Vertex Standard

UHF FM Transceiver

VX-146

Service Manual

 EC041U90A

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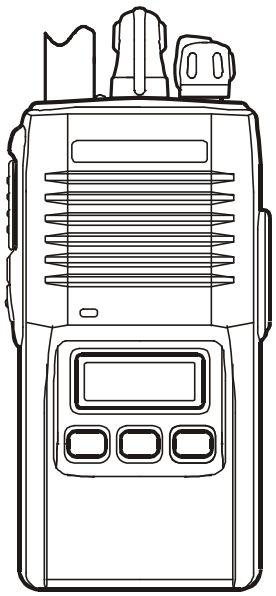


Introduction

This manual provides technical information necessary for servicing the VX-146 FM 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 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:	446.00625 - 446.09375 MHz
Number of Channels:	8 channels
Channel Spacing:	12.5 kHz
Emmission Type:	F3E
Power Supply voltage:	7.5 VDC ± 10 %
Operating Temperature Range:	–20 °C to +55 °C
Frequency Stability:	±2.5 ppm
Antenna Impedance:	50 Ohms
Dimensions (WHD):	58 x 120 x 31 mm
Weight (approx.):	365 g w/FNB-64 and Belt Clip

RECEIVER

Circuit Type:	Double-Conversion Superheterodyne
Internediate Frequencies:	1st: 44.25 MHz, 2nd: 450 kHz
Sensitivity:	
EIA 12 dB SINAD :	0.25 µV
20 dB Noise Quieting :	0.35 µV
Selectivity:	9 kHz (–6 dB) / 30 kHz (–60 dB)
Adjacent Channel Selectivity:	60 dB
Intermodulation:	65 dB
Spurious and Image Rejection:	70 dB
Hum & Noise	40 dB
Audio output:	500 mW @4 Ohms, 10% THD

TRANSMITTER

Power output:	0.5 W
Modulation Type:	Variable Reactance
Maximum Deviation:	±2.5 kHz
Conducted Spurious Emissions:	60 dB Below Carrier
FM Hum & Noise:	40 dB
Audio distortion (@ 1 kHz):	< 5 %

Specifications subject to change without notice or obligation.

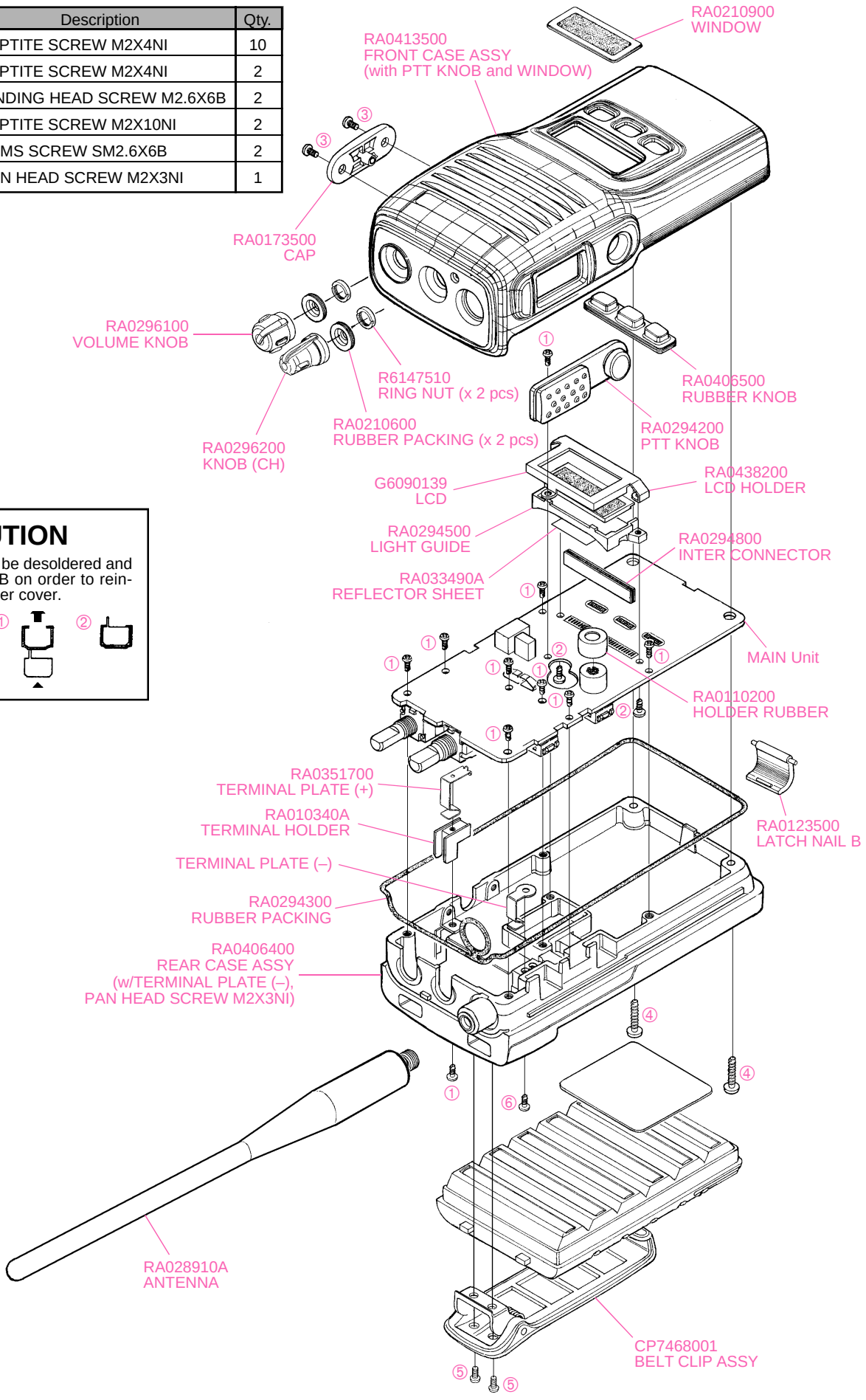
Exploded View & Miscellaneous Parts

REF.	VXSTD P/N	Description	Qty.
①	U44104002	TAPTITE SCREW M2X4NI	10
②	U44104002	TAPTITE SCREW M2X4NI	2
③	U20206007	BINDING HEAD SCREW M2.6X6B	2
④	U24110002	TAPTITE SCREW M2X10NI	2
⑤	U02206007	SEMS SCREW SM2.6X6B	2
⑥	U00103002	PAN HEAD SCREW M2X3NI	1

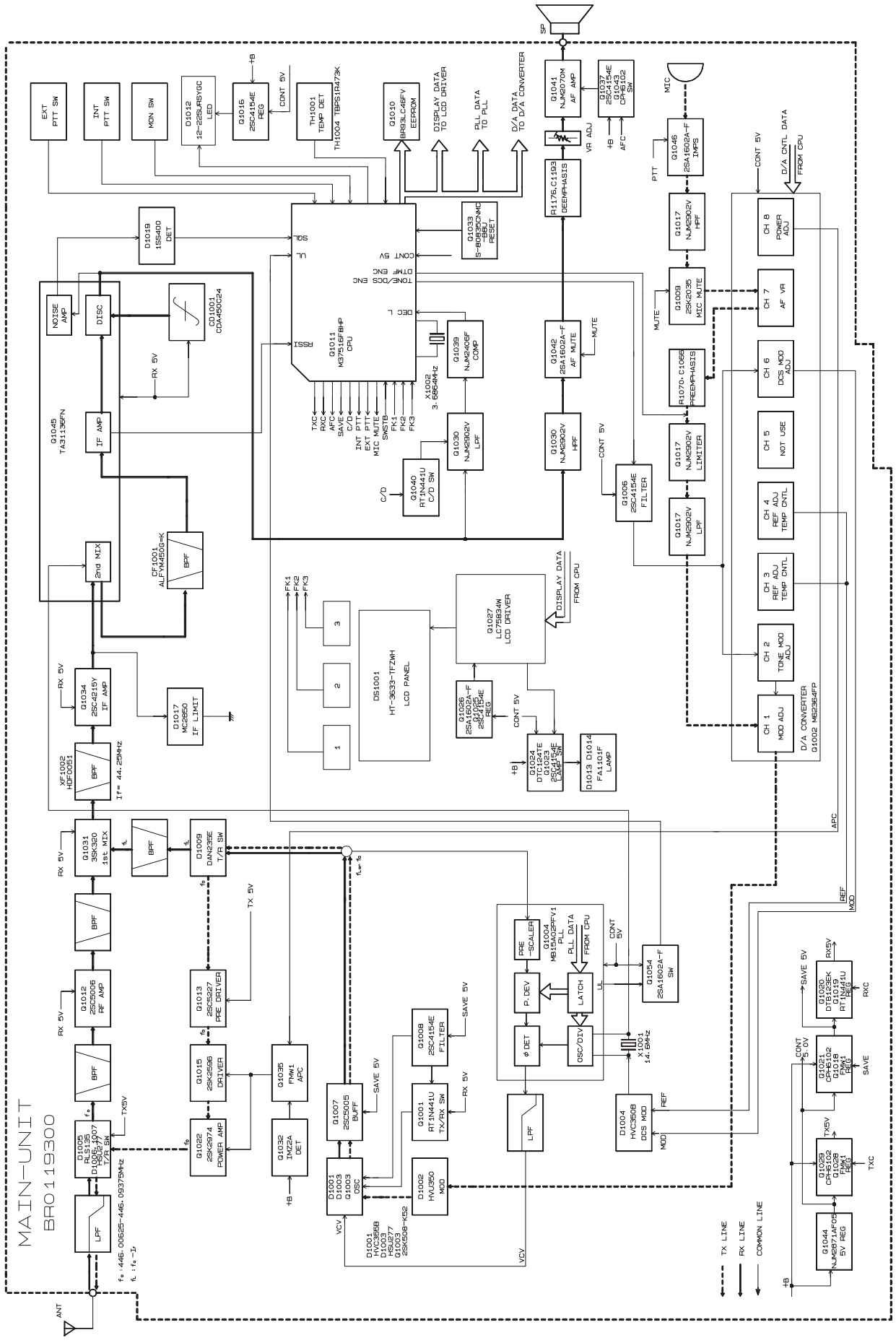
⚠ CAUTION

The mic element must be desoldered and removed from the PCB on order to reinstall its protective rubber cover.

Therefore, be careful not to remove this cover unless mic element replacement is necessary.



Block Diagram



Receive Signal Path

Incoming RF from the antenna is delivered to the RF Unit and passes through a low-pass filter consisting of coils L1003, L1004 & L1005, capacitors C1002, C1016, C1017, C1018, C1019, C1020, C1021 & C1023, and antenna switching diode D1005 (RLS135).

Signals within the frequency range of the transceiver enter a band-pass filter consisting of coils L1013 & L1015, capacitors C1071, C1072, C1073, C1074, C1075, C1076, C1077, C1095 & C1096, then amplified by **Q1012** (**2SC5006**) and enter a band-pass filter consisting of coils L1018 & L1021, capacitor C1109, C1110, C1111, C1112, C1114, C1128, C1129, C1130 & C1131 before first mixing by **Q1031** (**3SK320**).

Buffered output from the VCO is to provide a pure first local signal between 401.75625 and 401.84357 MHz for injection to the first mixer Q1031. The 44.25 MHz first mixer product then passes through monolithic crystal filter **XF1002** (HDF0042, 5.5 kHz BW) to strip away all but the desired signal, which is then amplified by **Q1034** (**2SC4215Y**).

The amplified first IF signal is applied to FM IF subsystem IC **Q1045** (**TA31136FN**), which contains the second mixer, second local oscillator, limiter amplifier, noise amplifier, and S-meter amplifier.

A second local signal is generated by PLL reference/second local oscillator of 14.60 MHz crystal **X1001** to produce the 450 kHz second IF when mixed with the first IF signal within **Q1045**.

The second IF then passes through the ceramic filter **CF1001** (ALFYM450G=K) to strip away unwanted mixer products, and is then applied to the limiter amplifier in **Q1045**, before detection of the speech by the ceramic discriminator **CD1001** (**CDA450C24**).

Detected audio from **Q1045** is applied to the audio high-pass filter, and then passed via the volume control to the audio amplifier **Q1041** (**NJM2070M**), which provides up to 0.5 Watts to the optional headphone jack or a 4-Ohm loudspeaker.

Squelch Control

The squelch circuitry consists of a noise amplifier and band-pass filter within **Q1045**, and noise detector **D1019** (**1SS355**).

When no carrier received, noise at the output of the detector stage in **Q1045** is amplified and band-pass filtered by the noise amplifier section of **Q1045** and the network between pins 7 and 8, and then rectified by **D1019**.

The resulting DC squelch control voltage is passed to pin 37 of the microprocessor **Q1011** (**M37515M6-121HP**). If no carrier is received, this signal causes pin 24 of **Q1011** to go low and pin 20 to go high. Pin 24 signals **Q1043** (**2SC4154E**) to disable the supply voltage to the audio amplifier **Q1041**, while pin 20 hold the green (Busy) half of the LED off, when pin 24 is high and pin 20 is high.

Thus, the microprocessor blocks output from the audio amplifier, and silences the receiver, while no signal is being received (and during transmission, as well).

When a carrier appears at the discriminator, noise is removed from the output, causing pin 37 of **Q1011** to go low and the microprocessor to activate the "Busy" LED via **Q1016**.

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, allows audio to pass through the audio amplifier **Q1041** (**NJM2070M**) to the loudspeaker by enabling the supply voltage to it via **Q1037**.

Transmit Signal Path

Speech input from the microphone is amplified by **Q1017** (**NJM2902V**), after pre-emphasis by C1066 and R1070, the audio passes another section of **Q1017**.

The processed audio may then be mixed with a CTCSS tone generated by **Q1011** (**M37515M6-121HP**) then delivered to **D1002** (**HVU350**) for frequency modulation of the PLL carrier (up to ±5kHz from the unmodulated carrier) at the transmitting frequency.

If a CTCSS code is enabled for transmission, the code is generated by microprocessor **Q1011** and delivered to **D1004** (**HVC350B**) for CTCSS modulating.

The modulated signal from the VCO **Q1003** (**2SK508-K52**) is buffered by **Q1007** (**2SC5005**). The low-level transmit signal is then passes through the T/R switching diode **D1009** (**DAN235E**) to the predriver amplifier **Q1013** (**2SC5227**) and driver amplifier **Q1015** (**2SK2596**) and **Q1022** (**2SK2974**), then amplified transmit signal is applied to the final amplifier **Q1022** up to 500 mill watts output power.

The transmit signal then passes through the antenna switch **D1005** (**RLS135**) and is low-pass filtered to suppress harmonic spurious radiation before delivery to the antenna.

Circuit Description

Automatic Transmit Power Control

Current from the final amplifier is sampled by R1120, R1121 and R1143, and is rectified by **Q1032** (**IMZ2A**). The resulting DC is fed back through **Q1035** (**FMW1**) to the drive amplifier **Q1015** and final amplifier **Q1022**, for control of the power output.

Transmit Inhibit

When the transmit PLL is unlocked, pin 7 of PLL chip **Q1004** goes to a logic "Low", and unlock detector Q1005 (**2SA1602A-F**) goes to a logic "High". The resulting DC unlock control voltage is passed to pin 14 of the microprocessor **Q1011**. While the transmit PLL is unlocked, pin 22 of **Q1011** remains high, which then turns off **Q1029** (**CPH6102**) and the Automatic Power Controller **Q1035** (**FMW1**) to disable the supply voltage to the drive amplifier **Q1013**, **Q1015** and final amplifier **Q1022**, 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 L1003, L1004 & L1005 plus C1002, C1016, C1017, C1018, C1019, C1021 and C1023, resulting in more than 70 dB of harmonic suppression prior to delivery to the antenna.

PLL Frequency Synthesizer

The PLL circuitry on the Main Unit consists of VCO **Q1003** (**2SK508-K52**), VCO buffer **Q1007** (**2SC5005**), and PLL subsystem IC **Q1004** (**MB15A02PFV1**), which contains a reference divider, serial-to-parallel data latch, programmable divider, phase comparator and charge pump.

Frequency stability is maintained by temperature compensating thermistor TH1001. The output from TH1001 is applied to pin 39 of **Q1011**. **Q1011** output thermal data to D/A converter **Q1002** (**M62364FP**) which produce the DC voltage according with the thermal data. The resulting DC voltage is applied to varactor diode **D1004** (**HVC350B**) to stabilize the 14.6MHz Reference Frequency.

While receiving, VCO **Q1003** oscillates between 401.75625 and 401.84375 MHz according to the transceiver version and the programmed receiving frequency. The VCO output is buffered by **Q1007**, then applied to the prescaler section of **Q1004**. There the VCO signal is divided by 64 or 65, according to a control signal from the data latch section of **Q1004**, before being sent to the programmable divider section of **Q1004**.

The data latch section of **Q1004** also receives serial dividing data from the microprocessor **Q1014**, 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 6.25 kHz derivative of the current VCO frequency.

Meanwhile, the reference divider section of **Q1004** divides the 14.6 MHz crystal reference from the reference oscillator **Q1004**, by 2336 to produce the 6.25 kHz loop reference.

The 3.125 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 **Q1004**, 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 **D1001** (**HVC355B**). Changes in the level of the DC voltage applied to the varactor, affecting 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 **Q1003**, after buffering by **Q1007** is applied to the first mixer as described previously.

For transmission, the VCO **Q1003** oscillates between 446.00625 and 446.09375 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 **D1002** (**HVU350**), as described previously.

Receive and transmit buses select which VCO is made active by **Q1001** (**RT1N441U**).

Push-To-Talk Transmit Activation

The **PTT** switch on the microphone is connected to pin 35 (External PTT) and pin 48 (Internal PTT) of microprocessor **Q1011**, so that when the **PTT** switch is closed, pin 23 of **Q1011** goes low. This signal disables the receiver by disabling the 5 V supply bus at **Q1020** (**DTB123EK**) to the front-end, FM IF subsystem IC **Q1045** and receiver VCO circuitry.

At the same time, **Q1028** (**FMW1**) and **Q1029** (**CPH6102**) activate the transmit 5V supply line to enable the transmitter.

Introduction

The **VX-146** has been aligned at the factory for the specified performance across the entire frequency range specified. Realignment should therefore not be necessary except in the event of a component failure. All component replacement and service should be performed only by an authorized Vertex Standard representative, or the warranty policy may be voided.

The following procedures cover the sometimes critical and tedious adjustments that are not normally required once the transceiver has left the factory. However, if damage occurs and some parts 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. Therefore, 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 must reserve 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 the need for realignment determined to be absolutely necessary.

The following test equipment (and thorough familiarity with its correct 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.

Required Test Equipment

- ❒ Radio Tester with calibrated output level at 1 GHz
- ❒ In-line Wattmeter with 5% accuracy at 1 GHz
- ❒ 50-ohm, 10-W RF Dummy Load
- ❒ Regulated DC Power Supply (standard 7.5V DC, 2A)
- ❒ Frequency Counter: ±0.2 ppm accuracy at 1 GHz
- ❒ AF Signal Generator
- ❒ AC Voltmeter
- ❒ DC Voltmeter
- ❒ UHF Sampling Coupler
- ❒ Microsoft® Windows® 95 or later operating system
- ❒ Vertex Standard CT-42 Connection Cable and CE53 Alignment program

Alignment Preparation & Precautions

A 50-ohm RF Dummy 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 following step to determine whether the same test equipment will be 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° and 30°C (68°~ 86°F). When the transceiver is brought into the shop from hot or cold air, it should be allowed 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.

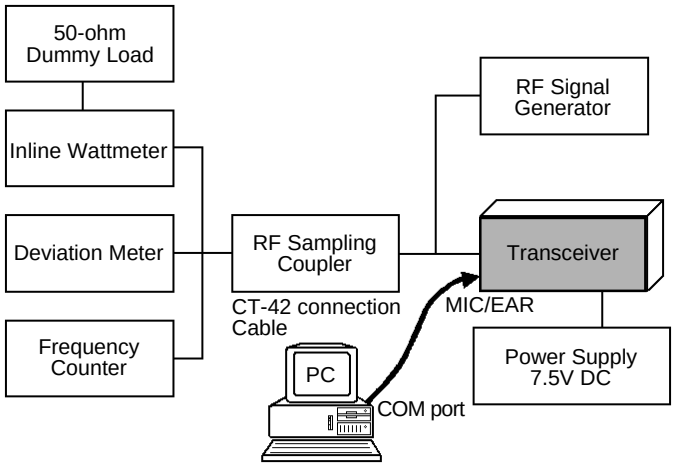
Note: Signal levels in dB referred to in this procedure are based on 0 dBμ = 0.5 μV (closed circuit).

Important Note

When connecting the **CT-42** plug into the **MIC/SP** jack of the **VX-146**, you must remove the plastic cap and its mounting screws prior to programming. Please remember to re-attach the cap and screws when the programming is complete.

Alignment

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



The transceiver must be programmed for use in the intended system before alignment is attempted. The RF parameters are loaded from the file during the alignment process.

In order to facilitate alignment over the complete operating rang of the equipment, it is recommended that the channel data in the transceiver be preset as per the chart below.

Channel	Frequency	CTCSS Tone	DCS Code
1	446.00625 MHz	–	–
2	446.05625 MHz	67.0 Hz	627
3	446.05625 MHz	103.5 Hz	627
4	446.09375 MHz	–	–

The alignment tool outline

Installation of the Alignment tool

The “alignment mode” is a software-based protocol, accessed by an “Alignment Mode” command from the computer while switching the transceiver on. It is operated by the alignment tool automatically. During use of the alignment mode, normal operation is suspended. The alignment tool program provides all needed operation capability.

Entering Alignment Mode

To enter the alignment mode, turn the transceiver off, execute the CE53 programming software with the "/M" option (type "CE53 /M [ENTER]) and type the password (please inquire the password to Vertex Sandard). Select “**Radio**” then “**Alignment**” parameter. Now, turn the transceiver back on. When the command has been successful, a message on the computer screen will confirm that the transceiver is now in the “Alignment” mode.

Alignment Sequence

Although the data displayed on the computer's screen during alignment is temporary data, it is important you follow the basic alignment sequence precisely, so that the displayed data and the data loaded into the transceiver are identical.

Basic Alignment Sequence

1. Enter the alignment mode
2. Upload data from transceiver
3. Align data
4. Download data to transceiver

PLL VCV (Varactor Control Voltage)

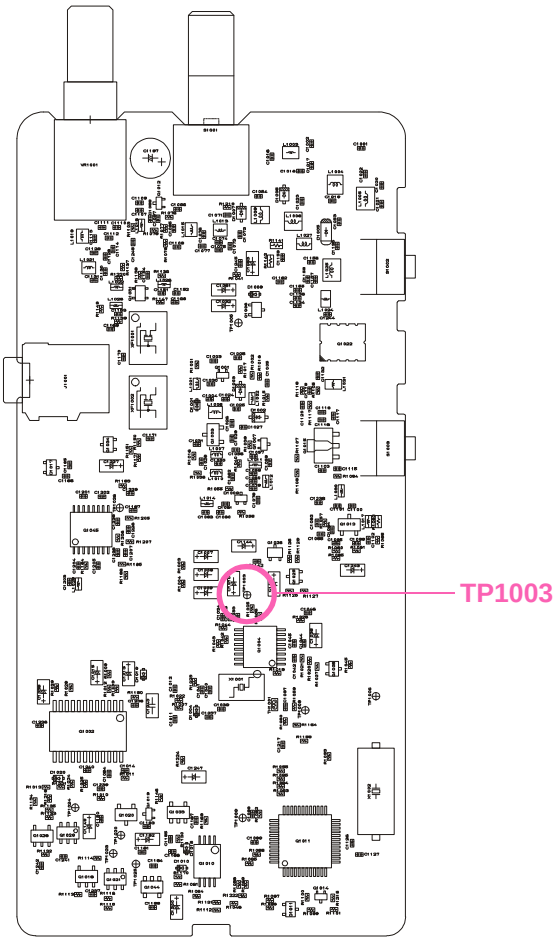
- ❒ Connect the DC voltmeter between **TP1003** on the Main Unit and ground.
- ❒ Set the transceiver to CH 4 via the "CH" box located on the upper left corner on the "Alignment" window, confirm that the voltage is more than 0.9 - 3.5V.

PLL Reference Frequency

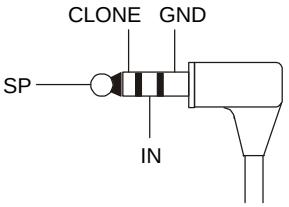
- ❒ Set the transceiver to CH 2 via the "CH" box located on the upper left corner on the "Alignment" window previously.
- ❒ To adjustment, double-click the left mouse button on the "**RF Frequency**" box to open the pop-up window, then move the slide bar to adjust the frequency counter displays the 446.05625 MHz ± 100 Hz.

Transmitter Output Power

- ❒ Set the transceiver to CH 2 via the "CH" box located on the upper left corner on the "Alignment" window previously.
- ❒ To adjustment, double-click the left mouse button on the "**RF Power**" box to open the pop-up window, then move the slide bar to adjust the 0.5 W ± 0.1 W. Confirm that the current consumption is 1.0 A or lower.
- ❒ Press the "OK" box to lock in the new data.



STD Deviation



- ❒ Inject a 1 kHz tone at –37 dBm to the **MIC** jack.
- ❒ To adjustment, double-click the left mouse button on the "**MIC Sensitivity**" box to open the pop-up window, then move the slide bar to adjust the ±1.5 kHz (±0.1 kHz) deviation.
- ❒ Press the "OK" box to lock in the new data.

MAX Deviation

- ❒ Set the transceiver to CH 2 via the "CH" box located on the upper left corner on the "Alignment" window previously.
- ❒ Inject a 1 kHz tone at –17 dBm to the **MIC** jack.
- ❒ To adjustment, double-click the left mouse button on the "**MAX Deviation**" box to open the pop-up window, then move the slide bar to adjust the ±2.1 kHz (±0.1 kHz) deviation.
- ❒ Press the "OK" box to lock in the new data.

CTCSS Deviation

- ❒ Set the transceiver to CH 3 via the "CH" box located on the upper left corner on the "Alignment" window previously.
- ❒ Double-click the left mouse button on the "**CTCSS Balance**" box to open the pop-up window, then move the slide bar to "00."
- ❒ To adjustment, double-click the left mouse button on the "**CTCSS Deviation**" box to open the pop-up window, then move the slide bar to adjust the ±1.0 kHz (±0.1 kHz) deviation.
- ❒ Press the "OK" box to lock in the new data.
- ❒ Set the transceiver to CH 2 via the "CH" box located on the upper left corner on the "Alignment" window previously.
- ❒ To adjustment, double-click the left mouse button on the "**CTCSS Balance**" box to open the pop-up window, then move the slide bar to "225." Move down the slide bar to adjust the ±0.55 kHz (±0.1 kHz) deviation.
- ❒ Press the "OK" box to lock in the new data.
- ❒ Set the transceiver to CH 3, then key the transmitter, and confirm that the deviation is 0.4 ~ 0.6 kHz.

DCS Deviation

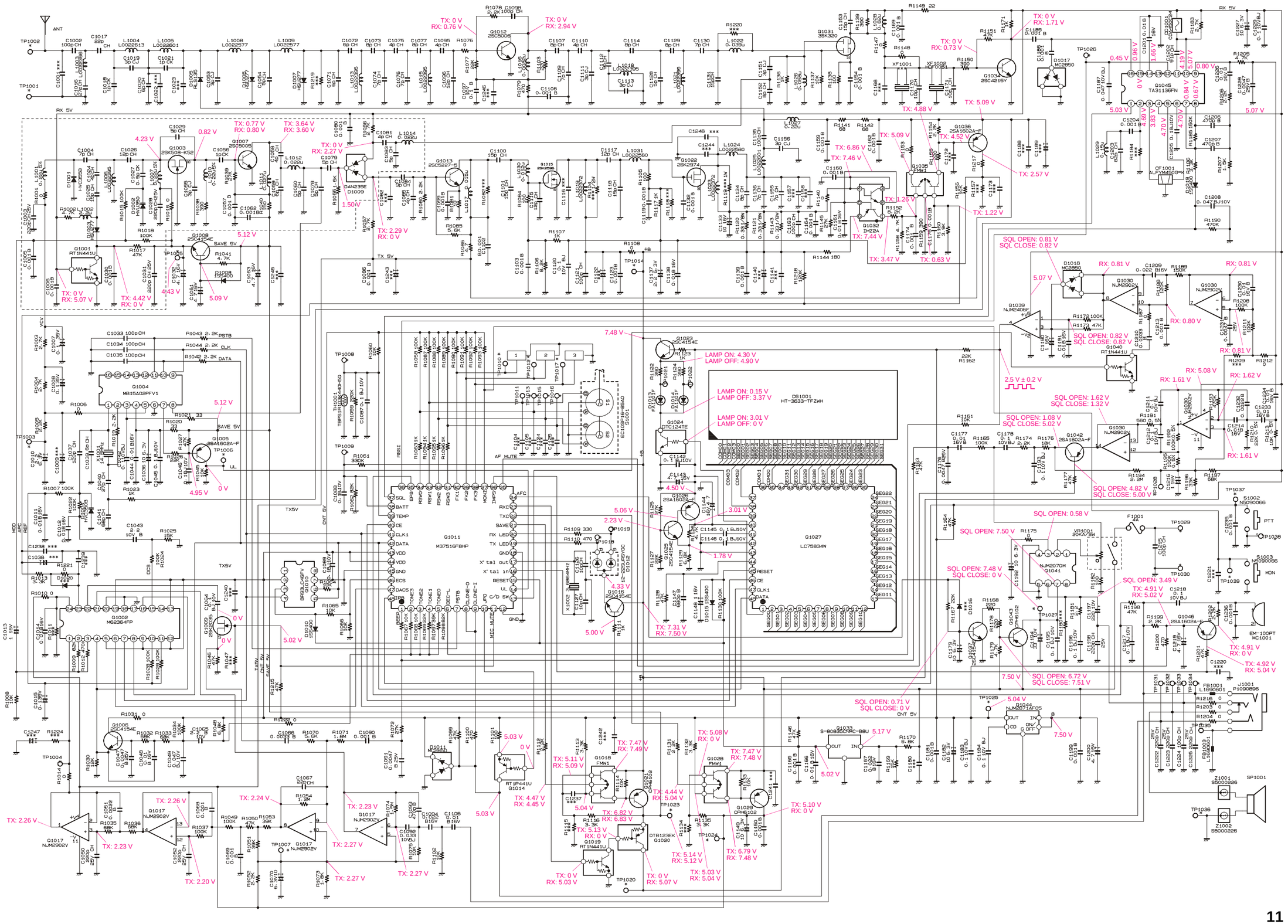
- ❒ Set the transceiver to CH 2 via the "CH" box located on the upper left corner on the "Alignment" window previously.
- ❒ To adjustment, double-click the left mouse button on the "**DCS Deviation**" box to open the pop-up window, then move the slide bar to adjust the ±0.4 kHz (±0.05 kHz) deviation.
- ❒ Press the "OK" box to lock in the new data.

This completes the internal alignment routine. To save all settings and exit, press the "OK" box.

Alignment

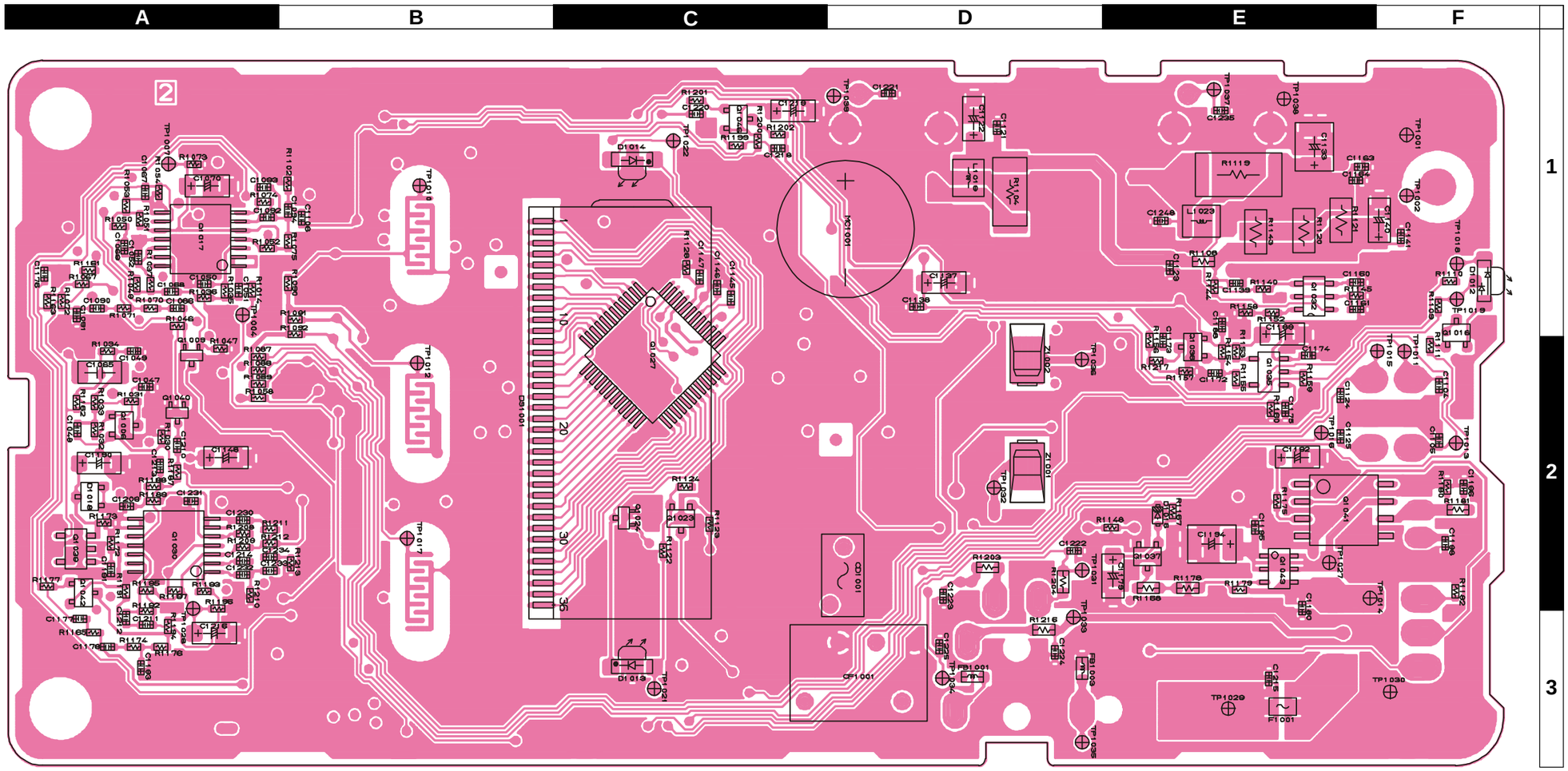
Note:

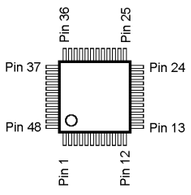
MAIN Unit Circuit Diagram



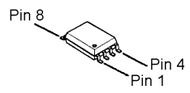
Note

Side A

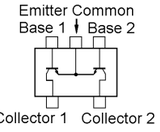




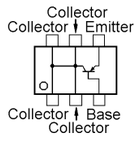
LC75834W
(Q1027)



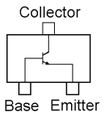
NJM2070M
(Q1041)



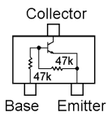
FMW1 (W1)
(Q1035)



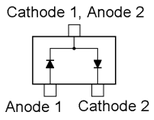
CPH6102 (AB)
(Q1043)



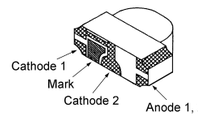
2SC4154E (LE)
(Q1006, 1016
1023, 1037)



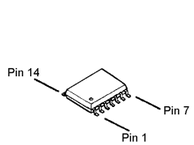
RT1N441U (N3)
(Q1040)



MC2850 (A7)
(D1018)



12-22SURSYGC/S530-A2/TR8
(D1012)



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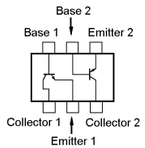
(Q1039)
NJM2902V
(Q1017, 1030)



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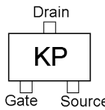
(Q1032)



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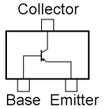
(Q1009)



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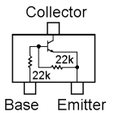
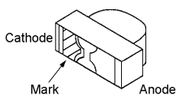
(Q1036, 1042)



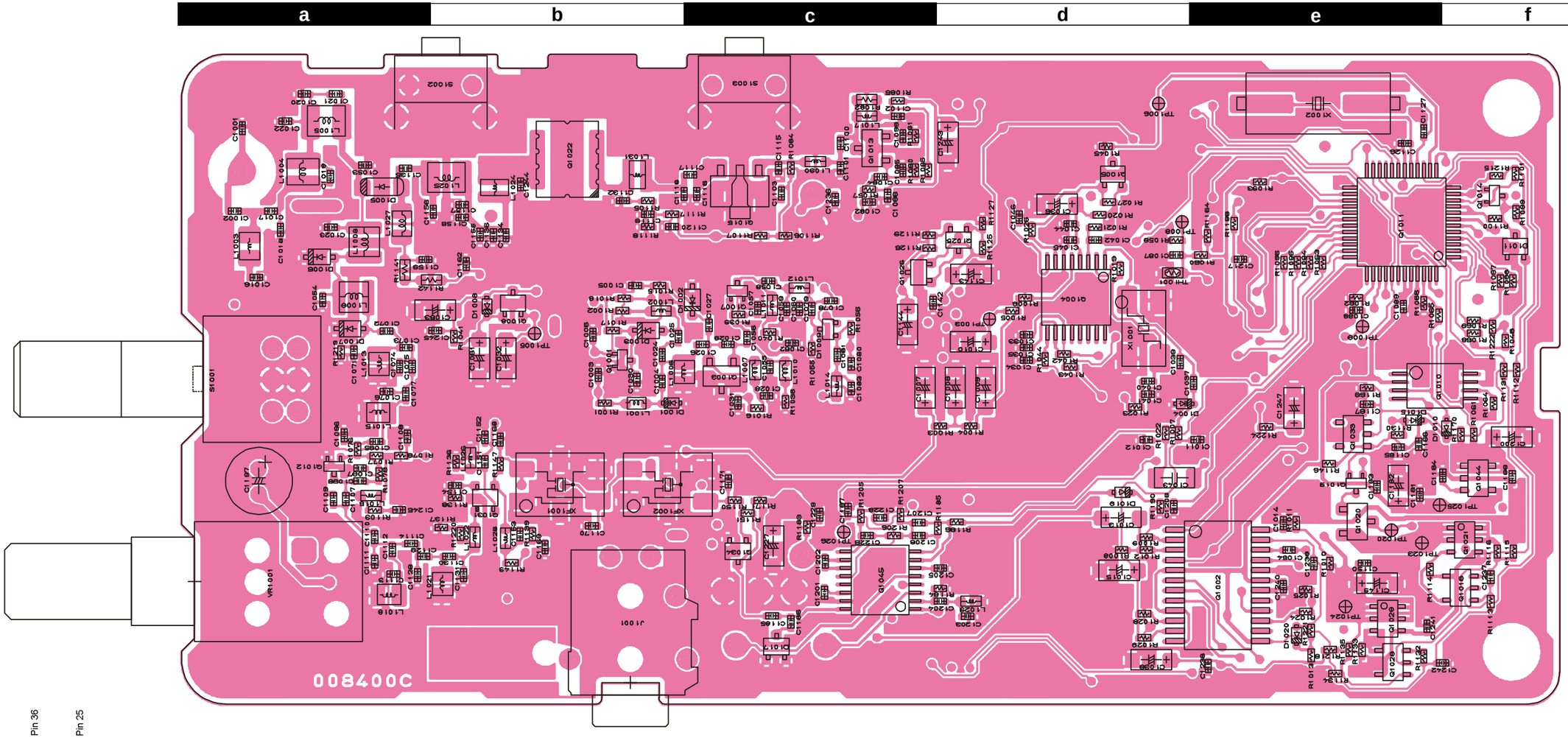
DTC124TE (25)
(Q1024)

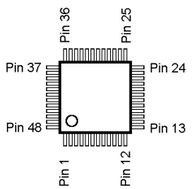


FA1101F
(D1013, 1018)

MAIN Unit Parts Layout

Side B





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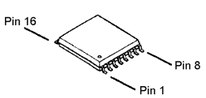

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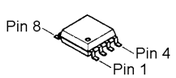

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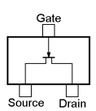
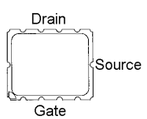


2SK508 (K52)
(Q1003)



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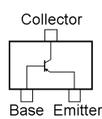

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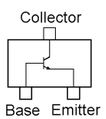
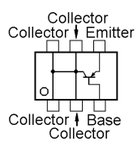
(Q1005, 1026)



2SC4154E (LE)
(Q1008, 1025)
2SC4215Y (QY)
(Q1034)
2SC5005 (73)
(Q1007)
2SC5006 (24)
(Q1012)
2SC5227 (LN)
(Q1013)



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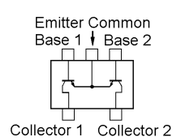
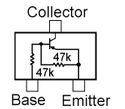
(Q1021, 1029)



FMW1 (W1)
(Q1018, 1028)



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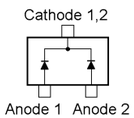
(Q1014)



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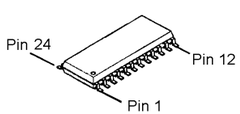
(D1009)



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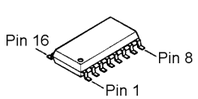
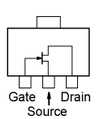
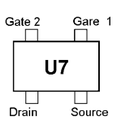


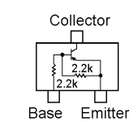
MB15A02PFV1
(Q1004)



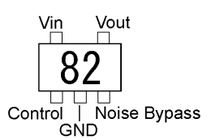
2SK2596 (BX)
(Q1015)



3SK320 (U7)
(Q1031)



DTB123EK (F12)
(Q1020)



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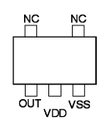
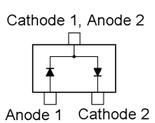
(Q1044)



S-80835
(Q1033)



MC2850 (A7)
(D1011, 1017)

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
	PCB with Components					CB2039001				
	Printed Circuit Board				AC041N000	FR0084000		1-		
C 1002	CHIP CAP.	100pF	50V	CH	UMK105CH101JW-F	K22178282		1-	B	a1
C 1003	CHIP CAP.	220pF	25V	CH	TMK105CH221JW-F	K22148246		1-	B	b2
C 1004	CHIP CAP.	6pF	50V	CH	GRM36CH060B50PT	K22178293		1-	B	b2
C 1005	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	b1
C 1006	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	b2
C 1007	CHIP TA.CAP.	0.1uF	35V		TESVA1V104M1-8R	K78160025		1-	B	c2
C 1008	CHIP TA.CAP.	0.1uF	35V		TESVA1V104M1-8R	K78160025		1-	B	d2
C 1010	CHIP TA.CAP.	2.2uF	6.3V		TESVA0J225M1-8R	K78080009		1-	B	d2
C 1011	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	e2
C 1012	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	d2
C 1013	CHIP TA.CAP.	1uF	16V		TESVA1C105M1-8R	K78120009		1-	B	d2
C 1014	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	e2
C 1015	CHIP TA.CAP.	0.1uF	35V		TESVA1V104M1-8R	K78160025		1-	B	d3
C 1016	CHIP CAP.	27pF	50V	CH	UMK105CH270JW-F	K22178268		1-	B	a1
C 1017	CHIP CAP.	22pF	50V	CH	UMK105CH220JW-F	K22178266		1-	B	a1
C 1018	CHIP CAP.	1pF	50V	CK	UMK105CK010CW-F	K22178248		1-	B	a1
C 1019	CHIP CAP.	3pF	50V	CJ	UMK105CJ030CW-F	K22178251		1-	B	a1
C 1020	CHIP CAP.	6pF	50V	CH	UMK105CH060DW-F	K22178254		1-	B	a1
C 1021	CHIP CAP.	1pF	50V	CK	UMK105CK010CW-F	K22178248		1-	B	a1
C 1024	CHIP CAP.	4pF	50V	CH	GRM36CH040B50PT	K22178291		1-	B	b2
C 1025	CHIP CAP.	15pF	50V	CH	UMK105CH150JW-F	K22178262		1-	B	b2
C 1026	CHIP CAP.	12pF	50V	CH	UMK105CH120JW-F	K22178260		1-	B	c2
C 1027	CHIP CAP.	0.5pF	50V	CK	GRM36CK0R5B50PT	K22178285		1-	B	c2
C 1028	CHIP CAP.	220pF	25V	CH	TMK105CH221JW-F	K22148246		1-	B	c2
C 1029	CHIP CAP.	5pF	50V	CH	UMK105CH050CW-F	K22178253		1-	B	c2
C 1030	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	b2
C 1031	CHIP CAP.	220pF	25V	CH	TMK105CH221JW-F	K22148246		1-	B	c2
C 1032	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	b2
C 1033	CHIP CAP.	100pF	50V	CH	UMK105CH101JW-F	K22178282		1-	B	d2
C 1034	CHIP CAP.	100pF	50V	CH	UMK105CH101JW-F	K22178282		1-	B	d2
C 1035	CHIP CAP.	100pF	50V	CH	UMK105CH101JW-F	K22178282		1-	B	d2
C 1036	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	d1
C 1037	CHIP CAP.	120pF	50V	CH	UMK105CH121JW-F	K22178284		1-	B	e2
C 1039	CHIP CAP.	6pF	50V	CH	UMK105CH060DW-F	K22178254		1-	B	d2
C 1040	CHIP CAP.	27pF	50V	CH	UMK105CH270JW-F	K22178268		1-	B	d2
C 1041	CHIP CAP.	68pF	50V	CH	UMK105CH680JW-F	K22178278		1-	B	d2
C 1042	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	B	d1
C 1043	CHIP CAP.	2.2uF	10V	B	GRM42-6B225K10PT	K22101801		1-	B	d2
C 1044	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	d1
C 1045	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	B	d1
C 1046	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	B	d1
C 1047	CHIP CAP.	0.0047uF	25V	B	TMK105B472KW-F	K22148831		1-	A	A2
C 1048	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	A2
C 1049	CHIP CAP.	0.047uF	10V	BJ	LMK105BJ473KV-F	K22108805		1-	A	A2
C 1050	CHIP CAP.	220pF	25V	CH	TMK105CH221JW-F	K22148246		1-	A	A1
C 1051	CHIP CAP.	0.0022uF	50V	B	UMK105B222KW-F	K22178833		1-	A	A1
C 1052	CHIP CAP.	220pF	25V	CH	TMK105CH221JW-F	K22148246		1-	A	A1
C 1053	CHIP CAP.	3pF	50V	CJ	UMK105CJ030CW-F	K22178251		1-	B	a1
C 1054	CHIP CAP.	5pF	50V	CH	UMK105CH050CW-F	K22178253		1-	B	a1
C 1055	CHIP CAP.	3pF	50V	CJ	UMK105CJ030CW-F	K22178251		1-	B	c2
C 1056	CHIP CAP.	1pF	50V	CK	GRM36CK010B50PT	K22178287		1-	B	c2
C 1057	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	c2
C 1058	CHIP CAP.	4pF	50V	CH	UMK105CH040CW-F	K22178252		1-	B	c1
C 1059	CHIP CAP.	6pF	50V	CH	UMK105CH060DW-F	K22178254		1-	B	c2
C 1060	CHIP CAP.	5pF	50V	CH	UMK105CH050CW-F	K22178253		1-	B	c2
C 1061	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	b2
C 1062	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	c2
C 1063	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	b2
C 1064	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	B	e2
C 1065	CHIP CAP.	2.2uF	10V	B	GRM42-6B225K10PT	K22101801		1-	A	A2
C 1066	CHIP CAP.	0.0033uF	50V	B	UMK105B332KW-F	K22178835		1-	A	A1
C 1067	CHIP CAP.	22pF	50V	CH	UMK105CH220JW-F	K22178266		1-	A	A1
C 1068	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	A	A1
C 1069	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	A	A1
C 1070	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	A	A1
C 1071	CHIP CAP.	6pF	50V	CH	UMK105CH060DW-F	K22178254		1-	B	a2
C 1072	CHIP CAP.	6pF	50V	CH	UMK105CH060DW-F	K22178254		1-	B	a2
C 1073	CHIP CAP.	8pF	50V	CH	UMK105CH080DW-F	K22178256		1-	B	a2
C 1074	CHIP CAP.	7pF	50V	CH	UMK105CH070DW-F	K22178255		1-	B	a2
C 1075	CHIP CAP.	4pF	50V	CH	UMK105CH040CW-F	K22178252		1-	B	a2
C 1076	CHIP CAP.	7pF	50V	CH	UMK105CH070DW-F	K22178255		1-	B	a2
C 1077	CHIP CAP.	8pF	50V	CH	UMK105CH080DW-F	K22178256		1-	B	a2
C 1078	CHIP CAP.	5pF	50V	CH	UMK105CH050CW-F	K22178253		1-	B	c1
C 1079	CHIP CAP.	5pF	50V	CH	UMK105CH050CW-F	K22178253		1-	B	c2

MAIN Unit Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
C 1080	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	c2
C 1081	CHIP CAP.	4pF	50V	CH	UMK105CH040CW-F	K22178252		1-	B	c2
C 1083	CHIP CAP.	5pF	50V	CH	UMK105CH050CW-F	K22178253		1-	B	c2
C 1084	CHIP CAP.	9pF	50V	CH	UMK105CH090DW-F	K22178257		1-	B	c1
C 1086	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	c1
C 1087	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	B	d1
C 1088	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	B	e2
C 1089	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	B	e2
C 1090	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	A	A1
C 1091	CHIP CAP.	0.0047uF	25V	B	TMK105B472KW-F	K22148831		1-	A	A1
C 1092	CHIP CAP.	0.033uF	10V	BJ	LMK105BJ333KV-F	K22108804		1-	A	A1
C 1093	CHIP CAP.	470pF	50V	B	UMK105B471KW-F	K22178825		1-	A	A1
C 1094	CHIP CAP.	0.022uF	16V	B	EMK105B223KW-F	K22128813		1-	A	B1
C 1095	CHIP CAP.	4pF	50V	CH	UMK105CH040CW-F	K22178252		1-	B	a2
C 1096	CHIP CAP.	12pF	50V	CH	UMK105CH120JW-F	K22178260		1-	B	a2
C 1097	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	a2
C 1098	CHIP CAP.	100pF	50V	CH	UMK105CH101JW-F	K22178282		1-	B	a2
C 1099	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	c1
C 1100	CHIP CAP.	15pF	50V	CH	UMK105CH150JW-F	K22178262		1-	B	c1
C 1101	CHIP CAP.	15pF	50V	CH	UMK105CH150JW-F	K22178262		1-	B	c1
C 1102	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	c1
C 1103	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	c1
C 1106	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B1
C 1107	CHIP CAP.	8pF	50V	CH	UMK105CH080DW-F	K22178256		1-	B	a2
C 1108	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	a2
C 1109	CHIP CAP.	7pF	50V	CH	UMK105CH070DW-F	K22178255		1-	B	a2
C 1110	CHIP CAP.	5pF	50V	CH	UMK105CH050CW-F	K22178253		1-	B	a2
C 1111	CHIP CAP.	3pF	50V	CJ	UMK105CJ030CW-F	K22178251		1-	B	a3
C 1112	CHIP CAP.	9pF	50V	CH	UMK105CH090DW-F	K22178257		1-	B	a2
C 1113	CHIP CAP.	3pF	50V	CJ	UMK105CJ030CW-F	K22178251		1-	B	a3
C 1114	CHIP CAP.	8pF	50V	CH	UMK105CH080DW-F	K22178256		1-	B	a2
C 1115	CHIP CAP.	10pF	50V	CH	UMK105CH100DW-F	K22178258		1-	B	c1
C 1117	CHIP CAP.	12pF	50V	CH	UMK105CH120JW-F	K22178260		1-	B	c1
C 1118	CHIP CAP.	12pF	50V	CH	UMK105CH120JW-F	K22178260		1-	B	b1
C 1119	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	b1
C 1120	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	B	b1
C 1121	CHIP CAP.	100pF	50V	CH	UMK105CH101JW-F	K22178282		1-	A	D1
C 1123	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	A	E1
C 1126	CHIP CAP.	10pF	50V	CH	UMK105CH100DW-F	K22178258		1-	B	e1
C 1127	CHIP CAP.	10pF	50V	CH	UMK105CH100DW-F	K22178258		1-	B	e1
C 1128	CHIP CAP.	5pF	50V	CH	UMK105CH050CW-F	K22178253		1-	B	a3
C 1129	CHIP CAP.	8pF	50V	CH	UMK105CH080DW-F	K22178256		1-	B	a2
C 1130	CHIP CAP.	7pF	50V	CH	UMK105CH070DW-F	K22178255		1-	B	b2
C 1131	CHIP CAP.	15pF	50V	CH	UMK105CH150JW-F	K22178262		1-	B	b3
C 1132	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	b1
C 1133	CHIP TA.CAP.	10uF	16V		TEMSVB21C106M-8R	K78120025		1-	A	E1
C 1134	CHIP CAP.	15pF	50V	CH	UMK105CH150JW-F	K22178262		1-	B	b1
C 1135	CHIP CAP.	100pF	50V	CH	UMK105CH101JW-F	K22178282		1-	B	a1
C 1136	CHIP CAP.	7pF	50V	CH	UMK105CH070DW-F	K22178255		1-	B	b1
C 1137	CHIP TA.CAP.	2.2uF	6.3V		TESVA0J225M1-8R	K78080009		1-	A	D1
C 1138	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	D1
C 1139	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	A	E1
C 1142	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	B	c1
C 1143	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	d1
C 1144	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	c2
C 1145	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	A	C1
C 1146	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	A	C1
C 1147	CHIP CAP.	680pF	50V	B	UMK105B681KW-F	K22178827		1-	A	C1
C 1148	CHIP TA.CAP.	1uF	16V		TESVA1C105M1-8R	K78120009		1-	A	A2
C 1149	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	e3
C 1150	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	e3
C 1151	CHIP CAP.	3pF	50V	CJ	UMK105CJ030CW-F	K22178251		1-	B	b2
C 1152	CHIP CAP.	8pF	50V	CH	UMK105CH080DW-F	K22178256		1-	B	b2
C 1153	CHIP CAP.	15pF	50V	CH	UMK105CH150JW-F	K22178262		1-	B	b2
C 1154	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	b2
C 1155	CHIP CAP.	7pF	50V	CH	UMK105CH070DW-F	K22178255		1-	B	b1
C 1156	CHIP CAP.	3pF	50V	CJ	UMK105CJ030CW-F	K22178251		1-	B	a1
C 1159	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	a1
C 1160	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	A	E1
C 1161	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	E1
C 1162	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	b1
C 1163	CHIP CAP.	100pF	50V	CH	UMK105CH101JW-F	K22178282		1-	A	E1
C 1164	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	A	E1
C 1165	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	e2
C 1166	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	e2
C 1167	CHIP CAP.	0.022uF	16V	B	EMK105B223KW-F	K22128813		1-	B	e2

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
C 1169	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	b2
C 1170	CHIP CAP.	10pF	50V	CH	UMK105CH100DW-F	K22178258		1-	B	b2
C 1171	CHIP CAP.	10pF	50V	CH	UMK105CH100DW-F	K22178258		1-	B	c2
C 1174	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	A	E2
C 1175	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	A	E2
C 1176	CHIP CAP.	0.0047uF	25V	B	TMK105B472KW-F	K22148831		1-	A	A1
C 1177	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	A3
C 1178	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	A	A3
C 1179	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	A	E2
C 1181	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	e2
C 1182	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	e2
C 1183	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	B	e2
C 1184	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	B	e2
C 1185	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	c3
C 1186	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	c3
C 1187	CHIP CAP.	0.047uF	10V	BJ	LMK105BJ473KV-F	K22108805		1-	B	c2
C 1190	CHIP TA.CAP.	1uF	16V		TESVA1C105M1-8R	K78120009		1-	A	A2
C 1191	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	A2
C 1192	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	A	E2
C 1193	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	A	A3
C 1194	CHIP TA.CAP.	22uF	16V		TEMSVB21C226M-8R	K78120028		1-	A	E2
C 1195	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	A	E2
C 1196	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	A	F2
C 1197	AL.ELECTRO.CAP.	220uF	10V		SMG1AVB221M 220UF	K40109027		1-	B	a2
C 1198	CHIP CAP.	220pF	25V	CH	TMK105CH221JW-F	K22148246		1-	A	F2
C 1199	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	f2
C 1200	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	f2
C 1201	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	c3
C 1202	CHIP CAP.	91pF	50V	CH	UMK105CH910JW-F	K22178281		1-	B	c3
C 1203	CHIP CAP.	82pF	50V	CH	UMK105CH820JW-F	K22178280		1-	B	d3
C 1204	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	d3
C 1205	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	B	d3
C 1206	CHIP CAP.	470pF	50V	B	UMK105B471KW-F	K22178825		1-	B	c2
C 1207	CHIP CAP.	470pF	50V	B	UMK105B471KW-F	K22178825		1-	B	c2
C 1208	CHIP CAP.	0.047uF	10V	BJ	LMK105BJ473KV-F	K22108805		1-	B	d2
C 1209	CHIP CAP.	0.022uF	16V	B	EMK105B223KW-F	K22128813		1-	A	A2
C 1210	CHIP CAP.	0.0033uF	50V	B	UMK105B332KW-F	K22178835		1-	A	A2
C 1211	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	A	A3
C 1212	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	A	A3
C 1213	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	A	A2
C 1214	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	A2
C 1215	CHIP CAP.	100pF	50V	CH	UMK105CH101JW-F	K22178282		1-	A	E3
C 1216	CHIP TA.CAP.	1uF	16V		TESVA1C105M1-8R	K78120009		1-	A	A3
C 1217	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	B	e1
C 1218	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	A	C1
C 1219	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	A	C1
C 1222	CHIP CAP.	220pF	25V	CH	TMK105CH221JW-F	K22148246		1-	A	D2
C 1223	CHIP CAP.	220pF	25V	CH	TMK105CH221JW-F	K22148246		1-	A	D2
C 1224	CHIP CAP.	100pF	50V	CH	UMK105CH101JW-F	K22178282		1-	A	D3
C 1225	CHIP CAP.	220pF	25V	CH	TMK105CH221JW-F	K22148246		1-	A	D3
C 1226	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	c2
C 1227	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	c2
C 1228	CHIP CAP.	0.0047uF	25V	B	TMK105B472KW-F	K22148831		1-	B	c2
C 1229	CHIP CAP.	0.1uF	10V	BJ	LMK105BJ104KV-F	K22108806		1-	B	c2
C 1230	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	A2
C 1231	CHIP CAP.	0.0047uF	25V	B	TMK105B472KW-F	K22148831		1-	A	A2
C 1232	CHIP CAP.	0.0022uF	50V	B	UMK105B222KW-F	K22178833		1-	A	A2
C 1233	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	A2
C 1234	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	A2
C 1235	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	A	E1
C 1236	CHIP CAP.	0.001uF	50V	B	UMK105B102KW-F	K22178829		1-	B	c1
C 1246	CHIP CAP.	220pF	25V	CH	TMK105CH221JW-F	K22148246		1-	B	a2
CD1001	CERAMIC DISC				CDA450C24	H7901430		1-	A	C2
CF1001	CERAMIC FILTER				ALFYM450G=K	H3900534		1-	A	C3
D 1001	DIODE				HVC355B(TAPE)	G2070588		1-	B	b2
D 1002	DIODE				HVU350TRF	G2070380		1-	B	c1
D 1003	DIODE				HSU277TRF	G2070118		1-	B	b2
D 1004	DIODE				HVC350B-TRF	G2070596		1-	B	d2
D 1005	DIODE				RLS135 TE-11	G2070128		1-	B	a1
D 1006	DIODE				HSU277TRF	G2070118		1-	B	a1
D 1007	DIODE				HSU277TRF	G2070118		1-	B	a2
D 1008	DIODE				1SS400 TE61	G2070634		1-	B	b2
D 1009	DIODE				DAN235E TL	G2070612		1-	B	c2
D 1010	DIODE				1SS400 TE61	G2070634		1-	B	f2
D 1011	DIODE				MC2850-T11-1	G2070704		1-	B	f1
D 1012	LED				12-22SURSYGC/S530-A2/TR8	G2070810		1-	A	F1

MAIN Unit Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
D 1013	LED				FA1101F-TR	G2070842		1-	A	C3
D 1014	LED				FA1101F-TR	G2070842		1-	A	C1
D 1015	DIODE				1SS400 TE61	G2070634		1-	B	e2
D 1017	DIODE				MC2850-T11-1	G2070704		1-	B	c3
D 1018	DIODE				MC2850-T11-1	G2070704		1-	A	A2
D 1019	DIODE				1SS400 TE61	G2070634		1-	B	d2
DS1001	LCD				HT-3633-TFZWH	G6090139		1-	A	C2
F 1001	CHIP FUSE	4A			KAB-2402-402NA31	Q0000086		1-	A	E3
FB1001	CHIP COI				BLM11P600SPT	L1690601		1-	A	D3
FB1003	CHIP COI				BLM11P600SPT	L1690601		1-	A	D3
J 1001	CONNECTOR				HSJ1594-010055	P1090896		1-	B	b3
JP1001	WIRE ASSY				ANTENNA CABLE	T9318161A		1-		
JP1001	WIRE ASSY				ANTENNA CABLE	T9318161B		5-		
L 1001	M.RFC	0.22uH		5%	C1608CA-R22J	L1691068		1-	B	b2
L 1002	M.RFC	2.2uH			LK1608 2R2K-T	L1690634		1-	B	b2
L 1003	COIL				E2 0.28-1.0-6T-R	L0022366		1-	B	a1
L 1004	COIL				E2 0.5-1.4-2.5T-L	L0022613		1-	B	a1
L 1005	COIL				E2 0.45-1.5-4.5T-L	L0022601		1-	B	a1
L 1006	COIL				E2 0.28-1.0-4.5T-R	L0022395		1-	B	b2
L 1007	M.RFC	0.22uH		5%	C1608CA-R22J	L1691068		1-	B	c2
L 1008	COIL				E2 0.35-1.6-4.5T-L	L0022577		1-	B	a1
L 1009	COIL				E2 0.35-1.6-4.5T-L	L0022577		1-	B	a1
L 1010	M.RFC	0.22uH		5%	C1608CA-R22J	L1691068		1-	B	c2
L 1011	M.RFC	0.027uH			HK1608 27NJ-T	L1690521		1-	B	c2
L 1012	M.RFC	0.022uH			HK1608 22NJ-T	L1690520		1-	B	c1
L 1013	COIL				E2 0.28-1.0-4.5T-R	L0022395		1-	B	a2
L 1014	M.RFC	0.022uH			HK1608 22NJ-T	L1690520		1-	B	c2
L 1015	COIL				E2 0.28-1.0-4.5T-R	L0022395		1-	B	a2
L 1016	M.RFC	0.0082uH			TFL0816-8N2	L1690490		1-	B	a2
L 1017	M.RFC	0.015uH			TFL0816-15	L1690493		1-	B	c1
L 1018	COIL				E2 0.28-1.0-4.5T-R	L0022395		1-	B	a3
L 1019	COIL				E2 0.3-1.7-7T-R	L0022372		1-	A	D1
L 1021	COIL				E2 0.28-1.0-4.5T-R	L0022395		1-	B	b3
L 1022	M.RFC	0.039uH			TFL0816-39	L1690498		1-	B	b2
L 1023	COIL				E2 0.3-1.7-7T-R	L0022372		1-	A	E1
L 1024	COIL	0.0033uH			AS050221-3R3NK	L0022635		1-	B	b1
L 1025	COIL				E2 0.45-1.5-4.5T-L	L0022601		1-	B	b1
L 1026	M.RFC	0.068uH			HK1608 68NJ-T	L1690526		1-	B	b2
L 1027	CHIP COIL	0.22uH			LQN21AR22J04	L1690600		1-	B	a1
L 1028	M.RFC	0.82uH			LK1608 R82K-T	L1690417		1-	B	b2
L 1029	M.RFC	0.15uH			HK1608 R15J-T	L1690938		1-	B	d3
L 1030	M.RFC	0.015uH			TFL0816-15	L1690493		1-	B	c1
L 1031	COIL				E2 0.4-1.3-2T-L	L0022580		1-	B	b1
MC1001	MIC. ELEMENT				EM-100PT	M3290029		1-	A	D1
Q 1001	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	B	b2
Q 1002	IC				M62364FP 600D	G1093033		1-	B	e3
Q 1003	FET				2SK508-T2B K52	G3805087B		1-	B	c2
Q 1004	IC				MB15A02PFV1-G-BND-EF	G1092541		1-	B	d1
Q 1005	TRANSISTOR				2SA1602A-T11-1F	G3116028F		1-	B	d1
Q 1006	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	A	A2
Q 1007	TRANSISTOR				2SC5005-T1	G3350058		1-	B	c1
Q 1008	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	B	b1
Q 1009	FET				2SK2035 TE85R	G3820357		1-	A	A2
Q 1010	IC				BR93LC46FV-WE2	G1093696		1-	B	e2
Q 1011	IC				M37516F8HP*	G1093678		1-	B	e1
Q 1012	TRANSISTOR				2SC5006-T1	G3350068		1-	B	a2
Q 1013	TRANSISTOR				2SC5227-5-TB	G3352278E		1-	B	c1
Q 1014	TRANSISTOR				RT1P441U-T11-1	G3070248		1-	B	f1
Q 1015	FET				2SK2596BXTL	G3825967		1-	B	c1
Q 1016	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	A	F2
Q 1017	IC				NJM2902V-TE1	G1091679		1-	A	A1
Q 1018	TRANSISTOR				FMW1 T98	G3070009		1-	B	f3
Q 1019	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	B	e2
Q 1020	TRANSISTOR				DTB123EK T146	G3070022		1-	B	e2
Q 1021	TRANSISTOR				CPH6102-TL	G3070223		1-	B	f2
Q 1022	FET				2SK2974-T11	G3829747		1-	B	b1
Q 1023	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	A	C2
Q 1024	TRANSISTOR				DTC124TE TL	G3070128		1-	A	C2
Q 1025	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	B	d1
Q 1026	TRANSISTOR				2SA1602A-T11-1F	G3116028F		1-	B	c1
Q 1027	IC				LC75834W	G1093288		1-	A	C2
Q 1028	TRANSISTOR				FMW1 T98	G3070009		1-	B	e3
Q 1029	TRANSISTOR				CPH6102-TL	G3070223		1-	B	e3
Q 1030	IC				NJM2902V-TE1	G1091679		1-	A	A2
Q 1031	FET				3SK320(TE85L)	G4803208		1-	B	b2
Q 1032	TRANSISTOR				IMZ2A T108	G3070060		1-	A	E1

*: Requires Firmware, CE53, and CT-42

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
Q 1033	IC				S-80835CNMC-B8U-T2	G1093606		1-	B	e2
Q 1034	TRANSISTOR				2SC4215Y TE85R	G3342157Y		1-	B	c2
Q 1035	TRANSISTOR				FMW1 T98	G3070009		1-	A	E2
Q 1036	TRANSISTOR				2SA1602A-T11-1F	G3116028F		1-	A	E2
Q 1037	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	A	E2
Q 1039	IC				NJM2406F-TE1	G1091452		1-	A	A2
Q 1040	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	A	A2
Q 1041	IC				NJM2070M(TE2)	G1092944		1-	A	E2
Q 1042	TRANSISTOR				2SA1602A-T11-1F	G3116028F		1-	A	A2
Q 1043	TRANSISTOR				CPH6102-TL	G3070223		1-	A	E2
Q 1044	IC				NJM2871AF05(TE1)	G1093658		1-	B	f2
Q 1045	IC				TA31136FN(EL)	G1091605		1-	B	c3
Q 1046	TRANSISTOR				2SA1602A-T11-1F	G3116028F		1-	A	C1
R 1001	CHIP RES.	10	1/16W	5%	RMC1/16S 100JTH	J24189001		1-	B	b2
R 1002	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	b2
R 1003	CHIP RES.	2.7k	1/16W	5%	RMC1/16S 272JTH	J24189030		1-	B	d2
R 1004	CHIP RES.	2.7k	1/16W	5%	RMC1/16S 272JTH	J24189030		1-	B	d2
R 1005	CHIP RES.	3.9k	1/16W	5%	RMC1/16S 392JTH	J24189032		1-	B	d2
R 1006	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	d1
R 1007	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	d2
R 1008	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	d2
R 1009	CHIP RES.	82k	1/16W	5%	RMC1/16S 823JTH	J24189048		1-	B	d2
R 1010	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	e3
R 1012	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	d2
R 1013	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	e3
R 1014	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	A1
R 1015	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	b1
R 1016	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	c2
R 1017	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	b2
R 1018	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	b1
R 1019	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	d1
R 1020	CHIP RES.	33	1/16W	5%	RMC1/16S 330JTH	J24189007		1-	B	d1
R 1021	CHIP RES.	33	1/16W	5%	RMC1/16S 330JTH	J24189007		1-	B	d1
R 1022	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	d2
R 1023	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	d2
R 1024	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	B	e3
R 1025	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	B	e3
R 1026	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	d1
R 1027	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	d1
R 1028	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	d3
R 1029	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	d3
R 1030	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	A	A2
R 1031	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	A2
R 1032	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	A	A2
R 1033	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	A	A2
R 1034	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	A2
R 1035	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	A	A1
R 1036	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	A	A1
R 1037	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	A1
R 1038	CHIP RES.	390	1/16W	5%	RMC1/16S 391JTH	J24189020		1-	B	c2
R 1039	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	B	c2
R 1040	CHIP RES.	150	1/16W	5%	RMC1/16S 151JTH	J24189015		1-	B	c2
R 1041	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	b2
R 1042	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	d2
R 1043	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	d2
R 1044	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	d2
R 1045	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	d1
R 1046	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	A1
R 1048	CHIP RES.	6.8k	1/16W	5%	RMC1/16S 682JTH	J24189035		1-	B	f2
R 1049	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	A1
R 1050	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	A1
R 1051	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	A	A1
R 1052	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	A1
R 1053	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	A	A1
R 1054	CHIP RES.	1.2M	1/16W	5%	RMC1/16S 125JTH	J24189062		1-	A	A1
R 1055	CHIP RES.	1.5k	1/16W	5%	RMC1/16S 152JTH	J24189027		1-	B	c2
R 1056	CHIP RES.	2.7k	1/16W	5%	RMC1/16S 272JTH	J24189030		1-	B	c2
R 1057	CHIP RES.	2.7k	1/16W	5%	RMC1/16S 272JTH	J24189030		1-	B	c1
R 1058	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	A2
R 1059	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	d1
R 1060	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	e1
R 1061	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	B	f2
R 1062	CHIP RES.	82k	1/16W	5%	RMC1/16S 823JTH	J24189048		1-	B	e1
R 1063	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	e1
R 1064	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	f2
R 1065	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	e2

MAIN Unit Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
R 1066	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	e1
R 1067	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	A1
R 1068	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	f2
R 1069	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	f2
R 1070	CHIP RES.	5.6k	1/16W	5%	RMC1/16S 562JTH	J24189034		1-	A	A1
R 1071	CHIP RES.	1.8M	1/16W	5%	RMC1/16S 185JTH	J24189064		1-	A	A1
R 1072	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	A	A1
R 1073	CHIP RES.	1.8k	1/16W	5%	RMC1/16S 182JTH	J24189028		1-	A	A1
R 1074	CHIP RES.	1.5M	1/16W	5%	RMC1/16S 155JTH	J24189063		1-	A	A1
R 1075	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	B1
R 1076	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	a2
R 1077	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	a2
R 1078	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	a2
R 1079	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	B	a2
R 1080	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	c1
R 1081	CHIP RES.	10	1/16W	5%	RMC1/16S 100JTH	J24189001		1-	B	c1
R 1084	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	c1
R 1085	CHIP RES.	5.6k	1/16W	5%	RMC1/16S 562JTH	J24189034		1-	B	c1
R 1086	CHIP RES.	4.7	1/16W	5%	RMC1/16S 4R7JTH	J24189066		1-	B	c1
R 1087	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	A2
R 1088	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	A2
R 1089	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	A2
R 1090	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	B1
R 1091	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	B1
R 1092	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	B2
R 1093	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	e1
R 1094	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	e1
R 1095	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	e1
R 1096	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	e1
R 1097	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	B	f1
R 1098	CHIP RES.	82k	1/16W	5%	RMC1/16S 823JTH	J24189048		1-	B	f1
R 1099	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	f1
R 1100	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	B	f1
R 1101	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	f1
R 1102	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	A	B1
R 1103	CHIP RES.	220	1/16W	5%	RMC1/16S 221JTH	J24189017		1-	B	a2
R 1105	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	b1
R 1106	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	c1
R 1107	CHIP RES.	6.8k	1/16W	5%	RMC1/16S 682JTH	J24189035		1-	B	c1
R 1108	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	E1
R 1109	CHIP RES.	330	1/16W	5%	RMC1/16S 331JTH	J24189019		1-	A	F1
R 1110	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	A	F1
R 1111	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	F2
R 1112	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	f2
R 1113	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	f3
R 1114	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	e3
R 1116	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	f2
R 1117	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	b1
R 1120	CHIP RES.	0.33	1/8W	10%	RMC1/8 R33KTP	J24219001		1-	A	E1
R 1121	CHIP RES.	0.33	1/8W	10%	RMC1/8 R33KTP	J24219001		1-	A	E1
R 1122	CHIP RES.	390	1/16W	5%	RMC1/16S 391JTH	J24189020		1-	A	C2
R 1123	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	C2
R 1124	CHIP RES.	390	1/16W	5%	RMC1/16S 391JTH	J24189020		1-	A	C2
R 1125	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	B	d1
R 1126	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	c1
R 1127	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	d1
R 1128	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	C1
R 1129	CHIP RES.	6.8k	1/16W	5%	RMC1/16S 682JTH	J24189035		1-	B	c1
R 1130	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	e2
R 1131	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	f2
R 1132	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	e3
R 1133	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	e3
R 1135	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	e3
R 1136	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	b2
R 1137	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	b2
R 1138	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	b2
R 1139	CHIP RES.	390	1/16W	5%	RMC1/16S 391JTH	J24189020		1-	B	b2
R 1140	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	E1
R 1141	CHIP RES.	68	1/16W	5%	RMC1/16 680JATP	J24185680		1-	B	a1
R 1142	CHIP RES.	68	1/16W	5%	RMC1/16 680JATP	J24185680		1-	B	a1
R 1143	CHIP RES.	0.33	1/8W	10%	RMC1/8 R33KTP	J24219001		1-	A	E1
R 1144	CHIP RES.	180	1/16W	5%	RMC1/16S 181JTH	J24189016		1-	A	E1
R 1145	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	A	E1
R 1146	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	e2
R 1147	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	b2
R 1148	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	E2

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
R 1149	CHIP RES.	22	1/16W	5%	RMC1/16S 220JTH	J24189005		1-	B	b3
R 1150	CHIP RES.	390	1/16W	5%	RMC1/16S 391JTH	J24189020		1-	B	c2
R 1151	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	c2
R 1152	CHIP RES.	8.2k	1/16W	5%	RMC1/16S 822JTH	J24189036		1-	A	E1
R 1153	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	E2
R 1154	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	E2
R 1155	CHIP RES.	220	1/16W	5%	RMC1/16S 221JTH	J24189017		1-	A	E2
R 1156	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	E2
R 1158	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	E1
R 1159	CHIP RES.	390	1/16W	5%	RMC1/16S 391JTH	J24189020		1-	A	E2
R 1160	CHIP RES.	3.9k	1/16W	5%	RMC1/16S 392JTH	J24189032		1-	A	E2
R 1161	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	A1
R 1162	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	A	A2
R 1163	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	A1
R 1164	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	e1
R 1165	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	A3
R 1167	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	A	E2
R 1168	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-	A	E2
R 1169	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	B	e2
R 1170	CHIP RES.	6.8k	1/16W	5%	RMC1/16S 682JTH	J24189035		1-	B	f2
R 1171	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	c2
R 1172	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	A2
R 1173	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	A2
R 1174	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	A3
R 1175	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	E2
R 1176	CHIP RES.	18k	1/16W	5%	RMC1/16S 183JTH	J24189040		1-	A	A3
R 1177	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	A2
R 1178	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-	A	E2
R 1179	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	E2
R 1181	CHIP RES.	2.2	1/16W	5%	RMC1/16 2R2JATP	J24185229		1-	A	F2
R 1182	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	A	F2
R 1183	CHIP RES.	2.7k	1/16W	5%	RMC1/16S 272JTH	J24189030		1-	B	c2
R 1185	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	B	c2
R 1186	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	d2
R 1187	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	A2
R 1188	CHIP RES.	120k	1/16W	5%	RMC1/16S 124JTH	J24189050		1-	A	A2
R 1189	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	A	A2
R 1190	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	B	d2
R 1191	CHIP RES.	680	1/16W	0.5%	RR0510P-681-D	J24189115		1-	A	A2
R 1192	CHIP RES.	100k	1/16W	0.5%	RR0510R-104-D	J24189167		1-	A	A3
R 1193	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	A	A2
R 1194	CHIP RES.	2.2M	1/16W	5%	RMC1/16S 225JTH	J24189065		1-	A	A3
R 1195	CHIP RES.	100k	1/16W	0.5%	RR0510R-104-D	J24189167		1-	A	A2
R 1196	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	A3
R 1197	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	A	A2
R 1198	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	e1
R 1199	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	C1
R 1200	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	A	C1
R 1201	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	C1
R 1202	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	C1
R 1203	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	D2
R 1204	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	D2
R 1205	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	c2
R 1206	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	c2
R 1207	CHIP RES.	1.5k	1/16W	5%	RMC1/16S 152JTH	J24189027		1-	B	c2
R 1208	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	A2
R 1210	CHIP RES.	22k	1/16W	0.5%	RR0510R-223-D	J24189151		1-	A	A2
R 1211	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	A2
R 1212	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	A2
R 1213	CHIP RES.	10k	1/16W	0.5%	RR0510P-103-D	J24189143		1-	A	B2
R 1215	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	f1
R 1216	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	D3
R 1217	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	E2
R 1218	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	B	e3
R 1221	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	e3
R 1222	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	f2
S 1001	ROTARY SWITCH				EC10SP16-85A0	Q9000764		1-	B	a2
S 1002	TACT SWITCH				SKHLLD	N5090066		1-	B	b1
S 1003	TACT SWITCH				SKHLLD	N5090066		1-	B	c1
TH1001	THERMISTOR				TBPS1R103K440H5Q	G9090067		1-	B	d1
VR1001	POT.				RK0971111 20KA/SW	J60800256		1-	B	a3
X 1001	XTAL SX-2112	14.6MHz			14.6MHZ	H0103260		1-	B	d2
X 1002	XTAL SX-1319	3.6864MHz			3.6864MHZ	H0103214		1-	B	e1
XF1002	XTAL FILTER				HDF0051 44.25M	H1102358		1-	B	b2
	SHIELD FINGER				3525 3100103	S5000226		1-	A	D2
	SHIELD FINGER				3525 3100103	S5000226		1-	A	D2

Note