YAESU

FT-250R

Technical Supplement

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Introduction

This manual provides the technical information necessary for servicing the **FT-250R** VHF FM Transceiver.

Servicing this equipment requires expertise in handing surface-mount chip components. Attempts by non-qualified persons to service this equipment may result in permanent damage not covered by the warranty, and may be illegal in some countries.

Two PCB layout diagrams are provided for each double-sided board in this transceiver. Each side of the board is referred to by the type of the majority of components installed on that side ("Side A" or "Side B"). In most cases one side has only chip components (surface-mount devices), and the other has either a mixture of both chip and leaded components (trimmers, coils, electrolytic capacitors, ICs, etc.), or leaded components only.

While we believe the information in this manual to be correct, VERTEX STANDARD assumes no liability for damage that may occur as a result of typographical or other errors that may be present. Your cooperation in pointing out any inconsistencies in the technical information would be appreciated.

Important Note

The transceiver was assembled using Pb (lead) free solder, based on the RoHS specification.
Only lead-free solder (Alloy Composition: Sn-3.0Ag-0.5Cu) should be used for repairs performed on this apparatus. The solder stated above utilizes the alloy composition required for compliance with the lead-free specification, and any solder with the above alloy composition may be used.

Contents

Specifications

GENERAL

Frequency coverage (MHz):	RX: 136 to 174
	TX: 144 to 146 (148)
Channel steps:	5, 10, 12.5, 15, 20, 25 & 50 kHz
Frequency Stability:	±5 ppm @ 14° to 140° F (–10° to +60° C)
Standard repeater shift:	600 kHz
Emission type:	F2D, F3E
Supply voltage:	Nominal: 7.2 V DC, Negative Ground
	Operating: 6.0 to 16.0 VDC, Negative Ground (EXT DC Jack)
Current consumption:	Receive: 150 mA;
	Standby, Saver off : 38 mA
	Standby, Saver on : 23 mA
	Auto Power Off : 8 mA
	Transmit (HIGH) : 1.3 A;
	(MID) : 900 mA;
	(LOW) : 500 mA;
Operating Temperature:	–4° to 140° F (–20 °C to +60 °C)
Case size (WHD):	2.3" (W) x 4.3" (H) x 1.1" (D) (58 x 108.5 x 26.5 mm) (w/o knob & antenna)
Weight (approx.):	11.5 Oz (325g) w/FNB-83, Antenna and BeltClip

RECEIVER

Circuit type:	Double-conversion superheterodyne
Intermediate Frequency:	1st: 21.7 MHz
	2nd: 450 kHz
Sensitivity:	0.16 μV for 12 dB SINAD
Adjacent channel selectivity:	65 dB
Intermodulation:	65 dB
Audio output:	0.7 W @16 ohms for 10% THD (@7.4V) Internal Speaker
	0.4 W @8 ohms for 10% THD (@7.4V) External Jack

TRANSMITTER

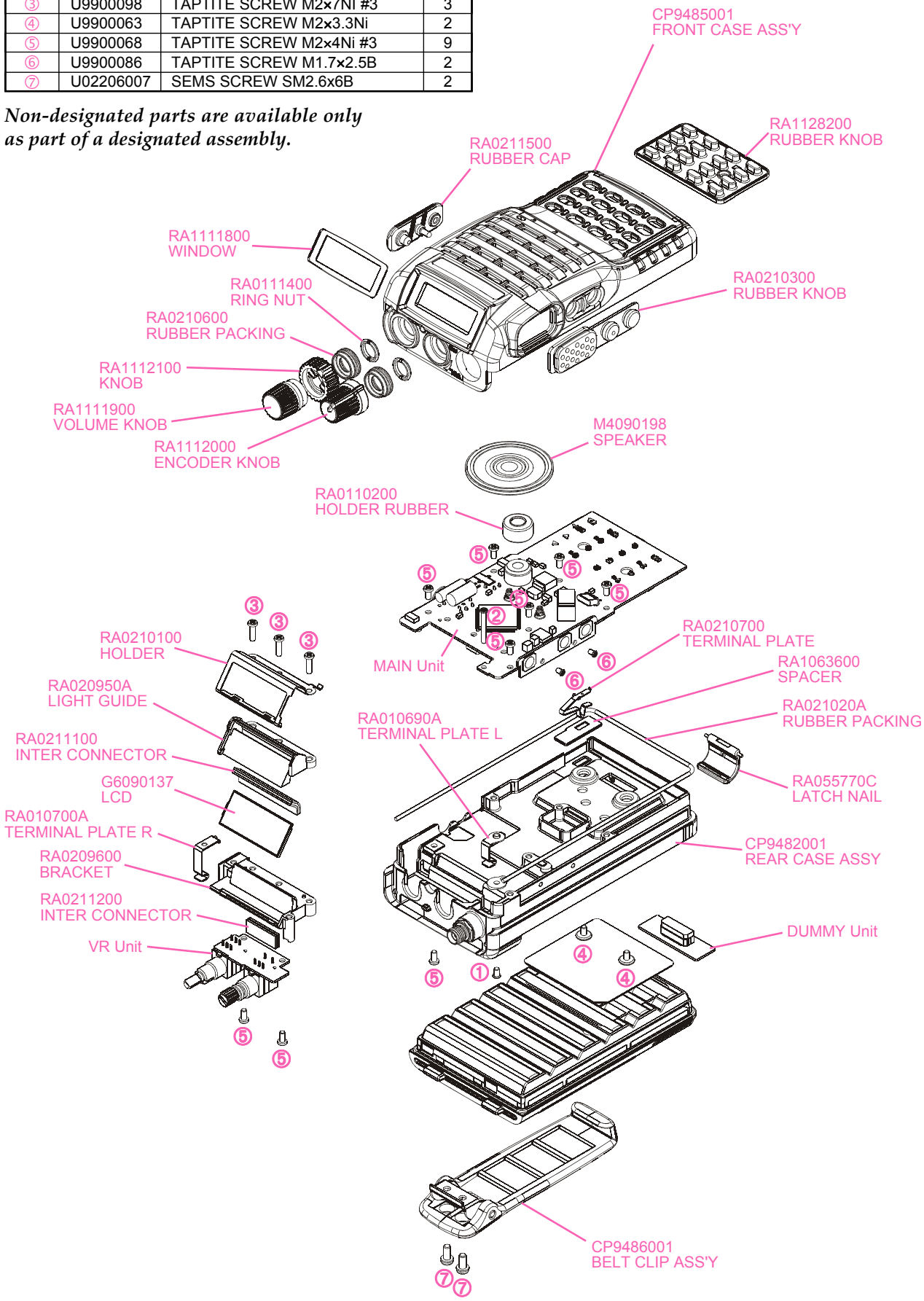
Power output:	5.0 W (High) / 2.0 W (Middle) / 0.5 W (Low) (@7.2 V)
Modulation system:	variable reactance
Maximum deviation:	±5 kHz
Spurious emissions:	At least 60 dB below
Microphone type:	2-kilohm condenser

Specifications are subject to change without notice, and are guaranteed within the 144 MHz amateur band only. Frequency ranges will vary according to transceiver version; check with your dealer.

Exploded View & Miscellaneous Parts

REF.	VXSTD P/N	Description	Qty.
①	U07230102	PAN HEAD SCREW M2×3NI #1	1
②	U9900101	PAN HEAD SCREW M1.7×14NI #2	1
③	U9900098	TAPTITE SCREW M2×7NI #3	3
④	U9900063	TAPTITE SCREW M2×3.3Ni	2
⑤	U9900068	TAPTITE SCREW M2×4Ni #3	9
⑥	U9900086	TAPTITE SCREW M1.7×2.5B	2
⑦	U02206007	SEMS SCREW SM2.6x6B	2

Non-designated parts are available only as part of a designated assembly.



Exploded View & Miscellaneous Parts

Note

MAIN-UNIT

TX LINE
RX LINE
COMMON LINE

F0= 144-148MHz
LPF
ANT SW D1001 02 RLS135
PWR AMP Q1008 2SK2974
AMP Q1009 2SK3074
AMP Q1010 2SC5226
TX/RX SW D1008 DAN235E
AMP Q1018 2SC5374
BUFF AMP Q1022 2SC5374
VCO Q1023 D1009 D1010 D1011 2SC5374 HSC277 HSC277 HVC350B
MOD MUTE SW Q1031 2SC4154E
+4.2V
TX 144-148MHz
RX 122.3-126.3MHz
+B
SW+B
TX5V
APC Q1001 Q1002 Q1003 Q1007 2SC2154E 2SC2154E NJM2904V 2SC4154E
PC
SAVECNT
APC SW Q1004 Q1005 Q1006 DTA114EE DTA114EE 2SC4154E
SAVE SW Q1024 Q1033 Q1034 DTA114TE DTA114TE 2SC4154E
BUFF AMP Q1034 2SC4245
PLL IC Q1030 MB15A01PFV1
LOOP FIL
MOD
LPF Q1064 NJM2902V
+3.3V
REG Q1025 2SC4154E
UL Q1032 2SA1774-R
UL
X1001 21.25MHz
PLLDATA
DCS MOD D1015 Q1040 HVC350B 2SC4154E
CTCSS
+5V
LIM AMP Q1064 NJM2902V
MOD N/W SW Q1065 2SC4154E
AUTO TUNE
RSSI
SQL
XF1001
MCF 21.7MHz
21R12A4
CHG
CHG Q1067 2SB1132Q
HPF
RF AMP Q1011 2SC5006
BPF
MIX Q1013 3SK228
IF AMP Q1014 2SC4400-4
IF IC Q1017 TA31136FN
BPF CF1001
CFWM450E
N/W SW Q1015 Q1016 2SC4154E 2SC4154E
NARROW/WIDE
EXT DC J1003
SW D1028 SB40W03T
SW+B
+3.3V REG Q1051 S-81333HG-KF
+3.3V
+5V REG Q1045 Q1046 2SB1132Q UMW1
+5V
TX5V RX5V
TX/RX SW Q1026 Q1027 Q1028 DTA143XE 2SA1586V UMW1
SHIFT SW Q1020 DTA144TE
BATT
PTTSW
SW Q1054 UMZ2N
MC1001 MIC
MIC AMP Q1064 NJM2902V
VR-UNIT
AFVR/PWRSW VR3001
+B
JPO Q1052 DTA144EE
CHANNEL SELECTOR SW SQL VR S3001
SQL VR
TX/BUSY LED D3001 BRPY1211F
SW Q1061 Q1062 2SC4154E UMG2N
LPF Q1060 NJM2902V
LPF Q1060 NJM2902V
J1002 MIC/EAR
AF MUTE Q1044 Q1063 2SC4154E 2SC4154E
JPO/CLONE
RESET&PO CNTL Q1037 D1017 Q1038 Q1039 2SC4154E DA221 2SC4154E S-80745SN-DC
JPO PLLDATA CLONE SAVECNT TX/RX TUNE/POW
PTTIN
LOWFREQ
TONEIN
SQL
RSSI
CTCSS
NARROW/WIDE
AFCNT
AFMUTE
DATA BUS ETC
PD
RESET
EN0/EN1
MON/LAMPSW
TX LED
RX LED
LAMP
SFT
XIN/XOUT
COM0-3
SEG0-31
ECK
EDO
CPU Q1035 M38267E8L-GP
AMP Q1043 2SC4617-R
HPF Q1064 NJM2902V
AF MUTE Q1041 Q1042 2SC4154E 2SC4154E
AF AMP Q1053 TDA2822A
SP1001
SW-UNIT
PTT SW
MONI SW
LAMP SW
SW Q1055 Q1056 2SC4154E 2SC4154E
KEYBOARD
AF +B Q1047 Q1048 2SB1132Q UMW1 Q1068 2SA1774-R
AFCNT SW+B
MICOUT MICIN AFIN AFOUT DISC
J1001
DUMMY-UNIT
SW Q1057 2SD1664-Q
SHIFT Q1059 2SC4154E
OSC X1002 3.6864MHz
EEPROM Q1058 AT24C64N-10SI
LMP LED D1026 D1027 D1028 D1029 D1030 D1031 D1024 AA1111C AA1111E AA1111G AA1111E AA1161F
LCD DS1001 G6090137

Block Diagram

Note:

Receive Signal Path

Incoming RF from the antenna jack is delivered to the RF Unit and passes through a low-pass filter and high-pass filter consisting of coils L1001, L1002, L1003, L1004, L1014 & L1015, capacitors C1001, C1002, C1003, C1004, C1006, C1007, C1042, C1044, C1045, C1046 & C1047, and antenna switching diode **D1001** (**RLS135**).

Signals within the frequency range of the transceiver are then amplified by **Q1011** (**2SC5006**) and enter a varactor-tuned band-pass filter consisting of coils L1016, L1017 & L1018, capacitors C1049, C1050, C1051, C1052, C1053, C1054, C1056, C1057, C1058, C1059, C1060, C1061, C1062 & C1063, and diodes **D1004**, **D1005** & **D1006** (all **HVC350B**) before delivery to the first mixer, **Q1013** (**3SK296ZQ**).

Buffered output from the VCO is amplified by **Q1018** (**2SC5374**) to provide a pure first local signal between 122.3 and 126.3 MHz according to the transceiver version and the programmed receiving frequency for injection to the first mixer Q1013. The 21.7 MHz first mixer product then passes through monolithic crystal filter XF1001 (21R12A4, 6 kHz BW) to strip away unwanted mixer products, and the IF signal is then amplified by **Q1014** (**2SC4400**).

The amplified first IF signal is applied to FM IF subsystem IC **Q1017** (**TA31136FN**), which contains the second mixer, limiter amplifier, noise amplifier, and S-meter amplifier.

A second local signal is generated by the reference oscillator section of the PLL subsystem IC **Q1030** (**MB15A01PFV1**) using 21.25 MHz crystal X1001; a 450 kHz second IF is produced when this signal is mixed with the first IF signal within Q1017.

The second IF then passes through the main selectivity element, ceramic filter **CF1001** (**CFWM450E**) to strip away all but the desired signal; it is then applied to the limiter amplifier in Q1017, which removes amplitude variations in the 450kHz IF, before detection of the speech by the ceramic discriminator **CD1001** (**JTBM450CX24**).

Detected audio from Q1017 is applied to a low-pass filter consisting of capacitors C1208, C1209 & C1210, resistors R1320, R1321, R1322, R1323 & R1324, and **Q1060** (**NJM2902V**), then passes through the audio mute gate **Q1044** and **Q1063** (both **2SC4081**) to the buffer amplifier **Q1043** (**2SC4617**); it is then passed through the de-emphasis network consisting of capacitor C1057 and resistor R1208 to a high-pass filter consisting of capacitors C1058, C1059 & C1060, resistors R1209 & R1210, and **Q1064** (**NJM2902V**).

The processed audio passes through the another audio mute gate **Q1041** and **Q1042** (both **2SC4081**) to the volume control potentiometer VR3001 on the VR Unit, then is delivered to the audio amplifier **Q1053** (**DTA2822L**), which provides up to 0.5 Watt to the headphone jack or an 8-W loudspeaker.

Squelch Control

The squelch circuitry consists of a noise amplifier, band-pass filter, noise detector & noise comparator within **Q1017**, audio control gate **Q1041**, **Q1042**, **Q1044**, **Q1063** (all **2SC4081**), microprocessor **Q1035** (**M3826AEFGP**), and squelch controller S3001 on the VR Unit.

When no carrier received, noise at the output of the detector stage in Q1017 is amplified and band-pass filtered by the noise amplifier section of Q1017 and the network between pins 7 and 8, and then rectified by the noise detector section of Q1017. The resulting DC squelch control voltage outputs at pin 13 of Q1017, then it is passed to pin 4 of the microprocessor Q1035.

If no carrier is received, this signal causes pins 44 and 47 of Q1035 to go "Low" and pin 54 to go "High." Pin 47 disables the supply voltage to the audio amplifier **Q1053** (**TDA2822L**), and pin 54 activates the audio control gates Q1041, Q1042, Q1044, Q1063, Q1049 and Q1050. Thus, the microprocessor Q1035 blocks output from the audio amplifier, and silences the receiver, while no signal is being received (and during transmission, as well). Meanwhile, pin 44 signals **Q1056** (**2SC4081**) to hold the green (Busy) half of the LED **D3001** (**BRPY1211F**) on the VR Unit off.

When a carrier appears at the discriminator, noise is removed from the output, causing pin 4 of Q1035 to go "low" and the microprocessor to activate the audio amplifier, audio mute gate, and "Busy" LED.

The microprocessor then checks for CTCSS or CDCSS code squelch information, if enabled, or for DTMF data on the optional DTMF Unit. If not transmitting and CTCSS or CDCSS is not activated, or if the received tone or code matches that programmed, the microprocessor stops scanning (if active) and allows audio to pass through the audio amplifier Q1053 to the loudspeaker by enabling the supply voltage to it via **Q1047** (**2SB1132Q**), **Q1048** (**UMW1**).

Circuit Description

Transmit Signal Path

Speech input from the microphone is amplified by **Q1064** (**NJM2902V**), then filtered and sent to any installed optional signaling unit. The audio which returns from the optional unit then is passed to the pre-emphasis network.

The processed audio may then be mixed with a CTCSS tone generated by the microprocessor **Q1035** (**M3826AEFGP**); it is then delivered to **D1010** (**HSC277**) for frequency modulation of the PLL carrier (up to ±5kHz from the unmodulated carrier) at the transmitting frequency.

If an external microphone is used, PTT switching is controlled by **Q1054** (**UMZ2N**), which signals the microprocessor Q1035 when the impedance at the microphone jack drops.

If a CDCSS code is enabled for transmission, the code is generated by microprocessor Q1035 and delivered to **D1015** (**HVC350B**) for CDCSS modulating.

If DTMF is enabled for transmission, the tone is generated by the microprocessor Q1035 and applied to the splatter filter section in place of the speech audio. Also, the tone is amplified for monitoring in the loudspeaker.

The modulated signal from the VCO **Q1023** (**2SC5374**) is buffered by **Q1022** and **Q1018** (both **2SC5374**). The low-level transmit signal is amplified by **Q1010** (**2SC5226-5**) and **Q1009** (**2SK3074**); it is then applied to the final amplifier **Q1008** (**RD07MVS1A**), which provides up to 5 watts output power.

The transmit signal then passes through the antenna switch **D1001** (**RLS135**) and is low-pass filtered to suppress harmonic spurious radiation before delivery to the antenna.

Automatic Transmit Power Control

Drain current of the final amplifier **Q1008** (**RD07MVS1A**) is sampled by R1028 and R1035. The resulting DC is fed back through the APC amplifier **Q1003** (**NJM2904V**) to the driver amplifier **Q1009** (**2SK3074**) and final amplifier Q1008, for control of the power output.

The microprocessor selects either "High" or "Low" power levels.

Transmit Inhibit

When the PLL is unlocked, pin 7 of PLL subsystem IC **Q1030** (**MB15A01PFV1**) goes to a logic "Low." The resulting DC unlock control voltage is passed through the inversion amplifier **Q1032** (**2SA1774**) to pin 8 of the microprocessor Q1035. While the PLL is unlocked, pin 15 of Q1035 remains "Low," disabling the gate voltages of driver amplifier **Q1009** (**2SK3074**) and final amplifier **Q1008** (**RD07MVS1A**), thereby disabling the transmitter.

Spurious Suppression

Generation of spurious products by the transmitter is minimized by the fundamental carrier frequency being equal to final transmitting frequency, modulated directly in the transmit VCO. Additional harmonic suppression is provided by a low-pass filter consisting of coils L1001, L1002, L1003, L1006, L1007 & L1008 and capacitors C1001, C1002, C1003, C1004, C1006, C1007, C1019, C1020, C1021 & C1022, resulting in more than 60 dB of harmonic suppression prior to delivery to the antenna.

PLL Frequency Synthesizer

The PLL circuitry on the Main Unit consists of VCO **Q1023** (**2SC5374**), VCO buffers **Q1022** and **Q1019** (both **2SC5374**), and PLL subsystem IC **Q1030** (**MB15A01PFV1**), which contains a reference divider, serial-to-parallel data latch, programmable divider, phase comparator, and charge pump.

Stability is maintained by a regulated 3.3 V supply provided via **Q1051** (**S-812C33AUA**) and 21.25 MHz reference frequency crystal X1001, as well as the reference oscillator's temperature compensating thermistor and capacitors.

While receiving, VCO Q1023 oscillates between 122.3 and 126.3 MHz according to the transceiver version and the programmed receiving frequency. The VCO output is buffered by Q1022 and Q1019, then applied to the prescaler section of Q1030. There the VCO signal is divided by 64 or 65, according to a control signal from the data latch section of Q1030, before being sent to the programmable divider section of Q1030.

The data latch section of Q1030 also receives serial dividing data from the microprocessor, Q1035, which causes the pre-divided VCO signal to be further divided in the programmable divider section, depending upon the desired receive frequency, so as to produce a 5 kHz or 6.25 kHz derivative of the current VCO frequency.

Meanwhile, the reference divider section of Q1030 divides the 21.25 MHz crystal reference X1001, by 4250 (or 3400) to produce the 5 kHz (or 6.25 kHz) loop reference (respectively).

The 5 kHz (or 6.25 kHz) signal from the programmable divider (derived from the VCO) and that derived from the reference oscillator are applied to the phase detector section of Q1030, which produces a pulsed output with pulse duration depending on the phase difference between the input signals.

This pulse train is filtered to DC and returned to the varactor **D1011** (**HVC350B**). Changes in the level of the DC voltage applied to the varactor affect the reference in the tank circuit of the VCO according to the phase difference between the signals derived from the VCO and the crystal reference oscillator.

The VCO is thus phase-locked to the crystal reference oscillator. The output of the VCO Q1023, after buffering by Q1022 and amplification by Q1018, is applied to the first mixer as described previously.

For transmission, the VCO Q1023 oscillates between 144 and 148 MHz according to the model version and programmed transmit frequency. The remainder of the PLL circuitry is shared with the receiver. However, the dividing data from the microprocessor is such that the VCO frequency is at the actual transmit frequency (rather than offset for IFs, as in the receiving case). Also, the VCO is modulated by the speech audio applied to **D1010** (**HSC277**), as described previously.

Receive and transmit buses select which VCO is made active by **Q1020** (**DTA144TE**). When the power saving feature is active, the microprocessor **Q1035** (**M3826AEFGP**) periodically signals switches the **Q1033** (**DTA114TE**) and **Q1034** (**2SC4081**) for the PLL subsystem IC Q1030 to conserve power and shortens the lock-up time.

Miscellaneous Circuits

Push-To-Talk Transmit Activation

The PTT switch is connected to pin 28 of microprocessor **Q1035** (**M3826AEFGP**), so that when the PTT switch is closed, pin 6 of Q1035 goes "High." This signals the microprocessor to activate the TX/RX controller **Q1028** (**UMW1**), which then disables the receiver by disabling the 5 V supply bus at **Q1026** (**DTA143XE**) to the front-end, FM IF subsystem IC **Q1017** (**TA31136FN**).

At the same time, **Q1027** (**2SA1586Y**) activates the transmit 5V supply line to enable the transmitter.

Alignment

Introduction

The **FT-250R** is carefully aligned at the factory for the specified performance across the amateur band. Realignment should therefore not be necessary except in the event of a component failure. Only an authorized Vertex Standard representative should perform all component replacement and service, or the warranty policy may be void.

The following procedures cover the adjustments that are not normally required once the transceiver has left the factory. However, if damage occurs and some parts subsequently are replaced, realignment may be required. If a sudden problem occurs during normal operation, it is likely due to component failure; realignment should not be done until after the faulty component has been replaced.

We recommend that servicing be performed only by authorized Vertex Standard service technicians who are experienced with the circuitry and fully equipped for repair and alignment. If a fault is suspected, contact the dealer from whom the transceiver was purchased for instructions regarding repair. Authorized Vertex Standard service technicians realign all circuits and make complete performance checks to ensure compliance with factory specifications after replacing any faulty components.

Those who do undertake any of the following alignments are cautioned to proceed at their own risk. Problems caused by unauthorized attempts at realignment are not covered by the warranty policy. Also, Vertex Standard reserves the right to change circuits and alignment procedures in the interest of improved performance, without notifying owners.

Under no circumstances should any alignment be attempted unless the normal function and operation of the transceiver are clearly understood, the cause of the malfunction has been clearly pinpointed and any faulty components replaced, and realignment determined to be absolutely necessary.

Required Test Equipment

The following test equipment (and familiarity with its use) is necessary for complete realignment. Correction of problems caused by misalignment resulting from use of improper test equipment is not covered under the warranty policy. While most steps do not require all of the equipment listed, the interactions of some adjustments may require that more complex adjustments be performed afterwards.

Do not attempt to perform only a single step unless it is clearly isolated electrically from all other steps. Have all test equipment ready before beginning and, follow all of the steps in a section in the order presented.

- ❒ RF Signal Generator with calibrated output level at 200 MHz
- ❒ Deviation Meter (linear detector)
- ❒ In-line Wattmeter with 5% accuracy at 200 MHz
- ❒ 50-Ohm 10-W RF Dummy Load
- ❒ 8-Ohm AF Dummy Load
- ❒ Regulated DC Power Supply adjustable from 3 to 16.5 VDC, 2A
- ❒ Frequency Counter: 0.2-ppm accuracy at 200 MHz
- ❒ AF Signal Generator
- ❒ AC Voltmeter
- ❒ DC Voltmeter: high impedance
- ❒ VHF Sampling Coupler
- ❒ SINAD Meter

Alignment Preparation & Precautions

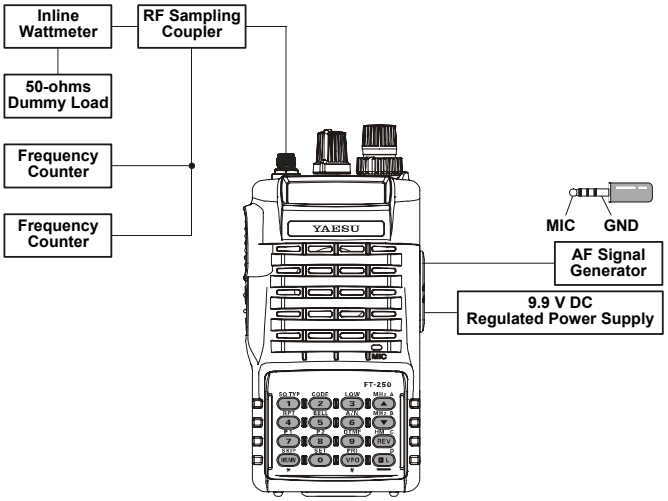
A 50-Ohm RF load and in-line wattmeter must be connected to the main antenna jack in all procedures that call for transmission; alignment is not possible with an antenna. After completing one step, read the next step to see if the same test equipment is required. If not, remove the test equipment (except dummy load and wattmeter, if connected) before proceeding.

Correct alignment requires that the ambient temperature be the same as that of the transceiver and test equipment, and that this temperature be held constant between 68 ~ 86° F (20° ~ 30° C). When the transceiver is brought into the shop from hot or cold air, it should be allowed some time to come to room temperature before alignment. Whenever possible, alignments should be made with oscillator shields and circuit boards firmly affixed in place. Also, the test equipment must be thoroughly warmed up before beginning.

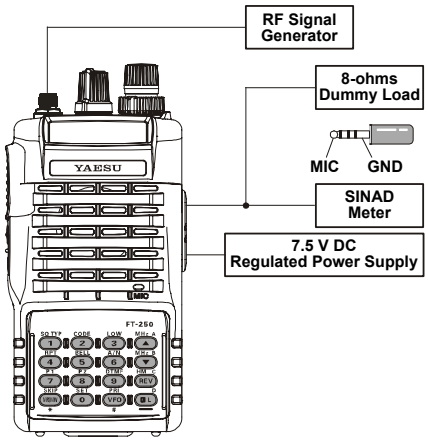
Note: Signal levels in dB referred to in the alignment procedure are based on 0dBμ = 0.5μV.

Test Setup

Set up the test equipment as shown below for transceiver alignment, and supply 7.5 V DC power to the transceiver.



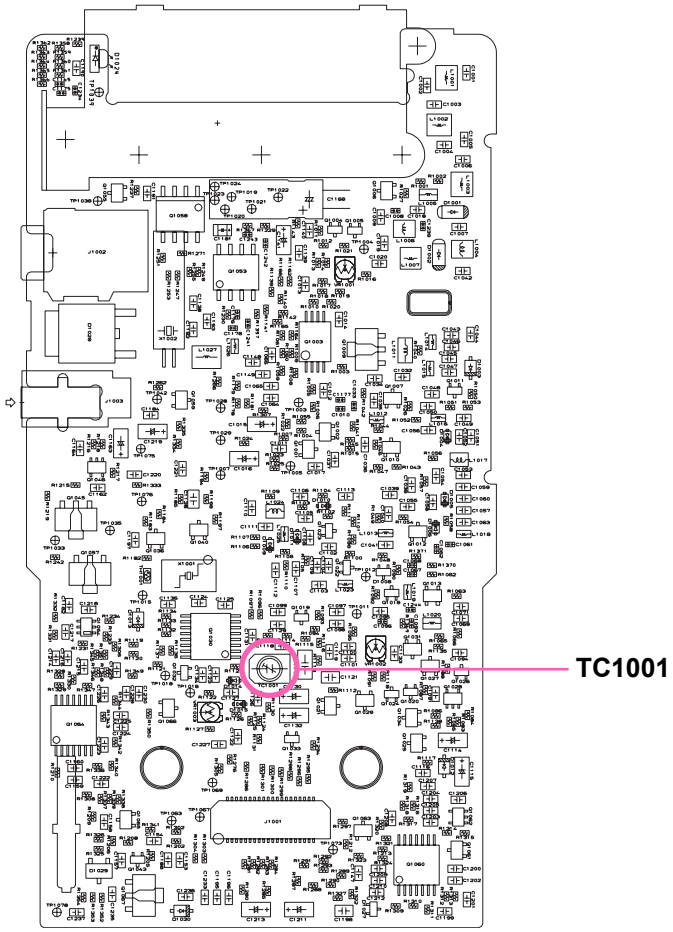
"TX SECTION" ALIGNMENT SETUP



"RX SECTION" ALIGNMENT SETUP

PLL Reference Frequency

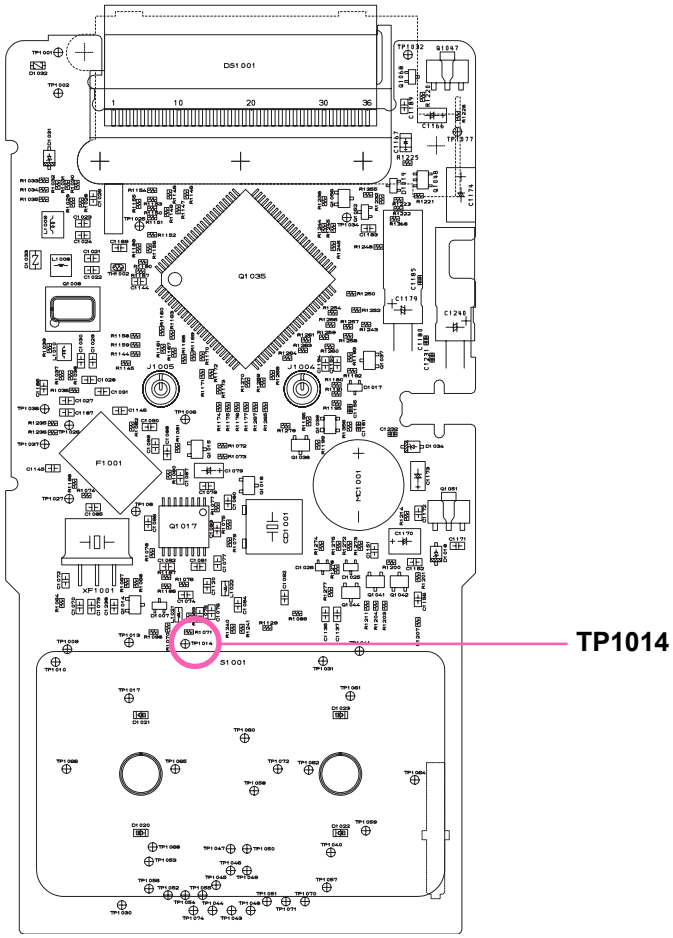
❒ With the wattmeter, dummy load and frequency counter connected to the antenna jack, select 146 MHz, key the transmitter, and adjust **TC1001** on the Main Unit, if necessary, so the counter frequency is within 100 Hz of 146 MHz.



Alignment

PLL VCV (Varactor Control Voltage)

- ❒ Connect the DC voltmeter between test point **TP1014** on the Main Unit and chassis ground.
- ❒ Set the transceiver to 136 MHz, and confirm about 0.4V ~ 1.0V on the voltmeter.
- ❒ Set the transceiver to 146 MHz, and confirm about 1.0V ~ 1.6V on the voltmeter.
- ❒ Set the transceiver to 174 MHz, and confirm about 2.9V ~ 4.3V on the voltmeter.
- ❒ Select 136 MHz, and this time key the transmitter; now confirm about 0.8V ~ 1.3V on the voltmeter.
- ❒ Set the transceiver to 146 MHz, and this time key the transmitter; now confirm about 1.3V ~ 1.9V on the voltmeter.
- ❒ Set the transceiver to 174 MHz, and this time key the transmitter; now confirm about 2.9V ~ 4.3V on the voltmeter.



Internal System Alignment Routine

This procedure uses a routine programmed in the transceiver that simplifies many previously complex adjustments with digitally controlled settings via front panel buttons and LCD indications.

Internal Alignment System Startup Procedure

- ❒ To begin, set the transceiver to the 146.0000 MHz, and turn the transceiver off.
- ❒ Next, press and hold in the [PTT], [MONI] and the [LAMP] switches; hold them in while turning the radio on.
- ❒ Press the keypad in following sequence while press and holding the [LAMP] key.
  [▲] ➠ [1] ➠ [4] ➠ [0] ➠ [1]
- ❒ Press the [PTT] switch to enter the alignment routine.
- ❒ To exit the alignment routine when adjustments are complete, just turn the radio off.

Low-Scale S-1 Adjustment

- ❒ Adjust the signal generator level to -5 dBμ, then hold in the [LAMP] and press the [▼] key.

S-Meter Full-Scale Adjustment

- ❒ Adjust the signal generator level to +23 dBμ, then hold in the [LAMP] and press the [▲] key.

Transmitter Output Power

- ❒ Set the transceiver output power to "LOW."
- ❒ Transmit, and press and hold in the [LAMP] key.
- ❒ Rotate the DIAL so as to achieve 0.47W (±0.05W) on the wattmeter.
- ❒ Set the transceiver output power to "MID."
- ❒ Transmit, and press and hold in the [LAMP] key.
- ❒ Rotate the DIAL so as to achieve 2.1W (±0.1W) on the wattmeter.
- ❒ Set the transceiver output power to "HIGH."
- ❒ Transmit, and press and hold in the [LAMP] key.
- ❒ Rotate the DIAL so as to achieve 5.2W (±0.1W) on the wattmeter.

CTCSS Deviation Adjustment

❒ Activate the CTCSS encoder with a 107.2-Hz tone.
❒ Transmit, and press and hold in the [LAMP] key.
❒ Rotate the DIAL so as to achieve a 0.7 kHz (±0.05 kHz) reading (narrow: 0.5 kHz) on the deviation meter.

DCS Deviation Adjustment

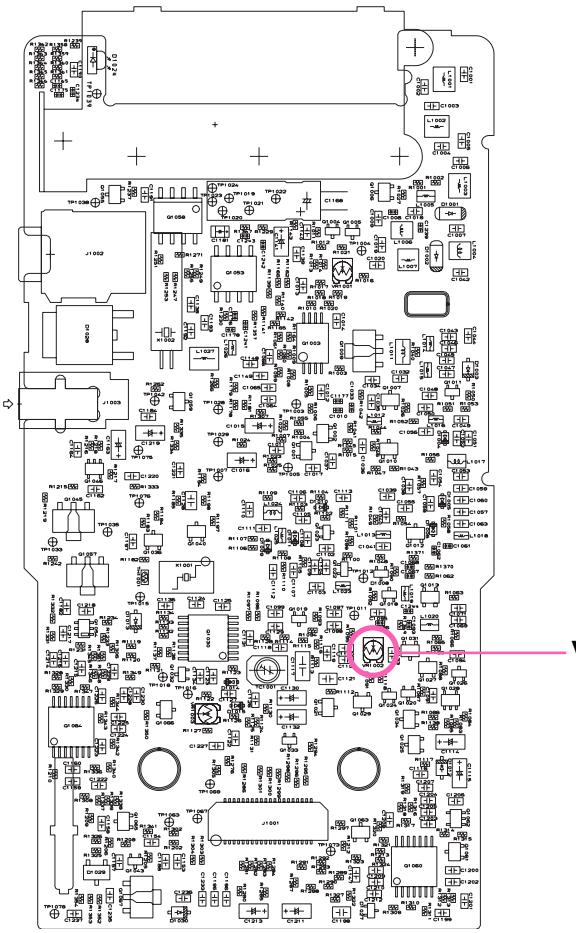
❒ Activate the DCS encoder/decoder with an 023 code.
❒ Transmit, and press and hold in the [LAMP] key.
❒ Rotate the DIAL so as to achieve a 0.7 kHz (±0.05 kHz) reading (narrow: 0.5 kHz) on the deviation meter.

Transmitter Total Deviation

❒ Select 146 MHz, and adjust the AF generator attenuator for 80-mV output at 1 kHz to the microphone jack.
❒ Key the transmitter, and adjust VR1002 on the Main Unit for ±4.2 kHz deviation on the deviation meter (±100 Hz).

DC Voltmeter

❒ Set the power supply voltage to 9.6 V.
❒ Press and hold in the [LAMP] and [REV] key.



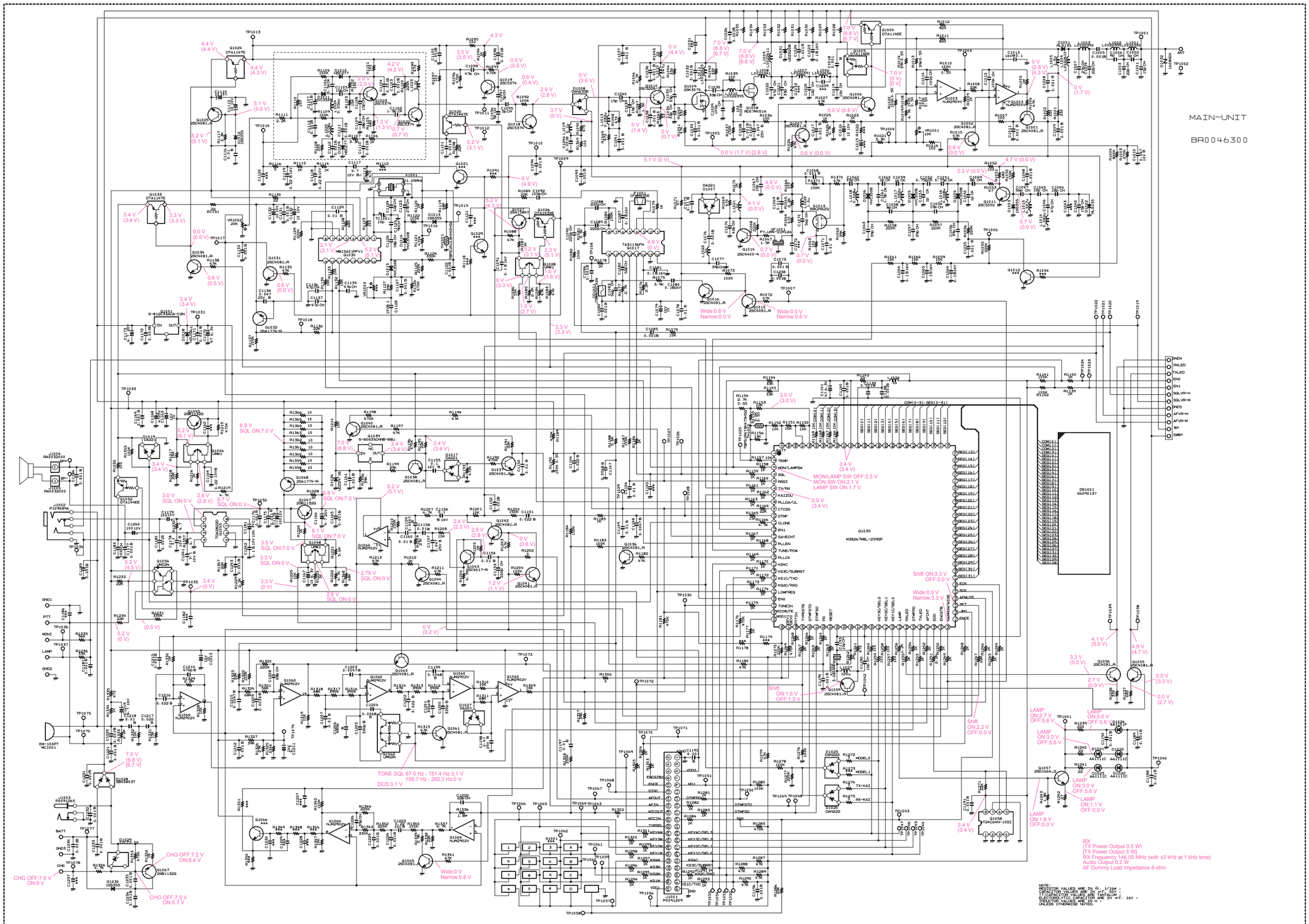
Receiver

Sensitivity

With 146 MHz selected, tune the RF signal generator to the same frequency, and set the generator level to -8 dBμ, and confirm about 12dB SINAD on the SINAD Meter.

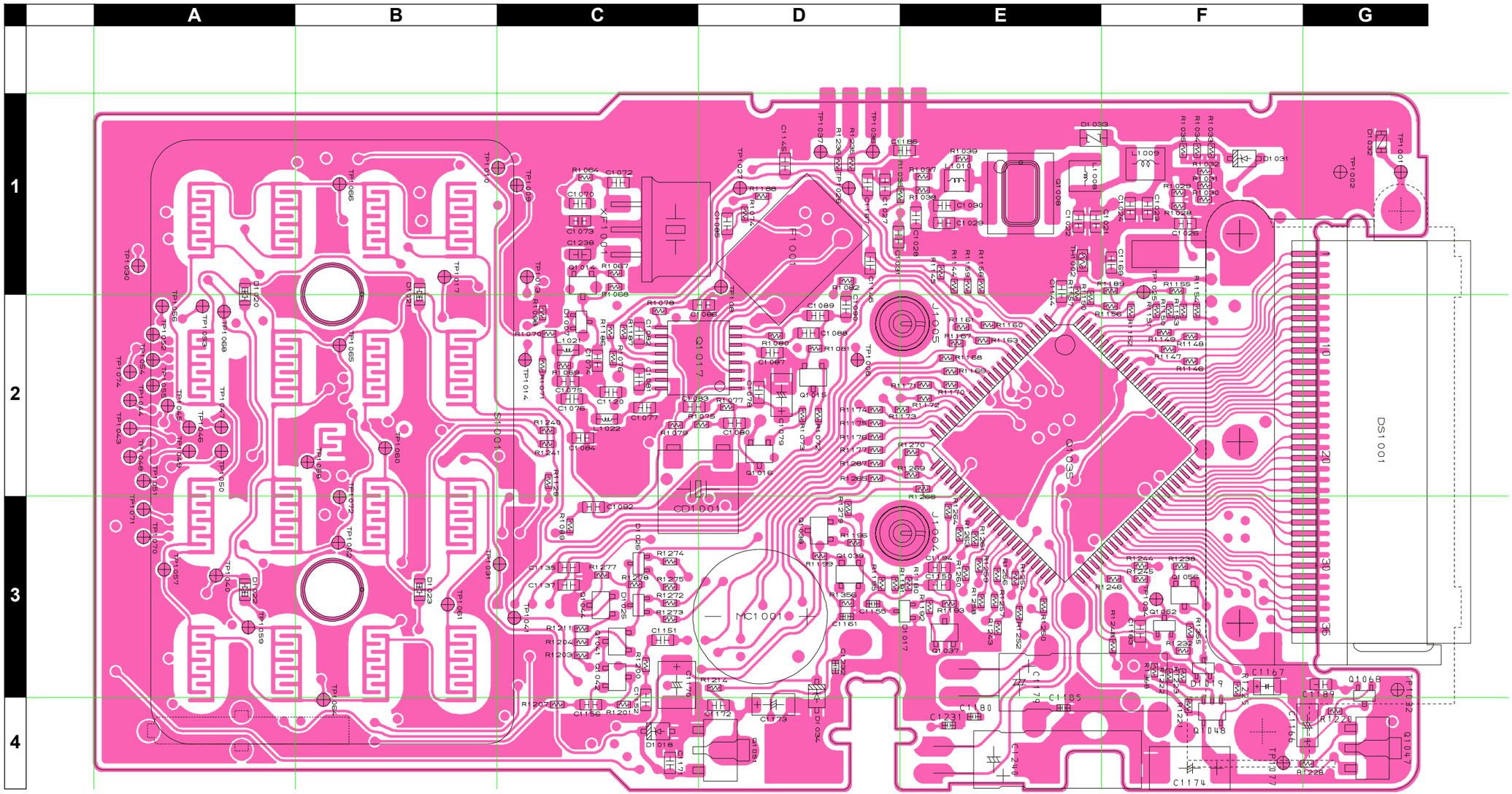
Alignment

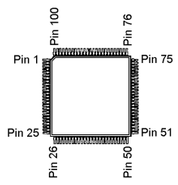
Note:


MAIN-UNIT
BR0046300
RX
(TX Power Output 0.5 W)
(TX Power Output 5 W)
RX Frequency 146.05 MHz (with ±3 kHz at 1 kHz tone)
Audio Output 0.2 W
AF Dummy Load Impedance 8-ohm
TONE SQL 67.0 Hz - 151.4 Hz:3.1 V
156.7 Hz - 250.3 Hz:0 V
DCS:3.1 V
Shift ON:3.3 V OFF:0.0 V
Wide:0.0 V Narrow:3.3 V
Shift ON:1.6 V OFF:1.5 V
Shift ON:2.2 V OFF:0.0 V
MONI/LAMP SW OFF:3.3 V
MON SW ON:2.1 V
LAMP SW ON:1.7 V
Wide:0.6 V Narrow:0.0 V
Wide:0.0 V Narrow:0.6 V
Wide:0.6 V Narrow:0.6 V
CHG OFF:7.2 V ON:6.4 V
CHG OFF:7.0 V ON:0 V
CHG OFF:7.0 V ON:5.7 V
LAMP ON:2.7 V OFF:5.6 V
LAMP ON:3.0 V OFF:5.6 V
LAMP ON:5.0 V OFF:5.6 V
LAMP ON:3.0 V OFF:5.6 V
LAMP ON:1.1 V OFF:0.0 V
LAMP ON:1.6 V OFF:0.0 V
NOTE:
RESISTOR VALUES ARE IN Ω , 1/16W ;
CAPACITOR VALUES ARE IN pF, 50V ;
TT(CAPACITOR VALUES ARE TANTALUM ;
ELECTOROLYTIC CAPACITOR ARE IN μF, 16V ;
INDUCTOR VALUES ARE IN H ;
UNLESS OTHERWISE NOTED.

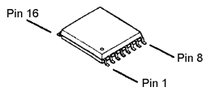
MAIN Unit

Parts Layout (Side A)



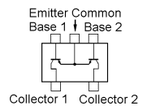


M3826AEFGP
(Q1035)



TA31136FN
(Q1017)

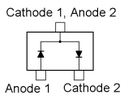
2SB1132 (BA)
(Q1063, 1078)



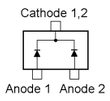
UMW1 (W1)
(Q1048)

DTA144EE (16)
(Q1052)

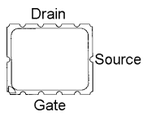
2SC4081
(Q1015, 1016, 1037, 1038, 1041, 1042, 1044, 1056)
2SC4400
(Q1014)



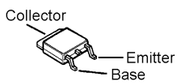
DA221 (K)
(D1007, 1017, 1019)



DAN222 (N)
(D1025, 1026)



RD07MVS1A
(Q1008)



2SB1132Q
(Q1047)

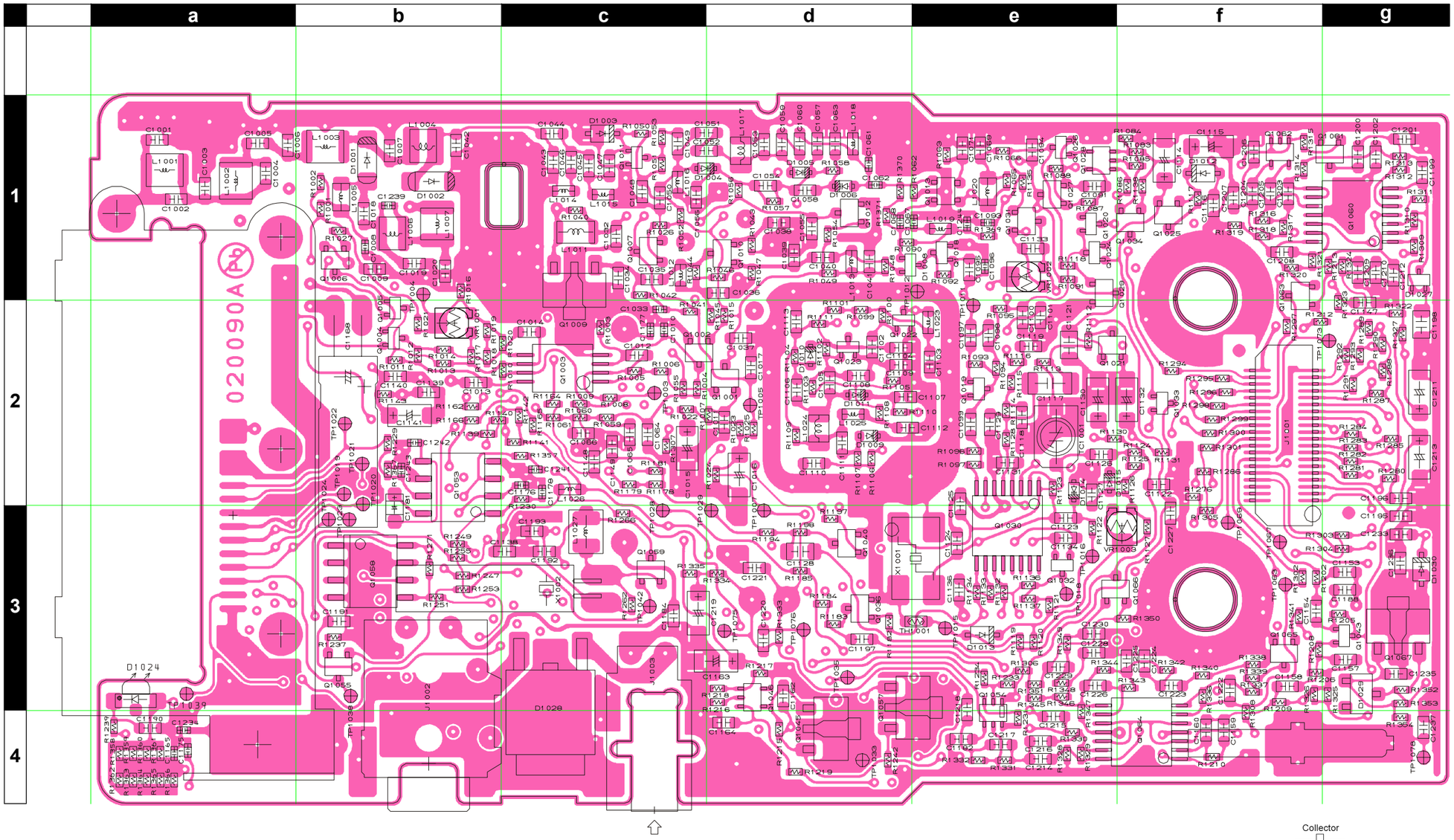
S-80835CNNB
(Q1039)

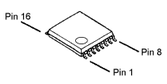
2SA1774 (FR)
(Q1068)

S-812C33AUA-C2N-T2
(Q1051)

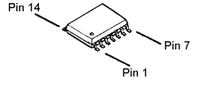
MAIN Unit

Parts Layout (Side B)

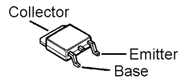




MB15A01PFV1
(Q1030)

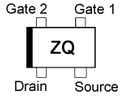


NJM2902V
(Q1060, 1064)

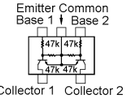


2SB1132Q
(Q1045, 1067)

DTA143XE
(Q1026)



3SK296ZQ (ZQ)
(Q1013)

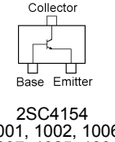


UMG2N
(Q1062)

2SA1586Y
(Q1027)
2SA1774 (FR)
(Q1032)

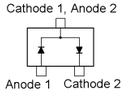
DTA114EE (14)
(Q1004, 1005)

DTA144TE (96)
(Q1020)

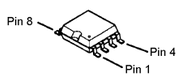


2SC4154
(Q1001, 1002, 1006, 1007, 1025, 1031, 1034, 1036, 1040, 1055, 1059, 1061, 1063, 1065)
2SC5006
(Q1011)
2SC4617 (BR)
(Q1043)
2SC5226
(Q1010)
2SC5374
(Q1018, 1019, 1022, 1023)

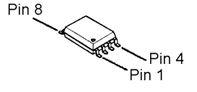
02CZ2.0X (2.0X)
(D1029)



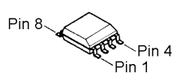
DA221 (K)
(D1027)



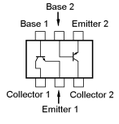
BR24L64F
(Q1058)



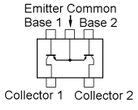
NJM2904V
(Q1003)



TDA2822D
(Q1053)



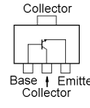
UMZ2N
(Q1054)



UMW1 (W1)
(Q1028, 1046)

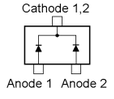
2SK3074 (WA)
(Q1009)

DTA114TE (94)
(Q1024, 1033)

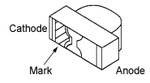


2SD1664 (DA)
(Q1057)

SB40W03T
(D1028)



DAN235E (M)
(D1008)



AA1101F
(D1024)

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
	PCB with Components					CS2034401	VX-250R	USA A2		
						CS2034404	VX-250R	EXP B3		
						CS2034405	VX-250R	EXP A1		
						CS2034406	VX-250R	EXP A3		
	Printed Circuit Board					FR020090A				
C 1001	CHIP CAP.	15pF	50V	CH	GRM1882C1H150JA01D	K22174215		1-	B	a1
C 1002	CHIP CAP.	5pF	50V	CH	GRM1882C1H5R0CZ01D	K22174206		1-	B	a1
C 1003	CHIP CAP.	22pF	50V	CH	GRM1882C1H220JA01D	K22174219		1-	B	a1
C 1004	CHIP CAP.	4pF	50V	CH	GRM1882C1H4R0CZ01D	K22174205		1-	B	a1
C 1005	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	a1
C 1006	CHIP CAP.	22pF	50V	CH	GRM1882C1H220JA01D	K22174219		1-	B	a1
C 1007	CHIP CAP.	27pF	50V	CH	GRM1882C1H270JA01D	K22174221		1-	B	b1
C 1008	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	B	b1
C 1009	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	b1
C 1010	CHIP CAP.	0.047uF	10V	B	GRM155B11A473KA01D	K22108801		1-	B	c2
C 1011	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d2
C 1012	CHIP CAP.	100pF	50V	CH	GRM1882C1H101JA01D	K22174235		1-	B	c2
C 1013	CHIP CAP.	0.1uF	16V	B	GRM188B11C104KA01D	K22124805		1-	B	b2
C 1014	CHIP CAP.	100pF	50V	CH	GRM1882C1H101JA01D	K22174235		1-	B	c2
C 1016	CHIP TA.CAP.	10uF	10V		TEESVA1A106M8R	K78100028		1-	B	d2
C 1017	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d2
C 1018	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	b1
C 1019	CHIP CAP.	10pF	50V	CH	GRM1882C1H100JA01D	K22174211		1-	B	b1
C 1020	CHIP CAP.	12pF	50V	CH	GRM1882C1H120JA01D	K22174213		1-	B	b1
C 1021	CHIP CAP.	33pF	50V	CH	GRM1882C1H330JA01D	K22174223		1-	A	E1
C 1022	CHIP CAP.	47pF	50V	CH	GRM1882C1H470JA01D	K22174227		1-	A	E1
C 1023	CHIP CAP.	0.1uF	16V	B	GRM188B11C104KA01D	K22124805		1-	A	F1
C 1024	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	F1
C 1026	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	F1
C 1027	CHIP CAP.	0.047uF	25V	B	GRM188B11E473KA01D	K22144811		1-	A	D1
C 1028	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	E1
C 1029	CHIP CAP.	100pF	50V	CH	GRM1882C1H101JA01D	K22174235		1	A	E1
C 1029	CHIP CAP.	82pF	50V	CH	GRM1882C1H820JA01D	K22174233		2-	A	E1
C 1030	CHIP CAP.	33pF	50V	CH	GRM1882C1H330JA01D	K22174223		1-	A	E1
C 1032	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	c1
C 1033	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	B	c2
C 1034	CHIP CAP.	33pF	50V	CH	GRM1882C1H330JA01D	K22174223		1-	B	c1
C 1035	CHIP CAP.	33pF	50V	CH	GRM1882C1H330JA01D	K22174223		1-	B	c1
C 1036	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d1
C 1037	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d2
C 1038	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d1
C 1039	CHIP CAP.	15pF	50V	CH	GRM1882C1H150JA01D	K22174215		1-	B	d1
C 1040	CHIP CAP.	15pF	50V	CH	GRM1882C1H150JA01D	K22174215		1-	B	d1
C 1041	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d1
C 1042	CHIP CAP.	15pF	50V	CH	GRM1882C1H150JA01D	K22174215		1-	B	b1
C 1044	CHIP CAP.	18pF	50V	CH	GRM1882C1H180JA01D	K22174217		1-	B	c1
C 1045	CHIP CAP.	10pF	50V	CH	GRM1882C1H100JA01D	K22174211		1-	B	c1
C 1046	CHIP CAP.	47pF	50V	CH	GRM1882C1H470JA01D	K22174227		1-	B	c1
C 1047	CHIP CAP.	56pF	50V	CH	GRM1882C1H560JA01D	K22174229		1-	B	c1
C 1048	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	c1
C 1049	CHIP CAP.	8pF	50V	CH	GRM1882C1H8R0DZ01D	K22174209		1-	B	c1
C 1050	CHIP CAP.	1pF	50V	CK	GRM1884C1H1R0BZ01D	K22174267		1-	B	c1
C 1051	CHIP CAP.	0.75pF	50V	CK	GRM1884C1HR75BZ01D	K22174266		1-	B	c1
C 1052	CHIP CAP.	0.75pF	50V	CK	GRM1884C1HR75BZ01D	K22174266		1-	B	c1
C 1053	CHIP CAP.	1pF	50V	CK	GRM1884C1H1R0BZ01D	K22174267		1-	B	d1
C 1054	CHIP CAP.	15pF	50V	CH	GRM1882C1H150JA01D	K22174215		1-	B	d1
C 1055	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d1
C 1056	CHIP CAP.	39pF	50V	CH	GRM1882C1H390JA01D	K22174225		1-	B	c1
C 1057	CHIP CAP.	39pF	50V	CH	GRM1882C1H390JA01D	K22174225		1-	B	d1
C 1058	CHIP CAP.	8pF	50V	CH	GRM1882C1H8R0DZ01D	K22174209		1-	B	d1
C 1059	CHIP CAP.	1pF	50V	CK	GRM1884C1H1R0BZ01D	K22174267		1-	B	d1
C 1060	CHIP CAP.	1pF	50V	CK	GRM1884C1H1R0BZ01D	K22174267		1-	B	d1
C 1061	CHIP CAP.	1.5pF	50V	CK	GRM1554C1H1R5BZ01D	K22178288		1-	B	d1
C 1062	CHIP CAP.	33pF	50V	CH	GRM1552C1H330JZ01D	K22178224		1-	B	d1
C 1063	CHIP CAP.	39pF	50V	CH	GRM1882C1H390JA01D	K22174225		1-	B	d1
C 1064	CHIP CAP.	0.1uF	16V	B	GRM188B11C104KA01D	K22124805		1-	B	c2
C 1065	CHIP CAP.	0.1uF	16V	B	GRM188B11C104KA01D	K22124805		1-	B	c2
C 1066	CHIP CAP.	0.1uF	16V	B	GRM188B11C104KA01D	K22124805		1-	B	c2
C 1067	CHIP CAP.	10pF	50V	CH	GRM1552C1H100BZ01D	K22178297		1-	B	d1
C 1068	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	B	d1
C 1069	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	B	e1
C 1070	CHIP CAP.	56pF	50V	CH	GRM1882C1H560JA01D	K22174229		1-	A	C1
C 1071	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	B	e1

MAIN Unit

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
C 1073	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	C1
C 1074	CHIP CAP.	43pF	50V	CH	GRM1882C1H430JZ01D	K22174226		1-	A	C2
C 1075	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	A	C2
C 1076	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	C2
C 1077	CHIP CAP.	39pF	50V	CH	GRM1882C1H390JA01D	K22174225		1-	A	C2
C 1078	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	A	D2
C 1079	CHIP TA.CAP.	10uF	10V		TEESVA1A106M8R	K78100028		1-	A	D2
C 1080	CHIP CAP.	0.1uF	16V	B	GRM188B11C104KA01D	K22124805		1-	A	D2
C 1081	CHIP CAP.	0.1uF	16V	B	GRM188B11C104KA01D	K22124805		1-	A	C2
C 1082	CHIP CAP.	56pF	50V	CH	GRM1882C1H560JA01D	K22174229		1-	A	C2
C 1083	CHIP CAP.	56pF	50V	CH	GRM1882C1H560JA01D	K22174229		1-	A	C2
C 1084	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	C2
C 1085	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	D1
C 1086	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	D2
C 1087	CHIP CAP.	0.1uF	16V	B	GRM188B11C104KA01D	K22124805		1-	A	D2
C 1088	CHIP CAP.	220pF	50V	CH	GRM1882C1H221JA01D	K22174243		1-	A	D2
C 1089	CHIP CAP.	220pF	50V	CH	GRM1882C1H221JA01D	K22174243		1-	A	D2
C 1090	CHIP CAP.	220pF	50V	CH	GRM1882C1H221JA01D	K22174243		1-	A	D2
C 1091	CHIP CAP.	0.1uF	16V	B	GRM188B11C104KA01D	K22124805		1-	B	e1
C 1092	CHIP CAP.	100pF	50V	CH	GRM1882C1H101JA01D	K22174235		1-	A	C3
C 1093	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	B	e1
C 1094	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	e1
C 1095	CHIP CAP.	5pF	50V	CH	GRM1882C1H5R0CZ01D	K22174206		1-	B	e1
C 1096	CHIP CAP.	5pF	50V	CH	GRM1552C1H5R0BZ01D	K22178292		1-	B	e1
C 1097	CHIP CAP.	5pF	50V	CH	GRM1882C1H5R0CZ01D	K22174206		1-	B	e2
C 1098	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	e2
C 1099	CHIP CAP.	47pF	50V	CH	GRM1882C1H470JA01D	K22174227		1-	B	e2
C 1100	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	e2
C 1101	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	e2
C 1102	CHIP CAP.	1.5pF	50V	CK	GRM1884C1H1R5CZ01D	K22174258		1-	B	d2
C 1103	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	e2
C 1104	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d2
C 1105	CHIP CAP.	15pF	50V	CH	GRM1882C1H150JA01D	K22174215		1-	B	d2
C 1106	CHIP CAP.	0.5pF	50V	CK	GRM1884C1HR50BZ01D	K22174265		1-	B	d2
C 1107	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d2
C 1108	CHIP CAP.	15pF	50V	CH	GRM1882C1H150JA01D	K22174215		1-	B	d2
C 1109	CHIP CAP.	18pF	50V	CH	GRM1882C1H180JA01D	K22174217		1-	B	d2
C 1110	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d2
C 1111	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d2
C 1112	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d2
C 1113	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d2
C 1114	CHIP TA.CAP.	10uF	10V		TEESVA1A106M8R	K78100028		1-	B	f1
C 1115	CHIP TA.CAP.	10uF	10V		TEESVA1A106M8R	K78100028		1-	B	f1
C 1116	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	B	f1
C 1117	CHIP CAP.	4.7uF	10V	BJ	LMK316BJ475ML-T	K22101802		1-	B	e2
C 1118	CHIP CAP.	0.22uF	10V	B	GRM188B11A224KA01D	K22104801		1-	B	e2
C 1119	CHIP CAP.	0.22uF	10V	B	GRM188B11A224KA01D	K22104801		1-	B	e2
C 1122	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	f2
C 1123	CHIP CAP.	27pF	50V	CH	GRM1882C1H270JA01D	K22174221		1-	B	e3
C 1124	CHIP CAP.	12pF	50V	CH	GRM1882C1H120JA01D	K22174213		1-	B	e3
C 1125	CHIP CAP.	9pF	50V	CH	GRM1882C1H9R0DZ01D	K22174210		1-	B	e2
C 1126	CHIP CAP.	18pF	50V	CH	GRM1882C1H180JA01D	K22174217		1-	B	e2
C 1127	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	e2
C 1128	CHIP CAP.	1uF	10V	B	GRM21BB11A105KA01L	K22100802		1-	B	d3
C 1129	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	B	e2
C 1130	CHIP TA.CAP.	10uF	10V		TEESVA1A106M8R	K78100028		1-	B	e2
C 1131	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	e2
C 1132	CHIP TA.CAP.	10uF	10V		TEESVA1A106M8R	K78100028		1-	B	f2
C 1133	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	e1
C 1134	CHIP CAP.	0.047uF	25V	B	GRM188B11E473KA01D	K22144811		1-	B	e3
C 1135	CHIP CAP.	47pF	50V	CH	GRM1882C1H470JA01D	K22174227		1-	A	C3
C 1136	CHIP CAP.	47pF	50V	CH	GRM1882C1H470JA01D	K22174227		1-	B	e3
C 1137	CHIP CAP.	47pF	50V	CH	GRM1882C1H470JA01D	K22174227		1-	A	C3
C 1138	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	b3
C 1139	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	b2
C 1140	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	b2
C 1141	CHIP TA.CAP.	47uF	6.3V		TEESVA0J476M8R	K78080085		1-	B	b2
C 1144	CHIP CAP.	0.022uF	50V	B	GRM188B11H223KA01D	K22174839		1-	A	E1
C 1146	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	A	D1
C 1147	CHIP CAP.	0.0068uF	50V	B	GRM188B11H682KA01D	K22174834		1-	B	g2
C 1148	CHIP CAP.	0.0047uF	50V	B	ECJ1VB1H472K	K22179622		1-	B	c2
C 1149	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	B	c2
C 1150	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	A	E3

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
C 1151	CHIP CAP.	0.022uF	50V	B	GRM188B11H223KA01D	K22174839		1-	A	C3
C 1152	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	C4
C 1153	CHIP CAP.	220pF	50V	CH	GRM1882C1H221JA01D	K22174243		1-	B	g3
C 1154	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	B	f3
C 1155	CHIP CAP.	0.1uF	10V	B	GRM155B11A104KA01D	K22108802		1-	A	D3
C 1156	CHIP CAP.	0.1uF	16V	B	GRM188B11C104KA01D	K22124805		1-	A	C4
C 1157	CHIP CAP.	0.047uF	25V	B	GRM188B11E473KA01D	K22144811		1-	B	g3
C 1158	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	B	f3
C 1159	CHIP CAP.	0.0047uF	50V	B	ECJ1VB1H472K	K22179622		1-	B	f4
C 1160	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	B	f4
C 1161	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	A	D3
C 1163	CHIP TA.CAP.	10uF	10V		TEESVA1A106M8R	K78100028		1-	B	d3
C 1164	CHIP CAP.	0.22uF	10V	B	GRM188B11A224KA01D	K22104801		1-	B	d4
C 1165	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	B	a4
C 1166	CHIP TA.CAP.	4.7uF	20V		TEESVA1D475M8R	K78130048		1-	A	G4
C 1167	CHIP TA.CAP.	10uF	6.3V		TEESVP0J106M8R	K78080055		1-	A	F3
C 1168	AL.ELECTRO.CAP.	47uF	25V		UVR1E470MDD6 47UF	K40149046		1-	B	b2
C 1169	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	F1
C 1170	CHIP TA.CAP.	47uF	6.3V		TEESVB20J476M8R	K78080048		1-	A	C3
C 1171	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	C4
C 1172	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	D4
C 1173	CHIP TA.CAP.	4.7uF	20V		TEESVA1D475M8R	K78130048		1-	A	D4
C 1174	CHIP TA.CAP.	100uF	10V		TEESVC1A107M12R	K78100075		1-	A	F4
C 1175	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	B	a4
C 1176	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	B	c2
C 1177	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	B	c2
C 1178	CHIP CAP.	0.1uF	10V	B	GRM155B11A104KA01D	K22108802		1-	B	c2
C 1179	AL.ELECTRO.CAP.	100uF	10V		UVR1A101MDD6 100UF	K40109028		1-	A	E3
C 1180	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	A	E4
C 1181	CHIP TA.CAP.	10uF	6.3V		TEESVP0J106M8R	K78080055		1-	B	b3
C 1183	CHIP CAP.	100pF	50V	CH	GRM1882C1H101JA01D	K22174235		1-	A	F3
C 1184	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	c3
C 1185	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	A	E4
C 1187	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	D1
C 1188	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	g3
C 1189	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	G3
C 1190	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	a4
C 1191	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	b3
C 1192	CHIP CAP.	10pF	50V	CH	GRM1882C1H100JA01D	K22174211		1-	B	c3
C 1193	CHIP CAP.	10pF	50V	CH	GRM1882C1H100JA01D	K22174211		1-	B	c3
C 1194	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	E3
C 1195	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	g3
C 1196	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	g2
C 1197	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	B	d3
C 1198	CHIP CAP.	0.47uF	25V	B	GRM21BB11E474KC01L	K22140824		1-	B	g2
C 1199	CHIP CAP.	0.0068uF	50V	B	GRM188B11H682KA01D	K22174834		1-	B	g1
C 1200	CHIP CAP.	330pF	50V	B	GRM188B11H331KD01D	K22174820		1-	B	g1
C 1201	CHIP CAP.	330pF	50V	B	GRM188B11H331KD01D	K22174820		1-	B	g1
C 1202	CHIP CAP.	0.022uF	50V	B	GRM188B11H223KA01D	K22174839		1-	B	g1
C 1203	CHIP CAP.	0.0047uF	50V	B	ECJ1VB1H472K	K22179622		1-	B	f1
C 1204	CHIP CAP.	0.0068uF	50V	B	GRM188B11H682KA01D	K22174834		1-	B	f1
C 1205	CHIP CAP.	330pF	50V	B	GRM188B11H331KD01D	K22174820		1-	B	f1
C 1206	CHIP CAP.	680pF	50V	B	ECUV1H681KBV	K22179612		1-	B	f1
C 1207	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	B	f1
C 1208	CHIP CAP.	68pF	50V	CH	GRM1882C1H680JA01D	K22174231		1-	B	f1
C 1209	CHIP CAP.	0.0033uF	50V	B	ECJ1VB1H332K	K22179620		1-	B	g1
C 1210	CHIP CAP.	0.0047uF	50V	B	ECJ1VB1H472K	K22179622		1-	B	g1
C 1211	CHIP TA.CAP.	4.7uF	16V		TEESVA1C475M8R	K78120031		1-	B	g2
C 1212	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	g1
C 1213	CHIP TA.CAP.	10uF	10V		TEESVA1A106M8R	K78100028		1-	B	g2
C 1214	CHIP CAP.	470pF	50V	B	ECUV1H471KBV	K22179610		1-	B	e4
C 1215	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	e4
C 1216	CHIP CAP.	0.022uF	50V	B	GRM188B11H223KA01D	K22174839		1-	B	e4
C 1217	CHIP CAP.	0.022uF	50V	B	GRM188B11H223KA01D	K22174839		1-	B	e4
C 1218	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	B	e3
C 1219	CHIP TA.CAP.	4.7uF	16V		TEESVA1C475M8R	K78120031		1-	B	c3
C 1220	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d3
C 1221	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	d3
C 1222	CHIP CAP.	22pF	50V	CH	GRM1882C1H220JA01D	K22174219		1-	B	f3
C 1223	CHIP CAP.	0.22uF	10V	B	GRM188B11A224KA01D	K22104801		1-	B	f3
C 1224	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	f3
C 1225	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	f3
C 1226	CHIP CAP.	39pF	50V	CH	GRM1882C1H390JA01D	K22174225		1-	B	e3

MAIN Unit

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
C 1231	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	A	E4
C 1232	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	A	D3
C 1233	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	g3
C 1234	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	B	a4
C 1235	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	g3
C 1236	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	B	g3
C 1238	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	C1
C 1240	AL.ELECTRO.CAP.	100uF	10V		UVR1A101MDD6 100UF	K40109028		1-	A	E4
C 1241	CHIP CAP.	0.1uF	10V	B	GRM155B11A104KA01D	K22108802		1-	B	c2
C 1242	CHIP CAP.	0.1uF	10V	B	GRM155B11A104KA01D	K22108802		1-	B	b2
C 1243	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	B	b2
C 1244	CHIP CAP.	0.001uF	50V	B	GRM155B11H102KA01D	K22178809		1-	B	e1
CD1001	CERAMIC DISC				JTBM450CX24	H7901530		1-	A	C2
D 1001	DIODE				RLS135 TE-11	G2070128		1-	B	b1
D 1002	DIODE				RLS135 TE-11	G2070128		1-	B	b1
D 1003	DIODE				1SS355 TE-17	G2070470		1-	B	c1
D 1004	DIODE				HVC350B-TRF-E	G2070596		1-	B	c1
D 1005	DIODE				HVC350B-TRF-E	G2070596		1-	B	d1
D 1006	DIODE				HVC350B-TRF-E	G2070596		1-	B	d1
D 1007	DIODE				DA221 TL	G2070178		1-	A	C2
D 1008	DIODE				DAN235E TL	G2070612		1-	B	d1
D 1009	DIODE				HSC277TRF-E	G2070584		1-	B	d2
D 1010	DIODE				HSC277TRF-E	G2070584		1-	B	d2
D 1011	DIODE				HVC350B-TRF-E	G2070596		1-	B	d2
D 1012	DIODE				1SS355 TE-17	G2070470		1-	B	f1
D 1013	DIODE				1SS355 TE-17	G2070470		1-	B	e3
D 1014	DIODE				HVC350B-TRF-E	G2070596		1-	B	e2
D 1015	DIODE				HVC350B-TRF-E	G2070596		1-	B	e2
D 1017	DIODE				DA221 TL	G2070178		1-	A	E3
D 1018	DIODE				HZU5ALL-TRF-E	G2070754		1-	A	C4
D 1019	DIODE				DA221 TL	G2070178		1-	A	F3
D 1020	LED				AA1111C-TR	G2070660		1-	A	A1
D 1021	LED				AA1111C-TR	G2070660		1-	A	B1
D 1022	LED				AA1111C-TR	G2070660		1-	A	A3
D 1023	LED				AA1111C-TR	G2070660		1-	A	B3
D 1024	LED				AA1101F-TR	G2070658		1-	B	a3
D 1025	DIODE				DAN222 TL	G2070174		1-	A	C3
D 1026	DIODE				DAN222 TL	G2070174		1-	A	C3
D 1027	DIODE				DA221 TL	G2070178		1-	B	g1
D 1028	DIODE				SB40W03T-TL	G2070370		1-	B	c3
D 1029	DIODE				02CZ2.0X(TE85R.F)	G2070124		1-	B	g3
D 1030	DIODE				1SS355 TE-17	G2070470		1-	B	g3
D 1031	DIODE				UDZS TE-17 20B	G2071016		1-	A	F1
D 1032	SURGE ABSORBER				1608SGX	Q9000891		1-	A	G1
D 1034	DIODE				UDZS TE-17 9.1B	G2070868		1-	A	D3
DS1001	LCD				HT-3597-TFZWL	G6090137		1-	A	G2
F 1001	CERAMIC FILTER				CFWLB450KE2A-B0	H3900466		1-	A	D2
J 1001	CONNECTOR				AXK6S40535P	P0091209		1-	B	f2
J 1002	CONNECTOR				HSJ1594-010055	P1090896		1-	B	b4
J 1003	CONNECTOR				HEC3604-010120	P0091265		1-	B	c4
J 1004	COIL SPRING					RA0032000		1-	A	E3
J 1005	COIL SPRING					RA0032000		1-	A	E2
L 1001	COIL				E2 0.35-1.6-7T-L	L0022390		1-	B	a1
L 1002	COIL				E2 0.35-1.6-7T-L	L0022390		1-	B	a1
L 1003	COIL				E2 0.35-1.6-7T-L	L0022390		1-	B	b1
L 1004	COIL				E2 0.25-1.9-5.5T-R	L0022610		1-	B	b1
L 1005	M.RFC	1uH			ELJ-ND1R0JF	L1690977		1-	B	b1
L 1006	COIL				E2 0.35-1.6-4T-L	L0022456		1-	B	b1
L 1007	COIL				E2 0.45-1.4-4T-L	L0022391		1-	B	b1
L 1008	COIL				E2 0.45-1.4-4T-L	L0022391		1-	A	E1
L 1009	COIL				E2 0.25-1.9-8.5T-L	L0022611		1-	A	F1
L 1010	COIL				E2 0.28-1.0-4.5T-R	L0022395		1-	A	E1
L 1011	COIL				E2 0.28-1.0-8TR	L0022423		1-	B	c1
L 1012	M.RFC	0.047uH			TFL0816-47	L1690499		1-	B	c1
L 1013	M.RFC	0.082uH			TFL0816-82N	L1690980		1-	B	d1
L 1014	M.RFC	0.082uH			TFL0816-82N	L1690980		1-	B	c1
L 1015	M.RFC	0.047uH			TFL0816-47	L1690499		1-	B	c1
L 1016	M.RFC	0.068uH			TFL0816-68	L1690501		1-	B	c1
L 1017	CHIP COIL	0.082uH			LQW2BHN82NG03L	L1690979		1-	B	d1
L 1018	M.RFC	0.068uH			TFL0816-68	L1690501		1-	B	d1
L 1019	M.RFC	0.1uH			TFL0816-100N	L1690981		1-	B	e1
L 1020	M.RFC	1uH			ELJ-ND1R0JF	L1690977		1-	B	e1
L 1021	M.RFC	1uH			LK1608 1R0K-T	L1690687		1-	A	C2

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
L 1022	M.RFC	1uH			LK1608 1R0K-T	L1690687		1-	A	C2
L 1023	M.RFC	0.1uH			TFL0816-100N	L1690981		1-	B	e2
L 1024	CHIP COIL	0.056uH			LQW2BHN56NG03L	L1690978		1-	B	d2
L 1025	M.RFC	0.018uH			TFL0816-18	L1690494		1-	B	d2
L 1026	M.RFC	1uH			LK1608 1R0K-T	L1690687		1-	B	c2
L 1027	CHIP COIL	120uH			LQH32MN121K23L	L1690100		1-	B	c3
MC1001	MIC. ELEMENT				PF0-1055P	M3290045		1-	A	D3
Q 1001	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	B	d2
Q 1002	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	B	c2
Q 1003	IC				NJM2904V-TE1	G1091677		1-	B	c2
Q 1004	TRANSISTOR				DTA114EE TL	G3070263		1-	B	b2
Q 1005	TRANSISTOR				DTA114EE TL	G3070263		1-	B	b2
Q 1006	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	B	b1
Q 1007	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	B	c1
Q 1008	FET				RD07MVS1A-T12	G3070352		1-	A	E1
Q 1009	FET				2SK3074(TE12L.F)	G3830748		1-	B	c1
Q 1010	TRANSISTOR				2SC5226-5-TL	G3352268E		1-	B	d1
Q 1011	TRANSISTOR				2SC5006-T1	G3350068		1-	B	c1
Q 1013	FET				3SK296ZQ-TL-E	G4802968		1-	B	e1
Q 1014	TRANSISTOR				2SC4400-4-TL	G3344008D		1-	A	C1
Q 1015	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	A	D2
Q 1016	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	A	D2
Q 1017	IC				TA31136FNG(EL)	G1091605		1-	A	C2
Q 1018	TRANSISTOR				2SC5374-TL	G3353748		1-	B	e1
Q 1019	TRANSISTOR				2SC5374-TL	G3353748		1-	B	e2
Q 1020	TRANSISTOR				DTA144TE TL	G3070209		1-	B	e1
Q 1022	TRANSISTOR				2SC5374-TL	G3353748		1-	B	d2
Q 1023	TRANSISTOR				2SC5374-TL	G3353748		1-	B	d2
Q 1024	TRANSISTOR				DTA114TE TL	G3070264		1-	B	e1
Q 1025	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	B	f1
Q 1026	TRANSISTOR				DTA143XE TL	G3070093		1-	B	e1
Q 1027	TRANSISTOR				2SA1586Y(TE85L.F)	G3115868Y		1-	B	e1
Q 1028	TRANSISTOR				UMW1 TR	G3070078		1-	B	e1
Q 1030	IC				MB15A01PFV1-G-BND-EFE1	G1092545		1-	B	e3
Q 1031	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	B	e1
Q 1032	TRANSISTOR				2SA1774 TL R	G3117748R		1-	B	e3
Q 1033	TRANSISTOR				DTA114TE TL	G3070264		1-	B	f2
Q 1034	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	B	f1
Q 1035	IC				M3826AEFGP	※		1-	A	E2
Q 1036	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	B	d3
Q 1037	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	A	E3
Q 1038	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	A	D3
Q 1039	IC				S-80835CNNB-B8U-T2-G	G1093991		1-	A	D3
Q 1040	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	B	d3
Q 1041	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	A	C3
Q 1042	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	A	C3
Q 1043	TRANSISTOR				2SC4617 TL R	G3346178R		1-	B	g3
Q 1044	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	A	C3
Q 1045	TRANSISTOR				2SB1132 T100 Q	G3211327Q		1-	B	d4
Q 1046	TRANSISTOR				UMW1 TR	G3070078		1-	B	d3
Q 1047	TRANSISTOR				2SB1132 T100 Q	G3211327Q		1-	A	G4
Q 1048	TRANSISTOR				UMW1 TR	G3070078		1-	A	F4
Q 1051	IC				S-812C33AUA-C2N-T2G	G1094056		1-	A	D4
Q 1052	TRANSISTOR				DTA144EE TL	G3070074		1-	A	F3
Q 1053	IC				TDA2822L-S08-R	G1094497		1-	B	b2
Q 1054	TRANSISTOR				UMZ2N TR	G3070117		1-	B	e4
Q 1055	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	B	b3
Q 1056	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	A	F3
Q 1057	TRANSISTOR				2SD1664 T100 Q	G3416647Q		1-	B	d3
Q 1058	IC				BR24L64F-WE2	G1093876		1-	B	b3
Q 1059	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	B	c3
Q 1060	IC				NJM2902V-TE1	G1091679		1-	B	g1
Q 1061	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	B	f1
Q 1062	TRANSISTOR				UMG2N TR	G3070088		1-	B	f1
Q 1063	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	B	f1
Q 1064	IC				NJM2902V-TE1	G1091679		1-	B	f4
Q 1065	TRANSISTOR				2SC4081 T106 R	G3340818R		1-	B	f3
Q 1067	TRANSISTOR				2SB1132 T100 Q	G3211327Q		1-	B	g3
Q 1068	TRANSISTOR				2SA1774 TL R	G3117748R		1-	A	G3
R 1001	CHIP RES.	330	1/16W	5%	RMC1/16S 331JTH	J24189019		1-	B	b1
R 1002	CHIP RES.	330	1/16W	5%	RMC1/16S 331JTH	J24189019		1-	B	b1
R 1003	CHIP RES.	270k	1/16W	5%	RMC1/16S 274JTH	J24189054		1-	B	c2
R 1004	CHIP RES.	820k	1/16W	5%	RMC1/16S 824JTH	J24189060		1-	B	c2

※: Please contact Vertex Standard

MAIN Unit

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
R 1005	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	B	c2
R 1006	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	c2
R 1007	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	c2
R 1008	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	c2
R 1009	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	c2
R 1010	CHIP RES.	100k	1/16W	0.5%	RR0510R-104-D	J24189167		1-	B	b2
R 1011	CHIP RES.	820	1/16W	5%	RMC1/16S 821JTH	J24189024		1-	B	b2
R 1012	CHIP RES.	820	1/16W	5%	RMC1/16S 821JTH	J24189024		1-	B	b2
R 1013	CHIP RES.	39k	1/16W	0.5%	RR0510R-393-D	J24189157		1-	B	b2
R 1014	CHIP RES.	39k	1/16W	0.5%	RR0510R-393-D	J24189157		1-	B	b2
R 1015	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	d2
R 1016	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	b1
R 1017	CHIP RES.	100k	1/16W	0.5%	RR0510R-104-D	J24189167		1-	B	b2
R 1018	CHIP RES.	100k	1/16W	0.5%	RR0510R-104-D	J24189167		1-	B	b2
R 1019	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	b2
R 1020	CHIP RES.	100k	1/16W	0.5%	RR0510R-104-D	J24189167		1-	B	b2
R 1021	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	b2
R 1023	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	d2
R 1024	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	d2
R 1025	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	d2
R 1026	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	c1
R 1027	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	b1
R 1028	CHIP RES.	1	1/16W	5%	RMC1/16S 1R0JTH	J24189319		1-	A	F1
R 1029	CHIP RES.	1	1/16W	5%	RMC1/16S 1R0JTH	J24189319		1-	A	F1
R 1030	CHIP RES.	1	1/16W	5%	RMC1/16S 1R0JTH	J24189319		1-	A	F1
R 1031	CHIP RES.	1	1/16W	5%	RMC1/16S 1R0JTH	J24189319		1-	A	F1
R 1032	CHIP RES.	1	1/16W	5%	RMC1/16S 1R0JTH	J24189319		1-	A	F1
R 1033	CHIP RES.	1	1/16W	5%	RMC1/16S 1R0JTH	J24189319		1-	A	F1
R 1034	CHIP RES.	1	1/16W	5%	RMC1/16S 1R0JTH	J24189319		1-	A	F1
R 1035	CHIP RES.	1	1/16W	5%	RMC1/16S 1R0JTH	J24189319		1-	A	F1
R 1036	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	D1
R 1037	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	A	E1
R 1038	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	A	E1
R 1039	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	A	E1
R 1040	CHIP RES.	330	1/16W	5%	RMC1/16S 331JTH	J24189019		1-	B	c1
R 1041	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	c2
R 1042	CHIP RES.	330	1/16W	5%	RMC1/16S 331JTH	J24189019		1-	B	c1
R 1043	CHIP RES.	33	1/16W	5%	RMC1/16S 330JTH	J24189007		1-	B	d1
R 1044	CHIP RES.	330	1/16W	5%	RMC1/16S 331JTH	J24189019		1-	B	c1
R 1045	CHIP RES.	22	1/16W	5%	RMC1/16S 220JTH	J24189005		1-	B	c2
R 1046	CHIP RES.	2.7k	1/16W	5%	RMC1/16S 272JTH	J24189030		1-	B	d1
R 1047	CHIP RES.	1.5k	1/16W	5%	RMC1/16S 152JTH	J24189027		1-	B	d1
R 1048	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	B	d1
R 1049	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	B	d1
R 1050	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	B	c1
R 1051	CHIP RES.	680	1/16W	5%	RMC1/16S 681JTH	J24189023		1-	B	c1
R 1052	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	c1
R 1053	CHIP RES.	47	1/16W	5%	RMC1/16S 470JTH	J24189009		1-	B	c1
R 1055	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	c2
R 1056	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	d1
R 1057	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	d1
R 1058	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	d1
R 1059	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	c2
R 1060	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	c2
R 1061	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	c2
R 1062	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	B	d1
R 1063	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	e1
R 1064	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	A	C1
R 1065	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	e1
R 1066	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	e1
R 1067	CHIP RES.	1.5k	1/16W	5%	RMC1/16S 152JTH	J24189027		1-	A	C1
R 1068	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	A	C1
R 1069	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	A	C2
R 1070	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	C2
R 1071	CHIP RES.	47	1/16W	5%	RMC1/16S 470JTH	J24189009		1-	A	C2
R 1072	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	D2
R 1073	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	D2
R 1074	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	D1
R 1075	CHIP RES.	3.9k	1/16W	5%	RMC1/16S 392JTH	J24189032		1-	A	D2
R 1076	CHIP RES.	2.2M	1/16W	5%	RMC1/16S 225JTH	J24189065		1-	A	C2
R 1077	CHIP RES.	2.7k	1/16W	5%	RMC1/16S 272JTH	J24189030		1-	A	D2
R 1078	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	C2
R 1079	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	C2

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
R 1080	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	A	D2
R 1081	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	A	D2
R 1082	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	D1
R 1083	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	f1
R 1084	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	f1
R 1085	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	f1
R 1086	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	f1
R 1087	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	e1
R 1088	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	e1
R 1089	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	A	C3
R 1090	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	B	d1
R 1092	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	e1
R 1093	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	B	e2
R 1094	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	e2
R 1095	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	e2
R 1096	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	B	e2
R 1097	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	e2
R 1098	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	A	C2
R 1099	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	B	d2
R 1100	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	d2
R 1101	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	d2
R 1102	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	d2
R 1102	CHIP RES.	10k	1/16W	0.5%	RR0510P-103-D	J24189143		4-	B	d2
R 1103	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	d2
R 1103	CHIP RES.	10k	1/16W	0.5%	RR0510P-103-D	J24189143		4-	B	d2
R 1104	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	d2
R 1104	CHIP RES.	100k	1/16W	0.5%	RR0510R-104-D	J24189167		4-	B	d2
R 1105	CHIP RES.	680	1/16W	5%	RMC1/16S 681JTH	J24189023		1-	B	d2
R 1105	CHIP RES.	680	1/16W	0.5%	RR0510P-681-D	J24189115		4-	B	d2
R 1106	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	d2
R 1107	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	d2
R 1108	CHIP RES.	220	1/16W	5%	RMC1/16S 221JTH	J24189017		1-	B	d2
R 1109	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	d2
R 1110	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	d2
R 1111	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	d2
R 1113	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	B	e2
R 1114	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	e2
R 1115	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	e2
R 1116	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	e2
R 1117	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	f1
R 1119	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	B	e3
R 1120	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	B	e3
R 1121	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	B	e3
R 1122	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	e3
R 1123	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	e2
R 1124	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	B	f2
R 1125	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	f2
R 1126	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	B	f2
R 1127	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	B	f3
R 1128	CHIP RES.	680	1/16W	5%	RMC1/16S 681JTH	J24189023		1-	B	e2
R 1129	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	A	C2
R 1130	CHIP RES.	22	1/16W	5%	RMC1/16S 220JTH	J24189005		1-	B	e2
R 1131	CHIP RES.	22	1/16W	5%	RMC1/16S 220JTH	J24189005		1-	B	f2
R 1132	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	e3
R 1133	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	e3
R 1134	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	e3
R 1135	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	e1
R 1136	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	e3
R 1137	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	e3
R 1138	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	f1
R 1139	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	b2
R 1140	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	b2
R 1141	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	c2
R 1142	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	c2
R 1143	CHIP RES.	22	1/16W	5%	RMC1/16S 220JTH	J24189005		1-	B	b2
R 1144	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	E1
R 1145	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	E1
R 1146	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	F2
R 1147	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	F2
R 1148	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	F2
R 1149	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	F2
R 1150	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	F2
R 1151	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	F2

MAIN Unit

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
R 1152	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	F2
R 1153	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	A	F2
R 1154	CHIP RES.	2.7k	1/16W	0.5%	RR0510P-272-D	J24189129		1-	A	F2
R 1155	CHIP RES.	5.6k	1/16W	0.5%	RR0510P-562-D	J24189137		1-	A	F1
R 1156	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	A	F2
R 1157	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	E1
R 1158	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E1
R 1159	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E1
R 1160	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E2
R 1161	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E2
R 1162	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	b2
R 1163	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E2
R 1164	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	c2
R 1165	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	B	c2
R 1166	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	b2
R 1167	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E2
R 1168	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E2
R 1169	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E2
R 1170	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E2
R 1171	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E2
R 1172	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E2
R 1173	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E2
R 1174	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	D2
R 1175	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	D2
R 1176	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	A	D2
R 1177	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	D2
R 1180	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	E3
R 1181	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	B	c2
R 1182	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	d3
R 1183	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	d3
R 1184	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	B	d3
R 1185	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	d3
R 1186	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	C2
R 1187	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	C2
R 1188	CHIP RES.	5.6k	1/16W	5%	RMC1/16S 562JTH	J24189034		1-	A	D1
R 1189	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	A	F1
R 1190	CHIP RES.	100k	1/16W	0.5%	RR0510R-104-D	J24189167		1-	A	E2
R 1191	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	A	D3
R 1192	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	A	E3
R 1193	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	A	E3
R 1194	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	d3
R 1195	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	A	D3
R 1196	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	A	D3
R 1197	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	d3
R 1198	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	B	d3
R 1199	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	A	D3
R 1200	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	A	C3
R 1201	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	C4
R 1202	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	f3
R 1203	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	C3
R 1204	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	C3
R 1205	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	B	g3
R 1206	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	f3
R 1207	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	C4
R 1208	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	f3
R 1209	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	B	f3
R 1210	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	B	f4
R 1211	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	C3
R 1212	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	f2
R 1213	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	f1
R 1214	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	D3
R 1215	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	B	d4
R 1216	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	d3
R 1217	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	d3
R 1218	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	d3
R 1219	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	d4
R 1220	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	G4
R 1221	CHIP RES.	6.8k	1/16W	5%	RMC1/16S 682JTH	J24189035		1-	A	F4
R 1222	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	F3
R 1223	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	F3
R 1225	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	F3
R 1228	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	G4
R 1229	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	b2

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
R 1230	CHIP RES.	4.7	1/16W	5%	RMC1/16S 4R7JTH	J24189066		1-	B	c2
R 1231	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	B	e4
R 1232	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	A	F3
R 1233	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	e3
R 1234	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	e3
R 1235	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	A	D1
R 1236	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	D1
R 1237	CHIP RES.	680	1/16W	5%	RMC1/16S 681JTH	J24189023		1-	B	b3
R 1238	CHIP RES.	330	1/16W	5%	RMC1/16S 331JTH	J24189019		1-	A	F3
R 1239	CHIP RES.	220	1/16W	5%	RMC1/16S 221JTH	J24189017		1-	B	a4
R 1240	CHIP RES.	22	1/16W	5%	RMC1/16S 220JTH	J24189005		1-	A	C2
R 1241	CHIP RES.	22	1/16W	5%	RMC1/16S 220JTH	J24189005		1-	A	C2
R 1242	CHIP RES.	27	1/16W	5%	RMC1/16S 270JTH	J24189006		1-	B	d4
R 1243	CHIP RES.	1.8k	1/16W	5%	RMC1/16S 182JTH	J24189028		1-	A	E3
R 1244	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	F3
R 1245	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	F3
R 1246	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	F3
R 1247	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	b3
R 1248	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	F3
R 1249	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	b3
R 1250	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E3
R 1251	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	b3
R 1252	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E3
R 1253	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	b3
R 1254	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E3
R 1255	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	b3
R 1256	CHIP RES.	1.2k	1/16W	5%	RMC1/16S 122JTH	J24189026		1-	A	E3
R 1257	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	A	E3
R 1258	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	A	E3
R 1259	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	A	E3
R 1260	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	A	E3
R 1261	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	A	E3
R 1262	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	B	c3
R 1263	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E3
R 1264	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E3
R 1265	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	D2
R 1266	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	c3
R 1267	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	D2
R 1268	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	E2
R 1269	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	A	E2
R 1270	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	A	E2
R 1271	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	b3
R 1272	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	C3
R 1274	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	C3
R 1275	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	C3
R 1276	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	f2
R 1277	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	A	C3
R 1278	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	C3
R 1279	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	D3
R 1280	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	g2
R 1281	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	g2
R 1282	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	g2
R 1283	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	g2
R 1284	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	g2
R 1285	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	B	g2
R 1286	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	f2
R 1287	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	g2
R 1288	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	g2
R 1289	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	g2
R 1290	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	g2
R 1291	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	g2
R 1292	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	g2
R 1293	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	g2
R 1294	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	f2
R 1295	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	f2
R 1296	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	f2
R 1297	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	f2
R 1298	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	f2
R 1299	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	f2
R 1300	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	f2
R 1301	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	f2
R 1302	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	f3
R 1303	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	g3

MAIN Unit

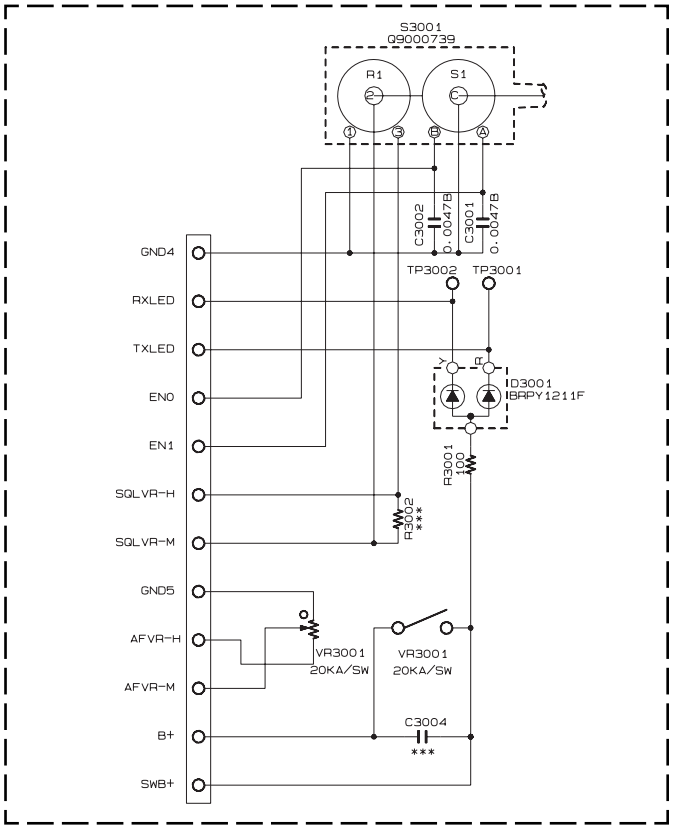
Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
R 1304	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	g3
R 1305	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	f3
R 1306	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	e3
R 1307	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	B	c2
R 1308	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	B	f4
R 1309	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	g1
R 1310	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	g1
R 1311	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	B	g1
R 1312	CHIP RES.	390k	1/16W	5%	RMC1/16S 394JTH	J24189056		1-	B	g1
R 1313	CHIP RES.	390k	1/16W	5%	RMC1/16S 394JTH	J24189056		1-	B	g1
R 1314	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	f1
R 1315	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	f1
R 1316	CHIP RES.	390k	1/16W	5%	RMC1/16S 394JTH	J24189056		1-	B	f1
R 1317	CHIP RES.	390k	1/16W	5%	RMC1/16S 394JTH	J24189056		1-	B	f1
R 1318	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	B	f1
R 1319	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	f1
R 1320	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	f1
R 1321	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	B	f1
R 1322	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	g2
R 1323	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	g2
R 1324	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	B	g1
R 1325	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	B	f3
R 1326	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	B	f3
R 1327	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	B	g2
R 1328	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	e4
R 1329	CHIP RES.	2.2M	1/16W	5%	RMC1/16S 225JTH	J24189065		1-	B	e4
R 1330	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	B	e4
R 1331	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	B	e4
R 1332	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	e4
R 1333	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	d3
R 1334	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	d3
R 1335	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	B	c3
R 1336	CHIP RES.	1.8M	1/16W	5%	RMC1/16S 185JTH	J24189064		1-	B	f3
R 1337	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	f3
R 1338	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	f3
R 1339	CHIP RES.	3.9k	1/16W	5%	RMC1/16S 392JTH	J24189032		1-	B	f3
R 1340	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	f3
R 1341	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	f3
R 1342	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	f3
R 1343	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	B	f3
R 1344	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	e3
R 1345	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	e3
R 1347	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	e4
R 1352	CHIP RES.	18	1/16W	5%	RMC1/16S 180JTH	J24189004		1-	B	g3
R 1353	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	B	g3
R 1354	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	g4
R 1355	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	F3
R 1356	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	A	D3
R 1357	CHIP RES.	4.7	1/16W	5%	RMC1/16S 4R7JTH	J24189066		1-	B	c2
R 1358	CHIP RES.	10	1/16W	5%	RMC1/16S 100JTH	J24189001		1-	B	a4
R 1359	CHIP RES.	10	1/16W	5%	RMC1/16S 100JTH	J24189001		1-	B	a4
R 1360	CHIP RES.	10	1/16W	5%	RMC1/16S 100JTH	J24189001		1-	B	a4
R 1361	CHIP RES.	10	1/16W	5%	RMC1/16S 100JTH	J24189001		1-	B	a4
R 1362	CHIP RES.	10	1/16W	5%	RMC1/16S 100JTH	J24189001		1-	B	a4
R 1363	CHIP RES.	10	1/16W	5%	RMC1/16S 100JTH	J24189001		1-	B	a4
R 1364	CHIP RES.	10	1/16W	5%	RMC1/16S 100JTH	J24189001		1-	B	a4
R 1365	CHIP RES.	10	1/16W	5%	RMC1/16S 100JTH	J24189001		1-	B	a4
R 1366	CHIP RES.	10	1/16W	5%	RMC1/16S 100JTH	J24189001		1-	B	a4
R 1369	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	e1
R 1370	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	d1
R 1371	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	B	d1
TC1001	TRIMMER CAP.	10pF			ECR-KN010C61X	K91000226		1-	B	e2
TH1001	THERMISTOR				TBPS1R103K440H5Q	G9090067		1-	B	d3
TH1002	THERMISTOR				TBPS1R473K475H5Q	G9090068		1-	A	E1
VR1001	POT.	10k			EVM-2WSX80B14	J51822103		1-	B	b2
VR1002	POT.	20k			EVM-2WSX80B24	J51822203		1-	B	e1
X 1001	XR002125T0105009	21.25MHz			21.25MHZ	H0103356		1-	B	d3
X 1002	XTAL CSA-310	3.6864MHz			3.6864MHZ	H0103078		1-	B	c3
X 1002	XTAL CSA-310	3.6864MHz			3.6864MHZ	H0102988		4-	B	c3
XF1001	XTAL FILTER				FY UM4-21M12A	H1102394		1-	A	C1
	TERMINAL PLATE R HOLDER RUBBER BRACKET				(MIC)	RA010700A RA0110200 RA0209600		1- 1- 1-		

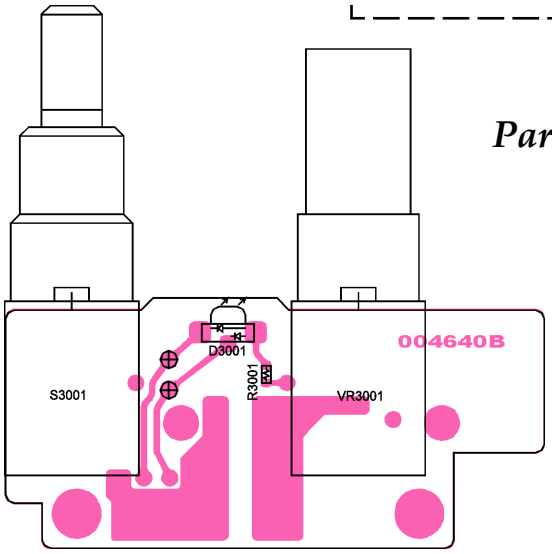
REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
	HOLDER					RA0210100		1-		
	TERMINAL PLATE					RA0210700		1-		
	SHEET					RA023330A		1-		
	LIGHT GUIDE					RA020950A		1-		

MAIN Unit

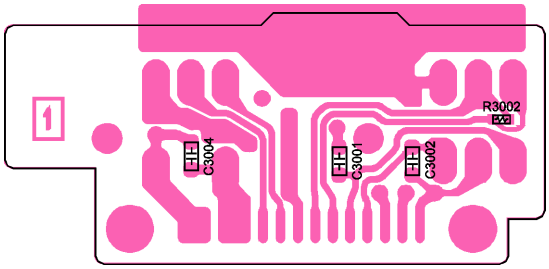
Note:



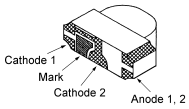
Parts Layout



Side A



Side B



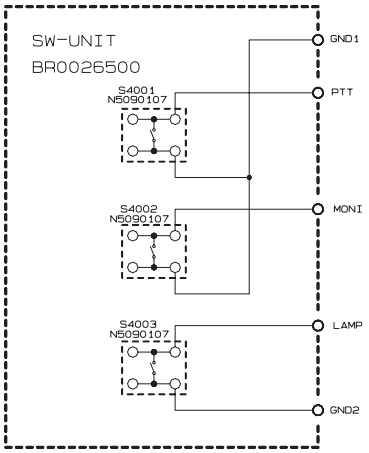
BRPY1211F
(D3001)

Parts List

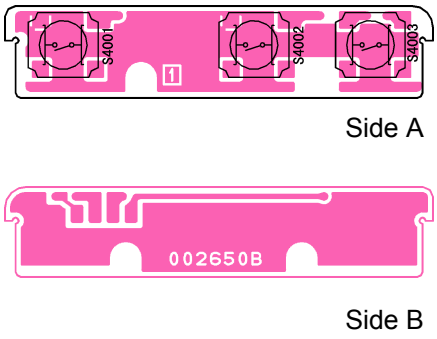
REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.	SIDE	LAY ADR
					*** VR UNIT ***					
	PCB with Components					CS2035101				
	Printed Circuit Board					FR004640B		1-		
C 3001	CHIP CAP.	0.0047uF	50V	B	K22174817		1-			
C 3002	CHIP CAP.	0.0047uF	50V	B	K22174817		1-			
D 3001	LED				G2070706		1-			
R 3001	CHIP RES.	100ohm	1/16W	5%	J24189013		1-			
S 3001	ROTARY ENCODER				Q9000739		1-			
VR3001	POT.				J60800236		1-			
VR3001	POT.				J60800269		5-			

SW & DUMMY Unit

SW Unit Circuit Diagram



SW Unit Parts Layout



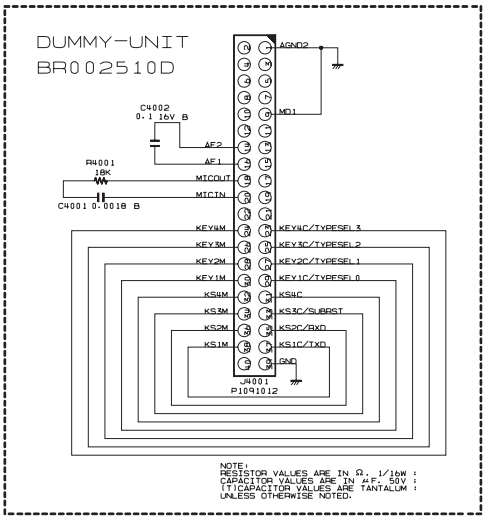
Side A

Side B

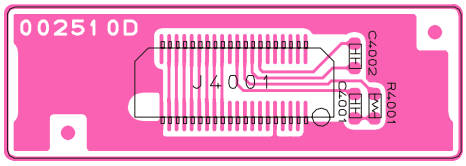
SW Unit Parts List

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.	SIDE
					*** SW UNIT ***				
	PCB with Components					CB4883001			
	Printed Circuit Board					FR002650B			
S 4001	TACT SWITCH				SOP-114HST R66-5374	N5090107		1-	A
S 4002	TACT SWITCH				SOP-114HST R66-5374	N5090107		1-	A
S 4003	TACT SWITCH				SOP-114HST R66-5374	N5090107		1-	A
	MYLAR SHEET					RA011720A			

Dummy Unit Circuit Diagram



Dummy Unit Parts Layout



Side A

Dummy Unit Parts List

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.	SIDE
					*** DUMMY UNIT ***				
	PCB with Components					CB4884001			
	Printed Circuit Board					FR002510D			
C 5001	CHIP CAP.	0.0018uF	50V	B	GRM39B182K50PT	K22174828		1-	A
C 5002	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A
J 5001	CONNECTOR				AXK5S40035P	P1091012		1-	A
R 5001	CHIP RES.	18k	1/16W	5%	RMC1/16 183JATP	J24185183		1-	A