



# SERVICE MANUAL

UHF FM REPEATER

# IC-FR4000

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## INTRODUCTION

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This service manual describes the latest service information for the **IC-FR4000** UHF FM REPEATER.

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

| VERSION NO. | VERSION     |
|-------------|-------------|
| #13         | 100 V-120 V |
| #23         | 220 V-240 V |

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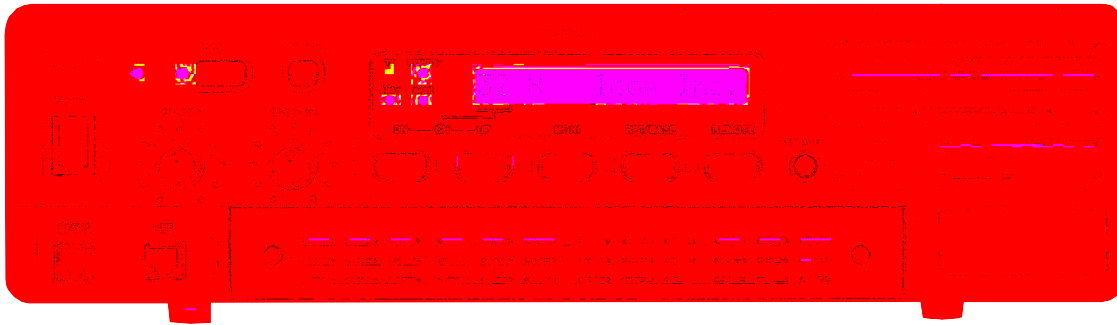
## DANGER

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Use **ONLY** the specified AC voltage described on the AC power socket. Other voltages may cause repeater damage or personal injury.

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

**DO NOT** apply an RF signal of more than 20 dBm (100 mW) to the antenna connector. This could damage the repeater'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>**

1110003780 S.IC NJM2902V IC-FR4000 LOGIC UNIT 1 piece  
8930056450 2368 6-key IC-FR4000 CHASSIS 5 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 repeater.
2. **DO NOT** open the repeater until the repeater is disconnected from AC outlet.
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 repeater is defective.
6. **DO NOT** transmit power into a signal generator or a sweep generator.
7. **ALWAYS** connect a 40 dB or 50 dB attenuator between the repeater and a deviation meter or spectrum analyser when using such test equipment.
8. **READ** the instructions of test equipment thoroughly before connecting equipment to the repeater.

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# SECTION 1 SPECIFICATIONS

## ■ GENERAL

|   |  |
|---|--|
| • Frequency range                       | : 450–480 MHz  |
| • Type of emission                      | : 16K0F3E / 8K50F3E  |
| • Frequency resolution                  | : 25 or 12.5 kHz   |
| • Number of channels                    | : Max. 32 channel  |
| • Antenna connector                     | : N-type × 2 (50 Ω)  |
| • Power supply requirement              | : 100–120 V AC [120V VERSION]<br>220–240 V AC [220V VERSION]<br>13.6 V (negative ground) |
| • Current drain (at 13.6 V)             | : Less than 20 A (TX)<br>Less than 1A (RX standby)<br>Less than 2A (RX max power)        |
| • Operating temperature range           | : –30°C to +60°C (–22°F to +140°F)   |
| • Dimensions (projections not included) | : 410 (W) × 110 (H) × 360 (D) mm<br>16.1 (W) × 4.3 (H) × 14.1 (D) inch                   |
| • Weight                                | : 12 kg (26.5 lb)  |

## ■ TRANSMITTER

|                            |  |
|----------------------------|--|
| • Output power             | : 50 W   |
| • Modulation system        | : Variable reactance frequency modulation            |
| • Max. frequency deviation | : ±5.0 kHz (Wide) / ±2.5 kHz (Narrow)                |
| • Spurious emissions       | : –70 dBc typical                                    |
| • Adjacent channel power   | : More than 70 dB (Wide)<br>More than 60 dB (Narrow) |
| • Input impedance          | : 600 Ω  |

## ■ RECEIVER

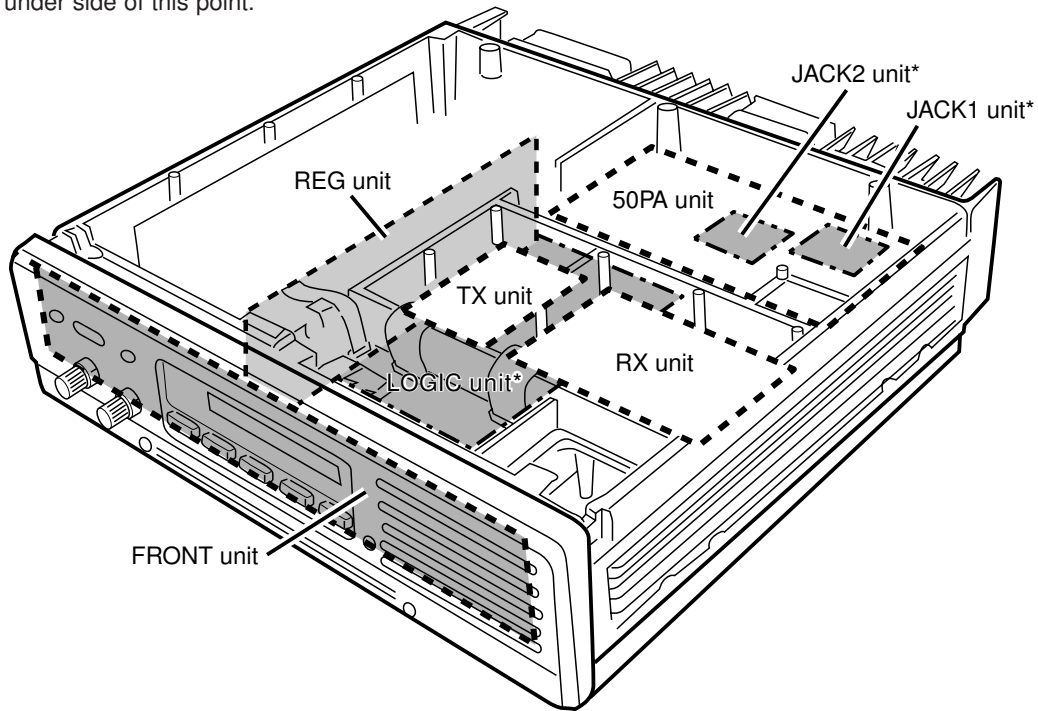
|                                |  |
|--------------------------------|--|
| • Receiving system             | : Double conversion superheterodyne system           |
| • Intermediate frequency       | : 1st; 70 MHz<br>2nd; 455 kHz                        |
| • Sensitivity (12 dB SINAD)    | : 0.5 μV; 12 dB SINAD                                |
| • Adjacent channel selectivity | : More than 70 dB (Wide)<br>More than 60 dB (Narrow) |
| • Spurious response            | : More than 70 dB                                    |
| • Intermodulation              | : More than 70 dB                                    |
| • Audio output power           | : 2.5 W at 10% distortion with an 4 Ω load           |
| • Audio output impedance       | : 4 Ω  |

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

## SECTION 2 INSIDE VIEWS

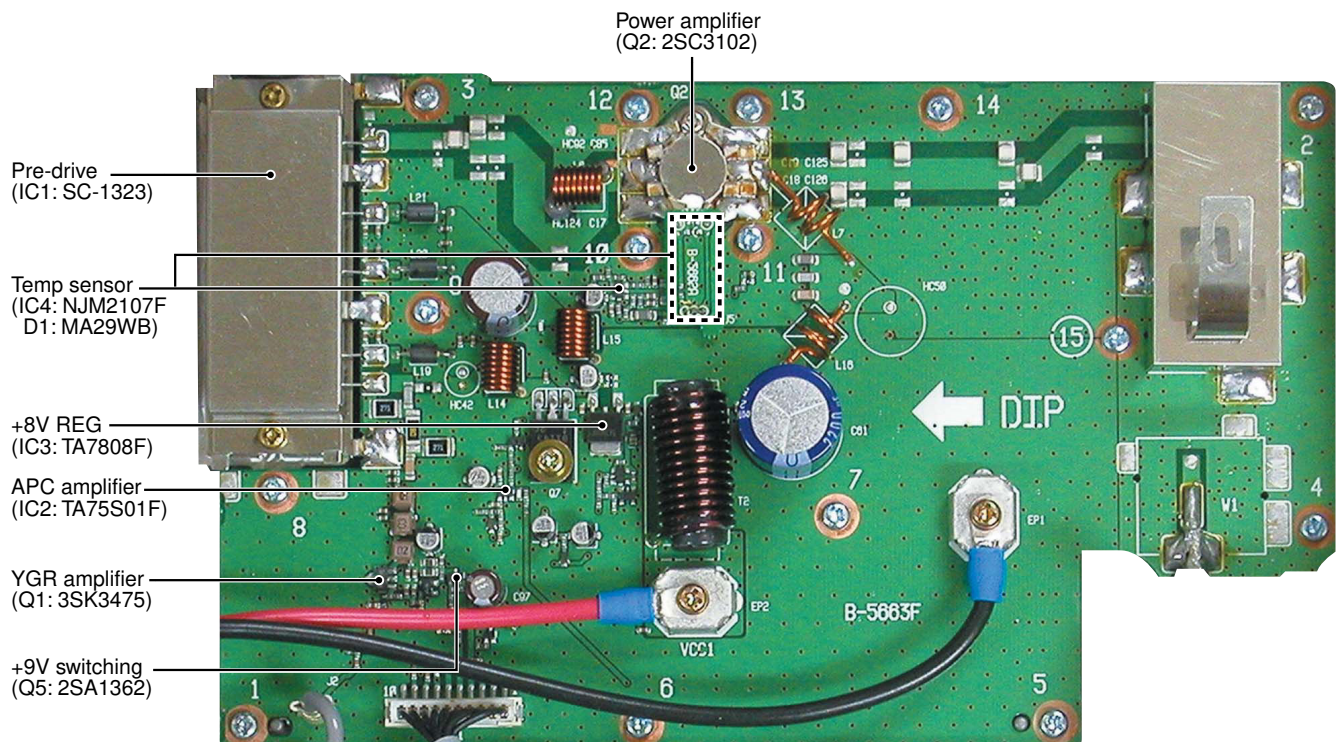
### • BOARD LAYOUT

\*: Located under side of this point.



### • 50PA UNIT

Top view



• LOGIC UNIT

Top view

OFF-HOOK CTRL  
(IC47: LC73701M,  
IC50: TC4W53)

CTCSS decoder  
(IC29: FX805)

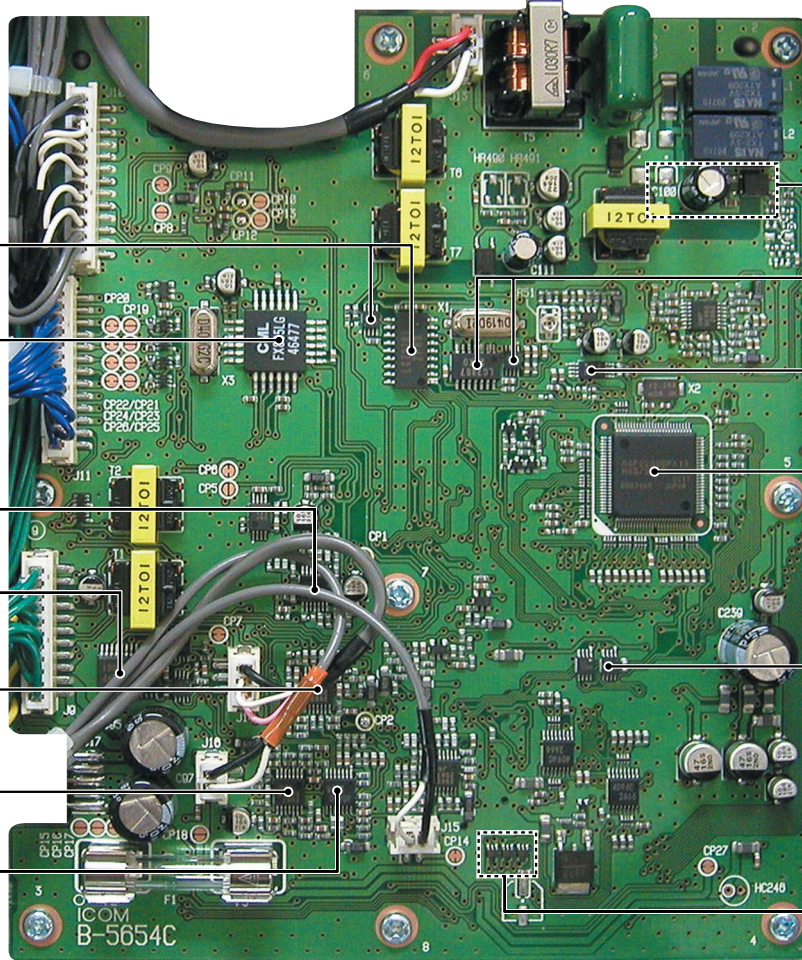
Splatter filter  
(IC4: NJM2902V)

D/A converter  
(IC25: M62364)

Mic mix amplifier  
(IC2: NJM2902V)

Mic amplifier  
(IC1: NJM2902V)

Mic mute  
(IC13: BU4066)



Ringer detect circuit  
(IC33: HD64F2238F)

DTMF decoder  
(IC30: TC4W53,  
IC31: LC738M)

EEPROM  
(IC39: BU4094)

CPU  
(IC33: HD64F2238F)

Temperature switching  
(IC32: TC4W53)

LED current CTRL  
(Q18, Q19, Q20: XP1114)

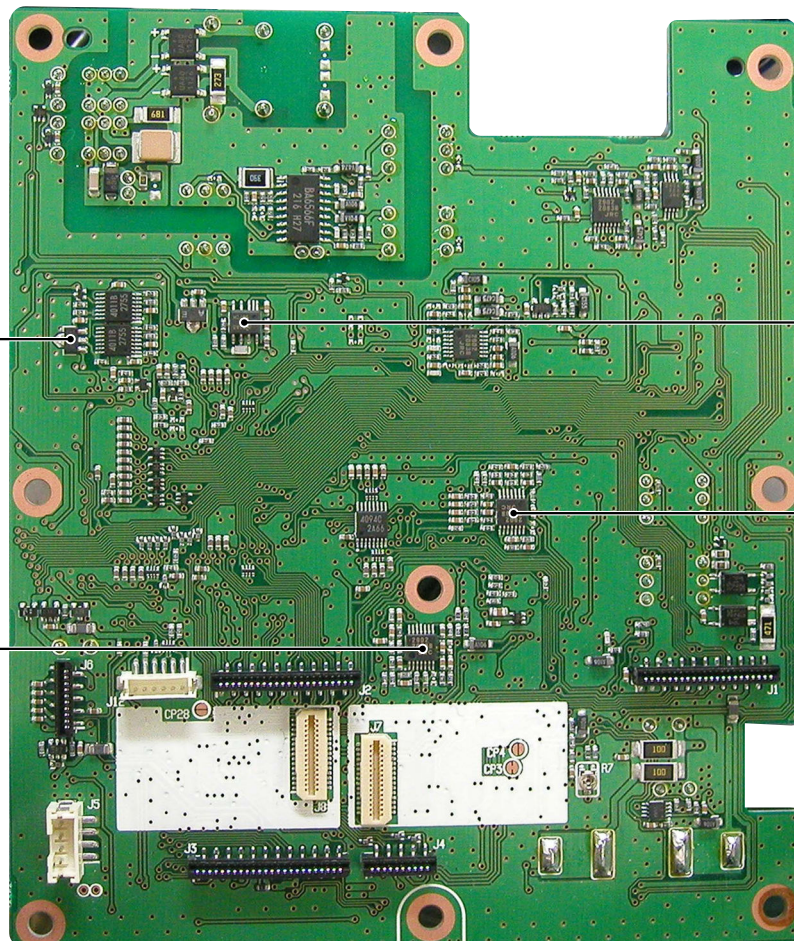
Bottom view

RESET  
(IC34: S-80842C)

Hipass filter,  
De-emphasis  
(IC9: NJM2902V)

ON-HOOK signal output  
(IC45: LM567M)

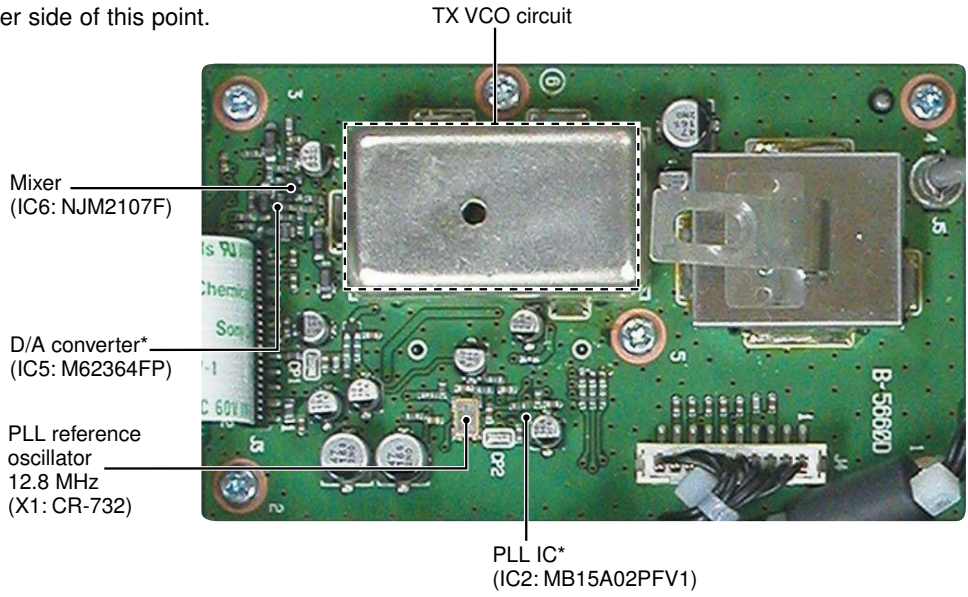
MIC amplifier, Limiter  
(IC3: NJM2902V)



• TX UNIT

Top view

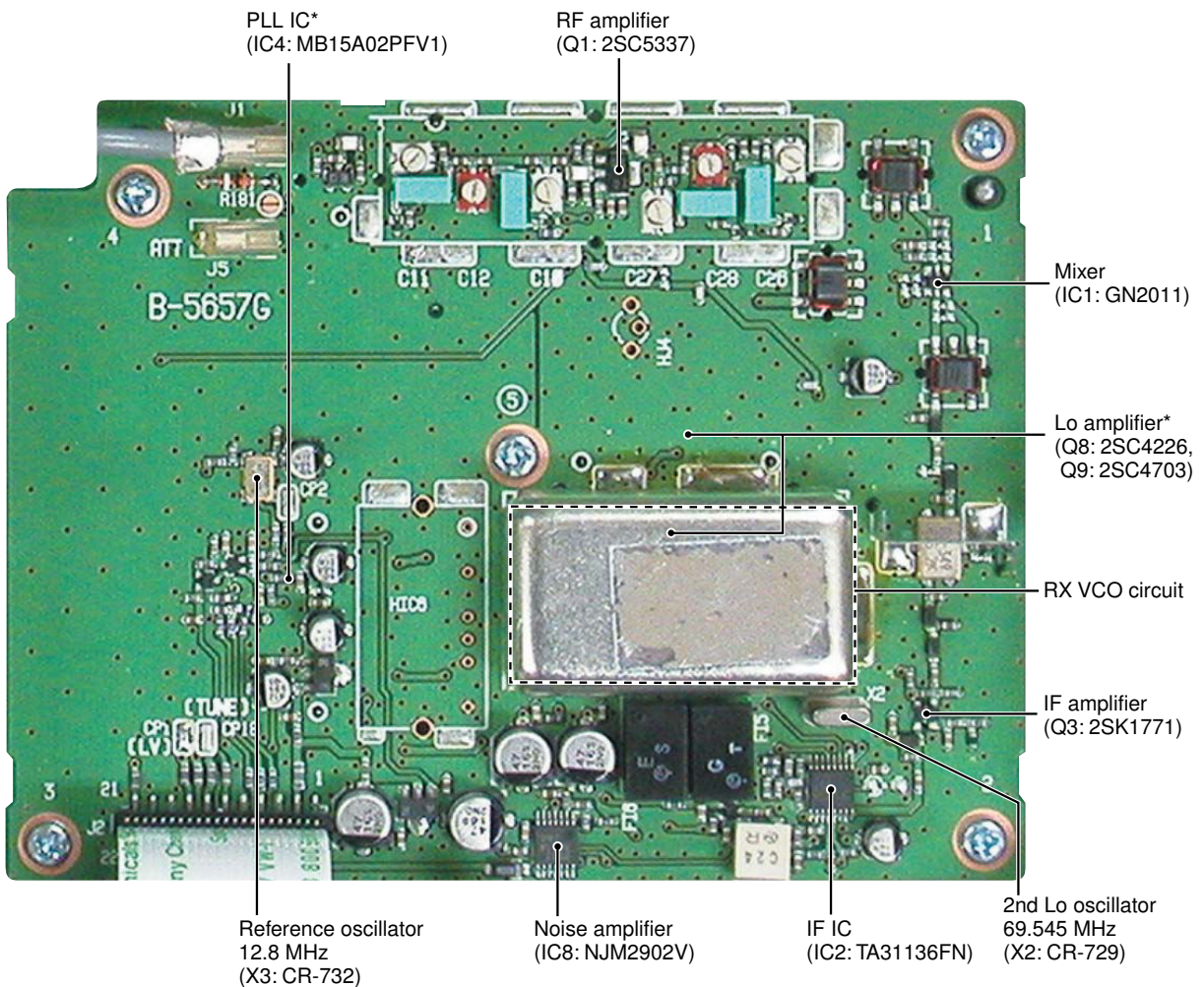
\*: Located under side of this point.



• RX UNIT

Top view

\*: Located under side of this point.



## SECTION 3    CIRCUIT DESCRIPTION

### 3-1 RECEIVER CIRCUITS

#### 3-1-1 RF CIRCUIT (RX UNIT)

Received signals from the RX antenna connector enter the RX unit J1 and pass through a tuned bandpass filter ( D3, D4, L1–L3, L32, C2, C5–C8, C10–C12, C14, C205, C206, C210,) which is controlled by the D/a converter IC (LOGIC unit; IC25). The filtered signals are applied to an PRE-amplifier (Q1). The amplified signal are applied to a bandpass filter (D6, D7, L6, L7, C21, C22, C24, C, 26–C28, C30, C207, C208) and are then applied to the 1st mixer circuit.

#### 3-1-2 1ST MIXER AND 1ST IF CIRCUITS (RX UNIT)

The 1st mixer circuit converts the received signals to a fixed frequency of the 1st IF signal with the 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 are applied to the 1st mixer circuit (L8, L9, L10, IC1), and are then mixed with the 1st LO signal from the PLL circuit to produce a 70MHz 1st IF signal.

The 1st IF signal passes through a MCF (Monolithic Crystal Filter; F11) to suppress out-of-band signals. The filtered signal is applied to the 2nd mixer circuit (IC2, pin 16) via the buffer amplifier (Q3).

#### 3-1-3 2ND IF AND DEMODULATOR CIRCUITS (RX UNIT)

The 2nd mixer circuit converts the 1st IF signal to a 2nd IF signal. A double-conversion superheterodyne system improves the image rejection ratio and obtains stable receiver gain.

The amplified signal is applied to the 2nd mixer section of the FM IF IC (IC2, pin 16), and is then mixed with the 2nd LO signal for conversion to a 455 kHz 2nd IF signal.

The 455 kHz 2nd IF signal is applied to a ceramic bandpass filter (narrow; F15, wide; F16) where unwanted signals are

suppressed, and are then applied to a limiter amplifier section in the system IC (IC2, pin 5).

IC2 contains the 2nd mixer, limiter amplifier, quadrature detector, active filter and noise amplifier circuits, etc. The local oscillator section and X2 generate 69.545 MHz for the 2nd LO signal.

The 2nd IF signal is then amplified at the limiter amplifier section (IC2, pin 5) and applied to the quadrature detector section (IC2, pins 10, 11 and X1) to demodulate the 2nd IF signal into AF signals.

The AF signals are output from pin 9 (IC2) and are then applied to the AF amplifier circuit on the LOGIC unit.

#### 3-1-5 AF AMPLIFIER CIRCUIT (LOGIC UNIT)

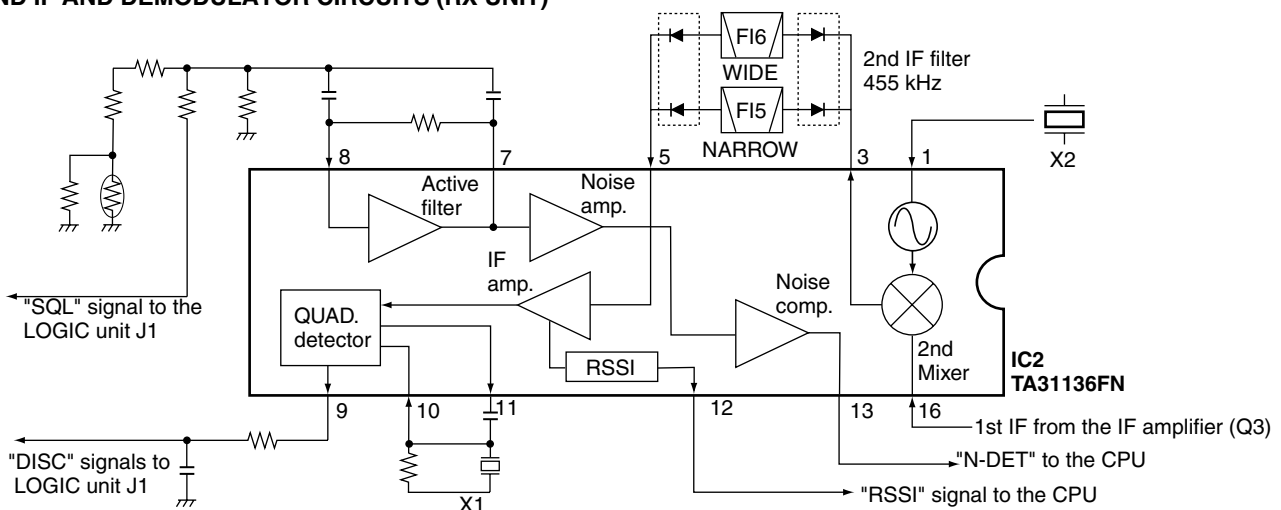
The AF amplifier circuit amplifies the demodulated AF signals to drive a speaker.

The AF signals from the FM IF IC (RX unit; IC2, pin 9) is applied to the buffer amplifier (IC9). The amplified signals passes through the high-pass filter (IC9, pins 5, 7, 12, 14) which removes CTCSS or DTCS signals.

The filtered AF signals are output from pin 7 (IC9) and are applied to the de-emphasis circuit (IC9, pins 1, 2) with frequency characteristics of –6 dB/octave, and then passed through the low-pass filter (IC10, pins 1, 3, 5, 7). The filtered signal is applied to the volume control (VR unit; R1) to control the audio level.

The output AF signals from the volume control (VR unit; R1) pass through the analog switch (IC16; pins 1, 7) and are then applied to the AF power amplifier (IC17) to drive the speaker.

#### • 2ND IF AND DEMODULATOR CIRCUITS (RX UNIT)





### 3-1-6 RECEIVER MUTE CIRCUITS (LOGIC UNIT)

#### • NOISE SQUELCH

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

Some noise components in the AF signals from the FM IF IC (RX unit; IC2, pin 9) are passed through the SQL level controller (VR unit; R2). The level controlled signals are applied to the active filter section in the FM IF IC (RX unit; IC2, pin 8). Noise components about 10 kHz are amplified and output from pin 7 (RX unit; IC2).

The filtered signals are converted to the pulse-type signals at the noise detector section and output from pin 13 (RX unit; IC2).

The NDET signal from the FM IF IC (RX unit; IC2) is applied to the CPU (IC33, pin 40). The CPU analyzes the noise condition and controls the AF mute signal via "AFMUTE1" line (IC40, pin 4) to the AF mute switch (IC16).

#### • CTCSS AND DTCS

The tone squelch circuit detects AF signals and opens the squelch only when receiving a signal containing a matching subaudible tone (CTCSS or DTCS).

The CTCSS signal passes through the low-pass filter circuit (IC8) and is then applied to the CTCSS decoder IC (IC29). The detected signal is applied to the CPU (IC 33) via the serial signal line.

The DTCS signal passes through the low-pass filter circuit (IC12), and is then applied to the DTCS decoder which is inside the CPU (IC33, pin 52) via the "DTCSI" line.

The 2/5TONE signals are pass through the low-pass filter circuit (IC12), and are then applied to the 2/5TONE decoder which is inside the CPU (IC33 pin 51) via "25T1" line.

The DTMF signal passes through the DTMF switch IC (IC30), and is then applied to the DTMF decoder which is inside the CPU (IC33, pins 82, 85, 86).

The DTMF switch (IC30) selects the signal from telephone line or RX unit.

### 3-2 TRANSMITTER CIRCUITS

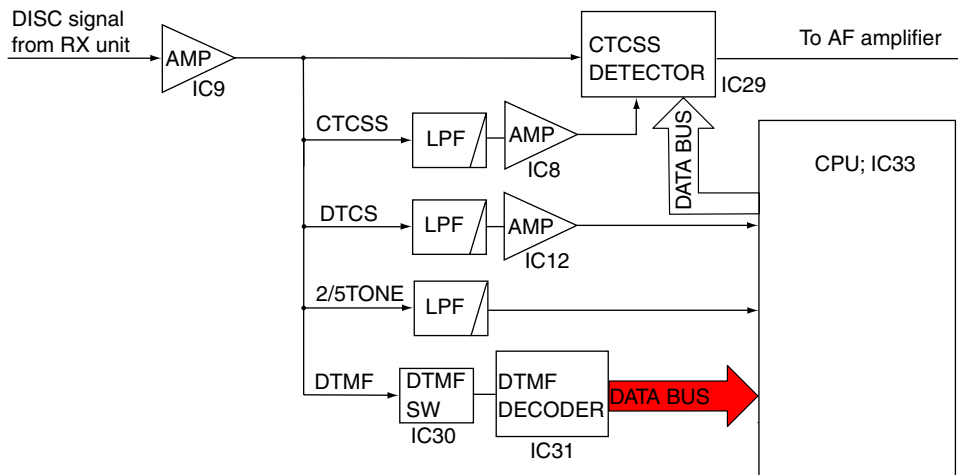
#### 3-2-1 AF AMPLIFIER CIRCUIT (LOGIC UNIT)

##### • IN CASE OF THE AF SIGNAL FROM THE MIC JACK

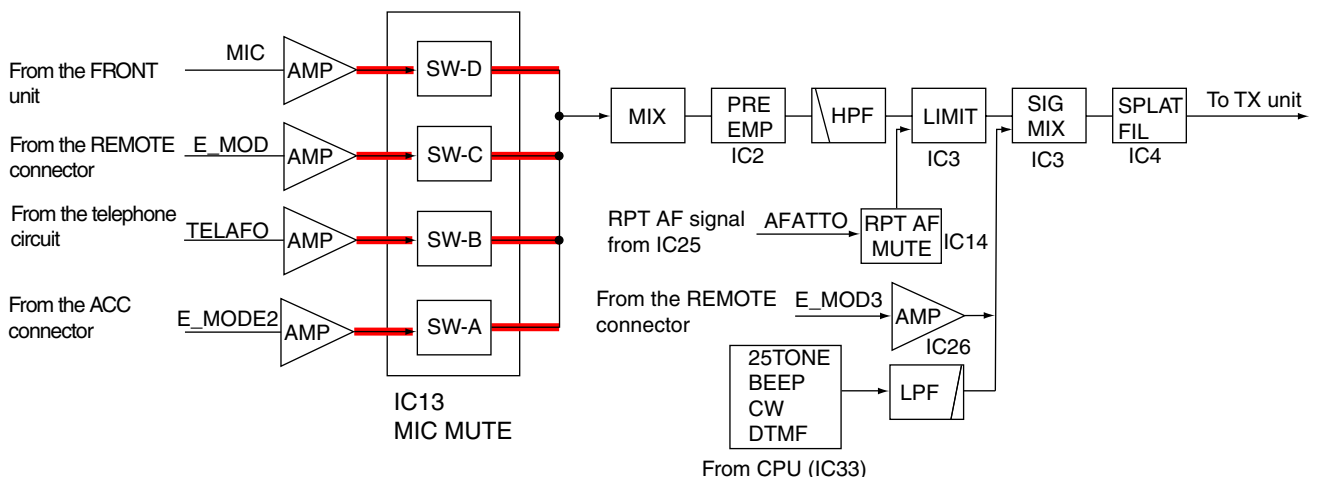
The AF signals (MIC) from the MIC jack (FRONT unit; J7) are amplified at the AF amplifier (IC1). The amplified signals are mixed with the "E\_MOD", "E\_MOD2" and "TELAFO" signals from IC1. The mixed signals pass through the high-pass filter (IC2) via the pre-emphasis circuit (IC2).

The filtered signals are applied to the limiter amplifier, and are then mixed with the DTMF signal from the CPU (IC33, pin 43) via TX-signal filter (IC3). The mixed signal applied to the splatter filter (IC4).

#### • TONE SIGNALS CIRCUITS (LOGIC UNIT)



#### • AF AMPLIFIER CIRCUITS (LOGIC UNIT)



**• IN CASE OF THE AF SIGNAL FROM THE ANTENNA CONNECTOR**

The AF signals (received signals) from the antenna connector (RX unit; J1) are applied to the buffer amplifier (IC9), CTCSS detector (IC29) and AF amplifier (IC6). The amplified signals are applied to the expander IC (IC25) to adjust to a level needed. The adjusted signals pass through the RPT AF mute switch (IC14), and are applied to the limiter amplifier (IC3).

**• IN CASE OF THE 2/5TONE SIGNALS**

The 2/5TONE signal from the CPU (IC33, pin 43) are applied to the mixer amplifier (IC3) via TX signal filter circuit (IC3).

**• IN CASE OF THE DTMF SIGNALS**

The DTMF from dialler IC (IC47, pin 14) are applied to the mixer amplifier (IC3) via the TX signal filter circuit (IC3).

**• IN CASE OF THE CTCSS AND DTCS SIGNALS**

The CTCSS and DTCS signals from the CPU (IC33, pin 44) are applied to the TX-tone filter (IC4, pins 12, 14). The filtered signal are applied to the converter IC (TX unit; IC5) to adjust tone level, and are then mixed with AF signal at the mixer amplifier IC (TX unit; IC6).

**3-2-2 MODULATION CIRCUIT (TX UNIT)**

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

The filtered signals from the LOGIC unit are applied to the D/A converter (IC5, pin 4) to adjust AF level. The adjusted signals are applied to the mixer amplifier IC (IC6, pin 1) with the CTCSS/DTCS signals.

The CTCSS/DTCS signals from the CPU (LOGIC unit; IC33, pin 44) are pass through the TX-tone filter (LOGIC unit; IC4) and are then applied to the D/A converter (IC5 pin9) to adjust tone level.

The mixed signals are applied to the TX VCO circuit to modulate the oscillated signal (TVCO unit; D5). The TVCO output is amplified at the buffer amplifiers (Q1, Q2) and is then applied to the drive amplifier circuit.

**3-2-3 DRIVE AMPLIFIER CIRCUIT (PA UNIT)**

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

The RF signal from the TX unit pass through the attenuater circuit (R12–R14), the low-pass filter circuit (L1, L13, C3, C4, ) and is then applied to the YGR amplifier (Q1). The amplified signal passes through the low-pass filter circuit (L4, L5, C8, C9, C56, C66), the attenuater circuit (R3–R5) and is then applied to the pre-drive amplifier IC1.

**3-2-4 POWER AMPLIFIER CIRCUIT (PA UNIT)**

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

The RF signal from the pre-drive amplifier (IC1) is applied to the power amplifier (Q2) to obtain 50 W of RF power.

The amplified signal is passed through the low-pass filter circuit (L8–L10, C24–C26, C30–C32) and APC detector (R8, R9, R25, R26, R29, R30, C88, C89, D2, D4), and are then applied to the antenna connector.

Control voltage for the pre-drive amplifier (IC1, pin 2) comes from the APC amplifier (IC6, IC7, D10) to obtain stable output power. The transmit mute switch (Q3, Q5, Q8, Q9, D11) controls YGR amplifier and pre-drive amplifier when transmit mute is necessary.

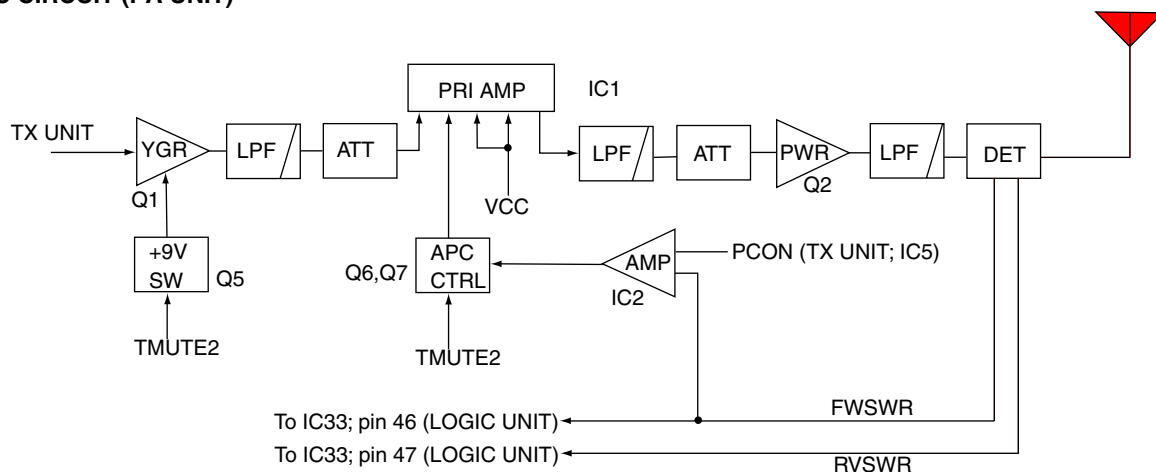
**3-2-5 APC CIRCUIT (PA UNIT)**

The APC circuit protects the power amplifier from a mismatched output load and stabilizes the output power.

The APC detector circuit detects forward signals and reflection signals at D2 and D4 respectively. The combined voltage become minimum level when the antenna impedance is matched at 50 Ω, and the voltage is increased when it is mismatched.

The detected voltage is applied to the APC amplifier (IC2, pin 3), and the power setting “PCON” signal from the D/A converter (TX unit; IC5), controlled by the CPU (LOGIC unit; IC33), is applied to APC amplifier (IC2, pin 1) for reference. When antenna impedance is mismatched, the detected voltage exceeds the power setting voltage. Then the output voltage of the APC amplifier (IC2, pin 4) controls the input cur-

**• APC CIRCUIT (PA UNIT)**



rent of the drive amplifier (IC1, pin 2) to reduce the output power.

### 3-3 PLL CIRCUITS

#### 3-3-1 GENERAL

Each receiver and transmitter circuit has an independent PLL circuit for controlling frequencies. All PLL circuits are shielded and installed on the RX and TX units.

PLL circuits steadily oscillate the transmit frequency and the receive local frequency. The PLL output frequency is controlled by divided ratio (N-data) of the programmable divider.

#### 3-3-2 RECEIVER PLL CIRCUIT (RX UNIT)

The PLL IC (IC4) which includes in the prescaler, the programmable counter and the phase comparator generates the 1st LO frequency with the VCO circuit (RVCO unit; Q1, D1–D4). The PLL IC sets the divided ratio which bases on N-data from the CPU (LOGIC unit; IC33) to control the programmable counter. The PLL IC compares a phases of the VCO signal with the reference oscillator frequency, and is then applied to the VCO circuit (RVCO unit; Q1, D1–D4).

#### 3-3-3 RECEIVER REFERENCE OSCILLATOR CIRCUIT (RX UNIT)

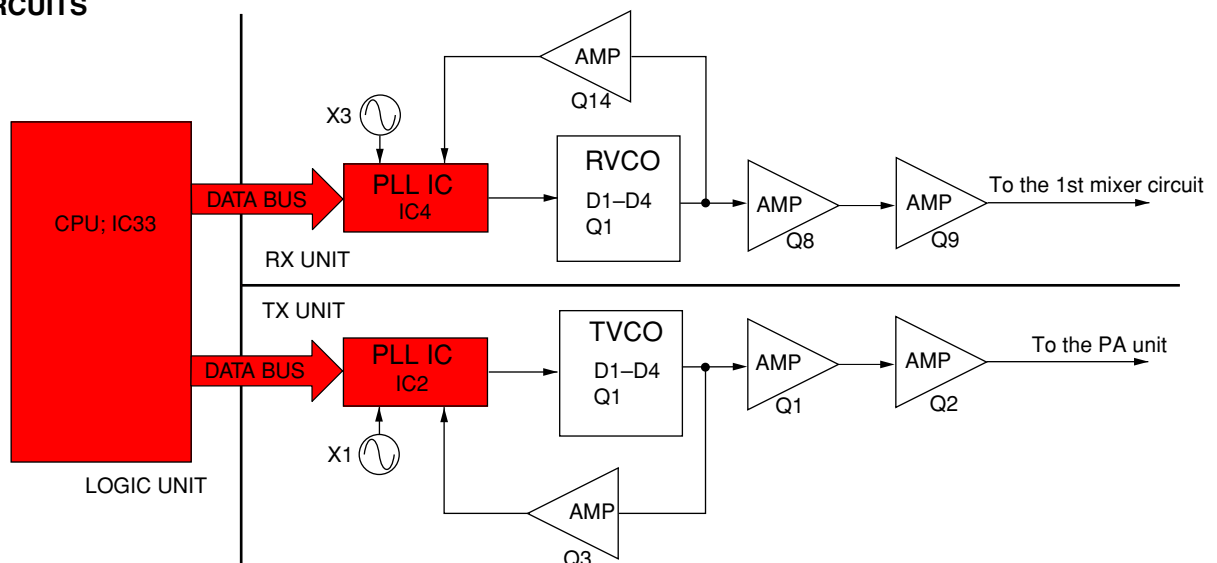
The 12.8 MHz reference frequency is produced by the oscillator (X3). The frequency is adjusted by the D/A converter IC (LOGIC unit; IC25). The reference frequency is applied to the PLL IC (IC4, pin 1).

#### 3-3-4 RECEIVER VCO CIRCUIT (RVCO UNIT)

The VCO circuit (D1–D4, Q1) generates the receive frequency. The signal is applied to the buffer amplifier (Q2), and is applied to the PLL IC (RX unit; IC4). The signal is amplified at the buffer amplifiers (RX unit; Q8, Q9), and is then applied to the 1st mixer circuit (RX unit; IC1) as 1st LO signal.

A part of the signal is applied to the PLL IC (IC4) via the

#### • PLL CIRCUITS



amplifier (Q14) as RX PLL lock voltage.

#### 3-3-5 TRANSMITTER PLL CIRCUIT (TX UNIT)

The PLL IC (IC2) which includes in the prescaler, the programmable counter and the phase comparator. The PLL IC sets the divided ratio which bases on N-data from the CPU (LOGIC unit; IC33) to control the programmable counter. The PLL IC compares a phases of the VCO signal with the reference oscillator frequency, and is then applied to the VCO circuit (TVCO unit; Q1, D1–D4).

#### 3-3-6 TRANSMITTER REFERENCE OSCILLATOR CIRCUIT (TX UNIT)

The 12.8 MHz reference frequency is produced by the oscillator (X1). The frequency is adjusted by the D/A converter IC (IC5, pin 14). The reference frequency is applied to the PLL IC (IC2, pin 1).

#### 3-3-7 TRANSMITTER VCO CIRCUIT (TVCO UNIT)

The VCO circuit (Q1, D1–D4) generates the transmit frequency. The signal is applied to the buffer amplifier (Q2) and is then applied to the PLL IC (TX unit; IC2) and buffer amplifier (TX unit; Q1, Q2). The amplified signal is applied to the PA unit.

A part of the signal is applied to the PLL IC (IC4) via the amplifier (Q3) as TX PLL lock voltage.

### 3-4 OTHER CIRCUIT

#### 3-4-1 TELEPHONE IF CIRCUIT (LOGIC UNIT)

The signals from the telephone line (FRONT, J13) are applied to the ringer detect circuit (C100, C103, C375, R131, D1, D5, R143, R145, IC48). The detected signals are applied to the CPU (IC33, pin 73) via "RING" line. The "HOOKC" signal from the CPU (IC33, pin 72) and the "DP" signal from IC47 are applied to the hook switch (RL1, RL2) to off-hook.

Received AF signals from the RX unit pass through the high-pass filter, de-emphasis and low-pass filter circuits. The filtered AF signal are amplified at IC7 and are then applied to the network IC (IC46, pin 16) via T6. The output signal from IC46 are applied to the J13 (FRONT unit).

AF signals from J13 (FRONT unit) are applied to the network IC (IC46). The output signals from IC46 (pins 8, 9) are applied the AF amplifier IC (IC1, pin 2) via T8. The signals pass through the MIC mute switch, the MIC mixer amplifier, the pre-emphasis circuit, the high-pass filter, limiter amplifier circuit, S-mixer circuit, and splatter filter circuit. The filtered signals are applied to the TX unit.

After off-hook condition, DTMF signal from telephone line is applied to the decoder IC (IC31) to decode the DTMF signal. The DTMF signal is applied to the CPU (IC33) via serial signal line.

The end signal is detected at IC45 and then is applied to the CPU (IC33). The "HOOKC" signal from the CPU (IC33, pin 72) and the "DP" signal from IC47 are applied to the hook switch (RL1, RL2) to on-hook.

#### 3-4-2 EEPROM CIRCUIT (LOGIC UNIT)

The detector IC (IC34) detects power supply ON-OFF voltage. The signal from IC34 is applied to IC33 (CPU). IC35, IC36 are reset signal circuit which stabilizes to memory for the EEPROM (IC37).

EEPROM (IC37) memories clone data and adjust setting condition data.

#### 3-4-3 TEMPERATURE DETECT CIRCUIT (LOGIC UNIT)

The temperature detect circuit protects the power amplifier and power supply circuit from high temperature and stabilizes the output power.

Inside temperature of the PA unit is detected at D1 (VARISTOR unit) and is then applied to the amplifier (PA unit; IC4). The amplified signal is applied to the CPU (IC33) to analyze the temperature via IC32.

Inside temperature of the REG unit is detected at D6 (REG unit) and is then applied to the amplifier (REG unit; IC9). The amplified signal applied to the CPU (IC33) to analyze the temperature via IC32.

IC32 selects "PATEMP" or "REGTEMP" signals from the PA or REG unit.

### 3-5 POWER SUPPLY CIRCUITS

#### 3-5-1 LOGIC AND REG UNITS VOLTAGE LINES

| Line   | Description  |
|--------|--|
| PS 15V | The voltage from the DC power unit (CHASSIS; EP1).   |
| VCC1   | The same voltage as the PS 15V line which is controlled by the power switch.   |
| M9V    | Common 9 V for converted from the VCC1 line by the M9V regulator circuit (REG unit; IC1, Q8, Q9). The voltage is applied to the TX and RX units. |
| L9V    | Common 9 V converted from the VCC1 line by the L9V regulator circuit (REG unit; IC2).  |
| A5V    | Common 5 V converted from the L9V line by the A5V regulator circuit (REG unit; IC3).   |
| L5V    | Common 5 V converted from the L9V line by the L5V regulator circuit (LOGIC unit; IC38, Q48, D43).  |
| C5V    | Common 5 V converted from the L9V line by the C5V regulator circuit (LOGIC unit; IC38, Q45, D13).  |
| TEL5V  | Common 5 V converted from the M9V line by the TEL5V regulator circuit (LOGIC unit; IC11).  |

#### 3-5-1 RX UNIT VOLTAGE LINES

| Line | Description   |
|------|---|
| +5V  | Common 5 V converted from the M9V line by the +5V regulator circuit (RX unit; IC3).                           |
| +6V  | Common 6 V converted from the M9V line by the +6V regulator circuit (RX unit; IC7).                           |
| R5V  | Receive 5 V converted from the R9V line by the R5V regulator circuit (RX unit; IC6).                          |
| R9V  | Receive 9 V controlled by the R9V regulator circuit (RX unit; Q15) using "R9C" signal from IC39 (LOGIC unit). |
| V9V  | The same voltage as the M9V.  |

#### 3-5-2 TX UNIT VOLTAGE LINES

| Line | Description   |
|------|---|
| T5V  | Transmit 5 V converted from the M9V line by the T5V regulator circuit (TX unit; IC1). |
| T6V  | Transmit 6 V converted from the M9V line by the T6V regulator circuit (TX unit; IC4). |
| V9V  | Common 9 V converted from the M9V line by the V9V regulator circuit (TX unit; Q6).    |

### 3-6 PORT ALLOCATIONS

#### 3-6-1 EXPANDER IC (LOGIC UNIT; IC39)

| Pin number | Port name | Description  |
|------------|-----------|--|
| 4          | BASL      | Outputs the control signal for "BASE" LED on the FRONT unit.   |
| 5          | RMTL      | Outputs the control signal for "REMOTE" LED on the FRONT unit. |
| 6          | BUSYL     | Outputs the control signal for "BUSY" LED on the FRONT unit.   |
| 7          | TXL       | Outputs the control signal for "TX" LED on the FRONT unit.     |
| 12         | D5C       | Outputs the control signal for the D5V on the FRONT unit.      |
| 13         | PROGL     | Outputs the control signal for "P" LED on the FRONT unit.      |
| 14         | DCL       | Outputs the control signal for "DC" LED on the FRONT unit.     |

#### 3-6-2 EXPANDER IC (LOGIC UNIT; IC40)

| Pin number | Port name | Description  |
|------------|-----------|--|
| 4          | AFMUTE1   | Outputs the speaker mute signal for the received AF.                       |
| 5          | AFMUTE2   | Outputs the speaker mute signal for the received 2/5TONE and DTMF signals. |
| 6          | MICMUTE1  | Outputs the MIC mute signal for the hand microphone.                       |
| 7          | MICMUTE2  | Outputs the MIC mute signal for the REMOTE connector.                      |
| 11         | TELBMR    | Outputs the pulse control signal for the telephone dialer IC               |
| 12         | TELMUTE2  | Outputs the MOD mute signal for AF signal from the telephone line.         |
| 13         | TELMUTE1  | Outputs the telephone mute signal for the received AF signal.              |
| 14         | MICMUTE3  | Outputs the MIC mute signal for the ACC connector.                         |

#### 3-6-3 EXPANDER IC (LOGIC UNIT; IC41)

| Pin number | Port name    | Description   |
|------------|--------------|---|
| 5          | R/BSW        | Outputs the switch control signal for the received AF signal to the microphone amplifier. |
| 6          | W/NS         | Outputs the control signal for narrow/wide bands.   |
| 7          | R9C          | Outputs the control signal for the +9V regulator on the RX unit.                          |
| 12         | M9C          | Outputs the control signal for the M9V regulator on the Rx unit and TX unit.              |
| 13<br>14   | OPT1<br>OPT3 | Output the detection signals whether optional boards are installed or not.                |

#### 3-6-4 D/A CONVERTER IC (LOGIC UNIT; IC25)

| Pin number | Port name | Description   |
|------------|-----------|---|
| 6          | DA2STB    | Input port for the strobe signal.   |
| 7          | SCK       | Input port for the clock signal.  |
| 8          | SDTO      | Outputs the serial data to the CPU (LOGIC unit; IC33).                        |
| 9          | AFFTTI    | Input port for the received AF signal.  |
| 10         | AFATTO    | Outputs the adjusted AF signal for the repeater output.                       |
| 14         | RVCON     | Outputs the adjustment signal for the PLL reference frequency on the RX unit. |
| 15         | TUNE      | Outputs the BPF tuning signal to the RX unit.                                 |

### 3-6-5 D/A CONVERTER IC (TX UNIT; IC5)

| Pin number | Port name | Description  |
|------------|-----------|--|
| 1          | ETONE     | Input port for the TONE signal from the ACC connector.                                       |
| 2          | ETONEO    | Outputs the adjusted external TONE signal.   |
| 3          | TXAFO     | Outputs the TX AF signal to the TX modulation.   |
| 4          | TXAF      | Input port for the AF signal.  |
| 6          | DA1STB    | Input port for the strobe signal.  |
| 7          | SCK       | Input port for the clock signal.   |
| 8          | SDTO      | Outputs the serial data signal to the CPU (LOGIC unit; IC33).                                |
| 9          | TONE      | Input port for the TONE signal.  |
| 10         | TONEO     | Outputs the adjusted TONE signal.  |
| 11         | PCON      | Outputs the TX power control signal.   |
| 14         | TVCON     | Outputs the adjustment signal for the TX unit PLL reference frequency.                       |
| 15         | MODC      | Outputs the control signal for modulation balance.   |
| 21         | MIXO      | Input port for the mixed signal with the external signal, TX AF signal and internal signals. |
| 22         | REFMOD    | Outputs the adjustment signal for TONE balance.  |
| 23         | MOD       | Outputs the adjusted AF signal for the TX modulation.  |
| 24         | MIXO      | Input port for the mixed signal with the ETONE, TX AF and TONE signals.                      |

### 3-6-6 CPU (LOGIC UNIT; IC33)

| Pin number | Port name | Description   |
|------------|-----------|---|
| 1          | RPLSTB    | Outputs the strobe signal for the PLL IC on the RX unit.          |
| 2          | TPLSTB    | Outputs the strobe signal for the PLL IC on the TX unit.          |
| 3          | TUNLK     | Input port for the unlock signal from the PLL IC on the TX unit.  |
| 4          | TMUTE     | Outputs the TX mute signal for the TX unit.                       |
| 5          | TMUTE2    | Outputs the TX mute signal for the PA unit.                       |
| 8          | M_PTT     | Input port for the PTT switch signal from the microphone.         |
| 9          | SPMUTE    | Input port for the [SPMUTE] switch.                               |
| 10         | REMOTE    | Input port for the [REMOTE] switch.                               |
| 11         | R/B       | Input port for the [R/B] switch.                                  |
| 13         | MBEEP     | Outputs the BEEP signal for modulation.                           |
| 15         | MONI      | Input port for the [MONI] switch.                                 |
| 16         | CHUP      | Input port for the [CHUP] switch.                                 |
| 17         | CHDN      | Input port for the [CHDN] switch.                                 |
| 18         | DISP      | Input port for the [DISP] switch.                                 |
| 19         | PROG      | Input port for the [PROG] switch.                                 |
| 26         | COAXSW    | Outputs the antenna switching signal.                             |
| 27         | CWO       | Outputs the CW signal for transmit.                               |
| 28         | KBEEP     | Outputs the beep audio signals to the speaker.                    |
| 29         | M/SO      | Outputs the master/slave switching signal.                        |
| 30         | M/SI      | Input port for the master/slave switching signal.                 |
| 33         | E_PTT     | Input port for the PTT signal form the REMOTE connector.          |
| 34         | E_PT2     | Input port for PTT signal from the ACC connector.                 |
| 35-39      | D0-D4     | Input port for the memory channel control signal.                 |
| 40         | NDET      | Input port for the noise signal from the FM IF IC (RX unit; IC2). |
| 41         | SW        | Outputs the temperature or PLL lock voltage switching signal.     |
| 43         | 2/5DTMF0  | Outputs the 2/5 TONE and DTMF signals.                            |
| 44         | CTDTO     | Outputs the CTCSS/DTCS signals.                                   |
| 45         | PSD       | Input port for the detection signal from the REG unit.            |
| 46         | FWSWR     | Input port for FW SWR signal from the PA unit.                    |

**CPU-Continued**

| Pin number | Port name | Description   |
|------------|-----------|---|
| 47         | RVSWR     | Input port for the RV SWR signal from the PA unit.                                    |
| 48         | TEMP      | Input port for the temperature signals of PA and REG units.                           |
| 49         | T/RLV     | Input port for the VCO lock voltage of the TX and RX units.                           |
| 50         | RSSI      | Input port for the RSSI signal from the FM IF IC (RX unit; IC2).                      |
| 51         | 25TI      | Input port for the 2/5TONE signals.   |
| 52         | DTCS      | Input port for the DTCS signal.   |
| 68         | TEL-BUSY  | Input port for the busy signal from the pulse tone dialler IC (LOGIC unit; IC47).     |
| 69         | MCK       | Outputs the serial clock signal for the EEPROM (LOGIC unit; IC37).                    |
| 70         | MDT       | I/O port for the serial data signal from/to the EEPROM (LOGIC unit; IC37).            |
| 71         | TELSTB    | Outputs strobe signal for the pulse tone dialler IC (LOGIC unit; IC47).               |
| 72         | HOOKC     | Outputs the ON/OFF HOOK control signal for the telephone line.                        |
| 73         | RING      | Input port for the ringer detecting signal from the telephone line.                   |
| 74         | SHIFT     | Outputs the control signal for the clock shift circuit.                               |
| 75         | INT       | Input port for the power supply detection signal.                                     |
| 76         | TXDTO     | Outputs the serial data signal to the ACC connector.                                  |
| 77         | RXDTO     | Input port for serial data signal from the ACC connector.                             |
| 78         | DTSEL1    | Outputs the control signal for the DTMF SW IC (LOGIC unit; IC50).                     |
| 79         | TXD1      | Outputs the clone data signal.  |
| 80         | RXD1      | Input port for the clone data signal.   |
| 81         | DTSEL2    | Outputs the control signal for the DTMF SW IC (LOGIC unit; IC30).                     |
| 82         | DTSTD     | Input port for the TONE detecting signal from the DTMF decoder IC (LOGIC unit; IC31). |
| 85         | DTMFD     | Input port for the data decoding signal from the DTMF decoder IC (LOGIC unit; IC31).  |
| 86         | DTACK     | Outputs the clock signal for the DTMF decoder IC (LOGIC unit; IC31).                  |
| 87         | ONHOOK    | Input port for the detection signal of the ON-HOOK signal.                            |
| 88         | IOE       | Outputs the control signal for the port expander IC (LOGIC unit; IC39–IC41).          |

**CPU-Continued**

| Pin number | Port name | Description   |
|------------|-----------|---|
| 89         | PE3STB    | Outputs the strobe signal for the port expander IC (LOGIC unit; IC41).  |
| 90         | PE2STB    | Outputs the strobe signal for the port expander IC (LOGIC unit; IC40).  |
| 91         | PE1STB    | Outputs the strobe signal for the port expander IC (LOGIC unit; IC39).  |
| 95         | D2STB     | Outputs the strobe signal for the D/A converter IC (LOGIC unit; IC25).  |
| 96         | D1STB     | Outputs the strobe signal for the D/A converter IC (TX unit; IC5).  |
| 97         | SDTO      | Outputs the serial data signal for the PLL IC (RX unit; IC4, TX unit; IC2), dialer IC (LOGIC unit; IC47), port expander IC (LOGIC unit; IC39–IC41) and optional boards. |
| 98         | SCK       | Outputs the clock signal for the PLL IC (RX unit; IC4, TX unit; IC2), dialer IC (LOGIC unit; IC47), port expander IC (LOGIC unit; IC39–IC41) and optional boards.       |
| 99         | RUNLK     | Input port for the unlock signal from the PLL IC (RX unit; IC4) on the RX unit.   |
| 100        | C/DSW     | Outputs the control signal for the CTCSS/DTCS filter (LOGIC unit; IC4).   |

# SECTION 4 ADJUSTMENT PROCEDURES

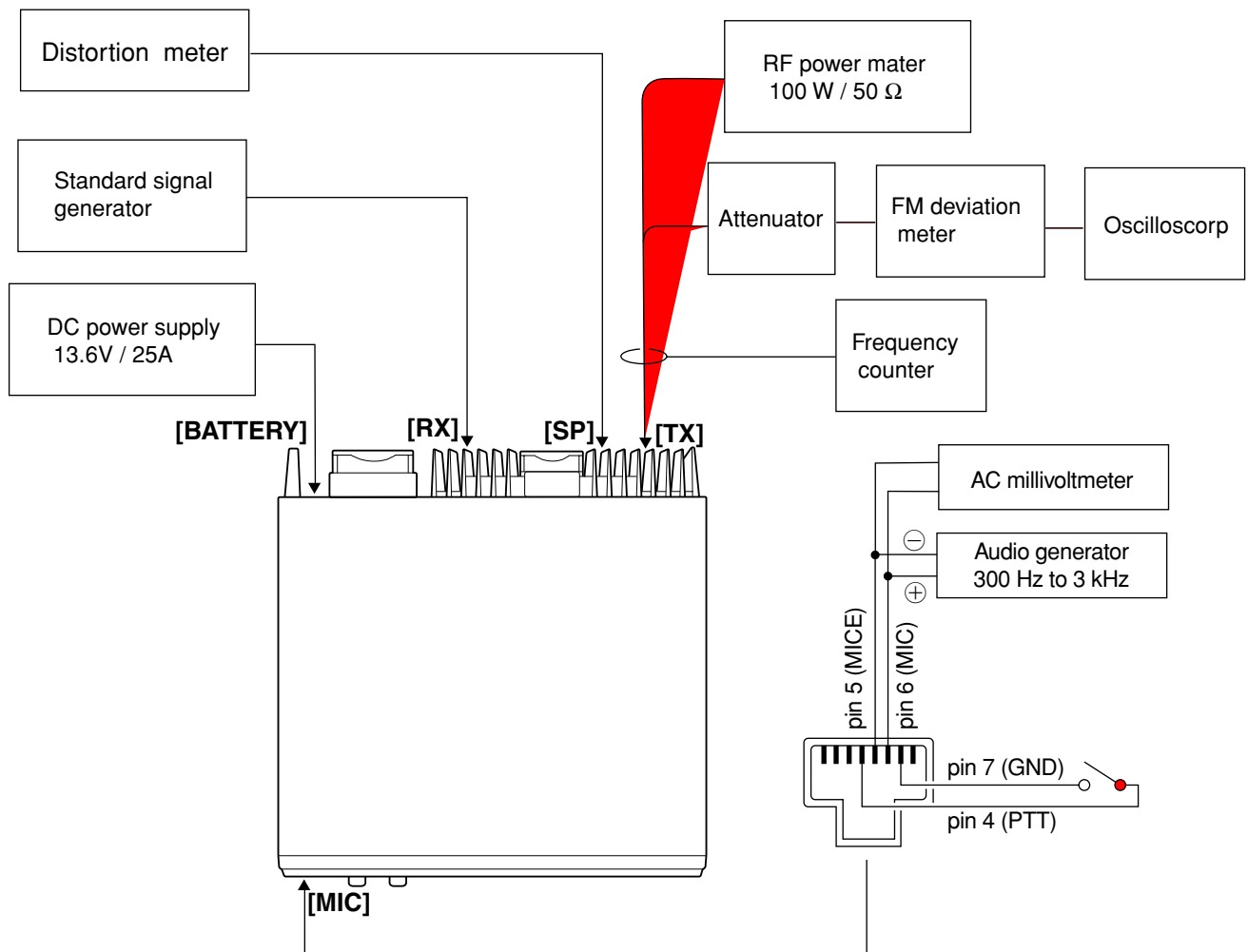
## 4-1 PREPARATION

When adjusting the contents on page 4-7, a JIG CABLE is required.  
Some adjustments must be performed on the "ADJUSTMENT MODE". Refer to the next page in detail.

### ■ REQUIRED TEST EQUIPMENT

| EQUIPMENT                        | GRADE AND RANGE   | EQUIPMENT                       | GRADE AND RANGE   |
|----------------------------------|---|---------------------------------|---|
| DC power supply                  | Output voltage : 13.6 V DC<br>Current capacity : 25 A or more   | Audio generator                 | Frequency range : 300–3000 Hz<br>Output level : 1–500 mV                          |
| RF power meter (terminated type) | Measuring range : 1–100 W<br>Frequency range : 300–600 MHz<br>Impedance : 50 Ω<br>SWR : Less than 1.2 : 1 | Attenuator                      | Power attenuation : 40 or 50 dB<br>Capacity : 100 W or more                       |
| Frequency counter                | Frequency range : 0.1–600 MHz<br>Frequency accuracy : ±1 ppm or better<br>Sensitivity : 100 mV or better  | Standard signal generator (SSG) | Frequency range : 120–600 MHz<br>Output level : 0.1 μV–32 mV<br>(–127 to –17 dBm) |
| FM deviation meter               | Frequency range : DC–600 MHz<br>Measuring range : 0 to ±5 kHz   | AC millivoltmeter               | Measuring range : 10 mV–10 V  |
| Digital multimeter               | Input impedance : 10 MΩ/V DC or better  | Oscilloscope                    | Frequency range : DC–20 MHz<br>Measuring range : 0.01–20 V                        |
|                                  |   | FM deviation meter              | Frequency range : 30–600 MHz<br>Measuring range : 10 mV–10 V                      |

### • CONNECTION



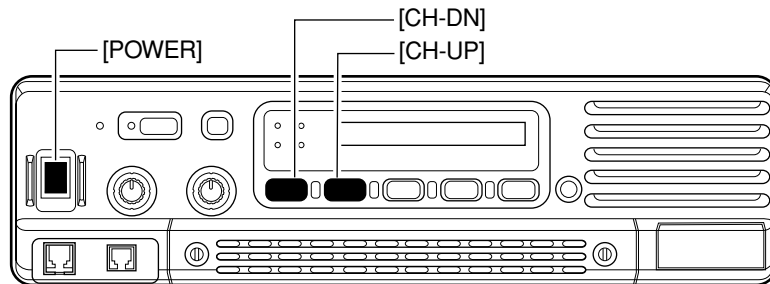


## ■ ENTERING THE ADJUSTMENT MODE

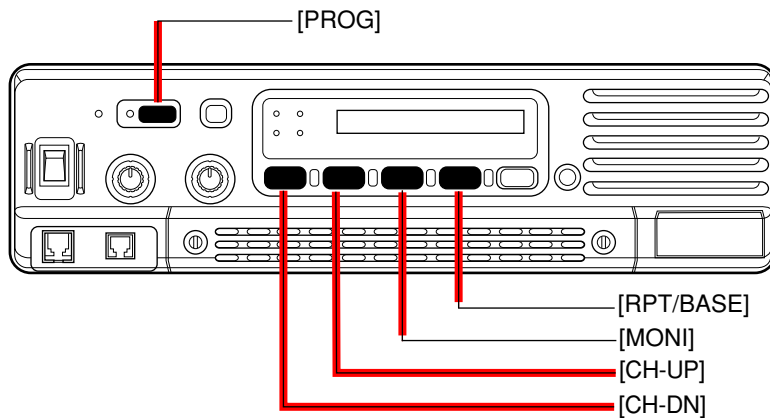
- ① Turn the power OFF.
- ② Push and hold [CH-DN] and [CH-UP] buttons, then turn the power ON, keep on pushing [CH-DN] and [CH-UP] buttons until sounds 1 beep audio.
- ③ Push [CH-DN] button, then sounds 2 beep audio.

## ■ EXITING THE ADJUSTMENT MODE

- ① Turn the power OFF.
- ② Push and hold [CH-UP] button, then turn the power ON, keep pushing [CH-UP] button until sounds 2 beep audio.
- ③ Push the [CH-UP] button, then sounds 1 beep audio.



## ■ OPERATING IN THE ADJUSTMENT MODE

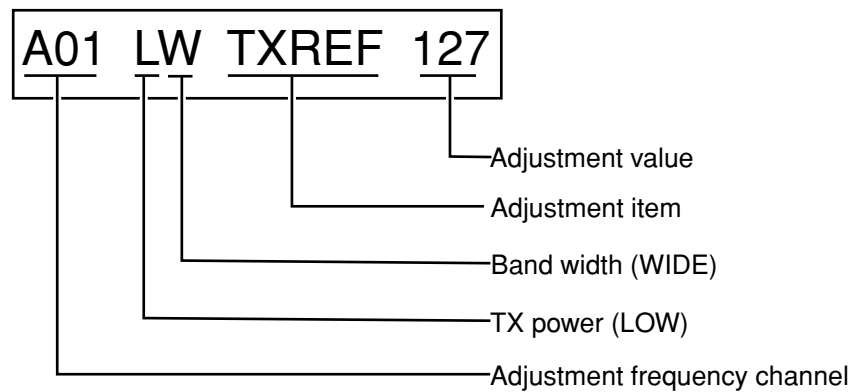


- Change the adjustment frequency channel (+1). : Push the [CH-UP] button.
- Change the adjustment frequency channel (-1). : Push the [CH-DN] button.
- Change the next adjustment item. : Push the [PROG] button.
- Adjust the specified value (+1). : Push the [RPT/BASE] button.
- Adjust the specified value (-1). : Push the [MONI] button.

## ■ ADJUSTMENT MODE CH LIST

| CH  | RX      | TX      | LCD DISPLAY       | BAND | W/N | ADJUSTMENT   |
|-----|---------|---------|-------------------|------|-----|--|
| A01 | 479.275 | 450.275 | A01 LW TXREF ***  | H    | W   | TVCO/RVCO adjustment.<br>Reference frequency adjustment. |
| A03 | 465.075 | 465.275 | A03 LW MRTUN ***  | M    | W   | RX sensitivity adjustment.                               |
| A05 | 450.075 | 450.275 | A05 LW RPTSQL***  | L    | W   | RPT SQL adjustment.                                      |
| A06 | 450.075 | 450.275 | A06 HW POWER ***  | M    | W   | TX power adjustment.                                     |
| A07 | 465.075 | 465.275 | A07 LW M DEV ***  | M    | W   | TX modulation adjustment.                                |
| A08 | 450.075 | 450.275 | A08 LW LMODC ***  | L    | W   | TX modulation adjustment.                                |
| A09 | 479.925 | 479.725 | A09 LW HMODC ***  | H    | W   | TX modulation adjustment.                                |
| A10 | 465.075 | 465.275 | A10 LW CTCDEV***  | M    | W   | CTCSS modulation adjustment                              |
| A11 | 450.075 | 465.275 | A11 LW DTCADJ***  | M    | W   | DTCS modulation adjustment.                              |
| A12 | 465.075 | 465.275 | A12 LN CTCDEV***  | M    | N   | CTCSS modulation adjustment. (NARROW)                    |
| A13 | 460.275 | 465.275 | A13 LW RPTAF ***  | M    | W   | RPT modulation adjustment. (WIDE)                        |
| A14 | 465.075 | 465.275 | A14 LN RPTAF ***. | M    | N   | RPT modulation adjustment. (NARROW)                      |

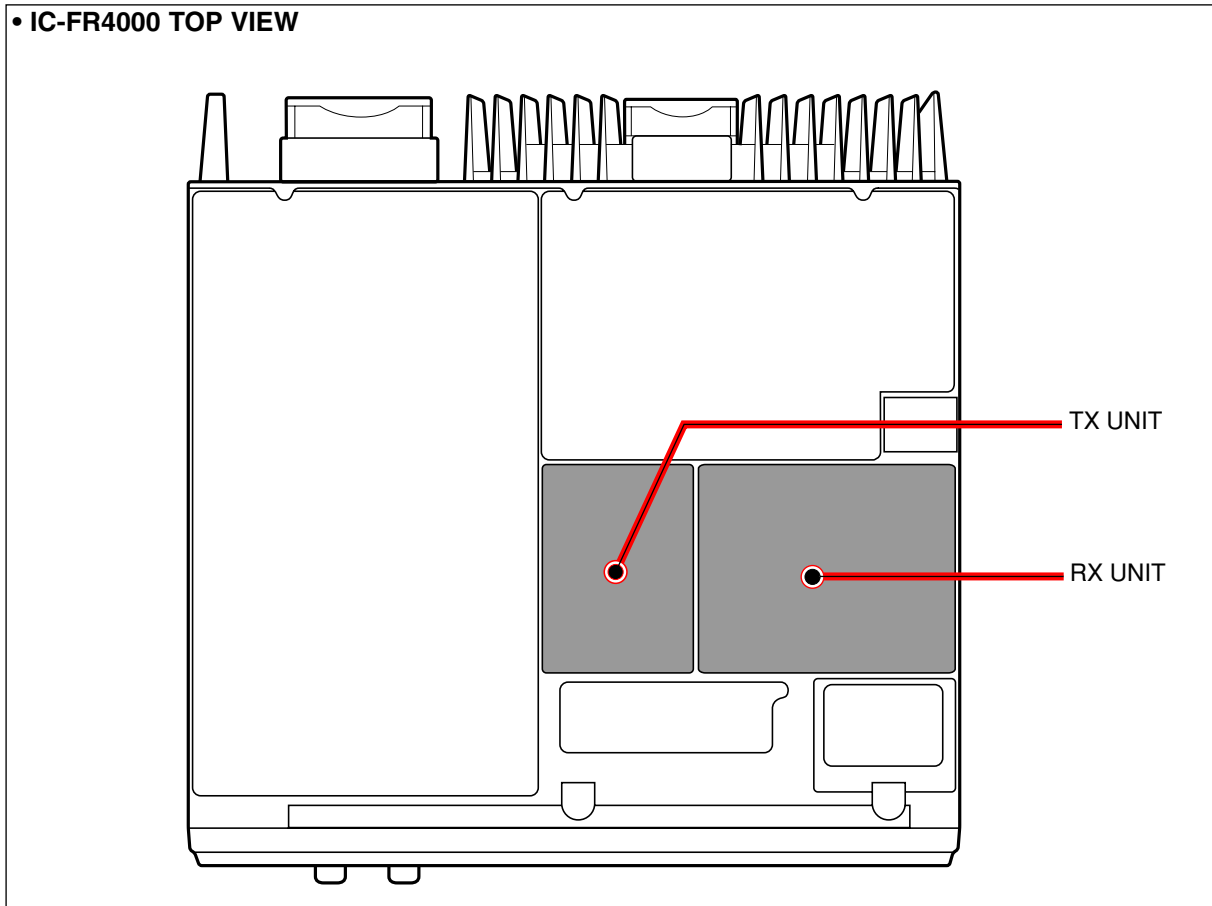
## ■ LCD DISPLAY IN THE ADJUSTMENT MODE



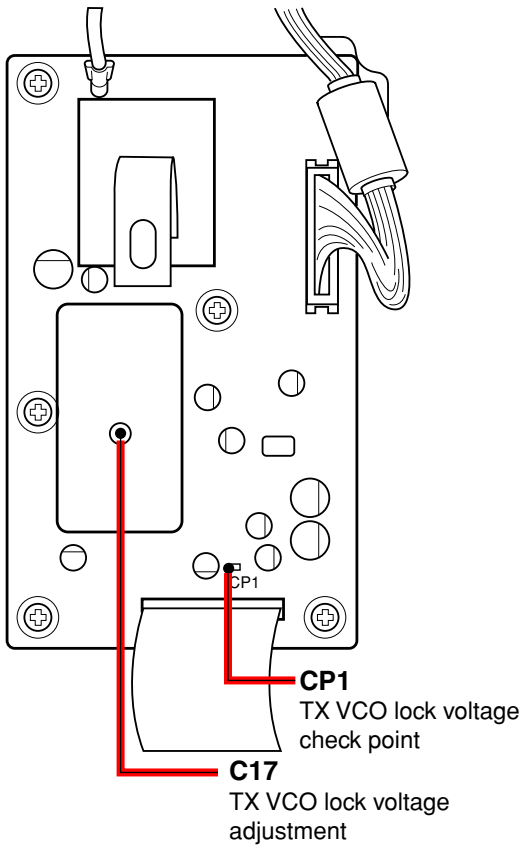
## 4-2 PLL ADJUSTMENT

| ADJUSTMENT          | ADJUSTMENT CONDITIONS   | MEASUREMENT |   | VALUE        | ADJUSTMENT |                     |
|---------------------|---|-------------|---|--------------|------------|---------------------|
|                     |   | UNIT        | LOCATION  |              | UNIT       | ADJUST              |
| TX VCO LOCK VOLTAGE | 1<br>• LCD display : A01 LW TXREF<br>• Receiving  | TX          | Connect a digital multi meter or oscilloscope to check point CP1. | 1.0 V        | TVCO       | C17                 |
| RX VCO LOCK VOLTAGE | 1<br>• LCD display : A01 LW TXREF<br>• Receiving  | RX          | Connect a digital multi meter or oscilloscope to check point CP1. | 4.3 V        | RVCO       | C17                 |
| REFERENCE FREQUENCY | 1<br>• Wait for 5 minutes after power ON.<br>• LCD display : A01 LW TXREF<br>• Connect an RF power meter or 50 $\Omega$ dummy load to the TX antenna connector.<br>• Transmitting | REAR panel  | Loosely couple a frequency counter to the TX antenna connector.   | 450.2750 MHz | FRONT      | [PRT/BASE] / [MONI] |
|                     | 2<br>• LCD display : A01 LW RXREF<br>• Receiving  | RX          | Connect a frequency counter to check point HJ4.                   | 409.9250 MHz | FRONT      | [PRT/BASE] / [MONI] |

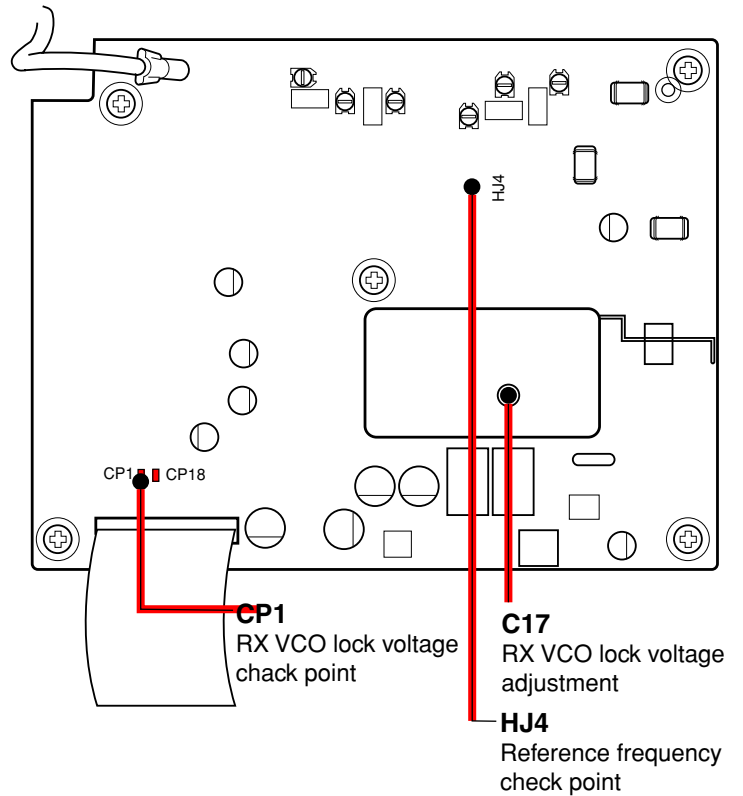
• IC-FR4000 TOP VIEW



• TX UNIT TOP VIEW



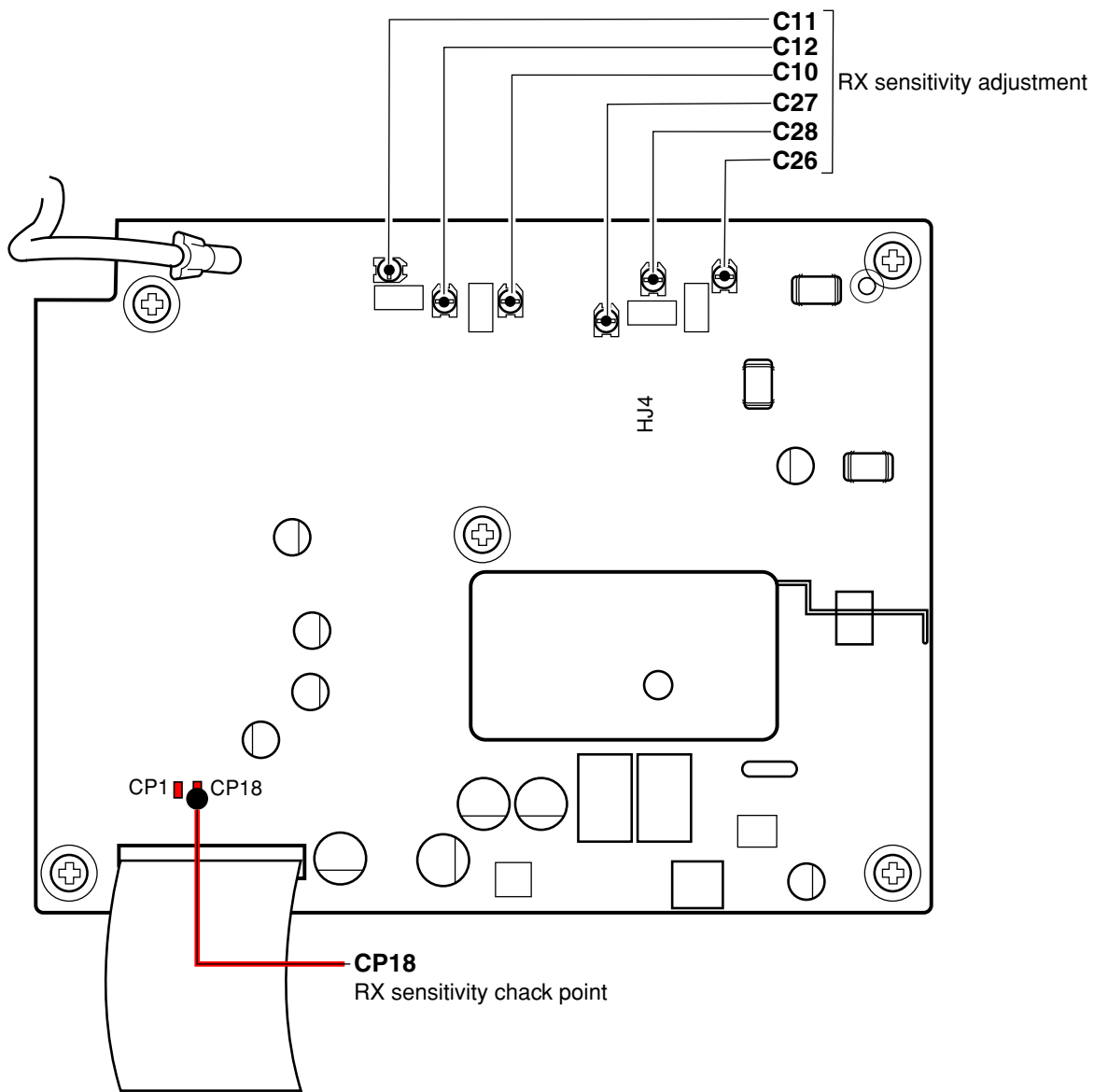
• RX UNIT TOP VIEW



### 4-3 RX ADJUSTMENT

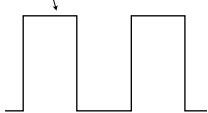
| ADJUSTMENT     | ADJUSTMENT CONDITIONS   | MEASUREMENT |  | VALUE           | ADJUSTMENT |  |
|----------------|---|-------------|--|-----------------|------------|--|
|                |   | UNIT        | LOCATION   |                 | UNIT       | ADJUST                                 |
| RX SENSITIVITY | <ul style="list-style-type: none"> <li>LCD display : A03 LW MRTUN</li> <li>Connect a standard signal generator to the RX antenna connector and set as:                             <ul style="list-style-type: none"> <li>Frequency : 465.075 MHz</li> <li>Level : 10 <math>\mu</math>V* (-87 dBm)</li> <li>Modulation : 1 kHz</li> <li>Deviation : <math>\pm</math>3 kHz</li> </ul> </li> <li>Receiving</li> </ul> | RX          | Connect a digital multi meter or oscilloscope to check point CP18. | Maximum voltage | RX         | C11<br>C12<br>C10<br>C27<br>C28<br>C26 |

• RX UNIT TOP VIEW



## 4-4 SOFTWARE ADJUSTMENT

Select an operation using [CH-UP] / [CH-DN] keys, then set specified value using [RPT/BASE] / [MONI] keys on the FRONT PANEL.

| ADJUSTMENT                   | ADJUSTMENT CONDITION   | MEASUREMENT |   | VALUE  |
|------------------------------|--|-------------|---|--|
|                              |  | UNIT        | LOCATION  |  |
| OUTPUT POWER<br>[Power (Hi)] | 1 <ul style="list-style-type: none"> <li>• LCD display : A06 HW POWER</li> <li>• Operating freq. : 465.2750 MHz</li> <li>• Connect the RF power meter to the TX antenna connector.</li> <li>• Transmitting</li> </ul>  | Rear panel  | Connect an RF power meter to the TX antenna connector.  | 50.0 W   |
| [Power (LOW)]                | 2 <ul style="list-style-type: none"> <li>• LCD display : A06 LW M POWER</li> <li>• Operating freq. : 465.2750 MHz</li> <li>• Transmitting</li> </ul>   |             |   | 10.0 W   |
| FM DEVIATION                 | <ul style="list-style-type: none"> <li>• LCD display : A07 LW M DEV</li> <li>• Operating freq. : 465.2750 MHz</li> <li>• IF bandwidth : Wide</li> <li>• Connect an audio generator to the [MIC] jack through the JIG cable and set as:<br/>1.0 kHz/40 mVrms</li> <li>• Set an FM deviation meter as:<br/>HPF : OFF<br/>LPF : 20 kHz<br/>De-emphasis: OFF<br/>Detector : (P-P)/2</li> <li>• Transmitting</li> </ul> | Rear panel  | Connect an FM deviation meter to the TX antenna connector through the attenuator.                     | ±4.5 kHz   |
| CTCSS DEVIATION<br>[WIDE]    | 1 <ul style="list-style-type: none"> <li>• LCD display : A10 LW CTCDEV</li> <li>• Operating freq. : 465.2750 MHz</li> <li>• Set the FM deviation meter as:<br/>HPF : OFF<br/>LPF : 20 kHz<br/>De-emphasis: OFF<br/>Detector : (P-P)/2</li> <li>• No audio applied to the [MIC] connector.</li> <li>• Transmitting</li> </ul>   | Rear panel  | Connect an FM deviation meter to the TX antenna connector through the attenuator.                     | ±0.7 kHz   |
| [NARROW]                     | 2 <ul style="list-style-type: none"> <li>• LCD display : A12 LN CTCDEV</li> <li>• Operating freq : 465.2750 MHz</li> <li>• No audio applied to the [MIC] connector.</li> <li>• Transmitting</li> </ul>   |             |   | ±0.35 kHz  |
| MODULATION BALANCE<br>[DTCS] | <ul style="list-style-type: none"> <li>• LCD display : A11 LW DTCADJ</li> <li>• Operating freq. : 465.2750 MHz</li> <li>• No audio applied to the [MIC] connector.</li> <li>• Transmitting.</li> </ul>   | Rear panel  | Connect an FM deviation meter with an oscilloscope to the TX antenna connector through an attenuator. | Set to square wave form<br> |
| REPEATER DEVIATION<br>[WIDE] | 1 <ul style="list-style-type: none"> <li>• LCD display : A13 LW RPTAF</li> <li>• Operating freq : 460.2750 MHz (RX)<br/>465.2750 MHz (TX)</li> <li>• Connect a standard signal generator to the RX antenna connector and set as:<br/>Level : 1 mV* (-47 dBm)<br/>Modulation : 1 kHz<br/>Deviation : ±3 kHz</li> <li>• Transmitting</li> </ul>  | Rear panel  | Connect an FM deviation meter to the TX antenna connector through the attenuator.                     | ±3.0 kHz   |
| [NARROW]                     | 2 <ul style="list-style-type: none"> <li>• LCD display : A14 LN RPTAF</li> <li>• Operating freq : 460.2750 MHz (RX)<br/>465.2750 MHz (TX)</li> <li>• Transmitting</li> </ul>   |             |   | ±1.5 kHz   |

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

# SECTION 5 PARTS LIST

[REG UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION  |                         |
|---------|------------|--------------|-------------------------|
| IC1     | 1180001320 | IC           | NJM7809FA               |
| IC2     | 1180002290 | S.IC         | NJM7809DL1A-TE          |
| IC3     | 1180001860 | S.IC         | TA78M05F (TE16L)        |
| IC4     | 1180002480 | S.REG        | TA78DL12AF (TE16L)      |
| IC6     | 1180001540 | S.IC         | TA78L08F (TE12R)        |
| IC7     | 1110002860 | S.IC         | TA75S393F (TE85R)       |
| IC8     | 1110002860 | S.IC         | TA75S393F (TE85R)       |
| IC9     | 1110002400 | S.IC         | NJM2107F-TE1            |
| IC11    | 1110002750 | S.IC         | TA75S01F (TE85R)        |
| Q1      | 1590003110 | FET          | 2SJ533                  |
| Q4      | 1590003110 | FET          | 2SJ533                  |
| Q5      | 1540000550 | S.TRANSISTOR | 2SD1664 T100Q           |
| Q7      | 1590001940 | S.TRANSISTOR | DTC144EE TL             |
| Q8      | 1590003030 | S.FET        | 2SJ553STR               |
| Q9      | 1590001940 | S.TRANSISTOR | DTC144EE TL             |
| D2      | 1750000550 | S.DIODE      | 1SS355 TE-17            |
| D3      | 1790000700 | DIODE        | DSA3A1                  |
| D4      | 1710001170 | DIODE        | FCH30A03L               |
| D6      | 1790000720 | DIODE        | MA29W-B                 |
| D7      | 1710001170 | DIODE        | FCH30A03L               |
| D8      | 1730002340 | S.ZENER      | MA8047-M (TX)           |
| R3      | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R14     | 7100000830 | RESISTOR     | SSG 3.3 Ω               |
| R16     | 7030003240 | S.RESISTOR   | ERJ3GEYJ 220 V (22 Ω)   |
| R17     | 7030003240 | S.RESISTOR   | ERJ3GEYJ 220 V (22 Ω)   |
| R18     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R19     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R21     | 7030010410 | S.RESISTOR   | ERJ1TYJ 220U (22 Ω)     |
| R23     | 7030003570 | S.RESISTOR   | ERJ3GEYJ 123 V (12 kΩ)  |
| R24     | 7030003510 | S.RESISTOR   | ERJ3GEYJ 392 V (3.9 kΩ) |
| R24     | 7030003550 | S.RESISTOR   | ERJ3GEYJ 822 V (8.2 kΩ) |
| R27     | 7030003420 | S.RESISTOR   | ERJ3GEYJ 681 V (680 Ω)  |
| R30     | 7030003450 | S.RESISTOR   | ERJ3GEYJ 122 V (1.2 kΩ) |
| R31     | 7030003200 | S.RESISTOR   | ERJ3GEYJ 100 V (10 Ω)   |
| R32     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R33     | 7030003510 | S.RESISTOR   | ERJ3GEYJ 392 V (3.9 kΩ) |
| R34     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R35     | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R36     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R37     | 7030003200 | S.RESISTOR   | ERJ3GEYJ 100 V (10 Ω)   |
| R38     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R39     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R40     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R41     | 7030003620 | S.RESISTOR   | ERJ3GEYJ 333 V (33 kΩ)  |
| R42     | 7030003200 | S.RESISTOR   | ERJ3GEYJ 100 V (10 Ω)   |
| R58     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R59     | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R60     | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R61     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R62     | 7030010510 | S.RESISTOR   | ERJ1TYJ 8R2U (8.2 Ω)    |
| R64     | 7030003240 | S.RESISTOR   | ERJ3GEYJ 220 V (22 Ω)   |
| R65     | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| R66     | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)  |
| R67     | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)  |
| R68     | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)  |
| C4      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C5      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C6      | 4510007690 | ELECTROLYTIC | LXZ25VB2200             |
| C7      | 4510007690 | ELECTROLYTIC | LXZ25VB2200             |
| C9      | 4510007690 | ELECTROLYTIC | LXZ25VB2200             |
| C11     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C15     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C17     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C19     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C20     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C22     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C23     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C24     | 4550006770 | S.TANTALUM   | TEMSVD2 1C 476M-12R     |

[REG UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION    |                    |
|---------|------------|----------------|--------------------|
| C25     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C26     | 4510007660 | ELECTROLYTIC   | LXZ25VB100         |
| C27     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C28     | 4510007650 | S.ELECTROLYTIC | EEVHB1C470P        |
| C29     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C31     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C33     | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T |
| C34     | 4510007570 | S.ELECTROLYTIC | EEVHB1C220UR       |
| C35     | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T |
| C36     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C37     | 4510007660 | ELECTROLYTIC   | LXZ25VB100         |
| C38     | 4510007660 | ELECTROLYTIC   | LXZ25VB100         |
| C41     | 4510007570 | S.ELECTROLYTIC | EEVHB1C220UR       |
| C42     | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T |
| C43     | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T |
| C45     | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T |
| C47     | 4510007660 | ELECTROLYTIC   | LXZ25VB100         |
| C48     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C49     | 4510007570 | S.ELECTROLYTIC | EEVHB1C220UR       |
| C50     | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T |
| C51     | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T |
| C52     | 4030017490 | S.CERAMIC      | C1608 JB 1A 105K-T |
| RL2     | 6330001680 | RELAY          | ACB32101           |
| J13     | 6510018970 | S.CONNECTOR    | B4B-PH-SM3-TB      |
| J14     | 6510022620 | S.CONNECTOR    | 10FMN-BMTR-A-TBT   |
| J16     | 6510018960 | S.CONNECTOR    | B2B-PH-SM3-TB      |
| J17     | 6510018960 | S.CONNECTOR    | B2B-PH-SM3-TB      |
| J18     | 6510018960 | S.CONNECTOR    | B2B-PH-SM3-TB      |
| F1      | 5220000300 | HOLDER         | 1A5600             |
| F2      | 5220000300 | HOLDER         | 1A5600             |
| F3      | 5210000850 | FUSE           | ATC-20             |
| F4      | 5220000300 | HOLDER         | 1A5600             |
| F5      | 5220000300 | HOLDER         | 1A5600             |
| F6      | 5210000850 | FUSE           | ATC-20             |
| W1      | 7120000490 | JUMPER         | ERD25T0            |
| W2      | 7120000490 | JUMPER         | ERD25T0            |
| W3      | 7120000490 | JUMPER         | ERD25T0            |
| W4      | 7120000490 | JUMPER         | ERD25T0            |
| EP1     | 6910056075 | PCB            | B 5651E            |
| EP2     | 6910012350 | S.BEAD         | MMZ1608Y 102BT     |
| EP3     | 6910011340 | TERMINAL       | OT-010 M3          |
| EP4     | 6910011340 | TERMINAL       | OT-010 M3          |
| EP5     | 6910011340 | TERMINAL       | OT-010 M3          |
| EP6     | 6910011340 | TERMINAL       | OT-010 M3          |
| EP7     | 6910011340 | TERMINAL       | OT-010 M3          |
| EP8     | 6910011340 | TERMINAL       | OT-010 M3          |
| EP9     | 6910011340 | TERMINAL       | OT-010 M3          |
| EP10    | 6910011340 | TERMINAL       | OT-010 M3          |

S.=Surface mount

**[FRONT UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION  |                         |
|---------|------------|--------------|-------------------------|
| Q1      | 1530002060 | S.TRANSISTOR | 2SC4081 T106 R          |
| D1      | 1750000930 | S.DIODE      | NNCD8.2C-T1             |
| D2      | 1750000930 | S.DIODE      | NNCD8.2C-T1             |
| D3      | 1750000930 | S.DIODE      | NNCD8.2C-T1             |
| L1      | 6200001620 | S.COIL       | ELJFC 1R0K-F            |
| R1      | 7030003400 | S.RESISTOR   | ERJ3GEYJ 471 V (470 Ω)  |
| R2      | 7030003200 | S.RESISTOR   | ERJ3GEYJ 100 V (10 Ω)   |
| R3      | 7030003200 | S.RESISTOR   | ERJ3GEYJ 100 V (10 Ω)   |
| R8      | 7030001150 | S.RESISTOR   | MCR50JZHJ 150 Ω (151)   |
| R9      | 7030001150 | S.RESISTOR   | MCR50JZHJ 150 Ω (151)   |
| R10     | 7030001160 | S.RESISTOR   | MCR50JZHJ 180 Ω (181)   |
| R11     | 7030001150 | S.RESISTOR   | MCR50JZHJ 150 Ω (151)   |
| R12     | 7030001150 | S.RESISTOR   | MCR50JZHJ 150 Ω (151)   |
| R13     | 7030001150 | S.RESISTOR   | MCR50JZHJ 150 Ω (151)   |
| R15     | 7030003460 | S.RESISTOR   | ERJ3GEYJ 152 V (1.5 kΩ) |
| R17     | 7030008220 | S.RESISTOR   | MCR100JZHJ 47 Ω (470)   |
| R18     | 7030008220 | S.RESISTOR   | MCR100JZHJ 47 Ω (470)   |
| R19     | 7540000240 | S.ABSORBER   | KU10R29N-4063           |
| R21     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R22     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R23     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R24     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R26     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R27     | 7030010910 | S.RESISTOR   | ERJ1TYJ 150U (15 Ω)     |
| R28     | 7030010910 | S.RESISTOR   | ERJ1TYJ 150U (15 Ω)     |
| C1      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C2      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C3      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C4      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C5      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C12     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C13     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C14     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C15     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C16     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C17     | 4030017200 | S.CERAMIC    | GRM31BR32J102KY01L      |
| C18     | 4030017200 | S.CERAMIC    | GRM31BR32J102KY01L      |
| J1      | 6510022620 | S.CONNECTOR  | 10FMN-BMTTR-A-TBT       |
| J2      | 6510022580 | S.CONNECTOR  | 24FMN-BMTTR-A-TBT       |
| J3      | 6510021600 | S.CONNECTOR  | S2B-PH-SM3-TB           |
| J4      | 6510022910 | CONNECTOR    | IMS9201B-1-16Z012Z      |
| J6      | 6510022790 | CONNECTOR    | 95003-2641              |
| J7      | 6450001470 | CONNECTOR    | 95003-2881              |
| J8      | 6510023250 | S.CONNECTOR  | S3B-PH-SM3-TB           |
| J9      | 6510021600 | S.CONNECTOR  | S2B-PH-SM3-TB           |
| DS1     | 5040001820 | LED          | BG3889S                 |
| DS2     | 5040001820 | LED          | BG3889S                 |
| DS3     | 5040001330 | LED          | BR3889S                 |
| DS4     | 5040001820 | LED          | BG3889S                 |
| DS5     | 5040001820 | LED          | BG3889S                 |
| DS6     | 5040001820 | LED          | BG3889S                 |
| DS7     | 5030002190 | LCD          | MSC-C161UYLT-4W         |
| S1      | 2260001680 | S.SWITCH     | SKQDPB                  |
| S2      | 2260001680 | S.SWITCH     | SKQDPB                  |
| S3      | 2260001680 | S.SWITCH     | SKQDPB                  |
| S4      | 2260001680 | S.SWITCH     | SKQDPB                  |
| S5      | 2260001680 | S.SWITCH     | SKQDPB                  |
| S6      | 2260001680 | S.SWITCH     | SKQDPB                  |
| S7      | 2260001680 | S.SWITCH     | SKQDPB                  |
| S8      | 2260001680 | S.SWITCH     | SKQDPB                  |
| EP1     | 0910056085 | PCB          | B 5652E                 |
| EP2     | 6910014560 | SPACER       | LM-15                   |
| EP3     | 6910014550 | SPACER       | LM-13                   |
| EP4     | 6910014540 | SPACER       | LM-10                   |
| EP5     | 6910014540 | SPACER       | LM-10                   |
| EP6     | 6910014540 | SPACER       | LM-10                   |

**[FRONT UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION |       |
|---------|------------|-------------|-------|
| EP7     | 6910014540 | SPACER      | LM-10 |

**[LOGIC UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION  |                    |
|---------|------------|--------------|--------------------|
| IC1     | 1110003780 | S.IC         | NJM2902V-TE1       |
| IC2     | 1110003780 | S.IC         | NJM2902V-TE1       |
| IC3     | 1110003780 | S.IC         | NJM2902V-TE1       |
| IC4     | 1110003780 | S.IC         | NJM2902V-TE1       |
| IC6     | 1110002400 | S.IC         | NJM2107F-TE1       |
| IC7     | 1110003780 | S.IC         | NJM2902V-TE1       |
| IC8     | 1110003780 | S.IC         | NJM2902V-TE1       |
| IC9     | 1110003780 | S.IC         | NJM2902V-TE1       |
| IC10    | 1110003780 | S.IC         | NJM2902V-TE1       |
| IC11    | 1180000420 | S.IC         | TA78L05F (TE12R)   |
| IC12    | 1110003780 | S.IC         | NJM2902V-TE1       |
| IC13    | 1130008090 | S.IC         | BU4066BCFV-E1      |
| IC14    | 1130004200 | S.IC         | TC4S66F (TE85R)    |
| IC16    | 1130006220 | S.IC         | TC4W53FU (TE12L)   |
| IC17    | 1110003090 | IC           | LA4425A            |
| IC20    | 1130006220 | S.IC         | TC4W53FU (TE12L)   |
| IC21    | 1130006220 | S.IC         | TC4W53FU (TE12L)   |
| IC25    | 1190001350 | S.IC         | M62364FP 600D      |
| IC26    | 1110003800 | S.IC         | NJM2904V-TE1       |
| IC28    | 1110002400 | S.IC         | NJM2107F-TE1       |
| IC29    | 1190001720 | S.IC         | FX805LG            |
| IC30    | 1130006220 | S.IC         | TC4W53FU (TE12L)   |
| IC31    | 1130007400 | S.IC         | LC7387M-TRM        |
| IC32    | 1130006220 | S.IC         | TC4W53FU (TE12L)   |
| IC33    | 1140010140 | S.IC         | HD64F2238BFA13     |
| IC34    | 1110005710 | S.IC         | S-80842CLUA-B63-T2 |
| IC35    | 1130009320 | S.IC         | BU4011BFV-E2       |
| IC36    | 1130009320 | S.IC         | BU4011BFV-E2       |
| IC37    | 1140008650 | S.IC         | HN58X2464TI        |
| IC38    | 1180002250 | S.IC         | S-812C50AMC-C3E-T2 |
| IC39    | 1130007570 | S.IC         | BU4094BCFV-E2      |
| IC40    | 1130007570 | S.IC         | BU4094BCFV-E2      |
| IC41    | 1130007570 | S.IC         | BU4094BCFV-E2      |
| IC42    | 1170000280 | S.IC         | TLP121 (GB-TPL)    |
| IC43    | 1170000280 | S.IC         | TLP121 (GB-TPL)    |
| IC44    | 1120002830 | S.IC         | NJM2125F-TE1       |
| IC45    | 1110005000 | S.IC         | LMC567CM           |
| IC46    | 1190001740 | S.IC         | BA6566F-E2         |
| IC47    | 1190001730 | S.IC         | LC73701M-TLM       |
| IC48    | 1170000280 | S.IC         | TLP121 (GB-TPL)    |
| IC49    | 1170000280 | S.IC         | TLP121 (GB-TPL)    |
| IC50    | 1130006220 | S.IC         | TC4W53FU (TE12L)   |
| IC51    | 1110002400 | S.IC         | NJM2107F-TE1       |
| IC52    | 1110005690 | S.IC         | NJM2520V-TE1       |
| IC53    | 1130006220 | S.IC         | TC4W53FU (TE12L)   |
| Q1      | 1590001400 | S.TRANSISTOR | XP1214 (TX)        |
| Q2      | 1530002060 | S.TRANSISTOR | 2SC4081 T106 R     |
| Q3      | 1590001940 | S.TRANSISTOR | DTC144EE TL        |
| Q4      | 1530002060 | S.TRANSISTOR | 2SC4081 T106 R     |
| Q5      | 1510000510 | S.TRANSISTOR | 2SA1576A T106R     |
| Q6      | 1530002060 | S.TRANSISTOR | 2SC4081 T106 R     |
| Q7      | 1590001400 | S.TRANSISTOR | XP1214 (TX)        |
| Q8      | 1590003210 | S.TRANSISTOR | XP1111 (TX)        |
| Q9      | 1590003210 | S.TRANSISTOR | XP1111 (TX)        |
| Q10     | 1590003210 | S.TRANSISTOR | XP1111 (TX)        |
| Q11     | 1590003210 | S.TRANSISTOR | XP1111 (TX)        |
| Q17     | 1590001940 | S.TRANSISTOR | DTC144EE TL        |
| Q18     | 1590002010 | S.TRANSISTOR | XP1114 (TX)        |
| Q19     | 1590002010 | S.TRANSISTOR | XP1114 (TX)        |
| Q20     | 1590002010 | S.TRANSISTOR | XP1114 (TX)        |
| Q24     | 1550000020 | S.FET        | 2SJ377 (TE16R)     |
| Q25     | 1530002060 | S.TRANSISTOR | 2SC4081 T106 R     |
| Q26     | 1590001960 | S.TRANSISTOR | XP4311 (TX)        |
| Q27     | 1590001960 | S.TRANSISTOR | XP4311 (TX)        |
| Q28     | 1590001960 | S.TRANSISTOR | XP4311 (TX)        |
| Q29     | 1590001960 | S.TRANSISTOR | XP4311 (TX)        |
| Q37     | 1590001940 | S.TRANSISTOR | DTC144EE TL        |
| Q38     | 1590001400 | S.TRANSISTOR | XP1214 (TX)        |
| Q40     | 1590001940 | S.TRANSISTOR | DTC144EE TL        |

S.=Surface mount



**[LOGIC UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION  |                         |
|---------|------------|--------------|-------------------------|
| Q44     | 1590002430 | S.TRANSISTOR | DTA144EE TL             |
| Q45     | 1510000590 | S.TRANSISTOR | 2SA1362-Y (TE85L)       |
| Q48     | 1160000150 | S.TRANSISTOR | IMZ4 T108               |
| Q49     | 1590001960 | S.TRANSISTOR | XP4311 (TX)             |
| Q50     | 1590001960 | S.TRANSISTOR | XP4311 (TX)             |
|         |            |              |                         |
| D1      | 1730002650 | S.ZENER      | PTZ TE25 36B            |
| D4      | 1710001180 | S.BRIDGE     | D1UBA80-4062            |
| D5      | 1710001180 | S.BRIDGE     | D1UBA80-4062            |
| D6      | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D7      | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D8      | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D9      | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D10     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D11     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D12     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D13     | 1790000670 | S.DIODE      | SB07-03C-TB             |
| D14     | 1790001260 | S.DIODE      | MA2S077-(TX)            |
| D15     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D16     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D17     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D18     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D19     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D20     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D21     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D22     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D23     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D24     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D25     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D26     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D27     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D28     | 1750000550 | S.DIODE      | 1SS355 TE-17            |
| D29     | 1750000550 | S.DIODE      | 1SS355 TE-17            |
| D33     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D38     | 1730002640 | S.ZENER      | PTZ TE25 13B            |
| D43     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D44     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D45     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| D46     | 1790001250 | S.DIODE      | MA2S111-(TX)            |
|         |            |              |                         |
| X1      | 6050011490 | S.XTAL       | CR-733 (4.194304 MHz)   |
| X2      | 6050011000 | S.XTAL       | CR-681 (12.288 MHz)     |
| X3      | 6050009300 | S.XTAL       | CR-505 (4 MHz)          |
|         |            |              |                         |
| L1      | 6200009790 | S.COIL       | BLM31PG121SN1           |
| L2      | 6200009790 | S.COIL       | BLM31PG121SN1           |
| L3      | 6200009790 | S.COIL       | BLM31PG121SN1           |
| L4      | 6200009790 | S.COIL       | BLM31PG121SN1           |
| L5      | 6200009790 | S.COIL       | BLM31PG121SN1           |
| L6      | 6200009790 | S.COIL       | BLM31PG121SN1           |
| L7      | 6200009790 | S.COIL       | BLM31PG121SN1           |
| L8      | 6200009790 | S.COIL       | BLM31PG121SN1           |
| L9      | 6200009790 | S.COIL       | BLM31PG121SN1           |
| L10     | 6200009790 | S.COIL       | BLM31PG121SN1           |
| L11     | 6200009790 | S.COIL       | BLM31PG121SN1           |
|         |            |              |                         |
| R2      | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R3      | 7030003750 | S.RESISTOR   | ERJ3GEYJ 394 V (390 kΩ) |
| R5      | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| R6      | 7030003710 | S.RESISTOR   | ERJ3GEYJ 184 V (180 kΩ) |
| R7      | 7310004790 | S.TRIMMER    | EVM-3YSX50 B14 (103)    |
| R8      | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R9      | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R10     | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| R12     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R13     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R14     | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| R15     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R16     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R17     | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| R18     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R19     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R22     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R23     | 7030003740 | S.RESISTOR   | ERJ3GEYJ 334 V (330 kΩ) |
| R24     | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| R25     | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| R26     | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| R27     | 7030003530 | S.RESISTOR   | ERJ3GEYJ 562 V (5.6 kΩ) |

**[LOGIC UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION |                         |
|---------|------------|-------------|-------------------------|
| R28     | 7030003420 | S.RESISTOR  | ERJ3GEYJ 681 V (680 Ω)  |
| R29     | 7030003510 | S.RESISTOR  | ERJ3GEYJ 392 V (3.9 kΩ) |
| R30     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R31     | 7030003370 | S.RESISTOR  | ERJ3GEYJ 271 V (270 Ω)  |
| R32     | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)  |
| R33     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R34     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R35     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R36     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R37     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R40     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R48     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R50     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R51     | 7310004790 | S.TRIMMER   | EVM-3YSX50 B14 (103)    |
| R52     | 7030003670 | S.RESISTOR  | ERJ3GEYJ 125 V (82 kΩ)  |
| R53     | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)  |
| R54     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R55     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R56     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)   |
| R57     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)   |
| R58     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)   |
| R59     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)   |
| R60     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)   |
| R61     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)   |
| R62     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)   |
| R63     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)   |
| R64     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R65     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R66     | 7030003550 | S.RESISTOR  | ERJ3GEYJ 822 V (8.2 kΩ) |
| R67     | 7030003530 | S.RESISTOR  | ERJ3GEYJ 562 V (5.6 kΩ) |
| R68     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R69     | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)  |
| R70     | 7030003490 | S.RESISTOR  | ERJ3GEYJ 272 V (2.7 kΩ) |
| R71     | 7030003410 | S.RESISTOR  | ERJ3GEYJ 561 V (560 Ω)  |
| R72     | 7030003620 | S.RESISTOR  | ERJ3GEYJ 333 V (33 kΩ)  |
| R74     | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)  |
| R75     | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ) |
| R77     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R78     | 7030003660 | S.RESISTOR  | ERJ3GEYJ 683 V (68 kΩ)  |
| R79     | 7030003660 | S.RESISTOR  | ERJ3GEYJ 683 V (68 kΩ)  |
| R80     | 7030003660 | S.RESISTOR  | ERJ3GEYJ 683 V (68 kΩ)  |
| R81     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R82     | 7030003660 | S.RESISTOR  | ERJ3GEYJ 683 V (68 kΩ)  |
| R83     | 7030003660 | S.RESISTOR  | ERJ3GEYJ 683 V (68 kΩ)  |
| R84     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R85     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R86     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R87     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R88     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R89     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R90     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R91     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R92     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R94     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)   |
| R95     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)   |
| R96     | 7030003690 | S.RESISTOR  | ERJ3GEYJ 124 V (120 kΩ) |
| R97     | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 kΩ) |
| R98     | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 kΩ) |
| R99     | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 kΩ) |
| R100    | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 kΩ) |
| R101    | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 kΩ) |
| R102    | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 kΩ) |
| R103    | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R104    | 7030003750 | S.RESISTOR  | ERJ3GEYJ 394 V (390 kΩ) |
| R105    | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R106    | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R107    | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)   |
| R108    | 7030003710 | S.RESISTOR  | ERJ3GEYJ 184 V (180 kΩ) |
| R109    | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ) |
| R112    | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R113    | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R114    | 7030003630 | S.RESISTOR  | ERJ3GEYJ 393 V (39 kΩ)  |
| R115    | 7030003670 | S.RESISTOR  | ERJ3GEYJ 823 V (82 kΩ)  |
| R116    | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R117    | 7030003700 | S.RESISTOR  | ERJ3GEYJ 154 V (150 kΩ) |
| R118    | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R119    | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R121    | 7030003700 | S.RESISTOR  | ERJ3GEYJ 154 V (150 kΩ) |
| R122    | 7030003630 | S.RESISTOR  | ERJ3GEYJ 393 V (39 kΩ)  |
| R123    | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R124    | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R127    | 7030003530 | S.RESISTOR  | ERJ3GEYJ 562 V (5.6 kΩ) |

S.=Surface mount

[LOGIC UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION                        |
|---------|------------|------------------------------------|
| R128    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R129    | 7030006480 | S.RESISTOR MCR100JZHJ 10 Ω (100)   |
| R130    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)  |
| R131    | 7030001430 | S.RESISTOR MCR50JZHJ 27 kΩ         |
| R137    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R138    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R139    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)  |
| R140    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R141    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R143    | 7030000410 | S.RESISTOR MCR10EZHZ 1.8 kΩ        |
| R144    | 7030000480 | S.RESISTOR MCR10EZHZ 6.8 kΩ        |
| R145    | 7030000410 | S.RESISTOR MCR10EZHZ 1.8 kΩ        |
| R148    | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| R149    | 7030003450 | S.RESISTOR ERJ3GEYJ 122 V (1.2 kΩ) |
| R150    | 7030003450 | S.RESISTOR ERJ3GEYJ 122 V (1.2 kΩ) |
| R151    | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 kΩ)  |
| R153    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R154    | 7030008350 | S.RESISTOR ERJ12YJ390U             |
| R155    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R158    | 7030003460 | S.RESISTOR ERJ3GEYJ 152 V (1.5 kΩ) |
| R159    | 7030003460 | S.RESISTOR ERJ3GEYJ 152 V (1.5 kΩ) |
| R160    | 7030003460 | S.RESISTOR ERJ3GEYJ 152 V (1.5 kΩ) |
| R162    | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)  |
| R163    | 7030003800 | S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)   |
| R164    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)  |
| R165    | 7030003690 | S.RESISTOR ERJ3GEYJ 124 V (120 kΩ) |
| R166    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R168    | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω)  |
| R169    | 7030003690 | S.RESISTOR ERJ3GEYJ 124 V (120 kΩ) |
| R170    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R171    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R172    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R175    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R177    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R179    | 7030003700 | S.RESISTOR ERJ3GEYJ 154 V (150 kΩ) |
| R182    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R183    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R184    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R185    | 7030003570 | S.RESISTOR ERJ3GEYJ 123 V (12 kΩ)  |
| R186    | 7030003570 | S.RESISTOR ERJ3GEYJ 123 V (12 kΩ)  |
| R187    | 7030003490 | S.RESISTOR ERJ3GEYJ 272 V (2.7 kΩ) |
| R188    | 7030003490 | S.RESISTOR ERJ3GEYJ 272 V (2.7 kΩ) |
| R189    | 7410001130 | S.ARRAY EXB28V102JX                |
| R190    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R191    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R192    | 7030003750 | S.RESISTOR ERJ3GEYJ 394 V (390 kΩ) |
| R193    | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| R194    | 7030003750 | S.RESISTOR ERJ3GEYJ 394 V (390 kΩ) |
| R195    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R196    | 7410001150 | S.ARRAY EXB28V471JX                |
| R197    | 7410001150 | S.ARRAY EXB28V471JX                |
| R198    | 7410001130 | S.ARRAY EXB28V102JX                |
| R199    | 7410001130 | S.ARRAY EXB28V102JX                |
| R200    | 7410001150 | S.ARRAY EXB28V471JX                |
| R201    | 7410001130 | S.ARRAY EXB28V102JX                |
| R202    | 7410001150 | S.ARRAY EXB28V471JX                |
| R203    | 7410001130 | S.ARRAY EXB28V102JX                |
| R204    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R205    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R206    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R207    | 7030003420 | S.RESISTOR ERJ3GEYJ 681 V (680 Ω)  |
| R208    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R209    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R210    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)  |
| R211    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R212    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)  |
| R213    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R214    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R215    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R216    | 7410001130 | S.ARRAY EXB28V102JX                |
| R217    | 7410001130 | S.ARRAY EXB28V102JX                |
| R218    | 7410001130 | S.ARRAY EXB28V102JX                |
| R219    | 7410001130 | S.ARRAY EXB28V102JX                |
| R220    | 7410001130 | S.ARRAY EXB28V102JX                |
| R221    | 7410001150 | S.ARRAY EXB28V471JX                |
| R222    | 7410001130 | S.ARRAY EXB28V102JX                |
| R223    | 7410001130 | S.ARRAY EXB28V102JX                |
| R224    | 7410001130 | S.ARRAY EXB28V102JX                |
| R225    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R227    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R228    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R229    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |

[LOGIC UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION                        |
|---------|------------|------------------------------------|
| R230    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R231    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R232    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R233    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R234    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R235    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R236    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R237    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R238    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R239    | 7410001130 | S.ARRAY EXB28V102JX                |
| R240    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R241    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R242    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R243    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R245    | 7030003570 | S.RESISTOR ERJ3GEYJ 123 V (12 kΩ)  |
| R246    | 7410001140 | S.ARRAY EXB28V104JX                |
| R247    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R250    | 7410001140 | S.ARRAY EXB28V104JX                |
| R251    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R256    | 7030003240 | S.RESISTOR ERJ3GEYJ 220 V (22 Ω)   |
| R257    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)  |
| R258    | 7030003650 | S.RESISTOR ERJ3GEYJ 563 V (56 kΩ)  |
| R259    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R260    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R261    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R262    | 7030001210 | S.RESISTOR MCR50JZHJ 470 Ω (471)   |
| R263    | 7030003410 | S.RESISTOR ERJ3GEYJ 561 V (560 Ω)  |
| R264    | 7030003410 | S.RESISTOR ERJ3GEYJ 561 V (560 Ω)  |
| R265    | 7030003450 | S.RESISTOR ERJ3GEYJ 122 V (1.2 kΩ) |
| R266    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R268    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R269    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R275    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R276    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R277    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R278    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R279    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R280    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R281    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R282    | 7030003740 | S.RESISTOR ERJ3GEYJ 334 V (330 kΩ) |
| R283    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R284    | 7030003700 | S.RESISTOR ERJ3GEYJ 154 V (150 kΩ) |
| R285    | 7030003700 | S.RESISTOR ERJ3GEYJ 154 V (150 kΩ) |
| R289    | 7030003660 | S.RESISTOR ERJ3GEYJ 683 V (68 kΩ)  |
| R290    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R291    | 7030003660 | S.RESISTOR ERJ3GEYJ 683 V (68 kΩ)  |
| R292    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R293    | 7030003670 | S.RESISTOR ERJ3GEYJ 823 V (82 kΩ)  |
| R294    | 7030003670 | S.RESISTOR ERJ3GEYJ 823 V (82 kΩ)  |
| R295    | 7030003650 | S.RESISTOR ERJ3GEYJ 563 V (56 kΩ)  |
| R297    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)  |
| R300    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R304    | 7030003800 | S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)   |
| R305    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)  |
| R306    | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)  |
| R307    | 7030003410 | S.RESISTOR ERJ3GEYJ 561 V (560 Ω)  |
| R312    | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ) |
| R313    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R314    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R315    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R316    | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ) |
| R317    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R318    | 7030003470 | S.RESISTOR ERJ3GEYJ 182 V (1.8 kΩ) |
| R320    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R321    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R322    | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ) |
| R323    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R325    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R326    | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ) |
| R327    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R328    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R329    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R330    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R331    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R332    | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ) |
| R334    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R335    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R336    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R337    | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ) |
| R338    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R339    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R340    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |

S.=Surface mount

**[LOGIC UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION                        |
|---------|------------|------------------------------------|
| R341    | 7030003510 | S.RESISTOR ERJ3GEYJ 392 V (3.9 kΩ) |
| R342    | 7030003510 | S.RESISTOR ERJ3GEYJ 392 V (3.9 kΩ) |
| R345    | 7030003500 | S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ) |
| R346    | 7030003450 | S.RESISTOR ERJ3GEYJ 122 V (1.2 kΩ) |
| R347    | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ) |
| R348    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R349    | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R350    | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R351    | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R352    | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R353    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R355    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R356    | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ) |
| R358    | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R359    | 7030003410 | S.RESISTOR ERJ3GEYJ 561 V (560 Ω)  |
| R367    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R368    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R369    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R370    | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R371    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R372    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R373    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R375    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R376    | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ) |
| R382    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R385    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R386    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R387    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R389    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R390    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R391    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R392    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R396    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R397    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R398    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R399    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R403    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R404    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R405    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R407    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R408    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R409    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R411    | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R412    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R414    | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R415    | 7030003410 | S.RESISTOR ERJ3GEYJ 561 V (560 Ω)  |
| R417    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R435    | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ) |
| R436    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R438    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R441    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)  |
| R442    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)  |
| R443    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R450    | 7030000330 | S.RESISTOR MCR10EZJH 390 Ω (391)   |
| R451    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R452    | 7030004040 | S.RESISTOR ERJ3GEYJ 4R7 V (4.7 Ω)  |
| R453    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R457    | 7030003410 | S.RESISTOR ERJ3GEYJ 561 V (560 Ω)  |
| R460    | 7030000330 | S.RESISTOR MCR10EZJH 390 Ω (391)   |
| R461    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R462    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R463    | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω)   |
| R464    | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R466    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R469    | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R470    | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R471    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R472    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R473    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R474    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)  |
| R475    | 7030003740 | S.RESISTOR ERJ3GEYJ 334 V (330 kΩ) |
| R476    | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ) |
| R477    | 7030003500 | S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ) |
| R478    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R479    | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ) |
| R480    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R481    | 7030003660 | S.RESISTOR ERJ3GEYJ 683 V (68 kΩ)  |
| R486    | 7030001230 | S.RESISTOR MCR50JZHJ 680 Ω (681)   |
| R487    | 7030003410 | S.RESISTOR ERJ3GEYJ 561 V (560 Ω)  |
| R488    | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R489    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R492    | 7030003470 | S.RESISTOR ERJ3GEYJ 182 V (1.8 kΩ) |

**[LOGIC UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION                        |
|---------|------------|------------------------------------|
| R493    | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R494    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R495    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R496    | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R497    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R498    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R500    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R501    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R503    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R504    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R505    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R506    | 7030003410 | S.RESISTOR ERJ3GEYJ 561 V (560 Ω)  |
| R508    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R509    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R510    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R511    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R512    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R519    | 7030003700 | S.RESISTOR ERJ3GEYJ 154 V (150 kΩ) |
| R520    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)  |
| R521    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R522    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R523    | 7030006480 | S.RESISTOR MCR100JZHJ 10 Ω (100)   |
| R524    | 7030003410 | S.RESISTOR ERJ3GEYJ 561 V (560 Ω)  |
| R525    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R526    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| C1      | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T       |
| C2      | 4030006870 | S.CERAMIC C1608 JB 1H 222K-T       |
| C3      | 4510004630 | S.ELECTROLYTIC ECEV1CA100SR        |
| C4      | 4550006480 | S.TANTALUM TEMSVA 1C 475M-8L       |
| C5      | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T       |
| C6      | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T       |
| C7      | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C8      | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C9      | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C10     | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C11     | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C12     | 4030017800 | S.CERAMIC C1608 CH 1H 561J-T       |
| C13     | 4030007120 | S.CERAMIC C1608 CH 1H 820J-T       |
| C14     | 4030007170 | S.CERAMIC C1608 CH 1H 221J-T       |
| C15     | 4030017870 | S.CERAMIC C1608 CH 1H 681J-T       |
| C16     | 4030007110 | S.CERAMIC C1608 CH 1H 680J-T       |
| C17     | 4030017870 | S.CERAMIC C1608 CH 1H 681J-T       |
| C18     | 4030007140 | S.CERAMIC C1608 CH 1H 121J-T       |
| C20     | 4030010760 | S.CERAMIC C1608 CH 1H 331J-T       |
| C23     | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T       |
| C24     | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T       |
| C25     | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T       |
| C26     | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T       |
| C27     | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C28     | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L       |
| C30     | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C31     | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T       |
| C32     | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C33     | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T       |
| C34     | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T       |
| C36     | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C37     | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C38     | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C39     | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C40     | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C42     | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C43     | 4030006870 | S.CERAMIC C1608 JB 1H 222K-T       |
| C44     | 4030007080 | S.CERAMIC C1608 CH 1H 390J-T       |
| C45     | 4030017800 | S.CERAMIC C1608 CH 1H 561J-T       |
| C46     | 4030007130 | S.CERAMIC C1608 CH 1H 101J-T       |
| C47     | 4030009490 | S.CERAMIC C1608 JB 1H 821K-T       |
| C48     | 4030007170 | S.CERAMIC C1608 CH 1H 221J-T       |
| C49     | 4030007170 | S.CERAMIC C1608 CH 1H 221J-T       |
| C50     | 4030007150 | S.CERAMIC C1608 CH 1H 151J-T       |
| C51     | 4030007030 | S.CERAMIC C1608 CH 1H 150J-T       |
| C52     | 4030007150 | S.CERAMIC C1608 CH 1H 151J-T       |
| C53     | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T       |
| C54     | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C56     | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T       |
| C58     | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T       |
| C59     | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T       |
| C60     | 4030008860 | S.CERAMIC C1608 JB 1H 153K-T       |
| C61     | 4030008860 | S.CERAMIC C1608 JB 1H 153K-T       |
| C62     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T       |
| C63     | 4030010770 | S.CERAMIC C1608 JB 1H 392K-T       |

S.=Surface mount

[LOGIC UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION    |                    |
|---------|------------|----------------|--------------------|
| C64     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C66     | 4030008850 | S.CERAMIC      | C1608 JB 1H 123K-T |
| C67     | 4030010760 | S.CERAMIC      | C1608 CH 1H 331J-T |
| C68     | 4030007170 | S.CERAMIC      | C1608 CH 1H 221J-T |
| C70     | 4030009980 | S.CERAMIC      | C1608 JB 1H 152K-T |
| C71     | 4030008900 | S.CERAMIC      | C1608 JB 1H 333K-T |
| C72     | 4030007100 | S.CERAMIC      | C1608 CH 1H 560J-T |
| C74     | 4550006480 | S.TANTALUM     | TEMSVA 1C 475M-8L  |
| C76     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C77     | 4030009490 | S.CERAMIC      | C1608 JB 1H 821K-T |
| C78     | 4030007150 | S.CERAMIC      | C1608 CH 1H 151J-T |
| C80     | 4030008920 | S.CERAMIC      | C1608 JB 1H 473K-T |
| C83     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C84     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C85     | 4030017490 | S.CERAMIC      | C1608 JB 1A 105K-T |
| C86     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C87     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C88     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C89     | 4030008870 | S.CERAMIC      | C1608 JB 1H 183K-T |
| C90     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C91     | 4030009490 | S.CERAMIC      | C1608 JB 1H 821K-T |
| C92     | 4030008650 | S.CERAMIC      | C1608 JB 1H 332K-T |
| C93     | 4030012610 | S.CERAMIC      | C2012 JB 1C 474K-T |
| C94     | 4550006250 | S.TANTALUM     | TEMSVA 1A 106M-8L  |
| C95     | 4510004510 | ELECTROLYTIC   | 25 MV 470 HC       |
| C96     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C97     | 4510004510 | ELECTROLYTIC   | 25 MV 470 HC       |
| C98     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C99     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C100    | 4510007040 | ELECTROLYTIC   | 50 MV 10 HWN       |
| C103    | 4030017200 | S.CERAMIC      | GRM31BR32J102KY01L |
| C106    | 4030008900 | S.CERAMIC      | C1608 JB 1H 333K-T |
| C107    | 4510005310 | S.ELECTROLYTIC | ECEV1CA220SR       |
| C108    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C109    | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR       |
| C110    | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR       |
| C111    | 4510005280 | ELECTROLYTIC   | 6.3 MV 220 HC      |
| C112    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C113    | 4030007170 | S.CERAMIC      | C1608 CH 1H 221J-T |
| C114    | 4550006250 | S.TANTALUM     | TEMSVA 1A 106M-8L  |
| C115    | 4550003250 | S.TANTALUM     | TEMSVA 1V 474M-8L  |
| C116    | 4030010760 | S.CERAMIC      | C1608 CH 1H 331J-T |
| C117    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C118    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C123    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C124    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C125    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C126    | 4550006250 | S.TANTALUM     | TEMSVA 1A 106M-8L  |
| C127    | 4030008880 | S.CERAMIC      | C1608 JB 1H 223K-T |
| C128    | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T |
| C129    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C130    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C131    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C132    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C133    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C134    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C135    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C136    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C137    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C138    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C139    | 4030007050 | S.CERAMIC      | C1608 CH 1H 220J-T |
| C140    | 4030007030 | S.CERAMIC      | C1608 CH 1H 150J-T |
| C141    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C142    | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T |
| C143    | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T |
| C144    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C145    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C146    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C147    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C148    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C149    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C150    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C151    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C152    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C153    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C154    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C155    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C156    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C157    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C158    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C159    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C160    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |

[LOGIC UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION    |                    |
|---------|------------|----------------|--------------------|
| C161    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C162    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C163    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C164    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C165    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C166    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C167    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C168    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C169    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C170    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C171    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C172    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C173    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C174    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C176    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C177    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C178    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C179    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C180    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C181    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C182    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C184    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C185    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C186    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C187    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C188    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C189    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C190    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C191    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C192    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C193    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C194    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C195    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C197    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C198    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C199    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C200    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C201    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C202    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C203    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C204    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C205    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C206    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C207    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C208    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C209    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C210    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C211    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C212    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C213    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C214    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C215    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C216    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C217    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C218    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C219    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C220    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C221    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C223    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C224    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C225    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C226    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C227    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C228    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C229    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C230    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C231    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C232    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-T |
| C233    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C234    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C235    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C236    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C237    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C238    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C239    | 4510004510 | ELECTROLYTIC   | 25 MV 470 HC       |
| C240    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C241    | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR       |
| C242    | 4030007080 | S.CERAMIC      | C1608 CH 1H 390J-T |
| C244    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C247    | 4510004640 | S.ELECTROLYTIC | ECEV1CA470SP       |
| C248    | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR       |
| C249    | 4510004640 | S.ELECTROLYTIC | ECEV1CA470SP       |

S.=Surface mount

**[LOGIC UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION                  |
|---------|------------|------------------------------|
| C250    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C251    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C252    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C253    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T |
| C254    | 4510004630 | S.ELECTROLYTIC ECEV1CA100SR  |
| C255    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C260    | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T |
| C261    | 4550002960 | S.TANTALUM TESVA 1C 155M1-8L |
| C262    | 4030007070 | S.CERAMIC C1608 CH 1H 330J-T |
| C263    | 4030007070 | S.CERAMIC C1608 CH 1H 330J-T |
| C264    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T |
| C265    | 4510004630 | S.ELECTROLYTIC ECEV1CA100SR  |
| C266    | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T |
| C270    | 4030008880 | S.CERAMIC C1608 JB 1H 223K-T |
| C271    | 4030008920 | S.CERAMIC C1608 JB 1H 473K-T |
| C272    | 4030010020 | S.CERAMIC C1608 JB 1H 122K-T |
| C273    | 4030009980 | S.CERAMIC C1608 JB 1H 152K-T |
| C274    | 4030008900 | S.CERAMIC C1608 JB 1H 333K-T |
| C275    | 4030008900 | S.CERAMIC C1608 JB 1H 333K-T |
| C276    | 4030010020 | S.CERAMIC C1608 JB 1H 122K-T |
| C277    | 4030006900 | S.CERAMIC C1608 JB 1H 103K-T |
| C282    | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T |
| C283    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L |
| C287    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L |
| C288    | 4510004630 | S.ELECTROLYTIC ECEV1CA100SR  |
| C289    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L |
| C290    | 4510004630 | S.ELECTROLYTIC ECEV1CA100SR  |
| C292    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L |
| C294    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L |
| C295    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L |
| C296    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L |
| C297    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L |
| C301    | 4510004630 | S.ELECTROLYTIC ECEV1CA100SR  |
| C302    | 4510004630 | S.ELECTROLYTIC ECEV1CA100SR  |
| C303    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C307    | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T |
| C308    | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T |
| C310    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C311    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C312    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C313    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C316    | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T |
| C322    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C323    | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T |
| C325    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L |
| C326    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C328    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L |
| C329    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L |
| C330    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L |
| C332    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C335    | 4550006480 | S.TANTALUM TEMSVA 1C 475M-8L |
| C337    | 4510004630 | S.ELECTROLYTIC ECEV1CA100SR  |
| C339    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C340    | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T |
| C341    | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T |
| C342    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C343    | 4030006900 | S.CERAMIC C1608 JB 1H 103K-T |
| C345    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T |
| C346    | 4030006900 | S.CERAMIC C1608 JB 1H 103K-T |
| C347    | 4550000530 | S.TANTALUM TESVA 1V 104M1-8L |
| C361    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T |
| C362    | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T |
| C363    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T |
| C364    | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T |
| C366    | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T |
| C371    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C372    | 4030007110 | S.CERAMIC C1608 CH 1H 680J-T |
| C373    | 4030008870 | S.CERAMIC C1608 JB 1H 183K-T |
| C375    | 4310000900 | MYLAR 250 MMW 105K-EF        |
| C380    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C382    | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T |
| C383    | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T |
| C384    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C386    | 4550006480 | S.TANTALUM TEMSVA 1C 475M-8L |
| C388    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C389    | 4030006900 | S.CERAMIC C1608 JB 1H 103K-T |
| C390    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C395    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C396    | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T |
| C397    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C398    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |
| C399    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T |

**[LOGIC UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION                   |
|---------|------------|-------------------------------|
| C407    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C408    | 4030007090 | S.CERAMIC C1608 CH 1H 470J-T  |
| C409    | 4030006870 | S.CERAMIC C1608 JB 1H 222K-T  |
| C411    | 4030007130 | S.CERAMIC C1608 CH 1H 101J-T  |
| C412    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T  |
| C413    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C414    | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T  |
| C415    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C416    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C417    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C418    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C419    | 4340000060 | S.MYLAR ECH-U 1C103JB5        |
| C420    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L  |
| C421    | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T  |
| C422    | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T  |
| C423    | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T  |
| C424    | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T  |
| C425    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C426    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L  |
| C427    | 4030007170 | S.CERAMIC C1608 CH 1H 221J-T  |
| C428    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C429    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C430    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C431    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C432    | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T  |
| C433    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T  |
| C434    | 4510004630 | S.ELECTROLYTIC ECEV1CA100SR   |
| C435    | 4030007090 | S.CERAMIC C1608 CH 1H 470J-T  |
| C436    | 4030007090 | S.CERAMIC C1608 CH 1H 470J-T  |
| C437    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C438    | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T  |
| C439    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C440    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C441    | 4030018060 | S.CERAMIC C5750 JB 2E 474KT   |
| C442    | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T  |
| C443    | 4030006900 | S.CERAMIC C1608 JB 1H 103K-T  |
| C447    | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T  |
| C448    | 4550002980 | S.TANTALUM TEMSVA 1C 225M-8L  |
| C449    | 4550000460 | S.TANTALUM TESVA 1C 105M1-8L  |
| C450    | 4030011600 | S.CERAMIC C1608 JB 1E 104K-T  |
| C451    | 4550006250 | S.TANTALUM TEMSVA 1A 106M-8L  |
| C452    | 4030017490 | S.CERAMIC C1608 JB 1A 105K-T  |
| RL1     | 6330001640 | RELAY ATX209                  |
| RL2     | 6330001640 | RELAY ATX209                  |
| J1      | 6510022590 | S.CONNECTOR 22FMN-BMTRR-A-TBT |
| J2      | 6510022590 | S.CONNECTOR 22FMN-BMTRR-A-TBT |
| J3      | 6510022580 | S.CONNECTOR 24FMN-BMTRR-A-TBT |
| J4      | 6510022620 | S.CONNECTOR 10FMN-BMTRR-A-TBT |
| J5      | 6510018970 | S.CONNECTOR B4B-PH-SM3-TB     |
| J6      | 6510022620 | S.CONNECTOR 10FMN-BMTRR-A-TBT |
| J7      | 6510018430 | S.CONNECTOR AXN330C038P       |
| J8      | 6510018430 | S.CONNECTOR AXN330C038P       |
| J9      | 6510020050 | S.CONNECTOR B11B-PH-SM3-TB    |
| J10     | 6510018940 | S.CONNECTOR B13B-PH-SM3-TB    |
| J11     | 6510018940 | S.CONNECTOR B13B-PH-SM3-TB    |
| J12     | 6510021440 | S.CONNECTOR B6B-ZR-SM3-TF     |
| J13     | 6510022190 | S.CONNECTOR B3B-PH-SM3-TB     |
| J14     | 6510022190 | S.CONNECTOR B3B-PH-SM3-TB     |
| J15     | 6510018960 | S.CONNECTOR B2B-PH-SM3-TB     |
| J16     | 6510018960 | S.CONNECTOR B2B-PH-SM3-TB     |
| F1      | 5210000030 | FUSE FGB 1A (FGB0 125V)       |
| F2      | 5220000020 | HOLDER S-N5051                |
| F3      | 5220000020 | HOLDER S-N5051                |
| T1      | 5920000570 | TRANSFORMER 12T01             |
| T2      | 5920000570 | TRANSFORMER 12T01             |
| T5      | 5920000860 | TRANSFORMER PLA10AS1030R7R2   |
| T6      | 5920000570 | TRANSFORMER 12T01             |
| T7      | 5920000570 | TRANSFORMER 12T01             |
| T8      | 5920000570 | TRANSFORMER 12T01             |
| W1      | 7030003860 | S.JUMPER ERJ3GE JPW V         |
| W2      | 7030003860 | S.JUMPER ERJ3GE JPW V         |
| W3      | 8900008940 | CABLE OPC-886 (P=1 N=10 L=75) |

S.=Surface mount

[LOGIC UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION |                         |
|---------|------------|-------------|-------------------------|
| W4      | 8900009230 | CABLE       | OPC-908 (P=1 N=10 L=60) |
| W5      | 8900008740 | CABLE       | OPC-867 (P=1 N=24 L=60) |
| W7      | 7030003860 | S.JUMPER    | ERJ3GE JPW V            |
| W8      | 7030007150 | S.JUMPER    | MCR50JZHJ JPW           |
| W10     | 8900009270 | CABLE       | OPC-912 (P=1 N=22 L=70) |
| W11     | 8900009270 | CABLE       | OPC-912 (P=1 N=22 L=70) |
| W12     | 7030003860 | S.JUMPER    | ERJ3GE JPW V            |
| W13     | 7030003860 | S.JUMPER    | ERJ3GE JPW V            |
| W14     | 7030003860 | S.JUMPER    | ERJ3GE JPW V            |
| W15     | 7030003860 | S.JUMPER    | ERJ3GE JPW V            |
| W16     | 7030003860 | S.JUMPER    | ERJ3GE JPW V            |
| W17     | 7030003860 | S.JUMPER    | ERJ3GE JPW V            |
| W18     | 7030003860 | S.JUMPER    | ERJ3GE JPW V            |
| W19     | 7030003860 | S.JUMPER    | ERJ3GE JPW V            |
| W20     | 7030003860 | S.JUMPER    | ERJ3GE JPW V            |
| EP1     | 0910056104 | PCB         | B 5654D                 |
| EP2     | 6910014900 | BEAD        | FRC-50-12-6.5           |
| EP3     | 6910014890 | E.OTHER     | FRC-WC1                 |

[RX UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION     |                      |
|---------|------------|-----------------|----------------------|
| IC1     | 1190000450 | S.IC            | GN2011-Q (TX)        |
| IC2     | 1110003490 | S.IC            | TA31136FN (D,EL)     |
| IC3     | 1180000420 | S.IC            | TA78L05F (TE12R)     |
| IC4     | 1140005990 | S.IC            | MB15A02PFV1-G-BND-ER |
| IC5     | 1110002750 | S.IC            | TA75S01F (TE85R)     |
| IC6     | 1180000420 | S.IC            | TA78L05F (TE12R)     |
| IC7     | 1180000430 | S.IC            | TA78L06F (TE12L)     |
| Q1      | 1530003820 | S.TRANSISTOR    | 2SC5337QS-T1         |
| Q3      | 1560000670 | S.FET           | 2SK1771 (TE85R)      |
| Q6      | 1530001950 | S.TRANSISTOR    | 2SC2712-GR (TE85R)   |
| Q7      | 1530001950 | S.TRANSISTOR    | 2SC2712-GR (TE85R)   |
| Q8      | 1530002920 | S.TRANSISTOR    | 2SC4226-T1 R25       |
| Q9      | 1530003270 | S.TRANSISTOR    | 2SC4703-T2 SF        |
| Q14     | 1530002920 | S.TRANSISTOR    | 2SC4226-T1 R25       |
| Q15     | 1520000270 | S.TRANSISTOR    | 2SB1182 TL Q         |
| Q16     | 1530002060 | S.TRANSISTOR    | 2SC4081 T106 R       |
| Q18     | 1560000540 | S.FET           | 2SK880-Y (TE85R)     |
| Q19     | 1590000440 | S.TRANSISTOR    | DTA143ZUA T106       |
| Q20     | 1510000510 | S.TRANSISTOR    | 2SA1576A T106R       |
| Q21     | 1530002060 | S.TRANSISTOR    | 2SC4081 T106 R       |
| D1      | 1750000070 | S.DIODE         | 1SS226 (TE85R)       |
| D3      | 1720000640 | S.VARICAP       | 1SV284 (TPH3)        |
| D4      | 1720000640 | S.VARICAP       | 1SV284 (TPH3)        |
| D6      | 1720000640 | S.VARICAP       | 1SV284 (TPH3)        |
| D7      | 1720000640 | S.VARICAP       | 1SV284 (TPH3)        |
| D15     | 1750000140 | S.DIODE         | 1SS268 (TE85R)       |
| D16     | 1750000140 | S.DIODE         | 1SS268 (TE85R)       |
| FI1     | 2030000201 | S.MONOLITH      | FL-349A (70.00 MHz)  |
| FI5     | 2020001030 | CERAMIC         | CFWLA455KGFA-B0      |
| FI6     | 2020001040 | CERAMIC         | CFWLA455KEFA-B0      |
| X1      | 6070000150 | S.DISCRIMINATOR | CDBC455KCAY24-R0     |
| X2      | 6050011470 | XTAL            | CR-729 (69.545 MHz)  |
| X3      | 6050011480 | S.XTAL          | CR-732 (12.800 MHz)  |
| L1      | 6200007670 | S.COIL          | LQW2BHN10NJ01L       |
| L2      | 6200010290 | S.COIL          | C6328A-22NG-A        |
| L3      | 6200010290 | S.COIL          | C6328A-22NG-A        |
| L4      | 6200007700 | S.COIL          | LQW2BHN22NJ01L       |
| L6      | 6200010290 | S.COIL          | C6328A-22NG-A        |
| L7      | 6200010290 | S.COIL          | C6328A-22NG-A        |
| L8      | 6200010490 | S.COIL          | 458DB-1011=P3        |
| L9      | 6200010490 | S.COIL          | 458DB-1011=P3        |
| L10     | 6200010490 | S.COIL          | 458DB-1011=P3        |
| L11     | 6200008730 | S.COIL          | ELJND R10J 0.1U      |
| L14     | 6200005510 | S.COIL          | ELJND R27J-F         |
| L20     | 6200010300 | S.COIL          | ELJND R68JF 0.68U    |
| L21     | 6200007230 | S.COIL          | LQW2BHN15NJ01L       |
| L22     | 6200007710 | S.COIL          | LQW2BHN27NJ01L       |
| L23     | 6200007680 | S.COIL          | LQW2BHN12NJ01L       |
| L24     | 6200007680 | S.COIL          | LQW2BHN12NJ01L       |
| L25     | 6200007230 | S.COIL          | LQW2BHN15NJ01L       |
| L27     | 6200007230 | S.COIL          | LQW2BHN15NJ01L       |
| L29     | 6200007230 | S.COIL          | LQW2BHN15NJ01L       |
| L30     | 6200007230 | S.COIL          | LQW2BHN15NJ01L       |
| L31     | 6200010300 | S.COIL          | ELJND R68JF 0.68U    |
| L32     | 6200007670 | S.COIL          | LQW2BHN10NJ01L       |
| L33     | 6200007340 | S.COIL          | ELJND R22J 0.22U     |
| L35     | 6200007820 | S.COIL          | ELJND R33J 0.33U     |
| L39     | 6200007680 | S.COIL          | LQW2BHN12NJ01L       |
| L40     | 6200010300 | S.COIL          | ELJND R68JF 0.68U    |
| L41     | 6200009940 | S.COIL          | BLM21PG221SN1        |
| L42     | 6910011690 | S.COIL          | ACB1608M-600-T       |
| L43     | 6910011690 | S.COIL          | ACB1608M-600-T       |
| L44     | 6910011690 | S.COIL          | ACB1608M-600-T       |
| L45     | 6910011690 | S.COIL          | ACB1608M-600-T       |
| L46     | 6910011690 | S.COIL          | ACB1608M-600-T       |
| L47     | 6910011690 | S.COIL          | ACB1608M-600-T       |
| L48     | 6910011690 | S.COIL          | ACB1608M-600-T       |
| L49     | 6910011690 | S.COIL          | ACB1608M-600-T       |
| L50     | 6910011690 | S.COIL          | ACB1608M-600-T       |
| L51     | 6910011690 | S.COIL          | ACB1608M-600-T       |
| L52     | 6200007680 | S.COIL          | LQW2BHN12NJ01L       |
| L53     | 6200007680 | S.COIL          | LQW2BHN12NJ01L       |

S.=Surface mount

[RX UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION                        |
|---------|------------|------------------------------------|
| R1      | 7030003670 | S.RESISTOR ERJ3GEYJ 823 V (82 kΩ)  |
| R2      | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R3      | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R4      | 7030003500 | S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ) |
| R5      | 7030003500 | S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ) |
| R6      | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω)   |
| R9      | 7030000140 | S.RESISTOR MCR10EZJH 10 Ω (100)    |
| R10     | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R11     | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R14     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R15     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R19     | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R25     | 7030003550 | S.RESISTOR ERJ3GEYJ 822 V (8.2 kΩ) |
| R26     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R35     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R36     | 7030003420 | S.RESISTOR ERJ3GEYJ 681 V (680 Ω)  |
| R37     | 7030003330 | S.RESISTOR ERJ3GEYJ 121 V (120 Ω)  |
| R39     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R40     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R41     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R42     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R43     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R44     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R45     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R48     | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω)   |
| R49     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R50     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R52     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R53     | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R54     | 7030003780 | S.RESISTOR ERJ3GEYJ 684 V (680 kΩ) |
| R55     | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)  |
| R56     | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R57     | 7510001670 | S.THRMISTOR NTCG16 4BH 103KT       |
| R58     | 7030003500 | S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ) |
| R60     | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R61     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R62     | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R63     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R64     | 7030003230 | S.RESISTOR ERJ3GEYJ 180 V (18 Ω)   |
| R65     | 7030003230 | S.RESISTOR ERJ3GEYJ 180 V (18 Ω)   |
| R66     | 7030003230 | S.RESISTOR ERJ3GEYJ 180 V (18 Ω)   |
| R67     | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω)   |
| R68     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R69     | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R70     | 7030003300 | S.RESISTOR ERJ3GEYJ 680 V (68 Ω)   |
| R71     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R72     | 7030000140 | S.RESISTOR MCR10EZJH 10 Ω (100)    |
| R73     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R74     | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R75     | 7030003300 | S.RESISTOR ERJ3GEYJ 680 V (68 Ω)   |
| R76     | 7030003340 | S.RESISTOR ERJ3GEYJ 151 V (150 Ω)  |
| R77     | 7030006060 | S.RESISTOR ERJ12YJ100U (10 Ω)      |
| R81     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R84     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R85     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R86     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R87     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R88     | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω)   |
| R92     | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R93     | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω)   |
| R112    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R115    | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R116    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R117    | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R118    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R119    | 7030003300 | S.RESISTOR ERJ3GEYJ 680 V (68 Ω)   |
| R120    | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R121    | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R122    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R123    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R126    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R127    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R134    | 7030003800 | S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)   |
| R135    | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R136    | 7030003300 | S.RESISTOR ERJ3GEYJ 680 V (68 Ω)   |
| R137    | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R138    | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)  |
| R139    | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)  |
| R140    | 7030003500 | S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ) |
| R148    | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R149    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R153    | 7030003470 | S.RESISTOR ERJ3GEYJ 182 V (1.8 kΩ) |

[RX UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION                        |
|---------|------------|------------------------------------|
| R155    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R156    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)  |
| R157    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R158    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R159    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R160    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R163    | 7030003340 | S.RESISTOR ERJ3GEYJ 151 V (150 Ω)  |
| R164    | 7030003270 | S.RESISTOR ERJ3GEYJ 390 V (39 Ω)   |
| R165    | 7030003340 | S.RESISTOR ERJ3GEYJ 151 V (150 Ω)  |
| R166    | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω)   |
| R167    | 7030003750 | S.RESISTOR ERJ3GEYJ 394 V (390 kΩ) |
| R168    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R169    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R170    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R171    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R172    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)  |
| R173    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)  |
| R174    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R175    | 7030003530 | S.RESISTOR ERJ3GEYJ 562 V (5.6 kΩ) |
| R176    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R177    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)  |
| R178    | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R179    | 7030003790 | S.RESISTOR ERJ3GEYJ 824 V (820 kΩ) |
| R180    | 7030003770 | S.RESISTOR SAJ05C 564 V (560 kΩ)   |
| R181    | 7540000250 | ABSORBER ERJ3GEYJ 100 V (10 Ω)     |
| R182    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R183    | 7030003530 | S.RESISTOR ERJ3GEYJ 562 V (5.6 kΩ) |
| R184    | 7030003530 | S.RESISTOR ERJ3GEYJ 562 V (5.6 kΩ) |
| R185    | 7030003530 | S.RESISTOR ERJ3GEYJ 562 V (5.6 kΩ) |
| R186    | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)   |
| R187    | 7510001560 | S.THERMISTOR NTCG16 4BH 102KT      |
| C1      | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C2      | 4030009910 | S.CERAMIC C1608 CH 1H 040B-T       |
| C4      | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C5      | 4030009910 | S.CERAMIC C1608 CH 1H 040B-T       |
| C6      | 4030009910 | S.CERAMIC C1608 CH 1H 040B-T       |
| C7      | 4030009910 | S.CERAMIC C1608 CH 1H 040B-T       |
| C8      | 4030009910 | S.CERAMIC C1608 CH 1H 040B-T       |
| C10     | 4610001590 | S.TRIMMER TZC3R100A110R00          |
| C11     | 4610001590 | S.TRIMMER TZC3R100A110R00          |
| C12     | 4610001970 | S.TRIMMER TZC3P200A110R00          |
| C13     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C14     | 4030007000 | S.CERAMIC C1608 CH 1H 090D-T       |
| C18     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C19     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C20     | 4030007100 | S.CERAMIC C1608 CH 1H 560J-T       |
| C21     | 4030009910 | S.CERAMIC C1608 CH 1H 040B-T       |
| C22     | 4030009910 | S.CERAMIC C1608 CH 1H 040B-T       |
| C23     | 4030009920 | S.CERAMIC C1608 CH 1H 050B-T       |
| C24     | 4030009910 | S.CERAMIC C1608 CH 1H 040B-T       |
| C26     | 4610001590 | S.TRIMMER TZC3R100A110R00          |
| C27     | 4610001590 | S.TRIMMER TZC3R100A110R00          |
| C28     | 4610001970 | S.TRIMMER TZC3P200A110R00          |
| C29     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C30     | 4030009910 | S.CERAMIC C1608 CH 1H 040B-T       |
| C31     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C32     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C33     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C34     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C35     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C39     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C40     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C41     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C42     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C43     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C44     | 4030006900 | S.CERAMIC C1608 JB 1H 103K-T       |
| C46     | 4030007040 | S.CERAMIC C1608 CH 1H 180J-T       |
| C47     | 4030007040 | S.CERAMIC C1608 CH 1H 180J-T       |
| C48     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C50     | 4510004630 | S.ELECTROLYTIC ECEV1CA100SR        |
| C51     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C52     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C53     | 4510004630 | S.ELECTROLYTIC ECEV1CA100SR        |
| C55     | 4030007010 | S.CERAMIC C1608 CH 1H 100D-T       |
| C56     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C57     | 4510004640 | S.ELECTROLYTIC ECEV1CA470SP        |
| C58     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C59     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T       |
| C60     | 4510004640 | S.ELECTROLYTIC ECEV1CA470SP        |
| C62     | 4030007120 | S.CERAMIC C1608 CH 1H 820J-T       |

S.=Surface mount

[RX UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION    |                    |
|---------|------------|----------------|--------------------|
| C64     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C65     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C67     | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR       |
| C68     | 4550000460 | S.TANTALUM     | TESVA 1C 105M1-8L  |
| C69     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C70     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C71     | 4030007160 | S.CERAMIC      | C1608 CH 1H 181J-T |
| C72     | 4030007160 | S.CERAMIC      | C1608 CH 1H 181J-T |
| C73     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C74     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C75     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C76     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C77     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C78     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C79     | 4030007010 | S.CERAMIC      | C1608 CH 1H 100D-T |
| C80     | 4030007010 | S.CERAMIC      | C1608 CH 1H 100D-T |
| C81     | 4030007010 | S.CERAMIC      | C1608 CH 1H 100D-T |
| C82     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C83     | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR       |
| C84     | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T |
| C85     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C86     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C87     | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR       |
| C102    | 4510004640 | S.ELECTROLYTIC | ECEV1CA470SP       |
| C103    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C104    | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T |
| C105    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C106    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C108    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C109    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C110    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C112    | 4030007050 | S.CERAMIC      | C1608 CH 1H 220J-T |
| C113    | 4030007050 | S.CERAMIC      | C1608 CH 1H 220J-T |
| C114    | 4030007020 | S.CERAMIC      | C1608 CH 1H 120J-T |
| C115    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C116    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C117    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C118    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C119    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C120    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C121    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C122    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C123    | 4030006980 | S.CERAMIC      | C1608 CH 1H 070D-T |
| C124    | 4030009910 | S.CERAMIC      | C1608 CH 1H 040B-T |
| C126    | 4030011770 | S.CERAMIC      | C1608 CH 1H 060B-T |
| C131    | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T |
| C132    | 4030007070 | S.CERAMIC      | C1608 CH 1H 330J-T |
| C133    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C134    | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T |
| C135    | 4030006980 | S.CERAMIC      | C1608 CH 1H 070D-T |
| C137    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C138    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C140    | 4510004640 | S.ELECTROLYTIC | ECEV1CA470SP       |
| C141    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C142    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C143    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C146    | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR       |
| C151    | 4030007010 | S.CERAMIC      | C1608 CH 1H 100D-T |
| C152    | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-T |
| C153    | 4030009920 | S.CERAMIC      | C1608 CH 1H 050B-T |
| C158    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C159    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C165    | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T |
| C166    | 4030008880 | S.CERAMIC      | C1608 JB 1H 223K-T |
| C167    | 4550002980 | S.TANTALUM     | TEMSVA 1C 225M-8L  |
| C173    | 4550006250 | S.TANTALUM     | TEMSVA 1A 106M-8L  |
| C175    | 4550006350 | S.TANTALUM     | TEMSVB2 1A 226M-8L |
| C177    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C180    | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T |
| C181    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C182    | 4030011770 | S.CERAMIC      | C1608 CH 1H 060B-T |
| C183    | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T |
| C184    | 4030007020 | S.CERAMIC      | C1608 CH 1H 120J-T |
| C186    | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T |
| C187    | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T |
| C188    | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T |
| C191    | 4030007010 | S.CERAMIC      | C1608 CH 1H 100D-T |
| C192    | 4030009920 | S.CERAMIC      | C1608 CH 1H 050B-T |
| C193    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T |
| C194    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C195    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T |
| C196    | 4550000530 | S.TANTALUM     | TESVA 1V 104M1-8L  |

[RX UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION |                    |
|---------|------------|-------------|--------------------|
| C199    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T |
| C200    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T |
| C201    | 4550006250 | S.TANTALUM  | TEMSVA 1A 106M-8L  |
| C202    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T |
| C203    | 4030011600 | S.CERAMIC   | C1608 JB 1E 104K-T |
| C204    | 4550006250 | S.TANTALUM  | TEMSVA 1A 106M-8L  |
| C205    | 4030009910 | S.CERAMIC   | C1608 CH 1H 040B-T |
| C206    | 4030009910 | S.CERAMIC   | C1608 CH 1H 040B-T |
| C207    | 4030009910 | S.CERAMIC   | C1608 CH 1H 040B-T |
| C208    | 4030009910 | S.CERAMIC   | C1608 CH 1H 040B-T |
| C210    | 4030006980 | S.CERAMIC   | C1608 CH 1H 070D-T |
| C211    | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-T |
| C212    | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C213    | 4030007130 | S.CERAMIC   | C1608 CH 1H 101J-T |
| C214    | 4030007020 | S.CERAMIC   | C1608 CH 1H 120J-T |
| C215    | 4030007020 | S.CERAMIC   | C1608 CH 1H 120J-T |
| C216    | 4030007020 | S.CERAMIC   | C1608 CH 1H 120J-T |
| C217    | 4030007020 | S.CERAMIC   | C1608 CH 1H 120J-T |
| C220    | 4030008650 | S.CERAMIC   | C1608 JB 1H 332K-T |
| J1      | 6510018450 | CONNECTOR   | TMP-S01X-B1        |
| J2      | 6510022590 | S.CONNECTOR | 22FMN-BMTR-A-TBT   |
| J5      | 6510018450 | CONNECTOR   | TMP-S01X-B1        |
| W1      | 7030003860 | S.JUMPER    | ERJ3GE JPW V       |
| W2      | 7030003860 | S.JUMPER    | ERJ3GE JPW V       |
| W3      | 7030003860 | S.JUMPER    | ERJ3GE JPW V       |
| W4      | 7030003860 | S.JUMPER    | ERJ3GE JPW V       |
| W6      | 7030003860 | S.JUMPER    | ERJ3GE JPW V       |
| W7      | 7030003860 | S.JUMPER    | ERJ3GE JPW V       |
| W8      | 7030003860 | S.JUMPER    | ERJ3GE JPW V       |
| W12     | 7030003860 | S.JUMPER    | ERJ3GE JPW V       |
| W13     | 7030003860 | S.JUMPER    | ERJ3GE JPW V       |
| W14     | 7030003860 | S.JUMPER    | ERJ3GE JPW V       |
| EP1     | 0910056138 | PCB         | B 5657H            |

S.=Surface mount



[RVCO UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION  |                         |
|---------|------------|--------------|-------------------------|
| Q1      | 1560001280 | S.FET        | 2SK508 K53 T1B          |
| Q2      | 1530002920 | S.TRANSISTOR | 2SC4226-T1 R25          |
| D1      | 1720000640 | S.VARICAP    | 1SV284 (TPH3)           |
| D2      | 1720000640 | S.VARICAP    | 1SV284 (TPH3)           |
| D3      | 1720000640 | S.VARICAP    | 1SV284 (TPH3)           |
| D4      | 1720000640 | S.VARICAP    | 1SV284 (TPH3)           |
| L1      | 6200007120 | S.COIL       | ELJND 1R0J 1U           |
| L2      | 6200008730 | S.COIL       | ELJND R10J 0.1U         |
| L3      | 6200010290 | S.COIL       | C6328A-22NG-A           |
| L4      | 6200008730 | S.COIL       | ELJND R10J 0.1U         |
| L5      | 6200007210 | S.COIL       | ELJND 10NKF             |
| L6      | 6200005700 | S.COIL       | ELJRE 22NG-F            |
| L9      | 6200005740 | S.COIL       | ELJRE 47NG-F            |
| R1      | 7030003280 | S.RESISTOR   | ERJ3GEYJ 470 V (47 Ω)   |
| R2      | 7030003400 | S.RESISTOR   | ERJ3GEYJ 471 V (470 Ω)  |
| R3      | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)  |
| R4      | 7030003550 | S.RESISTOR   | ERJ3GEYJ 822 V (8.2 kΩ) |
| R5      | 7030003350 | S.RESISTOR   | ERJ3GEYJ 181 V (180 Ω)  |
| R6      | 7030003500 | S.RESISTOR   | ERJ3GEYJ 332 V (3.3 kΩ) |
| R13     | 7030003280 | S.RESISTOR   | ERJ3GEYJ 470 V (47 Ω)   |
| C1      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C2      | 4030007130 | S.CERAMIC    | C1608 CH 1H 101J-T      |
| C3      | 4550006770 | S.TANTALUM   | TEMSVD2 1C 476M-12R     |
| C4      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C5      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C7      | 4030006980 | S.CERAMIC    | C1608 CH 1H 070D-T      |
| C8      | 4030009920 | S.CERAMIC    | C1608 CH 1H 050B-T      |
| C9      | 4030007010 | S.CERAMIC    | C1608 CH 1H 100D-T      |
| C10     | 4030009500 | S.CERAMIC    | C1608 CH 1H 0R5B-T      |
| C11     | 4030009920 | S.CERAMIC    | C1608 CH 1H 050B-T      |
| C13     | 4030007130 | S.CERAMIC    | C1608 CH 1H 101J-T      |
| C14     | 4030007130 | S.CERAMIC    | C1608 CH 1H 101J-T      |
| C16     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C17     | 4610001920 | S.TRIMMER    | TZC32060A110R00         |
| C22     | 4030009510 | S.CERAMIC    | C1608 CH 1H 010B-T      |
| C27     | 4030007130 | S.CERAMIC    | C1608 CH 1H 101J-T      |
| J1      | 6510022900 | CONNECTOR    | IMSA9201B-1-06Z198-T    |
| EP1     | 0910056143 | PCB          | B 5658C                 |

[TX UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION  |                         |
|---------|------------|--------------|-------------------------|
| IC1     | 1180000420 | S.IC         | TA78L05F (TE12R)        |
| IC2     | 1140005990 | S.IC         | MB15A02PFV1-G-BND-ER    |
| IC3     | 1110002400 | S.IC         | NJM2107F-TE1            |
| IC4     | 1180000430 | S.IC         | TA78L06F (TE12L)        |
| IC5     | 1190001350 | S.IC         | M62364FP 600D           |
| IC6     | 1110002400 | S.IC         | NJM2107F-TE1            |
| Q1      | 1530000371 | S.TRANSISTOR | 2SC3356-T1B R25         |
| Q2      | 1530003270 | S.TRANSISTOR | 2SC4703-T2 SF           |
| Q3      | 1530002920 | S.TRANSISTOR | 2SC4226-T1 R25          |
| Q5      | 1530001950 | S.TRANSISTOR | 2SC2712-GR (TE85R)      |
| Q6      | 1530002050 | S.TRANSISTOR | 2SC3661-TB              |
| Q7      | 1510000510 | S.TRANSISTOR | 2SA1576A T106R          |
| Q9      | 1530001950 | S.TRANSISTOR | 2SC2712-GR (TE85R)      |
| Q10     | 1560000540 | S.FET        | 2SK880-Y (TE85R)        |
| D1      | 1790001620 | S.DIODE      | 1SV308 (TPL3)           |
| D3      | 1710000840 | S.DIODE      | 1SR154-400 TE25         |
| D4      | 1790001250 | S.DIODE      | MA2S111-(TX)            |
| X1      | 6050011480 | S.XTAL       | CR-732 (12.800 MHz)     |
| L1      | 6200007690 | S.COIL       | LQW2BHN18NJ01L          |
| L2      | 6200007710 | S.COIL       | LQW2BHN27NJ01L          |
| L3      | 6200007230 | S.COIL       | LQW2BHN15NJ01L          |
| L8      | 6200008730 | S.COIL       | ELJND R10J 0.1U         |
| L9      | 6200008730 | S.COIL       | ELJND R10J 0.1U         |
| L10     | 6200007690 | S.COIL       | LQW2BHN18NJ01L          |
| L11     | 6200007710 | S.COIL       | LQW2BHN27NJ01L          |
| L14     | 6200007670 | S.COIL       | LQW2BHN10NJ01L          |
| L15     | 6200007700 | S.COIL       | LQW2BHN22NJ01L          |
| L16     | 6200007700 | S.COIL       | LQW2BHN22NJ01L          |
| L17     | 6910011690 | S.COIL       | ACB1608M-600-T          |
| L18     | 6910011690 | S.COIL       | ACB1608M-600-T          |
| L19     | 6910011690 | S.COIL       | ACB1608M-600-T          |
| L20     | 6910011690 | S.COIL       | ACB1608M-600-T          |
| L21     | 6910011690 | S.COIL       | ACB1608M-600-T          |
| L22     | 6910011690 | S.COIL       | ACB1608M-600-T          |
| L23     | 6910011690 | S.COIL       | ACB1608M-600-T          |
| L24     | 6910011690 | S.COIL       | ACB1608M-600-T          |
| L25     | 6910011690 | S.COIL       | ACB1608M-600-T          |
| L26     | 6910011690 | S.COIL       | ACB1608M-600-T          |
| L27     | 6200009940 | S.COIL       | BLM21PG221SN1           |
| L28     | 6200009940 | S.COIL       | BLM21PG221SN1           |
| L29     | 6910011690 | S.COIL       | ACB1608M-600-T          |
| L30     | 6910011690 | S.COIL       | ACB1608M-600-T          |
| R1      | 7030003230 | S.RESISTOR   | ERJ3GEYJ 180 V (18 Ω)   |
| R2      | 7030003230 | S.RESISTOR   | ERJ3GEYJ 180 V (18 Ω)   |
| R3      | 7030003230 | S.RESISTOR   | ERJ3GEYJ 180 V (18 Ω)   |
| R4      | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| R5      | 7030003480 | S.RESISTOR   | ERJ3GEYJ 222 V (2.2 kΩ) |
| R6      | 7030003300 | S.RESISTOR   | ERJ3GEYJ 680 V (68 Ω)   |
| R8      | 7030003200 | S.RESISTOR   | ERJ3GEYJ 100 V (10 Ω)   |
| R9      | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R10     | 7030003360 | S.RESISTOR   | ERJ3GEYJ 221 V (220 Ω)  |
| R11     | 7030004040 | S.RESISTOR   | ERJ3GEYJ 4R7 V (4.7 Ω)  |
| R16     | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R17     | 7030003330 | S.RESISTOR   | ERJ3GEYJ 121 V (120 Ω)  |
| R18     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R19     | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| R20     | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R21     | 7030003200 | S.RESISTOR   | ERJ3GEYJ 100 V (10 Ω)   |
| R23     | 7030003200 | S.RESISTOR   | ERJ3GEYJ 100 V (10 Ω)   |
| R24     | 7030003200 | S.RESISTOR   | ERJ3GEYJ 100 V (10 Ω)   |
| R25     | 7030003200 | S.RESISTOR   | ERJ3GEYJ 100 V (10 Ω)   |
| R26     | 7030003200 | S.RESISTOR   | ERJ3GEYJ 100 V (10 Ω)   |
| R27     | 7030003200 | S.RESISTOR   | ERJ3GEYJ 100 V (10 Ω)   |
| R29     | 7030003200 | S.RESISTOR   | ERJ3GEYJ 100 V (10 Ω)   |
| R31     | 7030003470 | S.RESISTOR   | ERJ3GEYJ 182 V (1.8 kΩ) |
| R33     | 7030003460 | S.RESISTOR   | ERJ3GEYJ 152 V (1.5 kΩ) |
| R36     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R37     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R38     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R39     | 7030003620 | S.RESISTOR   | ERJ3GEYJ 333 V (33 kΩ)  |
| R41     | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R42     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |

S.=Surface mount

[TX UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION    |                         |
|---------|------------|----------------|-------------------------|
| R45     | 7030003520 | S.RESISTOR     | ERJ3GEYJ 472 V (4.7 kΩ) |
| R50     | 7030003480 | S.RESISTOR     | ERJ3GEYJ 222 V (2.2 kΩ) |
| R51     | 7030003520 | S.RESISTOR     | ERJ3GEYJ 472 V (4.7 kΩ) |
| R52     | 7030003480 | S.RESISTOR     | ERJ3GEYJ 222 V (2.2 kΩ) |
| R53     | 7030003300 | S.RESISTOR     | ERJ3GEYJ 680 V (68 Ω)   |
| R54     | 7030003280 | S.RESISTOR     | ERJ3GEYJ 470 V (47 Ω)   |
| R55     | 7030003200 | S.RESISTOR     | ERJ3GEYJ 100 V (10 Ω)   |
| R56     | 7030003240 | S.RESISTOR     | ERJ3GEYJ 220 V (22 Ω)   |
| R57     | 7030003200 | S.RESISTOR     | ERJ3GEYJ 100 V (10 Ω)   |
| R61     | 7030003200 | S.RESISTOR     | ERJ3GEYJ 100 V (10 Ω)   |
| R64     | 7030003640 | S.RESISTOR     | ERJ3GEYJ 473 V (47 kΩ)  |
| R66     | 7030003720 | S.RESISTOR     | ERJ3GEYJ 224 V (220 kΩ) |
| R67     | 7030003770 | S.RESISTOR     | ERJ3GEYJ 564 V (560 kΩ) |
| R68     | 7030003560 | S.RESISTOR     | ERJ3GEYJ 103 V (10 kΩ)  |
| R69     | 7030003320 | S.RESISTOR     | ERJ3GEYJ 101 V (100 Ω)  |
| R70     | 7030003800 | S.RESISTOR     | ERJ3GEYJ 105 V (1 MΩ)   |
| R71     | 7030003200 | S.RESISTOR     | ERJ3GEYJ 100 V (10 Ω)   |
| R76     | 7030003520 | S.RESISTOR     | ERJ3GEYJ 472 V (4.7 kΩ) |
| R77     | 7030003640 | S.RESISTOR     | ERJ3GEYJ 473 V (47 kΩ)  |
| R78     | 7030003640 | S.RESISTOR     | ERJ3GEYJ 473 V (47 kΩ)  |
| R79     | 7030003640 | S.RESISTOR     | ERJ3GEYJ 473 V (47 kΩ)  |
| R80     | 7030003540 | S.RESISTOR     | ERJ3GEYJ 682 V (6.8 kΩ) |
| R81     | 7030003640 | S.RESISTOR     | ERJ3GEYJ 473 V (47 kΩ)  |
| R83     | 7030003280 | S.RESISTOR     | ERJ3GEYJ 470 V (47 Ω)   |
| R84     | 7030003540 | S.RESISTOR     | ERJ3GEYJ 682 V (6.8 kΩ) |
| R85     | 7030003680 | S.RESISTOR     | ERJ3GEYJ 104 V (100 kΩ) |
| R86     | 7030003520 | S.RESISTOR     | ERJ3GEYJ 472 V (4.7 kΩ) |
| R87     | 7030003480 | S.RESISTOR     | ERJ3GEYJ 222 V (2.2 kΩ) |
| R88     | 7030003560 | S.RESISTOR     | ERJ3GEYJ 103 V (10 kΩ)  |
| R90     | 7030003200 | S.RESISTOR     | ERJ3GEYJ 100 V (10 Ω)   |
| R91     | 7030003440 | S.RESISTOR     | ERJ3GEYJ 102 V (1 kΩ)   |
| R92     | 7030004040 | S.RESISTOR     | ERJ3GEYJ 4R7 V (4.7 Ω)  |
| R93     | 7030003720 | S.RESISTOR     | ERJ3GEYJ 224 V (220 kΩ) |
| R94     | 7030003680 | S.RESISTOR     | ERJ3GEYJ 104 V (100 kΩ) |
| R95     | 7030003320 | S.RESISTOR     | ERJ3GEYJ 101 V (100 Ω)  |
| R96     | 7030003530 | S.RESISTOR     | ERJ3GEYJ 562 V (5.6 kΩ) |
| R97     | 7030003530 | S.RESISTOR     | ERJ3GEYJ 562 V (5.6 kΩ) |
| R98     | 7030003530 | S.RESISTOR     | ERJ3GEYJ 562 V (5.6 kΩ) |
| R99     | 7030003530 | S.RESISTOR     | ERJ3GEYJ 562 V (5.6 kΩ) |
| C1      | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C2      | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T      |
| C3      | 4030006980 | S.CERAMIC      | C1608 CH 1H 070D-T      |
| C4      | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C5      | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T      |
| C6      | 4030006990 | S.CERAMIC      | C1608 CH 1H 080D-T      |
| C8      | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C9      | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C10     | 4030007010 | S.CERAMIC      | C1608 CH 1H 100D-T      |
| C15     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C16     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C17     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C18     | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T      |
| C19     | 4030006980 | S.CERAMIC      | C1608 CH 1H 070D-T      |
| C20     | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T      |
| C21     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C22     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C24     | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T      |
| C26     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C27     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C28     | 4510004640 | S.ELECTROLYTIC | ECEV1CA470SP            |
| C29     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C32     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C33     | 4510004640 | S.ELECTROLYTIC | ECEV1CA470SP            |
| C34     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C35     | 4030006870 | S.CERAMIC      | C1608 JB 1H 222K-T      |
| C36     | 4550006390 | S.TANTALUM     | TEMSVA 1C 335M-8L       |
| C37     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C38     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C39     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C40     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C41     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C42     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C43     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C44     | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR            |
| C45     | 4030007010 | S.CERAMIC      | C1608 CH 1H 100D-T      |
| C46     | 4030007010 | S.CERAMIC      | C1608 CH 1H 100D-T      |
| C47     | 4030007010 | S.CERAMIC      | C1608 CH 1H 100D-T      |
| C48     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C49     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C50     | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR            |

[TX UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION    |                                 |
|---------|------------|----------------|---------------------------------|
| C51     | 4550006250 | S.TANTALUM     | TEMSVA 1A 106M-8L               |
| C52     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C56     | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR                    |
| C57     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C58     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T              |
| C59     | 4030008920 | S.CERAMIC      | C1608 JB 1H 473K-T              |
| C60     | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR                    |
| C61     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C65     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C67     | 4550002980 | S.TANTALUM     | TEMSVA 1C 225M-8L               |
| C68     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C69     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C72     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C73     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C74     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C75     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C76     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C77     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C78     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C79     | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-T              |
| C80     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T              |
| C82     | 4550006250 | S.TANTALUM     | TEMSVA 1A 106M-8L               |
| C85     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C89     | 4030009920 | S.CERAMIC      | C1608 CH 1H 050B-T              |
| C90     | 4030007010 | S.CERAMIC      | C1608 CH 1H 100D-T              |
| C91     | 4030009920 | S.CERAMIC      | C1608 CH 1H 050B-T              |
| C92     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C93     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C96     | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR                    |
| C97     | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR                    |
| C98     | 4510004640 | S.ELECTROLYTIC | ECEV1CA470SP                    |
| C99     | 4550000460 | S.TANTALUM     | TESVA 1C 105M1-8L               |
| C100    | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR                    |
| C103    | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T              |
| C104    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T              |
| C105    | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR                    |
| C107    | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T              |
| C108    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C109    | 4550006250 | S.TANTALUM     | TEMSVA 1A 106M-8L               |
| C110    | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T              |
| C111    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T              |
| C112    | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T              |
| C113    | 4550006250 | S.TANTALUM     | TEMSVA 1A 106M-8L               |
| C114    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C115    | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T              |
| C116    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C117    | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T              |
| C118    | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T              |
| C119    | 4550000460 | S.TANTALUM     | TESVA 1C 105M1-8L               |
| C120    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T              |
| C121    | 4030007000 | S.CERAMIC      | C1608 CH 1H 090D-T              |
| C122    | 4550006250 | S.TANTALUM     | TEMSVA 1A 106M-8L               |
| J3      | 6510022590 | S.CONNECTOR    | 22FMN-BMTR-A-TBT                |
| J4      | 6510022800 | S.CONNECTOR    | B10B-PH-SM3-TB                  |
| W1      | 9018970060 | WIRE           | 62/99/070/C24/C31               |
| W2      | 7030003860 | S.JUMPER       | ERJ3GE JPW V                    |
| W3      | 7030003860 | S.JUMPER       | ERJ3GE JPW V                    |
| W4      | 7030003860 | S.JUMPER       | ERJ3GE JPW V                    |
| W5      | 7030003860 | S.JUMPER       | ERJ3GE JPW V                    |
| WS1     | 8970024070 |                | FX2368 1.5D COAXIAL TUBE (1)/TX |
| EP1     | 0910056155 | PCB            | B 5660E                         |

S.=Surface mount

[TVCO UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION  |                         |
|---------|------------|--------------|-------------------------|
| Q1      | 1530000371 | S.TRANSISTOR | 2SC3356-T1B R25         |
| Q2      | 1530002920 | S.TRANSISTOR | 2SC4226-T1 R25          |
| D1      | 1720000640 | S.VARICAP    | 1SV284 (TPH3)           |
| D2      | 1720000640 | S.VARICAP    | 1SV284 (TPH3)           |
| D3      | 1720000640 | S.VARICAP    | 1SV284 (TPH3)           |
| D4      | 1720000640 | S.VARICAP    | 1SV284 (TPH3)           |
| D5      | 1720000640 | S.VARICAP    | 1SV284 (TPH3)           |
| L1      | 6200003960 | S.COIL       | MLF1608A 1R0K-T         |
| L2      | 6200003960 | S.COIL       | MLF1608A 1R0K-T         |
| L3      | 6200010280 | S.COIL       | C3328A-14NG-A           |
| L4      | 6200007000 | S.COIL       | ELJRE 82NG-F            |
| L5      | 6200005700 | S.COIL       | ELJRE 22NG-F            |
| L6      | 6200007000 | S.COIL       | ELJRE 82NG-F            |
| L7      | 6200005740 | S.COIL       | ELJRE 47NG-F            |
| R1      | 7030003280 | S.RESISTOR   | ERJ3GEYJ 470 V (47 Ω)   |
| R2      | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R3      | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| R4      | 7030003550 | S.RESISTOR   | ERJ3GEYJ 822 V (8.2 kΩ) |
| R5      | 7030003350 | S.RESISTOR   | ERJ3GEYJ 181 V (180 Ω)  |
| R6      | 7030003500 | S.RESISTOR   | ERJ3GEYJ 332 V (3.3 kΩ) |
| R7      | 7030003400 | S.RESISTOR   | ERJ3GEYJ 471 V (470 Ω)  |
| R8      | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| R12     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R13     | 7030003280 | S.RESISTOR   | ERJ3GEYJ 470 V (47 Ω)   |
| R14     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R15     | 7030003540 | S.RESISTOR   | ERJ3GEYJ 682 V (6.8 kΩ) |
| C1      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C2      | 4030007130 | S.CERAMIC    | C1608 CH 1H 101J-T      |
| C3      | 4550006770 | S.TANTALUM   | TEMSVD2 1C 476M-12R     |
| C4      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C5      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C6      | 4030009510 | S.CERAMIC    | C1608 CH 1H 010B-T      |
| C7      | 4030009550 | S.CERAMIC    | C1608 CH 1H 2R5B-T      |
| C8      | 4030007000 | S.CERAMIC    | C1608 CH 1H 090D-T      |
| C9      | 4030007010 | S.CERAMIC    | C1608 CH 1H 100D-T      |
| C10     | 4030009510 | S.CERAMIC    | C1608 CH 1H 010B-T      |
| C11     | 4030007000 | S.CERAMIC    | C1608 CH 1H 090D-T      |
| C12     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C13     | 4030007130 | S.CERAMIC    | C1608 CH 1H 101J-T      |
| C14     | 4030007130 | S.CERAMIC    | C1608 CH 1H 101J-T      |
| C15     | 4030009510 | S.CERAMIC    | C1608 CH 1H 010B-T      |
| C16     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C17     | 4610001920 | S.TRIMMER    | TZC3Z060A110R00         |
| C18     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C22     | 4030007130 | S.CERAMIC    | C1608 CH 1H 101J-T      |
| C23     | 4030009520 | S.CERAMIC    | C1608 CH 1H 020B-T      |
| C24     | 4030009530 | S.CERAMIC    | C1608 CH 1H 030B-T      |
| C25     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T      |
| C26     | 4030007130 | S.CERAMIC    | C1608 CH 1H 101J-T      |
| C27     | 4030007130 | S.CERAMIC    | C1608 CH 1H 101J-T      |
| C28     | 4030009510 | S.CERAMIC    | C1608 CH 1H 010B-T      |
| C29     | 4030009500 | S.CERAMIC    | C1608 CH 1H 0R5B-T      |
| J1      | 6910008020 | CONNECTOR    | IPS-1323                |
| J2      | 6910008020 | CONNECTOR    | IPS-1323                |
| J3      | 6910008020 | CONNECTOR    | IPS-1323                |
| J4      | 6910008020 | CONNECTOR    | IPS-1323                |
| J5      | 6910008020 | CONNECTOR    | IPS-1323                |
| J6      | 6910008020 | CONNECTOR    | IPS-1323                |
| EP1     | 0910056167 | PCB          | B 5661G                 |

[50PA UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION  |                            |
|---------|------------|--------------|----------------------------|
| IC1     | 1150001680 | IC           | S-AU27AM (ICOM) / SC-1323  |
| IC2     | 1110002750 | S.IC         | TA75S01F (TE85R)           |
| IC3     | 1180001250 | S.IC         | TA7808F (TE16L)            |
| IC4     | 1110002400 | S.IC         | NJM2107F-TE1               |
| IC5     | 1180000420 | S.IC         | TA78L05F (TE12R)           |
| IC6     | 1130004200 | S.IC         | TC4S66F (TE85R)            |
| IC7     | 1110006060 | S.IC         | S-80820CNMC-B8F-T2         |
| Q1      | 1560001160 | S.FET        | 2SK3475 (TE12L)            |
| Q2      | 1530000920 | TRANSISTOR   | 2SC3102                    |
| Q3      | 1590000430 | S.TRANSISTOR | DTC144EUA T106             |
| Q5      | 1510000590 | S.TRANSISTOR | 2SA1362-Y (TE85L)          |
| Q6      | 1530001940 | S.TRANSISTOR | 2SC2712-BL (TE85R)         |
| Q7      | 1520000410 | TRANSISTOR   | 2SB1143 T                  |
| Q8      | 1590000680 | S.TRANSISTOR | DTC114EUA T106             |
| Q9      | 1590000680 | S.TRANSISTOR | DTC114EUA T106             |
| D1      | 1750000200 | S.DIODE      | 1SS319 (TE85R)             |
| D2      | 1720000360 | S.DIODE      | HSU88TRF                   |
| D4      | 1720000360 | S.DIODE      | HSU88TRF                   |
| D5      | 1730002340 | S.ZENER      | MA8047-M (TX)              |
| D6      | 1730002340 | S.ZENER      | MA8047-M (TX)              |
| D7      | 1730000900 | S.ZENER      | RD12M-T1B1                 |
| D8      | 1790000620 | S.DIODE      | MA77 (TX)                  |
| D9      | 1790000620 | S.DIODE      | MA77 (TX)                  |
| D10     | 1790000620 | S.DIODE      | MA77 (TX)                  |
| D11     | 1720000360 | S.DIODE      | HSU88TRF                   |
| L1      | 6200005640 | S.COIL       | ELJRE 6N8Z-F               |
| L2      | 6200004480 | S.COIL       | MLF1608D R82K-T            |
| L3      | 6200005800 | S.COIL       | 33CS-Y655LY-02M=P3         |
| L4      | 6200005780 | S.COIL       | 33CS-Y655LY-03K=P3         |
| L5      | 6200005790 | S.COIL       | 33CS-Y655LY-01M=P3         |
| L6      | 6110003690 | COIL         | LA-572                     |
| L7      | 6110003650 | COIL         | LA-562                     |
| L8      | 6110003620 | COIL         | LA-559                     |
| L9      | 6110003630 | COIL         | LA-560                     |
| L10     | 6110003620 | COIL         | LA-559                     |
| L13     | 6200005650 | S.COIL       | ELJRE 8N2Z-F               |
| L14     | 6110003661 | COIL         | LA-563A                    |
| L15     | 6110003661 | COIL         | LA-563A                    |
| L16     | 6110003640 | COIL         | LA-561                     |
| L17     | 6200009790 | S.COIL       | BLM31PG121SN1              |
| L18     | 6200009790 | S.COIL       | BLM31PG121SN1              |
| L19     | 6910000670 | COIL         | BL01RN1A1D2B (BL01RN1-A62) |
| L20     | 6910000670 | COIL         | BL01RN1A1D2B (BL01RN1-A62) |
| L21     | 6910000670 | COIL         | BL01RN1A1D2B (BL01RN1-A62) |
| R1      | 7030003460 | S.RESISTOR   | ERJ3GEYJ 152 V (1.5 kΩ)    |
| R2      | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R3      | 7030006250 | S.RESISTOR   | ERJ12YJ271U (270 Ω)        |
| R4      | 7030001040 | S.RESISTOR   | MCR50JZHJ 18 Ω (180)       |
| R5      | 7030006250 | S.RESISTOR   | ERJ12YJ271U (270 Ω)        |
| R6      | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)     |
| R7      | 7030000180 | S.RESISTOR   | MCR10EZJH 22 Ω (220)       |
| R8      | 7030003310 | S.RESISTOR   | ERJ3GEYJ 820 V (82 Ω)      |
| R9      | 7030003310 | S.RESISTOR   | ERJ3GEYJ 820 V (82 Ω)      |
| R12     | 7030003370 | S.RESISTOR   | ERJ3GEYJ 271 V (270 Ω)     |
| R13     | 7030003230 | S.RESISTOR   | ERJ3GEYJ 180 V (18 Ω)      |
| R14     | 7030003370 | S.RESISTOR   | ERJ3GEYJ 271 V (270 Ω)     |
| R15     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)     |
| R16     | 7030003660 | S.RESISTOR   | ERJ3GEYJ 683 V (68 kΩ)     |
| R17     | 7030003460 | S.RESISTOR   | ERJ3GEYJ 152 V (1.5 kΩ)    |
| R19     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)     |
| R20     | 7030003510 | S.RESISTOR   | ERJ3GEYJ 392 V (3.9 kΩ)    |
| R24     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ)    |
| R25     | 7030003570 | S.RESISTOR   | ERJ3GEYJ 123 V (12 kΩ)     |
| R26     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)     |
| R28     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ)    |
| R29     | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)     |
| R30     | 7030003620 | S.RESISTOR   | ERJ3GEYJ 333 V (33 kΩ)     |
| R32     | 7030003710 | S.RESISTOR   | ERJ3GEYJ 184 V (180 kΩ)    |
| R33     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)     |
| R34     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)     |
| R35     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)     |
| R39     | 7030003600 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)     |
| R43     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)     |
| R44     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)     |

S.=Surface mount

**[50PA UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION    |                         |
|---------|------------|----------------|-------------------------|
| R45     | 7030003560 | S.RESISTOR     | ERJ3GEYJ 103 V (10 kΩ)  |
| R46     | 7030000180 | S.RESISTOR     | MCR10EZHZ 22 Ω (220)    |
| R47     | 7030003320 | S.RESISTOR     | ERJ3GEYJ 101 V (100 Ω)  |
| R48     | 7030003560 | S.RESISTOR     | ERJ3GEYJ 103 V (10 kΩ)  |
| R50     | 7030003200 | S.RESISTOR     | ERJ3GEYJ 100 V (10 Ω)   |
| R51     | 7030003680 | S.RESISTOR     | ERJ3GEYJ 104 V (100 kΩ) |
| R52     | 7030003600 | S.RESISTOR     | ERJ3GEYJ 223 V (22 kΩ)  |
| R53     | 7030003450 | S.RESISTOR     | ERJ3GEYJ 122 V (1.2 kΩ) |
| R54     | 7030003320 | S.RESISTOR     | ERJ3GEYJ 101 V (100 Ω)  |
| R55     | 7030003560 | S.RESISTOR     | ERJ3GEYJ 103 V (10 kΩ)  |
| R56     | 7030003440 | S.RESISTOR     | ERJ3GEYJ 102 V (1 kΩ)   |
| R57     | 7030003640 | S.RESISTOR     | ERJ3GEYJ 473 V (47 kΩ)  |
| R58     | 7030003660 | S.RESISTOR     | ERJ3GEYJ 683 V (68 kΩ)  |
| R59     | 7030003630 | S.RESISTOR     | ERJ3GEYJ 393 V (39 kΩ)  |
| R60     | 7030003520 | S.RESISTOR     | ERJ3GEYJ 472 V (4.7 kΩ) |
| R61     | 7510001660 | S.THRMISTOR    | NTCG16 4LH 473KT        |
| R62     | 7030003480 | S.RESISTOR     | ERJ3GEYJ 222 V (2.2 kΩ) |
| R63     | 7030003480 | S.RESISTOR     | ERJ3GEYJ 222 V (2.2 kΩ) |
| R64     | 7030003700 | S.RESISTOR     | ERJ3GEYJ 154 V (150 kΩ) |
| R66     | 7030003600 | S.RESISTOR     | ERJ3GEYJ 223 V (22 kΩ)  |
| R67     | 7030003660 | S.RESISTOR     | ERJ3GEYJ 683 V (68 kΩ)  |
| R68     | 7030003640 | S.RESISTOR     | ERJ3GEYJ 473 V (47 kΩ)  |
| R69     | 7030003320 | S.RESISTOR     | ERJ3GEYJ 101 V (100 Ω)  |
| C1      | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C2      | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C3      | 4030007010 | S.CERAMIC      | C1608 CH 1H 100D-T      |
| C4      | 4030007040 | S.CERAMIC      | C1608 CH 1H 180J-T      |
| C5      | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C6      | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-T      |
| C7      | 4030017200 | S.CERAMIC      | GRM31BR32J102KY01L      |
| C8      | 4030009520 | S.CERAMIC      | C1608 CH 1H 020B-T      |
| C9      | 4030009520 | S.CERAMIC      | C1608 CH 1H 020B-T      |
| C10     | 4030017190 | S.CERAMIC      | GRM31AR32J471KW01D      |
| C14     | 4030017890 | S.CERAMIC      | ERF22X 6C2H 101J D01L   |
| C17     | 4030018290 | S.CERAMIC      | ERF22X 6C2H 390J D01L   |
| C18     | 4030018050 | S.CERAMIC      | ERF22X 6C2H 270J D01L   |
| C19     | 4030018050 | S.CERAMIC      | ERF22X 6C2H 270J D01L   |
| C20     | 4030018170 | S.CERAMIC      | ERF22X 6C2H 4R0C D01L   |
| C21     | 4030018430 | S.CERAMIC      | ERF22X 6C2H 6R0D D01L   |
| C24     | 4030018030 | S.CERAMIC      | ERF22X 6C2H 3R0C D01L   |
| C25     | 4030018030 | S.CERAMIC      | ERF22X 6C2H 3R0C D01L   |
| C26     | 4030018460 | S.CERAMIC      | ERF22X 6C2H 100J D01L   |
| C30     | 4030018460 | S.CERAMIC      | ERF22X 6C2H 100J D01L   |
| C31     | 4030018030 | S.CERAMIC      | ERF22X 6C2H 3R0C D01L   |
| C32     | 4030018030 | S.CERAMIC      | ERF22X 6C2H 3R0C D01L   |
| C38     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C39     | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-T      |
| C40     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C41     | 4510007670 | S.ELECTROLYTIC | EEVHB1C100R             |
| C43     | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-T      |
| C44     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C45     | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-T      |
| C46     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C47     | 4510007960 | ELECTROLYTIC   | KMY25VB1000             |
| C48     | 4030017190 | S.CERAMIC      | GRM31AR32J471KW01D      |
| C49     | 4030017200 | S.CERAMIC      | GRM31BR32J102KY01L      |
| C55     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C56     | 4030009520 | S.CERAMIC      | C1608 CH 1H 020B-T      |
| C57     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C58     | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T      |
| C59     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C60     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C61     | 4510007690 | ELECTROLYTIC   | LXZ25VB2200             |
| C62     | 4030007170 | S.CERAMIC      | C1608 CH 1H 221J-T      |
| C64     | 4030007170 | S.CERAMIC      | C1608 CH 1H 221J-T      |
| C66     | 4030009520 | S.CERAMIC      | C1608 CH 1H 020B-T      |
| C68     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C69     | 4510007570 | S.ELECTROLYTIC | EEVHB1C220UR            |
| C70     | 4030007170 | S.CERAMIC      | C1608 CH 1H 221J-T      |
| C71     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C72     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C73     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C74     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C75     | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-T      |
| C76     | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-T      |
| C80     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C81     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T      |
| C83     | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-T      |
| C85     | 4030018290 | S.CERAMIC      | ERF22X 6C2H 390J D01L   |
| C86     | 4030018450 | S.CERAMIC      | ERF22X 6C2H 8R0D D01L   |

**[50PA UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION    |                       |
|---------|------------|----------------|-----------------------|
| C87     | 4030018430 | S.CERAMIC      | ERF22X 6C2H 6R0D D01L |
| C88     | 4030009500 | S.CERAMIC      | C1608 CH 1H 0R5B-T    |
| C89     | 4030009530 | S.CERAMIC      | C1608 CH 1H 030B-T    |
| C90     | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-T    |
| C91     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T    |
| C93     | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-T    |
| C94     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T    |
| C95     | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-T    |
| C96     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T    |
| C97     | 4510007940 | ELECTROLYTIC   | KMY25VB100            |
| C98     | 4030011730 | S.CERAMIC      | GRM31M2C2H101JV01L    |
| C99     | 4510007570 | S.ELECTROLYTIC | EEVHB1C220UR          |
| C100    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T    |
| C101    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T    |
| C102    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T    |
| C103    | 4030011600 | S.CERAMIC      | C1608 JB 1E 104K-T    |
| C104    | 4510007570 | S.ELECTROLYTIC | EEVHB1C220UR          |
| C105    | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-T    |
| C106    | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-T    |
| C107    | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T    |
| C108    | 4030006900 | S.CERAMIC      | C1608 JB 1H 103K-T    |
| C109    | 4510007670 | S.ELECTROLYTIC | EEVHB1C100R           |
| C110    | 4510007670 | S.ELECTROLYTIC | EEVHB1C100R           |
| C111    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-T    |
| C112    | 4030017890 | S.CERAMIC      | ERF22X 6C2H 101J D01L |
| C113    | 4550006250 | S.TANTALUM     | TEMSVA 1A 106M-8L     |
| C119    | 4030018170 | S.CERAMIC      | ERF22X 6C2H 4R0C D01L |
| C125    | 4030018470 | S.CERAMIC      | ERF22X 6C2H 220J D01L |
| C126    | 4030018470 | S.CERAMIC      | ERF22X 6C2H 220J D01L |
| C134    | 4030017490 | S.CERAMIC      | C1608 JB 1A 105K-T    |
| J1      | 6510022800 | S.CONNECTOR    | B10B-PH-SM3-TB        |
| J2      | 6510007020 | CONNECTOR      | TMP-J01X-V6           |
| J5      | 6510021390 | CONNECTOR      | IMSA-9230B-1-03Z024-T |
| T2      | 5910000920 | TRANSFORMER    | CD-C-L030H-6R0        |
| W2      | 7030003860 | S.JUMPER       | ERJ3GE JPW V          |
| W3      | 7030003860 | S.JUMPER       | ERJ3GE JPW V          |
| W4      | 7030003860 | S.JUMPER       | ERJ3GE JPW V          |
| W5      | 7030003860 | S.JUMPER       | ERJ3GE JPW V          |
| W6      | 7030003860 | S.JUMPER       | ERJ3GE JPW V          |
| W10     | 7030003860 | S.JUMPER       | ERJ3GE JPW V          |
| EP1     | 6910014490 | TERMINAL       | OP-100 M3             |
| EP2     | 6910014490 | TERMINAL       | OP-100 M3             |
| EP3     | 0910056177 | PCB            | B 5663G               |

**[VARISTOR UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION |                |
|---------|------------|-------------|----------------|
| D1      | 1790000720 | DIODE       | MA29W-B        |
| EP1     | 6910012350 | S.BEAD      | MMZ1608Y 102BT |
| EP2     | 0910056182 | PCB         | B 5662B        |

S.=Surface mount

**[VR UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION |                |
|---------|------------|-------------|----------------|
| R1      | 7210003110 | VARIABLE    | RK0971110 10KA |
| R2      | 7210003120 | VARIABLE    | RK0971110 10KB |
| J1      | 6510018950 | S.CONNECTOR | B7B-PH-SM3-TB  |
| EP1     | 0910056093 | PCB         | B 5653C        |

**[JACK1 UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION |                    |
|---------|------------|-------------|--------------------|
| L1      | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L2      | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L3      | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L4      | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L5      | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L6      | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L7      | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L8      | 6200009940 | S.COIL      | BLM21PG221SN1      |
| R1      | 7540000210 | S.ABSORBER  | KU15N14-4063       |
| R2      | 7540000210 | S.ABSORBER  | KU15N14-4063       |
| R3      | 7540000210 | S.ABSORBER  | KU15N14-4063       |
| R4      | 7540000210 | S.ABSORBER  | KU15N14-4063       |
| R5      | 7540000210 | S.ABSORBER  | KU15N14-4063       |
| R6      | 7540000210 | S.ABSORBER  | KU15N14-4063       |
| R7      | 7540000210 | S.ABSORBER  | KU15N14-4063       |
| R8      | 7540000210 | S.ABSORBER  | KU15N14-4063       |
| R9      | 7540000210 | S.ABSORBER  | KU15N14-4063       |
| R10     | 7540000210 | S.ABSORBER  | KU15N14-4063       |
| C1      | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C2      | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C3      | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C4      | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C5      | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C6      | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C7      | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C8      | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C9      | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C10     | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| J1      | 6450001650 | CONNECTOR   | HSJ0836-01-500     |
| J2      | 6510016170 | CONNECTOR   | 52018-8835         |
| J3      | 6510022730 | S.CONNECTOR | S13B-PH-SM3-TB     |
| EP1     | 0910056113 | PCB         | B 5655C            |

**[JACK2 UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION |                    |
|---------|------------|-------------|--------------------|
| D1      | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D2      | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D3      | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D4      | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D5      | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D6      | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D11     | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D12     | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D13     | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D14     | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D15     | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D16     | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D17     | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D18     | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D19     | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D20     | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D21     | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D22     | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| D23     | 1750000930 | S.DIODE     | NNCD8.2C-T1        |
| L1      | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L2      | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L3      | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L4      | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L5      | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L6      | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L11     | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L12     | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L13     | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L14     | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L15     | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L16     | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L17     | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L18     | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L19     | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L20     | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L21     | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L22     | 6200009940 | S.COIL      | BLM21PG221SN1      |
| L23     | 6200009940 | S.COIL      | BLM21PG221SN1      |
| C1      | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T |
| C2      | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T |
| C3      | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T |
| C4      | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T |
| C5      | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T |
| C6      | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C8      | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C11     | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C12     | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C13     | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C14     | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C15     | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C16     | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C17     | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C18     | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C19     | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C20     | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C21     | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C22     | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| C23     | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T |
| J1      | 6510023290 | CONNECTOR   | DBR61-25K1200-B    |
| J2      | 6510022730 | S.CONNECTOR | S13B-PH-SM3-TB     |
| J3      | 6510022730 | S.CONNECTOR | S13B-PH-SM3-TB     |
| EP1     | 0910056124 | PCB         | B 5656D            |

S.=Surface mount

**[CHASSIS UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION |                               |
|---------|------------|-------------|-------------------------------|
| J1      | 6510022970 | CONNECTOR   | N-PA-JJ (NI)                  |
| SP1     | 2510001200 | SPEAKER     | C057FA510-10                  |
| MF1     | 2710000750 | FAN         | FBA08A12LZ                    |
| MF2     | 2710000740 | FAN         | FBA06A12L                     |
| W1      | 8900011510 | CABLE       | OPC-1048 (AC INPUT CABLE)     |
| W2      | 8900011520 | CABLE       | OPC-1049 (POWER SW CABLE)     |
| W3      | 8900011530 | CABLE       | OPC-1050 (BACKUP DC CABLE)    |
| W4      | 8900011540 | CABLE       | OPC-1052 (PS OUTPUT CABLE)    |
| W5      | 8900011550 | CABLE       | OPC-1053 (REG-LOGIC CABLE)    |
| W6      | 8900011560 | CABLE       | OPC-1054 (PA-TX CABLE)        |
| W7      | 8900011570 | CABLE       | OPC-1055 (LOGIC-JACK2 CABLEA) |
| W8      | 8900011580 | CABLE       | OPC-1056 (LOGIC-JACK2 CABLEB) |
| W9      | 8900011590 | CABLE       | OPC-1057 (LOGIC-JACK1 CABLE)  |
| W10     | 8900011600 | CABLE       | OPC-1058 (REG-PA CABLE RED)   |
| W11     | 8900011610 | CABLE       | OPC-1059 (REG-PA CABLE BLK)   |
| W12     | 8900011620 | CABLE       | OPC-1065 (RX-ANT CABLE)       |
| W13     | 8900011631 | CABLE       | OPC-1066 A(TX-ANT CABLE)      |
| W14     | 8900011660 | CABLE       | OPC-1178 (PA-FAN CABLE)       |
| W15     | 8900011660 | CABLE       | OPC-1178 (PA-FAN CABLE)       |
| W16     | 8900011680 | CABLE       | OPC-1183 (LOGIC-VR CABLE)     |
| W17     | 8900011690 | CABLE       | OPC-1184 (LOGIC-FRONT CABLE)  |
| WS1     | 8600036930 |             | SX2368 P01CH                  |
| EP1     | 6910014470 | UNIT BOARD  | FP2152A [100V VERSION]        |
|         | 6910014480 | UNIT BOARD  | FP2153A [220V VERSION]        |
| EP4     | 6910008330 | E.OTHER     | G80-18                        |
| EP5     | 8930030420 | COVER       | FG60B                         |

S.=Surface mount

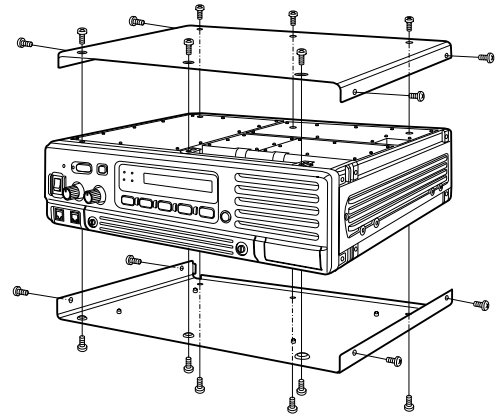
## SECTION 6 OPTION UNIT INSTALLATION

### ■ Opening the repeater's case

Follow the case and cover opening procedures shown here when an optional unit is installed or adjust the internal units, etc.

**CAUTION: DISCONNECT** the AC power cable and/or DC power cable from the repeater. Otherwise, there is danger of electric shock and/or equipment damage.

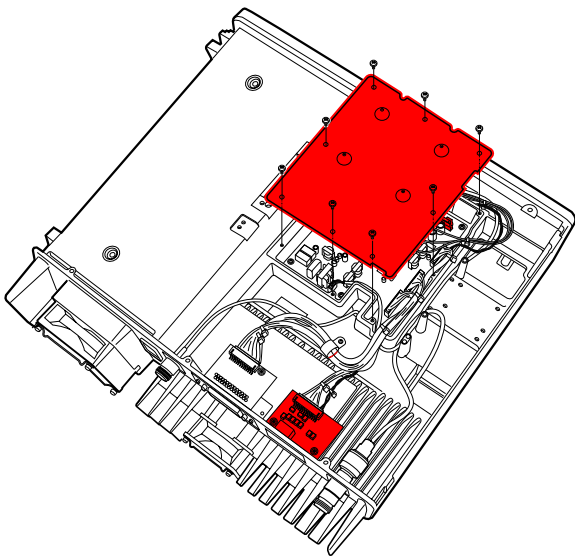
- ① Remove 6 screws from the top of the repeater and 4 screws from the sides, then lift up the top cover.
- ② Turn the repeater upside down.
- ③ Remove 6 screws from the bottom of the repeater, and 4 screws from the sides, then lift up the bottom cover.



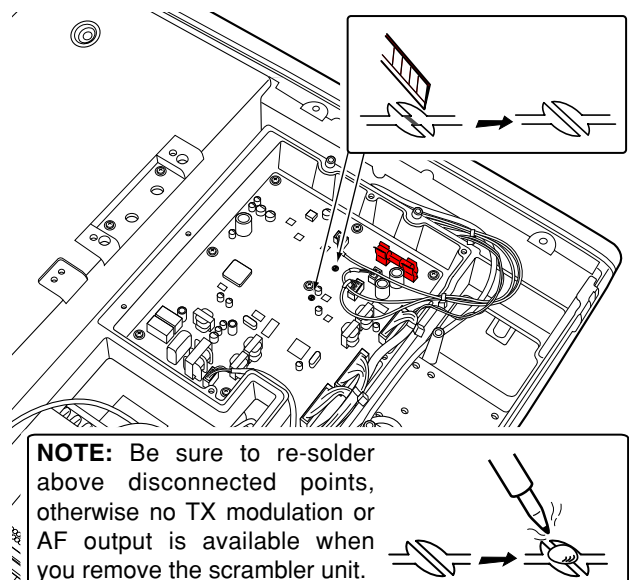
### ■ Voice scrambler unit installation

The UT-109 (#01)/UT-110 (#01) provides high performance private communication for base operating mode. In order to receive or send scrambled transmissions, the UT-109 (#01)/UT-110 (#01) must be installed and to activate the scrambler function.

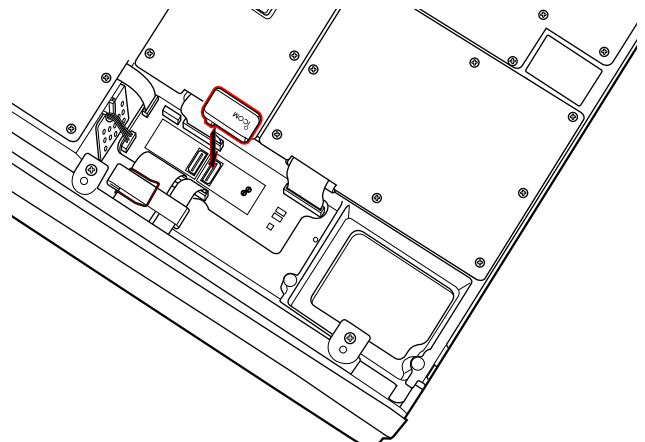
- ① Remove the top and bottom covers as shown above.
- ② Remove 8 screws from the LOGIC shielding plate, then remove the plate.



- ③ Cut the pattern on the PCB at the RX AF circuit (CP1) and TX mic circuit (CP2) on the LOGIC unit as shown at right.



- ④ Turn the repeater upside down, then install the scrambler unit as shown below.



- ⑤ Return the LOGIC shielding plate, top and bottom covers to their original positions.

# SECTION 7 MECHANICAL PARTS AND DISASSEMBLY

## [CHASSIS PARTS]

| REF NO. | ORDER NO.  | DESCRIPTION                    | QTY. |
|---------|------------|--------------------------------|------|
| W2      | 8900011520 | OPC-1049 (Power SW cable)      | 1    |
| W7      | 8900011570 | OPC-1055 (LOGIC-JACK2 cable A) | 1    |
| W8      | 8900011580 | OPC-1056 (LOGIC-JACK2 cable B) | 1    |
| W9      | 8900011590 | OPC-1057 (LOGIC-JACK1 cable)   | 1    |
| W16     | 8900011680 | OPC-1183 (LOGIC-VR cable)      | 1    |
| W17     | 8900011690 | OPC-1184 (LOGIC-FRONT cable)   | 1    |
| MP1     | 8210018430 | 2368 front panel assembly      | 1    |
| MP2     | 8310052480 | 2368 Window plate              | 1    |
| MP3     | 8930056450 | 2368 6-key                     | 1    |
| MP4     | 8930056440 | 2368 2-key                     | 1    |
| MP5     | 8210018300 | 2368 sub panel                 | 1    |
| MP6     | 8930058000 | 2368 filter net                | 1    |
| MP8     | 8930059660 | 2368 A-sponge                  | 1    |
| MP9     | 8930059670 | 2368 B-sponge                  | 1    |
| MP10    | 8930059650 | 2368 front sheet               | 1    |
| MP11    | 8860001290 | Grip ring NO.3                 | 2    |
| MP12    | 8820001230 | 2368 screw                     | 2    |
| MP14    | 8610009760 | Knob N233                      | 1    |
| MP15    | 8610009760 | Knob N233                      | 1    |
| MP16    | 8010018550 | 2368 sub chassis               | 1    |
| MP17    | 8010018540 | 2368 chassis                   | 1    |
| MP19    | 8110007480 | 2368 L-cover                   | 1    |
| MP20    | 8930057680 | Rubber stand (O)               | 4    |
| MP25    | 8110007640 | 2368 LOGIC shield cover        | 1    |
| MP26    | 8930056620 | 2368 D-sub plate               | 1    |
| MP27    | 8930059060 | 2368 Fin cover Y656            | 1    |
| MP37    | 8950003170 | Nylon clip SL-8N               | 1    |
| MP56    | 8810007230 | Set screw H M3 × 8             | 2    |
| MP57    | 8810007230 | Set screw H M3 × 8             | 1    |
| MP65    | 8810008450 | Bind screw M4 × 8 ZK           | 10   |
| MP66    | 8810005710 | Screw PH B0 M2 × 6 ZK          | 4    |
| MP67    | 8810005710 | Screw PH B0 M2 × 6 ZK          | 2    |
| MP68    | 8810009650 | Screw FH BT M3 × 8 NI-ZU       | 6    |
| MP69    | 8810008660 | Screw PH BT M3 × 8 NI-ZU       | 8    |
| MP77    | 8810008660 | Screw PH BT M3 × 8 NI-ZU       | 8    |
| MP82    | 8810008660 | Screw PH BT M3 × 8 NI-ZU       | 4    |
| MP84    | 8810008660 | Screw PH BT M3 × 8 NI-ZU       | 7    |
| MP85    | 8810008660 | Screw PH BT M3 × 8 NI-ZU       | 9    |
| MP86    | 8810008660 | Screw PH BT M3 × 8 NI-ZU       | 2    |
| MP87    | 8810008660 | Screw PH BT M3 × 8 NI-ZU       | 1    |
| MP91    | 8810008660 | Screw PH BT M3 × 8 NI-ZU       | 2    |
| MP92    | 8810008660 | Screw PH BT M3 × 8 NI-ZU       | 1    |
| MP101   | 8930018620 | Himelon sheet Y                | 4    |
| MP102   | 8930047050 | Himelon sheet BU               | 1    |
| MP106   | 8930007510 | Knob spring NO.7800            | 1    |
| MP107   | 8930007510 | Knob spring NO.7800            | 1    |
| SP1     | 2510001200 | Speaker C057FA510-10           | 1    |

## [FRONT UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION  | QTY. |
|---------|------------|--------------|------|
| EP2     | 6910014560 | Spacer LM-15 | 1    |
| EP3     | 6910014550 | Spacer LM-13 | 1    |
| EP4     | 6910014540 | Spacer LM-10 | 1    |
| EP5     | 6910014540 | Spacer LM-10 | 1    |
| EP6     | 6910014540 | Spacer LM-10 | 1    |
| EP7     | 6910014540 | Spacer LM-10 | 1    |

## [LOGIC UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION                   | QTY. |
|---------|------------|-------------------------------|------|
| F1      | 5210000030 | Fuse FGB 1A (FGB0 125V)       | 1    |
| F2      | 5220000020 | Fuse holder S-N5051           | 1    |
| F3      | 5220000020 | Fuse holder S-N5051           | 1    |
| W3      | 8900008940 | Cable OPC-886 (P=1 N=10 L=75) | 1    |
| W4      | 8900009230 | Cable OPC-908 (P=1 N=10 L=60) | 1    |
| W5      | 8900008740 | Cable OPC-867 (P=1 N=24 L=60) | 1    |
| W10     | 8900009270 | Cable OPC-912 (P=1 N=22 L=70) | 1    |
| W11     | 8900009270 | Cable OPC-912 (P=1 N=22 L=70) | 1    |

## [JACK2 UNIT]

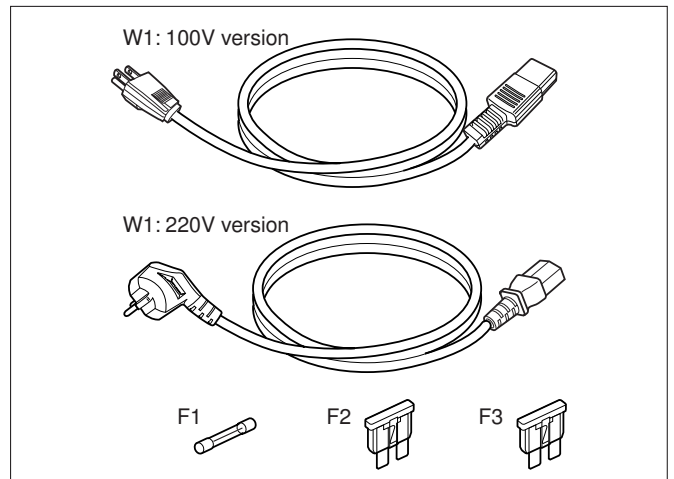
| REF NO. | ORDER NO.  | DESCRIPTION               | QTY. |
|---------|------------|---------------------------|------|
| J1      | 6510023290 | Connector DBR61-25K1200-B | 1    |

### Screw abbreviations

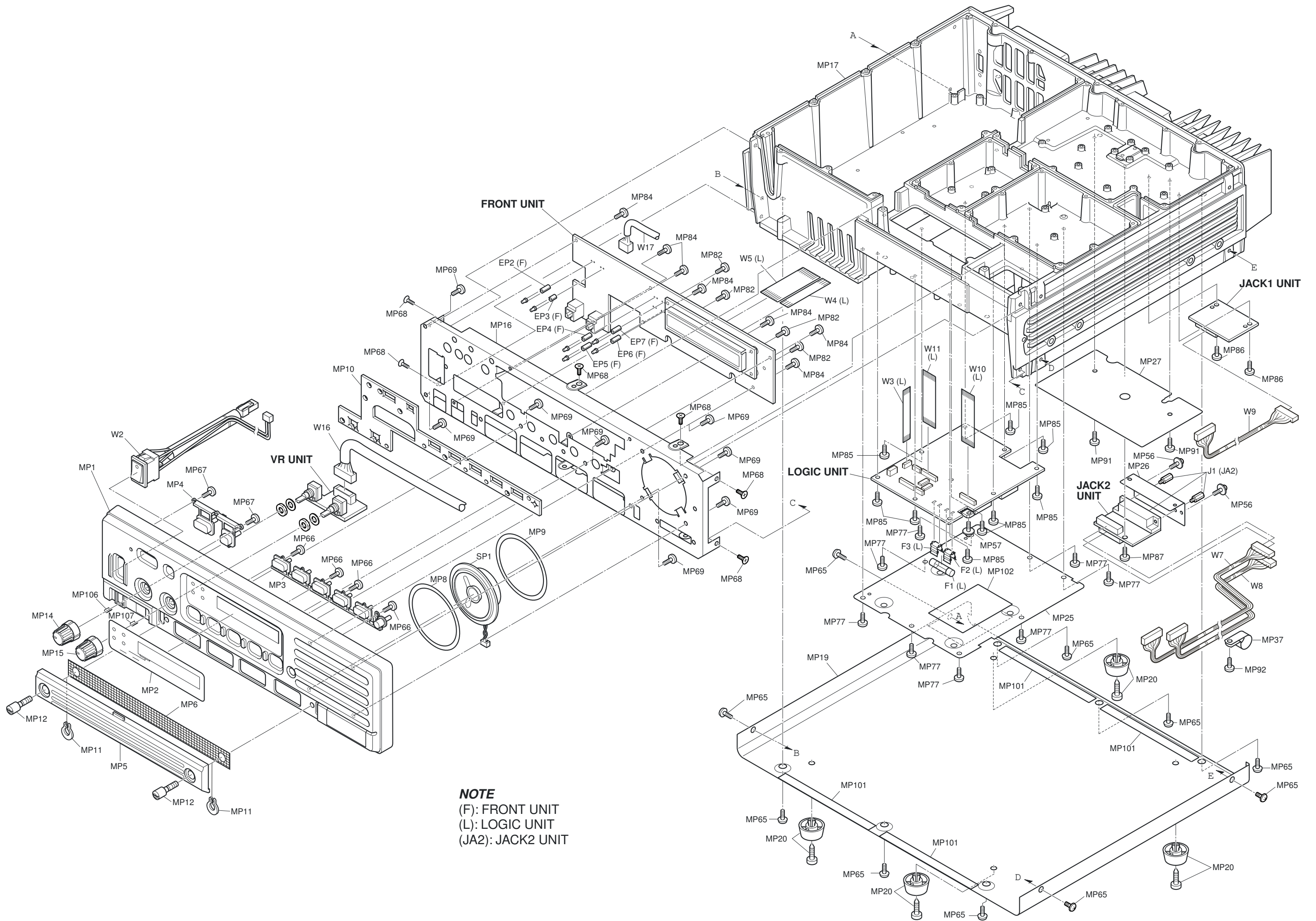
B0, BT: Self-tapping PH: Pan head  
 NI-ZU: Nickel-Zinc ZK: Black

## [ACCESSORIES]

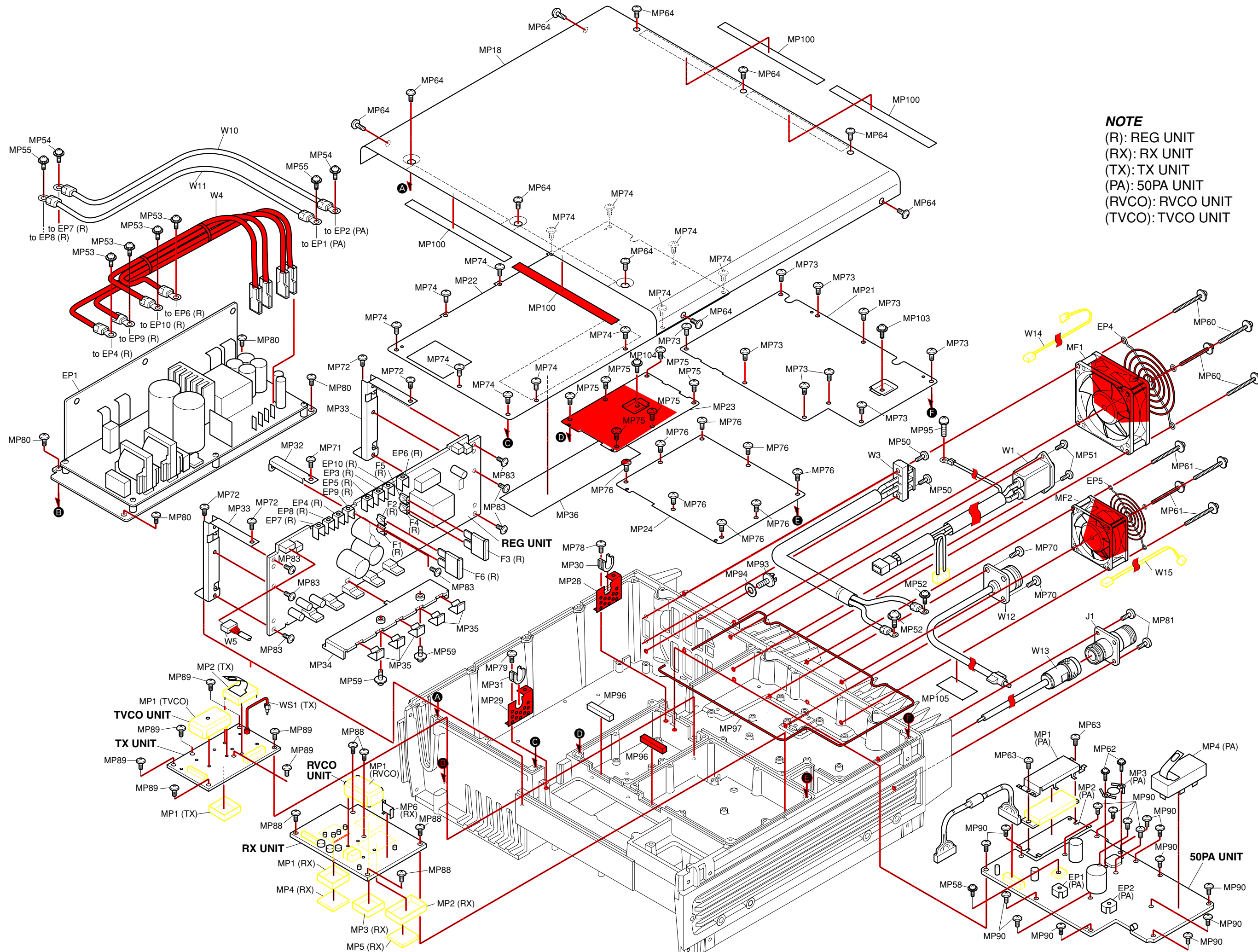
| REF NO. | ORDER NO.  | DESCRIPTION                  | QTY. |
|---------|------------|------------------------------|------|
| F1      | 5210000030 | Fuse FGB 1A (FGB0 125V)      | 1    |
| F2      | 5210000850 | Fuse ATC-20                  | 1    |
| F3      | 5210000850 | Fuse ATC-20                  | 1    |
| W1      | 8900005130 | Cable OPC-492 (220V version) | 1    |
|         | 8900005250 | Cable OPC-510 (100V version) | 1    |







**NOTE**  
 (F): FRONT UNIT  
 (L): LOGIC UNIT  
 (JA2): JACK2 UNIT



**NOTE**  
 (R): REG UNIT  
 (RX): RX UNIT  
 (TX): TX UNIT  
 (PA): 50PA UNIT  
 (RVCO): RVCO UNIT  
 (TVCO): TVCO UNIT

**[CHASSIS PARTS]**

| REF NO. | ORDER NO.  | DESCRIPTION                       | QTY. |
|---------|------------|-----------------------------------|------|
| J1      | 6510022970 | Connector N-PA-JJ(NI)             | 1    |
| W1      | 8900011510 | OPC-1048 (AC input cable)         | 1    |
| W2      | 8900011520 | OPC-1049 (Power SW cable)         | 1    |
| W3      | 8900011530 | OPC-1050 (Back up DC cable)       | 1    |
| W4      | 8900011540 | OPC-1052 (PS output cable)        | 1    |
| W5      | 8900011550 | OPC-1053 (REG-LOGIC cable)        | 1    |
| W6      | 8900011560 | OPC-1054 (PA-TX cable)            | 1    |
| W10     | 8900011600 | OPC-1058 (REG-PA cable red)       | 1    |
| W11     | 8900011610 | OPC-1059 (REG-PA cable black)     | 1    |
| W12     | 8900011620 | OPC-1065 (RX-ANT cable)           | 1    |
| W13     | 8900011631 | OPC-1066A (TX-ANT cable)          | 1    |
| W14     | 8900011660 | OPC-1178 (PA-FAN cable)           | 1    |
| W15     | 8900011660 | OPC-1178 (PA-FAN cable)           | 1    |
| EP1     | 6910014470 | Unit board FP2152A (100V version) | 1    |
|         | 6910014480 | Unit board FP2153A (220V version) | 1    |
| EP4     | 6910008330 | E.other G80-18 (Fin gured)        | 1    |
| EP5     | 8930030420 | Cover FG60B                       | 1    |
| MF1     | 2710000750 | Fan FBA08A12LZ (with Lib)         | 1    |
| MF2     | 2710000740 | Fan FBA06A12L (with Lib)          | 1    |
| MP18    | 8110007490 | 2368 U-cover                      | 1    |
| MP21    | 8510013760 | 2368 PA shield cover              | 1    |
| MP22    | 8510013770 | 2368 REG shield cover             | 1    |
| MP23    | 8510013790 | 2368 TX shield cover              | 1    |
| MP24    | 8510013780 | 2368 RX shield cover              | 1    |
| MP28    | 8510013810 | 2368 KC plate Y599                | 1    |
| MP29    | 8510013810 | 2368 KC plate Y599                | 1    |
| MP30    | 8010004340 | Edging rubber FX452               | 1    |
| MP31    | 8010004340 | Edging rubber FX452               | 1    |
| MP32    | 8930056650 | 2368 PCB angle Y600               | 1    |
| MP33    | 8930056660 | 2368 REG PCB angle                | 2    |
| MP34    | 8410002510 | 2368 REG heat sink                | 1    |
| MP35    | 8930035230 | 1546 TR-A clip                    | 5    |
| MP36    | 8930005460 | Isolating sheet G                 | 1    |
| MP50    | 8810000420 | Screw PH M4 × 18                  | 2    |
| MP51    | 8810009030 | Screw FH M3 × 8 ZK                | 2    |
| MP52    | 8810007230 | Set screw H M3 × 8                | 2    |
| MP53    | 8810007230 | Set screw H M3 × 8                | 4    |
| MP54    | 8810007230 | Set screw H M3 × 8                | 2    |
| MP55    | 8810007230 | Set screw H M3 × 8                | 2    |
| MP58    | 8810003380 | Set screw C M3 × 10               | 1    |
| MP59    | 8810003380 | Set screw C M3 × 10               | 2    |
| MP60    | 8810010130 | Set screw (C) 3 × 35              | 4    |
| MP61    | 8810010130 | Set screw (C) 3 × 35              | 4    |
| MP62    | 8810009040 | Set screw H M2.6 × 10 NI          | 2    |
| MP63    | 8810004830 | Screw PH M3 × 10 surface BS       | 2    |
| MP64    | 8810008450 | Bind screw M4 × 8 ZK              | 10   |
| MP70    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 2    |
| MP71    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 1    |
| MP72    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 4    |
| MP73    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 9    |
| MP74    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 12   |
| MP75    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 6    |
| MP76    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 8    |
| MP78    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 1    |
| MP79    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 1    |
| MP80    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 4    |
| MP81    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 2    |
| MP83    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 7    |
| MP88    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 5    |
| MP89    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 6    |
| MP90    | 8810008660 | Screw PH BT M3 × 8 NI-ZU          | 15   |
| MP93    | 8820000530 | Flange volt M4 × 8 NI             | 1    |
| MP94    | 8850000140 | Flat washer M4 NI BS              | 1    |
| MP95    | 8810003860 | Set screw A M4 × 8                | 1    |
| MP96    | 8930059330 | Shield sponge (W)                 | 2    |
| MP97    | 8930059340 | 2368 A-shield line                | 1    |
| MP100   | 8930018620 | Himelon sheet Y                   | 4    |
| MP103   | 8810003360 | Set screw C M3 × 6                | 1    |
| MP104   | 8810003360 | Set screw C M3 × 6                | 1    |
| MP105   | 8930007100 | Aluminum sheet C                  | 1    |

**[RX UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION | QTY. |
|---------|------------|-------------|------|
| MP1     | 8510015120 | 2368 A-case | 1    |
| MP2     | 8510015130 | 2368 B-case | 1    |
| MP3     | 8510015140 | 2368 E-case | 1    |
| MP4     | 8930059680 | Sponge (HD) | 1    |
| MP5     | 8930059680 | Sponge (HD) | 1    |

**[TX UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION                        | QTY. |
|---------|------------|------------------------------------|------|
| MP1     | 8510015120 | 2368 A-case                        | 1    |
| MP2     | 8510015240 | 2368 TX shield case assembly       | 1    |
| WS1     | 8970024070 | FX2368 1.5D coaxial cable (1) / TX | 1    |

**[RVCO UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION    | QTY. |
|---------|------------|----------------|------|
| MP1     | 8510014700 | 2368 RVCO case | 1    |

**[TVCO UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION    | QTY. |
|---------|------------|----------------|------|
| MP1     | 8510014690 | 2368 TVCO case | 1    |

**[REG UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION        | QTY. |
|---------|------------|--------------------|------|
| F1      | 5220000300 | Fuse holder 1A5600 | 1    |
| F2      | 5220000300 | Fuse holder 1A5600 | 1    |
| F3      | 5210000850 | Fuse ATC-20        | 1    |
| F4      | 5220000300 | Fuse holder 1A5600 | 1    |
| F5      | 5220000300 | Fuse holder 1A5600 | 1    |
| F6      | 5210000850 | Fuse ATC-20        | 1    |
| EP3     | 6910011340 | Terminal OT-010 M3 | 1    |
| EP4     | 6910011340 | Terminal OT-010 M3 | 1    |
| EP5     | 6910011340 | Terminal OT-010 M3 | 1    |
| EP6     | 6910011340 | Terminal OT-010 M3 | 1    |
| EP7     | 6910011340 | Terminal OT-010 M3 | 1    |
| EP8     | 6910011340 | Terminal OT-010 M3 | 1    |
| EP9     | 6910011340 | Terminal OT-010 M3 | 1    |
| EP10    | 6910011340 | Terminal OT-010 M3 | 1    |

**[50PA UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION                  | QTY. |
|---------|------------|------------------------------|------|
| EP1     | 6910014490 | Terminal OP-100 M3           | 1    |
| EP2     | 6910014490 | Terminal OP-100 M3           | 1    |
| MP1     | 8930056630 | 2368 Module holder Y602      | 1    |
| MP2     | 8930056640 | 2368 module plate Y601       | 1    |
| MP3     | 8860001130 | 2177 Rug plate Y430          | 1    |
| MP4     | 8510015230 | 2368 PA shield case assembly | 1    |

**Screw abbreviations**

B0, BT: Self-tapping PH: Pan head  
 NI-ZU: Nickel-Zinc ZK: Black

# SECTION 8 SEMI-CONDUCTOR INFORMATION

## 8 - 1 TRANSISTORS AND FETS

|   |  |   |  |  |
|---|--|---|--|--|
| <p>2SA1362-Y<br/>(Symbol: AEY)</p>      | <p>2SA1576A T106R<br/>(Symbol: FR)</p>   | <p>2SB1143 T<br/>(Symbol: B1143)</p>    | <p>2SB1182 TL Q<br/>(Symbol: B1182, Q)</p> | <p>2SC2712-BL/GR<br/>(Symbol: BL/LG)</p> |
| <p>2SC3102<br/>(Symbol: None)</p>       | <p>2SC3356-T1B R25<br/>(Symbol: R25)</p> | <p>2SC3661-TB<br/>(Symbol: FY)</p>      | <p>2SC4081 T106 R<br/>(Symbol: BR)</p>     | <p>2SC4226-T1 R25<br/>(Symbol: R25)</p>  |
| <p>2SC4703-T2 SF<br/>(Symbol: SE)</p>   | <p>2SC5337QS-T1<br/>(Symbol: QS)</p>     | <p>2SD1664 T100Q<br/>(Symbol: DAQ)</p>  | <p>2SJ377 (TE16R)<br/>(Symbol: J377)</p>   | <p>2SJ533<br/>(Symbol: J533)</p>         |
| <p>2SJ553STR<br/>(Symbol: J553)</p>     | <p>2SK1771 (TE85R)<br/>(Symbol: UB)</p>  | <p>2SK3475 (TE12L)<br/>(Symbol: WB)</p> | <p>2SK508 K53 T1B<br/>(Symbol: K53)</p>    | <p>2SK880Y<br/>(Symbol: XY)</p>          |
| <p>DTA143ZUA T106<br/>(Symbol: 113)</p> | <p>DTA144EE TL<br/>(Symbol: 16)</p>      | <p>DTC114EUA T106<br/>(Symbol: 26)</p>  | <p>DTC144EE TL<br/>(Symbol: 26)</p>        | <p>IMZ4 T108<br/>(Symbol: Z4)</p>        |
| <p>XP1111 (TX)<br/>(Symbol: 9S)</p>     | <p>XP1114(TX)<br/>(Symbol: 7Q)</p>       | <p>XP1214(TX)<br/>(Symbol: 9H)</p>      | <p>XP4311 (TX)<br/>(Symbol: 3X)</p>        |  |

## 8 - 2 DIODES

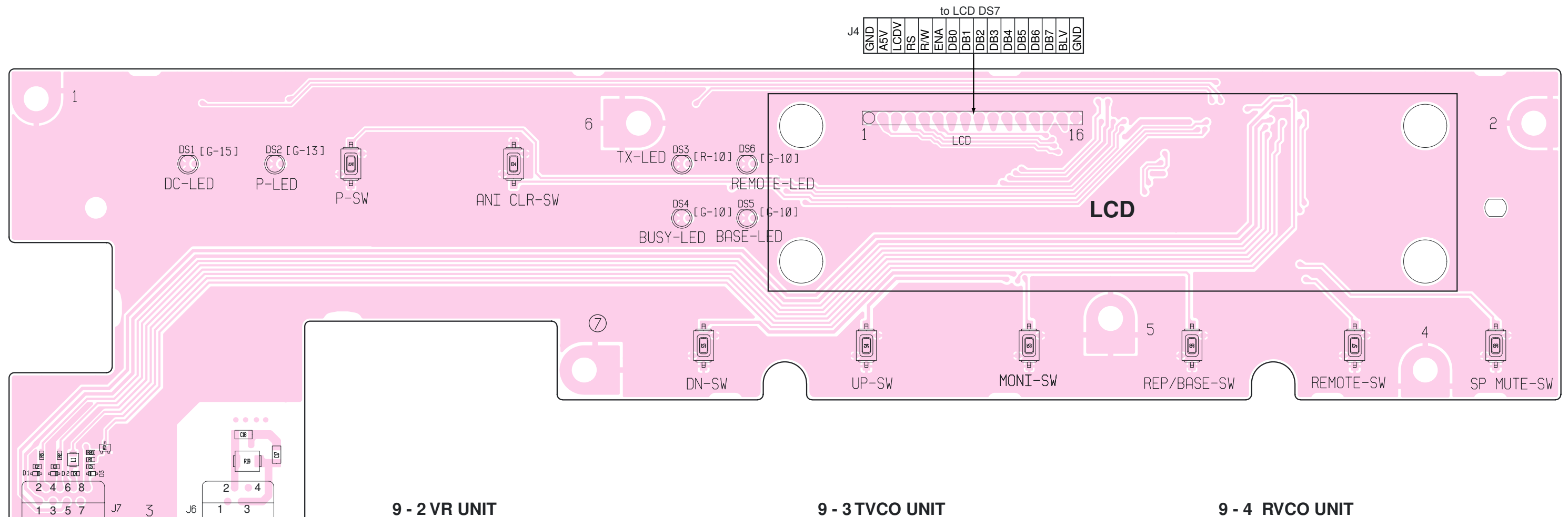
|   |   |  |  |  |
|---|---|--|--|--|
| <p>1SR154-400 TE25<br/>(Symbol: 14)</p> | <p>1SS226 (TE85R)<br/>(Symbol: C3)</p>  | <p>1SS268 (TE85R)<br/>(Symbol: BF)</p> | <p>1SS319 (TE85R)<br/>(Symbol: A4)</p> | <p>1SS355 TE-17<br/>(Symbol: A)</p>      |
| <p>1SV284 (TPH3)<br/>(Symbol: TL)</p>   | <p>1SV308 (TPL3)<br/>(Symbol: TX)</p>   | <p>D1UBA80-4062<br/>(Symbol: UA80)</p> | <p>DSA3A1<br/>(Symbol: None)</p>       | <p>FCH30A03L<br/>(Symbol: FCH30A03L)</p> |
| <p>HSU88TRF<br/>(Symbol: 9)</p>         | <p>MA29W-B<br/>(Symbol: Blown line)</p> | <p>MA2S077-(TX)<br/>(Symbol: S)</p>    | <p>MA2S111-(TX)<br/>(Symbol: A)</p>    | <p>MA77(TX)<br/>(Symbol: 4B)</p>         |
| <p>MA8047-M(TX)<br/>(Symbol: 4-7)</p>   | <p>NNCD8.2C-T1<br/>(Symbol: None)</p>   | <p>PTZ TE25 13B<br/>(Symbol: 13B)</p>  | <p>RD12M-T1B1<br/>(Symbol: 121)</p>    | <p>SB07-03C-TB<br/>(Symbol: J)</p>       |

# SECTION 9 BOARD LAYOUTS

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

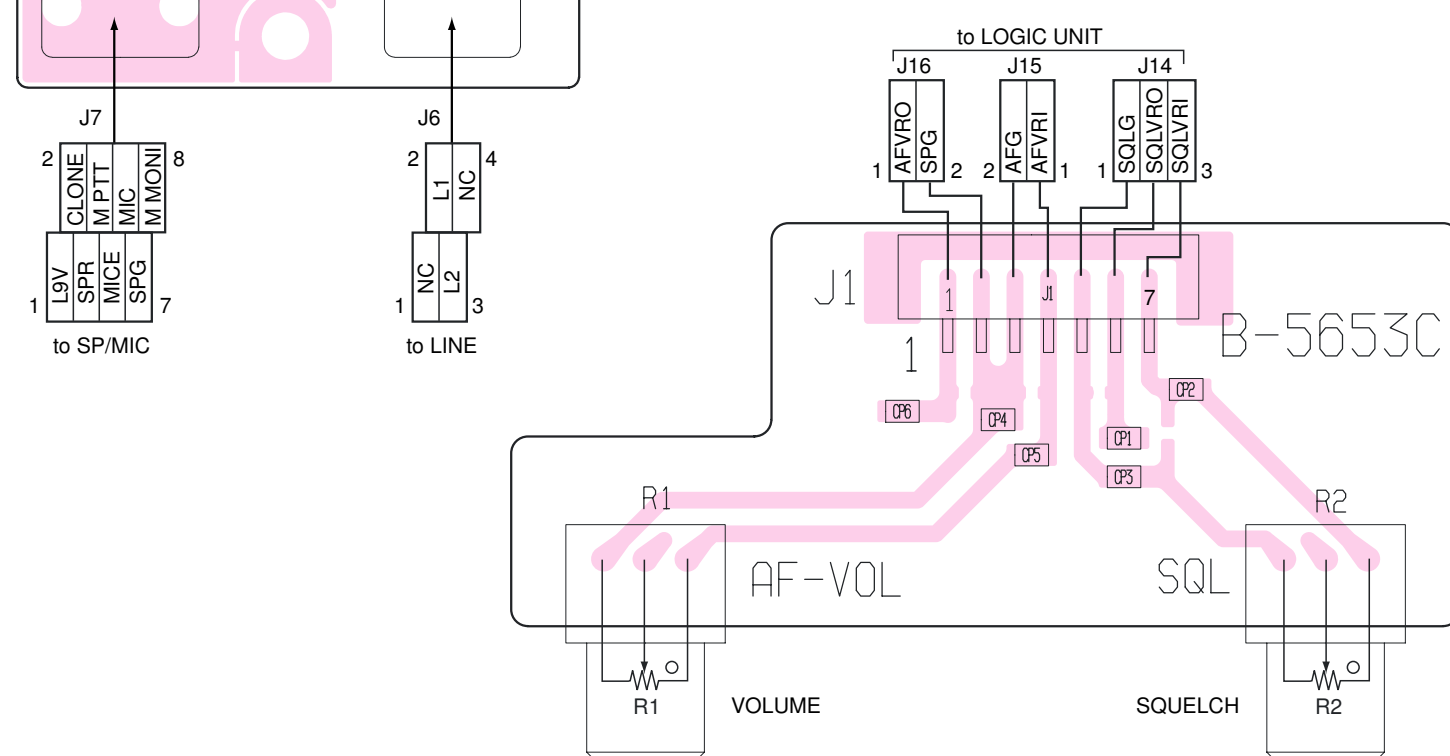
## 9 - 1 FRONT UNIT

• TOP VIEW



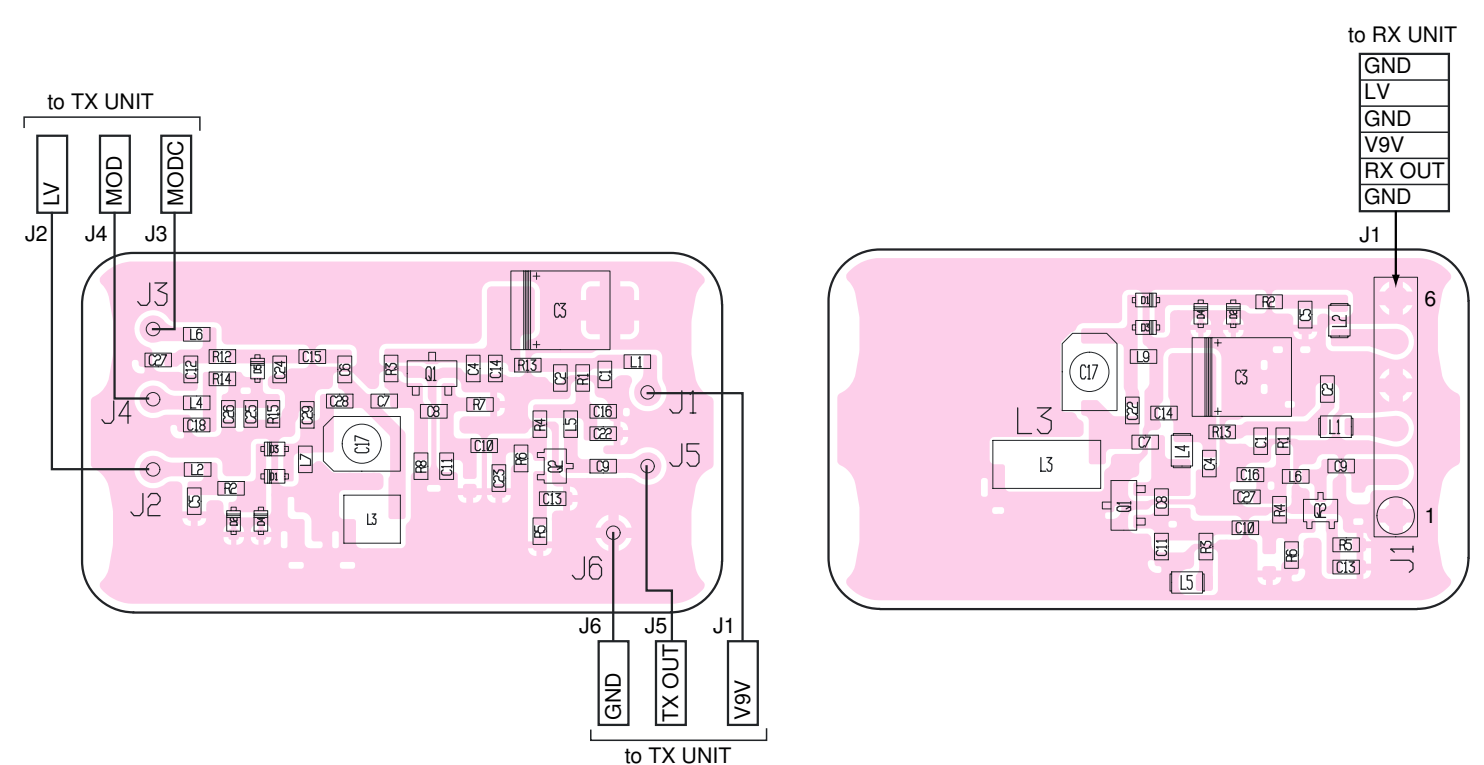
## 9 - 2 VR UNIT

• TOP VIEW



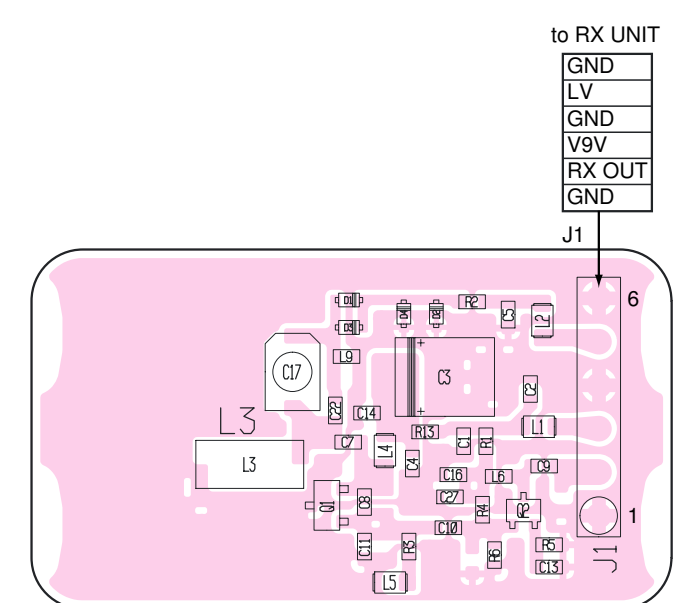
## 9 - 3 TVCO UNIT

• TOP VIEW



## 9 - 4 RVCO UNIT

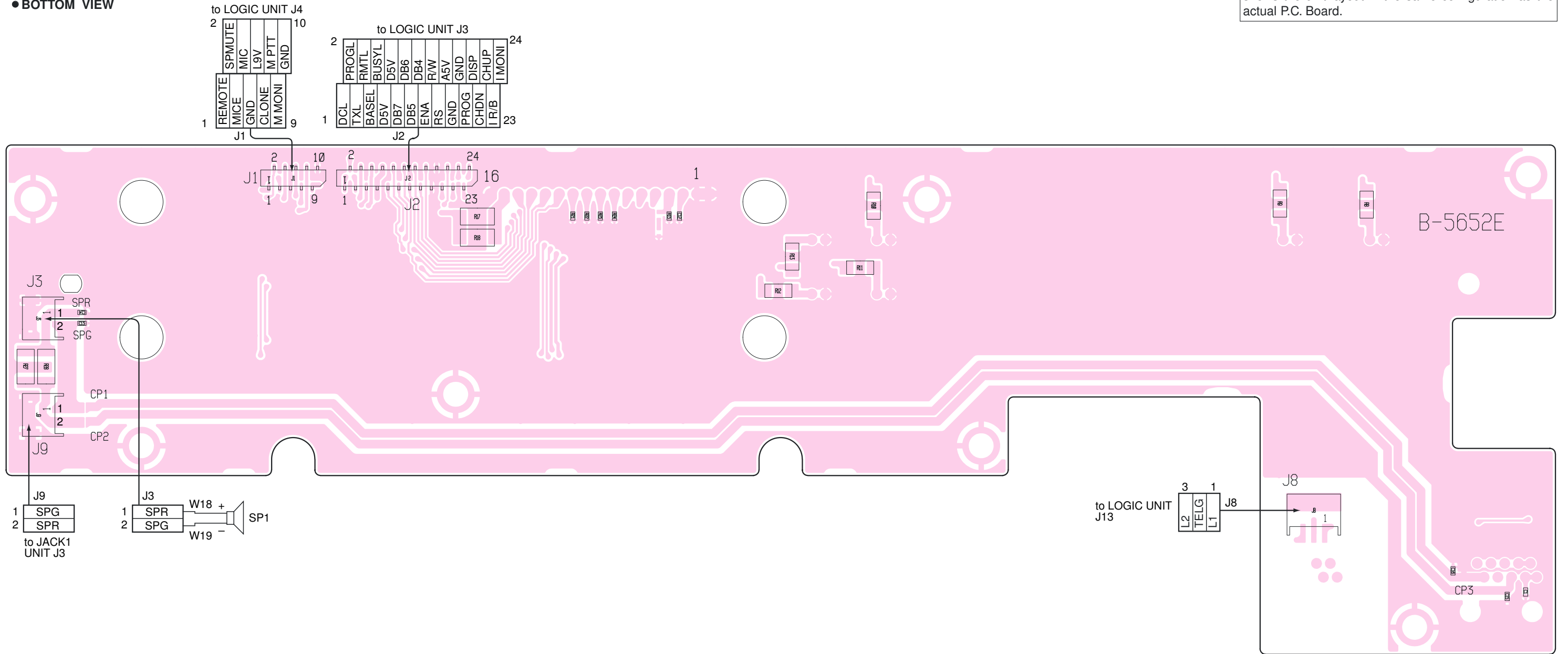
• TOP VIEW



### FRONT UNIT

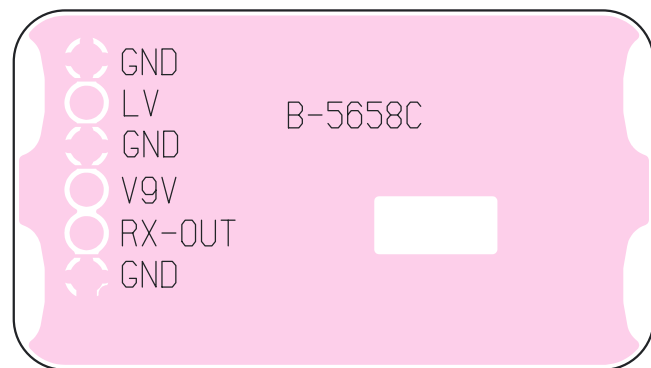
● BOTTOM VIEW

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



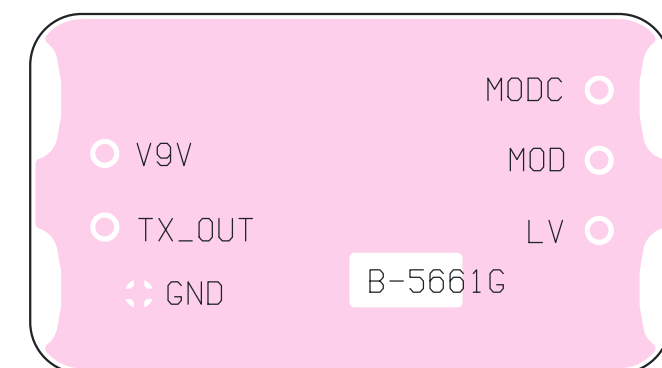
### RVCO UNIT

● BOTTOM VIEW



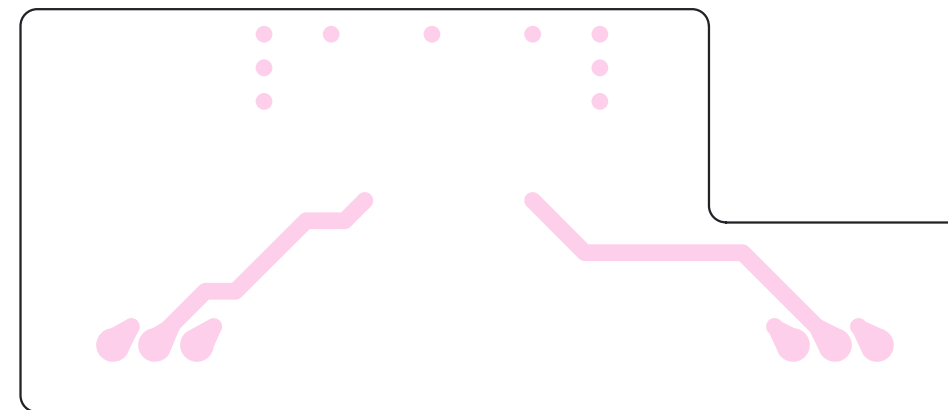
### TVCO UNIT

● BOTTOM VIEW



### VR UNIT

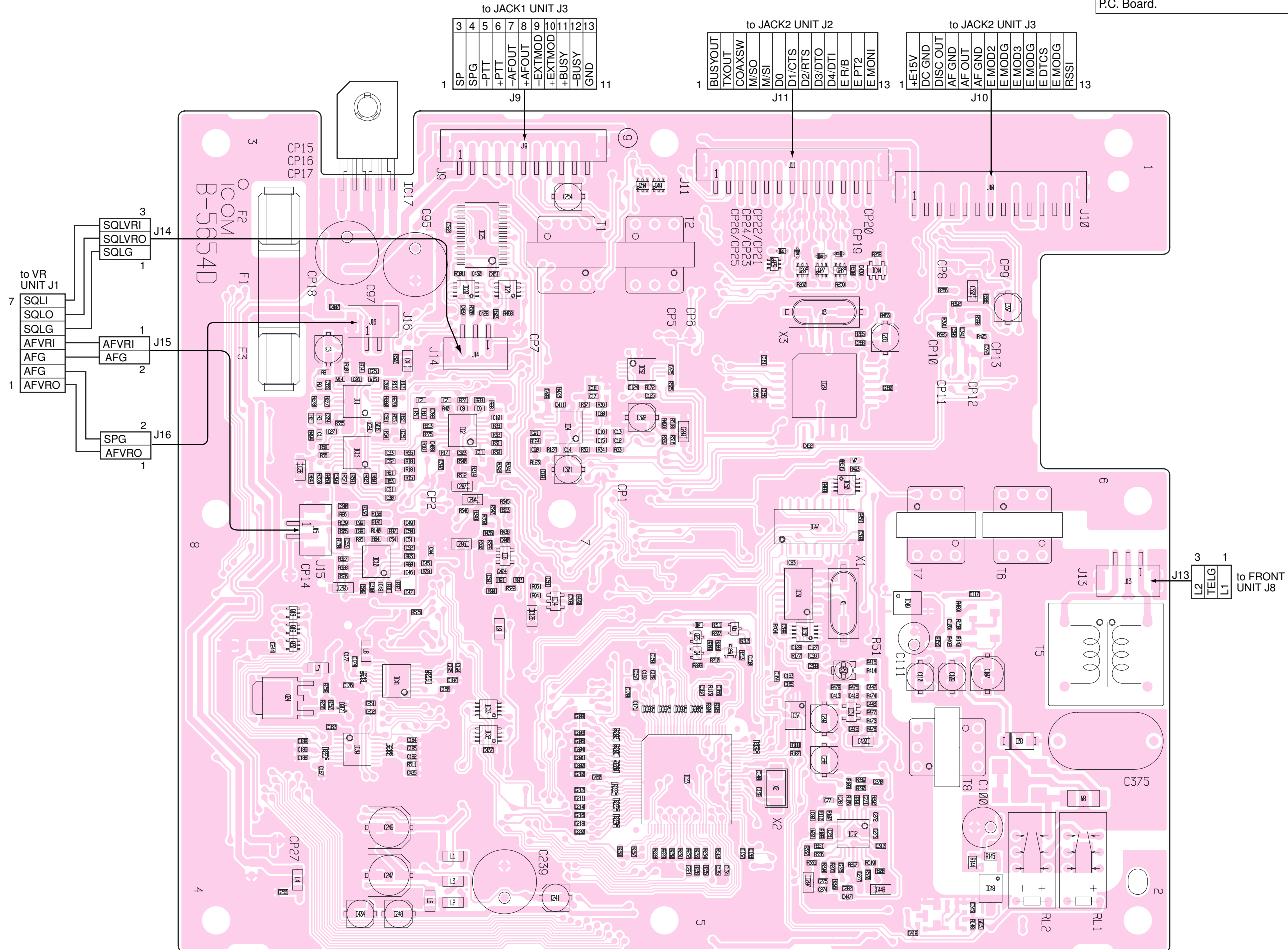
● BOTTOM VIEW



# 9 - 5 LOGIC UNIT

• TOP VIEW

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



# LOGIC UNIT

## ● BOTTOM VIEW

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

to OPTIONAL UNIT

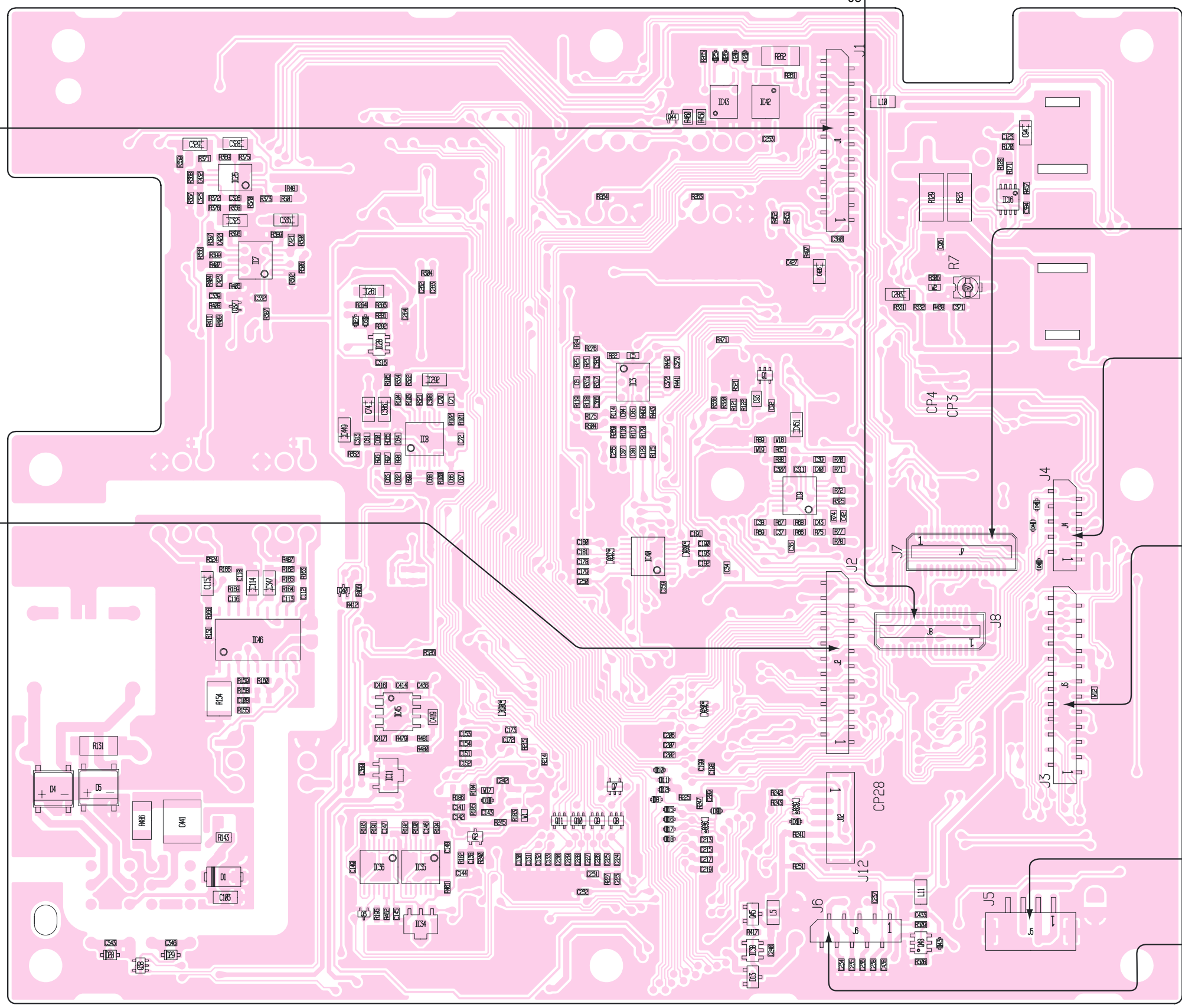
|    |        |
|----|--------|
| 16 | SCK    |
| 17 | SDTI   |
| 18 | SDTO   |
| 19 | CIRQ   |
| 20 | CCS    |
| 21 | NC     |
| 22 | NC     |
| 23 | DISCO  |
| 24 | SIGOUT |
| 25 | NC     |
| 26 | NC     |
| 27 | NC     |
| 28 | NC     |
| 29 | L5V    |
| 30 | GND    |

to RX UNIT J2

|    |       |    |        |
|----|-------|----|--------|
| 22 | GND   | 21 | GND    |
|    | M9V   |    | M9V    |
|    | GND   |    | SCK    |
|    | SDTO  |    | RPLSTB |
|    | GND   |    | R9C    |
|    | RUNLK |    | W/NS   |
|    | RSSI  |    | RLV    |
|    | RVCON |    | TUNE   |
|    | GND   |    | DISC   |
|    | SQL   |    | GND    |
|    | NDET  |    | GND    |
| 2  |       | 1  |        |

to TX UNIT J3

|    |        |    |        |
|----|--------|----|--------|
| 22 | GND    | 21 | M9V    |
|    | M9V    |    | SCK    |
|    | SDTO   |    | DA1STB |
|    | TPLSTB |    | TUNLK  |
|    | TLV    |    | GND    |
|    | TMUTE1 |    | W/NS   |
|    | I TONE |    | TXAF   |
|    | GND    |    | E TONE |
|    | PATEMP |    | TMUTE2 |
|    | FWSWR  |    | RVSWR  |
| 2  |        | 1  | GND    |



|    |       |        |    |
|----|-------|--------|----|
| 30 | GND   | NC     | 1  |
| 29 | L5V   | NC     | 2  |
| 28 | NC    | MICO   | 3  |
| 27 | NC    | MICI   | 4  |
| 26 | NC    | NC     | 5  |
| 25 | NC    | NC     | 6  |
| 24 | NC    | NC     | 7  |
| 23 | DISCO | SIGOUT | 8  |
| 22 | AFOUT | NC     | 9  |
| 21 | NC    | NC     | 10 |
| 20 | CCS   | OPT3   | 11 |
| 19 | NC    | GND    | 12 |
| 18 | SDTO  | NC     | 13 |
| 17 | SDTI  | NC     | 14 |
| 16 | SCK   | NC     | 15 |

to FRONT UNIT J1

|    |        |   |        |
|----|--------|---|--------|
| 10 | REMOTE | 9 | SPMUTE |
|    | MICE   |   | MIC    |
|    | GND    |   | L9V    |
|    | CLONE  |   | M PTT  |
|    | M MONI |   | GND    |
| 2  |        | 1 |        |

to FRONT UNIT J2

|    |       |    |        |
|----|-------|----|--------|
| 24 | DCL   | 23 | PROGL  |
|    | TXL   |    | RMTL   |
|    | BASEL |    | BUSYL  |
|    | D5V   |    | D5V    |
|    | DB7   |    | DB6    |
|    | DB5   |    | DB4    |
|    | ENA   |    | R/W    |
|    | RS    |    | A5V    |
|    | GND   |    | GND    |
|    | PROG  |    | DISP   |
|    | CHDN  |    | CHUP   |
|    | I R/B |    | I MONI |
| 2  |       | 1  |        |

to REG UNIT J13

|    |      |   |      |
|----|------|---|------|
| 4  | GND  | 1 | VCC2 |
|    | GND2 |   | VCC2 |
|    | L9V  |   |      |
|    | A5V  |   |      |
|    | PSD  |   |      |
| 10 |      | 9 |      |

to REG UNIT J14

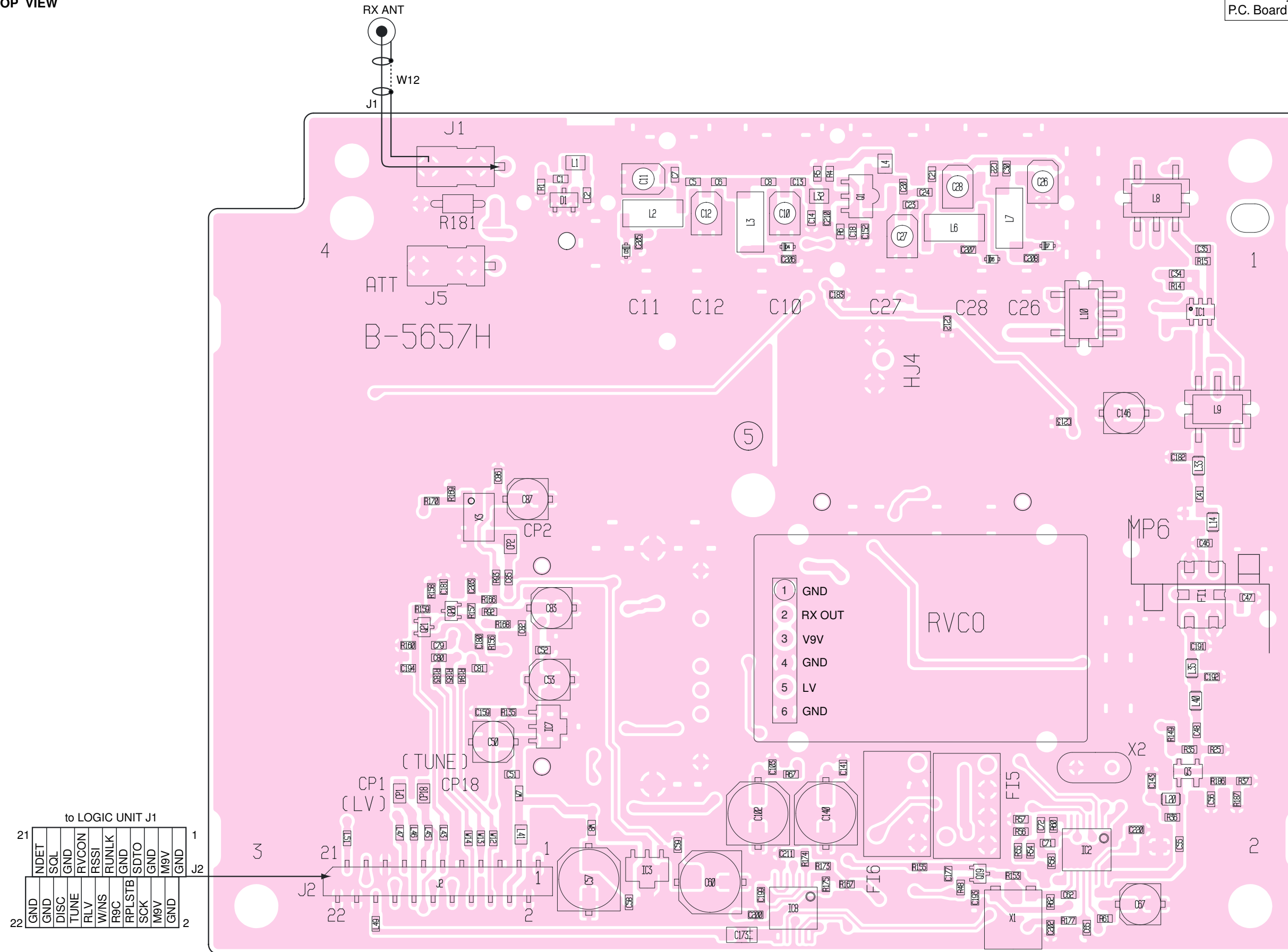
|    |     |   |         |
|----|-----|---|---------|
| 9  | M9V | 1 | REGTEMP |
|    | L9V |   | M9C     |
|    | A5V |   |         |
|    | PSD |   |         |
| 10 | GND | 2 |         |



# 9 - 6 RX UNIT

● TOP VIEW

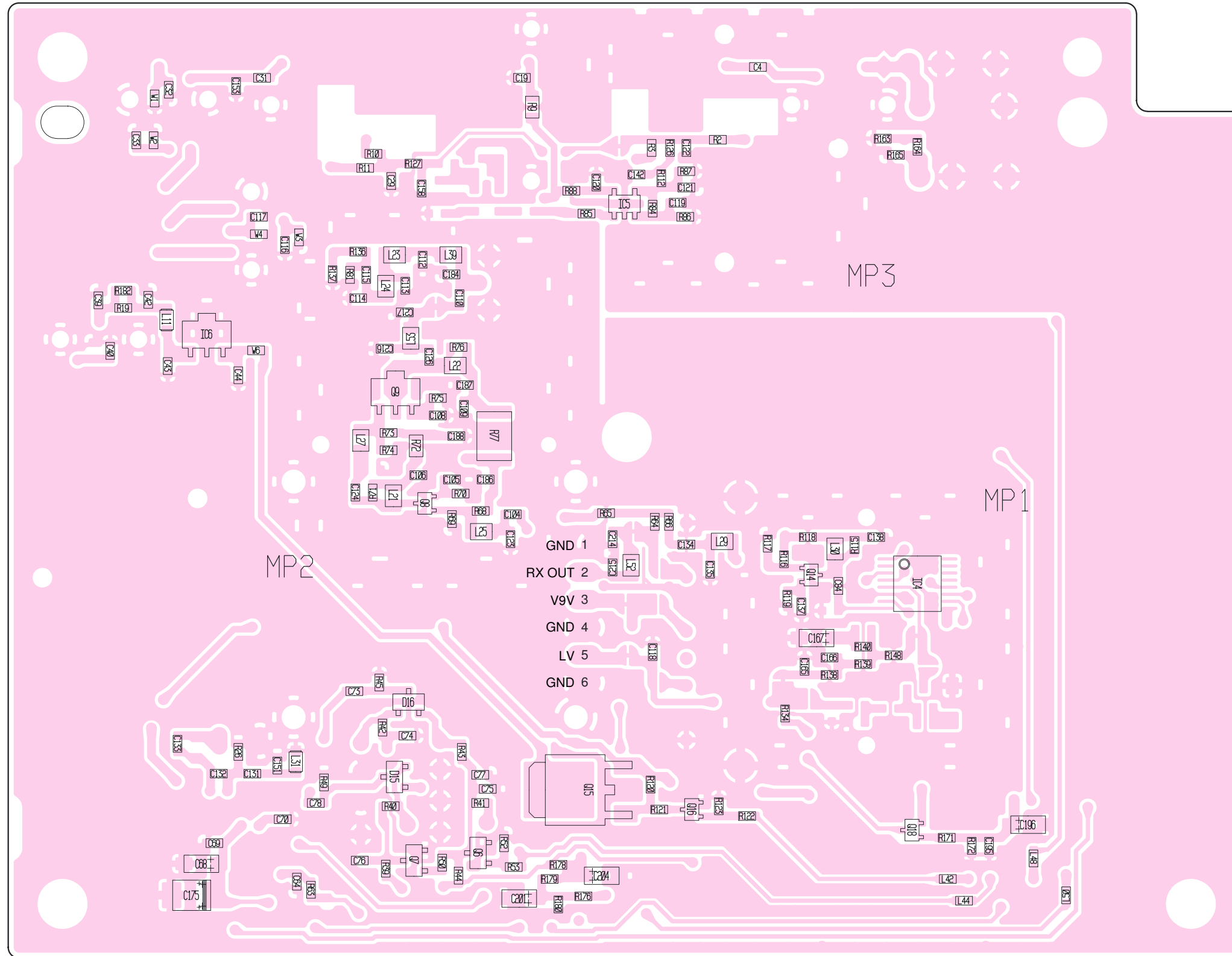
The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.



# RX UNIT

## ● BOTTOM VIEW

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

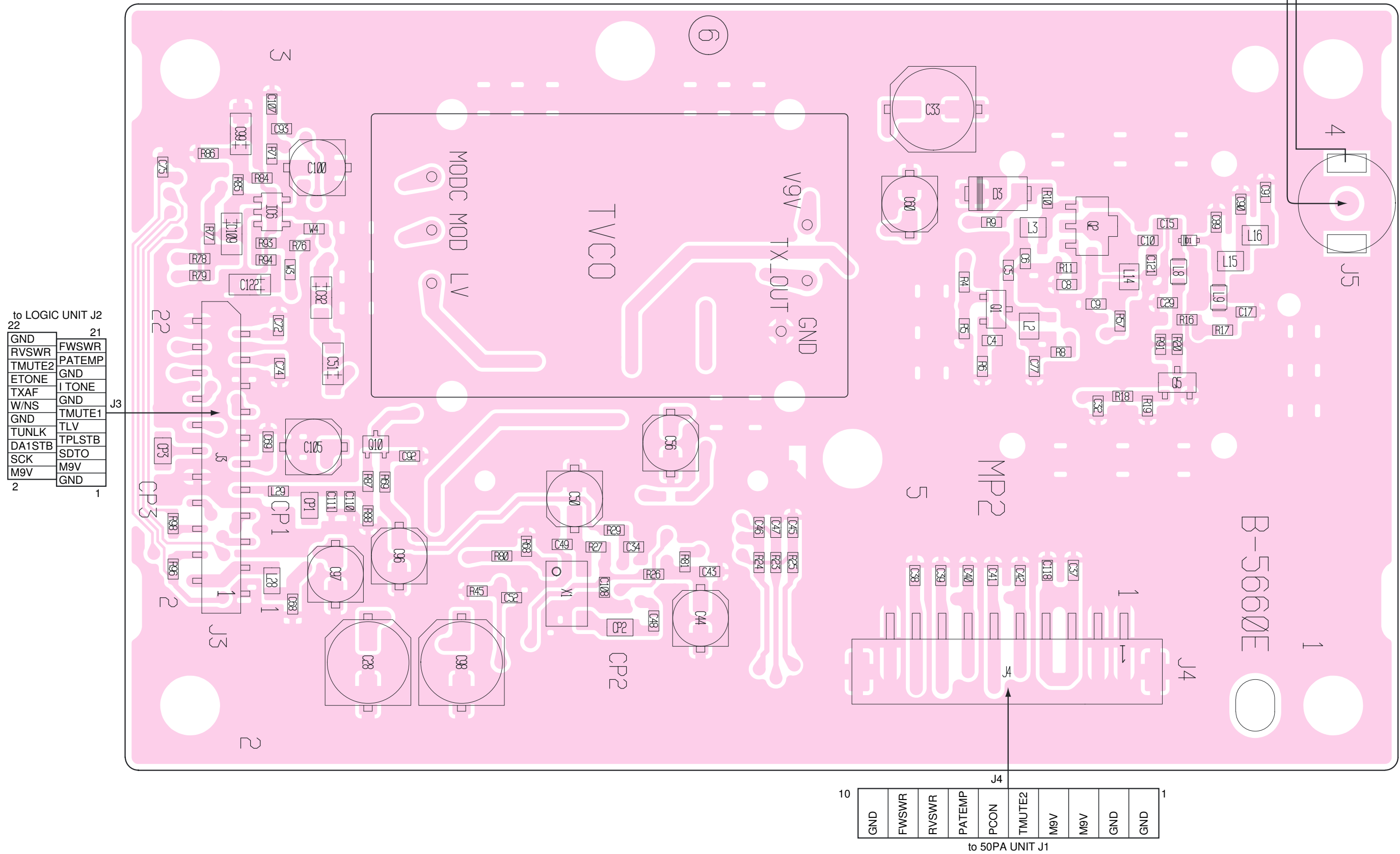


9 - 7 TX UNIT

• TOP VIEW

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

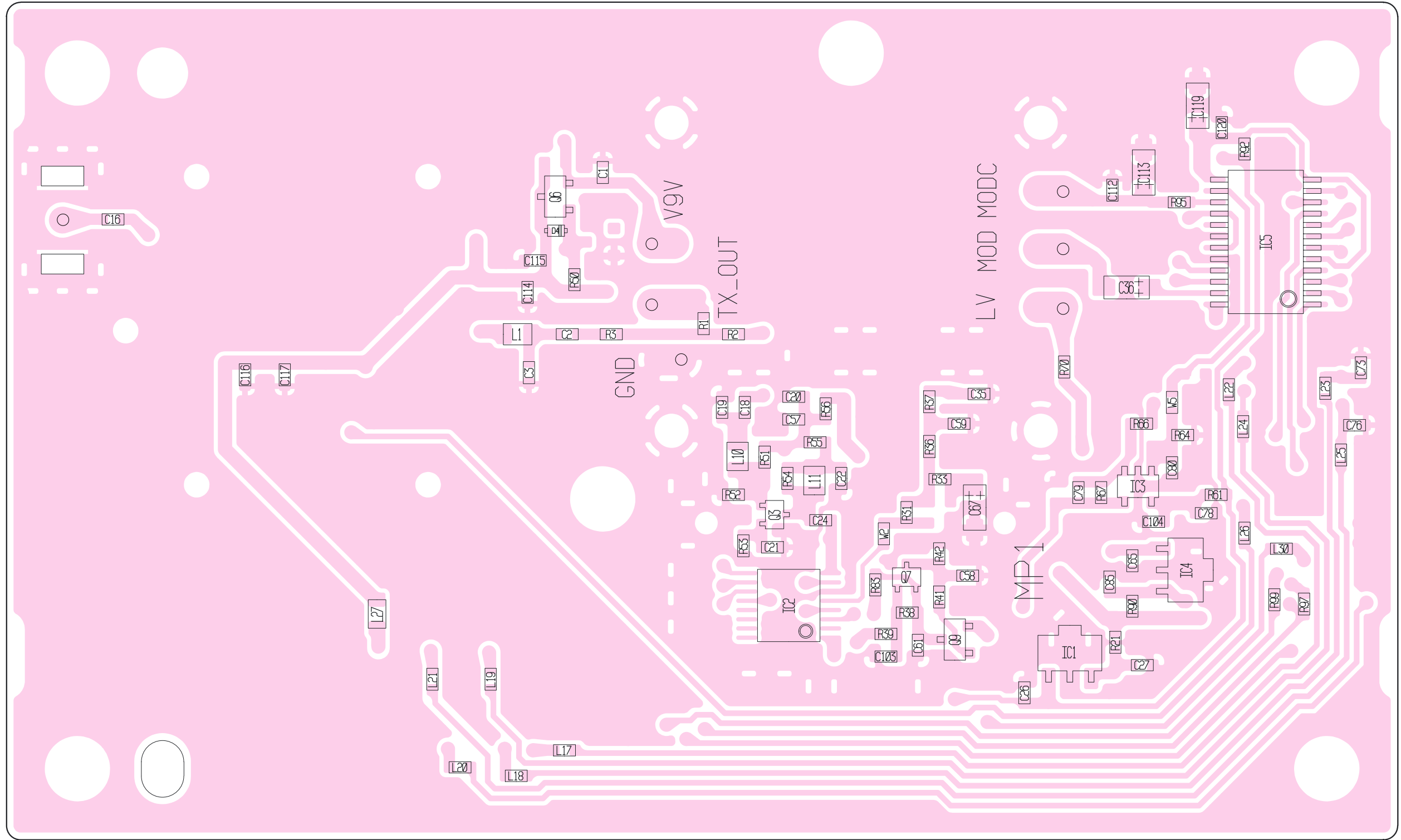
to 50PA UNIT  
J2



# TX UNIT

## ● BOTTOM VIEW

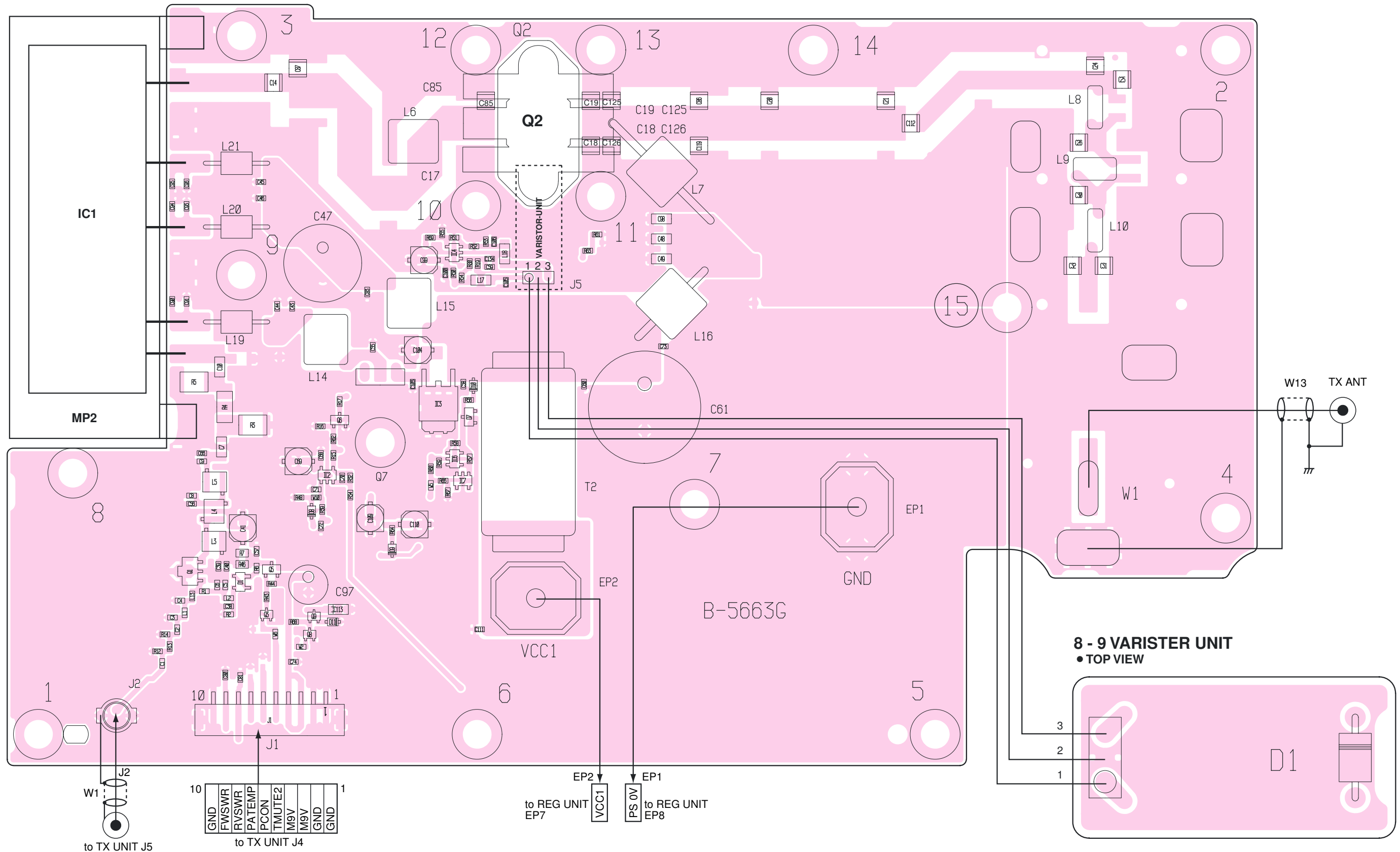
The combination of this page and the previous page shows the unit layout in the same configuration as the actual P.C. Board.



**9 - 8 50PA UNIT**

• TOP VIEW

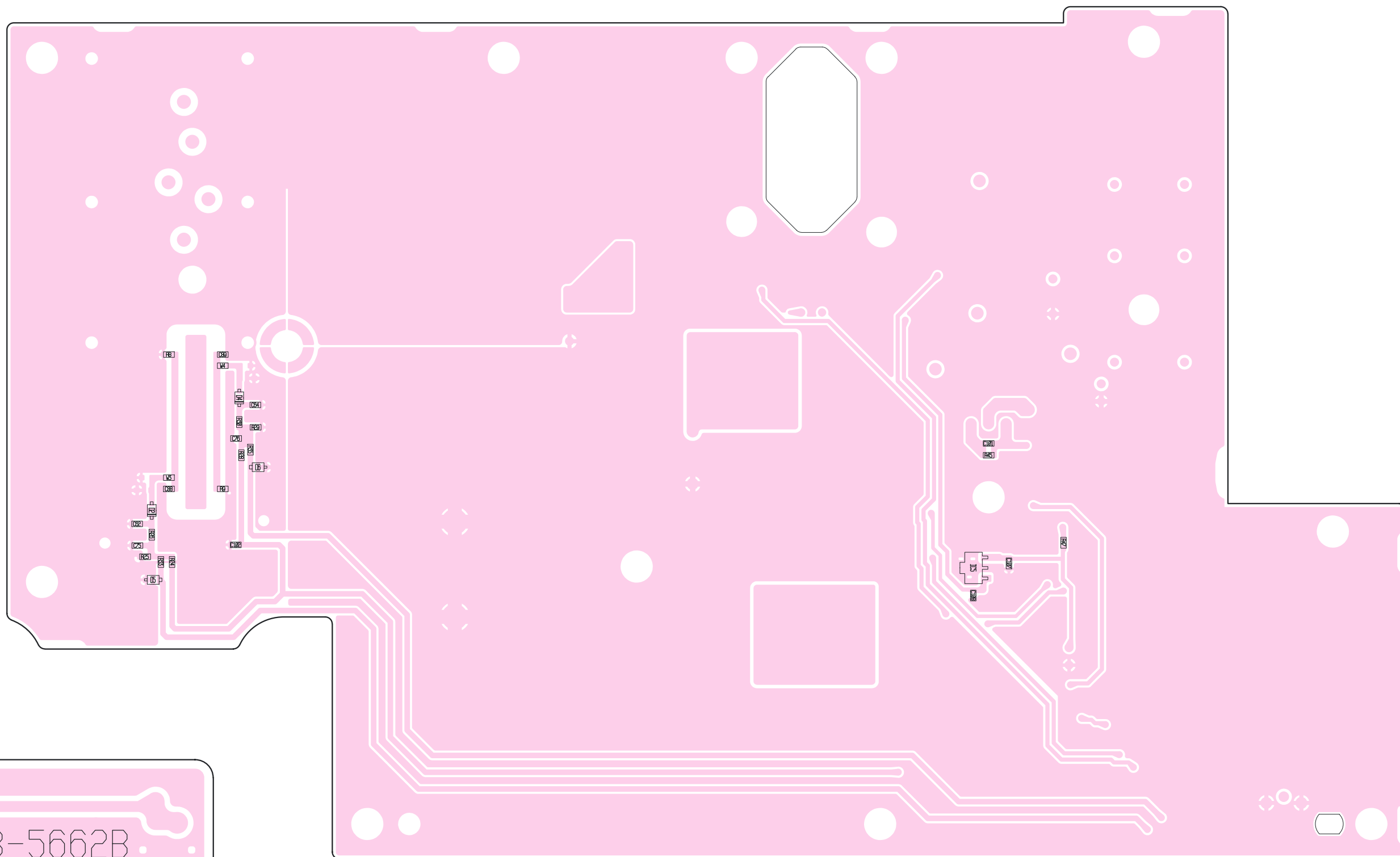
The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.



**50PA UNIT**

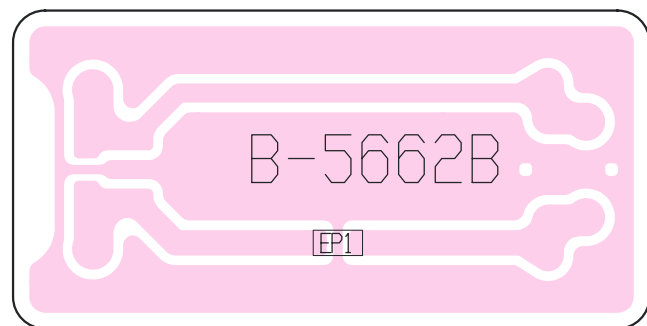
● **BOTTOM VIEW**

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



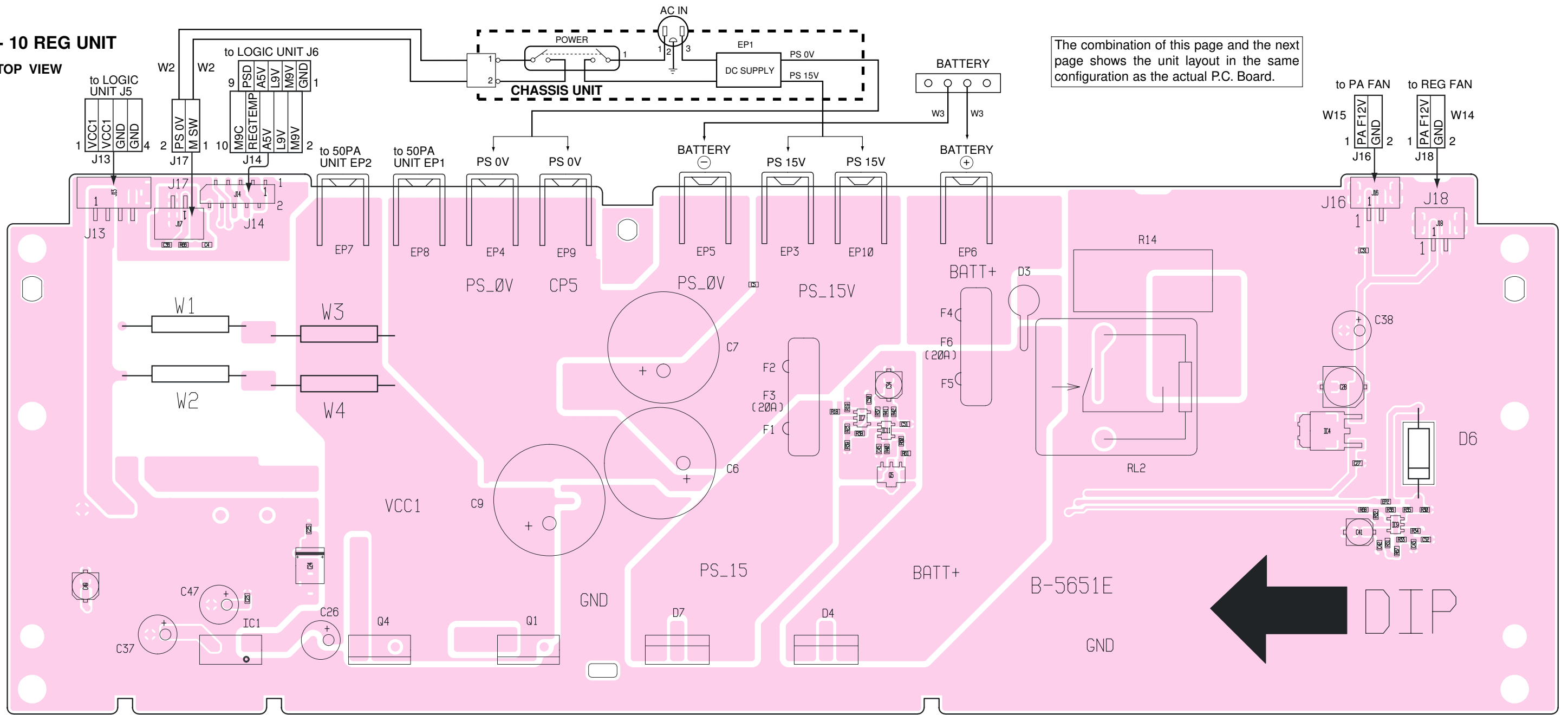
**VARISTER UNIT**

● **BOTTOM VIEW**



### 9 - 10 REG UNIT

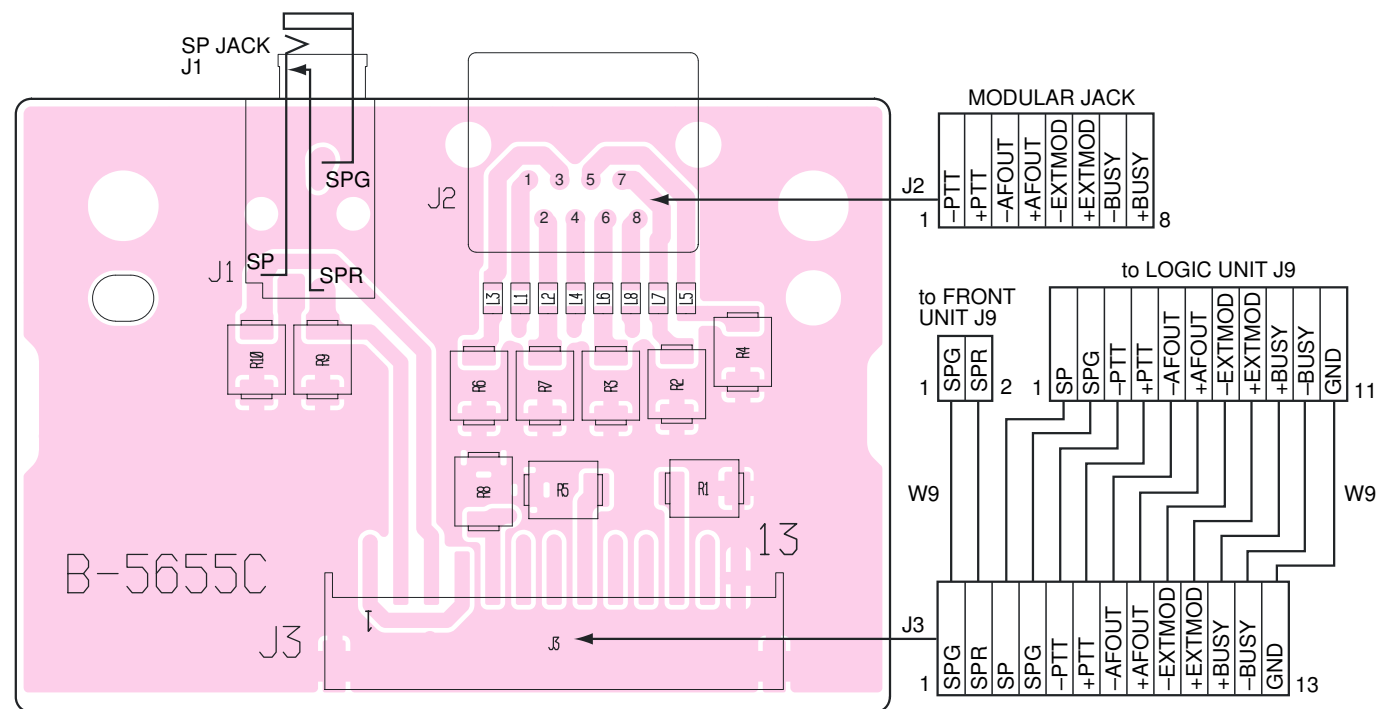
• TOP VIEW



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

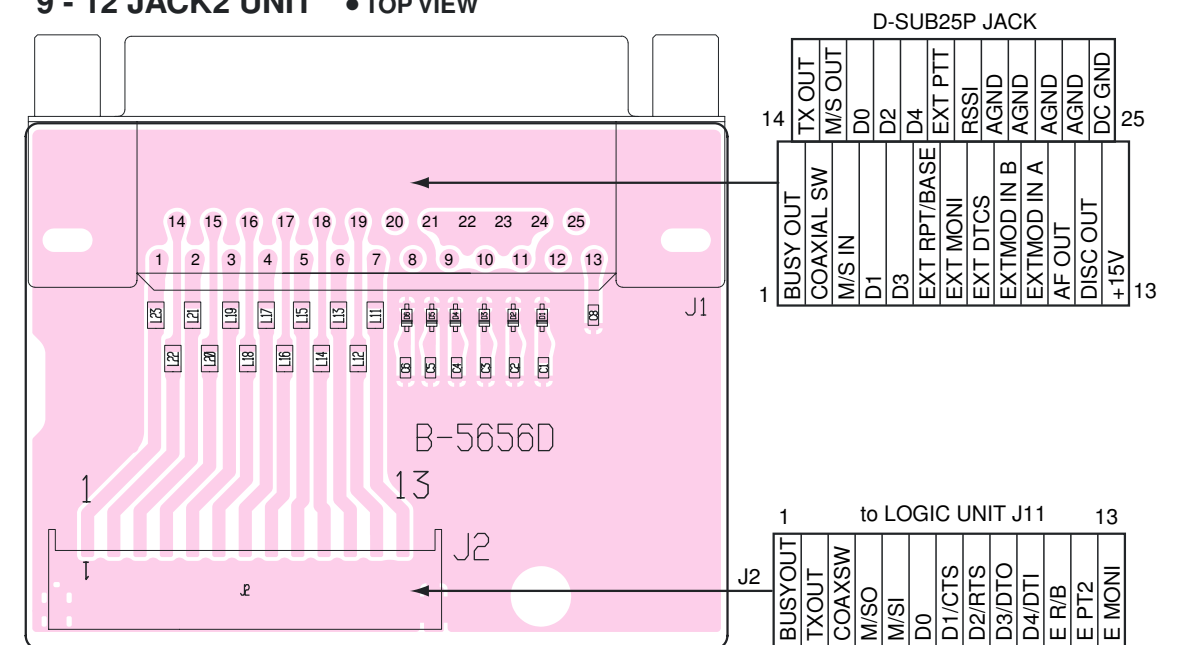
### 9 - 11 JACK1 UNIT

• TOP VIEW



### 9 - 12 JACK2 UNIT

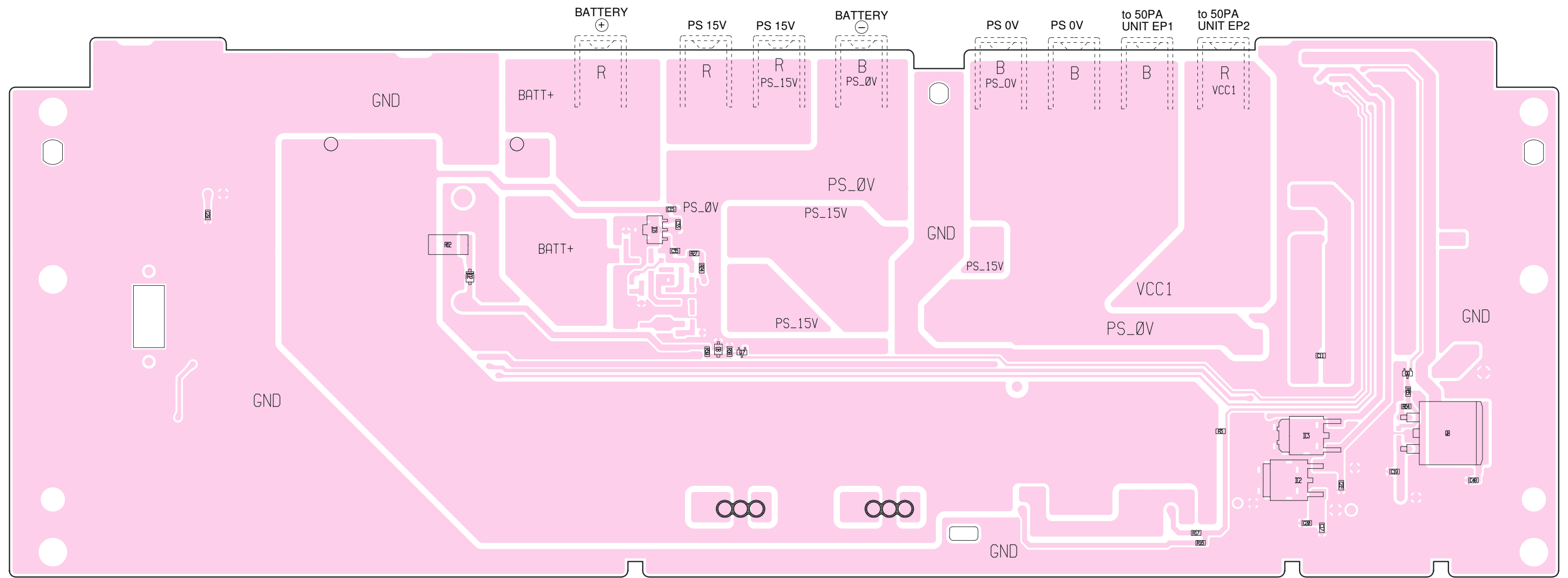
• TOP VIEW



# REG UNIT

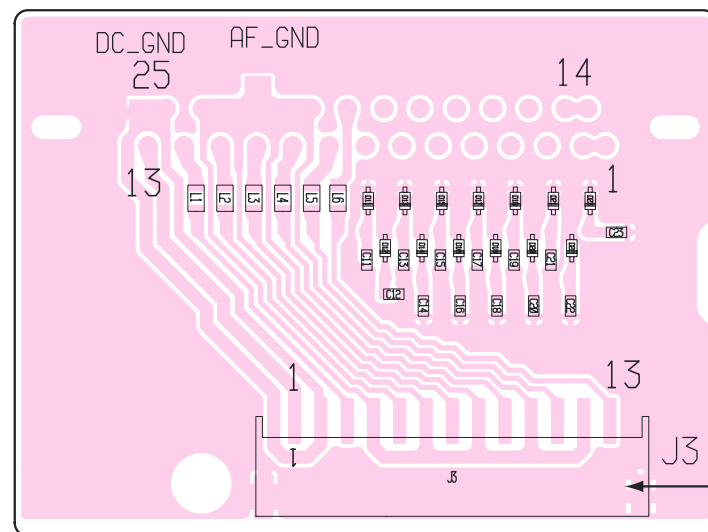
• BOTTOM VIEW

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



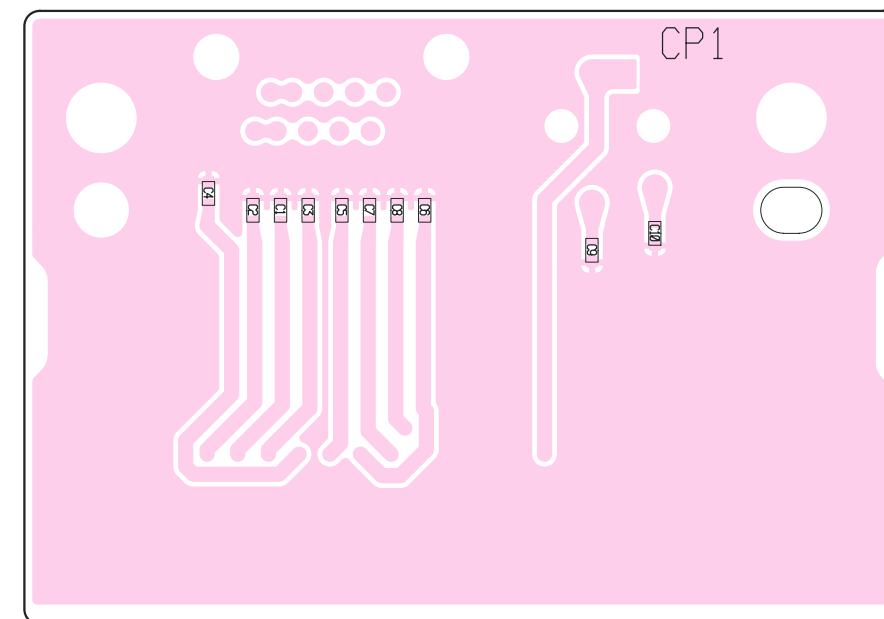
# JACK2 UNIT

• BOTTOM VIEW



# JACK1 UNIT

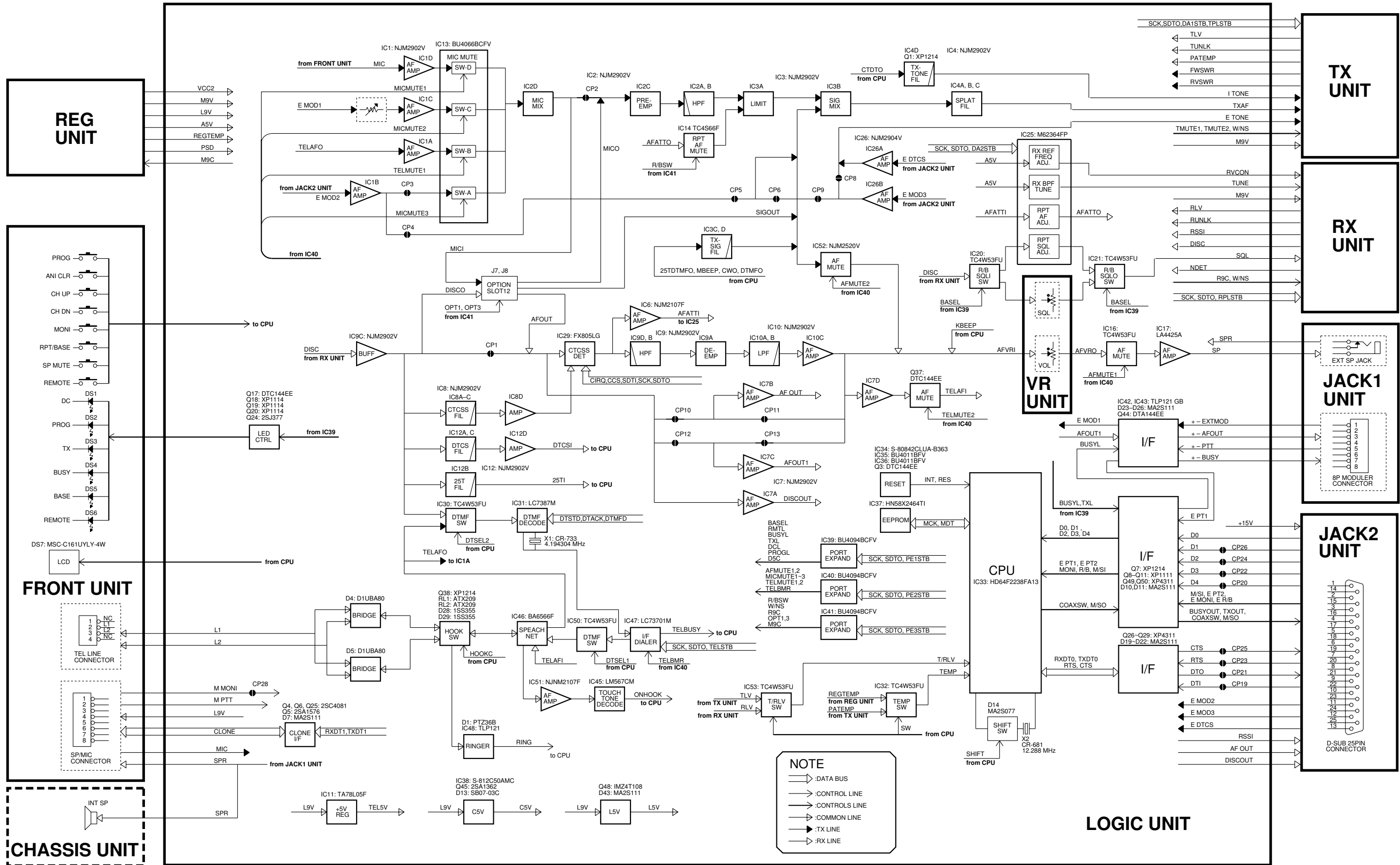
• BOTTOM VIEW

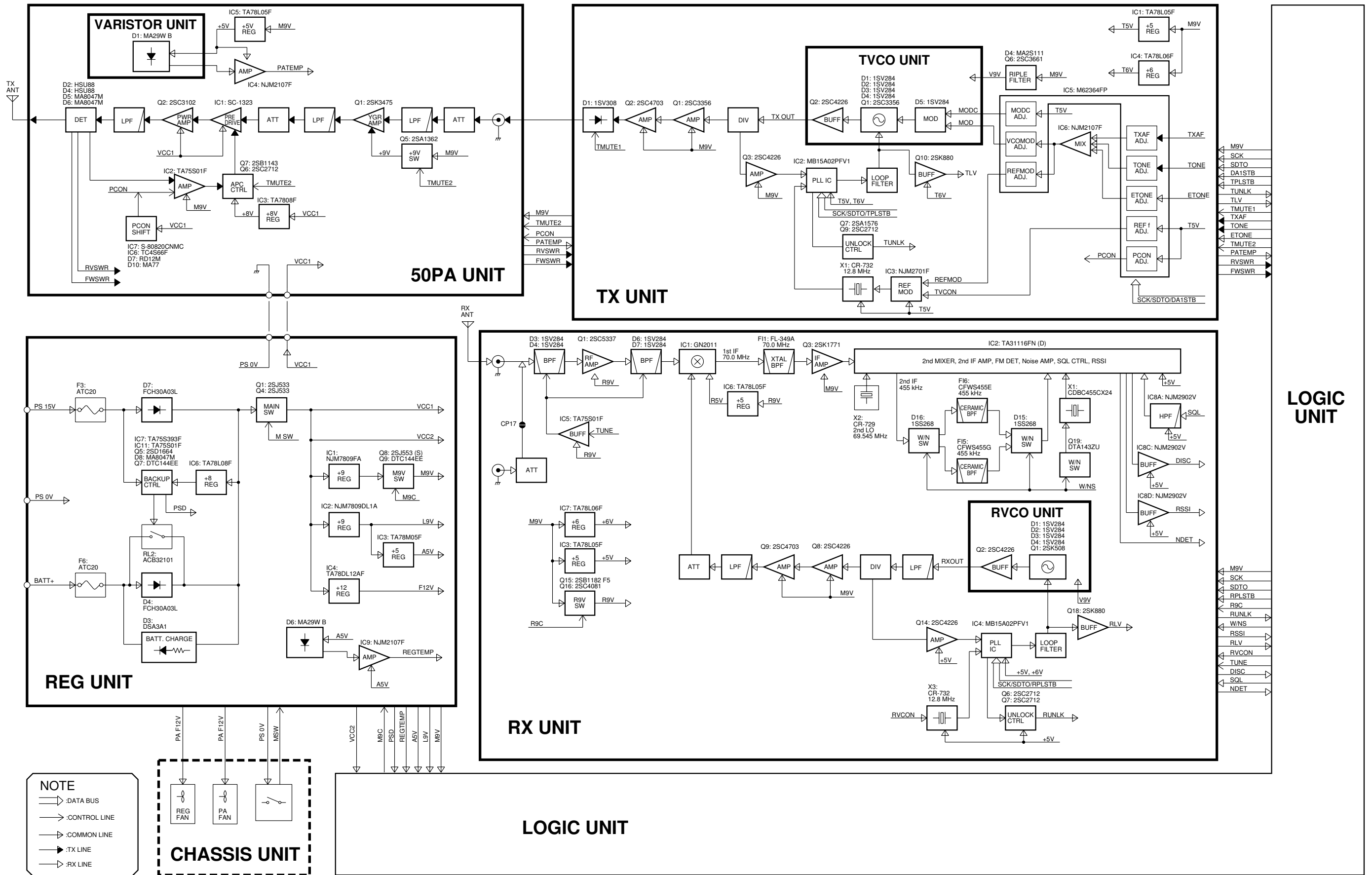


| 1        | to LOGIC UNIT J10 | 13 |
|----------|-------------------|----|
| +E15V    |                   |    |
| DC GND   |                   |    |
| DISC OUT |                   |    |
| AF GND   |                   |    |
| AF OUT   |                   |    |
| AF GND   |                   |    |
| E MOD2   |                   |    |
| E MOD3   |                   |    |
| E MODG   |                   |    |
| E DTCS   |                   |    |
| E MODG   |                   |    |
| RSSI     |                   |    |

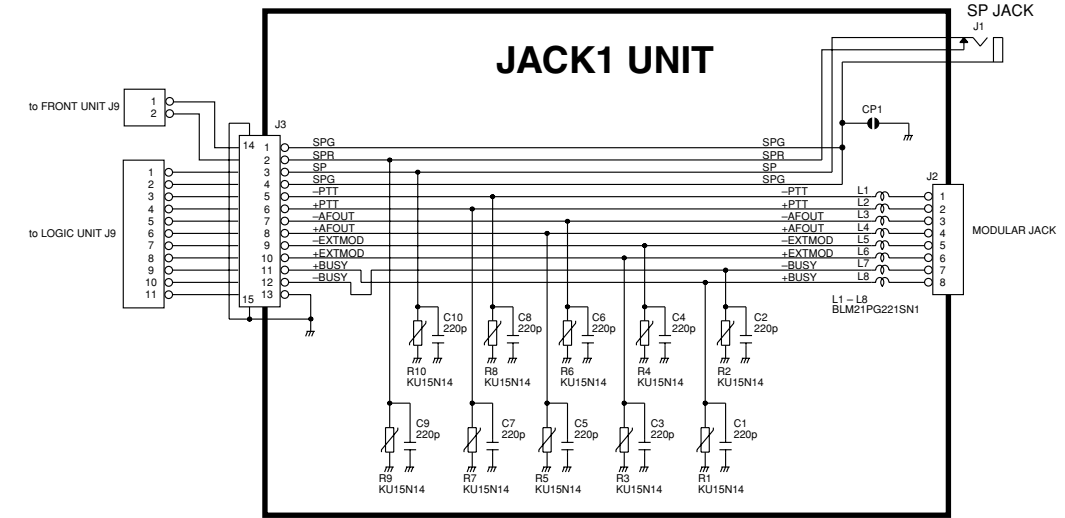
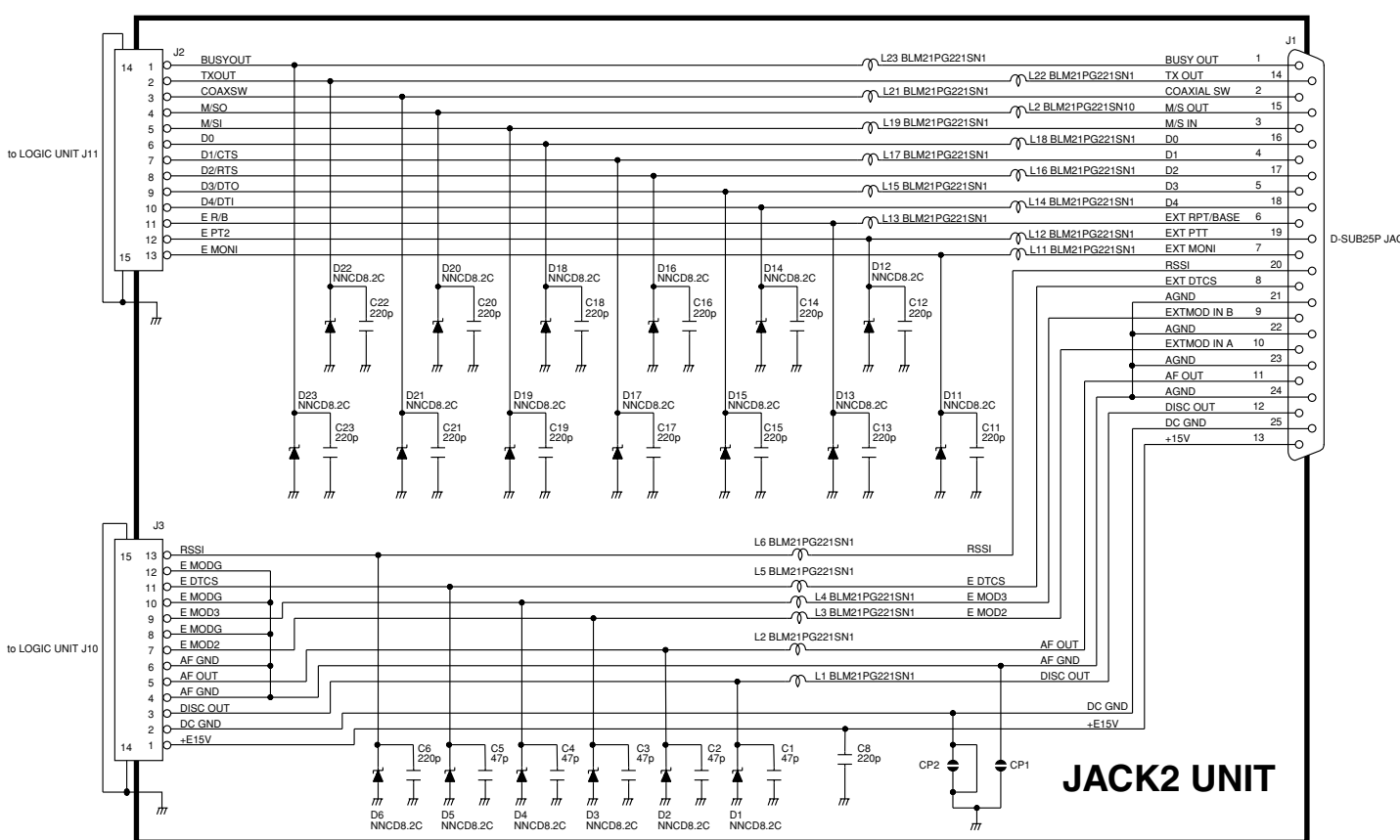
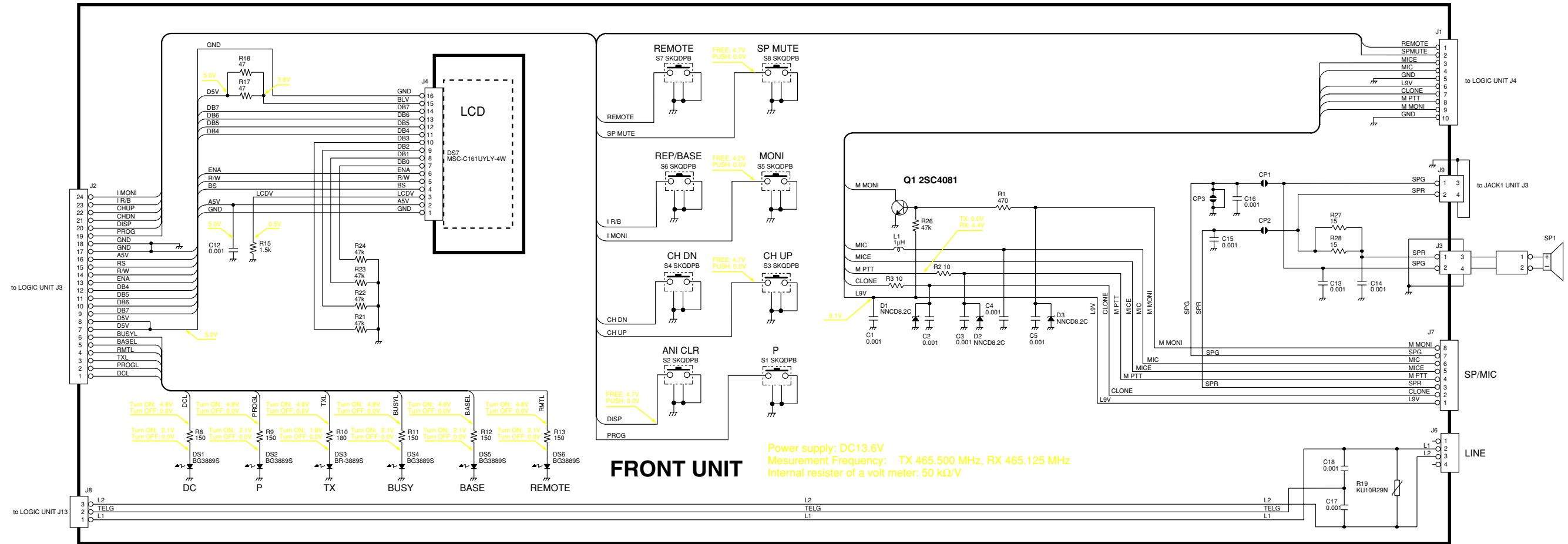


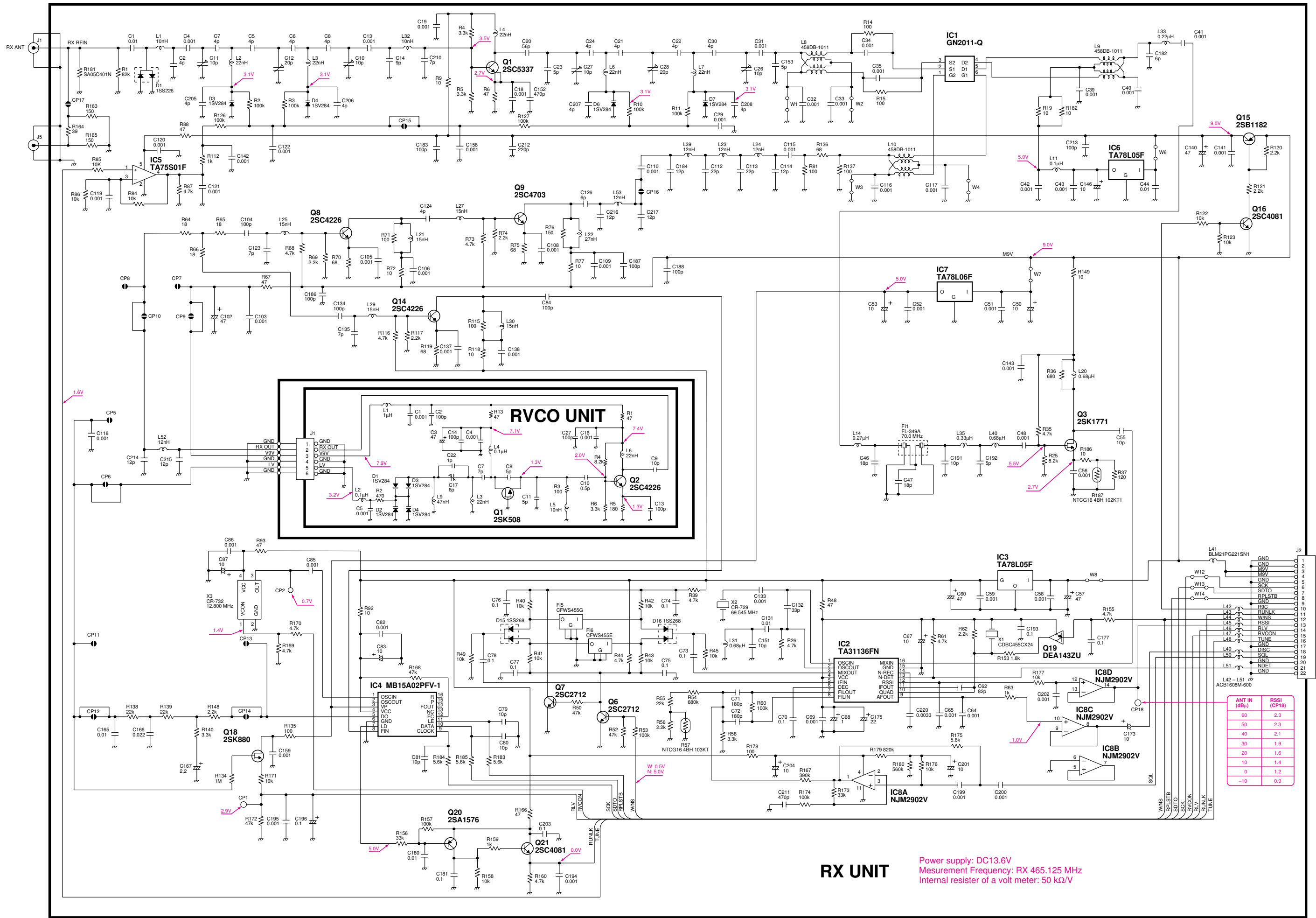
# SECTION 10 BLOCK DIAGRAM





# SECTION 11 VOLTAGE DIAGRAM

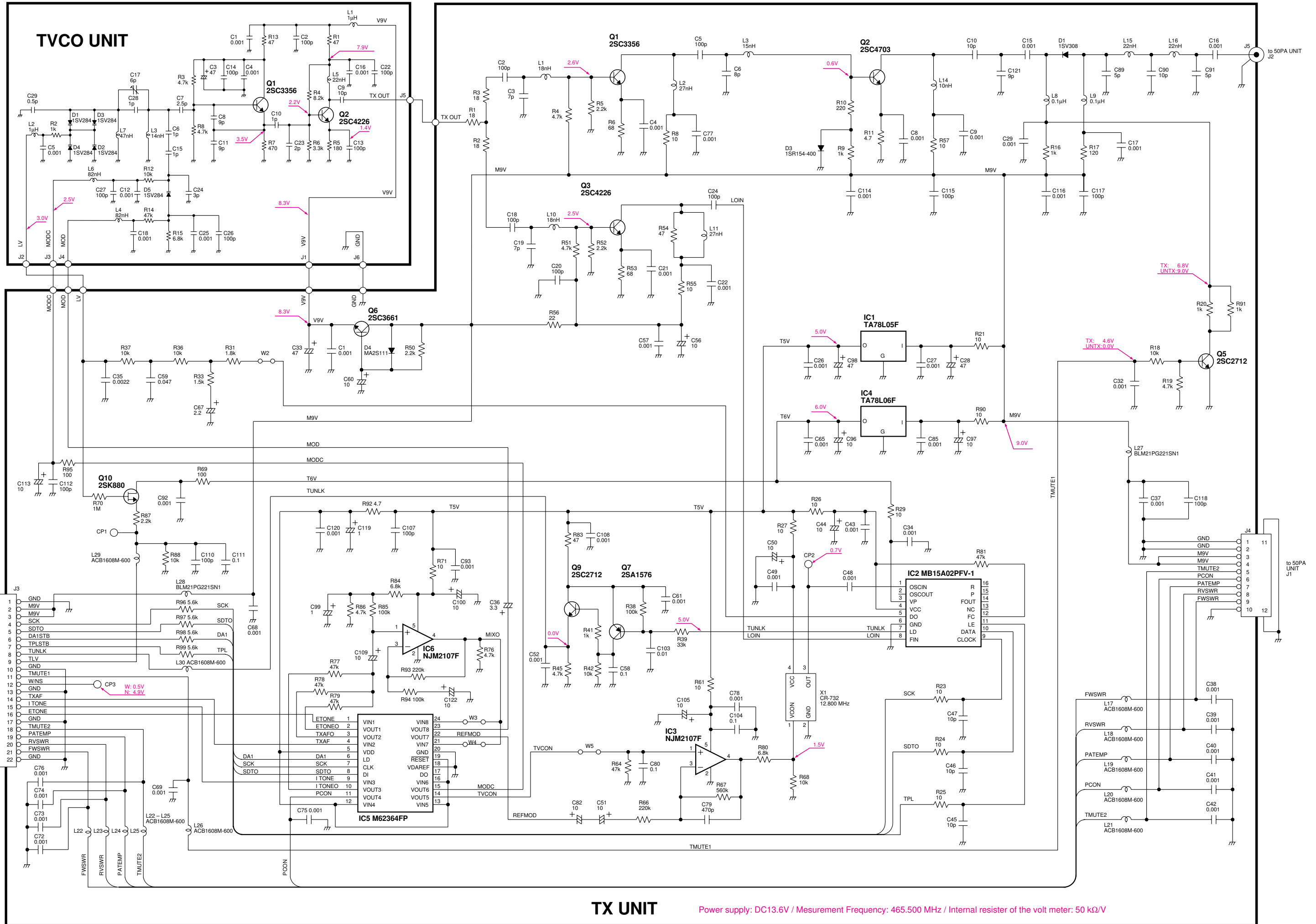




**RX UNIT**

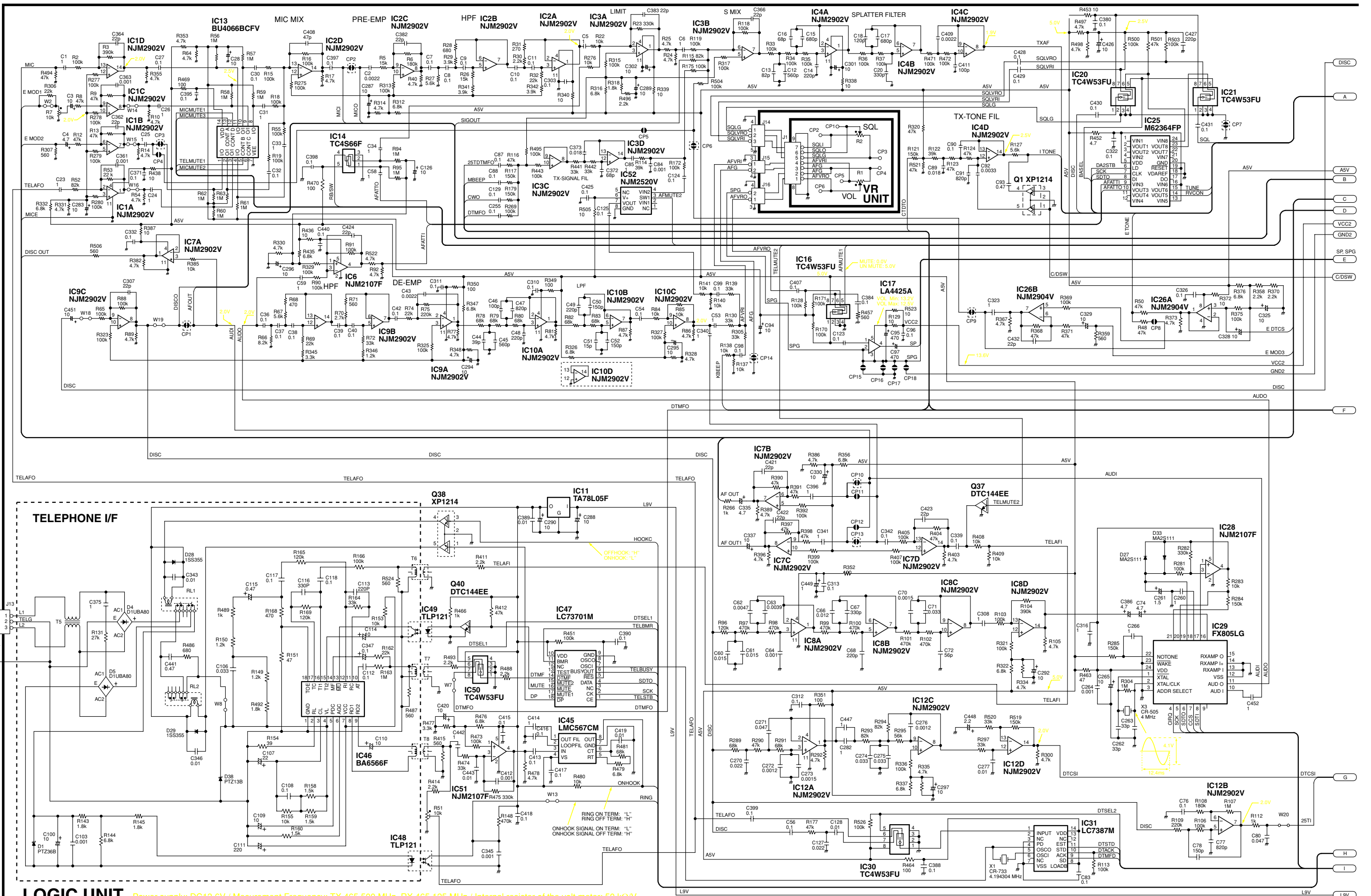
Power supply: DC13.6V  
 Measurement Frequency: RX 465.125 MHz  
 Internal resistor of a volt meter: 50 kΩV

| ANT IN (dBm) | RSSI (CP18) |
|--------------|-------------|
| 60           | 2.3         |
| 50           | 2.3         |
| 40           | 2.1         |
| 30           | 1.9         |
| 20           | 1.6         |
| 10           | 1.4         |
| 0            | 1.2         |
| -10          | 0.9         |

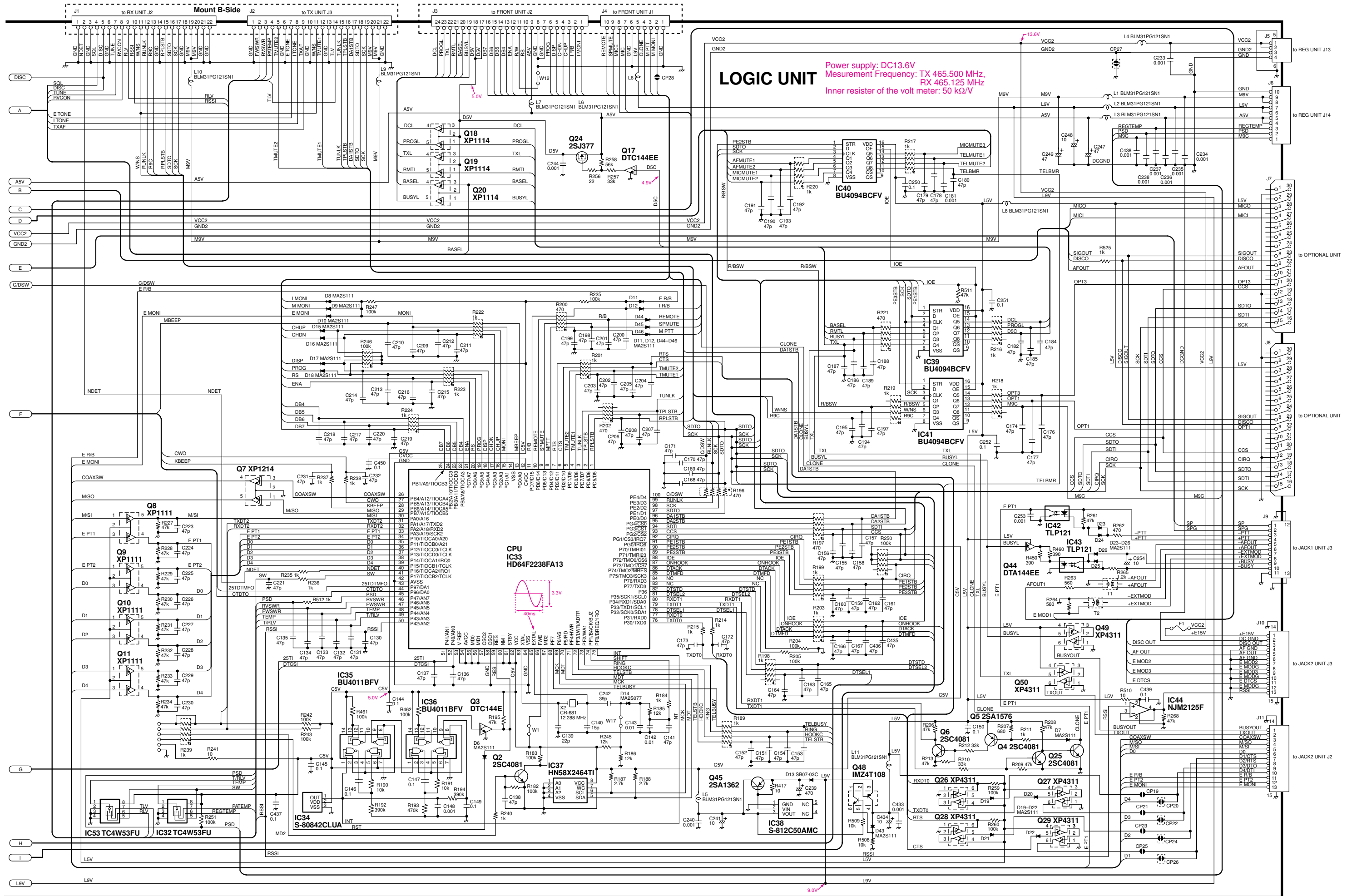


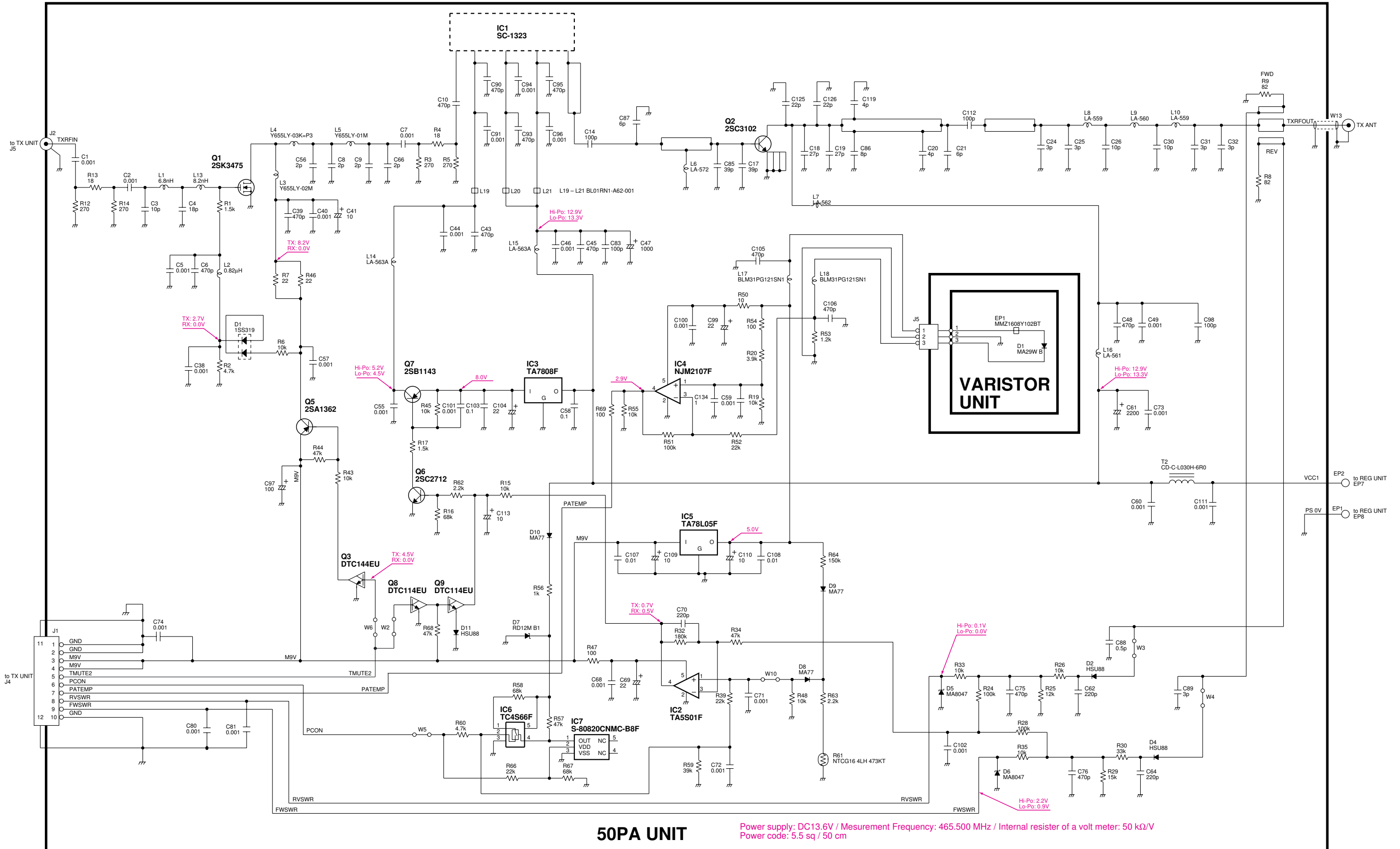
**TX UNIT**

Power supply: DC13.6V / Mesurement Frequency: 465.500 MHz / Internal resister of the volt meter: 50 kΩ/V



**LOGIC UNIT** Power supply: DC13.6V / Measurement Frequency: TX 465.500 MHz, RX 465.125 MHz / Internal resistor of the volt meter: 50 kΩ/V

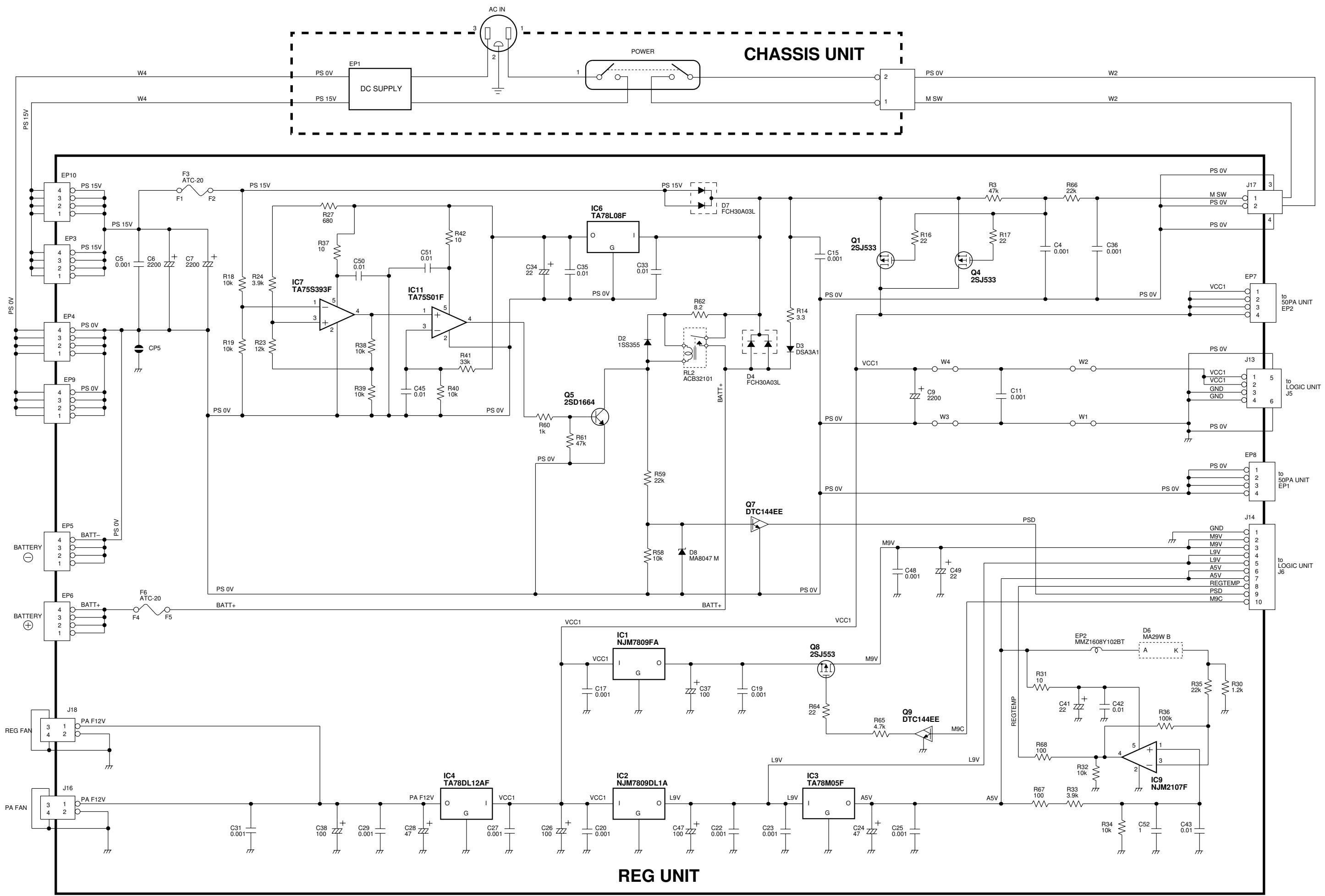




**50PA UNIT**

Power supply: DC13.6V / Measurement Frequency: 465.500 MHz / Internal resistor of a volt meter: 50 kΩ/V  
 Power code: 5.5 sq / 50 cm





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## FR4000 PA Replacement

1. Remove old PA Board from FR4000. The new PA kit part number is 98415323.
2. See the following image. Verify there are 2 little shields, one big shield panel, one brick final, and the PA Board. The power cable is not required...you already have one.



3. Put the PA Board in place and screw it into place firmly into the repeater.
4. See the following image. Put transistor grease on bottom of shield where it contacts the chassis and put it in place. Solder the bottom shield onto the PA board.



Note: Board is shown outside of repeater for clarity.

5. Put a layer of white transistor grease on the bottom shield so it will contact the final brick.  
 Note: There is now grease on both sides of the shield.
6. See the following image. Set the Final "Brick" into the bottom shield, align the pins and screw holes, and solder it onto the PA Board.



7. See the following image. Set the top shield in place and screw the Bottom shield, PA Brick, and Top shield in place.



8. Put large shield panel over the PA enclosure.
9. Reassemble repeater cover.
10. Go to the set mode or adjust mode of the repeater (explained at the dealer B2B site) and adjust the power output for High, L2, and L1 using a direct connection (or very short test cable) between the repeater and a certified, calibrated wattmeter.
11. Go to Maker Reserve Mode (specifically following the Maker Reserve Instructions on the B2B) and set the "On Mute Timer" to 0.000. Replacement is complete.