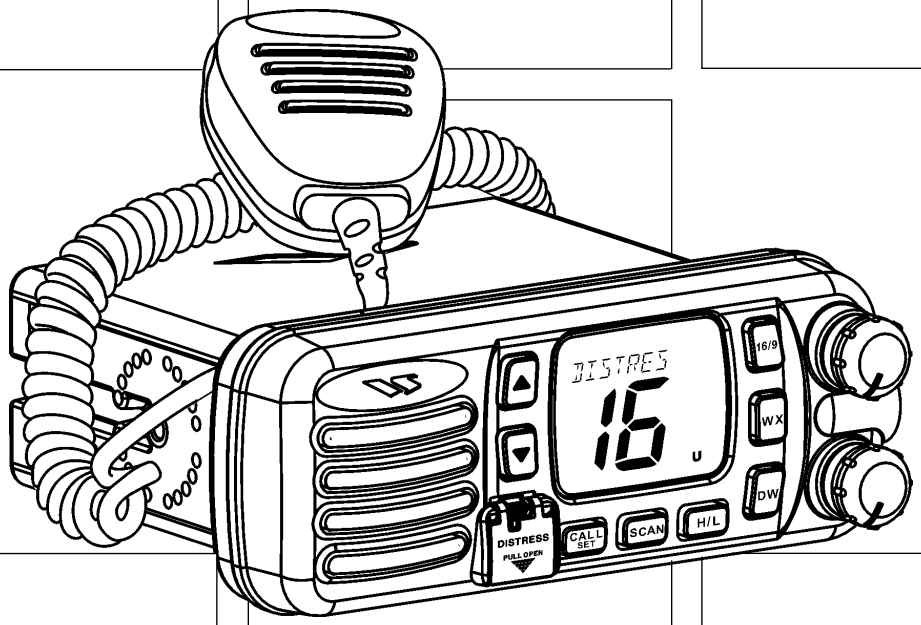
STANDARD HORIZON

25 Watt VHF/FM Marine Transceiver

QUEST+ GX1256S

SERVICE MANUAL



EM005N90A

Specifications

GENERAL

Channels:	All USA, International and Canadian
Input Voltage:	13.8 VDC ±20%
Current Drain:	Standby 0.5 A
	Receive 1.5 A
	Transmit 5.0 A (Hi); 1.5 A (Lo)
Dimensions:	2-1/2″ H x 6-5/16″ W x 6-5/16″ D (64 H x 160 W x 160 D mm)
Flush-Mount Dimensions:	2″ H x 5-5/16″ W x 5-1/8″ D (50 H x 136 W x 130 D mm)
Weight:	2.2 lbs (1 kg)

TRANSMITTER

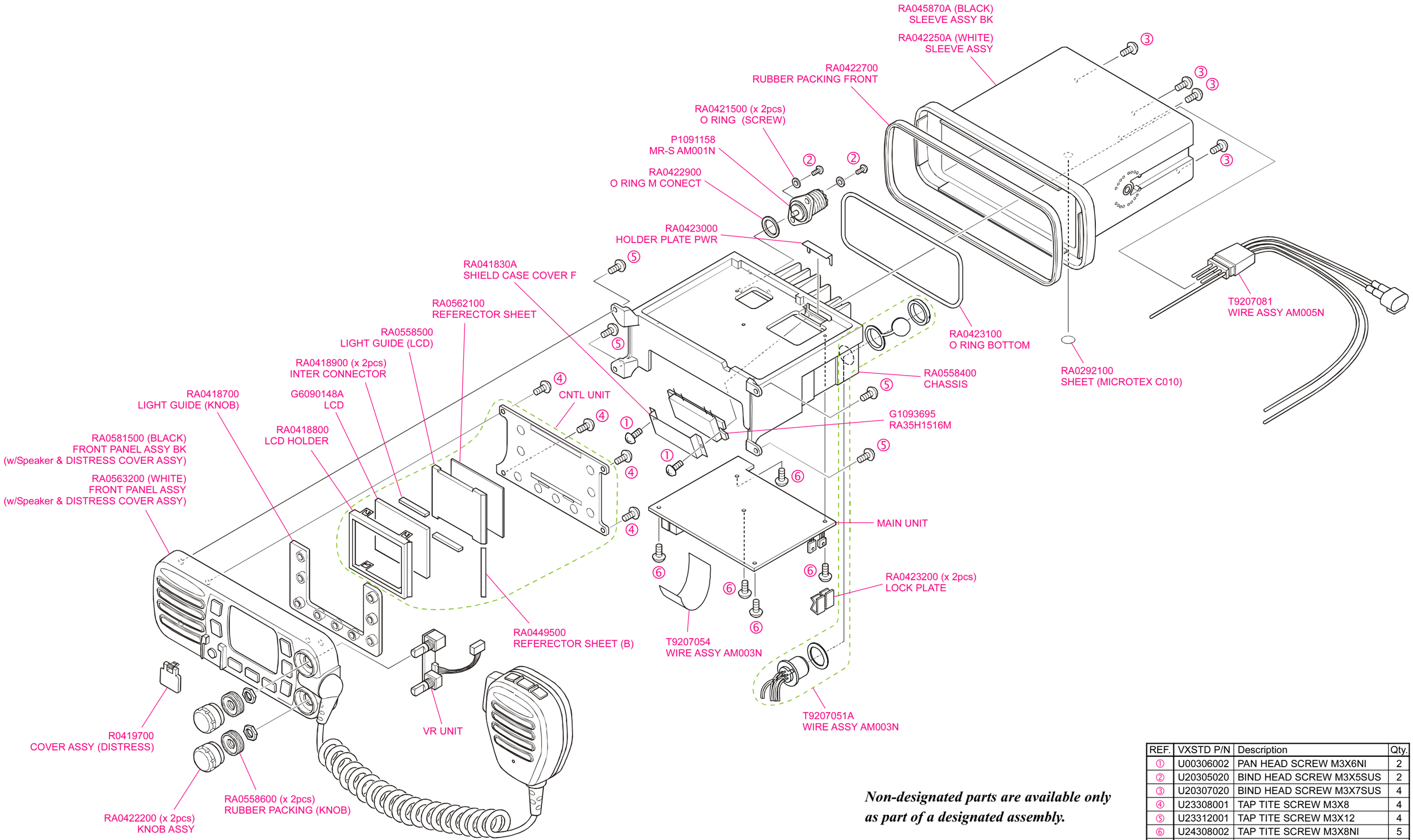
Frequency Range:	156.025 to 157.425 MHz
RF Output:	25 W (Hi); 1 W (Lo)
Conducted Spurious Emissions:	80 dB (Hi); 60 dB (Lo)
Audio Response:	within +1/–3 of a 6 dB/octave (pre-emphasis characteristic at 300 to 3000 Hz)
Audio Distortion:	5 %
Modulation:	16K0G3E, for DSC 16K0G2B
Frequency Stability:	±0.0005% (–20 °C to +50 °C)
FM Hum and Noise:	50 dB

RECEIVER

Frequency Range:	156.050 to 163.275 MHz
Sensitivity:	20 dB Quieting: 0.35 μV
	12 dB SINAD: 0.25 μV
	Squelch Sensitivity (Threshold): 0.13 μV
Modulation Acceptance Bandwidth:	±7.5 kHz
Selectivity:	Spurious and Image Rejection: –70 dB
	Intermodulation and Rejection at 12 dB SINAD: –70 dB
Audio Output:	4 W
Audio Response:	within + 2/–8 of a 6 dB/octave (de-emphasis characteristic at 300 to 3000 Hz)
Frequency Stability:	±0.0005 % (–20°C to +50°C)
Channel Spacing:	25 kHz
DSC Format:	RTCMSC101

Performance specifications are nominal, unless otherwise indicated, and are subject to change without notice.

Exploded View & Miscellaneous Parts

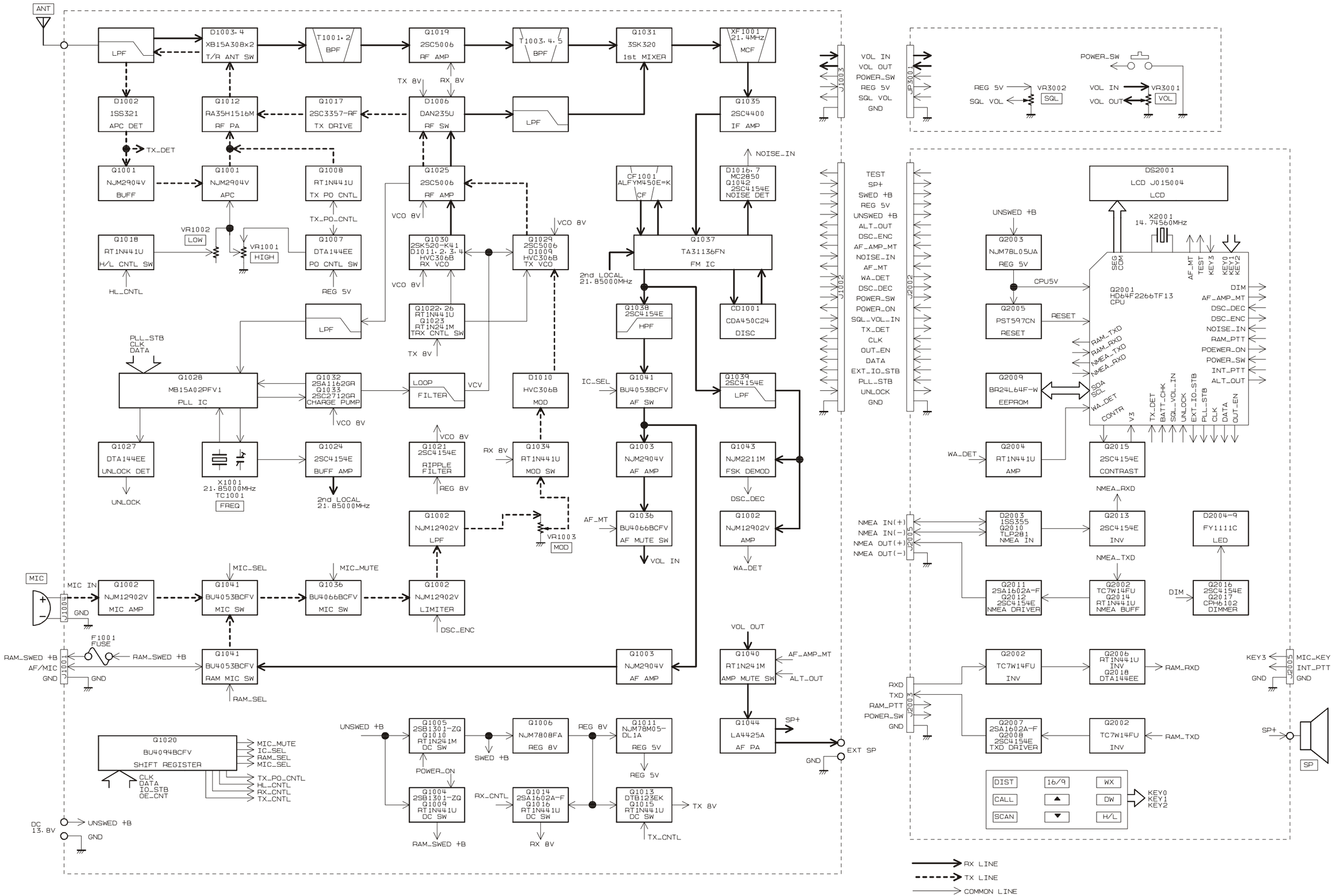


Non-designated parts are available only as part of a designated assembly.

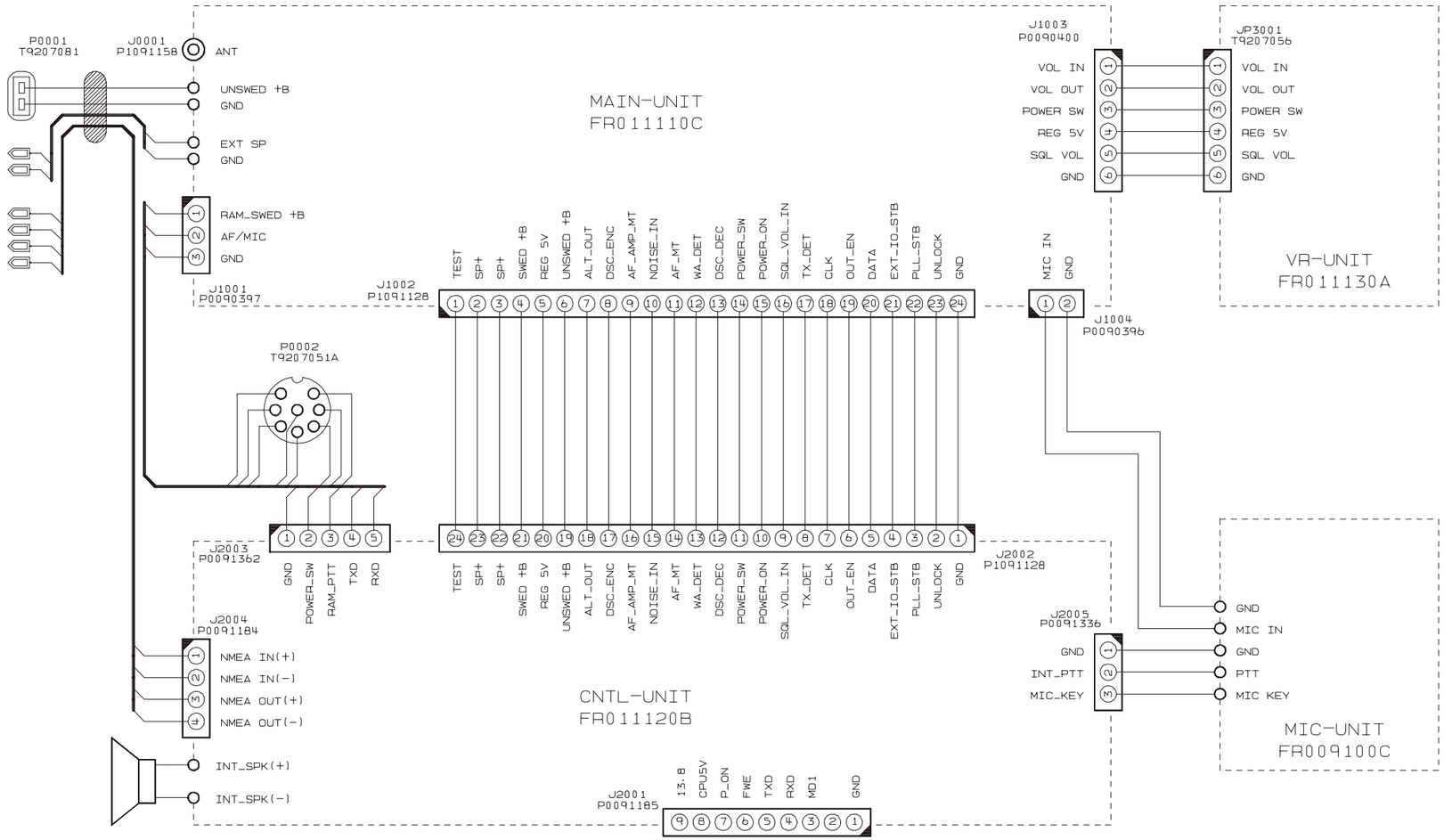
REF.	VXSTD P/N	Description	Qty.
①	U00306002	PAN HEAD SCREW M3X6NI	2
②	U20305020	BIND HEAD SCREW M3X5SUS	2
③	U20307020	BIND HEAD SCREW M3X7SUS	4
④	U23308001	TAP TITE SCREW M3X8	4
⑤	U23312001	TAP TITE SCREW M3X12	4
⑥	U24308002	TAP TITE SCREW M3X8NI	5
⑦	U40412220	TAP TITE SCREW 4X12SUS	2

Note

Block Diagram



Connection Diagram



Reception and transmission are switched by a shift register IC **Q1020** (**BU4094BCFV**) which is controlled by serial data lines from the CNTL Unit. The receiver uses double-conversion superheterodyne circuitry, with a 21.4 MHz 1st IF and 450 kHz 2nd IF. The 1st local is produced by a PLL synthesizer, yielding the 21.4 MHz 1st IF. The 2nd local uses a 21.850 MHz crystal oscillator, yielding the 450 kHz 2nd IF. The 2nd mixer and other circuits use a custom IC to convert and amplify the 2nd IF and detect FM to obtain demodulated signals. During transmit, the PLL synthesizer oscillates at the desired frequency directly, for amplification to obtain RF power output. During transmit, voice modulation is applied to this synthesizer. Transceiver functions, such as TX/RX control, PLL synthesizer settings, and channel programming, are controlled using the MPU.

Receiver

Incoming RF signals from the antenna connector are delivered to the RF Unit, and pass through a low-pass filter (LPF) consisting of coils and capacitors, and antenna switching diodes **D1003** and **D1004** (both **XB15A308**) for delivery to the receiver front end.

Signals within the frequency range of the transceiver are then passed through a bandpass filter consisting of T1001 and T1002 before RF amplification by **Q1019** (**2SC5006**).

The amplified RF is then bandpass filtered again by T1003, T1004, and T1005, to ensure pure in-band input to 1st mixer **Q1031** (**3SK320**).

Buffered output from the VCO Unit is amplified by **Q1025** (**2SC5006**) and low-pass filtered by L1013, L1014, C1133, C1144 and C1150, to provide a pure 1st local signal between 134.65 and 140.625 MHz for delivery to the 1st mixer.

The 21.4 MHz 1st mixer product then passes through dual monolithic crystal filter XF1001 (±6.5 kHz BW), and is amplified by **Q1035** (**2SC4400-3**) and delivered to the input of the FM IF subsystem IC **Q1037** (**TA31136FN**). This IC contains the 2nd mixer, 2nd local oscillator, limiter amplifier, FM detector, noise amplifier, and squelch gates.

The 2nd local in the IF-IC is produced from crystal X1001 (21.850 MHz), and the 1st IF is converted to 450 KHz by the 2nd mixer and stripped of unwanted components by ceramic filter CF1001.

After passing through a limiter amplifier, the signal is demodulated by the FM detector. Demodulated receive audio from the IF-IC is amplified by **Q1038** (**2SC4154E**), then the signal is through the AF selector switch **Q1041** (**BU4053BCFV**). The selected signal is amplified by **Q1003** (**NJM2904V**), then this signal passes through the AF Mute switch **Q1036** (**BU4066BCFV**).

After volume adjustment by the AF power amplifier **Q1044** (**LA4425A**), the audio signal is passed to the external Speaker terminal in the accessory cable and 16 Ω internal loudspeaker.

PLL Synthesizer

The 1st LO maintains stability from the PLL synthesizer by using a 21.850 MHz reference signal from crystal X1001. PLL synthesizer IC **Q1028** (**MB15A02PFV1**) consists of a prescaler, reference counter, swallow counter, programmable counter, a serial data input port to set these counters based on the external data, a phase comparator, and a charge pump.

The PLL-IC divides the 21.850 MHz reference signal by 1784 using the reference counter (12.5 kHz comparison frequency). The VCO output is divided by the prescaler, swallow counter and programmable counter. These two signals are compared by the phase comparator, and applied to the external charge pump which is comprised of **Q1032** (**2SA1162GR**), **Q1033** (**2SC2712GR**) and **D1007** (**HZU5ALL**).

A voltage proportional to their phase difference is delivered to the low-pass filter circuit, then fed back to the VCO as a voltage with phase error, controlling and stabilizing the oscillating frequency. This synthesizer also operates as a modulator during transmit.

The RX VCO is consisted of **Q1030** (**2SK520-K41**) and varactor diodes **D1011/1012/1013/1014** (all **HVC306B**), which oscillates at 21.4 MHz below from the receving frequency. The TX VCO is consisted of **Q1029** (**2SC5006**) and varactor diode **D1009** (**HVC306B**), which oscillates the fundamental transmit frequency during a transmit, with direct frequency-modulation using varactor diode **D1010** (**HVC306B**).

The VCO output passes through buffer amplifier **Q1025** (**2SC5006**) to obtain stable output.

The VCO DC supply is regulated by **Q1021** (**2SC4154E**). Synthesizer output is fed to the 1st mixer by diode switch **D1006** (**DAN235U**) during receive, and to drive amplifiers **Q1017** (**2SC3357-RF**), and **Q1012** (**RA35H1516M**) for transmit.

The reference oscillator feeds the PLL synthesizer.

Transmitter

Voice audio from the microphone is delivered via the MIC connector to the RF Unit. After passing through amplifier **Q1002** (**NJM12902V**), a pre-emphasis network, limiter (IDC: instantaneous deviation control), and LPF **Q1002** (**NJM12902V**), the audio is adjusted for optimum deviation level and delivered to the next stage.

Circuit Description

Voice or DSC (Digital Selective Calling) encode signal inputs from the LPF **Q1002** (**NJM12902V**) is FM-modulated in the VCO of the synthesizer. Synthesizer output, after passing through diode switch **D1006** (**DAN235U**), is amplified by driver **Q1017** (**2SC3357-RF**), and RF power amplifier **Q1012** (**RA35H1516M**) to obtain full RF output.

The RF energy then passes through antenna switch **D1003** (**XB15A308**) and a low-pass filter circuit and finally to the antenna connector.

RF output power from the final amplifier is sampled by C1009 and C1012 and is rectified by **D1002** (**1SS321**). The resulting DC is fed through Automatic Power Controllers **Q1001** (**NJM2904V**) to transmitter RF power amplifier **Q1012** (**RA35H1516M**), thus providing positive control of the power output.

Generation of spurious products by the transmitter is minimized by the fundamental carrier frequency being equal to the final transmitting frequency, modulated directly in the transmit VCO. Additional harmonic suppression is provided by a low-pass filter consisting of coils and capacitors, resulting in more than 70 dB of harmonic suppression prior to delivery of the RF energy to the antenna.

DSC Encoder/ Decoder

Encoder

The DCS (Digital Selective Calling) encode signal which D/A converted in the 8-bit MPU IC **Q2001** (**HD64F2266TF13**) is fed through the low-pass filter **Q1002** (**NJM12902V**) on the RF Unit to the VCO.

Decoder

The receiving DCS code is demodulated by the FM IC **Q1037** (**TA31136FN**), then fed through the low-pass filter **Q1039** (**2SC4154E**) to the DCS Decoder IC **Q1043** (**NJM2211M**) which the receiving DCS code is decoded. The decoded DCS signal delivered to the 8-bit MPU IC **Q2001** (**HD64F2266TF13**).

1050 Hz Weather Alert Decoder

1050Hz Weather Alert signals are demodulated on the CNTL Unit, and are applied to low-pass filter **Q1039** (**2SC4154E**), and pass thorugh the limiter comparator **Q1002** (**NJM12902V**).

MPU

Operation is controlled by 8-bit MPU IC **Q2001** (**HD64F2266TF13**). The system clock uses a 14.74560 MHz crystal for a time base. IC **Q2005** (**PST597CN**) resets the MPU when the power is on, and monitors the voltage of the regulated 5V power supply line.

EEPROM

The EE-PROM **Q2009** (**BR24L64F**) retains TX and RX data for all memory channels , prescaler dividing, IF frequency, local oscillator injection side, and reference oscillator data.

The **GX1256S** has been carefully aligned at the factory for the specified performance across the marine band.

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 Standard Horizon 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 Standard Horizon 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 Standard Horizon 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, Standard Horizon, a division of 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

- ❒ RF Signal Generator with calibrated output level at 200 MHz
- ❒ Deviation Meter (linear detector)
- ❒ AF Millivoltmeter
- ❒ SINAD Meter
- ❒ Inline Wattmeter with 5% accuracy at 200 MHz
- ❒ Regulated DC Power Supply: 13.8 VDC, 10A
- ❒ 50-ohm Non-reactive Dummy Load: 30W at 200 MHz
- ❒ Frequency Counter: >0.1 ppm accuracy at 200 MHz
- ❒ AF Signal Generator
- ❒ DC Voltmeter: high impedance
- ❒ VHF Sampling Coupler
- ❒ AF Dummy Load: 4 Ohms, 10 W
- ❒ Oscilloscope
- ❒ Spectrum Analyzer
- ❒ GX1255S Marine Transceiver

Alignment Preparation & Precautions

A dummy load and inline wattmeter must be connected to the main antenna jack in all procedures that call for transmission. 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.

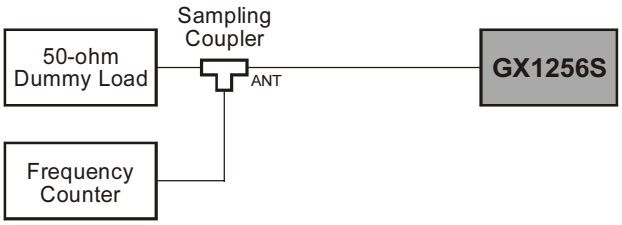
Correct alignment requires that the ambient temperature be the same as that of the transceiver and test equipment, and that this temperature be held constant between 68 °F and 86 °F (20 °C and 30 °C). When the transceiver is brought into the shop from hot or cold air it should be allowed some time for thermal equalization with the environment before alignment. If 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).

Alignment

Reference Frequency Adjustment

❒ Setup the test equipment as shown below.



❒ Set the channel to CH16;

❒ press the [**H/L**(**POS**)] key to set the transceiver power to "LOW";

❒ while pressing the **PTT** switch, adjust **TC1001** so that the RF frequency is 156.80000 MHz ±50 Hz.

Receiver Front-end Adjustment

Adjust the receiver front-end coil as the following procedure:

❒ Setup the test equipment as shown below.

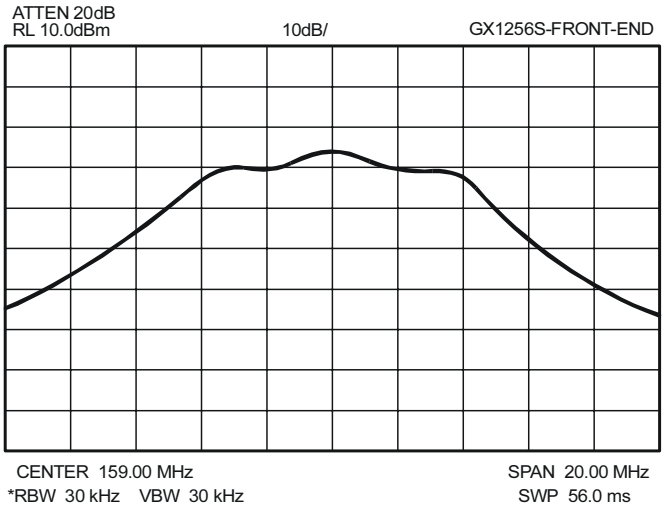
❒ Set the center frequency of the spectrum analyzer to 159.00 MHz, set SPAN to 20.00 MHz, set RBW and VBW to 30 kHz.

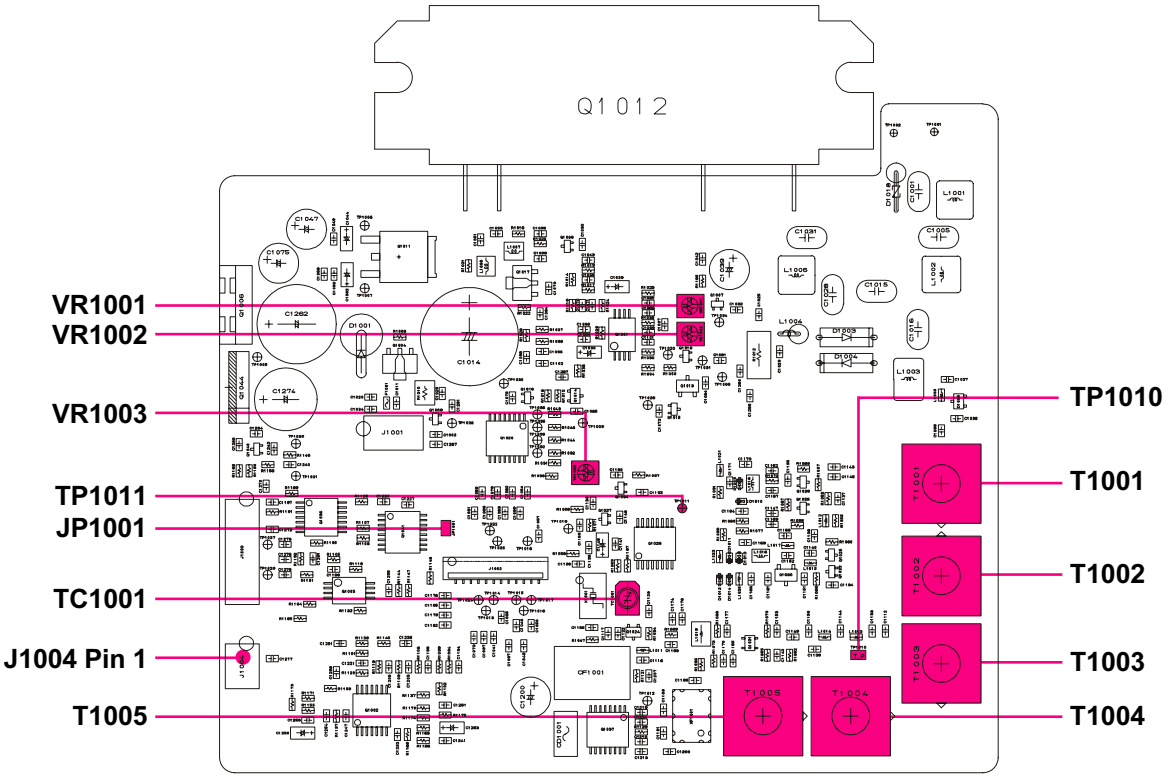
❒ Adjust **T1001**, **T1002**, **T1003**, **T1004**, and **T1005** until the wave form shown at the right is obtained.

Note: Adjust the output of the tracking generator so that RF AMP and spectrum analyzer will not saturate.

Figure shows the reference wave form. The wave form varies with measuring instruments. It is impotent to take the lowest possible value at the stop band near 150 MHz and the highest possible value at the band near 156 MHz.

Each coil shall be adjusted at the range between the initial condition and right and left revolving.





MAIN UNIT ALIGNMENT POINT

Software Alignment Mode

The "Software Alignment Mode" has been build in the microprocessor in order to adjust the performance of transceiver.

Starting Software Alignment Mode

- ❒ Turn the transceiver's power off.
- ❒ Short the TEST point (**JP1001**).
- ❒ Press and hold the **PWR/VOL** knob until the ratio turns on while pressing and holding the [**H/L**(**POS**)] and [**DISTRESS**] keys.
- ❒ Confirm that the LCD displays "ALIGNMENT".

Squelch Adjustment

- ❒ Press the [**SCAN**(**MEM**)] key to display "THRESH."
- ❒ Set the RF signal generator output to 156.8000 MHz, at a level of –12 dBμ, ±3.0 kHz deviation with 1 kHz audio tone.
- ❒ Press the [**DW**(**IC**)] key to obtain the sample value.
- ❒ Press the [**CALL/SET**(**MENU**)] key to save the new setting.
- ❒ Press the [**SCAN**(**MEM**)] key to display "TIGHT."
- ❒ Set the RF signal generator output to 156.8000 MHz, at a level of +5 dBμ, ±3.0 kHz deviation with 1 kHz audio tone.
- ❒ Press the [**DW**(**IC**)] key to obtain the sample value.
- ❒ Press the [**CALL/SET**(**MENU**)] key to save new setting.
- ❒ Press and hold the [**DISTRESS**] key for 2 seconds to save all settings.
- ❒ Turn the transceiver's power off.

Overview of Test Mode

The test mode has been build in the microprocessor in order to adjust and comfirm the performance of transceiver.

The purpose is to adjust transceiver simply and to confirm the performance of transceiver smoothly.

(a) Expansion channels "EXP01 - EXP07" will be set as follows:

DISPLAY	RX FREQUENCY	TX FREQUENCY	SCAN
EXP01	156.050 MHz	156.050 MHz	X
EXP02	—	157.425 MHz	X
EXP03	163.275 MHz	—	X
EXP04	155.050 MHz	155.050 MHz	O
EXP05	162.025 MHz	162.025 MHz	X
EXP06	163.575 MHz	158.975 MHz	X
EXP07	159.050 MHz	159.050 MHz	X
WX10	163.275 MHz	—	O

(B) In CH70, ever time you are in transmit mode, (every time you press PTT), the following test tone can be outputted:
1st transmission: Synthetic tone of 1300 Hz and 2100 Hz
2nd transmission: 1300 Hz
3rd transmission: 2100 Hz
4th transmission: No modulation
5th transmission: Return to 1st transmission

(C) Scan the channels between WX10 and EXP04 in the SCAN mode.

(D) EXP07 is the test channel for the NMEA output.

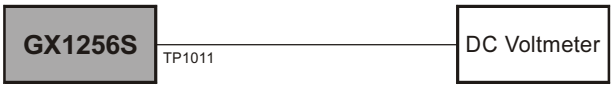
Starting Test Mode

Confirm that **PWR/VOL** switch is off, and short the TEST points (**JP1001**). Turn on the **PWR/VOL** switch while press and holding the [**DISTRESS**] and [**DW**(**IC**)] keys.

Confirmation of VCO

— Confirmation —

- ❒ Connect the DC voltmeter to the test point (**TP1011**).



- ❒ Use the [▲(**UP**)]/[▼(**DOWN**)] key to set the channel to **EXP04**, confirm that voltage on the test point is over 0.8 V in the receive and transmit mode.
- ❒ Use the [▲(**UP**)]/[▼(**DOWN**)] key to set the channel to **EXP05**, confirm that voltage on the test point is below 5.5 V in the transmit mode.
- ❒ Use the [▲(**UP**)]/[▼(**DOWN**)] key to set the channel to **EXP06**, confirm that voltage on the test point is below 5.5 V in the receive mode.

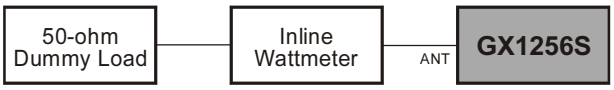
Alignment

Adjustment and Confirmation of Transmit Power

Adjust power at high and low in the transmit mode, and confirm power in the specified bandwidth.

— Adjustment —

❒ Connect the wattmeter and 50-ohm dummy load to the antenna jack.



❒ Use the [**H/L**(**POS**)] key to set transceiver to ***high power*** and set the channel to **CH16**. With the **PTT** switch pressed, adjust **VR1001** so that RF power is 25 W.

❒ Use the [**H/L**(**POS**)] key to set transceiver to ***low power*** and set the channel to **CH16**. With the **PTT** switch pressed, adjust **VR1002** so that RF power is 0.8 W.

— Confirmation —

❒ Use the [**H/L**(**POS**)] key to set transceiver to ***high power*** and set the channel to **EXP01**. With the **PTT** switch pressed, confirm that RF power is between 23 W and 27 W.

❒ Use the [**H/L**(**POS**)] key to set transceiver to ***low power***. With the **PTT** switch pressed, confirm that RF power is between 0.5 W and 1.0 W.

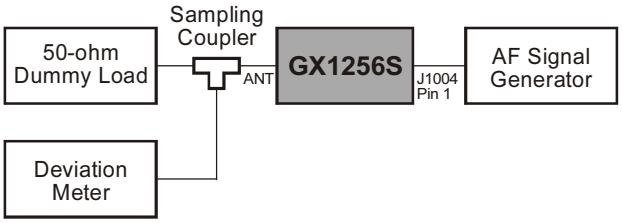
❒ As descried above, confirm RF power at **EXP04** and **EXP05**. Set transceiver to ***high power*** and confirm that RF power is between 23 W and 27 W. Set transceiver to ***low power*** and confirm that RF power is between 0.5 W and 1.0 W.

Adjustment and Confirmation of Deviation

Adjust deviation in the transmit mode.

— Adjustment —

❒ Setup the test equipment as shown below.



❒ Set the channel to **CH16**.

❒ Set the output of the audio generator (AG) to 1 kHz and 150 mV.

❒ With the **PTT** switch pressed, adjust **VR1003** so that the maximum deviation is ±4.2 kHz.

❒ Decrease the output level of AG by 20 dB (the output level of AG should be 1/10).

❒ With the **PTT** switch pressed, adjust the output level of AG so that the deviation is ±3.0 kHz.

❒ Increase the output level of AG by 20 dB (10 times of the output level of AG), confirm that maximum deviation is between ±4.0 kHz and ±5.0 kHz.

— Confirmation —

❒ Set the output of the AG to 1 kHz and 150 mV.

❒ Set the channel to **EXP01**, confirm that maximum deviation is between ±4.0 kHz and ±5.0 kHz.

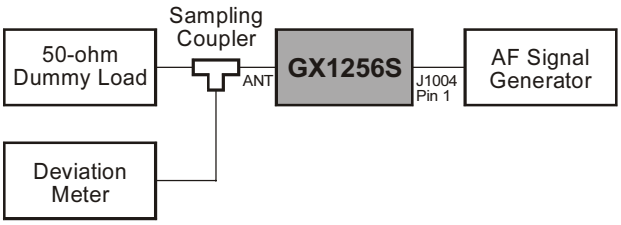
❒ Set the channel to **EXP02**, confirm that maximum deviation is between ±4.0 kHz and ±5.0 kHz.

❒ Set the channel to **EXP04**, confirm that maximum deviation is between ±4.0 kHz and ±5.0 kHz.

❒ Set the channel to **EXP05**, confirm that maximum deviation is between ±4.0 kHz and ±5.0 kHz.

Confirmation of the DSC Encoder

❒ Setup the test equipment as shown below.



❒ Set the channel to **CH70**.

❒ With the **PTT** switch pressed, confirm that the first tone deviation is ±3.8 kHz to ±4.4 kHz.

Confirmation of Weather Alert Tone

In the weather channel mode, when transceiver receives the specific emergency tone (1050 Hz), weather alert tone will be output (Weather Alert Operation). The Weather Alert mode will be active when a NOAA weather channel is in memory and radio is in memory scan or P-scan mode.

— Confirmation —

❒ Connect the standard signal generator (SSG) to the antenna jack.

❒ Squelch position set to tight.

❒ Press the [**SCAN**(**MEM**)] key and start to Memory Scan mode.

❒ Set the SSG to 163.275 MHz (WX10) and output level of the SSG to 20 dBμV, ±3.0 kHz deviation with 1050 Hz tone modulation.

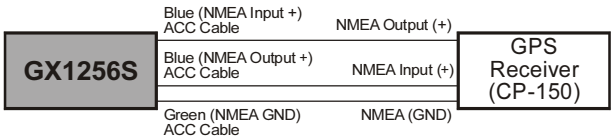
❒ Set the output of the SSG to ON.

❒ Confirm that the channel of transceiver stops at WX10 and the transceiver outputs the weather alert.

Confirmation of receive/transmit NMEA data

Input the NMEA format data output from the GPS receiver to NMEA Input terminal (Blue wire of the ACC Cable) of transceiver and display it to the LCD of the transceiver.

❒ Setup the test equipment as shown below.



❒ Set the channel to **EXP07**.

❒ Press and hold the [**DW**(**IC**)] key, confirm that the position data is displayed on the LCD of transceiver.

❒ Press the **PTT** switch, confirm that the position data is transmitted.

Confirmation of DSC Operation

— Confirmation —

❒ Prepare the confirmation transceiver (GX1255S).

❒ Input below data to the confirmation transceiver in advance.
- Input "TEST" to NAME of INDIVIDUAL DIRECTORY
- Input "123456789" to MMSI of INDIVIDUAL DIRECTORY
- Input "123456780" to local MMSI
- Channel 13 in U.S.A. mode

❒ Setup the test transceiver as follows:
- Channel 21 in U.S.A.

❒ In 3 seconds, send the INDIVIDUAL CALL from the conformation transceiver.

❒ Confirm that the test transceiver receives the INDIVIDUAL CALL from the conformation transceiver and outputs the beep.
Press the [**CALL/SET**(**MENU**)] key of the test transceiver and turn off the beep.
Simultaneously, confirm that "123456780" of conformation transceiver's MMSI is displayed in the LCD of the test transceiver.

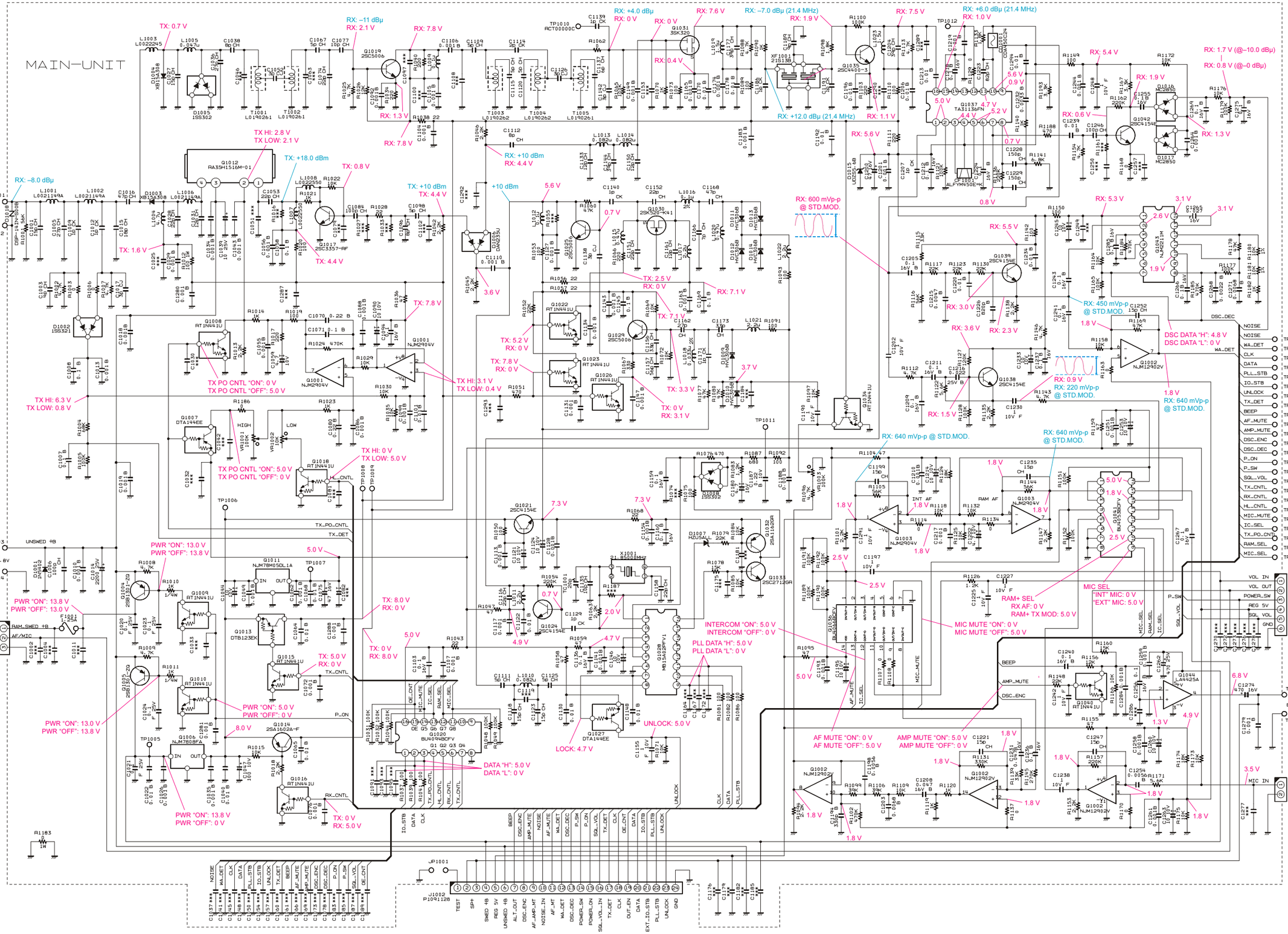
❒ Confirm that the conformation transceiver receives the response from the test transceiver and outputs beep.
Press the [**CALL/SET**(**MENU**)] key of the conformation transceiver and turn off the beep.
Simultaneously, confirm that "TEST" of test transceiver's MMSI is displayed in the LCD of the conformation transceiver.

Alignment

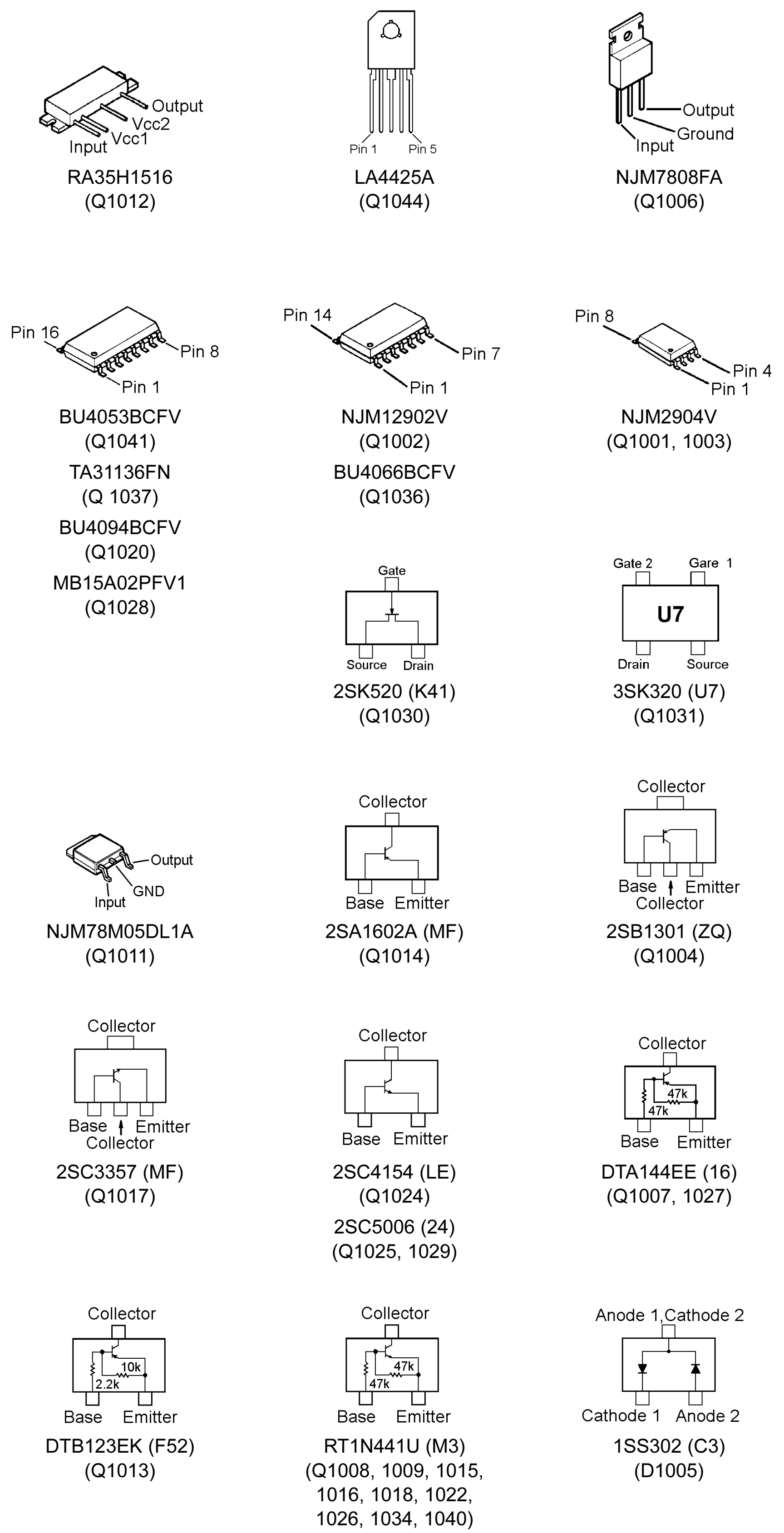
Note

MAIN Unit

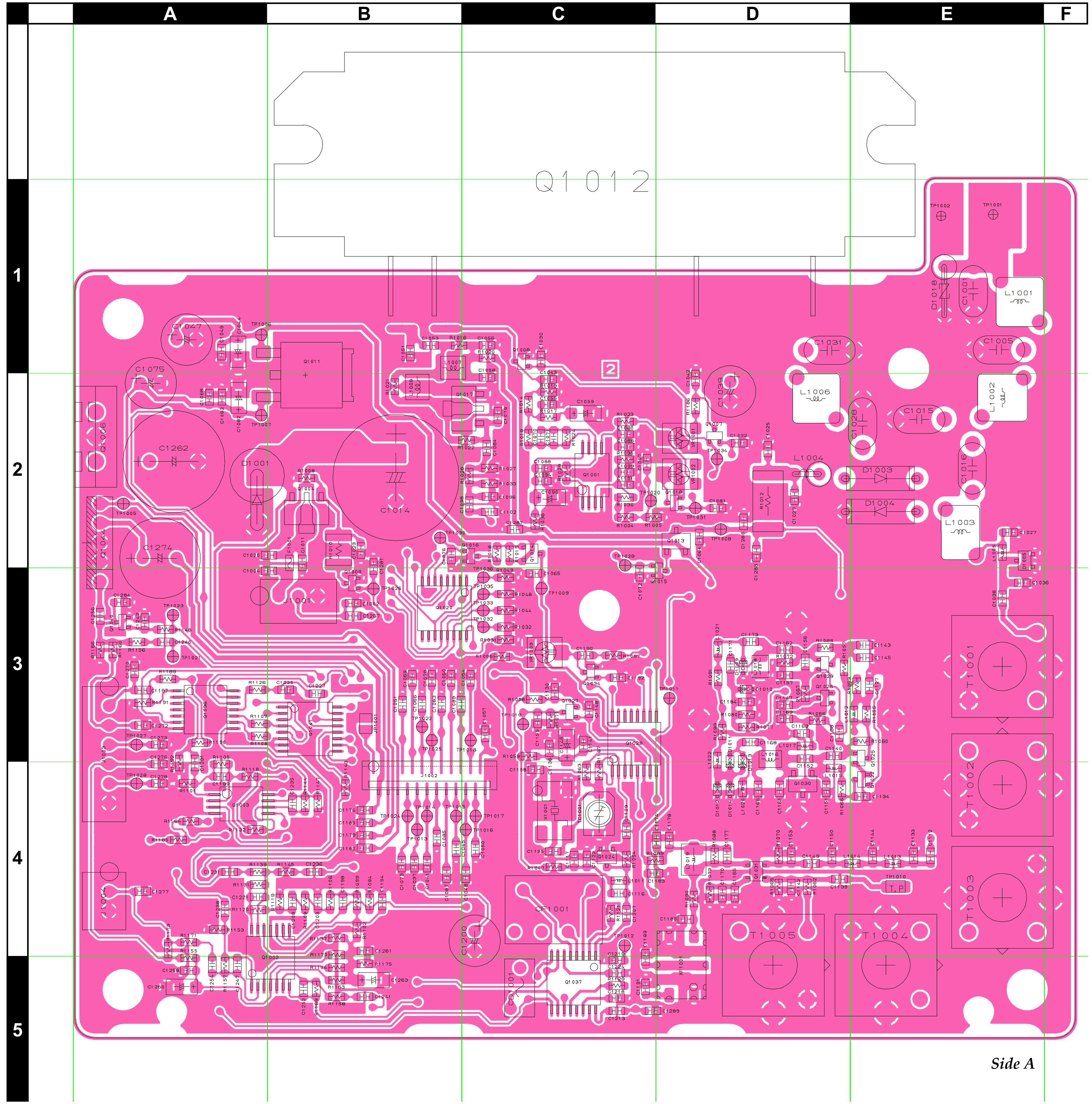
Circuit Diagram



Note



Output
Vcc2
Vcc1
Input
RA35H1516
(Q1012)
Pin 1
Pin 5
LA4425A
(Q1044)
Output
Ground
Input
NJM7808FA
(Q1006)
Pin 16
Pin 8
Pin 1
BU4053BCFV
(Q1041)
TA31136FN
(Q 1037)
BU4094BCFV
(Q1020)
MB15A02PFV1
(Q1028)
Pin 14
Pin 7
Pin 1
NJM12902V
(Q1002)
BU4066BCFV
(Q1036)
Pin 8
Pin 4
Pin 1
NJM2904V
(Q1001, 1003)
Gate
Source
Drain
2SK520 (K41)
(Q1030)
Gate 2
Gare 1
U7
Drain
Source
3SK320 (U7)
(Q1031)
Output
GND
Input
NJM78M05DL1A
(Q1011)
Collector
Base
Emitter
2SA1602A (MF)
(Q1014)
Collector
Base
Emitter
Collector
2SB1301 (ZQ)
(Q1004)
Collector
Base
Emitter
Collector
2SC3357 (MF)
(Q1017)
Collector
Base
Emitter
2SC4154 (LE)
(Q1024)
2SC5006 (24)
(Q1025, 1029)
Collector
47k
47k
Base
Emitter
DTA144EE (16)
(Q1007, 1027)
Collector
10k
2.2k
Base
Emitter
DTB123EK (F52)
(Q1013)
Collector
47k
47k
Base
Emitter
RT1N441U (M3)
(Q1008, 1009, 1015,
1016, 1018, 1022,
1026, 1034, 1040)
Anode 1, Cathode 2
Cathode 1
Anode 2
1SS302 (C3)
(D1005)

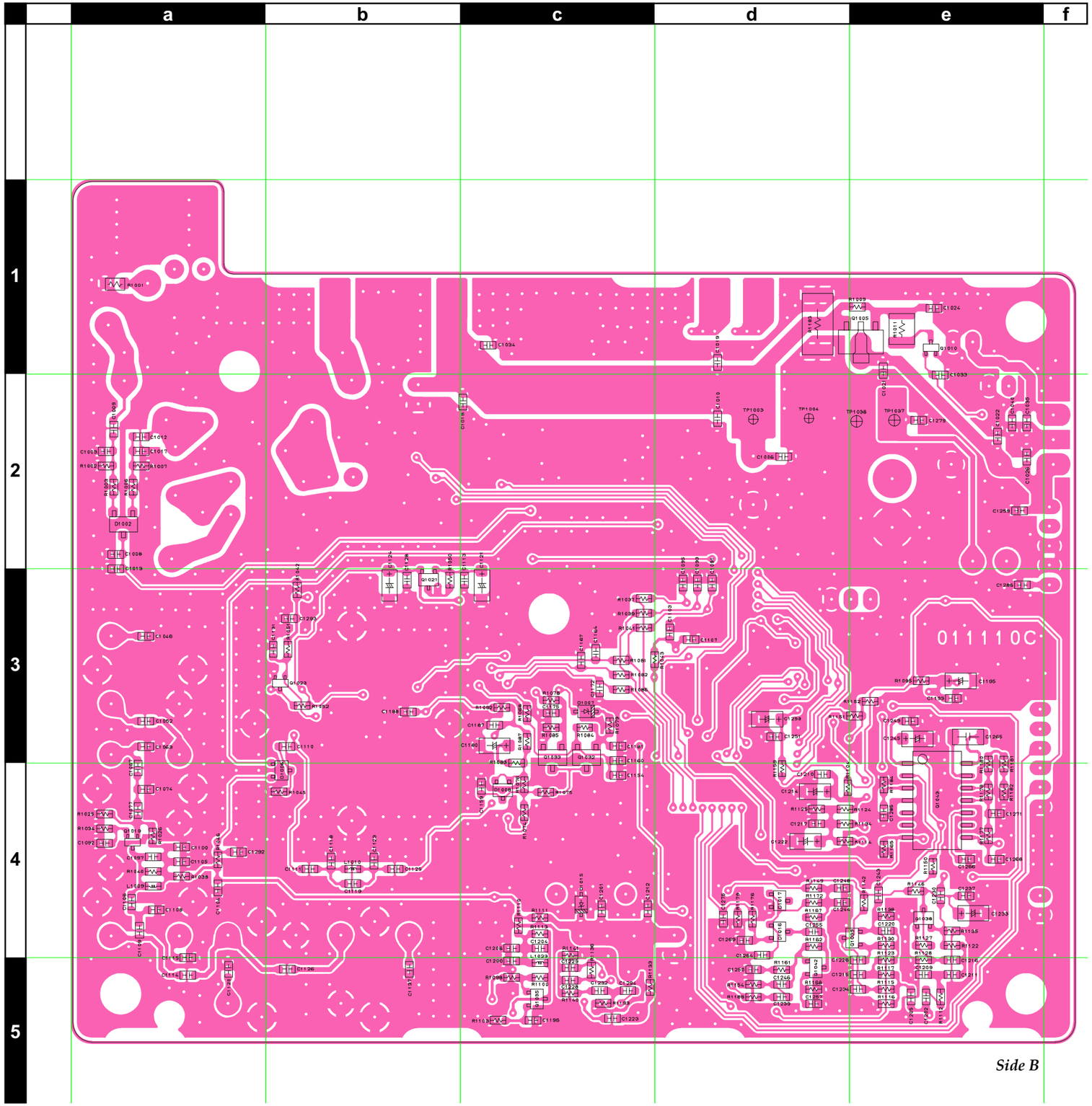


A
B
C
D
E
F
1
2
3
4
5
Q1012

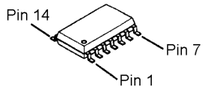
Side A

MAIN Unit

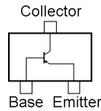
Parts Layout



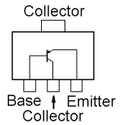
Side B



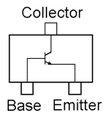
NJM2212M
(Q1043)



2SA1162GR (SG)
(Q1032)



2SB1301 (ZQ)
(Q1005)

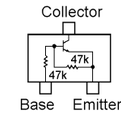


2SC2712GR (LG)
(Q1033)

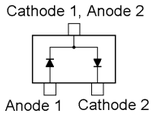
2SC4154 (LE)
(Q1021, 1038,
1039, 1042)

2SC4400 (RT4)
(Q1035)

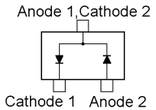
2SC5006 (24)
(Q1019)



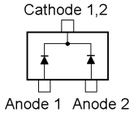
RT1N441U (M3)
(Q1010, 1023)



MC2850 (A7)
(D1016, 1017)



1SS302 (C3)
(D1008)



1SS321 (F9)
(D1002)

DAN235U (M)
(D1006)

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
	PCB with Components					CB2618001				
	Printed Circuit Board				AM005N000	FR011110C		1-		
C 1001	CERAMIC CAP.	15pF	50V	CH	CHU5 150J6	K02179104		1-	A	E1
C 1003	CHIP CAP.	4pF	50V	CH	GRM39CH040C50PT	K22174205		1-	B	a2
C 1005	CERAMIC CAP.	27pF	50V	CH	CHU5 270J6	K02179107		1-	A	E1
C 1006	CHIP CAP.	100pF	50V	CH	GRM39CH101J50PT	K22174235		1-	B	d2
C 1007	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	C2
C 1008	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	a2
C 1009	CHIP CAP.	1pF	50V	CK	GRM39CK010C50PT	K22174202		1-	B	a2
C 1010	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	d2
C 1012	CHIP CAP.	1pF	50V	CK	GRM39CK010C50PT	K22174202		1-	B	a2
C 1013	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	a2
C 1014	AL.ELECTRO.CAP.	2200uF	25V		RE3-25V222M	K40149055		1-	A	B2
C 1015	CERAMIC CAP.	18pF	50V	CH	CHU5 180J6	K02179105		1-	A	E2
C 1016	CERAMIC CAP.	47pF	50V	CH	CHU5 470J6	K02179110		1-	A	E2
C 1017	CHIP CAP.	3pF	50V	CJ	GRM39CJ030C50PT	K22174204		1-	B	a2
C 1018	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	c2
C 1019	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	d1
C 1020	CHIP CAP.	0.1uF	25V	F	GRM39F104Z25PT	K22145001		1-	A	B2
C 1021	CHIP CAP.	0.1uF	25V	F	GRM39F104Z25PT	K22145001		1-	B	e1
C 1022	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	e2
C 1023	CHIP CAP.	0.1uF	25V	F	GRM39F104Z25PT	K22145001		1-	A	B2
C 1024	CHIP CAP.	0.1uF	25V	F	GRM39F104Z25PT	K22145001		1-	B	e1
C 1026	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	e2
C 1027	CHIP CAP.	15pF	50V	CH	GRM39CH150J50PT	K22174215		1-	A	E2
C 1028	CERAMIC CAP.	22pF	50V	CH	CHU5 220J6	K02179106		1-	A	E2
C 1029	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	D2
C 1031	CERAMIC CAP.	12pF	50V	CH	CHU5 120J6	K02179103		1-	A	E1
C 1034	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	c1
C 1035	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	e2
C 1036	CHIP CAP.	27pF	50V	CH	GRM39CH270J50PT	K22174221		1-	A	E3
C 1038	CHIP CAP.	8pF	50V	CH	GRM39CH080D50PT	K22174209		1-	A	E3
C 1039	AL.ELECTRO.CAP.	10uF	25V		RC2-25V100M(5X7)	K40149012		1-	A	D2
C 1040	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	e2
C 1043	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	C2
C 1044	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	A	A1
C 1047	AL.ELECTRO.CAP.	100uF	10V		RE2-10V101M 100UF	K40109024		1-	A	A1
C 1049	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	A1
C 1052	CHIP CAP.	3pF	50V	CJ	GRM39CJ030C50PT	K22174204		1-	B	a3
C 1053	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-	A	B1
C 1055	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	C2
C 1056	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	C1
C 1058	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	C2
C 1059	CHIP TA.CAP.	4.7uF	10V		TEMSVA1A475M-8R	K78100022		1-	A	C2
C 1062	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	A2
C 1064	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	A	D2
C 1065	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	A	C3
C 1067	CHIP CAP.	5pF	50V	CH	GRM39CH050C50PT	K22174206		1-	B	a4
C 1068	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	A	A2
C 1070	CHIP CAP.	0.22uF	10V	B	GRM39B224K10PT	K22104801		1-	A	C2
C 1071	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	C2
C 1072	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	C3
C 1074	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-	B	a4
C 1075	AL.ELECTRO.CAP.	47uF	16V		RE2-16V470M 47UF	K40129054		1-	A	A2
C 1076	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	B2
C 1077	CHIP CAP.	10pF	50V	CH	GRM39CH100D50PT	K22174211		1-	B	a4
C 1080	CHIP CAP.	0.22uF	10V	B	GRM39B224K10PT	K22104801		1-	A	C2
C 1084	CHIP CAP.	100pF	50V	CH	GRM39CH101J50PT	K22174235		1-	A	C2
C 1086	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	C2
C 1088	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	C2
C 1090	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	A	C2
C 1092	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	a4
C 1094	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	C2
C 1096	CHIP CAP.	8pF	50V	CH	GRM39CH080D50PT	K22174209		1-	A	C2
C 1098	CHIP CAP.	5pF	50V	CH	GRM39CH050C50PT	K22174206		1-	A	C2
C 1099	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	C2
C 1101	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	A	C2
C 1103	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	d3
C 1104	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	a4
C 1105	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	a4
C 1106	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	a4
C 1107	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	d3
C 1109	CHIP CAP.	5pF	50V	CH	GRM39CH050C50PT	K22174206		1-	B	a4
C 1110	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	b3
C 1111	CHIP CAP.	5pF	50V	CH	GRM39CH050C50PT	K22174206		1-	B	b4
C 1112	CHIP CAP.	8pF	50V	CH	GRM39CH080D50PT	K22174209		1-	A	E4

MAIN Unit

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
C 1113	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	c3
C 1114	CHIP CAP.	2pF	50V	CK	GRM39CK020C50PT	K22174203		1-	B	a5
C 1115	CHIP CAP.	5pF	50V	CH	GRM39CH050C50PT	K22174206		1-	B	a4
C 1116	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-	A	C4
C 1117	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	C4
C 1118	CHIP CAP.	15pF	50V	CH	GRM39CH150J50PT	K22174215		1-	B	b4
C 1120	CHIP CAP.	5pF	50V	CH	GRM39CH050C50PT	K22174206		1-	B	a5
C 1121	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	c3
C 1122	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	A	C4
C 1123	CHIP CAP.	15pF	50V	CH	GRM39CH150J50PT	K22174215		1-	B	b4
C 1124	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	b3
C 1125	CHIP CAP.	5pF	50V	CH	GRM39CH050C50PT	K22174206		1-	B	b4
C 1126	CHIP CAP.	3pF	50V	CJ	GRM39CJ030C50PT	K22174204		1-	B	b5
C 1127	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	E3
C 1128	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	b3
C 1129	CHIP CAP.	1pF	50V	CK	GRM39CK010C50PT	K22174202		1-	A	C4
C 1130	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	A	C3
C 1131	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	b3
C 1133	CHIP CAP.	12pF	50V	CH	GRM39CH120J50PT	K22174213		1-	A	E4
C 1134	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	E4
C 1135	CHIP CAP.	10pF	50V	CH	GRM39CH100D50PT	K22174211		1-	A	C4
C 1136	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	C3
C 1137	CHIP CAP.	6pF	50V	CH	GRM39CH060D50PT	K22174207		1-	B	b5
C 1138	CHIP CAP.	3pF	50V	CJ	GRM39CJ030C50PT	K22174204		1-	A	D3
C 1139	CHIP CAP.	1pF	50V	CK	GRM39CK010C50PT	K22174202		1-	A	D4
C 1140	CHIP CAP.	1pF	50V	CK	GRM39CK010C50PT	K22174202		1-	A	D3
C 1141	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	C3
C 1142	CHIP CAP.	3pF	50V	CJ	GRM39CJ030C50PT	K22174204		1-	A	D4
C 1143	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	E3
C 1144	CHIP CAP.	39pF	50V	CH	GRM39CH390J50PT	K22174225		1-	A	E4
C 1145	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	E3
C 1146	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	A	C3
C 1147	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	D3
C 1148	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	A	C3
C 1149	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	D4
C 1150	CHIP CAP.	12pF	50V	CH	GRM39CH120J50PT	K22174213		1-	A	D4
C 1151	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-	A	D4
C 1152	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-	A	D3
C 1154	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	c4
C 1155	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-	A	C3
C 1156	CHIP CAP.	33pF	50V	CH	GRM39CH330J50PT	K22174223		1-	A	D3
C 1157	CHIP CAP.	56pF	50V	CH	GRM39CH560J50PT	K22174229		1-	A	D3
C 1158	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-	A	C4
C 1159	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	c4
C 1160	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	c3
C 1161	CHIP CAP.	12pF	50V	CH	GRM39CH120J50PT	K22174213		1-	A	D4
C 1162	CHIP CAP.	27pF	50V	CH	GRM39CH270J50PT	K22174221		1-	A	D3
C 1163	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	D3
C 1165	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	D4
C 1166	CHIP CAP.	7pF	50V	CH	GRM39CH070D50PT	K22174208		1-	A	D4
C 1168	CHIP CAP.	47pF	50V	CH	GRM39CH470J50PT	K22174227		1-	A	D3
C 1169	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	D3
C 1170	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	A	D4
C 1171	CHIP CAP.	1pF	50V	CK	GRM39CK010C50PT	K22174202		1-	A	D3
C 1173	CHIP CAP.	33pF	50V	CH	GRM39CH330J50PT	K22174223		1-	A	D3
C 1174	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	C4
C 1177	CHIP CAP.	39pF	50V	CH	GRM39CH390J50PT	K22174225		1-	A	D4
C 1178	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	A	D4
C 1180	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	c3
C 1183	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	C4
C 1186	CHIP CAP.	1pF	50V	CK	GRM39CK010C50PT	K22174202		1-	A	D4
C 1187	CHIP CAP.	0.22uF	10V	B	GRM39B224K10PT	K22104801		1-	B	c3
C 1188	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	b3
C 1189	CHIP CAP.	9pF	50V	CH	GRM39CH090D50PT	K22174210		1-	A	C5
C 1190	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-	A	C3
C 1191	CHIP CAP.	1pF	50V	CK	GRM39CK010C50PT	K22174202		1-	A	C5
C 1192	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	A	C3
C 1193	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	e3
C 1194	CHIP CAP.	330pF	50V	B	GRM39B331K50PT	K22174820		1-	A	B4
C 1195	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	e3
C 1196	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	c5
C 1197	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-	A	A3
C 1198	CHIP CAP.	0.0056uF	50V	B	GRM39B562M50PT	K22174818		1-	A	B4
C 1199	CHIP CAP.	15pF	50V	CH	GRM39CH150J50PT	K22174215		1-	A	A4
C 1200	AL.ELECTRO.CAP.	47uF	16V		RE2-16V470M 47UF	K40129054		1-	A	C4
C 1201	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	c4

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
C 1202	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-	B	e5
C 1203	CHIP CAP.	0.0068uF	50V	B	GRM39B682K50PT	K22174834		1-	A	B4
C 1204	CHIP CAP.	39pF	50V	CH	GRM39CH390J50PT	K22174225		1-	B	c4
C 1205	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	e5
C 1206	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	c4
C 1207	CHIP CAP.	1pF	50V	CK	GRM39CK010C50PT	K22174202		1-	A	C4
C 1208	CHIP CAP.	0.047uF	16V	B	GRM39B473K16PT	K22124804		1-	A	B4
C 1209	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	e5
C 1210	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	d4
C 1211	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	e5
C 1212	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	c4
C 1213	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	A	C5
C 1214	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	d4
C 1215	CHIP CAP.	0.0047uF	50V	B	GRM39B472K50PT	K22174833		1-	B	e5
C 1216	CHIP CAP.	0.022uF	25V	B	GRM39B223K25PT	K22144807		1-	B	e5
C 1217	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	d4
C 1218	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	C5
C 1219	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	C5
C 1220	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	e4
C 1221	CHIP CAP.	15pF	50V	CH	GRM39CH150J50PT	K22174215		1-	A	A4
C 1222	CHIP TA.CAP.	4.7uF	10V		TEMSVA1A475M-8R	K78100022		1-	B	d4
C 1223	CHIP CAP.	82pF	50V	CH	GRM39CH820J50PT	K22174233		1-	B	c5
C 1224	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	C5
C 1225	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-	A	B3
C 1226	CHIP CAP.	820pF	50V	B	GRM39B821M50PT	K22174808		1-	B	e5
C 1227	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-	A	B3
C 1228	CHIP CAP.	150pF	50V	CH	GRM39CH151J50PT	K22174239		1-	B	c5
C 1229	CHIP CAP.	150pF	50V	CH	GRM39CH151J50PT	K22174239		1-	B	c5
C 1230	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-	B	e4
C 1231	CHIP CAP.	0.047uF	16V	B	GRM39B473K16PT	K22124804		1-	A	A4
C 1232	CHIP CAP.	0.0033uF	50V	B	GRM39B332K50PT	K22174831		1-	B	c5
C 1233	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	e4
C 1234	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	e5
C 1235	CHIP CAP.	15pF	50V	CH	GRM39CH150J50PT	K22174215		1-	A	B4
C 1236	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	B4
C 1237	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	e4
C 1238	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-	A	A4
C 1239	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	d5
C 1240	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	A3
C 1241	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	B5
C 1242	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-	A	A3
C 1243	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	e4
C 1244	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	d4
C 1245	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	e3
C 1246	CHIP CAP.	100pF	50V	CH	GRM39CH101J50PT	K22174235		1-	B	d5
C 1247	CHIP CAP.	15pF	50V	CH	GRM39CH150J50PT	K22174215		1-	A	A5
C 1248	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-	B	d4
C 1251	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	d3
C 1252	CHIP CAP.	15pF	50V	CH	GRM39CH150J50PT	K22174215		1-	A	B5
C 1253	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	B	d3
C 1254	CHIP CAP.	0.0056uF	50V	B	GRM39B562M50PT	K22174818		1-	A	A5
C 1255	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	d4
C 1256	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	A3
C 1258	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	A5
C 1259	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	e2
C 1260	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	A	A5
C 1261	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	B4
C 1262	AL.ELECTRO.CAP.	470uF	25V		RE3-25V471M	K40149044		1-	A	A2
C 1263	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	A	B5
C 1264	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	d4
C 1265	FILM CAP.	0.027uF	16V		ECHU1C273JB5	K57120012		1-	B	e3
C 1266	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	e4
C 1267	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	B3
C 1268	CHIP CAP.	0.0022uF	50V	B	GRM39B222K50PT	K22174822		1-	B	e4
C 1269	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	d4
C 1271	CHIP CAP.	0.0068uF	50V	B	GRM39B682K50PT	K22174834		1-	B	e4
C 1274	AL.ELECTRO.CAP.	470uF	16V		RE3-16V471M 470UF	K40129066		1-	A	A2
C 1275	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	d4
C 1279	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	e2
C 1280	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	D2
C 1281	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	B2
C 1284	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	A3
C 1285	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	e4
C 1288	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	D2
C 1291	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-	A	A4
C 1294	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	c5

MAIN Unit

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
CD1001	CERAMIC DISC				CDA450C24	H7901430		1-	A	C5
CF1001	CERAMIC FILTER				ALFYM450E=K	H3900535		1-	A	C4
D 1001	DIODE				1N5402	G2090778		1-	A	A2
D 1002	DIODE				1SS321 TE85R	G2070076		1-	B	a2
D 1003	DIODE				XB15A308A2GB	G2090742		1-	A	E2
D 1004	DIODE				XB15A308A2GB	G2090742		1-	A	D2
D 1005	DIODE				1SS302 TE85R	G2070088		1-	A	E2
D 1006	DIODE				DAN235U TL	G2070176		1-	B	b4
D 1007	DIODE				HZU5ALL-TR	G2070754		1-	B	c3
D 1008	DIODE				1SS302 TE85R	G2070088		1-	B	c4
D 1009	DIODE				HVC306B TRU	G2070918		1-	A	D3
D 1010	DIODE				HVC306B TRU	G2070918		1-	A	D3
D 1011	DIODE				HVC306B TRU	G2070918		1-	A	D4
D 1012	DIODE				HVC306B TRU	G2070918		1-	A	D4
D 1013	DIODE				HVC306B TRU	G2070918		1-	A	D4
D 1014	DIODE				HVC306B TRU	G2070918		1-	A	D4
D 1015	DIODE				UDZS TE-17 5.6B	G2070910		1-	B	c4
D 1016	DIODE				MC2850-T11-1	G2070704		1-	B	d4
D 1017	DIODE				MC2850-T11-1	G2070704		1-	B	d4
D 1018	SURGE ABSORBER				DSP-141N-S00B	Q9000586		1-	A	E1
F 1001	CHIP FUSE	1.25A			FCC16 132ABTP	Q0000109		1-	A	B2
J 1001	CONNECTOR				B3B-PH-K-S	P0090397		1-	A	B3
J 1002	CONNECTOR				24FLT-SM1-TB	P1091128		1-	A	B4
J 1003	CONNECTOR				B6B-PH-K-S	P0090400		1-	A	A3
J 1004	CONNECTOR				B2B-PH-K-S	P0090396		1-	A	A4
L 1001	COIL A1				4.5T3.5D0.8UEW R	L0021149A		1-	A	E1
L 1002	COIL A1				4.5T3.5D0.8UEW R	L0021149A		1-	A	E2
L 1003	COIL A1				3.5T4.0D0.8UEW R	L0022245		1-	A	E2
L 1004	M.RFC	4.7uH			LAL03NA4R7K	L1190203		1-	A	D2
L 1005	M.RFC	0.047uH			HK1608 47NJ-T	L1690524		1-	A	E2
L 1006	COIL A1				4.5T3.5D0.8UEW R	L0021149A		1-	A	D2
L 1007	COIL				E2 0.25-1.9-8T-L	L0022550		1-	A	B1
L 1008	COIL				E2 0.25-1.9-8T-L	L0022550		1-	A	B2
L 1009	M.RFC	0.1uH			HK1608 R10J-T	L1690528		1-	B	a4
L 1010	M.RFC	0.082uH			HK1608 82NJ-T	L1690527		1-	B	b4
L 1011	M.RFC	2.2uH			LK1608 2R2K-T	L1690634		1-	A	C4
L 1012	M.RFC	0.1uH			HK1608 R10J-T	L1690528		1-	A	E3
L 1013	M.RFC	0.082uH			HK1608 82NJ-T	L1690527		1-	A	E4
L 1014	M.RFC	0.082uH			HK1608 82NJ-T	L1690527		1-	A	E4
L 1015	M.RFC	0.47uH			LK1608 R47K-T	L1690414		1-	A	D4
L 1016	M.RFC	0.1uH		2%	C2012C-R10G	L1690776		1-	A	D3
L 1017	M.RFC	2.2uH			LK1608 2R2K-T	L1690634		1-	A	D3
L 1018	M.RFC	0.033uH		2%	C2012C-33NG	L1690770		1-	A	D3
L 1019	CHIP COIL	1.5uH			LQH32MN1R5K23L	L1690077		1-	A	D4
L 1020	M.RFC	0.47uH			LK1608 R47K-T	L1690414		1-	A	D4
L 1021	M.RFC	2.2uH			LK1608 2R2K-T	L1690634		1-	A	D3
L 1022	M.RFC	2.2uH			LK1608 2R2K-T	L1690634		1-	A	D3
L 1023	M.RFC	1.5uH			LK1608 1R5K-T	L1690846		1-	B	c5
Q 1001	IC				NJM2904V-TE1	G1091677		1-	A	C2
Q 1002	IC				NJM12902V(TE1)	G1093592		1-	A	B5
Q 1003	IC				NJM2904V-TE1	G1091677		1-	A	A4
Q 1004	TRANSISTOR				2SB1301-T2 ZQ	G3213017Q		1-	A	B2
Q 1005	TRANSISTOR				2SB1301-T2 ZQ	G3213017Q		1-	B	e1
Q 1006	IC				NJM7808FA	G1093640		1-	A	A2
Q 1007	TRANSISTOR				DTA144EE TL	G3070074		1-	A	D2
Q 1008	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	A	C1
Q 1009	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	A	B3
Q 1010	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	B	e1
Q 1011	IC				NJM78M05DL1A(TE1)	G1093660		1-	A	B2
Q 1012	IC				RA35H1516M	G1093695		1-	A	B1
Q 1013	TRANSISTOR				DTB123EK T146	G3070022		1-	A	D2
Q 1014	TRANSISTOR				2SA1602A-T11-1F	G3116028F		1-	A	C2
Q 1015	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	A	D3
Q 1016	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	A	C2
Q 1017	TRANSISTOR				2SC3357-T2 RF	G3333577F		1-	A	C2
Q 1018	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	A	D2
Q 1019	TRANSISTOR				2SC5006-T1	G3350068		1-	B	a4
Q 1020	IC				BU4094BCFV-E2	G1093527		1-	A	B3
Q 1021	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	B	b3
Q 1022	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	A	E4
Q 1023	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	B	b3
Q 1024	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	A	C4
Q 1025	TRANSISTOR				2SC5006-T1	G3350068		1-	A	E3
Q 1026	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	A	D3
Q 1027	TRANSISTOR				DTA144EE TL	G3070074		1-	A	C3
Q 1028	IC				MB15A02PFV1-G-BND-EF	G1092541		1-	A	C3

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
Q 1029	TRANSISTOR				2SC5006-T1	G3350068		1-	A	D3
Q 1030	FET				2SK520-T2B K41	G3805207A		1-	A	D4
Q 1031	FET				3SK320(TE85L)	G4803208		1-	A	D4
Q 1032	TRANSISTOR				2SA1162GR TE85R	G3111627G		1-	B	c3
Q 1033	TRANSISTOR				2SC2712GR TE85R	G3327127G		1-	B	c3
Q 1034	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	A	C3
Q 1035	TRANSISTOR				2SC4400-3-TL	G3344008C		1-	B	c5
Q 1036	IC				BU4066BCFV-E2	G1093537		1-	A	A3
Q 1037	IC				TA31136FN(EL)	G1091605		1-	A	C5
Q 1038	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	B	e4
Q 1039	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	B	e4
Q 1040	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	A	A3
Q 1041	IC				BU4053BCFV-E2	G1093422		1-	A	B3
Q 1042	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	B	d5
Q 1043	IC				NJM2211M(TE1)	G1092943		1-	B	e4
Q 1044	IC				LA4425A	G1092241		1-	A	A2
R 1001	CHIP RES.	56k	1/10W	5%	RMC1/10T 563J	J24205563		1-	B	a1
R 1002	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	B	a2
R 1003	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	B	a2
R 1004	CHIP RES.	68k	1/16W	5%	RMC1/16 683JATP	J24185683		1-	A	C2
R 1005	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	C2
R 1006	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	B	a2
R 1007	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	B	a2
R 1008	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	A	B2
R 1009	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	B	e1
R 1010	CHIP RES.	1k	1/4W	5%	RMC1/4 102JATP	J24245102		1-	A	B2
R 1011	CHIP RES.	1k	1/4W	5%	RMC1/4 102JATP	J24245102		1-	B	e1
R 1012	CHIP RES.	100	1W	5%	RMC1 101JTE	J24305101		1-	A	D2
R 1013	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	A	C2
R 1014	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-	A	C2
R 1015	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	C2
R 1017	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-	A	C2
R 1018	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	A	C2
R 1019	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	A	C2
R 1020	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	A	C1
R 1021	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-	A	B2
R 1022	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	C2
R 1023	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-	A	C2
R 1024	CHIP RES.	470k	1/16W	5%	RMC1/16 474JATP	J24185474		1-	A	C2
R 1025	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	B	a4
R 1026	CHIP RES.	12k	1/16W	5%	RMC1/16 123JATP	J24185123		1-	B	a4
R 1028	CHIP RES.	22	1/16W	5%	RMC1/16 220JATP	J24185220		1-	A	C2
R 1029	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	C2
R 1030	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	C2
R 1031	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	C3
R 1032	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	C3
R 1034	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-	B	a4
R 1035	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	C2
R 1036	CHIP RES.	47	1/16W	5%	RMC1/16 470JATP	J24185470		1-	A	C2
R 1037	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c3
R 1038	CHIP RES.	22	1/16W	5%	RMC1/16 220JATP	J24185220		1-	B	a4
R 1039	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c3
R 1040	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-	B	a4
R 1041	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c3
R 1042	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	B	b3
R 1043	CHIP RES.	22	1/16W	5%	RMC1/16 220JATP	J24185220		1-	B	c3
R 1044	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	C3
R 1045	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	B	b4
R 1046	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	B	a4
R 1047	CHIP RES.	47	1/16W	5%	RMC1/16 470JATP	J24185470		1-	A	C4
R 1048	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	C3
R 1049	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	C3
R 1050	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	b3
R 1051	CHIP RES.	470	1/16W	5%	RMC1/16 471JATP	J24185471		1-	B	b3
R 1052	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-	B	b3
R 1053	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	A	E3
R 1054	CHIP RES.	220k	1/16W	5%	RMC1/16 224JATP	J24185224		1-	A	C4
R 1056	CHIP RES.	22	1/16W	5%	RMC1/16 220JATP	J24185220		1-	A	D3
R 1057	CHIP RES.	22	1/16W	5%	RMC1/16 220JATP	J24185220		1-	A	D3
R 1058	CHIP RES.	47	1/16W	5%	RMC1/16 470JATP	J24185470		1-	A	C3
R 1059	CHIP RES.	47	1/16W	5%	RMC1/16 470JATP	J24185470		1-	A	C3
R 1060	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	A	E3
R 1062	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	D4
R 1063	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	A	C4
R 1065	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	D4
R 1066	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-	A	D4

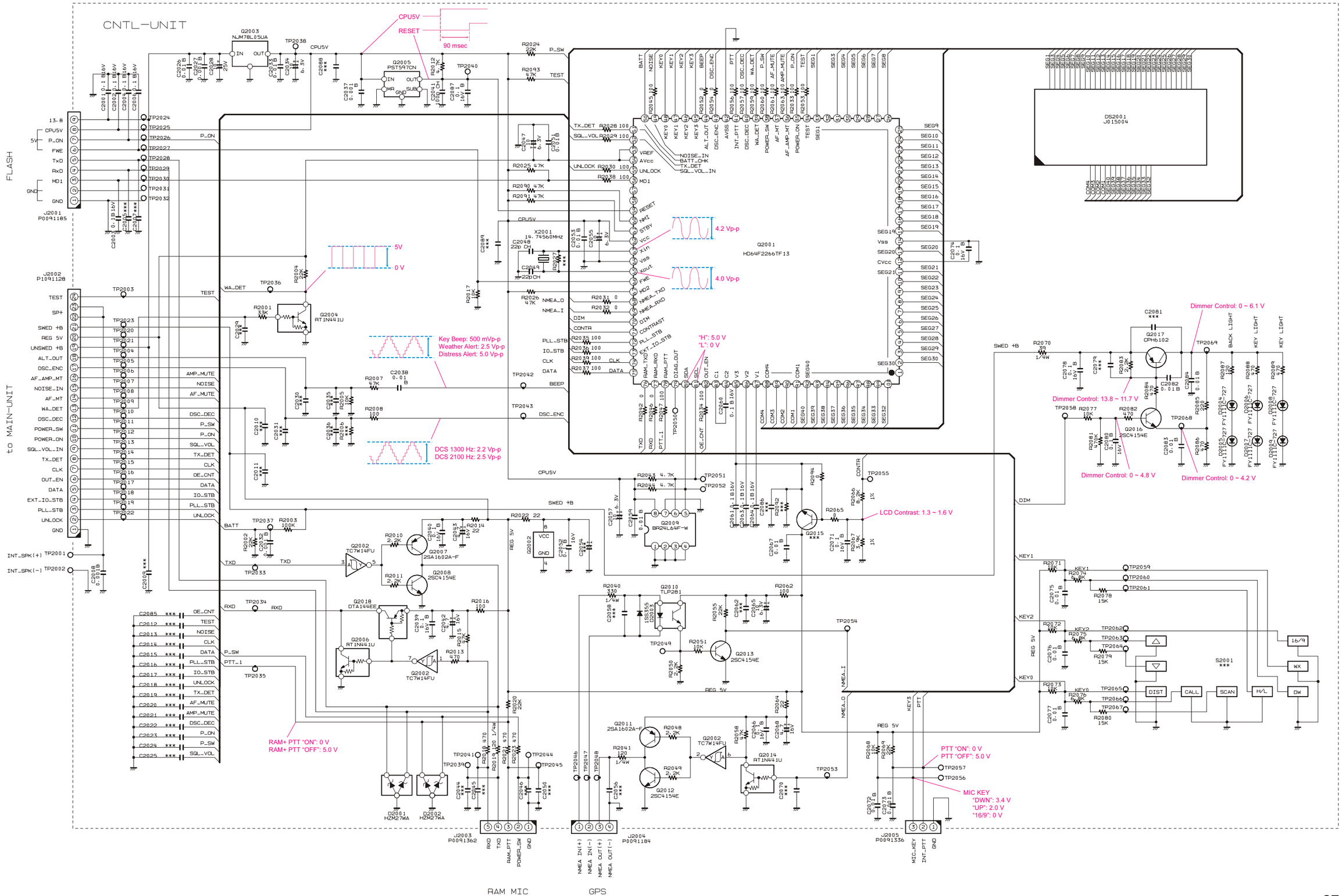
MAIN Unit

Parts List

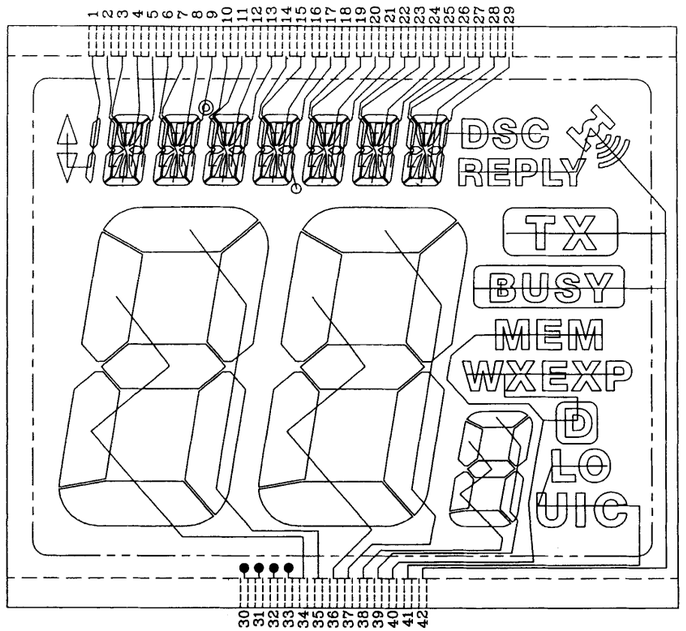
REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
R 1067	CHIP RES.	330	1/16W	5%	RMC1/16 331JATP	J24185331		1-	A	D3
R 1068	CHIP RES.	22	1/16W	5%	RMC1/16 220JATP	J24185220		1-	B	c3
R 1069	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	D3
R 1070	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-	A	D4
R 1071	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	C3
R 1072	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	D3
R 1073	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	A	D4
R 1075	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c4
R 1076	CHIP RES.	470	1/16W	5%	RMC1/16 471JATP	J24185471		1-	B	c4
R 1077	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	A	D3
R 1078	CHIP RES.	15k	1/16W	5%	RMC1/16 153JATP	J24185153		1-	B	c3
R 1079	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-	B	c3
R 1080	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	A	D3
R 1081	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c3
R 1082	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c3
R 1083	CHIP RES.	1.2k	1/16W	5%	RMC1/16 122JATP	J24185122		1-	B	c3
R 1084	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	B	c3
R 1085	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	B	c3
R 1086	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c3
R 1087	CHIP RES.	680	1/16W	5%	RMC1/16 681JATP	J24185681		1-	B	c3
R 1088	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	A	D4
R 1089	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	A	C4
R 1090	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-	A	D4
R 1091	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	A	D3
R 1092	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c3
R 1093	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	A	D3
R 1094	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	A	B4
R 1095	CHIP RES.	47	1/16W	5%	RMC1/16 470JATP	J24185470		1-	B	e3
R 1096	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	A	C3
R 1097	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	C3
R 1098	CHIP RES.	1.8k	1/16W	5%	RMC1/16 182JATP	J24185182		1-	B	c5
R 1099	CHIP RES.	39k	1/16W	5%	RMC1/16 393JATP	J24185393		1-	A	B4
R 1100	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	B	c5
R 1101	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	A	A4
R 1102	CHIP RES.	470k	1/16W	5%	RMC1/16 474JATP	J24185474		1-	A	B4
R 1103	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-	B	c5
R 1104	CHIP RES.	47	1/16W	5%	RMC1/16 470JATP	J24185470		1-	B	d4
R 1105	CHIP RES.	56k	1/16W	5%	RMC1/16 563JATP	J24185563		1-	A	A4
R 1106	CHIP RES.	39k	1/16W	5%	RMC1/16 393JATP	J24185393		1-	A	B4
R 1107	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	A3
R 1108	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	A3
R 1109	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	B4
R 1110	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c4
R 1111	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-	B	c4
R 1112	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	B	e5
R 1113	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	B	c4
R 1114	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	B	d4
R 1115	CHIP RES.	33k	1/16W	5%	RMC1/16 333JATP	J24185333		1-	B	e5
R 1116	CHIP RES.	56k	1/16W	5%	RMC1/16 563JATP	J24185563		1-	B	e5
R 1117	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-	B	e5
R 1118	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	A4
R 1119	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-	A	B4
R 1120	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-	A	A4
R 1121	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	C4
R 1122	CHIP RES.	5.6k	1/16W	5%	RMC1/16 562JATP	J24185562		1-	B	e4
R 1123	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-	B	e5
R 1124	CHIP RES.	18k	1/16W	5%	RMC1/16 183JATP	J24185183		1-	B	d4
R 1125	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	B	d4
R 1126	CHIP RES.	1.2k	1/16W	5%	RMC1/16 122JATP	J24185122		1-	A	A3
R 1127	CHIP RES.	120k	1/16W	5%	RMC1/16 124JATP	J24185124		1-	B	e4
R 1128	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	B	e5
R 1129	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	C5
R 1130	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-	B	e4
R 1131	CHIP RES.	330k	1/16W	5%	RMC1/16 334JATP	J24185334		1-	A	A4
R 1132	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	A4
R 1133	CHIP RES.	1.8k	1/16W	5%	RMC1/16 182JATP	J24185182		1-	B	c5
R 1134	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	B	d4
R 1135	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	B	e4
R 1136	CHIP RES.	220k	1/16W	5%	RMC1/16 224JATP	J24185224		1-	B	c5
R 1137	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	B4
R 1138	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	B	e4
R 1139	CHIP RES.	33k	1/16W	5%	RMC1/16 333JATP	J24185333		1-	A	A4
R 1140	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-	B	c5
R 1141	CHIP RES.	6.8k	1/16W	5%	RMC1/16 682JATP	J24185682		1-	B	c4
R 1142	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	e4
R 1143	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	A	B4

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
R 1144	CHIP RES.	56k	1/16W	5%	RMC1/16 563JATP	J24185563		1-	A	B4
R 1145	CHIP RES.	270k	1/16W	5%	RMC1/16 274JATP	J24185274		1-	A	B4
R 1146	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	B	e4
R 1147	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	A	B4
R 1148	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-	A	A3
R 1149	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	d4
R 1150	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	e4
R 1151	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	B	e3
R 1152	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	B	e3
R 1153	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	A	A4
R 1154	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	B	d5
R 1155	CHIP RES.	47	1/16W	5%	RMC1/16 470JATP	J24185470		1-	A	A5
R 1156	CHIP RES.	12k	1/16W	5%	RMC1/16 123JATP	J24185123		1-	A	A3
R 1157	CHIP RES.	220k	1/16W	5%	RMC1/16 224JATP	J24185224		1-	A	A5
R 1158	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	B5
R 1159	CHIP RES.	47	1/16W	5%	RMC1/16 470JATP	J24185470		1-	B	d4
R 1160	CHIP RES.	15k	1/16W	5%	RMC1/16 153JATP	J24185153		1-	A	A3
R 1162	CHIP RES.	220k	1/16W	5%	RMC1/16 224JATP	J24185224		1-	B	d4
R 1163	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	B5
R 1164	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	A4
R 1165	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	B	e4
R 1166	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	A3
R 1167	CHIP RES.	3.3k	1/16W	5%	RMC1/16 332JATP	J24185332		1-	B	d4
R 1168	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	B	d5
R 1169	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	A	B5
R 1170	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	B4
R 1171	CHIP RES.	5.6k	1/16W	5%	RMC1/16 562JATP	J24185562		1-	A	A4
R 1172	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	B	d4
R 1173	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	A4
R 1174	CHIP RES.	18k	1/16W	5%	RMC1/16 183JATP	J24185183		1-	A	B5
R 1175	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	B5
R 1176	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	B	d4
R 1177	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	B	e4
R 1178	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	B	e4
R 1179	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	B	d4
R 1180	CHIP RES.	10k	1/16W	1%	RMC1/16 103FTP	J24183103		1-	B	e3
R 1181	CHIP RES.	10k	1/16W	1%	RMC1/16 103FTP	J24183103		1-	B	e3
R 1182	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-	B	e4
R 1183	CHIP RES.	0	1W	5%	RMC1 JPATE	J24305000		1-	B	d1
R 1184	CHIP RES.	470k	1/16W	5%	RMC1/16 474JATP	J24185474		1-	B	e4
R 1185	CHIP RES.	470k	1/16W	5%	RMC1/16 474JATP	J24185474		1-	A	A4
R 1186	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	D2
R 1188	CHIP RES.	470	1/16W	5%	RMC1/16 471JATP	J24185471		1-	B	d5
R 1189	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	A3
R 1190	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	A3
R 1191	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	A3
R 1192	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	A4
R 1193	CHIP RES.	3.3k	1/16W	5%	RMC1/16 332JATP	J24185332		1-	B	c5
T 1001	COIL				MC120 E526HNSA-110461	L0190261		1-	A	E3
T 1002	COIL				MC120 E526HNSA-110461	L0190261		1-	A	E4
T 1003	COIL				MC120 E526HNSA-110462	L0190262		1-	A	E4
T 1004	COIL				MC120 E526HNSA-110462	L0190262		1-	A	E5
T 1005	COIL				MC120 E526HNSA-110461	L0190261		1-	A	D5
TC1001	TRIMMER CAP.	20pF			ECR-KN020E61X	K91000213		1-	A	C4
TP1010	CHECK TERMINAL				RCT00000C	Q5000103		1-	A	E4
VR1001	POT.	100k			EVN-5ESX50B15	J51811104		1-	A	D2
VR1002	POT.	10k			EVN-5ESX50B14	J51811103		1-	A	D2
VR1003	POT.	100k			EVN-5ESX50B15	J51811104		1-	A	C3
X 1001	XTAL TOP-B	21.85MHz			21.85000MHZ	H0103270		1-	A	C4
XF1001	XTAL FILTER				21S13B	H1102353		1-	A	D5
	SHIELD CASE COVER				F	RA041830A		1-		
	LEAF SPRING					R0140031		1-		
	SHIELD CASE VCO					RA0418500		1-		
	GASKET				L=50	RA0594900		1-		

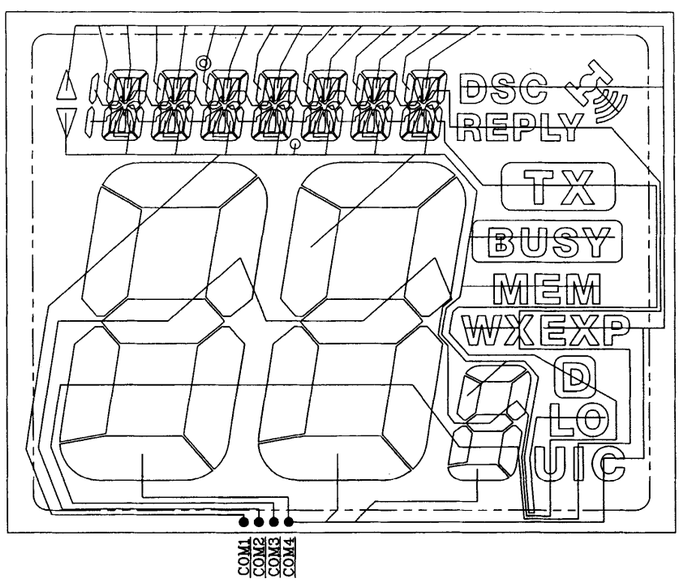
Note


CNTL-UNIT
FLASH
to MAIN-UNIT
J2001 P0091185
J2002 P1091128
J2003 P0091362
J2004 P0091184
J2005 P0091336
RAM MIC
GPS
Q2001 HD64F2266TF13
DS2001 J015004
CPU5V
RESET
90 msec
5V
0 V
4.2 Vp-p
4.0 Vp-p
Key Beep: 500 mVp-p
Weather Alert: 2.5 Vp-p
Distress Alert: 5.0 Vp-p
DCS 1300 Hz: 2.2 Vp-p
DCS 2100 Hz: 2.5 Vp-p
"H": 5.0 V
"L": 0 V
Dimmer Control: 0 ~ 6.1 V
Dimmer Control: 13.8 ~ 11.7 V
Dimmer Control: 0 ~ 4.8 V
Dimmer Control: 0 ~ 4.2 V
LCD Contrast: 1.3 ~ 1.6 V
RAM+ PTT "ON": 0 V
RAM+ PTT "OFF": 5.0 V
PTT "ON": 0 V
PTT "OFF": 5.0 V
MIC KEY
"DWN": 3.4 V
"UP": 2.0 V
"16/9": 0 V

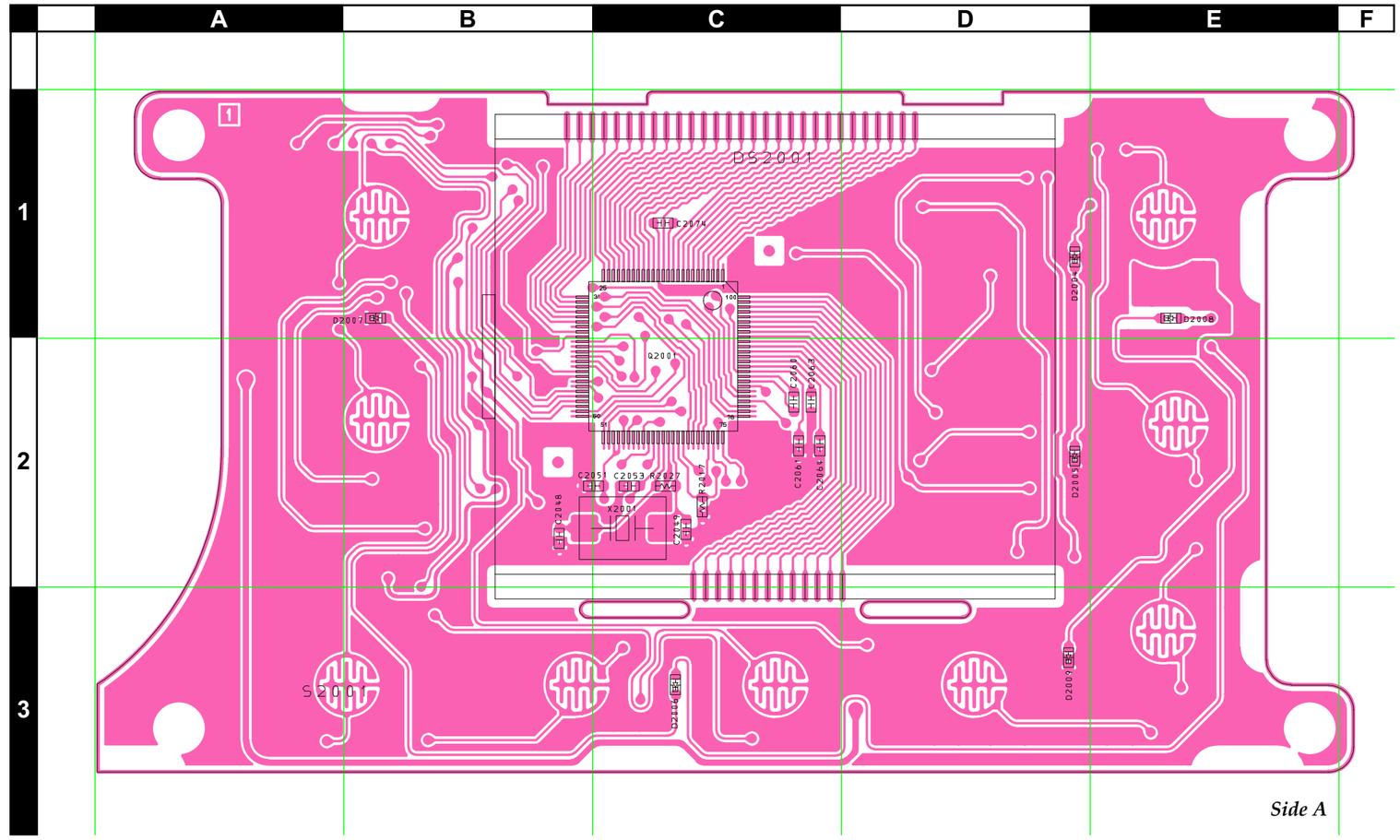
Note

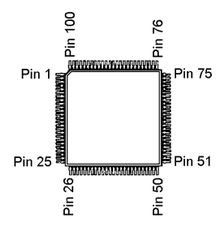


DS2001 SEGMENT



DS2001 COMMON

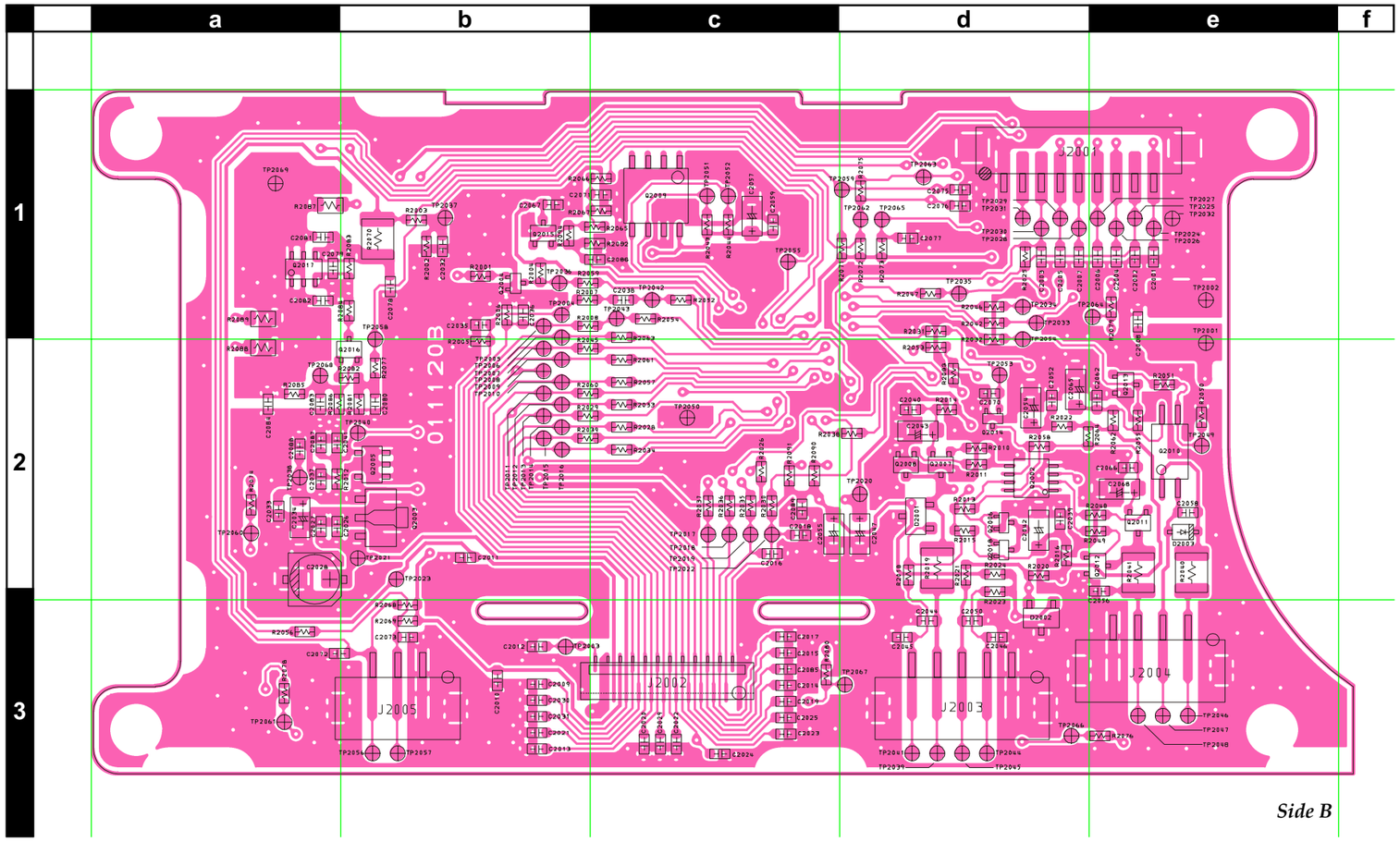


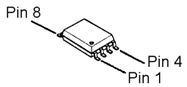


HD64F2266TF13
(Q2001)

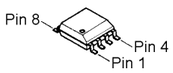
CNTL Unit

Parts Layout

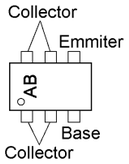




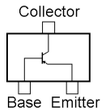
BR24C64F
(Q2009)



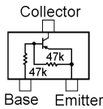
TC7W14FU
(Q2002)



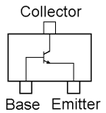
CPH6102 (AB)
(Q2017)



2SA1602A (MF)
(Q2007, 2011)

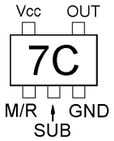


DTA144EE (16)
(Q2018)

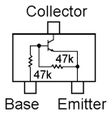


2SC4154 (LE)
(Q2008, 2012, 2013, 2016)

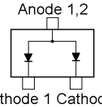
NJM78L05UA (8C)
(Q2003)



PST597CNR (7C)
(Q2005)



RT1N441U (N3)
(Q2004, 2006, 2014)



HZM27WA (27A)
(D2001, 2002)

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
	PCB with Components					CB2619001				
	Printed Circuit Board					FR0111200				
C 2001	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	e1
C 2002	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	e1
C 2003	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	d1
C 2004	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	e1
C 2006	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	e1
C 2008	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	e1
C 2026	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	a2
C 2027	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	a2
C 2028	AL.ELECTRO.CAP.	10uF	25V		MVA-25VC10MD55	K48140014		1-	B	a2
C 2032	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	b1
C 2033	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	a2
C 2034	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	a2
C 2037	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	a2
C 2038	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	c1
C 2039	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	d2
C 2040	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	d2
C 2041	CHIP CAP.	100pF	50V	CH	GRM39CH101J50PT	K22174235		1-	B	a2
C 2042	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	d2
C 2043	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	d2
C 2047	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	d2
C 2048	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-	A	B2
C 2049	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-	A	C2
C 2051	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	A	B2
C 2052	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	d2
C 2053	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	A	C2
C 2055	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	c2
C 2057	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	c1
C 2059	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	c1
C 2060	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	C2
C 2061	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	C2
C 2063	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	C2
C 2064	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	C2
C 2065	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	d2
C 2066	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	e2
C 2067	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	b1
C 2068	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	B	e2
C 2071	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	c1
C 2072	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	a3
C 2073	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	B	b3
C 2074	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	C1
C 2075	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	d1
C 2076	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	d1
C 2077	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	d1
C 2078	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	b1
C 2080	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	b2
C 2082	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	a1
C 2083	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	a2
C 2084	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	B	a2
C 2087	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	B	a2
D 2001	DIODE				HZM27WA-TR	G2070530		1-	B	d2
D 2002	DIODE				HZM27WA-TR	G2070530		1-	B	d3
D 2003	DIODE				1SS355 TE-17	G2070470		1-	B	e2
D 2004	LED				FY1111C-722-TR	G2070916		1-	A	D1
D 2005	LED				FY1111C-722-TR	G2070916		1-	A	D2
D 2006	LED				FY1111C-722-TR	G2070916		1-	A	C3
D 2007	LED				FY1111C-722-TR	G2070916		1-	A	B1
D 2008	LED				FY1111C-722-TR	G2070916		1-	A	E1
D 2009	LED				FY1111C-722-TR	G2070916		1-	A	D3
DS2001	LCD				J015004C	G6090148A		1-	A	C2
J 2001	CONNECTOR				B9B-ZR-SM3-TF	P0091185		1-	B	d1
J 2002	CONNECTOR				24FLT-SM1-TB	P1091128		1-	B	c3
J 2003	CONNECTOR				B5B-PH-SM3-TB	P0091362		1-	B	d3
J 2004	CONNECTOR				B4B-PH-SM3-TB	P0091184		1-	B	e3
J 2005	CONNECTOR				B3B-PH-SM3-TB	P0091336		1-	B	b3
JP2001	WIRE ASSY				BLK 75 (3)/B4	T9318192		1-		
Q 2001	IC				HD64F2266TF13	※		1-	A	C2
Q 2002	IC				TC7W14FU(TE12L)	G1093321		1-	B	d2
Q 2003	IC				NJM78L05UA TE1	G1091325		1-	B	b2
Q 2004	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	B	b1
Q 2005	IC				PST597CNR	G1092589		1-	B	b2
Q 2006	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	B	d2
Q 2007	TRANSISTOR				2SA1602A-T11-1F	G3116028F		1-	B	d2
Q 2008	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	B	d2
Q 2009	IC				BR24L64F-WE2	G1093876		1-	B	c1

※: Please contact Standard Horizon

CNTL Unit

Parts List

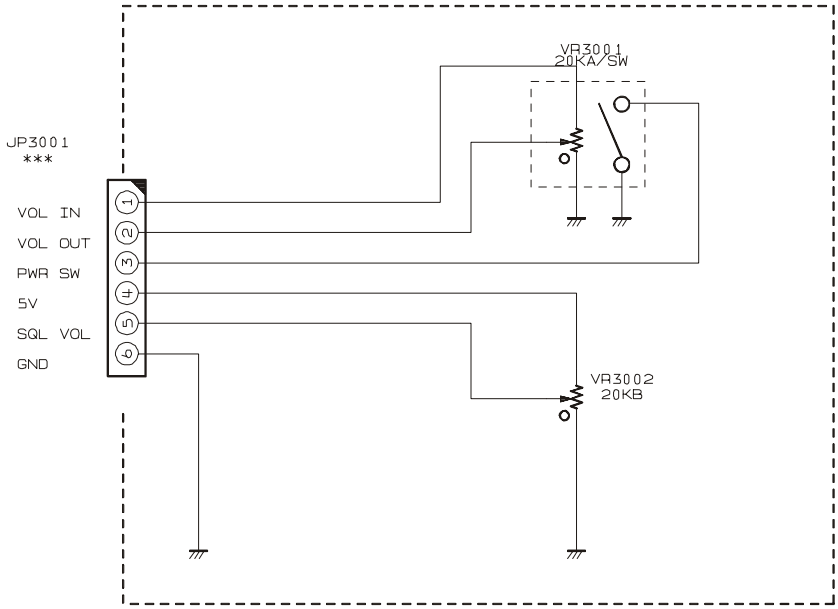
REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
Q 2010	PHOTO COUPLER				TLP281(GB-TP)	G0090037		1-	B	e2
Q 2011	TRANSISTOR				2SA1602A-T11-1F	G3116028F		1-	B	e2
Q 2012	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	B	e2
Q 2013	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	B	e2
Q 2014	TRANSISTOR				RT1N441U-T11-1	G3070247		1-	B	d2
Q 2016	TRANSISTOR				2SC4154-T11-1E	G3341548E		1-	B	b2
Q 2017	TRANSISTOR				CPH6102-TL	G3070223		1-	B	a1
Q 2018	TRANSISTOR				DTA144EE TL	G3070074		1-	B	d2
R 2001	CHIP RES.	33k	1/16W	5%	RMC1/16 333JATP	J24185333		1-	B	b1
R 2002	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-	B	b1
R 2003	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	B	b1
R 2004	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-	B	b1
R 2005	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	B	b2
R 2007	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	B	b1
R 2008	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	b1
R 2010	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	B	d2
R 2011	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	B	d2
R 2012	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	B	a2
R 2013	CHIP RES.	470	1/16W	5%	RMC1/16 471JATP	J24185471		1-	B	d2
R 2014	CHIP RES.	22	1/16W	5%	RMC1/16 220JATP	J24185220		1-	B	d2
R 2015	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	B	d2
R 2016	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	d2
R 2017	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	C2
R 2018	CHIP RES.	470	1/16W	5%	RMC1/16 471JATP	J24185471		1-	B	d2
R 2019	CHIP RES.	120	1/4W	5%	RMC1/4 121JATP	J24245121		1-	B	d2
R 2020	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-	B	d2
R 2021	CHIP RES.	470	1/16W	5%	RMC1/16 471JATP	J24185471		1-	B	d2
R 2022	CHIP RES.	22	1/16W	5%	RMC1/16 220JATP	J24185220		1-	B	d2
R 2023	CHIP RES.	470	1/16W	5%	RMC1/16 471JATP	J24185471		1-	B	d3
R 2024	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-	B	d2
R 2025	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	B	d1
R 2026	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	B	c2
R 2028	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c2
R 2029	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	b2
R 2030	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c2
R 2031	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	B	d1
R 2032	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	B	d2
R 2033	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c2
R 2034	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c2
R 2035	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c2
R 2036	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c2
R 2037	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c2
R 2038	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	d2
R 2039	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	b2
R 2040	CHIP RES.	330	1/4W	5%	RMC1/4 331JATP	J24245331		1-	B	e2
R 2041	CHIP RES.	120	1/4W	5%	RMC1/4 121JATP	J24245121		1-	B	e2
R 2042	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	B	d1
R 2043	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	B	c1
R 2044	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	B	c1
R 2045	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	b2
R 2046	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	B	d1
R 2047	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	d1
R 2048	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	B	e2
R 2049	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	B	e2
R 2050	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	B	e2
R 2051	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	B	e2
R 2052	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	B	c1
R 2053	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	d2
R 2054	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	B	c1
R 2055	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-	B	e2
R 2056	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	a3
R 2057	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c2
R 2058	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	B	d2
R 2059	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	b1
R 2060	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	b2
R 2061	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c2
R 2062	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	e2
R 2063	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-	B	c2
R 2064	CHIP RES.	22	1/16W	5%	RMC1/16 220JATP	J24185220		1-	B	d2
R 2065	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	B	c1
R 2066	CHIP RES.	8.2k	1/16W	1%	RMC1/16 822FTP	J24183822		1-	B	c1
R 2067	CHIP RES.	3.9k	1/16W	1%	RMC1/16 392FTP	J24183392		1-	B	c1
R 2068	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	B	b3
R 2069	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-	B	b3
R 2070	CHIP RES.	39	1/4W	5%	RMC1/4 390JATP	J24245390		1-	B	b1
R 2071	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	B	d1

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
R 2072	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	B	d1
R 2073	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	B	d1
R 2074	CHIP RES.	6.8k	1/16W	5%	RMC1/16 682JATP	J24185682		1-	B	a2
R 2075	CHIP RES.	6.8k	1/16W	5%	RMC1/16 682JATP	J24185682		1-	B	d1
R 2076	CHIP RES.	6.8k	1/16W	5%	RMC1/16 682JATP	J24185682		1-	B	e3
R 2077	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	B	b2
R 2078	CHIP RES.	15k	1/16W	5%	RMC1/16 153JATP	J24185153		1-	B	a3
R 2079	CHIP RES.	15k	1/16W	5%	RMC1/16 153JATP	J24185153		1-	B	e1
R 2080	CHIP RES.	15k	1/16W	5%	RMC1/16 153JATP	J24185153		1-	B	c3
R 2081	CHIP RES.	470k	1/16W	5%	RMC1/16 474JATP	J24185474		1-	B	b2
R 2082	CHIP RES.	470	1/16W	5%	RMC1/16 471JATP	J24185471		1-	B	b2
R 2083	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	B	b1
R 2084	CHIP RES.	470	1/16W	5%	RMC1/16 471JATP	J24185471		1-	B	b1
R 2085	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-	B	a2
R 2086	CHIP RES.	470	1/16W	5%	RMC1/16 471JATP	J24185471		1-	B	a2
R 2087	CHIP RES.	120	1/10W	5%	RMC1/10T 121J	J24205121		1-	B	a1
R 2088	CHIP RES.	470	1/10W	5%	RMC1/10T 471J	J24205471		1-	B	a2
R 2089	CHIP RES.	470	1/10W	5%	RMC1/10T 471J	J24205471		1-	B	a1
R 2090	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	B	c2
R 2091	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	B	c2
R 2093	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	B	d2
R 2094	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	B	b1
X 2001	XTAL 94SMX	14.7456MHz			94M147-18(D) 14.74560MHZ	H0103271		1-	A	C2
	LIGHT GUIDE				LCD	RA0558500		1-		
	LCD HOLDER					RA0418800		1-		
	INTER CONNECTOR					RA0418900		1-		
	REFLECTOR SHEET				005	RA0562100		1-		
	REFLECTOR SHEET				(B)	RA0449500		1-		
	SPONGE RUBBER				(LCD HOLDER)	RA0464000		1-		

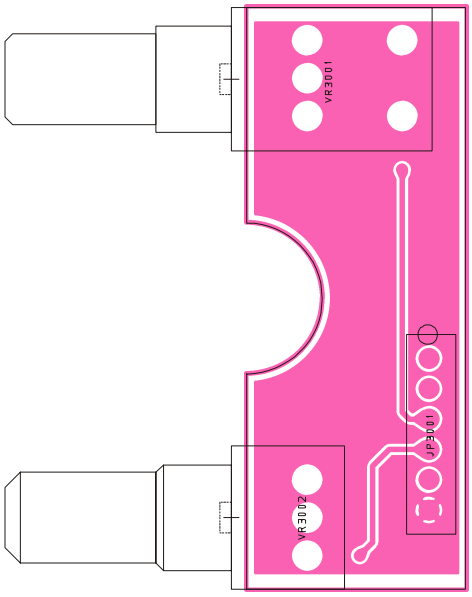
Note

VR Unit

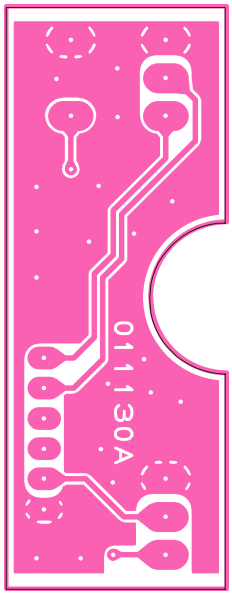
Circuit Diagram



Parts Layout



Side A



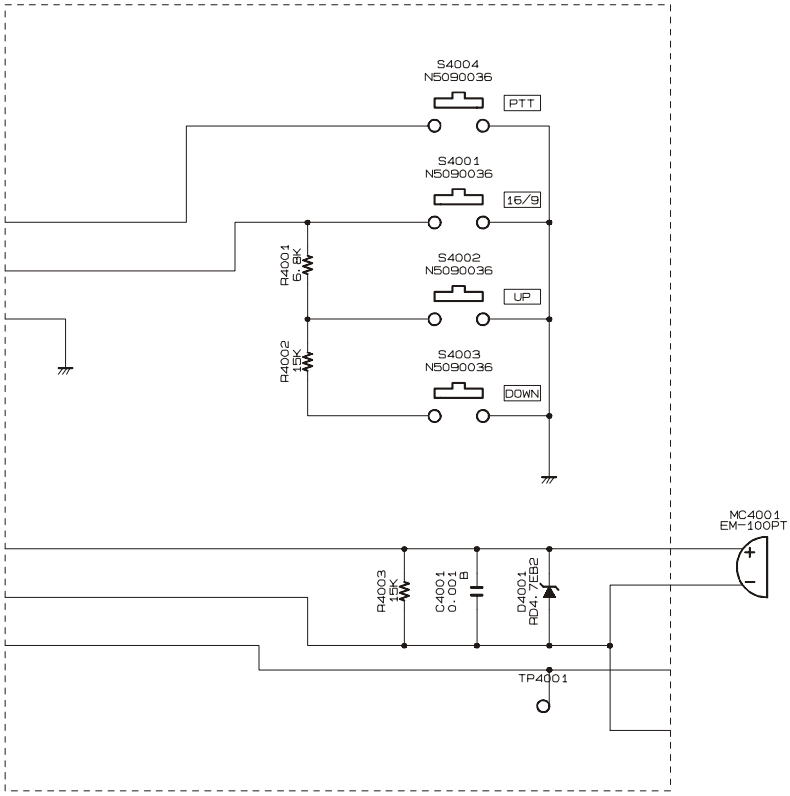
Side B

Parts List

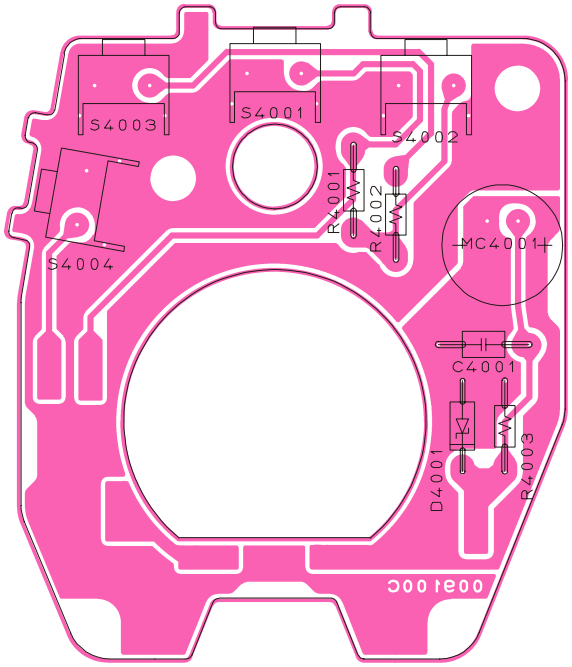
REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
	PCB with Components					CB2620001				
	Printed Circuit Board				AM005N000	FR0111300		1-		
JP3001	WIRE ASSY				AM005N	T9207056		1-	A	
VR3001	POT.				RK0971114 20KA/SW	J60800274		1-	A	
VR3002	POT.				RK0971110 20KB	J60800261		1-	A	

MIC Unit

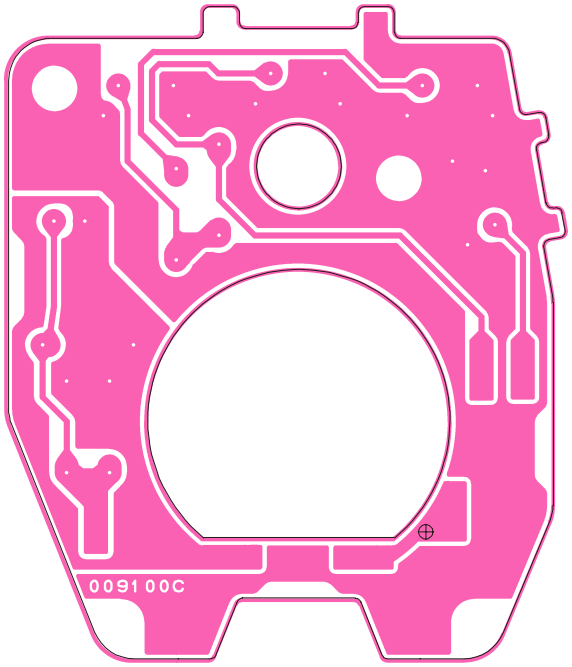
Circuit Diagram



Parts Layout



Side A

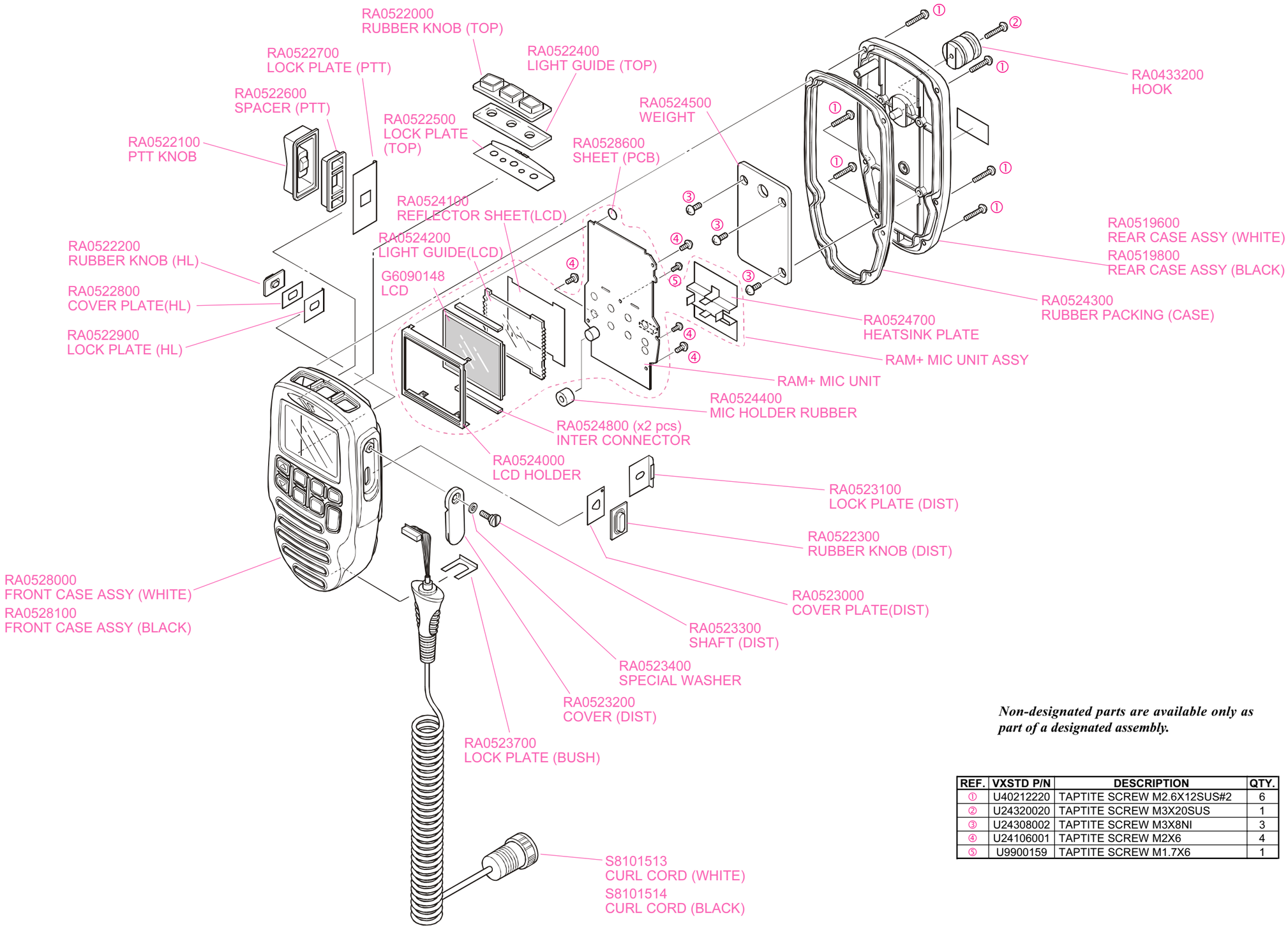


Side B

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
C 4001	CERAMIC CAP.	0.001uF	50V	B	UP050B102K-A-B	K28179001		1-	A	
D 4001	DIODE				RD4.7EB2	G2090158		1-	A	
MC4001	MIC. ELEMENT				EM-100PT	M3290029		1-	A	
R 4001	CARBON FILM RES.	6.8k	1/6W	5%	RD16PJ682 6.8K	J01225682		1-	A	
R 4002	CARBON FILM RES.	15k	1/6W	5%	RD16PJ153 15K	J01225153		1-	A	
R 4003	CARBON FILM RES.	15k	1/6W	5%	RD16PJ153 15K	J01225153		1-	A	
S 4001	TACT SWITCH				SKHHLN	N5090036		1-	A	
S 4002	TACT SWITCH				SKHHLN	N5090036		1-	A	
S 4003	TACT SWITCH				SKHHLN	N5090036		1-	A	
S 4004	TACT SWITCH				SKHHLN	N5090036		1-	A	

Exploded View & Miscellaneous Parts

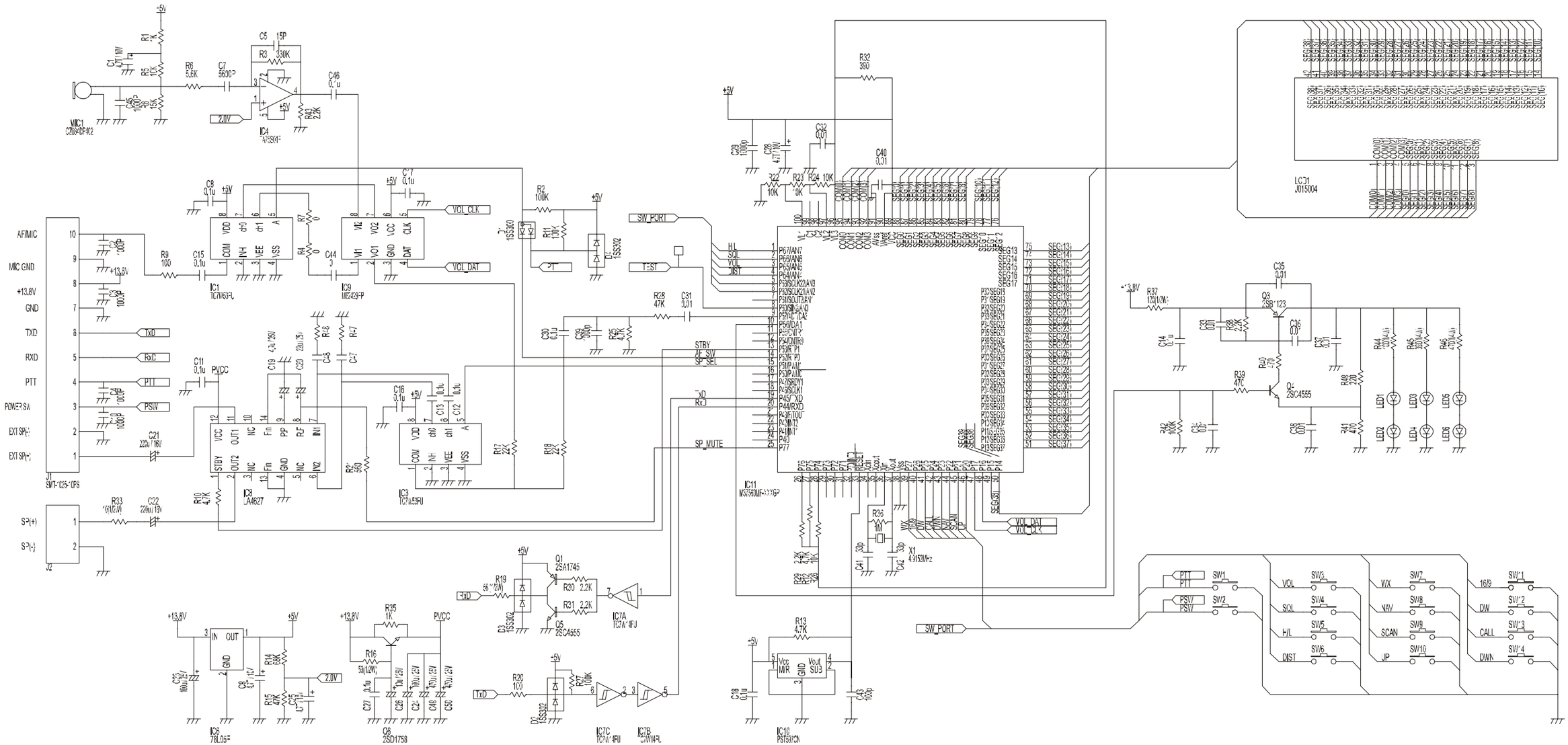


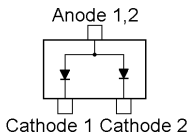
Non-designated parts are available only as part of a designated assembly.

REF.	VXSTD P/N	DESCRIPTION	QTY.
①	U40212220	TAPTITE SCREW M2.6X12SUS#2	6
②	U24320020	TAPTITE SCREW M3X20SUS	1
③	U24308002	TAPTITE SCREW M3X8NI	3
④	U24106001	TAPTITE SCREW M2X6	4
⑤	U9900159	TAPTITE SCREW M1.7X6	1

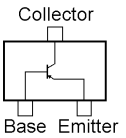
CMP25 RAM+ MIC (Option)

Circuit Diagram

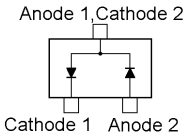




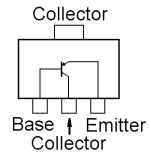
1SS300 (A3)
(D1)



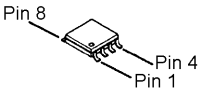
2SA1745 (ES)
(Q1)



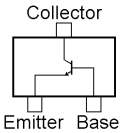
1SS302 (C3)
(D2, 3, 4)



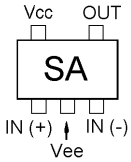
2SB1123 (BF)
(Q3)



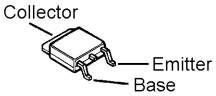
TC7W53FU
(IC01, 03)
TC7W14FU
(IC07)



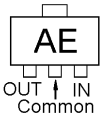
2SC4555 (UT)
(Q4, 5)



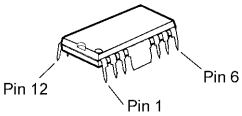
TA75S01F (SA)
(IC04, 05)



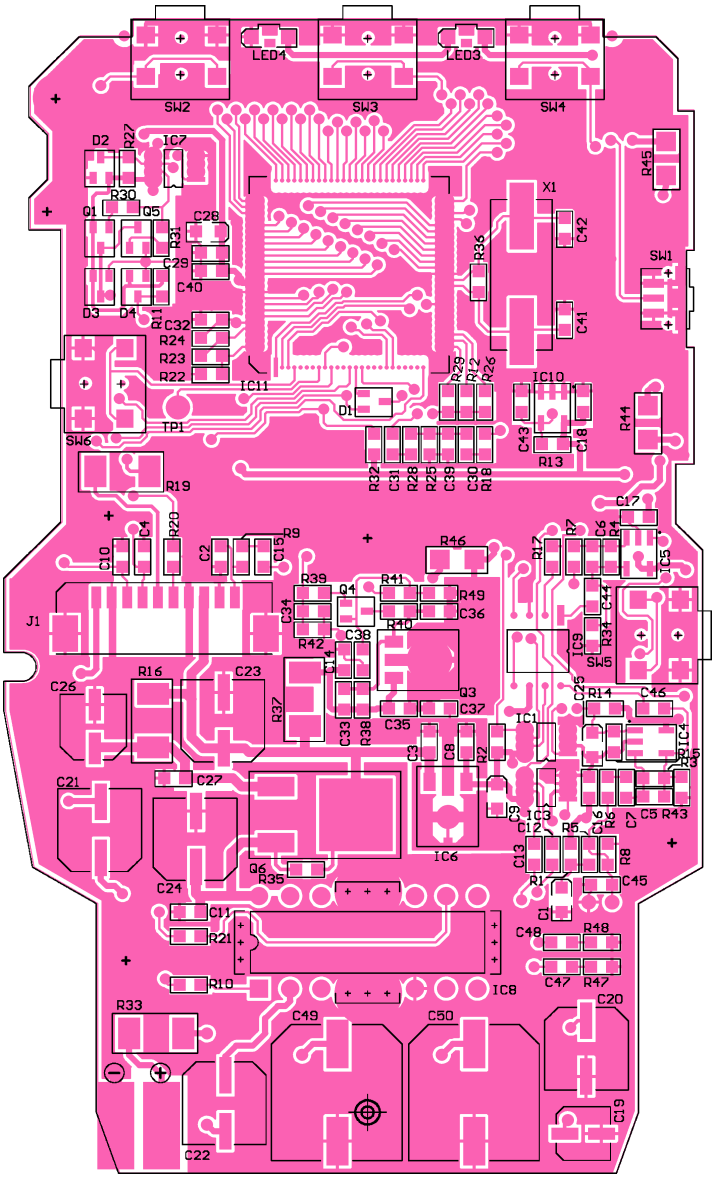
2SD1801S
(Q6)

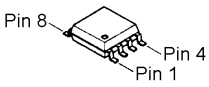


TA78L05F (AE)
(IC06)

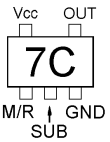


LA4627
(IC08)

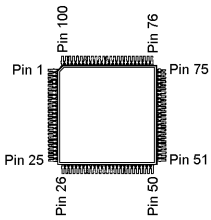




M62429FP
(IC09)



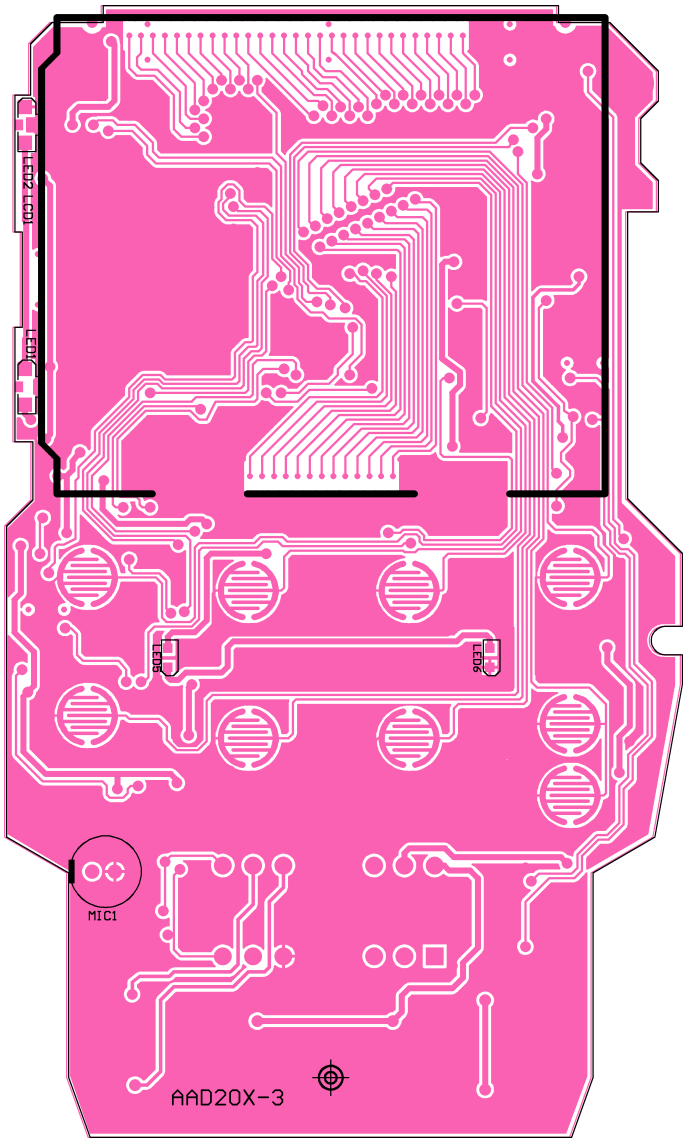
PST597CN (7C)
(IC10)

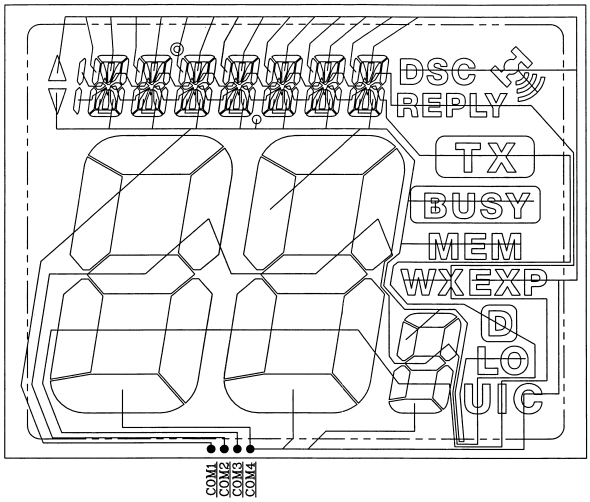


M37560MF
(IC11)

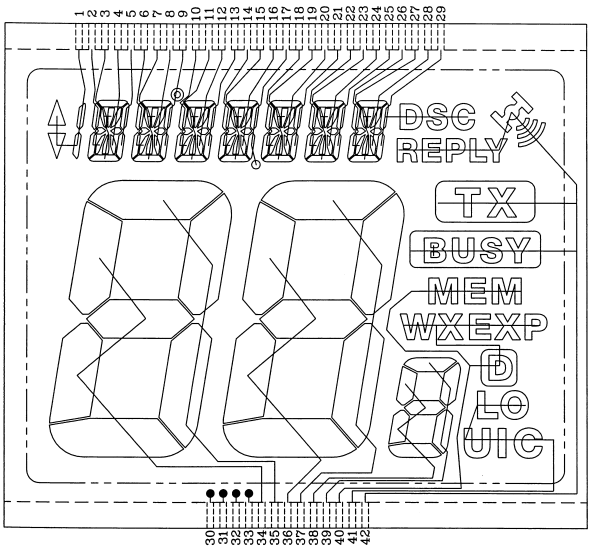
CMP25 RAM+ MIC (Option)

Parts Layout (Side B)





COMMON



SEGMENT

LCD (LCD1)

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
	PCB with Components					S8101542				
C1	Chip Tantal	4.7uF	16V		ESVP1A4R7M	K48120031	1-	A		
C2	Chip Cap	1000P	50V	B	GRM39B102K50PT	K22174821	1-	A		
C3	Chip Cap	1000P	50V	B	GRM39B102K50PT	K22174821	1-	A		
C4	Chip Cap	1000P	50V	B	GRM39B102K50PT	K22174821	1-	A		
C5	Chip Cap	15P	50V	CH	GRM39CH150J 50PT	K22174215	1-	A		
C6	Chip Cap	1000P	50V	B	GRM39B102K50PT	K22174821	1-	A		
C7	Chip Cap	5600P	50V	B	GRM39B562K50PT	K22174818	1-	A		
C8	Chip Cap	0.1u	25V	F	GRM39F104Z50PT	K22145001	1-	A		
C9	Chip Tantal	4.7T	16V		ESVP1A4R7M	K78120031	1-	A		
C10	Chip Cap	1000P	50V	B	GRM39B102K50PT	K22174821	1-	A		
C11	Chip Cap	0.1u	25V	F	GRM39F104Z50PT	K22145001	1-	A		
C12	Chip Cap	0.1u	25V	F	GRM39F104Z50PT	K22145001	1-	A		
C13	Chip Cap	0.1u	25V	F	GRM39F104Z50PT	K22145001	1-	A		
C14	Chip Cap	0.1u	25V	F	GRM39F104Z50PT	K22145001	1-	A		
C15	Chip Cap	0.1u	25V	F	GRM39F104Z50PT	K22145001	1-	A		
C16	Chip Cap	0.1u	25V	F	GRM39F104Z50PT	K22145001	1-	A		
C17	Chip Cap	0.1u	25V	F	GRM39F104Z50PT	K22145001	1-	A		
C18	Chip Cap	0.1u	25V	F	GRM39F104Z50PT	K22145001	1-	A		
C19	Electro. Chip Cap	4.7u	25V		25CV4.7BS	S8101534	1-	A		
C20	Electro. Chip Cap	100u	25V		25CV22BS	K48140010	1-	A		
C21	Electro. Chip Cap	220u	16V		16CV220BS	S8101535	1-	A		
C22	Electro. Chip Cap	220u	16V		16CV220BS	S8101535	1-	A		
C23	Electro. Chip Cap	100u	25V		25CV100BS	S8101536	1-	A		
C24	Electro. Chip Cap	100u	25V		25CV100BS	S8101536	1-	A		
C25	Chip Tantal	4.7T	16V		ESVP1A4R7M	K78120031	1-	A		
C26	Electro. Chip Cap	10u	25V		25CV10BS	K48140009	1-	A		
C27	Chip Cap	0.1u	25V		GRM39F104Z50PT	K22145001	1-	A		
C28	Chip Tantal	4.7T	16V		ESVP1A4R7M	K78120031	1-	A		
C29	Chip Cap	1000p	50V	B	GRM39B102K50PT	K22174821	1-	A		
C30	Chip Cap	0.1u	50V	F	GRM39F104Z50PT	K22145001	1-	A		
C31	Chip Cap	0.01	50V	B	GRM39B103K25PT	K22144803	1-	A		
C32	Chip Cap	0.01	50V	B	GRM39B103K25PT	K22144803	1-	A		
C33	Chip Cap	0.01	50V	B	GRM39B103K25PT	K22144803	1-	A		
C34	Chip Cap	0.01	50V	B	GRM39B103K25PT	K22144803	1-	A		
C35	Chip Cap	0.01	50V	B	GRM39B103K25PT	K22144803	1-	A		
C36	Chip Cap	0.01	50V	B	GRM39B103K25PT	K22144803	1-	A		
C37	Chip Cap	0.01	50V	B	GRM39B103K25PT	K22144803	1-	A		
C38	Chip Cap	0.01	50V	B	GRM39B103K25PT	K22144803	1-	A		
C39	Chip Cap	1000p	50V	B	GRM39B102K50PT	K22174821	1-	A		
C40	Chip Cap	0.01	25V	B	GRM39B103K25PT	K22144803	1-	A		
C41	Chip Cap	33p	50V	CH	GRM39CH330J 50PT	K22174223	1-	A		
C42	Chip Cap	33p	50V	CH	GRM39CH330J 50PT	K22174223	1-	A		
C43	Chip Cap	100p	50V	CH	GRM39CH101J 50PT	K22174235	1-	A		
C44	Chip Cap	0.1u	25V	F	GRM39F104Z50PT	K22145001	1-	A		
C45	Chip Cap	1000P	50V	B	GRM39B102K50PT	K22174821	1-	A		
C46	Chip Cap	0.1u	25V	F	GRM39F104Z50PT	K22145001	1-	A		
C49	Electro. Chip Cap	470uF	25V		25CV470BS	S8101537	1-	A		
C50	Electro. Chip Cap	470uF	25V		25CV470BS	S8101537	1-	A		
D1	Switching Diode (Anode Com.)		1SS300		1SS300	G2070084	1-	A		
D2	Switching Diode (Series conn.)		1SS302		1SS302	G2070088	1-	A		
D3	Switching Diode (Series conn.)		1SS302		1SS302	G2070088	1-	A		
D4	Switching Diode (Series conn.)		1SS302		1SS302	G2070088	1-	A		
IC1	Analog Switch MPX	TC4W53FU			TC7W53FU	S8101529	1-	A		
IC3	Analog Switch MPX	TC4W53FU			TC7W53FU	S8101529	1-	A		
IC4	Ope. Amp.	TA75S01F			TA75S01F	G1091593	1-	A		
IC5	Ope. Amp.	TA75S01F			TA75S01F	G1091593	1-	A		
IC6	3 Terminal Regulator	78L05F			78L05F	G1091014	1-	A		
IC7	Schmitt Invertor	TC7W14FU			TC7W14FU	G1093321	1-	A		
IC8	Audio Amp.	LA4627			LA4627	S8101528	1-	A		
IC9	Electronic Volume	M62429FP			M62429FP	G1093655	1-	A		
IC10	Reset IC	PST597CN			PST597CN	G1092589	1-	A		
IC11	CPU	M37560MF			M37560MF	※	1-	A		
J01		CON-10P2			SMT-1025-10PS	S8101539	1-	A		
LCD1		J015004			J015004	G6090148	1-	B		
LED1	Chip LED Front View	SML-712WW			FY1101F	S8101532	1-	B		
LED2	Chip LED Front View	SML-712WW			FY1101F	S8101532	1-	B		
LED3	Chip LED Front View	SML-712WW			FY1101F	S8101532	1-	A		
LED4	Chip LED Front View	SML-712WW			FY1101F	S8101532	1-	A		
LED5	Chip LED Side View	SML-712WW			FY1111C	S8101533	1-	B		
LED6	Chip LED Side View	SML-712WW			FY1111C	S8101533	1-	B		
MIC1	EMC Condenser Mic	WM-61B			CZ034DP402	S8101540	1-	B		
Q1	Low Frequ. Amp	2SA1577			2SA1745	S8101526	1-	A		

※: Please contact Vertex Standard

CMP25 RAM+ MIC (Option)

Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT	SIDE	LAY ADR
Q3	Power Switching/Power Drive	2SB1188			2SB1123	S8101525	1-	A		
Q4	Low Frequ. Amp	2SC4097			2SC4555	S8101527	1-	A		
Q5	Low Frequ. Amp	2SC4097			2SC4555	S8101527	1-	A		
Q6	Power Switching	2SD1758			2SD1801S	G3418018S	1-	A		
R1	Chip Resister	1K	1/16W		CR1/16-102KJV	J24185102	1-	A		
R2	Chip Resister	100K	1/16W		CR1/16-104KJV	J24185104	1-	A		
R3	Chip Resister	330K	1/16W		CR1/16-334KJV	J24185334	1-	A		
R4	Chip Resister	10K	1/16W		CR1/16-103KJV	J24185103	1-	A		
R5	Chip Resister	10K	1/16W		CR1/16-103KJV	J24185103	1-	A		
R6	Chip Resister	5.6K	1/16W		CR1/16-562KJV	J24185562	1-	A		
R7	Chip Resister	10K	1/16W		CR1/16-103KJV	J24185103	1-	A		
R8	Chip Resister	15K	1/16W		CR1/16-153KJV	J24185153	1-	A		
R9	Chip Resister	100	1/16W		CR1/16-101JV	J24185101	1-	A		
R10	Chip Resister	4.7K	1/16W		CR1/16-472KJV	J24185472	1-	A		
R11	Chip Resister	100K	1/16W		CR1/16-104KJV	J24185104	1-	A		
R12	Chip Resister	4.7K	1/16W		CR1/16-472KJV	J24185472	1-	A		
R13	Chip Resister	4.7K	1/16W		CR1/16-472KJV	J24185472	1-	A		
R14	Chip Resister	68K	1/16W		CR1/16-683KJV	J24185683	1-	A		
R15	Chip Resister	47K	1/16W		CR1/16-473KJV	J24185473	1-	A		
R16	Chip Resister	56(1/2W)	1/2W		CR1/2-560JV	J24275560	1-	A		
R17	Chip Resister	22K	1/16W		CR1/16-223KJV	J24185223	1-	A		
R18	Chip Resister	22K	1/16W		CR1/16-223KJV	J24185223	1-	A		
R19	Chip Resister	56	1/2W		CR1/2-560JV	J24275560	1-	A		
R20	Chip Resister	100	1/16W		CR1/16-101JV	J24185101	1-	A		
R21	Chip Resister	560	1/16W		CR1/16-561JV	J24185561	1-	A		
R22	Chip Resister	10K	1/16W		CR1/16-103KJV	J24185103	1-	A		
R23	Chip Resister	10K	1/16W		CR1/16-103KJV	J24185103	1-	A		
R24	Chip Resister	10K	1/16W		CR1/16-103KJV	J24185103	1-	A		
R25	Chip Resister	4.7K	1/16W		CR1/16-472KJV	J24185472	1-	A		
R26	Chip Resister	10K	1/16W		CR1/16-103KJV	J24185103	1-	A		
R27	Chip Resister	100K	1/16W		CR1/16-104KJV	J24185104	1-	A		
R28	Chip Resister	47K	1/16W		CR1/16-473KJV	J24185473	1-	A		
R29	Chip Resister	2.2K	1/16W		CR1/16-222KJV	J24185222	1-	A		
R30	Chip Resister	2.2K	1/16W		CR1/16-222KJV	J24185222	1-	A		
R31	Chip Resister	2.2K	1/16W		CR1/16-222KJV	J24185222	1-	A		
R32	Chip Resister	390	1/16W		CR1/16-391JV	J24185391	1-	A		
R33	Chip Resister	10	1/2W		CR1/2-100JV	J24275100	1-	A		
R34	Chip Resister	2.2K	1/16W		CR1/16-222KJV	J24185222	1-	A		
R35	Chip Resister	1K	1/16W		CR1/16-102KJV	J24185102	1-	A		
R36	Chip Resister	1M	1/16W		CR1/16-105MJV	J24185105	1-	A		
R37	Chip Resister	120	1/2W		CR1/2-121JV	J24275121	1-	A		
R38	Chip Resister	2.2K	1/16W		CR1/16-222KJV	J24185222	1-	A		
R39	Chip Resister	120	1/2W		CR1/2-121JV	J24275121	1-	A		
R40	Chip Resister	470	1/16W		CR1/16-471JV	J24185471	1-	A		
R41	Chip Resister	470	1/16W		CR1/16-471JV	J24185471	1-	A		
R42	Chip Resister	100K	1/16W		CR1/16-104KJV	J24185104	1-	A		
R43	Chip Resister	2.2K	1/16W		CR1/16-222KJV	J24185222	1-	A		
R44	Chip Resister	100	1/4W		CR1/4-101JV	J24275101	1-	A		
R45	Chip Resister	100	1/4W		CR1/4-391JV	J24279024	1-	A		
R46	Chip Resister	100	1/4W		CR1/4-471JV	J24275471	1-	A		
R49	Chip Resister	220	1/16W		CR1/16-221JV	J24185221	1-	A		
SW1	TACT Switch	SW-PB			SKRT	N5090130	1-	A		
SW2	TACT Switch	SW-PB			SKQLLCE012	S8101530	1-	A		
SW3	TACT Switch	SW-PB			SKQLLCE012	S8101530	1-	A		
SW4	TACT Switch	SW-PB			SKQLLCE012	S8101530	1-	A		
SW5	TACT Switch	SW-PB			SKQLLCE012	S8101530	1-	A		
SW6	TACT Switch	SW-PB			SKQLLCE012	S8101530	1-	A		
W1	Carl Cable Black					S8101514	1-	A		
W2	Carl Cable White					S8101513	1-	A		
W3	Extension Cable					S8101512	1-	A		
X1	49/U LP-5.OS.2S(SMD)	4.9152MHz			4.915200MHz	S8101541	1-	A		

STANDARD HORIZON

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