Vertex Standard

Air Band Transceiver

VXA-300

Service Manual

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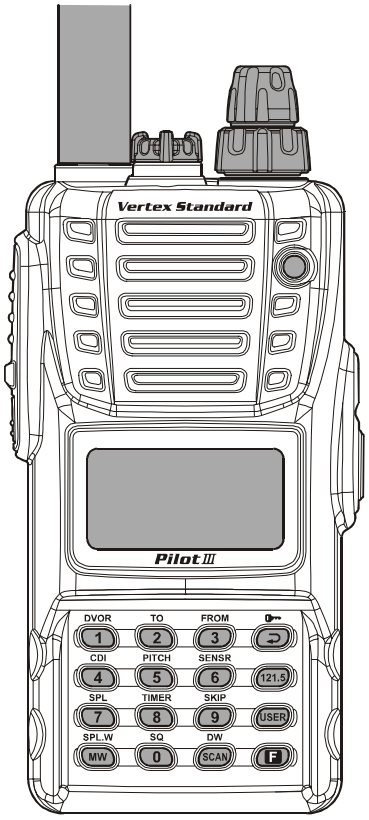


Introduction

This manual provides technical information necessary for servicing the **VXA-300** Air Band Transceiver.

Servicing this equipment requires expertise in handling 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 circuit board in the transceiver. Each side of thr board is referred to by the type of the majority of components installed on that side ("leaded" or "chip-only"). In most cases one side has only chip components, 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 technical 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.

Contents

Specifications

General

Frequency Range:	TX: 118.000 - 136.975 MHz RX: 108.000 - 136.975 MHz, Weather Channels (WX-01 - WX-10: USA version only)
Channel Spacing:	25 kHz/8.33 kHz (8.33 kHz: RX only)
Emission Type:	TX: AM RX: AM & FM (FM: for receiving the Weather Channels, USA version only)
Supply Voltage:	6.0 - 15.0 VDC
Current Consumption (approx.):	20 µA (power off), 20 mA (battery saver on, saver ratio 1:5) 60 mA (squelch on), 270 mA (receive), 0.9 A (transmit 1.5 W Carrier)
Temperature Range:	+14 °F to + 140 °F (–10 °C to +60 °C)
Case Size (WxHxD):	2.4 x 4.7 x 1.2 inches (60 x 120 x 32 mm) with FNB-83
Weight (approx.):	13.7 oz (390 grams) with FNB-83 and antenna

Receiver

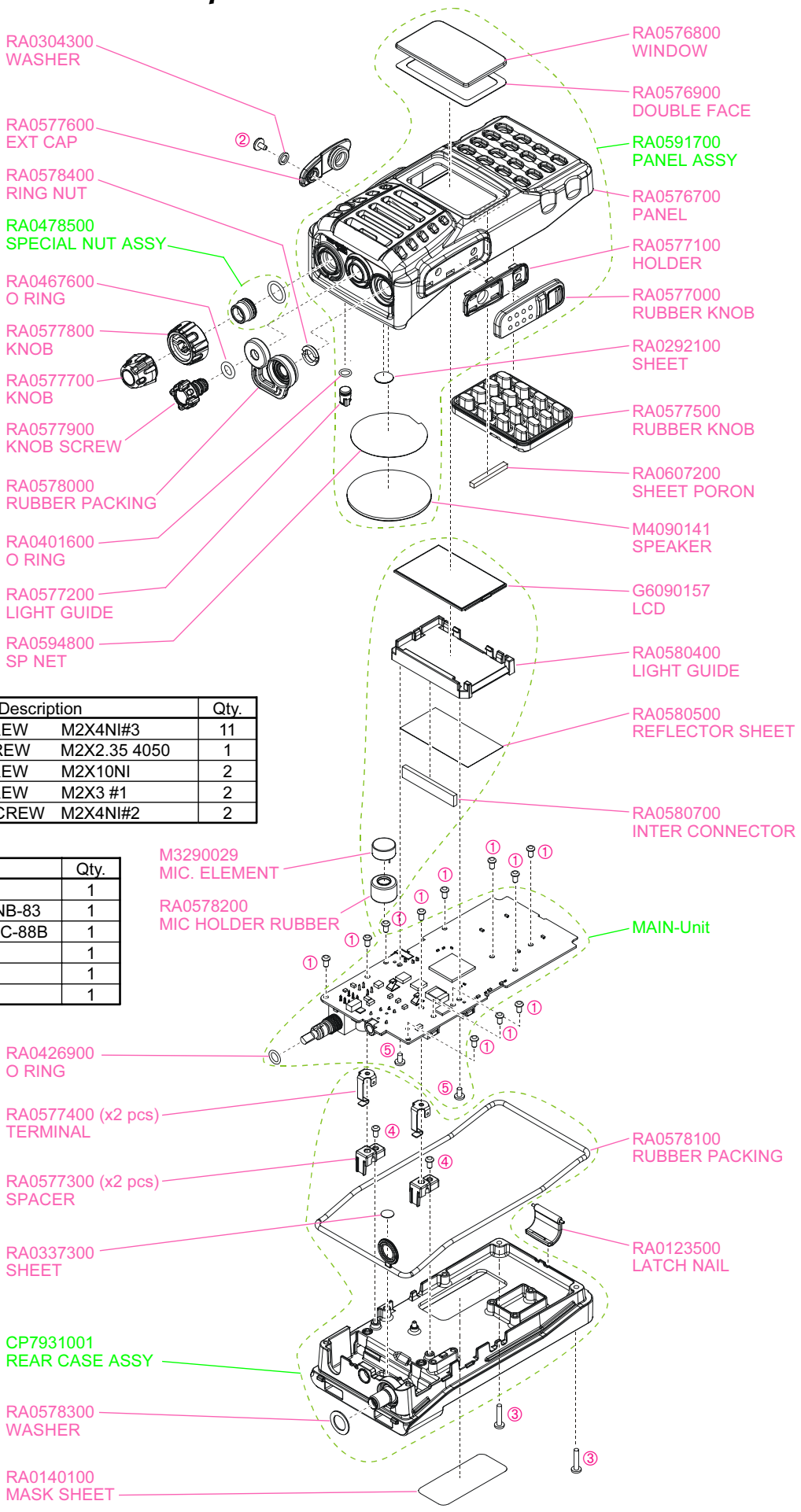
Circuit Type:	Double-conversion superheterodyne
IFs:	35.4 MHz & 450 kHz
Sensitivity:	Better than 0.8 µV (for 6 dB S/N with 1 kHz, 30 % modulation)
Selectivity:	>8 kHz/–6 dB
Adjacent CH. Selectivity:	<25 kHz/–60 dB
AF Output (@7.2 V):	0.8 W @ 16 Ohms, 10 % THD

Transmitter

Power Output (@ 7.2 V):	5.0 W (PEP), 1.5 W (Carrier Power)
Frequency Stability:	Better than ±10 ppm (+14 °F to + 140 °F [–10 °C to +60 °C])
Modulation System:	Low Level Amplitude Modulation
Spurious Emission:	>60 dB below carrier
Int. Microphone Type:	Condenser
Ext. Mic. Impedance:	150 Ohms

Specifications are subject to change without notice or obligation.

Exploded View & Miscellaneous Parts

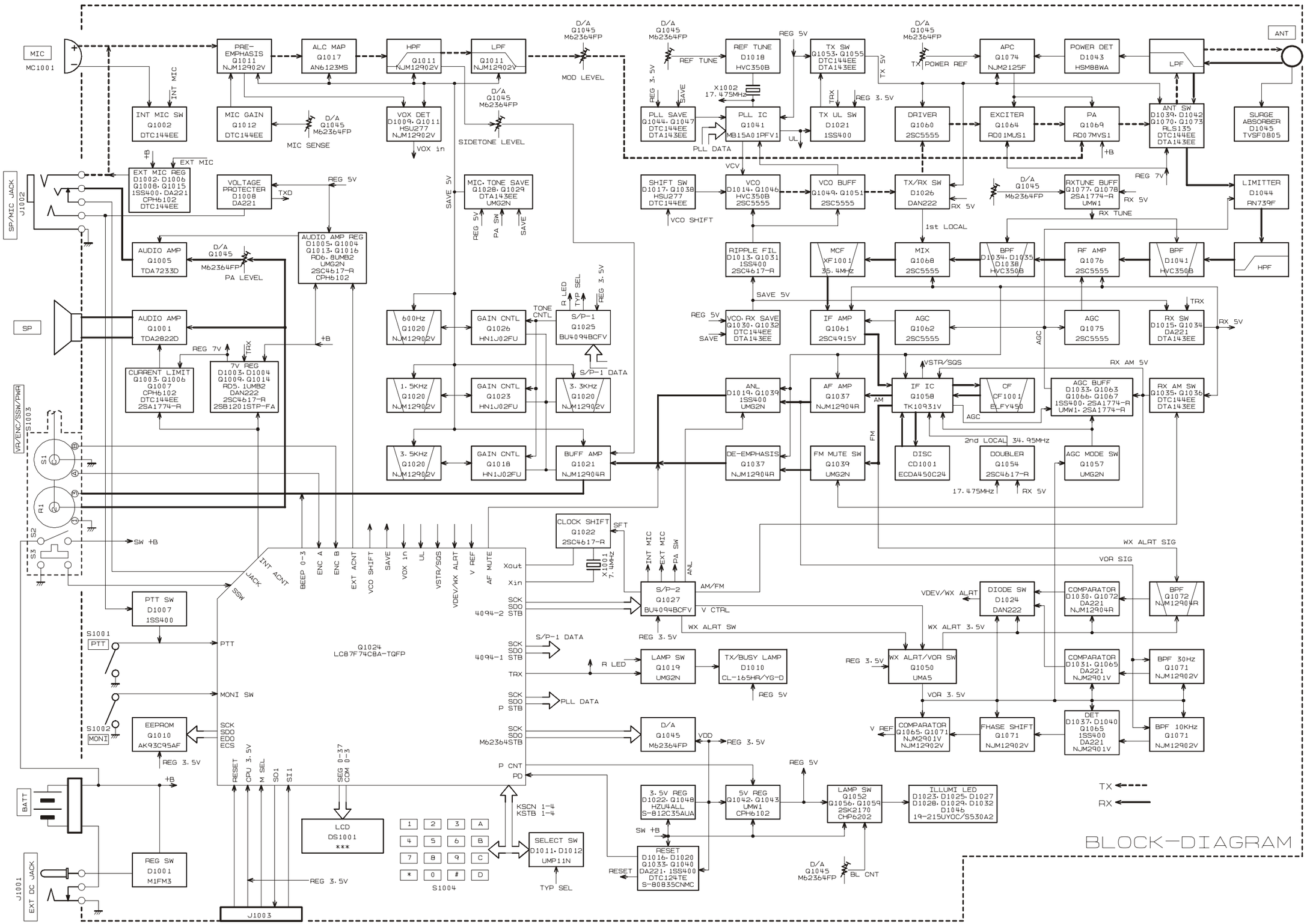


Ref.	VXSTD P/N	Description		Qty.
①	U9900068	TAPTITE SCREW	M2X4NI#3	11
②	U9900136	SPECIAL SCREW	M2X2.35 4050	1
③	U24110002	TAPTITE SCREW	M2X10NI	2
④	U9900035	TAPTITE SCREW	M2X3 #1	2
⑤	U07240202	PAN HEAD SCREW	M2X4NI#2	2

VXSTD P/N	Description	Qty.
Q3000194	ANTENNA ATV-10	1
Q9000817	NI-MH BATTERY FNB-83	1
Q9500126	WALL CHARGER NC-88B	1
Q7000495	CRADLE CD-28	1
Q7000451	CABLE CT-96	1
AAC48X001	BELT CLIP(ASSY)	1

Exploded View & Miscellaneous Parts

Block Diagram



Block Diagram

Note

Receive Signal Path

Incoming RF from the antenna jack is passed through a low-pass filter and high-pass filter consisting of coils L1022, L1025, L1026, L1027, L1028, & L1029, capacitors C1271, C1276, C1277, C1278, C1280, C1281, C1282, C1283, C1285, C1286, C1289, C1290, C1293, C1294, & C1295 and antenna switching diodes **D1039** and **D1042** (both **RLS135**) to the receiver front end section.

Signals within the frequency range of the transceiver is applied to the receiver front end which contains RF amplifier **Q1076** (**2SC5555ZD**) and varactor-tuned band-pass filter consisting of coils L1014, L1017, L1018, L1019, L1023, L1024, & L1031, capacitors C1241, C1243, C1245, C1246, C1248, C1250, C1255, C1256, C1259, C1266, C1272, & C1273, and diodes **D1034**, **D1035**, **D1038**, & **D1041** (all **HVC350B**), then applied to the 1st mixer **Q1068** (**2SC5555ZD**).

Buffered output from the VCO is amplified by **Q1049** (**2SC5555ZD**) to provide a pure 1st local signal between 143.4 and 172.4 MHz for injection to the 1st mixer. The 35.4 MHz 1st mixer product then passes through monolithic crystal filter XF1001 (7.5 kHz BW) which strips away all but the desired signal, which is then amplified by mixer post-amp **Q1061** (**2SC4915Y**).

The amplified 1st IF signal is applied to the AM/FM IF subsystem IC **Q1058** (**TK10931VT1**), which contains the 2nd mixer, 2nd local oscillator, limiter amplifier, noise amplifier and AM/FM detector.

A 2nd local signal is generated by PLL IC **Q1041** (**MB15A01PFV1**) from the 17.475 MHz crystal X1002. The17.475MHz signal is doubled by **Q1054** (**2SC4617**) to produce the 450 kHz 2nd IF when mixed with the 1st IF signal within **Q1058** (**TK10931VT1**). The 2nd IF then passes through the ceramic filter CF1001 to strip away unwanted mixer products.

In the FM mode, a 2nd IF signal from the ceramic filter CF1001 applied to the limiter amplifier section of **Q1058** (**TK10931VT1**), which removes amplitude variations in the 450 kHz IF before detection of the speech by the ceramic discriminator CD1001. Detected audio from **Q1058** (**TK10931VT1**) is passed through the de-emphasis, consisting of the resistors R1144, R1152, R1155, & R1199, capacitors C1118, C1119, C1124, C1149, & C1151, and **Q1037-2** (**NJM12904R**).

In the AM mode, detected audio from **Q1058** (**TK10931VT1**) is passed through the audio amplifier **Q1037-1** (**NJM12904R**) and ANL circuit, then applied to the AF amplifier **Q1037-2** (**NJM12904R**). When impulse noise received, a portion of the AM detector output signal from the AM/FM IF subsystem **Q1058** (**TK10931VT1**), including pulse noise is rectified by **D1019** (**1SS400**). The resulting DC is applied to the ANL MUTE gate **Q1039** (**UMG2N**), thus reducing the pulse noises.

The processed audio signal from **Q1037-1** (**NJM12904R**) is passed through the AF mute and amplifier **Q1037-2** (**NJM12904R**) to the audio tone equalizer **Q1021** (**NJM12904R**), **Q1018** (**HN1J02FU**), **Q1023** (**HN1J02FU**), **Q1026** (**HN1J02FU**), and **Q1020** (**NJM12904R**). The equalized audio signal is passed through the volume control to the audio power amplifier **Q1001** (**TDA2822D013TR**), providing up to 0.8 Watts to 16-ohm loudspeaker or audio power amplifier **Q1005** (**TDA7233D**), providing up to 0.4 Watts to 8-ohm the headphone jack.

A portion of the AF signal from the AM/FM IF subsystem **Q1058** (**TK10931VT1**) converted into DC voltage within the IC, and then passes through the AGC amplifier **Q1063** (**2SA1774**) and **Q1066** (**UMW1**) to the inversion amplifiers **Q1075** (**2SC5555ZD**) and **Q1062** (**2SC5555ZD**). These amplifier reduce the amplifier gain of the IF amplifier **Q1061** (**2SC4915Y**) and the RF amplifier **Q1076** (**2SC5555ZD**) while receiving a strong signal.

Squelch Control

When signal is received, appear the DC squelch control voltage at pin 15 of AM/FM IF subsystem **Q1058** (**TK10931VT1**) according to the receiving signal strength. This DC is applied to pin 16 of microprocessor **Q1024** (**LC87F74C8A**).

The DC squelch control voltage is compared with the SQL threshold level by the microprocessor **Q1024** (**LC87F74C8A**). If the DC squelch control voltage is lower, pin 7 of **Q1024** (**LC87F74C8A**) goes high. This signal activates the AF MUTE gate **Q1037-2** (**NJM12904R**), thus disabling the AF audio.

Also, the microprocessor stops scanning, if active, and allows audio to pass through the AF MUTE gate **Q1037-2** (**NJM12904R**).

Circuit Description

Transmit Signal Path

Speech input from the microphone is passed through the microphone amplifier **Q1011-1** (**NJM12902V**), then applied to the ALC amplifier **Q1017** (**AN6123MS**). The amplified speech signal is passed through the high-pass filter **Q1011-3** (**NJM12902V**) and low-pass filter **Q1011-4** (**NJM12902V**), which adjust the modulation level, then fed to the AM modulator **Q1069** (**2SC5555ZD**).

When using the optional headset, the SIDETONE signal from J1002 becomes "HIGH", turning Pin10 of **Q1024** (**LC87F74C8A**) on; pin 91 of **Q1024** (**LC87F74C8A**) therefore a portion of the speech signal applied to the AF power amplifier **Q1005** (**TDA2733D**) as a monitor signal.

The carrier signal from the VCO **Q1046** (**2SC5555ZD**) passes through the buffer amplifier **Q1049** (**2SC5555ZD**) and TX/RX switch **D1026** (**DAN222**).

The signal from **D1026** (**DAN222**) is amplified by **Q1060** (**2SC5555ZD**) and **Q1064** (**RD01MUS1**), and ultimately applied to the final amplifier **Q1069** (**RD07MVS1**) which increases the signal level up to 5 watts output power. The transmit signal then passes through the antenna switch **D1039** (**RLS135**), and is low-pass filtered to suppress away harmonic spurious radiation before delivery to the antenna.

Automatic Transmit Power Control

RF power output from the final amplifier is sampled by C1275/C1279 and is rectified by **D1043** (**HSM88WA**). The resulting DC is fed through the Automatic Power Controller **Q1074** (**NJM2125F**), thus allowing control of the power output.

Transmit Inhibit

When the transmit PLL is unlocked, pin 7 of PLL chip **Q1041** (**MB15A01PFV1**) goes to a logic low. The resulting DC "unlock" control voltage is switches off TX inhibit switches **Q1053** (**DTC144EE**), and **Q1055** (**DTA143EE**) to disable the supply voltage to transmitter RF amplifiers **Q1060** (**2SC5555ZD**), disabling the transmitter.

Spurious Suppression

Generation of spurious products by the transmitter is minimized by the fundamental carrier frequency being equal to the final transmitting frequency. Additional harmonic suppression is provided by a low-pass filter consisting of L1025, L1027 & L1029 and C1271, C1280, C1282, C1285, C1289 & C1293, resulting in more than 60 dB of harmonic suppression prior to delivery of the RF signal to the antenna.

PLL Frequency Synthesizer

PLL circuitry consists of VCO **Q1046** (**2SC5555ZD**), VCO buffer **Q1049** & **Q1051**(both **2SC5555ZD**), and PLL subsystem IC **Q1041** (**MB15A01PFV1**), which contains a reference divider, serial-to-parallel data latch, programmable divider, phase comparator and charge pump.

Stability is maintained by a regulated 3.5 V supply via **Q1048** (**S-812C35AUA**) which feeds the PLL reference oscillator **Q1041** (**MB15A01PFV1**), as well as capacitors associated with the 17.475 MHz frequency reference crystal X1002.

In the receive mode, VCO **Q1046** (**2SC5555ZD**) oscillates between 143.4 and 172.4 MHz. The VCO output is buffered by **Q1049** & **Q1051**(both **2SC5555ZD**), and applied to the prescaler section of **Q1041** (**MB15A01PFV1**). There the VCO signal is divided by 64 or 65, according to a control signal from the data latch section of **Q1041** (**MB15A01PFV1**), before being applied to the programmable divider section of **Q1041** (**MB15A01PFV1**). The data latch section of **Q1041** (**MB15A01PFV1**) also receives serial dividing data from the microprocessor **Q1024** (**LC87F74C8A**), 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 derivative of the current VCO frequency.

Meanwhile, the reference divider section of **Q1041** (**MB15A01PFV1**) divides the 17.475 MHz crystal reference from the reference oscillator section by 3495 to produce the 5 kHz loop reference. The 5 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 **Q1041** (**MB15A01PFV1**), 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 **D1014** (**HVC350B**).

Changes in the level of the DC voltage applied to the varactors affect the reactance in the tank circuit of the VCO, changing the oscillating frequency 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 **Q1046** (**2SC5555ZD**) is buffered by **Q1049** (**2SC5555ZD**) before application to the 1st mixer, as described previously.

For transmission, the VCO **Q1046** (**2SC5555ZD**) oscillates between 118 and 137 MHz. 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).

Receive and transmit buses select which VCO is made active by **Q1038** (**DTC144EE**).

Q1077 (**2SA1774**) and **Q1078** (**UMW1**) amplify the Tune voltage for application to the tracking band-pass filters in the receiver front end.

When the power saving feature is active, the microprocessor periodically signals to the PLL IC **Q1041** (**MB15A01PFV1**) to conserve power, and to shorten lock-up time.

Push-To-Talk Transmit Activation

The PTT switch on the microphone is control to pin 22 of microprocessor **Q1024** (**LC87F74C8A**), so that when the PTT switch is closed, pin 31 of **Q1024** (**LC87F74C8A**) goes high. This signals cut off the receiver by disabling the 5 V supply bus at **Q1034** (**DTA143EE**) which feeds the front-end, AM/FM IF subsystem IC **Q1058** (**TK10931VT1**), and receiver VCO circuitry. At the same time, **Q1055** (**DTA143EE**) and **Q1053** (**DTC144EE**) activates the transmit 5 V supply line to enable the transmitter.

Note

Introduction

The **VXA-300** is carefully aligned at the factory for the specified performance across the Aircraft and Weather bands. Realignment should therefore not be necessary except in the event of a component failure.

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. 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. Problems caused by unauthorized attempts at realignment are not covered by the warranty policy

Vertex Standard reserves the right to change circuits and alignment procedures, in the interest of improved performance, without notifying owners.

The following test equipment (and familiarity with its use) is necessary for complete realignment. 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 signal 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.

Correction of problems caused by misalignment resulting from use of improper test equipment is not covered under the warranty policy.

Required Test Equipment

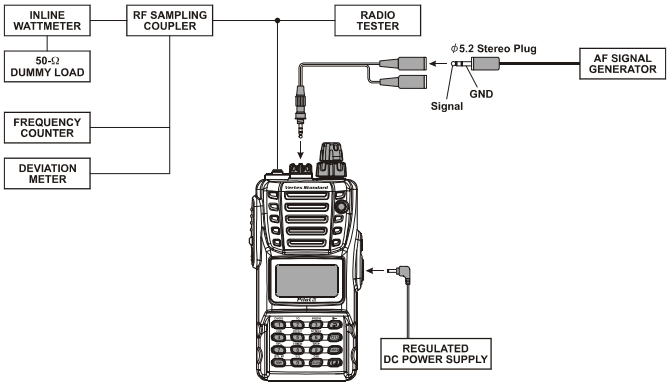
- Avionics Radio Tester with calibrated output level at 200 MHz
- In-line Wattmeter with 5 % accuracy at 200 MHz
- 50-ohm, 10 W RF Dummy Load
- Regulated DC Power Supply adjustable from 3 to 15 VDC, 2 A
- Frequency Counter: ±0.2 ppm accuracy at 200 MHz
- AF Signal Generator
- AC Voltmeter
- DC Voltmeter: high impedance
- VHF Sampling Coupler

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, except where specified otherwise. Correct 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 20 - 30 °C (68 - 86 °F). 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.

Set up the test equipment as shown below for transceiver alignment, apply 7.2 VDC power to the transceiver.



Note: signal levels in dB referred to in alignment are based on 0 dBμ = 0.5 μV (closed circuit).

Alignment

PLL Section

PLL Reference Frequency

- ❒ Connect the wattmeter, dummy load and frequency counter connected to the antenna jack, then set the transceiver to 128.000 MHz and turn the transceiver off.
- ❒ Press and hold in the **PTT** switch, **MONITOR** switch, and **VOLUME** knob while turning the transceiver on to enter the alignment mode.
- ❒ Rotate the **DIAL** selector knob to select "09 REF xxx."
- ❒ Press the **PTT** switch, and confirm that the counter reading is 128.000 MHz.
- ❒ If not,
  1. press the **VOLUME** knob momentarily,
  2. rotate the **DIAL** selector knob clockwise (frequency up) or counter-clockwise (frequency down),
  3. press the **VOLUME** knob again,
  4. confirm the counter reading.
- ❒ Repeat above steps 1 - 4, so that the counter reading is 128.000 MHz (±100 Hz).
- ❒ Turn the transceiver off.

How to Store Weather Channel "WX-010" into a Regular Memory Channel

- ❒ Press the **VOLUME** knob (repeatedly, if necessary) to select the Weather channel mode. The **VXA-300** will scan quickly through the Weather channels.
- ❒ Press the **MONITOR** switch momentarily to stop the scanning, then rotate the **DIAL** knob to select the channel "WX-010."
- ❒ Press and hold in the [**MW** (**SPL-W**)] key for 2 second, then rotate the **DIAL** knob to select the memory channel number for storage.
- ❒ Now, press and hold in the [**MW** (**SPL-W**)] key for 2 second to save the entry and exit.

Receiver Section

AM Squelch Threshold Adjustment

- ❒ Connect the Radio Tester to the antenna jack, then adjust the output level to –9 dBμV (with a standard AM modulation: 30 % AM modulation @ 1 kHz) at 128.000 MHz.
- ❒ Set the transceiver to 128.000 MHz and turn the transceiver off.
- ❒ Press and hold in the **PTT** switch, **MONITOR** switch, and **VOLUME** knob while turning the transceiver on to enter the alignment mode.
- ❒ Rotate the **DIAL** selector knob to select "01 AMTH xx."
- ❒ Press the **VOLUME** knob twice.
- ❒ Turn the transceiver off.

AM Squelch Tight Adjustment

- ❒ Connect the Radio Tester to the antenna jack, then adjust the output level to +10 dBμV (with a standard AM modulation: 30 % AM modulation @ 1 kHz) at 128.000 MHz.
- ❒ Set the transceiver to 128.000 MHz and turn the transceiver off.
- ❒ Press and hold in the **PTT** switch, **MONITOR** switch, and **VOLUME** knob while turning the transceiver on to enter the alignment mode.
- ❒ Rotate the **DIAL** selector knob to select "02 AMTI xx."
- ❒ Press the **VOLUME** knob twice.
- ❒ Turn the transceiver off.

FM Squelch Threshold Adjustment

- ❒ Connect the Radio Tester to the antenna jack, then adjust the output level to –11 dBμV (with a standard FM modulation: ±3kHz deviation @ 1 kHz) at 163.275 MHz.
- ❒ Store Weather Channel "WX-010" into a "regular" memory channel, per the instructions in the box to the left.
- ❒ Recall the memory channel into which you just stored Weather Channel "WX-010" in the previous step, then turn the radio off.
- ❒ Press and hold in the **PTT** switch, **MONITOR** switch, and **VOLUME** knob while turning the transceiver on to enter the alignment mode.
- ❒ Rotate the **DIAL** selector knob to select "03 FMTH xx."
- ❒ Press the **VOLUME** knob twice.
- ❒ Turn the transceiver off.

FM Squelch Tight Adjustment

- ❒ Connect the Radio Tester to the antenna jack, then adjust the output level to +10 dBμV (with a standard FM modulation: ±3kHz deviation @ 1 kHz) at 163.275 MHz.
- ❒ Store Weather Channel "WX-010" into a "regular" memory channel, per the instructions in the box on the previous page.
- ❒ Recall the memory channel into which you just stored Weather Channel "WX-010" in the previous step, then turn the radio off.
- ❒ Press and hold in the **PTT** switch, **MONITOR** switch, and **VOLUME** knob while turning the transceiver on to enter the alignment mode.
- ❒ Rotate the **DIAL** selector knob to select "04 FMTI xx."
- ❒ Press the **VOLUME** knob twice.
- ❒ Turn the transceiver off.

AM Squelch Hysteresis Adjustment

- ❒ Press and hold in the **PTT** switch, **MONITOR** switch, and **VOLUME** knob while turning the transceiver on to enter the alignment mode.
- ❒ Rotate the **DIAL** selector knob to select "05 AMHS xx."
- ❒ Press the **VOLUME** knob momentarily, then adjust the hysteresis level using the **DIAL** selector knob.
- ❒ Press the **VOLUME** knob again.
- ❒ Turn the transceiver off.

FM Squelch Hysteresis Adjustment

- ❒ Press and hold in the **PTT** switch, **MONITOR** switch, and **VOLUME** knob while turning the transceiver on to enter the alignment mode.
- ❒ Rotate the **DIAL** selector knob to select "06 FMHS xx."
- ❒ Press the **VOLUME** knob momentarily, then adjust the hysteresis level using the **DIAL** selector knob.
- ❒ Press the **VOLUME** knob again.
- ❒ Turn the transceiver off.

Transmitter Section

TX Power Adjustment

- ❒ Connect the wattmeter and dummy load to the antenna jack, then set the transceiver to 128.000 MHz and turn the transceiver off.
- ❒ Press and hold in the **PTT** switch, **MONITOR** switch, and **VOLUME** knob while turning the transceiver on to enter the alignment mode.
- ❒ Rotate the **DIAL** selector knob to select "07 TX PO xxx."
- ❒ Press the **PTT** switch with no microphone input, and confirm the RF output power is 1.5 Watts.
- ❒ If not,
  1. press the **VOLUME** knob momentarily,
  2. rotate the **DIAL** selector knob clockwise (increase the power) or counter-clockwise (decrease the power),
  3. press the **VOLUME** knob again,
  4. confirm the RF output power.
- ❒ Repeat above steps 1 - 4, so that the RF output power is 1.5 Watts.
- ❒ Turn the transceiver off.

TX Modulation Adjustment

- ❒ Connect the Radio Tester to the antenna jack, then adjust the AF generator output level for injection of 200 mV rms @ 1 kHz to the MIC jack.
- ❒ Set the transceiver to 127.500 MHz and turn the transceiver off.
- ❒ Press and hold in the **PTT** switch, **MONITOR** switch, and **VOLUME** knob while turning the transceiver on to enter the alignment mode.
- ❒ Rotate the **DIAL** selector knob to select "08 MDLV xxx."
- ❒ Press the **PTT** switch, and confirm the modulation level is 85 % (±5 %).
- ❒ If not,
  1. press the **VOLUME** knob momentarily,
  2. rotate the **DIAL** selector knob clockwise (increase the MIC gain) or counter-clockwise (decrease the MIC gain),
  3. press the **VOLUME** knob again,
  4. confirm the modulation level.
- ❒ Repeat above steps 1 - 4, to ensure that the modulation level is 85 % (±5 %).
- ❒ Turn the transceiver off.

Alignment

VOR Section

VOR Sensitivity Adjustment

- ❒ Connect the Radio Tester to the antenna jack, then adjust the output level to +5 dBµV (with a standard AM modulation: 30 % AM modulation @ 1 kHz) at 108.000 MHz.
- ❒ Set the transceiver to 108.000 MHz and turn the transceiver off.
- ❒ Press and hold in the **PTT** switch, **MONITOR** switch, and **VOLUME** knob while turning the transceiver on to enter the alignment mode.
- ❒ Rotate the **DIAL** selector knob to select "10 VSTR xxx."
- ❒ Press the **VOLUME** knob twice.
- ❒ Turn the transceiver off.

VOR Hysteresis Adjustment

- ❒ Connect the Radio Tester to the antenna jack, then adjust the output level to +5 dBµV (with a standard AM modulation: 30 % AM modulation @ 1 kHz) at 108.000 MHz.
- ❒ Set the transceiver to 108.000 MHz and turn the transceiver off.
- ❒ Press and hold in the **PTT** switch, **MONITOR** switch, and **VOLUME** knob while turning the transceiver on to enter the alignment mode.
- ❒ Rotate the **DIAL** selector knob to select the "11 VSHS xxx."
- ❒ Press the **VOLUME** knob momentarily, then adjust the hysteresis level using the **DIAL** selector knob.
- ❒ Press the **VOLUME** knob again.
- ❒ Turn the transceiver off.

VOR Angle Adjustment

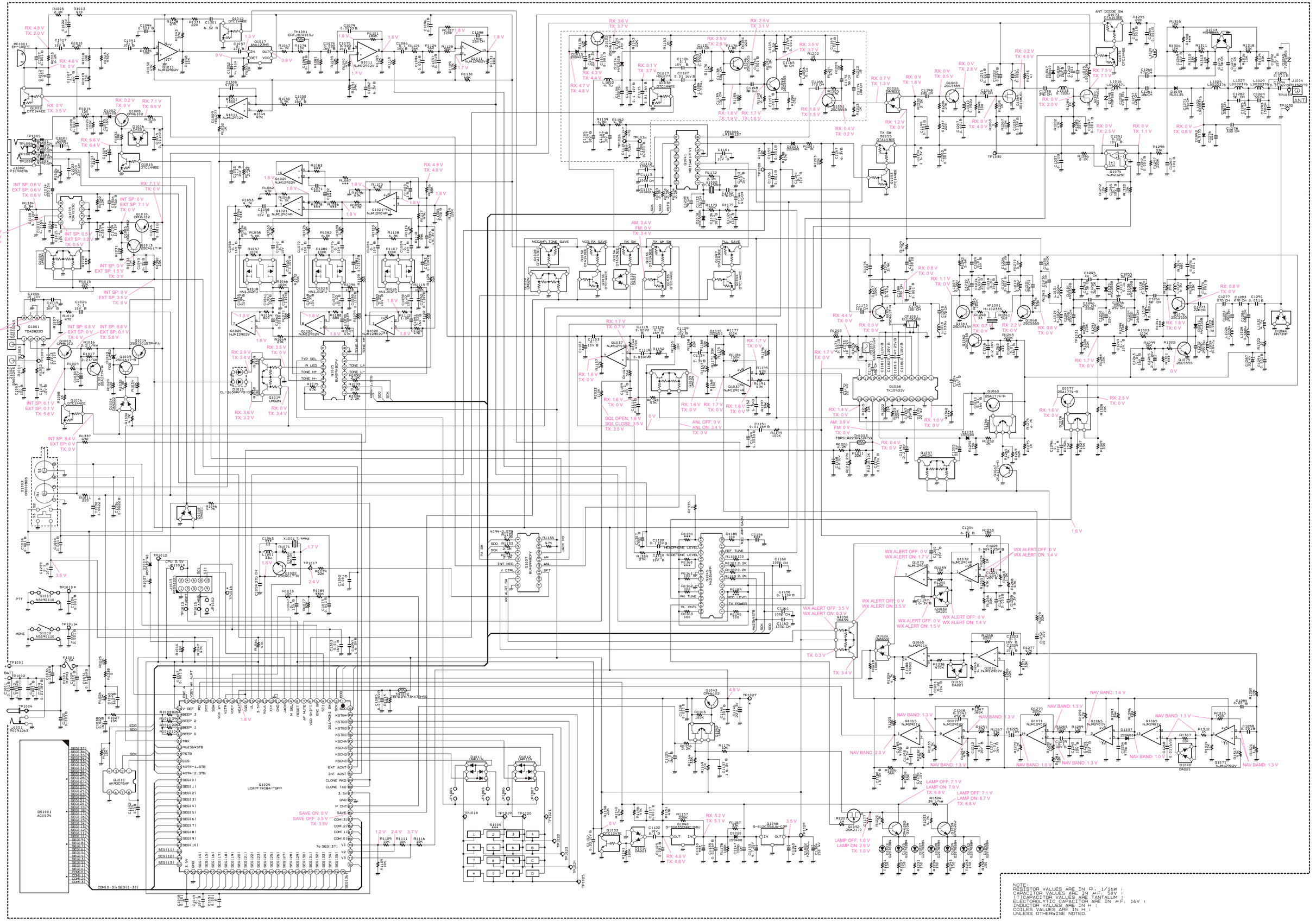
- ❒ Connect the Avionics Radio Tester to the antenna jack.
- ❒ Set the transceiver to 108.000 MHz, set up the "FROM" mode (press [**F**] + [**3** (**FROM**)] key, if necessary), and set the Avionics Radio Tester as shown below.
  Frequency: 108.000 MHz
  Output Level: +40 dBµV
  30 Hz VAR.: 30 %
  9.96 kHz Carrier: 30 %
  9.96 kHz Modulation: 480 Hz
  DIRECT: FROM
  PHASE: 15 °
- ❒ Note the difference of the phase indication between the Transceiver's indication and Avionics Radio Tester's indication, then turn the transceiver off.
- ❒ Press and hold in the **PTT** switch, **MONITOR** switch, and **VOLUME** knob while turn the transceiver on to enter the alignment mode.
- ❒ Rotate the **DIAL** selector knob to select "12 VOR xxx."
- ❒ Press the **VOLUME** knob momentarily, then set the difference value that is noted step 3 above, using the **DIAL** selector knob.
- ❒ Press the **VOLUME** knob twice
- ❒ Turn the transceiver off.

Resetting the CPU

If you are unable to gain control of the transceiver (or if you want to clear all memories and settings to their factory defaults), press and hold in the **MONITOR** button and **VOLUME** knob while turning the transceiver on.

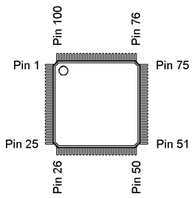
MAIN Unit

Circuit Diagram

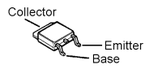


MAIN Unit

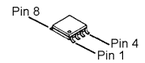
Note



LC87F74C8A
(Q1024)



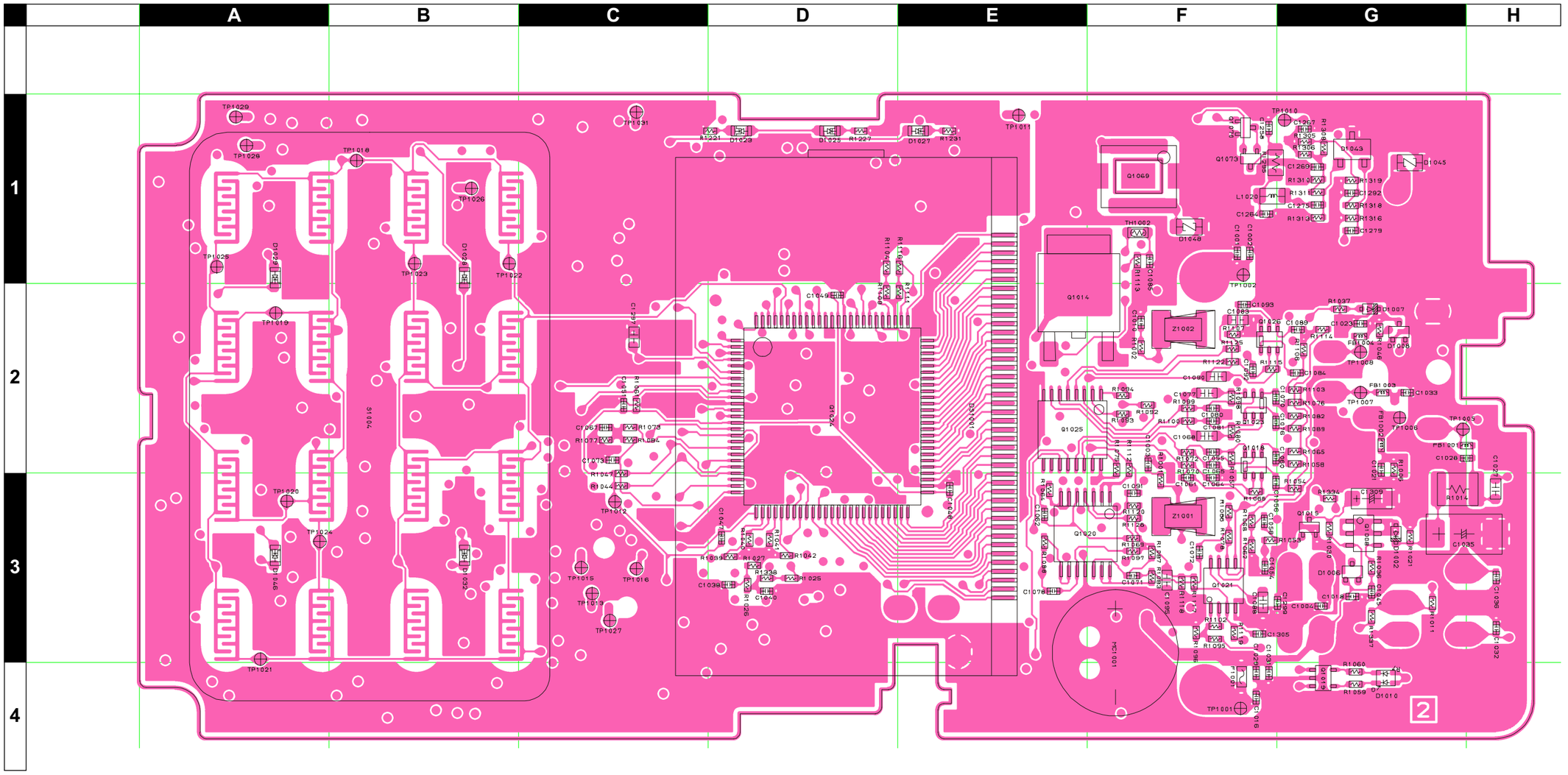
2SB1201S
(Q1014)

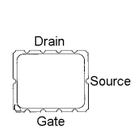


NJM12804V
(Q1021)

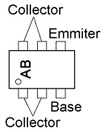
BU4094BCFV
(Q1025)

NJM12902V
(Q1020)





RD08MVS1
(Q1069)

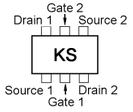


CPH6102 (AB)
(Q1008)

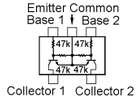
DTA143EE (13)
(Q1073)

DTC143ZE (E23)
(Q1015)

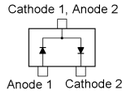
DTC144EE (26)
(Q1070)



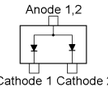
HN1J02FU (KS)
(Q1018, 1023, 1026)



UMG2N (G2)
(Q1019)



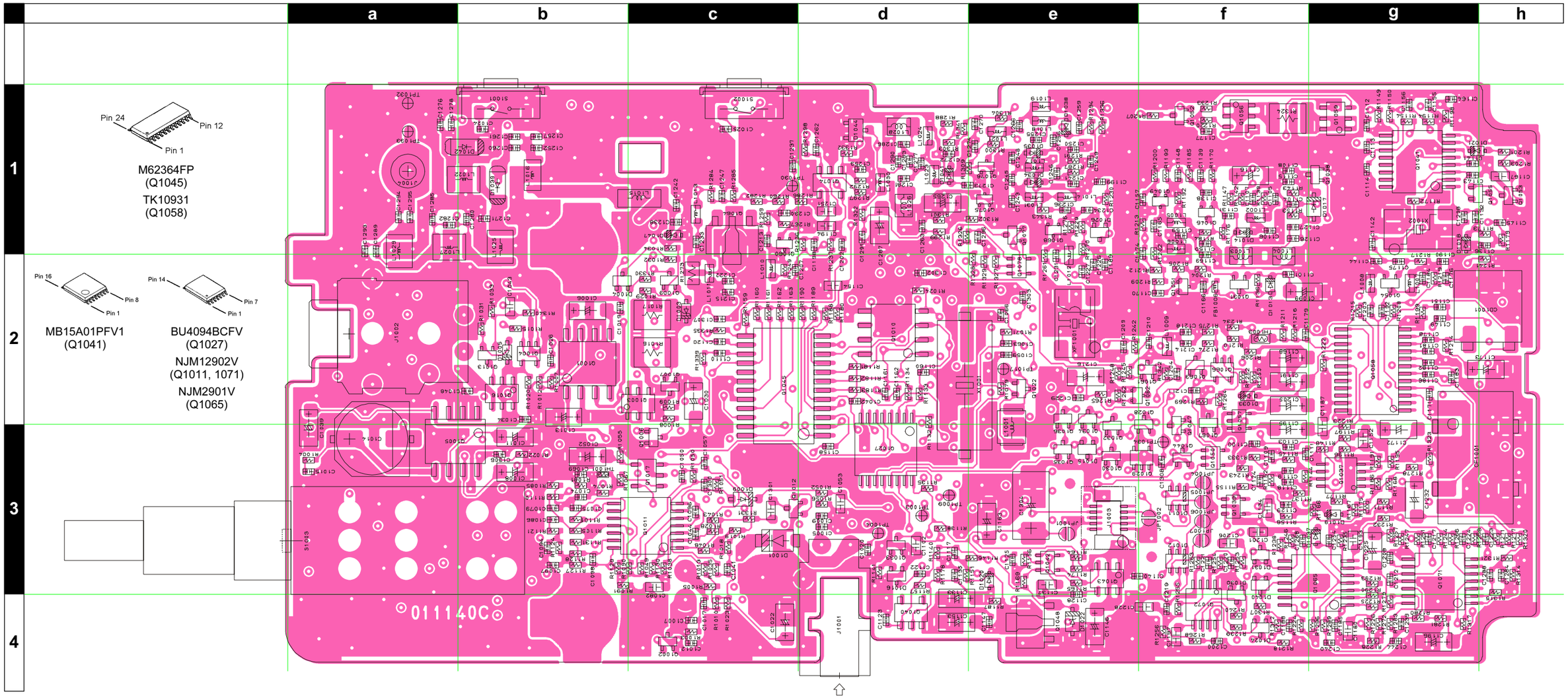
DA221 (K)
(D1006, 1008)



HSM88WA (K)
(D1043)

MAIN Unit

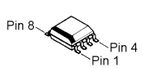
Parts Layout (Side B)



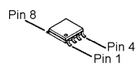
M62364FP
(Q1045)
TK10931
(Q1058)

MB15A01PFV1
(Q1041)

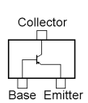
BU4094BCFV
(Q1027)
NJM12902V
(Q1011, 1071)
NJM2901V
(Q1065)



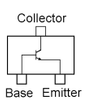
AK93C95AF
(Q1010)
TDA2822D013
(1001)
TDA7233D
(1005)



NJM12804V
(Q1037, 1072)

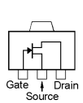


2SA1774 (FR)
(Q1007, 1063,
1067, 1077)

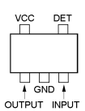


2SC4617 (BR)
(Q1009, 1013,
1022, 1031, 1054)
2SC4915Y (QY)
(Q1061)
2SC5555 (ZD-)
(Q1046, 1049,
1051, 1060, 1062,
1068, 1075, 1076)

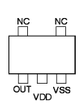
2SK2170 (JA)
(Q1052)



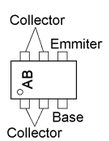
RD01MUS1
(Q1064)



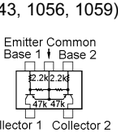
AN6123MS
(Q1017)



S-80835CNMC
(Q1040)

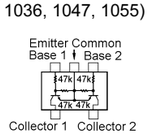


CPH6102 (AB)
(Q1003, 1016,
1043, 1056, 1059)



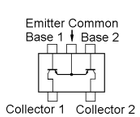
UMA5N (A5)
(Q1050)

DTA143EE (13)
(Q1028, 1032, 1034,
1036, 1047, 1055)

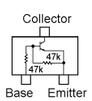


UMG2N (G2)
(Q1004, 1029,
1039, 1057)

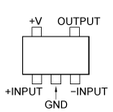
DTC124TE (05)
(Q1033)



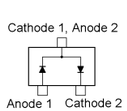
UMW1 (W1)
(Q1042, 1066)



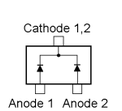
DTC144EE (26)
(Q1002, 1006,
1012, 1030, 1035,
1038, 1044, 1053)



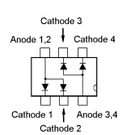
NJM2125F
(Q1074)



DA221 (K)
(D1015, 1016,
1030, 1031, 1040)
RN739F (5F)
(D1044)



DAN222 (N)
(D1004, 1024,
1026)



UMP11N (P11)
(D1011, 1012)

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
	PCB with Components					CB2638001 CB2638002	DST: VTX DST: EXP			
	Printed Circuit Board				AC057N000	FR011210C			1-	
C 1001	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	F1
C 1002	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	F1
C 1003	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	F2
C 1004	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	G3
C 1005	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	d3
C 1006	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	b2
C 1007	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	c4
C 1008	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	b3
C 1009	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	d3
C 1010	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	F2
C 1011	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	b3
C 1012	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	c4
C 1013	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	b2
C 1014	AL.ELECTRO.CAP.	220uF	10V		RV3-10V221MF80-R	K48100002		1-	B	a3
C 1015	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	a3
C 1016	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	F4
C 1017	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	c4
C 1018	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	G3
C 1019	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b2
C 1020	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	d3
C 1021	CHIP CAP.	220pF	25V	CH	GRM36CH221J25PT	K22148203		1-	A	G2
C 1022	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	c4
C 1023	CHIP CAP.	220pF	25V	CH	GRM36CH221J25PT	K22148203		1-	A	G2
C 1024	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b1
C 1025	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	c1
C 1026	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b2
C 1027	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	H3
C 1028	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	H2
C 1029	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	F4
C 1030	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	c2
C 1031	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	F4
C 1032	CHIP CAP.	0.0022uF	50V	B	GRM36B222K50PT	K22178813		1-	A	H3
C 1034	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1035	CHIP TA.CAP.	47uF	16V		TEMSVC1C476M12R	K78120057		1-	A	G3
C 1036	CHIP CAP.	0.0022uF	50V	B	GRM36B222K50PT	K22178813		1-	A	H3
C 1038	CHIP CAP.	0.022uF	16V	B	GRM36B223K16PT	K22128806		1-	A	D3
C 1039	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	a3
C 1040	CHIP CAP.	0.022uF	16V	B	GRM36B223K16PT	K22128806		1-	A	D3
C 1041	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	c3
C 1042	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	d2
C 1043	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	B	b2
C 1044	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	c3
C 1045	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	G3
C 1046	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1047	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	D3
C 1048	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	E3
C 1049	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	D2
C 1050	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	c3
C 1051	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	C2
C 1052	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	b3
C 1053	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	d3
C 1055	CHIP CAP.	0.047uF	10V	B	GRM36B473K10PT	K22108801		1-	A	F2
C 1056	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	F3
C 1057	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	c3
C 1058	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	F3
C 1059	CHIP CAP.	27pF	50V	CH	GRM36CH270J50PT	K22178222		1-	B	e2
C 1060	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	F2
C 1061	CHIP CAP.	0.047uF	10V	B	GRM36B473K10PT	K22108801		1-	A	F3
C 1062	CHIP CAP.	0.0018uF	50V	B	GRM36B182K50PT	K22178812		1-	A	E3
C 1064	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	F3
C 1065	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	F2
C 1066	CHIP CAP.	8pF	50V	CH	GRM36CH080D50PT	K22178210		1-	B	e2
C 1067	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	C2
C 1068	CHIP CAP.	0.22uF	10V	B	GRM39B224K10PT	K22104801		1-	A	F2
C 1069	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b3
C 1070	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	F2
C 1073	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	C2
C 1074	CHIP CAP.	0.022uF	16V	B	GRM36B223K16PT	K22128806		1-	B	b3
C 1075	CHIP CAP.	0.022uF	16V	B	GRM36B223K16PT	K22128806		1-	B	b3
C 1076	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	F2

MAIN Unit

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
C 1077	CHIP CAP.	0.22uF	10V	B	GRM39B224K10PT	K22104801		1-	A	F2
C 1078	CHIP CAP.	0.0039uF	50V	B	GRM36B392K50PT	K22178816		1-	A	E3
C 1079	CHIP CAP.	0.0033uF	50V	B	GRM36B332K50PT	K22178815		1-	B	b3
C 1080	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	F2
C 1081	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	F2
C 1082	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	B	c3
C 1083	CHIP CAP.	0.22uF	10V	B	GRM39B224K10PT	K22104801		1-	A	F2
C 1084	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	G2
C 1085	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	F1
C 1086	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b3
C 1088	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	A	F3
C 1089	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	G2
C 1090	CHIP CAP.	0.22uF	10V	B	GRM39B224K10PT	K22104801		1-	A	F2
C 1091	CHIP CAP.	0.022uF	16V	B	GRM36B223K16PT	K22128806		1-	A	F3
C 1092	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	F2
C 1093	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	F2
C 1094	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b3
C 1095	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	A	F3
C 1096	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	c3
C 1097	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b3
C 1098	CHIP CAP.	180pF	25V	CH	GRM36CH181J25PT	K22148201		1-	B	b3
C 1099	CHIP TA.CAP.	22uF	6.3V		TEMSVA0J226M-8R	K78080047		1-	B	f2
C 1101	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	f2
C 1102	CHIP CAP.	0.22uF	10V	B	GRM39B224K10PT	K22104801		1-	B	d3
C 1103	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	f3
C 1104	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	f1
C 1105	CHIP CAP.	0.047uF	10V	B	GRM36B473K10PT	K22108801		1-	B	f1
C 1106	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	f1
C 1107	CHIP CAP.	0.047uF	10V	B	GRM36B473K10PT	K22108801		1-	B	f1
C 1108	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	f1
C 1109	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	f3
C 1110	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	c2
C 1111	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	f3
C 1112	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	g1
C 1113	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	g1
C 1114	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	g1
C 1115	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	f1
C 1116	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	f1
C 1117	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	d3
C 1118	CHIP CAP.	0.0022uF	50V	B	GRM36B222K50PT	K22178813		1-	B	f3
C 1119	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	f3
C 1120	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	c2
C 1122	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	d3
C 1123	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	d4
C 1124	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	f3
C 1125	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	e3
C 1126	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	f1
C 1127	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	f1
C 1128	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	e4
C 1129	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	f3
C 1131	CHIP CAP.	10pF	50V	CH	GRM36CH100D50PT	K22178212		1-	B	f1
C 1132	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1-	B	g1
C 1134	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	B	f3
C 1135	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	d3
C 1136	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	h1
C 1137	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	B	e3
C 1138	CHIP CAP.	33pF	50V	CH	GRM36CH330J50PT	K22178224		1-	B	f1
C 1139	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1-	B	f1
C 1140	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	f3
C 1141	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	g1
C 1142	CHIP CAP.	47pF	50V	CH	GRM36CH470J50PT	K22178228		1-	B	g1
C 1143	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	g1
C 1144	CHIP CAP.	47pF	50V	CH	GRM36CH470J50PT	K22178228		1-	B	g2
C 1145	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	h1
C 1146	CHIP TA.CAP.	22uF	6.3V		TEMSVA0J226M-8R	K78080047		1-	B	e4
C 1147	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	e4
C 1148	CHIP CAP.	3pF	50V	CJ	GRM36CJ030C50PT	K22178205		1-	B	f1
C 1149	CHIP CAP.	0.0033uF	50V	B	GRM36B332K50PT	K22178815		1-	B	g2
C 1150	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	f1
C 1151	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	g2
C 1152	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	B	g3
C 1153	CHIP TA.CAP.	4.7uF	20V		TEMSVA1D475M-8R	K78130048		1-	B	d4
C 1155	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	g1

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
C 1156	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	g1
C 1157	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	f1
C 1158	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	d3
C 1159	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	f1
C 1160	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	d2
C 1161	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	d2
C 1162	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	d2
C 1164	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	g1
C 1165	CHIP CAP.	7pF	50V	CH	GRM36CH070D50PT	K22178209		1-	B	f1
C 1166	CHIP CAP.	10pF	50V	CH	GRM36CH100D50PT	K22178212		1-	B	f2
C 1167	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	B	h1
C 1168	CHIP TA.CAP.	2.2uF	16V		TEMSVA1C225M-8R	K78120015		1-	B	f2
C 1169	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	f2
C 1170	CHIP CAP.	5pF	50V	CH	GRM36CH050C50PT	K22178207		1-	B	f2
C 1171	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	g2
C 1172	CHIP TA.CAP.	22uF	4V		TEMSVA0G226M-8R	K78060023		1-	B	g3
C 1173	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	h2
C 1174	CHIP CAP.	10pF	50V	CH	GRM36CH100D50PT	K22178212		1-	B	f1
C 1175	CHIP CAP.	10pF	50V	CH	GRM36CH100D50PT	K22178212		1-	B	g2
C 1178	CHIP CAP.	68pF	50V	CH	GRM36CH680J50PT	K22178232		1-	B	g2
C 1179	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	f2
C 1180	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	B	g4
C 1181	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	g2
C 1182	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	g2
C 1183	CHIP CAP.	0.0047uF	25V	B	GRM36B472K25PT	K22148830		1-	B	g2
C 1184	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220		1-	B	g2
C 1185	CHIP CAP.	470pF	50V	B	GRM36B471K50PT	K22178805		1-	B	g4
C 1186	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	g2
C 1187	CHIP CAP.	0.47uF	10V	BJ	LMK107BJ474KA-T	K22104803		1-	B	g3
C 1188	CHIP CAP.	470pF	50V	B	GRM36B471K50PT	K22178805		1-	B	f4
C 1189	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	e2
C 1190	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	g2
C 1191	CHIP TA.CAP.	2.2uF	16V		TEMSVA1C225M-8R	K78120015		1-	B	f2
C 1192	CHIP CAP.	12pF	50V	CH	GRM36CH120J50PT	K22178214		1-	B	g2
C 1193	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	B	g3
C 1194	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	B	d1
C 1195	CHIP TA.CAP.	22uF	4V		TEMSVA0G226M-8R	K78060023		1-	B	f3
C 1196	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	g4
C 1197	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	B	f4
C 1198	CHIP CAP.	12pF	50V	CH	GRM36CH120J50PT	K22178214		1-	B	d1
C 1199	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	e1
C 1200	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	f4
C 1201	CHIP CAP.	0.22uF	10V	B	GRM39B224K10PT	K22104801		1-	B	f3
C 1202	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	d1
C 1203	CHIP CAP.	47pF	50V	CH	GRM36CH470J50PT	K22178228		1-	B	g2
C 1204	CHIP CAP.	2pF	50V	CK	GRM36CK020C50PT	K22178204		1-	B	f2
C 1205	CHIP TA.CAP.	47uF	4V		SK7-0G476M-RA	K78060048		1-	B	f2
C 1206	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	B	f3
C 1207	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	c2
C 1208	CHIP CAP.	0.0047uF	25V	B	GRM36B472K25PT	K22148830		1-	B	g3
C 1209	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	e2
C 1210	CHIP CAP.	39pF	50V	CH	GRM36CH390J50PT	K22178226		1-	B	f2
C 1211	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	f2
C 1212	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	g3
C 1213	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1-	B	c1
C 1214	CHIP CAP.	0.0047uF	25V	B	GRM36B472K25PT	K22148830		1-	B	f2
C 1215	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	c2
C 1216	CHIP TA.CAP.	3.3uF	16V		TEMSVA1C335M-8R	K78120021		1-	B	e2
C 1217	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	g3
C 1218	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	f2
C 1219	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	f4
C 1220	CHIP CAP.	0.0047uF	25V	B	GRM36B472K25PT	K22148830		1-	B	f3
C 1221	CHIP CAP.	0.0047uF	25V	B	GRM36B472K25PT	K22148830		1-	B	f3
C 1222	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	c2
C 1223	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	h3
C 1224	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	g3
C 1225	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	g3
C 1226	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	e2
C 1227	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	e2
C 1228	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	B	f4
C 1229	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	e2
C 1230	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	c1
C 1231	CHIP CAP.	39pF	50V	CH	GRM36CH390J50PT	K22178226		1-	B	e2

MAIN Unit

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
C 1232	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	g3
C 1233	CHIP CAP.	39pF	50V	CH	GRM36CH390J50PT	K22178226		1-	B	c1
C 1234	CHIP CAP.	0.5pF	50V	CK	GRM36CK0R5C50PT	K22178201		1-	B	e1
C 1236	CHIP CAP.	27pF	50V	CH	GRM36CH270J50PT	K22178222		1-	B	e1
C 1237	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	c1
C 1238	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	c1
C 1239	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	g4
C 1240	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	g4
C 1241	CHIP CAP.	470pF	50V	B	GRM36B471K50PT	K22178805		1-	B	e1
C 1242	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	c1
C 1243	CHIP CAP.	0.5pF	50V	CK	GRM36CK0R5C50PT	K22178201		1-	B	e1
C 1244	CHIP CAP.	0.047uF	10V	B	GRM36B473K10PT	K22108801		1-	B	g4
C 1245	CHIP CAP.	1pF	50V	CK	GRM36CK010C50PT	K22178202		1-	B	e1
C 1246	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	e1
C 1247	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	c1
C 1248	CHIP CAP.	0.5pF	50V	CK	GRM36CK0R5C50PT	K22178201		1-	B	e1
C 1249	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	e1
C 1250	CHIP CAP.	470pF	50V	B	GRM36B471K50PT	K22178805		1-	B	e1
C 1251	CHIP CAP.	0.22uF	10V	B	GRM39B224K10PT	K22104801		1-	B	d1
C 1252	CHIP CAP.	47pF	50V	CH	GRM36CH470J50PT	K22178228		1-	B	b1
C 1253	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	d1
C 1254	CHIP CAP.	470pF	50V	B	GRM36B471K50PT	K22178805		1-	B	g3
C 1255	CHIP CAP.	2pF	50V	CK	GRM36CK020C50PT	K22178204		1-	B	e1
C 1256	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	e1
C 1257	CHIP CAP.	12pF	50V	CH	GRM36CH120J50PT	K22178214		1-	B	b1
C 1258	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	F1
C 1259	CHIP CAP.	470pF	50V	B	GRM36B471K50PT	K22178805		1-	B	e1
C 1260	CHIP CAP.	47pF	50V	CH	GRM36CH470J50PT	K22178228		1-	B	b1
C 1261	CHIP CAP.	18pF	50V	CH	GRM36CH180J50PT	K22178218		1-	B	b1
C 1262	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	d1
C 1263	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	d1
C 1264	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	F1
C 1265	CHIP TA.CAP.	3.3uF	16V		TEMSVA1C335M-8R	K78120021		1-	B	d1
C 1266	CHIP CAP.	10pF	50V	CH	GRM36CH100D50PT	K22178212		1-	B	e1
C 1267	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	G1
C 1268	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	f3
C 1269	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	G1
C 1270	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	e1
C 1271	CHIP CAP.	39pF	50V	CH	GRM36CH390J50PT	K22178226		1-	B	b1
C 1272	CHIP CAP.	220pF	25V	CH	GRM36CH221J25PT	K22148203		1-	B	d1
C 1273	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220		1-	B	e1
C 1274	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	e1
C 1275	CHIP CAP.	0.5pF	50V	CK	GRM36CK0R5C50PT	K22178201		1-	A	G1
C 1276	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220		1-	B	a1
C 1277	CHIP CAP.	39pF	50V	CH	GRM36CH390J50PT	K22178226		1-	B	d1
C 1278	CHIP CAP.	33pF	50V	CH	GRM36CH330J50PT	K22178224		1-	B	a1
C 1279	CHIP CAP.	0.5pF	50V	CK	GRM36CK0R5C50PT	K22178201		1-	A	G1
C 1280	CHIP CAP.	33pF	50V	CH	GRM36CH330J50PT	K22178224		1-	B	b1
C 1281	CHIP CAP.	220pF	25V	CH	GRM36CH221J25PT	K22148203		1-	B	d1
C 1282	CHIP CAP.	5pF	50V	CH	GRM36CH050C50PT	K22178207		1-	B	a1
C 1283	CHIP CAP.	27pF	50V	CH	GRM36CH270J50PT	K22178222		1-	B	d1
C 1284	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	h3
C 1285	CHIP CAP.	27pF	50V	CH	GRM36CH270J50PT	K22178222		1-	B	a1
C 1286	CHIP CAP.	68pF	50V	CH	GRM36CH680J50PT	K22178232		1-	B	d1
C 1287	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	d1
C 1288	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	h3
C 1289	CHIP CAP.	5pF	50V	CH	GRM36CH050C50PT	K22178207		1-	B	a1
C 1290	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	d1
C 1291	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	d1
C 1292	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	G1
C 1293	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1-	B	a1
C 1294	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a1
C 1295	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	a1
C 1296	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	e1
C 1297	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	A	C2
C 1298	CHIP CAP.	9pF	50V	CH	GRM36CH090D50PT	K22178211		1-	B	g1
C 1299	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	G3
C 1300	CHIP CAP.	560pF	50V	B	GRM36B561K50PT	K22178806		1-	B	c3
C 1301	CHIP CAP.	1uF	6.3V	B	GRM39B105K6.3PT	K22084801		1-	B	c3
C 1302	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	d2
C 1303	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	e2
C 1304	CHIP TA.CAP.	150uF	4V		TEMSVC0G157M12R	K78060034		1-	B	e3
C 1305	CHIP CAP.	390pF	50V	B	GRM36B391K50PT	K22178804		1-	A	F3

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
C 1306	CHIP CAP.	470pF	50V	B	GRM36B471K50PT	K22178805		1-	B	b3
C 1307	CHIP CAP.	470pF	50V	B	GRM36B471K50PT	K22178805		1-	B	c2
C 1308	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	f3
C 1309	CHIP TA.CAP.	1uF	35V		TEMSVA1V105M-8R	K78160032		1-	A	G3
CD1001	CERAMIC DISC				ECDA450C24	H7901460		1-	B	h2
CF1001	CERAMIC FILTER				ELFY450D	H3900561		1-	B	g3
D 1001	DIODE				M1FM3-4063	G2070804		1-	B	c3
D 1002	DIODE				1SS400 TE61	G2070634		1-	A	G3
D 1003	DIODE				RD5.1UMB2-T1	G2070558		1-	B	c2
D 1004	DIODE				DAN222 TL	G2070174		1-	B	b2
D 1005	DIODE				RD6.8UMB2-T1B	G2070438		1-	B	b2
D 1006	DIODE				DA221 TL	G2070178		1-	A	G3
D 1007	DIODE				RB751S-40TE61	G2070850		1-	A	G2
D 1008	DIODE				DA221 TL	G2070178		1-	A	G2
D 1009	DIODE				HSU277TRF	G2070118		1-	B	c3
D 1010	LED				CL-165HR/YG-D-T	G2070860		1-	A	G4
D 1011	DIODE				UMP11N TN	G2070646		1-	B	f3
D 1012	DIODE				UMP11N TN	G2070646		1-	B	f3
D 1013	DIODE				1SS400 TE61	G2070634		1-	B	f2
D 1014	DIODE				HVC350B-TRF	G2070596		1-	B	f1
D 1015	DIODE				DA221 TL	G2070178		1-	B	e3
D 1016	DIODE				DA221 TL	G2070178		1-	B	d3
D 1017	DIODE				HSU277TRF	G2070118		1-	B	g1
D 1018	DIODE				HVC350B-TRF	G2070596		1-	B	g1
D 1019	DIODE				1SS400 TE61	G2070634		1-	B	g3
D 1020	DIODE				1SS400 TE61	G2070634		1-	B	e3
D 1021	DIODE				1SS400 TE61	G2070634		1-	B	h1
D 1022	DIODE				HZU4ALL-TR	G2070428		1-	B	e4
D 1023	LED				19-215UYOC/S530-A2/TR8	G2070884		1-	A	D1
D 1024	DIODE				DAN222 TL	G2070174		1-	B	f4
D 1025	LED				19-215UYOC/S530-A2/TR8	G2070884		1-	A	D1
D 1026	DIODE				DAN222 TL	G2070174		1-	B	e1
D 1027	LED				19-215UYOC/S530-A2/TR8	G2070884		1-	A	E1
D 1028	LED				19-215UYOC/S530-A2/TR8	G2070884		1-	A	B1
D 1029	LED				19-215UYOC/S530-A2/TR8	G2070884		1-	A	A1
D 1030	DIODE				DA221 TL	G2070178		1-	B	f4
D 1031	DIODE				DA221 TL	G2070178		1-	B	f3
D 1032	LED				19-215UYOC/S530-A2/TR8	G2070884		1-	A	B3
D 1033	DIODE				1SS400 TE61	G2070634		1-	B	f2
D 1034	DIODE				HVC350B-TRF	G2070596		1-	B	e1
D 1035	DIODE				HVC350B-TRF	G2070596		1-	B	e1
D 1037	DIODE				1SS400 TE61	G2070634		1-	B	g3
D 1038	DIODE				HVC350B-TRF	G2070596		1-	B	e1
D 1039	DIODE				RLS135 TE-11	G2070128		1-	B	b1
D 1040	DIODE				DA221 TL	G2070178		1-	B	f3
D 1041	DIODE				HVC350B-TRF	G2070596		1-	B	d1
D 1042	DIODE				RLS135 TE-11	G2070128		1-	B	b1
D 1043	DIODE				HSM88WA TR	G2070168		1-	A	G1
D 1044	DIODE				RN739F T106	G2070626		1-	B	d1
D 1045	SURGE ABSORBER				TVSF0805	Q9000807		1-	A	G1
D 1046	LED				19-215UYOC/S530-A2/TR8	G2070884		1-	A	A3
D 1047	DIODE				1SS400 TE61	G2070634		1-	B	c1
D 1048	SURGE ABSORBER				TVSF0805	Q9000807		1-	A	F1
DS1001	LCD				AC057N	G6090157		1-	A	D2
F 1001	CHIP FUSE	3A			0434 003. 3.0A	Q0000107		1-	A	F4
FB1001	FERRITE BEADS				BK1005HM102-T	L9190124		1-	A	H2
FB1002	FERRITE BEADS				BK1005HM102-T	L9190124		1-	A	G2
FB1003	FERRITE BEADS				BK1005HM102-T	L9190124		1-	A	G2
FB1004	FERRITE BEADS				BK1005HM102-T	L9190124		1-	A	G2
FB1006	FERRITE BEADS				BK1005LL680-T	L9190127		1-	B	f2
J 1001	CONNECTOR				HEC3604-010110	P0091263		1-	B	d4
J 1002	CONNECTOR				HSJ1594-010055	P1090896		1-	B	a2
J 1003	CONNECTOR				AXK6F10335YP	P0091225		1-	B	e3
J 1004	SPRING CONNECTOR					R0152490		1-	B	a1
L 1001	M.RFC	33uH			FLC32T-330J	L1690221		1-	B	e3
L 1002	M.RFC	4.7uH			LK1608 4R7K-T	L1690688		1-	B	f1
L 1003	CHIP COIL	0.056uH			LQN21A56NJ04	L1690618		1-	B	f2
L 1004	CHIP COIL	0.039uH			LQN21A39NJ04	L1690616		1-	B	f2
L 1005	M.RFC	0.1uH			HK1608 R10J-T	L1690528		1-	B	f1
L 1006	M.RFC	0.1uH			HK1608 R10J-T	L1690528		1-	B	f1
L 1007	M.RFC	0.47uH			LK1608 R47K-T	L1690414		1-	B	g2
L 1008	M.RFC	0.033uH			HK1608 33NJ-T	L1690522		1-	B	g2
L 1009	M.RFC	0.56uH			LK1608 R56K-T	L1690415		1-	B	f2

MAIN Unit

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
L 1010	M.RFC	0.082uH			HK1608 82NJ-T	L1690527		1-	B	c2
L 1011	M.RFC	0.082uH			HK1608 82NJ-T	L1690527		1-	B	c2
L 1012	M.RFC	0.56uH			LK1608 R56K-T	L1690415		1-	B	e2
L 1013	M.RFC	0.022uH			HK1608 22NJ-T	L1690520		1-	B	c1
L 1014	M.RFC	0.082uH			LBH1608T82NJ	L1691197		1-	B	e1
L 1015	COIL				E2 0.28-1.0-11TR	L0022426		1-	B	c1
L 1016	COIL				E2 0.3-0.9-7T-R	L0022371		1-	B	b1
L 1017	M.RFC	0.1uH			LBH1608TR10J	L1691198		1-	B	e1
L 1018	M.RFC	0.022uH			LBH1608T22NJ	L1691190		1-	B	e1
L 1019	M.RFC	0.068uH			LBH1608T68NJ	L1691196		1-	B	e1
L 1020	M.RFC	4.7uH			LK2125 4R7K-T	L1690327		1-	A	F1
L 1021	M.RFC	6.8uH			LK1608 6R8K-T	L1690632		1-	B	e1
L 1022	COIL				E2 0.3-1.7-8T-L	L0022376		1-	B	b1
L 1023	M.RFC	0.068uH			LBH1608T68NJ	L1691196		1-	B	d1
L 1024	M.RFC	0.047uH			LBH1608T47NJ	L1691194		1-	B	d1
L 1025	COIL				E2 0.3-1.7-8T-L	L0022376		1-	B	b1
L 1026	CHIP COIL	0.068uH			LQN21A68NJ04	L1690605		1-	B	d1
L 1027	COIL				E2 0.3-1.7-8T-L	L0022376		1-	B	a1
L 1028	CHIP COIL	0.068uH			LQN21A68NJ04	L1690605		1-	B	d1
L 1029	COIL				E2 0.3-1.7-8T-L	L0022376		1-	B	a1
L 1030	M.RFC	4.7uH			LK1608 4R7K-T	L1690688		1-	B	d1
L 1031	M.RFC	0.022uH			LBH1608T22NJ	L1691190		1-	B	e1
MC1001	MIC. ELEMENT				EM-100PT	M3290029		1-	A	F3
Q 1001	IC				TDA2822D013TR	G1091542		1-	B	b2
Q 1002	TRANSISTOR				DTC144EE TL	G3070075		1-	B	c4
Q 1003	TRANSISTOR				CPH6102-TL	G3070223		1-	B	c2
Q 1004	TRANSISTOR				UMG2N TR	G3070088		1-	B	b2
Q 1005	IC				TDA7233D-TR	G1091112		1-	B	b3
Q 1006	TRANSISTOR				DTC144EE TL	G3070075		1-	B	c3
Q 1007	TRANSISTOR				2SA1774 TL R	G3117748R		1-	B	c2
Q 1008	TRANSISTOR				CPH6102-TL	G3070223		1-	A	G3
Q 1009	TRANSISTOR				2SC4617 TL R	G3346178R		1-	B	c2
Q 1010	IC				AK93C95AF E-1	G1092838		1-	B	d2
Q 1011	IC				NJM12902V(TE1)	G1093592		1-	B	c3
Q 1012	TRANSISTOR				DTC144EE TL	G3070075		1-	B	c3
Q 1013	TRANSISTOR				2SC4617 TL R	G3346178R		1-	B	b2
Q 1014	TRANSISTOR				2SB1201S-TL	G3070195		1-	A	E2
Q 1015	TRANSISTOR				DTC143ZE TL	G3070102		1-	A	G3
Q 1016	TRANSISTOR				CPH6102-TL	G3070223		1-	B	b2
Q 1017	IC				AN6123MS-TXL	G1093114		1-	B	c3
Q 1018	FET				HN1J02FU(TE85L)	G3070221		1-	A	F2
Q 1019	TRANSISTOR				UMG2N TR	G3070088		1-	A	G4
Q 1020	IC				NJM12902V(TE1)	G1093592		1-	A	E3
Q 1021	IC				NJM12904R(TE1)	G1093337		1-	A	F3
Q 1022	TRANSISTOR				2SC4617 TL R	G3346178R		1-	B	e2
Q 1023	FET				HN1J02FU(TE85L)	G3070221		1-	A	F2
Q 1024	IC				LC87F74C8A	※		1-	A	D2
Q 1025	IC				BU4094BCFV-E2	G1093527		1-	A	E2
Q 1026	FET				HN1J02FU(TE85L)	G3070221		1-	A	F2
Q 1027	IC				BU4094BCFV-E2	G1093527		1-	B	d3
Q 1028	TRANSISTOR				DTA143EE TL	G3070252		1-	B	f3
Q 1029	TRANSISTOR				UMG2N TR	G3070088		1-	B	f3
Q 1030	TRANSISTOR				DTC144EE TL	G3070075		1-	B	e3
Q 1031	TRANSISTOR				2SC4617 TL R	G3346178R		1-	B	f2
Q 1032	TRANSISTOR				DTA143EE TL	G3070252		1-	B	e3
Q 1033	TRANSISTOR				DTC124TE TL	G3070128		1-	B	d3
Q 1034	TRANSISTOR				DTA143EE TL	G3070252		1-	B	e2
Q 1035	TRANSISTOR				DTC144EE TL	G3070075		1-	B	e3
Q 1036	TRANSISTOR				DTA143EE TL	G3070252		1-	B	e2
Q 1037	IC				NJM12904R(TE1)	G1093337		1-	B	g3
Q 1038	TRANSISTOR				DTC144EE TL	G3070075		1-	B	g1
Q 1039	TRANSISTOR				UMG2N TR	G3070088		1-	B	f3
Q 1040	IC				S-80835CNMC-B8U-T2	G1093606		1-	B	d4
Q 1041	IC				MB15A01PFV1-G-BND-EF	G1092545		1-	B	g1
Q 1042	TRANSISTOR				UMW1 TR	G3070078		1-	B	e3
Q 1043	TRANSISTOR				CPH6102-TL	G3070223		1-	B	e3
Q 1044	TRANSISTOR				DTC144EE TL	G3070075		1-	B	f3
Q 1045	IC				M62364FP 600D	G1093033		1-	B	c2
Q 1046	TRANSISTOR				2SC5555ZD-TR	G3355557		1-	B	f1
Q 1047	TRANSISTOR				DTA143EE TL	G3070252		1-	B	f3
Q 1048	IC				S-812C35AUA-C2P-T2	G1093672		1-	B	e4
Q 1049	TRANSISTOR				2SC5555ZD-TR	G3355557		1-	B	f1
Q 1050	TRANSISTOR				UMA5N TR	G3070138		1-	B	f3

※: Please contact Vertex Standard

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
Q 1051	TRANSISTOR				2SC5555ZD-TR	G3355557		1-	B	f2
Q 1052	FET				2SK2170-TL	G3821708		1-	B	f1
Q 1053	TRANSISTOR				DTC144EE TL	G3070075		1-	B	h1
Q 1054	TRANSISTOR				2SC4617 TL R	G3346178R		1-	B	g2
Q 1055	TRANSISTOR				DTA143EE TL	G3070252		1-	B	h1
Q 1056	TRANSISTOR				CPH6202-TL	G3070265		1-	B	f1
Q 1057	TRANSISTOR				UMG2N TR	G3070088		1-	B	f2
Q 1058	IC				TK10931VT1	G1093013		1-	B	g2
Q 1059	TRANSISTOR				CPH6202-TL	G3070265		1-	B	g1
Q 1060	TRANSISTOR				2SC5555ZD-TR	G3355557		1-	B	c1
Q 1061	TRANSISTOR				2SC4915Y(TE85R)	G3349157Y		1-	B	f2
Q 1062	TRANSISTOR				2SC5555ZD-TR	G3355557		1-	B	f2
Q 1063	TRANSISTOR				2SA1774 TL R	G3117748R		1-	B	f2
Q 1064	FET				RD01MUS1(TAPE)	G3070321		1-	B	c1
Q 1065	IC				NJM2901V-TE1	G1092779		1-	B	g3
Q 1066	TRANSISTOR				UMW1 TR	G3070078		1-	B	f2
Q 1067	TRANSISTOR				2SA1774 TL R	G3117748R		1-	B	f2
Q 1068	TRANSISTOR				2SC5555ZD-TR	G3355557		1-	B	e1
Q 1069	FET				RD07MVS1(TAPE)	G3070320		1-	A	F1
Q 1070	TRANSISTOR				DTC144EE TL	G3070075		1-	A	F1
Q 1071	IC				NJM12902V(TE1)	G1093592		1-	B	g3
Q 1072	IC				NJM12904R(TE1)	G1093337		1-	B	f4
Q 1073	TRANSISTOR				DTA143EE TL	G3070252		1-	A	F1
Q 1074	IC				NJM2125F(TAPE)	G1093894		1-	B	d1
Q 1075	TRANSISTOR				2SC5555ZD-TR	G3355557		1-	B	e1
Q 1076	TRANSISTOR				2SC5555ZD-TR	G3355557		1-	B	e1
Q 1077	TRANSISTOR				2SA1774 TL R	G3117748R		1-	B	e1
Q 1078	TRANSISTOR				UMW1 TR	G3070078		1-	B	e2
R 1001	CHIP RES.	4.7	1/16W	5%	RMC1/16S 4R7JTH	J24189066		1-	A	F3
R 1002	CHIP RES.	4.7	1/16W	5%	RMC1/16S 4R7JTH	J24189066		1-	A	F2
R 1003	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	c4
R 1004	CHIP RES.	10	1/16W	5%	RMC1/16S 100JTH	J24189001		1-	B	a3
R 1005	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	c3
R 1006	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	G2
R 1007	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	b2
R 1008	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	c2
R 1009	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	c2
R 1010	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	c4
R 1011	CHIP RES.	220	1/16W	5%	RMC1/16S 221JTH	J24189017		1-	A	G3
R 1012	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	B	b2
R 1013	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	B	c3
R 1014	CHIP RES.	150	1/4W	5%	RMC1/4 151JATP	J24245151		1-	A	G3
R 1015	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	b2
R 1016	CHIP RES.	2.2	1/4W	5%	RMC1/4 2R2JATP	J24245229		1-	B	c2
R 1017	CHIP RES.	2.2	1/4W	5%	RMC1/4 2R2JATP	J24245229		1-	B	c2
R 1018	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	B	c3
R 1019	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	c3
R 1021	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	G3
R 1022	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	b3
R 1023	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	B	c4
R 1024	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	d2
R 1025	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	A	D3
R 1026	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	A	D3
R 1027	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	A	D3
R 1028	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	B	c3
R 1029	CHIP RES.	220	1/16W	5%	RMC1/16S 221JTH	J24189017		1-	B	c2
R 1030	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	G3
R 1031	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	b2
R 1032	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	c2
R 1033	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	B	b2
R 1034	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	c1
R 1035	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	c3
R 1036	CHIP RES.	18	1/16W	5%	RMC1/16S 180JTH	J24189004		1-	A	G3
R 1037	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	G2
R 1038	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	c3
R 1039	CHIP RES.	82k	1/16W	5%	RMC1/16S 823JTH	J24189048		1-	A	D3
R 1040	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	A	D3
R 1041	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	A	D3
R 1042	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	D3
R 1043	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	B	c3
R 1044	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	C3
R 1046	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	G2
R 1047	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	C3

MAIN Unit

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
R 1048	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	c3
R 1049	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	c3
R 1050	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	c3
R 1051	CHIP RES.	120k	1/16W	5%	RMC1/16S 124JTH	J24189050		1-	B	c3
R 1052	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	d3
R 1053	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	F3
R 1054	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	G3
R 1055	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	B	b3
R 1056	CHIP RES.	2.2M	1/16W	5%	RMC1/16S 225JTH	J24189065		1-	B	d3
R 1057	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	F2
R 1058	CHIP RES.	5.6k	1/16W	5%	RMC1/16S 562JTH	J24189034		1-	A	G2
R 1059	CHIP RES.	330	1/16W	5%	RMC1/16S 331JTH	J24189019		1-	A	G4
R 1060	CHIP RES.	330	1/16W	5%	RMC1/16S 331JTH	J24189019		1-	A	G4
R 1061	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	C2
R 1062	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	F3
R 1064	CHIP RES.	820	1/16W	5%	RMC1/16S 821JTH	J24189024		1-	A	E3
R 1065	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	G2
R 1066	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	F3
R 1067	CHIP RES.	6.8k	1/16W	5%	RMC1/16S 682JTH	J24189035		1-	B	b3
R 1068	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	F3
R 1069	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	A	F3
R 1070	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	A	F2
R 1071	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	B	e2
R 1072	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	A	F2
R 1073	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	C2
R 1074	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	b3
R 1075	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	F2
R 1076	CHIP RES.	1.8k	1/16W	5%	RMC1/16S 182JTH	J24189028		1-	A	G2
R 1077	CHIP RES.	82k	1/16W	5%	RMC1/16S 823JTH	J24189048		1-	A	C2
R 1079	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	e2
R 1080	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	F2
R 1081	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	B	b3
R 1082	CHIP RES.	6.8k	1/16W	5%	RMC1/16S 682JTH	J24189035		1-	A	G2
R 1084	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	A	C2
R 1085	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	B	b3
R 1088	CHIP RES.	680	1/16W	5%	RMC1/16S 681JTH	J24189023		1-	A	E3
R 1089	CHIP RES.	1.8k	1/16W	5%	RMC1/16S 182JTH	J24189028		1-	A	G2
R 1090	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	c3
R 1091	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	B	b3
R 1092	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	F2
R 1093	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	F2
R 1094	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	F2
R 1095	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	F3
R 1096	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	F3
R 1097	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	F3
R 1098	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	F2
R 1099	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	A	F2
R 1100	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	A	F2
R 1101	CHIP RES.	180k	1/16W	5%	RMC1/16S 184JTH	J24189052		1-	B	b3
R 1102	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	F3
R 1103	CHIP RES.	1.2k	1/16W	5%	RMC1/16S 122JTH	J24189026		1-	A	G2
R 1104	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	D1
R 1105	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	b3
R 1107	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	F2
R 1108	CHIP RES.	6.8k	1/16W	5%	RMC1/16S 682JTH	J24189035		1-	A	G2
R 1109	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	D2
R 1110	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	b3
R 1111	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	E2
R 1112	CHIP RES.	1.2k	1/16W	5%	RMC1/16S 122JTH	J24189026		1-	A	F2
R 1113	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	A	F1
R 1114	CHIP RES.	1.2k	1/16W	5%	RMC1/16S 122JTH	J24189026		1-	A	G2
R 1115	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	F2
R 1116	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	E1
R 1117	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	F3
R 1118	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	A	F3
R 1119	CHIP RES.	120k	1/16W	5%	RMC1/16S 124JTH	J24189050		1-	A	F3
R 1120	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	F3
R 1121	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	B	b3
R 1122	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	A	F2
R 1124	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	B	b3
R 1125	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	A	F2
R 1126	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	A	F3
R 1127	CHIP RES.	120k	1/16W	5%	RMC1/16S 124JTH	J24189050		1-	B	b3

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
R 1128	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	B	b3
R 1129	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	b3
R 1130	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	B	c3
R 1132	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	d2
R 1133	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	d2
R 1134	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	d2
R 1135	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	d3
R 1136	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	f2
R 1137	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	f3
R 1138	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	d3
R 1139	CHIP RES.	6.8k	1/16W	5%	RMC1/16S 682JTH	J24189035		1-	B	f1
R 1140	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	d3
R 1141	CHIP RES.	180k	1/16W	5%	RMC1/16S 184JTH	J24189052		1-	B	d3
R 1142	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	f1
R 1143	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	f1
R 1144	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	B	f3
R 1145	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	B	f3
R 1146	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	e3
R 1147	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	B	f1
R 1148	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	g3
R 1149	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	g1
R 1150	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	g1
R 1151	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	e3
R 1152	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	B	f3
R 1153	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	f1
R 1154	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	g1
R 1155	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	f3
R 1156	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	e3
R 1157	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	d3
R 1158	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	B	f3
R 1161	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	c2
R 1162	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	c2
R 1163	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	c2
R 1164	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	B	e3
R 1165	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	e3
R 1166	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	B	g3
R 1167	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	B	g3
R 1168	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	g3
R 1169	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	e3
R 1170	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	f1
R 1171	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	B	g3
R 1172	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	g1
R 1173	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	B	h1
R 1174	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	B	e3
R 1175	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	B	g3
R 1176	CHIP RES.	1.8k	1/16W	5%	RMC1/16S 182JTH	J24189028		1-	B	f1
R 1177	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	g3
R 1178	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	d3
R 1179	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	h1
R 1180	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	d2
R 1181	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	d2
R 1182	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	d2
R 1183	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	d2
R 1184	CHIP RES.	220	1/16W	5%	RMC1/16S 221JTH	J24189017		1-	B	f1
R 1185	CHIP RES.	680	1/16W	5%	RMC1/16S 681JTH	J24189023		1-	B	f1
R 1186	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	B	g3
R 1187	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	B	e4
R 1188	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	d2
R 1190	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	d2
R 1191	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	g3
R 1192	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	f1
R 1193	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	f1
R 1194	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	g1
R 1195	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	g3
R 1196	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	B	g3
R 1197	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	B	g3
R 1198	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	g1
R 1199	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	g2
R 1200	CHIP RES.	150	1/16W	5%	RMC1/16S 151JTH	J24189015		1-	B	f1
R 1201	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	h1
R 1202	CHIP RES.	18	1/16W	5%	RMC1/16S 180JTH	J24189004		1-	B	f1
R 1203	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	h1
R 1204	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	B	f2

MAIN Unit

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
R 1205	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	f2
R 1206	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	f2
R 1207	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	B	f1
R 1208	CHIP RES.	22	1/16W	5%	RMC1/16S 220JTH	J24189005		1-	B	g2
R 1209	CHIP RES.	18	1/16W	5%	RMC1/16S 180JTH	J24189004		1-	B	f2
R 1210	CHIP RES.	18k	1/16W	5%	RMC1/16S 183JTH	J24189040		1-	B	f2
R 1211	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	B	f2
R 1212	CHIP RES.	18	1/16W	5%	RMC1/16S 180JTH	J24189004		1-	B	f2
R 1213	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	f1
R 1214	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	g2
R 1215	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	g2
R 1216	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	f2
R 1217	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	B	g2
R 1218	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	f4
R 1219	CHIP RES.	3.9k	1/16W	5%	RMC1/16S 392JTH	J24189032		1-	B	g2
R 1220	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	f1
R 1221	CHIP RES.	150	1/16W	5%	RMC1/16S 151JTH	J24189015		1-	A	D1
R 1222	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	g2
R 1223	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	g3
R 1224	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	f4
R 1225	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	g4
R 1226	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	B	g4
R 1227	CHIP RES.	150	1/16W	5%	RMC1/16S 151JTH	J24189015		1-	A	D1
R 1228	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	B	g4
R 1229	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	e1
R 1230	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	e1
R 1231	CHIP RES.	150	1/16W	5%	RMC1/16S 151JTH	J24189015		1-	A	E1
R 1232	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	g3
R 1233	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	f1
R 1234	CHIP RES.	150	1/16W	5%	RMC1/16S 151JTH	J24189015		1-	B	f2
R 1235	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	g3
R 1236	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	B	d1
R 1237	CHIP RES.	220	1/16W	5%	RMC1/16S 221JTH	J24189017		1-	B	d1
R 1238	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	B	f3
R 1239	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	f4
R 1240	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	B	f4
R 1241	CHIP RES.	150	1/16W	5%	RMC1/16S 151JTH	J24189015		1-	B	h2
R 1242	CHIP RES.	5.6k	1/16W	5%	RMC1/16S 562JTH	J24189034		1-	B	e2
R 1243	CHIP RES.	150	1/16W	5%	RMC1/16S 151JTH	J24189015		1-	B	f3
R 1244	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	g3
R 1245	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	e2
R 1246	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	f3
R 1247	CHIP RES.	180k	1/16W	5%	RMC1/16S 184JTH	J24189052		1-	B	g3
R 1248	CHIP RES.	33	1/16W	5%	RMC1/16S 330JTH	J24189007		1-	B	e2
R 1249	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	c2
R 1250	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	B	f2
R 1251	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	B	g3
R 1252	CHIP RES.	1.2k	1/16W	5%	RMC1/16S 122JTH	J24189026		1-	B	f2
R 1253	CHIP RES.	18k	1/16W	5%	RMC1/16S 183JTH	J24189040		1-	B	f3
R 1254	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	B	f3
R 1255	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	f4
R 1256	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	B	f4
R 1257	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	B	g3
R 1258	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	g3
R 1259	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	c1
R 1260	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	c1
R 1261	CHIP RES.	560	1/16W	5%	RMC1/16S 561JTH	J24189022		1-	B	e2
R 1262	CHIP RES.	390k	1/16W	5%	RMC1/16S 394JTH	J24189056		1-	B	e2
R 1263	CHIP RES.	1.2k	1/16W	5%	RMC1/16S 122JTH	J24189026		1-	B	f3
R 1264	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	f2
R 1265	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	B	e2
R 1266	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	g3
R 1267	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	c1
R 1268	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	f4
R 1269	CHIP RES.	82k	1/16W	5%	RMC1/16S 823JTH	J24189048		1-	B	f2
R 1270	CHIP RES.	820	1/16W	5%	RMC1/16S 821JTH	J24189024		1-	B	e1
R 1271	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	B	h3
R 1272	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	g4
R 1273	CHIP RES.	47	1/10W	5%	RMC1/10T 470J	J24205470		1-	B	c2
R 1274	CHIP RES.	2.7k	1/16W	5%	RMC1/16S 272JTH	J24189030		1-	B	f2
R 1275	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	f2
R 1276	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	B	e1
R 1277	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	h3

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
R 1278	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	g3
R 1279	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	g4
R 1280	CHIP RES.	180k	1/16W	5%	RMC1/16S 184JTH	J24189052		1-	B	g4
R 1281	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	B	g4
R 1282	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	c1
R 1283	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	g4
R 1284	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	c1
R 1285	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	c1
R 1286	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	d1
R 1287	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	e1
R 1288	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	d1
R 1289	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	B	g4
R 1290	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	g4
R 1291	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	e1
R 1292	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	d1
R 1293	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	B	g3
R 1294	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	e1
R 1295	CHIP RES.	220	1/10W	5%	RMC1/10T 221J	J24205221		1-	A	F1
R 1297	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	d1
R 1298	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	B	d1
R 1299	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	B	d1
R 1300	CHIP RES.	390	1/16W	5%	RMC1/16S 391JTH	J24189020		1-	B	e1
R 1302	CHIP RES.	12	1/16W	5%	RMC1/16S 120JTH	J24189002		1-	B	e1
R 1303	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	d1
R 1304	CHIP RES.	680	1/16W	5%	RMC1/16S 681JTH	J24189023		1-	B	e1
R 1305	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	G1
R 1306	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	G1
R 1307	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	f4
R 1309	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	B	e1
R 1310	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	G1
R 1311	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	G1
R 1312	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	f4
R 1313	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	G1
R 1314	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	h3
R 1315	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	B	h3
R 1316	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	G1
R 1317	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	g4
R 1318	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	G1
R 1319	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	G1
R 1320	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	B	h3
R 1321	CHIP RES.	1.8k	1/16W	5%	RMC1/16S 182JTH	J24189028		1-	B	h3
R 1322	CHIP RES.	15	1/16W	5%	RMC1/16S 150JTH	J24189003		1-	B	d1
R 1323	CHIP RES.	150	1/16W	5%	RMC1/16S 151JTH	J24189015		1-	B	g3
R 1324	CHIP RES.	39	1/4W	5%	RMC1/4 390JATP	J24245390		1-	B	f1
R 1326	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	B	e1
R 1327	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	B	e2
R 1328	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	B	e2
R 1329	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	B	e2
R 1330	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	c2
R 1331	CHIP RES.	330	1/16W	5%	RMC1/16S 331JTH	J24189019		1-	B	c3
R 1332	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	B	d1
R 1333	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	f3
R 1334	CHIP RES.	3.3M	1/16W	5%	RMC1/16S 335JTH	J24189324		1-	A	G3
R 1335	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	c2
R 1336	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	e1
R 1337	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	G3
R 1338	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	D3
R 1339	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	B	c2
R 1340	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	B	b2
R 1342	CHIP RES.	270k	1/16W	5%	RMC1/16S 274JTH	J24189054		1-	B	f2
R 1343	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	e1
S 1001	TACT SWITCH				SKQTLA	N5090110		1-	B	b1
S 1002	TACT SWITCH				SKQTLA	N5090110		1-	B	c1
S 1003	ROTARY ENCODER				TP90D281NAE20 RY-7499	Q9000808		1-	B	a3
TH1001	THERMISTOR				ERTJ0ER103J	G9090119		1-	B	b3
TH1002	THERMISTOR				TBPS1R473K475H5Q	G9090068		1-	A	F1
TH1003	THERMISTOR				TBPS1R223K460H5Q	G9090085		1-	B	f2
X 1001	XTAL SMD-49TA	7.4MHz			7.4MHZ	H0103285		1-	B	d2
X 1002	XTAL TOP-B	17.475MHz			17.475MHZ	H0103231		1-	B	g1
XF1001	XTAL FILTER				35S15A	H1102335		1-	B	e2
	CONTACT				OG-503040	S5000243		1-	A	F3
	CONTACT				OG-503040	S5000243		1-	A	F2
	LIGHT GUIDE				(LCD)	RA0580400		1-		

MAIN Unit

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
	INTER CONNECTOR				(LCD)	RA0580700		1-		
	REFLECTOR SHEET				(A)	RA0580500		1-		
	MIC HOLDER RUBBER					RA0578200		1-