ICOM®

SERVICE MANUAL

VHF/UHF DIGITAL TRANSCEIVER

ID-800H

S-14121HZ-C1
May. 2005

Icom Inc.

INTRODUCTION

This service manual describes the latest service information for the **ID-800H** VHF/UHF DIGITAL TRANSCEIVER at the time of publication.

MODEL	VERSION	SYMBOL
ID-800H	U.S.A.	USA
	Export	EXP

To upgrade quality, any electrical or mechanical parts and internal circuits are subject to change without notice or obligation.

DANGER

NEVER connect the transceiver to an AC outlet or to a DC power supply that uses more than 16 V. This will ruin the transceiver.

DO NOT expose the transceiver to rain, snow or any liquids.

DO NOT reverse the polarities of the power supply when connecting the transceiver.

DO NOT apply an RF signal of more than 20 dBm (100 mW) to the antenna connector. This could damage the transceiver's front end.

ORDERING PARTS

Be sure to include the following four points when ordering replacement parts:

1. 10-digit order numbers
2. Component part number and name
3. Equipment model name and unit name
4. Quantity required

<SAMPLE ORDER>

1140005990	S.IC	MB15A02PFV	ID-800H	MAIN UNIT	5 pieces
8810009610	Screw	FH M2.6×6 ZK	ID-800H	Bottom cover	10 pieces

Addresses are provided on the inside back cover for your convenience.

REPAIR NOTES

1. Make sure a problem is internal before disassembling the transceiver.
2. **DO NOT** open the transceiver until the transceiver is disconnected from its power source.
3. **DO NOT** force any of the variable components. Turn them slowly and smoothly.
4. **DO NOT** short any circuits or electronic parts. An insulated tuning tool **MUST** be used for all adjustments.
5. **DO NOT** keep power ON for a long time when the transceiver is defective.
6. **DO NOT** transmit power into a signal generator or a sweep generator.
7. **ALWAYS** connect a 50 dB to 60 dB attenuator between the transceiver and a deviation meter or spectrum analyzer when using such test equipment.
8. **READ** the instructions of test equipment thoroughly before connecting equipment to the transceiver.

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SECTION 1 SPECIFICATIONS

■ GENERAL

• Frequency range :

VERSION	RX (MHz)	TX (MHz)
[USA]	118.000–173.995*1, 230.000–549.995*3 810.000–824.000*4, 849.000–869.000*4 894.000–999.990*4	144.000–148.000, 440.000–450.000
[EXP]	118.000–173.995*1, 230.000–549.995*2 810.000–999.990*4	144.000–148.000, 430.000–440.000

*1Guaranteed 144.000–148.000 MHz, *2Guaranteed 430.000–440.000 MHz
*3Guaranteed 440.000–450.000 MHz, *4Not guaranteed

• Type of emission : FM, GMSK, AM (118.0–135.995 MHz range and Rx only.)
• Digital Transmission speed : 4.8 kbps
• CODEC : AMBE 2.4 kbps
• Number of memory channel : 512 (including 10 scan edges and 2 calls)
• Usable temperature range : –10˚C to +60˚C; +14˚F to +140˚F
• Frequency resolution : 5, 10, 12.5, 15, 20, 25, 30, 50, 100, 200 kHz
• Frequency stability : ±2.5 ppm (–10˚C to +60˚C; +14˚F to +140˚F)
• Power supply requirement : 13.8 V DC ±15% (negative ground)
• Current drain (at 13.8 V DC) :

		VHF	UHF
TX	High	12 A (at 55 W)	12.5 A (at 50 W)
	Middle	7.5 A (at 15 W)	7.5 A (at 15 W)
	Low	5.5 A (at 5 W)	5.0 A (at 5 W)
RX	Standby	0.9 A	
	Max. audio	1.1 A	

• Antenna connector : SO-239 (50 Ω)
• Dimensions (proj. not included) : 141(W)×40(H)×185.4(D) mm; 5 9/16(W)×1 9/16(H)×7 5/16(D) inch
• Weight (approx.) : 1.2 kg; 2 lb 10 oz

■ TRANSMITTER

• Output power (at 13.8 V DC; typ.) : VHF 55 W /15 W/5 W (selectable)
UHF 50 W/15 W/5 W (selectable)
• Modulation system : FM Variable reactance frequency modulation
DV GMSK
• Maximum frequency deviation : ±5.0 kHz
• Spurious emissions : Less than –60 dB
• Microphone connector : 8-pin modular jack (600 Ω)

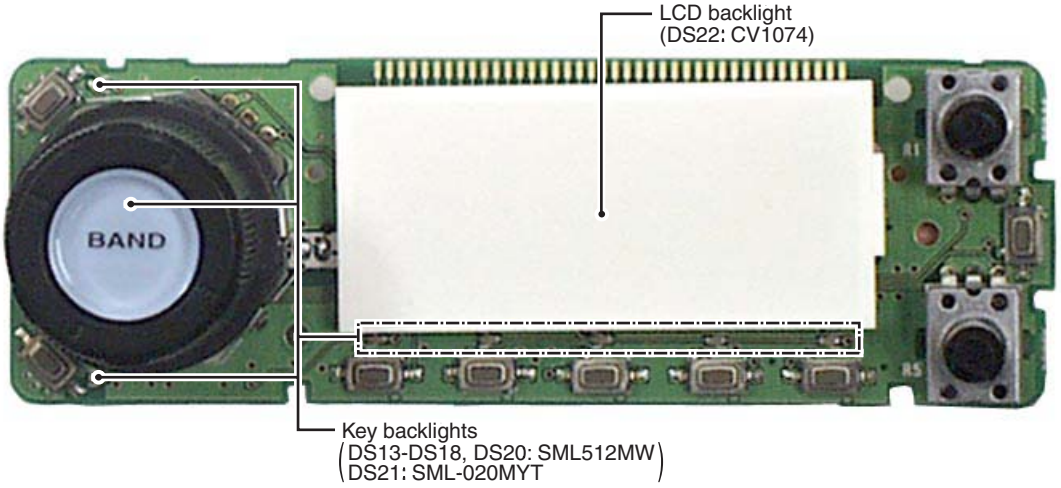
■ RECEIVER

• Receive system : Double-conversion superheterodyne
• Intermediate frequencies : 1st IF 46.05 MHz, 2nd IF 450 kHz
• Sensitivity : FM Less than 0.18 µV (–122 dBm) at 12 dB SINAD
DV Less than 0.35 µV (–116 dBm) at BER 1×10^{-2}
• Squelch sensitivity : Less than 0.13 µV (–125 dBm) at threshold
• Selectivity : Wide More than 12 kHz/6 dB, Less than 30 kHz/60 dB
Narrow More than 6 kHz/6 dB, Less than 20 kHz/60 dB
• Spurious and image rejection : More than 60 dB
• AF output power (at 13.8 V DC) : More than 2.0 W at 10% distortion with an 8 Ω load
• External speaker connector : 3-conductor 3.5(d) mm (1/8")/8 Ω

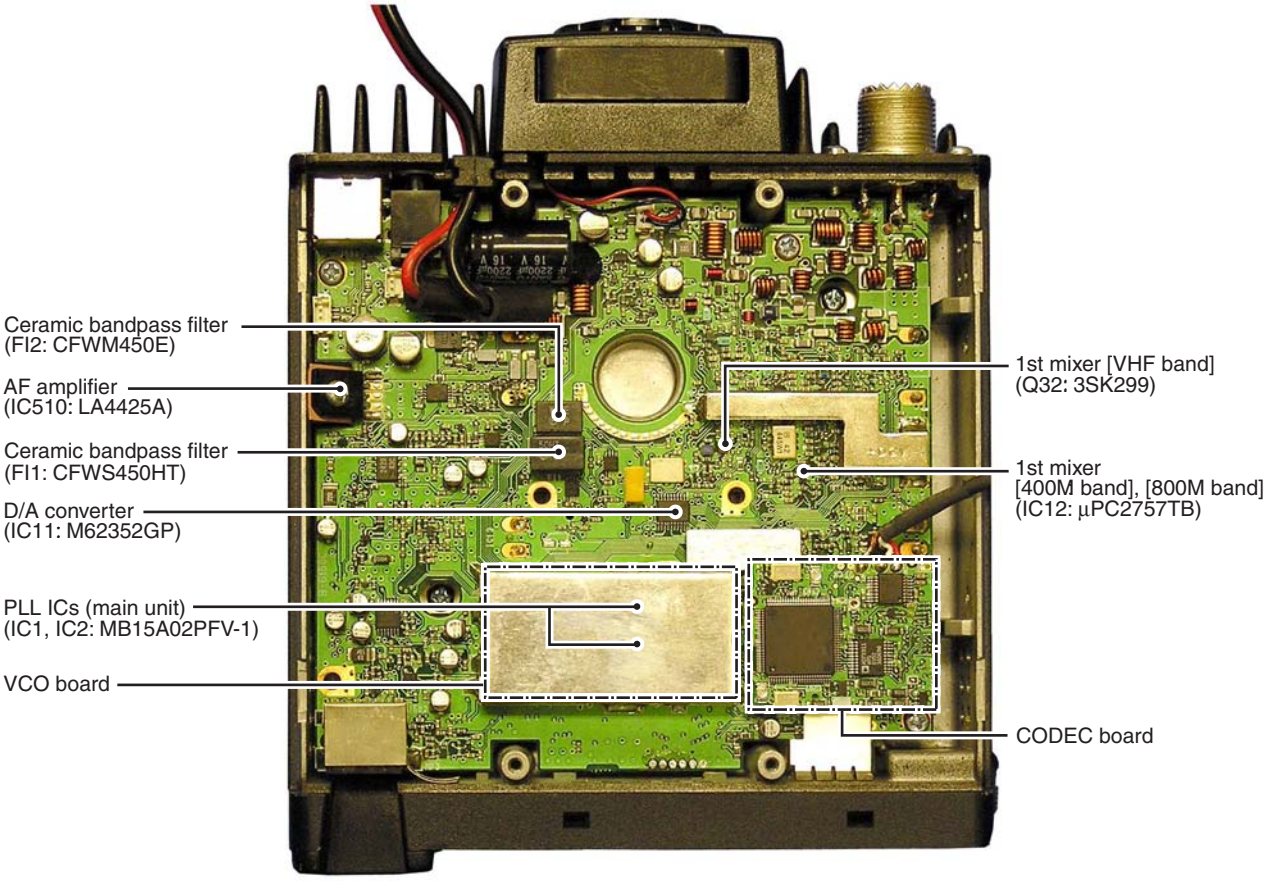
All stated specifications are subject to change without notice or obligation.

SECTION 2 INSIDE VIEWS

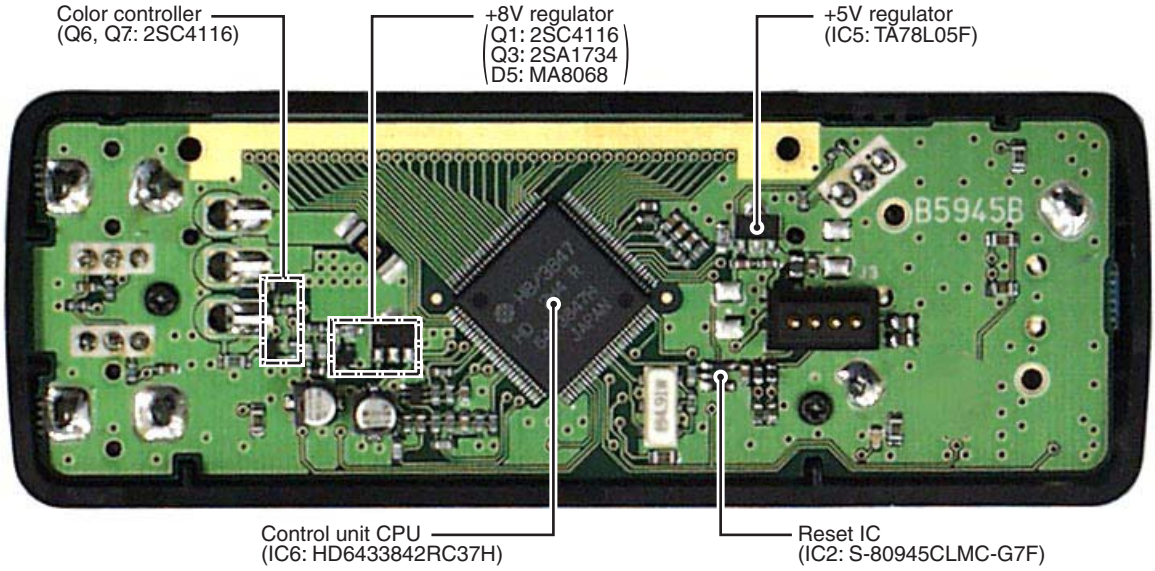
• CONTROL UNIT (TOP VIEW)



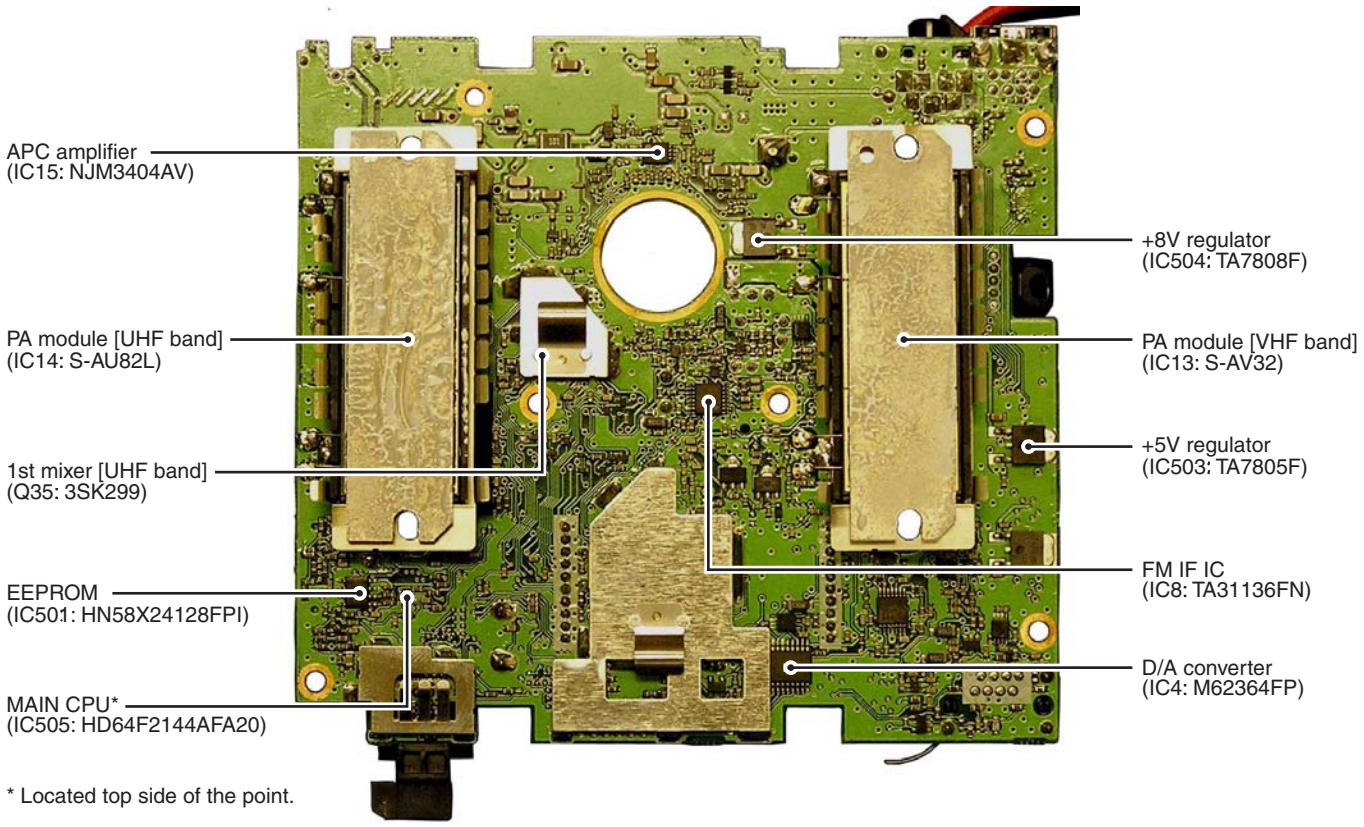
• MAIN UNIT (TOP VIEW)



• CONTROL UNIT (BOTTOM VIEW)



• MAIN UNIT (BOTTOM VIEW)

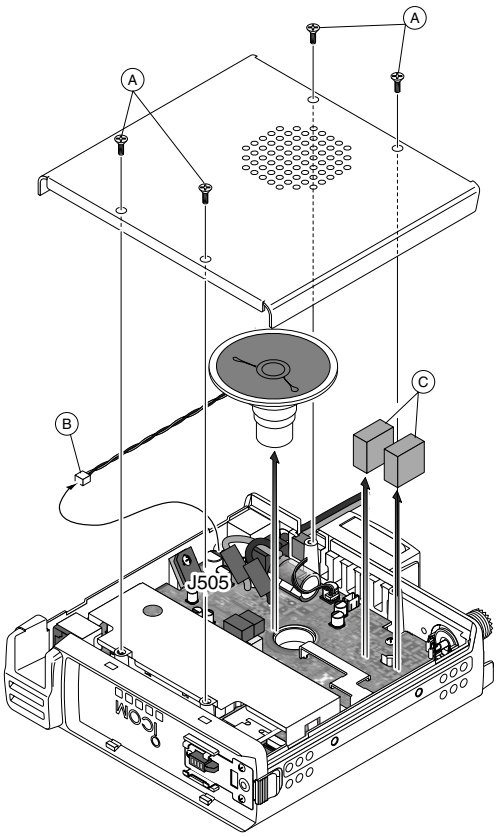


* Located top side of the point.

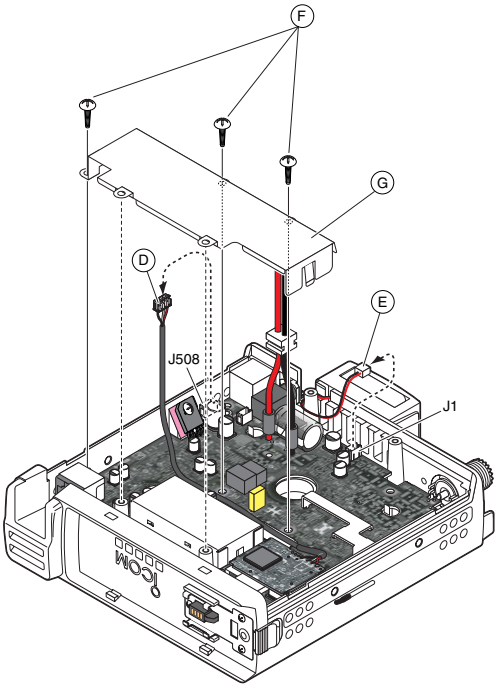
SECTION 3 DISASSEMBLY INSTRUCTIONS

• REMOVING THE MAIN UNIT AND CODEC BOARD

① Unscrew 4 screws Ⓐ, and remove the cover.
② Disconnect the cable Ⓑ from J505, and remove the speaker.
③ Remove 2 cube shaped rubbers Ⓒ.



④ Disconnect the cable Ⓓ from J508.
⑤ Disconnect the cable Ⓔ from J1.
⑥ Unscrew 3 screws Ⓕ, and remove the shield cover Ⓖ.



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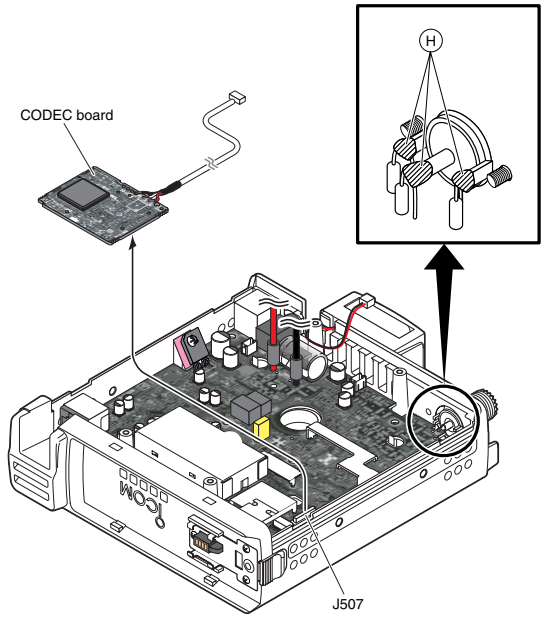
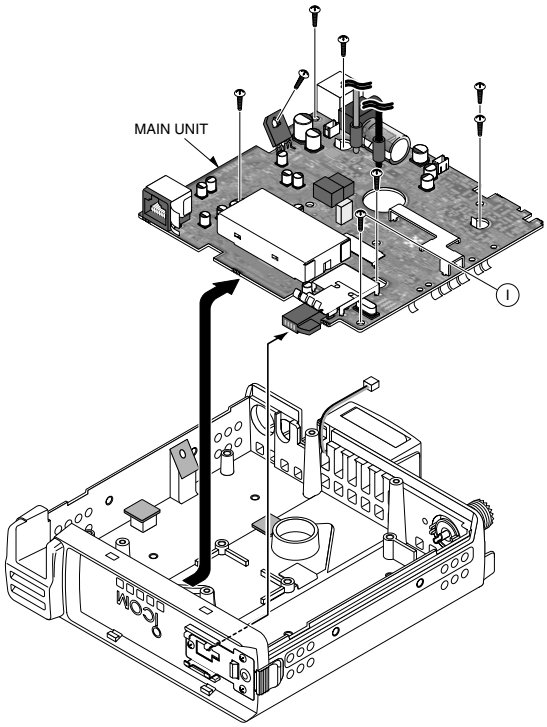
⑦ Remove the CODEC board from J507.
⑧ Unsolder 3 points Ⓗ.

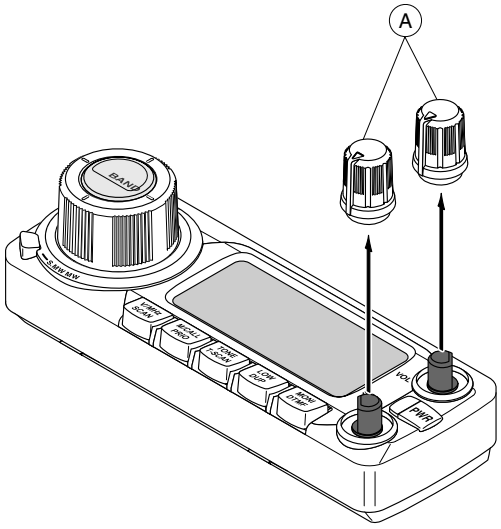


⑨ Unscrew 8 screws Ⓘ, and remove the MAIN unit.

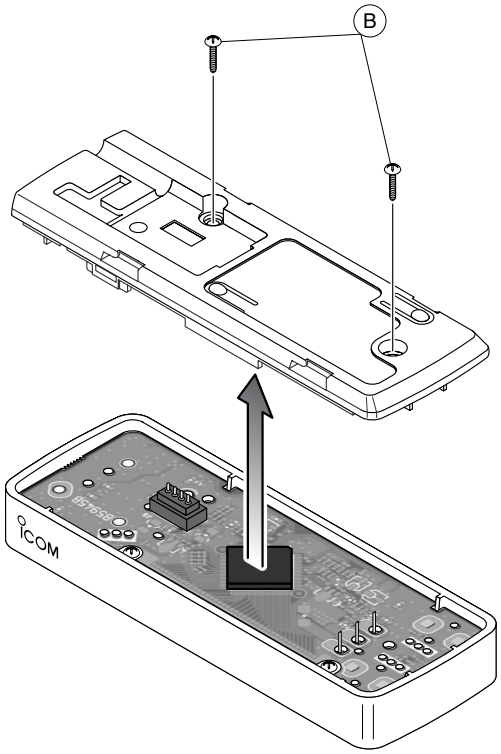


• REMOVING THE CONTROL UNIT

① Remove 2 knobs Ⓐ.

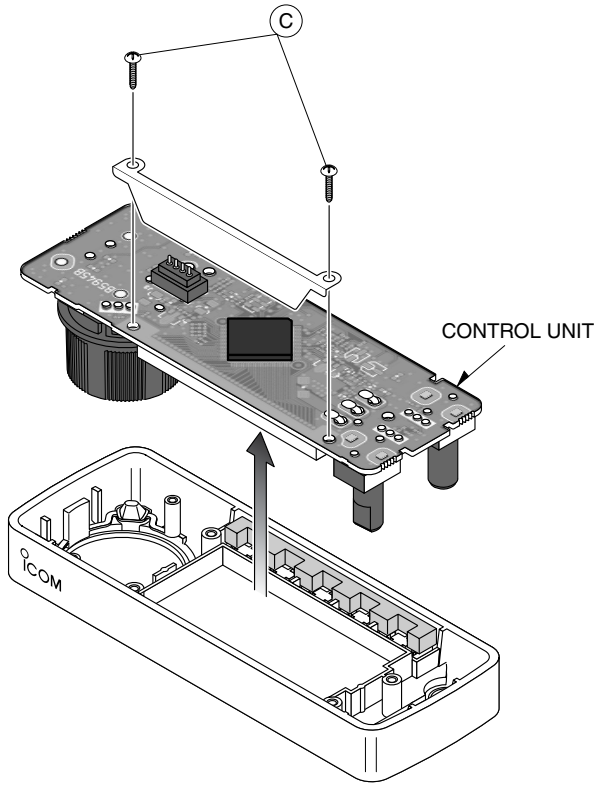


② Unscrew 2 screws Ⓑ, and remove the cover.



Continue to right above.

③ Unscrew 2 screws Ⓒ, and remove the LCD plate.
④ Remove the CONTROL unit.



SECTION 4 CIRCUIT DESCRIPTION

4-1 RECEIVER CIRCUITS

4-1-1 TRIPLEXER CIRCUIT (MAIN UNIT)

The transceiver has a triplexer (low-pass and high-pass filters) on the first stage from the antenna connector (CHASSIS; J2) to separate the signals into VHF, UHF and 800 MHz band signals. The 2 of low-pass filters (L51, L52, L56, C295, C299 and L45, L46, L49, C282, C285, C289) are for VHF band signals, the low-pass (L51, L52, L56, C295, C299) and high-pass (L47, L50, C284, C288, C292, C586) filters are for UHF band signals and high-pass filter (L55, L58, C298, C302, C304) is for 800 MHz band signals.

The separated signals are applied to each antenna switching circuits .

4-1-2 ANTENNA SWITCHING CIRCUITS (MAIN UNIT)

The antenna switching circuit (VHF: D50, UHF: D51) functions as a low-pass filter while receiving. However, its impedance becomes very high while transmitting. Thus transmit signals are blocked from entering the receiver circuits. The antenna switching circuit employs a ¼λ type diode switching system.

800 MHz band signals pass through the antenna switch (D44).

The passed signals are then applied to the each attenuator circuits.

4-1-3 ATTENUATOR CIRCUITS (MAIN UNIT)

The attenuator circuit attenuates the signal strength to a maximum of 10 dB to protect the RF amplifier from distortion when excessively strong signals are received.

The RF signals from the antenna switching circuits pass through the each attenuator circuit (for VHF band is D49, for UHF band is D46 and D48, for 800 MHz band is D39).

The D/A converter outputs “ATT” signal (IC11, pin 6), and is then applied to the attenuator controller (Q44). The circuit output attenuator control signals to each attenuator circuits.

The attenuated signals are applied to the each RF circuits.

4-1-4 RF CIRCUITS (MAIN UNIT)

The RF circuit amplifies signals within the range of frequency coverage and filters out-of-band signals.

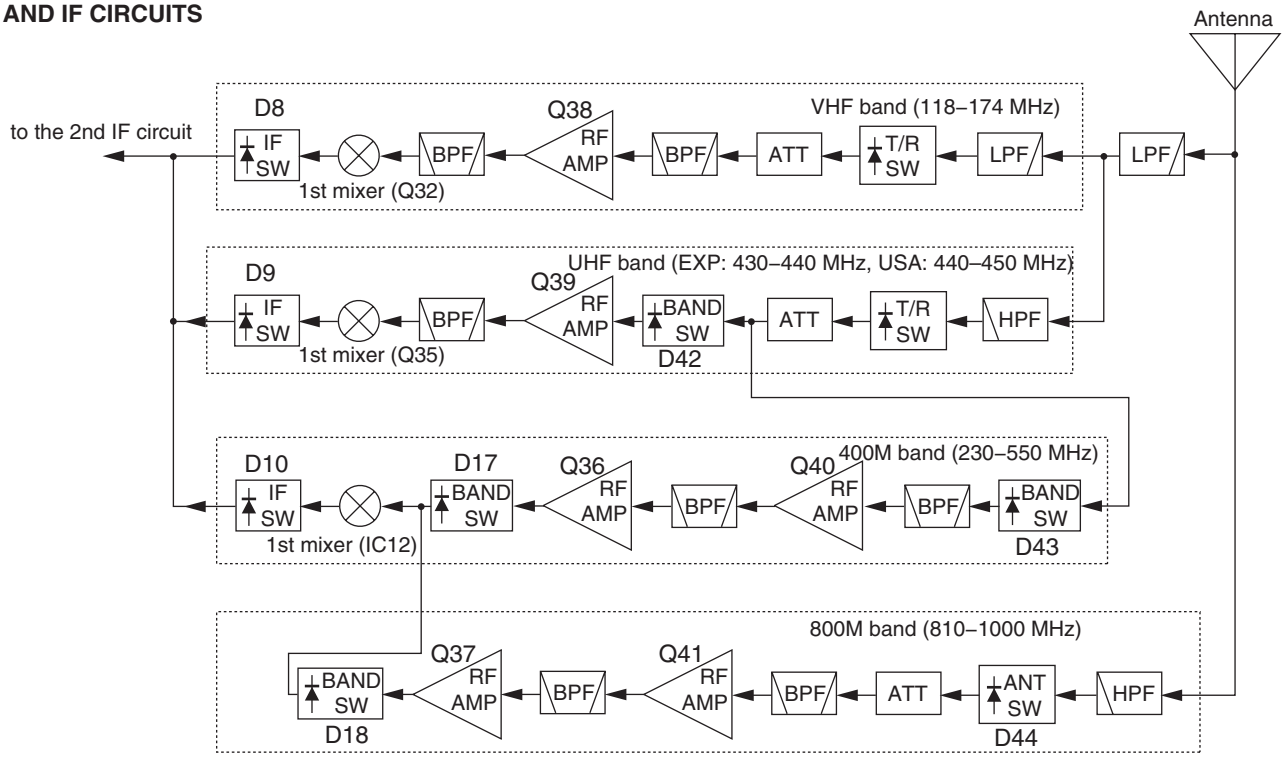
• VHF BAND RF CIRCUIT (118–174 MHz)

The RF signals from the attenuator circuit pass through the tunable bandpass filter (D41, L40, L44, C273, C280). The filtered signals are amplified at the RF amplifier (Q38) and are then applied to the another 3-stage tunable bandpass filter (D22, D23, D29, L28, C171, C174, C176, C177, C181, C185, C191, C198, C201, C204, C208) to suppress unwanted signals and improve the selectivity. The filtered signals are applied to the VHF 1st mixer circuit (Q32).

• UHF BAND RF CIRCUIT
(EXP: 430–440 MHz, USA: 440–450 MHz)

The RF signals from the attenuator circuit are applied to the RX switch (D42). The switched signals are amplified at the RF amplifier (Q39) and are then applied to the bandpass filter (FI4) to suppress unwanted signals. The filtered signals are applied to the UHF 1st mixer circuit (Q35).

• RF AND IF CIRCUITS



• 400 MHz BAND RF CIRCUIT
(230–550 MHz EXCEPT UHF BAND)

The RF signals from the attenuator circuit are applied to the band switch (D43). The switched signals are passed through the tunable bandpass filter (D36, L37, L38, C242, C253, C261) and are then amplified at the RF amplifier (Q40). The amplified signals are applied to the another 2-stage tunable bandpass filter (D25, D30, C196, C205, C212) to suppress unwanted signals and improve the selectivity. The filtered signals are applied to the RF amplifier (Q36). The amplified signals pass through the 400 MHz band switch (D17), and then applied to the 400/800 MHz band 1st mixer circuit (IC12).

• 800 MHz BAND RF CIRCUIT (810–1000 MHz)

The RF signals from the attenuator circuit are applied to the antenna switch (D44). The switched signals are passed through the tunable bandpass filter (D37, L39, C243, C254, C260, C269) and are then amplified at the RF amplifier (Q41). The amplified signals are applied to the another tunable bandpass filter (D26, D31, L27, L31, C188, C197, C206, C213, C223) to suppress unwanted signals and improve the selectivity. The filtered signals are applied to the RF amplifier (Q37). The amplified signals pass through the 800 MHz band switch (D18), and then applied to the 400/800 MHz band 1st mixer circuit (IC12) same as 400 MHz band signals.

The tunable bandpass filters (D22, D23, D25, D26, D29–D31, D36, D37) employ varactor diodes to tune the center frequency of the RF passband for wide bandwidth receiving and good image response rejection.

4-1-5 1ST MIXER CIRCUIT (MAIN UNIT)

The 1st mixer circuit converts the received signal to a fixed frequency of the 1st IF signal with the 1st LO frequency.

• VHF BAND

The filtered signals from the tunable bandpass filter (D22) are mixed with the 1st LO signal at the 1st mixer circuit (Q32) to produce the 46.05 MHz 1st IF signal. The 1st IF signal passes through the IF switch (D8), and are then applied to the 1st IF circuit.

• UHF BAND
(EXP: 430–440 MHz, USA: 440–450 MHz)

The filtered signals from the bandpass filter (FI4) are mixed with the 1st LO signal at the 1st mixer circuit (Q35) to produce the 46.05 MHz 1st IF signal. The 1st IF signal passes through the IF switch (D9), and are then applied to the 1st IF circuit.

• 400 MHz AND 800 MHz BAND
(230–550 MHz EXCEPT UHF BAND, 810–1000 MHz)

The switched signals from the band switch (D17, D18) are mixed with the 1st LO signal at the 1st mixer circuit (IC12, pins 1, 6) to produce the 46.05 MHz 1st IF signal. The 1st IF signal passes through the IF switch (D10), and are then applied to the 1st IF circuit.

The 46.05 MHz 1st IF signals from the each IF switches are filtered at the monolithic filter (FI3) to suppress out-of-band signals, and then pass through to the limiter circuit (D6). The level adjusted signal from the limiter circuit is amplified at the IF amplifier (Q18), and then applied to the 2nd mixer circuit (IC8).

4-1-6 2ND IF AND DEMODULATOR CIRCUITS (MAIN UNIT)

The 2nd mixer circuit converts the 1st IF signal to the 2nd IF signal. A double superheterodyne system (which converts receive signals twice) improves the image rejection ratio and obtains stable receiver gain.

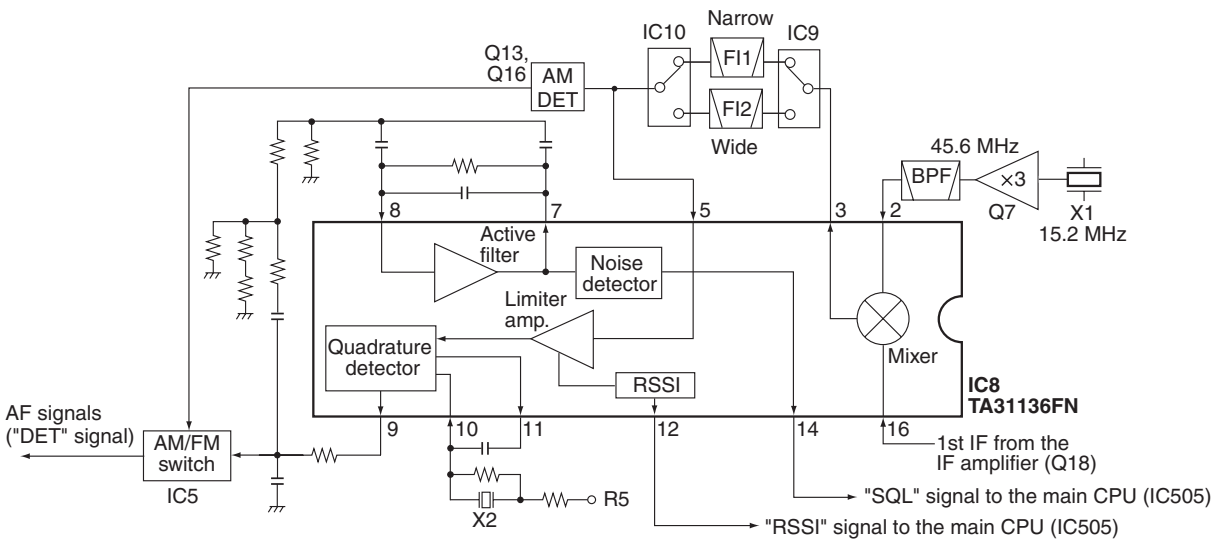
The FM IF IC (IC8) contains the 2nd mixer, limiter amplifier, quadrature detector, and noise detector circuits, etc.

The 1st IF signal from the IF amplifier (Q18) is applied to the 2nd mixer section of IC8 (pin 16), and is mixed with the 45.6 MHz 2nd LO signal to be converted into the 450 kHz 2nd IF signal.

The 2nd LO signal (45.6 MHz) is produced at PLL circuit by tripling it's reference frequency (X1: 15.2 MHz) at the tripler (Q7).

The 2nd IF signal from the 2nd mixer (IC8, pin 3) passes through one of the ceramic filters (FI1: Narrow, FI2: Wide), where unwanted signals are suppressed.

• 2ND IF AND DEMODULATOR CIRCUIT



The ceramic filters (FI1, FI2) are switched by W/N switches (IC9, IC10) that is controlled by “WN_SEL” signal from the main CPU (IC505, pin 99).

The filtered signal is applied to the AM or FM detector circuit separately.

• IN CASE OF FM/DV MODE SIGNAL RECEIVING

The filtered 2nd IF signal from the W/N switch (IC10, pin 1) is applied to the limiter amplifier section of the FM IF IC (IC8, pin 5). The amplified signal is applied to the quadrature detector section (IC8, pins 10, 11) to demodulate the 2nd IF into AF signals and then passed through the AM/FM switch (IC5, pins 1, 7).

While operating in DV mode, the switched AF signals from AM/FM switch (IC5, pin 1) are applied the CODEC circuit via J507 (pin 4).

While operating in FM mode, the switched AF signals from AM/FM switch (IC5, pin 1) are applied the AF circuit via the A/D switch (IC516, pins 1, 6).

• IN CASE OF AM MODE SIGNAL RECEIVING

The filtered 2nd IF signal from the W/N switch (IC10, pin 1) is applied to the AM detector (Q13, Q16) to demodulate the 2nd IF signal into AF signals and then passed through the AM/FM switch (IC5, pins 1, 6).

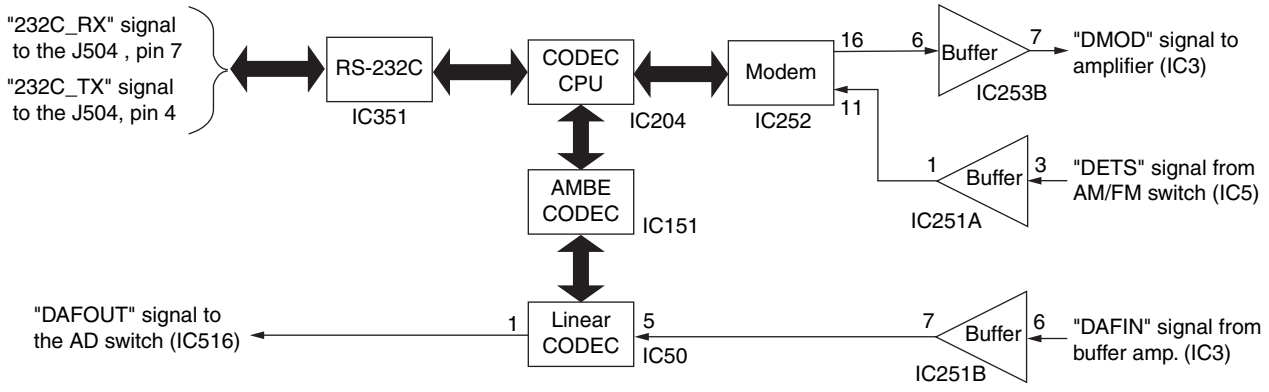
The switched AF signals from AM/FM switch (IC5, pin 1) are applied to the AF circuit via the A/D switch (IC516, pins 1, 6).

4-1-7 CODEC CIRCUIT (CODEC BOARD)

The switched AF signals “DETS” from the AM/FM switch (MAIN unit; IC5, pin 1) via the J301 (pin 22) are amplified at the buffer amplifier (IC251, pins 1, 2). The amplified signals are applied to the GMSK modem (IC252, pin 11), and are then applied to the CODEC CPU (IC204) as clock synchronizer digital signal. The digital signals from the CODEC CPU (IC204) are applied to the AMBE voice CODEC IC (IC151) to process code extension, and are then applied to the linear CODEC IC (IC50) as 32 bits digital voice data. The digital signals are converted into the analog AF signals at the D/A converter section (IC50), and are then applied to the AD switch (MAIN unit; IC516, pin 7) via the J301 (pin 22) as “DAFOUT” signal.

The output signals from the CODEC board are applied to the AF circuit.

• CODEC CIRCUIT



4-1-8 AF AMPLIFIER CIRCUIT (MAIN UNIT)

The AF amplifier circuit amplifies the detected audio signals to drive a speaker. The AF circuit includes an AF mute circuit for the squelch.

The audio signals from the AD switch (IC516, pin 1) are passed through the low-pass filter (Q5), and are then applied to the electric volume (IC508, pins 1, 2). The level adjusted AF signals are output from pin 2 and amplified at the AF power amplifier (IC510, pins 1, 4) after being passed through the AF mute switch (Q512).

The power amplified AF signals (IC510, pin 4) are applied to the internal speaker that is connected to J505 via [EXT SP] jack (J506).

A portion of the demodulated audio signals from the low-pass filter (Q5) are applied to the 8-pin data jack J504 (pin 6) for packed operation, etc.

4-1-9 SQUELCH CIRCUIT (MAIN UNIT)

• NOISE SQUELCH

A noise squelch circuit cuts out AF signals when no RF signals are received. By detecting noise components in the AF signals, the squelch circuit switches the AF mute switch.

Portion of the AF signals from the FM IF IC (IC8, pin 9) are passed through the active filter section in the FM IF IC (IC8, pin 8). The active filter section filters and amplifies noise components. The amplified noise signals are converted into the pulse-type signals at the noise detector section. The detected signals output from pin 14 (SQL) via the noise comparator section.

The "SQL" signal from the FM IF IC is applied to the main CPU (IC505, pin 39). Then the main CPU analyzes the noise condition and output the AF mute signal as "AF_MUTE" from pin 55 to the AF mute switch (Q512).

• TONE SQUELCH

The tone squelch circuit detects tone signals and opens the squelch only when receiving a signal containing a matching subaudible tone (CTCSS/DTCS). When tone squelch is in use, and a signal with a mismatched or no subaudible tone is received, the tone squelch circuit mutes the AF signals even when noise squelch is open.

A portion of the AF signals from the AM/FM switch (IC5, pin 1) pass through the low-pass filter (Q3) to remove AF (voice) signals, and are then applied to the CTCSS/DTCS decoder inside the main CPU (IC505, pin 29) via the “DTCS_IN” line. Then the main CPU analyzes the decoded tone signals and output the AF mute signal as "AF_MUTE" from pin 55 to the AF mute switch (Q512).

4-1-9 AGC CIRCUIT (MAIN UNIT)

The AGC (Automatic Gain Control) circuit reduces IF amplifier gain to keep the audio output at a constant level during AM mode operation. The receiver gain is determined by the voltage on the AGC line (Q13, pin 4).

The signal from the AM detector circuit (Q13) is detected at the AGC detector (D19–D21). When receiving strong signals, the detected voltage increases and the AGC voltage decreases via the AGC circuit. The AGC voltage is used for the bias voltage of the receive switching PIN diodes to attenuate the received signals. Therefore, this transceiver keeps the audio output at a constant level.

4-1-10 S-METER CIRCUIT (MAIN UNIT)

The S-meter circuit indicates the relative received signal strength while receiving.

The S-meter signal from the FM IF IC (IC8, pin 12) is applied to the main CPU (IC505, pin 40) via the “RSSI” signal line.

The S-meter signal is applied to the sub CPU and is then displayed on the LCD.

4-2 TRANSMITTER CIRCUITS

4-2-1 MICROPHONE AMPLIFIER CIRCUIT (MAIN UNIT)

The microphone amplifier circuit amplifies audio signals from the microphone to a level needed at the modulation circuit. The microphone amplifier circuit is commonly used for both the VHF and UHF bands.

• AUDIO SIGNALS

The AF signals from the microphone are amplified at the microphone amplifiers (Q505, IC506), and are then applied to the microphone level controller (IC509, pins 1, 2). The level adjusted AF signals

While operating DV mode, the level adjusted microphone AF signals from the microphone level controller (IC509, pin 1) are amplified at the ALC amplifier (IC513, pins 3, 5) via the ALC switch (IC512, pins 1, 7) and are then applied to the IDC amplifier (IC3A, pin 1, 3).

While operating in FM mode, the level adjusted microphone AF signals from the mic level controller are applied to the IDC amplifier (IC3A, pins, 1, 3) via the ALC switch (IC512, pins, 1, 6).

The amplified signals from the IDC amplifier (IC3A, pin 1) are passed through the low-pass filter (IC3D, pins 13, 14) to suppress unwanted components and then applied to the buffer amplifier (IC3C, pins 8, 9).

During DV mode operation, the buffer amplified signals from the buffer amplifier (IC3C, pin 8) are applied to the CODEC circuit as "DAFIN" signals via J507 (pin 5).

During FM mode operation, the buffer amplified signals from the buffer amplifier (IC3C, pin 8) are applied to the D/A converter (IC4, pins 13, 14) to adjust the modulation level. The level adjusted signals from the D/A convertor (IC4, pin 13) are applied to the VHF or UHF modulation circuits separately via the analog switch (IC517, pins 1, 6).

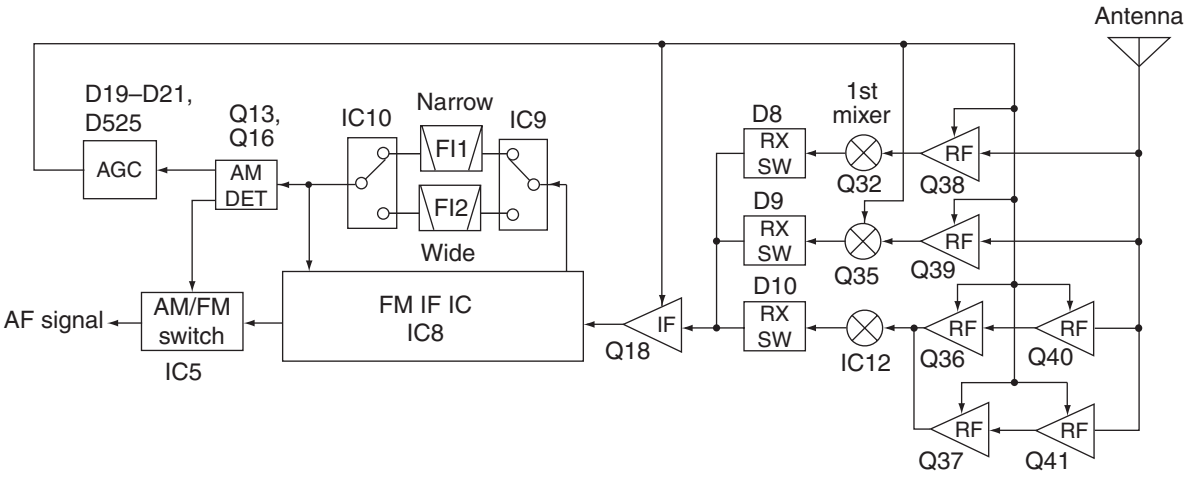
• PACKET DATA SIGNALS

The packet data signals from the 8-pin jack (J504, pin 1) pass through the limiter circuit (D524) to limit the level.

When setting to 9600 bps mode, the signals pass through the analog switch (IC509, pins 3, 4), and then pass through the switch again (pins 8, 9).

The switched signals are amplified at the buffer amplifier (IC3C, pins 8, 9), and are then passed through the D/A converter (IC4, pins 13, 14).

• AGC CIRCUIT



When setting to 1200 bps mode, the signals pass through the analog switch (IC509, pins 3, 4), and then pass through the switch again (pins 10, 11). The switched signals are applied to the IDC amplifier (IC3A, pins 1, 3) and then passed through the low-pass filter (IC3D, pins 13, 14) to suppress unwanted components. The filtered signals from the low-pass filter (IC3D, pin 14) are amplified at the buffer amplifier (IC3C, pins 8, 9) and then passed through the D/A converter (IC4, pins 13, 14) .

The signals from the D/A convertor (IC4, pin 13) are applied to the VHF or UHF modulation circuits separately via the analog switch (IC517, pins 1, 6).

4-2-2 CODEC CIRCUIT (CODEC BOARD)

The analog AF signals "DAFIN" from the buffer amplifier (MAIN unit; IC3, pin 8) via the J301 (pin 4) are amplified at the buffer amplifier (IC251, pins 6, 7). The amplified signals are applied to the linear CODEC IC (IC50, pin 5) to convert into 32 bits digital voice data at the A/D converter section as the "ADIN" signals. The converted digital signals are applied to the AMBE voice CODEC IC (IC151) to process code compression, and are then applied to the CODEC CPU (IC204). The digital signals from the CODEC CPU convert to the GMSK base band signal at the GMSK modem (IC252), and are then amplified at the buffer amplifier (IC253, pin 6, 7). The amplified signals are applied to the amplifier (MAIN unit; IC3, pin 15) via the J301 (pin 3).

The amplified signals from the CODEC board are applied to the D/A converter (IC4, pins 15, 16) to adjust modulation level and are then applied to the VHF or UHF modulation circuits separately via the analog switch (IC517, pins 1, 7).

4-2-3 VHF MODULATION CIRCUIT (VCO BOARD)

The modulation circuit modulates the VCO oscillating signal (RF signal) using the microphone audio signals.

The analog or digital audio signals from the analog switch (MAIN unit: IC517, pin 1) change the reactance of D1 to modulate the oscillated signal at the V-VCO circuit (Q3, D1 –D3). The modulated signal is amplified at the buffer amplifiers (Q4, Q5), and then passed through the Tx/Rx switch (D5) and low-pass filter (L6, C32, C33). The filtered signal is applied to the drive amplifier circuit on the MAIN unit.

4-2-4 VHF DRIVE AMPLIFIER CIRCUIT (MAIN UNIT)

The drive amplifier circuit amplifies the VCO oscillating signal to a level needed the power amplifier.

The output signal from VCO board pass through the attenuator (R133, R134, R137), and is then amplified at the pre-drive (Q30) and drive (Q33) amplifiers. The amplified signal is then applied to the VHF power amplifier (IC13).

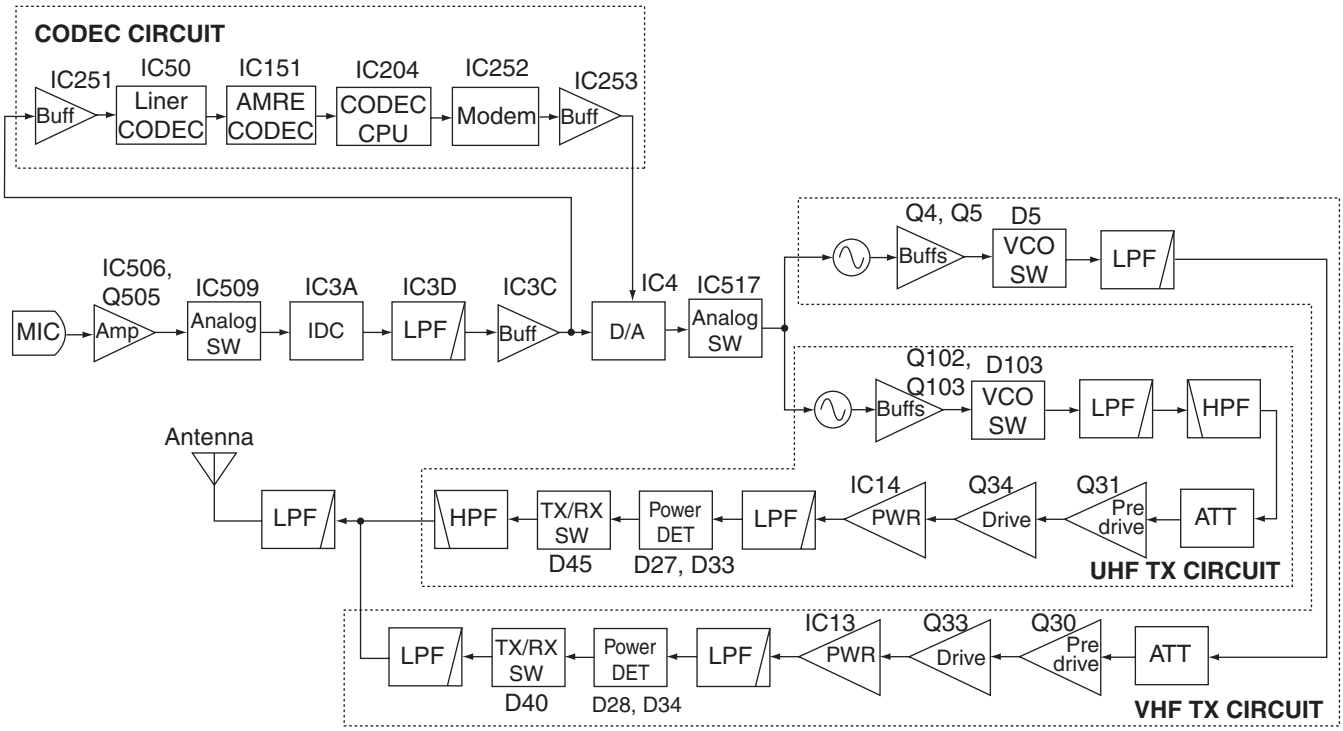
4-2-5 VHF POWER AMPLIFIER CIRCUIT (MAIN UNIT)

The power amplifier circuit amplifies the driver signal to an output power level.

IC13 is a power module which has amplification output capabilities of about 55 W. The RF signal from the drive amplifier (Q33) is applied to IC13 (pin 1).

The amplified signal from the power amplifier (IC13, pin 4) passes through the low-pass filter (L22, C183, C189) and power detector (D27, D33), antenna switch (D45) and another low-pass filter (L45, L46, L49, C282, C285, C289).

• TRANSMITTER CIRCUITS



The filtered signal is passed through the low-pass filter (L51, L52, L56, C295, C299) to suppress unwanted signals, and is then applied to the antenna connector (CHASSIS unit J2).

4-2-6 VHF APC CIRCUIT (MAIN UNIT)

The APC circuit stabilizes transmit output power and selects output power of HIGH, MIDDLE and LOW.

The power detector circuit (D27, D33, L29) detects transmit power output level and converts it into DC voltage.

The detected voltage is applied to the APC amplifier (IC15, pin 6) and is compared with the reference voltage which is supplied from the main CPU (IC505) via the D/A converter (IC11, pin 8) as the "PCON_V" signal.

The output voltage from the APC amplifier (IC15, pin 7) controls the bias voltage of the power amplifier (IC13) for stabilize the transmit output power.

4-2-7 UHF MODULATION CIRCUIT (VCO BOARD)

The modulation circuit modulates the VCO oscillating signal (RF signal) using the microphone audio signals.

The analog or digital audio signals from the analog switch (MAIN unit; IC517, pin 1) change the reactance of D100 to modulate the oscillated signal at the U-VCO circuit (Q101, D101, D102). The modulated signal is amplified at the buffer amplifiers (Q102, Q103), and then passed through the Tx/Rx switch (D103) and low-pass filter (L104, C122, C124). The filtered signal is applied to the drive amplifier circuit on the MAIN unit.

4-2-8 UHF DRIVE AMPLIFIER CIRCUIT (MAIN UNIT)

The output signal from VCO board passes through the high-pass filter (L69, C119) and attenuator (R135, R136, R138), and is then amplified at the pre-drive (Q31) and drive (Q34, D14) amplifiers. The amplified signal is then applied to the RF power amplifier (IC14).

4-2-9 UHF POWER AMPLIFIER CIRCUIT (MAIN UNIT)

IC14 is a power module which has amplification output capabilities of about 50 W. The RF signal from the drive amplifier (Q34) is applied to the power amplifier (IC14 pin 1).

The amplified signal from the power amplifier (IC14, pin 4) passes through the low-pass filter (L23, C184, C190) and power detector (D28, D34), antenna switch (D40) and high-pass filter (L47, L50, C284, C288, C292).

The filtered signal is passed through the low-pass filter (L51, L52, L56, C295, C299) to suppress unwanted signals, and is then applied to the antenna connector (CHASSIS unit J2).

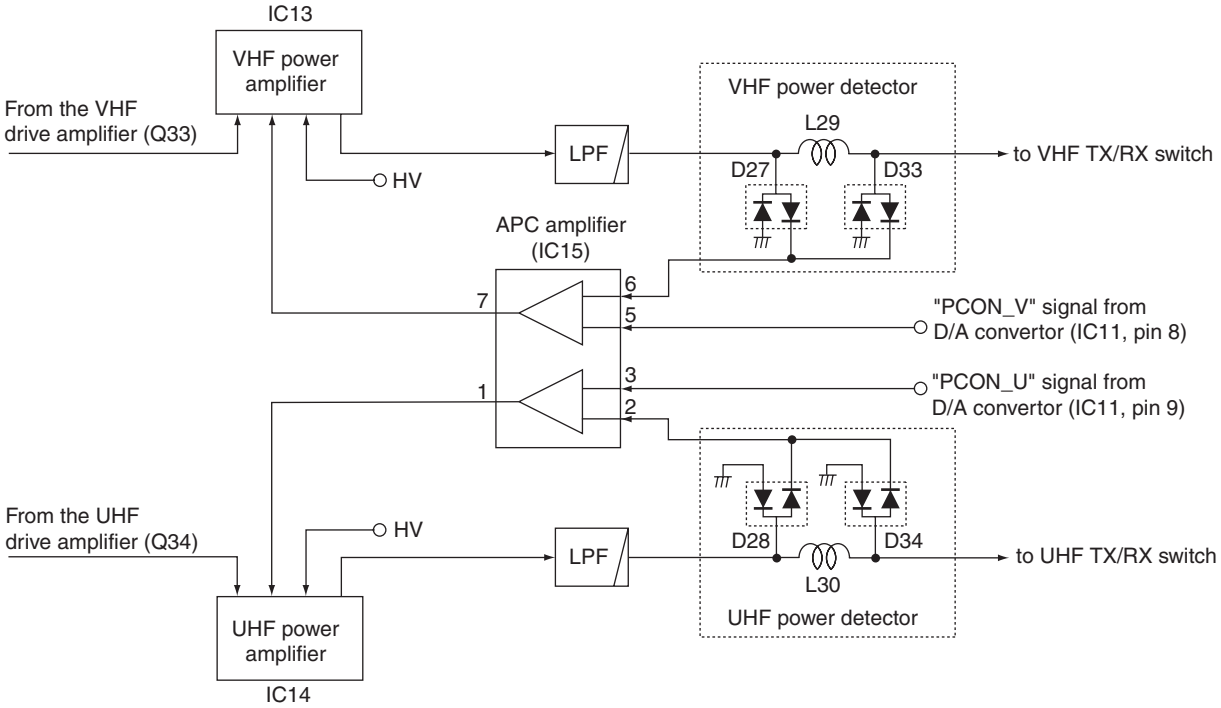
4-2-10 UHF APC CIRCUIT (MAIN UNIT)

The power detector circuit (D28, D34, L30) detects transmit power output level and converts it into DC voltage.

The detected voltage is applied to the APC amplifier (IC15, pin 2) and is compared with the reference voltage which is supplied from the main CPU (IC505) via the D/A converter (IC11, pin 8) as the "PCON_U" signal.

The output voltage from the APC amplifier (IC15, pin 1) controls the bias voltage of the power amplifier (IC14) for stabilize the transmit output power.

• APC CIRCUIT



4-3 PLL CIRCUITS

4-3-1 GENERAL (MAIN UNIT)

A PLL circuit provides stable oscillation of the transmit frequency and the receive local frequency. The PLL circuit compares the phase of the divided VCO frequency to the reference frequency. The PLL output frequency is controlled by a crystal oscillator and the divided ratio of the programmable divider.

4-3-2 VHF LOOP (VCO BOARD)

The generated signal at the V-VCO (Q3, D1, D2) enters the PLL IC (MAIN unit; IC1, pin 8) via the buffer amplifiers (Q6, Q8) and VCO switch (D50).

The applied signal is divided at the prescaler and programmable counter section by the N-data ratio from the main CPU (MAIN unit: IC505). The divided signal is detected on phase at the phase detector using the reference frequency and output from pin 15. The output signal is passed through the loop filter and is then applied to the V-VCO circuit.

If the oscillated signal drifts, its phase changes from that of the reference frequency, causing a lock voltage change to compensate for the drift in the oscillated frequency.

4-3-3 UHF LOOP (VCO BOARD)

The generated signal at the U-VCO (Q101, D100, D101) enters the PLL IC (MAIN unit; IC2, pin 8) via the buffer amplifiers (Q50, Q102) and VCO switch (D51).

The applied signal is divided at the prescaler and programmable counter section by the N-data ratio from the main CPU (MAIN unit: IC505). The divided signal is detected on phase at the phase detector using the reference frequency and output from pin 5. The output signal is passed through the loop filter and is then applied to the U-VCO circuit.

If the oscillated signal drifts, its phase changes from that of the reference frequency, causing a lock voltage change to compensate for the drift in the oscillated frequency.

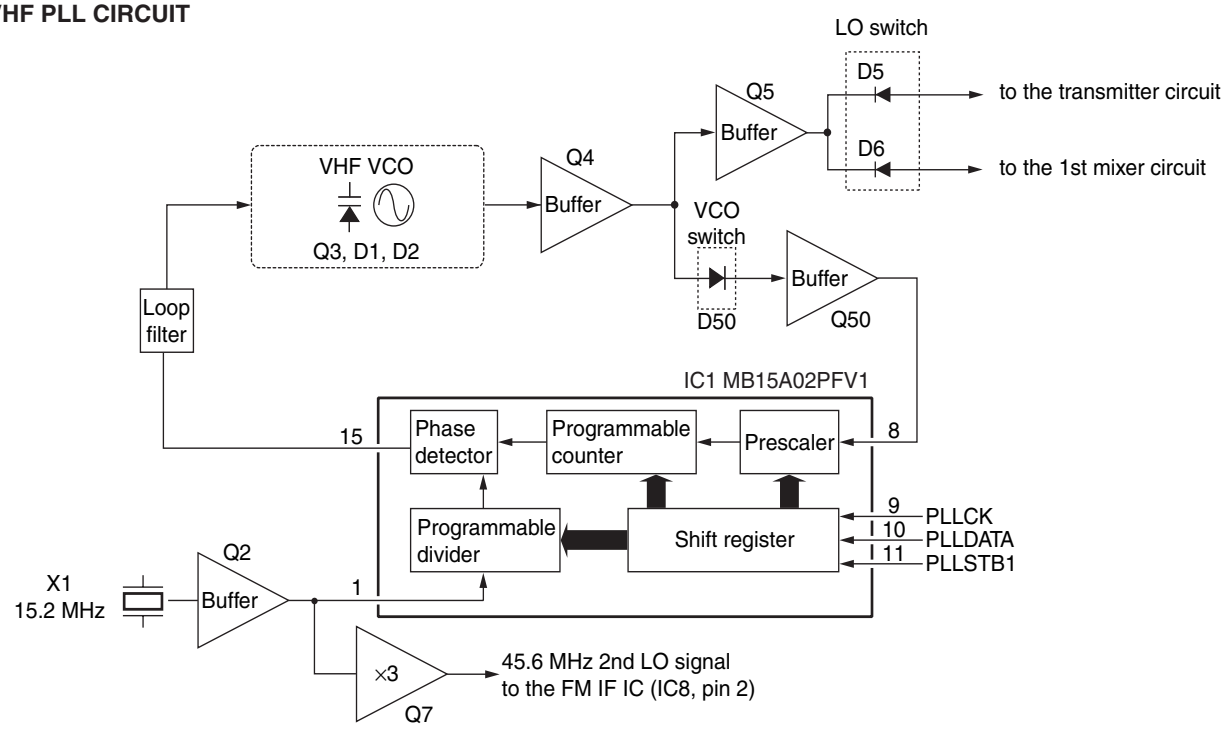
4-3-4 VCO CIRCUIT (VCO BOARD)

The 1st LO circuit contains a separate V-VCO (Q3, D1, D2) and U-VCO (Q101, D100, D101).

• 1ST LO CIRCUIT

Frequency range	VCO	1st mixer	Lo switch
118–174 MHz	V-VCO	Q23	D6
430–440 MHz (EXP) 440–450 MHz (USA)	U-VCO	Q35	D104
230–550 MHz	U-VCO	IC12 pin 3	D104
800–1000 MHz	U-VCO	IC12 pin 3	D105

• VHF PLL CIRCUIT



• V-VCO CIRCUIT

The oscillated signal at the V-VCO circuit (Q3, D1, D2) is amplified at the buffer amplifier (Q4), and is then applied to the LO switch (D5, D6). The receive 1st LO (Rx) signal from the LO switch (D6) is passed through the low-pass filter (L7, L8, C36–C38), and is then applied to the 1st mixer circuit (MAIN unit; Q32). The transmit signal from the LO switch (D5) is applied to the pre-drive amplifier (MAIN unit; Q30).

A portion of the amplified signal from the buffer amplifier (Q4) is amplified at the buffer amplifier (Q50) via the VCO switch (D50), and is then fed back to the PLL IC (MAIN unit; IC1, pin 8) as the comparison signal.

• U-VCO CIRCUIT

The oscillated signal at the U-VCO circuit (Q101, D100, D101) is amplified at the buffer amplifier (Q102, Q103), and is then applied to the LO switch (D103–D105).

While operating UHF band (EXP: 430–440 MHz, USA: 440–450 MHz), the receive 1st LO signal (Rx) is passed through the LO switch (D104) and low-pass filter (L105, L106, C126) and then applied to the 1st mixer circuit (MAIN unit; Q35) via the VCO switch (D106). The transmit signal is passed through the LO switch (D103) and low-pass filter (L104, C122, C124), and then applied to the pre-drive amplifier (MAIN unit; Q31).

While receiving 400 MHz band signals (230–550 MHz except UHF band), the output signal from the LO switch (D104) passes through the low-pass filter (L105, L106, C126), and is then applied to the 1st mixer circuit (MAIN unit; IC12) via the VCO switch (D106).

While receiving 800 MHz band signals (810–1000 MHz), the output signal from the LO switch (D105) is doubled at the doubler (Q104), and passes through the bandpass filter (L108–L110, C127, C129, C132, C133, C135). The signal is applied to the 1st mixer circuit (MAIN unit; IC12) via the VCO switch (D107).

A portion of the amplified signal from the buffer amplifier (Q102) is amplified at the buffer amplifier (Q50) via the VCO switch (D51), and is then fed back to the PLL IC (MAIN unit; IC2, pin 8) as the comparison signal.

4-4 POWER SUPPLY CIRCUITS

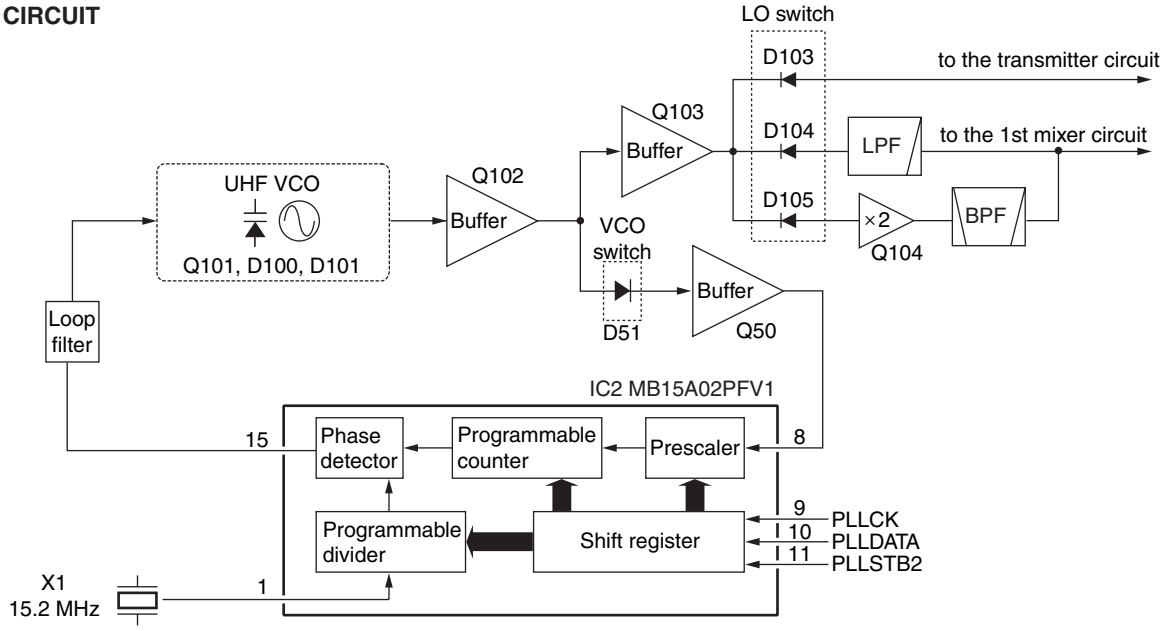
4-4-1 CONTROL UNIT VOLTAGE LINE

Line	Description
CPU5V	Common 5 V converted from the HV line at the +5V regulator circuit (IC5, D4). The output voltage is applied to the sub CPU (IC16) and reset IC (IC2).
8V	Common 8 V converted from the HV line at the 8 V regulator circuit (Q1, Q3, D5). The output voltage is applied to the LCD backlights (DS22, DS23) and key backlights (DS13–DS18, DS20, DS21) circuit.

4-4-2 CODEC UNIT VOLTAGE LINE

Line	Description
5V	Common 5 V controlled by the +5 V regulator circuit (Q50 and Q51) using the “PSAVE” signal from the CODEC CPU (IC204, pins 58, 59).
3.3V	Common 3.3 V converted from the 5V line by the 3.3V regulator circuit (IC1).
3.2V	Common 3.2 V converted from the 8 V line by the 3.2V regulator circuit (IC2). The circuit is controlled by the “APWR” signal from the CODEC CPU (IC204, pin 16).

• UHF PLL CIRCUIT



4-4-3 MAIN UNIT VOLTAGE LINE

Line	Description
HV	The voltage from the external power supply via the W501.
VCC	The same voltage as the HV line which is controlled by the VCC regulator circuit (Q501). The circuit is controlled by the power switch controller (Q502).
8V	Common 8 V converted from the VCC line at the +8 V regulator circuit (IC504).
VT8	Transmit 8 V for VHF band controlled by the VT8 regulator circuit (Q19, Q22) using the "VTXC" signal from the main CPU (IC505, pin 21).
UT8	Transmit 8 V for UHF band controlled by the UT8 regulator circuit (Q20, Q23) using the "UTXC" signal from the main CPU (IC505, pin 20).
5V	Common 5 V converted from the HV line at the +5 regulator circuit (IC503).
5VS	Common 5 V converted from the 5 V line at the +5S regulator circuit (IC503, D504). The circuit is controlled by the power switch controller (Q502).
V_VCO8	VCO 8 V for V-VCO controlled by "V_VCO" signal from the CPU (IC505, pin 81).
U_VCO8	VCO 8 V for U-VCO controlled by "U_VCO" signal from the CPU (IC505, pin 63).
R5	Receive 5 V controlled by the R5 regulator circuit (Q24) using the "R5CTRL" signal from the CPU (IC505, pin 78).
AM5	Receive 5 V line for AM circuit controlled by the AM5 regulator circuit (Q25) using the "AM" signal from the main CPU (IC505, pin 69).
VHF_R5	Receive 5 V line for VHF band circuit controlled by the VHF_R5 regulator circuit (Q26) using the "RXVHF" signal from the main CPU (IC505, pin 73).
UHF_R5	Receive 5 V line for UHF band circuit controlled by the UHF_R5 regulator circuit (Q27) using the "RXUHF" signal from the main CPU (IC505, pin 74).
400_R5	Receive 5 V line for 400 MHz band controlled by the 400_R5 regulator circuit (Q28) using the "RX400" signal from the main CPU (IC505, pin 67).
800_R5	Receive 5 V line for 800 MHz band circuit controlled by the 800_R5 regulator circuit (Q29) using the "RX800" signal from the main CPU (IC505, pin 66).

4-5 OTHER CIRCUITS

4-5-1 SUB CPU RESET CIRCUIT (CONTROL UNIT)

IC2 is the reset voltage detecting circuit. The output voltage from the +5 regulator circuit (IC5) is applied to the VDD terminal (IC2, pin 2). IC2 outputs “H” (high) signal to the sub CPU (IC6, pin 15) when the VDD terminal’s voltage is higher than detecting voltage.
IC6 employs the 8-bit CPU.

4-5-2 LCD AND KEY BACKLIGHT CIRCUIT (CONTROL UNIT)

The sub CPU (IC6) outputs +8 regulator circuit (Q1, Q3, D5) control signal from pin 2. The voltage from +8 regulator circuit is applied to the key backlights (DS13–DS18, DS20, DS23) and LCD backlights (DS21, DS22).

The backlight color is controlled by the sub CPU via the color control circuit (Q6, Q7). The backlight has 3 colors (Amber, Green and Yellow).

4-5-3 WATHER ALART (USA version only)

A portion of the demodulated audio signals from the AM/FM switch (IC5, pin 1) are passed through the low-pass filter (R46, R52, C52, C53), and then applied to the main CPU (IC505, pin 42) via the “WXALT” signal to detect WX alert signal.

4-6 PORT ALLOCATIONS

4-6-1 MAIN CPU (MAIN UNIT; IC505)

Pin number	Port name	Description
16	TX-MUTE	Outputs the transmit mute signal. High: While transmit is muted.
17	MIC-PTT	Input port for the microphone PTT signal. High: While PTT switch is pushed.
20	UTXC	Outputs the UT8 regulator control signal. High: While transmitting on UHF band.
21	VTXC	Outputs the VT8 regulator control signal. High: While transmitting on VHF band.
22	DTCS_SEL	Outputs the DTCS filter select signal. High: While transmitting the DTCS signal.
24	ES_DAT	I/O port for data signals from/to the EEPROM (IC501, pin 5).
25	ES_CK	Outputs clock signal to the EEPROM (IC501, pin 6).
26	P_PTT	Input port for the PTT control signal from the connected TNC. Low: While transmitting for the packet operation.
27	P_MOD_ MUTE	Outputs the packet modulation mute control signal. Low: While packet modulation is muted.
28	98_DATA	Input port for data signal from the HM-133.
31	MIC_SEL	Input port for the connected microphone detect signal. Low: While the HM-133 is connected.
39	SQL	Input port for the squelch level signal from the FM IF IC (IC8, pin 14).
40	RSSI	Input port for the S-meter signal from the FM IF IC (IC8, pin 12).
41	TEMP	Input port for the transceiver's internal temperature detection.
42	WXALT	Input port for the WX alert (1050 Hz) signal.
44	DTMF	Output DTMF, 1750 Hz TONE and BEEP signals.
45	DTCS	Output CTCSS and DTCS signals.
47	P_SQL	Outputs packet squelch control signal. High: While squelch is opened.
48	FAN_CT	Outputs the cooling fan control signal. High: While cooling fan is activated.
51	DA_DATA	Outputs the data signal to the D/A converter (IC11, pin 17).
52	DA_CK	Outputs the clock signal to the D/A converter (IC11, pin 16).
53	DA_STB	Outputs the strobe signal to the D/A converter (IC11, pin 15).
55	AF_MUTE	Outputs AF mute control signal. High: While AF signal is muted.
56	PLLSTB2	Outputs the strobe signal to the UHF PLL IC (IC2, pin 11).
57	PLLSTB1	Outputs the strobe signal to the VHF PLL IC (IC1, pin 11).
58	DET_MUTE	Outputs the detector circuit mute signal. High: While detector circuit is muted.
62	MIC_SENS	Outputs microphone sensitivity control signal. High: The sensitivity is high.
63	U_VCO	Outputs the UHF VCO control signal. High: While operating on 230–999.99 MHz.
65	1200_ 9600SEL	Outputs the packet baud rate select signal. Low: When 9600 bps is selected.
66	RX800	Outputs the 800_R5 regulator (Q29) control signal. Low: While receiving on 810–999.99 MHz.
67	RX400	Outputs the 400_R5 regulator (Q28) control signal. Low: While receiving on 230–550 MHz.
72	RXUHF	Outputs the UHF_R5 regulator (Q27) control signal. Low: While receiving 430–450 MHz.
73	RXVHF	Outputs the VHF_R5 regulator (Q26) control signal. Low: While receiving on 136–174 MHz.
74	MMUT	Outputs the modulation mute control signal to the VCO circuits. High: While modulation is muted.
78	R5CTRL	Outputs the R5 regulator (Q24) control signal. Low: While receiving.
81	V_VCO	Outputs the VHF VCO control signal. High: While operating on 136–174 MHz.
83	PLLSW	Outputs the PLL loop control signal.
84	ULCK	Input port for the PLL unlock signal. High: The PLL circuit is unlocked.
90	PLLDATA	Outputs the PLL data signal to the PLL ICs (IC1, IC2).
91	PLLCK	Outputs the PLL clock signal to the PLL ICs (IC1, IC2).
99	WN_SEL	Outputs the wide/narrow FM select signal. High: While wide FM is selected.

4-6-2 D/A CONVERTER IC PORT ALLOCATIONS (MAIN UNIT; IC11)

Pin number	Port name	Description
2–4	TUNE_V1–TUNE_V3	Output the VHF bandpass filters (D22, D23, D29, D41) tuning signals.
5	TUNE_U	Outputs the UHF bandpass filter (FI4) tuning signal.
6	ATT	Outputs the receiving attenuator control signal.
7	BSHIFT	Outputs the bandpass filter shift control signal.
8	PCON_V	Outputs the VHF output power control signal.
9	PCON_U	Outputs the UHF output power control signal.
12	TUNE_8	Outputs the 800MHz bandpass filter tuning signal.
13	REF_CON	Outputs the reference oscillator control signal.

4-6-3 MODEM IC PORT ALLOCATION (CODEC BOARD; IC252)

Pin number	Port name	Description
2	MCLK	Outputs 2.4576 MHz clock signal to the AMBE voice CODEC IC (IC151, pin 39).
7	ACQ	Outputs the PLL bandwidth control signal while receiving.
19	TXDT	Outputs transmitting data signal to the CODEC CPU (IC204, pin 54).
20	RXDT	Input port for receiving data signal from the CODEC CPU (IC204, pin 53).
21	RXCK	Input port for receive clock signal from the CODEC CPU (IC204, pin 52).
22	TXCK	Outputs transmit clock signal to the CODEC CPU (IC204, pin 51).

4-6-4 SUB CPU PORT ALLOCATIONS (CONTROL UNIT; IC6)

Pin number	Port name	Description
1	BAND	Input port for [BAND•MODE]. Low: While [BAND•MODE] is pushed.
3	COL_A	Outputs the LCD backlights (DS21, DS22) control signal. High: While amber or yellow backlights are selected in the set mode.
4	SMW	Input port for [S.MW•MW]. Low: While [S.MW•MW] is pushed.
5	TONE	Input port for [TONE•T-SCAN]. Low: While [TONE•T-SCAN] is pushed.
6	LOW	Input port for [LOW•DUP]. Low: While [LOW•DUP] is pushed.
7	MONI	Input port for [MONI•DTMF]. Low: While [MONI•DTMF] is pushed.
8	SET	Input port for [SET•LOCK]. Low: While [SET•LOCK] is pushed.
24	M/CALL	Input port for [M/CALL•PRIO]. Low: While [M/CALL•PRIO] is pushed.
25	VMHz	Input port for [V/MHz•SCAN]. Low: While [V/MHz•SCAN] is pushed.
30, 31	DIAL_A, DIAL_B	Input ports for control signals from the main dial.
83	COL_G	Outputs the LCD backlights (DS21, DS22) control signal. High: While green or yellow backlights are selected in the set mode.
86	PWR	Input port for [PWR]. Low: While [PWR] is pushed.
88	VOL	Input port for [VOL].
89	SQL	Input port for [SQL].

SECTION 5 ADJUSMENT PROCEDURES

5-1 PREPARATION

Most of adjustment must be performed on the adjustment mode.

■ REQUIRED TEST EQUIPMENT

EQUIPMENT	GRADE AND RANGE	EQUIPMENT	GRADE AND RANGE
DC power supply	Output voltage : 13.8 V Current capacity : 20 A or more	Audio generator	Frequency range : 300–3000 Hz Measuring range : 1–500 mV
Modulation analyzer	Frequency range : DC–600 MHz Measuring range : 0 to ±10 kHz	Attenuator	Power attenuation : 50 or 60 dB Capacity : 100 W
Frequency counter	Frequency range : 0.1–600 MHz Frequency accuracy : ±1 ppm or better Sensitivity : 100 mV or more	Standard signal generator (SSG)	Frequency range : 0.1–1200 MHz Output level : 0.1 µV to 32 mV (–127 to –17 dBm)
Digital multimeter	Input impedance : 10 MΩ/V DC or more	AC millivoltmeter	Measuring range : 10 mV to 10 V
RF power meter	Measuring range : 1–80 W Frequency range : 100–800 MHz Impedance : 50 Ω SWR : Better than 1.2 : 1	Oscilloscope	Frequency rang : DC–20 MHz Measuring range : 0.01–20 V
		External speaker	Input impedance : 8 Ω Capacity : 10 W or more

■ ENTERING THE ADJUSTMENT MODE

① Turn the transceiver's power OFF.
② Connect the JIG cable (see illustration on page 5-2) to the microphone connector.
③ Push and hold [SET•LOCK] and [BAND•MODE], and then turn power ON.

■ EXITING THE ADJUSTMENT MODE

① Turn the transceiver's power OFF.
② Disconnect the JIG cable from the microphone connector.
③ Tune the transceiver's power ON.

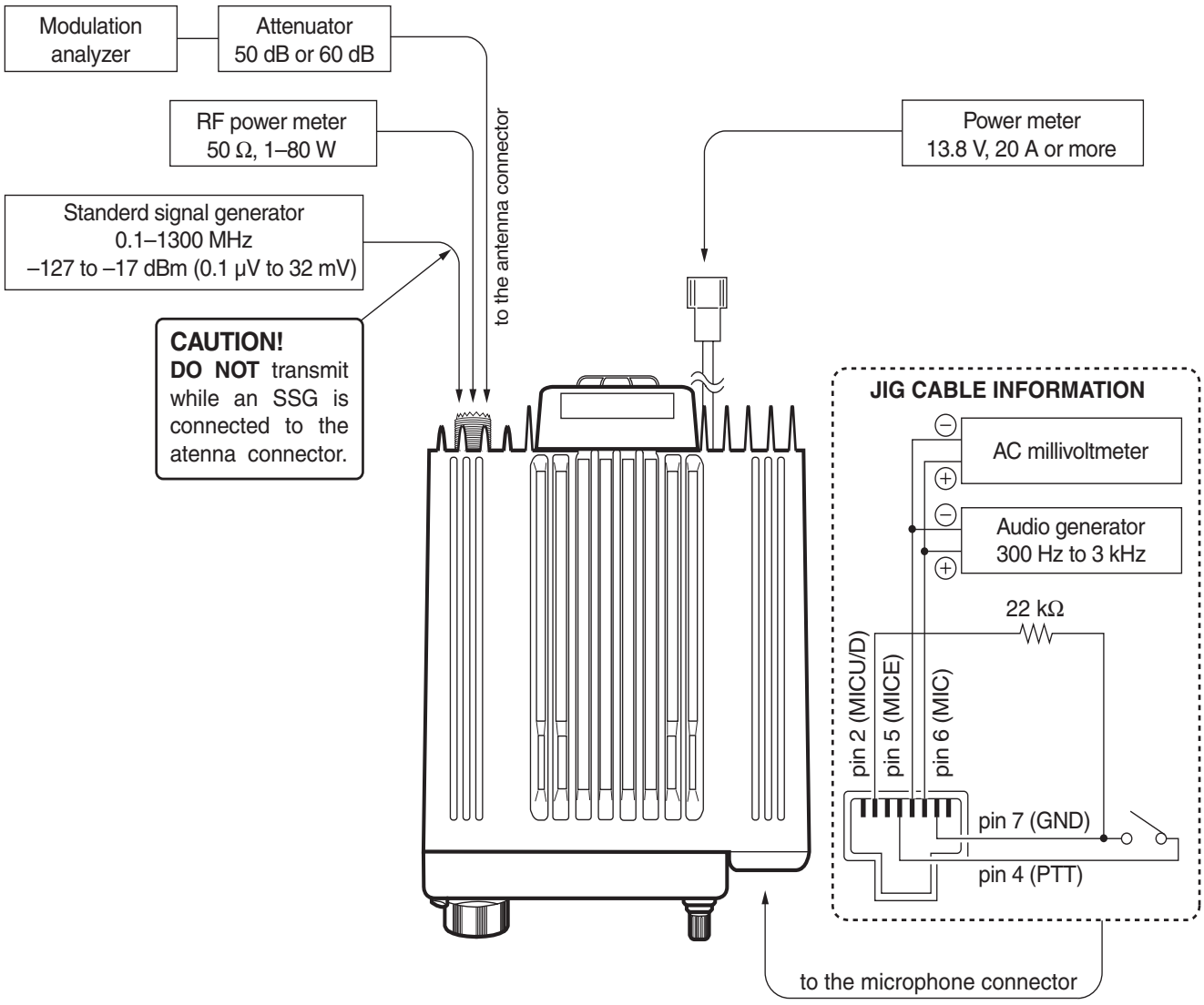
■ OPERATING ON THE ADJUSTMENT MODE

- Change the adjustment value : [DIAL]
- Verifying the adjustment value : [M/CALL•PRIO]
- TX output power level selection : [LOW•DUP]
- Mode selection : [TONE•T-SCAN]
- Adjustment item selection (forward) : [SET•LOCK]
- Adjustment item selection (backward) : [S.MW•MW]
- Set value storing/automatic adjustment : [BAND•MODE]

***CAUTION*: Push [BAND] when storing the adjustment value in the transceiver. Otherwise, the transceiver is not adjusted properly.**

***ATTENTION*: NEVER** adjust the adjustment items that are not described in this ADJUSTMENT PROCEDURES. The undescribed items are adjusted automatically. If undescribed items are adjusted manually, the transceiver may not work properly.

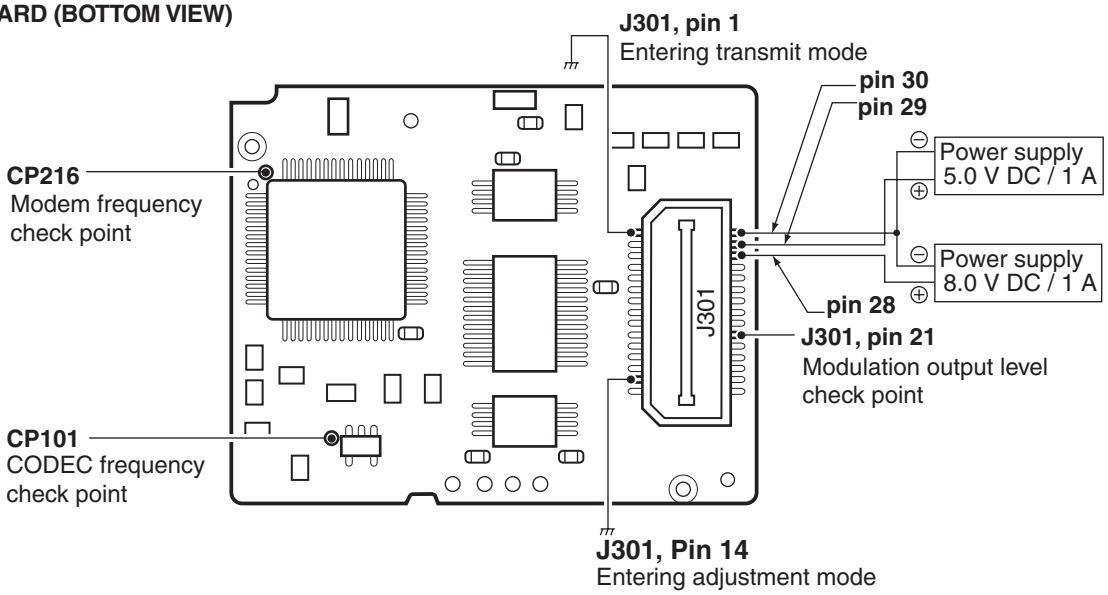
■ CONNECTIONS



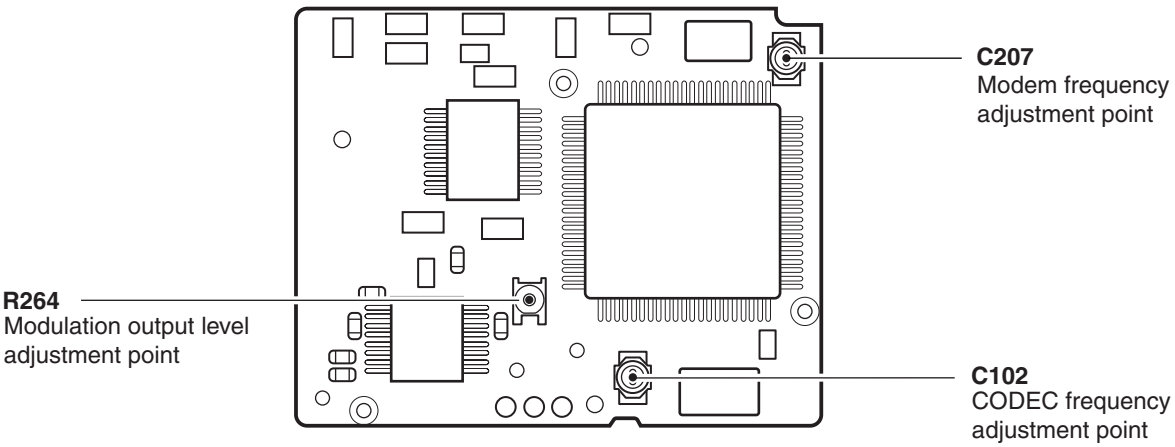
5-2 CODEC BOARD ADJUSTMENT

ADJUSTMENT ITEM		ADJUSTMENT CONDITION	OPERATION
POWER SUPPLY CONNECTIONS		• Connect 5.0 V DC power supply to pin 29 (⊕) and pin 30 (⊖) of J301. • Connect 8.0 V DC power supply to pin 28 (⊕) and pin 30 (⊖) of J301.	
ENTERING ADJUSTMENT MODE		• Connect the pin 14 of J301 to GND to enter the adjustment mode.	
CODEC FREQUENCY	1	• Connect the frequency counter to CP101 through a capacitor (1000 pF).	• Adjust C102 to set to 16.38400 MHz ±10 Hz.
MODEM FREQUENCY	1	• Connect the frequency counter to CP216 through a capacitor (1000 pF).	• Adjust C207 to set to 2.457600 MHz ±3 Hz.
MODURATION OUTPUT LEVEL	1	• Connect the pin 1 of J301 to GND to enter the transmit mode. • Connect the oscilloscope to pin 21 of J301.	• Adjust R264 to set to 350 mVp-p ±10 mV.
	2	• Disconnect the pin 1 of J301 from GND after the adjustment to exit the transmit mode.	
EXITING ADJUSTMENT MODE		• Disconnect the pin 14 of J301 from GND to exit the adjustment mode.	

• CODEC BOARD (BOTTOM VIEW)



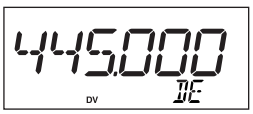
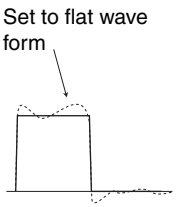
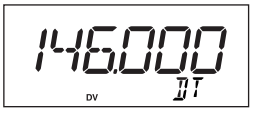
• CODEC BOARD (TOP VIEW)



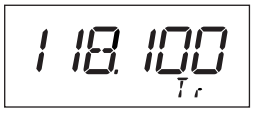
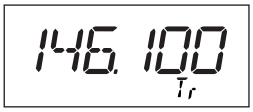
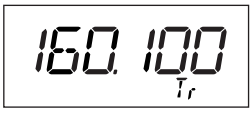
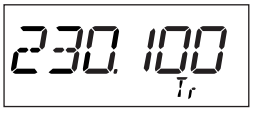
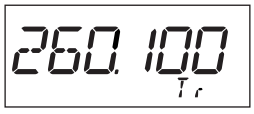
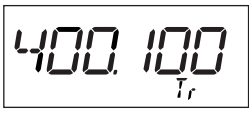
5-3 SOFTWARE ADJUSTMENT

<table>
<tr><th colspan="2">ADJUSTMENT ITEM</th><th>ADJUSTMENT CONDITION</th><th>DISPLAY</th><th>OPERATION</th></tr>
<tr><td>REFERENCE FREQUENCY [Fr]</td><td>1</td><td>• Operating freq. : 435.000 MHz [EXP]
445.000 MHz [USA]
• Connect an RF power meter or dummy load to the antenna connector.
• Loose couple a frequency counter to the antenna connector.
• Transmitting</td><td>  </td><td>• Rotate [DIAL] to set to the frequency as below.
<table><tr><th>Version</th><th>Adjustment freqency</th></tr><tr><td>EXP</td><td>435.000 MHz</td></tr><tr><td>USA</td><td>445.000 MHz</td></tr></table>• Push [BAND].</td></tr>
<tr><td>VHF TX OUTPUT POWER [Po] (High)</td><td>1</td><td>• Operating freq. : 145.000 MHz [EXP]
146.000 MHz [USA]
• Connect an RF power meter to the antenna connector.
• Transmitting</td><td>  </td><td>• Rotate [DIAL] to set the VHF high power to 56 W.
• Push [BAND].</td></tr>
<tr><td>(Middle)</td><td>2</td><td>• Transmitting</td><td>  </td><td>• Rotate [DIAL] to set the VHF middle power to 15 W.
• Push [BAND].</td></tr>
<tr><td>(Low)</td><td>3</td><td>• Transmitting</td><td>  </td><td>• Rotate [DIAL] to set the VHF low power to 5 W.
• Push [BAND].</td></tr>
<tr><td>UHF TX OUTPUT POWER [Po] (High)</td><td>1</td><td>• Operating freq. : 435.000 MHz [EXP]
445.000 MHz [USA]
• Transmitting</td><td>  </td><td>• Rotate [DIAL] to set the UHF high power to 51 W.
• Push [BAND].</td></tr>
<tr><td>(Middle)</td><td>2</td><td>• Transmitting</td><td>  </td><td>• Rotate [DIAL] to set the UHF middle power to 15 W.
• Push [BAND] key.</td></tr>
<tr><td>(Low)</td><td>3</td><td>• Transmitting</td><td>  </td><td>• Rotate [DIAL] to set the UHF low power to 5 W.
• Push [BAND].</td></tr>
<tr><td rowspan="3">TRANSMIT MINIMUM VOLTAGE [PL]</td><td>1</td><td>• Operating freq. : 430.000 MHz [EXP]
440.000 MHz [USA]
• Connect an RF power meter to the antenna connector.
• Transmitting</td><td>  </td><td rowspan="3">• Rotate [DIAL] to set to 1 W.
• Push [BAND].</td></tr>
<tr><td>2</td><td>• Operating freq. : 435.000 MHz [EXP]
445.000 MHz [USA]
• Transmitting</td><td>  </td></tr>
<tr><td>3</td><td>• Operating freq. : 438.000 MHz [EXP]
450.000 MHz [USA]
• Transmitting</td><td>  </td></tr>
<tr><td rowspan="2">PROTECT VOLTAGE [PV]</td><td>1</td><td>• Operating freq. : 145.000 MHz [EXP]
146.000 MHz [USA]
• RF power : High
• Connect an RF power meter to the antenna connector.
• Transmitting</td><td>  </td><td rowspan="2">• Push [BAND].</td></tr>
<tr><td>2</td><td>• Operating freq. : 435.000 MHz [EXP]
445.000 MHz [USA]
• Transmitting</td><td>  </td></tr>
</table>

SOFTWARE ADJUSTMENT (continued)

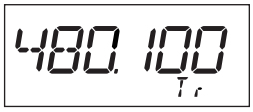
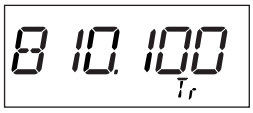
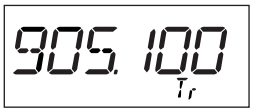
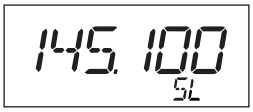
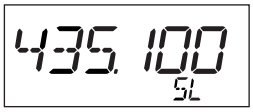
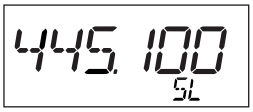
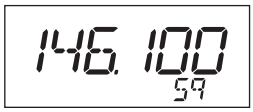
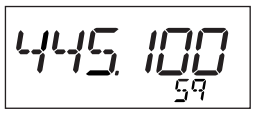
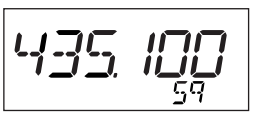
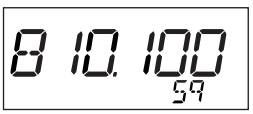
ADJUSTMENT ITEM		ADJUSTMENT CONDITION	DISPLAY	OPERATION
FREQUENCY DEVIATION [DE] (FM: VHF)	1	• Operating freq. : 145.000 MHz [EXP] 146.000 MHz [USA] • Connect an audio generator to the microphone connector and set as: : 1 kHz/20 mV [EXP] 1 kHz/80 mV [USA] • Connect a modulation analyzer and set as: HPF : OFF LPF : 20 kHz De-emphasis : OFF Detector : (P-P)/2 • Transmitting		• Rotate [DIAL] to set to 4.3 kHz. • Push [BAND].
[DE] (DV: VHF)	2	• Operating freq. : 145.000 MHz [EXP] 146.000 MHz [USA] • Set an audio generator as: 2.4 kHz/130 mV • Transmitting		• Rotate [DIAL] to set to 1.2 kHz. • Push [BAND].
[DE] (FM: UHF)	1	• Operating freq. : 435.000 MHz [EXP] 445.000 MHz [USA] • Set an audio generator as: : 1 kHz/20 mV [EXP] 1 kHz/80 mV [USA] • Transmitting		• Rotate [DIAL] to set to 4.4 kHz. • Push [BAND].
[DE] (DV: UHF)	2	• Operating freq. : 435.000 MHz [EXP] 445.000 MHz [USA] • Set an audio generator as: 2.4 kHz/130 mV • Transmitting		• Rotate [DIAL] to set to 1.2 kHz. • Push [BAND].
DTCS WAVE FORM [DT] (FM)	1	• Operating freq. : 145.000 MHz [EXP] 146.000 MHz [USA] • No audio signal is applied to the microphone connector. • Connect a modulation analyzer with oscilloscope and set as: HPF : OFF LPF : 20 kHz De-emphasis : OFF Detector : (P-P)/2 • Transmitting		• Rotate [DIAL] to set to flat wave form as shown below. • Push [BAND]. 
	2	• Operating freq. : 435.000 MHz [EXP] 445.000 MHz [USA] • Transmitting		
DIGITAL MODULATION [DT] (DV)	1	• Operating freq. : 145.000 MHz [EXP] 146.000 MHz [USA] • Connect an audio generator to the microphone connector and set as: 10 Hz/250 mV • Connect a modulation analyzer and set as: HPF : OFF LPF : 20 kHz De-emphasis : OFF Detector : (P-P)/2 • Transmitting		• Rotate [DIAL] to set to 1.2 kHz. • Push [BAND].
	2	• Operating freq. : 435.000 MHz [EXP] 445.000 MHz [USA] • Transmitting		

SOFTWARE ADJUSTMENT (continued)

ADJUSTMENT ITEM		ADJUSTMENT CONDITION	DISPLAY	OPERATION
SENSITIVITY [Tr]	1	• Operating freq. : 118.100 MHz • Connect an SSG to the antenna connector and set as : Level : 1 µV* (–107dBm) Modulation : 1 kHz Deviation : 3.5 kHz • Receiving		• Push [BAND].
	2	• Operating freq. : 146.100 MHz • Receiving		• Push [BAND].
	3	• Operating freq. : 160.100 MHz • Receiving		• Push [BAND].
	4	• Operating freq. : 173.900 MHz • Receiving		• Push [BAND].
	5	• Operating freq. : 230.100 MHz • Receiving		• Push [BAND].
	6	• Operating freq. : 260.100 MHz • Receiving		• Push [BAND].
	7	• Operating freq. : 380.100 MHz • Receiving		• Push [BAND].
	8	• Operating freq. : 399.900 MHz • Receiving		• Push [BAND].
	9	• Operating freq. : 400.100 MHz • Receiving		• Push [BAND].
	10	• Operating freq. : 429.900 MHz • Receiving		• Push [BAND].

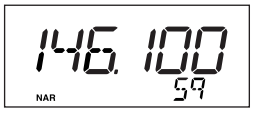
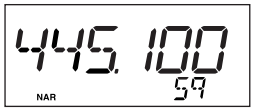
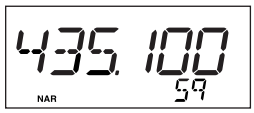
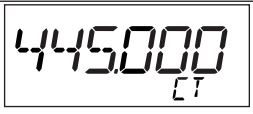
*This output level of a standard signal generator (SSG) is indicated as SSG's open circuit.

SOFTWARE ADJUSTMENT (continued)

ADJUSTMENT ITEM		ADJUSTMENT CONDITION	DISPLAY	OPERATION
SENSITIVITY [Tr]	11	• Operating freq. : 480.100 MHz • Receiving		• Push [BAND].
	12	• Operating freq. : 549.900 MHz • Receiving		• Push [BAND].
	13	• Operating freq. : 810.100 MHz • Receiving		• Push [BAND].
	14	• Operating freq. : 905.100 MHz • Receiving		• Push [BAND].
	15	• Operating freq. : 999.900 MHz • Receiving		• Push [BAND].
S-METER [SL] (Wide)	1	• Operating freq. : 145.100 MHz • Connect an SSG to the antenna connector and set as ; Level : 1 µV* (–107 dBm) Modulation : 1 kHz Deviation : 3.5 kHz • Receiving		• Push [BAND].
	2	• Operating freq. : 435.100 MHz • Receiving		• Push [BAND].
	3	• Operating freq. : 445.100 MHz • Receiving		• Push [BAND].
	4	• Operating freq. : 810.100 MHz • Set an SSG as: Level : 5.6 µV* (–92 dBm) • Receiving		• Push [BAND].
SQUELCH [Sq] (Wide)	1	• Operating freq. : 145.120 MHz [EXP] 146.100 MHz [USA] • Connect an SSG to the antenna connector and set as : Level : 0.079 µV* (–129 dBm) Modulation : 1 kHz Deviation : 3.5 kHz • Receiving		• Push [BAND].
	2	• Operating freq. : 435.100 MHz [EXP] 445.100 MHz [USA] • Receiving		• Push [BAND].
	3	• Operating freq. : 445.100 MHz [EXP] 435.100 MHz [USA] • Set an SSG as: Level : 0.1 µV* (–127 dBm) • Receiving		• Push [BAND].
	4	• Operating freq. : 810.100 MHz • Set an SSG as: Level : 0.2 µV* (–121 dBm) [EXP] 0.25 µV* (–119 dBm) [USA] • Receiving		• Push [BAND].

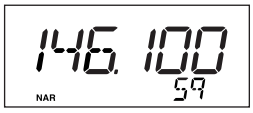
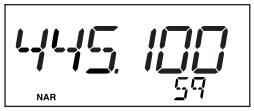
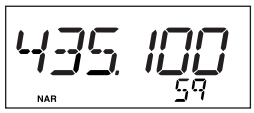
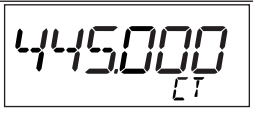
*This output level of a standard signal generator (SSG) is indicated as SSG's open circuit.

SOFTWARE ADJUSTMENT (continued)

ADJUSTMENT ITEM		ADJUSTMENT CONDITION	DISPLAY	OPERATION
SQUELCH [Sq] (Narrow)	1	• Operating freq. : 145.120 MHz [EXP] 146.100 MHz [USA] • Connect an SSG to the antenna connector and set as ; Level : 0.071 µV* (–130 dBm) Modulation : 1 kHz Deviation : 1.75 kHz • Receiving		• Push [BAND].
	2	• Operating freq. : 435.100 MHz [EXP] 445.100 MHz [USA] • Receiving		• Push [BAND].
	3	• Operating freq. : 445.100 MHz [EXP] 435.100 MHz [USA] • Set an SSG as: Level : 0.1 µV* (–127 dBm) • Receiving		• Push [BAND].
	4	• Operating freq. : 810.100 MHz • Set an SSG as : Level : 0.16 µV* (–123 dBm) [EXP] 0.2 µV* (–121 dBm) [USA] • Receiving		• Push [BAND].
PROTECT POWER [PP]	1	• Operating freq. : 145.000 MHz [EXP] 146.000 MHz [USA] • Connect an RF power meter to the antenna connector. • Transmitting		• Rotate [DIAL] to set to 5 W. • Push [BAND].
	2	• Operating freq. : 435.000 MHz [EXP] 445.000 MHz [USA] • Transmitting		
DTCS DEVIATION [DT]	1	• Operating freq. : 145.000 MHz [EXP] 146.000 MHz [USA] • No audio signal is applied to the microphone connector. • Connect a modulation analyzer and set as: HPF : OFF LPF : 20 kHz De-emphasis : OFF Detector : (P-P)/2 • Transmitting		• Rotate [DIAL] to set to 0.7 kHz. • Push [BAND].
	2	• Operating freq. : 435.000 MHz [EXP] 445.000 MHz [USA] • Transmitting		
CTCSS DEVIATION [CT]	1	• Operating freq. : 145.000 MHz [EXP] 146.000 MHz [USA] • No audio signal is applied to the microphone connector. • Connect a modulation analyzer and set as: HPF : OFF LPF : 20 kHz De-emphasis : OFF Detector : (P-P)/2 • Transmitting		• Rotate [DIAL] to set to 0.7 kHz. • Push [BAND].
	2	• Operating freq. : 435.000 MHz [EXP] 445.000 MHz [USA] • Transmitting		

*This output level of a standard signal generator (SSG) is indicated as SSG's open circuit.

SOFTWARE ADJUSTMENT (continued)

ADJUSTMENT ITEM		ADJUSTMENT CONDITION	DISPLAY	OPERATION
SQUELCH [Sq] (Narrow)	1	• Operating freq. : 145.120 MHz [EXP] 146.100 MHz [USA] • Connect an SSG to the antenna connector and set as ; Level : 0.071 µV* (–130 dBm) Modulation : 1 kHz Deviation : 1.75 kHz • Receiving		• Push [BAND].
	2	• Operating freq. : 435.100 MHz [EXP] 445.100 MHz [USA] • Receiving		• Push [BAND].
	3	• Operating freq. : 445.100 MHz [EXP] 435.100 MHz [USA] • Set an SSG as: Level : 0.1 µV* (–127 dBm) • Receiving		• Push [BAND].
	4	• Operating freq. : 810.100 MHz • Set an SSG as : Level : 0.16 µV* (–123 dBm) [EXP] 0.2 µV* (–121 dBm) [USA] • Receiving		• Push [BAND].
PROTECT POWER [PP]	1	• Operating freq. : 145.000 MHz [EXP] 146.000 MHz [USA] • Connect an RF power meter to the antenna connector. • Transmitting		• Rotate [DIAL] to set to 5 W. • Push [BAND].
	2	• Operating freq. : 435.000 MHz [EXP] 445.000 MHz [USA] • Transmitting		
DTCS DEVIATION [DT]	1	• Operating freq. : 145.000 MHz [EXP] 146.000 MHz [USA] • No audio signal is applied to the microphone connector. • Connect a modulation analyzer and set as: HPF : OFF LPF : 20 kHz De-emphasis : OFF Detector : (P-P)/2 • Transmitting		• Rotate [DIAL] to set to 0.7 kHz. • Push [BAND].
	2	• Operating freq. : 435.000 MHz [EXP] 445.000 MHz [USA] • Transmitting		
CTCSS DEVIATION [CT]	1	• Operating freq. : 145.000 MHz [EXP] 146.000 MHz [USA] • No audio signal is applied to the microphone connector. • Connect a modulation analyzer and set as: HPF : OFF LPF : 20 kHz De-emphasis : OFF Detector : (P-P)/2 • Transmitting		• Rotate [DIAL] to set to 0.7 kHz. • Push [BAND].
	2	• Operating freq. : 435.000 MHz [EXP] 445.000 MHz [USA] • Transmitting		

*This output level of a standard signal generator (SSG) is indicated as SSG's open circuit.

SECTION 6 PARTS LIST

[REPLACEMENT UNITS]

ORDER NO.	UNIT NAME
0327880101	U ID800 #01 CONTROL
0327880102	U ID800 #01 VCO
0327880103	U ID800 #01 CODEC

[CONTROL UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.	H/V LOCATION
IC2	1110005780	S.IC	S-80945CLMC-G7F-T2	B	38.6/9.9
IC5	1180000420	S.IC	TA78L05F (TE12R)	B	34.9/24.3
IC6	1140012780	S.IC	HD6433842RC37HV	B	54.8/17.5
Q1	1530002690	S.TR	2SC4116-GR (TE85R)	B	75.1/11.7
Q2	1590001650	S.TR	XP4601 (TX)	B	68.2/8.3
Q3	1510000690	S.TR	2SA1734 (TE12R)	B	70.2/13.8
Q6	1530002690	S.TR	2SC4116-GR (TE85R)	B	80.8/18.7
Q7	1530002690	S.TR	2SC4116-GR (TE85R)	B	82.2/12.5
D4	1790001000	S.ZEN	MA8062-L (TX)	B	38.3/23.3
D5	1790001170	S.ZEN	MA8068-M (TX)	B	74.6/14.5
X1	6060000610	S.CER	EFOS4914E3	B	44.2/7
R1	7210002920	VAR	EVU-F2AF20B55 (560K)		
R2	7030003440	S.RES	ERJ3GEYJ 102 V (1 kΩ)	B	97.6/18.5
R5	7210002920	VAR	EVU-F2AF20B55 (560K)		
R6	7030003440	S.RES	ERJ3GEYJ 102 V (1 kΩ)	B	95.5/10.5
R9	7030003640	S.RES	ERJ3GEYJ 473 V (47 kΩ)	B	30.3/27.1
R11	7030003640	S.RES	ERJ3GEYJ 473 V (47 kΩ)	B	27.1/31.7
R13	7030003520	S.RES	ERJ3GEYJ 472 V (4.7 kΩ)	B	77.8/10.5
R14	7030003640	S.RES	ERJ3GEYJ 473 V (47 kΩ)	B	100.7/16.9
R21	7030003440	S.RES	ERJ3GEYJ 102 V (1 kΩ)	B	77.8/14.7
R22	7030003760	S.RES	ERJ3GEYJ 474 V (470 kΩ)	B	71.1/10.3
R23	7030003560	S.RES	ERJ3GEYJ 103 V (10 kΩ)	B	66.1/8.3
R24	7030003520	S.RES	ERJ3GEYJ 472 V (4.7 kΩ)	B	67.5/5.4
R25	7030003560	S.RES	ERJ3GEYJ 103 V (10 kΩ)	B	66.1/5.4
R26	7030003520	S.RES	ERJ3GEYJ 472 V (4.7 kΩ)	B	68.9/5.4
R28	7030003520	S.RES	ERJ3GEYJ 472 V (4.7 kΩ)	B	64.7/8.3
R29	7030003560	S.RES	ERJ3GEYJ 103 V (10 kΩ)	B	64.7/5.4
R41	7030003800	S.RES	ERJ3GEYJ 105 V (1 MΩ)	B	41.2/7.3
R42	7030003520	S.RES	ERJ3GEYJ 472 V (4.7 kΩ)	B	80.8/16.4
R43	7030003520	S.RES	ERJ3GEYJ 472 V (4.7 kΩ)	B	79.9/12.5
R44	7030001120	S.RES	MCR50JZHJ 82 Ω (820)	B	72.4/22.4
R58	7030003680	S.RES	ERJ3GEYJ 104 V (100 kΩ)	B	44/23.2
R59	7030003680	S.RES	ERJ3GEYJ 104 V (100 kΩ)	B	42.1/21.3
R60	7030003680	S.RES	ERJ3GEYJ 104 V (100 kΩ)	B	40.3/22.2
R61	7030003580	S.RES	ERJ3GEYJ 153 V (15 kΩ)	B	65.4/10.4
R65	7030000360	S.RES	MCR10EZHJ 680 Ω (681)	B	83.4/5.7
R74	7030000360	S.RES	MCR10EZHJ 680 Ω (681)	B	9.4/31.1
R75	7030003560	S.RES	ERJ3GEYJ 103 V (10 kΩ)	B	41.2/10.1
R76	7030003640	S.RES	ERJ3GEYJ 473 V (47 kΩ)	B	60.5/5.4
R77	7030003570	S.RES	ERJ3GEYJ 123 V (12 kΩ)	B	61.9/5.4
R79	7030000380	S.RES	MCR10EZHJ 1 kΩ	B	10.9/23
R80	7030000380	S.RES	MCR10EZHJ 1 kΩ	B	10.9/18.2
R81	7030000360	S.RES	MCR10EZHJ 680 Ω (681)	B	43.8/1.9
R82	7030000360	S.RES	MCR10EZHJ 680 Ω (681)	B	21.3/4.6
R84	7030003560	S.RES	ERJ3GEYJ 103 V (10 kΩ)	B	45.4/25.2
C1	4030006880	S.CER	C1608 JB 1H 472K-T	B	99.8/18.7
C3	4030006880	S.CER	C1608 JB 1H 472K-T	B	92.1/10.7
C5	4030007130	S.CER	C1608 CH 1H 101J-T	B	78.5/12.5
C7	4030007130	S.CER	C1608 CH 1H 101J-T	B	69.9/2.7
C8	4030007130	S.CER	C1608 CH 1H 101J-T	B	77.1/12.5
C10	4030007130	S.CER	C1608 CH 1H 101J-T	B	65.4/3.3
C25	4030006860	S.CER	C1608 JB 1H 102K-T	B	36.3/20.8
C26	4030006900	S.CER	C1608 JB 1H 103K-T	B	36/10.2
C27	4030006860	S.CER	C1608 JB 1H 102K-T	B	33.6/20.8
C29	4030006860	S.CER	C1608 JB 1H 102K-T	B	29.4/20.6
C30	4030007090	S.CER	C1608 CH 1H 470J-T	B	34.7/6.4
C31	4030007090	S.CER	C1608 CH 1H 470J-T	B	33.4/6.4
C34	4030006900	S.CER	C1608 JB 1H 103K-T	B	45.4/26.5
C35	4030011600	S.CER	C1608 JB 1E 104K-T	B	43.1/25
C36	4030011600	S.CER	C1608 JB 1E 104K-T	B	42.2/24.1
C37	4030011600	S.CER	C1608 JB 1E 104K-T	B	41.3/23.1
C46	4510007310	S.ELE	16 CV 10 BS	B	72.1/6.5
C49	4030006900	S.CER	C1608 JB 1H 103K-T	B	63.3/8.3
C50	4030006860	S.CER	C1608 JB 1H 102K-T	B	63.3/5.4
C51	4510007310	S.ELE	16 CV 10 BS	B	77.8/7.4

[CONTROL UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.	H/V LOCATION
J3	6510023680	CNR	2633 FRONT CONNECTOR		
DS1	5030002710	LCD	IS09216E		
DS13	5040002930	S.LED	SML-512MW T86	T	60.1/6.7
DS14	5040002930	S.LED	SML-512MW T86	T	48.7/6.7
DS15	5040002930	S.LED	SML-512MW T86	T	71.5/6.7
DS16	5040002930	S.LED	SML-512MW T86	T	82.9/6.7
DS17	5040002930	S.LED	SML-512MW T86	T	37.3/6.7
DS18	5040002930	S.LED	SML-512MW T86	T	9.1/2.6
DS20	5040002930	S.LED	SML-512MW T86	T	9.1/32.3
DS21	5040002910	S.LED	SML-020MYT	T	14.7/20.5
DS22	5040002920	LED	CV1074		
DS23	5040002930	S.LED	SML-512MW T86	B	23.1/3.7
S1	2240000150	SW	JRS0000-1401		
S3	2260001890	S.SW	SKQDPA	T	102.2/17.5
S4	2260001890	S.SW	SKQDPA	T	14.7/15.5
S5	2260001890	S.SW	SKQDPA	T	37.3/3.2
S6	2260001890	S.SW	SKQDPA	T	48.7/3.2
S7	2260001890	S.SW	SKQDPA	T	60.1/3.2
S8	2260001890	S.SW	SKQDPA	T	71.5/3.2
S9	2260001890	S.SW	SKQDPA	T	82.9/3.2
S10	2260001890	S.SW	SKQDPA	T	4.2/4.2
S11	2260001890	S.SW	SKQDPA	T	4.2/30.8
W1	7030000010	S.RES	MCR10EZHJ JPW (000)	B	85.6/11.5
EP9	6910015120	S.BEA	MMZ2012D 301BT	B	31.1/20.4
EP10	6910012350	S.BEA	MMZ1608Y 102BT	B	34.7/10.2
EP11	6910012350	S.BEA	MMZ1608Y 102BT	B	33.4/10.2
EP12	6910015120	S.BEA	MMZ2012D 301BT	B	20.6/13.4
EP17	6910015120	S.BEA	MMZ2012D 301BT	B	20.6/15.1
EP18	8930060040	LCT	SRCN-2633-SP-N-W		

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.	H/V LOCATION
IC1	1140005990	S.IC	MB15A02PFV1-G-BND-ER	T	65.3/34.7
IC2	1140005990	S.IC	MB15A02PFV1-G-BND-ER	T	65.4/22.9
IC3	1110005340	S.IC	NJM12902V-TE1	B	27.2/21.3
IC4	1190001350	S.IC	M62364FP 600D	B	45.3/12.3
IC5	1130011781	S.IC	SN74AHC2G53HDCT3	B	41.9/66.8
IC8	1110003200	S.IC	TA31136FN (EL)	B	56.9/55.7
IC9	1130011781	S.IC	SN74AHC2G53HDCT3	T	51.5/56.4
IC10	1130011781	S.IC	SN74AHC2G53HDCT3	T	59.3/61.3
IC11	1110004310	S.IC	M62352GP 75EC	T	71.7/51.7
IC12	1110005230	S.IC	µPC2757TB-E3	T	97.8/58.4
IC13	1150002160	IC	S-AV32 (I2)		
IC14	1150002120	IC	S-AU82L (I)		
IC15	1110004050	S.IC	NJM3404AV-TE1	B	65.5/95.8
IC501	1140009240	S.IC	HN58X24128FPI	B	113.7/24.4
IC502	1110005990	S.IC	S-80945CNMC-G9F-T2	B	112.3/12
IC503	1180001070	S.IC	TA7805F (TE16L)	B	5.5/48.1
IC504	1180001250	S.IC	TA7808F (TE16L)	B	48.5/81.9
IC505	1140012770	S.IC	HD64F2144AFA20V	T	100.4/21.2
IC506	1130007370	S.IC	TA75S558F (TE85L)	T	19.1/18.8
IC507	1110002750	S.IC	TA75S01F (TE85R)	B	22.6/3.1
IC508	1110004490	S.IC	M62429FP 700C	T	14.7/60.5
IC509	1130011770	S.IC	CD4066BPWR	T	14.7/30.7
IC510	1110003091	IC	LA4425A-E		
IC511	1110005290	S.IC	NJM2115V-TE1	T	24.6/75.6
IC512	1130011781	S.IC	SN74AHC2G53HDCT3	B	18.4/27.9
IC513	1110005310	S.IC	AN6123MS	B	14.6/15.8
IC514	1180001250	S.IC	TA7808F (TE16L)	B	5.5/31.1
IC515	1130011781	S.IC	SN74AHC2G53HDCT3	B	53.2/15.1
IC516	1130011781	S.IC	SN74AHC2G53HDCT3	T	35.5/66.2
IC517	1130011781	S.IC	SN74AHC2G53HDCT3	B	44.4/19.5
IC518	1130011781	S.IC	SN74AHC2G53HDCT3	B	9.7/18.4
IC519	1130006220	S.IC	TC4W53FU (TE12L)	T	57.4/27.7
IC520	1130007020	S.IC	TC7S66FU (TE85R)	B	48.2/18.3
IC521	1110002750	S.IC	TA75S01F (TE85R)	B	55.7/9.1
IC522	1110002750	S.IC	TA75S01F (TE85R)	B	61.4/4.1
Q1	1590003290	S.TR	UNR9213J-(TX)	B	68.6/4.6
Q2	1530002850	S.TR	2SC4116-BL (TE85R)	T	69.2/28.2

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
Q3	1590001650	S.TR XP4601 (TX)	T	23.1/48
Q4	1530002850	S.TR 2SC4116-BL (TE85R)	T	42/18.3
Q5	1590001190	S.TR XP6501-(TX) .AB	T	24.8/64.3
Q6	1590002270	S.TR UMG9N TL	T	44.1/22.1
Q7	1530002380	S.TR 2SC4215-Y (TE85R)	B	63.7/32.5
Q8	1590002380	S.TR XP1115 (TX)	T	41.1/22.1
Q9	1510000770	S.TR 2SA1586-GR (TE85R)	T	53.1/34.3
Q10	1530002850	S.TR 2SC4116-BL (TE85R)	T	57.5/31.5
Q11	1590003290	S.TR UNR9213J-(TX)	B	59.4/25.6
Q13	1590001190	S.TR XP6501-(TX) .AB	B	51.7/63.8
Q15	1530002850	S.TR 2SC4116-BL (TE85R)	B	53.7/109.1
Q16	1590001190	S.TR XP6501-(TX) .AB	B	55.9/60.2
Q17	1530002850	S.TR 2SC4116-BL (TE85R)	B	53.8/106.6
Q18	1530002920	S.TR 2SC4226-T1 R25	B	62.2/63.5
Q19	1590003290	S.TR UNR9213J-(TX)	T	60.1/98.1
Q20	1590003290	S.TR UNR9213J-(TX)	B	65.6/99.6
Q21	1590003290	S.TR UNR9213J-(TX)	T	54/50.2
Q22	1510000580	S.TR 2SA1362-GR (TE85R)	T	61.4/102.9
Q23	1510000580	S.TR 2SA1362-GR (TE85R)	B	73.1/99.5
Q24	1590003240	S.TR UNR9114J-(TX)	B	73.4/53.9
Q25	1590003260	S.TR UNR911NJ-(TX)	B	70.8/55.1
Q26	1590003240	S.TR UNR9114J-(TX)	B	79.9/49
Q27	1590003240	S.TR UNR9114J-(TX)	B	82.2/46.9
Q28	1590003240	S.TR UNR9114J-(TX)	B	85/49.5
Q29	1590003240	S.TR UNR9114J-(TX)	B	91.2/47.3
Q30	1530002680	S.TR 2SC3357-T1	B	53/43.4
Q31	1530003230	S.TR 2SC5085-Y (TE85R)	T	101.1/42.9
Q32	1580000760	S.FET 3SK299-T1 U73	T	81.7/64
Q33	1530003270	S.TR 2SC4703-T1 SF	B	47.4/41.8
Q34	1530002680	S.TR 2SC3357-T1	T	111.8/45.2
Q35	1580000760	S.FET 3SK299-T1 U73	B	84.2/63
Q36	1530003260	S.TR 2SC5006-T1	T	101.8/64.1
Q37	1530003260	S.TR 2SC5006-T1	T	111.3/57.3
Q38	1580000760	S.FET 3SK299-T1 U73	T	79.1/86.9
Q39	1580000760	S.FET 3SK299-T1 U73	T	93.1/76.4
Q40	1530003260	S.TR 2SC5006-T1	T	102/75.9
Q41	1530003781	S.TR 2SC5624VH-TL-E	T	111.9/73
Q42	1590003230	S.TR UNR9113J-(TX)	T	67.8/92
Q43	1590003250	S.TR UNR9115J-(TX)	T	107.1/81.7
Q44	1530002060	S.TR 2SC4081 T106 R	T	117.4/81.4
Q45	1590003230	S.TR UNR9113J-(TX)	T	63.6/93.5
Q501	1520000270	S.TR 2SB1182 TL Q	T	27.9/87.3
Q502	1590003290	S.TR UNR9213J-(TX)	T	31/80.9
Q503	1510000670	S.TR 2SA1588-GR (TE85R)	T	10.1/46.6
Q504	1590001650	S.TR XP4601 (TX)	B	101.8/3.1
Q505	1530002850	S.TR 2SC4116-BL (TE85R)	T	12.3/16.1
Q506	1530002850	S.TR 2SC4116-BL (TE85R)	T	25.6/3.5
Q507	1590003230	S.TR UNR9113J-(TX)	T	7.7/53.1
Q508	1590003290	S.TR UNR9213J-(TX)	T	7.9/55.8
Q509	1590003290	S.TR UNR9213J-(TX)	T	15.1/21.2
Q510	1590003270	S.TR UNR9210J-(TX)	T	89.8/33.9
Q511	1590003290	S.TR UNR9213J-(TX)	T	30.8/4.8
Q512	1530003090	S.TR 2SC4213-B (TE85R)	T	5.7/65.7
Q515	1590003240	S.TR UNR9114J-(TX)	B	72.6/46.2
Q516	1590003290	S.TR UNR9213J-(TX)	B	74/44
Q517	1590002270	S.TR UMG9N TL	B	23.7/9.2
Q518	1590003290	S.TR UNR9213J-(TX)	T	29.1/68.8
Q519	1510000580	S.TR 2SA1362-GR (TE85R)	B	14.2/32.7
Q520	1560000540	S.FET 2SK880-Y (TE85R)	T	43.8/26
Q521	1560000540	S.FET 2SK880-Y (TE85R)	T	43.8/30.1
D2	1750000940	S.DIO ISS400 TE61	T	70.5/31.4
D3	1750000940	S.DIO ISS400 TE61	T	70.1/20.4
D4	1750000370	S.DIO DA221 TL	T	59.1/35.3
D5	1750000370	S.DIO DA221 TL	T	61.2/37.2
D6	1750000370	S.DIO DA221 TL	B	68.1/66.9
D7	1750000520	S.DIO DAN222TL	B	70.5/46.2
D8	1750000801	S.DIO HVC136TRF-E	T	78.9/58.3
D9	1750000801	S.DIO HVC136TRF-E	B	79.1/59.4
D10	1750000801	S.DIO HVC136TRF-E	T	92.2/55.6
D12	1750000520	S.DIO DAN222TL	T	97.4/54.7
D13	1750000550	S.DIO 1SS355 TE-17	B	45.6/37.3
D14	1750000550	S.DIO 1SS355 TE-17	T	107/44.5
D15	1750000801	S.DIO HVC136TRF-E	B	88.7/60.4
D16	1750000801	S.DIO HVC136TRF-E	T	99.7/53.4
D17	1750000801	S.DIO HVC136TRF-E	T	99.6/61.2
D18	1750000801	S.DIO HVC136TRF-E	T	101.6/58.1
D19	1790001240	S.DIO MA2S728-(TX)	T	108/58.9
D20	1790001240	S.DIO MA2S728-(TX)	T	81.3/73.2
D21	1790001240	S.DIO MA2S728-(TX)	T	106.3/66.4
D22	1750000711	S.VCP HVC350BTRF-E	T	85.9/70.6
D23	1750000711	S.VCP HVC350BTRF-E	T	85.5/75.9
D24	1790001260	S.DIO MA2S077-(TX)	T	101.2/66.8
D25	1750000610	S.VCP MA2SV0500L	T	101.2/70.2
D26	1720000700	S.VCP 1SV305 (TPL3)	T	110/63.1
D27	1790000980	S.DIO MA742 (TX)	B	53.7/90.6
D28	1790000980	S.DIO MA742 (TX)	T	95.6/88.1
D29	1750000711	S.VCP HVC350BTRF-E	T	85.2/80.3
D30	1750000610	S.VCP MA2SV0500L	T	98.5/73.6
D31	1720000700	S.VCP 1SV305 (TPL3)	T	110.4/67
D32	1790001260	S.DIO MA2S077-(TX)	T	105/71.9

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
D33	1790000980	S.DIO MA742 (TX)	B	60.4/99.6
D34	1790000980	S.DIO MA742 (TX)	B	82.2/82.5
D36	1750000610	S.VCP MA2SV0500L	T	101.3/77.6
D37	1720000700	S.VCP 1SV305 (TPL3)	T	111.8/78.9
D38	1790001260	S.DIO MA2S077-(TX)	T	101.5/82
D39	1790001160	S.DIO 1SS362 (TE85R)	T	112.1/80.6
D40	1750000510	S.DIO UM9401F	T	96.9/92.9
D41	1750000720	S.VCP HVC375BTRF-E	T	82.5/92.2
D42	1790001620	S.DIO 1SV308 (TPL3)	T	90.9/84.3
D43	1790001620	S.DIO 1SV308 (TPL3)	T	92.3/84.3
D44	1790001620	S.DIO 1SV308 (TPL3)	T	111.8/83.4
D45	1750000510	S.DIO UM9401F	T	77.1/111.6
D46	1750000940	S.DIO ISS400 TE61	T	86.1/87.6
D47	1750000940	S.DIO ISS400 TE61	T	82.5/96.3
D48	1710000871	S.DIO HVU131TRF-E	T	88.9/87.3
D49	1710000871	S.DIO HVU131TRF-E	T	81/96.1
D50	1750000510	S.DIO UM9401F	T	85/99.2
D51	1750000510	S.DIO UM9401F	B	88.9/101.3
D501	1730000520	ZEN RD20E B2		
D502	1790000700	DIO DSA3A1		
D503	1790001260	S.DIO MA2S077-(TX)	B	117/18.2
D504	1750000940	S.DIO ISS400 TE61	T	8.2/40.4
D505	1750000940	S.DIO ISS400 TE61	T	23/8.3
D506	1730002340	S.ZEN MA8047-M (TX)	B	10.5/2.8
D507	1750000940	S.DIO ISS400 TE61 [EXP] only	B	97.4/17.6
D521	1750000940	S.DIO ISS400 TE61 [USA] only	T	114.1/11.2
D522	1750000940	S.DIO ISS400 TE61 [USA] only	T	115.4/11.2
D523	1790000980	S.DIO MA742 (TX)	T	86.1/35
D524	1750000370	S.DIO DA221 TL	T	10.1/37.2
D525	1750000940	S.DIO ISS400 TE61	B	76.8/67.4
D526	1750000940	S.DIO ISS400 TE61	T	72.1/33.4
D527	1750000940	S.DIO ISS400 TE61	T	73.3/21.3
D528	1750000801	S.DIO HVC136TRF-E	T	86.8/62.3
D529	1750000801	S.DIO HVC136TRF-E	B	77.4/44.1
D530	1750000801	S.DIO HVC136TRF-E	B	77.5/46.6
D531	1750000520	S.DIO DAN222TL	T	103.9/51.1
D532	1750000340	S.DIO 1SS357 (TPHR3)	T	60.4/22.9
D533	1750000340	S.DIO 1SS357 (TPHR3)	T	61.3/27.3
D600	1730002680	S.ZEN MA8130-H (TX)	T	36.9/77.8
FI1	2020001460	CER CFWLA450KHFA-B0		
FI2	2020001270	CER CFWLB450KE2A-B0		
FI3	2010002560	S.MLH FL-344 (46.05 MHz)	T	70.5/60.1
FI4	2040001000	S.SAW EFCH435MWNP1 [EXP]	T	93.9/65.8
	2040001020	S.SAW EFCH445MWNP1 [USA]	T	93.9/65.8
X1	6050011960	S.XTL CR-784 (15.2 MHz)	T	70.1/16.7
X2	6070000200	DCR CDBLA450KCAY24-B0		
X501	6050009520	S.XTL CR-520 (19.6608 MHz)	T	116.7/16.9
L1	6200007620	S.COL LL1608-FH47NJ	T	63.8/28.4
L2	6200004480	S.COL MLF1608D R82K-T	B	66.2/33.1
L3	6200010450	S.COL C2520C-R82G	B	61.9/36.3
L4	6200005690	S.COL ELJRE 18NG-F	B	55.6/40
L5	6200006670	S.COL ELJRE 68NG-F	B	56.5/46.5
L6	6200005720	S.COL ELJRE 33NG-F	T	100.5/46.6
L7	6200005690	S.COL ELJRE 18NG-F	T	103.3/43
L9	6200005660	S.COL ELJRE 10NG-F	T	106.6/46.8
L10	6200003270	S.COL NL 252018T-R56J	T	78.6/64.1
L11	6200006980	S.COL ELJRE R10G-F	B	47.1/46.6
L12	6200005700	S.COL ELJRE 22NG-F	T	112.2/48.9
L13	6200010380	S.COL ELJRE R15J-F3	T	86.2/67
L15	6200005680	S.COL ELJRE 15NG-F	T	115.5/42.7
L17	6200009890	S.COL C2012C-82NG	T	83.7/70.7
L18	6200003270	S.COL NL 252018T-R56J	B	81.7/64.3
L19	6200005700	S.COL ELJRE 22NG-F	T	104.1/63.6
L20	6200005640	S.COL ELJRE 6N8Z-F	T	109.6/57.1
L21	6200009930	S.COL C2012C-68NG	B	86.6/63.1
L22	6200010060	S.COL AS080647-56N	T	47.2/89.1
L23	6200010040	S.COL AS100340-10N	T	112.2/87.8
L24	6200010210	S.COL C2012C-22NG	T	89.2/60.7
L25	6200010130	S.COL LQW18AN6N8C00	T	101.6/68.9
L26	6200010630	S.COL LQW18AN8N2D00D	T	99.1/67.1
L27	6200005590	S.COL ELJRE 2N7Z-F	T	112/61.6
L28	6200009890	S.COL C2012C-82NG	T	83.2/75.9
L29	6200010060	S.COL AS080647-56N	T	53.4/94.6
L30	6200010160	S.COL AS080440-22N	T	106.5/88.3
L31	6200005590	S.COL ELJRE 2N7Z-F	T	113.2/68.3
L32	6200009930	S.COL C2012C-68NG	T	82.1/86
L33	6200010540	S.COL C2012C-47NG	T	92.5/72.6
L34	6200010630	S.COL LQW18AN8N2D00D	T	104.8/74.8
L35	6200010130	S.COL LQW18AN6N8C00	T	102.1/74.1
L36	6200006980	S.COL ELJRE R10G-F	T	110.5/71.1
L37	6200010130	S.COL LQW18AN6N8C00	T	102.2/78.9
L38	6200010130	S.COL LQW18AN6N8C00	T	99.5/81.4
L39	6200005590	S.COL ELJRE 2N7Z-F	T	111.7/77.6
L40	6200010330	S.COL C2012C-R18G	T	78.7/91.1
L41	6200010000	S.COL C2012C-56NG	T	90.6/80
L42	6200010420	S.COL FHW1210HC 1R0JGT	T	91.2/92.1

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
L43	6200010420	S.COL FHW1210HC 1R0JGT	T	72.5/109.8
L44	6200009750	S.COL 0.30-2.0-7TL 68N	T	75.3/93
L45	6200010060	S.COL AS080647-56N	T	103.3/107.7
L46	6200010050	S.COL AS080547-47N	T	86.8/106.1
L47	6200010160	S.COL AS080440-22N	T	97.7/98.1
L49	6200010050	S.COL AS080547-47N	T	110.3/106.7
L50	6200010160	S.COL AS080440-22N	T	104.9/102.1
L51	6200010040	S.COL AS100340-10N	T	112/98.6
L52	6200010160	S.COL AS080440-22N	T	118.5/99.2
L53	6200008170	S.COL 0.35-1.6-8TL 54N	T	80.3/99.5
L54	6200008330	S.COL 0.45-1.4-4TL 15N	T	87/90.7
L55	6200005670	S.COL ELJRE 12NG-F	B	113.7/96.5
L56	6200010150	S.COL AS080340-15N	T	121.1/104.6
L57	6200010070	S.COL AS080747-68N	T	80.3/106.4
L58	6200005660	S.COL ELJRE 10NG-F	B	113.8/99.1
L59	6200010160	S.COL AS080440-22N	T	90.1/96.8
L60	6190001521	S.COL ZBFS5105-PT-01	T	35.2/89.8
L61	6190001521	S.COL ZBFS5105-PT-01	T	34.5/83
L62	6190001521	S.COL ZBFS5105-PT-01	T	40.2/80.2
L63	6190001521	S.COL ZBFS5105-PT-01	T	43.5/80.2
L65	6200005190	S.COL MLF1608D R56K-T	B	61.1/66.2
L66	6200004480	S.COL MLF1608D R82K-T	B	60.2/28.6
L67	6200003540	S.COL MLF1608D R22K-T	B	62.6/30.3
L68	6200003640	S.COL MLF1608E 100K-T	T	77.2/20.3
L69	6200005730	S.COL ELJRE 39NG-F	T	94.9/41.7
R1	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	62/17.3
R2	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	59.5/16.7
R3	7030003840	S.RES ERJ3GEYJ 225 V (2.2 MΩ)	T	25.2/45.1
R4	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	25.2/48.7
R5	7030003660	S.RES ERJ3GEYJ 683 V (68 kΩ)	T	26.6/47.7
R6	7030003820	S.RES ERJ3GEYJ 155 V (1.5 MΩ)	T	21.6/64.3
R7	7030003580	S.RES ERJ3GEYJ 153 V (15 kΩ)	B	25.3/28.5
R8	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	66.4/27.3
R9	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	T	69.4/26.3
R10	7030003450	S.RES ERJ3GEYJ 122 V (1.2 kΩ)	T	23.9/45.1
R11	7030003510	S.RES ERJ3GEYJ 392 V (3.9 kΩ)	B	71.6/4.1
R12	7030003630	S.RES ERJ3GEYJ 393 V (39 kΩ)	B	66.2/6.7
R15	7030003720	S.RES ERJ3GEYJ 224 V (220 kΩ)	T	30/21.1
R16	7030003500	S.RES ERJ3GEYJ 332 V (3.3 kΩ)	T	42/16.4
R17	7030003240	S.RES ERJ3GEYJ 220 V (22 Ω)	B	68/38
R18	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	T	69.4/35.4
R19	7030003240	S.RES ERJ3GEYJ 220 V (22 Ω)	B	67/20.6
R20	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	T	69.3/23.7
R21	7030003400	S.RES ERJ3GEYJ 471 V (470 Ω)	T	72.1/29.1
R22	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	T	19.2/64.3
R23	7030003580	S.RES ERJ3GEYJ 153 V (15 kΩ)	T	24.8/26.4
R24	7030003530	S.RES ERJ3GEYJ 562 V (5.6 kΩ)	T	22.1/25.3
R25	7030003400	S.RES ERJ3GEYJ 471 V (470 Ω)	B	25.7/11.9
R28	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	23.5/50.5
R29	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	21.3/42.4
R30	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	T	24.3/66.9
R31	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	66.2/8
R32	7030003630	S.RES ERJ3GEYJ 393 V (39 kΩ)	B	64.1/7.6
R33	7030003580	S.RES ERJ3GEYJ 153 V (15 kΩ)	T	23.5/26.4
R34	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	66.5/16.7
R36	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	62.2/30.2
R37	7030003500	S.RES ERJ3GEYJ 332 V (3.3 kΩ)	T	22.8/64.3
R38	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	22.5/22.5
R39	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	23.8/23.5
R40	7030003700	S.RES ERJ3GEYJ 154 V (150 kΩ)	B	22.6/24.5
R41	7030003720	S.RES ERJ3GEYJ 224 V (220 kΩ)	B	22.4/21.2
R42	7030003580	S.RES ERJ3GEYJ 153 V (15 kΩ)	T	21.2/45.1
R43	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	22.5/45.1
R44	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	27.5/63.2
R45	7030003720	S.RES ERJ3GEYJ 224 V (220 kΩ)	B	55.3/6.8
R46	7030003380	S.RES ERJ3GEYJ 331 V (330 Ω)	T	27.5/64.5
R47	7030003730	S.RES ERJ3GEYJ 274 V (270 kΩ)	B	65.4/30.5
R48	7030003280	S.RES ERJ3GEYJ 470 V (47 Ω)	B	67.7/28
R49	7030003660	S.RES ERJ3GEYJ 683 V (68 kΩ)	T	20.9/50.5
R50	7030003780	S.RES ERJ3GEYJ 684 V (680 kΩ)	T	25.6/66.9
R51	7030003660	S.RES ERJ3GEYJ 683 V (68 kΩ)	T	22.4/52.5
R52	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	27.5/50.5
R53	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	28.3/47.8
R54	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	72.1/37.3
R55	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	72.2/25.2
R56	7030003660	S.RES ERJ3GEYJ 683 V (68 kΩ)	T	26.7/52.5
R57	7030003630	S.RES ERJ3GEYJ 393 V (39 kΩ)	T	28.2/66.3
R58	7030003660	S.RES ERJ3GEYJ 683 V (68 kΩ)	B	23.8/18.6
R59	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	B	22.5/18.6
R60	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	72.4/36
R61	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	72.2/23.9
R62	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	59/33.5
R63	7030003610	S.RES ERJ3GEYJ 273 V (27 kΩ)	T	60.8/31.1
R64	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	72.4/34.7
R66	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	72.2/22.6
R67	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	T	30.1/64.5
R68	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	B	26.4/14.9
R69	7030003540	S.RES ERJ3GEYJ 682 V (6.8 kΩ)	T	59.8/28.5
R73	7030003460	S.RES ERJ3GEYJ 152 V (1.5 kΩ)	B	47/66.3
R74	7030005691	S.RES ERA3YED 123V (12 kΩ)	T	32.2/66.5

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R75	7030005501	S.RES ERA3YKD 124V (120 kΩ)	B	31.4/22.8
R76	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	54/36.9
R77	7030003510	S.RES ERJ3GEYJ 392 V (3.9 kΩ)	T	55.2/34.3
R79	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	B	51.7/66.1
R81	7030003710	S.RES ERJ3GEYJ 184 V (180 kΩ)	B	28.2/14.9
R83	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	54.8/32.1
R85	7030003450	S.RES ERJ3GEYJ 122 V (1.2 kΩ)	T	55/23.9
R86	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	B	48.3/63.7
R87	7030003760	S.RES ERJ3GEYJ 474 V (470 kΩ)	B	49.6/63.7
R88	7030003720	S.RES ERJ3GEYJ 224 V (220 kΩ)	B	30.7/19.9
R89	7030003860	S.RES ERJ3GE JPW V	T	52.2/32.1
R90	7030003860	S.RES ERJ3GE JPW V	T	50.9/23.5
R91	7030003710	S.RES ERJ3GEYJ 184 V (180 kΩ)	B	49.6/66.3
R92	7030005981	S.RES ERA3YED 333V (33 kΩ)	B	38.9/58.5
R94	7030003590	S.RES ERJ3GEYJ 183 V (18 kΩ)	B	58.2/16.7
R95	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	43.6/59
R96	7030003340	S.RES ERJ3GEYJ 151 V (150 Ω)	B	41.1/56.6
R98	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	51.7/107.8
R100	7030005521	S.RES ERA3YKD 334V (330 kΩ)	T	55.3/61.5
R101	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	B	45.5/59.8
R102	7030000120	S.RES MCR10EZHJ 6.8 Ω (6R8)	T	50.7/111.9
R103	7030000190	S.RES MCR10EZHJ 27 Ω (270)	B	57/109.1
R104	7030003530	S.RES ERJ3GEYJ 562 V (5.6 kΩ)	T	41.1/33.7
R105	7030003420	S.RES ERJ3GEYJ 681 V (680 Ω)	T	49.5/30.3
R106	7030003510	S.RES ERJ3GEYJ 392 V (3.9 kΩ)	T	41.1/26.5
R107	7030003380	S.RES ERJ3GEYJ 331 V (330 Ω)	T	49.5/21.5
R108	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	B	57.5/63.8
R109	7030003710	S.RES ERJ3GEYJ 184 V (180 kΩ)	B	55.1/63.4
R110	7030003730	S.RES ERJ3GEYJ 274 V (270 kΩ)	B	51.1/57.7
R111	7030003400	S.RES ERJ3GEYJ 471 V (470 Ω)	B	42.8/62.9
R112	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	51/105.7
R113	7030000190	S.RES MCR10EZHJ 27 Ω (270)	B	57/107.1
R114	7030003400	S.RES ERJ3GEYJ 471 V (470 Ω)	B	59/63.5
R115	7030003280	S.RES ERJ3GEYJ 470 V (47 Ω)	B	62.4/66.2
R117	7030003370	S.RES ERJ3GEYJ 271 V (270 Ω)	B	65.6/62
R118	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	B	65/64.7
R119	7030003280	S.RES ERJ3GEYJ 470 V (47 Ω)	B	66.4/53.5
R120	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	60/54.1
R121	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	66.3/65.8
R122	7030003500	S.RES ERJ3GEYJ 332 V (3.3 kΩ)	B	64.8/56.8
R123	7030003500	S.RES ERJ3GEYJ 332 V (3.3 kΩ)	T	56.3/50.1
R124	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	60.1/100.7
R125	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	B	68.6/99.1
R126	7030003400	S.RES ERJ3GEYJ 471 V (470 Ω)	B	69.4/65.2
R127	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	T	62.2/99.9
R128	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	B	70.7/99.3
R129	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	T	51.7/48.4
R130	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	B	60.4/46.2
R131	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	T	94.4/45.8
R132	7030003370	S.RES ERJ3GEYJ 271 V (270 Ω)	T	76.3/57
R133	7030003270	S.RES ERJ3GEYJ 390 V (39 Ω)	B	59.6/42.6
R134	7030003340	S.RES ERJ3GEYJ 151 V (150 Ω)	B	60.9/41.5
R135	7030003220	S.RES ERJ3GEYJ 150 V (15 Ω)	T	94.4/44.5
R136	7030003380	S.RES ERJ3GEYJ 331 V (330 Ω)	T	94.9/43
R137	7030003340	S.RES ERJ3GEYJ 151 V (150 Ω)	B	59.6/39.8
R138	7030003380	S.RES ERJ3GEYJ 331 V (330 Ω)	T	97/44.2
R139	7030000270	S.RES MCR10EZHJ 120 Ω (121)	B	57.5/49.1
R140	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	B	56.7/44.2
R141	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	B	55.6/38.7
R142	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	99.2/46.6
R143	7030003420	S.RES ERJ3GEYJ 681 V (680 Ω)	T	99.1/43.5
R145	7030003280	S.RES ERJ3GEYJ 470 V (47 Ω)	T	104.1/48.4
R146	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	T	91.4/57.4
R147	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	76.4/62.5
R148	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	T	78/60.1
R149	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	B	77.1/62.7
R150	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	T	94.9/56.5
R151	7030003240	S.RES ERJ3GEYJ 220 V (22 Ω)	T	104/46.2
R154	7030000180	S.RES MCR10EZHJ 22 Ω (220)	T	109.4/50.3
R155	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	78.4/62.2
R157	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	B	49/46.7
R158	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	B	47.2/37.6
R159	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	108.5/47.2
R160	7030003420	S.RES ERJ3GEYJ 681 V (680 Ω)	T	108.5/44.3
R161	7030003360	S.RES ERJ3GEYJ 221 V (220 Ω)	T	84.3/63.6
R162	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	B	90.1/59.1
R163	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	97.7/56.5
R164	7030000180	S.RES MCR10EZHJ 22 Ω (220)	B	45.9/49.9
R165	7030000180	S.RES MCR10EZHJ 22 Ω (220)	T	109.4/52.1
R167	7030003370	S.RES ERJ3GEYJ 271 V (270 Ω)	T	84.9/66.6
R168	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	B	87.9/58.2
R169	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	B	79.8/66.5
R170	7030003860	S.RES ERJ3GE JPW V	B	79.1/62
R171	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	T	97.6/61.6
R172	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	T	101.5/61
R173	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	T	103.6/60.4
R174	7030003220	S.RES ERJ3GEYJ 150 V (15 Ω)	B	42/42
R175	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	B	43.9/40.1
R176	7030003230	S.RES ERJ3GEYJ 180 V (18 Ω)	T	118.2/41.5
R177	7030003360	S.RES ERJ3GEYJ 221 V (220 Ω)	T	116.3/40.7
R178	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	B	78.5/63.9
R180	7030003360	S.RES ERJ3GEYJ 221 V (220 Ω)	T	120.2/40.7

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R181	7030003720	S.RES ERJ3GEYJ 224 V (220 kΩ)	T	87/72.5
R182	7030003360	S.RES ERJ3GEYJ 221 V (220 Ω)	B	85/66.6
R183	7030003360	S.RES ERJ3GEYJ 221 V (220 Ω)	T	99.1/64.5
R185	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	84.2/60.6
R186	7030003650	S.RES ERJ3GEYJ 563 V (56 kΩ)	T	104.2/65.1
R188	7030003360	S.RES ERJ3GEYJ 221 V (220 Ω)	T	113/57.8
R189	7030003720	S.RES ERJ3GEYJ 224 V (220 kΩ)	T	87.3/73.8
R190	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	104.4/67.8
R191	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	110.6/59
R192	7030003240	S.RES ERJ3GEYJ 220 V (22 Ω)	T	112/60.3
R194	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	99/68.4
R195	7030003720	S.RES ERJ3GEYJ 224 V (220 kΩ)	T	85.2/79
R196	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	111.9/64.3
R197	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	99/72.3
R198	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	111.9/65.7
R199	7030003200	S.RES ERJ3GEYJ 100 V (10 Ω)	T	85.2/84.2
R200	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	85.2/81.6
R201	7030003200	S.RES ERJ3GEYJ 100 V (10 Ω)	T	90.3/68.7
R202	7030003610	S.RES ERJ3GEYJ 273 V (27 kΩ)	B	57.2/90.6
R203	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	B	90.1/84.9
R204	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	82.6/84.2
R205	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	92.4/74.4
R206	7030003510	S.RES ERJ3GEYJ 392 V (3.9 kΩ)	T	105/69.3
R207	7030003280	S.RES ERJ3GEYJ 470 V (47 Ω)	T	112.6/70.5
R208	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	81.3/88.4
R209	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	95.6/72.3
R210	7030003510	S.RES ERJ3GEYJ 392 V (3.9 kΩ)	T	105.5/73.5
R211	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	70.1/93.7
R212	7030003720	S.RES ERJ3GEYJ 224 V (220 kΩ)	T	71.4/93.7
R213	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	104.8/77.4
R214	7030003360	S.RES ERJ3GEYJ 221 V (220 Ω)	T	98.5/77.5
R217	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	T	78.6/85
R218	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	79.8/81.1
R219	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	93.9/79.1
R220	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	T	95.8/80.1
R221	7030005981	S.RES ERA3YED 333V (33 kΩ)	T	106/80
R222	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	104.8/78.7
R223	7030005981	S.RES ERA3YED 333V (33 kΩ)	T	109.6/76
R224	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	T	110/74.7
R225	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	79/79.5
R226	7030005981	S.RES ERA3YED 333V (33 kΩ)	T	66.1/93.9
R228	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	79.1/88.8
R229	7030003800	S.RES ERJ3GEYJ 105 V (1 MΩ)	T	92.5/79.1
R230	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	95.8/77.5
R231	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	99.6/78.8
R232	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	114.9/76.8
R233	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	B	79/81.4
R234	7030003710	S.RES ERJ3GEYJ 184 V (180 kΩ)	B	70.1/90.9
R235	7030005521	S.RES ERA3YKD 334V (330 kΩ)	B	66/91.8
R236	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	B	59.3/95.4
R237	7030006070	S.RES ERJ12YJ101U (100 Ω)	B	82/97.6
R238	7030003580	S.RES ERJ3GEYJ 153 V (15 kΩ)	B	81.1/79.5
R239	7030003720	S.RES ERJ3GEYJ 224 V (220 kΩ)	T	80.7/92.6
R240	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	114.6/81
R241	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	T	93.2/81
R242	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	T	95.8/82.8
R243	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	102.8/83.4
R244	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	104.7/84.3
R245	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	T	109.6/83.8
R246	7030006070	S.RES ERJ12YJ101U (100 Ω)	T	74.3/104.7
R247	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	T	114/83.7
R248	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	89.6/84.2
R249	7030003540	S.RES ERJ3GEYJ 682 V (6.8 kΩ)	T	83.9/94.5
R250	7030005521	S.RES ERA3YKD 334V (330 kΩ)	B	64.6/91.8
R251	7030003540	S.RES ERJ3GEYJ 682 V (6.8 kΩ)	T	92.9/87.7
R252	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	59.2/92.7
R253	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	B	57.1/95.9
R254	7030003710	S.RES ERJ3GEYJ 184 V (180 kΩ)	B	60.6/91.3
R255	7030005981	S.RES ERA3YED 333V (33 kΩ)	T	61.9/94.5
R256	7030003720	S.RES ERJ3GEYJ 224 V (220 kΩ)	T	63.4/97.2
R257	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	118.6/78.6
R258	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	62.1/97.2
R259	7030003340	S.RES ERJ3GEYJ 151 V (150 Ω)	T	117.2/78.6
R260	7030003670	S.RES ERJ3GEYJ 823 V (82 kΩ)	T	120.7/109.4
R261	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	B	56.8/28.3
R262	7030003460	S.RES ERJ3GEYJ 152 V (1.5 kΩ)	T	39.1/31
R501	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	B	102.8/6.4
R502	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	B	116.5/13.7
R503	7030005691	S.RES ERA3YED 123V (12 kΩ)	B	119.7/18.2
R504	7030005691	S.RES ERA3YED 123V (12 kΩ)	B	117.6/20.1
R505	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	B	110.3/14.5
R506	7030005691	S.RES ERA3YED 123V (12 kΩ)	B	119.7/16.9
R507	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	29.2/8
R508	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	T	32/86.8
R509	7030000400	S.RES MCR10EZHJ 1.5 kΩ	T	29/82.2
R510	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	25.2/7.6
R511	7030003800	S.RES ERJ3GEYJ 105 V (1 MΩ)	B	116/15.6
R512	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	108.7/24
R513	7030000020	S.RES MCR10EZHJ 1 Ω (010)	T	84.3/3.8
R514	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	B	108.7/22.7
R515	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	96.3/8
R516	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	100.2/5

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R517	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	110.7/20.2
R518	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	B	105.6/20.6
R520	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	B	104/24.9
R521	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	8/43
R522	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	9.5/42.3
R523	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	B	23.5/7.1
R524	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	B	105.5/3.8
R525	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	B	102.8/5
R526	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	103.1/1.2
R527	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	B	23.5/5.7
R528	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	B	100.5/1.2
R529	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	B	114.3/19.5
R530	7410000800	S.ARY EXB-V8V 103JV (10 kΩ)	T	110.5/25.1
R531	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	97.6/8
R532	7030003700	S.RES ERJ3GEYJ 154 V (150 kΩ)	B	106.3/5.7
R533	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	B	108.4/8.1
R534	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	B	105.6/2.4
R535	7510001470	S.TMR NTCG20 4AG 473JT	T	119.1/37.2
R536	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	121.5/38.9
R537	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	11.6/13.9
R538	7030005981	S.RES ERA3YED 333V (33 kΩ)	T	12.3/18.2
R539	7030003660	S.RES ERJ3GEYJ 683 V (68 kΩ)	T	10.4/19.7
R540	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	14.2/13.9
R541	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	B	111.3/33
R542	7030003530	S.RES ERJ3GEYJ 562 V (5.6 kΩ)	T	14.9/17
R543	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	105.1/11.6
R544	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	B	110/33
R545	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	B	105.4/12.4
R546	7410001090	S.ARY EXB-V8V 101JV	T	98.9/34.5
R547	7030003590	S.RES ERJ3GEYJ 183 V (18 kΩ)	T	24.1/18.5
R548	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	B	103.8/13
R549	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	T	22/15.1
R550	7030003570	S.RES ERJ3GEYJ 123 V (12 kΩ)	T	20.1/14.6
R551	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	B	100/25.6
R552	7030003860	S.RES ERJ3GE JPW V	T	22.3/17.7
R553	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	B	101.2/26.9
R554	7030003760	S.RES ERJ3GEYJ 474 V (470 kΩ)	T	18.7/21.3
R555	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	T	22.9/5.2
R556	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	23.6/3.4
R557	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	96.4/35.8
R558	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	96.4/33.2
R559	7410001090	S.ARY EXB-V8V 101JV	T	93.5/32.5
R561	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	T	22.9/6.4
R562	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	25.7/5.4
R563	7410001090	S.ARY EXB-V8V 101JV	T	87.9/12.9
R564	7030005521	S.RES ERA3YKD 334V (330 kΩ)	B	20/4.8
R565	7030005501	S.RES ERA3YKD 124V (120 kΩ)	B	16/3
R566	7030005691	S.RES ERA3YED 123V (12 kΩ)	B	14.7/1.7
R567	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	12.1/2.9
R568	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	14.2/19
R569	7030003760	S.RES ERJ3GEYJ 474 V (470 kΩ)	B	25.1/3.3
R570	7410001090	S.ARY EXB-V8V 101JV	T	88.5/17.3
R571	7410001090	S.ARY EXB-V8V 101JV	T	89.9/24.9
R574	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	87.2/29.1
R575	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	89.4/27.9
R576	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	90.5/29.9
R577	7410001090	S.ARY EXB-V8V 101JV	T	86.7/22.2
R578	7410001090	S.ARY EXB-V8V 101JV	B	85.3/22.7
R579	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	11.6/20
R580	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	T	7.7/51.2
R581	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	10.1/54.9
R582	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	25.3/55.5
R583	7030003530	S.RES ERJ3GEYJ 562 V (5.6 kΩ) [EXP]	T	16.9/22.3
	7030003550	S.RES ERJ3GEYJ 822 V (8.2 kΩ) [USA]	T	16.9/22.3
R584	7030003550	S.RES ERJ3GEYJ 822 V (8.2 kΩ) [EXP]	T	18.5/24.1
	7030003610	S.RES ERJ3GEYJ 273 V (27 kΩ) [USA]	T	18.5/24.1
R585	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	17/50.8
R586	7030003580	S.RES ERJ3GEYJ 153 V (15 kΩ)	T	88.1/33.9
R587	7030003500	S.RES ERJ3GEYJ 332 V (3.3 kΩ)	T	10.2/65.6
R588	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	T	8.1/64.9
R589	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	17.6/52.9
R590	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	T	3.7/67.3
R591	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	17.6/48.9
R592	7030003840	S.RES ERJ3GEYJ 225 V (2.2 MΩ)	T	31.8/57
R593	7030005981	S.RES ERA3YED 333V (33 kΩ)	T	2.5/64.8
R594	7030003840	S.RES ERJ3GEYJ 225 V (2.2 MΩ)	T	34.4/57
R595	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	28.8/3.8
R596	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	4/63.5
R597	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	T	17.6/43.7
R598	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	8.4/37.2
R599	7030003840	S.RES ERJ3GEYJ 225 V (2.2 MΩ)	T	19.5/30.5
R600	7030003840	S.RES ERJ3GEYJ 225 V (2.2 MΩ)	T	19.8/27.9
R601	7030003760	S.RES ERJ3GEYJ 474 V (470 kΩ)	T	11.8/37.2
R602	7030003840	S.RES ERJ3GEYJ 225 V (2.2 MΩ)	T	18.1/30.5
R603	7030003840	S.RES ERJ3GEYJ 225 V (2.2 MΩ)	T	18.1/33.2
R604	7030000100	S.RES MCR10EZHJ 4.7 Ω (4R7)	T	10.7/97.1
R605	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	21.3/60.1
R606	7030003840	S.RES ERJ3GEYJ 225 V (2.2 MΩ)	B	6/104.5
R607	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	87.7/67.2
R611	7030003340	S.RES ERJ3GEYJ 151 V (150 Ω)	B	73/93
R612	7030003470	S.RES ERJ3GEYJ 182 V (1.8 kΩ)	B	75.3/92.8
R615	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	B	70.8/96.7

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R616	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	60/95
R618	7030003360	S.RES ERJ3GEYJ 221 V (220 Ω)	B	52.8/88.7
R619	7030003470	S.RES ERJ3GEYJ 182 V (1.8 kΩ)	B	50.2/88.7
R620	7030003280	S.RES ERJ3GEYJ 470 V (47 Ω)	T	100.5/55.4
R621	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	T	79.8/83.7
R622	7030003660	S.RES ERJ3GEYJ 683 V (68 kΩ)	B	78.2/66.5
R624	7030003800	S.RES ERJ3GEYJ 105 V (1 MΩ)	B	75.9/12.1
R625	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	B	74.9/46.2
R626	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	B	71.4/44.4
R627	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	70.2/52.5
R628	7030005521	S.RES ERA3YKD 334V (330 kΩ)	T	64.7/90.9
R629	7030005521	S.RES ERA3YKD 334V (330 kΩ)	T	66.1/90.9
R630	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	82/67.1
R631	7030005681	S.RES ERA3YKD 473V (47 kΩ)	T	36.5/76.4
R632	7030005681	S.RES ERA3YKD 473V (47 kΩ)	T	30.6/72.6
R634	7030005321	S.RES ERA3YED 103V (10 kΩ)	T	33.4/76.8
R635	7030005321	S.RES ERA3YED 103V (10 kΩ)	T	31.9/73.8
R636	7030005521	S.RES ERA3YKD 334V (330 kΩ)	T	29.3/73.7
R637	7030005521	S.RES ERA3YKD 334V (330 kΩ)	T	34.7/76.8
R638	7030003860	S.RES ERJ3GE JPW V	T	33.2/72.9
R641	7030003360	S.RES ERJ3GEYJ 221 V (220 Ω)	T	108.3/71.5
R642	7030003460	S.RES ERJ3GEYJ 152 V (1.5 kΩ)	B	48.8/69.4
R643	7030003300	S.RES ERJ3GEYJ 680 V (68 Ω)	B	49/38.2
R645	7030003220	S.RES ERJ3GEYJ 150 V (15 Ω)	B	43.9/42.8
R646	7030003360	S.RES ERJ3GEYJ 221 V (220 Ω)	B	77.4/28.5
R647	7510001720	S.TMR TN10-3K222JT	T	42.1/58.7
R648	7030003490	S.RES ERJ3GEYJ 272 V (2.7 kΩ)	B	40.2/58.5
R649	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	B	14.3/23.4
R650	7030003550	S.RES ERJ3GEYJ 822 V (8.2 kΩ)	B	17/21.4
R651	7030003730	S.RES ERJ3GEYJ 274 V (270 kΩ)	B	14.3/21.4
R652	7030003700	S.RES ERJ3GEYJ 154 V (150 kΩ)	B	17/22.7
R653	7030003800	S.RES ERJ3GEYJ 105 V (1 MΩ)	B	17.5/16.3
R654	7030003470	S.RES ERJ3GEYJ 182 V (1.8 kΩ)	B	23.9/12.4
R702	7030003860	S.RES ERJ3GE JPW V	B	75.3/91.5
R703	7030003860	S.RES ERJ3GE JPW V	B	53.3/86.8
R704	7030003860	S.RES ERJ3GE JPW V	T	106.9/77.9
R705	7030000010	S.RES MCR10EZHJ JPW (000)	T	105.9/60.2
R706	7030000010	S.RES MCR10EZHJ JPW (000)	T	104.8/56.5
R707	7030003860	S.RES ERJ3GE JPW V	T	36.1/61.8
R708	7030003860	S.RES ERJ3GE JPW V	T	23.9/61.6
R709	7030000010	S.RES MCR10EZHJ JPW (000)	T	25/78.7
R710	7030003860	S.RES ERJ3GE JPW V	T	17.6/57.1
R711	7030003860	S.RES ERJ3GE JPW V	B	50.9/39.3
R712	7030003860	S.RES ERJ3GE JPW V	B	52.9/50.3
R713	7030003860	S.RES ERJ3GE JPW V	B	101.4/24.3
R714	7030003860	S.RES ERJ3GE JPW V	T	80.6/61.3
R715	7030000010	S.RES MCR10EZHJ JPW (000)	T	85.2/61
R718	7030000010	S.RES MCR10EZHJ JPW (000)	B	78.2/57.3
R719	7030000010	S.RES MCR10EZHJ JPW (000)	B	81.3/72.2
R720	7030003860	S.RES ERJ3GE JPW V	B	83.9/68.7
R721	7030003860	S.RES ERJ3GE JPW V	T	84.7/93.2
R722	7030003860	S.RES ERJ3GE JPW V	T	84.1/90.6
R723	7030003860	S.RES ERJ3GE JPW V	T	80.7/67.4
R724	7030003860	S.RES ERJ3GE JPW V	T	64.9/63.4
R725	7030003860	S.RES ERJ3GE JPW V	T	66.4/56.6
R726	7030003860	S.RES ERJ3GE JPW V	T	115.4/13.6
R727	7030003860	S.RES ERJ3GE JPW V	T	117.2/54.1
R728	7030003860	S.RES ERJ3GE JPW V	B	62.3/48.9
R729	7030003860	S.RES ERJ3GE JPW V	B	64.4/43.8
R730	7030003860	S.RES ERJ3GE JPW V	B	68.7/42.3
R731	7030003860	S.RES ERJ3GE JPW V	B	69.3/33.6
R732	7030003860	S.RES ERJ3GE JPW V	B	70.4/30
R733	7030003860	S.RES ERJ3GE JPW V	B	71.7/30
R734	7030003860	S.RES ERJ3GE JPW V	B	68/24.8
R735	7030003860	S.RES ERJ3GE JPW V	B	72.6/16.1
R736	7030003860	S.RES ERJ3GE JPW V	B	66/15.4
R737	7030003860	S.RES ERJ3GE JPW V	B	63.4/19.6
R738	7030003860	S.RES ERJ3GE JPW V	B	54.6/35.1
R739	7030003860	S.RES ERJ3GE JPW V	B	55.8/31.5
R740	7030003860	S.RES ERJ3GE JPW V	B	55.8/24.2
R741	7030003860	S.RES ERJ3GE JPW V	B	41.5/35.8
R742	7030003860	S.RES ERJ3GE JPW V	B	94.6/11.1
R743	7030003860	S.RES ERJ3GE JPW V	B	32.4/34.9
R744	7030003860	S.RES ERJ3GE JPW V	T	87.8/82.6
R745	7030000010	S.RES MCR10EZHJ JPW (000)	T	87.6/77.4
R746	7030000010	S.RES MCR10EZHJ JPW (000)	T	86.1/7
R748	7030003860	S.RES ERJ3GE JPW V	B	32.2/16.8
R751	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	B	17.5/33.4
R752	7030003400	S.RES ERJ3GEYJ 471 V (470 Ω)	B	13.2/28.2
R753	7030007190	S.RES ERJ12YJ220U (22 Ω)	T	3.1/54.7
R754	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	B	117.3/35.2
R755	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	B	116.8/34
R756	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	B	116.3/32.1
R757	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	43.8/28
R758	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	48.2/21.5
R759	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	T	41.1/30.5
R760	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	45.7/27.8
R761	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	45.7/30.4
R762	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	T	46.6/24.6
R763	7030003580	S.RES ERJ3GEYJ 153 V (15 kΩ)	B	29.2/28.2
R764	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	B	29.2/27
R766	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	113.9/32.5

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R767	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	B	115.1/32.1
R770	7030003700	S.RES ERJ3GEYJ 154 V (150 kΩ)	B	53.3/7.9
R771	7030003720	S.RES ERJ3GEYJ 224 V (220 kΩ)	B	52.6/10.5
R772	7030003860	S.RES ERJ3GE JPW V	B	38.8/14.5
R773	7030003620	S.RES ERJ3GEYJ 333 V (33 kΩ)	B	7.4/17.2
R774	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	B	9.5/21.6
R775	7030003280	S.RES ERJ3GEYJ 470 V (47 Ω)	T	94.9/59.1
R776	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	B	7.4/14.3
R777	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	B	58.4/4.6
R778	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	B	58.4/3.3
R779	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	B	63.6/3.7
R780	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	B	60.7/10.1
R781	7030003580	S.RES ERJ3GEYJ 153 V (15 kΩ)	B	60.7/11.4
R782	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	63.4/10.1
R783	7030003620	S.RES ERJ3GEYJ 333 V (33 kΩ)	B	52.1/7.9
R784	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	33.3/69.2
R785	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	B	121.5/31.7
C1	4030006860	S.CER C1608 JB 1H 102K-T	B	60.1/14.8
C2	4030006900	S.CER C1608 JB 1H 103K-T	T	60.1/16.3
C3	4030006900	S.CER C1608 JB 1H 103K-T	T	26.6/45
C4	4030006860	S.CER C1608 JB 1H 102K-T	T	23.9/59
C5	4030008920	S.CER C1608 JB 1H 473K-T	B	23.4/27.7
C6	4030009920	S.CER C1608 CH 1H 050B-T	T	72.1/27.8
C7	4030008770	S.CER C1608 JB 1H 562K-T	B	25.5/26.3
C8	4030011600	S.CER C1608 JB 1E 104K-T	T	65.1/16.2
C9	4030006860	S.CER C1608 JB 1H 102K-T	T	73.8/16.7
C10	4030008900	S.CER C1608 JB 1H 333K-T	B	71.4/5.4
C11	4030010770	S.CER C1608 JB 1H 392K-T	T	20.4/66.9
C12	4550007080	S.TAN TEESVA 1C 106M8R	T	46.5/17.7
C13	4030006850	S.CER C1608 JB 1H 471K-T	T	63.8/16.2
C14	4030011600	S.CER C1608 JB 1E 104K-T	B	69.8/38.6
C15	4030011600	S.CER C1608 JB 1E 104K-T	T	69.4/34.1
C16	4030011600	S.CER C1608 JB 1E 104K-T	B	69.6/20.6
C17	4030011600	S.CER C1608 JB 1E 104K-T	T	69.5/22.4
C18	4030012660	S.CER C1608 JB 1E 683K-T	B	66.2/5.4
C19	4030012660	S.CER C1608 JB 1E 683K-T	B	25.7/9.3
C20	4030006860	S.CER C1608 JB 1H 102K-T	T	67.8/30.1
C21	4030009970	S.CER C1608 JB 1H 182K-T	T	21.7/66.9
C22	4030009510	S.CER C1608 CH 1H 010B-T	T	76.5/18.3
C23	4030006850	S.CER C1608 JB 1H 471K-T	B	66.1/38.6
C24	4030006850	S.CER C1608 JB 1H 471K-T	B	66.1/24.4
C25	4030017490	S.CER C1608 JB 1A 105K-T	T	66.5/28.7
C26	4030006870	S.CER C1608 JB 1H 222K-T	T	23.2/41.9
C27	4510007300	S.ELE 50 CV 1 BS	T	26.8/22.3
C28	4030007090	S.CER C1608 CH 1H 470J-T	T	71.8/31.3
C29	4030007090	S.CER C1608 CH 1H 470J-T	T	71.4/20.5
C30	4550007080	S.TAN TEESVA 1C 106M8R	B	60.8/8.4
C31	4030008860	S.CER C1608 JB 1H 153K-T	T	23/66.9
C33	4030007090	S.CER C1608 CH 1H 470J-T	T	42.4/20.2
C34	4030011810	S.CER C1608 JB 1A 224K-T	T	61.9/33.6
C35	4030006850	S.CER C1608 JB 1H 471K-T	T	69.2/32.3
C36	4030011810	S.CER C1608 JB 1A 224K-T	T	61.9/22.5
C37	4030006850	S.CER C1608 JB 1H 471K-T	T	68.8/20.5
C38	4030008880	S.CER C1608 JB 1H 223K-T	T	23.2/43.2
C39	4030006900	S.CER C1608 JB 1H 103K-T	B	57.9/6.8
C40	4030006860	S.CER C1608 JB 1H 102K-T	B	66.2/29.2
C41	4030007040	S.CER C1608 CH 1H 180J-T	B	60/30.3
C42	4030009970	S.CER C1608 JB 1H 182K-T	T	20.9/47.9
C43	4030011600	S.CER C1608 JB 1E 104K-T	T	30/32
C44	4030010770	S.CER C1608 JB 1H 392K-T	B	21/21.2
C45	4030008900	S.CER C1608 JB 1H 333K-T	T	22.2/50.5
C46	4030006860	S.CER C1608 JB 1H 102K-T	T	29.6/47.8
C47	4510007310	S.ELE 16 CV 10 BS	T	28.2/28.3
C48	4030009540	S.CER C1608 CH 1H 1R5B-T	B	64.8/34.9
C49	4030008900	S.CER C1608 JB 1H 333K-T	T	26.9/66.9
C50	4030007010	S.CER C1608 CH 1H 100D-T	B	61.9/34.1
C51	4030009880	S.CER C1608 JB 1H 682K-T	T	24.6/53.2
C52	4030006900	S.CER C1608 JB 1H 103K-T	T	29.2/50.5
C53	4030006860	S.CER C1608 JB 1H 102K-T	T	26.3/68.9
C54	4030011600	S.CER C1608 JB 1E 104K-T	T	52.6/4.8
C55	4030007020	S.CER C1608 CH 1H 120J-T	B	65.3/36.8
C56	4030009530	S.CER C1608 CH 1H 030B-T	B	64.2/42.5
C57	4030008860	S.CER C1608 JB 1H 153K-T	T	29.5/66.3
C58	4030009510	S.CER C1608 CH 1H 010B-T	B	63.8/38.6
C59	4030011330	S.CER C1608 CH 1H 391J-T	B	25.3/16.7
C60	4030011600	S.CER C1608 JB 1E 104K-T	B	38.9/62.9
C61	4030009880	S.CER C1608 JB 1H 682K-T	T	30.9/66.3
C63	4510007310	S.ELE 16 CV 10 BS	T	9.4/28
C64	4030008900	S.CER C1608 JB 1H 333K-T	B	29.6/14.9
C66	4030006900	S.CER C1608 JB 1H 103K-T	B	47/63.7
C67	4030008920	S.CER C1608 JB 1H 473K-T	T	55.3/36.9
C68	4030008920	S.CER C1608 JB 1H 473K-T	T	61.4/25.1
C70	4030007130	S.CER C1608 CH 1H 101J-T	B	32/19.9
C71	4030006850	S.CER C1608 JB 1H 471K-T	B	40.1/60.7
C72	4550003220	S.TAN TEESVA 1E 105M8L	B	56.1/18.8
C73	4550003250	S.TAN TEESVA 1V 474M8L	T	49.6/34.2
C74	4550003250	S.TAN TEESVA 1V 474M8L	T	52.6/25.2
C76	4550007080	S.TAN TEESVA 1C 106M8R	B	42.5/22.3
C77	4030011600	S.CER C1608 JB 1E 104K-T	B	58.5/66.2
C78	4030006860	S.CER C1608 JB 1H 102K-T	B	48.3/66.3

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

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REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
C79	4030006900	S.CER C1608 JB 1H 103K-T	T	48.1/30.3
C81	4510008120	S.ELE 16 CV 100 BS	T	55.8/109.3
C82	4030007170	S.CER C1608 CH 1H 221J-T	B	49.3/57.3
C83	4030007170	S.CER C1608 CH 1H 221J-T	B	49.3/58.6
C84	4550006650	S.TAN ECST1CY685R	T	47.4/34.2
C85	4550007080	S.TAN TEESVA 1C 106M8R	T	49.5/26.4
C86	4550006480	S.TAN TEESVA 1C 475M8L	B	55/69
C87	4030006860	S.CER C1608 JB 1H 102K-T	B	40.9/63.6
C91	4030006860	S.CER C1608 JB 1H 102K-T	B	40.9/62.2
C92	4030006900	S.CER C1608 JB 1H 103K-T	B	55.7/62.1
C93	4030006860	S.CER C1608 JB 1H 102K-T	T	60/112.9
C94	4030006860	S.CER C1608 JB 1H 102K-T	B	58.8/59.7
C95	4030011600	S.CER C1608 JB 1E 104K-T	B	50.9/55.6
C96	4030017480	S.CER C1608 JB 1A 474K-T	B	60.3/63.5
C97	4030006860	S.CER C1608 JB 1H 102K-T	T	61.5/106.8
C98	4030007120	S.CER C1608 CH 1H 820J-T	B	62.9/56.7
C99	4030011600	S.CER C1608 JB 1E 104K-T	T	50.9/53.2
C100	4030008900	S.CER C1608 JB 1H 333K-T	B	59.6/51.4
C101	4030006860	S.CER C1608 JB 1H 102K-T	B	59.4/68.1
C102	4030006860	S.CER C1608 JB 1H 102K-T	B	64.2/62
C103	4030006900	S.CER C1608 JB 1H 103K-T	T	56.8/62.1
C104	4030011600	S.CER C1608 JB 1E 104K-T	B	60.9/51.4
C105	4030006860	S.CER C1608 JB 1H 102K-T	B	61.3/60.9
C106	4030006860	S.CER C1608 JB 1H 102K-T	T	65.3/99.6
C107	4030006860	S.CER C1608 JB 1H 102K-T	B	72/102.3
C108	4030006860	S.CER C1608 JB 1H 102K-T	B	63.7/66.2
C109	4550007080	S.TAN TEESVA 1C 106M8R	B	65.5/51.8
C110	4030011600	S.CER C1608 JB 1E 104K-T	T	56.2/52.1
C111	4030006900	S.CER C1608 JB 1H 103K-T	B	66.8/63.9
C112	4030011600	S.CER C1608 JB 1E 104K-T	B	65/50.1
C114	4030007010	S.CER C1608 CH 1H 100D-T	T	72.6/63.5
C115	4030006900	S.CER C1608 JB 1H 103K-T	T	53.9/48.4
C117	4030011600	S.CER C1608 JB 1E 104K-T	T	58.7/57.5
C118	4030006860	S.CER C1608 JB 1H 102K-T	B	60.9/44.2
C119	4030007030	S.CER C1608 CH 1H 150J-T	T	91.8/44.5
C120	4030006860	S.CER C1608 JB 1H 102K-T	B	58.8/44.7
C121	4030011600	S.CER C1608 JB 1E 104K-T	T	96.5/47.3
C122	4030007050	S.CER C1608 CH 1H 220J-T	T	78.9/57
C123	4030006860	S.CER C1608 JB 1H 102K-T	B	54.2/50.7
C124	4030006860	S.CER C1608 JB 1H 102K-T	T	97.9/47.3
C125	4030006860	S.CER C1608 JB 1H 102K-T	B	57.6/41.9
C126	4030006860	S.CER C1608 JB 1H 102K-T	B	59.6/47.5
C127	4030009520	S.CER C1608 CH 1H 020B-T	B	57.6/39.7
C128	4030006860	S.CER C1608 JB 1H 102K-T	T	101.8/46.6
C129	4030007010	S.CER C1608 CH 1H 100D-T	T	97/45.5
C130	4030007010	S.CER C1608 CH 1H 100D-T	B	52.8/39.8
C131	4030009530	S.CER C1608 CH 1H 030B-T	T	101/44.8
C132	4030006860	S.CER C1608 JB 1H 102K-T	T	94.9/55.2
C133	4030006860	S.CER C1608 JB 1H 102K-T	T	79.3/60.1
C134	4030006860	S.CER C1608 JB 1H 102K-T	B	79.1/60.7
C135	4030006860	S.CER C1608 JB 1H 102K-T	T	92.9/57.4
C136	4030009530	S.CER C1608 CH 1H 030B-T	T	103.6/44.8
C137	4030006860	S.CER C1608 JB 1H 102K-T	T	83.6/66.9
C138	4030011600	S.CER C1608 JB 1E 104K-T	T	66.8/52.6
C140	4030009520	S.CER C1608 CH 1H 020B-T	T	105.4/43.7
C141	4030007040	S.CER C1608 CH 1H 180J-T	T	78.8/66
C142	4030006860	S.CER C1608 JB 1H 102K-T	T	81.9/61.3
C143	4030006860	S.CER C1608 JB 1H 102K-T	B	44.4/48.1
C144	4030006860	S.CER C1608 JB 1H 102K-T	T	112.2/51.7
C145	4030007090	S.CER C1608 CH 1H 470J-T	T	83.2/61.5
C146	4030006860	S.CER C1608 JB 1H 102K-T	T	94.9/53.9
C147	4030006860	S.CER C1608 JB 1H 102K-T	B	90.1/57.8
C148	4030009560	S.CER C1608 CH 1H R75B-T	T	100.5/56.7
C149	4030006900	S.CER C1608 JB 1H 103K-T	T	97.6/60.2
C150	4030007050	S.CER C1608 CH 1H 220J-T	B	45.1/44.8
C151	4030006980	S.CER C1608 CH 1H 070D-T	T	112.7/41.5
C152	4030006860	S.CER C1608 JB 1H 102K-T	B	49.3/45.4
C154	4030009520	S.CER C1608 CH 1H 020B-T	T	114.8/40.7
C155	4030006990	S.CER C1608 CH 1H 080D-T	T	87/65.1
C157	4030006860	S.CER C1608 JB 1H 102K-T	B	81.8/66.6
C159	4030006860	S.CER C1608 JB 1H 102K-T	B	59.8/48.8
C161	4030006860	S.CER C1608 JB 1H 102K-T	T	107/51.9
C162	4030009520	S.CER C1608 CH 1H 020B-T	T	118.2/40
C163	4030009520	S.CER C1608 CH 1H 020B-T	T	83/69
C164	4030007040	S.CER C1608 CH 1H 180J-T	B	79.8/63.9
C165	4030006860	S.CER C1608 JB 1H 102K-T	B	86.3/66.2
C166	4030007010	S.CER C1608 CH 1H 100D-T	T	101.6/62.3
C167	4030006860	S.CER C1608 JB 1H 102K-T	T	104.2/58.6
C168	4030007090	S.CER C1608 CH 1H 470J-T	B	83.7/66.1
C169	4030006860	S.CER C1608 JB 1H 102K-T	T	101.5/59.5
C170	4030007130	S.CER C1608 CH 1H 101J-T	T	108.7/60.7
C171	4030006860	S.CER C1608 JB 1H 102K-T	T	87.7/70.7
C172	4030006860	S.CER C1608 JB 1H 102K-T	B	43.6/73.1
C173	4030006860	S.CER C1608 JB 1H 102K-T	T	117.6/71.3
C174	4030007130	S.CER C1608 CH 1H 101J-T	T	84.4/72.5
C175	4030006860	S.CER C1608 JB 1H 102K-T	T	99.1/63.2
C176	4030009520	S.CER C1608 CH 1H 020B-T	T	82.6/73.2
C177	4030006860	S.CER C1608 JB 1H 102K-T	T	87.3/75.1
C178	4030009510	S.CER C1608 CH 1H 010B-T	B	88.8/61.7
C179	4030006860	S.CER C1608 JB 1H 102K-T	T	104.2/62.3
C180	4030007130	S.CER C1608 CH 1H 101J-T	T	114.3/57.8
C181	4030009510	S.CER C1608 CH 1H 010B-T	T	81/75.7

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REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
C182	4030009910	S.CER C1608 CH 1H 040B-T	T	102.5/66.8
C183	4030011160	S.CER GRM31M2C2H150JV01L	T	40.5/90.6
C184	4030011030	S.CER GRM31M4C2H1R5CY21L	T	116.2/89.6
C185	4030007120	S.CER C1608 CH 1H 820J-T	T	84.5/74
C186	4030006860	S.CER C1608 JB 1H 102K-T	T	99.1/65.8
C187	4030009520	S.CER C1608 CH 1H 020B-T	T	92.5/61.1
C188	4030009910	S.CER C1608 CH 1H 040B-T	T	110.1/61.1
C189	4030011210	S.CER GRM31M2C2H330JV01L	T	49.3/94.4
C190	4030011060	S.CER GRM31M2C2H4R0CY21L	T	112.5/91.6
C191	4030009530	S.CER C1608 CH 1H 030B-T	T	84/77.7
C192	4030011020	S.CER GRM31M4C2H1R0CY21L	B	50/92.9
C193	4030011140	S.CER GRM31M2C2H120JV01L	B	55.1/92.9
C194	4030011020	S.CER GRM31M4C2H1R0CY21L	T	101.5/87.6
C195	4030011160	S.CER GRM31M2C2H150JV01L	T	98/85.4
C196	4030007170	S.CER C1608 CH 1H 221J-T	T	98.6/69.7
C197	4030007020	S.CER C1608 CH 1H 120J-T	T	112.6/62.9
C198	4030009510	S.CER C1608 CH 1H 010B-T	T	82.1/78.2
C199	4030006860	S.CER C1608 JB 1H 102K-T	B	51.4/90.6
C200	4030006860	S.CER C1608 JB 1H 102K-T	T	97.8/88.1
C201	4030006860	S.CER C1608 JB 1H 102K-T	T	87.1/80.7
C202	4030006860	S.CER C1608 JB 1H 102K-T	T	98.6/71
C203	4030006860	S.CER C1608 JB 1H 102K-T	T	114.8/63.9
C204	4030009520	S.CER C1608 CH 1H 020B-T	T	80.7/78.7
C205	4030009540	S.CER C1608 CH 1H 1R5B-T	T	101.6/71.5
C206	4030009510	S.CER C1608 CH 1H 010B-T	T	108.8/64.9
C208	4030007140	S.CER C1608 CH 1H 121J-T	T	82.5/80.3
C209	4030006860	S.CER C1608 JB 1H 102K-T	T	85.2/82.9
C210	4030006860	S.CER C1608 JB 1H 102K-T	T	90.6/75.2
C211	4030006860	S.CER C1608 JB 1H 102K-T	T	104.8/76.1
C212	4030011280	S.CER C1608 CH 1H 271J-T	T	99.5/74.9
C213	4030007020	S.CER C1608 CH 1H 120J-T	T	113/67
C214	4030006860	S.CER C1608 JB 1H 102K-T	T	82.6/81.6
C215	4030009540	S.CER C1608 CH 1H 1R5B-T	T	94.8/70.9
C216	4030006860	S.CER C1608 JB 1H 102K-T	B	55.9/90.6
C217	4030006860	S.CER C1608 JB 1H 102K-T	B	90.1/86.2
C218	4030009530	S.CER C1608 CH 1H 030B-T	T	82.6/82.9
C219	4030006860	S.CER C1608 JB 1H 102K-T	T	84.1/88
C221	4030006860	S.CER C1608 JB 1H 102K-T	T	95.6/74.9
C222	4030006860	S.CER C1608 JB 1H 102K-T	T	105/70.6
C223	4030007130	S.CER C1608 CH 1H 101J-T	T	111.3/68.8
C224	4030006900	S.CER C1608 JB 1H 103K-T	T	82.6/88.4
C225	4030006900	S.CER C1608 JB 1H 103K-T	T	95.6/73.6
C226	4030006900	S.CER C1608 JB 1H 103K-T	T	109.2/68.3
C227	4030006860	S.CER C1608 JB 1H 102K-T	T	102.2/72.8
C229	4030011030	S.CER GRM31M4C2H1R5CY21L	B	87.8/91.1
C230	4030011020	S.CER GRM31M4C2H1R0CY21L	B	62.2/104.6
C231	4030011120	S.CER GRM31M2C2H100JV01L	B	62.2/102.3
C232	4030011020	S.CER GRM31M4C2H1R0CY21L	B	87.8/88.9
C233	4030011140	S.CER GRM31M2C2H120JV01L	B	82.5/88.9
C234	4030006860	S.CER C1608 JB 1H 102K-T	B	94.7/30.4
C235	4030006860	S.CER C1608 JB 1H 102K-T	T	79.8/82.4
C236	4030006860	S.CER C1608 JB 1H 102K-T	T	95.8/78.8
C237	4030008920	S.CER C1608 JB 1H 473K-T	T	72.7/93.7
C238	4030006860	S.CER C1608 JB 1H 102K-T	T	98.5/76.2
C240	4030006860	S.CER C1608 JB 1H 102K-T	B	62.9/100.6
C241	4030006860	S.CER C1608 JB 1H 102K-T	B	82.2/85.7
C242	4030007050	S.CER C1608 CH 1H 220J-T	T	104.1/80.5
C243	4030009920	S.CER C1608 CH 1H 050B-T	T	111.8/75.8
C244	4030006860	S.CER C1608 JB 1H 102K-T	T	72.6/101.5
C245	4030006860	S.CER C1608 JB 1H 102K-T	T	67.2/95.9
C246	4030017190	S.CER GRM31AR32J471KW01D	T	99.7/91.5
C247	4030009920	S.CER C1608 CH 1H 050B-T	T	76.3/90.1
C248	4030007040	S.CER C1608 CH 1H 180J-T	T	90.7/77.5
C249	4510008110	S.ELE 16 CV 22 BS	T	71.2/97.9
C250	4030017490	S.CER C1608 JB 1A 105K-T	T	76/86.5
C251	4030006860	S.CER C1608 JB 1H 102K-T	T	91.1/82.3
C252	4030006900	S.CER C1608 JB 1H 103K-T	T	105.3/82.4
C253	4030007170	S.CER C1608 CH 1H 221J-T	T	99.6/80.1
C254	4030007020	S.CER C1608 CH 1H 120J-T	T	113.6/78
C255	4030006860	S.CER C1608 JB 1H 102K-T	B	60.3/97.5
C256	4030006860	S.CER C1608 JB 1H 102K-T	B	86.7/98.4
C257	4030006860	S.CER C1608 JB 1H 102K-T	B	80.3/82.5
C258	4030006860	S.CER C1608 JB 1H 102K-T	B	82.4/79.5
C259	4030017200	S.CER GRM31BR32J102KY01L	B	64.2/107.5
C260	4030009910	S.CER C1608 CH 1H 040B-T	T	110/79.4
C261	4030007010	S.CER C1608 CH 1H 100D-T	T	102.8/80.8
C262	4030006860	S.CER C1608 JB 1H 102K-T	T	114.9/82.3
C263	4030006860	S.CER C1608 JB 1H 102K-T	T	69.6/107.3
C264	4030006860	S.CER C1608 JB 1H 102K-T	B	67.3/91.8
C266	4030006860	S.CER C1608 JB 1H 102K-T	T	95.8/81.4
C267	4030006900	S.CER C1608 JB 1H 103K-T	T	93.9/83.9
C268	4030006860	S.CER C1608 JB 1H 102K-T	T	97.7/82
C269	4030007130	S.CER C1608 CH 1H 101J-T	T	110.4/82
C270	4510008110	S.ELE 16 CV 22 BS	T	67.1/103.7
C271	4030011160	S.CER GRM31M2C2H150JV01L	B	66.2/111.3
C272	4030011600	S.CER C1608 JB 1E 104K-T	B	68.6/91.8
C273	4030007170	S.CER C1608 CH 1H 221J-T	T	78.7/93.7
C274	4030006900	S.CER C1608 JB 1H 103K-T	B	60.9/95.3
C276	4030006860	S.CER C1608 JB 1H 102K-T	T	102.1/85.3
C277	4030006860	S.CER C1608 JB 1H 102K-T	T	75.3/108.5
C278	4030006860	S.CER C1608 JB 1H 102K-T	B	62/91.8
C279	4030017200	S.CER GRM31BR32J102KY01L	T	82.4/111.3

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
C280	4030006970	S.CER C1608 CH 1H 060D-T	T	78.7/95
C281	4030006860	S.CER C1608 JB 1H 102K-T	T	90.5/87.2
C282	4030011170	S.CER GRM31M2C2H180JV01L	T	85.9/102.2
C283	4030011600	S.CER C1608 JB 1E 104K-T	B	63.3/92.3
C284	4030011140	S.CER GRM31M2C2H120JV01L	T	94.1/96.8
C285	4030011220	S.CER GRM31M2C2H360JV01L	T	98.4/111.7
C286	4030006860	S.CER C1608 JB 1H 102K-T	B	57.1/94.6
C288	4030011090	S.CER GRM31M2C2H7R0DV01L	T	101.5/100.9
C289	4030011190	S.CER GRM31M2C2H270JV01L	T	103.9/111.7
C290	4030009500	S.CER C1608 CH 1H 0R5B-T	T	78.3/97.3
C291	4030006860	S.CER C1608 JB 1H 102K-T	T	115.9/79.1
C292	4030011110	S.CER GRM31M2C2H9R0DV01L	T	109.7/102.2
C293	4030006860	S.CER C1608 JB 1H 102K-T	T	58.9/92.4
C294	4030006860	S.CER C1608 JB 1H 102K-T	T	117.3/83.6
C295	4030011070	S.CER GRM31M2C2H5R0CY21L	T	114.2/103.5
C296	4030009530	S.CER C1608 CH 1H 030B-T	T	87.4/87.5
C297	4030008920	S.CER C1608 JB 1H 473K-T	T	64.7/97.2
C298	4030009540	S.CER C1608 CH 1H 1R5B-T	B	111.9/94.7
C299	4030011090	S.CER GRM31M2C2H7R0DV01L	T	117.3/104.5
C300	4030006860	S.CER C1608 JB 1H 102K-T	T	61.9/91.8
C301	4030009920	S.CER C1608 CH 1H 050B-T	B	91.9/101
C302	4030009560	S.CER C1608 CH 1H R75B-T	B	111.9/97.3
C303	4030007060	S.CER C1608 CH 1H 270J-T	T	80.9/101.8
C304	4030009540	S.CER C1608 CH 1H 1R5B-T	B	111.9/99.9
C305	4030011170	S.CER GRM31M2C2H180JV01L	B	79.5/110.1
C306	4030011040	S.CER GRM31M4C2H2R0CY21L	B	94.4/99.2
C310	4030008920	S.CER C1608 JB 1H 473K-T	T	56.9/23.3
C311	4030011600	S.CER C1608 JB 1E 104K-T	T	59.6/20.7
C312	4030017490	S.CER C1608 JB 1A 105K-T	B	56.3/17.1
C501	4030011600	S.CER C1608 JB 1E 104K-T	B	108.7/25.3
C502	4510006021	ELE 16 ME 2200 HC		
C503	4030006860	S.CER C1608 JB 1H 102K-T	T	34.9/96.7
C504	4030009590	S.CER C2012 JF 1C 225Z-T	B	114.9/13.4
C505	4030006900	S.CER C1608 JB 1H 103K-T	B	107.6/19.8
C506	4030007090	S.CER C1608 CH 1H 470J-T	B	3.3/8.6
C507	4030012610	S.CER C2012 JB 1C 474K-T	B	10.2/52.7
C508	4030006900	S.CER C1608 JB 1H 103K-T	B	114.3/18.2
C509	4030007090	S.CER C1608 CH 1H 470J-T	B	118.8/21.5
C510	4030006860	S.CER C1608 JB 1H 102K-T	B	4/13.9
C511	4030007070	S.CER C1608 CH 1H 330J-T	B	116/16.9
C512	4030006860	S.CER C1608 JB 1H 102K-T	T	24.5/9.4
C513	4030011600	S.CER C1608 JB 1E 104K-T	T	26.8/83.1
C514	4030009910	S.CER C1608 CH 1H 040B-T	B	113.3/16.1
C515	4030006860	S.CER C1608 JB 1H 102K-T	B	21.3/6.5
C516	4030006860	S.CER C1608 JB 1H 102K-T	T	26.8/81.7
C517	4030007090	S.CER C1608 CH 1H 470J-T	T	83.9/6.7
C519	4030008900	S.CER C1608 JB 1H 333K-T	B	109.9/12
C520	4030007050	S.CER C1608 CH 1H 220J-T	B	119.7/15.6
C521	4030011600	S.CER C1608 JB 1E 104K-T	B	9/42.3
C522	4030006860	S.CER C1608 JB 1H 102K-T	B	108.5/13.2
C523	4030006860	S.CER C1608 JB 1H 102K-T	T	20.3/6.8
C524	4030007090	S.CER C1608 CH 1H 470J-T	B	99.5/3
C525	4550007080	S.TAN TEESVA 1C 106M8R	T	13.4/42.4
C526	4030006860	S.CER C1608 JB 1H 102K-T	B	13.4/2.9
C527	4030012610	S.CER C2012 JB 1C 474K-T	B	41.6/80
C528	4030007090	S.CER C1608 CH 1H 470J-T	B	104.7/5.7
C529	4510007310	S.ELE 16 CV 10 BS	T	90.7/8.4
C531	4550007080	S.TAN TEESVA 1C 106M8R	T	47.9/82
C532	4550007080	S.TAN TEESVA 1C 106M8R	T	13.1/51.1
C533	4030008910	S.CER C1608 JB 1H 393K-T	T	8.6/13.9
C534	4030008910	S.CER C1608 JB 1H 393K-T	T	10.4/16
C535	4030011600	S.CER C1608 JB 1E 104K-T	T	122.2/37
C536	4030011600	S.CER C1608 JB 1E 104K-T	T	15/15.7
C537	4030017490	S.CER C1608 JB 1A 105K-T	T	16.8/14.2
C538	4510007280	S.ELE 50 CV 2R2 BS	T	25.1/14.1
C539	4030006860	S.CER C1608 JB 1H 102K-T	T	99.5/37.5
C540	4030006860	S.CER C1608 JB 1H 102K-T	T	25.4/18.5
C542	4030011600	S.CER C1608 JB 1E 104K-T	B	101.1/28.9
C544	4030011600	S.CER C1608 JB 1E 104K-T	T	31.1/3.1
C545	4030006900	S.CER C1608 JB 1H 103K-T	B	92.8/24.9
C546	4550006760	S.TAN TEESVB21A336M8R	T	9.3/23.3
C547	4030017490	S.CER C1608 JB 1A 105K-T	T	20.9/22.3
C548	4030008890	S.CER C1608 JB 1H 273K-T	T	12.5/64.3
C549	4510007310	S.ELE 16 CV 10 BS	T	27.7/58.8
C550	4030006860	S.CER C1608 JB 1H 102K-T	T	88.3/31.3
C551	4030011600	S.CER C1608 JB 1E 104K-T	T	11.9/56.8
C552	4030006900	S.CER C1608 JB 1H 103K-T	T	16.2/48.9
C553	4030017490	S.CER C1608 JB 1A 105K-T	T	15.3/24.9
C554	4030011600	S.CER C1608 JB 1E 104K-T	T	16.2/52.9
C555	4030008880	S.CER C1608 JB 1H 223K-T	T	18.9/52.9
C556	4030011600	S.CER C1608 JB 1E 104K-T	T	31.8/55.7
C557	4030008650	S.CER C1608 JB 1H 332K-T	T	18.9/48.9
C558	4030006860	S.CER C1608 JB 1H 102K-T	T	116.8/38
C559	4030008650	S.CER C1608 JB 1H 332K-T	T	17.6/46.3
C560	4030012610	S.CER C2012 JB 1C 474K-T	T	3.2/61
C561	4030006860	S.CER C1608 JB 1H 102K-T	T	32.2/6.7
C562	4030006860	S.CER C1608 JB 1H 102K-T	T	33/3.1
C563	4030008920	S.CER C1608 JB 1H 473K-T	T	8.7/67.1
C564	4030011810	S.CER C1608 JB 1A 224K-T	T	10/68.3
C566	4510007310	S.ELE 16 CV 10 BS	T	9/33.5
C567	4510008130	S.ELE 16 CV 220 BS	T	18.2/84.5
C568	4510008140	S.ELE 10 CV 470 BS	T	10.3/86.6

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
C569	4030011600	S.CER C1608 JB 1E 104K-T	T	18.5/27.9
C570	4030011600	S.CER C1608 JB 1E 104K-T	T	9.8/94
C571	4030011600	S.CER C1608 JB 1E 104K-T	B	21/101.1
C572	4030007090	S.CER C1608 CH 1H 470J-T	B	22/110.6
C573	4030017490	S.CER C1608 JB 1A 105K-T	T	21/61.6
C574	4510007310	S.ELE 16 CV 10 BS	T	16.6/67.3
C575	4510007310	S.ELE 16 CV 10 BS	T	32.5/60.7
C577	4550006170	S.TAN ECST1AY225R	B	74.8/95.4
C579	4030006860	S.CER C1608 JB 1H 102K-T	T	118.3/52.2
C580	4030006860	S.CER C1608 JB 1H 102K-T	B	73.6/97.1
C581	4030006860	S.CER C1608 JB 1H 102K-T	T	58.7/95
C582	4550006170	S.TAN ECST1AY225R	T	55.2/87.8
C584	4030006860	S.CER C1608 JB 1H 102K-T	T	40.8/51.7
C585	4030006860	S.CER C1608 JB 1H 102K-T	T	74.2/19.3
C586	4030011730	S.CER GRM31M2C2H101JV01L	B	102.1/101.8
C587	4030011600	S.CER C1608 JB 1E 104K-T	T	110.7/22
C588	4030006860	S.CER C1608 JB 1H 102K-T	T	76.9/17.1
C589	4030006860	S.CER C1608 JB 1H 102K-T	B	98.3/32.3
C590	4030006860	S.CER C1608 JB 1H 102K-T	B	49.8/107
C591	4030006860	S.CER C1608 JB 1H 102K-T	B	34.1/32.9
C592	4030011810	S.CER C1608 JB 1A 224K-T	B	34.1/30.9
C593	4030006860	S.CER C1608 JB 1H 102K-T	T	32.1/76.8
C594	4030006860	S.CER C1608 JB 1H 102K-T	T	29.3/76.5
C595	4030006860	S.CER C1608 JB 1H 102K-T	T	20.9/72.9
C596	4030006860	S.CER C1608 JB 1H 102K-T	T	34.6/72.9
C597	4030007010	S.CER C1608 CH 1H 100D-T	T	94.9/57.8
C598	4030006860	S.CER C1608 JB 1H 102K-T	T	92/70.9
C599	4030009910	S.CER C1608 CH 1H 040B-T	T	107.7/56.3
C600	4030006860	S.CER C1608 JB 1H 102K-T	T	84.7/96.3
C601	4030006860	S.CER C1608 JB 1H 102K-T	T	94.1/85.8
C602	4030006860	S.CER C1608 JB 1H 102K-T	T	90.2/65
C603	4030006860	S.CER C1608 JB 1H 102K-T	B	79.6/55.9
C604	4030006860	S.CER C1608 JB 1H 102K-T	B	82.5/68.7
C605	4030006860	S.CER C1608 JB 1H 102K-T	B	90/65
C606	4030007130	S.CER C1608 CH 1H 101J-T	T	109.2/73.4
C607	4030007130	S.CER C1608 CH 1H 101J-T	T	109.5/69.7
C608	4030006860	S.CER C1608 JB 1H 102K-T	B	102.6/23
C609	4030006860	S.CER C1608 JB 1H 102K-T	B	91.1/44.1
C610	4030006980	S.CER C1608 CH 1H 070D-T	B	59.8/66.2
C611	4030006860	S.CER C1608 JB 1H 102K-T	B	54.9/48.2
C612	4030006900	S.CER C1608 JB 1H 103K-T	B	91.2/42.3
C616	4030007090	S.CER C1608 CH 1H 470J-T	B	77.4/20.7
C617	4030007090	S.CER C1608 CH 1H 470J-T	B	77.4/23.6
C618	4030007090	S.CER C1608 CH 1H 470J-T	B	34.1/28.9
C619	4030007090	S.CER C1608 CH 1H 470J-T	B	39.6/19.7
C620	4030006860	S.CER C1608 JB 1H 102K-T	B	91.1/45.6
C621	4030006860	S.CER C1608 JB 1H 102K-T	B	91.3/49.7
C623	4030006860	S.CER C1608 JB 1H 102K-T	B	83.3/49.4
C624	4030006860	S.CER C1608 JB 1H 102K-T	B	81.9/49.4
C625	4030006860	S.CER C1608 JB 1H 102K-T	B	76/56
C626	4030006860	S.CER C1608 JB 1H 102K-T	B	73.3/55.8
C627	4030006860	S.CER C1608 JB 1H 102K-T	B	89.9/27.7
C628	4030006860	S.CER C1608 JB 1H 102K-T	B	85.2/29.8
C629	4030006860	S.CER C1608 JB 1H 102K-T	B	83.4/27.2
C630	4030006860	S.CER C1608 JB 1H 102K-T	B	88.8/18.5
C632	4030007090	S.CER C1608 CH 1H 470J-T	T	49.5/48.4
C633	4030007140	S.CER C1608 CH 1H 121J-T	B	60.4/32.2
C634	4030007140	S.CER C1608 CH 1H 121J-T	B	61.8/32.2
C635	4030006860	S.CER C1608 JB 1H 102K-T	B	66.2/26.6
C636	4030011810	S.CER C1608 JB 1A 224K-T	B	67.6/35.4
C637	4030011810	S.CER C1608 JB 1A 224K-T	B	62.5/23.5
C638	4030006860	S.CER C1608 JB 1H 102K-T	T	76.7/77.5
C639	4030006860	S.CER C1608 JB 1H 102K-T	B	79.6/76.4
C640	4030006860	S.CER C1608 JB 1H 102K-T	T	105.7/52.7
C641	4030006860	S.CER C1608 JB 1H 102K-T	T	120.9/52.2
C642	4030006860	S.CER C1608 JB 1H 102K-T	T	116.8/56
C643	4030006860	S.CER C1608 JB 1H 102K-T	T	27.5/72.9
C644	4030011810	S.CER C1608 JB 1A 224K-T	B	61.6/54
C645	4030011810	S.CER C1608 JB 1A 224K-T	B	50.9/54.3
C646	4030006860	S.CER C1608 JB 1H 102K-T	B	54.5/37
C647	4030006860	S.CER C1608 JB 1H 102K-T	B	55.1/22.8
C648	4030006860	S.CER C1608 JB 1H 102K-T	B	55.1/33.2
C649	4030006860	S.CER C1608 JB 1H 102K-T	B	43.4/34.2
C650	4030006860	S.CER C1608 JB 1H 102K-T	B	39.6/37.4
C651	4030006860	S.CER C1608 JB 1H 102K-T	B	63.1/16.2
C652	4030006860	S.CER C1608 JB 1H 102K-T	B	34.5/17.3
C654	4030007090	S.CER C1608 CH 1H 470J-T	T	109.1/77.3
C655	4030007090	S.CER C1608 CH 1H 470J-T	T	107.3/63.2
C656	4030006860	S.CER C1608 JB 1H 102K-T	T	65.2/30
C657	4030006860	S.CER C1608 JB 1H 102K-T	T	65.4/18.5
C658	4030006860	S.CER C1608 JB 1H 102K-T [USA] only	T	75.4/70
C660	4030006860	S.CER C1608 JB 1H 102K-T	T	58.3/97.6
C661	4030006860	S.CER C1608 JB 1H 102K-T	T	38.8/52.8
C662	4030006860	S.CER C1608 JB 1H 102K-T	B	92.9/44.8
C663	4030006860	S.CER C1608 JB 1H 102K-T	B	92.6/51
C664	4030007090	S.CER C1608 CH 1H 470J-T	T	82.7/58.9
C665	4030007090	S.CER C1608 CH 1H 470J-T	T	87.5/58.7
C666	4030007010	S.CER C1608 CH 1H 100D-T	B	74.9/31.4
C667	4030007010	S.CER C1608 CH 1H 100D-T	B	73/10.3
C668	4030007010	S.CER C1608 CH 1H 100D-T	B	72.6/8.7
C669	4030007010	S.CER C1608 CH 1H 100D-T	B	34.8/24.4
C670	4030006860	S.CER C1608 JB 1H 102K-T	T	70.8/65.3

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
C671	4030011600	S.CER C1608 JB 1E 104K-T	B	14.5/28
C672	4030011600	S.CER C1608 JB 1E 104K-T	B	14.1/19.4
C673	4030011600	S.CER C1608 JB 1E 104K-T	B	15.7/24.6
C674	4030011600	S.CER C1608 JB 1E 104K-T	B	12.8/19.4
C675	4030006900	S.CER C1608 JB 1H 103K-T	B	12.3/15.6
C676	4550007080	S.TAN TEESVA 1C 106M8R	B	20.2/13.6
C677	4550007080	S.TAN TEESVA 1C 106M8R	B	18.7/17.9
C678	4030017490	S.CER C1608 JB 1A 105K-T	B	23.9/11.1
C679	4030011600	S.CER C1608 JB 1E 104K-T	T	36.3/69.2
C680	4030006860	S.CER C1608 JB 1H 102K-T	T	34.6/69.2
C681	4030006860	S.CER C1608 JB 1H 102K-T	T	36.3/63.9
C682	4030006860	S.CER C1608 JB 1H 102K-T	B	21/8.4
C683	4030006860	S.CER C1608 JB 1H 102K-T	B	40.9/19.7
C684	4030006860	S.CER C1608 JB 1H 102K-T	B	41.6/17.5
C685	4030006860	S.CER C1608 JB 1H 102K-T	B	48.4/4.7
C686	4030006860	S.CER C1608 JB 1H 102K-T	B	52.2/17.7
C687	4030006860	S.CER C1608 JB 1H 102K-T	B	21/10.1
C688	4030006860	S.CER C1608 JB 1H 102K-T	B	17.9/30.4
C689	4030006860	S.CER C1608 JB 1H 102K-T	B	18/24.3
C690	4510007310	S.ELE 16 CV 10 BS	T	2.7/48.4
C691	4510007310	S.ELE 16 CV 10 BS	T	4.2/30.2
C692	4030006860	S.CER C1608 JB 1H 102K-T	B	13.9/35.2
C693	4030006860	S.CER C1608 JB 1H 102K-T	B	14.1/30.1
C694	4030006860	S.CER C1608 JB 1H 102K-T	B	10.2/27.1
C695	4030006860	S.CER C1608 JB 1H 102K-T	B	9.1/35.2
C696	4030006860	S.CER C1608 JB 1H 102K-T	T	115/20.5
C697	4030006860	S.CER C1608 JB 1H 102K-T	B	118.1/25.5
C698	4030006860	S.CER C1608 JB 1H 102K-T	T	113.3/29.2
C699	4030006860	S.CER C1608 JB 1H 102K-T	B	116/28.8
C700	4030006860	S.CER C1608 JB 1H 102K-T	B	122.2/24.2
C701	4030007090	S.CER C1608 CH 1H 470J-T	B	115.2/30.3
C702	4030007090	S.CER C1608 CH 1H 470J-T	B	117.7/36.4
C703	4030006860	S.CER C1608 JB 1H 102K-T	T	41.1/27.8
C704	4030006860	S.CER C1608 JB 1H 102K-T	T	41.1/29.2
C705	4030006860	S.CER C1608 JB 1H 102K-T	T	47.1/27.8
C706	4030006860	S.CER C1608 JB 1H 102K-T	T	46.6/25.9
C707	4030006860	S.CER C1608 JB 1H 102K-T	B	51.4/12.2
C708	4030006860	S.CER C1608 JB 1H 102K-T	B	15.5/12.8
C709	4550007080	S.TAN TEESVA 1C 106M8R	B	28.4/29.9
C711	4030006860	S.CER C1608 JB 1H 102K-T	B	60.2/27.3
C712	4030006860	S.CER C1608 JB 1H 102K-T	T	55.1/27.6
C713	4030017490	S.CER C1608 JB 1A 105K-T	B	9.2/15.1
C714	4030011600	S.CER C1608 JB 1E 104K-T	T	9.5/51.9
C715	4030006850	S.CER C1608 JB 1H 471K-T	T	114.7/29.2
C716	4030006850	S.CER C1608 JB 1H 471K-T	T	122.6/25.2
C717	4030006850	S.CER C1608 JB 1H 471K-T	T	122.6/22.6
C718	4030006850	S.CER C1608 JB 1H 471K-T	B	121.5/30.4
C719	4030006850	S.CER C1608 JB 1H 471K-T	B	110.7/20.8
C720	4030006850	S.CER C1608 JB 1H 471K-T	B	77.9/90.5
C721	4030007090	S.CER C1608 CH 1H 470J-T	B	4.7/90.8
C722	4030007090	S.CER C1608 CH 1H 470J-T	T	5.2/87.5
C723	4550007080	S.TAN TEESVA 1C 106M8R	B	53.5/3.8
C750	4030006860	S.CER C1608 JB 1H 102K-T	T	20.4/64.3
C751	4030006860	S.CER C1608 JB 1H 102K-T	T	9.7/17.8
C752	4030006900	S.CER C1608 JB 1H 103K-T	T	82.7/6.7
C754	4030006900	S.CER C1608 JB 1H 103K-T	T	22.4/3.4
C755	4030006860	S.CER C1608 JB 1H 102K-T	T	21.5/8.3
C756	4030006860	S.CER C1608 JB 1H 102K-T	T	13.5/22.9
C757	4030008900	S.CER C1608 JB 1H 333K-T	B	106.1/23.5
C758	4030008900	S.CER C1608 JB 1H 333K-T	T	4/13.9
C759	4030006870	S.CER C1608 JB 1H 222K-T	T	27.1/8
C760	4030006900	S.CER C1608 JB 1H 103K-T	B	95/8.2
C761	4030006900	S.CER C1608 JB 1H 103K-T	B	17.5/15.1
C762	4030007010	S.CER C1608 CH 1H 100D-T	B	6.4/94
C763	4030007010	S.CER C1608 CH 1H 100D-T	B	4.8/92.5
C764	4030007010	S.CER C1608 CH 1H 100D-T	B	15.5/100.8
C765	4030007010	S.CER C1608 CH 1H 100D-T	B	9.5/101.8
C766	4030006900	S.CER C1608 JB 1H 103K-T	B	9.2/13.7
J1	6510014960	S.CNR B2B-ZR-SM3-TF	T	66.3/110.6
J502	6510023110	CNR 3008L-8P8C <KIN>		
J503	6510019321	CNR 1729 REAR CONNECTOR-1		
J504	6510023180	CNR TCS7282-01-211		
J505	6510014960	S.CNR B2B-ZR-SM3-TF	T	16/97.1
J506	6510023590	CNR HSJ2000-01-010		
J507	6510021970	S.CNR AXN330C130P	T	118.7/28.3
J508	6510019370	S.CNR B3B-ZR-SM3-TF	T	1.8/90.8
W1	7120000470	JMP ERDS2T0		
W2	7120000470	JMP ERDS2T0		
W3	7120000470	JMP ERDS2T0		
W501	8900004880	CBL OPC-465		
EP1	6910012350	S.BEA MMZ1608Y 102BT	T	62.2/112.8
EP2	6910012350	S.BEA MMZ1608Y 102BT	T	61.5/108.1
EP10	6910000660	BEA FSRH082149RL000B		
EP11	6910000660	BEA FSRH082149RL000B		
EP12	6910012350	S.BEA MMZ1608Y 102BT	T	23.7/28.4
EP13	6910012350	S.BEA MMZ1608Y 102BT	B	21.3/12

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
EP501	6910012350	S.BEA MMZ1608Y 102BT	B	13.5/5.6
EP502	6910012350	S.BEA MMZ1608Y 102BT	B	17.3/8.8
EP503	6910012350	S.BEA MMZ1608Y 102BT	T	21/10.2
EP504	6910012350	S.BEA MMZ1608Y 102BT	T	19.5/8.9
EP505	6910012350	S.BEA MMZ1608Y 102BT	B	11.8/13.7
EP507	6910012350	S.BEA MMZ1608Y 102BT	B	7.1/5.6
EP508	6910012350	S.BEA MMZ1608Y 102BT	B	4.1/10.7
EP509	6910014690	S.BEA MPZ1608S221A-T	B	96.8/8.2
EP510	6910015130	S.BEA MMZ1608D 301BT	B	100.2/6.4
EP511	6910015120	S.BEA MMZ2012D 301BT	T	108.7/8.4
EP512	6910012350	S.BEA MMZ1608Y 102BT	T	110.3/14.8
EP513	6910012350	S.BEA MMZ1608Y 102BT	T	112.5/13.5
EP514	6910012350	S.BEA MMZ1608Y 102BT	B	89.2/8.4
EP515	6910012350	S.BEA MMZ1608Y 102BT	B	92.1/7.9
EP517	6910012350	S.BEA MMZ1608Y 102BT	T	12.9/20
EP518	6910012350	S.BEA MMZ1608Y 102BT	B	115/20.8
EP519	6910012350	S.BEA MMZ1608Y 102BT	B	100.8/21.8
EP520	6910012350	S.BEA MMZ1608Y 102BT	B	89.5/38.9
EP521	6910012350	S.BEA MMZ1608Y 102BT	B	90.8/38.6
EP522	6910012350	S.BEA MMZ1608Y 102BT	B	67.9/36.7
EP523	6910012350	S.BEA MMZ1608Y 102BT	B	64.4/22.7
EP524	6910012350	S.BEA MMZ1608Y 102BT	T	76/84.3
EP525	6910012350	S.BEA MMZ1608Y 102BT	T	113/53.9
EP526	6910012350	S.BEA MMZ1608Y 102BT	B	64.3/40.6
EP528	6910012350	S.BEA MMZ1608Y 102BT	B	22.9/101.3
EP531	6910012350	S.BEA MMZ1608Y 102BT	T	7.7/92.2
EP532	6910012350	S.BEA MMZ1608Y 102BT	T	9.9/101.6
EP533	6910012350	S.BEA MMZ1608Y 102BT	T	114/25.5
EP534	6910012350	S.BEA MMZ1608Y 102BT	T	114/21.9
EP535	6910012350	S.BEA MMZ1608Y 102BT	T	114/23.1
EP536	6910012350	S.BEA MMZ1608Y 102BT	T	114/26.7
EP537	6910012350	S.BEA MMZ1608Y 102BT	T	114/24.3
EP538	6910012350	S.BEA MMZ1608Y 102BT	B	121.5/26
EP539	6910012350	S.BEA MMZ1608Y 102BT	B	120.7/28.5
EP541	6910012350	S.BEA MMZ1608Y 102BT	B	118.2/31.5
EP542	6910012350	S.BEA MMZ1608Y 102BT	B	117.8/30.1
EP543	6910012350	S.BEA MMZ1608Y 102BT	B	119.6/35.2
EP544	6910012350	S.BEA MMZ1608Y 102BT	B	118.9/28.2
EP545	6910012350	S.BEA MMZ1608Y 102BT	T	75.9/67.7
EP546	6910012350	S.BEA MMZ1608Y 102BT	T	76.8/55.1
EP547	6910012350	S.BEA MMZ1608Y 102BT	B	17/13.2
EP548	6910012350	S.BEA MMZ1608Y 102BT	B	7.7/92.2
EP549	6910012350	S.BEA MMZ1608Y 102BT	B	6.7/89.2
EP550	6910012350	S.BEA MMZ1608Y 102BT	B	13.8/98.9
EP551	6910012350	S.BEA MMZ1608Y 102BT	B	11.4/101.1

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[VCO BOARD]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
Q1	1590003290	S.TR UNR9213J-(TX)	B	8/14.4
Q2	1590003300	S.TR UNR921NJ-(TX)	T	12/15
Q3	1530003580	S.TR 2SC5231C8-TL	T	21.1/20.6
Q4	1530003580	S.TR 2SC5231C8-TL	T	24.2/16.8
Q5	1530003580	S.TR 2SC5231C8-TL	T	30.5/15.5
Q50	1530002560	S.TR 2SC4403-3-TL	T	21.3/2.4
Q100	1590003290	S.TR UNR9213J-(TX)	T	8.7/2.8
Q101	1530003580	S.TR 2SC5231C8-TL	T	18.4/9.7
Q102	1530003580	S.TR 2SC5231C8-TL	T	20.9/12.3
Q103	1530003580	S.TR 2SC5231C8-TL	T	29.5/10.9
Q104	1530003580	S.TR 2SC5231C8-TL	T	40.4/4
Q105	1590003290	S.TR UNR9213J-(TX)	T	37.5/9.4
D1	1720000650	S.VCP 1SV286 (TPH3)	T	11.7/17.9
D2	1720000730	S.VCP MA2S30400L	T	11.8/22.4
D3	1720000730	S.VCP MA2S30400L	T	10.4/17.9
D4	1790001260	S.DIO MA2S077-(TX)	T	14.3/17
D5	1790001620	S.DIO 1SV308 (TPL3)	T	37.2/21.5
D6	1790001260	S.DIO MA2S077-(TX)	T	37.2/19
D50	1790001260	S.DIO MA2S077-(TX)	T	24.1/15.1
D51	1790001260	S.DIO MA2S077-(TX)	T	24.1/13.8
D100	1720000650	S.VCP 1SV286 (TPH3)	T	10.9/9.3
D101	1750000721	S.VCP HVC375BTRF-E	T	12.2/9.3
D102	1750000721	S.VCP HVC375BTRF-E	T	12.9/11.7
D103	1790001620	S.DIO 1SV308 (TPL3)	T	37.3/15.3
D104	1790001260	S.DIO MA2S077-(TX)	T	36.2/3.4
D105	1790001260	S.DIO MA2S077-(TX)	T	36.2/2.1
D106	1790001620	S.DIO 1SV308 (TPL3)	T	43/15.2
D107	1790001260	S.DIO MA2S077-(TX)	B	43.4/14.6
L1	6200001980	S.COL NL 252018T-1R0J	T	8.8/22.1
L2	6200010100	S.COL C2012C-33NG	T	16.2/21.1
L3	6200010210	S.COL C2012C-22NG	T	16.1/16.5
L4	6200006980	S.COL ELJRE R10G-F	T	27.4/19.1
L5	6200003540	S.COL MLF1608D R22K-T	T	31.3/19.1
L6	6200006990	S.COL ELJRE 56NG-F	T	40.5/23.6
L7	6200007610	S.COL LL1608-FH39NJ	T	41.1/18.9
L8	6200007610	S.COL LL1608-FH39NJ	T	42.4/19.8
L50	6200006990	S.COL ELJRE 56NG-F	T	24.6/2.1
L51	6200005690	S.COL ELJRE 18NG-F	T	29.4/2.7
L100	6200002610	S.COL NL 252018T-R47J	T	10.5/11.8
L101	6200002330	S.COL LQW31HN15NJ01L	T	14.6/9.8
L102	6200005730	S.COL ELJRE 39NG-F	T	24.9/10.3
L103	6200005700	S.COL ELJRE 22NG-F	T	29.6/7.3
L104	6200005690	S.COL ELJRE 18NG-F	T	40.5/16.6
L105	6200005700	S.COL ELJRE 22NG-F	T	35.4/10.6
L106	6200005660	S.COL ELJRE 10NG-F	T	35.4/13.2
L107	6200005660	S.COL ELJRE 10NG-F	T	43.2/6.3
L108	6200005670	S.COL ELJRE 12NG-F	T	40.5/8.7
L109	6200005670	S.COL ELJRE 12NG-F	T	40/10
L110	6200005660	S.COL ELJRE 10NG-F	T	40.4/12.2
R1	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	B	6.1/10.9
R2	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	T	7.6/13.7
R3	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	8.5/16.3
R4	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	10/20
R5	7030003840	S.RES ERJ3GEYJ 225 V (2.2 MΩ)	T	8.2/19.5
R6	7030003640	S.RES ERJ3GEYJ 473 V (47 kΩ)	T	13/17.9
R7	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	13.2/20.5
R8	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	14.5/20.7
R9	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	18/20.3
R10	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	21.3/22.3
R11	7030003280	S.RES ERJ3GEYJ 470 V (47 Ω)	T	23.4/19.1
R12	7030003430	S.RES ERJ3GEYJ 821 V (820 Ω)	T	18.3/17.7
R13	7030003330	S.RES ERJ3GEYJ 121 V (120 Ω)	T	21.5/17.4
R14	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	24.8/19.1
R15	7030003470	S.RES ERJ3GEYJ 182 V (1.8 kΩ)	T	21.4/16.1
R16	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	25.9/21.7
R17	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	26.7/15.8
R18	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	28.7/19.1
R19	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	30/19.1
R20	7030003470	S.RES ERJ3GEYJ 182 V (1.8 kΩ)	T	28.7/15.1
R21	7030003400	S.RES ERJ3GEYJ 471 V (470 Ω)	T	31.2/21.7
R22	7030004050	S.RES ERJ3GEYJ 1R0 V (1 Ω)	T	32.4/16.4
R23	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	T	35.9/21.4
R24	7030004050	S.RES ERJ3GEYJ 1R0 V (1 Ω)	T	38.5/18.9
R25	7030004050	S.RES ERJ3GEYJ 1R0 V (1 Ω)	T	38.5/21.5
R26	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	39.8/18.9
R50	7030003240	S.RES ERJ3GEYJ 220 V (22 Ω)	T	15.4/2.4
R51	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	12.8/2.4
R52	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	T	17.7/3.2
R53	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	19.1/2.3
R54	7030003480	S.RES ERJ3GEYJ 222 V (2.2 kΩ)	T	24/4.1
R55	7030003840	S.RES ERJ3GEYJ 225 V (2.2 MΩ)	T	32.9/2.8
R100	7030003600	S.RES ERJ3GEYJ 223 V (22 kΩ)	T	6.2/3.7
R101	7030003550	S.RES ERJ3GEYJ 822 V (8.2 kΩ)	T	6.8/11.6
R102	7030003840	S.RES ERJ3GEYJ 225 V (2.2 MΩ)	T	8.3/8.9
R103	7030003680	S.RES ERJ3GEYJ 104 V (100 kΩ)	T	9.6/9.3
R104	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	16.5/12.4

[VCO BOARD]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R105	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	20.2/9.7
R106	7030003280	S.RES ERJ3GEYJ 470 V (47 Ω)	T	13.9/7
R107	7030003390	S.RES ERJ3GEYJ 391 V (390 Ω)	T	19.1/14.8
R108	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	21.5/9.7
R109	7030003470	S.RES ERJ3GEYJ 182 V (1.8 kΩ)	T	21.1/14.7
R110	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	21/7.7
R111	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	26.2/9.9
R112	7030003560	S.RES ERJ3GEYJ 103 V (10 kΩ)	T	27.5/9.9
R113	7030003470	S.RES ERJ3GEYJ 182 V (1.8 kΩ)	T	27/13.1
R114	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	26.9/7.3
R115	7030004050	S.RES ERJ3GEYJ 1R0 V (1 Ω)	T	32.2/10.7
R116	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	35.7/17.2
R117	7030003210	S.RES ERJ3GEYJ 120 V (12 Ω)	T	35.4/5.4
R118	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	40.1/2.1
R119	7030003210	S.RES ERJ3GEYJ 120 V (12 Ω)	T	35.4/8
R120	7030003320	S.RES ERJ3GEYJ 101 V (100 Ω)	T	36.7/5.4
R121	7030003440	S.RES ERJ3GEYJ 102 V (1 kΩ)	T	43.2/3.7
R122	7030003270	S.RES ERJ3GEYJ 390 V (39 Ω)	T	43.2/5
R123	7030003730	S.RES ERJ3GEYJ 274 V (270 kΩ)	T	40.5/6.1
R124	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	37.2/13.7
R125	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	43.9/11.9
R126	7030003520	S.RES ERJ3GEYJ 472 V (4.7 kΩ)	T	43.7/17.1
C1	4030007090	S.CER C1608 CH 1H 470J-T	T	1.4/5.8
C2	4030007090	S.CER C1608 CH 1H 470J-T	T	1.4/14.3
C3	4030007090	S.CER C1608 CH 1H 470J-T	T	1.4/8.4
C4	4030007090	S.CER C1608 CH 1H 470J-T	T	7.4/17.7
C5	4030007090	S.CER C1608 CH 1H 470J-T	B	7.4/19.6
C6	4030007090	S.CER C1608 CH 1H 470J-T	T	1.4/18.9
C7	4030007090	S.CER C1608 CH 1H 470J-T	T	1.4/11.3
C8	4030007090	S.CER C1608 CH 1H 470J-T	B	7.5/12.3
C9	4030011600	S.CER C1608 JB 1E 104K-T	T	7.5/15
C10	4030006860	S.CER C1608 JB 1H 102K-T	T	9.4/14.3
C11	4030006860	S.CER C1608 JB 1H 102K-T	B	11.2/18.8
C12	4030009500	S.CER C1608 CH 1H 0R5B-T	T	11.9/20.4
C13	4030006860	S.CER C1608 JB 1H 102K-T	T	14.6/12.7
C14	4030006860	S.CER C1608 JB 1H 102K-T	T	14.8/14.1
C15	4030006860	S.CER C1608 JB 1H 102K-T	T	15.3/18.8
C16	4030007020	S.CER C1608 CH 1H 120J-T	T	18.7/22.3
C17	4030006860	S.CER C1608 JB 1H 102K-T	T	23.3/21.7
C18	4030007050	S.CER C1608 CH 1H 220J-T	T	19.3/20.3
C19	4030007040	S.CER C1608 CH 1H 180J-T	T	19.6/17.7
C20	4030006920	S.CER C1608 CH 1H 010C-T	T	21.5/18.7
C21	4030006860	S.CER C1608 JB 1H 102K-T	T	27.2/21.7
C22	4030006920	S.CER C1608 CH 1H 010C-T	T	26.1/19.1
C23	4030007050	S.CER C1608 CH 1H 220J-T	T	26.6/17.1
C24	4030006860	S.CER C1608 JB 1H 102K-T	T	24.6/21.7
C25	4030006860	S.CER C1608 JB 1H 102K-T	T	32.5/21.7
C26	4030006910	S.CER C1608 CH 1H 0R5C-T	T	26.7/14.4
C27	4030006950	S.CER C1608 CH 1H 040C-T	T	29.4/17.2
C28	4030006990	S.CER C1608 CH 1H 080D-T	T	32.6/19
C29	4030007090	S.CER C1608 CH 1H 470J-T	T	29.8/21.7
C30	4030006860	S.CER C1608 JB 1H 102K-T	T	28.5/21.7
C31	4030006920	S.CER C1608 CH 1H 010C-T	T	32/13.7
C32	4030007040	S.CER C1608 CH 1H 180J-T	T	37.9/23.6
C33	4030007040	S.CER C1608 CH 1H 180J-T	T	43.2/23.2
C34	4030006860	S.CER C1608 JB 1H 102K-T	T	39.8/21.5
C36	4030007030	S.CER C1608 CH 1H 150J-T	T	41.1/21.5
C37	4030007060	S.CER C1608 CH 1H 270J-T	T	43.7/19.8
C38	4030007030	S.CER C1608 CH 1H 150J-T	T	43/21.7
C39	4030006860	S.CER C1608 JB 1H 102K-T	T	47.8/8.3
C40	4030006860	S.CER C1608 JB 1H 102K-T	T	47.8/5.7
C50	4030006860	S.CER C1608 JB 1H 102K-T	T	28.1/4.1
C51	4030006900	S.CER C1608 JB 1H 103K-T	T	23.3/2.1
C52	4030009530	S.CER C1608 CH 1H 030B-T	T	15.4/3.7
C53	4030006950	S.CER C1608 CH 1H 040C-T	T	26/2.1
C54	4030007090	S.CER C1608 CH 1H 470J-T	T	27.3/2.1
C55	4030006940	S.CER C1608 CH 1H 030C-T	T	29.4/1.4
C56	4030006940	S.CER C1608 CH 1H 030C-T	T	31.6/2.8
C100	4030011600	S.CER C1608 JB 1E 104K-T	T	6.8/7.7
C101	4030006860	S.CER C1608 JB 1H 102K-T	T	8.1/11.5
C102	4030006860	S.CER C1608 JB 1H 102K-T	T	8.6/6.8
C103	4030009570	S.CER C1608 CH 1H 0R3B-T	T	11.3/7.5
C104	4030006860	S.CER C1608 JB 1H 102K-T	T	16.5/7.2
C105	4030007090	S.CER C1608 CH 1H 470J-T	T	17.8/7.2
C106	4030006950	S.CER C1608 CH 1H 040C-T	T	16.5/9.8
C107	4030007090	S.CER C1608 CH 1H 470J-T	T	19.1/7.2
C108	4030007020	S.CER C1608 CH 1H 120J-T	T	17.8/12.2
C109	4030007020	S.CER C1608 CH 1H 120J-T	T	17.8/14.8
C110	4030009560	S.CER C1608 CH 1H R75B-T	T	19.1/12.2
C111	4030007090	S.CER C1608 CH 1H 470J-T	T	23/7.2
C112	4030006860	S.CER C1608 JB 1H 102K-T	T	24.3/7.2
C113	4030006940	S.CER C1608 CH 1H 030C-T	T	23.6/10.3
C114	4030006950	S.CER C1608 CH 1H 040C-T	T	23.8/12.4
C115	4030006860	S.CER C1608 JB 1H 102K-T	T	25.6/7.3
C116	4030006860	S.CER C1608 JB 1H 102K-T	T	29.5/9.2
C117	4030006950	S.CER C1608 CH 1H 040C-T	T	27/11.8
C118	4030006940	S.CER C1608 CH 1H 030C-T	T	30.9/7.3
C119	4030006990	S.CER C1608 CH 1H 080D-T	T	32.2/8
C120	4030006860	S.CER C1608 JB 1H 102K-T	T	28.2/7.3
C121	4030006920	S.CER C1608 CH 1H 010C-T	T	30/12.6

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[VCO BOARD]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
C122	4030006980	S.CER C1608 CH 1H 070D-T	T	37.8/16.6
C123	4030009520	S.CER C1608 CH 1H 020B-T	T	38.1/2.8
C124	4030006980	S.CER C1608 CH 1H 070D-T	T	42.4/17.1
C125	4030006860	S.CER C1608 JB 1H 102K-T	T	38/5.6
C126	4030006950	S.CER C1608 CH 1H 040C-T	T	37.2/11.1
C127	4030009520	S.CER C1608 CH 1H 020B-T	T	40.5/7.4
C128	4030007130	S.CER C1608 CH 1H 101J-T	T	42.7/2.4
C129	4030009510	S.CER C1608 CH 1H 010B-T	T	42.4/8.1
C130	4030006860	S.CER C1608 JB 1H 102K-T	T	37.2/12.4
C131	4030006860	S.CER C1608 JB 1H 102K-T	B	37.1/6.5
C132	4030009540	S.CER C1608 CH 1H 1R5B-T	T	41.9/10.7
C133	4030006950	S.CER C1608 CH 1H 040C-T	T	39.1/12.2
C134	4030006860	S.CER C1608 JB 1H 102K-T	T	43.9/9.3
C135	4030006950	S.CER C1608 CH 1H 040C-T	T	40.3/14
C136	4550000540	S.TAN TEESVA 1V 154M8L	B	10.5/10.1
C137	4550000530	S.TAN TEESVA 1V 104M8L	B	9.6/21.5
C138	4030006930	S.CER C1608 CH 1H 020C-T	B	43.5/2.9
J1	6910006810	CNR IMSA-9210B-1-10Z204-T		
J2	6910006810	CNR IMSA-9210B-1-10Z204-T		
W1	7030003860	S.RES ERJ3GE JPW V	T	42.9/13.9
W2	7030003860	S.RES ERJ3GE JPW V	B	42.1/14.6

[CODEC BOARD]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
IC1	1180002390	S.REG S-812C33AMC-C2N-T2	T	3.4/27.9
IC2	1180002370	S.REG R1111N321B-TR	T	19.5/25.7
IC50	1130011630	S.IC AD73311ARS	T	13.7/19.6
IC101	1130008360	S.IC TC7SHU04FU (TE85L)	B	32.1/2
IC103	1130008360	S.IC TC7SHU04FU (TE85L)	T	33.8/5.9
IC151	1130010920	S.IC AMBE-2020	T	27.9/16.1
IC202	1130010460	S.IC TC7SH08FU (TE85L)	B	29.5/8
IC203	1110005730	S.IC S-80928CNMC-G8Y-T2	B	30/27.5
IC204	1140010770	S.IC HD64F3687FP (EMPTY)	B	29.9/18.1
IC251	1110005290	S.IC NJM2115V-TE1	B	16.7/21.9
IC252	1110005430	S.IC CMX589AD5	B	16.7/13.6
IC253	1110006200	S.IC NJM13404V-TE1	B	16.6/6.1
IC254	1130004200	S.IC TC4S66F (TE85R)	B	28/4.1
IC351	1120002980	S.IC MAX3226EAE-T	T	9.7/6.1
Q50	1510000770	S.TR 2SA1586-GR (TE85R)	T	9.6/11
Q51	1590000430	S.TR DTC144EUA T106	B	8.7/23.2
Q201	1590001940	S.TR DTC144EE TL	B	33.4/9.3
Q202	1590001940	S.TR DTC144EE TL	B	36.5/10.9
Q251	1590001940	S.TR DTC144EE TL	B	35.4/6.6
Q252	1590001940	S.TR DTC144EE TL	B	36.1/8.8
Q301	1590000430	S.TR DTC144EUA T106	B	7.3/25.9
Q302	1590000430	S.TR DTC144EUA T106	B	2.3/25.8
Q303	1590000430	S.TR DTC144EUA T106	B	4.8/25.9
Q305	1590001660	S.TR XP4312 (TX)	B	23/8.1
Q306	1590001660	S.TR XP4312 (TX)	B	25.9/8.1
Q400	1510000770	S.TR 2SA1586-GR (TE85R)	B	13.2/27.5
Q401	1590000430	S.TR DTC144EUA T106	B	9.8/25.9
D151	1790001240	S.DIO MA2S728-(TX)	T	29.2/6.9
D152	1790001250	S.DIO MA2S111-(TX)	B	22.7/23.7
X101	6050011240	S.XTL CR-708 (16.384 MHz)	T	30.4/2.5
X201	6050011700	S.XTL CR-760 (9.8304 MHz)	T	30.5/27.7
L50	6200003960	S.COL MLF1608A 1R0K-T	T	11.8/11.9
L151	6200003960	S.COL MLF1608A 1R0K-T	B	16.1/27.2
L201	6200003960	S.COL MLF1608A 1R0K-T	B	24.6/12.1
L351	6200003960	S.COL MLF1608A 1R0K-T	T	14.2/9.4
R1	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	T	17.4/25.2
R2	7030000180	S.RES MCR10EZHJ 22 Ω (220)	T	12.9/26.8
R50	7030004990	S.RES ERJ2GEJ 221 X (220 Ω)	T	8.2/19.7
R51	7030005120	S.RES ERJ2GEJ 102 X (1 kΩ)	T	8.2/23.3
R52	7030004980	S.RES ERJ2GEJ 101 X (100 Ω)	B	11.1/21.6
R53	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	B	13.7/18.9
R54	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	T	6.6/21.8
R55	7030005090	S.RES ERJ2GEJ 104 X (100 kΩ)	B	12.5/22.4
R56	7030004980	S.RES ERJ2GEJ 101 X (100 Ω)	B	12.5/24.2
R57	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	T	17.3/23.5
R58	7030010040	S.RES ERJ2GE-JPW	B	11.1/22.6
R59	7030005090	S.RES ERJ2GEJ 104 X (100 kΩ)	T	7.7/11.2
R60	7030005050	S.RES ERJ2GEJ 103 X (10 kΩ)	T	7.2/12.5
R101	7030005160	S.RES ERJ2GEJ 105 X (1 MΩ)	B	32/3.8
R103	7030005120	S.RES ERJ2GEJ 102 X (1 kΩ)	B	34.1/5.2
R104	7030005120	S.RES ERJ2GEJ 102 X (1 kΩ)	B	33.8/3.7
R105	7030007280	S.RES ERJ2GEJ 331 X (330 Ω)	T	31.4/5
R151	7030005120	S.RES ERJ2GEJ 102 X (1 kΩ)	T	29.5/5.5
R152	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	T	31.4/6.9
R201	7030005120	S.RES ERJ2GEJ 102 X (1 kΩ)	B	30.1/10.4
R202	7030005120	S.RES ERJ2GEJ 102 X (1 kΩ)	B	29.2/10.4
R203	7030005040	S.RES ERJ2GEJ 472 X (4.7 kΩ)	B	28.3/10.4
R204	7030005040	S.RES ERJ2GEJ 472 X (4.7 kΩ)	B	27.2/10.4
R205	7030005040	S.RES ERJ2GEJ 472 X (4.7 kΩ)	B	31.8/7.7
R206	7030005120	S.RES ERJ2GEJ 102 X (1 kΩ)	B	33/10.8
R209	7030005120	S.RES ERJ2GEJ 102 X (1 kΩ)	B	27.8/26.2
R211	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	B	25.5/25.1
R212	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	B	22.4/22.3
R216	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	B	22.3/20
R217	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	B	22.3/21
R218	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	B	24.1/11
R219	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	B	26.3/10.4
R221	7030010040	S.RES ERJ2GE-JPW	B	24.5/25.1
R222	7030004990	S.RES ERJ2GEJ 221 X (220 Ω)	B	34.9/12
R223	7030005120	S.RES ERJ2GEJ 102 X (1 kΩ)	B	31/10.4
R251	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	B	18.3/24.7
R252	7030005090	S.RES ERJ2GEJ 104 X (100 kΩ)	B	20.1/23.7
R253	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	B	11.3/13.9
R254	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	B	11.3/12.9
R255	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	B	10.9/10.9
R256	7030005090	S.RES ERJ2GEJ 104 X (100 kΩ)	B	15.8/18.9
R257	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	B	13.1/9.3
R258	7030005090	S.RES ERJ2GEJ 104 X (100 kΩ)	B	17.8/18.9
R260	7030005090	S.RES ERJ2GEJ 104 X (100 kΩ)	B	16.8/18.9
R261	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	B	11.3/9.6
R262	7030005220	S.RES ERJ2GEJ 223 X (22 kΩ)	T	17.1/11.8
R264	7310004610	S.TRI EVM-2WSX80 B15 (104)	T	16.9/9

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

[CODEC BOARD]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R267	7030005090	S.RES ERJ2GEJ 104 X (100 kΩ)	B	17.7/8.7
R268	7030006610	S.RES ERJ2GEJ 394 X (390 kΩ)	B	25.3/4.8
R269	7030005060	S.RES ERJ2GEJ 333 X (33 kΩ)	B	15.9/8.7
R270	7030005240	S.RES ERJ2GEJ 473 X (47 kΩ)	B	28.5/1.6
R272	7030004990	S.RES ERJ2GEJ 221 X (220 Ω)	B	12/1.3
R301	7030004980	S.RES ERJ2GEJ 101 X (100 Ω)	B	8.8/4.9
R302	7030004980	S.RES ERJ2GEJ 101 X (100 Ω)	B	10.6/6.4
R308	7030004980	S.RES ERJ2GEJ 101 X (100 Ω)	T	1.8/16.9
R309	7030004980	S.RES ERJ2GEJ 101 X (100 Ω)	T	2.8/16.9
R315	7030004980	S.RES ERJ2GEJ 101 X (100 Ω)	T	6.2/16
R316	7030004980	S.RES ERJ2GEJ 101 X (100 Ω)	T	2.8/11.3
R317	7030004980	S.RES ERJ2GEJ 101 X (100 Ω)	B	10/17
R318	7030004980	S.RES ERJ2GEJ 101 X (100 Ω)	T	2.3/18.2
R319	7030005050	S.RES ERJ2GEJ 103 X (10 kΩ)	B	25.4/10.2
R400	7030005090	S.RES ERJ2GEJ 104 X (100 kΩ)	B	10.2/28.7
R401	7030009290	S.RES ERJ2GEJ 562 X (5.6 kΩ)	B	10.2/27.7
R402	7030009290	S.RES ERJ2GEJ 562 X (5.6 kΩ)	T	5.3/25.5
C1	4550006250	S.TAN TEESVA 1A 106M8L	T	8/26.7
C2	4550006250	S.TAN TEESVA 1A 106M8L	T	8/28.9
C5	4030017460	S.CER ECJ0EB1E102K	B	5.7/28.2
C7	4550005980	S.TAN TEESVA 1A 475M8L	T	13.6/28.9
C8	4030016930	S.CER ECJ0EB1A104K	T	17.1/28.7
C9	4550006250	S.TAN TEESVA 1A 106M8L	T	24.1/28.9
C10	4030016930	S.CER ECJ0EB1A104K	T	22/26.8
C11	4550006480	S.TAN TEESVA 1C 475M8L	T	14.4/24.8
C50	4030016930	S.CER ECJ0EB1A104K	T	7.2/18.7
C51	4030016970	S.CER ECJ0EB1C223K	T	7.7/22
C53	4030016930	S.CER ECJ0EB1A104K	T	6.6/20
C54	4550006250	S.TAN TEESVA 1A 106M8L	T	9.4/14.5
C55	4030016930	S.CER ECJ0EB1A104K	T	8.7/21
C56	4030016950	S.CER ECJ0EB1A473K	B	11.1/20.6
C57	4030016930	S.CER ECJ0EB1A104K	T	8.7/18.4
C58	4030016930	S.CER ECJ0EB1A104K	T	17.3/15.7
C101	4030017360	S.CER ECJ0EC1H030B	T	26.6/1.2
C102	4540000070	S.TRI TZY2Z100A001	T	24.4/3.4
C103	4030017640	S.CER ECJ0EC1H150J	T	34.1/1.8
C104	4030016930	S.CER ECJ0EB1A104K	B	33.9/1.8
C105	4030017420	S.CER ECJ0EC1H470J	T	35.1/1.8
C106	4030016930	S.CER ECJ0EB1A104K	T	35.1/3.6
C150	4550000460	S.TAN TEESVA 1C 105M8L	T	15.3/14.1
C151	4030016930	S.CER ECJ0EB1A104K	T	22.4/25.1
C152	4030016930	S.CER ECJ0EB1A104K	T	29/25.1
C153	4030016930	S.CER ECJ0EB1A104K	T	18.8/15.4
C154	4030016930	S.CER ECJ0EB1A104K	T	18.8/10
C155	4030016930	S.CER ECJ0EB1A104K	T	22.9/7
C156	4030017420	S.CER ECJ0EC1H470J	T	27.6/6.4
C157	4030016930	S.CER ECJ0EB1A104K	T	37.1/10.6
C159	4030016930	S.CER ECJ0EB1A104K	T	37.1/16.6
C160	4030017420	S.CER ECJ0EC1H470J	T	35.6/7.1
C162	4030017420	S.CER ECJ0EC1H470J	T	18.9/21.6
C163	4030017420	S.CER ECJ0EC1H470J	T	5.7/11.3
C164	4030017420	S.CER ECJ0EC1H470J	T	37.2/22.7
C165	4030017420	S.CER ECJ0EC1H470J	T	15.8/27
C166	4030017420	S.CER ECJ0EC1H470J	T	2.8/21.7
C201	4030017730	S.CER ECJ0EB1E471K	B	27.8/7.6
C202	4030017590	S.CER ECJ0EC1H070C	B	33.1/28.1
C203	4030016930	S.CER ECJ0EB1A104K	B	32.5/25.8
C204	4030017390	S.CER ECJ0EC1H180J	T	27.2/26.7
C205	4030016930	S.CER ECJ0EB1A104K	B	29.2/25.2
C206	4030016790	S.CER ECJ0EB1C103K	B	32.1/27.6
C207	4540000080	S.TRI TZY2R200A001	T	35.4/26.4
C208	4030017730	S.CER ECJ0EB1E471K	B	22/10.6
C210	4030016930	S.CER ECJ0EB1A104K	B	27.8/28
C250	4030016930	S.CER ECJ0EB1A104K	B	13.5/24.2
C252	4030017490	S.CER C1608 JB 1A 105K-T	B	16.6/24.6
C253	4030017400	S.CER ECJ0EC1H220J	B	14.8/18.9
C255	4030017490	S.CER C1608 JB 1A 105K-T	B	10.8/15.5
C256	4030016930	S.CER ECJ0EB1A104K	B	20/8.7
C257	4030017030	S.CER ECJ0EB1A273K	B	20.3/18.3
C258	4030017030	S.CER ECJ0EB1A273K	B	20.3/19.3
C259	4030017760	S.CER ECJ0EB1H222K	T	16/11.8
C261	4030016930	S.CER ECJ0EB1A104K	B	21.4/4.9
C262	4030017490	S.CER C1608 JB 1A 105K-T	B	19.9/3.5
C263	4030016930	S.CER ECJ0EB1A104K	B	24.9/2.8
C317	4030017420	S.CER ECJ0EC1H470J	T	1.8/13.1
C333	4030017460	S.CER ECJ0EB1E102K	T	9.1/12.9
C351	4030011810	S.CER C1608 JB 1A 224K-T	T	4.5/7.1
C352	4030011810	S.CER C1608 JB 1A 224K-T	T	5.7/9.4
C353	4030011810	S.CER C1608 JB 1A 224K-T	T	3.5/4.9
C354	4030011810	S.CER C1608 JB 1A 224K-T	T	3.5/3.6
C355	4030011600	S.CER C1608 JB 1E 104K-T	T	15/7.3
C401	4550006250	S.TAN TEESVA 1A 106M8L	B	17.4/28.9
J301	6510022820	S.CNR AXN430C530P	B	5.3/13.8
W1	6910016190	CBL OPC-1391		

[CODEC BOARD]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
EP301	6910012350	S.BEA MMZ1608Y 102BT	B	2.8/22.5
EP302	6910012350	S.BEA MMZ1608Y 102BT	B	9.9/22
EP303	6910016330	BEA MMZ1005S 601CT-S	B	34.9/1.8
EP304	6910016330	BEA MMZ1005S 601CT-S	B	15.6/2.9
EP305	6910016330	BEA MMZ1005S 601CT-S	T	13.5/12.1
EP306	6910016330	BEA MMZ1005S 601CT-S	B	35.1/3.6
EP307	6910016330	BEA MMZ1005S 601CT-S	T	18.7/18.9
EP308	6910016330	BEA MMZ1005S 601CT-S	T	22.9/26.4

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

SECTION 7 MECHANICAL PARTS AND DISASSEMBLY

[CHASSIS PARTS]

REF. NO.	ORDER NO.	DESCRIPTION		QTY.
J1	6510004880	Connector MR-DS-E 01		1
SP1	2510001160	Speaker 057P0802		1
MF1	2710000760	Fan FD1240107B-1N		1
MP1	8010019240	2633 chassis		1
MP2	8930059790	2633 SP rubber		1
MP3	8930041552	1893 OPC plate-2		1
MP4	8930041560	1893 release button		1
MP5	8810008660	Screw PH BT M3 × 8 NI-ZU		1
MP6	8810008660	Screw PH BT M3 × 8 NI-ZU		2
MP7	8810008660	Screw PH BT M3 × 8 NI-ZU		4
MP8	8810008660	Screw PH BT M3 × 8 NI-ZU		6
MP9	8810009610	Screw FH M2.6 × 6 ZK		4
MP10	8110005751	1729 fan cover-1		1
MP11	8810009110	Screw PH M2.6 × 16 ZK		4
MP12	8810009560	Screw PH BT M2 × 6 ZK		3
MP13	8110007950	2633 cover		1
MP14	8930003170	60 saran net		1
MP17	8930041870	Spring (AC)		1
MP19	8930039612	Thermally sheet (C)-2		1
MP20	8930039612	Thermally sheet (C)-2		1
MP21	8930043010	1893 sheet		1
MP24	8510016670	2788 shield cover		1
MP26	8930060350	Thermally sheet (AK)		1
MP27	8930060350	Thermally sheet (AK)		1
MP28	8930054521	Shield sponge (E)-1	[USA]	1
WS1	8600036880	SP cable		1

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION		QTY.
J502	6510023110	Connector 3008L-8P8C		1
J503	6510019321	1729 rear connector-1		1
J504	6510023180	Connector TCS7282-01-211		1
J506	6510023590	Connector HSJ2000-01-010		1
W501	8900004880	Cable OPC-465		1
EP10	6910000660	Bead FS0H082RL		1
EP11	6910000660	Bead FS0H082RL		1
MP1	8930059770	2633 M-HOLDER Y668		2
MP2	8510011290	1893 A-CPU plate Y353		1
MP3	8510011300	1893 moduler plate		1
MP4	8930059750	2633 H.V. plate		1
MP5	8930060270	2633 M-sheet		1
MP6	8510015410	2633 A-shield plate	[EXP]	1
	8510015470	2633 C-shield plate	[USA]	1
MP7	8930060260	2633 spring		1
MP8	8510015460	2633 B-shield plate		1
MP9	8510015440	2633 connector plate	[USA]	1
MP10	8930060260	2633 spring		1

[VCO BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
MP1	8510015420	2633 shield case assembly	1
MP2	8510015270	2633 VCO case	1
MP3	8510015280	2633 VCO cover	1

[CONTROL UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
R1	7210002920	Variable resistor EVU-F2AF20B55	1
R5	7210002920	Variable resistor EVU-F2AF20B55	1
S1	2240000150	Switch JRS0000-1401	1
DS1	5030002710	LCD IS09216E	1
DS22	5040002920	LED CV1074	1
EP18	8930060040	LCD contact SRCN-2633-SP-N-W	1
MP1	8210020810	2633 front panel (E)	1
MP2	8210019540	2633 rear panel	1
MP3	8610011290	Knob N297	1
MP4	8610011300	Knob N298	1
MP5	8610011280	Knob N299	1
MP6	8930064600	2633 key-top (A)	1
MP7	8210019550	2633 D-reflector	1
MP8	8930059740	2633 power button	1
MP9	8930059730	2633 2-key	1
MP10	8610011310	Knob K229	1
MP11	8610011350	Knob K229 (A)	1
MP12	8610011340	Knob K229 (B)	1
MP13	8610011330	Knob K229 (C)	1
MP14	8610011320	Knob K229 (D)	1
MP15	8310061960	2633 window plate (A)	1
MP16	8930060050	2633 window sheet	1
MP17	8930060060	2633 D-filter	1
MP18	8930060071	2633 jog sheet -1	1
MP19	8930060080	2633 A-sheet	1
MP20	8930060090	2633 key sponge	1
MP21	8930059780	2633 LCD plate	1
MP22	8930006440	Spring (F)	1
MP25	8810009220	Screw PH B0 M2 × 8 ZK	2
MP26	8810008990	Screw PH BT M2 × 10 ZK	2

[CODEC BOARD]

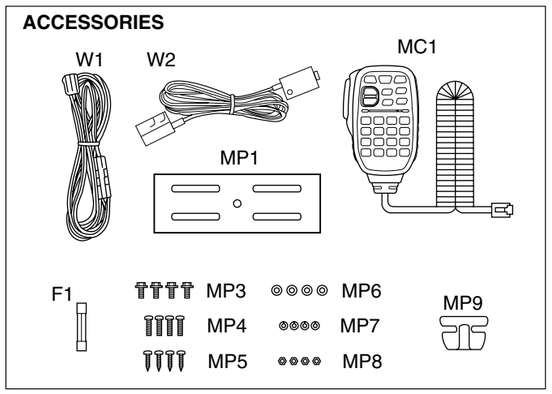
REF. NO.	ORDER NO.	DESCRIPTION	QTY.
W1	6910016190	Cable OPC-1391	1
MP2	8930064650	Sponge (IB)	1

[ACCESORIES]

REF. NO.	ORDER NO.	DESCRIPTION		QTY.
F1	5210000080	Fuse FGB 20A		1
MC1	Optional product	Microphone HM-133		1
W1	Optional product	Cable OPC-1132		1
W2	Optional product	Cable OPC-600R	[USA]	1
	Optional product	Cable OPC-600	[EXP]	1
MP1	8010019260	2633 mobile bracket		1
MP3	8820000530	Flange bolt M4 × 8 NI		4
MP4	8810000470	Screw PH M5 ×12 (+−)		4
MP5	8810000950	Screw PH A M5 × 16		4
MP6	8850000150	Flat washer M5 NI BS		4
MP7	8850000390	Spring washer M5		4
MP8	8830000120	Nut M5		4
MP9	8930007300	Mic hanger		1

Screw abbreviations BT, B0: Self-tapping
PH: Pan head FH: Flat head
ZK: Black NI: Nickel
BS: Brass NI-ZU: Nickel-Zinc

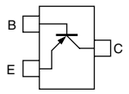
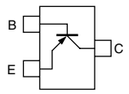
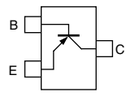
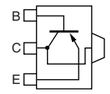
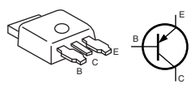
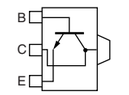
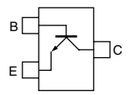
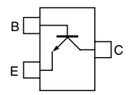
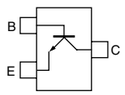
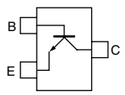
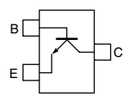
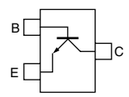
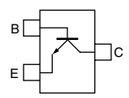
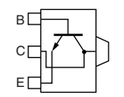
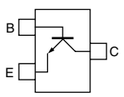
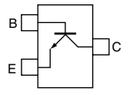
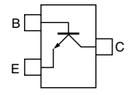
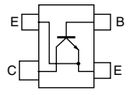
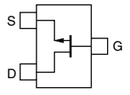
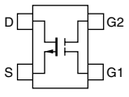
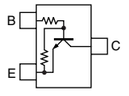
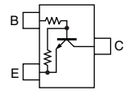
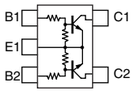
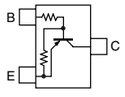
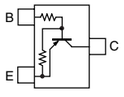
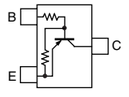
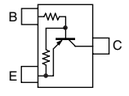
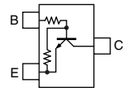
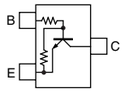
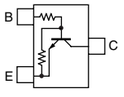
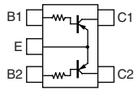
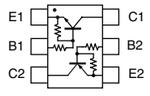
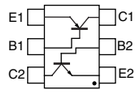
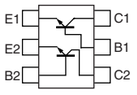
ACCESSORIES



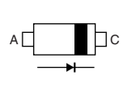
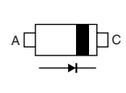
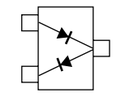
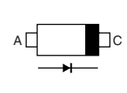
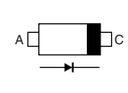
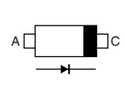
Unit abbreviations (C): CHASSIS PART
(M): MAIN UNIT
(CT): CONTROL UNIT
(V): VCO BOARD
(CO): CODEC BOARD

SECTION 8 SEMI-CONDUCTOR INFORMATION

• TRANSISTORS AND FET'S

2SA1362 GR (Symbol: AEG) 	**2SA1586 GR** (Symbol: SG) 	**2SA1588 GR** (Symbol: ZG) 	**2SA1734** (Symbol: LB) 	**2SB1182 TL Q** (Symbol: None) 
2SC3357 T1 (Symbol: RK) 	**2SC4081 T106 R** (Symbol: BR) 	**2SC4116 BL** (Symbol: LL) 	**2SC4116 GR** (Symbol: LG) 	**2SC4213 B** (Symbol: AB) 
2SC4215 Y (Symbol: QY) 	**2SC4226 T1 R25** (Symbol: R25) 	**2SC4403 3 TL** (Symbol: LY3) 	**2SC4703-T1 SF** (Symbol: SF) 	**2SC5006 T1** (Symbol: 24) 
2SC5085 Y (Symbol: MCY) 	**2SC5231 C8** (Symbol: C8) 	**2SC5624** (Symbol: VH-) 	**2SK880 Y** (Symbol: XY) 	**3SK299 T1 U73** (Symbol: U73) 
DTC144 EE TL (Symbol: 26) 	**DTC144EUA T106** (Symbol: 26_) 	**UMG9N TL** (Symbol: G9) 	**UNR9113J** (Symbol: 6C) 	**UNR9114J** (Symbol: 6D) 
UNR9115J (Symbol: 6E) 	**UNR911HJ** (Symbol: 6P) 	**UNR9210J** (Symbol: 8L) 	**UNR9213J** (Symbol: 8C) 	**UNR921NJ** (Symbol: EX) 
XP1115 (Symbol: 9L) 	**XP4312** (Symbol: 7T) 	**XP4601** (Symbol: 5C) 	**XP6501 AB** (Symbol: 5N) 	

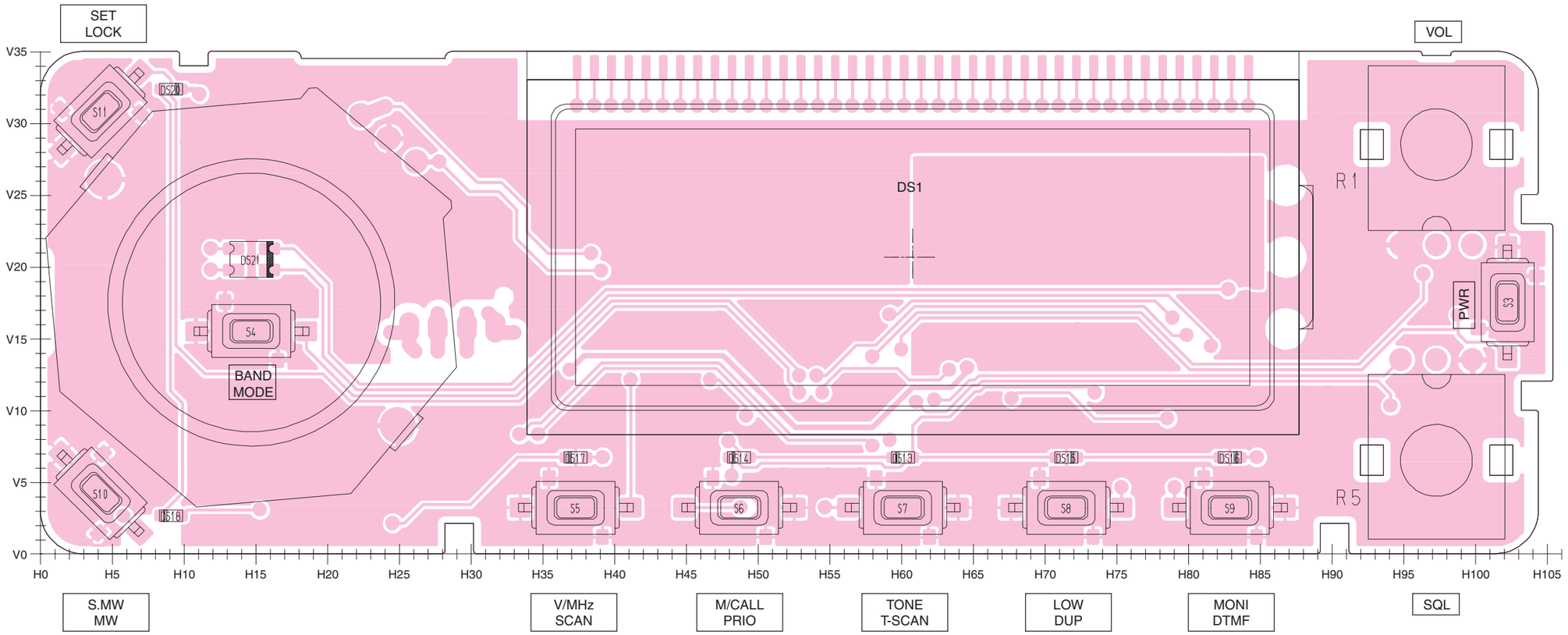
• DIODES

1SS355 (Symbol: A) 	**1SS357** (Symbol: S3) 	**1SS362** (Symbol: C3) 	**1SV286** (Symbol: T7) 	**1SV305** (Symbol: TV) 
1SV308 (Symbol: TX) 	**DA221 TL** (Symbol: K) 	**DAN222TL** (Symbol: N) 	**DSA3A1** (Color: Green) 	**HVC136** (Symbol: P6)
HVC350B (Symbol: B0) 	**HVC375B** (Symbol: B8) 	**HVU131TRF** (Symbol: P1) 	**1SS400** (Symbol: A) 	**MA2S077** (Symbol: S)
MA2S111 (Symbol: A) 	**MA2S30400 L** (Symbol: K) 	**MA2S728** (Symbol: B) 	**MA2SV0550 L** (Symbol: 3A) 	**MA742** (Symbol: M1U)
MA8047 M (Symbol: 4-7) 	**MA8062 L** (Symbol: 6_2) 	**MA8068 M** (Symbol: 6-8) 	**MA8130 H** (Symbol: 13^) 	**RD20E B2** (Symbol: 20 B2)
UM9401F (Symbol: none) 				

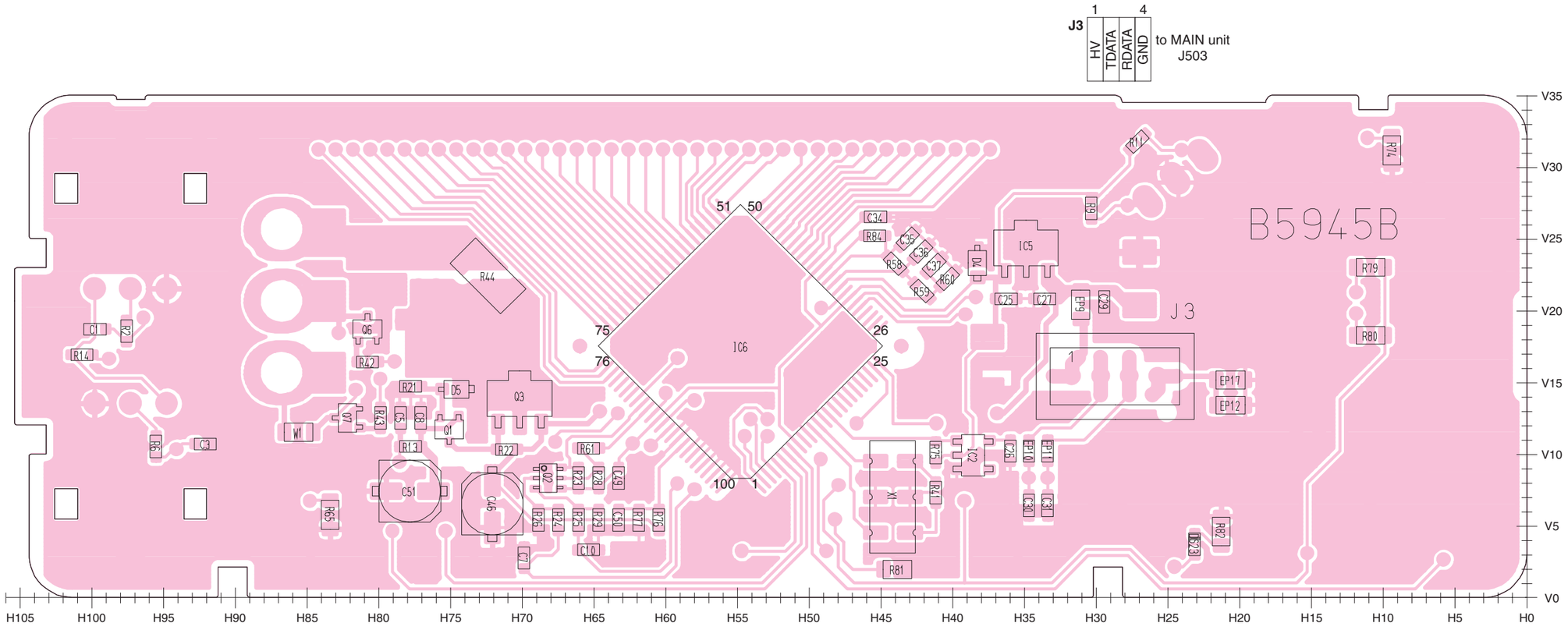
SECTION 9 BOARD LAYOUTS

9-1 CONTROL UNIT

• TOP VIEW

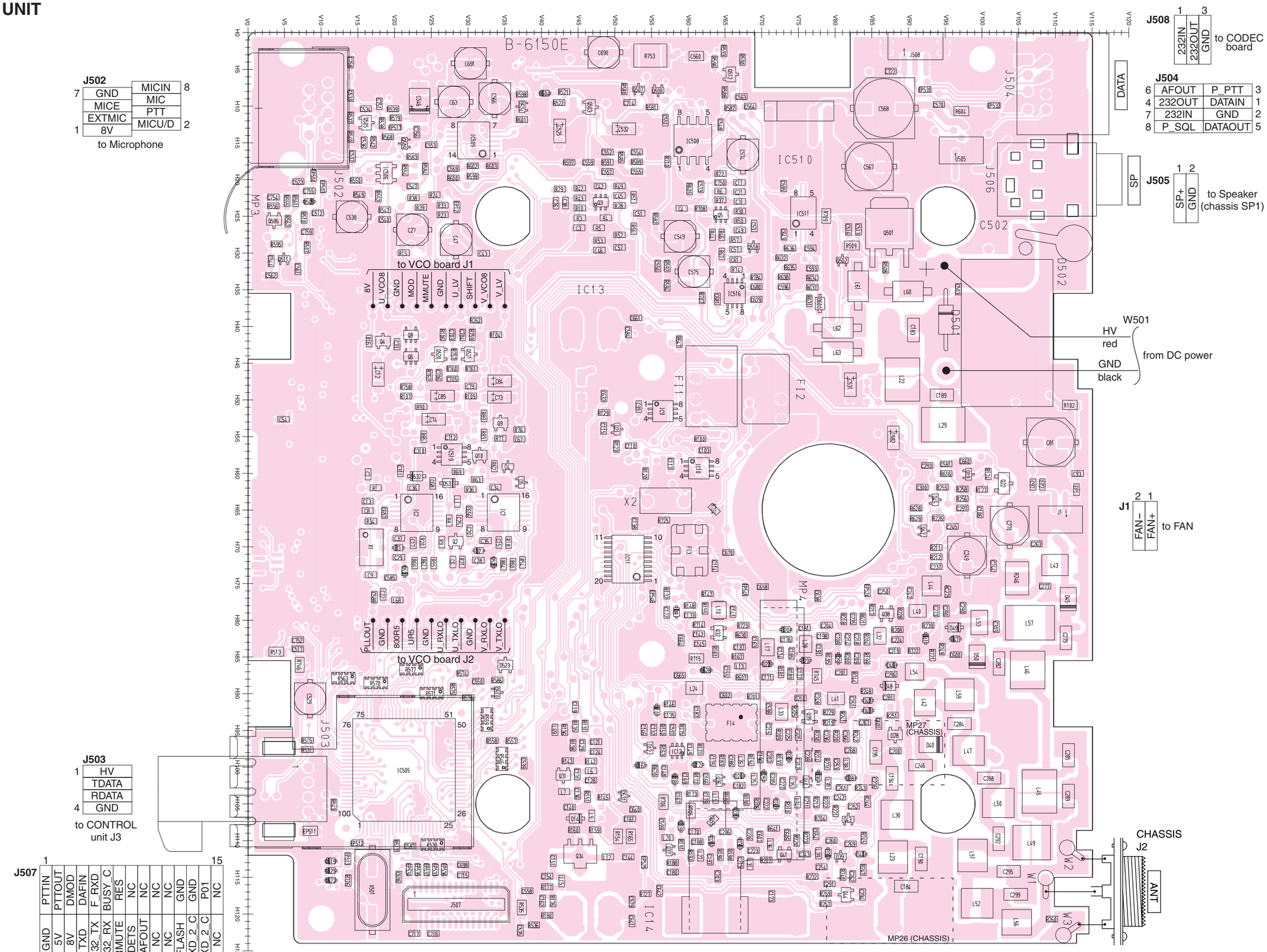


• **BOTTOM VIEW (CONTROL UNIT)**

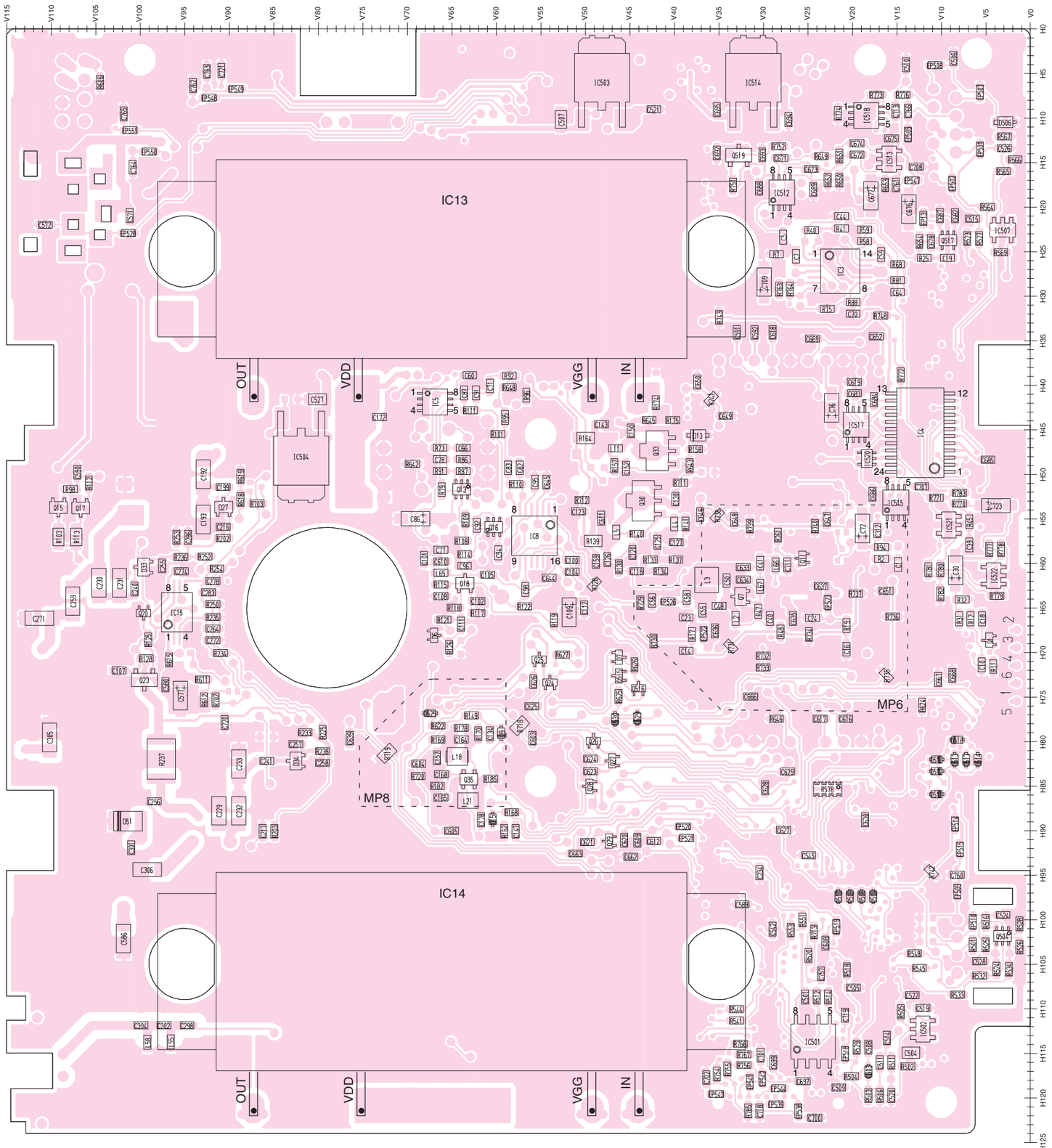


9-2 MAIN UNIT

• TOP VIEW

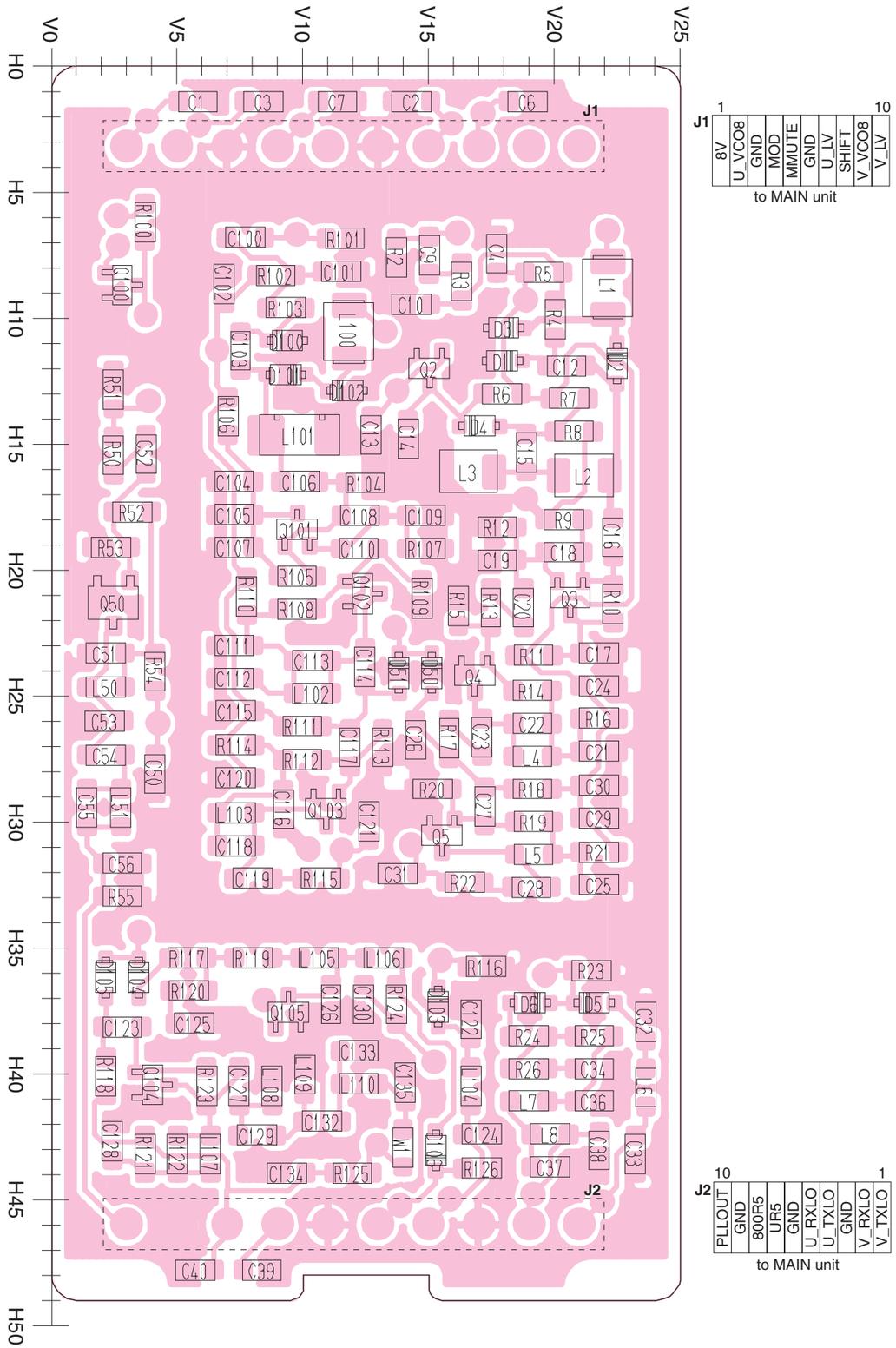


• **BOTTOM VIEW (MAIN UNIT)**



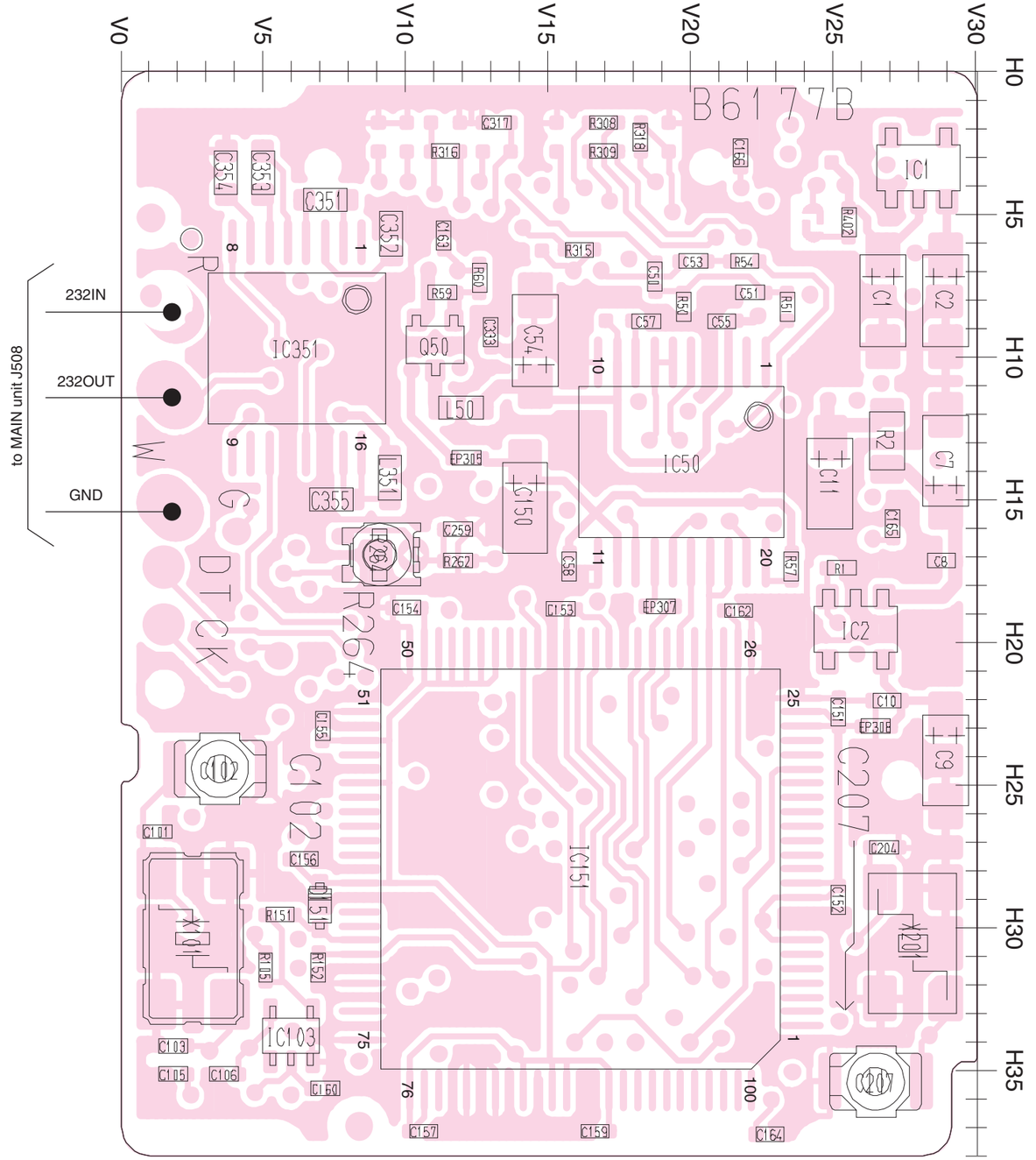
9-3 VCO BOARD

• TOP VIEW

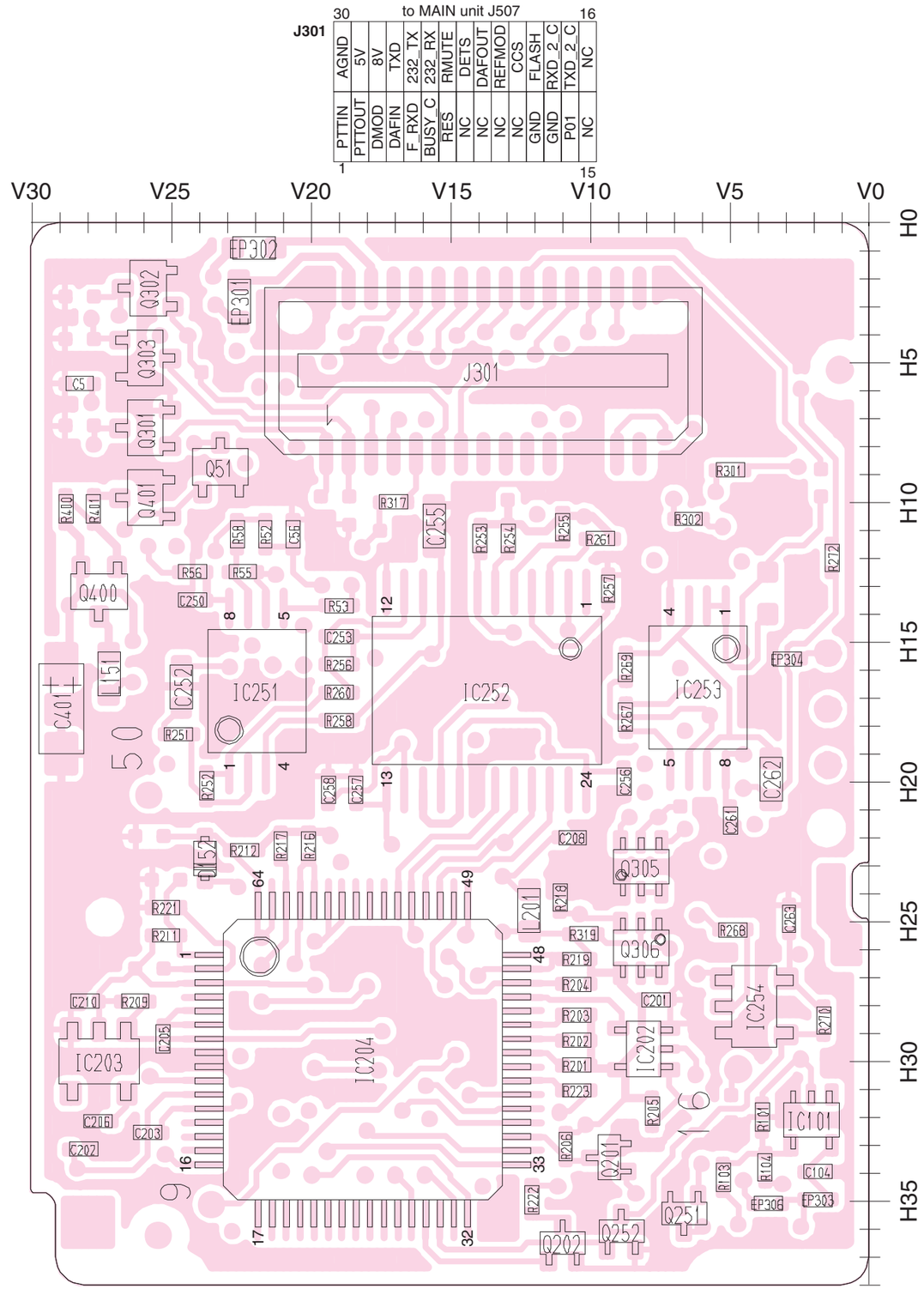


9-4 CODEC BOARD

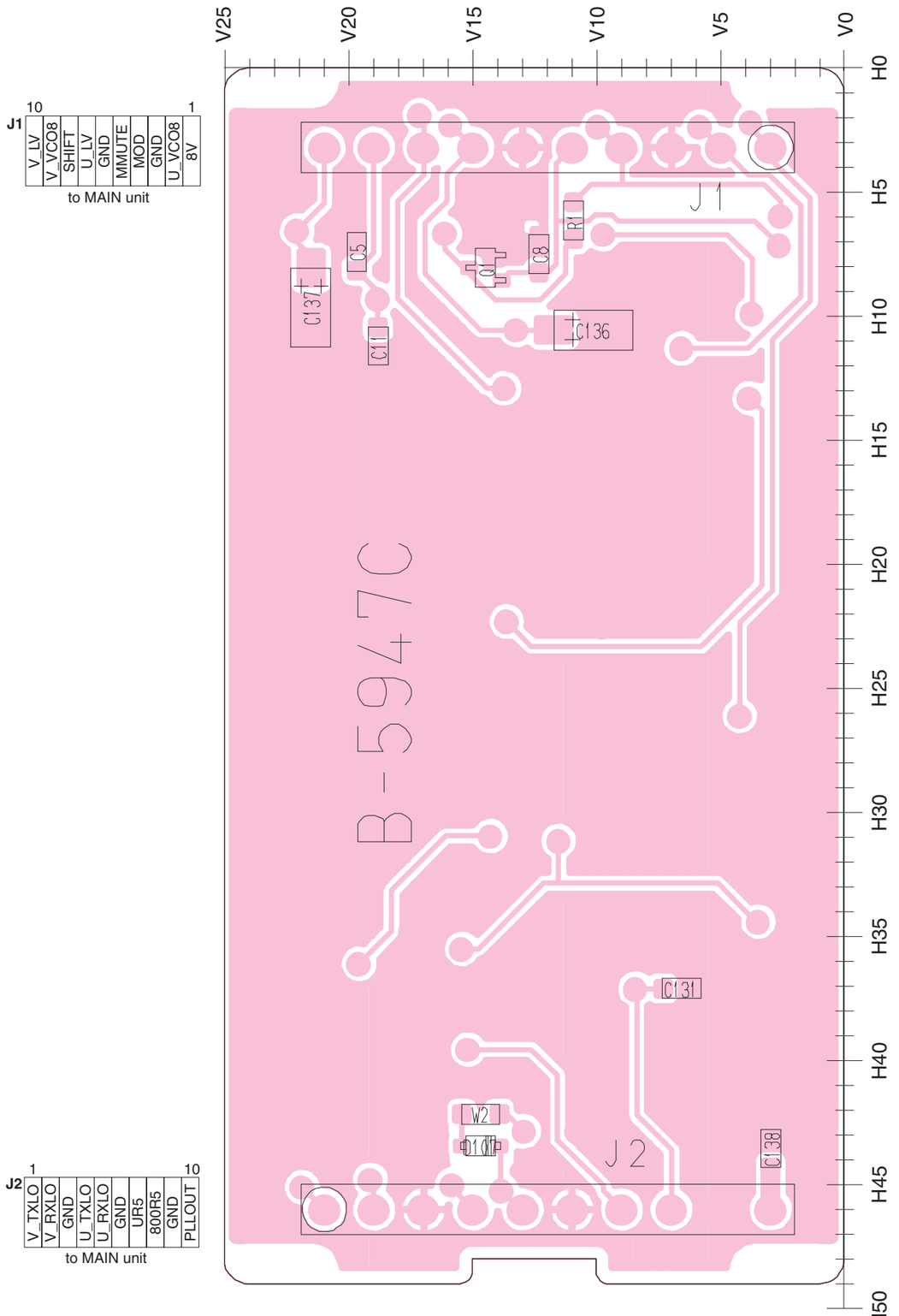
• TOP VIEW



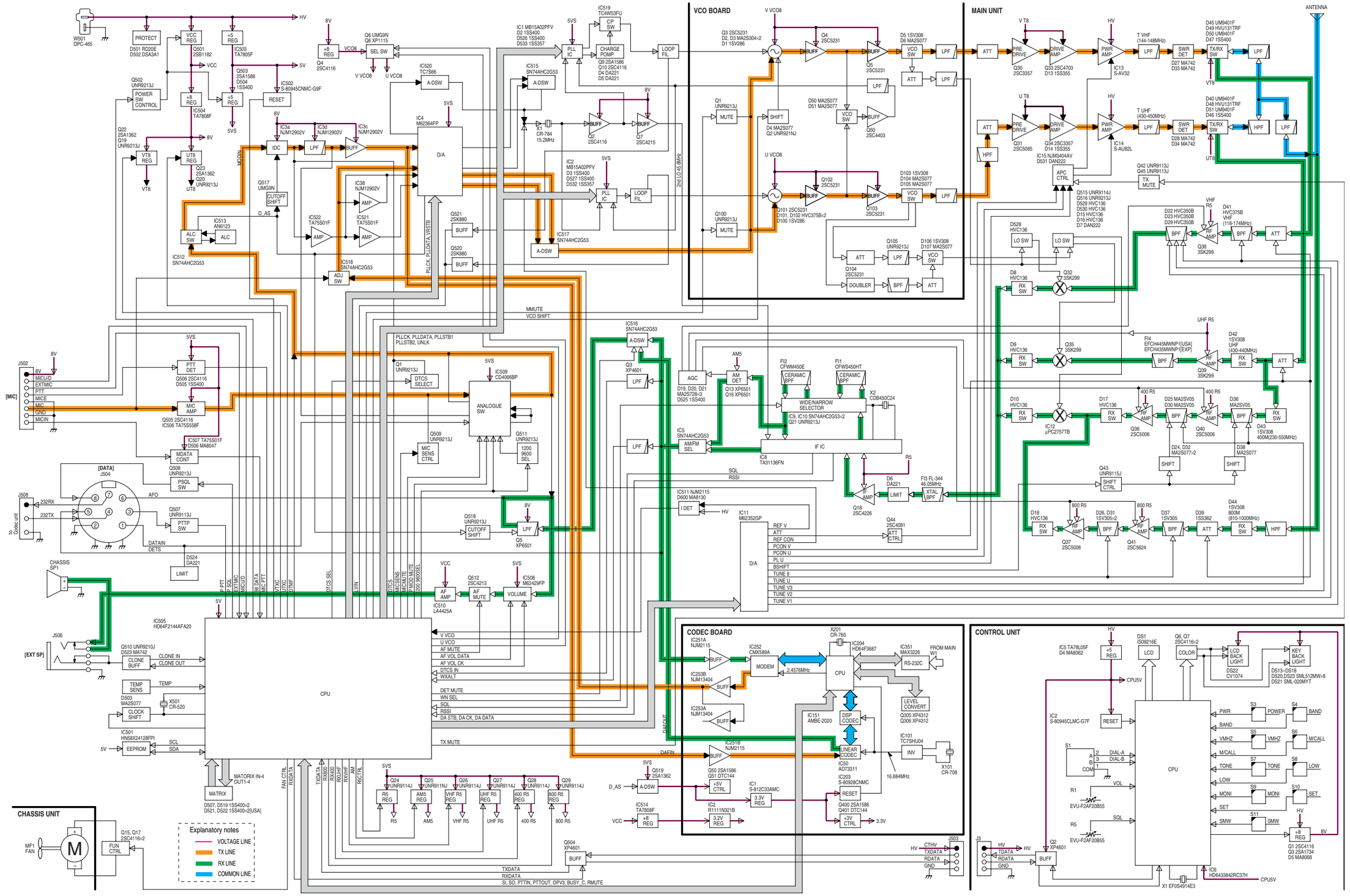
• **BOTTOM VIEW (CODEC BOARD)**



• **BOTTOM VIEW (VCO BOARD)**

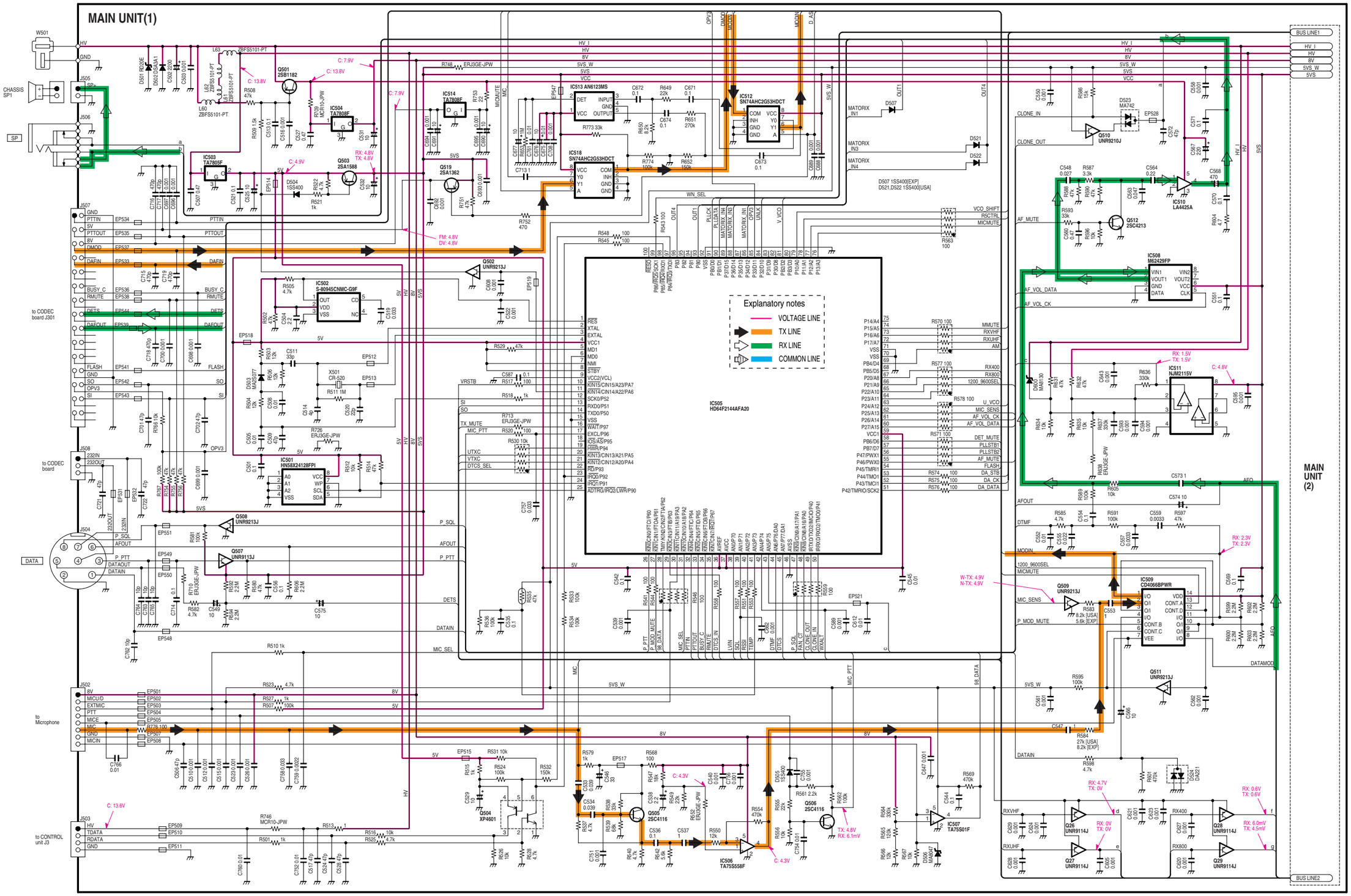


SECTION 10 BLOCK DIAGRAM

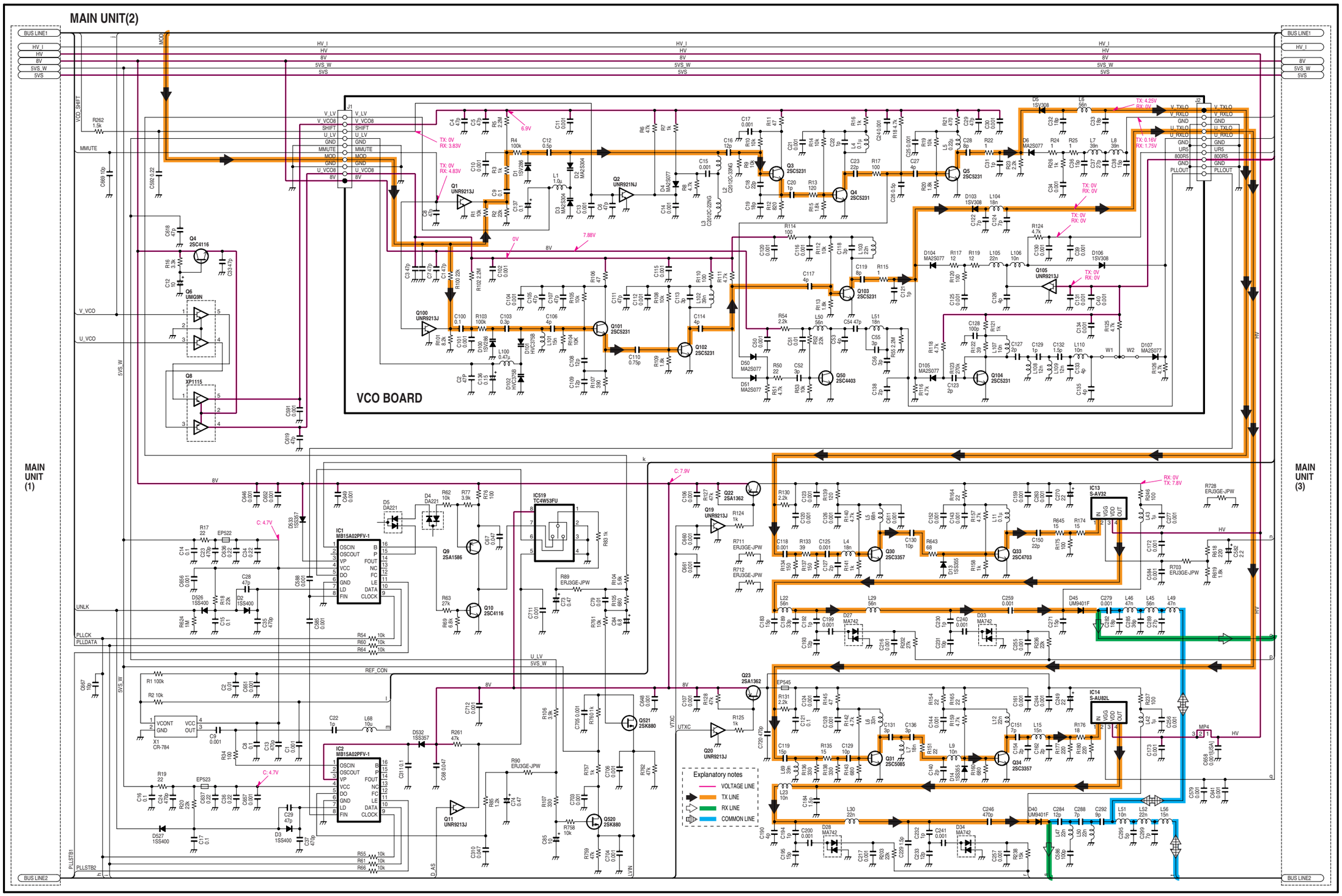


SECTION 11 VOLTAGE DIAGRAMS

11-1 MAIN UNIT



MAIN UNIT(2)


BUS LINE1
HV_I
HV
8V
5VS_W
5VS
MOD
VCO_SHIFT
MMUTE
V_VCO
U_VCO
5VS_W
UNLK
PLLCK
PLLDATA
PLLSTB1
PLLSTB2
REF_CON
U_LV
D_AS
VTXC
UTXC
J1
V_LV
V_VCO8
SHIFT
U_LV
GND
MMUTE
MOD
GND
U_VCO8
8V
J2
V_TXLO
V_RXLO
GND
U_TXLO
U_RXLO
GND
UR5
800R5
GND
PLLOUT
VCO BOARD
Q1 UNR9213J
Q2 UNR921NJ
Q3 2SC5231
Q4 2SC5231
Q5 2SC5231
Q6 UMG9N
Q8 XP1115
Q100 UNR9213J
Q101 2SC5231
Q102 2SC5231
Q103 2SC5231
Q104 2SC5231
Q105 UNR9213J
Q4 2SC4116
Q9 2SA1586
Q10 2SC4116
Q11 UNR9213J
Q19 UNR9213J
Q20 UNR9213J
Q22 2SA1362
Q23 2SA1362
Q30 2SC3357
Q31 2SC5085
Q33 2SC4703
Q34 2SC3357
Q50 2SC4403
Q520 2SK880
Q521 2SK880
IC1 MB15A02PFV-1
IC2 MB15A02PFV-1
IC519 TC4W53FU
IC13 S-AV32
IC14 S-AU82L
X1 CR-784
TX: 4.25V RX: 0V
TX: 0.16V RX: 1.75V
TX: 0V RX: 0V
TX: 0V RX: 3.83V
TX: 0V RX: 4.83V
RX: 0V TX: 7.8V
6.9V
7.88V
C: 4.7V
C: 7.9V
Explanatory notes
VOLTAGE LINE
TX LINE
RX LINE
COMMON LINE
MAIN UNIT (1)
MAIN UNIT (3)

MAIN UNIT(3)

Explanatory notes
- VOLTAGE LINE
- TX LINE
- RX LINE

MAIN UNIT (2)

MAIN UNIT (4)

MAIN UNIT(4)

BUS LINE1
HV_I
5VS_W
V RXLO
U_RXLO
UR5
80DR5
TUNE_V1
TUNE_V2
TUNE_V3
TUNE_U
BSHIFT
ATT
FAN_CT
TUNE_B
HV_I
5VS_W
BUS LINE2
BUS LINE3

D7 DAN222
Q515 UNR9114J
Q516 UNR9213J
D530 HVC136
D529 HVC136
D528 HVC136
D8 HVC136
D9 HVC136
D15 HVC136
D16 HVC136
D17 HVC136
D18 HVC136
D10 HVC136
D12 DAN222
D21 MA2S728
D19 MA2S728
D20 MA2S728
Q32 3SK299
Q35 3SK299
Q39 3SK299
Q36 2SC5006
Q37 2SC5006
Q38 3SK299
Q40 2SC5006
Q18 2SC4226
Q41 2SC5624
Q44 2SC4081
Q43 UNR9115J
Q15 2SC4116
Q17 2SC4116
IC12 μPC2757TB (PS, VCC, IFO, LO, GND, RFI)
FI3 FL-344 (GND, OUT, IN, GND)
FI4 EFCH445MWNP1[USA] EFCH435MWNP1[EXP]
D525 1SS400
D526 1SS400
D46 1SS400
D47 1SS400
D48 HVU131TRF
D49 HVU131TRF
D50 UM9401F
D51 UM9401F
D42 1SV308
D43 1SV308
D44 1SV308
D38 1SS362
D39 1SS362
D22 DA221
D23 HVC350B
D24 MA2S077
D25 MA2SV05
D26 MA2SV05
D27 MA2SV05
D28 MA2SV05
D29 HVC350B
D30 MA2SV05
D31 MA2SV05
D32 MA2SV05
D33 MA2SV05
D34 MA2SV05
D35 MA2SV05
D36 MA2SV05
D37 MA2SV05
D38 MA2S077
D39 MA2SV05
D40 HVC375B
D41 HVC375B
IC1 LQW18AN18NB00
L25 LQW18AN18NB00
L26 LQW18AN22NJ00
L27 LQW18AN18NB00
L28 C2012C-68NG
L32 C2012C-68NG
L33 C2012C-47NG
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L40 C2012C-R18G
L41 C2012C-56NG
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L43 C2012C-68NG
L44 68n
L45 C2012C-68NG
L46 C2012C-68NG
L47 C2012C-68NG
L48 C2012C-68NG
L49 C2012C-68NG
L50 C2012C-68NG
L51 C2012C-68NG
L52 C2012C-68NG
L53 54n
L54 15n
L55 12n
L56 12n
L57 68n
L58 12n
L59 22n
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R729-R743 ERJ3GE-JPW
R729 R731 R733 R735 R737 R739 R741 R743
R730 R732 R734 R736 R738 R740 R742
R721 ERJ3GE-JPW
R722 ERJ3GE-JPW
R744 ERJ3GE-JPW
R745 MCR10-JPW
R705 MCR10-JPW
R706 MCR10-JPW
R718 MCR10-JPW
R719 MCR10-JPW
R720 ERJ3GE-JPW
R724 ERJ3GE-JPW
R725 ERJ3GE-JPW
R704 ERJ3GE-JPW
R641 220
R201 10
R199 10

RX: 4.3V TX: 0V
RX: 1.1V TX: 0V
RX: 0.8V TX: 0V
RX: 4.3V TX: 0V
C: 4.8V
ON: 1.0V OFF: 13.7V
ATT MIN: 10mV MAX: 3.8V

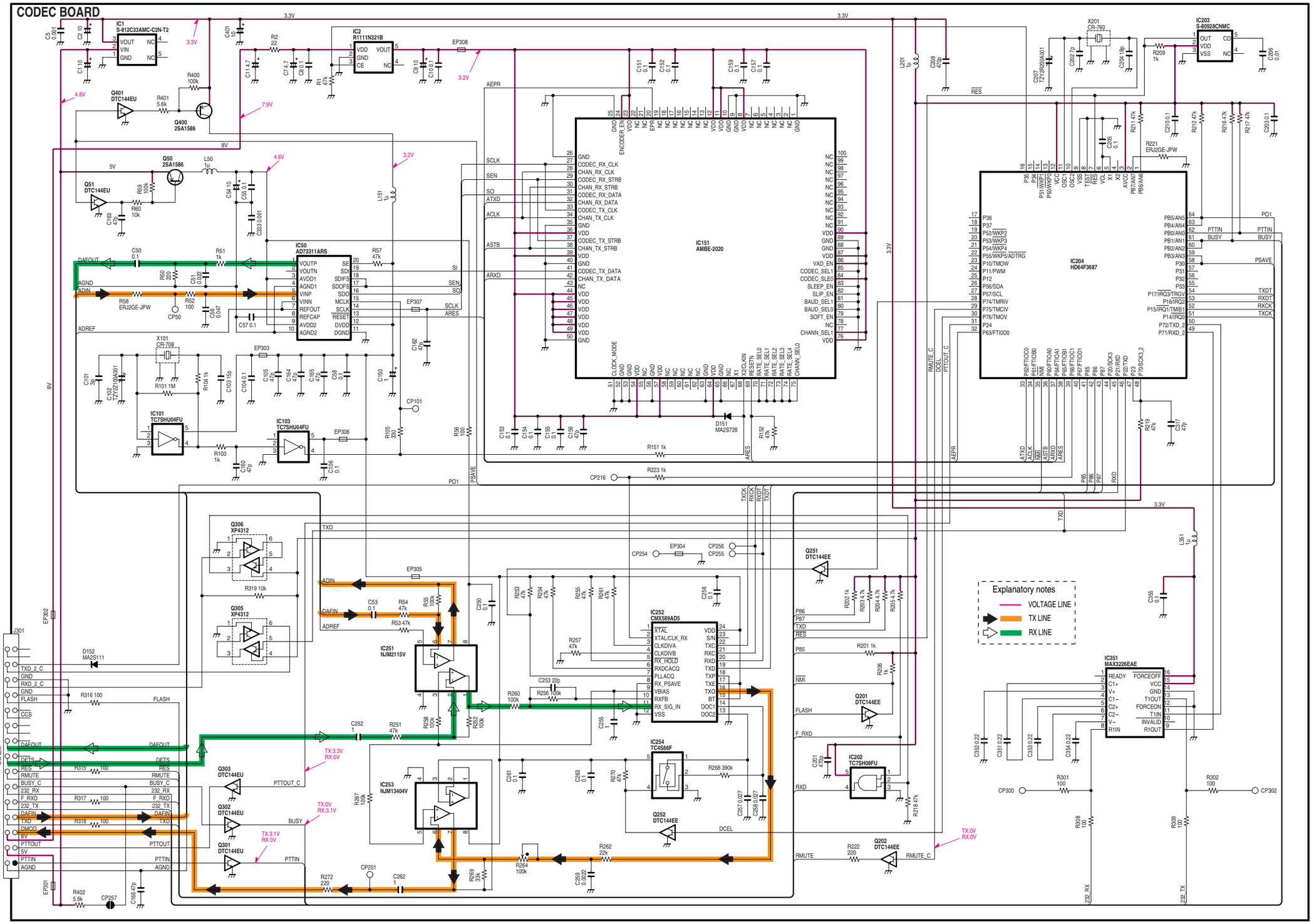
(118-174MHz)
(230-630MHz)
(630-999.990MHz)

Explanatory notes
VOLTAGE LINE
RX LINE
COMMON LINE

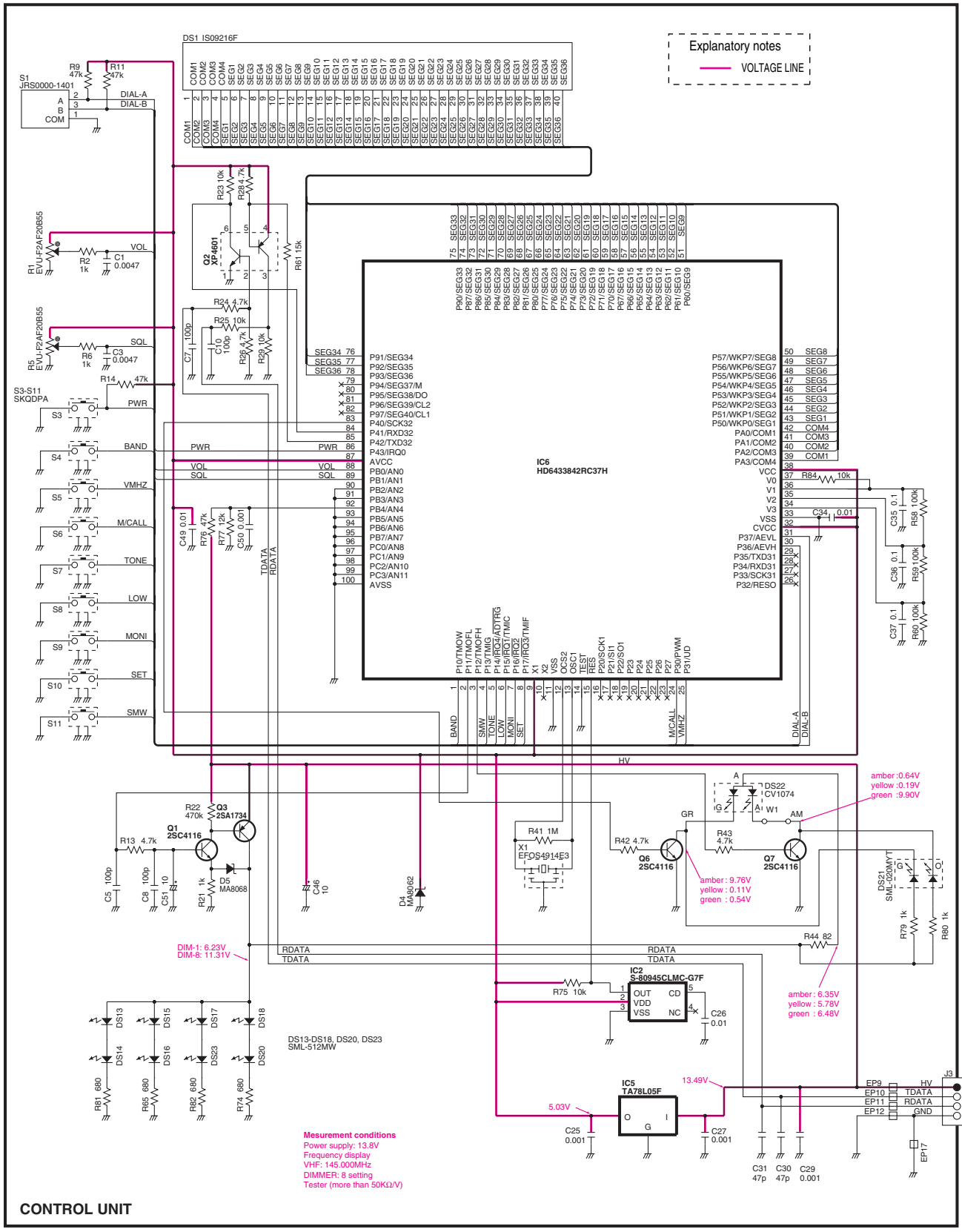
EP1
EP2
EP520
FAN+
FAN-
J1
J2
MF1
W1
W2
W3

MAIN UNIT (3)
CHASSIS UNIT

11-2 CODEC BOARD



11-3 CONTROL UNIT



Icom Inc.

1-1-32, Kamiminami, Hirano-ku, Osaka 547-0003, Japan
Phone : +81 (06) 6793 5302
Fax : +81 (06) 6793 0013
URL : http://www.icom.co.jp/world/index.html

Icom America Inc.
<Corporate Headquarters>
2380 116th Avenue N.E., Bellevue, WA 98004, U.S.A.
Phone : +1 (425) 454-8155 Fax : +1 (425) 454-1509
URL : http://www.icomamerica.com
E-mail : sales@icomamerica.com
<Customer Service>
Phone : +1 (425) 454-7619

Icom Canada
Glenwood Centre #150-6165
Highway 17 Delta, B.C., V4K 5B8, Canada
Phone : +1 (604) 952-4266 Fax : +1 (604) 952-0090
URL : http://www.icomcanada.com
E-mail : info@icomcanada.com

Icom (Australia) Pty. Ltd.
A.B.N. 88 006 092 575
Unit 1 / 103 Garden Road, Clayton VIC 3168 Australia
Phone : +61 (03) 9549-7500 Fax : +61 (03) 9549-7505
URL : http://www.icom.net.au
E-mail : sales@icom.net.au

Icom New Zealand
146A Harris Road, East Tamaki,
Auckland, New Zealand
Phone : +64 (09) 274 4062 Fax : +64 (09) 274 4708
URL : http://www.icom.co.nz
E-mail : inquiries@icom.co.nz

Beijing Icom Ltd.
Room C07, 10th Floor, Long Silver Mansion, No. 88,
Yong Ding Road, Haidian District, Beijing, 100039, China
Phone : +86 (010) 5889 5391/5392/5393
Fax : +86 (010) 5889 5395
URL : http://www.bjicom.com
E-mail : bjicom@bjicom.com

Icom (Europe) GmbH
Communication Equipment
Himmelgeister Str. 100, D-40225 Düsseldorf, Germany
Phone : +49 (0211) 346047 Fax : +49 (0211) 333639
URL : http://www.icomeurope.com
E-mail : info@icomeurope.com

Icom Spain S.L
Crta. de Gracia a Manresa Km. 14,750
08190 Sant Cugat del Valles Barcelona, SPAIN
Phone : +34 (93) 590 26 70 Fax : +34 (93) 589 04 46
URL : http://www.icomspain.com
E-mail : icom@icomspain.com

Icom (UK) Ltd.
Unit 9, Sea St., Herne Bay, Kent, CT6 8LD, U.K.
Phone : +44 (01227) 741741 Fax : +44 (01227) 741742
URL : http://www.icomuk.co.uk
E-mail : info@icomuk.co.uk

Icom France S.a
Zac de la Plaine, 1, Rue Brindejonc des Moulinais
BP 5804, 31505 Toulouse Cedex, France
Phone : +33 (5) 61 36 03 03 Fax : +33 (5) 61 36 03 00
URL : http://www.icom-france.com
E-mail : icom@icom-france.com

Asia Icom Inc.
6F No.68, Sec. 1 Cheng-Teh Road, Taipei, Taiwan, R.O.C.
Phone : +886 (02) 2559 1899 Fax : +886 (02) 2559 1874
URL : http://www.asia-icom.com
E-mail : sales@asia-icom.com

Icom Polska
Sopot, 3 Maja 54 Poland
Phone : +48 (58) 550 7135 Fax : +48 (58) 551 0484
E-mail : icompolska@icompolska.com.pl

Count on us!

Icom Inc.
1-1-32, Kamiminami, Hirano-ku, Osaka 547-0003, Japan

S-14121HZ-C1