



# SERVICE MANUAL

VHF AIR BAND TRANSCEIVER

## IC-A110

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## INTRODUCTION

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This service manual describes the latest service information for the **IC-A110** VHF AIR BAND TRANSCEIVER at the time of publication.

| MODEL   | VERSION   | SYMBOL |
|---------|-----------|--------|
| IC-A110 | General   | GEN    |
|         | General-1 | GEN-1  |
|         | U.S.A.    | USA    |
|         | U.S.A.-1  | USA-1  |

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

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## DANGER

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**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.



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## ORDERING PARTS

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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>

1130008830 S.IC TB31207AFN IC-A110 MAIN UNIT 5 pieces  
8810009130 Screw BT M3x12 NI-ZU IC-A110 Bottom cover 10 pieces  
Addresses are provided on the inside back cover for your convenience.

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## REPAIR NOTES

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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 coverage : 118.000–136.975 MHz
- Channel spacing : 25 kHz [GEN], [GEN-1]  
25 kHz/8.33 kHz [USA], [USA-1]
- Type of emission : AM (6K00A3E)
- Number of memory channels : 20 channels
- Antenna connector : SO-239 (50 Ω)
- Power supply requirement : 13.75 V DC or 27.5 V DC (negative ground)
- Current drain (at 13.75 V DC) : Transmit 5.0 A  
Receive max. audio output 4.0 A  
stand-by 500 mA
- Frequency stability : ±5 ppm
- Usable temperature range : –30°C to +60°C; –22°F to +140°F
- Dimensions (projections not included) : 150(W) × 50(H) × 180(D) mm; 5<sup>29</sup>/<sub>32</sub>(W) × 1<sup>34</sup>/<sub>32</sub>(H) × 7<sup>3</sup>/<sub>32</sub>(D) in
- Weight (with ant., BP-209) : 1.5 g; 3 lb 5 oz

## ■ TRANSMITTER

- RF output power (at 13.75 V DC) : 9.0 W (typical)
- Modulation system : Last stage modulation
- Input impedance : 600 Ω
- Modulation limiting : 70–100 %
- Audio harmonic distortion : Less than 10 % (at 85 % modulation)
- Ham and noise ratio : More than 40 dB
- Spurious emissions : –16 dBm or less (except ±62.5 kHz of operating frequency)
- Antenna requirements : Standard 50 Ω antenna with a VSWR < 3 : 1

## ■ RECEIVER

- Receive system : Double conversion superheterodyne system
- Intermediate frequencies : 1st 38.85 MHz  
2nd 450 kHz
- Sensitivity : Less than 1 μV at 6 dB S/N
- Squelch sensitivity : Less than 0.35 μV at threshold
- Selectivity :
 

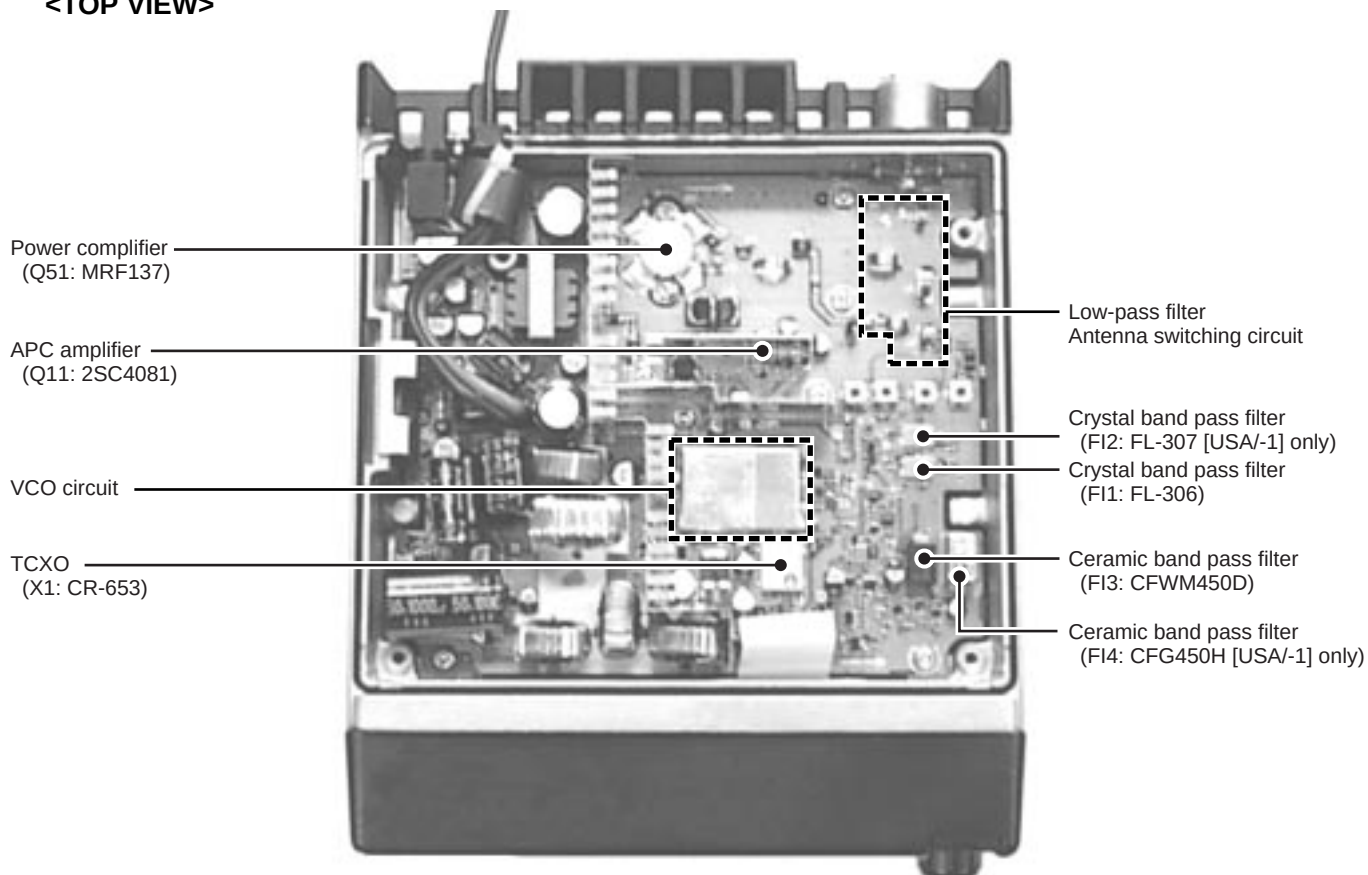
| At 25 kHz channel spacing |                 | At 8.33 kHz channel spacing |                 |
|---------------------------|-----------------|-----------------------------|-----------------|
| ±8 kHz                    | Less than 6 dB  | ±2.778 kHz                  | Less than 6 dB  |
| ±17 kHz                   | Less than 40 dB | ±7.37 kHz                   | Less than 60 dB |
| ±25 kHz                   | Less than 60 dB |                             |                 |
- Spurious response rejection ratio : More than 74 dBμ
- Hum and noise : More than 25 dB
- Audio output power (at 13.75 V DC) : Ext SP More than 10.0 W at 10 % distortion with an 8 Ω load  
Side tone More than 100 mW at 10 % distortion with an 500 Ω load
- Audio output impedance : Ext SP 8 Ω  
Side tone 500 Ω

Specifications are measured in accordance with FCC Part87 and RTCA DO-186a.  
(RTCA DO-186a: Class C/E, Class 4/6)

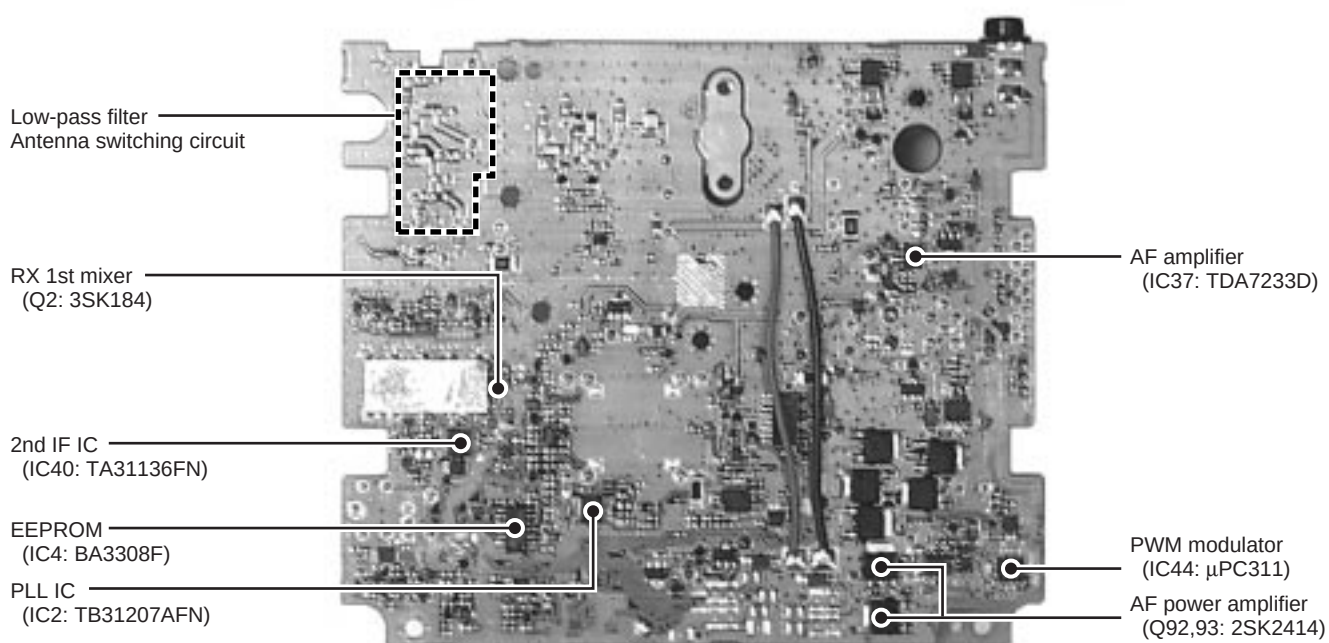
**All stated specifications are subject to change without notice or obligation.**

## SECTION 2 INSIDE VIEWS

### ● MAIN UNIT <TOP VIEW>



### <BOTTOM VIEW>



## SECTION 3 CIRCUIT DESCRIPTION

### 3-1 RECEIVER CIRCUITS

#### 3-1-1 ANTENNA SWITCHING CIRCUIT

The antenna switching circuit functions as a low-pass filter while receiving. However, its impedance becomes very high while D1 and D2 are turned ON. Thus transmit signals are blocked from entering the receiver circuits. The antenna switching circuit employs a  $\frac{1}{4}$  type diode switching system. The passed signals are then applied to the RF amplifier circuit.

Received signals are passed through the low-pass filter (L2, L3, L48, C1–C6, C330, C331). The filtered signals are applied to the  $\frac{1}{4}$  type antenna switching circuit (D1, D2).

#### 3-1-2 RF CIRCUIT

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

The signals from the antenna switching circuit are amplified at the RF amplifier (Q1) after passing through the RX attenuator (D38, L52, R295), bandpass filter (L27, L8, C10, C164, C165, C21) and two-stage tunable bandpass filters (the first filter is consisted of D6, L9, C342, C405 and the second filter is consisted of D37, L49, C23, C406). The amplified signals are applied to the 1st mixer circuit (Q2, gate 1) after out-of-band signals are suppressed at the another two-stage tunable bandpass filters (D7, L10, C28, C407 and D8, L11, C61, C553).

The tunable bandpass filters (D6–D8, D37) which employ varactor diodes, track the filters and are controlled by the PLL IC (IC2) via the tune buffer amplifier (Q79) using "TUNE" signal. These diodes tune the center frequency of an RF passband for wide bandwidth receiving and good image response rejection.

#### 3-1-3 1ST MIXER AND 1ST IF CIRCUITS

The 1st mixer circuit converts the received signal into a fixed frequency of the 1st IF signal with a PLL output frequency. By changing the PLL frequency, only the desired frequency will pass through a crystal filter at the next stage of the 1st mixer.

The filtered signals from the RF circuit are mixed at the 1st mixer (Q2) with a 1st LO signal coming from the VCO circuit to produce a 38.85 MHz 1st IF signal.

The 1st IF signal is applied to a pair of crystal filter [Wide mode: FI1, Narrow mode: FI2] to suppress out-of-band signals. The filtered 1st IF signal is applied to the IF amplifier (Q3), then applied to the 2nd mixer circuit (IC40, pin 16).

#### 3-1-4 2ND MIXER AND 2ND IF CIRCUITS

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

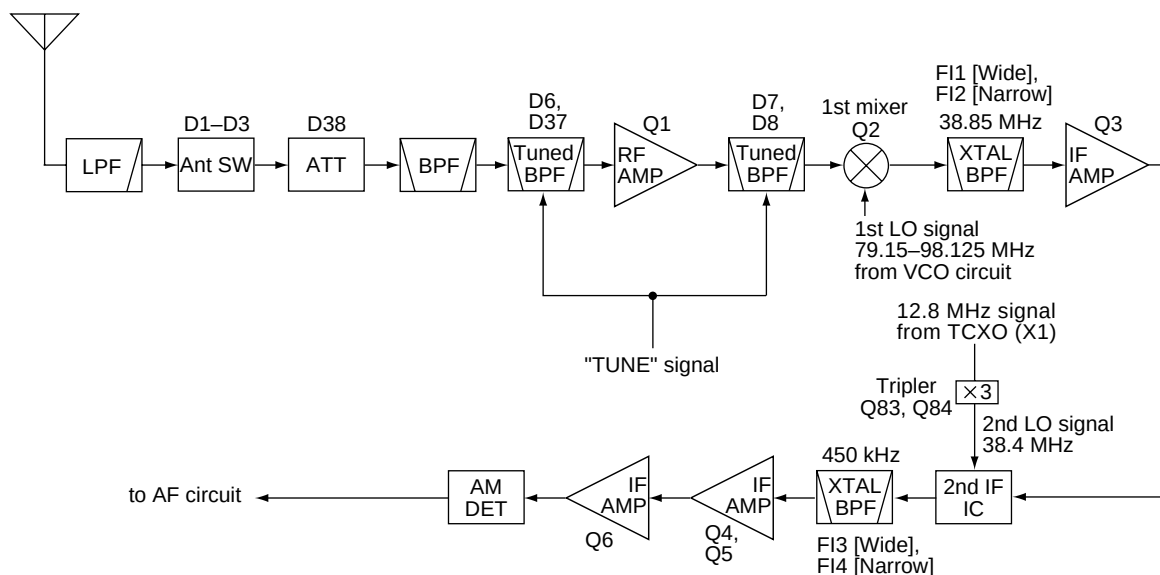
The 1st IF signal from the IF amplifier is applied to the 2nd mixer section of the IF IC (IC2, pin 16), and is mixed with the 38.4 MHz 2nd LO signal to be converted into a 450 kHz 2nd IF signal.

A 2nd LO signal (38.4 MHz) is produced at the PLL circuit by tripling its reference frequency (12.8 MHz).

The 2nd IF signal from the 2nd mixer (IC2, pin 3) passes through a ceramic filter [Wide mode: FI3, Narrow mode: FI4] to remove unwanted heterodyned frequencies. It is then amplified at the 2nd IF amplifiers (Q4–Q6).

#### • Receiver construction

118.000–136.975 MHz



### 3-1-5 AM DETECTOR CIRCUIT (MAIN UNIT)

The AM detector circuit converts the 2nd IF signal into AF signals.

The amplified 2nd IF signal from the 2nd IF amplifier (Q6) is applied to the AM detector circuit (Q7). It is then detected for conversion to AF signals.

The AF signals are applied to the AF circuit.

### 3-1-6 AF CIRCUIT (MAIN UNIT)

The AF circuit amplifies the demodulated AF signals to drive a speaker.

The AF signals are passed through the low pass filter (IC31, pin 1), and then applied to the MOD/AF select switch (IC22, pin 7).

The AF signals are amplified at the AF amplifier (IC42, pin 3), and are then passed through the RMUTE switch (IC6) and electric-volume switch (IC13, pins 14, 15) to control AF level. The level controlled signals are then applied to the mute switch (IC30, pin 1).

While in using the internal speaker or connecting outer speaker jack, the AF signals are applied to the MOD/AF switch (IC48, pin 7) via the AF mute switch (IC28). The applied AF signals are compared at the PWM IC (IC44) with the reference signal from the triangular wave oscillator (IC45), and are then converted to the PWM wave form. The AF signals are amplified at the FET driver (IC47) and AF power amplifiers (Q92, Q93). The amplified AF signals are applied to the SP mute switch (D66, Q101, Q100) via the line filter (L62–L64, L81, C456, C457, C462, C463). The filtered AF signals are applied to the internal speaker via the [EXT SP] jack (J7).

While in connecting the head set, the AF signals are amplified at the AF power amplifier (IC37, pin 8), and then applied to the ACC connector (J6, pin 6) via the impedance converter (T1).

### 3-1-7 SQUELCH CIRCUIT (MAIN AND FRONT UNITS)

The squelch circuit cuts out AF signals when receiving no modulated signal. When no voice modulation is included in the signal, the squelch circuit cuts out the AF signal by comparing voice audio and noise audio components in the AF detected signals.

The 2nd IF signal from the IF IC (MAIN unit; IC40, pin 3) passes through the 450 kHz ceramic filter (Wide mode: FI3, Narrow mode: FI4) to remove out-of-band signals, and then applied to the IF amplifier.

A portion of the amplified 2nd IF signal from the IF amplifier (MAIN unit; Q4) is applied to the IF amplifier section on the IF IC (MAIN unit; IC40, pin 5). The amplified signal passes through the RSSI section, and are then applied to the squelch amplifier (MAIN unit; IC11, pin 1) as "RSSI" signal.

The amplified "RSSI" signal at IC11 is output from pin 4 as "SQLI" signal, and is then applied to the CPU (FRONT unit; IC1, pin 74). The CPU analyzes the noise condition and outputs the "AFMUT" signal via the output expander IC (FRONT unit; IC5) to switch the SP mute switch (Q100, Q101), etc. When connecting the head set, "RMUTE" signal from the CPU via the output expander IC (FRONT unit; IC5) is applied to the RMUTE circuit (MAIN unit; IC6, Q80, Q81).

Even when the squelch is closed, the mute switch (IC30) opens at the moment of emitting beep tones.

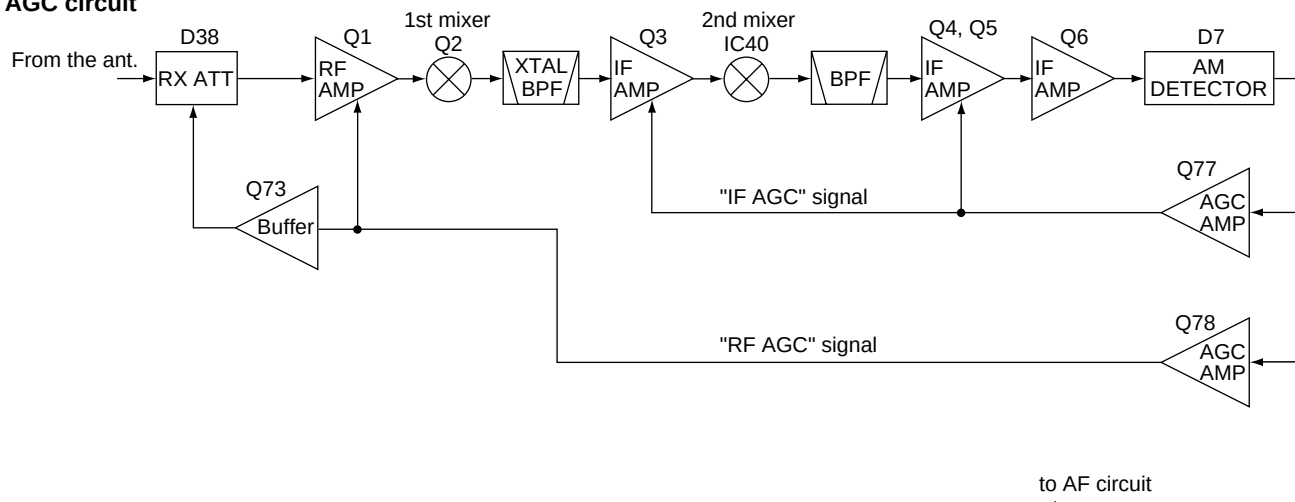
### 3-1-8 AGC CIRCUIT (MAIN UNIT)

The AGC (Automatic Gain Control) circuit reduces signal fading and keeps the audio output level constant.

AF signal from the AM detector circuit (Q7) is amplified at AGC amplifiers (Q77, Q78). The amplified signal from Q77 is applied to the IF amplifier (Q4, Q5). The other amplified signal from Q78 is applied to the RF amplifier (Q1), and the RX attenuator (D38) via the buffer amplifier (Q73).

These amplifiers reduce the amplifier gain of IF amplifiers (Q4, Q5) and the RF amplifier (Q1) while receiving a strong signal.

#### • AGC circuit



## 3-2 TRANSMITTER CIRCUITS

### 3-2-1 MICROPHONE AMPLIFIER CIRCUIT (MAIN UNIT)

The microphone amplifier circuit amplifies audio signals from the microphone, within +6 dB/octave pre-emphasis characteristics (300 Hz–3 kHz), to a level needed for the modulation circuit.

The AF signals from the microphone are applied to the IN/EXT MIC switch (IC16, pin 7) via the "MIC" signal. When using a headset, "EXTMIC" signal are applied to the external switch (IC16, pin 6) via R336 to adjust the external microphone level. The output signal from IC16 (pin 1) are applied to the ALC amplifier (IC4, pin 9) via R110 to adjust the microphone sensitivity.

The output signal from IC4 (pin 7) are amplified at the AF amplifier (IC5), and then applied to the MOD/AF switch via the high-pass filter (IC51) and low-pass filter (IC19) to filter out RF components. The filtered signals are applied to the modulation circuit.

### 3-2-2 MODULATION CIRCUIT (MAIN UNIT)

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

The audio signals are passed through the MOD/AF switch (IC48, pin 6) via the modulation depth adjustment pot R121. The signals are converted to the PWM wave form at the PWM (Pulse-Width-Modulation) IC (IC44, pin 3), and power amplified at the FET driver (IC47, pin 5) and power MOS FET (Q92, Q93). The power-amplified signals are passed through the line filter (L62–L64, L81, C456, C457, C462, C463, C468), and then applied to the drain of power amplifier (Q51) for the last stage modulation.

### 3-2-3 DRIVE/POWER AMPLIFIER CIRCUITS (MAIN UNIT)

The amplifier circuit amplifies the VCO oscillating signal to the output power level.

The signal from the buffer amplifiers (Q14, Q15) is passed through the TX/RX switch (D11), and is amplified at the pre-amplifier (Q42), pre-drivers (Q20, Q21) and the power amplifier (Q51) to obtain 9 W of RF power.

The amplified signal is passed through the antenna switching circuit (D3) and low-pass filter, and is then applied to the antenna connector.

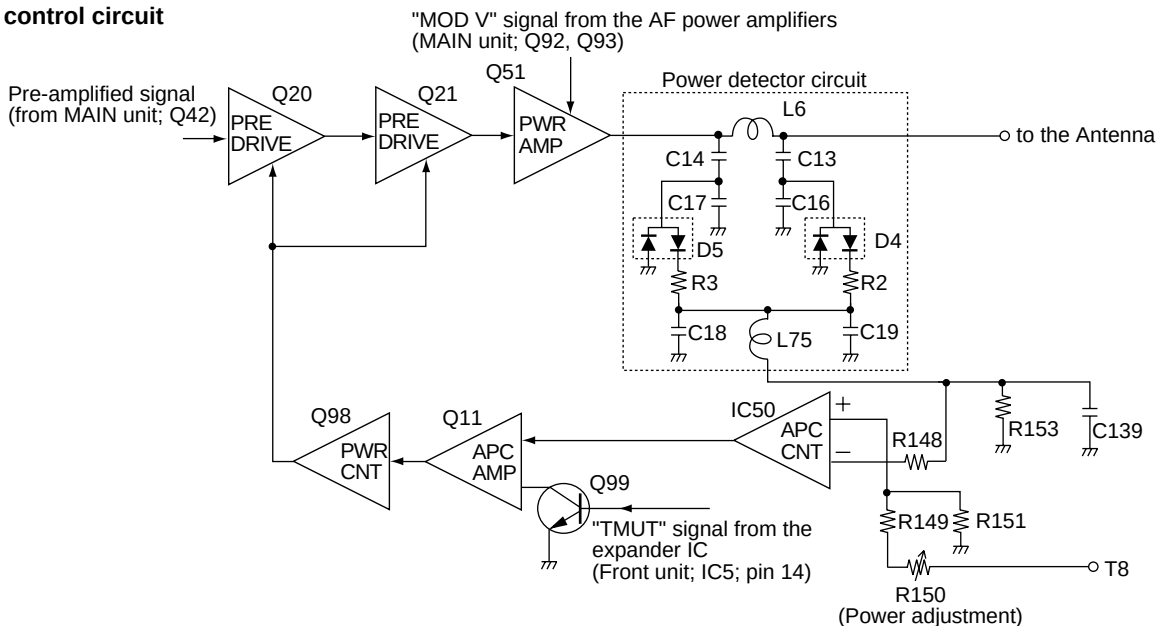
### 3-2-4 APC CIRCUIT (MAIN UNIT)

The APC (Automatic Power Control) circuit protects the drive and power amplifiers from mismatched output loads.

The APC detector circuit (D4, D5) detects forward and reflected signals respectively. The combined voltage is at a minimum level when the antenna is matched at 50  $\Omega$  and is increased when it is mismatched.

The detected voltage is applied to one of the APC controller inputs (IC50, pin 3) and a power setting voltage is applied to the other input (pin 1). When the antenna impedance is mismatched, the detected voltage exceeds the reference voltage. Thus the bias voltage of the pre-drivers is decreased.

#### • APC control circuit



### 3-3 PLL CIRCUIT

#### 3-3-1 GENERAL (MAIN UNIT)

A PLL circuit provides stable oscillation of the transmit frequency and receive 1st LO frequency. The PLL output compares the phase of the divided VCO frequency to the reference frequency. The PLL output frequency is controlled by the divided ratio (N-data) of a programmable divider.

The PLL circuit contains of the TX-VCO and RX-VCO circuits. The oscillated signals are applied to the buffer amplifiers (Q43, Q12) then applied to the PLL IC (IC2, pin 8). IC2 is a dual PLL IC which controls VCO circuits for TX and RX.

The PLL circuit, using a one chip PLL IC (IC2), directly generates the transmit frequency and receive 1st IF frequency with VCOs. The PLL sets the divided ratio based on serial data from the CPU on the FRONT unit and compares the phases of VCO signals with the reference oscillator frequency. The PLL IC detects the out-of-step phase and output from pin 9 for TX and RX, respectively. The reference frequency (12.8 MHz) is oscillated at X1.

#### 3-3-2 TX LOOP

The generated signal at the TX-VCO (Q44, D64) enters the PLL IC (IC2, pin 8), and is divided at the programmable divider section and is then applied to the phase detector section.

The phase detector compares the input signal with a reference frequency, and then outputs the out-of-phase signal (pulse-type signal) from pin 9.

The pulse-type signal is converted into DC voltage (lock voltage) at the loop filter (R61, R62, C59, C60), and then applied to the varactor diode (D64) of the TX-VCO to stabilize the oscillated frequency.

#### 3-3-3 RX LOOP

The generated signal at the RX-VCO (Q59, D65) enters the PLL IC (IC2, pin 8), and is divided at the programmable divider section. The divided signal is then applied to the phase detector section.

The phase detector compares the input signal with a reference frequency, and then outputs the out-of-phase signal (pulse-type signal) from pin 9.

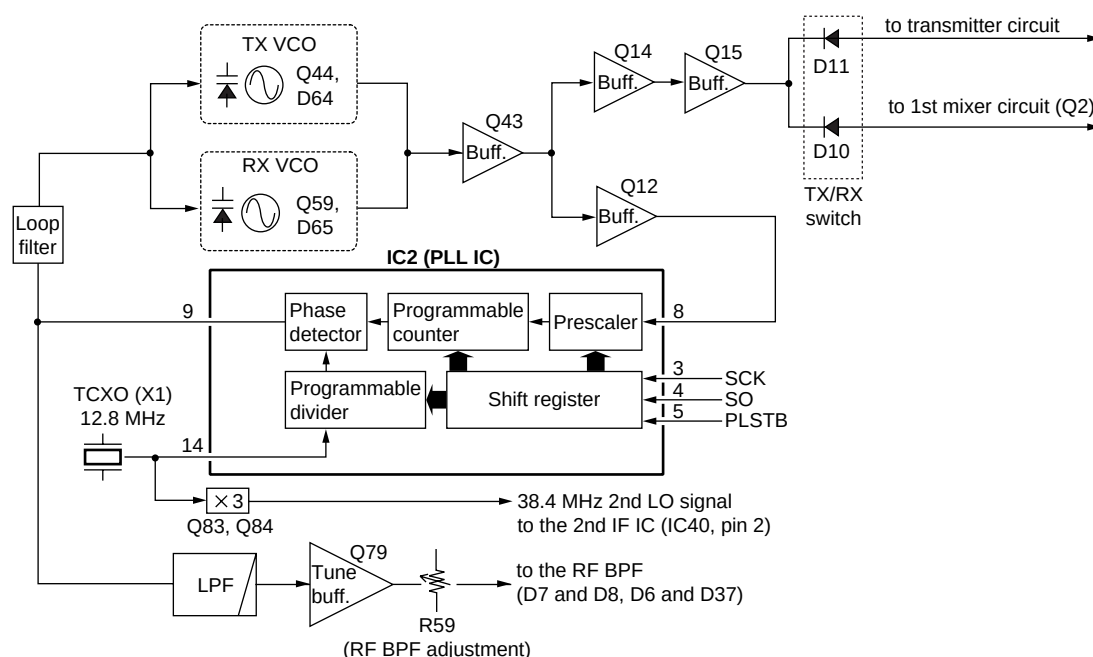
The pulse-type signal is converted into DC voltage (lock voltage) at the loop filter (R61, R62, C59, C60), and then applied to the varactor diode (D65) of the RX-VCO to stabilize the oscillated frequency. The lock voltage is also used for the receiver circuit for the bandpass filter center frequency. The lock voltage from the PLL IC (IC2, pin 9) passes through the low-pass filter, and is applied to the tune buffer amplifier (Q79). The amplified signal is applied to the RF bandpass filters (D7, D8 and D6, D37) via the tune adjustment pot (R59).

#### 3-3-4 VCO CIRCUIT

The VCO outputs from Q44 (TX) and Q59 (RX) are buffer amplified at Q43, and are applied to the buffer amplifiers (Q14, Q15). The amplified signal is applied to the T/R switch (D10, D11). The receive LO signal is applied to the 1st mixer circuit (Q2), and the transmit signal is applied to the pre-amplifier (Q42).

A portion of the VCO signal is amplified at the buffer amplifier (Q12), and then fed back to the PLL IC (IC2, pin 8).

#### • PLL circuit



### 3-4 POWER SUPPLY CIRCUITS VOLTAGE LINES (MAIN UNIT)

| LINE  | DESCRIPTION                                                                                                                                                                                                                 |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VCC   | The voltage from the external DC power connector which is controlled by the power switch ([VOL] control).                                                                                                                   |
| 8V    | Common 8 V converted from the VCC line by the +8 V regulator circuit (IC29). The output voltage is applied to the +5 V regulator circuit (IC7), the ripple filter (Q16), and etc.                                           |
| +5V   | Common 5 V converted from the 8V line by the +5V regulator (IC7) and +5V current amplifier (Q22, Q23, D15) circuits. The output voltage is applied to the electric volume IC (IC13), buffer amplifiers (Q68, Q69), and etc. |
| CPU5V | Common 5 V converted from the VCC line by +8 V regulator (Q82, D35) and +5 V regulator circuits (IC26). The output 5 V voltage is applied to the CPU (FRONT unit; IC1).                                                     |
| T8    | 8 V for transmitter circuits regulated by the +8 V regulator circuit (IC29).                                                                                                                                                |
| R8    | 8 V for receiver circuits regulated by the +8 V regulator circuit (IC29).                                                                                                                                                   |

### 3-5 PORT ALLOCATIONS

#### 3-5-1 OUTPUT EXPANDER IC (FRONT unit: IC5)

| Pin number | Port name  | Description                                                                                                                                                                                                                                                                                                                |      |                     |                     |     |     |           |      |     |                  |     |      |                     |      |      |                      |
|------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------------------|---------------------|-----|-----|-----------|------|-----|------------------|-----|------|---------------------|------|------|----------------------|
| 4, 5       | LED1, LED2 | Outputs backlight control signals.                                                                                                                                                                                                                                                                                         |      |                     |                     |     |     |           |      |     |                  |     |      |                     |      |      |                      |
|            |            | <table><tr><td>LED1</td><td>LED2</td><td>Backlight condition</td></tr><tr><td>Low</td><td>Low</td><td>Light OFF</td></tr><tr><td>High</td><td>Low</td><td>No establishment</td></tr><tr><td>Low</td><td>High</td><td>Light ON, Dimmer ON</td></tr><tr><td>High</td><td>High</td><td>Light ON, Dimmer OFF</td></tr></table> | LED1 | LED2                | Backlight condition | Low | Low | Light OFF | High | Low | No establishment | Low | High | Light ON, Dimmer ON | High | High | Light ON, Dimmer OFF |
|            |            | LED1                                                                                                                                                                                                                                                                                                                       | LED2 | Backlight condition |                     |     |     |           |      |     |                  |     |      |                     |      |      |                      |
|            |            | Low                                                                                                                                                                                                                                                                                                                        | Low  | Light OFF           |                     |     |     |           |      |     |                  |     |      |                     |      |      |                      |
|            |            | High                                                                                                                                                                                                                                                                                                                       | Low  | No establishment    |                     |     |     |           |      |     |                  |     |      |                     |      |      |                      |
| Low        | High       | Light ON, Dimmer ON                                                                                                                                                                                                                                                                                                        |      |                     |                     |     |     |           |      |     |                  |     |      |                     |      |      |                      |
| High       | High       | Light ON, Dimmer OFF                                                                                                                                                                                                                                                                                                       |      |                     |                     |     |     |           |      |     |                  |     |      |                     |      |      |                      |
| 6          | TRC        | Outputs control signal to the MOD/AF switch (MAIN unit: IC48, pin 5) and etc.<br>High: While transmitting.                                                                                                                                                                                                                 |      |                     |                     |     |     |           |      |     |                  |     |      |                     |      |      |                      |
| 7          | R/T        | Outputs control signal to the TX/RX switch (MAIN unit: Q58, pin 1) for VCO.<br>Low: While transmitting.                                                                                                                                                                                                                    |      |                     |                     |     |     |           |      |     |                  |     |      |                     |      |      |                      |
| 11         | SMUT       | Outputs AF mute switch (MAIN unit: IC30, Q86, Q75, Q74, D43) control signal.<br>Low: While squelched.                                                                                                                                                                                                                      |      |                     |                     |     |     |           |      |     |                  |     |      |                     |      |      |                      |
| 12         | AFMUT      | Outputs control signal to the mute switch (MAIN unit; Q100, Q101, D66) for speaker amplifier, and etc.<br>Low: While the speaker output is muted.                                                                                                                                                                          |      |                     |                     |     |     |           |      |     |                  |     |      |                     |      |      |                      |
| 13         | RMUT       | Outputs RMUTE switch (IC6) control signal.<br>Low: While squelched.                                                                                                                                                                                                                                                        |      |                     |                     |     |     |           |      |     |                  |     |      |                     |      |      |                      |
| 14         | TMUT       | Outputs T8 regulator control signal.<br>Low: When TX is muted.                                                                                                                                                                                                                                                             |      |                     |                     |     |     |           |      |     |                  |     |      |                     |      |      |                      |

### 3-5-2 CPU (FRONT unit; IC1)

| Pin number        | Port name | Description                                                                                                                                            |
|-------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1, 2, 3, 5, 8, 12 | KR4       | Input ports for the key matrix.                                                                                                                        |
| 9                 | RESET     | Input port for the CPU reset signal.                                                                                                                   |
| 10                | PSWC      | Outputs control signal for the power supply circuit.<br>High: Power is ON.                                                                             |
| 11                | BEEP      | Outputs beep audio signals.                                                                                                                            |
| 13                | ECK       | Outputs clock signal to the EEPROM (FRONT unit; IC4, pin 6).                                                                                           |
| 14                | ESO       | Outputs data signal to the EEPROM (FRONT unit; IC4, pin 5).                                                                                            |
| 15                | ECS       | Outputs chip select signal to the EEPROM (FRONT unit; IC4, pin 1).                                                                                     |
| 16, 17            | DLA, DLB  | Input port for the [DIAL] control signal.                                                                                                              |
| 18                | OE        | Outputs control signal to the expander IC (FRONT unit; IC5, pin 15).                                                                                   |
| 19                | EXSTB     | Outputs strobe signals to the expander IC (FRONT unit; IC5, pin 1).                                                                                    |
| 20                | VCS       | Outputs chip select signal to the electric volume (MAIN unit; IC13).<br>Low: While volume is controlled.                                               |
| 21                | SCK       | Outputs serial clock to the PLL IC (MAIN unit; IC2, pin 3), the expander IC (FRONT unit; IC5, pin 3) and the electric volume (MAIN unit; IC13, pin 8). |
| 22                | ESI       | Input port for the data signal from the EEPROM (FRONT unit; IC4, pin 2).                                                                               |
| 23                | SO        | Outputs serial data to the PLL IC (MAIN unit; IC2, pin 4), the expander IC (FRONT unit; IC5, pin 2) and the electric volume (MAIN unit; IC13, pin 9).  |
| 24                | PLSTB     | Outputs strobe signals to the PLL IC (MAIN unit; IC2, pin 5).                                                                                          |
| 25                | FISW      | Outputs 2nd IF filter's select signal.<br>High: While wide is selected.                                                                                |
| 69                | UNLK      | Input port for the unlock signal from the PLL IC (MAIN unit; IC2, pin 11).<br>Low: PLL is unlocked.                                                    |
| 70                | CLIN      | Input port for the cloning signal.                                                                                                                     |
| 71                | CLO       | Output port for the cloning signal.                                                                                                                    |
| 72                | PSW       | Input port for the POWER switch.<br>Low: While POWER switch is pushed                                                                                  |
| 74                | SQLI      | Input port for the squelch signal.                                                                                                                     |

| Pin number | Port name | Description                                                                        |
|------------|-----------|------------------------------------------------------------------------------------|
| 76         | HANG      | Input port for the microphone hanger detection signal.<br>Low: Microphone on hook. |
| 77         | PTT       | Input port for the PTT switch.<br>High: While PTT switch is pushed.                |
| 78-80      | KR1-KR2   | Input ports for the key matrix.                                                    |

## SECTION 4 ADJUSTMENT PROCEDURES

### 4-1 PREPARATION

- Some versions may need the optional CS-A110 CLONING SOFTWARE and OPC-478, OPC-592 CLONING CABLE for setting the adjustment frequency.
- All adjustments must be performed on the [Wide] mode.

### ■ REQUIRED TEST EQUIPMENT

| EQUIPMENT                           | GRADE AND RANGE                                                                                                | EQUIPMENT                       | GRADE AND RANGE                                                                        |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------------------------------------------------------------------------|
| DC power supply                     | Output voltage : 13.75 V DC<br>Current capacity : 10 A or more                                                 | DC voltmeter                    | Input impedance : 50 k $\Omega$ /V DC or better                                        |
| RF power meter<br>(terminated type) | Measuring range : 1–50 W<br>Frequency range : 50–300 MHz<br>Impedance : 50 $\Omega$<br>SWR : Less than 1.2 : 1 | Digital multimeter              | Input impedance : 10 M $\Omega$ /V DC or better                                        |
|                                     |                                                                                                                | Audio generator                 | Frequency range : 300–3000 Hz<br>Measuring range : 1–500 mV                            |
|                                     |                                                                                                                | Standard signal generator (SSG) | Frequency range : 0.1–300 MHz<br>Output level : 0.1 $\mu$ V–32 mV<br>(–127 to –17 dBm) |
| Frequency counter                   | Frequency range : 0.1–300 MHz<br>Frequency accuracy : $\pm 1$ ppm or better<br>Sensitivity : 100 mV or better  | AC millivoltmeter               | Measuring range : 10 mV–10 V                                                           |
| Modulation analyzer                 | Frequency range : DC–300 MHz<br>Measuring range : 0 to 100 %                                                   | Attenuator                      | Power attenuation : 40 or 50 dB<br>Capacity : 50 W or more                             |
| Distortion meter                    | Frequency range : 1 kHz $\pm 10$ %<br>Measuring range : 1 to 100 %                                             | Terminator                      | Impedance : 50 $\Omega$<br>Capacity : 50 W or more                                     |
| External speaker                    | Impedance : 8 $\Omega$                                                                                         |                                 |                                                                                        |

### ■ VFO CHANNEL ID LIST

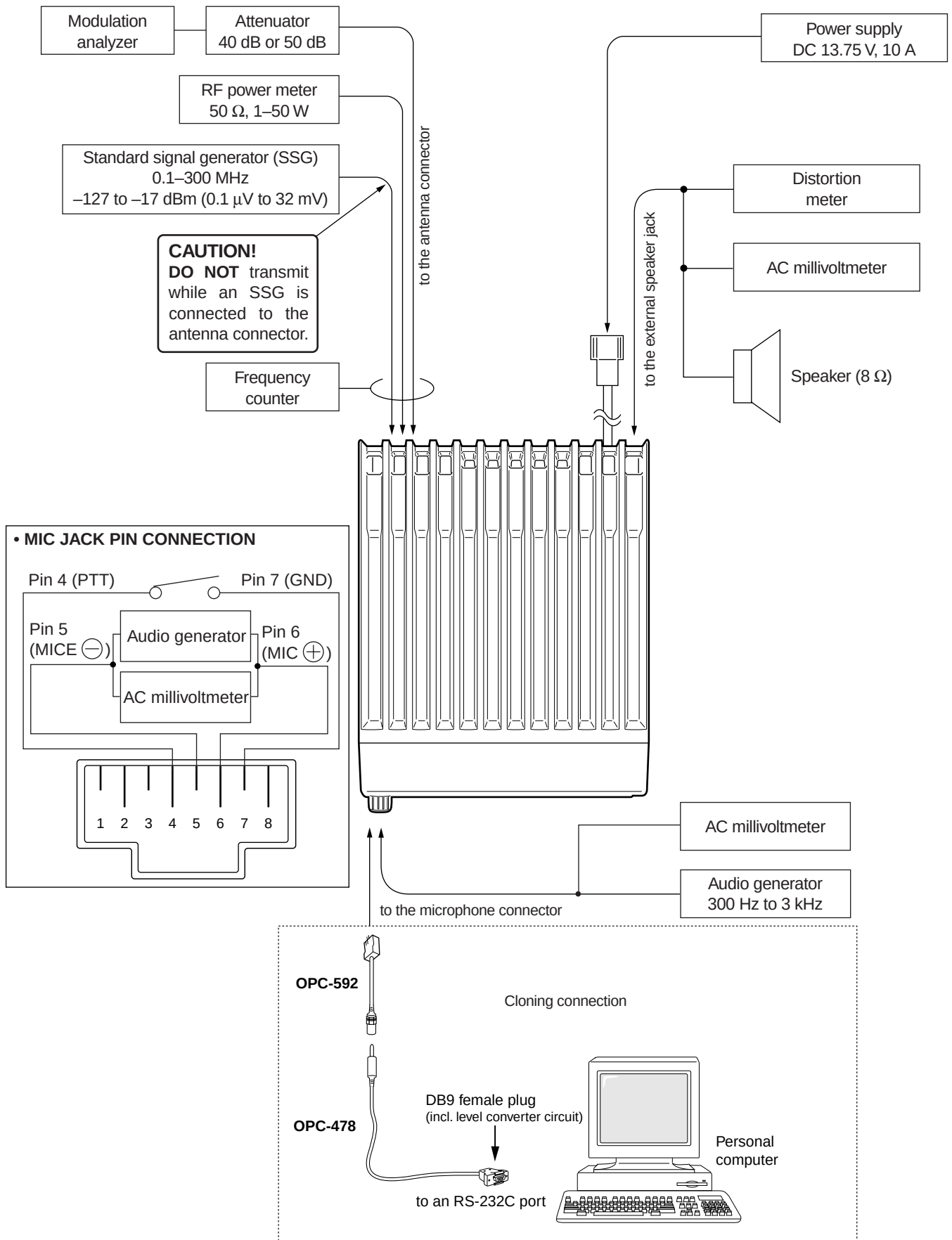
- Channel spacing: 8.33/25 kHz [USA/USA-1]

| Operating Freq.<br>(MHz) | Channel spacing<br>(kHz) | Channel ID<br>(Displayed Freq.) |
|--------------------------|--------------------------|---------------------------------|
| 118.0000                 | 25                       | 118.000                         |
| 118.0000                 | 8.33                     | 118.005                         |
| 118.0083                 | 8.33                     | 118.010                         |
| 118.0167                 | 8.33                     | 118.015                         |
| 118.0250                 | 25                       | 118.020                         |
| 118.0250                 | 8.33                     | 118.030                         |
| 118.0333                 | 8.33                     | 118.035                         |
| 118.0417                 | 8.33                     | 118.040                         |
| 118.0500                 | 25                       | 118.050                         |
| 118.0500                 | 8.33                     | 118.055                         |
| 118.0583                 | 8.33                     | 118.060                         |
| 118.0667                 | 8.33                     | 118.065                         |
| 118.0750                 | 25                       | 118.070                         |
| 118.0750                 | 8.33                     | 118.080                         |
| 118.0833                 | 8.33                     | 118.085                         |
| 118.0917                 | 8.33                     | 118.090                         |
| 118.1000                 | 25                       | 118.100                         |
| 118.1000                 | 8.33                     | 118.105                         |
| etc                      |                          |                                 |

- Channel spacing: 25 kHz [GEN/GEN-1]

| Operating Freq.<br>(MHz) | Channel spacing<br>(kHz) | Channel ID<br>(Displayed Freq.) |
|--------------------------|--------------------------|---------------------------------|
| 118.0000                 | 25                       | 118.000                         |
| 118.0250                 | 25                       | 118.025                         |
| 118.0500                 | 25                       | 118.050                         |
| 118.0750                 | 25                       | 118.075                         |
| 118.1000                 | 25                       | 118.100                         |
| etc                      |                          |                                 |

## ■ CONNECTION

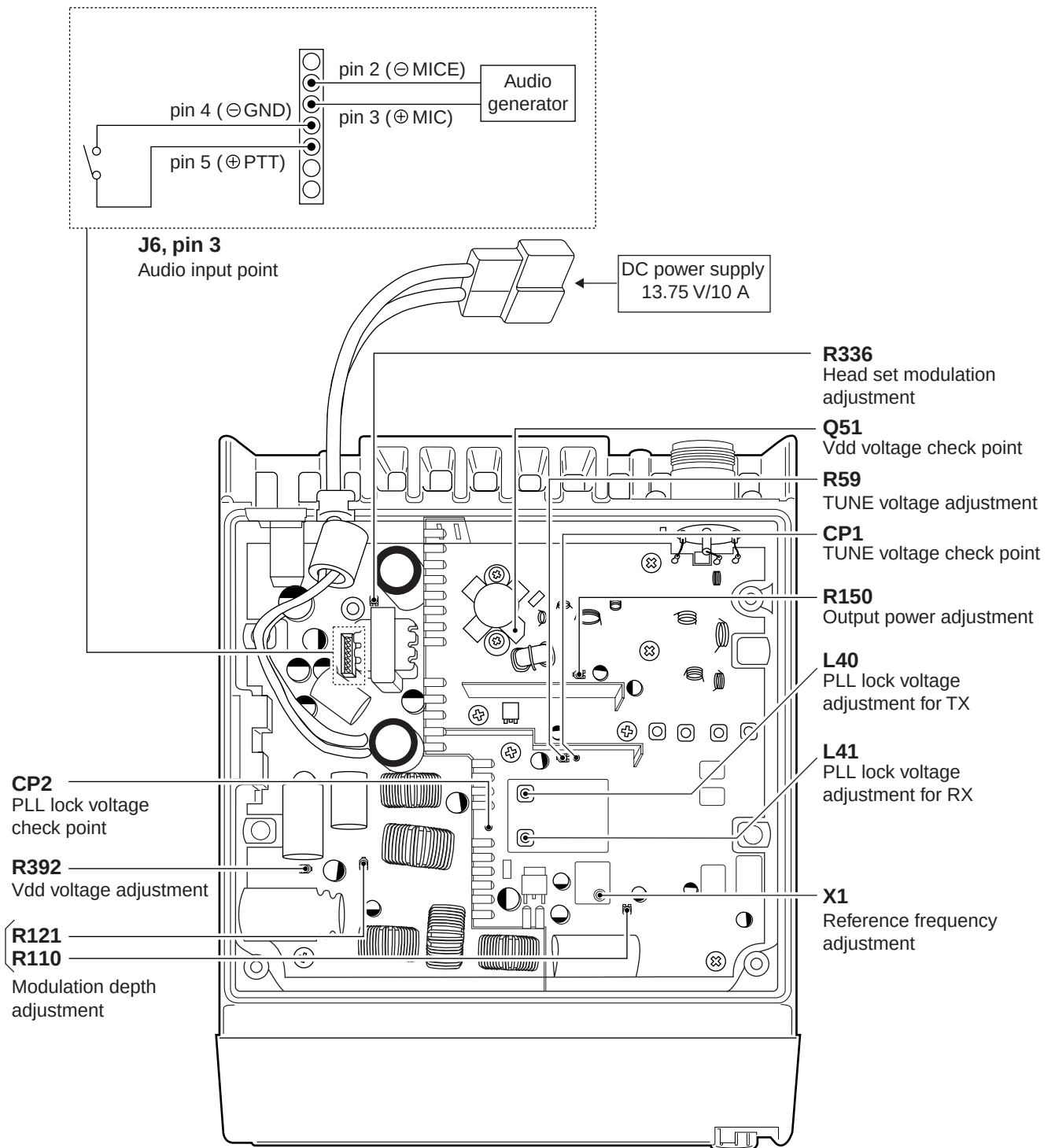


## 4-2 PLL ADJUSTMENT

| ADJUSTMENT          |   | ADJUSTMENT CONDITION                                                                                                                                                                                          | MEASUREMENT |                                                                | VALUE        | ADJUSTMENT POINT |        |
|---------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------------|--------------|------------------|--------|
|                     |   |                                                                                                                                                                                                               | UNIT        | LOCATION                                                       |              | UNIT             | ADJUST |
| Vdd VOLTAGE         | 1 | <ul style="list-style-type: none"> <li>Operating frequency : 118.000 MHz</li> <li>Receiving</li> </ul>                                                                                                        | MAIN        | Connect a digital multi-meter to drain terminal of Q51.        | 13.5 V       | MAIN             | R392   |
| PLL LOCK VOLTAGE    | 1 | <ul style="list-style-type: none"> <li>Operating frequency : 118.000 MHz</li> <li>Receiving</li> </ul>                                                                                                        | MAIN        | Connect a digital multi-meter to the check point CP2.          | 0.5 V        | MAIN             | L41    |
|                     | 2 | <ul style="list-style-type: none"> <li>Transmitting</li> </ul>                                                                                                                                                |             |                                                                | 0.5 V        |                  | L40    |
| TUNE VOLTAGE        | 1 | <ul style="list-style-type: none"> <li>Operating frequency : 118.000 MHz</li> <li>Receiving</li> </ul>                                                                                                        | MAIN        | Connect a digital multi-meter to the check point CP1.          | 0.7 V        | MAIN             | R59    |
| REFERENCE FREQUENCY | 1 | <ul style="list-style-type: none"> <li>Operating frequency : 136.950 MHz</li> <li>Connect an RF power meter or a 50 <math>\Omega</math> dummy load to the antenna connector.</li> <li>Transmitting</li> </ul> | Rear panel  | Loosely couple the frequency counter to the antenna connector. | 136.9500 MHz | MAIN             | X1     |

## 4-3 TRANSMITTER ADJUSTMENT

| ADJUSTMENT          |   | ADJUSTMENT CONDITION                                                                                                                                                                                                                                                                                                                                                                                                                               | MEASUREMENT |                                                                               | VALUE | ADJUSTMENT POINT |        |
|---------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------------------------------------------------------------------|-------|------------------|--------|
|                     |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                    | UNIT        | LOCATION                                                                      |       | UNIT             | ADJUST |
| OUTPUT POWER        | 1 | <ul style="list-style-type: none"> <li>Operating frequency : 127.000 MHz</li> <li>No audio applied to the [MIC] jack.</li> <li>Transmitting</li> </ul>                                                                                                                                                                                                                                                                                             | Rear panel  | Connect an RF power meter to the antenna connector.                           | 9.0 W | MAIN             | R150   |
| MODULATION DEPTH    | 1 | <ul style="list-style-type: none"> <li>Operating frequency : 127.000 MHz</li> <li>Connect an audio generator to the [MIC] jack and set as : 1 kHz/10 mVrms</li> <li>Set a modulation analyzer as : <ul style="list-style-type: none"> <li>HPF : OFF</li> <li>LPF : OFF</li> <li>De-emphasis : OFF</li> <li>Detector : (P-P)/2</li> </ul> </li> <li>Pre-set R110 and R121 on the MAIN unit to the center position.</li> <li>Transmitting</li> </ul> | Rear panel  | Connect a modulation analyzer to the antenna connector through an attenuator. | 90 %  | MAIN             | R121   |
|                     | 2 | <ul style="list-style-type: none"> <li>Set an audio generator as: 1 kHz/1 mVrms</li> <li>Transmitting</li> </ul>                                                                                                                                                                                                                                                                                                                                   |             |                                                                               | 30 %  |                  | R110   |
| HEAD SET MODULATION | 1 | <ul style="list-style-type: none"> <li>Operating frequency : 127.000 MHz</li> <li>Connect an audio generator to the [EXT MIC] jack and set as : 1 kHz/1 mVrms</li> <li>Transmitting</li> </ul>                                                                                                                                                                                                                                                     | Rear panel  | Connect a modulation analyzer to the antenna connector through an attenuator. | 30 %  | MAIN             | R336   |

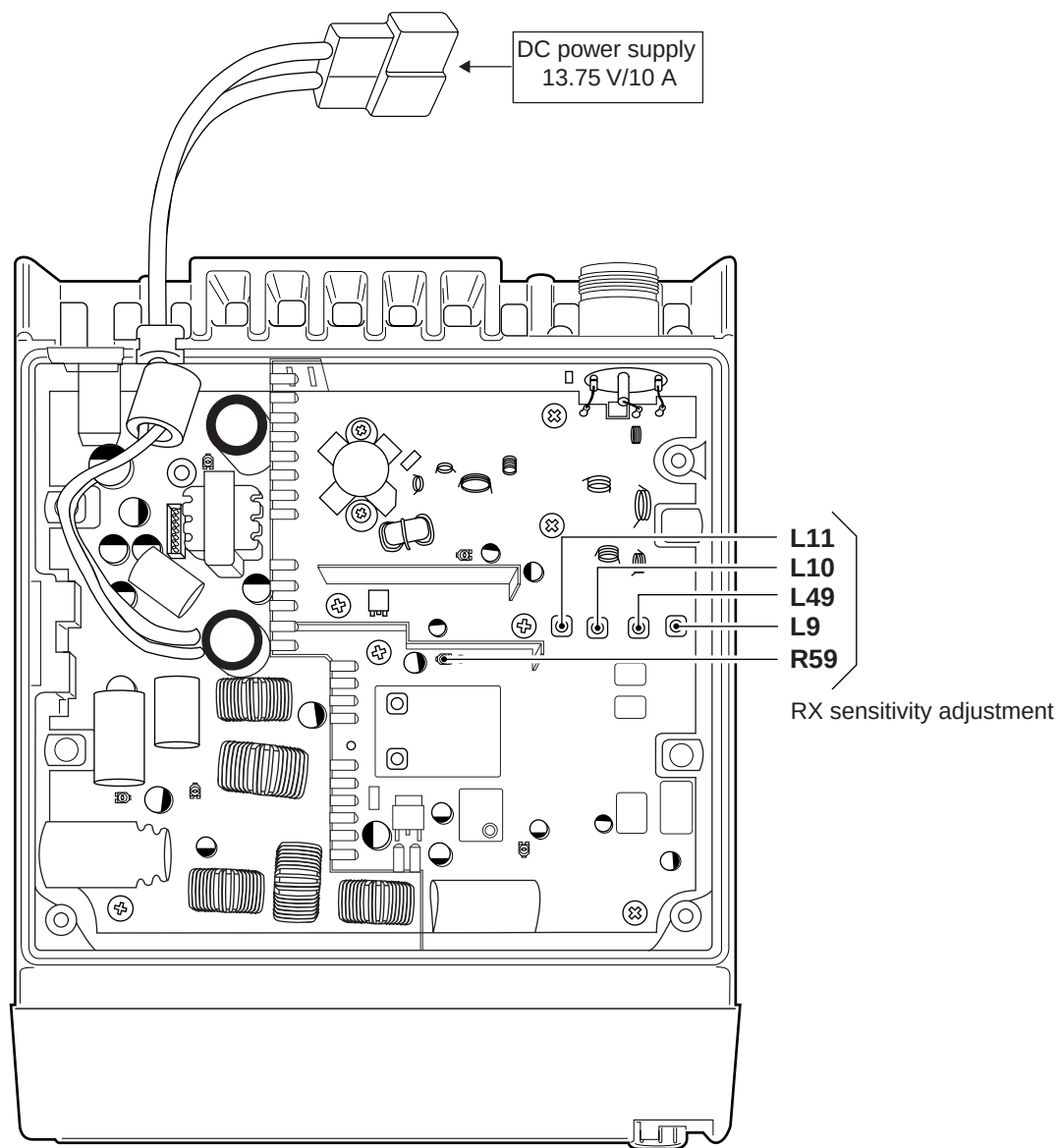


## 4-4 RECEIVER ADJUSTMENT

“SQUELCH ADJUSTMENT” must be performed at “SQUELCH ADJUSTMENT MODE”.

| ADJUSTMENT     |   | ADJUSTMENT CONDITION                                                                                                                                                                                                                                                                                                                                                         | MEASUREMENT                                                                                                                                                                                                                                                                                                                                 |                                                                                             | VALUE                                                                                                                                                                                                                                  | ADJUSTMENT POINT |                   |
|----------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|
|                |   |                                                                                                                                                                                                                                                                                                                                                                              | UNIT                                                                                                                                                                                                                                                                                                                                        | LOCATION                                                                                    |                                                                                                                                                                                                                                        | UNIT             | ADJUST            |
| RX SENSITIVITY | 1 | <ul style="list-style-type: none"><li>• Operating frequency : 118.000 MHz</li><li>• Pre-set L9, L10, L11, L49 on the MAIN unit to max. CCW.</li><li>• Connect an SSG to the antenna connector and set an SSG as :<br/>Level : 1.0 μV*<br/>(−107 dBm)<br/>Modulation : ± 1 kHz<br/>Mod. depth : 30 %</li><li>• Receiving</li></ul>                                            | Rear panel                                                                                                                                                                                                                                                                                                                                  | Connect an AC milli-voltmeter and distortion meter with 8 Ω load to the external [SP] jack. | Maximum AF output level                                                                                                                                                                                                                | MAIN             | L9, L10, L11, L49 |
|                | 2 | <ul style="list-style-type: none"><li>• Operating frequency : 136.975 MHz</li><li>• Receiving</li></ul>                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                             |                                                                                             | Maximum AF output level                                                                                                                                                                                                                |                  | R59               |
| SQUELCH        | 1 | <ul style="list-style-type: none"><li>• Enter the “Squelch adjustment mode”.<br/>1): Program 118.000 MHz into memory channel.<br/>2): Turn power OFF.<br/>3): While pushing [SQL], [TS], [SCAN], turn power ON.</li><li>• Connect an SSG to the antenna connector and set an SSG as :<br/>Level : 0.18 μV*<br/>(−122 dBm)<br/>Modulation : OFF</li><li>• Receiving</li></ul> | Front panel                                                                                                                                                                                                                                                                                                                                 | Display                                                                                     | <ul style="list-style-type: none"><li>• Verify the display indicates “sqADJ02”.<br/><b>NOTE:</b> If the display shows other, turn [MAIN DIAL] to select “sqADJ02”.</li><li>• Push the [SCAN] key to set the threshold level.</li></ul> |                  |                   |
|                | 2 | <ul style="list-style-type: none"><li>• Set an SSG as :<br/>Level : 5.6 μV*<br/>(−92 dBm)<br/>Modulation : OFF</li></ul>                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                             |                                                                                             | <ul style="list-style-type: none"><li>• Verify the display indicates “sqADJ25”.</li><li>• Push the [SCAN] key to set the tight level.</li></ul>                                                                                        |                  |                   |
|                |   | 3                                                                                                                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"><li>• Turn power OFF to cancell the “Squelch adjustment mode”.</li></ul> <p><b>NOTE:</b> Until turn power OFF, “Squelch adjustment mode” is not cancelled, and once pushing the [SCAN] key, display indicates “sqADJ02” (threshold level adjustment) or “sqADJ25” (tight level adjustment) repeatedly</p> |                                                                                             |                                                                                                                                                                                                                                        |                  |                   |

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



## SECTION 5 PARTS LIST

### [FRONT UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION  |                         |
|---------|------------|--------------|-------------------------|
| IC1     | 1140008780 | S.IC         | HD6433823A19D           |
| IC2     | 1130009110 | S.IC         | S-80942ANMP-DD6-T2      |
| IC3     | 1130007110 | S.IC         | TC7W04FU (TE12L)        |
| IC4     | 1130008670 | S.IC         | 25LC160T-I/SN           |
| IC5     | 1130007510 | S.IC         | BU4094BCFV-E1           |
| Q1      | 1590000440 | S.TRANSISTOR | DTA143ZUA T106          |
| Q2      | 1510000880 | S.TRANSISTOR | 2SA1622-6-TL            |
| Q3      | 1530003280 | S.TRANSISTOR | 2SC4211-6-TL            |
| Q4      | 1590001980 | S.TRANSISTOR | XP4315 (TX)             |
| Q5      | 1590000440 | S.TRANSISTOR | DTA143ZUA T106          |
| Q6      | 1590000680 | S.TRANSISTOR | DTC114EUA T106          |
| Q7      | 1590000680 | S.TRANSISTOR | DTC114EUA T106          |
| D5      | 1790001280 | S.DIODE      | MA111 (TX)              |
| D6      | 1750000130 | S.DIODE      | DA204U T107             |
| X1      | 6060000600 | S.CERAMIC    | PBRC 3.68 AR            |
| L1      | 6200003960 | S.COIL       | MLF1608A 1R0K-T         |
| L2      | 6200003540 | S.COIL       | MLF1608D R22K-T         |
| R1      | 7030003800 | S.RESISTOR   | ERJ3GEYJ 105 V (1 MΩ)   |
| R2      | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R3      | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R4      | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| R5      | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| R6      | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| R7      | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| R8      | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R9      | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R10     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R11     | 7030003370 | S.RESISTOR   | ERJ3GEYJ 271 V (270 Ω)  |
| R12     | 7030003350 | S.RESISTOR   | ERJ3GEYJ 181 V (180 Ω)  |
| R13     | 7030003350 | S.RESISTOR   | ERJ3GEYJ 181 V (180 Ω)  |
| R14     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R15     | 7030003590 | S.RESISTOR   | ERJ3GEYJ 183 V (18 kΩ)  |
| R16     | 7030003540 | S.RESISTOR   | ERJ3GEYJ 682 V (6.8 kΩ) |
| R17     | 7030003620 | S.RESISTOR   | ERJ3GEYJ 333 V (33 kΩ)  |
| R18     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R19     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R20     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R21     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R22     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R23     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R24     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R26     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R27     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R28     | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R29     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R30     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R31     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R32     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R33     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R34     | 7030003500 | S.RESISTOR   | ERJ3GEYJ 332 V (3.3 kΩ) |
| R36     | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R37     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R38     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R41     | 7030003610 | S.RESISTOR   | ERJ3GEYJ 273 V (27 kΩ)  |
| R42     | 7030003610 | S.RESISTOR   | ERJ3GEYJ 273 V (27 kΩ)  |
| R43     | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| R44     | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| R45     | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| R46     | 7030003610 | S.RESISTOR   | ERJ3GEYJ 273 V (27 kΩ)  |
| R47     | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| C1      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A    |
| C2      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A    |
| C3      | 4030007090 | S.CERAMIC    | C1608 CH 1H 470J-T-A    |
| C4      | 4030007090 | S.CERAMIC    | C1608 CH 1H 470J-T-A    |

### [FRONT UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION |                      |
|---------|------------|-------------|----------------------|
| C5      | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A |
| C6      | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A |
| C7      | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-T-A |
| C8      | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-T-A |
| C9      | 4030008560 | S.CERAMIC   | C1608 CH 1H 300J-T-A |
| C10     | 4030008560 | S.CERAMIC   | C1608 CH 1H 300J-T-A |
| C11     | 4030008890 | S.CERAMIC   | C1608 JB 1C 273K-T-A |
| C12     | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N  |
| C13     | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N  |
| C14     | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N  |
| C15     | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A |
| C16     | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N  |
| C17     | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N  |
| C18     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A |
| C19     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A |
| C20     | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N  |
| C21     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A |
| C22     | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N  |
| C23     | 4550006480 | S.TANTALUM  | TEMSVA 1C 475M-8L    |
| C24     | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N  |
| C25     | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N  |
| C26     | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N  |
| C27     | 4550006250 | S.TANTALUM  | TEMSVA 1A 106M-8L    |
| C28     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A |
| C29     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A |
| C30     | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A |
| C31     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A |
| C32     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A |
| C33     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A |
| C34     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A |
| C35     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A |
| C36     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A |
| J1      | 6510020510 | S.CONNECTOR | FH12-40S-0.5SV       |
| J2      | 6450001470 | CONNECTOR   | 95003-2881           |
| DS1     | 5030001740 | LCD         | HLC7453-012400       |
| DS2     | 5040002030 | S.LED       | CL-170Y-CD-T         |
| DS3     | 5040002030 | S.LED       | CL-170Y-CD-T         |
| DS4     | 5040002030 | S.LED       | CL-170Y-CD-T         |
| DS5     | 5040002030 | S.LED       | CL-170Y-CD-T         |
| DS6     | 5040002030 | S.LED       | CL-170Y-CD-T         |
| DS7     | 5040002030 | S.LED       | CL-170Y-CD-T         |
| S1      | 2250000420 | ENCODER     | EVQB2CFC620B         |
| SP1     | 2510000880 | SPEAKER     | SME-45W              |
| W1      | 7120000470 | JUMPER      | ERDS2T0              |
| W2      | 7120000470 | JUMPER      | ERDS2T0              |
| W3      | 7030003860 | S.JUMPER    | ERJ3GE JPW V         |
| W4      | 7030003860 | S.JUMPER    | ERJ3GE JPW V         |
| W6      | 8900007680 | CABLE       | OPC-741 (N:40 L:55)  |
| EP1     | 0910051553 | PCB         | B 5319C              |
| EP2     | 8930037960 | LCD CONTACT | SRCN-1705 ZSS        |

S.=Surface mount

## [MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION  |                                |
|---------|------------|--------------|--------------------------------|
| IC2     | 1130008830 | S.IC         | TB31207AFN (EL)                |
| IC4     | 1110003670 | S.IC         | BA3308F-T1                     |
| IC5     | 1110002750 | S.IC         | TA75S01F (TE85R)               |
| IC6     | 1130004200 | S.IC         | TC4S66F (TE85R)                |
| IC7     | 1180000800 | S.IC         | S-81350HG-KD-T1                |
| IC11    | 1110002400 | S.IC         | NJM2107F-TE1                   |
| IC13    | 1130008370 | S.IC         | TC9260F (HR)                   |
| IC15    | 1110005010 | S.IC         | MC33063AD                      |
| IC16    | 1130006220 | S.IC         | TC4W53FU (TE12L)               |
| IC17    | 1130006220 | S.IC         | TC4W53FU (TE12L) [USA/-1] only |
| IC18    | 1130006220 | S.IC         | TC4W53FU (TE12L) [USA/-1] only |
| IC19    | 1110003780 | S.IC         | NJM2902V-TE1                   |
| IC22    | 1130006220 | S.IC         | TC4W53FU (TE12L)               |
| IC26    | 1180000420 | S.IC         | TA78L05F (TE12R)               |
| IC28    | 1130004200 | S.IC         | TC4S66F (TE85R)                |
| IC29    | 1180002010 | S.REG        | BA08FP-E2                      |
| IC30    | 1130004200 | S.IC         | TC4S66F (TE85R)                |
| IC31    | 1110002750 | S.IC         | TA75S01F (TE85R)               |
| IC37    | 1110003250 | S.IC         | TDA7233D (TDA7233D013TR)       |
| IC40    | 1110003200 | S.IC         | TA31136FN (EL)                 |
| IC41    | 1110005030 | IC           | TA8208H                        |
| IC42    | 1110002750 | S.IC         | TA75S01F (TE85R)               |
| IC43    | 1190001210 | S.IC         | HIP4081AIB-E2                  |
| IC44    | 1110005130 | S.IC         | μPC311G2                       |
| IC45    | 1110005100 | S.IC         | NJM072BM-TE1                   |
| IC46    | 1110005010 | S.IC         | MC33063AD                      |
| IC47    | 1190001210 | S.IC         | HIP4081AIB-E2                  |
| IC48    | 1130006220 | S.IC         | TC4W53FU (TE12L)               |
| IC50    | 1110002750 | S.IC         | TA75S01F (TE85R)               |
| IC51    | 1110002750 | S.IC         | TA75S01F (TE85R)               |
|         |            |              |                                |
| Q1      | 1580000420 | S.FET        | 3SK184-R (TX)                  |
| Q2      | 1580000420 | S.FET        | 3SK184-R (TX)                  |
| Q3      | 1530002600 | S.TRANSISTOR | 2SC4215-O (TE85R)              |
| Q4      | 1530002600 | S.TRANSISTOR | 2SC4215-O (TE85R)              |
| Q5      | 1530002600 | S.TRANSISTOR | 2SC4215-O (TE85R)              |
| Q6      | 1530002600 | S.TRANSISTOR | 2SC4215-O (TE85R)              |
| Q7      | 1530003280 | S.TRANSISTOR | 2SC4211-6-TL                   |
| Q11     | 1530002280 | S.TRANSISTOR | 2SC4081 T107 S                 |
| Q12     | 1530002560 | S.TRANSISTOR | 2SC4403-3-TL                   |
| Q14     | 1530002560 | S.TRANSISTOR | 2SC4403-3-TL                   |
| Q15     | 1530002930 | S.TRANSISTOR | 2SC4228 (M) -T1 R45            |
| Q16     | 1530002850 | S.TRANSISTOR | 2SC4116-BL (TE85R)             |
| Q20     | 1560001100 | S.FET        | 2SK3074 (TE12L)                |
| Q21     | 1560001060 | S.FET        | 2SK3075 (TE12L)                |
| Q22     | 1530003280 | S.TRANSISTOR | 2SC4211-6-TL                   |
| Q23     | 1520000460 | S.TRANSISTOR | 2SB1132 T100 R                 |
| Q33     | 1590001980 | S.TRANSISTOR | XP4315 (TX)                    |
| Q42     | 1530002920 | S.TRANSISTOR | 2SC4226-T2 R25                 |
| Q43     | 1530002920 | S.TRANSISTOR | 2SC4226-T2 R25                 |
| Q44     | 1530002920 | S.TRANSISTOR | 2SC4226-T2 R25                 |
| Q51     | 1590002840 | FET          | MRF137                         |
| Q52     | 1510000880 | S.TRANSISTOR | 2SA1622-6-TL                   |
| Q53     | 1590000980 | S.TRANSISTOR | DTB123EK T147                  |
| Q58     | 1590001810 | S.TRANSISTOR | XP1113 (TX)                    |
| Q59     | 1530002920 | S.TRANSISTOR | 2SC4226-T2 R25                 |
| Q68     | 1590001980 | S.TRANSISTOR | XP4315 (TX)                    |
| Q69     | 1590000980 | S.TRANSISTOR | DTB123EK T147                  |
| Q70     | 1590000980 | S.TRANSISTOR | DTB123EK T147                  |
| Q71     | 1590001940 | S.TRANSISTOR | DTC144EE TL                    |
| Q72     | 1590001980 | S.TRANSISTOR | XP4315 (TX)                    |
| Q73     | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R                 |
| Q74     | 1520000200 | S.TRANSISTOR | 2SB798-T2 DK                   |
| Q75     | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R                 |
| Q77     | 1540000520 | S.TRANSISTOR | 2SD1819A (TX) R                |
| Q78     | 1540000520 | S.TRANSISTOR | 2SD1819A (TX) R                |
| Q79     | 1560000530 | S.FET        | 2SK880-GR (TE85R)              |
| Q80     | 1590000720 | S.TRANSISTOR | DTA144EUA T106                 |
| Q81     | 1590000430 | S.TRANSISTOR | DTC144EUA T106                 |
| Q82     | 1530002280 | S.TRANSISTOR | 2SC4081 T107 S                 |
| Q83     | 1530002380 | S.TRANSISTOR | 2SC4215-Y (TE85R)              |
| Q84     | 1530002380 | S.TRANSISTOR | 2SC4215-Y (TE85R)              |
| Q86     | 1590001980 | S.TRANSISTOR | XP4315 (TX)                    |
| Q87     | 1560001120 | S.FET        | 2SK2414-Z-E1                   |
| Q88     | 1560001120 | S.FET        | 2SK2414-Z-E1                   |
| Q89     | 1590001170 | S.TRANSISTOR | XP1501-(TX) .AB                |
| Q90     | 1510001020 | TRANSISTOR   | 2SA1471R                       |
| Q91     | 1560001120 | S.FET        | 2SK2414-Z-E1                   |
| Q92     | 1560001120 | S.FET        | 2SK2414-Z-E1                   |
| Q93     | 1560001120 | S.FET        | 2SK2414-Z-E1                   |
| Q94     | 1590002870 | S.FET        | FW215-TL                       |

## [MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION  |                                   |
|---------|------------|--------------|-----------------------------------|
| Q96     | 1590000430 | S.TRANSISTOR | DTC144EUA T106                    |
| Q97     | 1590000430 | S.TRANSISTOR | DTC144EUA T106                    |
| Q98     | 1510000770 | S.TRANSISTOR | 2SA1586-GR (TE85R)                |
| Q99     | 1530002850 | S.TRANSISTOR | 2SC4116-BL (TE85R)                |
| Q100    | 1590002870 | S.FET        | FW215-TL                          |
| Q101    | 1590000430 | S.TRANSISTOR | DTC144EUA T106                    |
| Q102    | 1530002280 | S.TRANSISTOR | 2SC4081 T107 S                    |
|         |            |              |                                   |
| D1      | 1750000510 | S.DIODE      | UM9401F                           |
| D2      | 1750000510 | S.DIODE      | UM9401F                           |
| D3      | 1750000510 | S.DIODE      | UM9401F                           |
| D4      | 1790001670 | S.DIODE      | RB706F-40T106                     |
| D5      | 1790001670 | S.DIODE      | RB706F-40T106                     |
| D6      | 1720000370 | S.VARICAP    | HVU350TRF                         |
| D7      | 1720000370 | S.VARICAP    | HVU350TRF                         |
| D8      | 1720000370 | S.VARICAP    | HVU350TRF                         |
| D10     | 1790000620 | S.DIODE      | MA77 (TX)                         |
| D11     | 1790000620 | S.DIODE      | MA77 (TX)                         |
| D14     | 1790001330 | S.ZENER      | MA8036-L (TX)                     |
| D15     | 1790001280 | S.DIODE      | MA111 (TX)                        |
| D26     | 1790001340 | S.DIODE      | DE5SC6M-4061                      |
| D27     | 1790001280 | S.DIODE      | MA111 (TX)                        |
| D28     | 1750000580 | S.DIODE      | 1SV307 (TPH3) [USA/-1] only       |
| D29     | 1750000580 | S.DIODE      | 1SV307 (TPH3)                     |
| D30     | 1750000580 | S.DIODE      | 1SV307 (TPH3)                     |
| D31     | 1750000580 | S.DIODE      | 1SV307 (TPH3) [USA/-1] only       |
| D35     | 1730002460 | S.ZENER      | MA8330-M (TX)                     |
| D36     | 1790000700 | DIODE        | DSA3A1                            |
| D37     | 1720000370 | S.VARICAP    | HVU350TRF                         |
| D38     | 1750000530 | S.DIODE      | 1SV271 (TPH3)                     |
| D43     | 1750000260 | S.DIODE      | 1SS352 (TPH3)                     |
| D44     | 1730002320 | S.ZENER      | MA8051-M (TX)                     |
| D50     | 1750000530 | S.DIODE      | 1SV271 (TPH3)                     |
| D51     | 1750000530 | S.DIODE      | 1SV271 (TPH3)                     |
| D52     | 1750000530 | S.DIODE      | 1SV271 (TPH3)                     |
| D53     | 1790001250 | S.DIODE      | MA2S111-(TX)                      |
| D54     | 1790001250 | S.DIODE      | MA2S111-(TX)                      |
| D55     | 1790000670 | S.DIODE      | SB07-03C-TB                       |
| D56     | 1790001340 | S.DIODE      | DE5SC6M-4061                      |
| D57     | 1790000670 | S.DIODE      | SB07-03C-TB                       |
| D62     | 1790000670 | S.DIODE      | SB07-03C-TB                       |
| D64     | 1720000370 | S.VARICAP    | HVU350TRF                         |
| D65     | 1720000370 | S.VARICAP    | HVU350TRF                         |
| D66     | 1790000670 | S.DIODE      | SB07-03C-TB                       |
|         |            |              |                                   |
| FI1     | 2010002400 | S.MONOLITH   | FL-306 (38.850 MHz)               |
| FI2     | 2010002410 | S.MONOLITH   | FL-307 (38.850 MHz) [USA/-1] only |
| FI3     | 2020001540 | CERAMIC      | CFWM4450D                         |
| FI4     | 2020001660 | CERAMIC      | CFG450H [USA/-1] only             |
| FI5     | 4580000110 | S.FILTER     | ACF321825-223-T                   |
| FI6     | 2040000500 | LC           | BNX-002-01                        |
|         |            |              |                                   |
| X1      | 6050010830 | S.XTAL       | CR-657 (12.800 MHz)               |
|         |            |              |                                   |
| L2      | 6110001670 | COIL         | LA-253                            |
| L3      | 6110001740 | COIL         | LA-263                            |
| L4      | 6110001610 | COIL         | LA-244                            |
| L5      | 6110001610 | COIL         | LA-244                            |
| L6      | 6110001550 | COIL         | LA-235                            |
| L7      | 6170000230 | COIL         | LW-25                             |
| L8      | 6200003350 | S.COIL       | ELJNC R27K-F                      |
| L9      | 6150005000 | S.COIL       | LS-527                            |
| L10     | 6150005000 | S.COIL       | LS-527                            |
| L11     | 6150005000 | S.COIL       | LS-527                            |
| L12     | 6200002710 | S.COIL       | ELJFC 1R8K-F                      |
| L14     | 6200001630 | S.COIL       | ELJNC R10K-F                      |
| L15     | 6200003300 | S.COIL       | ELJNC R22K-F                      |
| L17     | 6200003290 | S.COIL       | ELJNC R12K-F                      |
| L19     | 6200005730 | S.COIL       | ELJRE 39NG-F                      |
| L20     | 6200002380 | S.COIL       | LQN 1A 56NJ04                     |
| L21     | 6200008400 | S.COIL       | 0.35-1.6-6TL 36N                  |
| L22     | 6200005740 | S.COIL       | ELJRE 47NG-F                      |
| L23     | 6200008480 | S.COIL       | 0.30-1.4-5TR 25N                  |
| L26     | 6200003590 | S.COIL       | EXCCL3225U1                       |
| L27     | 6200003350 | S.COIL       | ELJNC R27K-F                      |
| L31     | 6200007000 | S.COIL       | ELJRE 82NG-F                      |
| L33     | 6200004480 | S.COIL       | MLF1608D R82K-T                   |
| L35     | 6200008270 | S.COIL       | 0.26-1.0-5TL 17N                  |

S.=Surface mount

**[MAIN UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION |                         |
|---------|------------|-------------|-------------------------|
| L36     | 6140000670 | COIL        | LR-89                   |
| L39     | 6200004480 | S.COIL      | MLF1608D R82K-T         |
| L40     | 6200009080 | S.COIL      | MC152-E558CN-100025=P3  |
| L41     | 6200004850 | S.COIL      | MC152-E558CN-100024     |
| L42     | 6200004480 | S.COIL      | MLF1608D R82K-T         |
| L43     | 6200004480 | S.COIL      | MLF1608D R82K-T         |
| L48     | 6110001600 | COIL        | LA-243                  |
| L49     | 6150005000 | S.COIL      | LS-527                  |
| L50     | 6110001730 | COIL        | LA-262                  |
| L52     | 6200004480 | S.COIL      | MLF1608D R82K-T         |
| L53     | 6190001500 | COIL        | HK-08S070-1310          |
| L54     | 6200007000 | S.COIL      | ELJRE 82NG-F            |
| L55     | 6200003310 | S.COIL      | ELJFC R33M-F            |
| L56     | 6200003310 | S.COIL      | ELJFC R33M-F            |
| L57     | 6200003310 | S.COIL      | ELJFC R33M-F            |
| L60     | 6200005010 | S.COIL      | NL 252018T-100J         |
| L61     | 6190001510 | COIL        | HK-10S080-1210          |
| L62     | 6190001500 | COIL        | HK-08S070-1310          |
| L63     | 6190001500 | COIL        | HK-08S070-1310          |
| L64     | 6190001500 | COIL        | HK-08S070-1310          |
| L65     | 6200005010 | S.COIL      | NL 252018T-100J         |
| L67     | 6200008760 | S.COIL      | 0.26-0.9-9TR 30N        |
| L68     | 6200009120 | S.COIL      | 0.20-0.7-4TR 8.8N       |
| L69     | 6200008270 | S.COIL      | 0.26-1.0-5TL 17N        |
| L70     | 6110001520 | COIL        | LA-232                  |
| L71     | 6110002110 | COIL        | LA-382                  |
| L72     | 6200002040 | S.COIL      | NL 252018T-101J         |
| L73     | 6200002040 | S.COIL      | NL 252018T-101J         |
| L75     | 6200004480 | S.COIL      | MLF1608D R82K-T         |
| L77     | 6200009140 | S.COIL      | NL 252018T-6R8J         |
| L78     | 6190001520 | S.COIL      | ZBFS5101-PT             |
| L79     | 6190001520 | S.COIL      | ZBFS5101-PT             |
| L80     | 6190001520 | S.COIL      | ZBFS5101-PT             |
| L81     | 6190001520 | S.COIL      | ZBFS5101-PT             |
| L82     | 6200004450 | S.COIL      | ELJFC 6R8M-F            |
| L83     | 6200004880 | S.COIL      | ELJFC 3R3K-F            |
| L84     | 6200004880 | S.COIL      | ELJFC 3R3K-F            |
| L85     | 6200004450 | S.COIL      | ELJFC 6R8M-F            |
| L86     | 6190001520 | S.COIL      | ZBFS5101-PT             |
| L87     | 6200006990 | S.COIL      | ELJRE 56NG-F            |
|         |            |             |                         |
| R1      | 7030006070 | S.RESISTOR  | ERJ12YJ101U (100 Ω)     |
| R2      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R3      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 kΩ) |
| R9      | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ) |
| R11     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)   |
| R12     | 7030003730 | S.RESISTOR  | ERJ3GEYJ 274 V (270 kΩ) |
| R13     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R14     | 7030003770 | S.RESISTOR  | ERJ3GEYJ 564 V (560 kΩ) |
| R15     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)   |
| R17     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)   |
| R18     | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ) |
| R19     | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ) |
| R20     | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ) |
| R21     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R24     | 7030003670 | S.RESISTOR  | ERJ3GEYJ 823 V (82 kΩ)  |
| R25     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R26     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R27     | 7030003470 | S.RESISTOR  | ERJ3GEYJ 182 V (1.8 kΩ) |
| R28     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R30     | 7030003590 | S.RESISTOR  | ERJ3GEYJ 183 V (18 kΩ)  |
| R31     | 7030003460 | S.RESISTOR  | ERJ3GEYJ 152 V (1.5 kΩ) |
| R34     | 7030003470 | S.RESISTOR  | ERJ3GEYJ 182 V (1.8 kΩ) |
| R35     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R36     | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)  |
| R37     | 7030003650 | S.RESISTOR  | ERJ3GEYJ 563 V (56 kΩ)  |
| R38     | 7030003460 | S.RESISTOR  | ERJ3GEYJ 152 V (1.5 kΩ) |
| R40     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R41     | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)  |
| R42     | 7030003460 | S.RESISTOR  | ERJ3GEYJ 152 V (1.5 kΩ) |
| R43     | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 kΩ) |
| R45     | 7030003650 | S.RESISTOR  | ERJ3GEYJ 563 V (56 kΩ)  |
| R46     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R48     | 7030003650 | S.RESISTOR  | ERJ3GEYJ 563 V (56 kΩ)  |
| R49     | 7030003750 | S.RESISTOR  | ERJ3GEYJ 394 V (390 kΩ) |
| R50     | 7030003430 | S.RESISTOR  | ERJ3GEYJ 821 V (820 Ω)  |
| R59     | 7310003600 | S.TRIMMER   | EVM-1XSX50 B54 (503)    |
| R61     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R62     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R63     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R64     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |

**[MAIN UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION  |                                         |
|---------|------------|--------------|-----------------------------------------|
| R65     | 7030003220 | S.RESISTOR   | ERJ3GEYJ 150 V (15 Ω)                   |
| R66     | 7030003220 | S.RESISTOR   | ERJ3GEYJ 150 V (15 Ω)                   |
| R67     | 7030003220 | S.RESISTOR   | ERJ3GEYJ 150 V (15 Ω)                   |
| R68     | 7030003480 | S.RESISTOR   | ERJ3GEYJ 222 V (2.2 kΩ)                 |
| R69     | 7030003700 | S.RESISTOR   | ERJ3GEYJ 154 V (150 kΩ)                 |
| R70     | 7030003400 | S.RESISTOR   | ERJ3GEYJ 471 V (470 Ω)                  |
| R71     | 7030003280 | S.RESISTOR   | ERJ3GEYJ 470 V (47 Ω)                   |
| R72     | 7030003660 | S.RESISTOR   | ERJ3GEYJ 683 V (68 kΩ)                  |
| R73     | 7030003370 | S.RESISTOR   | ERJ3GEYJ 271 V (270 Ω)                  |
| R74     | 7030003630 | S.RESISTOR   | ERJ3GEYJ 393 V (39 kΩ)                  |
| R75     | 7030003340 | S.RESISTOR   | ERJ3GEYJ 151 V (150 Ω)                  |
| R76     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)                  |
| R77     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)                  |
| R78     | 7030003300 | S.RESISTOR   | ERJ3GEYJ 680 V (68 Ω)                   |
| R79     | 7030003340 | S.RESISTOR   | ERJ3GEYJ 151 V (150 Ω)                  |
| R80     | 7030003300 | S.RESISTOR   | ERJ3GEYJ 680 V (68 Ω)                   |
| R85     | 7030003620 | S.RESISTOR   | ERJ3GEYJ 333 V (33 kΩ)                  |
| R86     | 7030003360 | S.RESISTOR   | ERJ3GEYJ 221 V (220 Ω)                  |
| R87     | 7030003330 | S.RESISTOR   | ERJ3GEYJ 121 V (120 Ω)                  |
| R95     | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)                  |
| R99     | 7030003270 | S.RESISTOR   | ERJ3GEYJ 390 V (39 Ω)                   |
| R101    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)                  |
| R108    | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)                   |
| R110    | 7310003610 | S.TRIMMER    | EVM-1XSX50 B14 (103)                    |
| R111    | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ)                 |
| R112    | 7030003270 | S.RESISTOR   | ERJ3GEYJ 390 V (39 Ω)                   |
| R113    | 7030003620 | S.RESISTOR   | ERJ3GEYJ 333 V (33 kΩ)                  |
| R114    | 7510001100 | S.THERMISTOR | NTCCM1608 4LH 104KC                     |
| R115    | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ)                 |
| R116    | 7030003770 | S.RESISTOR   | ERJ3GEYJ 564 V (560 kΩ)                 |
| R117    | 7030003800 | S.RESISTOR   | ERJ3GEYJ 105 V (1 MΩ)                   |
| R118    | 7030003690 | S.RESISTOR   | ERJ3GEYJ 124 V (120 kΩ)                 |
| R119    | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ)                 |
| R120    | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ)                 |
| R121    | 7310003580 | S.TRIMMER    | EVM-1XSX50 B15 (104)                    |
| R122    | 7030003630 | S.RESISTOR   | ERJ3GEYJ 393 V (39 kΩ)                  |
| R123    | 7030003630 | S.RESISTOR   | ERJ3GEYJ 393 V (39 kΩ)                  |
| R124    | 7030003630 | S.RESISTOR   | ERJ3GEYJ 393 V (39 kΩ)                  |
| R126    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)                  |
| R127    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)                  |
| R128    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)                  |
| R131    | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)                   |
| R132    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)                  |
| R148    | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)                  |
| R149    | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ)                 |
| R150    | 7310003610 | S.TRIMMER    | EVM-1XSX50 B14 (103)                    |
| R151    | 7030003500 | S.RESISTOR   | ERJ3GEYJ 332 V (3.3 kΩ)                 |
| R152    | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)                  |
| R153    | 7030003540 | S.RESISTOR   | ERJ3GEYJ 682 V (6.8 kΩ)                 |
| R174    | 7030003650 | S.RESISTOR   | ERJ3GEYJ 563 V (56 kΩ)                  |
| R181    | 7030003700 | S.RESISTOR   | ERJ3GEYJ 154 V (150 kΩ)                 |
| R182    | 7030003760 | S.RESISTOR   | ERJ3GEYJ 474 V (470 kΩ)                 |
| R183    | 7030003800 | S.RESISTOR   | ERJ3GEYJ 105 V (1 MΩ)                   |
| R184    | 7030003800 | S.RESISTOR   | ERJ3GEYJ 105 V (1 MΩ)                   |
| R186    | 7030003700 | S.RESISTOR   | ERJ3GEYJ 154 V (150 kΩ)                 |
| R187    | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ)                 |
| R188    | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)                  |
| R192    | 7030003660 | S.RESISTOR   | ERJ3GEYJ 683 V (68 kΩ)                  |
| R193    | 7030003400 | S.RESISTOR   | ERJ3GEYJ 471 V (470 Ω)                  |
| R194    | 7030003490 | S.RESISTOR   | ERJ3GEYJ 272 V (2.7 kΩ)                 |
| R208    | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)                  |
| R209    | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)                  |
| R211    | 7030003540 | S.RESISTOR   | ERJ3GEYJ 682 V (6.8 kΩ)                 |
| R212    | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)                   |
| R218    | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ)                 |
| R219    | 7030000210 | S.RESISTOR   | MCR10EZJH 39 Ω (390)                    |
| R220    | 7030003550 | S.RESISTOR   | ERJ3GEYJ 822 V (8.2 kΩ)                 |
| R221    | 7030000520 | S.RESISTOR   | MCR10EZJH 15 kΩ                         |
| R223    | 7030003620 | S.RESISTOR   | ERJ3GEYJ 333 V (33 kΩ)                  |
| R224    | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)                   |
| R225    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)                  |
| R226    | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ)                 |
| R228    | 7030003480 | S.RESISTOR   | ERJ3GEYJ 222 V (2.2 kΩ)                 |
| R229    | 7030003480 | S.RESISTOR   | ERJ3GEYJ 222 V (2.2 kΩ)                 |
| R230    | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ)                 |
|         |            |              |                                         |
| R231    | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ)<br>[USA-1] only |
|         |            |              |                                         |
| R232    | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ)<br>[USA-1] only |
| R233    | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ)                 |
| R234    | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)                  |
| R235    | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)                  |

S.=Surface mount

[MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION  |                         |
|---------|------------|--------------|-------------------------|
| R236    | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R237    | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R238    | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R239    | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R240    | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R241    | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R242    | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R243    | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)  |
| R251    | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| R256    | 7030003490 | S.RESISTOR   | ERJ3GEYJ 272 V (2.7 kΩ) |
| R267    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R273    | 7030003760 | S.RESISTOR   | ERJ3GEYJ 474 V (470 kΩ) |
| R280    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R281    | 7030003750 | S.RESISTOR   | ERJ3GEYJ 394 V (390 kΩ) |
| R288    | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R289    | 7030003720 | S.RESISTOR   | ERJ3GEYJ 224 V (220 kΩ) |
| R295    | 7030003350 | S.RESISTOR   | ERJ3GEYJ 181 V (180 Ω)  |
| R297    | 7030003760 | S.RESISTOR   | ERJ3GEYJ 474 V (470 kΩ) |
| R301    | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R321    | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R322    | 7030004040 | S.RESISTOR   | ERJ3GEYJ 4R7 V (4.7 Ω)  |
| R323    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R325    | 7030003370 | S.RESISTOR   | ERJ3GEYJ 271 V (270 Ω)  |
| R327    | 7030003340 | S.RESISTOR   | ERJ3GEYJ 151 V (150 Ω)  |
| R328    | 7030003650 | S.RESISTOR   | ERJ3GEYJ 563 V (56 kΩ)  |
| R329    | 7030003690 | S.RESISTOR   | ERJ3GEYJ 124 V (120 kΩ) |
| R330    | 7510001000 | S.THERMISTOR | TBPS1R154K475HSQ        |
| R331    | 7030003720 | S.RESISTOR   | ERJ3GEYJ 224 V (220 kΩ) |
| R332    | 7030003690 | S.RESISTOR   | ERJ3GEYJ 124 V (120 kΩ) |
| R333    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R334    | 7030003770 | S.RESISTOR   | ERJ3GEYJ 564 V (560 kΩ) |
| R335    | 7030004050 | S.RESISTOR   | ERJ3GEYJ 1R0 V (1 Ω)    |
| R336    | 4610001530 | S.TRIMMER    | EVM-1XSX50 B13 (102)    |
| R338    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R340    | 7030003410 | S.RESISTOR   | ERJ3GEYJ 561 V (560 Ω)  |
| R342    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R355    | 7030003480 | S.RESISTOR   | ERJ3GEYJ 222 V (2.2 kΩ) |
| R356    | 7030003660 | S.RESISTOR   | ERJ3GEYJ 683 V (68 kΩ)  |
| R357    | 7030003800 | S.RESISTOR   | ERJ3GEYJ 105 V (1 MΩ)   |
| R358    | 7030003670 | S.RESISTOR   | ERJ3GEYJ 823 V (82 kΩ)  |
| R359    | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)  |
| R361    | 7030003800 | S.RESISTOR   | ERJ3GEYJ 105 V (1 MΩ)   |
| R362    | 7030003450 | S.RESISTOR   | ERJ3GEYJ 122 V (1.2 kΩ) |
| R363    | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R364    | 7030003810 | S.RESISTOR   | ERJ3GEYJ 125 V (1.2 MΩ) |
| R365    | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R366    | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R367    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R368    | 7030003590 | S.RESISTOR   | ERJ3GEYJ 183 V (18 kΩ)  |
| R369    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R370    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R371    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R372    | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)  |
| R373    | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)  |
| R374    | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R375    | 7030003530 | S.RESISTOR   | ERJ3GEYJ 562 V (5.6 kΩ) |
| R376    | 7030003770 | S.RESISTOR   | ERJ3GEYJ 564 V (560 kΩ) |
| R377    | 7030003240 | S.RESISTOR   | ERJ3GEYJ 220 V (22 Ω)   |
| R378    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R379    | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R380    | 7030006060 | S.RESISTOR   | ERJ12YJ100U (10 Ω)      |
| R381    | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| R383    | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R386    | 7030003700 | S.RESISTOR   | ERJ3GEYJ 154 V (150 kΩ) |
| R387    | 7030003700 | S.RESISTOR   | ERJ3GEYJ 154 V (150 kΩ) |
| R388    | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| R389    | 7030003490 | S.RESISTOR   | ERJ3GEYJ 272 V (2.7 kΩ) |
| R390    | 7030003410 | S.RESISTOR   | ERJ3GEYJ 561 V (560 Ω)  |
| R391    | 7030003400 | S.RESISTOR   | ERJ3GEYJ 471 V (470 Ω)  |
| R392    | 7310003660 | S.TRIMMER    | EVM-1XSX50 B55 (504)    |
| R393    | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| R394    | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| R395    | 7030003650 | S.RESISTOR   | ERJ3GEYJ 563 V (56 kΩ)  |
| R396    | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R397    | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R398    | 7030003480 | S.RESISTOR   | ERJ3GEYJ 222 V (2.2 kΩ) |
| R399    | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R400    | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R401    | 7030003480 | S.RESISTOR   | ERJ3GEYJ 222 V (2.2 kΩ) |
| R403    | 7030003480 | S.RESISTOR   | ERJ3GEYJ 222 V (2.2 kΩ) |
| R404    | 7030003480 | S.RESISTOR   | ERJ3GEYJ 222 V (2.2 kΩ) |
| R405    | 7030003650 | S.RESISTOR   | ERJ3GEYJ 563 V (56 kΩ)  |

[MAIN UNIT]

| REF NO.      | ORDER NO.  | DESCRIPTION  |                         |
|--------------|------------|--------------|-------------------------|
| R406         | 7030003470 | S.RESISTOR   | ERJ3GEYJ 182 V (1.8 kΩ) |
| R407         | 7030003700 | S.RESISTOR   | ERJ3GEYJ 154 V (150 kΩ) |
| R408         | 7030003700 | S.RESISTOR   | ERJ3GEYJ 154 V (150 kΩ) |
| R409         | 7030004890 | S.RESISTOR   | ERJ3GEYF 434 V (430 kΩ) |
| R410         | 7030004860 | S.RESISTOR   | ERJ3GEYF 184 V (180 kΩ) |
| R411         | 7030005260 | S.RESISTOR   | ERJ3GEYF 394 V (390 kΩ) |
| R412         | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R413         | 7030003550 | S.RESISTOR   | ERJ3GEYJ 822 V (8.2 kΩ) |
| R414         | 7030003550 | S.RESISTOR   | ERJ3GEYJ 822 V (8.2 kΩ) |
| R415         | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R417         | 7030003480 | S.RESISTOR   | ERJ3GEYJ 222 V (2.2 kΩ) |
| R418         | 7030003760 | S.RESISTOR   | ERJ3GEYJ 474 V (470 kΩ) |
| R419         | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R420         | 7030003480 | S.RESISTOR   | ERJ3GEYJ 222 V (2.2 kΩ) |
| R422         | 7030003800 | S.RESISTOR   | ERJ3GEYJ 105 V (1 MΩ)   |
| R423         | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)  |
| R424         | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R425         | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R426         | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R427         | 7030003620 | S.RESISTOR   | ERJ3GEYJ 333 V (33 kΩ)  |
| R428         | 7030003380 | S.RESISTOR   | ERJ3GEYJ 331 V (330 Ω)  |
| R429         | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R430         | 7030003570 | S.RESISTOR   | ERJ3GEYJ 123 V (12 kΩ)  |
| R431         | 7030003540 | S.RESISTOR   | ERJ3GEYJ 682 V (6.8 kΩ) |
| R432         | 7030003650 | S.RESISTOR   | ERJ3GEYJ 563 V (56 kΩ)  |
| R433         | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R434         | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R435         | 7030000410 | S.RESISTOR   | MCR10EZJH 1.8 kΩ        |
| R436         | 7030003620 | S.RESISTOR   | ERJ3GEYJ 333 V (33 kΩ)  |
| R437         | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R438         | 7030003400 | S.RESISTOR   | ERJ3GEYJ 471 V (470 Ω)  |
| [USA-1] only |            |              |                         |
| R439         | 7030003400 | S.RESISTOR   | ERJ3GEYJ 471 V (470 Ω)  |
| [USA-1] only |            |              |                         |
| R440         | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R441         | 7030003500 | S.RESISTOR   | ERJ3GEYJ 332 V (3.3 kΩ) |
| R442         | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R443         | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R444         | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R445         | 7030003430 | S.RESISTOR   | ERJ3GEYJ 821 V (820 Ω)  |
| R446         | 7030003550 | S.RESISTOR   | ERJ3GEYJ 822 V (8.2 kΩ) |
| R447         | 7030003450 | S.RESISTOR   | ERJ3GEYJ 122 V (1.2 kΩ) |
| R448         | 7030003420 | S.RESISTOR   | ERJ3GEYJ 681 V (680 Ω)  |
| R449         | 7030003280 | S.RESISTOR   | ERJ3GEYJ 470 V (47 Ω)   |
| R450         | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R451         | 7030004040 | S.RESISTOR   | ERJ3GEYJ 4R7 V (4.7 Ω)  |
| R452         | 7030003530 | S.RESISTOR   | ERJ3GEYJ 562 V (5.6 kΩ) |
| R453         | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R454         | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| R455         | 7030003450 | S.RESISTOR   | ERJ3GEYJ 122 V (1.2 kΩ) |
| R456         | 7030003720 | S.RESISTOR   | ERJ3GEYJ 224 V (220 kΩ) |
| R457         | 7030003700 | S.RESISTOR   | ERJ3GEYJ 154 V (150 kΩ) |
| R458         | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R459         | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R460         | 7030004040 | S.RESISTOR   | ERJ3GEYJ 4R7 V (4.7 Ω)  |
| R461         | 7030003530 | S.RESISTOR   | ERJ3GEYJ 562 V (5.6 kΩ) |
| R462         | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R463         | 7030003760 | S.RESISTOR   | ERJ3GEYJ 474 V (470 kΩ) |
| R464         | 7030003500 | S.RESISTOR   | ERJ3GEYJ 332 V (3.3 kΩ) |
| R465         | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R466         | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R467         | 7030003800 | S.RESISTOR   | ERJ3GEYJ 105 V (1 MΩ)   |
| R468         | 7030006190 | S.RESISTOR   | ERJ12YJ2R2U (2.2 Ω)     |
| R470         | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R471         | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R472         | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R473         | 7030001160 | S.RESISTOR   | MCR50JZHJ 180 Ω (181)   |
| R474         | 7030004040 | S.RESISTOR   | ERJ3GEYJ 4R7 V (4.7 Ω)  |
| R475         | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| R476         | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R478         | 7030003670 | S.RESISTOR   | ERJ3GEYJ 823 V (82 kΩ)  |
| R479         | 7510001100 | S.THERMISTOR | NTCCM1608 4LH 104KC     |
| R484         | 7030003510 | S.RESISTOR   | ERJ3GEYJ 392 V (3.9 kΩ) |
| C1           | 4030011210 | S.CERAMIC    | GRM42-6 CH 330J 500PT   |
| C2           | 4030011070 | S.CERAMIC    | GRM42-6 CH 050C 500PT   |
| C3           | 4030011230 | S.CERAMIC    | GRM42-6 CH 390J 500PT   |
| C4           | 4030011030 | S.CERAMIC    | GRM42-6 CK 1R5C 500PT   |
| C5           | 4030011180 | S.CERAMIC    | GRM42-6 CH C220J 500PT  |
| C6           | 4030011260 | S.CERAMIC    | GRM42-6 W5R 102K 500PT  |
| C7           | 4030011180 | S.CERAMIC    | GRM42-6 CH 220J 500PT   |

S.=Surface mount

[MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION                      |
|---------|------------|----------------------------------|
| C8      | 4030007080 | S.CERAMIC C1608 CH 1H 390J-T-A   |
| C9      | 4030007040 | S.CERAMIC C1608 CH 1H 180J-T-A   |
| C10     | 4030007100 | S.CERAMIC C1608 CH 1H 560J-T-A   |
| C11     | 4030011260 | S.CERAMIC GRM42-6 W5R 102K 500PT |
| C12     | 4030011180 | S.CERAMIC GRM42-6 CH 220J 500PT  |
| C13     | 4030011020 | S.CERAMIC GRM42-6 CK 010C 500PT  |
| C14     | 4030011020 | S.CERAMIC GRM42-6 CK 010C 500PT  |
| C15     | 4030011180 | S.CERAMIC GRM42-6 CH 220J 500PT  |
| C16     | 4030011120 | S.CERAMIC GRM42-6 CH 100D 500PT  |
| C17     | 4030011120 | S.CERAMIC GRM42-6 CH 100D 500PT  |
| C18     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C19     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C20     | 4030011260 | S.CERAMIC GRM42-6 W5R 102K 500PT |
| C21     | 4030007010 | S.CERAMIC C1608 CH 1H 100D-T-A   |
| C22     | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T-A   |
| C23     | 4030009560 | S.CERAMIC C1608 CH 1H R75B-T-A   |
| C24     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C25     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C26     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C27     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C28     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C29     | 4030007060 | S.CERAMIC C1608 CH 1H 270J-T-A   |
| C30     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C31     | 4030009500 | S.CERAMIC C1608 CH 1H 0R5B-T-A   |
| C32     | 4030007060 | S.CERAMIC C1608 CH 1H 270J-T-A   |
| C33     | 4030009530 | S.CERAMIC C1608 CH 1H 030B-T-A   |
| C34     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C36     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C37     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C39     | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A   |
| C40     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C41     | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A   |
| C42     | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A   |
| C43     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C44     | 4030011600 | S.CERAMIC C1608 JB 1C 104KT-N    |
| C46     | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A   |
| C47     | 4030011600 | S.CERAMIC C1608 JB 1C 104KT-N    |
| C48     | 4030011600 | S.CERAMIC C1608 JB 1C 104KT-N    |
| C50     | 4030011600 | S.CERAMIC C1608 JB 1C 104KT-N    |
| C51     | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A   |
| C52     | 4030011600 | S.CERAMIC C1608 JB 1C 104KT-N    |
| C53     | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A   |
| C54     | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A   |
| C55     | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A   |
| C56     | 4550006560 | S.TANTALUM ECST1CY225R           |
| C58     | 4510004440 | S.ELECTROLYTIC ECEV1HA010SR      |
| C59     | 4550006360 | S.TANTALUM ECST1VY104R           |
| C60     | 4550006150 | S.TANTALUM ECST1CY105R           |
| C61     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C62     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C63     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C68     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C69     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C70     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C71     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C72     | 4030009990 | S.CERAMIC C1608 CH 1H 200J-T-A   |
| C73     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C74     | 4030007040 | S.CERAMIC C1608 CH 1H 180J-T-A   |
| C75     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C77     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C78     | 4030009990 | S.CERAMIC C1608 CH 1H 200J-T-A   |
| C82     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C85     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C87     | 4030007030 | S.CERAMIC C1608 CH 1H 150J-T-A   |
| C91     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C92     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C95     | 4030007060 | S.CERAMIC C1608 CH 1H 270J-T-A   |
| C96     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C97     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C98     | 4030007030 | S.CERAMIC C1608 CH 1H 150J-T-A   |
| C99     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C100    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C101    | 4030007070 | S.CERAMIC C1608 CH 1H 330J-T-A   |
| C102    | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T-A   |
| C103    | 4030007100 | S.CERAMIC C1608 CH 1H 560J-T-A   |
| C110    | 4030012600 | S.CERAMIC C2012 JB 1A 105M-T-A   |
| C112    | 4550006220 | S.TANTALUM TEMSVA 0J 156M-8L     |
| C113    | 4510004630 | S.ELECTROLYTIC ECEV1CA100SR      |
| C114    | 4550006140 | S.TANTALUM ECST1EY474R           |
| C115    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A   |
| C116    | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A   |
| C117    | 4030009970 | S.CERAMIC C1608 JB 1H 182K-T-A   |

[MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION                     |
|---------|------------|---------------------------------|
| C118    | 4030009630 | S.CERAMIC C1608 JB 1H 822K-T-A  |
| C119    | 4030007130 | S.CERAMIC C1608 CH 1H 101J-T-A  |
| C120    | 4030012610 | S.CERAMIC C2012 JB 1C 474K-T-A  |
| C121    | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A  |
| C122    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C123    | 4550006220 | S.TANTALUM TEMSVA 0J 156M-8L    |
| C124    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C126    | 4030011600 | S.CERAMIC C1608 JB 1C 104KT-N   |
| C127    | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A  |
| C128    | 4030011600 | S.CERAMIC C1608 JB 1C 104KT-N   |
| C129    | 4510007460 | S.ELECTROLYTIC 10 SV 22M        |
| C130    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C131    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C132    | 4550006710 | S.TANTALUM ECST1AX226R          |
| C133    | 4550006140 | S.TANTALUM ECST1EY474R          |
| C134    | 4550006710 | S.TANTALUM ECST1AX226R          |
| C135    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C138    | 4510004630 | S.ELECTROLYTIC ECEV1CA100SR     |
| C139    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C140    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C141    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C148    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C149    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C153    | 4030012600 | S.CERAMIC C2012 JB 1A 105M-T-A  |
| C154    | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T-A  |
| C156    | 4030011600 | S.CERAMIC C1608 JB 1C 104KT-N   |
| C164    | 4030007010 | S.CERAMIC C1608 CH 1H 100D-T-A  |
| C165    | 4030007060 | S.CERAMIC C1608 CH 1H 270J-T-A  |
| C167    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C168    | 4510005950 | S.ELECTROLYTIC ECEV1HA0R1SR     |
| C170    | 4030012600 | S.CERAMIC C2012 JB 1A 105M-T-A  |
| C175    | 4550006540 | S.TANTALUM ECST1CY475R          |
| C177    | 4550006300 | S.TANTALUM ECST1AY475R          |
| C188    | 4030007070 | S.CERAMIC C1608 CH 1H 330J-T-A  |
| C189    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C190    | 4030009500 | S.CERAMIC C1608 CH 1H 0R5B-T-A  |
| C192    | 4030007010 | S.CERAMIC C1608 CH 1H 100D-T-A  |
| C193    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C195    | 4030009990 | S.CERAMIC C1608 CH 1H 200J-T-A  |
| C206    | 4510006670 | S.ELECTROLYTIC ECEV1CA471P      |
| C208    | 4030007130 | S.CERAMIC C1608 CH 1H 101J-T-A  |
| C209    | 4030012610 | S.CERAMIC C2012 JB 1C 474K-T-A  |
| C211    | 4510007320 | ELECTROLYTIC 50 YXG 470M        |
| C212    | 4510007320 | ELECTROLYTIC 50 YXG 470M        |
| C213    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C214    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C217    | 4030007080 | S.CERAMIC C1608 CH 1H 390J-T-A  |
| C218    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C220    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C224    | 4030011600 | S.CERAMIC C1608 JB 1C 104KT-N   |
| C226    | 4550005980 | S.TANTALUM TEMSVA 1A 475M-8L    |
| C228    | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A  |
| C229    | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A  |
| C230    | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A  |
| C231    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C232    | 4030010210 | S.CERAMIC C3216 JB 1C 105M-T-A  |
| C233    | 4030012600 | S.CERAMIC C2012 JB 1A 105M-T-A  |
| C234    | 4030012600 | S.CERAMIC C2012 JB 1A 105M-T-A  |
| C235    | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A  |
| C241    | 4030011190 | S.CERAMIC GRM42-6 CH 270J 500PT |
| C242    | 4030017080 | S.CERAMIC GRH111 CH 820J 500PT  |
| C249    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C250    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C251    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C253    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C255    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C256    | 4030008880 | S.CERAMIC C1608 JB 1C 223K-T-A  |
| C257    | 4030009970 | S.CERAMIC C1608 JB 1H 182K-T-A  |
| C258    | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A  |
| C259    | 4030008860 | S.CERAMIC C1608 JB 1C 153K-T-A  |
| C260    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C261    | 4030008880 | S.CERAMIC C1608 JB 1C 223K-T-A  |
| C262    | 4030011340 | S.CERAMIC C1608 CH 1H 471J-T-A  |
| C263    | 4030012660 | S.CERAMIC C1608 JB 1C 683K-T-N  |
| C264    | 4030007120 | S.CERAMIC C1608 CH 1H 820J-T-A  |
| C265    | 4030011600 | S.CERAMIC C1608 JB 1C 104KT-N   |
| C266    | 4030011600 | S.CERAMIC C1608 JB 1C 104KT-N   |
| C267    | 4030011600 | S.CERAMIC C1608 JB 1C 104KT-N   |
| C268    | 4030011600 | S.CERAMIC C1608 JB 1C 104KT-N   |
| C277    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C279    | 4030007000 | S.CERAMIC C1608 CH 1H 090D-T-A  |
| C286    | 4030009500 | S.CERAMIC C1608 CH 1H 0R5B-T-A  |

S.=Surface mount

[MAIN UNIT]

| REF NO.      | ORDER NO.  | DESCRIPTION    |                       |
|--------------|------------|----------------|-----------------------|
| C288         | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A  |
| C289         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C290         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C292         | 4030008920 | S.CERAMIC      | C1608 JB 1C 473K-T-A  |
| C293         | 4030010760 | S.CERAMIC      | C1608 CH 1H 331J-T-A  |
| C295         | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A  |
| C298         | 4510006660 | S.ELECTROLYTIC | ECEV1HA330P           |
| C299         | 4030006890 | S.CERAMIC      | C1608 JF 1H 103Z-T-A  |
| C300         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C301         | 4510004540 | S.ELECTROLYTIC | ECEV0JA470SR          |
| C308         | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A  |
| C309         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C312         | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A  |
| C313         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C314         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C315         | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A  |
| C316         | 4030011180 | S.CERAMIC      | GRM42-6 CH 220J 500PT |
| C317         | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A  |
| C318         | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A  |
| C319         | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A  |
| [USA-1] only |            |                |                       |
| C320         | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A  |
| C321         | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A  |
| C322         | 4510005630 | S.ELECTROLYTIC | ECEV1EA330SP          |
| C323         | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A  |
| C324         | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A  |
| C325         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C326         | 4550006560 | S.TANTALUM     | ECST1CY225R           |
| C327         | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A  |
| C328         | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A  |
| C329         | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A  |
| C330         | 4030011110 | S.CERAMIC      | GRM42-6 CH 090D 500PT |
| C331         | 4030011160 | S.CERAMIC      | GRM42-6 CH 150J 500PT |
| C332         | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A  |
| [USA-1] only |            |                |                       |
| C333         | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A  |
| C337         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C338         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C339         | 4030008470 | S.CERAMIC      | C1608 JB 1H 272K-T-A  |
| C340         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C341         | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A  |
| C342         | 4030006950 | S.CERAMIC      | C1608 CH 1H 040C-T-A  |
| C343         | 4510006220 | S.ELECTROLYTIC | ECEV1CA101UP          |
| C344         | 4030009500 | S.CERAMIC      | C1608 CH 1H 0R5B-T-A  |
| C346         | 4030006960 | S.CERAMIC      | C1608 CH 1H 050C-T-A  |
| [USA-1] only |            |                |                       |
| C347         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C348         | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A  |
| C349         | 4030008650 | S.CERAMIC      | C1608 JB 1H 332K-T-A  |
| C353         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C354         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C358         | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T-A  |
| C359         | 4030007050 | S.CERAMIC      | C1608 CH 1H 220J-T-A  |
| C360         | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A  |
| C361         | 4030006950 | S.CERAMIC      | C1608 CH 1H 040C-T-A  |
| [USA-1] only |            |                |                       |
| C362         | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A  |
| C366         | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A  |
| C374         | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A  |
| C378         | 4030006870 | S.CERAMIC      | C1608 JB 1H 222K-T-A  |
| C379         | 4550006300 | S.TANTALUM     | ECST1AY475R           |
| C380         | 4550006150 | S.TANTALUM     | ECST1CY105R           |
| C381         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C382         | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A  |
| C383         | 4550006390 | S.TANTALUM     | TEMSVA 1C 335M-8L     |
| C384         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C385         | 4030008900 | S.CERAMIC      | C1608 JB 1C 333K-T-A  |
| C387         | 4510006670 | S.ELECTROLYTIC | ECEV1CA471P           |
| C388         | 4510005750 | S.ELECTROLYTIC | ECEV1EA220SP          |
| C389         | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A  |
| C390         | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N   |
| C391         | 4030009500 | S.CERAMIC      | C1608 CH 1H 0R5B-T-A  |
| C392         | 4030007020 | S.CERAMIC      | C1608 CH 1H 120J-T-A  |
| [USA-1] only |            |                |                       |
| C395         | 4030006950 | S.CERAMIC      | C1608 CH 1H 040C-T-A  |
| C396         | 4030012610 | S.CERAMIC      | C2012 JB 1C 474K-T-A  |
| C397         | 4030012610 | S.CERAMIC      | C2012 JB 1C 474K-T-A  |
| C398         | 4030009000 | S.CERAMIC      | C2012 JB 1C 224K-T-A  |
| C399         | 4510006220 | S.ELECTROLYTIC | ECEV1CA101UP          |
| C400         | 4510004640 | S.ELECTROLYTIC | ECEV1CA470SP          |
| C401         | 4510004640 | S.ELECTROLYTIC | ECEV1CA470SP          |
| C402         | 4030008980 | S.CERAMIC      | C2012 JB 1C 154K-T-A  |

[MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION    |                        |
|---------|------------|----------------|------------------------|
| C403    | 4030012600 | S.CERAMIC      | C2012 JB 1A 105M-T-A   |
| C404    | 4030012610 | S.CERAMIC      | C2012 JB 1C 474K-T-A   |
| C405    | 4030009350 | S.CERAMIC      | C1608 CH 1H 3R5B-T-A   |
| C406    | 4030006960 | S.CERAMIC      | C1608 CH 1H 050C-T-A   |
| C407    | 4030009530 | S.CERAMIC      | C1608 CH 1H 030B-T-A   |
| C409    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A   |
| C410    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A   |
| C413    | 4550006160 | S.TANTALUM     | ECST1CY155R            |
| C415    | 4030007060 | S.CERAMIC      | C1608 CH 1H 270J-T-A   |
| C416    | 4030007030 | S.CERAMIC      | C1608 CH 1H 150J-T-A   |
| C417    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A   |
| C418    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A   |
| C419    | 4030001170 | S.CERAMIC      | GRM42-6 B 102K 50PT    |
| C420    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A   |
| C421    | 4030007050 | S.CERAMIC      | C1608 CH 1H 220J-T-A   |
| C422    | 4030007070 | S.CERAMIC      | C1608 CH 1H 330J-T-A   |
| C423    | 4030006970 | S.CERAMIC      | C1608 CH 1H 060D-T-A   |
| C424    | 4030007100 | S.CERAMIC      | C1608 CH 1H 560J-T-A   |
| C425    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A   |
| C426    | 4030009990 | S.CERAMIC      | C1608 CH 1H 200J-T-A   |
| C427    | 4030007080 | S.CERAMIC      | C1608 CH 1H 390J-T-A   |
| C428    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A   |
| C429    | 4030009550 | S.CERAMIC      | C1608 CH 1H 2R5B-T-A   |
| C430    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A   |
| C431    | 4510006220 | S.ELECTROLYTIC | ECEV1CA101UP           |
| C433    | 4510004650 | S.ELECTROLYTIC | ECEV1EA4R7SR           |
| C434    | 4030006960 | S.CERAMIC      | C1608 CH 1H 050C-T-A   |
| C436    | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR           |
| C437    | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR           |
| C438    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A   |
| C439    | 4030007170 | S.CERAMIC      | C1608 CH 1H 221J-T-A   |
| C441    | 4510006220 | S.ELECTROLYTIC | ECEV1CA101UP           |
| C442    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A   |
| C443    | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N    |
| C444    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A   |
| C445    | 4510006220 | S.ELECTROLYTIC | ECEV1CA101UP           |
| C446    | 4030010760 | S.CERAMIC      | C1608 CH 1H 331J-T-A   |
| C447    | 4030012600 | S.CERAMIC      | C2012 JB 1A 105M-T-A   |
| C448    | 4510006220 | S.ELECTROLYTIC | ECEV1CA101UP           |
| C449    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A   |
| C450    | 4030010040 | S.CERAMIC      | C1608 JB 1H 561K-T-A   |
| C452    | 4510007230 | ELECTROLYTIC   | 50 YXG 1000UF          |
| C453    | 4510005870 | S.ELECTROLYTIC | ECEV1HA3R3SR           |
| C454    | 4550003210 | S.TANTALUM     | TEMSVD2 1D 226M-12R    |
| C455    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-T-A   |
| C456    | 4030017070 | S.CERAMIC      | GRM42-2 R 474K 50PT    |
| C457    | 4030017070 | S.CERAMIC      | GRM42-2 R 474K 50PT    |
| C462    | 4030017070 | S.CERAMIC      | GRM42-2 R 474K 50PT    |
| C463    | 4030017070 | S.CERAMIC      | GRM42-2 R 474K 50PT    |
| C468    | 4030017070 | S.CERAMIC      | GRM42-2 R 474K 50PT    |
| C472    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A   |
| C500    | 4030009650 | S.CERAMIC      | C1608 CH 1H 240J-T-A   |
| C501    | 4030007050 | S.CERAMIC      | C1608 CH 1H 220J-T-A   |
| C502    | 4030007110 | S.CERAMIC      | C1608 CH 1H 680J-T-A   |
| C503    | 4030006980 | S.CERAMIC      | C1608 CH 1H 070D-T-A   |
| C504    | 4030007150 | S.CERAMIC      | C1608 CH 1H 151J-T-A   |
| C505    | 4510007320 | ELECTROLYTIC   | 50 YXG 470M            |
| C506    | 4510004420 | S.ELECTROLYTIC | ECEV0JV330SR           |
| C507    | 4030008960 | S.CERAMIC      | C2012 JB 1C 104K-T-A   |
| C508    | 4030010020 | S.CERAMIC      | C1608 JB 1H 122K-T-A   |
| C509    | 4030010020 | S.CERAMIC      | C1608 JB 1H 122K-T-A   |
| C512    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A   |
| C513    | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR           |
| C514    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A   |
| C515    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A   |
| C516    | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N    |
| C517    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A   |
| C518    | 4030016990 | S.CERAMIC      | GRM42-2 R 105K 50PT    |
| C519    | 4030011250 | S.CERAMIC      | GRM42-6 W5R 471K 500PT |
| C520    | 4030011280 | S.CERAMIC      | C1608 CH 1H 271J-T-A   |
| C521    | 4510004650 | S.ELECTROLYTIC | ECEV1EA4R7SR           |
| C522    | 4030007050 | S.CERAMIC      | C1608 CH 1H 220J-T-A   |
| C523    | 4030006870 | S.CERAMIC      | C1608 JB 1H 222K-T-A   |
| C524    | 4030008550 | S.CERAMIC      | C2012 JF 1H 473Z-T-A   |
| C525    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A   |
| C529    | 4030008920 | S.CERAMIC      | C1608 JB 1C 473K-T-A   |
| C530    | 4030008770 | S.CERAMIC      | C1608 JB 1H 562K-T-A   |
| C531    | 4510007390 | ELECTROLYTIC   | 50 YK 220M             |
| C533    | 4030009530 | S.CERAMIC      | C1608 CH 1H 030B-T-A   |
| C535    | 4510005520 | ELECTROLYTIC   | 50 MV 330 HC           |
| C536    | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N    |
| C537    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T-A   |

S.=Surface mount

[MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION |                            |
|---------|------------|-------------|----------------------------|
| C538    | 4030007140 | S.CERAMIC   | C1608 CH 1H 121J-T-A       |
| C539    | 4030007010 | S.CERAMIC   | C1608 CH 1H 100D-T-A       |
| C540    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A       |
| C541    | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N        |
| C542    | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N        |
| C543    | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N        |
| C544    | 4030007150 | S.CERAMIC   | C1608 CH 1H 151J-T-A       |
| C545    | 4030007020 | S.CERAMIC   | C1608 CH 1H 120J-T-A       |
| C546    | 4030007000 | S.CERAMIC   | C1608 CH 1H 090D-T-A       |
| C547    | 4030009650 | S.CERAMIC   | C1608 CH 1H 240J-T-A       |
| C548    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A       |
| C549    | 4030016990 | S.CERAMIC   | GRM42-2 R 105K 50PT        |
| C550    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A       |
| C551    | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A       |
| C552    | 4030009530 | S.CERAMIC   | C1608 CH 1H 030B-T-A       |
| C553    | 4550006540 | S.TANTALUM  | ECST1CY475R                |
| C554    | 4030011250 | S.CERAMIC   | GRM42-6 W5R 471K 500PT     |
| C555    | 4030009650 | S.CERAMIC   | C1608 CH 1H 240J-T-A       |
| C556    | 4030009650 | S.CERAMIC   | C1608 CH 1H 240J-T-A       |
| C557    | 4030004750 | S.CERAMIC   | C2012 JB 1H 103K-T-A       |
| C558    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A       |
| C575    | 4030017070 | S.CERAMIC   | GRM42-2 R 474K 50PT        |
| J5      | 6510020510 | S.CONNECTOR | FH12-40S-0.5SV             |
| J6      | 6510009400 | CONNECTOR   | B7B-ZR                     |
| J7      | 6450000140 | CONNECTOR   | HSJ0807-01-010             |
| T1      | 5920000750 | TRANSFORMER | ST-82 (P)                  |
| W1      | 8900009210 | CABLE       | OPC-905                    |
| W2      | 7120000470 | JUMPER      | ERDS2T0                    |
| W3      | 7120000470 | JUMPER      | ERDS2T0                    |
| W4      | 7120000470 | JUMPER      | ERDS2T0                    |
| W15     | 7030003860 | S.JUMPER    | ERJ3GE JPW V               |
| W25     | 7030003860 | S.JUMPER    | ERJ3GE JPW V [GEN/-1] only |
| W27     | 7030003860 | S.JUMPER    | ERJ3GE JPW V               |
| W28     | 7030003860 | S.JUMPER    | ERJ3GE JPW V [GEN/-1] only |
| W29     | 7030007150 | S.JUMPER    | MCR50JZHJ JPW (000)        |
| W32     | 7030003860 | S.JUMPER    | ERJ3GE JPW V               |
| W33     | 7030003860 | S.JUMPER    | ERJ3GE JPW V               |
| W34     | 7030003970 | S.JUMPER    | MCR18EZHJ JPW (000)        |
| W35     | 7030007150 | S.JUMPER    | MCR50JZHJ JPW (000)        |
| W38     | 7030000010 | S.JUMPER    | MCR10EZHJ JPW (000)        |
| W39     | 7030003970 | S.JUMPER    | MCR18EZHJ JPW (000)        |
| W40     | 7030003970 | S.JUMPER    | MCR18EZHJ JPW (000)        |
| W41     | 7030003860 | S.JUMPER    | ERJ3GE JPW V               |
| W42     | 7030003860 | S.JUMPER    | ERJ3GE JPW V               |
| W43     | 7030003860 | S.JUMPER    | ERJ3GE JPW V               |
| W44     | 7030003860 | S.JUMPER    | ERJ3GE JPW V               |
| W46     | 7030003860 | S.JUMPER    | ERJ3GE JPW V               |
| W47     | 7030000010 | S.JUMPER    | MCR10EZHJ JPW (000)        |
| W48     | 7030003970 | S.JUMPER    | MCR18EZHJ JPW (000)        |
| W49     | 7030007150 | S.JUMPER    | MCR50JZHJ JPW (000)        |
| W51     | 7030003860 | S.JUMPER    | ERJ3GE JPW V               |
| W71     | 7030003860 | S.JUMPER    | ERJ3GE JPW V               |
| WS1     | 8970023550 |             | AX2270 J LEAD SET (2) /MA  |
| EP1     | 0910051545 | PCB         | B 5318E                    |
| EP2     | 6910013270 | BEAD        | 2643-625002                |
| EP3     | 9040901901 | TUBE        | IRRAX 0.7 (d) L=12 mm      |
| EP4     | 9040901901 | TUBE        | IRRAX 0.7 (d) L=12 mm      |

S.=Surface mount

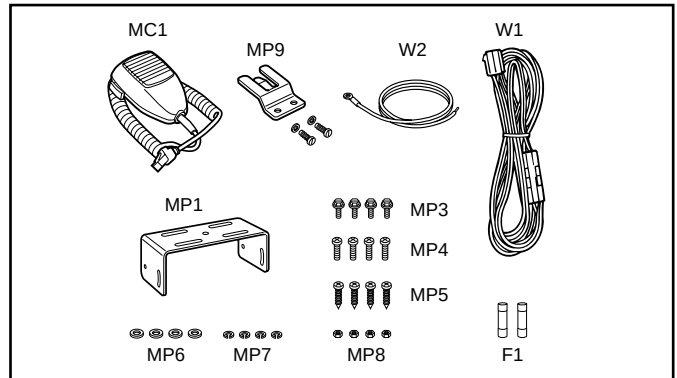
## SECTION 6 MECHANICAL PARTS AND DISSASSEMBLY

### [CHASSIS PARTS]

| REF. NO | ORDER NO.  | DESCRIPTION                           | QTY. |
|---------|------------|---------------------------------------|------|
| J1      | 6510004880 | Connector MR-DS-E 01                  | 1    |
| MP1     | 8010017870 | 2270 chassis                          | 1    |
| MP2     | 8810008660 | Screw PH BT M3 × 8 NI-ZU              | 8    |
| MP3     | 8810008490 | Setscrew H M2.6 × 8 NI                | 2    |
| MP4     | 8810008660 | Screw PH BT M3 × 8 NI-ZU              | 2    |
| MP5     | 8810009130 | Screw PH BT M3 × 12 NI-ZU             | 4    |
| MP6     | 8930050080 | 2270 IC clip                          | 1    |
| MP7     | 8820000870 | 1705 cap screw                        | 3    |
| MP8     | 8110007150 | 2270 cover                            | 1    |
| MP9     | 8930049650 | Thermal sheet (H)                     | 1    |
| MP10    | 8930036771 | 1705 main seal-1                      | 1    |
| MP11    | 8930050130 | 2270 jack sheet                       | 1    |
| MP12    | 8310027320 | Display seal (U) [USA/-1] only        | 1    |
| MP13    | 8930051440 | 2270 thermal sheet TC-200TKC          | 1    |
| MP17    | 8310048070 | Serial No seal (BE) A110 [GEN/-1]     | 1    |
|         |            | Serial No seal (BE) A110 FCC [USA/-1] | 1    |
| MP18    | 8930051830 | 2270 B-sheet                          | 1    |
| MP19    | 8930051820 | 2270 A-sponge                         | 1    |

### [ACCESSORIES]

| REF. NO | ORDER NO.        | DESCRIPTION                                              | QTY. |
|---------|------------------|----------------------------------------------------------|------|
| F1      | 5210000070       | Fuse FGB 10A                                             | 2    |
| W1      | Optional product | DC power cable OPC-344                                   | 1    |
| W2      | 8900000730       | Microphone (HANG) cable OPC-049                          | 1    |
| MC1     | Optional product | Microphone HM-100                                        | 1    |
| MP1     | 8010016730       | 150 mounting bracket                                     | 1    |
| MP3     | 8820000530       | Flange bolt M4 × 8 NI                                    | 4    |
| MP4     | 8810000470       | PH M5 × 12 (+/-)                                         | 4    |
| MP5     | 8810005840       | PH A M5 × 20                                             | 4    |
| MP6     | 8850000150       | Flat washer M5 NI BS                                     | 4    |
| MP7     | 8850000390       | Spring washer M5                                         | 4    |
| MP8     | 8830000120       | Nut M5                                                   | 4    |
| MP9     | 6910004210       | 731 microphone hanger set<br>(incl. 2 screws, 2 washers) | 1    |



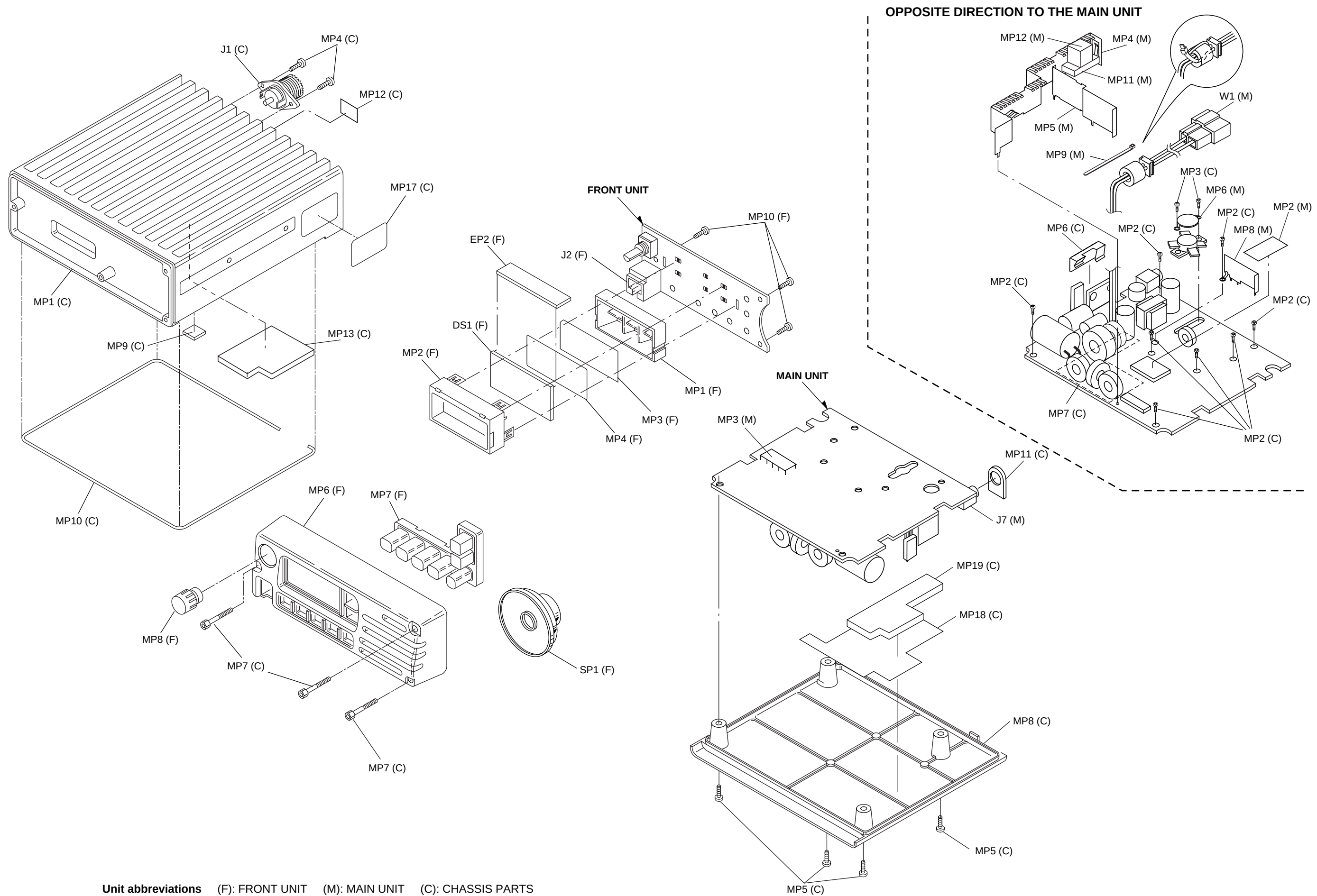
Screw abbreviations    BT:Self-tapping   PH: Pan head  
 NI: Nickel   NI-ZU: Nickel-Zinc  
 BS: Brass

### [FRONT UNIT]

| REF. NO | ORDER NO.  | DESCRIPTION               | QTY. |
|---------|------------|---------------------------|------|
| J2      | 6450001470 | Connector 95003-2881      | 1    |
| DS1     | 5030001740 | LCD HLC7453-012400        | 1    |
| EP2     | 8930037960 | LCD contact SRCN-1705 ZSS | 1    |
| SP1     | 2510000880 | Speaker SME-45W           | 1    |
| MP1     | 8210012610 | 1705 reflector            | 1    |
| MP2     | 8930036830 | 1705 LCD holder           | 1    |
| MP3     | 8930036820 | 1705 LCD filter           | 1    |
| MP4     | 8930037660 | 1705 LCD sheet            | 1    |
| MP6     | 8210013310 | 1705 front panel assembly | 1    |
| MP7     | 8930049760 | 1705 front key (C)        | 1    |
| MP8     | 8610009840 | Knob N234                 | 1    |
| MP10    | 8810009130 | Screw PH BT M3 × 12 NI-ZU | 3    |

### [MAIN UNIT]

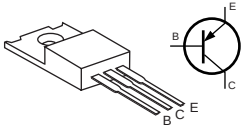
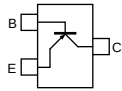
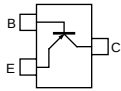
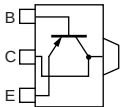
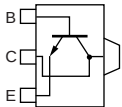
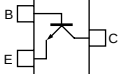
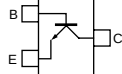
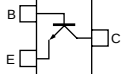
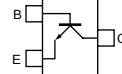
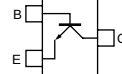
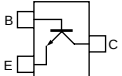
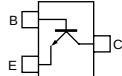
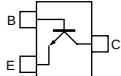
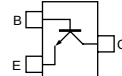
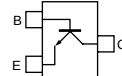
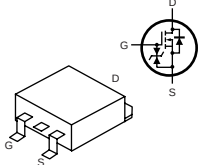
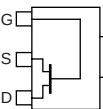
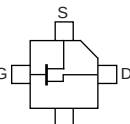
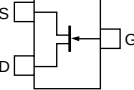
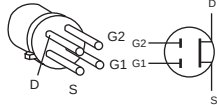
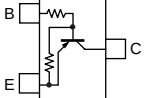
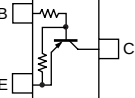
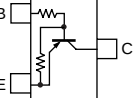
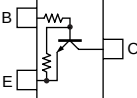
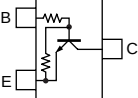
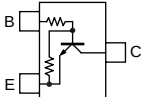
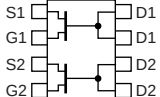
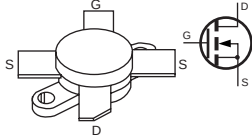
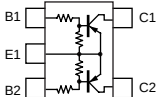
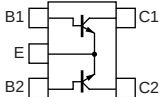
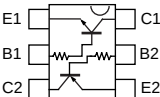
| REF. NO | ORDER NO.  | DESCRIPTION              | QTY. |
|---------|------------|--------------------------|------|
| J7      | 6450000140 | Connector HSJ0807-01-010 | 1    |
| W1      | 8900009210 | Cable OPC-905            | 1    |
| MP1     | 8510011660 | 2088 VCO case            | 1    |
| MP2     | 8930013590 | Alumi sheet N            | 1    |
| MP3     | 8510012940 | 2270 IF FIL sheild       | 1    |
| MP4     | 8510012950 | 2270 A-shield plate      | 1    |
| MP5     | 8510012920 | 2270 B-shield plate      | 1    |
| MP6     | 8510012910 | 2270 rug                 | 1    |
| MP7     | 8930051860 | 2270 A-sheet             | 1    |
| MP8     | 8510012960 | 2270 C-shield plate      | 1    |
| MP9     | 8950000180 | Cable tie-80             | 1    |
| MP11    | 8930052670 | Thermally sheet          | 1    |
| MP12    | 8930052660 | Rubber sheet             | 1    |



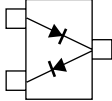
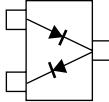
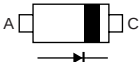
**Unit abbreviations** (F): FRONT UNIT (M): MAIN UNIT (C): CHASSIS PARTS

SECTION 7   SEMI-CONDUCTOR INFORMATION

• TRANSISTORS AND FET'S

|                                                                                                                                            |                                                                                                                                           |                                                                                                                                             |                                                                                                                                            |                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <div>2SA1471R</div> <div></div>                            | <div>2SA1586 GR<br/>(Symbol: SG)</div> <div></div>       | <div>2SA1622 6 TL<br/>(Symbol: M6)</div> <div></div>       | <div>2SB1132 T100 R<br/>(Symbol: BART)</div> <div></div> | <div>2SB798 T2 DK<br/>(Symbol: DK)</div> <div></div>   |
| <div>2SC4081 T107 R<br/>(Symbol: BR)</div> <div></div>    | <div>2SC4081 T107 S<br/>(Symbol: BS)</div> <div></div>   | <div>2SC4116 BL<br/>(Symbol: LL)</div> <div></div>         | <div>2SC4211-6-TL<br/>(Symbol: L6)</div> <div></div>     | <div>2SC4215 O<br/>(Symbol: QO)</div> <div></div>      |
| <div>2SC4215 Y<br/>(Symbol: QY)</div> <div></div>         | <div>2SC4226 T2 R25<br/>(Symbol: R25)</div> <div></div>  | <div>2SC4228(M)-T1 R45<br/>(Symbol: R45)</div> <div></div> | <div>2SC4403 3 TL<br/>(Symbol: LY3)</div> <div></div>    | <div>2SD1819 A R<br/>(Symbol: LG)</div> <div></div>    |
| <div>2SK2414-Z-E1</div> <div></div>                     | <div>2SK3074<br/>(Symbol: UW)</div> <div></div>        | <div>2SK3075<br/>(Symbol: UB F)</div> <div></div>        | <div>2SK880 GR<br/>(Symbol: XG)</div> <div></div>      | <div>3SK184 R<br/>(Symbol: 3R R)</div> <div></div>   |
| <div>DTA143ZUA T106<br/>(Symbol: 113)</div> <div></div> | <div>DTA144EUA T106<br/>(Symbol: 16)</div> <div></div> | <div>DTB123 EK T147<br/>(Symbol: F12)</div> <div></div>  | <div>DTC114EUA T106<br/>(Symbol: 24)</div> <div></div> | <div>DTC144 EE TL<br/>(Symbol: 26)</div> <div></div> |
| <div>DTC144EUA T106<br/>(Symbol: 26)</div> <div></div>  | <div>FW215-TL<br/>(Symbol: W215)</div> <div></div>     | <div>MRF137<br/>(Symbol: MRF133)</div> <div></div>       | <div>XP1113<br/>(Symbol: 7L)</div> <div></div>         | <div>XP1501 AB<br/>(Symbol: 5R)</div> <div></div>    |
| <div>XP4315<br/>(Symbol: CB)</div> <div></div>          |                                                                                                                                           |                                                                                                                                             |                                                                                                                                            |                                                                                                                                           |

• DIODES

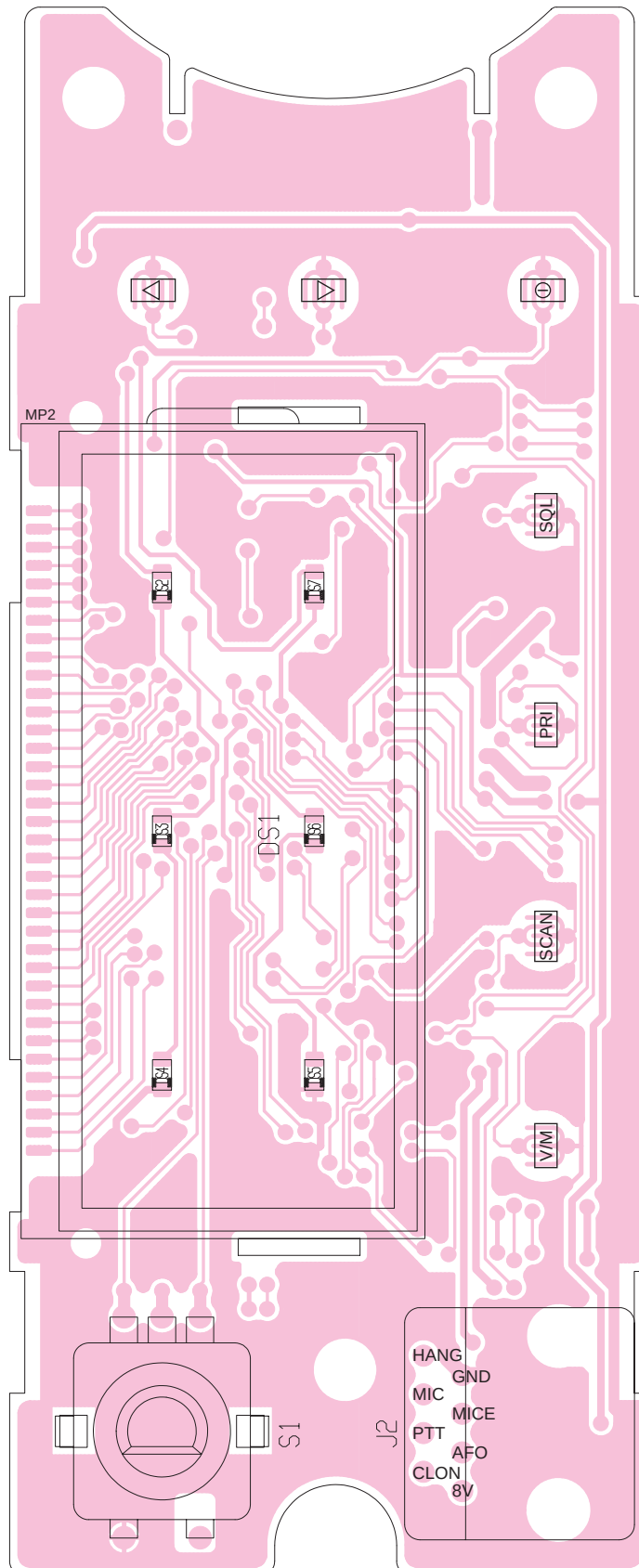
|                                                                                                                                      |                                                                                                                                      |                                                                                                                                           |                                                                                                                                        |                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <div>1SS352<br/>(Symbol: C1)</div> <div></div>    | <div>1SV271<br/>(Symbol: TG)</div> <div></div>    | <div>1SV307<br/>(Symbol: TX)</div> <div></div>         | <div>DA204 U T107<br/>(Symbol: K)</div> <div></div> | <div>DE5SC6M-4061<br/>(Symbol: 5SC6)</div> <div></div> |
| <div>HVU350 TRF<br/>(Symbol: 4)</div> <div></div> | <div>MA111<br/>(Symbol: 1B)</div> <div></div>     | <div>MA2S111<br/>(Symbol: A)</div> <div></div>         | <div>MA77<br/>(Symbol: 4B)</div> <div></div>        | <div>MA8036 L<br/>(Symbol: 3_6)</div> <div></div>      |
| <div>MA8051 M<br/>(Symbol: 5-1)</div> <div></div> | <div>MA8330 M<br/>(Symbol: 33-)</div> <div></div> | <div>RB706F-40 T106<br/>(Symbol: 3J)</div> <div></div> | <div>SB07-03C-TB<br/>(Symbol: J)</div> <div></div>  | <div>UM9401F</div> <div></div>                         |

## SECTION 8 BOARD LAYOUTS

### 8-1 FRONT UNIT

#### • TOP VIEW

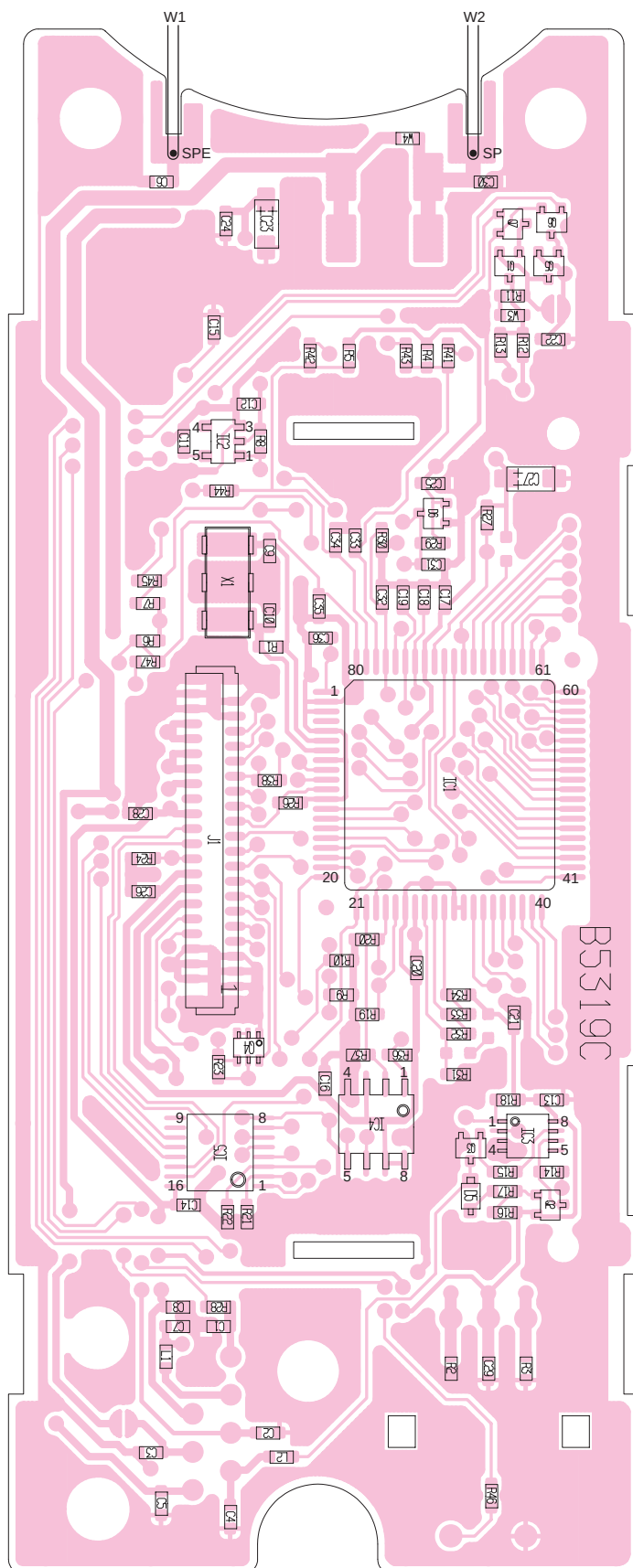
The combination of this page and the next page show the unit layout in the same configuration as the actual P.C.Board.



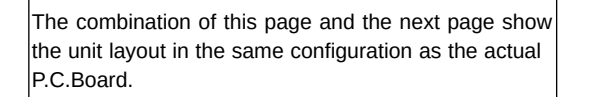
● BOTTOM VIEW

FROM MAIN  
UNIT J5

|           |       |        |
|-----------|-------|--------|
| <b>J1</b> |       |        |
| 40        | GND   | GND 39 |
|           | GND   | GND    |
|           | SPE   | RMUT   |
|           | SPE   | AFMUT  |
|           | SP    | SMUT   |
|           | SP    | VCS    |
|           | 8V    | SCK    |
|           | VCC   | SO     |
|           | 5V    | BEEP   |
|           | TRC   | FISW   |
|           | TMUT  | UNLK   |
|           | PSWC  | PLSTB  |
|           | CPU5V | SO     |
|           | MICE  | SCK    |
|           | MIC   | R/T    |
|           | PTT   | PDET   |
|           | PTTS  | SQLI   |
|           | GND   | GND    |
| 2         | GND   | GND 1  |
|           | GND   | GND    |

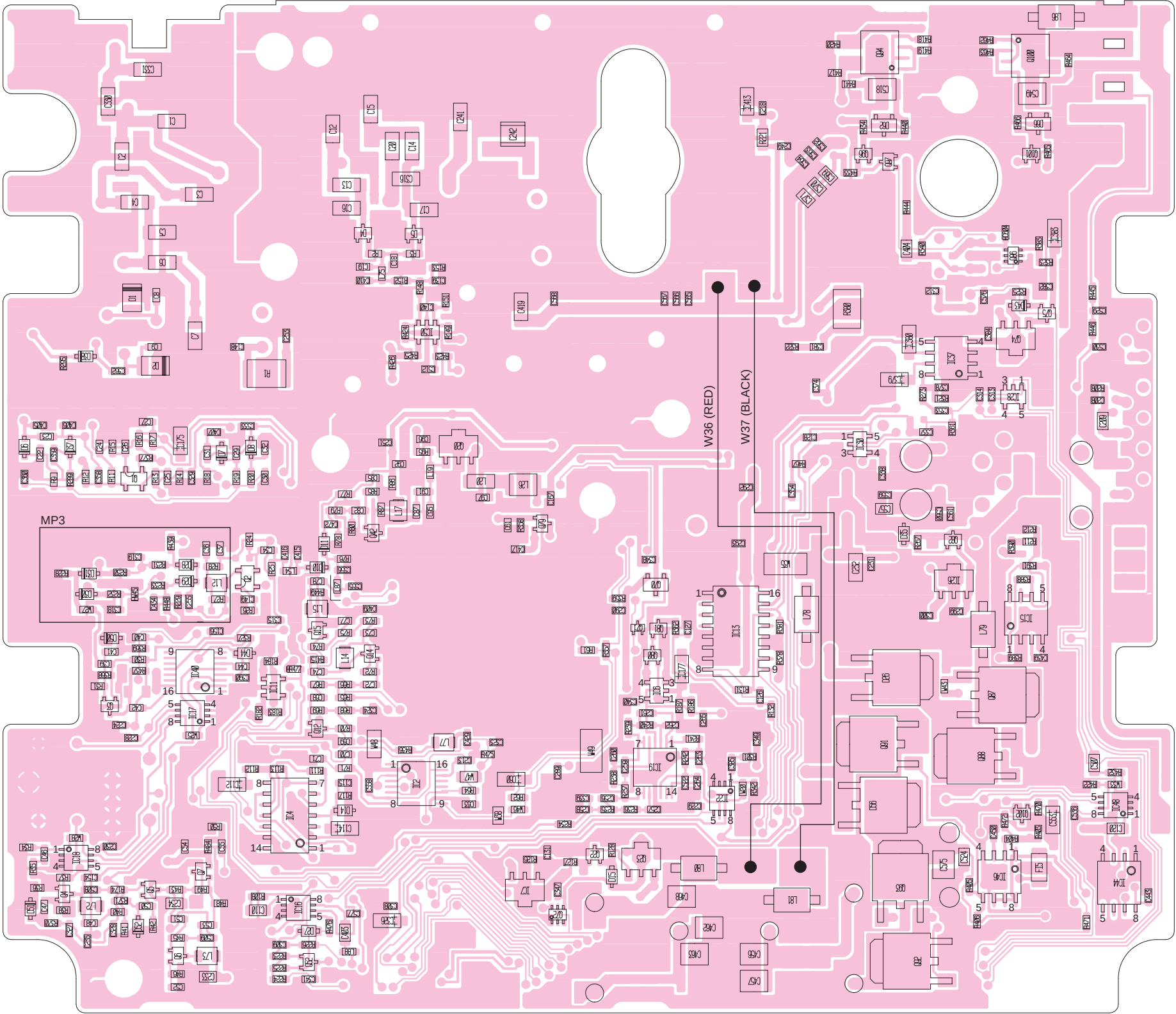


- TOP VIEW

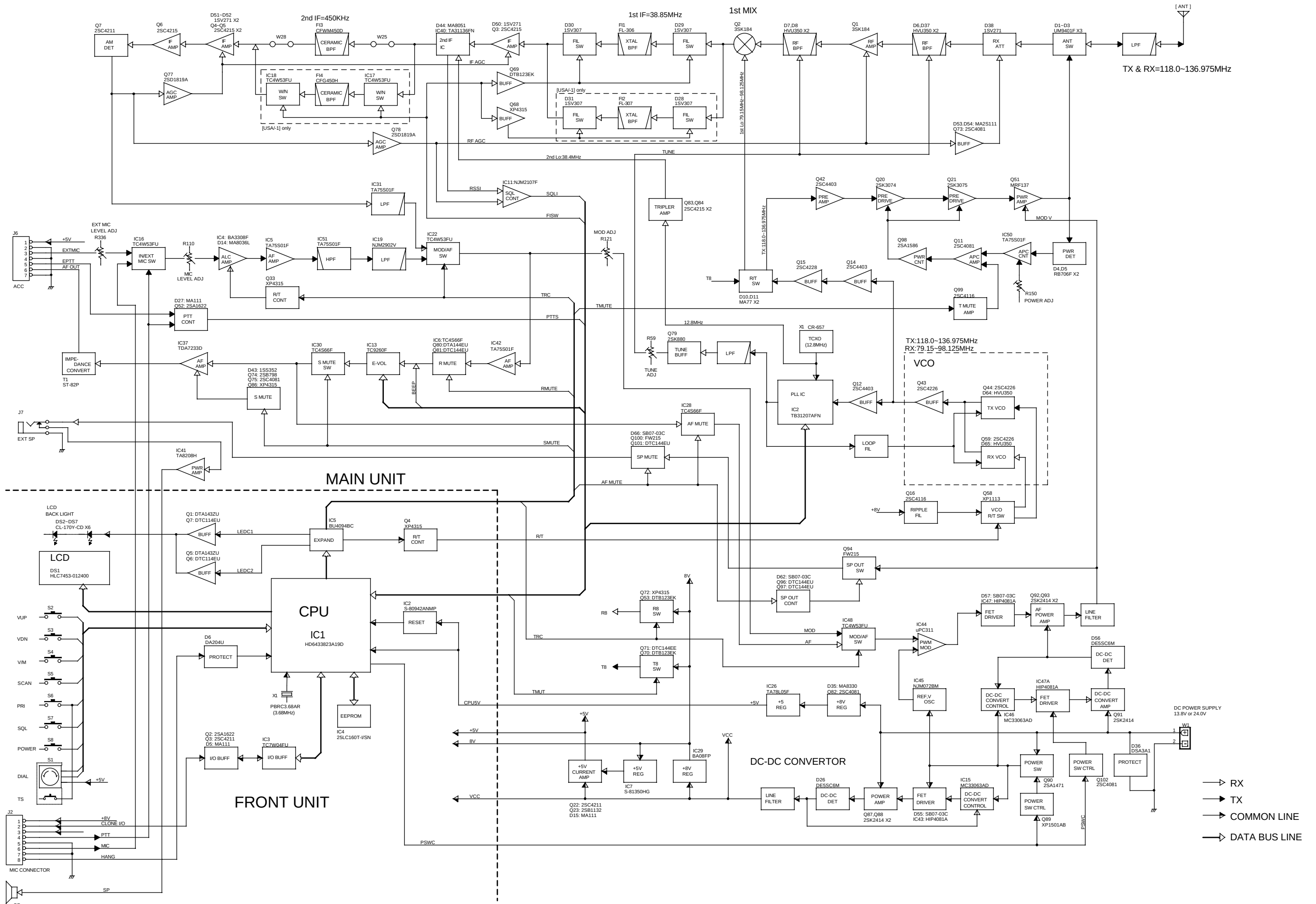


|    |                  |       |       |
|----|------------------|-------|-------|
| 2  |                  | 40    |       |
| J5 | GND              | GND   | GND   |
|    | GND              | GND   | GND   |
|    | FMUT             | FMUT  | FMUT  |
|    | AFMUT            | AFMUT | AFMUT |
|    | SMUT             | SMUT  | SMUT  |
|    | VCS              | VCS   | VCS   |
|    | SO               | SO    | SO    |
|    | BEEP             | BEEP  | BEEP  |
|    | FLSW             | FLSW  | FLSW  |
|    | UNLK             | UNLK  | UNLK  |
|    | PLSTB            | PLSTB | PLSTB |
|    | SO               | SO    | SO    |
|    | SO               | SO    | SO    |
|    | R/T              | R/T   | R/T   |
|    | NC               | NC    | NC    |
|    | SQI              | SQI   | SQI   |
|    | GND              | GND   | GND   |
|    | GND              | GND   | GND   |
|    | GND              | GND   | GND   |
|    | GND              | GND   | GND   |
| 1  | TO FRONT UNIT J1 |       | 39    |

● BOTTOM VIEW

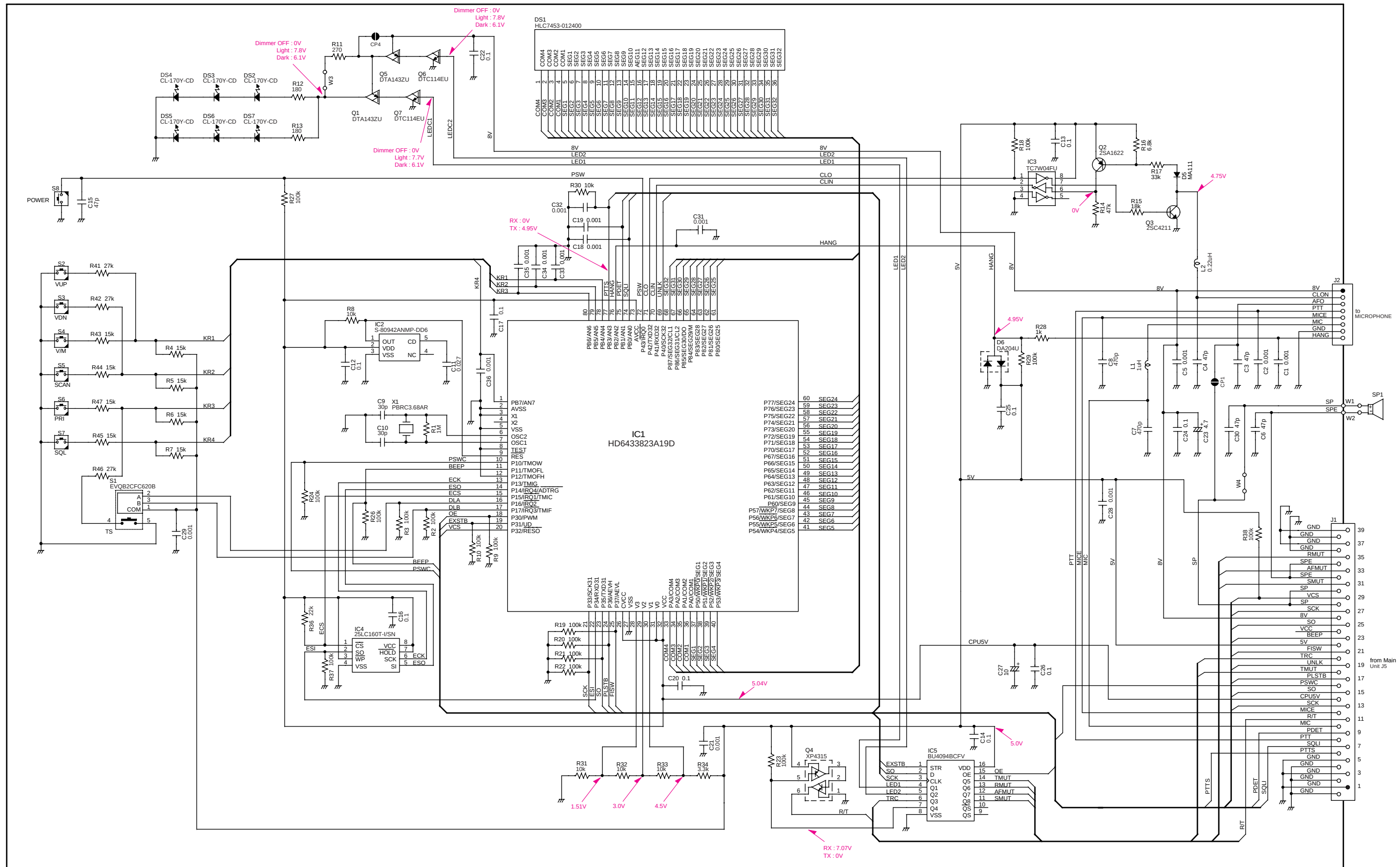


## SECTION 9 BLOCK DIAGRAM



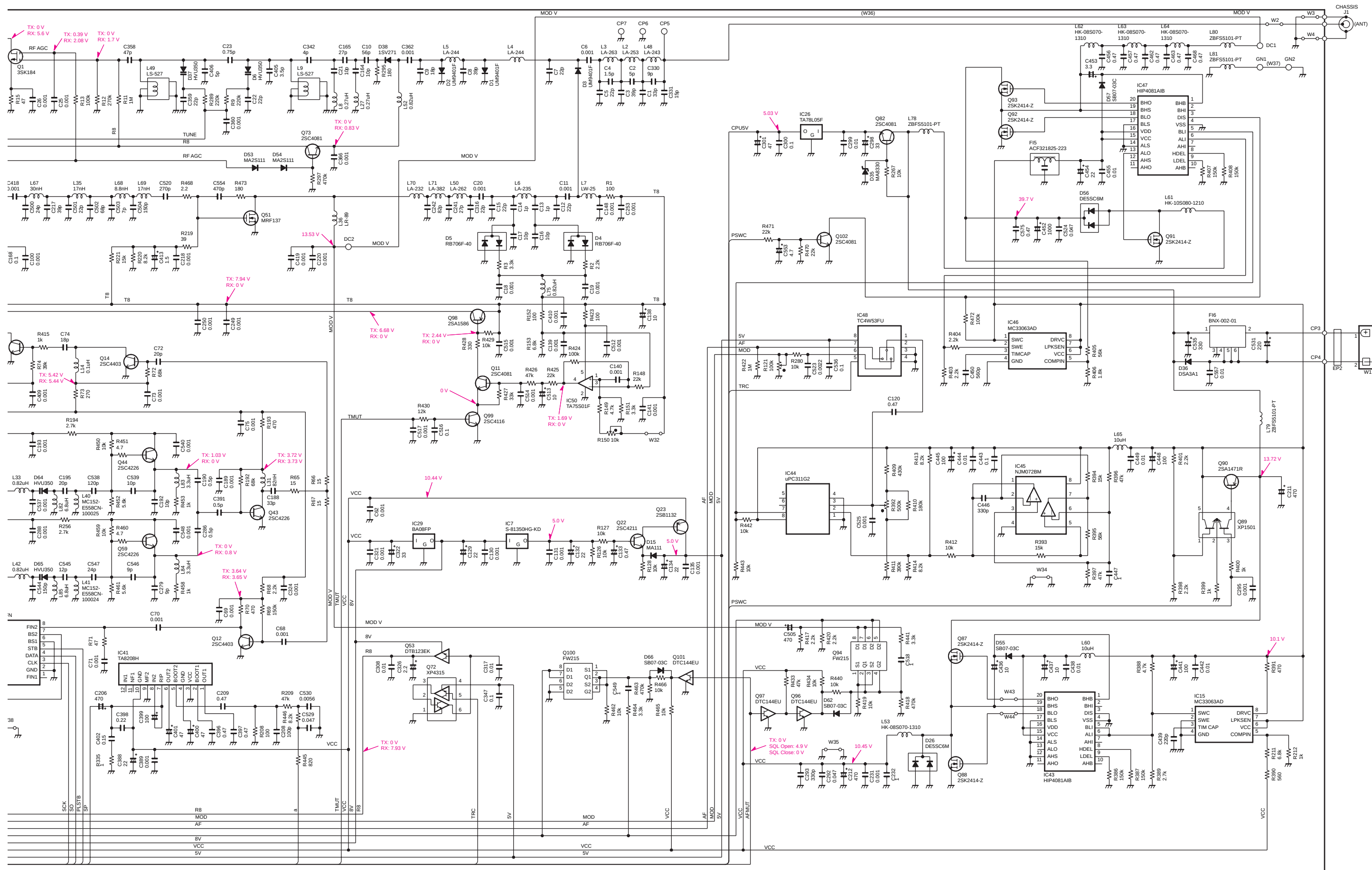
## SECTION 10 VOLTAGE DIAGRAM

## 10-1 FRONT UNIT



## COMPLETE VIEW





COMPLETE VIEW

**LEFT SIDE**



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