National Defence / Défense nationale

C-51-534-000/MS-001

TECHNICAL MANUAL

RADIO RECEIVER R-5099/U, R-5099A/U, AND R-5104/GRC-508

(ENGLISH)

Issued on Authority of the Chief of the Defence Staff
Publiée avec l'autorisation du Chef de l'état-major de la Défense

OPI: DMCS

1988-04-15

Canada

LIST OF EFFECTIVE PAGES

Insert latest changed pages; dispose of superseded pages in accordance with applicable orders.

NOTE – On a changed page, the portion of the text affected by the latest change is indicated by a vertical line in the margin of the page. Changes to illustrations are indicated by miniature pointing hands or black vertical lines.

Total number of pages in this order is 374 consisting of the following:

Page No.	Change No.	Page No.	Change No.
Title	0		
A	0		
i to ix/x	0		
1-1 to 1-6	0		
2-1 to 2-13/2-14	0		
3-1 to 3-18	0		
4-1 to 4-31/4-32	0		
5-1 to 5-98	0		
6-1 to 6-205/6-206	0		
7-1 to 7-67/7-68	0		

Zero in Change No. column indicates an original page.

WARNING

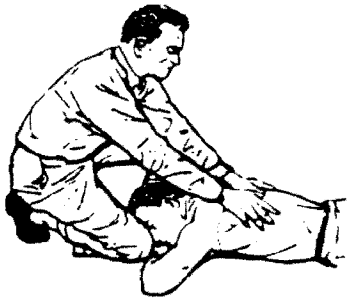
PRIMARY POWER (115 OR 220 V AC) IN THIS EQUIPMENT COULD CAUSE INJURY OR DEATH TO PERSONNEL. LOW VOLTAGE DC SUPPLIES USED IN THIS EQUIPMENT ARE NOT NORMALLY DANGEROUS, BUT CAN CAUSE SEVERE SHOCK AND PAINFUL BURNS TO MAINTENANCE PERSONNEL IN UNUSUAL ENVIRONMENTAL CONDITIONS (STANDING ON OR TOUCHING WET OR METAL SURFACES). DISCONNECT PRIMARY POWER BEFORE REMOVING DUST COVER(S) OR ATTEMPTING REPAIR.

HOLGER-NIELSEN METHOD OF ARTIFICIAL RESPIRATION

If breathing stops because of electrocution, drowning, sedative poisoning, gas poisoning, suffocation, or poliomyolitis, start artificial respiration immediately. Don't delay - seconds count. As soon as possible, send someone for a physician.

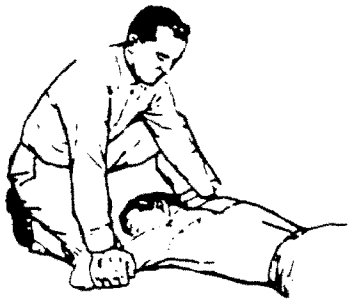
THE STANDARD TECHNIQUE FOR THE BACK PRESSURE-ARM LIFT METHOD IS AS FOLLOWS:

PLACE THE PATIENT FACE DOWN, ELBOWS BENT, ONE HAND ON THE OTHER WITH THE FACE TURNED TO ONE SIDE.

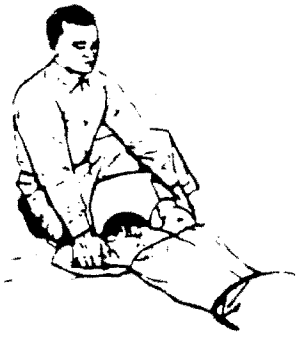


PLACE YOUR HANDS, THUMBS TOUCHING, JUST BELOW A LINE RUNNING BETWEEN THE ARMPITS.

ROCK FORWARD SLOWLY, ELBOWS STRAIGHT, UNTIL ARMS ARE VERTICAL.



ROCK BACKWARD, SLIDING YOUR HANDS TO THE PATIENT'S ARMS, JUST ABOVE THE ELBOWS.



RAISE THE ARMS UNTIL RESISTANCE AND TENSION ARE FELT AT THE PATIENT'S SHOULDERS.

REPEAT THE CYCLE 12 TIMES PER MINUTE

BE PREPARED for the EMERGENCY *Know How!*

DROWNING

1. REMOVE FROM WATER
2. LOOSEN CLOTHING
3. PLACE PATIENT FACE UPWARDS
   CLEAR MOUTH IF NECESSARY
4. APPLY ARTIFICIAL RESPIRATION
5. SEND FOR A DOCTOR
6. KEEP WARM - WITH BLANKETS ETC

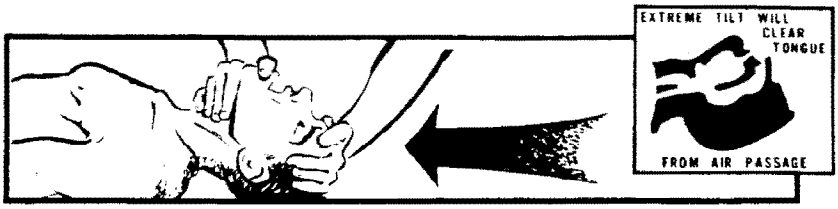
GASSING

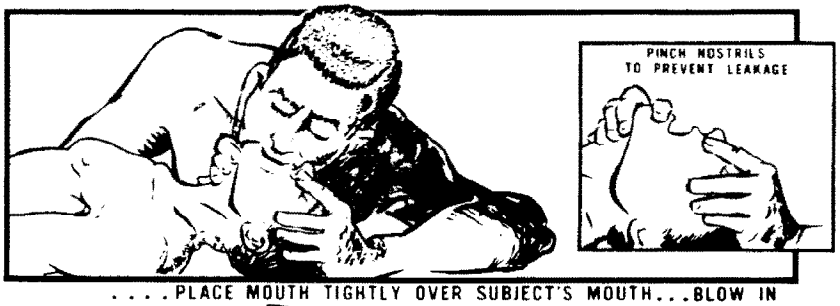
1. REMOVE TO FRESH AIR
2. LOOSEN CLOTHING
3. PLACE PATIENT FACE UPWARDS
   CLEAR MOUTH IF NECESSARY
4. APPLY ARTIFICIAL RESPIRATION
5. SEND FOR A DOCTOR
6. KEEP WARM - WITH BLANKETS ETC

ELECTRIC SHOCK

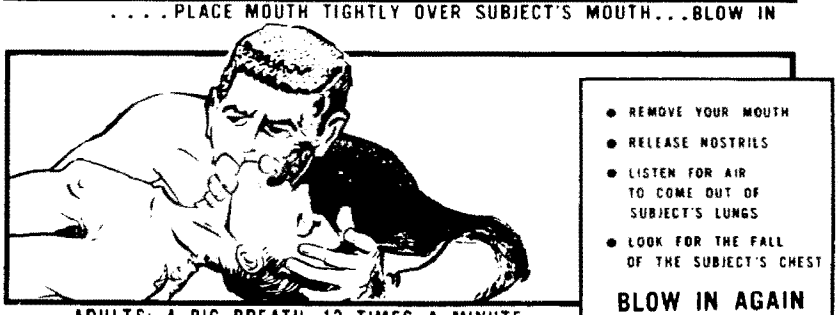
1. PROTECT YOURSELF - WITH DRY INSULATING MATERIAL DRY LEATHER, WOOD, RUBBER ETC
2. BREAK THE CIRCUIT - BY OPENING THE POWER SWITCH OR BY PULLING THE VICTIM FREE OF THE LINE CONDUCTOR
3. DON'T TOUCH THE VICTIM WITH THE BARE HANDS - UNTIL THE CIRCUIT IS BROKEN
4. REMOVE FALSE TEETH, CHEWING GUM, ETC. - FROM THE VICTIM'S MOUTH
5. START ARTIFICIAL RESPIRATION QUICKLY
6. SEND FOR A DOCTOR
7. KEEP PATIENT WARM - WITH BLANKETS ETC

MOUTH TO MOUTH BREATHING





. . . . PLACE MOUTH TIGHTLY OVER SUBJECT'S MOUTH . . . BLOW IN



- REMOVE YOUR MOUTH
- RELEASE NOSTRILS
- LISTEN FOR AIR TO COME OUT OF SUBJECT'S LUNGS
- LOOK FOR THE FALL OF THE SUBJECT'S CHEST

BLOW IN AGAIN

ADULTS: A BIG BREATH, 12 TIMES A MINUTE
CHILDREN: A SMALL BREATH, 16 TIMES A MINUTE

AIR PASSAGES MUST BE KEPT OPEN AT ALL TIMES

IF AIR PASSAGES ARE NOT OPEN THERE WILL BE
NO SOUND OF ESCAPING AIR
NO RISE OR FALL OF THE CHEST
RESISTANCE WHEN BLOWING INTO THE SUBJECT'S MOUTH

THEREFORE CHECK NECK AND HEAD POSITION AGAIN
CHECK MOUTH AND THROAT FOR FOREIGN SUBSTANCES.

AIR MAY GO TO STOMACH WHICH WILL DISTEND IT.
TAKE HAND FROM CHIN, PRESSING STOMACH GENTLY, FORCING AIR OUT.

CAUTION

THIS EQUIPMENT CONTAINS DEVICES WHICH ARE SUSCEPTIBLE TO DAMAGE IF SUBJECTED TO ELECTROSTATIC DISCHARGE. OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC ITEMS.

TABLE OF CONTENTS

TABLE OF CONTENTS (Cont)

LIST OF ILLUSTRATIONS

LIST OF ILLUSTRATIONS (Cont)

LIST OF TABLES

INTRODUCTION

DESIGN FEATURES

R-5099/U, R-5099A/U, and R-5104/GRC-508 Radio Receiver (receiver) is designed as a low-cost, highly reliable hf SSB/ISB receiver. The receiver has a frequency range of 14 kHz to 29.999 99 MHz tunable in 10-Hz steps over its entire range. In its basic configuration, it includes the following modes of operation: USB/LSB, CW, and AM.

Some of the outstanding features of the R-5099/U, R-5099A/U, and R-5104/GRC-508 Radio Receiver are as follows:

- Digital signal processing techniques.
- A microprocessor, keypad, and alphanumeric display that control and monitor all receiver functions.
- Frequency selection from the keypad, rotary tuning control, or 30 preset channels.
- Built-in test (BIT) for fault isolation to card/module or functional circuit level.
- Five selectable bandwidths.
- ISB mode.
- FSK mode when used with an external modem.
- Remote control interface (RS-422).
- Noise blanker with adjustable threshold.
- Voice squelch with front panel adjustable threshold.
- High-performance frequency standard.

Frontispiece. R-5099/U, R-5099A/U, and R-5104/GRC-508 Radio Receiver

SECTION 1
DESCRIPTION

1.1 GENERAL

1.1.1 R-5099/U, R-5099A/U, and R-5104/GRC-508 Radio Receiver provides reception of AM, SSB, and CW signals over the frequency range of 14 kHz to 29.999 99 MHz in 10-Hz steps. In R-5099A/U Radio Receiver, a preselector port and ISB operation is provided. Receive line audio and IF monitor output signals are available as well as a headphone jack and a built-in speaker for monitoring received signals. Remote control of the receiver is provided by RS-422 data signals. The receiver can be mounted in a standard 483-mm (19-in) rack using an optional slide-mounting kit. It can also be mounted in a desk-top enclosure or in a console style equipment cabinet. The receiver can be operated from a 115-V ac ±10 percent, 47- to 63-Hz, single-phase ac power source.

1.2 EQUIPMENT SUPPLIED/CONFIGURATION

1.2.1 Equipment supplied in the receiver and its configuration is shown in Figure 1-1 and listed in Table 1-1.

Table 1-1. Equipment Supplied/Configuration.

SUBASSEMBLY/CIRCUIT CARD		RADIO RECEIVER 622-6577-( )			DESCRIPTION/FUNCTION
TITLE	PART NUMBER	-001 R-5099A/U	-002 R-5099/U	-003 R-5104/GRC-508	
Chassis	652-6552-001	X	X	X	Standard
Front Panel A1	652-6572-001	X	X		Color-gray
	652-6572-002			X	Color-beige
Front Panel Card A1A1	646-6300-001	X	X	X	Standard
Control A2	646-6247-001	X			RS-422 remote control; preselector port; 30 presets; ISB
	646-6247-002		X	X	RS-422 remote control; no preselector port; 30 presets; no ISB
IF/Audio A3	646-6196-001	X			ISB
	646-6196-002		X	X	No ISB
Power Supply A4	652-6602-002	X	X	X	115 V ac ±10% at 47- to 63-Hz input power. Fused at 2A.
Synthesizer A5	646-6299-001	X	X	X	Standard
RF Translator A6	646-6298-001	X	X	X	Standard

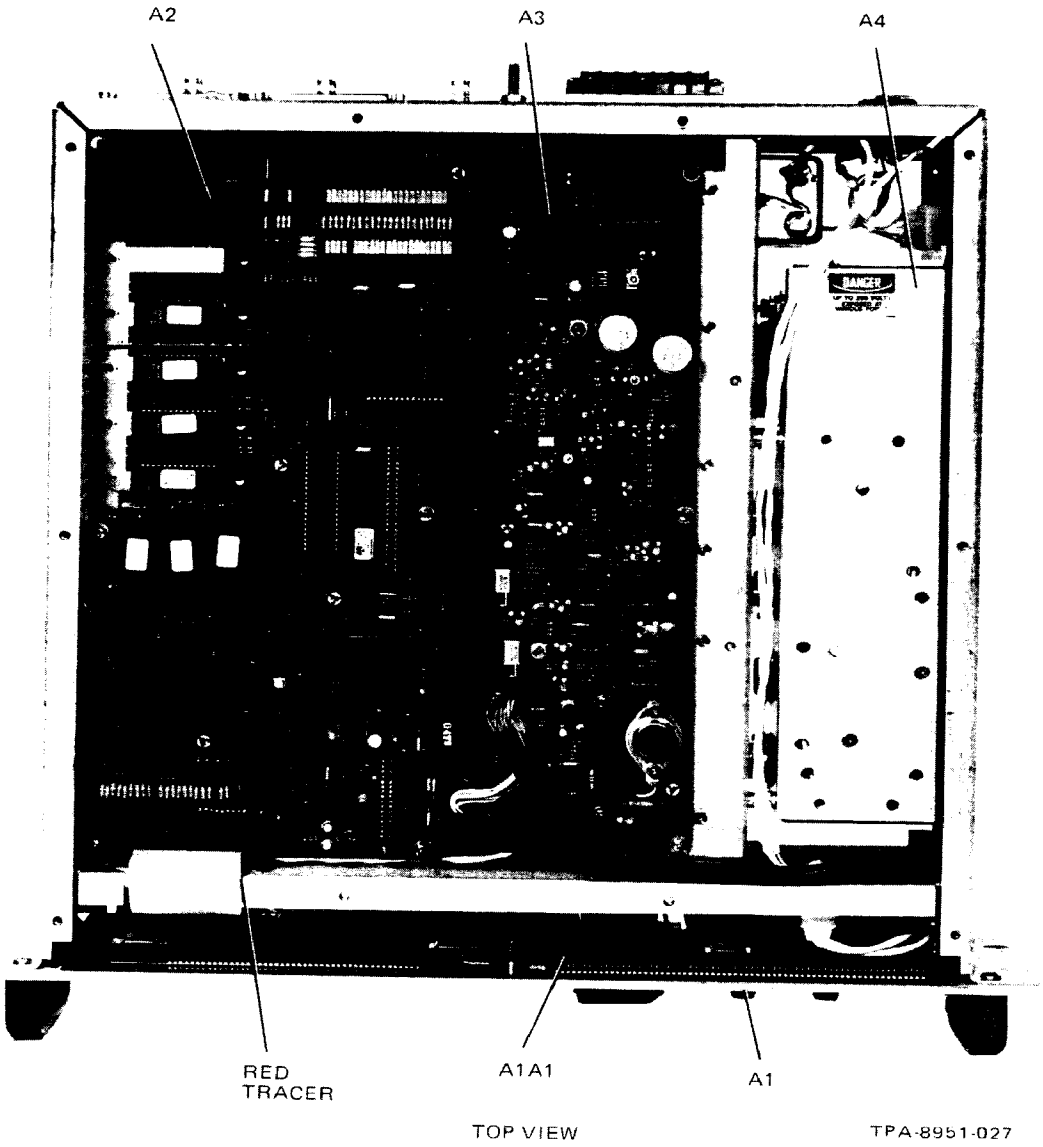


Figure 1-1 (Sheet 1 of 2) Location of Subassemblies/Circuit Cards

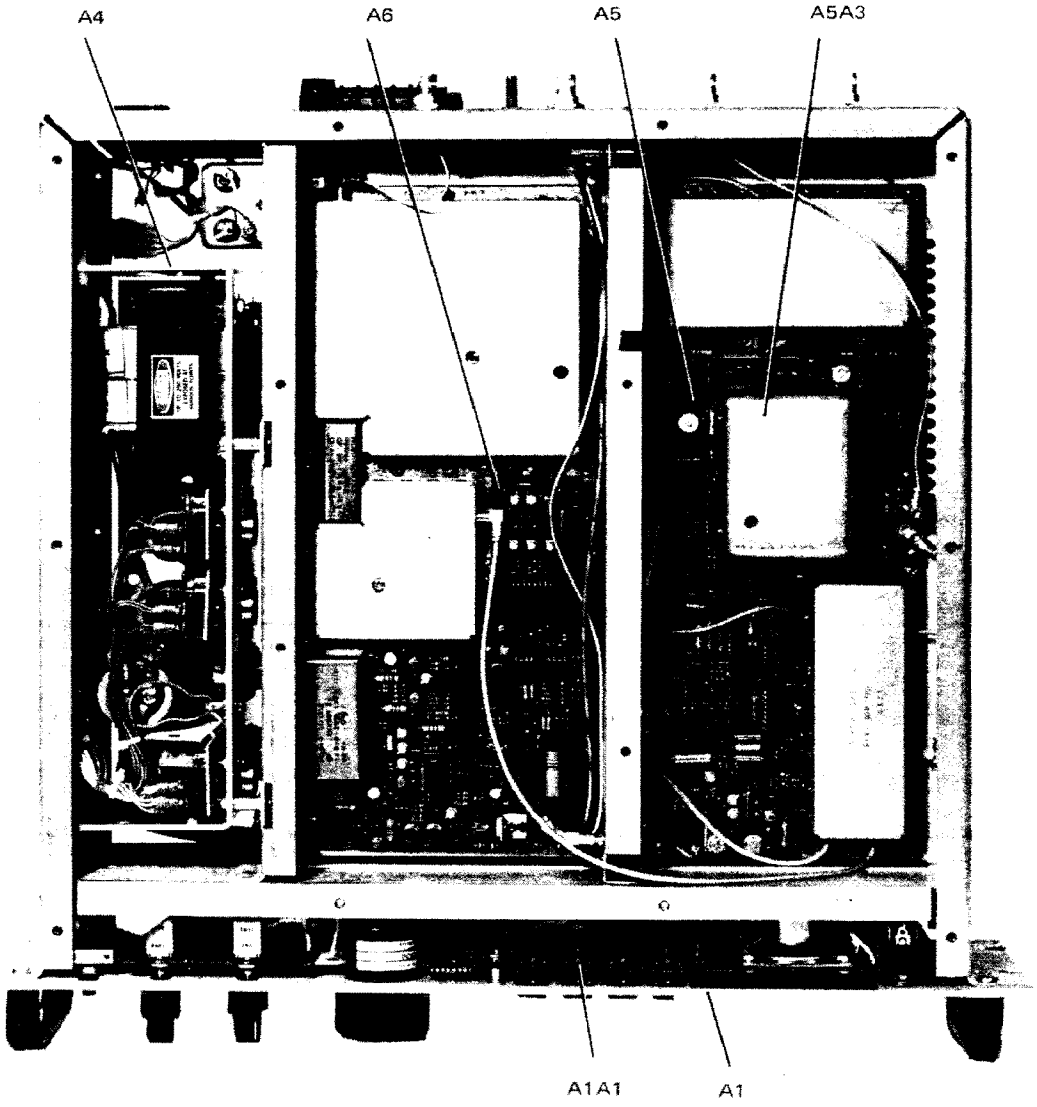


Figure 1-1 (Sheet 2 of 2) Location of Subassemblies/Circuit Cards

1.3 ASSOCIATED EQUIPMENT

1.3.1 Associated equipment required for operation of the receiver, but not supplied as part of the receiver, is listed in Table 1-2.

1.4 ACCESSORIES

1.4.1 Accessories available for use with the receiver are listed in Table 1-3.

1.5 EQUIPMENT SPECIFICATIONS

1.5.1 Specifications for the receiver are listed in Table 1-4.

Table 1-2. Associated Equipment.

EQUIPMENT	TYPE	FUNCTION	CHARACTERISTIC
Headphones	Any	Provide headphone monitoring of the receiver audio.	Standard 600-ohm headphones
Antenna	Any	Provide 50-ohm unbalanced antenna load.	Standard 50-ohm receive antenna
Receiver control	Any compatible	Provide serial data control signals in remote receiver applications.	Provides serial data control signals using RS-422 signals. A strapping option at the remote control interface allows up to 15 receivers to be connected to a common data bus.

Table 1-3. Options and Accessories.

OPTION/ACCESSORY	PART NUMBER	FUNCTION
AC-8050 Headphones	622-3412-001	Standard headphones, 600-ohm impedance, equipped with sound-blocking earmuffs.
AC-8051 Lightweight Headphones	622-3413-001	Lightweight headphones, 500-ohm impedance, equipped with comfort designed earpieces.
HF-8060 Preselector	622-3386-001	Automatically tuned bandpass filter, provides front-end selectivity and overload protection. Improves performance by attenuating out-of-band signals, suppressing their intermodulation and blocking effects.

Table 1-4. Equipment Specifications.

CHARACTERISTIC	SPECIFICATION
Electrical (signal levels are open circuit from 50-ohm source, unless otherwise specified)	
Modes of operation	CW, AM, USB or LSB, ISB (optional), and FSK (with external modem)
Frequency range	14 kHz to 29.999 99 MHz in 10-Hz increments
Frequency stability	Less than $\pm 1 \times 10^{-8}$ at 0 to +50 °C (+32 to +122 °F). Drift rate of not more than 3×10^{-8} per month.
Channeling speed	50 ms maximum
Preset channel memory	30-channel capacity. Each channel contains frequency, mode, bandwidth, AGC, and BFO information.
Sensitivity (SSB)	14 kHz to 500 kHz: 2.5 μV for 10 dB (s+n)/n 500 kHz to 29.999 99 MHz: 0.82 μV for 10 dB (s+n)/n
Intermodulation distortion	In band: 40 dB or greater below either of two input tones at −13 dBm per tone. Tones must be within IF passband with greater than 200-Hz separation. Out of band: Third order intercept point greater than +25 dBm. Second order intercept point greater than +40 dBm.
Spurious responses	IF rejection: 80 dB min Image rejection: 80 dB min Internal spurious: Less than 0.5-μV equivalent input External spurious rejection: 80 dB min at 20 kHz or more off tuned frequency
Audio outputs	Line: 600 ohms, 10%, balanced; adjustable from −20 to +10 dBm for 3-μV input in USB; maximum 1% distortion Headphone: Up to +10 dBm into 600 ohms; maximum 5% distortion Speaker: 2.5 W peak into 8 ohms; maximum 5% distortion
AGC threshold	3 μV maximum
AGC control	Less than 5-dB rise in audio output for signal increase from 1.4 μV to 0.2 V in USB.
AGC time constants	Attack time: less than 30 ms Fast decay time: 200 to 300 ms Slow decay time: 3.0 to 4.0 s Manual: greater than 100-dB range
Squelch	Operates on audio signal-plus-noise to noise ratio. Applicable to headphone and speaker outputs only.
Bandwidths	2.80-kHz USB/LSB/ISB bandpass filters 0.3-kHz, 1.0-kHz CW bandpass filters 3.2-kHz, 6.0-kHz AM bandpass filters

Table 1-4. Equipment Specifications (Cont).

CHARACTERISTIC	SPECIFICATION
Electrical (Cont)	
Antenna input impedance	50 ohms nominal, unbalanced 2:1 vswr max for 2.0 to 29.999 99 MHz
RF overload protection	Up to +47-dBm RF input, power on or off
Power requirements	115 V ac ±10%, 47 to 63 Hz, single-phase ac; 100 W nominal
Environmental	
Temperature	Full performance: 0 to +50 °C (+32 to +122 °F) Nonoperating: −62 to +71 °C (-80 to +160 °F)
Humidity	0 to 95% relative humidity, no condensation
Altitude	Operating: 0 to 3658 m (12 000 ft) Nonoperating: 0 to 12 910 m (40 000 ft)
Physical	
Size	133 mm (5.25 in) high × 483 mm (19 in) wide × 498 mm (19.6 in) deep with handles
Weight	17.2 kg (38.0 lb) maximum
Mounting	Desk-top cabinet or standard 483-mm (19-in EIA) rack with optional slide-mounting kit for rack.

SECTION 2
INSTALLATION

2.1 GENERAL

2.1.1 R-5099/U, R-5099A/U, and R-5104/GRC-508 Radio Receiver is ready, as shipped, for mounting in a 133-mm- (5-1/4-inch-) high space in a standard 483-mm (19-in) equipment rack. This section contains information for installing the receiver in a rack and making the unit operational. All interconnecting cables are attached to the receiver at the rear panel. The headphone jack is located on the front panel for operator convenience. The receiver operates with natural convective cooling in single-unit installations. In multiple-unit installations or where other heat-producing equipment is installed in the same cabinet, it is desirable to install a cabinet fan or blower to remove hot air and prevent excessive temperature buildup.

2.2 UNPACKING AND INSPECTION

2.2.1 Unpack the receiver carefully and check each item received against the shipping invoice. Inspect the items for evidence of damage during shipment. All claims for damage in shipment should be filed promptly with the transportation company involved. Save the original packing cases and material. Refer to paragraph 2.8.

2.3 PREINSTALLATION CHECK/ REQUIREMENTS

Caution

Do not remove or install plugs or plug-in cards/modules with power on. Damage to the cards/modules may result.

2.3.1 Input Power. The receiver operates on 115 V ac ±10 percent, 47 to 63 Hz. Excessive current protection is provided by fuse F1 (2 A), which is part of J1.

2.3.2 Remote Control. Both the remote-controlled receiver and associated receiver control or processor must operate at the same baud rate and signaling format. Refer to Remote Control Operation in section 3 for a description of the remote control operation.

2.3.2.1 Baud Rate Strapping. The baud rate select switch (U39) is located on Control A2 card. For the associated baud rate, the U39 switches must be set as shown in Table 2-1.

2.3.2.2 Signaling Format. The receiver operates from RS-422 data interface.

2.3.2.3 Remote Control Address. The receiver address is controlled by address strapping on the remote control connector (J6) address lines. Refer to Table 2-2 for address strapping.

2.4 CABLING (Refer to Figure 2-1)

2.4.1 Receiver to Primary Power Source. Separation between receiver and primary power source (115 V ac ±10 percent, 47 to 63 Hz) should be kept to a minimum. A power cable is supplied as part of the receiver.

2.4.2 Receiver to Preselector and/or Antenna. Separation between receiver and preselector or antenna should be kept to a minimum. A BNC-to-BNC cable is required for receiver-to-preselector installations. If the preselector is not used, a BNC-to-antenna connector RF cable is required. Preassembled cables are available from Rockwell International for use in installations where the preselector and antenna are used or where only an antenna is used.

2.4.3 Receiver to Receiver Control/Processor. Maximum allowable separation between the receiver and the receiver control/processor is dependent upon the characteristics of the transmission lines used, the method of signaling, and the transmission data rates selected. When using RS-422 signaling, maximum line length should be not more than 1221 metres (4000 feet).

Table 2-1. Baud Rate Strapping.

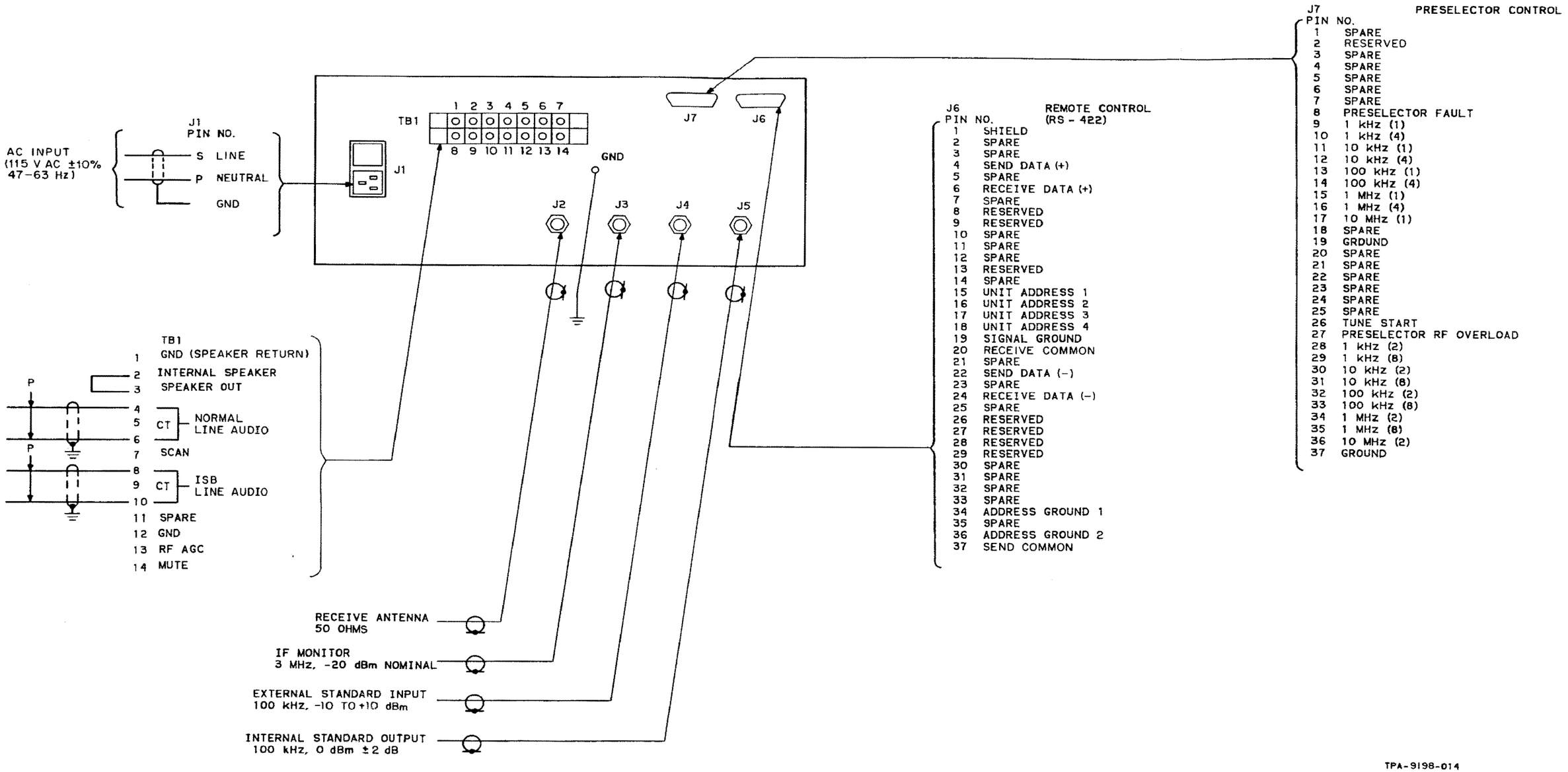
BAUD RATE	A2U39 SWITCH SETTINGS			
	S1	S2	S3	S4
19 200	1	1	1	1
12 800	0	1	1	1
9 600	1	0	1	1
4 800	0	0	1	1
3 200	1	1	0	1
2 400	0	1	0	1
1 920	1	0	0	1
1 829	0	0	0	1
1 600	1	1	1	0
1 200	0	1	1	0
800	1	0	1	0
600	0	0	1	0
300	1	1	0	0
150	0	1	0	0
110	1	0	0	0
75	0	0	0	0

1 = logic 1, switch open (off); 0 = logic 0, switch closed (on)

Table 2-2. Address Strapping.

ADDRESS	ADDRESS LINES			
	S1	S2	S3	S4
RS-422	J6-15	J6-16	J6-17	J6-18
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

1 = logic 1, open circuit; 0 = logic 0, grounded pin



TPA-9198-014

Typical Installation Figure 2-1

2.4.4 Multiple Receivers to Receiver Control/ Processor. Remote control of multiple receivers is accomplished by connecting in parallel all control data bus and all monitor data bus of the receivers. Each receiver must be strapped for a unique address as described in paragraph 2.3.2.3. The receivers also must be strapped for the same data rates. Refer to Table 2-4 for control (receive) data bus and monitor (send/transmit) data bus connections.

2.4.5 Receiver to External Speaker. Separation between receiver and external speaker should be kept to a minimum. However, field grade twisted-pair wire should be acceptable for most external speaker requirements. Terminal clips or wires can be attached to the receiver. Refer to applicable speaker for connection requirements. The jumper between TB1-2 and TB1-3 is removed and the external speaker leads are connected between TB1-1 and TB1-3.

2.4.6 Receiver to External Frequency Standard. Separation between receiver and external frequency standard should be kept to a minimum. A BNC-to-external frequency standard connector RF cable is required.

2.4.7 Receiver Internal Frequency Standard Output to External Device. Separation between the receiver internal frequency standard output and an external device should be kept to a minimum. A BNC-to-external device connector RF cable is required.

2.4.8 Receiver IF Output to External Detector or TTY Converter. Separation between the receiver and external receive modem should be kept to a minimum. A BNC-to-external receive modem connector RF cable is required.

2.4.9 Receiver Mute Line. The receiver may be muted by connecting an external mute line to TB1-14. This line must be grounded to mute, open, or high-level logic 1 to receive. If high-level logic 1 is used for receive, applied voltage must not exceed +30 V dc.

2.4.10 Receiver to RF AGC (TB1-13). The RF AGC terminal provides a place to monitor the internal AGC voltage or apply an external gain control signal. When monitoring the AGC voltage, a load impedance of greater than 10 kilohms should be used. For multiple receiver applications, the RF AGC terminals may be connected together on a common control line. In this configuration, the receiver with the greatest signal strength will provide the controlling AGC voltage. External lines connected to this terminal must be shielded to prevent noise or hum pickup from modulating the gain of the receiver.

Note

The AGC voltage at this terminal is the control voltage to the rf translator (A6) board only and does not include the gain control of the digital signal processing circuits.

2.5 INSTALLATION

2.5.1 General. Figure 2-2 shows the outline and mounting dimensions of the receiver. The receiver has standard 483-mm (19-inch), rack-mounting characteristics and can be mounted using four mounting screws through the edges of the front panel; however, on all rack-mounting configurations, slide mounting is recommended for ease of service and side support. When installation is complete, ensure that all electrical connections are made (including strapping) and that all dust covers and shields are in place.

2.5.2 Installation of Slide Mounts

a. Refer to Figures 2-2 and 2-3. Attach the slide rails to the proper location in the equipment cabinet and to the receiver.
b. Lift the receiver, position it squarely, and engage the slides of the mounting kit. Slide the receiver completely into the cabinet to ensure that the slides function properly.
c. Connect a ground strap (#14 AWG or larger) from the ground terminal, located on the rear of the receiver, to a suitable ground point in the equipment cabinet. Be sure that the cabinet ground point is free of paint or foreign material.
d. Refer to cabling, paragraph 2.4, and make the necessary cable connections as applicable to the unit.
e. Slide the receiver into place in the equipment cabinet. Secure it with two screws on each side of the front panel.

2.6 RECEIVER CHARACTERISTICS

2.6.1 Rear Panel Connections

a. POWER input (J1): High — 115 V ac ±10 percent, 47 to 63 Hz; Neutral — low side (return) of high input; Ground — ground.
b. RCV ANT input (J2): 50-ohm, BNC type connector.
c. IF monitor (J3): 50-ohm, BNC type connector. −20-dBm output at 3.0-MHz IF frequency.

d. EXT STD input (J4): 50-ohm, BNC type connector. −10-dBm to +10-dBm nominal input at 100-kHz, frequency standard input.
e. INT STD output (J5): 50-ohm, BNC type connector. 0-dBm ±2-dB nominal output at 100-kHz, frequency standard output.
f. Ground terminal: Unit ground. Must be connected to system ground.
g. EXTERNAL INTERFACE TB1 (refer to Table 2-3): Audio output and interface input/output control signals.
h. Remote Control Connector (J6), RS-422 Signal Control (Refer to Table 2-4): 37-pin, D-subminiature type connector, female; RS-449 connector. Refer to Remote Control Operation in section 3 for remote control operation.
j. Preselector Control Connector (J7) (Refer to Table 2-5): 37-pin, D-subminiature type connector, male.

2.7 POSTINSTALLATION CHECK/ REQUIREMENTS

2.7.1 There is no postinstallation check/requirements to be performed on the receiver as a unit. The operation procedures presented in the operation section of this instruction book may be used as a postinstallation operational check.

Table 2-3. External Interface Terminal Board TB1.

TB1-	DESCRIPTION
1	GND (SPEAKER RETURN)
2	Internal speaker, connects to 8-ohm speaker on the front panel.
3	Speaker output, connects to any 8-ohm speaker or speaker system.
4	
5	CT — Normal line audio, 600-ohm balanced, −20-dBm to +10-dBm output (adjustable)
6	
7	Scan, active low (ground to halt scan)
8	
9	CT — ISB line audio, 600-ohm balanced, −20-dBm to +10-dBm output (adjustable)
10	
11	Spare
12	Ground, system
13	RF AGC, input/output, 0 to 10 V dc for 0- to 96-dB attenuation, log-linear
14	Mute, active low (ground to mute receiver)

Table 2-4. Remote Control Connector (J6), RS-422 Signal Control.

J6	DESCRIPTION
1	Shield
2	Spare
3	Spare
4	Send data (+), output
5	Spare
6	Receive data (+), input
7	Spare
*8	No connection
*9	No connection
10	Spare
11	Spare

*Make no connections to pins marked no connection.

Table 2-4. Remote Control Connector (J6), RS-422 Signal Control (Cont).

J6	DESCRIPTION
12	Spare
*13	No connection
14	Spare
15	BIT 1 of the unit address, input (ground to enable)
16	BIT 2 of the unit address, input (ground to enable)
17	BIT 3 of the unit address, input (ground to enable)
18	BIT 4 of the unit address, input (ground to enable)
19	Signal ground
20	Receive common
21	Spare
22	Send data (−), output
23	Spare
24	Receive data (−), input
25	Spare
*26	No connection
*27	No connection
*28	No connection
*29	No connection
30	Spare
31	Spare
32	Spare
33	Spare
34	Address ground 1, return
35	Spare
36	Address ground 2, return
37	Send common, return

*Make no connections to pins marked no connection.

Table 2-5. Preselector Control Connector (J7).

J7	DESCRIPTION
	Note For pins 9 thru 17 and 28 thru 36, 0-V dc (ground) output = disable; open circuit output = enable.
1	Spare
2	Reserved
3	Spare
4	Spare
5	Spare
6	Spare
7	Spare
8	Preselector fault: +5- to +15-V dc input = fault 0-V dc input = no fault
9	1 kHz (1)
10	1 kHz (4)
11	10 kHz (1)
12	10 kHz (4)
13	100 kHz (1)
14	100 kHz (4)
15	1 MHz (1)
16	1 MHz (4)

Table 2-5. Preselector Control Connector (J7) (Cont).

J7	DESCRIPTION
17	10 MHz (1)
18	Spare
19	Ground
20	Spare
21	Spare
22	Spare
23	Spare
24	Spare
25	Spare
26	Tune Start: 0-V dc output pulse, 5- to 10-ms duration = tune start pulse open circuit = no tune start
27	Preselector RF Overload: +5- to +15-V dc input = overload 0-V dc input = no overload
28	1 kHz (2)
29	1 kHz (8)
30	10 kHz (2)
31	10 kHz (8)
32	100 kHz (2)
33	100 kHz (8)
34	1 MHz (2)
35	1 MHz (8)
36	10 MHz (2)
37	Ground

2.8 PREPARATION FOR SHIPMENT

2.8.1 Complete Unit. If the unit is to be shipped, pack the equipment in its original container (if available). Brace the equipment in the same manner used for original shipment. Pack the container with filler for protection of the equipment during storage or shipping. Include desiccant in the packing to absorb moisture.

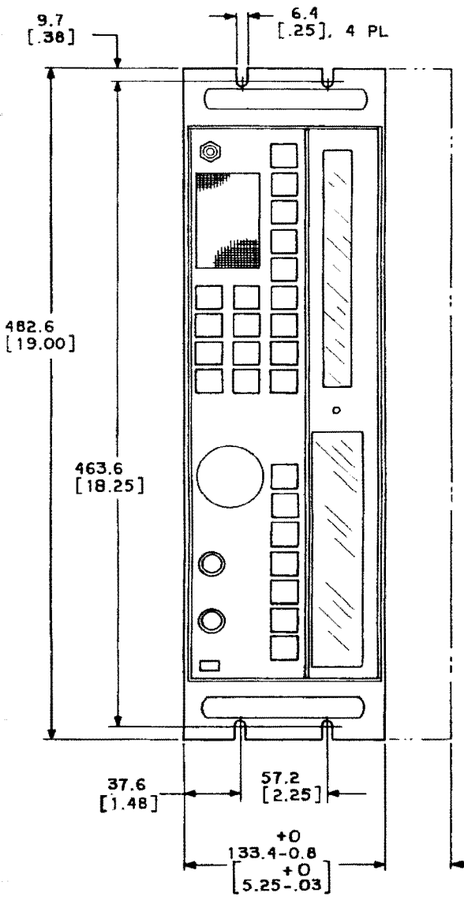
2.8.2 Modules/Subassemblies. For all modules or subassemblies other than Synthesizer A5 and RF Translator A6, follow the general guidelines given for shipment of the complete unit. For Synthesizer A5 and RF Translator A6, follow the procedures below.

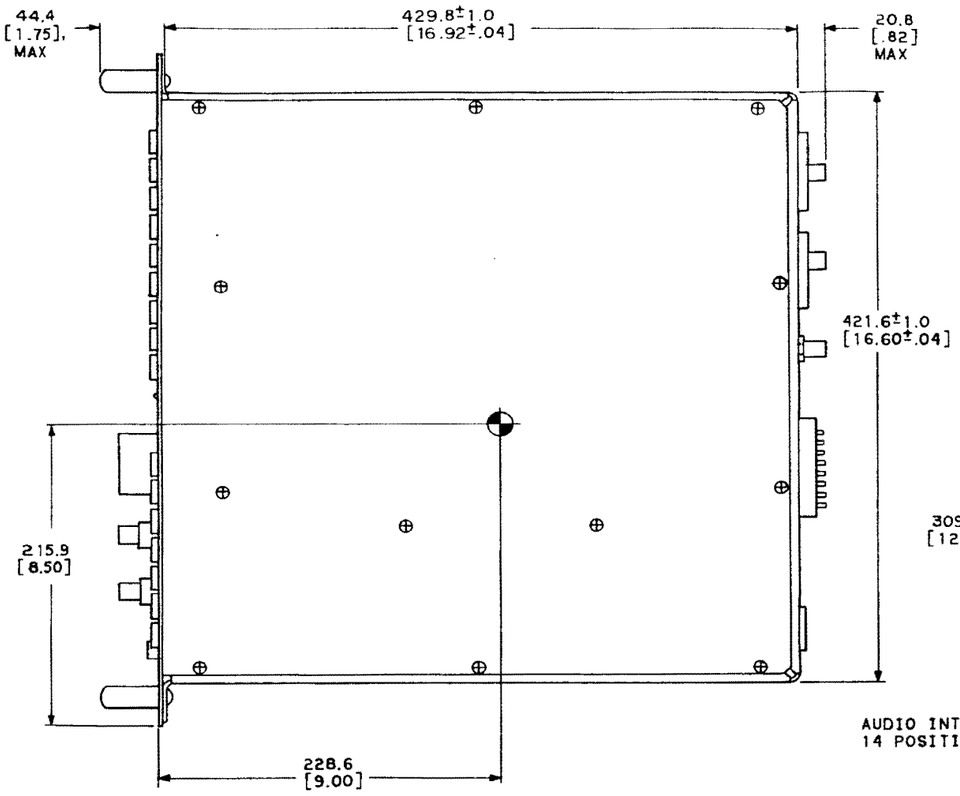
2.8.2.1 Synthesizer A5

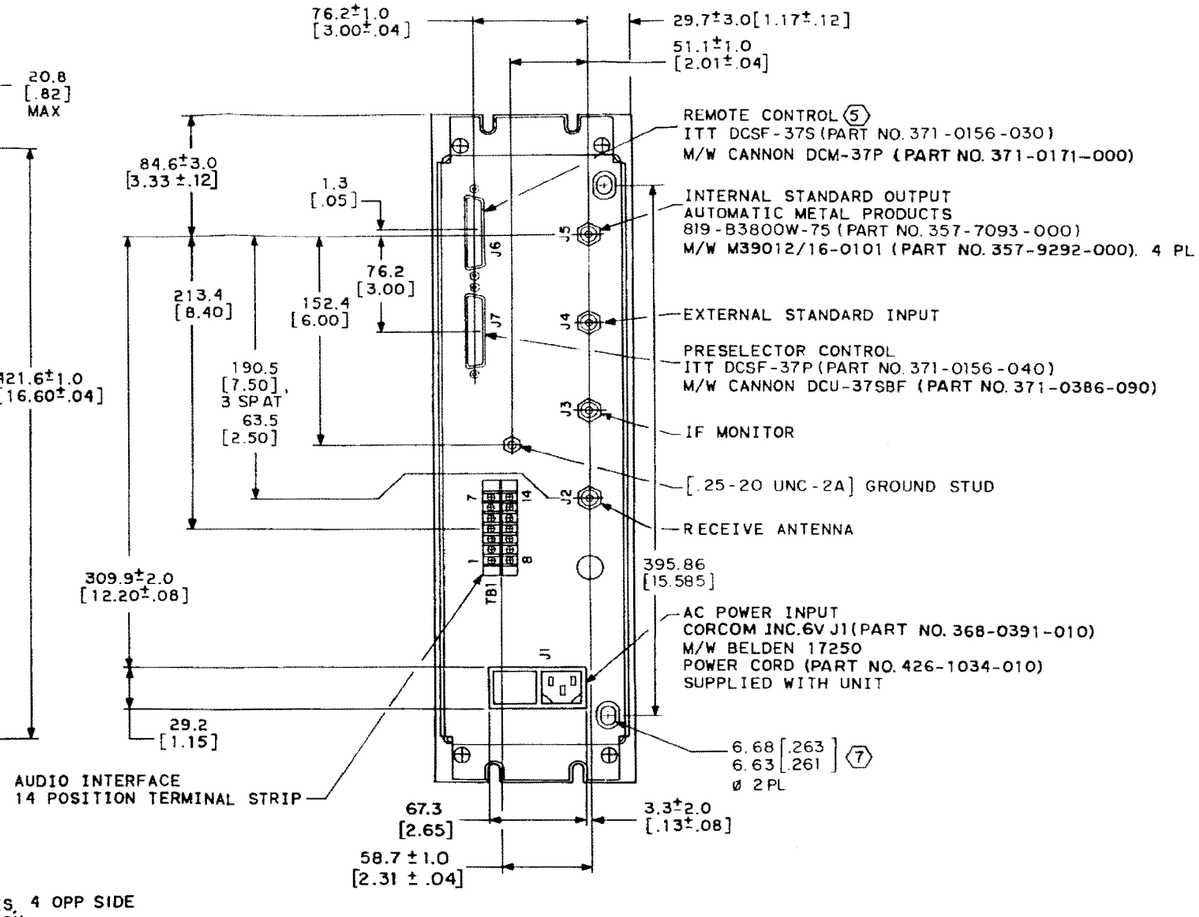
a. Place the contact fingers protective cover removed from replacement module over Synthesizer A6 in the same position as it was on the replacement module. If the protective cover is not available, fabricate one in accordance with Figure 2-4.
b. Secure the protective cover in place using the hardware removed from the replacement module.

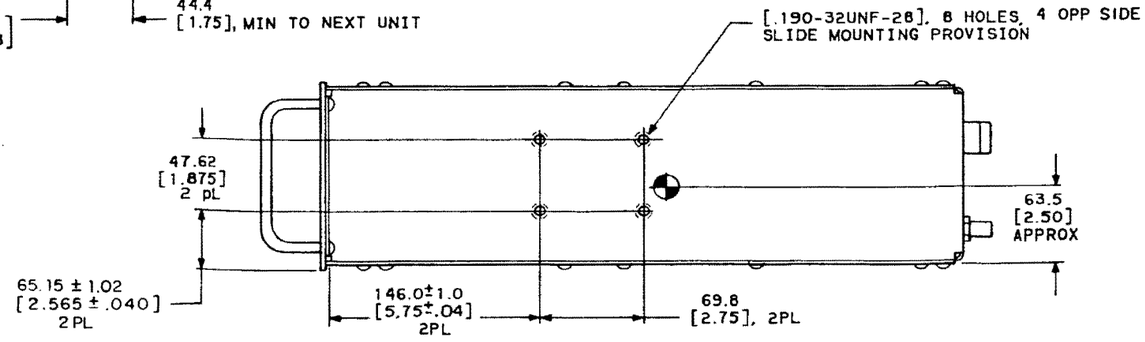
2.8.2.2 RF Translator A6

a. Place the contact fingers protective cover removed from replacement module over RF Translator A6 in the same position as it was on the replacement module. If the protective cover is not available, fabricate one in accordance with Figure 2-4.
b. Secure the protective cover in place using the hardware removed from the replacement module.









NOTES:

(1) DIMENSIONS ARE IN MILLIMETRES [INCHES].

(2) WEIGHT: 17.2 kg [38 LB] MAX.

(3) ◓ DENOTES CENTER OF GRAVITY. LOCATIONS ARE APPROX.

(4) INPUT POWER 115 V AC ±10% SINGLE PHASE 47-63 Hz, 100 WATTS NOMINAL.

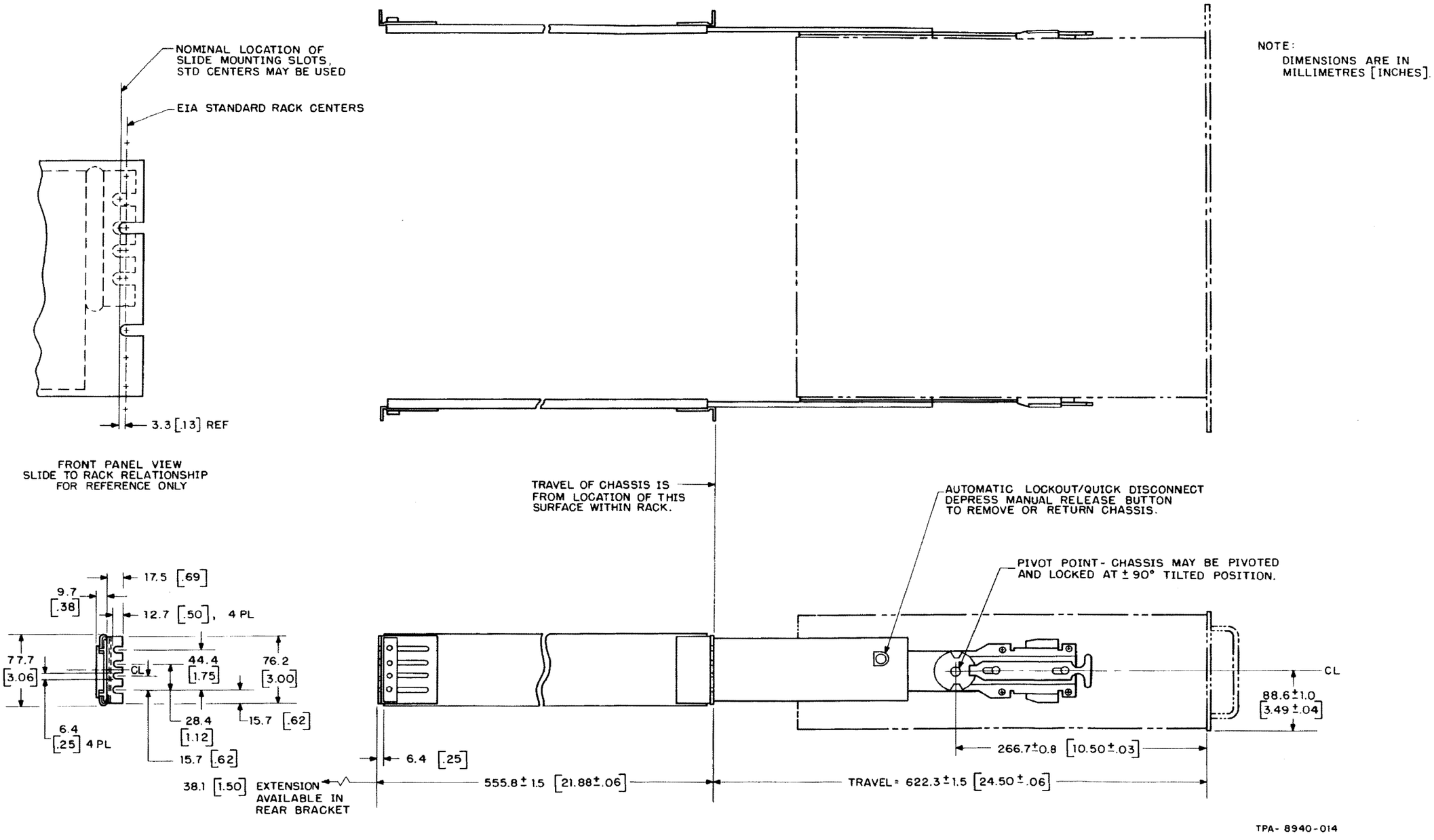
(5) REMOTE CONTROL PIN OUTS PER EIA SPECIFICATION RS-442.

(6) M/W=MATES WITH.

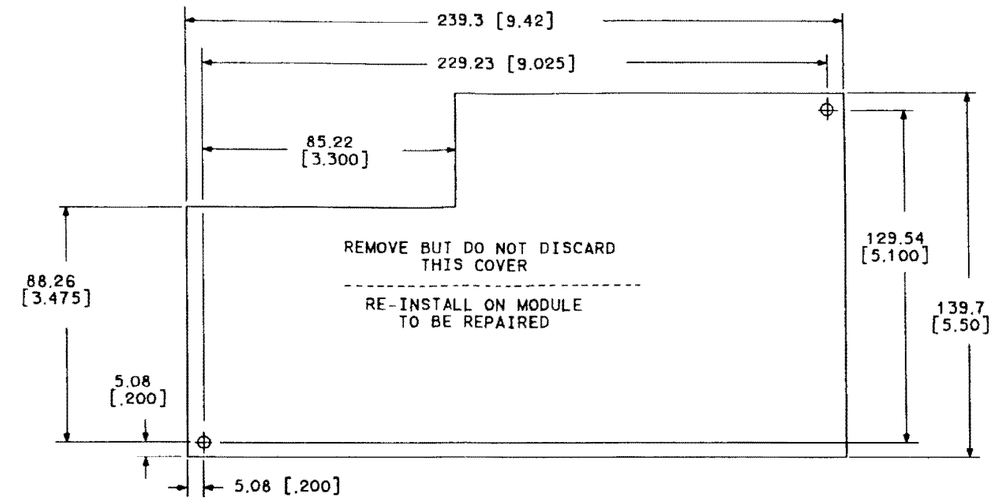
(7) EXTERNAL GUIDE PINS SHOULD NOT EXTEND MORE THAN 11 [0.44] INSIDE THE BUSHING FLANGE.

TPA-9211-014

Outline and Mounting Dimensions Figure 2-2



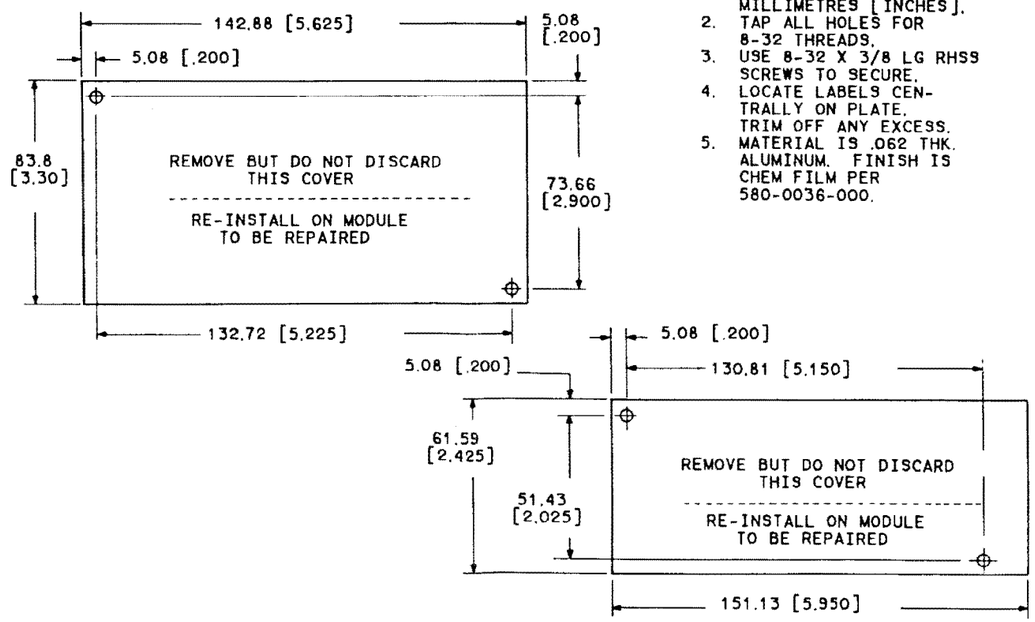
Installation of Slides in Rack Mounts Figure 2-3



PROTECTIVE COVER FOR RF TRANSLATOR A6

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES [INCHES].
2. TAP ALL HOLES FOR 8-32 THREADS.
3. USE 8-32 X 3/8 LG RHSS SCREWS TO SECURE.
4. LOCATE LABELS CENTRALLY ON PLATE. TRIM OFF ANY EXCESS.
5. MATERIAL IS .062 THK. ALUMINUM. FINISH IS CHEM FILM PER 580-0036-000.



PROTECTIVE COVERS FOR SYNTHESIZER A5

TPB-2792-014

Contact Fingers Protective Covers Figure 2-4

SECTION 3
OPERATION

3.1 GENERAL

3.1.1 This section of the instruction book contains instructions for operating R-5099/U, R-5099A/U, and R-5104/GRC-508 Radio Receiver. All controls and indicators necessary for operation of a receiver system are located on Front Panel A1 of the receiver.

3.1.2 Note that channel B IF and audio circuits are active only in ISB (independent sideband) mode. In ISB operation, channel A output signals are upper-sideband signals and channel B output signals are lower-sideband signals. In all other modes, only channel A circuits are active and provide signal outputs regardless of IF filter selected.

3.2 CONTROLS AND INDICATORS

3.2.1 Controls and indicators of the receiver are shown in Figure 3-1 and are listed in Table 3-1 along with their function. All controls and indicators listed are applicable to all units unless otherwise indicated.

3.3 OPERATING TECHNIQUES

3.3.1 General. This section describes the operation of the front panel functions and the remote control interface.

3.3.2 Normal Operation (Local Operation)

a. Normal Operation Initiation. Press the NORM switch. (The receiver returns to the last condition set in the NORM state.) The STATUS display will indicate NORM. Note that pressing the NORM switch at any time will abort any input sequence and will also terminate TEST, PRGM (program), and AUX (auxiliary) operations.

b. Frequency Selection. Using the switches, press the FREQ switch. CHANNEL number clears, the FREQUENCY-KHZ display blinks, and the DIAL indicator is set to LOCK. Input the frequency digits for the selected frequency. (Up to five digits can be entered without using a decimal point.) Valid inputs are 0 through 29 999.99 kHz. Press the ENTER switch and the display will cease blinking. To use the tuning knob, step the DIAL switch through the menu until FREQ is selected. Rotate the tuning knob until desired frequency is displayed. Note that the tuning rate can be changed by pressing the TUNE switch (FAST, MED, SLOW). When frequency is selected, set the DIAL switch to LOCK.

c. Mode Selection. Press the MODE switch. Each time the MODE switch is pressed, the MODE indicator is advanced to the next position (AM, CW, USB, LSB, ISB). Stop when the MODE indicator is beside the appropriate mode.

d. BFO Selection (CW, USB, and LSB modes only). Using the switches, press the BFO switch. CHANNEL number clears, the BFO-KHZ display blinks, and the DIAL indicator is set to LOCK. Input the frequency digits for the selected bfo offset. Press the +/− switch to input the bfo sign. Valid inputs are 0.00 through ±4.00 kHz. Press the ENTER switch and the display will cease blinking. To use the tuning knob, step the DIAL switch through the menu until BFO is selected. Rotate the tuning knob until desired bfo offset is displayed. When bfo is selected, set the DIAL switch to LOCK.

e. Bandwidth Selection. Press the BW switch. Each time the BW switch is pressed, the BW indicator is advanced to the next possible position. The following shows the default bandwidth position. The bandwidths in parenthesis are other possible selections in each mode (all in kHz).

AM	6.0	(6.0 - 3.2 - 1.0 - 0.3)
CW	1.0	(6.0 - 3.2 - 1.0 - 0.3)
USB	2.8 only	
LSB	2.8 only	
ISB	2.8 only	

f. AGC Time Constant Selection. Press the AGC switch. Each time the AGC switch is pressed, the AGC indicator is advanced to the next position (OFF-FAST-SLOW).

g. Audio Selection. Press the AUDIO switch. Each time the AUDIO switch is pressed, the AUDIO indicator is advanced to the next position

(OFF-NORM-ISB-BOTH). Speaker and phones are set to monitor audio as follows:
OFF — No audio signal

NORM — Channel A audio signal

ISB — Channel B audio signal (ISB mode only)

BOTH — Channel A and channel B audio signals (ISB mode only)

h. Local/Remote Control Selection. Press the CNTL switch. Each time the CNTL switch is pressed, the CNTL indicator advances to the next position (LOCAL-REMOTE) and the operating state, and displays of the receiver change accordingly. When switched to local control, the receiver sets up to the last local operating conditions. When switched to remote control, the receiver sets up to the last remote operating conditions.

j. Preset Channel Selection. Using the switches, press the CHAN switch. Blinking decimal points are displayed in the CHANNEL number and the DIAL indicator is set to LOCK. Input the digit(s) for the selected channel number. (When the first channel digit is entered, the blinking decimal points are cleared and the entered digit(s) are displayed and blinked.) Valid inputs are 0 to 29. When channel digits are selected, press the ENTER switch. The display ceases blinking and the parameters of the selected preset channel are displayed. To use the tuning knob, step the DIAL switch through the menu until CHAN is selected. Rotate the tuning knob until desired CHANNEL is displayed. Note that the tuning rate can be changed by pressing the TUNE switch (FAST, MED, SLOW).

k. Auxiliary Channel Selection. When in normal (NORM) operation, pressing the AUX switch causes the receiver and displays to immediately set up to the stored auxiliary channel parameters. The CHANNEL display contains the letters AU to indicate auxiliary channel operation, and the DIAL indicator is set to LOCK. Pressing the NORM switch (when in AUX operation) will return to the last normal operating condition before selecting the auxiliary channel.

m. Preset Channel Storage. While in normal (NORM) operation, preset channels may be loaded by transferring the current receiver operating state into a preset channel. When the STORE switch is pressed, blinking decimal points are displayed in the CHANNEL number. When the new channel digits are entered, they are displayed and blinked. Pressing ENTER switch stores the current receiver operating parameters in the selected channel and blinking of the display ceases.

Note

The following operating parameters are stored in a preset channel: frequency, bfo, mode, AGC, and bandwidth.

n. Auxiliary Channel Storage. While in normal (NORM) operation, the auxiliary channel may be loaded by transferring the current receiver operating state into the auxiliary channel. When STORE is pressed, blinking decimal points are displayed in the CHANNEL number. When AUX is pressed, the CHANNEL digits are set to the letters AU and blinked. Pressing ENTER stores the current operating parameters in the auxiliary channel and blinking of the display ceases.

3.3.3 Built-In Test

3.3.3.1 The built-in test (BIT) capabilities consist of four types of testing as follows: 1) power on testing, 2) continuous testing, 3) local operator-initiated testing, and 4) remote operator-initiated testing. Refer to maintenance section for details of testing.

3.3.3.2 Power on BIT testing is initiated when power is turned on. These tests are run start to finish, except that when a failure is detected, testing is terminated. If no failures are detected, total time of test is approximately 10 seconds.

3.3.3.3 Continuous BIT testing is a part of the normal receiver operating software and is continuous while the receiver is operating. Failure indications momentarily appear on the front panel display and are temporarily stored in memory. Overload indications appear in the status display on Front Panel A1.

3.3.3.4 Local operator-initiated BIT testing is an extensive test of the receiver. Once initiated, these tests are run start to finish, except that when a failure is detected, testing is terminated. Some monitoring and prompting is required by the operator. If no failures are detected, total time of test is approximately 3 minutes. The operator-initiated test may be terminated by pressing the NORM switch.

Table 3-1. Controls and Indicators.

INDEX NUMBER	CONTROL OR INDICATOR	FUNCTION
1	CHAN (channel) switch A1A1S1	Used to select a preset channel. To select channel, press CHAN switch, press appropriate digits for channel, and press ENTER switch. Channels available: 0 through 29.
2	+/− (plus or minus) switch A1A1S2	Used to select the direction of the bfo frequency. + (plus) indicates offset above receiver frequency; − (minus) indicates offset below receiver frequency.
3	BFO (beat-frequency oscillator) switch A1A1S3	Used to select bfo. To select bfo offset, press BFO switch, press appropriate digits for bfo, set +/− (direction desired), and press ENTER switch. Bfo offset available: 0 through ±4.00 kHz.
4	FREQ (frequency) switch A1A1S4	Used to select the frequency. To select a frequency, press FREQ switch, press appropriate digits for frequency, and press ENTER switch. Frequencies recognized: 0 through 29 999.99 kHz.
5	CHANNEL—BFO-KHZ—FREQUENCY-KHZ display A1A1DS1	Indicates the normal operating parameters of the receiver except when the receiver is in PRGM (program) mode. In the program mode, this display indicates the parameters being set up on each channel, as the parameter is selected.
6	NORM (normal) switch A1A1S5	Used to enable normal manual operation of the receiver.
7	PRGM (program) or 1 (digit one) switch A1A1S6	PRGM - Used to program preset channel parameters without disturbing the current operation of the receiver. 1 - Used to manually set the digit one for channel, bfo, or frequency.
8	STORE or 2 (digit two) switch A1A1S7	STORE - Used to store in memory any/all programmed preset channel parameters. To store programmed information, perform all programming functions desired, then press STORE switch, press appropriate digits for channel to be entered, press ENTER switch. 2 - Used to manually set the digit two for channel, bfo, or frequency.
9	TEST or 3 (digit three) switch A1A1S8	TEST - Used to select built-in test operation. To test receiver, press NORM switch, press TEST switch, allow unit to complete test. 3 - Used to manually set the digit three for channel, bfo, or frequency.
10	ENTER switch A1A1S9	Used to enter front panel commands (frequency, bfo, presets) into the receiver (processor).
11	FAULT lamp A1A1DS3	Indicates a receiver or preselector fault/failure.
12	Status display A1A1DS2	Status display indicates the operational status of the receiver as follows.
	RF INPUT	Indicates the relative receive RF input signal level to the receiver (0 to +100 dB relative to an input level of 1 μV).
	LINE AUDIO	Indicates the receive audio output available on the audio line measured in dBm (−15 to +15 dBm).
	STATUS	Indicates operational status of the receiver. OVLD (overload) indicates a receive RF overload or preselector RF overload condition.

Table 3-1. Controls and Indicators (Cont).

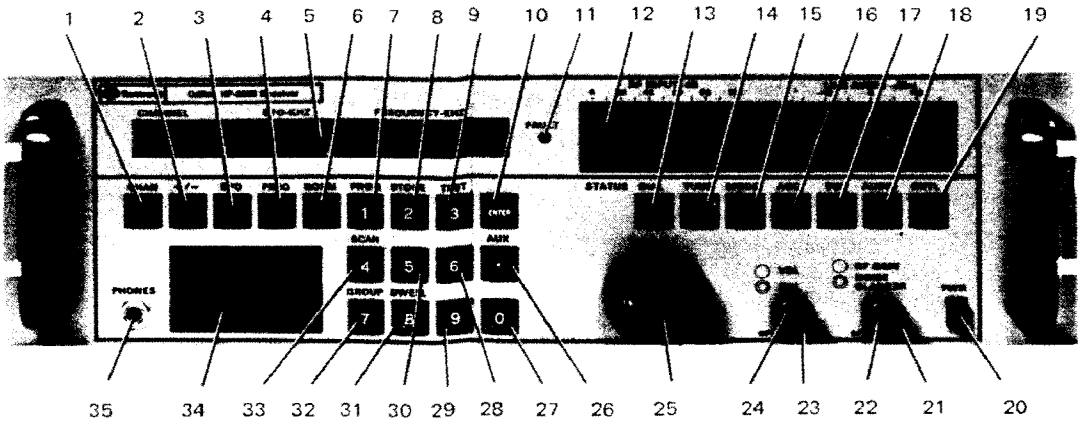
INDEX NUMBER	CONTROL OR INDICATOR	FUNCTION
12 (Cont)		NORM (normal) indicates the normal operating state of the receiver.
		PRGM (program) indicates the receiver is set up to program the preset channel parameters. The program status is terminated by returning to the normal operating state.
	DIAL	Indicates functional status of the tuning knob.
		FREQ (frequency) indicates the tuning knob will manually control the receiver frequency as shown on the FREQUENCY-KHZ display.
		BFO (beat-frequency oscillator) indicates tuning knob will manually control the offset frequency as shown on the BFO-KHZ display.
		CHAN (channel) indicates the tuning knob will manually control the preset channel selection as shown on the CHANNEL display.
		LOCK indicates movement of the tuning knob will not affect the frequency, bfo, or channel selection.
	TUNE	Indicates the rate of change as caused by rotation of the tuning knob.
		FAST tunes frequency in 10-kHz increments
		MED (medium) tunes frequency in 100-Hz increments
		SLOW tunes frequency in 10-Hz increments
	MODE	Indicates operational mode of receiver.
		AM
		CW
		USB
		LSB
		ISB (simultaneous 2-channel operation, upper and lower sideband)
	AGC (automatic gain control)	Indicates AGC time constant selected for receiver operation.
		OFF - AGC not enabled
		FAST - Decay 0.2 to 0.3 second, attack 15 to 30 ms
		SLOW - Decay 3.0 to 4.0 seconds, attack 15 to 30 ms
	BW (bandwidth)	Indicates bandwidth selected for receiver operation in AM or CW modes: 6.0 kHz, 3.2 kHz, 1.0 kHz, 0.3 kHz.
	AUDIO	Indicates line audio selected for speaker, phones, and meter.
		OFF - None selected (channel A in meter circuit)
		NORM - Channel A audio selected
		ISB - Channel B audio selected. Can only be selected in ISB mode.
		BOTH - Channel A and channel B audio selected (channel A in meter circuit). Can only be selected in ISB mode.

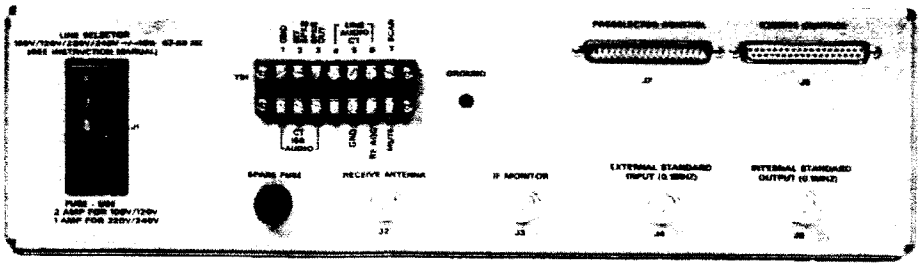
Table 3-1. Controls and Indicators (Cont).

INDEX NUMBER	CONTROL OR INDICATOR	FUNCTION
12 (Cont)	CNTL (control)	Indicates mode of control of the receiver. LCL (local) indicates receiver controlled from front panel controls RMT (remote) indicates receiver controlled from a remote control or processor
13	DIAL switch A1A1S10	Selects the tuning dial control (FREQ, BFO, CHAN, LOCK). When in LOCK, the tuning dial is disabled. In all other positions, the indicated parameter is controlled.
14	TUNE switch A1A1S11	Selects the rate of change for the tuning dial (FAST, MED, SLOW).
15	MODE switch A1A1S12	Selects the operational mode of the receiver (AM, CW, USB, LSB, ISB). The AM and CW default bandwidths are selected until another bandwidth is selected. AM 6.0 CW 1.0 USB 2.8 (bandwidth not displayed) LSB 2.8 (bandwidth not displayed) ISB 2.8 (bandwidth not displayed)
16	AGC switch A1A1S13	Selects the AGC time constant for receiver operation (OFF, FAST, SLOW).
17	BW (bandwidth) switch A1A1S14	Selects the IF bandwidth used in AM or CW mode in the receiver (6.0, 3.2, 1.0, 0.3 kHz).
18	AUDIO switch A1A1S15	Selects audio outputs on the speaker, phones, and meter (OFF, NORMAL, ISB, BOTH). OFF - None (channel A in meter circuit) NORM - Channel A ISB (ISB mode only) - Channel B BOTH (ISB mode only) - Channel A and channel B (channel A in meter circuit)
19	CNTL (control) switch A1A1S16	Alternates between LOCAL or REMOTE control operation. When switched to LOCAL, the receiver sets up to the last local operating conditions. When set to REMOTE, the receiver sets up to the last remote operating state (or default state). In remote, all the front panel controls except AUDIO and CNTL keys are disabled.
20	PWR (power) switch A1S1	Sets power on/off. When pressed and latched (inward position), power is applied to the receiver. When pressed and unlatched (outward position), power is removed from the receiver.
21	 RF GAIN control A1R2B	Controls RF AGC threshold/level, which in turn controls the gain of the RF circuits in the receiver.
22	 NOISE BLANKER control A1R2A	Controls the noise blanking threshold which controls the duration of noise spikes in the received signal.

Table 3-1. Controls and Indicators (Cont).

INDEX NUMBER	CONTROL OR INDICATOR	FUNCTION
23	 VOL (volume) control A1R1B	Controls volume of audio in phones and speaker. Does not affect line audio level.
24	 SQL (squelch) control A1R1A	Enables/disables squelch and controls the squelch threshold. In extreme counterclockwise position, squelch is disabled. When control is moved clockwise, squelch is enabled and squelch threshold is adjusted by further clockwise rotation of the SQL control.
25	Tuning knob A1S2	Can be used to set frequency, bfo, and channel selection when used in conjunction with DIAL switch. Tuning rate can be changed by using TUNE switch.
26	• (decimal point) or AUX (auxiliary) switch A1A1S20	• - Used to manually set a decimal point for bfo or frequency. AUX - Used to select the stored auxiliary channel parameters. When selected, the CHANNEL indicator will display the letters AU to indicate auxiliary channel operation.
27	0 (zero) switch A1A1S24	Used to manually set a digit zero for channel, bfo, or frequency.
28	6 (six) switch A1A1S19	Used to manually set the digit six for channel, bfo, or frequency.
29	9 (nine) switch A1A1S23	Used to manually set the digit nine for channel, bfo, or frequency.
30	5 (five) switch A1A1S18	Used to manually set the digit five for channel, bfo, or frequency.
31	8 (eight) or DWELL switch A1A1S22	8 - Used to manually set the digit eight for channel, bfo, or frequency. DWELL - The dwell function is not used.
32	7 (seven) or GROUP switch A1A1S21	7 - Used to manually set the digit seven for channel, bfo, or frequency. GROUP - The group function is not used.
33	4 (four) or SCAN switch A1A1S17	4 - Used to manually set the digit four for channel, bfo, or frequency. SCAN - The scan function is not used.
34	Speaker A1LS1	Front panel internal speaker. Audio heard on speaker is selected by AUDIO switch. OFF - None NORMAL - Channel A audio ISB - Channel B audio (in ISB mode only) BOTH - Channel A and channel B audio (in ISB mode only)
35	PHONES jack A1J1	Monitor audio at front panel with headphones as selected by AUDIO switch. OFF - None NORMAL - Channel A audio ISB - Channel B audio (in ISB mode only) BOTH - Channel A and channel B audio (in ISB mode only)





TPA-8953-017

Controls and Indicators Figure 3-1

3.3.3.5 Remote operator-initiated BIT testing is an extensive test of the receiver from a remote operating station. Once initiated, these tests are run start to finish. This test takes approximately 30 seconds and tests all parts of the receiver except addressing and the Front Panel A1 key pad. Fault status and detailed test results are available upon command.

3.3.4 Program Operation

3.3.4.1 The purpose of program operation is to permit programming of the preset channels without disturbing the current operation of the receiver. The preset channels can also be programmed in normal operation (see paragraph 3.3.2.m.), but this requires setting the receiver to the operating state of the desired channel conditions before storing the parameters in a channel. In local control, the PRGM switch (for program operation) is only pressed when the receiver is in NORM (normal operation). The displays remain the same as they were in normal, except the STATUS indicator indicates PRGM to remind the operator that the displayed parameters do not necessarily reflect the current receiver operating conditions, and that subsequent entries will have no effect on the current operation of the receiver. While in the PRGM state, CHAN, FREQ, BFO, MODE, AGC, and BW parameters are selected the same way as in normal operation. The primary difference being that only the displays and presets are changed in the PRGM state and the operating state of the receiver does not change. Once the PRGM state is entered, the only way to exit the state is by pressing the NORM switch. This returns the receiver to normal operation.

3.3.4.2 Setting Preset Channels

Note

For all procedures in paragraph 3.3.4.2, the receiver is in program (PRGM) operation.

a. Channel Selection. Using the switches, press the CHAN switch. Blinking decimal points are displayed in the CHANNEL number and the DIAL indicator is set to LOCK. Input the digit(s) for the selected channel number or press AUX for the auxiliary channel. Valid inputs are 0 to 29. When channel digits are selected, press the ENTER switch. The display ceases blinking and the parameters of the selected preset channel are displayed. To use the tuning knob, step the DIAL switch through the menu until CHAN is selected. Rotate the tuning knob until desired CHANNEL is displayed.

b. Frequency Selection. Using the switches, press the FREQ switch. The FREQUENCY-KHZ display blinks and the DIAL indicator is set to LOCK. Input the frequency digits for the selected frequency. (Up to five digits can be inputted without using a decimal point). Valid inputs are 0 to 29 999.99. Press the ENTER switch and display ceases blinking. To use the tuning knob, step the DIAL switch through the menu until FREQ is selected. Rotate the tuning knob until the desired frequency is displayed. Note that the tuning rate can be changed by pressing the TUNE switch (FAST, MED, SLOW).

c. BFO Selection (CW, USB, LSB modes only). Using the switches, press the BFO switch. The BFO-KHZ display blinks and the DIAL indicator is set to LOCK. Press the +/− switch to input the bfo sign. Input the frequency digits for the selected bfo frequency. Valid inputs are 0.00 to ±4.00 kHz. Press the ENTER switch and the display ceases blinking. To use the tuning knob, step the DIAL switch through the menu until BFO is selected. Rotate the tuning knob until desired bfo is displayed.

d. Mode Selection. Press the MODE switch. Each time the MODE switch is pressed, the MODE indicator is advanced to the next position (AM, CW, USB, LSB, ISB). Stop when the MODE indicator is beside the appropriate mode.

e. Bandwidth Selection. Press the BW switch. Each time the BW switch is pressed, the BW indicator is advanced to the next possible position. Stop when the BW indicator is beside the desired bandwidth. The following shows the default bandwidth position. The bandwidths in parenthesis are other possible selections in each mode (all in kHz).

AM	6.0	(6.0 - 3.2 - 1.0 - 0.3)
CW	1.0	(6.0 - 3.2 - 1.0 - 0.3)
USB	2.8 only	
LSB	2.8 only	
ISB	2.8 only	

f. AGC Time Constant Selection. Press AGC switch. Each time the AGC switch is pressed, the AGC indicator is advanced to the next position (MAN-FAST-SLOW). Stop when the desired AGC is indicated.

g. Preset Channel Storage. When parameters of a channel are all changed and displayed as desired (steps a through f), they can be stored by pressing the STORE switch, the selected channel dig-

its or AUX for the auxiliary channel, and the ENTER switch. More presets may be entered by following the procedure for presets, or return to normal operation by pressing the NORM switch.

3.3.5 Remote Control Operation. The following paragraphs describe the receiver remote control interface and operating characteristics. The remote control commands and functions described are valid only in REMOTE operating mode. However, the status request command (?) is also valid during local operation. This gives the remote operating terminal access to the local operating status of the receiver. To initiate remote control operation, press the CNTL switch so that the CNTL indicator indicates REMOTE.

3.3.5.1 Electrical/Mechanical. The receiver remote control interface uses the balanced voltage digital interface described in EIA Standard RS-422. Mechanical interface to the receiver consists of a 37-position connector in accordance with EIA Standard RS-449 (with the RS-422 interface) mounted on the receiver rear panel. The RS-422 interface implements Send Data (SD) circuit, Receive Data (RD) circuit, and Signal Ground (SG) circuit of the RS-449 standard. Serial command data are received on the RD circuit, and status information is transmitted on the SD circuit. The data circuits operate at selectable data rates up to 19 200 baud. High-impedance data receivers and tri-state drivers are used to permit a number of receivers to be connected in parallel and addressed on a common data bus. The receiver is considered to be a data terminal equipment (dte) in the sense of the RS-449 standard.

3.3.5.2 Signaling Characteristics. The receiver employs bit serial, binary, asynchronous data communications. Data timing signals are not used since timing is derived from a start bit transition transmitted with each data character. Each data character consists of a start bit, seven data bits, a parity bit (odd parity), and a stop bit. The data codes employed in the characters are standard USASCII character codes. Signaling rates from 75 to 19 200 baud are supported. The interface is normally operated in a half-duplex mode, but full-duplex operation is supported.

3.3.5.3 Data Protocol. The remote interface bus (SD, RD) to which the receiver interfaces is operated in a command/response mode where each command issued by the controller effects an action (such as frequency change) by the receiver. Status information from the receiver (such as current operating frequency) is never transmitted spontaneously but must always be solicited by the controller. In the full-duplex operating mode, the receiver echoes each received character back to the controller as a verification of correct reception of the character. Remote control operation of the receiver is effected by transmission of commands from a controller to the receiver. These commands consist of a sequence of serial, asynchronous, USASCII data characters which are recognized by the receiver as valid command codes. These commands are designed to control the receiver operating parameters such as frequency selection, mode, bandwidth, AGC selection, etc. Status responses from the receiver to the controller consists of a similiar sequence of USASCII data characters which report current receiver operating parameters to the controller.

3.3.5.4 Addressing. The receiver is designed to operate with up to 15 remote receivers connected to a single common data bus. Each receiver contains address strapping pins in the remote interface connector which are either connected to logic zero (ground) or left open (logic one) in combinations which define a unique address for the receiver. The address 00 is defined as the broadcast address to which all receivers respond. No status responses are returned by any receiver to commands for unit address 00, since doing so would cause all receivers to transmit status simultaneously on the same bus. Address 15 results as the default address if no address straps are installed. To control a particular receiver, the unit address command for that receiver is first sent by the controller. All subsequent commands are accepted by that receiver until such time that a different unit address command is issued. Table 3-2 defines the address numbers associated with all address strapping combinations.

3.3.5.5 Remote Control Commands and Structure. The receiver remote control commands are structured to be human readable and simple to use and understand. Since USASCII characters are used, any device capable of generating and displaying these character codes (such as a dumb terminal) may be used as a controller. Commands may be transmitted at any data rate supported by the interface from 75 to 19 200 baud. Commands consist of a two-character mnemonic followed by a parameter. For some commands, the parameter is not required. Only the first two characters of the command are significant; the remaining characters are not required but may be used for improved readability. A space is used to sepa-

Table 3-2. Address Strapping.

ADDRESS LINES				ADDRESS
ADDR 1	ADDR 2	ADDR 3	ADDR 4	
GROUND	GROUND	GROUND	GROUND	0
GROUND	GROUND	GROUND	OPEN	1
GROUND	GROUND	OPEN	GROUND	2
GROUND	GROUND	OPEN	OPEN	3
GROUND	OPEN	GROUND	GROUND	4
GROUND	OPEN	GROUND	OPEN	5
GROUND	OPEN	OPEN	GROUND	6
GROUND	OPEN	OPEN	OPEN	7
OPEN	GROUND	GROUND	GROUND	8
OPEN	GROUND	GROUND	OPEN	9
OPEN	GROUND	OPEN	GROUND	10
OPEN	GROUND	OPEN	OPEN	11
OPEN	OPEN	GROUND	GROUND	12
OPEN	OPEN	GROUND	OPEN	13
OPEN	OPEN	OPEN	GROUND	14
OPEN	OPEN	OPEN	OPEN	15

rate the command and parameter, and a comma separates multiple parameters for a single command. A semicolon is used to separate multiple commands on the same line. A command line may consist of up to 80 characters and must be terminated by a carriage return (CR), which signifies the end of the command line. A line feed (LF) may follow the carriage return to improve readability, but is not required. Table 3-3 lists all available commands and describes the function of each command. The "<-" is used to represent the carriage return/line feed character sequence.

3.3.5.5.1 Simple and Compound Commands. A simple command consists of a single command and its associated parameter (if required) followed by a carriage return (a single command on one line). A compound command consists of two or more commands separated by semicolons (;) and terminated by a carriage return. A compound command may contain up to 80 characters in the line. Compound commands may be sequenced in any order in the command line. However, the order of the commands is significant in that the commands are processed in the order received. Therefore, a command received at the end of a compound command can offset or nullify a similar command occurring earlier in the line. For this reason, some of the commands which interact with other parameters (eg, mode commands reset bfo offset frequency to 0.00 kHz) should be ordered in the proper sequence to ensure that the desired end result is achieved. For example, if both mode and bfo commands are included in a compound command, the bfo offset command should follow the mode command. Also, status request commands should follow other commands to ensure that the latest operational status is reported.

3.3.5.5.2 Status Readback Commands. Each of the remote control commands may also be used to solicit status readback from the receiver. To request status readback, it is only necessary to replace the normal command parameter with a question mark (?). This causes the receiver to respond with readback of the current parameter in effect at that time. Multiple status requests may be embedded in a compound command line. Each status requested is returned on a separate line terminated by a carriage return and line feed. It is valid only for the time at which it was proc-

essed, since subsequent commands could change the actual operating status. Therefore, status request commands should normally be placed last in a compound command line so that the readback reflects the actual conditions in effect at the end of the command line. In addition to status readback of the individual command parameters, a single question mark command may be used to obtain the overall status of the receiver including all significant operating parameters. This composite status is returned in a single line terminated by a carriage return and line feed. The format of this status line is shown in Table 3-4. All status request commands are invalid (ignored) when applied to the broadcast (UNIT ADDRESS 0), since all units would respond simultaneously.

3.3.5.5.3 Command Timing. To provide time for processing of the remote control commands, it is necessary for the controlling device to provide adequate time between successive commands to ensure that all commands are received and none lost. For simple commands, a time gap of 50 milliseconds from the end of one command to the beginning of the next command is required. If the simple command is a status request, a new command should not be issued until the complete status response has been received. For compound commands, the time required varies with the number of commands in the line, the type of the commands, whether status request commands are included, and on the data baud rate. If status requests are included in the compound command, a new command should not be issued until all status responses have been received (assuming the status request commands were at the end of the compound command). For compound commands with no status requests embedded, an intercommand time gap of 100 milliseconds is required. Any commands received while previous commands are being processed will be ignored. Special timing considerations are required for self-test operation. When the TEST command is initiated, up to 30 seconds of processing time is required to complete the self-test operation. Any commands issued during this processing period will be lost.

Table 3-3. Remote Control Commands.

COMMAND	DESCRIPTION	
	UNIT ADDRESS COMMAND	
UNit NN<-	Selects receiver unit (NN = 1 thru 15). No receiver responds to any commands until it receives a UNit address command which matches its hardwired strapped address, or until it receives the broadcast UNit address (NN = 0).	
	Examples:	
	UNIT 5<-	Selects receiver number 5 for control. Receiver 5 accepts all subsequent commands until another UNIT command is issued.
	UNIT 0<-	Selects the broadcast address to which all receivers respond.
	UNIT 8<-	Selects receiver number 8 for control.
	UNIT ?<-	Requests a UNIT response readback from the currently active unit. This command is ignored when UNIT 0 (broadcast address) is currently active.
	UNIT: 8	Receiver number 8 responds with its unit number as the currently active receiver.
	FREQUENCY COMMAND	
FRequency NNNNN.NN<-	Specifies receiver operating frequency (N = 0 to 29 999.99 kHz). If the decimal point is absent, kHz is assumed.	
	Examples:	
	FR 12345.67<-	Sets the receiver frequency to 12 345.67 kHz.

Table 3-3. Remote Control Commands (Cont).

COMMAND	DESCRIPTION	
	FREQUENCY COMMAND (Cont)	
	FR 10000<-	Sets the receiver frequency to 10 000 kHz.
	FR 3540.5<-	Sets the receiver frequency to 3540.5 kHz.
	FR ?<-	Requests status readback of receiver frequency.
	FR 3540.50	Receiver responds with its current frequency.
	MODE COMMANDS	
MOde AM<-	Selects MODE AM, BW 6000, BFO NONE	
MOde CW<-	Selects MODE CW, BW 1000, BFO 0.00	
MOde USb<-	Selects MODE USB, BW NONE, BFO 0.00	
MOde LSb<-	Selects MODE LSB, BW NONE, BFO 0.00	
MOde ISb<-	Selects MODE ISB, BW NONE, BFO NONE	
	Note Selection of an operating mode other than AM causes the bfo offset to be reset to 0.00 kHz. Therefore, mode selection should precede bfo offset selection in the command line. In USB, LSB, and ISB modes, bandwidth is fixed by the mode and no independent BW selection is possible. In AM and ISB modes, selection of bfo offset is not possible.	
	Examples:	
	MODE ISB<-	Selects ISB mode.
	MODE USB<-	Selects USB mode.
	MODE ?<-	Requests status readback of receiver mode.
	MODE USB	Receiver responds with its current mode status.
	MODE NONE	Receiver responds with NONE if no mode has been selected.
	BANDWIDTH COMMAND	
BW NNNN<-	Selects receiver bandwidth (NNNN = 6000, 3200, 1000, or 300 Hz) in AM or CW modes only.	
	Examples:	
	BW 6000<-	Selects 6000-Hz bandwidth.
	BW 3200<-	Selects 3200-Hz bandwidth.
	BW 300<-	Selects 300-Hz bandwidth.

Table 3-3. Remote Control Commands (Cont).

COMMAND	DESCRIPTION	
	BANDWIDTH COMMAND (Cont)	
	BW ?<-	Requests readback of current bandwidth.
	BW 300	Receiver responds with its current bandwidth status.
	BW NONE	Receiver responds with NONE, in USB, LSB, or ISB modes, if no bandwidth has been selected.
	BFO COMMANDS	
BFo ±N.NN<-	Selects variable bfo offset frequency (N.NN = 0 to ±4.00 kHz). Bfo is active only in CW, USB, or LSB modes. Note that bfo offset is reset to 0.00 kHz when any mode selection is made.	
	Examples:	
	BFO +1.22<-	Sets bfo offset frequency to +1.22 kHz.
	BFO 0<-	Sets bfo offset frequency to 0.00 kHz (center frequency).
	BFO −.8<-	Sets bfo offset frequency to −0.80 kHz.
	BFO ?<-	Requests readback of bfo offset frequency status.
	BFO −0.80	Receiver responds with bfo offset frequency.
	BFO NONE	Receiver responds with NONE if the current mode is AM or ISB.
	AGC COMMANDS	
AGc OFf<-	Turns AGC off.	
AGc FAst<-	Selects FAST AGC decay time.	
AGc SLow<-	Selects SLOW AGC decay time.	
	Examples:	
	AGC OFF<-	Turns AGC off (manual gain control).
	AGC FAST<-	Selects FAST AGC decay time constant.
	AGC ?<-	Requests readback of AGC status.
	AGC FAST	Receiver responds with current AGC status.
	RF GAIN CONTROL	
RF NNN<-	Sets RF gain attenuation from maximum gain (NNN = 0) to minimum gain (NNN = 225). Attenuation in dB is approximately one-half the number NNN.	
	Examples:	
	RF 16<-	Sets RF gain attenuation to approx 8 dB.
	RF 158<-	Sets RF gain attenuation to approx 79 dB.

Table 3-3. Remote Control Commands (Cont).

COMMAND	DESCRIPTION	
	RF GAIN CONTROL (Cont)	
	RF 0<-	Sets RF gain attenuation to 0 dB (max gain).
	RF ?<-	Requests readback of RF GAIN setting.
	RF GAIN: 0	Receiver responds with current gain status.
	SQUELCH COMMAND	
SQuelch NN<-	Sets receiver squelch sensitivity from no squelch (NN = 0) to maximum squelch (NN = 15).	
	Examples:	
	SQ 3<-	Sets squelch sensitivity to level 3.
	SQ 0<-	Sets squelch sensitivity to zero (disabled).
	SQ ?<-	Requests readback of squelch status.
	SQUELCH: 0	Receiver responds with current squelch status.
	NOISE BLANKER COMMAND	
NB NN<-	Sets noise blanker threshold from OFF (NN = 0) to maximum (NN = 15).	
	Examples:	
	NB 5<-	Sets noise blanker threshold to level 5.
	NB 0<-	Sets noise blanker threshold to level 0 (disabled).
	NB ?<-	Requests readback of noise blanker status.
	NOISE BLANKER: 0	Receiver responds with noise blanker status.
	PRESET CHANNEL COMMANDS	
CHannel NN<-	Sets the receiver to preset channel NN (NN = 0 to 29).	
	Examples:	
	CH 15<-	Selects preset channel 15.
	CH 5<-	Selects preset channel 5.
	CH ?<-	Requests readback of the current preset channel.
	CH 5	Receiver responds with current preset channel.
PReset NN = ...<-	Programs preset channel NN. Frequency, mode, AGC, BW, and bfo parameters may be included.	
	Examples:	
	PR 5 = FR 12345.67, MODE AM, BW 3200, AGC SLOW<-	
	PR 12 = FR 2212.55, MODE USB, BFO +1.00, AGC OFF<-	

Table 3-3. Remote Control Commands (Cont).

COMMAND	DESCRIPTION
	PRESET CHANNEL COMMANDS (Cont)
PReset NN ?<-	PR 19 = MODE LSB<- Parameters not included in the program command retain their current values. Requests readback of preset channel NN parameters. Examples: PR 5 ?<- CH 5 FR 12345.67 MODE AM BFO NONE BW 3200 AGC SLOW
	MISCELLANEOUS COMMANDS
HD<-	Selects half-duplex echo mode. All units default to this mode on power-up. In half-duplex mode, command characters are not echoed back to the controller by the addressed unit. Examples: HD<- Selects half-duplex echo mode. HD ?<- Requests readback of full/half-duplex echo mode status. HALF DUPLEX Receiver responds with echo mode status.
FD<-	Selects full-duplex echo mode. In full-duplex mode, all command characters received by the addressed unit are echoed back to the controller as a verification of reception. Examples: FD<- Selects full-duplex echo mode. FD ?<- Requests readback of full/half-duplex echo mode status. FULL DUPLEX Receiver responds with echo mode status.
TEst<-	This command initiates the unit self-test (BIT) function. Results of the self-test are returned in response to the TEst ?<- command, and the data returned are the same as displayed on the unit front panel on completion of self-test. If a fault is detected, the faulty module number will be returned (eg, A3 FAULT). If no fault is detected, the message NO FAULT is returned. The TEST ?<- status request may be used at any time to assess the go/no-go serviceability of the receiver. Examples: TEST<- Initiates receiver self-test. TEST ?<- Requests readback of unit fault status. NO FAULT Receiver responds with the NO FAULT status. TEST ?<- Requests readback of unit fault status. A5 FAULT Receiver responds with a fault in module A5.

Table 3-3. Remote Control Commands (Cont).

COMMAND	DESCRIPTION
	MISCELLANEOUS COMMANDS (Cont)
	The following fault codes apply: FAULT CODE — FAULTY MODULE A1 FAULT — Front Panel A2 FAULT — Control/Processor A3 FAULT — IF/Audio A4 FAULT — Power Supply A5 FAULT — Synthesizer A6 FAULT — RF Translator A7 FAULT — External preselector
	STATUS READBACK COMMANDS
?<-	Requests readback of the receiver status line. Status readback from an addressed unit is obtained by sending the command function followed by a question mark (?). Examples of this are shown with each command described above. In addition, a single question mark requests readback of a complete status line of all primary current operating parameters including unit number, local/remote status, preset channel number, operating frequency, bfo offset frequency, mode, bandwidth, and AGC status. The status line is described below. Examples: ?<- Request readback of status line from receiver. Receiver responds with status line. UNIT 3 RMT CH 21 FR 12345.67 MODE LSB BFO −.12 BW NONE AGC OFF

Remote Status Line

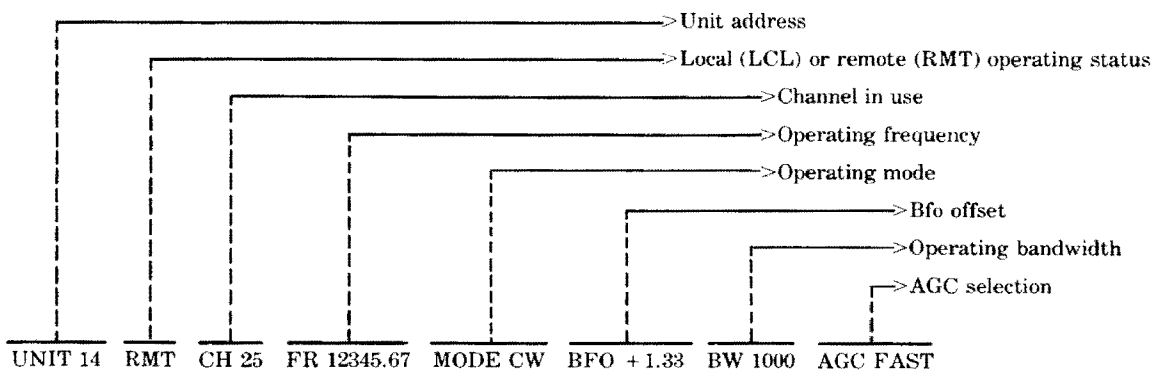


Table 3-4. Command/Status Examples.

COMMAND/DISPLAY	MEANING
UNIT 12; FREQ 1450<-	Sets unit 12 to 1450 kHz.
MODE AM<-	Sets unit 12 mode to AM.
CH 22<-	Sets unit 12 to channel 22.
UNIT 9; PR 22 ?<-	Requests readback of channel 22 from unit 9.
CH 22 FR 13322.44 MODE USB BFO +1.23 BW NONE AGC FAST	Unit 9 responds with channel 22 parameters. Note that this is not necessarily the current operating state of unit 9.
UNIT 5; PR 22 ?<-	Requests readback of channel 22 from unit 5.
CH 22 FR 12345.00 MODE AM BFO NONE BW 6000 AGC SLOW	Unit 5 responds with channel 22 parameters, which are not necessarily the current operating state of unit 5.
UNIT ?<-	Requests current active unit number.
UNIT: 5	Unit 5 responds.
UNIT 6; FR 1000; MODE USB; BFO −2.25; RF 43; AGC FAST; SQUELCH 2; ?<-	Setup unit 6 and request status readback.
UNIT 6 RMT CH NONE FR 1000.00 MODE USB BFO −2.25 BW NONE AGC FAST	Unit 6 status
UNIT 12; ?<-	Request unit 12 status.
UNIT 12 RMT CH 22 FR 3450.00 MODE USB BFO −1.25 BW NONE AGC FAST	Unit 12 status
UNIT 0; CH 22<-	Broadcast address. All units set up to channel 22 of their respective stored preset channels.
UNIT 12; ?<-	Request unit 12 status.
UNIT 12 RMT CH 22 FR 3450.00 MODE USB BFO −1.25 BW NONE AGC FAST	Unit 12 status

Note: "<" indicates carriage return/line feed character sequence.

SECTION 4
THEORY

4.1 GENERAL

4.1.1 This section provides functional theory of R-5099/U, R-5099A/U, and R-5104/GRC-508 Radio Receiver. It includes functional theory of cards, modules, and circuits unique to the receiver.

4.2 FUNCTIONAL THEORY

4.2.1 Overall Description

4.2.1.1 The primary function of the receiver is to receive RF signals and process them into audio signals. The standard configuration provides 10-Hz incremental coverage of the 14-kHz to 29.999 99-MHz frequency range in the USB, LSB, CW, and AM modes.

4.2.1.2 Control and monitor of the receiver's operation is performed by a microprocessor which interfaces to each circuit module. Front Panel A1 key pad and rotary tuning switch provide the required control inputs. Monitor information is returned to the front panel for display as frequency, status, or meter information. Remote control of the receiver is also provided through the microprocessor. Control and monitor information is supplied to a remote control unit at the remote control interface.

4.2.1.3 The signal processing circuitry may be divided into two parts: analog (RF Translator A6) and digital (IF/Audio A3). The analog circuits use conventional mixing and filtering techniques to provide frequency conversion, amplification, and selectivity. Narrowband filtering, AGC demodulation, and audio amplification are performed by the digital IF/Audio A3. A block diagram of the receiver is shown in Figure 4-1.

4.2.1.4 Input signals from the antenna are preconditioned by bandpass filters or a VLF upconverter prior to their application to the first mixer. Bandpass filters of 0.5 to 2.0 MHz and 2.0 to 30.0 MHz provide a "roofing" function for the first mixer. The upconverter translates the 14- to 500-kHz band up to 12.014 to 12.5 MHz before its application to the first mixer. At the first mixer, the RF input signal and the variable injection (99.5 to 129 MHz) are combined to generate the first conversion IF signal at 99 MHz. Initial front-end selectivity is provided at the 99-MHz IF by a crystal filter. Following the crystal filter is the second mixer which translates the 99-MHz first IF signal to the 3-MHz second IF signal. Additional selectivity is provided by the 3-MHz crystal filter. At the 3-MHz IF, much of the signal amplification and RF AGC is provided. The noise blanker circuit will blank impulsive type signals which could degrade the receiver's performance.

4.2.1.5 The 3-MHz IF signal from RF Translator A6 is applied to the digital signal processing circuits on IF/Audio A3. At the a/d converter, the analog IF signal is converted to a digital representation. Following the a/d converter is the IF translator circuit which translates the digital representation of the 3-MHz IF to a digital representation of the baseband signal. This translation improves the resolution of the digital representation and prepares the signal for the digital filters. The output signals from the IF translator are in the form of digital in-phase (I) and quadrature-phase (Q) signals. Amplitude and phase information (necessary for signal demodulation) are maintained by using the I and Q representation. The digital filtering is performed by using finite impulse response (FIR) filter algorithms. Within the filter signal processors are the software algorithms to perform the AM, CW and SSB filter responses.

4.2.1.6 AGC and signal demodulation are provided by the AGC/demodulator signal processor. The amplitude of the digital signal is controlled by the RF AGC to the RF translator and a digital scaling factor to the digital signal processors. Attack and decay times are controlled by software algorithms. Signal demodulation results from software algorithms being performed on the I and Q baseband signals. Digital-to-analog converters and low-pass filters produce the desired analog audio outputs from the demodulated signals. For those applications requiring independent sideband, an optional signal processor may be added which contains the ISB gain control and audio demodulator algorithms. In the ISB mode, both USB and LSB signals are simultaneously available at the rear panel.

4.2.1.7 The analog audio signals are amplified and supplied through the audio output transformer to provide a balanced 600-ohm output at the rear panel. In addition to the line audio output, a speaker or headphone output is provided at the front panel. The speaker amplifier is capable of 2.5 watts into 8 ohms. Part of the audio output is applied to a squelch control circuit. Active filters and signal-to-noise detectors sense the amount of noise (high-frequency components) and signal (low-frequency components) in the audio signal. The outputs from the detectors are compared in a signal-to-noise comparator. A predominance of high-frequency noise will activate threshold detectors which generate a muting control for the speaker and headphone outputs.

4.2.1.8 Synthesizer A5 provides the signal injection frequencies required by the receiving circuits. All injection signals are derived from the 48-MHz voltage-controlled crystal oscillator (vcxo) which is locked to the oven stabilized frequency standard A5A3, or an external 100-kHz reference. This 48-MHz signal is also supplied as an output for use by the digital signal processing in generation of clock/control signals. The 96-MHz injection signal for use by the second mixer in the RF translator is obtained by using a simple frequency doubler. An amplifier follows the doubler to provide a boost for the signal and load isolation. The 12-MHz signal used by the LF converter mixer is obtained by dividing the 48-MHz vcxo signal by 4 and is supplied through a low-pass filter for use by the LF converter. The 400-kHz signal used as an internal reference signal is obtained by dividing the 48-MHz vcxo signal by 6 and then dividing the resulting 8-MHz reference by 20. The internal 400-kHz reference is supplied to a divide-by-4 network to provide an internal 100-kHz reference output. The variable injection source uses two phase-locked loops, the 48-MHz base frequency multiplied by 3 to produce a 144-MHz reference, the 400-kHz internal reference, and two programmable loop dividers to produce the required 99.500 00- to 128.999 99-MHz variable injection signal.

4.2.1.9 Built-in test (BIT) capabilities are initiated from Front Panel A1 or through the remote interface. When initiated from Front Panel A1 or through the remote interface, the BIT will isolate faults to the module level. During normal receiver operation, the microprocessor continuously monitors various circuit functions to confirm correct operation.

4.2.1.10 The remote control interface permits remote serial control and monitoring of the receiver by a remote control unit. The interface will receive and transmit data at logic levels compatible with EIA Standard RS-422. Characteristics of the remote control functions such as format and baud rate are controlled by the microprocessor control circuits.

4.2.2 Power Distribution (Refer to Figure 4-2). Input power to the radio receiver is connected to J1 on the receiver rear panel and supplied through fuse (P/O J1 on rear panel) and A1A1S1 (front panel) to Power Supply A4. Power Supply A4 is a linear power supply and develops the following output voltages: +5.2, +15, and −15 V dc. These voltages are supplied to cards and modules in the receiver using IF/Audio A3 as the power interface. Refer to interconnect schematic Figure 7-2.

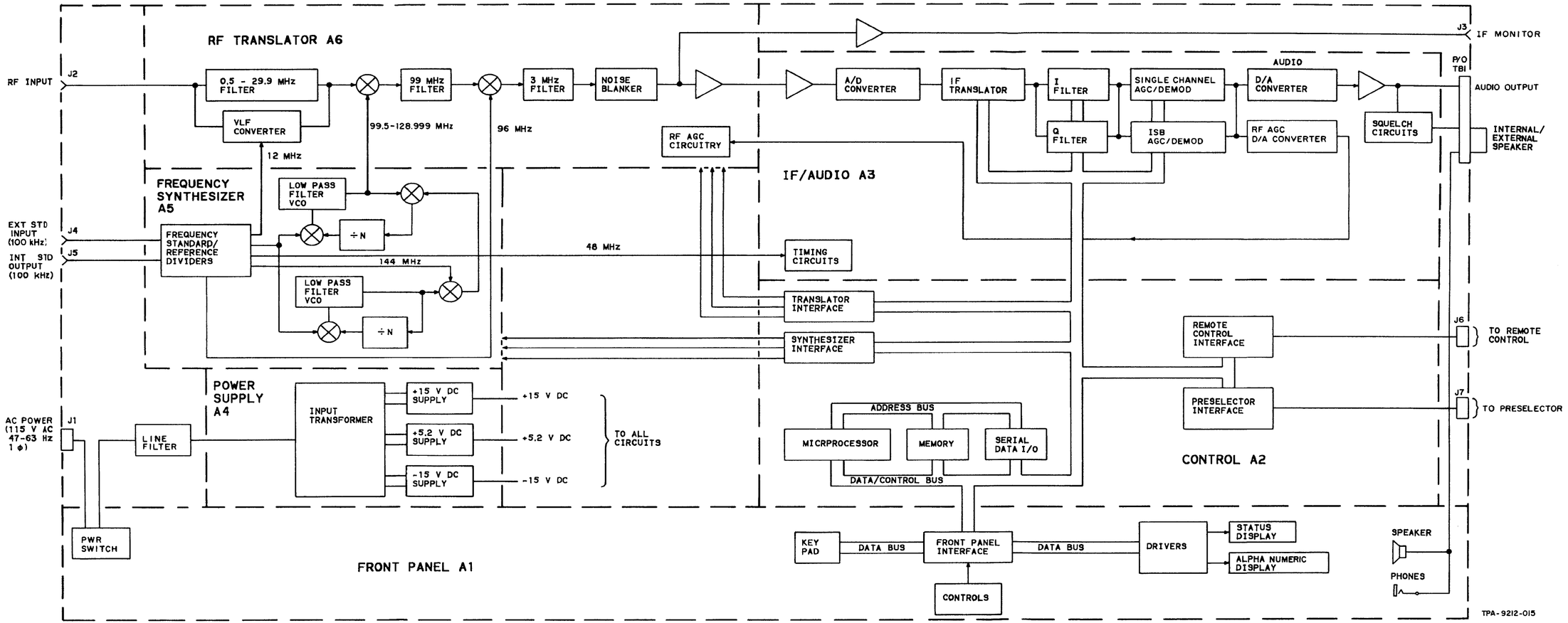
4.3 DETAILED THEORY

4.3.1 Front Panel A1 (Refer to block diagram Figure 4-3 and schematic Figure 7-3)

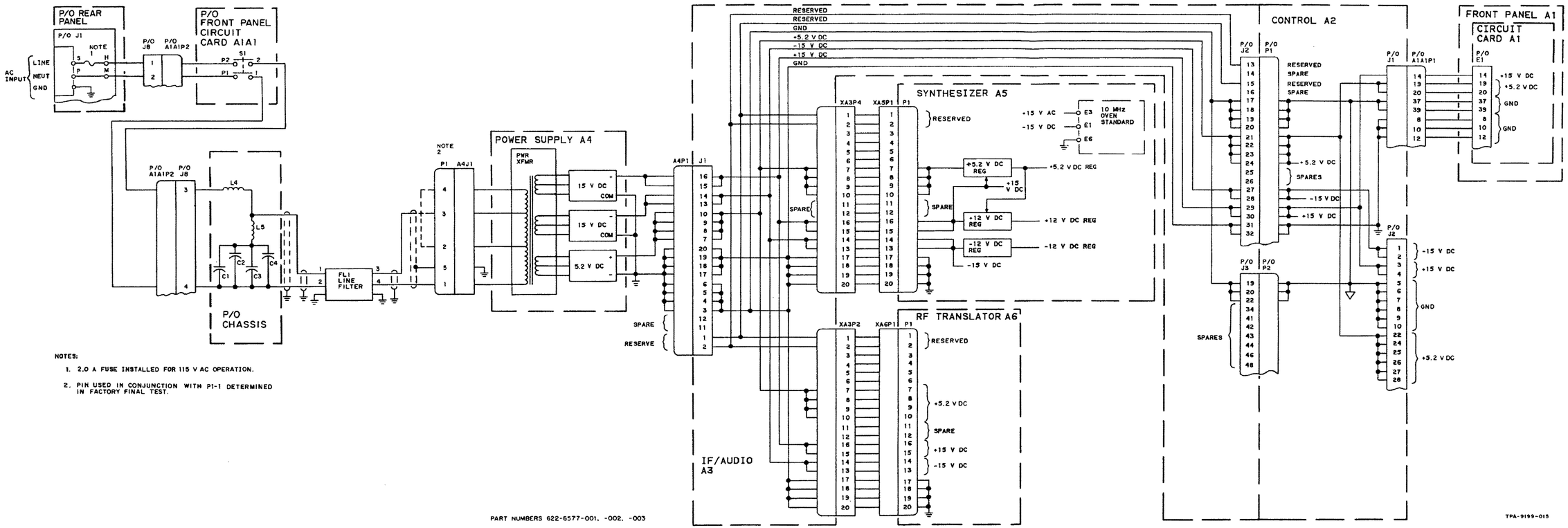
4.3.1.1 Front Panel A1 can be divided into the following major functional areas:

a. Control processor interface circuits
b. Display circuits
c. Keyboard circuits
d. Tuning control circuits
e. Miscellaneous controls and circuits

Operation of Front Panel A1 circuits is dependent upon the control processor. This section describes how the processor communicates with Front Panel A1 to provide control of the displays and access to the controls and pushbutton keyswitches. All interface lines between the receiver Front Panel A1 and the receiver chassis (except for the ac power lines) are contained in a pendant 40-conductor ribbon cable and connector (A1A1P1).



Block Diagram Figure 4-1

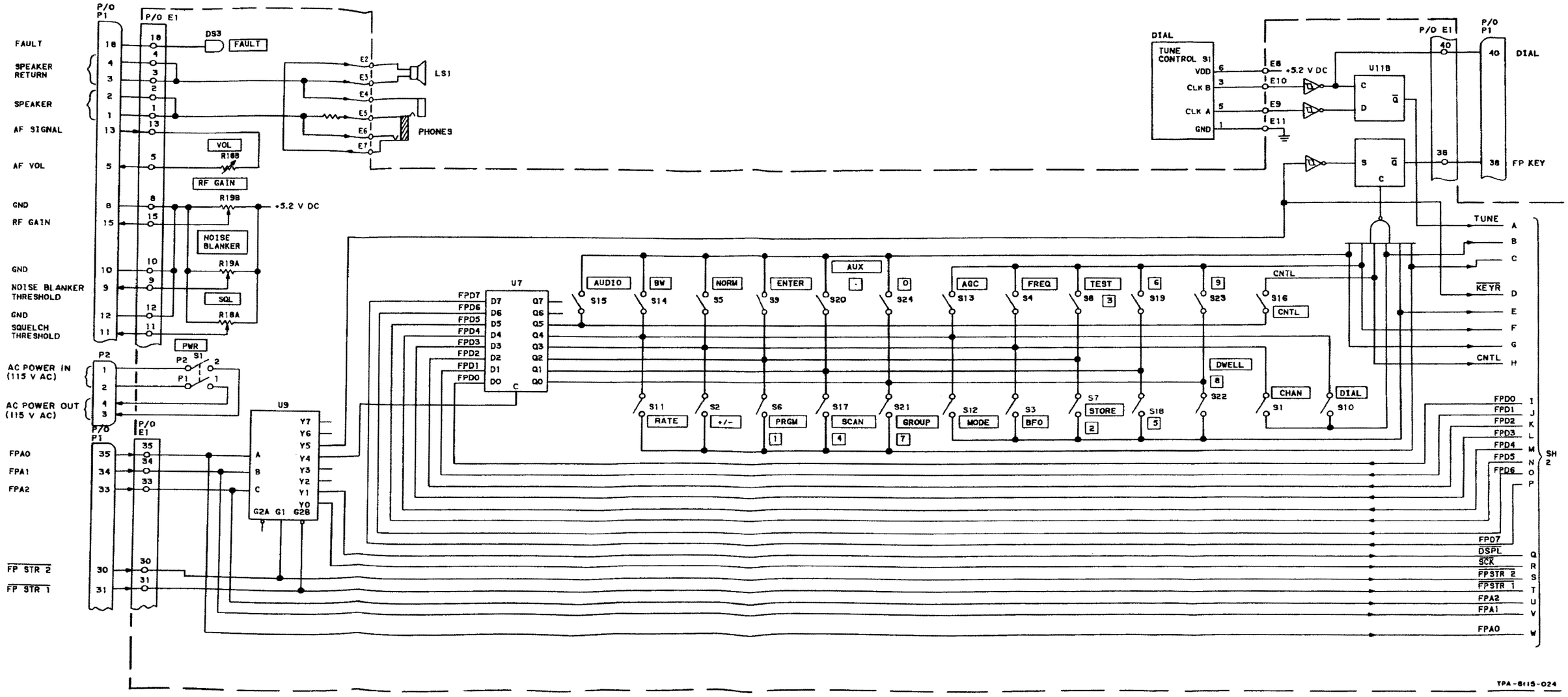


NOTES:

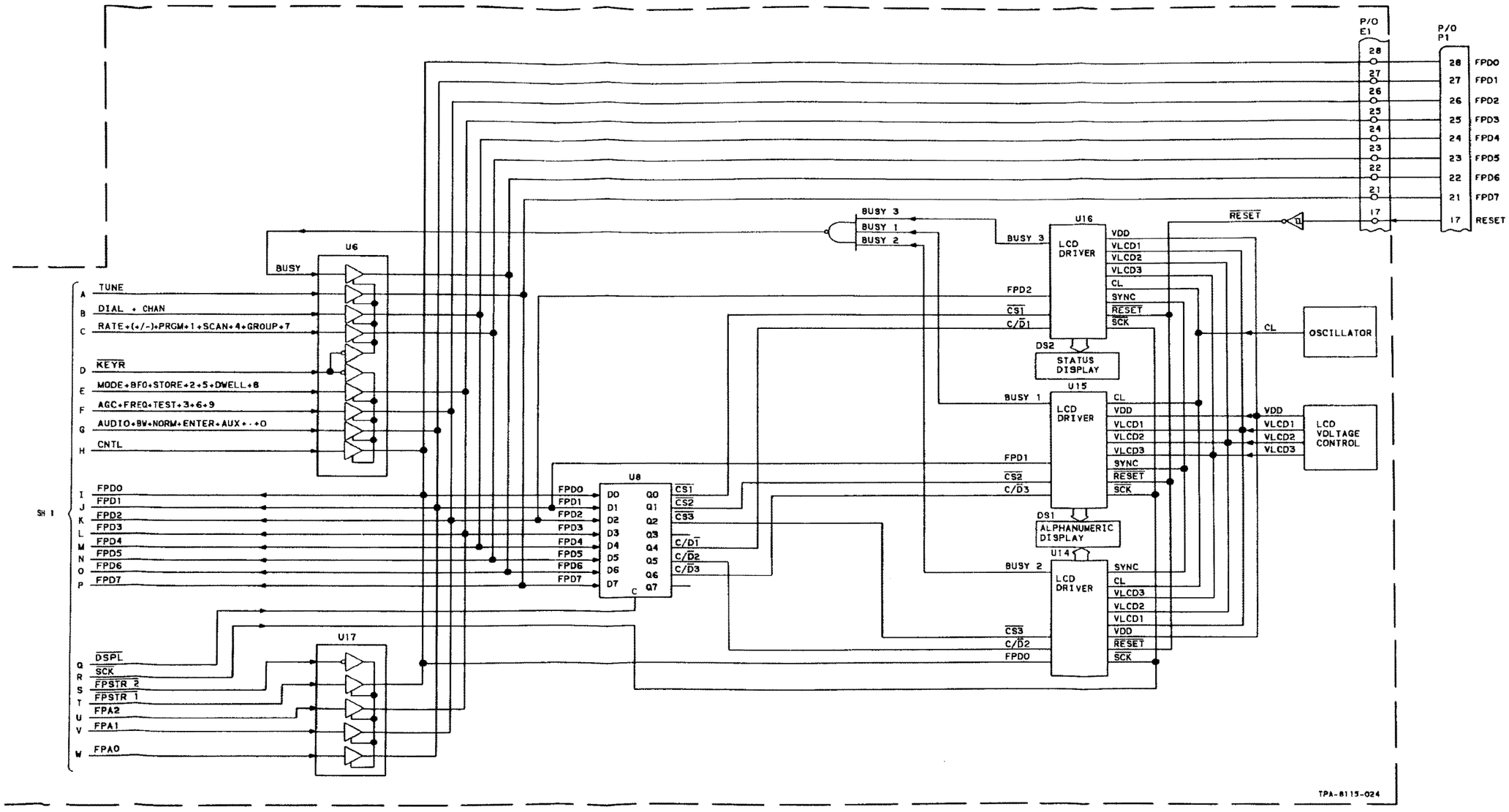
1. 2.0 A FUSE INSTALLED FOR 115 V AC OPERATION.
2. PIN USED IN CONJUNCTION WITH P1-1 DETERMINED IN FACTORY FINAL TEST.

PART NUMBERS 622-6577-001, -002, -003

Power Distribution Figure 4-2



Front Panel A1, Block Diagram (Sheet 1 of 2) Figure 4-3



Front Panel A1, Block Diagram (Sheet 2 of 2) Figure 4-3

4.3.1.2 Front Panel A1 control processor interface circuits consist of the bidirectional 8-bit data bus (FPD0 through FPD7), the chip select address decoder U9, and the BIT bus buffer U17. The control processor outputs chip select address data (FPA0 through FPA2; FPA3 is not used) to the chip select address decoder U9 to select the device to receive data from the processor or to provide data to the processor over Front Panel A1 data bus lines. Of the eight possible chip select addresses available, only four are used. Refer to Table 4-1. In addition to the three address lines, two strobe lines (FPSTR1 and FPSTR2) are supplied by the processor to address decoder U9. Both strobes are logic zero pulses with FPSTR1 used for all front panel operations and FPSTR2 used for built-in test to enable the BIT bus buffer U17 during self-test only. Front Panel A1 strobe (FPSTR1) is routed through address decoder U9 to the appropriate output line as determined by the state of the address lines FPA0, FPA1, and FPA2. BIT bus buffer U17 is enabled by a logic zero on FPSTR2 which also disables address decoder U9. The BIT bus buffer is activated only during built-in test to allow the processor to verify operation of the front panel address, strobe, and data bus lines.

4.3.1.3 Front Panel A3 display circuits consist of two liquid crystal displays (LCD) (DS1 and DS2), the display driver devices U14, U15, and U16, and the LCD driver control and chip select circuit U8. Associated with these circuits is the driver clock oscillator U12, the LCD bias supply and temperature compensation circuits U3, U4, R3 and associated components, and the LCD driver busy gate U13B. A red light emitting diode (LED) is used to indicate major equipment faults (FAULT DS3). The two LCD displays (DS1 and DS2) are driven by LCD drivers U14, U15, and U16, with data received from the control processor via the front panel data bus. Command or display data for U14, U15, and U16 are placed on front panel data bus lines FPD0, FPD1, and FPD2 respectively. The data on these bus lines are clocked into the drivers with the serial data clock ($\overline{SCK}$) from address decoder U9. Data clocked into the driver circuits is interpreted by the drivers as command or display data depending upon the state of the command/data (C/D) lines from the driver control and chip select latch U8. During the serial clocking operation, the driver chip selects from U8 are held low until all data have been clocked in. To completely update the displays, 128 bits of data are required by each driver. During the clocking operation, the drivers periodically (after every eighth data bit) generate a BUSY. The control processor may not clock data to the driver until the busy signal clears. The busy signals from the three drivers are summed in gate U13B and made available for control processor monitoring via one input to the keyboard column buffer U6. Chip selects and C/D control lines for each driver are controlled by the driver control and chip select latch U8. The control processor places the desired state of these lines onto the front panel data bus, outputs the appropriate address ($\overline{DSPL}$) to decoder U9, and strobes FPSTR1 to latch the control information into U8. Circuit U12 consists of an astable multivibrator which provides a continuous clock for internal timing of the LCD display drivers. This signal is a square wave at a frequency of approximately 100 kHz. Display drive bias levels for the drivers are generated by a resistive voltage divider from the +5.2-V dc power. The bias levels are temperature compensated by temperature sensor U3 and amplifier U4 which adjust the bias levels to track the change in LCD fluid threshold voltage over temperature. This provides optimum display contrast over the operating temperature range of the receiver. Variable resistor R3 is used to adjust the display contrast. LED FAULT indicator DS3 is controlled directly by the processor or, in the event of a processor failure, the

Table 4-1. Chip Select Addresses.

ADDRESS			SIGNAL NAME	FUNCTION
FPA2	FPA1	FPA0		
0	0	0	$\overline{SCK}$	Serial data clock to LCD display drivers
0	0	1	$\overline{DSPL}$	Display control latch (U8) strobe
0	1	0		Not used
0	1	1		Not used
1	0	0	$\overline{KEYL}$	Keyboard row driver latch U7 strobe
1	0	1	$\overline{KEYR}$	Keyboard column buffer U6 strobe and interrupt latch (U11A) reset strobe
1	1	0		Not used
1	1	1		Not used

LED is enabled by a hardware timer circuit on the control processor module which senses the absence of processor activity and releases the fault line, allowing the LED to light.

4.3.1.4 Front Panel A1 keyboard circuits consist of individual pushbutton keyswitches S1 through S24, keyboard row driver latch U7, keyboard column buffer U6, and keyboard interrupt generator circuits U5, U10A, U10B, U10C, and U11A. Front Panel A1 keyboard switches are arranged in matrix form consisting of six rows and six columns. Not all rows or columns contain all six possible switch crosspoints. The outputs of the keyboard row driver latch U7 are normally at logic zero level. These outputs are latched into U7 by the control processor applying logic zeros to the front panel data bus lines, supplying the appropriate address inputs to address decoder U9, and generating Front Panel A1 strobe FPSTR1. This strobe is routed through U9 to U7-11 which strobes the data bus logic zeros into latch U7. The column outputs of the keyboard matrix are pulled high to logic ones by pullup resistors on these lines. When a front panel key is pressed, a switch closure between the row and column lines is made by that key. This pulls the corresponding column line low to the logic zero level applied to the row lines by row driver latch U7. The logic zero level on the column line generates an interrupt (FPKEY) signal to the control processor to signal the processor that a key has been pressed. The processor then scans the keyboard matrix by successively enabling only one of the six row lines to the matrix and then reading the status of the column lines through column buffer U6. With a single key pressed (multiple key closures are not valid), the processor determines the location (and thus function) of the key in the matrix by row and column when the column line of a particular column line is a logic zero and the row drive line for a single row is also at logic zero. This scanning of all rows and columns continues until the unique row-column location of the pressed key has been determined by the processor. The function of the pressed key is then interpreted by the processor depending upon the activity (frequency entry, channel selection, mode selection, etc) currently in process. Each time the keyboard column buffer U6 is read (U6-1, U6-19 strobe is generated by the control processor through address decoder U9), the interrupt latch U11A is reset, readying the interrupt generator circuits for the next key closure.

4.3.1.5 Front Panel A1 tuning control circuits consist of optical shaft encoder S2, buffers U10D and U10E, and shaft direction decoder U11B. The output signal from the direction decoder (logic zero for up, clockwise tuning control rotation) is applied to one input of keyboard column buffer U6 for monitoring by the control processor. The two outputs of the optical shaft encoder are square-wave pulse trains with CLOCK B lagging CLOCK A by 90 degrees phase for clockwise rotation, and CLOCK B leading CLOCK A by 90 degrees phase for counterclockwise rotation. The buffered CLOCK B pulses (DIAL) are applied to an event-counter input of the control processor where the pulses are accumulated in a counter. The control processor periodically reads the contents of the event counter to determine activity of the tuning control and adjusts the quantity currently being controlled (frequency, bfo offset, channel number) in an increasing or decreasing direction.

4.3.1.6 Two dual concentric-shaft controls provide for adjustment of noise blanker threshold R19A, RF gain R19B, squelch threshold R18A, and volume R18B. The first three of these controls provide variable 0- to +5.2-V dc levels to an analog-to-digital converter on the control processor module. The voltage levels are digitized and periodically sampled by the control processor, which then provides digital control signals to the associated noise blanker, RF gain, and squelch circuits. The fourth control (volume) is supplied directly with the analog audio signal. The wiper arm output of the control feeds an audio amplifier (part of IF/Audio A3) to control the volume of the speaker and phones output.

4.3.1.7 The receiver front panel contains a built-in speaker (LS1) for local monitoring of the received audio signal. The speaker signal is supplied to Front Panel A1 from an amplifier on IF/Audio A3. The speaker signal is routed through a multicircuit phone jack which disables the local speaker circuit when a headphone plug is inserted into the jack. The receiver primary ac power switch A1S1 is located on the front panel. This alternate action push switch closes and opens the ac power line path to the receiver power supply module to enable/disable the receiver power circuits. The ac primary power is routed to Front Panel A1 through a separate power cable and connector which is pendant from the front panel power switch.

4.3.2 Control A2 (Refer to Figure 4-4 and schematic diagram Figure 7-4)

4.3.2.1 Control A2 assembly provides functional control of the receiver including: interface to each receiver module, control/monitor of the front panel and remote control, and built-in test. The processing functions of the control are accomplished with an Intel 80188 microprocessor and associated components. The microprocessor U52 operates from a defined set of software instructions, stored in program memory. The program memory is implemented in 27128 (16K byte) EPROM's U4, 8, 14.

4.3.2.2 Two types of random access memory (RAM) are used for variable storage. The preset information and current operating settings of the receiver are stored in nonvolatile RAM U18, type TC5517CPL-200. This 2K-byte RAM is made nonvolatile by a capacitor keep-alive circuit (C154, Q10-Q12) which supplies power (3 hours minimum) to U18 when primary power to the receiver is removed. A volatile RAM U3, 2K-byte device, is used for variables whose retention is not necessary during power loss conditions. The option status information is contained in 32-byte PROM memory device U28. This option PROM defines for the operating software the options that are implemented in a particular receiver status.

4.3.2.3 To ensure that the microprocessor is executing its proper control program, a reset is applied to the microprocessor when a power-up condition or low-voltage condition is detected. Comparator circuit U51A and a resistor-capacitor timing network detects the power loss and produces a reset pulse for the microprocessor. Following a reset, the program execution begins by retrieving the control instructions from U14. After the initial setup steps, the program pointer jumps to U4 to start execution of the main receiver routines. The initialization routines include: memory size definition, chip select definition, interrupt definition, bank select definition, and timer definition. A description of the memory map is given in Table 4-2.

4.3.2.3.1 Two timers, internal to the microprocessor, are defined during the initialization procedure. The first timer (Timer 0) is used as the baud rate clock for serial communication. A divide constant N, established by the baud rate select switch U39, is applied to the timer, which in turn divides the microprocessor clock frequency to the desired baud rate. Since this timer is defined in the power-on initialization, a change in baud rate requires a new initialization procedure. The second timer (Timer 1) counts the pulses generated by the front panel tuning dial assembly.

4.3.2.3.2 The four interrupts defined during the initialization are:

a. Interrupt 0: front panel key closure.
b. Interrupt 1: end-of-conversion on analog-to-digital converter U15.
c. Interrupt 2: character available from the remote serial interface.
d. Interrupt 3: mute signal applied at rear panel.

4.3.2.3.3 Program memory devices, input/output ports, and the monitor a/d converter are enabled through the chip select lines. These lines and their control functions are described in Table 4-3.

Table 4-2. Memory Address Map

MEMORY LOCATION				IC	FUNCTION
0F4000	-	0F7FFF	(Hex)	U4	Control Program
0F8000	-	0FBFFF	(Hex)	U8	Control Program
0FC000	-	0FFFFF	(Hex)	U14	Control Program
03800	-	0381F	(Hex)	U28	Option ROM
00000	-	007FF	(Hex)	U3	RAM
00800	-	00FFF	(Hex)	U18	RAM

Table 4-3. Chip Selects.

CHIP SELECT	CONDITION
UCS	Program memory 0F0000 - 0FFFFF (Hex)
LCS	RAM
MCS0	A/d converter U15, preselector output
MCS1	A/d data, preselector output
MCS2	2-MHz clock, preselector output
MCS3	Option ROM (U28)
PCS0	Parallel input/output U26
PCS1	Not used
PCS2	Front panel data U5, 9
PCS3	Baud rate, U34, 39
PCS4	Universal Synchronous Asynchronous Receiver Transmitter (USART) U46
PCS5	A3 assembly, IF/Audio
PCS6	Not used.
If two items are listed, the first is a read, the second is a write.	

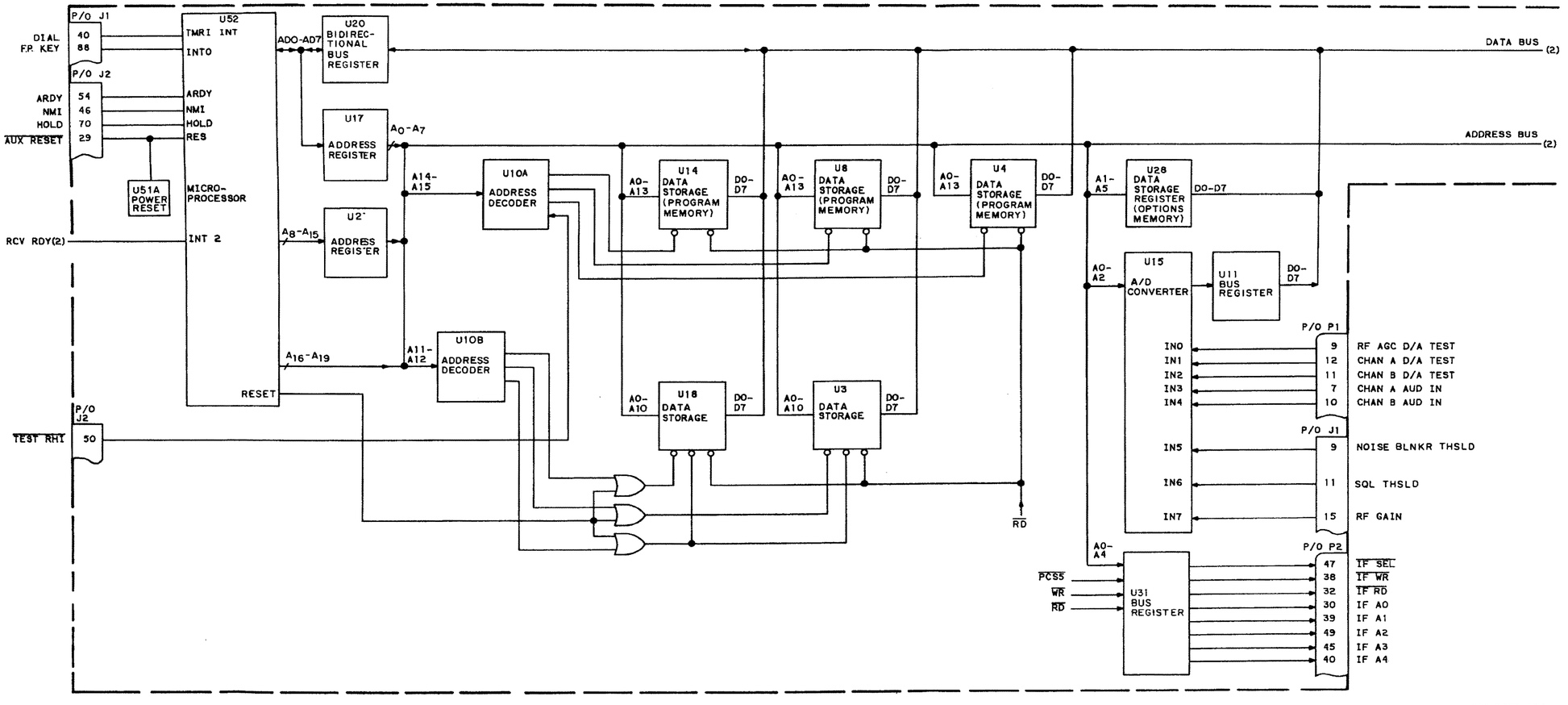
4.3.2.3.4 The memory select is initially defined as F000 (Hex), causing the initial memory fetches to be at 0FF4XX (Hex) in the program memory. Following the initialization procedures, the software moves to the main operating program for the receiver. The software retrieves from nonvolatile RAM U18 the last used operating parameters of the receiver including mode, bfo frequency (if used), frequency, bandwidth, and AGC. If the receiver was previously in remote, the prior remote settings are used to restore the operating conditions.

4.3.2.4 Frequency control information is calculated from tuning data received from the front panel or remote control interfaces. This information is sent to Synthesizer A5 using two data lines, a data clock, and a strobe line. The information is sent in bit-serial format followed by a strobe pulse to latch the data at the synthesizer. Frequency band data for RF Translator A6 is computed from the operating frequency information. If the tuned frequency is between 14 kHz and 499 kHz, the Band 1 line is made a logic low; if the frequency is between 500 kHz and 1.999 MHz, the Band 2 line is made a logic low; and if the frequency is between 2 MHz and 29.999 MHz, the Band 3 line is made a logic low.

4.3.2.5 Mode, bandwidth, and AGC information is required by the signal processor circuits on IF/Audio A3. This information is sent in byte parallel format to IF/Audio A3 whose address has been identified by the PCS5 chip select line. Additional information sent to IF/Audio A3 includes: audio on/off, squelch on/off, squelch threshold, bfo on/off, and bfo frequency.

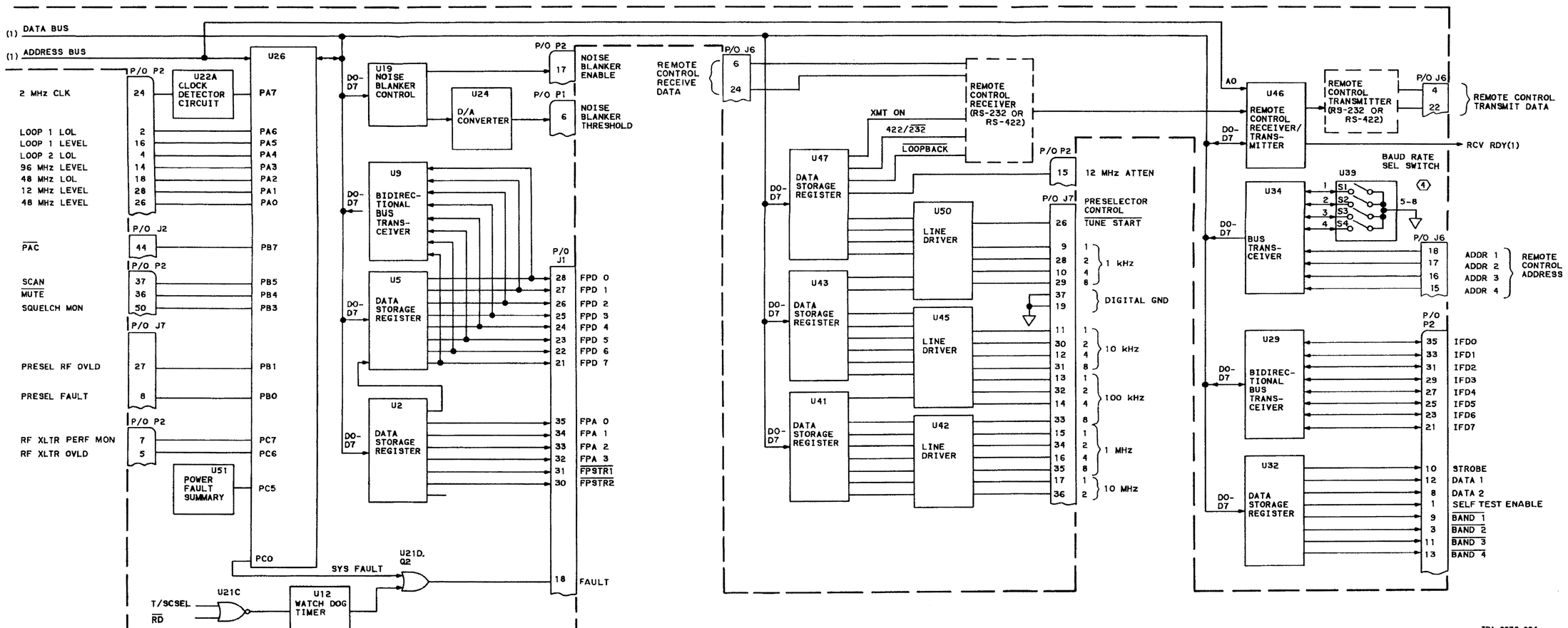
4.3.2.6 When no front panel activity or remote control activity is occurring, the control software continuously executes a monitor routine. These instructions look for a front panel key closure, test the remote port for activity, and monitor certain operating characteristics of the receiver. In addition to monitors on the operation of IF/Audio A3, performance monitors on the dc power input and in Synthesizer A5 are used to monitor the receiver operational status. Overload conditions from RF Translator A6, an external preselector, and the fault status of an external preselector are also continuously monitored. The preselector interface provides 18-bit parallel control data to a Rockwell International HF-8060 Preselector or equivalent. Frequency control data is calculated by the microprocessor then sent to preselector data latches U41, 43, 47 and connector J7 at the rear panel. Each time the operating frequency of the receiver is updated, the new control information is made available at J7, accompanied by tune start pulse J7-26.

4.3.2.7 Input lines are available for a preselector fault and a preselector overload. If a preselector fault occurs, the fault lamp on the front panel will light and "Preselector Fault" will appear on the front panel display. An overload condition will enable the overload indicator in the status display. This indicator will be disabled when the overload condition is removed.



TPA-8276-024

Control A2, Block Diagram (Sheet 1 of 2) Figure 4-4



Control A2, Block Diagram (Sheet 2 of 2) Figure 4-4

4.3.2.7.1 Remote control interface J6 is a serial ASCII data format conforming to the RS-422 electrical standard. The serial data is input to the operating system software and acted upon in accordance with the remote control software procedures. A receiver remote control address is input to microprocessor U52 during the power-on initialization. The address is used to uniquely identify the receiver in a multireceiver configuration. In the RS-422 versions, serial data is input to the receiver at J6-6, J6-24. This data is level shifted to TTL standards by U38A and then routed to the USART U46. Monitor information returned on the remote control connector by the microprocessor is sent to USART U46, to level shifter U36, and then to J6-4, J6-22.

4.3.2.7.2 Various analog signals from the receiver circuits are monitored during normal receiver operation. Monitor signals from IF/Audio A3 include: RF AGC d/a output, chan A d/a output, chan B d/a output, chan A audio, and chan B audio. Analog signals represent the position of the following Front Panel A1 controls: Noise Blanker Threshold, Squelch Threshold, and RF Gain. Each of these analog signals is converted to a digital signal at a/d converter U15. A/d converter U15 requires a start pulse from the operating system software to enable the conversion. At the completion of the conversion, U15 generates an end of conversion (EOC) signal which interrupts the microprocessor (INTI) and causes the software to read the result. Control A2 outputs the noise blanker threshold to RF Translator A6 using d/a converter U24. A digital representation of the threshold, derived from the front panel blanker threshold control or from a remote control command, is supplied to the d/a converter and then applied to RF Translator A6.

4.3.2.8 The last major function of Control A2 is the built-in test (BIT). The power supply voltages are monitored on Control A2 assembly using comparators U51C and U51D. A power fault signal from the comparators is applied through parallel input/output port U26 to the microprocessor. Parallel input/output port U26 also serves as the BIT input for the synthesizer status information (PA0 through PA6), the 2-MHz clock presence (PA7), preselector fault (PB0), preselector overload (PB1), and IF/Audio A3 squelch monitor (PB3) and mute and scan inputs (PB4 and PB5). From this BIT data, the proper fault messages are determined and displayed at the front panel. The fault lamp on the front panel is used to visually inform the operator that a fault condition exists in the receiver. Should the BIT detect a fault, the fault lamp is enabled. If the microprocessor is not executing the software program correctly, watchdog timer U12 will not be updated correctly resulting in a fault condition. A status lamp (DS1) is contained on the Control A2 assembly to verify that the microprocessor is functioning correctly. If this lamp goes out, a microprocessor fault condition exists.

4.3.3 IF/Audio A3 (Refer to Figure 4-5 and schematic diagram Figure 7-5)

4.3.3.1 IF/Audio A3 consists of the following circuits:

a. Analog/digital and digital/analog converters
b. Digital translation, filtering, and demodulation
c. Audio filtering and amplification
d. AGC, squelch

Additional circuitry provides the timing signals, control interface, and fault monitoring.

4.3.3.2 RF signals from RF Translator A6 are supplied to the 3-MHz IF input (P1-3, 4) of IF/Audio A3. At the input, the IF signal is combined with the noise output from the psuedorandom noise generator (PRNG). The combined signal is amplified by Q2, Q3, and Q6 and applied to a/d converter U87. PRNG U48, U58 consists of a shift register which produces a pseudorandom sequence of logic values at its output. Various taps from the register are used as inputs to a resistor-summing d/a converter to produce a multilevel noise signal output. The analog input to a/d converter U87 is digitized at a 12-megasample-per-second (Msps) rate. Each sample represents the 3-MHz IF signal and consists of seven parallel bits. The signal path from the 3-MHz IF a/d output to the audio and AGC d/a converters is composed entirely of digital signal processing circuits. All circuit elements contained in this part of the signal path are digital in nature.

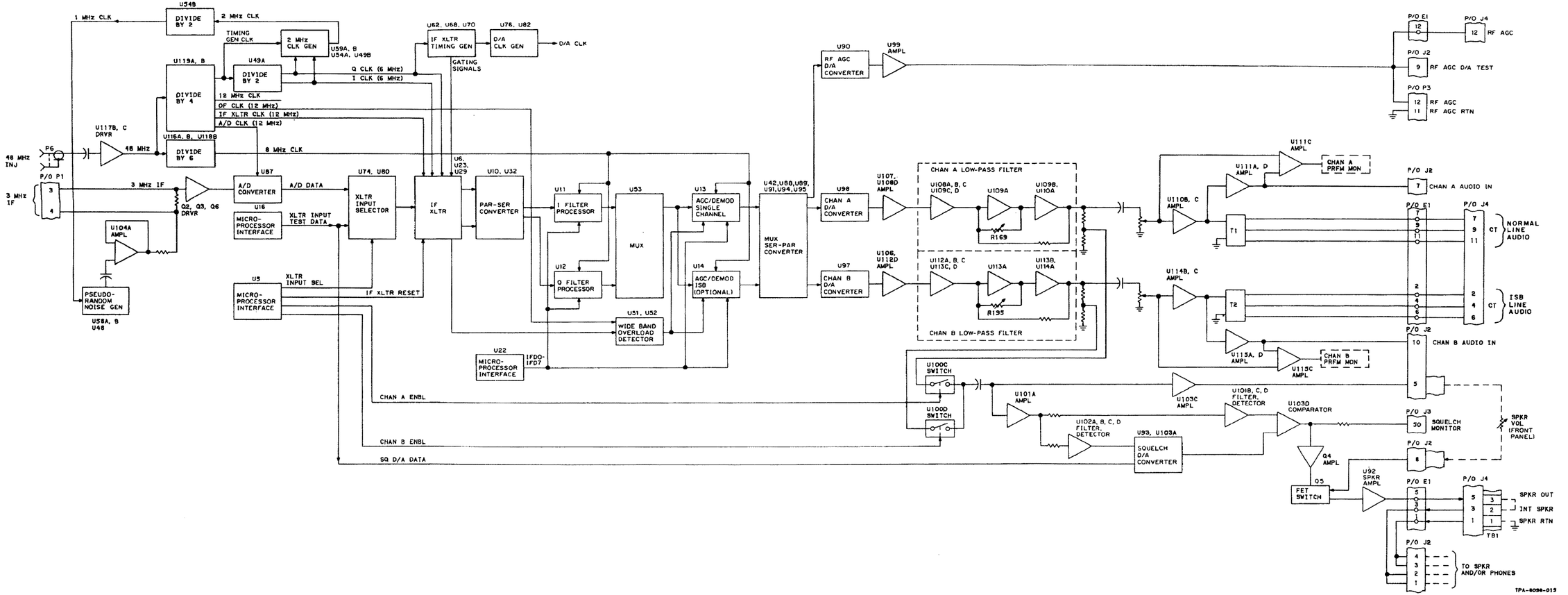
4.3.3.3 The a/d output is passed to the IF translator which translates the 3-MHz IF signal to a 0-Hz IF. At the 0-Hz IF, the signal is represented by in-phase (I) and quadrature-phase (Q) components. Each of the I and Q components is a physically separate signal, but only when taken together do they represent the 0-Hz IF signal. Additionally, the IF translator filters the I and Q signals and reduces the sample rate to 48 kilosamples per second (ksps). The I and Q signals are now represented by 16 bits of information per signal component. The I and Q signals are converted separately into synchronous serial data streams clocked at a 2-MHz rate. In this form, the I and Q signals are applied separately to I and Q filter processors U11, U12. The I and Q filter processors provide passband filtering and sample rate reduction (16 ksps) for the I

and Q components. Each filter processor has seven filter algorithms. Selection of the filter algorithm depends on the receiver's mode and bandwidth. In AM and CW modes, the available filter bandwidths are 300 Hz, 1 kHz, 3.2 kHz, and 6 kHz. SSB and ISB use the 2.8-kHz bandwidth. When these filters are used, the same filter algorithm is selected in both the I and Q processors. The outputs of the filter processors are the filtered I and Q signals represented in serial form. The I-Q signal pair represents the filtered 0-Hz IF signal. Each signal processor is connected to the control bus from Control A2. Filter, self-test, and status parameters are passed on this bus.

4.3.3.4 The filtered I and Q signals (refer to Figure 5-7 for a timing diagram) are multiplexed U53 and input to both the AGC/demodulator, single-channel U13 and AGC/demodulator, ISB U14 processors. In all modes except ISB, the single-channel processor is used and the ISB processor is dormant. The AGC algorithm within the single-channel processor uses an envelope detector on the IF signal to produce the IF and RF attenuation values. The IF attenuation value is used internally to the AGC/demodulator processor to control the gain of the I and Q signals. The RF attenuation value is converted to analog for use in RF Translator A6. If the AGC is turned off, the manual gain can be used to control the gain of the receiver. A signal strength value is calculated as part of the AGC processing. This output is sent over the control bus to Control A2 for display on the front panel. When the SSB mode is selected, a 1700-Hz offset is applied to the synthesizer's variable injection which places the desired signal in the middle of the 3-MHz IF passband. At the AGC/demodulator processor, an internal bfo signal is generated to restore the demodulated SSB audio signal to its proper frequency representation. The internal bfo is also used in the SSB/CW modes to shift the audio signal by the amount selected at the front panel or remote control. A product detector algorithm applied to the I and Q components produces the SSB/CW audio outputs. The AM audio results from an envelope detector algorithm being applied to the I-Q signal components. In ISB mode, the ISB AGC/demodulator processor is active and the single-channel processor is dormant. The I and Q inputs to the ISB processor are first applied to a sideband canceler, which generates USB and LSB audio. Each of these signals is applied to an envelope detector for AGC processing. The USB and LSB attenuation values are used internally in the ISB processor to control the gain of the USB and LSB signals. An RF attenuation value is calculated for use in RF Translator A6. A signal strength number based on the stronger channel (USB or LSB) is output over the control bus to Control A2. The gain-controlled USB and LSB signals and the RF attenuation value are multiplexed and output serially.

4.3.3.5 Wide-band overload detector U51 and U52 will generate control signals for the AGC/demodulator processors whenever a large signal is present at the a/d output. These signals are used to reduce RF Translator A6 gain and to correspondingly adjust the signal gain within the demodulator algorithms. The wide-band overload detector is necessary because of the broadband (approximately 15 kHz wide at the 3-dB frequencies) output from RF Translator A6. The serial output of the appropriate AGC/demodulator processor is selected (based on mode) by a multiplexer and then converted to parallel form U88, U89, U91, U94, U95. In all modes except ISB, the serial-to-parallel converter outputs the digital audio signal and the RF attenuation. In ISB mode, the converter outputs the USB and LSB digital signals, and the RF attenuation value. These digital signals are then applied to channel A, channel B, and RF AGC d/a converters U90, U97, U98 to reproduce the signals in analog form. In the ISB mode, channels A and B have the USB and LSB signals respectively.

4.3.3.6 The analog audio signals from the d/a converters are filtered in channel A U108, U109, U110 and channel B U112, U113, U114 low-pass filters. These signals are then applied to the channel A and B line audio amplifiers. Each line amplifier has an output range adjustable between ± 10 dBm, and has a balanced, 600-ohm output. The filtered analog signals are routed through analog switches, which select the audio channels that are applied to the squelch and Front Panel A1 speaker volume control. The squelch circuit compares low-band U101 and high-band U102 audio power levels to generate a gating signal to the speaker amplifier. To set the squelch threshold, the gain of the detected power level of the high-band audio is controlled by the squelch d/a converter U93, 103. The gain control input to the converter is provided by Control A2 over the control bus. At the rear panel, terminal block TB1 provides interface to the audio signals and the RF AGC, and mute control lines. The speaker audio at the rear panel may be used to drive an external speaker or may be strapped to the internal speaker and headphones on the front panel. Refer to the installation section for a description of the control signals available at TB1.



IF/Audio A3, Block Diagram Figure 4-5

4.3.3.7 The clock and synchronization signals are derived from the 48-MHz injection supplied by the frequency standard. Divider circuit U116, U118, U119 provides clock frequencies of 8 MHz and 12 MHz for the signal processors and the a/d converter respectively. The 8-MHz/12-MHz divider circuits also provide isolation between the digital signals on IF/Audio A3 and the injection frequencies of the frequency synthesizer. Additional divider networks produce 6-MHz U49, 2-MHz U49, U54, U59, and 1-MHz U54 clock signals and the various gating signals required by the IF translator circuits.

4.3.4 Power Supply A4 (Refer to block diagram Figure 4-6 and schematic diagram Figure 7-6)

4.3.4.1 Power Supply A4 is a linear power supply designed to provide +5.2 V dc and ±15 V dc. The supply consists of the input transformer, diode rectifiers, and three voltage regulator cards.

4.3.4.2 Transformer T1 is a stepdown transformer to reduce the input voltage (115 V ac) to the smaller voltages required by the voltage regulators. A full-wave diode rectifier and smoothing capacitor change the ac voltage into the dc voltage. Each series regulator card is designed to provide ±0.05-percent regulation for a 10-percent change in line voltage or a 50-percent change in load current. The output voltage of the series regulator is adjustable to ±5 percent by means of variable resistor R6. An adjustable autorecovery current foldback limiter protects the regulator outputs from damage due to excessive load currents. The current limit is preset at the factory to ensure safe operation of the unit and should not be adjusted. The +5.2-V dc regulator circuit also provides an overvoltage protector. A zener diode and SCR prevent the output voltage from exceeding approximately 6 V dc.

4.3.5 Synthesizer A5 (Refer to block diagram Figure 4-7 and schematic diagram Figure 7-7)

4.3.5.1 Synthesizer A5 provides all the signal injection frequencies required by the receiver circuits. All injection signals are generated from an internal 48-MHz vcxo Q11, Q12 which is locked to internal oven standard A5A3 or an external reference (J2). If an external 100-kHz reference is applied to the receiver, Synthesizer A5 will automatically sense its presence and switch over and lock to that reference. Therefore, all injections and receiver stability is the same as the reference standard being used. The 48-MHz vcxo Q11, Q12 is divided by 480 U13, U16, U17 to generate a 100-kHz reference signal. This reference is compared U10 with either the internal oven standard divided by 100 U8 or with 100 kHz from the external reference input. An error signal is generated and fed to the control line of the vcxo to effect the phase lock. The division of 480 is accomplished by a series of divisions, 3 by U13, 40 and 4 by U16, U17. After dividing by 120, the frequency is 400 kHz. This signal is used as the internal reference for both variable injection phase-locked loops. The 48 MHz is divided by 4 by U14 to produce 12 MHz which is used as an injection to the low-frequency upconverter in RF Translator A6.

4.3.5.2 Multiples of the 48-MHz signal are used for injection signals. In one case, it is multiplied by 2 by Q14, amplified by Q15, Q16, and used as the second injection in RF Translator A6. The 48 MHz is also multiplied by 3 by Q13, amplified by Q19, and used in the synthesizer for an injection into mixer A1. A 48-MHz signal is also provided (J6) to IF/Audio A3 for synchronization purposes.

4.3.5.3 Variable injection P5 covers the range of 99.5 to 128.999 99 MHz in 10-Hz steps. This is accomplished through the use of two phase-locked loops. Loop 1 consists of very low-noise voltage-controlled oscillator (vco) Q21 working in conjunction with mixer A2. The vco uses a high Q tank circuit and a diode array to achieve this high performance. Loop 1 is referenced on 10 kHz. This means that loop 1 will tune in increments of 10 kHz by changing the divide ratio of the loop divider U4. The reference divider, main loop divider, phase detector, loop lock monitor and frequency-control-shift registers are all contained in one LSI integrated circuit, U4. A divide by 32/33 high-speed prescaler U3 is used to reduce the IF frequency below the maximum clock rate of the LSI integrated circuit. All increments smaller than 10 kHz must be accomplished in loop 2. These small frequency increments are injected into mixer A2. The frequency output from loop 2 vco Q17 runs from 10.0 to 10.999 MHz in 1-kHz increments. This loop also uses an LSI integrated circuit U20 that contains all the basic circuitry needed in a phase-locked loop. The output of this loop is divided by 100 U21. After the division, the output frequency is 100.0 to 109.99 kHz in 10-Hz increments. This signal is now mixed in mixer A1 with 144.0 MHz to produce the 10-Hz incremental injection for the output loop. Monolithic crystal filters FL1, 2 are used between the two loops to pass only the desired mixer IF signal and reject all others.

4.3.5.4 Many of the circuits involved in a low-noise synthesizer are very sensitive to noise or discrete signals on the power supply voltages. Therefore, all voltages used to power the synthesizer are regulated using low-noise, high line regulation precision regulators. The output loop vco is powered between the +12-V dc and −12-V dc regulated supplies. Level performance monitors are present on all signal lines leaving Synthesizer A5 and loss of lock monitors are on all the phase-locked loops.

Caution

The clad area within the vco compartment is −V dc, not ground potential! Do not short the clad area to ground as this may damage the input regulators.

4.3.5.5 Oven frequency standard A5A3, part of Synthesizer A5 assembly, provides a 10-MHz, high stability reference signal to the main synthesizer. The frequency standard is composed of the 10-MHz crystal oscillator and the oven and oven control circuitry. Colpitts crystal oscillator Y1, Q1, C1, C2 is used to provide the desired frequency and stability. Varactor CR1, located in series with the 10-MHz crystal, is used to pull the crystal on frequency. During the factory alignment, varactor bias R1 is adjusted to set the oscillator frequency. The oscillator is followed by integrated circuit RF amplifier U2 to provide isolation for the oscillator and to bring the signal up to the correct power level. To provide more efficient operation and tight thermal control, two power transistors Q3, Q4 are used as oven heaters. Test select resistor R13 in the oven control network sets the oven temperature at the upper turning point of the oscillator crystal. This selection is performed as part of the factory alignment. The heater transistors are mounted to a solid aluminum block which provides a uniform heat distribution to the crystal.

4.3.6 RF Translator A6 (Refer to block diagram Figure 4-8 and schematic diagram Figure 7-8)

4.3.6.1 RF Translator A6 provides the basic functions of selectivity, amplification, and gain control. In addition, RF Translator A6 contains circuitry for overvoltage protection, noise blanking, and a built-in test performance monitor. Overvoltage protection is provided by a spark gap and by clipper diodes. Spark gap E1 will short high level, short duration pulses to ground before they damage the translator circuitry. For those signal levels between +20 dBm and +47 dBm, diode clipper networks CR2 through CR12 will attenuate the incoming signal level.

4.3.6.2 All incoming signals are routed through one of three filter networks. For tuned frequencies between 0.5 and 2.0 MHz and 2.0 and 30 MHz, the filter networks provide a roofing filter function. If the receiver is tuned below 500 kHz, an upconverter translates the incoming signal up to 12 MHz for improved signal sensitivity. The three band enable signals are generated by the microprocessor on Control A2. When the 12-MHz upconverter is in operation, the first injection frequency is automatically offset by 12 MHz. The 12-MHz notch filter FL3 through FL5 reduces the level of the injection signal appearing at the mixer output so that its noise skirts do not adversely effect the sensitivity for tuned frequencies below 50 kHz.

4.3.6.3 At the first mixer, the desired signal and the first injection signal are combined to produce the first intermediate frequency of 99 MHz. The first mixer Q3 through Q6 uses bipolar transistors in a double-balanced mixer configuration. To facilitate the fast on-off switching times required of a high performance mixer, injection amplifier Q1, Q2 "squares up" the applied sinusoidal injection signal. The first IF filter FL1 at 99 MHz provides the initial translator selectivity. The basic characteristics of the 99-MHz crystal filter are:

ATTENUATION	BANDWIDTH
0.5 dB	±3.1 kHz minimum
3.0 dB	±6 kHz minimum
40.0 dB	±44 kHz maximum

The second mixer translates the 99-MHz first IF to the 3-MHz second IF. A double-balanced mixer configuration similar to the first mixer is also used for the second mixer. Transistors Q18 through Q21 form the mixer circuit and transistors Q22, Q23, are the 96-MHz injection amplifier. Selectivity characteristics of 3-MHz crystal filter FL2 are:

ATTENUATION	BANDWIDTH
0.4 dB	±3.1 kHz minimum
3.0 dB	±8 kHz minimum
80.0 dB	±44 kHz maximum

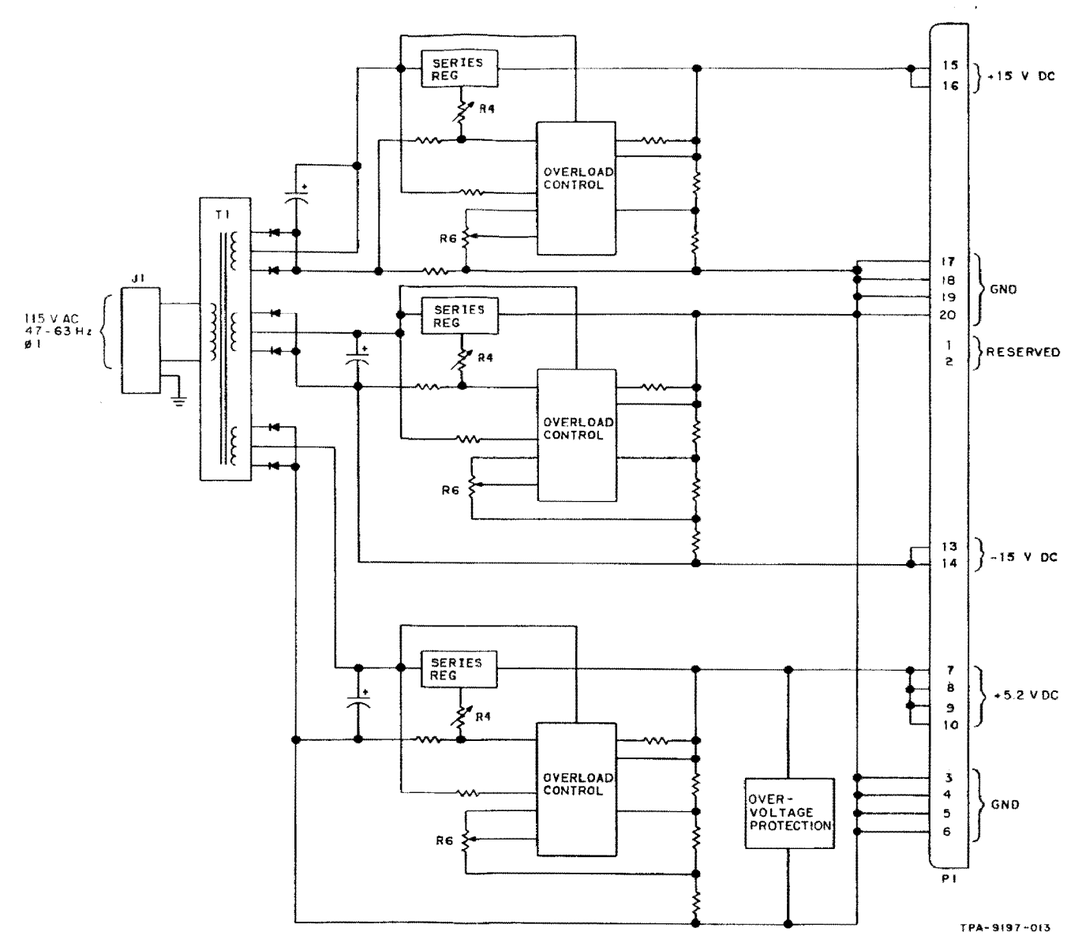
4.3.6.4 Much of the signal gain found in RF Translator A6 is provided by the amplifiers following the second mixer. Buffer amplifier Q24, between the second mixer and 3.0-MHz crystal filter FL2, provides signal gain and impedance matching. The three final

amplifiers Q25, Q26, Q29/Q30 complete the desired signal amplification for a total gain of 75 dB from the antenna input J3 to the 3-MHz IF output P3-3, P3-4. IF monitor output J1 is accessible at the rear panel for test and monitor purposes. The signal gain from antenna J3 to the IF monitor is 70 dB. All remaining signal characteristics of the IF signal applied to IF/Audio A3 are reproduced at the monitor output.

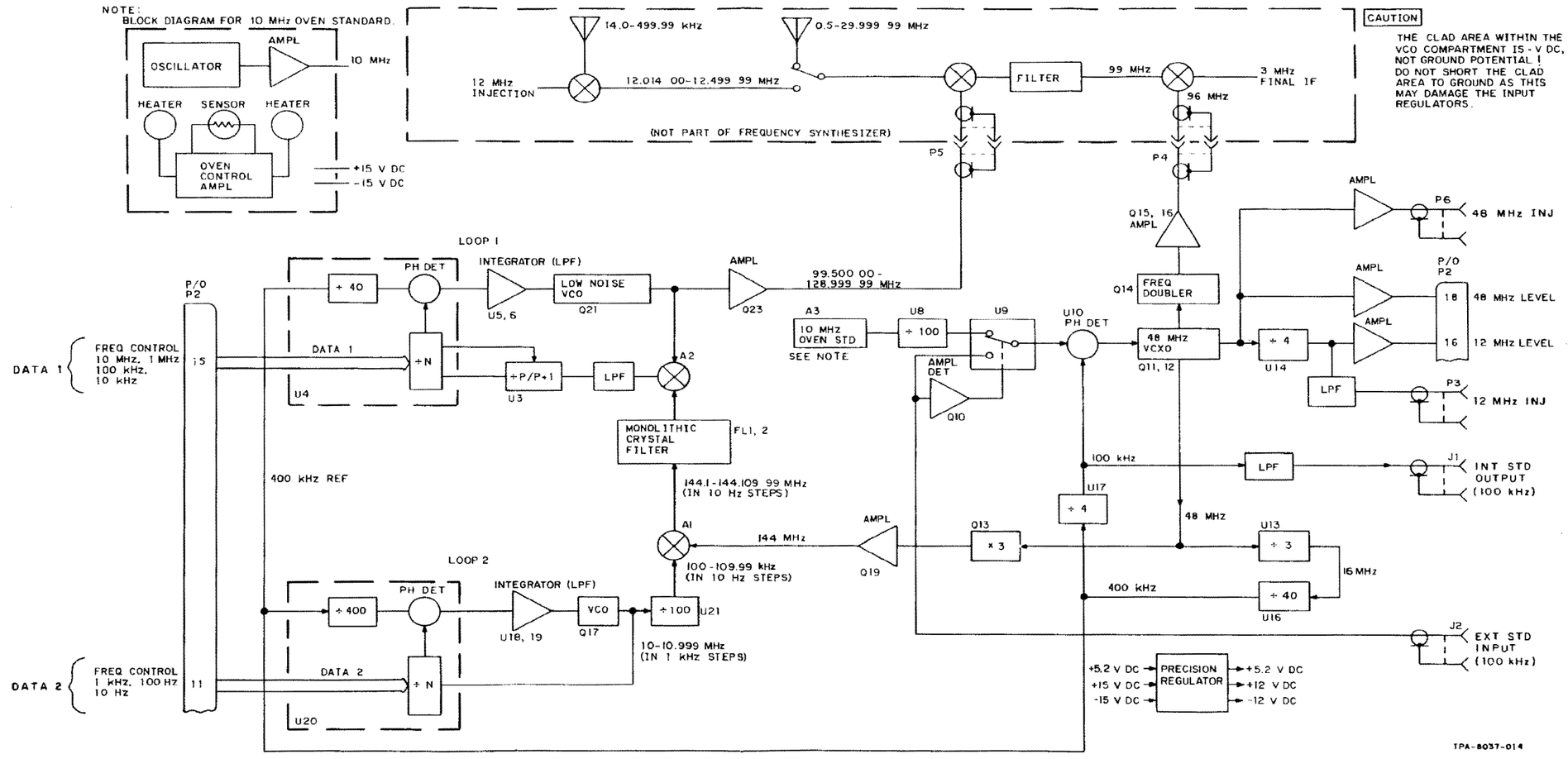
4.3.6.5 The gain control circuitry located in RF Translator A6 provides up to 96 dB of attenuation. Under normal operating conditions, the AGC input P2-11, P2-12 voltage is supplied by IF/Audio A3. The gain control circuitry consists of linear network/ amplifier U2, U3 and three sets of pin diode attenuators: CR19, 20, 42, 43 at the first mixer; CR21, 22 at the second mixer; and CR23, 24 in the final amplifier circuit. The gain control approximates a log-linear attenuation versus control voltage response. For an AGC input signal of 10 V dc; 96 dB of attenuation is applied to RF Translator A6.

4.3.6.6 Included within RF Translator A6 is the noise blanker circuitry. This circuitry reduces the effects of impluse signals appearing at the antenna input. A front panel adjustment allows the operator to select the amount of noise blanking he desires. The noise blanker circuitry is composed of a four-stage amplifier with AGC Q38 through Q41, peak-to-average detector Q35, Q42 through Q44, and the blanker FET's Q27, Q28. Impulse noise appearing with the desired signal will produce a pulse at the noise blanker detector output. The blanking pulse width is dependent upon the peak-to-average ratio of the impulse and upon the noise blanker threshold adjustment. To achieve the delay required for impulse detection and impulse blanking, the impulse signal is sampled prior to the 3-MHz crystal filter. The delay through this filter then allows the noise blanking pulse to be applied to the blanker FET's just as the impulse signal arrives at the blanker FET's. The blanker pulse width is approximately 600 microseconds at its maximum duration.

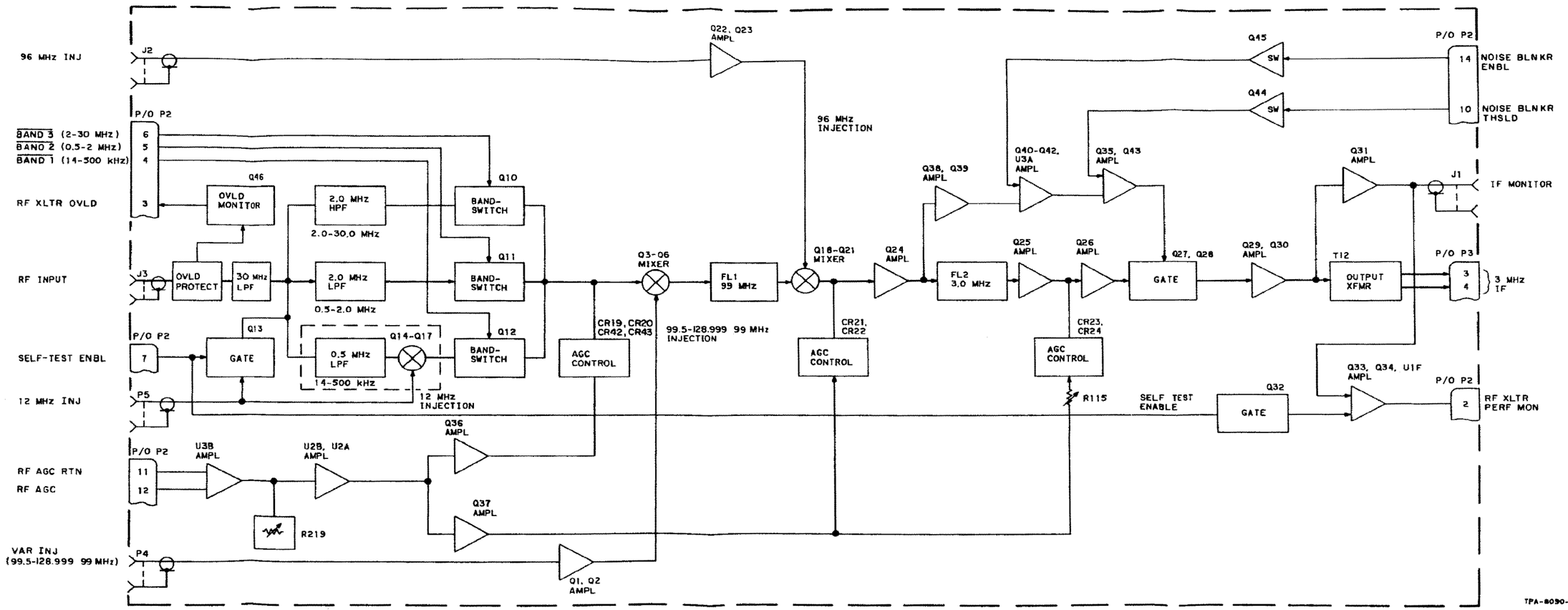
4.3.6.7 The self-test function within RF Translator A6 is an approximate measure of the gain through the translator. During the built-in test, the 12-MHz injection from the synthesizer is applied at the RF input. Since the receiver is tuned to receive 12 MHz during this test, the injection signal produces an on-channel response through the translator. If the gain is within approximately 10 dB of its correct value, the performance monitor (P2-2) will be at a logic zero (0.5 ±0.5 V dc) indicating satisfactory performance.



Power Supply A4, Block Diagram Figure 4-6



Synthesizer A5, Block Diagram Figure 4-7



RF Translator A6, Block Diagram Figure 4-8

SECTION 5
MAINTENANCE

5.1 FIRST-LINE MAINTENANCE

5.1.1 General. First-line testing of R-5099/U, R-5099A/U, and R-5104/GRC-508 Radio Receiver consists of built-in test (BIT) equipment. BIT testing is performed by four different methods: 1) power on testing, 2) continuous testing, 3) local operator-initiated testing, and 4) remote operator-initiated testing.

5.1.2 Testing

5.1.2.1 Power On Testing. Power on BIT testing includes the following sequential tests listed below. When power is turned on, the tests are run start to finish. If a failure is detected, the FAULT indicator is lit and the testing is terminated. The power on BIT is approximately 10 seconds in length.

a. ROM (Refer to Table 5-2, test 1.)
b. RAM (Refer to Table 5-2, test 2.)
c. Power Supply A4 (Refer to Table 5-2, test 3.)
d. Synthesizer A5 (Refer to Table 5-2, test 4.)
e. Front Panel A1 (Refer to Table 5-2, test 14.)
f. Small end-to-end (Refer to Table 5-3.)

5.1.2.2 Continuous Testing. Continuous testing is a part of normal receiver operating software and includes the tests listed below. The failed indications appear on Front Panel A1 display and are stored for future recall. Overload indications appear as a segment in the status display on Front Panel A1.

a. CPU watchdog (Refer to Table 5-4, test 1.)
b. Synthesizer A5 (Refer to Table 5-4, test 2.)
c. SORQ signal (Refer to Table 5-4, test 3.)
d. Preselector overload (Refer to Table 5-4, test 4.)
e. RF Translator A6 overload (Refer to Table 5-4, test 5.)
f. Power Supply A4 (Refer to Table 5-4, test 6.)
g. Preselector fault (Refer to Table 5-4, test 7.)

5.1.2.3 Local Operator-Initiated Testing. Local operator-initiated testing includes the sequential tests listed below. Once initiated, the tests will run start to finish. If a failure is detected, the fault indication is momentarily displayed, then stored for future recall. Testing is terminated if a fault is found. During the initiated BIT, the NORM key will abort the test and return the receiver to normal operation.

a. ROM (Refer to Table 5-2, test 1.)
b. RAM (Refer to Table 5-2, test 2.)
c. Power Supply A4 (Refer to Table 5-2, test 3.)
d. Synthesizer A5 (Refer to Table 5-2, test 4.)
e. Serial (Refer to Table 5-2, test 5.)
f. Preselector port (Refer to Table 5-2, test 6.)
g. IF/Audio A3 (Refer to Table 5-2, test 7.)
h. IF translator (Refer to Table 5-2, test 8.)
j. RF Translator A6 (Refer to Table 5-2, test 9.)
k. Pseudorandom number generator (Refer to Table 5-2, test 10.)
m. End-to-end (Refer to Table 5-2, test 11.)
n. Low-pass filter (Refer to Table 5-2, test 12.)
p. Squelch (Refer to Table 5-2, test 13.)
q. Front Panel A1 (Refer to Table 5-2, test 14.)
r. Display (Refer to Table 5-2, test 15.)
s. Address (Refer to Table 5-2, test 16.)
t. Keypad (Refer to Table 5-2, test 17.)

5.1.2.4 Remote Operator-Initiated Testing. Remote operator-initiated testing includes tests a through r listed in paragraph 5.1.2.3. This test is initiated from the remote control/processor by the command 'TE (space)' carriage return (CR). Results of tests can be obtained by the command 'TE (space)?' (CR) or 'FA (space)?' (CR). The test takes approximately 30 seconds. The FAULT lamp on the front panel of the receiver will be lit if a fault is detected.

5.1.2.4.1 The information presented to the remote control in response to a 'TE (space)?' command will be one of the following phrases: NO FAULT (BIT passed), A1 FAULT (Front Panel A1 fault), A2 FAULT (Control A2 fault), A3 FAULT (IF/Audio A3 fault), A4 FAULT (Power Supply A4 fault), A5 FAULT (Synthesizer A5 fault), or A6 FAULT (RF Translator A6 fault).

5.1.2.4.2 The information presented to the remote control in response to an 'FA (space)?' command will be: NO FAULT (BIT passed) or, the fault code given in the fault/debug format (example: 'A2 FAULT, F2 +1, F3 0000H, F4 0000.H').

5.1.3 Test Equipment. No test equipment is required for first-line maintenance. A standard 115-V ac, 47- to 63-Hz power source is required to provide power to the receiver.

5.1.4 Fault Isolation and Repair. To initiate the test sequence (unit in NORM operation), press TEST button. Unit will sequence through self-test function as listed in paragraph 5.1.2.3. If a fault is detected, it will be momentarily indicated at the front panel and the testing terminated. To recall the fault or debug codes, press 0 (zero) button. The fault codes will be displayed to indicate the fault location. Table 5-1 is an index which references fault codes to the appropriate fault isolation test found in Table 5-2 through Table 5-4.

Table 5-1. Fault Isolation Index.

FAULT CODE	FAULT ISOLATION TEST
A1 — FRONT PANEL FAULTS	
DEBUG 2 = 1:BUFFER TEST	Table 5-2, test 14
DEBUG 3:DATA SENT DEBUG 4:DATA READ	
DEBUG 2 = 2:CONTROL LINE TEST	Table 5-2, test 14
DEBUG 3:DATA SENT DEBUG 4:DATA READ	
A2 — CPU FAULTS	
DEBUG 2 = 1:ROMS BAD	Table 5-2, test 1
DEBUG 3:ROM NUMBER (0 = U14, 1 = U8, 2 = U4)	
DEBUG 2 = 2:RAM BAD	Table 5-2, test 2
DEBUG 3 = ADDR THAT FAILED (0000 thru 07FF = U18; 0800 thru OFFF = U3)	
DEBUG 2 = 3:SERIAL TEST	
DEBUG 3 = 1:XMTR NEVER EMPTY DEBUG 3 = 2:RCVR NOT READY DEBUG 3 = 3:DATA BAD DEBUG 4:RECEIVED DATA DEBUG 3 = 4:REMOTE TERMINAL BAD	Table 5-2, test 5
DEBUG 2 = 4:PRESELECTOR PORT	
DEBUG 3 = 0:TEST OF ALL HIGH FAILED DEBUG 3 > 0:BIT COUNT FOR BIT SET LOW	Table 5-2, test 6
DEBUG 2 = 5:SOFTWARE INTERRUPT	
DEBUG 3 = 0:DIVIDE BY ZERO DEBUG 3 = 1:FAULT	
A3 — DSP BOARD FAULTS	
DEBUG 2 = 1:CHIP SELECT	Table 5-2, test 7.1
DEBUG 3 = 1:TEST 0 0 TO NAND (U86C) DEBUG 3 = 2:TEST 0 1 TO NAND (U86C) DEBUG 3 = 3:TEST 1 1 TO NAND (U86C) DEBUG 3 = 4:TEST 1 0 TO NAND (U86C)	

Table 5-1. Fault Isolation Index (Cont).

FAULT CODE	FAULT ISOLATION TEST
A3 (Cont)	
DEBUG 2 = 2:DYNAMIC SIGNAL TEST	
DEBUG 3 = 0 . . . 7:POINT TO FAILED SIGNAL 0 = 8 MHz CLK 1 = QEN 2 = D/A WR 3 = SCK 4 = IQ SYNC 5 = I CLK 6 = SORQ TEST 7 = 12 MHz CLK	Table 5-2, test 7.2 Table 5-4, test 3
DEBUG 3 = 8:DETECTOR DID NOT RESET	
DEBUG 2 = 3:SHIFT REGISTER TEST	
DEBUG 3 = 1:ALL 0 CHECK DEBUG 3 = 2:ALL 1 CHECK DEBUG 3 = 3:0/1 CHECK DEBUG 3 = 4:1/0 CHECK	Table 5-2, test 7.3
DEBUG 2 = 4:READ A TO D TEST	
DEBUG 3 = 1:CH A CONVERSION NOT COMPLETE DEBUG 3 = 2:CH B CONVERSION NOT COMPLETE DEBUG 3 = 3:RF AGC CONVERSION NOT COMPLETE	Table 5-2, test 7.4
DEBUG 2 = 5:7720 TEST	Table 5-2, test 7.5
DEBUG 3 = 1:I CH BIT TEST DEBUG 4:I CH FILTER DATA (should be FFFFH) DEBUG 3 = 2:Q CH BIT TEST DEBUG 4:Q CH FILTER DATA (should be FFFFH) DEBUG 3 = 3:I CH TEST DEBUG 4:I CH FILTER DATA (should be 0100H) DEBUG 3 = 4:Q CH TEST DEBUG 4:Q CH FILTER DATA (should be 0100H) DEBUG 3 = 5:AGC TEST DEBUG 4:AGC DATA (should be 0200H) DEBUG 3 = 6:ISB AGC TEST DEBUG 4:ISB AGC DATA (should be 0300H)	Table 5-2, test 8
DEBUG 2 = 6:I CHAN READ - NO HANDSHAKE SIGNAL OR WRONG BYTE AFTER RESET	
DEBUG 3:7720 STATUS	
DEBUG 2 = 7:Q CHAN READ - NO HANDSHAKE SIGNAL OR WRONG BYTE AFTER RESET	
DEBUG 3:7720 STATUS	
DEBUG 2 = 8:I CHAN READ - NO HANDSHAKE SIGNAL OR WRONG BYTE REQUESTED	
DEBUG 3:7720 STATUS	
DEBUG 2 = 9:Q CHAN READ - NO HANDSHAKE SIGNAL OR WRONG BYTE REQUESTED	
DEBUG 3:7720 STATUS	

Table 5-1. Fault Isolation Index (Cont).

FAULT CODE	FAULT ISOLATION TEST
A3 (Cont)	
DEBUG 2 = 10:I CHAN READ - WRONG DATA	Table 5-2, test 8
DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 11:Q CHAN READ - WRONG DATA	
DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 12:I CHAN READ - WRONG DATA	
DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 13:Q CHAN READ - WRONG DATA	
DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 14:I CHAN READ - WRONG DATA	Table 5-2, test 8
DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 15:Q CHAN READ - WRONG DATA	
DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 16:I CHAN READ - WRONG DATA	
DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 17:Q CHAN READ - WRONG DATA	
DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 18:I CHAN READ - WRONG DATA	
DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 19:Q CHAN READ - WRONG DATA	
DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 20:I CHAN READ - WRONG DATA	
DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 21:Q CHAN READ - WRONG DATA	Table 5-2, test 8
DEBUG 3:READ DATA DEBUG 4:CHECK DATA	

Table 5-1. Fault Isolation Index (Cont).

FAULT CODE	FAULT ISOLATION TEST
A3 (Cont)	
DEBUG 2 = 22:I CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 23:Q CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 24:I CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 25:Q CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 26:I CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 27:Q CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 28:I CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 29:Q CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	Table 5-2, test 8
DEBUG 2 = 30:I CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 31:Q CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 32:I CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 33:Q CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	

Table 5-1. Fault Isolation Index (Cont).

FAULT CODE	FAULT ISOLATION TEST
A3 (Cont)	
DEBUG 2 = 34:I CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	Table 5-2, test 8
DEBUG 2 = 35:Q CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 36:I CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	
DEBUG 2 = 37:Q CHAN READ - WRONG DATA DEBUG 3:READ DATA DEBUG 4:CHECK DATA	Table 5-2, test 8
DEBUG 2 = 38:PRNG TEST DEBUG 3:BIT COUNT WHEN FAILED	Table 5-2, test 10
DEBUG 2 = 39:LOW PASS FILTER TEST (U98 area of circuit; puts three tones, in succession, out of the speaker.) DEBUG 3:1 = BFO 300, 2 = BFO 3000, 3 = BFO 6500 DEBUG 4:CHANNEL A DATA	Table 5-2, test 12
DEBUG 2 = 40:SQUELCH TEST (U93 area of circuit; this test puts a low tone then a high tone out of the speaker for varying lengths of time and verifies the squelch times.) DEBUG 3:0 = SQUELCH MONITOR, 1 = 00, 2 = 08, 3 = 40H DEBUG 4:COUNT	Table 5-2, test 13
DEBUG 2 = 41:END TO END TEST (Test of the signal path from the antenna through the RF translator, through the IF assembly to the line audio outputs) DEBUG 3:1 = BFO 0 (CW) DEBUG 3:2 = BFO 1000 (CW) DEBUG 3:3 = BFO −1000 (USB) DEBUG 3:4 = BFO 1000 (LSB) DEBUG 3:5 = ISB DEBUG 3:6 = ISB DEBUG 3:7 = ISB BOTH AUDIO ON DEBUG 3:8 = ISB BOTH AUDIO ON DEBUG 4:DSP STATUS	Table 5-2, test 11; Table 5-3, small end-to-end test
DEBUG 2 = 42:N/A	
DEBUG 2 = 43:D/A TEST DEBUG 3 = 1:DATA 0's DEBUG 3 = 2:DATA 1's DEBUG 3 = 3:DATA 0's	Table 5-2, test 7.4
DEBUG 2 = 44:2MHZ DETECTOR	Table 5-2, test 11; Table 5-3, small end-to-end test

Table 5-1. Fault Isolation Index (Cont).

FAULT CODE	FAULT ISOLATION TEST
A4 — POWER SUPPLY FAULTS	
DEBUG 2 = 1:POWER SUPPLY MONITOR	Table 5-2, test 3;
DEBUG 3:TEST STATUS C (BIT 5 = 0 FOR FAULT)	Table 5-2, test 9, test 11; Table 5-3, small end-to-end test; Table 5-4, test 6
A5 — SYNTHESIZER FAULTS	
DEBUG 2 = 1:SYNTHESIZER MONITOR	
DEBUG 3:TEST STATUS A (SYNTH MONITORS)	Table 5-2, test 4; Table 5-3, small end-to-end test; Table 5-4, test 2
A6 — TRANSLATOR FAULTS	
DEBUG 2 = 1:TRANSLATOR MONITOR 12 MHZ ON	Table 5-2, test 9
DEBUG 3:TEST STATUS C (This test has a 12-MHz test signal put into the antenna end of the RF translator. With the radio set to receive 12 MHz with full gain, this should give a signal at the IF)	
DEBUG 2 = 2:TRANSLATOR OVERLOAD	
DEBUG 3:TEST STATUS C	
DEBUG 2 = 3:TRANSLATOR MONITOR 12 MHZ OFF	
DEBUG 3:TEST STATUS C (This test has a 12-MHz injection on with the radio set to receive 30 MHz. With no gain, this should give no signal at the IF)	
DEBUG 2 = 4:TRANSLATOR OVERLOAD	
DEBUG 3:TEST STATUS C	
DEBUG 2 = 5:RF TRANSLATOR MONITOR (in end-to-end test)	Table 5-2, test 11; Table 5-3, small end-to-end test
DEBUG 3:1 = N/A, 2 = BFO 1000 (CW), 3 = BFO −300 (USB), 4 = BFO 300 (LSB), 5 = ISB, 6 = ISB DEBUG 4:TEST STATUS C	
A7 — PRESELECTOR FAULTS	

Table 5-2. Fault Isolation.

<table>
<tr><th>TEST</th><th>DESCRIPTION AND INDICATIONS</th></tr>
<tr><td>1. ROM</td><td>Tests the three EPROM memories on the Control A2 assembly. BIT indicates:

A2 FAULT
DEBUG 2 001
DEBUG 3 ROM number of failed ROM(s)
0000H = U14
0001H = U8
0002H = U4
DEBUG 4 (no meaning)</td></tr>
<tr><td>2. RAM</td><td>Tests the two static RAM's on the Control A2 assembly. BIT indicates:

A2 FAULT
DEBUG 2 002
DEBUG 3 Address that failed
0000H thru 07FFH = U18
0800H thru 0FFFH = U3
DEBUG 4 (no meaning)</td></tr>
<tr><td>3. Power Supply A4</td><td>Reads Power Supply A4 monitors and comparators on the +15-V dc and −15-V dc power lines. Failure is indicated by Front Panel A1 FAULT lamp being lit and BIT indicates:

A4 FAULT
DEBUG 2 001
DEBUG 3 00XXH (where XX equals test status C info)
DEBUG 4 (no meaning)

Note

Failure of +15 V dc will disable the front panel.

Example: DEBUG 3 0000H indicates that B5 = 0. This represents a power supply fault.

<table>
<tr><th rowspan="2">HEXADECIMAL
X =</th><th colspan="4">TEST STATUS BITS</th></tr>
<tr><th>B_7/B_3</th><th>B_6/B_2</th><th>B_5/B_1</th><th>B_4/B_0</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>2</td><td>0</td><td>0</td><td>1</td><td>0</td></tr>
<tr><td>3</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>4</td><td>0</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
<tr><td>6</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>7</td><td>0</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>8</td><td>1</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>9</td><td>1</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>A</td><td>1</td><td>0</td><td>1</td><td>0</td></tr>
<tr><td>B</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>C</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>D</td><td>1</td><td>1</td><td>0</td><td>1</td></tr>
<tr><td>E</td><td>1</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>F</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
</table>
</td></tr>
</table>

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
3. (Cont)	Test status C: B_0 = System fault output (fault = 1) B_1 = NA B_2 = NA B_3 = NA B_4 = Option ROM (presence = 0) B_5 = Power supply (fault = 0) B_6 = RF translator (overload = 0) B_7 = RF translator (fault = 1) **Note** Use normal troubleshooting techniques to identify failed components in the power supply.
4. Synthesizer A5	Reads Synthesizer A5 fault monitors, detectors, comparators, 48-MHz loss of lock, loop one loss of lock, loop two loss of lock, loop one level, 96-MHz level, 12-MHz level, and 48-MHz level. Failure is indicated by Front Panel A1 FAULT lamp being lit and BIT indicates: A5 FAULT DEBUG 2 001 DEBUG 3 00XXH (where XX equals test status A info) DEBUG 4 (no meaning) Example: DEBUG 3 001BH equals loop two loss of lock failed, 96-MHz level failed, 12-MHz clock failed, and 48-MHz level failed.

HEXADECIMAL	TEST STATUS BITS			
X=	B_7/B_3	B_6/B_2	B_5/B_1	B_4/B_0
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
A	1	0	1	0
B	1	0	1	1
C	1	1	0	0
D	1	1	0	1
E	1	1	1	0
F	1	1	1	1

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
4. (Cont)	Test status A (logic 1 = fault): B_0 = 48-MHz level B_1 = 12-MHz clock B_2 = 48-MHz loss of lock B_3 = 96-MHz level B_4 = Loop two loss of lock B_5 = Loop one level B_6 = Loop one loss of lock B_7 = 2-MHz presence **Note** B_7 = 1 will result in an A3 fault due to its origin on the A3 assembly. This is not a Synthesizer A5 fault condition. **Note** Use normal troubleshooting techniques to identify failed components in the synthesizer.
5. Serial	Tests the remote control port on the Control A2 assembly. Checks that data is sent and received at the 8251 (U46). External transmit and receive circuitry not checked. BIT indicates: A2 FAULT DEBUG 2 003 DEBUG 3 0001H - transmitter never emptied 0002H - receiver not ready 0003H - data bad 0004H - remote terminal bad DEBUG 4 XXYY.H - received data (applies only when data bad). Where XX equals data that was transmitted, and YY equals data that was received.
6. Preselector port	Tests the preselector port option, if present. All outputs are set high and verified, set low and verified, and then each output is set high in order from low to high bit weight. BIT indicates: A2 FAULT DEBUG 2 004 DEBUG 3 0000H - test of all high outputs failed 000XH - where X equals bit of port that failed DEBUG 4 0001.H - indicates high port failure 0002.H - indicates mid port failure 0003.H - indicates low port failure **Note** Failures - high port U41, U42; mid port U43, U45; low port U47, U50.
7. IF/Audio A3	Tests the digital signal processor circuitry on the IF/Audio A3 assembly. Includes the following tests. a. Chip select b. Dynamic signal c. Shift register d. Digital-to-analog converter e. Signal processor BIT

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
7.1 Chip select	Tests the chip select, data latch, and data buffer components on the IF/Audio A3 assembly. BIT indicates: A3 FAULT DEBUG 2 001 DEBUG 3 0001H - bit pattern 00 0002H - bit pattern 01 0003H - bit pattern 11 0004H - bit pattern 10 DEBUG 4 (no meaning) **Note** Failures - U5, U16, U22, U45, U46, U86C.
7.2 Dynamic signal	Tests the dynamic activity on the following IF/Audio A3 lines: 8-MHz clock, QEN, D/A WR, shift clock, IQ sync, I clock, SORQ test, 12-MHz clock. BIT indicates: A3 FAULT DEBUG 2 002 DEBUG 3 0000H - 8 MHz CLK (U41, U116, U117, U118) 0001H - QEN (U72) 0002H - D/A WR (U83) 0003H - SCK (U49) 0004H - IQ SYNC (U11, U12, U39, U60) 0005H - I CLK (U49) 0006H - SORQ TEST (U63, U84) 0007H - 12 MHz CLK (U75, U119, U117) 0008H - detector did not reset (U73B) DEBUG 4 (no meaning) **Note** Using normal troubleshooting techniques, additional related components may be found to have failed.
7.3 Shift register	Tests the shift register string of U55, U44, U88, U94, U89, U95, and U91. The test places various data values in the registers, then reads them out. BIT indicates: A3 FAULT DEBUG 2 003 DEBUG 3 0001H - all 0's shifted in but not read out. 0002H - all 1's shifted in but not read out. 0003H - 0, 1, 0, 1 pattern in, but not 0, 1, 0, 1 out. 0004H - 1, 0, 1, 0 pattern in, but not 1, 0, 1, 0 out. DEBUG 4 (no meaning)
7.4 Digital-to-analog (d/a) converter	Tests channel A, channel B, and RF AGC digital-to-analog circuits. **Note** Channel B checked only in ISB equipped radios. Tests are performed in three phases: a. All zeros are sent to the d/a's. Data returned from the analog-to-digital (a/d) is 0 for channel A, 0 for channel B, 0 for AGC, with d/a MSB 0 for channel A and channel B.

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
7.4 (Cont)	b. All ones are sent to the d/a's. Data returned from the a/d is F1H or greater for channel A, F1H or greater for channel B, F8 or greater for AGC, and d/a MSB is 0 for channel A and channel B. c. All zeros are sent to the d/a's. Data returned from the a/d is 0 for channel A, 0 for channel B, 0 for AGC, and d/a MSB is 0 for channel A and channel B. **Note** Data is checked in software as less than 10H for the zero case, and greater than DOH for the FXH case. BIT indicates: A3 FAULT DEBUG 2 004 DEBUG 3 0001H - failed reading a/d channel A 0002H - failed reading a/d channel B 0003H - failed reading a/d AGC DEBUG 4 (no meaning) **Note** A/d is on A2 assembly and signals are coming from A3 assembly. A3 FAULT DEBUG 2 043 DEBUG 3 0001H - zeros in, MSB = 0 0002H - ones in, MSB = 0 0003H - zeros in, MSB = 0 DEBUG 4 0001H - CHAN A D/A (U98) 0002H - CHAN B D/A (U97) 0003H - RF AGC D/A (U96)
7.5 Signal processor (U11, U12, U13, U14) BIT	Test each signal processor with internal test routines, external hardware, and external software. Test mode word is sent right after a signal processor reset. Filter chips U11, U12 are checked for an FFFFH response back to Control A2, then each signal processor responds with an ID code and test status information: 0100H ID and status for the I (U11) and Q (U12) filter; 0200H ID and status for AGC demod chip U13; and 0300H ID and status for ISB chip U14. Internal data ROM, serial in and out, and data RAM are checked in BIT. BIT indicates: A3 FAULT DEBUG 2 005 DEBUG 3 0001H - I channel filter, U11 DEBUG 4 (no meaning) DEBUG 3 0002H - Q channel filter, U12 DEBUG 4 (no meaning) DEBUG 3 0003H - I channel filter processor or associated components DEBUG 3 0004H - Q channel filter processor or associated components DEBUG 3 0005H - AGC processor or associated components DEBUG 3 0006H - ISB processor or associated components DEBUG 4 00XXH (where XX represents the test status bits.) Refer to following charts for I and Q channel filters, AGC, and ISB.

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
7.5 (Cont)	

HEXADECIMAL X=	TEST STATUS BITS B_7/B_3	B_6/B_2	B_5/B_1	B_4/B_0
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
A	1	0	1	0
B	1	0	1	1
C	1	1	0	0
D	1	1	0	1
E	1	1	1	0
F	1	1	1	1

I channel processor or associated components (DEBUG 3 is 0003H)

Note

X indicates a don't care state.

TEST STATUS BITS (fault = 1)

B_7	B_6	B_5	B_4	B_3	B_2	B_1	B_0		
X	X	X	X	X	X	X	1	RAM fault	Failure - U11
X	X	X	X	X	X	1	X	Data ROM fault	Failure - U11
X	X	1	X	X	X	X	X	Program trial execution fails	Failure - U11
X	X	X	X	1	X	X	X	Serial output does not clear	Failure - U11 or Serial Clock (SCK) missing
X	X	X	1	0	X	X	X	Serial input not present	Failure - Serial Output Request (SORQ) missing or bad loopback path (U27, U40)
X	X	X	0	0	1	X	X	Serial I/O fault	Failure - Bad loopback path (U27)
All remaining combinations									Failure - U11

Q channel processor or associated components (DEBUG 3 is 0004H)

TEST STATUS BITS (fault = 1)

B_7	B_6	B_5	B_4	B_3	B_2	B_1	B_0		
X	X	X	X	X	X	X	1	RAM fault	Failure - U12
X	X	X	X	X	X	1	X	Data ROM fault	Failure - U12
X	X	1	X	X	X	X	X	Program trial execution fails	Failure - U12
X	X	X	X	1	X	X	X	Serial output does not clear	Failure - U12 or Serial Clock (SCK) missing
X	X	X	1	0	X	X	X	Serial input not present	Failure - Serial Output Request (SORQ) missing or bad loopback path (U27, U40)
X	X	X	0	0	1	X	X	Serial I/O fault	Failure - Bad loopback path (U27)
All remaining combinations									Failure - U12

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
7.5 (Cont)	AGC processor or associated components (DEBUG 3 is 0005H) TEST STATUS BITS (fault = 1) B_7 B_6 B_5 B_4 B_3 B_2 B_1 B_0 X X X X X X X 1 — RAM fault — Failure - U13 X X X X X X 1 X — Data ROM fault — Failure - U13 X X X X 1 X X X — Serial output does not clear — Failure - U13 or Serial Clock (SCK) missing X X X 1 0 X X X — Serial input not present — Failure - Serial Output Request (SORQ) missing or bad loopback path (U40, U53) X X X 0 0 1 X X — Serial I/O fault — Failure - Bad loopback path (U53) All remaining combinations — Failure - U13 ISB processor or associated components (DEBUG 3 is 0006H) TEST STATUS BITS (fault = 1) B_7 B_6 B_5 B_4 B_3 B_2 B_1 B_0 X X X X X X X 1 — RAM fault — Failure - U14 X X X X X X 1 X — Data ROM fault — Failure - U14 X X X X 1 X X X — Serial output does not clear — Failure - U14 or Serial Clock (SCK) missing X X X 1 0 X X X — Serial input not present — Failure - Serial Output Request (SORQ) missing or bad loopback path (U40, U53) X X X 0 0 1 X X — Serial I/O fault — Failure - Bad loopback path (U53) All remaining combinations — Failure - U14
8. IF translator	Tests the intermediate frequency section of the IF/Audio A3 assembly and is accomplished by setting numbers into the input, through a special test path, then capturing the output data using the I and Q channel filter chips in a serial-to-parallel echo mode. BIT indicates: A3 FAULT DEBUG 2 — 006 — Failure - U11 or associated components DEBUG 3 — count = 123 DEBUG 4 — status word from U11 (< > 0100.H) A3 FAULT DEBUG 2 — 006 DEBUG 3 — status word from U11 (< > 0100H) DEBUG 4 — FFOO.H A3 FAULT DEBUG 2 — 007 — Failure - U12 or associated components DEBUG 3 — status word from U12 (< > 0100H) DEBUG 4 — (no meaning) A3 FAULT DEBUG 2 — 007 — Failure - U12 or associated components DEBUG 3 — status word from U12 (< > 0100H) DEBUG 4 — (no meaning) A3 FAULT DEBUG 2 — 008 — Failure - U11 or associated components DEBUG 3 — status word from U11 (< > 0100H) DEBUG 4 — (no meaning)

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
8. (Cont)	A3 FAULT DEBUG 2 009 — Failure - U12 or associated components DEBUG 3 status word from U12 (< > 0100H) DEBUG 4 (no meaning) **Note** The following tests write test patterns to the IF Translator to determine the operating status of the circuitry involved. The circuit components of the IF Translator have been grouped into functional areas to facilitate troubleshooting of the IF Translator. Common circuitry: U27, U29, U57, U66, U74, U80 I channel circuitry: U18, U23 thru U25, U30 thru U33A, U36 thru U38 Q channel circuitry: U1 thru U4, U6 thru U10, U17, U19 thru U21, U26, U33B Test inputs: INV INV = logic 0 (A3U34-5) I CARRY INV = logic 0 (A3U34-7) Q CARRY INV = logic 0 (A3U34-10) DATA = 00H (A3U16) A3 FAULT DEBUG 2 010 — I channel data not what was expected DEBUG 3 FF06H (data expected, if not received) DEBUG 4 (data received, < > FF06.H) A3 FAULT DEBUG 2 011 — Q channel data not what was expected DEBUG 3 FF83H (data expected, if not received) DEBUG 4 (data received, < > FF83.H) Test inputs: INV INV = logic 1 (A3U34-5) I CARRY INV = logic 1 (A3U34-7) Q CARRY INV = logic 0 (A3U34-10) DATA = 00H (A3U16) A3 FAULT DEBUG 2 012 — I channel data not what was expected DEBUG 3 007DH (data expected, if not received) DEBUG 4 (data received, < > 007D.H) A3 FAULT DEBUG 2 013 — Q channel data not what was expected DEBUG 3 0001H (data expected, if not received) DEBUG 4 (data received, < > 0001.H) Test inputs: INV INV = logic 1 (A3U34-5) I CARRY INV = logic 0 (A3U34-7) Q CARRY INV = logic 1 (A3U34-10) DATA = 10H (A3U16) A3 FAULT DEBUG 2 014 — I channel data not what was expected DEBUG 3 101DH (data expected, if not received) DEBUG 4 (data received, < > 101D.H)

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS		
8. (Cont)	A3 FAULT		
	DEBUG 2	015	Q channel data not what was expected
	DEBUG 3	101EH (data expected, if not received)	
	DEBUG 4	(data received, < > 101E.H)	
	Test inputs:	INV INV = logic 1 (A3U34-5) I CARRY INV = logic 0 (A3U34-7) Q CARRY INV = logic 1 (A3U34-10) DATA = 20H (A3U16)	
	A3 FAULT		
	DEBUG 2	016	I channel data not what was expected
	DEBUG 3	1FBDH (data expected, if not received)	
	DEBUG 4	(data received, < > 1FBD.H)	
	A3 FAULT		
	DEBUG 2	017	Q channel data not what was expected
	DEBUG 3	1FBEH (data expected, if not received)	
	DEBUG 4	(data received, < > 1FBE.H)	
	Test inputs:	INV INV = logic 1 (A3U34-5) I CARRY INV = logic 0 (A3U34-7) Q CARRY INV = logic 1 (A3U34-10) DATA = 40H (A3U16)	
	A3 FAULT		
	DEBUG 2	018	I channel data not what was expected
	DEBUG 3	C1FDH (data expected, if not received)	
	DEBUG 4	(data received, < > C1FD.H)	
	A3 FAULT		
	DEBUG 2	019	Q channel data not what was expected
	DEBUG 3	C1FEH (data expected, if not received)	
	DEBUG 4	(data received, < > C1FE.H)	
	Test inputs:	INV INV = logic 1 (A3U34-5) I CARRY INV = logic 0 (A3U34-7) Q CARRY INV = logic 1 (A3U34-10) DATA = 7FH (A3U16)	
	A3 FAULT		
	DEBUG 2	020	I channel data not what was expected
	DEBUG 3	FF83H (data expected, if not received)	
	DEBUG 4	(data received, < > FF83.H)	
	A3 FAULT		
	DEBUG 2	021	Q channel data not what was expected
	DEBUG 3	FF84H (data expected, if not received)	
	DEBUG 4	(data received, < > FF84.H)	
	Test inputs:	INV INV = logic 1 (A3U34-5) I CARRY INV = logic 0 (A3U34-7) Q CARRY INV = logic 0 (A3U34-10) DATA = 00H (A3U16)	

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS		
8. (Cont)	A3 FAULT		
	DEBUG 2	022	I channel data not what was expected
	DEBUG 3	0000H (data expected, if not received)	
	DEBUG 4	(data received, < > 0000.H)	
	A3 FAULT		
	DEBUG 2	023	Q channel data not what was expected
	DEBUG 3	0001H (data expected, if not received)	
	DEBUG 4	(data received, < > 0001.H)	
	Test inputs:	INV INV = logic 1 (A3U34-5) I CARRY INV = logic 0 (A3U34-7) Q CARRY INV = logic 0 (A3U34-10) DATA = 01H (A3U16)	
	A3 FAULT		
	DEBUG 2	024	I channel data not what was expected
	DEBUG 3	00FAH (data expected, if not received)	
	DEBUG 4	(data received, < > 00FA.H)	
	A3 FAULT		
	DEBUG 2	025	Q channel data not what was expected
	DEBUG 3	00FBH (data expected, if not received)	
	DEBUG 4	(data received, < > 00FB.H)	
	Test inputs:	INV INV = logic 1 (A3U34-5) I CARRY INV = logic 0 (A3U34-7) Q CARRY INV = logic 0 (A3U34-10) DATA = 02H (A3U16)	
	A3 FAULT		
	DEBUG 2	026	I channel data not what was expected
	DEBUG 3	01F4H (data expected, if not received)	
	DEBUG 4	(data received, < > 01F4.H)	
	A3 FAULT		
	DEBUG 2	027	Q channel data not what was expected
	DEBUG 3	01F5H (data expected, if not received)	
	DEBUG 4	(data received, < > 01F5.H)	
	Test inputs:	INV INV = logic 1 (A3U34-5) I CARRY INV = logic 0 (A3U34-7) Q CARRY INV = logic 0 (A3U34-10) DATA = 04H (A3U16)	
	A3 FAULT		
	DEBUG 2	028	I channel data not what was expected
	DEBUG 3	03E8H (data expected, if not received)	
	DEBUG 4	(data received, < > 03E8.H)	
	A3 FAULT		
	DEBUG 2	029	Q channel data not what was expected
	DEBUG 3	03E9H (data expected, if not received)	
	DEBUG 4	(data received, < > 03E9.H)	

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS		
8. (Cont)	Test inputs:	INV INV = logic 1 (A3U34-5) I CARRY INV = logic 0 (A3U34-7) Q CARRY INV = logic 0 (A3U34-10) DATA = 08H (A3U16)	
	A3 FAULT DEBUG 2 DEBUG 3 DEBUG 4	030 07D0H (data expected, if not received) (data received, < > 07D0.H)	I channel data not what was expected
	A3 FAULT DEBUG 2 DEBUG 3 DEBUG 4	031 07D1H (data expected, if not received) (data received, < > 07D1.H)	Q channel data not what was expected
	Test inputs:	INV INV = logic 1 (A3U34-5) I CARRY INV = logic 0 (A3U34-7) Q CARRY INV = logic 0 (A3U34-10) DATA = 20H (A3U16)	
	A3 FAULT DEBUG 2 DEBUG 3 DEBUG 4	032 1F40H (data expected, if not received) (data received, < > 1F40.H)	I channel data not what was expected
	A3 FAULT DEBUG 2 DEBUG 3 DEBUG 4	033 1F41H (data expected, if not received) (data received, < > 1F41.H)	Q channel data not what was expected
	Test inputs:	INV INV = logic 1 (A3U34-5) I CARRY INV = logic 0 (A3U34-7) Q CARRY INV = logic 0 (A3U34-10) DATA = 7FH (A3U16)	
	A3 FAULT DEBUG 2 DEBUG 3 DEBUG 4	034 FF06H (data expected, if not received) (data received, < > FF06.H)	I channel data not what was expected
	A3 FAULT DEBUG 2 DEBUG 3 DEBUG 4	035 FF07H (data expected, if not received) (data received, < > FF07.H)	Q channel data not what was expected
	Test inputs:	INV INV = logic 1 (A3U34-5) I CARRY INV = logic 0 (A3U34-7) Q CARRY INV = logic 0 (A3U34-10) DATA = 10H (A3U16)	
	A3 FAULT DEBUG 2 DEBUG 3 DEBUG 4	036 0FA0H (data expected, if not received) (data received, < > 0FA0.H)	I channel data not what was expected
	A3 FAULT DEBUG 2 DEBUG 3 DEBUG 4	037 0FA1H (data expected, if not received) (data received, < > 0FA1.H)	Q channel data not what was expected

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
9. RF Translator A6	A simple test of RF Translator A6 that uses the 12-MHz signal from Synthesizer A5, the 99.0- to 128.9-MHz vco, and a signal level monitor on the 3-MHz IF output. Test no 1 inputs: Variable injection, 111 MHz; mode, CW; test injection, 12 MHz on; and RF attenuation, 0 (no attenuation). BIT indicates: If Power Supply A4 failed: A4 FAULT DEBUG 2 001 DEBUG 3 test status C (refer to test 3) DEBUG 4 (no meaning) If Synthesizer A5 failed: A5 FAULT DEBUG 2 001 DEBUG 3 test status A (refer to test 4) DEBUG 4 (no meaning) If 2 MHz on IF/Audio A3 failed: A3 FAULT DEBUG 2 044 DEBUG 3 test status A (refer to test 4) DEBUG 4 (no meaning) If RF Translator A6 monitor indicates fault: A6 FAULT DEBUG 2 001 DEBUG 3 test status C (refer to test 3) DEBUG 4 (no meaning) If RF Translator A6 overload monitor indicates fault: A6 FAULT DEBUG 2 002 DEBUG 3 test status C (refer to test 3) DEBUG 4 (no meaning) Test no 2 inputs: Variable injection, 129 MHz; mode, CW; test injection, 12 MHz on; and RF attenuation, 255 (maximum attenuation). BIT indicates: If Power Supply A4 failed: A4 FAULT DEBUG 2 001 DEBUG 3 test status C (refer to test 3) DEBUG 4 (no meaning) If Synthesizer A5 failed: A5 FAULT DEBUG 2 001 DEBUG 3 test status A (refer to test 4) DEBUG 4 (no meaning)

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
9. (Cont)	If RF Translator A6 monitor indicates fault: A6 FAULT DEBUG 2 003 DEBUG 3 test status C (refer to test 3) DEBUG 4 (no meaning) If RF Translator A6 overload monitor indicates fault: A6 FAULT DEBUG 2 004 DEBUG 3 test status C (refer to test 3) DEBUG 4 (no meaning) **Note** Use normal troubleshooting techniques to identify failed components in the RF translator.
10. Pseudo-random number generator	The pseudorandom number generator (PRNG) circuit U47, U48, U58, located near the 3-MHz a/d, is used to generate a signal to be input into the a/d. The normal clock is disabled using the PRNG reset line. This allows the d/a MSB enable line to be used as the test clock source. The PRNG circuit is clocked one pulse at a time with the output (PRNG test) monitored after each clock pulse. BIT indications: A3 FAULT DEBUG 2 038 DEBUG 3 position in test (1 to 34) DEBUG 4 (no meaning)
11. End-to-end	Tests the signal path from RF Translator A6 through IF/Audio A3. A set of test frequencies are applied to the RF Translator A6 input stage and are detected at the audio outputs of IF/Audio A3. Test no 1 inputs: (No signal test.) RF GAIN, 255 (maximum attenuation); first injection, 99.0 MHz (produces signal at first IF); loopback, 1 (stops d/a activity); frequency, 1000.00 kHz to preselector. BIT indicates: If Power Supply A4 failed: A4 FAULT DEBUG 2 001 DEBUG 3 test status C (refer to test 3) DEBUG 4 (no meaning) If Synthesizer A5 failed: A5 FAULT DEBUG 2 001 DEBUG 3 test status A (refer to test 4) DEBUG 4 (no meaning) If IF/Audio A3 failed (2-MHz clock): A3 FAULT DEBUG 2 044 DEBUG 3 test status A (refer to test 4) DEBUG 4 (no meaning) If IF/Audio A3 failed (signal path): A3 FAULT DEBUG 2 041 DEBUG 3 00001H DEBUG 4 00XX.H (where XX equals digital signal path (DSP) status info)

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
11. (Cont)	

HEXADECIMAL	TEST STATUS BITS			
X =	B_7/B_3	B_6/B_2	B_5/B_1	B_4/B_0
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
A	1	0	1	0
B	1	0	1	1
C	1	1	0	0
D	1	1	0	1
E	1	1	1	0
F	1	1	1	1

DSP status:

B_0 = PRNG test
B_1 = CH A performance monitor*
B_2 = CH B performance monitor*
B_3 = NA
B_4 = NA
B_5 = Chip select detector
B_6 = Dynamic signal test detector
B_7 = Shift register output detector

*0 = signal present; 1 = no signal present

Test no 2 inputs: (CW detection, tone in channel A only) mode, CW; first injection, 99.0 MHz; bfo, 1000 Hz; loopback, 0 (normal d/a activity); frequency, 2000.00 kHz to preselector. BIT indicates:

If Power Supply A4 failed:
A4 FAULT
DEBUG 2 001
DEBUG 3 test status C (refer to test 3)
DEBUG 4 (no meaning)

If Synthesizer A5 failed:
A5 FAULT
DEBUG 2 001
DEBUG 3 test status A (refer to test 4)
DEBUG 4 (no meaning)

If 2 MHz on IF/Audio A3 failed:
A3 FAULT
DEBUG 2 044
DEBUG 3 test status A (refer to test 4)
DEBUG 4 (no meaning)

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
11. (Cont)	If signal path on IF/Audio A3 failed: A3 FAULT DEBUG 2 041 DEBUG 3 0001H DEBUG 4 DSP status (refer to test 11 (no signal test, test 1 inputs, DEBUG 2 = 041)) (B1 = 0; B2 = 1 is correct) If signal path on RF Translator A6 failed: A6 FAULT DEBUG 2 005 DEBUG 3 0002H DEBUG 4 test status C (refer to test 3) Test no 3 inputs: (USB detection, tone in channel A only) mode, USB; first injection, ≈98.0 MHz; bfo, 0; frequency, 3000.00 kHz to preselector. BIT indicates: If Power Supply A4 failed: A4 FAULT DEBUG 2 001 DEBUG 3 test status C (refer to test 3) DEBUG 4 (no meaning) If Synthesizer A5 failed: A5 FAULT DEBUG 2 001 DEBUG 3 test status A (refer to test 4) DEBUG 4 (no meaning) If 2-MHz clock on IF/Audio A3 failed: A3 FAULT DEBUG 2 044 DEBUG 3 test status A (refer to test 4) DEBUG 4 (no meaning) If signal path on IF/Audio A3 failed: A3 FAULT DEBUG 2 041 DEBUG 3 0003H DEBUG 4 DSP status (refer to test 11 (no signal test, test 1 inputs, DEBUG 2 = 041)) (B1 = 0; B2 = 1 is correct) If signal path on RF Translator A6 failed: A6 FAULT DEBUG 2 005 DEBUG 3 0003H DEBUG 4 test status C (refer to test 3) Test no 4 inputs: (LSB detection, tone in channel B only) mode, LSB; first injection, ≈99.0 MHz; bfo, O; frequency, 4000.00 kHz to preselector. BIT indicates: If Power Supply A4 failed: A4 FAULT DEBUG 2 001 DEBUG 3 test status C (refer to test 3) DEBUG 4 (no meaning)

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
11. (Cont)	If Synthesizer A5 failed: A5 FAULT DEBUG 2 001 DEBUG 3 test status A (refer to test 4) DEBUG 4 (no meaning) If 2-MHz clock on IF/Audio A3 failed: A3 FAULT DEBUG 2 044 DEBUG 3 test status A (refer to test 4) DEBUG 4 (no meaning) If signal path on IF/Audio A3 failed: A3 FAULT DEBUG 2 041 DEBUG 3 0004H DEBUG 4 DSP status (refer to test 11 (no signal test, test 1 inputs, DEBUG 2 = 041)) If signal path on RF Translator A6 failed: A6 FAULT DEBUG 2 005 DEBUG 3 0004H DEBUG 4 test status C (refer to test 3) Test no 5 inputs: (ISB, tone in channel B only) mode, ISB; first injection, ≈99.0 MHz; frequency, 5000.00 kHz to preselector. BIT indicates: If signal is present in both channels: A3 FAULT DEBUG 2 041 DEBUG 3 0007H DEBUG 4 (no meaning) If no signal is present at output of RF Translator A6: A6 FAULT DEBUG 2 005 DEBUG 3 0005H DEBUG 4 test status C (refer to test 3) If signal is not present at channel B, but is present in channel A: A3 FAULT DEBUG 2 041 DEBUG 3 0005H DEBUG 4 DSP status (refer to test 11 (no signal test, test 1 inputs, DEBUG 2 = 041)) TEST no 6 inputs: (ISB tone in channel A only) mode, ISB; first injection, ≈98.0 MHz; frequency, 6000.00 kHz to preselector. BIT indicates: If signal is present in both channels: A3 FAULT DEBUG 2 041 DEBUG 3 0008H DEBUG 4 (no meaning)

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
11. (Cont)	If no signal present at output of RF Translator A6: A6 FAULT DEBUG 2 005 DEBUG 3 0006H DEBUG 4 test status C (refer to test 3) If signal is not present at channel A, but is present in channel B IF output: A3 FAULT DEBUG 2 041 DEBUG 3 0006H DEBUG 4 DSP status (refer to test 11 (no signal test, test 1 inputs, DEBUG 2 = 041))
12. Low-pass filter	Tests the channel A audio low-pass filter (U108, 109, 110) on IF/Audio A3. Test consists of generating three tones using I and Q filter signal processors U11, U12 as the signal source and the bfo capability of AGC/demodulator signal processor U13. The three tones of 300, 3000, and 7000 Hz are chosen as in-band, near the corner, and stop-band values. The tones are audible through the front panel speaker and are less than 1 second in duration. Level detection is accomplished using the a/d converter input on Control A2. BIT indicates: If channel A test fails with 300-Hz bfo: A3 FAULT DEBUG 2 039 DEBUG 3 0001H DEBUG 4 0000.H thru 00XX.H (where XX equals value from a/d) (A relative value of less than 0015.H = fault) If channel A test fails with 3000-Hz bfo: A3 FAULT DEBUG 2 039 DEBUG 3 0002H DEBUG 4 0000.H thru 00XX.H (where XX equals value from a/d) (A value not within ±16.H of above value = fault) If channel A test fails with 7000-Hz bfo: A3 FAULT DEBUG 2 039 DEBUG 3 0003H DEBUG 4 0000.H thru 00XX.H (where XX equals value from a/d) (A relative value of greater than 0015.H = fault)
13. Squelch	Tests squelch circuits (Q5, U93, U101, U102, U103) on IF/Audio A3. I and Q filter signal processors U11, U12 are the signal source, while the bfo of AGC/demodulator signal processor U13 provides the audio tones. Two tones, 600 and 2500 Hz, are used to test the circuits at different values of squelch threshold. BIT indicates: If squelch monitor is not zero: A3 FAULT DEBUG 2 040 DEBUG 3 0000H DEBUG 4 (no meaning) If squelch time wrong at threshold (00): A3 FAULT DEBUG 2 040 DEBUG 3 0001H DEBUG 4 (no meaning)

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
13. (Cont)	If squelch time wrong at threshold (08): FAILED A3 DEBUG 2 040 DEBUG 3 0002H DEBUG 4 (no meaning) If squelch time wrong at threshold (40): A3 FAULT DEBUG 2 040 DEBUG 3 0003H DEBUG 4 (no meaning)
14. Front Panel A1	Test of the interconnection between Control A2 and Front Panel A1. The following test routes the front panel control data (FPA0 - FPA2, FPSTR1) through buffer circuit A1A1U17 to front panel data lines, providing verification of the control and data lines. BIT indicates: Test with 7FH written to control (A2U2): Failures - A2U2, A2U5, A2U19 A1 FAULT DEBUG 2 001 DEBUG 3 007FH (data sent, if not received) DEBUG 4 (data received, < > 007F.H) Test with C0H written to control (A2U2): Failures - A1A1U17, front panel interface (FPA0 - FPA2, FPD0 - FPD7) A1 FAULT DEBUG 2 002 DEBUG 3 00C0H (data sent, if not received) DEBUG 4 (data received, < > 00C0.H) Test with C1H written to control (A2U2): A1 FAULT DEBUG 2 002 DEBUG 3 00C1H (data sent, if not received) DEBUG 4 (data received, < > 00C1.H) Test with C2H written to control (A2U2): A1 FAULT DEBUG 2 002 DEBUG 3 00C2H (data sent, if not received) DEBUG 4 (data received, < > 00C2.H) Test with C4H written to control (A2U2): A1 FAULT DEBUG 2 002 DEBUG 3 00C4H (data sent, if not received) DEBUG 4 (data received, < > 00C4.H)
15. Display	Tests display assembly A1A1 on Front Panel A1. All segments are illuminated and flashed at approximately a one-per-second rate. The FAULT indicator is then lit with the display reading FAULT LED ON followed by the FAULT indicator being turned off and the display reading FAULT LED OFF. Failures are detected by the operator monitoring the display during this test.
16. Address	Test displays the baud rate information from Control A2 BAUD = YYYY where the Y's correspond to the four switches on Control A2 (A2U39).

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
16. (Cont)	**Note** Baud rate switch (A2U39) settings are shown in the chart. Test then displays the remote address as four bits. ADDRESS = XXXX Where the X's correspond to the four hard line inputs on the rear of the receiver. **Note** Address line inputs correspond to the settings shown in the chart.

BAUD RATE

BAUD RATE	HEX DIGIT			
	SW4	SW3	SW2	SW1
75	0	0	0	0
110	0	0	0	1
150	0	0	1	0
300	0	0	1	1
600	0	1	0	0
800	0	1	0	1
1 200	0	1	1	0
1 600	0	1	1	1
1 829	1	0	0	0
1 920	1	0	0	1
2 400	1	0	1	0
3 200	1	0	1	1
4 800	1	1	0	0
9 600	1	1	0	1
12 800	1	1	1	0
19 200	1	1	1	1
A2U39 SWITCH NO	4	3	2	1

Note: 1 = open circuit; 0 = closed (ground). A2U39 switch 1 is nearest the rear of the receiver.

ADDRESS

ADDRESS	HEX DIGIT			
	ADDR4	ADDR3	ADDR2	ADDR1
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1
RS-232	12	11	10	9
RS-422	18	17	16	15
J6 pin no				

Note: 1 = open circuit; 0 = ground

Table 5-2. Fault Isolation (Cont).

TEST	DESCRIPTION AND INDICATIONS
17. Keypad	This procedure tests the keypad on Front Panel A1 assembly. The display prompts the operator to press any key. **Note** Do not press the NORM key as this will abort the BIT sequence. Do not press the ENTER key until ready to advance to the next keyboard test. CHAN, 5, TUNE +/−, 6, MODE BFO, AUX/•, AGC FREQ, GROUP/7, BW PRGM/1, DWELL/8, AUDIO STORE/2, 9, CNTL TEST/3, 0 SCAN/4, DIAL When any of the above keys are pressed, the display will read "KEY = XXXX" with XXXX being the name of the key that is pressed. When all keys have been checked, press the ENTER key to proceed to the next test. The dial control is now tested as follows: rotate the dial control clockwise noting that the numbers increase. Rotate the dial control counterclockwise and note that the numbers decrease. When the dial test is completed, press the ENTER key to proceed to the next test. The SQL control is now tested as follows: rotate the SQL control clockwise noting that the numbers increase from 0 (fully counterclockwise) to ≈255 (fully clockwise). Between the end stops, the display will indicate between 0 and ≈255. When SQL control test is completed, press the ENTER key to proceed the next test. The RF GAIN control is now tested as follows: rotate the RF GAIN control clockwise noting that the numbers increase from 0 (fully counterclockwise) to ≈255 (fully clockwise). Between the end stops, the display will indicate between 0 and ≈255. When RF GAIN control test is completed, press the ENTER key to proceed to the next test. The NOISE BLANKER control is now tested as follows: rotate the NOISE BLANKER control clockwise noting that the numbers increase from 0 (fully counterclockwise) to ≈255 (fully clockwise). Between the end stops, the display will indicate between 0 and ≈255. When NOISE BLANKER control test is completed, press the ENTER key to proceed. The display will indicate 'BIT PASSED' and the receiver will return to normal operation.

Table 5-3. Small End-to-End Test.

TEST	DESCRIPTION AND INDICATIONS
Small end-to-end	**Note** This test is a shortened form of the end-to-end test performed in the operator-initiated testing (Table 5-2, Fault Isolation, test 11). It is used only in power-on bit testing. Tests the signal path from RF Translator A6 through IF/Audio A3. Test no 1 inputs: (No signal test.) RF GAIN, 255 (maximum attenuation); first injection, 99.0 MHz (produces signal at first IF); loopback, 1 (stops d/a activity); frequency, 1000.00 kHz to preselector. BIT indicates: If Power Supply A4 failed: A4 FAULT DEBUG 2 001 DEBUG 3 test status C (refer to Table 5-2, test 3) DEBUG 4 (no meaning)

Table 5-3. Small End-to-End Test (Cont).

TEST	DESCRIPTION AND INDICATIONS
Small-end-to-end (Cont)	If Synthesizer A5 failed: A5 FAULT DEBUG 2 001 DEBUG 3 test status A (refer to Table 5-2, test 4) DEBUG 4 (no meaning) If IF/Audio A3 failed (2-MHz clock): A3 FAULT DEBUG 2 044 DEBUG 3 test status A (refer to Table 5-2, test 4) DEBUG 4 (no meaning) If IF/Audio A3 failed (signal path): A3 FAULT DEBUG 2 041 DEBUG 3 0001H DEBUG 4 DSP status (refer to Table 5-2, test 11 (no signal test, test 1 inputs, DEBUG 2 = 041)) Test no 2 inputs: (CW detection) mode, CW; first injection, 99.0 MHz; bfo, 1000 Hz; loopback, 0 (normal d/a activity); audio, off. BIT indicates: If Power Supply A4 failed: A4 FAULT DEBUG 2 001 DEBUG 3 test status C (refer to Table 5-2, test 3) DEBUG 4 (no meaning) If Synthesizer A5 failed: A5 FAULT DEBUG 2 001 DEBUG 3 test status A (refer to Table 5-2, test 4) DEBUG 4 (no meaning) If IF/Audio A3 failed (2-MHz clock): A3 FAULT DEBUG 2 044 DEBUG 3 test status A (refer to Table 5-2, test 4) DEBUG 4 (no meaning) If signal path on IF/Audio A3 failed: A3 FAULT DEBUG 2 041 DEBUG 3 0002H DEBUG 4 DSP status (refer to Table 5-2, test 11 (no signal test, test 1 inputs, DEBUG 2 = 041)) If signal path on RF Translator A6 failed: A6 FAULT DEBUG 2 005 DEBUG 3 0002H DEBUG 4 test status C (refer to Table 5-2, test 3)

Table 5-4. Continuous Testing.

TEST	DESCRIPTION AND INDICATIONS
1. CPU watchdog	Monitors CPU operation. If the CPU fails, the FAULT lamp on Front Panel A1 lights and the status lamp on Control A2 is turned off. (Check +5 V dc on Control A2 and outputs at A2U12-10, -11, normal outputs are U12-10 = 1, U12-11 = 0).
2. Synthesizer A5	Reads the Synthesizer A5 fault monitors, detectors, and comparators, 48-MHz loss-of-lock, loop one loss-of-lock, loop two loss-of-lock, loop one level, 96-MHz level, 12-MHz level, and 48-MHz level. Failure is indicated by front panel FAULT lamp being lit and BIT indicates: A5 FAULT DEBUG 2 001 DEBUG 3 test status A (refer to Table 5-2, test 4) DEBUG 4 (no meaning)
3. SORQ signal	Checks that normal digital signal processing activity is taking place on IF/Audio A3 card. If bite monitor A3U73-9 did not reset: A3 FAULT DEBUG 2 002 DEBUG 3 0008H DEBUG 4 (no meaning) If SORQ signal is not present at A3U65-13: A3 FAULT DEBUG 2 002 DEBUG 3 0006H DEBUG 4 (no meaning)
4. Preselector overload	Checks for preselector overload condition. If preselector is overloaded, overload (OVLD) is indicated on Front Panel A1 status display. FAULT lamp on front panel is not turned on for an overload condition. (When overload is removed, OVLD indication is removed).
5. RF Translator A6 overload	Checks for RF Translator A6 overload condition. If RF Translator A6 is overloaded, overload (OVLD) is indicated on Front Panel A1 status display. FAULT lamp on front panel is not turned on for an overload condition. (When overload is removed, OVLD indication is removed).
6. Power supply A4	Reads Power Supply A4 monitors and comparators on the +15-V dc and −15-V dc power lines. Failure is indicated by Front Panel A1 FAULT lamp being lit and BIT indicates: A4 FAULT DEBUG 2 001 DEBUG 3 test status C (refer to Table 5-2, test 3) DEBUG 4 (no meaning)
7. Preselector fault	Checks if preselector fault is present. If preselector fails, Front Panel A1 FAULT lamp lights and BIT indicates: PRESELECTOR FAULT (When preselector fault is removed, fault indication is cleared by initiating built-in test (BIT).)

5.2 SECOND-LINE MAINTENANCE

5.2.1 General. Second-line maintenance of R-5099/U, R-5099A/U, and R-5104/GRC-508 Radio Receiver consists of 1) preventive maintenance, 2) performance testing, and 3) alignment/adjustments. Second-line maintenance is limited to those tests and repairs that can be accomplished in the field using standard test equipment.

Caution

This equipment contains electrostatic discharge sensitive (ESDS) devices. Special handling methods and materials must be utilized to prevent equipment damage.

Note

When replacing Synthesizer A5 or RF Translator A6 modules, retain the contact fingers protective covers from the replacement modules to use in shipment of the defective module. Refer to paragraph 2.8.

5.2.2 Test Equipment and Tools. Refer to Table 5-5 for a list of test equipment and tools required to perform second-line maintenance on the receivers.

5.2.3 Preventive Maintenance. No periodic or preventive maintenance is required for the receiver.

5.2.4 Performance Testing. Performance testing at the second-line maintenance level includes only testing that can be accomplished using standard test equipment and a minimum amount of disassembly (removal of dust covers). This testing includes accessible test points, input and output voltage and signal levels, and a minimum performance test of the assembled unit.

Table 5-5. Second-Line Maintenance, Test Equipment and Tools.

ITEM	MINIMUM SPECIFICATIONS	REPRESENTATIVE TYPE
Digital multimeter		Fluke 8600A
RF millivoltmeter		Boonton 92C
50-ohm probe for millivoltmeter		Boonton 91-8B
High-impedance probe for millivoltmeter		Boonton 91-6C
Spectrum analyzer		Hewlett-Packard 8568A
RF signal generator	0.5 to 30 MHz	Hewlett-Packard 8640B
RF signal generator	10 to 500 kHz	Hewlett-Packard 3325
6-dB attenuator		Measurements 800-P-3
Distortion analyzer		Hewlett-Packard 334A
Oscilloscope		Tektronix 465M
Frequency counter		Fluke 7260
60-dB variable attenuator		Tektronix 2701
Phone plug		
10-kilohm resistor		
600-ohm resistor (3 required)		
8-ohm, 2-watt resistor		

5.2.4.1 Test Points, and Voltage and Signal Levels. Accessible test points, and voltage and signal levels are presented in Table 5-6. An audio voltmeter, digital voltmeter, RF voltmeter, and appropriate loading are all that is required to make these checks. The test points along with the results of the minimum performance can be used to more readily define any failures/faults in receivers.

Note

If a failure is detected during the tests listed in Table 5-7, then those modules which are most suspect, listed at the beginning of each test, should be replaced.

5.2.4.2 Minimum Performance Test

a. Perform test setup of Figure 5-1.
b. Set power source and test equipment power to on.
c. Perform minimum performance test of Table 5-7.

Note

Should it be necessary to disconnect the signal generator from the receiver, the receiver input must be terminated with 50 ohms.

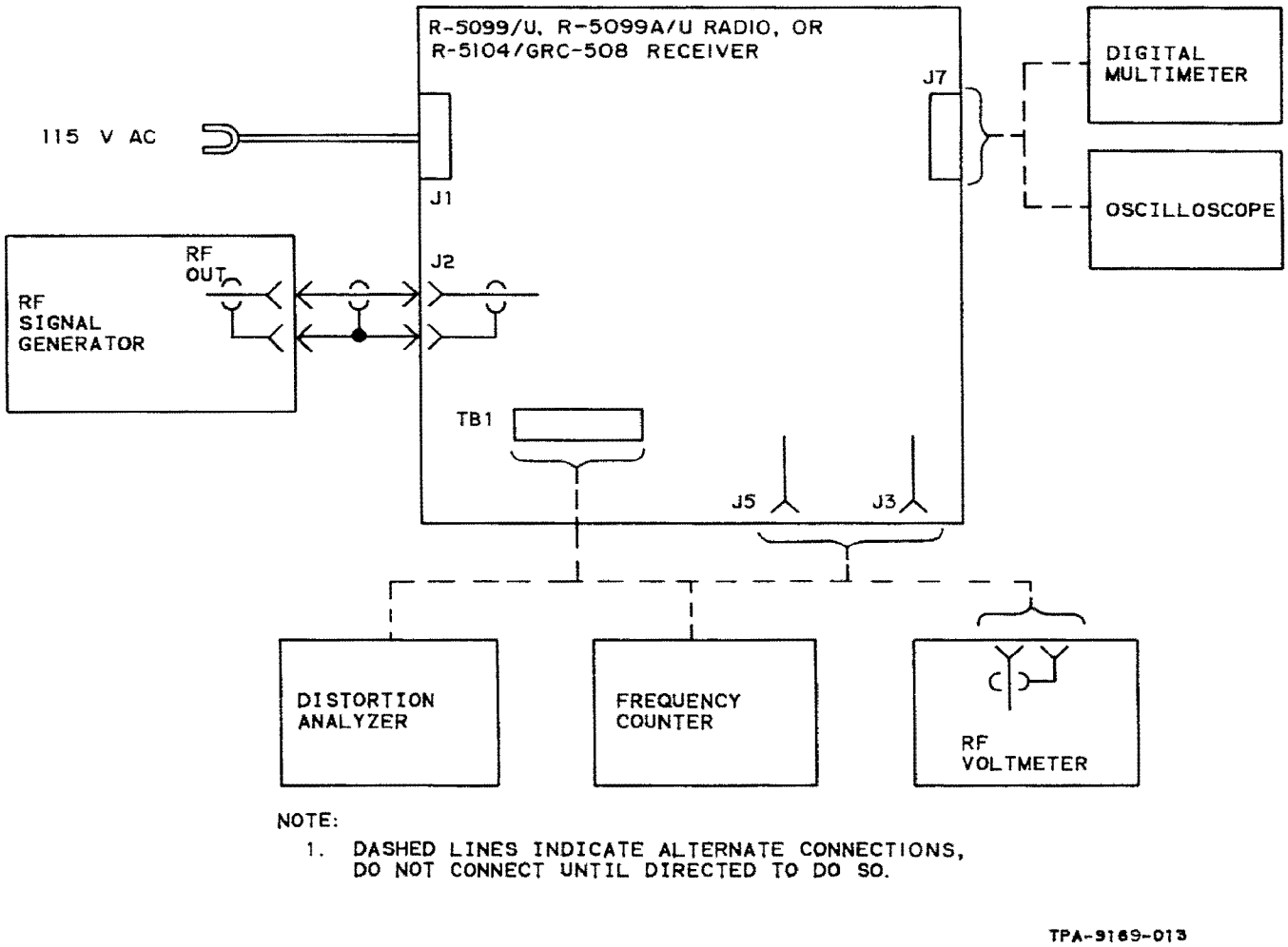


Figure 5-1 Minimum Performance Test, Test Setup

Table 5-6. Test Points, and Voltage and Signal Levels.

CARD/MODULE	TEST POINT	FUNCTION	SIGNAL, DESCRIPTION
IF/Audio A3	TP1	3-MHz IF input to a/d converter U87	
	TP2	Channel A d/a output	
	TP3	Channel B d/a output	
	TP4	Channel A filtered audio	
	TP5	Channel B filtered audio	
	TP6	Channel A performance monitor	
	TP7	Channel B performance monitor	
	TP8	U87 voltage	−5 V dc
	TP9	Speaker audio, source	
	TP10	Speaker audio amplifier input	
Synthesizer A5	TP1	Vco control voltage	
	TP2	Loop 2 output	144.100 00 to 144.109 99 MHz in 10-Hz steps, −5 dBm ±4 dB
	TP3	Loop 2 vco control voltage	6.0 V dc nominal
	TP4	Loop 2 vco output	10.000 to 10.999 MHz in 1-kHz steps
	TP5	+12 V dc reg	+12 ±0.25 V dc
	TP6	+5.2 V dc reg	+5.2 ±0.05 V dc
	TP7	−12 V dc reg	−12 ±0.25 V dc
	J1	Reference standard output (0.1 MHz)	100-kHz, 0-dBm ±2-dB nominal output into 50 ohms
	J2	Reference standard input (0.1 MHz)	100-kHz, −10- to +10-dBm, 50-ohm input
	P3	12 MHz to LF converter	12.0-MHz, 11-dBm ±2-dB output into 50 ohms
	P4	96-MHz injection output	96.0-MHz, 13-dBm ±3-dB output into 50 ohms
	P5	Variable injection output	99.5- to 128.999 99-MHz, 16-dBm +4-dB, −3-dB output into 50 ohms
	P6	48-MHz clock output	48.0-MHz, 10-dBm ±3-dB output into 50 ohms
RF Translator A6	TP1	3 MHz to noise blanker	
	TP2	Noise blanker output pulse	400- to 600-microsecond pulse width
	J1	IF monitor output	3.0-MHz IF, −20-dBm nominal output into 50 ohms
	J2	96-MHz injection input	
	J3	RF input (receive antenna)	50 ohms, 14-kHz to 29.999 99-MHz receive input
	P4	Variable injection input	
	P5	12-MHz input to LF converter	

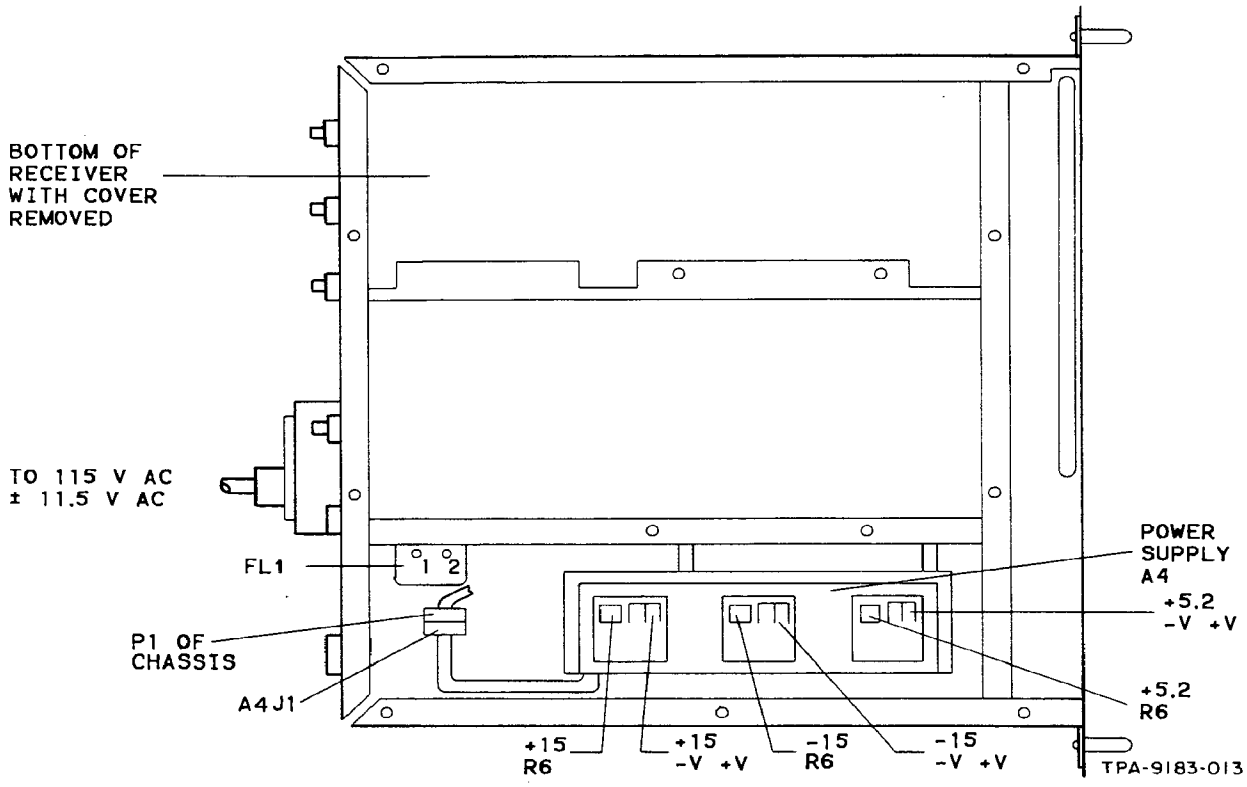


Figure 5-2 Power Supply Test Setup

Table 5-7. Minimum Performance Test.

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
Note It is recommended that front of receiver be raised approximately 2 inches from bench top in order to permit free air flow			
1. Built-in test	Perform tests of paragraph 5.1.2.3 (this test checks general overall operation of receiver).		Replace module identified by BIT.
2. Power Supply A4 voltage tests	a. Remove bottom cover from receiver.		
	b. Disconnect jack A4J1 from P1 on chassis. Refer to Figure 5-2.		
	c. Turn receiver PWR switch to ON.		
	d. Using a digital voltmeter, measure ac voltage between pin 1 and pins 2, 3, or 4 of P1 of chassis.	135 ±15 V ac	Replace fuse in J1, check operation of FL1 and components L4, L5, C1 thru C4 of line filter (replace as necessary), or replace J1 and wiring to P1.

Table 5-7. Minimum Performance Test (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
2. (Cont)	e. Turn receiver PWR switch to OFF. Plug A4J1 into P1.		
	f. Turn receiver PWR switch to ON.		
	g. Using a digital voltmeter, measure voltage on −V and +V terminals of Power Supply A4 circuit board closest to rear of receiver.	+15 ±0.1 V dc	Adjust R6 on same board as terminals for correct reading. Refer to paragraph 5.2.5.1. If correct reading is unattainable, replace Power Supply A4.
	h. Using a digital voltmeter, measure voltage on −V and +V terminals on the middle circuit board of Power Supply A4.	−15 ±0.1 V dc	Adjust R6 on same board as terminals for correct reading. Refer to paragraph 5.2.5.1. If correct reading is unattainable, replace Power Supply A4.
	j. Using a digital voltmeter, measure the voltage on −V and +V terminals of Power Supply A4 circuit board closest to front of receiver.	+5.2 ±0.05 V dc	Adjust R6 on same board as terminals for correct reading. Refer to paragraph 5.2.5.1. If correct reading is unattainable, replace Power Supply A4.
3. Control outputs	**Note** This test applicable only with preselector port installed, R-5099A/U Radio Receiver, pn 622-6577-001.		
	a. Set receiver to 6666.66 kHz. Refer to Figure 5-1.		
	Note To perform logic measurements, apply +5 V dc through a 10-kilohm pullup resistor to the pin being measured (per preselector control output chart).		
	b. Using a multimeter, measure 1's and 0's per preselector control output chart.	Refer to chart below.	Replace Control A2.
	c. Repeat steps a and b at each of the following frequencies: 10 000.00 kHz 29 999.99 kHz	Refer to chart below.	

Table 5-7. Minimum Performance Test (Cont).

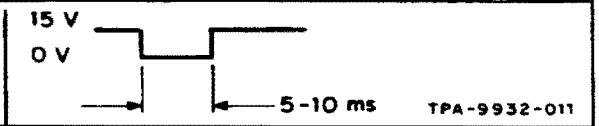
<table>
<tr><th>TEST</th><th>PROCEDURE</th><th>NORMAL INDICATION</th><th>IF INDICATION IS ABNORMAL</th></tr>
<tr><td>3. (Cont)</td><td>PRESELECTOR CONTROL OUTPUT CHART
Note
Logic 1 = +5 V dc; Logic 0 = 0 V dc
<table>
<tr><th>FREQUENCY (kHz)</th><th>10 MHz</th><th>1 MHz</th><th>100 kHz</th><th>10 kHz</th><th>1 kHz</th></tr>
<tr><td></td><td>2 1</td><td>8 4 2 1</td><td>8 4 2 1</td><td>8 4 2 1</td><td>8 4 2 1</td></tr>
<tr><td>J7 PIN NO</td><td>36 17</td><td>35 16 34 15</td><td>33 14 32 13</td><td>31 12 30 11</td><td>29 10 28 9</td></tr>
<tr><td>6 666.00</td><td>0 0</td><td>0 1 1 0</td><td>0 1 1 0</td><td>0 1 1 0</td><td>0 1 1 0</td></tr>
<tr><td>10 000.00</td><td>0 1</td><td>0 0 0 0</td><td>0 0 0 0</td><td>0 0 0 0</td><td>0 0 0 0</td></tr>
<tr><td>29 999.00</td><td>1 0</td><td>1 0 0 1</td><td>1 0 0 1</td><td>1 0 0 1</td><td>1 0 0 1</td></tr>
</table>
d. Using an oscilloscope with a 10-kilohm pullup resistor to +15 V dc, measure tune start pulse at J7-26.</td><td> 
</td><td></td></tr>
<tr><td>4. Control inputs</td><td>Note
This test applicable only with preselector port installed, R-5099A/U Radio Receiver, pn 622-6577-001.
a. Apply +15 V dc through a 1-kilohm resistor to J7-8.
b. Remove +15 V dc from J7-8.
c. Depress the "0" key.
d. Initiate TEST.
e. Apply +15 V dc through a 1-kilohm resistor to J7-27.
f. Remove +15 V dc from J7-27.</td><td>FAULT lamp lights.
FAULT lamp remains lit.
PRESEL FLT and fault codes are displayed.
FAULT lamp goes out.
OVLD display is indicated.
OVLD display goes out.</td><td>Replace Control A2.</td></tr>
<tr><td>5. Receiver mute</td><td>a. Set receiver to 5000.00 kHz, USB mode, AGC-FAST, and RF GAIN at full cw.
b. Set AUDIO control to NORM.
c. Set RF signal generator for 5.001 00 MHz and 1 mV rms.</td><td>Note audible tone in speaker.</td><td>Replace Control A2 or IF/Audio A3.</td></tr>
</table>

Table 5-7. Minimum Performance Test (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
5. (Cont)	d. Apply a ground to TB1-14. e. Remove ground from TB1-14.	Note that audio is muted. Note that audio returns. **Note** When mute is removed, audio is delayed by not more than 250 ms. Using an oscilloscope at the audio output, this delay can be measured.	
6. Remote control	a. Set CNTL switch to REMOTE. b. Press the following keys on front panel: CHAN TEST BFO DIAL FREQ TUNE NORM MODE PRGM AGC STORE BW c. Rotate the following controls on front panel: RF GAIN NOISE BLANKER SQUELCH Dial control d. Set CNTL switch to LOCAL. **Note** To check remote operation using a remote control or processor, perform remote operator-initiated testing, paragraph 5.1.2.4.	Note that Front Panel A1 functions do not change. Note that Front Panel A1 functions do not change.	Replace Front Panel A1 or Control A2.
Note In CW and SSB sensitivity checks, signal generator frequency may be adjusted to obtain peak passband response. Should it be necessary to disconnect the signal generator from the receiver, the receiver input must be terminated with 50 ohms.			
7. Sensitivity	a. Set receiver to 14.00 kHz, USB mode, AGC-OFF, and RF GAIN at full cw. b. Set RF signal generator for 15.00 kHz, RF output set to off. c. Using audio voltmeter with 600-ohm load, measure and record output between TB1-4 and -6.	Reference	

Table 5-7. Minimum Performance Test (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
7. (Cont)	d. Set RF signal generator RF output to on and to −105 dBm.		
	e. Measure output between TB1-4 and -6.	NLT 10 dB greater than reference in step c	Replace in order RF Translator A6, Synthesizer A5, and IF/Audio A3.
	f. Repeat steps a thru e with receiver set at 250.00 kHz and the RF signal generator set at 251.00 kHz.	Same as steps a thru e	
	g. Set receiver to 500.00 kHz.		
	h. Set RF signal generator for 0.501 MHz, RF output set to off.		
	j. Measure output between TB1-4 and -6.	Reference	
	k. Set RF signal generator RF output to on and to −115 dBm.		
	m. Measure output between TB1-4 and -6.	NLT 10 dB greater than reference in step j	
	n. Repeat steps g thru k with receiver set at the following frequencies and the RF signal generator set at 1 kHz above receiver frequency. 1 600.00 kHz 4 000.00 kHz 17 600.00 kHz 29 900.00 kHz	Same as steps g thru m	
	p. Set receiver to 4000.00 kHz, AM mode, AGC-FAST, RF GAIN at full cw, and BW to 6 kHz.		
	q. Set RF signal generator for 4.000 00 MHz, RF output set to on, modulated with 1000 Hz at 30%, output level at −100 dBm.		
	r. Measure output between TB1-4 and -6. Set reference level on distortion analyzer.	Reference	
	s. Using distortion analyzer, null out the 1000-Hz signal and measure the noise level.	NLT 10 dB below reference in step r	
	t. Set receiver to 22 000.00 kHz, CW mode, BFO at 1.0 kHz, AGC-OFF, RF GAIN at full cw, and BW to 1 kHz.		
	u. Set RF signal generator for 22.000 00 MHz, RF output set to off.		
	v. Measure output between TB1-4 and -6.	Reference	

Table 5-7. Minimum Performance Test (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
7. (Cont)	w. Set RF signal generator RF output to on and to −118 dBm, unmodulated.		
	x. Measure output between TB1-4 and -6.	NLT 10 dB greater than reference in step v	
	Note Steps y thru ag applicable only to R-5099A/U Radio Receiver, pn 622-6577-001.		
	y. Set receiver to 4000.00 kHz, ISB mode, AGC-OFF, and RF GAIN at full cw.		
	z. Set RF signal generator for 4.001 00 MHz, RF output set to off.		
	aa. Measure output between TB1-4 and -6.	Reference	
	ab. Set RF signal generator RF output to on and to −115 dBm.		
	ac. Measure output between TB1-4 and -6.	NLT 10 dB greater than reference in step aa.	
	ad. Set RF signal generator for 3.999 00 MHz, RF output set to off.		
	ae. Using audio voltmeter with 600-ohm load, measure output between TB1-8 and -10.	Reference	
	af. Set RF signal generator RF output to on and to −115 dBm.		
	ag. Measure output between TB1-8 and -10.	NLT 10 dB greater than reference in step ae.	
8. Gain	a. Set receiver to 14.00 kHz, USB mode, AGC-FAST, and RF GAIN at full cw.		
	b. Set RF signal generator for 15.00 kHz at −90 dBm.		
	c. Using audio voltmeter with 600-ohm load, measure output between TB1-4 and -6.	NLT −3 dBm	
	d. Using RF voltmeter with 50-ohm load, measure output at IF MONITOR (J3) on rear panel.	−16 to −24 dBm	Replace in order RF Translator A6, IF/Audio A3.

Table 5-7. Minimum Performance Test (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
8. (Cont)	e. Repeat steps a thru d with the receiver set at the following frequencies and the RF signal generator set at 1 kHz above receiver frequency. 250.00 kHz 500.00 kHz 1 600.00 kHz 4 000.00 kHz 17 600.00 kHz 29 900.00 kHz	Same as steps a thru d	
	f. Set receiver to 4000.00 kHz, AM mode, AGC-FAST, and RF GAIN at full cw.		
	g. Set RF signal generator for 4000.00 MHz, modulated at 1000 Hz at 50%, output level at −90 dBm.		
	h. Measure output between TB1-4 and -6.	NLT −3 dBm	
	j. Measure output at IF MONITOR (J3) on rear panel.	−16 to −24 dBm	
	k. Set receiver to 4000.00 kHz, ISB mode, AGC-FAST, and RF GAIN at full cw.		
	m. Set RF signal generator for 4.001 00 MHz at −90 dBm, unmodulated.		
	n. Measure output between TB1-4 and -6.	NLT −3 dBm	
	p. Measure output at IF MONITOR (J3) on rear panel.	−16 to −24 dBm	
	q. Set RF signal generator for 3.999 00 MHz at −90 dBm.		
	r. Using audio voltmeter with 600-ohm load, measure output between TB1-8 and -10.	NLT −3 dBm	
	s. Measure output at IF MONITOR (J3) on rear panel.	−16 to −24 dBm	
9. Audio distortion	a. Set receiver to 4000.00 kHz, USB mode, AGC-FAST, RF GAIN at full cw, and SQL at OFF.		
	b. Set RF signal generator for 4.001 00 MHz and −13 dBm.		
	c. Using distortion analyzer with 600-ohm load, measure distortion between TB1-4 and -6.	NMT 1%	Replace IF/Audio A3.
	d. Using distortion analyzer with 600-ohm load, measure output at PHONES jack on front panel.	Adjust VOL control to obtain +10-dBm audio output.	
	e. Measure distortion at PHONES jack.	NMT 5%	

Table 5-7. Minimum Performance Test (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
9. (Cont)	f. Remove jumper from between TB1-2 and -3.		
	g. Adjust VOL control to give 4.4 V rms into an 8-ohm load between TB1-1 and -3.		
	h. Using distortion analyzer measure distortion between TB1-1 and −3.	NMT 5%	
	j. Reconnect jumper between TB1-2 and -3.		
	k. Set receiver to 4000.00 kHz, AM mode, BW to 6 kHz, AGC-FAST, RF GAIN at full cw, and SQL at OFF.		
	m. Set RF signal generator for 4.000 00 MHz, modulated at 1000 Hz at 50%, output level at −13 dBm.		
	n. Using distortion analyzer with 600-ohm load, measure distortion between TB1-4 and −6.	NMT 3%	
	p. Set receiver to 4000.00 kHz, ISB mode, AGC-FAST, RF GAIN at full cw, and SQL to OFF.		
	q. Set RF signal generator for 3.999 00 MHz and −13 dBm, unmodulated.		
	r. Using distortion analyzer with 600-ohm load, measure distortion between TB1-8 and -10.	NMT 1%	
10. Squelch	a. Set receiver to 4000.00 kHz, USB mode, AGC-FAST, RF GAIN at full cw, SQL at 15° from OFF position.		
	b. Set RF signal generator for 4.000 60 MHz, RF output set to −93 dBm.		
	c. With AUDIO control set to NORM, note speaker audio output.	Audio tone heard	
	d. Set RF signal generator RF output to off and note speaker audio output.	No output. Audio output will squelch on receiver noise after 1 to 3 seconds.	Replace IF/Audio A3.
11. AGC audio rise	a. Set receiver to 4000.00 kHz, USB mode, AGC-FAST, RF GAIN at full cw.		
	b. Set RF signal generator for 4.001 00 MHz and −53 dBm.		
	c. Using audio voltmeter with 600-ohm load, measure output between TB1-4 and -6.	Reference	

Table 5-7. Minimum Performance Test (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
11. (Cont)	d. Decrease RF signal generator output to −110 dBm.		
	e. Measure output between TB1-4 and -6.	Reference. NMT ±3-dB change.	Replace IF/Audio A3, or RF Translator A6.
	f. Increase RF signal generator output to −7 dBm.		
	g. Measure output between TB1-4 and -6.	Reference. NMT ±3-dB change.	
12. Manual AGC	a. Set receiver to 4000.00 kHz, USB mode, AGC-FAST, RF GAIN at full cw.		
	b. Set RF signal generator for 4.001 00 MHz and −7 dBm.		
	c. Using audio voltmeter with 600-ohm load, measure output between TB1-4 and -6.	Reference	
	d. Set AGC to OFF.		
	e. Adjust RF GAIN ccw to obtain reference level of step c.	Reference +0 dB, −3 dB can be obtained.	
	f. Set receiver to 4000.00 kHz, ISB mode, AGC-FAST, RF GAIN at full cw.		
	g. Set RF signal generator for 3.999 00 MHz and −7 dBm.		
	h. Using audio voltmeter with 600-ohm load, measure output between TB1-8 and -10.	Reference (approximately same as step c)	
	j. Set AGC to OFF.		
	k. Adjust RF GAIN ccw to obtain reference level of step h.	Reference can be obtained.	
13. Selectivity	a. Set receiver to 4000.00 kHz, USB mode, AGC-OFF, RF GAIN at full cw.		
	b. Set RF signal generator for 4.001 00 MHz and −107 dBm.		
	c. Using audio voltmeter with 600-ohm load, measure voltage at TB1-4 and -6.		
	d. Adjust RF signal generator frequency slightly to find peak on audio voltmeter.	Reference audio voltmeter reading.	
	e. Observe audio voltmeter. Increase RF signal generator frequency until audio voltmeter is 3 dB down from reference in step d. Note RF signal generator frequency.	NLT 4.003 100 MHz	Replace IF/Audio A3, RF Translator A6.

Table 5-7. Minimum Performance Test (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
13. (Cont)	f. Observe audio voltmeter. Decrease RF signal generator frequency until audio voltmeter reading is again 3 dB down from reference in step d. Note RF signal generator frequency.	NMT 4.000 300 MHz	
	g. Set receiver to 4000.00 kHz, LSB mode, AGC-OFF, RF GAIN at full cw.		
	h. Set RF signal generator for 3.999 00 MHz and −107 dBm.		
	j. Using audio voltmeter with 600-ohm load, measure voltage at TB1-4 and -6.		
	k. Adjust RF signal generator frequency slightly to find peak on audio voltmeter.	Reference audio voltmeter reading.	
	m. Observe audio voltmeter. Increase RF signal generator frequency until audio voltmeter is 3 dB down from reference in step k. Note RF signal generator frequency.	NLT 3.999 700 MHz	
	n. Observe audio voltmeter. Decrease RF signal generator frequency until audio voltmeter reading is again 3 dB down from reference in step k. Note RF signal generator frequency.	NMT 3.996 900 MHz	
	p. Set receiver to 4000.00 kHz, CW mode, BFO to 1.0 kHz, BW to 0.3 kHz, AGC-OFF, RF GAIN at full cw.		
	q. Set RF signal generator for 4.000 00 MHz and −107 dBm.		
	r. Using audio voltmeter with 600-ohm load, measure voltage at TB1-4 and -6.		
	s. Adjust RF signal generator frequency slightly to find peak on audio voltmeter.	Reference audio voltmeter reading.	
	t. Observe audio voltmeter. Increase RF signal generator frequency until audio voltmeter is 3 dB down from reference in step s. Note RF signal generator frequency.	NLT 4.000 150 MHz	
	u. Observe audio voltmeter. Decrease RF signal generator frequency until audio voltmeter reading is again 3 dB down from reference in step s. Note RF signal generator frequency.	NMT 3.999 850 MHz	
	v. Set receiver to 4000.00 kHz, CW mode, BFO to 2.0 kHz, BW to 1.0 kHz, AGC-OFF, RF GAIN at full cw.		

Table 5-7. Minimum Performance Test (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
13. (Cont)	w. Set RF signal generator for 4.000 00 MHz and −107 dBm.		
	x. Using audio voltmeter with 600-ohm load, measure voltage at TB1-4 and -6.		
	y. Adjust RF signal generator frequency slightly to find peak on audio voltmeter.	Reference audio voltmeter reading.	
	z. Observe audio voltmeter. Increase RF signal generator frequency until audio voltmeter is 3 dB down from reference in step y. Note RF signal generator frequency.	NLT 4.000 500 MHz	
	aa. Observe audio voltmeter. Decrease RF signal generator frequency until audio voltmeter reading is again 3 dB down from reference in step y. Note RF signal generator frequency.	NMT 3.999 500 MHz	
	ab. Set receiver to 4000.00 kHz, CW mode, BFO to 2.5 kHz, BW to 3.2 kHz, AGC-OFF, RF GAIN at full cw.		
	ac. Set RF signal generator for 4.000 00 MHz and −107 dBm.		
	ad. Using audio voltmeter with 600-ohm load, measure voltage at TB1-4 and -6.		
	ae. Adjust RF signal generator frequency slightly to find peak on audio voltmeter.	Reference audio voltmeter reading.	
	af. Observe audio voltmeter. Increase RF signal generator frequency until audio voltmeter is 3 dB down from reference in step ae. Note RF signal generator frequency.	NLT 4.001 600 MHz	
	ag. Observe audio voltmeter. Decrease RF signal generator frequency until audio voltmeter reading is again 3 dB down from reference in step ae. Note RF signal generator frequency.	NMT 3.998 400 MHz	
	Note Test procedures ah thru ap will result in a loss of output signals for input frequencies 4000.0 kHz ±0.2 kHz. This is not an abnormal condition.		
	ah. Set receiver to 4000.00 kHz, CW mode, BW to 6.0 kHz, AGC-OFF, RF GAIN at full cw, BFO to 0.00 kHz.		
	aj. Set RF signal generator for 4.001 00 MHz and −107 dBm.		
	ak. Using audio voltmeter with 600-ohm load, measure voltage at TB1-4 and -6.		

Table 5-7. Minimum Performance Test (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
13. (Cont)	am. Adjust RF signal generator frequency slightly to find peak on audio voltmeter.	Reference audio voltmeter reading.	
	an. Observe audio voltmeter. Increase RF signal generator frequency until audio voltmeter is 3 dB down from reference in step am. Note RF signal generator frequency.	NLT 4.003 000 MHz	
	ap. Observe audio voltmeter. Decrease RF signal generator frequency until audio voltmeter reading is again 3 dB down from reference in step am. Note RF signal generator frequency.	NMT 3.997 000 MHz	
	aq. Set receiver to 4000.00 kHz, ISB mode, AGC-OFF, RF GAIN at full cw.		
	ar. Set RF signal generator for 4.001 00 MHz and −107 dBm.		
	as. Using audio voltmeter with 600-ohm load, measure voltage at TB1-4 and -6.		
	at. Adjust RF signal generator frequency slightly to find peak on audio voltmeter.	Reference audio voltmeter reading.	
	au. Observe audio voltmeter. Increase RF signal generator frequency until audio voltmeter is 3 dB down from reference in step at. Note RF signal generator frequency.	NLT 4.003 100 MHz	
	av. Observe audio voltmeter. Decrease RF signal generator frequency until audio voltmeter reading is again 3 dB down from reference in step at. Note RF signal generator frequency.	NMT 4.000 300 MHz	
	aw. Set receiver to 4000.00 kHz, ISB mode, AGC-OFF, RF GAIN at full cw.		
	ax. Set RF signal generator for 3.999 00 MHz and −107 dBm.		
	ay. Using audio voltmeter with 600-ohm load, measure voltage at TB1-8 and -10.		
	az. Adjust RF signal generator frequency slightly to find peak on audio voltmeter.	Reference audio voltmeter reading.	
	ba. Observe audio voltmeter. Increase RF signal generator frequency until audio voltmeter is 3 dB down from reference in step az. Note RF signal generator frequency.	NLT 3.999 700 MHz	
	bb. Observe audio voltmeter. Decrease RF signal generator frequency until audio voltmeter reading is again 3 dB down from reference in step az. Note RF signal generator frequency.	NMT 3.996 900 MHz	

Table 5-7. Minimum Performance Test (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
14. Keep alive	a. Set receiver to 29 999.00 kHz, USB mode, AGC-FAST, and BFO to 3.99 kHz. b. Program channel 10 for 12 345.00 kHz, CW mode, BW to 0.3 kHz, AGC-FAST, and BFO to 3.49 kHz. c. Return receiver to normal operation. d. Disconnect power from receiver. Wait 1 minute, then reconnect power to unit. e. Note operational status of receiver. f. Recall channel 10 and note channel 10 contents.	Same as set in step a Same as set in step b	Replace Control A2.
15. BFO	a. Set receiver to 4000.00 kHz, CW mode, BW to 6.0, AGC-FAST, RF GAIN to full cw. b. Set RF signal generator to 4.000 00 MHz at −53 dBm. c. Using frequency counter, count the audio output at TB1-4 to -6 while adjusting the bfo through its range. d. Stop BFO at: +540 Hz 2900 Hz −760 Hz −1230 Hz to check for accuracy.	540 ±5 Hz 2900 ±5 Hz 760 ±5 Hz 1230 ±5 Hz **Note** Measurements should allow for the tolerances of the frequency counter and RF signal generator.	Replace IF/Audio A3.
16. 100-kHz standard output	a. Using an RF voltmeter and 50-ohm load, measure the output at INTERNAL STANDARD OUTPUT. b. Using frequency counter, measure the frequency at INTERNAL STANDARD OUTPUT.	0 dBm ±2 dBm 100 000 ±0.05 Hz **Note** Measurement should allow for the tolerance of the frequency counter.	Replace Synthesizer A5.

*5.2.5 **Alignment/Adjustment.*** The following alignment/adjustment procedures are performed with the unit assembled and operating.

5.2.5.1 Power Supply A4 Adjustments

a. Remove bottom cover from radio receiver.
b. Turn receiver power (PWR) to ON.
c. Measure dc voltage between −V and +V terminals on Power Supply A4 circuit board closest to rear of receiver.
d. Adjust R6 on same board for +15 ±0.1 V dc.
e. Measure dc voltage between −V and +V terminals on Power Supply A4 middle circuit board.
f. Adjust R6 on same board for −15 ±0.1 V dc.
g. Measure dc voltage between −V and +V terminals on Power Supply A4 circuit card closest to front of receiver.
h. Adjust R6 on same board for +5.2 ±0.05 V dc.

Note

The following adjustments are to be made after equipment has been turned on for 15 minutes (minimum).

j. Disconnect the dc power cable from A3J1.
k. Measure the dc voltage at the large filter capacitor (C1) next to the 5-V dc voltage regulator card. If this voltage is less than 15 V dc, proceed to step n.
m. Disconnect the ac line input. Move contact from P1-3 (power supply interconnect) to P1-4. Reconnect the ac line input.
n. Reconnect the dc power cable to A3J1.
p. Measure the dc voltage at C1. If this voltage is greater than 9.0 V dc, the power supply adjustments are complete.
q. Disconnect the ac line input. Move contact from P1-3 to P1-2. Reconnect the ac line input.
r. Disconnect the dc power cable from A3J1.
s. Measure the dc voltage at C1. If this voltage is less than 15.0 V dc, reconnect the dc power cable. The power supply adjustments are complete.
t. If the voltage at C1 is greater then 15.0 V dc, the power supply transformer is out of specification. Replace the power supply.

5.2.5.2 Front Panel A1 Display Adjustment (A1A1R3)

a. Remove top cover.
b. Set receiver for normal operation at 1234.5 kHz.
c. Adjust display bias drive A1A1R3 (top center of front panel card A1A1) to obtain 0.8 ±0.05 V dc at A1A1U14-5.
d. If when viewing the front panel LCD display from any angle the "off" segments of the display are visible, readjust A1A1R3 so that the "off" segments fade out.

5.2.5.3 Synthesizer A5 Adjustments

Caution

The clad area within the vco compartment is −V dc, not ground potential! Do not short the clad area to ground as this may damage the input regulators.

a. Remove bottom cover
b. Set receiver for normal operation at 5000.00 kHz, AM mode.

*5.2.5.3.1 **Regulated Supply Voltage Verification.*** Using a dc voltmeter, measure the regulated supply voltages at the following points to ground.

a. TP6 (+) should be +5.2 ±0.1 V dc.
b. TP5 (+) should be +12.0 ±0.25 V dc.
c. TP7 (−) should be −12.0 ±0.25 V dc.

5.2.5.3.2 48-MHz Oscillator

a. Using an RF millivoltmeter with a high-impedance probe, measure the signal level at A5U12-11. Adjust A5L13 for maximum output at A5U12-11.
b. Apply a 100-kHz reference signal to external standard input J4. Monitor the waveform at the collector of Q9. Vary the reference by −25 Hz to +25 Hz. If the loop unlocks over this range, select L12 (1.2 to 3.3 μH) to restore lock.
c. Measure the signal level at A5P6 with an RF millivoltmeter (50-ohm probe). The test level should be +10 dBm ±3 dB.

5.2.5.3.3 96-MHz Injection

a. Using an RF millivoltmeter with a high-impedance probe, measure the signal level at A5P4 (in circuit). Adjust A5C60, A5C65, A5C75 for maximum output at A5P4 (13 dBm ±3 dB).
b. Repeat step a until no noticeable change occurs.

5.2.5.3.4 Loop 2 VCO Adjustment

a. Set receiver to 10 000.00 kHz.
b. Using a dc voltmeter, measure the vco control voltage at A5TP3 (+) to ground (−). Adjust A5L27 until voltage is +6.5 ±0.1 V dc.
c. Set receiver to 10 005.00 kHz.
d. Using a spectrum analyzer, high-impedance input, monitor the signal at A5TP4 (10.5 MHz). Adjust A5R59 for minimum 1-kHz sidebands on the vco output (minimum of 40 dB down).

5.2.5.3.5 144-MHz Level Adjustment. Using an RF millivoltmeter with a high-impedance probe, measure the signal level at the collector of Q19. Adjust A5C39 for maximum signal amplitude. Test select R80 (33 to 150 ohms) for a signal amplitude of 400 ±100 millivolts at the collector of Q19.

5.2.5.3.6 144.105-MHz Filter Adjustment. Apply 100.005-kHz reference signal to external standard input J4. Using an RF voltmeter with a high-impedance probe, measure the signal level at the RF port of the loop mixer (TP2). Adjust A5C103, A5C105, A5C123, and A5L56 for maximum signal (−5.0 dBm ±4 dB).

5.2.5.3.7 Loop 1 VCO Adjustment

a. Set receiver to 500.00 kHz.
b. Using a dc voltmeter, measure the voltage at A5TP1 with respect to A5TP7. Adjust A5L47 until voltage is +5.0 ±0.1 V dc.
c. Set receiver to 15 000.00 kHz.
d. Using a spectrum analyzer, 50-ohm input, monitor the vco output at A5P5 (out of circuit). Adjust A5R124 for minimum 10-kHz sidebands on the vco output (minimum of 55 dB down). Monitor the loop 1 level at the junction of R103 and C116. The IF signal shall be 30.1 MHz at a nominal level of −25 dBm.
e. Using an RF millivoltmeter (50-ohm probe), measure the signal level at A5P5. The test level should be 16 dBm +4 dB, −3 dB.

5.2.5.3.8 12-MHz Injection. Tune the receiver to 100 kHz. Measure the signal level at A5P3 (11.0 dBm ±2 dB). Tune the receiver to 500 kHz. The level at A5P3 shall drop to less than −27 dBm.

5.2.5.3.9 Performance Monitors. Verify that each of the following monitors is in the no fault state (no fault = 0.5 ±0.5 V dc, fault = 4.7 ±0.5 V dc).

12-MHz level	A5P2-16
48-MHz level	A5P2-18
96-MHz level	A5P2-17
Loop 1 level	A5P2-19
Loop 1 loss of lock	A5P2-5
Loop 2 loss of lock	A5P2-7
48-MHz loss of lock	A5P2-20

5.2.5.4 AGC Calibration

Note

Top cover must be removed.

a. Set receiver to 4000.00 kHz, USB mode, AGC-FAST, and RF GAIN at full ccw.
b. Connect an RF signal generator to RECEIVE ANTENNA input. Set RF signal generator for 4.001 MHz at +13 dBm.
c. Using a dc voltmeter, measure AGC voltage at TB1-13 (+) to TB1-12 (−). Adjust A3R130 until voltage is +10.0 ±0.1 V dc.

5.2.5.5 RF Translator A6 Adjustments

Note

Bottom cover must be removed.

a. Set receiver to 4000.00 kHz, AM mode, AGC-OFF, and RF GAIN at full cw.
b. With RF signal generator connected to RECEIVE ANTENNA input, set RF signal generator for 4.000 MHz at −90 dBm.
c. Monitor the IF monitor (A6J3) with a spectrum analyzer. Adjust A6C6 and A6C53 for maximum gain and response flatness between A6J3 and A6J1. Vary the generator frequency by ±3 kHz while adjusting A6C6 and A6C53.
d. Using an RF voltmeter with a 50-ohm load, measure the IF MONITOR output at J3. Adjust A6R117 for −20 dBm ±0.25 dB at J3.
e. Set RF signal generator output to off.
f. Using a dc voltmeter, measure voltage at cathode end of A6CR34 (+) to ground (−). Adjust A6R219 until voltage is 0.0 ±0.1 V dc.
g. Set RF signal generator output to on. Set RF signal generator output to produce −20 dBm at J3.
h. Using a dc voltmeter, measure AGC voltage at TB1-13 (+) to TB1-12 (−). Adjust the RF GAIN control (A1R19B) until voltage is +9.37 ±0.1 V dc.

j. Increase the RF signal generator level by 90 dB. Adjust A6R115 to produce −20 dBm ±0.25 dB at J3.

5.2.5.6 IF/Audio A3 Adjustments

Note

Top cover must be removed.

5.2.5.6.1 Normal Channel Audio Filter

a. Set receiver to 4000.00 kHz, CW mode, 1.0 kHz BW, +0.30-kHz bfo, and AGC-OFF.
b. With RF signal generator connected to RECEIVE ANTENNA input, set RF signal generator for 4.000 00 MHz at −13 dBm.
c. Using an audio voltmeter with high-impedance load, measure the channel A filtered audio level at A3TP4. Adjust the RF GAIN control (A1R19B) for 1.0 ±0.1 V rms at A3TP4 (note for reference). A small adjustment in the RF signal generator output may be necessary to achieve the reference.
d. Set the bfo to +3.10 kHz.
e. Adjust A3R169 to obtain the reference level of step c at A3TP4.

5.2.5.6.2 ISB Channel Audio Filter

a. Set receiver to 4000.00 kHz, ISB mode, and AGC-OFF.
b. With RF signal generator connected to RECEIVE ANTENNA input, set RF signal generator for 3.999 55 MHz at −13 dBm.
c. Using an audio voltmeter with high-impedance load, measure the channel B filtered audio level at A3TP5. Adjust the RF GAIN control (A1R19B) for 1.0 ±0.1 V rms at A3TP5 (note for reference). A small adjustment in the RF signal generator output may be necessary to achieve the reference.
d. Using an RF voltmeter with a 50-ohm load, measure the IF MONITOR level at J3 (note for reference).
e. Set RF signal generator for 3.997 05 MHz. Adjust RF signal generator to obtain IF MONITOR level referenced in step d.
f. Adjust A3R195 to obtain the reference level of step c at A3TP5.

5.2.5.6.3 Normal Audio Output (A3R218)

a. Set receiver to 4000.00 kHz, USB mode, AGC-FAST, and RF GAIN at full cw.
b. With RF signal generator connected to RECEIVE ANTENNA input, set RF signal generator for 4.001 00 MHz at −53 dBm.
c. Using an audio voltmeter with 600-ohm load, measure the LINE AUDIO at TB1-4, TB1-6 on the receiver rear panel. Set A3R218 to audio output level required for field operation (factory set for 0 dBm at TB1-4, TB1-6).

5.2.5.6.4 ISB Audio Output

a. Set receiver to 4000.00 kHz, ISB mode, AGC-FAST, and RF GAIN at full cw.
b. With RF signal generator connected to RECEIVE ANTENNA input, set RF signal generator for 3.999 00 MHz at −53 dBm.
c. Using an audio voltmeter with 600-ohm load, measure the ISB AUDIO at TB1-8, TB1-10 on the receiver rear panel. Set A3R204 to audio output level required for field operation (factory set for 0 dBm at TB1-8, TB1-10).

5.3 THIRD-LINE MAINTENANCE

5.3.1 General. Third-line maintenance of R-5099/U, R-5099A/U, and R-5104/GRC-508 Radio Receiver consists of testing and troubleshooting of 1) Front Panel A1, 2) Control A2, 3) IF/Audio A3, 4) Power Supply A4, 5) Synthesizer A5, and 6) RF Translator A6. Third-line maintenance requires the use of a microprocessor-based test set with adapters and standard test equipment. Third-line maintenance requires the disassembly of the receiver, refer to paragraph 5.3.3 for details.

5.3.2 Test Equipment and Tools. Refer to Table 5-8 for a listing of test equipment and tools required to perform third-line maintenance on the receivers. Table 5-9 shows which test equipment is used for testing each specific card or module.

Table 5-8. Third-Line Maintenance, Test Equipment and Tools.

ITEM	MINIMUM SPECIFICATIONS	REPRESENTATIVE TYPE
	TEST EQUIPMENT	
Microprocessor test set	Compatible with receivers and associated card adapters.	Rockwell International 965C-1, 622-7103-001
IF/Audio adapter	Compatible with 965C-1 Microprocessor Test Set and IF/Audio card A3 in receivers.	Rockwell International 997D-1, 622-7104-001
Synthesizer adapter	Compatible with 965C-1 Microprocessor Test Set and Synthesizer A5 in receivers.	Rockwell International 997D-2, 622-7105-001
RF translator adapter	Compatible with 965C-1 Microprocessor Test Set and RF Translator A6 in receivers.	Rockwell International 997D-3, 622-7106-001
Front panel adapter	Compatible with 965C-1 Microprocessor Test Set and Front Panel A1 in receivers.	Rockwell International 997D-4, 622-7107-001
Control adapter	Compatible with 965C-1 Microprocessor Test Set and Control A2 in receivers.	Rockwell International 997D-5, 622-7130-001
Digital multimeter		Fluke 8600A
RF millivoltmeter	0 to 3000 mV rms (+20 dBm), 50-ohm probe and a high-impedance probe	Boonton 92C
Frequency counter	±1-Hz accuracy, 0 to 130 MHz	Hewlett-Packard 5328A-H99
Frequency standard	100 kHz ±1 part per million	Hewlett-Packard 105B
50-ohm load	(4 required) 10 to 150 MHz	Bird 80F
Spectrum analyzer	14 kHz to 150 MHz	Hewlett-Packard 8568A
RF signal generator	(2 required) 450 kHz to 150 MHz, 0 to 5 V rms output (1 required) 14 kHz to 20 MHz, 0 to 5 V rms output	Hewlett-Packard 8640B (2 reqd) Hewlett-Packard 3325A (1 reqd)
Distortion analyzer		Hewlett-Packard 333A
Receiver	2 to 30 MHz, 3-kHz bandpass	
6-dB attenuator		
Pulse generator	Pulse, 100 μs wide, 1 volt amplitude, 100-Hz pulse repetition rate	
Oscilloscope		Tektronix 475
RF combiner		

Table 5-9. Cards and Modules, Test Equipment Usage Table.

CARD/MODULE / TEST EQUIPMENT	FRONT PANEL A1	CONTROL A2	IF/ AUDIO A3	POWER SUPPLY A4	SYNTHE-SIZER A5	RF TRANS-LATOR A6
Microprocessor test set, 965C-1	X	X	X		X	X
IF/Audio adapter, 997D-1			X			
Synthesizer adapter, 997D-2					X	
RF translator adapter, 997D-3						X
Front panel adapter, 997D-4	X					
Control adapter, 997D-5		X				
Digital multimeter, Fluke 8600A	X	X	X	X	X	X
RF millivoltmeter, Boonton 92C			X		X	X
Frequency counter, HP 5328A-H99					X	
Frequency standard, HP 105B					X	
50-ohm load, Bird 80F					(4)	
Spectrum analyzer, HP 8568A					X	
RF signal generator, HP 8640B		X	(2)		X	(2)
RF signal generator, HP 3325A					X	
Distortion analyzer, HP 333A		X	X			X
RF combiner						X
Receiver						X
6-dB attenuator						(2)
Pulse generator						X
Oscilloscope, Tektronix 475						X

5.3.3 Disassembly/Assembly. Disassembly of the receivers will be limited to removal and replacement of circuit cards and modules. Disassembly and assembly of the individual components on circuit cards or modules should be accomplished in accordance with accepted standard shop practices. Circuit cards, modules, and hardware referenced in the following procedures will be identified by the item identifier number from the Parts List section of this manual. Assembly of the receivers is the reverse of disassembly and will not be covered in detail.

Caution

This equipment contains electrostatic discharge sensitive (ESDS) devices. Special handling methods and materials must be utilized to prevent equipment damage.

5.3.3.1 Removal of Front Panel A1

a. Remove 13 screws holding top cover (5, Figure 6-1) to chassis (85).
b. Lift top cover (5) from chassis (85) and set aside.
c. Disconnect A1A1P1 and A1A1P2 from their respective jacks.
d. Remove four screws holding Front Panel A1 (7) to chassis (85).

5.3.3.2 Removal of Control A2

a. Perform step a and b of paragraph 5.3.3.1.
b. Disconnect A1A1P1 from Control A2 (8, Figure 6-1).
c. Remove four screws (25) holding A2J6 and A2J7 (26) to rear panel of chassis (85).
d. Remove six screws holding Control A2 (8) to top of IF/Audio A3 (10).
e. Lift Control A2 (8) off IF/Audio A3 (10).

5.3.3.3 Removal of IF/Audio A3

a. Perform steps a and b of paragraph 5.3.3.1.
b. Perform steps b through e of paragraph 5.3.3.2.
c. Disconnect A3J4 from TB1P1, A4P1 from A3J1, and A3P6 from its jack.
d. Remove eight screws securing IF/Audio A3 (10, Figure 6-1) to chassis (85).
e. Lift IF/Audio A3 (10) up and out of chassis (85).

5.3.3.4 Removal of Power Supply A4

a. Perform steps a and b of paragraph 5.3.3.1.
b. Remove 15 screws holding bottom cover (4, Figure 6-1) to chassis (85) and set bottom cover aside.
c. Disconnect A4J1 from P1 (12) and A4P1 from A3J1.
d. Remove four screws attaching Power Supply A4 (14) to chassis (85), two on top of chassis and two on bottom of chassis.
e. Lift Power Supply A4 (14) out of recess in chassis (85).

5.3.3.5 Removal of Synthesizer A5

a. Remove 15 screws holding bottom cover (4, Figure 6-1) to chassis (85). Set bottom cover aside.
b. Disconnect A5P5, A5J2, A5J1, A5P6, A5P3, and A5P4 from their respective jacks or plugs.
c. Remove 14 screws holding Synthesizer A5 (17) to chassis (85).
d. Lift Synthesizer A5 (17) up and out of chassis (85).

5.3.3.6 Removal of RF Translator A6

a. Remove 15 screws holding bottom cover (4, Figure 6-1) to chassis (85). Set bottom cover aside.
b. Disconnect A6J3, A6P5, A6P4, A5P4, A6J1, and A6J2 from their respective jacks or plugs.
c. Remove 16 screws holding RF Translator A6 (23) to chassis (85).
d. Lift RF Translator A6 (23) up and out of chassis (85).

5.3.4 Testing/Troubleshooting. Prior to detailed testing/troubleshooting, it may be desirable to check the alignment/adjustment of the suspect module in accordance with paragraph 5.2.5. Testing and troubleshooting at the third-line maintenance level requires the disassembly of the receiver and the use of the microprocessor test set and adapters. Perform the procedures for each module or card as detailed in the appropriate paragraph and referenced figure and table. Refer to the Diagrams section for schematic diagrams of individual modules or cards. Refer to Figure 5-7 for a timing diagram of IF/Audio A3. It is recommended that all tests on a card be performed to

check for commonality of causes between faults before analyzing individual faults. Components listed in several faults are more probable than components listed in only one fault. After a module or card is repaired, repeat the tests for that module or card on the appropriate test adapter and using the microprocessor test set. After the module or card passes this test, install the card or module into the receiver and perform the minimum performance tests and adjustments. Refer to paragraph 5.2.4.

5.3.4.1 Front Panel A1, Testing and Troubleshooting

a. Perform test setup of Figure 5-3.
b. Set MAIN POWER on test set to on.
c. Enter test adapter number 4 (for 997D-4).

Note

965C-1 Microprocessor Test Set and 997D-4 Front Panel Test Adapter will perform a self-test function and then continue.

d. Set UUT POWER on test set to on.
e. Select test to be performed from the following menu by pressing the test set key assigned to that test.
   0 - Power switch check
   1 - Potentiometer checks
   2 - Speaker check
   3 - FAULT display check (LED)
   4 - Keys check
   5 - Tune dial check
   6 - LCD segment check
   7 - LCD step check
   8 - LCD status display check
   9 - Front panel processor check
   A - Automatic test, includes all checks, 0 through 9
f. Follow instructions as given on the 965C-1 front panel display.

5.3.4.1.1 Power Switch Check. Checks PWR switch A1S1 and associated wiring to A1P2.

Note

Test set will show FAULT if switch is failed or directions given on 965C-1 display are not followed.

5.3.4.1.2 Potentiometer Checks. Checks VOL control A1A1R18B, SQL control A1A1R18A, NOISE BLANKER control A1A1R19A, RF GAIN control A1A1R19B, and associated wiring to A1A1P1.

Note

Test set will show FAULT if potentiometer is failed or directions given on 965C-1 display are not followed. Checks full cw and full ccw positions; will not check linearity or intermittent wiper arms.

5.3.4.1.3 Speaker Check. Checks that tone can be heard in speaker. Speaker check can be used to check PHONES jack A1J1 as follows.

Note

Test set will not show FAULT. If tone not heard, check speaker A1A1LS1, PHONES jack A1J1, and connections to speaker, phones jack, and P1-1, P1-2, P1-3, P1-4.

a. Plug headphone into PHONES jack.
b. Initiate speaker check on 965C-1.
c. Tone cannot be heard in speaker, but can be heard in headphone.
d. Remove headphone from PHONES jack.
e. Initiate speaker check on 965C-1.
f. Tone can be heard in speaker.

5.3.4.1.4 FAULT Display Check (LED)

Note

Test set will not show FAULT. If front panel FAULT does not light, check A1A1DS3 and associated circuit.

5.3.4.1.5 Keys Check. Checks all front panel key switches. Checks FAULT light on Front Panel A1. To exit the key check, press any key on the 965C-1 front panel.

Note

Test set will not show FAULT. If key function is not echoed on test set display, that key or associated circuit is faulted.

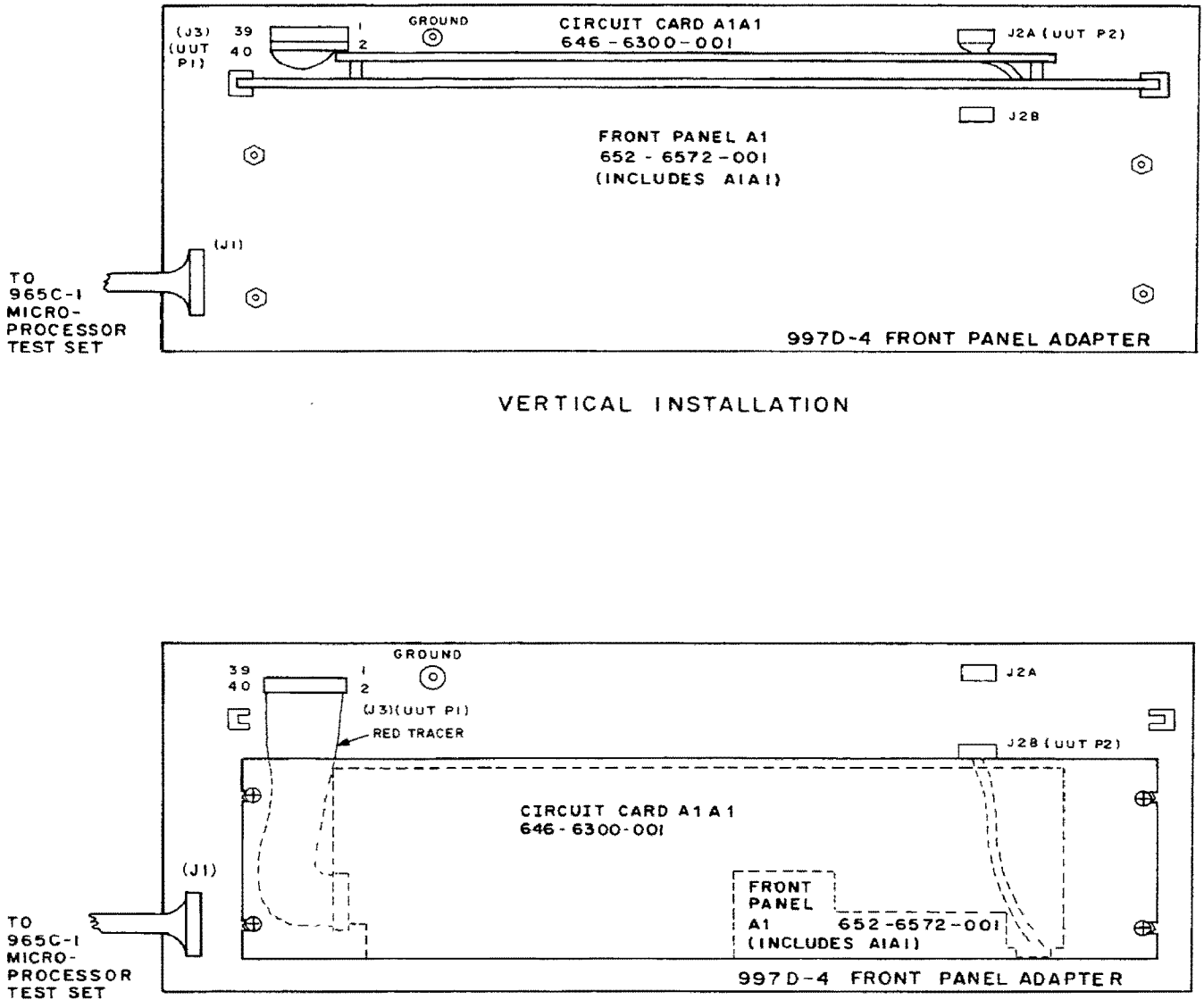


Figure 5-3 Front Panel A1, Test Setup

5.3.4.1.6 Tune Dial Check. Checks tune dial and associated circuit.

Note

Test set instructs operator to rotate dial clockwise one turn, then counterclockwise one turn. Dial should be rotated clockwise one turn or more until the test set display changes. Watch the test set display, not the dial position. If continued rotation of the dial does not change the display, the dial circuit has failed. If dial rotation is continued in the clockwise direction after the test set display is changed, FAULT may then appear on the test set display. Test set will show FAULT if a component in the dial circuit is failed or if directions on the 965C-1 display are not followed.

5.3.4.1.7 LCD Segment Check. Checks CHANNEL—BFO-KHZ—FREQUENCY-KHZ display one segment at a time. The same segment of all displays is shown at the same time. See Figure 5-4 for segment versus driver input.

Note

Test set will not show FAULT. If the associated segment of each display is not shown, check display DS1, associated driver U14 or U15, and associated inputs.

5.3.4.1.8 LCD Step Check. Checks all segments of each display at the same time, one display at a time.

Note

Test set will not show FAULT. If a display is not shown in its entirety, check display DS1, associated driver U14 or U15, and associated inputs.

5.3.4.1.9 LCD Status Display Check. Refer to Figure 5-5. Checks STATUS display DS2 in its entirety. Displays total RF INPUT in steps (26), total LINE AUDIO in steps (25), each STATUS, DIAL, TUNE, MODE, AGC, BW (bandwidth), AUDIO, and CNTL (control) segment.

Note

Test set will not show FAULT. If a display is not shown, check the display DS2, its driver U16, and associated inputs.

5.3.4.1.10 Front Panel A1 Processor Check. Checks all test set, adapter, and front panel interface including any function not tested as part of tests 0 through 8 (U9, U17, P1).

Note

Test set will show FAULT if any interface functions are failed.

5.3.4.1.11 Automatic Test. Checks all operations of Front Panel A1. In automatic test all tests are run in sequence. Automatic test can only be exited by completion of testing or by powering down the test set (set MAIN POWER to off). Test descriptions paragraphs 5.3.4.1.1 through 5.3.4.1.10 apply to automatic test also.

5.3.4.2 Control A2, Testing and Troubleshooting

Note

Because of rivets through J4 on W2 and J5 on W3, pins 1, 2, 3, and 4 on J4 and pins 1 and 2 on J5 are offset to the third position from the end.

a. Perform test setup of Figure 5-6.
b. Set MAIN POWER on test set to on.
c. Enter test adapter number 5 (for 997D-5).

Note

965C-1 Microprocessor Test Set and 997D-5 Control Test Adapter will perform a self-test function and then continue.

d. Set UUT POWER on test set to on. Press 0 to continue.
e. Enter either two-digit test number (01 through 27) desired or an A for automatic. Refer to the following list for the two-digit test number.

Note

U28 is tested upon unit under test (UUT) power up and is not in the automatic sequence. U28 is listed as test number 15 for manual testing.

Note

Set baud rate switches (U39) to off for automatic test or test 25.

TWO-DIGIT TEST NUMBER	COMPONENT CHECKED
01	U20
02	U27
03	U17
04	U30
05	U10
06	U18
07	U3 and U14
08	ROM tests (U8 and U4)
09	U12
10	U15
11	U24
12	U9
13	U5 and U2
14	U16
15	U28 (only if ISB system)
16	U26
17	U22
18	U31
19	U29 and U32
20	U41 and U43
21	U47
22	U46
23	RS 422 option
24	Not applicable (RS-232 option)
25	U34
26	U13 and U6
27	U52 (A2DS1 should be flashing)

f. After entry, test set will prompt: ARE YOU SURE (YES = 1, NO = 0). Press the appropriate key. The test being performed is displayed while the test is being run. If a two-digit number was entered and no faults encountered, the display will repeat the prompt. If automatic (A) testing was selected, the testing will run automatically with two operator inputs required during the testing of U12 and switch setting changes required during the testing of U34.

g. If a circuit faults, instructions to CHECK or REPLACE a component will be given along with the instructions to continue (C) or repeat test (E). CHECK or REPLACE a component means the circuit(s) that is associated with that component(s) also should be checked. If there is a fault on application of UUT power, then troubleshoot all microprocessor bus lines, voltages, and U28 or U25.

5.3.4.3 IF/Audio A3, Testing and Troubleshooting

Note

Refer to Figure 5-8 for a timing diagram.

a. Perform test setup of Figure 5-7.
b. Set test set adapter volume control fully counterclockwise.
c. Set test set adapter SCAN/MUTE switch to NORMAL.
d. Set MAIN POWER on test set to ON.
e. Enter test adapter number 1 (for 997D-1).

Note

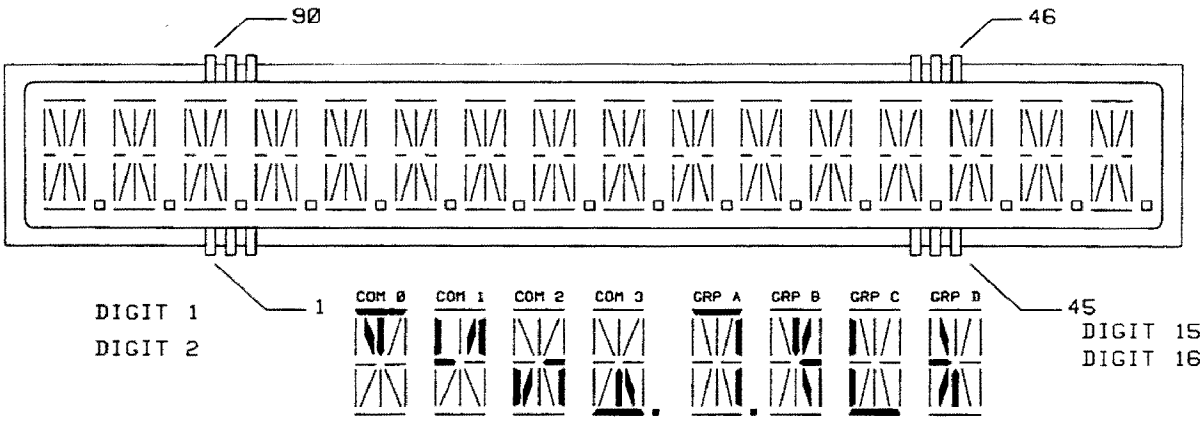
Test point locations are shown on Figure 6-5 as follows.

TP1 - Black	TP6 - Blue
TP2 - Red	TP7 - Yellow
TP3 - Blue	TP8 - Red
TP4 - Yellow	TP9 - Black
TP5 - Green	TP10 - Green

Note

965C-1 Microprocessor Test Set and 997D-1 IF/Audio Test Adapter will perform a self-test function then continue.

f. Confirm IF/Audio A3 is connected to test set adapter and press any key to continue.
g. Turn UUT POWER on test set to ON.



PIN	GRP	PIN	GRP	PIN	GRP	PIN	GRP	PIN	GRP
1	COM 3	19	C-9	37	C-4	55	A-5	73	NC
2	C-16	20	NC	38	B-4	56	D-5	74	A-10
3	B-16	21	NC	39	C-3	57	A-6	75	NC
4	C-15	22	B-9	40	B-3	58	D-6	76	D-10
5	B-15	23	NC	41	C-2	59	NC	77	NC
6	C-14	24	NC	42	B-2	60	A-7	78	A-11
7	B-14	25	C-8	43	C-1	61	NC	79	D-11
8	C-13	26	NC	44	B-1	62	D-7	80	A-12
9	B-13	27	B-8	45	COM 2	63	NC	81	D-12
10	C-12	28	NC	46	COM 1	64	A-8	82	A-13
11	B-12	29	C-7	47	A-1	65	NC	83	D-13
12	C-11	30	NC	48	D-1	66	D-8	84	A-14
13	B-11	31	B-7	49	A-2	67	NC	85	D-14
14	NC	32	NC	50	D-2	68	NC	86	A-15
15	C-10	33	C-6	51	A-3	69	A-9	87	D-15
16	NC	34	B-6	52	D-3	70	NC	88	A-16
17	B-10	35	C-5	53	A-4	71	NC	89	D-16
18	NC	36	B-5	54	D-4	72	D-9	90	COM 0

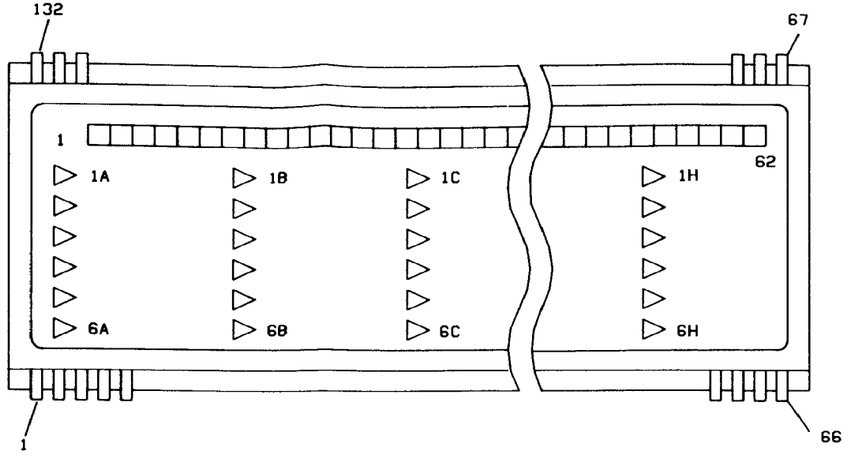
SEGMENT DESIGNATORS

NOTE:
THE INDIVIDUAL SEGMENTS OF A DISPLAYED CHARACTER IS FORMED BY ENABLING THE APPROPRIATE "COMMON" AND "GROUP".

EXAMPLE:
THE CHARACTER "7" IS FORMED BY ENABLING COMMON 0, COMMON 1, COMMON 2, GROUP A.
THE "COMMON" GROUPS ARE MULTIPLEXED IN SEQUENCE.

TP8-2047-014

Figure 5-4 Alphanumeric Display (DS1)



PIN NO. / BACKPLANE NO.	1	2	3	4	11	12	19	20	27	28	35	36	43	44	51	52	59	60	63	64	65	66
0			6A	1A	6B	1B	6C	1C	6D	1D	6E	1E	6F	1F	6G	1G	6H	1H			B.P. 0	B.P. 0
1	B.P. 1	B.P. 1	5A	2A	5B	2B	5C	2C	5D	2D	5E	2E	5F	2F	5G	2G	5H	2H	BP 1	BP 1		
2				3A		3B		3C		3D		3E		3F		3G		3H				
3				4A		4B		4C		4D		4E		4F		4G		4H				

PIN NO. / BACKPLANE NO.	67	68	69	74	75	82	83	90	91	98	99	106	107	114	115	122	123	130	131	132
0				57	56	49	48	41	40	33	32	25	24	17	16	9	8	1		
1				58	55	50	47	42	39	34	31	26	23	18	15	10	7	2		
2	B.P. 2	B.P. 2	62	59	54	51	46	43	38	35	30	27	22	19	14	11	6	3		
3			61	60	53	52	45	44	37	36	29	28	21	20	13	12	5	4	B.P. 3	B.P. 3

TPS-2848-814

Status Display (DS2) Figure 5-5

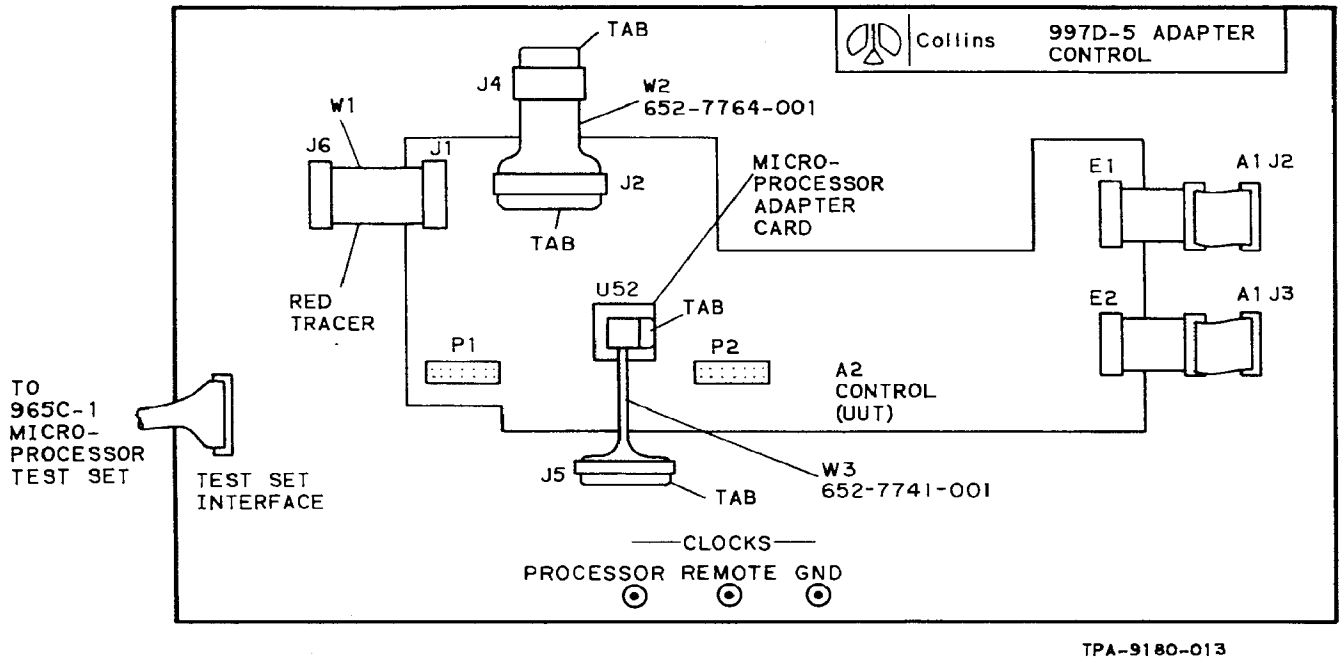


Figure 5-6 Control A2, Test Setup

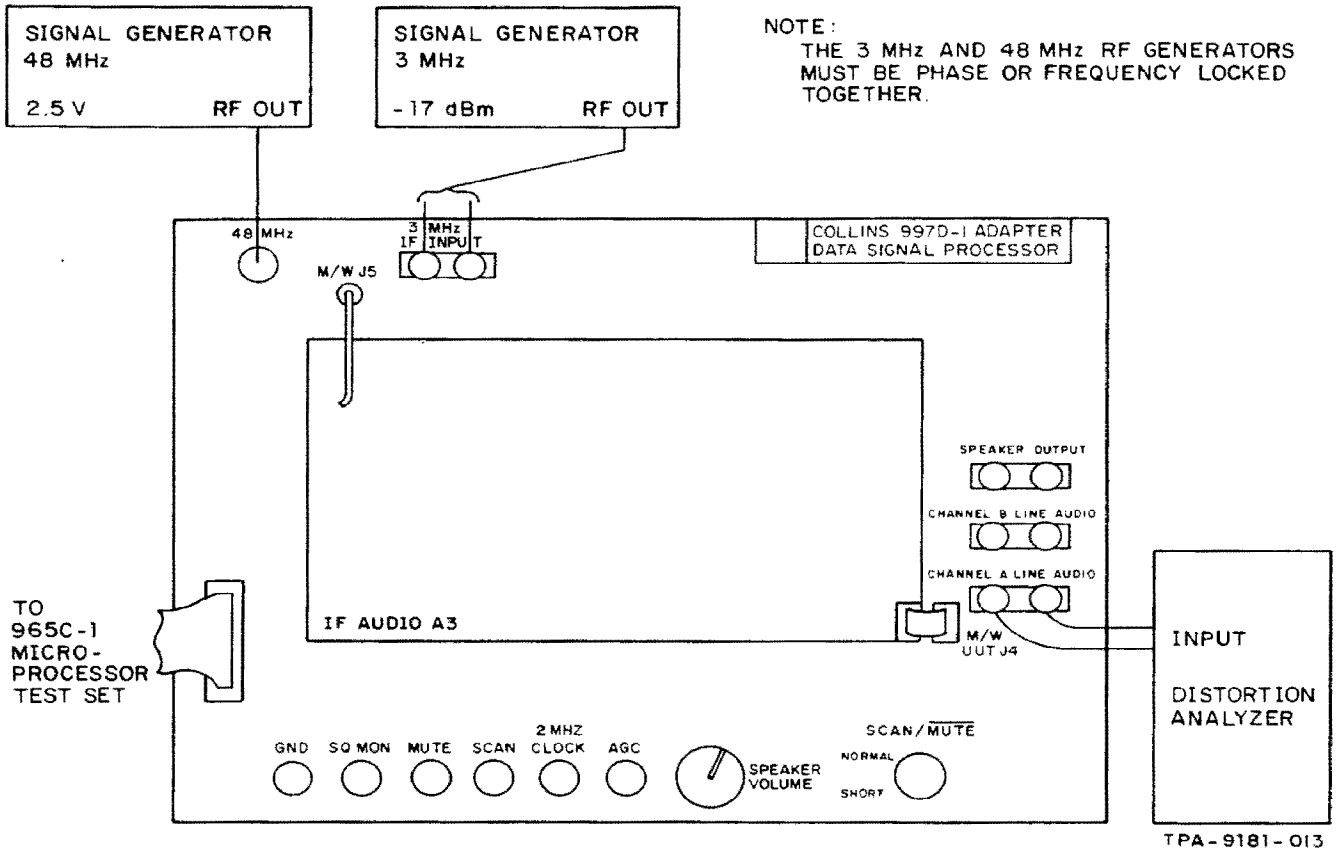
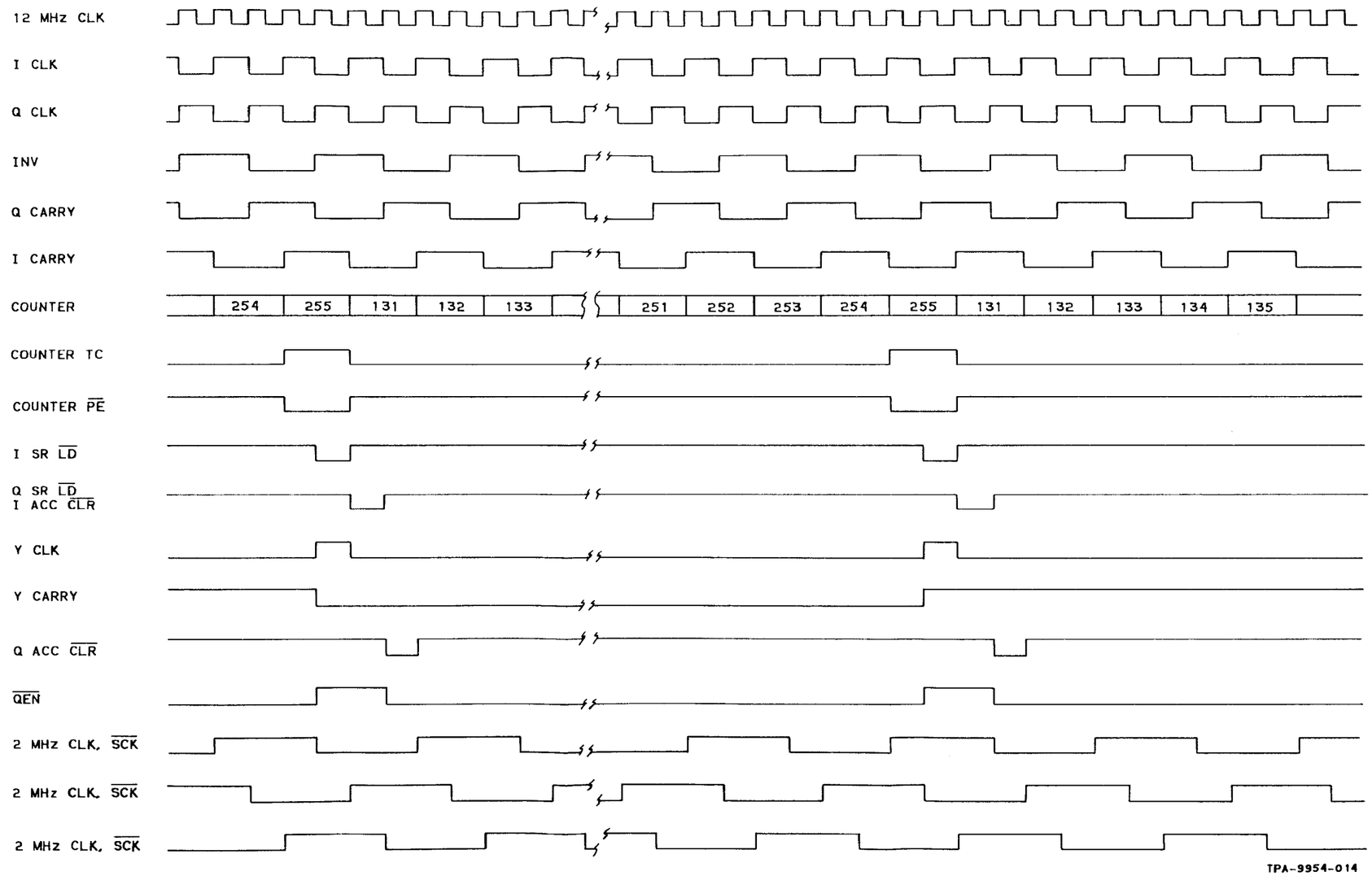


Figure 5-7 IF/Audio A3, Test Setup

BOXCAR TIMING



Timing Diagram Figure 5-8

h. Test set will display IS ISB OPTION IN (1 = YES, 2 = NO). If testing an IF/Audio A3 part number 646-6196-001, enter a 1; for part number 646-6169-002, enter a 2.

j. Test set will prompt ENTER TEST NUMBER (01 through 27 or A). Enter the number of the individual test desired from the list below or enter an A for automatic.

TEST NUMBER	TEST TITLE
1	AGC Calibration
2	Channel A Audio Filter Calibration
3	Channel B Audio Filter Calibration (ISB only)
4	Signal Activity Detector
5	Line Outputs, Test Points, and Line Level Performance Monitors
6	IF Translator
7	7720 Self-Tests and Loopback
8	Shift registers and D/A Converters
9	Pseudorandom Noise Generators Shift Register
10	A/D Input
11	Filter Selectivity and Ripple
12	SINAD
13	Intermod
14	Bfo
15	RF AGC and S-Meter Outputs
16	RF AGC and S-Meter ISB AGC (ISB only)
17	AGC Leveling
18	AGC Leveling ISB AGC (ISB only)
19	AGC Attack and Decay
20	AGC Attack and Decay, ISB (ISB only)
21	Speaker Output
22	Speaker Output, ISB (ISB only)
23	Squelch
24	Straight-Through I/O
25	Scan and Mute
26	Line Level Adjustment Range and Final Setting
27	Line Level Adjustment Range and Final Setting, ISB (ISB only)

Note

Tests labeled ISB only will function with part number 646-6196-001 only.

k. TEST SET will prompt ARE YOU SURE (1 = YES, 0 = NO). Enter appropriate answer and refer to Table 5-10 for test procedures.

Note

After reading prompt in Table 5-10, perform the procedure given, if any, prior to pressing key to continue. Failure to do so will result in skipping the test in question.

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures.

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1. AGC calibration	PROMPT: ADJUST R130 (AGC +10.0 V). PRESS ANY KEY TO CONTINUE.		
	a. Measure dc voltage at test adapter AGC test point to test adapter GROUND jack.		
	b. Adjust R130	+10 ±0.1 V dc	Replace in order U13, U90, U91, U99, or U14 (ISB only).
	c. Press any key to continue.		
2. Channel A audio filter calibration	PROMPT: INPUT 3.000000 MHZ (−17 DBM). PRESS ANY KEY TO CONTINUE.		
	a. Adjust signal generator connected to test adapter 3-MHz IF INPUT for 3.000 000 MHz at −17-dBm level.		
	PROMPT: ADJUST RF GAIN (0 DECREASE, 1 INCREASE, E TO CONTINUE).		
	b. Measure the output between TP4 and GROUND jack with the distortion analyzer.	1.0 ±0.3 V rms	Replace in order U13, U98, U107, U108, U109, U110.
	c. Adjust output by entering a 1 to the test set to increase the level or 0 to decrease.		
	d. Once level is set, press E key to continue.		
	PROMPT: ADJUST INPUT LEVEL (1 VRMS). PRESS ANY KEY TO CONTINUE.		
	e. Adjust signal generator input for 1 V rms at TP4.	1.0 ±0.1 V rms	Replace in order U13, U107, U108, U109, U110, U98.
	f. Press any key.		
	PROMPT: ADJUST R169 AND R218. PRESS ANY KEY TO CONTINUE.		
	g. Adjust R169 for 1.0 ±0.1 V rms at TP4.	1.0 ±0.1 V	Replace in order U13, U108, U107, U109, U110, U98.
	h. Adjust R218 for 0-dBm output at CHANNEL A LINE AUDIO jacks.	0 dBm	Replace U110.
	j. Press any key.		
3. Channel B audio filter calibration (ISB only)	PROMPT: INPUT 3.000450 MHZ (−17 DBM). PRESS ANY KEY TO CONTINUE.		
	a. Adjust signal generator for 3.000 450 MHz at −17 dBm.		
	b. Connect distortion analyzer to TP5 and GROUND jacks.		
	c. Press any key.		

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
3. (Cont)	PROMPT: ADJUST RF GAIN (0 DECREASE, 1 INCREASE, E TO CONTINUE).		
	d. Measure signal at TP5 on distortion analyzer.	1.0 V ±0.3 V rms	Replace in order U14, U97, U106, U112, U113, U114.
	e. Press key 1 to increase signal to desired level or key 0 to decrease signal to desired level.		
	f. When signal is 1.0 V rms, press E key.		
	PROMPT: ADJUST INPUT LEVEL (1 VRMS). PRESS ANY KEY TO CONTINUE.		
	g. Adjust output level of signal generator for 1 V rms at TP5.	1.0 ±0.1 V rms	Replace in order U14, U97, U106, U112, U113, U114.
	h. Press any key.		
	PROMPT: ADJUST R195 and R204. PRESS ANY KEY TO CONTINUE.		
	j. Adjust signal generator to 3.002 950 MHz without changing output level.		
	k. Adjust R195 for 1 V rms at TP5.	1.0 ±0.1 V rms	Replace in order U14, U97, U106, U112, U113, U114.
	m. Adjust R204 for 0-dBm output at CHANNEL B LINE AUDIO jacks.	0 dBm	Replace in order U14, U114.
	n. Press any key.		
4. Signal activity detector	PROMPT: NO INPUT SIGNAL. PRESS ANY KEY TO CONTINUE.		
	a. Disconnect signal generator from 3-MHz IF INPUT.		For a signal activity detector:
	b. Press any key. Test will be performed by test set.		FAULT / REPLACE IN ORDER 0: U73, U65, U41, U116, U118, U117 1: U65, U72, U78, U63, U49, U70, U62 2: U65, U83, U62, U82, U76, U70, U77, U71, U43 3: U65, U49, U81, U54, U59 4: U65, U12, U60, U39, U11 5: U65, U49 6: U65, U63, U84 7: U65, U75, U119, U117

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
5. Line outputs, test points, and line level performance monitors	PROMPT: INPUT 3.000000 MHZ (−17 DBM) TO IF INPUT. PRESS ANY KEY TO CONTINUE.		
	a. Connect signal generator to 3-MHz IF INPUT jacks. Adjust signal generator for 3.000 000 MHz at −17-dBm level.		
	b. Press any key.		
	PROMPT: VERIFY TP2, TP4, TP6. PRESS ANY KEY TO CONTINUE.		
	c. Measure the voltage at TP2 and TP4 in respect to GROUND.	1.05 ±0.1 V rms	For TP2, replace in order U98, U107, U108. For TP4, replace in order U108, U109, U110.
	d. Using oscilloscope, measure the frequency of the signal at TP2 and TP4.	1000 ± 1 Hz	For TP2, replace in order U98, U107, U108. For TP4, replace in order U108, U109, U110.
	e. Measure the dc logic level at TP6.	Logic 0	Replace in order U111, U110, U108.
	f. Measure the signal at CHANNEL A LINE AUDIO jacks.	0.5 dBm ±1 dB	Replace U110.
	g. Press any key.		
	PROMPT: VERIFY TP6. PRESS ANY KEY TO CONTINUE.		
	h. Measure the dc logic level at TP6.	Logic 1	Replace in order U13, U111.
	j. Press any key.		
	Note The following prompts will appear only if ISB question was answered with a 1 (YES). Otherwise proceed to test 6.		
	PROMPT: INPUT 3.001000 MHZ (−17 DBM) TO IF INPUT. PRESS ANY KEY TO CONTINUE.		
	k. Adjust signal generator for 3.001 000 MHz at −17-dBm level.		
	m. Press any key.		
	PROMPT: VERIFY TP3, TP5, AND TP7. PRESS ANY KEY TO CONTINUE.		
	n. Measure the voltage at TP3 and TP5 in respect to GROUND.	1.05 ±0.1 V rms	For TP3, replace in order U97, U106, U112. For TP5, replace in order U112, U113, U114.

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
5. (Cont)	p. Measure the frequency of the signal at TP3 and TP5.	1000 ±1 Hz	For TP3, replace in order U97, U106, U112. For TP5, replace in order U112, U113, U114.
	q. Measure the dc logic level at TP7.	Logic 0	Replace in order U115, U114.
	r. Measure the signal at CHANNEL B LINE AUDIO jacks.	0.5 dBm ±1 dB	Replace U114.
	s. Press any key.		
	PROMPT: VERIFY TP7. PRESS ANY KEY TO CONTINUE.		
	t. Measure the dc logic level at TP7.	Logic 1	Replace in order U14, U115, U114.
	u. Press any key.		
6. IF translator	This test done automatically by test set.		Replace components prompted by test set.
7. 7720 self-tests and loopback	This test done automatically by test set.		Replace components prompted by test set.
8. Shift registers and d/a converters	PROMPT: VERIFY TEST POINTS (STEP 1). PRESS ANY KEY TO CONTINUE.		
	a. Measure the dc voltage at TP2 and the AGC test point in respect to GROUND jack.	0 ±0.5 V dc	Replace in order U98, U107, U108.
	b. If testing circuit card part number 646-6196-001, measure the dc voltage at TP3.	0 ±0.5 V dc	Replace in order U97, U106, U112.
	c. Press any key.		
	PROMPT: VERIFY TEST POINTS (STEP 2). PRESS ANY KEY TO CONTINUE.		
	d. Measure the dc voltage at TP2.	+10 ±0.5 V dc	Replace in order U98, U107, U108.
	e. If testing circuit card part number 646-6196-001, measure the dc voltage at TP3.	+10 ±0.5 V dc	Replace in order U97, U106, U112.
	f. Measure the voltage at AGC test point.	+10.0 ±0.5 V dc	Replace in order U90, U91, U99.
	g. Press any key.		
	PROMPT: WORKING		
	PROMPT: VERIFY TEST POINTS (STEP 3). PRESS ANY KEY TO CONTINUE.		
	h. Measure the dc voltage at TP2.	−10 ± 0.5 V dc	Replace in order U98, U107, U108.

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
8. (Cont)	j. If testing circuit card part number 646-6196-001, measure the dc voltage at TP3.	−10 ±0.5 V dc	Replace in order U97, U106, U112.
	k. Measure the voltage at AGC test point.	+5.0 ±0.05 V dc	Replace in order U90, U91, U99.
	m. Press any key.		
9. Pseudo-random noise generator shift register	This test done automatically by test set.		If display reads PRNG TEST FAULT, replace in order U48, U86, U84, U58.
10. A/d input	PROMPT: TERMINATE IF INPUT WITH 50 OHMS. PRESS ANY KEY TO CONTINUE.		
	a. Disconnect signal generator from 3-MHz IF INPUT and connect a 50-ohm termination to the 3-MHz IF INPUT jack.		
	b. Press any key.		
	PROMPT: VERIFY TP1 (31 M V AC). PRESS ANY KEY TO CONTINUE.		
	c. Measure the dc voltage level at TP1 in respect to GROUND.	−0.5 ±0.15 V dc	Replace in order Q2, Q3, Q6.
	d. Measure the ac voltage between TP1 and GROUND jacks.	31 ±5 mV ac	Replace in order Q2, Q3, Q6.
	e. Press any key.		
11. Filter selectivity and ripple	**Note** IF/Audio A3 must be properly mounted onto test adapters using all mounting screws to ensure proper grounding.		
	PROMPT: ENTER FILTER TEST NUMBER.		
	a. Select filter to be tested from table below and press key corresponding to filter test number.		

	FILTER TEST	OUTPUT CHAN	INITIAL FREQ NO 1 (MHz)	3-dB INPUT FREQ (MHz)	INITIAL FREQ NO 2 (MHz)	SELECTIVITY FREQ (MHz)
	1	A	3.000 000	3.000 210 ±15	3.010 000	3.000 520 ±25
	2	A	3.000 000	3.000 600 ±25	3.010 000	3.000 950 ±50
	3	A	3.000 300	3.001 730 ±25	3.010 000	3.002 080 ±50
	4	A	3.000 300	3.003 300 ±50	3.010 000	3.003 620 ±100
	5	A	3.000 300	3.001 470 ±50	3.010 000	3.001 790 ±50
ISB ONLY	6	A	2.999 700	2.996 830 ±50	2.990 000	2.996 540 ±50
	7	B	3.000 300	3.003 170 ±50	3.010 00	3.003 460 ±50

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
11. (Cont)	PROMPT: WORKING		
	PROMPT: INPUT INITIAL FREQ. NO. 1 (MHZ). PRESS ANY KEY TO CONTINUE.		
	b. Adjust signal generator for frequency listed in the INITIAL FREQ NO 1(MHz) column of table in step a for filter test being performed. Adjust signal generator output for −17-dBm level.		
	c. Disconnect 50-ohm termination from 3-MHz IF INPUT and connect signal generator to 3-MHz IF INPUT.		
	d. Press any key.		
	PROMPT: ADJUST RF GAIN (0 DECREASE, 1 INCREASE, E TO CONTINUE).		
	e. Measure signal at CHANNEL LINE AUDIO jacks listed in table for filter test being performed.	0 dBm ±0.25 dB	Replace in order U13, U107, U108, U109, U110, U98.
	f. If signal is below 0 dBm, press the 1 key until signal is above 0 dBm. If signal is above 0 dBm, press the 0 key until signal is 0 dBm.		
	g. Press E key.		
	PROMPT: VERIFY FILTER RESPONSE. PRESS ANY KEY TO CONTINUE.		
	h. Increase the signal generator from the INITIAL FREQ NO 1 (MHz) column of table in step a to frequency listed in 3-dB INPUT FREQ (MHz) column to find the maximum output as a reference.	Reference	
	j. Increase signal generator frequency until output drops 3 dB from output reference found in step h. Frequency should be as shown in table in step a under 3-dB INPUT FREQ (MHz) column.	See table in step a.	Replace in order U11, U12.
	k. Adjust signal generator from the 3-dB point frequency towards the reference frequency found in step h until output is 1.5 dB less than reference of step h. Note frequency.		
	m. Vary the signal generator in frequency from frequency of step k to the INITIAL FREQ NO 1 (MHz) frequency used in step b. Measure the maximum output deviation (ripple) relative to the reference level in step h.	1.6 dB	
	n. Adjust signal generator for frequency in INITIAL FREQ NO 2 (MHz) column of the table in step a for filter test being performed. Adjust signal generator for +3 dBm.		

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
11. (Cont)	p. Decrease signal generator frequency until output level equals output level found in step h. Read frequency of signal generator. Frequency should be as shown in table under column SELECTIVITY FREQ (MHz). q. Press any key. PROMPT: REPEAT TEST FOR EACH FILTER DESIRED	See table in step a.	Replace in order U11, U12.
12. SINAD (signal plus noise and distortion to noise and distortion ratio)	PROMPT: INPUT FREQUENCY FOR STEP 1. PRESS ANY KEY TO CONTINUE. a. Adjust signal generator for 3.000 600 MHz at −17-dBm level. b. Press any key. PROMPT: WORKING PROMPT: ADJUST RF GAIN (0 DECREASE, 1 INCREASE, E TO CONTINUE).		
	c. Measure output level at CHANNEL A LINE AUDIO jacks. If signal output is larger than 0 dBm, press 0 key until signal decreases to 0 dBm. If signal is less than 0 dBm, press 1 key until signal increases to 0 dBm. d. Press E key.	0 dBm ±0.2 dB	Replace in order U13, U108, U107, U109, U110, U98.
	PROMPT: TEST SINAD PERFORMANCE FOR STEP 1. PRESS ANY KEY TO CONTINUE.		
	e. Measure the SINAD of signal at CHANNEL A LINE AUDIO jacks. f. Press any key.	42 dB min	Replace in order U13, U108, U107, U109, U110, U98.
	PROMPT: ADJUST INPUT FREQUENCY FOR STEP 2. PRESS ANY KEY TO CONTINUE.		
	g. Adjust signal generator for 3.000 000 MHz modulated 60% at 1000 Hz at a level of −17 dBm. h. Press any key. PROMPT: WORKING PROMPT: ADJUST RF GAIN (0 DECREASE, 1 INCREASE, E TO CONTINUE).		
	j. Measure output level at CHANNEL A LINE AUDIO jacks. If signal output is larger than 0 dBm, press 0 key until signal decreases to 0 dBm. If signal is less than 0 dBm, press 1 key until signal increases to 0 dBm. k. Press E key.	0 dBm ±0.2 dB	Replace in order U13, U108, U107, U109, U110, U98.

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
12. (Cont)	PROMPT: TEST SINAD PERFORMANCE FOR STEP 2. PRESS ANY KEY TO CONTINUE.		
	Note When measuring AM SINAD, tune RF generator frequency for best SINAD.		
	m. Measure the SINAD of the signal at CHANNEL A LINE AUDIO jacks.	38 dB min	Replace in order U13, U108, U107, U109, U110, U98.
	n. Press any key.		
	Note The following steps will be followed only when a YES (1) was input to the question about ISB. Otherwise go to test 13.		
	PROMPT: ADJUST INPUT FREQUENCY FOR STEP 3. PRESS ANY KEY TO CONTINUE.		
	p. Adjust signal generator for 2.999 000 MHz at −17 dBm.		
	q. Press any key.		
	PROMPT: WORKING		
	PROMPT: ADJUST RF GAIN (0 DECREASE, 1 INCREASE, E TO CONTINUE).		
	r. Measure output level at CHANNEL A LINE AUDIO jacks. If signal is larger than 0 dBm, press 0 key until signal is 0 dBm. If signal is less than 0 dBm, press 1 key until signal increases to 0 dBm.	0 dBm ±0.2 dB	Replace in order U14, U108, U107, U109, U110, U98.
	s. Press E key.		
	PROMPT: TEST SINAD PERFORMANCE FOR STEP 3. PRESS ANY KEY TO CONTINUE.		
	t. Measure the SINAD of the signal at CHANNEL A LINE AUDIO jacks.	42 dB min	Replace in order U14, U108, U107, U109, U110, U98.
	u. Press any key.		
	PROMPT: ADJUST INPUT FREQUENCY FOR STEP 4. PRESS ANY KEY TO CONTINUE.		
	v. Adjust signal generator for 3.001 000 MHz at −17 dBm.		
	w. Press any key.		
	PROMPT: WORKING		
	PROMPT: ADJUST RF GAIN (0 DECREASE, 1 INCREASE, E TO CONTINUE).		

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
12. (Cont)	x. Measure output level at CHANNEL B LINE AUDIO jacks. If signal output is larger than 0 dBm, press 0 key until signal decreases to 0 dBm. If signal output is less than 0 dBm, press 1 key until signal increases to 0 dBm.	0 dBm ±0.2 dB	Replace in order U14, U97, U106, U112, U113, U114.
	y. Press E key.		
	PROMPT: TEST SINAD PERFORMANCE FOR STEP 4. PRESS ANY KEY TO CONTINUE.		
	z. Measure the SINAD of the signal at CHANNEL B LINE AUDIO jacks.	42 dB min	Replace in order U14, U97, U106, U112, U113, U114.
	aa. Press any key.		
13. Intermod	PROMPT: WORKING.		
	PROMPT: INPUT 2.99990 MHZ, 3.00010 MHZ (−20 DB). PRESS ANY KEY TO CONTINUE.		
	a. Connect two signal generators through a signal combiner to the 3-MHz IF INPUT. Adjust one signal generator for 2.999 90 MHz and the other for 3.000 10 MHz. Set output level of both generator to −20 dBm at combiner output.		
	b. Press any key.		
	PROMPT: ADJUST RF GAIN (0 DECREASE, 1 INCREASE, E TO CONTINUE).		
	c. Measure output signal at the CHANNEL A LINE AUDIO jack. If output is greater than 0 dBm, press the 0 key until output decreases to 0 dBm. If output is less than 0 dBm, press the 1 key until level increases to 0 dBm.	0 dBm ±0.2 dB	Replace in order U13, U108, U107, U109, U110, U98.
	d. Press the E key.		
	PROMPT: VERIFY INTERMOD PRODUCTS. PRESS ANY KEY TO CONTINUE.		
	e. Connect a spectrum analyzer to CHANNEL A LINE AUDIO jacks through intermod test adapter.		
	f. Measure the following intermod products for level in relation to the output tones. 400 Hz 600 Hz 800 Hz 1000 Hz 1200 Hz 1400 Hz 2000 Hz 2200 Hz 2400 Hz 2600 Hz 2800 Hz 3000 Hz	43 dB or more difference in level	Replace in order U13, U108, U107, U109, U110, U98.

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
13. (Cont)	g. Press any key. **Note** The following steps will be performed for the ISB option only.		
	PROMPT: INPUT 3.000900 MHZ, 3.001100 MHZ (−20 DB). PRESS ANY KEY TO CONTINUE.		
	h. Adjust one signal generator to 3.000 900 MHz and the other signal generator to 3.001 100 MHz. Set output level of both signal generators to −20 dBm. j. Press any key.		
	PROMPT: ADJUST RF GAIN (0 DECREASE, 1 INCREASE, E TO CONTINUE).		
	k. Measure output signal at CHANNEL B LINE AUDIO jacks. If output is greater than 0 dBm, press the 0 key until output is less than 0 dBm. If output is less than 0 dBm, press the 1 key until the level increases to 0 dBm. m. Press the E key.	0 dBm ±0.2 dB	Replace in order U14, U97, U106, U112, U113, U114.
	PROMPT: VERIFY INTERMOD PRODUCTS. PRESS ANY KEY TO CONTINUE.		
	n. Connect a spectrum analyzer to CHANNEL B LINE AUDIO jacks to an intermod test adapter. p. Measure the following intermod products for level in relation to the output tones. 300 Hz 500 Hz 700 Hz 1300 Hz 1500 Hz 1700 Hz 1900 Hz 2100 Hz 2300 Hz 2500 Hz 2700 Hz 2900 Hz q. Press any key.	43 dB or more difference in level	Replace in order U14, U97, U106, U112, U113, U114.
14. Bfo	PROMPT: INPUT 3.000000 MHZ (−17 DBM). PRESS ANY KEY TO CONTINUE.		
	a. Connect a single signal generator to 3-MHz IF INPUT jack. b. Adjust signal generator for 3.000 000 MHz at a −17-dBm level.		

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
14. (Cont)	c. Press any key.		
	PROMPT: ADJUST RF GAIN (0 DECREASE, 1 INCREASE, E TO CONTINUE).		
	d. Measure output signal at CHANNEL A LINE AUDIO jacks. If output is greater than 0 dBm, press the 0 key until output decreases to 0 dBm. If output is less than 0 dBm, press the 1 key until output increases to 0 dBm.	0 dBm ±0.2 dB	Replace in order U13, U108, U107, U109, U110, U98.
	e. Press the E key.		
	PROMPT: VERIFY OUTPUT IS 4000 HZ. PRESS ANY KEY TO CONTINUE.		
	f. Connect a frequency counter to the CHANNEL A LINE AUDIO jacks.		
	g. Measure the output frequency.	4000 Hz	Replace U13.
	h. Press any key.		
	PROMPT: VERIFY OUTPUT IS 300 HZ. PRESS ANY KEY TO CONTINUE.		
	j. Measure the frequency of the output signal at the CHANNEL A LINE AUDIO jacks.	300 Hz	Replace U13.
	k. Press any key.		
	PROMPT: VERIFY OUTPUT IS 4000 HZ. PRESS ANY KEY TO CONTINUE.		
	m. Measure the frequency of the output signal at CHANNEL A LINE AUDIO jack.	4000 Hz	Replace U13.
	n. Press any key.		
15. RF AGC and S-meter outputs	PROMPT: INPUT 3.000000 MHZ TO IF INPUT (−17 DBM). PRESS ANY KEY TO CONTINUE.		
	PROMPT: STEP 1. PRESS ANY KEY TO CONTINUE.		
	a. Adjust signal generator connected to 3-MHz IF INPUT for 3.000 000 MHz at a −17-dBm level.		If display shows RF AGC FAULT, replace in order U13, U90, U91, U99.
	b. Press any key.		If display shows REPLACE U13, replace U13.
	PROMPT: STEP 2. PRESS ANY KEY TO CONTINUE.		
	c. Set signal generator output level to −7 dBm.		
	d. Press any key.		
	PROMPT: STEP 3. PRESS ANY KEY TO CONTINUE.		
	e. Set signal generator output level to +3 dBm.		

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
15. (Cont)	f. Press any key.		
	PROMPT: STEP 4. PRESS ANY KEY TO CONTINUE.		
	g. Set signal generator output level to −27 dBm.		
	h. Press any key.		
	PROMPT: STEP 5. PRESS ANY KEY TO CONTINUE.		
	j. Set signal generator output level to −100 dBm.		
	k. Press any key.		
	PROMPT: STEP 6. PRESS ANY KEY TO CONTINUE.		
	m. Set signal generator output level to −27 dBm.		
	n. Press any key.		
	PROMPT: STEP 7. PRESS ANY KEY TO CONTINUE.		
	p. Set signal generator output level to −7 dBm.		
	q. Press any key.		
	PROMPT: STEP 8. PRESS ANY KEY TO CONTINUE.		
	r. Press any key.		
	PROMPT: STEP 9. PRESS ANY KEY TO CONTINUE.		
	s. Press any key.		
16. RF AGC and S-meter ISB AGC (ISB only)	**Note** The following test can only be performed on IF/Audio A3 part number 646-6196-001.		
	PROMPT: ADJUST FREQUENCY AND INPUT LEVEL FOR EACH STEP. PRESS ANY KEY TO CONTINUE.		
	PROMPT: STEP 1. PRESS ANY KEY TO CONTINUE.		
	a. Adjust signal generator connected to 3-MHz IF INPUT for 2.999 500 MHz at a −17-dBm level.		If display shows RF AGC FAULT, replace in order U14, U90, U91, U99.
	b. Press any key.		If display shows REPLACE U14, replace U14.
	PROMPT: STEP 2. PRESS ANY KEY TO CONTINUE.		
	c. Set signal generator output level to −7 dBm.		
	d. Press any key.		

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
16. (Cont)	PROMPT: STEP 3. PRESS ANY KEY TO CONTINUE.		
	e. Set signal generator output level to −27 dBm.		
	f. Press any key.		
	PROMPT: STEP 4. PRESS ANY KEY TO CONTINUE.		
	g. Set signal generator output level to −100 dBm.		
	h. Press any key.		
	PROMPT: STEP 5. PRESS ANY KEY TO CONTINUE.		
	j. Set signal generator output level to −7 dBm.		
	k. Press any key.		
	PROMPT: STEP 6. PRESS ANY KEY TO CONTINUE.		
	m. Set signal generator output level to +3 dBm.		
	n. Press any key.		
	PROMPT: STEP 7. PRESS ANY KEY TO CONTINUE.		
	p. Set signal generator output level to −27 dBm.		
	q. Press any key.		
	PROMPT: STEP 8. PRESS ANY KEY TO CONTINUE.		
	r. Press any key.		
	PROMPT: STEP 9. PRESS ANY KEY TO CONTINUE.		
	s. Press any key.		
	PROMPT: STEP 10. PRESS ANY KEY TO CONTINUE.		
	t. Press any key.		
	PROMPT: STEP 11. PRESS ANY KEY TO CONTINUE.		
	u. Set signal generator to 3.000 500 and output level to −17 dBm.		
	v. Press any key.		
	PROMPT: STEP 12. PRESS ANY KEY TO CONTINUE.		
	w. Set signal generator output level to −7 dBm.		
	x. Press any key.		

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
16. (Cont)	PROMPT: STEP 13. PRESS ANY KEY TO CONTINUE.		
	y. Set signal generator output level to −27 dBm.		
	z. Press any key.		
17. AGC leveling	PROMPT: INPUT 3.000000 MHZ TO IF INPUT. PRESS ANY KEY TO CONTINUE.		
	a. Adjust signal generator connected to 3-MHz IF INPUT for 3.000 000 MHz at −17 dBm.		
	b. Press any key.		
	PROMPT: VARY INPUT LEVEL −30 DBM TO +5 DBM. PRESS ANY KEY TO CONTINUE.		
	c. Vary the output of the signal generator connected to 3-MHz IF INPUT from −30 dBm to +5 dBm while monitoring the output level of the CHANNEL A LINE AUDIO jacks. Level should remain 0 dBm ±2 dB.	0 dBm ±2 dB	Replace U13.
	d. Press any key.		
	PROMPT: VERIFY −30 DBM INPUT, AGC IS 0 VOLTS. PRESS ANY KEY TO CONTINUE.		
	e. Adjust signal generator output level to −30 dBm.		
	f. Measure the dc level at the AGC test point.	0 ±0.1 V dc	Replace in order U90, U91, U99.
	g. Press any key.		
	PROMPT: VERIFY ABOVE −15 DBM. AGC IS +10 VOLTS. PRESS ANY KEY TO CONTINUE.		
	h. Adjust signal generator output while monitoring the AGC test point. Note the signal generator output required for a level of +10 ±1 V dc at the AGC test point.	−11 dBm ±3 dB	Replace in order U90, U91, U99.
	j. Press any key.		
18. AGC leveling ISB AGC (ISB only)	**Note** This test can only be performed on IF/Audio A3 part number 646-6196-001.		
	PROMPT: INPUT 3.001000 MHZ AT THE IF INPUT. PRESS ANY KEY TO CONTINUE.		
	a. Adjust signal generator connected to 3-MHz IF INPUT for 3.001 000 MHz at −17 dBm.		
	b. Press any key.		

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
18. (Cont)	PROMPT: VARY INPUT LEVEL −30 DBM TO +5 DBM. PRESS ANY KEY TO CONTINUE.		
	c. Vary signal generator output from −30 dBm to +5 dBm while monitoring output level of signal at CHANNEL B LINE AUDIO jacks. Signal level does not vary 0 dBm ±2 dB.	0 dBm ±2 dB	Replace U14.
	d. Press any key.		
	PROMPT: VERIFY −30 DBM INPUT, AGC IS 0 VOLTS. PRESS ANY KEY TO CONTINUE.		
	e. Adjust signal generator output level to −30 dBm.		
	f. Measure dc level at AGC test point.	0 +0.1 V dc	Replace in order U90, U91, U99.
	g. Press any key.		
	PROMPT: VERIFY ABOVE −15 DBM. AGC IS +10 VOLTS. PRESS ANY KEY TO CONTINUE.		
	h. Adjust signal generator output while monitoring the AGC test point. Note the signal generator output required for a level of +10 ±0.1 V dc at the AGC test point.	−11 dBm ±3 dB	Replace in order U90, U91, U99.
	j. Press any key.		
19. AGC attack and decay	PROMPT: INPUT 3.000000 MHZ (−28 DBM). PRESS ANY KEY TO CONTINUE.		
	a. Adjust signal generator connected to 3-MHz IF INPUT for 3.000 000 MHz at −28-dBm level.		
	b. Connect oscilloscope to CHANNEL A LINE AUDIO jacks.		
	c. Press any key.		
	PROMPT: VERIFY ATTACK AND DECAY (FAST). PRESS ANY KEY TO CONTINUE.		
	d. Measure the time required for the signal on the oscilloscope to return to within 3 dB of its preset level, when the signal generator output is changed to −18 dBm (attack time).	20 ms or less	Replace U13.
	e. Measure the time required for the signal on the oscilloscope to return to within 3 dB of its preset level, when the signal generator output is changed to −28 dBm (decay time).	50 to 150 ms	Replace U13.
	f. Press any key.		

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
19. (Cont)	PROMPT: VERIFY ATTACK AND DECAY (SLOW). PRESS ANY KEY TO CONTINUE.		
	g. Repeat step d.	20 ms or less	Replace U13.
	h. Repeat step e.	0.5 to 1.5 s	Replace U13.
	j. Press any key.		
20. AGC attack and decay, ISB (ISB only)	**Note** This following test can only be performed on IF/Audio A3 part number 646-6196-001.		
	PROMPT: INPUT 3.001000 MHZ (−28 DBM). PRESS ANY KEY TO CONTINUE.		
	a. Adjust signal generator connected to 3-MHz IF INPUT for 3.001 000 MHz at −28 dBm.		
	b. Connect oscilloscope to CHANNEL B LINE AUDIO jacks.		
	c. Press any key.		
	PROMPT: VERIFY ATTACK AND DECAY (FAST). PRESS ANY KEY TO CONTINUE.		
	d. Measure the time required for the signal on the oscilloscope to return to within 3 dB of its preset level, when the signal generator output is changed to −18 dBm (attack time).	20 ms or less	Replace U14.
	e. Measure the time required for the signal on the oscilloscope to return to within 3 dB of its preset level, when the signal generator output is changed to −28 dBm (decay time).	50 to 150 ms	Replace U14.
	f. Press any key.		
	PROMPT: VERIFY ATTACK AND DECAY (SLOW). PRESS ANY KEY TO CONTINUE.		
	g. Repeat step d.	20 ms or less	Replace U14.
	h. Repeat step e.	0.5 to 1.5 s	Replace U14.
	j. Press any key.		
21. Speaker output	PROMPT: INPUT 3.000000 MHZ (−17 DBM) TO IF INPUT. PRESS ANY KEY TO CONTINUE.		
	a. Adjust signal generator connected to 3-MHz IF INPUT for 3.000 000 MHz at −17 dBm.		
	b. Press any key.		
	PROMPT: VERIFY THE OUTPUT. PRESS ANY KEY TO CONTINUE.		
	c. Verify that the 1000-Hz tone is present at SPKR OUT.	Tone present	Replace U92.

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
21. (Cont)	d. Measure the output level at SPKR OUT while varying the speaker VOL control.	0.1 to 4.5 V rms	Replace in order U92, U103, U100, U44.
	e. Set speaker VOL control for 4.5 V rms at SPKR OUT jacks.		
	f. Connect distortion analyzer to SPKR OUT jacks.		
	g. Measure the SINAD of the signal.	Not greater than 5%	Replace U92.
	h. Press any key.		
	PROMPT: VERIFY OUTPUT IS BELOW 0.1 VRMS. PRESS ANY KEY TO CONTINUE.		
	j. Measure the output level of signal at SPKR OUT jacks.	Less than 0.1 V rms	Replace U100, U44.
	k. Press any key.		
22. Speaker output, ISB (ISB only)	**Note** The following test can only be performed on IF/Audio A3 part number 646-6196-001.		
	PROMPT: INPUT 2.999100 MHZ, 3.001100 MHZ (−20 DBM). PRESS ANY KEY TO CONTINUE.		
	a. Connect two signal generators through a signal combiner to the 3-MHz IF INPUT.		
	b. Set one signal generator for 2.999 100 MHz and the other for 3.001 100 MHz. Set level of both signal generators for −20 dBm.		
	c. Connect a spectrum analyzer to SPEAKER OUTPUT jacks.		
	d. Press any key.		
	PROMPT: VERIFY THE OUTPUT. PRESS ANY KEY TO CONTINUE.		
	e. Verify that the 900-Hz and 1100-Hz tones are present.	Tones present	Replace in order U92, U103, U100, U44.
	f. Measure the level of the two tones and calculate difference between levels.	Difference of 4 dB or less	Replace in order U92, U103, U100, U44.
	g. Vary the speaker VOL control. Output level of SPKR OUT varies from 0.1 to 4.5 volts.	0.1 to 4.5 V rms	Replace in order U92, U103, U100, U44.
	h. Press any key.		
	PROMPT: VERIFY OUTPUT. PRESS ANY KEY TO CONTINUE.		
	j. Verify that 1100-Hz tone has disappeared.	1100-Hz tone not present.	Replace in order U100, U44.
	k. Press any key.		

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
23. Squelch	PROMPT: ADJUST RF GAIN (0 DECREASE, 1 INCREASE, E TO CONTINUE).		
	a. Connect one signal generator to 3-MHz IF INPUT. Adjust signal generator for 3.000 000 MHz at −17 dBm.		
	b. Measure the output at CHANNEL A LINE AUDIO jack. If signal is greater than 0 dBm, press 0 key until signal decreases to 0 dBm. If signal is less than 0 dBm, press the 1 key until signal increases to 0 dBm.	0 dBm ±0.2 dB	Replace in order U13, U108, U107, U109, U110, U98.
	c. Press E key.		
	PROMPT: VERIFY AUDIO IS NOT SQUELCHED. PRESS ANY KEY TO CONTINUE.		
	Note It may be necessary to adjust speaker VOL control to allow for viewing of audio.		
	d. Connect oscilloscope to SPKR OUT jacks. Verify audio signal present.	Signal present	Replace in order Q4, Q5, U102, U101, U103, U93.
	PROMPT: BFO = 2500 HZ (SQUELCH = 0). PRESS ANY KEY TO CONTINUE.		
	e. Press any key.		
	PROMPT: WORKING.		
	PROMPT: ENTER SQUELCH THRESHOLD (1 = 4, 0 = 63).		
	f. Enter the digit 0.		
	PROMPT: READY FOR T1 OR T2 MEASUREMENT. PRESS ANY KEY TO CONTINUE.		
	g. Connect an oscilloscope to SPKR OUT jacks. Trigger oscilloscope externally with signal from pin 26 of U13.		
	h. Measure time from start of sweep to time audio signal is squelched, after pressing any key.	1250 ±300 ms	Replace in order U16, U93.
	PROMPT: DONE. ENTER "E" TO EXIT. PRESS ANY KEY TO CONTINUE.		
	j. Press any key except E.		
	PROMPT: ENTER SQUELCH THRESHOLD (1 = 4, 0 = 63).		
	k. Enter the digit 1.		
	PROMPT: READY FOR T1 OR T2 MEASUREMENT. PRESS ANY KEY TO CONTINUE.		
	m. Connect oscilloscope to SQ MON jack. Trigger oscilloscope externally with signal from pin 26 of U13.		

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
23. (Cont)	n. Measure the time from start of sweep until SQ MON is logic 1, after pressing any key.	Not greater then 50 ms	Replace in order U16, U93.
	PROMPT: DONE. ENTER "E" TO EXIT. PRESS ANY KEY TO CONTINUE.		
	p. Press any key except E.		
	PROMPT: ENTER SQUELCH THRESHOLD (1 = 4, 0 = 63).		
	q. Enter the digit 0.		
	PROMPT: READY FOR T1 OR T2 MEASUREMENT. PRESS ANY KEY TO CONTINUE.		
	r. Measure time from start of sweep to time SQ MON is logic 1, after pressing any key.	Not greater than 5 ms	Replace in order U16, U93.
	PROMPT: DONE. ENTER "E" TO EXIT. PRESS ANY KEY TO CONTINUE.		
	s. If all measurements were achieved, enter E. If a measurement was not achieved, press any key to return to a previous prompt and read measurement.		
	PROMPT: ENTER SQUELCH THRESHOLD (1 = 4, 0 = 63).		
	t. Enter the digit 0.		
	PROMPT: READY FOR T3 OR T4 MEASUREMENT. PRESS ANY KEY TO CONTINUE.		
	u. Connect oscilloscope to SPKR OUT. Trigger oscilloscope with signal from pin 26 of U13.		
	v. Measure the time from start of sweep to time audio signal appears, after pressing any key.	130 ±100 ms	Replace in order U16, U93.
	PROMPT: DONE. ENTER "E" TO EXIT. PRESS ANY KEY TO CONTINUE.		
	w. Press any key except E.		
	PROMPT: ENTER SQUELCH THRESHOLD (1 = 4, 0 = 63).		
	x. Enter the digit 1.		
	PROMPT: READY FOR T3 OR T4 MEASUREMENT. PRESS ANY KEY TO CONTINUE.		
	y. Connect oscilloscope to SQ MON. Trigger oscilloscope externally with signal from pin 26 of U13.		
	z. Measure the time from start of sweep to time SQ MON is logic 0, after pressing any key.	Not greater than 5 ms	Replace in order U16, U93.
	PROMPT: DONE. ENTER "E" TO EXIT. PRESS ANY KEY TO CONTINUE.		
	aa. Press any key except E.		

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
23. (Cont)	PROMPT: ENTER SQUELCH THRESHOLD (1 = 4, 0 = 63).		
	ab. Enter the digit 0.		
	PROMPT: READY FOR T3 OR T4 MEASUREMENT. PRESS ANY KEY TO CONTINUE.		
	ac. Measure the time from start of sweep to time SQ MON is logic 0, after pressing any key.	Not greater than 170 ms	Replace in order U16, U93.
	PROMPT: DONE. ENTER "E" TO EXIT. PRESS ANY KEY TO CONTINUE.		
	ad. If all measurements were achieved, enter E. If a measurement was not achieved, press any key to return to a previous prompt and make a measurement.		
24. Straight-through I/O	PROMPT: TURN OFF UUT POWER. PRESS ANY KEY TO CONTINUE.		
	a. Place UUT POWER switch to the OFF position.		
	b. Press any key.		
	PROMPT: VERIFY IMPEDANCE BETWEEN CONNECTORS 1, 2. PRESS ANY KEY TO CONTINUE.		
	c. Measure the impedance between the points listed below: FROM TO P3-2 J3-7 P3-4 J3-9 P3-5 J3-3 P3-6 J3-11 P3-7 J3-1 P3-8 J3-13 P3-10 J2-6 P3-14 J3-17 P5-5 J3-2 P5-6 J3-15 P5-7 J3-4 P5-9 J3-6 P5-11 J3-8 P5-13 J3-10 P5-15 J3-12	10 ohms or less	Replace defective circuit wiring.

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
24. (Cont)	FROM TO P5-16 J3-28 P5-17 J3-14 P5-18 J3-26 P5-19 J3-16 P5-20 J3-18 J2-1, 2 J4-3		
	d. Measure the impedance from each point listed in the FROM and TO columns to the GROUND jack.	1 megohm or greater	Replace defective circuit wiring.
	e. Measure the impedance from each point listed in the FROM and TO columns to the +5-V dc line.	1 megohm or greater	Replace defective circuit wiring.
	f. Press any key.		
	PROMPT: TURN UUT POWER ON. PRESS ANY KEY TO CONTINUE.		
	g. Press any key.		
25. Scan and mute	PROMPT: SCAN/MUTE SWITCH (NORMAL). PRESS ANY KEY TO CONTINUE.		
	a. Place SCAN/MUTE switch to the NORMAL position.		
	b. Press any key.		
	PROMPT: VERIFY SCAN AND MUTE ARE LOGIC 1. PRESS ANY KEY TO CONTINUE.		
	c. Measure the logic level at the SCAN and MUTE test jacks.	Logic 1	Replace in order CR8, CR10, R44, R48.
	d. Press any key.		
	PROMPT: SCAN/MUTE SWITCH (SHORT). PRESS ANY KEY TO CONTINUE.		
	e. Place the SCAN/MUTE switch to the SHORT position.		
	f. Press any key.		
	PROMPT: VERIFY SCAN/MUTE ARE LOGIC 0. PRESS ANY KEY TO CONTINUE.		
	g. Measure the logic level at the SCAN and MUTE test jacks.	Logic 0	Replace in order CR4, CR5.
	h. Press any key.		

Table 5-10. IF/Audio A3, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
26. Line level adjustment range and final setting	PROMPT: INPUT 3.000000 MHZ (−17 DBM). PRESS ANY KEY TO CONTINUE.		
	a. Connect signal generator adjusted to 3.000 000 MHz at −17-dBm level to the 3-MHz IF INPUT jack.		
	b. Connect distortion analyzer to CHANNEL A LINE AUDIO jack.		
	c. Press any key.		
	PROMPT: VERIFY R218. THEN ADJUST FOR 0 DBM. PRESS ANY KEY TO CONTINUE.		
	d. Vary R218 while monitoring signal level at CHANNEL A LINE AUDIO jack. Signal level should vary from −12 to +12 dBm.	−12 to +12 dBm	
	e. Adjust R218 for 0-dBm output at CHANNEL A LINE AUDIO jacks.	0 dBm	
	f. Press any key.		
27. Line level adjustment range and final setting, ISB (ISB only)	**Note** The following test can be performed only on IF/Audio A3 part number 646-6196-001.		
	PROMPT: INPUT 3.001000 MHZ (−17 DBM). PRESS ANY KEY TO CONTINUE.		
	a. Connect a signal generator adjusted for 3.001 000 MHz at −17-dBm level to 3-MHz IF INPUT jack.		
	b. Connect distortion analyzer to CHANNEL B LINE AUDIO jacks.		
	c. Press any key.		
	PROMPT: VERIFY R204. THEN ADJUST FOR 0 DBM. PRESS ANY KEY TO CONTINUE.		
	d. Vary R204 while monitoring signal level at CHANNEL B LINE AUDIO jack. Signal level should vary from −12 to +12 dBm.	−12 to +12 dBm	
	e. Adjust R204 for 0-dBm output at CHANNEL B LINE AUDIO jack.	0 dBm	
	f. Press any key.		

5.3.4.4 Synthesizer A5, Testing and Troubleshooting

a. Perform test setup of Figure 5-9.
b. Set MAIN POWER on test set to on.
c. Enter test adapter number 2 (for 997D-2).

Note

965C-1 Microprocessor Test Set and 997D-2 Synthesizer Test Adapter will perform a self-test function and then continue.

d. Set UUT POWER on test set to on.
e. Test set display will indicate to set frequency at 14 kHz to 29.999 99 MHz. Frequency is automatically set to 2.000 00 MHz if no other frequency is entered. Enter a frequency now only if there is a specific frequency that you wish to test. To set frequency:
   1. Press numerical keys on test set to set frequency (most significant digit first). Continue to input numbers until most significant digit is in place on the display (example: to enter 14.000 00 MHz, first enter 1 (one), then 4 (four), then 0 (zero) five times).
   2. When display reads correctly, enter the displayed frequency by pressing a nonnumerical key (A, B, C, D, E, F, (yellow key), SEC, MAS, or CLR).

Note

If an attempt is made to enter a frequency below 14 kHz, the microprocessor will return to the last assigned frequency.

f. Perform test procedures in Table 5-11.

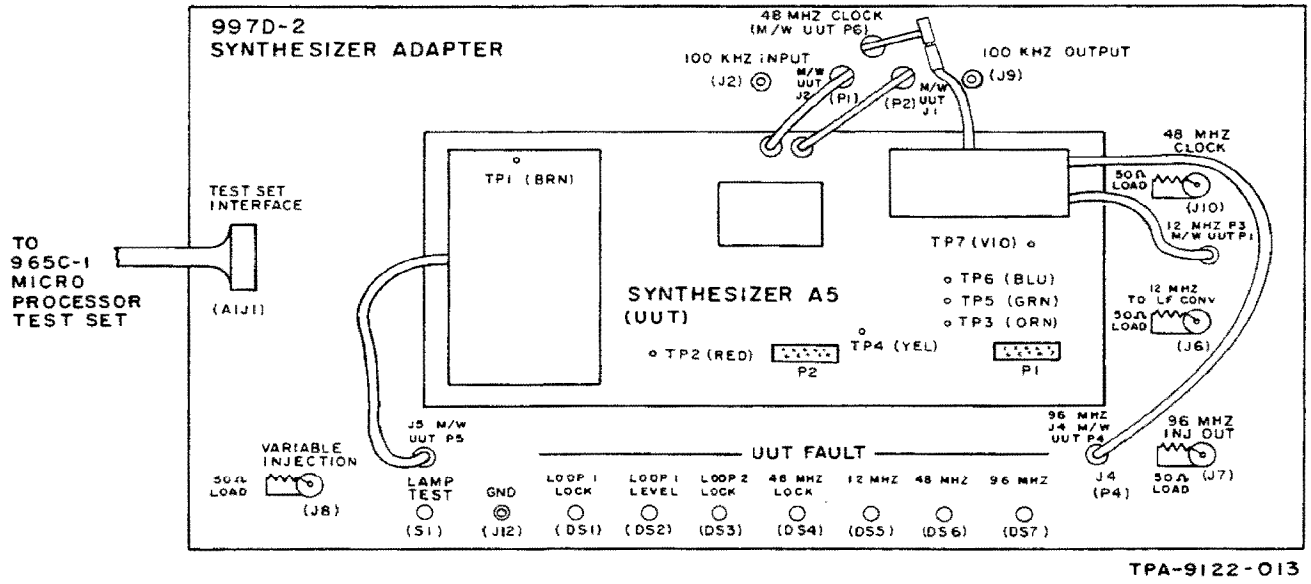


Figure 5-9 Synthesizer A5, Test Setup

Table 5-11. Synthesizer A5, Testing and Troubleshooting Procedures.

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
	Caution The clad area within the vco compartment is −V dc, not ground potential! Do not short the clad area to ground as this may damage the input regulators.		
1. Internal power supplies	Using a digital voltmeter, measure dc voltage from:		
	TP6 (blue) to ground	+5.2 ±0.06 V dc	Replace in order Q1, Q2, Q3, U1.
	TP5 (green) to ground	+12.0 ±0.25 V dc	Replace in order Q4, Q5, U2.
	TP7 (violet) to ground	−12.0 ±0.5 V dc	Replace in order Q6, Q7, U2.
2. 48-MHz clock	**Note** Allow at least a 15-minute warmup period before performing this test.		
	a. Connect frequency counter to 48 MHZ CLOCK (J10) on test set.		
	b. Enter 2 MHz into 965C-1 test set. Press yellow key.		
	c. Verify 48-MHz output.	48 MHz (This is a presence test not a tolerance test.)	
	d. Connect RF voltmeter to 48 MHZ CLOCK (J10).		
	e. Measure the output level.	+10 dBm ±3 dB	
3. External 100-kHz switching circuit	a. Connect RF signal generator to 100 KHZ INPUT (J2) on test set.		
	b. Adjust RF signal generator output for 100.001 kHz ±0.1 Hz at 0 dBm.		
	c. Connect frequency counter high-impedance input to 48 MHZ CLOCK output (J10).		
	d. Measure the frequency at 48 MHZ CLOCK output (J10).	48.000 480 MHz ±50 Hz	Replace in order Q8, Q10, U9, U10.
	e. Disconnect RF signal generator from 100 KHZ INPUT (J2).		
	f. Measure the frequency at 48 MHZ CLOCK output (J10).	48 MHz ±50 Hz	Replace in order freq std A5A3, U7, U8, U9.

Table 5-11. Synthesizer A5, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
4. 96-MHz doubler	a. Connect frequency counter 50-ohm input to 96-MHz output (J7) on test set. **Note** Use 50-ohm input on frequency counter in place of 50-ohm load in test setup.		
	b. Measure the frequency at 96-MHz output (J7).	Approximately 96 MHz (This is a presence test not a tolerance test.)	Replace in order Q16, Q15, Q14, Y2, U12.
	c. Disconnect frequency counter and connect RF voltmeter using 50-ohm probe to 96-MHz output (J7).		
	d. Measure 96-MHz output level.	+10 to +16 dBm	Replace in order Q16, Q15, Q14.
	e. Disconnect RF voltmeter and replace test setup 50-ohm loads at J7.		
5. Loop 2 vco	a. Set test set for 02.000 00 MHz.		
	b. Using digital voltmeter, measure dc voltage from TP3 (orange) to ground.	+6.5 ±0.1 V dc	Replace in order U19, U18, U20.
6. Integrator	a. Set test set for 02.005 00 MHz.		
	b. Using a high-impedance probe, connect spectrum analyzer between TP4 (yellow) and ground.		
	c. Measure the 1-kHz sidebands on the 10.5-MHz signal at TP4 (yellow).	NLT 40 dB below 10.5 MHz signal	Replace in order Q17, Q18, U18, U19.
7. 144.105-MHz filter	Using RF voltmeter with a high-impedance probe, measure output level at TP2 (red) to ground.	−5.0 dBm ±4.0 dB	Replace in order Q20, mixer A1, U21, Q19, Q13, U12.
8. Output vco	a. Set test set for 00.500 00 MHz.		
	b. Using digital voltmeter, measure dc voltage from, TP1 (brown) to TP7 (violet).	5.0 ±0.1 V dc	Replace in order U5, U4, U3, U24, mixer A2.

Table 5-11. Synthesizer A5, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
9. 10-MHz frequency standard	**Note** The built-in 10-MHz frequency standard is an extremely accurate device. Adjustment of the frequency standard should be attempted only in a calibration lab. Allow at least a 15-minute warmup period before performing this test/adjustment. a. Connect frequency counter 50-ohm input to P4 of Synthesizer A5 under test. **Note** Connect 100-kHz frequency standard to external standard input of the frequency counter. b. Measure the frequency at 96-MHz output (P4). c. Reconnect P4 of Synthesizer A5 to J4 of the test set.	96 MHz ±10 Hz	Adjust or replace A5A3, frequency standard assembly.
10. 12-MHz output	a. Set test set for 00.400 00 MHz. b. 50-ohm input to 12-MHz output (J6 on test set). **Note** Use 50-ohm input on frequency counter in place of 50-ohm load in test setup. c. Measure the frequency at 12-MHz output (J6). d. Disconnect frequency counter and connect RF voltmeter using 50-ohm probe to 12-MHz output (J6). e. Measure 12-MHz output level. f. Set test set for 00.600 00 MHz. g. Measure 12-MHz output level. h. Disconnect RF voltmeter and replace test setup 50-ohm load.	12 MHz (This is a presence test not a tolerance test.) +9 to +13 dBm (note level) Less than −27 dBm	Replace in order U14, U12. Replace in order U14, U12.

Table 5-11. Synthesizer A5, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
11. Output vco level	a. Connect RF voltmeter using a 50-ohm probe to VARIABLE INJECTION output (J8 on test set).		
	b. Set test set for 00.500 00 MHz. Note output level on RF voltmeter.	+13.0 to +20.0 dBm	Replace in order Q25, Q24, Q22, Q23, U6, U5, U4.
	c. Repeat step b for each 00.500 00-MHz increase in test set frequency, with the final check at 29.999 99 MHz.	Same as step b	Replace in order Q25, Q24, Q22, Q23, U6, U5, U4.
	Note If any frequency in the 00.500 00- to 29.999 99-MHz range is suspected to be faulty, check it also.		
12. Output vco frequency	**Note** Output vco frequency may be checked for any test set frequency as follows. Output vco frequency equals test set frequency plus 99.000 00 MHz.		
	a. Connect frequency counter 50-ohm input to VARIABLE INJECTION output (J8 on test set).		
	Note Connect 100-kHz frequency standard to external standard input of the frequency counter.		
	b. Set test set for 00.500 00 MHz.		
	c. Measure the frequency at VARIABLE INJECTION output (J8).	99.5 MHz (This is a presence test not a tolerance test.)	Replace in order U4, U20.
	d. Set test set for 15.000 00 MHz.		
	e. Measure the frequency at VARIABLE INJECTION output (J8).	114.0 MHz (This is a presence test not a tolerance test.)	Replace in order U4, U20.
	f. Set test set for 29.999 99 MHz.		
	g. Measure the frequency at VARIABLE INJECTION output (J8).	128.999 99 MHz (This is a presence test not a tolerance test.)	Replace in order U4, U20.

5.3.4.5 RF Translator A6

a. Perform test setup of Figure 5-10.
b. Set MAIN POWER on test set to on.
c. Enter test adapter number 3 (for 997D-3).

Note

965C-1 Microprocessor Test Set and 997D-3 RF Translator Test Adapter will perform a self-test function and then continue.

d. Set UUT POWER on test set to on.
e. Test set display will indicate to set frequency at 14 kHz to 29.999 99 MHz. Frequency is automatically set to 2.000 00 MHz if no other frequency is entered. Enter a frequency now only if there is a specific frequency that you wish to test. To set frequency:
   1. Press numerical keys on test set to set frequency (most significant digit first). Continue to input numbers until most significant digit is in place on the display (example: to enter 14.000 00 MHz, first enter 1 (one), then 4 (four), then 0 (zero) five times).
   2. When display reads correctly, enter the displayed frequency by pressing a nonnumerical key (A, B, C, D, E, F, (yellow key), SEC, MAS, or CLR).

Note

If an attempt is made to enter a frequency below 14 kHz, the microprocessor will return to the last assigned frequency.

f. Perform test procedures in Table 5-12.

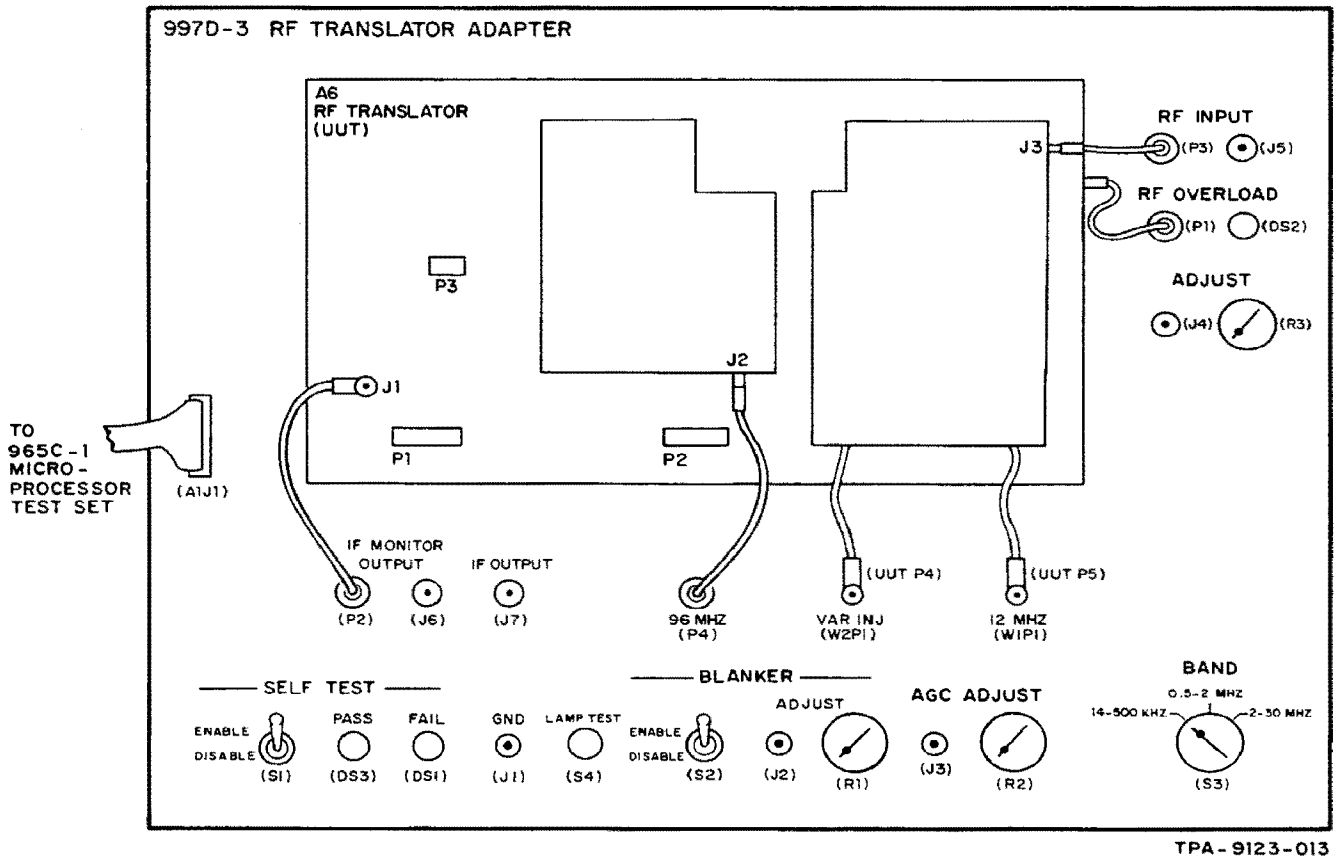


Figure 5-10 RF Translator A6, Test Setup

Table 5-12. RF Translator A6, Testing and Troubleshooting Procedures.

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1. Receiver alignment	a. Set test set for 05.000 00 MHz.		
	b. Connect RF signal generator to J5 (RF INPUT) on test adapter.		
	c. Set RF signal generator for 5.0 MHz at −90-dBm (7.07-μV rms) output.		
	d. Using 50-ohm probe, connect RF voltmeter to J7 (IF OUTPUT) on test adapter.		
	e. Measure IF output level.	−14.5 to −15.5 dBm (40 ±2.5 mV rms)	Adjust for maximum output (refer to para 5.2.5.5), then adjust R117 for −14.5 to −15.5 dBm. If unadjustable, replace in order Q29, Q26, Q25, Q24, Q19, Q21, Q18, Q20, Q6, Q5, Q4, Q3.
2. AGC linearity	**Note** Test setup same as for test 1.		
	a. Set RF signal generator for 5.0 MHz with RF output off.		
	b. Connect a digital voltmeter to AGC test point (J3) on test adapter.		
	c. Set AGC ADJUST (R2) on test adapter for 0 V dc on digital voltmeter.		
	d. Using a digital voltmeter, measure voltage at cathode end of CR34. Reconnect digital voltmeter to AGC test point (J3) on test adapter.	0.0 ±0.1 V dc	Replace U3.
	e. Turn RF signal generator RF output on and adjust for −93 dBm.		
	f. Note output at J7 (IF OUTPUT) on test adapter.	Reference	
	g. Increase RF signal generator output to −73 dBm (50 μV rms).		
	h. Adjust AGC ADJUST (R2) for 2.083 V dc on digital voltmeter.		
	j. Note output at J7 (IF OUTPUT) on test adapter.	−15.5 to −20.5 dBm	Replace in order U2, Q36, Q37.
	k. Increase RF signal generator output to −53 dBm (500 μV rms).		
	m. Adjust AGC ADJUST (R2) for 4.166 V dc on digital voltmeter.		

Table 5-12. RF Translator A6, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
2. (Cont)	n. Note output at J6 (IF MONITOR OUTPUT) on test adapter.	−15.5 to −20.5 dBm	Replace in order U2, Q36, Q37.
	p. Increase RF signal generator output to −23 dBm (16 mV rms).		
	q. Adjust AGC ADJUST (R2) for 7.292 V dc on digital voltmeter.		
	r. Note output at J7 (IF OUTPUT) on test adapter.	−15.5 to −20.5 dBm	Replace in order U2, Q36, Q37.
	s. Increase RF signal generator output to −3 dBm (160 mV rms).		
	t. Adjust AGC ADJUST (R2) for 9.375 V dc on digital voltmeter.		
	u. Note output at J7 (IF OUTPUT) on test adapter.	−17.0 to −19.0 dBm	Replace in order U2, Q36, Q37.
	v. With RF signal generator output at −3 dBm, adjust AGC ADJUST (R2) for 10.000 V dc on digital voltmeter.		
	w. Note output at J7 (IF OUTPUT) on test adapter.	−21.5 to −26.5 dBm	Replace in order U2, Q36, Q37.
3. Receiver sensitivity	a. With RF signal generator connected to J5 (RF INPUT) on test adapter, connect a receiver with a 3.0-kHz bandwidth to J7 (IF OUTPUT) on test adapter. Set test adapter AGC adjust ccw (no AGC).		
	b. Set receiver to 3.000 00 MHz, USB mode, AGC off.		
	c. Measure the s + n/n at the receiver output for the following frequencies.		
	INPUT LEVEL / FREQUENCY	OUTPUT	If s + n/n is not within tolerance, replace in order Q1 thru Q6, Q18 thru Q24, Q25, Q26, Q29, Q30.
	−110 dBm / 14 kHz	NLT 5.0 dB	
	−110 dBm / 490 kHz	NLT 5.0 dB	
	−110 dBm / 500 kHz	NLT 10.5 dB	
	−110 dBm / 1.9 MHz	NLT 10.5 dB	
	−110 dBm / 2.0 MHz	NLT 10.5 dB	
	−110 dBm / 29.9 MHz	NLT 10.5 dB	
4. Receiver bandwidth	**Note** Test setup same as for test 1.		
	a. Set RF signal generator for 5.0 MHz at −90-dBm (7.07-μV rms) output.		
	b. Note output at J7 (IF OUTPUT) on test adapter.	Reference	

Table 5-12. RF Translator A6, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
4. (Cont)	c. Vary RF signal generator frequency from 5.000 00 MHz to 5.003 20 MHz.		
	d. Note output at J7 (IF OUTPUT) on test adapter.	NMT 0.8 dB below reference in step b	Replace in order FL1, FL2.
	e. Vary RF signal generator frequency from 5.000 00 MHz to 4.996 80 MHz.		
	f. Note output at J7 (IF OUTPUT) on test adapter.	NMT 0.8 dB below reference in step b	Replace in order FL1, FL2.
5. Receiver selectivity	**Note** Test setup same as for test 1.		
	a. Set RF signal generator for 5.0 MHz at −100-dBm (2.24-μV rms) output.		
	b. Note output at J7 (IF OUTPUT) on test adapter.	Reference	
	c. Vary RF signal generator frequency from 5.000 00 MHz to 5.044 00 MHz. Increase RF signal generator output to 0 dBm (224 mV rms).		
	d. Note output at J7 (IF OUTPUT) on test adapter.	Less than reference in step b	Replace in order FL1, FL2.
	e. Vary RF signal generator frequency from 5.000 00 MHz to 4.956 00 MHz. (Maintain RF signal generator output at 0 dBm (224 mV rms).)		
	f. Note output at J7 (IF OUTPUT) on test adapter.	Less than reference in step b	Replace in order FL1, FL2.
6. Receiver gain	**Note** Test setup same as for test 1.		
	a. Set RF signal generator for 5.0 MHz at −70 dBm (70.7 μV rms).		
	b. Note output at J7 (IF OUTPUT) on test adapter.	368 to 428 mV rms	Replace in order Q1 thru Q6, Q18 thru Q24, Q25 thru Q30.
	c. Connect a 50-ohm load to J7 (IF OUTPUT) on test adapter.		
	d. Note output at J6 (IF MONITOR OUTPUT) on test adapter.	199 to 249 mV rms	Replace in order Q25, Q26, Q29, Q30 thru Q34, Q24 thru Q18, Q6 thru Q1.

Table 5-12. RF Translator A6, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
7. Blanker threshold	a. With noise blanker (S2) enabled and RF signal generator connected to J5 (RF INPUT) on test adapter, connect a 50-ohm load to J7 (IF OUTPUT) on test adapter.		
	b. Set RF signal generator for 5.0 MHz at −93 dBm (5.0 μV rms).		
	c. Using a high-impedance probe and RF voltmeter, measure voltage at TP2 (black) on RF translator.	150 to 300 mV rms (225 mV rms nominal)	Replace in order Q38, Q39, Q40, Q41.
	d. Increase RF signal generator level to −70 dBm (70.7 μV rms).		
	e. Note level at TP2.	290 to 580 mV rms (410 mV rms nominal)	Replace in order Q38, Q39, Q40, Q41.
8. Blanker gate	a. With RF signal generator connected to J5 (RF INPUT) on test adapter, connect a distortion analyzer to J7 (IF OUTPUT) on test adapter.		
	b. Set test set for 05.001 000 MHz.		
	c. Set BLANKER switch (S2) on test adapter to ENABLE.		
	d. Set BLANKER ADJUST (R1) on test adapter for 0 V dc as measured at BLANKER ADJUST test point (J2) on test adapter.		
	e. Set RF signal generator for 5.0 MHz at −100-dBm (2.24-μV rms) output.		
	f. Set the pulse generator for 100-μs width, 1-volt amplitude, and 100-Hz pulse repetition rate.		
	g. Using an RF combiner, apply the combined outputs to J5 (RF INPUT).		
	h. Using the distortion analyzer, measure the s+n/n at the receiver output.	NLT 10 dB	Replace in order Q27, Q28, Q35, Q43, Q44, Q42, U3.
	j. Set RF signal generator to −80-dBm (22.4-μV) output.		
	k. Using an oscilloscope, measure the blanker pulse width at J7 (IF OUTPUT).	400 to 600 μs	Replace in order Q27, Q28, Q35, Q43, Q44, Q42, U3.

Table 5-12. RF Translator A6, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
9. Image and IF rejection	**Note** Test setup same as for test 3.		
	a. Set test set for 05.000 00 MHz.		
	b. Set RF signal generator for 5.0 MHz at −110-dBm (0.71-μV rms) output.		
	c. Note output at J7 (IF OUTPUT) on test adapter.	Reference	
	d. Set RF signal generator for 2.999 MHz at −30-dBm (7.1-mV) output.		
	e. Note output at J7 (IF OUTPUT) on test adapter.	Less than reference in step c	Replace in order FL1, FL2.
	f. Repeat steps d and e at each of the following frequencies and −30 dBm. 10.999 MHz 98.999 MHz 202.999 MHz		
10. Self-test output	a. With RF signal generator connected to J5 (RF INPUT) on test adapter, connect a 50-ohm load to J6 (IF MONITOR OUTPUT) on test adapter.		
	b. Set test set for 12.000 00 MHz.		
	c. Set RF signal generator for 12.0 MHz at −90 dBm (7.07-μV rms) output.		
	d. Set SELF TEST switch (S1) on test adapter to ENABLE.		
	e. Observe the SELF TEST monitor lights.	PASS should light.	Replace in order U1, Q34, Q33, Q32.
	f. Set RF generator to −120 dBm.		
	g. Observe the SELF TEST monitor lights.	FAIL should light.	Replace in order U1, Q34, Q33, Q32.
11. Receiver intermodulation (in band)	a. Connect two RF signal generators to an RF combiner. Connect the output of the RF combiner to J5 (RF INPUT) on test adapter.		
	b. Connect 50-ohm input on a spectrum analyzer to J7 (IF OUTPUT) on test adapter.		
	c. Set test set for 05.000 00 MHz.		

Table 5-12. RF Translator A6, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
11. (Cont)	**Note** In steps d and e, tone being set is the only tone applied. d. Set one RF signal generator at 5.000 00 MHz at −10 dBm as measured at the output of the combiner. e. Set other RF signal generator at 5.001 00 MHz at −10 dBm as measured at the output of the combiner. f. Set AGC ADJUST (R2) for 0.25 volt per tone at J7 (IF OUTPUT) using an RF voltmeter. g. Measure the third and fifth order products using the spectrum analyzer at J7 (IF OUTPUT). h. Set AGC ADJUST (R2) for 0.0 V dc.	NLT 55 dB below each tone	Replace in order Q1 thru Q6, Q18 thru Q23.
12. Receiver intermodulation (out of band)	**Note** Test setup same as for test 11. a. Set test set for 00.600 00 MHz. b. Set one of RF signal generators for 601 kHz at −101 dBm as measured at output of the combiner. c. Note level of this signal on spectrum analyzer. **Note** In steps d and e, tone being set is the only tone applied. d. Change frequency of this signal generator to 630 kHz and level to −17 dBm as measured at output of the combiner. e. Set other RF signal generator to 659 kHz at −17 dBm as measured at output of the combiner. f. Apply both tones and measure the output levels using the spectrum analyzer. **Note** In steps g and h, tone being set is the only tone applied. g. Change frequency of one signal generator to 539 kHz at −17 dBm as measured at output of the combiner.	Reference Less than reference in step c	Replace in order Q1 thru Q6, Q18 thru Q24.

Table 5-12. RF Translator A6, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
12. (Cont)	h. Change frequency of other RF signal generator to 570 kHz at −17 dBm as measured at output of combiner.		
	j. Apply both tones and measure the output levels using the spectrum analyzer.	Less than reference in step c	Replace in order Q1 thru Q6, Q18 thru Q24.
	k. Set test set for 29.500 00 MHz.		
	m. Set one RF signal generator for 29.501 MHz at −101 dBm as measured at output of the combiner.		
	n. Note level of the signal on spectrum analyzer.	Reference	
	Note In steps p and q, tone being set is the only tone applied.		
	p. Change frequency of this signal generator to 29.530 MHz and level to −17 dBm as measured at output of the combiner.		
	q. Set other RF signal generator to 29.559 MHz at −17 dBm as measured at output of the combiner.		
	r. Apply both tones and measure the output levels using the spectrum analyzer.	Less than reference in step n	Replace in order Q1 thru Q6, Q18 thru Q23.
	Note In steps s and t, tone being set is the only tone applied.		
	s. Change frequency of one signal generator to 29.439 MHz at −17 dBm as measured at output of the combiner.		
	t. Change frequency of other RF signal generator to 29.470 MHz at −17 dBm as measured at output of the combiner.		
	u. Apply both tones and measure the output levels using the spectrum analyzer.	Less than reference in step n	Replace in order Q1 thru Q6, Q18 thru Q24.
13. Receiver overload	a. Connect RF OVERLOAD (P1) on test adapter to J3 on RF Translator A6.		
	b. Rotate RF OVERLOAD ADJUST (R3) clockwise until RF OVERLOAD indicator (DS2) just comes on.		
	c. Using a digital voltmeter, measure RF OVERLOAD ADJUST voltage at test point J4 on test adapter.	+2.0 to +4.0 V dc	Replace in order CR1 thru CR12, Q46.

SECTION 6
PARTS LIST

6.1 INTRODUCTION

6.1.1 General

The purpose of this parts list, prepared by Rockwell International, is for identification and requisition of parts. Parts listed meet critical equipment design specification requirements. Use only part numbers specified in this parts list for replacement of parts.

6.1.2 Group Assembly Parts List

6.1.2.1 FIG-ITEM Column — Digits preceding the dash are figure numbers. Digits following the dash are item numbers assigned in sequence to correspond with item numbers on the illustrations.

6.1.2.2 PART NO Column — Listed are MIL standard and vendor part numbers.

6.1.2.3 INDENT Column — Items are coded 1, 2, 3, etc, to indicate the relationship to the next higher assembly.

6.1.2.4 DESCRIPTION Column — Listed are the noun name, modifier, descriptive information, federal manufacturer's code, reference designation, attaching part (AP), reference to other figures, and effectivities.

6.1.2.4.1 Attaching parts are identified by (AP) following the part or parts they attach.

6.1.2.4.2 Effectivities are identified by the following methods: Manufacturer Control Number (MCN) 101 and up; Configuration Identifier (CI) 5-digit number; Revision Identifier (REV) dash (—) denotes original, letter A first change, letter B second change, etc. One of the above identifiers is listed on each chassis and/or replaceable assembly. Service bulletins are identified by SB 1, SB 2, etc.

6.1.2.5 UNITS PER ASSY Column — Quantities specified are per item number. Letters AR denote the selection of parts as required. Letters REF refer to an assembly completely assembled on a preceding figure and illustration.

6.1.2.6 USABLE ON CODE Column — Part variations within a group of equipment are indicated by a letter code (A, B, C, etc). Absence of a code indicates part applies to all models.

6.1.3 Numerical Index

6.1.3.1 PART NUMBER Column — Part numbers are listed in alphanumeric sequence.

6.1.3.2 FIG-ITEM Column — Digits preceding the dash are figure numbers. Digits following the dash are item numbers.

6.1.3.3 TTL REQ Column — Listed is the total quantity of parts or assemblies covered in the Group Assembly Parts List.

6.1.4 Reference Designation Index

6.1.4.1 REFERENCE DESIGNATION Column — Reference designations are listed in alphanumeric sequence.

6.1.4.2 FIG-ITEM Column — Digits preceding the dash are figure numbers. Digits following the dash are item numbers.

6.1.4.3 PART NUMBER Column — Part numbers listed are for items that have reference designations assigned.

6.1.5 How To Use This Parts List

6.1.5.1 To locate a part number if the assembly in which the part is used is known, turn to the List of Illustrations and find the page number for the assembly in which the part is used. Locate the part and its index number on the illustration and find the index number on the Group Assembly Parts List page to determine its description and part number.

6.1.5.2 To locate the illustration for a part if the number is known, refer to the Numerical Index and find the part number. Turn to the Group Assembly Parts List and find the first figure and index number indicated in the Numerical Index for that part. If this figure shows the part in a section or system of the equipment other than the one desired, refer to the other figure numbers listed in the Numerical Index.

6.1.5.3 To locate the illustration for a part if the reference designation is known, refer to the Reference Designation Index and find the symbol; turn to the Group Assembly Parts List and find the figure and index number indicated in the index.

Caution

This equipment contains electrostatic discharge sensitive (ESDS) devices. Special handling methods and materials must be used to prevent equipment damage. Refer to the maintenance section for the equipment before assembly/disassembly or repair is performed. ESDS items are identified in the description column of the parts list by (ESDS).

All supporting parts list illustrations that contain ESDS items are shown with the following symbol.

6.1.6 Manufacturer's Code, Name, and Address

MFR CODE	MANUFACTURER'S NAME AND ADDRESS
A1533	SQUIRES ELECTRONICS 8900 SW BURNHAM ROAD F-13 TIGARD OR 97223
A2184	TOSHIBA AMERICA INC ELECTRONICS COMPONENTS DIV 2441 MICHELLE DR TUSTIN CA 92680
00136	MCCOY ELECTRONICS CO 100 WATTS ST P O BOX B MT HOLLY SPRINGS PA 17065-1821
00417	DELTRON INC WISSAHICKON AVE P O BOX 1369 NORTH WALES PA 19454
00779	AMP INC EISENHOWER BLVD P O BOX 3608 HARRISBURG PA 17105
01121	ALLEN-BRADLEY CO 1201 SOUTH 2ND ST MILWAUKEE WI 53204-2410
01295	TEXAS INSTRUMENTS INC SEMICONDUCTOR GROUP 13500 N CENTRAL EXPRESSWAY P O BOX 225012 M/S 49 DALLAS TX 75265
01963	CHERRY ELECTRICAL PRODUCTS CORP 3600 SUNSET AVE WAUKEGAN IL 60087-3214
02111	SPECTROL ELECTRONICS CORP SUB OF CARRIER CORP 17070 E GALE AVE P O BOX 1220 CITY OF INDUSTRY CA 91749
02113	COILCRAFT INC 1102 SILVER LAKE RD CARY IL 60013-1658
02114	AMPEREX ELECTRONIC CORP FERROXCUBE DIV 5083 KINGS HWY SAUGERTIES NY 12477
02735	RCA CORP SOLID STATE DIVISION ROUTE 202 SOMERVILLE NJ 08876
04099	CAPCO INC 1328 WINTERS AVE P O BOX 1028 GRAND JUNCTION CO 81502
04222	AVX CERAMICS DIV OF AVX CORP 19TH AVE SOUTH P O BOX 867 MYRTLE BEACH SC 29577
04713	MOTOROLA INC SEMICONDUCTOR PRODUCTS SECTOR 5005 E MCDOWELL RD PHOENIX AZ 85008-4229
05245	CORCOM INC 1600 WINCHESTE RD LIBERTYVILLE IL 60048-1267
05276	ITT POMONA ELECTRONICS DIV 1500 E 9TH ST P O BOX 2767 POMONA CA 91766-3835
06383	PANDUIT CORP 17301 RIDGELAND TINLEY PARK IL 60477-3048

MFR CODE	MANUFACTURER'S NAME AND ADDRESS
06540	MITE CORP AMATOM ELECTRONIC HARDWARE DIV 446 BLAKE ST NEW HAVEN CT 06515-1238
07256	SILICON TRANSISTOR CORP SUB OF BBF INC KATRINA RD CHELMSFORD MA 01824
07263	FAIRCHILD CAMERA AND INSTRUMENT CORP SEMICONDUCTOR DIV NORTH AMERICAN SALES MAIL STOP 20-2275 464 ELLIS ST MOUNTAIN VIEW CA 94039
07707	USM CORP SUB OF EMHART INDUSTRIES INC USM FASTENER DIV 510 RIVER RD SHELTON CT 06484-4517
08289	BLINN DELBERT CO INC THE 1678 E MISSION BLVD P O BOX 2007 POMONA CA 91769
08530	RELIANCE MICA CORP 341-39TH ST BROOKLYN NY 11232-2903
09922	BURNDY CORP RICHARDS AVE NORWALK CT 06856
11402	HISONIC INC 249 N TROOST P O BOX 1130 OLATHE KS 66061-3154
12040	NATIONAL SEMICONDUCTOR CORP COMMERCE DR P O BOX 443 DANBURY CT 06810
12515	TELEDYNE THERMATICS A TELEDYNE INC CO HWY 301 S P O BOX 909 ELM CITY NC 27822
12697	CLAROSTAT MFG CO INC LOWER WASHINGTON ST DOVER NH 03820
12814	THERMAX WIRE CORP 32-02 LINDEN PLACE FLUSHING NY 11354-2823
12954	MICROSEMI CORP-SCOTTSDALE 8700 E THOMAS RD P O BOX 1390 SCOTTSDALE AZ 85252
12969	UNITRODE CORP 5 FORBES RD LEXINGTON MA 02173-7305
12998	QUALITY NAME PLATE INC MILL ROAD EAST GLASTONBURY CT 06025
13103	THERMALLOY CO INC 2021 W VALLEY VIEW LANE P O BOX 810839 DALLAS TX 75381
13499	ROCKWELL INTERNATIONAL CORPORATION DEFENSE ELECTRONICS OPERATIONS COLLINS DEFENSE COMMUNICATIONS 350 COLLINS ROAD NE CEDAR RAPIDS IA 52498
14099	SEMTECH CORP 652 MITCHELL ROAD NEWBURY PARK CA 91320-2211
14208	MINNEAPOLIS SPEAKER CO 3806 GRAND AVE S MINNEAPOLIS MN 55409-1233
14433	ITT SEMICONDUCTORS DIV WEST PALM BEACH FL
14604	ELMWOOD SENSORS INC SUB OF FASCO INDUSTRIES INC 500 NARRAGANSETT PARK DR P O BOX 2325 PAWTUCKET RI 02861-4325
14752	ELECTRO CUBE INC 1710 S DEL MAR AVE SAN GABRIEL CA 91776-3825
14756	ELECPAC DIV OF WILBRECHT ELECTRONICS INC 740 INDUSTRIAL DR SUITES D AND E CARY IL 60013-1962
14936	GENERAL INSTRUMENT CORP DISCRETE SEMI CONDUCTOR DIV 600 W JOHN ST HICKSVILLE NY 11802
15542	MINI-CIRCUITS LABORATORY DIV OF SCIENTIFIC COMPONENTS CORP 2625 E 14TH ST BROOKLYN NY 11235-3915
15686	DISC INSTRUMENTS INC 102 E BAKER ST COSTA MESA CA 92626-4503
16037	SPRUCE PINE MICA CO INC P O BOX 219 SPRUCE PINE NC 28777-0219
17856	SILICONIX INC 2201 LAURELWOOD RD SANTA CLARA CA 95054-1516
18324	SIGNETICS CORP MILITARY PRODUCTS DIV 4130 S MARKET COURT SACRAMENTO CA 95834-1222

MFR CODE	MANUFACTURER'S NAME AND ADDRESS
18796	MURATA ERIE TECHNOLOGICAL PRODUCTS STATE COLLEGE OPERATIONS 1900 W COLLEGE AVE STATE COLLEGE PA 16801-2723
19193	COIL SPECIALTY CO THE 2730 CAROLEAN INDUSTRIAL DR P O BOX 978 STATE COLLEGE PA 16804
19613	MINNESOTA MINING AND MFG CO TEXTOOL PRODUCTS DEPT ELECTRONIC PRODUCT DIV 1410 E PIONEER DR IRVING TX 75061-7847
19648	ELDRE COMPONENTS INC 1500 JEFFERSON RD ROCHESTER NY 14623-3110
20462	PREM ENTERPRISES INC 3519 N CHAPEL HILL MC HENRY IL 60050-2504
22526	DU PONT E I DE NEMOURS AND CO INC DU PONT CONNECTOR SYSTEMS ADVANCED PRODUCTS DIV MILITARY PRODUCTS GROUP 515 FISHING CREEK RD NEW CUMBERLAND PA 17070-3007
22753	U I D SWITCHES INC SUB OF ILLIONIOS TOOL WORKS INC 6615 W IRVING PARK RD CHICAGO IL 60634
24355	ANALOG DEVICES INC RT 1 INDUSTRIAL PK P O BOX 280 NORWOOD MA 02062
25088	SIEMENS CORP 186 WOOD AVE S ISELIN NJ 08830-2704
25120	PIEZO TECHNOLOGY INC 2525 SHADER RD P O BOX 7859 ORLANDO FL 32854
25403	AMPEREX ELECTRONIC CORP SEMICONDUCTOR SOLID STATE AND ACTIVE DEVICES-ELECTRO OPTICAL DEVICES PROVIDENCE PIKE SLATERSVILLE RI 02876
26863	ALL STATES INC 1801 W FOSTER AVE CHICAGO IL 60640-1023
27014	NATIONAL SEMICONDUCTOR CORP 2900 SEMICONDUCTOR DR SANTA CLARA CA 95051-0606
27264	MOLEX INC 2222 WELLINGTON COURT LISLE IL 60532-1613
28480	HEWLETT-PACKARD CO CORPORATE HQ 3000 HANOVER ST PALO ALTO CA 94304-1112
30161	AAVID ENGINEERING INC ONE KOOL PATH P O BOX 400 LACONIA NH 03247
31019	SOLID STATE SCIENTIFIC INC 3900 WELSH RD WILLOW GROVE PA 19090-2909
31918	ITT SCHADOW INC 8081 WALLACE RD EDEN PRAIRIE MN 55344-2224
32159	WEST-CAP ARIZONA 2201 E ELVIRA ROAD TUCSON AZ 85706-7026
34335	ADVANCED MICRO DEVICES 901 THOMPSON PL SUNNYVALE CA 94086-4518
34649	INTEL CORP 3065 BOWERS AVE SANTA CLARA CA 95051
38317	DATA IMAGES INC 1283 ALGONA RD OTTAWA ONT CAN K1B 3W7
45586	PANGBORN A KENNECOTT CO 10 PANGBORN BLVD P O BOX 380 HAGERSTOWN MD 21740
46384	PENN ENGINEERING AND MFG CORP OLD EASTON RD P O BOX 1000 DANBORO PA 18916
49956	RAYTHEON CO EXECUTIVE OFFICES 141 SPRING ST LEXINGTON MA 02173-7801
50056	PIEZO ELECTRIC PRODUCTS INC 212 DURHAM AVE METUCHEN NJ 08840-1740
51792	COLUMBIA NUT AND BOLT CORP 45 MURRAY ST NEW YORK NY 10007-2201
52458	MAGNUM ELECTRIC CORP 6385 DIXIE HWY ERIE MI 48133-9637
53387	ELECTRONIC PRODUCTS/3M ELECTRONIC PRODUCTS DIV 11209 METRIC BLVD/BLDG 502 P O BOX 2963 AUSTIN, TEXAN 78769-2963

MFR CODE	MANUFACTURER'S NAME AND ADDRESS
54473	MATSUSHITA ELECTRIC CORP OF AMERICA ONE PANASONIC WAY P O BOX 1501 SECAUCUS NJ 07094-2917
54590	RCA CORP DISTRIBUTION AND SPECIAL PRODUCTS BLDG 206-2 CHERRY HILL OFFICES CHERRY HILL NJ 08358
56289	SPRAGUE ELECTRIC CO 87 MARSHALL ST NORTH ADAMS MA 01247-2402
57771	STIMPSON CO INC 900 SYLVAN AVE BAYPORT NY 11705-1012
57863	NORTH AMERICAN SPECIALTIES CORP 120-12 28TH AVE FLUSHING NY 11354-1049
59518	METALAGRAPHICS INC 18143 NAPA ST NORTHRIDGE CA 91325-3319
59621	TRW/LSI PRODUCTS DIV OF TRW INC 4243 CAMPUS POINT CORT SAN DIEGO CA 92126
59660	TUSONIX INC 2155 N FORBES BLVD SUITE 107 TUCSON AZ 85745-1413
59942	US MICROTEK COMPONENTS 11144 PENROSE ST UNIT 7 SUN VALLEY CA 91352-2749
61271	FUJITSU MICROELECTRONICS INC 2985 KIFER RD SANTA CLARA CA 95051-0802
61892	NEC ELECTRONICS USA INC MICROCOMPUTER DIV ADVANCED CIRCUITS ENGINEERING 1 NATICK EXECUTIVE PK NATICK MA 01760
61957	USM CORP SUB OF EMHART INDUSTRIES INC 140 FEDERAL ST BOSTON MA 02107
64155	LINEAR TECHNOLOGY CORP 1630 MCCARTHY BLVD MILPITAS CA 95035-7417
70318	ALLMETAL SCREW PRODUCTS CO INC 821 STEWART AVE GARDEN CITY NY 11530-4810
70903	BELDEN CORP SUB OF COOPER INDUSTRIES INC 2000 S BATAVIA AVE GENEVA IL 60134-3325
71400	BUSSMANN DIV OF MCGRAW-EDISON CO 114 OLD STATE RD P O BOX 14460 ST LOUIS MO 63178
71468	ITT CANNON DIV OF ITT CORP 10550 TALBERT AVE P O BOX 8040 FOUNTAIN VALLEY CA 92708
72982	MURATA ERIE NORTH AMERICA INC ERIE OPRATIONS 645 W 11TH ST ERIE PA 16512
73386	FREED TRANSFORMER CO INC 1718 WIERFIELD ST RIDGEWOOD QUEENS NY 11385-5352
74970	JOHNSON E F CO 299 10TH AVE S W WASECA MN 56093-2539
77147	PATTON-MACGUYER CO DIV OF AVID CORP 17 VIRGINIA AVE PROVIDENCE RI 02905-4441
77250	ALLIED PRODUCTS CORP PHEOLL MFG CO DIV 5700 W ROOSEVELT RD CHICAGO IL 60650-1156
79807	WROUGHT WASHER MFG INC 2100 S BAY ST MILWAUKEE WI 53207-1208
80205	NATIONAL AEROSPACE STANDARDS COMMITTEE AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA INC 1725 DE SALES ST WASHINGTON DC
80294	BOURNS INSTRUMENTS INC 6135 MAGNOLIA AVE RIVERSIDE CA 92506-2521
81073	GRAYHILL INC 561 HILLGROVE AVE P O BOX 10373 LA GRANGE IL 60525-5914
81348	FEDERAL SPECIFICATIONS
81349	MILITARY SPECIFICATIONS
81815	COMMUNICATION COIL CO 2839 NORTH NARRAGANSETT AVE CHICAGO IL 60634-4935
82389	SWITCHCRAFT INC SUB OF RAYTHEON CO 5555 N ELSTRON AVE CHICAGO IL 60630-1314

MFR CODE	MANUFACTURER'S NAME AND ADDRESS
82647	TEXAS INSTRUMENTS INC CONTROL PRODUCTS DIV 34 FOREST ST MAIL STATION 12-33 ATTLEBORO MA 02703-2454
83330	KULKA SMITH INC A NORTH AMERICAN PHILIPS CO 1913 ATLANTIC AVE MANASQUAN NJ 08736-1005
85916	ELECTRIC INDUSTRIES AND MFG CO RED BANK NJ
90925	MILFORD RIVET AND MACHINE CO PENN DIVISION HATBORO PA
91293	JOHANSON MFG CO ROCKWAY VALLEY RD BOONTON NJ 07005-9023
91637	DALE ELECTRONICS INC 2064 12TH AVE P O BOX 609 COLUMBUS NE 68601-3632
91886	MICRODOT MFG INC MALCO MFG DIV 12 PROGRESS DR MONTGOMERYVILLE PA 18936
93958	REPUBLIC ELECTRONICS CORP 176 E 7TH ST PATERSON NJ 07524-1609
94375	AUTOMATIC CONNECTOR INC 400 MORELAND RD COMMACK NY 11725-5707
95105	ROCKWELL INTERNATIONAL CORPORATION DEFENSE ELECTRONICS OPERATIONS COLLINS DEFENSE COMMUNICATIONS 350 COLLINS ROAD NE CEDAR RAPIDS IA 52498
95146	ALCO ELECTRONIC PRODUCTS INC 1551 OSGOOD ST NORTH ANDOVER MA 01845-1014
96095	AVX CERAMICS DIV OF AVX CORP SENECA AVE OLEAN NY 14760-9524
96733	SFE TECHNOLOGIES 1501 FIRST ST SAN FERNANDO CA 91340-2707
96906	MILITARY STANDARDS
97913	INDUSTRIAL ELECTRONIC HARDWARE CORP 109 PRINCE ST NEW YORK NY 10012-3102
98291	SEALECTRO CORP BICC ELECTRONICS 40 LINDEMAN DR TRUMBULL CT 06611-4739
98978	INTERNATIONAL ELECTRONIC RESEARCH CORP 135 W MAGNOLIA BLVD P O BOX 7704 BURBANK CA 91510
99378	ATLEE OF DELAWARE INC NORTH ANDOVER BUSINESS PARK 10 BAYFIELD DR NORTH ANDOVER MA 01845
99800	AMERICAN PRECISION INDUSTRIES INC DELEVAN DIV 270 QUAKER RD EAST AURORA NY 14052-2114

6.1.7 Usable On Codes

The following usable on codes have been assigned in this manual:

USABLE ON CODE	UNIT PART NUMBER	FIG-ITEM
A	622-6577-001	6-1-
B	622-6577-002	6-1-
C	622-6577-003	6-1-

6.1.8 Reference Designation Prefixes

The following prefixes have been assigned in this manual:

PREFIX	UNIT PART NUMBER	FIG-ITEM
A1	652-6572-001	6-2-
A1	652-6572-002	6-2-
A1A1	646-6300-001	6-3-
A2	646-6247-001	6-4-
A2	646-6247-002	6-4-
A3	646-6196-001	6-5-
A3	646-6196-002	6-5-
A4	652-6602-002	6-9-
A4V1	P51650-601	6-10-
A4V2	P51649-601	6-11-
A4V3	P51649-601	6-11-
A5	646-6299-001	6-7-
A5A1	277-0496-010	6-7-439
A5A2	277-0496-010	6-7-447
A5A3	652-6611-001	6-8-
A5A3A1	659-2038-001	6-8-46
A5A3A2	659-2025-001	6-8-7
A6	646-6298-001	6-6-

PREFIX	UNIT PART NUMBER	FIG-ITEM
W1	652-6580-004	6-1-42
W2	652-6580-003	6-1-46
W3	652-6580-002	6-1-50
W4	652-6580-001	6-1-54

6.1.9 Configuration Identifiers

The following CI's/REV LTR's were used in compiling data for this manual:

CI/ REV LTR	UNIT PART NUMBER	FIG-ITEM
H	622-6577-001	6-1-
H	622-6577-002	6-1-
H	622-6577-003	6-1-
A	652-6580-004	6-1-42
A	652-6580-003	6-1-46
A	652-6580-002	6-1-50
A	652-6580-001	6-1-54
G	652-6552-001	6-1-75
F	652-6572-001	6-2-
F	646-6572-002	6-2-
G	646-6300-001	6-3-
L	646-6247-001	6-4-
L	646-6247-002	6-4-
M	646-6196-001	6-5-
M	646-6196-002	6-5-
M	646-6298-001	6-6-
N	646-6299-001	6-7-
K	652-6611-001	6-8-
L	659-2025-001	6-8-7
G	659-2038-001	6-8-46
D	652-6602-002	6-9-
—	P51650-601	6-10-
—	P51649-601	6-11-

6.2 GROUP ASSEMBLY PARTS LIST

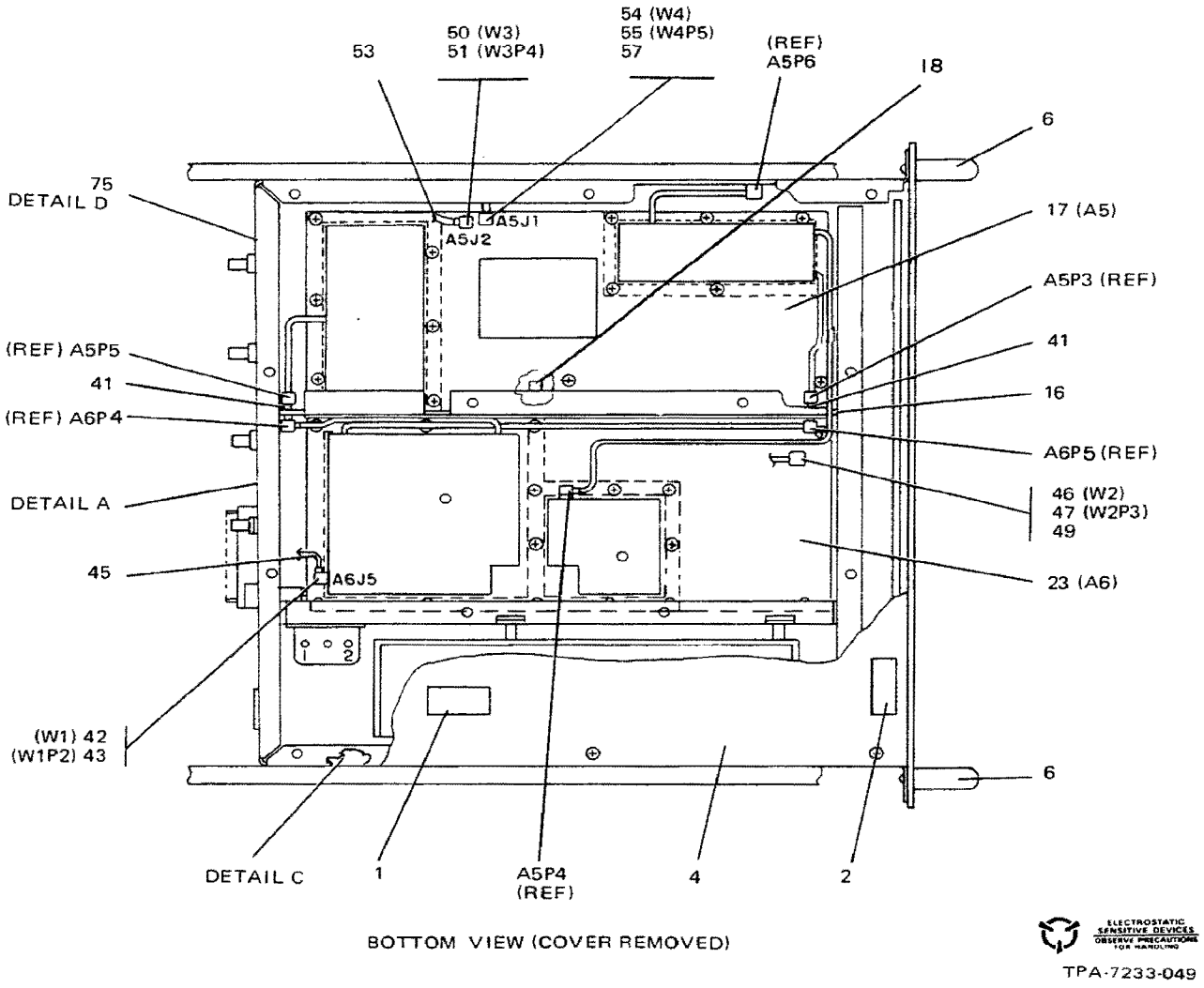


Figure 6-1 (Sheet 1 of 4) R-5099A/U Radio Receiver, R-5099/U Radio Receiver, and R-5104/GRC-508 Radio Receiver, Parts Location Diagram

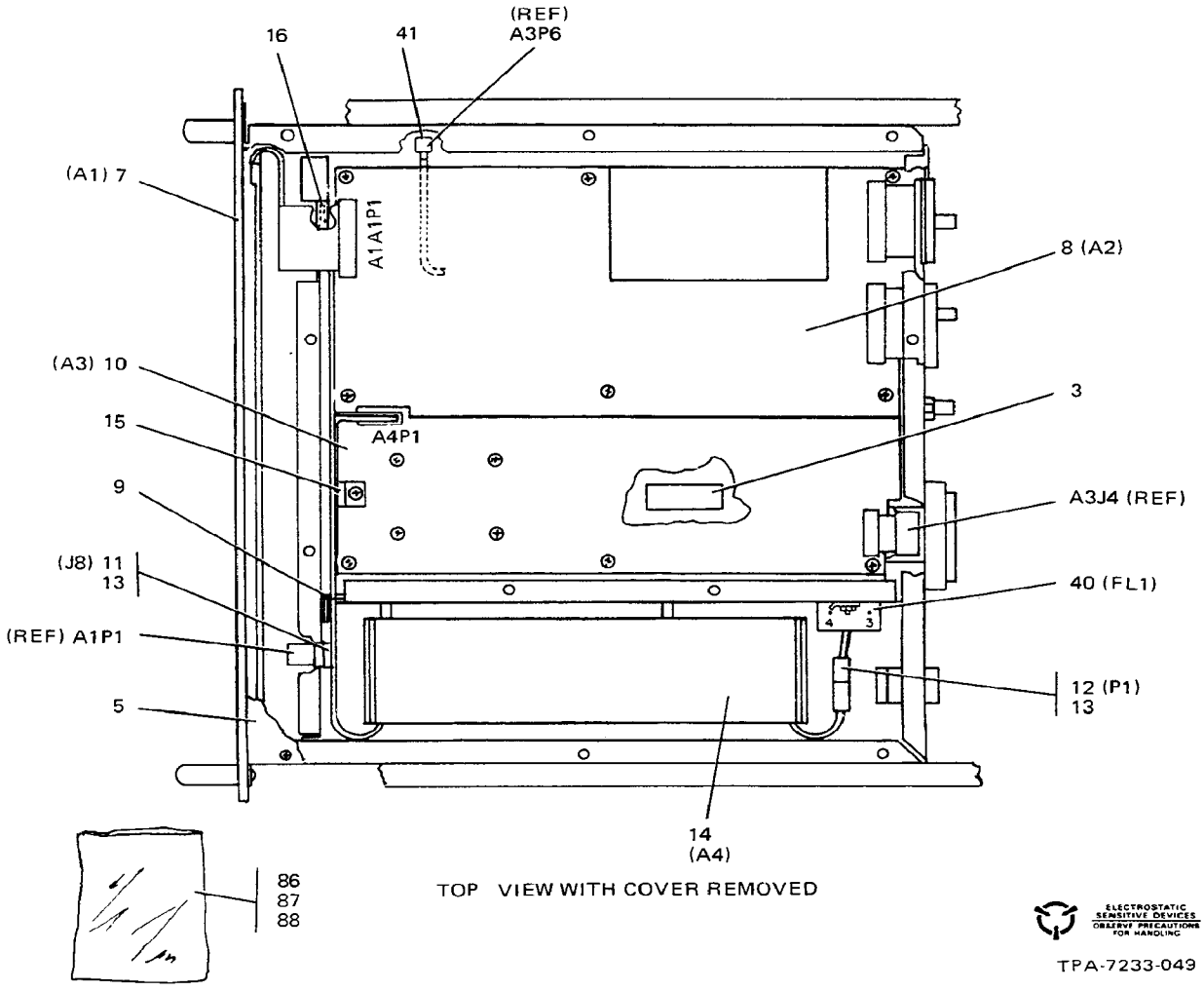
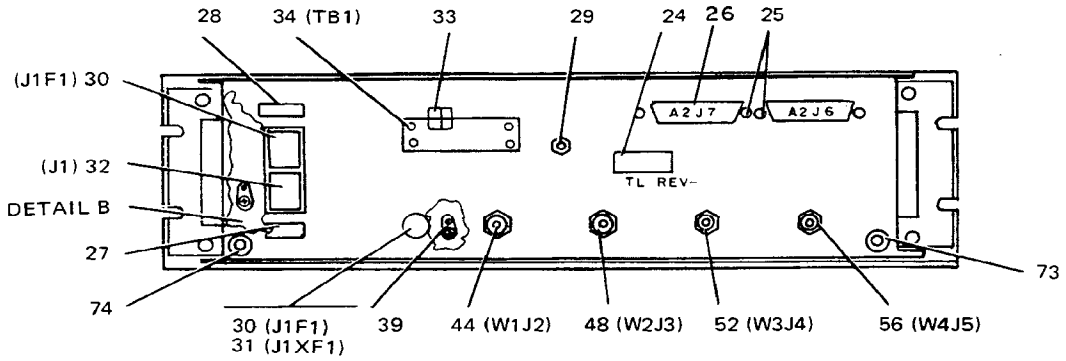
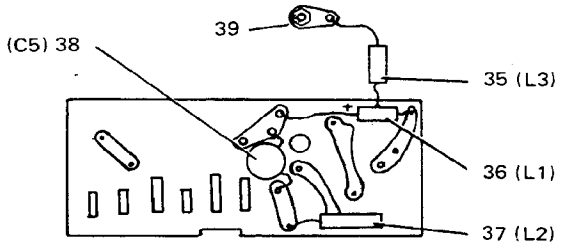


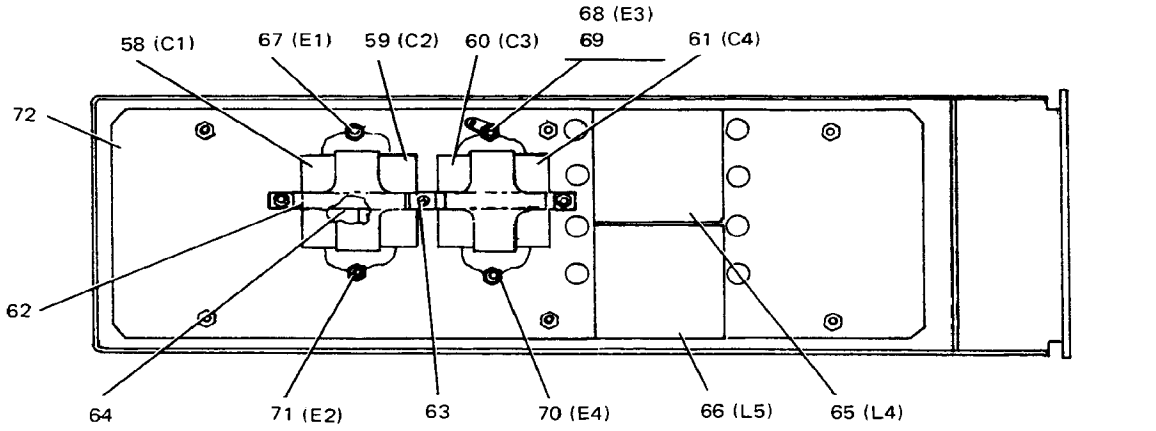
Figure 6-1 (Sheet 2 of 4) R-5099A/U Radio Receiver, R-5099/U Radio Receiver, and R-5104/GRC-508 Radio Receiver, Parts Location Diagram



DETAIL A-(BACK VIEW)



DETAIL B



DETAIL C

TPA-7233-049

Figure 6-1 (Sheet 3 of 4) R-5099A/U Radio Receiver, R-5099/U Radio Receiver, and R-5104/GRC-508 Radio Receiver, Parts Location Diagram

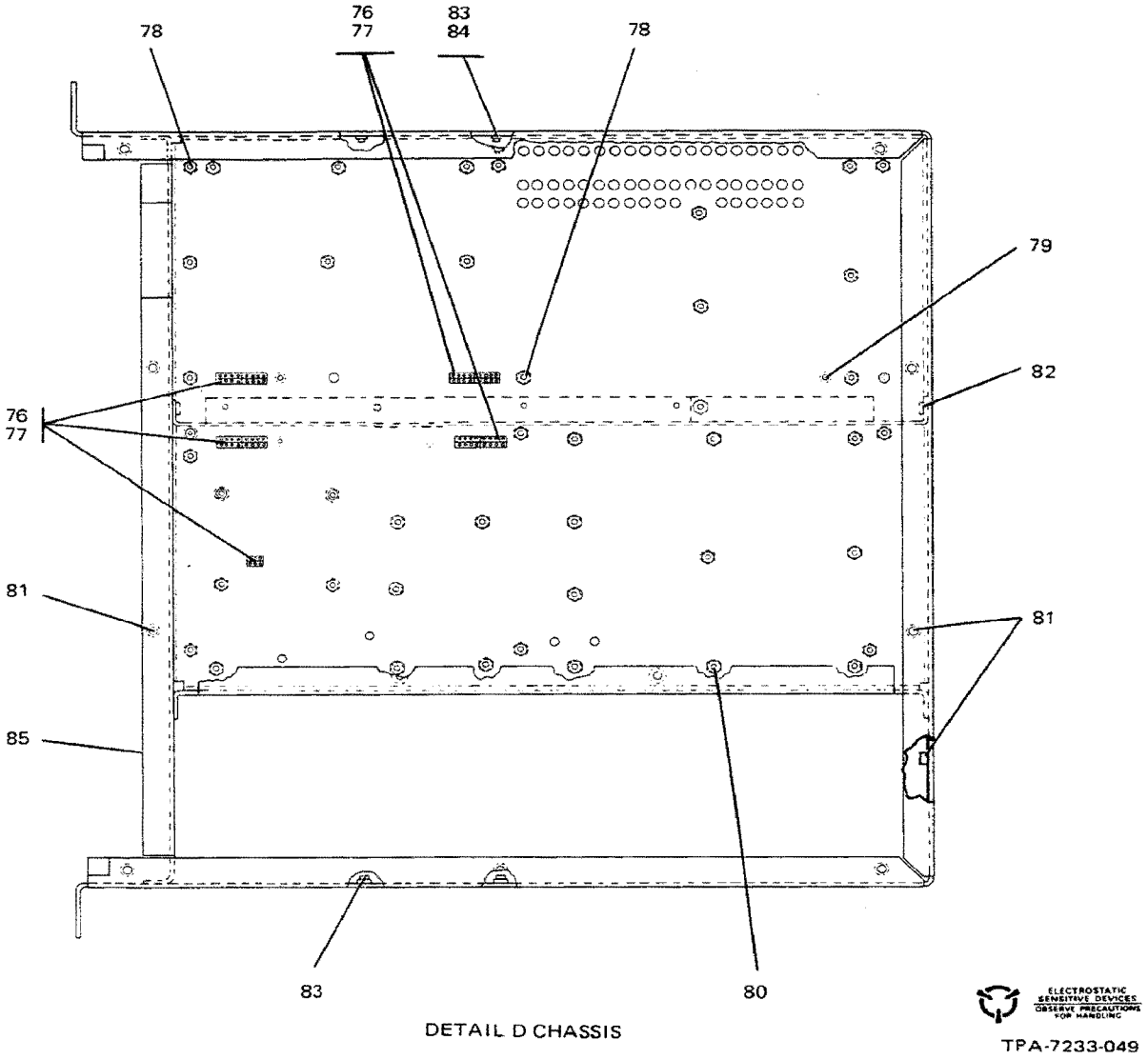


Figure 6-1 (Sheet 4 of 4) R-5099A/U Radio Receiver, R-5099/U Radio Receiver, and R-5104/GRC-508 Radio Receiver, Parts Location Diagram

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-1-	622-6577-001	1	RADIO RECEIVER, R-5099A/U	1	A
	622-6577-002	1	RADIO RECEIVER, R-5099/U	1	B
	622-6577-003	1	RADIO RECEIVER, R-5104/GRC-508	1	C
1	280-1368-340	2	LABEL,PRESSURE SENS (59518)	2	
2	280-2745-010	2	LABEL,WARNING (12998)	2	
3	652-6586-001	2	MARKER,LINE ADJUST	1	
4	652-6599-002	2	COVER, BOTTOM	1	
5	652-6599-001	2	COVER, TOP	1	

GROUP ASSEMBLY PARTS LIST

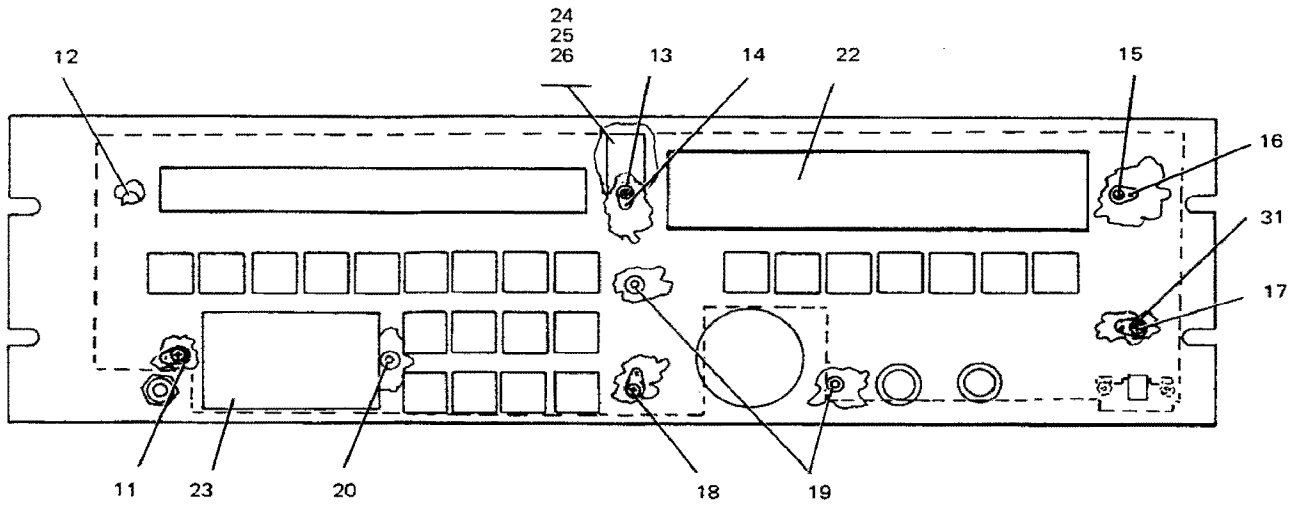
FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-1-	MS51957-28	2	SCREW,MACHINE CRES, 0.138-32 X 0.375IN (96906) 343-0169-000 (AP FOR 4,5)	29	
6	10937-A-1024	2	HANDLE,BOW (06540) 015-3555-030	2	
	MS51957-63	2	SCREW,MACHINE SST, 10-24 X 1/2 (96906) 343-0209-000 (AP)	4	
	MS35338-138	2	WASHER,LOCK SST, 0.194 ID X 0.334 OD (96906) 310-0284-000 (AP)	4	
7	652-6572-001	2	PANEL,FRONT (ESDS) A1 (SEE FIG 6-2)	1	A,B
7	652-6572-002	2	PANEL,FRONT (ESDS) A1 (SEE FIG 6-2)	1	C
8	646-6247-001	2	CONTROL (ESDS) A2 (SEE FIG 6-4)	1	A
8	646-6247-002	2	CONTROL (ESDS) A2 (SEE FIG 6-4)	1	B,C
	CRES0.138-32X1.125IN	2	SCREW,MACHINE CRES, 0.138-32 X 1.125IN (77250) 343-0177-000 (AP)	6	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP)	6	
	NAS620C6L	2	WASHER,FLAT PSVT CRES, 0.143 ID X 0.267 OD (80205) 310-0740-360 (AP)	6	
9	MS21266-2N	2	GROMMET,PLSTC CHAN (96906) 150-0175-000	AR	
10	646-6196-001	2	IF/AUDIO (ESDS) A3 (SEE FIG 6-5)	1	A
10	646-6196-002	2	IF/AUDIO (ESDS) A3 (SEE FIG 6-5)	1	B,C
	MS51957-28	2	SCREW,MACHINE CRES, 0.138-32 X 0.375IN (96906) 343-0169-000 (AP)	8	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP)	8	
	NAS620C6L	2	WASHER,FLAT PSVT CRES, 0.143 ID X 0.267 OD (80205) 310-0740-360 (AP)	8	
11	03-06-1041	2	CONNECTOR,RCPT ELEC (27264) 372-0092-010 J8	1	
12	03-06-1056	2	CONNECTOR,RCPT ELEC (27264) 372-0092-130 P1	1	
13	02-06-1103	2	CONTACT,SOCKET (27264) 372-5909-040	9	
14	652-6602-002	2	POWER SUPPLY A4 (SEE FIG 6-9)	1	
	MS51957-47	2	SCREW,MACHINE SST, 8-32 X 3/4 (96906) 343-0191-000 (AP)	4	
	MS35338-137	2	WASHER,LOCK CRES, 0.171 ID X 0.293 OD (96906) 310-0072-000 (AP)	4	
	541-6097-002	2	SPACER, SLEEVE (AP)	4	
15	3/8LN	2	CLAMP,LOOP (26863) 150-1543-000	1	
16	MS21266-1N	2	GROMMET,PLSTC CHAN (96906) 150-0173-000	AR	
17	646-6299-001	2	SYNTHESIZER (ESDS) A5 (SEE FIG 6-7)	1	
	MS51957-28	2	SCREW,MACHINE CRES, 0.138-32 X 0.375IN (96906) 343-0169-000 (AP)	14	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP)	14	
	NAS620C6L	2	WASHER,FLAT PSVT CRES, 0.143 ID X 0.267 OD (80205) 310-0740-360 (AP)	14	
18	652-6596-001	2	STRIP,CONDUCTIVE	1	
19		2	NOT USED		
20		2	NOT USED		
21		2	NOT USED		
22		2	NOT USED		
23	646-6298-001	2	RF TRANSLATOR (ESDS) A6 (SEE FIG 6-6)	1	
	MS51957-28	2	SCREW,MACHINE CRES, 0.138-32 X 0.375IN (96906) 343-0169-000 (AP)	16	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP)	16	
	NAS620C6L	2	WASHER,FLAT PSVT CRES, 0.143 ID X 0.267 OD (80205) 310-0740-360 (AP)	16	
24	642-0239-000	2	PLATE,IDENT	1	
25	M24308/26-1	2	SCREW,ASMBLD CLIP (81349) 371-0062-000	4	A
25	M24308/26-1	2	SCREW,ASMBLD CLIP (81349) 371-0062-000	2	B,C
26	652-6571-001	2	COVER,CONNECTOR	1	B,C
	NAS671C4	2	NUT,PLAIN,HEXAGON CD PL STL, 0.112-40 (80205) 313-0132-000 (AP)	2	B,C
	MS35338-135	2	WASHER,LOCK SST, 0.115 ID X 0.209 OD (96906) 310-0279-000 (AP)	2	B,C
	MS51957-15	2	SCREW,MACH STL, 4-40 X 3/8 (96906) 343-0135-000 (AP)	2	B,C

GROUP ASSEMBLY PARTS LIST

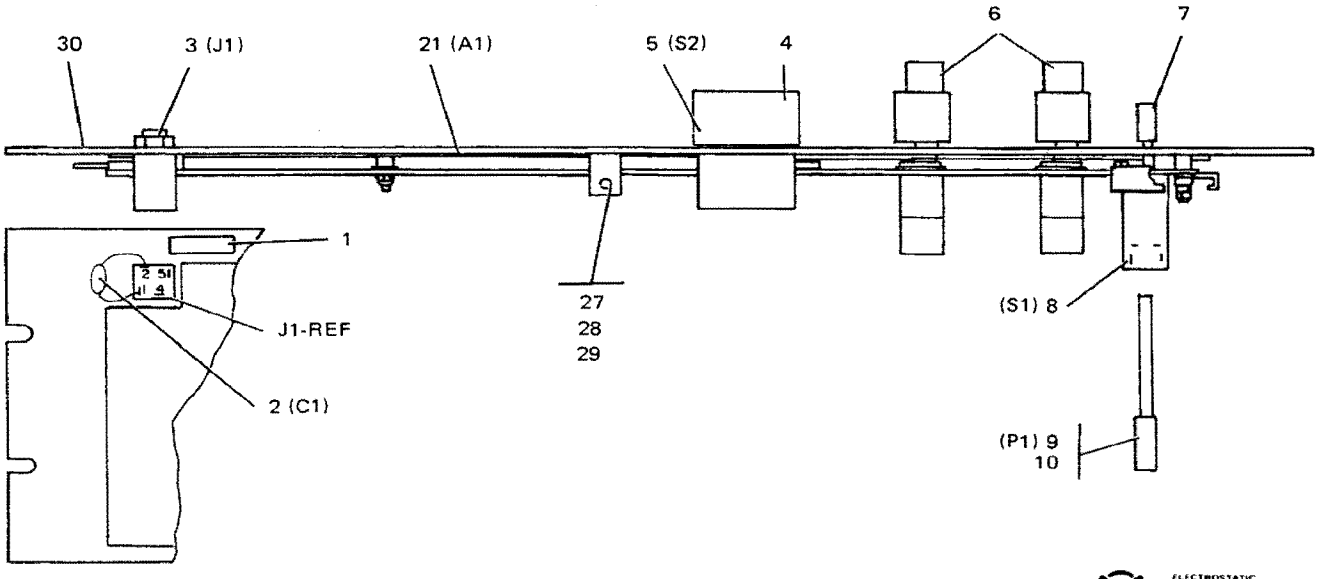
FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-1-27	652-6601-002	2	LABEL, FUSE	1	
28	652-6601-001	2	LABEL, VOLTAGE	1	
29	MS51957-83	2	SCREW,MACH SST, 1/4-20 X 1 (96906) 343-0269-000	1	
	MS35338-139	2	WASHER,LOCK SST, 0.255 ID X 0.489 OD (96906) 310-0288-000 (AP)	2	
	313-0082-000	2	NUT,PLAIN,HEXAGON CRES, 0.250-20 (51792) (AP)	3	
30	MDX-2	2	FUSE,CARTRIDGE (71400) 264-0305-000 J1F1 (SHIPPED WITH UNIT)	2	
31	HKPH	2	FUSEHOLDER (71400) 265-1171-000 J1XF1	1	
32	6VJ1	2	CONNECTOR (05245) 368-0391-010 J1	1	
33	JB1-02	2	JUMPER,TERM BLOCK (52458) 367-0806-010	1	
34	9M1PS14	2	CONNECTOR,TB/LTCH H (70903) 372-2670-030 TB1	1	
	MS51957-26	2	SCREW,MACHINE CRES, 0.138-32 X 0.250IN (96906) 343-0167-000 (AP) (REPLACEMENT FOR EXISTING SCREWS)	14	
	NAS671C6	2	NUT,PLAIN,HEXAGON CRES, 0.138-32 (80205) 313-0045-000 (AP)	4	
	MS51957-33	2	SCREW,MACHINE CRES, 0.138-32 X 0.875IN (96906) 343-0175-000 (AP)	4	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP)	4	
	NAS620C6L	2	WASHER,FLAT PSVT CRES, 0.143 ID X 0.267 OD (80205) 310-0740-360 (AP)	4	
35	MS18130-3	2	COIL,RF 0.33UH (96906) 240-1564-000 L3	1	
36	MS18130-3	2	COIL,RF 0.33UH (96906) 240-1564-000 L1	1	
37	MS18130-3	2	COIL,RF 0.33UH (96906) 240-1564-000 L2	1	
38	CK62AW472M	2	CAPACITOR,FIXED CER DIEL, 4700PF, 20%, 500V (81349) 913-1187-000 C5	1	
39	4007-6HOTTINNED	2	TERMINAL,LUG (77147) 304-0016-000	2	
	NAS671C6	2	NUT,PLAIN,HEXAGON CRES, 0.138-32 (80205) 313-0045-000 (AP)	2	
	MS51957-28	2	SCREW,MACHINE CRES, 0.138-32 X 0.375IN (96906) 343-0169-000 (AP)	2	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP)	2	
40	3V1A	2	FILTER,INTERFERENCE (05245) 241-0749-020 FL1	1	
	NAS671C6	2	NUT,PLAIN,HEXAGON CRES, 0.138-32 (80205) 313-0045-000 (AP)	2	
	4007-6HOTTINNED	2	TERMINAL,LUG (77147) 304-0016-000 (AP)	1	
	MS51957-28	2	SCREW,MACHINE CRES, 0.138-32 X 0.375IN (96906) 343-0169-000 (AP)	2	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP)	2	
41	51-075-7000	2	CONNECTOR,RCPT ELEC (98291) 357-7287-010	3	
42	652-6580-004	2	CABLE,RF W1	1	
43	M39012/69-0002	3	CONNECTOR,PLUG ELEC (81349) 357-7108-000 W1P2	1	
44	819-B3800W-75	3	CONNECTOR,RCPT (94375) 357-7093-000 W1J2	1	
45	DBL SHLD RG-178B /U	3	CABLE,RF (12515) 425-1599-000	AR	
46	652-6580-003	2	CABLE,RF W2	1	
47	M39012/69-0002	3	CONNECTOR,PLUG ELEC (81349) 357-7108-000 W2P3	1	
48	819-B3800W-75	3	CONNECTOR,RCPT (94375) 357-7093-000 W2J3	1	
49	DBL SHLD RG-178B /U	3	CABLE,RF (12515) 425-1599-000	AR	
50	652-6580-002	2	CABLE,RF W3	1	
51	M39012/69-0002	3	CONNECTOR,PLUG ELEC (81349) 357-7108-000 W3P4	1	
52	819-B3800W-75	3	CONNECTOR,RCPT (94375) 357-7093-000 W3J4	1	
53	DBL SHLD RG-178B /U	3	CABLE,RF (12515) 425-1599-000	AR	
54	652-6580-001	2	CABLE,RF W4	1	
55	M39012/69-0002	3	CONNECTOR,PLUG ELEC (81349) 357-7108-000 W4P5	1	
56	819-B3800W-75	3	CONNECTOR,RCPT (94375) 357-7093-000 W4J5	1	
57	DBL SHLD RG-178B /U	3	CABLE,RF (12515) 425-1599-000	AR	
58	910B1D205K	2	CAPACITOR,FIXED PLSTC DIEL, 2UF, 10%, 250V (14752) 933-1424-050 C1	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-1-59	910B1D205K	2	CAPACITOR,FIXED PLSTC DIEL, 2UF, 10%, 250V (14752) 933-1424-050 C2	1	
60	910B1D205K	2	CAPACITOR,FIXED PLSTC DIEL, 2UF, 10%, 250V (14752) 933-1424-050 C3	1	
61	910B1D205K	2	CAPACITOR,FIXED PLSTC DIEL, 2UF, 10%, 250V (14752) 933-1424-050 C4	1	
62	652-6598-001	2	CLAMP, CAPACITOR	1	
63	540-9176-003	2	POST	1	
	NAS671C4	2	NUT,PLAIN,HEXAGON CD PL STL, 0.112-40 (80205) 313-0132-000 (AP)	2	
	MS51959-13	2	SCREW,MACHINE CRES, 0.112-40 X 0.25 (96906) 342-0044-000 (AP)	3	
	MS35338-135	2	WASHER,LOCK SST, 0.115 ID X 0.209 OD (96906) 310-0279-000 (AP)	3	
	MS51957-15	2	SCREW,MACHINE STL, 4-40 X 3/8 (96906) 343-0135-000 (AP)	1	
64	652-6600-001	2	STRIP, RUBBER	2	
65	26-5378-00	2	INDUCTOR (11402) 678-0099-010 L4	1	
66	26-5378-00	2	INDUCTOR (11402) 678-0099-010 L5	1	
	MS51959-26	2	SCREW,MACHINE CRES, 6-32 X 1/4 (96906) 342-0060-000 (AP FOR 65,66)	4	
67	304-2513-250	2	INSULATED TERMINAL E1	1	
68	304-2513-250	2	INSULATED TERMINAL E3	1	
69	MS77068-1	2	TERMINAL,LUG (96906) 304-3110-010	1	
70	304-2513-250	2	INSULATED TERMINAL E4	1	
71	304-2513-250	2	INSULATED TERMINAL E2	1	
	MS51959-13	2	SCREW,MACHINE CRES, 0.112-40 X 0.25 (96906) 342-0044-000 (AP FOR 67-71)	4	
	MS35338-135	2	WASHER,LOCK SST, 0.115 ID X 0.209 OD (96906) 310-0279-000 (AP FOR 67-71)	4	
72	652-6597-001	2	SHIELD, SIDE	1	
	NAS671C6	2	NUT,PLAIN,HEXAGON CRES, 0.138-32 (80205) 313-0045-000 (AP)	6	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP)	6	
	MS51959-28	2	SCREW,MACHINE CRES, 6-32 X 3/8 (96906) 342-0062-000 (AP)	6	
73	609-9655-002	2	BUSHING, SLOTTED	1	
74	609-9655-001	2	BUSHING	1	
	NPSTL.375-32X.05 62X.093S	2	NUT,PLAIN,HEXAGON NP STL, 0.375-32 (77250) 313-0064-000 (AP FOR 73,74)	2	
	310-0291-000	2	WASHER,LOCK SST, 0.382 ID X 0.678 0D (70318) (AP FOR 73,74)	2	
75	652-6552-001	2	CHASSIS, PRSD	1	
76	1107-036	3	CONTACT,ELECTRICAL (57863) 372-2602-036	86	
77	372-2235-020	3	HOUSING,CONTACT	18	
78	S0S-632-8	3	NUT,STDF,SLF-CLNCH PSVT CRES, 0.138-32 (46384) 334-2709-190	18	
79	652-6556-001	3	PIN, GUIDE	6	
80	S0S-632-6	3	NUT,STDF,SLF-CLNCH PSVT CRES, 0.138-32 (46384) 334-2709-180	26	
81	M45938/5-6	3	NUT,SLFLKG,CLINCH CD PL STL, 0.138-32 (81349) 333-0842-000	26	
82	M45938/5-5	3	NUT,SLFLKG,CLINCH CD PL STL, 0.138-32 (81349) 333-0841-000	2	
83	M45938/5-8	3	NUT,SLFLKG,CLINCH CD PL STL, 10-32 (81349) 333-0846-000	6	
84	MS124695	3	INSERT,SCREW THREAD CRES, 10-32 X 0.285 (96906) 012-1594-000	2	
85	652-6552-002	3	CHASSIS	1	
86	17250	2	CABLE ASSEMBLY,ELEC (70903) 426-1034-010 (SHIPPED WITH UNIT)	1	
87	652-6591-001	2	BRACKET, CORD RETAINING (SHIPPED WITH UNIT)	1	
88	MS51957-28	2	SCREW,MACHINE CRES, 0.138-32 X 0.375IN (96906) 343-0169-000 (SHIPPED WITH UNIT)	1	



TOP VIEW



SIDE VIEW

TPA-7234-019

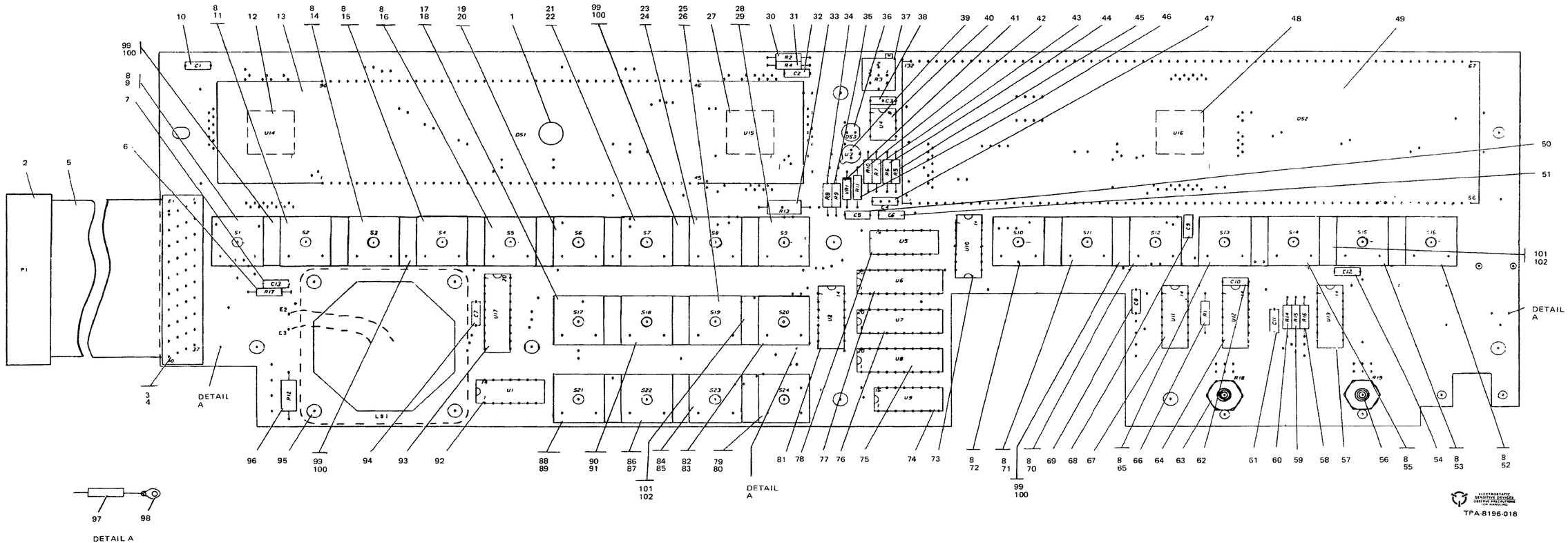
Figure 6-2 Front Panel A1, Parts Location Diagram

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-2-	652-6572-001	1	PANEL,FRONT (ESDS) A1 (SEE FIG 6-1-7 FOR NHA)	REF	A,B
	652-6572-002	1	PANEL,FRONT (ESDS) A1 (SEE FIG 6-1-7 FOR NHA)	REF	C
1	280-2745-010	2	LABEL,WARNING (12998)	1	
2	CK63AW103M	2	CAPACITOR,FIXED CER DIEL, 10000PF, 20%, 500V (81349) 913-1188-000 A1C1	1	
3	113E	2	JACK,TELEPHONE (82389) 360-0430-080 A1J1	1	
	310-0420-000	2	WASHER,ROUND NP BRS, 0.383 ID X 5/8 OD (79807) (AP)	1	
4	KN-90869F	2	KNOB,ROUND (95146) 281-0675-020	1	
5	PC62D-200-5-SPEC 5460	2	ENCODER,SHAFT (15686) 229-9702-030 A1S2	1	
	310-0420-000	2	WASHER,ROUND NP BRS, 0.383 ID X 5/8 OD (79807) (AP)	1	
6	KN-5700B(PR)	2	KNOB,ROUND (95146) 281-0675-030	2	
7	FSD1301	2	BUTTON,PUSH (31918) 266-7508-610	1	
8	NE15/F01-0003-00	2	SWITCH,PUSH (31918) 266-7524-010 A1S1	1	
	MS35649-224	2	NUT,PLAIN,HEXAGON SST, 2-56 (96906) 313-0037-000 (AP)	2	
	MS51957-3B	2	SCREW,MACH SST, 2-56 X 1/4 (96906) 343-0072-000 (AP)	2	
	MS35338-134	2	WASHER,LOCK SST, 0.088 ID X 0.172 OD (96906) 310-0275-000 (AP)	2	
9	03-06-2042	2	CONNECTOR,PLUG ELEC (27264) 372-5909-010 A1P1	1	
10	02-06-2103	2	CONTACT,PIN (27264) 372-5909-030	4	
11	652-6561-002	2	POST,SPACER	1	
	NAS671C6	2	NUT,PLAIN,HEXAGON CRES, 0.138-32 (80205) 313-0045-000 (AP)	1	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP)	1	
	MS15795-805	2	WASHER,FLAT PSVT CRES, 0.164 ID X 0.320 OD (96906) 310-0779-050 (AP)	2	
12	652-6561-001	2	POST,SPACER	1	
	NAS671C6	2	NUT,PLAIN,HEXAGON CRES, 0.138-32 (80205) 313-0045-000 (AP)	1	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP)	1	
	MS15795-805	2	WASHER,FLAT PSVT CRES, 0.164 ID X 0.320 OD (96906) 310-0779-050 (AP)	2	
13	652-6561-004	2	POST,SPACER	1	
14	4007-6HOTTINNED	2	TERMINAL,LUG (77147) 304-0016-000	1	
	NAS671C6	2	NUT,PLAIN,HEXAGON CRES, 0.138-32 (80205) 313-0045-000 (AP FOR 13,14)	1	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP FOR 13,14)	1	
	MS15795-805	2	WASHER,FLAT PSVT CRES, 0.164 ID X 0.320 OD (96906) 310-0779-050 (AP)	2	
15	652-6561-001	2	POST,SPACER	1	
16	4034	2	TERMINAL,LUG (77147) 304-0269-000	1	
	NAS671C6	2	NUT,PLAIN,HEXAGON CRES, 0.138-32 (80205) 313-0045-000 (AP FOR 15,16)	1	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP FOR 15,16)	1	
	MS15795-805	2	WASHER,FLAT PSVT CRES, 0.164 ID X 0.320 OD (96906) 310-0779-050 (AP)	1	
17	652-6561-003	2	POST,SPACER	1	
18	652-6561-001	2	POST,SPACER	1	
	NAS671C6	2	NUT,PLAIN,HEXAGON CRES, 0.138-32 (80205) 313-0045-000 (AP FOR 17,18)	2	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP FOR 17,18)	2	
	MS15795-805	2	WASHER,FLAT PSVT CRES, 0.164 ID X 0.320 OD (96906) 310-0779-050 (AP)	2	
19	652-6561-003	2	POST,SPACER	2	
20	652-6561-002	2	POST,SPACER	1	
	NAS671C6	2	NUT,PLAIN,HEXAGON CRES, 0.138-32 (80205) 313-0045-000 (AP FOR 19,20)	3	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP FOR 19,20)	3	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-2-	MS15795-805	2	WASHER,FLAT PSVT CRES, 0.164 ID X 0.320 OD (96906) 310-0779-050 (AP FOR 19,20)	4	
21	646-6300-001	2	CARD,FRONT PANEL (ESDS) A1A1 (SEE FIG 6-3)	1	
22	652-6568-001	2	WINDOW,DISPLAY	1	
23	652-6570-001	2	GRILLE-SPEAKER	1	
24	652-6581-004	2	BRACKET,ANGLE-PRSD	1	
25	M45938/5-6	3	NUT,SLFLKG,CLINCH CD PL STL, 0.138-32 (81349) 333-0842-000	1	
26	652-6581-003	3	BRACKET,ANGLE	1	
27	652-6581-002	2	BRACKET,ANGLE-PRSD	1	
28	M45938/5-6	3	NUT,SLFLKG,CLINCH CD PL STL, 0.138-32 (81349) 333-0842-000	1	
29	652-6581-001	3	BRACKET,ANGLE	1	
30	652-6558-001	2	PANEL,FRONT (GRAY)	1	A,B
30	652-6558-002	2	PANEL,FRONT (BIEGE)	1	C
31	M63540/1-16C	3	STUD,SELF-CLINCHING CRES, 0.138-32 X 0.750L (81349) 330-1717-120	9	



Front Panel Card A1A1, Parts Location Diagram Figure 6-3

GROUP ASSEMBLY PARTS LIST

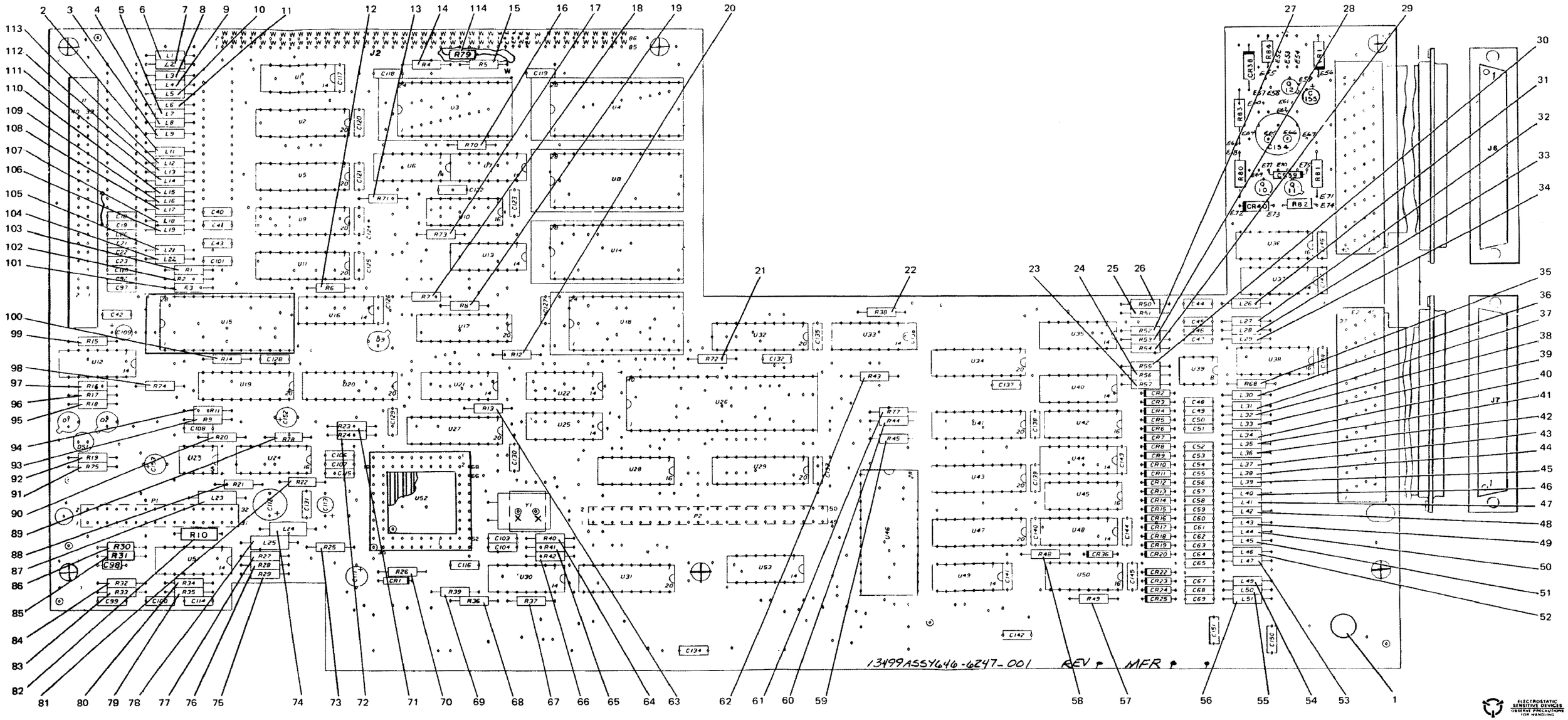
FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-3-	646-6300-001	1	CARD,FRONT PANEL (ESDS) A1A1 (SEE FIG 6-2-21 FOR NHA)	REF	
1	280-2745-040	2	LABEL,WARNING (12998)	1	
2	1-499566-0	2	CONNECTOR,PLUG ELEC (00779) 372-2648-070 A1A1P1	1	
3	88089-1	2	COVER,CONNECTOR ELEC (00779) 372-2653-160	1	
4	499441-5	2	HOUSING,CONNECTOR ELEC (00779) 372-2653-270	1	
5	424-0307-060	2	CABLE,SP,ELECTRICAL (22526)	AR	
6	RCR07G471KS	2	RESISTOR,FIXED CMPSN, 470 OHMS, 10%, 1/4W (81349) 745-0737-000 A1A1R17	1	
7	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A1A1C13	1	
8	539-0148	2	KEYTOP (01963) 266-0161-020	12	
9	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S1	1	
10	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A1A1C1	1	
11	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S2	1	
12	D7225G	2	INTEGRATED CIRCUIT LCD DRIVER (ESDS) (61892) 351-9073-010 A1A1U14	1	
13	C222-03	2	DISPLAY, LIQUID (38317) 284-0019-030 A1A1DS1	1	
14	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S3	1	
15	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S4	1	
16	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S5	1	
17	539-0154	2	KEYTOP (01963) 266-0161-060	1	
18	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S17	1	
19	539-0151	2	KEYTOP (01963) 266-0161-030	1	
20	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S6	1	
21	539-0132	2	KEYTOP (01963) 266-0161-040	1	
22	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S7	1	
23	539-0153	2	KEYTOP (01963) 266-0161-050	1	
24	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S8	1	
25	539-0156	2	KEYTOP (01963) 266-0161-080	1	
26	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S19	1	
27	D7225G	2	INTEGRATED CIRCUIT LCD DRIVER (ESDS) (61892) 351-9073-010 A1A1U15	1	
28	539-0236	2	KEYTOP (01963) 266-0161-140	1	
29	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S9	1	
30	RN55D9091F	2	RESISTOR,FIXED FILM, 9.09K, 1%, 1/8W (81349) 705-1042-000 A1A1R2	1	
31	RN55D7151F	2	RESISTOR,FIXED FILM, 7.15K, 1%, 1/8W (81349) 705-1037-000 A1A1R4	1	
32	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A1A1C2	1	
33	RCR20G122KS	2	RESISTOR,FIXED CMPSN, 1.2K, 10%, 1/2W (81349) 745-1356-000 A1A1R13	1	
34	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A1A1R8	1	
35	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A1A1R9	1	
36	MV5053	2	SEMICOND DEVICE (14936) 353-0293-040 A1A1DS3	1	
37	64P502	2	RESISTOR,VARIABLE CERMET, 5K, 10%, 1/2W (02111) 382-0052-090 A1A1R3	1	
38	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A1A1C3	1	
39	AD590IH	2	MICROCIRCUIT TEMPERATURE SENSOR (ESDS) (24355) 351-1411-030 A1A1U3	1	
40	LM258J	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1211-070 A1A1U4	1	
41	1N4624	2	SEMICOND DEVICE (04713) 353-3591-480 A1A1VR1	1	
42	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A1A1R10	1	
43	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A1A1R7	1	
44	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A1A1R6	1	
45	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A1A1R5	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-3-46	RN55D1652F	2	RESISTOR,FIXED FILM, 16.5K, 1%, 1/8W (81349) 705-3605-580 A1A1R11	1	
47	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A1A1C4	1	
48	D7225G	2	INTEGRATED CIRCUIT LCD DRIVER (ESDS) (61892) 351-9073-010 A1A1U16	1	
49	C203-03	2	DISPLAY, LIQUID (38317) 284-0020-030 A1A1DS2	1	
50	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A1A1C5	1	
51	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A1A1C6	1	
52	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S16	1	
53	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S15	1	
54	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A1A1C12	1	
55	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S14	1	
56	382-0061-010	2	RESISTOR,VARIABLE 10K (12697) A1A1R19	1	
57	CD4023BF	2	MICROCIRCUIT GATE (ESDS) (02735) 351-8184-020 A1A1U13	1	
58	RCR07G104KS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 10%, 1/4W (81349) 745-0821-000 A1A1R16	1	
59	RCR07G104KS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 10%, 1/4W (81349) 745-0821-000 A1A1R15	1	
60	RCR07G104KS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 10%, 1/4W (81349) 745-0821-000 A1A1R14	1	
61	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A1A1C11	1	
62	923CC0G101K200B	2	CAPACITOR,FIXED CER DIEL, 100PF, 10%, 200VDC (56289) 913-3325-190 A1A1C10	1	
63	382-0061-020	2	RESISTOR,VARIABLE 10K (12697) A1A1R18	1	
64	CD4047BF	2	MICROCIRCUIT LOGIC ARRAY (ESDS) (02735) 351-8200-010 A1A1U12	1	
65	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S13	1	
66	RN55D2002F	2	RESISTOR,FIXED FILM, 20K, 1%, 1/8W (81349) 705-3605-620 A1A1R1	1	
67	SCL4013BC	2	MICROCIRCUIT MOS (ESDS) (31019) 351-8160-030 A1A1U11	1	
68	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A1A1C9	1	
69	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A1A1C8	1	
70	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S12	1	
71	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S11	1	
72	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S10	1	
73	MC14584BAL	2	INTEGRATED CIRCUIT HEX TRIGGER (ESDS) (04713) 351-8565-010 A1A1U10	1	
74	CD54HC138F	2	MICROCIRCUIT (ESDS) (02735) 351-5639-100 A1A1U9	1	
75	MM54C374J	2	MICROCIRCUIT (OBSOLETE) (27014) 351-8610-010 A1A1U8	1	
76	MM54C374J	2	MICROCIRCUIT (OBSOLETE) (27014) 351-8610-010 A1A1U7	1	
77	CD54HC244F	2	MICROCIRCUIT (ESDS) (02735) 351-5639-220 A1A1U6	1	
78	CD4068BF	2	INTEGRATED CIRCUIT LOGIC GATE (ESDS) (02735) 351-8308-010 A1A1U5	1	
79	539-0235	2	KEYTOP (01963) 266-0161-120	1	
80	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S24	1	
81	314A104	2	RESISTOR NETWORK DUAL-IN-LINE, 100K, 2%, 1.25W PKG (ESDS) (01121) 350-4027-140 A1A1U2	1	
82	539-0170	2	KEYTOP (01963) 266-0161-130	1	
83	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S20	1	
84	539-0156	2	KEYTOP (01963) 266-0161-110	1	
85	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S23	1	
86	539-0158	2	KEYTOP (01963) 266-0161-100	1	
87	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S22	1	
88	539-0157	2	KEYTOP (01963) 266-0161-090	1	
89	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S21	1	
90	539-0155	2	KEYTOP (01963) 266-0161-070	1	
91	M81E-0500	2	SWITCH,PSHBUTTON (01963) 266-0161-010 A1A1S18	1	

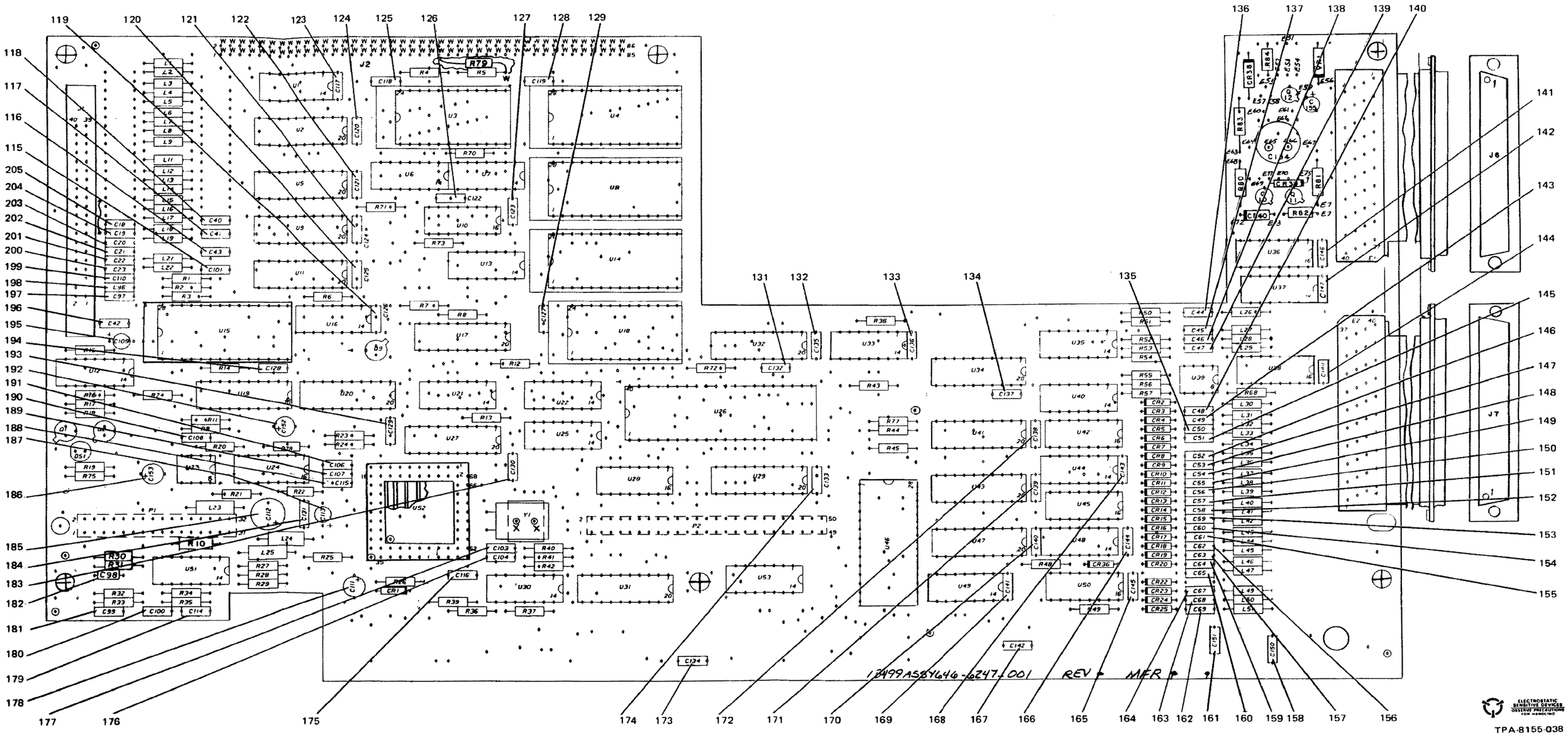
GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDEX	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-3-92	314A103	2	RESISTOR NETWORK DUAL-IN-LINE, 10K, 2%, 125V (01121) 350-4027-120 A1A1U1	1	
93	CD54HC244F	2	MICROCIRCUIT (ESDS) (02735) 351-5639-220 A1A1U17	1	
94	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A1A1C7	1	
95	A2WP	2	LOUDSPEAKER,PM (14208) 271-0264-040 A1A1LS1	1	
	NAS671C6	2	NUT,PLAIN,HEXAGON CRES, 0.138-32 (80205) 313-0045-000 (AP)	4	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP)	4	
	MS51957-28	2	SCREW,MACHINE CRES, 0.138-32 X 0.375IN (96906) 343-0169-000 (AP)	4	
96	RCR20G391KS	2	RESISTOR,FIXED CMPSN, 390 OHMS, 10%, 1/2W (81349) 745-1335-000 A1A1R12	1	
97	439-7300-000	2	WIRE,ELECTRICAL	AR	
98	4007-6HOTTINNED	2	TERMINAL,LUG (77147) 304-0016-000	3	
99	687-5187-001	2	SWITCH, ADAPTER	4	
100	751-0521-001	2	INSULATOR, SWITCH 3-POS	4	
101	687-5188-001	2	SWITCH, ADAPTER	3	
102	751-0520-001	2	INSULATOR, SWITCH 4-POS	3	

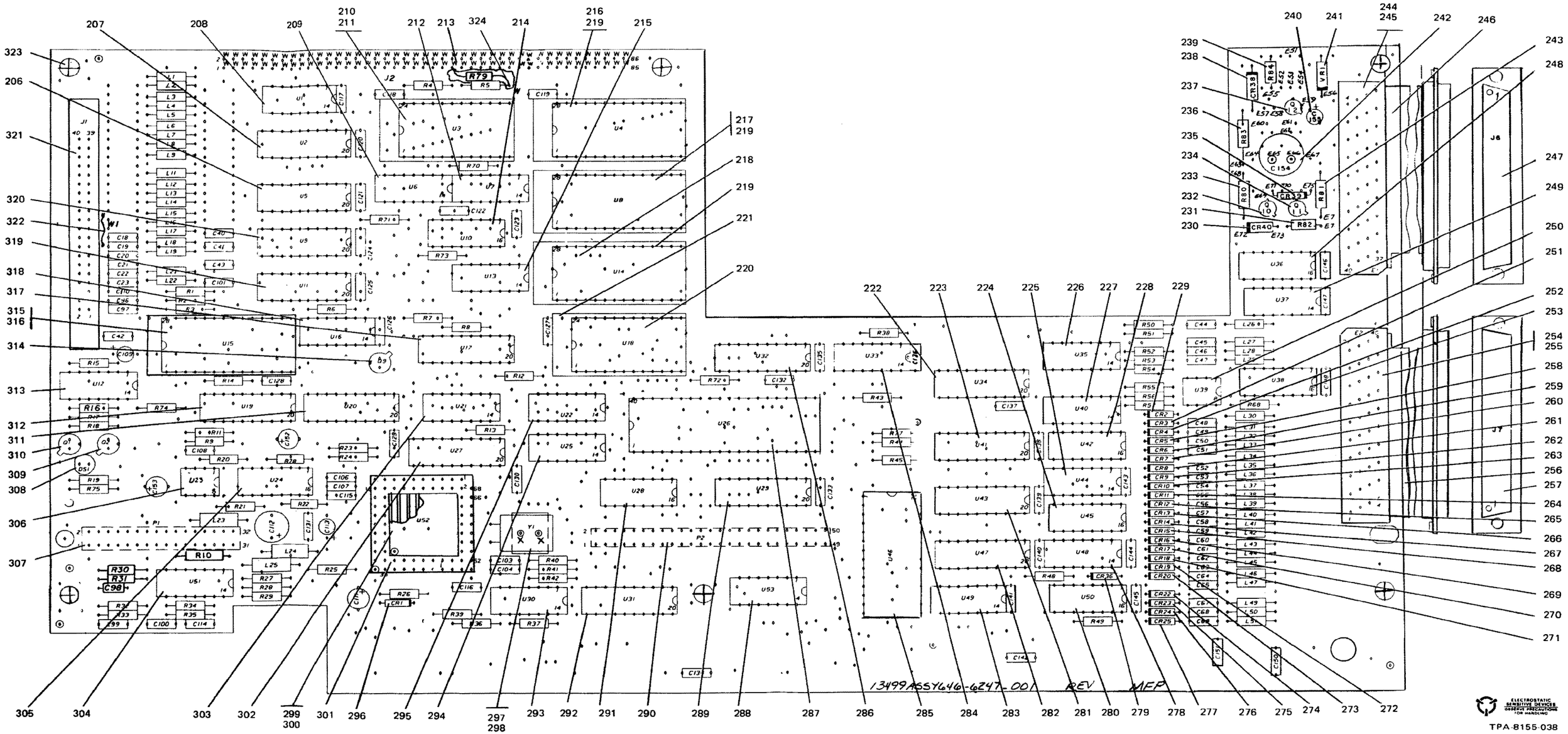


TPA-8155-038

Control A2, Parts Location Diagram (Sheet 1 of 3) Figure 6-4



Control A2, Parts Location Diagram (Sheet 2 of 3) Figure 6-4



Control A2, Parts Location Diagram (Sheet 3 of 3) Figure 6-4

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INCMT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-4-	646-6247-001	1	CONTROL (ESDS) A2 (SEE FIG 6-1-8 FOR NHA)	REF	A
	646-6247-002	1	CONTROL (ESDS) A2 (SEE FIG 6-1-8 FOR NHA)	REF	B,C
1	280-2745-040	2	LABEL,WARNING (12998)	1	
2	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L11	1	
3	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L9	1	
4	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L8	1	
5	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L7	1	
6	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L1	1	
7	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L2	1	
8	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L3	1	
9	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L4	1	
10	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L5	1	
11	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L6	1	
12	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R6	1	
13	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R71	1	
14	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R4	1	
15	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R5	1	
16	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R70	1	
17	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R73	1	
18	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R7	1	
19	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A2R8	1	
20	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R12	1	
21	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R72	1	
22	RCR07G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/4W (81349) 745-0773-000 A2R38	1	
23	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R57	1	
24	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R56	1	
25	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R51	1	
26	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R50	1	
27	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R52	1	
28	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R53	1	
29	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R54	1	
30	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R55	1	
31	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L26	1	
32	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L27	1	
33	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L28	1	
34	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L29	1	
35	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R68	1	
36	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L30	1	A
37	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L31	1	A
38	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L32	1	A
39	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L33	1	A
40	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L34	1	A
41	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L35	1	A
42	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L36	1	A
43	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L37	1	A

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-4-44	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L38	1	A
45	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L39	1	A
46	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L40	1	A
47	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L41	1	A
48	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L42	1	A
49	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L43	1	A
50	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L44	1	A
51	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L45	1	A
52	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L46	1	A
53	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L47	1	A
54	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L49	1	A
55	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L50	1	A
56	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L51	1	A
57	RCR07G153KS	2	RESISTOR,FIXED CMPSN, 15K, 10%, 1/4W (81349) 745-0791-000 A2R49	1	
58	RCR07G153KS	2	RESISTOR,FIXED CMPSN, 15K, 10%, 1/4W (81349) 745-0791-000 A2R48	1	
59	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R45	1	
60	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R44	1	
61	J0-500X0-125PVC2 2	2	LEAD,ELEC (A1533) 428-0288-040 A2R77	1	A
62	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R43	1	
63	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A2R13	1	
64	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R40	1	
65	RCR07G153KS	2	RESISTOR,FIXED CMPSN, 15K, 10%, 1/4W (81349) 745-0791-000 A2R41	1	
66	RCR07G153KS	2	RESISTOR,FIXED CMPSN, 15K, 10%, 1/4W (81349) 745-0791-000 A2R42	1	
67	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R37	1	
68	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R36	1	
69	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R39	1	
70	RCR07G393KS	2	RESISTOR,FIXED CMPSN, 39K, 10%, 1/4W (81349) 745-0806-000 A2R26	1	
71	RN55D1001F	2	RESISTOR,FIXED FILM, 1K, 1%, 1/8W (81349) 705-0996-000 A2R23	1	
72	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R24	1	
73	RCR07G470KS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 10%, 1/4W (81349) 745-0701-000 A2R25	1	
74	MS18130-1	2	COIL,RF 0.15UH (96906) 240-1562-000 A2L24	1	
75	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R29	1	
76	RN55D2492F	2	RESISTOR,FIXED FILM, 24.9K, 1%, 1/8W (81349) 705-1063-000 A2R28	1	
77	RN55D1003F	2	RESISTOR,FIXED FILM, 100K, 1%, 1/8W (81349) 705-1092-000 A2R27	1	
78	MS18130-1	2	COIL,RF 0.15UH (96906) 240-1562-000 A2L25	1	
79	RN55D4992F	2	RESISTOR,FIXED FILM, 49.9K, 1%, 1/8W (81349) 705-3605-810 A2R35	1	
80	RN55D7502F	2	RESISTOR,FIXED FILM, 75K, 1%, 1/8W (81349) 705-1086-000 A2R34	1	
81	RN55D1001F	2	RESISTOR,FIXED FILM, 1K, 1%, 1/8W (81349) 705-0996-000 A2R22	1	
82	RCR07G153KS	2	RESISTOR,FIXED CMPSN, 15K, 10%, 1/4W (81349) 745-0791-000 A2R10	1	
83	RN55D1003F	2	RESISTOR,FIXED FILM, 100K, 1%, 1/8W (81349) 705-1092-000 A2R33	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-4-84	RN55D2492F	2	RESISTOR,FIXED FILM, 24.9K, 1%, 1/8W (81349) 705-1063-000 A2R32	1	
85	RN55D1692F	2	RESISTOR,FIXED FILM, 16.9K, 1%, 1/8W (81349) 705-1055-000 A2R31	1	
86	RN55D1003F	2	RESISTOR,FIXED FILM, 100K, 1%, 1/8W (81349) 705-1092-000 A2R30	1	
87	MS18130-1	2	COIL,RF 0.15UH (96906) 240-1562-000 A2L23	1	
88	RCR07G153KS	2	RESISTOR,FIXED CMPSN, 15K, 10%, 1/4W (81349) 745-0791-000 A2R21	1	
89	RCR07G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/4W (81349) 745-0773-000 A2R78	1	
90	RN55D1001F	2	RESISTOR,FIXED FILM, 1K, 1%, 1/8W (81349) 705-0996-000 A2R20	1	
91	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R75	1	
92	RCR07G391KS	2	RESISTOR,FIXED CMPSN, 390 OHMS, 10%, 1/4W (81349) 745-0734-000 A2R19	1	
93	RN55D7502F	2	RESISTOR,FIXED FILM, 75K, 1%, 1/8W (81349) 705-1086-000 A2R9	1	
94	RN55D3742F	2	RESISTOR,FIXED FILM, 37.4K, 1%, 1/8W (81349) 705-3605-750 A2R11	1	
95	RCR07G153KS	2	RESISTOR,FIXED CMPSN, 15K, 10%, 1/4W (81349) 745-0791-000 A2R18	1	
96	RCR07G153KS	2	RESISTOR,FIXED CMPSN, 15K, 10%, 1/4W (81349) 745-0791-000 A2R17	1	
97	RCR07G105KS	2	RESISTOR,FIXED CMPSN, 1MEGO, 10%, 1/4W (81349) 745-0857-000 A2R16	1	
98	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R74	1	
99	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R15	1	
100	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R14	1	
101	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R3	1	
102	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R2	1	
103	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R1	1	
104	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L22	1	
105	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L21	1	
106	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L19	1	
107	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L18	1	
108	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L17	1	
109	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L16	1	
110	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L15	1	
111	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L14	1	
112	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L13	1	
113	MS75084-07	2	COIL,RF 3.90UH (96906) 240-2030-000 A2L12	1	
114	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A2R79	1	
115	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C101	1	A
116	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C43	1	A
117	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C41	1	A
118	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C40	1	A
119	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C126	1	
120	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C125	1	
121	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C124	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-4-122	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C121	1	
123	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C117	1	
124	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C120	1	
125	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C118	1	
126	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C122	1	
127	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C123	1	
128	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C119	1	
129	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C127	1	
130			NOT USED		
131	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C132	1	
132	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C135	1	
133	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C136	1	
134	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C137	1	
135	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C50	1	A
136	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C44	1	A
137	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C45	1	A
138	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C46	1	A
139	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C47	1	A
140	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C48	1	A
141	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C146	1	
142	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C147	1	
143	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C49	1	A
144	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C148	1	
145	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C51	1	A
146	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C52	1	A
147	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C53	1	A
148	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C54	1	A
149	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C55	1	A
150	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C56	1	A
151	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C57	1	A
152	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C58	1	A
153	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C59	1	A
154	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C60	1	A

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-4-155	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C61	1	A
156	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C62	1	A
157	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C63	1	A
158	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C150	1	
159	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C64	1	A
160	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C65	1	A
161	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C151	1	
162	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C69	1	A
163	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C68	1	A
164	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C67	1	A
165	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C145	1	
166	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C144	1	
167	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C142	1	
168	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C143	1	
169	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C141	1	
170	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C140	1	
171	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C139	1	
172	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C138	1	
173	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C134	1	
174	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C133	1	
175	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C116	1	
176	923CC0G220K200B	2	CAPACITOR,FIXED CER DIEL, 22PF, 10%, 200VDC (56289) 913-3325-110 A2C104	1	
177	923CC0G220K200B	2	CAPACITOR,FIXED CER DIEL, 22PF, 10%, 200VDC (56289) 913-3325-110 A2C103	1	
178	199D106X0020CE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 10UF, 20%, 20V (56289) 184-9102-610 A2C111	1	
179	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C114	1	
180	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C100	1	
181	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C99	1	
182	199D155X0025AE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 1.5UF, 20%, 25V (56289) 184-9102-650 A2C98	1	
183	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C130	1	
184	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C131	1	
185	199D476X0025EE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 47UF, 20%, 25V (56289) 184-9102-710 A2C112	1	
186	199D106X0020CE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 10UF, 20%, 20V (56289) 184-9102-610 A2C153	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-4-187	199D105X0035BE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 1UF, 20%, 35V (56289) 184-9102-790 A2C113	1	
188	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C115	1	
189	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C107	1	
190	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C108	1	
191	923CC0G220K200B	2	CAPACITOR,FIXED CER DIEL, 22PF, 10%, 200VDC (56289) 913-3325-110 A2C106	1	
192	199D106X0020CE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 10UF, 20%, 20V (56289) 184-9102-610 A2C152	1	
193	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C129	1	
194	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C128	1	
195	199D105X0035BE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 1UF, 20%, 35V (56289) 184-9102-790 A2C109	1	
196	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C42	1	
197	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C97	1	A
198	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C96	1	A
199	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C110	1	A
200	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C23	1	A
201	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C22	1	A
202	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C21	1	A
203	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C20	1	A
204	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A2C19	1	A
205	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A2C18	1	
206	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A2U5	1	
207	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A2U2	1	
208	SN54LS32J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-180 A2U1	1	
209	SN54LS32J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-180 A2U6		
210	MB8416-20P	2	MICROCIRCUIT MOS MEMORY,RAM (ESDS) (61271) 351-8781-030 A2U3	1	
211	D1LBQ24P-101	2	SOCKET,IC (09922) 220-0102-010	1	
212	SN54LS32J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-180 A2U7	1	
213	76602-105	2	CONTACT,ELECTRICAL (22526) 372-2601-547 A2J2 OR	86	
213	372-2601-047	2	CONTACT,ELECTRICAL A2J2	86	
214	SN54LS139J	2	MICROCIRCUIT DECODER (ESDS) (04713) 351-1526-020 A2U10	1	
215	SN54LS04J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-030 A2U13	1	
216	659-6157-012	2	INTEGRATED CIRCUIT, MODIFIED A2U4	1	
217	659-6157-011	2	INTEGRATED CIRCUIT, MODIFIED A2U8	1	
218	659-6157-010	2	INTEGRATED CIRCUIT, MODIFIED A2U14	1	
219	D1LBQ28P-101	2	SOCKET,IC (09922) 220-0102-020	3	
220	TC5517CPL-20	2	MICROCIRUIT STATIC RAM (ESDS) (A2184) 258-0072-010 A2U18	1	
221	D1LBQ24P-101	2	SOCKET,IC (09922) 220-0102-010	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-4-222	SN54LS245J	2	MICROCIRCUIT TRANSCEIVER,OCTAL BUS(ESDS) (01295) 351-1849-010 A2U34	1	
223	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A2U41	1	A
224	CA3081	2	MICROCIRCUIT NPN ARRAY (ESDS) (54590) 351-7802-020 A2U45	1	A
225	314B153	2	RESISTOR NETWORK DUAL-IN-LINE, 15K, 2%, 1.25W PKG (ESDS) (01121) 350-4027-490 A2U44	1	A
226	SN54LS125AJ	2	INTEGRATED CIRCUIT QUAD BUS BUFFER (ESDS) (01295) 351-1915-010 A2U35	1	
227	314B153	2	RESISTOR NETWORK DUAL-IN-LINE, 15K, 2%, 1.25W PKG (ESDS) (01121) 350-4027-490 A2U40	1	A
228	CA3081	2	MICROCIRCUIT NPN ARRAY (ESDS) (54590) 351-7802-020 A2U42	1	A
229	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR2	1	A
230	1N5711	2	SEMICOND DEVICE (ESDS) (28480) 353-3691-010 A2CR40	1	
231	RCR05G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/8W (81349) 745-2320-000 A2R82	1	
232	2N2369A	2	TRANSISTOR (14433) 352-0596-030 A2Q10	1	
233	RCR07G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/4W (81349) 745-0773-000 A2R80	1	
234	2N2369A	2	TRANSISTOR (14433) 352-0596-030 A2Q11	1	
235	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR39	1	
236	RCR07G330JS	2	RESISTOR,FIXED CMPSN, 33 OHMS, 5%, 1/4W (81349) 745-0694-000 A2R83	1	
237	2N2907A	2	TRANSISTOR (04713) 352-0551-010 A2Q12	1	
238	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR38	1	
239	RCR05G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/8W (81349) 745-2304-000 A2R84	1	
240	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A2C155	1	
241	1N4622	2	SEMICOND DEVICE (04713) 353-3591-460 A2VR1	1	
242	EEC-F5R5U104	2	CAPACITOR,FIXED ELCTLT, 0.10UF, P80%M20%, 5.5VDC (54473) 248-0013-010 A2C154	1	
243	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A2R81	1	
244	499441-5	2	HOUSING,CONNECTOR ELEC (00779) 372-2653-270 A2E1	1	
245	88089-1	2	COVER,CONNECTOR ELEC (00779) 372-2653-160	1	
246	424-0307-060	2	CABLE,SP,ELECTRICAL (22526)	AR	
247	DCSF-37S	2	CONNECTOR,PLUG ELEC (71468) 371-0156-030 A2J6	1	
248	AM26LS30/BEA	2	MICROCIRCUIT DUAL DIFF LINE DRIVER (ESDS) (34335) 351-1398-010 A2U36	1	
249	SN54LS00J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-010 A2U37	1	
250	76SB04S	2	SWITCH,DUAL PACKAGE (81073) 266-0243-010 A2U39	1	
251	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR3	1	A
252	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR4	1	A
253	DS78LS120J	2	MICROCIRCUIT DUAL DIFF LINE RCVR (ESDS) (27014) 351-9304-020 A2U38	1	
254	499441-5	2	HOUSING,CONNECTOR ELEC (00779) 372-2653-270 A2E2	1	A
255	88089-1	2	COVER,CONNECTOR ELEC (00779) 372-2653-160	1	A
256	424-0307-060	2	CABLE,SP,ELECTRICAL (22526)	AR	A
257	DCSF-37P	2	CONNECTOR,RCPT ELEC (71468) 371-0156-040 A2J7	1	A
258	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR5	1	A
259	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR6	1	A
260	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR7	1	A
261	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR8	1	A
262	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR9	1	A
263	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR10	1	A
264	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR11	1	A
265	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR12	1	A
266	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR13	1	A
267	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR14	1	A
268	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR15	1	A
269	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR16	1	A

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-4-270	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR17	1	A
271	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR18	1	A
272	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR19	1	A
273	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR20	1	A
274	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR22	1	A
275	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR23	1	A
276	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR24	1	A
277	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR25	1	A
278	314B153	2	RESISTOR NETWORK DUAL-IN-LINE, 15K, 2%, 1.25W PKG (ESDS) (01121) 350-4027-490 A2U48	1	A
279	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR36	1	A
280	CA3081	2	MICROCIRCUIT NPN ARRAY (ESDS) (54590) 351-7802-020 A2U50	1	A
281	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A2U43	1	A
282	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A2U47	1	
283	SN54LS32J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-180 A2U49	1	
284	SN54LS04J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-030 A2U33	1	
285	LD8251A	2	INTEGRATED CIRCUIT COMM INTERFACE (ESDS) (34649) 351-8471-050 A2U46	1	
286	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A2U32	1	
287	MD8255A/B	2	MICROCIRCUIT MEMORY (ESDS) (34649) 351-8439-050 A2U26	1	
288	314A103	2	RESISTOR NETWORK DUAL-IN-LINE, 10K, 2%, 125V (01121) 350-4027-120 A2U53	1	
289	SN54LS245J	2	MICROCIRCUIT TRANSCEIVER,OCTAL BUS(ESDS) (01295) 351-1849-010 A2U29	1	
290	86418-8	2	CONNECTOR,RCPT ELEC (00779) 372-0033-080 A2P2	1	
			OR		
290	2-87997-5	2	CONNECTOR,RCPT ELEC (00779) 372-0033-190 A2P2	1	
291	646-7026-001	2	INTEGRATED CIRCUIT PENGUIN CONTROL (ESDS) A2U28	1	A
292	SN54LS245J	2	MICROCIRCUIT TRANSCEIVER,OCTAL BUS(ESDS) (01295) 351-1849-010 A2U31	1	
293	SN54LS126AJ	2	INTEGRATED CIRCUIT QUAD BUS BUFFER (ESDS) (01295) 351-1915-020 A2U30	1	
294	SN54LS32J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-180 A2U25	1	
295	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A2U22	1	
296	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A2CR1	1	
297	289-7074-220-M20	2	CRYSTAL UNIT,QTZ 9.8304MHZ (00136) 289-7074-220 A2Y1	1	
298	100-206-10	2	CLIP,SPRING TENSION (99378) 139-3003-030	1	
	MS16535-23	2	RIVET,TUBULAR AL, 0.061 DIA X 0.156 (96906) 305-1722-000 (AP)	2	
299	MBL80188-CV	2	MICROCIRCUIT MICROPROCESSOR (ESDS) (61271) 351-8867-010 A2U52	1	
300	268-5400-50	2	SOCKET (19613) 220-0098-010	1	
301	58318	2	HEAT SINK (30161) 352-9664-010	1	
302	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A2U27	1	
303	SN54LS02J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-020 A2U21	1	
304	LM239J	2	MICROCIRCUIT COMPARATOR (ESDS) (01295) 351-1122-020 A2U51	1	
305	MC1408L-8	2	INTEGRATED CIRCUIT D TO A CONVERTER (ESDS) (04713) 351-1152-010 A2U24	1	
306	MC1558U	2	MICROCIRCUIT AMPLIFIER (ESDS) (04713) 351-1286-010 A2U23	1	
307	2-86418-0	2	CONNECTOR,RCPT ELEC (00779) 372-0033-430 A2P1	1	
			OR		
307	1-87997-7	2	CONNECTOR,RCPT ELEC (00779) 372-0033-380 A2P1	1	
308	MV5453	2	SEMICOND DEVICE (14936) 353-0293-010 A2DS1	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-4-309	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A2Q2	1	
310	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A2Q1	1	
311	SN54LS245J	2	MICROCIRCUIT TRANSCEIVER,OCTAL BUS(ESDS) (01295) 351-1849-010 A2U20	1	
312	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A2U19	1	
313	CD4047BF	2	MICROCIRCUIT LOGIC ARRAY (ESDS) (02735) 351-8200-010 A2U12	1	
314	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A2Q9	1	
315	ADC0808CCJ	2	INTEGRATED CIRCUIT MICROPROCESSOR (ESDS) (27014) 351-0559-030 A2U15	1	
316	D1LBQ28P-101	2	SOCKET,IC (09922) 220-0102-020	1	
317	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A2U17	1	
318	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A2U16	1	
319	SN54LS245J	2	MICROCIRCUIT TRANSCEIVER,OCTAL BUS(ESDS) (01295) 351-1849-010 A2U11	1	
320	SN54LS245J	2	MICROCIRCUIT TRANSCEIVER,OCTAL BUS(ESDS) (01295) 351-1849-010 A2U9	1	
321	499139-9	2	CONNECTOR,RCPT ELEC (00779) 372-0504-010 A2J1	1	
322	22-TEB-122-1	2	WIRE,ELECTRICAL (12814) 428-0282-010 A2W1	AR	
323	652-6557-001	2	SPACER	6	
324	372-2601-048	2	CONTACT,ELECTRICAL	1	

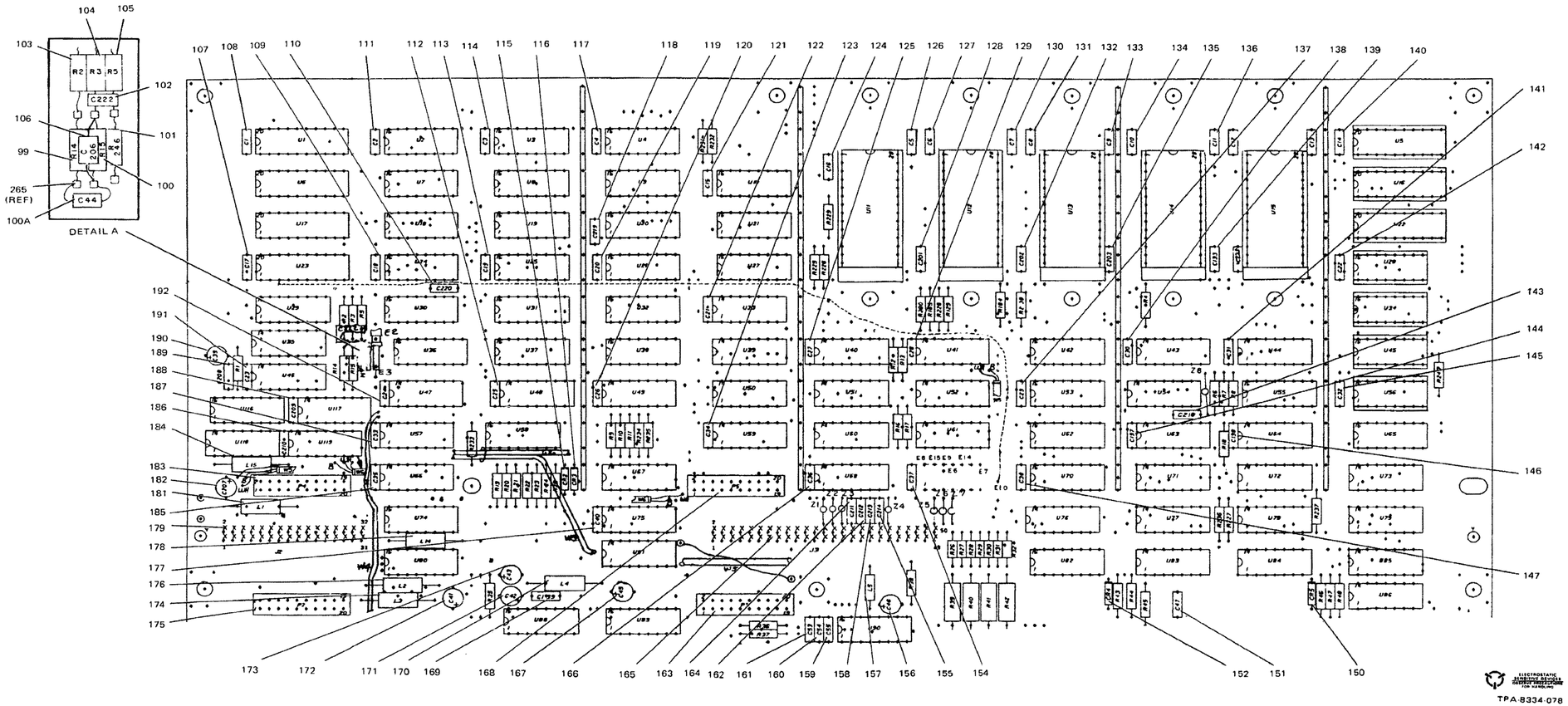
NOTE:

(1) C12, C13, C221, R8, R228, R240, U15, AND SOCKET (XU15) ARE FOR REFERENCE ONLY AND DO NOT APPEAR IN PARTS LIST.

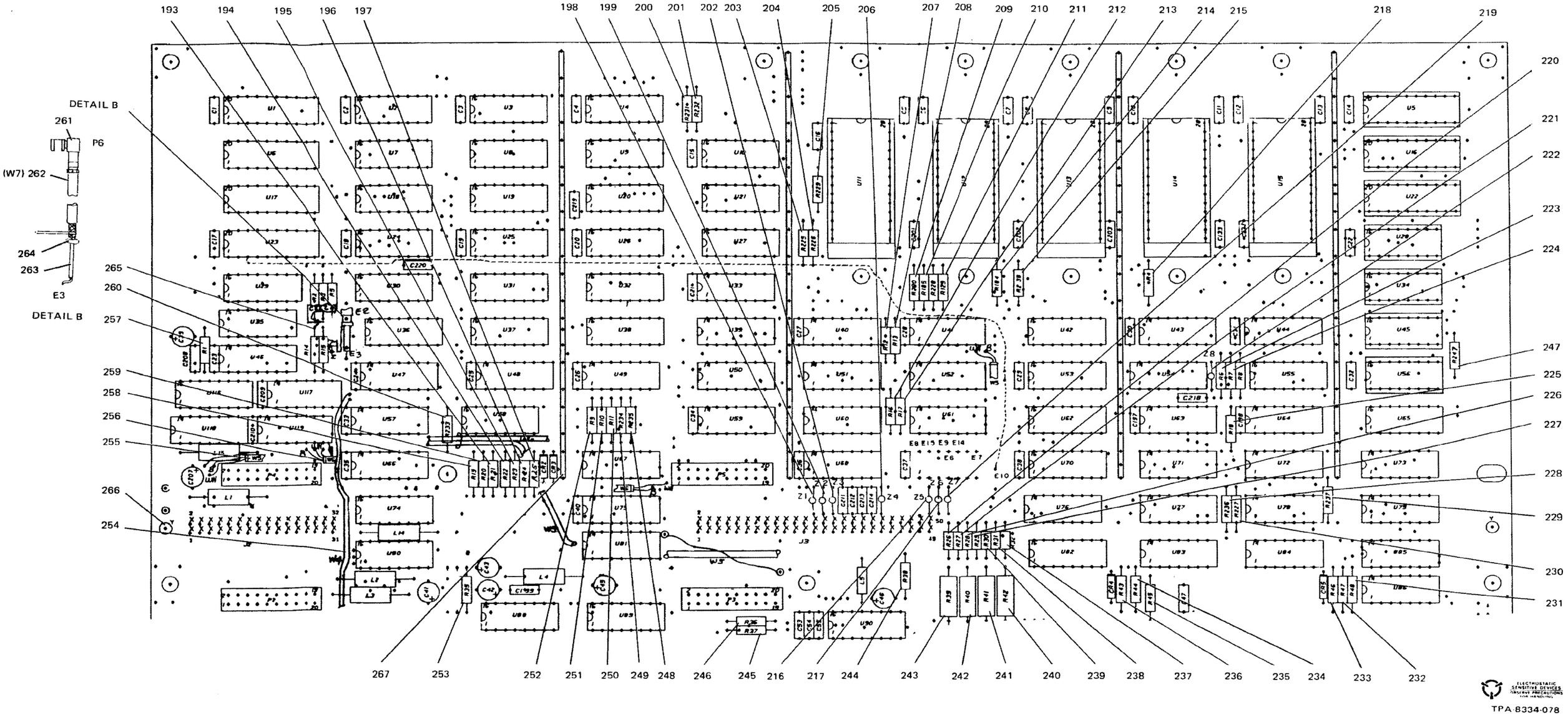
ELECTROSTATIC SENSITIVE DEVICES OBSERVE PRECAUTIONS FOR HANDLING

TPA 8334-078

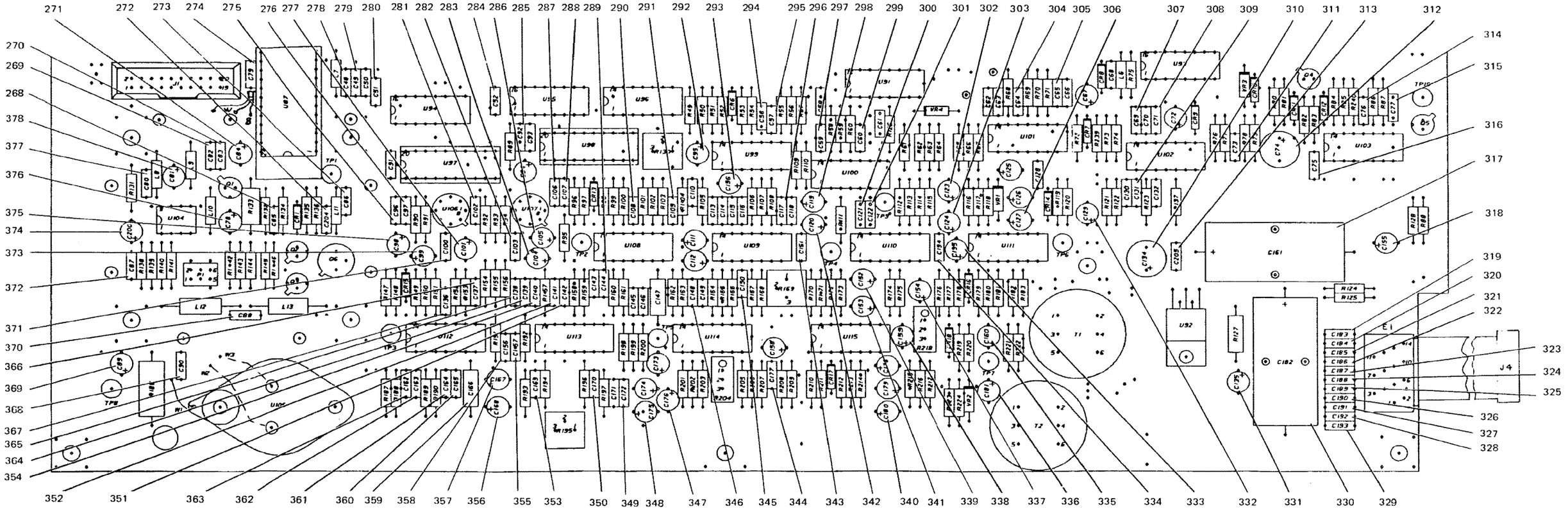
IF/Audio A3, Parts Location Diagram (Sheet 1 of 7) Figure 6-5



IF/Audio A3, Parts Location Diagram (Sheet 2 of 7) Figure 6-5



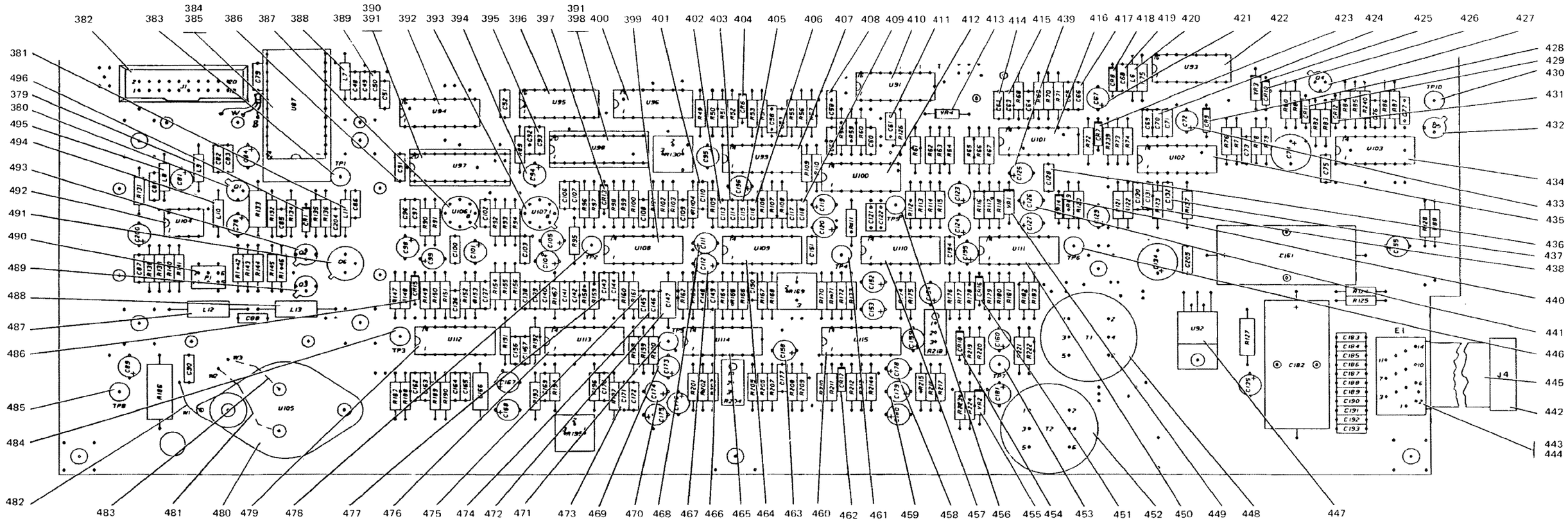
IF/Audio A3, Parts Location Diagram (Sheet 3 of 7) Figure 6-5



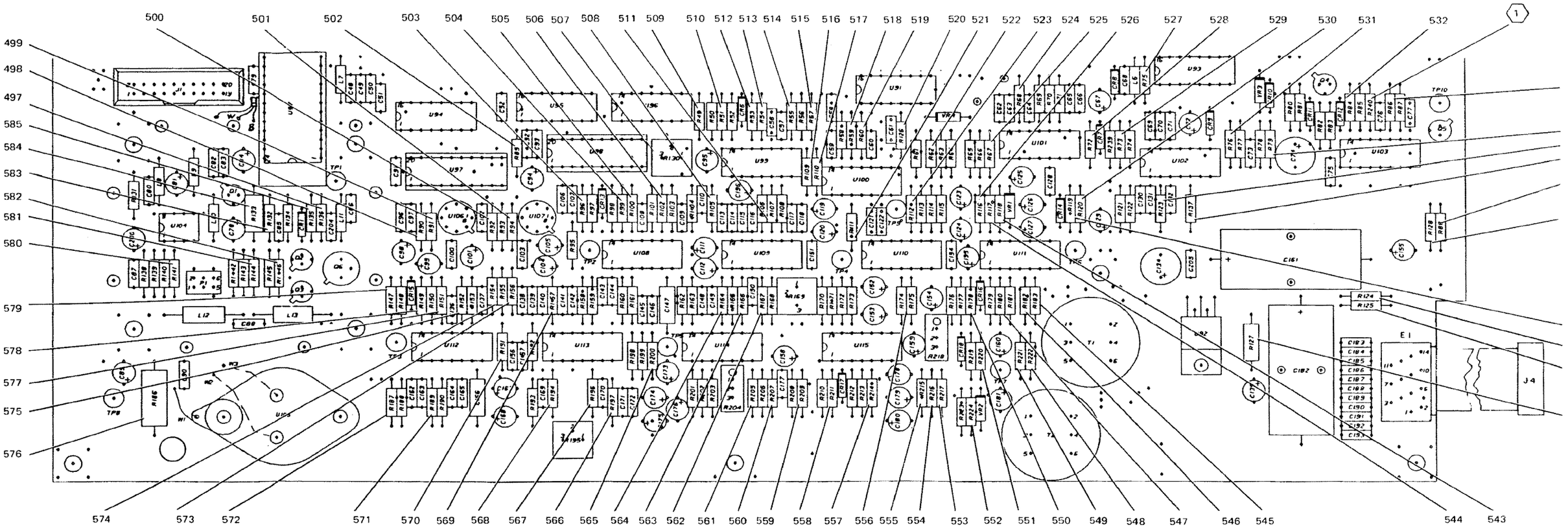
ELECTROSTATIC SENSITIVE DEVICES
OBSERVE PRECAUTIONS FOR HANDLING

TPA-8334-078

IF/Audio A3, Parts Location Diagram (Sheet 4 of 7) Figure 6-5



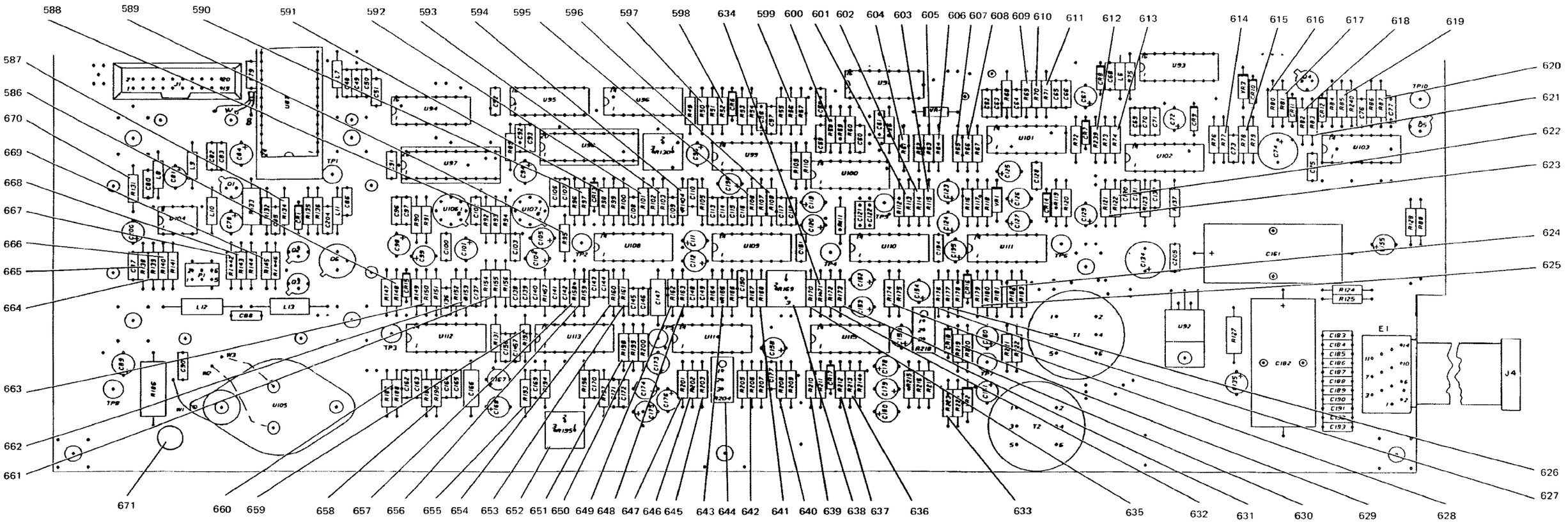
IF/Audio A3, Parts Location Diagram (Sheet 5 of 7) Figure 6-5



ELECTROSTATIC SENSITIVE DEVICES. OBSERVE PRECAUTIONS FOR HANDLING

TPA 8334-078

IF/Audio A3, Parts Location Diagram (Sheet 6 of 7) Figure 6-5



ELECTROSTATIC SENSITIVE DEVICES OBSERVE PRECAUTIONS FOR HANDLING

TPA 8334 078

IF/Audio A3, Parts Location Diagram (Sheet 7 of 7) Figure 6-5

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INCMT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-	646-6196-001	1	IF/AUDIO (ESDS) A3 (SEE FIG 6-1-10 FOR NHA)	REF	A
	646-6196-002	1	IF/AUDIO (ESDS) A3 (SEE FIG 6-1-10 FOR NHA)	REF	B,C
1	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A3U6	1	
2	SN54LS283J	2	MICROCIRCUIT ADDER (ESDS) (04713) 351-1745-010 A3U18	1	
3	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A3U1	1	
4	SN54LS174J	2	MICROCIRCUIT SHIFT REGISTER (ESDS) (04713) 351-1529-020 A3U31	1	
5	SN54LS283J	2	MICROCIRCUIT ADDER (ESDS) (04713) 351-1745-010 A3U7	1	
6	SN54LS283J	2	MICROCIRCUIT ADDER (ESDS) (04713) 351-1745-010 A3U2	1	
7	SN54LS174J	2	MICROCIRCUIT SHIFT REGISTER (ESDS) (04713) 351-1529-020 A3U25	1	
8	SN54LS283J	2	MICROCIRCUIT ADDER (ESDS) (04713) 351-1745-010 A3U19	1	
9	SN54LS283J	2	MICROCIRCUIT ADDER (ESDS) (04713) 351-1745-010 A3U8	1	
10	SN54LS283J	2	MICROCIRCUIT ADDER (ESDS) (04713) 351-1745-010 A3U3	1	
11	SN54LS174J	2	MICROCIRCUIT SHIFT REGISTER (ESDS) (04713) 351-1529-020 A3U37	1	
12	SN54LS165J	2	MICROCIRCUIT SHIFT REGISTER (ESDS) (04713) 351-1529-120 A3U38	1	
13	SN54LS174J	2	MICROCIRCUIT SHIFT REGISTER (ESDS) (04713) 351-1529-020 A3U4	1	
14	SN54LS174J	2	MICROCIRCUIT SHIFT REGISTER (ESDS) (04713) 351-1529-020 A3U9	1	
15	SN54LS174J	2	MICROCIRCUIT SHIFT REGISTER (ESDS) (04713) 351-1529-020 A3U20	1	
16	SN54LS283J	2	MICROCIRCUIT ADDER (ESDS) (04713) 351-1745-010 A3U26	1	
17	SN54LS165J	2	MICROCIRCUIT SHIFT REGISTER (ESDS) (04713) 351-1529-120 A3U32	1	
18	SN54LS165J	2	MICROCIRCUIT SHIFT REGISTER (ESDS) (04713) 351-1529-120 A3U10	1	
19	SN54LS165J	2	MICROCIRCUIT SHIFT REGISTER (ESDS) (04713) 351-1529-120 A3U21	1	
20	SN54LS157J	2	MICROCIRCUIT MULTIPLEXER (ESDS) (04713) 351-1530-150 A3U27	1	
21	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U33	1	
22	351-8869-020	2	MICROCIRCUIT SIGNAL PROCESSOR (ESDS) (61892) A3U11	1	
			OR		
22	MPD7720	2	INTEGRATED CIRCUIT,MODIFIED 659-1220-001 A3U11	1	
23	D1LBQ28P-101	2	SOCKET,IC (09922) 220-0102-020	1	
24	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U39	1	
25	351-8869-020	2	MICROCIRCUIT SIGNAL PROCESSOR (ESDS) (61892) A3U12	1	
			OR		
25	MPD7720	2	INTEGRATED CIRCUIT,MODIFIED 659-1220-001 A3U12	1	
26	D1LBQ28P-101	2	SOCKET,IC (09922) 220-0102-020	1	
27	SN54LS04J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-030 A3U40	1	
28	351-8869-030	2	MICROCIRCUIT SIGNAL PROCESSOR (ESDS) (61892) A3U13	1	
			OR		
28	MPD7720	2	INTEGRATED CIRCUIT,MODIFIED 659-1227-002 A3U13	1	
29	D1LBQ28P-101	2	SOCKET,IC (09922) 220-0102-020	1	
30	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A3U5	1	
31	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A3U16	1	
32	SN54LS245J	2	MICROCIRCUIT TRANSCEIVER,OCTAL BUS(ESDS) (01295) 351-1849-010 A3U22	1	
33	DILB20P-108	2	SOCKET,IC (09922) 220-0065-070	3	
34	SN5407J	2	MICROCIRCUIT LOGIC BUFFER (ESDS) (01295) 351-7715-020 A3U44	1	
35	SN54LS157J	2	MICROCIRCUIT MULTIPLEXER (ESDS) (04713) 351-1530-150 A3U55	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-36	SN54LS174J	2	MICROCIRCUIT SHIFT REGISTER (ESDS) (04713) 351-1529-020 A3U28	1	
37	SN54LS174J	2	MICROCIRCUIT SHIFT REGISTER (ESDS) (04713) 351-1529-020 A3U34	1	
38	SN54LS138J	2	MICROCIRCUIT DECODER (ESDS) (04713) 351-1526-010 A3U45	1	
39	SN54LS138J	2	MICROCIRCUIT DECODER (ESDS) (04713) 351-1526-010 A3U56	1	
40	DILB16P-108	2	SOCKET,IC (09922) 220-0065-030	4	
41	SN54S74J	2	MICROCIRCUIT FLIP-FLOP (ESDS) (01295) 351-1656-010 A3U64	1	
42	SN54LS251J	2	MICROCIRCUIT MULTIPLEXER (ESDS) (04713) 351-1530-010 A3U65	1	
43	SN54LS00J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-010 A3U72	1	
44	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U73	1	
45	SN54S74J	2	MICROCIRCUIT FLIP-FLOP (ESDS) (01295) 351-1656-010 A3U78	1	
46	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U79	1	
47	SN54LS04J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-030 A3U84	1	
48	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U85	1	
49	SN54LS00J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-010 A3U86	1	
50	MPD77P20	2	INTEGRATED CIRCUIT, MODIFIED 659-1246-001 A3U14	1	A
51	D1LBQ28P-101	2	SOCKET,IC (09922) 220-0102-020	1	A
52	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U43	1	
53	SN54LS00J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-010 A3U63	1	
54	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U83	1	
55	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U77	1	
56	SN54LS02J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-020 A3U71	1	
57	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U54	1	
58	SN54LS251J	2	MICROCIRCUIT MULTIPLEXER (ESDS) (04713) 351-1530-010 A3U82	1	
59	SN54LS164J	2	MICROCIRCUIT SHIFT REGISTER (ESDS) (04713) 351-1529-110 A3U76	1	
60	SN54LS163AJ	2	MICROCIRCUIT COUNTER (ESDS) (04713) 351-1637-060 A3U70	1	
61	MC1408L-8	2	INTEGRATED CIRCUIT D TO A CONVERTER (ESDS) (04713) 351-1152-010 A3U90	1	
62	SN54LS163AJ	2	MICROCIRCUIT COUNTER (ESDS) (04713) 351-1637-060 A3U62	1	
63	SN54LS157J	2	MICROCIRCUIT MULTIPLEXER (ESDS) (04713) 351-1530-150 A3U53	1	
64		2	NOT USED		
65	SN54LS157J	2	MICROCIRCUIT MULTIPLEXER (ESDS) (04713) 351-1530-150 A3U42	1	
66	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U61	1	
67	CD4015BF	2	MICROCIRCUIT ARRAY (ESDS) (02735) 351-8189-010 A3U89	1	
68	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U68	1	
69	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U52	1	
70	CD4015BF	2	MICROCIRCUIT ARRAY (ESDS) (02735) 351-8189-010 A3U88	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-71	SN54LS02J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-020 A3U81	1	
72	SN54LS00J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-010 A3U60	1	
73	SN54S04J	2	INTEGRATED CIRCUIT HEX INVERTER (ESDS) (01295) 351-1546-010 A3U75	1	
74	SN54S04J	2	INTEGRATED CIRCUIT HEX INVERTER (ESDS) (01295) 351-1546-010 A3U41	1	
75	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U51	1	
76	SN54LS157J	2	MICROCIRCUIT MULTIPLEXER (ESDS) (04713) 351-1530-150 A3U80	1	
77	SN54LS04J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-030 A3U67	1	
78	SN54LS157J	2	MICROCIRCUIT MULTIPLEXER (ESDS) (04713) 351-1530-150 A3U74	1	
79	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U59	1	
80	SN54LS02J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-020 A3U50	1	
81	SN54S86J	2	MICROCIRCUIT LOGIC GATE (ESDS) (01295) 351-1883-030 A3U66	1	
82	CD4520BMJ	2	INTEGRATED CIRCUIT COUNTER (ESDS) (27014) 351-8296-010 A3U58	1	
83	SN54S86J	2	MICROCIRCUIT LOGIC GATE (ESDS) (01295) 351-1883-030 A3U57	1	
84	SN54S74J	2	MICROCIRCUIT FLIP-FLOP (ESDS) (01295) 351-1656-010 A3U49	1	
85	S54F74/BCA	2	MICROCIRCUIT FLIP-FLOP (ESDS) (18324) 351-8823-010 A3U118	1	
86	S54F74/BCA	2	MICROCIRCUIT FLIP-FLOP (ESDS) (18324) 351-8823-010 A3U119	1	
87	SN54S112J	2	INTEGRATED CIRCUIT FLIP FLOP (ESDS) (01295) 351-7808-010 A3U116	1	
88	54F04/BCA	2	MICROCIRCUIT LOGIC GATE (ESDS) (18324) 351-5600-030 A3U117	1	
89	SN54S86J	2	MICROCIRCUIT LOGIC GATE (ESDS) (01295) 351-1883-030 A3U46	1	
90	MC14070BAL	2	INTEGRATED CIRCUIT LOGIC GATE (ESDS) (04713) 351-8407-020 A3U47	1	
91	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A3U35	1	
92	CD4006BF	2	MICROCIRCUIT LOGIC ARRAY (ESDS) (02735) 351-8198-010 A3U48	1	
93	SN54LS174J	2	MICROCIRCUIT SHIFT REGISTER (ESDS) (04713) 351-1529-020 A3U29	1	
94	SN54LS283J	2	MICROCIRCUIT ADDER (ESDS) (04713) 351-1745-010 A3U36	1	
95	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A3U23	1	
96	SN54LS283J	2	MICROCIRCUIT ADDER (ESDS) (04713) 351-1745-010 A3U30	1	
97	SN54LS374J	2	MICROCIRCUIT D TYPE REGISTER (ESDS) (01295) 351-1821-040 A3U17	1	
98	SN54LS283J	2	MICROCIRCUIT ADDER (ESDS) (04713) 351-1745-010 A3U24	1	
99	RCR07G222KS	2	RESISTOR,FIXED CMPSN, 2.2K, 10%, 1/4W (81349) 745-0761-000 A3R14	1	
100	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R15	1	
100A	CK05BX103K	2	CAPACITOR,FIXED CER DIEL, 0.01UF, 10%, 100VDC (81349) 913-5019-200 A3C44	1	
101	RCR07G221KS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 10%, 1/4W (81349) 745-0725-000 A3R246	1	
102	CK12BX330K	2	CAPACITOR,FIXED CER DIEL, 33PF, 10%, 100V (81349) 913-5020-100 A3C222	1	
103	RCR07G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/4W (81349) 745-0728-000 A3R2	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-104	RCR07G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/4W (81349) 745-0728-000 A3R3	1	
105	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R5	1	
106	CK12BX330K	2	CAPACITOR,FIXED CER DIEL, 33PF, 10%, 100V (81349) 913-5020-100 A3C206	1	
107	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C17	1	
108	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C1	1	
109	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C18	1	
110	923CC0G221K100B	2	CAPACITOR,FIXED CER DIEL, 220PF, 10%, 100VDC (56289) 913-3325-230 A3C220	1	
111	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C2	1	
112	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C25	1	
113	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C19	1	
114	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C3	1	
115	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR2	1	
116	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR3	1	
117	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C4	1	
118	923CC0G221K100B	2	CAPACITOR,FIXED CER DIEL, 220PF, 10%, 100VDC (56289) 913-3325-230 A3C219	1	
119	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C20	1	
120	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C26	1	
121	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C15	1	
122	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C21	1	
123	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C34	1	
124	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C16	1	
125	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C27	1	
126	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C5	1	
127	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C6	1	
128	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C201	1	
129	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C28	1	
130	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C7	1	
131	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C8	1	
132	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C202	1	
133	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C9	1	
134	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C10	1	A
135	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C203	1	
136	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C11	1	A

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-137	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C29	1	
138	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C30	1	
139	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C133	1	A
140	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C14	1	
141	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C31	1	
142	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C22	1	
143	923CC0G221K100B	2	CAPACITOR,FIXED CER DIEL, 220PF, 10%, 100VDC (56289) 913-3325-230 A3C218	1	
144	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C197	1	
145	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C32	1	
146	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C198	1	
147	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C38	1	
148		2	NOT USED		
149		2	NOT USED		
150	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR5	1	
151	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C47	1	
152	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR4	1	
153		2	NOT USED		
154	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C37	1	
155	923CC0G330K200B	2	CAPACITOR,FIXED CER DIEL, 33PF, 10%, 200VDC (56289) 913-3325-130 A3C214	1	
156	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C46	1	
157	MS75084-12	2	COIL,RF 10UH (96906) 240-2035-000 A3L5	1	
158	923CC0G101K200B	2	CAPACITOR,FIXED CER DIEL, 100PF, 10%, 200VDC (56289) 913-3325-190 A3C213	1	
159	923CC0G330K200B	2	CAPACITOR,FIXED CER DIEL, 33PF, 10%, 200VDC (56289) 913-3325-130 A3C55	1	
160	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C54	1	
161	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C53	1	
162	923CC0G101K200B	2	CAPACITOR,FIXED CER DIEL, 100PF, 10%, 200VDC (56289) 913-3325-190 A3C212	1	
163	532977-3	2	CONNECTOR,PIN HDR (00779) 372-0147-110 A3P3	1	
164	923CC0G101K200B	2	CAPACITOR,FIXED CER DIEL, 100PF, 10%, 200VDC (56289) 913-3325-190 A3C211	1	
165	76602-139	2	CONTACT,ELECTRICAL (22526) 372-2601-589 A3J3 OR	50	
165	372-2601-087	2	CONTACT,ELECTRICAL A3J3	50	
166	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C36	1	
167	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C45	1	
168	532977-3	2	CONNECTOR,PIN HDR (00779) 372-0147-110 A3P5	1	
169	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C199	1	
170	MS90539-15	2	COIL,RF 1000UH (96906) 240-2540-000 A3L4	1	
171	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C42	1	
172	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C41	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-173	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C43	1	
174	MS18130-10	2	COIL,RF 1.50UH (96906) 240-1570-000 A3L3	1	
175	532977-3	2	CONNECTOR,PIN HDR (00779) 372-0147-110 A3P2	1	
176	MS18130-1	2	COIL,RF 0.15UH (96906) 240-1562-000 A3L2	1	
177	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C40	1	
178	MS18130-10	2	COIL,RF 1.50UH (96906) 240-1570-000 A3L14	1	
179	76602-139	2	CONTACT,ELECTRICAL (22526) 372-2601-589 A3J2 OR	32	
179	372-2601-087	2	CONTACT,ELECTRICAL A3J2	32	
180		2	NOT USED		
181	MS18130-1	2	COIL,RF 0.15UH (96906) 240-1562-000 A3L1	1	
182	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C207	1	
183	532977-3	2	CONNECTOR,PIN HDR (00779) 372-0147-110 A3P4	1	
184	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A3L15	1	
185	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C35	1	
186	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C210	1	
187	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C33	1	
188	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C209	1	
189	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C208	1	
190	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C39	1	
191	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C23	1	
192	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C24	1	
193	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A3R21	1	
194	RN55D8062F	2	RESISTOR,FIXED FILM, 80.6K, 1%, 1/8W (81349) 705-3605-910 A3R22	1	
195	RN55D4991F	2	RESISTOR,FIXED FILM, 4.99K, 1%, 1/8W (81349) 705-3605-330 A3R23	1	
196	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R24	1	
197	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R25	1	
198	56-590-65/4A6	2	SUPPRESSOR,PARA (02114) 288-2154-000 A3Z1	1	
199	56-590-65/4A6	2	SUPPRESSOR,PARA (02114) 288-2154-000 A3Z2	1	
200	RCR07G471KS	2	RESISTOR,FIXED CMPSN, 470 OHMS, 10%, 1/4W (81349) 745-0737-000 A3R231	1	
201	RCR07G471KS	2	RESISTOR,FIXED CMPSN, 470 OHMS, 10%, 1/4W (81349) 745-0737-000 A3R232	1	
202	56-590-65/4A6	2	SUPPRESSOR,PARA (02114) 288-2154-000 A3Z3	1	
203	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R225	1	
204	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R226	1	
205	RCR07G470KS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 10%, 1/4W (81349) 745-0701-000 A3R229	1	
206	56-590-65/4A6	2	SUPPRESSOR,PARA (02114) 288-2154-000 A3Z4	1	
207	RCR07G471KS	2	RESISTOR,FIXED CMPSN, 470 OHMS, 10%, 1/4W (81349) 745-0737-000 A3R12	1	
208	RCR07G471KS	2	RESISTOR,FIXED CMPSN, 470 OHMS, 10%, 1/4W (81349) 745-0737-000 A3R13	1	
209	RCR07G470KS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 10%, 1/4W (81349) 745-0701-000 A3R230	1	
210	RCR07G470KS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 10%, 1/4W (81349) 745-0701-000 A3R185	1	A

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-211	RCR07G470KS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 10%, 1/4W (81349) 745-0701-000 A3R129	1	
212	RCR07G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/4W (81349) 745-0728-000 A3R16	1	
213	RCR07G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/4W (81349) 745-0728-000 A3R17	1	
214	RCR07G470KS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 10%, 1/4W (81349) 745-0701-000 A3R184	1	
215	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R238	1	
216	56-590-65/4A6	2	SUPPRESSOR,PARA (02114) 288-2154-000 A3Z5	1	
217	56-590-65/4A6	2	SUPPRESSOR,PARA (02114) 288-2154-000 A3Z6	1	
218	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R4	1	
219	56-590-65/4A6	2	SUPPRESSOR,PARA (02114) 288-2154-000 A3Z7	1	
220	RCR07G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/4W (81349) 745-0677-000 A3R26	1	
221	RCR07G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/4W (81349) 745-0677-000 A3R27	1	
222	56-590-65/4A6	2	SUPPRESSOR,PARA (02114) 288-2154-000 A3Z8	1	
223	RCR07G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/4W (81349) 745-0677-000 A3R6	1	
224	RCR07G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/4W (81349) 745-0677-000 A3R7	1	
225	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R18	1	
226	RCR07G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/4W (81349) 745-0677-000 A3R28	1	
227	RCR07G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/4W (81349) 745-0677-000 A3R29	1	
228	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R236	1	
229	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R237	1	
230	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R227	1	
231	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R48	1	
232	RCR07G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/4W (81349) 745-0677-000 A3R47	1	
233	RCR07G222KS	2	RESISTOR,FIXED CMPSN, 2.2K, 10%, 1/4W (81349) 745-0761-000 A3R46	1	
234	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R44	1	
235	RCR07G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/4W (81349) 745-0677-000 A3R45	1	
236	RCR07G222KS	2	RESISTOR,FIXED CMPSN, 2.2K, 10%, 1/4W (81349) 745-0761-000 A3R43	1	
237	RCR07G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/4W (81349) 745-0677-000 A3R32	1	
238	RCR07G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/4W (81349) 745-0677-000 A3R31	1	
239	RCR07G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/4W (81349) 745-0677-000 A3R30	1	
240	RCR20G331KS	2	RESISTOR,FIXED CMPSN, 330 OHMS, 10%, 1/2W (81349) 745-1331-000 A3R42	1	
241	RCR20G331KS	2	RESISTOR,FIXED CMPSN, 330 OHMS, 10%, 1/2W (81349) 745-1331-000 A3R41	1	
242	RCR20G331KS	2	RESISTOR,FIXED CMPSN, 330 OHMS, 10%, 1/2W (81349) 745-1331-000 A3R40	1	
243	RCR20G331KS	2	RESISTOR,FIXED CMPSN, 330 OHMS, 10%, 1/2W (81349) 745-1331-000 A3R39	1	
244	RCR07G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/4W (81349) 745-0677-000 A3R38	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-245	RCR07G332KS	2	RESISTOR,FIXED CMPSN, 3.3K, 10%, 1/4W (81349) 745-0767-000 A3R37	1	
246	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R36	1	
247	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R247	1	
248	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R235	1	
249	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R234	1	
250	RCR07G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/4W (81349) 745-0728-000 A3R11	1	
251	RCR07G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/4W (81349) 745-0728-000 A3R10	1	
252	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R9	1	
253	RN55D1820F	2	RESISTOR,FIXED FILM, 182 OHMS, 1%, 1/8W (81349) 705-3600-610 A3R35	1	
254	439-0649-000	2	CABLE,SP,ELEC A3W4	AR	
255	439-0649-000	2	CABLE,SP,ELEC A3W5	AR	
256	439-0649-000	2	CABLE,SP,ELEC A3W6	AR	
257	RCR07G471KS	2	RESISTOR,FIXED CMPSN, 470 OHMS, 10%, 1/4W (81349) 745-0737-000 A3R1	1	
258	RN55D2002F	2	RESISTOR,FIXED FILM, 20K, 1%, 1/8W (81349) 705-3605-620 A3R19	1	
259	RN55D4022F	2	RESISTOR,FIXED FILM, 40.2K, 1%, 1/8W (81349) 705-1073-000 A3R20	1	
260	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R233	1	
261	51-311-3875	2	CONNECTOR,PLUG ELEC (98291) 357-7108-020 A3P6	1	
262	11284	2	CABLE,RF (12515) 425-0113-010 A3W7	AR	
263	M16878/4BFA-9	2	WIRE,ELEC (81349) 428-0108-000 A3E3	AR	
264	SE-33BRSHT	2	EYELET,METALLIC BRS, 0.089DIA X 0.093 (61957) 307-1215-000	1	
265	76602-134	2	CONTACT,ELECTRICAL (22526) 372-2601-577 OR	6	
265	372-2601-048	2	CONTACT,ELECTRICAL	6	
266	652-6556-002	2	GUIDE PIN	2	
267	ECI-6102-1-10-3	2	BUSS BAR,ELECTRICAL (19648) 367-1912-010	4	
268	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C85	1	
269	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C82	1	
270	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C83	1	
271	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C84	1	
272	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C204	1	
273	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C86	1	
274	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C79	1	
275	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C96	1	A
276	923CC0G330K200B	2	CAPACITOR,FIXED CER DIEL, 33PF, 10%, 200VDC (56289) 913-3325-130 A3C97	1	A
277	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C101	1	A
278	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C48	1	
279	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C49	1	
280	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C51	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-281	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C102	1	A
282	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C103	1	
283	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C104	1	
284	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C52	1	
285	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C92	1	
286	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C105	1	
287	923CC0G330K200B	2	CAPACITOR,FIXED CER DIEL, 33PF, 10%, 200VDC (56289) 913-3325-130 A3C106	1	
288	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C107	1	
289	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C144	1	
290	923CX7R472K100B	2	CAPACITOR,FIXED CER DIEL, 4700PF, 10%, 100VDC (56289) 913-3325-390 A3C108	1	
291	923CX7R562K100B	2	CAPACITOR,FIXED CER DIEL, 5600PF, 10%, 100VDC (56289) 913-3325-400 A3C109	1	
292	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C95	1	
293	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C196	1	
294	CK06BX474K	2	CAPACITOR,FIXED CER DIEL, 0.47UF, 10%, 50VDC (81349) 913-5019-520 A3C56	1	
295	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C57	1	
296	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C117	1	
297	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C59	1	
298	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C119	1	
299	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C60	1	
300	CK06BX474K	2	CAPACITOR,FIXED CER DIEL, 0.47UF, 10%, 50VDC (81349) 913-5019-520 A3C121	1	A
301	CK06BX474K	2	CAPACITOR,FIXED CER DIEL, 0.47UF, 10%, 50VDC (81349) 913-5019-520 A3C122	1	
302	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C123	1	
303	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C124	1	
304	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C64	1	
305	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C65	1	
306	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C127	1	
307	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C69	1	
308	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C71	1	
309	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C131	1	
310	199D476X0025EE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 47UF, 20%, 25V (56289) 184-9102-710 A3C134	1	
311	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A3C73	1	
312	199D476X0025EE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 47UF, 20%, 25V (56289) 184-9102-710 A3C74	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-313	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C205	1	
314	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C76	1	
315	CK06BX474K	2	CAPACITOR,FIXED CER DIEL, 0.47UF, 10%, 50VDC (81349) 913-5019-520 A3C77	1	
316	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C75	1	
317	ECEB1VL471SR	2	CAPACITOR,FIXED ELCTLT, 470UF, P50%M10%, 35VDC (54473) 183-1471-280 A3C161	1	
318	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C155	1	
319	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C183	1	
320	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C184	1	
321	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C185	1	
322	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C186	1	
323	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C187	1	
324	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C188	1	
325	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C189	1	
326	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C190	1	
327	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C191	1	
328	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C192	1	
329	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C193	1	
330	ECEB1VL471SR	2	CAPACITOR,FIXED ELCTLT, 470UF, P50%M10%, 35VDC (54473) 183-1471-280 A3C182	1	
331	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C135	1	
332	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C129	1	
333	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C195	1	
334	923CC0G330K200B	2	CAPACITOR,FIXED CER DIEL, 33PF, 10%, 200VDC (56289) 913-3325-130 A3C194	1	
335	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C160	1	A
336	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C181	1	A
337	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C154	1	
338	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C159	1	A
339	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C152	1	
340	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C180	1	A
341	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C153	1	
342	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C120	1	
343	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C151	1	
344	923CC0G330K200B	2	CAPACITOR,FIXED CER DIEL, 33PF, 10%, 200VDC (56289) 913-3325-130 A3C177	1	A

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-345	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C150	1	
346	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C148	1	
347	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C176	1	A
348	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C175	1	A
349	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C172	1	A
350	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C170	1	A
351	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C142	1	A
352	923CX7R561K100B	2	CAPACITOR,FIXED CER DIEL, 560PF, 10%, 100VDC (56289) 913-3325-280 A3C141	1	A
353	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C169	1	A
354	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C140	1	A
355	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C157	1	A
356	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C168	1	A
357	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C167	1	A
358	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C156	1	A
359	CK14BR563K	2	CAPACITOR,FIXED CER DIEL, 0.056UF, 10%, 100V (81349) 913-5020-660 A3C166	1	A
360	923CX7R272K100B	2	CAPACITOR,FIXED CER DIEL, 2700PF, 10%, 100VDC (56289) 913-3325-360 A3C165	1	A
361	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C164	1	A
362	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C163	1	A
363	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C162	1	A
364	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C139	1	A
365	923CX7R682K100B	2	CAPACITOR,FIXED CER DIEL, 6800PF, 10%, 100VDC (56289) 913-3325-410 A3C138	1	A
366	923CX7R562K100B	2	CAPACITOR,FIXED CER DIEL, 5600PF, 10%, 100VDC (56289) 913-3325-400 A3C137	1	A
367	923CX7R472K100B	2	CAPACITOR,FIXED CER DIEL, 4700PF, 10%, 100VDC (56289) 913-3325-390 A3C136	1	A
368	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C90	1	
369	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C89	1	
370	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C88	1	
371	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C100	1	A
372	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A3C87	1	
373	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C99	1	A
374	199D476X0006DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 47UF, 20%, 6V (56289) 184-9102-470 A3C200	1	
375	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C98	1	A
376	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C78	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-377	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C80	1	
378	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C81	1	
379	MS75084-16	2	COIL,RF 22UH (96906) 240-2039-000 A3L9	1	
380	2N2907A	2	TRANSISTOR (04713) 352-0551-010 A3Q1	1	
381	MS75084-16	2	COIL,RF 22UH (96906) 240-2039-000 A3L11	1	
382	15-41-7220	2	HOUSING,CONNECTOR ELEC (27264) 372-0043-380 A3J1	1	
383	105-0853-001	2	JACK,TIP BLK (74970) 360-0489-030 A3TP1	1	
384	TDS5664	2	MICROCIRCUIT A/D CONVERTER (ESDS) (59621) 351-0639-010 A3U87	1	
385	D1LBQ24P-101	2	SOCKET,IC (09922) 220-0102-010	1	
386	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C91	1	A
387	LM218H	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1153-020 A3U106	1	A
388	MS75084-16	2	COIL,RF 22UH (96906) 240-2039-000 A3L7	1	
389	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C50	1	
390	AD7545CQ	2	MICROCIRCUIT D/A CONVERTER (ESDS) (24355) 351-0620-010 A3U97	1	A
391	DILB20P-108	2	SOCKET,IC (09922) 220-0065-070	1	A
391	DILB20P-108	2	SOCKET,IC (09922) 220-0065-070	1	B,C
392	CD4015BF	2	MICROCIRCUIT ARRAY (ESDS) (02735) 351-8189-010 A3U94	1	
393	LM218H	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1153-020 A3U107	1	
394	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C94	1	
395	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C93	1	
396	CD4015BF	2	MICROCIRCUIT ARRAY (ESDS) (02735) 351-8189-010 A3U95	1	
397	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR13	1	
398	AD7545CQ	2	MICROCIRCUIT D/A CONVERTER (ESDS) (24355) 351-0620-010 A3U98	1	
399	LM148J	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1262-020 A3U108	1	
400	SCL4011BC	2	MICROCIRCUIT MOS (ESDS) (31019) 351-8160-080 A3U96	1	
401	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C110	1	
402	923CX7R561K100B	2	CAPACITOR,FIXED CER DIEL, 560PF, 10%, 100VDC (56289) 913-3325-280 A3C113	1	
403	923CX7R682K100B	2	CAPACITOR,FIXED CER DIEL, 6800PF, 10%, 100VDC (56289) 913-3325-410 A3C114	1	
404	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR6	1	
405	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C115	1	
406	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C116	1	
407	LM148J	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1262-020 A3U99	1	
408	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C58	1	
409	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C118	1	
410	CD4094BMJ	2	MICROCIRCUIT REGISTER (ESDS) (27014) 351-8346-030 A3U91	1	
411	CK06BX474K	2	CAPACITOR,FIXED CER DIEL, 0.47UF, 10%, 50VDC (81349) 913-5019-520 A3C61	1	
412	CD4066BF	2	MICROCIRCUIT SWITCH (ESDS) (02735) 351-8252-020 A3U100	1	
413	1N821A	2	SEMICOND DEVICE (12954) 353-3261-000 A3VR4	1	
414	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C62	1	
415	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C63	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-416	LM148J	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1262-020 A3U101	1	
417	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C66	1	
418	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR8	1	
419	923CC0G330K200B	2	CAPACITOR,FIXED CER DIEL, 33PF, 10%, 200VDC (56289) 913-3325-130 A3C68	1	
420	MS75084-12	2	COIL,RF 10UH (96906) 240-2035-000 A3L6	1	
421	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C67	1	
422	MC1408L-8	2	INTEGRATED CIRCUIT D TO A CONVERTER (ESDS) (04713) 351-1152-010 A3U93	1	
423	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR7	1	
424	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C70	1	
425	1N4624	2	SEMICOND DEVICE (04713) 353-3591-480 A3VR3	1	
426	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR10	1	
427	2N2907A	2	TRANSISTOR (04713) 352-0551-010 A3Q4	1	
428	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR9	1	
429	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR11	1	
430	105-0854-001	2	JACK,TIP GRN (74970) 360-0489-040 A3TP10	1	
431	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR12	1	
432	2N4092	2	TRANSISTOR (ESDS) (27014) 352-0759-020 A3Q5	1	
433	199D475X0035DE3		CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C72	1	
434	LM148J	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1262-020 A3U103	1	
435	LM148J	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1262-020 A3U102	1	
436	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C128	1	
437	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C132	1	
438	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A3C130	1	
439	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C125	1	
440	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR14	1	
441	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C126	1	
442	3385-6000	2	CONNECTOR,PLUG ELEC (53387) 372-2634-160 A3J4	1	
443	88203-2	2	COVER,CONNECTOR ELEC (00779) 372-2653-040	1	
444	499443-4	2	HOUSING,CONNECTOR (00779) 372-2653-360 A3E1	1	
445	424-0307-110	2	CABLE,SP,ELECTRICAL (22526)	AR	
446	105-0860-001	2	JACK,TIP BLU (74970) 360-0489-080 A3TP6	1	
447	TDA2002H	2	MICROCIRCUIT AUDIO AMPLIFIER (ESDS) (6X403) 351-1383-010 A3U92	1	
	MS35649-244	2	NUT,PLAIN,HEXAGON SST, 4-40 (96906) 313-0043-000 (AP)	1	
	MS35333-70	2	WASHER,LOCK SST, 0.123 ID X 0.270 OD (96906) 373-8510-000 (AP)	1	
	NAS620C5	2	WASHER,FLAT PSVT CRES, 0.128 ID X 0.238 OD (80205) 310-0740-320 (AP)	1	
	MS51957-15	2	SCREW,MACHINE STL, 4-40 X 3/8 (96906) 343-0135-000 (AP)	1	
448	41712	2	TRANSFORMER,AUDIO (73386) 677-0410-010 A3T1	1	
449	1N4624	2	SEMICOND DEVICE (04713) 353-3591-480 A3VR1	1	
450	LM148J	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1262-020 A3U111	1	
451	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR16	1	
452	41712	2	TRANSFORMER,AUDIO (73386) 677-0410-010 A3T2	1	A
453	105-0857-001	2	JACK,TIP YEL (74970) 360-0489-060 A3TP7	1	A
454	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR18	1	A
455	1N4624	2	SEMICOND DEVICE (04713) 353-3591-480 A3VR2	1	A
456	105-0853-001	2	JACK,TIP BLK (74970) 360-0489-030 A3TP9	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-457	LM148J	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1262-020 A3U110	1	
458	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C178	1	A
459	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C179	1	A
460	LM148J	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1262-020 A3U115	1	A
461	105-0857-001	2	JACK,TIP YEL (74970) 360-0489-060 A3TP4	1	
462	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR17	1	A
463	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C158	1	A
464	LM148J	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1262-020 A3U109	1	
465	LM148J	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1262-020 A3U114	1	A
466	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C149	1	
467	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C112	1	
468	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C111	1	
469	199D475X0035DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 4.7UF, 20%, 35V (56289) 184-9102-830 A3C173	1	A
470	199D156X0020DE3	2	CAPACITOR,FIXED TNTLM ELCTLT, 15UF, 20%, 20V (56289) 184-9102-620 A3C174	1	A
471	105-0854-001	2	JACK,TIP GRN (74970) 360-0489-040 A3TP5	1	A
472	CK14BR563K	2	CAPACITOR,FIXED CER DIEL, 0.056UF, 10%, 100V (81349) 913-5020-660 A3C147	1	
473	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A3C171	1	A
474	923CX7R272K100B	2	CAPACITOR,FIXED CER DIEL, 2700PF, 10%, 100VDC (56289) 913-3325-360 A3C146	1	
475	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C145	1	
476	LM148J	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1262-020 A3U113	1	A
477	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A3C143	1	
478	105-0852-001	2	JACK,TIP RED (74970) 360-0489-020 A3TP2	1	
479	LM148J	2	MICROCIRCUIT OPRTNL AMPLIFIER (ESDS) (27014) 351-1262-020 A3U112	1	A
480	LM120K-5.0	2	MICROCIRCUIT VOLT REGULATOR (27014) 351-1218-060 A3U105	1	
	MS35649-244	2	NUT,PLAIN,HEXAGON SST, 4-40 (96906) 313-0043-000 (AP)	2	
	MS35333-70	2	WASHER,LOCK SST, 0.123 ID X 0.270 OD (96906) 373-8510-000 (AP)	2	
	547-8177-012	2	BUSHING,INSULATED (AP)	2	
	MS35431-3	2	TERMINAL,LUG (96906) 304-1465-030 (AP)	1	
	111	2	INSULATOR,PLATE (16037) 352-9882-010 (AP)	1	
	NAS620C5	2	WASHER,FLAT PSVT CRES, 0.128 ID X 0.238 OD (80205) 310-0740-320 (AP)	4	
	MS51957-17	2	SCREW,MACHINE STL, 4-40 X 1/2 (96906) 343-0137-000 (AP)	2	
481	M16878/4BFA-9	2	WIRE,ELECTRICAL (81349) 428-0108-000 A3W2	AR	
482	M16878/4BFA-9	2	WIRE,ELECTRICAL (81349) 428-0108-000 A3W1	AR	
483	M16878/4BFA-9	2	WIRE,ELECTRICAL (81349) 428-0108-000 A3W3	AR	
484	105-0860-001	2	JACK,TIP BLU (74970) 360-0489-080 A3TP3	1	A
485	105-0852-001	2	JACK,TIP RED (74970) 360-0489-020 A3TP8	1	
486	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR15	1	A
487	MS18130-12	2	COIL,RF 2.20UH (96906) 240-1572-000 A3L12	1	
488	MS18130-10	2	COIL,RF 1.50UH (96906) 240-1570-000 A3L13	1	
489	2N918	2	TRANSISTOR (04713) 352-0440-000 A3Q3	1	
490	532977-2	2	CONNECTOR,PIN HDR (00779) 372-0147-120 A3P1	1	
491	A210	2	TRANSISTOR (25403) 352-0766-010 A3Q6	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-492	MC1558U	2	MICROCIRCUIT AMPLIFIER (ESDS) (04713) 351-1286-010 A3U104	1	
493	2N918	2	TRANSISTOR (04713) 352-0440-000 A3Q2	1	
494	MS75084-16	2	COIL,RF 22UH (96906) 240-2039-000 A3L10	1	
495	MS75084-16	2	COIL,RF 22UH (96906) 240-2039-000 A3L8	1	
496	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A3CR1	1	
497	RN55D1000F	2	RESISTOR,FIXED FILM, 100 OHMS, 1%, 1/8W (81349) 705-0948-000 A3R136	1	
498	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R90	1	A
499	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A3R91	1	A
500	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R92	1	A
501	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R94	1	
502	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R89	1	
503	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A3R96	1	
504	RN55D2002F	2	RESISTOR,FIXED FILM, 20K, 1%, 1/8W (81349) 705-3605-620 A3R99	1	
505	RN55D2002F	2	RESISTOR,FIXED FILM, 20K, 1%, 1/8W (81349) 705-3605-620 A3R100	1	
506	RN55D6191F	2	RESISTOR,FIXED FILM, 6.19K, 1%, 1/8W (81349) 705-1034-000 A3R102	1	
507	101T10000	2	RESISTOR,VARIABLE 1K, 20%, 1/2W (91637) 382-0038-040 A3R130	1	
508	RN55D2552F	2	RESISTOR,FIXED FILM, 25.5K, 1%, 1/8W (81349) 705-3605-670 A3R105	1	
509	RN55D4531F	2	RESISTOR,FIXED FILM, 4.53K, 1%, 1/8W (81349) 705-3605-310 A3R49	1	
510	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A3R51	1	
511	RN55D2552F	2	RESISTOR,FIXED FILM, 25.5K, 1%, 1/8W (81349) 705-3605-670 A3R107	1	
512	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R53	1	
513	RN55D4991F	2	RESISTOR,FIXED FILM, 4.99K, 1%, 1/8W (81349) 705-3605-330 A3R54	1	
514	RN55D4991F	2	RESISTOR,FIXED FILM, 4.99K, 1%, 1/8W (81349) 705-3605-330 A3R55	1	
515	RN55D4641F	2	RESISTOR,FIXED FILM, 4.64K, 1%, 1/8W (81349) 705-1028-000 A3R57	1	
516	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R109	1	
517	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R110	1	
518	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A3R59	1	
519	RN55D1622F	2	RESISTOR,FIXED FILM, 16.2K, 1%, 1/8W (81349) 705-1054-000 A3R60	1	
520	RN55D6490F	2	RESISTOR,FIXED FILM, 649 OHMS, 1%, 1/8W (81349) 705-0987-000 A3R126	1	
521	RCR07G105KS	2	RESISTOR,FIXED CMPSN, 1MEGO, 10%, 1/4W (81349) 745-0857-000 A3R111	1	
522	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R62	1	
523	RCR07G105KS	2	RESISTOR,FIXED CMPSN, 1MEGO, 10%, 1/4W (81349) 745-0857-000 A3R112	1	
524	RN55D2373F	2	RESISTOR,FIXED FILM, 237K, 1%, 1/8W (81349) 705-1110-000 A3R68	1	
525	RN55D6192F	2	RESISTOR,FIXED FILM, 61.9K, 1%, 1/8W (81349) 705-1082-000 A3R67	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-526	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R116	1	
527	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R75	1	
528	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R72	1	
529	RN55D4751F	2	RESISTOR,FIXED FILM, 4.75K, 1%, 1/8W (81349) 705-3605-320 A3R73	1	
530	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R120	1	
531	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R76	1	
532	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R84	1	
533	RN55D1001F	2	RESISTOR,FIXED FILM, 1K, 1%, 1/8W (81349) 705-0996-000 A3R86	1	
534	RCR07G104KS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 10%, 1/4W (81349) 745-0821-000 A3R79	1	
535	RN55D7682F	2	RESISTOR,FIXED FILM, 76.8K, 1%, 1/8W (81349) 705-3605-900 A3R123	1	
536	RN55D8060F	2	RESISTOR,FIXED FILM, 806 OHMS, 1%, 1/8W (81349) 705-3600-920 A3R137	1	
537	RN55D1272F	2	RESISTOR,FIXED FILM, 12.7K, 1%, 1/8W (81349) 705-1049-000 A3R88	1	
538	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A3R128	1	
539	RCR07G221KS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 10%, 1/4W (81349) 745-0725-000 A3R124	1	
540	RCR07G180KS	2	RESISTOR,FIXED CMPSN, 18 OHMS, 10%, 1/4W (81349) 745-0686-000 A3R125	1	
541	RCR07G332KS	2	RESISTOR,FIXED CMPSN, 3.3K, 10%, 1/4W (81349) 745-0767-000 A3R119	1	
542	RW70U1R00F	2	RESISTOR,FIXED WW, 1 OHM, 1%, 1W (81349) 747-4230-010 A3R127	1	
543	RN55D1001F	2	RESISTOR,FIXED FILM, 1K, 1%, 1/8W (81349) 705-0996-000 A3R118	1	
544	RN55D1501F	2	RESISTOR,FIXED FILM, 1.5K, 1%, 1/8W (81349) 705-3605-080 A3R117	1	
545	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R183	1	
546	RN55D3012F	2	RESISTOR,FIXED FILM, 30.1K, 1%, 1/8W (81349) 705-1067-000 A3R182	1	
547	RCR07G221KS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 10%, 1/4W (81349) 745-0725-000 A3R180	1	
548	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R222	1	
549	RCR07G390KS	2	RESISTOR,FIXED CMPSN, 39 OHMS, 10%, 1/4W (81349) 745-0698-000 A3R221	1	
550	RN55D3401F	2	RESISTOR,FIXED FILM, 3.4K, 1%, 1/8W (81349) 705-3605-250 A3R178	1	
551	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R220	1	A
552	RN55D1001F	2	RESISTOR,FIXED FILM, 1K, 1%, 1/8W (81349) 705-0996-000 A3R224	1	A
553	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R217	1	A
554	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R216	1	A
555	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R215	1	A
556	RCR07G153KS	2	RESISTOR,FIXED CMPSN, 15K, 10%, 1/4W (81349) 745-0791-000 A3R175	1	
557	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R214	1	A

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-558	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R211	1	A
559	RCR07G221KS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 10%, 1/4W (81349) 745-0725-000 A3R209	1	A
560	RN55D3401F	2	RESISTOR,FIXED FILM, 3.4K, 1%, 1/8W (81349) 705-3605-250 A3R207	1	A
561	RCR07G104KS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 10%, 1/4W (81349) 745-0821-000 A3R205	1	A
562	RN55D3161F	2	RESISTOR,FIXED FILM, 3.16K, 1%, 1/8W (81349) 705-1020-000 A3R167	1	
563	RCR07G561KS	2	RESISTOR,FIXED CMPSN, 560 OHMS, 10%, 1/4W (81349) 745-0740-000 A3R166	1	
564	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R164	1	
565	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R200	1	A
566	RN55D3161F	2	RESISTOR,FIXED FILM, 3.16K, 1%, 1/8W (81349) 705-1020-000 A3R197	1	A
567	RN55D3161F	2	RESISTOR,FIXED FILM, 3.16K, 1%, 1/8W (81349) 705-1020-000 A3R196	1	A
568	RCR07G561KS	2	RESISTOR,FIXED CMPSN, 560 OHMS, 10%, 1/4W (81349) 745-0740-000 A3R194	1	A
569	RN55D2552F	2	RESISTOR,FIXED FILM, 25.5K, 1%, 1/8W (81349) 705-3605-670 A3R157	1	A
570	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R191	1	A
571	RN55D4121F	2	RESISTOR,FIXED FILM, 4.12K, 1%, 1/8W (81349) 705-3605-290 A3R189	1	A
572	RN55D3162F	2	RESISTOR,FIXED FILM, 31.6K, 1%, 1/8W (81349) 705-1068-000 A3R187	1	A
573	RN55D2552F	2	RESISTOR,FIXED FILM, 25.5K, 1%, 1/8W (81349) 705-3605-670 A3R156	1	A
574	RN55D1212F	2	RESISTOR,FIXED FILM, 12.1K, 1%, 1/8W (81349) 705-1048-000 A3R154	1	A
575	RN55D6191F	2	RESISTOR,FIXED FILM, 6.19K, 1%, 1/8W (81349) 705-1034-000 A3R152	1	A
576	RW69V150	2	RESISTOR,FIXED WW, 15.0 OHMS, 5%, 3W (81349) 747-5373-000 A3R186	1	
577	RN55D4991F	2	RESISTOR,FIXED FILM, 4.99K, 1%, 1/8W (81349) 705-3605-330 A3R151	1	A
578	RN55D2002F	2	RESISTOR,FIXED FILM, 20K, 1%, 1/8W (81349) 705-3605-620 A3R149	1	A
579	RN55D2001F	2	RESISTOR,FIXED FILM, 2K, 1%, 1/8W (81349) 705-3605-140 A3R147	1	A
580	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R141	1	
581	RN55D4750F	2	RESISTOR,FIXED FILM, 475 OHMS, 1%, 1/8W (81349) 705-3600-810 A3R144	1	
582	RN55D1000F	2	RESISTOR,FIXED FILM, 100 OHMS, 1%, 1/8W (81349) 705-0948-000 A3R146	1	
583	RCR07G220KS	2	RESISTOR,FIXED CMPSN, 22 OHMS, 10%, 1/4W (81349) 745-0689-000 A3R132	1	
584	RCR20G820KS	2	RESISTOR,FIXED CMPSN, 82 OHMS, 10%, 1/2W (81349) 745-1307-000 A3R133	1	
585	RCR07G681KS	2	RESISTOR,FIXED CMPSN, 680 OHMS, 10%, 1/4W (81349) 745-0743-000 A3R135	1	
586	RN55D2001F	2	RESISTOR,FIXED FILM, 2K, 1%, 1/8W (81349) 705-3605-140 A3R148	1	A
587	RCR07G470KS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 10%, 1/4W (81349) 745-0701-000 A3R134	1	
588	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R93	1	A
589	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R95	1	

GROUP ASSEMBLY PARTS LIST

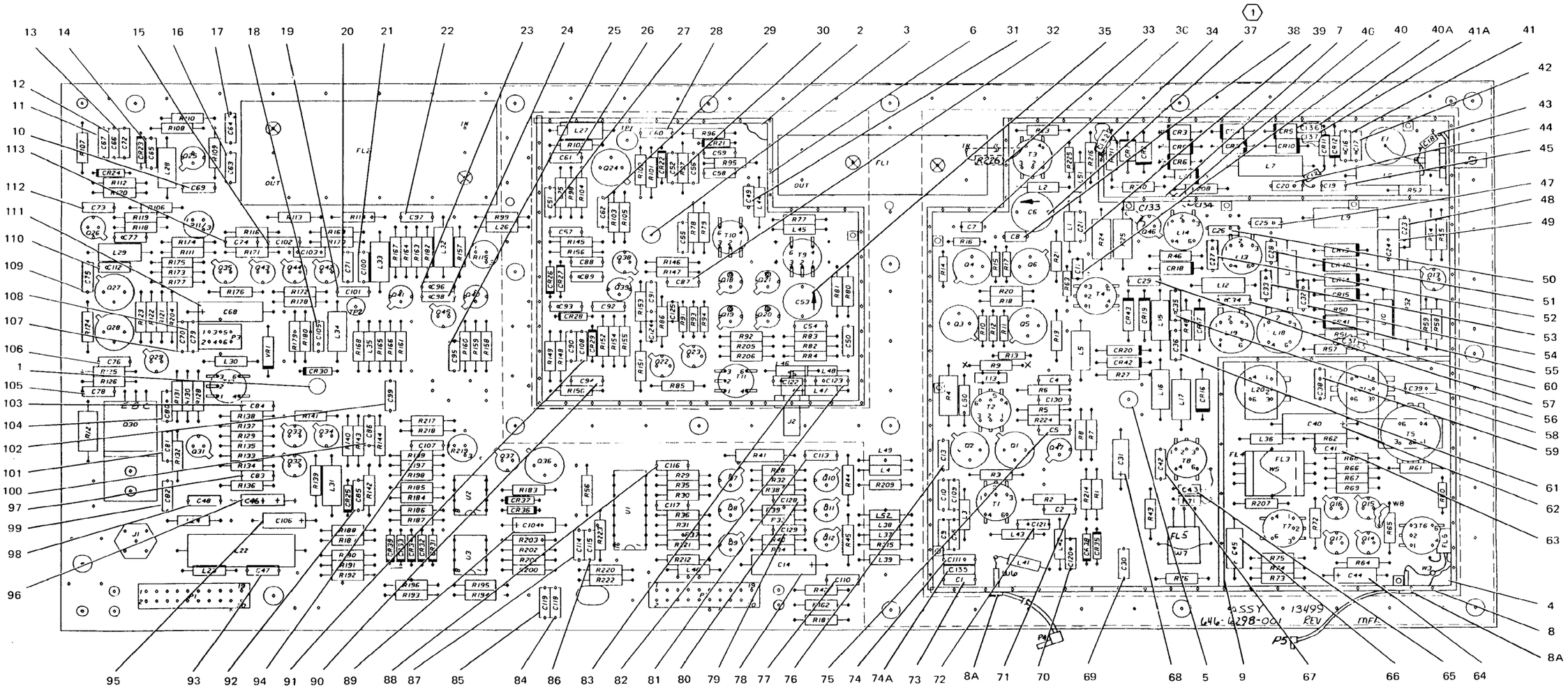
FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-590	RN55D2001F	2	RESISTOR,FIXED FILM, 2K, 1%, 1/8W (81349) 705-3605-140 A3R97	1	
591	RN55D2001F	2	RESISTOR,FIXED FILM, 2K, 1%, 1/8W (81349) 705-3605-140 A3R98	1	
592	RN55D4991F	2	RESISTOR,FIXED FILM, 4.99K, 1%, 1/8W (81349) 705-3605-330 A3R101	1	
593	RN55D6191F	2	RESISTOR,FIXED FILM, 6.19K, 1%, 1/8W (81349) 705-1034-000 A3R103	1	
594	RN55D1212F	2	RESISTOR,FIXED FILM, 12.1K, 1%, 1/8W (81349) 705-1048-000 A3R104	1	
595	RN55D1212F	2	RESISTOR,FIXED FILM, 12.1K, 1%, 1/8W (81349) 705-1048-000 A3R106	1	
596	RN55D3161F	2	RESISTOR,FIXED FILM, 3.16K, 1%, 1/8W (81349) 705-1020-000 A3R108	1	
597	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A3R50	1	
598	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R52	1	
599	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R56	1	
600	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R58	1	
601	RCR07G105KS	2	RESISTOR,FIXED CMPSN, 1MEGO, 10%, 1/4W (81349) 745-0857-000 A3R113	1	
602	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R114	1	
603	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R115	1	
604	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R61	1	
605	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R63	1	
606	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R64	1	
607	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R65	1	
608	RN55D4221F	2	RESISTOR,FIXED FILM, 4.22K, 1%, 1/8W (81349) 705-1026-000 A3R66	1	
609	RN55D1272F	2	RESISTOR,FIXED FILM, 12.7K, 1%, 1/8W (81349) 705-1049-000 A3R69	1	
610	RN55D3921F	2	RESISTOR,FIXED FILM, 3.92K, 1%, 1/8W (81349) 705-3605-280 A3R70	1	
611	RN55D1823F	2	RESISTOR,FIXED FILM, 182K, 1%, 1/8W (81349) 705-3604-130 A3R71	1	
612	RCR07G155KS	2	RESISTOR,FIXED CMPSN, 1.5MEGO, 10%, 1/4W (81349) 745-0863-000 A3R239	1	
613	RN55D6342F	2	RESISTOR,FIXED FILM, 63.4K, 1%, 1/8W (81349) 705-3605-860 A3R74	1	
614	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R77	1	
615	RCR07G105KS	2	RESISTOR,FIXED CMPSN, 1MEGO, 10%, 1/4W (81349) 745-0857-000 A3R78	1	
616	RCR07G473KS	2	RESISTOR,FIXED CMPSN, 47K, 10%, 1/4W (81349) 745-0809-000 A3R80	1	
617	RCR07G680KS	2	RESISTOR,FIXED CMPSN, 68 OHMS, 10%, 1/4W (81349) 745-0707-000 A3R81	1	
618	RN55D3161F	2	RESISTOR,FIXED FILM, 3.16K, 1%, 1/8W (81349) 705-1020-000 A3R82	1	
619	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A3R85	1	
620	RN55D1822F	2	RESISTOR,FIXED FILM, 18.2K, 1%, 1/8W (81349) 705-3605-600 A3R87	1	
621	RCR07G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/4W (81349) 745-0677-000 A3R83	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-622	RN55D1021F	2	RESISTOR,FIXED FILM, 1.02K, 1%, 1/8W (81349) 705-3605-010 A3R122	1	
623	RN55D3741F	2	RESISTOR,FIXED FILM, 3.74K, 1%, 1/8W (81349) 705-3605-270 A3R121	1	
624	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A3R181	1	
625	RCR07G221KS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 10%, 1/4W (81349) 745-0725-000 A3R179	1	
626	RN55D1001F	2	RESISTOR,FIXED FILM, 1K, 1%, 1/8W (81349) 705-0996-000 A3R177	1	
627	RCR07G104KS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 10%, 1/4W (81349) 745-0821-000 A3R176	1	
628	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R174	1	
629	RCR07G332KS	2	RESISTOR,FIXED CMPSN, 3.3K, 10%, 1/4W (81349) 745-0767-000 A3R219	1	A
630	RN55D3161F	2	RESISTOR,FIXED FILM, 3.16K, 1%, 1/8W (81349) 705-1020-000 A3R173	1	
631	RT22C2W103	2	RESISTOR,VARIABLE WW, 10K, PORM5%, 3/4W (81349) 381-1721-310 A3R218	1	
632	RN55D6811F	2	RESISTOR,FIXED FILM, 6.81K, 1%, 1/8W (81349) 705-1036-000 A3R172	1	
633	RN55D1501F	2	RESISTOR,FIXED FILM, 1.5K, 1%, 1/8W (81349) 705-3605-080 A3R223	1	A
634	RN55D1001F	2	RESISTOR,FIXED FILM, 1K, 1%, 1/8W (81349) 705-0996-000 A3R171	1	
635	RN55D3161F	2	RESISTOR,FIXED FILM, 3.16K, 1%, 1/8W (81349) 705-1020-000 A3R170	1	
636	RN55D3012F	2	RESISTOR,FIXED FILM, 30.1K, 1%, 1/8W (81349) 705-1067-000 A3R213	1	A
637	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A3R212	1	A
638	101T10001	2	RESISTOR,VARIABLE 10K, 20%, 1/2W (91637) 382-0038-070 A3R169	1	
639	RCR07G390KS	2	RESISTOR,FIXED CMPSN, 39 OHMS, 10%, 1/4W (81349) 745-0698-000 A3R210	1	A
640	RCR07G221KS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 10%, 1/4W (81349) 745-0725-000 A3R208	1	A
641	RN55D3161F	2	RESISTOR,FIXED FILM, 3.16K, 1%, 1/8W (81349) 705-1020-000 A3R168	1	
642	RN55D1001F	2	RESISTOR,FIXED FILM, 1K, 1%, 1/8W (81349) 705-0996-000 A3R206	1	A
643	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R165	1	
644	RT22C2W103	2	RESISTOR,VARIABLE WW, 10K, PORM5%, 3/4W (81349) 381-1721-310 A3R204	1	A
645	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A3R203	1	A
646	RCR07G153KS	2	RESISTOR,FIXED CMPSN, 15K, 10%, 1/4W (81349) 745-0791-000 A3R202	1	A
647	RN55D3161F	2	RESISTOR,FIXED FILM, 3.16K, 1%, 1/8W (81349) 705-1020-000 A3R201	1	A
648	RN55D1001F	2	RESISTOR,FIXED FILM, 1K, 1%, 1/8W (81349) 705-0996-000 A3R163	1	A
649	RN55D6811F	2	RESISTOR,FIXED FILM, 6.81K, 1%, 1/8W (81349) 705-1036-000 A3R162	1	A
650	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R199	1	A
651	RN55D3161F	2	RESISTOR,FIXED FILM, 3.16K, 1%, 1/8W (81349) 705-1020-000 A3R198	1	A
652	101T10001	2	RESISTOR,VARIABLE 10K, 20%, 1/2W (91637) 382-0038-070 A3R195	1	A
653	RN55D4121F	2	RESISTOR,FIXED FILM, 4.12K, 1%, 1/8W (81349) 705-3605-290 A3R161	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-5-654	RN55D4121F	2	RESISTOR,FIXED FILM, 4.12K, 1%, 1/8W (81349) 705-3605-290 A3R160	1	
655	RN55D3161F	2	RESISTOR,FIXED FILM, 3.16K, 1%, 1/8W (81349) 705-1020-000 A3R193	1	A
656	RN55D3162F	2	RESISTOR,FIXED FILM, 31.6K, 1%, 1/8W (81349) 705-1068-000 A3R159	1	
657	RN55D3162F	2	RESISTOR,FIXED FILM, 31.6K, 1%, 1/8W (81349) 705-1068-000 A3R158	1	
658	RN55D4121F	2	RESISTOR,FIXED FILM, 4.12K, 1%, 1/8W (81349) 705-3605-290 A3R190	1	A
659	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A3R192	1	A
660	RN55D3162F	2	RESISTOR,FIXED FILM, 31.6K, 1%, 1/8W (81349) 705-1068-000 A3R188	1	A
661	RN55D1212F	2	RESISTOR,FIXED FILM, 12.1K, 1%, 1/8W (81349) 705-1048-000 A3R155	1	A
662	RN55D6191F	2	RESISTOR,FIXED FILM, 6.19K, 1%, 1/8W (81349) 705-1034-000 A3R153	1	A
663	RN55D2002F	2	RESISTOR,FIXED FILM, 20K, 1%, 1/8W (81349) 705-3605-620 A3R150	1	A
664	RN55D1151F	2	RESISTOR,FIXED FILM, 1.15K, 1%, 1/8W (81349) 705-0999-000 A3R139	1	
665	RN55D1822F	2	RESISTOR,FIXED FILM, 18.2K, 1%, 1/8W (81349) 705-3605-600 A3R138	1	
666	RN55D8450F	2	RESISTOR,FIXED FILM, 845 OHMS, 1%, 1/8W (81349) 705-3600-930 A3R140	1	
667	RN55D51R1F	2	RESISTOR,FIXED FILM, 51.1 OHMS, 1%, 1/8W (81349) 705-0934-000 A3R142	1	
668	RN55D4750F	2	RESISTOR,FIXED FILM, 475 OHMS, 1%, 1/8W (81349) 705-3600-810 A3R143	1	
669	RN55D1000F	2	RESISTOR,FIXED FILM, 100 OHMS, 1%, 1/8W (81349) 705-0948-000 A3R145	1	
670	RN55D5620F	2	RESISTOR,FIXED FILM, 562 OHMS, 1%, 1/8W (81349) 705-0984-000 A3R131	1	
671	280-2745-040	2	LABEL,WARNING (12998)	1	



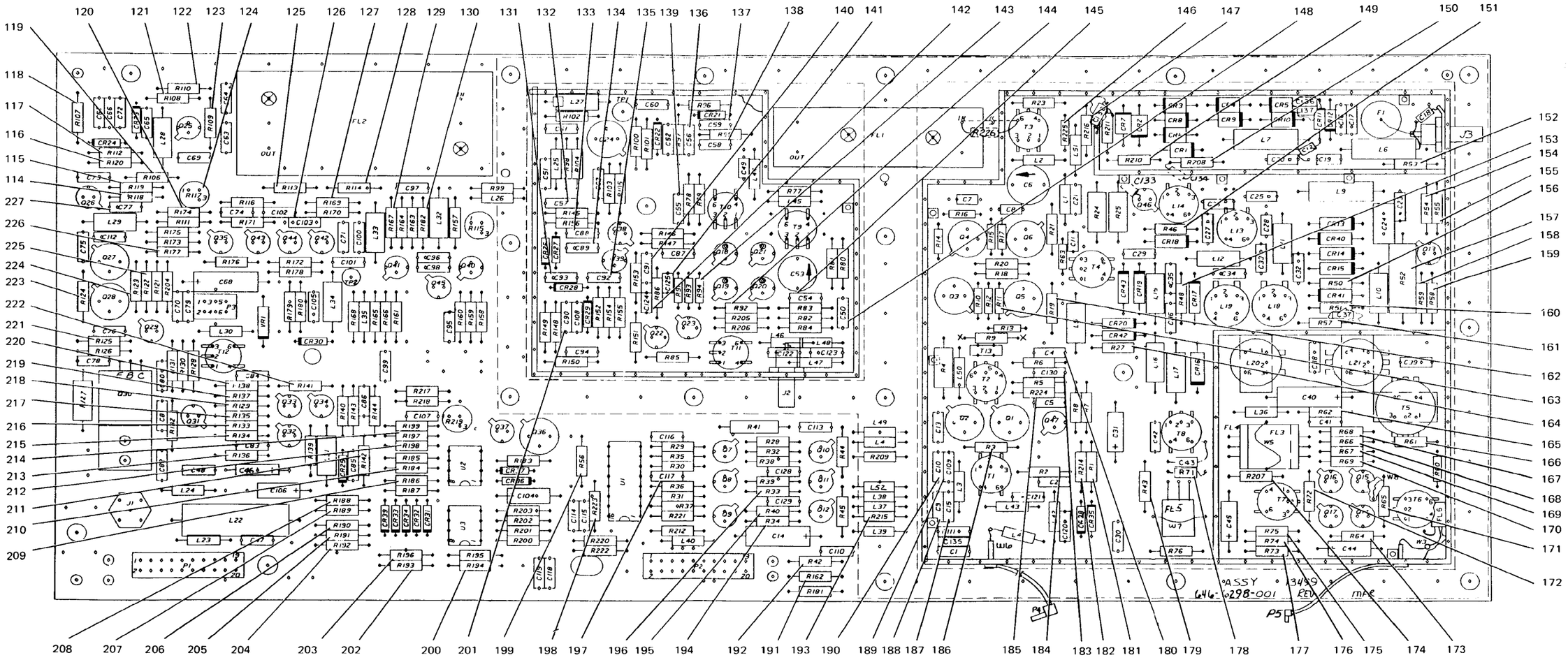
NOTE:

(1) ARROW INDICATES MOUNTING POSITION OF C6.

ELECTROSTATIC SENSITIVE DEVICES OBSERVE PRECAUTIONS FOR HANDLING

TPA 8197 058

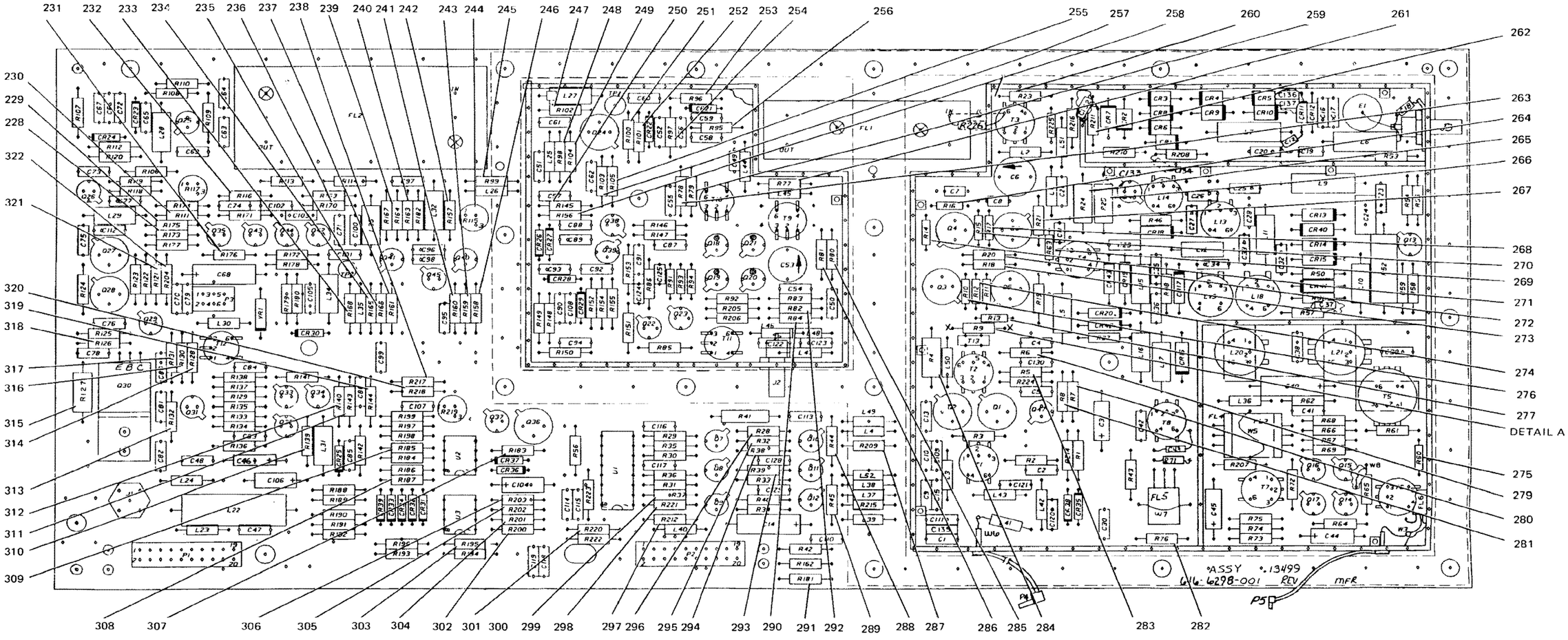
RF Translator A6, Parts Location Diagram (Sheet 1 of 5) Figure 6-6



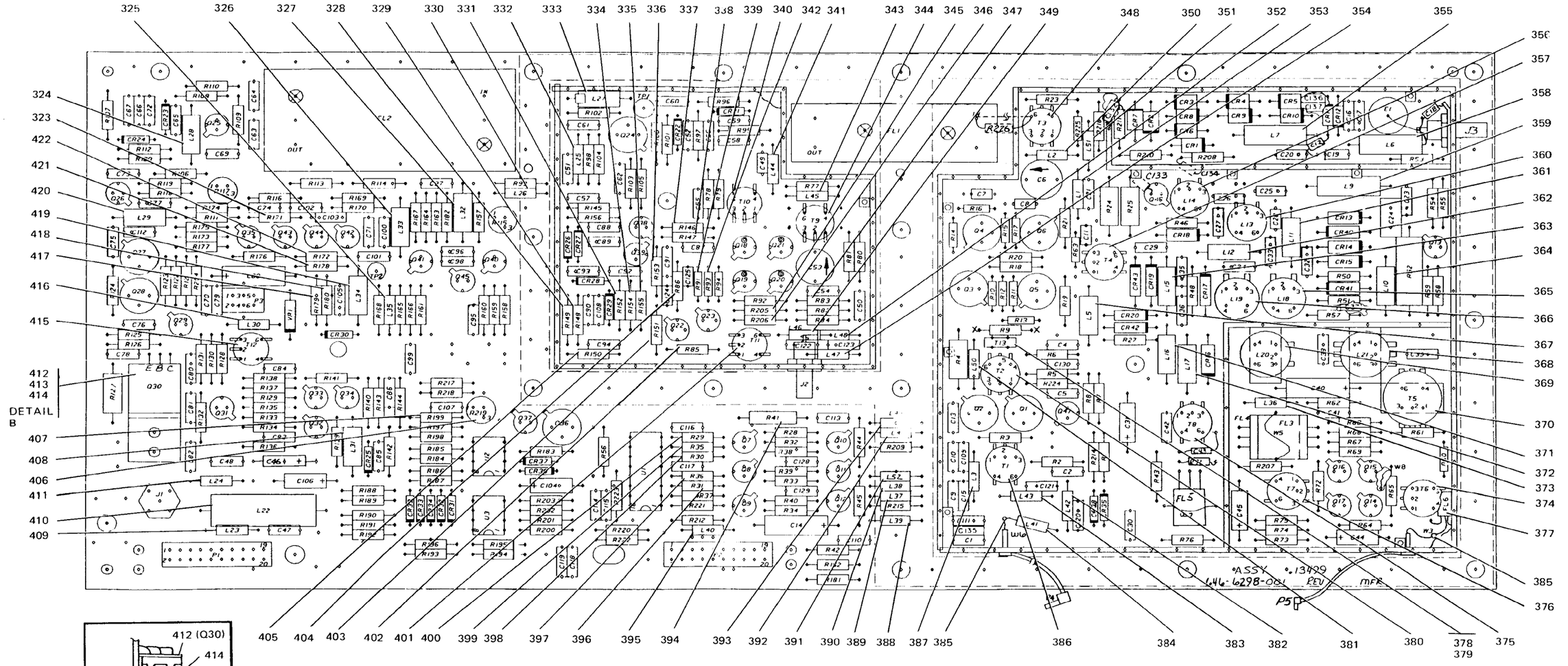
ELECTROSTATIC SENSITIVE DEVICES
OBSERVE PRECAUTIONS

TPA 8197 058

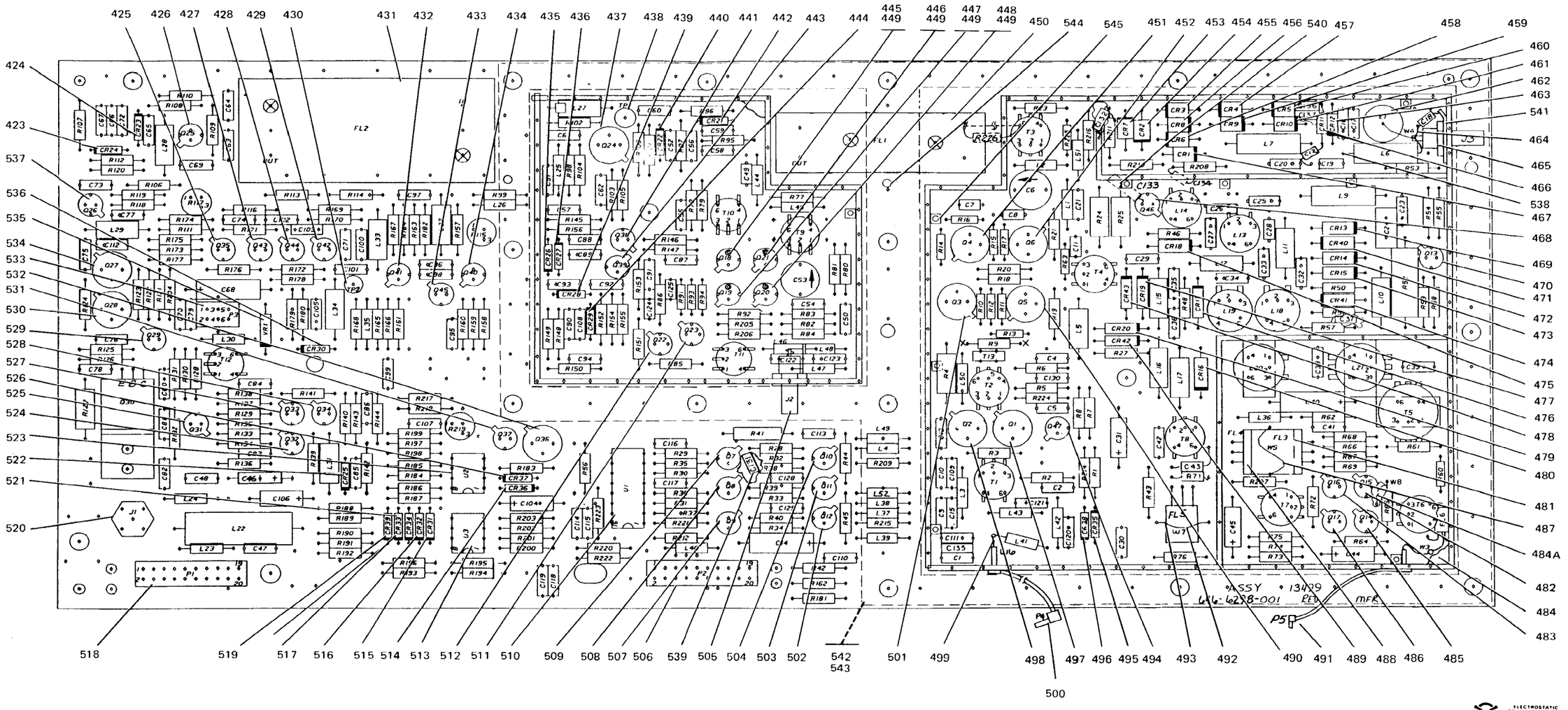
RF Translator A6, Parts Location Diagram (Sheet 2 of 5) Figure 6-6



RF Translator A6, Parts Location Diagram (Sheet 3 of 5) Figure 6-6



RF Translator A6, Parts Location Diagram (Sheet 4 of 5) Figure 6-6



ELECTROSTATIC SENSITIVE DEVICES OBSERVE PRECAUTIONS FOR HANDLING

TPA 8197-058

RF Translator A6, Parts Location Diagram (Sheet 5 of 5) Figure 6-6

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-	646-6298-001	1	RF TRANSLATOR (ESDS) A6 (SEE FIG 6-1-23 FOR NHA)	REF	
1	280-2745-040	2	LABEL,WARNING (12998)	1	
2	652-6566-001	2	COVER	1	
3	540-9213-003	2	POST,ELEC-MECH EQPT	1	
	MS51957-27	2	SCREW,MACHINE CRES, 0.138-32 X 0.312IN (96906) 343-0168-000 (AP FOR 2,3)	2	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP FOR 2,3)	1	
4	652-6567-001	2	COVER	1	
5	540-9213-003	2	POST,ELEC-MECH EQPT	1	
	MS51957-27	2	SCREW,MACHINE CRES, 0.138-32 X 0.312IN (96906) 343-0168-000 (AP FOR 4,5)	2	
	MS35338-136	2	WASHER,LOCK SST, 0.141 ID X 0.250 OD (96906) 310-0282-000 (AP FOR 4,5)	1	
6	652-6565-001	2	SHIELD,RF	1	
7	652-6563-001	2	SHIELD,RF	1	
8	652-6562-001	2	SHIELD,RF	1	
8A	547-8177-012	2	BUSHING,INSULATED	2	
9	652-6564-001	2	SHIELD,RF	1	
10	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C69	1	
11	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C67	1	
12	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C66	1	
13	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C72	1	
14	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C65	1	
15	923CX7R332K100B	2	CAPACITOR,FIXED CER DIEL, 3300PF, 10%, 100VDC (56289) 913-3325-370 A6C102	1	
16	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C63	1	
17	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C64	1	
18	DPG23BY103JG	2	CAPACITOR,FIXED CER DIEL, 0.01UF,5%, 50VDC (96733) 913-1112-490 A6C105	1	
19	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A6C101	1	
20	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C71	1	
21	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C100	1	
22	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C97	1	
23	923CC0G270J050B	2	CAPACITOR,FIXED CER DIEL, 27PF, 5%, 50VDC (56289) 913-1112-180 A6C96	1	
24	923CC0G221K100B	2	CAPACITOR,FIXED CER DIEL, 220PF, 10%, 100VDC (56289) 913-3325-230 A6C98	1	
25	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C95	1	
26	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C61	1	
27	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C51	1	
28	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C60	1	
29	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C62	1	
30	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C52	1	
31	923CC0G120J050B	2	CAPACITOR,FIXED CER DIEL, 12PF, 5%, 50VDC (56289) 913-1112-140 A6C49	1	
32	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C87	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-33	RCR05G3R3JS	2	RESISTOR,FIXED CMPSN, 3.3 OHMS, 5%, 1/8W 745-0907-130 A6R226	1	
34	8101P050Z5U102M	2	CAPACITOR,FIXED CER DIEL, 1000PF, 20%, 50V (72982) 913-3279-030 A6C132	1	
35	538-011B2V5-11	2	CAPACITOR,VARIABLE CER DIEL, 2.5 TO 11PF, 350V (59660) 917-1219-000 A6C53	1	
36	RPE110-111C0G220 F100V	2	CAPACITOR,FIXED CER DIEL, 22PF, 1%, 100VDC (18796) 913-2609-170 A6C7	1	
37	538-011B2V5-11	2	CAPACITOR,VARIABLE CER DIEL, 2.5 TO 11PF, 350V (59660) 917-1219-000 A6C6	1	
38	RPE110-111C0G220 F100V	2	CAPACITOR,FIXED CER DIEL, 22PF, 1%, 100VDC (18796) 913-2609-170 A6C8	1	
39	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C21	1	
40	RPE110-111C0G070 B100V	2	CAPACITOR,FIXED CER DIEL, 7.0PF, PORM 0.1PF, 100VDC (18796) 913-2609-080 A6C11	1	
40A	18085A331JA8060	2	CAPACITOR,FIXED CER DIEL, 330PF, 5%, 50V (04222) 913-3667-190 A6C136	1	
41	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A6C16	1	
41A	18085A331JA8060	2	CAPACITOR,FIXED CER DIEL, 330PF, 5%, 50V (04222) 913-3667-190 A6C137	1	
42	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A6C17	1	
43	CMR04F101JPDL	2	CAPACITOR,FIXED MICA DIEL, 100PF, 5%, 500V (81349) 912-2095-500 A6C18	1	
44	923CC0G181J050B	2	CAPACITOR,FIXED CER DIEL, 180PF, 5%, 50VDC (56289) 913-1112-280 A6C20	1	
45	RPE110-111C0G820 F100V	2	CAPACITOR,FIXED CER DIEL, 82PF, 1%, 100VDC (18796) 913-2609-320 A6C19	1	
46	8101P050Z5U102M	2	CAPACITOR,FIXED CER DIEL, 1000PF, 20%, 50V (72982) 913-3279-030 A6C134	1	
47	923CC0G222J050B	2	CAPACITOR,FIXED CER DIEL, 2200PF, 5%, 50VDC (56289) 913-1112-410 A6C25	1	
48	923CC0G470J050B	2	CAPACITOR,FIXED CER DIEL, 47PF, 5%, 50VDC (56289) 913-1112-210 A6C23	1	
49	8141M050Z5U155M	2	CAPACITOR,FIXED CER DIEL, 1.5UF, 20%, 50V (72982) 913-3279-280 A6C24	1	
50	923CC0G102J050B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 5%, 50VDC (56289) 913-1112-370 A6C26	1	
51	8141M050Z5U155M	2	CAPACITOR,FIXED CER DIEL, 1.5UF, 20%, 50V (72982) 913-3279-280 A6C28	1	
52	923CC0G222J050B	2	CAPACITOR,FIXED CER DIEL, 2200PF, 5%, 50VDC (56289) 913-1112-410 A6C27	1	
53	923CC0G272J050B	2	CAPACITOR,FIXED CER DIEL, 2700PF, 5%, 50VDC (56289) 913-1112-420 A6C33	1	
54	923CC0G152J050B	2	CAPACITOR,FIXED CER DIEL, 1500PF, 5%, 50VDC (56289) 913-1112-390 A6C32	1	
55	923CC0G152J050B	2	CAPACITOR,FIXED CER DIEL, 1500PF, 5%, 50VDC (56289) 913-1112-390 A6C34	1	
56	923CC0G562J050D	2	CAPACITOR,FIXED CER DIEL, 5600PF, 5%, 50VDC (56289) 913-1112-460 A6C39	1	
57	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C29	1	
58	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C35	1	
59	DPG23BY103JG	2	CAPACITOR,FIXED CER DIEL, 0.01UF,5%, 50VDC (96733) 913-1112-490 A6C38	1	
60	SR211A562JAA	2	CAPACITOR,FIXED CER DIEL, 5600PF, 5%, 100VDC (96095) 913-3281-380 A6C37	1	
61	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C36	1	
62	M39003/01-2304	2	CAPACITOR,FIXED ELCTLT, 6.8UF, 10%, 35V (81349) 184-9086-640 A6C40	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-63	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C41	1	
64	M39003/01-2356	2	CAPACITOR,FIXED ELCTLT, 1UF, 10%, 50V (81349) 184-9087-430 A6C44	1	
65	CK05BX103K	2	CAPACITOR,FIXED CER DIEL, 0.01UF, 10%, 100VDC (81349) 913-5019-200 A6C43	1	
66	M39003/01-2356	2	CAPACITOR,FIXED ELCTLT, 1UF, 10%, 50V (81349) 184-9087-430 A6C45	1	
67	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C42	1	
68	M39003/01-2356	2	CAPACITOR,FIXED ELCTLT, 1UF, 10%, 50V (81349) 184-9087-430 A6C31	1	
69	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C30	1	
70	923CC0G220J050B	2	CAPACITOR,FIXED CER DIEL, 22PF, 5%, 50VDC (56289) 913-1112-170 A6C120	1	
71	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C2	1	
72	923CC0G220J050B	2	CAPACITOR,FIXED CER DIEL, 22PF, 5%, 50VDC (56289) 913-1112-170 A6C121	1	
73	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C1	1	
74	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C111	1	
74A	CK05BX103K	2	CAPACITOR,FIXED CER DIEL, 0.01UF, 10%, 100VDC (81349) 913-5019-200 A6C135	1	
75	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C5	1	
76	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C13	1	
77	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C110	1	
78	M39003/01-2301	2	CAPACITOR,FIXED ELCTLT, 100UF, 10%, 20V (81349) 184-9086-610 A6C14	1	
79	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C129	1	
80	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C128	1	
81	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C113	1	
82	923CC0G330J050B	2	CAPACITOR,FIXED CER DIEL, 33PF, 5%, 50VDC (56289) 913-1112-190 A6C123	1	
83	923CC0G330J050B	2	CAPACITOR,FIXED CER DIEL, 33PF, 5%, 50VDC (56289) 913-1112-190 A6C122	1	
84	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C118	1	
85	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C119	1	
86	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C115	1	
87	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C114	1	
88	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C116	1	
89	M39003/01-2356	2	CAPACITOR,FIXED ELCTLT, 1UF, 10%, 50V (81349) 184-9087-430 A6C104	1	
90	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C94	1	
91	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C108	1	
92	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C85	1	
93	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C47	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-94	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C107	1	
95	M39003/01-2283	2	CAPACITOR,FIXED ELCTLT, 2.2UF, 10%, 20V (81349) 184-9086-430 A6C106	1	
96	M39003/01-2289	2	CAPACITOR,FIXED ELCTLT, 15UF, 10%, 20V (81349) 184-9086-490 A6C46	1	
97	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C83	1	
98	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C48	1	
99	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C82	1	
100	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C86	1	
101	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C81	1	
102	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C99	1	
103	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C84	1	
104	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C80	1	
105	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C78	1	
106	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A6C76	1	
107	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C70	1	
108	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C79	1	
109	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C75	1	
110	923CC0G220J050B	2	CAPACITOR,FIXED CER DIEL, 22PF, 5%, 50VDC (56289) 913-1112-170 A6C112	1	
111	M39003/01-2304	2	CAPACITOR,FIXED ELCTLT, 6.8UF, 10%, 35V (81349) 184-9086-640 A6C68	1	
112	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A6C73	1	
113	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C74	1	
114	RCR07G331JS	2	RESISTOR,FIXED CMPSN, 330 OHMS, 5%, 1/4W (81349) 745-0730-000 A6R118	1	
115	RCR07G101JS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 5%, 1/4W (81349) 745-0712-000 A6R119	1	
116	RCR07G122JS	2	RESISTOR,FIXED CMPSN, 1.2K, 5%, 1/4W (81349) 745-0751-000 A6R120	1	
117	RCR07G330JS	2	RESISTOR,FIXED CMPSN, 33 OHMS, 5%, 1/4W (81349) 745-0694-000 A6R112	1	
118	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R107	1	
119	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R106	1	
120	RCR07G223KS	2	RESISTOR,FIXED CMPSN, 22K, 10%, 1/4W (81349) 745-0797-000 A6R174	1	
121	RCR07G511JS	2	RESISTOR,FIXED CMPSN, 510 OHMS, 5%, 1/4W (81349) 745-0738-000 A6R108	1	
122	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R110	1	
123	RCR07G121JS	2	RESISTOR,FIXED CMPSN, 120 OHMS, 5%, 1/4W (81349) 745-0715-000 A6R109	1	
124	3329H-1-501	2	RESISTOR,VARIABLE 500 OHMS, 10%, 0.5W (80294) 382-0027-060 A6R117	1	
125	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R113	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-126	CK06BX474K	2	CAPACITOR,FIXED CER DIEL, 0.47UF, 10%, 50VDC (81349) 913-5019-520 A6C103	1	
127	RCR07G103JS	2	RESISTOR,FIXED CMPSN, 10K, 5%, 1/4W (81349) 745-0784-000 A6R169	1	
128	RCR07G331JS	2	RESISTOR,FIXED CMPSN, 330 OHMS, 5%, 1/4W (81349) 745-0730-000 A6R114	1	
129	RCR07G222JS	2	RESISTOR,FIXED CMPSN, 2.2K, 5%, 1/4W (81349) 745-0760-000 A6R167	1	
130	RCR07G470JS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 5%, 1/4W (81349) 745-0700-000 A6R182	1	
131	923CC0G221K100B	2	CAPACITOR,FIXED CER DIEL, 220PF, 10%, 100VDC (56289) 913-3325-230 A6C93	1	
132	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C57	1	
133	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C88	1	
134	923CC0G221K100B	2	CAPACITOR,FIXED CER DIEL, 220PF, 10%, 100VDC (56289) 913-3325-230 A6C89	1	
135	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C92	1	
136	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C56	1	
137	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C59	1	
138	923CC0G101J050B	2	CAPACITOR,FIXED CER DIEL, 100PF, 5%, 50VDC (56289) 913-1112-250 A6C58	1	
139	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C55	1	
140	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C91	1	
141	RPE110-111C0G150 F100V	2	CAPACITOR,FIXED CER DIEL, 15PF, 1%, 100VDC (18796) 913-2609-140 A6C125	1	
142	RPE110-111C0G150 F100V	2	CAPACITOR,FIXED CER DIEL, 15PF, 1%, 100VDC (18796) 913-2609-140 A6C124	1	
143	RCR05G330JS	2	RESISTOR,FIXED CMPSN, 33 OHMS, 5%, 1/8W (81349) 745-1863-130 A6R94	1	
144	RCR07G330JS	2	RESISTOR,FIXED CMPSN, 33 OHMS, 5%, 1/4W (81349) 745-0694-000 A6R92	1	
145	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C54	1	
146	RCR05G470JS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 5%, 1/8W (81349) 745-1863-170 A6R225	1	
147	RCR07G103JS	2	RESISTOR,FIXED CMPSN, 10K, 5%, 1/4W (81349) 745-0784-000 A6R216	1	
148	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C50	1	
149	RCR07G100JS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 5%, 1/4W (81349) 745-0676-000 A6R210	1	
150	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R208	1	
151	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R46	1	
152	RCR07G103JS	2	RESISTOR,FIXED CMPSN, 10K, 5%, 1/4W (81349) 745-0784-000 A6R53	1	
153	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R48	1	
154	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R54	1	
155	RCR07G103JS	2	RESISTOR,FIXED CMPSN, 10K, 5%, 1/4W (81349) 745-0784-000 A6R55	1	
156	RCR07G104JS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 5%, 1/4W (81349) 745-0820-000 A6R50	1	
157	RW69V271	2	RESISTOR,FIXED WW, 270.0 OHMS, 5%, 3W (81349) 747-5349-000 A6R52	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-158	RCR07G332JS	2	RESISTOR,FIXED CMPSN, 3.3K, 5%, 1/4W (81349) 745-0766-000 A6R59	1	
159	RCR07G103JS	2	RESISTOR,FIXED CMPSN, 10K, 5%, 1/4W (81349) 745-0784-000 A6R58	1	
160	RCR07G104JS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 5%, 1/4W (81349) 745-0820-000 A6R51	1	
161	RCR07G222JS	2	RESISTOR,FIXED CMPSN, 2.2K, 5%, 1/4W (81349) 745-0760-000 A6R57	1	
162	RNC55H18R2FS	2	RESISTOR,FIXED FILM, 18.2 OHMS, 1%, 1/10W (81349) 724-0637-260 A6R19	1	
163	RCR05G3R3JS	2	RESISTOR,FIXED CMPSN, 3.3 OHMS, 5%, 1/8W 745-0907-130 A6R11	1	
164	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R27	1	
165	RCR07G101JS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 5%, 1/4W (81349) 745-0712-000 A6R62	1	
166	RCR07G221JS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 5%, 1/4W (81349) 745-0724-000 A6R61	1	
167	RN55D22R1F	2	RESISTOR,FIXED FILM, 22.1 OHMS, 1%, 1/8W (81349) 705-3600-170 A6R68	1	
168	RN55D22R1F	2	RESISTOR,FIXED FILM, 22.1 OHMS, 1%, 1/8W (81349) 705-3600-170 A6R66	1	
169	RN55D22R1F	2	RESISTOR,FIXED FILM, 22.1 OHMS, 1%, 1/8W (81349) 705-3600-170 A6R67	1	
170	RN55D22R1F	2	RESISTOR,FIXED FILM, 22.1 OHMS, 1%, 1/8W (81349) 705-3600-170 A6R69	1	
171	RCR07G680JS	2	RESISTOR,FIXED CMPSN, 68 OHMS, 5%, 1/4W (81349) 745-0706-000 A6R65	1	
172	RCR07G182JS	2	RESISTOR,FIXED CMPSN, 1.8K, 5%, 1/4W (81349) 745-0757-000 A6R72	1	
173	RCR07G330JS	2	RESISTOR,FIXED CMPSN, 33 OHMS, 5%, 1/4W (81349) 745-0694-000 A6R64	1	
174	RCR07G221JS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 5%, 1/4W (81349) 745-0724-000 A6R207	1	
175	RCR07G100JS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 5%, 1/4W (81349) 745-0676-000 A6R75	1	
176	RCR07G122JS	2	RESISTOR,FIXED CMPSN, 1.2K, 5%, 1/4W (81349) 745-0751-000 A6R74	1	
177	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R73	1	
178	RCR07G101JS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 5%, 1/4W (81349) 745-0712-000 A6R71	1	
179	RCR07G101JS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 5%, 1/4W (81349) 745-0712-000 A6R43	1	
180	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C4	1	
181	RCR07G220JS	2	RESISTOR,FIXED CMPSN, 22 OHMS, 5%, 1/4W (81349) 745-0688-000 A6R1	1	
182	RN55D1001F	2	RESISTOR,FIXED FILM, 1K, 1%, 1/8W (81349) 705-0996-000 A6R214	1	
183	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C130	1	
184	RCR07G220JS	2	RESISTOR,FIXED CMPSN, 22 OHMS, 5%, 1/4W (81349) 745-0688-000 A6R2	1	
185	RCR07G100JS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 5%, 1/4W (81349) 745-0676-000 A6R224	1	
186	RCR07G101JS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 5%, 1/4W (81349) 745-0712-000 A6R3	1	
187	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A6C15	1	
188	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C3	1	
189	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C109	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	NOUN	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-190	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C10	1	
191	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R162	1	
192	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R42	1	
193	RCR07G222JS	2	RESISTOR,FIXED CMPSN, 2.2K, 5%, 1/4W (81349) 745-0760-000 A6R215	1	
194	RCR07G332JS	2	RESISTOR,FIXED CMPSN, 3.3K, 5%, 1/4W (81349) 745-0766-000 A6R34	1	
195	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R40	1	
196	RCR07G332JS	2	RESISTOR,FIXED CMPSN, 3.3K, 5%, 1/4W (81349) 745-0766-000 A6R33	1	
197	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C117	1	
198	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R223	1	
199	RCR07G104JS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 5%, 1/4W (81349) 745-0820-000 A6R56	1	
200	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A6R194	1	
201	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A6C90	1	
202	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A6R193	1	
203	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A6R196	1	
204	RN55D2740F	2	RESISTOR,FIXED FILM, 274 OHMS, 1%, 1/8W (81349) 705-0969-000 A6R192	1	
205	RN55D2670F	2	RESISTOR,FIXED FILM, 267 OHMS, 1%, 1/8W (81349) 705-3600-690 A6R191	1	
206	RN55D2940F	2	RESISTOR,FIXED FILM, 294 OHMS, 1%, 1/8W (81349) 705-3600-710 A6R190	1	
207	RN55D3321F	2	RESISTOR,FIXED FILM, 3.32K, 1%, 1/8W (81349) 705-1021-000 A6R189	1	
208	RN55D3321F	2	RESISTOR,FIXED FILM, 3.32K, 1%, 1/8W (81349) 705-1021-000 A6R188	1	
209	RN55D1692F	2	RESISTOR,FIXED FILM, 16.9K, 1%, 1/8W (81349) 705-1055-000 A6R186	1	
210	RN55D4222F	2	RESISTOR,FIXED FILM, 42.2K, 1%, 1/8W (81349) 705-1074-000 A6R184	1	
211	RCR07G101JS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 5%, 1/4W (81349) 745-0712-000 A6R142	1	
212	RN55D9761F	2	RESISTOR,FIXED FILM, 9.76K, 1%, 1/8W (81349) 705-3605-470 A6R198	1	
213	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R136	1	
214	RN55D3832F	2	RESISTOR,FIXED FILM, 38.3K, 1%, 1/8W (81349) 705-1072-000 A6R197	1	
215	RCR07G181JS	2	RESISTOR,FIXED CMPSN, 180 OHMS, 5%, 1/4W (81349) 745-0721-000 A6R134	1	
216	RN55D1000F	2	RESISTOR,FIXED FILM, 100 OHMS, 1%, 1/8W (81349) 705-0948-000 A6R133	1	
217	RCR07G222JS	2	RESISTOR,FIXED CMPSN, 2.2K, 5%, 1/4W (81349) 745-0760-000 A6R135	1	
218	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R129	1	
219	RCR07G101JS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 5%, 1/4W (81349) 745-0712-000 A6R137	1	
220	RCR07G471JS	2	RESISTOR,FIXED CMPSN, 470 OHMS, 5%, 1/4W (81349) 745-0736-000 A6R138	1	
221	RCR07G821JS	2	RESISTOR,FIXED CMPSN, 820 OHMS, 5%, 1/4W (81349) 745-0745-000 A6R125	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-222	RCR07G103JS	2	RESISTOR,FIXED CMPSN, 10K, 5%, 1/4W (81349) 745-0784-000 A6R141	1	
223	RCR07G221JS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 5%, 1/4W (81349) 745-0724-000 A6R124	1	
224	RCR07G122JS	2	RESISTOR,FIXED CMPSN, 1.2K, 5%, 1/4W (81349) 745-0751-000 A6R123	1	
225	RCR07G182JS	2	RESISTOR,FIXED CMPSN, 1.8K, 5%, 1/4W (81349) 745-0757-000 A6R122	1	
226	RCR07G223KS	2	RESISTOR,FIXED CMPSN, 22K, 10%, 1/4W (81349) 745-0797-000 A6R177	1	
227	923CC0G101J050B	2	CAPACITOR,FIXED CER DIEL, 100PF, 5%, 50VDC (56289) 913-1112-250 A6C77	1	
228	RCR07G223KS	2	RESISTOR,FIXED CMPSN, 22K, 10%, 1/4W (81349) 745-0797-000 A6R173	1	
229	RCR07G103JS	2	RESISTOR,FIXED CMPSN, 10K, 5%, 1/4W (81349) 745-0784-000 A6R175	1	
230	RCR07G330JS	2	RESISTOR,FIXED CMPSN, 33 OHMS, 5%, 1/4W (81349) 745-0694-000 A6R111	1	
231	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R176	1	
232	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R116	1	
233	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R168	1	
234	RCR07G101JS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 5%, 1/4W (81349) 745-0712-000 A6R165	1	
235	RCR07G471JS	2	RESISTOR,FIXED CMPSN, 470 OHMS, 5%, 1/4W (81349) 745-0736-000 A6R166	1	
236	RCR07G104JS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 5%, 1/4W (81349) 745-0820-000 A6R170	1	
237	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R161	1	
238	RCR07G222JS	2	RESISTOR,FIXED CMPSN, 2.2K, 5%, 1/4W (81349) 745-0760-000 A6R217	1	
239	RCR07G222JS	2	RESISTOR,FIXED CMPSN, 2.2K, 5%, 1/4W (81349) 745-0760-000 A6R164	1	
240	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R163	1	
241	RCR07G471JS	2	RESISTOR,FIXED CMPSN, 470 OHMS, 5%, 1/4W (81349) 745-0736-000 A6R160	1	
242	RCR07G223JS	2	RESISTOR,FIXED CMPSN, 22K, 5%, 1/4W (81349) 745-0796-000 A6R157	1	
243	RCR07G101JS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 5%, 1/4W (81349) 745-0712-000 A6R159	1	
244	3329H-1-502	2	RESISTOR,VARIABLE 5K, 10%, 0.5W (80294) 382-0027-090 A6R115	1	
245	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R99	1	
246	RCR07G103JS	2	RESISTOR,FIXED CMPSN, 10K, 5%, 1/4W (81349) 745-0784-000 A6R158	1	
247	RCR07G511JS	2	RESISTOR,FIXED CMPSN, 510 OHMS, 5%, 1/4W (81349) 745-0738-000 A6R102	1	
248	RCR07G122JS	2	RESISTOR,FIXED CMPSN, 1.2K, 5%, 1/4W (81349) 745-0751-000 A6R98	1	
249	RCR07G221JS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 5%, 1/4W (81349) 745-0724-000 A6R104	1	
250	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R145	1	
251	RCR07G222JS	2	RESISTOR,FIXED CMPSN, 2.2K, 5%, 1/4W (81349) 745-0760-000 A6R100	1	
252	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R101	1	
253	RCR07G330JS	2	RESISTOR,FIXED CMPSN, 33 OHMS, 5%, 1/4W (81349) 745-0694-000 A6R96	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDEX	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-254	RCR07G752JS	2	RESISTOR,FIXED CMPSN, 7.5K, 5%, 1/4W (81349) 745-0780-000 A6R97	1	
255	RCR07G221JS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 5%, 1/4W (81349) 745-0724-000 A6R105	1	
256	RCR07G221JS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 5%, 1/4W (81349) 745-0724-000 A6R95	1	
257	RCR07G560JS	2	RESISTOR,FIXED CMPSN, 56 OHMS, 5%, 1/4W (81349) 745-0703-000 A6R103	1	
258	RCR07G470JS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 5%, 1/4W (81349) 745-0700-000 A6R156	1	
259	RCR07G220JS	2	RESISTOR,FIXED CMPSN, 22 OHMS, 5%, 1/4W (81349) 745-0688-000 A6R79	1	
260	RCR07G161JS	2	RESISTOR,FIXED CMPSN, 160 OHMS, 5%, 1/4W (81349) 745-0720-000 A6R23	1	
261	RCR07G241JS	2	RESISTOR,FIXED CMPSN, 240 OHMS, 5%, 1/4W (81349) 745-0726-000 A6R77	1	
262	RCR07G331JS	2	RESISTOR,FIXED CMPSN, 330 OHMS, 5%, 1/4W (81349) 745-0730-000 A6R211	1	
263	RCR07G100JS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 5%, 1/4W (81349) 745-0676-000 A6R78	1	
264	RCR05G100JS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 5%, 1/8W (81349) 745-1863-010 A6R16	1	
265	RCR20G820JS	2	RESISTOR,FIXED CMPSN, 82 OHMS, 5%, 1/2W (81349) 745-1306-000 A6R24	1	
266	RCR20G101JS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 5%, 1/2W (81349) 745-1309-000 A6R25	1	
267	RNC55H18R2FS	2	RESISTOR,FIXED FILM, 18.2 OHMS, 1%, 1/10W (81349) 724-0637-260 A6R21	1	
268	RCR05G100JS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 5%, 1/8W (81349) 745-1863-010 A6R17	1	
269	RCR05G220JS	2	RESISTOR,FIXED CMPSN, 22 OHMS, 5%, 1/8W (81349) 745-1863-090 A6R63	1	
270	RCR05G100JS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 5%, 1/8W (81349) 745-1863-010 A6R15	1	
271	RCR05G100JS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 5%, 1/8W (81349) 745-1863-010 A6R14	1	
272	RNC55H18R2FS	2	RESISTOR,FIXED FILM, 18.2 OHMS, 1%, 1/10W (81349) 724-0637-260 A6R20	1	
273	RNC55H18R2FS	2	RESISTOR,FIXED FILM, 18.2 OHMS, 1%, 1/10W (81349) 724-0637-260 A6R18	1	
274	RCR05G3R3JS	2	RESISTOR,FIXED CMPSN, 3.3 OHMS, 5%, 1/8W 745-0907-130 A6R12	1	
275	RCR05G223JS	2	RESISTOR,FIXED CMPSN, 22K, 5%, 1/8W (81349) 745-1863-810 A6R60	1	
276	RCR05G3R3JS	2	RESISTOR,FIXED CMPSN, 3.3 OHMS, 5%, 1/8W 745-0907-130 A6R10	1	
277	RCR05G3R3JS	2	RESISTOR,FIXED CMPSN, 3.3 OHMS, 5%, 1/8W 745-0907-130 A6R13	1	
278	RCR07G560JS	2	RESISTOR,FIXED CMPSN, 56 OHMS, 5%, 1/4W (81349) 745-0703-000 A6R9	1	
278A	RCR07G560JS	2	RESISTOR,FIXED CMPSN, 56 OHMS, 5%, 1/4W (81349) 745-0703-000 A6R227	1	
278B	372-2601-046	2	CONTACT,ELECTRICAL	2	
279	RCR07G220JS	2	RESISTOR,FIXED CMPSN, 22 OHMS, 5%, 1/4W (81349) 745-0688-000 A6R6	1	
280	RCR07G220JS	2	RESISTOR,FIXED CMPSN, 22 OHMS, 5%, 1/4W (81349) 745-0688-000 A6R7	1	
281	RN55D1691F	2	RESISTOR,FIXED FILM, 1.69K, 1%, 1/8W (81349) 705-1007-000 A6R8	1	
282	RCR07G220JS	2	RESISTOR,FIXED CMPSN, 22 OHMS, 5%, 1/4W (81349) 745-0688-000 A6R76	1	
283	RCR07G100JS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 5%, 1/4W (81349) 745-0676-000 A6R5	1	
284	RWR81S56R2FR	2	RESISTOR,FIXED WW, 56.2 OHMS, 1%, 1W (81349) 747-2179-980 A6R4	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-285	RCR07G471JS	2	RESISTOR,FIXED CMPSN, 470 OHMS, 5%, 1/4W (81349) 745-0736-000 A6R80	1	
286	RCR07G560JS	2	RESISTOR,FIXED CMPSN, 56 OHMS, 5%, 1/4W (81349) 745-0703-000 A6R81	1	
287	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R209	1	
288	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R44	1	
289	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R45	1	
290	RCR07G560JS	2	RESISTOR,FIXED CMPSN, 56 OHMS, 5%, 1/4W (81349) 745-0703-000 A6R84	1	
291	RCR07G332JS	2	RESISTOR,FIXED CMPSN, 3.3K, 5%, 1/4W (81349) 745-0766-000 A6R181	1	
292	RCR07G391JS	2	RESISTOR,FIXED CMPSN, 390 OHMS, 5%, 1/4W (81349) 745-0733-000 A6R82	1	
293	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R39	1	
294	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R38	1	
295	RCR07G332JS	2	RESISTOR,FIXED CMPSN, 3.3K, 5%, 1/4W (81349) 745-0766-000 A6R32	1	
296	RCR07G470JS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 5%, 1/4W (81349) 745-0700-000 A6R28	1	
297	RCR07G103JS	2	RESISTOR,FIXED CMPSN, 10K, 5%, 1/4W (81349) 745-0784-000 A6R212	1	
298	RCR07G103JS	2	RESISTOR,FIXED CMPSN, 10K, 5%, 1/4W (81349) 745-0784-000 A6R221	1	
299	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R37	1	
300	RCR07G103JS	2	RESISTOR,FIXED CMPSN, 10K, 5%, 1/4W (81349) 745-0784-000 A6R222	1	
301	RCR07G103JS	2	RESISTOR,FIXED CMPSN, 10K, 5%, 1/4W (81349) 745-0784-000 A6R220	1	
302	RCR07G224JS	2	RESISTOR,FIXED CMPSN, 0.22MEGO, 5%, 1/4W (81349) 745-0832-000 A6R200	1	
303	RN55D1002F	2	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A6R195	1	
304	RCR07G223JS	2	RESISTOR,FIXED CMPSN, 22K, 5%, 1/4W (81349) 745-0796-000 A6R201	1	
305	RCR07G333JS	2	RESISTOR,FIXED CMPSN, 33K, 5%, 1/4W (81349) 745-0802-000 A6R202	1	
306	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R203	1	
307	RN55D1003F	2	RESISTOR,FIXED FILM, 100K, 1%, 1/8W (81349) 705-1092-000 A6R183	1	
308	RN55D5491F	2	RESISTOR,FIXED FILM, 5.49K, 1%, 1/8W (81349) 705-3605-350 A6R187	1	
309	RN55D6042F	2	RESISTOR,FIXED FILM, 60.4K, 1%, 1/8W (81349) 705-3605-850 A6R185	1	
310	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R139	1	
311	RCR07G104JS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 5%, 1/4W (81349) 745-0820-000 A6R143	1	
312	RCR07G331JS	2	RESISTOR,FIXED CMPSN, 330 OHMS, 5%, 1/4W (81349) 745-0730-000 A6R140	1	
313	RN55D51R1F	2	RESISTOR,FIXED FILM, 51.1 OHMS, 1%, 1/8W (81349) 705-0934-000 A6R132	1	
314	RCR07G122JS	2	RESISTOR,FIXED CMPSN, 1.2K, 5%, 1/4W (81349) 745-0751-000 A6R128	1	
315	RCR20G390JS	2	RESISTOR,FIXED CMPSN, 39 OHMS, 5%, 1/2W (81349) 745-1292-000 A6R127	1	
316	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R130	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-317	RCR07G100JS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 5%, 1/4W (81349) 745-0676-000 A6R131	1	
318	RCR07G100JS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 5%, 1/4W (81349) 745-0676-000 A6R126	1	
319	RCR07G104JS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 5%, 1/4W (81349) 745-0820-000 A6R144	1	
320	RN55D5111F	2	RESISTOR,FIXED FILM, 5.11K, 1%, 1/8W (81349) 705-1030-000 A6R218	1	
321	RCR07G330JS	2	RESISTOR,FIXED CMPSN, 33 OHMS, 5%, 1/4W (81349) 745-0694-000 A6R121	1	
322	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R204	1	
323	RCR07G104JS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 5%, 1/4W (81349) 745-0820-000 A6R171	1	
324	MS75089-13	2	COIL,RF 150UH (96906) 240-2715-390 A6L28	1	
325	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L35	1	
326	MS75089-11	2	COIL,RF 100UH (96906) 240-2715-370 A6L33	1	
327	MS75089-8	2	COIL,RF 56UH (96906) 240-2715-340 A6L32	1	
328	RCR07G222JS	2	RESISTOR,FIXED CMPSN, 2.2K, 5%, 1/4W (81349) 745-0760-000 A6R149	1	
329	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R148	1	
330	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L26	1	
331	RCR07G103JS	2	RESISTOR,FIXED CMPSN, 10K, 5%, 1/4W (81349) 745-0784-000 A6R152	1	
332	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L25	1	
333	MS75089-13	2	COIL,RF 150UH (96906) 240-2715-390 A6L27	1	
334	RCR07G223JS	2	RESISTOR,FIXED CMPSN, 22K, 5%, 1/4W (81349) 745-0796-000 A6R154	1	
335	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R155	1	
336	RCR07G101JS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 5%, 1/4W (81349) 745-0712-000 A6R153	1	
337	RCR07G151JS	2	RESISTOR,FIXED CMPSN, 150 OHMS, 5%, 1/4W (81349) 745-0718-000 A6R146	1	
338	RCR07G471JS	2	RESISTOR,FIXED CMPSN, 470 OHMS, 5%, 1/4W (81349) 745-0736-000 A6R147	1	
339	RCR05G330JS	2	RESISTOR,FIXED CMPSN, 33 OHMS, 5%, 1/8W (81349) 745-1863-130 A6R91	1	
340	7432	2	TRANSFORMER,RF (19193) 278-0464-080 A6T10	1	
341	MS75083-2	2	COIL,RF 0.120UH (96906) 240-2723-150 A6L44	1	
342	RCR05G330JS	2	RESISTOR,FIXED CMPSN, 33 OHMS, 5%, 1/8W (81349) 745-1863-130 A6R93	1	
343	MS75083-2	2	COIL,RF 0.120UH (96906) 240-2723-150 A6L45	1	
344	7431	2	TRANSFORMER,RF (19193) 278-0464-070 A6T9	1	
345	RCR07G221JS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 5%, 1/4W (81349) 745-0724-000 A6R205	1	
346	RCR07G221JS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 5%, 1/4W (81349) 745-0724-000 A6R206	1	
347	RCR07G331JS	2	RESISTOR,FIXED CMPSN, 330 OHMS, 5%, 1/4W (81349) 745-0730-000 A6R83	1	
348	7427	2	TRANSFORMER,RF (19193) 278-0464-030 A6T3	1	
349	BP3132-5	2	COIL,RF 47NH (99800) 240-0957-050 A6L46	1	
350	240-2711-010	2	COIL,RF 0.10UH (99800) A6L2	1	
351	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L51	1	
352	BP3132-5	2	COIL,RF 47NH (99800) 240-0957-050 A6L48	1	
353	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L1	1	
354	240-2711-010	2	COIL,RF 0.10UH (99800) A6L47	1	
355	B445-5	2	COIL,RF 0.32UH (81815) 240-2771-050 A6L7	1	
356	B445-3	2	COIL,RF 3.2UH (81815) 240-2771-030 A6L14	1	
357	7155	2	TRANSFORMER,RF (19193) 278-0464-010 A6T4	1	
358	B445-4	2	COIL,RF 0.30UH (81815) 240-2771-040 A6L6	1	
359	B445-4	2	COIL,RF 0.30UH (81815) 240-2771-040 A6L9	1	
360	B445-3	2	COIL,RF 3.2UH (81815) 240-2771-030 A6L13	1	
361	MS75089-17	2	COIL,RF 330UH (96906) 240-2715-430 A6L11	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-362	MS75089-17	2	COIL,RF 330UH (96906) 240-2715-430 A6L12	1	
363	MS75089-17	2	COIL,RF 330UH (96906) 240-2715-430 A6L15	1	
364	MS75089-17	2	COIL,RF 330UH (96906) 240-2715-430 A6L10	1	
365	B445-2	2	COIL,RF 4.5UH (81815) 240-2771-020 A6L18	1	
366	B445-2	2	COIL,RF 4.5UH (81815) 240-2771-020 A6L19	1	
367	MS75089-13	2	COIL,RF 150UH (96906) 240-2715-390 A6L5	1	
368	B445-1	2	COIL,RF 17UH (81815) 240-2771-010 A6L21	1	
369	B445-1	2	COIL,RF 17UH (81815) 240-2771-010 A6L20	1	
370	7428	2	TRANSFORMER,RF (19193) 278-0464-040 A6T5	1	
371	MS75089-17	2	COIL,RF 330UH (96906) 240-2715-430 A6L16	1	
372	MS75089-17	2	COIL,RF 330UH (96906) 240-2715-430 A6L17	1	
373	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L36	1	
374	7434	2	TRANSFORMER,RF (19193) 278-0464-110 A6T6	1	
375	7430	2	TRANSFORMER,RF (19193) 278-0464-060 A6T8	1	
376	7429	2	TRANSFORMER,RF (19193) 278-0464-050 A6T7	1	
377	289-7398-010	2	CRYSTAL UNIT,QTZ 12MHZ (00136) A6FL6	1	
378	7435	2	TRANSFORMER,RF (19193) 278-0464-120 A6T13	1	
379	054-1032-000	2	BEAD,GLASS	4	
380	7426	2	TRANSFORMER,RF (19193) 278-0464-020 A6T2	1	
381	240-2711-010	2	COIL,RF 0.10UH (99800) A6L50	1	
382	BP3132-7	2	COIL,RF 68NH (99800) 240-0957-070 A6L42	1	
383	BP3132-3	2	COIL,RF 33NH (99800) 240-0957-030 A6L43	1	
384	BP3132-3	2	COIL,RF 33NH (99800) 240-0957-030 A6L41	1	
385	004-3405-000599	2	TERMINAL,STUD (98291) 306-2511-100	2	
386	7434	2	TRANSFORMER,RF (19193) 278-0464-110 A6T1	1	
387	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L3	1	
388	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L39	1	
389	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L37	1	
390	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L38	1	
391	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L52	1	
392	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L4	1	
393	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L49	1	
394	RWR81S1100FR	2	RESISTOR,FIXED WW, 110 OHMS, 1%, 1W (81349) 747-2183-050 A6R41	1	
395	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L40	1	
396	RCR07G104JS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 5%, 1/4W (81349) 745-0820-000 A6R31	1	
397	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R36	1	
398	RCR07G104JS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 5%, 1/4W (81349) 745-0820-000 A6R30	1	
399	RCR07G472JS	2	RESISTOR,FIXED CMPSN, 4.7K, 5%, 1/4W (81349) 745-0772-000 A6R35	1	
400	RCR07G104JS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 5%, 1/4W (81349) 745-0820-000 A6R29	1	
401	7434	2	TRANSFORMER,RF (19193) 278-0464-110 A6T11	1	
402	RCR07G560JS	2	RESISTOR,FIXED CMPSN, 56 OHMS, 5%, 1/4W (81349) 745-0703-000 A6R85	1	
403	RCR07G471JS	2	RESISTOR,FIXED CMPSN, 470 OHMS, 5%, 1/4W (81349) 745-0736-000 A6R151	1	
404	RCR07G121JS	2	RESISTOR,FIXED CMPSN, 120 OHMS, 5%, 1/4W (81349) 745-0715-000 A6R86	1	
405	RCR07G222JS	2	RESISTOR,FIXED CMPSN, 2.2K, 5%, 1/4W (81349) 745-0760-000 A6R150	1	
406	3329H-1-102	2	RESISTOR,VARIABLE 1K, 10%, 0.5W (80294) 382-0027-070 A6R219	1	
407	RN55D2430F	2	RESISTOR,FIXED FILM, 243 OHMS, 1%, 1/8W (81349) 705-3600-670 A6R199	1	
408	MS75089-17	2	COIL,RF 330UH (96906) 240-2715-430 A6L31	1	
409	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L23	1	
410	MS75103-3	2	COIL,RF 33UH (96906) 240-1621-000 A6L22	1	
411	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L24	1	
412	A210	2	TRANSISTOR (25403) 352-0766-010 A6Q30	1	
413	TXP0506B	2	HEATSINK,ELEC-ELEK (98978) 352-9555-030	1	
414	652-6560-001	2	BRACKET	1	

GROUP ASSEMBLY PARTS LIST

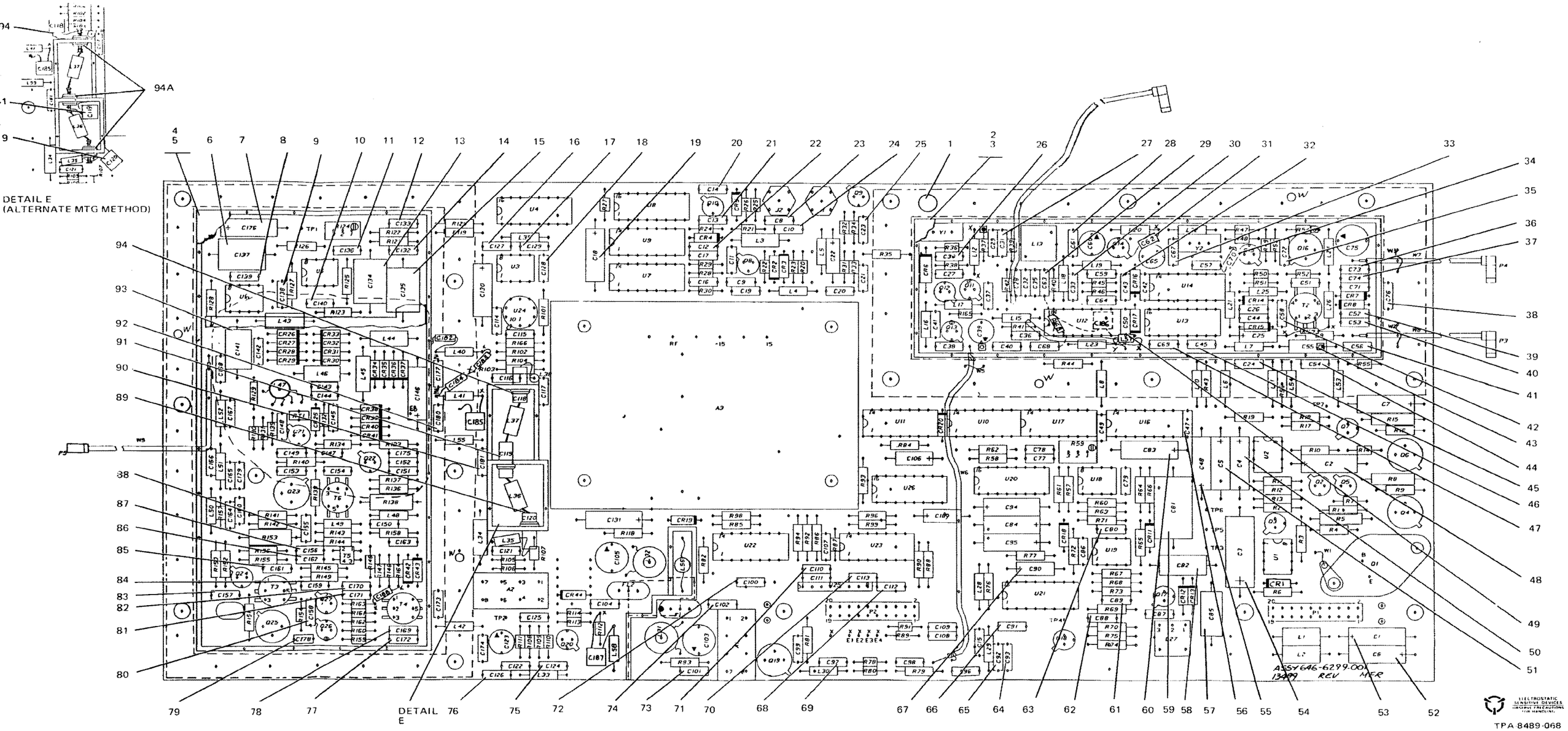
FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-	MS35649-224	2	NUT,PLAIN,HEXAGON SST, 2-56 (96906) 313-0037-000 (AP)	2	
	MS35338-134	2	WASHER,LOCK SST, 0.088 ID X 0.172 OD (96906) 310-0275-000 (AP)	2	
	MS51957-4	2	SCREW,MACHINE CRES, 2-56 X 5/16 (96906) 343-0125-000 (AP)	2	
415	7437	2	TRANSFORMER,RF (19193) 278-0464-140 A6T12	1	
416	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A6L30	1	
417	RCR07G224JS	2	RESISTOR,FIXED CMPSN, 0.22MEGO, 5%, 1/4W (81349) 745-0832-000 A6R179	1	
418	RCR07G223JS	2	RESISTOR,FIXED CMPSN, 22K, 5%, 1/4W (81349) 745-0796-000 A6R180	1	
419	MS75089-11	2	COIL,RF 100UH (96906) 240-2715-370 A6L34	1	
420	MS75089-8	2	COIL,RF 56UH (96906) 240-2715-340 A6L29	1	
421	RCR07G102JS	2	RESISTOR,FIXED CMPSN, 1K, 5%, 1/4W (81349) 745-0748-000 A6R178	1	
422	RCR07G103JS	2	RESISTOR,FIXED CMPSN, 10K, 5%, 1/4W (81349) 745-0784-000 A6R172	1	
423	1N5767	2	SEMICOND DEVICE (28480) 922-6119-010 A6CR24	1	
424	1N5767	2	SEMICOND DEVICE (28480) 922-6119-010 A6CR23	1	
425	2N2907A	2	TRANSISTOR (04713) 352-0551-010 A6Q35	1	
426	2N2857	2	TRANSISTOR (ESDS) (27014) 352-0792-010 A6Q25	1	
427	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A6Q43	1	
428	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A6Q44	1	
429	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A6Q42	1	
430	105-0853-001	2	JACK,TIP BLK (74970) 360-0489-030 A6TP2	1	
431	677	2	FILTER,BANDPASS,XTL (00136) 293-1355-010 A6FL2	1	
	MS21044C04	2	NUT,SLFLKG,HEX SST, 4-40 (96906) 333-1299-000 (AP)	2	
	AN961-4T	2	WASHER,FLAT TP BRS, 0.125 ID X 0.312 OD 310-0751-010 (AP)	2	
432	2N2857	2	TRANSISTOR (ESDS) (27014) 352-0792-010 A6Q41	1	
433	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A6Q45	1	
434	2N918	2	TRANSISTOR (04713) 352-0440-000 A6Q40	1	
435	1N5767	2	SEMICOND DEVICE (28480) 922-6119-010 A6CR26	1	
436	1N5767	2	SEMICOND DEVICE (28480) 922-6119-010 A6CR27	1	
437	A210	2	TRANSISTOR (25403) 352-0766-010 A6Q24	1	
438	105-0853-001	2	JACK,TIP BLK (74970) 360-0489-030 A6TP1	1	
439	1N5767	2	SEMICOND DEVICE (28480) 922-6119-010 A6CR28	1	
440	1N5767	2	SEMICOND DEVICE (28480) 922-6119-010 A6CR22	1	
441	2N918	2	TRANSISTOR (04713) 352-0440-000 A6Q38	1	
442	1N5767	2	SEMICOND DEVICE (28480) 922-6119-010 A6CR21	1	
443	2N918	2	TRANSISTOR (04713) 352-0440-000 A6Q39	1	
444	1N5767	2	SEMICOND DEVICE (28480) 922-6119-010 A6CR29	1	
445	MRF904	2	TRANSISTOR,HF (ESDS) (04713) 352-1210-010 A6Q18	1	
446	MRF904	2	TRANSISTOR,HF (ESDS) (04713) 352-1210-010 A6Q21	1	
447	MRF904	2	TRANSISTOR,HF (ESDS) (04713) 352-1210-010 A6Q19	1	
448	MRF904	2	TRANSISTOR,HF (ESDS) (04713) 352-1210-010 A6Q20	1	
449	56-590-65/4A6	2	SUPPRESSOR,PARA (02114) 288-2154-000	4	
450	2Q123	2	FILTER,BANDPASS,XTL (00136) 293-1356-010 A6FL1	1	
	MS21044C04	2	NUT,SLFLKG,HEX SST, 4-40 (96906) 333-1299-000 (AP)	2	
	AN961-4T	2	WASHER,FLAT TP BRS, 0.125 ID X 0.312 OD 310-0751-010 (AP)	2	
451	MRF517	2	TRANSISTOR (ESDS) (04713) 352-1109-020 A6Q4	1	
452	MRF517	2	TRANSISTOR (ESDS) (04713) 352-1109-020 A6Q6	1	
453	1N5614	2	SEMICOND DEVICE (14099) 353-6556-010 A6CR7	1	
454	1N5614	2	SEMICOND DEVICE (14099) 353-6556-010 A6CR2	1	
455	1N5614	2	SEMICOND DEVICE (14099) 353-6556-010 A6CR3	1	
456	1N5614	2	SEMICOND DEVICE (14099) 353-6556-010 A6CR8	1	
457	1N5614	2	SEMICOND DEVICE (14099) 353-6556-010 A6CR4	1	
458	1N5614	2	SEMICOND DEVICE (14099) 353-6556-010 A6CR6	1	
459	1N5614	2	SEMICOND DEVICE (14099) 353-6556-010 A6CR9	1	
460	1N5614	2	SEMICOND DEVICE (14099) 353-6556-010 A6CR5	1	
461	1N5614	2	SEMICOND DEVICE (14099) 353-6556-010 A6CR10	1	
462	B1-C90/20	2	ARRESTOR,ELEC SURGE (25088) 013-1455-020 A6E1	1	
463	1N5617	2	SEMICOND DEVICE (14936) 353-6496-040 A6CR12	1	
464	QQW343H26S1T	2	WIRE,ELECTRICAL (81348) 421-0074-000 A6W4	AR	

GROUP ASSEMBLY PARTS LIST

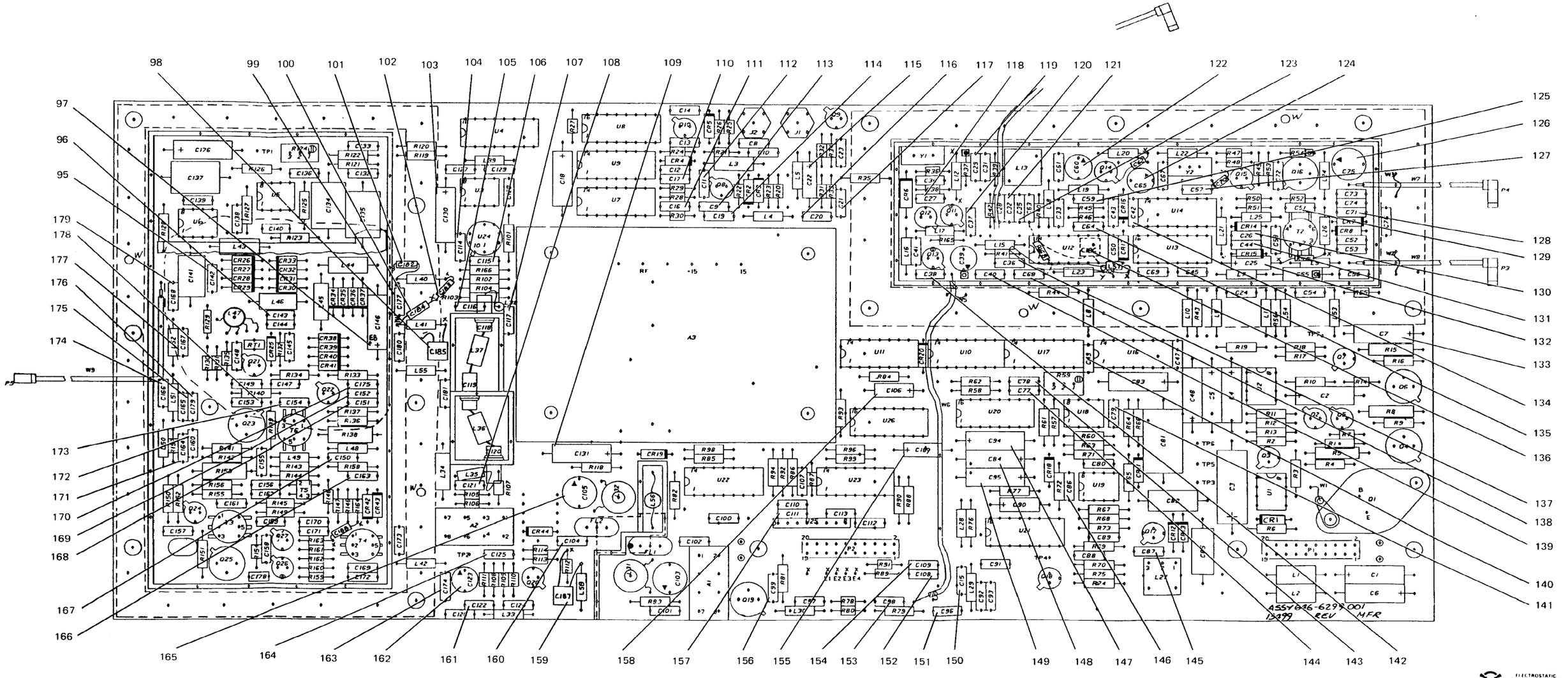
FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-465	M39012-71-0002	2	CONNECTOR,RCPT ELEC (81349) 357-9852-010 A6J3	1	
466	1N5617	2	SEMICOND DEVICE (14936) 353-6496-040 A6CR11	1	
467	1N4003	2	SEMICOND DEVICE (14433) 353-6442-030 A6CR1	1	
468	2N2484	2	TRANSISTOR (49956) 352-0549-000 A6Q46	1	
469	1N4003	2	SEMICOND DEVICE (14433) 353-6442-030 A6CR13	1	
470	2N918	2	TRANSISTOR (04713) 352-0440-000 A6Q13	1	
471	1N4003	2	SEMICOND DEVICE (14433) 353-6442-030 A6CR40	1	
472	1N4003	2	SEMICOND DEVICE (14433) 353-6442-030 A6CR14	1	
473	1N4003	2	SEMICOND DEVICE (14433) 353-6442-030 A6CR15	1	
474	1N4003	2	SEMICOND DEVICE (14433) 353-6442-030 A6CR41	1	
475	1N4003	2	SEMICOND DEVICE (14433) 353-6442-030 A6CR18	1	
476	1N4003	2	SEMICOND DEVICE (14433) 353-6442-030 A6CR17	1	
477	UM9137	2	SEMICOND DEVICE (12969) 922-6120-010 A6CR19	1	
478	UM9137	2	SEMICOND DEVICE (12969) 922-6120-010 A6CR43	1	
479	UM9137	2	SEMICOND DEVICE (12969) 922-6120-010 A6CR20	1	
480	1N4003	2	SEMICOND DEVICE (14433) 353-6442-030 A6CR16	1	
481	289-7398-010	2	CRYSTAL UNIT,QTZ 12MHZ (00136) A6FL3	1	
482	2N918	2	TRANSISTOR (04713) 352-0440-000 A6Q15	1	
483	2N918	2	TRANSISTOR (04713) 352-0440-000 A6Q16	1	
484	DBL SHLD RG-178B /U	2	CABLE,RF (12515) 425-1599-000 A6W3	AR	
484A	428-4822-000	2	WIRE,ELECTRICAL A6W8	AR	
485	2N918	2	TRANSISTOR (04713) 352-0440-000 A6Q14	1	
486	2N918	2	TRANSISTOR (04713) 352-0440-000 A6Q17	1	
487	QQW343H26S1T	2	WIRE,ELECTRICAL (81348) 421-0074-000 A6W5	AR	
488	289-7398-010	2	CRYSTAL UNIT,QTZ 12MHZ (00136) A6FL4	1	
489	UM9137	2	SEMICOND DEVICE (12969) 922-6120-010 A6CR42	1	
490	MRF517	2	TRANSISTOR (ESDS) (04713) 352-1109-020 A6Q5	1	
491	M39012/69-0002	2	CONNECTOR,PLUG ELEC (81349) 357-7108-000 A6P5	1	
492	289-7398-010	2	CRYSTAL UNIT,QTZ 12MHZ (00136) A6FL5	1	
493	QQW343H26S1T	2	WIRE,ELECTRICAL (81348) 421-0074-000 A6W7	AR	
494	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A6Q47	1	
495	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A6CR35	1	
496	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A6CR38	1	
497	A210	2	TRANSISTOR (25403) 352-0766-010 A6Q1	1	
498	A210	2	TRANSISTOR (25403) 352-0766-010 A6Q2	1	
499	DBL SHLD RG-178B /U	2	CABLE,RF (12515) 425-1599-000 A6W6	AR	
500	M39012/69-0002	2	CONNECTOR,PLUG ELEC (81349) 357-7108-000 A6P4	1	
501	MRF517	2	TRANSISTOR (ESDS) (04713) 352-1109-020 A6Q3	1	
502	2N2907A	2	TRANSISTOR (04713) 352-0551-010 A6Q12	1	
503	2N2907A	2	TRANSISTOR (04713) 352-0551-010 A6Q11	1	
504	2N2907A	2	TRANSISTOR (04713) 352-0551-010 A6Q10	1	
505	M39012-71-0002	2	CONNECTOR,RCPT ELEC (81349) 357-9852-010 A6J2	1	
506	532977-3	2	CONNECTOR,PIN HDR (00779) 372-0147-110 A6P2	1	
507	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A6Q9	1	
508	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A6Q8	1	
509	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A6Q7	1	
510	CD4049UBF	2	MICROCIRCUIT BUFFER (ESDS) (02735) 351-8197-010 A6U1	1	
511	2N2857	2	TRANSISTOR (ESDS) (27014) 352-0792-010 A6Q23	1	
512	2N2857	2	TRANSISTOR (ESDS) (27014) 352-0792-010 A6Q22	1	
513	MC1558U	2	MICROCIRCUIT AMPLIFIER (ESDS) (04713) 351-1286-010 A6U3	1	
514	1N5767	2	SEMICOND DEVICE (28480) 922-6119-010 A6CR36	1	
515	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A6CR31	1	
516	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A6CR32	1	
517	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A6CR33	1	
518	532977-3	2	CONNECTOR,PIN HDR (00779) 372-0147-110 A6P1	1	
519	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A6CR39	1	
520	M39012/95-0001	2	CONNECTOR,RCPT ELEC (81349) 357-7405-010 A6J1	1	
521	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A6CR34	1	
522	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A6CR25	1	
523	MC1558U	2	MICROCIRCUIT AMPLIFIER (ESDS) (04713) 351-1286-010 A6U2	1	
524	2N918	2	TRANSISTOR (04713) 352-0440-000 A6Q32	1	

GROUP ASSEMBLY PARTS LIST

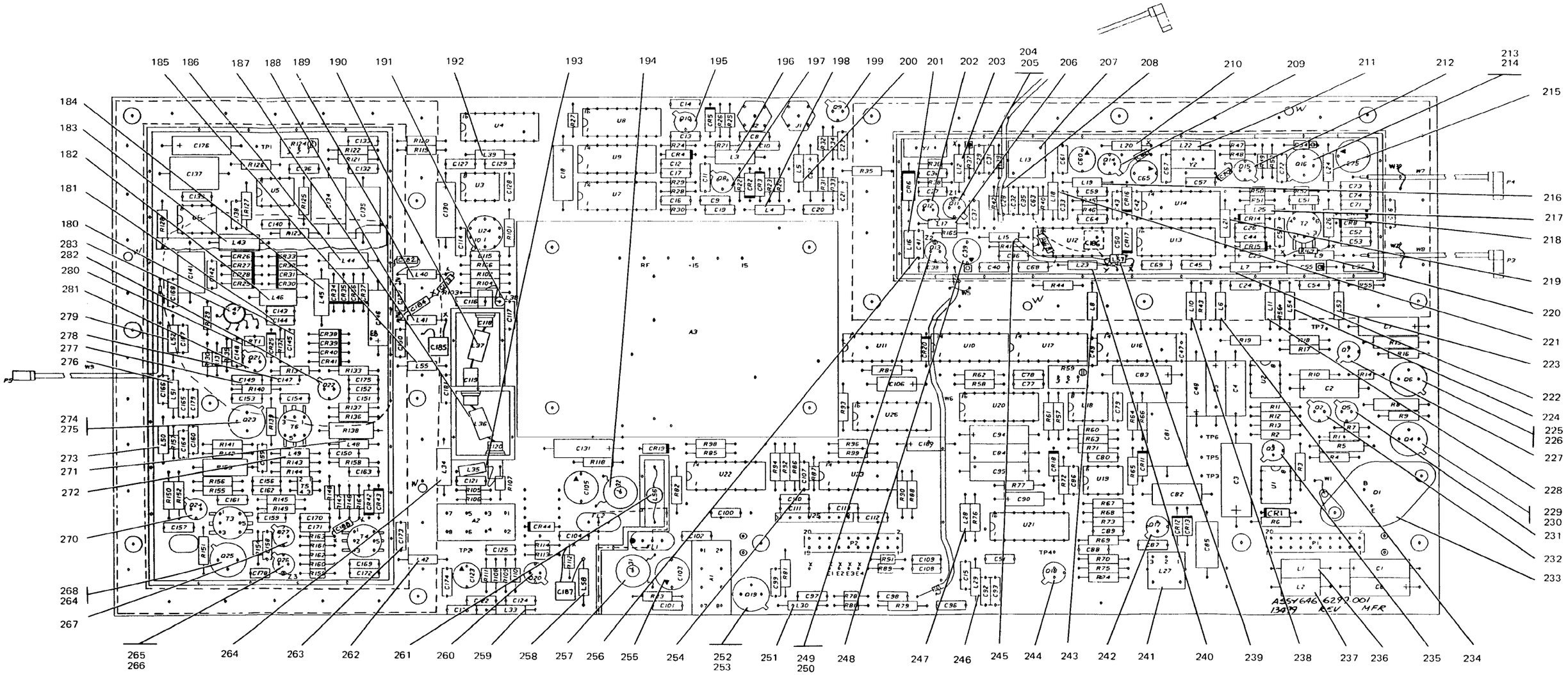
FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-6-525	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A6Q31	1	
526	1N5767	2	SEMICOND DEVICE (28480) 922-6119-010 A6CR37	1	
527	2N918	2	TRANSISTOR (04713) 352-0440-000 A6Q33	1	
528	2N2907A	2	TRANSISTOR (04713) 352-0551-010 A6Q34	1	
529	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A6Q29	1	
530	FN4595	2	TRANSISTOR (ESDS) (17856) 352-1041-010 A6Q28	1	
531	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A6Q37	1	
532	2N2219A	2	TRANSISTOR (49956) 352-0661-010 A6Q36	1	
533	532977-2	2	CONNECTOR,PIN HDR (00779) 372-0147-120 A6P3	1	
534	FN4595	2	TRANSISTOR (ESDS) (17856) 352-1041-010 A6Q27	1	
535	1N751A	2	SEMICOND DEVICE (04713) 353-2710-000 A6VR1	1	
536	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A6CR30	1	
537	2N2857	2	TRANSISTOR (ESDS) (27014) 352-0792-010 A6Q26	1	
538	RPE110-111C0G820 F100V	2	CAPACITOR,FIXED CER DIEL, 82PF, 1%, 100VDC (18796) 913-2609-320 A6C12	1	
539	CK05BX103K	2	CAPACITOR,FIXED CER DIEL, 0.01UF, 10%, 100VDC (81349) 913-5019-200 A6C131	1	
540	8101P050Z5U102M	2	CAPACITOR,FIXED CER DIEL, 1000PF, 20%, 5V (72982) 913-3279-030 A6C133	1	
541	008-0091-000	2	TERMINAL,LUG (91886) 304-1466-010	1	
542	685-1050-001	2	CONTACT, SHIELD	1	
543	652-6553-001	2	SHIELD	1	
544	MS51957-3	2	SCREW,MACHINE CRES, 2-56 X 1/4 (96906) 343-0124-000	4	
	MS15795-802	2	WASHER,FLAT PSVT CRES, 0.094 ID X 0.250 OD (96906) 310-0779-020 (AP)	4	
	MS35338-134	2	WASHER,LOCK SST, 0.088 ID X 0.172 OD (96906) 310-0275-000 (AP)	4	
545	NPBRS0.112-40X0.250IN	2	SCREW,MACHINE NP BRS, 0.112-40 X 0.250IN (77250) 343-0285-000	13	
	MS35338-97	2	WASHER,SPRING CD PL BRZ, 0.115 ID X 0.209 OD (96906) 310-0095-000 (AP)	13	



Synthesizer A5, Parts Location Diagram (Sheet 1 of 6) Figure 6-7



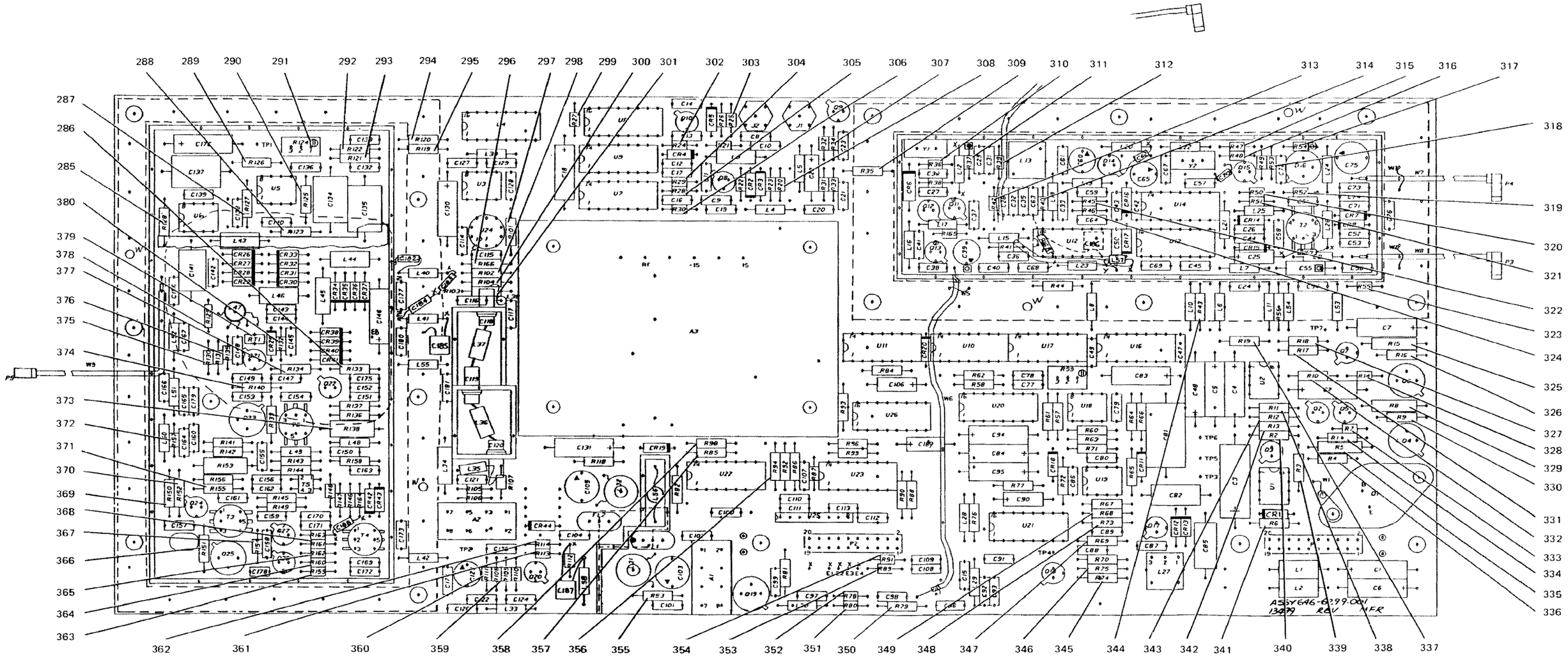
Synthesizer A5, Parts Location Diagram (Sheet 2 of 6) Figure 6-7



ELECTROSTATIC SENSITIVE DEVICES OBSERVE PRECAUTIONS FOR HANDLING

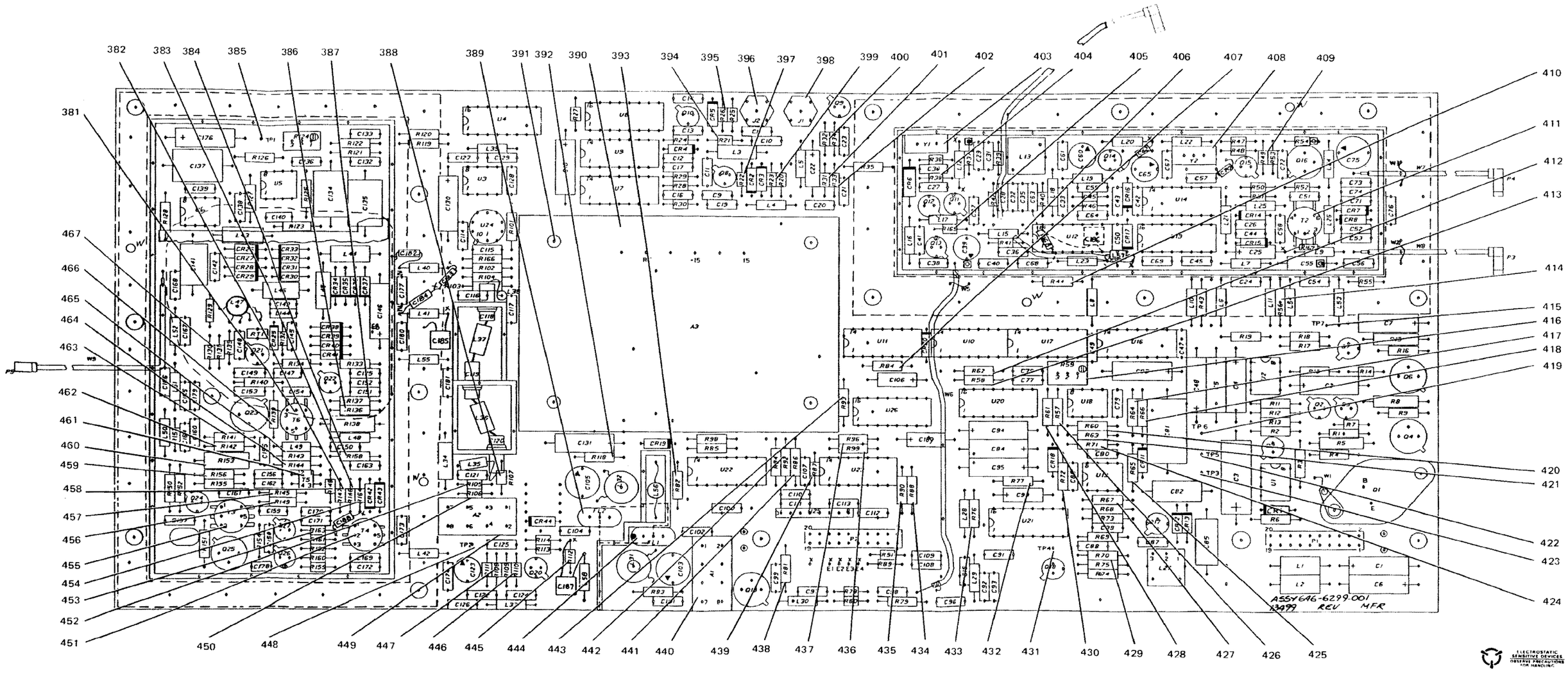
TPA 8489 068

Synthesizer A5, Parts Location Diagram (Sheet 3 of 6) Figure 6-7



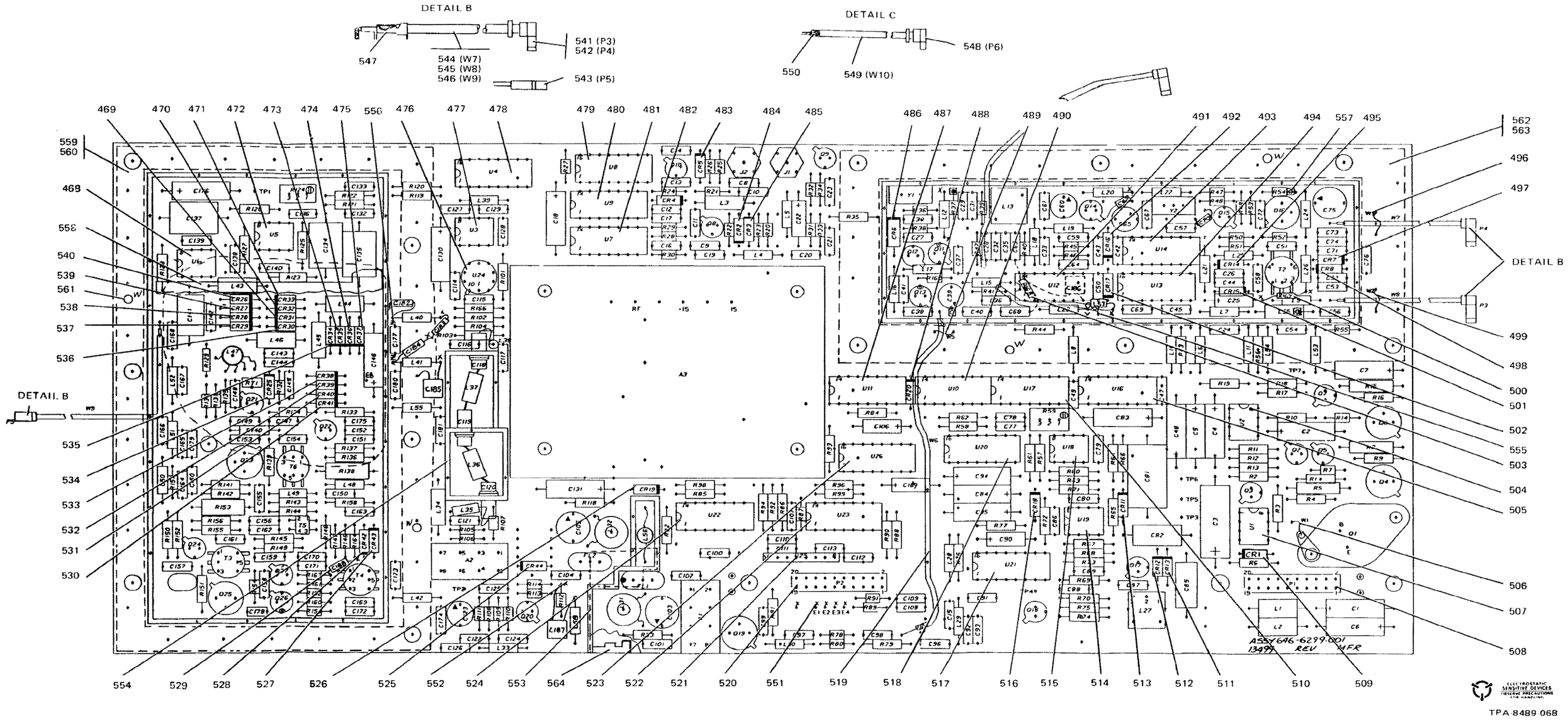
TPA 8489 068

Synthesizer A5, Parts Location Diagram (Sheet 4 of 6) Figure 6-7



TPA-8489-068

Synthesizer A5, Parts Location Diagram (Sheet 5 of 6) Figure 6-7



TPA 8489 068

Synthesizer A5, Parts Location Diagram (Sheet 6 of 6) Figure 6-7

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-	646-6299-001	1	SYNTHESIZER (ESDS) A5 (SEE FIG 6-1-17 FOR NHA)	REF	
1	280-2745-040	2	LABEL,WARNING (12998)	1	
2	652-6578-001	2	COVER	1	
3	652-6576-002	2	SHIELD	1	
4	751-0508-001	2	COVER	1	
5	652-6574-001	2	SHIELD	1	
	MS51957-2	2	SCREW,MACHINE CRES, 2-56 X 3/16 (96906) 343-0123-000 (AP FOR 4,5)	6	
	MS35338-134	2	WASHER,LOCK SST, 0.088 ID X 0.172 OD (96906) 310-0275-000 (AP FOR 4,5)	6	
	MS15795-802	2	WASHER,FLAT PSVT CRES, 0.094 ID X 0.250 OD (96906) 310-0779-020 (AP FOR 4,5)	6	
6	CRC-1-180	2	CAPACITOR,FIXED PLSTC DIEL, 0.68UF, 10%, 50V (04099) 933-1081-180 A5C137	1	
7	M39003/01-2304	2	CAPACITOR,FIXED ELCTLT, 6.8UF, 10%, 35V (81349) 184-9086-640 A5C176	1	
8	923CC0G390J050B	2	CAPACITOR,FIXED CER DIEL, 39PF, 5%, 50VDC (56289) 913-1112-200 A5C139	1	
9	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C138	1	
10	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C140	1	
11	923CC0G390J050B	2	CAPACITOR,FIXED CER DIEL, 39PF, 5%, 50VDC (56289) 913-1112-200 A5C136	1	
12	923CX7R153K050B	2	CAPACITOR,FIXED CER DIEL, 0.015UF, 10%, 50VDC (56289) 913-3325-810 A5C133	1	
13	CRC-1-180	2	CAPACITOR,FIXED PLSTC DIEL, 0.68UF, 10%, 50V (04099) 933-1081-180 A5C134	1	
14	923CX7R153K050B	2	CAPACITOR,FIXED CER DIEL, 0.015UF, 10%, 50VDC (56289) 913-3325-810 A5C132	1	
15	CRC-1-180	2	CAPACITOR,FIXED PLSTC DIEL, 0.68UF, 10%, 50V (04099) 933-1081-180 A5C135	1	
16	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C127	1	
17	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C129	1	
18	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C128	1	
19	M39003/01-2257	2	CAPACITOR,FIXED ELCTLT, 33UF, 10%, 10V (81349) 184-9086-170 A5C18	1	
20	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C14	1	
21	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C13	1	
22	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C12	1	
23	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C8	1	
24	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C10	1	
25	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C23	1	
26	923CC0G101J050B	2	CAPACITOR,FIXED CER DIEL, 100PF, 5%, 50VDC (56289) 913-1112-250 A5C30	1	
27	923CC0G221J050B	2	CAPACITOR,FIXED CER DIEL, 220PF, 5%, 50VDC (56289) 913-1112-290 A5C31	1	
28	923CC0G150J050B	2	CAPACITOR,FIXED CER DIEL, 15PF, 5%, 50VDC (56289) 913-1112-150 A5C61	1	
29	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A5C63	1	
30	923CC0G470J050B	2	CAPACITOR,FIXED CER DIEL, 47PF, 5%, 50VDC (56289) 913-1112-210 A5C33	1	
31	CCR05CG102JM	2	CAPACITOR,FIXED CER DIEL, 1000PF, 5%, 100VDC (81349) 913-3319-740 A5C62	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-32	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C43	1	
33	923CC0G560J050B	2	CAPACITOR,FIXED CER DIEL, 56PF, 5%, 50VDC (56289) 913-1112-220 A5C67	1	
34	CCR05CG471JM	2	CAPACITOR,FIXED CER DIEL, 470PF, 5%, 100VDC (81349) 913-3319-660 A5C70	1	
35	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C72	1	
36	923CC0G101J050B	2	CAPACITOR,FIXED CER DIEL, 100PF, 5%, 50VDC (56289) 913-1112-250 A5C73	1	
37	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C74	1	
38	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C76	1	
39	923CC0G221J050B	2	CAPACITOR,FIXED CER DIEL, 220PF, 5%, 50VDC (56289) 913-1112-290 A5C52	1	
40	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C53	1	
41	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A5C56	1	
42	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C58	1	
43	M39003/01-2283	2	CAPACITOR,FIXED ELCTLT, 2.2UF, 10%, 20V (81349) 184-9086-430 A5C55	1	
44	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A5C54	1	
45	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A5C24	1	
46	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A5C45	1	
47	923CC0G820J050B	2	CAPACITOR,FIXED CER DIEL, 82PF, 5%, 50VDC (56289) 913-1112-240 A5C69	1	
48	M39003/01-2257	2	CAPACITOR,FIXED ELCTLT, 33UF, 10%, 10V (81349) 184-9086-170 A5C2	1	
49	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C50	1	
50	M39003/01-2257	2	CAPACITOR,FIXED ELCTLT, 33UF, 10%, 10V (81349) 184-9086-170 A5C4	1	
51	M39003/01-2289	2	CAPACITOR,FIXED ELCTLT, 15UF, 10%, 20V (81349) 184-9086-490 A5C5	1	
52	M39003/01-2304	2	CAPACITOR,FIXED ELCTLT, 6.8UF, 10%, 35V (81349) 184-9086-640 A5C6	1	
53	M39003/01-2304	2	CAPACITOR,FIXED ELCTLT, 6.8UF, 10%, 35V (81349) 184-9086-640 A5C1	1	
54	M39003/01-2247	2	CAPACITOR,FIXED ELCTLT, 150UF, 10%, 6V (81349) 184-9086-070 A5C3	1	
55	M39003/01-2257	2	CAPACITOR,FIXED ELCTLT, 33UF, 10%, 10V (81349) 184-9086-170 A5C48	1	
56	923CC0G101J050B	2	CAPACITOR,FIXED CER DIEL, 100PF, 5%, 50VDC (56289) 913-1112-250 A5C47	1	
57	CRC-1-130	2	CAPACITOR,FIXED PLSTC DIEL, 0.27UF, 10%, 50V (04099) 933-1081-130 A5C85	1	
58	CRC-1-130	2	CAPACITOR,FIXED PLSTC DIEL, 0.27UF, 10%, 50V (04099) 933-1081-130 A5C82	1	
59	CRC-1-230	2	CAPACITOR,FIXED PLSTC DIEL, 1.8UF, 10%, 50V (04099) 933-1081-230 A5C81	1	
60	M39003/01-2304	2	CAPACITOR,FIXED ELCTLT, 6.8UF, 10%, 35V (81349) 184-9086-640 A5C83	1	
61	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C89	1	
62	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A5C88	1	
63	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C80	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-64	923CX7R473K050B	2	CAPACITOR,FIXED CER DIEL, 0.047UF, 10%, 50VDC (56289) 913-3325-460 A5C93	1	
65	923CX7R123K050B	2	CAPACITOR,FIXED CER DIEL, 0.012UF, 10%, 50VDC (56289) 913-3325-430 A5C92	1	
66	923CX7R473K050B	2	CAPACITOR,FIXED CER DIEL, 0.047UF, 10%, 50VDC (56289) 913-3325-460 A5C91	1	
67	M39003/01-2283	2	CAPACITOR,FIXED ELCTLT, 2.2UF, 10%, 20V (81349) 184-9086-430 A5C90	1	
68	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C112	1	
69	923CC0G120J050B	2	CAPACITOR,FIXED CER DIEL, 12PF, 5%, 50VDC (56289) 913-1112-140 A5C97	1	
70	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C113	1	
71	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C110	1	
72	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C100	1	
73	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C101	1	
74	DPG22BY2R2DG	2	CAPACITOR,FIXED CER DIEL, 2.2PF, PORM0.5PF, 50VDC (96733) 913-1112-050 A5C102	1	
75	923CC0G180J050B	2	CAPACITOR,FIXED CER DIEL, 18PF, 5%, 50VDC (56289) 913-1112-160 A5C124	1	
76	923CC0G271J050B	2	CAPACITOR,FIXED CER DIEL, 270PF, 5%, 50VDC (56289) 913-1112-300 A5C126	1	
77	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C172	1	
78	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C169	1	
79	CK05BX103K	2	CAPACITOR,FIXED CER DIEL, 0.01UF, 10%, 100VDC (81349) 913-5019-200 A5C178	1	
80	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C158	1	
81	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C171	1	
82	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C170	1	
83	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C157	1	
84	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C159	1	
85	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C161	1	
86	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C162	1	
87	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C156	1	
88	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C155	1	
89	2404-000-Y5F-121 J	2	CAPACITOR,FIXED CER DIEL, 120PF, 5%, 250VDC (59660) 913-2607-010 A5C120 OR	1	
89	CM04FD121J03	2	CAPACITOR,FIXED MICA DIEL, 120PF, 5%, 500V (81349) 912-3885-000 A5C120	1	
90	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C181	1	
91	2404-000-Y5F-131 J	2	CAPACITOR,FIXED CER DIEL, 130PF, 5%, 250VDC (59660) 913-2607-020 A5C119 OR	1	
91	CM04FD131J03	2	CAPACITOR,FIXED MICA DIEL, 130PF, 5%, 500V (81349) 912-3888-000 A5C119	1	
92	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C180	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-93	CRC-1-140	2	CAPACITOR,FIXED PLSTC DIEL, 0.33UF, 10%, 50V (04099) 933-1081-140 A5C141	1	
94	2404-000-Y5F-151 J	2	CAPACITOR,FIXED CER DIEL, 150PF, 5%, 250VDC (59660) 913-2607-030 A5C118 OR	1	
94	CM04FD151J03	2	CAPACITOR,FIXED MICA DIEL, 150PF, 5%, 500V (81349) 912-3891-000 A5C118	1	
94A	AAAS-30W-SS	2	TERMINAL,SINGLE (85916) 306-2495-010	3	
95	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C142	1	
96	DPG22BY3R3DG	2	CAPACITOR,FIXED CER DIEL, 3.3PF; PORM0.5PF, 50VDC (96733) 913-1112-070 A5C143	1	
97	M39003/01-2289	2	CAPACITOR,FIXED ELCTLT, 15UF, 10%, 20V (81349) 184-9086-490 A5C146	1	
98	CK05BX271K	2	CAPACITOR,FIXED CER DIEL, 270PF, 10%, 200V (81349) 913-4011-000 A5C185	1	
99	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C177	1	
100	CK05BX103K	2	CAPACITOR,FIXED CER DIEL, 0.01UF, 10%, 100VDC (81349) 913-5019-200 A5C184	1	
101	CK05BX103K	2	CAPACITOR,FIXED CER DIEL, 0.01UF, 10%, 100VDC (81349) 913-5019-200 A5C182	1	
102	CK05BX271K	2	CAPACITOR,FIXED CER DIEL, 270PF, 10%, 200V (81349) 913-4011-000 A5C183	1	
103	M39003/01-2257	2	CAPACITOR,FIXED ELCTLT, 33UF, 10%, 10V (81349) 184-9086-170 A5C130	1	
104	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C114	1	
105	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C116	1	
106	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C115	1	
107	923CC0G820J050B	2	CAPACITOR,FIXED CER DIEL, 82PF, 5%, 50VDC (56289) 913-1112-240 A5C117	1	
108	923CC0G101J050B	2	CAPACITOR,FIXED CER DIEL, 100PF, 5%, 50VDC (56289) 913-1112-250 A5C121	1	
109	M39003/01-2289	2	CAPACITOR,FIXED ELCTLT, 15UF, 10%, 20V (81349) 184-9086-490 A5C131	1	
110	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C17	1	
111	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C16	1	
112	923CC0G222J050B	2	CAPACITOR,FIXED CER DIEL, 2200PF, 5%, 50VDC (56289) 913-1112-410 A5C11	1	
113	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C9	1	
114	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C19	1	
115	M39003/01-2283	2	CAPACITOR,FIXED ELCTLT, 2.2UF, 10%, 20V (81349) 184-9086-430 A5C22	1	
116	923CX7R473K050B	2	CAPACITOR,FIXED CER DIEL, 0.047UF, 10%, 50VDC (56289) 913-3325-460 A5C20	1	
117	923CC0G180J050B	2	CAPACITOR,FIXED CER DIEL, 18PF, 5%, 50VDC (56289) 913-1112-160 A5C21	1	
118	923CC0G391J050B	2	CAPACITOR,FIXED CER DIEL, 390PF, 5%, 50VDC (56289) 913-1112-320 A5C27	1	
119	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A5C29	1	
120	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C37	1	
121	923CC0G680J050B	2	CAPACITOR,FIXED CER DIEL, 68PF, 5%, 50VDC (56289) 913-1112-230 A5C32	1	
122	009-0025-005	2	CAPACITOR,VARIABLE CER DIEL, 5 TO 25PF, 100V (74970) 917-1256-030 A5C60	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDEX	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-123	923CC0G100J050B	2	CAPACITOR,FIXED CER DIEL, 10PF, 5%, 50VDC (56289) 913-1112-130 A5C35	1	
124	009-0025-005	2	CAPACITOR,VARIABLE CER DIEL, 5 TO 25PF, 100V (74970) 917-1256-030 A5C65	1	
125	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A5C59	1	
126	9697	2	CAPACITOR,VARIABLE CER DIEL, 20-100PF, 250VDC (91293) 917-0501-110 A5C75	1	
127	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C57	1	
128	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C71	1	
129	923CC0G221J050B	2	CAPACITOR,FIXED CER DIEL, 220PF, 5%, 50VDC (56289) 913-1112-290 A5C51	1	
130	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A5C26	1	
131	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C44	1	
132	M39003/01-2283	2	CAPACITOR,FIXED ELCTLT, 2.2UF, 10%, 20V (81349) 184-9086-430 A5C25	1	
133	M39003/01-2289	2	CAPACITOR,FIXED ELCTLT, 15UF, 10%, 20V (81349) 184-9086-490 A5C7	1	
134	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C42	1	
135	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A5C64	1	
136	CK05BX271K	2	CAPACITOR,FIXED CER DIEL, 270PF, 10%, 200V (81349) 913-4011-000 A5C186	1	
137	DPG22BY6R8DG	2	CAPACITOR,FIXED CER DIEL, 6.8PF, PORM0.5PF, 50VDC (96733) 913-1112-110 A5C36	1	
138	923CC0G360J050B	2	CAPACITOR,FIXED CER DIEL, 36PF, 5%, 50VDC (56289) 913-1112-540 A5C68	1	
139	923CC0G680J050B	2	CAPACITOR,FIXED CER DIEL, 68PF, 5%, 50VDC (56289) 913-1112-230 A5C40	1	
140	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C49	1	
141	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C79	1	
142	923CC0G100J050B	2	CAPACITOR,FIXED CER DIEL, 10PF, 5%, 50VDC (56289) 913-1112-130 A5C38	1	
143	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A5C78	1	
144	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A5C77	1	
145	923CC0G470J050B	2	CAPACITOR,FIXED CER DIEL, 47PF, 5%, 50VDC (56289) 913-1112-210 A5C87	1	
146	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C86	1	
147	M39003/01-2257	2	CAPACITOR,FIXED ELCTLT, 33UF, 10%, 10V (81349) 184-9086-170 A5C94	1	
148	M39003/01-2304	2	CAPACITOR,FIXED ELCTLT, 6.8UF, 10%, 35V (81349) 184-9086-640 A5C84	1	
149	M39003/01-2289	2	CAPACITOR,FIXED ELCTLT, 15UF, 10%, 20V (81349) 184-9086-490 A5C95	1	
150	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C15	1	
151	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C96	1	
152	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C108	1	
153	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C98	1	
154	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C109	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDEX	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-155	M39003/01-2283	2	CAPACITOR,FIXED ELCTLT, 2.2UF, 10%, 20V (81349) 184-9086-430 A5C189	1	
156	923CC0G120J050B	2	CAPACITOR,FIXED CER DIEL, 12PF, 5%, 50VDC (56289) 913-1112-140 A5C99	1	
157	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C111	1	
158	M39003/01-2283	2	CAPACITOR,FIXED ELCTLT, 2.2UF, 10%, 20V (81349) 184-9086-430 A5C106	1	
159	CK05BX103K	2	CAPACITOR,FIXED CER DIEL, 0.01UF, 10%, 100VDC (81349) 913-5019-200 A5C187	1	
160	DPG22BY2R2DG	2	CAPACITOR,FIXED CER DIEL, 2.2PF, PORM0.5PF, 50VDC (96733) 913-1112-050 A5C104	1	
161	923CC0G100J050B	2	CAPACITOR,FIXED CER DIEL, 10PF, 5%, 50VDC (56289) 913-1112-130 A5C122	1	
162	009-0025-005	2	CAPACITOR,VARIABLE CER DIEL, 5 TO 25PF, 100V (74970) 917-1256-030 A5C123	1	
163	923CC0G220J050B	2	CAPACITOR,FIXED CER DIEL, 22PF, 5%, 50VDC (56289) 913-1112-170 A5C174	1	
164	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C125	1	
165	538-011A2-8	2	CAPACITOR,VARIABLE CER DIEL, 2 TO 8PF, 350V (59660) 917-1218-000 A5C105	1	
166	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C163	1	
167	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C150	1	
168	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C151	1	
169	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C152	1	
170	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A5C175	1	
171	923CC0G120J050B	2	CAPACITOR,FIXED CER DIEL, 12PF, 5%, 50VDC (56289) 913-1112-140 A5C164	1	
172	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C160	1	
173	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C154	1	
174	923CC0G120J050B	2	CAPACITOR,FIXED CER DIEL, 12PF, 5%, 50VDC (56289) 913-1112-140 A5C166	1	
175	923CC0G390J050B	2	CAPACITOR,FIXED CER DIEL, 39PF, 5%, 50VDC (56289) 913-1112-200 A5C165	1	
176	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C179	1	
177	923CC0G510J050B	2	CAPACITOR,FIXED CER DIEL, 51PF, 5%, 50VDC (56289) 913-1112-560 A5C167	1	
178	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C153	1	
179	923CC0G510J050B	2	CAPACITOR,FIXED CER DIEL, 51PF, 5%, 50VDC (56289) 913-1112-560 A5C168	1	
180	923CC0G180J050B	2	CAPACITOR,FIXED CER DIEL, 18PF, 5%, 50VDC (56289) 913-1112-160 A5C145	1	
181	923CC0G101J050B	2	CAPACITOR,FIXED CER DIEL, 100PF, 5%, 50VDC (56289) 913-1112-250 A5C144	1	
182	652-6585-001	2	COIL,2.2UH SPECIAL A5L46	1	
183	652-6585-001	2	COIL,2.2UH SPECIAL A5L43	1	
184	652-6585-001	2	COIL,2.2UH SPECIAL A5L45	1	
185	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A5L55	1	
186	652-6585-001	2	COIL,2.2UH SPECIAL A5L44	1	
187	23303MJ	2	COIL,RF 0.33UH (32159) 240-0887-070 A5L36	1	
188	MS75084-04	2	COIL,RF 2.20UH (96906) 240-2027-000 A5L41	1	
189	MS75084-04	2	COIL,RF 2.20UH (96906) 240-2027-000 A5L40	1	
190	23303MJ	2	COIL,RF 0.33UH (32159) 240-0887-070 A5L37	1	
191	240-0887-340	2	COIL,RF 0.27UH A5L38	1	
192	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A5L39	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-193	23303MJ	2	COIL,RF 0.33UH (32159) 240-0887-070 A5L35	1	
194	278-0451-080	2	COIL,RF 10 TURNS (20462) A5L32	1	
195	2N2369A	2	TRANSISTOR (14433) 352-0596-030 A5Q10	1	
196	MS75089-23	2	COIL,RF 1000UH (96906) 240-2715-490 A5L3	1	
197	2N2369A	2	TRANSISTOR (14433) 352-0596-030 A5Q8	1	
198	MS75085-05	2	COIL,RF 68UH (96906) 240-2045-000 A5L4	1	
199	2N2369A	2	TRANSISTOR (14433) 352-0596-030 A5Q9	1	
200	MS75085-05	2	COIL,RF 68UH (96906) 240-2045-000 A5L5	1	
201	BP3132-6	2	COIL,RF 56NH (99800) 240-0957-060 A5L16	1	
202	2N918	2	TRANSISTOR (04713) 352-0440-000 A5Q12	1	
203	MS75084-01	2	COIL,RF 1.20UH (96906) 240-2024-000 A5L12 (TEST SELECT)	AR	
203	MS75084-02	2	COIL,RF 1.50UH (96906) 240-2025-000 A5L12 (TEST SELECT)	AR	
203	MS75084-03	2	COIL,RF 1.80UH (96906) 240-2026-000 A5L12 (TEST SELECT)	AR	
203	MS75084-04	2	COIL,RF 2.20UH (96906) 240-2027-000 A5L12 (TEST SELECT)	AR	
203	MS75084-05	2	COIL,RF 2.70UH (96906) 240-2028-000 A5L12 (TEST SELECT)	AR	
203	MS75084-06	2	COIL,RF 3.30UH (96906) 240-2029-000 A5L12 (TEST SELECT)	AR	
204	2N918	2	TRANSISTOR (04713) 352-0440-000 A5Q11	1	
205	56-590-65/4A6	2	SUPPRESSOR,PARA (02114) 288-2154-000 A5Z1	1	
206	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A5L17	1	
207	242-0505-040	2	COIL,RF,VARIABLE 4.5 TURNS (02113) A5L13	1	
208	923CX7R102K100B	2	CAPACITOR,FIXED CER DIEL, 1000PF, 10%, 100VDC (56289) 913-3325-310 A5C28	1	
209	2N4416	2	TRANSISTOR (ESDS) (04713) 352-0756-010 A5Q14	1	
210	MS75083-04	2	COIL,RF 0.18UH (96906) 240-2014-000 A5L20	1	
211	MS75083-11	2	COIL,RF 0.68UH (96906) 240-2021-000 A5L22	1	
212	2N918	2	TRANSISTOR (04713) 352-0440-000 A5Q15	1	
213	A210	2	TRANSISTOR (25403) 352-0766-010 A5Q16	1	
214	4005	2	INSULATOR,DISK (13103) 352-9582-030 (AP)	1	
215	BP3132-5	2	COIL,RF 47NH (99800) 240-0957-050 A5L24	1	
216	MS75084-01	2	COIL,RF 1.20UH (96906) 240-2024-000 A5L19	1	
217	MS75084-04	2	COIL,RF 2.20UH (96906) 240-2027-000 A5L25	1	
218	MS75083-13	2	COIL,RF 1UH (96906) 240-2023-000 A5L26	1	
219	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A5L21	1	
220	MS75084-04	2	COIL,RF 2.20UH (96906) 240-2027-000 A5L9	1	
221	MS75083-09	2	COIL,RF 0.47UH (96906) 240-2019-000 A5L18	1	
222	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A5L7	1	
223	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A5L53	1	
224	MS75084-04	2	COIL,RF 2.20UH (96906) 240-2027-000 A5L54	1	
225	2N2905A	2	TRANSISTOR (12040) 352-0550-000 A5Q6	1	
226	4005	2	INSULATOR,DISK (13103) 352-9582-030 (AP)	1	
227	2N2907A	2	TRANSISTOR (04713) 352-0551-010 A5Q7	1	
228	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A5L11	1	
229	2N2219A	2	TRANSISTOR (49956) 352-0661-010 A5Q4	1	
230	4005	2	INSULATOR,DISK (13103) 352-9582-030 (AP)	1	
231	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A5Q5	1	
232	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A5Q2	1	
233	2N3879A	2	TRANSISTOR (07256) 352-0704-020 A5Q1	1	
	NAS671C4	2	NUT,PLAIN,HEXAGON CD PL STL, 0.112-40 (80205) 313-0132-000 (AP)	2	
	MS35338-135	2	WASHER,LOCK SST, 0.115 ID X 0.209 OD (96906) 310-0279-000 (AP)	2	
	MS15795-803	2	WASHER,FLAT PSVT CRES, 0.125 ID X 0.250 OD (96906) 310-0779-030 (AP)	2	
	547-8177-012	2	BUSHING,INSULATED (AP)	2	
	4007-6HOTTINNED	2	TERMINAL,LUG (77147) 304-0016-000 (AP)	1	
	MS51957-15	2	SCREW,MACHINE STL, 4-40 X 3/8 (96906) 343-0135-000 (AP)	2	
	TA-2402-A	2	WASHER (08289) 352-9570-020 (AP)	1	
234	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A5L6	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-235	2N2222A	2	TRANSISTOR (49956) 352-0661-020 A5Q3	1	
236	MS75088-13	2	COIL,RF 10UH (96906) 240-2715-250 A5L1	1	
237	MS75088-13	2	COIL,RF 10UH (96906) 240-2715-250 A5L2	1	
238	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A5L10	1	
239	MS75083-1	2	COIL,RF 0.100UH (96906) 240-2723-140 A5L57	1	
240	MS75083-05	2	COIL,RF 0.22UH (96906) 240-2015-000 A5L23	1	
241	242-0441-030	2	INDUCTOR,RF 9UH (20462) A5L27	1	
242	2N918	2	TRANSISTOR (04713) 352-0440-000 A5Q17	1	
243	MS75085-01	2	COIL,RF 33UH (96906) 240-2041-000 A5L8	1	
244	2N2369A	2	TRANSISTOR (14433) 352-0596-030 A5Q18	1	
245	BP3132-8	2	COIL,RF 80NH (99800) 240-0957-080 A5L15	1	
246	MS75085-03	2	COIL,RF 47UH (96906) 240-2043-000 A5L29	1	
247	MS75085-07	2	COIL,RF 100UH (96906) 240-2047-000 A5L28	1	
248	009-0025-005	2	CAPACITOR,VARIABLE CER DIEL, 5 TO 25PF, 100V (74970) 917-1256-030 A5C39	1	
249	2N5179	2	TRANSISTOR (ESDS) (04713) 352-0792-020 A5Q13	1	
250	56-590-65/4A6	2	SUPPRESSOR,PARA (02114) 288-2154-000 A5Z2	1	
251	BP3132-5	2	COIL,RF 47NH (99800) 240-0957-050 A5L30	1	
252	A210	2	TRANSISTOR (25403) 352-0766-010 A5Q19	1	
253	4005	2	INSULATOR,DISK (13103) 352-9582-030 (AP)	1	
254	923CX7R104K050B	2	CAPACITOR,FIXED CER DIEL, 0.1UF, 10%, 50VDC (56289) 913-3325-470 A5C107	1	
255	538-011A2-8	2	CAPACITOR,VARIABLE CER DIEL, 2 TO 8PF, 350V (59660) 917-1218-000 A5C103	1	
256	923CX7R103K100B	2	CAPACITOR,FIXED CER DIEL, 0.010UF, 10%, 50VDC (56289) 913-3325-420 A5C41	1	
257	278-0451-080	2	COIL,RF 10 TURNS (20462) A5L31	1	
258	MS75084-04	2	COIL,RF 2.20UH (96906) 240-2027-000 A5L58	1	
259	MS75083-1	2	COIL,RF 0.100UH (96906) 240-2723-140 A5L33	1	
260	2N5179	2	TRANSISTOR (ESDS) (04713) 352-0792-020 A5Q20	1	
261	242-0453-010	2	COIL,RF,ADJUSTABLE (81815) A5L56	1	
262	MS75083-1	2	COIL,RF 0.100UH (96906) 240-2723-140 A5L42	1	
263	923CC0G220J050B	2	CAPACITOR,FIXED CER DIEL, 22PF, 5%, 50VDC (56289) 913-1112-170 A5C173	1	
264	22203MJ	2	COIL,RF 0.22UH (32159) 240-0887-020 A5L34	1	
265	2N918	2	TRANSISTOR (04713) 352-0440-000 A5Q26	1	
266	56-590-65/4A6	2	SUPPRESSOR,PARA (02114) 288-2154-000 A5Z3	1	
267	2N918	2	TRANSISTOR (04713) 352-0440-000 A5Q27	1	
268	SRF2263 (XRF525)	2	TRANSISTOR (ESDS) (04713) 352-1109-010 A5Q25	1	
269	4005	2	INSULATOR,DISK (13103) 352-9582-030 (AP)	1	
270	2N2907A	2	TRANSISTOR (04713) 352-0551-010 A5Q24	1	
271	MS75084-04	2	COIL,RF 2.20UH (96906) 240-2027-000 A5L48	1	
272	MS75084-04	2	COIL,RF 2.20UH (96906) 240-2027-000 A5L49	1	
273	BP3132-8	2	COIL,RF 80NH (99800) 240-0957-080 A5L50	1	
274	SRF2263 (XRF525)	2	TRANSISTOR (ESDS) (04713) 352-1109-010 A5Q23	1	
275	4005	2	INSULATOR,DISK (13103) 352-9582-030 (AP)	1	
276	BP3132-8	2	COIL,RF 80NH (99800) 240-0957-080 A5L51	1	
277	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C149	1	
278	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C147	1	
279	BP3132-7	2	COIL,RF 68NH (99800) 240-0957-070 A5L52	1	
280	923CX7R471K100B	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 100VDC (56289) 913-3325-270 A5C148	1	
281	FN4721	2	TRANSISTOR (ESDS) (17856) 352-1042-010 A5Q21	1	
282	2N2907A	2	TRANSISTOR (04713) 352-0551-010 A5Q22	1	
283	242-0595-460	2	COIL,RF,ADJUSTABLE 4 TURNS (81815) A5L47	1	
284		2	NOT USED		
285	RN55D2550F	2	RESISTOR,FIXED FILM, 255 OHMS, 1%, 1/8W (81349) 705-3600-680 A5R128	1	
286	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A5R133	1	
287	RN55D2550F	2	RESISTOR,FIXED FILM, 255 OHMS, 1%, 1/8W (81349) 705-3600-680 A5R127	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-288	RN55D1871F	2	RESISTOR,FIXED FILM, 1.87K, 1%, 1/8W (81349) 705-1009-000 A5R123	1	
289	RN55D2550F	2	RESISTOR,FIXED FILM, 255 OHMS, 1%, 1/8W (81349) 705-3600-680 A5R126	1	
290	RN55D1871F	2	RESISTOR,FIXED FILM, 1.87K, 1%, 1/8W (81349) 705-1009-000 A5R125	1	
291	RJ24CW203	2	RESISTOR,VARIABLE NONWIRE-WOUND, 20K, 10%, 1/2W (81349) 380-1080-280 A5R124	1	
292	RN55D2051F	2	RESISTOR,FIXED FILM, 2.05K, 1%, 1/8W (81349) 705-1011-000 A5R122	1	
293	RN55D2051F	2	RESISTOR,FIXED FILM, 2.05K, 1%, 1/8W (81349) 705-1011-000 A5R121	1	
294	RN55D2051F	2	RESISTOR,FIXED FILM, 2.05K, 1%, 1/8W (81349) 705-1011-000 A5R120	1	
295	RN55D2051F	2	RESISTOR,FIXED FILM, 2.05K, 1%, 1/8W (81349) 705-1011-000 A5R119	1	
296	RCR07G270KS	2	RESISTOR,FIXED CMPSN, 27 OHMS, 10%, 1/4W (81349) 745-0692-000 A5R166	1	
297	RN55D3010F	2	RESISTOR,FIXED FILM, 301 OHMS, 1%, 1/8W (81349) 705-0971-000 A5R101	1	
298	RCR07G562KS	2	RESISTOR,FIXED CMPSN, 5.6K, 10%, 1/4W (81349) 745-0776-000 A5R102	1	
299	RCR05G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/8W (81349) 745-2365-000 A5R27	1	
300	RCR07G562KS	2	RESISTOR,FIXED CMPSN, 5.6K, 10%, 1/4W (81349) 745-0776-000 A5R104	1	
301	RCR07G510JS	2	RESISTOR,FIXED CMPSN, 51 OHMS, 5%, 1/4W (81349) 745-0702-000 A5R103	1	
302	RCR05G332KS	2	RESISTOR,FIXED CMPSN, 3.3K, 10%, 1/8W (81349) 745-2359-000 A5R24	1	
303	RCR05G473KS	2	RESISTOR,FIXED CMPSN, 47K, 10%, 1/8W (81349) 745-2401-000 A5R25	1	
304	RCR05G222KS	2	RESISTOR,FIXED CMPSN, 2.2K, 10%, 1/8W (81349) 745-2353-000 A5R29	1	
305	RCR05G470KS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 10%, 1/8W (81349) 745-2292-000 A5R28	1	
306	RCR05G161JS	2	RESISTOR,FIXED CMPSN, 160 OHMS, 5%, 1/8W (81349) 745-1863-300 A5R30	1	
307	RCR05G473KS	2	RESISTOR,FIXED CMPSN, 47K, 10%, 1/8W (81349) 745-2401-000 A5R34	1	
308	RCR05G222KS	2	RESISTOR,FIXED CMPSN, 2.2K, 10%, 1/8W (81349) 745-2353-000 A5R20	1	
309	RCR07G104KS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 10%, 1/4W (81349) 745-0821-000 A5R35	1	
310	RCR05G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/8W (81349) 745-2377-000 A5R36	1	
311	RCR05G153KS	2	RESISTOR,FIXED CMPSN, 15K, 10%, 1/8W (81349) 745-2383-000 A5R37	1	
312	RCR05G561KS	2	RESISTOR,FIXED CMPSN, 560 OHMS, 10%, 1/8W (81349) 745-2332-000 A5R39	1	
313	RCR05G222KS	2	RESISTOR,FIXED CMPSN, 2.2K, 10%, 1/8W (81349) 745-2353-000 A5R42	1	
314	RCR05G272KS	2	RESISTOR,FIXED CMPSN, 2.7K, 10%, 1/8W (81349) 745-2356-000 A5R40	1	
315	RCR05G151KS	2	RESISTOR,FIXED CMPSN, 150 OHMS, 10%, 1/8W (81349) 745-2311-000 A5R47	1	
316	RCR05G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/8W (81349) 745-2365-000 A5R48	1	
317	RCR05G470KS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 10%, 1/8W (81349) 745-2292-000 A5R54	1	
318	RCR05G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/8W (81349) 745-2268-000 A5R53	1	
319	RCR05G560KS	2	RESISTOR,FIXED CMPSN, 56 OHMS, 10%, 1/8W (81349) 745-2295-000 A5R52	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-320	RCR05G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/8W (81349) 745-2304-000 A5R50	1	
321	RCR05G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/8W (81349) 745-2320-000 A5R51	1	
322	RCR05G561KS	2	RESISTOR,FIXED CMPSN, 560 OHMS, 10%, 1/8W (81349) 745-2332-000 A5R45	1	
323	RCR05G104KS	2	RESISTOR,FIXED CMPSN, 100K, 10%, 1/8W (81349) 745-2413-000 A5R55	1	
324	RCR05G122KS	2	RESISTOR,FIXED CMPSN, 1.2K, 10%, 1/8W (81349) 745-2344-000 A5R46	1	
325	RW70U2R00F	2	RESISTOR,FIXED WW, 2.00 OHMS, 1%, 1W (81349) 747-4230-300 A5R15	1	
326	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A5R16	1	
327	RN55D3401F	2	RESISTOR,FIXED FILM, 3.4K, 1%, 1/8W (81349) 705-3605-250 A5R18	1	
328	RCR05G272KS	2	RESISTOR,FIXED CMPSN, 2.7K, 10%, 1/8W (81349) 745-2356-000 A5R14	1	
329	RW70U2R00F	2	RESISTOR,FIXED WW, 2.00 OHMS, 1%, 1W (81349) 747-4230-300 A5R8	1	
330	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A5R9	1	
331	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A5R17	1	
332	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A5R10	1	
333	RCR05G222KS	2	RESISTOR,FIXED CMPSN, 2.2K, 10%, 1/8W (81349) 745-2353-000 A5R7	1	
334	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A5R1	1	
335	RW70U1R00F	2	RESISTOR,FIXED WW, 1 OHM, 1%, 1W (81349) 747-4230-010 A5R5	1	
336	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A5R4	1	
337	RN55D3401F	2	RESISTOR,FIXED FILM, 3.4K, 1%, 1/8W (81349) 705-3605-250 A5R19	1	
338	RN55D3401F	2	RESISTOR,FIXED FILM, 3.4K, 1%, 1/8W (81349) 705-3605-250 A5R11	1	
339	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A5R3	1	
340	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A5R2	1	
341	RCR07G562KS	2	RESISTOR,FIXED CMPSN, 5.6K, 10%, 1/4W (81349) 745-0776-000 A5R6	1	
342	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A5R13	1	
343	RN55D2611F	2	RESISTOR,FIXED FILM, 2.61K, 1%, 1/8W (81349) 705-1016-000 A5R12	1	
344	RCR07G270KS	2	RESISTOR,FIXED CMPSN, 27 OHMS, 10%, 1/4W (81349) 745-0692-000 A5R43	1	
345	RCR07G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/4W (81349) 745-0785-000 A5R74	1	
346	RCR07G122KS	2	RESISTOR,FIXED CMPSN, 1.2K, 10%, 1/4W (81349) 745-0752-000 A5R75	1	
347	RCR07G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/4W (81349) 745-0728-000 A5R69	1	
348	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A5R73	1	
349	RCR07G473KS	2	RESISTOR,FIXED CMPSN, 47K, 10%, 1/4W (81349) 745-0809-000 A5R68	1	
350	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A5R79	1	
351	RCR05G330KS	2	RESISTOR,FIXED CMPSN, 33 OHMS, 10%, 1/8W (81349) 745-2286-000 A5R80 (TEST SELECT)	AR	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-351	RCR05G390KS	2	RESISTOR,FIXED CMPSN, 39 OHMS, 10%, 1/8W (81349) 745-2289-000 A5R80 (TEST SELECT)	AR	
351	RCR05G470KS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 10%, 1/8W (81349) 745-2292-000 A5R80 (TEST SELECT)	AR	
351	RCR05G560KS	2	RESISTOR,FIXED CMPSN, 56 OHMS, 10%, 1/8W (81349) 745-2295-000 A5R80 (TEST SELECT)	AR	
351	RCR05G680KS	2	RESISTOR,FIXED CMPSN, 68 OHMS, 10%, 1/8W (81349) 745-2298-000 A5R80 (TEST SELECT)	AR	
351	RCR05G820KS	2	RESISTOR,FIXED CMPSN, 82 OHMS, 10%, 1/8W (81349) 745-2301-000 A5R80 (TEST SELECT)	AR	
351	RCR05G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/8W (81349) 745-2304-000 A5R80 (TEST SELECT)	AR	
351	RCR05G121KS	2	RESISTOR,FIXED CMPSN, 120 OHMS, 10%, 1/8W (81349) 745-2308-000 A5R80 (TEST SELECT)	AR	
351	RCR05G151KS	2	RESISTOR,FIXED CMPSN, 150 OHMS, 10%, 1/8W (81349) 745-2311-000 A5R80 (TEST SELECT)	AR	
352	RCR05G151KS	2	RESISTOR,FIXED CMPSN, 150 OHMS, 10%, 1/8W (81349) 745-2311-000 A5R78	1	
353	RCR05G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/8W (81349) 745-2341-000 A5R89	1	
354	RCR05G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/8W (81349) 745-2341-000 A5R91	1	
355	RCR07G270KS	2	RESISTOR,FIXED CMPSN, 27 OHMS, 10%, 1/4W (81349) 745-0692-000 A5R83	1	
356	RCR07G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/4W (81349) 745-0773-000 A5R94	1	
357	RCR07G562KS	2	RESISTOR,FIXED CMPSN, 5.6K, 10%, 1/4W (81349) 745-0776-000 A5R85	1	
358	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A5R98	1	
359	RCR05G180KS	2	RESISTOR,FIXED CMPSN, 18 OHMS, 10%, 1/8W (81349) 745-2277-000 A5R109	1	
360	RCR05G201JS	2	RESISTOR,FIXED CMPSN, 200 OHMS, 5%, 1/8W (81349) 745-1863-320 A5R111	1	
361	RCR05G223KS	2	RESISTOR,FIXED CMPSN, 22K, 10%, 1/8W (81349) 745-2389-000 A5R113	1	
362	RCR05G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/8W (81349) 745-2341-000 A5R114	1	
363	RCR05G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/8W (81349) 745-2365-000 A5R159	1	
364	RCR05G272KS	2	RESISTOR,FIXED CMPSN, 2.7K, 10%, 1/8W (81349) 745-2356-000 A5R160	1	
365	RCR05G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/8W (81349) 745-2268-000 A5R162	1	
366	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A5R151	1	
367	RCR05G150JS	2	RESISTOR,FIXED CMPSN, 15 OHMS, 5%, 1/8W (81349) 745-1863-050 A5R154	1	
368	RCR05G182KS	2	RESISTOR,FIXED CMPSN, 1.8K, 10%, 1/8W (81349) 745-2350-000 A5R161	1	
369	RN55D2612F	2	RESISTOR,FIXED FILM, 26.1K, 1%, 1/8W (81349) 705-1064-000 A5R150	1	
370	RN55D1502F	2	RESISTOR,FIXED FILM, 15K, 1%, 1/8W (81349) 705-3605-560 A5R152	1	
371	RCR07G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/4W (81349) 745-0728-000 A5R155	1	
372	RCR05G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/8W (81349) 745-2320-000 A5R157	1	
373	RCR20G221KS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 10%, 1/2W (81349) 745-1324-000 A5R138	1	
374	RCR07G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349) 745-0749-000 A5R140	1	
375	RCR05G270KS	2	RESISTOR,FIXED CMPSN, 27 OHMS, 10%, 1/8W (81349) 745-2283-000 A5R130	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-376	RCR05G201JS	2	RESISTOR,FIXED CMPSN, 200 OHMS, 5%, 1/8W (81349) 745-1863-320 A5R135	1	
377	RCR07G270KS	2	RESISTOR,FIXED CMPSN, 27 OHMS, 10%, 1/4W (81349) 745-0692-000 A5R134	1	
378	RCR05G181KS	2	RESISTOR,FIXED CMPSN, 180 OHMS, 10%, 1/8W (81349) 745-2314-000 A5R129	1	
379	B0411H-022	2	RESISTOR,THERMAL 200 OHMS, 10%, 4MW (45586) 714-3234-180 A5RT1	1	
380	RCR05G683JS	2	RESISTOR,FIXED CMPSN, 68K, 5%, 1/8W (81349) 745-1863-930 A5R132	1	
381	CS7395	2	TRANSFORMER,RF (19193) 278-0444-200 A5T6	1	
382	RCR05G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/8W (81349) 745-2320-000 A5R147	1	
383	RCR05G560KS	2	RESISTOR,FIXED CMPSN, 56 OHMS, 10%, 1/8W (81349) 745-2295-000 A5R146	1	
384	RCR07G474KS	2	RESISTOR,FIXED CMPSN, 0.47MEGO, 10%, 1/4W (81349) 745-0845-000 A5R158	1	
385	105-0858-001	2	JACK,TIP BRN (74970) 360-0489-070 A5TP1	1	
386	RN55D1502F	2	RESISTOR,FIXED FILM, 15K, 1%, 1/8W (81349) 705-3605-560 A5R136	1	
387	RN55D2612F	2	RESISTOR,FIXED FILM, 26.1K, 1%, 1/8W (81349) 705-1064-000 A5R137	1	
388	RCR05G151KS	2	RESISTOR,FIXED CMPSN, 150 OHMS, 10%, 1/8W (81349) 745-2311-000 A5R107	1	
389	6799	2	FILTER,BANDPASS,XTL (25120) 293-1354-010 A5FL2	1	
390	652-6611-001	2	FREQUENCY STANDARD (ESDS) A5A3 (SEE FIG 6-8)	1	
391	MS51957-13	2	SCREW,MACHINE STL, 4-40 X 1/4 (96906) 343-0133-000 (AP)	4	
392	RCR07G473KS	2	RESISTOR,FIXED CMPSN, 47K, 10%, 1/4W (81349) 745-0809-000 A5R118	1	
393	RCR07G331KS	2	RESISTOR,FIXED CMPSN, 330 OHMS, 10%, 1/4W (81349) 745-0731-000 A5R82	1	
394	RCR05G470KS	2	RESISTOR,FIXED CMPSN, 47 OHMS, 10%, 1/8W (81349) 745-2292-000 A5R21	1	
395	RCR05G473KS	2	RESISTOR,FIXED CMPSN, 47K, 10%, 1/8W (81349) 745-2401-000 A5R26	1	
396	M39012/95-0001	2	CONNECTOR,RCPT ELEC (81349) 357-7405-010 A5J2	1	
397	RCR05G221KS	2	RESISTOR,FIXED CMPSN, 220 OHMS, 10%, 1/8W (81349) 745-2317-000 A5R22	1	
398	M39012/95-0001	2	CONNECTOR,RCPT ELEC (81349) 357-7405-010 A5J1	1	
399	RCR05G104KS	2	RESISTOR,FIXED CMPSN, 100K, 10%, 1/8W (81349) 745-2413-000 A5R23	1	
400	RCR05G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/8W (81349) 745-2365-000 A5R32	1	
401	RCR05G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/8W (81349) 745-2304-000 A5R31	1	
402	RCR05G103KS	2	RESISTOR,FIXED CMPSN, 10K, 10%, 1/8W (81349) 745-2377-000 A5R33	1	
403	315-0025-010	2	CRYSTAL UNIT,QTZ 24MHZ (00136) A5Y1	1	
404	RCR05G153KS	2	RESISTOR,FIXED CMPSN, 15K, 10%, 1/8W (81349) 745-2383-000 A5R38	1	
405	RCR05G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/8W (81349) 745-2365-000 A5R165	1	
406	RCR05G331KS	2	RESISTOR,FIXED CMPSN, 330 OHMS, 10%, 1/8W (81349) 745-2323-000 A5R41	1	
407	RCR07G105KS	2	RESISTOR,FIXED CMPSN, 1MEGO, 10%, 1/4W (81349) 745-0857-000 A5R84	1	
408	289-4369-010	2	CRYSTAL UNIT,QTZ 96MHZ (00136) A5Y2	1	
409	RCR05G222KS	2	RESISTOR,FIXED CMPSN, 2.2K, 10%, 1/8W (81349) 745-2353-000 A5R49	1	
410	RCR07G104KS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 10%, 1/4W (81349) 745-0821-000 A5R44	1	
411	7433	2	TRANSFORMER,RF (19193) 278-0464-100 A5T2	1	
412	RN55D4321F	2	RESISTOR,FIXED FILM, 4.32K, 1%, 1/8W (81349) 705-3605-300 A5R62	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDEX	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-413	RN55D4321F	2	RESISTOR,FIXED FILM, 4.32K, 1%, 1/8W (81349) 705-3605-300 A5R58	1	
414	RCR07G104KS	2	RESISTOR,FIXED CMPSN, 0.10MEGO, 10%, 1/4W (81349) 745-0821-000 A5R56	1	
415	105-0862-001	2	JACK,TIP VIO (74970) 360-0489-090 A5TP7	1	
416	RJ24CW203	2	RESISTOR,VARIABLE NONWIRE-WOUND, 20K, 10%, 1/2W (81349) 380-1080-280 A5R59	1	
417	RCR07G471KS	2	RESISTOR,FIXED CMPSN, 470 OHMS, 10%, 1/4W (81349) 745-0737-000 A5R64	1	
418	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A5R66	1	
419	105-0860-001	2	JACK,TIP BLU (74970) 360-0489-080 A5TP6	1	
420	RN55D3322F	2	RESISTOR,FIXED FILM, 33.2K, 1%, 1/8W (81349) 705-1069-000 A5R60	1	
421	RN55D3322F	2	RESISTOR,FIXED FILM, 33.2K, 1%, 1/8W (81349) 705-1069-000 A5R63	1	
422	105-0854-001	2	JACK,TIP GRN (74970) 360-0489-040 A5TP5	1	
423	105-0856-001	2	JACK,TIP ORN (74970) 360-0489-050 A5TP3	1	
424	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A5R71	1	
425	RCR07G471KS	2	RESISTOR,FIXED CMPSN, 470 OHMS, 10%, 1/4W (81349) 745-0737-000 A5R65	1	
426	RN55D4321F	2	RESISTOR,FIXED FILM, 4.32K, 1%, 1/8W (81349) 705-3605-300 A5R57	1	
427	RN55D1471F	2	RESISTOR,FIXED FILM, 1.47K, 1%, 1/8W (81349) 705-1004-000 A5R67	1	
428	RN55D4321F	2	RESISTOR,FIXED FILM, 4.32K, 1%, 1/8W (81349) 705-3605-300 A5R61	1	
429	RCR07G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/4W (81349) 745-0728-000 A5R70	1	
430	RCR07G122KS	2	RESISTOR,FIXED CMPSN, 1.2K, 10%, 1/4W (81349) 745-0752-000 A5R72	1	
431	105-0857-001	2	JACK,TIP YEL (74970) 360-0489-060 A5TP4	1	
432	RCR07G473KS	2	RESISTOR,FIXED CMPSN, 47K, 10%, 1/4W (81349) 745-0809-000 A5R77	1	
433	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A5R76	1	
434	RCR07G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/4W (81349) 745-0773-000 A5R88	1	
435	RCR07G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/4W (81349) 745-0773-000 A5R90	1	
436	RCR07G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/4W (81349) 745-0773-000 A5R99	1	
437	RCR07G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/4W (81349) 745-0773-000 A5R96	1	
438	RCR07G331KS	2	RESISTOR,FIXED CMPSN, 330 OHMS, 10%, 1/4W (81349) 745-0731-000 A5R81	1	
439	RCR05G102KS	2	RESISTOR,FIXED CMPSN, 1K, 10%, 1/8W (81349) 745-2341-000 A5R87	1	
440	SBL1S-1	2	MIXER,RF (15542) 277-0496-010 A5A1	1	
441	RCR07G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/4W (81349) 745-0773-000 A5R86	1	
442	RCR07G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/4W (81349) 745-0773-000 A5R92	1	
443	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A5R93	1	
444	6799	2	FILTER,BANDPASS,XTL (25120) 293-1354-010 A5FL1	1	
445	RCR05G360JS	2	RESISTOR,FIXED CMPSN, 36 OHMS, 5%, 1/8W (81349) 745-1863-140 A5R112	1	
446	RCR05G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/8W (81349) 745-2320-000 A5R110	1	
447	RCR05G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/8W (81349) 745-2320-000 A5R108	1	
448	105-0852-001	2	JACK,TIP RED (74970) 360-0489-020 A5TP2	1	
449	SBL1S-1	2	MIXER,RF (15542) 277-0496-010 A5A2	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-450	RCR05G330KS	2	RESISTOR,FIXED CMPSN, 33 OHMS, 10%, 1/8W (81349) 745-2286-000 A5R106	1	
451	CS7411	2	TRANSFORMER,RF (19193) 278-0444-220 A5T4	1	
452	RCR05G151KS	2	RESISTOR,FIXED CMPSN, 150 OHMS, 10%, 1/8W (81349) 745-2311-000 A5R105	1	
453	RCR05G820KS	2	RESISTOR,FIXED CMPSN, 82 OHMS, 10%, 1/8W (81349) 745-2301-000 A5R163	1	
454	RCR05G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/8W (81349) 745-2268-000 A5R164	1	
455	CS7395	2	TRANSFORMER,RF (19193) 278-0444-200 A5T3	1	
456	RN55D3320F	2	RESISTOR,FIXED FILM, 332 OHMS, 1%, 1/8W (81349) 705-0973-000 A5R149	1	
457	RCR07G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/4W (81349) 745-0713-000 A5R145	1	
458	RCR05G560KS	2	RESISTOR,FIXED CMPSN, 56 OHMS, 10%, 1/8W (81349) 745-2295-000 A5R148	1	
459	RCR07G180KS	2	RESISTOR,FIXED CMPSN, 18 OHMS, 10%, 1/4W (81349) 745-0686-000 A5R156	1	
460	RCR20G161JS	2	RESISTOR,FIXED CMPSN, 160 OHMS, 5%, 1/2W (81349) 745-1319-000 A5R153	1	
461	A-595	2	TRANSFORMER,RF (81815) 278-0450-040 A5T5	1	
462	RCR07G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/4W (81349) 745-0728-000 A5R142	1	
463	RCR07G100KS	2	RESISTOR,FIXED CMPSN, 10 OHMS, 10%, 1/4W (81349) 745-0677-000 A5R141	1	
464	RCR07G271KS	2	RESISTOR,FIXED CMPSN, 270 OHMS, 10%, 1/4W (81349) 745-0728-000 A5R144	1	
465	RCR07G180KS	2	RESISTOR,FIXED CMPSN, 18 OHMS, 10%, 1/4W (81349) 745-0686-000 A5R143	1	
466	RN55D5110F	2	RESISTOR,FIXED FILM, 511 OHMS, 1%, 1/8W (81349) 705-0982-000 A5R139	1	
467	RCR05G181KS	2	RESISTOR,FIXED CMPSN, 180 OHMS, 10%, 1/8W (81349) 745-2314-000 A5R131	1	
468	RM5534ADE	2	MICROCIRCUIT OPRTNL AMPL (ESDS) (49956) 351-0503-020 A5U6	1	
469	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR31	1	
470	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR32	1	
471	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR33	1	
472	RM5534ADE	2	MICROCIRCUIT OPRTNL AMPL (ESDS) (49956) 351-0503-020 A5U5	1	
473	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR35	1	
474	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR36	1	
475	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR37	1	
476	733HM	2	MICROCIRCUIT VIDIO AMPLIFIER (ESDS) (07263) 351-1047-010 A5U24	1	
477	MC12015P	2	MICROCIRCUIT LOW-POWER PRESCALAR (04713) 351-3550-010 A5U3	1	
478	MC145158P	2	INTEGRATED CIRCUIT CMOS PHASE-LOCKED LOOP (ESDS) (04713) 351-3567-020 A5U4	1	
479	SN54LS390J	2	INTEGRATED CIRCUIT DECADE COUNTER (ESDS) (01295) 351-1958-010 A5U8	1	
480	SN54LS00J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-010 A5U9	1	
481	SN54LS00J	2	MICROCIRCUIT LOGIC GATE (ESDS) (04713) 351-1523-010 A5U7	1	
482	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A5CR4	1	
483	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A5CR5	1	
484	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A5CR2	1	
485	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A5CR3	1	
486	MV1404	2	SEMICOND DEVICE (04713) 922-6100-020 A5CR6	1	
487	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A5U11	1	
488	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A5CR20	1	
489	QQW343H24S1T	2	WIRE,ELECTRICAL (81348) 421-2420-000 A5W5	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-490	DM54LS74J	2	MICROCIRCUIT FLIP FLOP (ESDS) (27014) 351-1525-010 A5U10	1	
491	54F04/BCA	2	MICROCIRCUIT LOGIC GATE (ESDS) (18324) 351-5600-030 A5U12	1	
492	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A5CR16	1	
493	S54F74/BCA	2	MICROCIRCUIT FLIP-FLOP (ESDS) (18324) 351-8823-010 A5U14	1	
494	SN54S112J	2	INTEGRATED CIRCUIT FLIP FLOP (ESDS) (01295) 351-7808-010 A5U13	1	
495	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A5CR14	1	
496	QQW343H24S1T	2	WIRE,ELECTRICAL (81348) 421-2420-000 A5W3	1	
497	1N5711	2	SEMICOND DEVICE (ESDS) (28480) 353-3691-010 A5CR7	1	
498	1N5711	2	SEMICOND DEVICE (ESDS) (28480) 353-3691-010 A5CR8	1	
499	QQW343H24S1T	2	WIRE,ELECTRICAL (81348) 421-2420-000 A5W2	1	
500	RCR05G101KS	2	RESISTOR,FIXED CMPSN, 100 OHMS, 10%, 1/8W (81349) 745-2304-000 A5R167	1	
501	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A5CR15	1	
502	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A5CR17	1	
503	RCR05G331KS	2	RESISTOR,FIXED CMPSN, 330 OHMS, 10%, 1/8W (81349) 745-2323-000 A5R168	1	
504	RM5532ADE	2	MICROCIRCUIT OPRTNL AMPL (ESDS) (49956) 351-0503-010 A5U2	1	
505	SN54LS90J	2	MICROCIRCUIT DECADE COUNTER (ESDS) (01295) 351-1636-020 A5U16	1	
506	QQW343H24S1T	2	WIRE,ELECTRICAL (81348) 421-2420-000 A5W1	1	
507	RM5534ADE	2	MICROCIRCUIT OPRTNL AMPL (ESDS) (49956) 351-0503-020 A5U1	1	
508	532977-3	2	CONNECTOR,PIN HDR (00779) 372-0147-110 A5P1	1	
509	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A5CR1	1	
510	SN54LS93J	2	MICROCIRCUIT COUNTER (ESDS) (04713) 351-1738-010 A5U17	1	
511	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR13	1	
512	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR12	1	
513	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A5CR11	1	
514	UA741RM	2	INTEGRATED CIRCUIT OPRTNL AMPLIFIER (ESDS) (07263) 351-1261-010 A5U19	1	
515	UA741RM	2	INTEGRATED CIRCUIT OPRTNL AMPLIFIER (ESDS) (07263) 351-1261-010 A5U18	1	
516	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A5CR18	1	
517	SN54LS390J	2	INTEGRATED CIRCUIT DECADE COUNTER (ESDS) (01295) 351-1958-010 A5U21	1	
518	MC145157P	2	INTEGRATED CIRCUIT CMOS PHASE-LOCKED LOOP (ESDS) (04713) 351-3567-010 A5U20	1	
519	DBL SHLD RG-178B /U	2	CABLE,RF (12515) 425-1599-000 A5W6	AR	
	A1039BRSHT	2	EYELET,METALLIC BRS, 0.068DIA X 0.100 (57771) 307-1212-000 (AP)	2	
520	532977-3	2	CONNECTOR,PIN HDR (00779) 372-0147-110 A5P2	1	
521	208B102	2	RESISTOR NETWORK FILM, 1.0K, 2%, 1W (ESDS) (01121) 350-4046-630 A5U25	1	
522	LM239J	2	MICROCIRCUIT COMPARATOR (ESDS) (01295) 351-1122-020 A5U23	1	
523	SCL4050BE	2	MICROCIRCUIT DIGITAL MOS (ESDS) (31019) 351-8159-220 A5U26	1	
524	LM239J	2	MICROCIRCUIT COMPARATOR (ESDS) (01295) 351-1122-020 A5U22	1	
525	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A5CR44	1	
526	1N4454-1	2	SEMICOND DEVICE (12969) 353-3644-010 A5CR19	1	
527	1N5711	2	SEMICOND DEVICE (ESDS) (28480) 353-3691-010 A5CR43	1	
528	1N5711	2	SEMICOND DEVICE (ESDS) (28480) 353-3691-010 A5CR42	1	
529	CK05BX471K	2	CAPACITOR,FIXED CER DIEL, 470PF, 10%, 200V (81349) 913-4014-000 A5C188	1	
530	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR41	1	
531	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR40	1	
532	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR39	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-7-533	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR38	1	
534	1N5711	2	SEMICOND DEVICE (ESDS) (28480) 353-3691-010 A5CR25	1	
535	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR34	1	
536	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR30	1	
537	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR29	1	
538	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR28	1	
539	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR27	1	
540	BB409T	2	SEMICOND DEVICE (25088) 922-6106-020 A5CR26	1	
541	51-311-3875	2	CONNECTOR,PLUG ELEC (98291) 357-7108-020 A5P3	1	
542	51-311-3875	2	CONNECTOR,PLUG ELEC (98291) 357-7108-020 A5P4	1	
543	51-307-3875	2	CONNECTOR,PLUG ELEC (98291) 357-7108-030 A5P5	1	
544	RG59-36Y	2	CABLE ASSY,RF (05276) 425-0133-010 A5W7	AR	
545	RG59-36Y	2	CABLE ASSY,RF (05276) 425-0133-010 A5W8	AR	
546	RG59-36Y	2	CABLE ASSY,RF (05276) 425-0133-010 A5W9	AR	
547	226177-2	2	TERMINATION,RF (00779) 357-7559-010	3	
548	51-311-3875	2	CONNECTOR,PLUG ELEC (98291) 357-7108-020 A5P6	1	
549	11284	2	CABLE,RF (12515) 425-0113-010 A5W10	AR	
550	SE-33BRSHT	2	EYELET,METALLIC BRS, 0.089DIA X 0.093 (61957) 307-1215-000	1	
551	76602-102	2	CONTACT,ELECTRICAL (22526) 372-2601-545 OR	17	
551	372-2601-037	2	CONTACT,ELECTRICAL	17	
552	EP1685	2	TERMINAL,FEEDTHRU (14756) 306-1830-000	2	
553	652-6584-001	2	SHIELD	1	
554	652-6583-001	2	SHIELD	1	
555	372-2601-048	2	CONTACT,ELECTRICAL	1	
556	372-2601-027	2	CONTACT,ELECTRICAL	2	
557	NPBRS0.112-40X0.250IN	2	SCREW,MACHINE NP BRS, 0.112-40 X 0.250IN (77250) 343-0285-000	4	
	MS35338-97	2	WASHER,SPRING CD PL BRZ, 0.115 ID X 0.209 OD (96906) 310-0095-000 (AP)	4	
558	751-0509-001	2	SUPPORT,COVER	1	
	MS51957-2	2	SCREW,MACHINE CRES, 2-56 X 3/16 (96906) 343-0123-000 (AP)	4	
	MS35338-134	2	WASHER,LOCK SST, 0.088 ID X 0.172 OD (96906) 310-0275-000 (AP)	4	
	MS15795-802	2	WASHER,FLAT PSVT CRES, 0.094 ID X 0.250 OD (96906) 310-0779-020 (AP)	4	
559	652-6575-001	2	SHIELD,CARD-RF	1	
560	685-1051-001	2	CONTACT,SHIELD	1	
561	MS51957-3	2	SCREW,MACHINE CRES, 2-56 X 1/4 (96906) 343-0124-000	4	
	MS35338-134	2	WASHER,LOCK SST, 0.088 ID X 0.172 OD (96906) 310-0275-000 (AP)	4	
	MS15795-802	2	WASHER,FLAT PSVT CRES, 0.094 ID X 0.250 OD (96906) 310-0779-020 (AP)	4	
562	652-6577-001	2	SHIELD,CARD-RF	1	
563	685-1049-001	2	CONTACT,SHIELD	1	
564	652-6593-001	2	SHIELD	1	

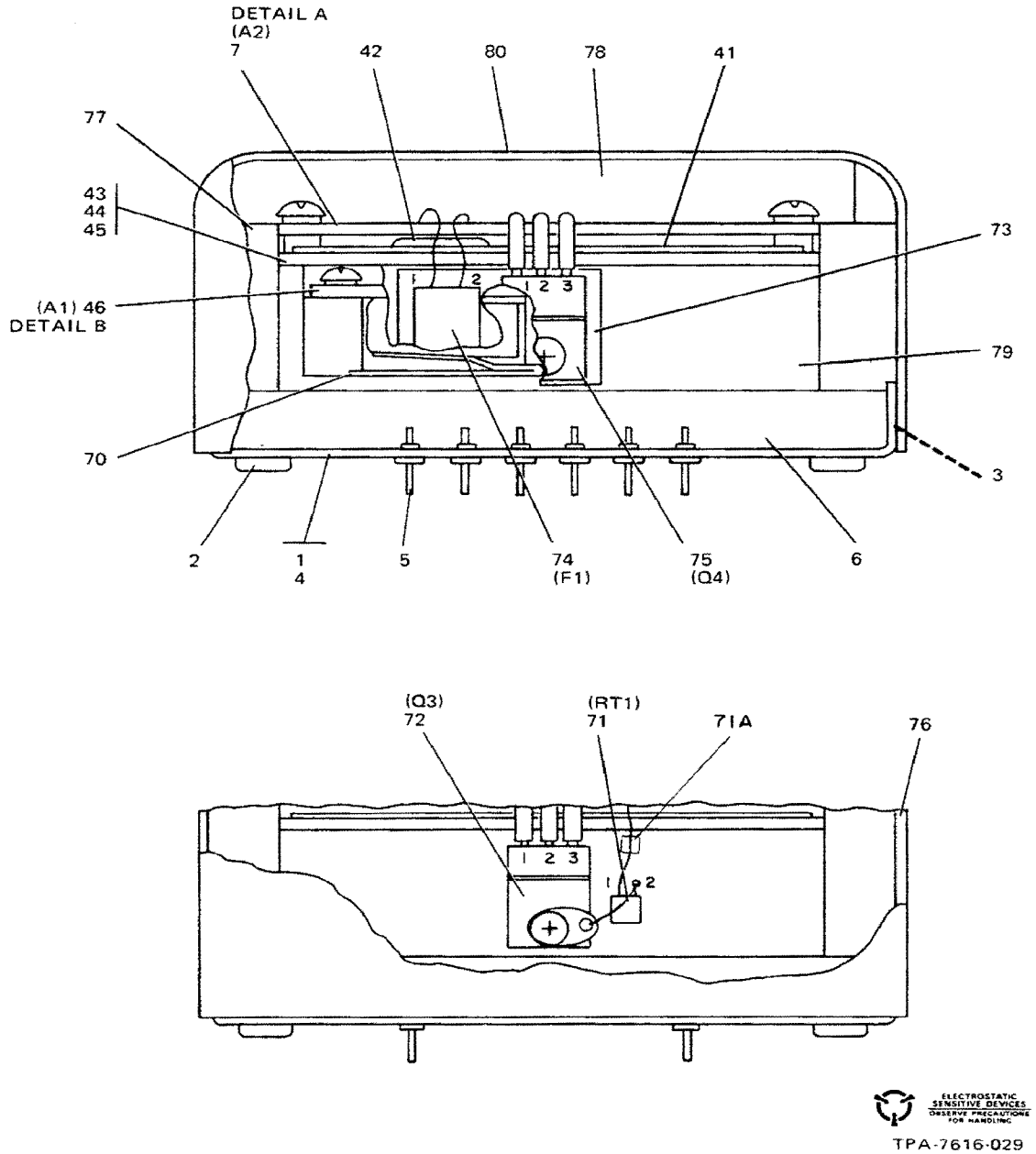
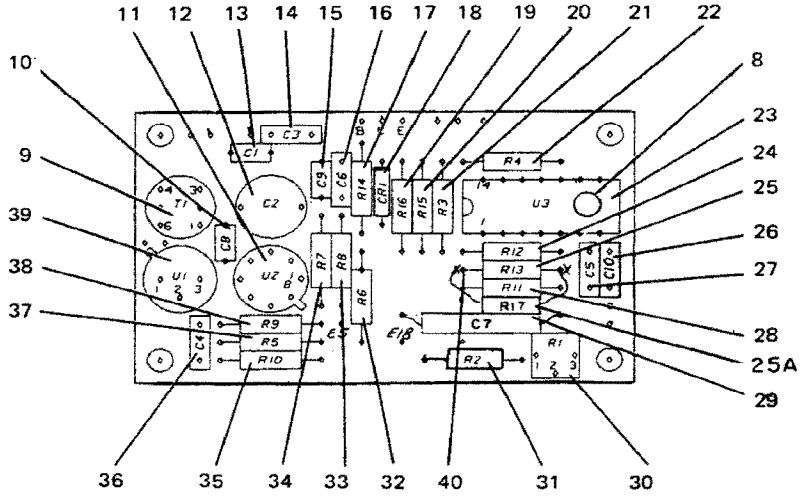
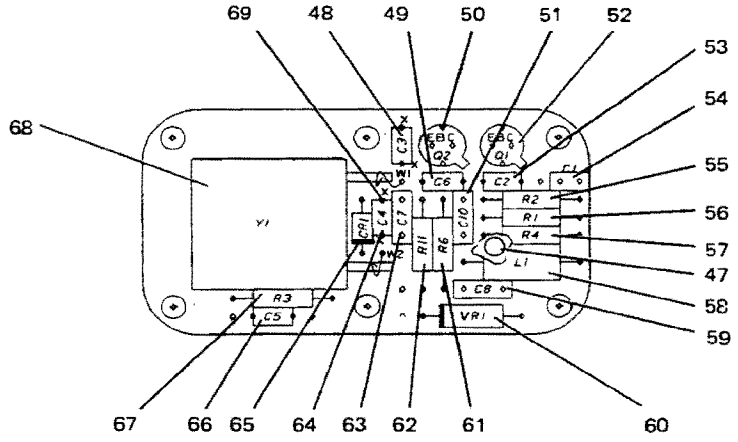


Figure 6-8 (Sheet 1 of 2) Frequency Standard A5A3, Parts Location Diagram



DETAIL A
REF DES PRECEDED BY "A2"



DETAIL B
REF DES PRECEDED BY "A1"

ELECTROSTATIC SENSITIVE DEVICES OBSERVE PRECAUTIONS FOR HANDLING

TPA-7616-029

Figure 6-8 (Sheet 2 of 2) Frequency Standard A5A3, Parts Location Diagram

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-8-	652-6611-001	1	FREQUENCY STANDARD (ESDS) A5A3 (SEE FIG 6-7-390 FOR NHA)	REF	
1	652-6629-001	2	PLATE,COVER,CASE	1	
	MS51957-3	2	SCREW,MACHINE CRES, 2-56 X 1/4 (96906) 343-0124-000 (AP)	4	
2	CL-440-1ZI	3	NUT,PLAIN,CLINCH ZINC PL STL, 0.112-40 (46384) 334-0552-000	4	
3	M45938/5-1	3	NUT,SLFLKG,CLINCH CD PL STL, 0.086-56 (81349) 333-0837-000	4	
4	652-6629-002	3	COVER	1	
5	EP1686	2	TERMINAL,FEEDTHRU (14756) 306-1831-000	6	
6	652-7158-003	2	PAD,PROTECTIVE-TOP	1	
7	659-2025-001	2	CARD,OVEN CONTROL (ESDS) A5A3A2	1	
	MS51957-16	2	SCREW,MACHINE STL, 4-40 X 7/16 (96906) 343-0136-000 (AP)	4	
	MS35338-135	2	WASHER,LOCK SST, 0.115 ID X 0.209 OD (96906) 310-0279-000 (AP)	4	
8	280-2745-040	3	LABEL,WARNING (12998)	1	
9	CS7402	3	TRANSFORMER,RF (19193) 278-0444-280 A5A3A2T1	1	
10	8121M050Z5U103M	3	CAPACITOR,FIXED CER DIEL, 0.01UF, 20%, 50V (72982) 913-3279-110 A5A3A2C8	1	
11	MC1590G	3	MICROCIRCUIT LINEAR AMPLIFIER (ESDS) (04713) 351-1084-010 A5A3A2U2	1	
12	538-011D9-35	3	CAPACITOR,VARIABLE CER DIEL, 9 TO 35PF, 200V (59660) 917-1225-000 A5A3A2C2	1	
13	SR151A820JAA	3	CAPACITOR,FIXED CER DIEL, 82PF, 10%, 100VDC (96095) 913-3281-410 A5A3A2C1	1	
14	8131M050Z5U104M	3	CAPACITOR,FIXED CER DIEL, 0.1UF, 20%, 50V (72982) 913-3279-200 A5A3A2C3	1	
15	8121M050Z5U103M	3	CAPACITOR,FIXED CER DIEL, 0.01UF, 20%, 50V (72982) 913-3279-110 A5A3A2C9	1	
16	8131M050Z5U104M	3	CAPACITOR,FIXED CER DIEL, 0.1UF, 20%, 50V (72982) 913-3279-200 A5A3A2C6	1	
17	RN55D1002F	3	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A5A3A2R14	1	
18	1N4454-1	3	SEMICOND DEVICE (12969) 353-3644-010 A5A3A2CR1	1	
19	RWR81S5R62FR	3	RESISTOR,FIXED WW, 5.62 OHMS, 1%, 1W (81349) 747-2179-730 A5A3A2R16	1	
20	RN55D1103F	3	RESISTOR,FIXED FILM, 110K, 1%, 1/8W (81349) 705-1094-000 A5A3A2R15	1	
21	RN55D1001F	3	RESISTOR,FIXED FILM, 1K, 1%, 1/8W (81349) 705-0996-000 A5A3A2R3	1	
22	RN55D2002F	3	RESISTOR,FIXED FILM, 20K, 1%, 1/8W (81349) 705-3605-620 A5A3A2R4	1	
23	M38510/11005BCB	3	MICROCIRCUIT (ESDS) (81349) 351-7901-180 A5A3A2U3	1	
			OR		
23	LM124J	3	MICROCIRCUIT AMPLIFIER (ESDS) (12040) 351-1141-010 A5A3A2U3	1	
24	RN55D4752F	3	RESISTOR,FIXED FILM, 47.5K, 1%, 1/8W (81349) 705-3605-800 A5A3A2R12	1	
25	RN55D8251F	3	RESISTOR,FIXED FILM, 8.25K, 1%, 1/8W (81349) 705-1040-000 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D8661F	3	RESISTOR,FIXED FILM, 8.66K, 1%, 1/8W (81349) 705-1041-000 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D9091F	3	RESISTOR,FIXED FILM, 9.09K, 1%, 1/8W (81349) 705-1042-000 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D9531F	3	RESISTOR,FIXED FILM, 9.53K, 1%, 1/8W (81349) 705-1043-000 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D1002F	3	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D1052F	3	RESISTOR,FIXED FILM, 10.5K, 1%, 1/8W (81349) 705-1045-000 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D1102F	3	RESISTOR,FIXED FILM, 11K, 1%, 1/8W (81349) 705-1046-000 A5A3A2R13 (TEST SELECT)	AR	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-8-25	RN55D1152F	3	RESISTOR,FIXED FILM, 11.5K, 1%, 1/8W (81349) 705-1047-000 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D1212F	3	RESISTOR,FIXED FILM, 12.1K, 1%, 1/8W (81349) 705-1048-000 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D1272F	3	RESISTOR,FIXED FILM, 12.7K, 1%, 1/8W (81349) 705-1049-000 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D8061F	3	RESISTOR,FIXED FILM, 8.06K, 1%, 1/8W (81349) 705-3605-430 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D8451F	3	RESISTOR,FIXED FILM, 8.45K, 1%, 1/8W (81349) 705-3605-440 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D8871F	3	RESISTOR,FIXED FILM, 8.87K, 1%, 1/8W (81349) 705-3605-450 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D9311F	3	RESISTOR,FIXED FILM, 9.31K, 1%, 1/8W (81349) 705-3605-460 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D9761F	3	RESISTOR,FIXED FILM, 9.76K, 1%, 1/8W (81349) 705-3605-470 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D1022F	3	RESISTOR,FIXED FILM, 10.2K, 1%, 1/8W (81349) 705-3605-480 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D1072F	3	RESISTOR,FIXED FILM, 10.7K, 1%, 1/8W (81349) 705-3605-490 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D1132F	3	RESISTOR,FIXED FILM, 11.3K, 1%, 1/8W (81349) 705-3605-500 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D1182F	3	RESISTOR,FIXED FILM, 11.8K, 1%, 1/8W (81349) 705-3605-510 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D1242F	3	RESISTOR,FIXED FILM, 12.4K, 1%, 1/8W (81349) 705-3605-520 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D1302F	3	RESISTOR,FIXED FILM, 13K, 1%, 1/8W (81349) 705-3605-530 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D6041F	3	RESISTOR,FIXED FILM, 6.04K, 1%, 1/8W (81349) 705-3605-370 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D6341F	3	RESISTOR,FIXED FILM, 6.34K, 1%, 1/8W (81349) 705-3605-380 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D6651F	3	RESISTOR,FIXED FILM, 6.65K, 1%, 1/8W (81349) 705-3605-390 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D6981F	3	RESISTOR,FIXED FILM, 6.98K, 1%, 1/8W (81349) 705-3605-400 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D7321F	3	RESISTOR,FIXED FILM, 7.32K, 1%, 1/8W (81349) 705-3605-410 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D7681F	3	RESISTOR,FIXED FILM, 7.68K, 1%, 1/8W (81349) 705-3605-420 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D6191F	3	RESISTOR,FIXED FILM, 6.19K, 1%, 1/8W (81349) 705-1034-000 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D6491F	3	RESISTOR,FIXED FILM, 6.49K, 1%, 1/8W (81349) 705-1035-000 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D6811F	3	RESISTOR,FIXED FILM, 6.81K, 1%, 1/8W (81349) 705-1036-000 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D7151F	3	RESISTOR,FIXED FILM, 7.15K, 1%, 1/8W (81349) 705-1037-000 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D7501F	3	RESISTOR,FIXED FILM, 7.5K, 1%, 1/8W (81349) 705-1038-000 A5A3A2R13 (TEST SELECT)	AR	
25	RN55D7871F	3	RESISTOR,FIXED FILM, 7.87K, 1%, 1/8W (81349) 705-1039-000 A5A3A2R13 (TEST SELECT)	AR	
25A	RN60D4993F	3	RESISTOR,FIXED FILM, 499K, 1%, 1/4W (81349) 705-6742-000 A5A3A2R17 (TEST SELECT)	AR	
25A	RN60D6193F	3	RESISTOR,FIXED FILM, 619K, 1%, 1/4W (81349) 705-6730-000 A5A3A2R17 (TEST SELECT)	AR	
25A	RN60D6813F	3	RESISTOR,FIXED FILM, 681K, 1%, 1/4W (81349) 705-6732-000 A5A3A2R17 (TEST SELECT)	AR	
25A	RN60D7873F	3	RESISTOR,FIXED FILM, 787K, 1%, 1/4W (81349) 705-6735-000 A5A3A2R17 (TEST SELECT)	AR	
25A	RN60D9093F	3	RESISTOR,FIXED FILM, 909K, 1%, 1/4W (81349) 705-6738-000 A5A3A2R17 (TEST SELECT)	AR	
26	CK06BX684K	3	CAPACITOR,FIXED CER DIEL, 0.68UF, 10%, 50VDC (81349) 913-5019-540 A5A3A2C10	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-8-27	8131M050Z5U104M	3	CAPACITOR,FIXED CER DIEL, 0.1UF, 20%, 50V (72982) 913-3279-200 A5A3A2C5	1	
28	RN55D4752F	3	RESISTOR,FIXED FILM, 47.5K, 1%, 1/8W (81349) 705-3605-800 A5A3A2R11	1	
29	M39003/01-2418	3	CAPACITOR,FIXED ELCTLT, 10UF, 10%, 75V (81349) 184-9088-370 A5A3A2C7	1	
30	RJR26FW203M	3	RESISTOR,VARIABLE 20K, 10%, 1/4W (81349) 380-1095-120 A5A3A2R1	1	
31	RN55D1003F	3	RESISTOR,FIXED FILM, 100K, 1%, 1/8W (81349) 705-1092-000 A5A3A2R2	1	
32	RWR81S5R62FR	3	RESISTOR,FIXED WW, 5.62 OHMS, 1%, 1W (81349) 747-2179-730 A5A3A2R6	1	
33	RN55D1003F	3	RESISTOR,FIXED FILM, 100K, 1%, 1/8W (81349) 705-1092-000 A5A3A2R8	1	
34	RN55D4750F	3	RESISTOR,FIXED FILM, 475 OHMS, 1%, 1/8W (81349) 705-3600-810 A5A3A2R7	1	
35	RN55D1001F	3	RESISTOR,FIXED FILM, 1K, 1%, 1/8W (81349) 705-0996-000 A5A3A2R10	1	
36	8131M050Z5U104M	3	CAPACITOR,FIXED CER DIEL, 0.1UF, 20%, 50V (72982) 913-3279-200 A5A3A2C4	1	
37	RN55D3650F	3	RESISTOR,FIXED FILM, 365 OHMS, 1%, 1/8W (81349) 705-0975-000 A5A3A2R5	1	
38	RN55D6041F	3	RESISTOR,FIXED FILM, 6.04K, 1%, 1/8W (81349) 705-3605-370 A5A3A2R9	1	
39	LM117H	3	MICROCIRCUIT REGULATOR (64155) 351-1271-020 A5A3A2U1	1	
40	372-2601-026	3	CONTACT,ELECTRICAL	2	
41	652-6625-001	2	STRIP,INSULATOR	1	
42	MS35489-4	2	GROMMET,RUBBER (96906) 201-0001-000	1	
43	652-6626-001	2	PLATE,COVER, HOUSING	1	
44	652-6623-001	3	SLEEVE,SPACING	4	
45	652-6626-002	3	PLATE,COVER	1	
46	659-2038-001	2	CARD,OSCILLATOR (ESDS) A5A3A1	1	
	MS51957-3	2	SCREW,MACHINE CRES, 2-56 X 1/4 (96906) 343-0124-000 (AP)	4	
	MS35338-134	2	WASHER,LOCK SST, 0.088 ID X 0.172 OD (96906) 310-0275-000 (AP)	4	
47	280-2745-040	3	LABEL,WARNING (12998)	1	
48	RPE110C0G100J100V	3	CAPACITOR,FIXED CER DIEL, 10PF, 5%, 100VDC (72982) 913-1098-010 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G8R2D100V	3	CAPACITOR,FIXED CER DIEL, 8.2PF, PORM 0.5PF, 100VDC (72982) 913-1098-160 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G6R8D100V	3	CAPACITOR,FIXED CER DIEL, 6.8PF, PORM 0.5PF, 100VDC (72982) 913-1098-140 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G5R6D100V	3	CAPACITOR,FIXED CER DIEL, 5.6PF, PORM 0.5PF, 100VDC (72982) 913-1098-130 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G4R7C100V	3	CAPACITOR,FIXED CER DIEL, 4.7PF, PORM 0.25PF, 100VDC (72982) 913-1098-210 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G3R9C100V	3	CAPACITOR,FIXED CER DIEL, 3.9PF, PORM 0.25PF, 100VDC (72982) 913-1098-220 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G3R3C100V	3	CAPACITOR,FIXED CER DIEL, 3.3PF, PORM 0.25PF, 100VDC (72982) 913-1098-230 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G030C200V	3	CAPACITOR,FIXED CER DIEL, 3PF, PORM 0.25PF, 200VDC (72982) 913-1098-340 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G2R7C100V	3	CAPACITOR,FIXED CER DIEL, 2.7PF, PORM 0.25PF, 100VDC (72982) 913-1098-240 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G2R2C100V	3	CAPACITOR,FIXED CER DIEL, 2.2PF, PORM 0.25PF, 100VDC (72982) 913-1098-250 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G1R8C100V	3	CAPACITOR,FIXED CER DIEL, 1.8PF, PORM 0.25PF, 100VDC (72982) 913-1098-260 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G1R5C100V	3	CAPACITOR,FIXED CER DIEL, 1.5PF, PORM 0.25PF, 100VDC (72982) 913-1098-270 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G1R2C100V	3	CAPACITOR,FIXED CER DIEL, 1.2PF, PORM 0.25PF, 100VDC (72982) 913-1098-280 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G010C200V	3	CAPACITOR,FIXED CER DIEL, 1PF, PORM 0.25PF, 200VDC (72982) 913-1098-330 A5A3A1C3 (TEST SELECT)	AR	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-8-48	8111B115-C0K0-568B	3	CAPACITOR,FIXED CER DIEL, 0.56PF, PORM 0.1PF, 100VDC (59660) 913-1098-310 A5A3A1C3 (TEST SELECT)	AR	
48	SR151A101JAA	3	CAPACITOR,FIXED CER DIEL, 100PF, 5%, 100VDC (96095) 913-3281-280 A5A3A1C3 (TEST SELECT)	AR	
48	DR20CB910J	3	CAPACITOR,FIXED CER DIEL, 91PF, 5%, 100VDC (93958) 913-3401-110 A5A3A1C3 (TEST SELECT)	AR	
48	SR151A820JAA	3	CAPACITOR,FIXED CER DIEL, 82PF, 10%, 100VDC (96095) 913-3281-410 A5A3A1C3 (TEST SELECT)	AR	
48	C82A750J	3	CAPACITOR,FIXED CER DIEL, 75PF, 5%, 100VDC (59942) 913-3401-080 A5A3A1C3 (TEST SELECT)	AR	
48	C82A680J	3	CAPACITOR,FIXED CER DIEL, 68PF, 5%, 100VDC (59942) 913-3401-090 A5A3A1C3 (TEST SELECT)	AR	
48	C82A560J	3	CAPACITOR,FIXED CER DIEL, 56PF, 5%, 100VDC (59942) 913-3401-070 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G470JPPV	3	CAPACITOR,FIXED CER DIEL, 47PF, 5%, 100VDC (72982) 913-1098-640 A5A3A1C3 (TEST SELECT)	AR	
48	C81A430J2	3	CAPACITOR,FIXED CER DIEL, 43PF, 5%, 100VDC (59942) 913-3401-060 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G390JPPV	3	CAPACITOR,FIXED CER DIEL, 39PF, 5%, 200VDC (72982) 913-1098-630 A5A3A1C3 (TEST SELECT)	AR	
48	DR15CB360J	3	CAPACITOR,FIXED CER DIEL, 36PF, 5%, 100VDC (93958) 913-3401-120 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G330JPPV	3	CAPACITOR,FIXED CER DIEL, 33PF, 5%, 200VDC (72982) 913-1098-620 A5A3A1C3 (TEST SELECT)	AR	
48	C81A300J2	3	CAPACITOR,FIXED CER DIEL, 30PF, 5%, 100VDC (59942) 913-3401-050 A5A3A1C3 (TEST SELECT)	AR	
48	C81A270J2	3	CAPACITOR,FIXED CER DIEL, 27PF, 5%, 100VDC (59942) 913-3401-040 A5A3A1C3 (TEST SELECT)	AR	
48	RPE110C0G9R1D100V	3	CAPACITOR,FIXED CER DIEL, 9.1PF, PORM 0.5PF, 100VDC (72982) 913-1098-170 A5A3A1C3 (TEST SELECT)	AR	
48	C81A180J2	3	CAPACITOR,FIXED CER DIEL, 18PF, 5%, 100VDC (59942) 913-3401-010 A5A3A1C3 (TEST SELECT)	AR	
48	C81A220J2	3	CAPACITOR,FIXED CER DIEL, 22PF, 5%, 100VDC (59942) 913-3401-100 A5A3A1C3 (TEST SELECT)	AR	
49	8121M050Z5U103M	3	CAPACITOR,FIXED CER DIEL, 0.01UF, 20%, 50V (72982) 913-3279-110 A5A3A1C6	1	
50	2N918	3	TRANSISTOR (04713) 352-0440-000 A5A3A1Q2	1	
51	C81A270J2	3	CAPACITOR,FIXED CER DIEL, 27PF, 5%, 100VDC (59942) 913-3401-040 A5A3A1C10	1	
52	2N918	3	TRANSISTOR (04713) 352-0440-000 A5A3A1Q1	1	
53	DR20CB331J	3	CAPACITOR,FIXED CER DIEL, 330PF, 5%, 100VDC (93958) 913-3117-070 A5A3A1C2	1	
54	SR151A101JAA	3	CAPACITOR,FIXED CER DIEL, 100PF, 5%, 100VDC (96095) 913-3281-280 A5A3A1C1	1	
55	RN55D2152F	3	RESISTOR,FIXED FILM, 21.5K, 1%, 1/8W (81349) 705-1060-000 A5A3A1R2	1	
56	RN55D2152F	3	RESISTOR,FIXED FILM, 21.5K, 1%, 1/8W (81349) 705-1060-000 A5A3A1R1	1	
57	RN55D1002F	3	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A5A3A1R4	1	
58	MS18130-10	3	COIL,RF 1.50UH (96906) 240-1570-000 A5A3A1L1	1	
59	8121M050Z5U103M	3	CAPACITOR,FIXED CER DIEL, 0.01UF, 20%, 50V (72982) 913-3279-110 A5A3A1C8	1	
60	1N4625	3	SEMICOND DEVICE (04713) 353-3591-490 A5A3A1VR1	1	
61	RN55D2211F	3	RESISTOR,FIXED FILM, 2.21K, 1%, 1/8W (81349) 705-3605-160 A5A3A1R6	1	
62	RN55D2210F	3	RESISTOR,FIXED FILM, 221 OHMS, 1%, 1/8W (81349) 705-3600-650 A5A3A1R11	1	
63	8131M050Z5U105M	3	CAPACITOR,FIXED CER DIEL, 1UF, 20%, 50V (72982) 913-3279-270 A5A3A1C7	1	
64	RPE110C0G100J100V	3	CAPACITOR,FIXED CER DIEL, 10PF, 5%, 100VDC (72982) 913-1098-010 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G8R2D100V	3	CAPACITOR,FIXED CER DIEL, 8.2PF, PORM 0.5PF, 100VDC (72982) 913-1098-160 A5A3A1C4 (TEST SELECT)	AR	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-8-64	RPE110C0G6R8D100V	3	CAPACITOR,FIXED CER DIEL, 6.8PF, PORM 0.5PF, 100VDC (72982) 913-1098-140 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G5R6D100V	3	CAPACITOR,FIXED CER DIEL, 5.6PF, PORM 0.5PF, 100VDC (72982) 913-1098-130 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G4R7C100V	3	CAPACITOR,FIXED CER DIEL, 4.7PF, PORM 0.25PF, 100VDC (72982) 913-1098-210 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G3R9C100V	3	CAPACITOR,FIXED CER DIEL, 3.9PF, PORM 0.25PF, 100VDC (72982) 913-1098-220 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G3R3C100V	3	CAPACITOR,FIXED CER DIEL, 3.3PF, PORM 0.25PF, 100VDC (72982) 913-1098-230 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G030C200V	3	CAPACITOR,FIXED CER DIEL, 3PF, PORM 0.25PF, 200VDC (72982) 913-1098-340 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G2R7C100V	3	CAPACITOR,FIXED CER DIEL, 2.7PF, PORM 0.25PF, 100VDC (72982) 913-1098-240 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G2R2C100V	3	CAPACITOR,FIXED CER DIEL, 2.2PF, PORM 0.25PF, 100VDC (72982) 913-1098-250 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G1R8C100V	3	CAPACITOR,FIXED CER DIEL, 1.8PF, PORM 0.25PF, 100VDC (72982) 913-1098-260 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G1R5C100V	3	CAPACITOR,FIXED CER DIEL, 1.5PF, PORM 0.25PF, 100VDC (72982) 913-1098-270 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G1R2C100V	3	CAPACITOR,FIXED CER DIEL, 1.2PF, PORM 0.25PF, 100VDC (72982) 913-1098-280 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G010C200V	3	CAPACITOR,FIXED CER DIEL, 1PF, PORM 0.25PF, 200VDC (72982) 913-1098-330 A5A3A1C4 (TEST SELECT)	AR	
64	8111B115-C0K0-568B	3	CAPACITOR,FIXED CER DIEL, 0.56PF, PORM 0.1PF, 100VDC (59660) 913-1098-310 A5A3A1C4 (TEST SELECT)	AR	
64	SR151A101JAA	3	CAPACITOR,FIXED CER DIEL, 100PF, 5%, 100VDC (96095) 913-3281-280 A5A3A1C4 (TEST SELECT)	AR	
64	DR20CB910J	3	CAPACITOR,FIXED CER DIEL, 91PF, 5%, 100VDC (93958) 913-3401-110 A5A3A1C4 (TEST SELECT)	AR	
64	SR151A820JAA	3	CAPACITOR,FIXED CER DIEL, 82PF, 10%, 100VDC (96095) 913-3281-410 A5A3A1C4 (TEST SELECT)	AR	
64	C82A750J	3	CAPACITOR,FIXED CER DIEL, 75PF, 5%, 100VDC (59942) 913-3401-080 A5A3A1C4 (TEST SELECT)	AR	
64	C82A680J	3	CAPACITOR,FIXED CER DIEL, 68PF, 5%, 100VDC (59942) 913-3401-090 A5A3A1C4 (TEST SELECT)	AR	
64	C82A560J	3	CAPACITOR,FIXED CER DIEL, 56PF, 5%, 100VDC (59942) 913-3401-070 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G470JPPV	3	CAPACITOR,FIXED CER DIEL, 47PF, 5%, 100VDC (72982) 913-1098-640 A5A3A1C4 (TEST SELECT)	AR	
64	C81A430J2	3	CAPACITOR,FIXED CER DIEL, 43PF, 5%, 100VDC (59942) 913-3401-060 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G390JPPV	3	CAPACITOR,FIXED CER DIEL, 39PF, 5%, 200VDC (72982) 913-1098-630 A5A3A1C4 (TEST SELECT)	AR	
64	DR15CB360J	3	CAPACITOR,FIXED CER DIEL, 36PF, 5%, 100VDC (93958) 913-3401-120 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G330JPPV	3	CAPACITOR,FIXED CER DIEL, 33PF, 5%, 200VDC (72982) 913-1098-620 A5A3A1C4 (TEST SELECT)	AR	
64	C81A300J2	3	CAPACITOR,FIXED CER DIEL, 30PF, 5%, 100VDC (59942) 913-3401-050 A5A3A1C4 (TEST SELECT)	AR	
64	C81A270J2	3	CAPACITOR,FIXED CER DIEL, 27PF, 5%, 100VDC (59942) 913-3401-040 A5A3A1C4 (TEST SELECT)	AR	
64	RPE110C0G9R1D100V	3	CAPACITOR,FIXED CER DIEL, 9.1PF, PORM 0.5PF, 100VDC (72982) 913-1098-170 A5A3A1C4 (TEST SELECT)	AR	
64	C81A180J2	3	CAPACITOR,FIXED CER DIEL, 18PF, 5%, 100VDC (59942) 913-3401-010 A5A3A1C4 (TEST SELECT)	AR	
64	C81A220J2	3	CAPACITOR,FIXED CER DIEL, 22PF, 5%, 100VDC (59942) 913-3401-100 A5A3A1C4 (TEST SELECT)	AR	
65	BB409T	3	SEMICOND DEVICE (25088) 922-6106-020 A5A3A1CR1	1	
66	8121M050Z5U103M	3	CAPACITOR,FIXED CER DIEL, 0.01UF, 20%, 50V (72982) 913-3279-110 A5A3A1C5	1	
67	RN55D1002F	3	RESISTOR,FIXED FILM, 10K, 1%, 1/8W (81349) 705-1044-000 A5A3A1R3	1	
68	289-7392-010	3	CRYSTAL UNIT,QTZ 10MHZ (00136) A5A3A1Y1	1	
69	372-2601-026	3	CONTACT,ELECTRICAL	4	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-8-70	652-6624-001	2	SPRING, HEAT TRANSFER	1	
71	51TF4-1-5PCT	2	RESISTOR,THERMAL 100K, 5%, 1.4MW (50056) 714-2852-010 A5A3RT1	1	
71A	652-7158-005	2	PAD, PROTECTIVE	1	
72	TIP125	2	TRANSISTOR (01295) 352-1082-020 A5A3Q3	1	
	MS51957-13	2	SCREW,MACHINE STL, 4-40 X 1/4 (96906) 343-0133-000 (AP)	1	
	MS35338-135	2	WASHER,LOCK SST, 0.115 ID X 0.209 OD (96906) 310-0279-000 (AP)	1	
	4007-4HOTTINNED	2	TERMINAL,LUG (77147) 304-0015-000 (AP)	1	
73	652-6622-001	2	STRIP,COPPER	1	
74	WA-141	2	FUSE,THERMAL CUTOFF (14604) 264-0971-010 A5A3F1	1	
75	TIP125	2	TRANSISTOR (01295) 352-1082-020 A5A3Q4	1	
	MS51957-13	2	SCREW,MACHINE STL, 4-40 X 1/4 (96906) 343-0133-000 (AP)	1	
	MS35338-135	2	WASHER,LOCK SST, 0.115 ID X 0.209 OD (96906) 310-0279-000 (AP)	1	
76	652-7158-001	2	PAD, PROTECTIVE-SIDE	2	
77	652-7158-002	2	PAD, PROTECTIVE-END	2	
78	652-7158-004	2	PAD, PROTECTIVE-BOT	1	
79	652-6630-001	2	HOUSING	1	
	685-0303-001	2	INSULATOR (AP)	2	
80	652-6627-001	2	CASE	1	

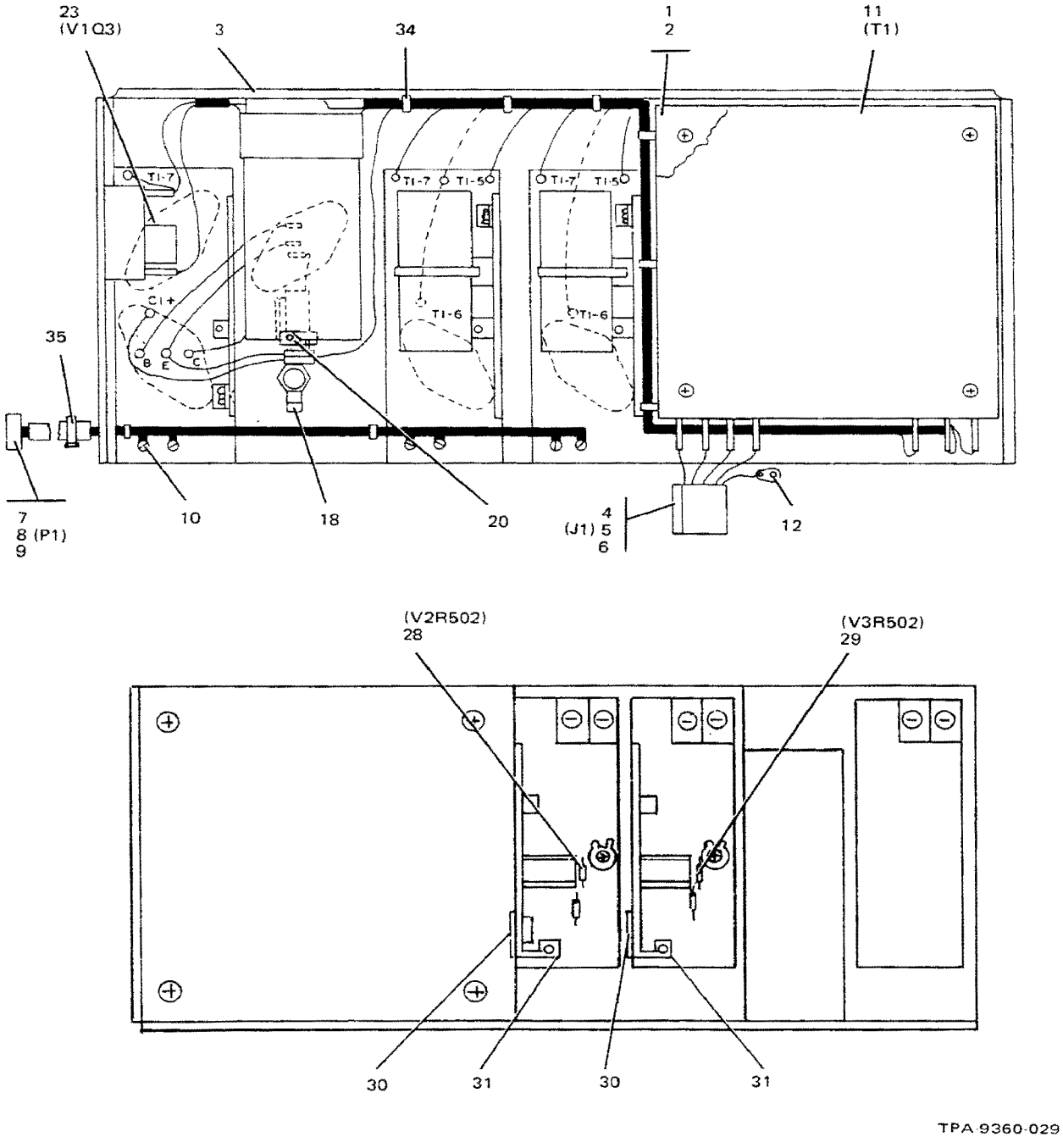


Figure 6-9 (Sheet 1 of 2) Power Supply A4, Parts Location Diagram

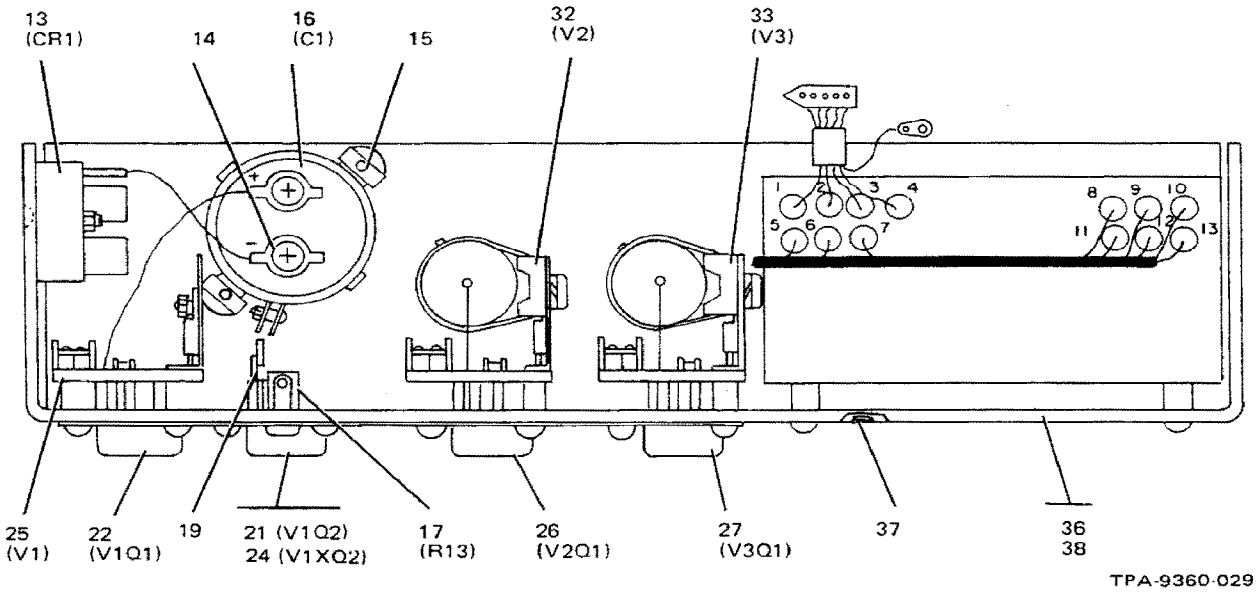


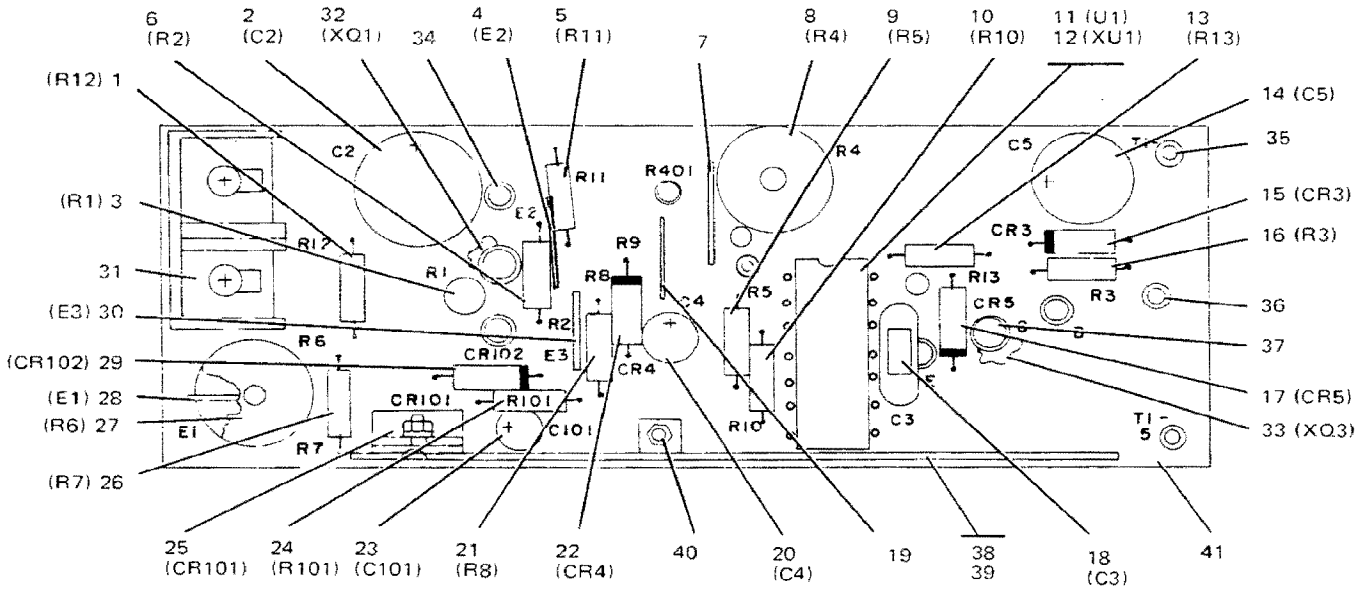
Figure 6-9 (Sheet 2 of 2) Power Supply A4, Parts Location Diagram

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-9-	652-6602-002	1	POWER SUPPLY A4 (SEE FIG 6-1-14 FOR NHA)	REF	
1	652-6607-001	2	SHIELD,TRANSFORMER	1	
	MS51957-41	2	SCREW,MACHINE SST, 8-32 X 1/4 (96906) 343-0185-000 (AP)	4	
	MS35338-137	2	WASHER,LOCK CRES, 0.171 ID X 0.293 OD (96906) 310-0072-000 (AP)	4	
2	652-6608-001	2	INSULATOR,SHIELD	1	
3	10890XA	2	POWER SUPPLY (00417) 270-0074-010	1	
4	C16271-1	3	CABLE ASSY,INPUT, 10656XA	1	
5	3641341	4	CONNECTOR,PLUG,5 PIN A4J1	1	
6	3641350	4	CONNECTOR PIN,PLUG 02-06-2130	5	
7	316271-2	3	CABLE ASSY,OUTPUT, 10656XA	1	
8	3641007	4	CONNECTOR,RECPTLE. 20 PIN A4P1	1	
9	3640001	4	CONNECTOR,PIN SOCKET	16	
10	3941108	4	TERMINAL,LUG, FV2216-4	10	
11	3602702	3	TRANSFORMER,POWER, R6029 A4T1	1	
	3705200	3	SCREW,MACH, 8-32 X 1/2 (AP)	4	
	3841031	3	LOCK WASHER, NO.8, SPLIT (AP)	4	
12	3943101	3	TERMINAL,LUG,1410-6 (83330)	1	
13	3150054	3	RECTIFIER,CT,PBCN20 A4CR1	1	
	3820050	3	NUT,HEX,8-32,5/16AF (AP)	1	
	3841031	3	LOCK WASHER, NO.8, SPLIT (AP)	1	
	3705366	3	SCREW,MACH, 8-32 X 7/8 (AP)	1	
14	3941116	3	TERMINAL,LUG, FV2216-5	4	
	3706109	3	SCREW,MACH,10-32 X 5/16 (AP)	2	
15	3450040	3	CAPACITOR MTG BRKT	1	
	3820050	3	NUT,HEX,8-32,5/16AF (AP)	1	
	3841031	3	LOCK WASHER,NO.8, SPLIT (AP)	1	
	3705307	3	SCREW,MACH, 8-32 X 1/4 (AP)	1	
	3810046	3	SPEED NUT, C7888-632-4 (AP)	1	
	3704050	3	SCREW,MACH, 6-32 X 3/8 (AP)	1	
16	3360351	3	CAPACITOR,30,000UF, 15V A4C1	1	
17	3530019	3	RESISTOR,0.1 OHM, 10%,5W (00417) A4R13	1	
18	3943101	3	TERMINAL,LUG,1410-6	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-9-	3820050	3	NUT,HEX,8-32,5/16AF (AP)	1	
	3841031	3	LOCK WASHER, NO.8, SPLIT (AP)	1	
	3705153	3	SCREW,MACH, 8-32 X 3/8 (AP)	1	
19	3630021	3	TERMINAL STRIP, 2 LUGS (97913)	1	
20	3861058	3	RIVET,SEMITUBULAR, S-511 X 7/32 (90925)	1	
21	3210138	3	TRANSISTOR,2N3055 A4V1Q2	1	
22	3210138	3	TRANSISTOR,2N3055 A4V1Q1	1	
23	3210103	3	TRANSISTOR,MJ2955 (00417) A4V1Q3	1	
	3690032	3	SCREW,TAP,6-32 X 7/16 (AP FOR 21,22,23)	6	
	3850072	3	WASHER,MICA,734 (08530) (AP FOR 21,22,23)	3	
24	3320049	3	TRANSISTOR,SOCKET, PTS-2B-2D (22753) A4V1XQ2	1	
25	P51650-601	3	+5 VOLT POWER SUPPLY A4V1 (SEE FIG 6-10)	1	
26	3210138	3	TRANSISTOR,2N3055 A4V2Q1	1	
27	3210138	3	TRANSISTOR,2N3055 A4V3Q1	1	
	3690032	3	SCREW,TAP,6-32 X 7/16 (AP FOR 26,27)	4	
	3850072	3	WASHER,MICA,734 (08530) (AP FOR 26,27)	2	
28	RCR07G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/4W (81349) 745-0773-000 A4V2R502 (MOUNTS TO A4V2U1)	1	
29	RCR07G472KS	2	RESISTOR,FIXED CMPSN, 4.7K, 10%, 1/4W (81349) 745-0773-000 A4V3R502 (MOUNTS TO A4V3U1)	1	
30	MS51959-14	2	SCREW,MACHINE CRES, 0.112-40 X 0.31 (96906) 342-0045-000 (REPLACES EXISTING SCREW,P/N 3702006, MOUNTING A4V2Q2/A4V3Q2)	1	
31	751-0586-001	2	BRACKET, ANGLE	2	
	MS51957-12	2	SCREW,MACHINE STL, 4-40 X 3/16 (96906) 343-0132-000 (AP)	2	
	310-0278-000	2	WASHER,LOCK SST, 0.115 ID X 0.202 OD (70318) (AP)	2	
32	P51649-601	3	-15 VOLT POWER SUPPLY A4V2 (SEE FIG 6-11)	1	
33	P51649-601	3	+15 VOLT POWER SUPPLY A4V3 (SEE FIG 6-11)	1	
	3701107	3	SCREW,4-40 X 5/16 (AP FOR 28,29)	2	
34	3651011	3	CABLE.TIE,SST-1.5M (06383)	8	
35	3651029	3	CABLE TIE,SST-2S (06383)	1	
36	A16526-1	3	CHASSIS ASSY	1	
37	3821021	4	NUT,SELF-CLINCH, F-832-1	4	
38	A16525-1	4	CHASSIS	1	



TPA-9396-019

Figure 6-10 +5-Volt Power Supply A4V1, Parts Location Diagram

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-10-	P51650-601	1	+5 VOLT POWER SUPPLY A4V1 (SEE FIG 6-9-25 FOR NHA)	REF	
1	3490033	2	RESISTOR,4.7 OHM, 5%,1/4W (00417) A4V1R12	1	
2	3380581	2	CAPACITOR,900UF,12V A4V1C2	1	
3	3530019	2	RESISTOR,0.1 OHM, 10%, 5W (00417) A4V1R1	1	
4	3661008	2	JUMPER,.3 X .25,B22 A4V1E2	1	
5	3490033	2	RESISTOR,4.7 OHM, 5%, 1/4W (00417) A4V1R11	1	
6	3490084	2	RESISTOR,22 OHM, 5%, 1/4W (00417) A4V1R2	1	
7	3661601	2	JUMPER,.4 X .25,B22 (IN PLACE OF A4V1R401)	1	
8	3580091	2	POT,2.5K OHM, FLAT, PT10V (00417) A4V1R4	1	
9	3490505	2	RESISTOR,8.2K OHM, 5%,1/4W (00417) A4V1R5	1	
10	3490998	2	RESISTOR,4.3K OHM, 5%,1/4W (00417) A4V1R10	1	
11	3000028	2	INTEGRATED CIRCUIT, 14 PIN, UA723CN (00417) A4V1U1	1	
12	3320022	2	SOCKET,IC,14 PIN, C831402 (82647) A4V1XU1	1	
13	3490033	2	RESISTOR,4.7 OHM, 5%, 1/4W (00417) A4V1R13	1	
14	3380599	2	CAPACITOR,100UF,20V A4V1C5	1	
15	3040011	2	D015 RECT,1.5A, 1N5391 A4V1CR3	1	
16	3490262	2	RESISTOR,680 OHM, 5%, 1/4W (00417) A4V1R3	1	
17	3040011	2	D015 RECT, 1.5A, 1N5391 A4V1CR5	1	
18	3440290	2	CAPACITOR,0.01UF, 100V A4V1C3	1	
19	3661601	2	JUMPER,.4 X .25,B22 (IN PLACE OF A4V1R9)	1	
20	3390047	2	CAPACITOR,4.7UF,35V A4V1C4	1	
21	3490181	2	RESISTOR,220 OHM, 5%,1/4W (00417) A4V1R8	1	
22	3040011	2	D015 RECT, 1.5A, 1N5391 A4V1CR4	1	
23	3390047	2	CAPACITOR,4.7UF,35V A4V1C101	1	
24	3490238	2	RESISTOR,470 OHM, 5%,1/4W (00417) A4V1R101	1	
25	3190013	2	T0220 SCR, 8A,PLAS, MCR68-2 (00417) A4V1CR101	1	
	3820025	2	NUT,HEX, 4-40,3/16 (AP)	1	
	3840018	2	LOCK WASHER,NO.4, INT SZP (AP)	1	
	3702006	2	SCREW,MACH,4-40 X 3/8 (AP)	1	
	3831019	2	WASHER,SHOULDER NO.4-3 (AP)	1	
	3850102	2	WASHER,MICA, SK-59-130 (AP)	1	
26	3490998	2	RESISTOR,4.3K OHM, 5%,1/4W (00417) A4V1R7	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-10-27	3580091	2	POT,2.5K OHM,FLAT, PT10V (00417) A4V1R6	1	
28	3661105	2	JUMPER,.3 X .25,T22 A4V1E1	1	
29	3270017	2	D041 ZEN,6.2V,5%, 1N4735A (00417) A4V1CR102	1	
30	3661008	2	JUMPER,.3 X .25,B22 A4V1E3	1	
31	3620077	2	TERMINAL BOARD,20A, 72502-C-49	1	
32	3320057	2	SOCKET,TRANSISTOR, PTS-2B-PC (22753) A4V1XQ1	1	
33	3320057	2	SOCKET,TRANSISTOR, PTS-2B-PC A4V1XQ3	1	
34	3862046	2	EYELET,S-5867-CU068 (07707)	4	
35	3943124	2	TERMINAL,BOTTOM,146	2	
36	3862054	2	EYELET,S-5931-CU068 (07707)	12	
37	3862062	2	EYELET,S-5935-CU068 (07707)	2	
38	A15452-1	2	BRACKET,HEAT SINK	1	
39	A16475-3	2	INSULATOR,EDGE	1	
40	3861058	2	RIVET,SEMITUBULAR, S-511 X 7/32 (90925)	1	
41	C15444-1	2	PC BOARD	1	

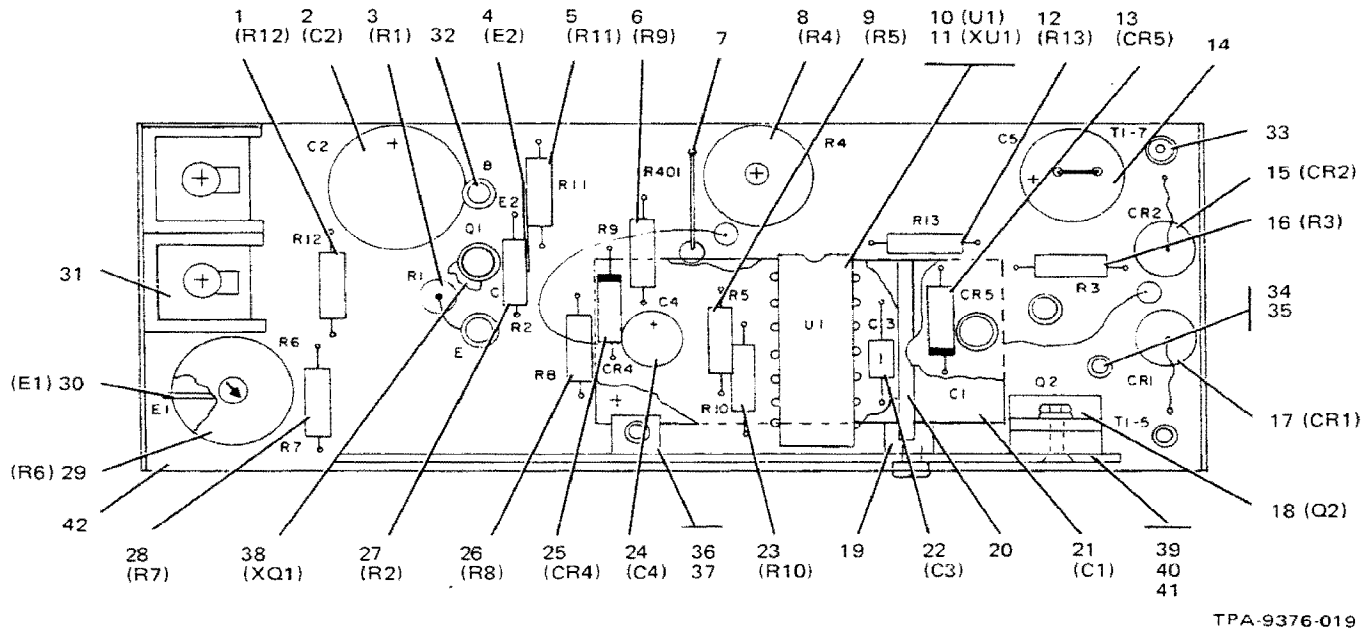


Figure 6-11 ±15-Volt Power Supply A4V2, A4V3, Parts Location Diagram

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDEX	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-11-	P51649-601	1	-15 VOLT POWER SUPPLY A4V2 (SEE FIG 6-9-32 FOR NHA)	REF	
	P51649-601	1	+15 VOLT POWER SUPPLY A4V3 (SEE FIG 6-9-33 FOR NHA)	REF	
1	3490033	2	RESISTOR,4.7 OHM, 5%,1/4W (00417) A4V2R12 A4V3R12	1	
2	3380572	2	CAPACITOR,270UF,25V A4V2C2 A4V3C2	1	
3	3510042	2	RESISTOR,0.27 OHM, 10%, 2W, BWH (00417) A4V2R1 A4V3R1	1	
4	3661008	2	JUMPER,.3 X .25,B22 A4V2E2 A4V3E2	1	
5	3490033	2	RESISTOR,4.7 OHM, 5%, 1/4W (00417) A4V2R11 A4V3R11	1	
6	3490475	2	RESISTOR,6.2K OHM, 5%, 1/4W (00417) A4V2R9 A4V3R9	1	
7	3661601	2	JUMPER,.4 X .25,B22 (IN PLACE OF A4V2R401,A4V3R401)	1	
8	3580091	2	POT,2.5K OHM,FLAT, PT10V (00417) A4V2R4 A4V3R4	1	
9	3490521	2	RESISTOR, 10K OHM, 5%,1/4W (00417) A4V2R5 A4V3R5	1	
10	3000028	2	INTEGRATED CIRCUIT, 14 PIN,UA723CN (00417) A4V2U1 A4V3U1	1	
11	3320022	2	SOCKET,IC, 14 PIN, C831402 (82647) A4V2XU1 A4V3XU1	1	
12	3490033	2	RESISTOR, 4.7 OHM, 5%,1/4W (00417) A4V2R13 A4V3R13	1	
13	3040011	2	D015 RECT,1.5A, 1N5391 A4V2CR5 A4V3CR5	1	
14	3660401	2	JUMPER,.187 X .25, B22 (IN PLACE OF A4V2C5,A4V3C5)	1	
15	3050050	2	D027 RECT,3.0A, 1N5404 (00417) A4V2CR2 A4V3CR2	1	
16	3490211	2	RESISTOR,330 OHM, 5%, 1/4W (00417) A4V2R3 A4V3R3	1	
17	3050050	2	D027 RECT,3.0A, 1N5404 (00417) A4V2CR1 A4V3CR1	1	
18	3260062	2	T0220 TRANSISTOR, PNP,4A,BD240 A4V2Q2 A4V3Q2	1	
	3820025	2	NUT,HEX, 4-40,3/16 (AP)	1	
	3840018	2	LOCK WASHER, NO.4, INT SZP (AP)	1	
	3702006	2	SCREW,MACH, 4-40 X 3/8 (AP) (REPLACE WITH ITEM 30 OF FIG 6-10)	1	
	3831019	2	WASHER,SHOULDER NO.4-3 (AP)	1	
	3850102	2	WASHER,MICA, SK-59-130 (AP)	1	
19	3450121	2	CAPACITOR MTG BASE, TM-2S8 (06383)	1	
	3820050	2	NUT,HEX, 8-32, 5/16AF (AP)	1	
	3841031	2	LOCK WASHER, NO.8, SPLIT (AP)	1	
	3705056	2	SCREW,MACH, 8-32 X 1/4 (AP)	1	
20	3651029	2	CABLE TIE,SST-2S (06383)	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
6-11-21	3370330	2	CAPACITOR, 4700UF, 50V A4V2C1 A4V3C1	1	
22	3440290	2	CAPACITOR,.01UF, 100V A4V2C3 A4V3C3	1	
23	3490998	2	RESISTOR, 4.3K OHM, 5%,1/4W (00417) A4V2R10 A4V3R10	1	
24	3390047	2	CAPACITOR, 4.7UF, 35V A4V2C4 A4V3C4	1	
25	3040011	2	D015 RECT, 1.5A, 1N5391 A4V2CR4 A4V3CR4	1	
26	3490327	2	RESISTOR, 1.2K OHM, 5%,1/4W (00417) A4V2R8 A4V3R8	1	
27	3490131	2	RESISTOR, 68 OHM, 5%, 1/4W (00417) A4V2R2 A4V3R2	1	
28	3490998	2	RESISTOR, 4.3K OHM, 5%,1/4W (00417) A4V2R7 A4V3R7	1	
29	3580091	2	POT,2.5K OHM,FLAT, PT10V (00417) A4V2R6 A4V3R6	1	
30	3661105	2	JUMPER,.3 X .25,T22 A4V2E1 A4V3E1	1	
31	3620077	2	TERMINAL BOARD,20A, 72502-C-49	1	
32	3862046	2	EYELET,S-5867-CU068 (07707)	4	
33	3943124	2	TERMINAL,BOTTOM,146	2	
34	3871185	2	SWAGE STDOFF, 3/16, 5/16 X 4-40	1	
35	3862062	2	EYELET,S-5935-CU068 (07707)	1	
36	3862054	2	EYELET,S-5931-CU068 (07707)	10	
37	3861058	2	RIVET,SEMITUBULAR, S-511 X 7/32 (90925)	1	
38	3320057	2	SOCKET,TRANSISTOR, PTS-2B-PC (22753) A4V2XQ1 A4V3XQ1	1	
39	A15462-1	2	BRACKET,HEATSINK	1	
40	A16475-1	2	INSULATOR,EDGE	1	
41	A16475-2	2	INSULATOR,EDGE	1	
42	C15444-1	2	PC BOARD	1	

6.3 NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
A-595	6-7-461	1
AAAS-30W-SS	6-7-94A	3
ADC0808CCJ	6-4-315	1
AD590IH	6-3-39	1
AD7545CQ	6-5-390	
	6-5-398	2
AM26LS30/BEA	6-4-248	1
AN961-4T	6-6-431	
	6-6-450	4
A1039BRSHT	6-7-519	2
A15452-1	6-10-38	1
A15462-1	6-11-39	1
A16475-1	6-11-40	1
A16475-2	6-11-41	1
A16475-3	6-10-39	1
A16525-1	6-9-38	1
A16526-1	6-9-36	1
A2WP	6-3-95	1
A210	6-5-491	
	6-6-412	
	6-6-437	
	6-6-497	
	6-6-498	
	6-7-213	
	6-7-252	7
BB409T	6-7-469	
	6-7-470	
	6-7-471	
	6-7-473	
	6-7-474	
	6-7-475	
	6-7-511	
	6-7-512	
	6-7-530	
	6-7-531	
	6-7-532	
	6-7-533	
	6-7-535	
	6-7-536	
	6-7-537	
	6-7-538	
	6-7-539	
	6-7-540	
	6-8-65	19
BP3132-3	6-6-383	
	6-6-384	2
BP3132-5	6-6-349	
	6-6-352	
	6-7-215	
	6-7-251	4
BP3132-6	6-7-201	1
BP3132-7	6-6-382	
	6-7-279	2
BP3132-8	6-7-245	
	6-7-273	
	6-7-276	3
B0411H-022	6-7-379	1
B1-C90/20	6-6-462	1
B445-1	6-6-368	
	6-6-369	2
B445-2	6-6-365	
	6-6-366	2
B445-3	6-6-356	
	6-6-360	2
B445-4	6-6-358	
	6-6-359	2
B445-5	6-6-355	1
CA3081	6-4-224	
	6-4-228	
	6-4-280	3
CCR05CG102JM	6-7-31	1
CCR05CG471JM	6-7-34	1
CD4006BF	6-5-92	1
CD4015BF	6-5-67	
	6-5-70	
	6-5-392	
	6-5-396	4
CD4023BF	6-3-57	1
CD4047BF	6-3-64	
	6-4-313	2
CD4049UBF	6-6-510	1
CD4066BF	6-5-412	1
CD4068BF	6-3-78	1
CD4094BMJ	6-5-410	1
CD4520BMJ	6-5-82	1
CD54HC138F	6-3-74	1
CD54HC244F	6-3-77	
	6-3-93	2
CK05BX103K	6-5-100A	
	6-6-65	
	6-6-74A	
	6-6-539	
	6-7-79	
	6-7-100	
	6-7-101	
	6-7-159	8
CK05BX271K	6-7-98	
	6-7-102	
	6-7-136	3
CK05BX471K	6-7-529	1
CK06BX474K	6-5-294	
	6-5-300	
	6-5-301	
	6-5-315	
	6-5-411	
	6-6-126	6
CK06BX684K	6-8-26	1
CK12BX330K	6-5-102	
	6-5-106	2
CK14BR563K	6-5-359	
	6-5-472	2
CK62AW472M	6-1-38	1
CK63AW103M	6-2-2	1
CL-440-1ZI	6-8-2	4
CMR04F101JPDL	6-6-43	1
CM04FD121J03	6-7-89	1
CM04FD131J03	6-7-91	1
CM04FD151J03	6-7-94	1
CRC-1-130	6-7-57	
	6-7-58	2
CRC-1-140	6-7-93	1
CRC-1-180	6-7-6	
	6-7-13	
	6-7-15	3
CRC-1-230	6-7-59	1

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
CRES0.138-32X1.1 25IN	6-1-8	6
CS7395	6-7-381	
	6-7-455	2
CS7402	6-8-9	1
CS7411	6-7-451	1
C15444-1	6-10-41	
	6-11-42	2
C16271-1	6-9-4	1
C203-03	6-3-49	1
C222-03	6-3-13	1
C81A180J2	6-8-48	AR
	6-8-64	AR
C81A220J2	6-8-48	AR
	6-8-64	AR
C81A270J2	6-8-48	AR
	6-8-51	1
	6-8-64	AR
C81A300J2	6-8-48	AR
	6-8-64	AR
C81A430J2	6-8-48	AR
	6-8-64	AR
C82A560J	6-8-48	AR
	6-8-64	AR
C82A680J	6-8-48	AR
	6-8-64	AR
C82A750J	6-8-48	AR
	6-8-64	AR
DBL SHLD RG-178B /U	6-1-45	AR
	6-1-49	AR
	6-1-53	AR
	6-1-57	AR
	6-6-484	AR
	6-6-499	AR
	6-7-519	AR
DCSF-37P	6-4-257	1
DCSF-37S	6-4-247	1
DILB16P-108	6-5-40	4
DILB20P-108	6-5-33	
	6-5-391	
	6-5-391	5
DM54LS74J	6-4-295	
	6-4-318	
	6-5-21	
	6-5-24	
	6-5-44	
	6-5-46	
	6-5-48	
	6-5-52	
	6-5-54	
	6-5-55	
	6-5-57	
	6-5-66	
	6-5-68	
	6-5-69	
	6-5-75	
	6-5-79	
	6-5-91	
	6-7-487	
	6-7-490	19
DPG22BY2R2DG	6-7-74	
	6-7-160	2
DPG22BY3R3DG	6-7-96	1
DPG22BY6R8DG	6-7-137	1
DPG23BY103JG	6-6-18	
	6-6-59	2
DR15CB360J	6-8-48	AR
	6-8-64	AR
DR20CB331J	6-8-53	1
DR20CB910J	6-8-48	AR
	6-8-64	AR
DS78LS120J	6-4-253	1
D1LBQ24P-101	6-4-211	
	6-4-221	
	6-5-385	3
D1LBQ28P-101	6-4-219	
	6-4-316	
	6-5-23	
	6-5-26	
	6-5-29	
	6-5-51	8
D7225G	6-3-12	
	6-3-27	
	6-3-48	3
ECEB1VL471SR	6-5-317	
	6-5-330	2
ECI-6102-1-10-3	6-5-267	4
EEC-F5R5U104	6-4-242	1
EP1685	6-7-552	2
EP1686	6-8-5	6
FN4595	6-6-530	
	6-6-534	2
FN4721	6-7-281	1
FSD1301	6-2-7	1
HKPH	6-1-31	1
JB1-02	6-1-33	1
J0-500X0-125PVC2 2	6-4-61	1
KN-5700B(PR)	6-2-6	2
KN-90869F	6-2-4	1
LD8251A	6-4-285	1
LM117H	6-8-39	1
LM120K-5.0	6-5-480	1
LM124J	6-8-23	1
LM148J	6-5-399	
	6-5-407	
	6-5-416	
	6-5-434	
	6-5-435	
	6-5-450	
	6-5-457	
	6-5-460	
	6-5-464	
	6-5-465	
	6-5-476	
	6-5-479	12
LM218H	6-5-387	
	6-5-393	2
LM239J	6-4-304	
	6-7-522	
	6-7-524	3
LM258J	6-3-40	1
MBL80188-CV	6-4-299	1
MB8416-20P	6-4-210	1
MC12015P	6-7-477	1
MC14070BAL	6-5-90	1

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
MC1408L-8	6-4-305	
	6-5-61	
	6-5-422	3
MC145157P	6-7-518	1
MC145158P	6-7-478	1
MC14584BAL	6-3-73	1
MC1558U	6-4-306	
	6-5-492	
	6-6-513	
	6-6-523	4
MC1590G	6-8-11	1
MDX-2	6-1-30	2
MD8255A/B	6-4-287	1
MM54C374J	6-3-75	
	6-3-76	2
MPD77P20	6-5-50	1
MPD7720	6-5-22	
	6-5-25	
	6-5-28	3
MRF517	6-6-451	
	6-6-452	
	6-6-490	
	6-6-501	4
MRF904	6-6-445	
	6-6-446	
	6-6-447	
	6-6-448	4
MS124695	6-1-84	2
MS15795-802	6-6-544	
	6-7-5	
	6-7-558	
	6-7-561	18
MS15795-803	6-7-233	2
MS15795-805	6-2-11	
	6-2-12	
	6-2-14	
	6-2-16	
	6-2-18	
	6-2-20	13
MS16535-23	6-4-298	2
MS18130-1	6-4-74	
	6-4-78	
	6-4-87	
	6-5-176	
	6-5-181	5
MS18130-10	6-5-174	
	6-5-178	
	6-5-488	
	6-8-58	4
MS18130-12	6-5-487	1
MS18130-3	6-1-35	
	6-1-36	
	6-1-37	3
MS21044C04	6-6-431	
	6-6-450	4
MS21266-1N	6-1-16	AR
MS21266-2N	6-1-9	AR
MS35333-70	6-5-447	
	6-5-480	3
MS35338-134	6-2-8	
	6-6-414	
	6-6-544	
	6-7-5	
	6-7-558	
MS35338-134	6-7-561	
	6-8-46	26
MS35338-135	6-1-26	
	6-1-63	
	6-1-71	
	6-7-233	
	6-8-7	
	6-8-72	
	6-8-75	17
MS35338-136	6-1-8	
	6-1-10	
	6-1-17	
	6-1-23	
	6-1-34	
	6-1-39	
	6-1-40	
	6-1-72	
	6-2-11	
	6-2-12	
	6-2-14	
	6-2-16	
	6-2-18	
	6-2-20	
	6-3-95	
	6-6-3	
	6-6-5	73
MS35338-137	6-1-14	
	6-9-1	8
MS35338-138	6-1-6	4
MS35338-139	6-1-29	2
MS35338-97	6-6-545	
	6-7-557	17
MS35431-3	6-5-480	1
MS35489-4	6-8-42	1
MS35649-224	6-2-8	
	6-6-414	4
MS35649-244	6-5-447	
	6-5-480	3
MS51957-12	6-9-31	2
MS51957-13	6-7-391	
	6-8-72	
	6-8-75	6
MS51957-15	6-1-26	
	6-1-63	
	6-5-447	
	6-7-233	6
MS51957-16	6-8-7	4
MS51957-17	6-5-480	2
MS51957-2	6-7-5	
	6-7-558	10
MS51957-26	6-1-34	14
MS51957-27	6-6-3	
	6-6-5	4
MS51957-28	6-1-5	
	6-1-10	
	6-1-17	
	6-1-23	
	6-1-39	
	6-1-40	
	6-1-88	
	6-3-95	76
MS51957-3	6-6-544	
	6-7-561	
	6-8-1	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
MS51957-3	6-8-46	16
MS51957-3B	6-2-8	2
MS51957-33	6-1-34	4
MS51957-4	6-6-414	2
MS51957-41	6-9-1	4
MS51957-47	6-1-14	4
MS51957-63	6-1-6	4
MS51957-83	6-1-29	1
MS51959-13	6-1-63	
	6-1-71	7
MS51959-14	6-9-30	1
MS51959-26	6-1-66	4
MS51959-28	6-1-72	6
MS75083-04	6-7-210	1
MS75083-05	6-7-240	1
MS75083-09	6-7-221	1
MS75083-1	6-7-239	
	6-7-259	
	6-7-262	3
MS75083-11	6-7-211	1
MS75083-13	6-7-218	1
MS75083-2	6-6-341	
	6-6-343	2
MS75084-01	6-7-203	AR
	6-7-216	1
MS75084-02	6-7-203	AR
MS75084-03	6-7-203	AR
MS75084-04	6-7-188	
	6-7-189	
	6-7-203	AR
	6-7-217	
	6-7-220	
	6-7-224	
	6-7-258	
	6-7-271	
	6-7-272	8
MS75084-05	6-7-203	AR
MS75084-06	6-7-203	AR
MS75084-07	6-4-2	
	6-4-3	
	6-4-4	
	6-4-5	
	6-4-6	
	6-4-7	
	6-4-8	
	6-4-9	
	6-4-10	
	6-4-11	
	6-4-31	
	6-4-32	
	6-4-33	
	6-4-34	
	6-4-36	
	6-4-37	
	6-4-38	
	6-4-39	
	6-4-40	
	6-4-41	
	6-4-42	
	6-4-43	
	6-4-44	
	6-4-45	
	6-4-46	
	6-4-47	

PART NUMBER	FIG-ITEM	TTL REQ
MS75084-07	6-4-48	
	6-4-49	
	6-4-50	
	6-4-51	
	6-4-52	
	6-4-53	
	6-4-54	
	6-4-55	
	6-4-56	
	6-4-104	
	6-4-105	
	6-4-106	
	6-4-107	
	6-4-108	
	6-4-109	
	6-4-110	
	6-4-111	
	6-4-112	
	6-4-113	45
MS75084-12	6-5-157	
	6-5-420	2
MS75084-16	6-5-379	
	6-5-381	
	6-5-388	
	6-5-494	
	6-5-495	5
MS75085-01	6-5-184	
	6-6-325	
	6-6-330	
	6-6-332	
	6-6-351	
	6-6-353	
	6-6-373	
	6-6-387	
	6-6-388	
	6-6-389	
	6-6-390	
	6-6-391	
	6-6-392	
	6-6-393	
	6-6-395	
	6-6-409	
	6-6-411	
	6-6-416	
	6-7-185	
	6-7-192	
	6-7-206	
	6-7-219	
	6-7-222	
	6-7-223	
	6-7-228	
	6-7-234	
	6-7-238	
	6-7-243	28
MS75085-03	6-7-246	1
MS75085-05	6-7-198	
	6-7-200	2
MS75085-07	6-7-247	1
MS75088-13	6-7-236	
	6-7-237	2
MS75089-11	6-6-326	
	6-6-419	2
MS75089-13	6-6-324	
	6-6-333	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
MS75089-13	6-6-367	3
MS75089-17	6-6-361	
	6-6-362	
	6-6-363	
	6-6-364	
	6-6-371	
	6-6-372	
	6-6-408	7
MS75089-23	6-7-196	1
MS75089-8	6-6-327	
	6-6-420	2
MS75103-3	6-6-410	1
MS77068-1	6-1-69	1
MS90539-15	6-5-170	1
MV1404	6-7-486	1
MV5053	6-3-36	1
MV5453	6-4-308	1
M16878/4BFA-9	6-5-263	AR
	6-5-481	AR
	6-5-482	AR
	6-5-483	AR
M24308/26-1	6-1-25	
	6-1-25	6
M38510/11005BCB	6-8-23	1
M39003/01-2247	6-7-54	1
M39003/01-2257	6-7-19	
	6-7-48	
	6-7-50	
	6-7-55	
	6-7-103	
	6-7-147	6
M39003/01-2283	6-6-95	
	6-7-43	
	6-7-67	
	6-7-115	
	6-7-132	
	6-7-155	
	6-7-158	7
M39003/01-2289	6-6-96	
	6-7-51	
	6-7-97	
	6-7-109	
	6-7-133	
	6-7-149	6
M39003/01-2301	6-6-78	1
M39003/01-2304	6-6-62	
	6-6-111	
	6-7-7	
	6-7-52	
	6-7-53	
	6-7-60	
	6-7-148	7
M39003/01-2356	6-6-64	
	6-6-66	
	6-6-68	
	6-6-89	4
M39003/01-2418	6-8-29	1
M39012-71-0002	6-6-465	
	6-6-505	2
M39012/69-0002	6-1-43	
	6-1-47	
	6-1-51	
	6-1-55	
	6-6-491	
M39012/69-0002	6-6-500	6
M39012/95-0001	6-6-520	
	6-7-396	
	6-7-398	3
M45938/5-1	6-8-3	4
M45938/5-5	6-1-82	2
M45938/5-6	6-1-81	
	6-2-25	
	6-2-28	28
M45938/5-8	6-1-83	6
M63540/1-16C	6-2-31	9
M81E-0500	6-3-9	
	6-3-11	
	6-3-14	
	6-3-15	
	6-3-16	
	6-3-18	
	6-3-20	
	6-3-22	
	6-3-24	
	6-3-26	
	6-3-29	
	6-3-52	
	6-3-53	
	6-3-55	
	6-3-65	
	6-3-70	
	6-3-71	
	6-3-72	
	6-3-80	
	6-3-83	
	6-3-85	
	6-3-87	
	6-3-89	
	6-3-91	24
NAS620C5	6-5-447	
	6-5-480	5
NAS620C6L	6-1-8	
	6-1-10	
	6-1-17	
	6-1-23	
	6-1-34	48
NAS671C4	6-1-26	
	6-1-63	
	6-7-233	6
NAS671C6	6-1-34	
	6-1-39	
	6-1-40	
	6-1-72	
	6-2-11	
	6-2-12	
	6-2-14	
	6-2-16	
	6-2-18	
	6-2-20	
	6-3-95	27
NE15/F01-0003-00	6-2-8	1
NPBRS0.112-40X0.250IN	6-6-545	
	6-7-557	17
NPSTL.375-32X.0562X.093S	6-1-74	2

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
PC62D-200-5-SPEC 5460	6-2-5	1
P51649-601	6-9-32	
	6-9-33	2
	6-11-	REF
	6-11-	REF
P51650-601	6-9-25	1
	6-10-	REF
QQW343H24S1T	6-7-489	
	6-7-496	
	6-7-499	
	6-7-506	4
QQW343H26S1T	6-6-464	AR
	6-6-487	AR
	6-6-493	AR
RCR05G100JS	6-6-264	
	6-6-268	
	6-6-270	
	6-6-271	4
RCR05G100KS	6-7-318	
	6-7-365	
	6-7-454	3
RCR05G101KS	6-4-239	
	6-7-320	
	6-7-351	AR
	6-7-401	
	6-7-500	4
RCR05G102KS	6-7-353	
	6-7-354	
	6-7-362	
	6-7-439	4
RCR05G103KS	6-7-310	
	6-7-402	2
RCR05G104KS	6-7-323	
	6-7-399	2
RCR05G121KS	6-7-351	AR
RCR05G122KS	6-7-324	1
RCR05G150JS	6-7-367	1
RCR05G151KS	6-7-315	
	6-7-351	AR
	6-7-352	
	6-7-388	
	6-7-452	4
RCR05G153KS	6-7-311	
	6-7-404	2
RCR05G161JS	6-7-306	1
RCR05G180KS	6-7-359	1
RCR05G181KS	6-7-378	
	6-7-467	2
RCR05G182KS	6-7-368	1
RCR05G201JS	6-7-360	
	6-7-376	2
RCR05G220JS	6-6-269	1
RCR05G221KS	6-7-397	1
RCR05G222KS	6-7-304	
	6-7-308	
	6-7-313	
	6-7-333	
	6-7-409	5
RCR05G223JS	6-6-275	1
RCR05G223KS	6-7-361	1
RCR05G270KS	6-7-375	1
RCR05G271KS	6-4-231	
	6-7-321	
	6-7-372	

PART NUMBER	FIG-ITEM	TTL REQ
RCR05G271KS	6-7-382	
	6-7-446	
	6-7-447	6
RCR05G272KS	6-7-314	
	6-7-328	
	6-7-364	3
RCR05G3R3JS	6-6-33	
	6-6-163	
	6-6-274	
	6-6-276	
	6-6-277	5
RCR05G330JS	6-6-143	
	6-6-339	
	6-6-342	3
RCR05G330KS	6-7-351	AR
	6-7-450	1
RCR05G331KS	6-7-406	
	6-7-503	2
RCR05G332KS	6-7-302	1
RCR05G360JS	6-7-445	1
RCR05G390KS	6-7-351	AR
RCR05G470JS	6-6-146	1
RCR05G470KS	6-7-305	
	6-7-317	
	6-7-351	AR
RCR05G472KS	6-7-299	
	6-7-316	
	6-7-363	
	6-7-400	
	6-7-405	5
RCR05G473KS	6-7-303	
	6-7-307	
	6-7-395	3
RCR05G560KS	6-7-319	
	6-7-351	AR
	6-7-383	
	6-7-458	3
RCR05G561KS	6-7-312	
	6-7-322	2
RCR05G680KS	6-7-351	AR
RCR05G683JS	6-7-380	1
RCR05G820KS	6-7-351	AR
	6-7-453	1
RCR07G100JS	6-6-149	
	6-6-175	
	6-6-185	
	6-6-263	
	6-6-283	
	6-6-317	
	6-6-318	7
RCR07G100KS	6-5-220	
	6-5-221	
	6-5-223	
	6-5-224	
	6-5-226	
	6-5-227	
	6-5-232	
	6-5-235	
	6-5-237	
	6-5-238	
	6-5-239	
	6-5-244	
	6-5-621	
	6-7-463	14
RCR07G101JS	6-6-115	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
RCR07G101JS	6-6-165	
	6-6-178	
	6-6-179	
	6-6-186	
	6-6-211	
	6-6-219	
	6-6-234	
	6-6-243	
	6-6-336	10
RCR07G101KS	6-5-498	
	6-5-500	
	6-5-501	
	6-5-502	
	6-5-516	
	6-5-517	
	6-5-554	
	6-5-555	
	6-5-564	
	6-5-565	
	6-5-570	
	6-5-588	
	6-5-589	
	6-5-599	
	6-5-600	
	6-5-602	
	6-5-603	
	6-5-643	
	6-5-650	
	6-5-659	
	6-7-286	
	6-7-326	
	6-7-330	
	6-7-331	
	6-7-332	
	6-7-336	
	6-7-348	
	6-7-350	
	6-7-418	
	6-7-424	
	6-7-433	
	6-7-443	
	6-7-457	33
RCR07G102JS	6-6-118	
	6-6-119	
	6-6-122	
	6-6-125	
	6-6-164	
	6-6-177	
	6-6-198	
	6-6-232	
	6-6-245	
	6-6-250	
	6-6-252	
	6-6-306	
	6-6-310	
	6-6-322	
	6-6-329	
	6-6-335	
	6-6-421	17
RCR07G102KS	6-4-19	
	6-4-63	
	6-4-243	
	6-5-100	
	6-5-105	
	6-5-218	
RCR07G102KS	6-5-225	
	6-5-228	
	6-5-229	
	6-5-230	
	6-5-231	
	6-5-234	
	6-5-246	
	6-5-248	
	6-5-249	
	6-5-252	
	6-5-512	
	6-5-522	
	6-5-527	
	6-5-530	
	6-5-532	
	6-5-551	
	6-5-598	
	6-5-605	
	6-5-606	
	6-5-607	
	6-5-614	
	6-5-619	
	6-7-334	
	6-7-339	
	6-7-358	
	6-7-366	
	6-7-374	33
RCR07G103JS	6-6-127	
	6-6-147	
	6-6-152	
	6-6-155	
	6-6-159	
	6-6-222	
	6-6-229	
	6-6-246	
	6-6-297	
	6-6-298	
	6-6-300	
	6-6-301	
	6-6-331	
	6-6-422	14
RCR07G103KS	6-4-12	
	6-4-13	
	6-4-14	
	6-4-15	
	6-4-16	
	6-4-17	
	6-4-18	
	6-4-20	
	6-4-21	
	6-4-23	
	6-4-24	
	6-4-25	
	6-4-26	
	6-4-27	
	6-4-28	
	6-4-29	
	6-4-30	
	6-4-35	
	6-4-59	
	6-4-60	
	6-4-62	
	6-4-64	
	6-4-67	
	6-4-68	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
RCR07G103KS	6-4-69	
	6-4-72	
	6-4-75	
	6-4-91	
	6-4-98	
	6-4-99	
	6-4-100	
	6-4-101	
	6-4-102	
	6-4-103	
	6-4-114	
	6-5-196	
	6-5-197	
	6-5-203	
	6-5-204	
	6-5-215	
	6-5-247	
	6-5-260	
	6-5-526	
	6-5-528	
	6-5-531	
	6-5-545	
	6-5-548	
	6-5-553	
	6-5-557	
	6-5-558	
	6-5-580	
	6-5-604	
	6-5-628	
	6-5-645	
	6-7-340	
	6-7-342	
	6-7-345	57
RCR07G104JS	6-6-156	
	6-6-160	
	6-6-199	
	6-6-236	
	6-6-311	
	6-6-319	
	6-6-323	
	6-6-396	
	6-6-398	
	6-6-400	10
RCR07G104KS	6-3-58	
	6-3-59	
	6-3-60	
	6-5-534	
	6-5-561	
	6-5-627	
	6-7-309	
	6-7-410	
	6-7-414	9
RCR07G105KS	6-4-97	
	6-5-521	
	6-5-523	
	6-5-601	
	6-5-615	
	6-7-407	6
RCR07G121JS	6-6-123	
	6-6-404	2
RCR07G122JS	6-6-116	
	6-6-176	
	6-6-224	
	6-6-248	
	6-6-314	5
RCR07G122KS	6-7-346	
	6-7-430	2
RCR07G151JS	6-6-337	1
RCR07G153KS	6-4-57	
	6-4-58	
	6-4-65	
	6-4-66	
	6-4-82	
	6-4-88	
	6-4-95	
	6-4-96	
	6-5-556	
	6-5-646	10
RCR07G155KS	6-5-612	1
RCR07G161JS	6-6-260	1
RCR07G180KS	6-5-540	
	6-7-459	
	6-7-465	3
RCR07G181JS	6-6-215	1
RCR07G182JS	6-6-172	
	6-6-225	2
RCR07G220JS	6-6-181	
	6-6-184	
	6-6-259	
	6-6-279	
	6-6-280	
	6-6-282	6
RCR07G220KS	6-5-583	1
RCR07G221JS	6-6-166	
	6-6-174	
	6-6-223	
	6-6-249	
	6-6-255	
	6-6-256	
	6-6-345	
	6-6-346	8
RCR07G221KS	6-5-101	
	6-5-539	
	6-5-547	
	6-5-559	
	6-5-625	
	6-5-640	6
RCR07G222JS	6-6-129	
	6-6-161	
	6-6-193	
	6-6-217	
	6-6-238	
	6-6-239	
	6-6-251	
	6-6-328	
	6-6-405	9
RCR07G222KS	6-5-99	
	6-5-233	
	6-5-236	3
RCR07G223JS	6-6-242	
	6-6-304	
	6-6-334	
	6-6-418	4
RCR07G223KS	6-6-120	
	6-6-226	
	6-6-228	3
RCR07G224JS	6-6-302	
	6-6-417	2
RCR07G241JS	6-6-261	1
RCR07G270KS	6-7-296	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
RCR07G270KS	6-7-344	
	6-7-355	
	6-7-377	4
RCR07G271KS	6-5-103	
	6-5-104	
	6-5-212	
	6-5-213	
	6-5-250	
	6-5-251	
	6-7-347	
	6-7-371	
	6-7-429	
	6-7-462	
	6-7-464	11
RCR07G330JS	6-4-236	
	6-6-117	
	6-6-144	
	6-6-173	
	6-6-230	
	6-6-253	
	6-6-321	7
RCR07G331JS	6-6-114	
	6-6-128	
	6-6-262	
	6-6-312	
	6-6-347	5
RCR07G331KS	6-7-393	
	6-7-438	2
RCR07G332JS	6-6-158	
	6-6-194	
	6-6-196	
	6-6-291	
	6-6-295	5
RCR07G332KS	6-5-245	
	6-5-541	
	6-5-629	3
RCR07G333JS	6-6-305	1
RCR07G390KS	6-5-549	
	6-5-639	2
RCR07G391JS	6-6-292	1
RCR07G391KS	6-4-92	1
RCR07G393KS	6-4-70	1
RCR07G470JS	6-6-130	
	6-6-258	
	6-6-296	3
RCR07G470KS	6-4-73	
	6-5-205	
	6-5-209	
	6-5-210	
	6-5-211	
	6-5-214	
	6-5-587	7
RCR07G471JS	6-6-220	
	6-6-235	
	6-6-241	
	6-6-285	
	6-6-338	
	6-6-403	6
RCR07G471KS	6-3-6	
	6-5-200	
	6-5-201	
RCR07G471KS	6-5-207	
	6-5-208	
	6-5-257	
	6-7-417	
	6-7-425	8
RCR07G472JS	6-6-150	
	6-6-151	
	6-6-153	
	6-6-154	
	6-6-191	
	6-6-192	
	6-6-195	
	6-6-213	
	6-6-218	
	6-6-231	
	6-6-233	
	6-6-237	
	6-6-240	
	6-6-287	
	6-6-288	
	6-6-289	
	6-6-293	
	6-6-294	
	6-6-299	
	6-6-316	
	6-6-397	
	6-6-399	22
RCR07G472KS	6-4-22	
	6-4-89	
	6-4-233	
	6-7-356	
	6-7-434	
	6-7-435	
	6-7-436	
	6-7-437	
	6-7-441	
	6-7-442	
	6-9-28	
	6-9-29	12
RCR07G473KS	6-5-616	
	6-7-349	
	6-7-392	
	6-7-432	4
RCR07G474KS	6-7-384	1
RCR07G510JS	6-7-301	1
RCR07G511JS	6-6-121	
	6-6-247	2
RCR07G560JS	6-6-257	
	6-6-278	
	6-6-278A	
	6-6-286	
	6-6-290	
	6-6-402	6
RCR07G561KS	6-5-563	
	6-5-568	2
RCR07G562KS	6-7-298	
	6-7-300	
	6-7-341	
	6-7-357	4
RCR07G680JS	6-6-171	1
RCR07G680KS	6-5-617	1
RCR07G681KS	6-5-585	1

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
RCR07G752JS	6-6-254	1
RCR07G821JS	6-6-221	1
RCR20G101JS	6-6-266	1
RCR20G122KS	6-3-33	1
RCR20G161JS	6-7-460	1
RCR20G221KS	6-7-373	1
RCR20G331KS	6-5-240	
	6-5-241	
	6-5-242	
	6-5-243	4
RCR20G390JS	6-6-315	1
RCR20G391KS	6-3-96	1
RCR20G820JS	6-6-265	1
RCR20G820KS	6-5-584	1
RG59-36Y	6-7-544	AR
	6-7-545	AR
	6-7-546	AR
RJR26FW203M	6-8-30	1
RJ24CW203	6-7-291	
	6-7-416	2
RM5532ADE	6-7-504	1
RM5534ADE	6-7-468	
	6-7-472	
	6-7-507	3
RNC55H18R2FS	6-6-162	
	6-6-267	
	6-6-272	
	6-6-273	4
RN55D1000F	6-5-497	
	6-5-582	
	6-5-669	
	6-6-216	4
RN55D1001F	6-4-71	
	6-4-81	
	6-4-90	
	6-5-533	
	6-5-543	
	6-5-552	
	6-5-626	
	6-5-634	
	6-5-642	
	6-5-648	
	6-6-182	
	6-8-21	
	6-8-35	13
RN55D1002F	6-3-34	
	6-3-35	
	6-3-42	
	6-3-43	
	6-3-44	
	6-3-45	
	6-5-193	
	6-5-499	
	6-5-503	
	6-5-510	
	6-5-518	
	6-5-538	
	6-5-597	
	6-5-624	
	6-5-637	
	6-6-200	
	6-6-202	
	6-6-203	

PART NUMBER	FIG-ITEM	TTL REQ
RN55D1002F	6-6-303	
	6-8-17	
	6-8-25	AR
	6-8-57	
	6-8-67	22
RN55D1003F	6-4-77	
	6-4-83	
	6-4-86	
	6-6-307	
	6-8-31	
	6-8-33	6
RN55D1021F	6-5-622	1
RN55D1022F	6-8-25	AR
RN55D1052F	6-8-25	AR
RN55D1072F	6-8-25	AR
RN55D1102F	6-8-25	AR
RN55D1103F	6-8-20	1
RN55D1132F	6-8-25	AR
RN55D1151F	6-5-664	1
RN55D1152F	6-8-25	AR
RN55D1182F	6-8-25	AR
RN55D1212F	6-5-574	
	6-5-594	
	6-5-595	
	6-5-661	4
	6-8-25	AR
RN55D1242F	6-8-25	AR
RN55D1272F	6-5-537	
	6-5-609	2
	6-8-25	AR
RN55D1302F	6-8-25	AR
RN55D1471F	6-7-427	1
RN55D1501F	6-5-544	
	6-5-633	2
RN55D1502F	6-7-370	
	6-7-386	2
RN55D1622F	6-5-519	1
RN55D1652F	6-3-46	1
RN55D1691F	6-6-281	1
RN55D1692F	6-4-85	
	6-6-209	2
RN55D1820F	6-5-253	1
RN55D1822F	6-5-620	
	6-5-665	2
RN55D1823F	6-5-611	1
RN55D1871F	6-7-288	
	6-7-290	2
RN55D2001F	6-5-579	
	6-5-586	
	6-5-590	
	6-5-591	4
RN55D2002F	6-3-66	
	6-5-258	
	6-5-504	
	6-5-505	
	6-5-578	
	6-5-663	
	6-8-22	7
RN55D2051F	6-7-292	
	6-7-293	
	6-7-294	
	6-7-295	4
RN55D2152F	6-8-55	
	6-8-56	2

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
RN55D22R1F	6-6-167	
	6-6-168	
	6-6-169	
	6-6-170	4
RN55D2210F	6-8-62	1
RN55D2211F	6-8-61	1
RN55D2373F	6-5-524	1
RN55D2430F	6-6-407	1
RN55D2492F	6-4-76	
	6-4-84	2
RN55D2550F	6-7-285	
	6-7-287	
	6-7-289	3
RN55D2552F	6-5-508	
	6-5-511	
	6-5-569	
	6-5-573	4
RN55D2611F	6-7-343	1
RN55D2612F	6-7-369	
	6-7-387	2
RN55D2670F	6-6-205	1
RN55D2740F	6-6-204	1
RN55D2940F	6-6-206	1
RN55D3010F	6-7-297	1
RN55D3012F	6-5-546	
	6-5-636	2
RN55D3161F	6-5-562	
	6-5-566	
	6-5-567	
	6-5-596	
	6-5-618	
	6-5-630	
	6-5-635	
	6-5-641	
	6-5-647	
	6-5-651	
	6-5-655	11
RN55D3162F	6-5-572	
	6-5-656	
	6-5-657	
	6-5-660	4
RN55D3320F	6-7-456	1
RN55D3321F	6-6-207	
	6-6-208	2
RN55D3322F	6-7-420	
	6-7-421	2
RN55D3401F	6-5-550	
	6-5-560	
	6-7-327	
	6-7-337	
	6-7-338	5
RN55D3650F	6-8-37	1
RN55D3741F	6-5-623	1
RN55D3742F	6-4-94	1
RN55D3832F	6-6-214	1
RN55D3921F	6-5-610	1
RN55D4022F	6-5-259	1
RN55D4121F	6-5-571	
	6-5-653	
	6-5-654	
	6-5-658	4
RN55D4221F	6-5-608	1
RN55D4222F	6-6-210	1
RN55D4320F	6-7-297	1
RN55D4321F	6-7-412	
RN55D4321F	6-7-413	
	6-7-426	
	6-7-428	4
RN55D4531F	6-5-509	1
RN55D4641F	6-5-515	1
RN55D4750F	6-5-581	
	6-5-668	
	6-8-34	3
RN55D4751F	6-5-529	1
RN55D4752F	6-8-24	
	6-8-28	2
RN55D4991F	6-5-195	
	6-5-513	
	6-5-514	
	6-5-577	
	6-5-592	5
RN55D4992F	6-4-79	1
RN55D51R1F	6-5-667	
	6-6-313	2
RN55D5110F	6-7-466	1
RN55D5111F	6-6-320	1
RN55D5491F	6-6-308	1
RN55D5620F	6-5-670	1
RN55D6041F	6-8-25	AR
	6-8-38	1
RN55D6042F	6-6-309	1
RN55D6191F	6-5-506	
	6-5-575	
	6-5-593	
	6-5-662	4
	6-8-25	AR
RN55D6192F	6-5-525	1
RN55D6341F	6-8-25	AR
RN55D6342F	6-5-613	1
RN55D6490F	6-5-520	1
RN55D6491F	6-8-25	AR
RN55D6651F	6-8-25	AR
RN55D6811F	6-5-632	
	6-5-649	2
	6-8-25	AR
RN55D6981F	6-8-25	AR
RN55D7151F	6-3-31	1
	6-8-25	AR
RN55D7321F	6-8-25	AR
RN55D7501F	6-8-25	AR
RN55D7502F	6-4-80	
	6-4-93	2
RN55D7681F	6-8-25	AR
RN55D7682F	6-5-535	1
RN55D7871F	6-8-25	AR
RN55D8060F	6-5-536	1
RN55D8061F	6-8-25	AR
RN55D8062F	6-5-194	1
RN55D8251F	6-8-25	AR
RN55D8450F	6-5-666	1
RN55D8451F	6-8-25	AR
RN55D8661F	6-8-25	AR
RN55D8871F	6-8-25	AR
RN55D9091F	6-3-30	1
	6-8-25	AR
RN55D9311F	6-8-25	AR
RN55D9531F	6-8-25	AR
RN55D9761F	6-6-212	1
	6-8-25	AR

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
RN60D4993F	6-8-25A	AR
RN60D6193F	6-8-25A	AR
RN60D6813F	6-8-25A	AR
RN60D7873F	6-8-25A	AR
RN60D9093F	6-8-25A	AR
RPE110-111C0G070B100V	6-6-40	1
RPE110-111C0G150F100V	6-6-141	
	6-6-142	2
RPE110-111C0G220F100V	6-6-36	
	6-6-38	2
RPE110-111C0G820F100V	6-6-45	
	6-6-538	2
RPE110C0G010C200V	6-8-48	AR
	6-8-64	AR
RPE110C0G030C200V	6-8-48	AR
	6-8-64	AR
RPE110C0G1R2C100V	6-8-48	AR
	6-8-64	AR
RPE110C0G1R5C100V	6-8-48	AR
	6-8-64	AR
RPE110C0G1R8C100V	6-8-48	AR
	6-8-64	AR
RPE110C0G100J100V	6-8-48	AR
	6-8-64	AR
RPE110C0G2R2C100V	6-8-48	AR
	6-8-64	AR
RPE110C0G2R7C100V	6-8-48	AR
	6-8-64	AR
RPE110C0G3R3C100V	6-8-48	AR
	6-8-64	AR
RPE110C0G3R9C100V	6-8-48	AR
	6-8-64	AR
RPE110C0G330JPPV	6-8-48	AR
	6-8-64	AR
RPE110C0G390JPPV	6-8-48	AR
	6-8-64	AR
RPE110C0G4R7C100V	6-8-48	AR
	6-8-64	AR
RPE110C0G470JPPV	6-8-48	AR
	6-8-64	AR
RPE110C0G5R6D100V	6-8-48	AR
	6-8-64	AR
RPE110C0G6R8D100V	6-8-48	AR
RPE110C0G6R8D100V	6-8-64	AR
RPE110C0G8R2D100V	6-8-48	AR
	6-8-64	AR
RPE110C0G9R1D100V	6-8-48	AR
	6-8-64	AR
RT22C2W103	6-5-631	
	6-5-644	2
RWR81S1100FR	6-6-394	1
RWR81S5R62FR	6-8-19	
	6-8-32	2
RWR81S56R2FR	6-6-284	1
RW69V150	6-5-576	1
RW69V271	6-6-157	1
RW70U1R00F	6-5-542	
	6-7-335	2
RW70U2R00F	6-7-325	
	6-7-329	2
SBL1S-1	6-7-440	
	6-7-449	2
SCL4011BC	6-5-400	1
SCL4013BC	6-3-67	1
SCL4050BE	6-7-523	1
SE-33BRSHT	6-5-264	
	6-7-550	2
SN54LS00J	6-4-249	
	6-5-43	
	6-5-49	
	6-5-53	
	6-5-72	
	6-7-480	
	6-7-481	7
SN54LS02J	6-4-303	
	6-5-56	
	6-5-71	
	6-5-80	4
SN54LS04J	6-4-215	
	6-4-284	
	6-5-27	
	6-5-47	
	6-5-77	5
SN54LS125AJ	6-4-226	1
SN54LS126AJ	6-4-293	1
SN54LS138J	6-5-38	
	6-5-39	2
SN54LS139J	6-4-214	1
SN54LS157J	6-5-20	
	6-5-35	
	6-5-63	
	6-5-65	
	6-5-76	
	6-5-78	6
SN54LS163AJ	6-5-60	
	6-5-62	2
SN54LS164J	6-5-59	1
SN54LS165J	6-5-12	
	6-5-17	
	6-5-18	
	6-5-19	4
SN54LS174J	6-5-4	
	6-5-7	
	6-5-11	
	6-5-13	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
SN54LS174J	6-5-14	
	6-5-15	
	6-5-36	
	6-5-37	
	6-5-93	9
SN54LS245J	6-4-222	
	6-4-289	
	6-4-292	
	6-4-311	
	6-4-319	
	6-4-320	
	6-5-32	7
SN54LS251J	6-5-42	
	6-5-58	2
SN54LS283J	6-5-2	
	6-5-5	
	6-5-6	
	6-5-8	
	6-5-9	
	6-5-10	
	6-5-16	
	6-5-94	
	6-5-96	
	6-5-98	10
SN54LS32J	6-4-208	
	6-4-209	
	6-4-212	
	6-4-283	
	6-4-294	4
SN54LS374J	6-4-206	
	6-4-207	
	6-4-223	
	6-4-281	
	6-4-282	
	6-4-286	
	6-4-302	
	6-4-312	
	6-4-317	
	6-5-1	
	6-5-3	
	6-5-30	
	6-5-31	
	6-5-95	
	6-5-97	15
SN54LS390J	6-7-479	
	6-7-517	2
SN54LS90J	6-7-505	1
SN54LS93J	6-7-510	1
SN54S04J	6-5-73	
	6-5-74	2
SN54S112J	6-5-87	
	6-7-494	2
SN54S74J	6-5-41	
	6-5-45	
	6-5-84	3
SN54S86J	6-5-81	
	6-5-83	
	6-5-89	3
SN5407J	6-5-34	1
SRF2263 (XRF525)	6-7-268	
	6-7-274	2
SR151A101JAA	6-8-48	AR
	6-8-54	1

PART NUMBER	FIG-ITEM	TTL REQ
SR151A101JAA	6-8-64	AR
SR151A820JAA	6-8-13	1
	6-8-48	AR
	6-8-64	AR
SR211A562JAA	6-6-60	1
S0S-632-6	6-1-80	26
S0S-632-8	6-1-78	18
S54F74/BCA	6-5-85	
	6-5-86	
	6-7-493	3
TA-2402-A	6-7-233	1
TC5517CPL-20	6-4-220	1
TDA2002H	6-5-447	1
TDS5664	6-5-384	1
TIP125	6-8-72	
	6-8-75	2
TXP0508B	6-6-413	1
UA741RM	6-7-514	
	6-7-515	2
UM9137	6-6-477	
	6-6-478	
	6-6-479	
	6-6-489	4
WA-141	6-8-74	1
004-3405-000599	6-6-385	2
008-0091-000	6-6-541	1
009-0025-005	6-7-122	
	6-7-124	
	6-7-162	
	6-7-248	4
012-1594-000	6-1-84	2
013-1455-020	6-6-462	1
015-3555-030	6-1-6	2
02-06-1103	6-1-13	9
02-06-2103	6-2-10	4
03-06-1041	6-1-11	1
03-06-1056	6-1-12	1
03-06-2042	6-2-9	1
054-1032-000	6-6-379	4
1-499566-0	6-3-2	1
1-87997-7	6-4-307	1
1N4003	6-6-467	
	6-6-469	
	6-6-471	
	6-6-472	
	6-6-473	
	6-6-474	
	6-6-475	
	6-6-476	
	6-6-480	9
1N4454-1	6-4-229	
	6-4-235	
	6-4-238	
	6-4-251	
	6-4-252	
	6-4-258	
	6-4-259	
	6-4-260	
	6-4-261	
	6-4-262	
	6-4-263	
	6-4-264	
	6-4-265	
	6-4-266	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
1N4454-1	6-4-267	
	6-4-268	
	6-4-269	
	6-4-270	
	6-4-271	
	6-4-272	
	6-4-273	
	6-4-274	
	6-4-275	
	6-4-276	
	6-4-277	
	6-4-279	
	6-4-296	
	6-5-115	
	6-5-116	
	6-5-150	
	6-5-152	
	6-5-397	
	6-5-404	
	6-5-418	
	6-5-423	
	6-5-426	
	6-5-428	
	6-5-429	
	6-5-431	
	6-5-440	
	6-5-451	
	6-5-454	
	6-5-462	
	6-5-486	
	6-5-496	
	6-6-495	
	6-6-496	
	6-6-515	
	6-6-516	
	6-6-517	
	6-6-519	
	6-6-521	
	6-6-522	
	6-6-536	
	6-7-482	
	6-7-483	
	6-7-484	
	6-7-485	
	6-7-488	
	6-7-492	
	6-7-495	
	6-7-501	
	6-7-502	
	6-7-509	
	6-7-513	
	6-7-516	
	6-7-525	
	6-7-526	
	6-8-18	69
1N4622	6-4-241	1
1N4624	6-3-41	
	6-5-425	
	6-5-449	
	6-5-455	4
1N4625	6-8-60	1
1N5614	6-6-453	
	6-6-454	
	6-6-455	
1N5614	6-6-456	
	6-6-457	
	6-6-458	
	6-6-459	
	6-6-460	
	6-6-461	9
1N5617	6-6-463	
	6-6-466	2
1N5711	6-4-230	
	6-7-497	
	6-7-498	
	6-7-527	
	6-7-528	
	6-7-534	6
1N5767	6-6-423	
	6-6-424	
	6-6-435	
	6-6-436	
	6-6-439	
	6-6-440	
	6-6-442	
	6-6-444	
	6-6-514	
	6-6-526	10
1N751A	6-6-535	1
1N821A	6-5-413	1
100-206-10	6-4-298	1
101T10000	6-5-507	1
101T10001	6-5-638	
	6-5-652	2
105-0852-001	6-5-478	
	6-5-485	
	6-7-448	3
105-0853-001	6-5-383	
	6-5-456	
	6-6-430	
	6-6-438	4
105-0854-001	6-5-430	
	6-5-471	
	6-7-422	3
105-0856-001	6-7-423	1
105-0857-001	6-5-453	
	6-5-461	
	6-7-431	3
105-0858-001	6-7-385	1
105-0860-001	6-5-446	
	6-5-484	
	6-7-419	3
105-0862-001	6-7-415	1
10890XA	6-9-3	1
10937-A-1024	6-1-6	2
1107-036	6-1-76	86
111	6-5-480	1
11284	6-5-262	AR
	6-7-549	AR
113E	6-2-3	1
139-3003-030	6-4-298	1
15-41-7220	6-5-382	1
150-0173-000	6-1-16	AR
150-0175-000	6-1-9	AR
150-1543-000	6-1-15	1
17250	6-1-86	1
18085A331JA8060	6-6-40A	
	6-6-41A	2

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
183-1471-280	6-5-317	
	6-5-330	2
184-9086-070	6-7-54	1
184-9086-170	6-7-19	
	6-7-48	
	6-7-50	
	6-7-55	
	6-7-103	
	6-7-147	6
184-9086-430	6-6-95	
	6-7-43	
	6-7-67	
	6-7-115	
	6-7-132	
	6-7-155	
	6-7-158	7
184-9086-490	6-6-96	
	6-7-51	
	6-7-97	
	6-7-109	
	6-7-133	
	6-7-149	6
184-9086-610	6-6-78	1
184-9086-640	6-6-62	
	6-6-111	
	6-7-7	
	6-7-52	
	6-7-53	
	6-7-60	
	6-7-148	7
184-9087-430	6-6-64	
	6-6-66	
	6-6-68	
	6-6-89	4
184-9088-370	6-8-29	1
184-9102-470	6-5-374	1
184-9102-610	6-4-178	
	6-4-186	
	6-4-192	3
184-9102-620	6-4-240	
	6-5-156	
	6-5-171	
	6-5-173	
	6-5-182	
	6-5-190	
	6-5-277	
	6-5-283	
	6-5-286	
	6-5-292	
	6-5-293	
	6-5-298	
	6-5-302	
	6-5-306	
	6-5-338	
	6-5-340	
	6-5-341	
	6-5-342	
	6-5-347	
	6-5-348	
	6-5-356	
	6-5-357	
	6-5-373	
	6-5-375	
	6-5-394	
184-9102-620	6-5-467	
	6-5-468	
	6-5-470	28
184-9102-650	6-4-182	1
184-9102-710	6-4-185	
	6-5-310	
	6-5-312	3
184-9102-790	6-4-187	
	6-4-195	2
184-9102-830	6-5-167	
	6-5-172	
	6-5-271	
	6-5-303	
	6-5-318	
	6-5-331	
	6-5-332	
	6-5-333	
	6-5-335	
	6-5-336	
	6-5-337	
	6-5-339	
	6-5-369	
	6-5-376	
	6-5-378	
	6-5-421	
	6-5-433	
	6-5-439	
	6-5-441	
	6-5-458	
	6-5-459	
	6-5-463	
	6-5-469	22
199D105X0035BE3	6-4-187	
	6-4-195	2
199D106X0020CE3	6-4-178	
	6-4-186	
	6-4-192	3
199D155X0025AE3	6-4-182	1
199D156X0020DE3	6-4-240	
	6-5-156	
	6-5-171	
	6-5-173	
	6-5-182	
	6-5-190	
	6-5-277	
	6-5-283	
	6-5-286	
	6-5-292	
	6-5-293	
	6-5-298	
	6-5-302	
	6-5-306	
	6-5-338	
	6-5-340	
	6-5-341	
	6-5-342	
	6-5-347	
	6-5-348	
	6-5-356	
	6-5-357	
	6-5-373	
	6-5-375	
	6-5-394	
	6-5-467	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
199D156X0020DE3	6-5-468	
	6-5-470	28
199D475X0035DE3	6-5-167	
	6-5-172	
	6-5-271	
	6-5-303	
	6-5-318	
	6-5-331	
	6-5-332	
	6-5-333	
	6-5-335	
	6-5-336	
	6-5-337	
	6-5-339	
	6-5-369	
	6-5-376	
	6-5-378	
	6-5-421	
	6-5-433	
	6-5-439	
	6-5-441	
	6-5-458	
	6-5-459	
	6-5-463	
	6-5-469	22
199D476X0006DE3	6-5-374	1
199D476X0025EE3	6-4-185	
	6-5-310	
	6-5-312	3
2-86418-0	6-4-307	1
2-87997-5	6-4-290	1
2N2219A	6-6-532	
	6-7-229	2
2N2222A	6-4-309	
	6-4-310	
	6-4-314	
	6-6-427	
	6-6-428	
	6-6-429	
	6-6-433	
	6-6-494	
	6-6-507	
	6-6-508	
	6-6-509	
	6-6-525	
	6-6-529	
	6-6-531	
	6-7-231	
	6-7-232	
	6-7-235	17
2N2369A	6-4-232	
	6-4-234	
	6-7-195	
	6-7-197	
	6-7-199	
	6-7-244	6
2N2484	6-6-468	1
2N2857	6-6-426	
	6-6-432	
	6-6-511	
	6-6-512	
	6-6-537	5
2N2905A	6-7-225	1
2N2907A	6-4-237	
2N2907A	6-5-380	
	6-5-427	
	6-6-425	
	6-6-502	
	6-6-503	
	6-6-504	
	6-6-528	
	6-7-227	
	6-7-270	
	6-7-282	11
2N3879A	6-7-233	1
2N4092	6-5-432	1
2N4416	6-7-209	1
2N5179	6-7-249	
	6-7-260	2
2N918	6-5-489	
	6-5-493	
	6-6-434	
	6-6-441	
	6-6-443	
	6-6-470	
	6-6-482	
	6-6-483	
	6-6-485	
	6-6-486	
	6-6-524	
	6-6-527	
	6-7-202	
	6-7-204	
	6-7-212	
	6-7-242	
	6-7-265	
	6-7-267	
	6-8-50	
	6-8-52	20
2Q123	6-6-450	1
201-0001-000	6-8-42	1
208B102	6-7-521	1
22-TEB-122-1	6-4-322	AR
220-0065-030	6-5-40	4
220-0065-070	6-5-33	
	6-5-391	
	6-5-391	5
220-0098-010	6-4-300	1
220-0102-010	6-4-211	
	6-4-221	
	6-5-385	3
220-0102-020	6-4-219	
	6-4-316	
	6-5-23	
	6-5-26	
	6-5-29	
	6-5-51	8
22203MJ	6-7-264	1
226177-2	6-7-547	3
229-9702-030	6-2-5	1
23303MJ	6-7-187	
	6-7-190	
	6-7-193	3
240-0887-020	6-7-264	1
240-0887-070	6-7-187	
	6-7-190	
	6-7-193	3
240-0887-340	6-7-191	1

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
240-0957-030	6-6-383	
	6-6-384	2
240-0957-050	6-6-349	
	6-6-352	
	6-7-215	
	6-7-251	4
240-0957-060	6-7-201	1
240-0957-070	6-6-382	
	6-7-279	2
240-0957-080	6-7-245	
	6-7-273	
	6-7-276	3
240-1562-000	6-4-74	
	6-4-78	
	6-4-87	
	6-5-176	
	6-5-181	5
240-1564-000	6-1-35	
	6-1-36	
	6-1-37	3
240-1570-000	6-5-174	
	6-5-178	
	6-5-488	
	6-8-58	4
240-1572-000	6-5-487	1
240-1621-000	6-6-410	1
240-2014-000	6-7-210	1
240-2015-000	6-7-240	1
240-2019-000	6-7-221	1
240-2021-000	6-7-211	1
240-2023-000	6-7-218	1
240-2024-000	6-7-203	AR
	6-7-216	1
240-2025-000	6-7-203	AR
240-2026-000	6-7-203	AR
240-2027-000	6-7-188	
	6-7-189	
	6-7-203	AR
	6-7-217	
	6-7-220	
	6-7-224	
	6-7-258	
	6-7-271	
	6-7-272	8
240-2028-000	6-7-203	AR
240-2029-000	6-7-203	AR
240-2030-000	6-4-2	
	6-4-3	
	6-4-4	
	6-4-5	
	6-4-6	
	6-4-7	
	6-4-8	
	6-4-9	
	6-4-10	
	6-4-11	
	6-4-31	
	6-4-32	
	6-4-33	
	6-4-34	
	6-4-36	
	6-4-37	
	6-4-38	
	6-4-39	
240-2030-000	6-4-40	
	6-4-41	
	6-4-42	
	6-4-43	
	6-4-44	
	6-4-45	
	6-4-46	
	6-4-47	
	6-4-48	
	6-4-49	
	6-4-50	
	6-4-51	
	6-4-52	
	6-4-53	
	6-4-54	
	6-4-55	
	6-4-56	
	6-4-104	
	6-4-105	
	6-4-106	
	6-4-107	
	6-4-108	
	6-4-109	
	6-4-110	
	6-4-111	
	6-4-112	
	6-4-113	45
240-2035-000	6-5-157	
	6-5-420	2
240-2039-000	6-5-379	
	6-5-381	
	6-5-388	
	6-5-494	
	6-5-495	5
240-2041-000	6-5-184	
	6-6-325	
	6-6-330	
	6-6-332	
	6-6-351	
	6-6-353	
	6-6-373	
	6-6-387	
	6-6-388	
	6-6-389	
	6-6-390	
	6-6-391	
	6-6-392	
	6-6-393	
	6-6-395	
	6-6-409	
	6-6-411	
	6-6-416	
	6-7-185	
	6-7-192	
	6-7-206	
	6-7-219	
	6-7-222	
	6-7-223	
	6-7-228	
	6-7-234	
	6-7-238	
	6-7-243	28
240-2043-000	6-7-246	1
240-2045-000	6-7-198	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
240-2045-000	6-7-200	2
240-2047-000	6-7-247	1
240-2540-000	6-5-170	1
240-2711-010	6-6-350	
	6-6-354	
	6-6-381	3
240-2715-250	6-7-236	
	6-7-237	2
240-2715-340	6-6-327	
	6-6-420	2
240-2715-370	6-6-326	
	6-6-419	2
240-2715-390	6-6-324	
	6-6-333	
	6-6-367	3
240-2715-430	6-6-361	
	6-6-362	
	6-6-363	
	6-6-364	
	6-6-371	
	6-6-372	
	6-6-408	7
240-2715-490	6-7-196	1
240-2723-140	6-7-239	
	6-7-259	
	6-7-262	3
240-2723-150	6-6-341	
	6-6-343	2
240-2771-010	6-6-368	
	6-6-369	2
240-2771-020	6-6-365	
	6-6-366	2
240-2771-030	6-6-356	
	6-6-360	2
240-2771-040	6-6-358	
	6-6-359	2
240-2771-050	6-6-355	1
2404-000-Y5F-121 J	6-7-89	1
2404-000-Y5F-131 J	6-7-91	1
2404-000-Y5F-151 J	6-7-94	1
241-0749-020	6-1-40	1
242-0441-030	6-7-241	1
242-0453-010	6-7-261	1
242-0505-040	6-7-207	1
242-0595-460	6-7-283	1
248-0013-010	6-4-242	1
258-0072-010	6-4-220	1
26-5378-00	6-1-65	
	6-1-66	2
264-0305-000	6-1-30	2
264-0971-010	6-8-74	1
265-1171-000	6-1-31	1
266-0161-010	6-3-9	
	6-3-11	
	6-3-14	
	6-3-15	
	6-3-16	
	6-3-18	
	6-3-20	
	6-3-22	
	6-3-24	
266-0161-010	6-3-26	
	6-3-29	
	6-3-52	
	6-3-53	
	6-3-55	
	6-3-65	
	6-3-70	
	6-3-71	
	6-3-72	
	6-3-80	
	6-3-83	
	6-3-85	
	6-3-87	
	6-3-89	
	6-3-91	24
266-0161-020	6-3-8	12
266-0161-030	6-3-19	1
266-0161-040	6-3-21	1
266-0161-050	6-3-23	1
266-0161-060	6-3-17	1
266-0161-070	6-3-90	1
266-0161-080	6-3-25	1
266-0161-090	6-3-88	1
266-0161-100	6-3-86	1
266-0161-110	6-3-84	1
266-0161-120	6-3-79	1
266-0161-130	6-3-82	1
266-0161-140	6-3-28	1
266-0243-010	6-4-250	1
266-7508-610	6-2-7	1
266-7524-010	6-2-8	1
268-5400-50	6-4-300	1
270-0074-010	6-9-3	1
271-0264-040	6-3-95	1
277-0496-010	6-7-440	
	6-7-449	2
278-0444-200	6-7-381	
	6-7-455	2
278-0444-220	6-7-451	1
278-0444-280	6-8-9	1
278-0450-040	6-7-461	1
278-0451-080	6-7-194	
	6-7-257	2
278-0464-010	6-6-357	1
278-0464-020	6-6-380	1
278-0464-030	6-6-348	1
278-0464-040	6-6-370	1
278-0464-050	6-6-376	1
278-0464-060	6-6-375	1
278-0464-070	6-6-344	1
278-0464-080	6-6-340	1
278-0464-100	6-7-411	1
278-0464-110	6-6-374	
	6-6-386	
	6-6-401	3
278-0464-120	6-6-378	1
278-0464-140	6-6-415	1
280-1368-340	6-1-1	2
280-2745-010	6-1-2	
	6-2-1	3
280-2745-040	6-3-1	
	6-4-1	
	6-5-671	
	6-6-1	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
280-2745-040	6-7-1	
	6-8-8	
	6-8-47	7
281-0675-020	6-2-4	1
281-0675-030	6-2-6	2
284-0019-030	6-3-13	1
284-0020-030	6-3-49	1
288-2154-000	6-5-198	
	6-5-199	
	6-5-202	
	6-5-206	
	6-5-216	
	6-5-217	
	6-5-219	
	6-5-222	
	6-6-449	
	6-7-205	
	6-7-250	
	6-7-266	15
289-4369-010	6-7-408	1
289-7074-220	6-4-297	1
289-7074-220-M20	6-4-297	1
289-7392-010	6-8-68	1
289-7398-010	6-6-377	
	6-6-481	
	6-6-488	
	6-6-492	4
293-1354-010	6-7-389	
	6-7-444	2
293-1355-010	6-6-431	1
293-1356-010	6-6-450	1
3/8LN	6-1-15	1
3V1A	6-1-40	1
3000028	6-10-11	
	6-11-10	2
304-0015-000	6-8-72	1
304-0016-000	6-1-39	
	6-1-40	
	6-2-14	
	6-3-98	
	6-7-233	8
304-0269-000	6-2-16	1
304-1465-030	6-5-480	1
304-1466-010	6-6-541	1
304-2513-250	6-1-67	
	6-1-68	
	6-1-70	
	6-1-71	4
304-3110-010	6-1-69	1
3040011	6-10-15	
	6-10-17	
	6-10-22	
	6-11-13	
	6-11-25	5
305-1722-000	6-4-298	2
3050050	6-11-15	
	6-11-17	2
306-1830-000	6-7-552	2
306-1831-000	6-8-5	6
306-2495-010	6-7-94A	3
306-2511-100	6-6-385	2
307-1212-000	6-7-519	2
307-1215-000	6-5-264	
307-1215-000	6-7-550	2
310-0072-000	6-1-14	
	6-9-1	8
310-0095-000	6-6-545	
	6-7-557	17
310-0275-000	6-2-8	
	6-6-414	
	6-6-544	
	6-7-5	
	6-7-558	
	6-7-561	
	6-8-46	26
310-0278-000	6-9-31	2
310-0279-000	6-1-26	
	6-1-63	
	6-1-71	
	6-7-233	
	6-8-7	
	6-8-72	
	6-8-75	17
310-0282-000	6-1-8	
	6-1-10	
	6-1-17	
	6-1-23	
	6-1-34	
	6-1-39	
	6-1-40	
	6-1-72	
	6-2-11	
	6-2-12	
	6-2-14	
	6-2-16	
	6-2-18	
	6-2-20	
	6-3-95	
	6-6-3	
	6-6-5	73
310-0284-000	6-1-6	4
310-0288-000	6-1-29	2
310-0291-000	6-1-74	2
310-0420-000	6-2-3	
	6-2-5	2
310-0740-320	6-5-447	
	6-5-480	5
310-0740-360	6-1-8	
	6-1-10	
	6-1-17	
	6-1-23	
	6-1-34	48
310-0751-010	6-6-431	
	6-6-450	4
310-0779-020	6-6-544	
	6-7-5	
	6-7-558	
	6-7-561	18
310-0779-030	6-7-233	2
310-0779-050	6-2-11	
	6-2-12	
	6-2-14	
	6-2-16	
	6-2-18	
	6-2-20	13
313-0037-000	6-2-8	
	6-6-414	4

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
313-0043-000	6-5-447	
	6-5-480	3
313-0045-000	6-1-34	
	6-1-39	
	6-1-40	
	6-1-72	
	6-2-11	
	6-2-12	
	6-2-14	
	6-2-16	
	6-2-18	
	6-2-20	
	6-3-95	27
313-0064-000	6-1-74	2
313-0082-000	6-1-29	3
313-0132-000	6-1-26	
	6-1-63	
	6-7-233	6
314A103	6-3-92	
	6-4-288	2
314A104	6-3-81	1
314B153	6-4-225	
	6-4-227	
	6-4-278	3
315-0025-010	6-7-403	1
3150054	6-9-13	1
316271-2	6-9-7	1
3190013	6-10-25	1
3210103	6-9-23	1
3210138	6-9-21	
	6-9-22	
	6-9-26	
	6-9-27	4
3260062	6-11-18	1
3270017	6-10-29	1
330-1717-120	6-2-31	9
3320022	6-10-12	
	6-11-11	2
3320049	6-9-24	1
3320057	6-10-32	
	6-10-33	
	6-11-38	3
3329H-1-102	6-6-406	1
3329H-1-501	6-6-124	1
3329H-1-502	6-6-244	1
333-0837-000	6-8-3	4
333-0841-000	6-1-82	2
333-0842-000	6-1-81	
	6-2-25	
	6-2-28	28
333-0846-000	6-1-83	6
333-1299-000	6-6-431	
	6-6-450	4
334-0552-000	6-8-2	4
334-2709-180	6-1-80	26
334-2709-190	6-1-78	18
3360351	6-9-16	1
3370330	6-11-21	1
3380572	6-11-2	1
3380581	6-10-2	1
3380599	6-10-14	1
3385-6000	6-5-442	1
3390047	6-10-20	
	6-10-23	
3390047	6-11-24	3
342-0044-000	6-1-63	
	6-1-71	7
342-0045-000	6-9-30	1
342-0060-000	6-1-66	4
342-0062-000	6-1-72	6
343-0072-000	6-2-8	2
343-0123-000	6-7-5	
	6-7-558	10
343-0124-000	6-6-544	
	6-7-561	
	6-8-1	
	6-8-46	16
343-0125-000	6-6-414	2
343-0132-000	6-9-31	2
343-0133-000	6-7-391	
	6-8-72	
	6-8-75	6
343-0135-000	6-1-26	
	6-1-63	
	6-5-447	
	6-7-233	6
343-0136-000	6-8-7	4
343-0137-000	6-5-480	2
343-0167-000	6-1-34	14
343-0168-000	6-6-3	
	6-6-5	4
343-0169-000	6-1-5	
	6-1-10	
	6-1-17	
	6-1-23	
	6-1-39	
	6-1-40	
	6-1-88	
	6-3-95	76
343-0175-000	6-1-34	4
343-0177-000	6-1-8	6
343-0185-000	6-9-1	4
343-0191-000	6-1-14	4
343-0209-000	6-1-6	4
343-0269-000	6-1-29	1
343-0285-000	6-6-545	
	6-7-557	17
3440290	6-10-18	
	6-11-22	2
3450040	6-9-15	1
3450121	6-11-19	1
3490033	6-10-1	
	6-10-5	
	6-10-13	
	6-11-1	
	6-11-5	
	6-11-12	6
3490084	6-10-6	1
3490131	6-11-27	1
3490181	6-10-21	1
3490211	6-11-16	1
3490238	6-10-24	1
3490262	6-10-16	1
3490327	6-11-26	1
3490475	6-11-6	1
3490505	6-10-9	1
3490521	6-11-9	1
3490998	6-10-10	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
3490998	6-10-26	
	6-11-23	
	6-11-28	4
350-4027-120	6-3-92	
	6-4-288	2
350-4027-140	6-3-81	1
350-4027-490	6-4-225	
	6-4-227	
	6-4-278	3
350-4046-630	6-7-521	1
351-0503-010	6-7-504	1
351-0503-020	6-7-468	
	6-7-472	
	6-7-507	3
351-0559-030	6-4-315	1
351-0620-010	6-5-390	
	6-5-398	2
351-0639-010	6-5-384	1
351-1047-010	6-7-476	1
351-1084-010	6-8-11	1
351-1122-020	6-4-304	
	6-7-522	
	6-7-524	3
351-1141-010	6-8-23	1
351-1152-010	6-4-305	
	6-5-61	
	6-5-422	3
351-1153-020	6-5-387	
	6-5-393	2
351-1211-070	6-3-40	1
351-1218-060	6-5-480	1
351-1261-010	6-7-514	
	6-7-515	2
351-1262-020	6-5-399	
	6-5-407	
	6-5-416	
	6-5-434	
	6-5-435	
	6-5-450	
	6-5-457	
	6-5-460	
	6-5-464	
	6-5-465	
	6-5-476	
	6-5-479	12
351-1271-020	6-8-39	1
351-1286-010	6-4-306	
	6-5-492	
	6-6-513	
	6-6-523	4
351-1383-010	6-5-447	1
351-1398-010	6-4-248	1
351-1411-030	6-3-39	1
351-1523-010	6-4-249	
	6-5-43	
	6-5-49	
	6-5-53	
	6-5-72	
	6-7-480	
	6-7-481	7
351-1523-020	6-4-303	
	6-5-56	
	6-5-71	
	6-5-80	4
351-1523-030	6-4-215	
	6-4-284	
	6-5-27	
	6-5-47	
	6-5-77	5
351-1523-180	6-4-208	
	6-4-209	
	6-4-212	
	6-4-283	
	6-4-294	4
351-1525-010	6-4-295	
	6-4-318	
	6-5-21	
	6-5-24	
	6-5-44	
	6-5-46	
	6-5-48	
	6-5-52	
	6-5-54	
	6-5-55	
	6-5-57	
	6-5-66	
	6-5-68	
	6-5-69	
	6-5-75	
	6-5-79	
	6-5-91	
	6-7-487	
	6-7-490	19
351-1526-010	6-5-38	
	6-5-39	2
351-1526-020	6-4-214	1
351-1529-020	6-5-4	
	6-5-7	
	6-5-11	
	6-5-13	
	6-5-14	
	6-5-15	
	6-5-36	
	6-5-37	
	6-5-93	9
351-1529-110	6-5-59	1
351-1529-120	6-5-12	
	6-5-17	
	6-5-18	
	6-5-19	4
351-1530-010	6-5-42	
	6-5-58	2
351-1530-150	6-5-20	
	6-5-35	
	6-5-63	
	6-5-65	
	6-5-76	
	6-5-78	6
351-1546-010	6-5-73	
	6-5-74	2
351-1636-020	6-7-505	1
351-1637-060	6-5-60	
	6-5-62	2
351-1656-010	6-5-41	
	6-5-45	
	6-5-84	3
351-1738-010	6-7-510	1
351-1745-010	6-5-2	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
351-1745-010	6-5-5	
	6-5-6	
	6-5-8	
	6-5-9	
	6-5-10	
	6-5-16	
	6-5-94	
	6-5-96	
	6-5-98	10
351-1821-040	6-4-206	
	6-4-207	
	6-4-223	
	6-4-281	
	6-4-282	
	6-4-286	
	6-4-302	
	6-4-312	
	6-4-317	
	6-5-1	
	6-5-3	
	6-5-30	
	6-5-31	
	6-5-95	
	6-5-97	15
351-1849-010	6-4-222	
	6-4-289	
	6-4-292	
	6-4-311	
	6-4-319	
	6-4-320	
	6-5-32	7
351-1883-030	6-5-81	
	6-5-83	
	6-5-89	3
351-1915-010	6-4-226	1
351-1915-020	6-4-293	1
351-1958-010	6-7-479	
	6-7-517	2
351-3550-010	6-7-477	1
351-3567-010	6-7-518	1
351-3567-020	6-7-478	1
351-5600-030	6-5-88	
	6-7-491	2
351-5639-100	6-3-74	1
351-5639-220	6-3-77	
	6-3-93	2
351-7715-020	6-5-34	1
351-7802-020	6-4-224	
	6-4-228	
	6-4-280	3
351-7808-010	6-5-87	
	6-7-494	2
351-7901-180	6-8-23	1
351-8159-220	6-7-523	1
351-8160-030	6-3-67	1
351-8160-080	6-5-400	1
351-8184-020	6-3-57	1
351-8189-010	6-5-67	
	6-5-70	
	6-5-392	
	6-5-396	4
351-8197-010	6-6-510	1
351-8198-010	6-5-92	1
351-8200-010	6-3-64	

PART NUMBER	FIG-ITEM	TTL REQ
351-8200-010	6-4-313	2
351-8252-020	6-5-412	1
351-8296-010	6-5-82	1
351-8308-010	6-3-78	1
351-8346-030	6-5-410	1
351-8407-020	6-5-90	1
351-8439-050	6-4-287	1
351-8471-050	6-4-285	1
351-8565-010	6-3-73	1
351-8610-010	6-3-75	
	6-3-76	2
351-8781-030	6-4-210	1
351-8823-010	6-5-85	
	6-5-86	
	6-7-493	3
351-8867-010	6-4-299	1
351-8869-020	6-5-22	
	6-5-25	2
351-8869-030	6-5-28	1
351-9073-010	6-3-12	
	6-3-27	
	6-3-48	3
351-9304-020	6-4-253	1
3510042	6-11-3	1
352-0440-000	6-5-489	
	6-5-493	
	6-6-434	
	6-6-441	
	6-6-443	
	6-6-470	
	6-6-482	
	6-6-483	
	6-6-485	
	6-6-486	
	6-6-524	
	6-6-527	
	6-7-202	
	6-7-204	
	6-7-212	
	6-7-242	
	6-7-265	
	6-7-267	
	6-8-50	
	6-8-52	20
352-0549-000	6-6-468	1
352-0550-000	6-7-225	1
352-0551-010	6-4-237	
	6-5-380	
	6-5-427	
	6-6-425	
	6-6-502	
	6-6-503	
	6-6-504	
	6-6-528	
	6-7-227	
	6-7-270	
	6-7-282	11
352-0596-030	6-4-232	
	6-4-234	
	6-7-195	
	6-7-197	
	6-7-199	
	6-7-244	6
352-0661-010	6-6-532	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
352-0661-010	6-7-229	2
352-0661-020	6-4-309	
	6-4-310	
	6-4-314	
	6-6-427	
	6-6-428	
	6-6-429	
	6-6-433	
	6-6-494	
	6-6-507	
	6-6-508	
	6-6-509	
	6-6-525	
	6-6-529	
	6-6-531	
	6-7-231	
	6-7-232	
	6-7-235	17
352-0704-020	6-7-233	1
352-0756-010	6-7-209	1
352-0759-020	6-5-432	1
352-0766-010	6-5-491	
	6-6-412	
	6-6-437	
	6-6-497	
	6-6-498	
	6-7-213	
	6-7-252	7
352-0792-010	6-6-426	
	6-6-432	
	6-6-511	
	6-6-512	
	6-6-537	5
352-0792-020	6-7-249	
	6-7-260	2
352-1041-010	6-6-530	
	6-6-534	2
352-1042-010	6-7-281	1
352-1082-020	6-8-72	
	6-8-75	2
352-1109-010	6-7-268	
	6-7-274	2
352-1109-020	6-6-451	
	6-6-452	
	6-6-490	
	6-6-501	4
352-1210-010	6-6-445	
	6-6-446	
	6-6-447	
	6-6-448	4
352-9555-030	6-6-413	1
352-9570-020	6-7-233	1
352-9582-030	6-7-214	
	6-7-226	
	6-7-230	
	6-7-253	
	6-7-269	
	6-7-275	6
352-9664-010	6-4-301	1
352-9882-010	6-5-480	1
353-0293-010	6-4-308	1
353-0293-040	6-3-36	1
353-2710-000	6-6-535	1
353-3261-000	6-5-413	1
353-3591-460	6-4-241	1
353-3591-480	6-3-41	
	6-5-425	
	6-5-449	
	6-5-455	4
353-3591-490	6-8-60	1
353-3644-010	6-4-229	
	6-4-235	
	6-4-238	
	6-4-251	
	6-4-252	
	6-4-258	
	6-4-259	
	6-4-260	
	6-4-261	
	6-4-262	
	6-4-263	
	6-4-264	
	6-4-265	
	6-4-266	
	6-4-267	
	6-4-268	
	6-4-269	
	6-4-270	
	6-4-271	
	6-4-272	
	6-4-273	
	6-4-274	
	6-4-275	
	6-4-276	
	6-4-277	
	6-4-279	
	6-4-296	
	6-5-115	
	6-5-116	
	6-5-150	
	6-5-152	
	6-5-397	
	6-5-404	
	6-5-418	
	6-5-423	
	6-5-426	
	6-5-428	
	6-5-429	
	6-5-431	
	6-5-440	
	6-5-451	
	6-5-454	
	6-5-462	
	6-5-486	
	6-5-496	
	6-6-495	
	6-6-496	
	6-6-515	
	6-6-516	
	6-6-517	
	6-6-519	
	6-6-521	
	6-6-522	
	6-6-536	
	6-7-482	
	6-7-483	
	6-7-484	
	6-7-485	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
353-3644-010	6-7-488	
	6-7-492	
	6-7-495	
	6-7-501	
	6-7-502	
	6-7-509	
	6-7-513	
	6-7-516	
	6-7-525	
	6-7-526	
	6-8-18	69
353-3691-010	6-4-230	
	6-7-497	
	6-7-498	
	6-7-527	
	6-7-528	
	6-7-534	6
353-6442-030	6-6-467	
	6-6-469	
	6-6-471	
	6-6-472	
	6-6-473	
	6-6-474	
	6-6-475	
	6-6-476	
	6-6-480	9
353-6496-040	6-6-463	
	6-6-466	2
353-6556-010	6-6-453	
	6-6-454	
	6-6-455	
	6-6-456	
	6-6-457	
	6-6-458	
	6-6-459	
	6-6-460	
	6-6-461	9
3530019	6-9-17	
	6-10-3	2
357-7093-000	6-1-44	
	6-1-48	
	6-1-52	
	6-1-56	4
357-7108-000	6-1-43	
	6-1-47	
	6-1-51	
	6-1-55	
	6-6-491	
	6-6-500	6
357-7108-020	6-5-261	
	6-7-541	
	6-7-542	
	6-7-548	4
357-7108-030	6-7-543	1
357-7287-010	6-1-41	3
357-7405-010	6-6-520	
	6-7-396	
	6-7-398	3
357-7559-010	6-7-547	3
357-9852-010	6-6-465	
	6-6-505	2
3580091	6-10-8	
	6-10-27	
	6-11-8	
3580091	6-11-29	4
360-0430-080	6-2-3	1
360-0489-020	6-5-478	
	6-5-485	
	6-7-448	3
360-0489-030	6-5-383	
	6-5-456	
	6-6-430	
	6-6-438	4
360-0489-040	6-5-430	
	6-5-471	
	6-7-422	3
360-0489-050	6-7-423	1
360-0489-060	6-5-453	
	6-5-461	
	6-7-431	3
360-0489-070	6-7-385	1
360-0489-080	6-5-446	
	6-5-484	
	6-7-419	3
360-0489-090	6-7-415	1
3602702	6-9-11	1
3620077	6-10-31	
	6-11-31	2
3630021	6-9-19	1
3640001	6-9-9	16
3641007	6-9-8	1
3641341	6-9-5	1
3641350	6-9-6	5
3651011	6-9-34	8
3651029	6-9-35	
	6-11-20	2
3660401	6-11-14	1
3661008	6-10-4	
	6-10-30	
	6-11-4	3
3661105	6-10-28	
	6-11-30	2
3661601	6-10-7	
	6-10-19	
	6-11-7	3
367-0806-010	6-1-33	1
367-1912-010	6-5-267	4
368-0391-010	6-1-32	1
3690032	6-9-23	
	6-9-27	10
3701107	6-9-33	2
3702006	6-10-25	
	6-11-18	2
3704050	6-9-15	1
3705056	6-11-19	1
3705153	6-9-18	1
3705200	6-9-11	4
3705307	6-9-15	1
3705366	6-9-13	1
3706109	6-9-14	2
371-0062-000	6-1-25	
	6-1-25	6
371-0156-030	6-4-247	1
371-0156-040	6-4-257	1
372-0033-080	6-4-290	1
372-0033-190	6-4-290	1
372-0033-380	6-4-307	1
372-0033-430	6-4-307	1

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
372-0043-380	6-5-382	1
372-0092-010	6-1-11	1
372-0092-130	6-1-12	1
372-0147-110	6-5-163	
	6-5-168	
	6-5-175	
	6-5-183	
	6-6-506	
	6-6-518	
	6-7-508	
	6-7-520	8
372-0147-120	6-5-490	
	6-6-533	2
372-0504-010	6-4-321	1
372-2235-020	6-1-77	18
372-2601-026	6-8-40	
	6-8-69	6
372-2601-027	6-7-556	2
372-2601-037	6-7-551	17
372-2601-046	6-6-278B	2
372-2601-047	6-4-213	86
372-2601-048	6-4-324	
	6-5-265	
	6-7-555	8
372-2601-087	6-5-165	
	6-5-179	82
372-2601-545	6-7-551	17
372-2601-547	6-4-213	86
372-2601-577	6-5-265	6
372-2601-589	6-5-165	
	6-5-179	82
372-2602-036	6-1-76	86
372-2634-160	6-5-442	1
372-2648-070	6-3-2	1
372-2653-040	6-5-443	1
372-2653-160	6-3-3	
	6-4-245	
	6-4-255	3
372-2653-270	6-3-4	
	6-4-244	
	6-4-254	3
372-2653-360	6-5-444	1
372-2670-030	6-1-34	1
372-5909-010	6-2-9	1
372-5909-030	6-2-10	4
372-5909-040	6-1-13	9
373-8510-000	6-5-447	
	6-5-480	3
380-1080-280	6-7-291	
	6-7-416	2
380-1095-120	6-8-30	1
381-1721-310	6-5-631	
	6-5-644	2
3810046	6-9-15	1
382-0027-060	6-6-124	1
382-0027-070	6-6-406	1
382-0027-090	6-6-244	1
382-0038-040	6-5-507	1
382-0038-070	6-5-638	
	6-5-652	2
382-0052-090	6-3-37	1
382-0061-010	6-3-56	1
382-0061-020	6-3-63	1
3820025	6-10-25	
3820025	6-11-18	2
3820050	6-9-13	
	6-9-15	
	6-9-18	
	6-11-19	4
3821021	6-9-37	4
3831019	6-10-25	
	6-11-18	2
3840018	6-10-25	
	6-11-18	2
3841031	6-9-11	
	6-9-13	
	6-9-15	
	6-9-18	
	6-11-19	8
3850072	6-9-23	
	6-9-27	5
3850102	6-10-25	
	6-11-18	2
3861058	6-9-20	
	6-10-40	
	6-11-37	3
3862046	6-10-34	
	6-11-32	8
3862054	6-10-36	
	6-11-36	22
3862062	6-10-37	
	6-11-35	3
3871185	6-11-34	1
3941108	6-9-10	10
3941116	6-9-14	4
3943101	6-9-12	
	6-9-18	2
3943124	6-10-35	
	6-11-33	4
4005	6-7-214	
	6-7-226	
	6-7-230	
	6-7-253	
	6-7-269	
	6-7-275	6
4007-4HOTTINNED	6-8-72	1
4007-6HOTTINNED	6-1-39	
	6-1-40	
	6-2-14	
	6-3-98	
	6-7-233	8
4034	6-2-16	1
41712	6-5-448	
	6-5-452	2
421-0074-000	6-6-464	AR
	6-6-487	AR
	6-6-493	AR
421-2420-000	6-7-489	
	6-7-496	
	6-7-499	
	6-7-506	4
424-0307-060	6-3-5	AR
	6-4-246	AR
	6-4-256	AR
424-0307-110	6-5-445	AR
425-0113-010	6-5-262	AR
	6-7-549	AR
425-0133-010	6-7-544	AR

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
425-0133-010	6-7-545	AR
	6-7-546	AR
425-1599-000	6-1-45	AR
	6-1-49	AR
	6-1-53	AR
	6-1-57	AR
	6-6-484	AR
	6-6-499	AR
	6-7-519	AR
426-1034-010	6-1-86	1
428-0108-000	6-5-263	AR
	6-5-481	AR
	6-5-482	AR
	6-5-483	AR
428-0282-010	6-4-322	AR
428-0288-040	6-4-61	1
428-4822-000	6-6-484A	AR
439-0649-000	6-5-254	AR
	6-5-255	AR
	6-5-256	AR
439-7300-000	6-3-97	AR
499139-9	6-4-321	1
499441-5	6-3-4	
	6-4-244	
	6-4-254	3
499443-4	6-5-444	1
51-075-7000	6-1-41	3
51-307-3875	6-7-543	1
51-311-3875	6-5-261	
	6-7-541	
	6-7-542	
	6-7-548	4
51TF4-1-5PCT	6-8-71	1
532977-2	6-5-490	
	6-6-533	2
532977-3	6-5-163	
	6-5-168	
	6-5-175	
	6-5-183	
	6-6-506	
	6-6-518	
	6-7-508	
	6-7-520	8
538-011A2-8	6-7-165	
	6-7-255	2
538-011B2V5-11	6-6-35	
	6-6-37	2
538-011D9-35	6-8-12	1
539-0132	6-3-21	1
539-0148	6-3-8	12
539-0151	6-3-19	1
539-0153	6-3-23	1
539-0154	6-3-17	1
539-0155	6-3-90	1
539-0156	6-3-25	
	6-3-84	2
539-0157	6-3-88	1
539-0158	6-3-86	1
539-0170	6-3-82	1
539-0235	6-3-79	1
539-0236	6-3-28	1
54F04/BCA	6-5-88	
	6-7-491	2
540-9176-003	6-1-63	1
540-9213-003	6-6-3	
	6-6-5	2
541-6097-002	6-1-14	4
547-8177-012	6-5-480	
	6-6-8A	
	6-7-233	6
56-590-65/4A6	6-5-198	
	6-5-199	
	6-5-202	
	6-5-206	
	6-5-216	
	6-5-217	
	6-5-219	
	6-5-222	
	6-6-449	
	6-7-205	
	6-7-250	
	6-7-266	15
58318	6-4-301	1
6VJ1	6-1-32	1
609-9655-001	6-1-74	1
609-9655-002	6-1-73	1
622-6577-001	6-1-	1
622-6577-002	6-1-	1
622-6577-003	6-1-	1
64P502	6-3-37	1
642-0239-000	6-1-24	1
646-6196-001	6-1-10	1
	6-5-	REF
646-6196-002	6-1-10	1
	6-5-	REF
646-6247-001	6-1-8	1
	6-4-	REF
646-6247-002	6-1-8	1
	6-4-	REF
646-6298-001	6-1-23	1
	6-6-	REF
646-6299-001	6-1-17	1
	6-7-	REF
646-6300-001	6-2-21	1
	6-3-	REF
646-7026-001	6-4-291	1
652-6552-001	6-1-75	1
652-6552-002	6-1-85	1
652-6553-001	6-6-543	1
652-6556-001	6-1-79	6
652-6556-002	6-5-266	2
652-6557-001	6-4-323	6
652-6558-001	6-2-30	1
652-6558-002	6-2-30	1
652-6560-001	6-6-414	1
652-6561-001	6-2-12	
	6-2-15	
	6-2-18	3
652-6561-002	6-2-11	
	6-2-20	2
652-6561-003	6-2-17	
	6-2-19	3
652-6561-004	6-2-13	1
652-6562-001	6-6-8	1
652-6563-001	6-6-7	1
652-6564-001	6-6-9	1
652-6565-001	6-6-6	1
652-6566-001	6-6-2	1

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
652-6567-001	6-6-4	1
652-6568-001	6-2-22	1
652-6570-001	6-2-23	1
652-6571-001	6-1-26	1
652-6572-001	6-1-7	1
	6-2-	REF
652-6572-002	6-1-7	1
	6-2-	REF
652-6574-001	6-7-5	1
652-6575-001	6-7-559	1
652-6576-002	6-7-3	1
652-6577-001	6-7-562	1
652-6578-001	6-7-2	1
652-6580-001	6-1-54	1
652-6580-002	6-1-50	1
652-6580-003	6-1-46	1
652-6580-004	6-1-42	1
652-6581-001	6-2-29	1
652-6581-002	6-2-27	1
652-6581-003	6-2-26	1
652-6581-004	6-2-24	1
652-6583-001	6-7-554	1
652-6584-001	6-7-553	1
652-6585-001	6-7-182	
	6-7-183	
	6-7-184	
	6-7-186	4
652-6586-001	6-1-3	1
652-6591-001	6-1-87	1
652-6593-001	6-7-564	1
652-6596-001	6-1-18	1
652-6597-001	6-1-72	1
652-6598-001	6-1-62	1
652-6599-001	6-1-5	1
652-6599-002	6-1-4	1
652-6600-001	6-1-64	2
652-6601-001	6-1-28	1
652-6601-002	6-1-27	1
652-6602-002	6-1-14	1
	6-9-	REF
652-6607-001	6-9-1	1
652-6608-001	6-9-2	1
652-6611-001	6-7-390	1
	6-8-	REF
652-6622-001	6-8-73	1
652-6623-001	6-8-44	4
652-6624-001	6-8-70	1
652-6625-001	6-8-41	1
652-6626-001	6-8-43	1
652-6626-002	6-8-45	1
652-6627-001	6-8-80	1
652-6629-001	6-8-1	1
652-6629-002	6-8-4	1
652-6630-001	6-8-79	1
652-7158-001	6-8-76	2
652-7158-002	6-8-77	2
652-7158-003	6-8-6	1
652-7158-004	6-8-78	1
652-7158-005	6-8-71A	1
659-1220-001	6-5-22	
	6-5-25	2
659-1227-002	6-5-28	1
659-1246-001	6-5-50	1
659-2025-001	6-8-7	1
659-2038-001	6-8-46	1
659-6157-010	6-4-218	1
659-6157-011	6-4-217	1
659-6157-012	6-4-216	1
677	6-6-431	1
677-0410-010	6-5-448	
	6-5-452	2
678-0099-010	6-1-65	
	6-1-66	2
6799	6-7-389	
	6-7-444	2
685-0303-001	6-8-79	2
685-1049-001	6-7-563	1
685-1050-001	6-6-542	1
685-1051-001	6-7-560	1
687-5187-001	6-3-99	4
687-5188-001	6-3-101	3
705-0934-000	6-5-667	
	6-6-313	2
705-0948-000	6-5-497	
	6-5-582	
	6-5-669	
	6-6-216	4
705-0969-000	6-6-204	1
705-0971-000	6-7-297	1
705-0973-000	6-7-456	1
705-0975-000	6-8-37	1
705-0982-000	6-7-466	1
705-0984-000	6-5-670	1
705-0987-000	6-5-520	1
705-0996-000	6-4-71	
	6-4-81	
	6-4-90	
	6-5-533	
	6-5-543	
	6-5-552	
	6-5-626	
	6-5-634	
	6-5-642	
	6-5-648	
	6-6-182	
	6-8-21	
	6-8-35	13
705-0999-000	6-5-664	1
705-1004-000	6-7-427	1
705-1007-000	6-6-281	1
705-1009-000	6-7-288	
	6-7-290	2
705-1011-000	6-7-292	
	6-7-293	
	6-7-294	
	6-7-295	4
705-1016-000	6-7-343	1
705-1020-000	6-5-562	
	6-5-566	
	6-5-567	
	6-5-596	
	6-5-618	
	6-5-630	
	6-5-635	
	6-5-641	
	6-5-647	
	6-5-651	
	6-5-655	11
705-1021-000	6-6-207	
	6-6-208	2

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
705-1026-000	6-5-608	1
705-1028-000	6-5-515	1
705-1030-000	6-6-320	1
705-1034-000	6-5-506	
	6-5-575	
	6-5-593	
	6-5-662	4
	6-8-25	AR
705-1035-000	6-8-25	AR
705-1036-000	6-5-632	
	6-5-649	2
	6-8-25	AR
705-1037-000	6-3-31	1
	6-8-25	AR
705-1038-000	6-8-25	AR
705-1039-000	6-8-25	AR
705-1040-000	6-8-25	AR
705-1041-000	6-8-25	AR
705-1042-000	6-3-30	1
	6-8-25	AR
705-1043-000	6-8-25	AR
705-1044-000	6-3-34	
	6-3-35	
	6-3-42	
	6-3-43	
	6-3-44	
	6-3-45	
	6-5-193	
	6-5-499	
	6-5-503	
	6-5-510	
	6-5-518	
	6-5-538	
	6-5-597	
	6-5-624	
	6-5-637	
	6-6-200	
	6-6-202	
	6-6-203	
	6-6-303	
	6-8-17	
	6-8-25	AR
	6-8-57	
	6-8-67	22
705-1045-000	6-8-25	AR
705-1046-000	6-8-25	AR
705-1047-000	6-8-25	AR
705-1048-000	6-5-574	
	6-5-594	
	6-5-595	
	6-5-661	4
	6-8-25	AR
705-1049-000	6-5-537	
	6-5-609	2
	6-8-25	AR
705-1054-000	6-5-519	1
705-1055-000	6-4-85	
	6-6-209	2
705-1060-000	6-8-55	
	6-8-56	2
705-1063-000	6-4-76	
	6-4-84	2
705-1064-000	6-7-369	
	6-7-387	2
705-1067-000	6-5-546	
	6-5-636	2
705-1068-000	6-5-572	
	6-5-656	
	6-5-657	
	6-5-660	4
705-1069-000	6-7-420	
	6-7-421	2
705-1072-000	6-6-214	1
705-1073-000	6-5-259	1
705-1074-000	6-6-210	1
705-1082-000	6-5-525	1
705-1086-000	6-4-80	
	6-4-93	2
705-1092-000	6-4-77	
	6-4-83	
	6-4-86	
	6-6-307	
	6-8-31	
	6-8-33	6
705-1094-000	6-8-20	1
705-1110-000	6-5-524	1
705-3600-170	6-6-167	
	6-6-168	
	6-6-169	
	6-6-170	4
705-3600-610	6-5-253	1
705-3600-650	6-8-62	1
705-3600-670	6-6-407	1
705-3600-680	6-7-285	
	6-7-287	
	6-7-289	3
705-3600-690	6-6-205	1
705-3600-710	6-6-206	1
705-3600-790	6-7-297	1
705-3600-810	6-5-581	
	6-5-668	
	6-8-34	3
705-3600-920	6-5-536	1
705-3600-930	6-5-666	1
705-3604-130	6-5-611	1
705-3605-010	6-5-622	1
705-3605-080	6-5-544	
	6-5-633	2
705-3605-140	6-5-579	
	6-5-586	
	6-5-590	
	6-5-591	4
705-3605-160	6-8-61	1
705-3605-250	6-5-550	
	6-5-560	
	6-7-327	
	6-7-337	
	6-7-338	5
705-3605-270	6-5-623	1
705-3605-280	6-5-610	1
705-3605-290	6-5-571	
	6-5-653	
	6-5-654	
	6-5-658	4
705-3605-300	6-7-412	
	6-7-413	
	6-7-426	
	6-7-428	4

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
705-3605-310	6-5-509	1
705-3605-320	6-5-529	1
705-3605-330	6-5-195	
	6-5-513	
	6-5-514	
	6-5-577	
	6-5-592	5
705-3605-350	6-6-308	1
705-3605-370	6-8-25	AR
	6-8-38	1
705-3605-380	6-8-25	AR
705-3605-390	6-8-25	AR
705-3605-400	6-8-25	AR
705-3605-410	6-8-25	AR
705-3605-420	6-8-25	AR
705-3605-430	6-8-25	AR
705-3605-440	6-8-25	AR
705-3605-450	6-8-25	AR
705-3605-460	6-8-25	AR
705-3605-470	6-6-212	1
	6-8-25	AR
705-3605-480	6-8-25	AR
705-3605-490	6-8-25	AR
705-3605-500	6-8-25	AR
705-3605-510	6-8-25	AR
705-3605-520	6-8-25	AR
705-3605-530	6-8-25	AR
705-3605-560	6-7-370	
	6-7-386	2
705-3605-580	6-3-46	1
705-3605-600	6-5-620	
	6-5-665	2
705-3605-620	6-3-66	
	6-5-258	
	6-5-504	
	6-5-505	
	6-5-578	
	6-5-663	
	6-8-22	7
705-3605-670	6-5-508	
	6-5-511	
	6-5-569	
	6-5-573	4
705-3605-750	6-4-94	1
705-3605-800	6-8-24	
	6-8-28	2
705-3605-810	6-4-79	1
705-3605-850	6-6-309	1
705-3605-860	6-5-613	1
705-3605-900	6-5-535	1
705-3605-910	6-5-194	1
705-6730-000	6-8-25A	AR
705-6732-000	6-8-25A	AR
705-6735-000	6-8-25A	AR
705-6738-000	6-8-25A	AR
705-6742-000	6-8-25A	AR
714-2852-010	6-8-71	1
714-3234-180	6-7-379	1
7155	6-6-357	1
724-0637-260	6-6-162	
	6-6-267	
	6-6-272	
	6-6-273	4
733HM	6-7-476	1
7426	6-6-380	1
7427	6-6-348	1
7428	6-6-370	1
7429	6-6-376	1
7430	6-6-375	1
7431	6-6-344	1
7432	6-6-340	1
7433	6-7-411	1
7434	6-6-374	
	6-6-386	
	6-6-401	3
7435	6-6-378	1
7437	6-6-415	1
745-0676-000	6-6-149	
	6-6-175	
	6-6-185	
	6-6-263	
	6-6-283	
	6-6-317	
	6-6-318	7
745-0677-000	6-5-220	
	6-5-221	
	6-5-223	
	6-5-224	
	6-5-226	
	6-5-227	
	6-5-232	
	6-5-235	
	6-5-237	
	6-5-238	
	6-5-239	
	6-5-244	
	6-5-621	
	6-7-463	14
745-0686-000	6-5-540	
	6-7-459	
	6-7-465	3
745-0688-000	6-6-181	
	6-6-184	
	6-6-259	
	6-6-279	
	6-6-280	
	6-6-282	6
745-0689-000	6-5-583	1
745-0692-000	6-7-296	
	6-7-344	
	6-7-355	
	6-7-377	4
745-0694-000	6-4-236	
	6-6-117	
	6-6-144	
	6-6-173	
	6-6-230	
	6-6-253	
	6-6-321	7
745-0698-000	6-5-549	
	6-5-639	2
745-0700-000	6-6-130	
	6-6-258	
	6-6-296	3
745-0701-000	6-4-73	
	6-5-205	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
745-0701-000	6-5-209	
	6-5-210	
	6-5-211	
	6-5-214	
	6-5-587	7
745-0702-000	6-7-301	1
745-0703-000	6-6-257	
	6-6-278	
	6-6-278A	
	6-6-286	
	6-6-290	
	6-6-402	6
745-0706-000	6-6-171	1
745-0707-000	6-5-617	1
745-0712-000	6-6-115	
	6-6-165	
	6-6-178	
	6-6-179	
	6-6-186	
	6-6-211	
	6-6-219	
	6-6-234	
	6-6-243	
	6-6-336	10
745-0713-000	6-5-498	
	6-5-500	
	6-5-501	
	6-5-502	
	6-5-516	
	6-5-517	
	6-5-554	
	6-5-555	
	6-5-564	
	6-5-565	
	6-5-570	
	6-5-588	
	6-5-589	
	6-5-599	
	6-5-600	
	6-5-602	
	6-5-603	
	6-5-643	
	6-5-650	
	6-5-659	
	6-7-286	
	6-7-326	
	6-7-330	
	6-7-331	
	6-7-332	
	6-7-336	
	6-7-348	
	6-7-350	
	6-7-418	
	6-7-424	
	6-7-433	
	6-7-443	
	6-7-457	33
745-0715-000	6-6-123	
745-0715-000	6-6-404	2
745-0718-000	6-6-337	1
745-0720-000	6-6-260	1
745-0721-000	6-6-215	1
745-0724-000	6-6-166	
	6-6-174	
	6-6-223	
	6-6-249	
	6-6-255	
	6-6-256	
	6-6-345	
	6-6-346	8
745-0725-000	6-5-101	
	6-5-539	
	6-5-547	
	6-5-559	
	6-5-625	
	6-5-640	6
745-0726-000	6-6-261	1
745-0728-000	6-5-103	
	6-5-104	
	6-5-212	
	6-5-213	
	6-5-250	
	6-5-251	
	6-7-347	
	6-7-371	
	6-7-429	
	6-7-462	
	6-7-464	11
745-0730-000	6-6-114	
	6-6-128	
	6-6-262	
	6-6-312	
	6-6-347	5
745-0731-000	6-7-393	
	6-7-438	2
745-0733-000	6-6-292	1
745-0734-000	6-4-92	1
745-0736-000	6-6-220	
	6-6-235	
	6-6-241	
	6-6-285	
	6-6-338	
	6-6-403	6
745-0737-000	6-3-6	
	6-5-200	
	6-5-201	
	6-5-207	
	6-5-208	
	6-5-257	
	6-7-417	
	6-7-425	8
745-0738-000	6-6-121	
	6-6-247	2
745-0740-000	6-5-563	
	6-5-568	2
745-0743-000	6-5-585	1
745-0745-000	6-6-221	1
745-0748-000	6-6-118	
	6-6-119	
	6-6-122	
	6-6-125	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
745-0748-000	6-6-164	
	6-6-177	
	6-6-198	
	6-6-232	
	6-6-245	
	6-6-250	
	6-6-252	
	6-6-306	
	6-6-310	
	6-6-322	
	6-6-329	
	6-6-335	
	6-6-421	17
745-0749-000	6-4-19	
	6-4-63	
	6-4-243	
	6-5-100	
	6-5-105	
	6-5-218	
	6-5-225	
	6-5-228	
	6-5-229	
	6-5-230	
	6-5-231	
	6-5-234	
	6-5-246	
	6-5-248	
	6-5-249	
	6-5-252	
	6-5-512	
	6-5-522	
	6-5-527	
	6-5-530	
	6-5-532	
	6-5-551	
	6-5-598	
	6-5-605	
	6-5-606	
	6-5-607	
	6-5-614	
	6-5-619	
	6-7-334	
	6-7-339	
	6-7-358	
	6-7-366	
	6-7-374	33
745-0751-000	6-6-116	
	6-6-176	
	6-6-224	
	6-6-248	
	6-6-314	5
745-0752-000	6-7-346	
	6-7-430	2
745-0757-000	6-6-172	
	6-6-225	2
745-0760-000	6-6-129	
	6-6-161	
	6-6-193	
	6-6-217	
	6-6-238	
	6-6-239	
	6-6-251	
	6-6-328	
	6-6-405	9
745-0761-000	6-5-99	
	6-5-233	
	6-5-236	3
745-0766-000	6-6-158	
	6-6-194	
	6-6-196	
	6-6-291	
	6-6-295	5
745-0767-000	6-5-245	
	6-5-541	
	6-5-629	3
745-0772-000	6-6-150	
	6-6-151	
	6-6-153	
	6-6-154	
	6-6-191	
	6-6-192	
	6-6-195	
	6-6-213	
	6-6-218	
	6-6-231	
	6-6-233	
	6-6-237	
	6-6-240	
	6-6-287	
	6-6-288	
	6-6-289	
	6-6-293	
	6-6-294	
	6-6-299	
	6-6-316	
	6-6-397	
	6-6-399	22
745-0773-000	6-4-22	
	6-4-89	
	6-4-233	
	6-7-356	
	6-7-434	
	6-7-435	
	6-7-436	
	6-7-437	
	6-7-441	
	6-7-442	
	6-9-28	
	6-9-29	12
745-0776-000	6-7-298	
	6-7-300	
	6-7-341	
	6-7-357	4
745-0780-000	6-6-254	1
745-0784-000	6-6-127	
	6-6-147	
	6-6-152	
	6-6-155	
	6-6-159	
	6-6-222	
	6-6-229	
	6-6-246	
	6-6-297	
	6-6-298	
	6-6-300	
	6-6-301	
	6-6-331	
	6-6-422	14

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
745-0785-000	6-4-12	
	6-4-13	
	6-4-14	
	6-4-15	
	6-4-16	
	6-4-17	
	6-4-18	
	6-4-20	
	6-4-21	
	6-4-23	
	6-4-24	
	6-4-25	
	6-4-26	
	6-4-27	
	6-4-28	
	6-4-29	
	6-4-30	
	6-4-35	
	6-4-59	
	6-4-60	
	6-4-62	
	6-4-64	
	6-4-67	
	6-4-68	
	6-4-69	
	6-4-72	
	6-4-75	
	6-4-91	
	6-4-98	
	6-4-99	
	6-4-100	
	6-4-101	
	6-4-102	
	6-4-103	
	6-4-114	
	6-5-196	
	6-5-197	
	6-5-203	
	6-5-204	
	6-5-215	
	6-5-247	
	6-5-260	
	6-5-526	
	6-5-528	
	6-5-531	
	6-5-545	
	6-5-548	
	6-5-553	
	6-5-557	
	6-5-558	
	6-5-580	
	6-5-604	
	6-5-628	
	6-5-645	
	6-7-340	
	6-7-342	
	6-7-345	57
745-0791-000	6-4-57	
	6-4-58	
	6-4-65	
	6-4-66	
	6-4-82	
	6-4-88	
	6-4-95	
745-0791-000	6-4-96	
	6-5-556	
	6-5-646	10
745-0796-000	6-6-242	
	6-6-304	
	6-6-334	
	6-6-418	4
745-0797-000	6-6-120	
	6-6-226	
	6-6-228	3
745-0802-000	6-6-305	1
745-0806-000	6-4-70	1
745-0809-000	6-5-616	
	6-7-349	
	6-7-392	
	6-7-432	4
745-0820-000	6-6-156	
	6-6-160	
	6-6-199	
	6-6-236	
	6-6-311	
	6-6-319	
	6-6-323	
	6-6-396	
	6-6-398	
	6-6-400	10
745-0821-000	6-3-58	
	6-3-59	
	6-3-60	
	6-5-534	
	6-5-561	
	6-5-627	
	6-7-309	
	6-7-410	
	6-7-414	9
745-0832-000	6-6-302	
	6-6-417	2
745-0845-000	6-7-384	1
745-0857-000	6-4-97	
	6-5-521	
	6-5-523	
	6-5-601	
	6-5-615	
	6-7-407	6
745-0863-000	6-5-612	1
745-0907-130	6-6-33	
	6-6-163	
	6-6-274	
	6-6-276	
	6-6-277	5
745-1292-000	6-6-315	1
745-1306-000	6-6-265	1
745-1307-000	6-5-584	1
745-1309-000	6-6-266	1
745-1319-000	6-7-460	1
745-1324-000	6-7-373	1
745-1331-000	6-5-240	
	6-5-241	
	6-5-242	
	6-5-243	4
745-1335-000	6-3-96	1
745-1356-000	6-3-33	1

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
745-1863-010	6-6-264	
	6-6-268	
745-1863-010	6-6-270	
	6-6-271	4
745-1863-050	6-7-367	1
745-1863-090	6-6-269	1
745-1863-130	6-6-143	
	6-6-339	
	6-6-342	3
745-1863-140	6-7-445	1
745-1863-170	6-6-146	1
745-1863-300	6-7-306	1
745-1863-320	6-7-360	
	6-7-376	2
745-1863-810	6-6-275	1
745-1863-930	6-7-380	1
745-2268-000	6-7-318	
	6-7-365	
	6-7-454	3
745-2277-000	6-7-359	1
745-2283-000	6-7-375	1
745-2286-000	6-7-450	1
745-2289-000	6-7-351	AR
745-2292-000	6-7-305	
	6-7-317	
	6-7-351	AR
	6-7-394	3
745-2295-000	6-7-319	
	6-7-351	AR
	6-7-383	
	6-7-458	3
745-2298-000	6-7-351	AR
745-2301-000	6-7-351	AR
	6-7-453	1
745-2304-000	6-4-239	
	6-7-320	
	6-7-351	AR
	6-7-401	
	6-7-500	4
745-2308-000	6-7-351	AR
745-2311-000	6-7-315	
	6-7-351	AR
	6-7-352	
	6-7-388	
	6-7-452	4
745-2314-000	6-7-378	
	6-7-467	2
745-2317-000	6-7-397	1
745-2320-000	6-4-231	
	6-7-321	
	6-7-372	
	6-7-382	
	6-7-446	
	6-7-447	6
745-2323-000	6-7-406	
	6-7-503	2
745-2332-000	6-7-312	
	6-7-322	2
745-2341-000	6-7-353	
	6-7-354	
	6-7-362	
	6-7-439	4
745-2344-000	6-7-324	1
745-2350-000	6-7-368	1
745-2353-000	6-7-304	
	6-7-308	
	6-7-313	
745-2353-000	6-7-333	
	6-7-409	5
745-2356-000	6-7-314	
	6-7-328	
	6-7-364	3
745-2359-000	6-7-302	1
745-2365-000	6-7-299	
	6-7-316	
	6-7-363	
	6-7-400	
	6-7-405	5
745-2377-000	6-7-310	
	6-7-402	2
745-2383-000	6-7-311	
	6-7-404	2
745-2389-000	6-7-361	1
745-2401-000	6-7-303	
	6-7-307	
	6-7-395	3
745-2413-000	6-7-323	
	6-7-399	2
747-2179-730	6-8-19	
	6-8-32	2
747-2179-980	6-6-284	1
747-2183-050	6-6-394	1
747-4230-010	6-5-542	
	6-7-335	2
747-4230-300	6-7-325	
	6-7-329	2
747-5349-000	6-6-157	1
747-5373-000	6-5-576	1
751-0508-001	6-7-4	1
751-0509-001	6-7-558	1
751-0520-001	6-3-102	3
751-0521-001	6-3-100	4
751-0586-001	6-9-31	2
76SB04S	6-4-250	1
76602-102	6-7-551	17
76602-105	6-4-213	86
76602-134	6-5-265	6
76602-139	6-5-165	
	6-5-179	82
8101P050Z5U102M	6-6-34	
	6-6-46	
	6-6-540	3
8111B115-C0K0-56 8B	6-8-48	AR
	6-8-64	AR
8121M050Z5U103M	6-8-10	
	6-8-15	
	6-8-49	
	6-8-59	
	6-8-66	5
8131M050Z5U104M	6-8-14	
	6-8-16	
	6-8-27	
	6-8-36	4
8131M050Z5U105M	6-8-63	1
8141M050Z5U155M	6-6-49	
	6-6-51	2
819-B3800W-75	6-1-44	
	6-1-48	
	6-1-52	
	6-1-56	4
86418-8	6-4-290	1
88089-1	6-3-3	
	6-4-245	
	6-4-255	3

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
88203-2	6-5-443	1
9M1PS14	6-1-34	1
910B1D205K	6-1-58	
	6-1-59	
	6-1-60	
	6-1-61	4
912-2095-500	6-6-43	1
912-3885-000	6-7-89	1
912-3888-000	6-7-91	1
912-3891-000	6-7-94	1
913-1098-010	6-8-48	AR
	6-8-64	AR
913-1098-130	6-8-48	AR
	6-8-64	AR
913-1098-140	6-8-48	AR
	6-8-64	AR
913-1098-160	6-8-48	AR
	6-8-64	AR
913-1098-170	6-8-48	AR
	6-8-64	AR
913-1098-210	6-8-48	AR
	6-8-64	AR
913-1098-220	6-8-48	AR
	6-8-64	AR
913-1098-230	6-8-48	AR
	6-8-64	AR
913-1098-240	6-8-48	AR
	6-8-64	AR
913-1098-250	6-8-48	AR
	6-8-64	AR
913-1098-260	6-8-48	AR
	6-8-64	AR
913-1098-270	6-8-48	AR
	6-8-64	AR
913-1098-280	6-8-48	AR
	6-8-64	AR
913-1098-310	6-8-48	AR
	6-8-64	AR
913-1098-330	6-8-48	AR
	6-8-64	AR
913-1098-340	6-8-48	AR
	6-8-64	AR
913-1098-620	6-8-48	AR
	6-8-64	AR
913-1098-630	6-8-48	AR
	6-8-64	AR
913-1098-640	6-8-48	AR
	6-8-64	AR
913-1112-050	6-7-74	
	6-7-160	2
913-1112-070	6-7-96	1
913-1112-110	6-7-137	1
913-1112-130	6-7-123	
	6-7-142	
	6-7-161	3
913-1112-140	6-6-31	
	6-7-69	
	6-7-156	
	6-7-171	
	6-7-174	5
913-1112-150	6-7-28	1
913-1112-160	6-7-75	
	6-7-117	
	6-7-180	3
913-1112-170	6-6-70	
913-1112-170	6-6-72	
	6-6-110	
	6-7-163	
	6-7-263	5
913-1112-180	6-6-23	1
913-1112-190	6-6-82	
	6-6-83	2
913-1112-200	6-7-8	
	6-7-11	
	6-7-175	3
913-1112-210	6-6-48	
	6-7-30	
	6-7-145	3
913-1112-220	6-7-33	1
913-1112-230	6-7-121	
	6-7-139	2
913-1112-240	6-7-47	
	6-7-107	2
913-1112-250	6-6-138	
	6-6-227	
	6-7-26	
	6-7-36	
	6-7-56	
	6-7-108	
	6-7-181	7
913-1112-280	6-6-44	1
913-1112-290	6-7-27	
	6-7-39	
	6-7-129	3
913-1112-300	6-7-76	1
913-1112-320	6-7-118	1
913-1112-370	6-6-50	1
913-1112-390	6-6-54	
	6-6-55	2
913-1112-410	6-6-47	
	6-6-52	
	6-7-112	3
913-1112-420	6-6-53	1
913-1112-460	6-6-56	1
913-1112-490	6-6-18	
	6-6-59	2
913-1112-540	6-7-138	1
913-1112-560	6-7-177	
	6-7-179	2
913-1187-000	6-1-38	1
913-1188-000	6-2-2	1
913-2607-010	6-7-89	1
913-2607-020	6-7-91	1
913-2607-030	6-7-94	1
913-2609-080	6-6-40	1
913-2609-140	6-6-141	
	6-6-142	2
913-2609-170	6-6-36	
	6-6-38	2
913-2609-320	6-6-45	
	6-6-538	2
913-3117-070	6-8-53	1
913-3279-110	6-8-10	
	6-8-15	
	6-8-49	
	6-8-59	
	6-8-66	5
913-3279-200	6-8-14	
	6-8-16	
	6-8-27	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
913-3279-200	6-8-36	4
913-3279-270	6-8-63	1
913-3279-280	6-6-49	
	6-6-51	2
	6-8-48	AR
	6-8-54	1
	6-8-64	AR
913-3281-380	6-6-60	1
913-3281-410	6-8-13	1
	6-8-48	AR
	6-8-64	AR
913-3319-660	6-7-34	1
913-3319-740	6-7-31	1
913-3325-110	6-4-176	
	6-4-177	
	6-4-191	3
913-3325-130	6-5-155	
	6-5-159	
	6-5-276	
	6-5-287	
	6-5-334	
	6-5-344	
	6-5-419	7
913-3325-190	6-3-62	
	6-5-158	
	6-5-162	
	6-5-164	4
913-3325-230	6-5-110	
	6-5-118	
	6-5-143	
	6-6-24	
	6-6-131	
	6-6-134	6
913-3325-270	6-7-16	
	6-7-17	
	6-7-35	
	6-7-37	
	6-7-38	
	6-7-73	
	6-7-77	
	6-7-78	
	6-7-80	
	6-7-81	
	6-7-82	
	6-7-84	
	6-7-85	
	6-7-86	
	6-7-87	
	6-7-88	
	6-7-95	
	6-7-128	
	6-7-166	
	6-7-167	
	6-7-168	
	6-7-172	
	6-7-173	
	6-7-178	
	6-7-277	
	6-7-278	
	6-7-280	27
913-3325-280	6-5-352	
	6-5-402	2
913-3325-310	6-5-128	
	6-5-132	
	6-5-135	
913-3325-310	6-5-139	
	6-5-269	
	6-5-273	
	6-5-289	
	6-5-351	
	6-5-354	
	6-5-361	
	6-5-362	
	6-5-363	
	6-5-364	
	6-5-401	
	6-5-405	
	6-5-406	
	6-5-475	
	6-5-477	
	6-6-19	
	6-6-41	
	6-6-42	
	6-6-106	
	6-6-112	
	6-7-29	
	6-7-41	
	6-7-44	
	6-7-45	
	6-7-46	
	6-7-62	
	6-7-119	
	6-7-125	
	6-7-130	
	6-7-135	
	6-7-143	
	6-7-144	
	6-7-170	
	6-7-208	37
913-3325-360	6-5-360	
	6-5-474	2
913-3325-370	6-4-115	
	6-4-116	
	6-4-117	
	6-4-118	
	6-4-135	
	6-4-136	
	6-4-137	
	6-4-138	
	6-4-139	
	6-4-140	
	6-4-143	
	6-4-145	
	6-4-146	
	6-4-147	
	6-4-148	
	6-4-149	
	6-4-150	
	6-4-151	
	6-4-152	
	6-4-153	
	6-4-154	
	6-4-155	
	6-4-156	
	6-4-157	
	6-4-159	
	6-4-160	
	6-4-162	
	6-4-163	
	6-4-164	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
913-3325-370	6-4-197	
	6-4-198	
	6-4-199	
	6-4-200	
	6-4-201	
	6-4-202	
	6-4-203	
	6-4-204	
	6-5-311	
	6-5-372	
	6-6-15	40
913-3325-390	6-5-290	
	6-5-367	2
913-3325-400	6-5-291	
	6-5-366	2
913-3325-410	6-5-365	
	6-5-403	2
913-3325-420	6-5-305	
	6-5-307	
	6-5-309	
	6-5-319	
	6-5-320	
	6-5-321	
	6-5-322	
	6-5-323	
	6-5-324	
	6-5-325	
	6-5-326	
	6-5-327	
	6-5-328	
	6-5-329	
	6-5-343	
	6-5-345	
	6-5-350	
	6-5-353	
	6-5-370	
	6-5-414	
	6-5-415	
	6-5-417	
	6-5-424	
	6-5-438	
	6-6-14	
	6-6-16	
	6-6-20	
	6-6-25	
	6-6-26	
	6-6-27	
	6-6-28	
	6-6-29	
	6-6-32	
	6-6-39	
	6-6-61	
	6-6-74	
	6-6-76	
	6-6-77	
	6-6-79	
	6-6-80	
	6-6-81	
	6-6-84	
	6-6-85	
	6-6-86	
	6-6-87	
	6-6-88	
	6-6-90	
	6-6-94	
913-3325-420	6-6-99	
	6-6-100	
	6-6-102	
	6-6-103	
	6-6-104	
	6-6-109	
	6-6-113	
	6-6-133	
	6-6-135	
	6-6-136	
	6-6-137	
	6-6-139	
	6-6-140	
	6-6-145	
	6-6-148	
	6-6-183	
	6-6-188	
	6-6-189	
	6-6-190	
	6-6-197	
	6-6-201	
	6-7-18	
	6-7-20	
	6-7-21	
	6-7-32	
	6-7-40	
	6-7-49	
	6-7-72	
	6-7-104	
	6-7-105	
	6-7-106	
	6-7-110	
	6-7-111	
	6-7-120	
	6-7-127	
	6-7-131	
	6-7-134	
	6-7-146	
	6-7-150	
	6-7-153	
	6-7-164	
	6-7-176	
	6-7-256	91
913-3325-430	6-7-65	1
913-3325-460	6-7-64	
	6-7-66	
	6-7-116	3
913-3325-470	6-3-7	
	6-3-10	
	6-3-32	
	6-3-38	
	6-3-47	
	6-3-50	
	6-3-51	
	6-3-54	
	6-3-61	
	6-3-68	
	6-3-69	
	6-3-94	
	6-4-119	
	6-4-120	
	6-4-121	
	6-4-122	
	6-4-123	
	6-4-124	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ	PART NUMBER	FIG-ITEM	TTL REQ
913-3325-470	6-4-125		913-3325-470	6-5-142	
	6-4-126			6-5-144	
	6-4-127			6-5-145	
	6-4-128			6-5-146	
	6-4-129			6-5-147	
	6-4-131			6-5-151	
	6-4-132			6-5-154	
	6-4-133			6-5-160	
	6-4-134			6-5-161	
	6-4-141			6-5-166	
	6-4-142			6-5-169	
	6-4-144			6-5-177	
	6-4-158			6-5-185	
	6-4-161			6-5-186	
	6-4-165			6-5-187	
	6-4-166			6-5-188	
	6-4-167			6-5-189	
	6-4-168			6-5-191	
	6-4-169			6-5-192	
	6-4-170			6-5-268	
	6-4-171			6-5-270	
	6-4-172			6-5-272	
	6-4-173			6-5-274	
	6-4-174			6-5-275	
	6-4-175			6-5-278	
	6-4-179			6-5-279	
	6-4-180			6-5-280	
	6-4-181			6-5-281	
	6-4-183			6-5-282	
	6-4-184			6-5-284	
	6-4-188			6-5-285	
	6-4-189			6-5-288	
	6-4-190			6-5-295	
	6-4-193			6-5-296	
	6-4-194			6-5-297	
	6-4-196			6-5-299	
	6-4-205			6-5-304	
	6-5-107			6-5-308	
	6-5-108			6-5-313	
	6-5-109			6-5-314	
	6-5-111			6-5-316	
	6-5-112			6-5-346	
	6-5-113			6-5-349	
	6-5-114			6-5-355	
	6-5-117			6-5-358	
	6-5-119			6-5-368	
	6-5-120			6-5-371	
	6-5-121			6-5-377	
	6-5-122			6-5-386	
	6-5-123			6-5-389	
	6-5-124			6-5-395	
	6-5-125			6-5-408	
	6-5-126			6-5-409	
	6-5-127			6-5-436	
	6-5-129			6-5-437	
	6-5-130			6-5-466	
	6-5-131			6-5-473	
	6-5-133			6-6-10	
	6-5-134			6-6-11	
	6-5-136			6-6-12	
	6-5-137			6-6-13	
	6-5-138			6-6-17	
	6-5-140			6-6-21	
	6-5-141			6-6-22	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
913-3325-470	6-6-30	
	6-6-57	
	6-6-58	
	6-6-63	
	6-6-67	
	6-6-69	
	6-6-71	
	6-6-73	
	6-6-75	
	6-6-91	
	6-6-92	
	6-6-93	
	6-6-97	
	6-6-98	
	6-6-101	
	6-6-105	
	6-6-107	
	6-6-108	
	6-6-132	
	6-6-180	
	6-6-187	
	6-7-9	
	6-7-10	
	6-7-22	
	6-7-23	
	6-7-24	
	6-7-25	
	6-7-42	
	6-7-61	
	6-7-63	
	6-7-68	
	6-7-70	
	6-7-71	
	6-7-83	
	6-7-90	
	6-7-92	
	6-7-99	
	6-7-113	
	6-7-114	
	6-7-140	
	6-7-141	
	6-7-151	
	6-7-152	
	6-7-154	
	6-7-157	
	6-7-169	
	6-7-254	193
913-3325-810	6-7-12	
	6-7-14	2
913-3401-010	6-8-48	AR
	6-8-64	AR
913-3401-040	6-8-48	AR
	6-8-51	1
	6-8-64	AR
913-3401-050	6-8-48	AR
	6-8-64	AR
913-3401-060	6-8-48	AR
	6-8-64	AR
913-3401-070	6-8-48	AR
	6-8-64	AR
913-3401-080	6-8-48	AR
	6-8-64	AR
913-3401-090	6-8-48	AR
	6-8-64	AR
913-3401-100	6-8-48	AR
	6-8-64	AR
913-3401-110	6-8-48	AR
	6-8-64	AR
913-3401-120	6-8-48	AR
	6-8-64	AR
913-3667-190	6-6-40A	
	6-6-41A	2
913-4011-000	6-7-98	
	6-7-102	
	6-7-136	3
913-4014-000	6-7-529	1
913-4018-000	6-6-34	
	6-6-46	
	6-6-540	3
913-5019-200	6-5-100A	
	6-6-65	
	6-6-74A	
	6-6-539	
	6-7-79	
	6-7-100	
	6-7-101	
	6-7-159	8
913-5019-520	6-5-294	
	6-5-300	
	6-5-301	
	6-5-315	
	6-5-411	
	6-6-126	6
913-5019-540	6-8-26	1
913-5020-100	6-5-102	
	6-5-106	2
913-5020-660	6-5-359	
	6-5-472	2
917-0501-110	6-7-126	1
917-1218-000	6-7-165	
	6-7-255	2
917-1219-000	6-6-35	
	6-6-37	2
917-1225-000	6-8-12	1
917-1256-030	6-7-122	
	6-7-124	
	6-7-162	
	6-7-248	4
922-6100-020	6-7-486	1
922-6106-020	6-7-469	
	6-7-470	
	6-7-471	
	6-7-473	
	6-7-474	
	6-7-475	
	6-7-511	
	6-7-512	
	6-7-530	
	6-7-531	
	6-7-532	
	6-7-533	
	6-7-535	
	6-7-536	
	6-7-537	
	6-7-538	
	6-7-539	
	6-7-540	
	6-8-65	19

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
922-6119-010	6-6-423	
	6-6-424	
	6-6-435	
	6-6-436	
	6-6-439	
	6-6-440	
	6-6-442	
	6-6-444	
	6-6-514	
	6-6-526	10
922-6120-010	6-6-477	
	6-6-478	
	6-6-479	
	6-6-489	4
923CC0G100J050B	6-7-123	
	6-7-142	
	6-7-161	3
923CC0G101J050B	6-6-138	
	6-6-227	
	6-7-26	
	6-7-36	
	6-7-56	
	6-7-108	
	6-7-181	7
923CC0G101K200B	6-3-62	
	6-5-158	
	6-5-162	
	6-5-164	4
923CC0G102J050B	6-6-50	1
923CC0G120J050B	6-6-31	
	6-7-69	
	6-7-156	
	6-7-171	
	6-7-174	5
923CC0G150J050B	6-7-28	1
923CC0G152J050B	6-6-54	
	6-6-55	2
923CC0G180J050B	6-7-75	
	6-7-117	
	6-7-180	3
923CC0G181J050B	6-6-44	1
923CC0G220J050B	6-6-70	
	6-6-72	
	6-6-110	
	6-7-163	
	6-7-263	5
923CC0G220K200B	6-4-176	
	6-4-177	
	6-4-191	3
923CC0G221J050B	6-7-27	
	6-7-39	
	6-7-129	3
923CC0G221K100B	6-5-110	
	6-5-118	
	6-5-143	
	6-6-24	
	6-6-131	
	6-6-134	6
923CC0G222J050B	6-6-47	
	6-6-52	
	6-7-112	3
923CC0G270J050B	6-6-23	1
923CC0G271J050B	6-7-76	1
923CC0G272J050B	6-6-53	1
923CC0G330J050B	6-6-82	
	6-6-83	2
923CC0G330K200B	6-5-155	
	6-5-159	
	6-5-276	
	6-5-287	
	6-5-334	
	6-5-344	
	6-5-419	7
923CC0G360J050B	6-7-138	1
923CC0G390J050B	6-7-8	
	6-7-11	
	6-7-175	3
923CC0G391J050B	6-7-118	1
923CC0G470J050B	6-6-48	
	6-7-30	
	6-7-145	3
923CC0G510J050B	6-7-177	
	6-7-179	2
923CC0G560J050B	6-7-33	1
923CC0G562J050D	6-6-56	1
923CC0G680J050B	6-7-121	
	6-7-139	2
923CC0G820J050B	6-7-47	
	6-7-107	2
923CX7R102K100B	6-5-128	
	6-5-132	
	6-5-135	
	6-5-139	
	6-5-269	
	6-5-273	
	6-5-289	
	6-5-351	
	6-5-354	
	6-5-361	
	6-5-362	
	6-5-363	
	6-5-364	
	6-5-401	
	6-5-405	
	6-5-406	
	6-5-475	
	6-5-477	
	6-6-19	
	6-6-41	
	6-6-42	
	6-6-106	
	6-6-112	
	6-7-29	
	6-7-41	
	6-7-44	
	6-7-45	
	6-7-46	
	6-7-62	
	6-7-119	
	6-7-125	
	6-7-130	
	6-7-135	
	6-7-143	
	6-7-144	
	6-7-170	
	6-7-208	37
923CX7R103K100B	6-5-305	
	6-5-307	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
923CX7R103K100B	6-5-309	
	6-5-319	
	6-5-320	
	6-5-321	
	6-5-322	
	6-5-323	
	6-5-324	
	6-5-325	
	6-5-326	
	6-5-327	
	6-5-328	
	6-5-329	
	6-5-343	
	6-5-345	
	6-5-350	
	6-5-353	
	6-5-370	
	6-5-414	
	6-5-415	
	6-5-417	
	6-5-424	
	6-5-438	
	6-6-14	
	6-6-16	
	6-6-20	
	6-6-25	
	6-6-26	
	6-6-27	
	6-6-28	
	6-6-29	
	6-6-32	
	6-6-39	
	6-6-61	
	6-6-74	
	6-6-76	
	6-6-77	
	6-6-79	
	6-6-80	
	6-6-81	
	6-6-84	
	6-6-85	
	6-6-86	
	6-6-87	
	6-6-88	
	6-6-90	
	6-6-94	
	6-6-99	
	6-6-100	
	6-6-102	
	6-6-103	
	6-6-104	
	6-6-109	
	6-6-113	
	6-6-133	
	6-6-135	
	6-6-136	
	6-6-137	
	6-6-139	
	6-6-140	
	6-6-145	
	6-6-148	
	6-6-183	
	6-6-188	
	6-6-189	
923CX7R103K100B	6-6-190	
	6-6-197	
	6-6-201	
	6-7-18	
	6-7-20	
	6-7-21	
	6-7-32	
	6-7-40	
	6-7-49	
	6-7-72	
	6-7-104	
	6-7-105	
	6-7-106	
	6-7-110	
	6-7-111	
	6-7-120	
	6-7-127	
	6-7-131	
	6-7-134	
	6-7-146	
	6-7-150	
	6-7-153	
	6-7-164	
	6-7-176	
	6-7-256	91
923CX7R104K050B	6-3-7	
	6-3-10	
	6-3-32	
	6-3-38	
	6-3-47	
	6-3-50	
	6-3-51	
	6-3-54	
	6-3-61	
	6-3-68	
	6-3-69	
	6-3-94	
	6-4-119	
	6-4-120	
	6-4-121	
	6-4-122	
	6-4-123	
	6-4-124	
	6-4-125	
	6-4-126	
	6-4-127	
	6-4-128	
	6-4-129	
	6-4-131	
	6-4-132	
	6-4-133	
	6-4-134	
	6-4-141	
	6-4-142	
	6-4-144	
	6-4-158	
	6-4-161	
	6-4-165	
	6-4-166	
	6-4-167	
	6-4-168	
	6-4-169	
	6-4-170	
	6-4-171	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ	PART NUMBER	FIG-ITEM	TTL REQ
923CX7R104K050B	6-4-172		923CX7R104K050B	6-5-272	
	6-4-173			6-5-274	
	6-4-174			6-5-275	
	6-4-175			6-5-278	
	6-4-179			6-5-279	
	6-4-180			6-5-280	
	6-4-181			6-5-281	
	6-4-183			6-5-282	
	6-4-184			6-5-284	
	6-4-188			6-5-285	
	6-4-189			6-5-288	
	6-4-190			6-5-295	
	6-4-193			6-5-296	
	6-4-194			6-5-297	
	6-4-196			6-5-299	
	6-4-205			6-5-304	
	6-5-107			6-5-308	
	6-5-108			6-5-313	
	6-5-109			6-5-314	
	6-5-111			6-5-316	
	6-5-112			6-5-346	
	6-5-113			6-5-349	
	6-5-114			6-5-355	
	6-5-117			6-5-358	
	6-5-119			6-5-368	
	6-5-120			6-5-371	
	6-5-121			6-5-377	
	6-5-122			6-5-386	
	6-5-123			6-5-389	
	6-5-124			6-5-395	
	6-5-125			6-5-408	
	6-5-126			6-5-409	
	6-5-127			6-5-436	
	6-5-129			6-5-437	
	6-5-130			6-5-466	
	6-5-131			6-5-473	
	6-5-133			6-6-10	
	6-5-134			6-6-11	
	6-5-136			6-6-12	
	6-5-137			6-6-13	
	6-5-138			6-6-17	
	6-5-140			6-6-21	
	6-5-141			6-6-22	
	6-5-142			6-6-30	
	6-5-144			6-6-57	
	6-5-145			6-6-58	
	6-5-146			6-6-63	
	6-5-147			6-6-67	
	6-5-151			6-6-69	
	6-5-154			6-6-71	
	6-5-160			6-6-73	
	6-5-161			6-6-75	
	6-5-166			6-6-91	
	6-5-169			6-6-92	
	6-5-177			6-6-93	
	6-5-185			6-6-97	
	6-5-186			6-6-98	
	6-5-187			6-6-101	
	6-5-188			6-6-105	
	6-5-189			6-6-107	
	6-5-191			6-6-108	
	6-5-192			6-6-132	
	6-5-268			6-6-180	
	6-5-270			6-6-187	

NUMERICAL INDEX

PART NUMBER	FIG-ITEM	TTL REQ
923CX7R104K050B	6-7-9	
	6-7-10	
	6-7-22	
	6-7-23	
	6-7-24	
	6-7-25	
	6-7-42	
	6-7-61	
	6-7-63	
	6-7-68	
	6-7-70	
	6-7-71	
	6-7-83	
	6-7-90	
	6-7-92	
	6-7-99	
	6-7-113	
	6-7-114	
	6-7-140	
	6-7-141	
	6-7-151	
	6-7-152	
	6-7-154	
	6-7-157	
	6-7-169	
	6-7-254	193
923CX7R123K050B	6-7-65	1
923CX7R153K050B	6-7-12	
	6-7-14	2
923CX7R272K100B	6-5-360	
	6-5-474	2
923CX7R332K100B	6-4-115	
	6-4-116	
	6-4-117	
	6-4-118	
	6-4-135	
	6-4-136	
	6-4-137	
	6-4-138	
	6-4-139	
	6-4-140	
	6-4-143	
	6-4-145	
	6-4-146	
	6-4-147	
	6-4-148	
	6-4-149	
	6-4-150	
	6-4-151	
	6-4-152	
	6-4-153	
	6-4-154	
	6-4-155	
	6-4-156	
	6-4-157	
	6-4-159	
	6-4-160	
	6-4-162	
	6-4-163	
	6-4-164	
	6-4-197	
	6-4-198	
	6-4-199	
	6-4-200	
923CX7R332K100B	6-4-201	
	6-4-202	
	6-4-203	
	6-4-204	
	6-5-311	
	6-5-372	
	6-6-15	40
923CX7R471K100B	6-7-16	
	6-7-17	
	6-7-35	
	6-7-37	
	6-7-38	
	6-7-73	
	6-7-77	
	6-7-78	
	6-7-80	
	6-7-81	
	6-7-82	
	6-7-84	
	6-7-85	
	6-7-86	
	6-7-87	
	6-7-88	
	6-7-95	
	6-7-128	
	6-7-166	
	6-7-167	
	6-7-168	
	6-7-172	
	6-7-173	
	6-7-178	
	6-7-277	
	6-7-278	
	6-7-280	27
923CX7R472K100B	6-5-290	
	6-5-367	2
923CX7R473K050B	6-7-64	
	6-7-66	
	6-7-116	3
923CX7R561K100B	6-5-352	
	6-5-402	2
923CX7R562K100B	6-5-291	
	6-5-366	2
923CX7R682K100B	6-5-365	
	6-5-403	2
933-1081-130	6-7-57	
	6-7-58	2
933-1081-140	6-7-93	1
933-1081-180	6-7-6	
	6-7-13	
	6-7-15	3
933-1081-230	6-7-59	1
933-1424-050	6-1-58	
	6-1-59	
	6-1-60	
	6-1-61	4
9697	6-7-126	1

6.4 REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A1	6-1-7	652-6572-001
A1	6-1-7	652-6572-002
A1	6-2-	652-6572-001
A1	6-2-	652-6572-002
A1A1	6-2-21	646-6300-001
A1A1	6-3-	646-6300-001
A1A1C1	6-3-10	923CX7R104K050B
A1A1C10	6-3-62	923CC0G101K200B
A1A1C11	6-3-61	923CX7R104K050B
A1A1C12	6-3-54	923CX7R104K050B
A1A1C13	6-3-7	923CX7R104K050B
A1A1C2	6-3-32	923CX7R104K050B
A1A1C3	6-3-38	923CX7R104K050B
A1A1C4	6-3-47	923CX7R104K050B
A1A1C5	6-3-50	923CX7R104K050B
A1A1C6	6-3-51	923CX7R104K050B
A1A1C7	6-3-94	923CX7R104K050B
A1A1C8	6-3-69	923CX7R104K050B
A1A1C9	6-3-68	923CX7R104K050B
A1A1DS1	6-3-13	C222-03
A1A1DS2	6-3-49	C203-03
A1A1DS3	6-3-36	MV5053
A1A1LS1	6-3-95	A2WP
A1A1P1	6-3-2	1-499566-0
A1A1R1	6-3-66	RN55D2002F
A1A1R10	6-3-42	RN55D1002F
A1A1R11	6-3-46	RN55D1652F
A1A1R12	6-3-96	RCR20G391KS
A1A1R13	6-3-33	RCR20G122KS
A1A1R14	6-3-60	RCR07G104KS
A1A1R15	6-3-59	RCR07G104KS
A1A1R16	6-3-58	RCR07G104KS
A1A1R17	6-3-6	RCR07G471KS
A1A1R18	6-3-63	382-0061-020
A1A1R19	6-3-56	382-0061-010
A1A1R2	6-3-30	RN55D9091F
A1A1R3	6-3-37	64P502
A1A1R4	6-3-31	RN55D7151F
A1A1R5	6-3-45	RN55D1002F
A1A1R6	6-3-44	RN55D1002F
A1A1R7	6-3-43	RN55D1002F
A1A1R8	6-3-34	RN55D1002F
A1A1R9	6-3-35	RN55D1002F
A1A1S1	6-3-9	M81E-0500
A1A1S10	6-3-72	M81E-0500
A1A1S11	6-3-71	M81E-0500
A1A1S12	6-3-70	M81E-0500
A1A1S13	6-3-65	M81E-0500
A1A1S14	6-3-55	M81E-0500
A1A1S15	6-3-53	M81E-0500
A1A1S16	6-3-52	M81E-0500
A1A1S17	6-3-18	M81E-0500
A1A1S18	6-3-91	M81E-0500
A1A1S19	6-3-26	M81E-0500
A1A1S2	6-3-11	M81E-0500
A1A1S20	6-3-83	M81E-0500
A1A1S21	6-3-89	M81E-0500
A1A1S22	6-3-87	M81E-0500
A1A1S23	6-3-85	M81E-0500
A1A1S24	6-3-80	M81E-0500
A1A1S3	6-3-14	M81E-0500
A1A1S4	6-3-15	M81E-0500
A1A1S5	6-3-16	M81E-0500
A1A1S6	6-3-20	M81E-0500
A1A1S7	6-3-22	M81E-0500
A1A1S8	6-3-24	M81E-0500
A1A1S9	6-3-29	M81E-0500
A1A1U1	6-3-92	314A103
A1A1U10	6-3-73	MC14584BAL
A1A1U11	6-3-67	SCL4013BC
A1A1U12	6-3-64	CD4047BF
A1A1U13	6-3-57	CD4023BF
A1A1U14	6-3-12	D7225G
A1A1U15	6-3-27	D7225G
A1A1U16	6-3-48	D7225G
A1A1U17	6-3-93	CD54HC244F
A1A1U2	6-3-81	314A104
A1A1U3	6-3-39	AD590IH
A1A1U4	6-3-40	LM258J
A1A1U5	6-3-78	CD4068BF
A1A1U6	6-3-77	CD54HC244F
A1A1U7	6-3-76	MM54C374J
A1A1U8	6-3-75	MM54C374J
A1A1U9	6-3-74	CD54HC138F
A1A1VR1	6-3-41	1N4624
A1C1	6-2-2	CK63AW103M
A1J1	6-2-3	113E
A1P1	6-2-9	03-06-2042
A1S1	6-2-8	NE15/F01-0003-00
A1S2	6-2-5	PC62D-200-5-SPEC 5460
A2	6-1-8	646-6247-001
A2	6-1-8	646-6247-002
A2	6-4-	646-6247-001
A2	6-4-	646-6247-002
A2CR1	6-4-296	1N4454-1
A2CR10	6-4-263	1N4454-1
A2CR11	6-4-264	1N4454-1
A2CR12	6-4-265	1N4454-1
A2CR13	6-4-266	1N4454-1
A2CR14	6-4-267	1N4454-1
A2CR15	6-4-268	1N4454-1
A2CR16	6-4-269	1N4454-1
A2CR17	6-4-270	1N4454-1
A2CR18	6-4-271	1N4454-1
A2CR19	6-4-272	1N4454-1
A2CR2	6-4-229	1N4454-1
A2CR20	6-4-273	1N4454-1
A2CR22	6-4-274	1N4454-1
A2CR23	6-4-275	1N4454-1
A2CR24	6-4-276	1N4454-1
A2CR25	6-4-277	1N4454-1
A2CR3	6-4-251	1N4454-1
A2CR36	6-4-279	1N4454-1
A2CR38	6-4-238	1N4454-1
A2CR39	6-4-235	1N4454-1
A2CR4	6-4-252	1N4454-1
A2CR40	6-4-230	1N5711
A2CR5	6-4-258	1N4454-1
A2CR6	6-4-259	1N4454-1
A2CR7	6-4-260	1N4454-1
A2CR8	6-4-261	1N4454-1
A2CR9	6-4-262	1N4454-1
A2C100	6-4-180	923CX7R104K050B
A2C101	6-4-115	923CX7R332K100B

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A2C103	6-4-177	923CC0G220K200B	A2C47	6-4-139	923CX7R332K100B
A2C104	6-4-176	923CC0G220K200B	A2C48	6-4-140	923CX7R332K100B
A2C106	6-4-191	923CC0G220K200B	A2C49	6-4-143	923CX7R332K100B
A2C107	6-4-189	923CX7R104K050B	A2C50	6-4-135	923CX7R332K100B
A2C108	6-4-190	923CX7R104K050B	A2C51	6-4-145	923CX7R332K100B
A2C109	6-4-195	199D105X0035BE3	A2C52	6-4-146	923CX7R332K100B
A2C110	6-4-199	923CX7R332K100B	A2C53	6-4-147	923CX7R332K100B
A2C111	6-4-178	199D106X0020CE3	A2C54	6-4-148	923CX7R332K100B
A2C112	6-4-185	199D476X0025EE3	A2C55	6-4-149	923CX7R332K100B
A2C113	6-4-187	199D105X0035BE3	A2C56	6-4-150	923CX7R332K100B
A2C114	6-4-179	923CX7R104K050B	A2C57	6-4-151	923CX7R332K100B
A2C115	6-4-188	923CX7R104K050B	A2C58	6-4-152	923CX7R332K100B
A2C116	6-4-175	923CX7R104K050B	A2C59	6-4-153	923CX7R332K100B
A2C117	6-4-123	923CX7R104K050B	A2C60	6-4-154	923CX7R332K100B
A2C118	6-4-125	923CX7R104K050B	A2C61	6-4-155	923CX7R332K100B
A2C119	6-4-128	923CX7R104K050B	A2C62	6-4-156	923CX7R332K100B
A2C120	6-4-124	923CX7R104K050B	A2C63	6-4-157	923CX7R332K100B
A2C121	6-4-122	923CX7R104K050B	A2C64	6-4-159	923CX7R332K100B
A2C122	6-4-126	923CX7R104K050B	A2C65	6-4-160	923CX7R332K100B
A2C123	6-4-127	923CX7R104K050B	A2C67	6-4-164	923CX7R332K100B
A2C124	6-4-121	923CX7R104K050B	A2C68	6-4-163	923CX7R332K100B
A2C125	6-4-120	923CX7R104K050B	A2C69	6-4-162	923CX7R332K100B
A2C126	6-4-119	923CX7R104K050B	A2C96	6-4-198	923CX7R332K100B
A2C127	6-4-129	923CX7R104K050B	A2C97	6-4-197	923CX7R332K100B
A2C128	6-4-194	923CX7R104K050B	A2C98	6-4-182	199D155X0025AE3
A2C129	6-4-193	923CX7R104K050B	A2C99	6-4-181	923CX7R104K050B
A2C130	6-4-183	923CX7R104K050B	A2DS1	6-4-308	MV5453
A2C131	6-4-184	923CX7R104K050B	A2E1	6-4-244	499441-5
A2C132	6-4-131	923CX7R104K050B	A2E2	6-4-254	499441-5
A2C133	6-4-174	923CX7R104K050B	A2J1	6-4-321	499139-9
A2C134	6-4-173	923CX7R104K050B	A2J2	6-4-213	76602-105
A2C135	6-4-132	923CX7R104K050B	A2J2	6-4-213	372-2601-047
A2C136	6-4-133	923CX7R104K050B	A2J6	6-4-247	DCSF-37S
A2C137	6-4-134	923CX7R104K050B	A2J7	6-4-257	DCSF-37P
A2C138	6-4-172	923CX7R104K050B	A2L1	6-4-6	MS75084-07
A2C139	6-4-171	923CX7R104K050B	A2L11	6-4-2	MS75084-07
A2C140	6-4-170	923CX7R104K050B	A2L12	6-4-113	MS75084-07
A2C141	6-4-169	923CX7R104K050B	A2L13	6-4-112	MS75084-07
A2C142	6-4-167	923CX7R104K050B	A2L14	6-4-111	MS75084-07
A2C143	6-4-168	923CX7R104K050B	A2L15	6-4-110	MS75084-07
A2C144	6-4-166	923CX7R104K050B	A2L16	6-4-109	MS75084-07
A2C145	6-4-165	923CX7R104K050B	A2L17	6-4-108	MS75084-07
A2C146	6-4-141	923CX7R104K050B	A2L18	6-4-107	MS75084-07
A2C147	6-4-142	923CX7R104K050B	A2L19	6-4-106	MS75084-07
A2C148	6-4-144	923CX7R104K050B	A2L2	6-4-7	MS75084-07
A2C150	6-4-158	923CX7R104K050B	A2L21	6-4-105	MS75084-07
A2C151	6-4-161	923CX7R104K050B	A2L22	6-4-104	MS75084-07
A2C152	6-4-192	199D106X0020CE3	A2L23	6-4-87	MS18130-1
A2C153	6-4-186	199D106X0020CE3	A2L24	6-4-74	MS18130-1
A2C154	6-4-242	EEC-F5R5U104	A2L25	6-4-78	MS18130-1
A2C155	6-4-240	199D156X0020DE3	A2L26	6-4-31	MS75084-07
A2C18	6-4-205	923CX7R104K050B	A2L27	6-4-32	MS75084-07
A2C19	6-4-204	923CX7R332K100B	A2L28	6-4-33	MS75084-07
A2C20	6-4-203	923CX7R332K100B	A2L29	6-4-34	MS75084-07
A2C21	6-4-202	923CX7R332K100B	A2L3	6-4-8	MS75084-07
A2C22	6-4-201	923CX7R332K100B	A2L30	6-4-36	MS75084-07
A2C23	6-4-200	923CX7R332K100B	A2L31	6-4-37	MS75084-07
A2C40	6-4-118	923CX7R332K100B	A2L32	6-4-38	MS75084-07
A2C41	6-4-117	923CX7R332K100B	A2L33	6-4-39	MS75084-07
A2C42	6-4-196	923CX7R104K050B	A2L34	6-4-40	MS75084-07
A2C43	6-4-116	923CX7R332K100B	A2L35	6-4-41	MS75084-07
A2C44	6-4-136	923CX7R332K100B	A2L36	6-4-42	MS75084-07
A2C45	6-4-137	923CX7R332K100B	A2L37	6-4-43	MS75084-07
A2C46	6-4-138	923CX7R332K100B	A2L38	6-4-44	MS75084-07

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A2L39	6-4-45	MS75084-07	A2R42	6-4-66	RCR07G153KS
A2L4	6-4-9	MS75084-07	A2R43	6-4-62	RCR07G103KS
A2L40	6-4-46	MS75084-07	A2R44	6-4-60	RCR07G103KS
A2L41	6-4-47	MS75084-07	A2R45	6-4-59	RCR07G103KS
A2L42	6-4-48	MS75084-07	A2R48	6-4-58	RCR07G153KS
A2L43	6-4-49	MS75084-07	A2R49	6-4-57	RCR07G153KS
A2L44	6-4-50	MS75084-07	A2R5	6-4-15	RCR07G103KS
A2L45	6-4-51	MS75084-07	A2R50	6-4-26	RCR07G103KS
A2L46	6-4-52	MS75084-07	A2R51	6-4-25	RCR07G103KS
A2L47	6-4-53	MS75084-07	A2R52	6-4-27	RCR07G103KS
A2L49	6-4-54	MS75084-07	A2R53	6-4-28	RCR07G103KS
A2L5	6-4-10	MS75084-07	A2R54	6-4-29	RCR07G103KS
A2L50	6-4-55	MS75084-07	A2R55	6-4-30	RCR07G103KS
A2L51	6-4-56	MS75084-07	A2R56	6-4-24	RCR07G103KS
A2L6	6-4-11	MS75084-07	A2R57	6-4-23	RCR07G103KS
A2L7	6-4-5	MS75084-07	A2R6	6-4-12	RCR07G103KS
A2L8	6-4-4	MS75084-07	A2R68	6-4-35	RCR07G103KS
A2L9	6-4-3	MS75084-07	A2R7	6-4-18	RCR07G103KS
A2P1	6-4-307	2-86418-0	A2R70	6-4-16	RCR07G103KS
A2P1	6-4-307	1-87997-7	A2R71	6-4-13	RCR07G103KS
A2P2	6-4-290	86418-8	A2R72	6-4-21	RCR07G103KS
A2P2	6-4-290	2-87997-5	A2R73	6-4-17	RCR07G103KS
A2Q1	6-4-310	2N2222A	A2R74	6-4-98	RCR07G103KS
A2Q10	6-4-232	2N2369A	A2R75	6-4-91	RCR07G103KS
A2Q11	6-4-234	2N2369A	A2R77	6-4-61	J0-500X0-125PVC2
A2Q12	6-4-237	2N2907A			2
A2Q2	6-4-309	2N2222A	A2R78	6-4-89	RCR07G472KS
A2Q9	6-4-314	2N2222A	A2R79	6-4-114	RCR07G103KS
A2R1	6-4-103	RCR07G103KS	A2R8	6-4-19	RCR07G102KS
A2R10	6-4-82	RCR07G153KS	A2R80	6-4-233	RCR07G472KS
A2R11	6-4-94	RN55D3742F	A2R81	6-4-243	RCR07G102KS
A2R12	6-4-20	RCR07G103KS	A2R82	6-4-231	RCR05G271KS
A2R13	6-4-63	RCR07G102KS	A2R83	6-4-236	RCR07G330JS
A2R14	6-4-100	RCR07G103KS	A2R84	6-4-239	RCR05G101KS
A2R15	6-4-99	RCR07G103KS	A2R9	6-4-93	RN55D7502F
A2R16	6-4-97	RCR07G105KS	A2U1	6-4-208	SN54LS32J
A2R17	6-4-96	RCR07G153KS	A2U10	6-4-214	SN54LS139J
A2R18	6-4-95	RCR07G153KS	A2U11	6-4-319	SN54LS245J
A2R19	6-4-92	RCR07G391KS	A2U12	6-4-313	CD4047BF
A2R2	6-4-102	RCR07G103KS	A2U13	6-4-215	SN54LS04J
A2R20	6-4-90	RN55D1001F	A2U14	6-4-218	659-6157-010
A2R21	6-4-88	RCR07G153KS	A2U15	6-4-315	ADC0808CCJ
A2R22	6-4-81	RN55D1001F	A2U16	6-4-318	DM54LS74J
A2R23	6-4-71	RN55D1001F	A2U17	6-4-317	SN54LS374J
A2R24	6-4-72	RCR07G103KS	A2U18	6-4-220	TC5517CPL-20
A2R25	6-4-73	RCR07G470KS	A2U19	6-4-312	SN54LS374J
A2R26	6-4-70	RCR07G393KS	A2U2	6-4-207	SN54LS374J
A2R27	6-4-77	RN55D1003F	A2U20	6-4-311	SN54LS245J
A2R28	6-4-76	RN55D2492F	A2U21	6-4-303	SN54LS02J
A2R29	6-4-75	RCR07G103KS	A2U22	6-4-295	DM54LS74J
A2R3	6-4-101	RCR07G103KS	A2U23	6-4-306	MC1558U
A2R30	6-4-86	RN55D1003F	A2U24	6-4-305	MC1408L-8
A2R31	6-4-85	RN55D1692F	A2U25	6-4-294	SN54LS32J
A2R32	6-4-84	RN55D2492F	A2U26	6-4-287	MD8255A/B
A2R33	6-4-83	RN55D1003F	A2U27	6-4-302	SN54LS374J
A2R34	6-4-80	RN55D7502F	A2U28	6-4-291	646-7026-001
A2R35	6-4-79	RN55D4992F	A2U29	6-4-289	SN54LS245J
A2R36	6-4-68	RCR07G103KS	A2U3	6-4-210	MB8416-20P
A2R37	6-4-67	RCR07G103KS	A2U30	6-4-293	SN54LS126AJ
A2R38	6-4-22	RCR07G472KS	A2U31	6-4-292	SN54LS245J
A2R39	6-4-69	RCR07G103KS	A2U32	6-4-286	SN54LS374J
A2R4	6-4-14	RCR07G103KS	A2U33	6-4-284	SN54LS04J
A2R40	6-4-64	RCR07G103KS	A2U34	6-4-222	SN54LS245J
A2R41	6-4-65	RCR07G153KS	A2U35	6-4-226	SN54LS125AJ

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A2U36	6-4-248	AM26LS30/BEA
A2U37	6-4-249	SN54LS00J
A2U38	6-4-253	DS78LS120J
A2U39	6-4-250	76SB04S
A2U4	6-4-216	659-6157-012
A2U40	6-4-227	314B153
A2U41	6-4-223	SN54LS374J
A2U42	6-4-228	CA3081
A2U43	6-4-281	SN54LS374J
A2U44	6-4-225	314B153
A2U45	6-4-224	CA3081
A2U46	6-4-285	LD8251A
A2U47	6-4-282	SN54LS374J
A2U48	6-4-278	314B153
A2U49	6-4-283	SN54LS32J
A2U5	6-4-206	SN54LS374J
A2U50	6-4-280	CA3081
A2U51	6-4-304	LM239J
A2U52	6-4-299	MBL80188-CV
A2U53	6-4-288	314A103
A2U6	6-4-209	SN54LS32J
A2U7	6-4-212	SN54LS32J
A2U8	6-4-217	659-6157-011
A2U9	6-4-320	SN54LS245J
A2VR1	6-4-241	1N4622
A2W1	6-4-322	22-TEB-122-1
A2Y1	6-4-297	289-7074-220-M20
A3	6-1-10	646-6196-001
A3	6-1-10	646-6196-002
A3	6-5-	646-6196-001
A3	6-5-	646-6196-002
A3CR1	6-5-496	1N4454-1
A3CR10	6-5-426	1N4454-1
A3CR11	6-5-429	1N4454-1
A3CR12	6-5-431	1N4454-1
A3CR13	6-5-397	1N4454-1
A3CR14	6-5-440	1N4454-1
A3CR15	6-5-486	1N4454-1
A3CR16	6-5-451	1N4454-1
A3CR17	6-5-462	1N4454-1
A3CR18	6-5-454	1N4454-1
A3CR2	6-5-115	1N4454-1
A3CR3	6-5-116	1N4454-1
A3CR4	6-5-152	1N4454-1
A3CR5	6-5-150	1N4454-1
A3CR6	6-5-404	1N4454-1
A3CR7	6-5-423	1N4454-1
A3CR8	6-5-418	1N4454-1
A3CR9	6-5-428	1N4454-1
A3C1	6-5-108	923CX7R104K050B
A3C10	6-5-134	923CX7R104K050B
A3C100	6-5-371	923CX7R104K050B
A3C101	6-5-277	199D156X0020DE3
A3C102	6-5-281	923CX7R104K050B
A3C103	6-5-282	923CX7R104K050B
A3C104	6-5-283	199D156X0020DE3
A3C105	6-5-286	199D156X0020DE3
A3C106	6-5-287	923CC0G330K200B
A3C107	6-5-288	923CX7R104K050B
A3C108	6-5-290	923CX7R472K100B
A3C109	6-5-291	923CX7R562K100B
A3C11	6-5-136	923CX7R104K050B
A3C110	6-5-401	923CX7R102K100B
A3C111	6-5-468	199D156X0020DE3
A3C112	6-5-467	199D156X0020DE3
A3C113	6-5-402	923CX7R561K100B
A3C114	6-5-403	923CX7R682K100B
A3C115	6-5-405	923CX7R102K100B
A3C116	6-5-406	923CX7R102K100B
A3C117	6-5-296	923CX7R104K050B
A3C118	6-5-409	923CX7R104K050B
A3C119	6-5-298	199D156X0020DE3
A3C120	6-5-342	199D156X0020DE3
A3C121	6-5-300	CK06BX474K
A3C122	6-5-301	CK06BX474K
A3C123	6-5-302	199D156X0020DE3
A3C124	6-5-303	199D475X0035DE3
A3C125	6-5-439	199D475X0035DE3
A3C126	6-5-441	199D475X0035DE3
A3C127	6-5-306	199D156X0020DE3
A3C128	6-5-436	923CX7R104K050B
A3C129	6-5-332	199D475X0035DE3
A3C130	6-5-438	923CX7R103K100B
A3C131	6-5-309	923CX7R103K100B
A3C132	6-5-437	923CX7R104K050B
A3C133	6-5-139	923CX7R102K100B
A3C134	6-5-310	199D476X0025EE3
A3C135	6-5-331	199D475X0035DE3
A3C136	6-5-367	923CX7R472K100B
A3C137	6-5-366	923CX7R562K100B
A3C138	6-5-365	923CX7R682K100B
A3C139	6-5-364	923CX7R102K100B
A3C14	6-5-140	923CX7R104K050B
A3C140	6-5-354	923CX7R102K100B
A3C141	6-5-352	923CX7R561K100B
A3C142	6-5-351	923CX7R102K100B
A3C143	6-5-477	923CX7R102K100B
A3C144	6-5-289	923CX7R102K100B
A3C145	6-5-475	923CX7R102K100B
A3C146	6-5-474	923CX7R272K100B
A3C147	6-5-472	CK14BR563K
A3C148	6-5-346	923CX7R104K050B
A3C149	6-5-466	923CX7R104K050B
A3C15	6-5-121	923CX7R104K050B
A3C150	6-5-345	923CX7R103K100B
A3C151	6-5-343	923CX7R103K100B
A3C152	6-5-339	199D475X0035DE3
A3C153	6-5-341	199D156X0020DE3
A3C154	6-5-337	199D475X0035DE3
A3C155	6-5-318	199D475X0035DE3
A3C156	6-5-358	923CX7R104K050B
A3C157	6-5-355	923CX7R104K050B
A3C158	6-5-463	199D475X0035DE3
A3C159	6-5-338	199D156X0020DE3
A3C16	6-5-124	923CX7R104K050B
A3C160	6-5-335	199D475X0035DE3
A3C161	6-5-317	ECEB1VL471SR
A3C162	6-5-363	923CX7R102K100B
A3C163	6-5-362	923CX7R102K100B
A3C164	6-5-361	923CX7R102K100B
A3C165	6-5-360	923CX7R272K100B
A3C166	6-5-359	CK14BR563K
A3C167	6-5-357	199D156X0020DE3
A3C168	6-5-356	199D156X0020DE3
A3C169	6-5-353	923CX7R103K100B
A3C17	6-5-107	923CX7R104K050B
A3C170	6-5-350	923CX7R103K100B
A3C171	6-5-473	923CX7R104K050B

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A3C172	6-5-349	923CX7R104K050B	A3C33	6-5-187	923CX7R104K050B
A3C173	6-5-469	199D475X0035DE3	A3C34	6-5-123	923CX7R104K050B
A3C174	6-5-470	199D156X0020DE3	A3C35	6-5-185	923CX7R104K050B
A3C175	6-5-348	199D156X0020DE3	A3C36	6-5-166	923CX7R104K050B
A3C176	6-5-347	199D156X0020DE3	A3C37	6-5-154	923CX7R104K050B
A3C177	6-5-344	923CC0G330K200B	A3C38	6-5-147	923CX7R104K050B
A3C178	6-5-458	199D475X0035DE3	A3C39	6-5-190	199D156X0020DE3
A3C179	6-5-459	199D475X0035DE3	A3C4	6-5-117	923CX7R104K050B
A3C18	6-5-109	923CX7R104K050B	A3C40	6-5-177	923CX7R104K050B
A3C180	6-5-340	199D156X0020DE3	A3C41	6-5-172	199D475X0035DE3
A3C181	6-5-336	199D475X0035DE3	A3C42	6-5-171	199D156X0020DE3
A3C182	6-5-330	ECEB1VL471SR	A3C43	6-5-173	199D156X0020DE3
A3C183	6-5-319	923CX7R103K100B	A3C44	6-5-100A	CK05BX103K
A3C184	6-5-320	923CX7R103K100B	A3C45	6-5-167	199D475X0035DE3
A3C185	6-5-321	923CX7R103K100B	A3C46	6-5-156	199D156X0020DE3
A3C186	6-5-322	923CX7R103K100B	A3C47	6-5-151	923CX7R104K050B
A3C187	6-5-323	923CX7R103K100B	A3C48	6-5-278	923CX7R104K050B
A3C188	6-5-324	923CX7R103K100B	A3C49	6-5-279	923CX7R104K050B
A3C189	6-5-325	923CX7R103K100B	A3C5	6-5-126	923CX7R104K050B
A3C19	6-5-113	923CX7R104K050B	A3C50	6-5-389	923CX7R104K050B
A3C190	6-5-326	923CX7R103K100B	A3C51	6-5-280	923CX7R104K050B
A3C191	6-5-327	923CX7R103K100B	A3C52	6-5-284	923CX7R104K050B
A3C192	6-5-328	923CX7R103K100B	A3C53	6-5-161	923CX7R104K050B
A3C193	6-5-329	923CX7R103K100B	A3C54	6-5-160	923CX7R104K050B
A3C194	6-5-334	923CC0G330K200B	A3C55	6-5-159	923CC0G330K200B
A3C195	6-5-333	199D475X0035DE3	A3C56	6-5-294	CK06BX474K
A3C196	6-5-293	199D156X0020DE3	A3C57	6-5-295	923CX7R104K050B
A3C197	6-5-144	923CX7R104K050B	A3C58	6-5-408	923CX7R104K050B
A3C198	6-5-146	923CX7R104K050B	A3C59	6-5-297	923CX7R104K050B
A3C199	6-5-169	923CX7R104K050B	A3C6	6-5-127	923CX7R104K050B
A3C2	6-5-111	923CX7R104K050B	A3C60	6-5-299	923CX7R104K050B
A3C20	6-5-119	923CX7R104K050B	A3C61	6-5-411	CK06BX474K
A3C200	6-5-374	199D476X0006DE3	A3C62	6-5-414	923CX7R103K100B
A3C201	6-5-128	923CX7R102K100B	A3C63	6-5-415	923CX7R103K100B
A3C202	6-5-132	923CX7R102K100B	A3C64	6-5-304	923CX7R104K050B
A3C203	6-5-135	923CX7R102K100B	A3C65	6-5-305	923CX7R103K100B
A3C204	6-5-272	923CX7R104K050B	A3C66	6-5-417	923CX7R103K100B
A3C205	6-5-313	923CX7R104K050B	A3C67	6-5-421	199D475X0035DE3
A3C206	6-5-106	CK12BX330K	A3C68	6-5-419	923CC0G330K200B
A3C207	6-5-182	199D156X0020DE3	A3C69	6-5-307	923CX7R103K100B
A3C208	6-5-189	923CX7R104K050B	A3C7	6-5-130	923CX7R104K050B
A3C209	6-5-188	923CX7R104K050B	A3C70	6-5-424	923CX7R103K100B
A3C21	6-5-122	923CX7R104K050B	A3C71	6-5-308	923CX7R104K050B
A3C210	6-5-186	923CX7R104K050B	A3C72	6-5-433	199D475X0035DE3
A3C211	6-5-164	923CC0G101K200B	A3C73	6-5-311	923CX7R332K100B
A3C212	6-5-162	923CC0G101K200B	A3C74	6-5-312	199D476X0025EE3
A3C213	6-5-158	923CC0G101K200B	A3C75	6-5-316	923CX7R104K050B
A3C214	6-5-155	923CC0G330K200B	A3C76	6-5-314	923CX7R104K050B
A3C218	6-5-143	923CC0G221K100B	A3C77	6-5-315	CK06BX474K
A3C219	6-5-118	923CC0G221K100B	A3C78	6-5-376	199D475X0035DE3
A3C22	6-5-142	923CX7R104K050B	A3C79	6-5-274	923CX7R104K050B
A3C220	6-5-110	923CC0G221K100B	A3C8	6-5-131	923CX7R104K050B
A3C222	6-5-102	CK12BX330K	A3C80	6-5-377	923CX7R104K050B
A3C23	6-5-191	923CX7R104K050B	A3C81	6-5-378	199D475X0035DE3
A3C24	6-5-192	923CX7R104K050B	A3C82	6-5-269	923CX7R102K100B
A3C25	6-5-112	923CX7R104K050B	A3C83	6-5-270	923CX7R104K050B
A3C26	6-5-120	923CX7R104K050B	A3C84	6-5-271	199D475X0035DE3
A3C27	6-5-125	923CX7R104K050B	A3C85	6-5-268	923CX7R104K050B
A3C28	6-5-129	923CX7R104K050B	A3C86	6-5-273	923CX7R102K100B
A3C29	6-5-137	923CX7R104K050B	A3C87	6-5-372	923CX7R332K100B
A3C3	6-5-114	923CX7R104K050B	A3C88	6-5-370	923CX7R103K100B
A3C30	6-5-138	923CX7R104K050B	A3C89	6-5-369	199D475X0035DE3
A3C31	6-5-141	923CX7R104K050B	A3C9	6-5-133	923CX7R104K050B
A3C32	6-5-145	923CX7R104K050B	A3C90	6-5-368	923CX7R104K050B

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A3C91	6-5-386	923CX7R104K050B	A3R117	6-5-544	RN55D1501F
A3C92	6-5-285	923CX7R104K050B	A3R118	6-5-543	RN55D1001F
A3C93	6-5-395	923CX7R104K050B	A3R119	6-5-541	RCR07G332KS
A3C94	6-5-394	199D156X0020DE3	A3R12	6-5-207	RCR07G471KS
A3C95	6-5-292	199D156X0020DE3	A3R120	6-5-530	RCR07G102KS
A3C96	6-5-275	923CX7R104K050B	A3R121	6-5-623	RN55D3741F
A3C97	6-5-276	923CC0G330K200B	A3R122	6-5-622	RN55D1021F
A3C98	6-5-375	199D156X0020DE3	A3R123	6-5-535	RN55D7682F
A3C99	6-5-373	199D156X0020DE3	A3R124	6-5-539	RCR07G221KS
A3E1	6-5-444	499443-4	A3R125	6-5-540	RCR07G180KS
A3E3	6-5-263	M16878/4BFA-9	A3R126	6-5-520	RN55D6490F
A3J1	6-5-382	15-41-7220	A3R127	6-5-542	RW70U1R00F
A3J2	6-5-179	76602-139	A3R128	6-5-538	RN55D1002F
A3J2	6-5-179	372-2601-087	A3R129	6-5-211	RCR07G470KS
A3J3	6-5-165	76602-139	A3R13	6-5-208	RCR07G471KS
A3J3	6-5-165	372-2601-087	A3R130	6-5-507	101T10000
A3J4	6-5-442	3385-6000	A3R131	6-5-670	RN55D5620F
A3L1	6-5-181	MS18130-1	A3R132	6-5-583	RCR07G220KS
A3L10	6-5-494	MS75084-16	A3R133	6-5-584	RCR20G820KS
A3L11	6-5-381	MS75084-16	A3R134	6-5-587	RCR07G470KS
A3L12	6-5-487	MS18130-12	A3R135	6-5-585	RCR07G681KS
A3L13	6-5-488	MS18130-10	A3R136	6-5-497	RN55D1000F
A3L14	6-5-178	MS18130-10	A3R137	6-5-536	RN55D8060F
A3L15	6-5-184	MS75085-01	A3R138	6-5-665	RN55D1822F
A3L2	6-5-176	MS18130-1	A3R139	6-5-664	RN55D1151F
A3L3	6-5-174	MS18130-10	A3R14	6-5-99	RCR07G222KS
A3L4	6-5-170	MS90539-15	A3R140	6-5-666	RN55D8450F
A3L5	6-5-157	MS75084-12	A3R141	6-5-580	RCR07G103KS
A3L6	6-5-420	MS75084-12	A3R142	6-5-667	RN55D51R1F
A3L7	6-5-388	MS75084-16	A3R143	6-5-668	RN55D4750F
A3L8	6-5-495	MS75084-16	A3R144	6-5-581	RN55D4750F
A3L9	6-5-379	MS75084-16	A3R145	6-5-669	RN55D1000F
A3P1	6-5-490	532977-2	A3R146	6-5-582	RN55D1000F
A3P2	6-5-175	532977-3	A3R147	6-5-579	RN55D2001F
A3P3	6-5-163	532977-3	A3R148	6-5-586	RN55D2001F
A3P4	6-5-183	532977-3	A3R149	6-5-578	RN55D2002F
A3P5	6-5-168	532977-3	A3R15	6-5-100	RCR07G102KS
A3P6	6-5-261	51-311-3875	A3R150	6-5-663	RN55D2002F
A3Q1	6-5-380	2N2907A	A3R151	6-5-577	RN55D4991F
A3Q2	6-5-493	2N918	A3R152	6-5-575	RN55D6191F
A3Q3	6-5-489	2N918	A3R153	6-5-662	RN55D6191F
A3Q4	6-5-427	2N2907A	A3R154	6-5-574	RN55D1212F
A3Q5	6-5-432	2N4092	A3R155	6-5-661	RN55D1212F
A3Q6	6-5-491	A210	A3R156	6-5-573	RN55D2552F
A3R1	6-5-257	RCR07G471KS	A3R157	6-5-569	RN55D2552F
A3R10	6-5-251	RCR07G271KS	A3R158	6-5-657	RN55D3162F
A3R100	6-5-505	RN55D2002F	A3R159	6-5-656	RN55D3162F
A3R101	6-5-592	RN55D4991F	A3R16	6-5-212	RCR07G271KS
A3R102	6-5-506	RN55D6191F	A3R160	6-5-654	RN55D4121F
A3R103	6-5-593	RN55D6191F	A3R161	6-5-653	RN55D4121F
A3R104	6-5-594	RN55D1212F	A3R162	6-5-649	RN55D6811F
A3R105	6-5-508	RN55D2552F	A3R163	6-5-648	RN55D1001F
A3R106	6-5-595	RN55D1212F	A3R164	6-5-564	RCR07G101KS
A3R107	6-5-511	RN55D2552F	A3R165	6-5-643	RCR07G101KS
A3R108	6-5-596	RN55D3161F	A3R166	6-5-563	RCR07G561KS
A3R109	6-5-516	RCR07G101KS	A3R167	6-5-562	RN55D3161F
A3R11	6-5-250	RCR07G271KS	A3R168	6-5-641	RN55D3161F
A3R110	6-5-517	RCR07G101KS	A3R169	6-5-638	101T10001
A3R111	6-5-521	RCR07G105KS	A3R17	6-5-213	RCR07G271KS
A3R112	6-5-523	RCR07G105KS	A3R170	6-5-635	RN55D3161F
A3R113	6-5-601	RCR07G105KS	A3R171	6-5-634	RN55D1001F
A3R114	6-5-602	RCR07G101KS	A3R172	6-5-632	RN55D6811F
A3R115	6-5-603	RCR07G101KS	A3R173	6-5-630	RN55D3161F
A3R116	6-5-526	RCR07G103KS	A3R174	6-5-628	RCR07G103KS

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A3R175	6-5-556	RCR07G153KS	A3R233	6-5-260	RCR07G103KS
A3R176	6-5-627	RCR07G104KS	A3R234	6-5-249	RCR07G102KS
A3R177	6-5-626	RN55D1001F	A3R235	6-5-248	RCR07G102KS
A3R178	6-5-550	RN55D3401F	A3R236	6-5-228	RCR07G102KS
A3R179	6-5-625	RCR07G221KS	A3R237	6-5-229	RCR07G102KS
A3R18	6-5-225	RCR07G102KS	A3R238	6-5-215	RCR07G103KS
A3R180	6-5-547	RCR07G221KS	A3R239	6-5-612	RCR07G155KS
A3R181	6-5-624	RN55D1002F	A3R24	6-5-196	RCR07G103KS
A3R182	6-5-546	RN55D3012F	A3R246	6-5-101	RCR07G221KS
A3R183	6-5-545	RCR07G103KS	A3R247	6-5-247	RCR07G103KS
A3R184	6-5-214	RCR07G470KS	A3R25	6-5-197	RCR07G103KS
A3R185	6-5-210	RCR07G470KS	A3R26	6-5-220	RCR07G100KS
A3R186	6-5-576	RW69V150	A3R27	6-5-221	RCR07G100KS
A3R187	6-5-572	RN55D3162F	A3R28	6-5-226	RCR07G100KS
A3R188	6-5-660	RN55D3162F	A3R29	6-5-227	RCR07G100KS
A3R189	6-5-571	RN55D4121F	A3R3	6-5-104	RCR07G271KS
A3R19	6-5-258	RN55D2002F	A3R30	6-5-239	RCR07G100KS
A3R190	6-5-658	RN55D4121F	A3R31	6-5-238	RCR07G100KS
A3R191	6-5-570	RCR07G101KS	A3R32	6-5-237	RCR07G100KS
A3R192	6-5-659	RCR07G101KS	A3R35	6-5-253	RN55D1820F
A3R193	6-5-655	RN55D3161F	A3R36	6-5-246	RCR07G102KS
A3R194	6-5-568	RCR07G561KS	A3R37	6-5-245	RCR07G332KS
A3R195	6-5-652	101T10001	A3R38	6-5-244	RCR07G100KS
A3R196	6-5-567	RN55D3161F	A3R39	6-5-243	RCR20G331KS
A3R197	6-5-566	RN55D3161F	A3R4	6-5-218	RCR07G102KS
A3R198	6-5-651	RN55D3161F	A3R40	6-5-242	RCR20G331KS
A3R199	6-5-650	RCR07G101KS	A3R41	6-5-241	RCR20G331KS
A3R2	6-5-103	RCR07G271KS	A3R42	6-5-240	RCR20G331KS
A3R20	6-5-259	RN55D4022F	A3R43	6-5-236	RCR07G222KS
A3R200	6-5-565	RCR07G101KS	A3R44	6-5-234	RCR07G102KS
A3R201	6-5-647	RN55D3161F	A3R45	6-5-235	RCR07G100KS
A3R202	6-5-646	RCR07G153KS	A3R46	6-5-233	RCR07G222KS
A3R203	6-5-645	RCR07G103KS	A3R47	6-5-232	RCR07G100KS
A3R204	6-5-644	RT22C2W103	A3R48	6-5-231	RCR07G102KS
A3R205	6-5-561	RCR07G104KS	A3R49	6-5-509	RN55D4531F
A3R206	6-5-642	RN55D1001F	A3R5	6-5-105	RCR07G102KS
A3R207	6-5-560	RN55D3401F	A3R50	6-5-597	RN55D1002F
A3R208	6-5-640	RCR07G221KS	A3R51	6-5-510	RN55D1002F
A3R209	6-5-559	RCR07G221KS	A3R52	6-5-598	RCR07G102KS
A3R21	6-5-193	RN55D1002F	A3R53	6-5-512	RCR07G102KS
A3R210	6-5-639	RCR07G390KS	A3R54	6-5-513	RN55D4991F
A3R211	6-5-558	RCR07G103KS	A3R55	6-5-514	RN55D4991F
A3R212	6-5-637	RN55D1002F	A3R56	6-5-599	RCR07G101KS
A3R213	6-5-636	RN55D3012F	A3R57	6-5-515	RN55D4641F
A3R214	6-5-557	RCR07G103KS	A3R58	6-5-600	RCR07G101KS
A3R215	6-5-555	RCR07G101KS	A3R59	6-5-518	RN55D1002F
A3R216	6-5-554	RCR07G101KS	A3R6	6-5-223	RCR07G100KS
A3R217	6-5-553	RCR07G103KS	A3R60	6-5-519	RN55D1622F
A3R218	6-5-631	RT22C2W103	A3R61	6-5-604	RCR07G103KS
A3R219	6-5-629	RCR07G332KS	A3R62	6-5-522	RCR07G102KS
A3R22	6-5-194	RN55D8062F	A3R63	6-5-605	RCR07G102KS
A3R220	6-5-551	RCR07G102KS	A3R64	6-5-606	RCR07G102KS
A3R221	6-5-549	RCR07G390KS	A3R65	6-5-607	RCR07G102KS
A3R222	6-5-548	RCR07G103KS	A3R66	6-5-608	RN55D4221F
A3R223	6-5-633	RN55D1501F	A3R67	6-5-525	RN55D6192F
A3R224	6-5-552	RN55D1001F	A3R68	6-5-524	RN55D2373F
A3R225	6-5-203	RCR07G103KS	A3R69	6-5-609	RN55D1272F
A3R226	6-5-204	RCR07G103KS	A3R7	6-5-224	RCR07G100KS
A3R227	6-5-230	RCR07G102KS	A3R70	6-5-610	RN55D3921F
A3R229	6-5-205	RCR07G470KS	A3R71	6-5-611	RN55D1823F
A3R23	6-5-195	RN55D4991F	A3R72	6-5-528	RCR07G103KS
A3R230	6-5-209	RCR07G470KS	A3R73	6-5-529	RN55D4751F
A3R231	6-5-200	RCR07G471KS	A3R74	6-5-613	RN55D6342F
A3R232	6-5-201	RCR07G471KS	A3R75	6-5-527	RCR07G102KS

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A3R76	6-5-531	RCR07G103KS	A3U13	6-5-28	MPD7720
A3R77	6-5-614	RCR07G102KS	A3U14	6-5-50	MPD77P20
A3R78	6-5-615	RCR07G105KS	A3U16	6-5-31	SN54LS374J
A3R79	6-5-534	RCR07G104KS	A3U17	6-5-97	SN54LS374J
A3R80	6-5-616	RCR07G473KS	A3U18	6-5-2	SN54LS283J
A3R81	6-5-617	RCR07G680KS	A3U19	6-5-8	SN54LS283J
A3R82	6-5-618	RN55D3161F	A3U2	6-5-6	SN54LS283J
A3R83	6-5-621	RCR07G100KS	A3U20	6-5-15	SN54LS174J
A3R84	6-5-532	RCR07G102KS	A3U21	6-5-19	SN54LS165J
A3R85	6-5-619	RCR07G102KS	A3U22	6-5-32	SN54LS245J
A3R86	6-5-533	RN55D1001F	A3U23	6-5-95	SN54LS374J
A3R87	6-5-620	RN55D1822F	A3U24	6-5-98	SN54LS283J
A3R88	6-5-537	RN55D1272F	A3U25	6-5-7	SN54LS174J
A3R89	6-5-502	RCR07G101KS	A3U26	6-5-16	SN54LS283J
A3R9	6-5-252	RCR07G102KS	A3U27	6-5-20	SN54LS157J
A3R90	6-5-498	RCR07G101KS	A3U28	6-5-36	SN54LS174J
A3R91	6-5-499	RN55D1002F	A3U29	6-5-93	SN54LS174J
A3R92	6-5-500	RCR07G101KS	A3U3	6-5-10	SN54LS283J
A3R93	6-5-588	RCR07G101KS	A3U30	6-5-96	SN54LS283J
A3R94	6-5-501	RCR07G101KS	A3U31	6-5-4	SN54LS174J
A3R95	6-5-589	RCR07G101KS	A3U32	6-5-17	SN54LS165J
A3R96	6-5-503	RN55D1002F	A3U33	6-5-21	DM54LS74J
A3R97	6-5-590	RN55D2001F	A3U34	6-5-37	SN54LS174J
A3R98	6-5-591	RN55D2001F	A3U35	6-5-91	DM54LS74J
A3R99	6-5-504	RN55D2002F	A3U36	6-5-94	SN54LS283J
A3TP1	6-5-383	105-0853-001	A3U37	6-5-11	SN54LS174J
A3TP10	6-5-430	105-0854-001	A3U38	6-5-12	SN54LS165J
A3TP2	6-5-478	105-0852-001	A3U39	6-5-24	DM54LS74J
A3TP3	6-5-484	105-0860-001	A3U4	6-5-13	SN54LS174J
A3TP4	6-5-461	105-0857-001	A3U40	6-5-27	SN54LS04J
A3TP5	6-5-471	105-0854-001	A3U41	6-5-74	SN54S04J
A3TP6	6-5-446	105-0860-001	A3U42	6-5-65	SN54LS157J
A3TP7	6-5-453	105-0857-001	A3U43	6-5-52	DM54LS74J
A3TP8	6-5-485	105-0852-001	A3U44	6-5-34	SN5407J
A3TP9	6-5-456	105-0853-001	A3U45	6-5-38	SN54LS138J
A3T1	6-5-448	41712	A3U46	6-5-89	SN54S86J
A3T2	6-5-452	41712	A3U47	6-5-90	MC14070BAL
A3U1	6-5-3	SN54LS374J	A3U48	6-5-92	CD4006BF
A3U10	6-5-18	SN54LS165J	A3U49	6-5-84	SN54S74J
A3U100	6-5-412	CD4066BF	A3U5	6-5-30	SN54LS374J
A3U101	6-5-416	LM148J	A3U50	6-5-80	SN54LS02J
A3U102	6-5-435	LM148J	A3U51	6-5-75	DM54LS74J
A3U103	6-5-434	LM148J	A3U52	6-5-69	DM54LS74J
A3U104	6-5-492	MC1558U	A3U53	6-5-63	SN54LS157J
A3U105	6-5-480	LM120K-5.0	A3U54	6-5-57	DM54LS74J
A3U106	6-5-387	LM218H	A3U55	6-5-35	SN54LS157J
A3U107	6-5-393	LM218H	A3U56	6-5-39	SN54LS138J
A3U108	6-5-399	LM148J	A3U57	6-5-83	SN54S86J
A3U109	6-5-464	LM148J	A3U58	6-5-82	CD4520BMJ
A3U11	6-5-22	351-8869-020	A3U59	6-5-79	DM54LS74J
A3U11	6-5-22	MPD7720	A3U6	6-5-1	SN54LS374J
A3U110	6-5-457	LM148J	A3U60	6-5-72	SN54LS00J
A3U111	6-5-450	LM148J	A3U61	6-5-66	DM54LS74J
A3U112	6-5-479	LM148J	A3U62	6-5-62	SN54LS163AJ
A3U113	6-5-476	LM148J	A3U63	6-5-53	SN54LS00J
A3U114	6-5-465	LM148J	A3U64	6-5-41	SN54S74J
A3U115	6-5-460	LM148J	A3U65	6-5-42	SN54LS251J
A3U116	6-5-87	SN54S112J	A3U66	6-5-81	SN54S86J
A3U117	6-5-88	54F04/BCA	A3U67	6-5-77	SN54LS04J
A3U118	6-5-85	S54F74/BCA	A3U68	6-5-68	DM54LS74J
A3U119	6-5-86	S54F74/BCA	A3U7	6-5-5	SN54LS283J
A3U12	6-5-25	351-8869-020	A3U70	6-5-60	SN54LS163AJ
A3U12	6-5-25	MPD7720	A3U71	6-5-56	SN54LS02J
A3U13	6-5-28	351-8869-030	A3U72	6-5-43	SN54LS00J

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A3U73	6-5-44	DM54LS74J	A4V1C2	6-10-2	3380581
A3U74	6-5-78	SN54LS157J	A4V1C3	6-10-18	3440290
A3U75	6-5-73	SN54S04J	A4V1C4	6-10-20	3390047
A3U76	6-5-59	SN54LS164J	A4V1C5	6-10-14	3380599
A3U77	6-5-55	DM54LS74J	A4V1E1	6-10-28	3661105
A3U78	6-5-45	SN54S74J	A4V1E2	6-10-4	3661008
A3U79	6-5-46	DM54LS74J	A4V1E3	6-10-30	3661008
A3U8	6-5-9	SN54LS283J	A4V1Q1	6-9-22	3210138
A3U80	6-5-76	SN54LS157J	A4V1Q2	6-9-21	3210138
A3U81	6-5-71	SN54LS02J	A4V1Q3	6-9-23	3210103
A3U82	6-5-58	SN54LS251J	A4V1R1	6-10-3	3530019
A3U83	6-5-54	DM54LS74J	A4V1R10	6-10-10	3490998
A3U84	6-5-47	SN54LS04J	A4V1R101	6-10-24	3490238
A3U85	6-5-48	DM54LS74J	A4V1R11	6-10-5	3490033
A3U86	6-5-49	SN54LS00J	A4V1R12	6-10-1	3490033
A3U87	6-5-384	TDS5664	A4V1R13	6-10-13	3490033
A3U88	6-5-70	CD4015BF	A4V1R2	6-10-6	3490084
A3U89	6-5-67	CD4015BF	A4V1R3	6-10-16	3490262
A3U9	6-5-14	SN54LS174J	A4V1R4	6-10-8	3580091
A3U90	6-5-61	MC1408L-8	A4V1R5	6-10-9	3490505
A3U91	6-5-410	CD4094BMJ	A4V1R6	6-10-27	3580091
A3U92	6-5-447	TDA2002H	A4V1R7	6-10-26	3490998
A3U93	6-5-422	MC1408L-8	A4V1R8	6-10-21	3490181
A3U94	6-5-392	CD4015BF	A4V1U1	6-10-11	3000028
A3U95	6-5-396	CD4015BF	A4V1XQ1	6-10-32	3320057
A3U96	6-5-400	SCL4011BC	A4V1XQ2	6-9-24	3320049
A3U97	6-5-390	AD7545CQ	A4V1XQ3	6-10-33	3320057
A3U98	6-5-398	AD7545CQ	A4V1XU1	6-10-12	3320022
A3U99	6-5-407	LM148J	A4V2	6-9-32	P51649-601
A3VR1	6-5-449	1N4624	A4V2	6-11-	P51649-601
A3VR2	6-5-455	1N4624	A4V2CR1	6-11-17	3050050
A3VR3	6-5-425	1N4624	A4V2CR2	6-11-15	3050050
A3VR4	6-5-413	1N821A	A4V2CR4	6-11-25	3040011
A3W1	6-5-482	M16878/4BFA-9	A4V2CR5	6-11-13	3040011
A3W2	6-5-481	M16878/4BFA-9	A4V2C1	6-11-21	3370330
A3W3	6-5-483	M16878/4BFA-9	A4V2C2	6-11-2	3380572
A3W4	6-5-254	439-0649-000	A4V2C3	6-11-22	3440290
A3W5	6-5-255	439-0649-000	A4V2C4	6-11-24	3390047
A3W6	6-5-256	439-0649-000	A4V2E1	6-11-30	3661105
A3W7	6-5-262	11284	A4V2E2	6-11-4	3661008
A3Z1	6-5-198	56-590-65/4A6	A4V2Q1	6-9-26	3210138
A3Z2	6-5-199	56-590-65/4A6	A4V2Q2	6-11-18	3260062
A3Z3	6-5-202	56-590-65/4A6	A4V2R1	6-11-3	3510042
A3Z4	6-5-206	56-590-65/4A6	A4V2R10	6-11-23	3490998
A3Z5	6-5-216	56-590-65/4A6	A4V2R11	6-11-5	3490033
A3Z6	6-5-217	56-590-65/4A6	A4V2R12	6-11-1	3490033
A3Z7	6-5-219	56-590-65/4A6	A4V2R13	6-11-12	3490033
A3Z8	6-5-222	56-590-65/4A6	A4V2R2	6-11-27	3490131
A4	6-1-14	652-6602-002	A4V2R3	6-11-16	3490211
A4	6-9-	652-6602-002	A4V2R4	6-11-8	3580091
A4CR1	6-9-13	3150054	A4V2R5	6-11-9	3490521
A4C1	6-9-16	3360351	A4V2R502	6-9-28	RCR07G472KS
A4J1	6-9-5	3641341	A4V2R6	6-11-29	3580091
A4P1	6-9-8	3641007	A4V2R7	6-11-28	3490998
A4R13	6-9-17	3530019	A4V2R8	6-11-26	3490327
A4T1	6-9-11	3602702	A4V2R9	6-11-6	3490475
A4V1	6-9-25	P51650-601	A4V2U1	6-11-10	3000028
A4V1	6-10-	P51650-601	A4V2XQ1	6-11-38	3320057
A4V1CR101	6-10-25	3190013	A4V2XU1	6-11-11	3320022
A4V1CR102	6-10-29	3270017	A4V3	6-9-33	P51649-601
A4V1CR3	6-10-15	3040011	A4V3	6-11-	P51649-601
A4V1CR4	6-10-22	3040011	A4V3CR1	6-11-17	3050050
A4V1CR5	6-10-17	3040011	A4V3CR2	6-11-15	3050050
A4V1C101	6-10-23	3390047	A4V3CR4	6-11-25	3040011

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A4V3CR5	6-11-13	3040011
A4V3C1	6-11-21	3370330
A4V3C2	6-11-2	3380572
A4V3C3	6-11-22	3440290
A4V3C4	6-11-24	3390047
A4V3E1	6-11-30	3661105
A4V3E2	6-11-4	3661008
A4V3Q1	6-9-27	3210138
A4V3Q2	6-11-18	3260062
A4V3R1	6-11-3	3510042
A4V3R10	6-11-23	3490998
A4V3R11	6-11-5	3490033
A4V3R12	6-11-1	3490033
A4V3R13	6-11-12	3490033
A4V3R2	6-11-27	3490131
A4V3R3	6-11-16	3490211
A4V3R4	6-11-8	3580091
A4V3R5	6-11-9	3490521
A4V3R502	6-9-29	RCR07G472KS
A4V3R6	6-11-29	3580091
A4V3R7	6-11-28	3490998
A4V3R8	6-11-26	3490327
A4V3R9	6-11-6	3490475
A4V3U1	6-11-10	3000028
A4V3XQ1	6-11-38	3320057
A4V3XU1	6-11-11	3320022
A5	6-1-17	646-6299-001
A5	6-7-	646-6299-001
A5A1	6-7-440	SBL1S-1
A5A2	6-7-449	SBL1S-1
A5A3	6-7-390	652-6611-001
A5A3	6-8-	652-6611-001
A5A3A1	6-8-46	659-2038-001
A5A3A1CR1	6-8-65	BB409T
A5A3A1C1	6-8-54	SR151A101JAA
A5A3A1C10	6-8-51	C81A270J2
A5A3A1C2	6-8-53	DR20CB331J
A5A3A1C3	6-8-48	RPE110C0G100J100V
A5A3A1C3	6-8-48	RPE110C0G8R2D100V
A5A3A1C3	6-8-48	RPE110C0G6R8D100V
A5A3A1C3	6-8-48	RPE110C0G5R6D100V
A5A3A1C3	6-8-48	RPE110C0G4R7C100V
A5A3A1C3	6-8-48	RPE110C0G3R9C100V
A5A3A1C3	6-8-48	RPE110C0G3R3C100V
A5A3A1C3	6-8-48	RPE110C0G030C200V
A5A3A1C3	6-8-48	RPE110C0G2R7C100V
A5A3A1C3	6-8-48	RPE110C0G2R2C100V
A5A3A1C3	6-8-48	RPE110C0G1R8C100V
A5A3A1C3	6-8-48	RPE110C0G1R5C100V
A5A3A1C3	6-8-48	RPE110C0G1R2C100V
A5A3A1C3	6-8-48	RPE110C0G010C200
A5A3A1C3	6-8-48	8111B115-C0K0-56 8B
A5A3A1C3	6-8-48	SR151A101JAA
A5A3A1C3	6-8-48	DR20CB910J
A5A3A1C3	6-8-48	SR151A820JAA
A5A3A1C3	6-8-48	C82A750J
A5A3A1C3	6-8-48	C82A680J
A5A3A1C3	6-8-48	C82A560J
A5A3A1C3	6-8-48	RPE110C0G470JPPV
A5A3A1C3	6-8-48	C81A430J2
A5A3A1C3	6-8-48	RPE110C0G390JPPV
A5A3A1C3	6-8-48	DR15CB360J
A5A3A1C3	6-8-48	RPE110C0G330JPPV
A5A3A1C3	6-8-48	C81A300J2
A5A3A1C3	6-8-48	C81A270J2
A5A3A1C3	6-8-48	RPE110C0G9R1D100V
A5A3A1C3	6-8-48	C81A180J2
A5A3A1C3	6-8-48	C81A220J2
A5A3A1C4	6-8-64	RPE110C0G100J100V
A5A3A1C4	6-8-64	RPE110C0G8R2D100V
A5A3A1C4	6-8-64	RPE110C0G6R8D100V
A5A3A1C4	6-8-64	RPE110C0G5R6D100V
A5A3A1C4	6-8-64	RPE110C0G4R7C100V
A5A3A1C4	6-8-64	RPE110C0G3R9C100V
A5A3A1C4	6-8-64	RPE110C0G3R3C100V
A5A3A1C4	6-8-64	RPE110C0G030C200V
A5A3A1C4	6-8-64	RPE110C0G2R7C100V
A5A3A1C4	6-8-64	RPE110C0G2R2C100V
A5A3A1C4	6-8-64	RPE110C0G1R8C100V
A5A3A1C4	6-8-64	RPE110C0G1R5C100V
A5A3A1C4	6-8-64	RPE110C0G1R2C100V
A5A3A1C4	6-8-64	RPE110C0G010C200V
A5A3A1C4	6-8-64	8111B115-C0K0-56 8B
A5A3A1C4	6-8-64	SR151A101JAA
A5A3A1C4	6-8-64	DR20CB910J
A5A3A1C4	6-8-64	SR151A820JAA
A5A3A1C4	6-8-64	C82A750J
A5A3A1C4	6-8-64	C82A680J
A5A3A1C4	6-8-64	C82A560J
A5A3A1C4	6-8-64	RPE110C0G470JPPV
A5A3A1C4	6-8-64	C81A430J2
A5A3A1C4	6-8-64	RPE110C0G390JPPV
A5A3A1C4	6-8-64	DR15CB360J
A5A3A1C4	6-8-64	RPE110C0G330JPPV
A5A3A1C4	6-8-64	C81A300J2
A5A3A1C4	6-8-64	C81A270J2

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A5A3A1C4	6-8-64	RPE110C0G9R1D100V
A5A3A1C4	6-8-64	C81A180J2
A5A3A1C4	6-8-64	C81A220J2
A5A3A1C5	6-8-66	8121M050Z5U103M
A5A3A1C6	6-8-49	8121M050Z5U103M
A5A3A1C7	6-8-63	8131M050Z5U105M
A5A3A1C8	6-8-59	8121M050Z5U103M
A5A3A1L1	6-8-58	MS18130-10
A5A3A1Q1	6-8-52	2N918
A5A3A1Q2	6-8-50	2N918
A5A3A1R1	6-8-56	RN55D2152F
A5A3A1R11	6-8-62	RN55D2210F
A5A3A1R2	6-8-55	RN55D2152F
A5A3A1R3	6-8-67	RN55D1002F
A5A3A1R4	6-8-57	RN55D1002F
A5A3A1R6	6-8-61	RN55D2211F
A5A3A1VR1	6-8-60	1N4625
A5A3A1Y1	6-8-68	289-7392-010
A5A3A2	6-8-7	659-2025-001
A5A3A2CR1	6-8-18	1N4454-1
A5A3A2C1	6-8-13	SR151A820JAA
A5A3A2C10	6-8-26	CK06BX684K
A5A3A2C2	6-8-12	538-011D9-35
A5A3A2C3	6-8-14	8131M050Z5U104M
A5A3A2C4	6-8-36	8131M050Z5U104M
A5A3A2C5	6-8-27	8131M050Z5U104M
A5A3A2C6	6-8-16	8131M050Z5U104M
A5A3A2C7	6-8-29	M39003/01-2418
A5A3A2C8	6-8-10	8121M050Z5U103M
A5A3A2C9	6-8-15	8121M050Z5U103M
A5A3A2R1	6-8-30	RJR26FW203M
A5A3A2R10	6-8-35	RN55D1001F
A5A3A2R11	6-8-28	RN55D4752F
A5A3A2R12	6-8-24	RN55D4752F
A5A3A2R13	6-8-25	RN55D8251F
A5A3A2R13	6-8-25	RN55D8661F
A5A3A2R13	6-8-25	RN55D9091F
A5A3A2R13	6-8-25	RN55D9531F
A5A3A2R13	6-8-25	RN55D1002F
A5A3A2R13	6-8-25	RN55D1052F
A5A3A2R13	6-8-25	RN55D1102F
A5A3A2R13	6-8-25	RN55D1152F
A5A3A2R13	6-8-25	RN55D1212F
A5A3A2R13	6-8-25	RN55D1272F
A5A3A2R13	6-8-25	RN55D8061F
A5A3A2R13	6-8-25	RN55D8451F
A5A3A2R13	6-8-25	RN55D8871F
A5A3A2R13	6-8-25	RN55D9311F
A5A3A2R13	6-8-25	RN55D9761F
A5A3A2R13	6-8-25	RN55D1022F
A5A3A2R13	6-8-25	RN55D1072F
A5A3A2R13	6-8-25	RN55D1132F
A5A3A2R13	6-8-25	RN55D1182F
A5A3A2R13	6-8-25	RN55D1242F
A5A3A2R13	6-8-25	RN55D1302F
A5A3A2R13	6-8-25	RN55D6041F
A5A3A2R13	6-8-25	RN55D6341F
A5A3A2R13	6-8-25	RN55D6651F
A5A3A2R13	6-8-25	RN55D6981F
A5A3A2R13	6-8-25	RN55D7321F
A5A3A2R13	6-8-25	RN55D7681F
A5A3A2R13	6-8-25	RN55D6191F
A5A3A2R13	6-8-25	RN55D6491F
A5A3A2R13	6-8-25	RN55D6811F
A5A3A2R13	6-8-25	RN55D7151F
A5A3A2R13	6-8-25	RN55D7501F
A5A3A2R13	6-8-25	RN55D7871F
A5A3A2R14	6-8-17	RN55D1002F
A5A3A2R15	6-8-20	RN55D1103F
A5A3A2R16	6-8-19	RWR81S5R62FR
A5A3A2R17	6-8-25A	RN60D4993F
A5A3A2R17	6-8-25A	RN60D6193F
A5A3A2R17	6-8-25A	RN60D6813F
A5A3A2R17	6-8-25A	RN60D7873F
A5A3A2R17	6-8-25A	RN60D9093F
A5A3A2R2	6-8-31	RN55D1003F
A5A3A2R3	6-8-21	RN55D1001F
A5A3A2R4	6-8-22	RN55D2002F
A5A3A2R5	6-8-37	RN55D3650F
A5A3A2R6	6-8-32	RWR81S5R62FR
A5A3A2R7	6-8-34	RN55D4750F
A5A3A2R8	6-8-33	RN55D1003F
A5A3A2R9	6-8-38	RN55D6041F
A5A3A2T1	6-8-9	CS7402
A5A3A2U1	6-8-39	LM117H
A5A3A2U2	6-8-11	MC1590G
A5A3A2U3	6-8-23	M38510/11005BCB
A5A3A2U3	6-8-23	LM124J
A5A3F1	6-8-74	WA-141
A5A3Q3	6-8-72	TIP125
A5A3Q4	6-8-75	TIP125
A5A3RT1	6-8-71	51TF4-1-5PCT
A5CR1	6-7-509	1N4454-1
A5CR11	6-7-513	1N4454-1
A5CR12	6-7-512	BB409T
A5CR13	6-7-511	BB409T
A5CR14	6-7-495	1N4454-1
A5CR15	6-7-501	1N4454-1
A5CR16	6-7-492	1N4454-1
A5CR17	6-7-502	1N4454-1
A5CR18	6-7-516	1N4454-1
A5CR19	6-7-526	1N4454-1
A5CR2	6-7-484	1N4454-1
A5CR20	6-7-488	1N4454-1
A5CR25	6-7-534	1N5711
A5CR26	6-7-540	BB409T
A5CR27	6-7-539	BB409T
A5CR28	6-7-538	BB409T
A5CR29	6-7-537	BB409T
A5CR3	6-7-485	1N4454-1
A5CR30	6-7-536	BB409T
A5CR31	6-7-469	BB409T
A5CR32	6-7-470	BB409T
A5CR33	6-7-471	BB409T
A5CR34	6-7-535	BB409T
A5CR35	6-7-473	BB409T
A5CR36	6-7-474	BB409T
A5CR37	6-7-475	BB409T
A5CR38	6-7-533	BB409T
A5CR39	6-7-532	BB409T
A5CR4	6-7-482	1N4454-1
A5CR40	6-7-531	BB409T
A5CR41	6-7-530	BB409T
A5CR42	6-7-528	1N5711
A5CR43	6-7-527	1N5711
A5CR44	6-7-525	1N4454-1
A5CR5	6-7-483	1N4454-1

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A5CR6	6-7-486	MV1404	A5C149	6-7-277	923CX7R471K100B
A5CR7	6-7-497	1N5711	A5C15	6-7-150	923CX7R103K100B
A5CR8	6-7-498	1N5711	A5C150	6-7-167	923CX7R471K100B
A5C1	6-7-53	M39003/01-2304	A5C151	6-7-168	923CX7R471K100B
A5C10	6-7-24	923CX7R104K050B	A5C152	6-7-169	923CX7R104K050B
A5C100	6-7-72	923CX7R103K100B	A5C153	6-7-178	923CX7R471K100B
A5C101	6-7-73	923CX7R471K100B	A5C154	6-7-173	923CX7R471K100B
A5C102	6-7-74	DPG22BY2R2DG	A5C155	6-7-88	923CX7R471K100B
A5C103	6-7-255	538-011A2-8	A5C156	6-7-87	923CX7R471K100B
A5C104	6-7-160	DPG22BY2R2DG	A5C157	6-7-83	923CX7R104K050B
A5C105	6-7-165	538-011A2-8	A5C158	6-7-80	923CX7R471K100B
A5C106	6-7-158	M39003/01-2283	A5C159	6-7-84	923CX7R471K100B
A5C107	6-7-254	923CX7R104K050B	A5C16	6-7-111	923CX7R103K100B
A5C108	6-7-152	923CX7R104K050B	A5C160	6-7-172	923CX7R471K100B
A5C109	6-7-154	923CX7R104K050B	A5C161	6-7-85	923CX7R471K100B
A5C11	6-7-112	923CC0G222J050B	A5C162	6-7-86	923CX7R471K100B
A5C110	6-7-71	923CX7R104K050B	A5C163	6-7-166	923CX7R471K100B
A5C111	6-7-157	923CX7R104K050B	A5C164	6-7-171	923CC0G120J050B
A5C112	6-7-68	923CX7R104K050B	A5C165	6-7-175	923CC0G390J050B
A5C113	6-7-70	923CX7R104K050B	A5C166	6-7-174	923CC0G120J050B
A5C114	6-7-104	923CX7R103K100B	A5C167	6-7-177	923CC0G510J050B
A5C115	6-7-106	923CX7R103K100B	A5C168	6-7-179	923CC0G510J050B
A5C116	6-7-105	923CX7R103K100B	A5C169	6-7-78	923CX7R471K100B
A5C117	6-7-107	923CC0G820J050B	A5C17	6-7-110	923CX7R103K100B
A5C118	6-7-94	2404-000-Y5F-151 J	A5C170	6-7-82	923CX7R471K100B
A5C118	6-7-94	CM04FD151J03	A5C171	6-7-81	923CX7R471K100B
A5C119	6-7-91	2404-000-Y5F-131 J	A5C172	6-7-77	923CX7R471K100B
A5C119	6-7-91	CM04FD131J03	A5C173	6-7-263	923CC0G220J050B
A5C12	6-7-22	923CX7R104K050B	A5C174	6-7-163	923CC0G220J050B
A5C120	6-7-89	2404-000-Y5F-121 J	A5C175	6-7-170	923CX7R102K100B
A5C120	6-7-89	CM04FD121J03	A5C176	6-7-7	M39003/01-2304
A5C121	6-7-108	923CC0G101J050B	A5C177	6-7-99	923CX7R104K050B
A5C122	6-7-161	923CC0G100J050B	A5C178	6-7-79	CK05BX103K
A5C123	6-7-162	009-0025-005	A5C179	6-7-176	923CX7R103K100B
A5C124	6-7-75	923CC0G180J050B	A5C18	6-7-19	M39003/01-2257
A5C125	6-7-164	923CX7R103K100B	A5C180	6-7-92	923CX7R104K050B
A5C126	6-7-76	923CC0G271J050B	A5C181	6-7-90	923CX7R104K050B
A5C127	6-7-16	923CX7R471K100B	A5C182	6-7-101	CK05BX103K
A5C128	6-7-18	923CX7R103K100B	A5C183	6-7-102	CK05BX271K
A5C129	6-7-17	923CX7R471K100B	A5C184	6-7-100	CK05BX103K
A5C13	6-7-21	923CX7R103K100B	A5C185	6-7-98	CK05BX271K
A5C130	6-7-103	M39003/01-2257	A5C186	6-7-136	CK05BX271K
A5C131	6-7-109	M39003/01-2289	A5C187	6-7-159	CK05BX103K
A5C132	6-7-14	923CX7R153K050B	A5C188	6-7-529	CK05BX471K
A5C133	6-7-12	923CX7R153K050B	A5C189	6-7-155	M39003/01-2283
A5C134	6-7-13	CRC-1-180	A5C19	6-7-114	923CX7R104K050B
A5C135	6-7-15	CRC-1-180	A5C2	6-7-48	M39003/01-2257
A5C136	6-7-11	923CC0G390J050B	A5C20	6-7-116	923CX7R473K050B
A5C137	6-7-6	CRC-1-180	A5C21	6-7-117	923CC0G180J050B
A5C138	6-7-9	923CX7R104K050B	A5C22	6-7-115	M39003/01-2283
A5C139	6-7-8	923CC0G390J050B	A5C23	6-7-25	923CX7R104K050B
A5C14	6-7-20	923CX7R103K100B	A5C24	6-7-45	923CX7R102K100B
A5C140	6-7-10	923CX7R104K050B	A5C25	6-7-132	M39003/01-2283
A5C141	6-7-93	CRC-1-140	A5C26	6-7-130	923CX7R102K100B
A5C142	6-7-95	923CX7R471K100B	A5C27	6-7-118	923CC0G391J050B
A5C143	6-7-96	DPG22BY3R3DG	A5C28	6-7-208	923CX7R102K100B
A5C144	6-7-181	923CC0G101J050B	A5C29	6-7-119	923CX7R102K100B
A5C145	6-7-180	923CC0G180J050B	A5C3	6-7-54	M39003/01-2247
A5C146	6-7-97	M39003/01-2289	A5C30	6-7-26	923CC0G101J050B
A5C147	6-7-278	923CX7R471K100B	A5C31	6-7-27	923CC0G221J050B
A5C148	6-7-280	923CX7R471K100B	A5C32	6-7-121	923CC0G680J050B
			A5C33	6-7-30	923CC0G470J050B
			A5C35	6-7-123	923CC0G100J050B
			A5C36	6-7-137	DPG22BY6R8DG

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A5C37	6-7-120	923CX7R103K100B	A5C97	6-7-69	923CC0G120J050B
A5C38	6-7-142	923CC0G100J050B	A5C98	6-7-153	923CX7R103K100B
A5C39	6-7-248	009-0025-005	A5C99	6-7-156	923CC0G120J050B
A5C4	6-7-50	M39003/01-2257	A5FL1	6-7-444	6799
A5C40	6-7-139	923CC0G680J050B	A5FL2	6-7-389	6799
A5C41	6-7-256	923CX7R103K100B	A5J1	6-7-398	M39012/95-0001
A5C42	6-7-134	923CX7R103K100B	A5J2	6-7-396	M39012/95-0001
A5C43	6-7-32	923CX7R103K100B	A5L1	6-7-236	MS75088-13
A5C44	6-7-131	923CX7R103K100B	A5L10	6-7-238	MS75085-01
A5C45	6-7-46	923CX7R102K100B	A5L11	6-7-228	MS75085-01
A5C47	6-7-56	923CC0G101J050B	A5L12	6-7-203	MS75084-01
A5C48	6-7-55	M39003/01-2257	A5L12	6-7-203	MS75084-02
A5C49	6-7-140	923CX7R104K050B	A5L12	6-7-203	MS75084-03
A5C5	6-7-51	M39003/01-2289	A5L12	6-7-203	MS75084-04
A5C50	6-7-49	923CX7R103K100B	A5L12	6-7-203	MS75084-05
A5C51	6-7-129	923CC0G221J050B	A5L12	6-7-203	MS75084-06
A5C52	6-7-39	923CC0G221J050B	A5L13	6-7-207	242-0505-040
A5C53	6-7-40	923CX7R103K100B	A5L15	6-7-245	BP3132-8
A5C54	6-7-44	923CX7R102K100B	A5L16	6-7-201	BP3132-6
A5C55	6-7-43	M39003/01-2283	A5L17	6-7-206	MS75085-01
A5C56	6-7-41	923CX7R102K100B	A5L18	6-7-221	MS75083-09
A5C57	6-7-127	923CX7R103K100B	A5L19	6-7-216	MS75084-01
A5C58	6-7-42	923CX7R104K050B	A5L2	6-7-237	MS75088-13
A5C59	6-7-125	923CX7R102K100B	A5L20	6-7-210	MS75083-04
A5C6	6-7-52	M39003/01-2304	A5L21	6-7-219	MS75085-01
A5C60	6-7-122	009-0025-005	A5L22	6-7-211	MS75083-11
A5C61	6-7-28	923CC0G150J050B	A5L23	6-7-240	MS75083-05
A5C62	6-7-31	CCR05CG102JM	A5L24	6-7-215	BP3132-5
A5C63	6-7-29	923CX7R102K100B	A5L25	6-7-217	MS75084-04
A5C64	6-7-135	923CX7R102K100B	A5L26	6-7-218	MS75083-13
A5C65	6-7-124	009-0025-005	A5L27	6-7-241	242-0441-030
A5C67	6-7-33	923CC0G560J050B	A5L28	6-7-247	MS75085-07
A5C68	6-7-138	923CC0G360J050B	A5L29	6-7-246	MS75085-03
A5C69	6-7-47	923CC0G820J050B	A5L3	6-7-196	MS75089-23
A5C7	6-7-133	M39003/01-2289	A5L30	6-7-251	BP3132-5
A5C70	6-7-34	CCR05CG471JM	A5L31	6-7-257	278-0451-080
A5C71	6-7-128	923CX7R471K100B	A5L32	6-7-194	278-0451-080
A5C72	6-7-35	923CX7R471K100B	A5L33	6-7-259	MS75083-1
A5C73	6-7-36	923CC0G101J050B	A5L34	6-7-264	22203MJ
A5C74	6-7-37	923CX7R471K100B	A5L35	6-7-193	23303MJ
A5C75	6-7-126	9697	A5L36	6-7-187	23303MJ
A5C76	6-7-38	923CX7R471K100B	A5L37	6-7-190	23303MJ
A5C77	6-7-144	923CX7R102K100B	A5L38	6-7-191	240-0887-340
A5C78	6-7-143	923CX7R102K100B	A5L39	6-7-192	MS75085-01
A5C79	6-7-141	923CX7R104K050B	A5L4	6-7-198	MS75085-05
A5C8	6-7-23	923CX7R104K050B	A5L40	6-7-189	MS75084-04
A5C80	6-7-63	923CX7R104K050B	A5L41	6-7-188	MS75084-04
A5C81	6-7-59	CRC-1-230	A5L42	6-7-262	MS75083-1
A5C82	6-7-58	CRC-1-130	A5L43	6-7-183	652-6585-001
A5C83	6-7-60	M39003/01-2304	A5L44	6-7-186	652-6585-001
A5C84	6-7-148	M39003/01-2304	A5L45	6-7-184	652-6585-001
A5C85	6-7-57	CRC-1-130	A5L46	6-7-182	652-6585-001
A5C86	6-7-146	923CX7R103K100B	A5L47	6-7-283	242-0595-460
A5C87	6-7-145	923CC0G470J050B	A5L48	6-7-271	MS75084-04
A5C88	6-7-62	923CX7R102K100B	A5L49	6-7-272	MS75084-04
A5C89	6-7-61	923CX7R104K050B	A5L5	6-7-200	MS75085-05
A5C9	6-7-113	923CX7R104K050B	A5L50	6-7-273	BP3132-8
A5C90	6-7-67	M39003/01-2283	A5L51	6-7-276	BP3132-8
A5C91	6-7-66	923CX7R473K050B	A5L52	6-7-279	BP3132-7
A5C92	6-7-65	923CX7R123K050B	A5L53	6-7-223	MS75085-01
A5C93	6-7-64	923CX7R473K050B	A5L54	6-7-224	MS75084-04
A5C94	6-7-147	M39003/01-2257	A5L55	6-7-185	MS75085-01
A5C95	6-7-149	M39003/01-2289	A5L56	6-7-261	242-0453-010
A5C96	6-7-151	923CX7R104K050B	A5L57	6-7-239	MS75083-1

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A5L58	6-7-258	MS75084-04	A5R125	6-7-290	RN55D1871F
A5L6	6-7-234	MS75085-01	A5R126	6-7-289	RN55D2550F
A5L7	6-7-222	MS75085-01	A5R127	6-7-287	RN55D2550F
A5L8	6-7-243	MS75085-01	A5R128	6-7-285	RN55D2550F
A5L9	6-7-220	MS75084-04	A5R129	6-7-378	RCR05G181KS
A5P1	6-7-508	532977-3	A5R13	6-7-342	RCR07G103KS
A5P2	6-7-520	532977-3	A5R130	6-7-375	RCR05G270KS
A5P3	6-7-541	51-311-3875	A5R131	6-7-467	RCR05G181KS
A5P4	6-7-542	51-311-3875	A5R132	6-7-380	RCR05G683JS
A5P5	6-7-543	51-307-3875	A5R133	6-7-286	RCR07G101KS
A5P6	6-7-548	51-311-3875	A5R134	6-7-377	RCR07G270KS
A5Q1	6-7-233	2N3879A	A5R135	6-7-376	RCR05G201JS
A5Q10	6-7-195	2N2369A	A5R136	6-7-386	RN55D1502F
A5Q11	6-7-204	2N918	A5R137	6-7-387	RN55D2612F
A5Q12	6-7-202	2N918	A5R138	6-7-373	RCR20G221KS
A5Q13	6-7-249	2N5179	A5R139	6-7-466	RN55D5110F
A5Q14	6-7-209	2N4416	A5R14	6-7-328	RCR05G272KS
A5Q15	6-7-212	2N918	A5R140	6-7-374	RCR07G102KS
A5Q16	6-7-213	A210	A5R141	6-7-463	RCR07G100KS
A5Q17	6-7-242	2N918	A5R142	6-7-462	RCR07G271KS
A5Q18	6-7-244	2N2369A	A5R143	6-7-465	RCR07G180KS
A5Q19	6-7-252	A210	A5R144	6-7-464	RCR07G271KS
A5Q2	6-7-232	2N2222A	A5R145	6-7-457	RCR07G101KS
A5Q20	6-7-260	2N5179	A5R146	6-7-383	RCR05G560KS
A5Q21	6-7-281	FN4721	A5R147	6-7-382	RCR05G271KS
A5Q22	6-7-282	2N2907A	A5R148	6-7-458	RCR05G560KS
A5Q23	6-7-274	SRF2263 (XRF525)	A5R149	6-7-456	RN55D3320F
A5Q24	6-7-270	2N2907A	A5R15	6-7-325	RW70U2R00F
A5Q25	6-7-268	SRF2263 (XRF525)	A5R150	6-7-369	RN55D2612F
A5Q26	6-7-265	2N918	A5R151	6-7-366	RCR07G102KS
A5Q27	6-7-267	2N918	A5R152	6-7-370	RN55D1502F
A5Q3	6-7-235	2N2222A	A5R153	6-7-460	RCR20G161JS
A5Q4	6-7-229	2N2219A	A5R154	6-7-367	RCR05G150JS
A5Q5	6-7-231	2N2222A	A5R155	6-7-371	RCR07G271KS
A5Q6	6-7-225	2N2905A	A5R156	6-7-459	RCR07G180KS
A5Q7	6-7-227	2N2907A	A5R157	6-7-372	RCR05G271KS
A5Q8	6-7-197	2N2369A	A5R158	6-7-384	RCR07G474KS
A5Q9	6-7-199	2N2369A	A5R159	6-7-363	RCR05G472KS
A5RT1	6-7-379	B0411H-022	A5R16	6-7-326	RCR07G101KS
A5R1	6-7-334	RCR07G102KS	A5R160	6-7-364	RCR05G272KS
A5R10	6-7-332	RCR07G101KS	A5R161	6-7-368	RCR05G182KS
A5R101	6-7-297	RN55D3010F	A5R162	6-7-365	RCR05G100KS
A5R102	6-7-298	RCR07G562KS	A5R163	6-7-453	RCR05G820KS
A5R103	6-7-301	RCR07G510JS	A5R164	6-7-454	RCR05G100KS
A5R104	6-7-300	RCR07G562KS	A5R165	6-7-405	RCR05G472KS
A5R105	6-7-452	RCR05G151KS	A5R166	6-7-296	RCR07G270KS
A5R106	6-7-450	RCR05G330KS	A5R167	6-7-500	RCR05G101KS
A5R107	6-7-388	RCR05G151KS	A5R168	6-7-503	RCR05G331KS
A5R108	6-7-447	RCR05G271KS	A5R17	6-7-331	RCR07G101KS
A5R109	6-7-359	RCR05G180KS	A5R18	6-7-327	RN55D3401F
A5R11	6-7-338	RN55D3401F	A5R19	6-7-337	RN55D3401F
A5R110	6-7-446	RCR05G271KS	A5R2	6-7-340	RCR07G103KS
A5R111	6-7-360	RCR05G201JS	A5R20	6-7-308	RCR05G222KS
A5R112	6-7-445	RCR05G360JS	A5R21	6-7-394	RCR05G470KS
A5R113	6-7-361	RCR05G223KS	A5R22	6-7-397	RCR05G221KS
A5R114	6-7-362	RCR05G102KS	A5R23	6-7-399	RCR05G104KS
A5R118	6-7-392	RCR07G473KS	A5R24	6-7-302	RCR05G332KS
A5R119	6-7-295	RN55D2051F	A5R25	6-7-303	RCR05G473KS
A5R12	6-7-343	RN55D2611F	A5R26	6-7-395	RCR05G473KS
A5R120	6-7-294	RN55D2051F	A5R27	6-7-299	RCR05G472KS
A5R121	6-7-293	RN55D2051F	A5R28	6-7-305	RCR05G470KS
A5R122	6-7-292	RN55D2051F	A5R29	6-7-304	RCR05G222KS
A5R123	6-7-288	RN55D1871F	A5R3	6-7-339	RCR07G102KS
A5R124	6-7-291	RJ24CW203	A5R30	6-7-306	RCR05G161JS

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A5R31	6-7-401	RCR05G101KS	A5R82	6-7-393	RCR07G331KS
A5R32	6-7-400	RCR05G472KS	A5R83	6-7-355	RCR07G270KS
A5R33	6-7-402	RCR05G103KS	A5R84	6-7-407	RCR07G105KS
A5R34	6-7-307	RCR05G473KS	A5R85	6-7-357	RCR07G562KS
A5R35	6-7-309	RCR07G104KS	A5R86	6-7-441	RCR07G472KS
A5R36	6-7-310	RCR05G103KS	A5R87	6-7-439	RCR05G102KS
A5R37	6-7-311	RCR05G153KS	A5R88	6-7-434	RCR07G472KS
A5R38	6-7-404	RCR05G153KS	A5R89	6-7-353	RCR05G102KS
A5R39	6-7-312	RCR05G561KS	A5R9	6-7-330	RCR07G101KS
A5R4	6-7-336	RCR07G101KS	A5R90	6-7-435	RCR07G472KS
A5R40	6-7-314	RCR05G272KS	A5R91	6-7-354	RCR05G102KS
A5R41	6-7-406	RCR05G331KS	A5R92	6-7-442	RCR07G472KS
A5R42	6-7-313	RCR05G222KS	A5R93	6-7-443	RCR07G101KS
A5R43	6-7-344	RCR07G270KS	A5R94	6-7-356	RCR07G472KS
A5R44	6-7-410	RCR07G104KS	A5R96	6-7-437	RCR07G472KS
A5R45	6-7-322	RCR05G561KS	A5R98	6-7-358	RCR07G102KS
A5R46	6-7-324	RCR05G122KS	A5R99	6-7-436	RCR07G472KS
A5R47	6-7-315	RCR05G151KS	A5TP1	6-7-385	105-0858-001
A5R48	6-7-316	RCR05G472KS	A5TP2	6-7-448	105-0852-001
A5R49	6-7-409	RCR05G222KS	A5TP3	6-7-423	105-0856-001
A5R5	6-7-335	RW70U1R00F	A5TP4	6-7-431	105-0857-001
A5R50	6-7-320	RCR05G101KS	A5TP5	6-7-422	105-0854-001
A5R51	6-7-321	RCR05G271KS	A5TP6	6-7-419	105-0860-001
A5R52	6-7-319	RCR05G560KS	A5TP7	6-7-415	105-0862-001
A5R53	6-7-318	RCR05G100KS	A5T2	6-7-411	7433
A5R54	6-7-317	RCR05G470KS	A5T3	6-7-455	CS7395
A5R55	6-7-323	RCR05G104KS	A5T4	6-7-451	CS7411
A5R56	6-7-414	RCR07G104KS	A5T5	6-7-461	A-595
A5R57	6-7-426	RN55D4321F	A5T6	6-7-381	CS7395
A5R58	6-7-413	RN55D4321F	A5U1	6-7-507	RM5534ADE
A5R59	6-7-416	RJ24CW203	A5U10	6-7-490	DM54LS74J
A5R6	6-7-341	RCR07G562KS	A5U11	6-7-487	DM54LS74J
A5R60	6-7-420	RN55D3322F	A5U12	6-7-491	54F04/BCA
A5R61	6-7-428	RN55D4321F	A5U13	6-7-494	SN54S112J
A5R62	6-7-412	RN55D4321F	A5U14	6-7-493	S54F74/BCA
A5R63	6-7-421	RN55D3322F	A5U16	6-7-505	SN54LS90J
A5R64	6-7-417	RCR07G471KS	A5U17	6-7-510	SN54LS93J
A5R65	6-7-425	RCR07G471KS	A5U18	6-7-515	UA741RM
A5R66	6-7-418	RCR07G101KS	A5U19	6-7-514	UA741RM
A5R67	6-7-427	RN55D1471F	A5U2	6-7-504	RM5532ADE
A5R68	6-7-349	RCR07G473KS	A5U20	6-7-518	MC145157P
A5R69	6-7-347	RCR07G271KS	A5U21	6-7-517	SN54LS390J
A5R7	6-7-333	RCR05G222KS	A5U22	6-7-524	LM239J
A5R70	6-7-429	RCR07G271KS	A5U23	6-7-522	LM239J
A5R71	6-7-424	RCR07G101KS	A5U24	6-7-476	733HM
A5R72	6-7-430	RCR07G122KS	A5U25	6-7-521	208B102
A5R73	6-7-348	RCR07G101KS	A5U26	6-7-523	SCL4050BE
A5R74	6-7-345	RCR07G103KS	A5U3	6-7-477	MC12015P
A5R75	6-7-346	RCR07G122KS	A5U4	6-7-478	MC145158P
A5R76	6-7-433	RCR07G101KS	A5U5	6-7-472	RM5534ADE
A5R77	6-7-432	RCR07G473KS	A5U6	6-7-468	RM5534ADE
A5R78	6-7-352	RCR05G151KS	A5U7	6-7-481	SN54LS00J
A5R79	6-7-350	RCR07G101KS	A5U8	6-7-479	SN54LS390J
A5R8	6-7-329	RW70U2R00F	A5U9	6-7-480	SN54LS00J
A5R80	6-7-351	RCR05G330KS	A5W1	6-7-506	QQW343H24S1T
A5R80	6-7-351	RCR05G390KS	A5W10	6-7-549	11284
A5R80	6-7-351	RCR05G470KS	A5W2	6-7-499	QQW343H24S1T
A5R80	6-7-351	RCR05G560KS	A5W3	6-7-496	QQW343H24S1T
A5R80	6-7-351	RCR05G680KS	A5W5	6-7-489	QQW343H24S1T
A5R80	6-7-351	RCR05G820KS	A5W6	6-7-519	DBL SHLD RG-178B /U
A5R80	6-7-351	RCR05G101KS			
A5R80	6-7-351	RCR05G121KS	A5W7	6-7-544	RG59-36Y
A5R80	6-7-351	RCR05G151KS	A5W8	6-7-545	RG59-36Y
A5R81	6-7-438	RCR07G331KS	A5W9	6-7-546	RG59-36Y

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A5Y1	6-7-403	315-0025-010
A5Y2	6-7-408	289-4369-010
A5Z1	6-7-205	56-590-65/4A6
A5Z2	6-7-250	56-590-65/4A6
A5Z3	6-7-266	56-590-65/4A6
A6	6-1-23	646-6298-001
A6	6-6-	646-6298-001
A6CR1	6-6-467	1N4003
A6CR10	6-6-461	1N5614
A6CR11	6-6-466	1N5617
A6CR12	6-6-463	1N5617
A6CR13	6-6-469	1N4003
A6CR14	6-6-472	1N4003
A6CR15	6-6-473	1N4003
A6CR16	6-6-480	1N4003
A6CR17	6-6-476	1N4003
A6CR18	6-6-475	1N4003
A6CR19	6-6-477	UM9137
A6CR2	6-6-454	1N5614
A6CR20	6-6-479	UM9137
A6CR21	6-6-442	1N5767
A6CR22	6-6-440	1N5767
A6CR23	6-6-424	1N5767
A6CR24	6-6-423	1N5767
A6CR25	6-6-522	1N4454-1
A6CR26	6-6-435	1N5767
A6CR27	6-6-436	1N5767
A6CR28	6-6-439	1N5767
A6CR29	6-6-444	1N5767
A6CR3	6-6-455	1N5614
A6CR30	6-6-536	1N4454-1
A6CR31	6-6-515	1N4454-1
A6CR32	6-6-516	1N4454-1
A6CR33	6-6-517	1N4454-1
A6CR34	6-6-521	1N4454-1
A6CR35	6-6-495	1N4454-1
A6CR36	6-6-514	1N5767
A6CR37	6-6-526	1N5767
A6CR38	6-6-496	1N4454-1
A6CR39	6-6-519	1N4454-1
A6CR4	6-6-457	1N5614
A6CR40	6-6-471	1N4003
A6CR41	6-6-474	1N4003
A6CR42	6-6-489	UM9137
A6CR43	6-6-478	UM9137
A6CR5	6-6-460	1N5614
A6CR6	6-6-458	1N5614
A6CR7	6-6-453	1N5614
A6CR8	6-6-456	1N5614
A6CR9	6-6-459	1N5614
A6C1	6-6-73	923CX7R104K050B
A6C10	6-6-190	923CX7R103K100B
A6C100	6-6-21	923CX7R104K050B
A6C101	6-6-19	923CX7R102K100B
A6C102	6-6-15	923CX7R332K100B
A6C103	6-6-126	CK06BX474K
A6C104	6-6-89	M39003/01-2356
A6C105	6-6-18	DPG23BY103JG
A6C106	6-6-95	M39003/01-2283
A6C107	6-6-94	923CX7R103K100B
A6C108	6-6-91	923CX7R104K050B
A6C109	6-6-189	923CX7R103K100B
A6C11	6-6-40	RPE110-111C0G070 B100V
A6C110	6-6-77	923CX7R103K100B
A6C111	6-6-74	923CX7R103K100B
A6C112	6-6-110	923CC0G220J050B
A6C113	6-6-81	923CX7R103K100B
A6C114	6-6-87	923CX7R103K100B
A6C115	6-6-86	923CX7R103K100B
A6C116	6-6-88	923CX7R103K100B
A6C117	6-6-197	923CX7R103K100B
A6C118	6-6-84	923CX7R103K100B
A6C119	6-6-85	923CX7R103K100B
A6C12	6-6-538	RPE110-111C0G820 F100V
A6C120	6-6-70	923CC0G220J050B
A6C121	6-6-72	923CC0G220J050B
A6C122	6-6-83	923CC0G330J050B
A6C123	6-6-82	923CC0G330J050B
A6C124	6-6-142	RPE110-111C0G150 F100V
A6C125	6-6-141	RPE110-111C0G150 F100V
A6C128	6-6-80	923CX7R103K100B
A6C129	6-6-79	923CX7R103K100B
A6C13	6-6-76	923CX7R103K100B
A6C130	6-6-183	923CX7R103K100B
A6C131	6-6-539	CK05BX103K
A6C132	6-6-34	8101P050Z5U102M
A6C133	6-6-540	8101P050Z5U102M
A6C134	6-6-46	8101P050Z5U102M
A6C132	6-6-34	CK05BX102K
A6C133	6-6-540	CK05BX102K
A6C134	6-6-46	CK05BX102K
A6C135	6-6-74A	CK05BX103K
A6C136	6-6-40A	18085A331JA8060
A6C137	6-6-41A	18085A331JA8060
A6C14	6-6-78	M39003/01-2301
A6C15	6-6-187	923CX7R104K050B
A6C16	6-6-41	923CX7R102K100B
A6C17	6-6-42	923CX7R102K100B
A6C18	6-6-43	CMR04F101JPDL
A6C19	6-6-45	RPE110-111C0G820 F100V
A6C2	6-6-71	923CX7R104K050B
A6C20	6-6-44	923CC0G181J050B
A6C21	6-6-39	923CX7R103K100B
A6C23	6-6-48	923CC0G470J050B
A6C24	6-6-49	8141M050Z5U155M
A6C25	6-6-47	923CC0G222J050B
A6C26	6-6-50	923CC0G102J050B
A6C27	6-6-52	923CC0G222J050B
A6C28	6-6-51	8141M050Z5U155M
A6C29	6-6-57	923CX7R104K050B
A6C3	6-6-188	923CX7R103K100B
A6C30	6-6-69	923CX7R104K050B
A6C31	6-6-68	M39003/01-2356
A6C32	6-6-54	923CC0G152J050B
A6C33	6-6-53	923CC0G272J050B
A6C34	6-6-55	923CC0G152J050B
A6C35	6-6-58	923CX7R104K050B
A6C36	6-6-61	923CX7R103K100B
A6C37	6-6-60	SR211A562JAA
A6C38	6-6-59	DPG23BY103JG
A6C39	6-6-56	923CC0G562J050D
A6C4	6-6-180	923CX7R104K050B
A6C40	6-6-62	M39003/01-2304
A6C41	6-6-63	923CX7R104K050B
A6C42	6-6-67	923CX7R104K050B
A6C43	6-6-65	CK05BX103K

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A6C44	6-6-64	M39003/01-2356	A6FL2	6-6-431	677
A6C45	6-6-66	M39003/01-2356	A6FL3	6-6-481	289-7398-010
A6C46	6-6-96	M39003/01-2289	A6FL4	6-6-488	289-7398-010
A6C47	6-6-93	923CX7R104K050B	A6FL5	6-6-492	289-7398-010
A6C48	6-6-98	923CX7R104K050B	A6FL6	6-6-377	289-7398-010
A6C49	6-6-31	923CC0G120J050B	A6J1	6-6-520	M39012/95-0001
A6C5	6-6-75	923CX7R104K050B	A6J2	6-6-505	M39012-71-0002
A6C50	6-6-148	923CX7R103K100B	A6J3	6-6-465	M39012-71-0002
A6C51	6-6-27	923CX7R103K100B	A6L1	6-6-353	MS75085-01
A6C52	6-6-30	923CX7R104K050B	A6L10	6-6-364	MS75089-17
A6C53	6-6-35	538-011B2V5-11	A6L11	6-6-361	MS75089-17
A6C54	6-6-145	923CX7R103K100B	A6L12	6-6-362	MS75089-17
A6C55	6-6-139	923CX7R103K100B	A6L13	6-6-360	B445-3
A6C56	6-6-136	923CX7R103K100B	A6L14	6-6-356	B445-3
A6C57	6-6-132	923CX7R104K050B	A6L15	6-6-363	MS75089-17
A6C58	6-6-138	923CC0G101J050B	A6L16	6-6-371	MS75089-17
A6C59	6-6-137	923CX7R103K100B	A6L17	6-6-372	MS75089-17
A6C6	6-6-37	538-011B2V5-11	A6L18	6-6-365	B445-2
A6C60	6-6-28	923CX7R103K100B	A6L19	6-6-366	B445-2
A6C61	6-6-26	923CX7R103K100B	A6L2	6-6-350	240-2711-010
A6C62	6-6-29	923CX7R103K100B	A6L20	6-6-369	B445-1
A6C63	6-6-16	923CX7R103K100B	A6L21	6-6-368	B445-1
A6C64	6-6-17	923CX7R104K050B	A6L22	6-6-410	MS75103-3
A6C65	6-6-14	923CX7R103K100B	A6L23	6-6-409	MS75085-01
A6C66	6-6-12	923CX7R104K050B	A6L24	6-6-411	MS75085-01
A6C67	6-6-11	923CX7R104K050B	A6L25	6-6-332	MS75085-01
A6C68	6-6-111	M39003/01-2304	A6L26	6-6-330	MS75085-01
A6C69	6-6-10	923CX7R104K050B	A6L27	6-6-333	MS75089-13
A6C7	6-6-36	RPE110-111C0G220 F100V	A6L28	6-6-324	MS75089-13
			A6L29	6-6-420	MS75089-8
A6C70	6-6-107	923CX7R104K050B	A6L3	6-6-387	MS75085-01
A6C71	6-6-20	923CX7R103K100B	A6L30	6-6-416	MS75085-01
A6C72	6-6-13	923CX7R104K050B	A6L31	6-6-408	MS75089-17
A6C73	6-6-112	923CX7R102K100B	A6L32	6-6-327	MS75089-8
A6C74	6-6-113	923CX7R103K100B	A6L33	6-6-326	MS75089-11
A6C75	6-6-109	923CX7R103K100B	A6L34	6-6-419	MS75089-11
A6C76	6-6-106	923CX7R102K100B	A6L35	6-6-325	MS75085-01
A6C77	6-6-227	923CC0G101J050B	A6L36	6-6-373	MS75085-01
A6C78	6-6-105	923CX7R104K050B	A6L37	6-6-389	MS75085-01
A6C79	6-6-108	923CX7R104K050B	A6L38	6-6-390	MS75085-01
A6C8	6-6-38	RPE110-111C0G220 F100V	A6L39	6-6-388	MS75085-01
			A6L4	6-6-392	MS75085-01
A6C80	6-6-104	923CX7R103K100B	A6L40	6-6-395	MS75085-01
A6C81	6-6-101	923CX7R104K050B	A6L41	6-6-384	BP3132-3
A6C82	6-6-99	923CX7R103K100B	A6L42	6-6-382	BP3132-7
A6C83	6-6-97	923CX7R104K050B	A6L43	6-6-383	BP3132-3
A6C84	6-6-103	923CX7R103K100B	A6L44	6-6-341	MS75083-2
A6C85	6-6-92	923CX7R104K050B	A6L45	6-6-343	MS75083-2
A6C86	6-6-100	923CX7R103K100B	A6L46	6-6-349	BP3132-5
A6C87	6-6-32	923CX7R103K100B	A6L47	6-6-354	240-2711-010
A6C88	6-6-133	923CX7R103K100B	A6L48	6-6-352	BP3132-5
A6C89	6-6-134	923CC0G221K100B	A6L49	6-6-393	MS75085-01
A6C90	6-6-201	923CX7R103K100B	A6L5	6-6-367	MS75089-13
A6C91	6-6-140	923CX7R103K100B	A6L50	6-6-381	240-2711-010
A6C92	6-6-135	923CX7R103K100B	A6L51	6-6-351	MS75085-01
A6C93	6-6-131	923CC0G221K100B	A6L52	6-6-391	MS75085-01
A6C94	6-6-90	923CX7R103K100B	A6L6	6-6-358	B445-4
A6C95	6-6-25	923CX7R103K100B	A6L7	6-6-355	B445-5
A6C96	6-6-23	923CC0G270J050B	A6L9	6-6-359	B445-4
A6C97	6-6-22	923CX7R104K050B	A6P1	6-6-518	532977-3
A6C98	6-6-24	923CC0G221K100B	A6P2	6-6-506	532977-3
A6C99	6-6-102	923CX7R103K100B	A6P3	6-6-533	532977-2
A6E1	6-6-462	B1-C90/20	A6P4	6-6-500	M39012/69-0002
A6FL1	6-6-450	2Q123	A6P5	6-6-491	M39012/69-0002

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A6Q1	6-6-497	A210	A6R114	6-6-128	RCR07G331JS
A6Q10	6-6-504	2N2907A	A6R115	6-6-244	3329H-1-502
A6Q11	6-6-503	2N2907A	A6R116	6-6-232	RCR07G102JS
A6Q12	6-6-502	2N2907A	A6R117	6-6-124	3329H-1-501
A6Q13	6-6-470	2N918	A6R118	6-6-114	RCR07G331JS
A6Q14	6-6-485	2N918	A6R119	6-6-115	RCR07G101JS
A6Q15	6-6-482	2N918	A6R12	6-6-274	RCR05G3R3JS
A6Q16	6-6-483	2N918	A6R120	6-6-116	RCR07G122JS
A6Q17	6-6-486	2N918	A6R121	6-6-321	RCR07G330JS
A6Q18	6-6-445	MRF904	A6R122	6-6-225	RCR07G182JS
A6Q19	6-6-447	MRF904	A6R123	6-6-224	RCR07G122JS
A6Q2	6-6-498	A210	A6R124	6-6-223	RCR07G221JS
A6Q20	6-6-448	MRF904	A6R125	6-6-221	RCR07G821JS
A6Q21	6-6-446	MRF904	A6R126	6-6-318	RCR07G100JS
A6Q22	6-6-512	2N2857	A6R127	6-6-315	RCR20G390JS
A6Q23	6-6-511	2N2857	A6R128	6-6-314	RCR07G122JS
A6Q24	6-6-437	A210	A6R129	6-6-218	RCR07G472JS
A6Q25	6-6-426	2N2857	A6R13	6-6-277	RCR05G3R3JS
A6Q26	6-6-537	2N2857	A6R130	6-6-316	RCR07G472JS
A6Q27	6-6-534	FN4595	A6R131	6-6-317	RCR07G100JS
A6Q28	6-6-530	FN4595	A6R132	6-6-313	RN55D51R1F
A6Q29	6-6-529	2N2222A	A6R133	6-6-216	RN55D1000F
A6Q3	6-6-501	MRF517	A6R134	6-6-215	RCR07G181JS
A6Q30	6-6-412	A210	A6R135	6-6-217	RCR07G222JS
A6Q31	6-6-525	2N2222A	A6R136	6-6-213	RCR07G472JS
A6Q32	6-6-524	2N918	A6R137	6-6-219	RCR07G101JS
A6Q33	6-6-527	2N918	A6R138	6-6-220	RCR07G471JS
A6Q34	6-6-528	2N2907A	A6R139	6-6-310	RCR07G102JS
A6Q35	6-6-425	2N2907A	A6R14	6-6-271	RCR05G100JS
A6Q36	6-6-532	2N2219A	A6R140	6-6-312	RCR07G331JS
A6Q37	6-6-531	2N2222A	A6R141	6-6-222	RCR07G103JS
A6Q38	6-6-441	2N918	A6R142	6-6-211	RCR07G101JS
A6Q39	6-6-443	2N918	A6R143	6-6-311	RCR07G104JS
A6Q4	6-6-451	MRF517	A6R144	6-6-319	RCR07G104JS
A6Q40	6-6-434	2N918	A6R145	6-6-250	RCR07G102JS
A6Q41	6-6-432	2N2857	A6R146	6-6-337	RCR07G151JS
A6Q42	6-6-429	2N2222A	A6R147	6-6-338	RCR07G471JS
A6Q43	6-6-427	2N2222A	A6R148	6-6-329	RCR07G102JS
A6Q44	6-6-428	2N2222A	A6R149	6-6-328	RCR07G222JS
A6Q45	6-6-433	2N2222A	A6R15	6-6-270	RCR05G100JS
A6Q46	6-6-468	2N2484	A6R150	6-6-405	RCR07G222JS
A6Q47	6-6-494	2N2222A	A6R151	6-6-403	RCR07G471JS
A6Q5	6-6-490	MRF517	A6R152	6-6-331	RCR07G103JS
A6Q6	6-6-452	MRF517	A6R153	6-6-336	RCR07G101JS
A6Q7	6-6-509	2N2222A	A6R154	6-6-334	RCR07G223JS
A6Q8	6-6-508	2N2222A	A6R155	6-6-335	RCR07G102JS
A6Q9	6-6-507	2N2222A	A6R156	6-6-258	RCR07G470JS
A6R1	6-6-181	RCR07G220JS	A6R157	6-6-242	RCR07G223JS
A6R10	6-6-276	RCR05G3R3JS	A6R158	6-6-246	RCR07G103JS
A6R100	6-6-251	RCR07G222JS	A6R159	6-6-243	RCR07G101JS
A6R101	6-6-252	RCR07G102JS	A6R16	6-6-264	RCR05G100JS
A6R102	6-6-247	RCR07G511JS	A6R160	6-6-241	RCR07G471JS
A6R103	6-6-257	RCR07G560JS	A6R161	6-6-237	RCR07G472JS
A6R104	6-6-249	RCR07G221JS	A6R162	6-6-191	RCR07G472JS
A6R105	6-6-255	RCR07G221JS	A6R163	6-6-240	RCR07G472JS
A6R106	6-6-119	RCR07G102JS	A6R164	6-6-239	RCR07G222JS
A6R107	6-6-118	RCR07G102JS	A6R165	6-6-234	RCR07G101JS
A6R108	6-6-121	RCR07G511JS	A6R166	6-6-235	RCR07G471JS
A6R109	6-6-123	RCR07G121JS	A6R167	6-6-129	RCR07G222JS
A6R11	6-6-163	RCR05G3R3JS	A6R168	6-6-233	RCR07G472JS
A6R110	6-6-122	RCR07G102JS	A6R169	6-6-127	RCR07G103JS
A6R111	6-6-230	RCR07G330JS	A6R17	6-6-268	RCR05G100JS
A6R112	6-6-117	RCR07G330JS	A6R170	6-6-236	RCR07G104JS
A6R113	6-6-125	RCR07G102JS	A6R171	6-6-323	RCR07G104JS

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A6R172	6-6-422	RCR07G103JS	A6R28	6-6-296	RCR07G470JS
A6R173	6-6-228	RCR07G223KS	A6R29	6-6-400	RCR07G104JS
A6R174	6-6-120	RCR07G223KS	A6R3	6-6-186	RCR07G101JS
A6R175	6-6-229	RCR07G103JS	A6R30	6-6-398	RCR07G104JS
A6R176	6-6-231	RCR07G472JS	A6R31	6-6-396	RCR07G104JS
A6R177	6-6-226	RCR07G223KS	A6R32	6-6-295	RCR07G332JS
A6R178	6-6-421	RCR07G102JS	A6R33	6-6-196	RCR07G332JS
A6R179	6-6-417	RCR07G224JS	A6R34	6-6-194	RCR07G332JS
A6R18	6-6-273	RNC55H18R2FS	A6R35	6-6-399	RCR07G472JS
A6R180	6-6-418	RCR07G223JS	A6R36	6-6-397	RCR07G472JS
A6R181	6-6-291	RCR07G332JS	A6R37	6-6-299	RCR07G472JS
A6R182	6-6-130	RCR07G470JS	A6R38	6-6-294	RCR07G472JS
A6R183	6-6-307	RN55D1003F	A6R39	6-6-293	RCR07G472JS
A6R184	6-6-210	RN55D4222F	A6R4	6-6-284	RWR81S56R2FR
A6R185	6-6-309	RN55D6042F	A6R40	6-6-195	RCR07G472JS
A6R186	6-6-209	RN55D1692F	A6R41	6-6-394	RWR81S1100FR
A6R187	6-6-308	RN55D5491F	A6R42	6-6-192	RCR07G472JS
A6R188	6-6-208	RN55D3321F	A6R43	6-6-179	RCR07G101JS
A6R189	6-6-207	RN55D3321F	A6R44	6-6-288	RCR07G472JS
A6R19	6-6-162	RNC55H18R2FS	A6R45	6-6-289	RCR07G472JS
A6R190	6-6-206	RN55D2940F	A6R46	6-6-151	RCR07G472JS
A6R191	6-6-205	RN55D2670F	A6R48	6-6-153	RCR07G472JS
A6R192	6-6-204	RN55D2740F	A6R5	6-6-283	RCR07G100JS
A6R193	6-6-202	RN55D1002F	A6R50	6-6-156	RCR07G104JS
A6R194	6-6-200	RN55D1002F	A6R51	6-6-160	RCR07G104JS
A6R195	6-6-303	RN55D1002F	A6R52	6-6-157	RW69V271
A6R196	6-6-203	RN55D1002F	A6R53	6-6-152	RCR07G103JS
A6R197	6-6-214	RN55D3832F	A6R54	6-6-154	RCR07G472JS
A6R198	6-6-212	RN55D9761F	A6R55	6-6-155	RCR07G103JS
A6R199	6-6-407	RN55D2430F	A6R56	6-6-199	RCR07G104JS
A6R2	6-6-184	RCR07G220JS	A6R57	6-6-161	RCR07G222JS
A6R20	6-6-272	RNC55H18R2FS	A6R58	6-6-159	RCR07G103JS
A6R200	6-6-302	RCR07G224JS	A6R59	6-6-158	RCR07G332JS
A6R201	6-6-304	RCR07G223JS	A6R6	6-6-279	RCR07G220JS
A6R202	6-6-305	RCR07G333JS	A6R60	6-6-275	RCR05G223JS
A6R203	6-6-306	RCR07G102JS	A6R61	6-6-166	RCR07G221JS
A6R204	6-6-322	RCR07G102JS	A6R62	6-6-165	RCR07G101JS
A6R205	6-6-345	RCR07G221JS	A6R63	6-6-269	RCR05G220JS
A6R206	6-6-346	RCR07G221JS	A6R64	6-6-173	RCR07G330JS
A6R207	6-6-174	RCR07G221JS	A6R65	6-6-171	RCR07G680JS
A6R208	6-6-150	RCR07G472JS	A6R66	6-6-168	RN55D22R1F
A6R209	6-6-287	RCR07G472JS	A6R67	6-6-169	RN55D22R1F
A6R21	6-6-267	RNC55H18R2FS	A6R68	6-6-167	RN55D22R1F
A6R210	6-6-149	RCR07G100JS	A6R69	6-6-170	RN55D22R1F
A6R211	6-6-262	RCR07G331JS	A6R7	6-6-280	RCR07G220JS
A6R212	6-6-297	RCR07G103JS	A6R71	6-6-178	RCR07G101JS
A6R214	6-6-182	RN55D1001F	A6R72	6-6-172	RCR07G182JS
A6R215	6-6-193	RCR07G222JS	A6R73	6-6-177	RCR07G102JS
A6R216	6-6-147	RCR07G103JS	A6R74	6-6-176	RCR07G122JS
A6R217	6-6-238	RCR07G222JS	A6R75	6-6-175	RCR07G100JS
A6R218	6-6-320	RN55D5111F	A6R76	6-6-282	RCR07G220JS
A6R219	6-6-406	3329H-1-102	A6R77	6-6-261	RCR07G241JS
A6R220	6-6-301	RCR07G103JS	A6R78	6-6-263	RCR07G100JS
A6R221	6-6-298	RCR07G103JS	A6R79	6-6-259	RCR07G220JS
A6R222	6-6-300	RCR07G103JS	A6R8	6-6-281	RN55D1691F
A6R223	6-6-198	RCR07G102JS	A6R80	6-6-285	RCR07G471JS
A6R224	6-6-185	RCR07G100JS	A6R81	6-6-286	RCR07G560JS
A6R225	6-6-146	RCR05G470JS	A6R82	6-6-292	RCR07G391JS
A6R226	6-6-33	RCR05G3R3JS	A6R83	6-6-347	RCR07G331JS
A6R227	6-6-278A	RCR07G560JS	A6R84	6-6-290	RCR07G560JS
A6R23	6-6-260	RCR07G161JS	A6R85	6-6-402	RCR07G560JS
A6R24	6-6-265	RCR20G820JS	A6R86	6-6-404	RCR07G121JS
A6R25	6-6-266	RCR20G101JS	A6R9	6-6-278	RCR07G560JS
A6R27	6-6-164	RCR07G102JS	A6R91	6-6-339	RCR05G330JS

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG-ITEM	PART NUMBER
A6R92	6-6-144	RCR07G330JS
A6R93	6-6-342	RCR05G330JS
A6R94	6-6-143	RCR05G330JS
A6R95	6-6-256	RCR07G221JS
A6R96	6-6-253	RCR07G330JS
A6R97	6-6-254	RCR07G752JS
A6R98	6-6-248	RCR07G122JS
A6R99	6-6-245	RCR07G102JS
A6TP1	6-6-438	105-0853-001
A6TP2	6-6-430	105-0853-001
A6T1	6-6-386	7434
A6T10	6-6-340	7432
A6T11	6-6-401	7434
A6T12	6-6-415	7437
A6T13	6-6-378	7435
A6T2	6-6-380	7426
A6T3	6-6-348	7427
A6T4	6-6-357	7155
A6T5	6-6-370	7428
A6T6	6-6-374	7434
A6T7	6-6-376	7429
A6T8	6-6-375	7430
A6T9	6-6-344	7431
A6U1	6-6-510	CD4049UBF
A6U2	6-6-523	MC1558U
A6U3	6-6-513	MC1558U
A6VR1	6-6-535	1N751A
A6W3	6-6-484	DBL SHLD RG-178B /U
A6W4	6-6-464	QQW343H26S1T
A6W5	6-6-487	QQW343H26S1T
A6W6	6-6-499	DBL SHLD RG-178B /U
A6W7	6-6-493	QQW343H26S1T
A6W8	6-6-484A	428-4822-000
C1	6-1-58	910B1D205K
C2	6-1-59	910B1D205K
C3	6-1-60	910B1D205K
C4	6-1-61	910B1D205K
C5	6-1-38	CK62AW472M
E1	6-1-67	304-2513-250
E2	6-1-71	304-2513-250
E3	6-1-68	304-2513-250
E4	6-1-70	304-2513-250
FL1	6-1-40	3V1A
J1	6-1-32	6VJ1
J1F1	6-1-30	MDX-2
J1XF1	6-1-31	HKPH
J8	6-1-11	03-06-1041
L1	6-1-36	MS18130-3
L2	6-1-37	MS18130-3
L3	6-1-35	MS18130-3
L4	6-1-65	26-5378-00
L5	6-1-66	26-5378-00
P1	6-1-12	03-06-1056
TB1	6-1-34	9M1PS14
W1	6-1-42	652-6580-004
W1J2	6-1-44	819-B3800W-75
W1P2	6-1-43	M39012/69-0002
W2	6-1-46	652-6580-003
W2J3	6-1-48	819-B3800W-75
W2P3	6-1-47	M39012/69-0002
W3	6-1-50	652-6580-002
W3J4	6-1-52	819-B3800W-75
W3P4	6-1-51	M39012/69-0002
W4	6-1-54	652-6580-001
W4J5	6-1-56	819-B3800W-75
W4P5	6-1-55	M39012/69-0002

SECTION 7
DIAGRAMS

7.1 INTRODUCTION

7.1.1 The schematic diagrams for R-5099/U, R-5099A/U, and R-5104/GRC-508 Radio Receiver is included in this section. General information pertaining to the schematic diagram is included in notes located on the diagram.

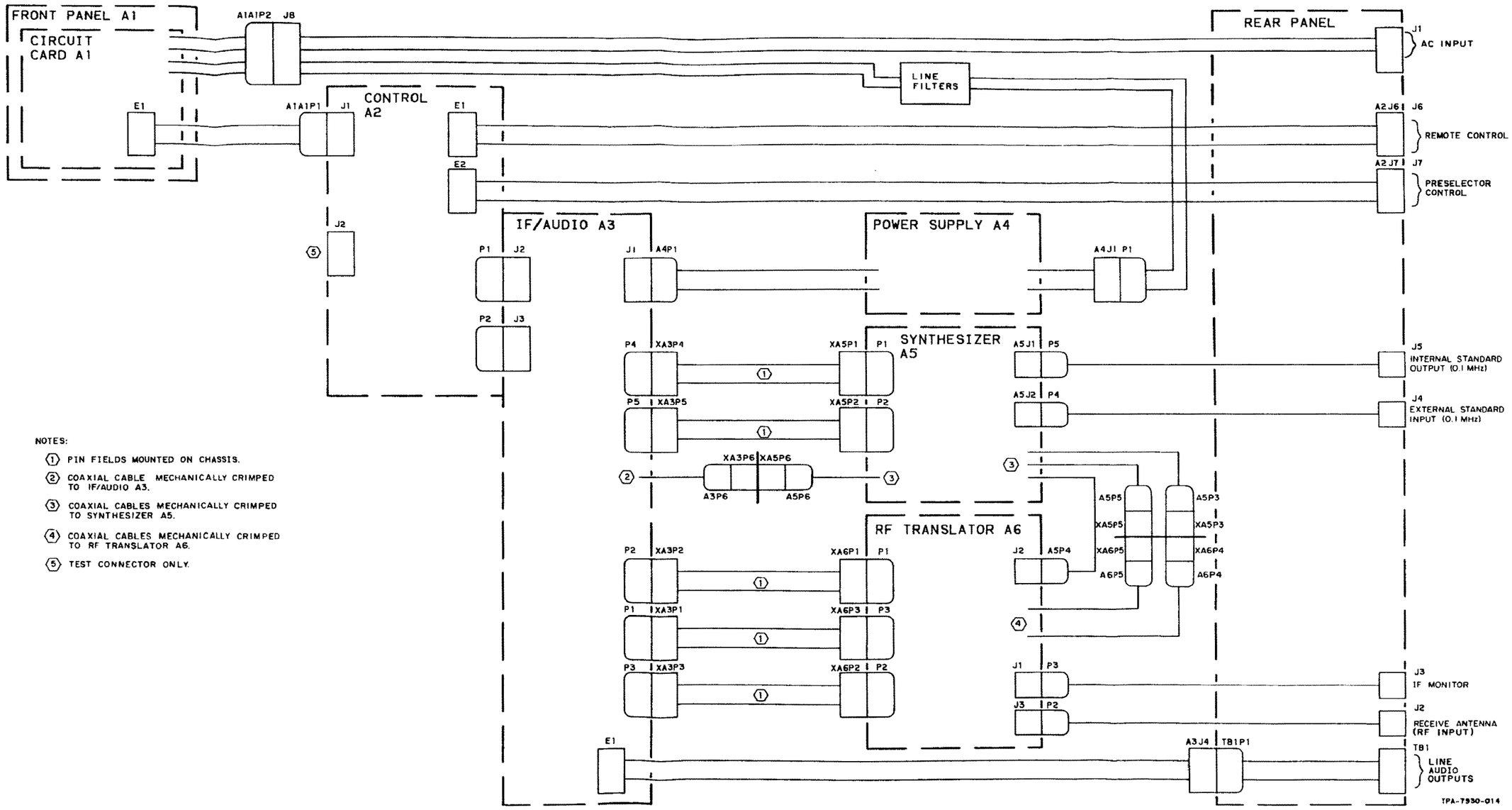
7.2 EFFECTIVITIES

7.2.1 The procedure for identification of equipment design changes is described in section 6, Parts List.

7.3 INDEX OF DIAGRAMS

7.3.1 The figure number and title of diagrams applicable to this section are listed below.

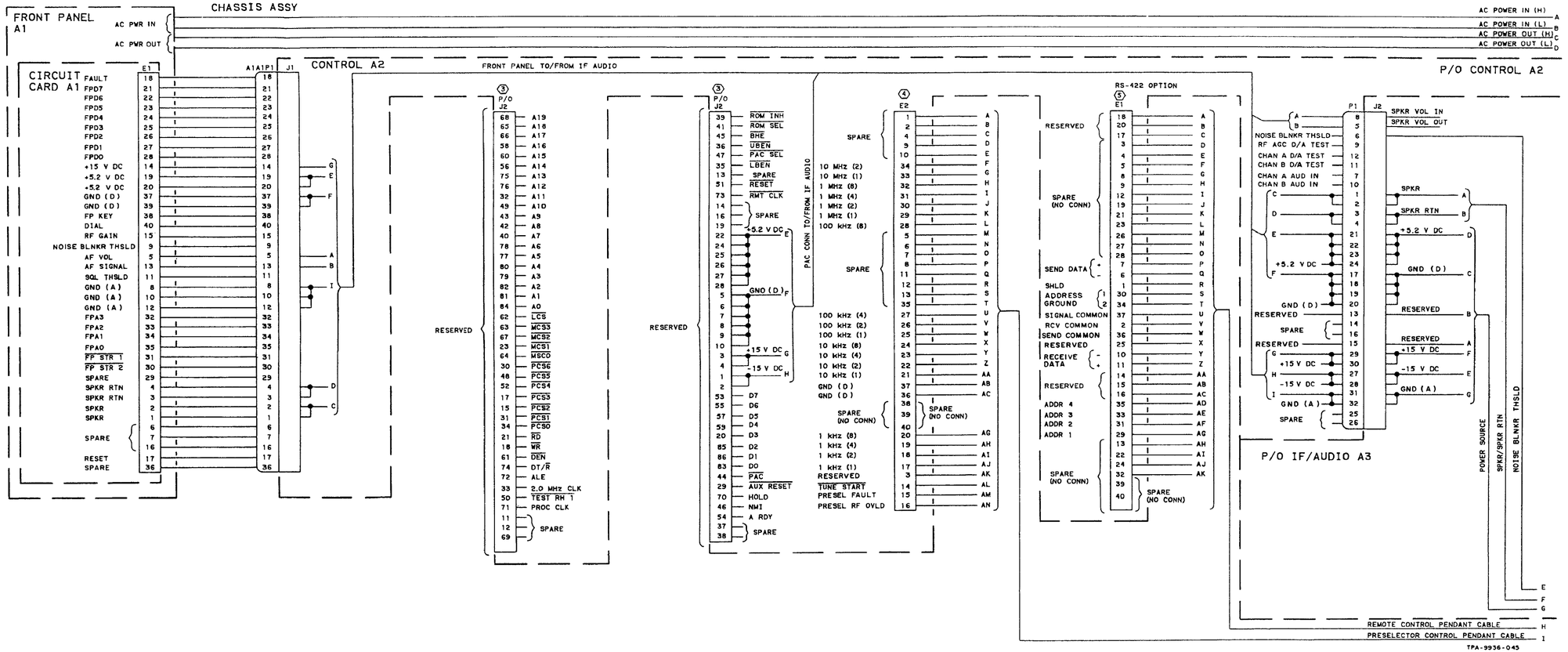
FIGURE	TITLE
7-1	Cabling Diagram
7-2	Interconnect Diagram
7-3	Front Panel A1 (652-6572-XXX), Schematic Diagram
7-4	Control A2 (646-6247-XXX), Schematic Diagram
7-5	IF/Audio A3 (646-6196-XXX), Schematic Diagram
7-6	Power Supply A4 (652-6602-002), Schematic Diagram
7-7	Synthesizer A5 (646-6299-001), Schematic Diagram
7-8	RF Translator A6 (646-6298-001), Schematic Diagram
7-9	Assembly, Connector, and Pin Locations



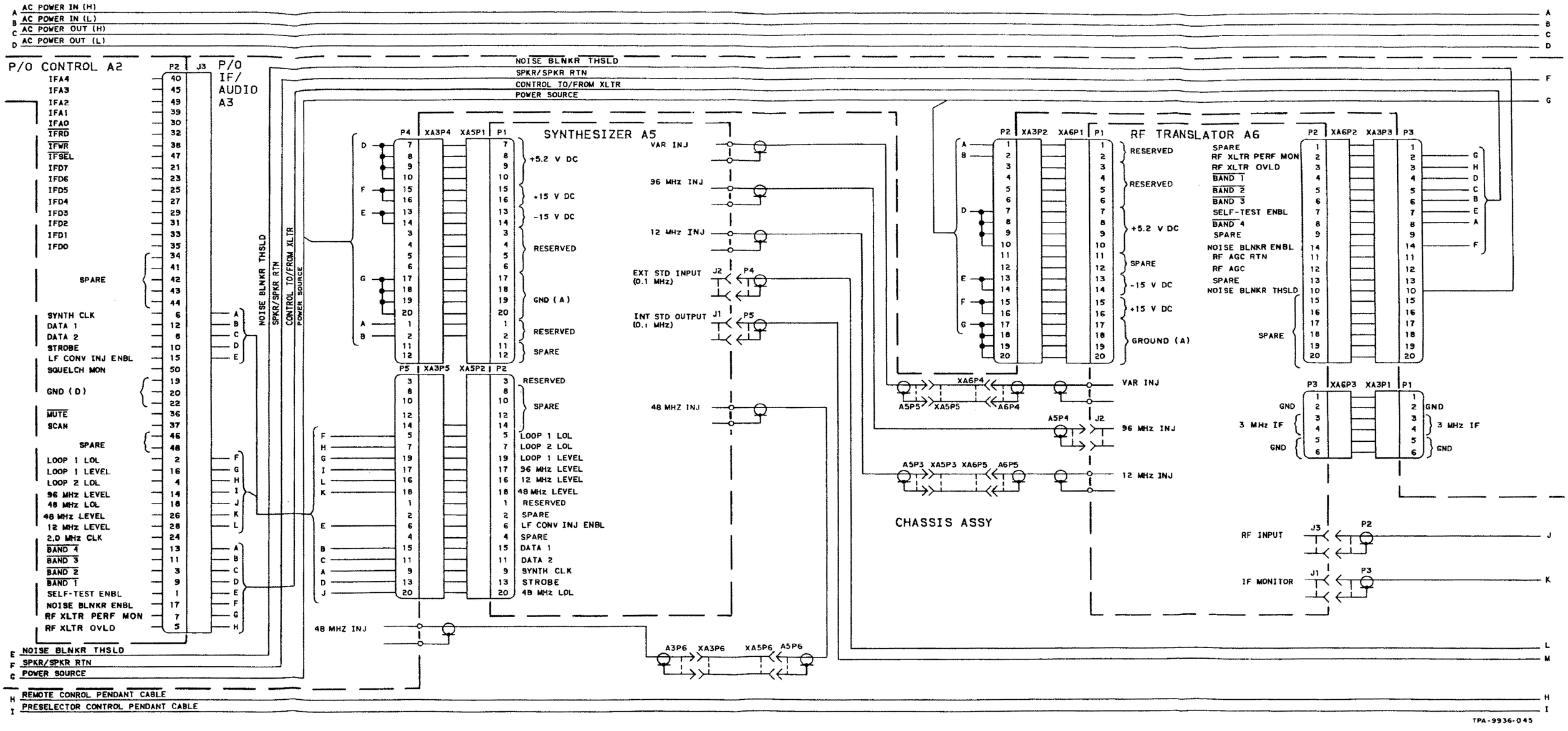
NOTES:

1. PIN FIELDS MOUNTED ON CHASSIS.
2. COAXIAL CABLE MECHANICALLY CRIMPED TO IF/AUDIO A3.
3. COAXIAL CABLES MECHANICALLY CRIMPED TO SYNTHESIZER A5.
4. COAXIAL CABLES MECHANICALLY CRIMPED TO RF TRANSLATOR A6.
5. TEST CONNECTOR ONLY.

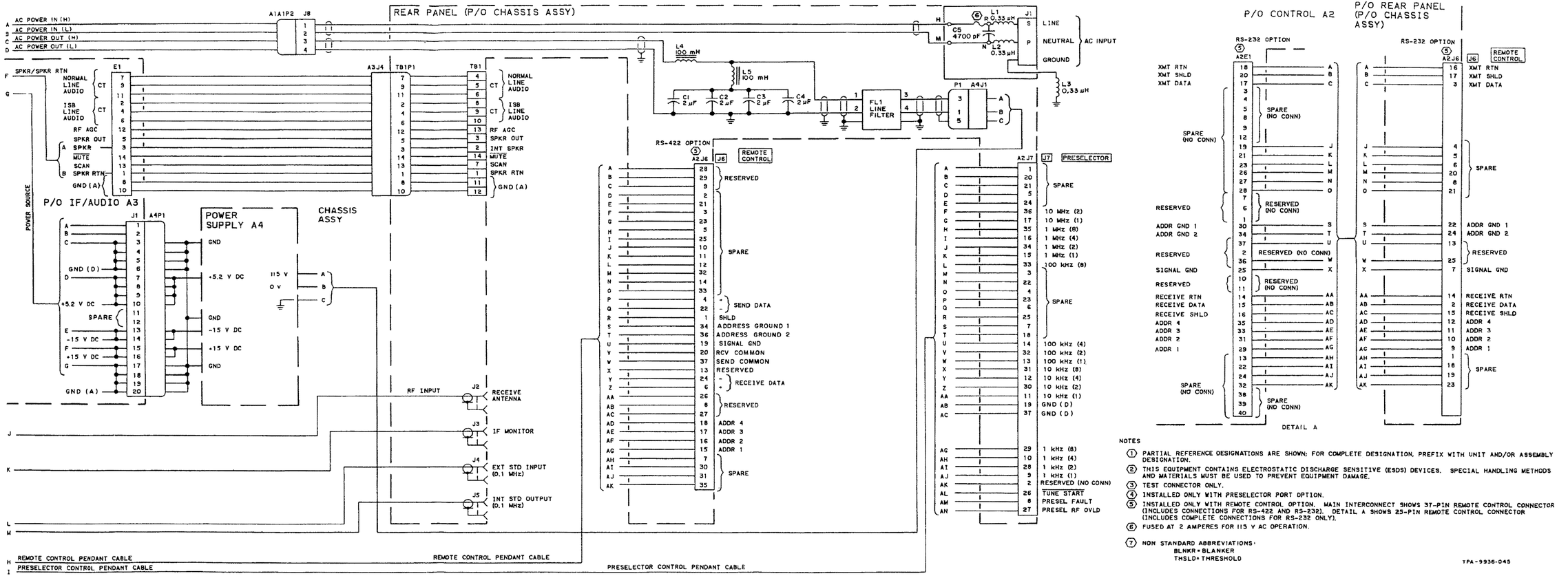
Cabling Diagram Figure 7-1



Interconnect Diagram (Sheet 1 of 3) Figure 7-2



Interconnect Diagram (Sheet 2 of 3) Figure 7-2

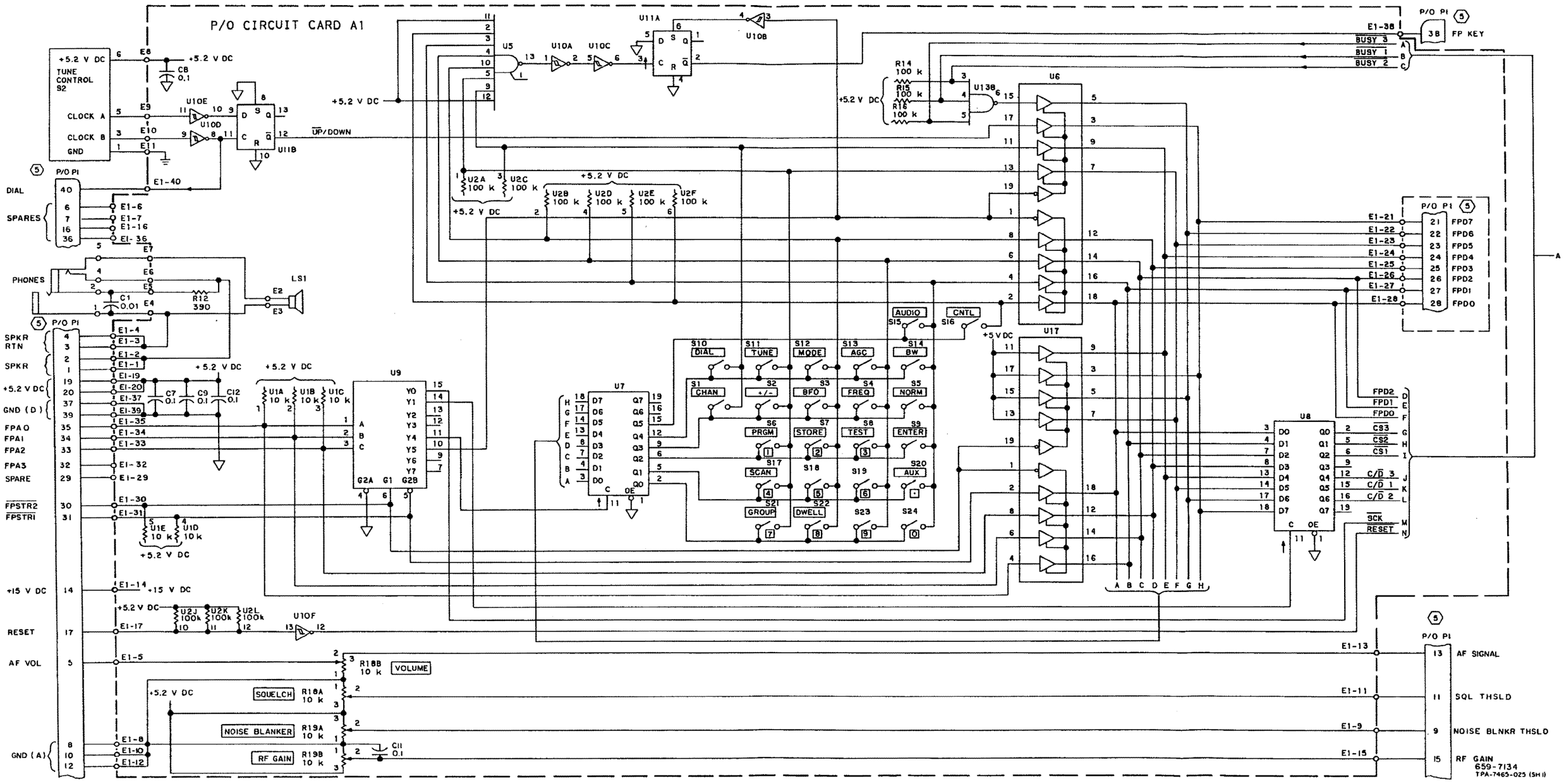


NOTES

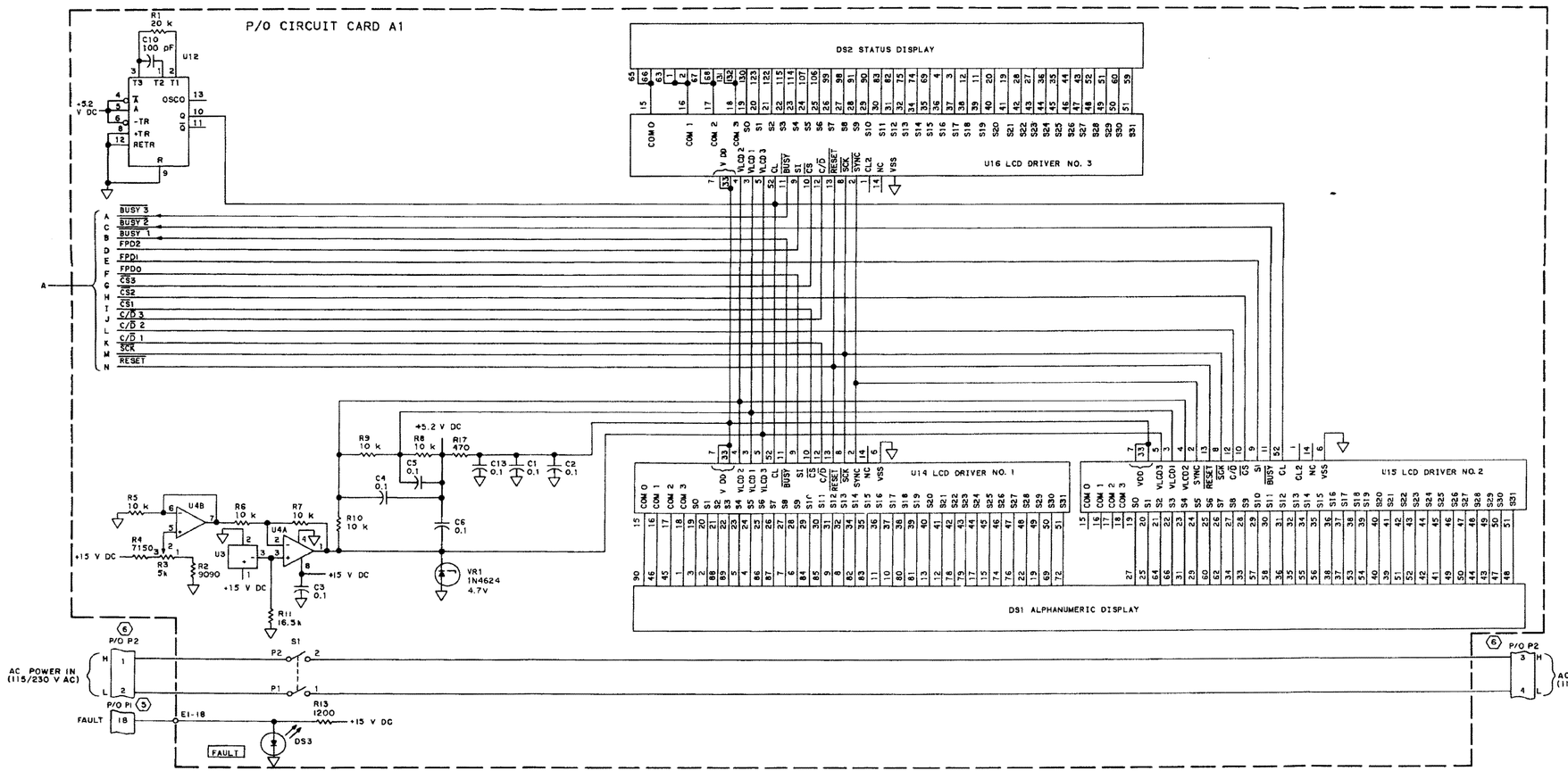
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
2. THIS EQUIPMENT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) DEVICES. SPECIAL HANDLING METHODS AND MATERIALS MUST BE USED TO PREVENT EQUIPMENT DAMAGE.
3. TEST CONNECTOR ONLY.
4. INSTALLED ONLY WITH PRESELECTOR PORT OPTION.
5. INSTALLED ONLY WITH REMOTE CONTROL OPTION. MAIN INTERCONNECT SHOWS 37-PIN REMOTE CONTROL CONNECTOR (INCLUDES CONNECTIONS FOR RS-422 AND RS-232). DETAIL A SHOWS 25-PIN REMOTE CONTROL CONNECTOR (INCLUDES COMPLETE CONNECTIONS FOR RS-232 ONLY).
6. FUSED AT 2 AMPERES FOR 115 V AC OPERATION.
7. NON STANDARD ABBREVIATIONS:
   BLNKR = BLANKER
   THSLD = THRESHOLD

TPA-9936-045

Interconnect Diagram (Sheet 3 of 3) Figure 7-2



Front Panel A1 (652-6572-XXX), Schematic Diagram (Sheet 1 of 2) Figure 7-3



MICROCIRCUIT INFORMATION:

U NO	TYPE	POWER (V DC) +15	+5.2	GND (D)	GND (A)
1	10 k RES NETWORK		14		
2	100 k RES NETWORK		14		
3	AD5901	SEE DRAWING			
4	LM258	SEE DRAWING			
5	4068B		14	7	
6	74HC244		20	10	
7	54C374		20	10	
8	54C374		20	10	
9	74HC138		16	8	
10	4584B		14	7	
11	4013		14	7	
12	4047		14	7	
13	4023		14	7	
14	UPD7225	SEE DRAWING			
15	UPD7225	SEE DRAWING			
16	UPD7225	SEE DRAWING			
17	74HC244		20	10	

(7) RESISTOR ARRAY CONFIGURATION FOR U1 (10K) AND U2 (100K).

NOTES:

(1) UNLESS OTHERWISE SPECIFIED; RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN MICROFARADS.

(2) PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.

(3) TYPE DESIGNATIONS SHOWN MAY BE GENERIC IN FORM AND ARE FOR REFERECE ONLY. SEE APPLICABLE PARTS LIST FOR REPLACEMENT PARTS.

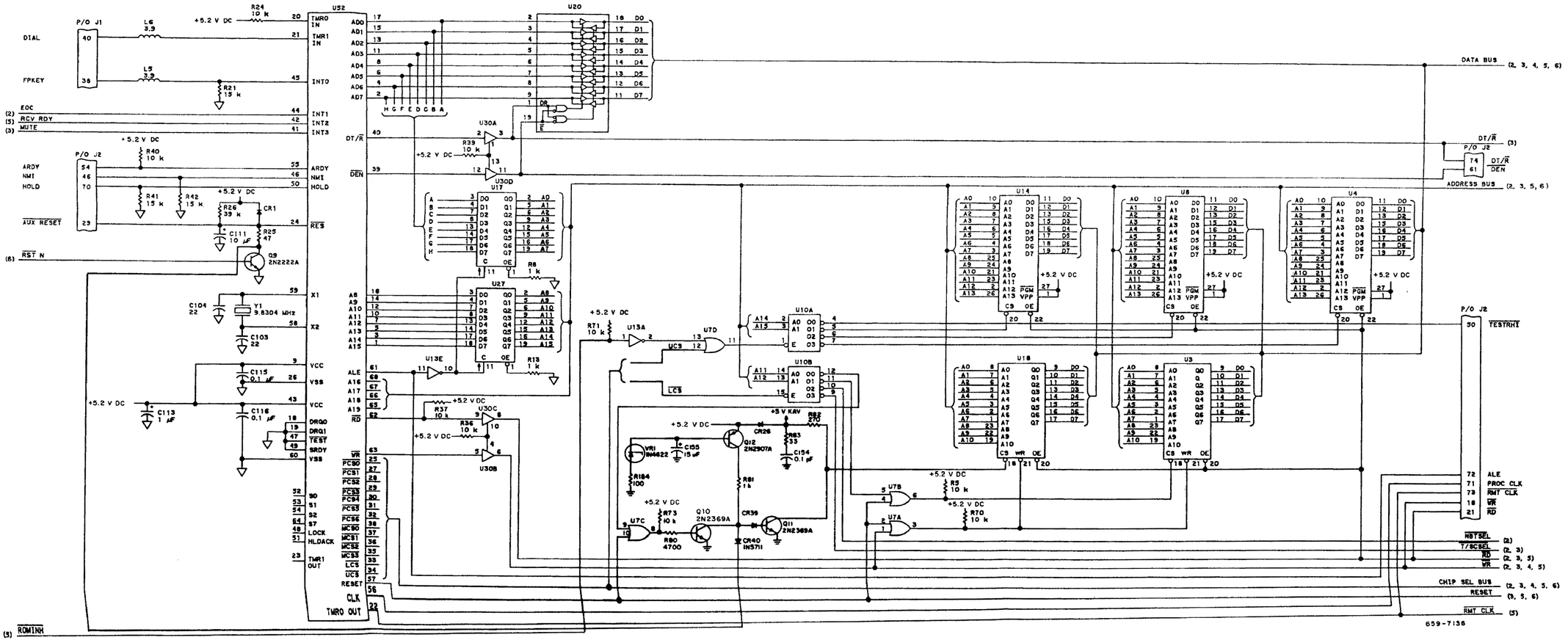
(4) THIS EQUIPMENT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) DEVICES. SPECIAL HANDLING METHODS AND MATERIALS MUST BE USED TO PREVENT EQUIPMENT DAMAGE.

(5) P1 IS PART OF A1 PENDANT CONTROL CABLE.

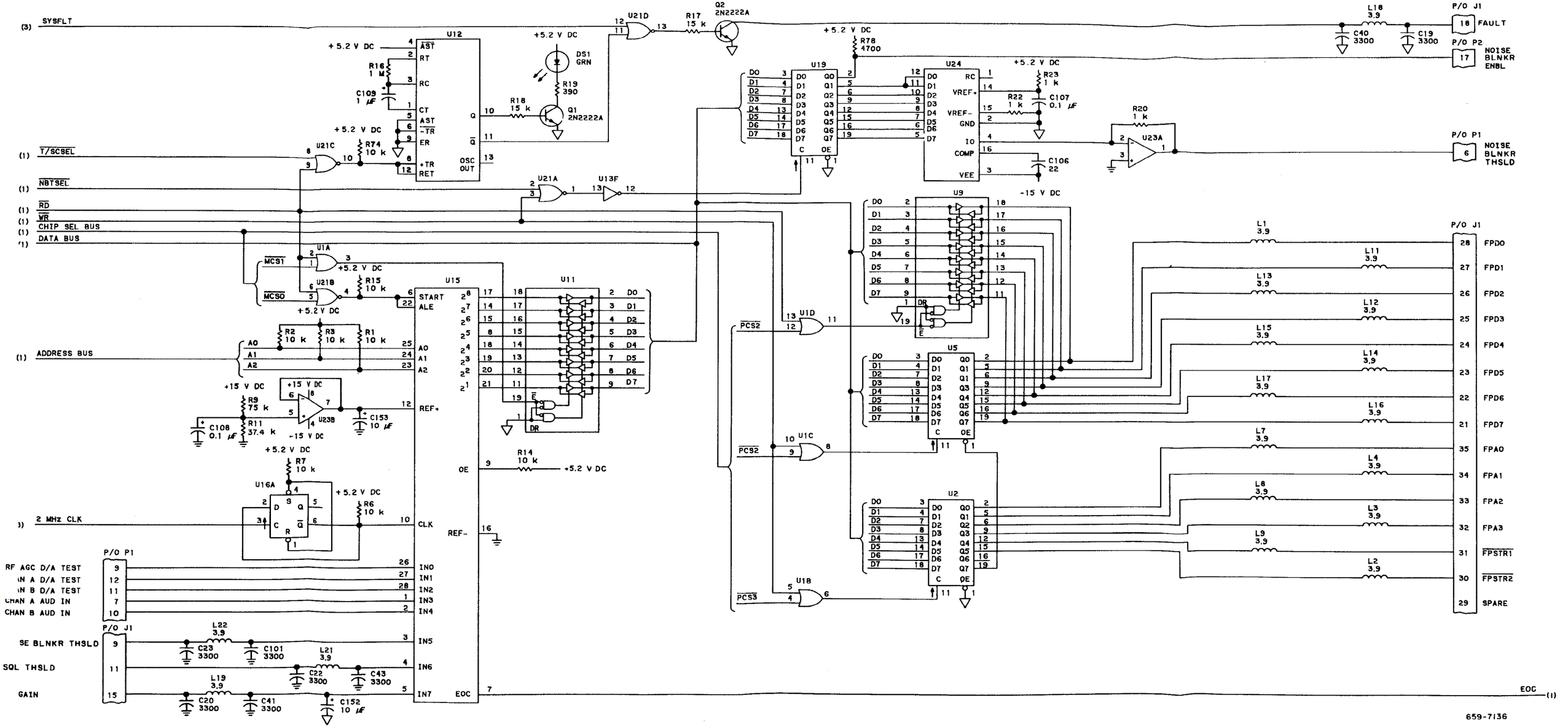
(6) P2 IS PART OF A1 PENDANT POWER CABLE.

659-7134
TPA-7465-025 (SH 2)

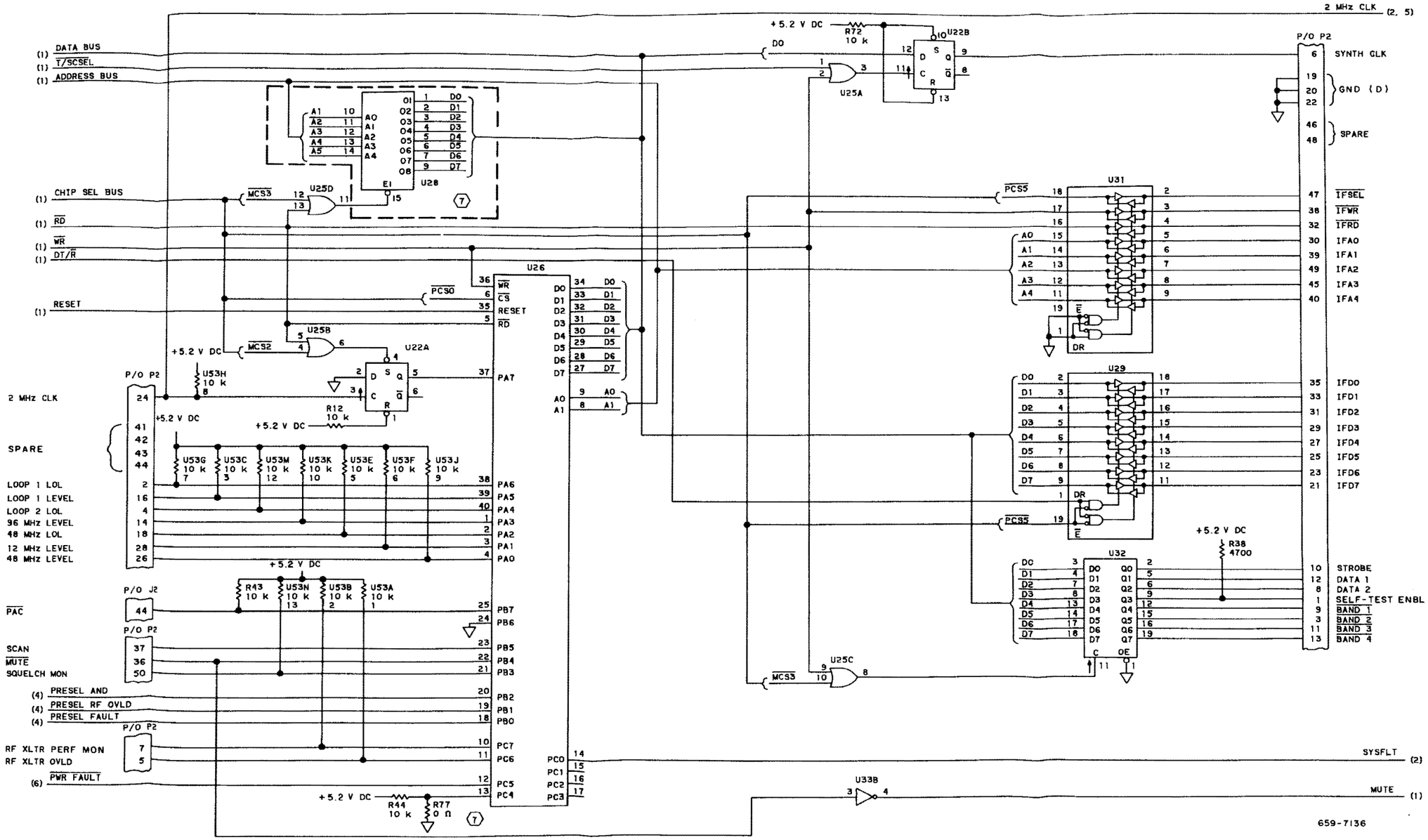
Front Panel A1 (652-6572-XXX), Schematic Diagram (Sheet 2 of 2) Figure 7-3



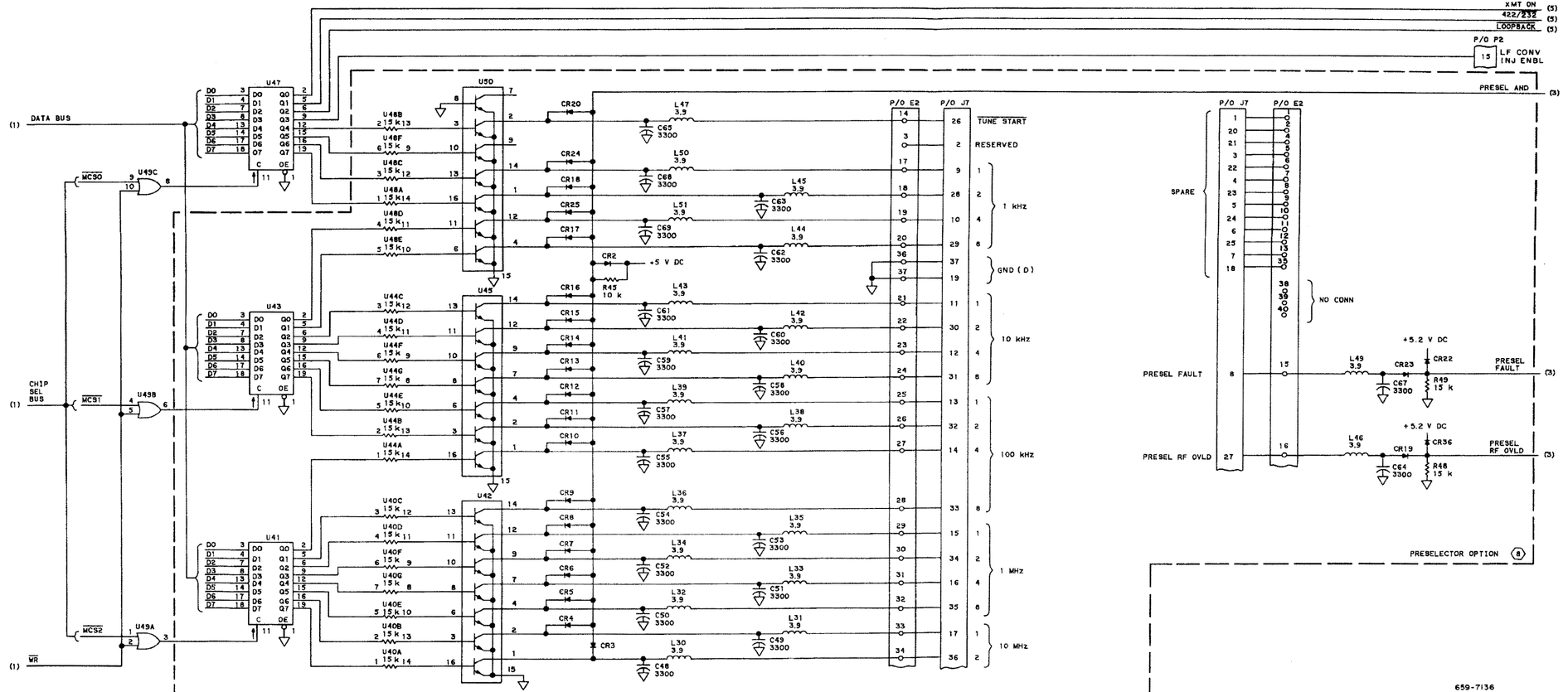
Control A2 (646-6247-XXX), Schematic Diagram (Sheet 1 of 6) Figure 7-4



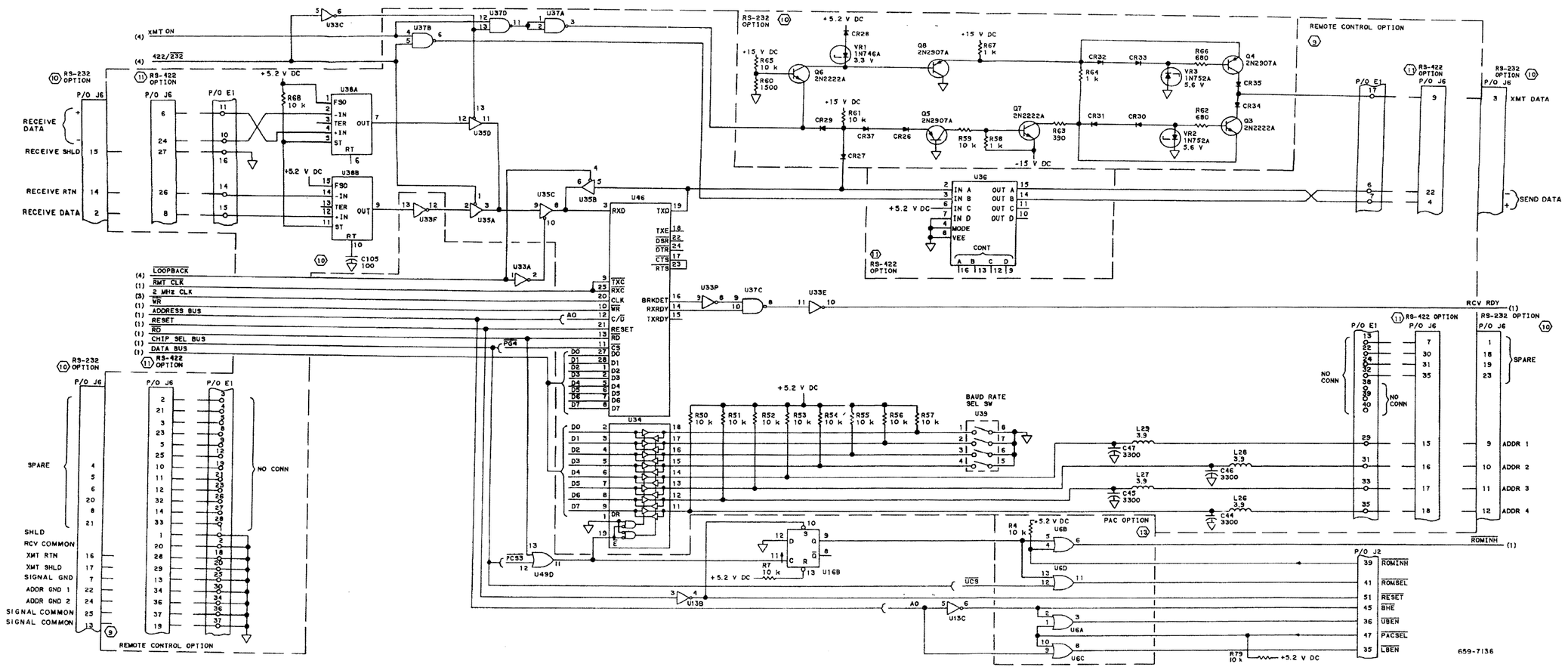
Control A2 (646-6247-XXX), Schematic Diagram (Sheet 2 of 6) Figure 7-4



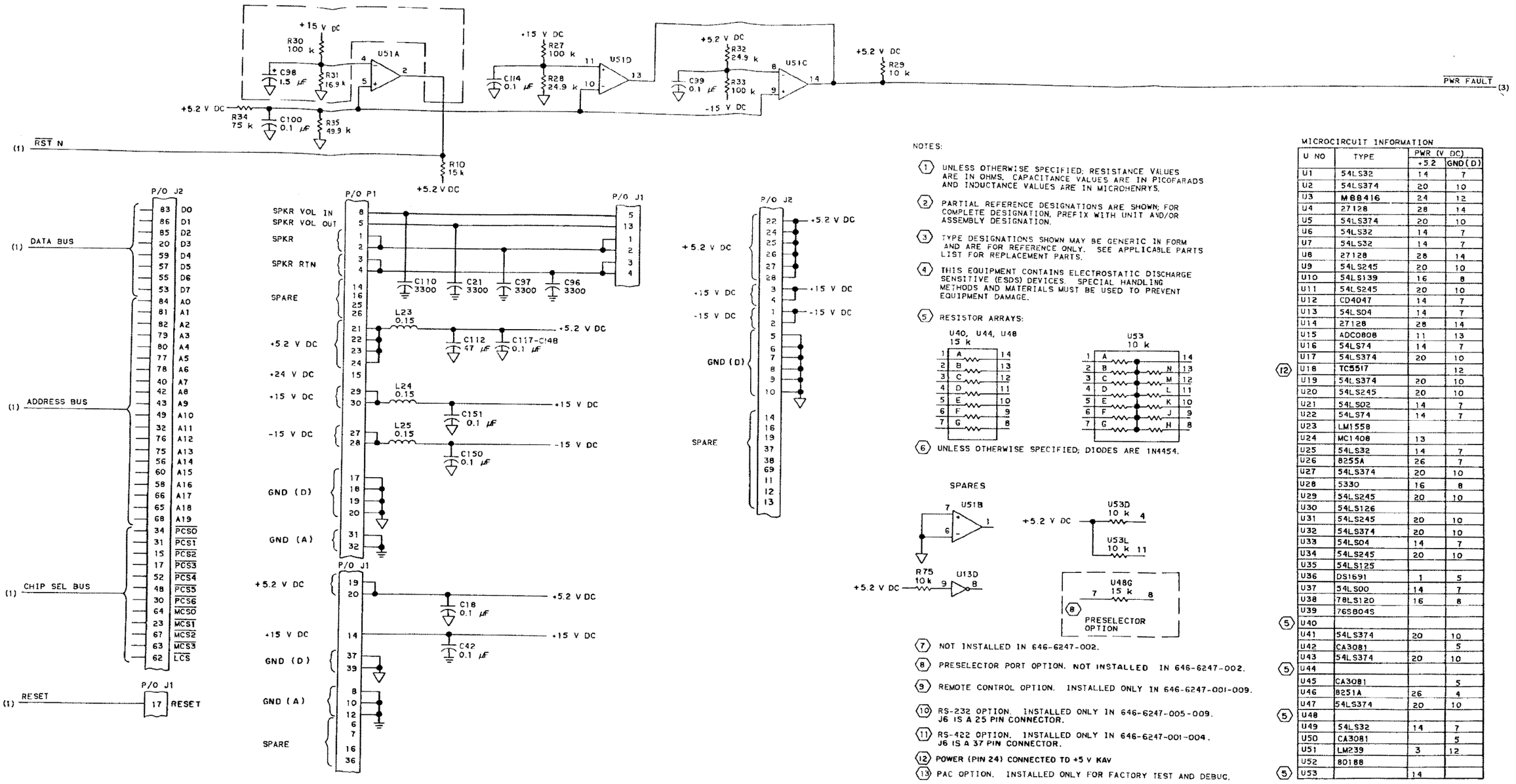
Control A2 (646-6247-XXX), Schematic Diagram (Sheet 3 of 6) Figure 7-4



Control A2 (646-6247-XXX), Schematic Diagram (Sheet 4 of 6) Figure 7-4



Control A2 (646-6247-XXX), Schematic Diagram (Sheet 5 of 6) Figure 7-4



NOTES:

1. UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN PICOFARADS AND INDUCTANCE VALUES ARE IN MICROHENRYS.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
3. TYPE DESIGNATIONS SHOWN MAY BE GENERIC IN FORM AND ARE FOR REFERENCE ONLY. SEE APPLICABLE PARTS LIST FOR REPLACEMENT PARTS.
4. THIS EQUIPMENT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) DEVICES. SPECIAL HANDLING METHODS AND MATERIALS MUST BE USED TO PREVENT EQUIPMENT DAMAGE.
5. RESISTOR ARRAYS:

6. UNLESS OTHERWISE SPECIFIED; DIODES ARE 1N4454.

SPARES

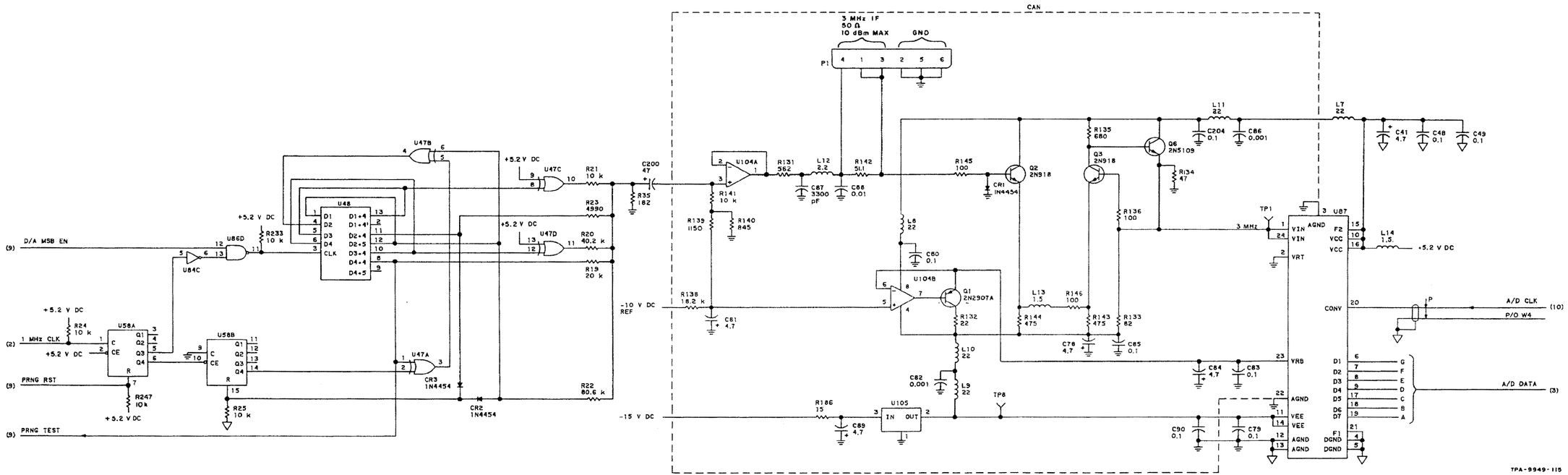
7. NOT INSTALLED IN 646-6247-002.
8. PRESELECTOR PORT OPTION. NOT INSTALLED IN 646-6247-002.
9. REMOTE CONTROL OPTION. INSTALLED ONLY IN 646-6247-001-009.
10. RS-232 OPTION. INSTALLED ONLY IN 646-6247-005-009. J6 IS A 25 PIN CONNECTOR.
11. RS-422 OPTION. INSTALLED ONLY IN 646-6247-001-004. J6 IS A 37 PIN CONNECTOR.
12. POWER (PIN 24) CONNECTED TO +5 V KAV
13. PAC OPTION. INSTALLED ONLY FOR FACTORY TEST AND DEBUG.

MICROCIRCUIT INFORMATION

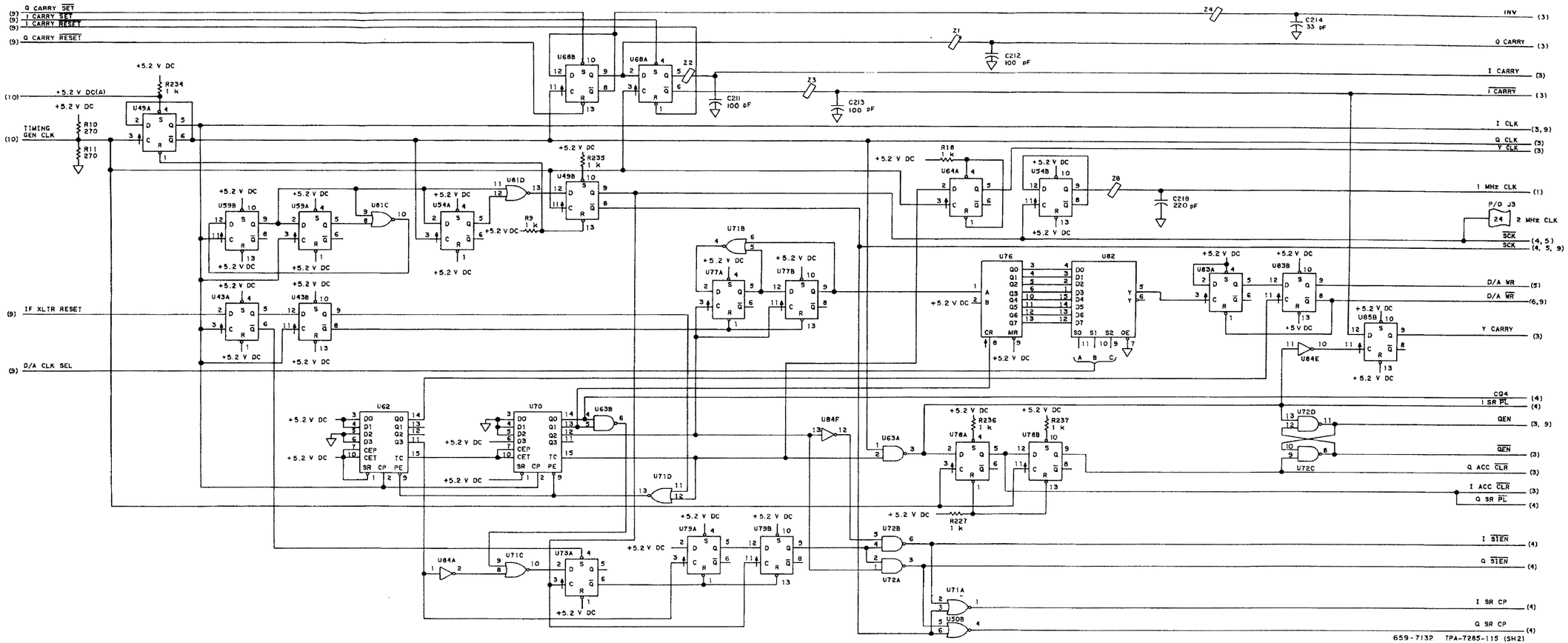
	U NO	TYPE	PWR (V DC) +5.2	PWR (V DC) GND(D)
	U1	54LS32	14	7
	U2	54LS374	20	10
	U3	M88416	24	12
	U4	27128	28	14
	U5	54LS374	20	10
	U6	54LS32	14	7
	U7	54LS32	14	7
	U8	27128	28	14
	U9	54LS245	20	10
	U10	54LS139	16	8
	U11	54LS245	20	10
	U12	CD4047	14	7
	U13	54LS04	14	7
	U14	27128	28	14
	U15	ADC0808	11	13
	U16	54LS74	14	7
	U17	54LS374	20	10
(12)	U18	TC5517		12
	U19	54LS374	20	10
	U20	54LS245	20	10
	U21	54LS02	14	7
	U22	54LS74	14	7
	U23	LM1558		
	U24	MC1408	13	
	U25	54LS32	14	7
	U26	8255A	26	7
	U27	54LS374	20	10
	U28	5330	16	8
	U29	54LS245	20	10
	U30	54LS126		
	U31	54LS245	20	10
	U32	54LS374	20	10
	U33	54LS04	14	7
	U34	54LS245	20	10
	U35	54LS125		
	U36	DS1691	1	5
	U37	54LS00	14	7
	U38	78LS120	16	8
	U39	76S804S		
(5)	U40			
	U41	54LS374	20	10
	U42	CA3081		5
	U43	54LS374	20	10
(5)	U44			
	U45	CA3081		5
	U46	8251A	26	4
	U47	54LS374	20	10
(5)	U48			
	U49	54LS32	14	7
	U50	CA3081		5
	U51	LM239	3	12
	U52	80188		
(5)	U53		14	

659-7136

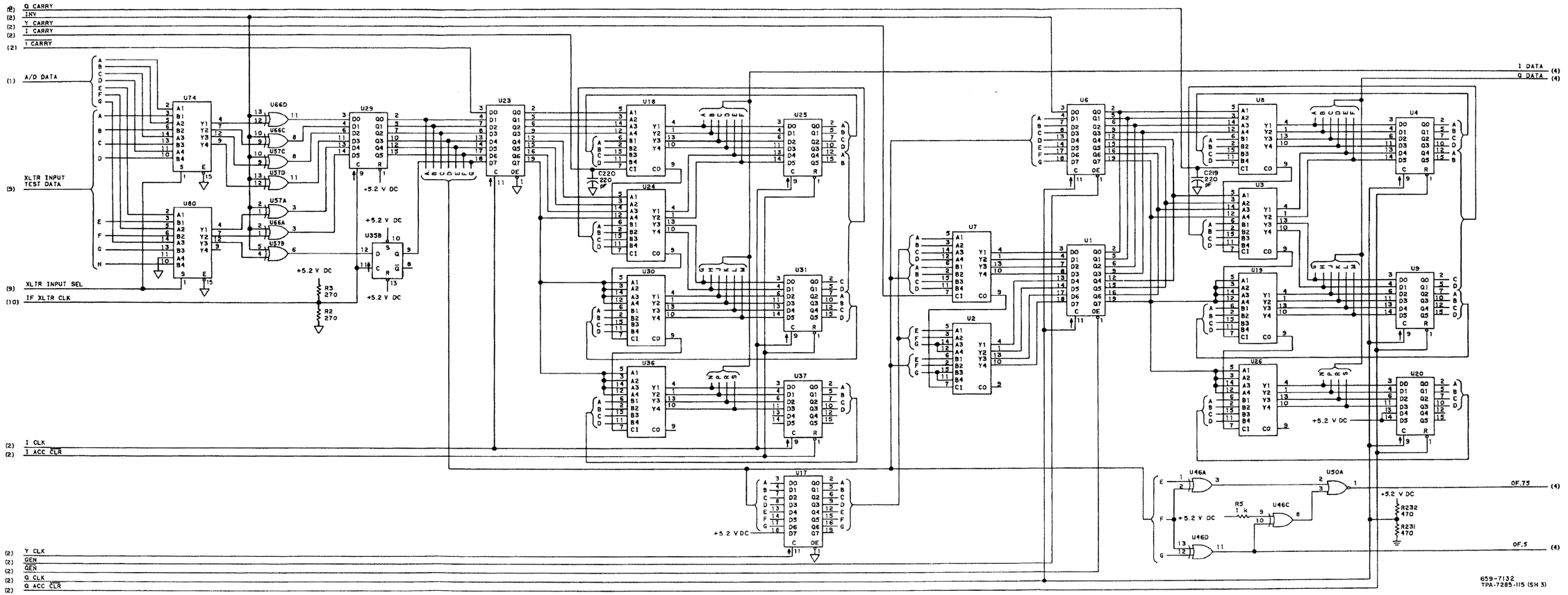
Control A2 (646-6247-XXX), Schematic Diagram (Sheet 6 of 6) Figure 7-4



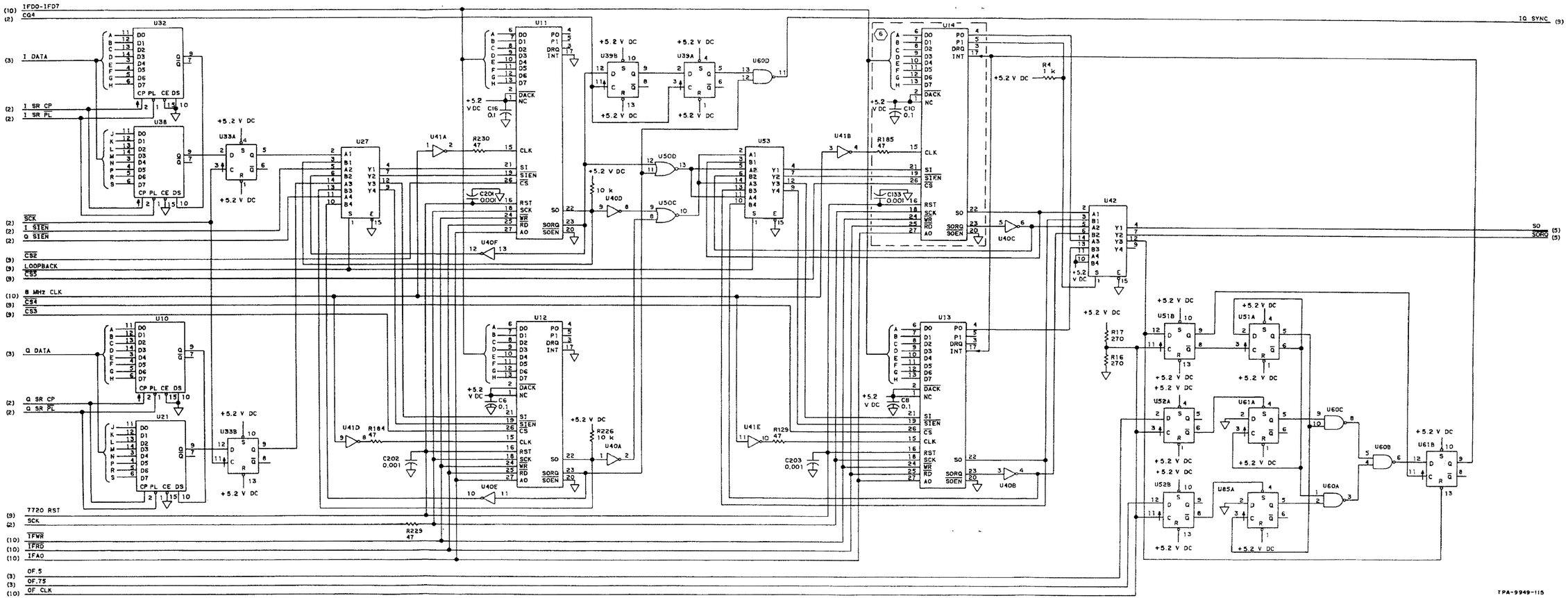
IF/Audio A3 (646-6196-XXX), Schematic Diagram (Sheet 1 of 11) Figure 7-5



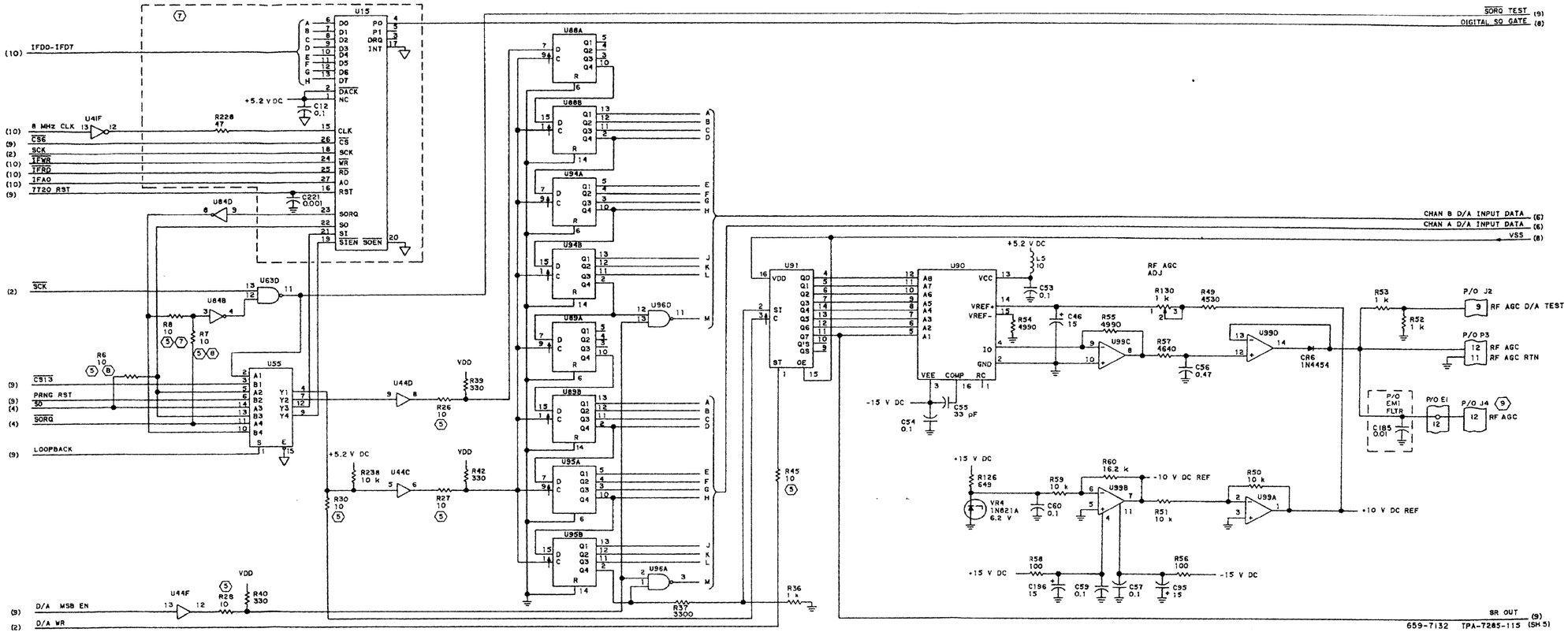
1F/Audio A3 (646-6196-XXX), Schematic Diagram (Sheet 2 of 11) Figure 7-5



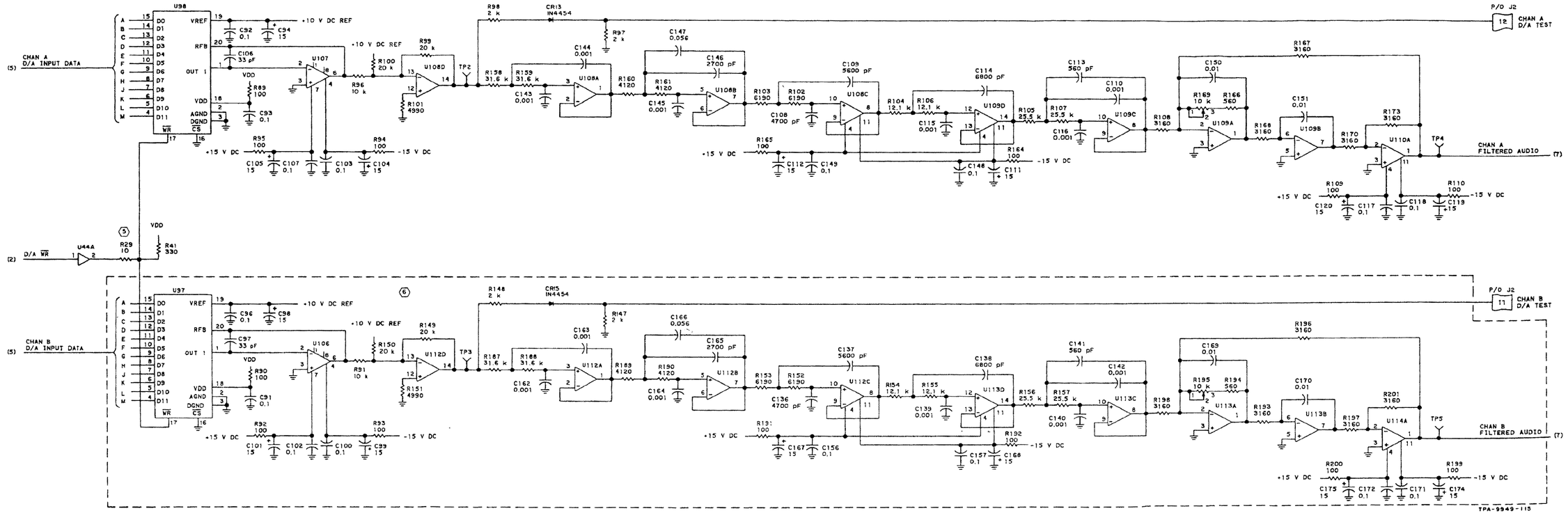
IF/Audio A3 (646-6196-XXX), Schematic Diagram (Sheet 3 of 11) Figure 7-5



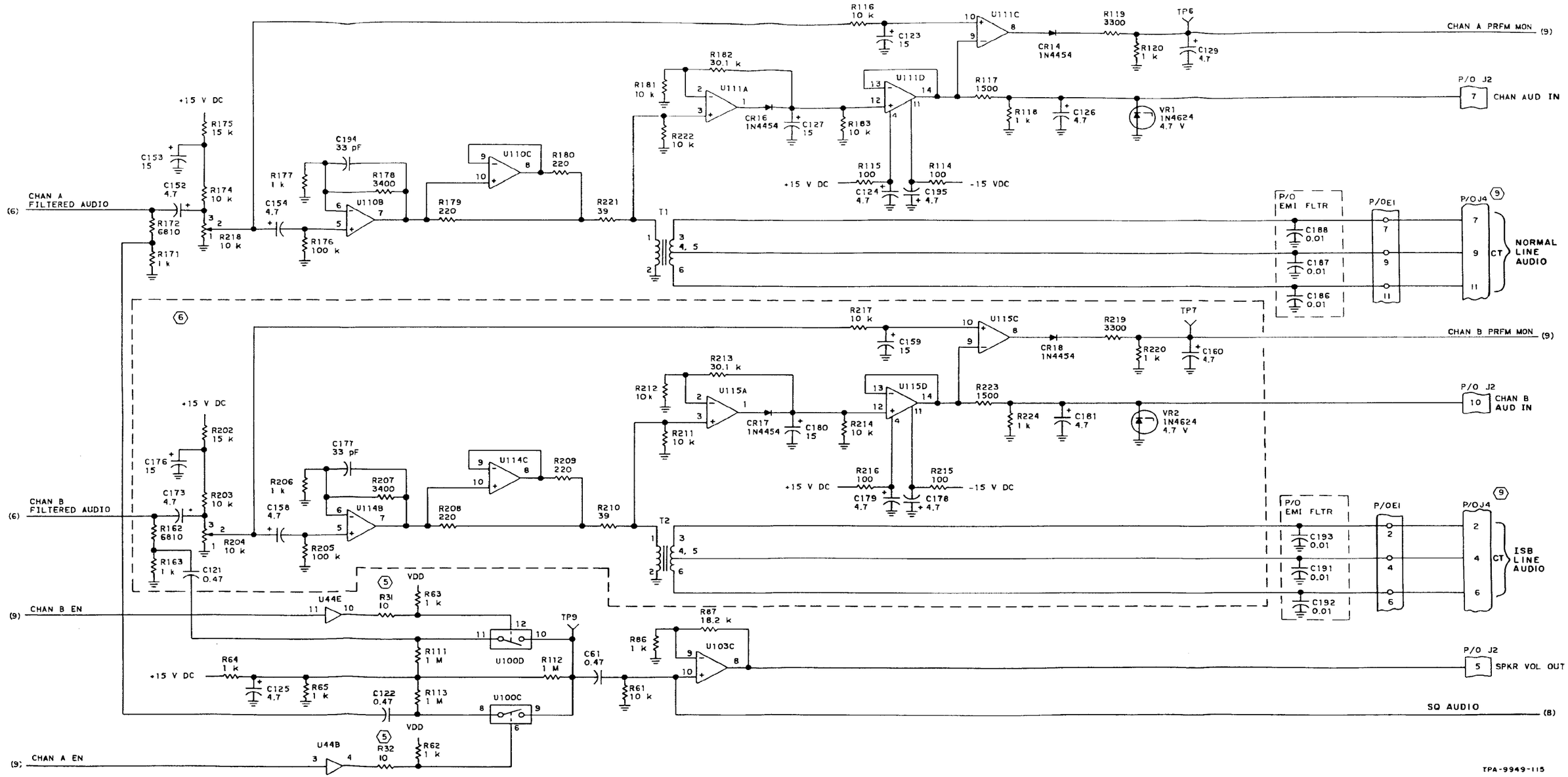
IF/Audio A3 (646-6196-XXX), Schematic Diagram (Sheet 4 of 11) Figure 7-5



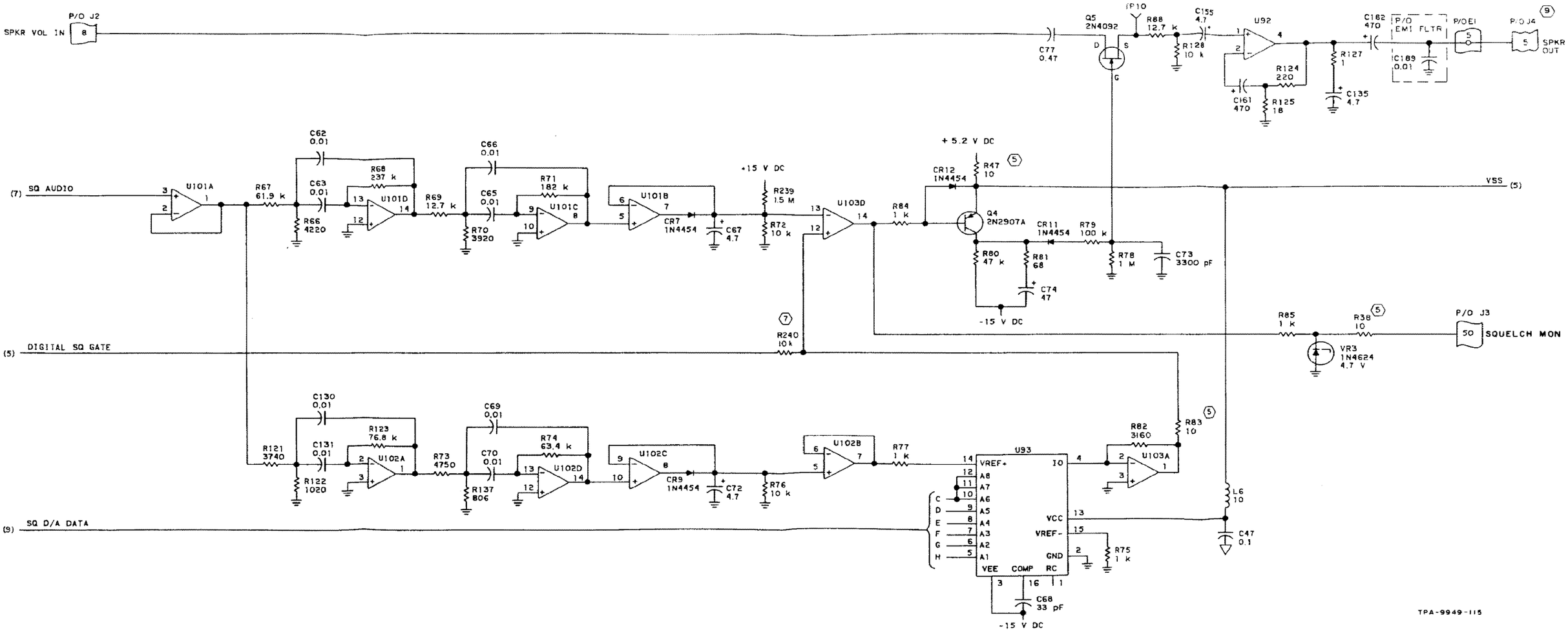
IF/Audio A3 (646-6196-XXX), Schematic Diagram (Sheet 5 of 11) Figure 7-5



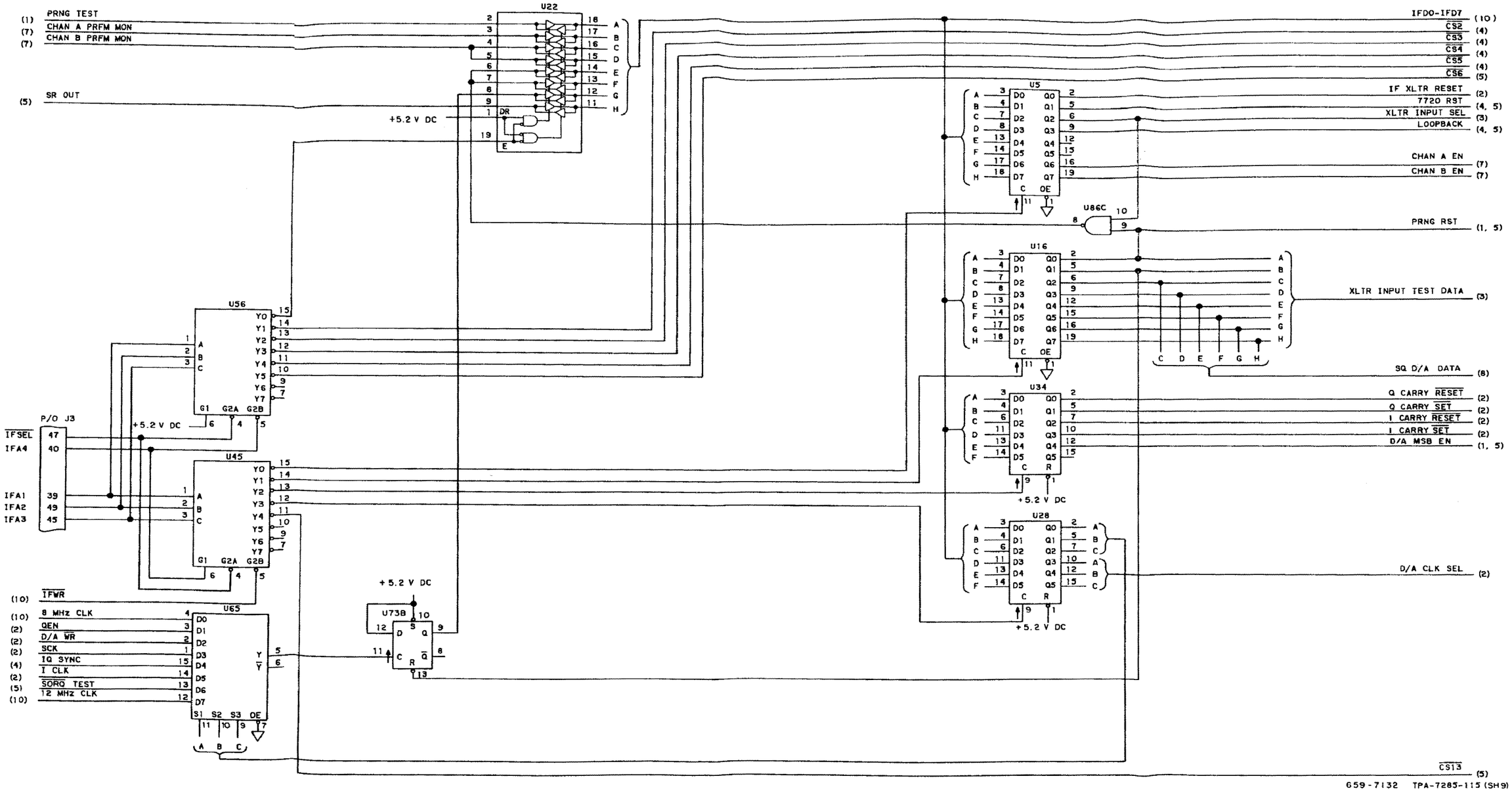
IF/Audio A3 (646-6196-XXX), Schematic Diagram (Sheet 6 of 11) Figure 7-5



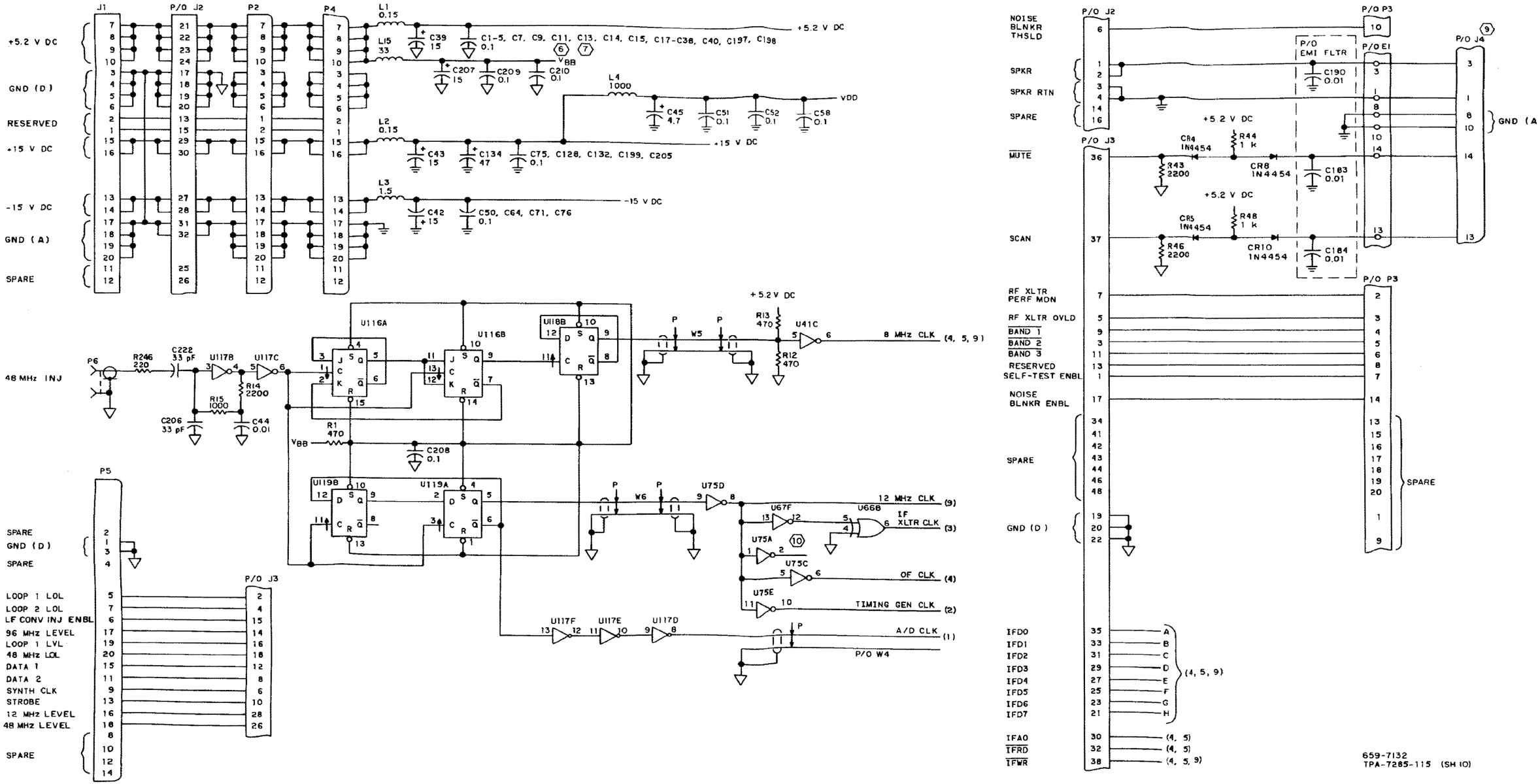
IF/Audio A3 (646-6196-XXX), Schematic Diagram (Sheet 7 of 11) Figure 7-5



IF/Audio A3 (646-6196-XXX), Schematic Diagram (Sheet 8 of 11) Figure 7-5



IF/Audio A3 (646-6196-XXX), Schematic Diagram (Sheet 9 of 11) Figure 7-5

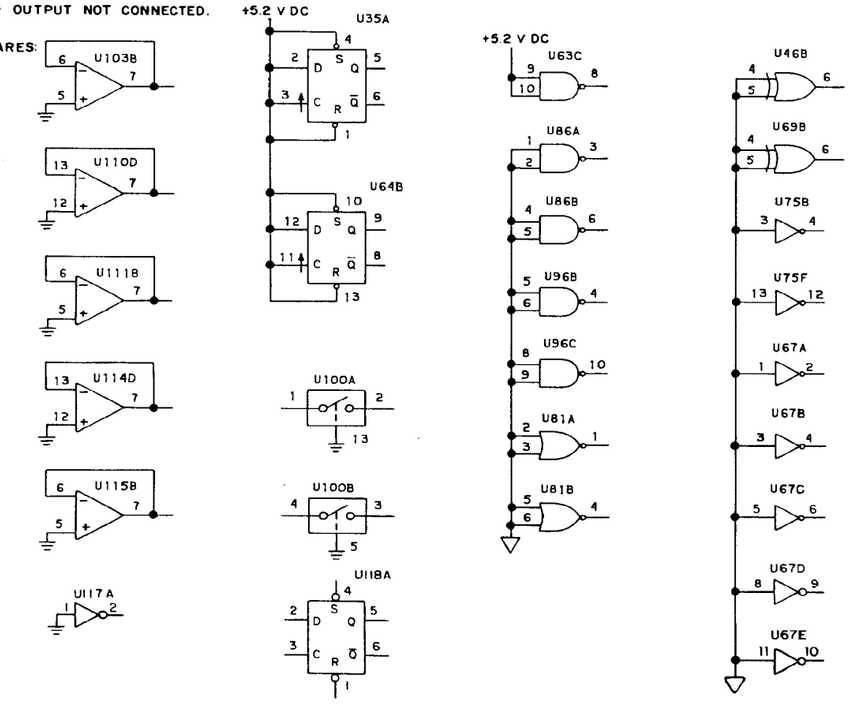


IF/Audio A3 (646-6196-XXX), Schematic Diagram (Sheet 10 of 11) Figure 7-5

NOTES:

1. UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS AND INDUCTANCE VALUES ARE IN MICROHENRYS.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
3. TYPE DESIGNATIONS SHOWN MAY BE GENERIC IN FORM AND ARE FOR REFERENCE ONLY. SEE APPLICABLE PARTS LIST FOR REPLACEMENT PARTS.
4. THIS EQUIPMENT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) DEVICES. SPECIAL HANDLING METHODS AND MATERIALS MUST BE USED TO PREVENT EQUIPMENT DAMAGE.
5. RESISTORS ARE USED FOR JUMPERING.
6. INSTALLED FOR ISB OPTION ONLY.
7. INSTALLED FOR OPTION PROCESSOR ONLY.
8. NOT INSTALLED IF OPTION PROCESSOR INSTALLED.
9. J4 PART OF PENDANT CABLE.
10. **OUTPUT NOT CONNECTED.**

SPARES:



11. GROUNDS ARE DESIGNATED AS (A) ANALOG OR (D) DIGITAL. GROUNDS ARE SEPARATED TO PREVENT INTERFERENCE.

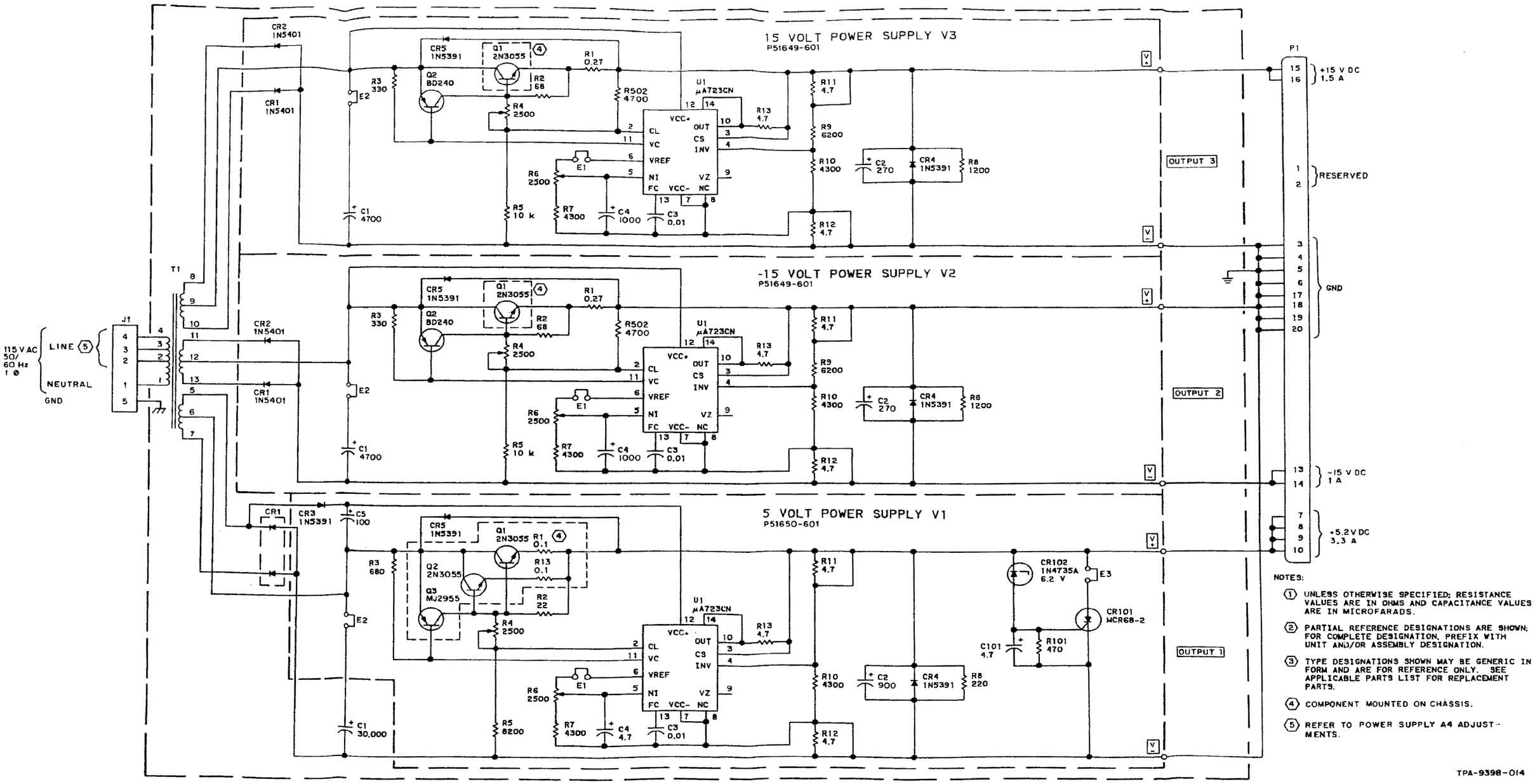
MICROCIRCUIT INFORMATION

U NO.	TYPE	PWR (V DC) +5.2	VDD	+15	-15	GND (A)	GND (D)
U1	54LS374	20					10
U2	54LS283	16					8
U3	54LS283	16					8
U4	54LS174	16					8
U5	54LS374	20					10
U6	54LS374	20					10
U7	54LS283	16					8
U8	54LS283	16					8
U9	54LS174	16					8
U10	54LS165	16					8
U11	7720	28					14
U12	7720	28					14
U13	7720	28					14
U14	7720	28					14
U15	7720	28					14
U16	54LS374	20					10
U17	54LS374	20					10
U18	54LS283	16					8
U19	54LS283	16					8
U20	54LS174	16					8
U21	54LS165	16					8
U22	54LS245	20					10
U23	54LS374	20					10
U24	54LS283	16					8
U25	54LS174	16					8
U26	54LS283	16					8
U27	54LS157	16					8
U28	54LS174	16					8
U29	54LS174	16					8
U30	54LS283	16					8
U31	54LS174	16					8
U32	54LS165	16					8
U33	54LS74	14					7
U34	54LS174	16					8
U35	54LS74	14					7
U36	54LS283	16					8
U37	54LS174	16					8
U38	54LS165	16					8
U39	54LS74	14					7
U40	54LS04	14					7
U41	54S04	14					7
U42	54LS157	16					8
U43	54LS74	14					7
U44	5407	14					7
U45	54LS138	16					8
U46	54S86	14					7
U47	4070	14					7
U48	4006B	14					7
U49	54S74	14					7
U50	54LS02	14					7
U51	54LS74	14					7
U52	54LS74	14					7
U53	54LS157	16					8
U54	54LS74	14					7
U55	54LS157	16					8
U56	54LS138	16					8
U57	54S86	14					7
U58	4520	16					8
U59	54LS74	14					7
U60	54LS00	14					7

U NO.	TYPE	PWR (V DC) +5.2	VDD	+15	-15	GND (A)	GND (D)	VBB
U61	54LS74	14					7	
U62	54LS163	16					8	
U63	54LS00	14					7	
U64	54LS74	14					7	
U65	54LS251	16					8	
U66	54S86	14					7	
U67	54LS04	14					7	
U68	54LS74	14					7	
U70	54LS163	16					8	
U71	54LS02	14					7	
U72	54LS00	14					7	
U73	54LS74	14					7	
U74	54LS157	16					8	
U75	54S04	14					7	
U76	54LS164	14					7	
U77	54LS74	14					7	
U78	54LS74	14					7	
U79	54LS74	14					7	
U80	54LS157	16					8	
U81	54LS02	14					7	
U82	54LS251	16					8	
U83	54LS74	14					7	
U84	54LS04	14					7	
U85	54LS74	14					7	
U86	54LS00	14					7	
U87	TDC1027							
U88	4015B		16			8		
U89	4015B		16			8		
U90	1408L8							
U91	4094B					8		
U92	TDA2002			5		3		
U93	1408L8							
U94	4015B		16			8		
U95	4015B		16			8		
U96	4011B		14			7		
U97	AD7545CQ							
U98	AD7545CQ							
U99	LM148							
U100	4066		14			7		
U101	LM148			4	11			
U102	LM148			4	11			
U103	LM148			4	11			
U104	MC1558							
U105	LM120K-5.0							
U106	LM218							
U107	LM218							
U108	LM148							
U109	LM148							
U110	LM148							
U111	LM148							
U112	LM148							
U113	LM148							
U114	LM148							
U115	LM148							
U116	54S112						8	16
U117	54F04						7	14
U118	54F74						7	14
U119	54F74						7	14

659-7132 TPA-9949-115

IF/Audio A3 (646-6196-XXX), Schematic Diagram (Sheet 11 of 11) Figure 7-5

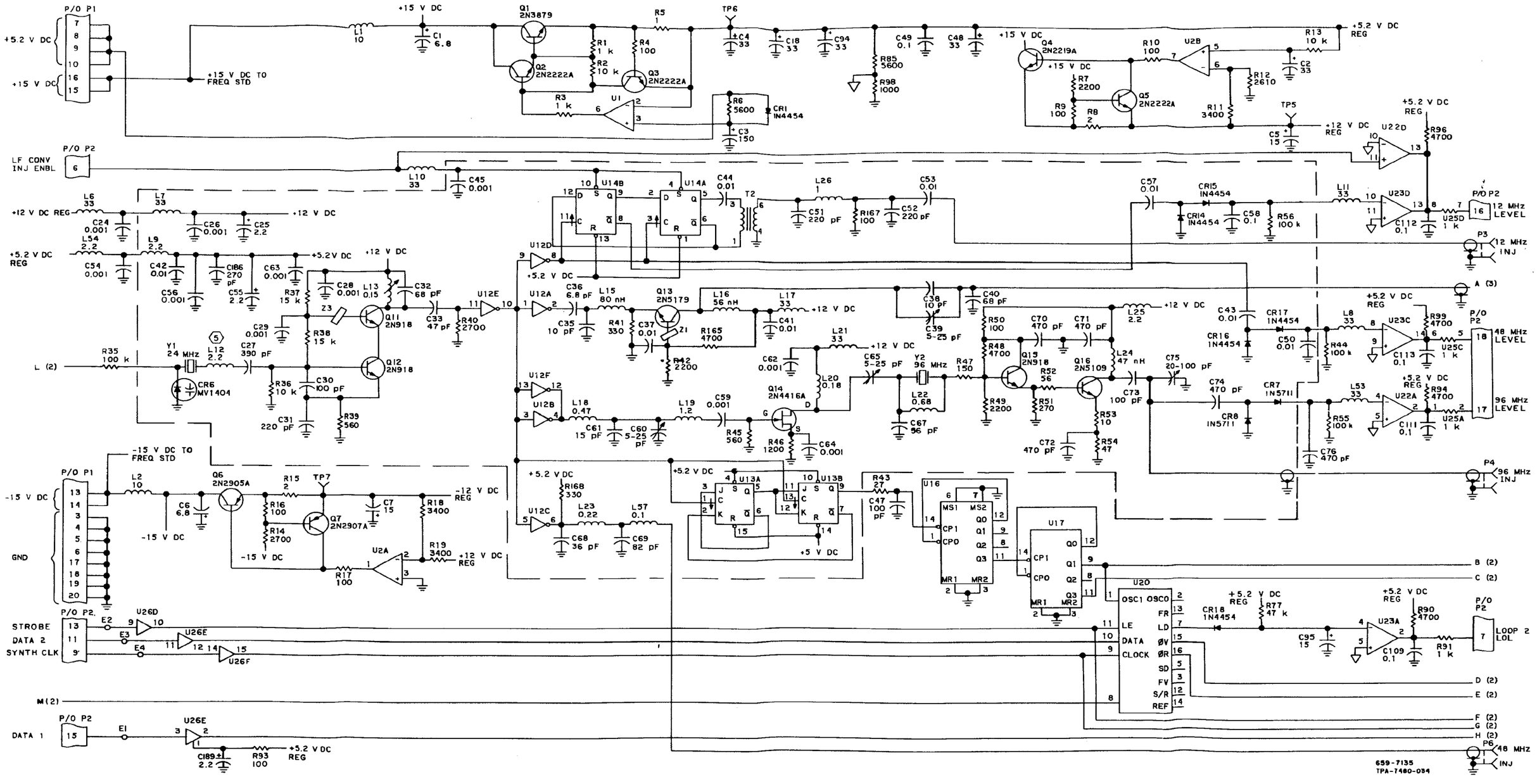


NOTES:

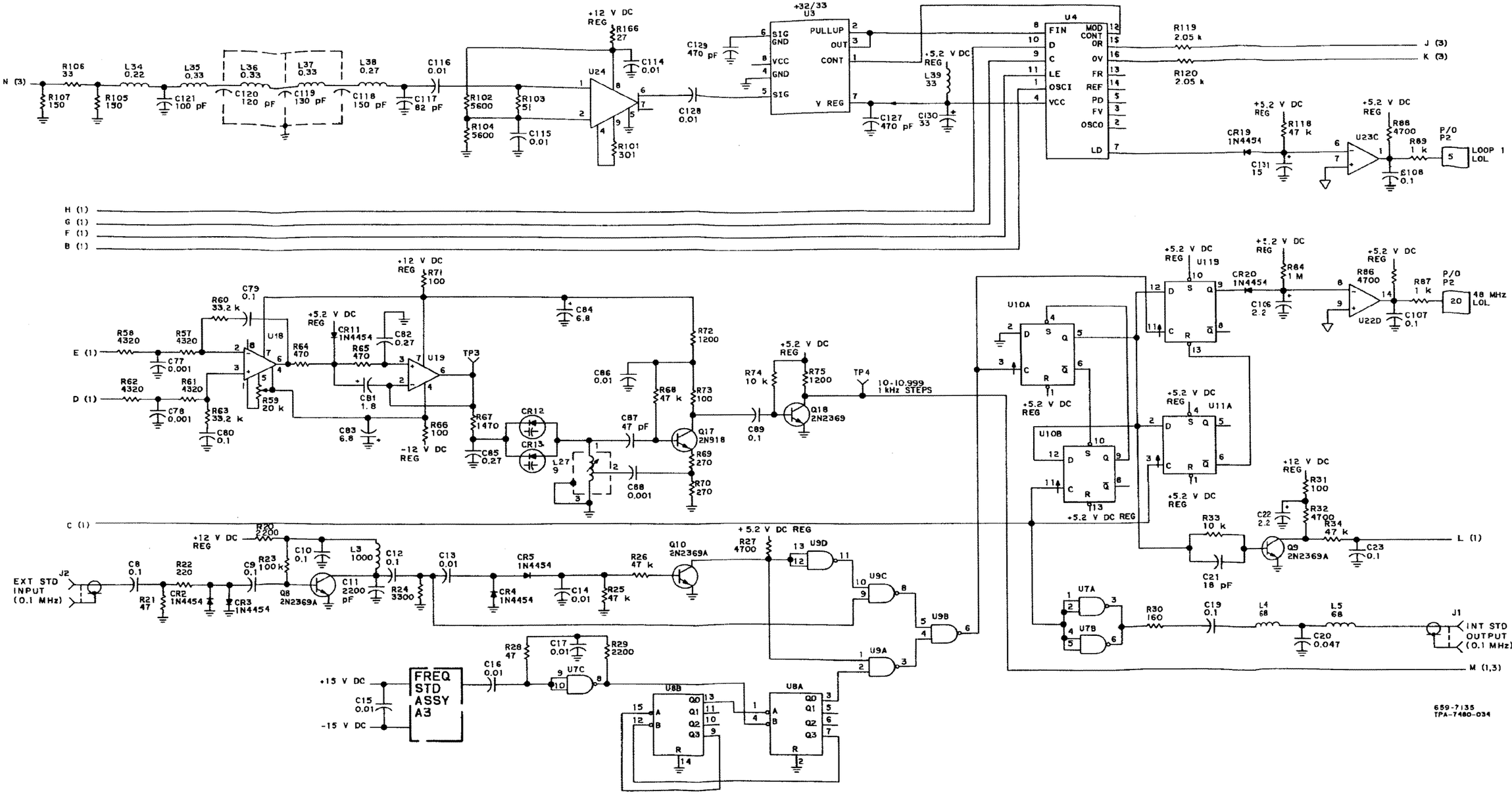
1. UNLESS OTHERWISE SPECIFIED; RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN MICROFARADS.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
3. TYPE DESIGNATIONS SHOWN MAY BE GENERIC IN FORM AND ARE FOR REFERENCE ONLY. SEE APPLICABLE PARTS LIST FOR REPLACEMENT PARTS.
4. COMPONENT MOUNTED ON CHASSIS.
5. REFER TO POWER SUPPLY A4 ADJUSTMENTS.

TPA-9398-014

Power Supply A4 (652-6602-002), Schematic Diagram Figure 7-6



Synthesizer A5 (646-6299-001), Schematic Diagram (Sheet 1 of 4) Figure 7-7

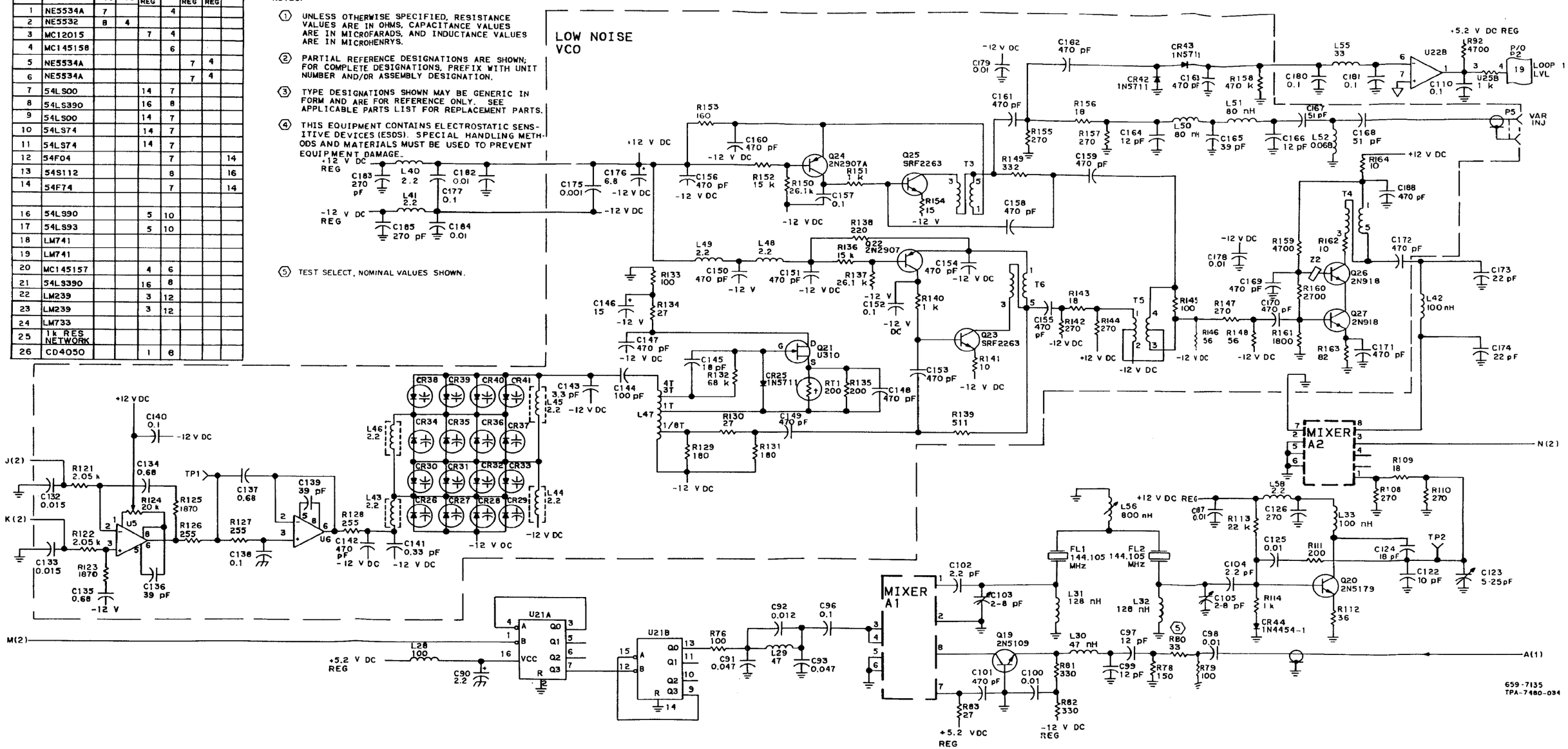


Synthesizer A5 (646-6299-001), Schematic Diagram (Sheet 2 of 4) Figure 7-7

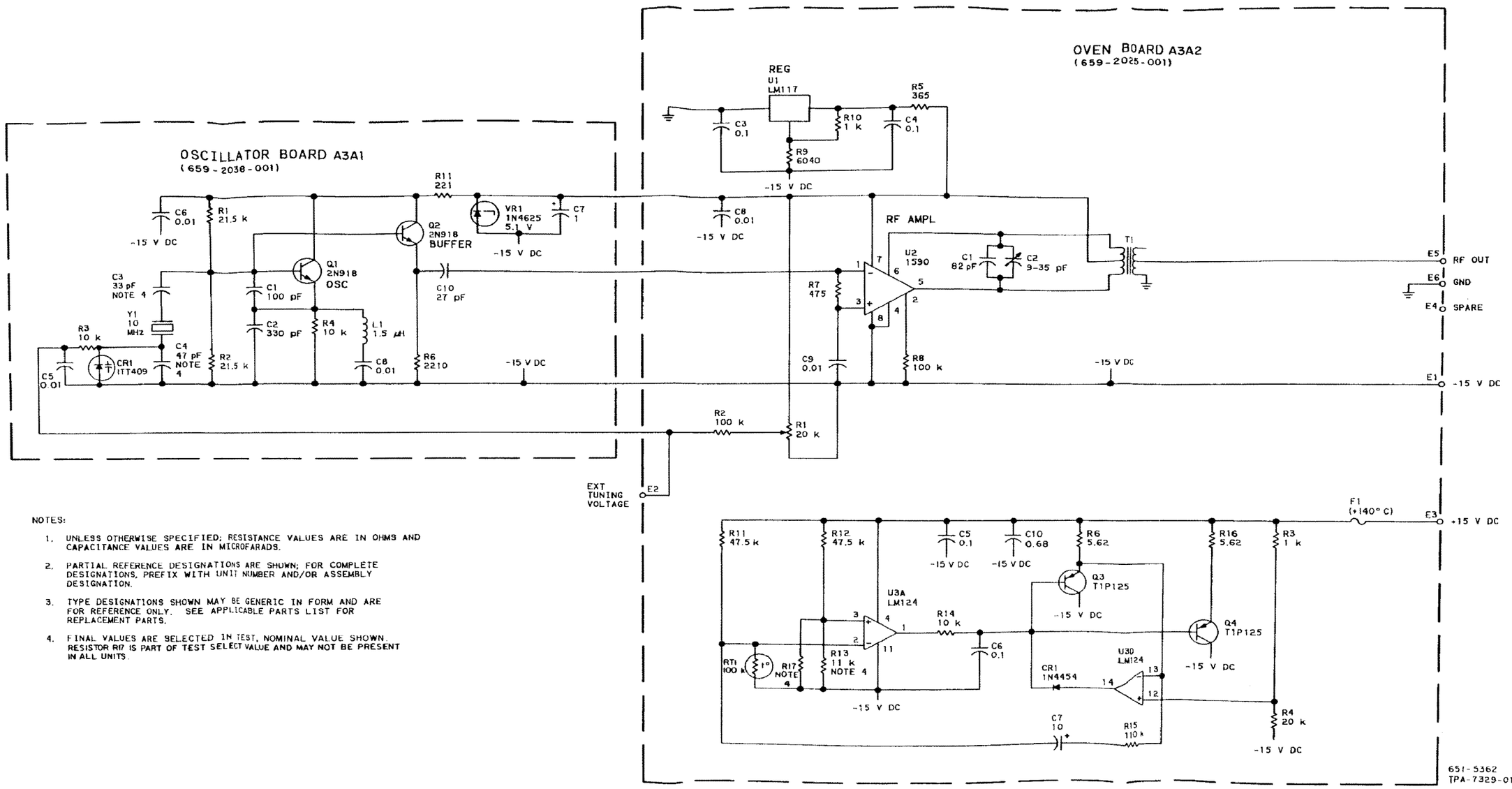
U NO	TYPE	POWER (V DC)						
		+15	-15	+5.2 REG	GND	+12 REG	-12 REG	+5.2
1	NE5534A	7			4			
2	NE5532	8	4					
3	MC12015			7	4			
4	MC145158				6			
5	NE5534A					7	4	
6	NE5534A					7	4	
7	54LS00			14	7			
8	54LS390			16	8			
9	54LS00			14	7			
10	54LS74			14	7			
11	54LS74			14	7			
12	54F04				7			14
13	54S112				8			16
14	54F74				7			14
16	54LS90			5	10			
17	54LS93			5	10			
18	LM741							
19	LM741							
20	MC145157			4	6			
21	54LS390			16	8			
22	LM239			3	12			
23	LM239			3	12			
24	LM733							
25	1k RES NETWORK							
26	CD4050			1	8			

NOTES:

1. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS, AND INDUCTANCE VALUES ARE IN MICROHENRYS.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATIONS, PREFIX WITH UNIT NUMBER AND/OR ASSEMBLY DESIGNATION.
3. TYPE DESIGNATIONS SHOWN MAY BE GENERIC IN FORM AND ARE FOR REFERENCE ONLY. SEE APPLICABLE PARTS LIST FOR REPLACEMENT PARTS.
4. THIS EQUIPMENT CONTAINS ELECTROSTATIC SENSITIVE DEVICES (ESDS). SPECIAL HANDLING METHODS AND MATERIALS MUST BE USED TO PREVENT EQUIPMENT DAMAGE.
5. TEST SELECT, NOMINAL VALUES SHOWN.



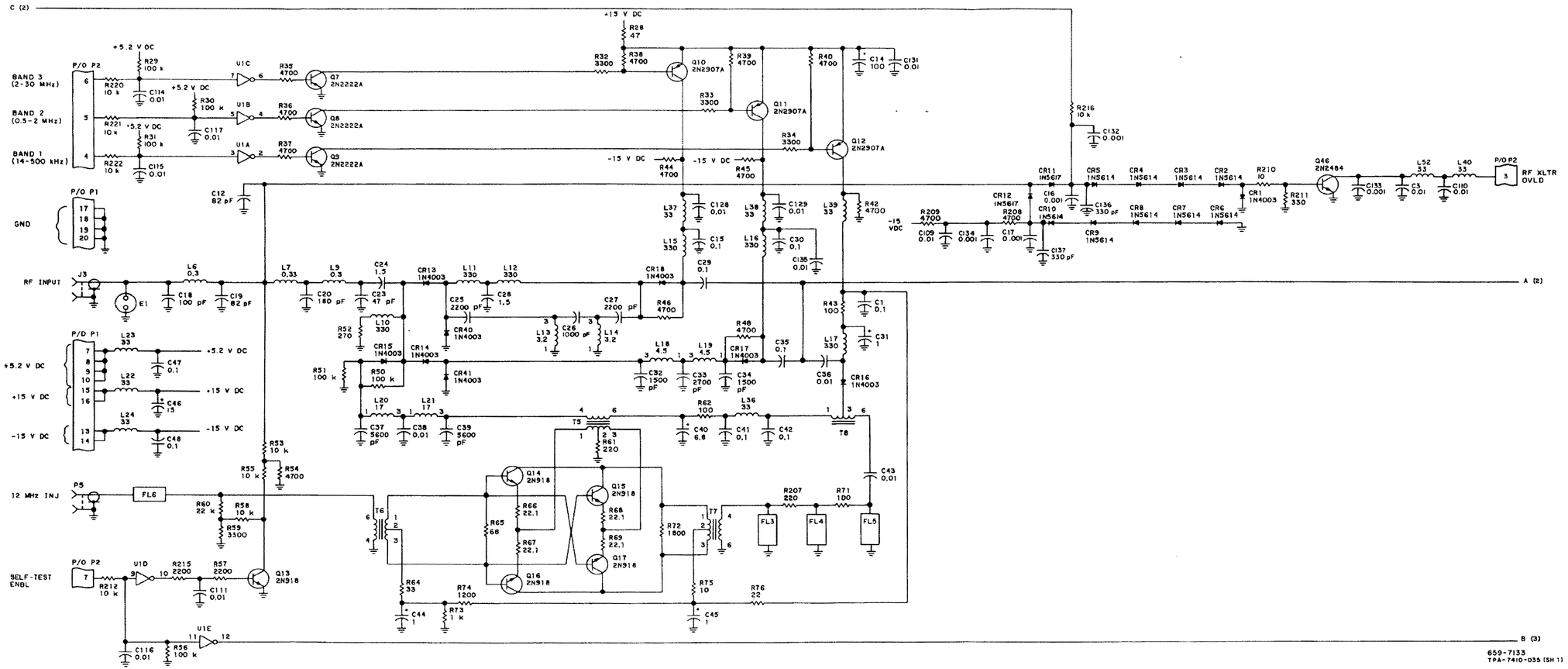
Synthesizer A5 (646-6299-001), Schematic Diagram (Sheet 3 of 4) Figure 7-7



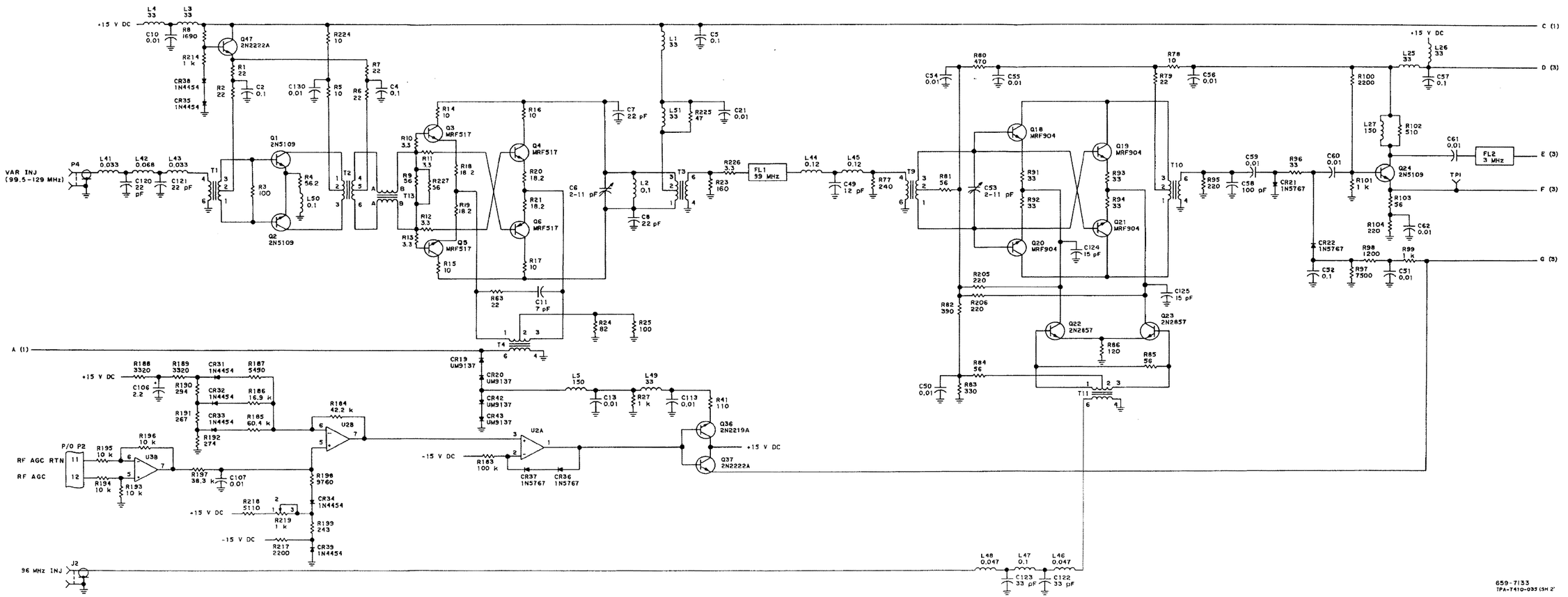
NOTES:

1. UNLESS OTHERWISE SPECIFIED; RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN MICROFARADS.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATIONS, PREFIX WITH UNIT NUMBER AND/OR ASSEMBLY DESIGNATION.
3. TYPE DESIGNATIONS SHOWN MAY BE GENERIC IN FORM AND ARE FOR REFERENCE ONLY. SEE APPLICABLE PARTS LIST FOR REPLACEMENT PARTS.
4. FINAL VALUES ARE SELECTED IN TEST, NOMINAL VALUE SHOWN. RESISTOR R17 IS PART OF TEST SELECT VALUE AND MAY NOT BE PRESENT IN ALL UNITS.

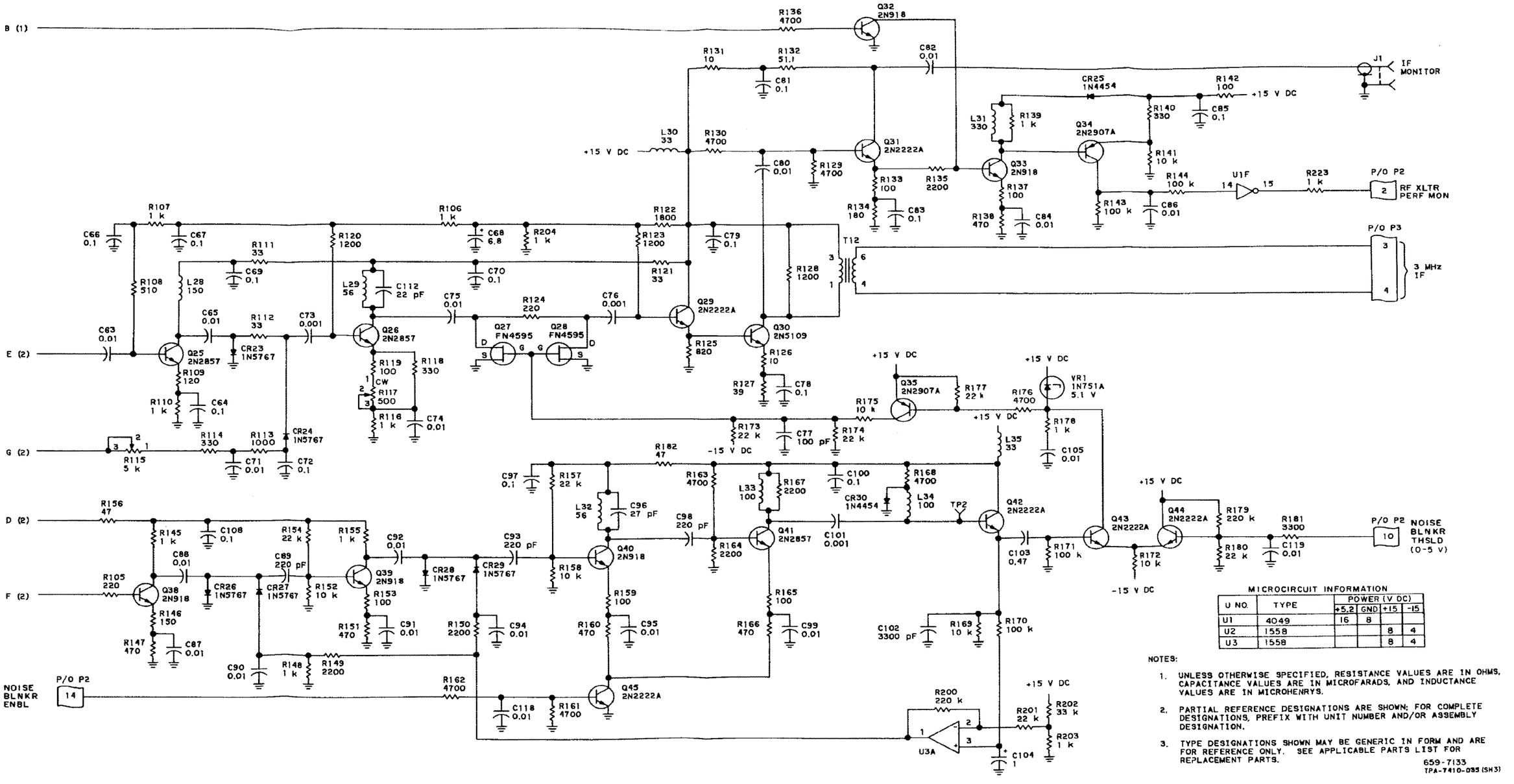
Synthesizer A5 (646-6299-001), Schematic Diagram (Sheet 4 of 4) Figure 7-7



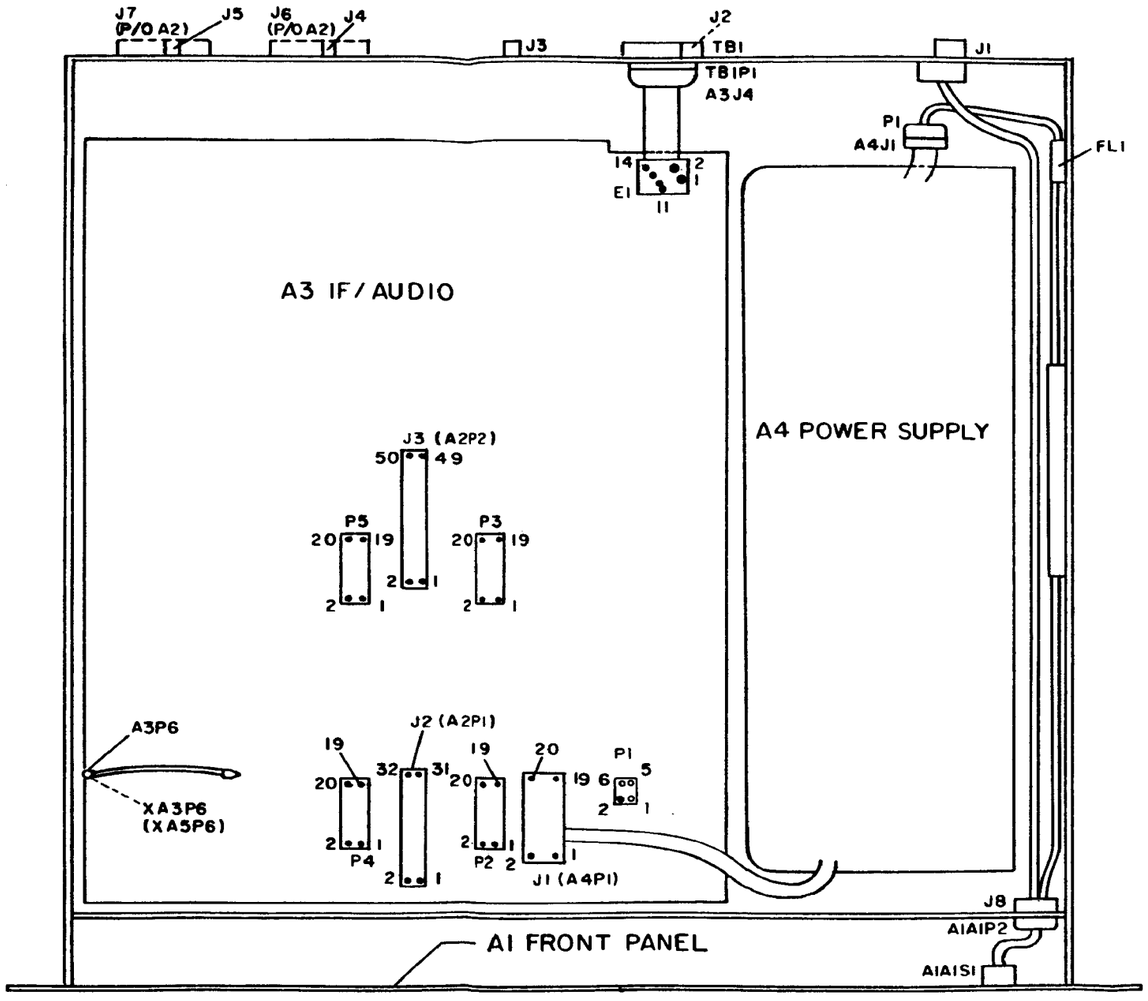
RF Translator A6 (646-6298-001), Schematic Diagram (Sheet 1 of 3) Figure 7-8



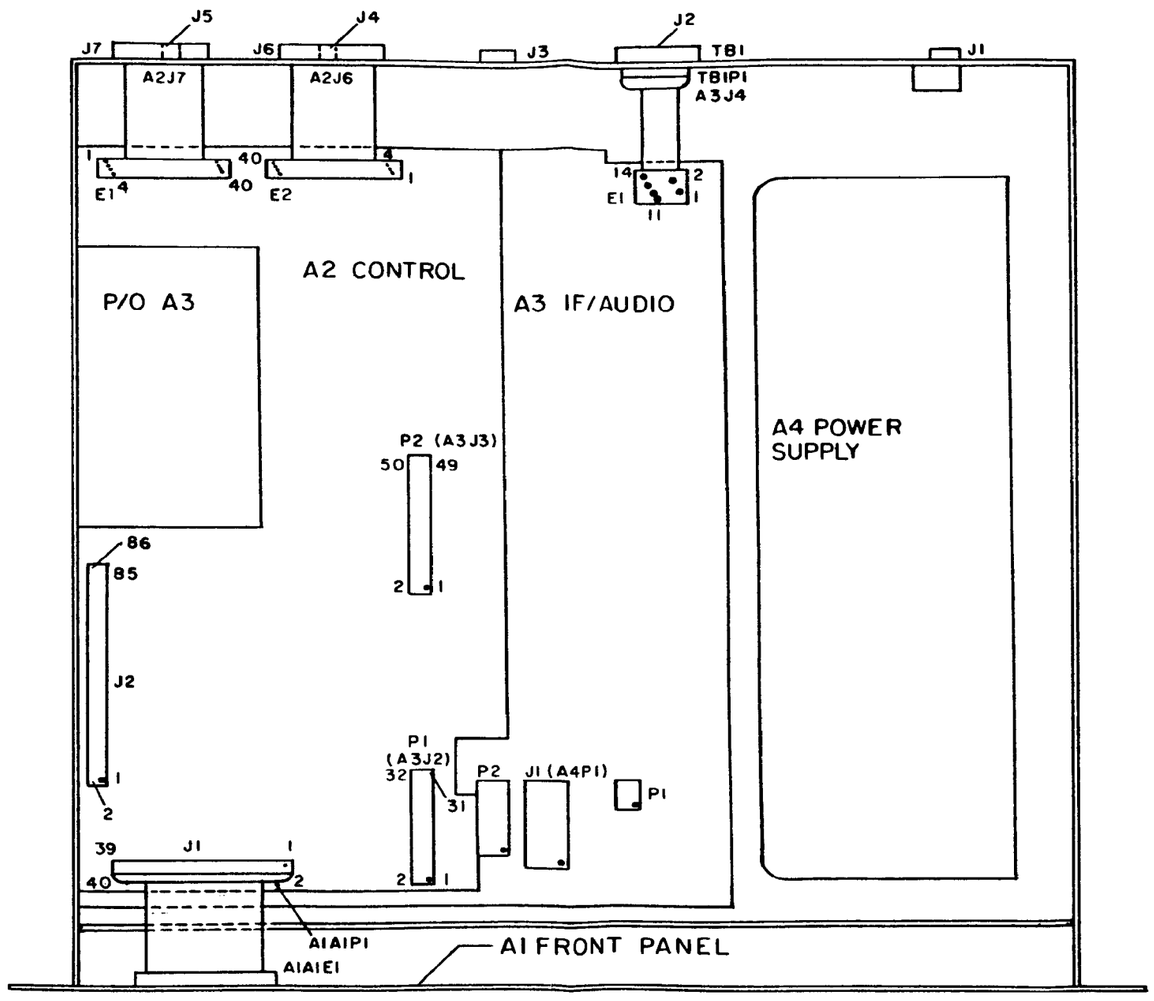
RF Translator A6 (646-6298-001), Schematic Diagram (Sheet 2 of 3) Figure 7-8



RF Translator A6 (646-6298-001), Schematic Diagram (Sheet 3 of 3) Figure 7-8



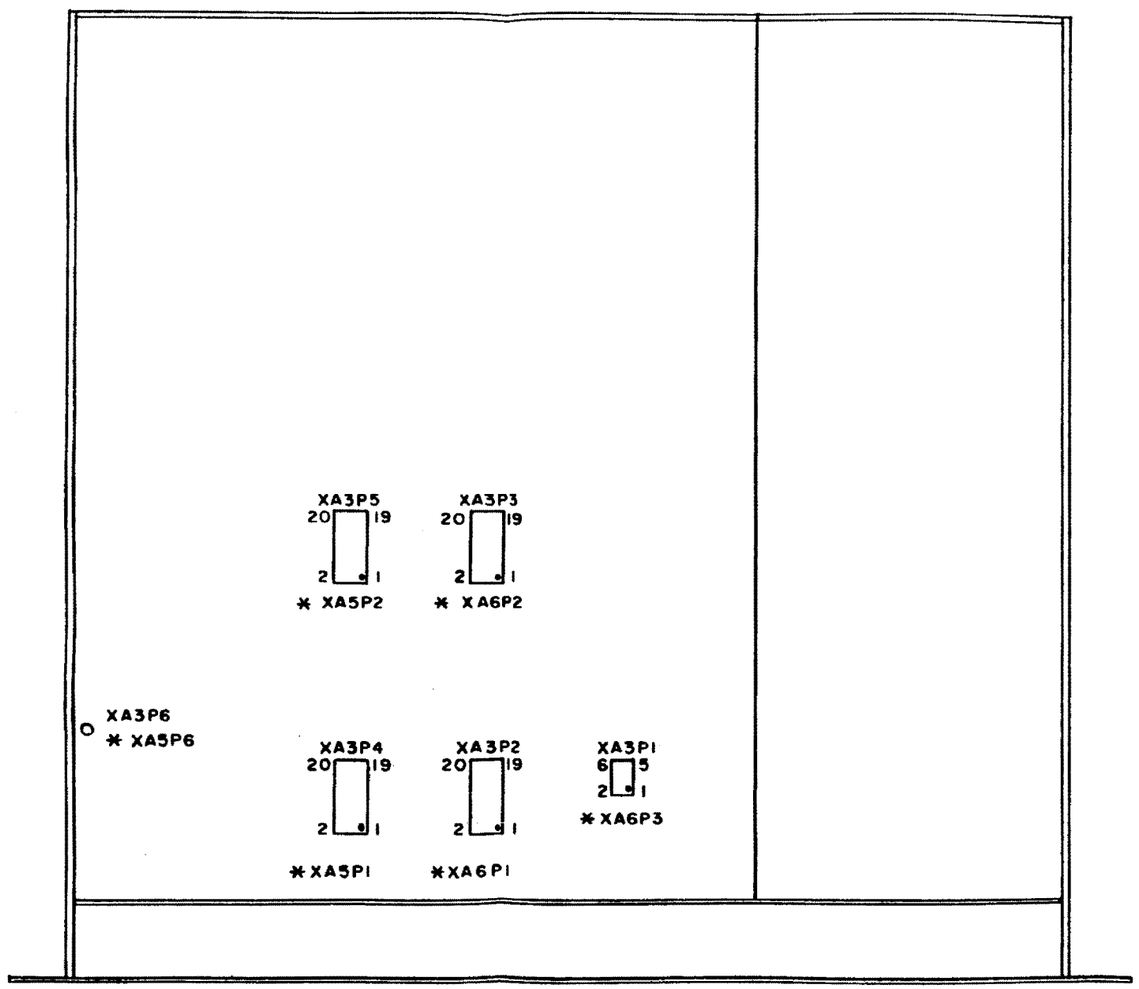
CHASSIS TOP VIEW SHOWING PIN FIELDS.
A1 FRONT PANEL, A3 IF/AUDIO, AND A4 POWER SUPPLY INSTALLED.
(⊲ COAXIAL CABLE SOLDERED TO ASSOCIATED ASSEMBLY)



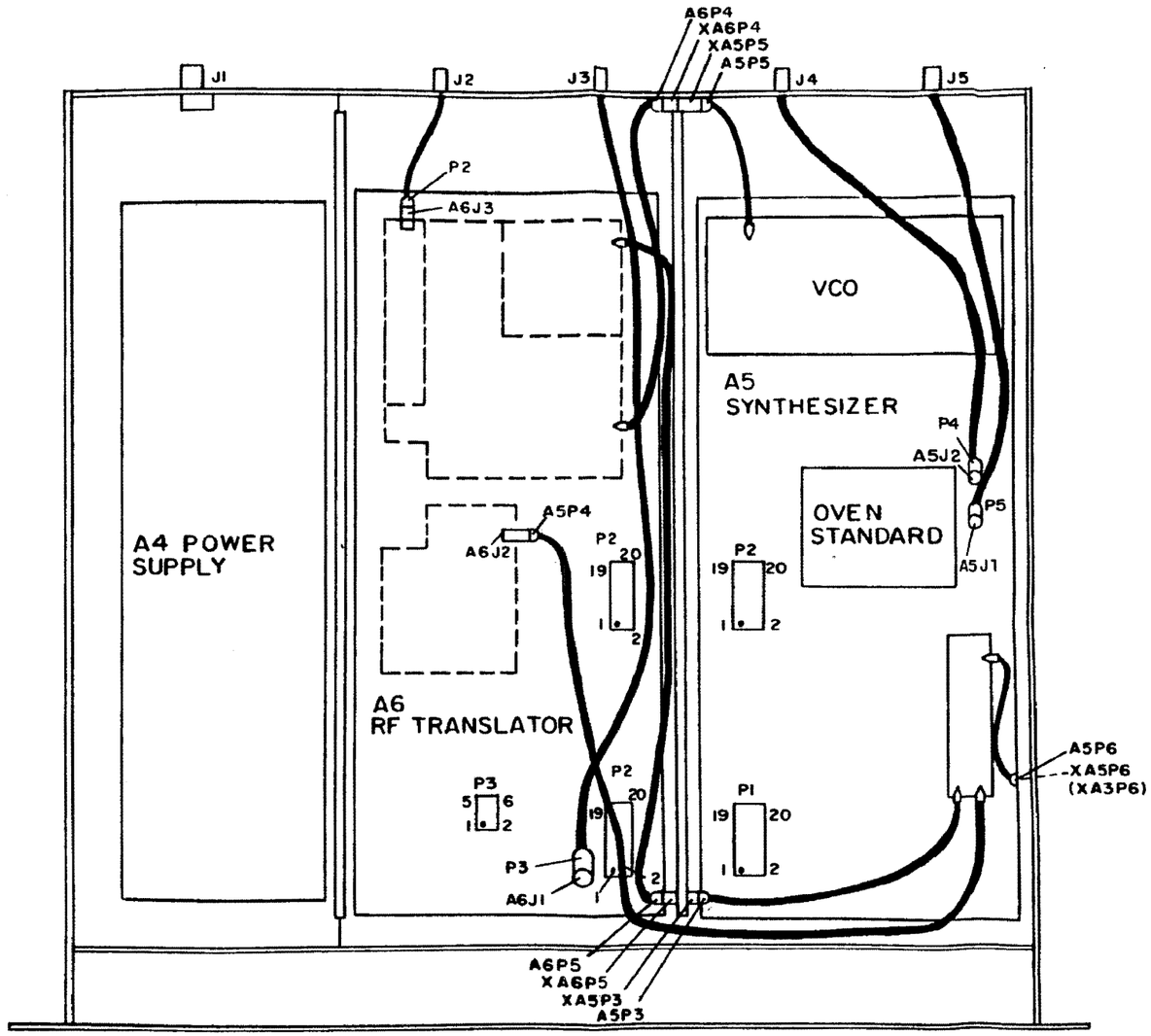
CHASSIS TOP VIEW SHOWING PIN FIELDS.
A1 FRONT PANEL, A2 CONTROL, A3 IF/AUDIO, AND A4 POWER SUPPLY INSTALLED.

TPA-8181-022

Assembly, Connector, and Pin Locations (Sheet 1 of 2) Figure 7-9



CHASSIS TOP VIEW SHOWING PIN FIELDS
(* PIN FIELD LOCATED ON BOTTOM SIDE OF CHASSIS)



CHASSIS BOTTOM VIEW SHOWING PIN FIELDS AND COAXIAL CABLES.
A4 POWER SUPPLY, A5 SYNTHESIZER, AND A6 RF TRANSLATOR INSTALLED.
(⊂ COAXIAL CABLE SOLDERED TO ASSOCIATED ASSEMBLY.)

TPA-8181-022

Assembly, Connector, and Pin Locations (Sheet 2 of 2) Figure 7-9