

# **OPERATING AND SERVICE MANUAL**

## **RX 4009**

### **COMMUNICATION RECEIVER**

#### **WARNING**

To prevent potential fire or shock hazard, do not expose receiver to rain or moisture.

Manual part no. 489603

## RX 4009    DEFINITION

The HF communication receiver RX4009 contains the following electrical modules:

A1	Synthesizer	Assy	448168
A2	Frequency Generator Standard	Assy	488232
A3	Front-End	Assy	448206
	A3FL Crystal Filters	Assy	488313
A4	Suboctave Filters	Assy	466743
A7	Signal Processing, IF-2nd, Audio	Assy	448443
A8	Microcomputer	Assy	487740
A9	Remote Module	Assy	471666
A10	Power Supply	Assy	471720
A11A1	Front Panel Circuit	Assy	471445
A12A1	Motherboard	Assy	448648

Optionally:

A6	RTTY Demodulator	Assy	488275
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## SAFETY SUMMARY

The following general safety precautions must be observed during all phases of operation, service, and repair of this equipment. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the equipment. Dansk Radio AS assumes no liability for the customer's failure to comply with these requirements.

### GROUND THE EQUIPMENT

To minimize shock hazard, the equipment chassis and cabinet must be connected to an electrical ground. The equipment is equipped with a three-conductor ac power socket. The power cable must either be plugged into an approved three-contact electrical outlet or used with a three-contact to two-contact adapter with the grounding wire (green) firmly connected to an electrical ground (safety ground) at the power outlet.

### DO NOT OPERATE IN AN EXPLOSIVE ATMOSPHERE

Do not operate the equipment in the presence of flammable gases or fumes. Operation of any electrical equipment in such an environment constitutes a definite safety hazard.

### KEEP AWAY FROM LIVE CIRCUITS

Operating personnel must not remove equipment covers. Component replacement and internal adjustments must be made by qualified maintenance personnel. Do not replace components with power cable connected. Under certain conditions, dangerous voltages may exist even with the power cable removed. To avoid injuries, always disconnect power and discharge circuits before touching them.

## SAFETY SUMMARY (continued)

### DO NOT SERVICE OR ADJUST ALONE

Do not attempt internal service or adjustment unless another person, capable of rendering first aid and resuscitation, is present.

### DO NOT SUBSTITUTE PARTS OR MODIFY EQUIPMENT

Because of the danger of introducing additional hazards, do not install substitute parts or perform any unauthorized modification to the equipment.

### DANGEROUS PROCEDURE WARNINGS

Warnings, such as the example below, precede potentially dangerous procedures throughout this manual. Instructions contained in the warnings must be followed.

#### **WARNING**

Dangerous voltages, capable of causing death, are present in this equipment. Use extreme caution when handling, testing, and adjusting.

## TABLE OF CONTENTS

Section	Page
1 GENERAL INFORMATION . . . . .	1-1
1.1 Introduction . . . . .	1-1
1.2 Specifications . . . . .	1-1
1.3 Receivers Covered by This Manual . . . . .	1-1
1.4 Safety Considerations . . . . .	1-1
1.5 Description . . . . .	1-1
1.6 Options . . . . .	1-3
1.7 Accessories Supplied . . . . .	1-3
1.8 Accessories Available . . . . .	1-3
Specifications . . . . .	1-4
Specification of Options . . . . .	1-10
Operational Features . . . . .	1-12
2 INSTALLATION . . . . .	2-1
2.1 Introduction . . . . .	2-1
2.2 Initial Inspection . . . . .	2-1
2.3 Storage . . . . .	2-1
2.4 Repacking for Shipment . . . . .	2-1
2.5 Mounting Information . . . . .	2-2
2.6 Power Requirements . . . . .	2-3
2.7 Fuses . . . . .	2-3
2.8 Power Cable . . . . .	2-3
2.9 Audio Input/Output, A10J3 . . . . .	2-4
2.10 Line Output, A7J4 . . . . .	2-4
2.11 110 Baud Control Input/Output, A8J1 . . . . .	2-4
2.12 IF Output, A7J2 . . . . .	2-5
2.13 Antenna Input, A4J1 . . . . .	2-5
2.14 RTTY-Demodulator Data Output, A6J1 (Optional) . . . . .	2-5
2.15 Line Input, A6J2 . . . . .	2-6
2.16 5.12 MHz Internal Standard Output . . . . .	2-6
2.17 Installation Check-out . . . . .	2-6

## TABLE OF CONTENTS (cont'd)

Section	Page
3 OPERATION . . . . .	3-1
3.1 Introduction . . . . .	3-1
3.2 Frontpanel Features . . . . .	3-1
3.3 Power/Warm-Up . . . . .	3-1
3.4 Initial Conditions . . . . .	3-1
3.5 Self Test . . . . .	3-1
3.6 Manual Operating Instructions . . . . .	3-3
3.6.1 Clear Display . . . . .	3-3
3.6.2 Entry Errors . . . . .	3-3
3.7 Quick Reference Operating Instructions . . . . .	3-3
3.7.1 Fast Recall of User-defined Preference Frequency . . . . .	3-3
3.7.2 AM Operation . . . . .	3-3
3.7.3 SSB, CW and RTTY Operation . . . . .	3-3
3.8 Frequency Control . . . . .	3-3
3.8.1 Keyed Tuning . . . . .	3-3
3.8.2 Free Tuning . . . . .	3-4
3.9 Function Keys . . . . .	3-4
3.9.1 Reception Mode . . . . .	3-4
3.9.2 AGC Control . . . . .	3-4
3.9.3 AGC Threshold Control . . . . .	3-5
3.9.4 BFO Control . . . . .	3-5
3.9.5 Bandwidth Control . . . . .	3-6
3.9.6 RTTY Operation (Optional) . . . . .	3-6
3.10 User Programmable Channels . . . . .	3-6
3.10.1 Using the User Programmable Channels . . . . .	3-6
3.10.2 To Recall a User Programmable Channel . . . . .	3-6
3.10.3 Channel 00 . . . . .	3-6
3.20 Preprogrammed Channels . . . . .	3-7
3.20.1 Using the Preprogrammed Channels . . . . .	3-7
3.20.2 International Calling Channels . . . . .	3-7

## TABLE OF CONTENTS (cont'd)

Section	Page
3.30 The Scan Function . . . . .	3-8
3.31 Manual Scanning . . . . .	3-8
3.32 Scanning User Programmable Channels . . . . .	3-9
3.33 Scanning Preprogrammed Channels . . . . .	3-9
3.34 Program Scanning . . . . .	3-10
3.35 Frequency Scanning . . . . .	3-11
3.40 Introduction to the Program Function . . . . .	3-12
3.41 Clock Viewing and Setting . . . . .	3-13
3.42 Clock Alarm Programming . . . . .	3-14
3.43 Creating/Revising Scanning Programs . . . . .	3-15
3.44 Alarm Viewing . . . . .	3-16
3.45 Alarm Clearing . . . . .	3-16
3.46 Antenna Selection (option) . . . . .	3-16
3.50 Clear all . . . . .	3-16a
3.60 Serial Control . . . . .	3-17
3.70 Examples of Operation . . . . .	3-19
 4 OMITTED	
 5 REMOTE CONTROL (option) . . . . .	 5-1
 6 REPLACEABLE PARTS . . . . .	 6-1
6.1 Introduction . . . . .	6-1
6.2 Abbreviations . . . . .	6-1
6.3 Replaceable Parts List . . . . .	6-1
6.4 Ordering Information . . . . .	6-1
 7 MANUAL CHANGES . . . . .	 7-1
 8 SERVICE . . . . .	 8-1
8.1 Introduction . . . . .	8-1
8.2 Theory of Operation . . . . .	8-1
8.3 Troubleshooting . . . . .	8-1
8.4 Self-Test Program . . . . .	8-1
8.5 Preventive Maintenance . . . . .	8-2a
8.6 Front Panel Assembly Removal . . . . .	8-2a
8.7 PC-Board Assembly Removal . . . . .	8-2a

Section	Page
8.8 Servicing PC-Boards . . . . .	8-3
8.9 MOS Handling Precautions . . . . .	8-3
8.10 Logic Devices . . . . .	8-4
8.11 Basic Principles of Operation . . . . .	8-4
8.12 Overall Operation . . . . .	8-4
8.13 Synthesizer Assembly A1 . . . . .	8-7
8.14 Standard Assembly A2 . . . . .	8-8
8.15 Front-end Assembly A3 . . . . .	8-9
8.16 Suboctave Filter Assembly A4 . . . . .	8-11
8.17 IF/AF Assembly A7 . . . . .	8-12
8.18 Microcomputer Assembly A8 . . . . .	8-13
8.19 Power Supply Assembly A10 . . . . .	8-14
8.20 Front Panel Assembly A11A1 . . . . .	8-15
8.21 Mother Board A12A1 . . . . .	8-15
8.22 RTTY Demodulator . . . . .	8-16
A8 Microcomputer Module, LED indication . . . . .	8-18
Table 8.2a Key Values during Self-Test . . . . .	8-19
Table 8.2b Fault Analysis Procedures . . . . .	8-20

## SECTION 1 GENERAL INFORMATION

### 1.1 Introduction

This Operating and Service Manual contains information required to install, operate, test, adjust and service the receiver. A separate Operators Guide is also supplied. It should be kept with the receiver for use by the operator.

### 1.2 Specifications

Receiver specifications are listed in table 1.1, page 1-5. These specifications are the performance standards or limits against which the receiver is tested.

Table 1.2, page 1-10, lists the operational features.

### 1.3 Receivers covered by this Manual

This manual applies to receivers with serial number included in the list on the title page.

Due to the experience obtained from the production and operation of the equipment, minor differences between the receiver and the manual can occur. Wherever possible such differences are covered in a "MANUAL CHANGES" supplement, which also contains the documentation concerning the actual options in your receiver.

### 1.4 Safety Considerations

This manual contains information, cautions and warnings which must be followed to ensure safe operation and to maintain the receiver in a safe condition.

### 1.5 Description

The communication receiver is a fully synthesized, dual conversion, super-heterodyne receiver. It covers the frequency range 100 kHz to 29.99999 MHz in 10 Hz increments.

Operation modes are AM, CW, RTTY and SSB.

The receiver is equipped with microprocessor control. This provides intelligence in the form of factory programmed instruction memory that introduces new concepts in communication receivers, providing improvements in performance, ease of operation and reliability.

The microprocessor control includes features such as:

- Instant pushbutton tuning
- Free tuning in 10 Hz to 1 kHz steps

- Battery back-up memory storage for 75 user programmable frequencies and reception modes (incl. BFO-tuning)
- Automatic selection of all CCIR recommended frequencies for SSB and RTTY communication
- Digital keyed AGC
- AGC hold-time synchronized with SIMPLEX or ARQ burst keying
- Scanning of user-selected and CCIR frequencies
- Built-in diagnostic routines
- Error conditions automatically displayed on front panel
- AGC threshold control
- Prepared for digital selcall (option)
- Fully remote controlled (option)

The receiver controls are arranged in groups enabling the operator to easily identify and control receiver operation with a minimum of switching. Standard settings of the AGC and bandwidth controls are automatically selected when the operator presses the desired reception mode. The operator can override all preset settings and select AGC time constants and receiver bandwidths more suitable for his reception environment.

During supply drop-out the receiver settings as well as the information contained in the user programmed memory storage is energized from a built-in battery back-up. When the drop-out is terminated, the receiver settings are automatically recalled to the front panel.

The receiver incorporates scanning facilities. During scanning the dwell time between channels is programmed by means of the normal frequency entry keyboard. Via the control input/output socket (at the rear panel of the receiver) the scan sequence may be temporarily terminated from an auxiliary decoder, enabling automatic reception of selcall communication.

When the receiver is set to the AGC-mode, the manual RF-control may be used as an AGC threshold control. When the receiving signal exceeds the threshold level the AGC circuit in the receiver is operated. At the same instant a digital ON signal is available at the control input/output socket, permitting external recording facilities, e.g. telex terminals or tape recorders, to be started.

A detailed operating instruction is contained in section 3 of this manual.



## 1.6 Options

The following extends the usefulness of the Receiver.

1.6.1. Duplex Filters included on the Suboctave Filter board (DRA part no. 466751) to improve reception when the receiver is used in the DUPLEX mode.

1.6.2. RTTY Demodulator Module (DRA part no. 471577) featuring adaptive threshold control, RS232C output and strappable baud rate and mark/space frequencies.

1.6.3. Remote Control from RC 4000 unit or a personal computer, to allow control over two pairs of telephone lines. Two systems are available.

1) Serial Remote Control Module (DRA part no. 471666) conform to the V24/RS232 600/1200 bps, incl. AUX port for remote control of external equipment via the serial remote control system of the receiver.

2) Serial Remote Control Module (DRA part no. 463302) conform to RS232 9600 bps standard interface.

1.6.4. Power Supply 110/220V AC/24V DC alternative power supply to the standard mains only version (DRA part no. 448532).

Please note that when this optional power supply is used in the RX 4000 the receiver can be equipped with either RTTY-demodulator option (A6) or remote module option (A9). If the receiver is to be remotely controlled, the RTTY-demodulator (when supplied) must be placed in the RC 4000.

1.6.5. ELC Extended Local Control up to 20 meters, part no. 484873.

1.6.6. RTTY Demodulator Module (DRA part no. 489670). As 1.6.2. but optimized for 150 Baud Data Rate.

1.6.7. RTTY Demodulator Module (DRA part no. 488275). As 1.6.6. but without internal audio input.

## 1.7 Accessories Supplied.

The following accessories are supplied with the Receiver.

One Operating and Service Manual,  
DRA part no. 475211,

One Operators Guide, DRA part no. 475238,

One Power Cord, DRA part no. 426652.

## 1.8 Accessories Available.

The following items are available for use with the Receiver.

Receiver Cabinet, DRA part no. 475246

Rack Slides Kit, DRA part no. 458872

Connector Kit, basis receiver version,  
DRA part no. 475505

Connector Kit for RTTY Demodulator,  
DRA part no. 485284

Connector Kit for Remote Control  
Module, DRA part no. 485292

Standard Spare Parts Kit,  
DRA part no. 475076

Depot Spares Kit, DRA part no. 475041

Special Tools Kit, DRA part no. 475025.

Table 1.1 Specifications

FREQUENCY RANGE

15 kHz to 30 MHz in 10 Hz increments.  
(15 kHz to 100 kHz with reduced performance)

ANTENNA IMPEDANCE

50 ohm

INPUT PROTECTION

30V EMF continuously  
100V EMF for up to 15 minutes

OPERATING MODES

A1A, A2B, H2A, A3E, H3E, R3E, J3E, F1B, F3C, R3C

FREQUENCY STABILITY

0.1 ppm -15 to +45°C  
0.3 ppm -25 to +55°C  
aging <1 ppm/year

FREQUENCY TUNE TIME

Typically 10 msec.

INPUT SELECTIVITY

10 Fixed filters

Table 1.1 Specifications (Continued)

IF SELECTIVITY

R3E, J3E: Passband ripple < 3 dB

Relative att. < 3 dB within 300 Hz to 3 kHz

Stopband att. > 60 dB at -900 Hz and 4.2 kHz

A1A, A2B, H2A, A3E, H3E, F1B:

Wide : -3 dB at  $\pm 3.4$  kHz -60 dB  $\pm 5.00$  kHz

Inter : -3 dB at  $\pm 1.3$  kHz -60 dB  $\pm 2.6$  kHz

Narrow : -3 dB at  $\pm 0.4$  kHz -60 dB  $\pm 1.0$  kHz

Very narrow : -3 dB at  $\pm 0.15$  kHz -60 dB  $\pm 0.6$  kHz

DIFFERENTIAL GROUP DELAY

R3E, J3E: Max. 0.5 msec within 500 Hz to 2800 Hz (USB)

SENSITIVITY

2 $\mu$ V EMF for 20 dB SINAD in SSB

8 $\mu$ V EMF for 20 dB SINAD in AM

INTERMODULATION (Out-of-band)

100 dB $\mu$ V EMF per signal more than 30 kHz offset  
from tune frequency produces less than an  
equivalent input signal of 40 dB $\mu$ V EMF.

Table 1.1 Specifications (Continued)

CROSS MODULATION

With a wanted J3E signal of 60 dB $\mu$ V EMF, an unwanted signal of 110 dB $\mu$ V EMF/30% - 400 Hz produces cross modulation output less than -30 dB relative to wanted signal level.

BLOCKING

With a wanted signal of 60 dB $\mu$ V EMF, an unwanted signal of 110 dB $\mu$ V EMF causes less than 3 dB change in output level.

ADJACENT SIGNAL SELECTIVITY

With a wanted J3E signal at the specified sensitivity limit, an unwanted signal of 80 dB $\mu$ V EMF offset -5 kHz/+8 kHz from tune frequency causes less than 6 dB change in SINAD.

IMAGE REJECTION

Greater than 90 dB.

IF REJECTION

Greater than 90 dB.

SPURIOUS RESPONSE REJECTION

Greater than 80 dB

INTERNALLY GENERATED SPURIOUS RESPONSE

Internally generated spurious signals will not produce a S/N ratio greater than 10 dB (Inter).

Table 1.1 Specifications (Continued)

SPURIOUS EMISSION

Less than  $5 \mu\text{V}/50 \Omega$  at antenna connector.

RF ATTENUATOR

0 dB or 10 dB.

AUTOMATIC GAIN CONTROL

Less than 4 dB change in output for 100 dB input signal variation from specified sensitivity limit.

Time constants A1A, R3E, J3E, F1B:

Attack time : 0.5 msec. for 70 dB  
signal increase

Debounce time : 5 msec.

Attack-to-hold time:

Wide : 25 msec.

Inter : 30 msec.

Narr : 50 msec.

Vnarr : 60 msec.

Hold time:

Short : 30 msec.

Long : 1 sec.

Decay time : Typical 20 dB per 100 msec.

Time constants A2B, H2A, A3E, H3E: 200 msec.

BFO RANGE

$\pm 7$  kHz synthesized in 10 Hz steps.

Table 1.1 Specifications (Continued)

BFO TUNE TIME

Less than 1 msec.

NOTCH TUNE

Typical 30 dB variable from 300 Hz to 2700 Hz.

IF OUTPUT

-20 dB/50 Ohm.

LINE OUTPUT

Level : Adjustable up to +10 dBm

Impedance : 600 Ohm balanced, return loss better than 20 dB

Distortion : Less than 1% in J3E

LINE INTERMODULATION (In-band)

Less than -45 dB relative to either of two 94 dB $\mu$ V EMF signals (With RF Attenuator in "OFF").

SIDE TONE INPUT

Max. 500 mV/600 Ohm.

MONITOR OUTPUT

Speaker : 4W/4 Ohm

Phones : 10 mW/500 Ohm

MUTING

Attenuation : 60 dB typical

Attack time : 0.1 msec. typical

Decay time : 0.5 msec. typical

Table 1.1 Specifications (Continued)

INPUT POWER

110-125, 220-250 V, 50/60 Hz, 70 VA

OPERATING ENVIRONMENT

Temperature: Full performance range 0°C to 50°C  
Operating range -25°C to 55°C

Humidity : To 95% relative humidity at 40°C

Vibration : Vibration in three planes for 30 min. each  
with 1 G acceleration, 5 to 50 Hz

WEIGHT

15 kg incl. cabinet

DIMENSIONS

See outline drawing table 1.2, page 1-14.

## Specification of Options

### Modem/Modem Interface Board A9

#### Technical Specifications

- Internal Modem : V23 CCITT compatible modem  
Input output impedance 600 ohm balanced  
Strappable level to -10, -20 or -30 dB  
Baudrate 1200/600 bps.  
Operates on either 2 wire or 4 wire  
leased telephone lines
- Modem Interface : V24 modem interface for interfacing an  
external modem. 1200/600 bps.
- AUX-port : 8/4 bit input/output AUX port for  
external equipment, open collector  
output max. 15V/100mA.



## Specification of Options (Continued)

RTTY Demodulator A6 Assy 471577

### Technical Specifications

External audio input	: Input impedance 600 ohm, balanced input level 0, -10, -20 or -30 dBm strappable.
Center frequency	: 1700 Hz
Deviation	: <u>±</u> 42.5 Hz, <u>±</u> 85 Hz, <u>±</u> 212.5 Hz or <u>±</u> 425 Hz, strappable.
Keying speed	: 50, 75 or 100 baud, strappable.
RS232 output (J4)	: 25 pole D-conn. RS 232 C Received line signal detect output Invert and Autostart control inputs 5 Volt and <u>±</u> 12 Volt outputs
Current loop output (J2)	: 9 pole D-conn. 60, 80, 100 or 120 Volt/ 20, 40 or 60 mA, strappable
Diversity input/output (J3/J4)	: SMB connector Two demodulators can be interconnected to perform predetection diversity combining.

## Specification of Options (Continued)

### RTTY Demodulator A6 Assy 489670

#### Technical Specifications

External audio input	: Input impedance 600 ohm, balanced input level 0, -10, -20 or -30 dBm strappable.
Center frequency	: 1700 Hz
Deviation	: $\pm 42.5$ Hz, $\pm 85$ Hz, $\pm 250$ Hz or $\pm 425$ Hz, strappable.
Keying speed	: 50, 100 or 150 baud, strappable.
RS232 output (J4)	: 25 pole D-conn. RS 232 C Received line signal detect output Invert and Autostart control inputs 5 Volt and $\pm 12$ Volt outputs
Current loop output (J2)	: 9 pole D Conn. 60, 80, 100 or 120 Volt/20, 40 or 60 mA, strappable.
Diversity input/output (J3/J4)	: SMB connector Two demodulators can be interconnected to perform predetection diversity combining.

## Specification of Options (Continued)

RTTY Demodulator A6 Assy 488275

### Technical Specifications

External audio input (No internal audio input)	: Input impedance 600 ohm, balanced input level 0, -10, -20 or -30 dBm strappable.
Center frequency	: 1700 Hz
Deviation	: $\pm 42.5$ Hz, $\pm 85$ Hz, $\pm 250$ Hz or $\pm 425$ Hz, strappable.
Keying speed	: 50, 100 or 150 baud, strappable.
RS232 output (J4)	: 25 pole D-conn. RS 232 C Received line signal detect output Invert and Autostart control inputs 5 Volt and $\pm 12$ Volt outputs
Current loop output (J2)	: 9 pole D Conn. 60, 80, 100 or 120 Volt/20, 40 or 60 mA, strappable.
Diversity input/output (J3/J4)	: SMB connector Two demodulators can be interconnected to perform predetection diversity combining.

Table 1.2 Operational Features

#### FREQUENCY TUNING

Numerical frequency keyboard entry plus single knob tuning.

75 user programmable channels including mode settings

176 pre-programmed CCIR-SSB channels

257 pre-programmed CCIR-RTTY channels

#### BFO TUNING

Numerical frequency keyboard entry plus single knob tuning.

Default values automatically recalled when selecting reception modes.

#### AGC SYNCHRONIZATION

The AGC control is synchronized with the mute command.

#### AGC THRESHOLD CONTROL

Threshold continuously variable.

#### USER PROGRAMMABLE CHANNELS

Number of channels : 75

Channel information : Receive frequency, reception mode,  
bandwidth, AGC-setting, RF attenuator  
and BFO frequency.

Data storage time : Greater than 2 years

#### PREPROGRAMMED CHANNELS

Number of channels : 433

Table 1.2 Operational Features (continued)

#### SCANNING

Scanning of frequency bands, user programmed channels, CCIR channels and user designed scanning programs.

Scan mode : Automatically or manually by tune knob.  
Dwell time : 0.1 to 9 sec. selected by keyboard entry.  
Scan control : By built-in programmable timer or by scan stop (remote or manual) and AGC level.

#### DIMMER CONTROL

Continuously variable.

#### AUTO RESTART

Retention of receiver settings during power failure.

#### USER CREATED SCAN PROGRAMS

Number of programs : 30  
Number of programming steps : 6

#### USER PROGRAMMABLE TIMER

Number of clock alarms : 24  
Number of programming steps : 2 (time and command)

### User programmable features

The receiver is equipped with extended user programmable features such as:

- 75 addressable user programmable channels that allow the operator to store and recall complete receiver settings
- 24 addressable day/hour clock alarms with programmable scanning, frequency change or muting.
- 30 user defined scanning programs each containing up to 6 intermixed scanings or frequency changes with

selectable dwell time.

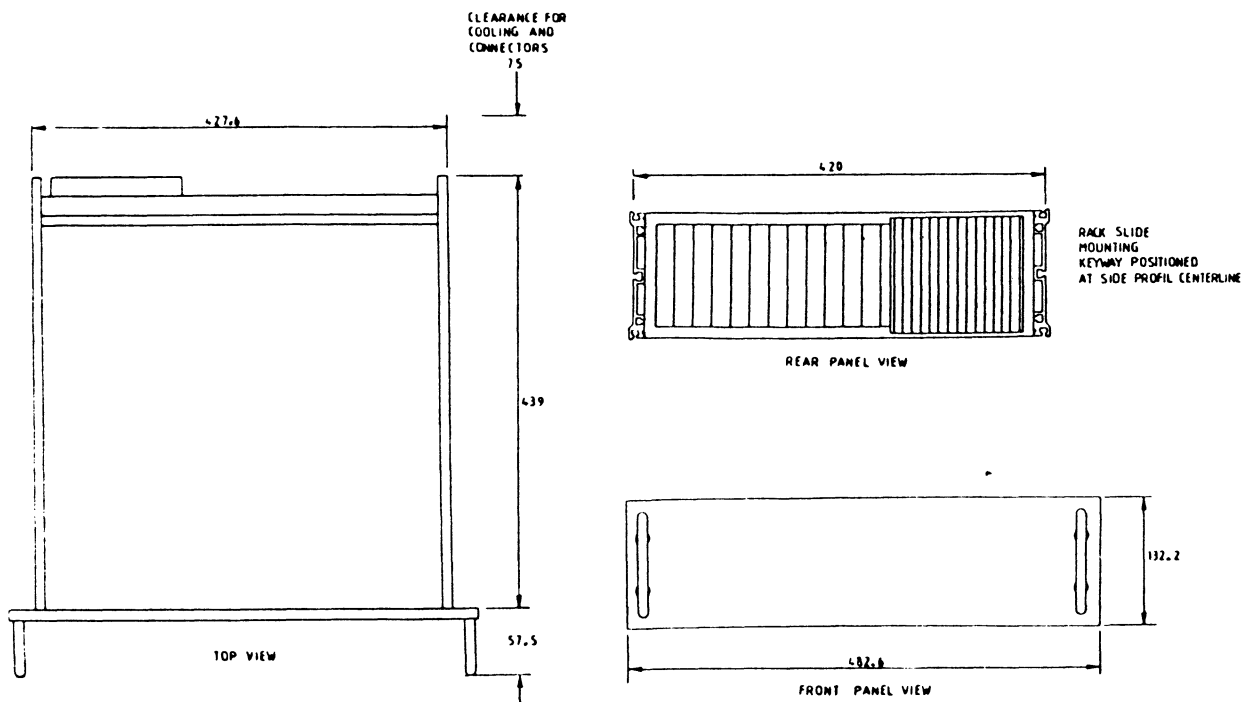
- a 24 hours' clock with battery back-up.

All these channels, clock alarms and scanning programs are stored in CMOS memory that maintain their content even though the receiver is turned off or disconnected from power sources.

When the receiver is turned on, it will restart at the last receiver settings before the power was turned off.

Table 1.2 Supplemental Characteristics (continued)

### RECEIVER DIMENSION



### RECEIVER CABINET (Not included in normal delivery)

Height : 159 mm  
Width : 509 mm  
Depth : 463 mm

## SECTION 2

### INSTALLATION

#### 2.1 Introduction

This section of the manual provides installation instructions for the RX4009 communication receiver. It also includes information about initial inspection and damage claims, preparation for use and repacking for shipment information.

#### 2.2 Initial Inspection

##### **WARNING**

To avoid hazardous electrical shock, do not perform electrical tests when there are signs of shipping damage to any portion of the front or rear panel or outer covers. Read the safety summary at the front of this manual before installing or operating the receiver.

Inspect the shipping container for damage. If the shipping container or cushioning material is damaged, it should be kept until the contents of the shipment has been checked for completeness and the receiver has been checked mechanically and electrically. Contents of the shipment should be as listed in the "Equipment Supplied" paragraph in Section 1. If the contents are incomplete, if there is mechanical

damage or defect, or if the receiver does not pass the performance tests, notify the nearest Dansk Radio agent. If the shipping container is damaged, or if the cushioning material shows sign of stress, notify the carrier as well as the Dansk Radio agent.

A full report of the damage should also be forwarded to Dansk Radio.

Include the following:

- Order number
- Model and serial number
- Name of transportation agency

#### 2.3 Storage

The receiver may be stored or shipped in temperatures within the limits  $-40^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$ . It is advisable to protect the receiver from extreme temperature variation which can cause excessive condensation.

#### 2.4 Repacking for shipment

The shipping container for the RX4000 has been carefully designed to protect the receiver and its accessories during shipment. This container and its associated packing material should be used when repacking for shipment. If shipping to Dansk Radio for service, attach

a tag indicating the type of service required, return address, model number and full serial number. Mark the container FRAGILE to ensure careful handling.

If the original shipping container is not available, the following general instructions should be used for re-packing with commercially available materials:

- Wrap the receiver in heavy paper or plastic. If shipping to Dansk Radio for service, attach a tag indicating the type of service required, return address, model number and full serial number.
- Use a strong shipping container e.g. a double walled carton of 160 kg. test material.
- Protect the control panel with cardboard and insert a 7 to 10 cm layer of shock absorbing material between all surfaces of the equipment and the sides of the container.
- Seal the shipping container securely.
- Mark the shipping container FRAGILE to ensure careful handling.

## 2.5 Mounting information

The receiver may be conveniently mounted in a standard 19 inch rack using a pair of rack slides or chassis angles appropriate for the rack system.

The receiver in the rack mounted configuration requires a standard panel space 5.25 inches high.

The receiver may also be mounted in a cabinet for bench operation, part no. 475246. The cabinet is designed to be mounted on a table or on a shelf, fastened to the support by means of four bolts.

When operating the receiver, provide at least 75 mm. of clearance at the rear and at least 7 mm. on all sides of the receiver. Failure to allow adequate air circulation will result in excessive internal temperature, reducing receiver reliability.



## 2.6 Power Requirements

110 - 125V, 220 - 250V, 50/60 Hz  
70 VA  $\pm$  10%.

### CAUTION

The receiver is normally set at the factory for 220 Vac.

The selection of 110 volt nominal mains voltage is made by changing connections on A10A2 on the power supply assembly A10. To change the mains voltage setting, proceed as follows: (refer to Fig. 2.1 and Fig. 2.5).

- Disconnect the input power cord from the receiver.
- Disconnect the regulation transistor cable from A10J2 and remove the power supply heat sink panel by removing the four retaining screws at the rear end of the receiver side profiles.
- Remove the eight screws positioned at the edge of the power supply rear panel A10 and withdraw the power supply assembly.
- Change connections on A10A2 as appropriate in accordance with Figure 2.1.
- Reposition the power supply assembly in the receiver.
- Reposition the power supply heat sink panel and connect the regulation transistor cable to A10J2.

- Connect the input power cord to the receiver.

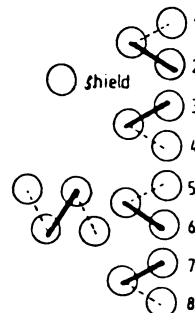


Fig. 2.1b Mains strapping 220 V

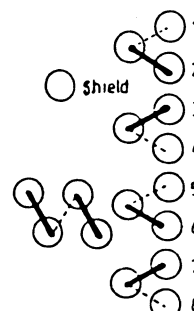


Fig. 2.1a Mains strapping 110 V

## 2.7 Fuses

Table 2.1 Fuse Ratings

Rear Panel	F1 1A T
" "	F2 1A T
On A10A2	F3 6, 3A T
" "	F4 6, 3A T
" "	F5 6, 3A T

## 2.8 Power Cable

In accordance with international safety standards this receiver is equipped with a three terminal power connector. When connected with an appropriate power cable, the receiver cabinet should be grounded via the power connector center tap.

If the power cable is terminated with a mains plug, this should only be inserted in a socket outlet provided with a protective earth contact. The protective action must not be negated by the use of a power cable without a protective conductor (grounding).

## 2.9 Audio Input/Output, A10J3

The audio input/output socket (refer to Figure 2.2) provides loudspeaker output and sidetone input (later used during simplex A1 keying).

The audio input/output socket connections are as follows:

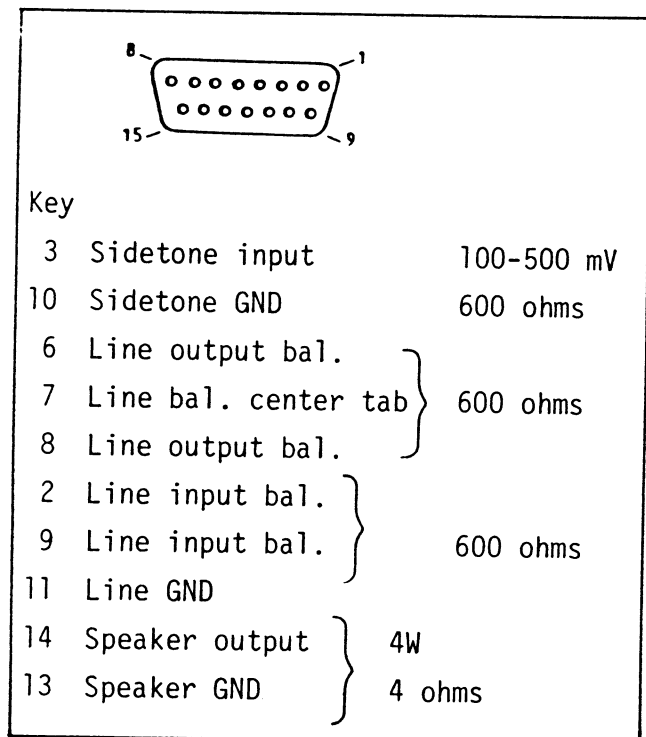


Fig. 2.2 Audio Input/Output Plug

The appropriate cable connector may be ordered from Dansk Radio as part of the Connector Kit, part no. 475505.

## 2.10 Line Output, A7J4

The line output plug (refer to Fig. 2.3) provides the AF line output for auxiliary equipment. The line output level may be adjusted from the A7 rear panel to a level between +10dBm and -20dBm/600 ohms. The line output plug connections are as follows:

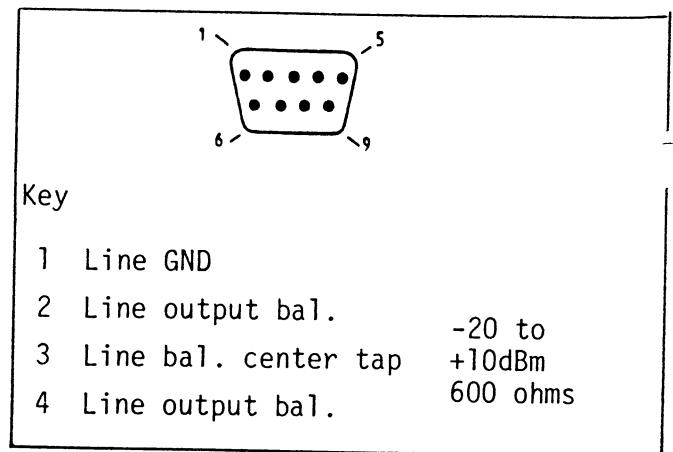


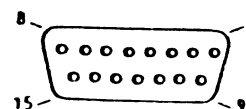
Figure 2.3 Line output Plug

The appropriate cable connector may be ordered from Dansk Radio as part of the Connector Kit, part no. 475505.

## 2.11 110 Baud Control Input/Output, A8J

The control input/output socket (refer to Figure 2.4) provides all digital controls to and from the receiver.

The socket connections are as follows:



#### Key

- 1 RS 232 input
- 2 RS 232 in. GND
- 3 Mute input (-)
- 4 Mute input (+)
- 5 Duplex input (-)
- 6 Duplex input (+)
- 7 Scan Stop input (-)
- 8 Scan Stop input (+)
- 9 RS 232 Output
- 10 RS 232 out. GND

Optional

Figure 2.4 Control Input/Output Socket

All control inputs are floating and exercised by 24Vdc/10mA positive logic.

The appropriate cable connector may be ordered from Dansk Radio as part of the Connector Kit, part no. 475505.

#### 2.12 IF Output, A7J2

The receiver is equipped with a 1.4 MHz IF output socket (BNC) providing a -20 dBm/50 ohm 2nd IF signal for auxiliary equipment. (Refer to Figure 2.7). The output signal is bandwidth filtered in accordance with the receiver bandwidth setting.

The appropriate cable connector may be ordered from Dansk Radio as part of the Connector Kit, part no. 475505.

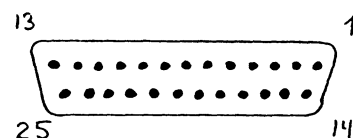
#### 2.13 Antenna Input, A4J1

The antenna input socket is protected against 50V EMF/15 minutes burn-out. The antenna input impedance is 50 ohms. (Refer to Figure 2.7).

The appropriate cable connector may be ordered from Dansk Radio as part of the Connector Kit, part no. 475505.

#### 2.14 RTTY-Demodulator Data Output, A6J1 (Optional)

The 25-pole socket J1 provides RTTY data output in accordance with RS 232C standard and control of the demodulator. The connections are as follows:



Pin	Circuit	Description
1	AA	Protective ground
3	BB	Received data
6	CC	Data set ready
7	AB	Signal ground (common return)
8	CF	Received line signal detector
9 <sup>x</sup>	-	INVERT Data inverted when 0
10 <sup>x</sup>	-	AUTOSTART Circuit disabled when 0
11	-	+12V
18	-	-12V
25	-	+ 5V

<sup>x</sup>: Pin 9 and 10 are 1 when left open.

Figure 2.5 RTTY-Demodulator Data Output Socket

The appropriate cable connector may be ordered from Dansk Radio as part of the Connector Kit, part no. 475505.

#### 2.15 Line Input and Teleprinter Output A6J2

The line input plug provides the input signal to the RTTY-demodulator, as well as the output signal to the teleprinter.

The connections are as follows:

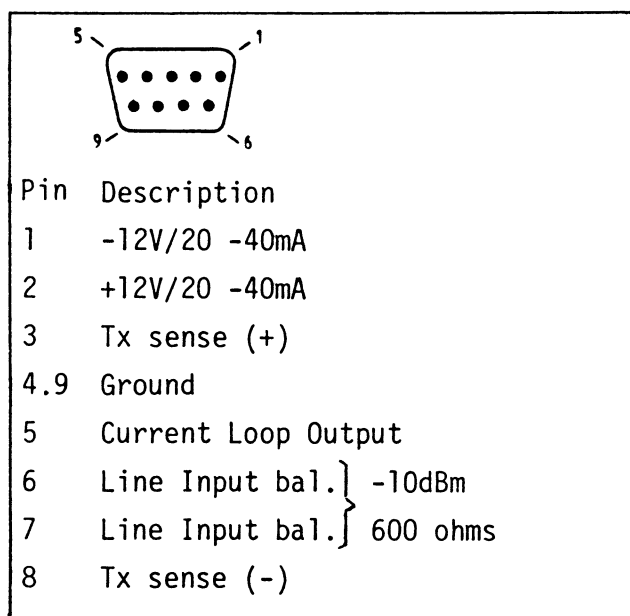


Figure 2.6 RTTY-Demodulator Socket

The appropriate cable connector may be ordered from Dansk Radio as part of the Connector Kit, part no. 475505.

#### 2.16 5.12 MHz Internal Standard Output

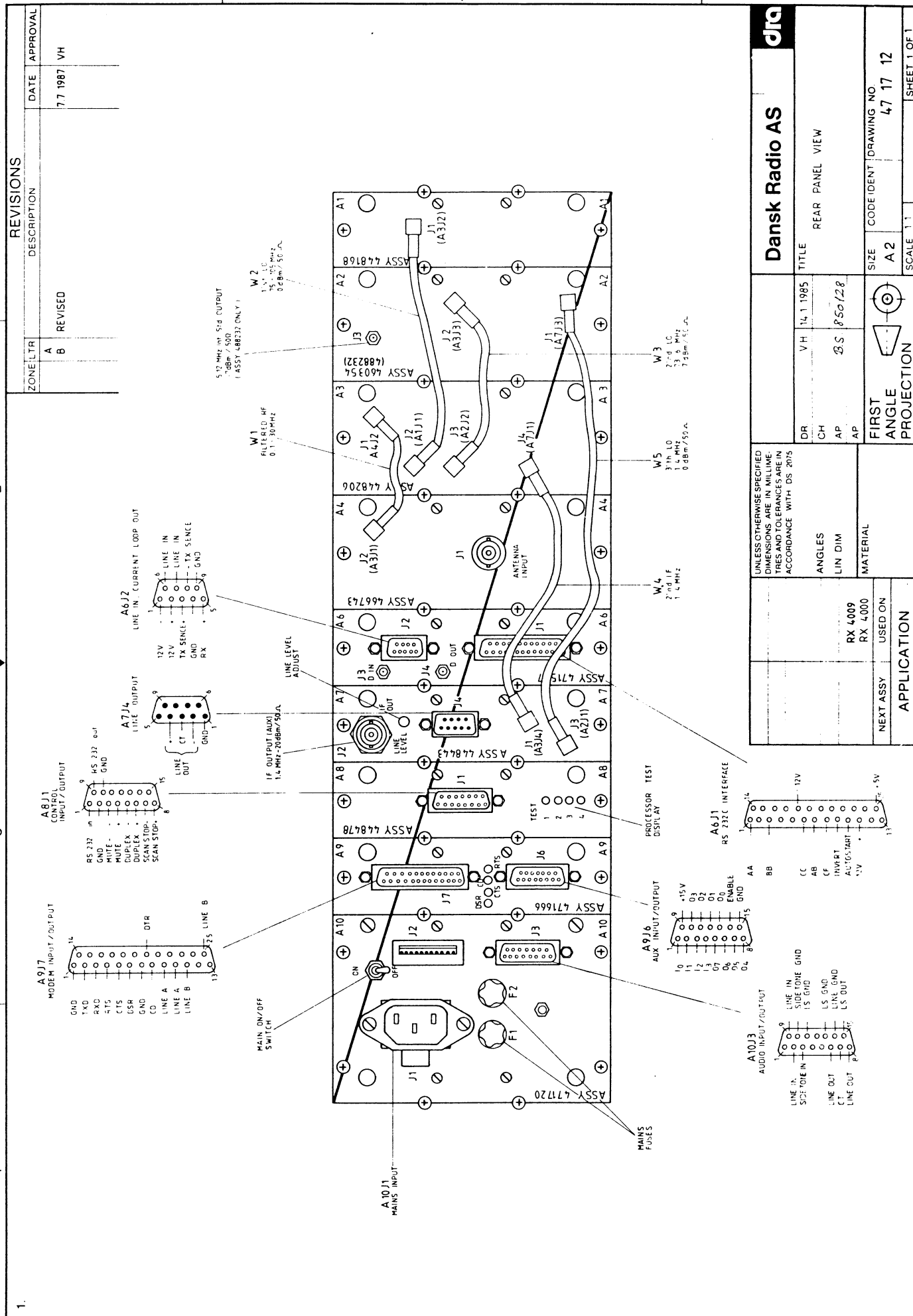
The 5.12 MHz Internal Standard Output is standard for RX4009 and optional for other versions.

The output socket (BNC) is mounted on the rear frame of the receiver and provides a 5.12 MHz, -7dBm/50 Ohm signal for auxiliary equipment.

#### 2.17 Installation Check-out

When the installation is complete, refer to section 3 (OPERATION) and fully check the operation of the receiver.

Figure 2.7 Rear Panel View



## SECTION 3

### OPERATION

#### 3.1 Introduction

This section of the manual contains instructions for proper operation of the RX4000 communication receiver.

#### 3.2 Front Panel features

Figure 3.1 identifies and describes the functions of the front panel controls, indicators and connectors.

#### 3.3 Power/Warm-up

The model requires a power source between 110 or 250Vac, single phase. The selection of power source and phases is described in Section 2, Installation.

The power switch on the front panel (see Figure 2.7) has two positions, OFF and ON. Power is applied to some circuits at any time the receiver is connected to the power source. As the receiver has a crystal Oven Assembly installed, it is important that it remains connected to the power source to maintain a constant oven temperature, eliminating the need for a long warm-up period. A master mains switch on the rear panel (see Figure 2.7) can switch off the entire receiver.

#### 3.4 Initial conditions

After the power has been switched on, the receiver status will be as the setup from before the power was switched off.

#### NOTE

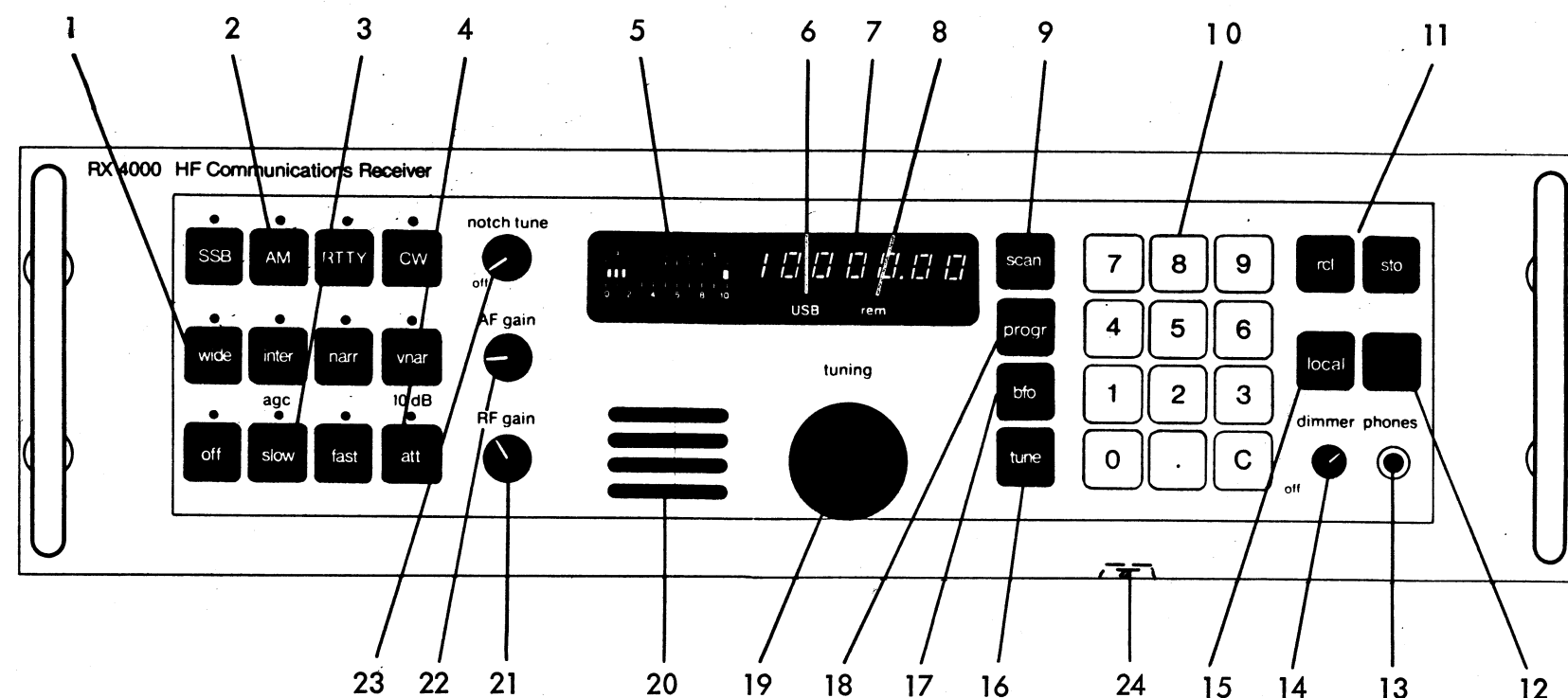
1. If the display reads OSC.FAIL, the frequency synthesis circuits are not operating properly.
2. If Ann.FAIL (nn is a two-digit number) momentarily appears in the display after turn-on, some of the initial test indicate a failure. Refer to Section 8, Service, for failure identification.
3. If either of the above conditions occurs, refer the receiver to qualified service personnel for repair.

#### 3.5 Self Test

The self test operation is initiated by pressing the C key, then the tune key. The self test is then carried out by the built-in microprocessor by means of a ROM-based diagnostic program package.

Press the C key again to leave the self test program. For further information see Par. 8.4, page 8-1.

Figure 3.1.  
Front Panel Features



- 1 BANDWIDTH group. These keys select the IF-bandwidth when the receiver is operated in AM- or CW mode.
- 2 MODE group. These are the primary mode selection keys for reception. Pressing any mode key automatically selects default values for the secondary keys.
- 3 AGC control group. These keys select the proper AGC time constants. These constants are also affected by the MODE keys. In the "off" mode, RF-gain is manually controlled.
- 4 ATTENUATOR key. Inserts a 10dB attenuator in the receiver front end. Used to further improve the receiver's large-signal response.
- 5 S-METER. Analogue indication of the received signal strength.

- 6 LSB/USB indicator.
- 7 ALPHANUMERIC display. Displays the receiving frequency, the BFO-frequency, error codes and failure modes.
- 8 REMOTE annunciator. Indicates that the receiver is remotely controlled by a master.
- 9 SCAN key. Selects the automatic- and the manual scanning mode.
- 10 ENTRY group. This group includes the numeric data keys and the clear key.
- 11 REGISTER group. These keys are used for storing and recalling user-programmed receiver settings. The recall key is also used for selection of international communication channels.

- 12 FAST RECALL of user-defined preference frequency equal to channel 01.
- 13 PHONES output. Connection for headphones. Disconnects the internal speaker.
- 14 DIMMER/POWER control. Used for control of the light intensity in the front panel indicators. In the OFF position, power is only applied to the oven (optional) and to part of the power supply circuits.
- 15 LOCAL key. Used to bring the receiver in local mode when operated in a remote system with RC 4000.
- 16 TUNE key. Enables/disables free-tuning by the control knob.
- 17 BFO key. Enables/disables the BFO control mode.

- 18 PROGRAM key. Key for entering the program mode.
- 19 TUNING control. Used for free-tuning of the receiving frequency and the BFO-frequency.
- 20 LOUDSPEAKER.
- 21 RF-GAIN/SQUELCH control. Used during AGC "off" to manually adjust the intermediate frequency gain.
- 22 AF-GAIN control. Manual adjustment of the audio frequency gain.
- 23 NOTCH-TUNE control. Manual adjustment of an audio frequency notch filter, tunable in the range 300 Hz to 3000 Hz. Used to attenuate undesired interfering signals in the audio output.
- 24 Loudspeaker ON/OFF switch mounted on bottom of frontpanel.

### 3.6 Manual operating instructions

The following paragraphs describe the procedures for operating from the front panel.

They explain how to set the frequency, mode and special function controls and cover operating instructions for standard and distress operating modes.

#### 3.6.1 Clear display

Pressing **[C]** key clears the display to zero. This key is useful when an error is made while entering data.

#### 3.6.2 Entry errors

The word "Error" will appear in the display for approximately one second when an error in programming the receiver occurs. The incorrect entry will not be accepted. Table 3.1 shows the relevant entry error-codes and their explanation.

Table 3.1 Entry errors

Error code	Message
Not dEF	User programmable channel or scan channel are not defined in the memory.
Error 3	Invalid user programmable channel

(for other error messages see page 20, 21 and 22)

### 3.7 Quick reference operating instructions

#### 3.7.1 Fast recall of userdefined preference frequency, 01

- Press unlabelled key.

#### 3.7.2 AM operation

- Key in the desired frequency
- Press the **[AM]** key
- Adjust AF-GAIN for convenient volume

#### 3.7.3 SSB, CW and RTTY operation

- Key in the desired frequency
- Press **[SSB]** (USB), **[CW]** or **[RTTY]**
- Adjust AF-GAIN for a convenient volume
- For LSB press **[SSB]** twice

### 3.8 Frequency Control

The frequency resolution can be selected by pressing **[.]** to 1 kHz, 100 Hz or 10 Hz an appropriate number of times.

#### 3.8.1 Keyed Tuning

Key in the desired frequency by pressing numbers in sequence, just as they are written on a piece of paper.



The display immediately shows the number sequency in right entry display format, i.e. the numbers appear in the rightmost display character and are shifted left, one character on each number entry. The decimal point must be keyed if it is part of the number (unless it has to be right of the last frequency digit in kHz). For example to key in 7501.65 kHz, simply press the following keys in sequence,

Press	Display
<u>C</u>	0.00
<u>7</u>	7.00
<u>5</u>	75.00
<u>0</u>	750.00
<u>1</u>	7501.00
<u>.</u>	7501.00
<u>6</u>	7501.60
<u>5</u>	7501.65

### 3.8.2 Free tuning

The tuning control is activated by pressing tune. By rotating the tuning knob the receiving frequency is varied in quasi-continuous steps.

Pressing tune the second time disables the free tuning.

## 3.9 Function keys

The receiver has a number of function keys that allow the operator to select operating modes.

### NOTE

A lighted indicator above any key denotes it as an active entry. For example, if the "wide" key indicator is on, it is not necessary to press that key if this is the desired bandwidth.

### 3.9.1 Reception mode

The receiver can operate in four modes:

AM, SSB, CW and RTTY (RTTY optional)

The proper mode is selected by pressing one of the keys labelled AM, SSB, CW, or RTTY.

After pressing SSB the USB mode is selected.

LSB is selected by pressing SSB once more.

Pressing a mode key automatically selects default values for secondary control keys. However, these default settings can be altered by the operator by manual entry after the mode selection.

The following default settings are used:

AM	- AGC (slow), Bandwidth (wide)
SSB	- AGC (slow), Bandwidth (disabled)
CW	- AGC (slow), Bandwidth (narr)
RTTY	- AGC (slow), Bandwidth (narr)

### 3.9.2 AGC control

The AGC keys control the AGC time constants. Press any of the keys labelled off, slow or fast to select the desired mode.

In the AGC "off" mode the gain can be adjusted by means of the RF-GAIN control knob.

#### NOTE

The MODE keys will affect the time constants of the AGC-circuit. The AGC control keys are used for supplementary control of the AGC time constants. For further information refer to the receiver specifications.

#### 3.9.3 AGC Threshold control

The AGC threshold control may be activated when the receiver is operated in either of the two automatic gain control modes, i.e. "slow" and "fast".

- Press the key labelled slow or fast to select the desired AGC time constants.
- Press the active AGC key again to enter the threshold mode.

The threshold mode is indicated by a blinking AGC indicator. The AGC threshold is adjusted by turning the RF-GAIN.

To leave the threshold mode

- Press the active AGC key.

The active AGC indicator will now light steadily.

If the threshold mode is used during scanning, the receiver will dwell only briefly, i.e. 100 ms, at channels with signal levels below the AGC threshold.

If the signal level exceeds the threshold, the receiver dwells at the channel for the time selected with the keys 0-9 and then continues the scanning.

If the dwell time "." (clock) is selected, the receiver will dwell at the channel as long as the signal level exceeds the threshold value.

#### 3.9.4 BFO Control

The BFO-frequency is entered and displayed with 3-digit resolution. The frequency can be entered from the keyboard and/or tuned by the tuning control knob.

To enter the BFO-frequency from the keyboard:

- Press bfo
- Press 0 to select the proper signal (+/-)
- Press the number keys of the applicable BFO-frequency, entering the decimal point in the proper place.

To adjust the BFO-frequency by the frequency tuning knob:

- Press bfo
- Adjust the BFO-frequency by means of the tuning knob.

Pressing bfo the second time disables the BFO-control.

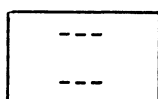
### 3.9.5 Bandwidth control

The bandwidth keys wide , inter , narr and vnar select the IF bandwidth of the receiver. These keys can only be used in the AM, RTTY and CW reception modes, and will not respond to commands when the receiver is operated in SSB mode.

### 3.9.6 RTTY Operation (Optional)

The RTTY-demodulator can be installed in either RX4000 or RC4000. When the RTTY button is activated once, the receiver will enter the RTTY mode and a frequency setup can be entered.

At a second activation of the RTTY button the display of the unit where the demodulator is installed, will show:



where the lower and upper segments represent mark/space levels.

Depending on the level, few or many segments will light. To ensure proper reception, the two rows must be equal and this can be done by tuning. When a signal is present, the demodulator will be activated and start up the telex printer.

### 3.10 User programmable channels

The receiver contains 75 addressable user programmable channels (UPC) that allow the operator to manually store and recall complete receiver settings.

A complete receiver setting includes reception mode, frequency, AGC mode, bandwidth, BFO and attenuation.

The unlabelled button beside the LOCAL key is dedicated from the factory to a fast recall of user programmable channel nr. 01, but could as well be defined by the user.

#### 3.10.1 Using the user programmable channels.

To store a complete receiver setting

- Press sto
- Enter the number of the applicable channel (00 through 75)

#### 3.10.2 To recall a user programmable channel.

- Press rc1
- Press 1 to select the UPC
- Enter the applicable channel number (00 through 75)

3.10.3 The channel 00 always contains the present receiver setting except any free tuned frequency offset.

After a free tuning sequence, simply press rc1 1 0 0 to restore the original frequency setting.

If after a re-adjustment the operator wants to update the receiver setting to reflect the current receiving frequency, he should press sto 0 0 .

### 3.20 Preprogrammed channels.

The receiver contains information on all CCIR recommended frequencies as 433 preprogrammed channels (PPC) for

- Voice duplex communication in the coaststation bands 4, 6, 8, 12, 16 and 22 MHz.
- Telex communication in the coaststation bands 4, 6, 8, 12, 16 and 22 MHz.

When preprogrammed channels are selected, the receiver will automatically generate all settings for that particular channel.

The preprogrammed channels are stored in non-volatile memory and it is not possible to change these channels unless done by the factory.

### 3.21 Using the preprogrammed channels.

To recall a preprogrammed channel

- Press **[rc1]**
- Press **[2]** to select the PPC
- Press **[SSB]** or **[RTTY]** once or twice to select the reception mode (see 3.7.3 and 3.9.6)
- Enter the desired frequency band (4, 6, 8, 12, 16 or 22)
- Enter the desired channel number

Illegal band and channel selection is ignored by the receiver.

### 3.22 International calling channels.

To select an international channel press the **[.]** decimal point instead of the channel number.

### 3.30 The SCAN function.

The receiver is equipped with a manual and an automatic scanning function that allows scanning in the following modes:

Mode 1: Scanning of user programmable channels

Mode 2: Scanning of preprogrammed channels

Mode 3: Scanning of user program(s)

Mode 4: Scanning of frequency bands

To initiate the SCAN function

- Press **[scan]** to select the scan mode
- Press the applicable mode number (1,2,3 or 4)

A discussion of each scan mode is contained in section 3.32 - 3.35.

Once a scanning is initiated, the receiver will continue to scan from the lowest part towards the highest part.

The dwell time between each change is defaulty set to 1 sec.

To select another dwell time

- Press any of the number keys 1 through 9 to select the dwell time in seconds
- Press **[0]** to select 100 msec dwell time

The dwell time setting is further discussed on page 3-24.

An external input signal connected to plug A8J1 on the microcomputer sub-assembly A8 can be used to interrupt the scanning sequence. (See page 2-5).

### 3.31 Manual scanning.

When scanning is initiated, the manual scanning can be selected.

- Press **[scan]**  
The manual scan mode is indicated by a flashing scan label. Manual scanning is carried out by rotating the tuning knob.

To leave the manual SCAN mode

- Press **[scan]** to reenter the automatic scan or
- Press **[C]** to leave scanning mode

#### NOTE!

Only **[scan]**, **[C]** and **[ ]** may be activated during scanning.

All other keys are blocked.

### 3.32 Scanning user programmable channels.

Mode 1:

To initiate the SCAN function

- Press **[scan]**
- Press **[1]** to select (UPC)
- Enter the lowest applicable channel
- Enter the highest applicable channel

Then the receiver will begin scanning from the lowest towards the highest channel ignoring the undefined channels in between.

### 3.33 Scanning preprogrammed channels

Mode 2:

To initiate the SCAN function

- Press **[scan]**
- Press **[2]** to select (PPC)
- Select a reception mode by pressing **[SSB]** or **[RTTY]** once or twice
- Enter the applicable coast station frequency band (4,6,8,12,16 or 22)
- Enter the lowest applicable channel number
- Enter the highest applicable channel number

Then the receiver will start scanning.

Illegal channel and band entries will be ignored.

If all channels in a band are to be scanned, just press the **[.]** decimal key instead of entering the low channel.

### 3.34 Program scanning

Mode 3:

In this scanning mode it is possible for the operator to scan a user program. To do this a scan program has to be made first. See section 3.43.

A scanning program is a sequence of up to 6 different user defined receiver modes. (A receiver mode is either a scanning or a recall).

When scanning a program the receiver is set to the first receiver mode in the program. After the global dwell time is expired the receiver is set to the next receiver mode and so on until the last mode is reached. Then the process will start all over.

To select the program scanning

- Press the scan key to select the SCAN function
- Press 3 to select the program scanning
- Enter an applicable program number (01-30)

If the addressed scan program is undefined an error message will appear as:

not. dEF.

and a new has to be entered.

The global dwell time is defaulty set to 1 sec.

When manual scan mode is selected the foreward scan will run through all channels in a local scan.

But a backward scan will only show the start channel and then the former receiver mode in the program.

### 3.35 Frequency scanning.

#### Mode 4:

In this scanning mode the receiver is able to scan between two desired frequencies in the range from 15 kHz to 29999.99 kHz in steps from 10 Hz up to 999.99 kHz in all reception modes.

To select the SCAN function

- Enter mode, bandwidth and AGC
- Press the scan key
- Press 4 to select the frequency scan

Start frequency entry.

- Enter the desired start frequency in kHz, press the decimal point once to enter fractions of a kHz or press it twice to complete the start frequency entry.

Step frequency entry.

The max. step size is 999.99 kHz.

- Enter the desired step frequency in kHz, if less than 1 kHz press the decimal point once and enter 100 and 10 Hz fractions, else press it twice to complete the step frequency entry.

Stop Frequency entry.

- Enter the desired stop frequency in kHz, press the decimal point once to enter kHz fractions or

press it twice to complete the stop frequency entry.

If the stop frequency is too small or the step size too big an error message will appear as:

ILLEGAL

and a new stop frequency has to be entered.

After the stop frequency is accepted the receiver will start to scan from the start towards the stop frequency. When the actual scanning frequency reaches the nearest frequency below the stop frequency, it starts all over. If manual scanning is selected it is not possible to scan below the start frequency.



### 3.40 Introduction to the program function

---

Selecting the program function.

The program function is selected by pressing the **PROGR** key. The display and the indicators will turn off, a PRG display and a flashing cursor will welcome you, indicating that the receiver is waiting at your command. The radio will continue receiving at the chosen setup. \*).

Once in the program function it is left by pressing the **PROGR** key again and the last receiver setup will appear again on the front panel display.

Selecting the program mode.

The program function contains the following 5 modes:

- Mode 1: 24 hours' clock
- Mode 2: alarm programming
- Mode 3: scan programming
- Mode 4: alarm viewing
- Mode 5: alarm clearing
- Mode 6: antenna selection (optional)

To select a mode, just press the associated mode number. A detailed discussion of the program modes is contained in later sections.

\* a setup is a complete receiver setting including frequency and BFO

When a new alarm or scanning program is created, the cursor will be empty, i.e. a flashing underscore.

When an existing alarm or scanning program is accessed, the cursor will be full, i.e. either a digit or a letter will flash.

Throughout the program function, a flashing cursor indicates that the receiver is waiting for a key entry.

) 3.41 Clock viewing and setting

Mode 1:

When mode 1 is selected, the time will appear at the display as a 4 digit number with a bar flashing in the middle to indicate the seconds. The displayed time will be updated every minute.

) Setting the clock.

- If corrections have to be made, it is done by pressing the decimal point. The cursor will now appear at the 10 hours and the changes in the hours' count can be done. If the hours counted are correct, pressing the decimal point again will advance the cursor and the minutes are ready for changing.

When the correction has been accepted and stored in the memory, a small red dot will light in the right corner.

) If another mode is wanted press the decimal point, the cursor will appear and a new mode can be entered.

To return to normal receiver mode, press the PROGR key and the last receiver setup will appear at the front panel display.

### 3.42 Clock alarm programming

#### Mode 2:

When program mode 2 is selected, the following mode message will appear at the display:

AL.no. — —

An empty cursor will flash at the first underscore.

To select a specific alarm, enter a two digit alarm number between 00 and 23. If the selected alarm is already created, the alarm time will appear as under the clock mode. The alarm can then either be left or revised/changed or deleted.

If the alarm is unused, the display will show:

— — - — —

with the cursor at the first underscore.

A new alarm is created by entering the alarm time and the receiver mode.

A clock alarm consists of 2 parts:

- a) the alarm time
- b) a receiver mode (action)

each part is covered below.

#### a. The alarm time.

The alarm can be chosen to be either a day alarm, coming once a day, or an hour alarm, coming once an hour.

A day alarm is made by entering both the hour and minute number.

An hour alarm is made by entering a decimal point instead of the hours and entering the minute number as normal.

The clear key deletes the last entry and illegal keys are ignored.

#### b. The receiver mode (action).

The receiver mode has to be selected among the following menu:

1. Recall of a user programmable channel.
2. Recall of a coast station channel.
3. Scanning of user programmable channels.
4. Scanning of coast station channels.
5. Scanning of user scan program.
6. Silence (receiver muted).

When selecting 1 through 5 the entry syntax is as under normal use of the RX4000, see sections 3.12, 3.21, 3.32, 3.33, 3.34.

#### Silence.

If the operator wants the receiver muted at a specified time,

)  
- a mute mode is selected by entering any digit and the display will show:

SILENCE

By pressing a digit key again the muting is accepted or pressing the clear key the muting is deleted and another mode can be entered.

### 3.43 Creating/revising scanning programs

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#### ) Mode 3:

- This mode is used for creating, revising/changing or deleting scanning programs. Each scanning program can contain up to 6 different receiver modes and 30 programs can be made.

Selecting a scanning program.

When program mode 3 is selected, the display will show:

Pr. no. --

To select a specific program, a program number between 01 and 30 has to be entered.

Depending on whether the chosen program is already created or not, the display will show a receiver mode or an empty cursor.

#### a. Creating a scanning program.

In case of an empty cursor appearing on the display a new scanning program can be created.

This is done by selecting a receiver mode. See 3.12, 3.21, 3.32, 3.33, 3.34. When the first receiver mode is entered the display will be cleared and new receiver modes can be entered in the same manner.

The program is stored in memory when the program mode is left.

After 6 modes have been entered the display will show:

no SPACE

Leaving the program mode is done by pressing **PROGR** or a new program can be accessed by pressing the decimal point.

#### b. Revising/changing scanning programs.

After a program has been created it is possible to revise and/or change it. It is done by accessing it with its program number and then revise it by means of the decimal point.

Changing a complete receiver mode is done by clearing it and after revising the rest of the program entering a new receiver mode.

Changing a receiver mode parameters i.e. band no. or channel no. is done by entering the new values when revising.

### 3.44 Alarm viewing

Mode 4:

When this mode is selected, all active alarms will be shown in turn on the display.

Each active alarm will be shown with the alarm number first and then the alarm time.

When all active alarms have been shown, program 2 mode will welcome you, if any changes or deletion have to be made.

### 3.45 Alarm clearing

Mode 5:

With this mode all alarms can be cleared at a time. The display will show:

clr. Alr.

for a moment and then:

PrESS.C.

If the clear key is pressed, the command will be executed. If any other key is pressed or after 2.5 sec., the program function will be left and the receiver will return to receiver mode.

### 3.46 Antenna Selection (option).

Mode 6:

To use this function refer to page 3-25.

### 3.50 Clear all

WARNING: This routine erases all data stored in the programmable memory.

To clear all user programmable channels, scanning programs and clock alarms

- press **sto** and AGC **off** at the same time.
- the display will show [Lr ALL.

If the **sto** key is pressed within 2.5 sec. the command will be executed.

If no key is pressed within 2.5 sec. or if any other key but 'sto' is pressed, the program function will be left and the receiver will return to receive mode.

## 110 BAUD SERIAL CONTROL VIA A8J1

3.60

The protocol for the serial control  
is as follows:

Input terminals: A8J1 - pin 1

is RS232 input

A8J1 - pin 2

is SIGNAL GND.

Data format: 110 baud asynchronous  
ASCII 7 bit  
1, 1.5 or 2 stop bits,  
odd parity.

Syntax: To each of the front panel keys  
corresponds an ASCII Character.

The characters must be sent to the  
receiver in the same sequence as the  
corresponding front panel keys would  
be used. An exception is that the  
TEST-program, when activated remotely,  
finishes without "Clear" commands.

The tuning wheel corresponds to the  
letters "u"=up and "d"=down.

Upon receiving data of the correct  
format, the receiver lights up the  
"remote" label on the front panel  
and ignores key operation. Two seconds  
after the last character has been re-  
received, the "remote" label is switched  
off and the keyboard is enabled again.

Refer to the manual section 3 for  
detailed operation instructions.

Conversion table:

FRONT PANEL KEY = ASCII LETTER

SSB = S

AM = A

RTTY = R

CW = W

wide = w

inter = i

narr = n

vnar = v

off = o

slow = l

fast = f

att = a

scan = c

bfo = b

tune = t

9 = 9

8 = 8

7 = 7

6 = 6

5 = 5

4 = 4

3 = 3

2 = 2

1 = 1

0 = 0

comma = comma

clear = C

rc1            = r  
sto            = s  
local          = p  
"fast rc1" = D  
clear all      = /  
tune up        = u  
tune down      = d  
program        = p

NOTE:

Always start a complete setup with "CC". When selecting LSB or USB, always be sure to start out in a mode different from SSB.

Example 1: Set up the receiver  
          at 4321.98 kHz in  
          mode SSB/LSB:  
          "ACCSS4321.98".

Example 2: Set up the receiver  
          at 1062.00 kHz in  
          mode AM: "CCA1062".

Example 3: Store the above setup  
          in user channel No. 27: "s.27".

Example 4: Set up the receiver  
          at 26345.70 kHz in mode  
          RTTY: "CCR26345.70".

Example 5: Scan user channels No.13  
          through 54 with a dwell time  
          of 2 seconds per channel: "c.13542".

Example 6: Stop scanning at the  
          present channel: "C"  
          (the next Clear will clear  
          the receiving frequency to 0.)



### 3.70 Examples of operation

Some examples are now given to assist the operator and to demonstrate the receiver capabilities.

#### a) MEMORY CHANNELS available:

Mode 1: 75 user programmable channels, UPC, are available. These are programmed by the operator when and as required. The settings will remain even if power is removed. See page 3-6.

Mode 2: 433 preprogrammed channels, PPC. All international coast station frequencies for SSB and telex communication are factory programmed. See page 3-7.

#### b) SCAN MODES available:

Mode 1: UPC Scan

Mode 2: PPC Scan

Mode 3: User - program Scan

Mode 4: Frequency Scan

After pressing **SCAN**, one of the above numbers, 1-4, must be entered to inform the receiver which mode has to be scanned. Manual scanning can be carried out after the automatic scanning has started by pressing **SCAN** again.

Automatic scanning can be stopped by pressing **C** .  
See pages 3-8, 3-9, 3-10, 3-11.

#### c) PROGRAM Functions:

Mode 1: The 24 hours clock must be set exactly to enable Mode 2 function to operate correctly. If power has been switched off the clock must be reset.  
see page 3-13.

Mode 2: Up to 24 alarms can be programmed, either hourly or daily. These alarms can be programmed for either recall or scan or mute, or all three.  
See page 3-14.

Mode 3: Up to 30 separate programs can be created, each program can contain up to 6 different receiver modes. With this mode it is possible to scan, as an example, in one program all 257 RTTY channels. See page 3-15.

Mode 4: This mode is used to review and check the alarm numbers with the relevant alarm time.  
See page 3-16.

Mode 5: Used only to cancel all alarms at one time. See page 3-16.

Mode 6: (Optional) Up to 255 antennas can be selected from the receiver front panel by entering the antenna number.  
See page 3-25.

### Example 1: Storing a user programmable Channel, UPC

---

The example given is to program channel 21 with the following telex receiver setting of 12509.50 kHz with intermediate bandwidth, AGC slow and 10 dB attenuation

- Press **RTTY**
- Key frequency 12509.50 kHz
- Press **INTER**
- Press AGC **SLOW**
- Press **ATT**
- Press **STO**
- Key 21

### Example 2: Programming a user created Scanning Program

---

The following example is to create a scanning program no. 05:

- a) to scan user programmable channels 10-31
  - f) to scan international channels nos. 21-31 in the 8 MHz band
- Press **PROGR**
  - Press 3
  - Enter 05
- a) - Press **SCAN**
  - Press 2
  - Press **SSB**
  - Enter 16 .
  - Enter 6 (dwell time)
- a) to scan all international SSB channels in the 16 MHz band
  - b) to scan all international SSB channels in the 12 MHz band
  - c) to recall user programmable channel 21
  - d) to recall the international calling channel in the 16 MHz band

- b) - Press **SCAN**
- Press 2
- Press **SSB**
- Enter 12 .
- Enter 5 (dwell time)

- c) - Press **RCL**
- Press 1
- Enter 21

- d) - Press **RCL**
- Press 2
- Press **SSB**
- Enter 16 .

- e) - Press **SCAN**
- Press 1
- Enter 10 31
- Enter 8 (dwell time)

- f) - Press **SCAN**
- Press 2
- Press **SSB**
- Enter 08 21 31
- Enter 7 (dwell time)
- Press **PROGR**

If a mistake is made during programming, it can be corrected using the decimal point and then inserting the correct figure, or alternatively, pressing **C** and then insert the correct complete entry.

### Example 3: Recall UPC channel

Recall user programmable channel.

- Press **RCL**
- Press 1
- Enter 21

The following will be displayed:

12509.5 kHz, RTTY, INTER, AGC SLOW and 10 dB ATT, i.e. the receiver setting programmed in the programming UPC example described previously.

### Example 4: Recall PPC channel

Recall - Preprogrammed channels

- Press **RCL**
- Press 2
- Press **SSB**
- Enter 0806

The following frequency will be displayed:

8210.5 kHz (see page 3-7)

- Press **RCL**
- Press 2
- Press **SSB**
- Enter 08

The following frequency will be displayed:

8257.00 kHz (see page 3-7)  
(international calling channel)

### Example 5: Scanning UPC channels

#### Scan - Mode 1

- Press **SCAN**
- Press 1
- Enter 01 (lowest channel)
- Enter 09 (highest channel)
- Enter 5

The receiver will now scan, from user program channel 01 to channel 09 with a dwell time of 5 secs. each channel (assuming that these channels are programmed).

### Example 6: Scanning PPC channels

#### Scan - Mode 2

- Press **SCAN**
- Press 2
- Press **SSB**
- Enter 12

The receiver will now scan from 12330,00 kHz to 12426.10 kHz, with a dwell time of 9 secs. (all international ship channels).

### Example 7: Scanning PPC channels

#### Scan - Mode 2

This example illustrates the use of the AGC threshold control.

- Press AGC **SLOW** . If AGC was off then press again so that AGC indicator blinks.

- Press **SCAN**

- Press 2

- Press **SSB**

- Enter 12

The receiver will now scan, but dwell only 100 ms on unoccupied channels. Will dwell 9 secs. on occupied channels, adjust RF-GAIN to regulate AGC threshold. The frequency displayed will be from 12330.00 kHz to 12426.10 kHz.

### Example 8: Program scanning

#### Scan - Mode 3

- Press **SCAN**
- Press 3
- Enter 05 (program number)

Receiver will now scan the user program 05 if the program has been created as par. 3.43 (example has been given previously).

### Example 9: Frequency scanning

#### Scan - Mode 4

- Press **SCAN**
- Press 4
- Enter 13100.80 kHz
- Enter 3.10 kHz
- Enter 13196.90 kHz
- Enter 3

Receiver will now scan from 13800.80 kHz to 13196.90 kHz in 3.10 kHz steps, i.e. all international coast station frequencies in the 12 MHz band, with a dwell time of 3 secs.

### Example 10: Programming timer

Progr - Mode 3

- Press **PROGR**
- Press 2
- Enter 19 (alarm no.)
- Enter . (hours)
- Enter 10 (minutes)
- Press **SCAN**
- Press 3
- Enter 05 6

Note the last figure (6),  
dwell time only applies for  
channel **RCL**

The receiver will now receive at ten  
minutes past every hour the program  
no. 05 (the same as at scan Mode 3  
above).

### Dwell Time (option 4.0C)

This option allows dwell time setting in the range 0.1 sec. to 99 sec. in steps of 0.5 sec.

(Settings over .5 will be rounded down to .5 sec. and below .5 will be rounded down to .0 sec., the only exception is setting i.e. a dwell time of 0.4 sec., which will be rounded down to 0.1 sec.)

Setting dwell time simply press the time needed by max. 3 digits.

Example 1, dwell time 78 sec.

Press    The display will show   
for approx. 2 seconds.

Example 2, dwell time 14.5 sec.

Press    The display will show   
for approx. 2 seconds.

Example 3, dwell time 3 sec.

Press   The display will show   
for approx. 2 seconds.

Example 4, dwell time 0.5 sec.

Press    The display will show   
for approx. 2 seconds.

NOTE: The display of the remote control RC4000 will show   
constantly during scanning.

If more than 2 seconds elapse between pressing the numerical keys the entry will be cancelled and the scanning will continue with the previous dwell time.

### Antenna selection (option 4.0C)

This option allows control of up to 255 antennas from the keyboard of RX4000 and RC4000.

To select an antenna simply press **PRO** **6** and then the antenna number by max. 3 digits.

After having pressed **PRO** **6** the display will in approx. 2 seconds show **Ant xxx** as being the number of the antenna in use.

Example 1, selection of antenna 16

Press **PRO** **6** **1** **6** **.** The display will show **Ant 016** for approx. 2 seconds.

Example 2, selection of antenna 243

Press **PRO** **6** **2** **4** **3** The display will show **Ant 243** for approx. 2 seconds.

Example 3, selection of antenna 7

Press **PRO** **6** **7** **.** The display will show **Ant 007** for approx. 2 seconds.

If more than 2 seconds elapse during the keying the entry will be cancelled and the previous antenna will remain selected.

The antenna control output is presented in binary code at socket A9/J7 rear of RX4000. The antenna number equals a binary number -1.  
For further reference see the table on the next page.

A9/J6 Pin	8	7	6	5	10	11	12	13	15
Antenna no.	07	06	05	04	03	02	01	00	Ground
1	1	1	1	1	1	1	1	1	
2	1	1	1	1	1	1	1	0	
3	1	1	1	1	1	1	0	1	
4	1	1	1	1	1	1	0	0	
5	1	1	1	1	1	0	1	1	
6	1	1	1	1	1	0	1	0	
7	1	1	1	1	1	0	0	1	
8	1	1	1	1	1	0	0	0	
9	1	1	1	1	0	1	1	1	
10	1	1	1	1	0	1	1	0	
11	1	1	1	1	0	1	0	1	
12	1	1	1	1	0	1	0	0	
13	1	1	1	1	0	0	1	1	
14	1	1	1	1	0	0	1	0	
15	1	1	1	1	0	0	0	1	
16	1	1	1	1	0	0	0	0	
255	0	0	0	0	0	0	0	1	



## SECTION 5

### REMOTE CONTROL

#### 5.1 Introduction

This section provides information on Remote Control of the receiver by means of optionally A9 module, Assy 471666.

## 5.20 RC/RX Configurations

The configurations of controlling RX4000 receiver(s) from the RC4000 Remote Control Unit can be done in several ways. Page 5-15 through 5-21 show how to strap the modem board A9 for different applications.

### A Internal modem

Fig. 5.1 - 5.2 - 5.3 show applications where the internal modem is used. The AF signal from each RX4000 receiver is transferred through a separate pair of 600 ohm leased telephone lines.

The data transmission can either be simplex (2 wire) or half duplex (4 wire) on leased 600 ohm telephone lines.

A maximum of 8 RX4000 receivers can be controlled from one RC4000, when using the internal modem. Each receiver must have a unique address in the range from 01 to 31. When controlling only one receiver with RC4000 (point to point operation), the receiver must be strapped to address 00.

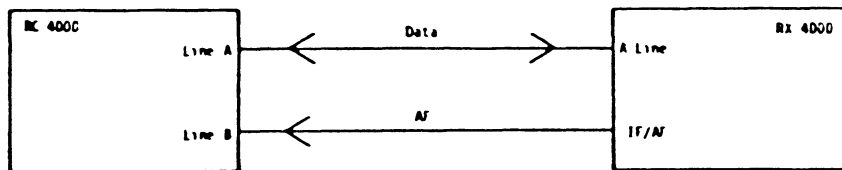


Fig. 5.1 4-wire operation with separate Data/AF.

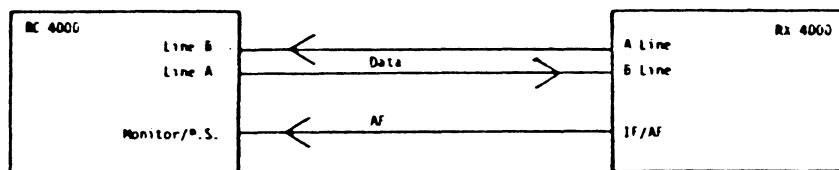


Fig. 5.2 6-wire operation with separate Data/AF

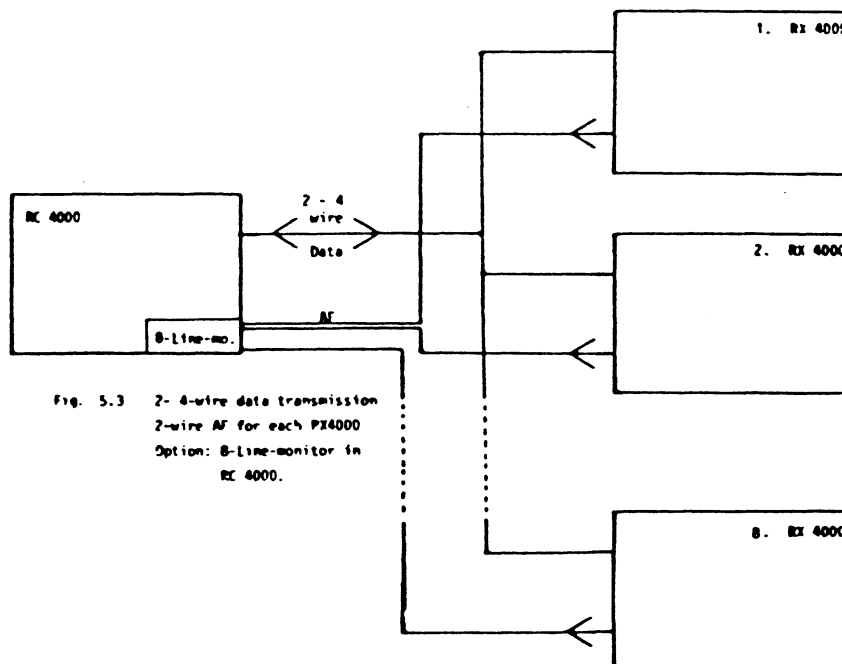


Fig. 5.3 2-4 wire data transmission  
2-wire AF for each RX4000  
Option: 8-Line-monitor in  
RC 4000.

## B External modem

Fig. 5.4 - 5.5 show applications where an external modem is used. This can be of interest if the internal modem is not sufficient, or where the telecommunication authorities do not allow private modems.

An external 1200/600 bps modem is connected to the V24 interface on A9. The baudrate on A9 must be strapped in accordance with the baudrate of the modem.

The audio signal is transferred on separate 600 ohm leased telephone lines, from A7J4 on RX4000 to either the A10J7 or the optional 8-line monitor on RC4000.

A maximum of 31 RX4000 can be controlled from one RC4000, when using external modem. In case of controlling more than one receiver, each receiver must have a unique address in the interval 01 to 31. A special multidrop device must be added between the modem and the receiver, to allow the receivers to be connected to the same modem.

When controlling only one receiver from RC4000 (point to point operation), the receiver must be strapped to address 00.

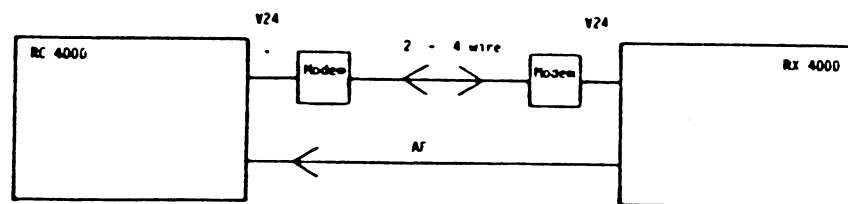


Fig. 5.4 2- 4-wire data operation with external modem.

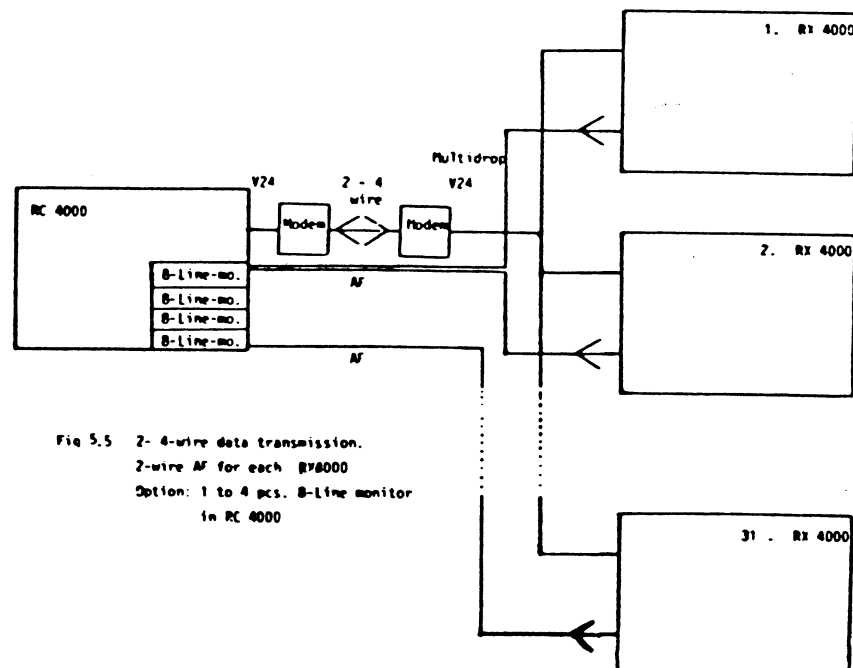


Fig 5.5 2- 4-wire data transmission.  
2-wire AF for each RX4000  
Option: 1 to 4 pcs. B-Line monitor  
in RC 4000

## 5.30

### A9 Modem/modem interface board

#### Technical Specifications

- Internal Modem : V23 CCITT compatible modem.  
Input output impedance 600 ohm balanced.  
Strappable level to -10, -20 or -30 dB.  
Baudrate 1200/600 bps.  
Operates on either 2 wire or 4 wire leased telephone lines.
- Modem Interface : V24 modem interface for interfacing an external modem. 1200/600 bps.
- Aux-port : 8/4 bit input/output aux port for external equipment, open collector output max. 15V/100mA.

#### 5.40 A9 Modem input/output sockets

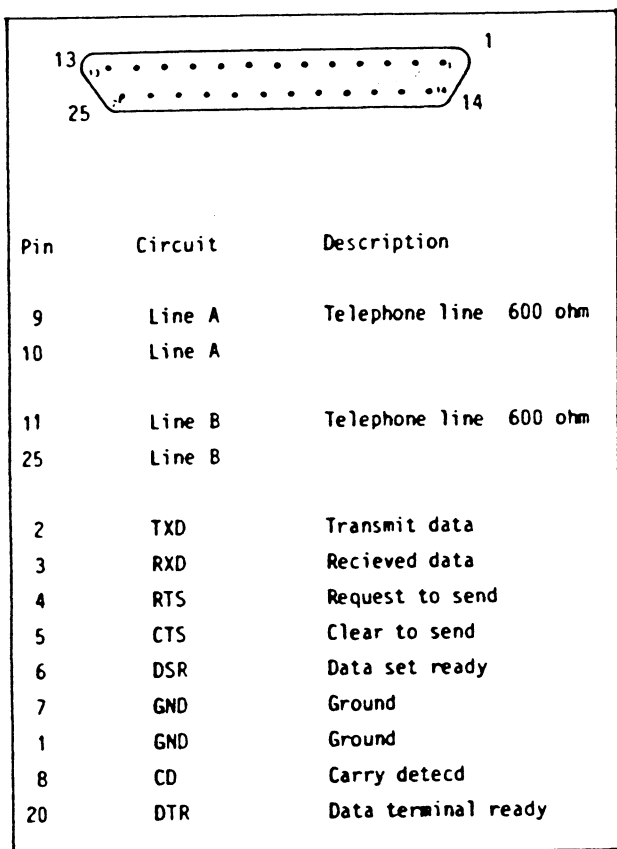
The modem board is equipped with two input/output sockets.

##### Modem input/output socket A9J7

The 25-pole J7 socket contains the V24 modem interface and the two 600 ohm balanced lines. See fig. 5.6.

#### 5.41 AUX input/output socket A9J7

The 15-pole J6 socket contains the AUX input/output port and depending on whether it is a RC4000 or a RX4000, the configuration is as shown in fig. 5.7 - 5.8.



##### Data input output A9J7

Fig. 5.6

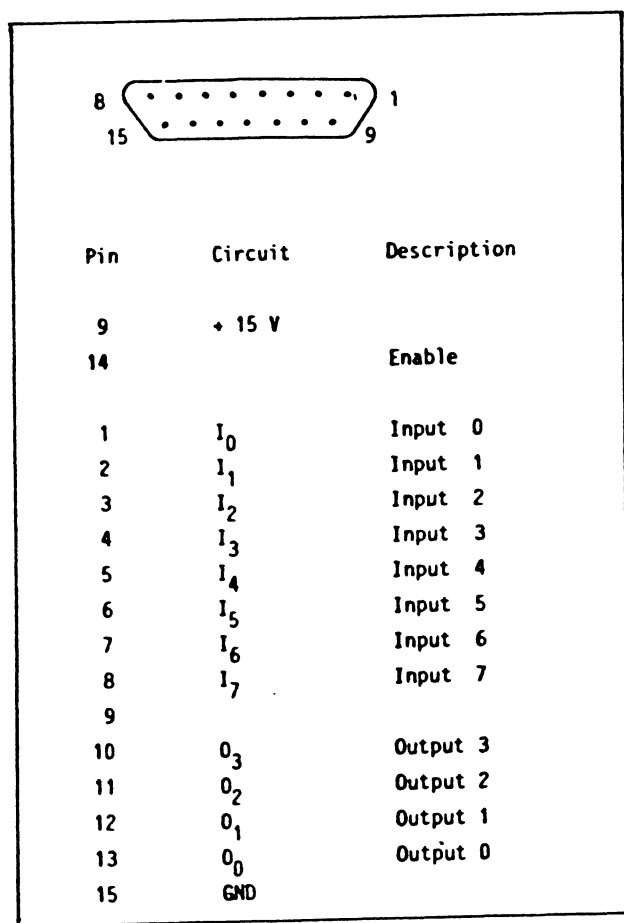
The AUX port can be used to control an antenna switch or to turn on/off external devices like TTY's or lights etc.

The AUX port is able to transfer an 8 bit data word from RC4000 to the addressed RX4000, as well as to transfer a 4 bit data word in the opposite direction.

The data transfer takes place only when the inputs are enabled by 0V or on pin 14.

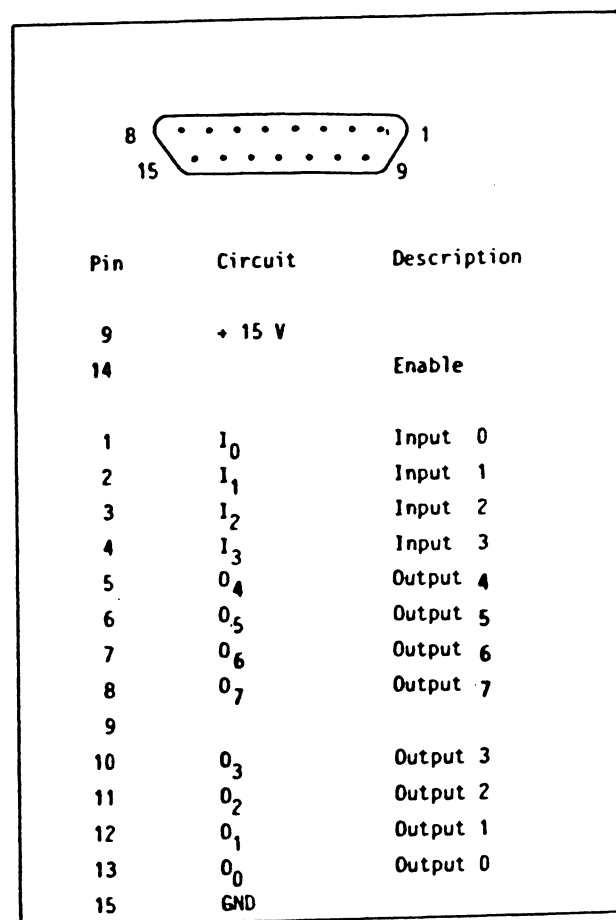
The input is RS232 compatible and the output is open collector max. 15V/100mA.

The socket connections are as follows:



AUX input output A9J6  
RC4000 site

Fig. 5.7



AUX input output A9J6  
RX4000 site

Fig. 5.8



## 5.50

### Modem Strapping

Table 5.1 Sensitivity selection of the modem

The sensitivity of the modem is about -36 dBm, but for proper operation the received FSK signal must be between -30 dBm and 0 dBm.

S7a on will reduce the received signal on line A about 30 dB.

S7b on will reduce the received signal on line A about 20 dB.

S7c on will reduce the received signal on line A about 10 dB.

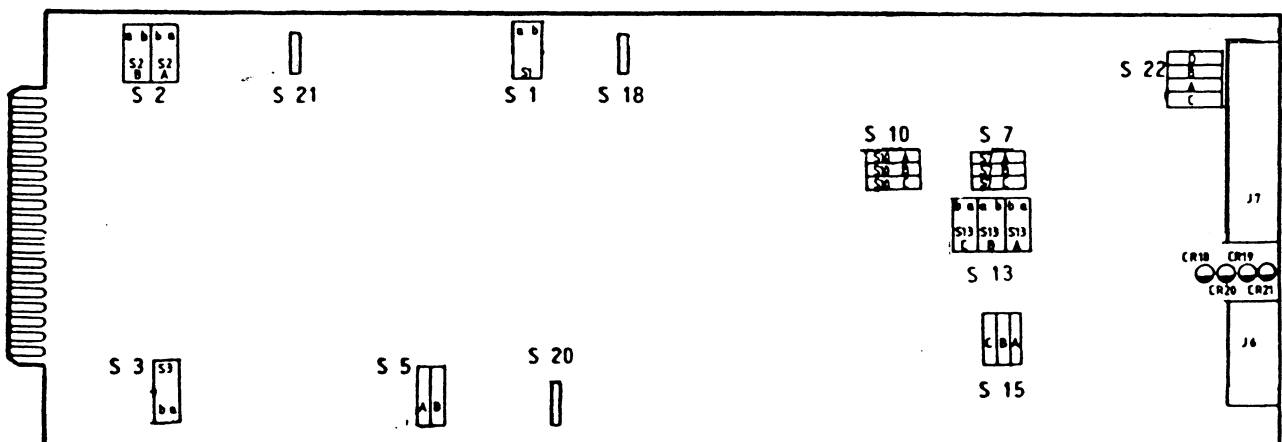
S10a on will reduce the received signal on line B about 30 dB.

S10b on will reduce the received signal on line B about 20 dB.

S10c on will reduce the received signal on line B about 10 dB.

Table 5.2 Baud rate selection, analogue

	600 baud	1200 baud
S1	a	b
S18	on	off



Switch on analogue modem

Fig. 5.10



**Table 5.4 Transmission selection, RX 4000 site**

	S2b	S21	S20	S13c	S13b
All modes	off	off	x	x	a

With internal modem:

Operation	S2a	S3	S13a	S15a S15b S15c	fig.
4 wire with separate Data/AF	off	a	a	off	5.1
Line A Data RX/TX					5.3
Audio from IF/AF					
6 wire with separate Data/AF	off	b	b	on	5.2
Line A Data TX					5.3
Line B Data RX					
Audio from IF/AF					

With external modem:

Operation	S2a	S3	S13a	S15a S15b S15c	fig.
2 or 4 wire Data trans- mission	b	a	a	off	5.4
2 wire AF					
Line A Audio TX					
2 or 4 wire Data trans- mission	off	x	x	x	5.5
Audio from IF/AF					

(S15a, S15b, S15c off is always allowed, but on causes a faster mute response).

Strapping of DIGITAL MODEM

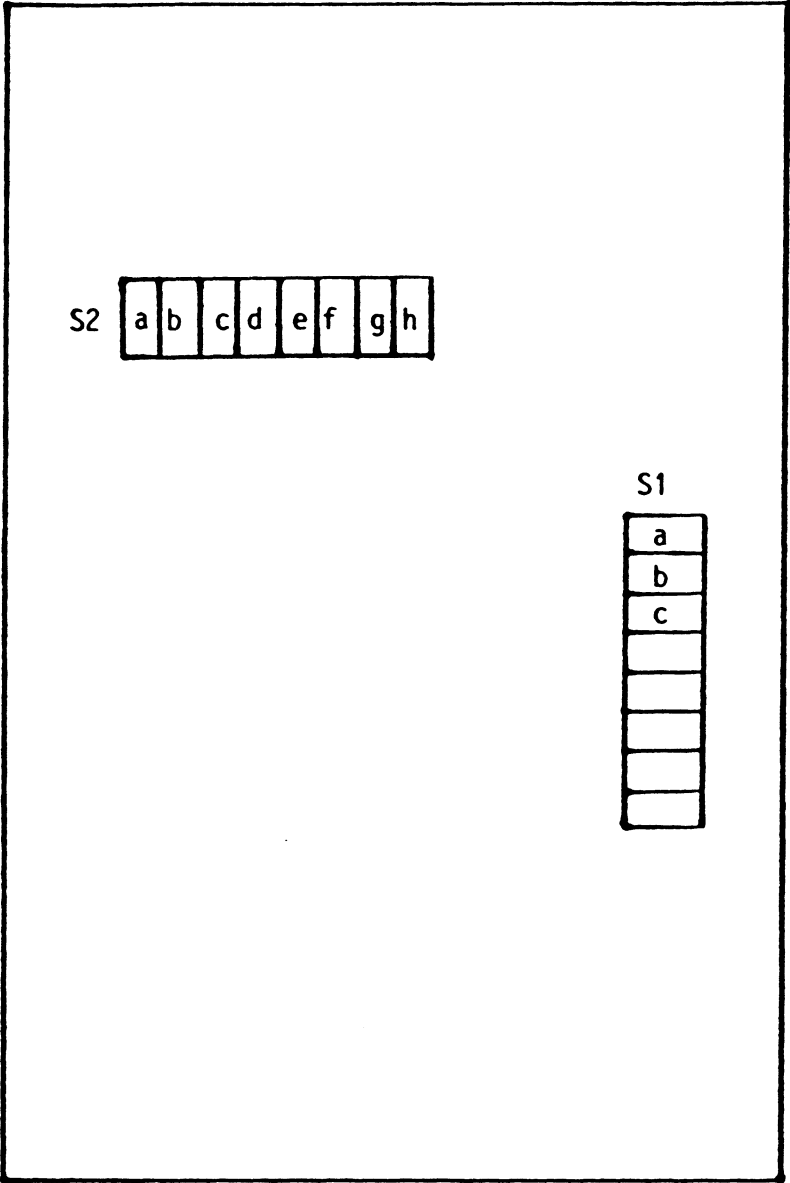


Fig. 5.11 Swich position

## RX 4000 Modem Strapping (digital part)

Table 5.8

<u>Baudrate control</u>		Switch S1
S1	600 baud	1200 baud
b	on	off
c	off	on

Note: a must always be off.

Table 5.9

<u>Communication control</u>		Switch S2
Remote unit address select		
S2	ON switch value	OFF switch value
a	1	0
b	2	0
c	4	0
d	8	0
e	16	0

The remote unit address is the sum of the switch values.

E.g.: If an RX 4000 shall have an address of 21.

Then switch e, c and a must be ON and  
switch b and d must be OFF

or another address e.g. 27.

Then switch e, d, b and a must be ON and  
switch c must be OFF.

Modem select:

Table 5.10

S2	Internal	External
g	on	off

Data - AF select

S2	Common	Separate
h	on	off

NOTE: Switch "h" must always be OFF.

## SECTION 6

### REPLACEABLE PARTS

#### 6.1 Introduction

This section contains information for ordering parts. Table 6.1 lists abbreviations used in the parts list, table 6.2 lists all replaceable parts in reference designator order, and table 6.3 contains names that correspond to the manufacturer's code numbers.

#### 6.2 Abbreviations

Table 6.1 lists abbreviations used in the parts list, the schematics, and throughout the manual.

#### 6.3 Replaceable Parts List

Table 6.2 lists replaceable parts and is organized as follows:

- a. Electrical assemblies in alpha-numerical order by reference designation.
- b. Chassis-mounted parts in alpha-numerical order by reference designation.
- c. Electrical assemblies and their components by alphanumerical order by reference designation.

The information given for each part consists of the following:

- a. Complete reference designation
- b. Dansk Radio stock number
- c. Description of part
- d. Typical manufacturer of part in identifying code
- e. Total quantity in first higher level

The total quantity in first higher level for each part is given only once - at the first appearance of the part number per lower level.

#### 6.4 Ordering Information

To order a part listed in the replaceable parts table, quote the DRA part number, indicate the quantity required and address the order to Dansk Radio.

To order a part that is not listed in the replaceable parts list, include the receiver model number, receiver serial number, the description and function of the part, and the number of parts required. Address the order to Dansk Radio.

Table 6.1 Reference Designations and Abbreviations

## REFERENCE DESIGNATIONS

A . . . . . assembly	E . . . . . miscellaneous electrical part	P . . . . . electrical connector (movable portion); plug	U . . . . . integrated circuit; microcircuit
AT . . . . . attenuator; isolator; termination	F . . . . . fuse	Q . . . . . transistor; SCR; triode thynistor	V . . . . . electron tube
B . . . . . fan; motor	FL . . . . . filter	R . . . . . resistor	VR . . . . . voltage regulator; breakdown diode
BT . . . . . battery	H . . . . . hardware	RT . . . . . thermistor	W . . . . . cable; transmission path; wire
C . . . . . capacitor	HY . . . . . circulator	S . . . . . switch	X . . . . . socket
CP . . . . . coupler	J . . . . . electrical connector (stationary portion); jack	T . . . . . transformer	Y . . . . . crystal unit (piezo-electric or quartz)
CR . . . . . diode; diode thynistor; varactor	K . . . . . relay	TB . . . . . terminal board	Z . . . . . tuned cavity; tuned circuit
DC . . . . . directional coupler	L . . . . . coil; inductor	TC . . . . . thermocouple	
DL . . . . . delay line	M . . . . . meter	TP . . . . . test point	
DS . . . . . annunciator; signaling device (audible or visual); lamp; LED	MP . . . . . miscellaneous mechanical part		

## ABBREVIATIONS

A . . . . . ampere	COMPL . . . . . complete	FET . . . . . field-effect transistor	LF . . . . . low frequency
ac . . . . . alternating current	CONN . . . . . connector	F/F . . . . . flip-flop	LG . . . . . long
ACCESS . . . . . accessory	CP . . . . . cadmium plate	FH . . . . . flat head	LH . . . . . left hand
ADJ . . . . . adjustment	CRT . . . . . cathode-ray tube	FIL H . . . . . fillister head	LIM . . . . . limit
A/D . . . . . analog-to-digital	CTL . . . . . complementary transistor logic	FM . . . . . frequency modulation	LIN . . . . . linear taper (used in parts list)
AF . . . . . audio frequency	CW . . . . . continuous wave	FP . . . . . front panel	lin . . . . . linear
AFC . . . . . automatic frequency control	cw . . . . . clockwise	FREQ . . . . . frequency	LK WASH . . . . . lock washer
AGC . . . . . automatic gain control	cm . . . . . centimeter	FXD . . . . . fixed	LO . . . . . low; local oscillator
AL . . . . . aluminum	D/A . . . . . digital-to-analog	g . . . . . gram	LOG . . . . . logarithmic taper (used in parts list)
ALC . . . . . automatic level control	dB . . . . . decibel	GE . . . . . germanium	log . . . . . logarithm(ic)
AM . . . . . amplitude modulation	dBm . . . . . decibel referred to 1 mW	GL . . . . . glass	LPF . . . . . low pass filter
AMPL . . . . . amplifier	dc . . . . . direct current	GRD . . . . . ground(ed)	LV . . . . . low voltage
APC . . . . . automatic phase control	deg . . . . . degree (temperature interval or difference)	H . . . . . henry	m . . . . . meter (distance)
ASSY . . . . . assembly	° . . . . . degree (plane angle)	h . . . . . hour	mA . . . . . milliampere
AUX . . . . . auxiliary	°C . . . . . degree Celsius (centigrade)	HET . . . . . heterodyne	MAX . . . . . maximum
avg . . . . . average	°F . . . . . degree Fahrenheit	HEX . . . . . hexagonal	MΩ . . . . . megohm
AWG . . . . . American wire gauge	°K . . . . . degree Kelvin	HD . . . . . head	MEG . . . . . meg (10 <sup>6</sup> ) (used in parts list)
BAL . . . . . balance	DEPC . . . . . deposited carbon	HDW . . . . . hardware	MET FLM . . . . . metal film
BCD . . . . . binary coded decimal	DET . . . . . detector	HF . . . . . high frequency	MET OX . . . . . metallic oxide
BD . . . . . board	diam . . . . . diameter	HG . . . . . mercury	MF . . . . . medium frequency; microfarad (used in parts list)
BE CU . . . . . beryllium copper	DIA . . . . . diameter (used in parts list)	HI . . . . . high	MFR . . . . . manufacturer
BFO . . . . . beat frequency oscillator	DIFF AMPL . . . . . differential amplifier	HPF . . . . . high pass filter	mg . . . . . milligram
BH . . . . . binder head	div . . . . . division	HR . . . . . hour (used in parts list)	MHz . . . . . megahertz
BKDN . . . . . breakdown	DPDT . . . . . double-pole, double-throw	HV . . . . . high voltage	mH . . . . . millihenry
BP . . . . . bandpass	DR . . . . . drive	Hz . . . . . Hertz	mho . . . . . mho
BPF . . . . . bandpass filter	DSB . . . . . double sideband	IC . . . . . integrated circuit	MIN . . . . . minimum
BRS . . . . . brass	DTL . . . . . diode transistor logic	ID . . . . . inside diameter	min . . . . . minute (time)
BWO . . . . . backward-wave oscillator	DVM . . . . . digital voltmeter	IF . . . . . intermediate frequency	... . . . . minute (plane angle)
CAL . . . . . calibrate	ECL . . . . . emitter coupled logic	IMPG . . . . . impregnated	MINAT . . . . . miniature
ccw . . . . . counter-clockwise	EMF . . . . . electromotive force	in . . . . . inch	mm . . . . . millimeter
CER . . . . . ceramic	EDP . . . . . electronic data processing	INCD . . . . . incandescent	MOD . . . . . modulator
CHAN . . . . . channel	ELECT . . . . . electrolytic	INCL . . . . . include(s)	MOM . . . . . momentary
cm . . . . . centimeter	ENCAP . . . . . encapsulated	INP . . . . . input	MOS . . . . . metal-oxide semiconductor
CMO . . . . . cabinet mount only	EXT . . . . . external	INS . . . . . insulation	ms . . . . . millisecond
COAX . . . . . coaxial	F . . . . . farad	INT . . . . . internal	MTG . . . . . mounting
COEF . . . . . coefficient		kg . . . . . kilogram	MTR . . . . . meter (indicating device)
COM . . . . . common		kHz . . . . . kilohertz	mV . . . . . millivolt
COMP . . . . . composition		kΩ . . . . . kilohm	mVac . . . . . millivolt, ac
		kV . . . . . kilovolt	mVdc . . . . . millivolt, dc
		lb . . . . . pound	mVpk . . . . . millivolt, peak
		LC . . . . . inductance-capacitance	
		LED . . . . . light-emitting diode	

Table 6.1 Reference Designations and Abbreviations (continued)

mVp-p . . . millivolt, peak-to-peak	P . . . . . peak (used in parts list)	REF . . . . . reference	TERM . . . . . terminal
mVrms . . . . millivolt, rms	PAM . . . . . pulse-amplitude modulation	REG . . . . . regulated	TFT . . . . . thin-film transistor
mW . . . . . milliwatt	PC . . . . . printed circuit	REPL . . . . . replaceable	TGL . . . . . toggle
MUX . . . . . multiplex	PCM . . . . . pulse-code modulation; pulse-count modulation	RF . . . . . radio frequency	THD . . . . . thread
MY . . . . . mylar	PDM . . . . . pulse-duration modulation	RFI . . . . . radio frequency interference	THRU . . . . . through
μA . . . . . microampere	pF . . . . . picofarad	RH . . . . . round head; right hand	TI . . . . . titanium
μF . . . . . microfarad	PH BRZ . . . . . phosphor bronze	RLC . . . . . resistance-inductance-capacitance	TOL . . . . . tolerance
μH . . . . . microhenry	PHL . . . . . Phillips	RMO . . . . . rack mount only	TRIM . . . . . trimmer
μmho . . . . . micromho	PIN . . . . . positive-intrinsic-negative	rms . . . . . root-mean-square	TSTR . . . . . transistor
μs . . . . . microsecond	PIV . . . . . peak inverse voltage	RND . . . . . round	TTL . . . . . transistor-transistor logic
μV . . . . . microvolt	pk . . . . . peak	ROM . . . . . read-only memory	TV . . . . . television
μVac . . . . . microvolt, ac	PL . . . . . phase lock	R&P . . . . . rack and panel	TVI . . . . . television interference
μVdc . . . . . microvolt, dc	PLO . . . . . phase lock oscillator	RWV . . . . . reverse working voltage	TWT . . . . . traveling wave tube
μVpk . . . . . microvolt, peak-to-peak	PM . . . . . phase modulation	S . . . . . scattering parameter	U . . . . . micro (10 <sup>-6</sup> ) (used in parts list)
μVrms . . . . . microvolt, rms	PNP . . . . . positive-negative-positive	S-B . . . . . slow-blow (fuse) (used in parts list)	UF . . . . . microfarad (used in parts list)
μW . . . . . microwatt	P/O . . . . . part of	SCR . . . . . silicon controlled rectifier; screw	UHF . . . . . ultrahigh frequency
nA . . . . . nanoampere	POLY . . . . . polystyrene	SE . . . . . selenium	UNREG . . . . . unregulated
NC . . . . . no connection	PORC . . . . . porcelain	SECT . . . . . sections	V . . . . . volt
N/C . . . . . normally closed	POS . . . . . positive; position(s) (used in parts list)	SEMICON . . . . . semiconductor	VA . . . . . voltampere
NE . . . . . neon	POSN . . . . . position	SHF . . . . . superhigh frequency	Vac . . . . . volts, ac
NEG . . . . . negative	POT . . . . . potentiometer	SI . . . . . silicon	VAR . . . . . variable
nF . . . . . nanofarad	p-p . . . . . peak-to-peak	SIL . . . . . silver	VCO . . . . . voltage-controlled oscillator
NI PL . . . . . nickel plate	PP . . . . . peak-to-peak (used in parts list)	SL . . . . . slide	Vdc . . . . . volts, dc
N/O . . . . . normally open	PPM . . . . . pulse-position modulation	SNR . . . . . signal-to-noise ratio	VDCW . . . . . volts, dc, working (used in parts list)
NOM . . . . . nominal	PREAMPL . . . . . preamplifier	SPDT . . . . . single-pole, double-throw	V(F) . . . . . volts, filtered
NORM . . . . . normal	PRF . . . . . pulse-repetition frequency	SPG . . . . . spring	VFO . . . . . variable-frequency oscillator
NPN . . . . . negative-positive-negative	PRR . . . . . pulse repetition rate	SR . . . . . split ring	VHF . . . . . very-high frequency
NPO . . . . . negative-positive zero (zero temperature coefficient)	ps . . . . . picosecond	SPST . . . . . single-pole, single-throw	Vpk . . . . . volts, peak
NRFR . . . . . not recommended for field replacement	PT . . . . . point	SSB . . . . . single sideband	Vp-p . . . . . volts, peak-to-peak
NSR . . . . . not separately replaceable	PTM . . . . . pulse-time modulation	SST . . . . . stainless steel	Vrms . . . . . volts, rms
ns . . . . . nanosecond	PWM . . . . . pulse-width modulation	STL . . . . . steel	VSWR . . . . . voltage standing wave ratio
nW . . . . . nanowatt	PWV . . . . . peak working voltage	SQ . . . . . square	VTO . . . . . voltage-tuned oscillator
OBD . . . . . order by description	RC . . . . . resistance-capacitance	SWR . . . . . standing-wave ratio	VTVM . . . . . vacuum-tube voltmeter
OD . . . . . outside diameter	RECT . . . . . rectifier	SYNC . . . . . synchronize	V(X) . . . . . volts, switched
OH . . . . . oval head		T . . . . . timed (slow-blow fuse)	W . . . . . watt
OP AMPL . . . . . operational amplifier		TA . . . . . tantalum	W/ . . . . . with
OPT . . . . . option		TC . . . . . temperature compensating	WIV . . . . . working inverse voltage
OSC . . . . . oscillator		TD . . . . . time delay	WW . . . . . wirewound
OX . . . . . oxide			W/O . . . . . without
oz . . . . . ounce			YIG . . . . . yttrium-iron-garnet
Ω . . . . . ohm			Z <sub>0</sub> . . . . . characteristic impedance

### MULTIPLIERS

Abbreviation	Prefix	Multiple
T	tera	10 <sup>12</sup>
G	giga	10 <sup>9</sup>
M	mega	10 <sup>6</sup>
k	kilo	10 <sup>3</sup>
da	deka	10
d	deci	10 <sup>-1</sup>
c	centi	10 <sup>-2</sup>
m	milli	10 <sup>-3</sup>
μ	micro	10 <sup>-6</sup>
n	nano	10 <sup>-9</sup>
p	pico	10 <sup>-12</sup>
f	femto	10 <sup>-15</sup>
a	atto	10 <sup>-18</sup>

Table 6.2 Replaceable Parts

<div> <div>Title</div> <div>RX4009</div> <div>Nr. 488240</div> </div> <div>PARTS LIST</div>				
REF. DES.	DRA PART NO.	NOMENCLATURE OR DESCRIPTION	MFR CODE	QTY
FIND NO.				
1		INTERCONNECTION DIAGRAM		REF
2		REAR PANEL VIEW		REF
3		BLOCK DIAGRAM		REF
4	489603	OPERATING AND SERVICE MANUAL		1
5	475238	OPERATORS GUIDE		1
	448648	MOTHERBOARD		
A1	448168	SYNTHESIZER	ASSY EMK	1
A2	488232	STANDARD OCXO	ASSY EMK	
A3	448206	FRONT-END	ASSY EMK	1
A4	466743	PRESELECTOR, SUBOCTAVE	ASSY EMK	
	466751	PRESELECTOR INCL. DUPLEX OPT.		
A7	448443	IF/AF	ASSY EMK	1
A8	487740	MICROCOMPUTER	ASSY EMK	1
A10	471720	POWER SUPPLY	ASSY EMK	1
A11	488259	FRONT PANEL	ASSY EMK	1
A12	457833	CHASSIS	ASSY EMK	1
A6	488275	RTTY DEMODULATOR OPT.	ASSY EMK	1
A9	471666	MODEM	ASSY EMK	1
	471909	RC4000 REMOTE CONTROL UNIT OPT.	EMK	1
H1	327301	SCREW M5 X 20 CHM		4
H2	327263	SCREW M4 X 20 CHM		4
H3	450561	SCREW, SELFTAPPING		40
H4	336777	WASHER M4		4
H5	321966	WASHER M5		4
MP1	445991	REAR PANEL DUMMY	EMK	2
W1	457868	CABLE ASSY, COAX	EMK	1
W2	457868	CABLE ASSY, COAX	EMK	1
W3	457868	CABLE ASSY, COAX	EMK	1
W4	457906	CABLE ASSY, COAX	EMK	1
W5	457906	CABLE ASSY, COAX	EMK	1
W6	378275	CABLE ASSY, COAX	EMK	1



PARENT ITEM NO.  
488240DESCRIPTION PANEL RX4009  
ENGR DRAW EMK T488240

RECEIVER

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
06	890278	SLUTMONTAG		.700	TI ?
04	895083			4.000	TI 9
03 A..1	448168	SYNTHESIZER A1	EMK T448168	1.000	ST 1
01 A..2	488232	STANDARD OCXO, 5MHZ A2	EMK T488232	1.000	ST 2
03 A..3	448206	FRONT END ASSY A3	EMK T448206	1.000	ST 1
02 A..4	466743	SUBOCTAV.STANDARD A4	EMK T466743	1.000	ST 1
03 A..7	448443	IF/AF ASSY A7	EMK T448443	1.000	ST 1
01 A..8	487740	MICROCOMPUTER ASSY A8 -RTC-	EMK T487740	1.000	ST 1
01 A..9	471666	MODEM ANALOG ASSY A9	EMK 1&2T471666	1.000	ST 1
02 A.10	471720	POWER SUPPLY ASSY A10	EMK 2T471720	1.000	ST 1
01 A.11	488259	FRONT PANEL RX4009 A11	EMK T488259	1.000	ST 2
03 A.12	457833	CHASSIS ASSY A12	EMK T457833	1.000	ST 1
01 FLA3	488313	FILTERS FOR A3 RX4009	EMK T488313	1.000	ST 2
05 H..1	327301	SCREW M 5 X20 CHM CU SN	DIN 84	4.000	ST 3
05 H..2	327255	SCREW M 4 X16 CHM CU SN	DIN 84	4.000	ST 3
04 H..3	450561	SCREW SELFTAP.4X1/2 PHPX-B	HFC206DIN7970BZ	40.000	ST 3
05 H..4	336777	WASHER,FLAT Ø 4MM CU SN M	DIN433	4.000	ST 3
06 H..5	321966	WASHER,FLAT Ø 5MM CU SN M	DIN433	4.000	ST 3
03 MP.1	445991	REAR PANEL-DUMMY M 3000	EMK 4T445991	2.000	ST 2
03 W..1	457868	COAX CABLE ASSY M 3000	EMK 4T457868	1.000	ST 3
03 W..2	457868	COAX CABLE ASSY M 3000	EMK 4T457868	1.000	ST 3
03 W..3	457868	COAX CABLE ASSY M 3000	EMK 4T457868	1.000	ST 3
03 W..4	457868	COAX CABLE ASSY M 3000	EMK 4T457868	1.000	ST 3
03 W..5	457906	COAX CABLE ASSY M 3000	EMK 4T457906	1.000	ST 3
04 W..6	378275	COAX CABLE ASSY W19 MR6000	EMK 4T 22200	1.000	ST 3

PARENT ITEM NO.  
448168DESCRIPTION SYNTHESIZER  
ENGR DRAW EMK T448168

A1

BATCH QTY 1

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
04 ...1	448141	PRINTED CIRC.BEARD	EMK 2T448141	1.000	ST 3
04 A..1	455490	VCO ASSY	EMK T455490	1.000	ST 1
05 C..1	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C..2	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
04 C..3	458457	CAPACITOR PLST 330P 160 J	B33063-B1331-J	1.000	ST 3
04 C..4	359645	CAPACITOR PLST 160P 630 F	2222 427 41601	1.000	ST 3
04 C..5	450839	CAPACITOR PLST 560P 160 J	B33063-B1561-J	1.000	ST 3
04 C..6	450812	CAPACITOR PLST 1N 160 J	B33063-B1102-J	1.000	ST 3
05 C..7	202991	CAPACITOR PLST 220N 100 K	2222 344 21224	1.000	ST 3
06 C..8	357553	CAPACITOR CER. 82P 100 C N150	2222 683 34829	1.000	ST 3
06 C..9	209554	CAPACITOR PLST 10N 250 K	2222 344 41103	1.000	ST 3
05 C..10	209562	CAPACITOR PLST 33N 250 K	2222 344 41333	1.000	ST 3
06 C..11	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
05 C..12	450359	CAPACITOR ELEC 1U 25 M	2222 122 56108	1.000	ST 3
05 C..13	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C..14	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..27	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C..28	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
05 C..29	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
06 C..30	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C..31	357480	CAPACITOR CER. 22P 100 G N150	2222 683 34229	1.000	ST 3
06 C..32	357472	CAPACITOR CER. 18P 100 G N150	2222 683 34189	1.000	ST 3
05 C..33	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..34	451053	CAPACITOR ELEC 68U 6,3 M	2222 122 53689	1.000	ST 3
06 C..35	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
05 C..36	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
06 C..37	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
05 C..38	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C..39	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
05 C..40	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C..41	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C..42	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C..43	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
05 C..44	357537	CAPACITOR CER. 56P 100 C N150	2222 683 34569	1.000	ST 3
05 C..45	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
06 C..46	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
06 C..47	357448	CAPACITOR CER. 10P 100 G N150	2222 683 34109	1.000	ST 3
05 C..48	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..49	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..50	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C..51	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..52	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..53	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..54	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C..55	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..56	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..57	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C..58	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..59	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..60	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..61	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..62	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..63	451053	CAPACITOR ELEC 68U 6,3 M	2222 122 53689	1.000	ST 3
05 C..64	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..65	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..66	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..67	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..68	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..69	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..70	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..71	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..72	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..73	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..74	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..75	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..76	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..77	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..78	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..79	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..80	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..81	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..82	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..83	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..84	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..85	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..86	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..87	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..88	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..89	451053	CAPACITOR ELEC 68U 6,3 M	2222 122 53689	1.000	ST 3
05 C..90	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..91	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3

PARENT ITEM NO.  
448168DESCRIPTION SYNTHESIZER  
ENGR DRAW EMK T448168

A1

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
05 C.92	451053	CAPACITOR ELEC 68U 6,3 M	2222 122 53689	1.000	ST 3
05 C.93	451053	CAPACITOR ELEC 68U 6,3 M	2222 122 53689	1.000	ST 3
05 C.94	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.95	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.96	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.97	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.98	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.99	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
07 CR.1	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.2	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
05 CR.3	480681	DIODE SCHOT BAT 83 SI 60V	BAT83	1.000	ST 3
05 CR.4	480681	DIODE SCHOT BAT 83 SI 60V	BAT83	1.000	ST 3
07 CR.5	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.6	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.7	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR11	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR19	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR20	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR21	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
05 C100	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C101	357405	CAPACITOR CER. 5P6 100 C N150	2222 683 33568	1.000	ST 3
05 C102	357537	CAPACITOR CER. 5P6 100 C N150	2222 683 34569	1.000	ST 3
06 C103	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C104	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C105	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C106	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C107	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
04 C108	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
05 H..1	458694	SCREW M 2,5X 5 CHM CU SN	DIN 84 HFC 93	13.000	ST 3
07 H..3	392707	TRANS.ACCESSORY PAD TO-18	TO-18-002	5.000	ST 3
04 J..1	475521	COAX CONNECTOR SMB FEM-PCB	51-053-9029-22	1.000	ST 3
06 L..3	389609	COIL,CHOKE 47U K	1M22	1.000	ST 3
05 L..4	357820	COIL,CHOKE 2U2 K	IM-2	1.000	ST 3
04 L..5	405493	COIL,CHOKE 0U47 K	IM-4	1.000	ST 3
06 L..6	393967	COIL,CHOKE 0U15 K	IM-2	1.000	ST 3
05 L..7	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 L..8	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 L..9	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 L..10	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 L..11	355933	COIL,CHOKE 6U8 K	IM-2	1.000	ST 3
05 L..12	355933	COIL,CHOKE 6U8 K	IM-2	1.000	ST 3
05 L..13	355933	COIL,CHOKE 6U8 K	IM-2	1.000	ST 3
04 L..14	372889	COIL,CHOKE 5U6 K	IM-4	1.000	ST 3
05 L..15	355933	COIL,CHOKE 6U8 K	IM-2	1.000	ST 3
06 L..16	394335	COIL,CHOKE 0U1 K	IM-2	1.000	ST 3
05 L..17	357820	COIL,CHOKE 2U2 K	IM-2	1.000	ST 3
05 L..18	357820	COIL,CHOKE 2U2 K	IM-2	1.000	ST 3
05 L..19	357820	COIL,CHOKE 2U2 K	IM-2	1.000	ST 3
05 L..20	357820	COIL,CHOKE 2U2 K	IM-2	1.000	ST 3
04 MP.1	460176	REAR PLATE A1 M 3000	EMK 4T460176	1.000	ST 2
05 MP.2	448095	RETAINER,PC M 3000	EMK 4T448095	1.000	ST 2
06 MP.3	260819	THUMBSCREW,KNURLED M3	EMK 5T 18978	2.000	ST 3
05 MP.4	455571	STAY NUT M2,5X15 Ø4,0-2,9	EMK 4T455571	8.000	ST 3
04 MP.5	457612	SCREEN SHIELD A1 M 3000	EMK 4T457612	1.000	ST 2
04 MP.6	457604	SCREEN SHIELD A1 M 3000	EMK 4T457604	1.000	ST 2
04 MP.7	460273	SCREEN SHIELD A1 M 3000	EMK 4T460273	1.000	ST 2
04 MP.8	459364	CONTACT SPRING 2 M 3000	EMK 4T459364	1.000	ST 2
04 Q..1	451320	TRANS.LOPOW 2N3906 SI-P TO-92	2N3906	1.000	ST 3
04 Q..2	451320	TRANS.LOPOW 2N3906 SI-P TO-92	2N3906	1.000	ST 3
04 Q..3	455164	TRANS.LOPOW 2N3904 SI-P TO-92	2N3904	1.000	ST 3
04 Q..4	451320	TRANS.LOPOW 2N3906 SI-P TO-92	2N3906	1.000	ST 3
04 Q..5	455172	TRANS.JFETN 2N3958 DUAL TO-71	2N3958	1.000	ST 3
04 Q..6	455164	TRANS.LOPOW 2N3904 SI-P TO-92	2N3904	1.000	ST 3
04 Q..7	455164	TRANS.LOPOW 2N3904 SI-P TO-92	2N3904	1.000	ST 3
04 Q..8	451320	TRANS.LOPOW 2N3906 SI-P TO-92	2N3906	1.000	ST 3
04 Q..9	455164	TRANS.LOPOW 2N3904 SI-P TO-92	2N3904	1.000	ST 3
04 Q..10	451320	TRANS.LOPOW 2N3906 SI-P TO-92	2N3906	1.000	ST 3
04 Q..11	455164	TRANS.LOPOW 2N3904 SI-P TO-92	2N3904	1.000	ST 3
04 Q..12	455164	TRANS.LOPOW 2N3904 SI-P TO-92	2N3904	1.000	ST 3
04 Q..13	451320	TRANS.LOPOW 2N3906 SI-P TO-92	2N3906	1.000	ST 3
05 Q..14	399914	TRANS.JFETN J 309 TO-92	J309	1.000	ST 3
04 Q..15	455164	TRANS.LOPOW 2N3904 SI-P TO-92	2N3904	1.000	ST 3
04 Q..16	455164	TRANS.LOPOW 2N3904 SI-P TO-92	2N3904	1.000	ST 3
04 Q..17	450278	TRANS.MFETN 3N 139	3N139 / SD211	1.000	ST 3
04 Q..18	455164	TRANS.LOPOW 2N3904 SI-P TO-92	2N3904	1.000	ST 3
04 Q..19	451320	TRANS.LOPOW 2N3906 SI-P TO-92	2N3906	1.000	ST 3
05 Q..20	274070	TRANS.JFETN BFW 11 TO-72	BFW11	1.000	ST 3
07 Q..21	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
04 Q..23	451274	TRANS.LOPOW MPS2369 SI-N TO-92	MPS2369	1.000	ST 3
07 Q..24	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
07 Q..25	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3

PARENT ITEM NO.  
448168DESCRIPTION SYNTHESIZER  
ENGR DRAW EMK T448168

A1

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
06 Q.26	359157	TRANS.LOPOW BC 251	SI-P TO-92 BC251	1.000	ST 3
06 Q.27	357804	TRANS.UHF BFX 89	SI-N TO-72 BFX89	1.000	ST 3
06 Q.28	357804	TRANS.UHF BFX 89	SI-N TO-72 BFX89	1.000	ST 3
04 Q.29	320668	TRANS.LOPOW BFX 48	SI-P TO-18 BFX48	1.000	ST 3
04 Q.30	451274	TRANS.LOPOW MPS2369	SI-N TO-92 MPS2369	1.000	ST 3
04 Q.31	455164	TRANS.LOPOW 2N3904	SI-P TO-92 2N3904	1.000	ST 3
04 Q.32	455164	TRANS.LOPOW 2N3904	SI-P TO-92 2N3904	1.000	ST 3
04 Q.33	451274	TRANS.LOPOW MPS2369	SI-N TO-92 MPS2369	1.000	ST 3
06 Q.34	389730	TRANS.JFETN J 300	TO-92 J300	1.000	ST 3
04 Q.35	451290	TRANS.JFETP 2N5460	TO-92 2N5460	1.000	ST 3
04 Q.36	451320	TRANS.LOPOW 2N3906	SI-P TO-92 2N3906	1.000	ST 3
04 Q.37	451320	TRANS.LOPOW 2N3906	SI-P TO-92 2N3906	1.000	ST 3
04 Q.38	451320	TRANS.LOPOW 2N3906	SI-P TO-92 2N3906	1.000	ST 3
06 Q.39	389730	TRANS.JFETN J 300	TO-92 J300	1.000	ST 3
04 Q.40	451290	TRANS.JFETP 2N5460	TO-92 2N5460	1.000	ST 3
08 R..1	240516	RESISTOR CARB. 4K7 1/4J	SFR25 2322 181 53472	1.000	ST 3
06 R..2	240354	RESISTOR CARB. 510R 1/4J	SFR25 2322 181 53511	1.000	ST 3
06 R..3	240354	RESISTOR CARB. 510R 1/4J	SFR25 2322 181 53511	1.000	ST 3
09 R..4	240222	RESISTOR CARB. 100R 1/4J	SFR25 2322 181 53101	1.000	ST 3
06 R..5	240265	RESISTOR CARB. 200R 1/4J	SFR25 2322 181 53201	1.000	ST 3
07 R..6	240397	RESISTOR CARB. 820R 1/4J	SFR25 2322 181 53821	1.000	ST 3
05 R..7	240125	RESISTOR CARB. 22R 1/4J	SFR25 2322 181 53229	1.000	ST 3
09 R..8	240222	RESISTOR CARB. 100R 1/4J	SFR25 2322 181 53101	1.000	ST 3
06 R..9	240605	RESISTOR CARB. 15K 1/4J	SFR25 2322 181 53153	1.000	ST 3
09 R.10	240222	RESISTOR CARB. 100R 1/4J	SFR25 2322 181 53101	1.000	ST 3
06 R.11	240443	RESISTOR CARB. 2K0 1/4J	SFR25 2322 181 53202	1.000	ST 3
09 R.12	240222	RESISTOR CARB. 100R 1/4J	SFR25 2322 181 53101	1.000	ST 3
06 R.13	240605	RESISTOR CARB. 15K 1/4J	SFR25 2322 181 53153	1.000	ST 3
04 R.14	405590	RESISTOR FILM 619R 0.6F	MRS25 2322 156 16191	1.000	ST 3
06 R.15	240583	RESISTOR CARB. 12K 1/4J	SFR25 2322 181 53123	1.000	ST 3
07 R.16	240451	RESISTOR CARB. 2K2 1/4J	SFR25 2322 181 53222	1.000	ST 3
07 R.17	240184	RESISTOR CARB. 47R 1/4J	SFR25 2322 181 53479	1.000	ST 3
04 R.18	240303	RESISTOR CARB. 300R 1/4J	SFR25 2322 181 53301	1.000	ST 3
06 R.19	240389	RESISTOR CARB. 680R 1/4J	SFR25 2322 181 53681	1.000	ST 3
06 R.20	240486	RESISTOR CARB. 3K3 1/4J	SFR25 2322 181 53332	1.000	ST 3
06 R.21	240567	RESISTOR CARB. 10K 1/4J	SFR25 2322 181 53103	1.000	ST 3
05 R.22	240125	RESISTOR CARB. 22R 1/4J	SFR25 2322 181 53229	1.000	ST 3
06 R.23	240486	RESISTOR CARB. 3K3 1/4J	SFR25 2322 181 53332	1.000	ST 3
06 R.24	240265	RESISTOR CARB. 200R 1/4J	SFR25 2322 181 53201	1.000	ST 3
06 R.25	240400	RESISTOR CARB. 1K0 1/4J	SFR25 2322 181 53102	1.000	ST 3
06 R.26	240354	RESISTOR CARB. 510R 1/4J	SFR25 2322 181 53511	1.000	ST 3
06 R.27	240265	RESISTOR CARB. 200R 1/4J	SFR25 2322 181 53201	1.000	ST 3
07 R.28	240451	RESISTOR CARB. 2K2 1/4J	SFR25 2322 181 53222	1.000	ST 3
06 R.29	240389	RESISTOR CARB. 680R 1/4J	SFR25 2322 181 53681	1.000	ST 3
06 R.30	240567	RESISTOR CARB. 10K 1/4J	SFR25 2322 181 53103	1.000	ST 3
06 R.31	240567	RESISTOR CARB. 10K 1/4J	SFR25 2322 181 53103	1.000	ST 3
06 R.32	240567	RESISTOR CARB. 10K 1/4J	SFR25 2322 181 53103	1.000	ST 3
07 R.33	240524	RESISTOR CARB. 5K6 1/4J	SFR25 2322 181 53562	1.000	ST 3
09 R.34	240621	RESISTOR CARB. 22K 1/4J	SFR25 2322 181 53223	1.000	ST 3
06 R.35	240427	RESISTOR CARB. 1K5 1/4J	SFR25 2322 181 53152	1.000	ST 3
08 R.36	240516	RESISTOR CARB. 4K7 1/4J	SFR25 2322 181 53472	1.000	ST 3
09 R.37	240621	RESISTOR CARB. 22K 1/4J	SFR25 2322 181 53223	1.000	ST 3
06 R.38	240354	RESISTOR CARB. 510R 1/4J	SFR25 2322 181 53511	1.000	ST 3
06 R.39	240354	RESISTOR CARB. 510R 1/4J	SFR25 2322 181 53511	1.000	ST 3
09 R.40	240621	RESISTOR CARB. 22K 1/4J	SFR25 2322 181 53223	1.000	ST 3
08 R.41	240516	RESISTOR CARB. 4K7 1/4J	SFR25 2322 181 53472	1.000	ST 3
05 R.42	450979	RESISTOR CARB. 360R 1/4J	SFR25 2322 181 53361	1.000	ST 3
09 R.43	240222	RESISTOR CARB. 100R 1/4J	SFR25 2322 181 53101	1.000	ST 3
06 R.50	240419	RESISTOR CARB. 1K2 1/4J	SFR25 2322 181 53122	1.000	ST 3
05 R.51	372064	RESISTOR CARB. 9K1 1/4J	SFR25 2322 181 53912	1.000	ST 3
06 R.52	240443	RESISTOR CARB. 2K0 1/4J	SFR25 2322 181 53202	1.000	ST 3
06 R.53	240400	RESISTOR CARB. 1K0 1/4J	SFR25 2322 181 53102	1.000	ST 3
07 R.54	240451	RESISTOR CARB. 2K2 1/4J	SFR25 2322 181 53222	1.000	ST 3
09 R.55	240222	RESISTOR CARB. 100R 1/4J	SFR25 2322 181 53101	1.000	ST 3
06 R.56	240400	RESISTOR CARB. 1K0 1/4J	SFR25 2322 181 53102	1.000	ST 3
06 R.57	328545	RESISTOR CARB. 220R 1/4J	SFR25 2322 181 53221	1.000	ST 3
06 R.58	240230	RESISTOR CARB. 120R 1/4J	SFR25 2322 181 53121	1.000	ST 3
05 R.59	240206	RESISTOR CARB. 56R 1/4J	SFR25 2322 181 53569	1.000	ST 3
06 R.60	240230	RESISTOR CARB. 120R 1/4J	SFR25 2322 181 53121	1.000	ST 3
06 R.61	240362	RESISTOR CARB. 560R 1/4J	SFR25 2322 181 53561	1.000	ST 3
06 R.62	240230	RESISTOR CARB. 120R 1/4J	SFR25 2322 181 53121	1.000	ST 3
06 R.63	240192	RESISTOR CARB. 51R 1/4J	SFR25 2322 181 53519	1.000	ST 3
06 R.64	240230	RESISTOR CARB. 120R 1/4J	SFR25 2322 181 53121	1.000	ST 3
06 R.65	240567	RESISTOR CARB. 10K 1/4J	SFR25 2322 181 53103	1.000	ST 3
06 R.66	240338	RESISTOR CARB. 390R 1/4J	SFR25 2322 181 53391	1.000	ST 3
06 R.67	240400	RESISTOR CARB. 1K0 1/4J	SFR25 2322 181 53102	1.000	ST 3
06 R.69	240400	RESISTOR CARB. 1K0 1/4J	SFR25 2322 181 53102	1.000	ST 3
06 R.70	240192	RESISTOR CARB. 51R 1/4J	SFR25 2322 181 53519	1.000	ST 3
05 R.71	324205	RESISTOR CARB. 5K1 1/4J	SFR25 2322 181 53512	1.000	ST 3
06 R.72	324221	RESISTOR CARB. 2K4 1/4J	SFR25 2322 181 53242	1.000	ST 3
09 R.73	240222	RESISTOR CARB. 100R 1/4J	SFR25 2322 181 53101	1.000	ST 3
06 R.74	328545	RESISTOR CARB. 220R 1/4J	SFR25 2322 181 53221	1.000	ST 3

PARENT ITEM NO.  
448168DESCRIPTION SYNTHESIZER  
ENGR DRAW EMK T448168

A1

BATCH QTY

LL SEQ	COMPONENT	DESCRIPTION	ENGINEERING	QUANTITY	ITEM
CD NO.	ITEM NO.		DRAWING NUMBER		UM TYP
06 R.75	240354	RESISTOR CARB. 510R 1/4J SFR25	2322 181 53511	1.000	ST 3
05 R.76	362913	RESISTOR CARB. 15R 1/4J SFR25	2322 181 53159	1.000	ST 3
06 R.77	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
05 R.78	450979	RESISTOR CARB. 360R 1/4J SFR25	2322 181 53361	1.000	ST 3
06 R.79	240338	RESISTOR CARB. 390R 1/4J SFR25	2322 181 53391	1.000	ST 3
05 R.80	450979	RESISTOR CARB. 360R 1/4J SFR25	2322 181 53361	1.000	ST 3
06 R.81	240389	RESISTOR CARB. 680R 1/4J SFR25	2322 181 53681	1.000	ST 3
06 R.82	240389	RESISTOR CARB. 680R 1/4J SFR25	2322 181 53681	1.000	ST 3
06 R.83	240354	RESISTOR CARB. 510R 1/4J SFR25	2322 181 53511	1.000	ST 3
06 R.84	240389	RESISTOR CARB. 680R 1/4J SFR25	2322 181 53681	1.000	ST 3
05 R.85	450979	RESISTOR CARB. 360R 1/4J SFR25	2322 181 53361	1.000	ST 3
06 R.86	240338	RESISTOR CARB. 390R 1/4J SFR25	2322 181 53391	1.000	ST 3
06 R.87	240389	RESISTOR CARB. 680R 1/4J SFR25	2322 181 53681	1.000	ST 3
05 R.88	240257	RESISTOR CARB. 180R 1/4J SFR25	2322 181 53181	1.000	ST 3
05 R.89	240257	RESISTOR CARB. 180R 1/4J SFR25	2322 181 53181	1.000	ST 3
05 R.90	240257	RESISTOR CARB. 180R 1/4J SFR25	2322 181 53181	1.000	ST 3
04 R.91	363251	RESISTOR CARB. 39R 1/4J SFR25	2322 181 53399	1.000	ST 3
06 R.92	240281	RESISTOR CARB. 270R 1/4J SFR25	2322 181 53271	1.000	ST 3
07 R.93	240397	RESISTOR CARB. 820R 1/4J SFR25	2322 181 53821	1.000	ST 3
06 R.94	240281	RESISTOR CARB. 270R 1/4J SFR25	2322 181 53271	1.000	ST 3
08 R.95	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
07 R.96	240397	RESISTOR CARB. 820R 1/4J SFR25	2322 181 53821	1.000	ST 3
05 R.97	367826	RESISTOR FILM 2K49 0,6F MRS25	2322 156 12492	1.000	ST 3
05 R.98	367826	RESISTOR FILM 2K49 0,6F MRS25	2322 156 12492	1.000	ST 3
05 R.99	376477	RESISTOR FILM 1K27 0,6F MRS25	2322 156 11272	1.000	ST 3
06 R100	240311	RESISTOR CARB. 330R 1/4J SFR25	2322 181 53331	1.000	ST 3
06 R101	240494	RESISTOR CARB. 3K9 1/4J SFR25	2322 181 53392	1.000	ST 3
06 R102	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R103	240443	RESISTOR CARB. 2K0 1/4J SFR25	2322 181 53202	1.000	ST 3
06 R104	240494	RESISTOR CARB. 3K9 1/4J SFR25	2322 181 53392	1.000	ST 3
06 R105	240443	RESISTOR CARB. 2K0 1/4J SFR25	2322 181 53202	1.000	ST 3
06 R106	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R107	240494	RESISTOR CARB. 3K9 1/4J SFR25	2322 181 53392	1.000	ST 3
06 R108	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R109	240443	RESISTOR CARB. 2K0 1/4J SFR25	2322 181 53202	1.000	ST 3
05 R110	324205	RESISTOR CARB. 5K1 1/4J SFR25	2322 181 53512	1.000	ST 3
06 R111	324191	RESISTOR CARB. 7K5 1/4J SFR25	2322 181 53752	1.000	ST 3
05 R112	240370	RESISTOR CARB. 620R 1/4J SFR25	2322 181 53621	1.000	ST 3
06 R113	240486	RESISTOR CARB. 3K3 1/4J SFR25	2322 181 53332	1.000	ST 3
06 R114	240435	RESISTOR CARB. 1K8 1/4J SFR25	2322 181 53182	1.000	ST 3
06 R115	240583	RESISTOR CARB. 12K 1/4J SFR25	2322 181 53123	1.000	ST 3
07 R116	240524	RESISTOR CARB. 5K6 1/4J SFR25	2322 181 53562	1.000	ST 3
09 R117	240621	RESISTOR CARB. 22K 1/4J SFR25	2322 181 53223	1.000	ST 3
08 R118	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
08 R119	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
06 R120	240443	RESISTOR CARB. 2K0 1/4J SFR25	2322 181 53202	1.000	ST 3
07 R121	240184	RESISTOR CARB. 47R 1/4J SFR25	2322 181 53479	1.000	ST 3
06 R122	240346	RESISTOR CARB. 470R 1/4J SFR25	2322 181 53471	1.000	ST 3
08 R123	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
06 R124	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R125	240419	RESISTOR CARB. 1K2 1/4J SFR25	2322 181 53122	1.000	ST 3
05 R126	359335	RESISTOR FILM 78K7 0,6F MRS25	2322 156 17873	1.000	ST 3
06 R127	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
05 R128	455210	RESISTOR FILM 604K 0,6F MRS25	2322 156 16044	1.000	ST 3
05 R129	371033	RESISTOR FILM 100R 0,6F MRS25	2322 156 11001	1.000	ST 3
05 R130	376574	RESISTOR FILM 2K00 0,6F MRS25	2322 156 12002	1.000	ST 3
05 R131	371033	RESISTOR FILM 100R 0,6F MRS25	2322 156 11001	1.000	ST 3
04 R132	372102	RESISTOR FILM 332R 0,6F MRS25	2322 156 13321	1.000	ST 3
04 R133	458309	RESISTOR FILM 332K 0,6F MRS25	2322 156 13324	1.000	ST 3
05 R134	359408	RESISTOR SEMIV 50K 1/2K CERM	3386P-1-503	1.000	ST 3
04 R135	372102	RESISTOR FILM 332R 0,6F MRS25	2322 156 13321	1.000	ST 3
05 R136	371033	RESISTOR FILM 100R 0,6F MRS25	2322 156 11001	1.000	ST 3
05 R137	363235	RESISTOR SEMIV 5K 1/2K CERM	3386P-1-502	1.000	ST 3
04 R138	455199	RESISTOR FILM 100K 1/4D	EE 471 T-2	1.000	ST 3
04 R139	455180	RESISTOR FILM 100R 1/4D	EE 471 T-9	1.000	ST 3
05 R140	349631	RESISTOR FILM 33K2 0,6F MRS25	2322 156 13323	1.000	ST 3
05 R141	324205	RESISTOR CARB. 5K1 1/4J SFR25	2322 181 53512	1.000	ST 3
05 R142	324205	RESISTOR CARB. 5K1 1/4J SFR25	2322 181 53512	1.000	ST 3
06 R143	240389	RESISTOR CARB. 680R 1/4J SFR25	2322 181 53681	1.000	ST 3
06 R144	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
06 R145	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
05 R146	376361	RESISTOR FILM 825R 0,6F MRS25	2322 156 18251	1.000	ST 3
06 R147	324191	RESISTOR CARB. 7K5 1/4J SFR25	2322 181 53752	1.000	ST 3
06 R148	240443	RESISTOR CARB. 2K0 1/4J SFR25	2322 181 53202	1.000	ST 3
07 R150	240184	RESISTOR CARB. 47R 1/4J SFR25	2322 181 53479	1.000	ST 3
07 R151	240184	RESISTOR CARB. 47R 1/4J SFR25	2322 181 53479	1.000	ST 3
07 R152	240184	RESISTOR CARB. 47R 1/4J SFR25	2322 181 53479	1.000	ST 3
07 R153	240184	RESISTOR CARB. 47R 1/4J SFR25	2322 181 53479	1.000	ST 3
07 R154	240184	RESISTOR CARB. 47R 1/4J SFR25	2322 181 53479	1.000	ST 3
07 R155	240184	RESISTOR CARB. 47R 1/4J SFR25	2322 181 53479	1.000	ST 3
04 R156	376531	RESISTOR FILM 511R 0,6F MRS25	2322 156 15111	1.000	ST 3
04 R157	376531	RESISTOR FILM 511R 0,6F MRS25	2322 156 15111	1.000	ST 3
04 R158	376531	RESISTOR FILM 511R 0,6F MRS25	2322 156 15111	1.000	ST 3

PARENT ITEM NO.  
448168DESCRIPTION SYNTHESIZER  
ENGR DRAW EMK T448168

A1

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
08 R159	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
08 R160	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
07 R161	240184	RESISTOR CARB. 47R 1/4J SFR25	2322 181 53479	1.000	ST 3
06 TP..	231304	TERMINAL STUD 2,5X7 Ø1,3	4772	12.000	ST 3
04 U..1	451150	IC DIGITAL 74LS669N U/D COUNT.	SN74LS669N	1.000	ST 3
04 U..2	451150	IC DIGITAL 74LS669N U/D COUNT.	SN74LS669N	1.000	ST 3
04 U..3	451150	IC DIGITAL 74LS669N U/D COUNT.	SN74LS669N	1.000	ST 3
05 U..4	404608	IC DIGITAL 74S 74N 2X D-FF	SN74S74N	1.000	ST 3
05 U..5	365874	IC DIGITAL 74LS 74N 2X D FF	SN74LS74N	1.000	ST 3
05 U..6	365874	IC DIGITAL 74LS 74N 2X D FF	SN74LS74N	1.000	ST 3
05 U..7	365874	IC DIGITAL 74LS 74N 2X D FF	SN74LS74N	1.000	ST 3
04 U..8	454761	IC DIGITAL 74LS174N 6X D-FF	SN74LS174N	1.000	ST 3
04 U..9	454761	IC DIGITAL 74LS174N 6X D-FF	SN74LS174N	1.000	ST 3
04 U..10	451207	IC DIGITAL 74LS283N 4BIT ADDER	SN74LS283N	1.000	ST 3
04 U..11	451207	IC DIGITAL 74LS283N 4BIT ADDER	SN74LS283N	1.000	ST 3
04 U..12	451207	IC DIGITAL 74LS283N 4BIT ADDER	SN74LS283N	1.000	ST 3
04 U..13	473855	IC DIGITAL 74LS193N U/D COUNT.	TEXAS:SN74LS193	1.000	ST 3
04 U..14	473855	IC DIGITAL 74LS193N U/D COUNT.	TEXAS:SN74LS193	1.000	ST 3
04 U..15	473855	IC DIGITAL 74LS193N U/D COUNT.	TEXAS:SN74LS193	1.000	ST 3
05 U..16	451185	IC DIGITAL 74LS 02N 4X2IN NOR	SN74LS02N	1.000	ST 3
04 U..17	454788	IC DIGITAL 74LS192N U/D COUNT.	SN74LS192N	1.000	ST 3
05 U..18	365874	IC DIGITAL 74LS 74N 2X D FF	SN74LS74N	1.000	ST 3
05 U..19	365874	IC DIGITAL 74LS 74N 2X D FF	SN74LS74N	1.000	ST 3
05 U..20	365874	IC DIGITAL 74LS 74N 2X D FF	SN74LS74N	1.000	ST 3
05 U..21	404608	IC DIGITAL 74S 74N 2X D-FF	SN74S74N	1.000	ST 3
04 U..22	450367	IC DIGITAL 10131P ECL D-FF	MC10131P	1.000	ST 3
04 U..23	450367	IC DIGITAL 10131P ECL D-FF	MC10131P	1.000	ST 3
04 U..24	450383	IC DIGITAL 10106P ECL NOR	MC10106P	1.000	ST 3
05 U..25	451266	IC LINEAR LM 301A OP.AMP.	LM301AM	1.000	ST 3
04 U..26	450375	IC DIGITAL 10116P ECL BUFFER	MC10116P	1.000	ST 3
04 U..27	454753	IC LINEAR LM 393N VOLT COMP.	LM393N	1.000	ST 3
04 U..28	454745	IC LINEAR LM 310N OP.AMP.	LM310N	1.000	ST 3
04 U..29	455113	IC LINEAR LM 308N OP.AMP.	LM308N	1.000	ST 3
05 U..30	451282	IC LINEAR LF 356N OP.AMP.	LF356N	1.000	ST 3
04 U..31	357898	IC DIGITAL 74S112 2X JK-FF	SN74S112	1.000	ST 3
04 U..32	451304	IC LINEAR LM 3046N TRANS.ARR.	LM3046N	1.000	ST 3
05 U..33	433683	IC DIGITAL 74LS138 3-8 DECOD.	SN74LS138	1.000	ST 3
05 U..34	362131	IC DIGITAL 74 06N 6X INV-BUF	SN7406N	1.000	ST 3
05 U..35	451185	IC DIGITAL 74LS 02N 4X2IN NOR	SN74LS02N	1.000	ST 3
04 U..36	451630	IC DIGITAL 74LS379N 4X D-FF	SN74LS379N	1.000	ST 3
04 U..37	451169	IC DIGITAL 74LS365N 6X BUSDRIV	SN74LS365AN	1.000	ST 3
04 U..38	451029	IC DIGITAL 74LS377N 8X D-FF	SN74LS377N	1.000	ST 3
04 U..39	451029	IC DIGITAL 74LS377N 8X D-FF	SN74LS377N	1.000	ST 3
04 U..40	451029	IC DIGITAL 74LS377N 8X D-FF	SN74LS377N	1.000	ST 3
06 VR.1	228788	DIODE ZENER ZPD10 10V 0.5W	ZPD10	1.000	ST 3
05 VR.2	454389	DIODE ZENER ZPD16 16V 0.5W	ZPD16	1.000	ST 3
05 VR.3	454389	DIODE ZENER ZPD16 16V 0.5W	ZPD16	1.000	ST 3
05 VR.4	228850	DIODE ZENER ZPD 6,2 6,2V 0,5W	ZPD6,2 R	1.000	ST 3
05 VR.5	228850	DIODE ZENER ZPD 6,2 6,2V 0,5W	ZPD6,2 R	1.000	ST 3
05 VR.6	228850	DIODE ZENER ZPD 6,2 6,2V 0,5W	ZPD6,2 R	1.000	ST 3
05 VR.7	228850	DIODE ZENER ZPD 6,2 6,2V 0,5W	ZPD6,2 R	1.000	ST 3
05 VR.8	228850	DIODE ZENER ZPD 6,2 6,2V 0,5W	ZPD6,2 R	1.000	ST 3
04 W..1	458775	COAX CABLE ASSY A1 M 3000	EMK 4T458775	1.000	ST 3
04 W..2	458783	COAX CABLE ASSY A1 M 3000	EMK 4T458783	1.000	ST 3
04 W..3	458791	COAX CABLE ASSY A1 M 3000	EMK 4T458791	1.000	ST 3

PARENT ITEM NO.  
455490DESCRIPTION VCO ASSY  
ENGR DRAW EMK T455490

A1A1

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
09	891177	FORMONTAGE		1.000	TI 9
08	895075			.030	TI 9
05	...1 455482	PRINTED CIRC.BOARD VCO	EMK 4T455482	1.000	ST 3
06	C.17 358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06	C.18 358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
05	C.19 455148	CAPACITOR CER. 18P 63 J N150	5B-N150-18-J-63	1.000	ST 3
05	C.20 455121	CAPACITOR CER. 10P 63 J N150	5B-N150-10-J-63	1.000	ST 3
06	C.21 358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
05	C.22 450855	CAPACITOR CER. 47P 63 J N150	5B-N150-47-J-63	1.000	ST 3
06	C.23 358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06	C.24 358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06	C.25 358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06	C.26 358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06	CR13 358614	DIODE SWTCH BA 482 SI 100MA	BA482 (BA243)	1.000	ST 3
06	CR14 358614	DIODE SWTCH BA 482 SI 100MA	BA482 (BA243)	1.000	ST 3
06	CR15 358614	DIODE SWTCH BA 482 SI 100MA	BA482 (BA243)	1.000	ST 3
06	CR16 358614	DIODE SWTCH BA 482 SI 100MA	BA482 (BA243)	1.000	ST 3
05	CR17 405531	DIODE CAP. BB 204B SI 37-42PF	BB204B	1.000	ST 3
07	CR22 228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07	C109 436976	CAPACITOR CER. 100N 100 M	CK06BX104M	1.000	ST 3
07	C110 436976	CAPACITOR CER. 100N 100 M	CK06BX104M	1.000	ST 3
07	C111 436976	CAPACITOR CER. 100N 100 M	CK06BX104M	1.000	ST 3
05	H..1 458287	SCREW M 2,5X 8 CHM CU SN	DIN 84	4.000	ST 3
06	H..2 231304	TERMINAL STUD 2,5X7 Ø1,3	4772	7.000	ST 3
07	H..3 218952	TRANS.ACCESSORY PAD TO-18	T0518-004	1.000	ST 3
05	L..1 455237	COIL M 3000 A1A1 L1	EMK 4T455237	1.000	ST 2
05	L..2 357820	COIL,CHOKE 2U2 K	IM-2	1.000	ST 3
05	MP.1 457620	SCREEN SHIELD A1A1 M 3000	EMK 4T457620	1.000	ST 2
05	MP.2 396834	STAY NUT M2,6X15,5 Ø3,9/Ø6,0	EMK 4T 22745	4.000	ST 3
05	Q.22 455229	TRANS.MFETN MFE131 2XG TO-72	MFE131	1.000	ST 3
05	R.44 455210	RESISTOR FILM 604K 0,6F MRS25	2322 156 16044	1.000	ST 3
05	R.45 455210	RESISTOR FILM 604K 0,6F MRS25	2322 156 16044	1.000	ST 3
05	R.46 359335	RESISTOR FILM 78K7 0,6F MRS25	2322 156 17873	1.000	ST 3
05	R.47 349585	RESISTOR FILM 56K0 0,6F MRS25	2322 156 15603	1.000	ST 3
05	R.48 371033	RESISTOR FILM 100R 0,6F MRS25	2322 156 11001	1.000	ST 3
05	R.49 371033	RESISTOR FILM 100R 0,6F MRS25	2322 156 11001	1.000	ST 3
05	R149 349674	RESISTOR FILM 15K0 0,6F MRS25	2322 156 11503	1.000	ST 3

PARENT ITEM NO.  
488232DESCRIPTION STANDARD OCXO, 5MHZ A2  
ENGR DRAW EMK T488232

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
04 ...1	448176	PRINTED CIRC.BEARD M3000 A2	EMK 2T448176	1.000	ST 3
05 C..1	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
04 C..2	450898	CAPACITOR PLST 330N 63 J MET	2222 344 15334	1.000	ST 3
04 C..3	448850	CAPACITOR PLST 2N2 160 H	B33063-B1222-H	1.000	ST 3
05 C..4	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C..5	357561	CAPACITOR CER. 100P 100 G NFO	2222 679 10101	1.000	ST 3
05 C..6	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
06 C..7	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C..8	357480	CAPACITOR CER. 22P 100 G N150	2222 683 34229	1.000	ST 3
06 C..9	357545	CAPACITOR CER. 68P 100 C N150	2222 683 34689	1.000	ST 3
05 C.10	390224	CAPACITOR CER. 470P 100 K HI-K	2222 630 06471	1.000	ST 3
05 C.11	357561	CAPACITOR CER. 100P 100 G NFO	2222 679 10101	1.000	ST 3
06 C.12	357634	CAPACITOR CER. 2N2 100 K HI-K	2222 630 06222	1.000	ST 3
06 C.13	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C.14	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C.15	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
05 C.17	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.18	451053	CAPACITOR ELEC 68U 6,3 M	2222 122 53689	1.000	ST 3
06 C.19	357510	CAPACITOR CER. 39P 100 G N150	2222 683 34399	1.000	ST 3
06 C.20	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
05 C.21	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C.22	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C.23	357634	CAPACITOR CER. 2N2 100 K HI-K	2222 630 06222	1.000	ST 3
06 C.24	357634	CAPACITOR CER. 2N2 100 K HI-K	2222 630 06222	1.000	ST 3
05 C.25	209570	CAPACITOR PLST 47N 250 K	2222 344 41473	1.000	ST 3
05 C.26	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.27	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
06 C.28	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
04 C.29	448885	CAPACITOR PLST 4N7 160 H	B33063-B1472-H	1.000	ST 3
05 C.30	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.31	448877	CAPACITOR PLST 3N3 160 H	B33063-B1332-H	1.000	ST 3
05 C.32	209570	CAPACITOR PLST 47N 250 K	2222 344 41473	1.000	ST 3
06 C.33	209554	CAPACITOR PLST 10N 250 K	2222 344 41103	1.000	ST 3
04 C.34	450804	CAPACITOR PLST 3N 160 F	B33063-B1302-F	1.000	ST 3
06 C.35	357480	CAPACITOR CER. 22P 100 G N150	2222 683 34229	1.000	ST 3
06 C.36	357545	CAPACITOR CER. 68P 100 C N150	2222 683 34689	1.000	ST 3
05 C.37	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C.38	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
04 C.39	450812	CAPACITOR PLST 1N 160 J	B33063-B1102-J	1.000	ST 3
04 C.40	450820	CAPACITOR PLST 220P 630 J	B33063-B6221-J	1.000	ST 3
06 C.41	357650	CAPACITOR CER. 22N 63 A HI-K	2222 629 19223	1.000	ST 3
04 C.42	450812	CAPACITOR PLST 1N 160 J	B33063-B1102-J	1.000	ST 3
04 C.43	450812	CAPACITOR PLST 1N 160 J	B33063-B1102-J	1.000	ST 3
06 C.44	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
05 C.45	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.46	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.47	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
04 C.48	450839	CAPACITOR PLST 560P 160 J	B33063-B1561-J	1.000	ST 3
05 C.49	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.50	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.51	357596	CAPACITOR CER. 150P 100 G N150	2222 683 34151	1.000	ST 3
05 C.52	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.53	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.54	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.55	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.56	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.57	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.58	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.59	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.60	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.61	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.62	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.63	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.64	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.65	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.66	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.67	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.68	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.69	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.70	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.71	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.72	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.73	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C.74	357499	CAPACITOR CER. 27P 100 G N150	2222 683 34279	1.000	ST 3
05 C.75	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.76	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C.77	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
02 C.78	487937	CAPACITOR PLST 1N2 160 J	2222 425 21202	1.000	ST 3
02 C.79	487937	CAPACITOR PLST 1N2 160 J	2222 425 21202	1.000	ST 3
07 C.80	202967	CAPACITOR PLST 100N 100 K	2222 344 21104	1.000	ST 3
04 CR.1	451061	DIODE CAP. BB 405B SI 2-17PF	BB405B	1.000	ST 3
07 CR.4	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3



PARENT ITEM NO.  
488232DESCRIPTION STANDARD OCXO, 5MHZ A2  
ENGR DRAW EMK T488232

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM U <sup>M</sup> TYP
07 CR.5	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.6	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.7	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
05 CR.8	405531	DIODE CAP. BB 204B SI 37-42PF	BB204B	1.000	ST 3
05 CR.9	405531	DIODE CAP. BB 204B SI 37-42PF	BB204B	1.000	ST 3
07 CR10	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR11	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
05 H..1	458694	SCREW M 2,5X 5 CHM CU SN	DIN 84 HFC 93	5.000	ST 3
05 H..2	450065	COIL, ACCESSORY	SCREEN, CAN 433-09-221-00	2.000	ST 3
04 J..1	475521	COAX CONNECTOR SMB	FEM-PCB 51-053-9029-22	1.000	ST 3
04 J..2	475521	COAX CONNECTOR SMB	FEM-PCB 51-053-9029-22	1.000	ST 3
04 L..1	454524	COIL M 3000 A2	L1 EMK 4T454524	1.000	ST 2
05 L..2	450405	COIL, CHOKE	0U68 K IM-2	1.000	ST 3
05 L..3	450405	COIL, CHOKE	0U68 K IM-2	1.000	ST 3
06 L..4	394343	COIL, CHOKE	1U0 K IM-2	1.000	ST 3
04 L..5	363294	COIL, CHOKE	47U J IM-4	1.000	ST 3
05 L..6	375330	COIL, CHOKE	0U22 K IM-2	1.000	ST 3
05 L..7	375330	COIL, CHOKE	0U22 K IM-2	1.000	ST 3
06 L..8	394343	COIL, CHOKE	1U0 K IM-2	1.000	ST 3
06 L..9	394343	COIL, CHOKE	1U0 K IM-2	1.000	ST 3
05 L.10	363944	COIL, CHOKE	HF WIDE BAND 4312 020 36640	1.000	ST 3
05 L.11	363944	COIL, CHOKE	HF WIDE BAND 4312 020 36640	1.000	ST 3
05 L.12	363944	COIL, CHOKE	HF WIDE BAND 4312 020 36640	1.000	ST 3
05 L.13	363944	COIL, CHOKE	HF WIDE BAND 4312 020 36640	1.000	ST 3
05 L.14	363944	COIL, CHOKE	HF WIDE BAND 4312 020 36640	1.000	ST 3
04 L.16	450413	COIL, CHOKE	1M0 K IM-2	1.000	ST 3
04 L.17	363294	COIL, CHOKE	47U J IM-4	1.000	ST 3
04 L.18	454532	COIL M 3000 A2	L18 EMK 4T454532	1.000	ST 2
04 L.19	450774	COIL, CHOKE	33U K IM-2	1.000	ST 3
04 L.20	450782	COIL, CHOKE	82U K IM-2	1.000	ST 3
05 L.21	363944	COIL, CHOKE	HF WIDE BAND 4312 020 36640	1.000	ST 3
04 L.22	450766	COIL, CHOKE	27U J AIRCO 15.55-2J	1.000	ST 3
02 L.23	463523	COIL, CHOKE	1U5 K 4336_2K	1.000	ST 3
02 MP.1	487945	REAR PLATE	RX4009 A2 EMK 4T487945	1.000	ST 2
05 MP.2	448095	RETAINER, PC	M 3000 EMK 4T448095	1.000	ST 2
06 MP.3	260819	THUMBSCREW, KNURLED	M3 EMK 5T 18978	2.000	ST 3
04 MP.4	459356	CONTACT SPRING 1	M 3000 EMK 4T459356	1.000	ST 2
04 MP.5	459364	CONTACT SPRING 2	M 3000 EMK 4T459364	1.000	ST 2
05 Q..1	399914	TRANS. JFETN J 309	TO-92 J309	1.000	ST 3
06 Q..2	359157	TRANS. LOPOW BC 251	SI-P TO-92 BC251	1.000	ST 3
04 Q..3	451274	TRANS. LOPOW MPS2369	SI-N TO-92 MPS2369	1.000	ST 3
04 Q..4	451320	TRANS. LOPOW 2N3906	SI-P TO-92 2N3906	1.000	ST 3
04 Q..5	451320	TRANS. LOPOW 2N3906	SI-P TO-92 2N3906	1.000	ST 3
07 Q..6	273899	TRANS. LOPOW BC 547B	SI-N TO-92 BC547B	1.000	ST 3
04 Q..7	451274	TRANS. LOPOW MPS2369	SI-N TO-92 MPS2369	1.000	ST 3
04 Q..8	451290	TRANS. JFETP 2N5460	TO-92 2N5460	1.000	ST 3
06 Q..9	389730	TRANS. JFETN J 300	TO-92 J300	1.000	ST 3
07 Q.10	273899	TRANS. LOPOW BC 547B	SI-N TO-92 BC547B	1.000	ST 3
04 Q.11	451312	TRANS. LOPOW BF 199	SI-N TO-92 BF199	1.000	ST 3
07 Q.12	273899	TRANS. LOPOW BC 547B	SI-N TO-92 BC547B	1.000	ST 3
06 Q.13	359157	TRANS. LOPOW BC 251	SI-P TO-92 BC251	1.000	ST 3
07 Q.14	273899	TRANS. LOPOW BC 547B	SI-N TO-92 BC547B	1.000	ST 3
04 Q.15	451274	TRANS. LOPOW MPS2369	SI-N TO-92 MPS2369	1.000	ST 3
04 Q.16	451274	TRANS. LOPOW MPS2369	SI-N TO-92 MPS2369	1.000	ST 3
07 Q.17	273899	TRANS. LOPOW BC 547B	SI-N TO-92 BC547B	1.000	ST 3
04 Q.18	451274	TRANS. LOPOW MPS2369	SI-N TO-92 MPS2369	1.000	ST 3
05 Q.20	274100	TRANS. LOPOW 2N2369	SI-N TO-18 BFY78 2N2369	1.000	ST 3
06 R..1	240400	RESISTOR CARB. 1K0 1/4J	SFR25 2322 181 53102	1.000	ST 3
06 R..2	240400	RESISTOR CARB. 1K0 1/4J	SFR25 2322 181 53102	1.000	ST 3
07 R..3	240451	RESISTOR CARB. 2K2 1/4J	SFR25 2322 181 53222	1.000	ST 3
05 R..4	240125	RESISTOR CARB. 22R 1/4J	SFR25 2322 181 53229	1.000	ST 3
04 R..5	376515	RESISTOR FILM 3K65 0,6F	MRS25 2322 156 13652	1.000	ST 3
05 R..6	349569	RESISTOR FILM 6K81 0,6F	MRS25 2322 156 16812	1.000	ST 3
05 R..7	349526	RESISTOR FILM 4K75 0,6F	MRS25 2322 156 14752	1.000	ST 3
06 R..8	349623	RESISTOR FILM 10K0 0,6F	MRS25 2322 156 11003	1.000	ST 3
05 R..9	349526	RESISTOR FILM 4K75 0,6F	MRS25 2322 156 14752	1.000	ST 3
05 R.10	349526	RESISTOR FILM 4K75 0,6F	MRS25 2322 156 14752	1.000	ST 3
05 R.11	349496	RESISTOR FILM 100K 0,6F	MRS25 2322 156 11004	1.000	ST 3
05 R.12	349518	RESISTOR FILM 39K2 0,6F	MRS25 2322 156 13923	1.000	ST 3
06 R.13	349623	RESISTOR FILM 10K0 0,6F	MRS25 2322 156 11003	1.000	ST 3
05 R.14	349496	RESISTOR FILM 100K 0,6F	MRS25 2322 156 11004	1.000	ST 3
06 R.15	240281	RESISTOR CARB. 270R 1/4J	SFR25 2322 181 53271	1.000	ST 3
05 R.16	444871	RESISTOR FILM 27K4 0,6F	MRS25 2322 156 12743	1.000	ST 3
07 R.17	240109	RESISTOR CARB. 10R 1/4J	SFR25 2322 181 53109	1.000	ST 3
05 R.18	444871	RESISTOR FILM 27K4 0,6F	MRS25 2322 156 12743	1.000	ST 3
04 R.19	376345	RESISTOR FILM 274R 0,6F	MRS25 2322 156 12741	1.000	ST 3
06 R.20	328545	RESISTOR CARB. 220R 1/4J	SFR25 2322 181 53221	1.000	ST 3
06 R.21	240338	RESISTOR CARB. 390R 1/4J	SFR25 2322 181 53391	1.000	ST 3
06 R.22	240338	RESISTOR CARB. 390R 1/4J	SFR25 2322 181 53391	1.000	ST 3
06 R.23	328545	RESISTOR CARB. 220R 1/4J	SFR25 2322 181 53221	1.000	ST 3

PARENT ITEM NO.  
488232DESCRIPTION STANDARD OCXO, 5MHZ A2  
ENGR DRAW EMK T488232

BATCH QTY

LL	SEQ	COMPONENT	DESCRIPTION	ENGINEERING	QUANTITY	ITEM
CD	NO.	ITEM NO.		DRAWING NUMBER		UM TYP
08	R.24	240516	RESISTOR CARB. 4K7 1/4J SFR25 2322 181 53472		1.000	ST 3
06	R.25	240494	RESISTOR CARB. 3K9 1/4J SFR25 2322 181 53392		1.000	ST 3
05	R.26	240273	RESISTOR CARB. 240R 1/4J SFR25 2322 181 53241		1.000	ST 3
04	R.27	363251	RESISTOR CARB. 39R 1/4J SFR25 2322 181 53399		1.000	ST 3
06	R.28	359572	RESISTOR CARB. 110R 1/4J SFR25 2322 181 53111		1.000	ST 3
06	R.29	240362	RESISTOR CARB. 560R 1/4J SFR25 2322 181 53561		1.000	ST 3
06	R.30	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
05	R.31	240125	RESISTOR CARB. 22R 1/4J SFR25 2322 181 53229		1.000	ST 3
06	R.32	328545	RESISTOR CARB. 220R 1/4J SFR25 2322 181 53221		1.000	ST 3
06	R.33	328545	RESISTOR CARB. 220R 1/4J SFR25 2322 181 53221		1.000	ST 3
06	R.34	240362	RESISTOR CARB. 560R 1/4J SFR25 2322 181 53561		1.000	ST 3
06	R.35	240338	RESISTOR CARB. 390R 1/4J SFR25 2322 181 53391		1.000	ST 3
06	R.36	240338	RESISTOR CARB. 390R 1/4J SFR25 2322 181 53391		1.000	ST 3
06	R.37	328545	RESISTOR CARB. 220R 1/4J SFR25 2322 181 53221		1.000	ST 3
05	R.38	240257	RESISTOR CARB. 180R 1/4J SFR25 2322 181 53181		1.000	ST 3
06	R.39	240362	RESISTOR CARB. 560R 1/4J SFR25 2322 181 53561		1.000	ST 3
06	R.40	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
07	R.41	240540	RESISTOR CARB. 6K8 1/4J SFR25 2322 181 53682		1.000	ST 3
06	R.42	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
06	R.43	240605	RESISTOR CARB. 15K 1/4J SFR25 2322 181 53153		1.000	ST 3
06	R.44	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
06	R.45	372137	RESISTOR CARB. 20K 1/4J SFR25 2322 181 53203		1.000	ST 3
06	R.46	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
06	R.47	240478	RESISTOR CARB. 2K7 1/4J SFR25 2322 181 53272		1.000	ST 3
06	R.48	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
06	R.50	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
07	R.51	240540	RESISTOR CARB. 6K8 1/4J SFR25 2322 181 53682		1.000	ST 3
04	R.52	451096	RESISTOR FILM 4K75 1/4D MPR24 2322 141 40...		1.000	ST 3
04	R.53	451096	RESISTOR FILM 4K75 1/4D MPR24 2322 141 40...		1.000	ST 3
06	R.54	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
04	R.55	451096	RESISTOR FILM 4K75 1/4D MPR24 2322 141 40...		1.000	ST 3
04	R.56	451096	RESISTOR FILM 4K75 1/4D MPR24 2322 141 40...		1.000	ST 3
04	R.57	451096	RESISTOR FILM 4K75 1/4D MPR24 2322 141 40...		1.000	ST 3
04	R.58	451096	RESISTOR FILM 4K75 1/4D MPR24 2322 141 40...		1.000	ST 3
06	R.59	349593	RESISTOR FILM 2K74 0,6F MRS25 2322 156 12742		1.000	ST 3
04	R.60	451096	RESISTOR FILM 4K75 1/4D MPR24 2322 141 40...		1.000	ST 3
04	R.61	451118	RESISTOR FILM 560R 1/4D EE 471 T-9		1.000	ST 3
04	R.62	451126	RESISTOR FILM 10K0 1/4D EE 471 T-9		1.000	ST 3
06	R.63	240583	RESISTOR CARB. 12K 1/4J SFR25 2322 181 53123		1.000	ST 3
06	R.64	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
05	R.65	349607	RESISTOR FILM 18K2 0,6F MRS25 2322 156 11823		1.000	ST 3
05	R.66	349569	RESISTOR FILM 6K81 0,6F MRS25 2322 156 16812		1.000	ST 3
05	R.67	349569	RESISTOR FILM 6K81 0,6F MRS25 2322 156 16812		1.000	ST 3
04	R.68	365831	RESISTOR CARB. 680K 1/4J SFR25 2322 181 53684		1.000	ST 3
04	R.69	451134	RESISTOR FILM 12K4 1/4D EE 471 T-9		1.000	ST 3
04	R.70	451096	RESISTOR FILM 4K75 1/4D MPR24 2322 141 40...		1.000	ST 3
05	R.71	372110	RESISTOR FILM 19K6 0,6F MRS25 2322 156 11963		1.000	ST 3
05	R.72	436879	RESISTOR SEMIV 20K 3/4K CERM 3006P-1-203		1.000	ST 3
06	R.73	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
06	R.74	240605	RESISTOR CARB. 15K 1/4J SFR25 2322 181 53153		1.000	ST 3
06	R.75	240478	RESISTOR CARB. 2K7 1/4J SFR25 2322 181 53272		1.000	ST 3
06	R.76	240362	RESISTOR CARB. 560R 1/4J SFR25 2322 181 53561		1.000	ST 3
06	R.77	240478	RESISTOR CARB. 2K7 1/4J SFR25 2322 181 53272		1.000	ST 3
06	R.78	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
06	R.79	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
06	R.80	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
06	R.81	240346	RESISTOR CARB. 470R 1/4J SFR25 2322 181 53471		1.000	ST 3
06	R.82	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
06	R.83	240362	RESISTOR CARB. 560R 1/4J SFR25 2322 181 53561		1.000	ST 3
06	R.84	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
05	R.85	240214	RESISTOR CARB. 82R 1/4J SFR25 2322 181 53829		1.000	ST 3
06	R.86	240494	RESISTOR CARB. 3K9 1/4J SFR25 2322 181 53392		1.000	ST 3
06	R.87	328545	RESISTOR CARB. 220R 1/4J SFR25 2322 181 53221		1.000	ST 3
05	R.88	240125	RESISTOR CARB. 22R 1/4J SFR25 2322 181 53229		1.000	ST 3
06	R.89	328545	RESISTOR CARB. 220R 1/4J SFR25 2322 181 53221		1.000	ST 3
06	R.90	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
06	R.91	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
06	R.92	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
06	R.93	240478	RESISTOR CARB. 2K7 1/4J SFR25 2322 181 53272		1.000	ST 3
06	R.94	240346	RESISTOR CARB. 470R 1/4J SFR25 2322 181 53471		1.000	ST 3
06	R.95	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
07	R.96	240540	RESISTOR CARB. 6K8 1/4J SFR25 2322 181 53682		1.000	ST 3
06	R.97	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
06	R.98	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
06	R.99	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
06	R100	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
06	R101	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
06	R102	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
06	R104	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
06	R105	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
08	R106	240516	RESISTOR CARB. 4K7 1/4J SFR25 2322 181 53472		1.000	ST 3
06	R107	240443	RESISTOR CARB. 2K0 1/4J SFR25 2322 181 53202		1.000	ST 3

PARENT ITEM NO.  
488232DESCRIPTION STANDARD OCXO, 5MHZ A2  
ENGR DRAW EMK T488232

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
06 R108	240443	RESISTOR CARB. 2K0 1/4J SFR25	2322 181 53202	1.000	ST 3
05 R109	240206	RESISTOR CARB. 56R 1/4J SFR25	2322 181 53569	1.000	ST 3
06 R110	240346	RESISTOR CARB. 470R 1/4J SFR25	2322 181 53471	1.000	ST 3
06 TP..	231304	TERMINAL STUD 2,5X7 Ø1,3	4772	17.000	ST 3
04 U..1	434825	IC DIGITAL 74LS163N BIN.COUNT.	SN74LS163N	1.000	ST 3
04 U..2	434825	IC DIGITAL 74LS163N BIN.COUNT.	SN74LS163N	1.000	ST 3
05 U..3	365874	IC DIGITAL 74LS 74N 2X D FF	SN74LS74N	1.000	ST 3
05 U..5	451231	IC LINEAR LM 723C VOLT REGL. LM723CN(14 PIN)		1.000	ST 3
05 U..6	451282	IC LINEAR LF 356N OP.AMP.	LF356N	1.000	ST 3
04 U..7	442933	IC DIGITAL 74LS393 2XBIN.COUN	SN74LS393	1.000	ST 3
05 U..9	404705	IC DIGITAL 74LS 00N 4X2IN NAND	SN74LS00N	1.000	ST 3
04 U.10	450375	IC DIGITAL 10116P ECL BUFFER	MC10116P	1.000	ST 3
04 U.11	357898	IC DIGITAL 74S112 2X JK-FF	SN74S112	1.000	ST 3
04 U.12	451177	IC DIGITAL 74LS290N DEC.COUNT.	SN74LS290N	1.000	ST 3
04 U.13	434825	IC DIGITAL 74LS163N BIN.COUNT.	SN74LS163N	1.000	ST 3
04 U.14	434825	IC DIGITAL 74LS163N BIN.COUNT.	SN74LS163N	1.000	ST 3
05 U.15	365874	IC DIGITAL 74LS 74N 2X D FF	SN74LS74N	1.000	ST 3
05 U.16	433535	IC DIGITAL 74LS 04 6XINVERTER	SN74LS04	1.000	ST 3
04 U.17	451258	IC LINEAR LM 2901N VOLT COMP.	LM2901N	1.000	ST 3
05 U.18	365874	IC DIGITAL 74LS 74N 2X D FF	SN74LS74N	1.000	ST 3
05 U.19	451282	IC LINEAR LF 356N OP.AMP.	LF356N	1.000	ST 3
05 U.20	451282	IC LINEAR LF 356N OP.AMP.	LF356N	1.000	ST 3
05 U.21	451266	IC LINEAR LM 301A OP.AMP.	LM301AM	1.000	ST 3
04 U.22	451215	IC LINEAR DAC-08EN D/A CONV.	AMDAC-08EN	1.000	ST 3
04 U.23	451304	IC LINEAR LM 3046N TRANS.ARR.	LM3046N	1.000	ST 3
05 U.24	433683	IC DIGITAL 74LS138 3-8 DECOD.	SN74LS138	1.000	ST 3
05 U.25	451185	IC DIGITAL 74LS 02N 4X2IN NOR	SN74LS02N	1.000	ST 3
05 U.26	362131	IC DIGITAL 74 06N 6X INV-BUF	SN7406N	1.000	ST 3
04 U.27	451169	IC DIGITAL 74LS365N 6X BUSDRIV	SN74LS365AN	1.000	ST 3
04 U.28	451029	IC DIGITAL 74LS377N 8X D-FF	SN74LS377N	1.000	ST 3
04 U.29	451029	IC DIGITAL 74LS377N 8X D-FF	SN74LS377N	1.000	ST 3
04 U.30	451193	IC DIGITAL 74LS175N 4X D FF	SN74LS175N	1.000	ST 3
04 U.31	451193	IC DIGITAL 74LS175N 4X D FF	SN74LS175N	1.000	ST 3
04 U.32	451207	IC DIGITAL 74LS283N 4BIT ADDER	SN74LS283N	1.000	ST 3
04 U.33	451207	IC DIGITAL 74LS283N 4BIT ADDER	SN74LS283N	1.000	ST 3
04 U.34	451193	IC DIGITAL 74LS175N 4X D FF	SN74LS175N	1.000	ST 3
04 U.35	451207	IC DIGITAL 74LS283N 4BIT ADDER	SN74LS283N	1.000	ST 3
05 U.36	365874	IC DIGITAL 74LS 74N 2X D FF	SN74LS74N	1.000	ST 3
04 U.37	451150	IC DIGITAL 74LS669N U/D COUNT.	SN74LS669N	1.000	ST 3
04 U.38	451150	IC DIGITAL 74LS669N U/D COUNT.	SN74LS669N	1.000	ST 3
07 VR.1	228818	DIODE ZENER ZPD 2.7 2.7V 0.5W	ZPD2.7	1.000	ST 3
04 VR.2	451223	DIODE ZEN. BZX792V4 2.4V 0.5W	BZX79C2V4	1.000	ST 3
05 VR.3	228842	DIODE ZENER ZPD 5.6 5.6V 0.5W	ZPD5.6	1.000	ST 3
05 VR.4	228842	DIODE ZENER ZPD 5.6 5.6V 0.5W	ZPD5.6	1.000	ST 3
02 W..1	487953	COAX CABLE ASS W1 RX4009 A2	EMK 4T487953	1.000	ST 3
05 XY.1	216070	FUSE ACCESSORY CLIPS	5965	1.000	ST 3
04 XY.1	486825	CONNECTOR 1P FEMALE	450-3310-01-03	2.000	ST 3
04 Y..1	485888	CRYSTAL 73,60000MHZ HC42-U S	TQ34.07.16 S	1.000	ST 3
03 Y..2	462136	CRYSTALOSC 10,24MHZ OCXO ALDET	FS5782-41-00TTL	1.000	ST 2

PARENT ITEM NO.  
448206DESCRIPTION FRONT END ASSY A3  
ENGR DRAW EMK T448206

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
04 ...1	448192	PRINTED CIRC.BOARD M3000 A3	EMK 2T448192	1.000	ST 3
04 A..1	448222	INPUT AMPLIFIER A3A1	EMK T448222	1.000	ST 1
04 A..2	448249	1.MIXER ASSY A3A2	EMK T448249	1.000	ST 1
04 A..3	448265	LO AMPLIFIER ASSY A3A3	EMK T448265	1.000	ST 1
04 A..4	448281	1.IF AMPLIFIER ASSY A3A4	EMK T448281	1.000	ST 1
04 A..5	448311	75 MHZ AGC ASSY A3A5	EMK T448311	1.000	ST 1
04 A..6	448346	2.MIXER ASSY A3A6	EMK T448346	1.000	ST 1
04 A..7	448362	2.IF AMPLIFIER ASSY A3A7	EMK T448362	1.000	ST 1
04 C..1	450952	CAPAC.FEED THROUGH 82P250 J	9/0121.50	1.000	ST 3
05 C.67	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.68	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.69	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.70	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.71	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.72	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.73	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.74	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.75	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.76	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.77	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.78	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.79	448834	CAPACITOR PLST 1N5 160 H	B33063-B1152-H	1.000	ST 3
05 C.80	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.81	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.82	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.83	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.84	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.85	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.86	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.87	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.88	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.89	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.90	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.91	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.92	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.93	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.94	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.95	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C.96	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C.97	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C.98	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C.99	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
04 CR.4	450944	DIODE SIGN. 1S 921 SI 200MA 1S921	1S921	1.000	ST 3
04 CR.5	450944	DIODE SIGN. 1S 921 SI 200MA 1S921	1S921	1.000	ST 3
04 CR.6	450944	DIODE SIGN. 1S 921 SI 200MA 1S921	1S921	1.000	ST 3
04 CR.7	450944	DIODE SIGN. 1S 921 SI 200MA 1S921	1S921	1.000	ST 3
04 CR.8	450944	DIODE SIGN. 1S 921 SI 200MA 1S921	1S921	1.000	ST 3
04 CR.9	450944	DIODE SIGN. 1S 921 SI 200MA 1S921	1S921	1.000	ST 3
04 CR10	450944	DIODE SIGN. 1S 921 SI 200MA 1S921	1S921	1.000	ST 3
04 CR11	450944	DIODE SIGN. 1S 921 SI 200MA 1S921	1S921	1.000	ST 3
06 C100	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C101	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C102	358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06 C104	209791	CAPACITOR TAN. 2U2 35 S	0678-901-238	1.000	ST 3
07 C110	436976	CAPACITOR CER. 100N 100 M	CK06BX104M	1.000	ST 3
07 C111	436976	CAPACITOR CER. 100N 100 M	CK06BX104M	1.000	ST 3
04 E..1	375314	COIL,ACCESSORY FERRITCORE	B62110A6022X025	1.000	ST 3
04 E..2	375314	COIL,ACCESSORY FERRITCORE	B62110A6022X025	1.000	ST 3
04 E..3	375314	COIL,ACCESSORY FERRITCORE	B62110A6022X025	1.000	ST 3
04 E..4	375314	COIL,ACCESSORY FERRITCORE	B62110A6022X025	1.000	ST 3
04 E..5	375314	COIL,ACCESSORY FERRITCORE	B62110A6022X025	1.000	ST 3
04 E..6	375314	COIL,ACCESSORY FERRITCORE	B62110A6022X025	1.000	ST 3
04 E..7	375314	COIL,ACCESSORY FERRITCORE	B62110A6022X025	1.000	ST 3
04 E..8	375314	COIL,ACCESSORY FERRITCORE	B62110A6022X025	1.000	ST 3
04 E..9	375314	COIL,ACCESSORY FERRITCORE	B62110A6022X025	1.000	ST 3
04 FL.1	363367	FILTER,XTAL 75MHZ 12KHZ	EMK 4T 21399	1.000	ST 3
04 FL.6	450960	FILTER,CER-PHI 0U5	9/0168.50	1.000	ST 3
04 FL.7	450960	FILTER,CER-PHI 0U5	9/0168.50	1.000	ST 3
04 FL.8	450960	FILTER,CER-PHI 0U5	9/0168.50	1.000	ST 3
04 FL.9	450960	FILTER,CER-PHI 0U5	9/0168.50	1.000	ST 3
04 FL10	450960	FILTER,CER-PHI 0U5	9/0168.50	1.000	ST 3
04 FL11	450960	FILTER,CER-PHI 0U5	9/0168.50	1.000	ST 3
04 FL12	450960	FILTER,CER-PHI 0U5	9/0168.50	1.000	ST 3
04 FL13	450960	FILTER,CER-PHI 0U5	9/0168.50	1.000	ST 3
08 H..1	276758	SCREW M 2 X 6 CHM CU SN	DIN 84	28.000	ST 3
05 H..2	458694	SCREW M 2,5X 5 CHM CU SN	DIN 84 HFC 93	5.000	ST 3
07 H..3	438227	FLEX TEFLON Ø0,7X Ø1,2	TWT22 BS2848	.200	M 3
06 H..4	325619	SCREW SELFTA.4X3/16 RPPX NO.4	HFC206	4.000	ST 3
05 H..5	450065	COIL,ACCESSORY SCREEN,CAN	433-09-221-00	1.000	ST 3
04 J..1	475521	COAX CONNECTOR SMB FEM-PCB	51-053-9029-22	1.000	ST 3
04 L.31	450413	COIL,CHOKE 1M0 K	IM-2	1.000	ST 3
04 L.32	450413	COIL,CHOKE 1M0 K	IM-2	1.000	ST 3

PARENT ITEM NO.  
448206DESCRIPTION FRONT END ASSY A3  
ENGR DRAW EMK T448206

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
04 L.33	450413	COIL,CHOKE 1M0 K	IM-2	1.000	ST 3
04 L.34	450413	COIL,CHOKE 1M0 K	IM-2	1.000	ST 3
05 L.36	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 L.37	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 L.38	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 L.39	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 L.40	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
04 MF.1	460192	REAR PLATE FRONTEND M 3000 A3	EMK 4T460192	1.000	ST 2
05 MF.2	448095	RETAINER,PC M 3000	EMK 4T448095	1.000	ST 2
06 MF.3	260819	THUMBSCREW,KNURLED M3	EMK 5T 18978	2.000	ST 3
04 MF.4	460001	SCREEN BOX ASSY M 3000 A3	EMK 2T460001	1.000	ST 2
06 R.60	240494	RESISTOR CARB. 3K9 1/4J SFR25	2322 181 53392	1.000	ST 3
06 R.61	240494	RESISTOR CARB. 3K9 1/4J SFR25	2322 181 53392	1.000	ST 3
06 R.62	240494	RESISTOR CARB. 3K9 1/4J SFR25	2322 181 53392	1.000	ST 3
06 R.63	240494	RESISTOR CARB. 3K9 1/4J SFR25	2322 181 53392	1.000	ST 3
06 R.64	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
06 R.65	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
06 R.66	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
06 R.67	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
06 R.68	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R.69	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
04 T.7	451908	TRAFO A3T7 M 3000	EMK 4T451908	1.000	ST 2
06 TP..	231304	TERMINAL STUD 2,5X7 Ø1,3	4772	9.000	ST 3
05 U..4	362131	IC DIGITAL 74 06N 6X INV-BUF	SN7406N	1.000	ST 3
05 U..5	433683	IC DIGITAL 74LS138 3-8 DECOD.	SN74LS138	1.000	ST 3
04 U..6	451630	IC DIGITAL 74LS379N 4X D-FF	SN74LS379N	1.000	ST 3
04 W..1	458805	COAX CABLE ASSY W1 M 3000 A3	EMK 4T458805	1.000	ST 3
04 W..2	458813	COAX CABLE ASSY W2 M 3000 A3	EMK 4T458813	1.000	ST 3
04 W..3	458821	COAX CABLE ASSY W3 M 3000 A3	EMK 4T458821	1.000	ST 3

DANSK RADIO AS

SINGLE LEVEL BILL WITH BLOW-THRU

DATE 11/09/87  
OPER LSRPARENT ITEM NO.  
448222DESCRIPTION INPUT AMPLIFIER A3A1  
ENGR DRAW EMK T448222

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
09	891177	FORMONTAGE		.360	TI 9
08	895075			.050	TI 9
05 ...1	448214	PRINTED CIRC.BORD M3000 A3A1 EMK 4T448214		1.000	ST 3
06 C..2	357553	CAPACITOR CER. 82F 100 C N150 2222 683 34829		1.000	ST 3
05 C..3	450529	CAPACITOR ELEC 6U8 25 M 2222 122 56688		1.000	ST 3
05 C..4	450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
06 C..5	357472	CAPACITOR CER. 18F 100 G N150 2222 683 34189		1.000	ST 3
05 C..6	450529	CAPACITOR ELEC 6U8 25 M 2222 122 56688		1.000	ST 3
05 C..7	450529	CAPACITOR ELEC 6U8 25 M 2222 122 56688		1.000	ST 3
05 C..8	450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
05 C..9	450529	CAPACITOR ELEC 6U8 25 M 2222 122 56688		1.000	ST 3
06 C103	357480	CAPACITOR CER. 22F 100 G N150 2222 683 34229		1.000	ST 3
05 C105	357391	CAPACITOR CER. 4F7 100 C N150 2222 683 33478		1.000	ST 3
05 C106	450529	CAPACITOR ELEC 6U8 25 M 2222 122 56688		1.000	ST 3
07 H..1	349135	TRANS.ACCESSORY HEATSI.T05 KK5095 C/W45		1.000	ST 3
07 H..2	218944	TRANS.ACCESSORY PAD T0-5 T05-009		1.000	ST 3
05 L..1	375330	COIL,CHOKE 0U22 K IM-2		1.000	ST 3
05 L..3	394270	COIL,CHOKE 220U K IM-2		1.000	ST 3
06 MP.1	394742	STAY NUT M2 X 5 Ø4 F/PCB EMK 4T 22733		4.000	ST 3
05 Q..1	362514	TRANS.HIPOW 2N5109 SI-N T0-39 2N5109		1.000	ST 3
07 Q..9	273899	TRANS.LOPOW BC 547B SI-N T0-92 BC547B		1.000	ST 3
05 R..1	240214	RESISTOR CARB. 82R 1/4J SFR25 2322 181 53829		1.000	ST 3
07 R..2	240451	RESISTOR CARB. 2K2 1/4J SFR25 2322 181 53222		1.000	ST 3
06 R..3	240419	RESISTOR CARB. 1K2 1/4J SFR25 2322 181 53122		1.000	ST 3
06 R..4	240265	RESISTOR CARB. 200R 1/4J SFR25 2322 181 53201		1.000	ST 3
05 R.74	240273	RESISTOR CARB. 240R 1/4J SFR25 2322 181 53241		1.000	ST 3
06 R.75	240443	RESISTOR CARB. 2K0 1/4J SFR25 2322 181 53202		1.000	ST 3
05 T..1	451886	TRAFO A3A1T1 M 3000 EMK 4T451886		1.000	ST 2

PARENT ITEM NO.  
448249DESCRIPTION 1.MIXER ASSY  
ENGR DRAW EMK T448249

A3A2

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
09	891177	FORMONTAGE		.410	TI 9
08	895075			.030	TI 9
05 ...1	448230	PRINTED CIRC.BOARD M3000 A3A2 EMK 4T448230		1.000	ST 3
06 C.27	357553	CAPACITOR CER. 82P 100 C N150 2222 683 34829		1.000	ST 3
06 C.28	357472	CAPACITOR CER. 18P 100 G N150 2222 683 34189		1.000	ST 3
06 C.29	357480	CAPACITOR CER. 22P 100 G N150 2222 683 34229		1.000	ST 3
05 C.30	357588	CAPACITOR CER. 120P 100 G N150 2222 683 34121		1.000	ST 3
05 C.31	357596	CAPACITOR CER. 150P 100 G N150 2222 683 34151		1.000	ST 3
06 L.14	393967	COIL,CHOKE 0U15 K IM-2		1.000	ST 3
05 L.15	450391	COIL,CHOKE 0U39 K IM-2		1.000	ST 3
05 L.16	450405	COIL,CHOKE 0U68 K IM-2		1.000	ST 3
05 L.17	357820	COIL,CHOKE 2U2 K IM-2		1.000	ST 3
06 MP.1	394742	STAY NUT M2 X 5 Ø4 F/PCB EMK 4T 22733		4.000	ST 3
06 R.22	240192	RESISTOR CARB. 51R 1/4J SFR25 2322 181 53519		1.000	ST 3
05 U..1	362530	IC HYBRID SRA 3H BAL.MIXER SRA3H		1.000	ST 3

PARENT ITEM NO.  
448265DESCRIPTION LO AMPLIFIER ASSY A3A3  
ENGR DRAW EMK T448265

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
09	891177	FORMONTAGE		.280	TI 9
08	895075			.080	TI 9
05	...1 448257	PRINTED CIRC.BOARD M3000 A3A3 EMK 4T448257		1.000	ST 3
06	C.10 358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06	C.11 358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06	C.12 357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
06	C.13 358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06	C.14 357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
05	C.15 357537	CAPACITOR CER. 56P 100 C N150	2222 683 34569	1.000	ST 3
06	C.16 358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06	C.17 358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06	C.18 357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
06	C.19 357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
06	C.20 358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
06	C.21 357480	CAPACITOR CER. 22F 100 G N150	2222 683 34229	1.000	ST 3
06	C.22 357383	CAPACITOR CER. 3P9 100 C N150	2222 683 33398	1.000	ST 3
06	C.23 357499	CAPACITOR CER. 27F 100 G N150	2222 683 34279	1.000	ST 3
05	C.24 357464	CAPACITOR CER. 15P 100 G N150	2222 683 34159	1.000	ST 3
05	C.25 357413	CAPACITOR CER. 6P8 100 C N150	2222 683 33688	1.000	ST 3
05	C.26 357413	CAPACITOR CER. 6P8 100 C N150	2222 683 33688	1.000	ST 3
05	H..1 386847	TRANS.ACCESSORY HEATSINK	KK1895	1.000	ST 3
07	H..2 349135	TRANS.ACCESSORY HEATSINK	KK5095 C/W45	1.000	ST 3
07	H..3 218944	TRANS.ACCESSORY PAD T0-5	T05-009	1.000	ST 3
07	H..4 218952	TRANS.ACCESSORY PAD T0-18	T0518-004	1.000	ST 3
05	L..4 357820	COIL,CHOKE 2U2 K	IM-2	1.000	ST 3
05	L..5 357820	COIL,CHOKE 2U2 K	IM-2	1.000	ST 3
05	L..6 357820	COIL,CHOKE 2U2 K	IM-2	1.000	ST 3
05	L..7 357820	COIL,CHOKE 2U2 K	IM-2	1.000	ST 3
05	L..8 375330	COIL,CHOKE 0U22 K	IM-2	1.000	ST 3
05	L..9 375330	COIL,CHOKE 0U22 K	IM-2	1.000	ST 3
06	L.10 394335	COIL,CHOKE 0U1 K	IM-2	1.000	ST 3
06	L.11 393967	COIL,CHOKE 0U15 K	IM-2	1.000	ST 3
05	L.12 375330	COIL,CHOKE 0U22 K	IM-2	1.000	ST 3
05	L.13 363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
06	MP.1 394742	STAY NUT M2 X 5 Ø4 F/PCB EMK 4T 22733		4.000	ST 3
06	Q..2 357804	TRANS.UHF BFX 89 SI-N T0-72 BFX89		1.000	ST 3
05	Q..3 362514	TRANS.HIPOWER 2N5109 SI-N T0-39 2N5109		1.000	ST 3
06	R..6 240435	RESISTOR CARB. 1K8 1/4J SFR25	2322 181 53182	1.000	ST 3
05	R..7 450979	RESISTOR CARB. 360R 1/4J SFR25	2322 181 53361	1.000	ST 3
06	R..8 240478	RESISTOR CARB. 2K7 1/4J SFR25	2322 181 53272	1.000	ST 3
07	R..9 240397	RESISTOR CARB. 820R 1/4J SFR25	2322 181 53821	1.000	ST 3
05	R.10 240133	RESISTOR CARB. 24R 1/4J SFR25	2322 181 53249	1.000	ST 3
05	R.11 240273	RESISTOR CARB. 240R 1/4J SFR25	2322 181 53241	1.000	ST 3
06	R.12 240346	RESISTOR CARB. 470R 1/4J SFR25	2322 181 53471	1.000	ST 3
06	R.13 240265	RESISTOR CARB. 200R 1/4J SFR25	2322 181 53201	1.000	ST 3
06	R.14 240443	RESISTOR CARB. 2K0 1/4J SFR25	2322 181 53202	1.000	ST 3
06	R.15 240419	RESISTOR CARB. 1K2 1/4J SFR25	2322 181 53122	1.000	ST 3
05	R.16 450979	RESISTOR CARB. 360R 1/4J SFR25	2322 181 53361	1.000	ST 3
05	R.17 240117	RESISTOR CARB. 18R 1/4J SFR25	2322 181 53189	1.000	ST 3
05	R.18 240117	RESISTOR CARB. 18R 1/4J SFR25	2322 181 53189	1.000	ST 3
05	R.19 240273	RESISTOR CARB. 240R 1/4J SFR25	2322 181 53241	1.000	ST 3
06	R.20 240265	RESISTOR CARB. 200R 1/4J SFR25	2322 181 53201	1.000	ST 3
06	R.21 240192	RESISTOR CARB. 51R 1/4J SFR25	2322 181 53519	1.000	ST 3



PARENT ITEM NO.  
448281DESCRIPTION 1.IF AMPLIFIER ASSY A3A4  
ENGR DRAW EMK T448281

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
09	891177	FORMONTAGE		.320	TI 9
08	895075			.060	TI 9
05	...1 448273	PRINTED CIRC.BOARD M3000 A3A4 EMK 4T448273		1.000	ST 3
06	C.32 357472	CAPACITOR CER. 18P 100 G N150 2222 683 34189		1.000	ST 3
06	C.33 357480	CAPACITOR CER. 22P 100 G N150 2222 683 34229		1.000	ST 3
05	C.34 373419	CAPACITOR SEM 2-18P TEFLON 107.2901.018		1.000	ST 3
06	C.35 357502	CAPACITOR CER. 33P 100 G N150 2222 683 34339		1.000	ST 3
05	C.38 450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
05	C.39 450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
06	C.40 358959	CAPACITOR CER. 1N0 100 K 2222 630 19102		1.000	ST 3
05	C.41 450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
06	C.42 358959	CAPACITOR CER. 1N0 100 K 2222 630 19102		1.000	ST 3
06	C.43 357383	CAPACITOR CER. 3P9 100 C N150 2222 683 33398		1.000	ST 3
05	C.45 450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
06	C.46 358959	CAPACITOR CER. 1N0 100 K 2222 630 19102		1.000	ST 3
05	C.47 450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
07	CR.1 228087	DIODE SIGN. 1N4148 SI 150MA 1N4148		1.000	ST 3
05	H..1 349097	TRANS.ACCESSORY HEATSI.T05 KK505 C/W60		1.000	ST 3
07	H..2 349135	TRANS.ACCESSORY HEATSI.T05 KK5095 C/W45		1.000	ST 3
06	H..3 373362	IC ACCESSORY 10 PIN PAD TO-5 KU-960/10		1.000	ST 3
07	H..4 218944	TRANS.ACCESSORY PAD TO-5 T05-009		1.000	ST 3
05	J..1 358665	COAX CONNECTOR SMB FEM-PCB 82-SMB-50-0-1		1.000	ST 3
05	L.18 375330	COIL,CHOKE 0U22 K IM-2		1.000	ST 3
05	L.19 375330	COIL,CHOKE 0U22 K IM-2		1.000	ST 3
05	L.20 375330	COIL,CHOKE 0U22 K IM-2		1.000	ST 3
05	L.21 375330	COIL,CHOKE 0U22 K IM-2		1.000	ST 3
05	L.22 357820	COIL,CHOKE 2U2 K IM-2		1.000	ST 3
06	L.23 392294	COIL,CHOKE 10U K IM-2		1.000	ST 3
06	MP.1 394742	STAY NUT M2 X 5 Ø4 F/PCB EMK 4T 22733		4.000	ST 3
07	Q..4 273899	TRANS.LOPOW BC 547B SI-N TO-92 BC547B		1.000	ST 3
05	Q..5 448710	TRANS.JFETN U 431 DUAL TO-99 U431		1.000	ST 3
05	Q..6 362514	TRANS.HIPOW 2N5109 SI-N TO-39 2N5109		1.000	ST 3
05	R.23 371033	RESISTOR FILM 100R 0,6F MRS25 2322 156 11001		1.000	ST 3
05	R.24 371033	RESISTOR FILM 100R 0,6F MRS25 2322 156 11001		1.000	ST 3
05	R.25 458260	RESISTOR SEMIV 20R 1/2K CERM 3386P-1-200		1.000	ST 3
06	R.26 240443	RESISTOR CARB. 2K0 1/4J SFR25 2322 181 53202		1.000	ST 3
06	R.27 240419	RESISTOR CARB. 1K2 1/4J SFR25 2322 181 53122		1.000	ST 3
06	R.28 240419	RESISTOR CARB. 1K2 1/4J SFR25 2322 181 53122		1.000	ST 3
06	R.30 240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
09	R.31 240222	RESISTOR CARB. 100R 1/4J SFR25 2322 181 53101		1.000	ST 3
07	R.32 240451	RESISTOR CARB. 2K2 1/4J SFR25 2322 181 53222		1.000	ST 3
07	R.33 240109	RESISTOR CARB. 10R 1/4J SFR25 2322 181 53109		1.000	ST 3
05	R.34 240214	RESISTOR CARB. 82R 1/4J SFR25 2322 181 53829		1.000	ST 3
06	R.35 240419	RESISTOR CARB. 1K2 1/4J SFR25 2322 181 53122		1.000	ST 3
05	R.36 371033	RESISTOR FILM 100R 0,6F MRS25 2322 156 11001		1.000	ST 3
05	T..2 451940	TRAFO A3A4T2 M 3000 EMK 4T451940		1.000	ST 2
05	T..3 451967	TRAFO A3A4T3 M 3000 EMK 4T451967		1.000	ST 2

PARENT ITEM NO.  
448311DESCRIPTION 75 MHZ AGC ASSY A3A5  
ENGR DRAW EMK T448311

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
09	891177	FORMONTAGE		.640	TI 9
08	895075			.040	TI 9
05	...1 448303	PRINTED CIRC. BOARD M3000 A3A5 EMK 4T448303		1.000	ST 3
06	C.48 358959	CAPACITOR CER. 1N0 100 K 2222 630 19102		1.000	ST 3
06	C.49 357642	CAPACITOR CER. 10N 100 S HI-K 2222 640 06103		1.000	ST 3
06	C.50 357642	CAPACITOR CER. 10N 100 S HI-K 2222 640 06103		1.000	ST 3
06	C.52 357642	CAPACITOR CER. 10N 100 S HI-K 2222 640 06103		1.000	ST 3
06	C.53 357642	CAPACITOR CER. 10N 100 S HI-K 2222 640 06103		1.000	ST 3
05	C.54 385646	CAPACITOR CER. 2P7 100 C P100 2222 632 03278		1.000	ST 3
06	C.55 358959	CAPACITOR CER. 1N0 100 K 2222 630 19102		1.000	ST 3
05	C.56 357561	CAPACITOR CER. 100P 100 G NP0 2222 679 10101		1.000	ST 3
05	C.57 357561	CAPACITOR CER. 100P 100 G NP0 2222 679 10101		1.000	ST 3
06	C.58 357472	CAPACITOR CER. 18P 100 G N150 2222 683 34189		1.000	ST 3
06	C.59 357642	CAPACITOR CER. 10N 100 S HI-K 2222 640 06103		1.000	ST 3
06	C.60 357480	CAPACITOR CER. 22P 100 G N150 2222 683 34229		1.000	ST 3
06	C.61 357456	CAPACITOR CER. 12P 100 G N150 2222 683 34129		1.000	ST 3
06	C.62 358959	CAPACITOR CER. 1N0 100 K 2222 630 19102		1.000	ST 3
06	C.63 358959	CAPACITOR CER. 1N0 100 K 2222 630 19102		1.000	ST 3
06	C.64 357642	CAPACITOR CER. 10N 100 S HI-K 2222 640 06103		1.000	ST 3
07	CR.2 228087	DIODE SIGN. 1N4148 SI 150MA 1N4148		1.000	ST 3
07	CR.3 228087	DIODE SIGN. 1N4148 SI 150MA 1N4148		1.000	ST 3
07	CR12 228087	DIODE SIGN. 1N4148 SI 150MA 1N4148		1.000	ST 3
07	CR13 452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
06	CR14 228826	DIODE ZENER ZPD 3.3 3.3V 0.5W ZPD3.3		1.000	ST 3
06	C103 358959	CAPACITOR CER. 1N0 100 K 2222 630 19102		1.000	ST 3
06	C107 393959	CAPACITOR CER. 100N 50 M SR215E104MAA		1.000	ST 3
05	E.10 376213	COIL, ACCESSORY FERRITBEAD 4322 020 34420		1.000	ST 3
05	H..2 450073	COIL, ACCESSORY SCREEN, CAN 433-14-121-00		1.000	ST 3
05	L.24 375330	COIL, CHOKE 0U22 K IM-2		1.000	ST 3
05	L.25 375330	COIL, CHOKE 0U22 K IM-2		1.000	ST 3
05	L.41 451983	COIL M 3000 A3/A5 L41 EMK 4T451983		1.000	ST 2
05	L.42 355933	COIL, CHOKE 6U8 K IM-2		1.000	ST 3
06	MP.1 394742	STAY NUT M2 X 5 Ø4 5/PCB EMK 4T 22733		4.000	ST 3
05	Q..7 478695	TRANS. MFETN BF 981 2XG SOT103 BF981		1.000	ST 3
07	Q..9 273899	TRANS. LOPOW BC 547B SI-N TO-92 BC547B		1.000	ST 3
06	Q.10 357901	TRANS. JFETN J 310 TO-92 J310		1.000	ST 3
06	R.37 324191	RESISTOR CARB. 7K5 1/4J SFR25 2322 181 53752		1.000	ST 3
05	R.38 478687	RESISTOR FILM 200R 0,6F MRS25 2322 156 12001		1.000	ST 3
05	R.39 478679	RESISTOR FILM 887R 0,6F MRS25 2322 156 18871		1.000	ST 3
06	R.40 240605	RESISTOR CARB. 15K 1/4J SFR25 2322 181 53153		1.000	ST 3
06	R.41 240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
05	R.42 372064	RESISTOR CARB. 9K1 1/4J SFR25 2322 181 53912		1.000	ST 3
05	R.43 487902	RESISTOR SEMIV 2K 1/2K CERM 3296Y-1-202		1.000	ST 3
06	R.44 240443	RESISTOR CARB. 2K0 1/4J SFR25 2322 181 53202		1.000	ST 3
08	R.45 240516	RESISTOR CARB. 4K7 1/4J SFR25 2322 181 53472		1.000	ST 3
05	R.46 478660	RESISTOR FILM 1K82 0,6F MRS25 2322 156 11822		1.000	ST 3
08	R.47 240516	RESISTOR CARB. 4K7 1/4J SFR25 2322 181 53472		1.000	ST 3
06	R.48 240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
05	R.49 240591	RESISTOR CARB. 13K 1/4J SFR25 2322 181 53133		1.000	ST 3
06	R.50 240141	RESISTOR CARB. 27R 1/4J SFR25 2322 181 53279		1.000	ST 3
06	R.51 240141	RESISTOR CARB. 27R 1/4J SFR25 2322 181 53279		1.000	ST 3
07	R.70 240648	RESISTOR CARB. 27K 1/4J SFR25 2322 181 53273		1.000	ST 3
06	R.71 240230	RESISTOR CARB. 120R 1/4J SFR25 2322 181 53121		1.000	ST 3
07	R.72 240397	RESISTOR CARB. 820R 1/4J SFR25 2322 181 53821		1.000	ST 3
06	R.73 324221	RESISTOR CARB. 2K4 1/4J SFR25 2322 181 53242		1.000	ST 3
06	R.74 240265	RESISTOR CARB. 200R 1/4J SFR25 2322 181 53201		1.000	ST 3
06	R.75 240265	RESISTOR CARB. 200R 1/4J SFR25 2322 181 53201		1.000	ST 3
06	R.76 240230	RESISTOR CARB. 120R 1/4J SFR25 2322 181 53121		1.000	ST 3
06	R.77 240427	RESISTOR CARB. 1K5 1/4J SFR25 2322 181 53152		1.000	ST 3
06	R.78 240230	RESISTOR CARB. 120R 1/4J SFR25 2322 181 53121		1.000	ST 3
06	R.79 240192	RESISTOR CARB. 51R 1/4J SFR25 2322 181 53519		1.000	ST 3
08	R.80 240516	RESISTOR CARB. 4K7 1/4J SFR25 2322 181 53472		1.000	ST 3
07	R.81 357693	RESISTOR CARB. 150K 1/4J SFR25 2322 181 53154		1.000	ST 3
06	R.82 240605	RESISTOR CARB. 15K 1/4J SFR25 2322 181 53153		1.000	ST 3
06	R.83 240583	RESISTOR CARB. 12K 1/4J SFR25 2322 181 53123		1.000	ST 3
06	R.84 240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
05	R.85 240656	RESISTOR CARB. 33K 1/4J SFR25 2322 181 53333		1.000	ST 3
05	RT.1 458252	RESISTOR NTC 4K7 K M822 Q63082-M2472-K		1.000	ST 3
05	T..4 451924	TRAFO A3A5T4 M 3000 EMK 4T451924		1.000	ST 2
05	U..2 462292	IC LINEAR TL 084 4X OP. AMP. TL084		1.000	ST 3

DANSK RADIO AS

SINGLE LEVEL BILL WITH BLOW-THRU

DATE 11/09/87  
OPER LSRPARENT ITEM NO.  
448346DESCRIPTION 2.MIXER ASSY  
ENGR DRAW EMK T448346

A3A6

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
09	891177		FORMONTAGE	.200	TI 9
08	895075			.020	TI 9
05	...1 448338	PRINTED CIRC.BOARD	M3000 A3A6 EMK 4T448338	1.000	ST 3
06	C.59 357510	CAPACITOR CER. 39P	100 G N150 2222 683 34399	1.000	ST 3
06	C.60 357510	CAPACITOR CER. 39P	100 G N150 2222 683 34399	1.000	ST 3
06	L.27 394335	COIL,CHOKE	OU1 K IM-2	1.000	ST 3
06	L.28 394335	COIL,CHOKE	OU1 K IM-2	1.000	ST 3
06	MP.1 394742	STAY NUT M2 X 5	Ø4 F/PCB EMK 4T 22733	4.000	ST 3
06	R.52 240192	RESISTOR CARB. 51R	1/4J SFR25 2322 181 53519	1.000	ST 3
06	R.53 240192	RESISTOR CARB. 51R	1/4J SFR25 2322 181 53519	1.000	ST 3
06	U..3 362522	IC HYBRID SRA 1	BAL.MIXER SRA1	1.000	ST 3

DANSK RADIO AS

SINGLE LEVEL BILL WITH BLOW-THRU

DATE 11/09/87  
OPER LSRPARENT ITEM NO.  
448362DESCRIPTION 2.IF AMPLIFIER ASSY A3A7  
ENGR DRAW EMK T448362

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
09	891177	FORMONTAGE		.240	TI 9
08	895075			.060	TI 9
05	...1 448354	PRINTED CIRC.BOARD M3000 A3A7 EMK 4T448354		1.000	ST 3
06	C.61 357634	CAPACITOR CER. 2N2 100 K HI-K 2222 630 06222		1.000	ST 3
06	C.62 357634	CAPACITOR CER. 2N2 100 K HI-K 2222 630 06222		1.000	ST 3
06	C.63 358932	CAPACITOR PLST 200P 630 F 2222 427 42001		1.000	ST 3
05	C.64 450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
05	C.65 450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
05	C.66 450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
06	L.29 393975	COIL,CHOKE 5U6 K IM-2		1.000	ST 3
06	L.30 393975	COIL,CHOKE 5U6 K IM-2		1.000	ST 3
06	MP.1 394742	STAY NUT M2 X 5 Ø4 F/PCB EMK 4T 22733		4.000	ST 3
06	Q..8 357901	TRANS.JFETN J 310 TO-92 J310		1.000	ST 3
06	R.54 240192	RESISTOR CARB. 51R 1/4J SFR25 2322 181 53519		1.000	ST 3
06	R.55 240192	RESISTOR CARB. 51R 1/4J SFR25 2322 181 53519		1.000	ST 3
06	R.56 240168	RESISTOR CARB. 33R 1/4J SFR25 2322 181 53339		1.000	ST 3
06	R.57 240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST 3
07	R.58 240109	RESISTOR CARB. 10R 1/4J SFR25 2322 181 53109		1.000	ST 3
06	R.59 240230	RESISTOR CARB. 120R 1/4J SFR25 2322 181 53121		1.000	ST 3
05	T..5 489581	TRAFO A3A7T5 M 3000 EMK 4T489581		1.000	ST 2
05	T..6 451894	TRAFO A3A7T6 M 3000 EMK 4T451894		1.000	ST 2

DANSK RADIO AS

SINGLE LEVEL BILL WITH BLOW-THRU

DATE 11/09/87  
OPER LSRPARENT ITEM NO.  
488313DESCRIPTION FILTERS FOR A3  
ENGR DRAW EMK T488313

RX4009

BATCH QTY 1

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
02 FL.2	487783	FILTER,XTAL 1.4MHZ 3.0KHZ	LSB-4	1.000	ST 3
02 FL.3	487791	FILTER,XTAL 1.4MHZ 6.8KHZ	WIDE-4	1.000	ST 3
02 FL.4	487813	FILTER,XTAL 1.4MHZ 0.8KHZ	NARROW-3	1.000	ST 3
02 FL.5	487805	FILTER,XTAL 1.4MHZ 0.3KHZ	VERY NARROW-3	1.000	ST 3

PARENT ITEM NO.  
466743DESCRIPTION SUBOCTAV.STANDARD A4  
ENGR DRAW EMK T466743

BATCH QTY

LL SEQ	COMPONENT	DESCRIPTION	ENGINEERING	QUANTITY	ITEM
CD NO.	ITEM NO.		DRAWING NUMBER		UM TYP
03 ...1	464155	PRINTED CIRC.BOARD SUBOCT.FL.	EMK 2T464155	1.000	ST 3
05 C..1	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..2	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C..3	202975	CAPACITOR PLST 1U 100 K	2222 344 21105	1.000	ST 3
06 C..4	202975	CAPACITOR PLST 1U 100 K	2222 344 21105	1.000	ST 3
05 C..5	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
03 C..6	448745	CAPACITOR PLST 56P 630 H	B33063-B6560-H	1.000	ST 3
05 C..7	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
03 C..8	448796	CAPACITOR PLST 430P 630 H	B33063-B6431-H	1.000	ST 3
03 C..9	448796	CAPACITOR PLST 430P 630 H	B33063-B6431-H	1.000	ST 3
05 C.10	385514	CAPACITOR CER. 100P 100 G N150	2222 632 34101	1.000	ST 3
05 C.11	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C.12	357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
05 C.13	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
03 C.14	466786	CAPACITOR PLST 91P 630 F	B33063-B6910-F	1.000	ST 3
05 C.15	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.16	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C.17	358924	CAPACITOR PLST 620P 250 F	2222 426 46201	1.000	ST 3
06 C.18	358924	CAPACITOR PLST 620P 250 F	2222 426 46201	1.000	ST 3
06 C.19	357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
05 C.20	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.21	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.40	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.41	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C.42	202975	CAPACITOR PLST 1U 100 K	2222 344 21105	1.000	ST 3
06 C.43	357545	CAPACITOR CER. 68P 100 C N150	2222 683 34689	1.000	ST 3
05 C.44	357464	CAPACITOR CER. 15P 100 G N150	2222 683 34159	1.000	ST 3
05 C.45	357596	CAPACITOR CER. 150P 100 G N150	2222 683 34151	1.000	ST 3
05 C.46	357464	CAPACITOR CER. 15P 100 G N150	2222 683 34159	1.000	ST 3
06 C.47	357545	CAPACITOR CER. 68P 100 C N150	2222 683 34689	1.000	ST 3
06 C.48	202975	CAPACITOR PLST 1U 100 K	2222 344 21105	1.000	ST 3
05 C.49	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.50	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.51	466980	CAPACITOR PLST 120P 630 H	B33063-B6121-H	1.000	ST 3
05 C.52	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
03 C.53	466794	CAPACITOR PLST 15P 630 F	B33063-B6150-F	1.000	ST 3
05 C.54	209546	CAPACITOR PLST 1N 160 F	2222 425 41002	1.000	ST 3
05 C.55	209546	CAPACITOR PLST 1N 160 F	2222 425 41002	1.000	ST 3
05 C.56	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.57	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
03 C.58	448761	CAPACITOR PLST 240P 630 H	B33063-B6241-H	1.000	ST 3
05 C.59	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
04 C.60	359696	CAPACITOR PLST 1N6 250 F	2222 426 41602	1.000	ST 3
04 C.61	359696	CAPACITOR PLST 1N6 250 F	2222 426 41602	1.000	ST 3
05 C.62	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.63	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.64	359637	CAPACITOR PLST 360P 630 F	2222 427 43601	1.000	ST 3
05 C.65	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
04 C.66	448850	CAPACITOR PLST 2N2 160 H	B33063-B1222-H	1.000	ST 3
04 C.67	448850	CAPACITOR PLST 2N2 160 H	B33063-B1222-H	1.000	ST 3
05 C.68	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.69	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.70	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.71	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
04 C.72	209619	CAPACITOR PLST 510P 250 F	2222 426 45101	1.000	ST 3
05 C.73	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.74	396060	CAPACITOR PLST 3N9 160 F	2222 425 43902	1.000	ST 3
05 C.75	396060	CAPACITOR PLST 3N9 160 F	2222 425 43902	1.000	ST 3
05 C.76	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.77	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.78	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
03 C.79	462322	CAPACITOR PLST 750P 160 F	B33063-B1751-F	1.000	ST 3
05 C.80	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
04 C.81	362026	CAPACITOR PLST 5N6 63 F	2222 424 45602	1.000	ST 3
04 C.82	362026	CAPACITOR PLST 5N6 63 F	2222 424 45602	1.000	ST 3
05 C.83	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.84	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
04 C.85	450804	CAPACITOR PLST 3N 160 F	B33063-B1302-F	1.000	ST 3
05 C.86	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
04 C.87	448893	CAPACITOR PLST 5N1 160 H	B33063-B1512-H	1.000	ST 3
04 C.88	448893	CAPACITOR PLST 5N1 160 H	B33063-B1512-H	1.000	ST 3
05 C.89	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.90	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.92	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.93	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.94	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.95	448826	CAPACITOR PLST 820P 630 H	B33063-B6821-H	1.000	ST 3
05 C.96	448826	CAPACITOR PLST 820P 630 H	B33063-B6821-H	1.000	ST 3
05 C.97	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
04 C.98	448885	CAPACITOR PLST 4N7 160 H	B33063-B1472-H	1.000	ST 3
04 C.99	448885	CAPACITOR PLST 4N7 160 H	B33063-B1472-H	1.000	ST 3

PARENT ITEM NO.  
466743DESCRIPTION SUBOCTAV.STANDARD A4  
ENGR DRAW EMK T466743

BATCH QTY

LL SED CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
05 CR.1	454389	DIODE ZENER ZPD16 16V 0.5W ZPD16		1.000	ST 3
03 CR.2	488631	DIODE POW.BYW29-150 SI 150V 8A BYW 29-150		1.000	ST 3
03 CR.3	488631	DIODE POW.BYW29-150 SI 150V 8A BYW 29-150		1.000	ST 3
07 CR.4	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148		1.000	ST 3
07 CR.5	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148		1.000	ST 3
07 CR.6	228834	DIODE ZENER ZPD 4.7 4.7V 0.5W ZPD4.7		1.000	ST 3
07 CR.7	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR.8	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR.9	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR10	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
06 CR11	361488	DIODE ZENER ZPD 3.9 3.9V 0.5W ZPD3.9		1.000	ST 3
04 CR12	450987	DIODE SIGN. 1N4150 SI 400MA 1N4150		1.000	ST 3
04 CR13	450987	DIODE SIGN. 1N4150 SI 400MA 1N4150		1.000	ST 3
07 CR14	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR15	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR16	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR17	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR18	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR19	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR20	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR21	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR22	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR23	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR24	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR25	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR26	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR27	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR28	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR29	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR30	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
07 CR31	452238	DIODE PIN BA 379 USORTERET BA379 / BA389		1.000	ST 3
05 C100	450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
05 C101	450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
05 C102	450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
05 C103	396079	CAPACITOR FLST 6N8 63 F 2222 424 46802		1.000	ST 3
04 C104	448842	CAPACITOR FLST 1N8 160 H B33063-B1182-H		1.000	ST 3
04 C105	448923	CAPACITOR FLST 15N 63 F 2222 424 41503		1.000	ST 3
04 C106	448842	CAPACITOR FLST 1N8 160 H B33063-B1182-H		1.000	ST 3
05 C107	396079	CAPACITOR FLST 6N8 63 F 2222 424 46802		1.000	ST 3
05 C108	450529	CAPACITOR ELEC 6U8 25 M 2222 122 56688		1.000	ST 3
05 C109	450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
05 C110	450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
05 C111	450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
05 C112	450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
06 C114	357642	CAPACITOR CER. 10N 100 S HI-K 2222 640 06103		1.000	ST 3
05 C115	450510	CAPACITOR CER. 100N 63 S B37449-C6104-S2		1.000	ST 3
04 E..1	267139	SURGE ARRESTER 90V B1-C90		1.000	ST 3
05 H..1	458694	SCREW M 2,5X 5 CHM CU SN DIN 84 HFC 93		5.000	ST 3
04 H..2	459356	CONTACT SPRING 1 M 3000 EMK 4T459356		1.000	ST 2
04 H..3	459364	CONTACT SPRING 2 M 3000 EMK 4T459364		1.000	ST 2
07 H..4	327506	NUT M 3 M CU SN DIN 934		3.000	ST 3
05 H..5	276804	SCREW M 3 X 8 CHM CU SN DIN 84		3.000	ST 3
06 H..6	380105	WASHER,FLAT Ø 3MM CU SN M DIN433		3.000	ST 3
06 H..7	391387	TRANS.ACCESSORY ISOLAT.FLD SIL-EL33/T0220		3.000	ST 3
03 H..8	489026	TRANS.ACCESSORY INSL.BUSH 56359C		3.000	ST 3
05 J..1	368210	COAX CONNECTOR BNC FEM-CHASS. 22-BNC-50-0-16		1.000	ST 3
04 J..2	475521	COAX CONNECTOR SMB FEM-FCB 51-053-9029-22		1.000	ST 3
03 K..5	488666	RELAY REED 12VDC 500 1XCHG. GR108 CDE45 12V		1.000	ST 3
04 L..1	457590	COIL M 3000 A4 EMK 4T457590		1.000	ST 2
04 L.10	364045	COIL,CHOKE 10M J MS90540-2500-76		1.000	ST 3
06 L.11	363278	COIL,CHOKE 0U33 M IM-4		1.000	ST 3
04 L.11	405493	COIL,CHOKE 0U47 K IM-4		1.000	ST 3
03 L.12	466875	COIL M 3000 A4 L12/L13 EMK 4T466875		1.000	ST 2
03 L.13	466875	COIL M 3000 A4 L12/L13 EMK 4T466875		1.000	ST 2
05 L.14	362921	COIL,CHOKE 33U M IM-4		1.000	ST 3
05 L.15	362921	COIL,CHOKE 33U M IM-4		1.000	ST 3
04 L.16	357766	COIL,CHOKE 0U68 J IM-4		1.000	ST 3
04 L.16	405493	COIL,CHOKE 0U47 K IM-4		1.000	ST 3
04 L.17	364045	COIL,CHOKE 10M J MS90540-2500-76		1.000	ST 3
06 L.18	357782	COIL,CHOKE 0U15 M IM-4		1.000	ST 3
06 L.19	357782	COIL,CHOKE 0U15 M IM-4		1.000	ST 3
05 L.20	362921	COIL,CHOKE 33U M IM-4		1.000	ST 3
05 L.21	362921	COIL,CHOKE 33U M IM-4		1.000	ST 3
05 L.22	446521	COIL,CHOKE U27 K IM-2		1.000	ST 3
05 L.23	446521	COIL,CHOKE U27 K IM-2		1.000	ST 3
03 L.24	466883	COIL,CHOKE 1U8 K IM-4		1.000	ST 3
04 L.25	361364	COIL,CHOKE 0U22 J IM-4		1.000	ST 3
04 L.26	361364	COIL,CHOKE 0U22 J IM-4		1.000	ST 3
04 L.27	357723	COIL,CHOKE 100U J B78108-T1104-J		1.000	ST 3
04 L.28	357723	COIL,CHOKE 100U J B78108-T1104-J		1.000	ST 3
05 L.29	357758	COIL,CHOKE 4U7 K IM-4		1.000	ST 3

PARENT ITEM NO.  
466743DESCRIPTION SUBOCTAV.STANDARD A4  
ENGR DRAW EMK T466743

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
05 L.30	357758	COIL,CHOKE 4U7 K	IM-4	1.000	ST 3
06 L.31	363278	COIL,CHOKE 0U33 M	IM-4	1.000	ST 3
06 L.32	363278	COIL,CHOKE 0U33 M	IM-4	1.000	ST 3
04 L.38	357723	COIL,CHOKE 100U J	B78108-T1104-J	1.000	ST 3
04 L.39	357723	COIL,CHOKE 100U J	B78108-T1104-J	1.000	ST 3
03 L.43	466840	COIL,CHOKE 8U2 K	IM-4	1.000	ST 3
03 L.44	466840	COIL,CHOKE 8U2 K	IM-4	1.000	ST 3
04 L.45	357766	COIL,CHOKE 0U68 J	IM-4	1.000	ST 3
04 L.46	357766	COIL,CHOKE 0U68 J	IM-4	1.000	ST 3
04 L.47	357723	COIL,CHOKE 100U J	B78108-T1104-J	1.000	ST 3
04 L.48	357723	COIL,CHOKE 100U J	B78108-T1104-J	1.000	ST 3
04 L.49	450782	COIL,CHOKE 82U K	IM-2	1.000	ST 3
04 L.50	450782	COIL,CHOKE 82U K	IM-2	1.000	ST 3
04 L.51	450782	COIL,CHOKE 82U K	IM-2	1.000	ST 3
04 L.52	450782	COIL,CHOKE 82U K	IM-2	1.000	ST 3
04 L.53	450782	COIL,CHOKE 82U K	IM-2	1.000	ST 3
04 L.54	450782	COIL,CHOKE 82U K	IM-2	1.000	ST 3
04 L.55	450782	COIL,CHOKE 82U K	IM-2	1.000	ST 3
04 L.56	450782	COIL,CHOKE 82U K	IM-2	1.000	ST 3
04 L.57	450782	COIL,CHOKE 82U K	IM-2	1.000	ST 3
04 L.58	450413	COIL,CHOKE 1M0 K	IM-2	1.000	ST 3
03 L.59	466832	COIL,CHOKE 6U8 K	IM-4	1.000	ST 3
03 L.60	466867	COIL,CHOKE 0U82 K	IM-4	1.000	ST 3
03 L.61	466867	COIL,CHOKE 0U82 K	IM-4	1.000	ST 3
04 L.62	357723	COIL,CHOKE 100U J	B78108-T1104-J	1.000	ST 3
04 L.63	357723	COIL,CHOKE 100U J	B78108-T1104-J	1.000	ST 3
03 L.64	363286	COIL,CHOKE 10U K	IM-4	1.000	ST 3
03 L.65	466824	COIL,CHOKE 3U3 K	IM-4	1.000	ST 3
03 L.66	466816	COIL,CHOKE 2U2 K	IM-4	1.000	ST 3
03 L.67	466816	COIL,CHOKE 2U2 K	IM-4	1.000	ST 3
03 L.68	466824	COIL,CHOKE 3U3 K	IM-4	1.000	ST 3
04 L.69	357723	COIL,CHOKE 100U J	B78108-T1104-J	1.000	ST 3
04 L.70	357723	COIL,CHOKE 100U J	B78108-T1104-J	1.000	ST 3
03 L.71	363286	COIL,CHOKE 10U K	IM-4	1.000	ST 3
03 L.72	466832	COIL,CHOKE 6U8 K	IM-4	1.000	ST 3
03 L.73	466832	COIL,CHOKE 6U8 K	IM-4	1.000	ST 3
05 L.74	359289	COIL,CHOKE 220U J	IM-4	1.000	ST 3
05 L.75	359289	COIL,CHOKE 220U J	IM-4	1.000	ST 3
05 L.76	362921	COIL,CHOKE 33U M	IM-4	2.000	ST 3
04 L.77	357731	COIL,CHOKE 22U K	IM-4	1.000	ST 3
04 L.78	357731	COIL,CHOKE 22U K	IM-4	1.000	ST 3
05 L.79	359289	COIL,CHOKE 220U J	IM-4	1.000	ST 3
05 L.80	359289	COIL,CHOKE 220U J	IM-4	1.000	ST 3
04 L.81	357774	COIL,CHOKE 15U K	IM-4	1.000	ST 3
03 L.81	363286	COIL,CHOKE 10U K	IM-4	1.000	ST 3
04 L.82	357774	COIL,CHOKE 15U K	IM-4	1.000	ST 3
03 L.82	363286	COIL,CHOKE 10U K	IM-4	1.000	ST 3
05 L.83	359289	COIL,CHOKE 220U J	IM-4	1.000	ST 3
05 L.84	359289	COIL,CHOKE 220U J	IM-4	1.000	ST 3
05 L.85	212709	COIL,CHOKE 220U K	1583/41	1.000	ST 3
05 L.86	212709	COIL,CHOKE 220U K	1583/41	1.000	ST 3
05 L.88	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
03 MP.1	466891	REAR PLATE A4 M 3000	EMK 4T466891	1.000	ST 2
05 MP.2	448095	RETAINER,PC M 3000	EMK 4T448095	1.000	ST 2
06 MP.3	260819	THUMBSCREW,KNURLED M3	EMK 5T 18978	2.000	ST 3
03 Q..1	488623	TRANS.DARLN BDX 53F SI-N T0220 BDX 53F		1.000	ST 3
03 Q..2	488658	TRANS.SCR BT 149B 200V 0,6A BT149B		1.000	ST 3
06 R..1	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..2	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
07 R..3	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
05 R..4	328561	RESISTOR CARB. 910R 1/4J SFR25	2322 181 53911	1.000	ST 3
07 R..5	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
07 R..6	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
06 R..7	240389	RESISTOR CARB. 680R 1/4J SFR25	2322 181 53681	1.000	ST 3
07 R..8	241229	RESISTOR CARB. 120R 1/2JSFR25H	2322 186 13121	1.000	ST 3
06 R..8	328545	RESISTOR CARB. 220R 1/4J SFR25	2322 181 53221	1.000	ST 3



PARENT ITEM NO.  
466743DESCRIPTION SUBOCTAV.STANDARD A4  
ENGR DRAW EMK T466743

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
07 R.9	241458	RESISTOR CARB. 1K0 1/2JSFR25H	2322 186 13102	1.000	ST 3
05 R.10	328561	RESISTOR CARB. 910R 1/4J SFR25	2322 181 53911	1.000	ST 3
06 R.11	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
08 R.19	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
07 R.20	240109	RESISTOR CARB. 10R 1/4J SFR25	2322 181 53109	1.000	ST 3
05 R.21	380393	RESISTOR CARB. 270K 1/4J SFR25	2322 181 53274	1.000	ST 3
05 R.22	380393	RESISTOR CARB. 270K 1/4J SFR25	2322 181 53274	1.000	ST 3
05 R.23	380393	RESISTOR CARB. 270K 1/4J SFR25	2322 181 53274	1.000	ST 3
05 R.24	380393	RESISTOR CARB. 270K 1/4J SFR25	2322 181 53274	1.000	ST 3
07 R.25	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
03 R.26	467162	RESISTOR NETW 9XM10 1/5G	4310R-101-104	1.000	ST 3
05 R.27	380393	RESISTOR CARB. 270K 1/4J SFR25	2322 181 53274	1.000	ST 3
05 R.28	380393	RESISTOR CARB. 270K 1/4J SFR25	2322 181 53274	1.000	ST 3
06 R.29	328545	RESISTOR CARB. 220R 1/4J SFR25	2322 181 53221	1.000	ST 3
06 R.30	328545	RESISTOR CARB. 220R 1/4J SFR25	2322 181 53221	1.000	ST 3
06 R.31	328545	RESISTOR CARB. 220R 1/4J SFR25	2322 181 53221	1.000	ST 3
06 R.32	328545	RESISTOR CARB. 220R 1/4J SFR25	2322 181 53221	1.000	ST 3
06 R.33	328545	RESISTOR CARB. 220R 1/4J SFR25	2322 181 53221	1.000	ST 3
06 R.34	328545	RESISTOR CARB. 220R 1/4J SFR25	2322 181 53221	1.000	ST 3
06 R.35	328545	RESISTOR CARB. 220R 1/4J SFR25	2322 181 53221	1.000	ST 3
06 R.36	328545	RESISTOR CARB. 220R 1/4J SFR25	2322 181 53221	1.000	ST 3
06 R.37	328545	RESISTOR CARB. 220R 1/4J SFR25	2322 181 53221	1.000	ST 3
06 R.38	328545	RESISTOR CARB. 220R 1/4J SFR25	2322 181 53221	1.000	ST 3
07 R.39	241245	RESISTOR CARB. 150R 1/2JSFR25H	2322 186 13151	1.000	ST 3
07 R.40	241245	RESISTOR CARB. 150R 1/2JSFR25H	2322 186 13151	1.000	ST 3
06 R.41	240230	RESISTOR CARB. 120R 1/4J SFR25	2322 181 53121	1.000	ST 3
05 U.1	404586	IC DIGITAL 74 45N BCD-DECIMA	SN7445N	1.000	ST 3
03 U.2	488224	IC DIGITAL 74HCT377 8X D-FF	PC74HCT377P	1.000	ST 3
03 U.3	488127	IC DIGITAL 74HCT138 3-8 DECOD.	PC74HCT138P	1.000	ST 3
05 U.4	393622	IC DIGITAL 74 07N 6X BUF.OC.	SN7407N	1.000	ST 3
03 U.5	488003	IC DIGITAL 74HCT 00 4X2IN NAND	PC74HCT00P	1.000	ST 3
05 U.6	393622	IC DIGITAL 74 07N 6X BUF.OC.	SN7407N	1.000	ST 3

PARENT ITEM NO.  
488275DESCRIPTION RTTY DEMODULATOR A6  
ENGR DRAW EMK T488275

BATCH QTY

LL SEQ	COMPONENT	DESCRIPTION	ENGINEERING	QUANTITY	ITEM
CD NO.	ITEM NO.		DRAWING NUMBER		UM TYP
02 ...1	471569	PRINTED CIRC.BOARD RTTY DEMOD	EMK 2T471569	1.000	ST 3
05 C..1	357596	CAPACITOR CER. 150P 100 G N150	2222 683 34151	1.000	ST 3
04 C..2	203246	CAPACITOR PLST 10N 400 K	2222 342 51103	1.000	ST 3
04 C..3	203246	CAPACITOR PLST 10N 400 K	2222 342 51103	1.000	ST 3
05 C..5	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..6	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..7	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
04 C..8	448923	CAPACITOR PLST 15N 63 F	2222 424 41503	1.000	ST 3
02 C..9	450871	CAPACITOR PLST 15N 400 J	2222 344 52153	1.000	ST 3
05 C.10	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.11	448907	CAPACITOR PLST 10N 160 F	B33063-B1103-F	1.000	ST 3
05 C.12	448907	CAPACITOR PLST 10N 160 F	B33063-B1103-F	1.000	ST 3
05 C.13	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.14	448907	CAPACITOR PLST 10N 160 F	B33063-B1103-F	1.000	ST 3
05 C.15	448907	CAPACITOR PLST 10N 160 F	B33063-B1103-F	1.000	ST 3
05 C.16	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.17	450359	CAPACITOR ELEC 1U 25 M	2222 122 56108	1.000	ST 3
05 C.18	357537	CAPACITOR CER. 56P 100 C N150	2222 683 34569	1.000	ST 3
05 C.19	450359	CAPACITOR ELEC 1U 25 M	2222 122 56108	1.000	ST 3
05 C.20	357537	CAPACITOR CER. 56P 100 C N150	2222 683 34569	1.000	ST 3
04 C.21	437395	CAPACITOR CER. 220P 100 G N750	2222 638 58221	1.000	ST 3
04 C.22	437395	CAPACITOR CER. 220P 100 G N750	2222 638 58221	1.000	ST 3
02 C.23	462993	CAPACITOR PLST 33N 63 F	2222 424 43303	1.000	ST 3
05 C.24	384895	CAPACITOR PLST 22N 63 F	2222 424 42203	1.000	ST 3
02 C.25	468169	CAPACITOR PLST 47N 63 F	B33063-B1473-F	1.000	ST 3
02 C.26	462993	CAPACITOR PLST 33N 63 F	2222 424 43303	1.000	ST 3
04 C.27	448923	CAPACITOR PLST 15N 63 F	2222 424 41503	1.000	ST 3
05 C.28	459410	CAPACITOR ELEC 10U 16 M	2222 122 55109	1.000	ST 3
05 C.29	459410	CAPACITOR ELEC 10U 16 M	2222 122 55109	1.000	ST 3
05 C.30	459410	CAPACITOR ELEC 10U 16 M	2222 122 55109	1.000	ST 3
05 C.31	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.32	357537	CAPACITOR CER. 56P 100 C N150	2222 683 34569	1.000	ST 3
04 C.33	451339	CAPACITOR ELEC 15U 10 M	2222 122 54159	1.000	ST 3
05 C.34	450359	CAPACITOR ELEC 1U 25 M	2222 122 56108	1.000	ST 3
05 C.35	390224	CAPACITOR CER. 470P 100 K HI-K	2222 630 06471	1.000	ST 3
05 C.36	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.37	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.38	390224	CAPACITOR CER. 470P 100 K HI-K	2222 630 06471	1.000	ST 3
05 C.39	390224	CAPACITOR CER. 470P 100 K HI-K	2222 630 06471	1.000	ST 3
05 C.40	390224	CAPACITOR CER. 470P 100 K HI-K	2222 630 06471	1.000	ST 3
05 C.41	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.42	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.43	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.44	349070	CAPACITOR PLST 680N 100 K	2222 344 21684	1.000	ST 3
05 C.45	349070	CAPACITOR PLST 680N 100 K	2222 344 21684	1.000	ST 3
05 C.46	349070	CAPACITOR PLST 680N 100 K	2222 344 21684	1.000	ST 3
04 C.47	448885	CAPACITOR PLST 4N7 160 H	B33063-B1472-H	1.000	ST 3
05 C.48	454265	CAPACITOR ELEC 100U 25 T	EHF1-100-25 1A	1.000	ST 3
05 C.49	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.50	424625	CAPACITOR PLST 330N 100 K	2222 344 21334	1.000	ST 3
05 C.51	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.52	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.53	209562	CAPACITOR PLST 33N 250 K	2222 344 41333	1.000	ST 3
05 C.54	209562	CAPACITOR PLST 33N 250 K	2222 344 41333	1.000	ST 3
05 C.55	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.56	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.57	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.58	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.59	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.60	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.61	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.62	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.63	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.64	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.65	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.66	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.67	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.68	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.69	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.70	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.71	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.72	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.73	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.74	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.75	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.76	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.77	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.78	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.79	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.80	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.81	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.82	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.83	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3

PARENT ITEM NO.  
488275DESCRIPTION RTTY DEMODULATOR A6  
ENGR DRAW EMK T488275

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
07 CR.1	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR.2	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR.3	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR.4	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR.5	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR.6	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR.7	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR.8	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
04 CR.9	227986	DIODE SIGN. AA 119 GE 35MA AA119	35MA AA119	1.000	ST 3
04 CR10	227986	DIODE SIGN. AA 119 GE 35MA AA119	35MA AA119	1.000	ST 3
04 CR11	227986	DIODE SIGN. AA 119 GE 35MA AA119	35MA AA119	1.000	ST 3
04 CR12	227986	DIODE SIGN. AA 119 GE 35MA AA119	35MA AA119	1.000	ST 3
07 CR13	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR14	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR15	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR16	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR17	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR18	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR19	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR20	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR21	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR22	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
05 CR23	450480	DIODE LED HLMP1000 RED 03 HLMP1000	03 HLMP1000	1.000	ST 3
07 CR24	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR25	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR26	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR27	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR28	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR29	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
05 CR30	471836	DIODE POW. BYV 95B 400V 1A5 BYV95B	400V 1A5 BYV95B	1.000	ST 3
07 CR31	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR32	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR33	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR34	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR35	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR36	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
07 CR37	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	150MA 1N4148	1.000	ST 3
02 F..1	262803	FUSE 20X5MM 0,4A 953	0,4A 953	1.000	ST 4
05 H..1	458694	SCREW M 2,5X 5 CHM CU SN DIN 84 HFC 93	DIN 84 HFC 93	4.000	ST 3
05 H..2	276804	SCREW M 3 X 8 CHM CU SN DIN 84	DIN 84	2.000	ST 3
07 H..3	327506	NUT M 3 M CU SN DIN 934	DIN 934	2.000	ST 3
08 H..4	394734	WASHER, SPRING Ø 3,0 STEEL DIN127B	DIN127B	2.000	ST 3
07 H..5	230251	CONNECTOR D ACCESS. LOCK SCREW D53018	D53018	4.000	ST 3
06 H..6	442399	TERMINAL STUD 140-1785-2 140-1785-2	140-1785-2	2.000	ST 3
05 J..1	390895	CONNECTOR D PCB ANG 25P FEMALE DB-25S-1A0N	DB-25S-1A0N	1.000	ST 3
05 J..2	446068	CONNECTOR D PCB ANG 9P FEMALE DE-9S-1A0N	DE-9S-1A0N	1.000	ST 3
05 J..3	431117	COAX CONNECTOR SMB MALE CHASS 22SMB-50-0-2	22SMB-50-0-2	1.000	ST 3
05 J..4	431117	COAX CONNECTOR SMB MALE CHASS 22SMB-50-0-2	22SMB-50-0-2	1.000	ST 3
02 L..1	471615	COIL RX4000 A6 L1 EMK 4T471695	EMK 4T471695	1.000	ST 2
05 L..2	454125	COIL, CHOKE 25U 1,5A INS 1584	1,5A INS 1584	1.000	ST 3
05 L..3	359289	COIL, CHOKE 220U J IM-4	J IM-4	1.000	ST 3
05 L..4	363944	COIL, CHOKE HF WIDE BAND 4312 020 36640	HF WIDE BAND 4312 020 36640	1.000	ST 3
05 L..5	363944	COIL, CHOKE HF WIDE BAND 4312 020 36640	HF WIDE BAND 4312 020 36640	1.000	ST 3
05 L..6	363944	COIL, CHOKE HF WIDE BAND 4312 020 36640	HF WIDE BAND 4312 020 36640	1.000	ST 3
02 MP.1	489344	REAR PLATE RX4009 A6 EMK 4T489344	RX4009 A6 EMK 4T489344	1.000	ST 2
05 MP.2	448095	RETAINER, PC M 3000 EMK 4T448095	M 3000 EMK 4T448095	1.000	ST 2
06 MP.3	260819	THUMBSCREW, KNULED M3 EMK 5T 18978	M3 EMK 5T 18978	2.000	ST 3
06 Q..1	359157	TRANS. LOPOW BC 251 SI-P T0-92 BC251	SI-P T0-92 BC251	1.000	ST 3
07 Q..2	273899	TRANS. LOPOW BC 547B SI-N T0-92 BC547B	SI-N T0-92 BC547B	1.000	ST 3
06 Q..3	359157	TRANS. LOPOW BC 251 SI-P T0-92 BC251	SI-P T0-92 BC251	1.000	ST 3
07 Q..4	273899	TRANS. LOPOW BC 547B SI-N T0-92 BC547B	SI-N T0-92 BC547B	1.000	ST 3
06 Q..5	359157	TRANS. LOPOW BC 251 SI-P T0-92 BC251	SI-P T0-92 BC251	1.000	ST 3
07 Q..6	273899	TRANS. LOPOW BC 547B SI-N T0-92 BC547B	SI-N T0-92 BC547B	1.000	ST 3
07 Q..7	273899	TRANS. LOPOW BC 547B SI-N T0-92 BC547B	SI-N T0-92 BC547B	1.000	ST 3
02 Q..8	471844	TRANS. HIPOW BUX 85 SI-N T0220 BUX85	SI-N T0220 BUX85	1.000	ST 3
06 Q..9	359157	TRANS. LOPOW BC 251 SI-P T0-92 BC251	SI-P T0-92 BC251	1.000	ST 3
07 Q..10	273899	TRANS. LOPOW BC 547B SI-N T0-92 BC547B	SI-N T0-92 BC547B	1.000	ST 3
06 Q..11	359157	TRANS. LOPOW BC 251 SI-P T0-92 BC251	SI-P T0-92 BC251	1.000	ST 3
07 Q..12	273899	TRANS. LOPOW BC 547B SI-N T0-92 BC547B	SI-N T0-92 BC547B	1.000	ST 3
07 Q..13	273899	TRANS. LOPOW BC 547B SI-N T0-92 BC547B	SI-N T0-92 BC547B	1.000	ST 3
02 Q..14	471844	TRANS. HIPOW BUX 85 SI-N T0220 BUX85	SI-N T0220 BUX85	1.000	ST 3
06 R..1	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103	10K 1/4J SFR25 2322 181 53103	1.000	ST 3
06 R..2	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103	10K 1/4J SFR25 2322 181 53103	1.000	ST 3
06 R..3	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103	10K 1/4J SFR25 2322 181 53103	1.000	ST 3
06 R..4	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103	10K 1/4J SFR25 2322 181 53103	1.000	ST 3
06 R..5	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103	10K 1/4J SFR25 2322 181 53103	1.000	ST 3
06 R..6	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103	10K 1/4J SFR25 2322 181 53103	1.000	ST 3
06 R..7	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103	10K 1/4J SFR25 2322 181 53103	1.000	ST 3
06 R..8	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103	10K 1/4J SFR25 2322 181 53103	1.000	ST 3

PARENT ITEM NO.  
488275DESCRIPTION RTTY DEMODULATOR A6  
ENGR DRAW EMK T488275

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
06 R.9	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.10	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
05 R.11	349496	RESISTOR FILM 100K 0,6F MRS25	2322 156 11004	1.000	ST 3
05 R.12	454354	RESISTOR FILM 20K5 0,6F MRS25	2322 156 12053	1.000	ST 3
06 R.13	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
05 R.14	366501	RESISTOR FILM 68K0 0,6F MRS25	2322 156 16803	1.000	ST 3
05 R.15	240370	RESISTOR CARB. 620R 1/4J SFR25	2322 181 53621	1.000	ST 3
08 R.16	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
06 R.17	240494	RESISTOR CARB. 3K9 1/4J SFR25	2322 181 53392	1.000	ST 3
06 R.18	240583	RESISTOR CARB. 12K 1/4J SFR25	2322 181 53123	1.000	ST 3
06 R.19	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
07 R.20	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
06 R.21	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.22	240664	RESISTOR CARB. 39K 1/4J SFR25	2322 181 53393	1.000	ST 3
07 R.23	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
08 R.24	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
08 R.25	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
06 R.26	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
05 R.27	450316	RESISTOR FILM 47K5 0,6F MRS25	2322 156 14753	1.000	ST 3
02 R.28	359327	RESISTOR FILM 215K 0,6F MRS25	2322 156 12154	1.000	ST 3
05 R.29	240710	RESISTOR CARB. 68K 1/4J SFR25	2322 181 53683	1.000	ST 3
07 R.30	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
04 R.31	357715	RESISTOR SEMIV 1K 1/2K CERM	3386P-1-102	1.000	ST 3
06 R.32	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
08 R.33	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
04 R.34	240796	RESISTOR CARB. 200K 1/4J SFR25	2322 181 53204	1.000	ST 3
05 R.35	349496	RESISTOR FILM 100K 0,6F MRS25	2322 156 11004	1.000	ST 3
04 R.36	240796	RESISTOR CARB. 200K 1/4J SFR25	2322 181 53204	1.000	ST 3
05 R.37	368539	RESISTOR FILM 7K50 0,6F MRS25	2322 156 17502	1.000	ST 3
05 R.38	372218	RESISTOR CARB. 820K 1/4J SFR25	2322 181 53824	1.000	ST 3
06 R.39	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
05 R.40	368539	RESISTOR FILM 7K50 0,6F MRS25	2322 156 17502	1.000	ST 3
05 R.41	349674	RESISTOR FILM 15K0 0,6F MRS25	2322 156 11503	1.000	ST 3
05 R.42	349542	RESISTOR FILM 22K1 0,6F MRS25	2322 156 12213	1.000	ST 3
04 R.43	359343	RESISTOR FILM 26K1 0,6F MRS25	2322 156 12613	1.000	ST 3
02 R.44	488283	RESISTOR FILM 53K6 0,6F MRS25	2322 156 15363	1.000	ST 3
04 R.45	357715	RESISTOR SEMIV 1K 1/2K CERM	3386P-1-102	1.000	ST 3
06 R.46	240613	RESISTOR CARB. 18K 1/4J SFR25	2322 181 53183	1.000	ST 3
06 R.47	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
04 R.48	240796	RESISTOR CARB. 200K 1/4J SFR25	2322 181 53204	1.000	ST 3
05 R.49	349496	RESISTOR FILM 100K 0,6F MRS25	2322 156 11004	1.000	ST 3
04 R.50	240796	RESISTOR CARB. 200K 1/4J SFR25	2322 181 53204	1.000	ST 3
05 R.51	368539	RESISTOR FILM 7K50 0,6F MRS25	2322 156 17502	1.000	ST 3
04 R.52	357715	RESISTOR SEMIV 1K 1/2K CERM	3386P-1-102	1.000	ST 3
05 R.53	380393	RESISTOR CARB. 270K 1/4J SFR25	2322 181 53274	1.000	ST 3
03 R.54	390267	RESISTOR FILM 11K0 0,6F MRS25	2322 156 11103	1.000	ST 3
05 R.55	368539	RESISTOR FILM 7K50 0,6F MRS25	2322 156 17502	1.000	ST 3
05 R.56	368539	RESISTOR FILM 7K50 0,6F MRS25	2322 156 17502	1.000	ST 3
07 R.57	357693	RESISTOR CARB. 150K 1/4J SFR25	2322 181 53154	1.000	ST 3
05 R.58	432881	RESISTOR FILM 30K1 0,6F MRS25	2322 156 13013	1.000	ST 3
05 R.59	349674	RESISTOR FILM 15K0 0,6F MRS25	2322 156 11503	1.000	ST 3
04 R.60	240613	RESISTOR CARB. 18K 1/4J SFR25	2322 181 53183	1.000	ST 3
06 R.61	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
08 R.62	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
05 R.63	391980	RESISTOR SEMIV 2K 1/2K CERM	3386P-1-202	1.000	ST 3
06 R.64	240435	RESISTOR CARB. 1K8 1/4J SFR25	2322 181 53182	1.000	ST 3
06 R.65	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.66	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.67	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.68	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
09 R.69	240222	RESISTOR CARB. 100R 1/4J SFR25	2322 181 53101	1.000	ST 3
06 R.70	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
07 R.71	240648	RESISTOR CARB. 27K 1/4J SFR25	2322 181 53273	1.000	ST 3
08 R.72	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
05 R.73	391980	RESISTOR SEMIV 2K 1/2K CERM	3386P-1-202	1.000	ST 3
06 R.74	240435	RESISTOR CARB. 1K8 1/4J SFR25	2322 181 53182	1.000	ST 3
06 R.75	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.76	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.77	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.78	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
09 R.79	240222	RESISTOR CARB. 100R 1/4J SFR25	2322 181 53101	1.000	ST 3
06 R.80	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
07 R.81	240648	RESISTOR CARB. 27K 1/4J SFR25	2322 181 53273	1.000	ST 3
06 R.82	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.83	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.84	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.85	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
08 R.86	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
06 R.87	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
06 R.88	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.89	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
05 R.90	328618	RESISTOR CARB. 91K 1/4J SFR25	2322 181 53913	1.000	ST 3

PARENT ITEM NO.  
488275DESCRIPTION RTTY DEMODULATOR A6  
ENGR DRAW EMK T488275

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
06 R.91	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
07 R.92	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
05 R.93	328618	RESISTOR CARB. 91K 1/4J SFR25	2322 181 53913	1.000	ST 3
06 R.94	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
07 R.95	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
05 R.96	328618	RESISTOR CARB. 91K 1/4J SFR25	2322 181 53913	1.000	ST 3
06 R.97	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
07 R.98	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
06 R.99	240613	RESISTOR CARB. 18K 1/4J SFR25	2322 181 53183	1.000	ST 3
06 R100	240613	RESISTOR CARB. 18K 1/4J SFR25	2322 181 53183	1.000	ST 3
07 R101	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
06 R102	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R103	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R104	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
08 R105	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
08 R106	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
06 R107	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R108	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
05 R109	240656	RESISTOR CARB. 33K 1/4J SFR25	2322 181 53333	1.000	ST 3
06 R110	240494	RESISTOR CARB. 3K9 1/4J SFR25	2322 181 53392	1.000	ST 3
06 R111	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
06 R112	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R113	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
06 R114	240478	RESISTOR CARB. 2K7 1/4J SFR25	2322 181 53272	1.000	ST 3
06 R115	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R116	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R117	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R118	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R119	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R120	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R121	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R122	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
04 R123	240788	RESISTOR CARB. 130K 1/4J SFR25	2322 181 53134	1.000	ST 3
05 R124	391980	RESISTOR SEMIV 2K 1/2K CERM	3386P-1-202	1.000	ST 3
07 R125	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
06 R126	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
07 R127	357693	RESISTOR CARB. 150K 1/4J SFR25	2322 181 53154	1.000	ST 3
06 R128	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R129	240478	RESISTOR CARB. 2K7 1/4J SFR25	2322 181 53272	1.000	ST 3
08 R130	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
06 R131	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R132	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
08 R133	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
06 R134	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
07 R135	240540	RESISTOR CARB. 6K8 1/4J SFR25	2322 181 53682	1.000	ST 3
07 R136	240540	RESISTOR CARB. 6K8 1/4J SFR25	2322 181 53682	1.000	ST 3
07 R137	240540	RESISTOR CARB. 6K8 1/4J SFR25	2322 181 53682	1.000	ST 3
07 R138	240869	RESISTOR CARB. 1M0 1/4J SFR25	2322 181 53105	1.000	ST 3
06 R139	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R140	240362	RESISTOR CARB. 560R 1/4J SFR25	2322 181 53561	1.000	ST 3
06 R141	240362	RESISTOR CARB. 560R 1/4J SFR25	2322 181 53561	1.000	ST 3
06 R142	240362	RESISTOR CARB. 560R 1/4J SFR25	2322 181 53561	1.000	ST 3
06 R143	240362	RESISTOR CARB. 560R 1/4J SFR25	2322 181 53561	1.000	ST 3
05 R144	240257	RESISTOR CARB. 180R 1/4J SFR25	2322 181 53181	1.000	ST 3
06 R145	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R146	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
06 R147	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
09 R148	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
07 R149	240184	RESISTOR CARB. 47R 1/4J SFR25	2322 181 53479	1.000	ST 3
07 R150	241458	RESISTOR CARB. 1K0 1/2JSFR25H	2322 186 13102	1.000	ST 3
07 R151	241458	RESISTOR CARB. 1K0 1/2JSFR25H	2322 186 13102	1.000	ST 3
06 R152	240338	RESISTOR CARB. 390R 1/4J SFR25	2322 181 53391	1.000	ST 3
02 R153	471828	RESISTOR WIREW 0R68 5J	CW2B-13 R68/5J	1.000	ST 3
06 R154	240168	RESISTOR CARB. 33R 1/4J SFR25	2322 181 53339	1.000	ST 3
05 R155	450979	RESISTOR CARB. 360R 1/4J SFR25	2322 181 53361	1.000	ST 3
07 R156	240397	RESISTOR CARB. 820R 1/4J SFR25	2322 181 53821	1.000	ST 3
06 R157	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
06 R158	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
05 R159	372064	RESISTOR CARB. 9K1 1/4J SFR25	2322 181 53912	1.000	ST 3
07 R160	240540	RESISTOR CARB. 6K8 1/4J SFR25	2322 181 53682	1.000	ST 3
06 R161	240362	RESISTOR CARB. 560R 1/4J SFR25	2322 181 53561	1.000	ST 3
04 R162	242357	RESISTOR FILM 120R 1.6J PR37	2322 191 31201	1.000	ST 3
07 R163	240109	RESISTOR CARB. 10R 1/4J SFR25	2322 181 53109	1.000	ST 3
05 R164	240273	RESISTOR CARB. 240R 1/4J SFR25	2322 181 53241	1.000	ST 3
05 R165	240273	RESISTOR CARB. 240R 1/4J SFR25	2322 181 53241	1.000	ST 3
06 R166	240311	RESISTOR CARB. 330R 1/4J SFR25	2322 181 53331	1.000	ST 3
06 R167	361992	RESISTOR CARB. 68R 1/4J SFR25	2322 181 53689	1.000	ST 3
02 R168	462373	RESISTOR WIREW 220R 5J	CW2B-13 220R/5J	1.000	ST 3
02 R169	462373	RESISTOR WIREW 220R 5J	CW2B-13 220R/5J	1.000	ST 3
07 R170	240540	RESISTOR CARB. 6K8 1/4J SFR25	2322 181 53682	1.000	ST 3
08 R171	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
07 R172	240540	RESISTOR CARB. 6K8 1/4J SFR25	2322 181 53682	1.000	ST 3
06 R173	240389	RESISTOR CARB. 680R 1/4J SFR25	2322 181 53681	1.000	ST 3

PARENT ITEM NO.  
488275DESCRIPTION RTTY DEMODULATOR A6  
ENGR DRAW EMK T488275

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
06 R174	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R175	240664	RESISTOR CARB. 39K 1/4J SFR25	2322 181 53393	1.000	ST 3
06 R176	240613	RESISTOR CARB. 18K 1/4J SFR25	2322 181 53183	1.000	ST 3
06 R177	240613	RESISTOR CARB. 18K 1/4J SFR25	2322 181 53183	1.000	ST 3
06 R178	240613	RESISTOR CARB. 18K 1/4J SFR25	2322 181 53183	1.000	ST 3
06 R179	240583	RESISTOR CARB. 12K 1/4J SFR25	2322 181 53123	1.000	ST 3
06 R180	240443	RESISTOR CARB. 2K0 1/4J SFR25	2322 181 53202	1.000	ST 3
06 R181	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
09 R182	240222	RESISTOR CARB. 100R 1/4J SFR25	2322 181 53101	1.000	ST 3
05 R183	240559	RESISTOR CARB. 8K2 1/4J SFR25	2322 181 53822	1.000	ST 3
06 R184	240443	RESISTOR CARB. 2K0 1/4J SFR25	2322 181 53202	1.000	ST 3
06 R185	363057	RESISTOR CARB. 2M2 1/4J SFR25	2322 181 53225	1.000	ST 3
06 R186	240362	RESISTOR CARB. 560R 1/4J SFR25	2322 181 53561	1.000	ST 3
06 R187	240494	RESISTOR CARB. 3K9 1/4J SFR25	2322 181 53392	1.000	ST 3
06 R188	240346	RESISTOR CARB. 470R 1/4J SFR25	2322 181 53471	1.000	ST 3
06 R189	361992	RESISTOR CARB. 68R 1/4J SFR25	2322 181 53689	1.000	ST 3
06 R190	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R191	240583	RESISTOR CARB. 12K 1/4J SFR25	2322 181 53123	1.000	ST 3
06 R192	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R193	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
04 S..1	471798	SWITCH,PCP DIP-FIX 8X ON/OFF	C42315A1347A108	.375	ST 3
04 S..2	471798	SWITCH,PCP DIP-FIX 8X ON/OFF	C42315A1347A108	.375	ST 3
04 S..3	471798	SWITCH,PCP DIP-FIX 8X ON/OFF	C42315A1347A108	.375	ST 3
04 S..4	471798	SWITCH,PCP DIP-FIX 8X ON/OFF	C42315A1347A108	.250	ST 3
04 S..5	471798	SWITCH,PCP DIP-FIX 8X ON/OFF	C42315A1347A108	.250	ST 3
04 S..6	471798	SWITCH,PCP DIP-FIX 8X ON/OFF	C42315A1347A108	.250	ST 3
04 S..7	471798	SWITCH,PCP DIP-FIX 8X ON/OFF	C42315A1347A108	.250	ST 3
04 S..8	471798	SWITCH,PCP DIP-FIX 8X ON/OFF	C42315A1347A108	.250	ST 3
04 S..9	471798	SWITCH,PCP DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04 S.10	471798	SWITCH,PCP DIP-FIX 8X ON/OFF	C42315A1347A108	.250	ST 3
04 S.11	471798	SWITCH,PCP DIP-FIX 8X ON/OFF	C42315A1347A108	.375	ST 3
04 S.12	471798	SWITCH,PCP DIP-FIX 8X ON/OFF	C42315A1347A108	.250	ST 3
05 T..1	362859	TRAFO,LINE 600:600R	TD2735-INDST08T	1.000	ST 3
06 TP.1	231304	TERMINAL STUD 2,5X7 Ø1,3	4772	4.000	ST 3
05 U..1	433683	IC DIGITAL 74LS138 3-8 DECOD.	SN74LS138	1.000	ST 3
02 U..2	471801	IC LINEAR ADC0804 A/D CONVRT	ADC0804	1.000	ST 3
04 U..3	451029	IC DIGITAL 74LS377N 8X D-FF	SN74LS377N	1.000	ST 3
04 U..4	451169	IC DIGITAL 74LS365N 6X BUSDRIV	SN74LS365AN	1.000	ST 3
02 U..5	473758	IC DIGITAL 4051B 8CH.MUX.	CD4051B	1.000	ST 3
05 U..6	451185	IC DIGITAL 74LS 02N 4X2IN NOR	SN74LS02N	1.000	ST 3
05 U..7	362131	IC DIGITAL 74 06N 6X INV-BUF	SN7406N	1.000	ST 3
04 U..8	451517	IC DIGITAL 74LS 03N 4X2IN NAND	SN74LS03N	1.000	ST 3
04 U..9	385247	IC DIGITAL 74 86N 4X2IN EXOR	SN7486N	1.000	ST 3
02 U.10	466964	IC DIGITAL 74LS132 4X2IN NAND	SN74LS132	1.000	ST 3
05 U.11	433535	IC DIGITAL 74LS 04 6XINVERTER	SN74LS04	1.000	ST 3
04 U.12	390909	IC DIGITAL 1488L 4XLINEDRIV	MC1488L	1.000	ST 3
04 U.13	390917	IC DIGITAL 1489A 4XLIN RCVR	MC1489AL	1.000	ST 3
02 U.14	466964	IC DIGITAL 74LS132 4X2IN NAND	SN74LS132	1.000	ST 3
05 U.15	433632	IC LINEAR MCA 255 OPTO ISOL	MCA255	1.000	ST 3
05 U.16	433632	IC LINEAR MCA 255 OPTO ISOL	MCA255	1.000	ST 3
02 U.17	462950	IC LINEAR XR 2211C TONE DECOD	XR2211CP	1.000	ST 3
05 U.18	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05 U.19	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05 U.20	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05 U.21	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05 U.22	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05 U.23	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05 U.24	357707	IC LINEAR MC 1458P OP.AMPL.	MC1458P	1.000	ST 3
06 VR.1	228826	DIODE ZENER ZPD 3.3 3.3V 0.5W	ZPD3.3	1.000	ST 3
06 VR.2	228826	DIODE ZENER ZPD 3.3 3.3V 0.5W	ZPD3.3	1.000	ST 3
07 VR.3	228818	DIODE ZENER ZPD 2.7 2.7V 0.5W	ZPD2.7	1.000	ST 3
07 VR.4	228818	DIODE ZENER ZPD 2.7 2.7V 0.5W	ZPD2.7	1.000	ST 3
05 VR.5	436887	DIODE ZENER 1N 749A 4.3V 0.4W	1N749A	1.000	ST 3
04 VR.6	440701	DIODE ZENER ZPD27 27V 0.5W	ZPD27	1.000	ST 3
06 VR.7	363324	DIODE ZENER ZPD 5.1 5.1V 0.5W	ZPD5.1	1.000	ST 3
06 VR.8	363324	DIODE ZENER ZPD 5.1 5.1V 0.5W	ZPD5.1	1.000	ST 3
03 W...	379719	WIRE,ELEC 0,25 BLUE/GREEN	LIVY/0.25	.220	M 3
05 XF.1	216070	FUSE ACCESSORY CLIPS	5965	2.000	ST 3

PARENT ITEM NO.  
448443DESCRIPTION IF/AF ASSY  
ENGR DRAW EMK T448443

A7

BATCH QTY

LL SEQ	COMPONENT	DESCRIPTION	ENGINEERING	QUANTITY	ITEM
CD NO.	ITEM NO.		DRAWING NUMBER		UM TYE
04	...1 448435	PRINTED CIRC. BOARD M3000 A7	EMK 2T448435	1.000	ST 3
05	C..1 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..2 448834	CAPACITOR PLST 1N5 160 H	B33063-B1152-H	1.000	ST 3
05	C..3 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..4 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..5 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..6 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..7 357588	CAPACITOR CER. 120P 100 G N150	2222 683 34121	1.000	ST 3
05	C..8 448877	CAPACITOR PLST 3N3 160 H	B33063-B1332-H	1.000	ST 3
05	C..9 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..10 450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05	C..11 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..12 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06	C..13 358959	CAPACITOR CER. 1N0 100 K	2222 630 19102	1.000	ST 3
05	C..14 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..15 448877	CAPACITOR PLST 3N3 160 H	B33063-B1332-H	1.000	ST 3
05	C..16 448877	CAPACITOR PLST 3N3 160 H	B33063-B1332-H	1.000	ST 3
05	C..17 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..18 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..19 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..20 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..21 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..22 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..23 448834	CAPACITOR PLST 1N5 160 H	B33063-B1152-H	1.000	ST 3
05	C..24 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..25 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..26 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06	C..27 357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
04	C..28 448885	CAPACITOR PLST 4N7 160 H	B33063-B1472-H	1.000	ST 3
06	C..29 357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
05	C..30 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..31 450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05	C..32 450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
04	C..33 448893	CAPACITOR PLST 5N1 160 H	B33063-B1512-H	1.000	ST 3
05	C..34 448877	CAPACITOR PLST 3N3 160 H	B33063-B1332-H	1.000	ST 3
04	C..35 448788	CAPACITOR PLST 270P 630 H	B33063-B6271-H	1.000	ST 3
05	C..36 450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05	C..37 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..38 450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05	C..39 450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05	C..40 450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
06	C..41 357650	CAPACITOR CER. 22N 63 A HI-K	2222 629 19223	1.000	ST 3
05	C..42 357561	CAPACITOR CER. 100P 100 G NFO	2222 679 10101	1.000	ST 3
05	C..43 450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05	C..44 450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05	C..45 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..46 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..47 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..48 450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05	C..49 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..50 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..51 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..52 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..53 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..54 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..55 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..56 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..57 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..58 450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05	C..59 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..60 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..61 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..62 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..63 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..64 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..65 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..66 450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05	C..67 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..68 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..69 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..70 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..71 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..72 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..73 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..74 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..75 450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05	C..76 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..77 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..78 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..79 450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05	C..80 450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3

PARENT ITEM NO.  
448443DESCRIPTION IF/AF ASSY  
ENGR DRAW EMK T448443

A7

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
05 C.81	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.82	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.83	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.84	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C.85	357634	CAPACITOR CER. 2N2 100 K HI-K	2222 630 06222	1.000	ST 3
06 C.86	357634	CAPACITOR CER. 2N2 100 K HI-K	2222 630 06222	1.000	ST 3
05 C.87	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
06 C.88	357634	CAPACITOR CER. 2N2 100 K HI-K	2222 630 06222	1.000	ST 3
06 C.89	357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
05 C.90	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.91	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.92	384895	CAPACITOR PLST 22N 63 F	2222 424 42203	1.000	ST 3
04 C.93	448923	CAPACITOR PLST 15N 63 F	2222 424 41503	1.000	ST 3
05 C.94	448834	CAPACITOR PLST 1N5 160 H	B33063-B1152-H	1.000	ST 3
05 C.95	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.96	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.97	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.98	450359	CAPACITOR ELEC 1U 25 M	2222 122 56108	1.000	ST 3
05 C.99	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
07 CR.1	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.2	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.3	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.4	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.5	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.6	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.7	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
05 C100	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C101	357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
06 C102	357553	CAPACITOR CER. 82P 100 C N150	2222 683 34829	1.000	ST 3
06 C103	357553	CAPACITOR CER. 82P 100 C N150	2222 683 34829	1.000	ST 3
05 C104	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 E..1	376213	COIL,ACCESSORY FERRITBEAD	4322 020 34420	1.000	ST 3
05 H..1	458694	SCREW M 2,5X 5 CHM CU SN	DIN 84 HFC 93	5.000	ST 3
07 H..2	230251	CONNECTOR D ACCESS. LOCK SCREW	D53018	2.000	ST 3
06 H..3	373362	IC ACCESSORY 10 PIN PAD TO-5	KU-960/10	2.000	ST 3
05 H..4	450065	COIL,ACCESSORY SCREEN,CAN	433-09-221-00	1.000	ST 3
04 J..1	475521	COAX CONNECTOR SMB FEM-PCB	51-053-9029-22	1.000	ST 3
05 J..4	373273	CONNECTOR D PCB ANG 9P MALE	DE-9P-1A0N	1.000	ST 3
04 L..2	451975	COIL M 3000 A7 L2	EMK 4T451975	1.000	ST 2
05 L..3	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 L..4	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 L..5	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
04 MP.1	460222	REAR PLATE M 3000 A7	EMK 4T460222	1.000	ST 2
05 MP.2	448095	RETAINER,PC M 3000	EMK 4T448095	1.000	ST 2
06 MP.3	260819	THUMBSCREW,KNURLED M3	EMK 5T 18978	2.000	ST 3
04 MP.4	450901	SCREEN SHIELD M 3000 A7	EMK 4T450901	1.000	ST 2
04 MP.5	450928	SCREEN SHIELD M 3000 A7	EMK 4T450928	1.000	ST 2
04 MP.6	450936	SCREEN SHIELD M 3000 A7	EMK 4T450936	1.000	ST 2
06 Q..1	357901	TRANS.JFETN J 310 TO-92	J310	1.000	ST 3
04 Q..2	388009	TRANS.MFETN 3N 201 2XG TO-72	3N201	1.000	ST 3
07 Q..3	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
07 Q..4	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
07 Q..5	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
07 Q..6	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
07 Q..7	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
06 Q..8	359157	TRANS.LOPOW BC 251 SI-P TO-92	BC251	1.000	ST 3
06 Q..9	357901	TRANS.JFETN J 310 TO-92	J310	1.000	ST 3
07 Q..10	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
07 Q..11	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
07 R..1	240109	RESISTOR CARB. 10R 1/4J SFR25	2322 181 53109	1.000	ST 3
05 R..2	240206	RESISTOR CARB. 56R 1/4J SFR25	2322 181 53569	1.000	ST 3
06 R..3	240230	RESISTOR CARB. 120R 1/4J SFR25	2322 181 53121	1.000	ST 3
06 R..4	328545	RESISTOR CARB. 220R 1/4J SFR25	2322 181 53221	1.000	ST 3
05 R..5	349542	RESISTOR FILM 22K1 0,6F MRS25	2322 156 12213	1.000	ST 3
06 R..6	328545	RESISTOR CARB. 220R 1/4J SFR25	2322 181 53221	1.000	ST 3
08 R..7	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
05 R..8	240761	RESISTOR CARB. 120K 1/4J SFR25	2322 181 53124	1.000	ST 3
06 R..9	240613	RESISTOR CARB. 18K 1/4J SFR25	2322 181 53183	1.000	ST 3
06 R.10	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
06 R.11	363227	RESISTOR SEMIV 10K 1/2K CERM	3386P-1-103	1.000	ST 3
06 R.12	240427	RESISTOR CARB. 1K5 1/4J SFR25	2322 181 53152	1.000	ST 3
07 R.13	240109	RESISTOR CARB. 10R 1/4J SFR25	2322 181 53109	1.000	ST 3
07 R.14	240109	RESISTOR CARB. 10R 1/4J SFR25	2322 181 53109	1.000	ST 3
05 R.15	240257	RESISTOR CARB. 180R 1/4J SFR25	2322 181 53181	1.000	ST 3
08 R.16	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
08 R.17	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
09 R.18	240222	RESISTOR CARB. 100R 1/4J SFR25	2322 181 53101	1.000	ST 3
07 R.19	240184	RESISTOR CARB. 47R 1/4J SFR25	2322 181 53479	1.000	ST 3
06 R.20	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
05 R.21	240206	RESISTOR CARB. 56R 1/4J SFR25	2322 181 53569	1.000	ST 3
06 R.22	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3



PARENT ITEM NO.  
448443DESCRIPTION IF/AF ASSY  
ENGR DRAW EMK T448443

A7

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
07 R.23	240451	RESISTOR CARB. 2K2 1/4J SFR25	2322 181 53222	1.000	ST 3
05 R.24	391980	RESISTOR SEMIV 2K 1/2K CERM	3386P-1-202	1.000	ST 3
06 R.25	240311	RESISTOR CARB. 330R 1/4J SFR25	2322 181 53331	1.000	ST 3
06 R.26	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.27	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R.28	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
06 R.29	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
06 R.30	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
06 R.31	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.32	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
06 R.33	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
07 R.34	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
05 R.35	366498	RESISTOR FILM 12K1 0.6F MRS25	2322 156 11213	1.000	ST 3
05 R.36	450316	RESISTOR FILM 47K5 0.6F MRS25	2322 156 14753	1.000	ST 3
05 R.37	450316	RESISTOR FILM 47K5 0.6F MRS25	2322 156 14753	1.000	ST 3
06 R.38	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.39	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
07 R.40	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
07 R.41	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
06 R.42	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R.43	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
06 R.44	324191	RESISTOR CARB. 7K5 1/4J SFR25	2322 181 53752	1.000	ST 3
04 R.45	240729	RESISTOR CARB. 75K 1/4J SFR25	2322 181 53753	1.000	ST 3
05 R.46	359165	RESISTOR SEMIV 10K 1/2K CERM	3386H-1-103	1.000	ST 3
06 R.47	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
05 R.48	240257	RESISTOR CARB. 180R 1/4J SFR25	2322 181 53181	1.000	ST 3
05 R.49	240125	RESISTOR CARB. 22R 1/4J SFR25	2322 181 53229	1.000	ST 3
04 R.50	240729	RESISTOR CARB. 75K 1/4J SFR25	2322 181 53753	1.000	ST 3
06 R.51	240311	RESISTOR CARB. 330R 1/4J SFR25	2322 181 53331	1.000	ST 3
06 R.52	240311	RESISTOR CARB. 330R 1/4J SFR25	2322 181 53331	1.000	ST 3
06 R.53	240427	RESISTOR CARB. 1K5 1/4J SFR25	2322 181 53152	1.000	ST 3
06 R.54	240427	RESISTOR CARB. 1K5 1/4J SFR25	2322 181 53152	1.000	ST 3
04 R.55	450324	RESISTOR FILM 4K32 0.6F MRS25	2322 156 14322	1.000	ST 3
05 R.56	368539	RESISTOR FILM 7K50 0.6F MRS25	2322 156 17502	1.000	ST 3
07 R.57	240109	RESISTOR CARB. 10R 1/4J SFR25	2322 181 53109	1.000	ST 3
06 R.58	240494	RESISTOR CARB. 3K9 1/4J SFR25	2322 181 53392	1.000	ST 3
06 R.59	240613	RESISTOR CARB. 18K 1/4J SFR25	2322 181 53183	1.000	ST 3
06 R.60	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
07 R.61	240648	RESISTOR CARB. 27K 1/4J SFR25	2322 181 53273	1.000	ST 3
04 R.62	357715	RESISTOR SEMIV 1K 1/2K CERM	3386P-1-102	1.000	ST 3
06 R.63	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
06 R.64	240346	RESISTOR CARB. 470R 1/4J SFR25	2322 181 53471	1.000	ST 3
06 R.65	240192	RESISTOR CARB. 51R 1/4J SFR25	2322 181 53519	1.000	ST 3
06 R.66	240192	RESISTOR CARB. 51R 1/4J SFR25	2322 181 53519	1.000	ST 3
06 R.67	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
09 R.68	240222	RESISTOR CARB. 100R 1/4J SFR25	2322 181 53101	1.000	ST 3
06 R.69	240443	RESISTOR CARB. 2K0 1/4J SFR25	2322 181 53202	1.000	ST 3
08 R.70	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
04 R.71	240699	RESISTOR CARB. 51K 1/4J SFR25	2322 181 53513	1.000	ST 3
09 R.72	240222	RESISTOR CARB. 100R 1/4J SFR25	2322 181 53101	1.000	ST 3
06 R.73	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
06 R.74	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
06 R.75	240354	RESISTOR CARB. 510R 1/4J SFR25	2322 181 53511	1.000	ST 3
06 R.76	240362	RESISTOR CARB. 560R 1/4J SFR25	2322 181 53561	1.000	ST 3
06 R.77	240230	RESISTOR CARB. 120R 1/4J SFR25	2322 181 53121	1.000	ST 3
07 R.78	240109	RESISTOR CARB. 10R 1/4J SFR25	2322 181 53109	1.000	ST 3
07 R.79	240397	RESISTOR CARB. 820R 1/4J SFR25	2322 181 53821	1.000	ST 3
06 R.80	240168	RESISTOR CARB. 33R 1/4J SFR25	2322 181 53339	1.000	ST 3
07 R.81	240109	RESISTOR CARB. 10R 1/4J SFR25	2322 181 53109	1.000	ST 3
06 R.82	240362	RESISTOR CARB. 560R 1/4J SFR25	2322 181 53561	1.000	ST 3
06 R.83	240362	RESISTOR CARB. 560R 1/4J SFR25	2322 181 53561	1.000	ST 3
06 R.84	240230	RESISTOR CARB. 120R 1/4J SFR25	2322 181 53121	1.000	ST 3
07 R.85	240109	RESISTOR CARB. 10R 1/4J SFR25	2322 181 53109	1.000	ST 3
07 R.86	240397	RESISTOR CARB. 820R 1/4J SFR25	2322 181 53821	1.000	ST 3
06 R.87	240168	RESISTOR CARB. 33R 1/4J SFR25	2322 181 53339	1.000	ST 3
07 R.88	240109	RESISTOR CARB. 10R 1/4J SFR25	2322 181 53109	1.000	ST 3
06 R.89	240362	RESISTOR CARB. 560R 1/4J SFR25	2322 181 53561	1.000	ST 3
06 R.90	240362	RESISTOR CARB. 560R 1/4J SFR25	2322 181 53561	1.000	ST 3
06 R.91	240230	RESISTOR CARB. 120R 1/4J SFR25	2322 181 53121	1.000	ST 3
07 R.92	240109	RESISTOR CARB. 10R 1/4J SFR25	2322 181 53109	1.000	ST 3
07 R.93	240397	RESISTOR CARB. 820R 1/4J SFR25	2322 181 53821	1.000	ST 3
06 R.94	240168	RESISTOR CARB. 33R 1/4J SFR25	2322 181 53339	1.000	ST 3
06 R.95	240362	RESISTOR CARB. 560R 1/4J SFR25	2322 181 53561	1.000	ST 3
07 R.96	240109	RESISTOR CARB. 10R 1/4J SFR25	2322 181 53109	1.000	ST 3
06 R.97	240362	RESISTOR CARB. 560R 1/4J SFR25	2322 181 53561	1.000	ST 3
09 R.98	240222	RESISTOR CARB. 100R 1/4J SFR25	2322 181 53101	1.000	ST 3
07 R.99	240109	RESISTOR CARB. 10R 1/4J SFR25	2322 181 53109	1.000	ST 3
07 R100	240397	RESISTOR CARB. 820R 1/4J SFR25	2322 181 53821	1.000	ST 3
06 R101	328545	RESISTOR CARB. 220R 1/4J SFR25	2322 181 53221	1.000	ST 3
06 R102	240168	RESISTOR CARB. 33R 1/4J SFR25	2322 181 53339	1.000	ST 3

PARENT ITEM NO.  
448443DESCRIPTION IF/AF ASSY  
ENGR DRAW EMK T448443

A7

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
06	R103 240362	RESISTOR CARB. 540R 1/4J SFR25	2322 181 53561	1.000	ST 3
06	R104 240613	RESISTOR CARB. 18K 1/4J SFR25	2322 181 53183	1.000	ST 3
06	R105 361542	RESISTOR CARB. 1K6 1/4J SFR25	2322 181 53162	1.000	ST 3
06	R106 240427	RESISTOR CARB. 1K5 1/4J SFR25	2322 181 53152	1.000	ST 3
07	R107 240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
05	R108 240257	RESISTOR CARB. 180R 1/4J SFR25	2322 181 53181	1.000	ST 3
06	R109 376310	RESISTOR SEMIV 200R 1/2K CERM	3386P-1-201	1.000	ST 3
07	R110 240397	RESISTOR CARB. 820R 1/4J SFR25	2322 181 53821	1.000	ST 3
07	R111 240451	RESISTOR CARB. 2K2 1/4J SFR25	2322 181 53222	1.000	ST 3
06	R112 328626	RESISTOR CARB. 220K 1/4J SFR25	2322 181 53224	1.000	ST 3
06	R113 240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06	R114 240419	RESISTOR CARB. 1K2 1/4J SFR25	2322 181 53122	1.000	ST 3
06	R115 240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06	R116 240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06	R117 240192	RESISTOR CARB. 51R 1/4J SFR25	2322 181 53519	1.000	ST 3
06	R118 240427	RESISTOR CARB. 1K5 1/4J SFR25	2322 181 53152	1.000	ST 3
06	R119 363227	RESISTOR SEMIV 10K 1/2K CERM	3386P-1-103	1.000	ST 3
06	R120 240486	RESISTOR CARB. 3K3 1/4J SFR25	2322 181 53332	1.000	ST 3
06	R121 240486	RESISTOR CARB. 3K3 1/4J SFR25	2322 181 53332	1.000	ST 3
06	R122 240583	RESISTOR CARB. 12K 1/4J SFR25	2322 181 53123	1.000	ST 3
06	R123 240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
09	R124 240222	RESISTOR CARB. 100R 1/4J SFR25	2322 181 53101	1.000	ST 3
06	R125 240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06	R127 240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06	R127 240737	RESISTOR CARB. 82K 1/4J SFR25	2322 181 53823	1.000	ST 3
06	R128 240737	RESISTOR CARB. 82K 1/4J SFR25	2322 181 53823	1.000	ST 3
05	R129 433136	RESISTOR FILM 6K19 0,6F MRS25	2322 156 16192	1.000	ST 3
05	R130 444871	RESISTOR FILM 27K4 0,6F MRS25	2322 156 12743	1.000	ST 3
05	R131 444871	RESISTOR FILM 27K4 0,6F MRS25	2322 156 12743	1.000	ST 3
08	R132 240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
05	R133 240656	RESISTOR CARB. 33K 1/4J SFR25	2322 181 53333	1.000	ST 3
09	R134 240621	RESISTOR CARB. 22K 1/4J SFR25	2322 181 53223	1.000	ST 3
05	R135 366889	RESISTOR CARB. 180K 1/4J SFR25	2322 181 53184	1.000	ST 3
06	R136 240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
08	R137 240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
06	R138 240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06	R139 240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06	R140 240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06	R141 240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06	R142 363227	RESISTOR SEMIV 10K 1/2K CERM	3386P-1-103	1.000	ST 3
08	R143 240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
08	R144 240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
05	R145 349542	RESISTOR FILM 22K1 0,6F MRS25	2322 156 12213	1.000	ST 3
05	R146 369578	RESISTOR FILM 5K11 0,6F MRS25	2322 156 15112	1.000	ST 3
05	R147 376477	RESISTOR FILM 1K27 0,6F MRS25	2322 156 11272	1.000	ST 3
06	R148 349593	RESISTOR FILM 2K74 0,6F MRS25	2322 156 12742	1.000	ST 3
06	R149 240311	RESISTOR CARB. 330R 1/4J SFR25	2322 181 53331	1.000	ST 3
05	R150 240206	RESISTOR CARB. 56R 1/4J SFR25	2322 181 53569	1.000	ST 3
05	T..1 451894	TRAFO A3A7T6 M 3000	EMK 4T451894	1.000	ST 2
04	T..2 451959	TRAFO A7 T2 M 3000	EMK 4T451959	1.000	ST 2
04	T..3 451932	TRAFO A7 T3 M 3000	EMK 4T451932	1.000	ST 2
05	T..4 362859	TRAFO, LINE 600:600R	TD2735-INDSTØBT	1.000	ST 3
06	TP.. 231304	TERMINAL STUD 2,5X7 Ø1,3	4772	11.000	ST 3
04	U..1 450286	IC LINEAR MC 1349P IF AMP.	MC1349P	1.000	ST 3
04	U..2 460613	IC LINEAR TBA 120S FM-ZF-AMP	TBA 120S	1.000	ST 3
06	U..3 354821	IC DIGITAL 4066B 4X ANA.SW.	FCF4066BE	1.000	ST 3
05	U..4 357707	IC LINEAR MC 1458P OP.AMPL.	MC1458P	1.000	ST 3
05	U..5 357707	IC LINEAR MC 1458P OP.AMPL.	MC1458P	1.000	ST 3
05	U..6 393622	IC DIGITAL 74 07N 6X BUF.OC.	SN7407N	1.000	ST 3
04	U..7 373532	IC LINEAR CA 723C VOLT.REG.	CA723CT(10 PIN)	1.000	ST 3
05	U..8 450294	IC LINEAR TL 082CP OP.AMP.	TL082CP	1.000	ST 3
04	U..9 450308	IC LINEAR CA 3083 TRANS ARR.	CA3083	1.000	ST 3
04	U..10 450308	IC LINEAR CA 3083 TRANS ARR.	CA3083	1.000	ST 3
04	U..11 361585	IC LINEAR MC 1496G MOD-DEMOD.	MC1496G	1.000	ST 3
05	U..12 357707	IC LINEAR MC 1458P OP.AMPL.	MC1458P	1.000	ST 3
05	U..13 433683	IC DIGITAL 74LS138 3-8 DECOD.	SN74LS138	1.000	ST 3
04	U..14 454028	IC DIGITAL 74LS378N 6X D FF	SN74LS378N	1.000	ST 3
04	U..15 451169	IC DIGITAL 74LS365N 6X BUSDRIV	SN74LS365AN	1.000	ST 3
05	U..16 362131	IC DIGITAL 74 06N 6X INV-BUF	SN7406N	1.000	ST 3
05	U..17 451185	IC DIGITAL 74LS 02N 4X2IN NOR	SN74LS02N	1.000	ST 3
05	VR.1 228842	DIODE ZENER ZPD 5.6 5.6V 0.5W	ZPD5.6	1.000	ST 3
05	VR.2 228796	DIODE ZENER ZPD12 12V 0.5W	ZPD12-BZX83/C12	1.000	ST 3
05	VR.3 228869	DIODE ZENER ZPD 7.5 7.5V 0.5W	ZPD7.5	1.000	ST 3
07	VR.4 228818	DIODE ZENER ZPD 2.7 2.7V 0.5W	ZPD2.7	1.000	ST 3
07	VR.5 228818	DIODE ZENER ZPD 2.7 2.7V 0.5W	ZPD2.7	1.000	ST 3
04	W..1 458740	COAX CABLE ASSY W1 M 3000 A7	EMK 4T458740	1.000	ST 3
04	W..2 458759	COAX CABLE ASSY W2 M 3000 A7	EMK 4T458759	1.000	ST 3
04	W..3 456993	COAX CABLE ASSY W3 M 3000 A7	EMK 4T456993	1.000	ST 3

PARENT ITEM NO.  
487740DESCRIPTION MICROCOMPUTER ASSY AB -RTC-  
ENGR DRAW EMK T487740

BATCH QTY

LL SEQ	COMPONENT	DESCRIPTION	ENGINEERING	QUANTITY	ITEM
CD NO.	ITEM NO.		DRAWING NUMBER		UM TYP
02	...1	PCB, MICROCOMP. RTC	SE4010 AB		
05	BT.1	BATTERY	3V LITHIUM	1.000	ST 3
05	C..1	CAPACITOR ELEC	68U 6,3 M	1.000	ST 3
04	C..2	CAPACITOR ELEC	15U 10 M	1.000	ST 3
06	C..3	CAPACITOR CER.	22N 63 A HI-K	1.000	ST 3
04	C..4	CAPACITOR CER.	220F 100 G N750	1.000	ST 3
05	C..5	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C..6	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C..7	CAPACITOR CER.	100N 63 S	1.000	ST 3
06	C..9	CAPACITOR CER.	10N 100 S HI-K	1.000	ST 3
05	C.10	CAPACITOR PLST	220N 63 K	1.000	ST 3
06	C.11	CAPACITOR CER.	10N 100 S HI-K	1.000	ST 3
05	C.12	CAPACITOR PLST	680N 100 K	1.000	ST 3
05	C.13	CAPACITOR PLST	220N 100 K	1.000	ST 3
05	C.14	CAPACITOR PLST	68N 250 K	1.000	ST 3
06	C.15	CAPACITOR CER.	10N 100 S HI-K	1.000	ST 3
05	C.16	CAPACITOR ELEC	6U8 25 M	1.000	ST 3
05	C.17	CAPACITOR ELEC	6U8 25 M	1.000	ST 3
05	C.18	CAPACITOR ELEC	6U8 25 M	1.000	ST 3
05	C.19	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.20	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.21	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.22	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.23	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.24	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.25	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.26	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.27	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.28	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.29	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.30	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.31	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.32	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.33	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.34	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.35	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.36	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.37	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.38	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.39	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.40	CAPACITOR CER.	100N 63 S	1.000	ST 3
06	C.42	CAPACITOR CER.	2N2 100 K HI-K	1.000	ST 3
05	C.47	CAPACITOR ELEC	10U 16 M	1.000	ST 3
05	C.48	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.49	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.50	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.51	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.52	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.53	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.54	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	C.57	CAPACITOR CER.	100N 63 S	1.000	ST 3
05	CR.1	DIODE SCHOT BAT 85	SI 200MA BAT85	1.000	ST 3
07	CR.4	DIODE SIGN.	1N4148 SI 150MA 1N4148	1.000	ST 3
07	CR.5	DIODE SIGN.	1N4148 SI 150MA 1N4148	1.000	ST 3
07	CR.6	DIODE SIGN.	1N4148 SI 150MA 1N4148	1.000	ST 3
07	CR.7	DIODE SIGN.	1N4148 SI 150MA 1N4148	1.000	ST 3
07	CR.8	DIODE SIGN.	1N4148 SI 150MA 1N4148	1.000	ST 3
07	CR.9	DIODE SIGN.	1N4148 SI 150MA 1N4148	1.000	ST 3
07	CR.10	DIODE SIGN.	1N4148 SI 150MA 1N4148	1.000	ST 3
05	CR.11	DIODE SCHOT BAT 85	SI 200MA BAT85	1.000	ST 3
07	CR.12	DIODE SIGN.	1N4148 SI 150MA 1N4148	1.000	ST 3
07	CR.14	DIODE SIGN.	1N4148 SI 150MA 1N4148	1.000	ST 3
05	CR.15	DIODE LED HLMP1000	RED Ø3 HLMP1000	1.000	ST 3
05	CR.16	DIODE LED HLMP1000	RED Ø3 HLMP1000	1.000	ST 3
05	CR.17	DIODE LED HLMP1000	RED Ø3 HLMP1000	1.000	ST 3
05	CR.18	DIODE LED HLMP1000	RED Ø3 HLMP1000	1.000	ST 3
05	CR.19	DIODE SCHOT BAT 85	SI 200MA BAT85	1.000	ST 3
07	CR.20	DIODE SIGN.	1N4148 SI 150MA 1N4148	1.000	ST 3
07	CR.21	DIODE SIGN.	1N4148 SI 150MA 1N4148	1.000	ST 3
04	CR.23	DIODE SIGN.	A4Z 15 GE 140MA A4Z15	1.000	ST 3
05	H..1	SCREW M 2,5X 5 CHM	CU SN DIN 84 HFC 93	5.000	ST 3
07	H..2	CONNECTOR D ACCESS.	LOCK SCREW D53018	2.000	ST 3
05	J..1	TRANS.ACCESSORY	PAD TO-18 TO-18-002	8.000	ST 3
05	L..1	CONNECTOR D PCB ANG	15P FEMALE DA15S-1A0N	1.000	ST 3
05	L..2	COIL, CHOK	HF WIDE BAND 4312 020 36640	1.000	ST 3
05	L..3	COIL, CHOK	HF WIDE BAND 4312 020 36640	1.000	ST 3
02	MP.1	COIL, CHOK	HF WIDE BAND 4312 020 36640	1.000	ST 3
05	MP.2	REAR PLATE	AB MICROC. EMK 4T489808	1.000	ST 2
06	MP.3	RETAINER, PC	M 3000 EMK 4T448095	1.000	ST 2
04	MP.4	THUMBSCREW, KNURLED	M3 EMK 5T 18978	2.000	ST 3
		PAD, RUBBER ADHESIVE	3,2X19 INSEAL315	.010	M 3

PARENT ITEM NO.  
487740DESCRIPTION MICROCOMPUTER ASSY AB -RTC-  
ENGR DRAW EMK T487740

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
07 Q..1	392820	TRANS.LOPOW 2N2222A SI-N TO-18	2N2222A	1.000	ST 3
07 Q..2	392820	TRANS.LOPOW 2N2222A SI-N TO-18	2N2222A	1.000	ST 3
07 Q..3	392820	TRANS.LOPOW 2N2222A SI-N TO-18	2N2222A	1.000	ST 3
07 Q..8	392820	TRANS.LOPOW 2N2222A SI-N TO-18	2N2222A	1.000	ST 3
07 Q..9	392839	TRANS.LOPOW 2N2907A SI-P TO-18	2N2907A	1.000	ST 3
07 Q..11	392839	TRANS.LOPOW 2N2907A SI-P TO-18	2N2907A	1.000	ST 3
07 R..1	240451	RESISTOR CARB. 2K2 1/4J SFR25	2322 181 53222	1.000	ST 3
07 R..2	357693	RESISTOR CARB. 150K 1/4J SFR25	2322 181 53154	1.000	ST 3
07 R..3	357693	RESISTOR CARB. 150K 1/4J SFR25	2322 181 53154	1.000	ST 3
07 R..4	357693	RESISTOR CARB. 150K 1/4J SFR25	2322 181 53154	1.000	ST 3
06 R..5	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..6	372137	RESISTOR CARB. 20K 1/4J SFR25	2322 181 53203	1.000	ST 3
06 R..7	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
04 R..8	240699	RESISTOR CARB. 51K 1/4J SFR25	2322 181 53513	1.000	ST 3
04 R..9	240699	RESISTOR CARB. 51K 1/4J SFR25	2322 181 53513	1.000	ST 3
06 R..10	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..11	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..12	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..13	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..14	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..15	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
07 R..16	241458	RESISTOR CARB. 1K0 1/2JSFR25H	2322 186 13102	1.000	ST 3
07 R..17	241458	RESISTOR CARB. 1K0 1/2JSFR25H	2322 186 13102	1.000	ST 3
05 R..18	240257	RESISTOR CARB. 180R 1/4J SFR25	2322 181 53181	1.000	ST 3
06 R..19	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..20	240494	RESISTOR CARB. 3K9 1/4J SFR25	2322 181 53392	1.000	ST 3
06 R..21	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
07 R..22	241458	RESISTOR CARB. 1K0 1/2JSFR25H	2322 186 13102	1.000	ST 3
07 R..23	241458	RESISTOR CARB. 1K0 1/2JSFR25H	2322 186 13102	1.000	ST 3
05 R..24	240257	RESISTOR CARB. 180R 1/4J SFR25	2322 181 53181	1.000	ST 3
06 R..25	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..26	240494	RESISTOR CARB. 3K9 1/4J SFR25	2322 181 53392	1.000	ST 3
06 R..27	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
07 R..28	241458	RESISTOR CARB. 1K0 1/2JSFR25H	2322 186 13102	1.000	ST 3
07 R..29	241458	RESISTOR CARB. 1K0 1/2JSFR25H	2322 186 13102	1.000	ST 3
05 R..30	240257	RESISTOR CARB. 180R 1/4J SFR25	2322 181 53181	1.000	ST 3
06 R..32	240494	RESISTOR CARB. 3K9 1/4J SFR25	2322 181 53392	1.000	ST 3
06 R..33	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..34	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..35	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..36	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..39	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..40	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..41	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..42	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..43	240249	RESISTOR CARB. 150R 1/4J SFR25	2322 181 53151	1.000	ST 3
06 R..44	240249	RESISTOR CARB. 150R 1/4J SFR25	2322 181 53151	1.000	ST 3
06 R..45	240249	RESISTOR CARB. 150R 1/4J SFR25	2322 181 53151	1.000	ST 3
06 R..46	240249	RESISTOR CARB. 150R 1/4J SFR25	2322 181 53151	1.000	ST 3
06 R..47	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..48	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..49	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..51	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..59	372137	RESISTOR CARB. 20K 1/4J SFR25	2322 181 53203	1.000	ST 3
06 R..62	372137	RESISTOR CARB. 20K 1/4J SFR25	2322 181 53203	1.000	ST 3
05 R..64	324205	RESISTOR CARB. 5K1 1/4J SFR25	2322 181 53512	1.000	ST 3
06 R..65	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
05 R..66	324205	RESISTOR CARB. 5K1 1/4J SFR25	2322 181 53512	1.000	ST 3
05 R..67	391093	RESISTOR SEMIV 20K 1/2K CERM	3386P-1-203	1.000	ST 3
06 R..68	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
07 R..69	240869	RESISTOR CARB. 1M0 1/4J SFR25	2322 181 53105	1.000	ST 3
06 R..70	240443	RESISTOR CARB. 2K0 1/4J SFR25	2322 181 53202	1.000	ST 3
06 R..71	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..72	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
06 R..73	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
06 R..75	240338	RESISTOR CARB. 390R 1/4J SFR25	2322 181 53391	1.000	ST 3
06 R..76	240443	RESISTOR CARB. 2K0 1/4J SFR25	2322 181 53202	1.000	ST 3
06 R..77	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
07 R..78	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
06 R..79	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R..80	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
06 R..81	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R..82	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..83	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R..84	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
06 R..85	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R..86	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
06 R..87	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
06 R..88	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..89	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
05 R..91	362913	RESISTOR CARB. 15R 1/4J SFR25	2322 181 53159	1.000	ST 3

PARENT ITEM NO.  
487740DESCRIPTION MICROCOMPUTER ASSY AB -RTC-  
ENGR DRAW EMK T487740

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
06 R.93	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
06 R.95	240338	RESISTOR CARB. 390R 1/4J SFR25	2322 181 53391	1.000	ST 3
06 R.96	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.97	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R.98	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R.99	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
05 R100	380393	RESISTOR CARB. 270K 1/4J SFR25	2322 181 53274	1.000	ST 3
04 TP..	457698	WRAP-FIN 0.64X0.64X 60 8242 06 23		4.000	ST 3
04 TP..	458554	CONNECTOR AMP MODU2 3P MALE	826063-3	1.000	ST 3
04 TP..	458562	CONNECTOR AMP MODU2 18P MALE	1-826063-8	1.000	ST 3
05 U..1	433799	IC DIGITAL 8085 MICROPROC.	P8085	1.000	ST 3
05 U..2	433527	IC DIGITAL 74LS123 2XMONOSTAB	SN74LS123	1.000	ST 3
05 U..3	433535	IC DIGITAL 74LS 04 6XINVERTER	SN74LS04	1.000	ST 3
09 U..4	451541	IC DIGITAL 74LS 14N 6XINV ST	SN74LS14N	1.000	ST 3
05 U..5	433535	IC DIGITAL 74LS 04 6XINVERTER	SN74LS04	1.000	ST 3
05 U..6	362131	IC DIGITAL 74 06N 6X INV-BUF	SN7406N	1.000	ST 3
04 U..7	434752	IC DIGITAL 74LS 08N 4X2 IN AND	SN74LS08N	1.000	ST 3
05 U..8	404705	IC DIGITAL 74LS 00N 4X2IN NAND	SN74LS00N	1.000	ST 3
04 U..9	451576	IC DIGITAL 74LS161A BIN COUNT.	SN74LS161AN	1.000	ST 3
05 U.10	433535	IC DIGITAL 74LS 04 6XINVERTER	SN74LS04	1.000	ST 3
05 U.11	437107	IC DIGITAL 74LS 32N 4X2 INP OR	SN74LS32N	1.000	ST 3
05 U.12	451614	IC DIGITAL 74LS373N 8X D LATCH	SN74LS373N	1.000	ST 3
04 U.13	451169	IC DIGITAL 74LS365N 6X BUSDRIV	SN74LS365AN	1.000	ST 3
05 U.14	365874	IC DIGITAL 74LS 74N 2X D FF	SN74LS74N	1.000	ST 3
05 U.15	404705	IC DIGITAL 74LS 00N 4X2IN NAND	SN74LS00N	1.000	ST 3
05 U.16	451592	IC DIGITAL 74LS240N 8X BUF.INV	SN74LS240N	1.000	ST 3
05 U.17	451606	IC DIGITAL 74LS245N 8 BIT TRCV	SN74LS245N	1.000	ST 3
05 U.18	393592	IC DIGITAL 74LS 11 3X3 IN AND	SN74LS11N	1.000	ST 3
05 U.19	433683	IC DIGITAL 74LS138 3-8 DECOD.	SN74LS138	1.000	ST 3
05 U.20	437107	IC DIGITAL 74LS 32N 4X2 INP OR	SN74LS32N	1.000	ST 3
05 U.21	433683	IC DIGITAL 74LS138 3-8 DECOD.	SN74LS138	1.000	ST 3
05 U.22	433608	IC DIGITAL 74LS 21 2X4 IN AND	SN74LS21	1.000	ST 3
02 U.26	487503	IC DIGITAL 62421B RT CLOCK	RTC-62421B	1.000	ST 3
05 U.27	451606	IC DIGITAL 74LS245N 8 BIT TRCV	SN74LS245N	1.000	ST 3
05 U.28	365874	IC DIGITAL 74LS 74N 2X D FF	SN74LS74N	1.000	ST 3
05 U.29	404551	IC DIGITAL 74 37N 4X2IN NAND	SN7437N	1.000	ST 3
05 U.30	404551	IC DIGITAL 74 37N 4X2IN NAND	SN7437N	1.000	ST 3
05 U.31	404551	IC DIGITAL 74 37N 4X2IN NAND	SN7437N	1.000	ST 3
04 U.32	390909	IC DIGITAL 1488L 4XLINEDRIV	MC1488L	1.000	ST 3
04 U.33	390917	IC DIGITAL 1489A 4XLIN RCVR	MC1489AL	1.000	ST 3
05 U.34	433632	IC LINEAR MCA 255 OPTO ISOL	MCA255	1.000	ST 3
05 U.35	433632	IC LINEAR MCA 255 OPTO ISOL	MCA255	1.000	ST 3
05 U.36	433632	IC LINEAR MCA 255 OPTO ISOL	MCA255	1.000	ST 3
05 U.37	362131	IC DIGITAL 74 06N 6X INV-BUF	SN7406N	1.000	ST 3
04 U.38	451576	IC DIGITAL 74LS161A BIN COUNT.	SN74LS161AN	1.000	ST 3
04 U.39	451576	IC DIGITAL 74LS161A BIN COUNT.	SN74LS161AN	1.000	ST 3
04 U.40	451576	IC DIGITAL 74LS161A BIN COUNT.	SN74LS161AN	1.000	ST 3
05 U.41	451592	IC DIGITAL 74LS240N 8X BUF.INV	SN74LS240N	1.000	ST 3
04 U.42	451622	IC DIGITAL 74LS259N 8X LATCH	SN74LS259N	1.000	ST 3
04 U.43	451630	IC DIGITAL 74LS379N 4X D-FF	SN74LS379N	1.000	ST 3
04 U.44	451568	IC DIGITAL 74LS145N BCD-DEC	SN74LS145N	1.000	ST 3
02 U.45	487511	IC DIGITAL 6264 8KX8 SRAM	CDM 6264-4	1.000	ST 3
05 U.48	433608	IC DIGITAL 74LS 21 2X4 IN AND	SN74LS21	1.000	ST 3
05 U.49	355003	IC DIGITAL 4049B 6X INV-BUF	CD4049BE	1.000	ST 3
05 U.50	354899	IC DIGITAL 4027A 2X JK FF	CD4027AE	1.000	ST 3
05 U.51	355046	IC DIGITAL 4071B 4X2 INP OR	CD4071BE	1.000	ST 3
04 U.52	451029	IC DIGITAL 74LS377N 8X D-FF	SN74LS377N	1.000	ST 3
04 U.53	451215	IC LINEAR DAC-08EN D/A CONV.	AMDAC-08EN	1.000	ST 3
05 U.54	450294	IC LINEAR TL 082CP OP.AMP.	TL082CP	1.000	ST 3
05 U.55	450294	IC LINEAR TL 082CP OP.AMP.	TL082CP	1.000	ST 3
05 U.56	362131	IC DIGITAL 74 06N 6X INV-BUF	SN7406N	1.000	ST 3
06 U.57	354821	IC DIGITAL 4066B 4X ANA.SW.	FCF4066BE	1.000	ST 3
06 U.58	354821	IC DIGITAL 4066B 4X ANA.SW.	FCF4066BE	1.000	ST 3
04 U.59	455474	IC LINEAR LM 3302N VOLT COMP.	LM3302N	1.000	ST 3
06 VR.1	363324	DIODE ZENER ZPD 5.1 5.1V 0.5W	ZPD5.1	1.000	ST 3
06 VR.2	363324	DIODE ZENER ZPD 5.1 5.1V 0.5W	ZPD5.1	1.000	ST 3
07 VR.3	228834	DIODE ZENER ZPD 4.7 4.7V 0.5W	ZPD4.7	1.000	ST 3
05 XU.1	451452	IC ACCESSORY 40 PIN SOCKET	C934002	1.000	ST 3
05 XU23	435120	IC ACCESSORY 28 PIN SOCKET	4E40502	1.000	ST 3
05 XU24	435120	IC ACCESSORY 28 PIN SOCKET	4E40502	1.000	ST 3
05 XU25	435120	IC ACCESSORY 28 PIN SOCKET	4E40502	1.000	ST 3
03 XU26	380008	IC ACCESSORY 18 PIN SOCKET	518-AG-11D	1.000	ST 3
04 XU32	362832	IC ACCESSORY 14 PIN SOCKET	C931402	1.000	ST 3
04 XU33	362832	IC ACCESSORY 14 PIN SOCKET	C931402	1.000	ST 3
05 XU45	435120	IC ACCESSORY 28 PIN SOCKET	4E40502	1.000	ST 3
05 XU46	435120	IC ACCESSORY 28 PIN SOCKET	4E40502	1.000	ST 3
05 Y..1	433853	CRYSTAL 6,14400MHZ HC18-U	243000200	1.000	ST 3

DANSK RADIO AS

SINGLE LEVEL BILL WITH BLOW-THRU

DATE 11/09/87  
OPER LSRPARENT ITEM NO.  
471666DESCRIPTION MODEM ANALOG ASSY A9  
ENGR DRAW EMK 1&2T471666

BATCH QTY

LL	SEQ	COMPONENT	DESCRIPTION	ENGINEERING	QUANTITY	ITEM
CD	NO.	ITEM NO.		DRAWING NUMBER		UM TYP
02	...1	471658	PRINTED CIRC. BOARD MODEM ANA.	EMK 2T471658	1.000	ST 3
02	A..1	471631	MODEM DIGITAL ASSY A9A1	EMK 1&2T471631	1.000	ST 1
05	AXF1	451479	CONNECTOR AMP MODU2 10P FEMALE	1-826044-0	1.000	ST 3
05	AXF2	451479	CONNECTOR AMP MODU2 10P FEMALE	1-826044-0	1.000	ST 3
05	AXF3	451479	CONNECTOR AMP MODU2 10P FEMALE	1-826044-0	1.000	ST 3
05	AXF4	451479	CONNECTOR AMP MODU2 10P FEMALE	1-826044-0	1.000	ST 3
05	AXF5	451479	CONNECTOR AMP MODU2 10P FEMALE	1-826044-0	1.000	ST 3
02	C..1	487449	CAPACITOR TAN. 3U3 25 M	TAG 3,3UF 25V	1.000	ST 3
06	C..3	209783	CAPACITOR TAN. 1U 35 S	T399A105M035AS	1.000	ST 3
04	C..4	448923	CAPACITOR FLST 15N 63 F	2222 424 41503	1.000	ST 3
04	C..6	459534	CAPACITOR FLST 100N 63 M	B32529-A0104-M	1.000	ST 3
04	C..7	459534	CAPACITOR FLST 100N 63 M	B32529-A0104-M	1.000	ST 3
05	C..8	373176	CAPACITOR FLST 5N1 63 F	2222 424 45102	1.000	ST 3
06	C..9	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
02	C.10	462993	CAPACITOR FLST 33N 63 F	2222 424 43303	1.000	ST 3
04	C.11	362026	CAPACITOR FLST 5N6 63 F	2222 424 45602	1.000	ST 3
05	C.12	466980	CAPACITOR FLST 120P 630 H	B33063-B6121-H	1.000	ST 3
06	C.13	209783	CAPACITOR TAN. 1U 35 S	T399A105M035AS	1.000	ST 3
06	C.14	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
04	C.15	448893	CAPACITOR FLST 5N1 160 H	B33063-B1512-H	1.000	ST 3
06	C.16	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
06	C.17	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
06	C.18	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
06	C.19	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
04	C.20	362026	CAPACITOR FLST 5N6 63 F	2222 424 45602	1.000	ST 3
04	C.21	448923	CAPACITOR FLST 15N 63 F	2222 424 41503	1.000	ST 3
06	C.22	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
06	C.23	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
06	C.24	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
06	C.25	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
05	C.26	359661	CAPACITOR FLST 680P 160 F	2222 425 46801	1.000	ST 3
04	C.27	367869	CAPACITOR FLST 7N5 63 F	2222 424 47502	1.000	ST 3
02	C.28	487449	CAPACITOR TAN. 3U3 25 M	TAG 3,3UF 25V	1.000	ST 3
06	C.29	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
06	C.30	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
06	C.31	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
06	C.32	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
04	C.33	367869	CAPACITOR FLST 7N5 63 F	2222 424 47502	1.000	ST 3
05	C.34	209546	CAPACITOR FLST 1N 160 F	2222 425 41002	1.000	ST 3
06	C.35	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
06	C.36	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
06	C.37	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
02	C.38	487449	CAPACITOR TAN. 3U3 25 M	TAG 3,3UF 25V	1.000	ST 3
04	C.39	367869	CAPACITOR FLST 7N5 63 F	2222 424 47502	1.000	ST 3
04	C.40	448893	CAPACITOR FLST 5N1 160 H	B33063-B1512-H	1.000	ST 3
06	C.41	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
06	C.42	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
06	C.43	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
06	C.44	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
06	C.45	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
05	C.46	203203	CAPACITOR FLST 1N8 160 F	2222 425 41802	1.000	ST 3
06	C.47	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
05	C.48	203203	CAPACITOR FLST 1N8 160 F	2222 425 41802	1.000	ST 3
05	C.49	448907	CAPACITOR FLST 10N 160 F	B33063-B1103-F	1.000	ST 3
06	C.50	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
06	C.51	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
06	C.52	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
06	C.53	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
05	C.54	209600	CAPACITOR FLST 470P 250 F	2222 426 44701	1.000	ST 3
06	C.55	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
06	C.56	209783	CAPACITOR TAN. 1U 35 S	T399A105M035AS	1.000	ST 3
04	C.57	448923	CAPACITOR FLST 15N 63 F	2222 424 41503	1.000	ST 3
06	C.58	209783	CAPACITOR TAN. 1U 35 S	T399A105M035AS	1.000	ST 3
06	C.59	209783	CAPACITOR TAN. 1U 35 S	T399A105M035AS	1.000	ST 3
04	C.60	459534	CAPACITOR FLST 100N 63 M	B32529-A0104-M	1.000	ST 3
04	C.61	459534	CAPACITOR FLST 100N 63 M	B32529-A0104-M	1.000	ST 3
04	C.62	459534	CAPACITOR FLST 100N 63 M	B32529-A0104-M	1.000	ST 3
03	C.63	450863	CAPACITOR FLST 10N 400 J	2222 344 52103	1.000	ST 3
03	C.64	450863	CAPACITOR FLST 10N 400 J	2222 344 52103	1.000	ST 3
04	C.65	437395	CAPACITOR CER. 220P 100 G N750	2222 638 58221	1.000	ST 3
04	C.66	437395	CAPACITOR CER. 220P 100 G N750	2222 638 58221	1.000	ST 3
03	C.67	450863	CAPACITOR FLST 10N 400 J	2222 344 52103	1.000	ST 3
03	C.68	450863	CAPACITOR FLST 10N 400 J	2222 344 52103	1.000	ST 3
04	C.69	437395	CAPACITOR CER. 220P 100 G N750	2222 638 58221	1.000	ST 3
06	C.70	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06	C.71	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06	C.72	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
05	C.73	209600	CAPACITOR FLST 470P 250 F	2222 426 44701	1.000	ST 3
06	C.74	209643	CAPACITOR FLST 820P 160 F	2222 425 48201	1.000	ST 3
06	C.75	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
04	C.76	448923	CAPACITOR FLST 15N 63 F	2222 424 41503	1.000	ST 3

PARENT ITEM NO.  
471666DESCRIPTION MODERN ANALOG ASSY A9  
ENGR DRAW EMK 1&2T471666

BATCH QTY

LL SEQ	COMPONENT	DESCRIPTION	ENGINEERING	QUANTITY	ITEM
CD NO.	ITEM NO.		DRAWING NUMBER		UM TYP
06 C.77	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
06 C.78	209643	CAPACITOR PLST 820P 160 F	2222 425 48201	1.000	ST 3
06 C.79	209643	CAPACITOR PLST 820P 160 F	2222 425 48201	1.000	ST 3
05 C.80	359688	CAPACITOR PLST 270P 630 F	2222 427 42701	1.000	ST 3
05 C.81	209600	CAPACITOR PLST 470P 250 F	2222 426 44701	1.000	ST 3
04 C.82	448923	CAPACITOR PLST 15N 63 F	2222 424 41503	1.000	ST 3
06 C.83	357502	CAPACITOR CER. 33P 100 G N150	2222 683 34339	1.000	ST 3
06 C.84	209643	CAPACITOR PLST 820P 160 F	2222 425 48201	1.000	ST 3
06 C.85	209643	CAPACITOR PLST 820P 160 F	2222 425 48201	1.000	ST 3
05 C.86	362867	CAPACITOR PLST 15N 250 K	2222 344 44153	1.000	ST 3
04 C.87	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
02 C.88	475386	CAPACITOR PLST 3N0 63 F	2222 424 43002	1.000	ST 3
05 C.89	384895	CAPACITOR PLST 22N 63 F	2222 424 42203	1.000	ST 3
06 C.90	358940	CAPACITOR PLST 2N2 160 F	2222 425 42202	1.000	ST 3
06 C.91	209783	CAPACITOR TAN. 1U 35 S	T399A105M035AS	1.000	ST 3
04 C.92	362026	CAPACITOR PLST 5N6 63 F	2222 424 45602	1.000	ST 3
02 C.93	487449	CAPACITOR TAN. 3U3 25 M	TAG 3,3UF 25V	1.000	ST 3
02 C.94	487449	CAPACITOR TAN. 3U3 25 M	TAG 3,3UF 25V	1.000	ST 3
06 C.95	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.96	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.97	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
04 C.98	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
04 C.99	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
07 CR.1	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.2	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.3	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.4	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.5	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.6	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.7	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.8	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.9	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR10	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR11	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR12	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR13	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR14	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR15	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
05 CR16	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR17	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR18	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR19	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR20	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR21	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
06 CR22	363324	DIODE ZENER ZPD 5.1 5.1V 0.5W	ZFD5.1	1.000	ST 3
07 CR23	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR24	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
04 C100	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
05 C101	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C102	450359	CAPACITOR ELEC 1U 25 M	2222 122 56108	1.000	ST 3
05 C103	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C104	396621	CAPACITOR PLST 22N 400 M	MKT1822-322-4	1.000	ST 3
05 C105	390291	CAPACITOR PLST 47N 63 F	2222 424 44703	1.000	ST 3
05 C106	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
04 C107	437395	CAPACITOR CER. 220P 100 G N750	2222 638 58221	1.000	ST 3
04 C108	437395	CAPACITOR CER. 220P 100 G N750	2222 638 58221	1.000	ST 3
04 C109	437395	CAPACITOR CER. 220P 100 G N750	2222 638 58221	1.000	ST 3
05 C110	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C111	450359	CAPACITOR ELEC 1U 25 M	2222 122 56108	1.000	ST 3
05 C112	396389	CAPACITOR CER. 680P 40 M	9/0129.8	1.000	ST 3
04 C113	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
04 C114	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
06 C115	209805	CAPACITOR TAN. 6U8 35 S	0678-901-241	1.000	ST 3
06 C116	209805	CAPACITOR TAN. 6U8 35 S	0678-901-241	1.000	ST 3
04 C117	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
06 C118	209805	CAPACITOR TAN. 6U8 35 S	0678-901-241	1.000	ST 3
04 C119	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
04 C120	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
04 C121	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
04 C122	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
04 C123	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
04 C124	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
04 C125	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
04 C126	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
04 C127	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
06 C128	209783	CAPACITOR TAN. 1U 35 S	T399A105M035AS	1.000	ST 3
04 C129	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
04 C130	459534	CAPACITOR PLST 100N 63 M	B32529-A0104-M	1.000	ST 3
06 C131	209805	CAPACITOR TAN. 6U8 35 S	0678-901-241	1.000	ST 3
06 C132	209805	CAPACITOR TAN. 6U8 35 S	0678-901-241	1.000	ST 3
05 C133	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3



PARENT ITEM NO.  
471666DESCRIPTION MODEM ANALOG ASSY A9  
ENGR DRAW EMK 1&2T471666

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
05 C134	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C135	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C136	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C137	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C138	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C139	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C140	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 H..1	458694	SCREW M 2,5X 5 CHM CU SN	DIN 84 HFC 93	4.000	ST 3
05 H..2	276790	SCREW M 3 X 5 CHM CU SN	DIN 84	8.000	ST 3
07 H..3	230251	CONNECTOR D ACCESS. LOCK SCREW	D53018	4.000	ST 3
07 H..4	392715	GLASPERLER	2.5/1MMX2M 56-201840-6	4.000	ST 3
05 J..6	368016	CONNECTOR D PCB ANG 15P FEMALE	DA15S-1A0N	1.000	ST 3
05 J..7	390895	CONNECTOR D PCB ANG 25P FEMALE	DB-25S-1A0N	1.000	ST 3
05 L..1	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 L..2	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 L..3	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
02 MP.1	476099	REAR PLATE R 4000 A9	EMK 4T476099	1.000	ST 2
06 MP.2	260819	THUMBSCREW,KNURLED M3	EMK 5T 18978	2.000	ST 3
05 MP.3	448095	RETAINER,PC M 3000	EMK 4T448095	1.000	ST 2
04 MP.4	453137	STAY NUT M3 X12 N5	EMK 4T 21920	4.000	ST 3
07 Q..1	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
06 Q..2	359157	TRANS.LOPOW BC 251 SI-P TO-92	BC251	1.000	ST 3
07 Q..3	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
07 Q..4	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
06 Q..5	359157	TRANS.LOPOW BC 251 SI-P TO-92	BC251	1.000	ST 3
06 Q..6	359157	TRANS.LOPOW BC 251 SI-P TO-92	BC251	1.000	ST 3
07 Q..7	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
06 Q..8	359157	TRANS.LOPOW BC 251 SI-P TO-92	BC251	1.000	ST 3
06 Q..9	359157	TRANS.LOPOW BC 251 SI-P TO-92	BC251	1.000	ST 3
07 Q.10	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
07 Q.11	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
07 Q.12	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
07 Q.13	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
07 Q.14	273899	TRANS.LOPOW BC 547B SI-N TO-92	BC547B	1.000	ST 3
06 R..1	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
08 R..2	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
06 R..3	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..4	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R..5	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R..6	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
06 R..7	240664	RESISTOR CARB. 39K 1/4J SFR25	2322 181 53393	1.000	ST 3
06 R..8	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
06 R..9	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
06 R.10	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
07 R.11	240648	RESISTOR CARB. 27K 1/4J SFR25	2322 181 53273	1.000	ST 3
06 R.12	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
06 R.13	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
05 R.14	324205	RESISTOR CARB. 5K1 1/4J SFR25	2322 181 53512	1.000	ST 3
05 R.15	324205	RESISTOR CARB. 5K1 1/4J SFR25	2322 181 53512	1.000	ST 3
06 R.16	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
05 R.17	450316	RESISTOR FILM 47K5 0,6F MRS25	2322 156 14753	1.000	ST 3
03 R.18	359351	RESISTOR FILM 36K5 0,6F MRS25	2322 156 13653	1.000	ST 3
05 R.19	432881	RESISTOR FILM 30K1 0,6F MRS25	2322 156 13013	1.000	ST 3
06 R.20	240265	RESISTOR CARB. 200R 1/4J SFR25	2322 181 53201	1.000	ST 3
08 R.21	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
07 R.22	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
07 R.23	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
07 R.24	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
02 R.25	462063	RESISTOR FILM 24K3 0,6F MRS25	2322 156 12433	1.000	ST 3
02 R.26	462063	RESISTOR FILM 24K3 0,6F MRS25	2322 156 12433	1.000	ST 3
02 R.27	462063	RESISTOR FILM 24K3 0,6F MRS25	2322 156 12433	1.000	ST 3
06 R.28	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.29	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.30	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.31	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.32	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
05 R.33	328634	RESISTOR CARB. 4M7 1/4K SFR25	2322 181 53475	1.000	ST 3
04 R.34	368563	RESISTOR FILM 133R 0,6F MRS25	2322 156 11331	1.000	ST 3
04 R.35	371432	RESISTOR FILM 9K09 0,6F MRS25	2322 156 19092	1.000	ST 3
06 R.36	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.37	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.38	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.39	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.40	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.41	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
05 R.42	328634	RESISTOR CARB. 4M7 1/4K SFR25	2322 181 53475	1.000	ST 3
05 R.43	349607	RESISTOR FILM 18K2 0,6F MRS25	2322 156 11823	1.000	ST 3
04 R.44	376388	RESISTOR FILM 681R 0,6F MRS25	2322 156 16811	1.000	ST 3
06 R.45	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.46	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.47	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.48	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.49	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.50	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3



PARENT ITEM NO.  
471666DESCRIPTION MODERN ANALOG ASSY A9  
ENGR DRAW EMK 1&2T471666

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
05 R.51	328634	RESISTOR CARB. 4M7 1/4K SFR25	2322 181 53475	1.000	ST 3
05 R.52	368539	RESISTOR FILM 7K50 0,6F MRS25	2322 156 17502	1.000	ST 3
05 R.53	349542	RESISTOR FILM 22K1 0,6F MRS25	2322 156 12213	1.000	ST 3
06 R.54	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.55	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.56	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.57	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
03 R.58	390267	RESISTOR FILM 11K0 0,6F MRS25	2322 156 11103	1.000	ST 3
05 R.59	376418	RESISTOR FILM 82K5 0,6F MRS25	2322 156 18253	1.000	ST 3
02 R.60	467146	RESISTOR FILM 511K 0,6F MRS25	2322 156 15114	1.000	ST 3
03 R.61	390267	RESISTOR FILM 11K0 0,6F MRS25	2322 156 11103	1.000	ST 3
06 R.62	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.63	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
08 R.64	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
05 R.65	324205	RESISTOR CARB. 5K1 1/4J SFR25	2322 181 53512	1.000	ST 3
05 R.66	324205	RESISTOR CARB. 5K1 1/4J SFR25	2322 181 53512	1.000	ST 3
04 R.67	373486	RESISTOR FILM 3K32 0,6F MRS25	2322 156 13322	1.000	ST 3
05 R.68	454354	RESISTOR FILM 20K5 0,6F MRS25	2322 156 12053	1.000	ST 3
06 R.69	240265	RESISTOR CARB. 200R 1/4J SFR25	2322 181 53201	1.000	ST 3
08 R.70	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
06 R.71	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
07 R.72	240648	RESISTOR CARB. 27K 1/4J SFR25	2322 181 53273	1.000	ST 3
07 R.73	240648	RESISTOR CARB. 27K 1/4J SFR25	2322 181 53273	1.000	ST 3
06 R.74	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.75	240486	RESISTOR CARB. 3K3 1/4J SFR25	2322 181 53332	1.000	ST 3
05 R.76	380393	RESISTOR CARB. 270K 1/4J SFR25	2322 181 53274	1.000	ST 3
05 R.77	240559	RESISTOR CARB. 8K2 1/4J SFR25	2322 181 53822	1.000	ST 3
06 R.78	328626	RESISTOR CARB. 220K 1/4J SFR25	2322 181 53224	1.000	ST 3
06 R.79	328626	RESISTOR CARB. 220K 1/4J SFR25	2322 181 53224	1.000	ST 3
07 R.80	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
06 R.81	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.82	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
06 R.83	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.84	240605	RESISTOR CARB. 15K 1/4J SFR25	2322 181 53153	1.000	ST 3
06 R.85	240664	RESISTOR CARB. 39K 1/4J SFR25	2322 181 53393	1.000	ST 3
07 R.86	240451	RESISTOR CARB. 2K2 1/4J SFR25	2322 181 53222	1.000	ST 3
06 R.87	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
07 R.88	240109	RESISTOR CARB. 10R 1/4J SFR25	2322 181 53109	1.000	ST 3
05 R.89	240370	RESISTOR CARB. 620R 1/4J SFR25	2322 181 53621	1.000	ST 3
06 R.90	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.91	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.92	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.93	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.94	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
05 R.95	450979	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.96	240419	RESISTOR CARB. 360R 1/4J SFR25	2322 181 53361	1.000	ST 3
08 R.97	240516	RESISTOR CARB. 1K2 1/4J SFR25	2322 181 53122	1.000	ST 3
05 R.98	240370	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
06 R.99	240567	RESISTOR CARB. 620R 1/4J SFR25	2322 181 53621	1.000	ST 3
05 R100	450979	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R101	240419	RESISTOR CARB. 360R 1/4J SFR25	2322 181 53361	1.000	ST 3
08 R102	240516	RESISTOR CARB. 1K2 1/4J SFR25	2322 181 53122	1.000	ST 3
04 R103	361534	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
06 R104	240486	RESISTOR CARB. 16K 1/4J SFR25	2322 181 53163	1.000	ST 3
03 R105	390267	RESISTOR CARB. 3K3 1/4J SFR25	2322 181 53332	1.000	ST 3
05 R106	376418	RESISTOR FILM 11K0 0,6F MRS25	2322 156 11103	1.000	ST 3
02 R107	467146	RESISTOR FILM 82K5 0,6F MRS25	2322 156 18253	1.000	ST 3
03 R108	390267	RESISTOR FILM 511K 0,6F MRS25	2322 156 15114	1.000	ST 3
06 R109	240567	RESISTOR FILM 11K0 0,6F MRS25	2322 156 11103	1.000	ST 3
06 R110	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
08 R111	240516	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
04 R112	240826	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
07 R113	357693	RESISTOR CARB. 330K 1/4J SFR25	2322 181 53334	1.000	ST 3
06 R114	349623	RESISTOR CARB. 150K 1/4J SFR25	2322 181 53154	1.000	ST 3
06 R115	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R116	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R117	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R118	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R119	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R120	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
04 R121	240826	RESISTOR CARB. 330K 1/4J SFR25	2322 181 53334	1.000	ST 3
07 R122	357693	RESISTOR CARB. 150K 1/4J SFR25	2322 181 53154	1.000	ST 3
06 R123	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R124	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R125	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R126	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
03 R129	240842	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
03 R130	240842	RESISTOR CARB. 510K 1/4J SFR25	2322 181 53514	1.000	ST 3
07 R131	240745	RESISTOR CARB. 510K 1/4J SFR25	2322 181 53514	1.000	ST 3
04 R132	371963	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
05 R133	359165	RESISTOR CARB. 62K 1/4J SFR25	2322 181 53623	1.000	ST 3
		RESISTOR SEMIV 10K 1/2K CERM	3386H-1-103	1.000	ST 3

PARENT ITEM NO.  
471666DESCRIPTION MODEM ANALOG ASSY A9  
ENGR DRAW EMK 1&2T471666

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
08 R134	240516	RESISTOR CARB. 4K7 1/4J SFR25 2322 181 53472		1.000	ST 3
08 R135	240516	RESISTOR CARB. 4K7 1/4J SFR25 2322 181 53472		1.000	ST 3
07 R136	240745	RESISTOR CARB. 100K 1/4J SFR25 2322 181 53104		1.000	ST 3
06 R137	328626	RESISTOR CARB. 220K 1/4J SFR25 2322 181 53224		1.000	ST 3
06 R138	328626	RESISTOR CARB. 220K 1/4J SFR25 2322 181 53224		1.000	ST 3
06 R139	240605	RESISTOR CARB. 15K 1/4J SFR25 2322 181 53153		1.000	ST 3
06 R140	240486	RESISTOR CARB. 3K3 1/4J SFR25 2322 181 53332		1.000	ST 3
06 R141	240680	RESISTOR CARB. 47K 1/4J SFR25 2322 181 53473		1.000	ST 3
05 R142	240559	RESISTOR CARB. 8K2 1/4J SFR25 2322 181 53822		1.000	ST 3
06 R143	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
06 R144	328626	RESISTOR CARB. 220K 1/4J SFR25 2322 181 53224		4.000	ST 3
06 R145	240478	RESISTOR CARB. 2K7 1/4J SFR25 2322 181 53272		1.000	ST 3
07 R146	240745	RESISTOR CARB. 100K 1/4J SFR25 2322 181 53104		1.000	ST 3
07 R147	240745	RESISTOR CARB. 100K 1/4J SFR25 2322 181 53104		1.000	ST 3
07 R148	240745	RESISTOR CARB. 100K 1/4J SFR25 2322 181 53104		1.000	ST 3
09 R149	240621	RESISTOR CARB. 22K 1/4J SFR25 2322 181 53223		1.000	ST 3
07 R150	240745	RESISTOR CARB. 100K 1/4J SFR25 2322 181 53104		1.000	ST 3
09 R151	240621	RESISTOR CARB. 22K 1/4J SFR25 2322 181 53223		1.000	ST 3
07 R152	240745	RESISTOR CARB. 100K 1/4J SFR25 2322 181 53104		1.000	ST 3
07 R153	357693	RESISTOR CARB. 150K 1/4J SFR25 2322 181 53154		1.000	ST 3
06 R154	240680	RESISTOR CARB. 47K 1/4J SFR25 2322 181 53473		1.000	ST 3
06 R155	240664	RESISTOR CARB. 39K 1/4J SFR25 2322 181 53393		1.000	ST 3
07 R156	240524	RESISTOR CARB. 5K6 1/4J SFR25 2322 181 53562		1.000	ST 3
09 R157	240621	RESISTOR CARB. 22K 1/4J SFR25 2322 181 53223		1.000	ST 3
05 R158	450316	RESISTOR FILM 47K5 0,6F MRS25 2322 156 14753		1.000	ST 3
05 R159	450316	RESISTOR FILM 47K5 0,6F MRS25 2322 156 14753		1.000	ST 3
09 R160	240621	RESISTOR CARB. 22K 1/4J SFR25 2322 181 53223		1.000	ST 3
05 R161	450316	RESISTOR FILM 47K5 0,6F MRS25 2322 156 14753		1.000	ST 3
05 R162	450316	RESISTOR FILM 47K5 0,6F MRS25 2322 156 14753		1.000	ST 3
02 R163	467081	RESISTOR FILM 2K15 0,6F MRS25 2322 156 12152		1.000	ST 3
06 R164	328626	RESISTOR CARB. 220K 1/4J SFR25 2322 181 53224		1.000	ST 3
05 R165	450316	RESISTOR FILM 47K5 0,6F MRS25 2322 156 14753		1.000	ST 3
05 R166	367826	RESISTOR FILM 2K49 0,6F MRS25 2322 156 12492		1.000	ST 3
06 R167	240338	RESISTOR CARB. 390R 1/4J SFR25 2322 181 53391		1.000	ST 3
06 R168	240605	RESISTOR CARB. 15K 1/4J SFR25 2322 181 53153		1.000	ST 3
07 R169	240648	RESISTOR CARB. 27K 1/4J SFR25 2322 181 53273		1.000	ST 3
06 R170	240338	RESISTOR CARB. 390R 1/4J SFR25 2322 181 53391		1.000	ST 3
07 R171	240745	RESISTOR CARB. 100K 1/4J SFR25 2322 181 53104		1.000	ST 3
05 R172	240532	RESISTOR CARB. 6K2 1/4J SFR25 2322 181 53622		1.000	ST 3
09 R173	240621	RESISTOR CARB. 22K 1/4J SFR25 2322 181 53223		1.000	ST 3
09 R174	240621	RESISTOR CARB. 22K 1/4J SFR25 2322 181 53223		1.000	ST 3
09 R175	240621	RESISTOR CARB. 22K 1/4J SFR25 2322 181 53223		1.000	ST 3
06 R176	240249	RESISTOR CARB. 150R 1/4J SFR25 2322 181 53151		1.000	ST 3
06 R177	240249	RESISTOR CARB. 150R 1/4J SFR25 2322 181 53151		1.000	ST 3
06 R178	240249	RESISTOR CARB. 150R 1/4J SFR25 2322 181 53151		1.000	ST 3
06 R179	240249	RESISTOR CARB. 150R 1/4J SFR25 2322 181 53151		1.000	ST 3
05 R180	241334	RESISTOR CARB. 330R 1/2JSFR25H 2322 186 13331		1.000	ST 3
07 R181	240745	RESISTOR CARB. 100K 1/4J SFR25 2322 181 53104		1.000	ST 3
07 R182	240745	RESISTOR CARB. 100K 1/4J SFR25 2322 181 53104		1.000	ST 3
07 R183	240745	RESISTOR CARB. 100K 1/4J SFR25 2322 181 53104		1.000	ST 3
07 R184	240745	RESISTOR CARB. 100K 1/4J SFR25 2322 181 53104		1.000	ST 3
05 R185	451363	RESISTOR NETW 5X2K2 1/5G 4306R-101-222		1.000	ST 3
06 R186	457655	RESISTOR NETW 4X3K3 1/5G 764-3-R-3K3		1.000	ST 3
05 R187	372196	RESISTOR NETW 5X47K 1/8M 4306R-101-473		1.000	ST 3
04 R188	372188	RESISTOR NETW 9X47K 1/8M 4310R-101-473		1.000	ST 3
08 R189	240516	RESISTOR CARB. 4K7 1/4J SFR25 2322 181 53472		1.000	ST 3
07 R190	240540	RESISTOR CARB. 6K8 1/4J SFR25 2322 181 53682		1.000	ST 3
08 R191	240516	RESISTOR CARB. 4K7 1/4J SFR25 2322 181 53472		1.000	ST 3
06 R192	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST 3
05 R201	368636	RESISTOR SEMIV 2K 1/2K CERM 3386H-1-202		1.000	ST 3
05 R202	359165	RESISTOR SEMIV 10K 1/2K CERM 3386H-1-103		1.000	ST 3
05 R203	365963	RESISTOR SEMIV 5K 1/2K CERM 3386H-1-502		1.000	ST 3
05 R204	365963	RESISTOR SEMIV 5K 1/2K CERM 3386H-1-502		1.000	ST 3
05 R205	361550	RESISTOR SEMIV 100K 1/2K CERM 3386H-1-104		1.000	ST 3
05 R206	365963	RESISTOR SEMIV 5K 1/2K CERM 3386H-1-502		1.000	ST 3
05 R207	365963	RESISTOR SEMIV 5K 1/2K CERM 3386H-1-502		1.000	ST 3

PARENT ITEM NO.  
471666DESCRIPTION MODEM ANALOG ASSY A9  
ENGR DRAW EMK 1&2T471666

BATCH QTY

LL CD	SEQ NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
07	R208	372072	RESISTOR SEMIV 100K 1/2K CERM	3386P-1-104	1.000	ST 3
05	R209	391980	RESISTOR SEMIV 2K 1/2K CERM	3386P-1-202	1.000	ST 3
05	R210	391980	RESISTOR SEMIV 2K 1/2K CERM	3386P-1-202	1.000	ST 3
04	R211	357715	RESISTOR SEMIV 1K 1/2K CERM	3386P-1-102	1.000	ST 3
09	R212	240621	RESISTOR CARB. 22K 1/4J SFR25	2322 181 53223	1.000	ST 3
02	S.1.	471771	SWITCH,PCB DIP-FIX 4X CHANGE	C42315A1347A204	.250	ST 3
02	S.2A	471771	SWITCH,PCB DIP-FIX 4X CHANGE	C42315A1347A204	.250	ST 3
02	S.2B	471771	SWITCH,PCB DIP-FIX 4X CHANGE	C42315A1347A204	.250	ST 3
02	S.3.	471771	SWITCH,PCB DIP-FIX 4X CHANGE	C42315A1347A204	.250	ST 3
04	S.5A	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S.5B	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S.7A	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S.7B	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S.7C	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S10A	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S10B	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S10C	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
02	S13A	471771	SWITCH,PCB DIP-FIX 4X CHANGE	C42315A1347A204	.250	ST 3
02	S13B	471771	SWITCH,PCB DIP-FIX 4X CHANGE	C42315A1347A204	.250	ST 3
02	S14C	471771	SWITCH,PCB DIP-FIX 4X CHANGE	C42315A1347A204	.250	ST 3
04	S15.	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S16.	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S17.	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S18.	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S20.	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S21.	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S22A	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S22B	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S22C	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
04	S22D	471798	SWITCH,PCF DIP-FIX 8X ON/OFF	C42315A1347A108	.125	ST 3
05	T.1	373206	TRAFO.LINE 600:600R	2824MU-INDSTØBT	1.000	ST 3
05	T.2	373206	TRAFO.LINE 600:600R	2824MU-INDSTØBT	1.000	ST 3
06	TP..	231304	TERMINAL STUD 2,5X7 Ø1,3	4772	9.000	ST 3
05	U..1	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05	U..2	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05	U..3	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05	U..4	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05	U..5	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05	U..6	392561	IC LINEAR NE 567N PLL DECOD	NE567N	1.000	ST 3
02	U..7	462950	IC LINEAR XR 2211C TONE DECOD	XR2211CP	1.000	ST 3
05	U..8	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05	U..9	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05	U..10	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05	U..11	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
06	U..12	354821	IC DIGITAL 4066B 4X ANA.SW.	FCF4066BE	1.000	ST 3
05	U..13	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
02	U..14	475122	IC LINEAR XR 2206 FUNC.GEN.	XR2206	1.000	ST 3
02	U..15	475122	IC LINEAR XR 2206 FUNC.GEN.	XR2206	1.000	ST 3
05	U..16	357707	IC LINEAR MC 1458P OP.AMPL.	MC1458P	1.000	ST 3
02	U..17	475130	IC DIGITAL 26LS 29 LINEDRIVER	AM26LS29DM	1.000	ST 3

DANSK RADIO AS

SINGLE LEVEL BILL WITH BLOW-THRU

DATE 11/09/87  
OPER LSRPARENT ITEM NO.  
471631DESCRIPTION MODEM DIGITAL ASSY A9A1  
ENGR DRAW EMK 1&2T471631

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
03 ...1	471623	PRINTED CIRC. BOARD MODEM DIG.	EMK 2T471623	1.000	ST 4
05 C..1	450529	CAPACITOR ELEC 6U8 25 M	2222 122 5668B	1.000	ST 3
06 C..2	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C..3	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C..4	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C..5	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C..6	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C..7	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C..8	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C..9	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.10	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.11	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.12	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.13	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.14	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.15	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.16	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.17	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.18	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.19	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.20	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.21	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C.22	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
04 C.23	437395	CAPACITOR CER. 220P 100 G N750	2222 638 58221	1.000	ST 3
07 CR.1	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
06 P..1	451487	CONNECTOR AMP MODU2 10P MALE	1-826063-0	1.000	ST 3
06 P..2	451487	CONNECTOR AMP MODU2 10P MALE	1-826063-0	1.000	ST 3
06 P..3	451487	CONNECTOR AMP MODU2 10P MALE	1-826063-0	1.000	ST 3
06 P..4	451487	CONNECTOR AMP MODU2 10P MALE	1-826063-0	1.000	ST 3
06 P..5	451487	CONNECTOR AMP MODU2 10P MALE	1-826063-0	1.000	ST 3
07 R..1	240451	RESISTOR CARB. 2K2 1/4J SFR25	2322 181 53222	1.000	ST 3
06 R..2	240435	RESISTOR CARB. 1K8 1/4J SFR25	2322 181 53182	1.000	ST 3
06 R..3	240435	RESISTOR CARB. 1K8 1/4J SFR25	2322 181 53182	1.000	ST 3
07 R..4	357693	RESISTOR CARB. 150K 1/4J SFR25	2322 181 53154	1.000	ST 3
08 R..5	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
05 R..6	457647	RESISTOR NETW 9X10K 1/5G	4310R-101-103	1.000	ST 3
08 R..7	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
08 R..8	240516	RESISTOR CARB. 4K7 1/4J SFR25	2322 181 53472	1.000	ST 3
03 S..1	476587	SWITCH,DIP 8PST 16PIN DIP	BDS 08S	1.000	ST 3
03 S..2	476587	SWITCH,DIP 8PST 16PIN DIP	BDS 08S	1.000	ST 3
04 TP..	457698	WRAP-PIN 0.64X0.64X 60 8242 06 23		18.000	ST 3
09 U..1	451541	IC DIGITAL 74LS 14N 6XINV ST	SN74LS14N	1.000	ST 3
04 U..2	451576	IC DIGITAL 74LS161A BIN COUNT.	SN74LS161AN	1.000	ST 3
04 U..3	442933	IC DIGITAL 74LS393 2XBIN.COUN	SN74LS393	1.000	ST 3
05 U..4	451606	IC DIGITAL 74LS245N 8 BIT TRCV	SN74LS245N	1.000	ST 3
05 U..5	437107	IC DIGITAL 74LS 32N 4X2 INP OR	SN74LS32N	1.000	ST 3
05 U..6	451614	IC DIGITAL 74LS373N 8X D LATCH	SN74LS373N	1.000	ST 3
03 U..7	462489	IC DIGITAL 8251A USART	P8251A	1.000	ST 3
05 U..8	451592	IC DIGITAL 74LS240N 8X BUF.INV	SN74LS240N	1.000	ST 3
05 U..9	393592	IC DIGITAL 74LS 11 3X3 IN AND	SN74LS11N	1.000	ST 3
05 U.10	393622	IC DIGITAL 74 07N 6X BUF.OC.	SN7407N	1.000	ST 3
05 U.11	433683	IC DIGITAL 74LS138 3-8 DECOD.	SN74LS138	1.000	ST 3
05 U.12	451614	IC DIGITAL 74LS373N 8X D LATCH	SN74LS373N	1.000	ST 3
05 U.13	404357	IC DIGITAL 74LS157N 4X DATASEL	DM74LS157N	1.000	ST 3
05 U.14	433705	IC DIGITAL 74LS273 8X D FF	SN74LS273	1.000	ST 3
03 U.15	476579	IC DIGITAL 2068B 4XDARLNGT	ULN 2068B	1.000	ST 3
03 U.16	476579	IC DIGITAL 2068B 4XDARLNGT	ULN 2068B	1.000	ST 3
05 U.17	437107	IC DIGITAL 74LS 32N 4X2 INP OR	SN74LS32N	1.000	ST 3
04 U.18	390917	IC DIGITAL 1489A 4XLIN RCVR	MC1489AL	1.000	ST 3
04 U.19	390917	IC DIGITAL 1489A 4XLIN RCVR	MC1489AL	1.000	ST 3
05 U.20	433535	IC DIGITAL 74LS 04 6XINVERTER	SN74LS04	1.000	ST 3
04 U.21	434752	IC DIGITAL 74LS 08N 4X2 IN AND	SN74LS08N	1.000	ST 3
09 U.22	451541	IC DIGITAL 74LS 14N 6XINV ST	SN74LS14N	1.000	ST 3
05 U.23	393622	IC DIGITAL 74 07N 6X BUF.OC.	SN7407N	1.000	ST 3
05 U.24	433535	IC DIGITAL 74LS 04 6XINVERTER	SN74LS04	1.000	ST 3
05 Y..1	433853	CRYSTAL 6,14400MHZ HC18-U	243000200	1.000	ST 3

DANSK RADIO AS

SINGLE LEVEL BILL WITH BLOW-THRU

DATE 11/09/87  
OPER LSRPARENT ITEM NO.  
471720DESCRIPTION POWER SUPPLY ASSY A10  
ENGR DRAW EMK 2T471720

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
09	891177	FORMONTAGE		.400	TI ?
08	895075			.140	TI ?
09	895091			1.500	TI ?
03 A..1	471534	REGULATOR-AF, ASSY A10A1	EMK 1&2T471534	1.000	ST 1
03 A..2	471550	TRAFO ASSY RX4000 A10A2	EMK 1&2T471550	1.000	ST 1
04 A..3	458341	HEATSINK ASSY A10A3	EMK T458341	1.000	ST 1
05 H..1	458694	SCREW M 2,5X 5 CHM CU SN	DIN 84 HFC 93	4.000	ST 3
05 H..2	276790	SCREW M 3 X 5 CHM CU SN	DIN 84	2.000	ST 3
06 H..3	275638	SCREW M 4 X 8 CHJ GULCR	DIN 84	4.000	ST 3
07 H..4	230251	CONNECTOR D ACCESS. LOCK SCREW	D53018	4.000	ST 3
06 MP.1	260819	THUMBSCREW, KNURLED M3	EMK 5T 18978	4.000	ST 3

PARENT ITEM NO.  
471534DESCRIPTION REGULATOR-AF, ASSY A10A1  
ENGR DRAW EMK 1A2T471534

BATCH QTY

LL SEQ	COMPONENT	DESCRIPTION	ENGINEERING	QUANTITY	ITEM
CD NO.	ITEM NO.		DRAWING NUMBER		UM TYP
04 ...1	471526	PRINTED CIRC. BOARD REGUL. AF	EMK 2T471526	1.000	ST 3
05 C..1	454265	CAPACITOR ELEC 100U 25 T	EHF1-100-25 1A	1.000	ST 3
07 C..2	202967	CAPACITOR PLST 100N 100 K	2222 344 21104	1.000	ST 3
05 C..3	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..4	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..5	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C..6	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..7	451053	CAPACITOR ELEC 68U 6,3 M	2222 122 53689	1.000	ST 3
06 C..8	357634	CAPACITOR CER. 2N2 100 K HI-K	2222 630 06222	1.000	ST 3
06 C..9	357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
05 C..10	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C..11	357499	CAPACITOR CER. 27P 100 G N150	2222 683 34279	1.000	ST 3
05 C..12	454273	CAPACITOR ELEC 220U 25 T	EHF1-220-25 1A	1.000	ST 3
05 C..13	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C..14	357634	CAPACITOR CER. 2N2 100 K HI-K	2222 630 06222	1.000	ST 3
06 C..15	357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
05 C..16	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..17	454265	CAPACITOR ELEC 100U 25 T	EHF1-100-25 1A	1.000	ST 3
05 C..18	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..19	385123	CAPACITOR CER. 4N7 100 K HI-K	2222 630 02472	1.000	ST 3
06 C..20	357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
05 C..21	454265	CAPACITOR ELEC 100U 25 T	EHF1-100-25 1A	1.000	ST 3
07 C..22	202967	CAPACITOR PLST 100N 100 K	2222 344 21104	1.000	ST 3
05 C..23	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C..24	357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
06 C..25	357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
06 C..26	357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
04 C..27	450812	CAPACITOR PLST 1N 160 J	B33063-B1102-J	1.000	ST 3
05 C..28	448907	CAPACITOR PLST 10N 160 F	B33063-B1103-F	1.000	ST 3
05 C..29	448907	CAPACITOR PLST 10N 160 F	B33063-B1103-F	1.000	ST 3
05 C..30	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
04 C..31	203246	CAPACITOR PLST 10N 400 K	2222 342 51103	1.000	ST 3
06 C..32	357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
04 C..33	476315	CAPACITOR PLST 680N 50 J	MKS 2 0U68 50VJ	1.000	ST 3
05 C..34	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C..35	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C..36	451053	CAPACITOR ELEC 68U 6,3 M	2222 122 53689	1.000	ST 3
05 C..37	454281	CAPACITOR ELEC 1M 25 T	EHF1-1000-25 1A	1.000	ST 3
05 C..38	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
04 C..39	476315	CAPACITOR PLST 680N 50 J	MKS 2 0U68 50VJ	1.000	ST 3
05 C..40	454265	CAPACITOR ELEC 100U 25 T	EHF1-100-25 1A	1.000	ST 3
05 C..41	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C..42	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..43	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C..44	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
07 C..45	202967	CAPACITOR PLST 100N 100 K	2222 344 21104	1.000	ST 3
07 C..46	202967	CAPACITOR PLST 100N 100 K	2222 344 21104	1.000	ST 3
07 C..47	202967	CAPACITOR PLST 100N 100 K	2222 344 21104	1.000	ST 3
05 C..48	385123	CAPACITOR CER. 4N7 100 K HI-K	2222 630 02472	1.000	ST 3
05 C..49	344273	CAPACITOR PLST 22N 250 K	2222 344 41223	1.000	ST 3
05 C..50	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C..51	454117	CAPACITOR PLST 68N 250 K	2222 344 41683	1.000	ST 3
05 C..52	454273	CAPACITOR ELEC 220U 25 T	EHF1-220-25 1A	1.000	ST 3
05 C..53	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
04 C..54	209376	CAPACITOR ELEC 470U 16 T	LL PEG1246D347	1.000	ST 3
05 C..55	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C..56	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
07 CR.1	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.2	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.3	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.4	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.5	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.6	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.7	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.8	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
07 CR.9	228087	DIODE SIGN. 1N4148 SI 150MA	1N4148	1.000	ST 3
05 H..1	458694	SCREW M 2,5X 5 CHM CU SN	DIN 84 HFC 93	5.000	ST 3
05 H..2	276790	SCREW M 3 X 5 CHM CU SN	DIN 84	5.000	ST 3
05 H..3	276804	SCREW M 3 X 8 CHM CU SN	DIN 84	1.000	ST 3
05 H..4	327514	NUT M 3 CONTRA M CU SN	DIN439	6.000	ST 3
05 H..5	362069	IC ACCESSORY HEATSINK	KL-105 SW	1.000	ST 3
06 H..6	391387	TRANS.ACCESSORY ISOLAT.PLD	SIL-EL33/T0220	1.000	ST 3
05 H..7	386677	BEAD, STEATITE	3.18X3.18 831	16.000	ST 3
06 H..8	442399	TERMINAL STUD	140-1785-2 140-1785-2	4.000	ST 3
05 J..2	458481	CONNECTOR MOLEX	11P MALE 5046/22-11-1111	1.000	ST 3
05 J..3	368016	CONNECTOR D PCB ANG	15P FEMALE DA15S-1A0N	1.000	ST 3
05 J..4	454168	CONNECTOR MOLEX	2P MALE 6410/22-29-2021	1.000	ST 3
05 MP.1	458384	SCREEN SHIELD CAN	M3000A10A1 EMK 4T458384	1.000	ST 3
05 MP.2	448095	RETAINER, PC	M 3000 EMK 4T448095	1.000	ST 2
05 MP.3	455571	STAY NUT M2,5X15	04,0-2,9 EMK 4T455571	2.000	ST 3
06 Q..1	359157	TRANS. LOPOW BC 251	SI-F T0-92 BC251	1.000	ST 3
06 Q..2	359157	TRANS. LOPOW BC 251	SI-F T0-92 BC251	1.000	ST 3

PARENT ITEM NO.  
471534DESCRIPTION REGULATOR-AF, ASSY A10A1  
ENGR DRAW EMK 1&2T471534

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM	TYPE
06 Q.1.3	359157	TRANS.LOPOW BC 251 SI-P TO-92 BC251		1.000	ST	3
07 Q.1.4	273899	TRANS.LOPOW BC 547B SI-N TO-92 BC547B		1.000	ST	3
05 Q.1.5	454206	TRANS.SCR 2N6402 200V16A 2N6402		1.000	ST	3
07 Q.1.6	273899	TRANS.LOPOW BC 547B SI-N TO-92 BC547B		1.000	ST	3
05 Q.1.7	454206	TRANS.SCR 2N6402 200V16A 2N6402		1.000	ST	3
06 Q.1.8	359157	TRANS.LOPOW BC 251 SI-P TO-92 BC251		1.000	ST	3
06 Q.1.9	359157	TRANS.LOPOW BC 251 SI-P TO-92 BC251		1.000	ST	3
05 Q.1.10	454206	TRANS.SCR 2N6402 200V16A 2N6402		1.000	ST	3
07 Q.1.11	273899	TRANS.LOPOW BC 547B SI-N TO-92 BC547B		1.000	ST	3
07 Q.1.12	273899	TRANS.LOPOW BC 547B SI-N TO-92 BC547B		1.000	ST	3
05 Q.1.12	454605	TRANS.JFETN 2N3955 DUAL TO-71 2N3955		1.000	ST	3
07 Q.1.14	273899	TRANS.LOPOW BC 547B SI-N TO-92 BC547B		1.000	ST	3
07 Q.1.15	273899	TRANS.LOPOW BC 547B SI-N TO-92 BC547B		1.000	ST	3
07 Q.1.16	273899	TRANS.LOPOW BC 547B SI-N TO-92 BC547B		1.000	ST	3
07 Q.1.17	273899	TRANS.LOPOW BC 547B SI-N TO-92 BC547B		1.000	ST	3
06 Q.1.18	359157	TRANS.LOPOW BC 251 SI-P TO-92 BC251		1.000	ST	3
06 R.1.1	240583	RESISTOR CARB. 12K 1/4J SFR25 2322 181 53123		1.000	ST	3
06 R.1.3	324221	RESISTOR CARB. 2K4 1/4J SFR25 2322 181 53242		1.000	ST	3
06 R.1.4	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST	3
09 R.1.5	240621	RESISTOR CARB. 22K 1/4J SFR25 2322 181 53223		1.000	ST	3
05 R.1.6	432881	RESISTOR FILM 30K1 0.6F MRS25 2322 156 13013		1.000	ST	3
05 R.1.7	349496	RESISTOR FILM 100K 0.6F MRS25 2322 156 11004		1.000	ST	3
06 R.1.8	240427	RESISTOR CARB. 1K5 1/4J SFR25 2322 181 53152		1.000	ST	3
08 R.1.10	240516	RESISTOR CARB. 4K7 1/4J SFR25 2322 181 53472		1.000	ST	3
06 R.1.11	240478	RESISTOR CARB. 2K7 1/4J SFR25 2322 181 53272		1.000	ST	3
09 R.1.12	240222	RESISTOR CARB. 100R 1/4J SFR25 2322 181 53101		1.000	ST	3
06 R.1.14	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST	3
06 R.1.15	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST	3
09 R.1.16	240621	RESISTOR CARB. 22K 1/4J SFR25 2322 181 53223		1.000	ST	3
06 R.1.17	240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000	ST	3
06 R.1.18	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST	3
06 R.1.19	240494	RESISTOR CARB. 3K9 1/4J SFR25 2322 181 53392		1.000	ST	3
06 R.2.0	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST	3
07 R.2.1	240524	RESISTOR CARB. 5K6 1/4J SFR25 2322 181 53562		1.000	ST	3
07 R.2.2	240524	RESISTOR CARB. 5K6 1/4J SFR25 2322 181 53562		1.000	ST	3
06 R.2.3	240192	RESISTOR CARB. 51R 1/4J SFR25 2322 181 53519		1.000	ST	3
06 R.2.4	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST	3
04 R.2.4	371963	RESISTOR CARB. 62K 1/4J SFR25 2322 181 53623		1.000	ST	3
07 R.2.5	240648	RESISTOR CARB. 27K 1/4J SFR25 2322 181 53273		1.000	ST	3
05 R.2.6	454184	RESISTOR WIREW 0R1 4J CW2B-13		1.000	ST	3
05 R.2.7	454184	RESISTOR WIREW 0R1 4J CW2B-13		1.000	ST	3
06 R.2.8	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST	3
06 R.2.9	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST	3
05 R.3.0	369578	RESISTOR FILM 5K11 0.6F MRS25 2322 156 15112		1.000	ST	3
05 R.3.1	369578	RESISTOR FILM 5K11 0.6F MRS25 2322 156 15112		1.000	ST	3
05 R.3.2	369578	RESISTOR FILM 5K11 0.6F MRS25 2322 156 15112		1.000	ST	3
06 R.3.3	240311	RESISTOR CARB. 330R 1/4J SFR25 2322 181 53331		1.000	ST	3
06 R.3.4	240311	RESISTOR CARB. 330R 1/4J SFR25 2322 181 53331		1.000	ST	3
06 R.3.5	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST	3
06 R.3.6	240494	RESISTOR CARB. 3K9 1/4J SFR25 2322 181 53392		1.000	ST	3
06 R.3.7	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST	3
07 R.3.8	240524	RESISTOR CARB. 5K6 1/4J SFR25 2322 181 53562		1.000	ST	3
07 R.3.9	240524	RESISTOR CARB. 5K6 1/4J SFR25 2322 181 53562		1.000	ST	3
06 R.4.0	240192	RESISTOR CARB. 51R 1/4J SFR25 2322 181 53519		1.000	ST	3
09 R.4.1	240222	RESISTOR CARB. 100R 1/4J SFR25 2322 181 53101		1.000	ST	3
06 R.4.3	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST	3
05 R.4.4	454184	RESISTOR WIREW 0R1 4J CW2B-13		1.000	ST	3
06 R.4.5	240249	RESISTOR CARB. 150R 1/4J SFR25 2322 181 53151		1.000	ST	3
05 R.4.6	324183	RESISTOR CARB. 30K 1/4J SFR25 2322 181 53303		1.000	ST	3
05 R.4.7	372129	RESISTOR FILM 178K 0.6F MRS25 2322 156 11784		1.000	ST	3
05 R.4.8	376434	RESISTOR FILM 59K0 0.6F MRS25 2322 156 15903		1.000	ST	3
09 R.4.9	240222	RESISTOR CARB. 100R 1/4J SFR25 2322 181 53101		1.000	ST	3
06 R.5.0	328545	RESISTOR CARB. 220R 1/4J SFR25 2322 181 53221		1.000	ST	3
06 R.5.1	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST	3
06 R.5.2	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST	3
06 R.5.3	240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000	ST	3
07 R.5.4	240524	RESISTOR CARB. 5K6 1/4J SFR25 2322 181 53562		1.000	ST	3
07 R.5.5	240524	RESISTOR CARB. 5K6 1/4J SFR25 2322 181 53562		1.000	ST	3
06 R.5.6	240265	RESISTOR CARB. 200R 1/4J SFR25 2322 181 53201		1.000	ST	3
05 R.5.7	454184	RESISTOR WIREW 0R1 4J CW2B-13		1.000	ST	3
05 R.5.8	454184	RESISTOR WIREW 0R1 4J CW2B-13		1.000	ST	3
04 R.5.9	371963	RESISTOR CARB. 62K 1/4J SFR25 2322 181 53623		1.000	ST	3
07 R.6.0	240540	RESISTOR CARB. 6K8 1/4J SFR25 2322 181 53682		1.000	ST	3
09 R.6.1	240222	RESISTOR CARB. 100R 1/4J SFR25 2322 181 53101		1.000	ST	3
06 R.6.2	240311	RESISTOR CARB. 330R 1/4J SFR25 2322 181 53331		1.000	ST	3
05 R.6.3	454192	RESISTOR WIREW 0R22 4J CW2B-13		1.000	ST	3
06 R.6.4	240338	RESISTOR CARB. 390R 1/4J SFR25 2322 181 53391		1.000	ST	3
05 R.6.5	240370	RESISTOR CARB. 620R 1/4J SFR25 2322 181 53621		1.000	ST	3
06 R.6.6	240664	RESISTOR CARB. 39K 1/4J SFR25 2322 181 53393		1.000	ST	3
06 R.6.7	240605	RESISTOR CARB. 15K 1/4J SFR25 2322 181 53153		1.000	ST	3
05 R.6.8	240273	RESISTOR CARB. 240R 1/4J SFR25 2322 181 53241		1.000	ST	3

DANSK RADIO AS

SINGLE LEVEL BILL WITH BLOW-THRU

DATE 11/09/87  
OPER LSRPARENT ITEM NO.  
471534DESCRIPTION REGULATOR-AF, ASSY A10A1  
ENGR DRAW EMK 1&2T471534

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
05 R.69	240273	RESISTOR CARB. 240R 1/4J SFR25	2322 181 53241	1.000	ST 3
05 R.70	240214	RESISTOR CARB. 82R 1/4J SFR25	2322 181 53829	1.000	ST 3
06 R.71	240168	RESISTOR CARB. 33R 1/4J SFR25	2322 181 53339	1.000	ST 3
06 R.72	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
05 R.73	405604	RESISTOR FILM 16K2 0,6F MRS25	2322 156 11623	1.000	ST 3
05 R.74	376566	RESISTOR FILM 8K25 0,6F MRS25	2322 156 18252	1.000	ST 3
06 R.75	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
06 R.76	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
06 R.77	328626	RESISTOR CARB. 220K 1/4J SFR25	2322 181 53224	1.000	ST 3
06 R.78	328626	RESISTOR CARB. 220K 1/4J SFR25	2322 181 53224	1.000	ST 3
06 R.79	328626	RESISTOR CARB. 220K 1/4J SFR25	2322 181 53224	1.000	ST 3
06 R.80	328626	RESISTOR CARB. 220K 1/4J SFR25	2322 181 53224	1.000	ST 3
06 R.81	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R.82	240486	RESISTOR CARB. 3K3 1/4J SFR25	2322 181 53332	1.000	ST 3
05 R.83	359165	RESISTOR SEMIV 10K 1/2K CERM	3386H-1-103	1.000	ST 3
06 R.84	240486	RESISTOR CARB. 3K3 1/4J SFR25	2322 181 53332	1.000	ST 3
06 R.85	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
06 R.86	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
05 R.87	240370	RESISTOR CARB. 620R 1/4J SFR25	2322 181 53621	1.000	ST 3
05 R.88	324175	RESISTOR CARB. 36K 1/4J SFR25	2322 181 53363	1.000	ST 3
05 R.89	450251	RESISTOR NTC 15K K M822	063082-M2153-K	1.000	ST 3
05 R.90	359165	RESISTOR SEMIV 10K 1/2K CERM	3386H-1-103	1.000	ST 3
06 R.91	328626	RESISTOR CARB. 220K 1/4J SFR25	2322 181 53224	1.000	ST 3
07 R.92	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
06 R.93	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
06 R.94	240664	RESISTOR CARB. 39K 1/4J SFR25	2322 181 53393	1.000	ST 3
06 R.95	349623	RESISTOR FILM 10K0 0,6F MRS25	2322 156 11003	1.000	ST 3
05 R.96	454354	RESISTOR FILM 20K5 0,6F MRS25	2322 156 12053	1.000	ST 3
06 R.97	328626	RESISTOR CARB. 220K 1/4J SFR25	2322 181 53224	1.000	ST 3
06 R.98	240702	RESISTOR CARB. 56K 1/4J SFR25	2322 181 53563	1.000	ST 3
07 R.99	240451	RESISTOR CARB. 2K2 1/4J SFR25	2322 181 53222	1.000	ST 3
07 R100	240397	RESISTOR CARB. 820R 1/4J SFR25	2322 181 53821	1.000	ST 3
07 R101	240397	RESISTOR CARB. 820R 1/4J SFR25	2322 181 53821	1.000	ST 3
06 R102	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R103	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
05 R104	240559	RESISTOR CARB. 8K2 1/4J SFR25	2322 181 53822	1.000	ST 3
06 R105	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R106	240419	RESISTOR CARB. 1K2 1/4J SFR25	2322 181 53122	1.000	ST 3
06 R107	240346	RESISTOR CARB. 470R 1/4J SFR25	2322 181 53471	1.000	ST 3
06 R108	240419	RESISTOR CARB. 1K2 1/4J SFR25	2322 181 53122	1.000	ST 3
07 R109	240451	RESISTOR CARB. 2K2 1/4J SFR25	2322 181 53222	1.000	ST 3
07 R110	240451	RESISTOR CARB. 2K2 1/4J SFR25	2322 181 53222	1.000	ST 3
07 R111	240451	RESISTOR CARB. 2K2 1/4J SFR25	2322 181 53222	1.000	ST 3
06 R112	240419	RESISTOR CARB. 1K2 1/4J SFR25	2322 181 53122	1.000	ST 3
06 R113	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
06 R114	240680	RESISTOR CARB. 47K 1/4J SFR25	2322 181 53473	1.000	ST 3
07 R115	240540	RESISTOR CARB. 6K8 1/4J SFR25	2322 181 53682	1.000	ST 3
07 R116	240745	RESISTOR CARB. 100K 1/4J SFR25	2322 181 53104	1.000	ST 3
06 R117	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
05 R118	359165	RESISTOR SEMIV 10K 1/2K CERM	3386H-1-103	1.000	ST 3
06 R119	240567	RESISTOR CARB. 10K 1/4J SFR25	2322 181 53103	1.000	ST 3
04 R120	240729	RESISTOR CARB. 75K 1/4J SFR25	2322 181 53753	1.000	ST 3
05 R121	240257	RESISTOR CARB. 180R 1/4J SFR25	2322 181 53181	1.000	ST 3
05 R122	240125	RESISTOR CARB. 22R 1/4J SFR25	2322 181 53229	1.000	ST 3
06 R123	240311	RESISTOR CARB. 330R 1/4J SFR25	2322 181 53331	1.000	ST 3
06 R124	240427	RESISTOR CARB. 1K5 1/4J SFR25	2322 181 53152	1.000	ST 3
06 R125	240427	RESISTOR CARB. 1K5 1/4J SFR25	2322 181 53152	1.000	ST 3
06 R126	240311	RESISTOR CARB. 330R 1/4J SFR25	2322 181 53331	1.000	ST 3
05 R127	240176	RESISTOR CARB. 43R 1/4J SFR25	2322 181 53439	1.000	ST 3
05 R128	240257	RESISTOR CARB. 180R 1/4J SFR25	2322 181 53181	1.000	ST 3
05 R129	364029	RESISTOR CARB. 2R2 1/4J SFR25	2322 181 53228	1.000	ST 3
04 R130	462004	RESISTOR WIREW 1R0 5J	CW2B-13 1R/5J	1.000	ST 3
05 R131	458686	RESISTOR WIREW 4R7 4J	CW2B-13	1.000	ST 3
06 R132	240249	RESISTOR CARB. 150R 1/4J SFR25	2322 181 53151	1.000	ST 3
06 R133	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R134	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3



PARENT ITEM NO.  
471534DESCRIPTION REGULATOR-AF, ASSY A10A1  
ENGR DRAW EMK 1&2T471534

BATCH QTY

LL	SEQ	COMPONENT	DESCRIPTION	ENGINEERING	QUANTITY	ITEM
CD	NO.	ITEM NO.		DRAWING NUMBER		UM TYP
06	R135	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
04	S..1	471798	SWITCH, PCP DIP-FIX 8X ON/OFF	C42315A1347A108	.500	ST 3
05	T..1	362859	TRAFO, LINE 600:600R	TD2735-INDSTØBT	1.000	ST 3
05	T..2	362859	TRAFO, LINE 600:600R	TD2735-INDSTØBT	1.000	ST 3
06	TP..	231304	TERMINAL STUD 2,5X7 Ø1,3	4772	13.000	ST 3
05	U..1	454370	IC LINEAR 79MGU1 VOLT REGL.	UA79MGU1C	1.000	ST 3
05	U..2	451231	IC LINEAR LM 723C VOLT REGL.	LM723CN(14 PIN)	1.000	ST 3
05	U..3	451282	IC LINEAR LF 356N OP.AMP.	LF356N	1.000	ST 3
05	U..4	451266	IC LINEAR LM 301A OP.AMP.	LM301AM	1.000	ST 3
05	U..5	454222	IC LINEAR LM 324N 4X OP.AMP.	LM324N	1.000	ST 3
05	U..6	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05	U..7	462292	IC LINEAR TL 084 4X OP.AMP.	TL084	1.000	ST 3
05	U..8	454230	IC LINEAR LM 3054N TRANS.ARR	LM3054N	1.000	ST 3
05	U..9	443964	IC LINEAR TDA2002 POW. AMPL	TDA2002H	1.000	ST 3
05	VR.1	228842	DIODE ZENER ZPD 5.6 5.6V 0.5W	ZPD5.6	1.000	ST 3
05	VR.2	454389	DIODE ZENER ZPD16 16V 0.5W	ZPD16	1.000	ST 3
05	VR.3	454389	DIODE ZENER ZPD16 16V 0.5W	ZPD16	1.000	ST 3
05	VR.4	228842	DIODE ZENER ZPD 5.6 5.6V 0.5W	ZPD5.6	1.000	ST 3
05	VR.5	228842	DIODE ZENER ZPD 5.6 5.6V 0.5W	ZPD5.6	1.000	ST 3
05	VR.6	228869	DIODE ZENER ZPD 7.5 7.5V 0.5W	ZPD7.5	1.000	ST 3
07	VR.7	228818	DIODE ZENER ZPD 2.7 2.7V 0.5W	ZPD2.7	1.000	ST 3
07	VR.8	228818	DIODE ZENER ZPD 2.7 2.7V 0.5W	ZPD2.7	1.000	ST 3
06	VR.9	228788	DIODE ZENER ZPD10 10V 0.5W	ZPD10	1.000	ST 3

PARENT ITEM NO.  
471550DESCRIPTION TRAFD ASSY RX4000 A10A2  
ENGR DRAW EMK 1&2T471550

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
09	891177	FORMONTAGE		2.000	TI 9
08	895075			.100	TI 9
04	...1 471542	PRINTED CIRC.BOARD	TRANS ASSY EMK 2T471542	1.000	ST 3
04	A..1 471968	TERMINAL ASSY	A10A2A1 EMK 0T471968	1.000	ST 2
05	C..1 385190	CAPACITOR CER. 4N7	5KV M HI-K 9/0138.9	1.000	ST 3
05	C..2 385190	CAPACITOR CER. 4N7	5KV M HI-K 9/0138.9	1.000	ST 3
05	C..3 385190	CAPACITOR CER. 4N7	5KV M HI-K 9/0138.9	1.000	ST 3
05	C..4 458511	CAPACITOR PLST 100N	630 K B32655-JG104	1.000	ST 3
07	C..5 202967	CAPACITOR PLST 100N	100 K 2222 344 21104	1.000	ST 3
07	C..6 202967	CAPACITOR PLST 100N	100 K 2222 344 21104	1.000	ST 3
07	C..7 202967	CAPACITOR PLST 100N	100 K 2222 344 21104	1.000	ST 3
05	C..8 450510	CAPACITOR CER. 100N	63 S B37449-C6104-S2	1.000	ST 3
05	C..9 450529	CAPACITOR ELEC 6U8	25 M 2222 122 56688	1.000	ST 3
05	C.10 366471	CAPACITOR ELEC 1M	40 T T PEG123KJ410	1.000	ST 3
05	C.11 366471	CAPACITOR ELEC 1M	40 T T PEG123KJ410	1.000	ST 3
05	C.12 366471	CAPACITOR ELEC 1M	40 T T PEG123KJ410	1.000	ST 3
05	C.13 366471	CAPACITOR ELEC 1M	40 T T PEG123KJ410	1.000	ST 3
05	C.14 366471	CAPACITOR ELEC 1M	40 T T PEG123KJ410	1.000	ST 3
04	C.15 373516	CAPACITOR ELEC 2M2	25 T LL PEG123HG4220	1.000	ST 3
04	C.16 373516	CAPACITOR ELEC 2M2	25 T LL PEG123HG4220	1.000	ST 3
04	C.17 373516	CAPACITOR ELEC 2M2	25 T LL PEG123HG4220	1.000	ST 3
04	C.18 373516	CAPACITOR ELEC 2M2	25 T LL PEG123HG4220	1.000	ST 3
04	C.19 373516	CAPACITOR ELEC 2M2	25 T LL PEG123HG4220	1.000	ST 3
05	CR.1 373524	DIODE POW. MR 501	SI100V 3A MR501	1.000	ST 3
05	CR.2 373524	DIODE POW. MR 501	SI100V 3A MR501	1.000	ST 3
05	CR.3 373524	DIODE POW. MR 501	SI100V 3A MR501	1.000	ST 3
05	CR.4 373524	DIODE POW. MR 501	SI100V 3A MR501	1.000	ST 3
05	CR.5 373524	DIODE POW. MR 501	SI100V 3A MR501	1.000	ST 3
06	F..1 394629	FUSE 20X5MM	6,3A T DIN 41571	1.000	ST 3
06	F..2 394629	FUSE 20X5MM	6,3A T DIN 41571	1.000	ST 3
06	F..3 394629	FUSE 20X5MM	6,3A T DIN 41571	1.000	ST 3
05	H..1 458694	SCREW M 2,5X 5 CHM	CU SN DIN 84 HFC 93	3.000	ST 3
05	H..2 327239	SCREW M 4 X10 CHM	CU SN DIN 84	6.000	ST 3
06	H..3 446793	SCREW M 3 X10 CHM	NYLON DIN 84	1.000	ST 3
05	H..4 458295	SCREW M 5 X50 CHM	CU SN DIN 84	1.000	ST 3
07	H..5 327549	NUT M 5	M CU SN DIN934	1.000	ST 3
06	H..6 391387	TRANS.ACCESSORY	ISOLAT.PLD SIL-EL33/T0220	1.000	ST 3
06	H..7 442399	TERMINAL STUD	140-1785-2 140-1785-2	18.000	ST 3
05	H..8 458546	TRANS.ACCESSORY	ISOLATIONS DF 03 D TO 220	1.000	ST 3
04	H..9 475343	STRAP,CABLE	L292XB4,8 PLT3S-M-30	5.000	ST 3
05	L..1 454125	COIL,CHOKE 25U	1,5A INS 1584	1.000	ST 3
05	L..2 454125	COIL,CHOKE 25U	1,5A INS 1584	1.000	ST 3
05	MP.1 448095	RETAINER,PC	M 3000 EMK 4T448095	1.000	ST 2
05	MP.2 458120	STAY NUT M4 X62	N7 EMK 4T458120	2.000	ST 3
05	MP.3 458139	STAY NUT M4 X64	N7 EMK 4T458139	2.000	ST 3
05	MP.4 458430	HEAT SINK A10A2	M 3000 EMK 3T458430	1.000	ST 2
06	R..1 240494	RESISTOR CARB. 3K9	1/4J SFR25 2322 181 53392	1.000	ST 3
07	R..2 240540	RESISTOR CARB. 6K8	1/4J SFR25 2322 181 53682	1.000	ST 3
04	T..1 471976	TRAFD,MAINS 125/125	9,7/2X20,3 TD346	1.000	ST 3
05	U..1 454362	IC LINEAR 78MGU1	VOLT REGL. UA78MGU1C	1.000	ST 3
05	W..1 464902	FLATCABL.ASSY W1	M 3000 A10 300-75-9-254-1	1.000	ST 3
05	XF.1 216070	FUSE ACCESSORY	CLIPS 5965	2.000	ST 3
05	XF.2 216070	FUSE ACCESSORY	CLIPS 5965	2.000	ST 3
05	XF.3 216070	FUSE ACCESSORY	CLIPS 5965	2.000	ST 3

PARENT ITEM NO.  
471968DESCRIPTION TERMINAL ASSY  
ENGR DRAW EMK OT471968

A10A2A1

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
09	891177	FORMONTAGE		.500	TI 9
08	895075			.030	TI 9
05 CR.5	471984	DIODE BRGD.BY260200 S1200V 12A BY260-200		1.000	ST 3
06 F..1	262706	FUSE 20X5MM 1A TT 70107		1.000	ST 3
06 F..2	262706	FUSE 20X5MM 1A TT 70107		1.000	ST 3
07 H..1	403377	SCREW SELFTAP.4X3/8 UHF-AB DIN7972B		2.000	ST 3
05 H..2	327174	SCREW M 3 X12 CHM CU SN DIN 84		1.000	ST 3
06 J..1	457736	CONNECTOR MAINS 3P MALE 189-102		1.000	ST 3
05 MP.1	476102	REAR PLATE RX4000 A10 EMK 4T476102		1.000	ST 2
05 S..1	248312	SWITCH,TOGGLE DPDT 2A MST-205N		1.000	ST 3
06 XF.1	358975	FUSE ACCES. HOLDER 5X20 6,3A FEP 031.1001		1.000	ST 3
06 XF.2	358975	FUSE ACCES. HOLDER 5X20 6,3A FEP 031.1001		1.000	ST 3

DANSK RADIO AS

SINGLE LEVEL BILL WITH BLOW-THRU

DATE 11/09/87  
OPER LSRPARENT ITEM NO.  
458341DESCRIPTION HEATSINK ASSY  
ENGR DRAW EMK T458341

A10A3

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
09	891177	FORMONTAGE		.590	TI 9
05 H..1	458546	TRANS.ACCESSORY ISOLATIONS	DF 03 D TO 220	3.000	ST 3
06 H..2	391387	TRANS.ACCESSORY ISOLAT.FLD	SIL-EL33/T0220	3.000	ST 3
06 H..3	327220	SCREW M 4 X 8 CHM CU SN	DIN 84	4.000	ST 3
05 H..4	276790	SCREW M 3 X 5 CHM CU SN	DIN 84	6.000	ST 3
06 H..5	380105	WASHER,FLAT Ø 3MM CU SN M	DIN433	7.000	ST 3
06 H..6	436518	RIVET,TUBULAR 3.3/4.8	AD46N POPNITTE	7.000	ST 3
05 H..7	458465	CLAMP,CABLE CV3 3MMX7	318201	4.000	ST 3
05 H..8	458473	CLAMP,CABLE CV6 6MMX7	318203	6.000	ST 3
05 H..9	220108	FLEX SILICONE 1,6 WHT		.100	M 3
05 MP.1	458147	BACK-SPACE A10A3 M 3000	EMK 2T458147	1.000	ST 2
05 MP.2	458244	HEAT SINK A10A3 M 3000	EMK 3T458244	1.000	ST 3
05 Q..1	454400	TRANS.DARLN BDX 54A SI-P T0220	BDX54A	1.000	ST 3
05 Q..2	454397	TRANS.DARLN BDX 53C SI-N T0220	BDX53C	1.000	ST 3
05 Q..3	454400	TRANS.DARLN BDX 54A SI-P T0220	BDX54A	1.000	ST 3
05 W..1	458910	CABLE ASSY A10A3W1 M 3000	EMK 4T458910	1.000	ST 2

PARENT ITEM NO.  
488259DESCRIPTION FRONT PANEL RX4009 A11  
ENGR DRAW EMK T488259

BATCH QTY

LL SEQ	COMPONENT	DESCRIPTION	ENGINEERING	QUANTITY	ITEM
CD NO.	ITEM NO.		DRAWING NUMBER		UM TYP
03 A..1	471445	FRONT PANEL CIRCUIT A11A1	EMK T471445	1.000	ST 1
05 H..1	458694	SCREW M 2,5X 5 CHM CU SN	DIN 84 HFC 93	4.000	ST 3
05 H..2	276790	SCREW M 3 X 5 CHM CU SN	DIN 84	10.000	ST 3
04 H..3	450545	SCREW M 5 X12 UHR	DIN963 HFC1710	4.000	ST 3
04 H..4	475785	SCREW SELFTAP.2X1/8 PHFX-B	HFC206DIN7970BZ	8.000	ST 3
04 H..6	245674	WASHER,NYLON Ø10MM	020U1322	8.000	ST 3
04 H..7	403342	SCREW PINOL M 3 X 6 R UNBRACO	DIN916	2.000	ST 3
04 H..8	454443	KNOB Ø10MM BLCK	021-2325	1.000	ST 3
04 H..9	454435	KNOB,CAB 3,3X Ø7,2	040-1625	1.000	ST 3
04 H.10	452971	KNAP SØØ44.5 ØB.2	KN-1751BS-1/4	1.000	ST 3
04 H.12	454478	KNOB 17X Ø14,5	021-3525	3.000	ST 3
04 H.13	454451	KNOB,CAB 4,8X Ø11	040-3625	3.000	ST 3
04 H.14	230278	WASHER,LOCK Ø 5MM X0,7MM	DIN 6799	1.000	ST 3
07 H.15	327506	NUT M 3 M CU SN	DIN 934	6.000	ST 3
06 H.16	380105	WASHER,FLAT Ø 3MM CU SN M	DIN433	6.000	ST 3
04 H.17	465046	SCREW M 3 X 5 UHJ CU SN	DIN 63	2.000	ST 3
04 H.18	333255	SCREW M 3 X 6 UHJ GULCR		2.000	ST 3
07 H.19	403377	SCREW SELFTAP.4X3/8 UHF-AB	DIN7972B	2.000	ST 3
06 H.20	436518	RIVET,TUBULAR 3.3/4.8	AD46N POPNITTE	2.000	ST 3
04 H.21	321486	NUT M10F 10X14X3MM	FOR LYSEKRONE	1.000	ST 3
03 H.22	475289	CLOTH,LOUDSPEAKER- BLCK 60X60	RP:670610	.060	ST 3
06 H.23	402923	WASHER,FLAT Ø10MM GULCR J		1.000	ST 3
04 J..1	454575	CONNECTOR JACK CHAS 2P FEMALE	110-340 MONO	1.000	ST 3
03 LS.1	474924	LOUDSPEAKER 8R 10W 60X50	S6FB	1.000	ST 3
04 MP.1	216674	HANDLE F.5 1/4" 111MM	EMK 4T 19165	2.000	ST 3
04 MP.2	260827	THUMBSCREW,KNURLED M6	EMK 5T 19164	4.000	ST 3
04 MP.3	268682	GUIDE F/THUMBSCREW "260827"	EMK 5T 19090	4.000	ST 3
02 MP.4	488267	FRONT PLATE RX4009 A11	EMK 2T488267	1.000	ST 2
03 MP.5	471453	GUIDE SHEET RX4000 A11	EMK 2T471453	1.000	ST 2
04 MP.6	445827	BRACKET,FRONTPLATE M 3000	EMK 4T445827	2.000	ST 2
04 MP.7	458015	BUSHING,PILOT M 3000 A11	EMK 4T458015	1.000	ST 3
04 MP.9	457728	CODE WHEEL M 3000 A11	EMK 3T457728	1.000	ST 2
04 MP10	458023	FLY WHEEL M 3000 A11	EMK 4T458023	1.000	ST 3
04 MP11	458007	SHAFT F/CODE WHEEL M 3000 A11	EMK 4T458007	1.000	ST 3
04 MP12	457957	SCREEN M 3000 A11	EMK 2T457957	1.000	ST 2
04 MP13	267015	WASHER,NYLON Ø12MM X15MM	EMK 5T 20288	4.000	ST 3
03 MP14	488801	DISPLAY WINDOW RC-RX4000	EMK 3T488801	1.000	ST 3
03 MP16	471690	MOUNTING F/LOUDSP. R4000A11A1	EMK T471690	1.000	ST 2
06 MP17	377104	STAY NUT M3 X 5,5 N5	EMK 4T 21920	2.000	ST 3
04 MP18	482978	STAY NUT M3 X 6 W/TAB 5MM	EMK 4T482978	6.000	ST 3
04 R..1	454516	RESISTOR VAR. 10K CERM LIN	3852A-282-103A	1.000	ST 3
04 R..2	454508	RESISTOR VAR. 1K0 CERM LIN	3852A-282-102A	1.000	ST 3
04 R..3	454508	RESISTOR VAR. 1K0 CERM LIN	3852A-282-102A	1.000	ST 3
04 R..4	459313	RESISTOR VAR. 4K7 M 3000 A11	EMK 4T459313	1.000	ST 2
04 R..5	377538	RESISTOR CARB. 30R 1/4J SFR25	2322 181 53309	1.000	ST 3
04 W..1	458937	CABLE ASSY A11W1 M 3000	EMK 4T458937	1.000	ST 2
04 W..2	458945	CABLE ASSY A11W2 M 3000	EMK 4T458945	1.000	ST 2
04 W..3	458953	CABLE ASSY A11W3 M 3000	EMK 4T458953	1.000	ST 2

PARENT ITEM NO.  
471445DESCRIPTION FRONT PANEL CIRCUIT A11A1  
ENGR DRAW EMK T471445

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
05 ...1	471437	PCB,FRONT PANEL CIR A11A1	EMK 2T471437	1.000	ST 3
04 A..1	471372	DISPLAY BOARD ASSY A11A1A1	EMK T471372	1.000	ST 1
05 C..1	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
06 C..2	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
05 C..3	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
06 C..4	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
05 C..5	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
06 C..6	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
05 C..7	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C..8	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
05 C..9	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 C.10	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
06 C.11	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
05 C.12	451053	CAPACITOR ELEC 68U 6,3 M	2222 122 53689	1.000	ST 3
05 C.13	459410	CAPACITOR ELEC 10U 16 M	2222 122 55109	1.000	ST 3
06 C.14	357642	CAPACITOR CER. 10N 100 S HI-K	2222 640 06103	1.000	ST 3
05 C.15	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
05 C.16	450529	CAPACITOR ELEC 6U8 25 M	2222 122 56688	1.000	ST 3
06 C.17	357650	CAPACITOR CER. 22N 63 A HI-K	2222 629 19223	1.000	ST 3
06 C.18	357650	CAPACITOR CER. 22N 63 A HI-K	2222 629 19223	1.000	ST 3
05 C.19	450510	CAPACITOR CER. 100N 63 S	B37449-C6104-S2	1.000	ST 3
05 CR.1	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR.2	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR.3	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR.4	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR.5	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR.6	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR.7	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR.8	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR.9	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR.10	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR.11	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
05 CR.12	450480	DIODE LED HLMP1000 RED Ø3	HLMP1000	1.000	ST 3
07 CR.16	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	1N4148	1.000	ST 3
07 CR.17	228087	DIODE SIGN. 1N4148 SI 150MA 1N4148	1N4148	1.000	ST 3
05 H..1	465402	SCREW M 2,5X 6 CHM CU SN	DIN 84	4.000	ST 3
05 H..2	276790	SCREW M 3 X 5 CHM CU SN	DIN 84	36.000	ST 3
05 H..3	276804	SCREW M 3 X 8 CHM CU SN	DIN 84	1.000	ST 3
05 H..5	321540	WASHER,FLAT Ø 2,5 M CU SN	DIN433	4.000	ST 3
07 H..6	327506	NUT M 3 M CU SN	DIN 934	1.000	ST 3
05 H..7	375209	NUT M 2,5 M CU SN	DIN934	4.000	ST 3
07 H..8	218952	TRANS.ACCESSORY PAD TO-18	T0518-004	12.000	ST 3
06 H..9	380105	WASHER,FLAT Ø 3MM CU SN M	DIN433	16.000	ST 3
05 H.10	452688	TRANS.ACCESSORY TALLFJEDER	B52200F004	1.000	ST 3
06 H.11	220140	FLEX SILICONE 0,5/1 TRAN	100/50-0.5X1	.480	M 3
05 L..1	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 L..2	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 L..3	363944	COIL,CHOKE HF WIDE BAND	4312 020 36640	1.000	ST 3
05 MP.1	458961	KNOB,BLACK,WHT.TEXT "SLOW"	EMK 4T458961	1.000	ST 3
05 MP.2	458988	KNOB,BLACK,WHT.TEXT "INTER"	EMK 4T458988	1.000	ST 3
05 MP.3	458996	KNOB,BLACK,WHT.TEXT "AM"	EMK 4T458996	1.000	ST 3
05 MP.4	459003	KNOB,BLACK,WHT.TEXT "BFO"	EMK 4T459003	1.000	ST 3
05 MP.5	459011	KNOB,WHITE,BLK.TEXT "9"	EMK 4T459011	1.000	ST 3
05 MP.6	459038	KNOB,WHITE,BLK.TEXT "6"	EMK 4T459038	1.000	ST 3
05 MP.7	459046	KNOB,WHITE,BLK.TEXT "3"	EMK 4T459046	1.000	ST 3
05 MP.8	474959	KNOB,WHITE,BLK.TEXT "C"	EMK 4T474959	1.000	ST 3
05 MP.9	459062	KNOB,BLACK,WHT.TEXT "ATT"	EMK 4T459062	1.000	ST 3
05 MP.10	459070	KNOB,BLACK,WHT.TEXT "VNAAR"	EMK 4T459070	1.000	ST 3
05 MP.11	459089	KNOB,BLACK,WHT.TEXT "CW"	EMK 4T459089	1.000	ST 3
05 MP.12	459097	KNOB,BLACK,WHT.TEXT "SCAN"	EMK 4T459097	1.000	ST 3
05 MP.13	459100	KNOB,WHITE,BLK.TEXT "7"	EMK 4T459100	1.000	ST 3
05 MP.14	459119	KNOB,WHITE,BLK.TEXT "4"	EMK 4T459119	1.000	ST 3
05 MP.15	459127	KNOB,WHITE,BLK.TEXT "1"	EMK 4T459127	1.000	ST 3
05 MP.16	459135	KNOB,WHITE,BLK.TEXT "0"	EMK 4T459135	1.000	ST 3
05 MP.17	459143	KNOB,BLACK,WHT.TEXT "OFF"	EMK 4T459143	1.000	ST 3
05 MP.18	459151	KNOB,BLACK,WHT.TEXT "WIDE"	EMK 4T459151	1.000	ST 3
05 MP.19	459178	KNOB,BLACK,WHT.TEXT "SSB"	EMK 4T459178	1.000	ST 3
05 MP.20	459186	KNOB,BLACK,WHT.TEXT "RCL"	EMK 4T459186	1.000	ST 3
05 MP.21	459194	KNOB,BLACK,WHT.TEXT "STO"	EMK 4T459194	1.000	ST 3
04 MP.22	471410	KNOB,BLACK,WHT.TEXT "LOCAL"	EMK 4T471410	1.000	ST 3
04 MP.23	474967	KNOB,BLACK NO TEXT	EMK 4T474967	1.000	ST 3
05 MP.24	459224	KNOB,BLACK,WHT.TEXT "FAST"	EMK 4T459224	1.000	ST 3
05 MP.25	459232	KNOB,BLACK,WHT.TEXT "NARR"	EMK 4T459232	1.000	ST 3
05 MP.26	459240	KNOB,BLACK,WHT.TEXT "RTTY"	EMK 4T459240	1.000	ST 3
05 MP.27	459259	KNOB,BLACK,WHT.TEXT "TUNE"	EMK 4T459259	1.000	ST 3
05 MP.28	459267	KNOB,WHITE,BLK.TEXT "8"	EMK 4T459267	1.000	ST 3
05 MP.29	459275	KNOB,WHITE,BLK.TEXT "5"	EMK 4T459275	1.000	ST 3
05 MP.30	459283	KNOB,WHITE,BLK.TEXT "2"	EMK 4T459283	1.000	ST 3
05 MP.31	459291	KNOB,WHITE,BLK.TEXT "1"	EMK 4T459291	1.000	ST 3
05 MP.32	448117	GUIDE SHEET 1 M 3000 A11	EMK 4T448117	1.000	ST 2
04 MP.33	471461	GUIDE SHEET 2 RX4000 A11	EMK 4T471461	1.000	ST 2
05 MP.34	453129	STAY NUT M3 X 7 N5	EMK 4T 219220	2.000	ST 3

PARENT ITEM NO.  
471445DESCRIPTION FRONT PANEL CIRCUIT A11A1  
ENGR DRAW EMK T471445

BATCH QTY

LL SEQ	COMPONENT	DESCRIPTION	ENGINEERING	ITEM
CD NO.	ITEM NO.		DRAWING NUMBER	UM TYP
05	MF36 465399	STAY NUT M3 X12,5 N5	EMK 4T 21920	6.000 ST 3
05	MF37 460338	STAY NUT M3 X13,3 N5	EMK 4T460338	8.000 ST 3
04	MF38 471402	KNOB, BLACK, WHT. TEXT "PROGR"	EMK 4T471402	1.000 ST 3
07	Q..1 392839	TRANS. LOPOW 2N2907A SI-P TO-18 2N2907A		1.000 ST 3
07	Q..2 392839	TRANS. LOPOW 2N2907A SI-P TO-18 2N2907A		1.000 ST 3
07	Q..3 392839	TRANS. LOPOW 2N2907A SI-P TO-18 2N2907A		1.000 ST 3
07	Q..4 392839	TRANS. LOPOW 2N2907A SI-P TO-18 2N2907A		1.000 ST 3
07	Q..5 392839	TRANS. LOPOW 2N2907A SI-P TO-18 2N2907A		1.000 ST 3
07	Q..6 392839	TRANS. LOPOW 2N2907A SI-P TO-18 2N2907A		1.000 ST 3
07	Q..7 392839	TRANS. LOPOW 2N2907A SI-P TO-18 2N2907A		1.000 ST 3
07	Q..8 392839	TRANS. LOPOW 2N2907A SI-P TO-18 2N2907A		1.000 ST 3
05	Q..9 362980	TRANS. HIFOW MJE3055 SI-N 90-05 MJE3055		1.000 ST 3
07	Q..10 392839	TRANS. LOPOW 2N2907A SI-P TO-18 2N2907A		1.000 ST 3
06	Q..11 369454	TRANS. DARLN MP5A13 SI-N TO-92 MP5-A13		1.000 ST 3
06	Q..12 369454	TRANS. DARLN MP5A13 SI-N TO-92 MP5-A13		1.000 ST 3
06	Q..13 369454	TRANS. DARLN MP5A13 SI-N TO-92 MP5-A13		1.000 ST 3
05	Q..14 399914	TRANS. JFETN J 309 TO-92 J309		1.000 ST 3
07	Q..15 392820	TRANS. LOPOW 2N2222A SI-N TO-18 2N2222A		1.000 ST 3
07	Q..16 392839	TRANS. LOPOW 2N2907A SI-P TO-18 2N2907A		1.000 ST 3
07	Q..17 392839	TRANS. LOPOW 2N2907A SI-P TO-18 2N2907A		1.000 ST 3
07	Q..18 273899	TRANS. LOPOW BC 547B SI-N TO-92 BC547B		1.000 ST 3
07	Q..19 273899	TRANS. LOPOW BC 547B SI-N TO-92 BC547B		1.000 ST 3
06	R..1 240400	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000 ST 3
05	R..2 457663	RESISTOR NETW 8X1K5 1/4G 4116R-001-152		1.000 ST 3
05	R..3 457647	RESISTOR NETW 9X10K 1/5G 4310R-101-103		1.000 ST 3
05	R..4 241040	RESISTOR CARB. 15R 1/2JSFR25H 2322 186 13159		1.000 ST 3
05	R..5 241040	RESISTOR CARB. 15R 1/2JSFR25H 2322 186 13159		1.000 ST 3
05	R..6 241040	RESISTOR CARB. 15R 1/2JSFR25H 2322 186 13159		1.000 ST 3
05	R..7 241040	RESISTOR CARB. 15R 1/2JSFR25H 2322 186 13159		1.000 ST 3
05	R..8 241040	RESISTOR CARB. 15R 1/2JSFR25H 2322 186 13159		1.000 ST 3
05	R..9 241040	RESISTOR CARB. 15R 1/2JSFR25H 2322 186 13159		1.000 ST 3
05	R..10 241040	RESISTOR CARB. 15R 1/2JSFR25H 2322 186 13159		1.000 ST 3
05	R..11 241040	RESISTOR CARB. 15R 1/2JSFR25H 2322 186 13159		1.000 ST 3
06	R..12 240419	RESISTOR CARB. 15R 1/2JSFR25H 2322 186 13159		1.000 ST 3
06	R..13 240613	RESISTOR CARB. 1K2 1/4J SFR25 2322 181 53122		1.000 ST 3
06	R..14 324221	RESISTOR CARB. 18K 1/4J SFR25 2322 181 53183		1.000 ST 3
06	R..15 240702	RESISTOR CARB. 2K4 1/4J SFR25 2322 181 53242		1.000 ST 3
08	R..16 240516	RESISTOR CARB. 56K 1/4J SFR25 2322 181 53563		1.000 ST 3
08	R..17 240516	RESISTOR CARB. 4K7 1/4J SFR25 2322 181 53472		1.000 ST 3
05	R..18 457639	RESISTOR CARB. 4K7 1/4J SFR25 2322 181 53472		1.000 ST 3
08	R..19 240516	RESISTOR NETW 7X4K7 1/5G 4308R-101-472		1.000 ST 3
06	R..20 240486	RESISTOR CARB. 4K7 1/4J SFR25 2322 181 53472		1.000 ST 3
06	R..21 240486	RESISTOR CARB. 3K3 1/4J SFR25 2322 181 53332		1.000 ST 3
06	R..22 240486	RESISTOR CARB. 3K3 1/4J SFR25 2322 181 53332		1.000 ST 3
05	R..23 451355	RESISTOR CARB. 3K3 1/4J SFR25 2322 181 53332		1.000 ST 3
05	R..24 433470	RESISTOR NETW 5X1K0 1/5G 4306R-101-102		1.000 ST 3
05	R..25 457671	RESISTOR NETW 9X1K0 1/5G 4310R-101-102		1.000 ST 3
05	R..26 349674	RESISTOR NETW 8X15K 1/4G 4116R-001-153		1.000 ST 3
05	R..27 368539	RESISTOR FILM 15K0 0,6F MRS25 2322 156 11503		1.000 ST 3
05	R..28 368539	RESISTOR FILM 7K50 0,6F MRS25 2322 156 17502		1.000 ST 3
05	R..29 368539	RESISTOR FILM 7K50 0,6F MRS25 2322 156 17502		1.000 ST 3
05	R..30 368539	RESISTOR FILM 7K50 0,6F MRS25 2322 156 17502		1.000 ST 3
05	R..31 368539	RESISTOR FILM 7K50 0,6F MRS25 2322 156 17502		1.000 ST 3
05	R..32 368539	RESISTOR FILM 7K50 0,6F MRS25 2322 156 17502		1.000 ST 3
05	R..33 368539	RESISTOR FILM 7K50 0,6F MRS25 2322 156 17502		1.000 ST 3
05	R..34 368539	RESISTOR FILM 7K50 0,6F MRS25 2322 156 17502		1.000 ST 3
07	R..35 240745	RESISTOR FILM 7K50 0,6F MRS25 2322 156 17502		1.000 ST 3
06	R..36 240605	RESISTOR CARB. 100K 1/4J SFR25 2322 181 53104		1.000 ST 3
06	R..37 240338	RESISTOR CARB. 15K 1/4J SFR25 2322 181 53153		1.000 ST 3
06	R..38 240567	RESISTOR CARB. 390R 1/4J SFR25 2322 181 53391		1.000 ST 3
05	R..39 324205	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000 ST 3
06	R..42 240400	RESISTOR CARB. 5K1 1/4J SFR25 2322 181 53512		1.000 ST 3
06	R..43 240567	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000 ST 3
06	R..44 240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000 ST 3
06	R..45 240400	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000 ST 3
06	R..46 240346	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000 ST 3
06	R..47 324221	RESISTOR CARB. 470R 1/4J SFR25 2322 181 53471		1.000 ST 3
07	R..48 240621	RESISTOR CARB. 2K4 1/4J SFR25 2322 181 53242		1.000 ST 3
06	R..49 240346	RESISTOR CARB. 22K 1/4J SFR25 2322 181 53223		1.000 ST 3
06	R..50 324221	RESISTOR CARB. 470R 1/4J SFR25 2322 181 53471		1.000 ST 3
09	R..51 240621	RESISTOR CARB. 2K4 1/4J SFR25 2322 181 53242		1.000 ST 3
06	R..52 240400	RESISTOR CARB. 22K 1/4J SFR25 2322 181 53223		1.000 ST 3
06	R..53 240567	RESISTOR CARB. 1K0 1/4J SFR25 2322 181 53102		1.000 ST 3
06	R..54 240567	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000 ST 3
05	S..1 450421	RESISTOR CARB. 10K 1/4J SFR25 2322 181 53103		1.000 ST 3
05	S..2 450421	SWITCH, PUSH BU.SPST NO 6100.0101		1.000 ST 3
05	S..3 450421	SWITCH, PUSH BU.SPST NO 6100.0101		1.000 ST 3
05	S..4 450421	SWITCH, PUSH BU.SPST NO 6100.0101		1.000 ST 3
05	S..5 450421	SWITCH, PUSH BU.SPST NO 6100.0101		1.000 ST 3
05	S..6 450421	SWITCH, PUSH BU.SPST NO 6100.0101		1.000 ST 3
05	S..7 450421	SWITCH, PUSH BU.SPST NO 6100.0101		1.000 ST 3

DANSK RADIO AS

SINGLE LEVEL BILL WITH BLOW-THRU

DATE 11/09/87  
OPER LSRPARENT ITEM NO.  
471445DESCRIPTION FRONT PANEL CIRCUIT A11A1  
ENGR DRAW EMK T471445

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
05 S..8	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..9	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..10	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..11	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..12	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..13	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..14	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..15	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..16	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..17	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..18	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..19	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..20	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..21	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..22	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..23	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..24	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..25	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..26	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..27	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..28	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..29	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..30	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..31	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
05 S..32	450421	SWITCH,PUSH BU.SPST NO	6100.0101	1.000	ST 3
04 S..33	471992	SWITCH,SLIDE SPDT F/PCB	TSS11EG-RA ALCO	1.000	ST 3
05 U..1	433683	IC DIGITAL 74LS138 3-8 DECOD.	SN74LS138	1.000	ST 3
05 U..2	451185	IC DIGITAL 74LS 02N 4X2IN NOR	SN74LS02N	1.000	ST 3
05 U..3	362131	IC DIGITAL 74 06N 6X INV-BUF	SN7406N	1.000	ST 3
09 U..4	451541	IC DIGITAL 74LS 14N 6XINV ST	SN74LS14N	1.000	ST 3
05 U..5	451614	IC DIGITAL 74LS373N 8X D LATCH	SN74LS373N	1.000	ST 3
05 U..6	450294	IC LINEAR TL 082CF OP.AMP.	TL082CF	1.000	ST 3
05 U..7	451584	IC DIGITAL 74LS164N SHIFT REG.	SN74LS164N	1.000	ST 3
05 U..8	451584	IC DIGITAL 74LS164N SHIFT REG.	SN74LS164N	1.000	ST 3
05 U..9	451592	IC DIGITAL 74LS240N 8X BUF.INV	SN74LS240N	1.000	ST 3
05 U..10	362131	IC DIGITAL 74 06N 6X INV-BUF	SN7406N	1.000	ST 3
05 U..11	365874	IC DIGITAL 74LS 74N 2X D FF	SN74LS74N	1.000	ST 3
05 U..12	362131	IC DIGITAL 74 06N 6X INV-BUF	SN7406N	1.000	ST 3
05 U..13	473928	IC HYBRID OPB822SD OPTO SWITC	OPB822SD	1.000	ST 3
05 W..1	459550	FLATCABL. ASSY W1 M 3000 A11 EMK	4T459550	1.000	ST 3
05 XP..1	451479	CONNECTOR AMP MODU2 10P FEMALE	1-826044-0	1.000	ST 3
05 XP..2	451479	CONNECTOR AMP MODU2 10P FEMALE	1-826044-0	1.000	ST 3
05 XP..3	451479	CONNECTOR AMP MODU2 10P FEMALE	1-826044-0	1.000	ST 3



PARENT ITEM NO.  
471372DESCRIPTION DISPLAY BOARD ASSY A11A1A1  
ENGR DRAW EMK T471372

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP
06 ...1	471364	PRINTED CIRC.BOARD	DISPL.RX4. EMK 4T471364	1.000	ST 3
07 CR.1	228087	DIODE SIGN. 1N4148	SI 150MA 1N4148	1.000	ST 3
07 CR.2	228087	DIODE SIGN. 1N4148	SI 150MA 1N4148	1.000	ST 3
06 F..1	451487	CONNECTOR AMP MODU2	10P MALE 1-826063-0	1.000	ST 3
06 F..2	451487	CONNECTOR AMP MODU2	10P MALE 1-826063-0	1.000	ST 3
06 F..3	451487	CONNECTOR AMP MODU2	10P MALE 1-826063-0	1.000	ST 3
06 Q..1	369454	TRANS.DARLN MP5A13	SI-N TO-92 MPS-A13	1.000	ST 3
06 Q..2	369454	TRANS.DARLN MP5A13	SI-N TO-92 MPS-A13	1.000	ST 3
06 Q..3	369454	TRANS.DARLN MP5A13	SI-N TO-92 MPS-A13	1.000	ST 3
06 Q..4	369454	TRANS.DARLN MP5A13	SI-N TO-92 MPS-A13	1.000	ST 3
06 Q..5	369454	TRANS.DARLN MP5A13	SI-N TO-92 MPS-A13	1.000	ST 3
06 Q..6	369454	TRANS.DARLN MP5A13	SI-N TO-92 MPS-A13	1.000	ST 3
06 Q..7	369454	TRANS.DARLN MP5A13	SI-N TO-92 MPS-A13	1.000	ST 3
06 R..1	457655	RESISTOR NETW 4X3K3	1/5G 764-3-R-3K3	1.000	ST 3
06 R..2	457655	RESISTOR NETW 4X3K3	1/5G 764-3-R-3K3	1.000	ST 3
06 R..3	240400	RESISTOR CARB. 1K0	1/4J SFR25 2322 181 53102	1.000	ST 3
06 R..4	324221	RESISTOR CARB. 2K4	1/4J SFR25 2322 181 53242	1.000	ST 3
06 R..5	462268	RESISTOR FILM 3K01	0,6F MRS25 2322 156 13012	1.000	ST 3
06 R..6	462268	RESISTOR FILM 3K01	0,6F MRS25 2322 156 13012	1.000	ST 3
06 R..7	433926	RESISTOR FILM 4K02	0,6F MRS25 2322 156 14022	1.000	ST 3
06 R..8	240567	RESISTOR CARB. 10K	1/4J SFR25 2322 181 53103	1.000	ST 3
06 R..9	240346	RESISTOR CARB. 470R	1/4J SFR25 2322 181 53471	1.000	ST 3
06 R..10	240346	RESISTOR CARB. 470R	1/4J SFR25 2322 181 53471	1.000	ST 3
06 U..1	450499	IC DISPL. 5082-7740	7 SEGM.RED 5082-7740	1.000	ST 3
06 U..2	450499	IC DISPL. 5082-7740	7 SEGM.RED 5082-7740	1.000	ST 3
06 U..3	450499	IC DISPL. 5082-7740	7 SEGM.RED 5082-7740	1.000	ST 3
06 U..4	450499	IC DISPL. 5082-7740	7 SEGM.RED 5082-7740	1.000	ST 3
06 U..5	450499	IC DISPL. 5082-7740	7 SEGM.RED 5082-7740	1.000	ST 3
06 U..6	450499	IC DISPL. 5082-7740	7 SEGM.RED 5082-7740	1.000	ST 3
06 U..7	450499	IC DISPL. 5082-7740	7 SEGM.RED 5082-7740	1.000	ST 3
05 U..8	471380	IC DISPLAY HLMP2300	LIGHT BAR HLMP2300	1.000	ST 3
05 U..9	471380	IC DISPLAY HLMP2300	LIGHT BAR HLMP2300	1.000	ST 3
05 U..10	471380	IC DISPLAY HLMP2300	LIGHT BAR HLMP2300	1.000	ST 3
05 U..11	471380	IC DISPLAY HLMP2300	LIGHT BAR HLMP2300	1.000	ST 3
05 U..12	471380	IC DISPLAY HLMP2300	LIGHT BAR HLMP2300	1.000	ST 3
05 U..13	471380	IC DISPLAY HLMP2300	LIGHT BAR HLMP2300	1.000	ST 3
05 U..14	471380	IC DISPLAY HLMP2300	LIGHT BAR HLMP2300	1.000	ST 3
06 U..15	446327	IC LINEAR UAA 170	LED DRIVER UAA170	1.000	ST 3
06 U..16	474916	IC DISPLAY HDSP4820	LIGHT BAR HDSP 4820	1.000	ST 3
06 U..17	474916	IC DISPLAY HDSP4820	LIGHT BAR HDSP 4820	1.000	ST 3
06 W..1	225487	COIL-WIRE,COPPER	0,40MM TIN	.001	KG 3
06 W..2	225487	COIL-WIRE,COPPER	0,40MM TIN	.001	KG 3
06 W..3	225487	COIL-WIRE,COPPER	0,40MM TIN	.001	KG 3
06 W..4	225487	COIL-WIRE,COPPER	0,40MM TIN	.001	KG 3
06 W..5	225487	COIL-WIRE,COPPER	0,40MM TIN	.001	KG 3
06 W..6	225487	COIL-WIRE,COPPER	0,40MM TIN	.001	KG 3

DANSK RADIO AS

SINGLE LEVEL BILL WITH BLOW-THRU

DATE 11/09/87  
OPER LSRPARENT ITEM NO.  
457833DESCRIPTION CHASSIS ASSY  
ENGR DRAW EMK T457833

A12

BATCH QTY

LL SEQ CD NO.	COMPONENT ITEM NO.	DESCRIPTION	ENGINEERING DRAWING NUMBER	QUANTITY	ITEM UM TYP	O N
09	891177	FORMONTAGE		.780	TI 9	
04 A..1	448648	MOTHERBOARD ASSY A12A1	EMK 1&2T448648	1.000	ST 1	
04 H..1	387681	STAY NUT M3 X10 N5	EMK 4T 21920	10.000	ST 3	
04 H..2	450588	NUT M 3 SQUARE 3X7X2,2MM	HFC793	16.000	ST 3	
05 H..3	276723	SCREW M 3 X 8 UHM CU SN	DIN 63	12.000	ST 3	
07 H..4	436909	SCREW UNBRAK M 3X 8 UHR	DIN7991	4.000	ST 3	
04 H..5	450561	SCREW SELFTAP.4X1/2 PHFX-B	HFC206DIN7970BZ	40.000	ST 3	
05 H..6	276790	SCREW M 3 X 5 CHM CU SN	DIN 84	20.000	ST 3	
04 H..7	459526	SCREW M 4 X 6 CHM CU SN	DIN 84 /HFC9093	12.000	ST 3	
05 H..8	336777	WASHER,FLAT Ø 4MM CU SN M	DIN433	12.000	ST 3	
04 MP.1	448001	PLATE,JUNCTION M 3000	EMK 2T448001	1.000	ST 2	
04 MP.2	445886	PROFILE,PC 1M M 3000	EMK 3T445886	5.000	ST 3	
04 MP.3	445894	PROFIL,PC 1M DRILL. M 3000	EMK 3T445894	2.000	ST 3	
04 MP.4	445908	PROFILE,PC 1,5M M 3000	EMK 3T445908	3.000	ST 3	
04 MP.5	445940	PROFILE,SIDE DRILL. M 3000	EMK 3T445940	2.000	ST 3	
04 MP.6	458600	RAIL SECTION M 3000 A12	EMK 4T458600	2.000	ST 2	
04 MP.7	458619	SPLICE-PIECE M 3000 A12	EMK 4T458619	6.000	ST 2	

PARENT ITEM NO.  
448648DESCRIPTION MOTHERBOARD ASSY A12A1  
ENGR DRAW EMK 1&2T448648

BATCH QTY

LL SEQ	COMPONENT	DESCRIPTION	ENGINEERING	QUANTITY	ITEM
CD NO.	ITEM NO.		DRAWING NUMBER		UM TYP
05 ...1	448621	PRINTED CIRC. BOARD M3000A12A1	EMK 2T448621	1.000	ST 3
06 C..1	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
06 C..2	393959	CAPACITOR CER. 100N 50 M	SR215E104MAA	1.000	ST 3
05 H..1	454419	CONNECTOR PCB ACCES CODE PIN	201-0067-000	18.000	ST 3
05 H..2	459429	CONTACT STRIP 0,58X0,5IN	97-505	.250	M 3
07 R..6	240451	RESISTOR CARB. 2K2 1/4J SFR25	2322 181 53222	1.000	ST 3
06 R..7	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..8	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R..9	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
05 R.10	451371	RESISTOR NETW 9X2K2 1/5G	4310R-101-222	1.000	ST 3
05 R.11	451363	RESISTOR NETW 5X2K2 1/5G	4306R-101-222	1.000	ST 3
06 R.12	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R.13	240400	RESISTOR CARB. 1K0 1/4J SFR25	2322 181 53102	1.000	ST 3
06 R.14	240354	RESISTOR CARB. 510R 1/4J SFR25	2322 181 53511	1.000	ST 3
05 U..1	451606	IC DIGITAL 74LS245N 8 BIT TRCV	SN74LS245N	1.000	ST 3
05 U..2	451606	IC DIGITAL 74LS245N 8 BIT TRCV	SN74LS245N	1.000	ST 3
05 U..3	404551	IC DIGITAL 74 37N 4X2IN NAND	SN7437N	1.000	ST 3
05 XA.1	451509	CONNECTOR PCB EDGE 36P FEMALE	G11D036P2ABBL	1.000	ST 3
05 XA.2	451509	CONNECTOR PCB EDGE 36P FEMALE	G11D036P2ABBL	1.000	ST 3
05 XA.3	451509	CONNECTOR PCB EDGE 36P FEMALE	G11D036P2ABBL	1.000	ST 3
05 XA.4	451509	CONNECTOR PCB EDGE 36P FEMALE	G11D036P2ABBL	1.000	ST 3
05 XA.6	451509	CONNECTOR PCB EDGE 36P FEMALE	G11D036P2ABBL	1.000	ST 3
05 XA.7	451509	CONNECTOR PCB EDGE 36P FEMALE	G11D036P2ABBL	1.000	ST 3
05 XA.8	451509	CONNECTOR PCB EDGE 36P FEMALE	G11D036P2ABBL	1.000	ST 3
05 XA.9	451509	CONNECTOR PCB EDGE 36P FEMALE	G11D036P2ABBL	1.000	ST 3
05 XA10	451509	CONNECTOR PCB EDGE 36P FEMALE	G11D036P2ABBL	1.000	ST 3

SECTION 7  
MANUAL CHANGES

7.1 INTRODUCTION

This section normally contains information for adapting this manual to equipments for which the contents does not apply directly.

7.2 CHANGES

Change 1:

Assy 448443, IF/AF assembly

Service Sheet A7, sheet 1

Delete T1 and jumper across secondary connections

Remove C3

Reconnect C3 between Q1-source and J1, 1.4 MHz IF-input

Change 2:

Assy 448206, Frontend Assembly

Service Sheet A3, sheet 2

Delete C43

Delete R36

Add Resistor 30R, DRA part No. 377538 across L23

Add Resistor 10R, DRA part No. 240109, in serie with C46

Add Capacitor 2p2, DRA part NO. 361356, between Q6-collector and ground

Change 3:

Assy 448206, Frontend Assembly

Service Sheet A3, sheet 2

Delete C52

Delete R75

Add Resistor 27R, DRA part No. 240141, in serie with C48

Change 4:

Assy 448206, Frontend Assembly

Service Sheet A3, sheet 3

Change R60,R61,R62,R63 to 1K8, DRA part No. 240435

Add Diode 1S921, DRA part No. 450944, in serie with CR4  
(cathode to anode).

Add Diode 1S921, DRA part No. 450944, in serie with CR5  
(cathode to anode).

Add Capacitor 68p, DRA part No. 357545, between common point of  
added diode and CR4 and ground.

Add Capacitor 68p, DRA part no. 357545, between common point of  
added diode and CR5 and ground.

Add Capacitor 68p, DRA part No. 357545, between input of FL4 and  
ground.

Add Capacitor 68p, DRA part No. 357545, between input of FL5 and  
ground.

.Change 5:

Assy 448443, IF/AF assembly.

Service Sheet A7, sheet 2.

Change C89 to 1uF/25V, DRA part No. 450359

Change 6:

Assy 471550, Power Supply, Transformer assembly.

Service Sheet A10A2, sheet 1.

Add Capacitor 2m2/25V, DRA part No. 373516, in parallel with C19.

Change 7:

Operating and Service Manual.

Page 8-18, Case 1.

When power is turned on the LED's are undefined during the first  
0.5 sec.

Change 8:

Assy 471445, Front Panel Circuit.

This change changes function of S33 from Loudspeaker on/off to Display on/off.

Service Sheet A11A1, sheet 1 and 2.

Change connection between LS1 and E25 to LS1 and E8

Cut PC board conductor lane to S33 center terminal.

Establish connection between E11 and E25.

Establish connection between E12 and S33 center terminal.

## SECTION 8

### SERVICE

#### 8.1 Introduction

This section provides information for servicing the receiver.

#### 8.2 Theory of Operation

The overall theory of operation is explained beginning with paragraph 8.11. Each paragraph explains with the aid of block diagrams the operation of functional assemblies.

Detailed theory of operation is located opposite the schematics.

#### 8.3 Troubleshooting

##### **WARNING**

Read the Safety Summary at the front of this manual before troubleshooting the receiver.

By the use of front-panel controls, note as many symptoms of the malfunction as possible. From these symptoms it can usually be determined which assembly is malfunctioning. The Self-Test Program and the Fault Analysis Table (table 8.2b) can be used as a guide.

When a problem has been isolated to a particular assembly or circuit, the faulty component(s) may be located using the detailed theory of operation shown on the page opposing the appropriate schematic.

#### 8.4 Self-Test Program

Receiver Test Program. (See also page 8-19 to 8-22)  
The built-in test program goes through the following sequence:

- a) Assembly test. The  $\mu$ P addresses the individual interface circuits to see whether they are present. If an assy does not acknowledge the call, the  $\mu$ P displays e.g. "A3 FAIL" and then continues the test.
- b) Synthesizer lock test. The synthesizer is set up near the boundaries of the VCO ranges, which are equivalent to the receiving frequencies 0, 6<sup>-</sup>, 6<sup>+</sup>, 12<sup>-</sup>, 12<sup>+</sup>, 20<sup>-</sup>, 20<sup>+</sup> and 29.99999 MHz. If the synthesizer does not lock up within 100 msec., the display shows "OSC 1 Err".
- c) Gain test. The synthesizer is set to 75 MHz and the feed-through in the signal path is measured at the AGC to be above a reasonable level.

Also the presence of audio output from the detector is examined. The test is repeated with different BFO frequencies and crystal filters. If the BFO does not lock up, the display shows "OSC 3 Err" followed by "no Audio".

If the BFO level is low or an error is present in the AGC or the detector, the display shows "no Audio".

If the gain in the signal path is low, or the synthesizer level is low, the display shows "GAin Lo".

E.g. a fault in one of the crystal filters or in an interconnecting cable will result in "GAin Lo".

An AGC fault can also cause this readout.

- d) Display test. All LED's are lit.
- e) The software version number is displayed.
- f) Key test. Pressing any key but "C" results in the hexadecimal value of the key being shown. See table 8.2a.



### 8.5 Preventive Maintenance

Painted surfaces can be cleaned with a commercial, spray-type window cleaner or with a mild soap and water solution.

#### **CAUTION**

Avoid the use of chemical cleaning agents that might damage the plastics used in this receiver.

The pushbutton switches in this receiver were designed for long, trouble-free service. If one of these switches should become defective, replacement rather than repair is recommended.

### 8.6 Front Panel Assembly Removal

To remove the front panel assembly proceed as follows:

- a) remove the four screws holding the front panel. The four screws are located at the exterior side of the receiver side profiles.
- b) carefully withdraw the front panel assembly and disconnect the ribbon cable connector from the motherboard.

- c) to reinstall the front panel assembly, reverse removal procedure,

### 8.7 PC-Board Assembly Removal.

To remove a pc-board assembly proceed as follows:

- a. Disconnect the regulation transistor cable from A10J2 and remove the power supply heat sink panel by removing the four screws holding the panel. The four screws are located on the exterior side of the receiver side profiles.
- b. Disconnect all cables running to the concerned assembly.
- c) Remove the six (eight) screws positioned at the edge of the concerned assembly rear panel and withdraw the assembly. If the assembly is stuck in the chassis frame, it may be necessary carefully to release the assembly by keying a screwdriver in between the rear panel and the main frame.
- d) To reinstall the assembly, reverse removal procedure.

Due to the use of self tapping screws holding the assembly rear panel to the chassis frame, carefully reinsert the screws in the threads when reversing step d above.

### 8.8 Servicing PC-Boards

All the pc-boards have plated-through component holes. This allows components to be removed or replaced by unsoldering or soldering from either side of the board. When removing large components, rotate the soldering iron tip from lead to lead while applying pressure to the part to lift it from the board.

### 8.9 MOS Handling Precautions

All MOS devices are subject to damage from static charge buildup. The generation of static charges is not a problem, but the accumulation of static charges is. In general, any device not connected directly to ground can accumulate static charges. Electrical discharge can occur to ground or to any object or person having a lower potential. Therefore, handling precautions are recommended for all personnel coming into contact with MOS devices.

When handling or testing MOS devices, observe the following precautions:

a. Ground test equipment and tools used

in testing or handling MOS devices.

- b. Apply no power to board assembly while MOS device is being installed. This permits accumulated static charges on MOS device to be safely removed before power is applied.
- c. When not in use, short all MOS leads. This prevents voltage differences from occurring on leads.

#### **WARNING**

When accomplishing step d, never expose personnel directly to hard electrical ground. For safety reasons, resistance of at least 100 Kohms should be placed between using personnel and hard electrical ground.

- d. Do not handle MOS devices by their leads. Before handling any MOS device, personnel should touch electrical ground to discharge accumulated static charges.
- e. Avoid use of plastics, rubber, and silk in MOS areas. Do not use any material susceptible to static charge accumulation.
- f. Handle circuit boards and modules containing MOS devices in the same manner as individual MOS devices. Regardless of configuration, whenever leads of MOS devices are exposed, damage due to static-charge buildup can occur.

- g. Use conductive, grounded table tops in MOS work area.
- h. Humidity in work area should be maintained above 50%. Static charge generation increases exponentially as relative humidity decreases.

### 8.10 Logic Devices

This receiver uses three different families of logic circuits: MOS, TTL and ECL. Most of the logic devices used in this receiver are TTL and are represented by unmarked logic symbols on the schematics. Logic elements, not of the TTL Logic family, are so indicated on the schematics. Table 8.1 below lists typical voltage levels associated with each family used in this receiver.

Table 8.1 Typical logic levels

Logic Family	High Level	Low Level
TTL	3 - 5V	0.2V
ECL	4.3 to 4.7V	3.4 to 3.7V
MOS	5 - 15V	0V

### 8.11 Basic Principles of Operation

The following paragraphs contain functional descriptions keyed to the block diagrams. The block diagrams are drawn for function and do not show circuit details. Schematic and detailed descriptions of each circuit are located on subsequent service sheets.

### 8.12 Overall Operation

The overall functional block diagram of the receiver is shown in Figure 8.1

The antenna signal is connected to the suboctave filter assembly A4, which serves two objects, matching the 50 ohm antenna impedance and rejecting unwanted signals.

Duplex filters, designed for the coaststation duplex bands, may be incorporated.

From A4 the filtered signal is routed to the Front-end Assembly A3, where the signal is up-converted to the first intermediate frequency at 75 MHz and crystal filtered to approx. 12 kHz. Following the first AGC-amplifier, the signal is then down-converted to the second intermediate frequency at 1.4 MHz and crystal filtered to the final information bandwidth.

The 1.4 MHz signal is then routed to the IF/AF assembly A7, where final amplification with subsequent SSB/CW or AM demodulation is performed. An AGC-leveled IF output is accessible at the rear panel of the assembly.

The Power Supply Assembly A10, incorporates AF notch filter and output amplifier for driving the operators headphone or loudspeaker. The Power Supply Assembly accepts 110-125, 220-250 Vac.

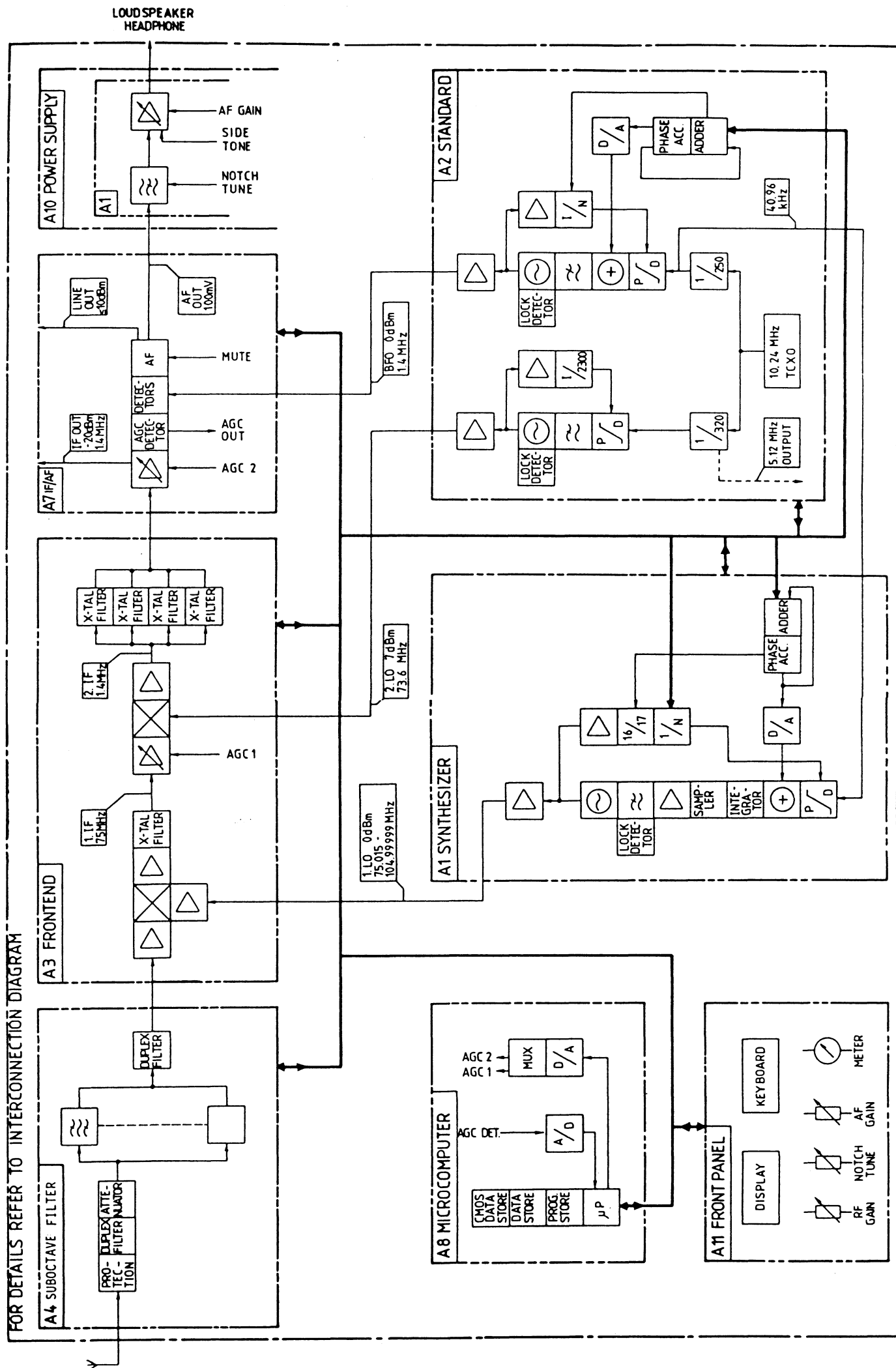
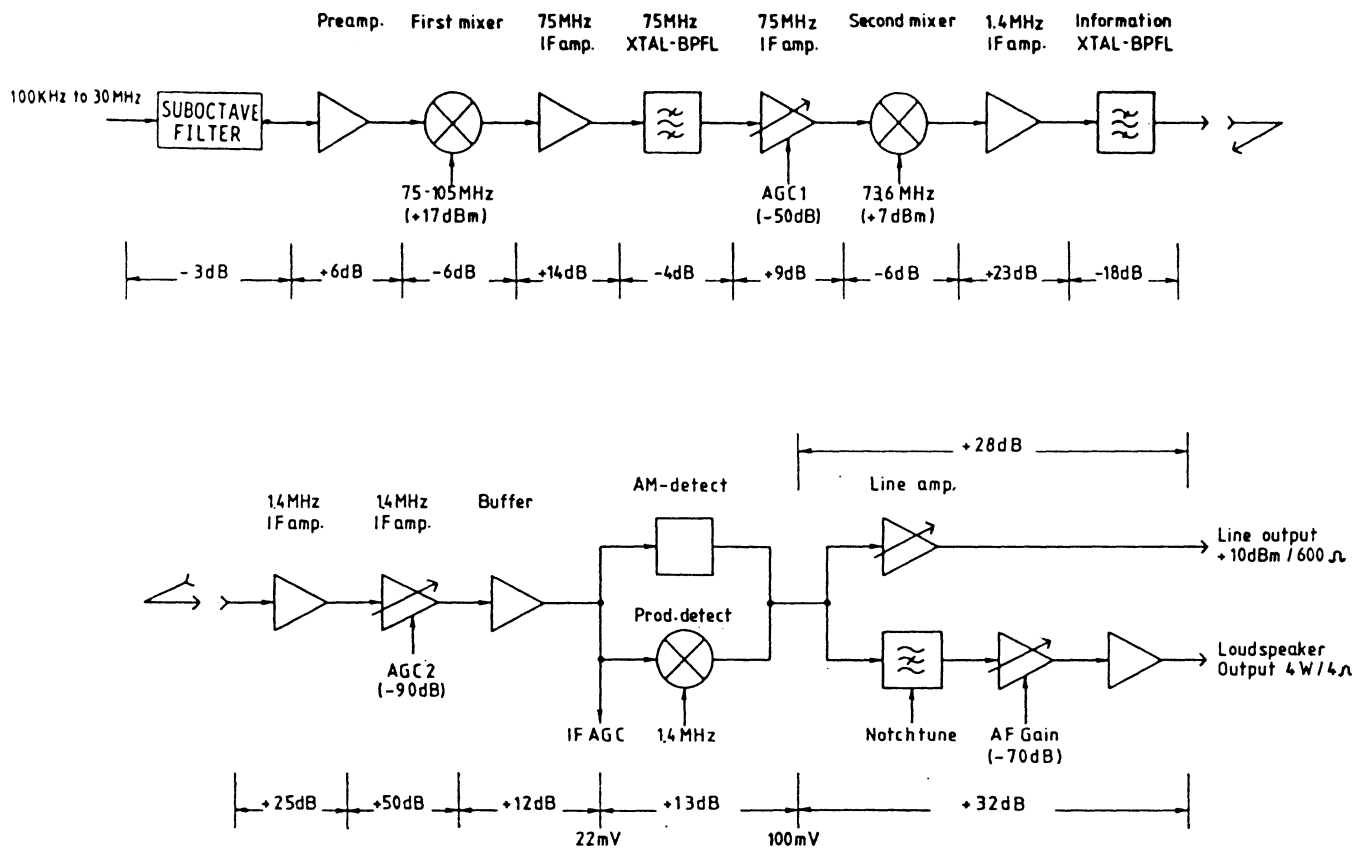


Figure 8.1 Overall Functional Block Diagram 8-5



Note: Voltage Gain shown are for reference only

Figure 8.2 Signal path block diagram

The Synthesizer Assembly A1, generates the first local oscillator signal tunable from 75 MHz to 105 MHz in 10 Hz increments.

The Standard Assembly A2, generates the second local oscillator signal at 73.6 MHz, the Synthesizer Assembly reference signal, and the synthesized beat frequency oscillator signal tunable from 1.393 MHz to 1.407 MHz in 10 Hz increments.

The Microcomputer Assembly A8, performs the overall control of the receiver. Typical tasks handled by the assembly:

- Control of the individual assemblies
- Keyboard and steptune reading
- Display refreshing
- AGC/GC through multiplexed D/A-A/D conversion
- Programmable memory set-ups
- Scanning
- Channel stepping
- Squelch control
- Remote control
- Diagnostic routines

Communication between the Microcomputer Assembly and the remaining assemblies is conducted over an internal bus running on the mother pc-board and the front panel ribbon cable.

### 8.13 Synthesizer Assembly A1

The functional block diagram of the Synthesizer Assembly is shown in Figure 8.3

1831 and 2563. This output is compared with the 40,96 kHz reference clock in a sample and hold phase detector. The ratio P is used as input to a digital loop adding the fractional ratio to an

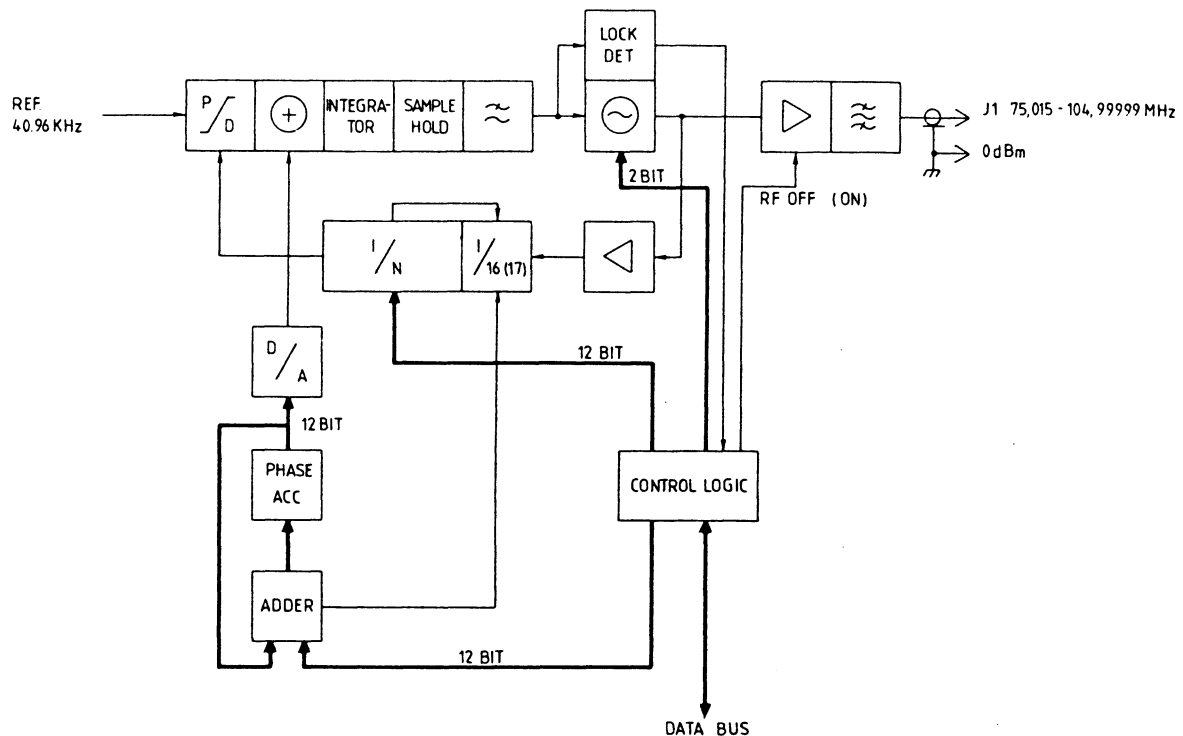


Figure 8.3 Synthesizer Assembly

The assembly generates the 75.015-104.99999 MHz 1. Lo signal for the Front-end Assembly A3. The synthesizer uses a fractional N technique, where the loop output frequency is equal to the number  $N \cdot P$  times the reference frequency, where N and P are positive integers. The output signal from the loop oscillator is routed through a 16 (17) divider, controlled either by the N counter, or by the fractional phase accumulator. The N divider combined with the 16 (17) divider changes division ratio between

accumulated residual fraction. Every time the accumulated residual fraction overflows, the 16 (17) counter is commanded to delay the 17 to 16 count transition one reference clock period, which corresponds to deleting one pulse from the signal feeding the N divider.

To compensate for pulse delete sidebands on the synthesizer output signal, the residual fraction is converted to an analog signal and added to the error signal from the phase

detector. The composed error signal is filtered before entering the control input of the voltage controlled oscillator.

#### 8.14 Standard Assembly A2

The functional block diagram of the Standard Assembly is shown in Figure 8.4

The output signal from the temperature compensated crystal oscillator is applied to two divider chains. One generating 32kHz reference clock for the 73.6 MHz loop, and one generating 40.96 KHz reference clock for the 1.4 MHz loop and the Synthesizer Assembly.

The 73.6 MHz oscillator is formed by a voltage controlled crystal oscilla-

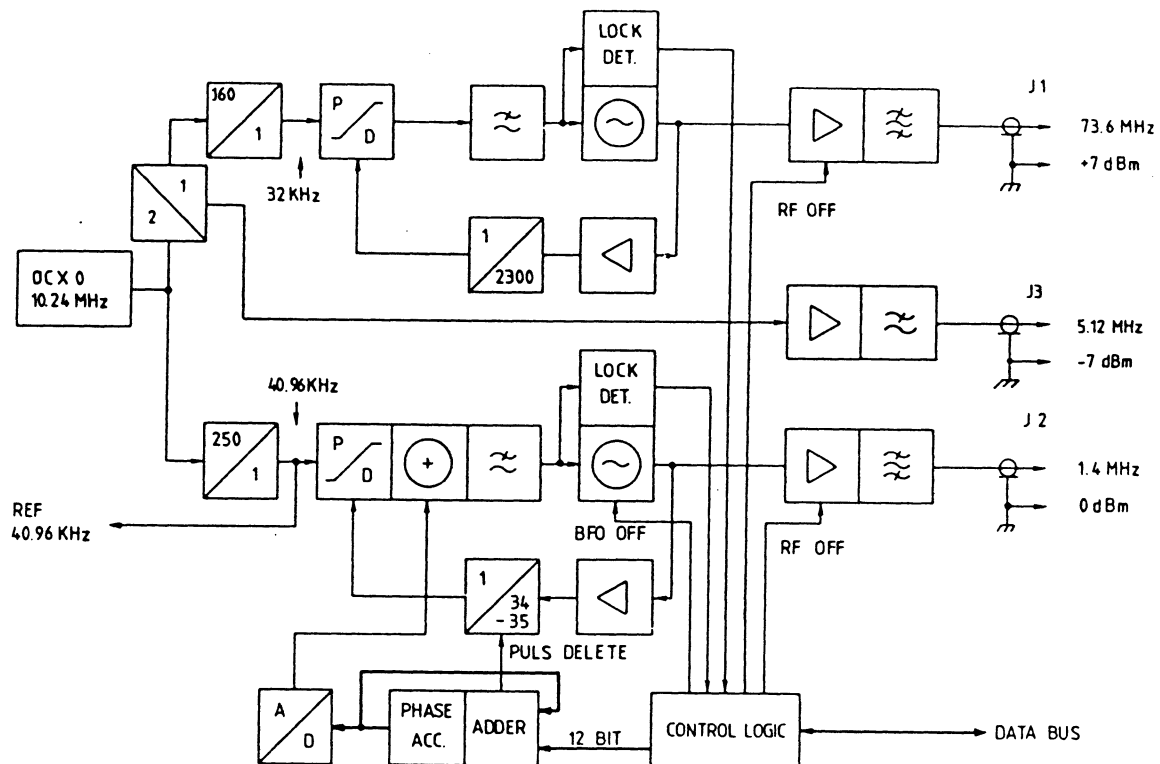


Figure 8.4 Standard Assembly

The assembly holds three basic functions:

- 10.24 MHz stable master oscillator
- 73.6 MHz synthesized second LO
- 1.4 MHz synthesized BFO

tor ensuring low side-band noise. The loop has a 10 Hz bandwidth compensating for frequency drift.

The 1.4 MHz synthesizer is tuneable in 10 Hz increments. The loop reference

frequency is 40.96 kHz and the corresponding loop band-width approx. 800 Hz

The loop uses a fractional N technique, where the loop output frequency is equal to the number of N.P. times the reference frequency, where N and P are positive integers. Due to the limited tuning requirements for the loop, the N number is fixed 34. The programmed number P is used as input to a digital loop adding the fractional ratio to an accumulated residual fraction. Every time the accumulated residual fraction overflows, the N divider is commanded to divide by 35, deleting one vco clock puls. The average vco frequency will in this way be raised with 40.96 kHz divided by P. To compensate for puls delete sidebands on the

1.4 MHz signal, the residual fraction is converted to an analog signal and added to the error signal from the phase detector. The composed error signal is filtered before entering the control input of the voltage controlled oscillator.

During AM mode reception the 1.4 MHz BFO signal is muted.

### 8.15 Front-end Assembly A3

The functional block diagram of the Front-end Assembly is shown in Figure 8.5

The Front-end Assembly contains the RF preamplifier, the first and second

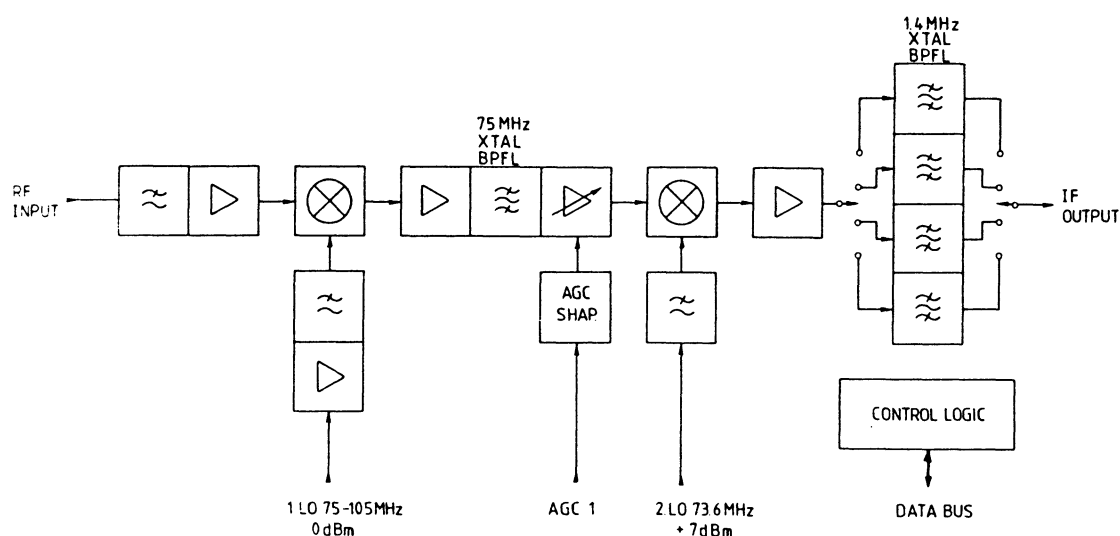


Figure 8.5 Front-end Assembly



mixer with associated injection amplifiers, the 75 MHz IF amplifier and the information crystal filters.

The 15 kHz to 30 MHz input signal is first preamplified approx. 6 dB before entering a high L0 injection (+17 dBm) up-converting mixer. The high L0 signal is derived from a broadband amplifier placed close to the mixer.

The up-converted 75 MHz first IF signal is then amplified 14 dB in a parallel FET circuit and crystal filtered to a bandwidth of approx. 12 kHz. The AGC1-amplifier following the crystal filter further amplifies the signal 9 dB with a 50 dB delayed AGC.

Delayed AGC is brought into operation when the received input level reaches about 40 dB above 1 microvolt.

The second mixer down-converts the signal to the second IF frequency of 1.4 MHz. The down-converted signal is amplified 23 dB and impedance matched to the four information crystal filters. These filters determine the overall receiver selectivity. The filters are switched by means of series-diodes.

### 8.16 Suboctave Filter Assembly A4

The functional block diagram of the Suboctave Filter Assembly is shown in Figure 8.6.

The primary function of the Suboctave Filter Assembly is to provide selectivity ahead of the front-end preamplifier.

The frequency range 15 kHz to 30 MHz is covered by 10 fixed bandpass filters. The 7 filters covering the frequency range 1.6 - 30 MHz are all less than one octave wide.

To reduce interference from adjacent and/or high power transmitters, a 10 dB switchable pad is incorporated to attenuate incoming signals.

An input overload circuit protects the receiver against extreme antenna signals. The overload circuit can sustain 30 Vrms/continuous and 50 Vrms/15 minutes burn-out.

An output protection circuit prevents spike products from the switch circuits to reach the Front-end Assembly.

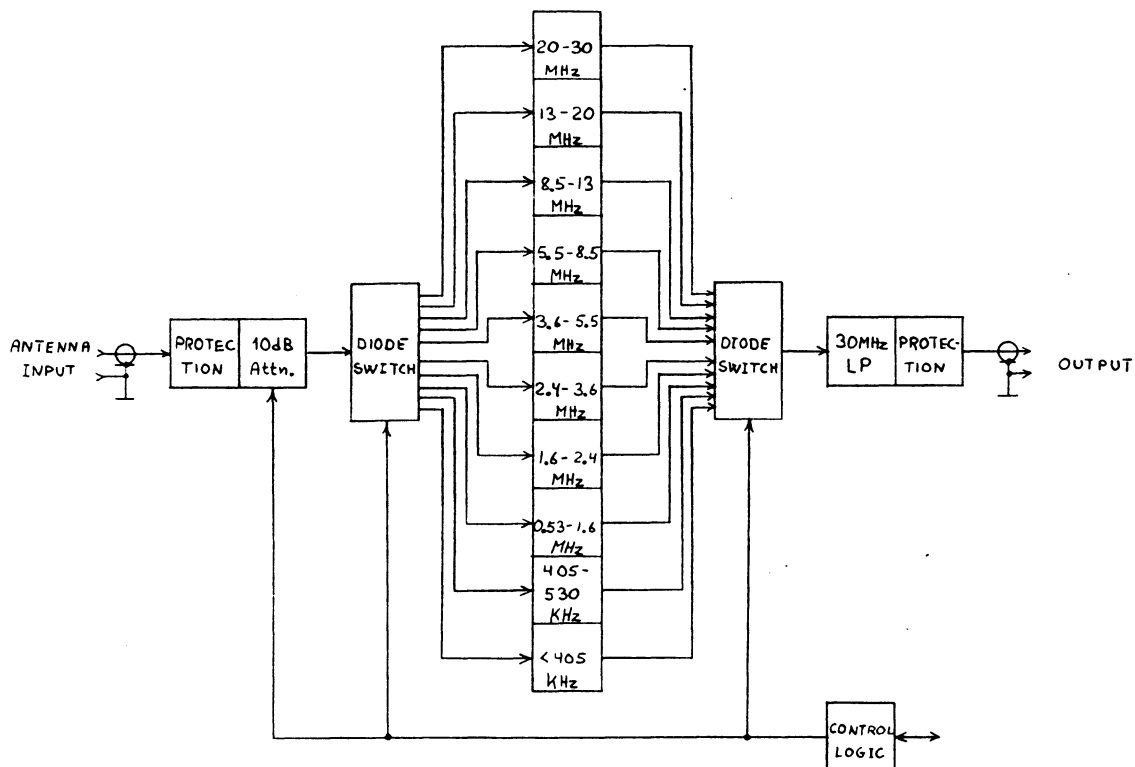


Figure 8.6 Suboctave Filter Assembly

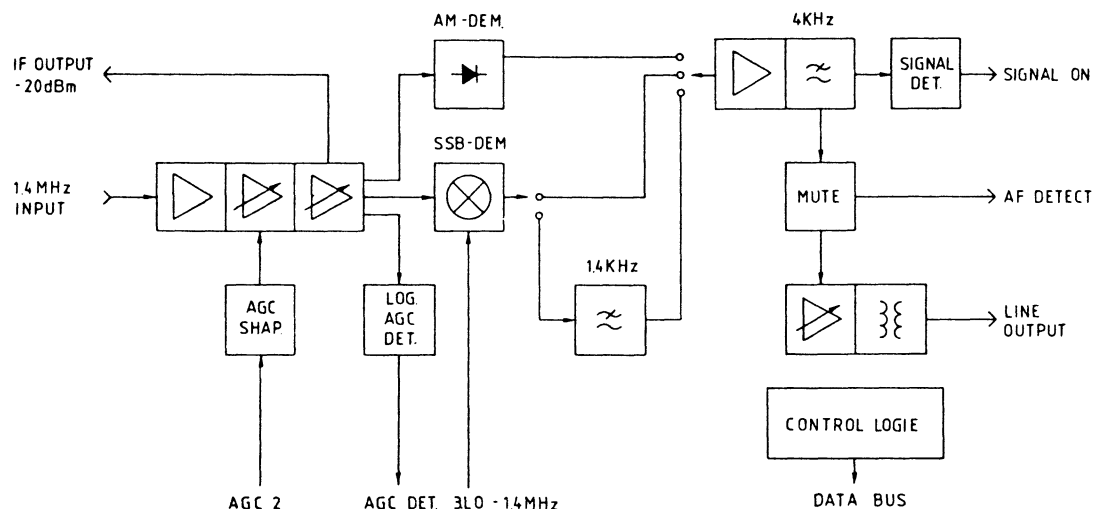


Fig. 8.7 IF/AF Assembly

### 8.17 IF/AF Assembly A7

The functional block diagram of the IF/AF Assembly is shown in Fig. 8.7.

The IF/AF Assembly contains the 1.4MHz second IF amplifier, demodulators, AGC detector and AF line output circuit.

The 1.4 MHz signal is first amplified approx. 25 dB and impedance matched before entering the AGC2-amplifier. The AGC2-amplifier further amplifies the signal 50 dB with an AGC-range of 90 dB. The amplified signal is separated into four paths, one for the synchronous AM-demodulator, one for the balanced SSB/CW demodulator, one for the AGC-detector and one for the buffered IF output driving auxiliary equipment.

The output signals from the demodulators are routed through a mode switch selecting the desired reception mode. The mode switch further selects the 1.4 kHz lowpass filter used in the narr and vnar modes.

The output signal from the mode switch is 4 kHz lowpass filtered and applied to the mute circuit enables the Micro-computer Assembly to mute the AF signal during simplex transmission, switch sequences and squelch operation.

Finally the AF signal is routed to the line output amplifier where the signal level is raised to a level of +10 dBm/ 600 ohm. The line level is adjustable from the rear panel of the assembly.

The AGC-detection is performed by the use of four emitter coupled limiting stages giving a true logarithmic detection characteristic. The output signal from the AGC-detector is routed to the Micro-computer Assembly for digitizing.

### 8.18 Microcomputer Assembly A8

The functional block diagram of the Microcomputer Assembly is shown in Figure 8.8.

The assembly consists of an 8085 micro-processor largescale integrated circuit that controls all basic functions within the receiver.

The operating system software for the microcomputer is stored in three programmable read-only memories (PROM's). Each PROM is capable of storing 16K x 8-bit words.

One random access memory chip (RAM), capable of storing 8k x 8-bit words each, is required for the temporary storage and manipulation of input and output data. During power failure and receiver standby, the RAM is powered from a 3V battery backup preventing interruptions from disturbing the stored data.

Various buffers and decoders assure proper drive levels and timing to and from various circuits and input/output ports.

In one special version a battery backed-up real time clock integrated circuit is mounted to ensure correct time keeping even during power failure or receiver standby.

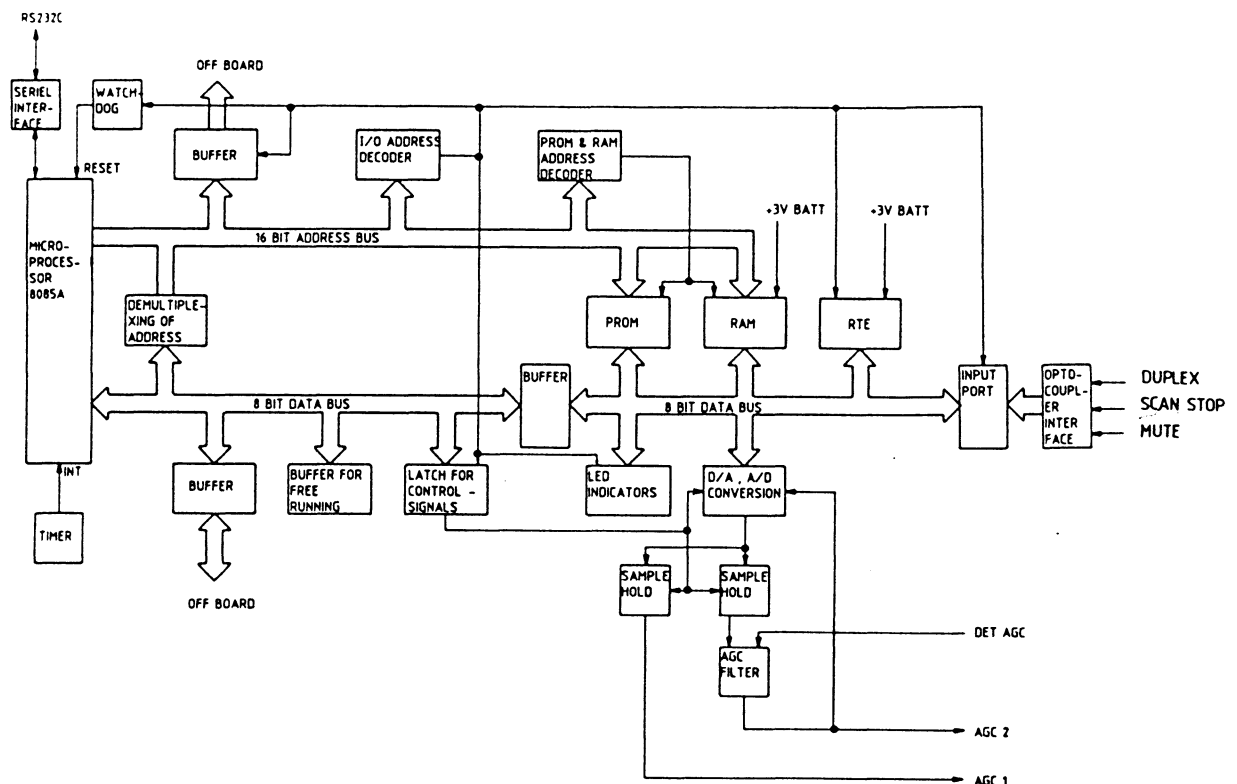


Figure 8.8 Microcomputer Assembly

Timing of the assembly is via a 6.144 MHz crystal oscillator contained in the CPU.

The Microprocessor Assembly performs the automatic gain control. An analogue loop provides a fast attack AGC2-level for the IF/AF Assembly. A digital AGC2-level is formed by an A/D conversion (Successive approximation by D/A-conversion) of the analogue AGC2-level and controls the hold and decay parameters. The digital AGC1-level to the Front-end Assembly is derived from the digital AGC2-level.

### 8.19 Power Supply Assembly A10

The functional block diagram of the Power Supply Assembly is shown in Figure 8.9.

Part of the AF circuits, the notch filter and the AF power amplifier, are included in the assembly.

The AC mains is transformer-coupled to bridge rectifiers, followed by current limited voltage regulators (fold-back limited) delivering +5V, -15V and +15V.

The regulated output voltages are controlled by the front panel on/off switch.

When the switch is turned off the reference voltage for the regulators is grounded, causing the output voltages to be removed, while the remaining part of the assembly will continue to energize. An extra +15V regulator, servicing the oven-stabilized reference oscillator, is bypassed by the front panel on/off switch.

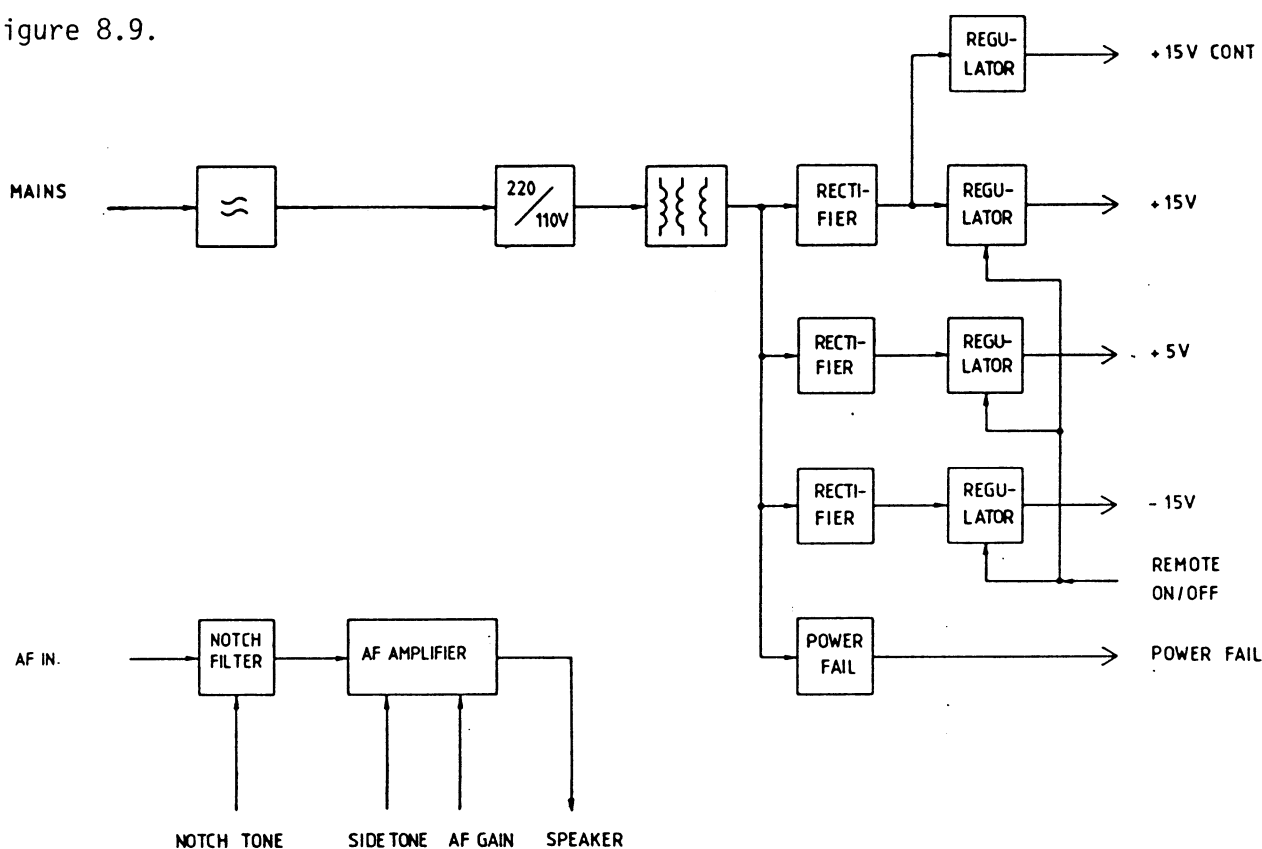


Figure 8.9 Power Supply Assembly

By means of an on/off switch positioned on the assembly rear panel the receiver may be deenergized. To avoid information loss during supply drop-out, a power failure circuit sensing the mains transformer secondary voltage, generates a look-ahead warning for the Microcomputer Assembly.

The AF part of the assembly contains a voltage controlled notch filter covering the range 300 Hz to 2700 Hz, a voltage controlled gain variable pre-amplifier and a 4W/4 ohm loudspeaker amplifier. A sidetone input, used during CW/SIMPLEX operation is mixed to the preamplifier AF signal.

#### 8.20 Front Panel Assembly A11A1

The Front Panel Assembly mounts and interconnects most of the front panel controls, including power on-off/dimmer control, RF gain, AF gain, notch tune, mode select, bandwidth select, and receiver frequency/BFO tune. The LED's, meter read-out, and phone connector are also mounted on this assembly.

All digital controlled pushbuttons, the tuning knob information and the digi-

tized RF-gain setting are scanned by the Microcomputer Assembly. Synchronous the LED readouts and the front panel meter are updated. The assembly incorporates A/D-D/A converters for converting the analog RF-gain and meter information.

The only analog signals routed to and from the assembly are the DC-voltages controlling the notch tune and gain setting of the AF circuits, and the phone signal for the front panel mounted phone jack.

A single ribbon cable interconnects the assembly to the receiver mother board.

#### 8.21 Mother Board A12A1

The receiver mother board ties all parts of the receiver together. It routes the front panel controls, the microcomputer controls and the stabilized voltages to the remaining assemblies.

## 8.22

### RTTY Demodulator Assembly A6 (Option)

The functional block diagram of the RTTY Demodulator is shown in figure 8.10.

The assembly demodulates the received RTTY signals, and presents the data in the RS232 output and in the high voltage Current loop output.

The assembly is capable of receiving data for transmitting, and the microprocessor is able to send data messages to the RS232 output.

The demodulator can receive input both from the 600 ohm line input and the AFDET input, (From the IF/AF module). \*)

The Mark and Space frequencies are filtered out in 2 bandpass filters and each output is rectified. The rectified Mark signal is subtracted from the Space signal. The resulting data signal passes through the diversity combiner. With the diversity output from a second RTTY Demodulator, connected to the diversity input of the present module, the combiner will average the 2 signals. Then the signal is fed through a third order lowpass filter to the ATC (Automatic Threshold Control). There the dc-component is removed, and the signal is converted to TTL-levels. Upon conversion it is possible to invert the data signal, and this can be done from the microprocessor and from an external invert line.

For some TELEX printers long periods with Space are unwanted. To avoid this, the signal is passed through an anti-space circuit, that will switch to Mark after a certain space period. The antispace function can be disabled by the microprocessor.

After the Antispace, the signal is led to the Autostart, and here the data signal will be enabled or disabled, depending on the signal level. The signal level is measured after the ATC.

The Autostart can be put out of function by the microprocessor or from the external autostart the datasignal is led to the microprocessor and the 2 Received Data outputs, current loop and RS232 output.

In the demodulator a FM discriminator is included, and the output from this is read by the microprocessor, together with the detected Mark and Space levels. As previously mentioned the assembly is supplied with an RS232 receiver and a current loop sense circuit, and the data from these can be read by the microprocessor.

\* Note that Demodulator Assy 488275 does not incorporate the AFDET input.

Current loop strapping.

Current choice:

	S12	
	a	b
20 mA	off	off
40 mA	on	off
60 mA	on	on

Voltage choice:

	S11
120v	open
100v	a
80v	b
60v	c

Line input level strapping:

	S1
0 dBm	c
-10 dBm	b
-20 dBm	a
-30 dBm	open



## Strapping of the RTTY-Module A6 Assy 489670 and Assy 488275

To get maximum performance of the RTTY-demodulator, it is necessary to strap the filters to correct baudrate and frequency shift.

Frequency shift	Baudrate		
	50	100	150
$\pm 42.5$ Hz	2a	2a 6b, 7b, 8b	2a 6a, 7a, 8a
$\pm 85$ Hz	2b, 3a	2b, 3a 4b, 5b 6b, 7b, 8b	2b, 3a 4a, 5a 6a, 7a, 8a
$\pm 250$ Hz	2c, 3b	2c, 3b 4b, 5b 6b, 7b, 8b	2c, 3b 4a, 5a 6a, 7a, 8a
$\pm 425$ Hz	3 c	3 c 4b, 5b 6b, 7b, 8b	3 c 4a, 5a 6a, 7a, 8a

Fig. 8.11 Baud rate and frequency shift table

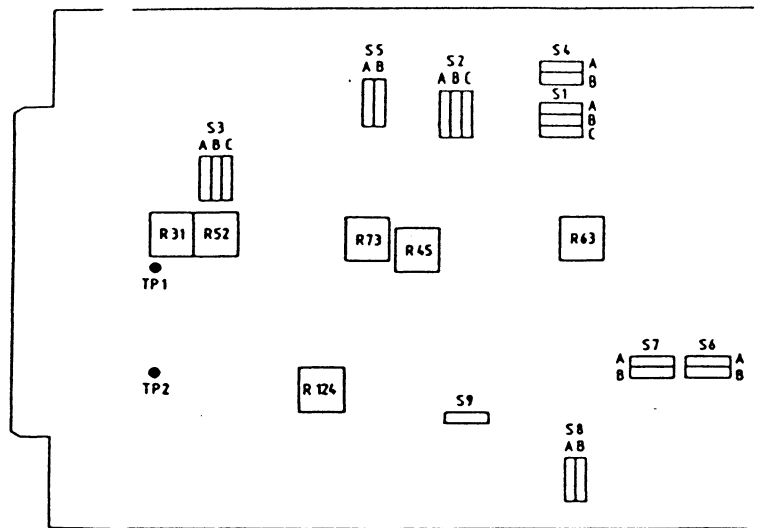
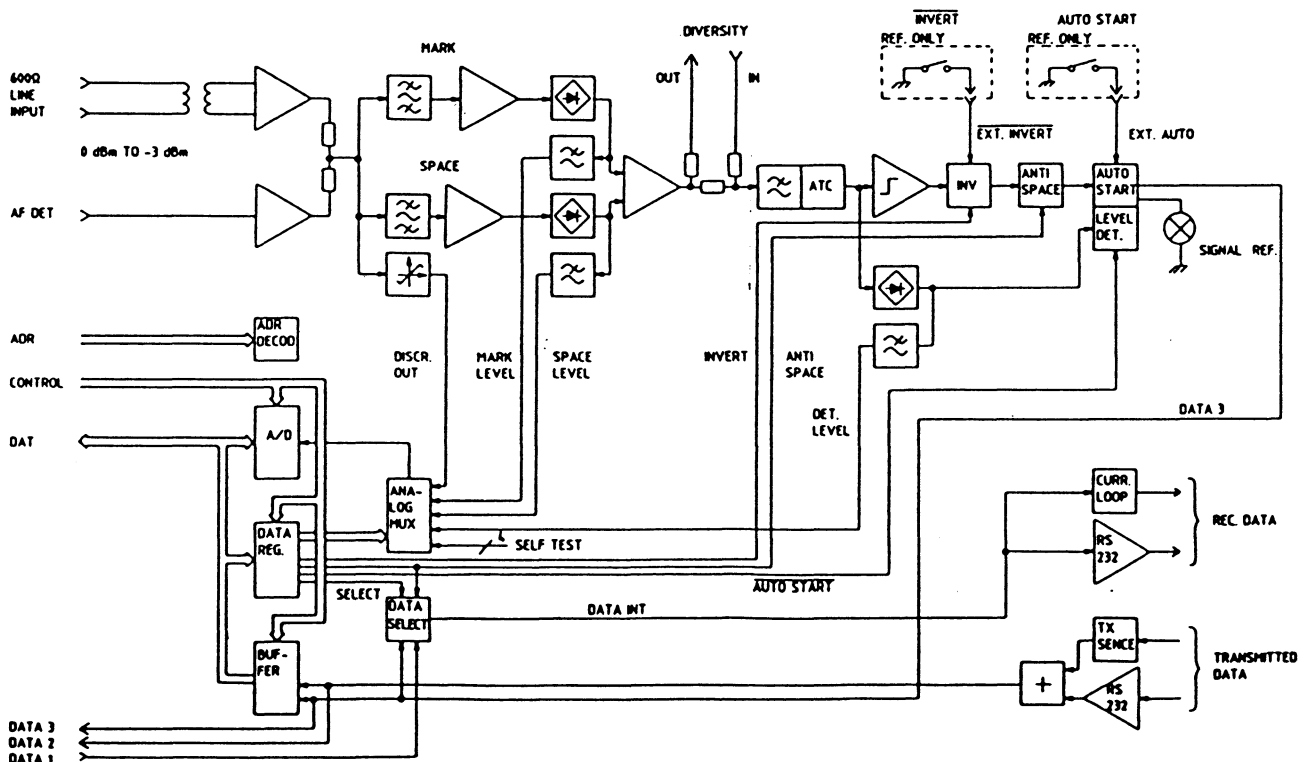


Fig. 8.12 RTTY demodulator: Frequency shift and baud rate strapping



(Note: Assy 488275 does not incorporate the AFDET input)

## Strapping of the RTTY-Module A6 Assy 471577

To get maximum performance of the RTTY-demodulator, it is necessary to strap the filters to correct baudrate and frequency shift.

Frequency shift.	Baudrate		
	50	75	100
$\pm 42.5$ Hz	2a	2a 6a,7a,8a	2a 6b,7b,8b
$\pm 85$ Hz	2b,3a	2b,3a 4a,5a 6a,7a,8a	2b,3a 4a,5a 6b,7b,8b
$\pm 212.5$ Hz	2c,3b	2c,3b 4a,5a 6a,7a,8a	2c,3b 4b,5b 6b,7b,8b
$\pm 425$ Hz	3c	3c 4a,5a 6a,7a,8a	3c 4b,5b 6b,7b,8b

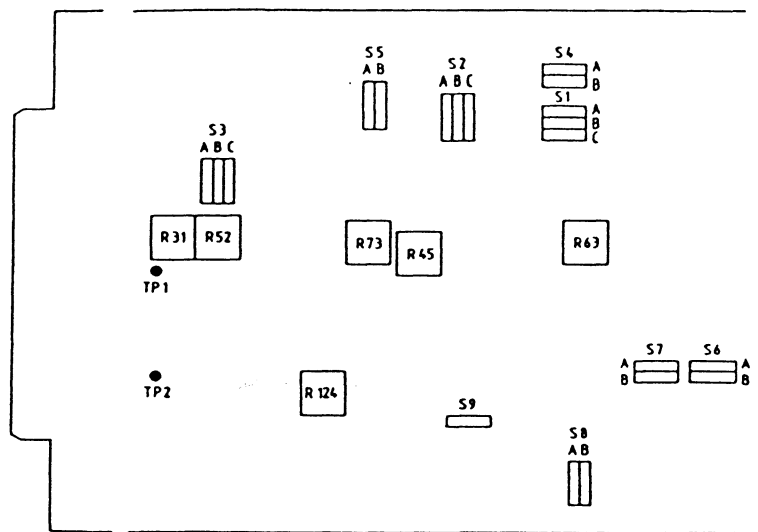
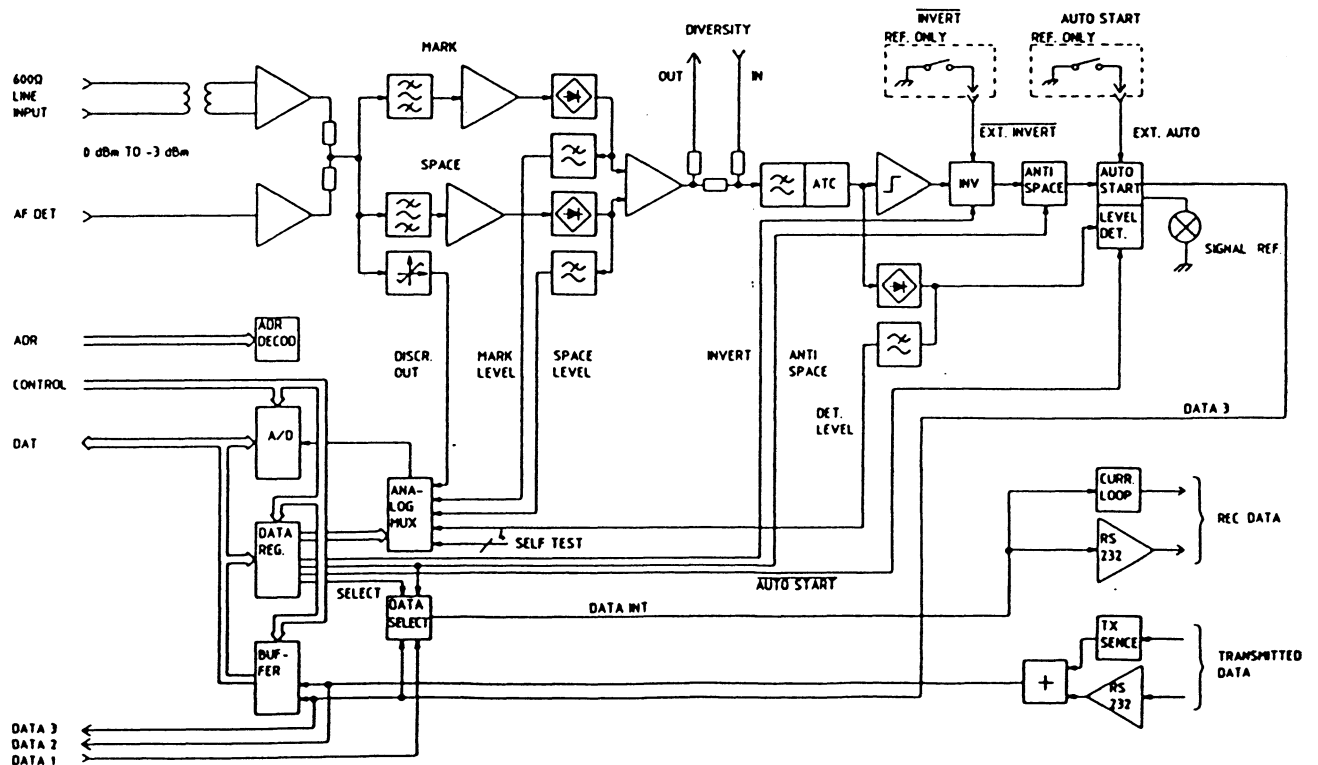


Fig 8.11 Baud rate and Frequency shift table.

Fig. 8.12 RTTY demodulator: Frequency shift and baud rate strapping



## A8 MICROCOMPUTER MODULE, LED INDICATION

The four LEDs on the rear panel of the A8 module are primarily intended for use at the factory test of the module.

When the A8 module is mounted in a receiver, the LEDs will act as follows:

1	0	off	}	When power is turned on. Duration $< \frac{1}{2}$ sec.
2	●	on		
3	0	off		
4	0	off		
1	●	on	}	After power has been turned on, until the muting is released and the receiver goes into normal operation. Duration approx. 2 sec.
2	0	off		
3	0	off		
4	●	on		
1	●	flashing	}	In normal operation. Flashing period 1 sec.
2	0	off		
3	0	off		
4	●	flashing		
1	●	flashing	}	When in test program. Flashing period 1 sec.
2	0	off		
3	●	flashing		
4	●	flashing		

The LEDs are not for fault finding during after sales service.

Table 8.2a Key values during self-test

KEY DEPRESSED	VALUE DISPLAYED
SSB	11
AM	10
RTTY	12
CW	13
wide	18
inter	19
narr	1A
vnar	1B
off	20
slow	21
fast	22
att	24
scan	36
bfo	35
tune	34
C	37
comma	8A
0	80
1	81
2	82
3	83
4	84
5	85
6	86
7	87
8	88
9	89
rcl	31
sto	30
local	32
unmarked	33
prog	38

Table 8.2b    Fault Analysis Procedures

Find the symptoms below that match the fault condition and follow the hints.

SYMPTOM	POSSIBLE CAUSE
1. Receiver dead. Mains OK. Fuse not blown. No LEDs lit.	A10 Power Supply A11 Front Panel on/off switch
2. Receiver dead. Mains OK. Fuse blown and new fuse also blows.	A10 Power Supply Diodes, series-transistors, 75V zenerdiodes
3. Front Panel dead. Noise is heard in the loudspeaker during power- up. No LEDs flashing on A8 back plane.	A8 Microcomputer A10 Power Supply 5V missing
4. Front Panel dead. Some LEDs flashing on A8 backplane.	A11 Front Panel
5. Display very weak. Receiver else OK.	A11 Front Panel Dimmer Circuit A10 Power Supply 8V missing
6. Part of display lights extremely bright while the rest is not lit. Receiver stops operation.	A8 Microcomputer 8085
7. The same display segment is missing in all figures	A11 Front Panel Driver transistor Interconnection cable to motherboard
8. Display shows "FCS FAIL" and/or "FFFFF.FF" steadily or periodi- cally. Pressing a key can cause an "OSC 1 Err" read-out.	A10 Power Supply VBB, VEE or VFF drifting or incorrectly adjusted
9. The display shows "An FAIL" during power-up or during keyboard operation.	Microcomputer-interface on An is faulty

Table 8.2b (continued)

SYMPTOM	POSSIBLE CAUSE
10. "OSC 1 Err" during frequency or mode changes.	A1 Synthesizer. VCO out of lock.
11. "OSC 2 Err"	A2 Standard. 73.6 MHz oscillator out of lock.
12. "OSC 3 Err"	A2 Standard. 1.4 MHz oscillator out of lock.
13. Receiving Frequency incorrect. No error read-outs.	A1 Synthesizer. Digital circuits. A2 Standard. 40.96 kHz reference.
14. Sensitivity poor.	Signal Path. Oscillator levels.
15. Sensitivity poor. Receiver runs testprogram without error read- outs.	Antenna cable. A4 Preselector. Input protection. Range switches.
16. "An FAIL" during testprogram.	Microcomputer-interface on An is faulty.
17. "OSC 1 Err" during testprogram. No errors during normal operation.	A1 Synthesizer. VCO range switch. VCO adjustment.
18. "GAin Lo" 5 times followed by "SEnS Lo" one time during testprogram.	The signal-path gain is low. A3 Front-end. A7 IF/AF. A1 Synthesizer output level. A2 Standard. 73.6 MHz level. Interconnection cables.
19. "GAin Lo" and "no Audio" 5 times followed by "SEnS Lo" one time during testprogram.	Same as 18.
20. "GAin Lo" and "no Audio" 5 times during testprogram.	A1 Synthesizer frequency wrong, digital error.

Table 8.2b (continued)

SYMPTOM	POSSIBLE CAUSE
21. "no Audio" during testprogram. The loudspeaker output is weak and distorted.	A2 Standard. 1.4 MHz level or frequency. A7 IF/AF demodulator. Interconnection cable.
22. "GAIN Lo" in one of the bandwidths during testprogram.	A3 Front-end crystal filter.
23. "SENS Lo" during testprogram. Sensitivity poor.	A4 Preselector range switches. Interconnection cable to A3. A3 Front-end input amplifier or lo amplifier.
24. "SENS Lo" during testprogram. Receiver operates normally.	This is not necessarily a fault, but can be caused by temperature drift in the AGC-circuits.
25. "no Audio" during testprogram. Receiver operates normally.	Same as 24. + A7 IF/AF AGC detector not adjusted for -20dBm output from A7J2. Audio detector.
26. Audio distorted in AM.	A7 IF/AF demodulator. AGC detector not adjusted for -20dBm output from A7J2.
27. Audio missing or weak. No error read-outs during testprogram.	A10 Power Supply. Audio amplifier. A11 Front Panel AF potentiometer Interconnection cable to motherboard.
28. Receiver acts strange when pressing certain keys.	A8 Microcomputer 8085 or EPROMS.
29. Receiver loses user-programmed channels.	A8 Microcomputer Battery run out. CMOS RAM faulty.
30. "FCS FAIL" during power-up.	A8 Microcomputer RAM circuits faulty.





ASSY 448168, SYNTHESIZER ASSEMBLY

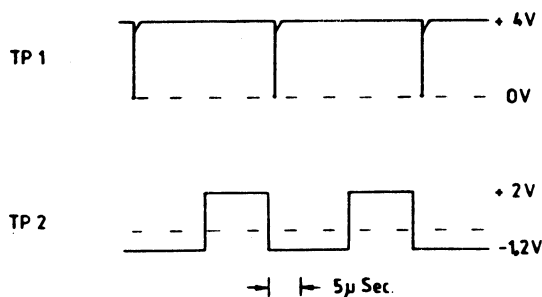
Service Sheet A1

**① Phase Detector**

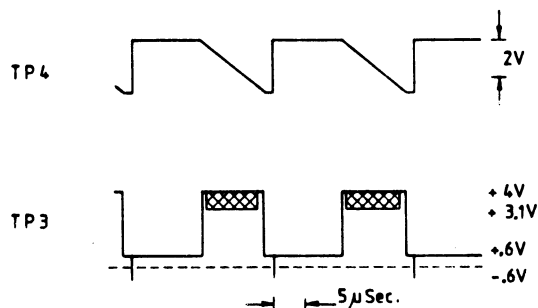
The J-k flip-flop U31 forms a set-reset phasedetector, switching the differential transistor pair  $Q_1$ ,  $Q_2$ . U-31 is clocked by the reference signal, 40.96 kHz negative going impulses, turning the diode switch CR4 "ON". CR4 is connected to a constant current generator, making the Ramp Generator ramp up. U31 is preset by the frequency divided signal from the VCO, terminating the ramp up period.

**② Ramp Down Switch**

The ramp down period is controlled by the diode switch and has the length of 832 VCO-cycles. The voltage at TP2 is 2.0 V in the ramp down period and -1.2 V in the remaining time.

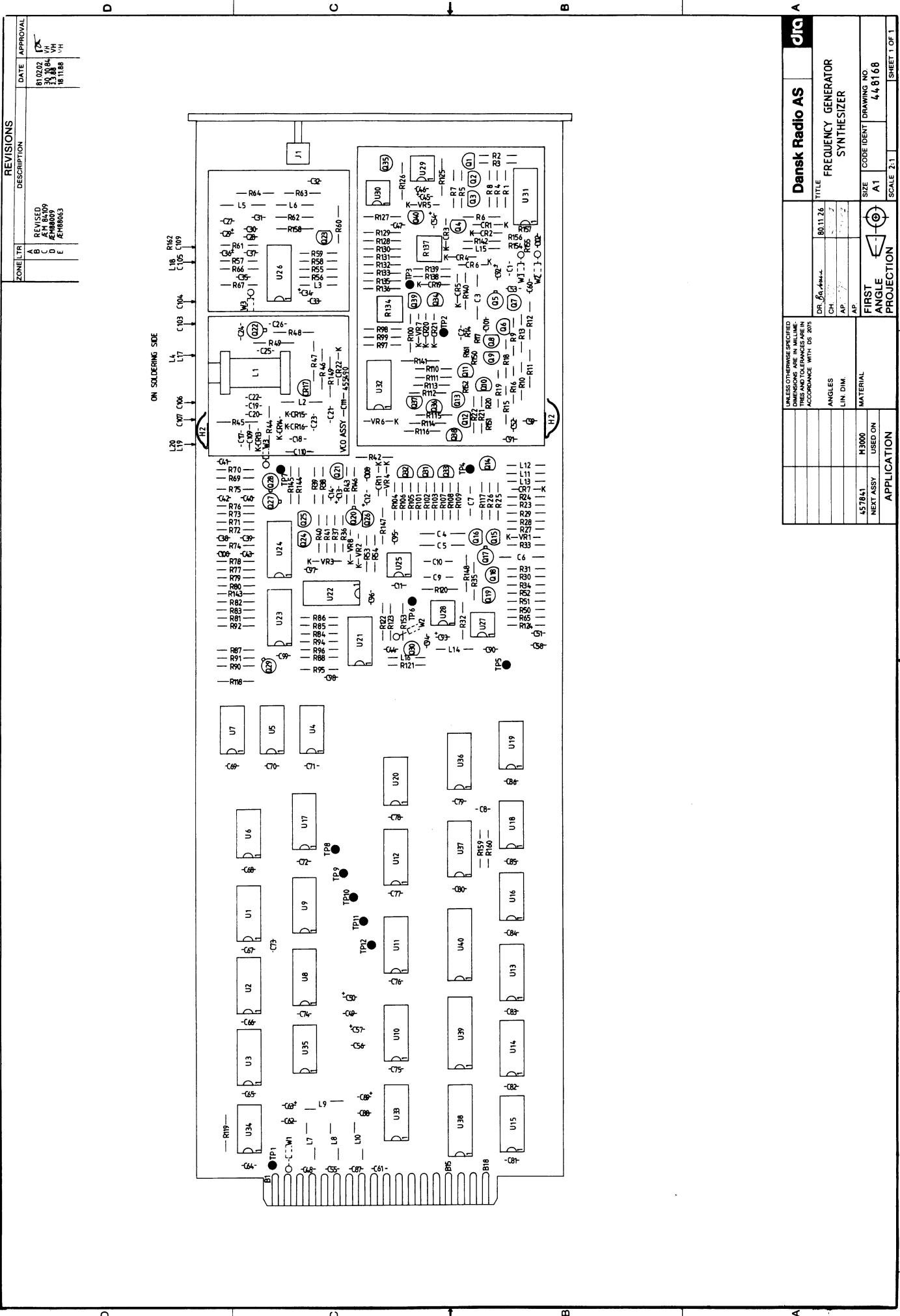
**③ Ramp Generator**

The ramp generator is an inverting current integrator built by discrete components ensuring fast response and low noise.

**④ Summing Amplifier**

The current from the constant current generator U29, Q35 is added to the current from the resistance network R128-R139 by the summing Amplifier U30, Q40. The current from R128-R139 is controlled by the diode switches CR19-CR21.

**⑤ Supply Filtering**



REVISIONS		DATE	APPROVAL
ZONE/LTR	DESCRIPTION		
A	REVISED	81.02.02	[Signature]
B	AM 8409	18.11.84	VH
C	AM 8409	18.11.84	VH
D	AM 8409	18.11.84	VH
E	AM 8409	18.11.84	VH

Dansk Radio AS		TITLE	
FREQUENCY GENERATOR SYNTHESIZER		80.11.26	
DR. 80.11.26		CH	
AP		AP	
AP		AP	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE IN ACCORDANCE WITH DS 2075		MATERIAL	
457841		M3000	
NEXT ASSY		USED ON	
APPLICATION		FIRST ANGLE PROJECTION	
SIZE		CODE IDENT	
A1		DRAWING NO.	
448168		SCALE 2:1	
SHEET 1 OF 1			

6. Sample and Hold

The transistor pair  $Q_{15}$ ,  $Q_{16}$  generates the gate voltage to the first sample switch  $Q_{14}$ . The voltage at  $C_4$  is transferred to the sample capacitor  $C_5$  by the second switch  $Q_{17}$ . The signal at TP5 is positive going impulses with a frequency of 40.96kHz. At the output of the unity gain amplifier U28, the voltage is between -9V and +10V.

7. Loop Filter

Active second order lowpass filter  $f_{cut}=3\text{kHz}$  approx.

8. VCO-Supply

The voltage at TP7: -7.5V.

9. Voltage Controlled Oscillator

The 75MHz - 105MHz VCO is controlled by a voltage between -9V and +10V. R149 and CR22 is inserted for linearization of the voltage-frequency function. The frequency range is divided into 4 subranges by switching the fixed capacitors  $C_{19}$  and  $C_{20}$ .

The VCO control voltage, TP6, may be adjusted by the coil L1. With the exciter tuned to 29.99 MHz, the voltage shall be +10.0V at  $t_{amb.}=25^{\circ}\text{C}$ .

10. Range Shift

The range shift shall be in accordance with the following table:

Frequency kHz	Voltage at C15	Voltage at C16
15-5999.99	-8.2V	-8.2V
6000-11999.99	+15V	-8.2V
12000-19999.99	-8.2V	+15V
20000-29999.99	+15V	+15V

11. Lock Detector

The output of the lock detector is high when the VCO control voltage is between -9.5V and 11.5V. Outside this range the output is turned low.

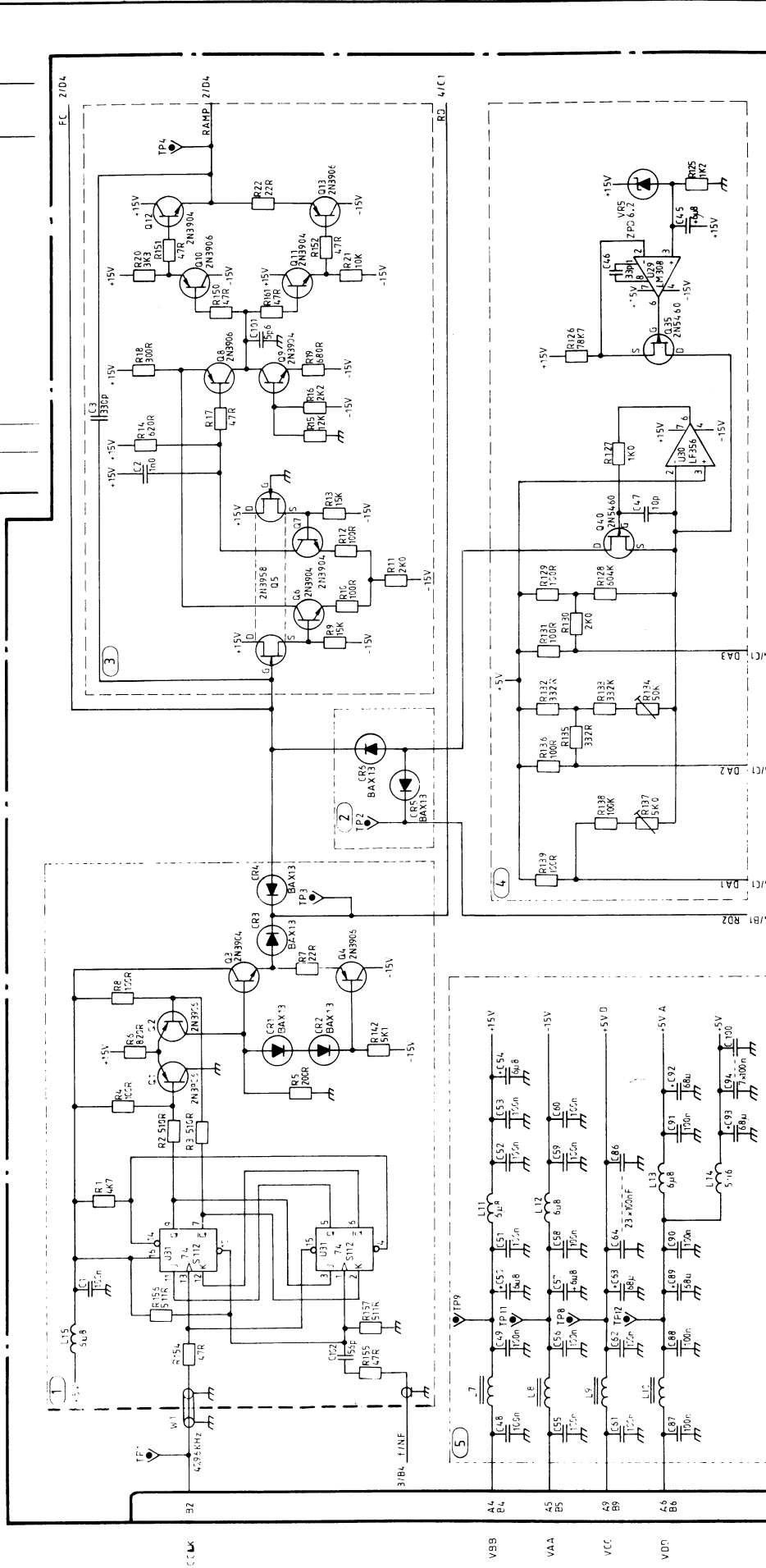
12. Output Buffer

The necessary amplification and isolation are provided by the output Buffer U26. Undesired spurious and harmonic outputs are attenuated by the band-pass filter  $L_5$ ,  $L_6$  and the attenuator  $R_{62}$ - $R_{64}$  insures a low VSWR. The output is attenuated approx. 60dB by activating  $Q_{26}$ .

13. Isolation Amplifier

The signal from the output buffer is fed through the cascode configuration  $Q_{27}$  and  $Q_{28}$  to protect the VCO from noise generated by the prescaler.

Dansk Radio AS		FREQUENCY GENERATOR SYNTHESIZER	
DR 80.10.24	80.10.24	CH. 2	AP
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLI- METRES AND TOLERANCES IN ACCORDANCE WITH DS 2075	ANGLES LIN DIM.	MATERIAL M 3000	APPLICATION NEXT ASSY USED ON
4 5 7 8 4 1			
FIRST ANGLE PROJECTION	SIZE A 2	CLASS: A 2	NO.: 4 4 8 1 6 8
		SCALE	SHEET 1 OF 4



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVAL
2 03	A	REVISED	810202	1/DR
	B	AM 81021	810619	GS



14. Prescaler

The prescaler has a divide ratio of  $N=17$  depending on the logical level of U16 pin 10. ECL to TTL conversion is provided by  $Q_{29}$ . Noise from the prescaler is isolated from the phase detector by the inverter  $Q_{30}$ .

15. Synchronizer

The synchronizer generates the timing signals for the sample and hold, ramp down, D/A conversion and pulse removal. One cycle of the Synchronizer is similar to one reference cycle. (24.4μsec). One reference cycle contains 1831-2563 VCO cycles, depending on the tune frequency. The reference cycle is defined at the negative transition of U21 pin 5. When 1536 VCO-cycles remain in the reference cycle, U18A is clocked and the sample and hold circuit is activated. When 1280 VCO-cycles remain, the decode counter U17 starts counting, defining the time for the ramp down period. The D/A conversion for the phase compensation is started when 1216 VCO-cycles remain (U19 pin 9). In case of an overflow from the adder U12 the pulse removal will take place when 192 VCO-cycles remain. The pulse remove signal is present at U20 pin 9.

16. Pulse Swallowing Counter

The counter is built by 3 4-bit counters and 1 flipflop. When the down counter U15 reaches 0000, U15 is reset by U18B and the counter ratio for the prescaler is changed from 17 to 16. The counter ratio  $N$  is loaded into the counters in binary code. The binary code is split into a 4-bit code  $A$  and a 8-bit code  $P$ . Thus the wanted ratio is

$$N = P \times 16 + A$$

At the start of the reference cycle all counters are loaded. The first  $A \times 17$  VCO-cycles the prescaler ratio is 17. U15 is reset and U14, U13 go on counting the remaining  $(P-A) \times 16$  VCO-impuls. The result is

$$A \times 17 + (P-A) \times 16 = P \times 16 + A = N$$

When all counters reach the zero state, U13 pin 13 goes low. After 1 prescaler cycle = 16 x VCO cycles, U21 pin 5 goes low, loading all 3 counters. After 2 prescaler cycles, the load signal is inhibited and the count down period starts. As loading takes 32 VCO cycles, the counter must be programmed to the desired ratio minus 32.

17. Rate Counters

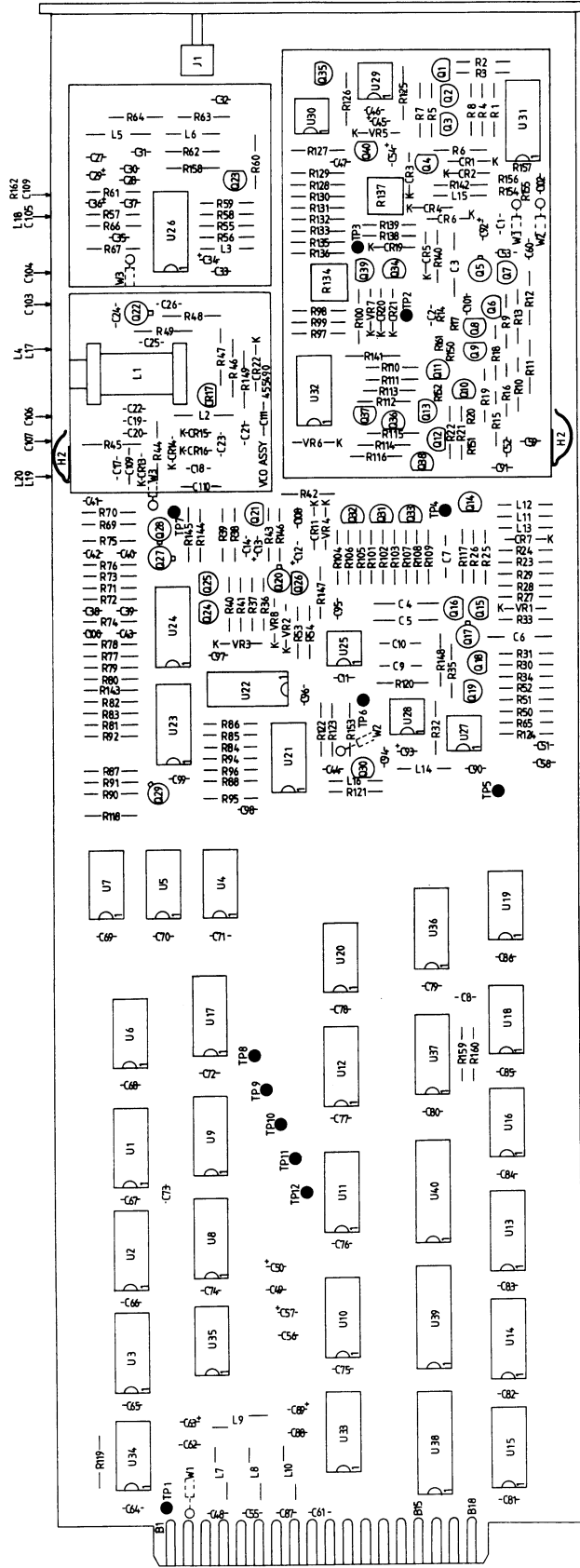
For each reference cycle, the content of the latches U8, U9 is loaded into the linear counters U1-U3. In the ramp down period, U1-U3 are counted down with a frequency  $f_{vco}/64$ . When they reach the zero state, they are reset by an external flip-flop. Each counter corresponds to 4-bit of the latches U8, U9 and the period of time in which the counters are active is proportional to the 4-bit content of the latch. While the counters are active, the switches  $Q_{31}-Q_{33}$  are switched "ON".





REVISIONS		
ZONE LTR	DESCRIPTION	DATE APPROVAL
1	REVISED	8/10/02
2	AM 84709	30/10/04
3	AM 84709	30/10/04
4	AM 84709	30/10/04
5	AM 84709	30/10/04
6	AM 84709	30/10/04
7	AM 84709	30/10/04
8	AM 84709	30/10/04
9	AM 84709	30/10/04
10	AM 84709	30/10/04
11	AM 84709	30/10/04
12	AM 84709	30/10/04
13	AM 84709	30/10/04
14	AM 84709	30/10/04
15	AM 84709	30/10/04
16	AM 84709	30/10/04
17	AM 84709	30/10/04
18	AM 84709	30/10/04
19	AM 84709	30/10/04
20	AM 84709	30/10/04
21	AM 84709	30/10/04
22	AM 84709	30/10/04
23	AM 84709	30/10/04
24	AM 84709	30/10/04
25	AM 84709	30/10/04
26	AM 84709	30/10/04
27	AM 84709	30/10/04
28	AM 84709	30/10/04
29	AM 84709	30/10/04
30	AM 84709	30/10/04
31	AM 84709	30/10/04
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33	AM 84709	30/10/04
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42	AM 84709	30/10/04
43	AM 84709	30/10/04
44	AM 84709	30/10/04
45	AM 84709	30/10/04
46	AM 84709	30/10/04
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93	AM 84709	30/10/04
94	AM 84709	30/10/04
95	AM 84709	30/10/04
96	AM 84709	30/10/04
97	AM 84709	30/10/04
98	AM 84709	30/10/04
99	AM 84709	30/10/04
100	AM 84709	30/10/04

ON SOLDERING SIDE



Dansk Radio AS		TITLE	
		FREQUENCY GENERATOR SYNTHESIZER	
		80.11.26	
		7	
		AP	
		AP	
		FIRST ANGLE PROJECTION	
		SIZE A1	
		CODE IDENT DRAWING NO. 448168	
		SCALE 2:1	
		SHEET 1 OF 1	

APPLICATION		MATERIAL	
		H3000	
		USED ON	
		NEXT ASSY	
		457841	
		UNLESS OTHERWISE SPECIFIED	
		DIMENSIONS ARE IN	
		TOLERANCES ARE IN	
		ACCORDANCE WITH DS 2075	
		ANGLES	
		LIN DIM	
		AP	
		CH	
		DR	

#### 18. Current Generators

3 current sources are used for the D/A conversion and the ramp up. The FET  $Q_{39}$  is inserted to insure a high output impedance.

#### 19. Adder/Accumulator

For each reference cycle, the latches U8 and U9 are clocked and the fraction part, present at the input of the adders U10-U12, is added to the content of the two latches. When the adders overflow, the synchronizer is activated and one pulse is removed in the counting sequence.

#### 20. Current Switches

The current switches  $Q_{31}$ - $Q_{33}$  are operated from the Rate Counter, U4, U5 and U7.

The current switched by  $Q_{33}$  is also used as ramp up current for the ramp generator.

Consequently the ramp up current and the current for the D/A conversion of the most significant 4-bit is the same current.

$Q_{36}$ - $Q_{38}$  generates the switch voltages for the ramp up D/A switch  $Q_{34}$ .

#### 21. Interface

The data selector U33 selects the desired input or output latch.

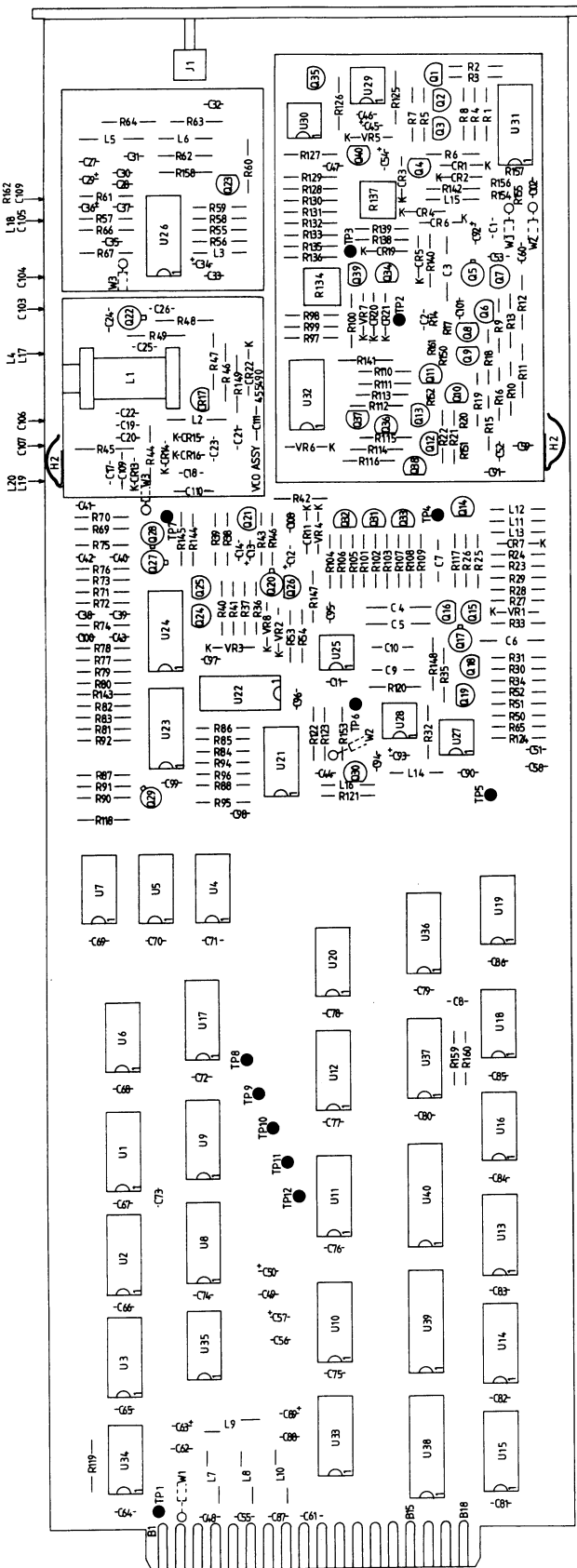
The 24-bit frequency information is available at the output at U38-U40.

The input latch U36 sets the frequency range and the  $\overline{RF\ ON}$ . At the output latch U37 the "out of lock" signal is checked, and the overflow indication from the adders U10-U12 is available at U37 pin 4.



REVISIONS		DATE	APPROVAL
ZONE/LTR	DESCRIPTION		
A	REVISED	10.03.00	✓
C	AT 84.09	13.06.04	VH
D	EM8009	13.06.04	VH
E	EM8003	18.11.88	

ON SOLDERING SIDE



Dansk Radio AS		Title	
		FREQUENCY GENERATOR SYNTHESIZER	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS. DIMENSIONS IN PARENTHESES ARE APPROXIMATE AND MAY VARY IN ACCORDANCE WITH DS 2075.		DR 84.09.04	80.11.26
		CH	2
		AP	2
		LIN. DIM	
		MATERIAL	
457841 M3000 USED ON		FIRST ANGLE PROJECTION	
NEXT ASSY		SIZE CODE IDENT DRAWING NO	
		A1 44.8168	
		SCALE 2:1	
		SHEET 1 OF 1	



ASSY 488232, STANDARD ASSEMBLY

Service Sheet A2

### ① Phase-Frequency Detector

U23 generates a matched set of currents. One for the current translator U19, Q8, twice this current to Q9, and a reference current to the D/A converter U22. The current from Q8 acts as a ramp up current for C29. R60, 61, 62 limiting this function. The ramp down current from Q9 is controlled by the switches CR5, CR6. The ramp down time is dependent on the count down VCO signal. This is performed by a set-reset function, U18a and Q7. The wave form in TP10 is an approx. triangle. This is fed to the loop integrator U20, C31, C32, R65 by R62. The loop bandwidth is approx. 800 Hz. The diodes CR7, VR3 reduce saturation time in the loop. To reduce 40.96 kHz sidebands a second order low pass filter with a cut-off frequency at 2.5 kHz is added, U21, R66 - 67, C33 - 34.

### ② 1,4 MHz VCO

Q11, Q12 performs an oscillator with tuned circuit, L17-18, C39, C40 in the collector of Q11. The feedback path is performed between the emitters of Q11 - 12. A buffered output is taken from Q12 via a low Q tuned circuit L22, C42 -

43. The voltage controlled capacitor diodes CR8, CR9 allow a tuning range at approx. 6.8 kHz/V. The nominal DC voltage in TR11 is +3V at 1,400 MHz adjusted by L18 at 25°C room temperatur.

### ③ Output Amplifier

0dBm 50  $\Omega$  output is performed by Q13 with the tuned circuit L19, C48, L20. R87 - 88 - 89 is a 3dB attenuator which gives a more exact 50 ohm output impedance.

Q14 allows RF ON/OFF switching, with approx. 50dB attenuation.

### ④ Buffer-Translator.

Q15-16 is an emitter coupled amplifier, which gives excellent isolation between the counter and the VCO. The output level is a 0-5V square wave.

### ⑤ Lock Detector.

The control voltage to the VCO is fed to a window detector U17a-b. The loop is within proper conditions if the voltage in TP11 is  $0V < TP11 < +6V$ . Under this condition Q17 gives a HIGH, TP14.

## ⑥ API Generator

The D/A converter (U22), forms a part of the API system (analog phase interpolator). It converts an 8 bit phase information from the adder in ⑧ to a ramp current. This current is converted to a voltage by R61, and injected to the loop by R60. It is adjusted to eliminate the stepped ramp error signal arising from the fractional system ⑧.





**7 Loop Divider.**

This divider works in two modes. Divide by 34 or 35. When the fractional part is zero (input to U32 - 33 - 35 equals 0), the counter is continuously divided by 34. The output frequency is then  $34 \times 40,96 \text{ kHz} = 1392,64 \text{ kHz}$ . In general the average output frequency is set by;

$$F_o = (34 + \frac{F}{4096}) 40,96 \text{ kHz}$$

where  $F = 0-4095$  (fractional part).

If  $F = 1$ , 4096 reference pulses will elapse before the counter receives one divided by 35 instruction. This means that the phase-detector will receive an instruction for raising the frequency each  $4096 \times \frac{1}{40,96} \text{ kHz} = 0,1 \text{ sek}$ . The average frequency will raise 10 Hz. For  $F = 2$ , 20 Hz and so on. For  $F_o = 14000,0 \text{ kHz}$ ,  $F = 736$ .

**8 Adder and Phase Accumulator.**

The fractional part consists of 3 cascade coupled 4 bit adders connected with  $3 \times 4$  bit latches. On reference clock, the data present on the data inputs of the latches will be transferred to the Q outputs. An addition will occur between these outputs and the data present on the frequency set inputs. After  $4096/F$  additions U35

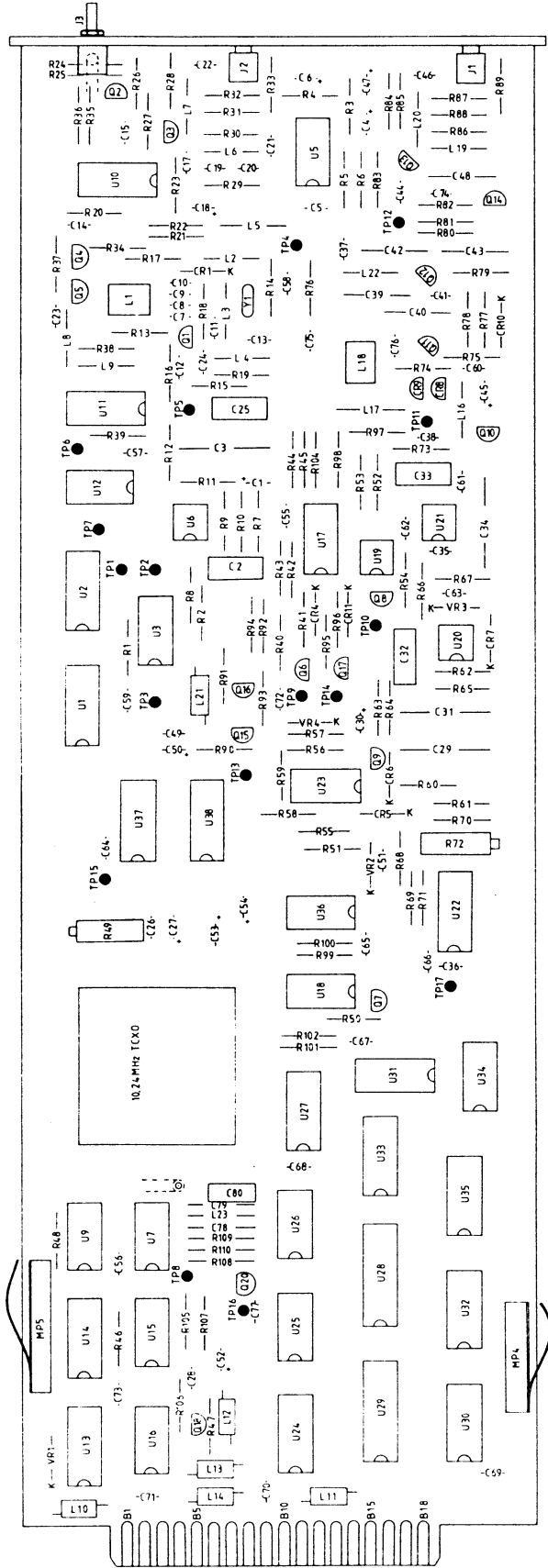
will give an overflow which is used to change the counter to divide by 35 (the same as removing 1 VCO clock cycle). The contents of the data latch U30-31-34 gives a phase information that converted in **6** will show a stepped ramp function similar to the error in the loop when the API is disconnected.

**9 Microcomputer Interface.**

U28 - U29 converts the 8 bit data bus to 14 bit data information. 11 bit for BFO frequency set, 1 for BFO RF ON/OFF, and 1 for 73,6 MHz RF ON/OFF switching. U27 reads BFO lock, 73,6 MHz lock, 10.24 MHz level and fractional control, and transmits them to the  $\mu P$ . U24, U25, U26 is an address key system.



REVISIONS		DATE	APPROVAL
ZONE	DESCRIPTION		
1			
2			
3			
4			

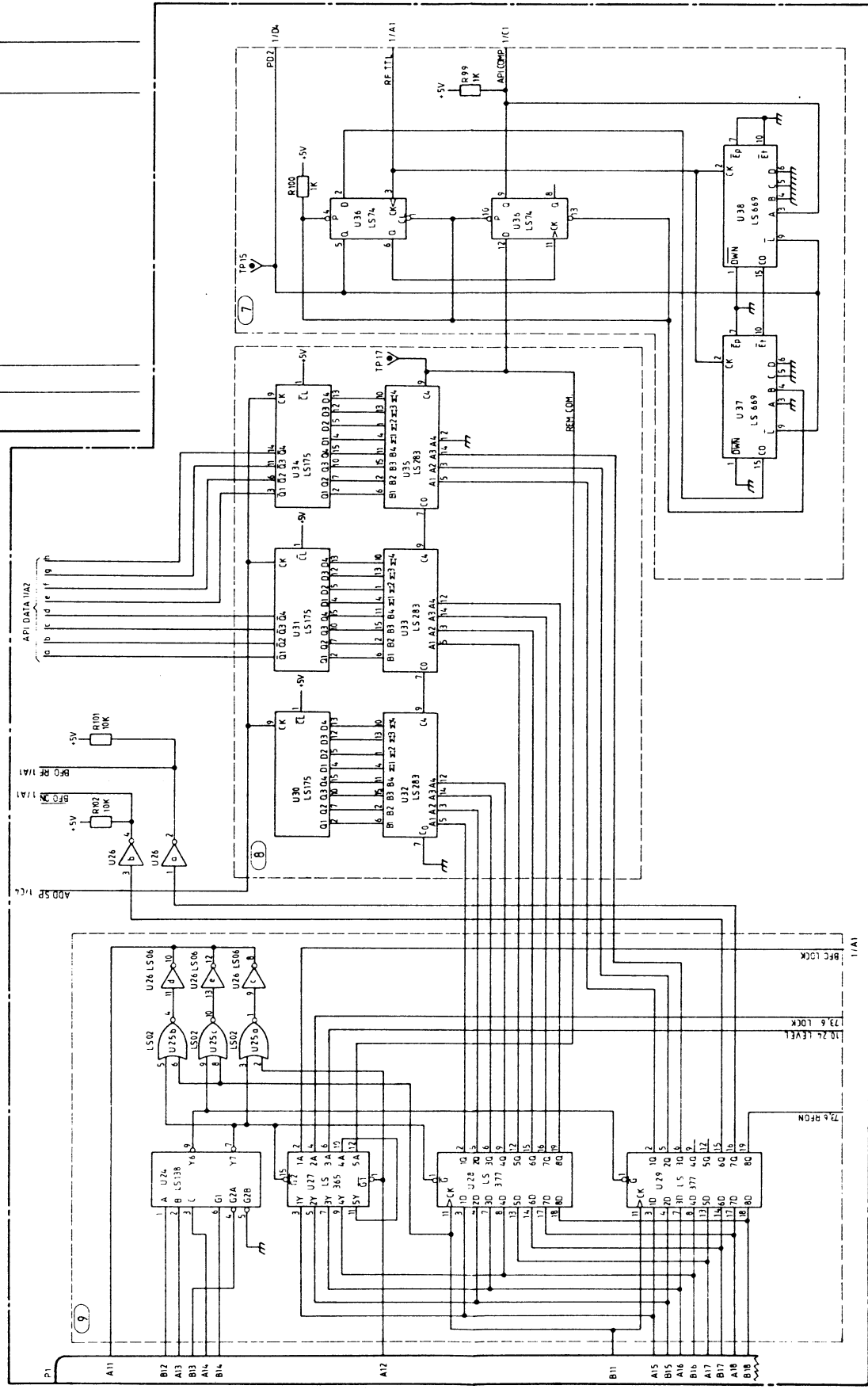



Danek Radio AS		dra	
DR	VH 85 87	TITLE	FREQUENCY GENERATOR STANDARD
CW	5 47 8-5-77	SIZE	CODE IDENT DRAWING NO 48 82 32
AP		SCALE	2:1
AP		PROJECTION	1
AP		ANGLE	
AP		MATERIAL	
AP		REVISION	
AP		USED ON	
AP		APPLICATION	

**19) Divider.**

U7 - 8 - 9 divides the input frequency on 5,12 MHz (TP8) with 160. The output TP3 is a negative pulse with a width of 150 nS. The signal is used as input to the phasedetector.

REVISIONS			DATE	APPROVAL
ZONE	LTR	DESCRIPTION		



FIRST ANGLE PROJECTION			SIZE	CLASS	NO.:
			A 2		48 82 32
			SCALE:		SHEET 2

(10) Divider.

U1 - 2 - 3 divides the input frequency of 3,68 MHz with 115 to 32 kHz (31,25 nS) TP1. This signal feeds the phase/freq. detector. The signal in TP1 is a negative pulse with a width of approx. 270 nS.

(11) Phase-Frequency Detector.

U3 performs a SET-RESET phase/freq. detector. It compares the 32 kHz from U1 - 2 - 3 (TP1) with a reference signal from U9b, TP3. The output TP2 is a duty cycle controlled square wave with a frequency of 32 kHz.

(12) Fine Regulator.

The +15V is stabilized to a +11V low noise reference for the 73,6 MHz VCX0 and the 1,4 MHz VCO.

(13) 73,6 MHz VCX0.

The X-tal Y1 operates in series resonance mode with the voltage controlled circuit CR1, L2. It forms the feedback path in the oscillator performed by Q1 and the low Q tuned circuit L1, C8, C9. L3 eliminates the parallel capacitance in Y1. U10c ECL amplifier operates as buffer amplifier. The tune voltage in TR5 is nominally adjusted to +4V by L1, at 25°C room temperature.

(14) Output Amplifier.

The 73,6 MHz +7 dBm output is performed by 1/3 ECL amplifier U10c and Q3 with the tuned circuit L2, L19, L7. R31-32-33 is at 3 dB attenuator which gives a more exact 50  $\Omega$  output. An RF ON/OFF switch function is performed by U16 and Q2. The output is disabled by approx. 60 dB.

(15) ECL to TTL Translator.

U10b performs an isolation and driver amplifier for Q4, Q5 emitter coupled amplifier. L8, L9, R38 is a peaking circuit.

(16) Prescaler.

U11 divides by 4. The output is 18,4 MHz, TP6.

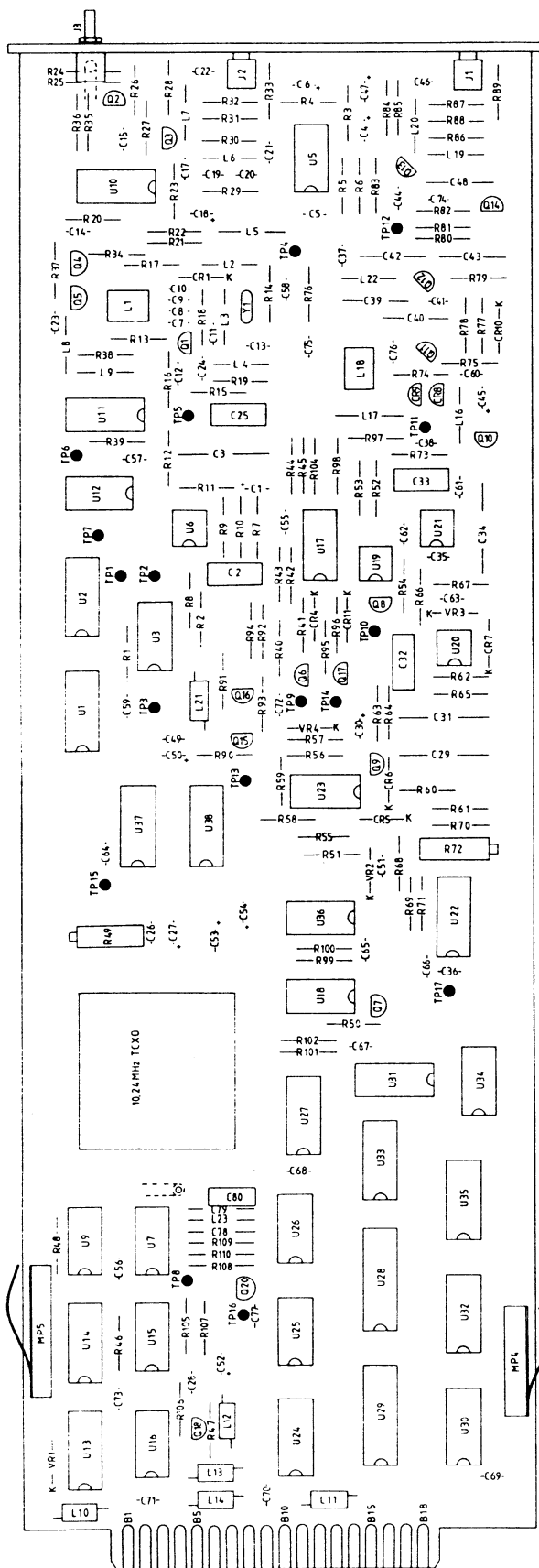
(17) Divider.

U12 divides the 18,4 MHz by 5. The output is 3,68 MHz, TP7.

(18) Loop Filter.

The square-wave from the phase detector is integrated by R8, C2. U6 is an amplifier-filter removing the 32 kHz from the control voltage to the VCX0. The loop bandwidth is approx. 10 Hz.

REVISIONS		DATE	APPROVAL
ZONE	DESCRIPTION		
1			
2			
3			
4			



Danak Radio AS		d/a	
TITLE		FREQUENCY GENERATOR STANDARD	
DR	5.5.87	CH	5.4.87
AP		AP	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE IN ACCORDANCE WITH IS 2011		SIZE CODE IDENT DRAWING NO	
ANGLES		A1	
LIN DIM		48 82 32	
MATERIAL		SCALE 7:1	
APPLICATION		FIRST ANGLE PROJECTION	
48 82 32 NEXT ASSY USED ON		SHEET 1 OF 1	



(20) Reference Divider.

The buffered Main reference oscillator signal on 10,24 MHz is fed to a divide by 2 (U15a), a divide by 250 performed by U13-14-9d-15b, and a detector Q18, that indicates the presence of the 10,24 MHz. The output from U15b is used as a 40,96 kHz reference signal. The buffered signal from U16d is a negative pulse with a width of approx. 100 nS.

(21) Lockdetector.

The control voltage to the 73,6 MHz VCXO is fed to a window detector 1/2 U17. The loop is within proper conditions when this voltage is  $-10V < V < +9V$ . Under this condition Q6 gives a HIGH, TP9.

(22) Filter.

Power supply filter system.

(23) TCXO. Opt.000

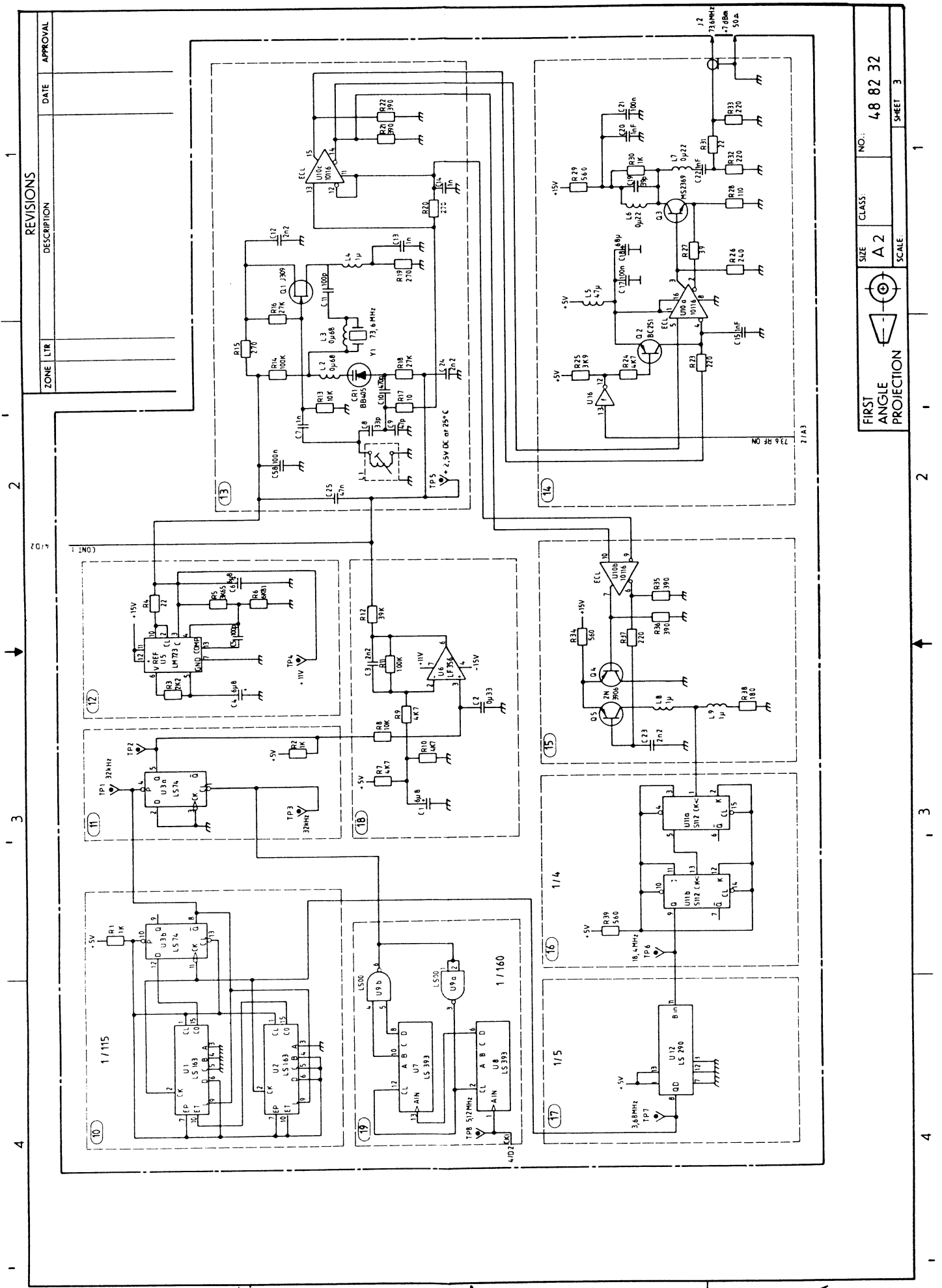
Master reference temperature compensated oscillator on 10,240 MHz. R49, frequency fine tuning adjustment.

(23) OCXO Opt.005

Master reference oven stabilized oscillator on 10,240 MHz R49, frequency fine adjustment.

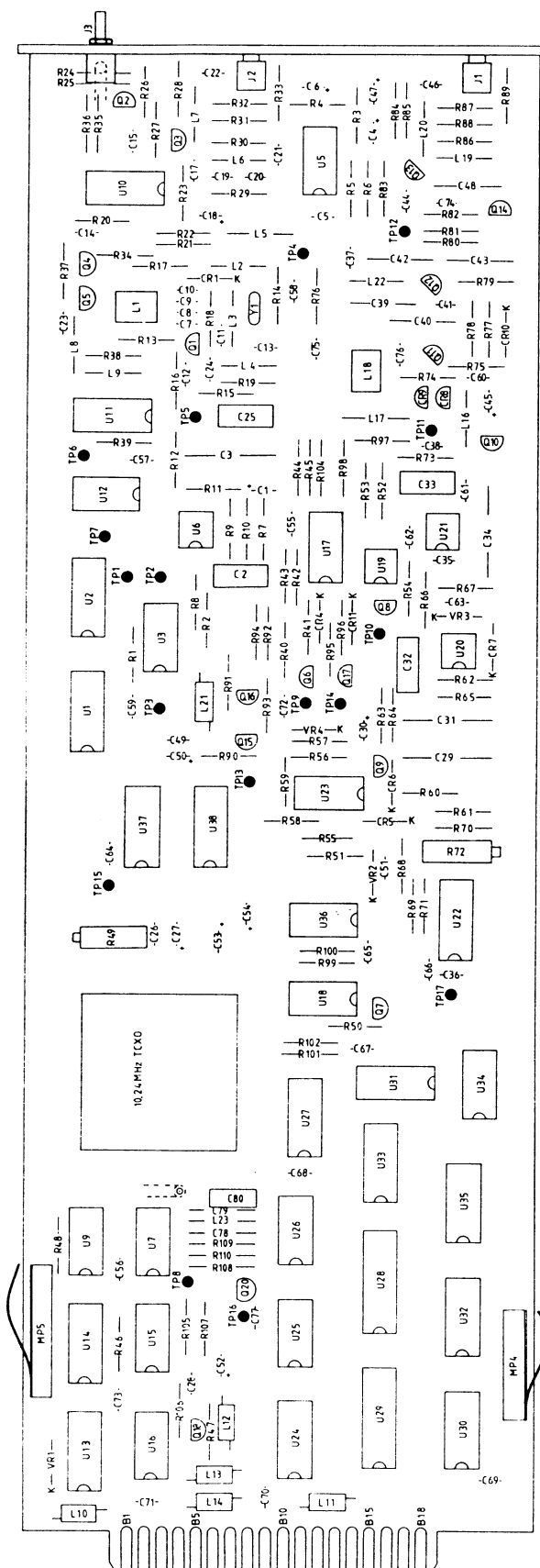
(24) 5.12 MHz Filter.

The 5.12 MHz square wave signal is buffered and filtered before being fed to coax connector J3.



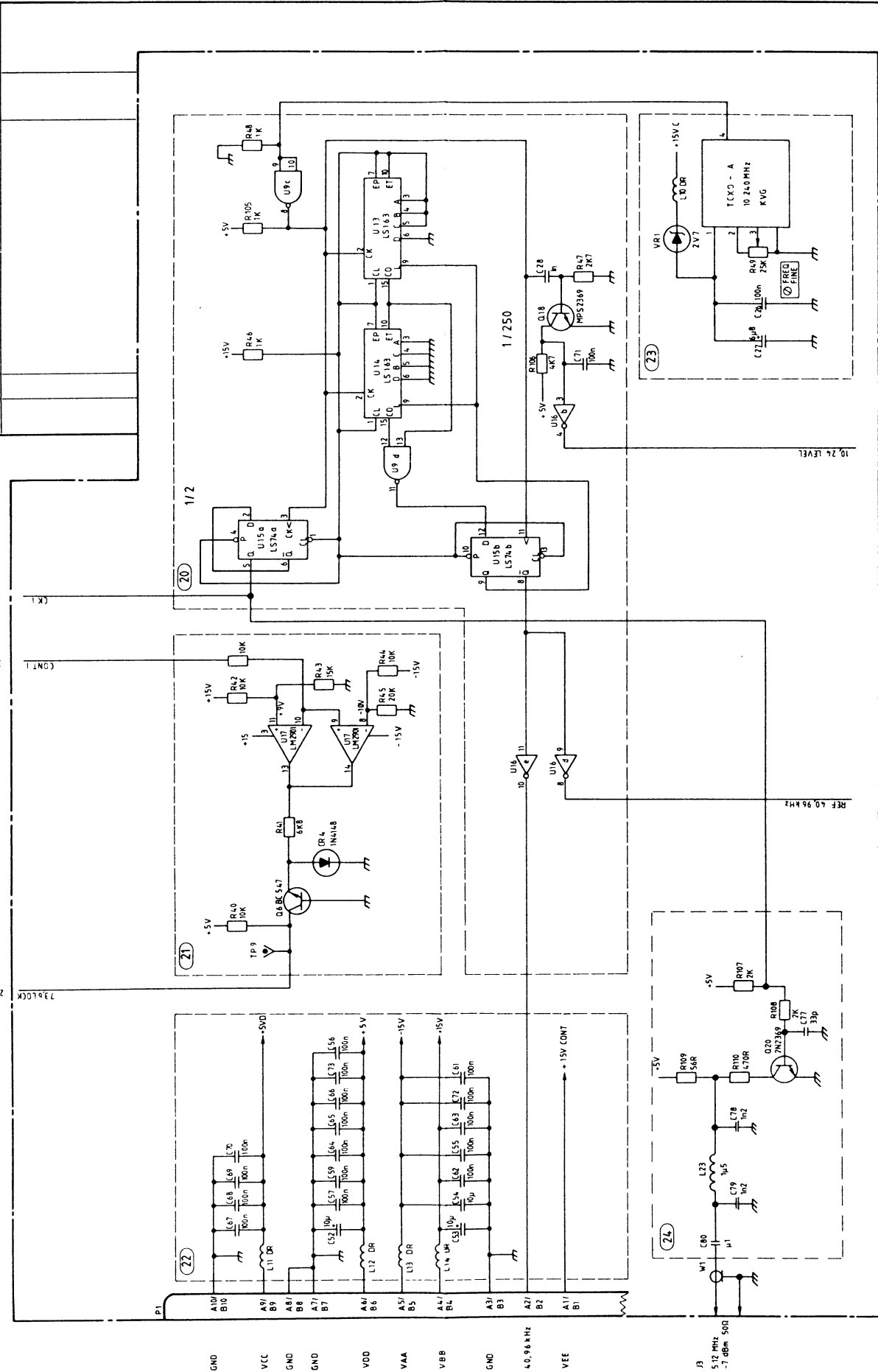
REVISIONS			
ZONE	LTR	DATE	APPROVAL
1			
2			
3			
4			

REVISIONS		DATE	APPROVAL
ZONE	DESCRIPTION		



Dansk Radio AS		dlja	
TITLE		FREQUENCY GENERATOR STANDARD	
DR	8.5.87	SIZE	CODE IDENT DRAWING NO
CH	5.4/8.5.87	AP	A1
AP		SCALE	2:1
FIRST ANGLE PROJECTION		SHEET 1 OF 1	
APPLICATION			
MATERIAL			
NEXT ASSY			
USED ON			

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE



NO.:	48 82 32
CLASS:	A2
SIZE:	A2
SCALE:	1
SHEET:	4

ASSY 448206, FRONT-END ASSEMBLY

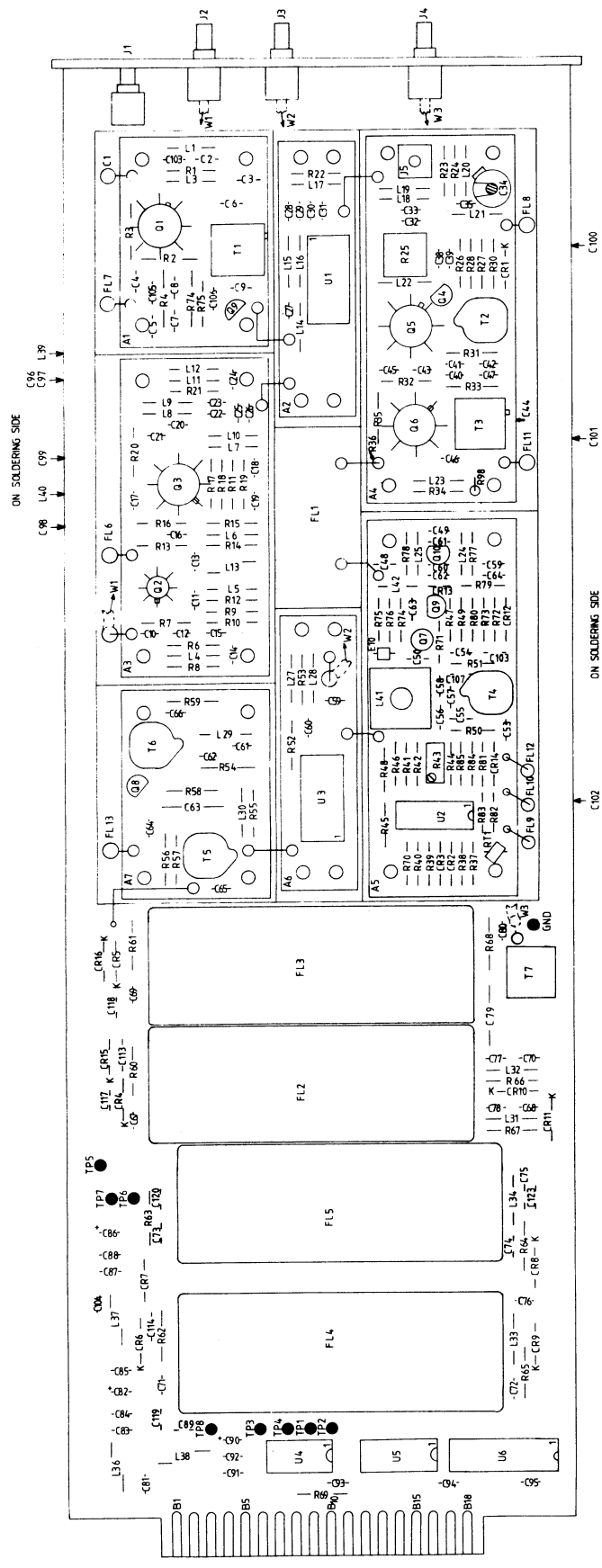
Service Sheet A3

① RF Preamplifier. Gain = +6 dB

② First Mixer. Gain = -6 dB

③ 1.LO Amplifier. Gain = +17 dB

REVISIONS		
ZONE	DESCRIPTION	DATE APPROVAL
G	EM87064	13.08.77 VH
H	EM87092-93-94-96	26.11.87 VH
D	EM84104	23.08.84 VH
E	EM 80006	9.9.86 VH
F	EM 87035	12.5.87 VH



NOTE  
 E1 - E3 MOUNTED ON W1  
 E4 - E6 " " W2  
 E7 - E9 " " W3

Dansk Radio AS		DR B D	80 10 02	TITLE
FRONT - END		CH		
AP		AP		
AP		AP		
MATERIAL		USED ON		
NEXT ASSY		M 3000		
APPLICATION				
SIZE		A1		
CODE IDENT				
DRAWING NO				
4 48 20 6				
SCALE				
SHEET 1 OF 1				

448240	RXL009	ANGLES	DR B D	80 10 02	TITLE
47712	RXL000	AP	CH		
47785	RX3000	AP	AP		
47547	OCEANIC	USED ON			
46529	M 3000				
APPLICATION					
SIZE		A1			
CODE IDENT					
DRAWING NO					
4 48 20 6					
SCALE					
SHEET 1 OF 1					

4 75 MHz IF Amplifier.

Voltage gain = +14dB. J5 is only used for factory adjustments.

5 75 MHz X-tal filter. Gain = -4dB

6 75 MHz Voltage controlled IF Amplifier.

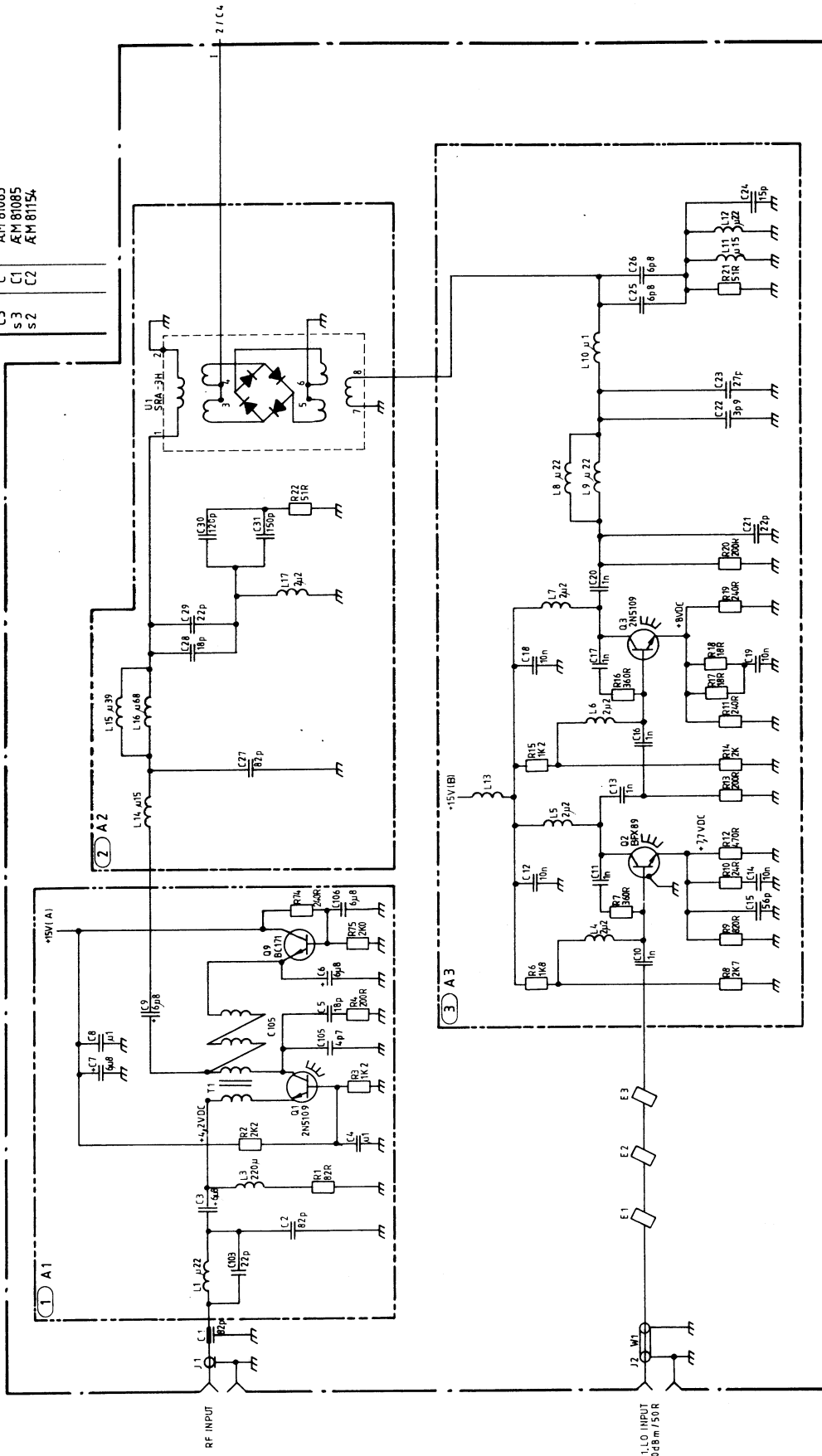
Voltage gain: -41dB to +9dB  
approx. controlled by the dc-voltage applied to Gate 2 of Q7 and the current of CR13. C56 to C58 together with L41 form a 72.2 MHz rejection filter.

U2 with surrounding components form an AGC shaping circuit for the AGC voltage AGC1. Offset adjustment (R43): With AGC voltage AGC1 equal to 9V, the gain reduction of the IF amplifier is adjusted to 50dB by means of R43 (T-amb. = +25°C). The voltage range of AGC voltage AGC1 is between 0V and +10V.

7 Feed-through Filter.



REVISIONS		DATE	APPROVAL
ZONE	LTR		
A	REVIS	810202	80
B	FM 81063	81052633	
C	FM 81085	810819	GS
S 3	FM 81154	820208	GS
S 2			
C2			



Dansk Radio AS		TITLE	
FRONT - END		80 09 12	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLI-METRES AND TOLERANCES IN ACCORDANCE WITH DS 2075		CH. 1.1.1.1	
ANGLES:		AP. 1.1.1.1	
LINES DIML:		AP. 1.1.1.1	
MATERIAL:		FIRST ANGLE PROJECTION	
45 78 41 M 3000		NO. 448206	
NEXT ASSY USED ON		SCALE	
APPLICATION		SHEET 1 OF 4	



⑧ Second Mixer.

Translate the 75 MHz IF-signal to  
1.4 MHz by mixing with 73,6 MHz.  
Gain = -6dB.

⑨ 1.4 MHz diplexer and amplifier.

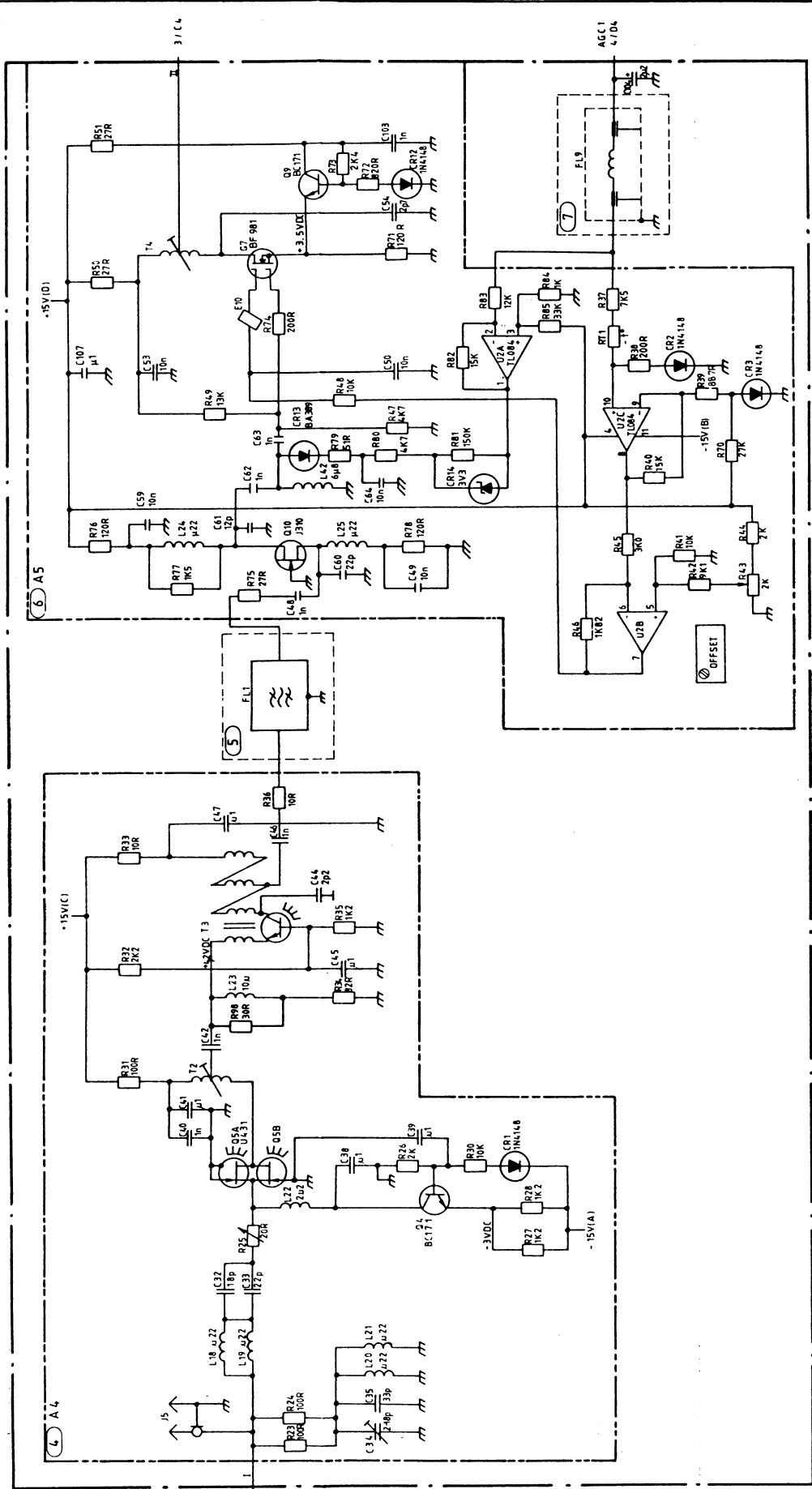
Voltage gain = +23 dB.

⑩ Information filterbank.

The diodes at the input and at  
the output of the filters switch  
the corresponding X-tal filter  
on, controlled by the logical le-  
vel applied to U4. A logical 1  
(+5V) switches the filter on.  
Voltage gain = -18 dB.

REVISIONS		
ZONE LTR	DESCRIPTION	DATE
C1	EM 81154	820208
C2	EM 84104	23.8.84
D	EM 86006	9.9.86
E	EM 87035	12.5.87
F	EM 87053	08.10.87
G	EM 87053	08.10.87
H	EM 87090-92-93-96	26.11.87

DATE	APPROVAL
820208	GS
23.8.84	VH
9.9.86	VH
12.5.87	VH
08.10.87	VH
26.11.87	VH



SIZE	CODE IDENT NO	DRAWING NO
A2		448206
SCALE		SHEET 2 of 2

FIRST ANGLE PROJECTION	1	2	3	4
------------------------	---	---	---	---

REV	DATE	APPROVAL
1	19.01.81	VH
2	26.11.87	VH
3	23.08.84	VH
4	19.09.86	VH
5	12.05.87	VH

REV	DESCRIPTION
1	448240
2	448240-01
3	448240-02
4	448240-03
5	448240-04

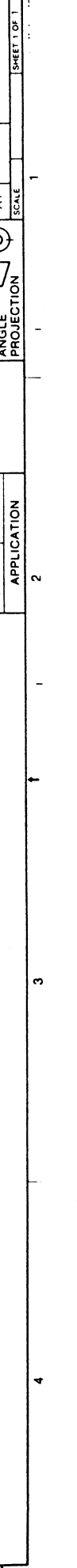
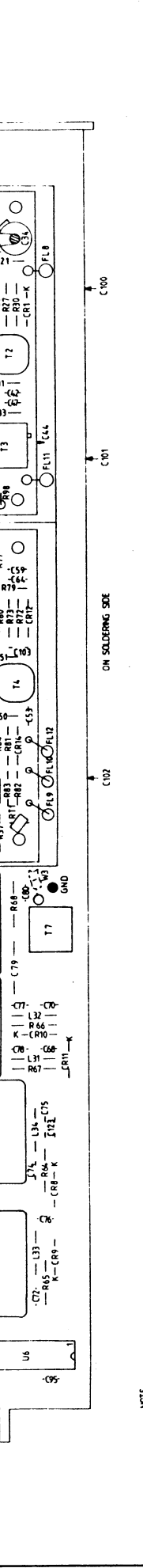
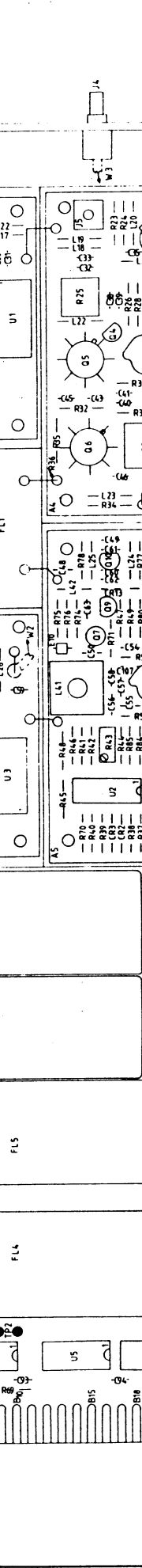
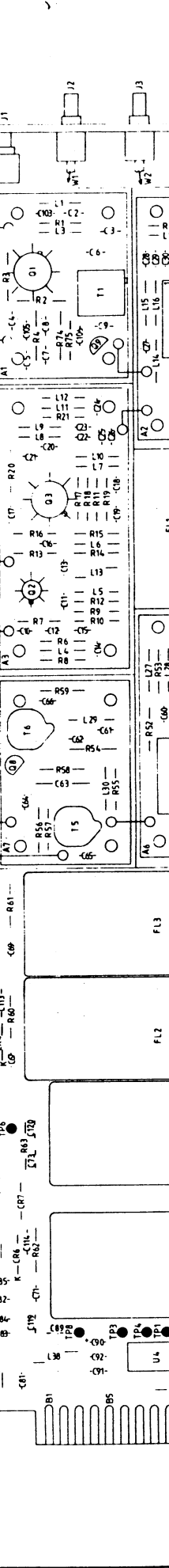
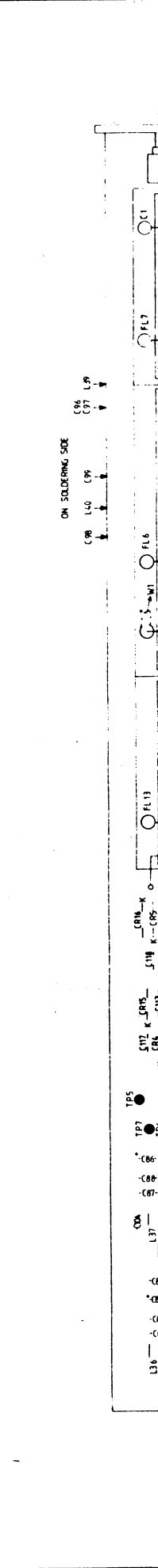
REV	DESCRIPTION
1	448240
2	448240-01
3	448240-02
4	448240-03
5	448240-04

REV	DESCRIPTION
1	448240
2	448240-01
3	448240-02
4	448240-03
5	448240-04

REV	DESCRIPTION
1	448240
2	448240-01
3	448240-02
4	448240-03
5	448240-04

REV	DESCRIPTION
1	448240
2	448240-01
3	448240-02
4	448240-03
5	448240-04

REV	DESCRIPTION
1	448240
2	448240-01
3	448240-02
4	448240-03
5	448240-04



NOTE  
E1 - E3 MOUNTED ON W1  
E4 - E6 - - - - - W2  
E7 - E9 - - - - - W3

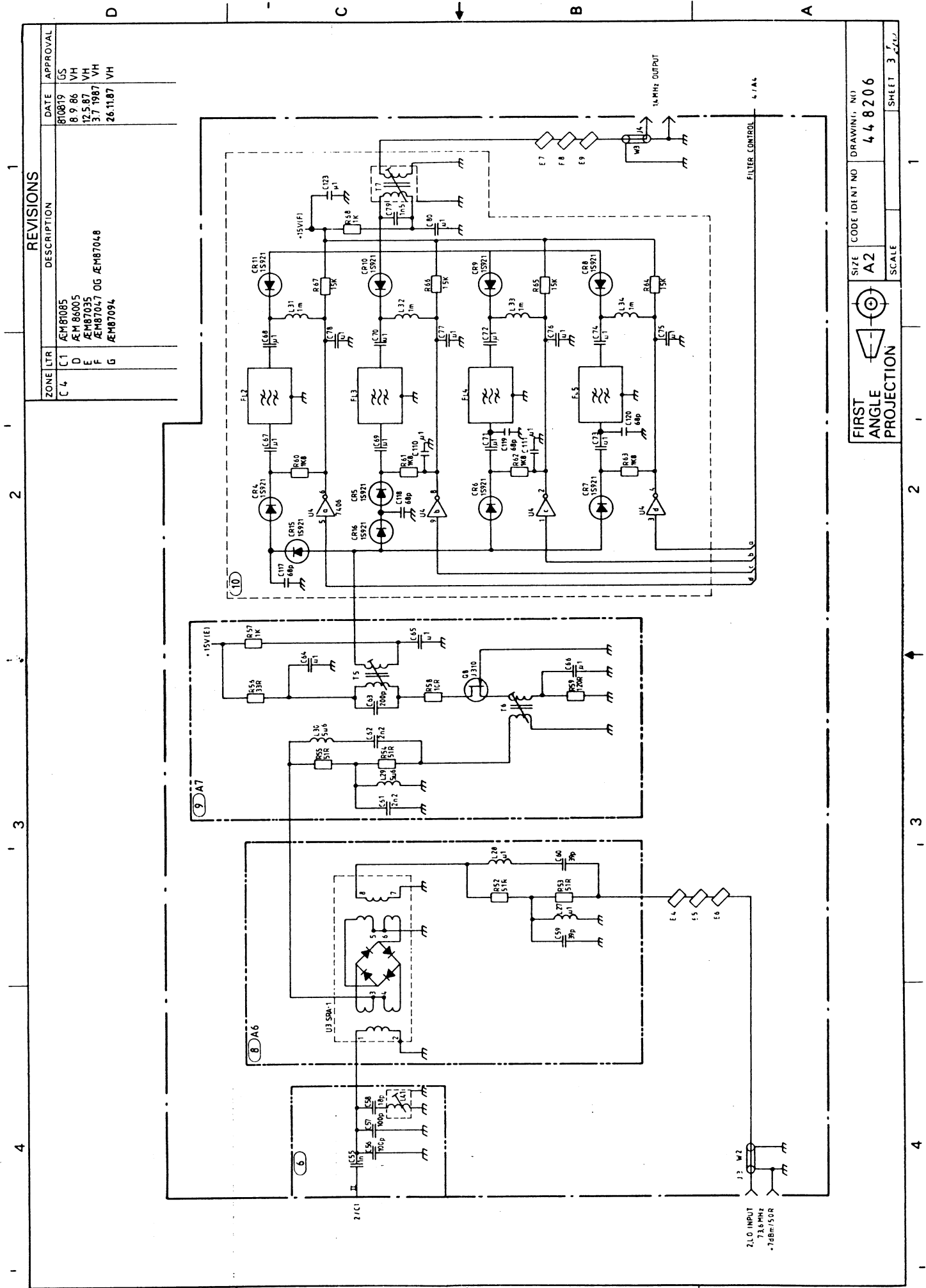
Dansk Radio AS		TITLE	
8010 02		FRONT - END	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS AND DECIMALS ARE IN ACCORDANCE WITH DS 2075		FIRST ANGLE PROJECTION	
DR B.D.	CH	SIZE	CODE IDENT
AP	AP	A1	448206
APPLICATION		DRAWING NO	
NEXT ASSY USED ON		SCALE	
448240		1	
448240-01		SHEET 1 OF 1	

⑪ Filtering circuit for bias voltages.

⑫ Microcomputer interface circuit.

The address of the module is FF26.

When the five least significant address bits are applied to the assembly in inverted form, output U5-5 follows  $\overline{WR}$ . On a positive transition of  $\overline{WR}$ , data is loaded into U6 and appears at the Q-outputs.  $\overline{TIACK}$  (A11) follows  $\overline{WR}$  provided that the correct address is present.



# REVISIONS

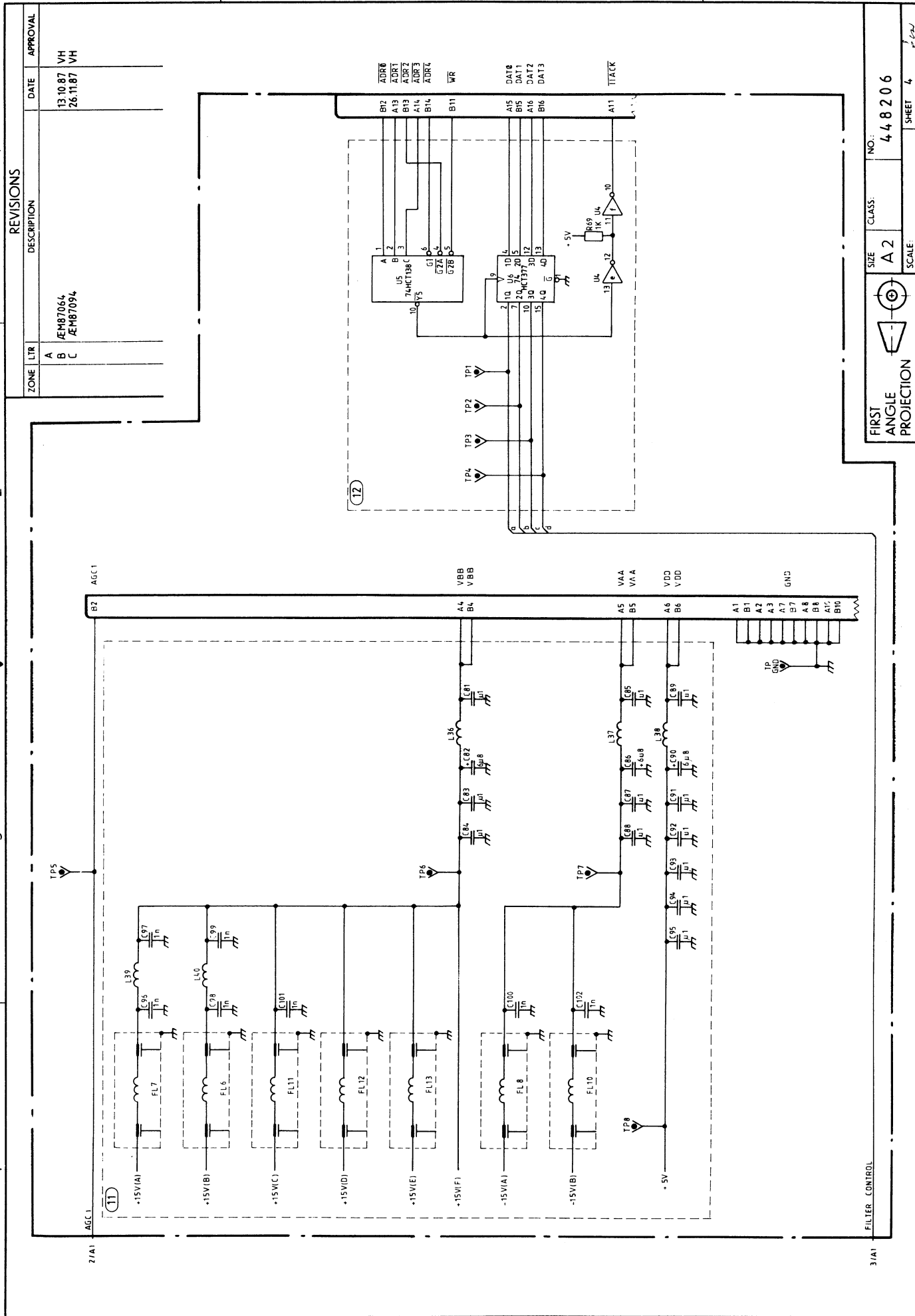
ZONE	LTR	DESCRIPTION	DATE	APPROVAL
C 4	C 1	ÆM81085	8/08/19	GS
	D	ÆM 86005	8 9 86	VH
	E	ÆM87035	12.5.87	VH
	F	ÆM87047 OG ÆM87048	3 7 1987	VH
	G	ÆM87094	26.11.87	VH

SIZE	CODE IDENT NO	DRAWING NO	SHEET
A2	A2	44 8206	3
SCALE		3 1/4"	









REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVAL
	A	ÆM87064	13.10.87	VH
	B	ÆM87094	26.11.87	VH
	C			

FIRST ANGLE PROJECTION			
SIZE	CLASS	NO.	SCALE
A2		448206	

ASSY 466751, 466743, SUBOCTAVE FILTER

Service Sheet A4

①. Input Protection clipper.

The output signal at C4 is limited to 10Vpp by CR2 and CR3.

At frequencies above 5MHz Q1 will conduct when the RF voltage at C3 exceeds 10Vpp, thereby lowering the bias voltage at CR2 and CR3. This tends to make the clipping level frequency independent, as CR4 and CR5 are fast switching diodes.

②. Marine duplex filters (optional).

③. Attenuator, filters 13-20MHz and 20-30MHz.

Relay K5 switches the 10dB attenuator R8. Current to all range-switching diodes is supplied through resistors R4 (filter inputs) or R10 (filter outputs). A filter is switched in by a low level at the controlline.



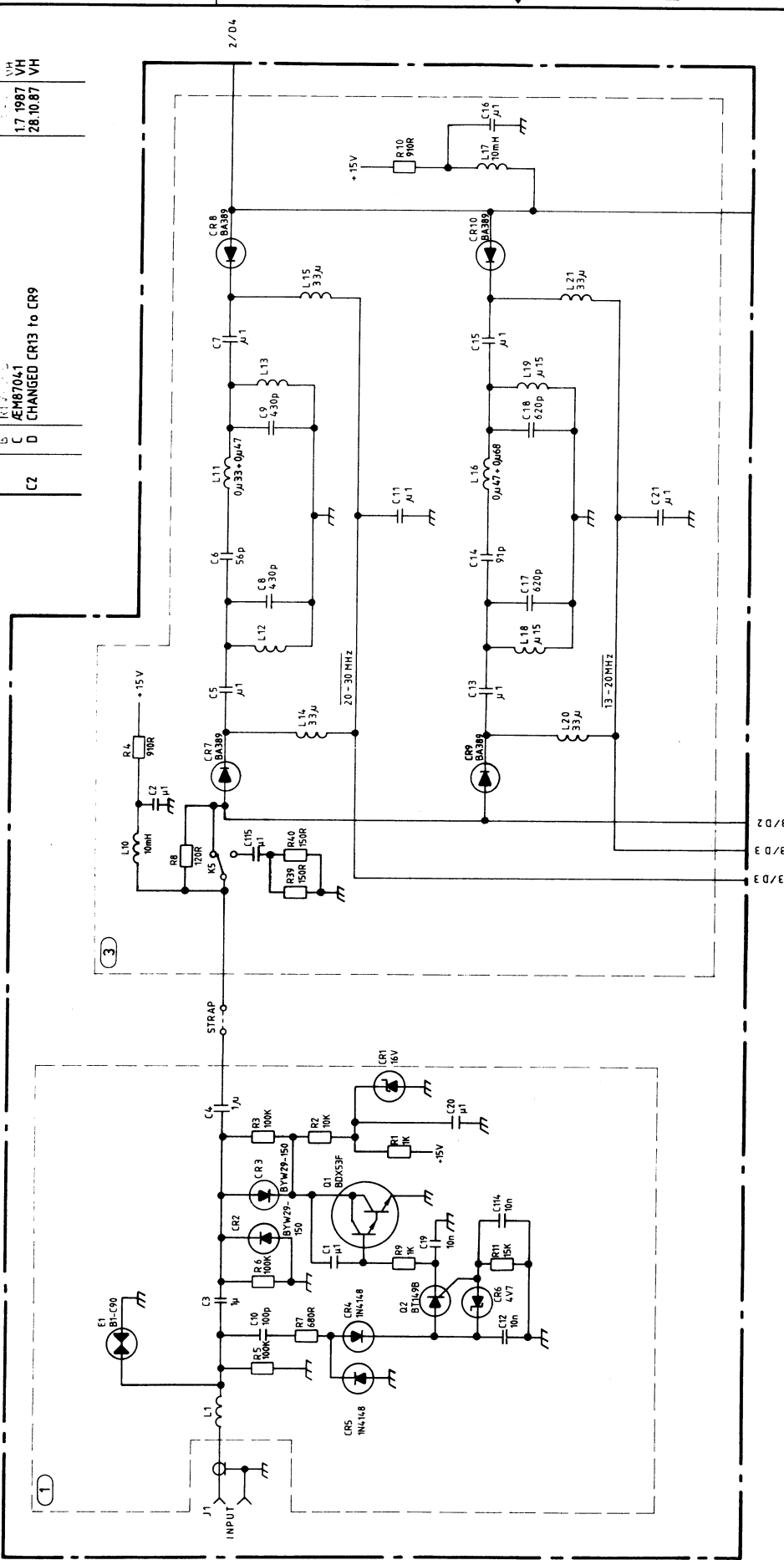
④ Marine duplex filters (optional).

⑤ 30MHz LP filter.

⑥ Output Protection circuit.

The output at C48 is limited to 6Vpp.

REVISIONS		
ZONE/LTR	DESCRIPTION	DATE
A	REVISION	17.1987
B	REVISION	17.1987
C	REVISION	17.1987
D	REVISION	17.1987
C2	CHANGED CR13 to CR9	28.10.87
		VH
		VH



Dansk Radio AS		TITLE	
DR. J. Larsen/EVB		8.0704	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETRES AND TOLERANCES ARE IN ACCORDANCE WITH DS 2075		SUBOCTAVE FILTERS, WITHOUT DUPLEX	
ANGLES		SIZE	
LIN. DIM.		A2	
MATERIAL		CODE IDENT	
45 78 41 M 3000		DRAWING NO.	
47 17 12 RX 4000		46 67 43	
NEXT ASSY USED ON		SCALE	
APPLICATION		SHEET 1 OF 5	



(7.) Range Decoder.

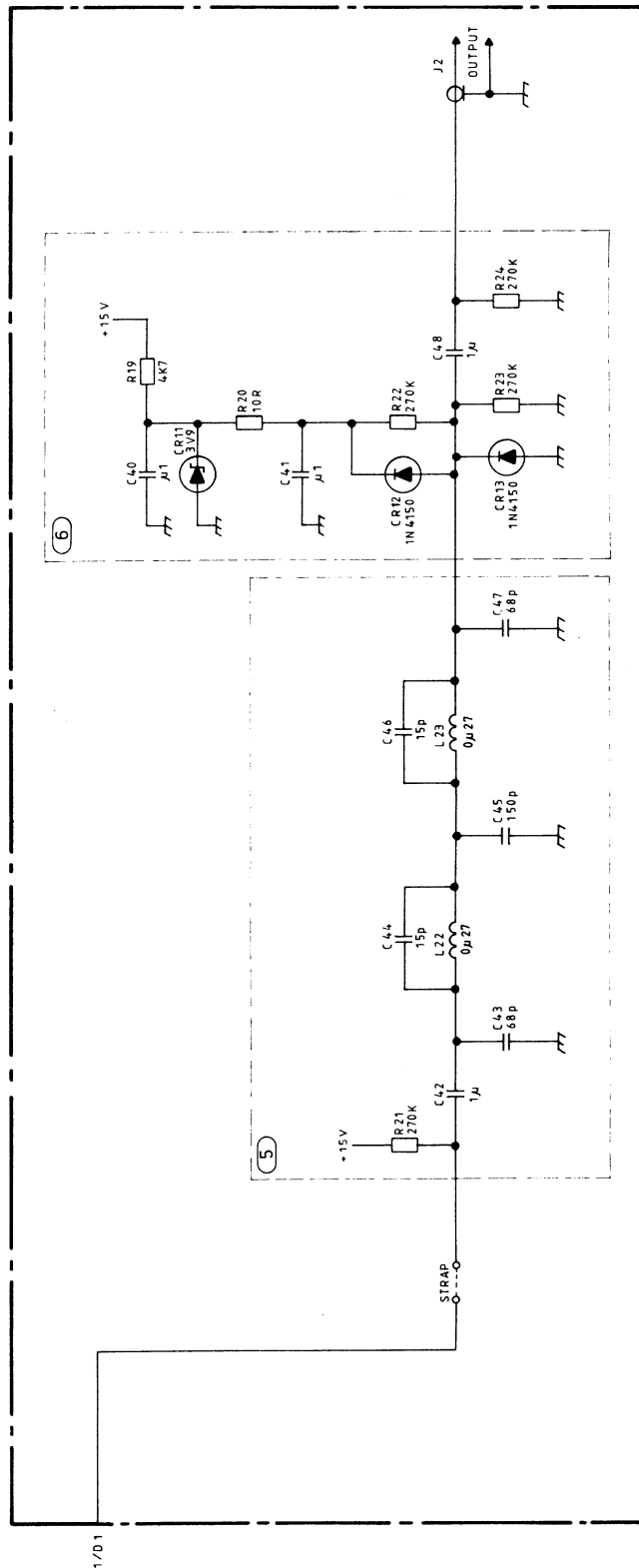
U1 is a BCD to 1 of 10 decoders with open collector outputs.

(8.) Filters 3.6 - 5.5MHz, 5.5 - 8.5MHz and 8.5 - 13MHz.

A filter is switched in by a low level at the controlline. Diodes CR17 and CR19 are conducting when a filter below 5.5MHz is selected.



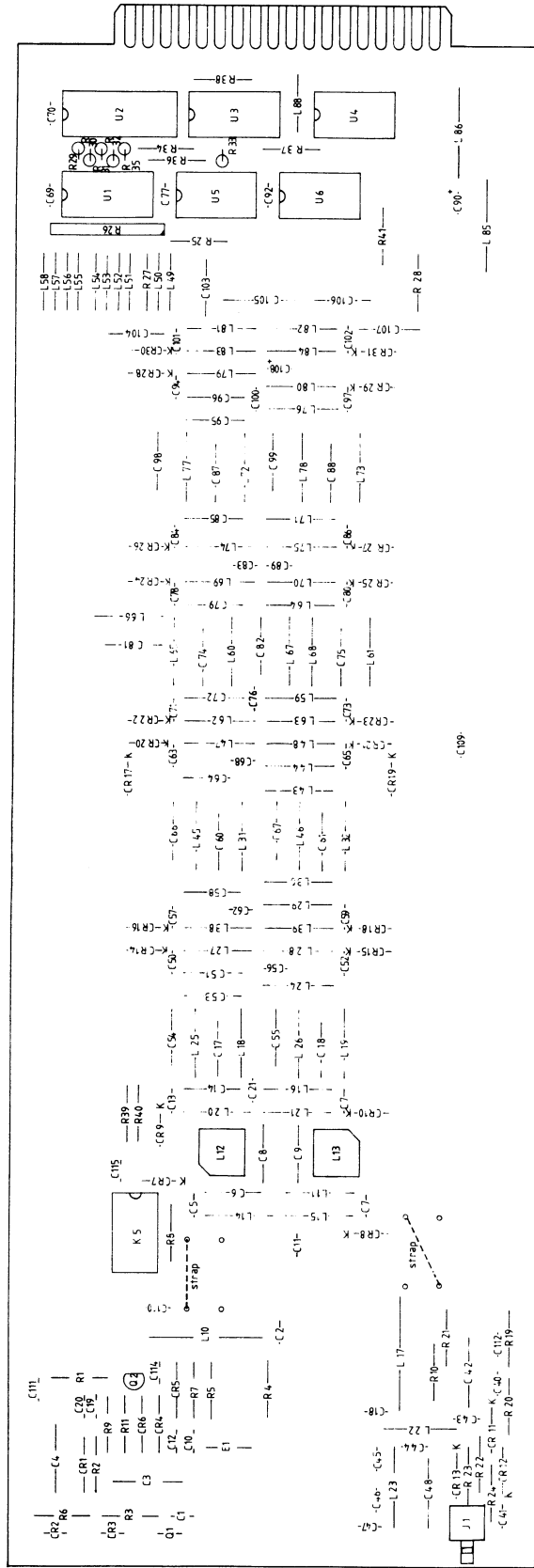
REVISIONS		
ZONE/LTR	DESCRIPTION	DATE APPROVAL
A		
B	REVISED AM 86007	9.9.86 VH



FIRST ANGLE PROJECTION	SIZE A2	CODE IDENT A2	DRAWING NO. 46 67 43
	SCALE		SHEET 2

REVISIONS		
ZONE	DESCRIPTION	DATE
A	6447041	27.08.87
B	REVISÉ 9% to C76 and changed L12, L13	28.10.87
C		

DATE	APPROVAL
27.08.87	WM
28.10.87	WM



Dansk Radio AS		dja	
DR	1/10 - 82	TITLE	M 3000
CH	1/10 - 82	Substrate filter without duplex	
AP			
AP			
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE IN MILLIMETERS ACCORDANCE WITH DS 8073			
ANGLES			
LIN DIM			
MATERIAL			
SIZE		CODE IDENT	DRAWING NO.
A1			4.6674.3
SCALE			
SHEET 1 OF 1			

APPLICATION		FIRST ANGLE PROJECTION	
NEXT ASSY	USED ON		

⑨. Data latch.

⑩. Address decoder.

When a correct address is present,  
output  $Y_o$  or  $Y_y$  goes low.

⑪. Acknowledge driver.

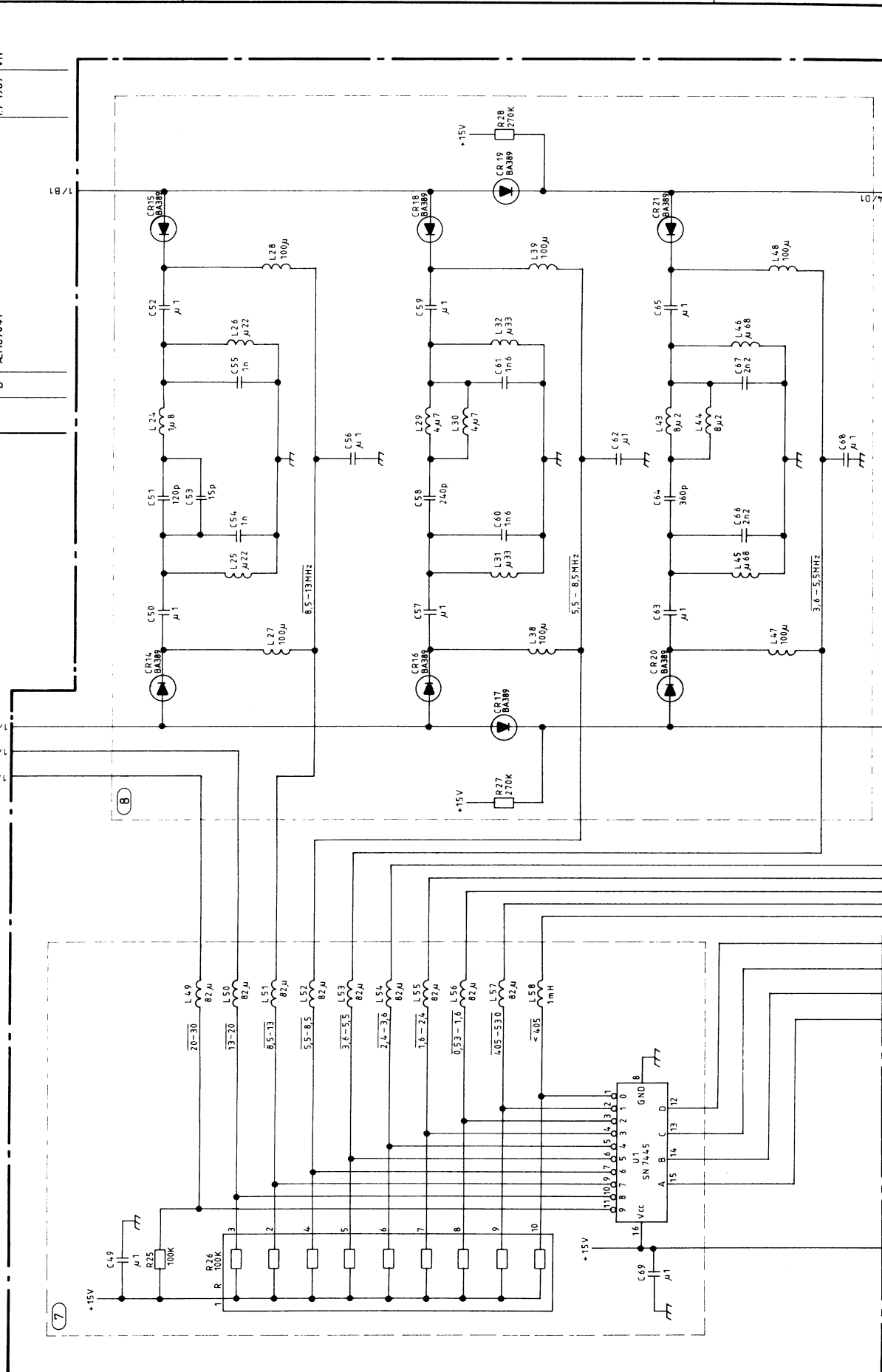
When a correct address is present, the  
acknowledge line (A11) is pulled low.

⑫. Gates.

⑬. Filters 530kHz - 3.6MHz.

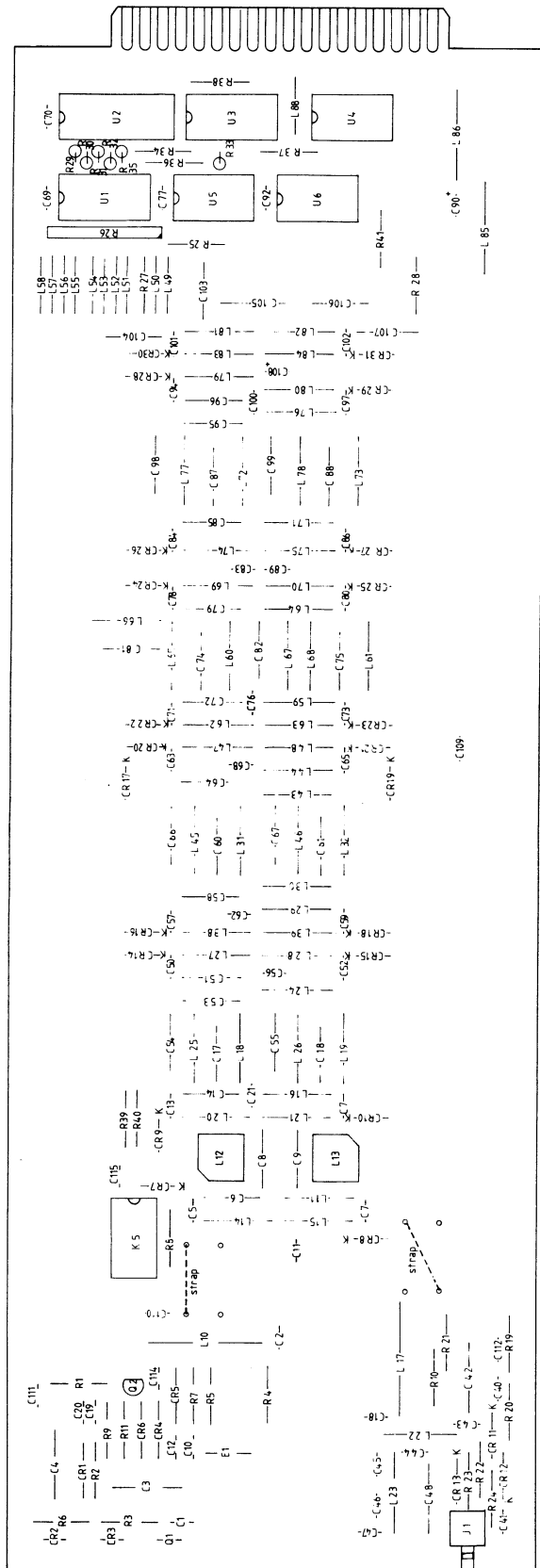
A filter is switched in by a low level  
at the controlline.

REVISIONS		
ZONE/LTR	DESCRIPTION	DATE
A	DEM87041	1.7 1987
B		VH



FIRST ANGLE PROJECTION	
SIZE	A2
CODE IDENT	46 67 43
DRAWING NO.	SHEET 3

REVISIONS		DATE	APPROVAL
ZONE	LTR		
A	REVISION 1	27.1987	VH
B	REVISION 2	28.10.87	VH
C	REVISION 3		



Dansk Radio AS		dita	
DR	1/10-82	TITLE	M 3000
CH	1/10-82	Substrate filter without duplex	
AP		SIZE	A1
AP		CODE IDENT	466743
AP		DRAWING NO.	
AP		SCALE	
AP		SHEET OF 1	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE IN MILLIMETERS FINISHES ARE AS SHOWN		FIRST ANGLE PROJECTION	
ANGLES		SIZE	A1
LIN DIM		CODE IDENT	466743
MATERIAL		DRAWING NO.	
USED ON		SCALE	
APPLICATION		SHEET OF 1	

(14.) Supply line filters.

(15.) Relay drivers.

The 10dB attenuator is switched in when I5 is off.

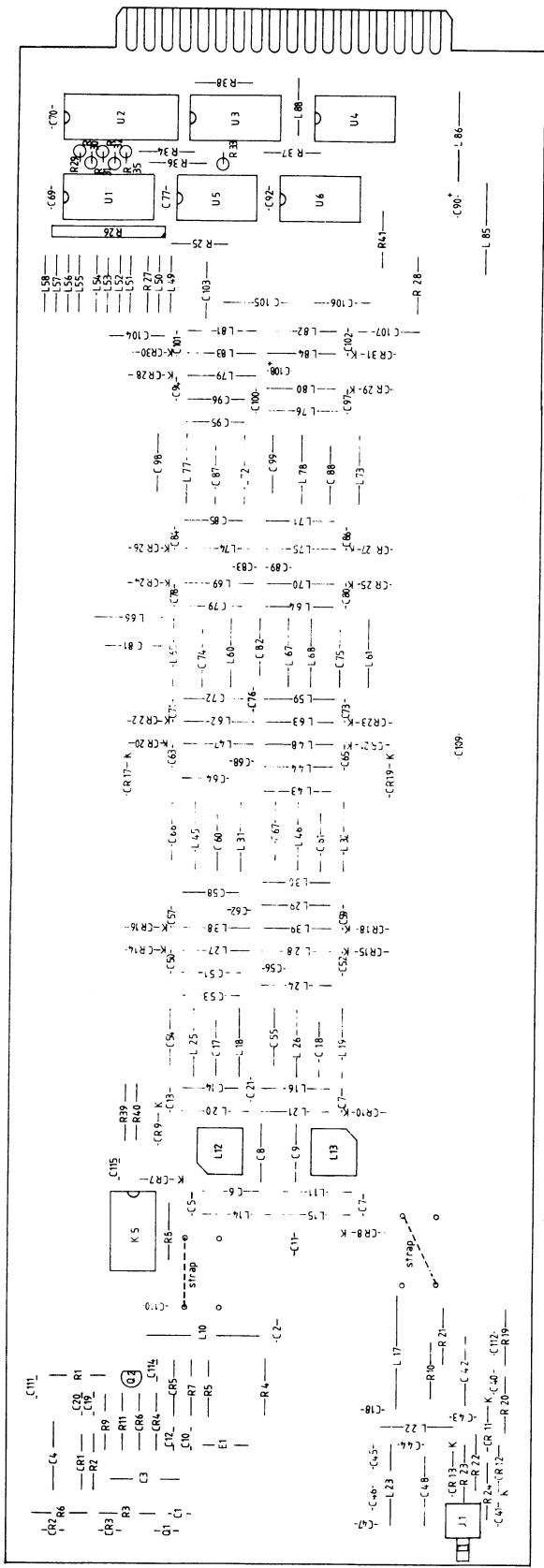
Duplex filters 4 - 6 - 8MHz are switched in when K3, K4, K7 and K8 are on and K1 and K9 are off.

(16.) Filters 15kHz - 530kHz.

A filter is switched in by a low level at the controlline.



REVISIONS			DATE		APPROVAL	
ZONE	TR	DESCRIPTION				
A		54M7041	24 MAR 71		VH	
C2, B3	C	REVISED (5% to C7% and changed L12, L13	20 MAR 71		VH	

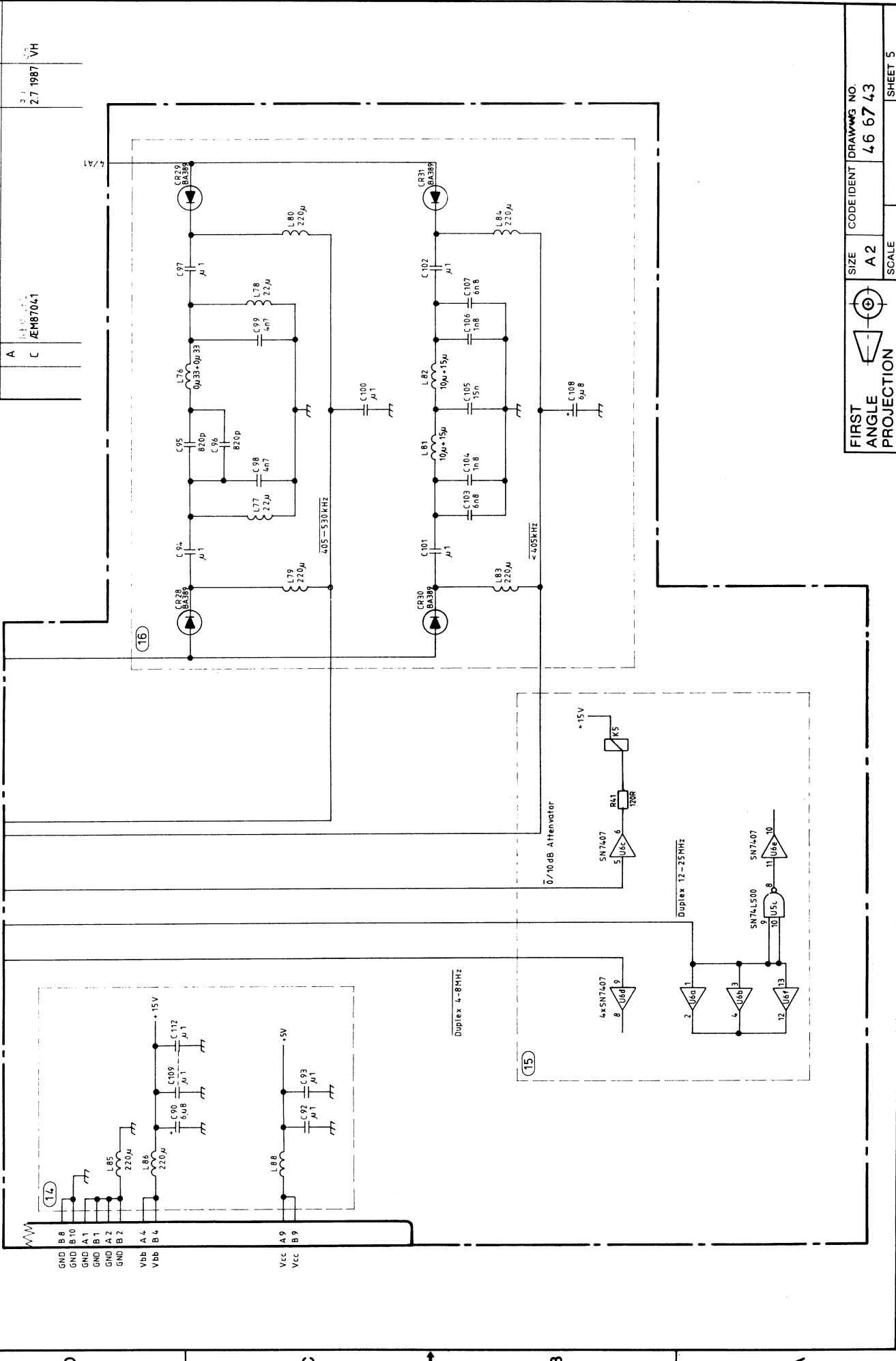


Dansk Radio AS		M 3000		Substrate filter without duplex	
DR	1/10-82	CH	1/10-82	AP	AP
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE AS FOLLOWS: DIMENSIONS WITH 0.20% DIMENSIONS WITH 0.50% DIMENSIONS WITH 1.00% DIMENSIONS WITH 2.00% DIMENSIONS WITH 5.00% DIMENSIONS WITH 10.00% DIMENSIONS WITH 20.00% DIMENSIONS WITH 50.00% DIMENSIONS WITH 100.00%		ANGLES LIN DIM		MATERIAL	
FIRST ANGLE PROJECTION		SIZE CODE IDENT		DRAWING NO	
A1		466743		SHEET 1 OF 1	

APPLICATION		NEXT ASSY		USED ON	
Dansk Radio AS		M 3000		Substrate filter without duplex	



REVISIONS		DATE	APPROVAL
ZONE/LTR	DESCRIPTION		
A	REVISED	2.7.1987	VH
C	REVISION		



FIRST ANGLE PROJECTION	SIZE A2	CODE IDENT	DRAWING NO. 46 67 43	SHEET 5
------------------------	---------	------------	----------------------	---------

ASSY 488275 , RTTY Demodulator

Service Sheet A6

① Address decoder.

When a correct address is present at the address bus, output U1-Y4 or U1-Y5 goes low to enable the relevant chip in block ② or ③. U6 and U7 provide the acknowledged signal  $\overline{TIACK}$  to the microprocessor.

② A/D converter.

U2 is a selfcontained A/D converter. The input range to U2-6 is 0-5V. U24b supplies a 2.5V reference. U5 is an analogue multiplexer with 8 input channels. The multiplexer is controlled by the microprocessor via latch U3. Channels 0 and 1 are used during the self-test program to measure +15V and -15V supply voltages.

Channels 2 through 6 supervise the RTTY demodulator.

Channel 7 is used during the self-test program to monitor the function of the current loop generator. The current loop output at J2 shall be open-circuited during this test.

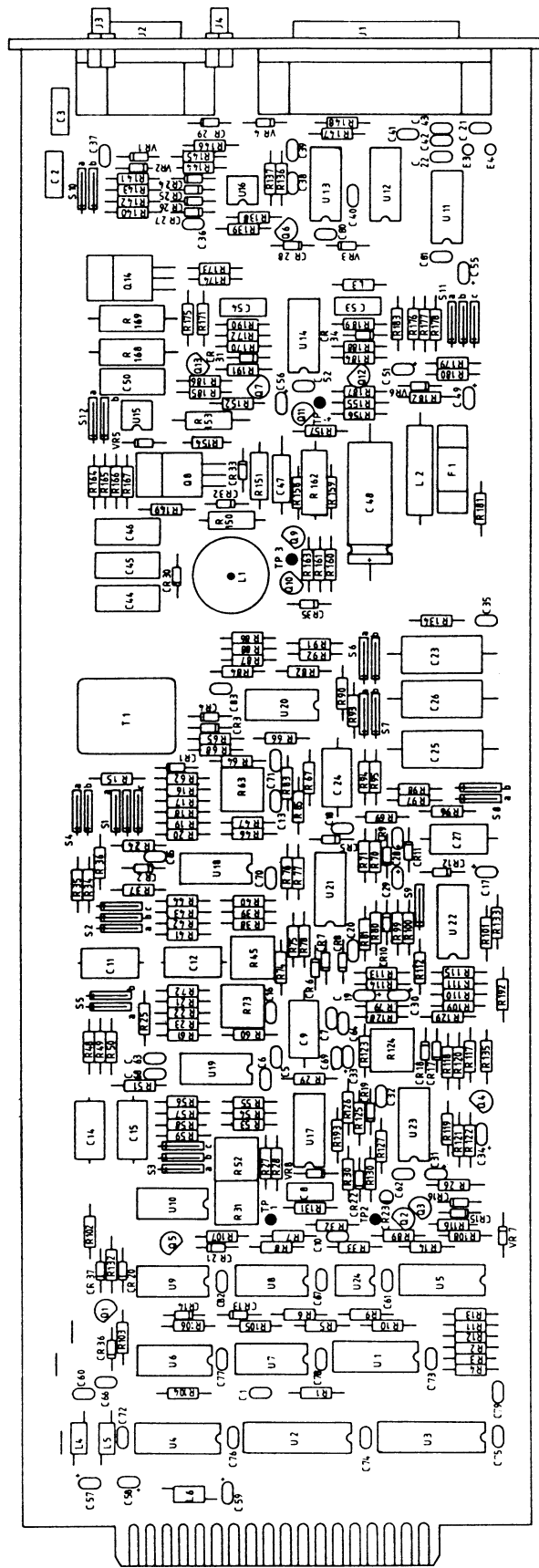
③ Bus interface and data selector.

U3 is an 8 bit latch which delivers control data to the demodulator.

U4 is a 6 bit tri-state buffer which allows the microprocessor to read information- and control data from the demodulator.

The data selector U8 is controlled by U3-Q7, "SELECT EXT". When U3-Q7 is low, "DATAINT" is connected to "DATA 1" from the motherboard, provided "ANTISPACE" is low. This configuration allows optional data-processing equipment to communicate via the RS 232/current loop-port at the RTTY demodulator assy. It also allows the microprocessor to write out status messages to the teleprinter using the "ANTISPACE" line as a serial dataline.

REVISIONS		DATE	APPROVAL
ZONE/LTR	DESCRIPTION		

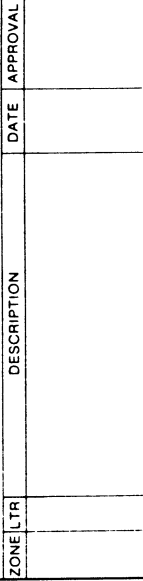


Dansk Radio AS		d/ja	
TITLE		COMPONENT LOCATION	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE IN ACCORDANCE WITH DS 0271		RYX009	
DR		AP	
CH		AP	
AP		AP	
FIRST ANGLE PROJECTION		CODE DENT DRAWING NO	
SCALE		48 82 75	
MATERIAL		SHEET 1 OF 1	
NET ASSY USED ON		APPLICATION	
48 82 75		RYX009	

A diversity combining amplifier is placed between the subtractor and the filter.

With the output J4 from a second RTTY-demodulator, connected to the diversity-input J3 on the present RTTY-demodulator, the amplifier will average the 2 demodulated signals (post detection combining).

Output level from the LP-filter:  
3Vpp.



4 AF-amplifier.

The AF-amplifier is divided into a 600 ohm balanced line input amplifier and an unbalanced AF-amplifier. The input level to the line input amplifier can be strapped (S1) to: 0dBm, -10dBm, -20dBm and -30dBm.

The unbalanced AF-amplifier receives input signal from the IF/AF-module (A7) via the motherboard. The input level is 280 mVpp. The mixed output from the 2 amplifiers is 590mVpp.

5 Center frequency discriminator.

The discriminator is a PLL-type FM-discriminator. The center frequency is determined by R27, 28, 31 and C8, max. frequency deviation by R29 and loop damping by C9. The output from the discriminator is lowpass filtered through R30 and C10. The difference between DISCR. REF and DISCR. OUT is displayed on the front panel meter.

6 Mark/Space filters.

Both of these filters are single pole bandpass filters of the gyrator type.

The center frequency is selected by the straps S2a-c and S3a-c, the bandwidth is selected by the straps S4a-b and S5a-b.

The center frequency is fine tuned with R45 and R52.

Both filters are buffered and the output level from the buffers is 1.8Vpp.

7 Mark/Space level detectors.

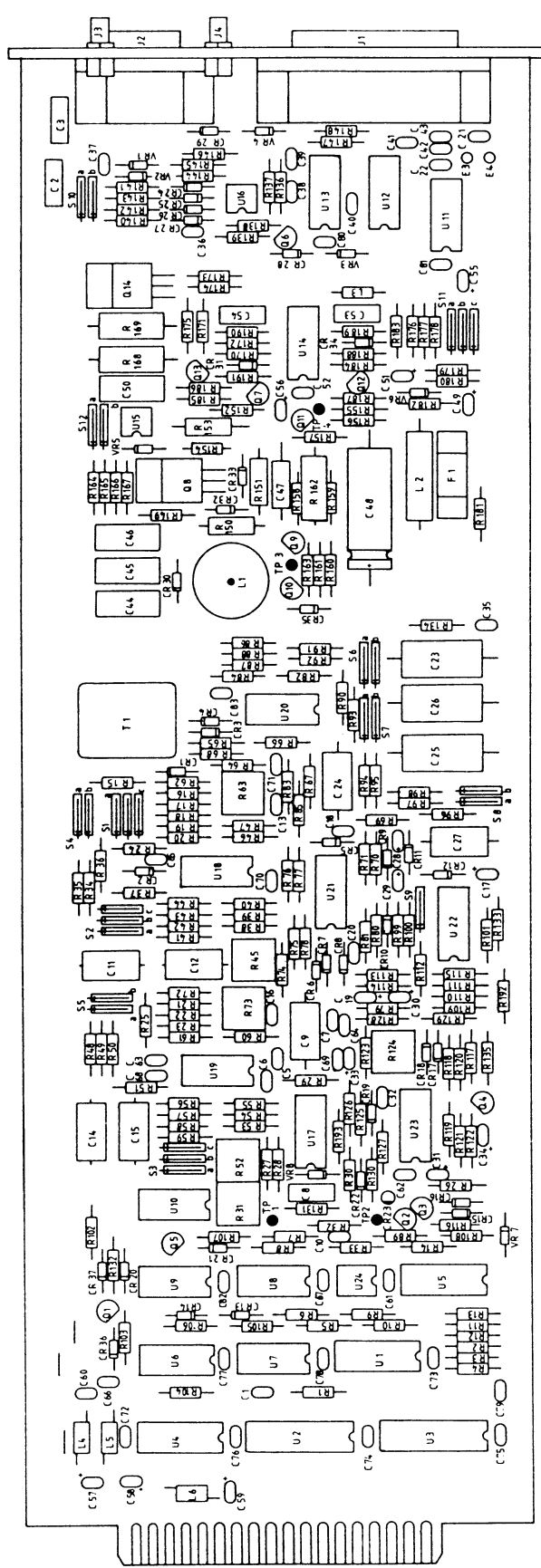
The Mark/Space level detectors consist of a fullwave rectifier, followed by a peak detector.

The output from the peak detector is led to the A/D-converter and shown at the front panel LED-display. The input to the rectifier is adjusted to give full scale deflection on the meter with nominal input level. To protect the multiplexer in front of the A/D-converter, the output from the peak detector is limited to 5V. Output from the peak detector: 4.5Vpp.

8 Mark/Space subtractor and filter.

The rectified mark signal is subtracted from the rectified space signal. The resulting data signal is filtered in a 3 pole lowpass filter. The cut-off frequency is strapped by S6-8.

REVISIONS		DATE	APPROVAL
NO.	DESCRIPTION		
1			
2			
3			
4			



Dansk Radio AS		dlr	
TITLE		COMPONENT LOCATION	
VH-15 1987		RTTY DEMODULATOR	
DR		RX-009	
CH		1/4 E-170	
AP		AP	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS DIMENSIONS IN PARENTHESES APPLY TO DIMENSIONS OF COMPONENTS WITH EX-80		SIZE	
ANGLES		CODE IDENT	
LIN DIM		DRAWING NO	
MATERIAL		48 82 75	
L4 82 L0		SCALE	
NEXT ASSY		A1	
USED ON		PROJECTION	
APPLICATION		FIRST ANGLE	
2		SHEET 1 OF 1	



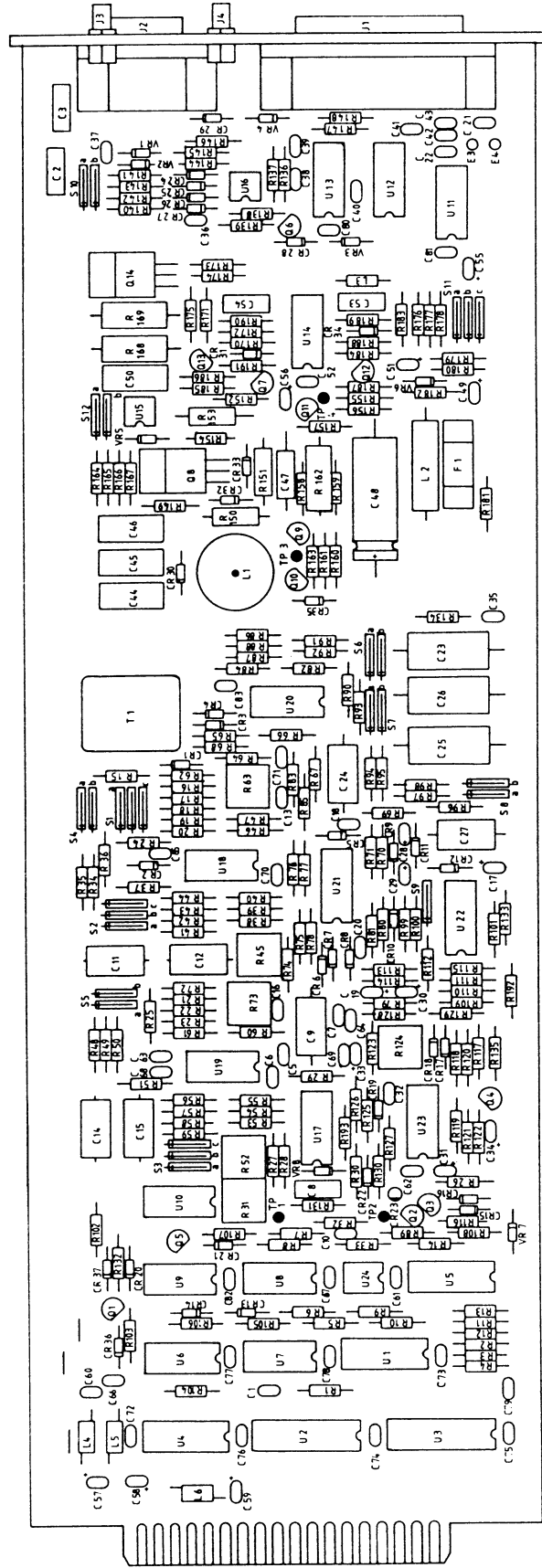
4

4


- 9 Automatic threshold control.  
The dc-component is removed and the signal is transferred into TTL-level. The ATC-function is ignored when S9 is closed.
- 10 Invert Circuit.  
When EX-INV and INVERT are low, the REC. DATA output at J1 is normal. If one or both inputs are high, the output is inverted.
- 11 Anti space control.  
If the signal is in Space more than 0.3 sec. the data output is switched to Mark.  
  
When receiving a normal RTTY-signal, C30 is discharged each time a Mark is present. When Mark is missing, the output from U22 will go high and U6-4 will go low.
- 12 Data signal level detector.  
The level detector is a full wave rectifier followed by a lowpass filter. The output from the detector, DET. LEVEL, can be read by the microprocessor.
- 13 Auto start control.  
The auto start control disables the data signal when it comes under a chosen level too often. The threshold level is set at R124. The capacitor C33 averages the time under threshold and when that value exceeds 3.3V, the output U23-14 goes negative and the U10 output goes high.  
  
The LED on the PCB, CR23 lights when the signal level is sufficient. The disable of the data signal is delayed approximately 1 sec. and the enable approximately 3 sec.  
The auto start control can be blocked from the microprocessor (AUTOSTART) and by shortening J1-10 to ground (EXT. AUTO).

REVISIONS		DATE	APPROVAL
ZONE	DESCRIPTION		

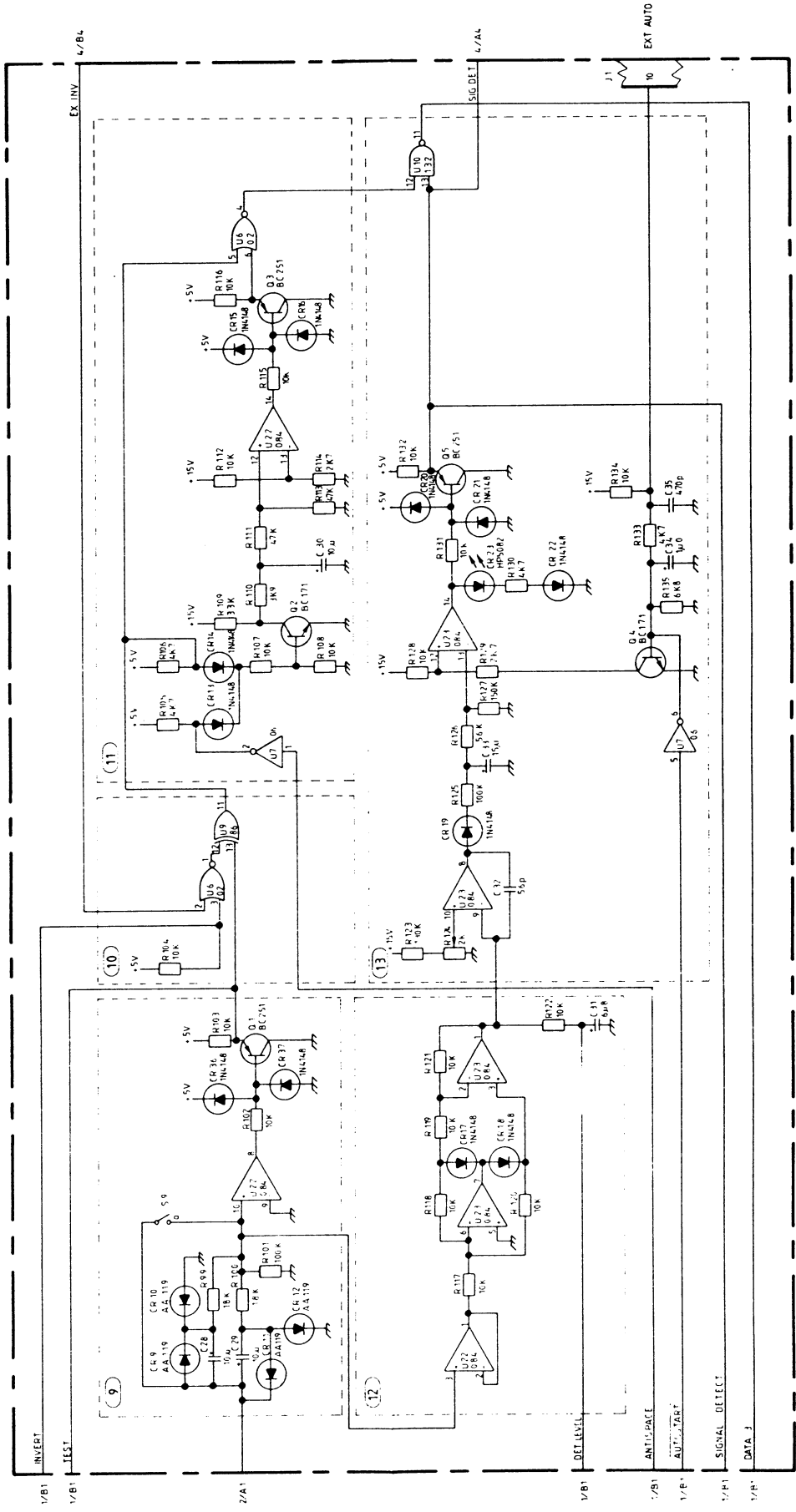
1			
2			
3			
4			



Dansek Radio AS		dra
TITLE		WH 1.3.1987
COMPONENT LOCATION		RTTY DEMODULATOR
RXTX		RXL009
AP		IN/EX-REF
AP		AP
FIRST ANGLE		PROJECTION
SIZE		CODE IDENT DRAWING NO
A1		48 82 75
SCALE		SHEET 1 OF 1
APPLICATION		
NEXT ASSY		
MATERIAL		
RXL009		
USED ON		
48 82 40		
UNLESS OTHERWISE SPECIFIED		
DIMENSIONS ARE IN MILLIMETERS		
TOLERANCES ARE IN MILLIMETERS		
UNLESS OTHERWISE SPECIFIED		
TOLERANCES ARE IN MILLIMETERS		
UNLESS OTHERWISE SPECIFIED		
TOLERANCES ARE IN MILLIMETERS		
UNLESS OTHERWISE SPECIFIED		
TOLERANCES ARE IN MILLIMETERS		

FIRST ANGLE PROJECTION			SIZE	CODE IDENT	DRAWING NO
			A 2		48 82 75
			SCALE		SHEET 3

REVISIONS		DATE	APPROVAL
ZONE/LTR	DESCRIPTION		



1 2 3 4

1 2 3 4

**14** TX Circuit.

A low voltage current loop for transmitting is present in J2. The shortcircuit current can be strapped to 20mA and 40mA and it can be used with both unbalanced 12V and balanced 24V output.

The TX-sense circuit is a floating loop made with an opto-coupler (U16) and it can be placed in series with the TX- or the RX-current loop.

The TX-sense circuit is activated with a current greater than 4mA. The data output from the opto-coupler is led to the microprocessor.

**15** RS232C port.

U13: RS232C line receiver.

The TRANSMIT DATA input is gated together with the data signals from the TX-sense.

U12: RS232C line driver.

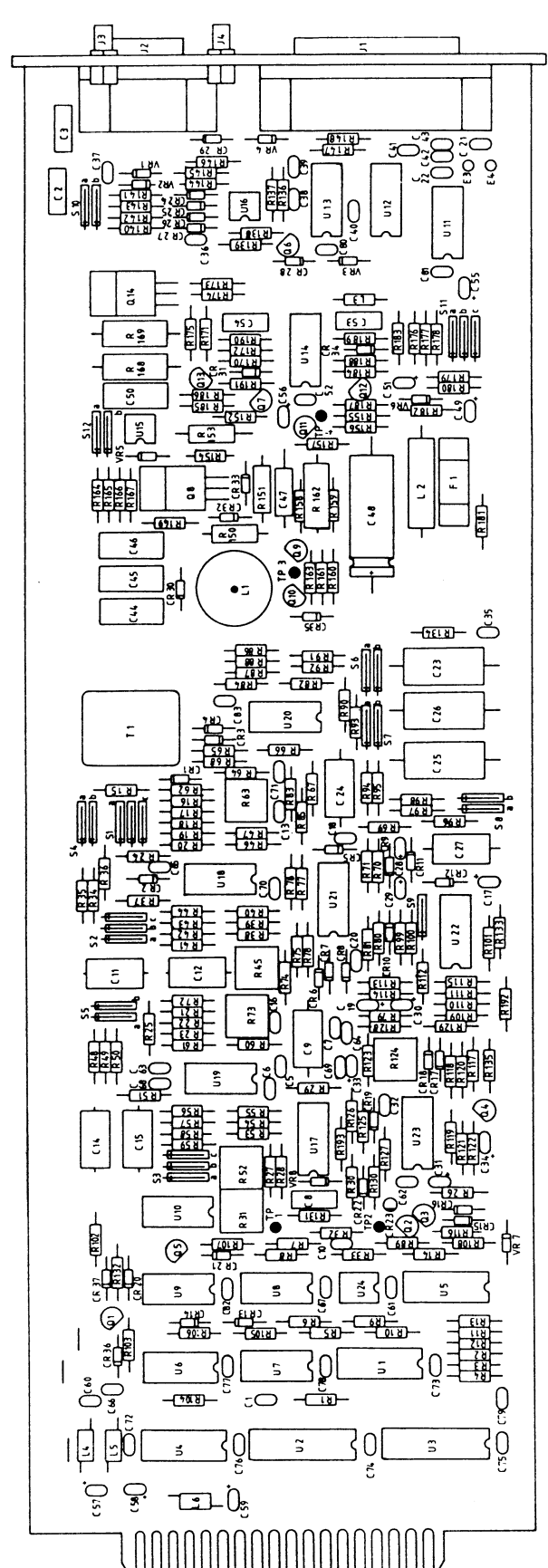
The RS232C socket has +/-12V and +5V to supply an external modem.

**16** Oscillator and pulsewidth modulator.

R190 and C54 determine the operating frequency, approx. 20 kHz.

R188, 189 and C53 form a oneshot and the pulsewidth modulation is made by changing the discharge time of C53. The output is used to drive the converter output stage.

REVISIONS			DATE	APPROVAL
ZONE	LTR	DESCRIPTION		
1				
2				
3				
4				



Dansk Radio AS		J10	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE IN INCHES		TITLE VH 15.5.1987 COMPONENT LOCATION RTTY DEMODULATOR R44009	
DR CH AP		SIZE A1	
FIRST ANGLE PROJECTION		CODE IDENT DRAWING NO 48 82 75	
APPLICATION NEXT ASSY USED ON R44009		SCALE 1	
SHEET 1 OF 1		SHEET 1 OF 1	



**(17) Output stage.**

The output signal from the pulse-width modulator is amplified in the driver stage (Q9-11) and then fed to the output transistor Q8.

When Q8 is switched on, the current in L1 will raise linear.

When the current has reached a sufficient value, Q8 is turned off and the voltage over L1 will raise to the level, where CR30 conducts. L1 will then deliver its energy to the storage capacitors C44-46. Q8 is shunted by a snubbernwork in order to damp oscillations when L1 is without load.

R149 and C46 damp the high frequency ripple caused by the switching.

The function of Q7 is to stop the output pulse if the collector current raises further than approx. 1A. R154 and CR35 prevent Q8 to break down in case the drivernetwork fails. The collector current in Q8 will be limited to 1.5A and this will cause the -15V fuse F1 to blow off.

**(18) Voltage and current regulator.**

The output voltage is set with the straps S11a-c and the voltage regulation is made with VR6 and Q12.

The output current limiter is set with the straps S12a-b and the current regulation is made with VR5 and U15.

Both the voltage- and current regulation change the discharge time of C53 in the oneshot.

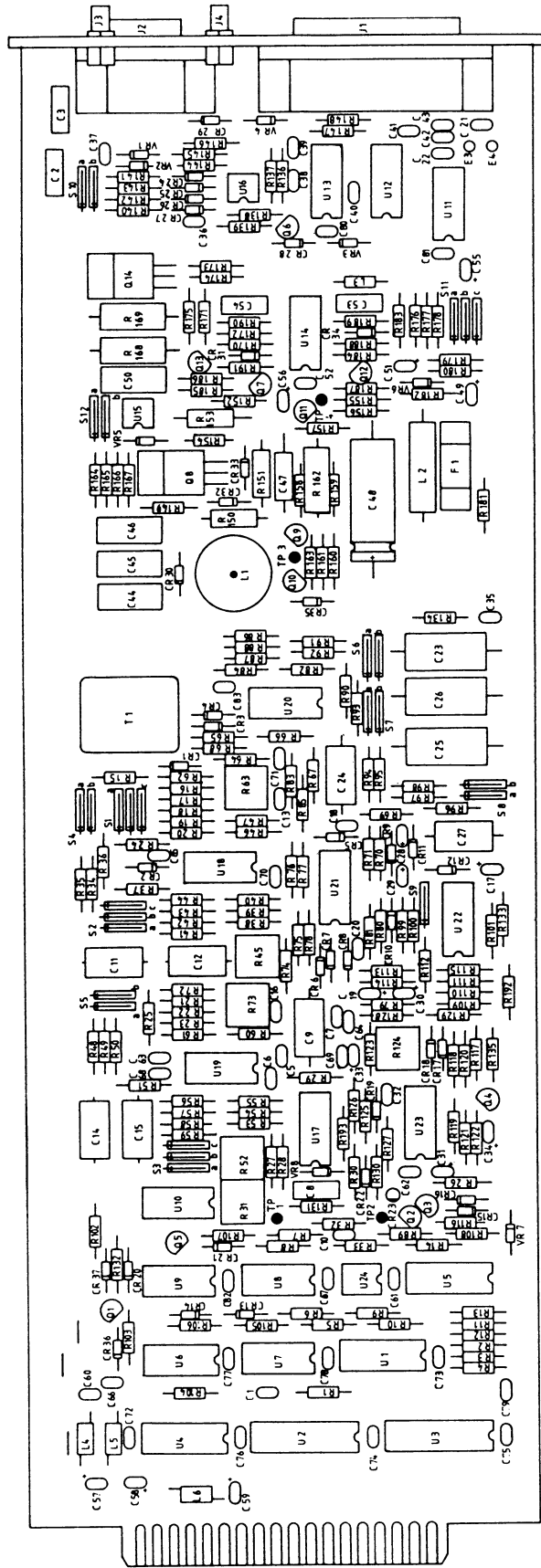
The output signal from the converter is modulated with Q13 and Q14. When a high is present on the DATA CUR. LOOP the RX+ output will be active.

**(19) Separate +5v line filter to the converter +5V, marked "(+5V)".**

**(20) +15V, -15V and +5V line filters and decoupling capacitors.**



REVISIONS		DATE	APPROVAL
ZONE	DESCRIPTION		
1			
2			
3			
4			



Dansk Radio AS		Title	
VH 15.1987		Component Location	
CH		RTTY DE-MODULATOR	
AP		RX-609	
AP		SIZE	
FIRST		CODE IDENT	
ANGLE		DRAWING NO	
PROJECTION		48 82 75	
SCALE		SHEET 1 OF 1	
APPLICATION		MATERIAL	
48 82 40		RX-609	
NEXT ASSY		USED ON	
APPLICATION		MATERIAL	
48 82 40		RX-609	
NEXT ASSY		USED ON	

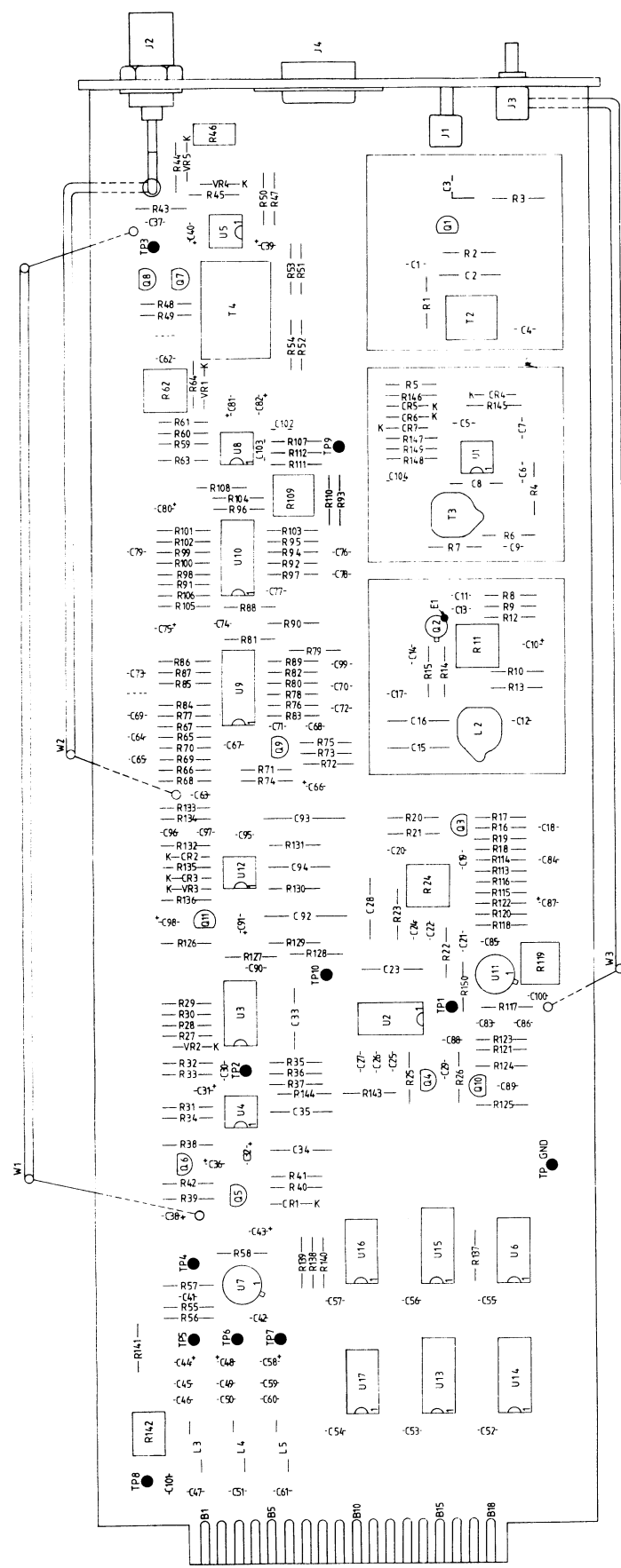


ASSY 448443, IF/AF ASSEMBLY

Service Sheet A7

- ① 1.4 MHz tuned amplifier  
Voltage gain: +25 dB approx.
- ② 1.4 MHz Voltage controlled tuned amplifier.  
Voltage gain: -40 dB to +50 dB approx. Controlled by the current through R5.
- ③ Dc-amplifier for AGC-voltage (AGC 2).  
Offset adjustment (R62): With AGC-voltage AGC 2 equal to 0V the gain reduction of U1 (block 2) is adjusted to 1 dB by means of R62 (T-amb. = 24°C). The voltage range of the AGC-voltage AGC 2 is between 0V and +10V.
- ④ 1.4 MHz adjustable tuned amplifier.  
Gain adjustment (R11): A 1.4 MHz/-107 dBm signal is applied to J1, IF-input. The signal IF-output, J2, is monitored. The adjustment in ③ is carried out first, then the signal at W2 is adjusted to -20 dBm/50Ω (63mV/50Ω) by means of R11.
- ⑤ Buffer amplifier for IF-output signal.
- ⑥ Logarithmic AGC-detector.  
The AGC attack level is adjustable by means of R109. When the IF-output level is -20 dBm/50Ω, the nominal dc-voltage at TP 9 is 0V.
- ⑦ 1.4 MHz signal splitting amplifier.

REVISIONS			DATE	APPROVAL
ZONE/ITER	DESCRIPTION			
2	EM 8101	A	8/21/87	VH
3	EM 8104	B	8/21/87	VH
4	REVISED EM 86001	C	8/21/87	VH
5	EM 87091	D	8/21/87	VH



**8 Synchronous AM-detector.**

The detector gain is adjustable by means of R24. Nominal AF-voltage at TP 3 is 100 mV-rms (280 mV-pp) when the AM-signal is modulated to 50%/1 kHz.

**9 DC-voltage switch for block 8.**

A logical 1 applied to U6a-3 switches the dc-voltage on. The switch is on in mode AM, only.

**10 Balanced SSB/CW Demodulator.**

The demodulator gain is adjustable by means of R119. Nominal AF-voltage at TP 3 is 100 mV-rms (280 mV-pp) @ 1 kHz.

**11 DC-voltage switch for 10 .**

A logical 1 applied to U6e-5 switches the dc-voltage on. The switch is on in modes SSB and CW, only.

**12 Mode selection switch.**

The correspondence between the selected mode and the logical level at the control inputs is as follows:

Mode	Control input		
	U3-13	U3-5	U3-12,6
AM	1	0	0
SSB,RTTY	0	1	0
CW/Wide, inter	0	1	0
CW/vnar, navr.	0	0	1

A logical 1 correspondsto +12V

A logical 0 correspondsto 0V

**13 1.4 kHz LP-filter.**

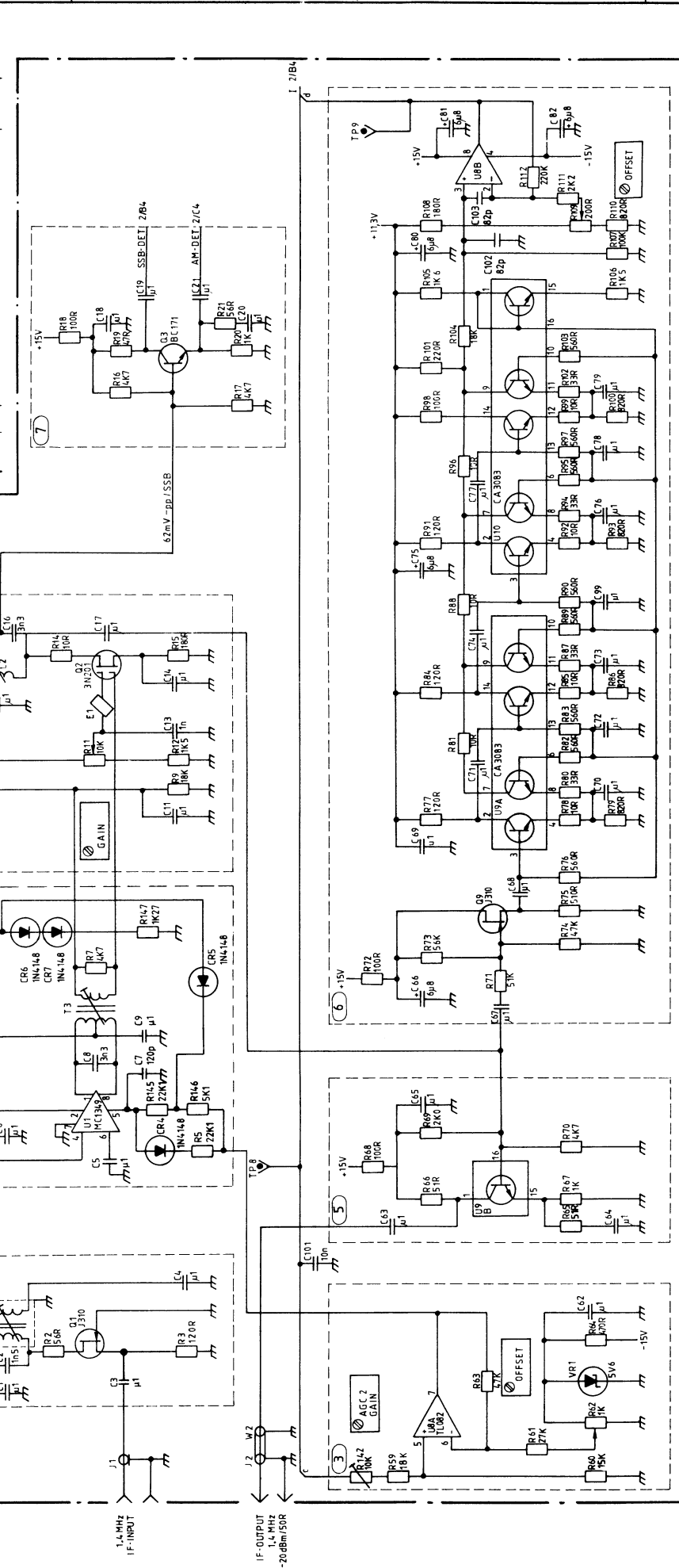
The filter is inserted after the Demodulator in mode CW/vnar. and CW/narr.

**14 LF-amplifier. Voltage gain:30dB.**

Nominal voltage level at TP2:115mV-rms (322mV-pp).

REVISIONS			DATE	APPROVAL
ZONE	LTR	DESCRIPTION		
A	ÆM810/6		8/02/24	GS
B	ÆM810/5		8/02/27	GS
C	ÆM810/4		8/20/07	GS
D	REVISED		15.9.85	VH
E	REVISED		8.9.86	VH
F	REVISED		15.9.87	VH
G	REVISED		25.11.87	VH

SHEET 1	ÆM810/6	81133
SHEET 2	ÆM810/5	
SHEET 3	ÆM810/4	
SHEET 4	REVISED	
SHEET 5	REVISED	
SHEET 6	REVISED	
SHEET 7	REVISED	
SHEET 8	REVISED	
SHEET 9	REVISED	
SHEET 10	REVISED	
SHEET 11	REVISED	
SHEET 12	REVISED	
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SHEET 97	REVISED	
SHEET 98	REVISED	
SHEET 99	REVISED	
SHEET 100	REVISED	



Dansk Radio AS		TITLE	
488240	RX4009	80 09 04	SIGNAL PROCESSING,
475467	OCEANIC	80 09 12	IF - 2ND , AUDIO.
477885	RX3000	80 09 22	
477172	RX4000		
465429	M 3000		
NEXT ASSY	USED ON		
APPLICATION		FIRST ANGLE PROJECTION	
		SCALE	
		NO. 448443	
		SHEET 1 OF 3	





(15) 4 kHz LP-filter.

(16) Muting circuit.

A logical 1 applied to U6f-1 forces Q5 to go on, thus shortcircuiting the signal path.

(17) Signal Detector.

When a signal is present in the signal path a logic 0 appears at TP10.

(18) Line Amplifier.

Output level up to +10 dBm/ 600 $\Omega$  adjustable by means of R46 which is accessible through a hole in the rear panel. Nominal voltage level at TP3: 100mV-rms (280 mV-pp).

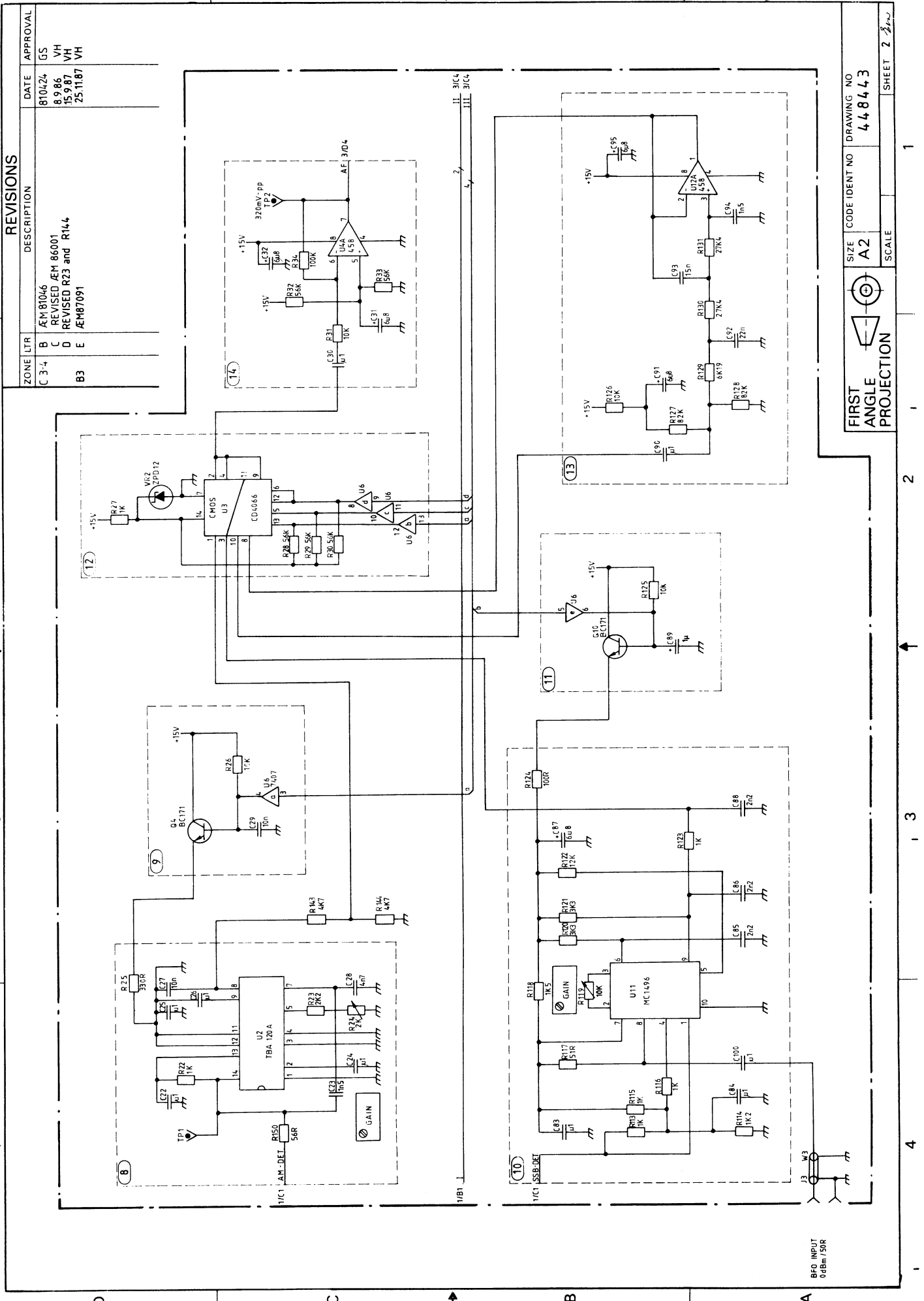
(19) 11.3V Voltage Regulator for the AGC-detector circuit. Voltage tolerance: +/- 0.7 V

(20) Filtering circuit for bias voltages.

(21) Microcomputer interface circuit.

The address of the assembly is FF29. When the five least significant address bits are applied to the module in inverted form, U13-9 goes low. This enables U14 and U15. On a positive transition of  $\overline{WR}$  data is loaded into U14 and appears at the Q-outputs. A logical 0 at  $\overline{RD}$  en-

ables three-state buffer U15, provided that U15-15 is at logical 0. Thus data at input U15-2 is fed to connector P1-A15 (DAT 0).  $\overline{ATACK}$  (A11) goes low when  $\overline{RD}$  or  $\overline{WR}$  goes low provided that the correct address is present.



FIRST ANGLE PROJECTION

SIZE A2

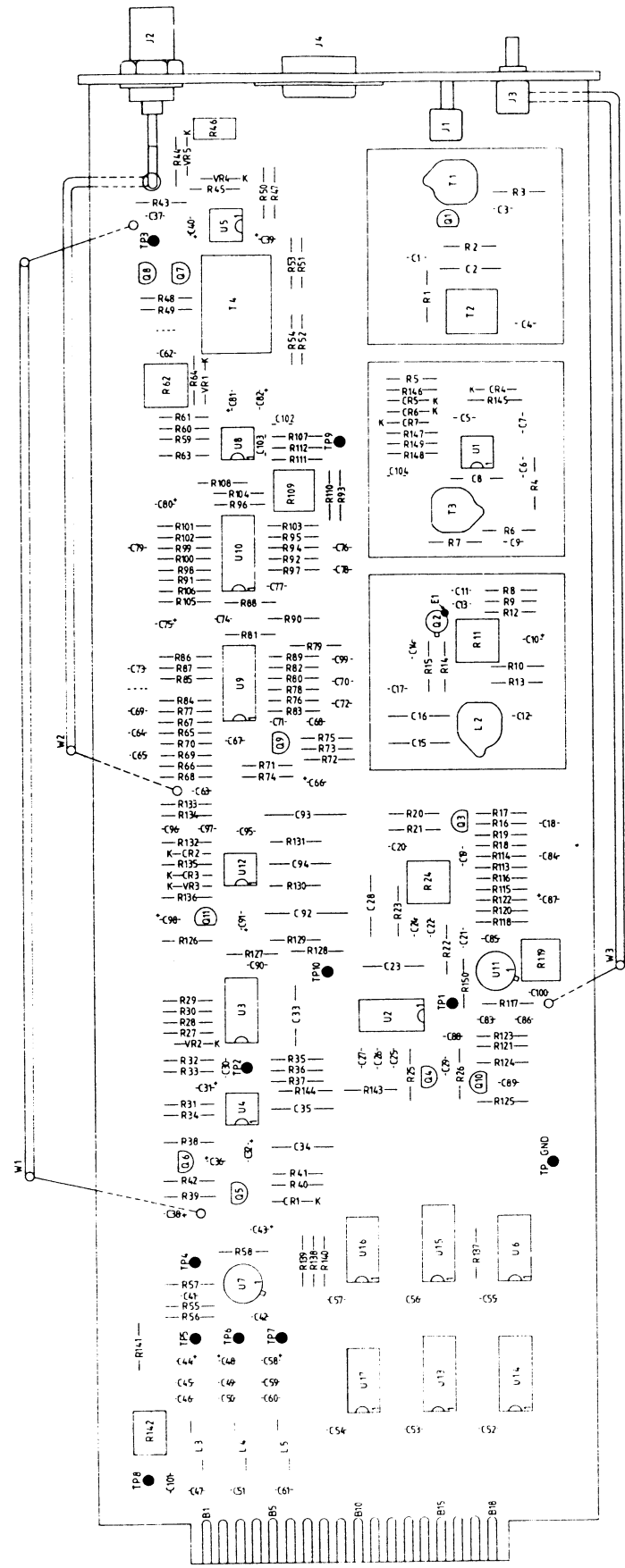
CODE IDENT NO 448443

DRAWING NO 448443

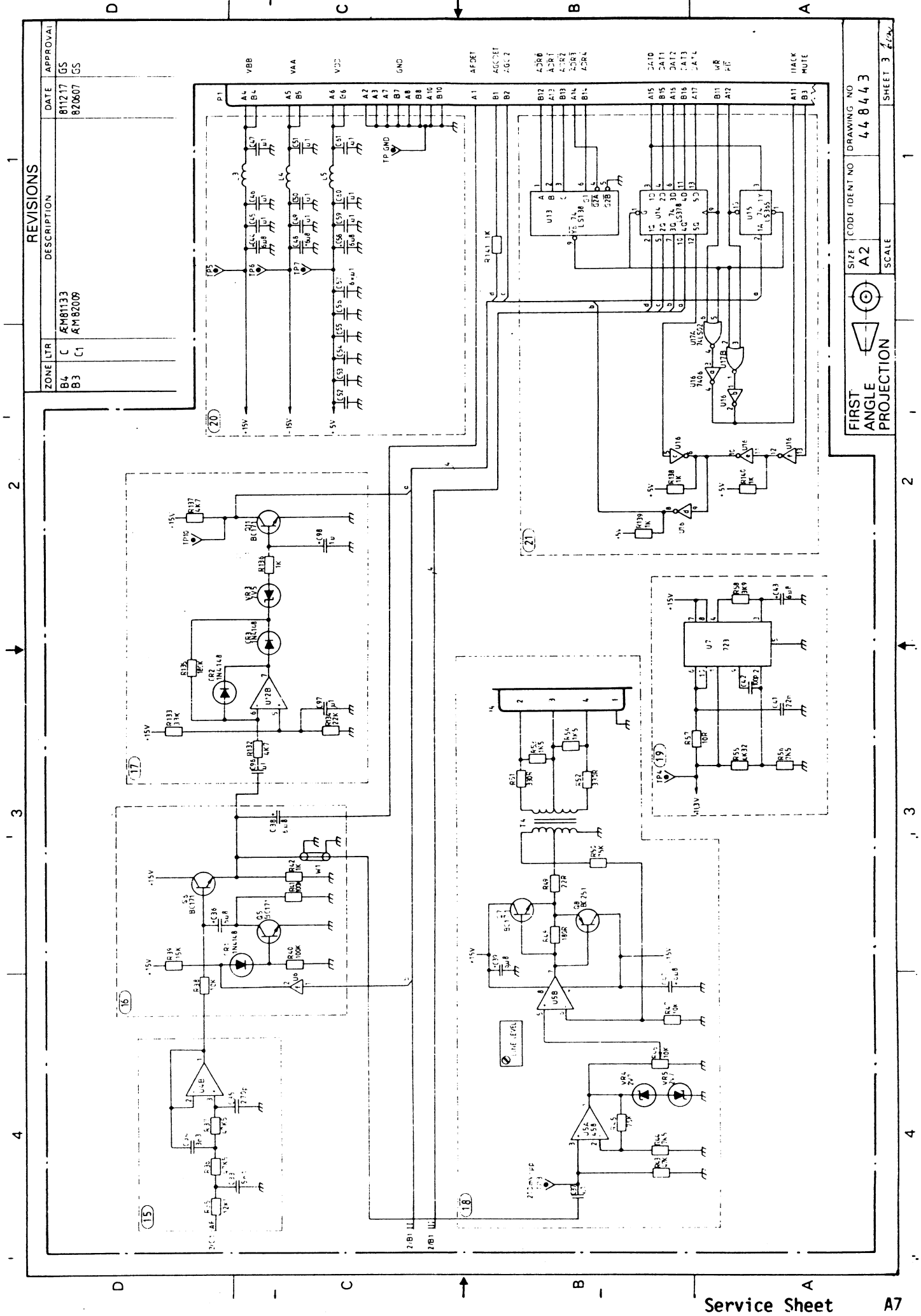
SCALE

SHEET 2/2

REVISIONS		
ZONE	DESCRIPTION	DATE
1	EM 8031	8/11/77
2	EM 8034	8/9/86
3	REVISED EM 84001	VH



Dansk Radio AS		dra	
DR. B. D.	86 09 29	TITLE	SIGNAL PROCESSING, IF - 2ND, AUDIO
CH	15	AP	AP
AP	15	SIZE	CODE IDENT
AP	15	DRAWING NO.	44 86 43
FIRST ANGLE	A1	SCALE	1
PROJECTION		SHEET 1 OF 1	
APPLICATION			
NEXT ASSY			
USED ON			
MATERIAL			
UN DIM			
ANGLES			
VALUES DIMENSIONS SPECIFIED			
DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED			
TOLERANCES ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED			
TOLERANCES ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED			



REVISIONS

ZONE	UTR	DESCRIPTION	DATE	APPROVAL
B4	C	AM81133	811217	GS
B3	C1	AM82009	820607	GS

FIRST ANGLE PROJECTION	SIZE A2	CODE IDENT NO	DRAWING NO 448443
		SCALE	SHEET 3 of 4

**ASSY 487740, MICROCOMPUTER ASSEMBLY**

**Service Sheet    A8**

① U1: 8085 microprocessor with associated 6.144 MHz crystal for internal clockstabilisation.

U12: Eight-bit latch for multiplexing address line DB0-DB7.

U13: Buffer for command signals etc.

② Watch-dog for surveillance of correct start-up and system software operation.

At system start-up R4, C1 ensures that a reset pulse of approx. 10 msec is generated. This pulse is routed to the microprocessor through U2.

U2: Retrigger astable multivibrator with a period of 1 s. Under normal operation, the software ensures that U2 is retriggered at appropriate intervals so that the reset signal to the microprocessor is disabled. Appearance of software error causes the retrigger to cease and the reset pulse generation will start-up.

③ Timer that starts counting when  $\overline{\text{OFF}}\overline{\text{BD}}\overline{\text{REQ}}$  goes low.

If the timer counts out, no acknowledge-signal has been received within the last 16 ms, and a Trap-interrupt is generated to the microprocessor.

In normal operation, acknowledge-signals should be received within 16 ms.

④ Network that converts an acknowledge-signal to a ready-signal to the microprocessor.

⑤ The flip/flop U14 delays the start of  $\overline{\text{WR}}$ -signal one half of a CLK-period, which ensures that BUFEN-signal delays the enable of buffer U17 in accordance with the timing.

$\overline{\text{OFF}}\overline{\text{BD}}\overline{\text{REQ}}$  and  $\overline{\text{OFF}}\overline{\text{BD}}\overline{\text{WR}}$  are only generated if no acknowledge-signal on board has been received before start of BUFEN.



6. Test Buffer

U16 is an 8 bit buffer which is enabled during "free-running", i.e. when  $\overline{\text{TEST}}$  is low. When "free-running" is selected, U16 forces the microprocessor to read NOP-instructions, regardless of the microprocessor addressing.

7. Data Buffer

U17 is an 8 bit bidirectional data buffer which is enabled during on board operations.

8. Internal Address Decoding

Address decoding for generating on-board chip selects for I/O operations. An acknowledge-signal  $\overline{\text{I/O AACK}}$  is generated for every I/O-address, as handshaking signal to the microprocessor.

9. Address Decoding for Memory

Address decoding for generating on-board chip selects for memory operations. An acknowledge-signal  $\overline{\text{MEM-AACK}}$  is generated for every memory address, as handshaking signal to the microprocessor.

The S1, S2 and S3 strap fields determine the address range of CS1, CS2 and CS3

S1,S2,S3	32	64	128
CS1	0-0FFFH	0-1FFFH	0-3FFFH
CS2	1000-1FFFH	2000-3FFFH	4000-7FFFH
CS3	2000-2FFFH	3000-4FFFH	8000-BFFFH

The address range from C000H to FFFFH is reserved for RAM memory.







10. EPROM Area

The content of 2732 is 4K x 8 bit.

The content of 2764 is 8K x 8 bit.

The content of 27128 is 16K x 8 bit.

S1,S2,S3	S4	S5	S6	U23	U24	U25
32	32	32	32	2732	2732	2732
64	-	32	-	2764	2732	N.U.
64	-	-	32	2764	2764	2732
64	-	-	-	2764	2764	2764
128	128	32	-	27128	2732	N.U.
128	128	64	-	27128	2764	N.U.
128	128	128	-	27128	27128	2764
128	128	128	128	28128	28128	27128

(N.U. = not used).





- (11) Circuit which ensures power to CMOS-gates U49,50,51 and CMOS-RAM U45 and U46 (if large RAM area is required).

BT1 is a lithium battery and R51 protects the battery against serious damage if a short circuit appears.

- (12) RAM-area, consisting of one 8K x 8 bit.  
The Ram area can be extended to 16K x 8 bit by placing an additional 8K x 8 bit RAM circuit in socket U46

- (13) When power is removed intentionally by PWR OFF on the front panel U50a is set. The 'PWRL0' will interrupt the microprocessor. This will read the status of U50a and store relevant information in the CMOS RAM (U47, 60,61) and hereafter protect the CMOS RAM against writing by setting U50b. During start-up U50a will be cleared by RESET and the CMOS RAM will be enabled by clearing U50b.

- (33) U26: Real Time Clock integrated circuit (Battery back-uped).

## REVISIONS



FIRST  
ANGLE  
PROJECTION

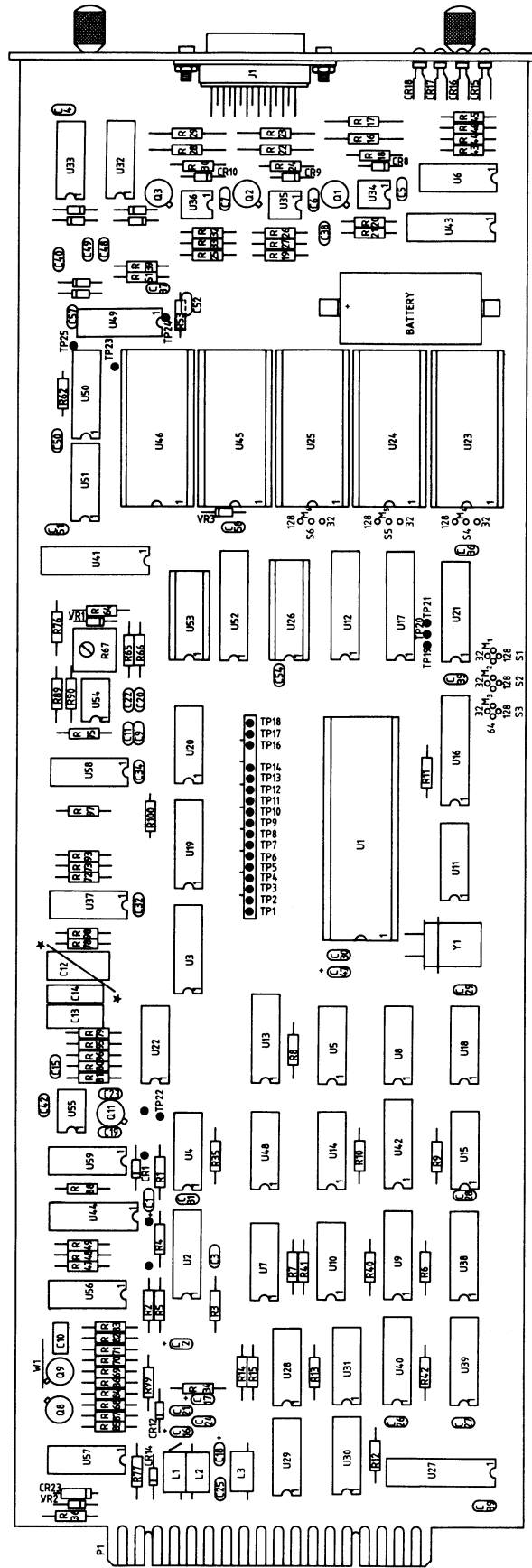
SIZE	CODE IDENT	DRAWING NO.
------	------------	-------------

48 77 40

SCALE

SET 3

REVISIONS		
ZONE	DESCRIPTION	DATE
3C	Added CR1	23 12 87
A	Added CR1	23 12 87
B	Added CR1	23 12 87
C	Added CR1	23 12 87
D	Added CR1	23 12 87
E	Added CR1	23 12 87
F	Added CR1	23 12 87



PROM	S1	S2	S3	S4	S5	S6
2732	M <sub>1</sub> -32	M <sub>2</sub> -32	M <sub>3</sub> -32	M <sub>4</sub> -32	M <sub>5</sub> -32	M <sub>6</sub> -32
2764	M <sub>1</sub> -64	M <sub>2</sub> -64	M <sub>3</sub> -64	M <sub>4</sub> -64	M <sub>5</sub> -64	M <sub>6</sub> -64
27128	M <sub>1</sub> -128	M <sub>2</sub> -128	M <sub>3</sub> -128	M <sub>4</sub> -128	M <sub>5</sub> -128	M <sub>6</sub> -128

STRAP ONLY  
★ MOUNTED ON SE4100

Dansk Radio AS		Djia	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE IN ACCORDANCE WITH DS 2075		TITLE	
DR		VH3.9.1987	
CH		A60F / 4.8.1987	
AP		AP	
MATERIAL		RC4000	
NEXT ASSY		RX4000	
USED ON		RX4000	
APPLICATION		SE4100	
FIRST ANGLE PROJECTION		SE4100	
SIZE		A1	
CODE IDENT		48 77 40	
DRAWING NO		48 77 40	
COMPONENT LOCATION		PPJ BOARD AS	
SCALE		2:1	
SHEET		1 OF 1	



14. 1msec Timer

This timer counts on the CLK-signal from the microprocessor. The output gives a RST 7.5 interrupt to the microprocessor for every 1ms, and a clock pulse to 3.

15. Input Buffer for internal Signals

8 bit input port.

16. Control Latch

U42 is an 8 bit addressable latch used for control signals. U44 is a one out-of-four decoder with associated pull-up resistors. used for control signals

17. Status LED Circuit

Four bit latch with associated buffers and LEDs.



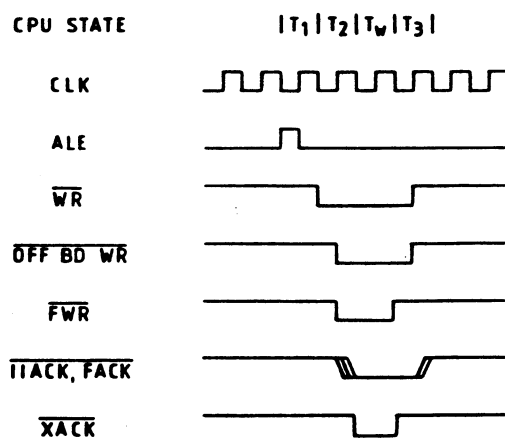


18. Supply Filters19. Off-Board Data Latch

U27 is an 8 bit bidirectional data bus buffer, which is enabled during off-board operations.

20. Off-Board Acknowledge

Circuit to provide at least 1 wait-state in the micro-processor timing, during off board write operations. This ensures that data is valid on the rising edge of  $\overline{FWR}$ .



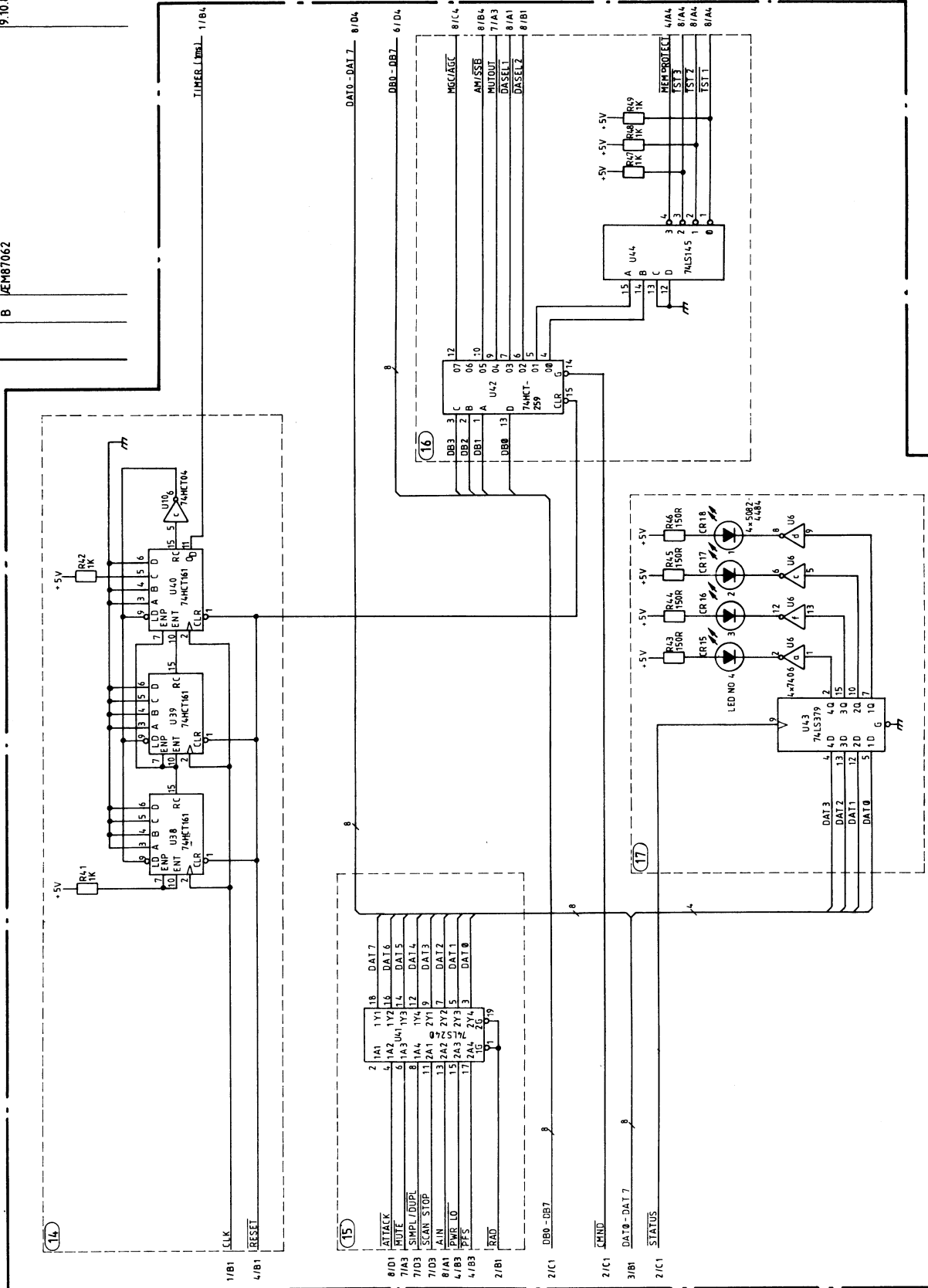
Timing diagram for generating of 1 wait-state.

21. Off-Board Address Buffer

Buffers for Off-board address- and command-signals.

# REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVAL
A				
B		JEM87062	9.10.87	VH



## REVISIONS



1

1. 30

22. RS232 Interface (Optional)

RS232 interface for serial communication.

23. Opto-coupler Interface

Opto-coupler interface to ensure electrical separation between incoming signals and on-board signals.

External signal generators shall be 24V, 10mA to provide a proper TTL-signal on Q1's, Q2's or Q3's collector.

The duplex input is not used in SE4010.

24. Power Control Inputs

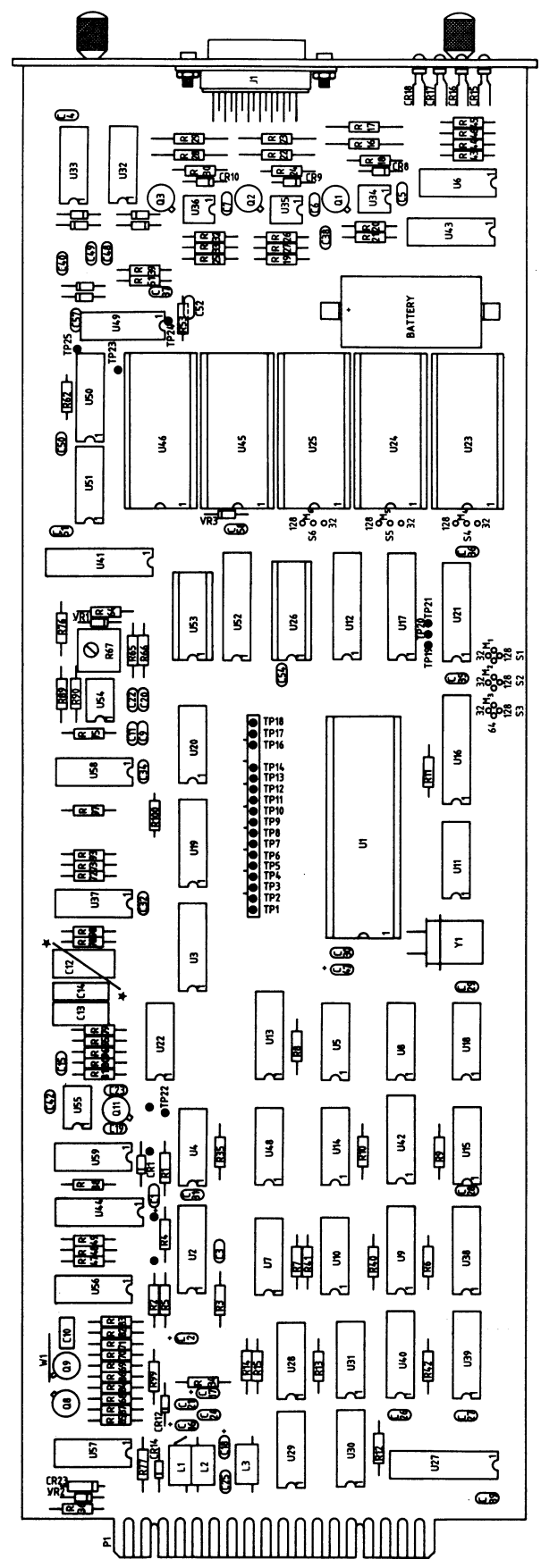
Diode network CR13 and CR14 are protection diodes. R34 and CR12 ensures current through the connector when PWRON is low.

If power is removed by turning "PWR OFF" on the front panel, PWRON goes high, and provides U50a in 13 to be cleared, by means of COLD STRT.





REVISIONS		
ZONE/TRA	DESCRIPTION	DATE APPROVAL
A	Added CR1	2.12.87 VH
B	Added CR1	23.08.88 VH
C	Added CR1	19.08.88 VH
D	Added CR1	19.08.88 VH
E	Added CR1	19.08.88 VH
F	Added CR1	19.08.88 VH



PROM	S1	S2	S3	S4	S5	S6
2732	M <sub>1</sub> -32	M <sub>2</sub> -32	M <sub>3</sub> -32	M <sub>4</sub> -32	M <sub>5</sub> -32	M <sub>6</sub> -32
2764	M <sub>1</sub> -64	M <sub>2</sub> -64	M <sub>3</sub> -64	M <sub>4</sub> -64	M <sub>5</sub> -64	M <sub>6</sub> -64
27128	M <sub>1</sub> -128	M <sub>2</sub> -128	M <sub>3</sub> -128	M <sub>4</sub> -128	M <sub>5</sub> -128	M <sub>6</sub> -128

STRAP ONLY  
\* MOUNTED ON SE400

Dansk Radio AS		
DR.	CH.	AP.
VH 3.9.1987	AP	AP
TITLE		
HPU BOARD AS		
COMPONENT LOCATION		
SIZE		
CODE IDENT		
DRAWING NO.		
48 77 40		
FIRST ANGLE		
PROJECTION		
APPLICATION		
USED ON		
NEXT ASSY		
MATERIAL		
LIN. DIM.		
ANGLES		
TOLERANCES ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED		
IN ACCORDANCE WITH DS 2075		
SCALE 2:1		
SHEET 1 OF 1		

25. D/A Converter

U52 is an 8 bit latch. U53 is an bit digital to analogue converter with associated resistor network. U54 is an operational amplifier with an output to be range set by R67. The maximum output may be adjusted to 10V.

26. ATTACK Detector

Circuit to provide an ATTACK as long as Q9 is open. To avoid spikes to cause an ATTACK, R91, C10 determines the minimum time Q9 has to be open. R70, R71 and C10 holds the ATTACK to ensure the microprocessor to read the ATTACK.

27. MUTE Buffer

A MUTE - Signal will force the AGC2/VALC2 and the AGC1/ALCKEY to +15 VDC. (optionally).

28. Analogue Switch

U57 is an analogue switch. When the microprocessor assembly is used in SE4010 this switch will always be closed. CR23 protects U57 against negative levels.

29. Gain Control Filter/Strap

Only when the microcomputer assembly is used in SE4010, the strap shall be inserted. This will minimize the effect of the filter and cause the transfer function to equals 1 approximately.

If VALC1/AGCDET exceeds  $V_{hold} + V_{be}$  (Q8) ( $V_{hold}$  is the voltage on the output of U54b) an ATTACK is fed to the microcomputer causing  $V_{hold}$  to increase.

When used in SE4010  $V_{hold}$  decreases slowly when no ATTACK is present provided that AGC1/ALCKEY is on logical "1".

When used in a receiver  $V_{hold}$  decreases according to the AGC time constants.

30. Sample and Hold Circuit for  $V_{hold}$   
Sample and hold circuit supplying  $V_{hold}$ .31. Test Circuit

By means of the comparator U59 and the D/A-converter in (25), an A/D-conversion of either AGC1/ALCKEY, AGC2/VALC2 or a test level can be performed.

32. Sample and Hold Circuit for AGC1

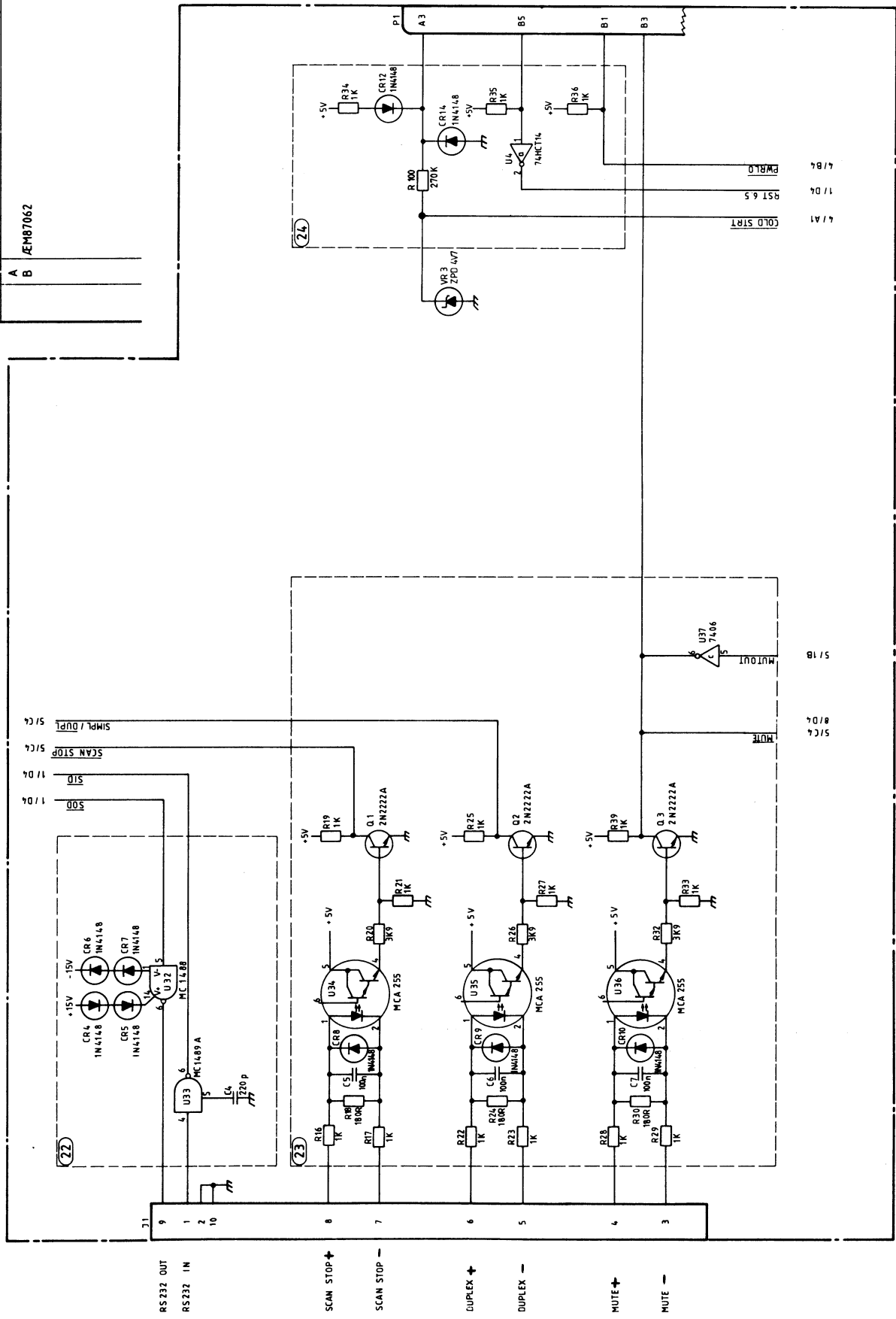
When used in receivers the circuit supplies AGC-voltage to AGC1.

# REVISIONS

ZONE LTR DESCRIPTION DATE APPROVAL

A JEM87062

9/10/87 VH



NO. 48 77 40

CLASS: A 2

SCALE: 1/10

PROJECTION

FIRST ANGLE

PROJECTION

SCALE: 1/10

CLASS: A 2

NO. 48 77 40

SCALE: 1/10

PROJECTION

FIRST ANGLE

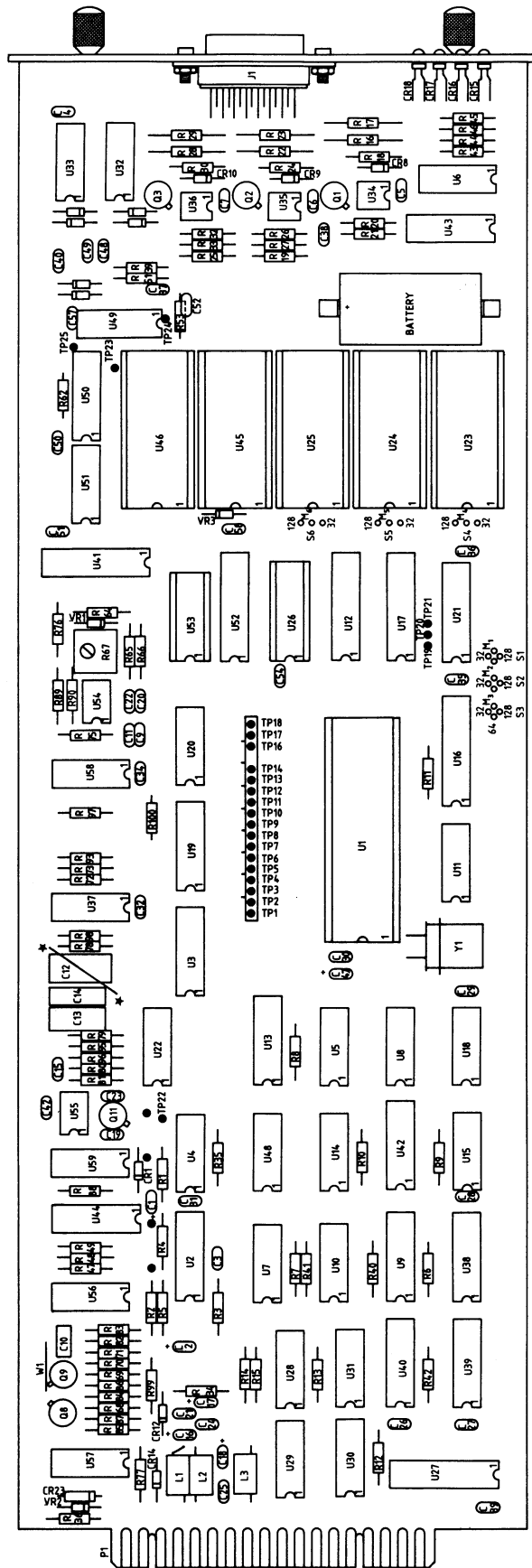
PROJECTION

SCALE: 1/10

CLASS: A 2

NO. 48 77 40

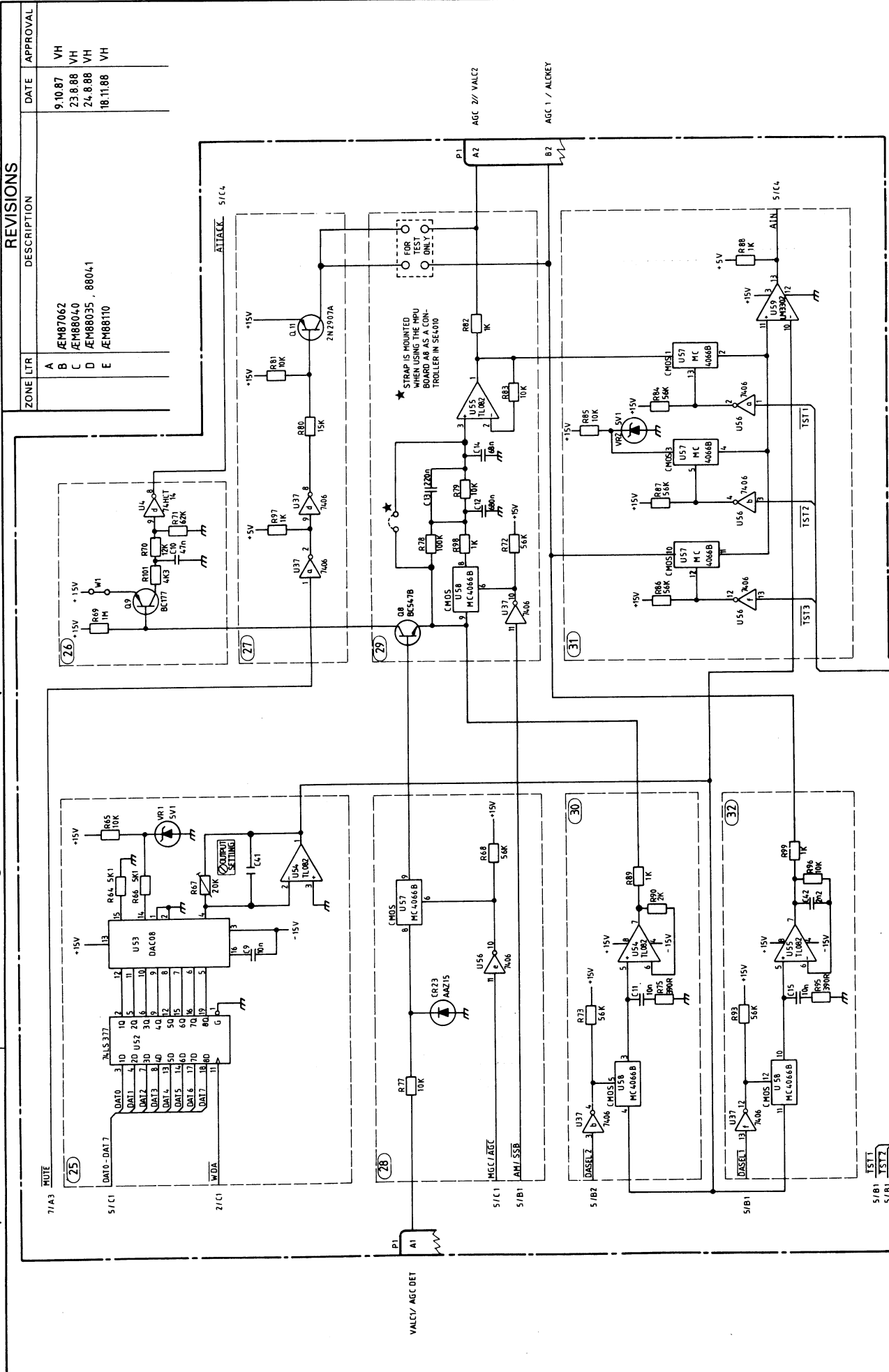
REVISIONS		
ZONE/LTR	DESCRIPTION	DATE APPROVAL
A	Added CRT	VH
B	REVISION	21.8.87
C	REVISION	24.8.88
D	REVISION	24.8.88
E	REVISION	19.88
F	REVISION	18.11.88



FROM	S1	S2	S3	S4	S5	S6
2732	M <sub>1</sub> -32	M <sub>2</sub> -32	M <sub>3</sub> -32	M <sub>4</sub> -32	M <sub>5</sub> -32	M <sub>6</sub> -32
2764	M <sub>1</sub> -64	M <sub>2</sub> -64	M <sub>3</sub> -64	M <sub>4</sub> -64	M <sub>5</sub> -64	M <sub>6</sub> -64
27128	M <sub>1</sub> -128	M <sub>2</sub> -128	M <sub>3</sub> -128	M <sub>4</sub> -128	M <sub>5</sub> -128	M <sub>6</sub> -128

★ STAMP ONLY  
MOUNTED ON SE-4010

Dansk Radio AS		dlc	
TITLE		COMPONENT LOCATION	
MPU BOARD A8		MPU BOARD A8	
DR	VH 3.9 1987	CH	AP 1.4 1987
AP	AP	AP	AP
FIRST ANGLE PROJECTION		CODE IDENT DRAWING NO	
A1		48 77 40	
SIZE		SHEET 1 OF 1	



ZONE	DESCRIPTION	DATE	APPROVAL
A	REVISIONS		
B	REVISIONS		
C	REVISIONS		
D	REVISIONS		
E	REVISIONS		

ZONE	DESCRIPTION	DATE	APPROVAL
A	REVISIONS	9.10.87	VH
B	REVISIONS	23.8.88	VH
C	REVISIONS	24.8.88	VH
D	REVISIONS	18.11.88	VH
E	REVISIONS		

**Assy 471666, Modem**

**ASSY 471631, DIGITAL MODEM ASSEMBLY**

**Service Sheet A9**

**① Supply filtering.**

The +15V, -15V and +5V supplies are filtered to reduce noise by distributed capacitances around the board.

**② Line input - output A.**

The line I/O provides a balanced impedance for bidirectional data and audio, bidirectional data or only transmitted data.

**③ Line A buffer.**

The buffer, U1, is protected against high levels by D3-D6 and provides a low impedance output to the attenuator. Data to be transmitted is applied to the line primary via R89.

**④ Line A attenuator.**

The attenuator is used to set the line sensitivity. Attenuation of 10dB, 20dB or 30dB is obtained with S7 c,b and a respectively.

**⑤ Buffer.**

The buffer is used to provide a low impedance source for the filter inputs and prevents loading of the attenuator.

**⑥ Line input B.**

The line input can act as data receiver, audio receiver or both data and audio receiver. R98 defines the line impedance.

**⑦ Line B attenuator.**

The attenuator is used to set the line sensitivity. Attenuation of 10dB, 20dB or 30dB is obtained with S10 c,b and a respectively.

**⑧ Line B buffer.**

The buffer U1 is protected against high levels by D7 and D23 and provides a low impedance source to the filters.

**⑨ Notch filter.**

As a 2990Hz tone is used to provide a mute contact for the receiver it is desirable to filter this out of the audio and data line. This filter provides > 20dB attenuation with a bandwidth of 300 Hz. The center frequency of the notch is adjustable with R208.

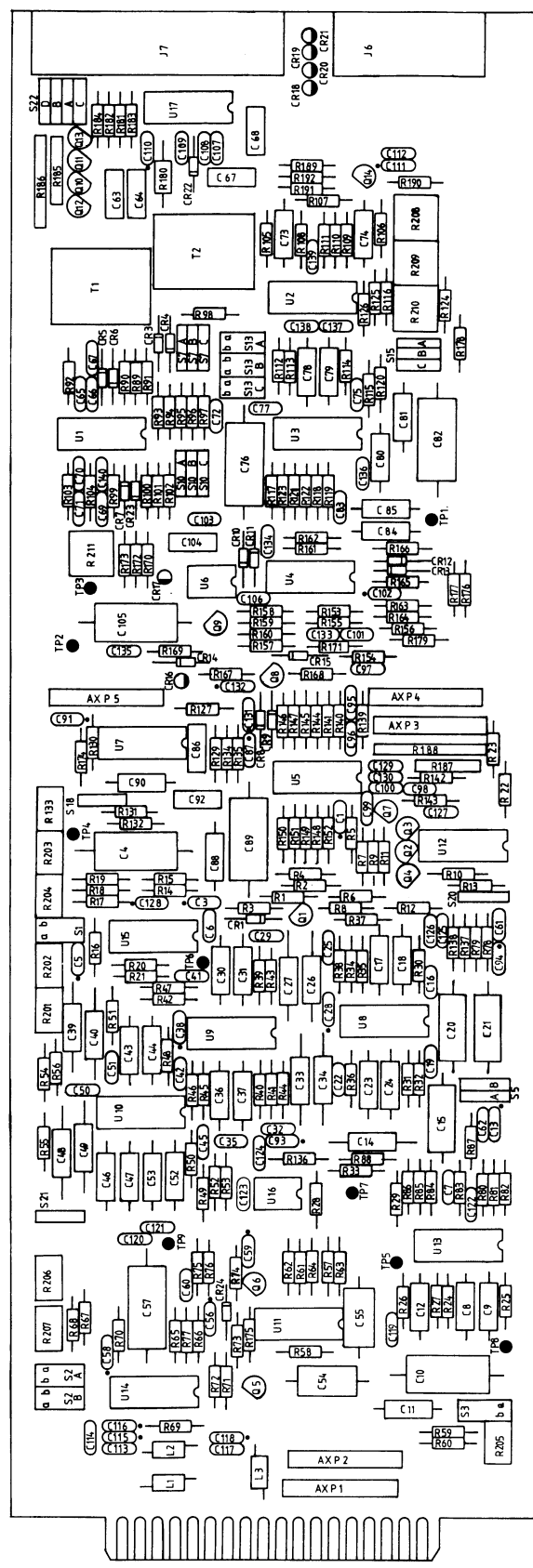
**⑩ 200 Hz HPF.**

The low end frequency response as used by the FSK demodulator is defined by this third order filter.

**⑪ FSK demodulator.**

This is a PLL type demodulator and can be set to receive either 600 baud, 1300Hz mark and 1700Hz space or 1200 baud, 1300Hz mark and 2100Hz space by setting S18 either on or off. The received data and carrier detect signals are sent to the digital board via AXP5.

REVISIONS		DATE	APPROVAL
ZONE	DESCRIPTION		
A		21.12.87	VH
B	ÆNH0709		



Dansk Radio AS		dlq	
DR GERT JENSEN		TITLE	
CH		MODEN	
AP		AP	
AP		AP	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE IN ACCORDANCE WITH DS 2075		FIRST ANGLE PROJECTION	
ANGLES		SIZE	
LIN DIM		CODE IDENT	
MATERIAL		DRAWING NO	
USED ON		47 16 66	
NEXT ASSY		A1	
APPLICATION		SCALE	
		SHEET 1 OF 7	



12. Bandpass Filter

This filter is tuned to a center frequency of 2990 Hz with R209 and R210. U3 is used as a "gyrator" to simulate inductance. The bandwidth of the filter is 100 Hz with S15 a,b,c open and 200 Hz with S15 a,b,c closed.

13. Amplifier

A +3 dB amplifier acts also as a buffer following the filter and operates in the non-inverting mode.

14. Level Detector

The level detector is preceded by a limiting stage U4a, D12-D13. The output of this also goes to the frequency detector. The limited signal is then rectified with U4, D10, D11 and filtered by U4 and C101. The resulting signal will then be used to indicate the presence of a 2990 Hz tone above a required level.

15. Frequency Detector

The limited signal from 14) is applied to the input of U6, a PLL tone decoder. The free running frequency is adjusted to 2990 Hz with R211. If the loop locks on to a signal of 2990 Hz then the output will go low, lighting CR17.

This is also "anded" with the output from the level detector, so when both level and frequency criteria are filled, then CR16 lights. At the RX4000 this is used to determine if a mute tone is present.

16. 200 Hz HPF

This 3rd order filter is used to define the low end audio response before further amplification in the RC4000.

17. Audio Switch

The analogue switch, biased for linear operation, is used to cut the audio at the RC4000 when a mute tone or data is sent. It can be bypassed with S20 which would allow a continuous monitoring of the line.

18. Unity Gain Buffer

The buffer is used for the audio signal before it passes to the power amplifiers at the RC4000.

19. Log AF Detector

The detector gives an output proportional to the log of audio level. The detector and buffer are made up of U5, D8, D9 and the feedback is applied to the transistor Q7 which reduces the input signal level.

ZONE	TR	DESCRIPTION	DATE	APPROVAL

# REVISIONS

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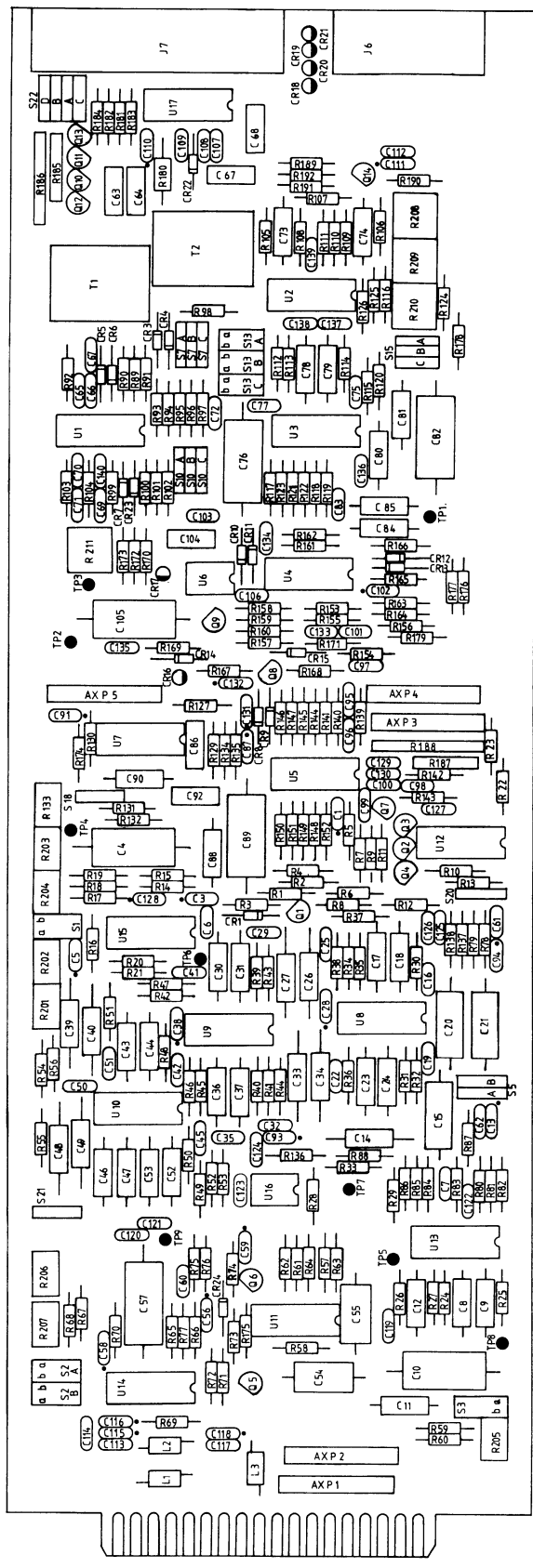
304

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307

REVISIONS		DATE	APPROVAL
ZONE/CTR	DESCRIPTION		
A		21.12.87	VH
B	ÆM81079		



Dansk Radio AS		DIA	
DR GERT JENSEN		TITLE	
CH		MODEL	
AP		SIZE	
FIRST ANGLE		DRAWING NO	
PROJECTION		47 16 66	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS. DIMENSIONS IN PARENTHESES ARE IN INCHES. CONFORM TO EN 60913-1.		SCALE	
ANGLES		MATERIAL	
LIN DIM		USED ON	
NEXT ASSY		APPLICATION	
SHEET 1 OF 7			

20. 60 msec. Delay

A delay of 60mS is produced between RTS going low and CTS going low due to R3, R4 and C1. The switching speed of the network is increased with Q2 so that a sharp falling edge is produced. Q4 is used as an inverter to drive the analogue switch 22.

21. FSK Generator

The serial data to be transmitted is used to control two tones. A mark tone of 1300 Hz is adjusted by R202. The space frequency can be either 1700 Hz or 2100 Hz as selected by S1. K203 adjusts the 2100 +/-5 Hz tone and R204 adjusts the 1700 +/-5 Hz tone. R201 adjusts the output level at TP6 to be 77mVrms.

22. Analogue Switch

The switch, biased for linear operation by R22 and R23, selects either audio from the receiver's detector or the tones from the FSK generator. It is controlled by the 60mS delay 20) so that only one source is selected at a time.

23. Buffer

A buffer is provided so that the following filter sees a low source impedance.

24. 3 kHz Lowpass Filter

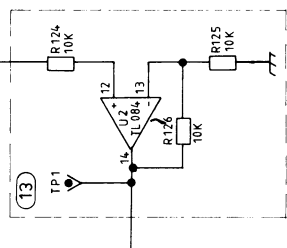
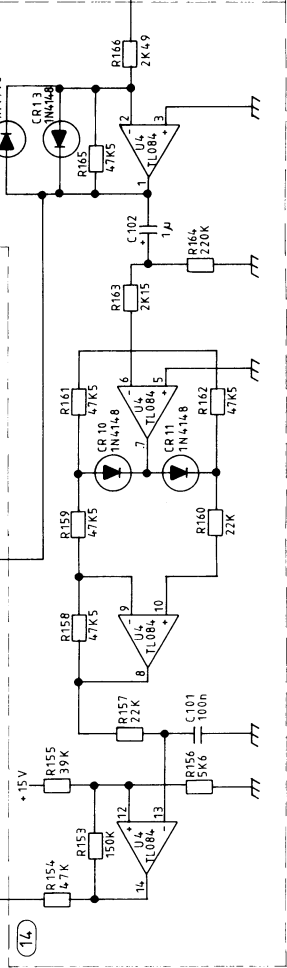
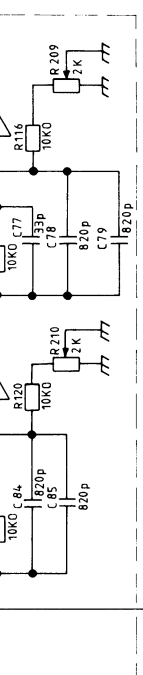
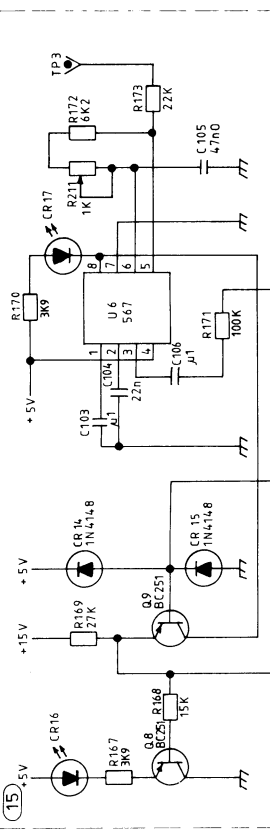
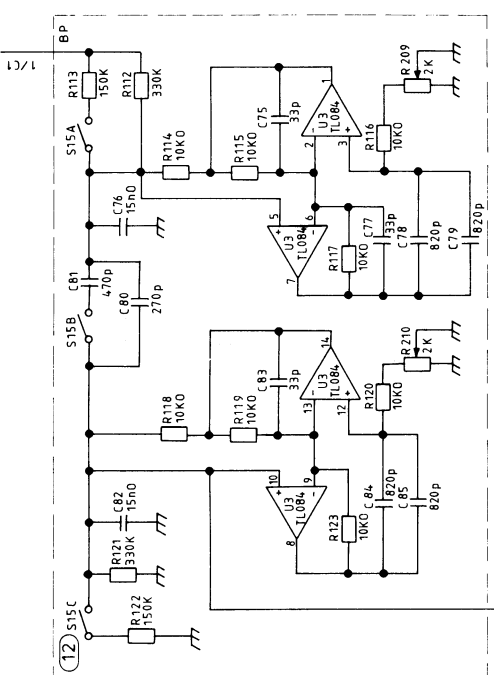
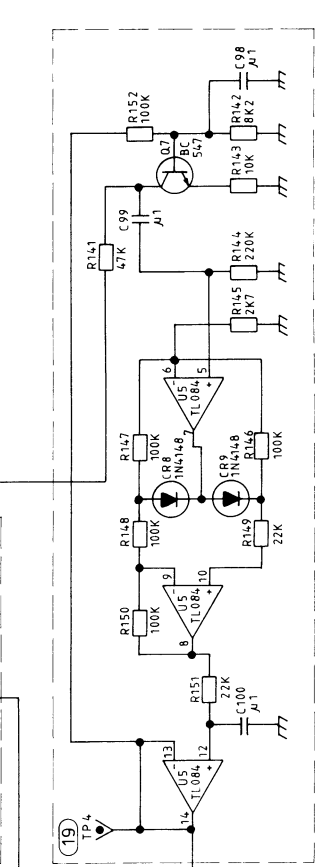
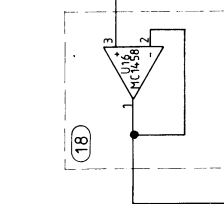
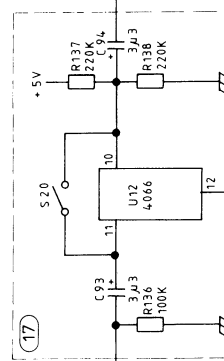
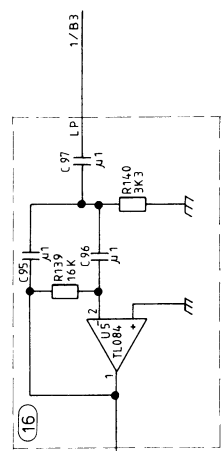
This 3rd order LPF is used to provide a band limited signal for the line transmitter.

25. 2700 Hz Lowpass Filter

This filter, of an elliptic configuration, provides very high attenuation of frequencies above 2.7 kHz, typically 45 dB at 2870 Hz. It is formed with floating gyrators providing the inductance. R33, 42 and 51 are only to provide a ground reference point. This high order of attenuation is used to prevent the audio tones from activating the mute. The three stages are coupled by C28 and C38.

ZONE/LTR	DESCRIPTION	DATE	APPROVAL
A	REVISED	2.1.1986 VH	
B	REVISED	23.3.88 VH	
C	REVISED	23.3.88 VH	

# REVISIONS



FIRST ANGLE PROJECTION	SIZE A2	CODE IDENT A2	DRAWING NO. 47 16 66
	SCALE		SHEET 2



26. Buffer

The buffer is used to provide isolation between filters (25) and (27)

27. Notch Filter

This provides further attenuation of any further 2990 Hz frequencies. During alignment it is normally necessary to connect TP7 and TP5, so that R205 can be adjusted for a minimum. Typically > 20 dB of attenuation is provided with a 3 dB bandwidth of < 300 Hz.

28. Tone Generator

The mute tone of 2990 +/- 5 Hz is generated by U14 with the frequency of the tone adjusted by R207. The output level at TP9 is normally 206 mVrms and is set by R206.

29. +10 dB Switch

When the controller requires the receiver to be muted, the mute line goes low. This turns on Q5 and turns off Q6, leaving the mute tone only attenuated by R76. After a time delay set by C54, R76 Q6 again turns on and the mute tone is attenuated by R75 in parallel to R76, reducing the level by 10 dB.

30. Switch

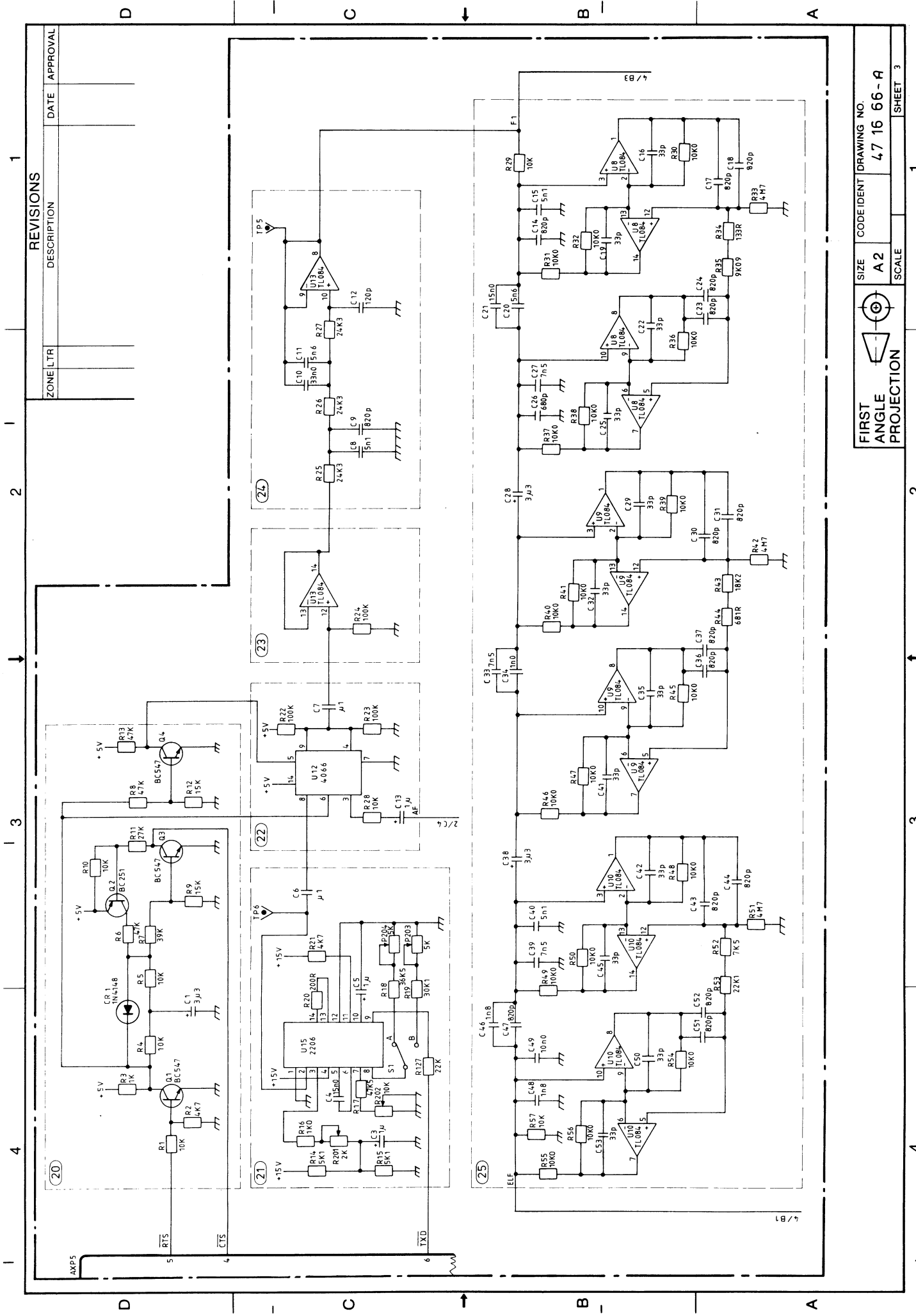
The analogue switch is controlled by the inverted MUTE and isolates the tone from the combiner if no mute is selected.

31. Combiner

U13 is used to combine the audio or FSK and mute tones when present.

32. Output Amplifier

The line A output amplifier has three possible gain reductions, six dB with S5a closed and ten dB with S5b closed or sixteen dB with S5a and S5b both closed.



REVISIONS		
ZONE/LTR	DESCRIPTION	DATE / APPROVAL

FIRST ANGLE PROJECTION

SIZE A2

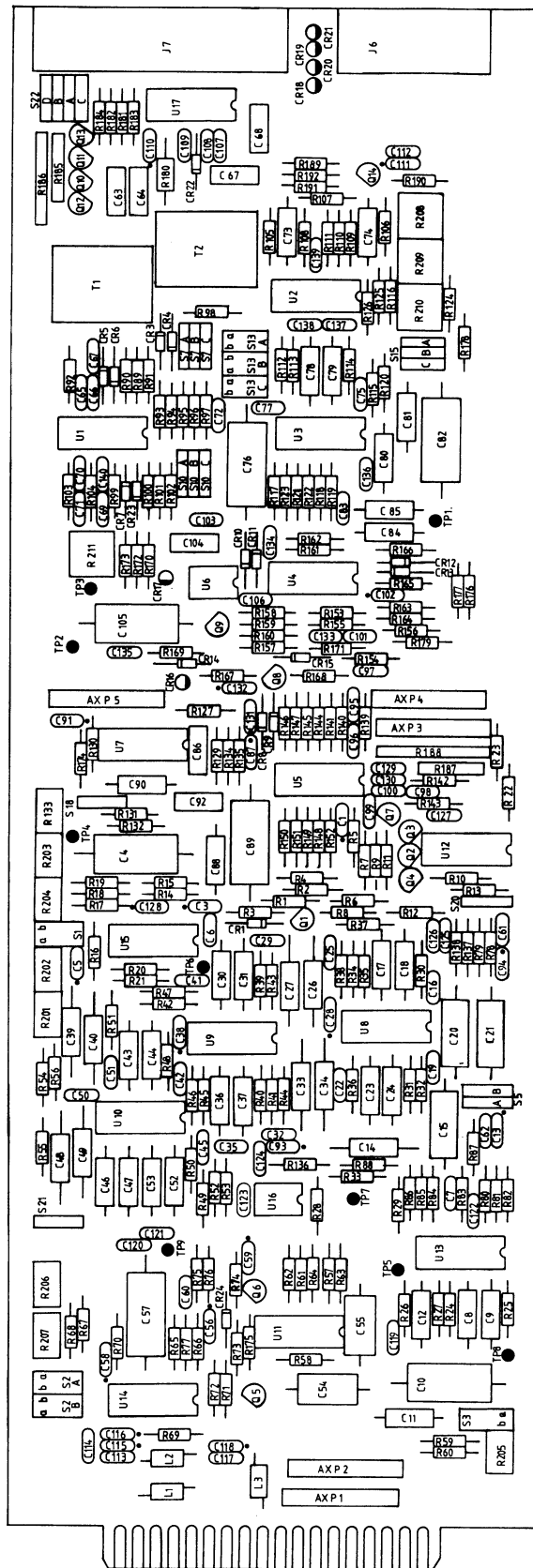
CODE IDENT A2

DRAWING NO. 47 16 66 - A


SHEET 3

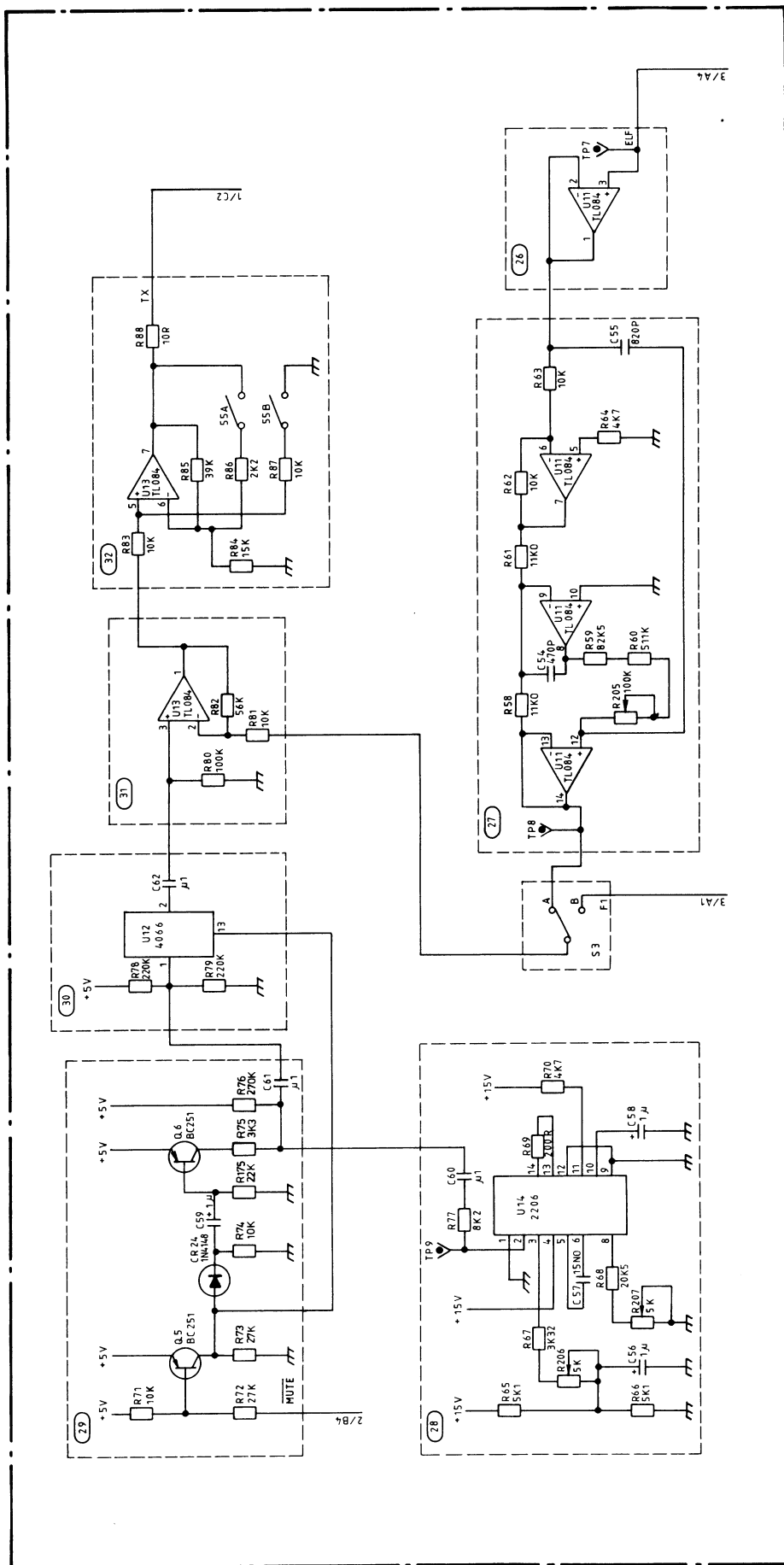


REVISIONS		
ZONE/LTR	DESCRIPTION	DATE
A		21.12.87
B	EM87079	VH

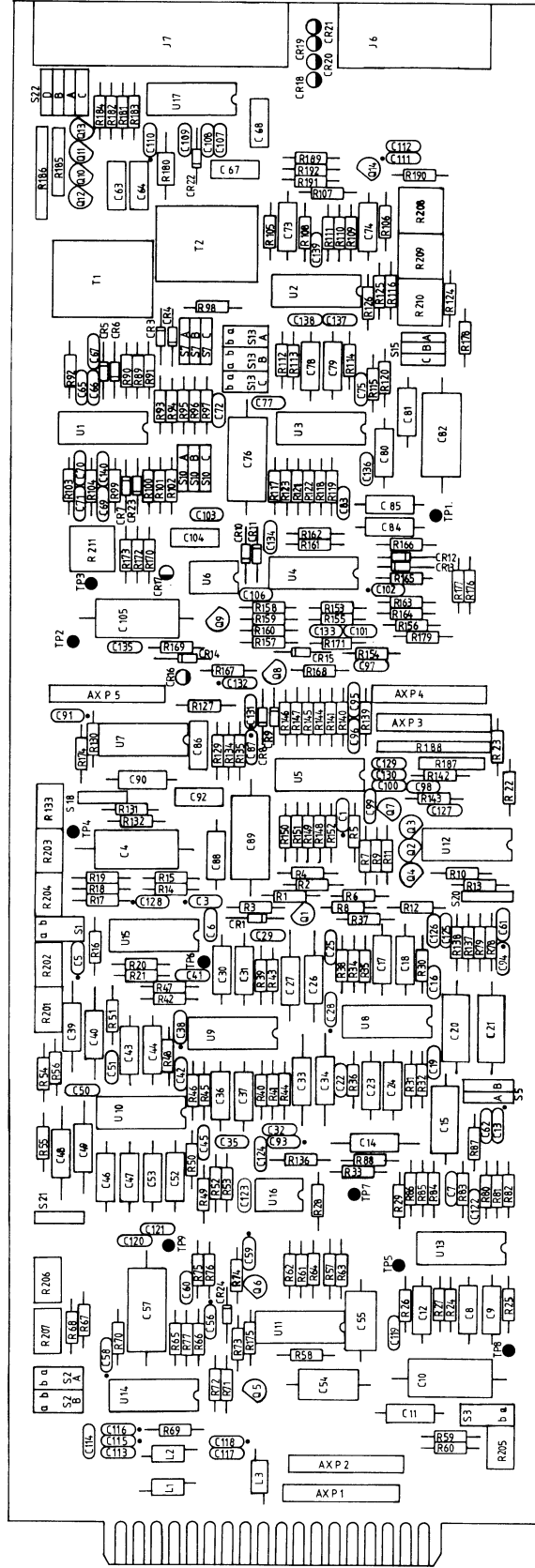


Dansk Radio AS		dtg	
DR GERT JENSEN		TITLE	
CH		M00BH	
AP		SIZE	
FIRST ANGLE		CODE IDENT	
PROJECTION		DRAWING NO	
		47 16 66	
		SHEET 1 OF 1	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED		APPLICATION	
NEXT ASSY		USED ON	
ANGLES		MATERIAL	
LIN DIM			

	SIZE	CODE IDENT	DRAWING NO.
	A 2		47 16 66-A
<b>FIRST ANGLE PROJECTION</b>	SCALE	SHEET 4	



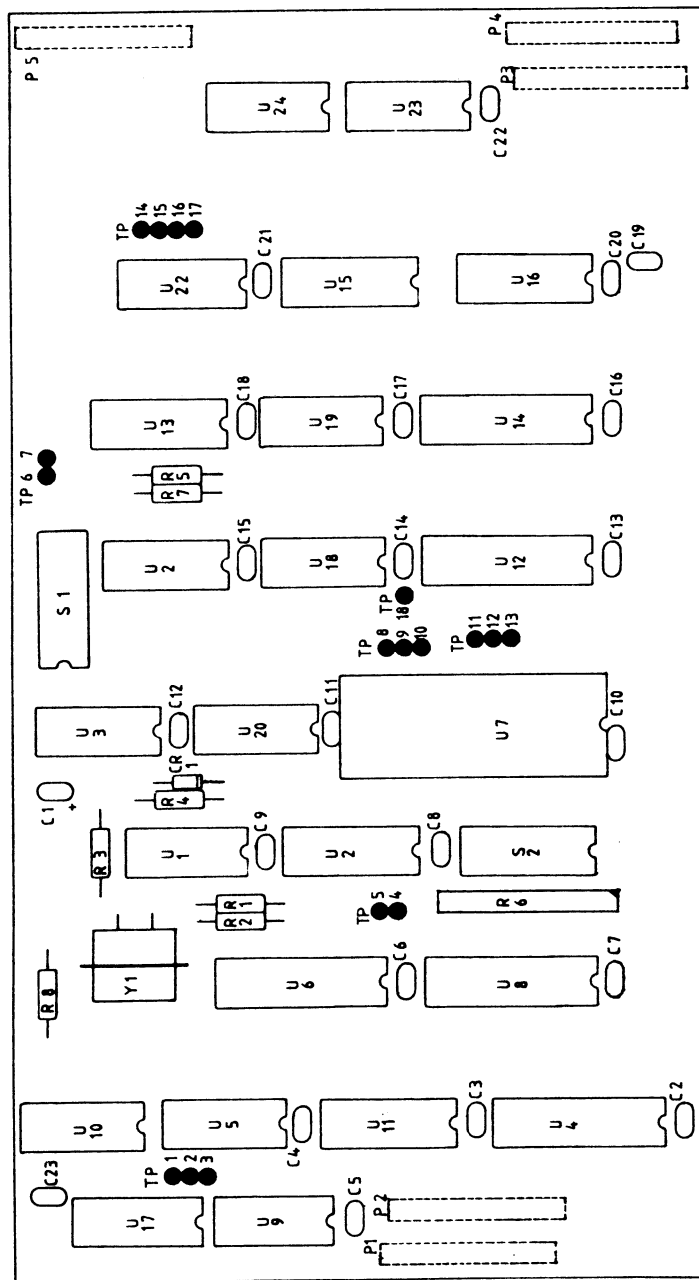
REVISIONS		DATE	APPROVAL
ZONE/CTR	DESCRIPTION		
A			
B	ÆM81079	21.12.87	VH




Dansk Radio AS		dan	
TITLE		MODEL	
DR. GERT JENSEN		B1095	
CH		AP	
AP		AP	
FIRST ANGLE		DRAWING NO	
PROJECTION		47 16 66	
APPLICATION		SCALE	
USED ON		SHEET 1 OF 7	
NEXT ASSY			
MATERIAL			
LIN DIM			
ANGLES			
DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE IN ACCORDANCE WITH DS 2075			



ZONE	LTR	DESCRIPTION	DATE	APPROVAL
------	-----	-------------	------	----------



		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIME- TRES AND TOLERANCES ARE IN ACCORDANCE WITH DS 2075				Dansk Radio AS		dra	
		ANGLES		DR.		MIJ		D606 B4	
		LIN. DIM.		CH.					
				AP		B. S.		650/28	
				AP.					
		MATERIAL		FIRST ANGLE PROJECTION				SIZE	
471666		RC 4000						A 2	
471666		RX 4000						CODE IDENT	
NEXT ASSY		USED ON						DRAWING NO.	
APPLICATION								471631	
								SCALE	
								SHEET 1 OF 2	

5. Modem Controller

U7 is a USART and the heart of the modem. It controls the serial data transmission and sets associated control signals.

6. Clock Circuit

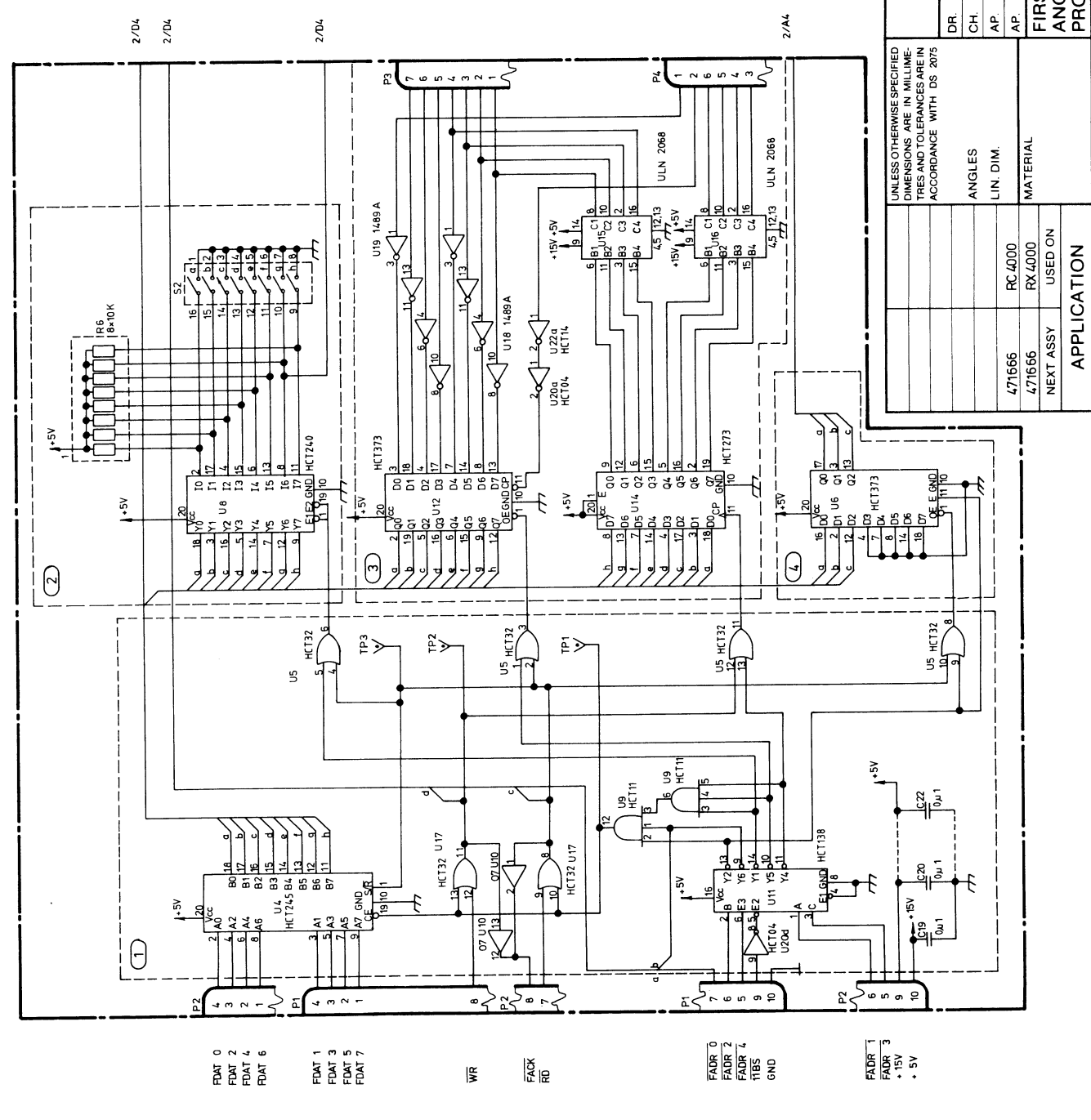
U1 e,d,f and crystal Y1 form a clock generator running at 6.4122 MHz. U2 divides this by 5 to obtain a 1.2824 MHz clock to the UART. This clock is further divided by U3 to get the receive/transmit clock rate at 16 times the baud rate. The baud rate is selected at switch S1. b selects 600 baud transmission. c selects 1200 baud rate.

U1c together with R4 and C1 generate a power on reset pulse to the USART.

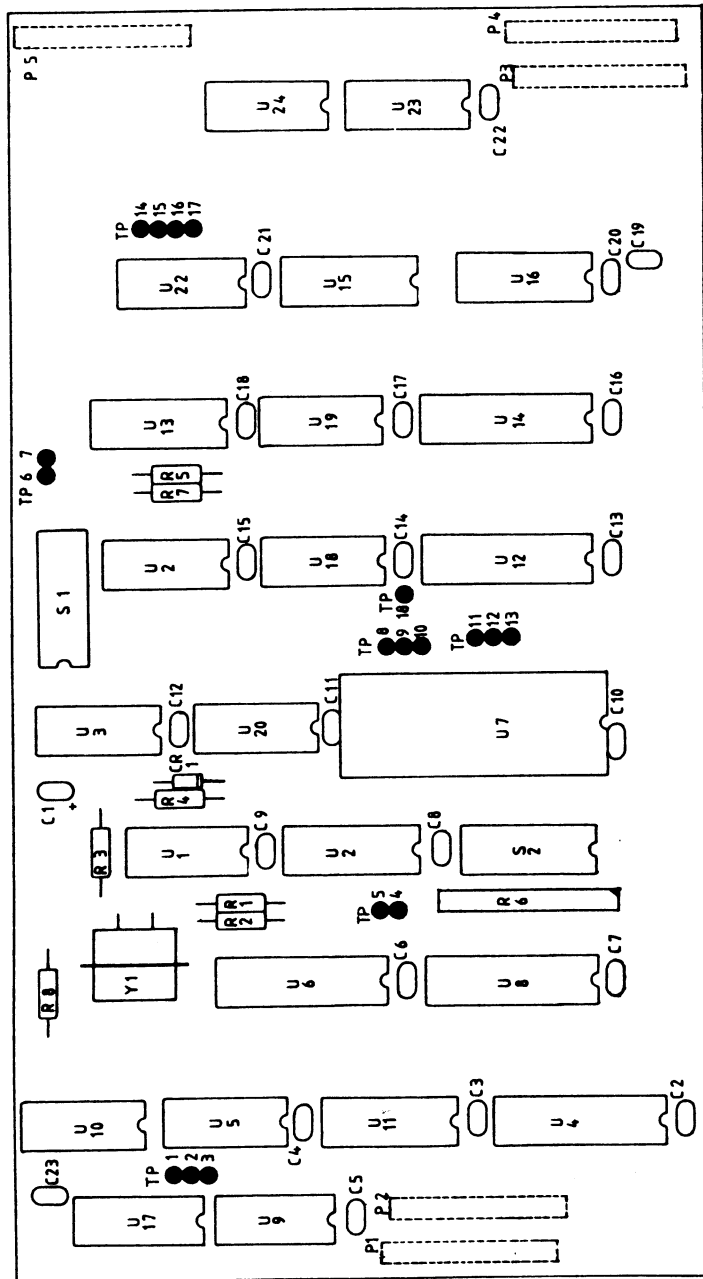
7. Modem Control Logic


U21 and U13 control the data transfer between the ext./int. modem and the USART.

REVISIONS		DATE	APPROVAL
ZONE/LTR	DESCRIPTION		
A	REVISED	12.2.88	VH
B			



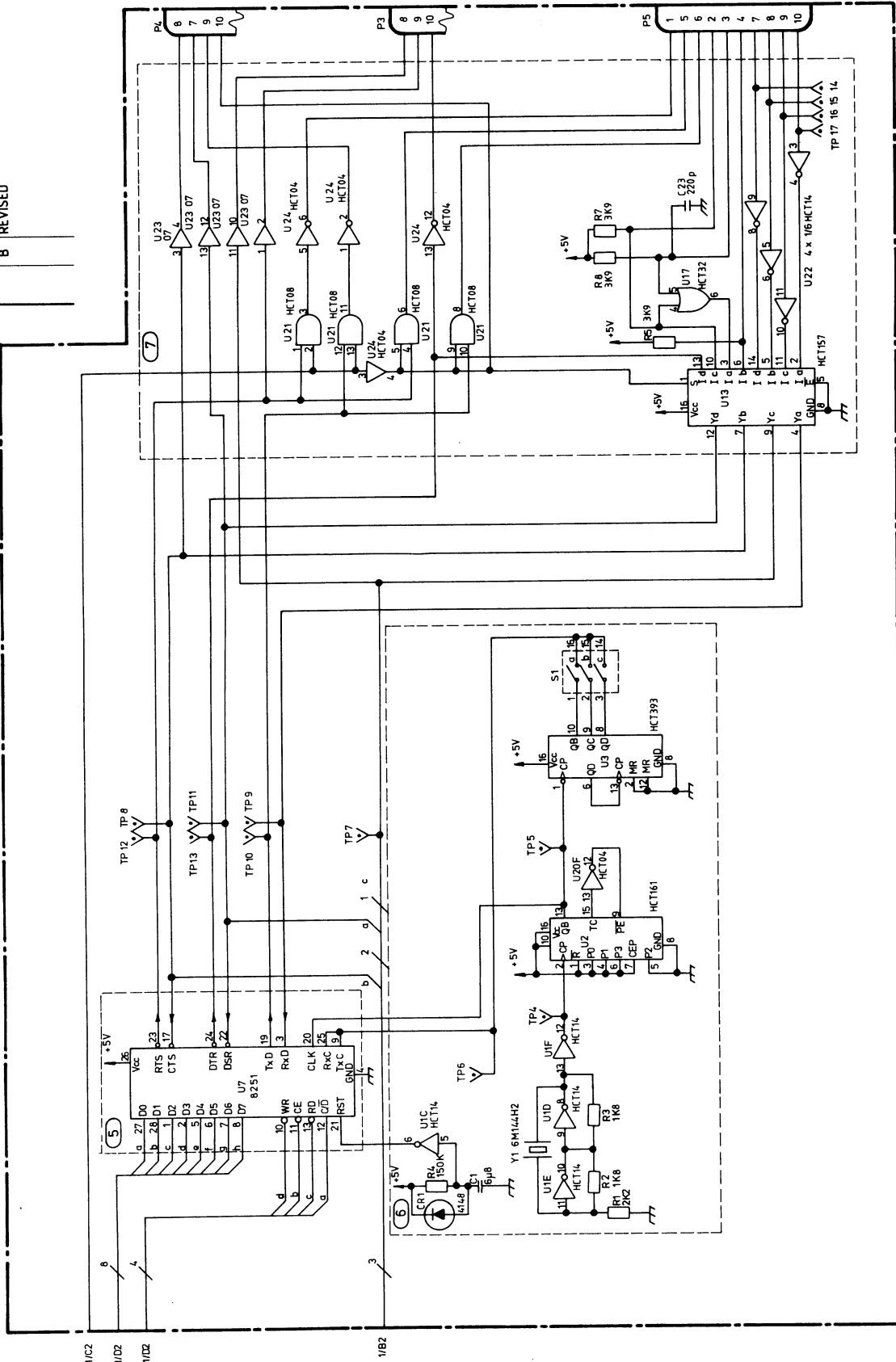
Dansk Radio AS		TITLE	
DR.	MIJ	0606 84	MODEM
CH.	8.S.	850128	DIGITAL PART
AP.			
FIRST ANGLE PROJECTION		SIZE	CODE IDENT
		A 2	A 2
		DRAWING NO.	471631
		SCALE	SHEET 1 OF 2



		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIME- TRES AND TOLERANCES ARE IN ACCORDANCE WITH DS 2075	DR.	M.I.J.	D606.84	TITLE	Dansk Radio AS		drg	
			CH							MODEM DIGITAL PART
			AP.	B.S.	650/28					
			AP.							
				FIRST ANGLE PROJECTION			SIZE	CODE IDENT	DRAWING NO.	
							A 2		471631	
						SCALE		SHEET 1 OF 2		



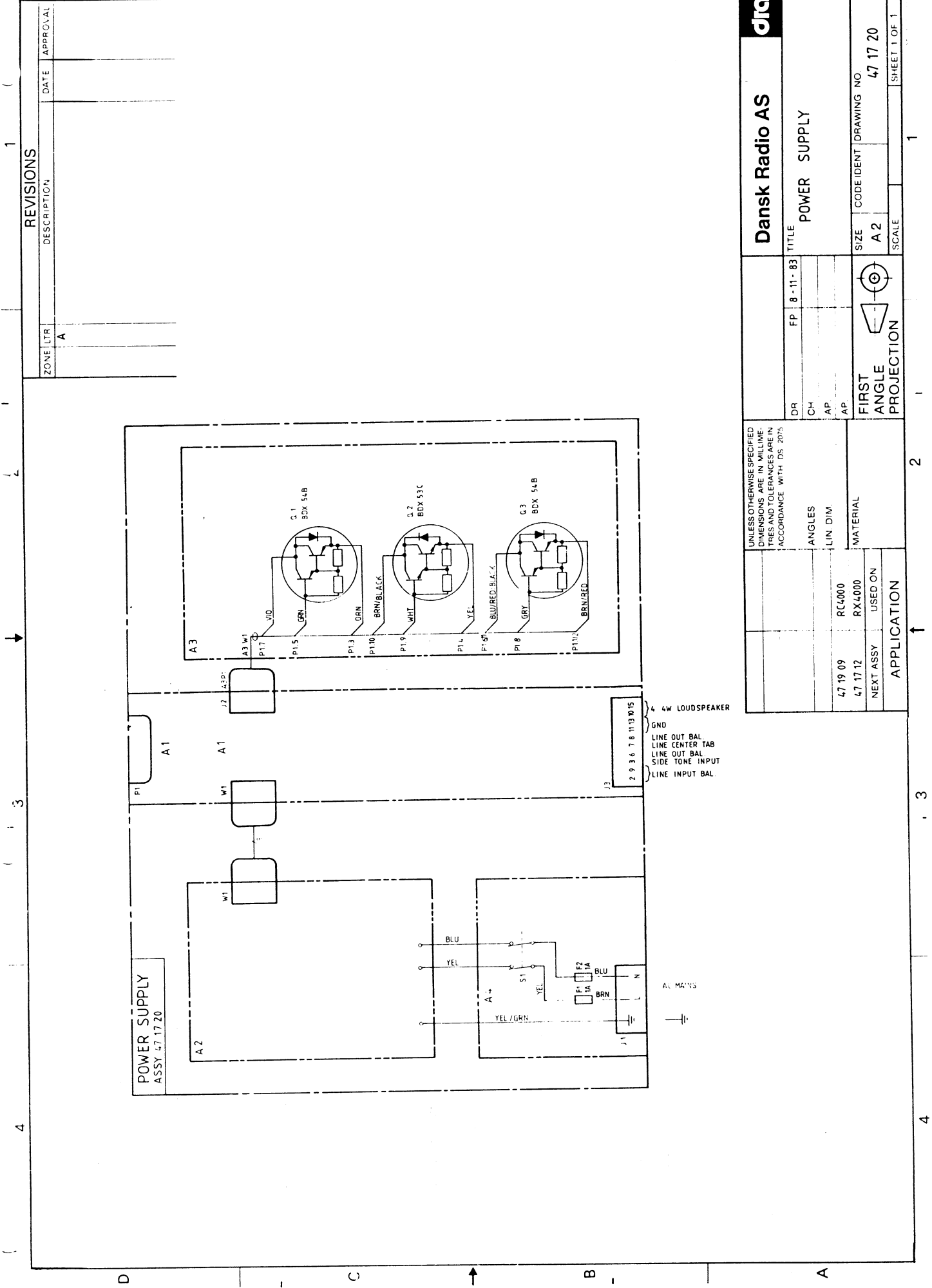
REVISIONS		DATE	APPROVAL
ZONE/LTR	DESCRIPTION		
A			
B	REVISED	12.2.88	VH



FIRST ANGLE PROJECTION	SIZE A2	CODE IDENT	DRAWING NO. 471631
		SCALE	SHEET 2

ASSY 471720, 471534, 471550, POWER SUPPLY

Service Sheet A10



REVISIONS

ZONE LTR	DESCRIPTION	DATE	APPROVAL
A			

Dansk Radio AS		POWER SUPPLY	
DR	FP	8-11-83	TITLE
CH			
AP			
AP			
FIRST ANGLE PROJECTION		SIZE	CODE IDENT
		A2	47 17 20
		SCALE	SHEET 1 OF 1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE IN ACCORDANCE WITH DS 2075		ANGLES	
		LIN DIM	
		MATERIAL	
47 19 09	RC4000		
47 17 12	RX4000		
NEXT ASSY		USED ON	
		APPLICATION	

4 W LOUDSPEAKER  
GND  
LINE OUT BAL.  
LINE CENTER TAB  
LINE OUT BAL.  
SIDE TONE INPUT  
LINE INPUT BAL.

POWER SUPPLY  
ASSY 47 17 20

AC MAINS

- 1 VEE supply filter
- 2 -15V reference voltage regulator.  
The reference voltage is adjusted to -15, 3V at 25<sup>0</sup> by means of R2.
- 3 Standby/On switch circuit.  
When P1-A3 is grounded, Q1 is switched on supplying +15V to 4.
- 4 U2 forms part of the PWRL0 detector. R6 and R7 generate a reference ripple from the unregulated 8V. The reference ripple is compared with a threshold level (R8, R9), holding Q2 in the off-state when the reference ripple exceeds the threshold level. Q3 and Q4 ensure a PWRL0 signal during start-up until VBB reaches VEE.
- 5 +15V - VBB regulator.  
U4 compares VBB/3 with the 5V reference voltage and supplies the regulating current for the driving transistor Q6.  
U3 forms the current limiting circuit. When the R26-27 voltage drop exceeds the R132 voltage drop, U3 shunts the regulating current for Q6 tracking a fold-back characteristic.
- Q5, VR2 and R33 form a crow-bar protection on the regulator output voltage. The trigger point for Q5 is approx. +17V.
- 6 -15V - VAA regulator.  
U5B compares VAA with three times the 5V reference voltage and supplies the regulating current for the driving transistor Q8.  
U4B forms the current limiting circuit similar in operation to 5. Q7, VR3, R49, R50 and Q9 form a crow-bar protection on the regulator output voltage. The trigger point for Q7 is approx. -17V.
- 7 +5V - VCC/VDD regulator.  
U5d compares VDD from a mother board sense point (P1-B6) or through R61, with the 5V reference voltage and supplies the regulating current for the driving transistor Q11.  
U5a forms the current limiting circuit similar in operation to 5. Q10, VR4 and R62 form a crow-bar protection on the regulated output voltage. The trigger point for Q10 is approx. +6.2V.



**8** AFDET and line input.

The appropriate input is selected with S1. U6d makes it possible to drive the AFDET line with the 600 ohm line input.

**9** Notch-filter.

U7a, U7b and U7c form an inverting voltage controlled bandpass filter with unity gain. The notch characteristic is obtained by adding the non-inverted input signal to the inverted output signal. Q12 acts as voltage controlled resistor in the filter. The filter is adjusted by means of R83 to 1 kHz notch tune when TP9 is set to -11.5V.

**10** Notch Control.

R88, R89 and C35 filter and temperature stabilize the filter control voltage.

By means of Q13 and Q14 the notch filter may be bypassed. When TP9 reaches -15V, Q13 is switched on whereby the bandpass filter output is grounded.

U7d forms a summing amplifier for AFDET, bandpass filter output and "Side-Tone" input.

**11** AF-gain Control.

The AF signal from **9** is routed to U8-11. The control voltage between U8-6 and U8-9 adjusts the AF signal level at R106 by means of the emitter coupled amplifier within U8. The control voltage is derived from the AF gain control adjustment. The overall gain of the stage may be controlled from -60dB to approx. 0dB.

**12** Line output amplifier.

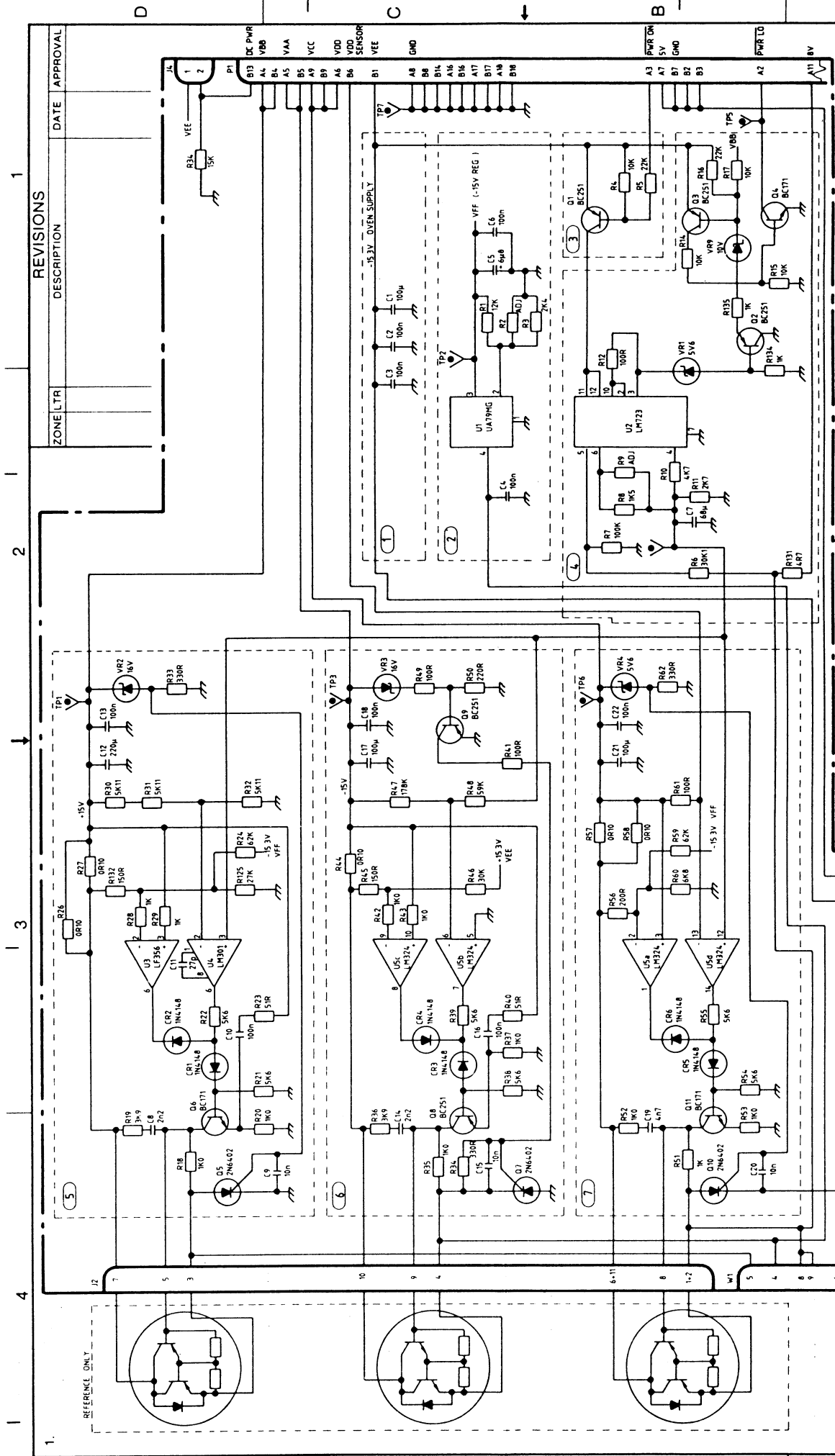
U6c, VR7 and VR8 form an amplifier with the output limited to  $\pm 3.5V$  peak.

U6b, Q17 and Q18 drive the transformer T2 and the feedback loop includes the transformer.

R123 and R126 give the 600 ohm output impedance independent of the transformer.

**13** AF-Output amplifier.

U9 forms the AF output amplifier. The stage has a voltage gain of approx. 38 dB and is capable of delivering up to 4W in a 4 ohm load.



REVISIONS

ZONE	TR	DESCRIPTION	DATE	APPROVAL
1				
2				
3				
4				

Dansko Radio AS

TITLE

DR.	VH	25.3.1988
CH		
AP		
AP		

POWER SUPPLY  
REGULATOR AND AF ASSY

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN MILLIMETRES  
AND TOLERANCES ARE IN  
ACCORDANCE WITH DS 2075

47 17 20	RX4010	ANGLES
47 17 20	RX4009	LIN DIM
47 17 20	RX4000	MATERIAL
47 68 03	RC4000	USED ON
NEXT ASSY		

FIRST  
ANGLE  
PROJECTION

SIZE  
A2

CODE IDENT

DRAWING NO.  
47 15 34

SHEET 1 OF 2

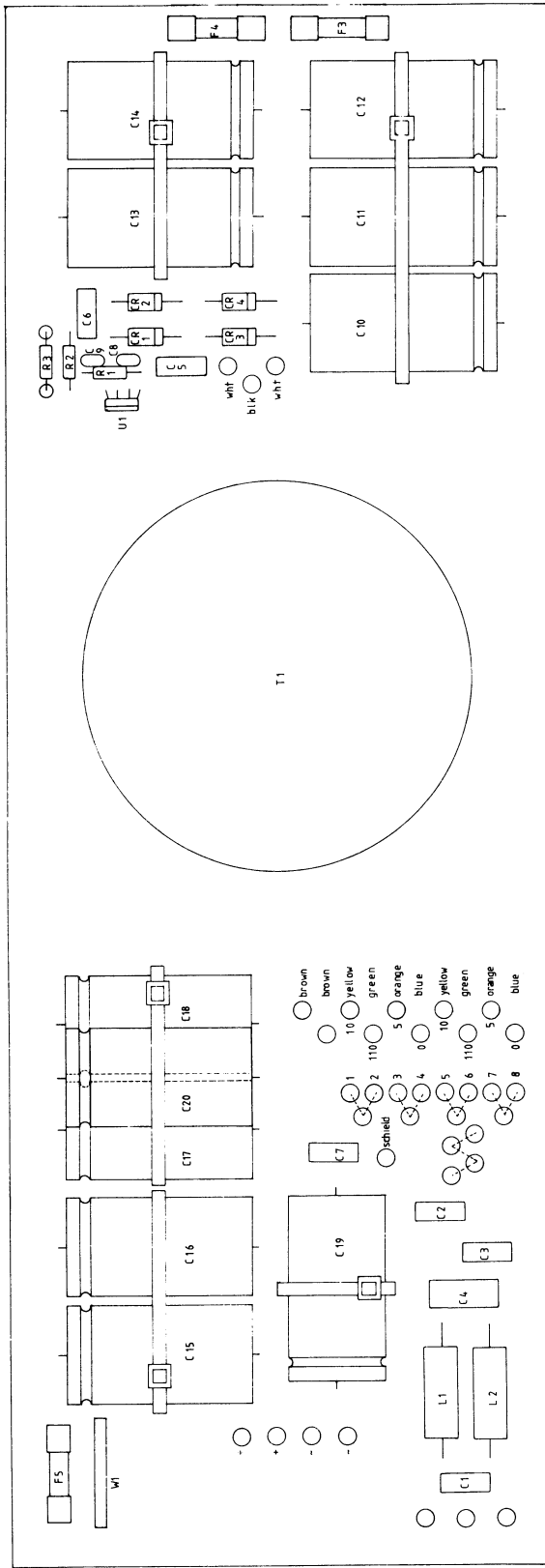




- ① EMI filter for AC-mains supply.
- ② Mains transformer with 110V to 125V and 220V to 250V in 5V steps.
- ③ Rectifiers and filters.
- ④ +15V regulator for standby supply.  
By means of R3 the voltage is adjusted to +15, 3V at 25°C.



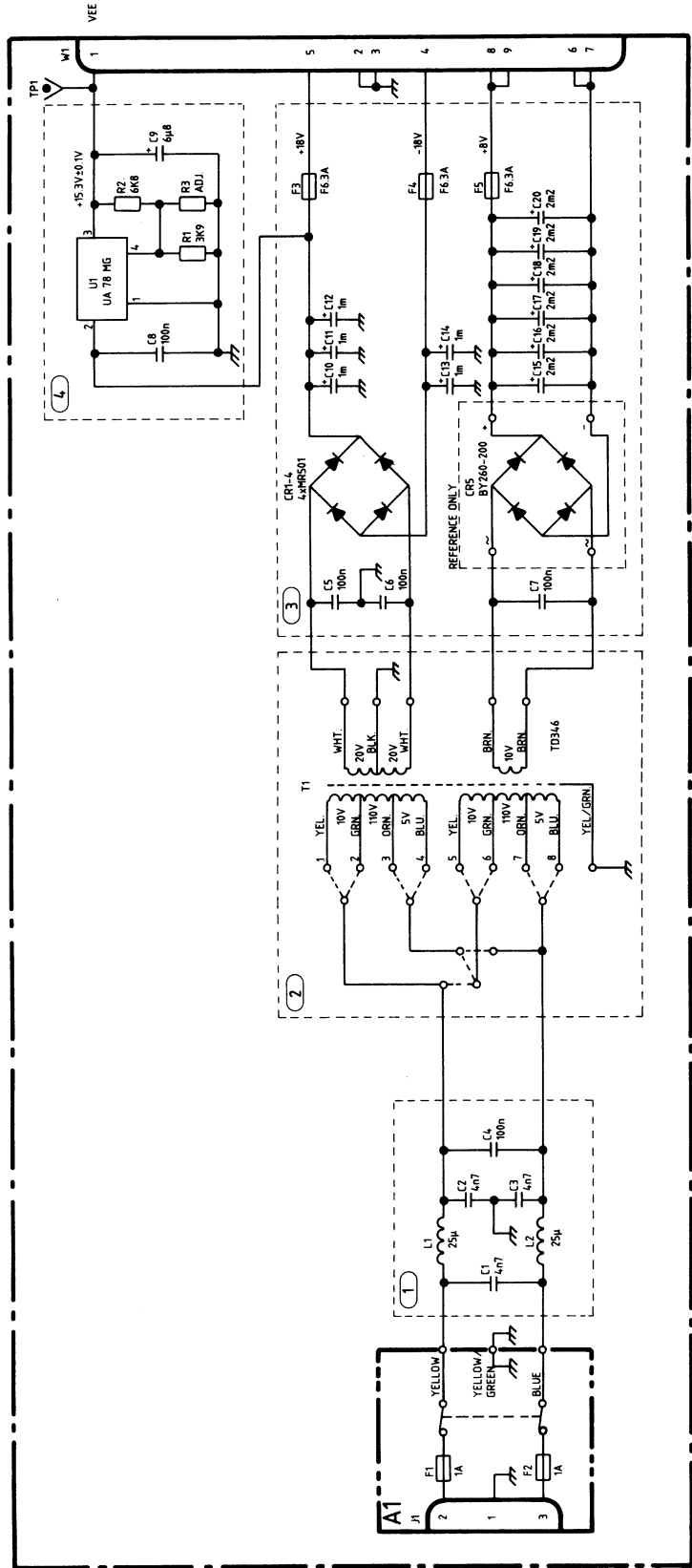
REVISIONS		
ZONE/LTR	DESCRIPTION	DATE APPROVAL
A		
B	ENH7101	29.2.88 VH
C3		



Dansk Radio AS		dlq A	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE AS SHOWN ACCORDANCE WITH DS 2075		TITLE	
RXL000		COMPONENT LOCATION	
47 17 20		PARTS LIST	
47 17 20		TRAFO ASSY	
47 17 20		TRAFO ASSY	
NEXT ASSY		CODE IDENT	
USED ON		DRAWING NO	
		47 15 50	
		SCALE 2:1	
		SHEET 1 OF 1	

1. 4 3 2 1

REVISIONS		
ZONE/LTR	DESCRIPTION	DATE



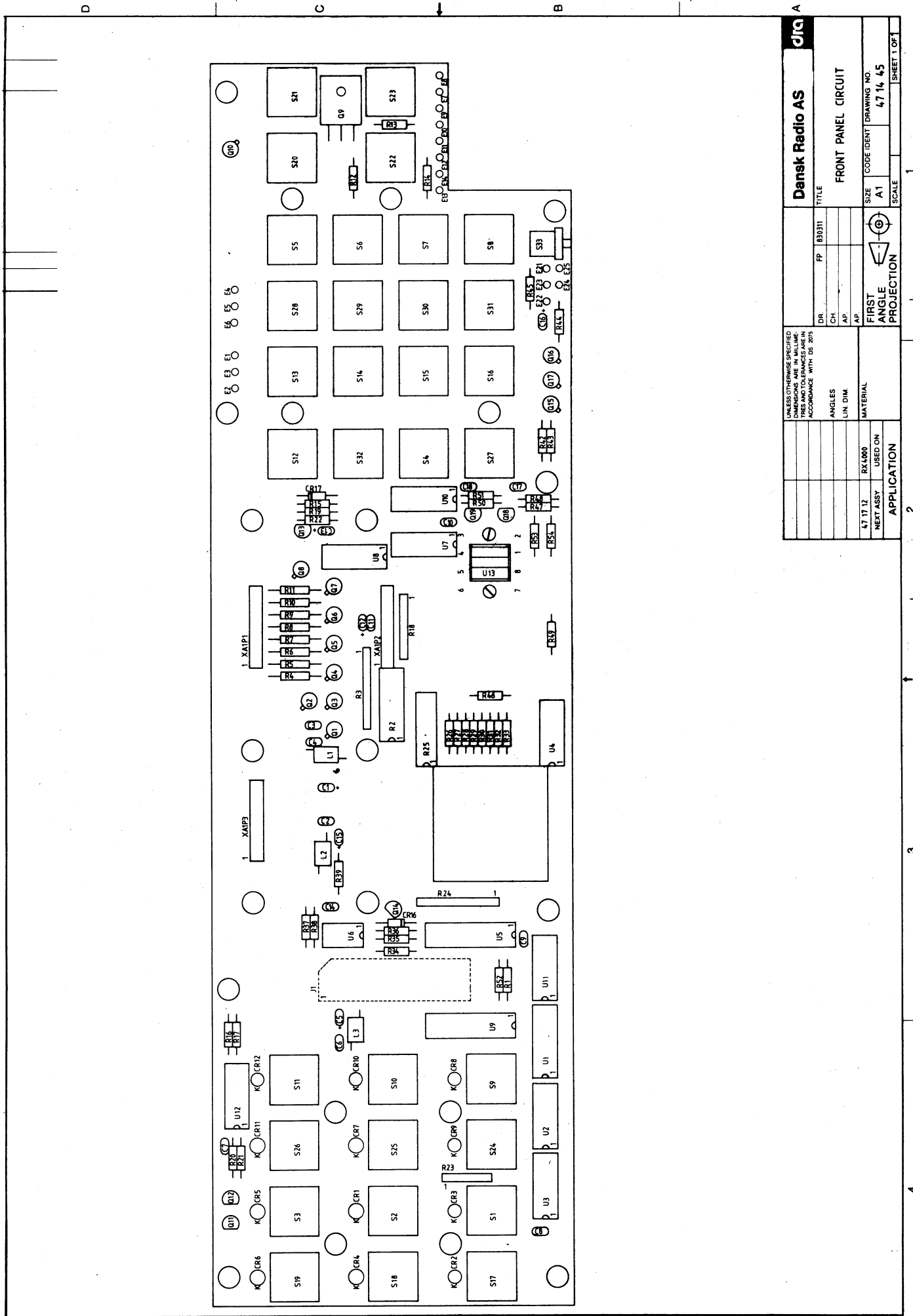
Dansk Radio AS		dra	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE IN ACCORDANCE WITH DS 2075		TITLE	
ANGLES		DR. VH 213 1988	
LIN. DIM.		CH. 26 1/3 88	
MATERIAL		AP. 26 1/3 88	
APPLICATION		FIRST ANGLE PROJECTION	
NEXT ASSY USED ON		SIZE CODE IDENT	
		A2	
		DRAWING NO. 47 15 50	
		SHEET 1 OF 1	

ASSY 471445, 471372 FRONT PANEL CIRCUIT

Service Sheet All

ASSY 471445, FRONT PANEL CIRCUIT      Schematic 1

- ① Address decoding with associated gates for generation of acknowledge  $\overline{F\bar{A}\bar{C}\bar{K}}$ , as handshaking signal for the microcomputer.
- ② Supply filters.



Dansk Radio AS		TITLE	
DR	B0331	FP	
CH		CH	
AP		AP	
FRONT PANEL CIRCUIT		CODE IDENT DRAWING NO.	
SIZE		A1	
SCALE		4.7 14.45	
SHEET 1 OF 1			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED		FIRST ANGLE PROJECTION	
ANGLES LIN DIM.		MATERIAL	
4.7 17.12		BX 4000	
NEXT ASSY		USED ON	
APPLICATION			
1		2	
3		4	

ASSY 448591, FRONT PANEL CIRCUIT      Schematic 2

③      Eight-bit latch used for segment information to displays and LED's, and data to D/A-converter ⑪ .

④      Q1-Q8: Drivers for segment information.  
R4-R11: Current limiting resistors.

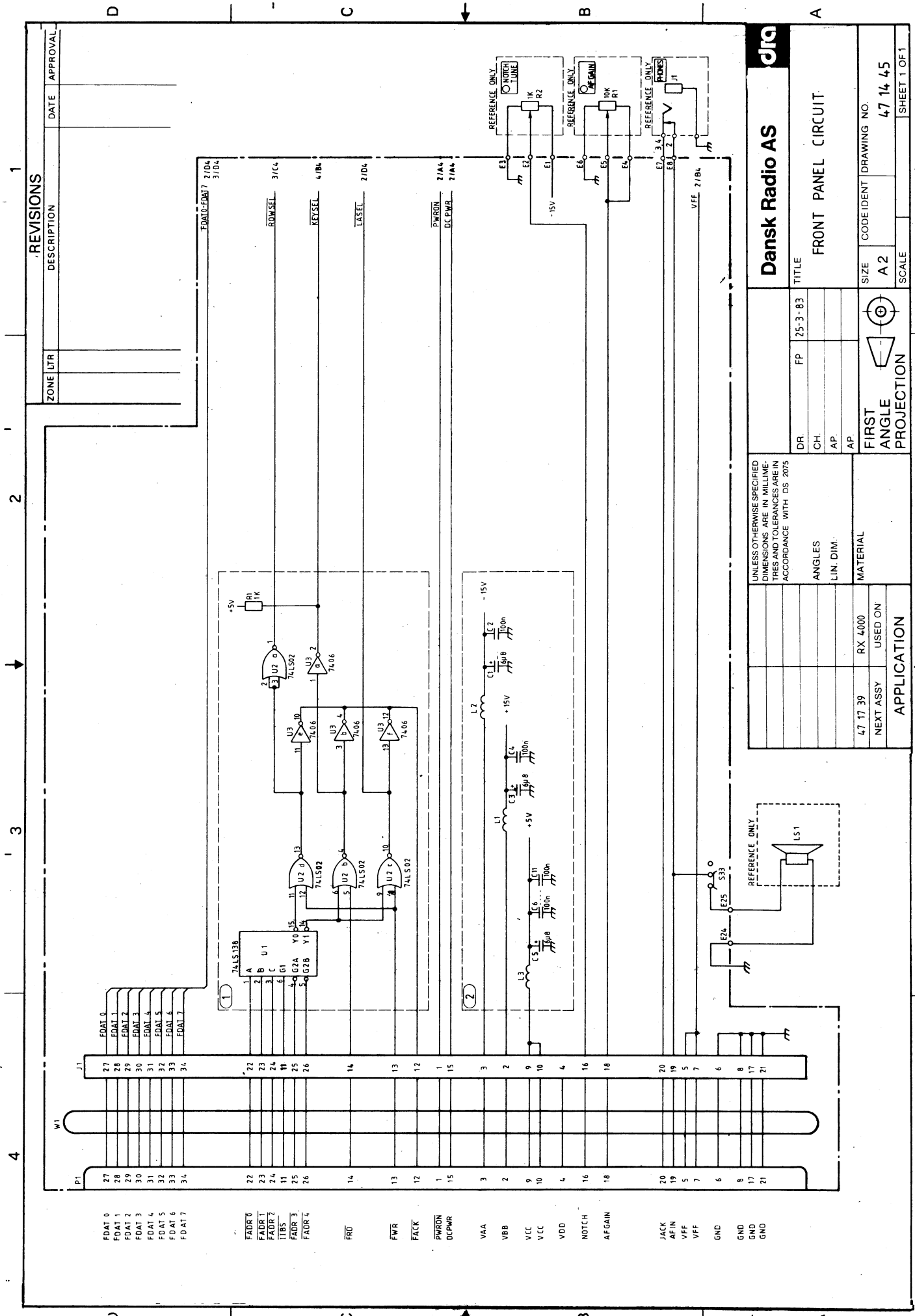
⑤      LED indicators.

CR no.      Corresponding switch

1	inter
2	off
3	slow
4	WIDE
5	AM
6	SSB
7	narr
8	att
9	fast
10	vnar
11	RTTY
12	CW
13	tune
14	bfo
15	scan

⑥      Dimmer circuit, controls the light in displays, LED's and S-meter.





REVISIONS

ZONE	UJR	DESCRIPTION	DATE	APPROVAL

Dansk Radio AS		TITLE	
FRONT PANEL CIRCUIT			
DR.	FP	75-3-83	
CH.			
AP.			
AP.			
FIRST ANGLE PROJECTION			
SIZE	CODE IDENT	DRAWING NO.	
A2		47 14 45	
SCALE			
		SHEET 1 OF 1	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE IN ACCORDANCE WITH IS 2075			
ANGLES			
LIN. DIM.			
MATERIAL			
47 17 39	RX 4000		
NEXT ASSY	USED ON		
APPLICATION			

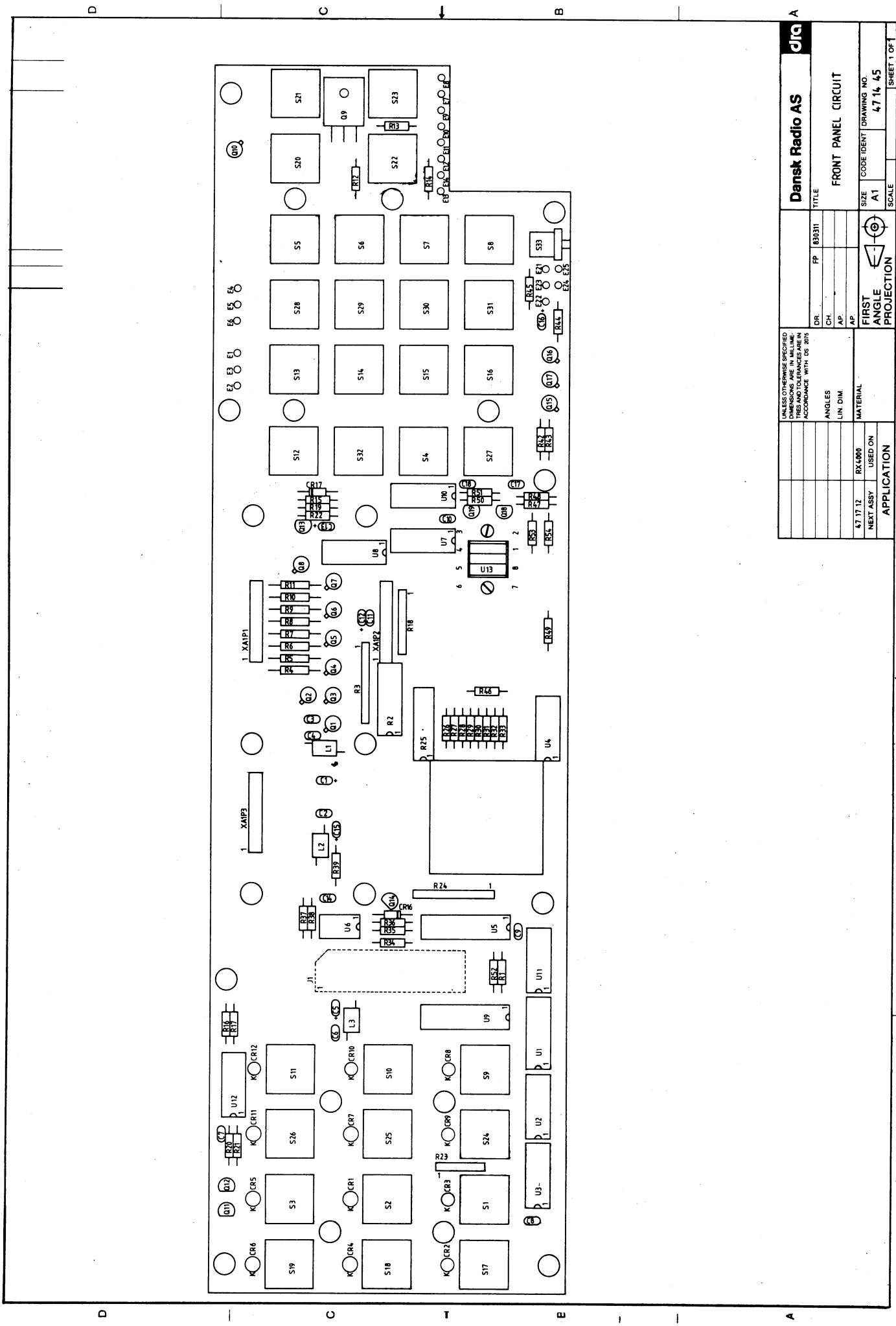


ASSY 448591, FRONT PANEL CIRCUIT      Schematic 3

⑦ U7, U8: Shift registers with associated pull-up network, used for multiplexing displays LED's and switches. It also selects the sample hold circuit ⑬, and clears tune F/F ⑫. R15, C13 clears U7 - U8 during start-up.

⑧ Drivers for multiplexing of LED's.



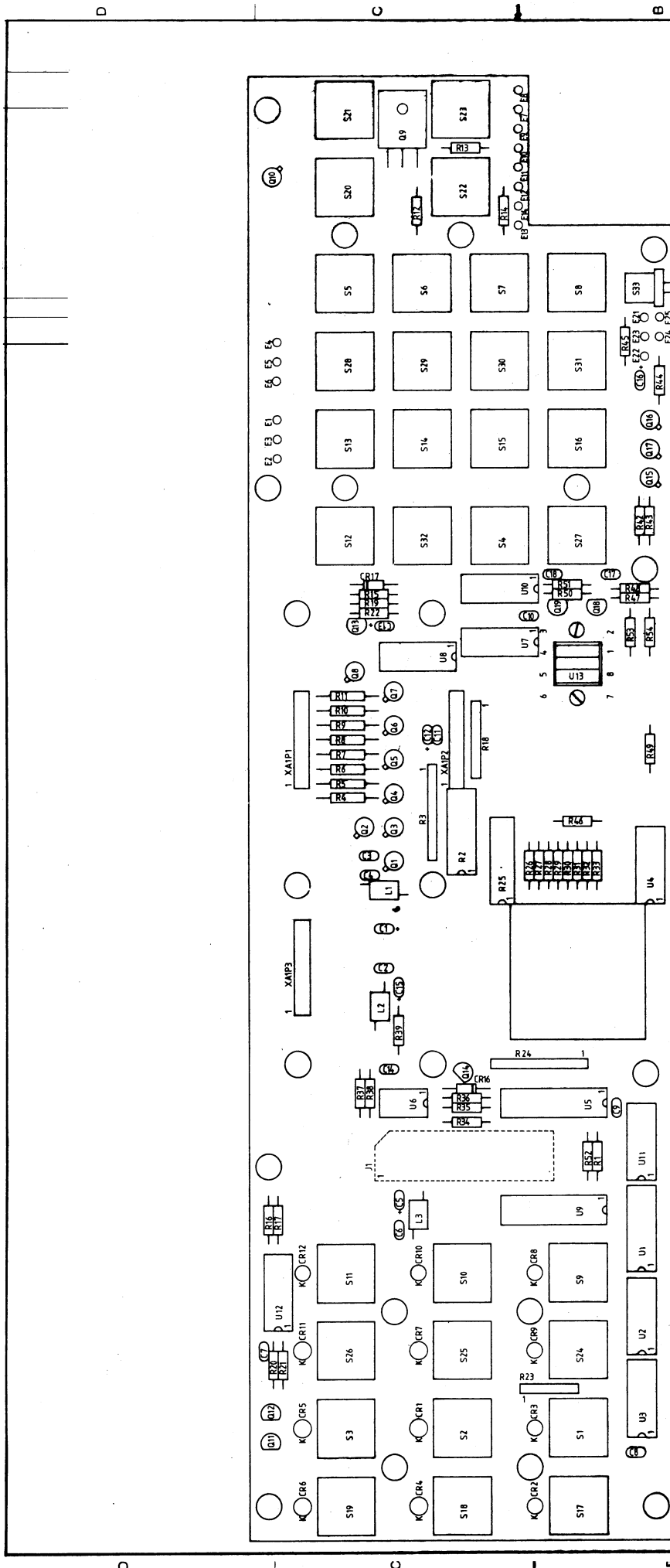


Dansk Radio AS		d/ja	
TITLE		FRONT PANEL CIRCUIT	
DR.	FP	B30311	
CH.			
AP.			
AP.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE IN ACCORDANCE WITH DS 2075		FIRST ANGLE PROJECTION	
APPLICATION		SIZE A1	
4.7 17 12 NEXT ASSY USED ON		CODE IDENT DRAWING NO 4.7 14. 45	
MATERIAL		SCALE	
RX 4000		SHEET 1 OF 1	

ASSY 448591, FRONT PANEL CIRCUIT      Schematic 4

- ⑨      Eight-bit output buffer, read by the microcomputer,
- ⑩      S1-S31, switches SPSTNO (Single Pole Single Throw Normally Open) with associated pull-up network and open-collector buffers.





Dansk Radio AS		dlq A	
TITLE		FRONT PANEL CIRCUIT	
DR.	810311	SIZE	A1
CH.		CODE IDENT	4714.45
AP.		SCALE	
AP.		SHEET 1 OF 1	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE IN ACCORDANCE WITH DS 2075		FIRST ANGLE PROJECTION	
ANGLES		MATERIAL	
LIN DIM		APPLICATION	
47 17 12		RX 4000	
NEXT ASSY		USED ON	



- ⑪ Eight-bit Digital to Analog converter.

R24: pull-up network

R25-R33: R-2R network

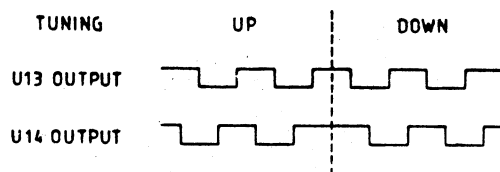
U6b: Operational amplifier with an output range from 5V to 10V.

- ⑫ Input-circuit for inreading of tune adjustment.

U11a: is set when tuning

U11b: is set when tuning up

When U11 has been read by the microcomputer, the program will clear U11a.



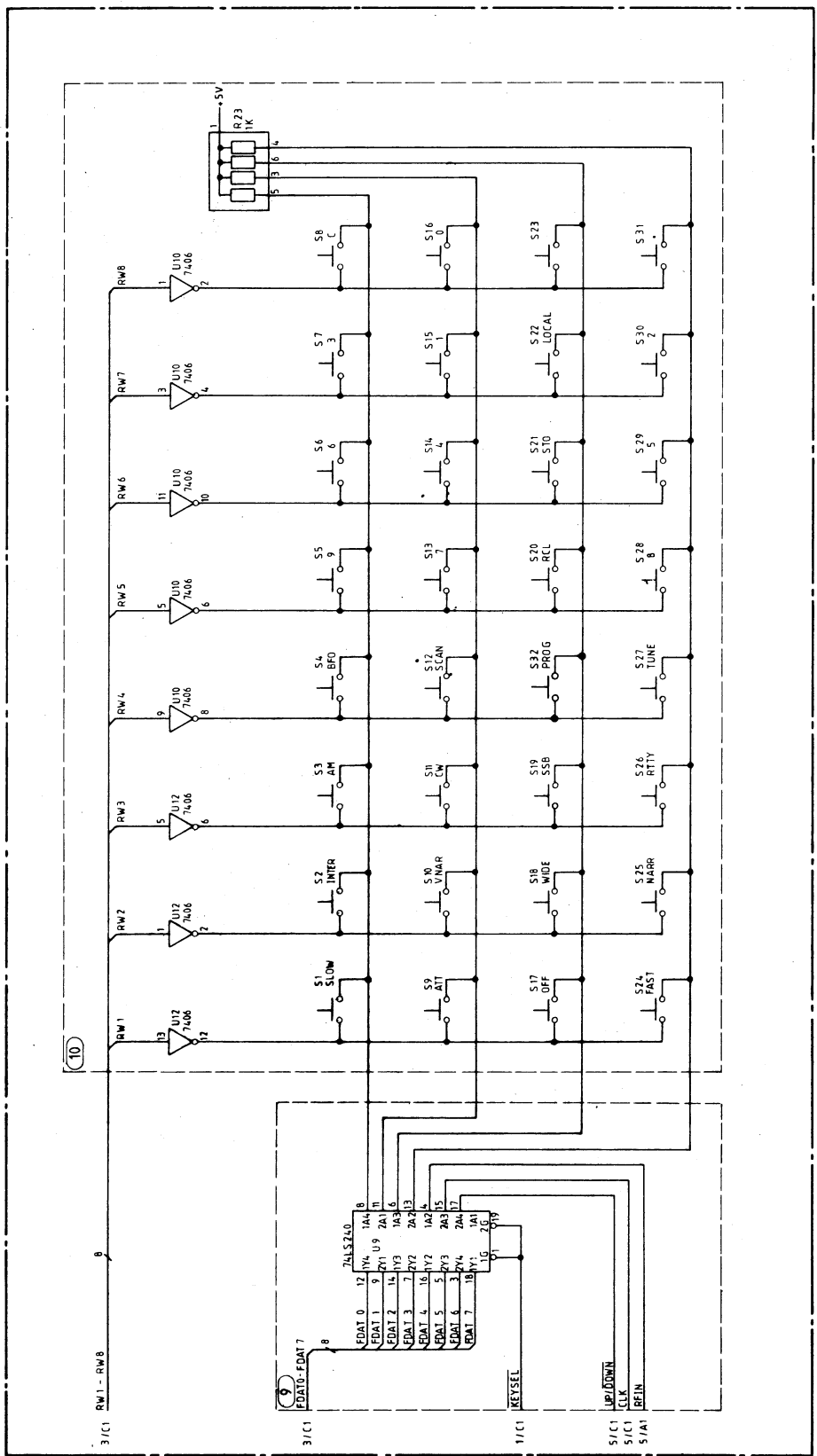
- ⑬ Sample hold circuit used as a source generator to the S-meter ⑭ and for A/D-conversion ⑮ .

- ⑮ Voltage comparator.

By means of the D/A-converter ⑪ and the comparator circuit an A/D-conversion of the RF-level is performed.

1 2 3 4

REVISIONS		
ZONE LTR	DESCRIPTION	DATE



FIRST  
ANGLE  
PROJECTION

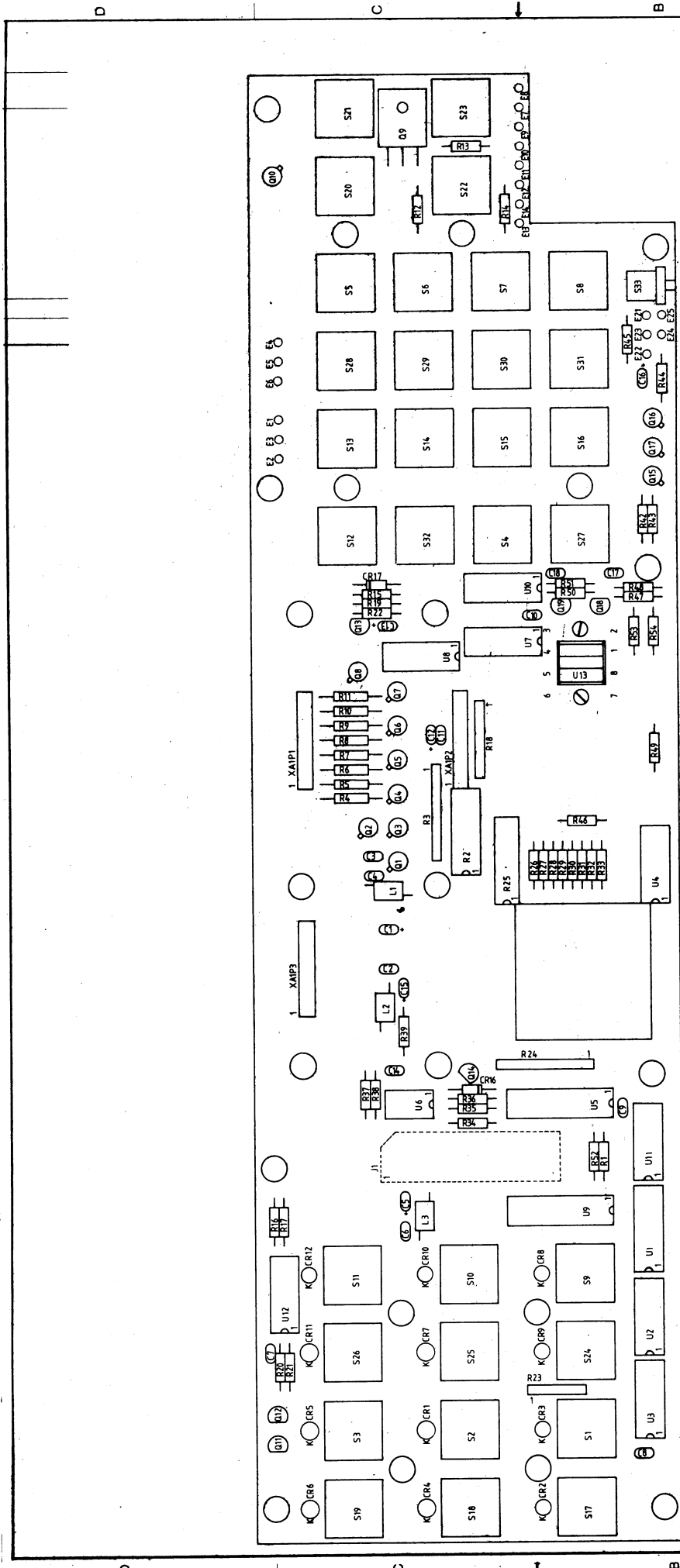
SIZE  
A2

CODE IDENT NO

DRAWING NO  
47 14 45

SHEET  
4

1 2 3 4

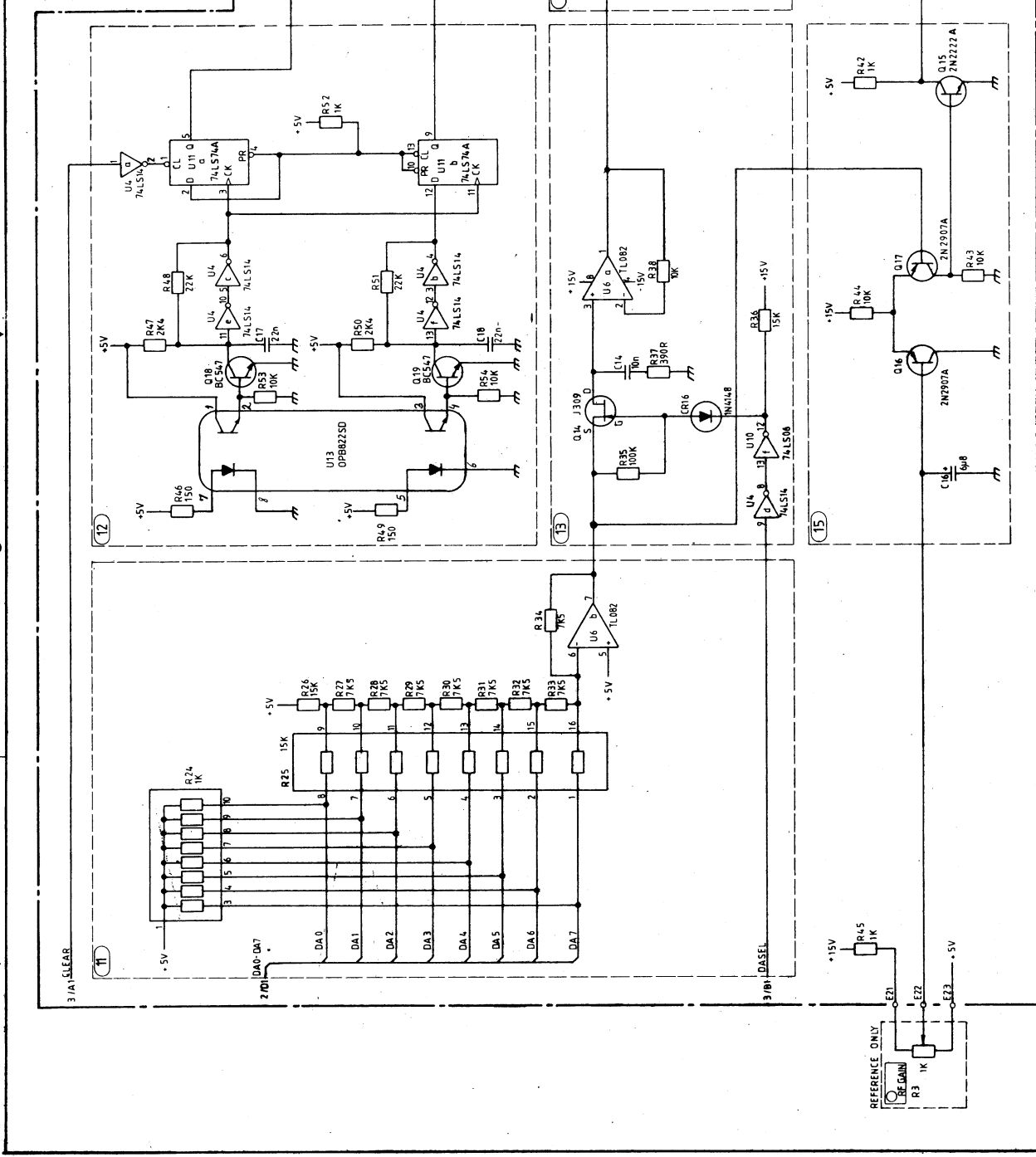


Dansk Radio AS		dlg	
TITLE		FRONT PANEL CIRCUIT	
DR	FP	830311	
CH			
AP			
FIRST ANGLE PROJECTION		CODE IDENT DRAWING NO	
		47 14 45	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS, TOLERANCES ACCORDANCE WITH DS 2075		SCALE	
		SHEET 1 OF 1	
APPLICATION		MATERIAL	
47 17 12		RX LK00	
NEXT ASSY		USED ON	

ASSY 471372, DISPLAY BOARD ASSEMBLY

- U1-U7 7-segment display.  
Most significant digit, U1.
- U8-U14 Light bars.
- Q1-Q8 Drivers for multiplexing.
- U15 Driver for light bars for meter
- U16-U17 Light bars for meter

ZONE	LTR	DESCRIPTION	DATE	APPROVAL



FIRST ANGLE PROJECTION

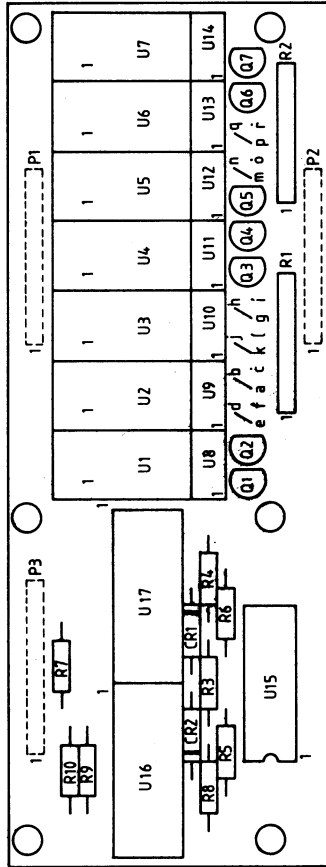
SIZE A2

CODE IDENT NO 47 14 45

DRAWING NO 47 14 45

SHEET 5

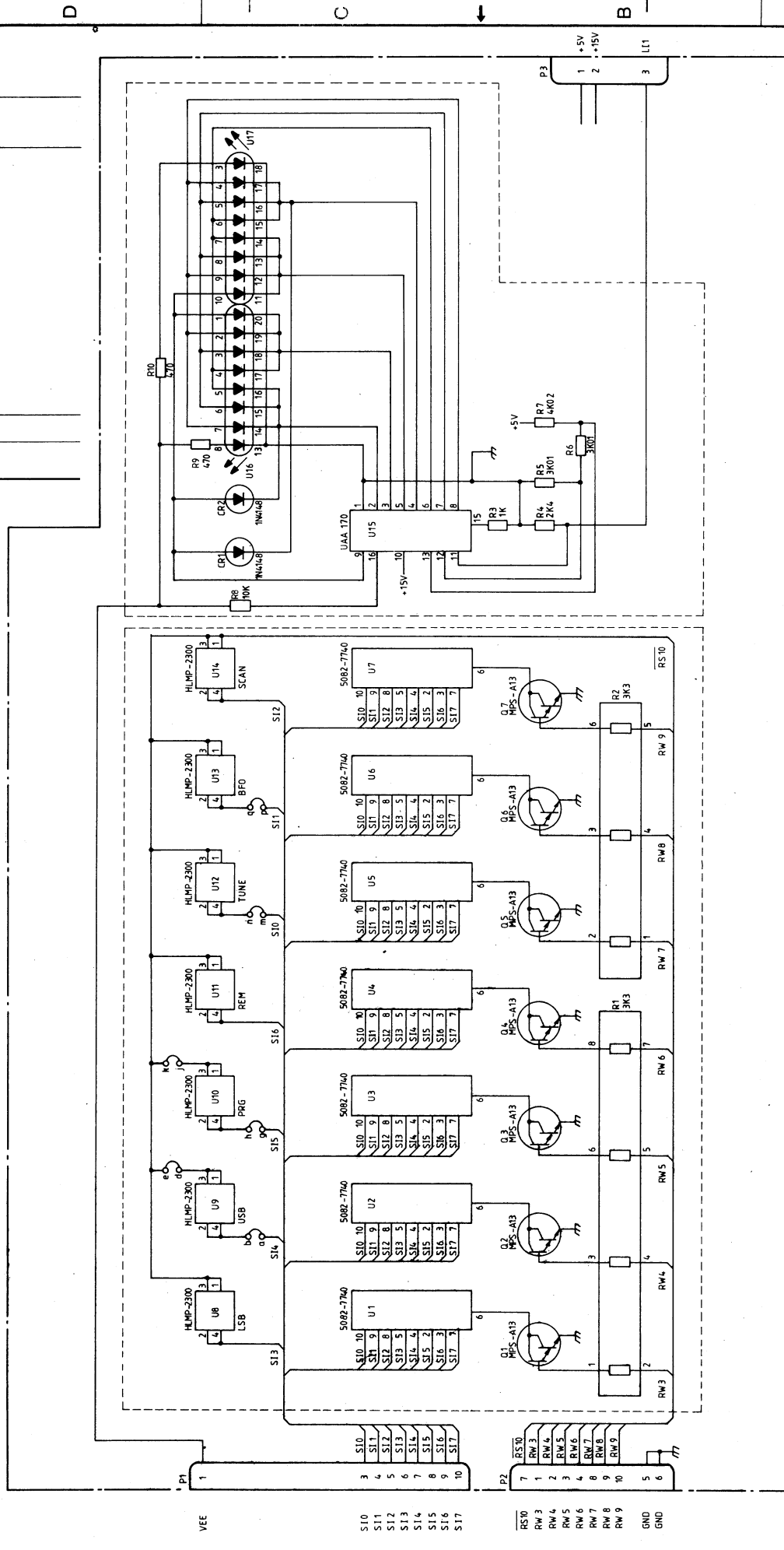
REVISIONS		
ZONE	DESCRIPTION	DATE
1		
2		
3		
4		



Dansk Radio AS		dra	
TITLE		DISPLAY BOARD	
DR.	FP	27-5-83	
CH.			
AP.			
AP.			
FIRST ANGLE PROJECTION		CODE IDENT	
		DRAWING NO. 47 13 72	
SIZE A2		SCALE 2:1	
SHEET 1 OF 1			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETRES AND TOLERANCES ARE IN ACCORDANCE WITH DS 2075	
ANGLES	
LIN. DIM.	
MATERIAL	
47 19 09	RC4000
47 17 12	RX4000
NEXT ASSY	USED ON
APPLICATION	

REVISIONS		
ZONE/LTR	DESCRIPTION	DATE



Dansk Radio AS		dra	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLI- METERS AND TOLERANCES ARE IN ACCORDANCE WITH DS 2075		TITLE	
DR.	FP	830506	
CH.			
AP.			
AP.			
FIRST ANGLE PROJECTION		CODE IDENT DRAWING NO.	
		47 13 72	
APPLICATION		SIZE	
		A2	
		SCALE	
		SHEET 1 OF 1	

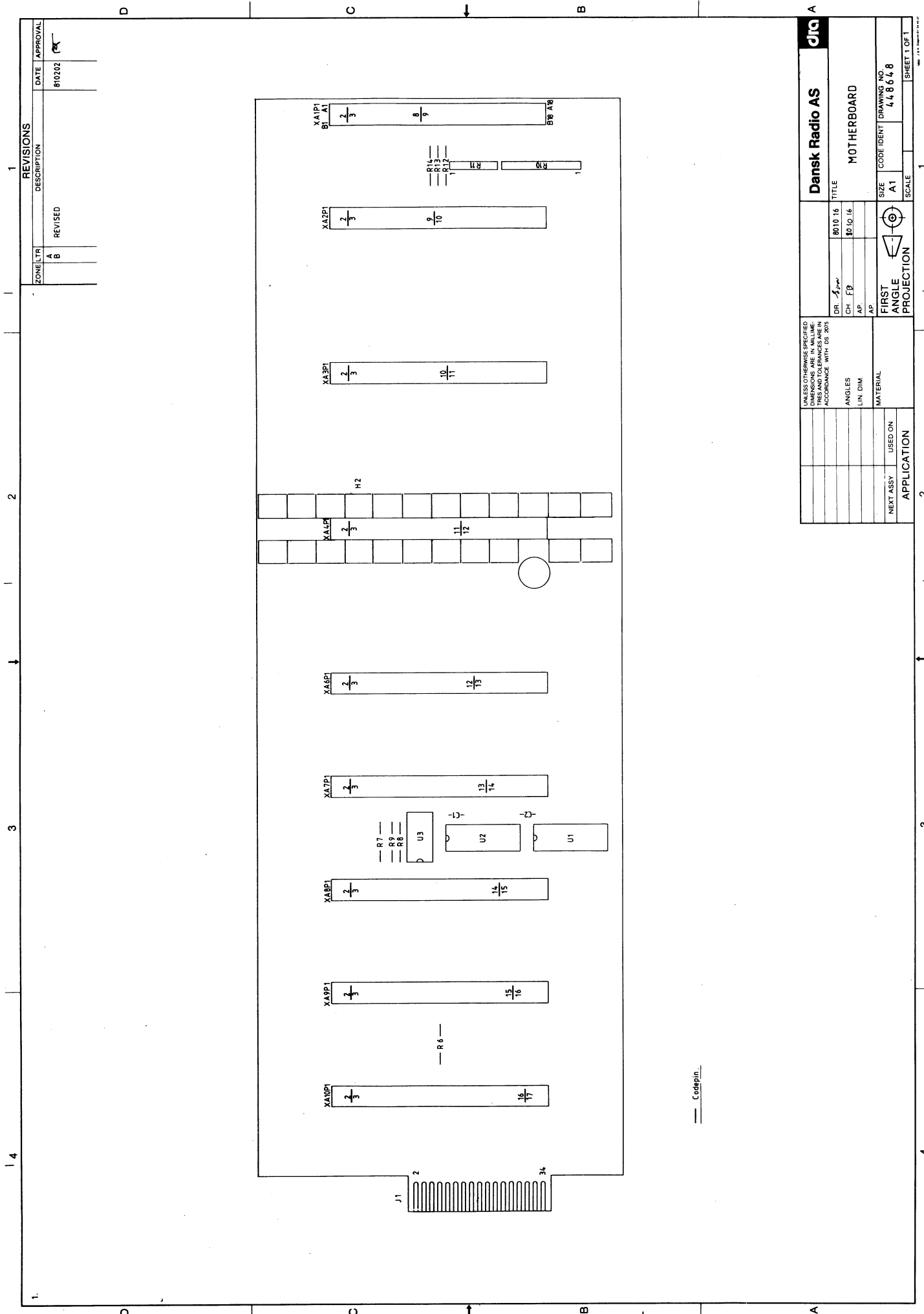
ASSY 448648, MOTHERBOARD ASSEMBLY

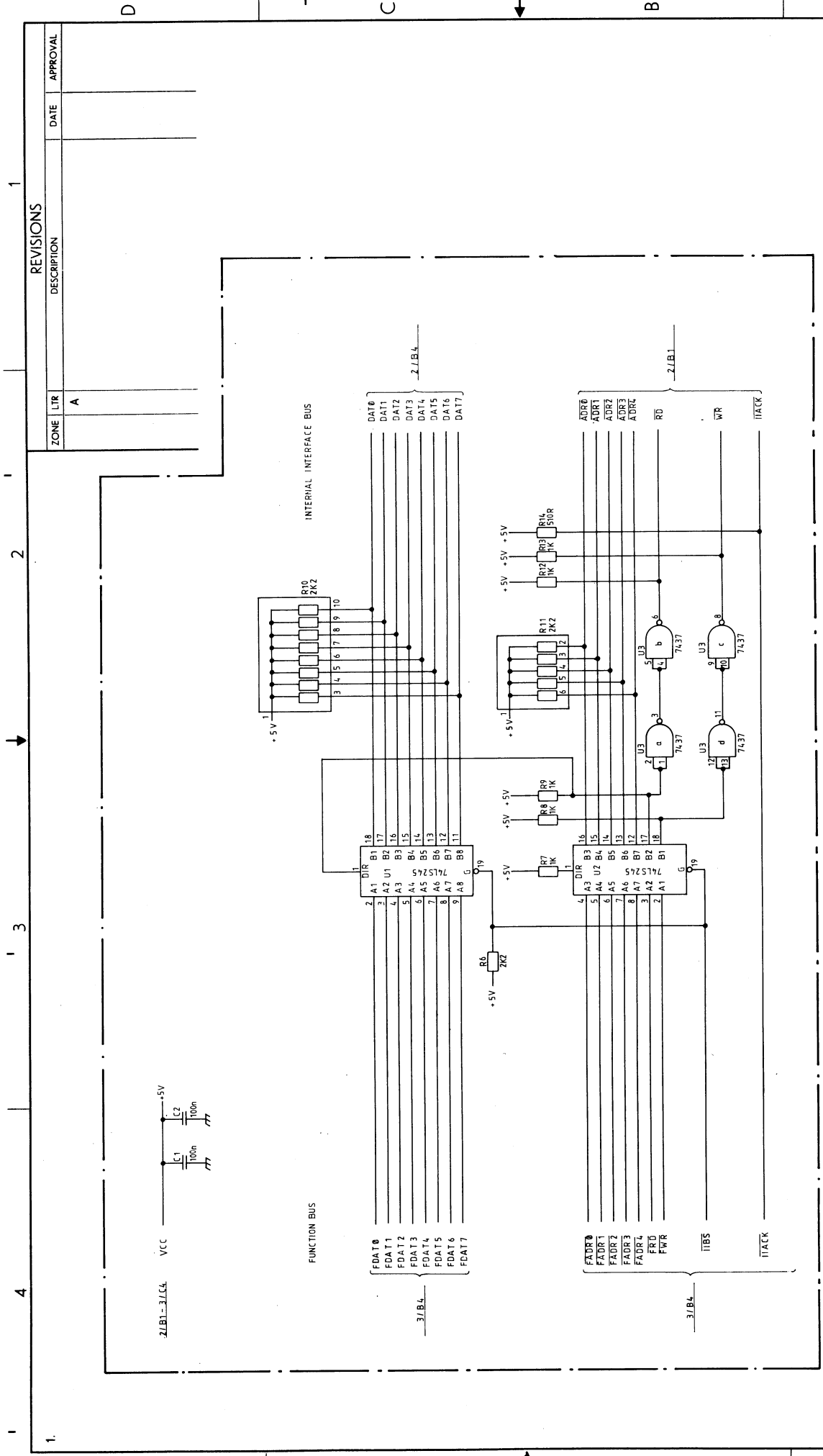
Service Sheet A12



## ASSY 448648, MOTHERBOARD ASSEMBLY

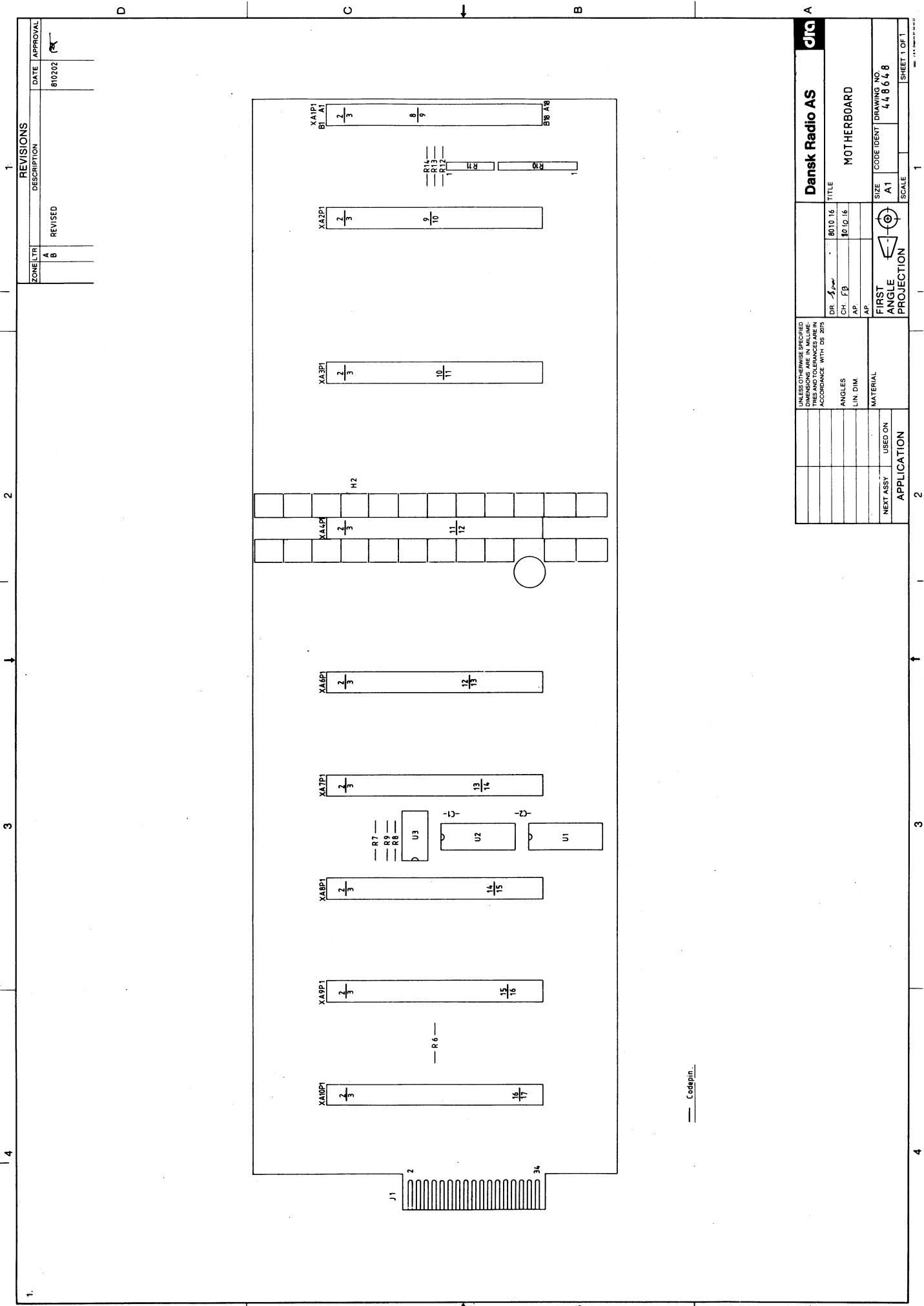
To avoid noise in the more sensitive parts of the receiver, two buffers U1 and U2 separates the internal interface bus from the function bus. The internal interface bus is only activated when necessary.





REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
A			

Dansk Radio AS			
MOTHERBOARD			
TITLE:			
DR: 80.08.28			
CH: FØ			
AP:			
FIRST ANGLE PROJECTION			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETRES AND TOLERANCES IN ACCORDANCE WITH DS 2075			
ANGLES:			
LIN. DIM.:			
MATERIAL:			
NEXT ASSY USED ON APPLICATION			
SIZE CLASS: A 2			
NO.: 4 4 8 6 4 8			
SCALE: SHEET 1 OF 3			



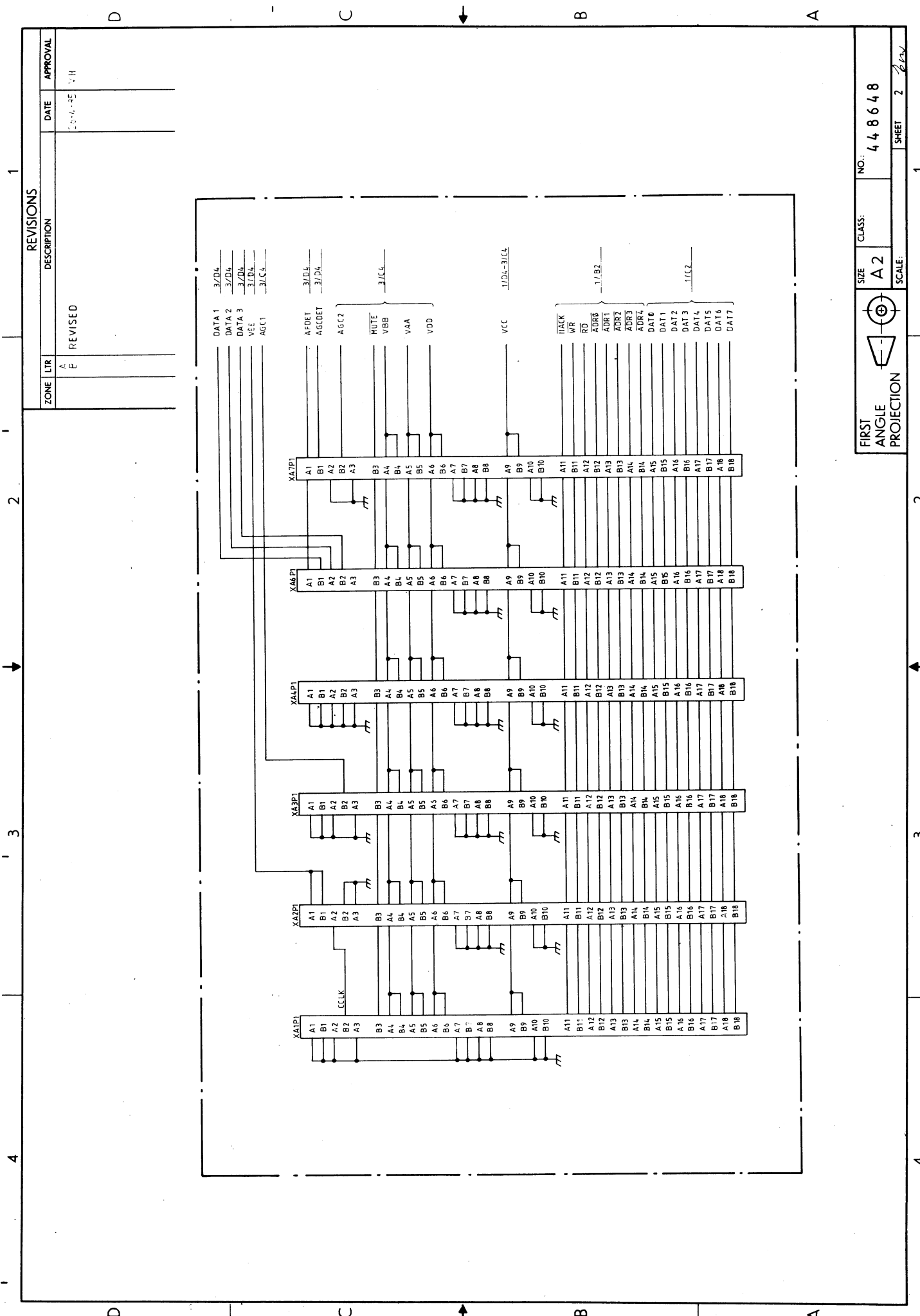
REVISIONS		DATE	APPROVAL
ZONE/LTR	DESCRIPTION		
A	REVISED	8/10/202	
B			

Dansk Radio AS		TITLE	
		MOTHERBOARD	
		DRAWING NO.	
		448648	
		SIZE	
		A1	
		SCALE	
		1	
		SHEET 1 OF 1	

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE IN ACCORDANCE WITH ISO 2015		FIRST ANGLE PROJECTION	
		NEXT ASSY	
		USED ON	
		APPLICATION	
		2	

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE IN ACCORDANCE WITH ISO 2015		FIRST ANGLE PROJECTION	
		NEXT ASSY	
		USED ON	
		APPLICATION	
		2	

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE IN ACCORDANCE WITH ISO 2015		FIRST ANGLE PROJECTION	
		NEXT ASSY	
		USED ON	
		APPLICATION	
		2	



REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVAL
A	P	REVISED	2004-05-11	

FIRST ANGLE PROJECTION

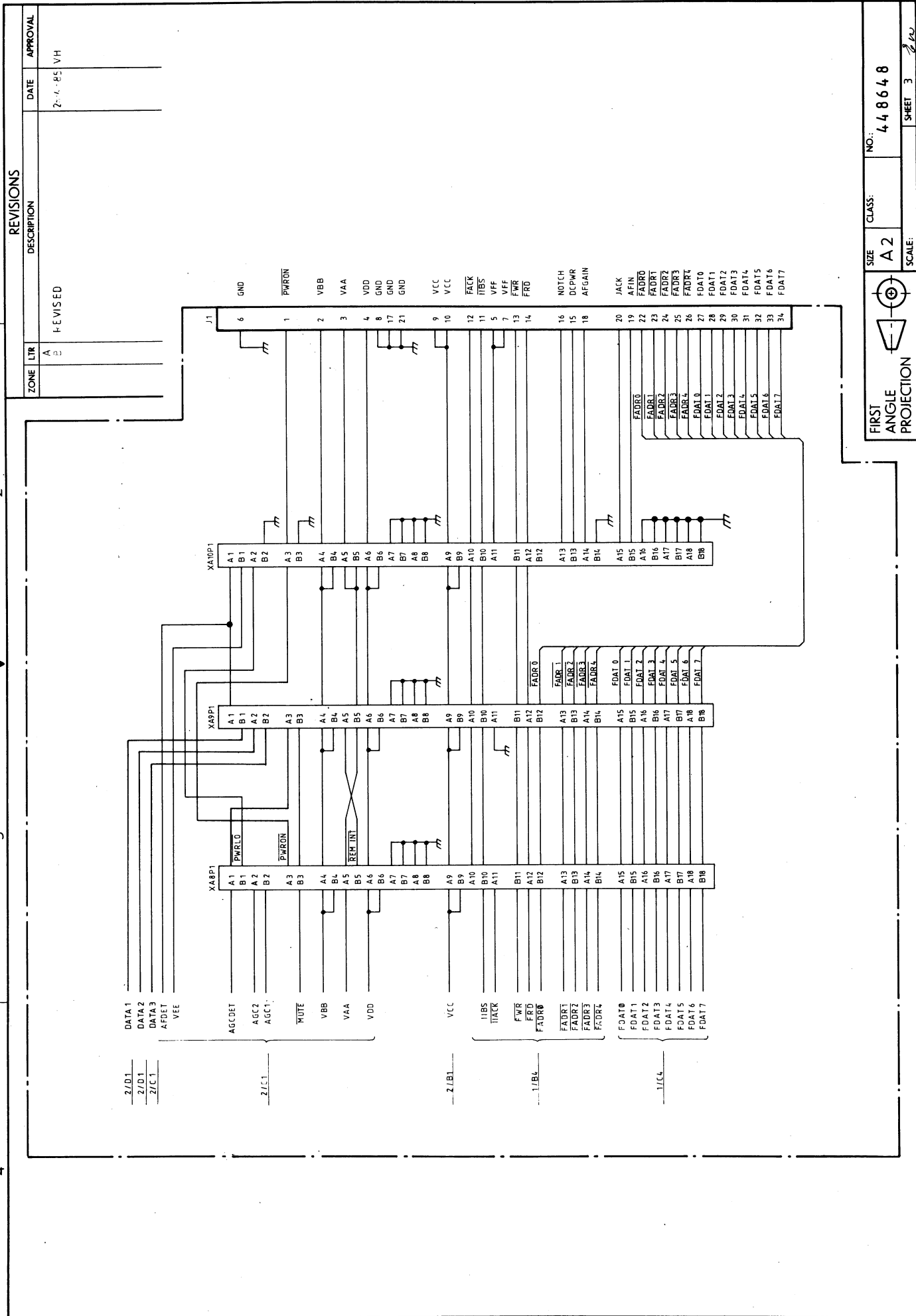
SIZE: A2

CLASS:

NO.: 448648

SHEET: 2 of 2





REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
A	1	REVISED	2-14-85 VH

2/D1	DATA 1
2/D1	DATA 2
2/C1	DATA 3
	AFDET
	VEE
	AGCDET
	AGC2
	AGC1
	MUTE
	VBB
	VAA
	VDD
	VCC
	IIBS
	FWR
	FRO
	FADR0
	FADR1
	FADR2
	FADR3
	FADR4
	FADT0
	FADT1
	FADT2
	FADT3
	FADT4
	FADT5
	FADT6
	FADT7