



# SERVICE MANUAL

HF TRANSCEIVER

**IC-707**

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## INTRODUCTION

This service manual describes the latest service information for the **IC-707** HF TRANSCEIVER at the time of publication.

| VERSION NO. | VERSION | SYMBOL |
|-------------|---------|--------|
| #01         | Other   | OTH    |
| #02         | Spain   | ESP    |
| #03         | France  | FRA    |
| #04         | Germany | FRG    |

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

## DANGER

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

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

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

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



## ORDERING PARTS

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

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

### <SAMPLE ORDER>

|            |       |         |        |           |           |
|------------|-------|---------|--------|-----------|-----------|
| 1120000970 | IC    | M54562P | IC-707 | MAIN UNIT | 5 pieces  |
| 8810000230 | Screw | PH M3×6 | IC-707 | Chassis   | 10 pieces |

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

## REPAIR NOTES

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

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# SECTION 1 SPECIFICATIONS

## ■ GENERAL

- Frequency coverage : Transmit 1.8000-1.9999 MHz 3.5000-3.9999 MHz  
7.0000-7.3000 MHz 10.1000-10.1500 MHz  
14.0000-14.3500 MHz 18.0680-18.1680 MHz  
21.0000-21.4500 MHz 24.8900-24.9900 MHz  
28.0000-29.7000 MHz  
Receive 0.5000-30.0000 MHz
- Mode : SSB (USB/LSB), CW, AM, FM\*  
\*An optional UI-9 FM UNIT is required.
- Number of channels : 32 (Normal channels 25, Split channels 5, Scan edge channels 2)
- Antenna impedance : 50  $\Omega$  (nominal)
- Usable temperature range :  $-10^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$  ( $+14^{\circ}\text{F}$  to  $+140^{\circ}\text{F}$ )
- Power supply requirement : 13.8 V DC  $\pm 15\%$  (negative ground)
- Current drain (at 13.8 V) : Transmit 20 A  
Receive Squelched 1.3 A  
Max. audio output 2.1 A
- Frequency stability : Less than  $\pm 200$  Hz from 1 min. to 60 min. after power ON  
Less than  $\pm 30$  Hz/hr. after 1 hr. at  $+25^{\circ}\text{C}$   
Less than  $\pm 350$  Hz with temperature fluctuations of  $0^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$
- Dimensions : 240 (W)  $\times$  95 (H)  $\times$  239 (D) mm  
9.4 (W)  $\times$  3.7 (H)  $\times$  9.4 (D) in  
(Projections not included)
- Weight : 4.1 kg (9.0 lb)

## ■ TRANSMITTER

- Output power : SSB, CW, FM 5-100 W  
AM 5-25 W  
(continuously adjustable)
- Modulation system : SSB Balanced modulation  
AM Low power modulation  
FM Variable reactance frequency modulation
- Spurious emissions : 50 dB below peak output power
- Carrier suppression : More than 40 dB
- Unwanted sideband suppression : More than 50 dB
- Microphone impedance : 600  $\Omega$

## ■ TRANSMITTER

- Sensitivity (Preamp ON) : SSB, CW (10 dB S/N) 1.8000-30.0000 MHz Less than 0.16  $\mu\text{V}$   
AM (10 dB S/N) 0.5000-1.8000 MHz Less than 13.0  $\mu\text{V}$   
1.8000-30.0000 MHz Less than 2.0  $\mu\text{V}$   
FM (12 dB SINAD) 28.0000-29.7000 MHz Less than 0.5  $\mu\text{V}$
- Squelch sensitivity (Preamp OFF) : SSB, CW 5.6  $\mu\text{V}$   
FM 1.0  $\mu\text{V}$
- Selectivity : SSB, CW More than 2.1 kHz/  $-6$  dB Less than 4.0 kHz/  $-60$  dB  
AM More than 6.0 kHz/  $-6$  dB Less than 20.0 kHz/  $-40$  dB  
FM More than 12.0 kHz/  $-6$  dB Less than 30.0 kHz/  $-50$  dB
- Spurious and image rejection ratio : More than 70 dB
- Audio output power : More than 2.6 W with an 8  $\Omega$  load
- RIT variable range :  $\pm 1.2$  kHz

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



## SECTION 2 DISASSEMBLY INSTRUCTIONS

1. Remove 12 screws from the top and bottom covers.

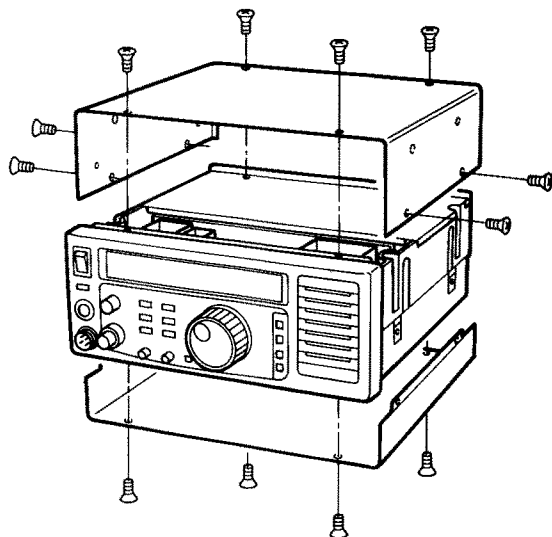


Fig. 1

2. Remove 11 screws from the PA unit cover.

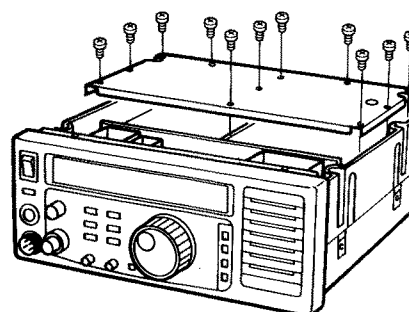


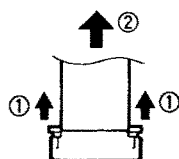
Fig. 2

### To remove the front panel:

1. Unplug 8 connectors as shown in Fig. 4 and 5.
2. Remove 4 screws as shown in Fig. 3.
3. Unplug lead cable from [POWER] switch.
4. Remove 1 screw from J10 as shown in Fig. 3.

### Remove flat cables.

- ① Pull out the connector tab.
- ② Remove the flat cable.



### [POWER] switch

1-pin, from PA unit, W23

### J10

Earth terminal, from MAIN unit, EP12

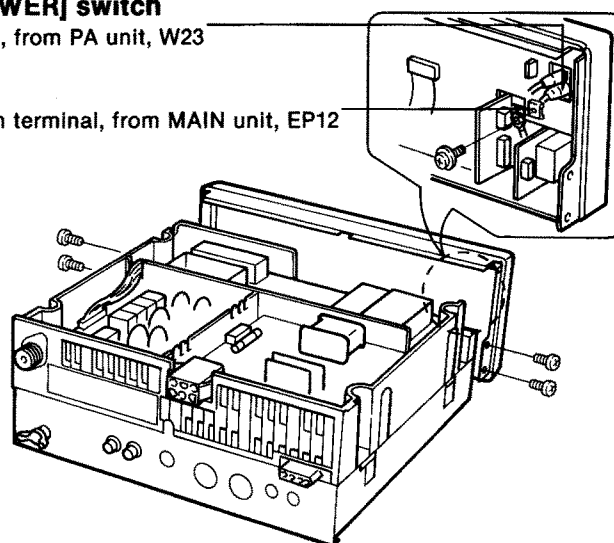


Fig. 3

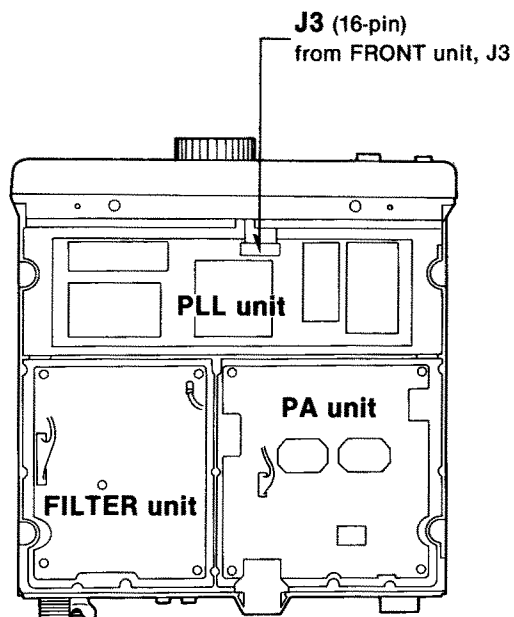


Fig. 4

J9 (16-pin)  
from FRONT unit, J1

J10 (16-pin)  
from FRONT unit, J2

J11 (4-pin)  
from FRONT unit, P2

J15 (4-pin)  
from JACK unit, P1

J16 (3-pin)  
from Speaker (SP1), P1

J12 (16-pin)  
from VR unit, P2

J7 (5-pin)  
from FRONT unit, P3

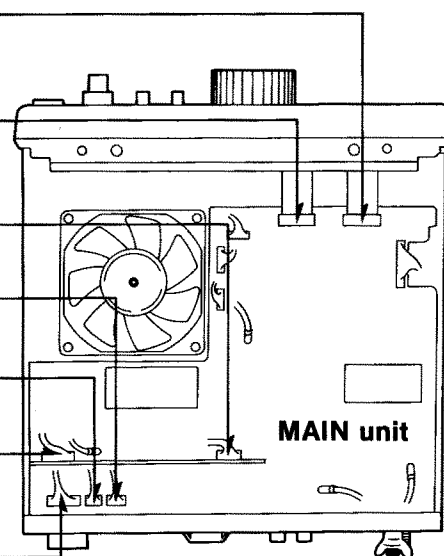
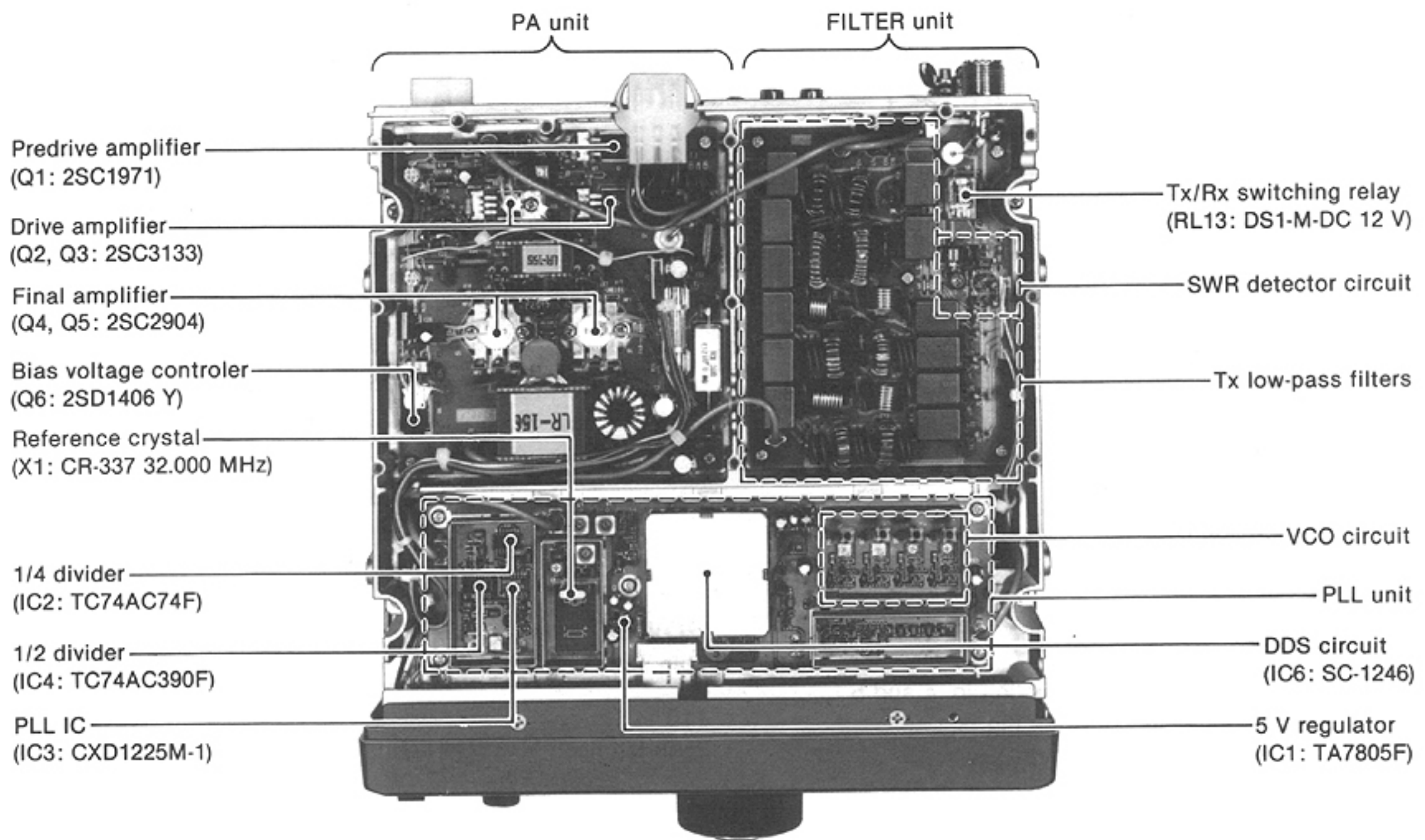


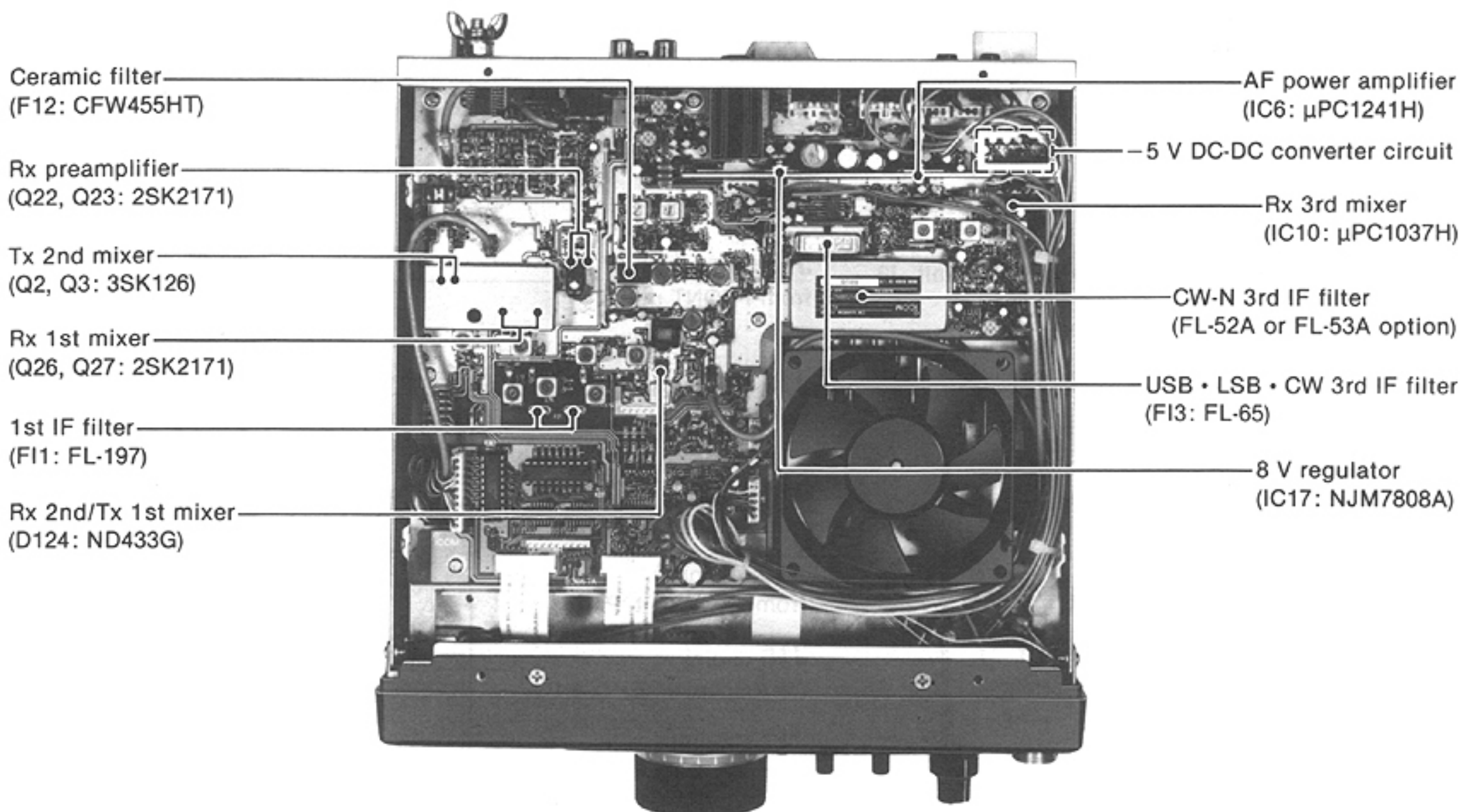
Fig. 5

## SECTION 3 INSIDE VIEWS

### • PLL, PA AND FILTER UNITS



### • MAIN UNIT



## SECTION 4 CIRCUIT DESCRIPTION

### 4-1 RECEIVER CIRCUITS

#### 4-1-1 RF SWITCHING CIRCUIT (FILTER AND MAIN UNITS)

The RF switching circuit leads receive signals to bandpass filters from the antenna connector while receiving. While transmitting, this circuit leads the signals from the RF power amplifier to the antenna connector. This circuit includes a 20 dB RF attenuator circuit to prevent distortion from very strong signals.

RF signals from the antenna connector pass through the transmit/receive switching relay (RL13) and low-pass filter (L14, C14–C16), and are then applied to the MAIN unit via P2 (MAIN unit: J2).

The signals from the FILTER unit are either bypassed or are attenuated at the 20 dB attenuator (R99, RL1). There are no non-linear components from the antenna connector to the attenuator in this circuit construction. Therefore the attenuator effectively prevents distortion caused by strong signals. The signals are then applied to RF filters.

#### 4-1-2 RF BANDPASS FILTER CIRCUIT (MAIN UNIT)

RF bandpass filters pass only the desired band signals and suppress any undesired band signals.

The RF circuit has 7 RF bandpass filters (BPF) for signals above 1.6 MHz and 1 low-pass filter (LPF) for signals below 1.6 MHz. The signals pass through the low-pass or one of the bandpass filters depending on their frequencies.

##### (1) 0.5–1.6 MHz

These signals pass through a low-pass filter (L28, L29, C84–C86) to suppress unwanted frequencies. The filtered signals are bypassed a preamplifier by a BPF control signal (B0) and preamp switch (Q21), and are then applied to the 1st mixer circuit (Q26, Q27).

##### (2) 1.6–2.0 MHz

These signals pass through a bandpass filter (L35–L39, C92–C99) to suppress unwanted frequencies. The filtered signals are then applied to the preamplifier circuit.

##### (3) 2.0–30.0 MHz

These signals pass through a high-pass filter (L33, L34, C89, C90, C359, C367) to suppress strong signals below 1.6 MHz, such as from broadcasting stations. The filtered signals are applied to one of 6 bandpass filters depending on their frequencies and are then applied to the preamplifier circuit.

#### USED RF FILTER

| BAND        | CONTROL SIGNAL | ENTRANCE DIODE | BAND      | CONTROL SIGNAL | ENTRANCE DIODE |
|-------------|----------------|----------------|-----------|----------------|----------------|
| 0.5–1.6 MHz | B0             | D33            | 8–11 MHz  | B4             | D45a           |
| 1.6–2 MHz   | B1             | D38            | 11–15 MHz | B5             | D45b           |
| 2–4 MHz     | B2             | D41a           | 15–22 MHz | B6             | D49a           |
| 4–8 MHz     | B3             | D41b           | 22–30 MHz | B7             | D49b           |

#### 4-1-3 PREAMPLIFIER CIRCUIT (MAIN UNIT)

The preamplifier circuit uses two 2SK2171s to obtain 10 dB of gain over a wideband frequency range. When the preamplifier is turned ON, the signals above 1.6 MHz are applied to the preamplifier circuit.

Q22 and Q23 are connected in parallel to easily match the impedance to 50 Ω. Q24 and Q25 switch the signals from a bandpass filter, either to be bypassed, or to be applied to the preamplifier, depending on the [PREAMP] switch condition.

Amplified or bypassed signals are applied to the 1st mixer circuit (Q26, Q27).

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

The 1st mixer circuit mixes the receive signals with the 1st LO signal to convert the receive signal frequencies to a 64.455 MHz 1st IF.

The signals from the preamplifier circuit, or signals which bypass the preamplifier, pass through a low-pass filter. This low-pass filter suppresses signals above 30 MHz to eliminate direct receiving of signals at 64.455 MHz and image interference at 130–160 MHz. The signals are then applied to the 1st mixer (Q26, Q27).

The 1st LO signal (64.9535–94.4565 MHz) enters the MAIN unit from the PLL unit via P1 (PLL unit: J4). The LO signal is amplified at Q5 and then applied to the 1st mixer.

The 1st mixer (Q26, Q27) uses two 2SK2171s to produce high level mixing with a high intercept point.

#### EXACT 1ST IF FREQUENCY

| MODE         | FREQUENCY (MHz) |
|--------------|-----------------|
| USB          | 64.4565         |
| LSB          | 64.4535         |
| CW           | 64.4541         |
| AM, FM, CW-N | 64.4550         |

#### 4-1-5 1ST IF CIRCUIT (MAIN UNIT)

The 1st IF circuit filters and amplifies the 1st IF signals. The 1st IF signals from the 1st mixer circuit are applied to MCF (Monolithic Crystal Filter; F11) to suppress out-of-band signals. The passband width of F11 is  $\pm 7.5$  kHz/−6 dB. The filtered signals are applied to the 1st IF amplifier (Q28). AGC voltage is supplied to the 2nd gate of Q28.

When an optional FM mode is selected, the amplified signal is applied to the FM unit (optional UI-9) via D1. The FM unit detects the IF signal to AF signals and apply them to the AF input mode selector switch (IC5 described in Section 4-1-12).

#### 4-1-6 2ND MIXER CIRCUIT (MAIN UNIT)

The 2nd mixer circuit mixes the amplified 1st IF signals and 2nd LO signal (64.00 MHz) to convert the 1st IF to a 2nd IF.

The amplified 1st IF signals from Q28 are converted to 455 kHz 2nd IF signals at the 2nd mixer (D124). D124 is a DBM (Double Balanced Mixer). The 2nd LO level is approx. 0 dBm.

The 2nd IF signals are applied to FI2 to suppress undesired signals such as the 2nd LO signal, and are then applied to the noise blanker gate (D10, D11).

In an optional FM mode, the 2nd LO signal is applied to the FM unit (optional UI-9) as the "FM2L" signal via D4.

##### EXACT 2ND IF FREQUENCY

| MODE     | FREQUENCY (kHz) |
|----------|-----------------|
| USB      | 456.5           |
| LSB      | 453.5           |
| CW       | 454.1           |
| AM, CW-N | 455.0           |

#### 4-1-7 NOISE BLANKER CIRCUIT (MAIN UNIT)

The noise blanker circuit detects pulse type noise, and turns OFF the signal line when noise appears.

The 2nd IF signals from FI2 are applied to the noise blanker gate (D10, D11). A portion of the signals from FI2 are amplified at the noise amplifiers (Q10, Q12, Q13), then detected at the noise detector (D15). The detected signal from the noise detector is applied to the noise blanker switch (Q39).

A portion of the detected signals from the noise detector is applied to the noise AGC circuit (Q11, Q37, C211, R59, R214) to control the bias voltage of the noise amplifier (Q10, Q12).

The threshold level of the noise blanker switch (Q39) is set at 0.9 V. When the detected voltage exceeds the threshold level, Q40 outputs a blanking signal to close the noise blanker gate (D10, D11), depending on the pulse noise period.

When the operating frequency is changed, the "DNB" signal line becomes "LOW," turning Q40 ON through D72. In this case, the noise blanker gate prevents PLL click noise.

#### 4-1-8 2ND IF CIRCUIT (MAIN UNIT)

The signals passed through the noise gate (D10, D11) are amplified at Q9. AGC voltage is supplied to the 2nd gate of Q9.

When SSB or CW mode is selected, the amplified signals pass through FI3 (FL-65). When an optional CW narrow filter is installed and CW-N mode is selected, the signals pass through the CW narrow filter. When AM mode is selected, the signals bypass the 2nd IF filter.

The filters are selected with mode selecting signals (SSB-CW, AM, CW-N) and the "T8V" voltage line.

The filtered signal is amplified at Q44–Q46 to obtain a detectable level. AGC voltage is supplied to the 2nd gate of Q46. A thermistor (R228), connected to the gate of Q45, improves the temperature characteristics of the receiver gain. R230 adjusts the receiver gain.

Output signals from Q45 are applied to the SSB/CW detector. Output signals from Q44 are shared between the AM detector and AGC detector.

#### 4-1-9 BFO CIRCUIT (PLL UNIT)

BFO (Beat Frequency Oscillator) frequency is used at the SSB/CW detector and the balanced modulator. The IC-707 uses a PLL circuit for the BFO circuit.

The oscillated signal at the VCO (Q15, 45.33–45.65 MHz) is buffer-amplified at Q16 and applied to the divider (IC4). The signal is divided by 2 at IC4 and is applied to a PLL IC (IC3).

The signal is divided at the programmable divider section in IC3 and is then phase detected at the phase comparator section with a 5 kHz reference frequency. The phase detected signal is output from pin 7 and is then converted to a DC voltage (lock voltage) by the active loop filter (Q13, Q14). The lock voltage is applied to the varactor diode (D3) in the VCO circuit to change the capacitance of the diode and control the oscillation frequency.

The oscillating signal is then buffer-amplified at Q16, divided by 100 at IC4, filtered by the low-pass filter (L14, L15, C51–C55), and finally applied to the product detector (MAIN unit IC10) for receive demodulation.

##### BFO FREQUENCY IN EACH MODE

| MODE | FREQUENCY (kHz) |          | MODE | FREQUENCY (kHz) |          |
|------|-----------------|----------|------|-----------------|----------|
|      | RECEIVE         | TRANSMIT |      | RECEIVE         | TRANSMIT |
| USB  | 456.5           |          | CW-N | 454.2           | 455.0    |
| LSB  | 453.5           |          | AM   | NO OUTPUT       | 455.0    |
| CW   | 453.3           | 454.1    | FM   | 455.0           | 455.0    |

#### 4-1-10 SSB/CW DEMODULATOR CIRCUITS (MAIN UNIT)

In SSB or CW mode, the 2nd IF signal from the IF amplifier (Q45) is mixed with the BFO signal from the PLL unit at the product detector (IC10) to demodulate the 2nd IF signal into an AF signal. The detected signal (AF) from IC10 (pin 3) is applied to the AF input mode selector switch (IC5).

#### 4-1-11 AM DEMODULATOR CIRCUITS (MAIN UNIT)

In AM mode, the 2nd IF signal from the buffer amplifier (Q44) passes through C198 and is detected at D71. The detected signal (AF) is then applied to the AF input mode selector switch (IC5).

#### 4-1-12 AF INPUT MODE SELECTOR SWITCH (MAIN UNIT)

The AF signal from one of the detector circuits is applied to the AF input mode selector switch (IC5). IC5 consists of 4 analog switches which are selected with a mode signal and the squelch control signal. The AF signal is output from IC5 (pins 1, 4, 11) and then applied to the AF amplifier circuit.

#### 4-1-13 AGC CIRCUIT (MAIN UNIT)

The AGC (Automatic Gain Control) circuit reduces IF amplifier gain to keep the audio output at a constant level.

The receiver gain is determined by the voltage on the AGC line (Q33, collector). The voltage is usually set by D64 and the resistance ratio of R171, R172, R174 and R176.

The 2nd IF signal from the buffer amplifier (Q44) is detected at the AGC detector (D65) and is then applied to the DC amplifier (Q33). - 5 V is applied to the Q33 emitter to activate the AGC line with minus voltage.

When receiving strong signals, the detected voltage increases and the voltage of the AGC line decreases via the DC amplifier (Q33). As the AGC line is used for the bias voltage of the IF amplifiers (Q9, Q28, Q46), IF amplifier gain is decreased.

When the strong signal disappears, the AGC line voltage is released by C175 and R170 in CW mode to obtain a fast AGC release time. In SSB or AM mode, C174 and R169 are connected in parallel to obtain a slow AGC release time.

#### 4-1-14 S-METER CIRCUIT (MAIN UNIT)

The S-meter circuit indicates the relative received signal strength while receiving by utilizing the AGC voltage which changes depending on the received signal strength.

The AGC bias voltage (time constant line) is applied to a differential amplifier (IC9 pin 6) where the difference between the bias and reference voltages is detected.

In optional FM mode, an FSMV (FM S Meter Voltage) signal from the FM unit is applied to D61 to combine the signal to the S-meter signal line.

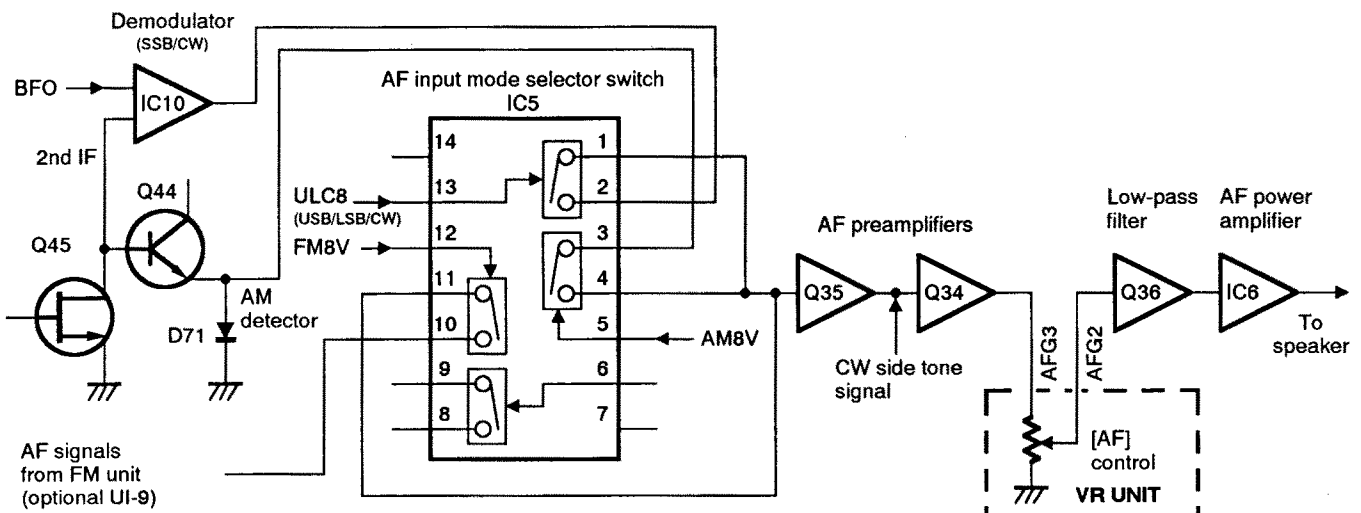
The resulting S-meter signal is applied to the A/D converter section in the CPU (FRONT unit IC1 pin 98) and the S/R/F indicator displays the relative signal strength. The reference voltage is adjusted with R175.

#### 4-1-15 SQUELCH CIRCUIT (MAIN UNIT)

The squelch circuit mutes audio output when the S-meter signal is lower than the [SQL] control setting level.

The S-meter signal from IC9b (pin 7) is applied to the comparator (IC9a pin 2) through D63 to be compared with the threshold level set by the [SQL] control.

#### AF CIRCUIT



When the S-meter signal is lower than the threshold level, the comparator becomes "HIGH" and Q32 turns ON to deactivate the AF input mode selector switch (IC5 pins 5, 12, 13). This cuts the AF signal OFF. This signal is then applied to Q31, turning OFF the [RX] indicator, and is also applied to the [MIC] connector (pin 4) and [ACC(1)] connector (pin 6).

#### 4-1-16 AF AMPLIFIER CIRCUIT (MAIN UNIT)

The AF amplifier amplifies the AF input signal to a suitable driving level for the speaker.

The AF signal from the AF input mode selector switch is applied to the AF preamplifiers (Q34, Q35). The CW side tone signal is applied to Q34.

The amplified signal is applied to the [AF] control (R1 on the AF unit) and then to the 2.3 kHz cut-off active low-pass filter (Q36). The AF signal output from Q36 is power-amplified at IC6 to drive the speaker.

### 4-2 TRANSMITTER CIRCUITS

#### 4-2-1 MICROPHONE AMPLIFIER CIRCUIT (FRONT AND MAIN UNITS)

The microphone amplifier circuit amplifies the microphone input signals and outputs the amplified signal to the balanced modulator.

Audio signals from the [MIC] connector are adjusted at the [MIC] control (FRONT unit R61) and amplified at IC18c and IC18b (MAIN unit). External modulation input from the [ACC(1)] socket (pin 4) is also applied to IC18c via R341 (MAIN unit). The microphone bias voltage is supplied from the 8 V line via R62 and R63 (FRONT unit).

In AM mode, the maximum level of the IC18c output is limited by the ALC circuit (IC18d, Q57, D91). The maximum modulation level is set by R300 (MAIN unit).

#### 4-2-2 BALANCED MODULATOR (MAIN UNIT)

The balanced modulator converts the AF signal from the microphone amplifier to a 455 kHz IF signal with a BFO signal.

Output signals from the microphone amplifier and the CW keying signal are applied to the balanced modulator (IC11 pin 5). The BFO signal from the PLL unit is applied to IC11 (pin 7) as a carrier signal.

IC11 is a double balanced mixer IC and outputs a double side band (DSB) signal with - 40 dB carrier suppression.

R251 and R253 adjust the balanced level of IC11 for maximum carrier suppression. In CW mode, the CW keying signal upsets the balance to create a carrier signal. In AM mode, Q75 and R407 upset the balance to create an AM carrier signal.

#### 4-2-3 CW KEYING CIRCUIT (MAIN UNIT)

The CW keyer is connected to Q68. When the CW key is closed, 8 V is output from Q68 and this voltage controls break-in operation, the side tone signal and the transmit signal.

The 8 V from Q68 is applied via D106, D101 and D102 to the balanced modulator (IC11) to unbalance the IC11 input bias voltage and create a carrier signal. R331 determines the transmit delay timing.

##### (1) BREAK-IN

The IC-707 is automatically set to transmit by CW keying. The 8 V from Q68 is applied to the base of Q66 via Q67. When the key is closed, Q66 grounds the SEND line for transmitting.

The transmit release delay time is determined by C290, R335 and R336.

##### (2) SIDE TONE

When the CW key is closed, the side tone circuit (Q64) oscillates and sends the signal to the AF circuit.

Normally, D100 is ON, and C285 is connected to the Q64 collector so that no oscillation occurs. When the CW key is closed, the 8 V from Q68 via D101 give D100 reverse bias to disconnect C285 from Q64. Q64 then oscillates with 800 Hz as a side tone signal. R328 prevents side tone click noise.

##### (3) KEYING

Keying is controlled at 2 points in the IC-707. The balanced mixer (IC11) stops the carrier output by recovering the balance of the input bias voltage. Q7, located at the 2nd IF mixer (D124) input, cuts the signal line.

C287, R330 and R331 determine the voltage wave form to IC11 (pin 6) to produce the keying wave form.

#### 4-2-4 IF AMPLIFIER (MAIN UNIT)

The SSB/CW 455 kHz IF signal passes through FI3 (FL-65) to suppress unwanted sideband signals, then the signal is applied to a transmit IF amplifier (Q8). The optional CW narrow filter is not used in transmitting.

The amplified signal from Q8 is mixed with the 2nd LO signal and converted to a 64.455 MHz IF signal at D124. D124 is used in receiving and transmitting. The AM signal bypasses FI3, is amplified at Q8 and is then applied to D124.

An FM IF signal from the FM unit (optional UI-9) is applied to the 64.455 MHz IF line via D2.



The 64.455 MHz IF signal is filtered at F11, amplified at the IF amplifier (Q4) and is then converted to the displayed frequency at the balanced mixer (Q2, Q3) with the 1st LO signal.

The gates of the IF amplifiers (Q4, Q8) are controlled by ALC bias voltage from the ALC circuit. A thermistor (R41), connected to the gate of Q8, improves the temperature characteristics of the transmitter gain. R36 adjusts the total transmitter gain.

#### 4-2-5 RF CIRCUIT (MAIN AND PA UNITS)

The displayed frequency signal converted at the balanced mixer (MAIN unit Q2, Q3) is applied to the bandpass filter (L3–L5, C3–C7, C9, C10) where unwanted LO signal emission is reduced. The filtered signal is amplified at Q1, and is then applied to the PA unit via the attenuator.

The signals from the MAIN unit are amplified at the predrive amplifier (Q1), drive amplifier (Q2, Q3) and power amplifier (Q4, Q5) in the PA unit to obtain a stable 100 W of RF output power.

The predrive amplifier is a class A amplifier with a  $V_{cc}$  of 13.8 V. The drive amplifier is a class AB push-pull amplifier with a  $V_{cc}$  of 13.8 V. D1 controls bias voltage to the drive amplifier.

The impedance of the signal from the drive amplifier is converted at L2, then the signal is applied to the power amplifier (Q4, Q5). The power amplifier is a class AB push-pull amplifier and amplifies the input signal to 100 W. D2 and D3 control bias voltage to the power amplifier. The signal from the power amplifier is applied to one of the low-pass filters in the FILTER unit.

#### 4-2-6 LOW-PASS FILTER CIRCUIT (FILTER UNIT)

The low-pass filter circuit consists of 6 Chebyshev low-pass filters to suppress the higher harmonic components. The signal from the power amplifier (Q4, Q5) is applied to one of the low-pass filters (depending on its frequency). The filter switching voltage from the MAIN unit (J4) is applied to the FILTER unit via P1.

The filtered signal passes through the SWR detector circuit (L13) and is then applied to the antenna connector.

#### 4-2-7 ALC CIRCUIT (MAIN UNIT)

The ALC (Automatic Level Control) circuit controls the gain of IF amplifiers in order for the IC-707 to output a constant RF power set by the [RF PWR] control even when the supplied voltage shifts, etc.

The RF power signal level is detected at D8 (FILTER unit) and applied to the MAIN unit as the "FOR" voltage.

The "FOR" voltage from the FILTER unit is applied to IC15b (pin 6) in the MAIN unit. The "POC" voltage, set by the [RF PWR] control (FRONT unit R60), is applied to IC15b (pin 5) as the reference voltage.

When the "FOR" voltage exceeds the "POC" voltage, ALC bias voltage from IC15b (pin 7) controls the IF amplifiers (Q4, Q8). This adjusts the output power to the determined level by the [RF PWR] control until the "FOR" and "POC" voltages are equalized.

In AM mode, Q48 turns ON and C256 is connected to the "FOR" voltage line to obtain an averaging ALC operation. Q47 turns ON and the "POC" voltage is shifted for 40 W AM output power (maximum) through R274.

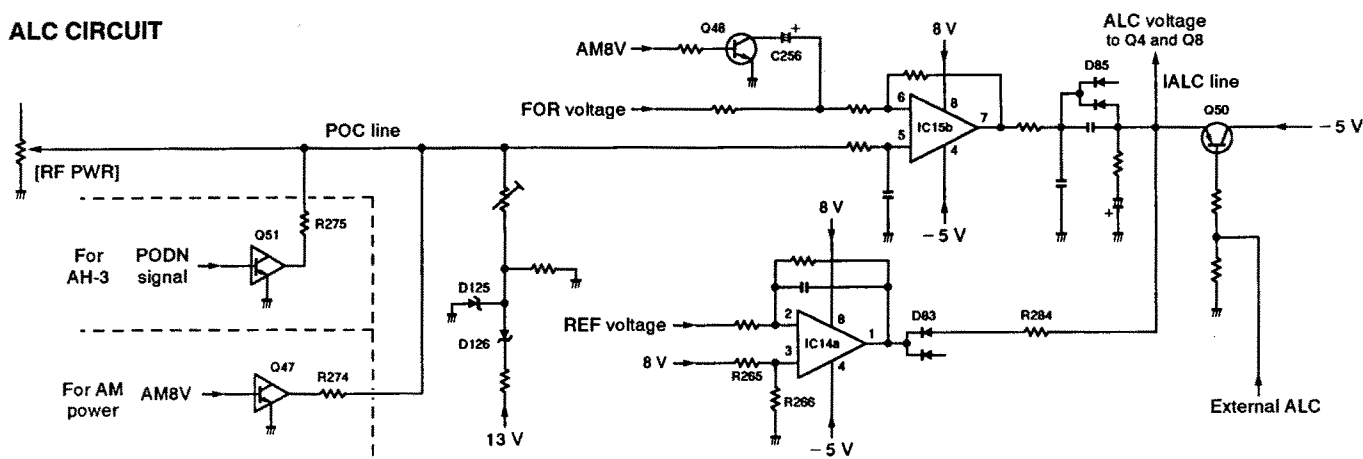
An external ALC input from the [ACC(1)] or [ACC(2)] socket or the [ALC] jack is applied to the buffer amplifier (Q50). External ALC operation is identical to that of the internal ALC.

#### 4-2-8 APC CIRCUIT (MAIN UNIT)

The APC (Automatic Power Control) circuit protects the power amplifiers on the PA unit from high SWR and excessive current.

A reflected wave signal appears and increases on the antenna connector when the antenna is mismatched. D9 of the SWR detector circuit (L13, D8, D9) in the FILTER unit detects the signal and applies it to IC14a in the MAIN unit as the "REF" signal. When the "REF" signal level increases, IC14a decreases the IALC line voltage via R264 to activate the ALC.

#### ALC CIRCUIT



For the IC APC, the power transistor current is obtained by detecting the voltages ("ICH" and "ICL") which appear at both terminals of a 0.012  $\Omega$  resistor (PA unit R25). The detected voltage is applied to the differential amplifier (IC15a pins 2, 3). When the current of the final transistors is more than 22 A, IC15a controls the IALC line via D86 to prevent excessive current flow.

During tuning of an antenna with an optional AH-3, the "PODN" signal turns Q51 ON. As a result, the "POC" voltage is shifted for approx. 10 W output power.

#### 4-2-9 TEMPERATURE PROTECTION CIRCUIT (MAIN UNIT)

A cooling fan (CHASSIS unit MF1) is activated while transmitting or if the temperature of Q4 exceeds the preset value.

While transmitting, PAT8 voltage is provided to MF1 via R29. Thermistor R29 on the PA unit detects the temperature of Q4. If the Q4 temperature is more than 50°C (122 °F), R29 becomes very low impedance and keeps Q73 and Q74 (MAIN unit) ON to rotate the cooling fan at high speed – even when the transceiver condition has changed from transmit to receive.

#### 4-2-10 RF METER CIRCUIT (MAIN UNIT)

The "FOR" voltage from the FILTER unit is applied to the RF meter amplifier (IC14b pin 5). The amplified voltage is output from IC14b (pin 7) and then applied to the A/D converter section of the CPU (IC1 pin 99) in the FRONT unit. R268 adjusts the meter sensitivity and R273 and C254 are used for RF meter peak power hold.

### 4-3 PLL CIRCUITS

#### 4-3-1 GENERAL DESCRIPTION

The PLL unit contains 2 PLL circuits for generating a 1st LO signal (64.9535–94.4565 MHz variable) and a BFO frequency (453.3–456.5 kHz). The 1st LO PLL employs a 1 loop DDS PLL whose reference oscillator is also used as the 2nd LO signal (64.00 MHz fixed). The DDS (Direct Digital Synthesizer) circuit performs signal sampling, generation of digital sine wave and digital phase detection.

#### 4-3-2 1ST LO CIRCUIT (PLL UNIT)

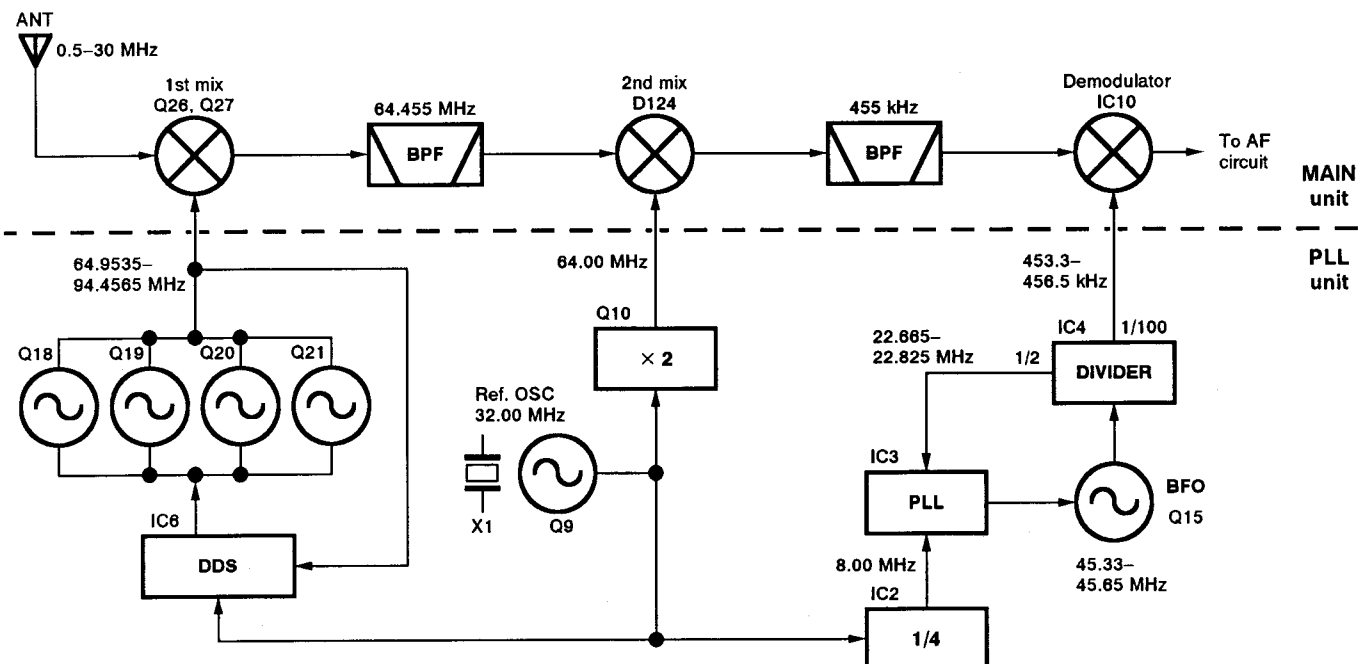
The PLL contains 4 VCO circuits for all HF band coverage within 10 Hz steps (100 Hz step by programming and 10 Hz by an RIT). One of four VCO oscillation signals is buffer-amplified at Q26 and is then amplified at Q29, Q32 and Q30. The resulting signal is applied to the DDS IC (IC6).

The DDS IC outputs pulse-type signals. The signals are applied to the active loop filter (IC5) to be converted to a DC voltage (lock voltage).

The lock voltage is applied to the varactor diodes (D4–D7) in the VCO circuits to change the capacitance of these diodes and control the oscillation frequency. The VCO circuits are switched by the VCO switching signal ("VCO1"–"VCO4") from the DDS IC.

The VCO oscillating signal is then buffer-amplified at the buffer amplifier (Q26), amplified at Q27 and Q28, and finally applied to the MAIN unit as a 1st LO signal.

### FREQUENCY CONSTRUCTION





### 4-3-3 REFERENCE OSCILLATOR CIRCUIT (PLL UNIT)

The reference oscillator circuit consists of Q9 and X1. A 32.00 MHz reference frequency is oscillated to produce a 2nd LO signal, DDS reference frequency and BFO PLL reference frequency.

The reference frequency is applied to the DDS IC (IC6 pins 40, 41). The reference frequency is amplified at Q11 and is then divided by 4 at IC2. The 8.00 MHz frequency is divided by 1600 at the BFO PLL IC (IC3) to obtain the 5 kHz PLL reference frequency.

The 32.00 MHz reference frequency is multiplied by 2 at Q10 to obtain the 2nd LO signal. The resulting 64.00 MHz signal is filtered at the bandpass filter and is then applied to the MAIN unit via P1 as the 2nd LO signal.

## 4-4 LOGIC CIRCUITS

### 4-4-1 BAND SELECTION DATA (MAIN AND PLL UNITS)

To select the correct bandpass filter and low-pass filter, the CPU outputs the following band selection data from the I/O expander (MAIN unit IC3) depending on the displayed frequency.

The VCO selection data is output from the DDS IC in the PLL unit. The band voltage is produced at R366–R376 and R378 (MAIN unit).

#### BAND SELECTION DATA

| FREQUENCY<br>(MHz) | BPF | BAND<br>VOLTAGE | LPF | VCO  |
|--------------------|-----|-----------------|-----|------|
| 0.5–1.59999        | B0  | 7.4 V           | L1  | VCO1 |
| 1.6–1.99999        | B1  |                 |     |      |
| 2.0–3.99999        | B2  | 6.1 V           | L2  |      |
| 4.0–7.99999        | B3  | 5.1 V           | L3  |      |
| 8.0–10.99999       | B4  | 0.0 V           | L4  | VCO2 |
| 11.0–14.99999      | B5  | 4.1 V           |     |      |
| 15.0–21.99999      | B6  | 3.2 V           | L5  | VCO3 |
| 22.0–30.00000      | B7  | 2.2 V           | L6  | VCO4 |

### 4-4-2 RIT CONTROL (FRONT UNIT)

The [RIT] control shifts the "RITV" voltage in order to shift the receive frequency. The voltage is applied to the A/D converter section of the CPU (IC1 pin 1). The CPU shifts the N-data for the DDS IC.

### 4-4-3 CPU (FRONT UNIT)

The CPU (IC1) contains an 8-bit CMOS CPU, a 32k-byte ROM, a 1k-byte RAM and an LCD driver. A 9.8304 MHz clock is used for rapid operation. The CPU controls the operating frequency, mode, function display, etc. The memory channel information is stored in the CPU using a lithium backup battery which has a normal life of more than 5 years.

The Icom CI-V network system allows the IC-707 to be remotely controlled by a personal computer using an RS-232C I/O port.

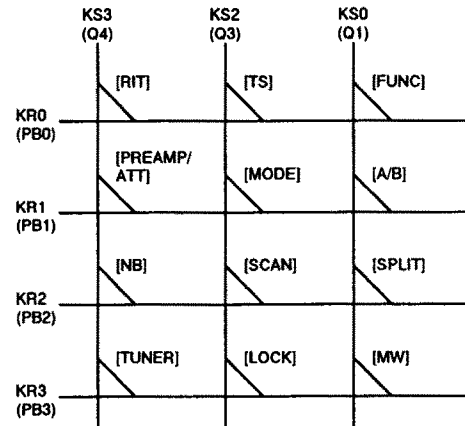
#### • INPUT PORT ALLOCATIONS

| PORT NAME  | PIN<br>NUMBER | DESCRIPTION                                                                                                          |
|------------|---------------|----------------------------------------------------------------------------------------------------------------------|
| RITV       | 1             | Input port for the detection of the [RIT] control position.                                                          |
| AVss, AVcc | 2, 89         | Input reference voltages for internal A/D converters.                                                                |
| OSC1, OSC2 | 7, 8          | I/O ports for the CPU clock oscillation.                                                                             |
| RES        | 9             | Input port for the reset signal.                                                                                     |
| P20–P22    | 11–13         | Inputports for dial tuning signals.                                                                                  |
| CIVCK      | 84            | Input port for busy signal of the CI-V bus line. This port becomes "HIGH" when the bus line is busy.                 |
| CIVI       | 86            | Input port for the CI-V data.                                                                                        |
| BAKUP      | 88            | Detects the power voltage. When the signal is "LOW," the CPU is backed up.                                           |
| KR0–KR3    | 90–93         | Input ports for return signals of the key matrix.                                                                    |
| KEY        | 94            | Input port for the external antenna tuner (AH-3). This port becomes "LOW" while an external antenna tuner is tuning. |
| TRC        | 95            | Input port for transmit/receive switching signal. This port becomes "HIGH" while transmitting.                       |
| SQLS       | 96            | Input port for the squelch signal. This port becomes "LOW" when squelch is open.                                     |
| SMV        | 98            | Input port for the detection of the received signal strength.                                                        |
| POV        | 99            | Input port for the detection of the RF output power.                                                                 |
| MICV       | 100           | Input port for the detection of [UP]/[DN] switch access.                                                             |

## • OUTPUT PORTS

| PORT NAME  | PIN NUMBER | DESCRIPTION                                                                                                           |
|------------|------------|-----------------------------------------------------------------------------------------------------------------------|
| STAR       | 14         | Outputs a control signal for the external antenna tuner (AH-3). Detects the connection of the external antenna tuner. |
| CON0–CON2  | 15–17      | Output control signals for the DDS IC.                                                                                |
| SRES       | 18         | Outputs a reset signal for the DDS IC.                                                                                |
| CK         | 19         | Outputs a clock signal for the DDS IC, PLL IC and output expanders.                                                   |
| PLLE       | 20         | Outputs an enable signal for the PLL data.                                                                            |
| DATA       | 21         | Outputs serial data to the DDS IC, PLL IC or output expander.                                                         |
| DSTB       | 22         | Outputs a strobe signal for the DDS IC.                                                                               |
| PSTB       | 23         | Outputs a strobe signal for the BFO PLL.                                                                              |
| BSTB       | 24         | Outputs a strobe signal for the output expander (IC3) which outputs band signals.                                     |
| MSTB       | 25         | Outputs a strobe signal for the output expander (IC8) which outputs mode selection signals.                           |
| KSTB       | 26         | Outputs a strobe signal for the output expander (IC6) which outputs key matrix strobe signals.                        |
| COM1–COM4  | 35–32      | Output LCD common signals.                                                                                            |
| SEG1–SEG38 | 36–73      | Output LCD segment signals.                                                                                           |
| PODN       | 77         | Outputs a control signal for setting the tuning output power of the AH-3.                                             |
| BEEP       | 78         | Outputs a 1 kHz or 500 Hz beep tone.                                                                                  |
| PREV       | 79         | Outputs a control signal for the preamplifier circuit.                                                                |
| ATTV       | 80         | Outputs a control signal for the RF attenuator circuit.                                                               |
| NBV        | 81         | Outputs a control signal for the noise blanker circuit.                                                               |
| CSEN       | 82         | Outputs a control signal for tuning transmission.                                                                     |
| CIVO       | 87         | Output port for the CI-V data.                                                                                        |

## 4-4-4 KEY MATRIX (FRONT UNIT)



## 4-5 REGULATOR CIRCUITS

Either +8 V, +5 V or –5 V DC is supplied from a corresponding regulator circuit. +8 V, +5 V and –5 V DC are regulated at the following circuits using 13.8 V DC.

### (1) +5 V REGULATOR (FRONT UNIT)

+5 V DC is provided by a three-terminal voltage regulator (IC4).

### (2) +8 V REGULATOR (MAIN UNIT)

+8 V DC is provided by a three-terminal voltage regulator (IC17).

### (3) –5 V REGULATOR (MAIN UNIT)

IC16 generates a negative pulse-type voltage by converting the DC input to AC voltages (approx. 6.7 kHz) as a multi-vibrator. The voltage is rectified at D80 and D81, regulated by a Zener diode (D82) and C249, and is then applied to the MAIN and PLL units.

## SECTION 5 ADJUSTMENT PROCEDURES

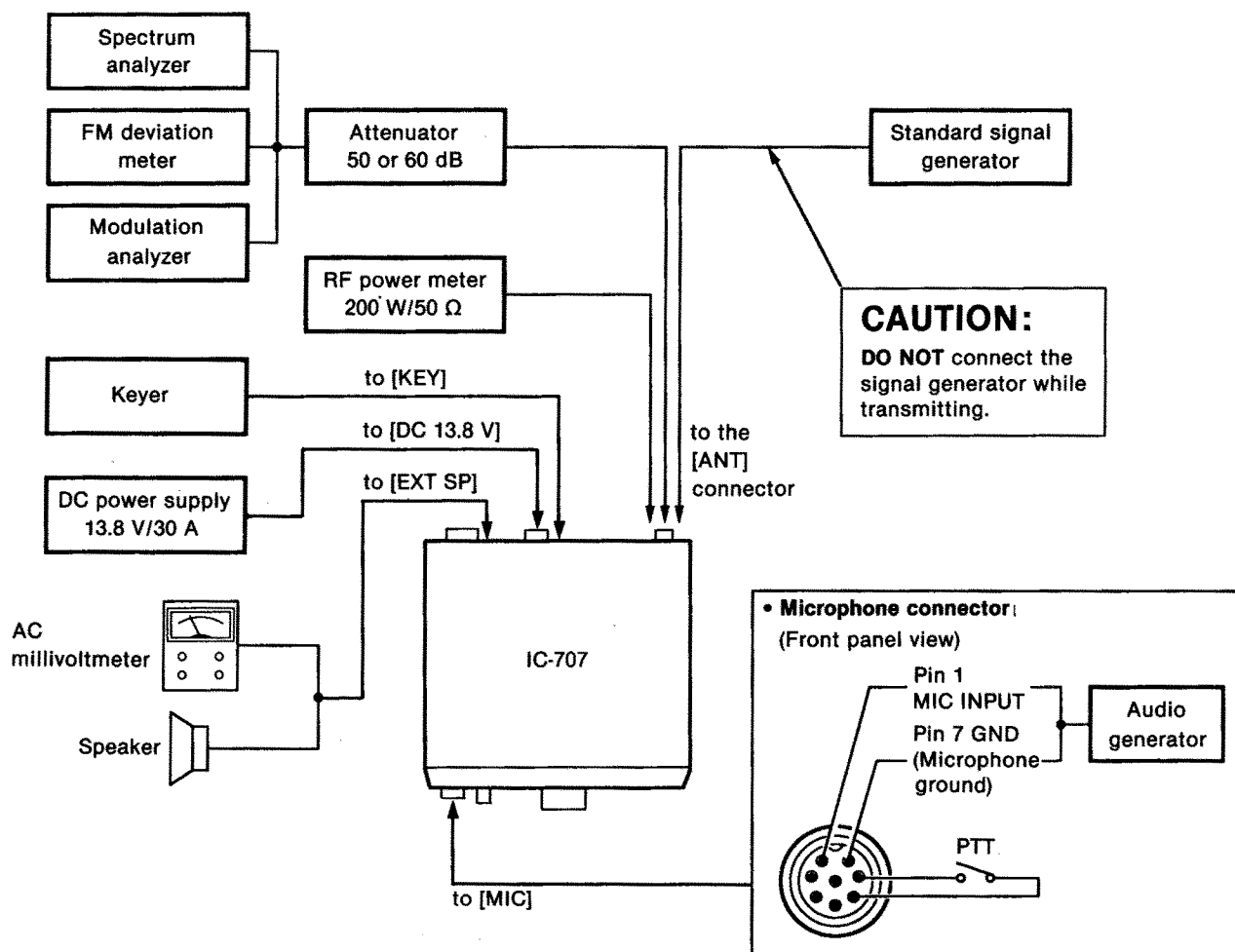
### 5-1 PREPARATION BEFORE SERVICING

#### ■ REQUIRED TEST EQUIPMENT

| EQUIPMENT                        | GRADE AND RANGE                                                                                                | EQUIPMENT           | GRADE AND RANGE                                                                 |
|----------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------|
| DC power supply                  | Output voltage : 13.8 V DC<br>Current capacity : 30 A or more                                                  | AC millivoltmeter   | Measuring range : 10 mV-10 V                                                    |
| RF power meter (terminated type) | Measuring range : 10-200 W<br>Frequency range : 1.8-30 MHz<br>Impedance : 50 $\Omega$<br>SWR : Less than 1.2:1 | DC voltmeter        | Input impedance : 50 k $\Omega$ /DC or better                                   |
| Frequency counter                | Frequency range : 0.1-100 MHz<br>Frequency accuracy : $\pm 1$ ppm or better<br>Sensitivity : 100 mV or better  | Ammeter             | Measurement capability: 1 A and 30 A                                            |
| RF voltmeter                     | Frequency range : 0.1-100 MHz<br>Measuring range : 0.01-10 V                                                   | Audio generator     | Frequency range : 300-3000 MHz<br>Output level : 1-500 mV                       |
| Digital multimeter               | Input impedance : 10 M $\Omega$ /DC or better                                                                  | Attenuator          | Power attenuation : 50 or 60 dB<br>Capacity : 150 W or more                     |
| Standard signal generator (SSG)  | Frequency range : 0.1-100 MHz<br>Output level : 0.1 $\mu$ V-32 mV<br>(-127 to -17 dBm)                         | Spectrum analyzer   | Frequency range : At least 90 MHz<br>Spectrum bandwidth : $\pm 100$ kHz or more |
| Distortion meter                 | Frequency range : 1 kHz $\pm 10\%$<br>Measuring range : 1-100%                                                 | FM deviation meter  | Frequency range : At least 30 MHz<br>Measuring range : 0 to $\pm 10$ kHz        |
| Oscilloscope                     | Frequency range : DC-20 MHz<br>Measuring range : 0.01-10 V                                                     | Modulation analyzer | Frequency range : At least 30 MHz<br>Measuring range : 0-100%                   |
|                                  |                                                                                                                | External speaker    | Impedance : 8 $\Omega$<br>Max. input power : 5 W                                |

CW: Clockwise CCW: Counterclockwise

#### ■ CONNECTION



## 5-2 PLL ADJUSTMENT

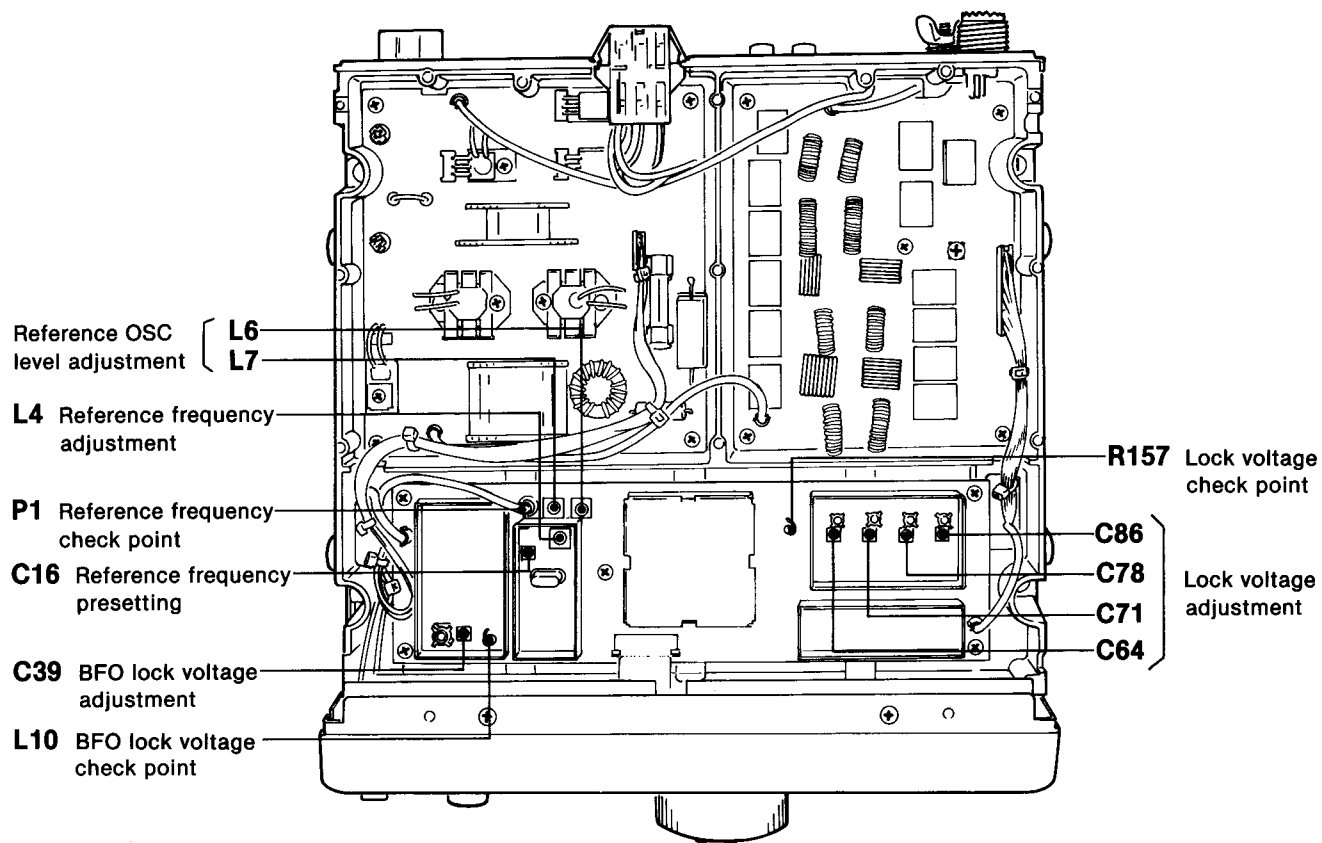
| ADJUSTMENT           |   | ADJUSTMENT CONDITIONS                                                                                     | MEASUREMENT |                                                         | VALUE                                                                                                                   | ADJUSTMENT POINT |        |
|----------------------|---|-----------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------|--------|
|                      |   |                                                                                                           | UNIT        | LOCATION                                                |                                                                                                                         | UNIT             | ADJUST |
| REFERENCE FREQUENCY  | 1 | • Displayed frequency: 14.1000 MHz<br>• Mode : USB<br>• Terminate P1 with a 50 Ω resistor.<br>• Receiving | PLL         | Connect the frequency counter to P1.                    | Preset to center as shown below.<br> | PLL              | C16    |
|                      | 2 |                                                                                                           |             |                                                         | 64.0000 MHz                                                                                                             |                  | L4     |
|                      | 3 |                                                                                                           |             | Connect the RF voltmeter to P1.                         | Maximum level                                                                                                           |                  | L6, L7 |
|                      | 4 | After adjustment, remove the resistor from P1 and re-plug P1.                                             |             |                                                         |                                                                                                                         |                  |        |
| BFO PLL LOCK VOLTAGE | 1 | • Displayed frequency: 14.0000 MHz<br>• Mode : LSB<br>• Receiving                                         | PLL         | Connect the digital multimeter or oscilloscope to L10.  | 1.9 V DC                                                                                                                | PLL              | C39    |
| LOCK VOLTAGE         | 1 | • Displayed frequency: 7.9999 MHz<br>• Mode : USB<br>• Receiving                                          | PLL         | Connect the digital multimeter or oscilloscope to R157. | 6.0 V DC                                                                                                                | PLL              | C64    |
|                      | 2 | • Displayed frequency: 14.9999 MHz                                                                        |             |                                                         | 6.0 V DC                                                                                                                |                  | C71    |
|                      | 3 | • Displayed frequency: 21.9999 MHz                                                                        |             |                                                         | 6.0 V DC                                                                                                                |                  | C78    |
|                      | 4 | • Displayed frequency: 30.0000 MHz                                                                        |             |                                                         | 6.0 V DC                                                                                                                |                  | C86    |
|                      | 5 | • Displayed frequency: 0.5000 MHz, 8.0000 MHz, 15.0000 MHz and 22.0000 MHz                                |             |                                                         | More than 1.7 V DC                                                                                                      |                  | Verify |

## 5-3 RECEIVER ADJUSTMENT

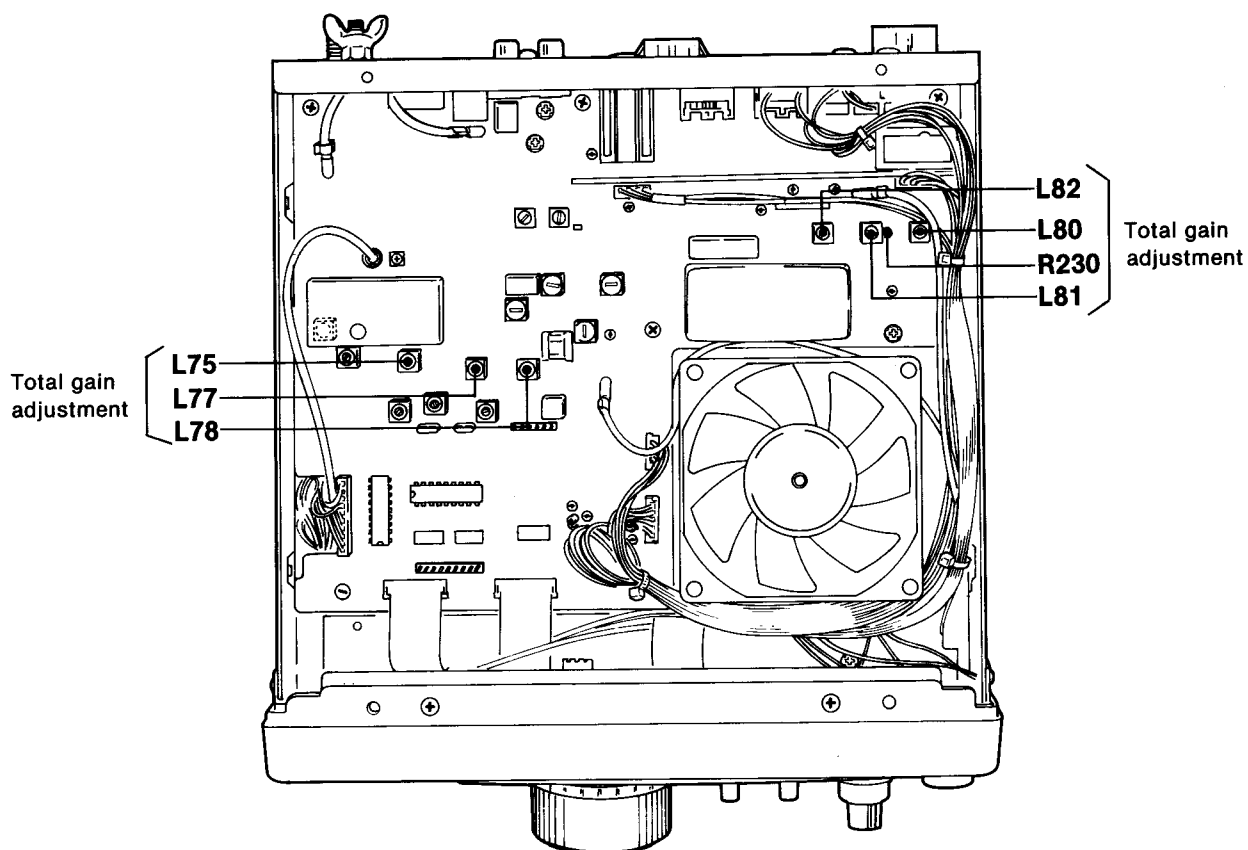
| ADJUSTMENT |   | ADJUSTMENT CONDITIONS                                                                                                                                                                                                                                                                                                                                                      | MEASUREMENT |                                                                             | VALUE                        | ADJUSTMENT POINT |                                                 |
|------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------------------|------------------------------|------------------|-------------------------------------------------|
|            |   |                                                                                                                                                                                                                                                                                                                                                                            | UNIT        | LOCATION                                                                    |                              | UNIT             | ADJUST                                          |
| TOTAL GAIN | 1 | <ul style="list-style-type: none"> <li>Displayed frequency: 14.1000 MHz</li> <li>Mode : USB</li> <li>[RIT] switch : OFF</li> <li>[NB] switch : OFF</li> <li>[PRE AMP] switch : OFF</li> <li>Connect the SSG to the [ANT] connector and set as:<br/>Frequency : 14.1010 MHz<br/>Level : 1.0 <math>\mu</math>V* (−107 dBm)<br/>Modulation: OFF</li> <li>Receiving</li> </ul> | Rear panel  | Connect the AC millivoltmeter to the [EXT SP] jack with an 8 $\Omega$ load. | Maximum audio output level   | MAIN             | Adjust in sequence L75, L77, L78, L82, L81, L80 |
|            | 2 | <ul style="list-style-type: none"> <li>Set the SSG as:<br/>Level : 1.0 mV* (−47 dBm) and OFF</li> </ul>                                                                                                                                                                                                                                                                    |             |                                                                             | 30 dB of AF level difference |                  | R230                                            |

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

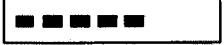
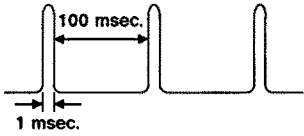
## • PLL UNIT



## • MAIN UNIT

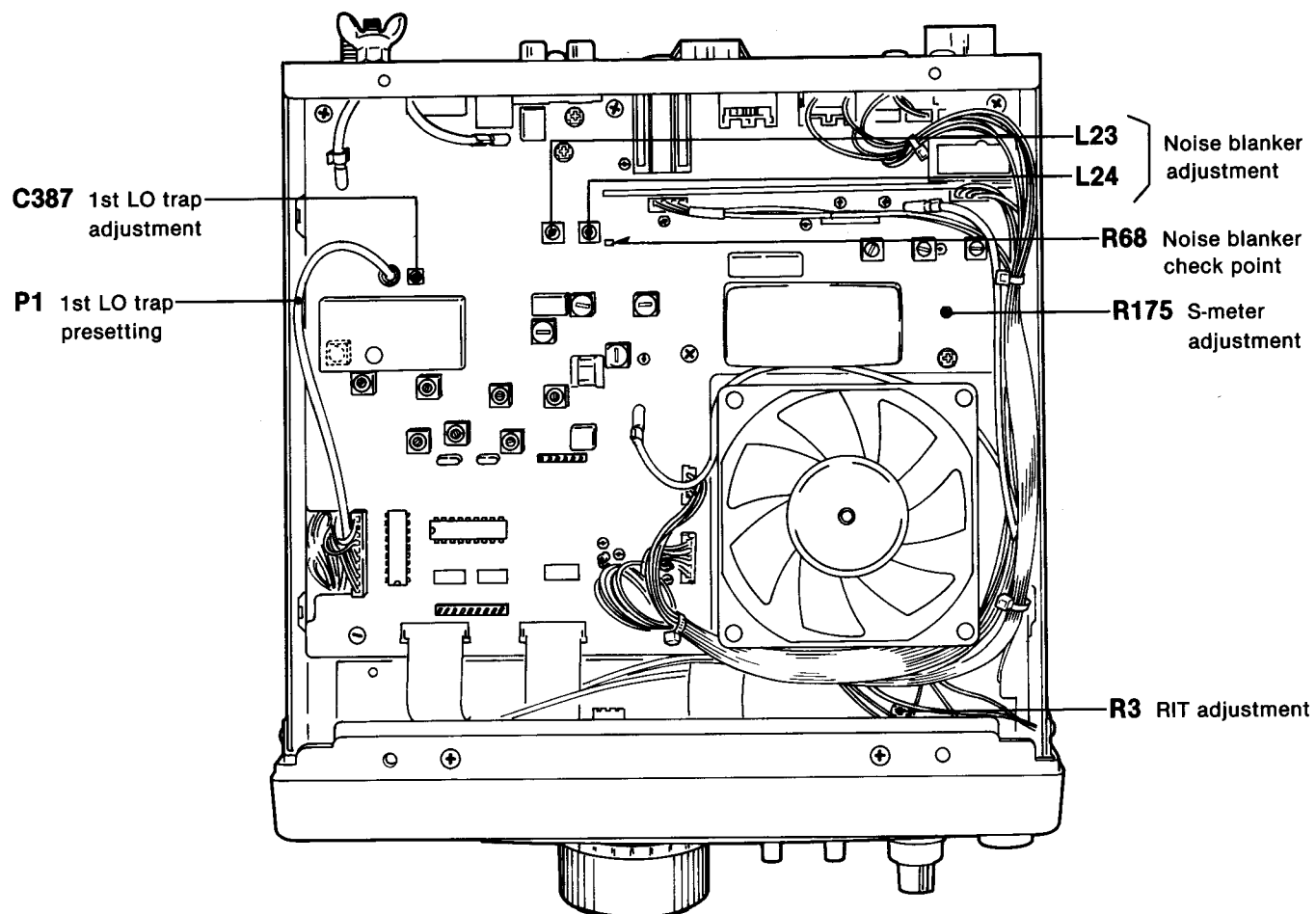


# RECEIVER ADJUSTMENT (CONTINUED)

| ADJUSTMENT    |   | ADJUSTMENT CONDITIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | MEASUREMENT      |                                                                             | VALUE                                                                                                     | ADJUSTMENT POINT |          |
|---------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------|----------|
|               |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | UNIT             | LOCATION                                                                    |                                                                                                           | UNIT             | ADJUST   |
| S-METER       | 1 | <ul style="list-style-type: none"> <li>Displayed frequency: 14.1000 MHz</li> <li>Mode : USB</li> <li>[RIT] switch : OFF</li> <li>[NB] switch : OFF</li> <li>[PRE AMP] switch : OFF</li> <li>Connect the SSG to the [ANT] connector and set as: <ul style="list-style-type: none"> <li>Frequency : 14.1000 MHz</li> <li>Level : 25 <math>\mu</math>V* (−79 dBm)</li> <li>Modulation: OFF</li> </ul> </li> <li>Receiving</li> </ul>                                                                                                                  | Function display | S-indicator                                                                 | 5 dots just appear.<br> | MAIN             | R175     |
| NOISE BLANKER | 1 | <ul style="list-style-type: none"> <li>Displayed frequency: 14.1000 MHz</li> <li>Mode : USB</li> <li>[NB] switch : OFF</li> <li>[PRE AMP] switch : ON</li> <li>Receiving</li> <li>Connect the SSG to the [ANT] connector and set as: <ul style="list-style-type: none"> <li>Frequency : 14.1000 MHz</li> <li>Level : 3.2 <math>\mu</math>V* (−97 dBm)</li> <li>Modulation: OFF</li> </ul> </li> <li>Apply the following signal to the SSG's output.</li> </ul>  | MAIN             | Connect the oscilloscope to R68.                                            | Adjust for maximum waveform on the oscilloscope.                                                          | MAIN             | L23, L24 |
|               | 2 | <ul style="list-style-type: none"> <li>[NB] switch : ON</li> <li>Set the SSG as: <ul style="list-style-type: none"> <li>Level : 10 <math>\mu</math>V* (−87 dBm)</li> <li>Modulation: OFF</li> </ul> </li> <li>Apply the same signal as shown above.</li> </ul>                                                                                                                                                                                                                                                                                     |                  |                                                                             | The noise must be blanked.                                                                                |                  | Verify   |
| 1st LO TRAP   | 1 | <ul style="list-style-type: none"> <li>Displayed frequency: 14.1000 MHz</li> <li>Mode : USB</li> <li>[PRE AMP] switch : OFF</li> <li>Connect the SSG to P1 (MAIN unit) and set as: <ul style="list-style-type: none"> <li>Frequency : 64.4550 MHz</li> <li>Level : 3.2 <math>\mu</math>V* (−97 dBm)</li> <li>Modulation: OFF</li> </ul> </li> <li>Receiving</li> </ul>                                                                                                                                                                             | Rear panel       | Connect the AC millivoltmeter to the [EXT SP] jack with an 8 $\Omega$ load. | Adjust for minimum speaker output.                                                                        | MAIN             | C387     |
|               | 1 | <ul style="list-style-type: none"> <li>Frequency : 64.4550 MHz</li> <li>Level : 3.2 <math>\mu</math>V* (−97 dBm)</li> <li>Modulation: OFF</li> <li>Receiving</li> </ul>                                                                                                                                                                                                                                                                                                                                                                            |                  |                                                                             |                                                                                                           |                  |          |
| RIT           | 1 | <ul style="list-style-type: none"> <li>Displayed frequency: 14.1000 MHz</li> <li>Mode : USB</li> <li>Connect the SSG to the [ANT] connector and set as: <ul style="list-style-type: none"> <li>Level : 50 <math>\mu</math>V* (−73 dBm)</li> <li>Modulation: OFF</li> </ul> </li> <li>[RIT] control : Center</li> <li>[RIT] switch : ON and OFF</li> <li>Receiving</li> </ul>                                                                                                                                                                       | Front panel      | Speaker                                                                     | Same tone pitch on both conditions.                                                                       | VR               | R3       |

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

• MAIN AND VR UNITS

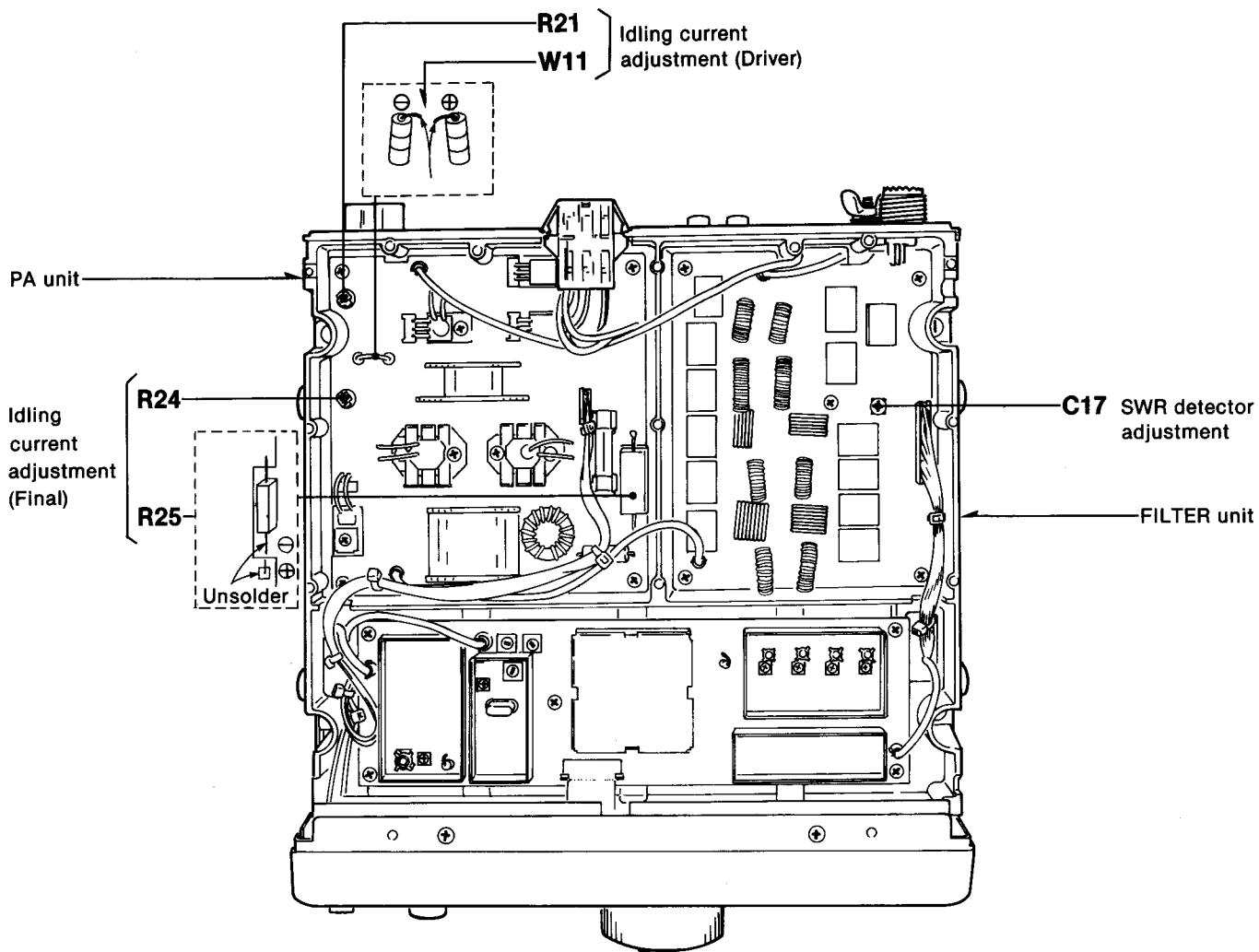


## 5-4 TRANSMITTER ADJUSTMENT

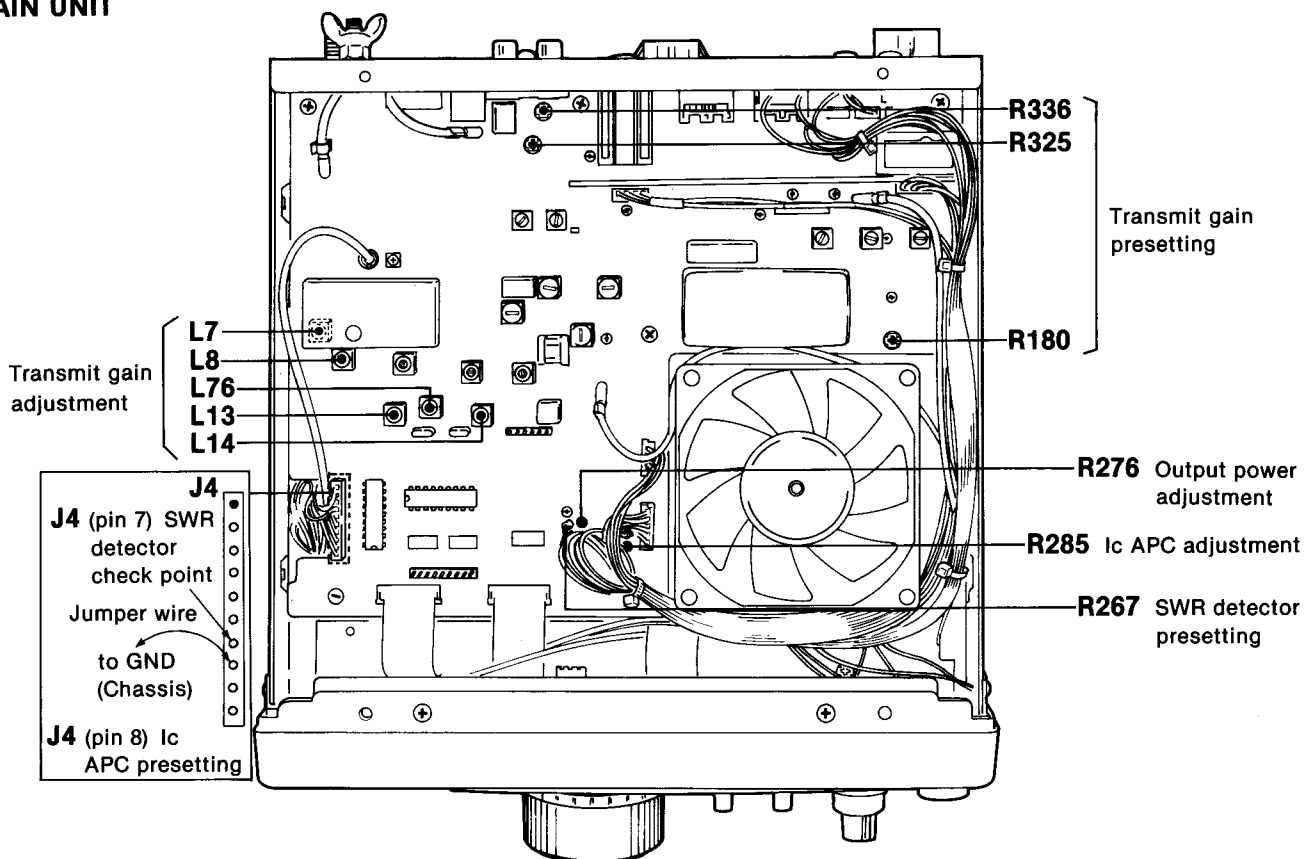
| ADJUSTMENT                                |                         | ADJUSTMENT CONDITIONS                                                                                                                                                                                                                                                                                                 | MEASUREMENT                                         |                                                                 | VALUE   | ADJUSTMENT POINT |                                                                 |
|-------------------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------|---------|------------------|-----------------------------------------------------------------|
|                                           |                         |                                                                                                                                                                                                                                                                                                                       | UNIT                                                | LOCATION                                                        |         | UNIT             | ADJUST                                                          |
| IDLING CURRENT<br>Ⓐ For drive transistors | 1                       | • Displayed frequency: 14.1000 MHz<br>• Mode : USB<br>• [RF PWR] control : Max. CCW<br>• [MIC] control : Max. CCW<br>• Transmitting                                                                                                                                                                                   | PA                                                  | Unsolder W11 and connect the ammeter to the unsoldering points. | 100 mA  | PA               | R21                                                             |
|                                           | ② For final transistors |                                                                                                                                                                                                                                                                                                                       |                                                     | 2                                                               |         |                  | Unsolder R25 and connect the ammeter to the unsoldering points. |
|                                           |                         | 3                                                                                                                                                                                                                                                                                                                     | After adjustment, re-solder W11 and R25.            |                                                                 |         |                  |                                                                 |
| SWR DETECTOR                              | 1                       | • Displayed frequency: 14.1000 MHz<br>• Mode : USB<br>• [RF PWR] control : Max. CCW<br>• Connect the jumper wire between R267 (MAIN unit) and a ground.<br>• Connect the audio generator to the [MIC] connector and set as:<br>Level : 30 mV<br>Frequency : 1.5 kHz<br>• Transmitting                                 | Rear panel                                          | Connect the RF power meter to the [ANT] connector.              | 100 W   | Front panel      | [MIC] control                                                   |
|                                           | 2                       |                                                                                                                                                                                                                                                                                                                       | MAIN                                                | Connect the DC voltmeter to J4 (pin 7).                         | Minimum | FILTER           | C17                                                             |
|                                           |                         | 3                                                                                                                                                                                                                                                                                                                     | After adjustment, remove the jumper wire from R267. |                                                                 |         |                  |                                                                 |
| TRANSMIT GAIN                             | 1                       | • Displayed frequency: 14.1000 MHz<br>• Mode : USB<br>• [RF PWR] control : Max. CW<br>• R180 (MAIN unit) : Max. CW<br>• R325, R336 (MAIN unit): Center<br>• Connect the audio generator to the [MIC] connector and set as:<br>Level : 3 mV<br>Frequency : 1.5 kHz<br>• Transmitting                                   | Rear panel                                          | Connect the RF power meter to the [ANT] connector.              | 50 W    | Front panel      | [MIC] control                                                   |
|                                           | 2                       |                                                                                                                                                                                                                                                                                                                       |                                                     |                                                                 | Maximum | MAIN             | L14, L76, L13, L8, L7                                           |
| OUTPUT POWER                              | 1                       | • Displayed frequency: 14.1000 MHz<br>• Mode : USB<br>• [RF PWR] control : Max. CW<br>• [MIC] control : Center<br>• Connect the audio generator to the [MIC] connector and set as:<br>Level : 30 mV<br>Frequency : 1.5 kHz<br>• Transmitting                                                                          | Rear panel                                          | Connect the RF power meter to the [ANT] connector.              | 100 W   | MAIN             | R276                                                            |
| Ic APC                                    | 1                       | • Displayed frequency: 14.1000 MHz<br>• Mode : USB<br>• [RF PWR] control : Max. CW<br>• [MIC] control : Center<br>• Connect the jumper wire between J4 (pin 8, MAIN unit) and a ground.<br>• Connect the audio generator to the [MIC] connector and set as:<br>Level : 30 mV<br>Frequency : 1.5 kHz<br>• Transmitting | Rear panel                                          | Connect the ammeter between the DC power supply and IC-707.     | 22 A    | MAIN             | R285                                                            |



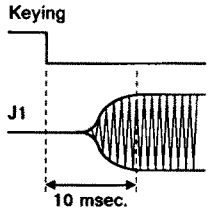
## • PA AND FILTER UNITS



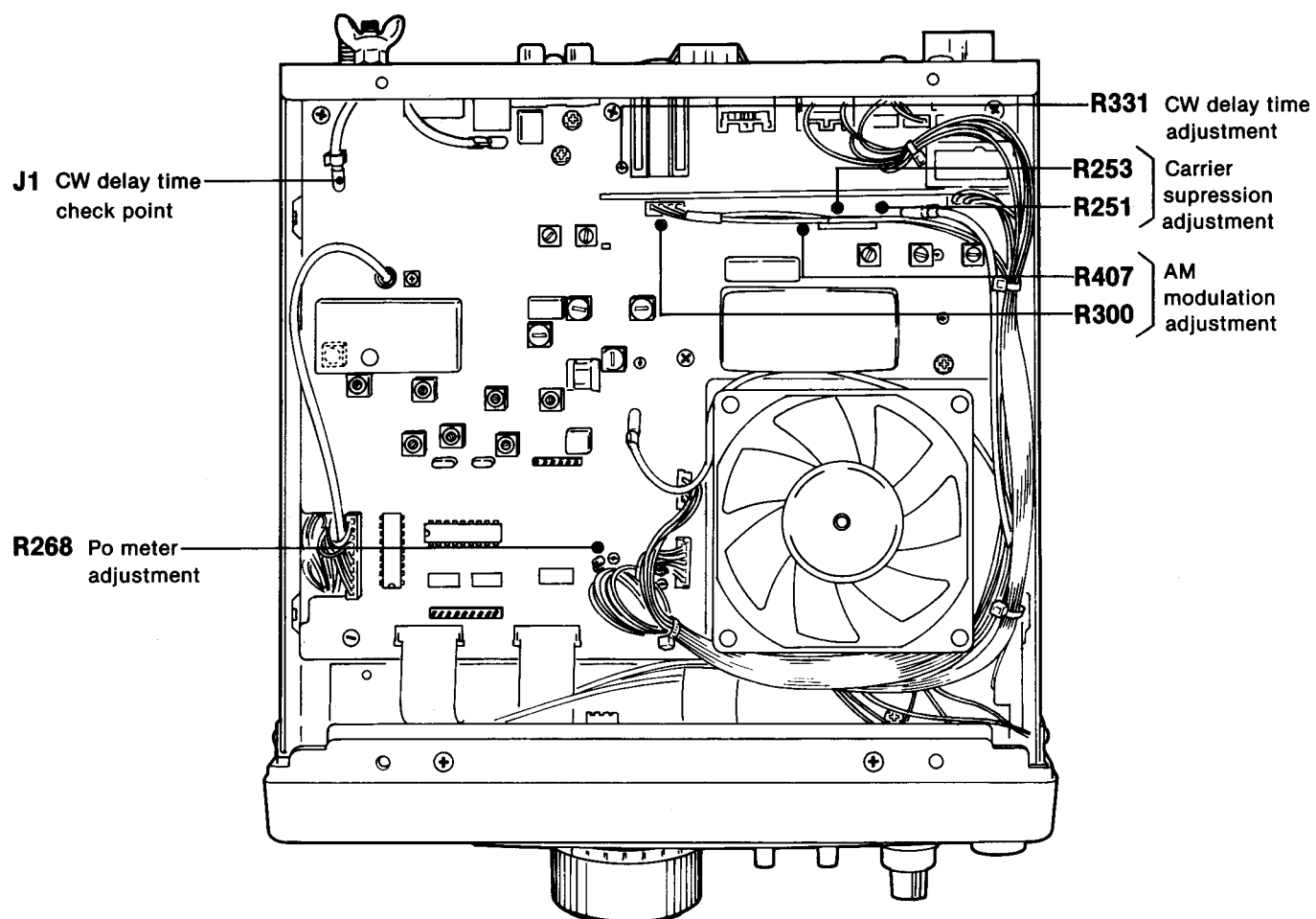
## • MAIN UNIT



## TRANSMITTER ADJUSTMENT (CONTINUED)

| ADJUSTMENT          |   | ADJUSTMENT CONDITIONS                                                                                                                                                                                                                                                                                                                                       | MEASUREMENT      |                                                                            | VALUE                                                                                                      | ADJUSTMENT POINT |                                      |
|---------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------|--------------------------------------|
|                     |   |                                                                                                                                                                                                                                                                                                                                                             | UNIT             | LOCATION                                                                   |                                                                                                            | UNIT             | ADJUST                               |
| Po METER            | 1 | <ul style="list-style-type: none"> <li>Displayed frequency: 14.1000 MHz</li> <li>Mode : USB</li> <li>Connect the audio generator to the [MIC] connector and set as:</li> </ul>                                                                                                                                                                              | Rear panel       | Connect the RF power meter to the [ANT] connector.                         | 85 W                                                                                                       | Front panel      | [RF PWR] control                     |
|                     | 2 | <ul style="list-style-type: none"> <li>Level : 30 mV</li> <li>Frequency : 1 kHz</li> <li>Transmitting</li> </ul>                                                                                                                                                                                                                                            | Function display | RF indicator                                                               | 8 dots just appear.<br>  | MAIN             | R268                                 |
| CARRIER SUPPRESSION | 1 | <ul style="list-style-type: none"> <li>Displayed frequency: 14.1000 MHz</li> <li>Mode : USB</li> <li>[MIC] control : Max. CCW</li> <li>Apply no signal to the [MIC] connector.</li> <li>Transmitting</li> </ul>                                                                                                                                             | Rear panel       | Connect the spectrum analyzer to the [ANT] connector via the attenuator.   | Minimum carrier level<br>(Less than -40 dB)                                                                | MAIN             | R251, R253<br>(Alternate adjustment) |
| AM MODULATION       | 1 | <ul style="list-style-type: none"> <li>Displayed frequency: 14.1000 MHz</li> <li>Mode : AM</li> <li>R300 (MAIN unit) : Center</li> <li>[RF PWR] control : Max. CW</li> <li>[MIC] control : Center</li> <li>Connect the audio generator to the [MIC] connector and set as:</li> <li>Level : 3 mV</li> <li>Frequency : 1 kHz</li> <li>Transmitting</li> </ul> | Rear panel       | Connect the modulation analyzer to the [ANT] connector via the attenuator. | 70% modulation                                                                                             | MAIN             | R407                                 |
|                     | 2 | <ul style="list-style-type: none"> <li>Set the audio generator as:</li> <li>Level : 30 mV</li> <li>Frequency : 1 kHz</li> </ul>                                                                                                                                                                                                                             |                  |                                                                            | 90% modulation                                                                                             |                  | R300                                 |
| CW DELAY TIME       | 1 | <ul style="list-style-type: none"> <li>Displayed frequency: 14.1000 MHz</li> <li>Mode : CW</li> <li>[RF PWR] control : Max. CW</li> <li>Connect a keyer to the [KEY] jack and key down.</li> </ul>                                                                                                                                                          | MAIN             | Connect the oscilloscope to J1 and the keyer.                              | Adjust as follows:<br> | MAIN             | R331                                 |

• MAIN UNIT



# SECTION 6 PARTS LIST

## [CHARSSIS PARTS]

| REF. NO. | ORDER NO.  | DESCRIPTION   |
|----------|------------|---------------|
| W9       | 8900004360 | CABLE OPC-424 |
| W10      | 8900004360 | CABLE OPC-424 |
| W11      | 8900004360 | CABLE OPC-424 |

## [FRONT UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                                 |
|----------|------------|---------------------------------------------|
| IC1      | 1140003960 | S.IC HD8433834A04H                          |
| IC2      | 1130005720 | S.IC TC7W04F (TE12L)                        |
| IC3      | 1110001550 | S.IC S-8054ALB-LM-T1                        |
| IC4      | 1180000420 | S.IC TA78L05F (TE12R)                       |
| IC5      | 1130007040 | S.IC TC7W32F(TE12L)                         |
| IC6      | 1130000830 | S.IC $\mu$ PD4094BG-T1                      |
| IC7      | 1130001920 | S.IC $\mu$ PD4071BG-T1                      |
| IC8      | 1130002660 | S.IC $\mu$ PD4030BG-T1                      |
| Q1       | 1510000510 | S.TRANSISTOR 2SA1576 T107 R                 |
| Q2       | 1530002080 | S.TRANSISTOR 2SC4081 T107 R                 |
| Q3       | 1530002060 | S.TRANSISTOR 2SC4081 T107 R                 |
| Q4       | 1520000200 | S.TRANSISTOR 2SB798-T2 DK                   |
| Q5       | 1530002060 | S.TRANSISTOR 2SC4081 T107 R                 |
| Q8       | 1530002060 | S.TRANSISTOR 2SC4081 T107 R                 |
| Q9       | 1510000510 | S.TRANSISTOR 2SA1576 T107 R                 |
| D1       | 1160000060 | S.DIODE DAN202U T107                        |
| D2       | 1160000060 | S.DIODE DAN202U T107                        |
| D3       | 1160000060 | S.DIODE DAN202U T107                        |
| D4       | 1160000050 | S.DIODE DAP202U T107                        |
| D5       | 1160000050 | S.DIODE DAP202U T107                        |
| D7       | 1160000050 | S.DIODE DAP202U T107                        |
| D8       | 1160000050 | S.DIODE DAP202U T107                        |
| D9       | 1160000050 | S.DIODE DAP202U T107                        |
| D10      | 1160000050 | S.DIODE DAP202U T107                        |
| D11      | 1160000060 | S.DIODE DAN202U T107 (OTH, ESP, FRG)        |
| D12      | 1160000060 | S.DIODE DAN202U T107 (OTH, ESP, FRG)        |
| D12      | 1160000060 | S.DIODE DAN202U T107 (OTH)                  |
| D15      | 1160000060 | S.DIODE DAN202U T107                        |
| D16      | 1160000060 | S.DIODE DAN202U T107                        |
| D17      | 1730000410 | S.ZENER RD5.1M-T2B2                         |
| D18      | 1160000060 | S.DIODE DAN202U T107                        |
| D20      | 1160000060 | S.DIODE DAN202U T107                        |
| D21      | 1160000060 | S.DIODE DAN202U T107                        |
| D22      | 1160000060 | S.DIODE DAN202U T107                        |
| D23      | 1160000060 | S.DIODE DAN202U T107                        |
| X1       | 6050008160 | S.XTAL CR-410                               |
| L1       | 6180000990 | COIL LAL 04NA 101K                          |
| L2       | 6200003260 | S.COIL NL 322522T-101J                      |
| L3       | 6200003260 | S.COIL NL 322522T-101J                      |
| L4       | 6200003260 | S.COIL NL 322522T-101J                      |
| L5       | 6200003260 | S.COIL NL 322522T-101J                      |
| L6       | 6200003260 | S.COIL NL 322522T-101J                      |
| L7       | 6200003260 | S.COIL NL 322522T-101J                      |
| R1       | 7030003800 | S.RESISTOR ERJ3GEYJ 105 V (1 M $\Omega$ )   |
| R2       | 7030003500 | S.RESISTOR ERJ3GEYJ 332 V (3.3 k $\Omega$ ) |
| R3       | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R4       | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R5       | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 k $\Omega$ )  |

## [FRONT UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                                 |
|----------|------------|---------------------------------------------|
| R6       | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R7       | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R8       | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R9       | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R10      | 7510000310 | THERMISTOR ERT-D2ZHL 802S                   |
| R11      | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R12      | 7030001060 | S.RESISTOR MCR50JZHJ 27 $\Omega$ (270)      |
| R13      | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R14      | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 k $\Omega$ ) |
| R15      | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 k $\Omega$ ) |
| R16      | 7030003760 | S.RESISTOR ERJ3GEYJ 101 V (100 k $\Omega$ ) |
| R17      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R18      | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R19      | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R20      | 7030003320 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R21      | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R22      | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R23      | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R24      | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R25      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R26      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R28      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R29      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R30      | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R31      | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R32      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R33      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R34      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R35      | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R36      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R37      | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 $\Omega$ )    |
| R38      | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R40      | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R41      | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R42      | 7030003800 | S.RESISTOR ERJ3GEYJ 105 V (1 M $\Omega$ )   |
| R43      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R44      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R45      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R46      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R47      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R48      | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R49      | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R50      | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R51      | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R52      | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R53      | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R54      | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R55      | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R56      | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 k $\Omega$ ) |
| R57      | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R58      | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R59      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R60      | 7210002190 | VARIABLE EVU-FLAEA4 B14 (10KB) [RF PWR]     |
| R61      | 7210002190 | VARIABLE EVU-FLAEA4 B14 (10KB) [MIC]        |
| R62      | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R63      | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 $\Omega$ )    |
| R64      | 7030001140 | S.RESISTOR MCR50JZHJ 120 $\Omega$ (121)     |
| R65      | 7030001140 | S.RESISTOR MCR50JZHJ 120 $\Omega$ (121)     |
| R66      | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 k $\Omega$ ) |
| R67      | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R68      | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R69      | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R71      | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R72      | 7030003590 | S.RESISTOR ERJ3GEYJ 183 V (18 k $\Omega$ )  |
| R73      | 7030003540 | S.RESISTOR ERJ3GEYJ 882 V (8.8 k $\Omega$ ) |
| R74      | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 k $\Omega$ )  |
| R75      | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R81      | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ ) |

S.=Surface mount

## [FRONT UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                         |
|----------|------------|--------------|-------------------------|
| R82      | 7030003720 | S.RESISTOR   | ERJ3GEYJ 224 V (220 kΩ) |
| R83      | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R84      | 7030003800 | S.RESISTOR   | ERJ3GEYJ 105 V (1 MΩ)   |
| R85      | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R86      | 7030003720 | S.RESISTOR   | ERJ3GEYJ 224 V (220 kΩ) |
| R87      | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R88      | 7030003800 | S.RESISTOR   | ERJ3GEYJ 105 V (1 MΩ)   |
| R89      | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| R90      | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)  |
| R91      | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| R92      | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R93      | 7030003840 | S.RESISTOR   | ERJ3GEYJ 225 V (2.2 MΩ) |
| R94      | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ) |
| C1       | 4030008620 | S.CERAMIC    | C1608 SL 1H 120J-T-A    |
| C2       | 4030008620 | S.CERAMIC    | C1608 SL 1H 120J-T-A    |
| C3       | 4030008630 | S.CERAMIC    | C1608 JF 1C 104Z-T-A    |
| C4       | 4030008630 | S.CERAMIC    | C1608 JF 1C 104Z-T-A    |
| C5       | 4030008630 | S.CERAMIC    | C1608 JF 1C 104Z-T-A    |
| C6       | 4510004590 | ELECTROLITIC | 16 MV 470 HC            |
| C7       | 4510003910 | ELECTROLITIC | 16 MV 47 HW             |
| C8       | 4030008630 | S.CERAMIC    | C1608 JF 1C 104Z-T-A    |
| C9       | 4030008630 | S.CERAMIC    | C1608 JF 1C 104Z-T-A    |
| C10      | 4510003910 | ELECTROLITIC | 16 MV 47 HW             |
| C11      | 4030009000 | S.CERAMIC    | C2012 JB 1C 224K-T-A    |
| C12      | 4030006750 | S.CERAMIC    | C1608 SL 1H 101J-T-A    |
| C13      | 4030006750 | S.CERAMIC    | C1608 SL 1H 101J-T-A    |
| C14      | 4030006750 | S.CERAMIC    | C1608 SL 1H 101J-T-A    |
| C15      | 4030006750 | S.CERAMIC    | C1608 SL 1H 101J-T-A    |
| C16      | 4030006750 | S.CERAMIC    | C1608 SL 1H 101J-T-A    |
| C17      | 4030006750 | S.CERAMIC    | C1608 SL 1H 101J-T-A    |
| C18      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C19      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C21      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C22      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C23      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C24      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C25      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C26      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C27      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C28      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C29      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C30      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C31      | 4030006750 | S.CERAMIC    | C1608 SL 1H 101J-T-A    |
| C32      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C33      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C34      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C35      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C36      | 4030006750 | S.CERAMIC    | C1608 SL 1H 101J-T-A    |
| C37      | 4030006750 | S.CERAMIC    | C1608 SL 1H 101J-T-A    |
| C38      | 4030006750 | S.CERAMIC    | C1608 SL 1H 101J-T-A    |
| C39      | 4030006750 | S.CERAMIC    | C1608 SL 1H 101J-T-A    |
| C40      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C41      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C42      | 4510003830 | ELECTROLITIC | 50 MV R47 SW            |
| C43      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C44      | 4510004990 | ELECTROLITIC | 16 MV 100 HC            |
| C45      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C46      | 4030008630 | S.CERAMIC    | C1608 JF 1C 104Z-T-A    |
| C47      | 4030008630 | S.CERAMIC    | C1608 JF 1C 104Z-T-A    |
| C48      | 4030008630 | S.CERAMIC    | C1608 JF 1C 104Z-T-A    |
| C49      | 4030008630 | S.CERAMIC    | C1608 JF 1C 104Z-T-A    |
| C50      | 4030008680 | S.CERAMIC    | C1608 JB 1H 102K-T-A    |
| C51      | 4030008680 | S.CERAMIC    | C1608 JB 1H 102K-T-A    |
| C52      | 4030008630 | S.CERAMIC    | C1608 JF 1C 104Z-T-A    |
| C53      | 4030008680 | S.CERAMIC    | C1608 JB 1H 102K-T-A    |
| C54      | 4030008680 | S.CERAMIC    | C1608 JB 1H 102K-T-A    |
| C55      | 4030008680 | S.CERAMIC    | C1608 JB 1H 102K-T-A    |
| C56      | 4510003830 | ELECTROLITIC | 50 MV R47 SW            |
| C57      | 4030008630 | S.CERAMIC    | C1608 JF 1C 104Z-T-A    |
| SP1      | 2510000670 | SPEAKER      | VS-50-0827              |
| BT1      | 3020000020 | LITHIUM      | BR2032-1T2              |

## [FRONT UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                            |
|----------|------------|-------------|----------------------------|
| DS1      | 5030000980 | LCD         | LD-BU5637EZ (E-5806)       |
| DS2      | 5080000305 | LAMP        | HRT-3290A-F                |
| DS3      | 5080000305 | LAMP        | HRT-3290A-F                |
| DS4      | 5080000305 | LAMP        | HRT-3290A-F                |
| W2       | 7120000380 | JUMPER      | JPW 01 R-01                |
| W3       | 7120000380 | JUMPER      | JPW 01 R-01                |
| J1       | 6510016030 | CONNECTOR   | 52089-1620                 |
| J2       | 6510016030 | CONNECTOR   | 52089-1620                 |
| J3       | 6510016030 | CONNECTOR   | 52089-1620                 |
| J5       | 6510003440 | CONNECTOR   | B08B-EH-S<br>(ESP,FRA,FRG) |
| J9       | 6510003390 | CONNECTOR   | B03B-EH-S                  |
| J10      | 6510006060 | CONNECTOR   | P-422                      |
| S1       | 2260000080 | SWITCH      | SKHHAM024A [FUNC]          |
| S2       | 2260000080 | SWITCH      | SKHHAM024A [A/B]           |
| S3       | 2260000080 | SWITCH      | SKHHAM024A [SPLIT]         |
| S4       | 2260000080 | SWITCH      | SKHHAM024A [MW]            |
| S5       | 2260000080 | SWITCH      | SKHHAM024A [TS]            |
| S6       | 2260000080 | SWITCH      | SKHHAM024A [MODE]          |
| S7       | 2260000080 | SWITCH      | SKHHAM024A [SCAN]          |
| S8       | 2260000080 | SWITCH      | SKHHAM024A [LOCK]          |
| S9       | 2260000080 | SWITCH      | SKHHAM024A [RIT]           |
| S10      | 2260000080 | SWITCH      | SKHHAM024A<br>[PREAMP/ATT] |
| S11      | 2260000080 | SWITCH      | SKHHAM024A [NB]            |
| S12      | 2260000080 | SWITCH      | SKHHAM024A [TUNER]         |
| S13      | 2260000210 | SWITCH      | MSR5-2#1 [POWER]           |
| S14      | 2250000130 | ENCODER     | SW-152 (EC24B50B0013B)     |
| EP1      | 0910039463 | PCB         | B 3859C                    |
| EP3      | 6910007700 | E.OTHER     | HLJ0999-01-470             |

## [VR UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                                          |
|----------|------------|-------------|------------------------------------------|
| R1       | 7210001360 | VARIABLE    | RK097111004NA (10KB)<br>[RIT]            |
| R2       | 7210001070 | VARIABLE    | RK0972210001B<br>(10KB/10KA)<br>[SQL/AF] |
| R3       | 7310000830 | TRIMMER     | RV-183 (RH0652C14J0FB)<br>103            |
| J1       | 6510003510 | CONNECTOR   | S03B-EH-S                                |
| EP1      | 0910039441 | PCB         | B 3862A                                  |

## [JACK UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                             |
|----------|------------|-------------|-----------------------------|
| R1       | 7010003280 | RESISTOR    | ELR20J 100 Ω                |
| R2       | 7010003280 | RESISTOR    | ELR20J 100 Ω                |
| J1       | 6450001250 | CONNECTOR   | HLJ4308-01-3070<br>[PHONES] |
| J3       | 6510003440 | CONNECTOR   | B08B-EH-S                   |
| EP1      | 0910039432 | PCB         | B 3863B                     |

S.=Surface mount

**[MIC BOARD]**

| REF. NO. | ORDER NO.  | DESCRIPTION                  |
|----------|------------|------------------------------|
| J1       | 6510000190 | CONNECTOR FM214-8SS(P) [MIC] |
| EP1      | 0910040410 | FPC B 3988                   |

**[MAIN UNIT]**

| REF. NO. | ORDER NO.  | DESCRIPTION                 |
|----------|------------|-----------------------------|
| IC1      | 1120000970 | IC M54582P                  |
| IC2      | 1120002410 | S.IC LB1721M-TER            |
| IC3      | 1130000830 | S.IC $\mu$ PD4094BG-T1      |
| IC5      | 1130001250 | S.IC $\mu$ PD4086BG-T1      |
| IC6      | 1110000890 | IC $\mu$ PC1241H            |
| IC7      | 1120000970 | IC M54582P                  |
| IC8      | 1130000830 | S.IC $\mu$ PD4094BG-T1      |
| IC9      | 1110000960 | S.IC NJM4558M(T1)           |
| IC10     | 1110001320 | IC $\mu$ PC1037HA           |
| IC11     | 1110001320 | IC $\mu$ PC1037HA           |
| IC13     | 1130001910 | S.IC $\mu$ PD4011BG-T1      |
| IC14     | 1110000960 | S.IC NJM4558M(T1)           |
| IC15     | 1110000960 | S.IC NJM4558M(T1)           |
| IC16     | 1110000240 | IC BA222-V                  |
| IC17     | 1180000470 | IC NJM7808A                 |
| IC18     | 1110002680 | S.IC NJM2902M-T1            |
| Q1       | 1530003150 | S.TRANSISTOR 2SC4673D-TD    |
| Q2       | 1580000800 | S.FET 3SK128-O(TE85R)       |
| Q3       | 1580000800 | S.FET 3SK128-O(TE85R)       |
| Q4       | 1580000580 | S.FET 2SK882-GR (TE85L)     |
| Q5       | 1530003150 | S.TRANSISTOR 2SC4673D-TD    |
| Q6       | 1590000680 | S.TRANSISTOR DTC114EU T107  |
| Q7       | 1590000680 | S.TRANSISTOR DTC114EU T107  |
| Q8       | 1560000580 | S.FET 2SK882-GR (TE85L)     |
| Q9       | 1580000800 | S.FET 3SK128-O(TE85R)       |
| Q10      | 1560000580 | S.FET 2SK882-GR (TE85L)     |
| Q11      | 1510000510 | S.TRANSISTOR 2SA1578 T107 R |
| Q12      | 1560000580 | S.FET 2SK882-GR (TE85L)     |
| Q13      | 1560000580 | S.FET 2SK882-GR (TE85L)     |
| Q14      | 1590001330 | S.TRANSISTOR DTA114EU T107  |
| Q15      | 1590001330 | S.TRANSISTOR DTA114EU T107  |
| Q16      | 1590000680 | S.TRANSISTOR DTC114EU T107  |
| Q17      | 1520000200 | S.TRANSISTOR 2SB798-T2 DK   |
| Q18      | 1590000680 | S.TRANSISTOR DTC114EU T107  |
| Q21      | 1590000680 | S.TRANSISTOR DTC114EU T107  |
| Q22      | 1560000720 | S.FET 2SK2171-4-TD          |
| Q23      | 1560000720 | S.FET 2SK2171-4-TD          |
| Q24      | 1590001330 | S.TRANSISTOR DTA114EU T107  |
| Q25      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R |
| Q26      | 1560000720 | S.FET 2SK2171-4-TD          |
| Q27      | 1560000720 | S.FET 2SK2171-4-TD          |
| Q28      | 1580000800 | S.FET 3SK128-O(TE85R)       |
| Q29      | 1590000680 | S.TRANSISTOR DTC114EU T107  |
| Q30      | 1590001330 | S.TRANSISTOR DTA114EU T107  |
| Q31      | 1590000680 | S.TRANSISTOR DTC114EU T107  |
| Q32      | 1590000680 | S.TRANSISTOR DTC114EU T107  |
| Q33      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R |
| Q34      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R |
| Q35      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R |
| Q36      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R |
| Q37      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R |
| Q38      | 1590000680 | S.TRANSISTOR DTC114EU T107  |
| Q39      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R |
| Q40      | 1590001330 | S.TRANSISTOR DTA114EU T107  |
| Q41      | 1590000680 | S.TRANSISTOR DTC114EU T107  |
| Q44      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R |
| Q45      | 1560000580 | S.FET 2SK882-GR (TE85L)     |
| Q46      | 1580000800 | S.FET 3SK128-O(TE85R)       |
| Q47      | 1590000680 | S.TRANSISTOR DTC114EU T107  |
| Q48      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R |
| Q50      | 1510000510 | S.TRANSISTOR 2SA1578 T107 R |
| Q51      | 1590000680 | S.TRANSISTOR DTC114EU T107  |
| Q52      | 1540000250 | S.TRANSISTOR 2SD999-T2 CK   |
| Q53      | 1540000250 | S.TRANSISTOR 2SD999-T2 CK   |

**[MAIN UNIT]**

| REF. NO. | ORDER NO.  | DESCRIPTION                    |
|----------|------------|--------------------------------|
| Q54      | 1540000250 | S.TRANSISTOR 2SD999-T2 CK      |
| Q55      | 1590000680 | S.TRANSISTOR DTC114EU T107     |
| Q56      | 1590000680 | S.TRANSISTOR DTC114EU T107     |
| Q57      | 1530003090 | S.TRANSISTOR 2SC4213-B (TE85R) |
| Q58      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R    |
| Q59      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R    |
| Q60      | 1590000680 | S.TRANSISTOR DTC114EU T107     |
| Q61      | 1590001330 | S.TRANSISTOR DTA114EU T107     |
| Q62      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R    |
| Q63      | 1590000680 | S.TRANSISTOR DTC114EU T107     |
| Q64      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R    |
| Q65      | 1590000680 | S.TRANSISTOR DTC114EU T107     |
| Q66      | 1540000250 | S.TRANSISTOR 2SD999-T2 CK      |
| Q67      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R    |
| Q68      | 1510000510 | S.TRANSISTOR 2SA1578 T107 R    |
| Q69      | 1590000680 | S.TRANSISTOR DTC114EU T107     |
| Q70      | 1590001330 | S.TRANSISTOR DTA114EU T107     |
| Q71      | 1590000680 | S.TRANSISTOR DTC114EU T107     |
| Q72      | 1590001330 | S.TRANSISTOR DTA114EU T107     |
| Q73      | 1540000250 | S.TRANSISTOR 2SD999-T2 CK      |
| Q74      | 1530002060 | S.TRANSISTOR 2SC4081 T107 R    |
| Q75      | 1590000680 | S.TRANSISTOR DTC114EU T107     |
| Q76      | 1530003090 | S.TRANSISTOR 2SC4213-B (TE85R) |
| Q77      | 1590000680 | S.TRANSISTOR DTC114EU T107     |
| D1       | 1790000450 | S.DIODE MA862(TX)              |
| D2       | 1790000450 | S.DIODE MA862(TX)              |
| D3       | 1790000450 | S.DIODE MA862(TX)              |
| D4       | 1790000450 | S.DIODE MA862(TX)              |
| D5       | 1790000450 | S.DIODE MA862(TX)              |
| D6       | 1160000080 | S.DIODE DAN202U T107           |
| D7       | 1160000080 | S.DIODE DAN202U T107           |
| D8       | 1160000080 | S.DIODE DAN202U T107           |
| D9       | 1160000080 | S.DIODE DAN202U T107           |
| D10      | 1790000450 | S.DIODE MA862(TX)              |
| D11      | 1790000450 | S.DIODE MA862(TX)              |
| D15      | 1790000890 | S.DIODE HSM88ASR-TR            |
| D17      | 1160000050 | S.DIODE DAP202U T107           |
| D18      | 1160000080 | S.DIODE DAN202U T107           |
| D19      | 1160000050 | S.DIODE DAP202U T107           |
| D20      | 1160000080 | S.DIODE DAN202U T107           |
| D21      | 1160000080 | S.DIODE DAN202U T107           |
| D22      | 1160000050 | S.DIODE DAP202U T107           |
| D23      | 1160000080 | S.DIODE DAN202U T107           |
| D24      | 1160000050 | S.DIODE DAP202U T107           |
| D25      | 1160000080 | S.DIODE DAN202U T107           |
| D26      | 1160000080 | S.DIODE DAN202U T107           |
| D31      | 1160000080 | S.DIODE DAN202U T107           |
| D32      | 1160000080 | S.DIODE DAN202U T107           |
| D33      | 1790000450 | S.DIODE MA862(TX)              |
| D35      | 1790000450 | S.DIODE MA862(TX)              |
| D36      | 1790000450 | S.DIODE MA862(TX)              |
| D38      | 1790000450 | S.DIODE MA862(TX)              |
| D41      | 1790000450 | S.DIODE MA862(TX)              |
| D42      | 1790000450 | S.DIODE MA862(TX)              |
| D45      | 1790000450 | S.DIODE MA862(TX)              |
| D46      | 1790000450 | S.DIODE MA862(TX)              |
| D49      | 1790000450 | S.DIODE MA862(TX)              |
| D50      | 1790000450 | S.DIODE MA862(TX)              |
| D53      | 1790000450 | S.DIODE MA862(TX)              |
| D55      | 1790000450 | S.DIODE MA862(TX)              |
| D57      | 1790000450 | S.DIODE MA862(TX)              |
| D59      | 1160000080 | S.DIODE DAN202U T107           |
| D61      | 1160000080 | S.DIODE DAN202U T107           |
| D62      | 1160000080 | S.DIODE DAN202U T107           |
| D63      | 1160000050 | S.DIODE DAP202U T107           |
| D64      | 1160000080 | S.DIODE DAN202U T107           |
| D65      | 1790000890 | S.DIODE HSM88ASR-TR            |
| D67      | 1160000080 | S.DIODE DAN202U T107           |
| D68      | 1160000080 | S.DIODE DAN202U T107           |
| D70      | 1160000080 | S.DIODE DAN202U T107           |
| D71      | 1790000890 | S.DIODE HSM88ASR-TR            |
| D72      | 1160000080 | S.DIODE DAN202U T107           |
| D73      | 1160000080 | S.DIODE DAN202U T107           |
| D74      | 1160000080 | S.DIODE DAN202U T107           |

S.=Surface mount

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                        |
|----------|------------|-------------|------------------------|
| D76      | 1160000060 | S.DIODE     | DAN202U T107           |
| D78      | 1160000060 | S.DIODE     | DAN202U T107           |
| D80      | 1160000060 | S.DIODE     | DAN202U T107           |
| D81      | 1160000060 | S.DIODE     | DAN202U T107           |
| D82      | 1730000410 | S.ZENER     | RD5.1M-T2B2            |
| D83      | 1160000060 | S.DIODE     | DAN202U T107           |
| D84      | 1160000050 | S.DIODE     | DAP202U T107           |
| D85      | 1160000060 | S.DIODE     | DAN202U T107           |
| D86      | 1160000060 | S.DIODE     | DAN202U T107           |
| D87      | 1160000060 | S.DIODE     | DAN202U T107           |
| D88      | 1160000060 | S.DIODE     | DAN202U T107           |
| D89      | 1160000060 | S.DIODE     | DAN202U T107           |
| D90      | 1160000060 | S.DIODE     | DAN202U T107           |
| D91      | 1790000690 | S.DIODE     | HSM88ASR-TR            |
| D93      | 1160000060 | S.DIODE     | DAN202U T107           |
| D96      | 1160000060 | S.DIODE     | DAN202U T107           |
| D97      | 1160000060 | S.DIODE     | DAN202U T107           |
| D98      | 1160000060 | S.DIODE     | DAN202U T107           |
| D99      | 1160000060 | S.DIODE     | DAN202U T107           |
| D100     | 1160000060 | S.DIODE     | DAN202U T107           |
| D101     | 1160000050 | S.DIODE     | DAP202U T107           |
| D102     | 1160000050 | S.DIODE     | DAP202U T107           |
| D104     | 1160000060 | S.DIODE     | DAN202U T107           |
| D106     | 1160000050 | S.DIODE     | DAP202U T107           |
| D108     | 1160000060 | S.DIODE     | DAN202U T107           |
| D110     | 1160000060 | S.DIODE     | DAN202U T107           |
| D112     | 1160000060 | S.DIODE     | DAN202U T107           |
| D114     | 1160000060 | S.DIODE     | DAN202U T107           |
| D115     | 1160000060 | S.DIODE     | DAN202U T107           |
| D116     | 1160000050 | S.DIODE     | DAP202U T107           |
| D117     | 1160000050 | S.DIODE     | DAP202U T107           |
| D118     | 1160000050 | S.DIODE     | DAP202U T107           |
| D119     | 1160000050 | S.DIODE     | DAP202U T107           |
| D120     | 1160000050 | S.DIODE     | DAP202U T107           |
| D121     | 1160000050 | S.DIODE     | DAP202U T107           |
| D122     | 1160000060 | S.DIODE     | DAN202U T107           |
| D123     | 1160000060 | S.DIODE     | DAN202U T107           |
| D124     | 1790000891 | S.DIODE     | ND433G-E1              |
| D125     | 1730000030 | S.ZENER     | RD5.6M-T2B2            |
| D126     | 1730000730 | S.ZENER     | RD6.2M-T2B2            |
| D127     | 1160000060 | S.DIODE     | DAN202U T107           |
| D128     | 1160000060 | S.DIODE     | DAN202U T107           |
| FI1      | 2010001590 | XTAL        | FL-197 (64.455000 MHz) |
| FI2      | 2020000150 | CERAMIC     | CFW455HT               |
| FI3      | 2020000210 | CERAMIC     | FL-65                  |
| L1       | 6140000080 | COIL        | LR-20                  |
| L2       | 6180000960 | COIL        | LAL 03NA 102K          |
| L3       | 6200003000 | S.COIL      | NL 322522T-R22J-3      |
| L4       | 6200003010 | S.COIL      | NL 322522T-R27J-3      |
| L5       | 6200001850 | S.COIL      | NL 322522T-5R6J        |
| L6       | 6140002050 | COIL        | LR-224                 |
| L7       | 6150001770 | COIL        | LS-198                 |
| L8       | 6150000990 | COIL        | LS-114                 |
| L9       | 6200003260 | S.COIL      | NL 322522T-101J        |
| L10      | 6200003030 | S.COIL      | NL 322522T-R47J-3      |
| L11      | 6200003000 | S.COIL      | NL 322522T-R22J-3      |
| L12      | 6200003260 | S.COIL      | NL 322522T-101J        |
| L13      | 6150002430 | COIL        | LS-254                 |
| L14      | 6150002430 | COIL        | LS-254                 |
| L15      | 6140002060 | COIL        | LR-225                 |
| L16      | 6140002510 | COIL        | LR-289                 |
| L17      | 6150004090 | COIL        | LS-469 (C-13969)       |
| L18      | 6200003260 | S.COIL      | NL 322522T-101J        |
| L19      | 6150004080 | COIL        | LS-468 (C-13958)       |
| L20      | 6150004080 | COIL        | LS-468 (C-13958)       |
| L21      | 6150004080 | COIL        | LS-468 (C-13958)       |
| L22      | 6180000960 | COIL        | LAL 03NA 102K          |
| L23      | 6150002290 | COIL        | LS-240                 |
| L24      | 6150002290 | COIL        | LS-240                 |
| L25      | 6180002250 | COIL        | LAL 03NA 331K          |
| L27      | 6200003260 | S.COIL      | NL 322522T-101J        |
| L28      | 6200001850 | S.COIL      | NL 322522T-5R6J        |

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                   |
|----------|------------|-------------|-------------------|
| L29      | 6200003110 | S.COIL      | NL 322522T-6R6J   |
| L30      | 6200003260 | S.COIL      | NL 322522T-101J   |
| L31      | 6200003260 | S.COIL      | NL 322522T-101J   |
| L32      | 6200003260 | S.COIL      | NL 322522T-101J   |
| L33      | 6200002960 | S.COIL      | NL 322522T-4R7J-3 |
| L34      | 6200003320 | S.COIL      | NL 322522T-3R3J-3 |
| L35      | 6200003260 | S.COIL      | NL 322522T-101J   |
| L36      | 6200003090 | S.COIL      | NL 322522T-2R7J-3 |
| L37      | 6200003100 | S.COIL      | NL 322522T-3R9J-3 |
| L38      | 6180002860 | COIL        | EL0606SKI-4R7J    |
| L39      | 6200001850 | S.COIL      | NL 322522T-5R6J   |
| L40      | 6200003260 | S.COIL      | NL 322522T-101J   |
| L41      | 6200002990 | S.COIL      | NL 322522T-4R2J-3 |
| L42      | 6200002990 | S.COIL      | NL 322522T-2R2J-3 |
| L43      | 6200003260 | S.COIL      | NL 322522T-101J   |
| L44      | 6200003050 | S.COIL      | NL 322522T-R82J-3 |
| L45      | 6200003060 | S.COIL      | NL 322522T-1R2J-3 |
| L46      | 6200003080 | S.COIL      | NL 322522T-1R8J-3 |
| L47      | 6200003070 | S.COIL      | NL 322522T-1R5J-3 |
| L48      | 6200003260 | S.COIL      | NL 322522T-101J   |
| L49      | 6200003060 | S.COIL      | NL 322522T-1R2J-3 |
| L50      | 6200003330 | S.COIL      | NL 322522T-1R0J-3 |
| L51      | 6200003050 | S.COIL      | NL 322522T-R82J-3 |
| L52      | 6200003060 | S.COIL      | NL 322522T-1R2J-3 |
| L53      | 6200003260 | S.COIL      | NL 322522T-101J   |
| L54      | 6200003030 | S.COIL      | NL 322522T-R47J-3 |
| L55      | 6200002980 | S.COIL      | NL 322522T-R56J-3 |
| L56      | 6200003040 | S.COIL      | NL 322522T-R68J-3 |
| L57      | 6200003050 | S.COIL      | NL 322522T-R82J-3 |
| L58      | 6200003260 | S.COIL      | NL 322522T-101J   |
| L59      | 6200003250 | S.COIL      | NL 322522T-R39J-3 |
| L60      | 6200003250 | S.COIL      | NL 322522T-R39J-3 |
| L61      | 6200003030 | S.COIL      | NL 322522T-R47J-3 |
| L62      | 6200002980 | S.COIL      | NL 322522T-R56J-3 |
| L63      | 6200003260 | S.COIL      | NL 322522T-101J   |
| L64      | 6200003010 | S.COIL      | NL 322522T-R27J-3 |
| L65      | 6200003010 | S.COIL      | NL 322522T-R27J-3 |
| L66      | 6200003020 | S.COIL      | NL 322522T-R33J-3 |
| L67      | 6200003250 | S.COIL      | NL 322522T-R39J-3 |
| L68      | 6140000640 | COIL        | LR-86             |
| L69      | 6140001540 | COIL        | LR-169            |
| L70      | 6110001850 | COIL        | LA-248            |
| L71      | 6200003010 | S.COIL      | NL 322522T-R27J-3 |
| L72      | 6140002050 | COIL        | LR-224            |
| L73      | 6110001850 | COIL        | LA-248            |
| L74      | 6200003140 | S.COIL      | NL 322522T-150J   |
| L75      | 6150001770 | COIL        | LS-198            |
| L76      | 6150002430 | COIL        | LS-254            |
| L77      | 6150002430 | COIL        | LS-254            |
| L78      | 6150000990 | COIL        | LS-114            |
| L79      | 6170000140 | COIL        | LW-15             |
| L80      | 6150002291 | COIL        | LS-450            |
| L81      | 6150002271 | COIL        | LS-451            |
| L82      | 6150002291 | COIL        | LS-450            |
| L83      | 6180000960 | COIL        | LAL 03NA 102K     |
| L84      | 6180000960 | COIL        | LAL 03NA 102K     |
| L86      | 6180000960 | COIL        | LAL 03NA 102K     |
| L87      | 6180000960 | COIL        | LAL 03NA 102K     |
| L88      | 6910003570 | COIL        | 2943-666663       |
| L89      | 6910003570 | COIL        | 2943-666663       |
| L90      | 6910000670 | COIL        | BT01RN1-A61-001   |
| L91      | 6180000960 | COIL        | LAL 03NA 102K     |
| L92      | 6180000960 | COIL        | LAL 03NA 102K     |
| L94      | 6200003260 | S.COIL      | NL 322522T-101J   |
| L95      | 6200003260 | S.COIL      | NL 322522T-101J   |
| L96      | 6200003260 | S.COIL      | NL 322522T-101J   |
| L97      | 6910000670 | COIL        | BT01RN1-A61-001   |
| L98      | 6910000670 | COIL        | BT01RN1-A61-001   |
| L99      | 6200003260 | S.COIL      | NL 322522T-101J   |
| L100     | 6200003260 | S.COIL      | NL 322522T-101J   |
| L102     | 6910000670 | COIL        | BT01RN1-A61-001   |
| L103     | 6200003260 | S.COIL      | NL 322522T-101J   |
| L104     | 6200003260 | S.COIL      | NL 322522T-101J   |
| L105     | 6910000670 | COIL        | BT01RN1-A61-001   |
| L106     | 6200003260 | S.COIL      | NL 322522T-101J   |
| L107     | 6180002190 | COIL        | LAL 02NA R47K     |

S.=Surface mount

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                            |
|----------|------------|-------------|----------------------------|
| L108     | 6180000690 | COIL        | LAL 03NA R22M              |
| R1       | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)     |
| R2       | 7030003220 | S.RESISTOR  | ERJ3GEYJ 150 V (15 Ω)      |
| R3       | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)     |
| R4       | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)      |
| R5       | 7030003550 | S.RESISTOR  | ERJ3GEYJ 822 V (8.2 kΩ)    |
| R6       | 7030004040 | S.RESISTOR  | ERJ3GEYJ 4R7 V (4.7 Ω)     |
| R7       | 7030003460 | S.RESISTOR  | ERJ3GEYJ 152 V (1.5 kΩ)    |
| R8       | 7030003290 | S.RESISTOR  | ERJ3GEYJ 560 V (56 Ω)      |
| R9       | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R10      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R11      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R12      | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)     |
| R13      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R14      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R15      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R16      | 7030003340 | S.RESISTOR  | ERJ3GEYJ 151 V (150 Ω)     |
| R17      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 kΩ)    |
| R18      | 7030003290 | S.RESISTOR  | ERJ3GEYJ 560 V (56 Ω)      |
| R19      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R20      | 7030003530 | S.RESISTOR  | ERJ3GEYJ 562 V (5.6 kΩ)    |
| R21      | 7030003200 | S.RESISTOR  | ERJ3GEYJ 100 V (10 Ω)      |
| R22      | 7030003420 | S.RESISTOR  | ERJ3GEYJ 681 V (680 Ω)     |
| R23      | 7030003290 | S.RESISTOR  | ERJ3GEYJ 560 V (56 Ω)      |
| R24      | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)      |
| R25      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R26      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R27      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R28      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R29      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R30      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R31      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)     |
| R32      | 7030003220 | S.RESISTOR  | ERJ3GEYJ 150 V (15 Ω)      |
| R33      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)     |
| R34      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R35      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R36      | 7310002600 | S.TRIMMER   | RV-110 (RH03A3AS4X0AA) 473 |
| R37      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R38      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R39      | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)      |
| R40      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R41      | 7510000260 | THERMISTOR  | ERT-D2ZGL 102S             |
| R42      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R43      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R44      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R45      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R46      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R47      | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)     |
| R48      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R49      | 7030003470 | S.RESISTOR  | ERJ3GEYJ 182 V (1.8 kΩ)    |
| R50      | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 kΩ)    |
| R51      | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)     |
| R52      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R53      | 7030003540 | S.RESISTOR  | ERJ3GEYJ 682 V (6.8 kΩ)    |
| R54      | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)      |
| R55      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R56      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R57      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R58      | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)     |
| R59      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R60      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)     |
| R61      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R62      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R63      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R64      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R65      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R66      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R67      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R68      | 7010004450 | RESISTOR    | R20J 100 KΩ                |
| R69      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R70      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R71      | 7030003530 | S.RESISTOR  | ERJ3GEYJ 562 V (5.6 kΩ)    |
| R72      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                         |
|----------|------------|-------------|-------------------------|
| R73      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R74      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R75      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R76      | 7030003530 | S.RESISTOR  | ERJ3GEYJ 562 V (5.6 kΩ) |
| R77      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R78      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R79      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R80      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 kΩ) |
| R81      | 7030003530 | S.RESISTOR  | ERJ3GEYJ 562 V (5.6 kΩ) |
| R82      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R83      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 kΩ) |
| R84      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R85      | 7030003620 | S.RESISTOR  | ERJ3GEYJ 333 V (33 kΩ)  |
| R86      | 7030003620 | S.RESISTOR  | ERJ3GEYJ 333 V (33 kΩ)  |
| R87      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)  |
| R88      | 7030003220 | S.RESISTOR  | ERJ3GEYJ 150 V (15 Ω)   |
| R89      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)  |
| R90      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R91      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)  |
| R92      | 7030003220 | S.RESISTOR  | ERJ3GEYJ 150 V (15 Ω)   |
| R93      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)  |
| R94      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R95      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R96      | 7010003830 | RESISTOR    | R20J 1 Ω                |
| R97      | 7010003280 | RESISTOR    | ELR20J 100 Ω            |
| R98      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R99      | 7030003390 | S.RESISTOR  | ERJ3GEYJ 391 V (390 Ω)  |
| R100     | 7030003290 | S.RESISTOR  | ERJ3GEYJ 560 V (56 Ω)   |
| R102     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R103     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R104     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R105     | 7030003240 | S.RESISTOR  | ERJ3GEYJ 220 V (22 Ω)   |
| R106     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)   |
| R107     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R108     | 7030003240 | S.RESISTOR  | ERJ3GEYJ 220 V (22 Ω)   |
| R109     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R110     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R111     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R112     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R113     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R114     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R115     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R116     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R117     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R118     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R119     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R120     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R121     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R122     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R123     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R124     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R125     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R126     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R127     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R128     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R129     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R130     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R131     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R132     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R133     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R134     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R135     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R136     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R137     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R138     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R139     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R140     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R141     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R142     | 7030003240 | S.RESISTOR  | ERJ3GEYJ 220 V (22 Ω)   |
| R143     | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)  |
| R144     | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)  |
| R145     | 7030004040 | S.RESISTOR  | ERJ3GEYJ 4R7 V (4.7 Ω)  |
| R146     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R147     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R148     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R149     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |

S.=Surface mount



## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                                  |
|----------|------------|-------------|----------------------------------|
| R150     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R151     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R152     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 $\Omega$ )    |
| R153     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 k $\Omega$ ) |
| R154     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 k $\Omega$ ) |
| R155     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R156     | 7030003240 | S.RESISTOR  | ERJ3GEYJ 220 V (22 $\Omega$ )    |
| R157     | 7030003470 | S.RESISTOR  | ERJ3GEYJ 182 V (1.8 k $\Omega$ ) |
| R158     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 M $\Omega$ )   |
| R159     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R160     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 k $\Omega$ ) |
| R161     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R162     | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 k $\Omega$ ) |
| R163     | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 k $\Omega$ )  |
| R164     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R165     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R166     | 7030003840 | S.RESISTOR  | ERJ3GEYJ 225 V (2.2 M $\Omega$ ) |
| R167     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 M $\Omega$ )   |
| R168     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R169     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R170     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R171     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R172     | 7510000320 | THERMISTOR  | ERT-D2ZGL 202S                   |
| R173     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 M $\Omega$ )   |
| R174     | 7030003550 | S.RESISTOR  | ERJ3GEYJ 822 V (8.2 k $\Omega$ ) |
| R175     | 7310002740 | S.TRIMMER   | RV-150 (RH03A3A14X0FC) 103       |
| R176     | 7030003540 | S.RESISTOR  | ERJ3GEYJ 682 V (6.8 k $\Omega$ ) |
| R177     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R178     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R179     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R180     | 7310000780 | TRIMMER     | RH0651CS4J25A (473)              |
| R181     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R182     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R183     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R184     | 7030003620 | S.RESISTOR  | ERJ3GEYJ 333 V (33 k $\Omega$ )  |
| R185     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 k $\Omega$ ) |
| R186     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R187     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R188     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R189     | 7030003240 | S.RESISTOR  | ERJ3GEYJ 220 V (22 $\Omega$ )    |
| R190     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R191     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R192     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R193     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R194     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 k $\Omega$ ) |
| R195     | 7030003590 | S.RESISTOR  | ERJ3GEYJ 183 V (18 k $\Omega$ )  |
| R196     | 7030003590 | S.RESISTOR  | ERJ3GEYJ 183 V (18 k $\Omega$ )  |
| R197     | 7030003570 | S.RESISTOR  | ERJ3GEYJ 123 V (12 k $\Omega$ )  |
| R198     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R199     | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 k $\Omega$ ) |
| R200     | 7030003660 | S.RESISTOR  | ERJ3GEYJ 683 V (68 k $\Omega$ )  |
| R201     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R202     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R203     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 $\Omega$ )    |
| R204     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 $\Omega$ )    |
| R205     | 7030004050 | S.RESISTOR  | ERJ3GEYJ 1R0 V (1 $\Omega$ )     |
| R206     | 7010003100 | RESISTOR    | ELR20J 3.3 $\Omega$              |
| R207     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R208     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R209     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R210     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R211     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R212     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R213     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R214     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R215     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R216     | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 $\Omega$ )   |
| R217     | 7030003540 | S.RESISTOR  | ERJ3GEYJ 682 V (6.8 k $\Omega$ ) |
| R218     | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 k $\Omega$ )  |
| R219     | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 $\Omega$ )   |
| R220     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 k $\Omega$ ) |
| R221     | 7010003830 | RESISTOR    | R20J 1 $\Omega$                  |
| R222     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 $\Omega$ )    |
| R223     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R224     | 7030003610 | S.RESISTOR  | ERJ3GEYJ 273 V (27 k $\Omega$ )  |

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                                  |
|----------|------------|-------------|----------------------------------|
| R225     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R226     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R227     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R228     | 7510000240 | THERMISTOR  | ERT-D2ZGL 332S                   |
| R229     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R230     | 7310002720 | S.TRIMMER   | RV-148 (RH03A3AS3X0DA) 472       |
| R231     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R232     | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 $\Omega$ )   |
| R233     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R234     | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 k $\Omega$ ) |
| R235     | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 k $\Omega$ ) |
| R236     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R237     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R238     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R239     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R240     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R241     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R242     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R243     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R244     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 k $\Omega$ ) |
| R245     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R246     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R247     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R248     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R249     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R250     | 7030003450 | S.RESISTOR  | ERJ3GEYJ 122 V (1.2 k $\Omega$ ) |
| R251     | 7310002740 | S.TRIMMER   | RV-150 (RH03A3A14X0FC) 103       |
| R252     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R253     | 7310002740 | S.TRIMMER   | RV-150 (RH03A3A14X0FC) 103       |
| R254     | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 k $\Omega$ ) |
| R255     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R256     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R257     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R258     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R259     | 7030003290 | S.RESISTOR  | ERJ3GEYJ 580 V (58 $\Omega$ )    |
| R260     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R261     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R262     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 $\Omega$ )    |
| R263     | 7010004410 | RESISTOR    | R20J 47 k $\Omega$               |
| R264     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 M $\Omega$ )   |
| R265     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 153 V (15 k $\Omega$ )  |
| R266     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R267     | 7010004320 | RESISTOR    | R20J 10 k $\Omega$               |
| R268     | 7310002580 | S.TRIMMER   | RV-108 (RH03A3A15X05A) 104       |
| R269     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R270     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R271     | 7030003730 | S.RESISTOR  | ERJ3GEYJ 274 V (270 k $\Omega$ ) |
| R272     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R273     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R274     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R275     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R276     | 7310002580 | S.TRIMMER   | RV-108 (RH03A3A15X05A) 104       |
| R278     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R279     | 7030003730 | S.RESISTOR  | ERJ3GEYJ 274 V (270 k $\Omega$ ) |
| R280     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 225 V (2.2 M $\Omega$ ) |
| R281     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R282     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R283     | 7030003290 | S.RESISTOR  | ERJ3GEYJ 580 V (58 $\Omega$ )    |
| R284     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R285     | 7310002740 | S.TRIMMER   | RV-150 (RH03A3A14X0FC) 103       |
| R286     | 7030003620 | S.RESISTOR  | ERJ3GEYJ 333 V (33 k $\Omega$ )  |
| R287     | 7030003620 | S.RESISTOR  | ERJ3GEYJ 333 V (33 k $\Omega$ )  |
| R288     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 M $\Omega$ )   |
| R289     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R290     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R291     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R292     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R293     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R294     | 7010003910 | RESISTOR    | R20J 4.7 $\Omega$                |
| R295     | 7010004190 | RESISTOR    | R20J 1 k $\Omega$                |

S.=Surface mount

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                          |
|----------|------------|--------------------------------------|
| R298     | 7010003910 | RESISTOR R20J 4.7 Ω                  |
| R297     | 7010004190 | RESISTOR R20J 1 KΩ                   |
| R298     | 7010003910 | RESISTOR R20J 4.7 Ω                  |
| R299     | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ)   |
| R300     | 7310002740 | S.TRIMMER RV-150 (RH03A3A14X0FC) 103 |
| R301     | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)    |
| R302     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)   |
| R303     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R304     | 7030003700 | S.RESISTOR ERJ3GEYJ 154 V (150 kΩ)   |
| R305     | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ)   |
| R306     | 7030003360 | S.RESISTOR ERJ3GEYJ 221 V (220 Ω)    |
| R307     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)   |
| R308     | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)    |
| R310     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R311     | 7030003510 | S.RESISTOR ERJ3GEYJ 392 V (3.9 kΩ)   |
| R312     | 7030003630 | S.RESISTOR ERJ3GEYJ 393 V (39 kΩ)    |
| R313     | 7030003580 | S.RESISTOR ERJ3GEYJ 154 V (15 kΩ)    |
| R314     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)   |
| R315     | 7030003780 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ)   |
| R316     | 7030003580 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R317     | 7030003780 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ)   |
| R318     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R319     | 7030003580 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R320     | 7030003360 | S.RESISTOR ERJ3GEYJ 221 V (220 Ω)    |
| R321     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)   |
| R322     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)   |
| R323     | 7030003530 | S.RESISTOR ERJ3GEYJ 582 V (5.8 kΩ)   |
| R324     | 7030003550 | S.RESISTOR ERJ3GEYJ 822 V (8.2 kΩ)   |
| R325     | 7310000710 | TRIMMER RH0851C13J1YA (102)          |
| R326     | 7030003420 | S.RESISTOR ERJ3GEYJ 681 V (680 Ω)    |
| R327     | 7030004040 | S.RESISTOR ERJ3GEYJ 4R7 V (4.7 Ω)    |
| R328     | 7030003570 | S.RESISTOR ERJ3GEYJ 123 V (12 kΩ)    |
| R329     | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω)    |
| R330     | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ)   |
| R331     | 7310002740 | S.TRIMMER RV-150 (RH03A3A14X0FC) 103 |
| R332     | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω)     |
| R333     | 7030003580 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R334     | 7030003800 | S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)     |
| R335     | 7030003580 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R336     | 7310000820 | TRIMMER RH0851C16J0RA (105)          |
| R337     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R338     | 7030003540 | S.RESISTOR ERJ3GEYJ 882 V (8.8 kΩ)   |
| R339     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)   |
| R341     | 7030003580 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R342     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R343     | 7030003530 | S.RESISTOR ERJ3GEYJ 582 V (5.8 kΩ)   |
| R344     | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω)     |
| R345     | 7030003590 | S.RESISTOR ERJ3GEYJ 183 V (18 kΩ)    |
| R346     | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)    |
| R347     | 7010003910 | RESISTOR R20J 4.7 Ω                  |
| R348     | 7010003910 | RESISTOR R20J 4.7 Ω                  |
| R350     | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω)     |
| R351     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R352     | 7030003340 | S.RESISTOR ERJ3GEYJ 151 V (150 Ω)    |
| R353     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)    |
| R354     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)    |
| R355     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)    |
| R358     | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω)     |
| R359     | 7010003830 | RESISTOR R20J 1 Ω                    |
| R360     | 7030003220 | S.RESISTOR ERJ3GEYJ 150 V (15 Ω)     |
| R361     | 7030003220 | S.RESISTOR ERJ3GEYJ 150 V (15 Ω)     |
| R362     | 7030003220 | S.RESISTOR ERJ3GEYJ 150 V (15 Ω)     |
| R363     | 7030003220 | S.RESISTOR ERJ3GEYJ 150 V (15 Ω)     |
| R364     | 7030003220 | S.RESISTOR ERJ3GEYJ 150 V (15 Ω)     |
| R365     | 7030003220 | S.RESISTOR ERJ3GEYJ 150 V (15 Ω)     |
| R366     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R367     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R368     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R369     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R370     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R371     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R372     | 7030005320 | S.RESISTOR RR0816P-103-D (10 kΩ)     |
| R373     | 7030005330 | S.RESISTOR RR0816P-582-D (5.8 kΩ)    |
| R374     | 7030005340 | S.RESISTOR RR0816P-332-D (3.3 kΩ)    |

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                          |
|----------|------------|--------------------------------------|
| R375     | 7030005350 | S.RESISTOR RR0816P-182-D (1.8 kΩ)    |
| R376     | 7030005360 | S.RESISTOR RR0816P-751-D (750 Ω)     |
| R377     | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω)    |
| R378     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)   |
| R379     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)    |
| R381     | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω)    |
| R383     | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)    |
| R384     | 7030003780 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ)   |
| R385     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)    |
| R386     | 7030003650 | S.RESISTOR ERJ3GEYJ 583 V (58 kΩ)    |
| R387     | 7030003650 | S.RESISTOR ERJ3GEYJ 583 V (58 kΩ)    |
| R388     | 7030003650 | S.RESISTOR ERJ3GEYJ 583 V (58 kΩ)    |
| R389     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)   |
| R390     | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)   |
| R391     | 7030003780 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ)   |
| R392     | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)    |
| R393     | 7030003580 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R394     | 7030003580 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R395     | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ)   |
| R396     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)    |
| R397     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)    |
| R398     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)    |
| R399     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)    |
| R400     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R401     | 7030003330 | S.RESISTOR ERJ3GEYJ 121 V (120 Ω)    |
| R402     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)    |
| R403     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)   |
| R407     | 7310002580 | S.TRIMMER RV-108 (RH03A3A15X05A) 104 |
| R408     | 7510000560 | THERMISTOR ERT-D2ZGL 801S            |
| R409     | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ)   |
| C1       | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A       |
| C2       | 4030006920 | S.CERAMIC C1608 JB 1C 473K-T-A       |
| C3       | 4030006730 | S.CERAMIC C1608 SL 1H 680J-T-A       |
| C4       | 4030006870 | S.CERAMIC C1608 SL 1H 270J-T-A       |
| C5       | 4030006770 | S.CERAMIC C1608 SL 1H 151J-T-A       |
| C6       | 4030006810 | S.CERAMIC C1608 SL 1H 100D-T-A       |
| C7       | 4030006740 | S.CERAMIC C1608 SL 1H 820J-T-A       |
| C8       | 4030006960 | S.CERAMIC C2012 JB 1C 104K-T-A       |
| C9       | 4030006870 | S.CERAMIC C1608 JB 1H 222K-T-A       |
| C10      | 4030006850 | S.CERAMIC C1608 JB 1H 332K-T-A       |
| C11      | 4030006920 | S.CERAMIC C1608 JB 1C 473K-T-A       |
| C12      | 4030006560 | S.CERAMIC C1608 SL 1H 050C-T-A       |
| C13      | 4030006920 | S.CERAMIC C1608 JB 1C 473K-T-A       |
| C14      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A       |
| C15      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A       |
| C16      | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A       |
| C17      | 4030006620 | S.CERAMIC C1608 SL 1H 120J-T-A       |
| C18      | 4030006590 | S.CERAMIC C1608 SL 1H 080D-T-A       |
| C19      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A       |
| C20      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A       |
| C21      | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A       |
| C22      | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A       |
| C23      | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A       |
| C24      | 4030006750 | S.CERAMIC C1608 SL 1H 101J-T-A       |
| C25      | 4030006750 | S.CERAMIC C1608 SL 1H 101J-T-A       |
| C26      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A       |
| C27      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A       |
| C28      | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A       |
| C29      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A       |
| C30      | 4030006590 | S.CERAMIC C1608 SL 1H 080D-T-A       |
| C31      | 4030006590 | S.CERAMIC C1608 SL 1H 080D-T-A       |
| C32      | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A       |
| C33      | 4030006960 | S.CERAMIC C2012 JB 1C 104K-T-A       |
| C34      | 4510003830 | ELECTROLITIC 50 MV R47 SW            |
| C35      | 4510003860 | ELECTROLITIC 50 MV 3R3 SW            |
| C36      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A       |
| C37      | 4030006960 | S.CERAMIC C2012 JB 1C 104K-T-A       |
| C38      | 4510003910 | ELECTROLITIC 16 MV 47 HW             |
| C39      | 4030006960 | S.CERAMIC C2012 JB 1C 104K-T-A       |
| C40      | 4030006960 | S.CERAMIC C2012 JB 1C 104K-T-A       |
| C41      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A       |
| C42      | 4030006960 | S.CERAMIC C2012 JB 1C 104K-T-A       |
| C43      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A       |

S.=Surface mount

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                    |
|----------|------------|--------------------------------|
| C44      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C45      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C46      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C47      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C48      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C49      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C50      | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C51      | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C52      | 4030006710 | S.CERAMIC C1608 SL 1H 470J-T-A |
| C53      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C54      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C55      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C56      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C57      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C59      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C60      | 4030006830 | S.CERAMIC C1608 SL 1H 331J-T-A |
| C61      | 4030006870 | S.CERAMIC C1608 JB 1H 222K-T-A |
| C62      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C63      | 4030006850 | S.CERAMIC C1608 JB 1H 471K-T-A |
| C64      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C65      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C66      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C67      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C68      | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A |
| C69      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C70      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C71      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C72      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C73      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C74      | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C75      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C76      | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A |
| C77      | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A |
| C78      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C79      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C80      | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C81      | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C82      | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C83      | 4510005210 | ELECTROLITIC 50 MV 1 SWNP      |
| C84      | 4030008470 | S.CERAMIC C1608 JB 1H 272K-T-A |
| C85      | 4030006800 | S.CERAMIC C1608 SL 1H 221J-T-A |
| C86      | 4030006870 | S.CERAMIC C1608 JB 1H 222K-T-A |
| C87      | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C88      | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C89      | 4030009980 | S.CERAMIC C1608 JB 1H 152K-T-A |
| C90      | 4030008470 | S.CERAMIC C1608 JB 1H 272K-T-A |
| C91      | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C92      | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C93      | 4030009970 | S.CERAMIC C1608 JB 1H 182K-T-A |
| C94      | 4030006810 | S.CERAMIC C1608 SL 1H 271J-T-A |
| C95      | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A |
| C96      | 4030006850 | S.CERAMIC C1608 JB 1C 123K-T-A |
| C97      | 4030008470 | S.CERAMIC C1608 JB 1H 272K-T-A |
| C98      | 4030009980 | S.CERAMIC C1608 JB 1H 152K-T-A |
| C99      | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C100     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C101     | 4030010020 | S.CERAMIC C1608 JB 1H 122K-T-A |
| C102     | 4030006750 | S.CERAMIC C1608 SL 1H 101J-T-A |
| C103     | 4030010020 | S.CERAMIC C1608 JB 1H 122K-T-A |
| C104     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C105     | 4030006850 | S.CERAMIC C1608 JB 1H 471K-T-A |
| C106     | 4030006730 | S.CERAMIC C1608 SL 1H 580J-T-A |
| C107     | 4030006810 | S.CERAMIC C1608 SL 1H 271J-T-A |
| C108     | 4030010020 | S.CERAMIC C1608 JB 1H 122K-T-A |
| C109     | 4030010040 | S.CERAMIC C1608 JB 1H 581K-T-A |
| C110     | 4030008770 | S.CERAMIC C1608 JB 1H 582K-T-A |
| C111     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C112     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C113     | 4030006830 | S.CERAMIC C1608 SL 1H 331J-T-A |
| C114     | 4030008720 | S.CERAMIC C1608 SL 1H 560J-T-A |
| C115     | 4030006830 | S.CERAMIC C1608 SL 1H 331J-T-A |
| C116     | 4030009580 | S.CERAMIC C1608 JB 1H 681K-T-A |
| C117     | 4030006830 | S.CERAMIC C1608 SL 1H 331J-T-A |
| C118     | 4030008470 | S.CERAMIC C1608 JB 1H 272K-T-A |
| C119     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C120     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                    |
|----------|------------|--------------------------------|
| C121     | 4030006810 | S.CERAMIC C1608 SL 1H 271J-T-A |
| C122     | 4030006720 | S.CERAMIC C1608 SL 1H 560J-T-A |
| C123     | 4030006770 | S.CERAMIC C1608 SL 1H 151J-T-A |
| C124     | 4030006850 | S.CERAMIC C1608 JB 1H 471K-T-A |
| C125     | 4030006800 | S.CERAMIC C1608 SL 1H 221J-T-A |
| C126     | 4030009980 | S.CERAMIC C1608 JB 1H 152K-T-A |
| C127     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C128     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C129     | 4030006800 | S.CERAMIC C1608 SL 1H 221J-T-A |
| C130     | 4030006890 | S.CERAMIC C1608 SL 1H 330J-T-A |
| C131     | 4030006780 | S.CERAMIC C1608 SL 1H 121J-T-A |
| C132     | 4030006810 | S.CERAMIC C1608 SL 1H 271J-T-A |
| C133     | 4030006770 | S.CERAMIC C1608 SL 1H 151J-T-A |
| C134     | 4030010020 | S.CERAMIC C1608 JB 1H 122K-T-A |
| C135     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C136     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C137     | 4030006890 | S.CERAMIC C1608 SL 1H 330J-T-A |
| C138     | 4030006760 | S.CERAMIC C1608 SL 1H 121J-T-A |
| C139     | 4030006700 | S.CERAMIC C1608 SL 1H 390J-T-A |
| C140     | 4030006730 | S.CERAMIC C1608 SL 1H 680J-T-A |
| C141     | 4030006800 | S.CERAMIC C1608 SL 1H 221J-T-A |
| C142     | 4030006750 | S.CERAMIC C1608 SL 1H 101J-T-A |
| C143     | 4030009490 | S.CERAMIC C1608 JB 1H 821K-T-A |
| C144     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C145     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C146     | 4030006750 | S.CERAMIC C1608 SL 1H 101J-T-A |
| C147     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C148     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C149     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C150     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C151     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C152     | 4030006770 | S.CERAMIC C1608 SL 1H 151J-T-A |
| C153     | 4030006810 | S.CERAMIC C1608 SL 1H 100D-T-A |
| C154     | 4030006740 | S.CERAMIC C1608 SL 1H 820J-T-A |
| C155     | 4030006810 | S.CERAMIC C1608 SL 1H 100D-T-A |
| C156     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C157     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C158     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A |
| C159     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C160     | 4030006580 | S.CERAMIC C1608 SL 1H 050C-T-A |
| C161     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C162     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A |
| C163     | 4030006590 | S.CERAMIC C1608 SL 1H 080D-T-A |
| C164     | 4030006590 | S.CERAMIC C1608 SL 1H 080D-T-A |
| C165     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C167     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C168     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C169     | 4030006560 | S.CERAMIC C1608 SL 1H 050C-T-A |
| C170     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C171     | 4510003790 | ELECTROLITIC 16 MV 10 SW       |
| C172     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A |
| C174     | 4510003800 | ELECTROLITIC 25 MV 4R7 SW      |
| C175     | 4510003830 | ELECTROLITIC 50 MV R47 SW      |
| C177     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C178     | 4510003910 | ELECTROLITIC 16 MV 47 HW       |
| C179     | 4030006750 | S.CERAMIC C1608 SL 1H 101J-T-A |
| C180     | 4030006770 | S.CERAMIC C1608 SL 1H 151J-T-A |
| C181     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C182     | 4510003830 | ELECTROLITIC 50 MV R47 SW      |
| C183     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C184     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C185     | 4510003910 | ELECTROLITIC 16 MV 47 HW       |
| C186     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C187     | 4510003830 | ELECTROLITIC 50 MV R47 SW      |
| C188     | 4310000440 | MYLAR 50 F2D 473J              |
| C190     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C191     | 4510003830 | ELECTROLITIC 50 MV R47 SW      |
| C192     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C193     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C194     | 4510003790 | ELECTROLITIC 16 MV 10 SW       |
| C195     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C196     | 4030006760 | S.CERAMIC C1608 SL 1H 121J-T-A |
| C197     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A |
| C198     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C199     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C200     | 4510004600 | ELECTROLITIC 16 MV 1000 HC     |

S.=Surface mount

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                    |
|----------|------------|--------------------------------|
| C201     | 4510004590 | ELECTROLITIC 16 MV 470 HC      |
| C202     | 4510004990 | ELECTROLITIC 16 MV 100 HC      |
| C203     | 4510004990 | ELECTROLITIC 16 MV 100 HC      |
| C204     | 4510005000 | ELECTROLITIC 16 MV 220 HC      |
| C205     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C206     | 4510004990 | ELECTROLITIC 16 MV 100 HC      |
| C207     | 4510003820 | ELECTROLITIC 50 MV R22 SW      |
| C208     | 4030006870 | S.CERAMIC C1608 JB 1H 222K-T-A |
| C209     | 4310000400 | MYLAR 50 F2D 223J              |
| C210     | 4510003820 | ELECTROLITIC 50 MV R22 SW      |
| C211     | 4510003790 | ELECTROLITIC 16 MV 10 SW       |
| C212     | 4510003910 | ELECTROLITIC 16 MV 47 HW       |
| C213     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C214     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C215     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C216     | 4030006800 | S.CERAMIC C1608 SL 1H 221J-T-A |
| C218     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C219     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C221     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C222     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C223     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C224     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C225     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C227     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C228     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C229     | 4510005210 | ELECTROLITIC 50 MV 1 SWNP      |
| C230     | 4030006860 | S.CERAMIC C1608 SL 1H 220J-T-A |
| C231     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C232     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C233     | 4510003790 | ELECTROLITIC 16 MV 10 SW       |
| C234     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C235     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C236     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C237     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C239     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C240     | 4510004600 | ELECTROLITIC 16 MV 1000 HC     |
| C241     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C242     | 4510003790 | ELECTROLITIC 16 MV 10 SW       |
| C243     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C244     | 4510003790 | ELECTROLITIC 16 MV 10 SW       |
| C246     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A |
| C247     | 4510003790 | ELECTROLITIC 16 MV 10 SW       |
| C248     | 4510003840 | ELECTROLITIC 50 MV 1 SW        |
| C249     | 4510003850 | ELECTROLITIC 50 MV 2R2 SW      |
| C250     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C251     | 4030006750 | S.CERAMIC C1608 SL 1H 101J-T-A |
| C252     | 4030006850 | S.CERAMIC C1608 JB 1H 471K-T-A |
| C253     | 4030006750 | S.CERAMIC C1608 SL 1H 101J-T-A |
| C254     | 4510003790 | ELECTROLITIC 16 MV 10 SW       |
| C255     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C256     | 4510003820 | ELECTROLITIC 50 MV R22 SW      |
| C257     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C258     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A |
| C259     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C260     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C261     | 4510004140 | ELECTROLITIC 50 MV 10 HW       |
| C262     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C263     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C264     | 4510003790 | ELECTROLITIC 16 MV 10 SW       |
| C265     | 4510003790 | ELECTROLITIC 16 MV 10 SW       |
| C266     | 4510003790 | ELECTROLITIC 16 MV 10 SW       |
| C267     | 4510003800 | ELECTROLITIC 25 MV 4R7 SW      |
| C268     | 4510003840 | ELECTROLITIC 50 MV 1 SW        |
| C269     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C270     | 4510005240 | ELECTROLITIC 16 MV 22 SWB      |
| C271     | 4510003840 | ELECTROLITIC 50 MV 1 SW        |
| C272     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C273     | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A |
| C274     | 4550003130 | S.TANTALUM TEMSVB2 1C 475M-8L  |
| C275     | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A |
| C276     | 4550003250 | S.TANTALUM TEMSVA 1V 474M-8L   |
| C277     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C278     | 4310000400 | MYLAR 50 F2D 223J              |
| C279     | 4310000400 | MYLAR 50 F2D 223J              |
| C280     | 4310000400 | MYLAR 50 F2D 223J              |
| C281     | 4510003910 | ELECTROLITIC 16 MV 47 HW       |

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                    |
|----------|------------|--------------------------------|
| C282     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C283     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C284     | 4550002120 | TANTALUM DN 1C 220M            |
| C285     | 4510003840 | ELECTROLITIC 50 MV 1 SW        |
| C286     | 4510003850 | ELECTROLITIC 50 MV 2R2 SW      |
| C287     | 4510003840 | ELECTROLITIC 50 MV 1 SW        |
| C288     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C289     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C290     | 4510003840 | ELECTROLITIC 50 MV 1 SW        |
| C292     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C293     | 4510003910 | ELECTROLITIC 16 MV 47 HW       |
| C294     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C295     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C296     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C297     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C298     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C299     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C300     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C301     | 4510004590 | ELECTROLITIC 16 MV 470 HC      |
| C302     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C303     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C304     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C305     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C306     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C307     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C308     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C310     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A |
| C311     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C312     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C324     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A |
| C346     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C347     | 4550000400 | TANTALUM DN 1C 2R2M            |
| C348     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C349     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C350     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C355     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C359     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A |
| C361     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C362     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C363     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C364     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C365     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C366     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C367     | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A |
| C368     | 4030008960 | S.CERAMIC C2012 JB 1C 104K-T-A |
| C370     | 4030006850 | S.CERAMIC C1608 JB 1H 471K-T-A |
| C371     | 4030010020 | S.CERAMIC C1608 JB 1H 122K-T-A |
| C372     | 4030006870 | S.CERAMIC C1608 JB 1H 222K-T-A |
| C373     | 4030006840 | S.CERAMIC C1608 SL 1H 391J-T-A |
| C374     | 4510003840 | ELECTROLITIC 50 MV 1 SW        |
| C375     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C376     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C377     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C378     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C379     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C380     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C381     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C382     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A |
| C383     | 4030006850 | S.CERAMIC C1608 JB 1H 471K-T-A |
| C384     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C385     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C386     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C387     | 4610001260 | S.TRIMMER ECR-JA020 E12W       |
| C388     | 4030006860 | S.CERAMIC C1608 JB 1H 102K-T-A |
| C389     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A |
| C390     | 4030006740 | S.CERAMIC C1608 SL 1H 820J-T-A |
| C391     | 4030006740 | S.CERAMIC C1608 SL 1H 820J-T-A |
| RL1      | 6330000180 | RELAY MZ-12HG                  |
| RL2      | 6330000560 | RELAY OUC-SH-114D              |
| J1       | 6510003250 | CONNECTOR TMP-J01X-A2          |
| J2       | 6510003250 | CONNECTOR TMP-J01X-A2          |
| J3       | 6510003250 | CONNECTOR TMP-J01X-A2          |

S.=Surface mount

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                 |
|----------|------------|-------------|-----------------|
| J4       | 6510003460 | CONNECTOR   | B10B-EH-S       |
| J5       | 6510003400 | CONNECTOR   | B04B-EH-S       |
| J6       | 6450001440 | CONNECTOR   | HSJ1403-01-010  |
| J7       | 6510003410 | CONNECTOR   | B05B-EH-S       |
| J8       | 6510003410 | CONNECTOR   | B05B-EH-S       |
| J9       | 6510016030 | CONNECTOR   | 52089-1620      |
| J10      | 6510016030 | CONNECTOR   | 52089-1620      |
| J11      | 6510003400 | CONNECTOR   | B04B-EH-S       |
| J12      | 6510003420 | CONNECTOR   | B06B-EH-S       |
| J13      | 6450001130 | CONNECTOR   | JPJ2042-01-110  |
| J14      | 6510003390 | CONNECTOR   | B03B-EH-S       |
| J15      | 6510003400 | CONNECTOR   | B04B-EH-S       |
| J16      | 6510003390 | CONNECTOR   | B03B-EH-S       |
| J17      | 6450000170 | CONNECTOR   | TCS4480-01-1111 |
| J18      | 6450000160 | CONNECTOR   | TCS4470-01-1111 |
| J19      | 6450001440 | CONNECTOR   | HSJ1403-01-010  |
| J20      | 6450001260 | CONNECTOR   | HLJ4306-01-3080 |
| J21      | 6510003250 | CONNECTOR   | TMP-J01X-A2     |
| J22      | 6510004890 | CONNECTOR   | 3022-09A        |
| J23      | 6510000780 | CONNECTOR   | 3022-06A        |
| J24      | 6510003390 | CONNECTOR   | B03B-EH-S       |
| EP1      | 0910039514 | PCB         | B 3857D         |

## [PLL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                   |
|----------|------------|--------------|-------------------|
| IC1      | 1180001070 | S.IC         | TA7805F(TE18L)    |
| IC2      | 1130005741 | S.IC         | TC74AC74F(TP1)    |
| IC3      | 1130006520 | S.IC         | CXD1225M-1        |
| IC4      | 1130006671 | S.IC         | TC74AC390F(TP1)   |
| IC5      | 1110001900 | S.IC         | μPC4570G2-T1      |
| IC6      | 1140003640 | S.IC         | SC-1246 (L7B1106) |
| IC7      | 1130003610 | S.IC         | TC4SU69F (TE85R)  |
| Q9       | 1530002370 | S.TRANSISTOR | 2SC2714-O (TE85R) |
| Q10      | 1530002370 | S.TRANSISTOR | 2SC2714-O (TE85R) |
| Q11      | 1530002600 | S.TRANSISTOR | 2SC4215-O (TE85R) |
| Q12      | 1590000680 | S.TRANSISTOR | DTC114EU T107     |
| Q13      | 1560000530 | S.FET        | 2SK880-GR (TE85R) |
| Q14      | 1530002050 | S.TRANSISTOR | 2SC3661-TA        |
| Q15      | 1560000330 | S.FET        | 2SK210-GR (TE85R) |
| Q16      | 1560000560 | S.FET        | 2SK882-GR (TE85L) |
| Q18      | 1560000330 | S.FET        | 2SK210-GR (TE85R) |
| Q19      | 1560000330 | S.FET        | 2SK210-GR (TE85R) |
| Q20      | 1560000330 | S.FET        | 2SK210-GR (TE85R) |
| Q21      | 1560000330 | S.FET        | 2SK210-GR (TE85R) |
| Q22      | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q23      | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q24      | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q25      | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q26      | 1530002370 | S.TRANSISTOR | 2SC2714-O (TE85R) |
| Q27      | 1530002370 | S.TRANSISTOR | 2SC2714-O (TE85R) |
| Q28      | 1530002370 | S.TRANSISTOR | 2SC2714-O (TE85R) |
| Q29      | 1530002370 | S.TRANSISTOR | 2SC2714-O (TE85R) |
| Q30      | 1530002370 | S.TRANSISTOR | 2SC2714-O (TE85R) |
| Q32      | 1530002370 | S.TRANSISTOR | 2SC2714-O (TE85R) |
| D2       | 1750000020 | S.DIODE      | 1SS184 (TE85R)    |
| D3       | 1720000230 | VARICAP      | 1SV101            |
| D4       | 1720000230 | VARICAP      | 1SV101            |
| D5       | 1720000230 | VARICAP      | 1SV101            |
| D6       | 1720000230 | VARICAP      | 1SV101            |
| D7       | 1720000230 | VARICAP      | 1SV101            |
| D8       | 1750000020 | S.DIODE      | 1SS184 (TE85R)    |
| D9       | 1750000020 | S.DIODE      | 1SS184 (TE85R)    |
| D10      | 1750000020 | S.DIODE      | 1SS184 (TE85R)    |
| D11      | 1750000020 | S.DIODE      | 1SS184 (TE85R)    |
| D12      | 1750000020 | S.DIODE      | 1SS184 (TE85R)    |
| D13      | 1730000510 | S.ZENER      | RD3.9M-T2B2       |

## [PLL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                         |
|----------|------------|-------------|-------------------------|
| D14      | 1750000020 | S.DIODE     | 1SS184 (TE85R)          |
| D15      | 1750000070 | S.DIODE     | 1SS226 (TE85R)          |
| D16      | 1750000070 | S.DIODE     | 1SS226 (TE85R)          |
| D17      | 1750000070 | S.DIODE     | 1SS226 (TE85R)          |
| X1       | 6050007350 | XTAL        | CR-337                  |
| L1       | 6200001830 | S.COIL      | NL 322522T-100J         |
| L2       | 6200001830 | S.COIL      | NL 322522T-100J         |
| L3       | 6170000180 | COIL        | LW-19                   |
| L4       | 6150000760 | COIL        | LS-94                   |
| L5       | 6200001830 | S.COIL      | NL 322522T-100J         |
| L6       | 6150000990 | COIL        | LS-114                  |
| L7       | 6150000990 | COIL        | LS-114                  |
| L8       | 6200001830 | S.COIL      | NL 322522T-100J         |
| L9       | 6200001830 | S.COIL      | NL 322522T-100J         |
| L10      | 6180000880 | COIL        | LAL 03NA 100K           |
| L11      | 6190000990 | COIL        | C-14207-8.5             |
| L12      | 6200002960 | S.COIL      | NL 322522T-4R7J-3       |
| L13      | 6200003320 | S.COIL      | NL 322522T-3R3J-3       |
| L14      | 6200003140 | S.COIL      | NL 322522T-150J         |
| L15      | 6200003140 | S.COIL      | NL 322522T-150J         |
| L18      | 6140002220 | COIL        | LR-270                  |
| L19      | 6190000950 | COIL        | C-13975-6.5T            |
| L20      | 6140002220 | COIL        | LR-270                  |
| L21      | 6190000950 | COIL        | C-13975-6.5T            |
| L22      | 6140002220 | COIL        | LR-270                  |
| L23      | 6190000950 | COIL        | C-13975-6.5T            |
| L24      | 6140002220 | COIL        | LR-270                  |
| L25      | 6190000950 | COIL        | C-13975-6.5T            |
| L26      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L27      | 6200000400 | S.COIL      | MLF3216D R88M-T         |
| L28      | 6200000400 | S.COIL      | MLF3216D R88M-T         |
| L29      | 6200000400 | S.COIL      | MLF3216D R88M-T         |
| L30      | 6200000400 | S.COIL      | MLF3216D R88M-T         |
| L31      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L33      | 6200003050 | S.COIL      | NL 322522T-R82J-3       |
| L34      | 6200003430 | S.COIL      | NL 322522T-R10J         |
| L35      | 6200003420 | S.COIL      | NL 322522T-R15J-3       |
| L36      | 6200003430 | S.COIL      | NL 322522T-R10J         |
| L37      | 6200003450 | S.COIL      | NL 322522T-082J         |
| L39      | 6200003050 | S.COIL      | NL 322522T-R82J-3       |
| L40      | 6200003320 | S.COIL      | NL 322522T-3R3J-3       |
| L41      | 6200001830 | S.COIL      | NL 322522T-100J         |
| L42      | 6200003050 | S.COIL      | NL 322522T-R82J-3       |
| L43      | 6200003320 | S.COIL      | NL 322522T-3R3J-3       |
| L44      | 6200003180 | S.COIL      | NL 322522T-270J         |
| L45      | 6200001710 | S.COIL      | NL 322522T-220J         |
| L46      | 6200003150 | S.COIL      | NL 322522T-180J         |
| L47      | 6200003060 | S.COIL      | NL 322522T-1R2J-3       |
| R1       | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R2       | 7030003390 | S.RESISTOR  | ERJ3GEYJ 391 V (390 Ω)  |
| R3       | 7030003550 | S.RESISTOR  | ERJ3GEYJ 822 V (8.2 kΩ) |
| R4       | 7030003550 | S.RESISTOR  | ERJ3GEYJ 822 V (8.2 kΩ) |
| R5       | 7030003390 | S.RESISTOR  | ERJ3GEYJ 391 V (390 Ω)  |
| R6       | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R7       | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)  |
| R8       | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)  |
| R9       | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (220 kΩ) |
| R10      | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (220 kΩ) |
| R12      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 153 V (15 kΩ)  |
| R13      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R14      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R15      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R16      | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (220 kΩ) |
| R17      | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)  |
| R18      | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)  |
| R19      | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)  |
| R20      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R21      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R22      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R23      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |

S.=Surface mount



## [PLL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                                  |
|----------|------------|-------------|----------------------------------|
| R24      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 152 V (1.5 k $\Omega$ ) |
| R26      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R27      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R28      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R29      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R30      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R31      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R32      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R33      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R34      | 7030003700 | S.RESISTOR  | ERJ3GEYJ 154 V (150 k $\Omega$ ) |
| R35      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R36      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R37      | 7030003340 | S.RESISTOR  | ERJ3GEYJ 151 V (100 $\Omega$ )   |
| R38      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R39      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R40      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R41      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R42      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R43      | 7030003510 | S.RESISTOR  | ERJ3GEYJ 392 V (3.9 k $\Omega$ ) |
| R44      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R46      | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 $\Omega$ )    |
| R49      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R50      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R51      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R52      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R53      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R54      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R55      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R56      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R57      | 7030003350 | S.RESISTOR  | ERJ3GEYJ 181 V (180 $\Omega$ )   |
| R58      | 7030003340 | S.RESISTOR  | ERJ3GEYJ 151 V (150 $\Omega$ )   |
| R60      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 k $\Omega$ ) |
| R61      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R62      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R63      | 7030003340 | S.RESISTOR  | ERJ3GEYJ 151 V (150 $\Omega$ )   |
| R64      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 k $\Omega$ ) |
| R65      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R66      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R67      | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 $\Omega$ )    |
| R68      | 7030003340 | S.RESISTOR  | ERJ3GEYJ 151 V (150 $\Omega$ )   |
| R69      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 k $\Omega$ ) |
| R70      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R71      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R72      | 7030003340 | S.RESISTOR  | ERJ3GEYJ 151 V (150 $\Omega$ )   |
| R73      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 k $\Omega$ ) |
| R74      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R75      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R76      | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 $\Omega$ )   |
| R77      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R78      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 $\Omega$ )   |
| R79      | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 $\Omega$ )   |
| R80      | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 k $\Omega$ )  |
| R81      | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 k $\Omega$ )  |
| R82      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R83      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R84      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R85      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R86      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R87      | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 $\Omega$ )   |
| R88      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R89      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R90      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R91      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R92      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R93      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R94      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R95      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R96      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R97      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R98      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R99      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R101     | 7080001250 | RESISTOR    | CRH100X R-02J 22 $\Omega$ (220)  |
| R103     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R104     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R105     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R106     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |

## [PLL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                                  |
|----------|------------|--------------|----------------------------------|
| R107     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R108     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R109     | 7030003660 | S.RESISTOR   | ERJ3GEYJ 683 V (68 k $\Omega$ )  |
| R110     | 7030003780 | S.RESISTOR   | ERJ3GEYJ 684 V (680 k $\Omega$ ) |
| R116     | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R117     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R118     | 7030003280 | S.RESISTOR   | ERJ3GEYJ 470 V (47 $\Omega$ )    |
| R119     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R120     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R121     | 7030003360 | S.RESISTOR   | ERJ3GEYJ 221 V (220 $\Omega$ )   |
| R126     | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R127     | 7030003400 | S.RESISTOR   | ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R132     | 7030005400 | S.RESISTOR   | RR0816P-202-D (2 k $\Omega$ )    |
| R133     | 7030005390 | S.RESISTOR   | RR0816P-102-D (1 k $\Omega$ )    |
| R134     | 7030005390 | S.RESISTOR   | RR0816P-102-D (1 k $\Omega$ )    |
| R135     | 7030005390 | S.RESISTOR   | RR0816P-102-D (1 k $\Omega$ )    |
| R136     | 7030005390 | S.RESISTOR   | RR0816P-102-D (1 k $\Omega$ )    |
| R137     | 7030005390 | S.RESISTOR   | RR0816P-102-D (1 k $\Omega$ )    |
| R138     | 7030005390 | S.RESISTOR   | RR0816P-102-D (1 k $\Omega$ )    |
| R139     | 7030005380 | S.RESISTOR   | RR0816P-102-B (1 k $\Omega$ )    |
| R140     | 7030005380 | S.RESISTOR   | RR0816P-102-B (1 k $\Omega$ )    |
| R141     | 7030005380 | S.RESISTOR   | RR0816P-102-B (1 k $\Omega$ )    |
| R142     | 7030005380 | S.RESISTOR   | RR0816P-102-B (1 k $\Omega$ )    |
| R143     | 7030005380 | S.RESISTOR   | RR0816P-102-B (1 k $\Omega$ )    |
| R144     | 7030005400 | S.RESISTOR   | RR0816P-202-D (2 k $\Omega$ )    |
| R145     | 7030005400 | S.RESISTOR   | RR0816P-202-D (2 k $\Omega$ )    |
| R146     | 7030005400 | S.RESISTOR   | RR0816P-202-D (2 k $\Omega$ )    |
| R147     | 7030005400 | S.RESISTOR   | RR0816P-202-D (2 k $\Omega$ )    |
| R148     | 7030005400 | S.RESISTOR   | RR0816P-202-D (2 k $\Omega$ )    |
| R149     | 7030005400 | S.RESISTOR   | RR0816P-202-D (2 k $\Omega$ )    |
| R150     | 7030005370 | S.RESISTOR   | RR0816P-202-B (2 k $\Omega$ )    |
| R151     | 7030005370 | S.RESISTOR   | RR0816P-202-B (2 k $\Omega$ )    |
| R152     | 7030005370 | S.RESISTOR   | RR0816P-202-B (2 k $\Omega$ )    |
| R153     | 7030005370 | S.RESISTOR   | RR0816P-202-B (2 k $\Omega$ )    |
| R154     | 7030005370 | S.RESISTOR   | RR0816P-202-B (2 k $\Omega$ )    |
| R155     | 7030005400 | S.RESISTOR   | RR0816P-202-D (2 k $\Omega$ )    |
| R156     | 7030003280 | S.RESISTOR   | ERJ3GEYJ 470 V (47 $\Omega$ )    |
| R157     | 7010001320 | RESISTOR     | R25XJ 22 K $\Omega$              |
| R158     | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R159     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R160     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R161     | 7030003360 | S.RESISTOR   | ERJ3GEYJ 221 V (220 $\Omega$ )   |
| R162     | 7030003500 | S.RESISTOR   | ERJ3GEYJ 332 V (3.3 k $\Omega$ ) |
| R163     | 7030003500 | S.RESISTOR   | ERJ3GEYJ 332 V (3.3 k $\Omega$ ) |
| R164     | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R165     | 7030003800 | S.RESISTOR   | ERJ3GEYJ 105 V (1 M $\Omega$ )   |
| R166     | 7030003800 | S.RESISTOR   | ERJ3GEYJ 105 V (1 M $\Omega$ )   |
| R167     | 7010004140 | RESISTOR     | R20J 390 $\Omega$                |
| R168     | 7030003400 | S.RESISTOR   | ERJ3GEYJ 471 V (470 $\Omega$ )   |
| R169     | 7030003280 | S.RESISTOR   | ERJ3GEYJ 470 V (47 $\Omega$ )    |
| C1       | 4510004990 | ELECTROLITIC | 16 MV 100 HC                     |
| C2       | 4510005210 | ELECTROLITIC | 50 MV 1 SWNP                     |
| C3       | 4030006870 | S.CERAMIC    | C1608 JB 1H 222K-T-A             |
| C4       | 4510003840 | ELECTROLITIC | 50 MV 1 SW                       |
| C5       | 4510004990 | ELECTROLITIC | 16 MV 100 HC                     |
| C7       | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A             |
| C8       | 4510003790 | ELECTROLITIC | 16 MV 10 SW                      |
| C9       | 4510003790 | ELECTROLITIC | 16 MV 10 SW                      |
| C10      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A             |
| C12      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A             |
| C13      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A             |
| C14      | 4030007380 | S.CERAMIC    | C1608 PH 1H 820J-T-A             |
| C15      | 4030008300 | S.CERAMIC    | C1608 UJ 1H 330J-T-A             |
| C16      | 4610001260 | S.TRIMMER    | ECR-JA020 E12W                   |
| C17      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A             |
| C18      | 4030006750 | S.CERAMIC    | C1608 SL 1H 101J-T-A             |
| C19      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A             |
| C20      | 4030006630 | S.CERAMIC    | C1608 SL 1H 150J-T-A             |
| C21      | 4510004990 | ELECTROLITIC | 16 MV 100 HC                     |
| C22      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A             |
| C23      | 4030006510 | S.CERAMIC    | C1608 SL 1H 0R5C-T-A             |
| C24      | 4030006610 | S.CERAMIC    | C1608 SL 1H 100D-T-A             |
| C25      | 4030007380 | S.CERAMIC    | C1608 PH 1H 820J-T-A             |
| C26      | 4030006750 | S.CERAMIC    | C1608 SL 1H 101J-T-A             |

S.=Surface mount

## [PLL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                      |
|----------|------------|--------------|----------------------|
| C27      | 4030006880 | S.CERAMIC    | C1808 JB 1H 102K-T-A |
| C28      | 4030006900 | S.CERAMIC    | C1808 JB 1E 103K-T-A |
| C29      | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C30      | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C31      | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C32      | 4030008920 | S.CERAMIC    | C1808 JB 1C 473K-T-A |
| C33      | 4030008920 | S.CERAMIC    | C1808 JB 1C 473K-T-A |
| C34      | 4030009000 | S.CERAMIC    | C2012 JB 1C 224K-T-A |
| C35      | 4030008920 | S.CERAMIC    | C1808 JB 1C 473K-T-A |
| C36      | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C37      | 4030007130 | S.CERAMIC    | C1808 CH 1H 101J-T-A |
| C38      | 4030007020 | S.CERAMIC    | C1808 CH 1H 120J-T-A |
| C39      | 4610001270 | S.TRIMMER    | ECR-JA010 A12W       |
| C40      | 4030007110 | S.CERAMIC    | C1808 CH 1H 680J-T-A |
| C41      | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C42      | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C43      | 4030007030 | S.CERAMIC    | C1808 CH 1H 150J-T-A |
| C44      | 4030007010 | S.CERAMIC    | C1808 CH 1H 100D-T-A |
| C45      | 4030007010 | S.CERAMIC    | C1808 CH 1H 100D-T-A |
| C48      | 4030008920 | S.CERAMIC    | C1808 JB 1C 473K-T-A |
| C50      | 4030008920 | S.CERAMIC    | C1808 JB 1C 473K-T-A |
| C51      | 4030008850 | S.CERAMIC    | C1808 JB 1C 123K-T-A |
| C52      | 4030006870 | S.CERAMIC    | C1808 JB 1H 222K-T-A |
| C53      | 4030009490 | S.CERAMIC    | C1808 JB 1H 821K-T-A |
| C54      | 4030008860 | S.CERAMIC    | C1808 JB 1C 153K-T-A |
| C55      | 4030008870 | S.CERAMIC    | C1808 JB 1C 183K-T-A |
| C82      | 4030007170 | S.CERAMIC    | C1808 CH 1H 221J-T-A |
| C83      | 4030009990 | S.CERAMIC    | C1808 CH 1H 200J-T-A |
| C84      | 4610001270 | S.TRIMMER    | ECR-JA010 A12W       |
| C85      | 4030007110 | S.CERAMIC    | C1808 CH 1H 680J-T-A |
| C86      | 4030007020 | S.CERAMIC    | C1808 CH 1H 120J-T-A |
| C87      | 4030007020 | S.CERAMIC    | C1808 CH 1H 120J-T-A |
| C88      | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C89      | 4030007110 | S.CERAMIC    | C1808 CH 1H 680J-T-A |
| C70      | 4030007030 | S.CERAMIC    | C1808 CH 1H 150J-T-A |
| C71      | 4610001270 | S.TRIMMER    | ECR-JA010 A12W       |
| C72      | 4030007090 | S.CERAMIC    | C1808 CH 1H 470J-T-A |
| C73      | 4030007020 | S.CERAMIC    | C1808 CH 1H 120J-T-A |
| C74      | 4030007020 | S.CERAMIC    | C1808 CH 1H 120J-T-A |
| C75      | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C76      | 4030010000 | S.CERAMIC    | C1808 CH 1H 510J-T-A |
| C77      | 4030007020 | S.CERAMIC    | C1808 CH 1H 120J-T-A |
| C78      | 4610001170 | S.TRIMMER    | ECR-JA006 A12W       |
| C79      | 4030007090 | S.CERAMIC    | C1808 CH 1H 470J-T-A |
| C80      | 4030007020 | S.CERAMIC    | C1808 CH 1H 120J-T-A |
| C81      | 4030006990 | S.CERAMIC    | C1808 CH 1H 080D-T-A |
| C82      | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C84      | 4030007090 | S.CERAMIC    | C1808 CH 1H 470J-T-A |
| C85      | 4030006970 | S.CERAMIC    | C1808 CH 1H 080D-T-A |
| C86      | 4610001170 | S.TRIMMER    | ECR-JA006 A12W       |
| C87      | 4030007070 | S.CERAMIC    | C1808 CH 1H 330J-T-A |
| C88      | 4030007020 | S.CERAMIC    | C1808 CH 1H 120J-T-A |
| C89      | 4030006970 | S.CERAMIC    | C1808 CH 1H 080D-T-A |
| C90      | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C91      | 4030008920 | S.CERAMIC    | C1808 JB 1C 473K-T-A |
| C92      | 4510004990 | ELECTROLITIC | 16 MV 100 HC         |
| C93      | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C94      | 4030006540 | S.CERAMIC    | C1808 SL 1H 030C-T-A |
| C95      | 4030006860 | S.CERAMIC    | C1808 JB 1H 102K-T-A |
| C96      | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C97      | 4030006540 | S.CERAMIC    | C1808 SL 1H 030C-T-A |
| C98      | 4030006860 | S.CERAMIC    | C1808 JB 1H 102K-T-A |
| C99      | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C100     | 4030006540 | S.CERAMIC    | C1808 SL 1H 030C-T-A |
| C101     | 4030006860 | S.CERAMIC    | C1808 JB 1H 102K-T-A |
| C102     | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C103     | 4030006540 | S.CERAMIC    | C1808 SL 1H 030C-T-A |
| C104     | 4030006860 | S.CERAMIC    | C1808 JB 1H 102K-T-A |
| C105     | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C106     | 4030008920 | S.CERAMIC    | C1808 JB 1C 473K-T-A |
| C107     | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C108     | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C109     | 4030006880 | S.CERAMIC    | C1808 JB 1H 472K-T-A |
| C110     | 4030006860 | S.CERAMIC    | C1808 JB 1H 102K-T-A |
| C111     | 4030006860 | S.CERAMIC    | C1808 JB 1H 102K-T-A |
| C112     | 4030006720 | S.CERAMIC    | C1808 SL 1H 560J-T-A |

## [PLL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                      |
|----------|------------|-------------|----------------------|
| C113     | 4030006840 | S.CERAMIC   | C1808 SL 1H 391J-T-A |
| C114     | 4030006700 | S.CERAMIC   | C1808 SL 1H 390J-T-A |
| C115     | 4030006230 | S.CERAMIC   | C1808 SL 1H 240J-T-A |
| C116     | 4030006590 | S.CERAMIC   | C1808 SL 1H 080D-T-A |
| C117     | 4030006710 | S.CERAMIC   | C1808 SL 1H 470J-T-A |
| C118     | 4030006880 | S.CERAMIC   | C1808 JB 1H 472K-T-A |
| C119     | 4030006860 | S.CERAMIC   | C1808 JB 1H 102K-T-A |
| C120     | 4030006880 | S.CERAMIC   | C1808 JB 1H 472K-T-A |
| C124     | 4030006880 | S.CERAMIC   | C1808 JB 1H 472K-T-A |
| C126     | 4030006880 | S.CERAMIC   | C1808 JB 1H 472K-T-A |
| C127     | 4030006860 | S.CERAMIC   | C1808 JB 1H 102K-T-A |
| C128     | 4030006880 | S.CERAMIC   | C1808 JB 1H 472K-T-A |
| C129     | 4030008960 | S.CERAMIC   | C2012 JB 1C 104K-T-A |
| C130     | 4030006860 | S.CERAMIC   | C1808 JB 1H 102K-T-A |
| C132     | 4030006750 | S.CERAMIC   | C1808 SL 1H 101J-T-A |
| C134     | 4030006720 | S.CERAMIC   | C1808 SL 1H 560J-T-A |
| C135     | 4030006550 | S.CERAMIC   | C1808 JB 1H 040C-T-A |
| C136     | 4030006620 | S.CERAMIC   | C1808 SL 1H 120J-T-A |
| C137     | 4030006730 | S.CERAMIC   | C1808 SL 1H 680J-T-A |
| C138     | 4030006720 | S.CERAMIC   | C1808 SL 1H 560J-T-A |
| C139     | 4030008920 | S.CERAMIC   | C1808 JB 1C 473K-T-A |
| C141     | 4030008920 | S.CERAMIC   | C1808 JB 1C 473K-T-A |
| C143     | 4030008920 | S.CERAMIC   | C1808 JB 1C 473K-T-A |
| C144     | 4030008920 | S.CERAMIC   | C1808 JB 1C 473K-T-A |
| C145     | 4030008920 | S.CERAMIC   | C1808 JB 1C 473K-T-A |
| C146     | 4030008920 | S.CERAMIC   | C1808 JB 1C 473K-T-A |
| C147     | 4030008920 | S.CERAMIC   | C1808 JB 1C 473K-T-A |
| C148     | 4030008920 | S.CERAMIC   | C1808 JB 1C 473K-T-A |
| C149     | 4030008920 | S.CERAMIC   | C1808 JB 1C 473K-T-A |
| C150     | 4030008920 | S.CERAMIC   | C1808 JB 1C 473K-T-A |
| C151     | 4030008920 | S.CERAMIC   | C1808 JB 1C 473K-T-A |
| C152     | 4030008920 | S.CERAMIC   | C1808 JB 1C 473K-T-A |
| C153     | 4030008920 | S.CERAMIC   | C1808 JB 1C 473K-T-A |
| C155     | 4030008920 | S.CERAMIC   | C1808 JB 1C 473K-T-A |
| C156     | 4030006860 | S.CERAMIC   | C1808 SL 1H 220J-T-A |
| C157     | 4030006700 | S.CERAMIC   | C1808 SL 1H 390J-T-A |
| C158     | 4030006880 | S.CERAMIC   | C1808 JB 1H 102K-T-A |
| C159     | 4030006880 | S.CERAMIC   | C1808 JB 1H 102K-T-A |
| C160     | 4030006880 | S.CERAMIC   | C1808 JB 1H 472K-T-A |
| C161     | 4030006880 | S.CERAMIC   | C1808 JB 1H 472K-T-A |
| C162     | 4030006860 | S.CERAMIC   | C1808 JB 1H 102K-T-A |
| C163     | 4030006860 | S.CERAMIC   | C1808 JB 1H 102K-T-A |
| C164     | 4030006710 | S.CERAMIC   | C1808 SL 1H 470J-T-A |
| J3       | 6510016030 | CONNECTOR   | 52089-1620           |
| J4       | 6510007020 | CONNECTOR   | TMP-J01X-V6          |
| EP1      | 0910039594 | PCB         | B 3858D              |

## [PA UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                         |
|----------|------------|-------------|-------------------------|
| Q1       | 1530000790 | TRANSISTOR  | 2SC1971                 |
| Q2       | 1530000190 | TRANSISTOR  | 2SC3133                 |
| Q3       | 1530000190 | TRANSISTOR  | 2SC3133                 |
| Q4       | 1530000200 | TRANSISTOR  | 2SC2904                 |
| Q5       | 1530000200 | TRANSISTOR  | 2SC2904                 |
| Q6       | 1540000200 | TRANSISTOR  | 2SD1406 Y               |
| D1       | 1790000710 | VARIATOR    | MA29B                   |
| D2       | 1790000710 | VARIATOR    | MA29B                   |
| D3       | 1790000710 | VARIATOR    | MA29B                   |
| D4       | 1710000010 | DIODE       | 15CD11                  |
| L1       | 6140001170 | COIL        | LR-142                  |
| L2       | 6140001300 | COIL        | LR-155                  |
| L3       | 6140001310 | COIL        | LR-156                  |
| L4       | 6140002540 | COIL        | LR-292                  |
| L5       | 6140002030 | COIL        | LR-230 (SK-10M-15Y 120) |

S.=Surface mount

## [PA UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                           |
|----------|------------|--------------|---------------------------|
| L6       | 6910000670 | COIL         | BT01RN1-A61-001           |
| L7       | 6910000670 | COIL         | BT01RN1-A61-001           |
| L8       | 6910000670 | COIL         | BT01RN1-A61-001           |
| L11      | 6910000670 | COIL         | BT01RN1-A61-001           |
| L14      | 6180001230 | COIL         | LAL 04NA 8R2K             |
| L17      | 6910000670 | COIL         | BT01RN1-A61-001           |
| L18      | 6910000670 | COIL         | BT01RN1-A61-001           |
|          |            |              |                           |
| R1       | 7010004130 | RESISTOR     | R20J 330 Ω                |
| R2       | 7010004110 | RESISTOR     | R20J 220 Ω                |
| R3       | 7010003360 | RESISTOR     | ELR20J 470 Ω              |
| R4       | 7010004830 | RESISTOR     | R50XJ 4.7 Ω               |
| R5       | 7010004120 | RESISTOR     | R20J 270 Ω                |
| R6       | 7010003300 | RESISTOR     | ELR20J 150 Ω              |
| R7       | 7010004030 | RESISTOR     | R20J 47 Ω                 |
| R8       | 7010004030 | RESISTOR     | R20J 47 Ω                 |
| R9       | 7010004730 | RESISTOR     | R50XJ 120 Ω               |
| R10      | 7010004730 | RESISTOR     | R50XJ 120 Ω               |
| R11      | 7070000320 | RESISTOR     | CRH100X R-02J 3.3 Ω (3R3) |
| R12      | 7070000320 | RESISTOR     | CRH100X R-02J 3.3 Ω (3R3) |
| R13      | 7070000320 | RESISTOR     | CRH100X R-02J 3.3 Ω (3R3) |
| R14      | 7070000320 | RESISTOR     | CRH100X R-02J 3.3 Ω (3R3) |
| R15      | 7070000320 | RESISTOR     | CRH100X R-02J 3.3 Ω (3R3) |
| R16      | 7070000320 | RESISTOR     | CRH100X R-02J 3.3 Ω (3R3) |
| R17      | 7010004650 | RESISTOR     | R50XJ 10 Ω                |
| R18      | 7010004650 | RESISTOR     | R50XJ 10 Ω                |
| R19      | 7070000520 | RESISTOR     | CRH300 R-02J 2.7 Ω (2R7)  |
| R20      | 7010004720 | RESISTOR     | R50XJ 100 Ω               |
| R21      | 7310000700 | TRIMMER      | RH0651CS2J1HA (471)       |
| R22      | 7010004650 | RESISTOR     | R50XJ 10 Ω                |
| R23      | 7010005240 | RESISTOR     | R50XJ 820 Ω               |
| R24      | 7310000720 | TRIMMER      | RH0651CJ3J0CA (222)       |
| R25      | 7100000640 | RESISTOR     | 5 SI 0.012 Ω (J)          |
| R26      | 7010003400 | RESISTOR     | ELR20J 1 KΩ               |
| R27      | 7010003400 | RESISTOR     | ELR20J 1 KΩ               |
| R29      | 7510000070 | THERMISTOR   | ERT-D2FHL 503S            |
|          |            |              |                           |
| C1       | 4010000520 | CERAMIC      | DD108 B 472K 50V          |
| C2       | 4040000250 | BARRIERLAYER | UAT 08X 473M              |
| C3       | 4010000510 | CERAMIC      | DD108 B 222K 50V          |
| C4       | 4040000250 | BARRIERLAYER | UAT 08X 473M              |
| C5       | 4310000610 | MYLAR        | 50 F2D 472J               |
| C6       | 4310000610 | MYLAR        | 50 F2D 472J               |
| C8       | 4320000520 | DIP MICA     | DM20C152J5-N              |
| C9       | 4040000170 | BARRIERLAYER | UAT 05X 682K              |
| C10      | 4040000170 | BARRIERLAYER | UAT 05X 682K              |
| C11      | 4010004120 | CERAMIC      | DD07 B 102K 500V          |
| C13      | 4010004070 | CERAMIC      | DD12 SL 221K 500V         |
| C14      | 4010004070 | CERAMIC      | DD12 SL 221K 500V         |
| C15      | 4320000500 | DIP MICA     | DM20C122J5-N              |
| C16      | 4320000710 | DIP MICA     | DM19C681J5-N              |
| C17      | 4040000250 | BARRIERLAYER | UAT 08X 473M              |
| C19      | 4040000250 | BARRIERLAYER | UAT 08X 473M              |
| C20      | 4510003910 | ELECTROLITIC | 16 MV 47 HW               |
| C21      | 4040000250 | BARRIERLAYER | UAT 08X 473M              |
| C22      | 4010000500 | CERAMIC      | DD104 B 102K 50V          |
| C23      | 4040000250 | BARRIERLAYER | UAT 08X 473M              |
| C24      | 4040000250 | BARRIERLAYER | UAT 08X 473M              |
| C25      | 4040000250 | BARRIERLAYER | UAT 08X 473M              |
| C26      | 4510003910 | ELECTROLITIC | 16 MV 47 HW               |
| C27      | 4510004600 | ELECTROLITIC | 16 MV 1000 HC             |
| C28      | 4010000520 | CERAMIC      | DD108 B 472K 50V          |
| C29      | 4040000260 | BARRIERLAYER | UZE 08X 104M              |
| C30      | 4010000380 | CERAMIC      | DD107 SL 221J 50V         |
| C31      | 4040000250 | BARRIERLAYER | UAT 08X 473M              |
| C32      | 4510004600 | ELECTROLITIC | 16 MV 1000 HC             |
| C33      | 4010000520 | CERAMIC      | DD108 B 472K 50V          |
| C34      | 4010000380 | CERAMIC      | DD107 SL 221J 50V         |
| C35      | 4040000260 | BARRIERLAYER | UZE 08X 104M              |
| C36      | 4040000170 | BARRIERLAYER | UAT 05X 682K              |
| C37      | 4040000170 | BARRIERLAYER | UAT 05X 682K              |
| C38      | 4040000250 | BARRIERLAYER | UAT 08X 473M              |
| C39      | 4040000250 | BARRIERLAYER | UAT 08X 473M              |
| C40      | 4040000250 | BARRIERLAYER | UAT 08X 473M              |

## [PA UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                  |
|----------|------------|--------------|------------------|
| C41      | 4040000250 | BARRIERLAYER | UAT 08X 473M     |
| C42      | 4510004600 | ELECTROLITIC | 16 MV 1000 HC    |
| C45      | 4010000520 | CERAMIC      | DD108 B 472K 50V |
| C46      | 4010000520 | CERAMIC      | DD108 B 472K 50V |
| C47      | 4010000520 | CERAMIC      | DD108 B 472K 50V |
| C48      | 4020000250 | CYLINDER     | UP125 X 472M     |
|          |            |              |                  |
| F1       | 5210000130 | FUSE         | FGB 4A           |
| F2       | 5220000020 | HOLDER       | S-N5051          |
| F3       | 5220000020 | HOLDER       | S-N5051          |
|          |            |              |                  |
| J8       | 6510006790 | CONNECTOR    | TSL-P03P-V2      |
| J9       | 6510006790 | CONNECTOR    | TSL-P03P-V2      |
| J10      | 6510006790 | CONNECTOR    | TSL-P03P-V2      |
| J11      | 6510006790 | CONNECTOR    | TSL-P03P-V2      |
| J12      | 6510003080 | CONNECTOR    | RT01T-1.0B       |
| J13      | 6510003080 | CONNECTOR    | RT01T-1.0B       |
| J14      | 6510004880 | CONNECTOR    | MR-DS-E 01       |
|          |            |              |                  |
| EP1      | 6910000610 | BEAD         | FSOH050RN01      |
| EP2      | 6910000610 | BEAD         | FSOH050RN01      |
| EP5      | 6910000610 | BEAD         | FSOH050RN01      |
| EP6      | 6910000610 | BEAD         | FSOH050RN01      |
| EP7      | 6910000600 | BEAD         | FSOH050RN        |
| EP8      | 6910000600 | BEAD         | FSOH050RN        |
| EP9      | 6910000630 | BEAD         | FSOH070RN        |
| EP10     | 6910000630 | BEAD         | FSOH070RN        |
|          |            |              |                  |
| EP11     | 0910039454 | PCB          | B 3860D          |

## [FILTER UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |               |
|----------|------------|-------------|---------------|
| D1       | 1710000030 | DIODE       | 1S1555        |
| D2       | 1710000030 | DIODE       | 1S1555        |
| D3       | 1710000030 | DIODE       | 1S1555        |
| D4       | 1710000030 | DIODE       | 1S1555        |
| D5       | 1710000030 | DIODE       | 1S1555        |
| D6       | 1710000030 | DIODE       | 1S1555        |
| D7       | 1710000030 | DIODE       | 1S1555        |
| D8       | 1790000070 | DIODE       | 1SS237        |
| D9       | 1790000070 | DIODE       | 1SS237        |
|          |            |             |               |
| L1       | 6140001990 | COIL        | LR-226        |
| L2       | 6140002000 | COIL        | LR-227        |
| L3       | 6140001780 | COIL        | LR-214        |
| L4       | 6140001790 | COIL        | LR-215        |
| L5       | 6140001800 | COIL        | LR-216        |
| L6       | 6140001800 | COIL        | LR-216        |
| L7       | 6140002560 | COIL        | LR-293        |
| L8       | 6140002560 | COIL        | LR-293        |
| L9       | 6110002920 | COIL        | LA-481        |
| L10      | 6110002910 | COIL        | LA-480        |
| L11      | 6110002890 | COIL        | LA-478        |
| L12      | 6110002900 | COIL        | LA-479        |
| L13      | 6140002530 | COIL        | LR-291        |
| L14      | 6140002520 | COIL        | LR-290        |
| L15      | 6180000900 | COIL        | LAL 03NA 101K |
| L16      | 6180000900 | COIL        | LAL 03NA 101K |
| L17      | 6180000900 | COIL        | LAL 03NA 101K |
| L18      | 6180000900 | COIL        | LAL 03NA 101K |
| L19      | 6180000900 | COIL        | LAL 03NA 101K |
| L20      | 6180000900 | COIL        | LAL 03NA 101K |
| L21      | 6180000900 | COIL        | LAL 03NA 101K |
| L22      | 6180000900 | COIL        | LAL 03NA 101K |
| L23      | 6180000900 | COIL        | LAL 03NA 101K |
| L24      | 6180000880 | COIL        | LAL 03NA 100K |
| L25      | 6180000880 | COIL        | LAL 03NA 100K |
| L26      | 6180000880 | COIL        | LAL 03NA 100K |

S.=Surface mount



## [FILTER UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION   |                   |
|----------|------------|---------------|-------------------|
| L27      | 6180000880 | COIL          | LAL 03NA 100K     |
| L28      | 6180000900 | COIL          | LAL 03NA 101K     |
| L29      | 6180000900 | COIL          | LAL 03NA 101K     |
| L30      | 6140001810 | COIL          | LR-217            |
| L31      | 6170000380 | COIL          | LW-28             |
| R1       | 7540000100 | ABSORBER      | SRYH-350L         |
| R2       | 7010004390 | RESISTOR      | R20J 33 kΩ        |
| R3       | 7010003220 | RESISTOR      | ELR20J 33 Ω       |
| R4       | 7010004320 | RESISTOR      | R20J 10 kΩ        |
| R5       | 7010004320 | RESISTOR      | R20J 10 kΩ        |
| R6       | 7010003530 | RESISTOR      | ELR20J 10 kΩ      |
| R7       | 7010003530 | RESISTOR      | ELR20J 10 kΩ      |
| R8       | 7010003620 | RESISTOR      | ELR20J 47 kΩ      |
| R9       | 7010003620 | RESISTOR      | ELR20J 47 kΩ      |
| C1       | 4040000250 | BARRIER LAYER | UAT 08X 473M      |
| C2       | 4040000250 | BARRIER LAYER | UAT 08X 473M      |
| C3       | 4040000250 | BARRIER LAYER | UAT 08X 473M      |
| C4       | 4040000250 | BARRIER LAYER | UAT 08X 473M      |
| C5       | 4040000250 | BARRIER LAYER | UAT 08X 473M      |
| C6       | 4040000250 | BARRIER LAYER | UAT 08X 473M      |
| C7       | 4040000250 | BARRIER LAYER | UAT 08X 473M      |
| C8       | 4040000250 | BARRIER LAYER | UAT 08X 473M      |
| C9       | 4010000520 | CERAMIC       | DD108 B 472K 50V  |
| C10      | 4010000520 | CERAMIC       | DD108 B 472K 50V  |
| C11      | 4010000520 | CERAMIC       | DD108 B 472K 50V  |
| C12      | 4010000520 | CERAMIC       | DD108 B 472K 50V  |
| C13      | 4040000250 | BARRIER LAYER | UAT 08X 473M      |
| C14      | 4010000330 | CERAMIC       | DD105 SL 101J 50V |
| C15      | 4010000120 | CERAMIC       | DD104 SL 100D 50V |
| C16      | 4010000330 | CERAMIC       | DD105 SL 101J 50V |
| C17      | 4610001000 | TRIMMER       | CVSSA0701         |
| C18      | 4010000360 | CERAMIC       | DD106 SL 181J 50V |
| C19      | 4010000450 | CERAMIC       | DD104 B 331K 50V  |
| C20      | 4010000460 | CERAMIC       | DD104 B 471K 50V  |
| C21      | 4010000460 | CERAMIC       | DD104 B 471K 50V  |
| C22      | 4320000520 | DIP MICA      | DM20C152J5-N      |
| C23      | 4010004080 | CERAMIC       | DD12 SL 271K 500V |
| C24      | 4010004080 | CERAMIC       | DD12 SL 271K 500V |
| C25      | 4320000510 | DIP MICA      | DM20C272J5-N      |
| C26      | 4010004030 | CERAMIC       | DD10 SL 121K 500V |
| C27      | 4320000520 | DIP MICA      | DM20C152J5-N      |
| C28      | 4010004070 | CERAMIC       | DD12 SL 221K 500V |
| C29      | 4010004050 | CERAMIC       | DD12 SL 181K 500V |
| C30      | 4010004040 | CERAMIC       | DD10 SL 151K 500V |
| C31      | 4010004070 | CERAMIC       | DD12 SL 221K 500V |
| C32      | 4320000500 | DIP MICA      | DM20C122J5-N      |
| C33      | 4010003990 | CERAMIC       | DD09 SL 680K 500V |
| C34      | 4010004070 | CERAMIC       | DD12 SL 221K 500V |
| C35      | 4010004070 | CERAMIC       | DD12 SL 221K 500V |
| C36      | 4010004070 | CERAMIC       | DD12 SL 221K 500V |
| C37      | 4010004050 | CERAMIC       | DD12 SL 181K 500V |
| C38      | 4010004030 | CERAMIC       | DD10 SL 121K 500V |
| C39      | 4010004030 | CERAMIC       | DD10 SL 121K 500V |
| C40      | 4010004070 | CERAMIC       | DD12 SL 221K 500V |
| C41      | 4010004070 | CERAMIC       | DD12 SL 221K 500V |
| C42      | 4010004070 | CERAMIC       | DD12 SL 221K 500V |
| C43      | 4010004680 | CERAMIC       | DD09 SL 750K 500V |
| C44      | 4010004050 | CERAMIC       | DD12 SL 181K 500V |
| C45      | 4010004070 | CERAMIC       | DD12 SL 221K 500V |
| C46      | 4010004060 | CERAMIC       | DD12 SL 201K 500V |
| C47      | 4010004010 | CERAMIC       | DD09 SL 101K 500V |
| C48      | 4010003990 | CERAMIC       | DD09 SL 680K 500V |
| C49      | 4010004040 | CERAMIC       | DD10 SL 151K 500V |
| C50      | 4010003990 | CERAMIC       | DD09 SL 680K 500V |
| C51      | 4010004030 | CERAMIC       | DD10 SL 121K 500V |
| C52      | 4010004010 | CERAMIC       | DD09 SL 101K 500V |
| C53      | 4010003910 | CERAMIC       | DD08 SL 220K 500V |
| C54      | 4010004050 | CERAMIC       | DD12 SL 181K 500V |
| C55      | 4010003980 | CERAMIC       | DD09 SL 560K 500V |
| C56      | 4010004680 | CERAMIC       | DD09 SL 750K 500V |
| C57      | 4010004680 | CERAMIC       | DD09 SL 750K 500V |
| C58      | 4010003960 | CERAMIC       | DD08 SL 390K 500V |

## [FILTER UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                      |
|----------|------------|-------------|----------------------|
| C59      | 4010004040 | CERAMIC     | DD10 SL 151K 500V    |
| C60      | 4010003870 | CERAMIC     | DD06 SL 120K 500V    |
| C61      | 4010003970 | CERAMIC     | DD07 SL 470K 500V    |
| C62      | 4010004680 | CERAMIC     | DD09 SL 750K 500V    |
| C63      | 4010000450 | CERAMIC     | DD104 B 331K 50V     |
| RL1      | 6330000180 | RELAY       | MZ-12HG              |
| RL2      | 6330000180 | RELAY       | MZ-12HG              |
| RL3      | 6330000180 | RELAY       | MZ-12HG              |
| RL4      | 6330000180 | RELAY       | MZ-12HG              |
| RL5      | 6330000180 | RELAY       | MZ-12HG              |
| RL6      | 6330000180 | RELAY       | MZ-12HG              |
| RL7      | 6330000180 | RELAY       | MZ-12HG              |
| RL8      | 6330000180 | RELAY       | MZ-12HG              |
| RL9      | 6330000180 | RELAY       | MZ-12HG              |
| RL10     | 6330000180 | RELAY       | MZ-12HG              |
| RL11     | 6330000180 | RELAY       | MZ-12HG              |
| RL12     | 6330000180 | RELAY       | MZ-12HG              |
| RL13     | 6330000720 | RELAY       | DS1-M-DC12V (AG2013) |
| W1       | 7120000010 | JUMPER      | JPW 02A              |
| W2       | 7120000020 | JUMPER      | JPW 02H              |
| W3       | 7120000010 | JUMPER      | JPW 02A              |
| J3       | 6510007020 | CONNECTOR   | TMP-J01X-V6          |
| EP1      | 0910039606 | PCB         | B 3861F              |

S.=Surface mount

## SECTION 7 MECHANICAL PARTS

### 7-1 FRONT, CABINET PARTS AND ACCESSORIES

#### • FRONT AND CABINET PARTS

| LABEL NUMBER | ORDER NO.  | DESCRIPTION                                    | QTY. |
|--------------|------------|------------------------------------------------|------|
| ①            | 8110005030 | 963 U-cover                                    | 1    |
| ②            | 8810004320 | Screw OH M3 × 8 ZK BS                          | 12   |
| ③            | 8930028270 | 963 LCD rubber                                 | 1    |
| ④            | 8010014690 | 963 sub chassis                                | 1    |
| ⑤            | 8810007970 | Screw PH BT M3 × 6 NI                          | 4    |
| ⑥            | 5030000980 | LCD LD-BU5637EZ [FUNCTION DISPLAY]             | 1    |
| ⑦            | 8930028280 | 963 LCD filter                                 | 1    |
| ⑧            | 8930028260 | 963 LCD holder                                 | 1    |
| ⑨            | 8810003350 | Set screw C M3 × 5                             | 2    |
| ⑩            | 8610002380 | Knob N105 [AF, RIT]                            | 2    |
| ⑪            | 8610002390 | Knob N106 [SQL]                                | 1    |
| ⑫            | 2260002010 | Switch MSR5-2#1 [POWER]                        | 1    |
| ⑬            | 8810007750 | Screw PH B1 M3 × 18 ZK                         | 1    |
| ⑭            | 8610002490 | Knob N104 (A) [MAIN DIAL] (incl. ⑬)            | 1    |
| ⑮            | 8010006510 | N104 rubber ring                               | 1    |
| ⑯            | 8210009520 | 963 front panel complete (A) (incl. ⑰-⑲)       | 1    |
| ⑰            | 8610008690 | Button K203 [TUNER]                            | 1    |
| ⑱            | 8610008680 | Button K204 [LOCK]                             | 1    |
| ⑲            | 8610008670 | Button K205 [RIT, TS etc.]                     | 2    |
| ⑳            | 8610008660 | Button K206 [FUNC, A/B etc.]                   | 1    |
| ㉑            | 8810000990 | Screw PH B0 M2 × 5                             | 6    |
| ㉒            | 8930030160 | 963 A knob sheet                               | 1    |
| ㉓            | 8930030180 | 963 C knob sheet                               | 1    |
| ㉔            | 8930030170 | 963 B knob sheet                               | 2    |
| ㉕            | 8930030190 | 1386 knob sheet                                | 1    |
| ㉖            | 8810007700 | Screw FH B1 M3 × 6                             | 4    |
| ㉗            | 2250000130 | Encoder SW-152 [MAIN DIAL] (incl. nut, washer) | 1    |
| ㉘            | 8510008340 | 963 plate                                      | 1    |
| ㉙            | 2510000670 | Speaker VS-50-0827                             | 1    |
| ㉚            | 8930028300 | 963 SP holder                                  | 1    |
| ㉛            | 8810007970 | Screw PH BT M3 × 6 NI                          | 4    |
| ㉜            | 8930030140 | 963 SP sponge                                  | 1    |
| ㉝            | 8110005010 | 610 bottom cover (complete)                    | 1    |

#### Screw abbreviations

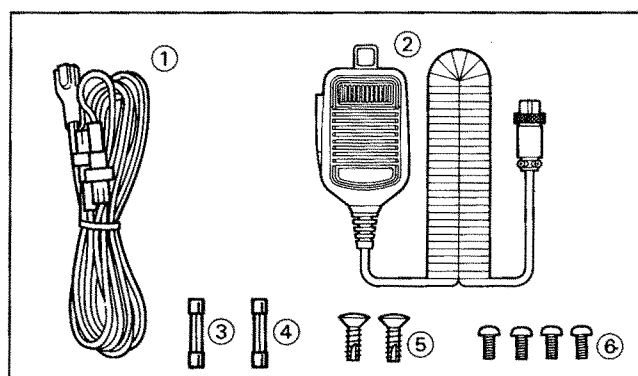
PH: Pan head FH: Flat head OH: Oval countersunk head  
B0, B1, BT: Self-tapping BS: Brass NI: Nickel ZK: Black

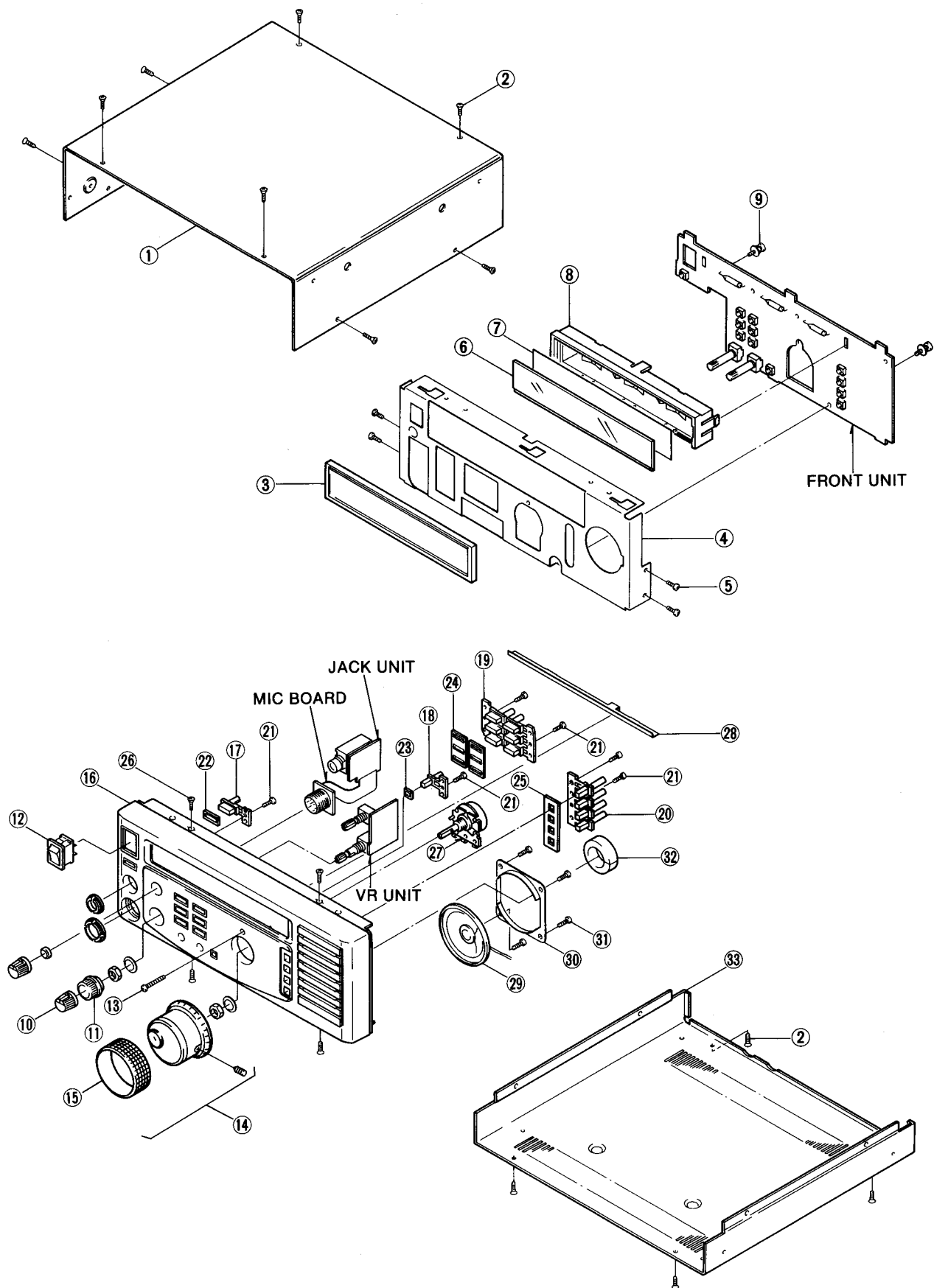
#### • ACCESSORIES

| LABEL NUMBER | ORDER NO.        | DESCRIPTION              | QTY. |
|--------------|------------------|--------------------------|------|
| ①            | 8900000220       | DC power cable OPC-025 A | 1    |
| ②            | Optional product | HM-36 HAND MICROPHONE    | 1    |
| ③            | 5210000080       | Spare fuse FGB 20A       | 1    |
| ④            | 5210000130       | Spare fuse FGB 4A        | 1    |
| ⑤            | 8810005500       | Screw OH B1 M4 × 12 CR   | 2    |
| ⑥            | 8810001650       | Screw PH FT M3 × 6       | 4    |

#### Screw abbreviations

PH: Pan head  
OH: Oval countersunk head  
B1: Self-tapping screw

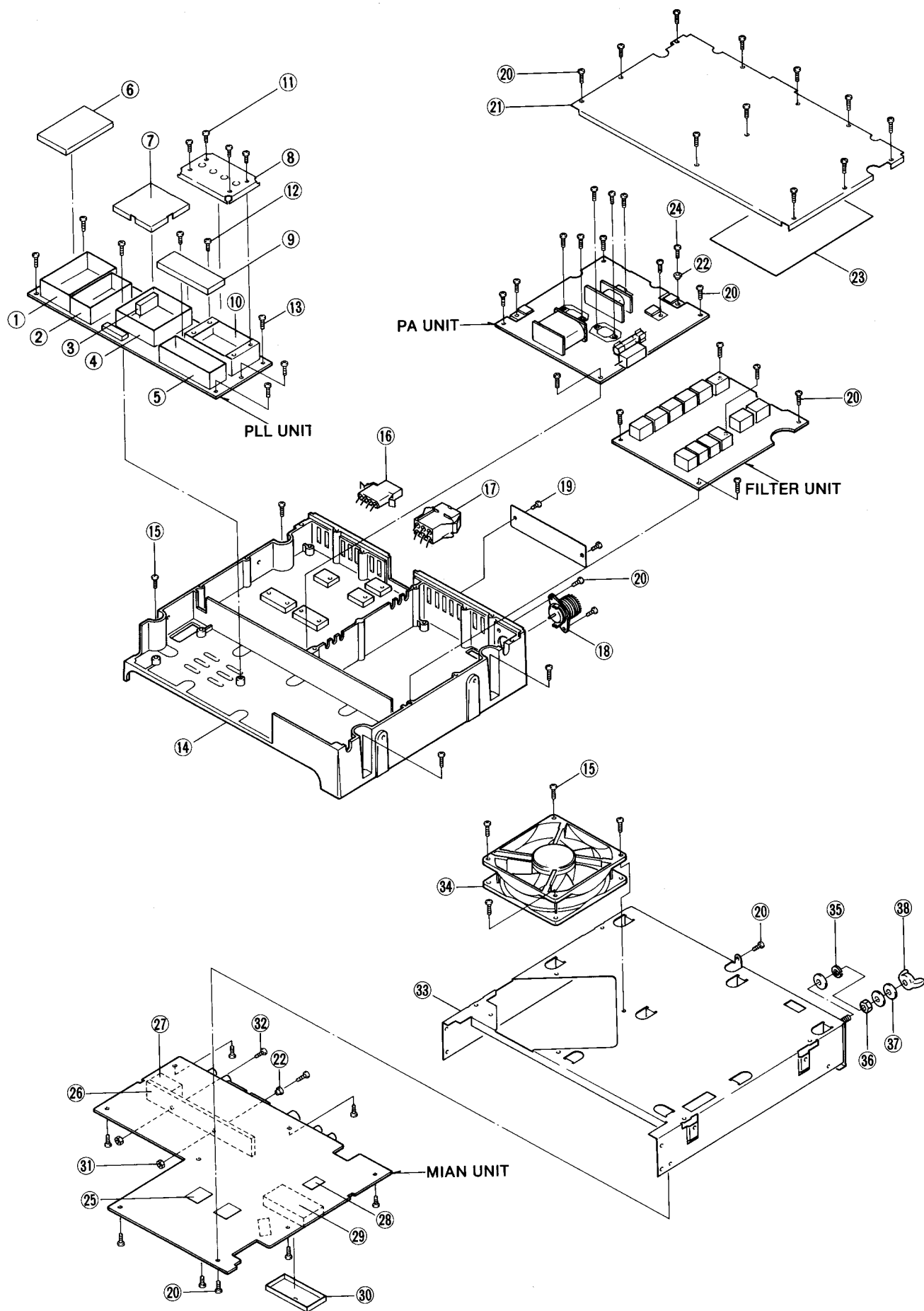




## 7-2 CHASSIS PARTS

| LABEL<br>NUMBER | ORDER NO.  | DESCRIPTION                  | QTY. |
|-----------------|------------|------------------------------|------|
| ①               | 8510001080 | Shield case (A)              | 1    |
| ②               | 8510000230 | 220 shield case              | 1    |
| ③               | 8510005330 | Coil shield case             | 1    |
| ④               | 8510008300 | 963 DDS shield case          | 1    |
| ⑤               | 8510001060 | Shield case                  | 1    |
| ⑥               | 8510001101 | Shield case (A) cover (A) -1 | 1    |
| ⑦               | 8510008310 | 963 DDS shield case          | 1    |
| ⑧               | 8510008540 | 963 shield case              | 1    |
| ⑨               | 8510001740 | Shield case cover            | 1    |
| ⑩               | 8510008530 | 963 shield case              | 1    |
| ⑪               | 8810003960 | Setscrew A M2.6 × 5          | 4    |
| ⑫               | 8810003160 | Setscrew A M3 × 6            | 3    |
| ⑬               | 8810007970 | Screw PH BT M3 × 6 NI        | 5    |
| ⑭               | 8410001871 | 963 heatsink-1               | 1    |
| ⑮               | 8810005540 | Screw PH B1 M4 × 10          | 8    |
| ⑯               | 8600031280 | Connector P03×J01CH [TUNER]  | 1    |
| ⑰               | 8600031370 | Connector J01PA [DC 13.8 V]  | 1    |
| ⑱               | 6510004880 | Connector MR-DS-E 01 [ANT]   | 1    |
| ⑲               | 8810005530 | Screw PH ST M2.6 × 6 NI      | 2    |
| ⑳               | 8810007970 | Screw PH BT M3 × 6 NI        | 31   |
| ㉑               | 8110005020 | 963 PA cover                 | 1    |
| ㉒               | 6910000310 | Insulate bushing B312D       | 2    |
| ㉓               | 8930005480 | Insulating plate I           | 1    |
| ㉔               | 8810000230 | Screw PH M3 × 6              | 8    |
| ㉕               | 8510008740 | 963 shield plate             | 2    |
| ㉖               | 8410000770 | AF heatsink-1                | 1    |
| ㉗               | 8510002200 | VCO shield case              | 1    |
| ㉘               | 8510002280 | VCO shield plate (A)         | 2    |
| ㉙               | 8510000230 | 220 shield case              | 1    |
| ㉚               | 8510000241 | 220 shield case cover -1     | 1    |
| ㉛               | 8830000100 | Nut M3                       | 2    |
| ㉜               | 8810003170 | Setscrew A M3 × 8            | 2    |
| ㉝               | 8010014680 | 963 main chassis             | 1    |
| ㉞               | 2710000330 | Fan FBA08A12HA               | 1    |
| ㉟               | 8850000440 | Spring washer M5 NI          | 1    |
| ㊱               | 8830000210 | Nut M5 NI BS                 | 1    |
| ㊲               | 8850000150 | Flat washer M5 NI BS         | 3    |
| ㊳               | 8830000360 | Wing nut M5 NI [GND]         | 1    |

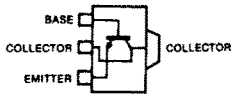
**Screw abbreviations**    PH: Pan head    B1, BT, ST: Self-tapping    NI: Nickel



# SECTION 8 BOARD LAYOUTS

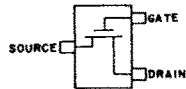
## 8-1 MAIN UNIT

**2SC4673D**  
(Symbol: C0)



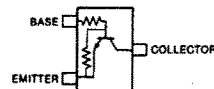
Q1, Q5

**2SK882 GR**  
(Symbol: TG)



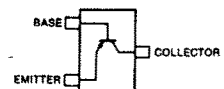
Q4, Q8, Q10, Q12, Q13, Q45

**DTC114EU**  
(Symbol: 24)



Q6, Q7, Q16, Q18, Q21, Q29, Q31, Q32, Q38, Q41, Q47, Q51, Q55, Q56, Q60, Q63, Q65, Q69, Q71, Q75, Q77

**2SA1576 R**  
(Symbol: FR)



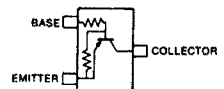
Q11, Q50, Q68

**3SK126 0**  
(Symbol: UC)



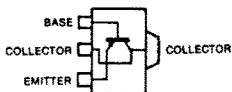
Q2, Q3, Q9, Q28, Q46

**DTA114EU**  
(Symbol: 14)



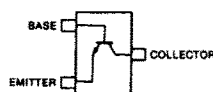
Q14, Q15, Q24, Q30, Q40, Q61, Q70, Q72

**2SB798 DK**  
(Symbol: DK)



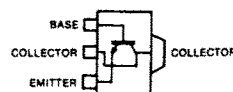
Q17

**2SC4081 R**  
(Symbol: BR)



Q25, Q33, Q34, Q35, Q36, Q37, Q39, Q44, Q48, Q58, Q59, Q62, Q64, Q67, Q74

**2SD999 CK**  
(Symbol: CK)



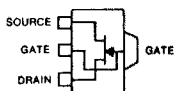
Q52, Q53, Q54, Q66, Q73

**MA862**  
(Symbol: M11)



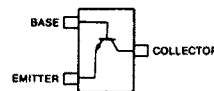
D1, D2, D3, D4, D5, D10, D11, D33, D35, D36, D38, D41, D42, D45, D46, D49, D50, D53, D55, D57

**2SK2171 4**  
(No Symbol)



Q22, Q23, Q26, Q27

**2SC4213 B**  
(Symbol: AB)



Q57, Q76

**DAN202U**  
(Symbol: N)



D6, D7, D8, D9, D18, D20, D21, D23, D25, D26, D31, D32, D59, D61, D62, D64, D67, D68, D70, D72, D73, D74, D76, D78, D80, D81, D83, D85, D86, D87, D88, D89, D90, D93, D96, D97, D98, D99, D100, D104, D108, D110, D112, D114, D115, D122, D123, D127, D128

**HSM88ASR**  
(Symbol: C3)



D15, D65, D71, D91

**RD5.1M B2**  
(Symbol: 512)



D82

**RD5.6M B2**  
(Symbol: 562)



D125

**DAP202U**  
(Symbol: P)



D17, D19, D22, D24, D63, D84, D101, D102, D106, D116, D117, D118, D119, D120, D121

**ND433G**  
(Symbol: 433)



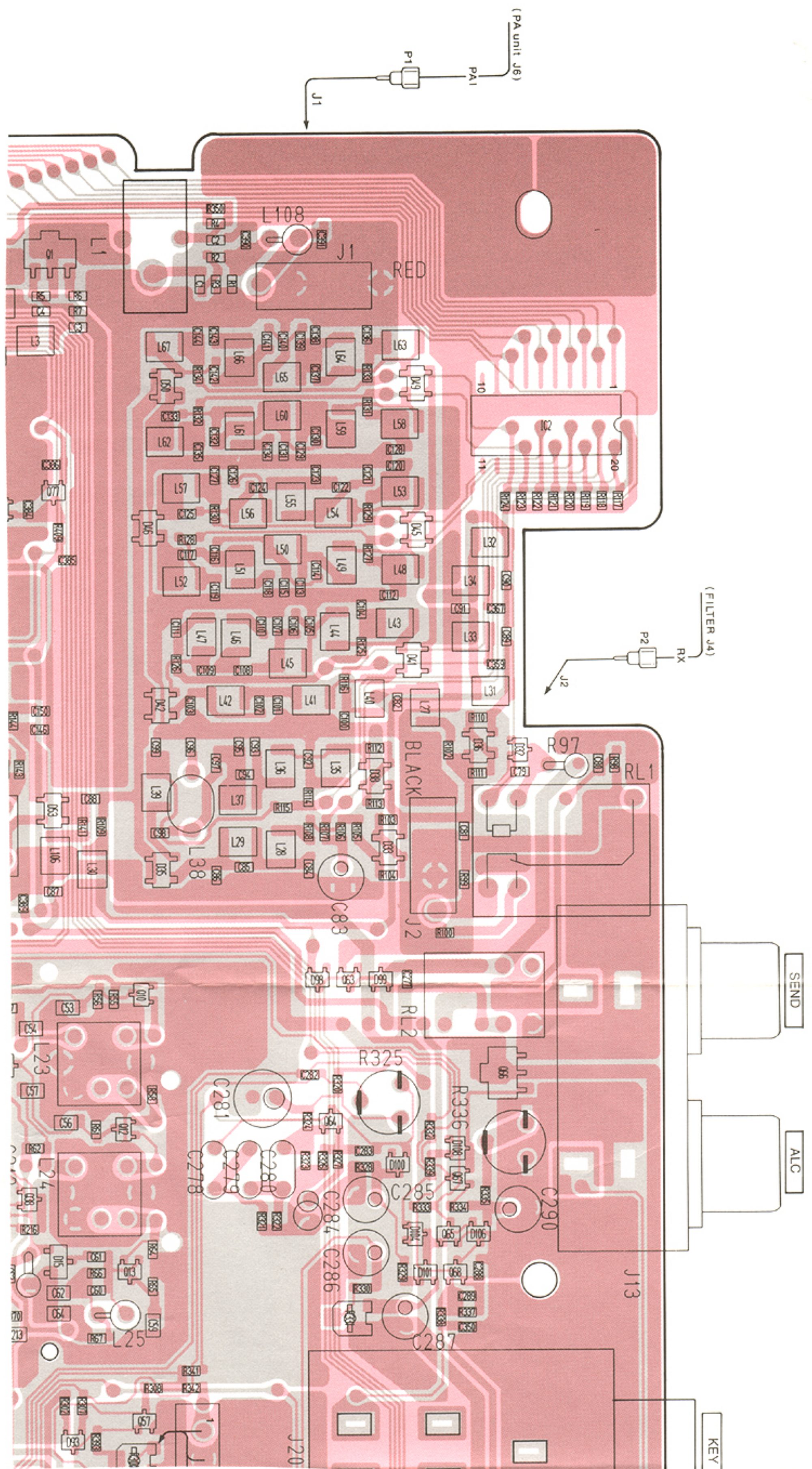
D124

**RD6.2M B2**  
(Symbol: 622)

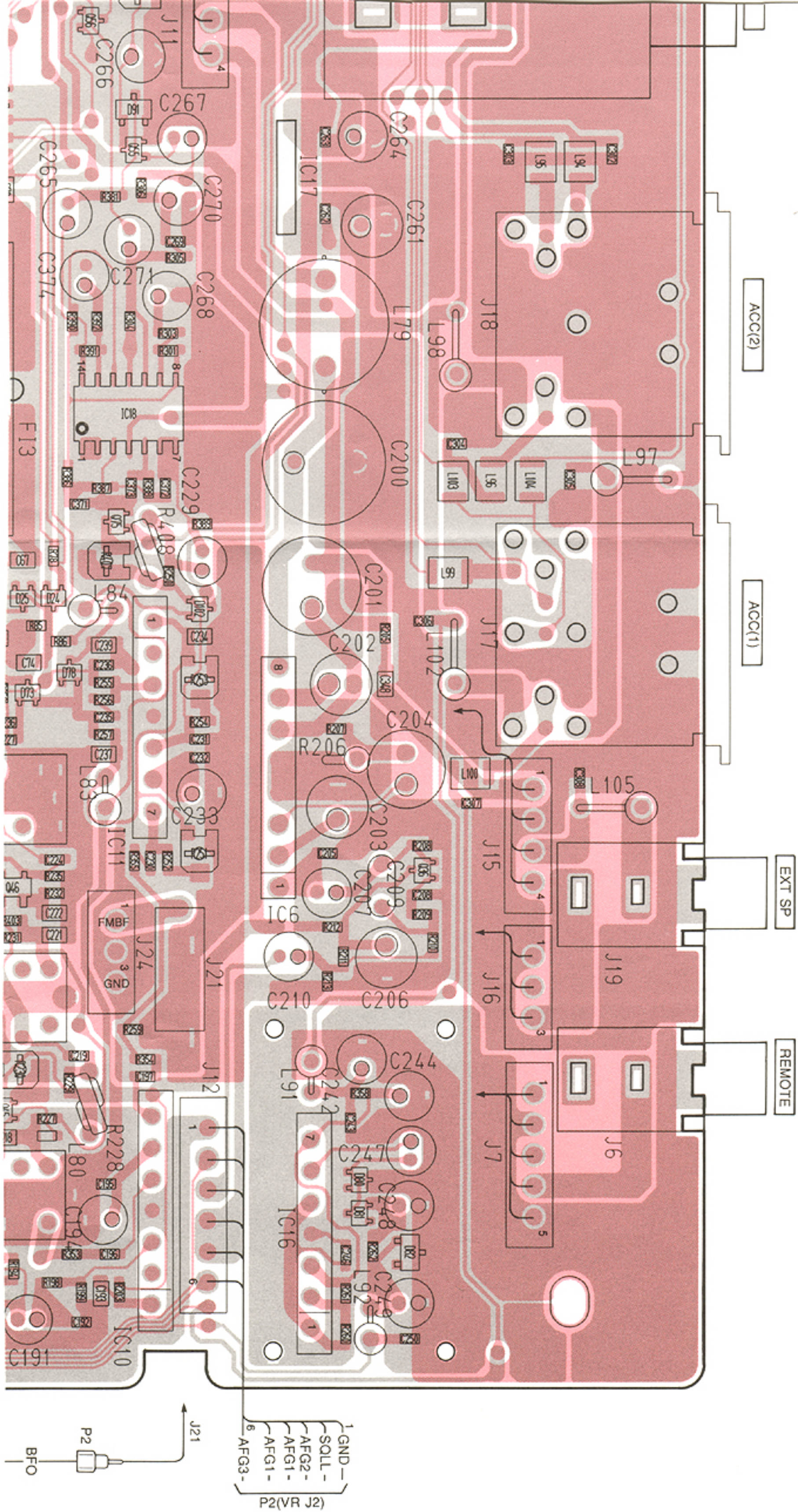


D126

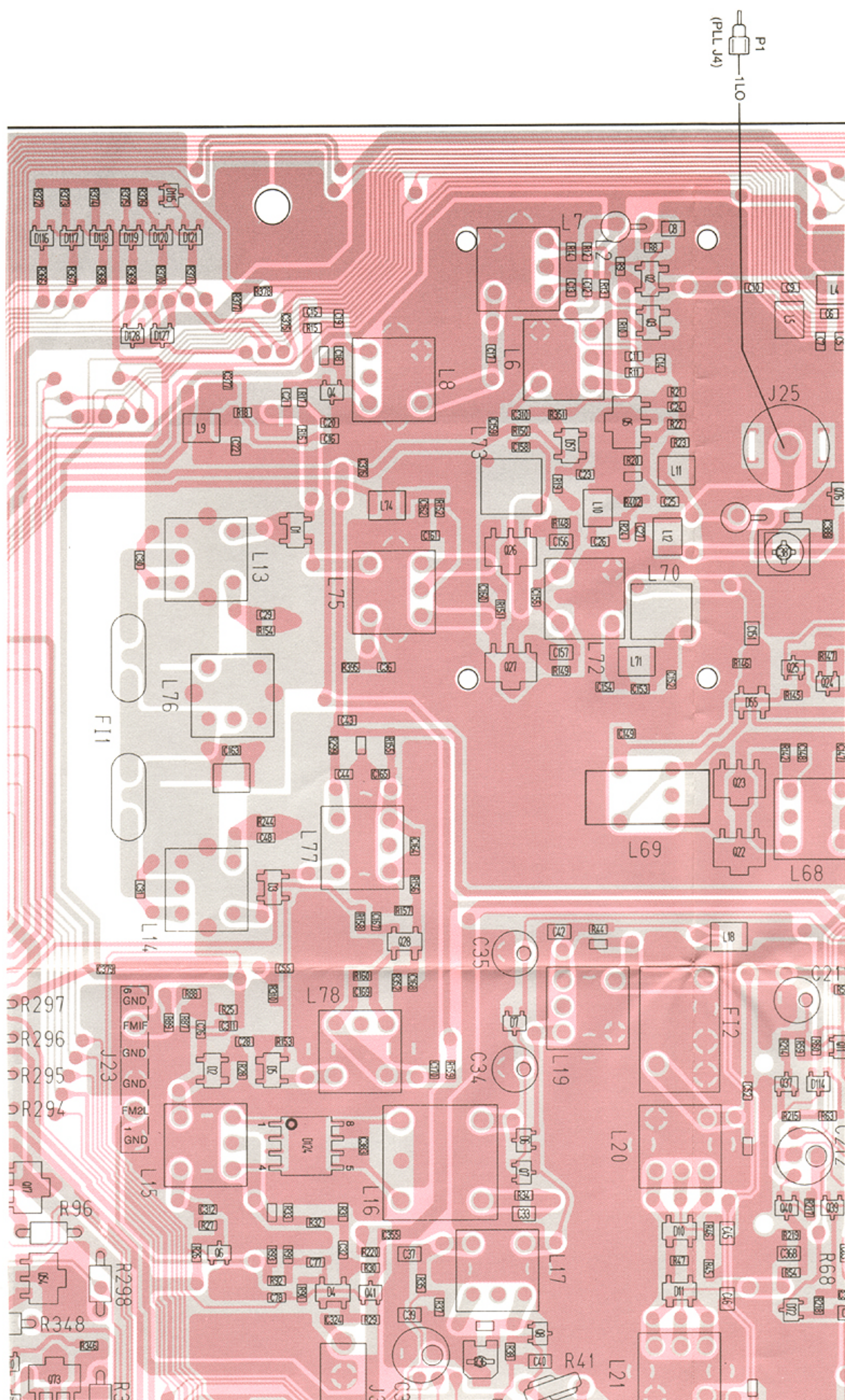








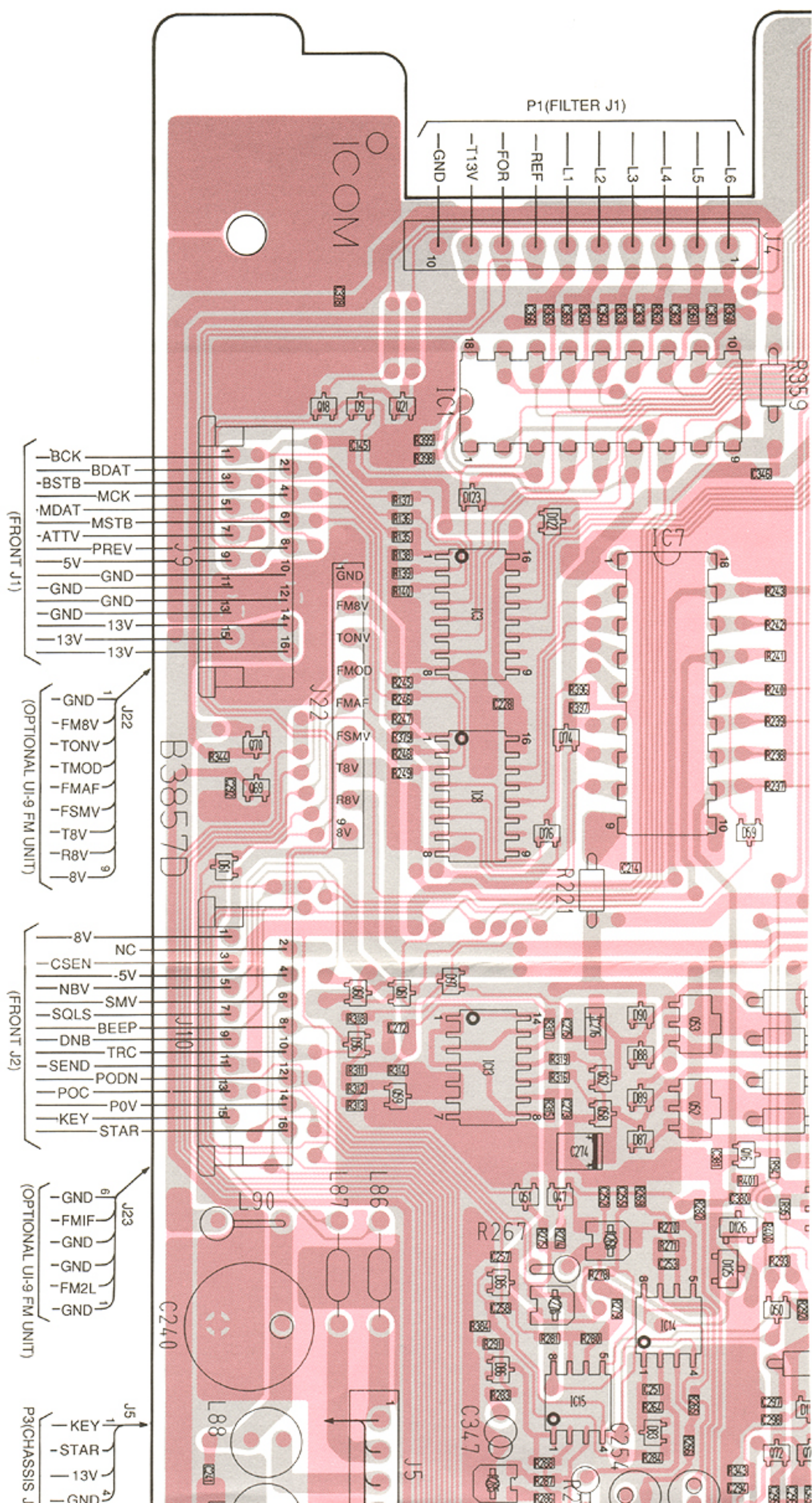






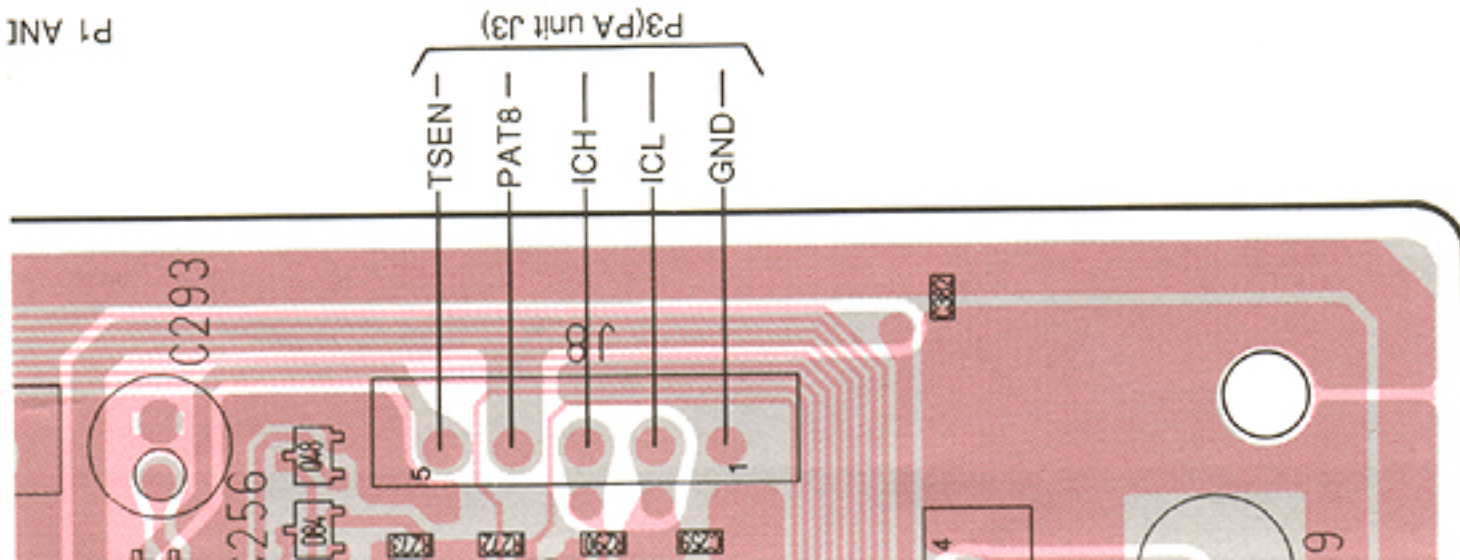








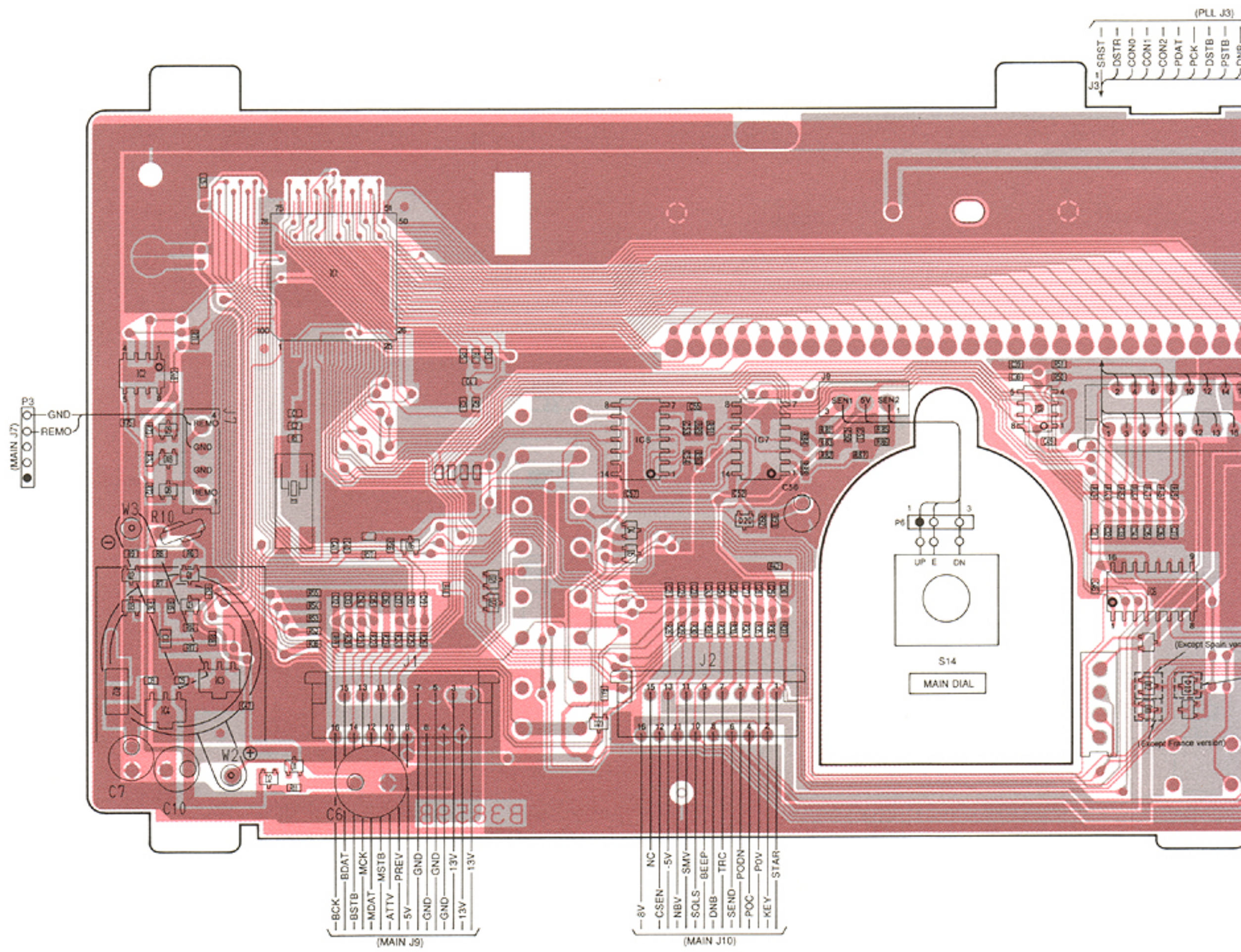
P1 ANT



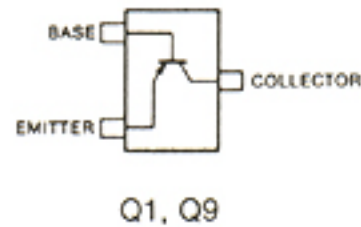


8-2 FRONT, VR AND JACK UNITS

• FRONT UNIT



**2SA1576 R**  
(Symbol: FR)



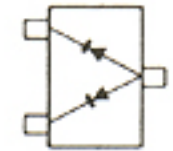
Q1, Q9

**2SB798 DK**  
(Symbol: DK)



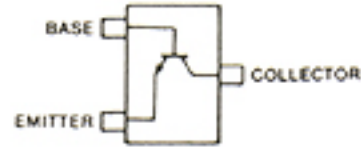
Q4

**DAP202U**  
(Symbol: P)



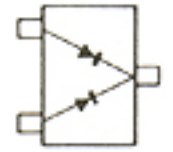
D4, D5, D7, D8, D9, D10

**2SC4081 R**  
(Symbol: BR)



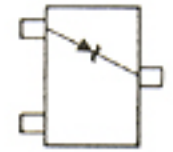
Q2, Q3, Q5, Q8

**DAN202U**  
(Symbol: N)



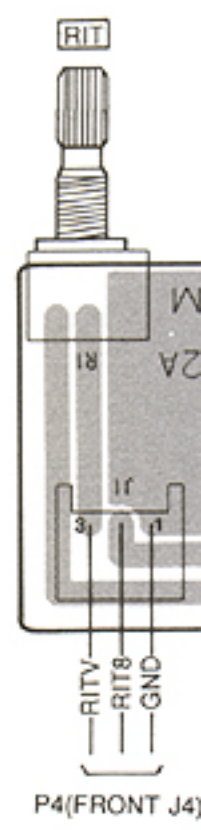
D1, D2, D3, D11,  
D12, D13, D15, D16,  
D18, D20, D21, D22,  
D23

**RD5.1M B2**  
(Symbol: 512)



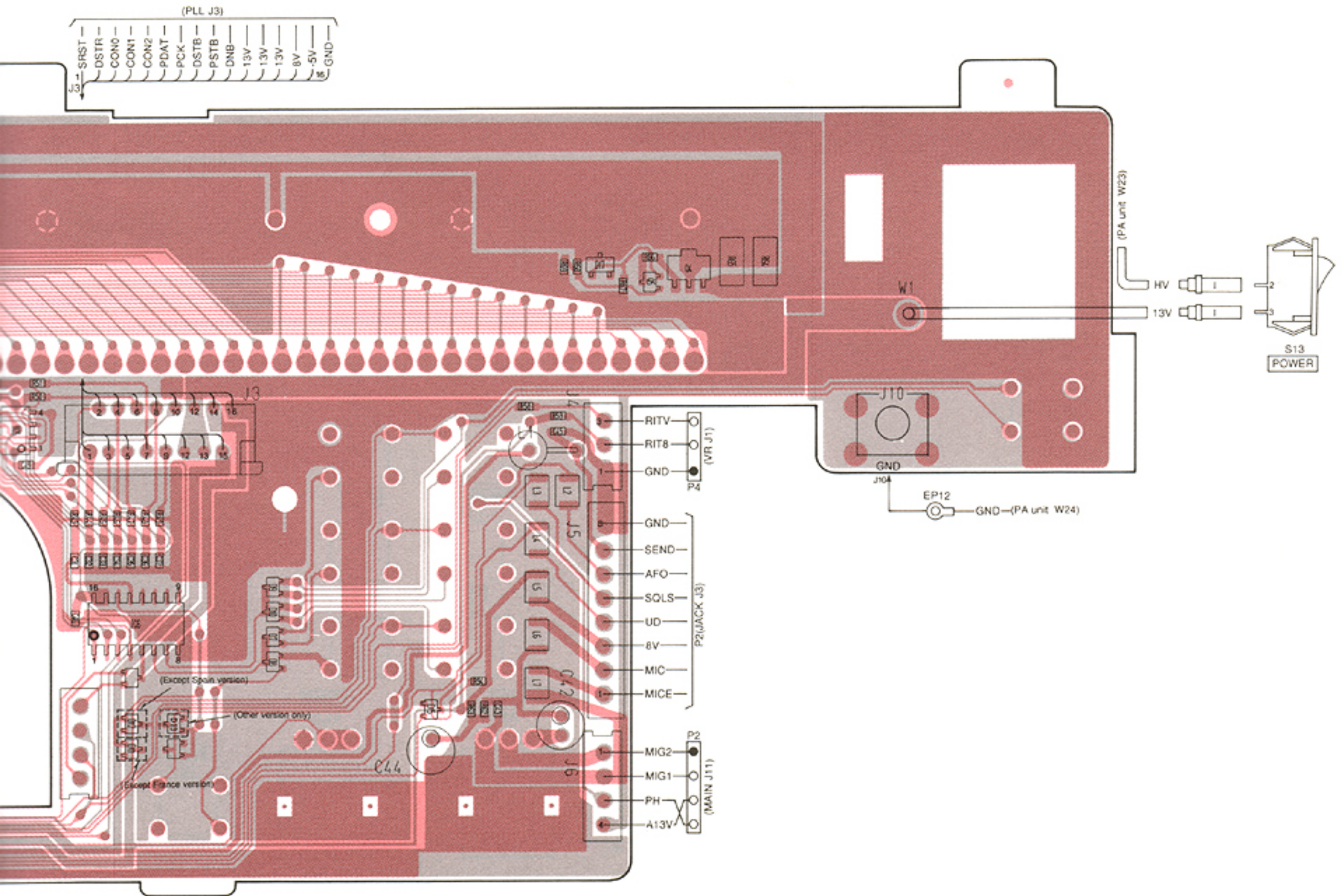
D17

• VR UNIT

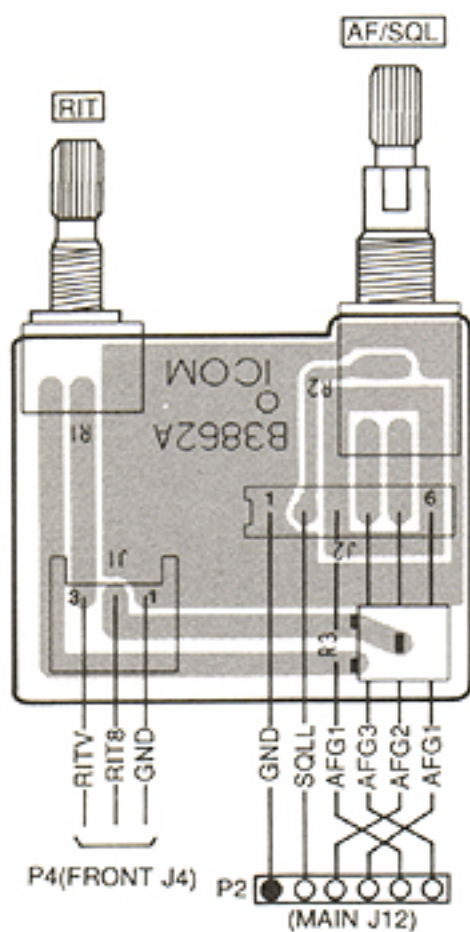




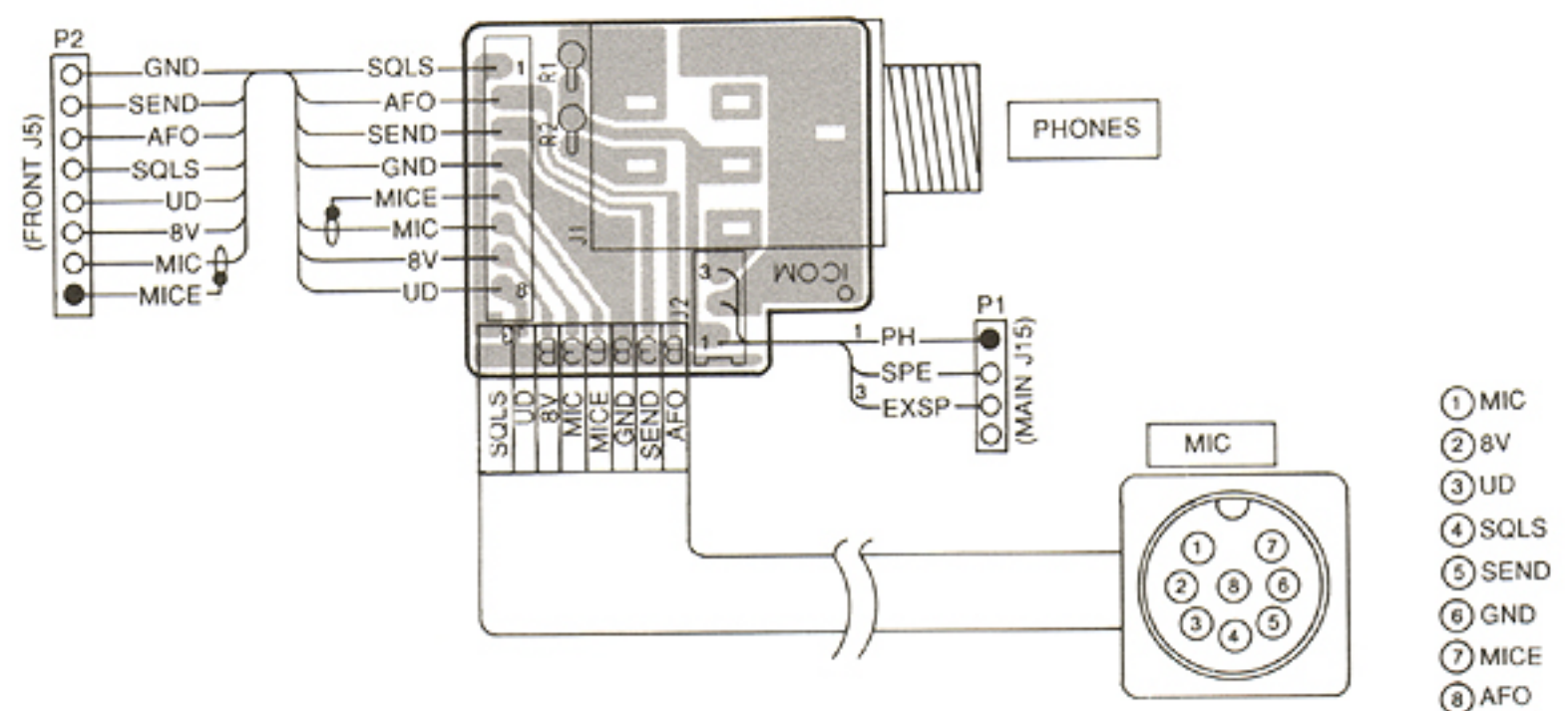
The combination of this page and the next page show the unit layout in the same configuration as the actual P.C. Board.



## • VR UNIT

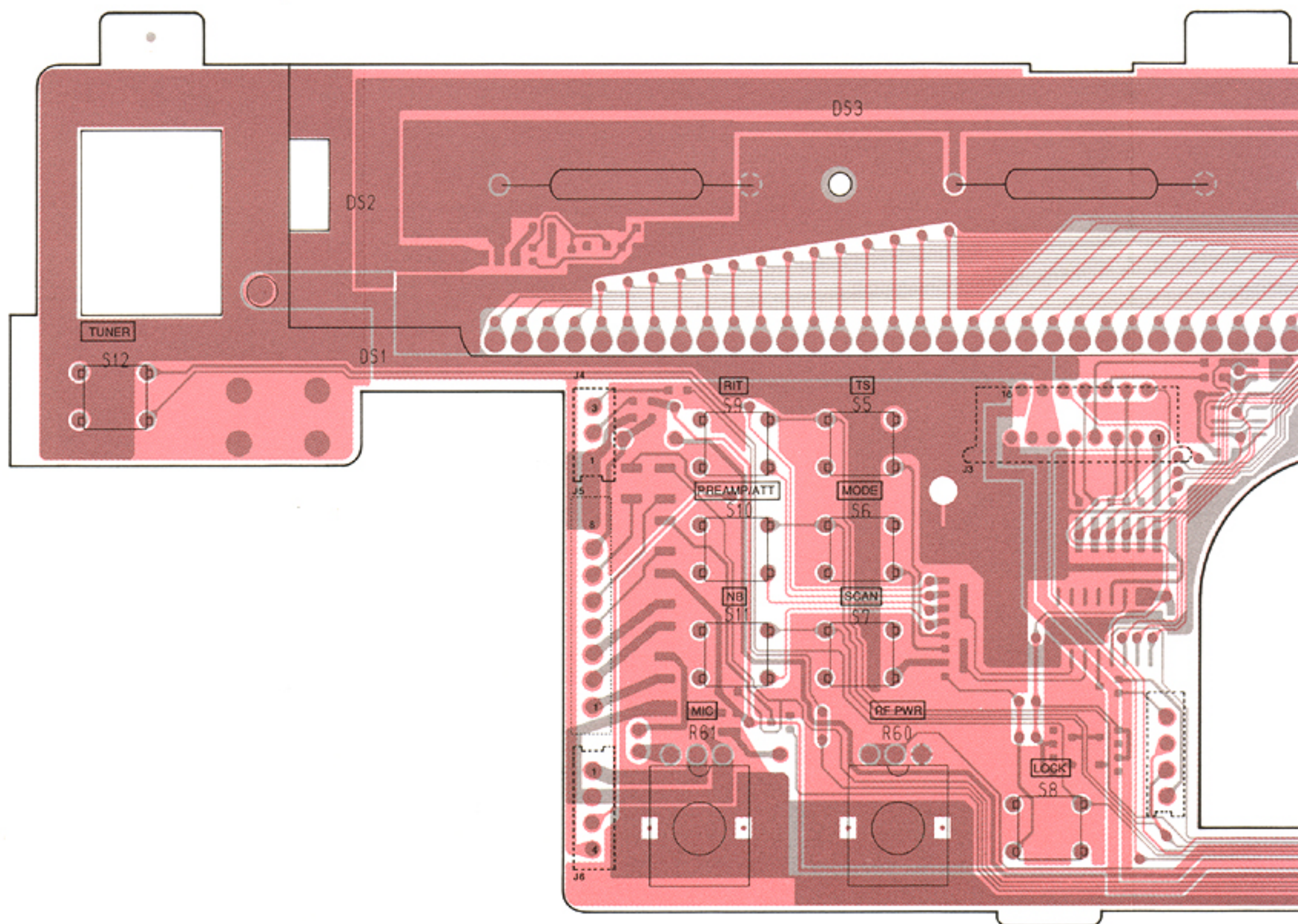


## • JACK UNIT





• FRONT UNIT

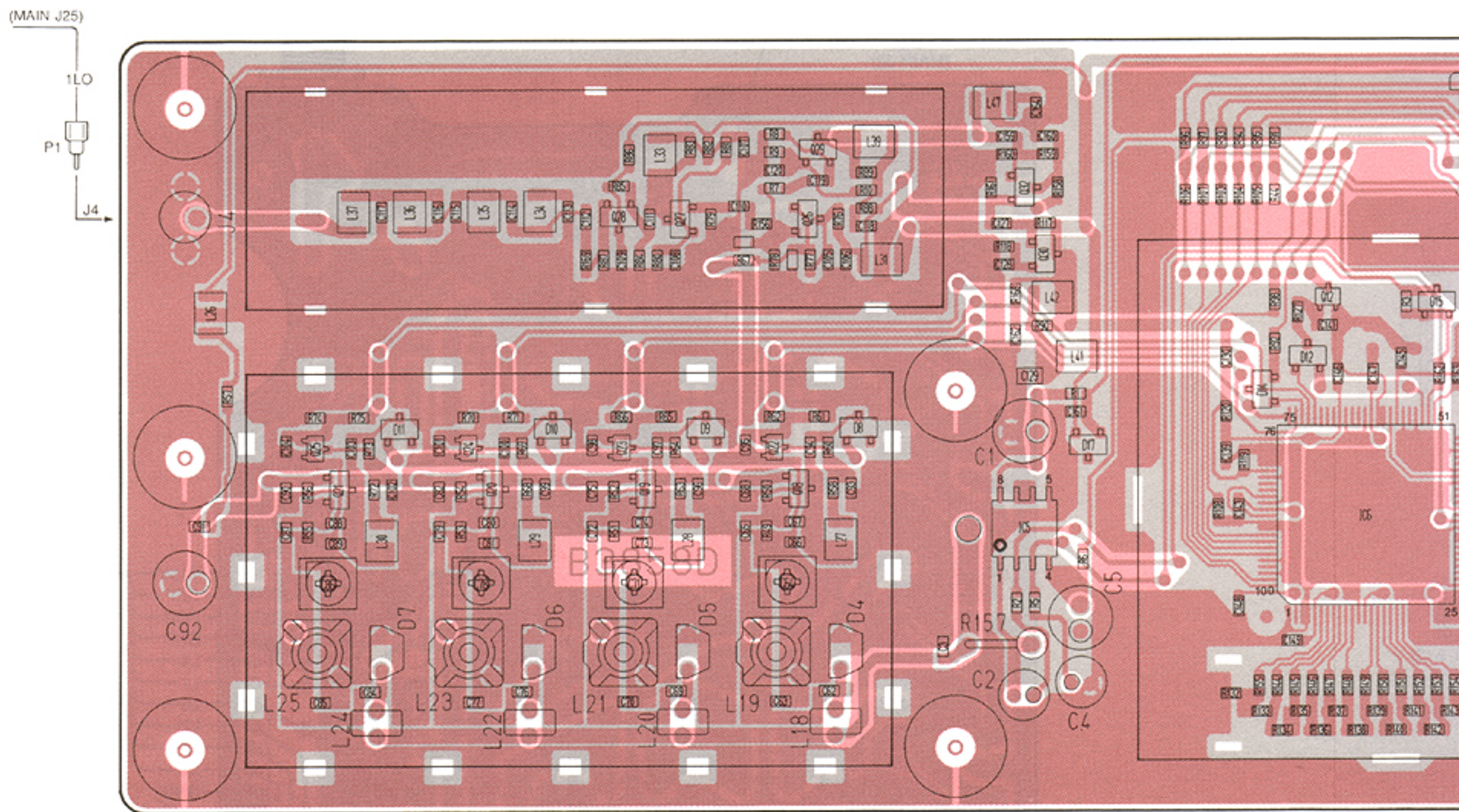




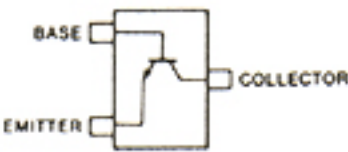




8-3 PLL UNIT

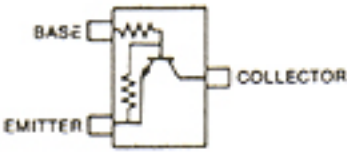


**2SC2714 O**  
(Symbol: Q0)



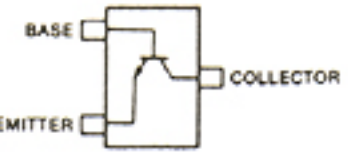
Q9, Q10, Q26, Q27,  
Q28, Q29, Q30, Q32

**DTC114EU**  
(Symbol: 24)



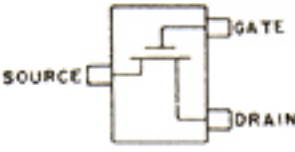
Q12

**2SC3661**  
(Symbol: FY)



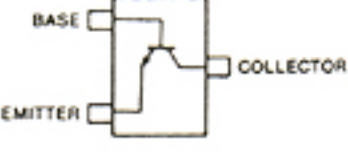
Q14

**2SK882 GR**  
(Symbol: TG)



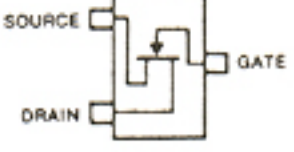
Q16

**2SC4215 O**  
(Symbol: Q0)



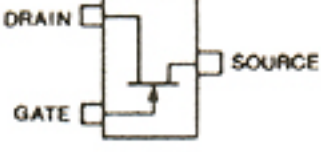
Q11

**2SK880 GR**  
(Symbol: XG)



Q13

**2SK210 GR**  
(Symbol: YG)



Q15, Q18, Q19, Q20,  
Q21

**2SC4081 R**  
(Symbol: BR)



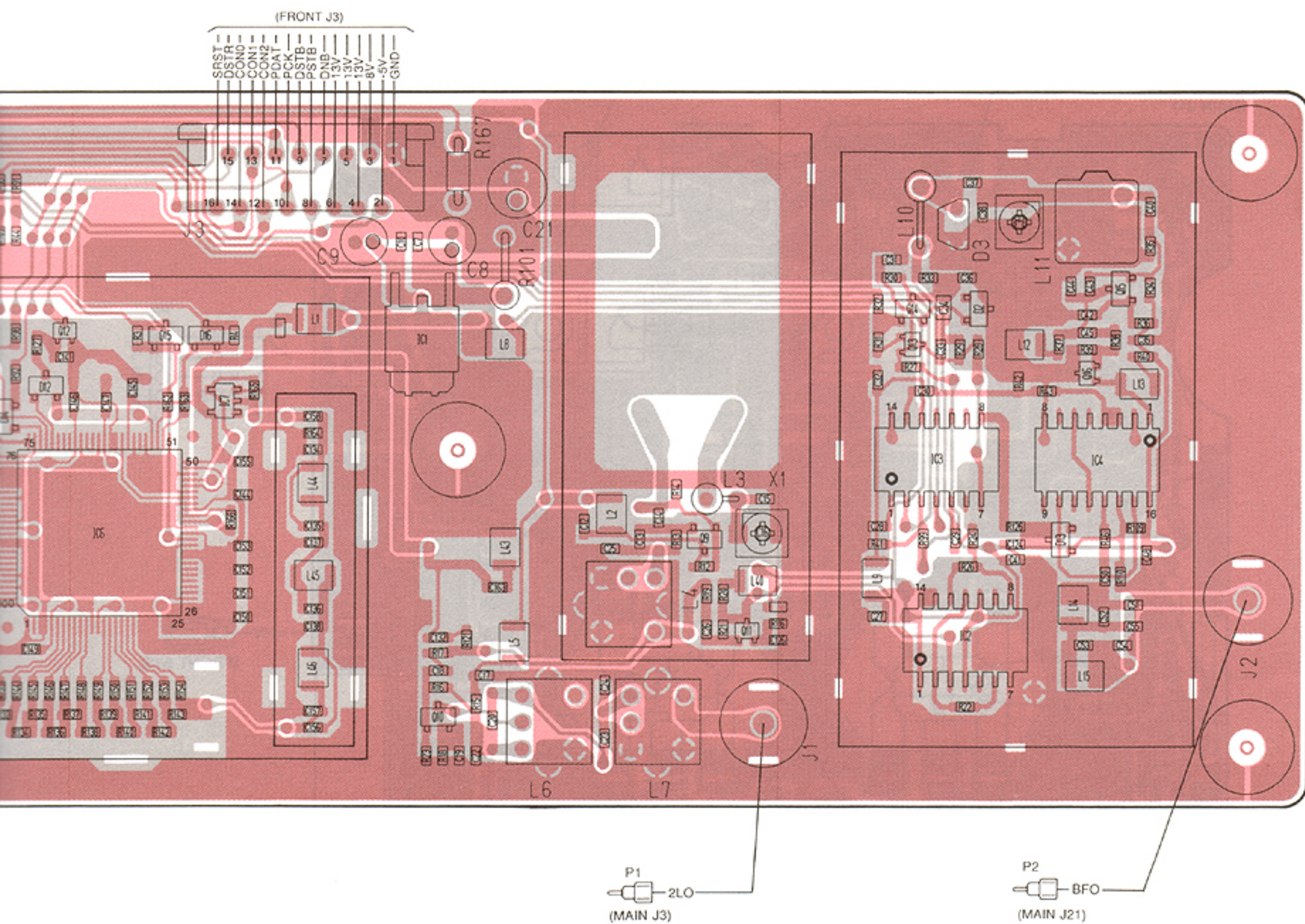
Q22, Q23, Q24, Q25

**1S**  
(Symbol: SY)

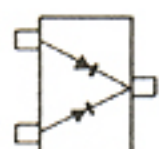


D2, D8  
D12, D



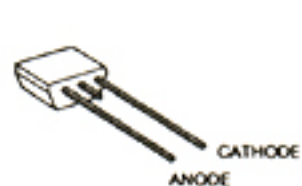


**1SS184**  
(Symbol: B3)



D2, D8, D9, D10, D11,  
D12, D14

**1SV101**



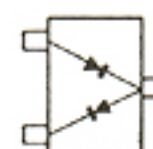
D3, D4, D5, D6, D7

**RD3.9M B2**  
(Symbol: 392)



D13

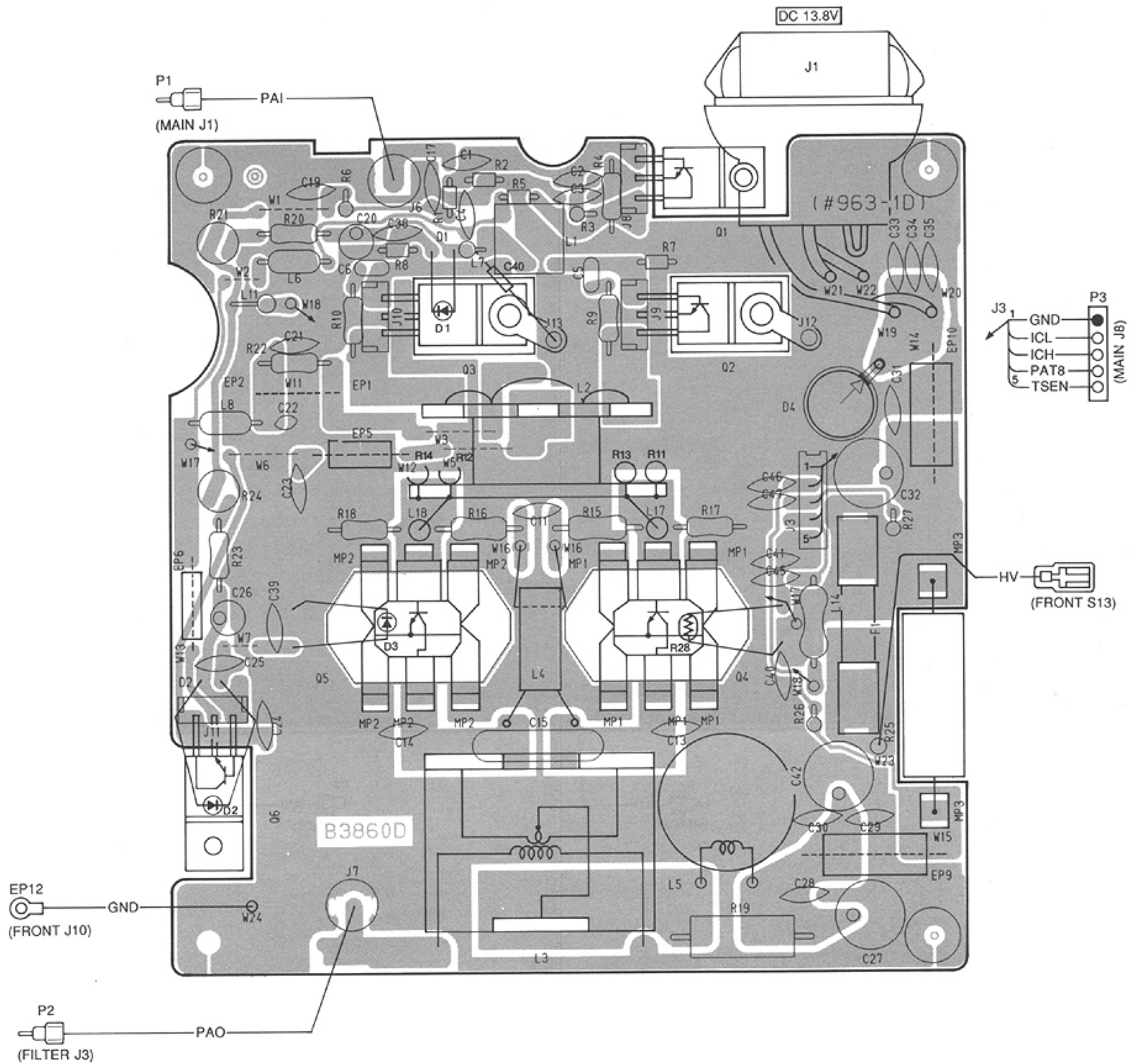
**1SS226**  
(Symbol: C3)



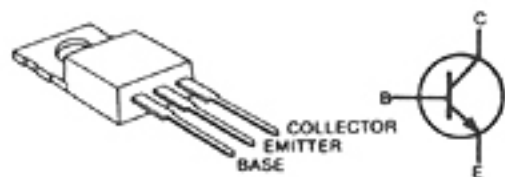
D15, D16, D17



## 8-4 PA UNIT

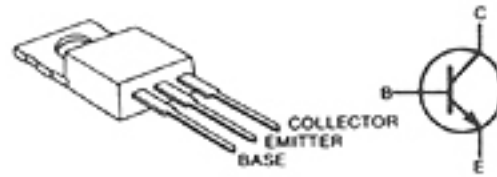


2SC1971



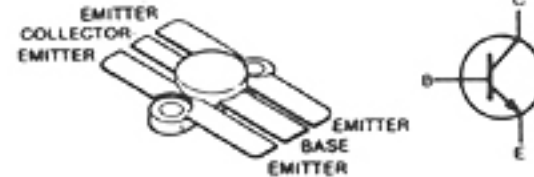
Q1

2SC3133



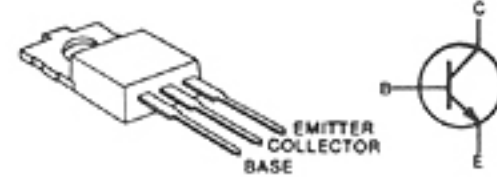
Q2, Q3

2SC2904



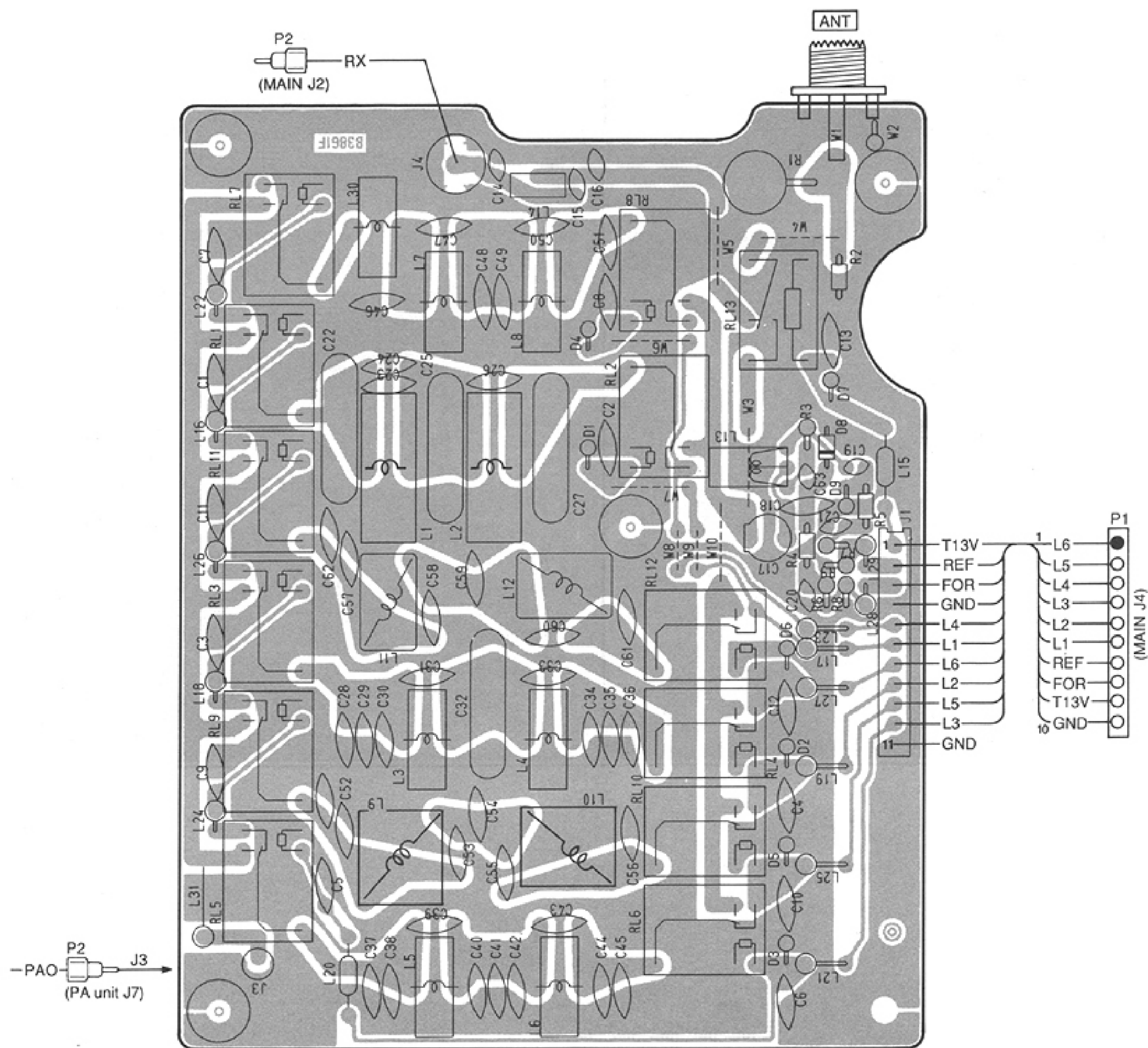
Q4, Q5

2SD1406



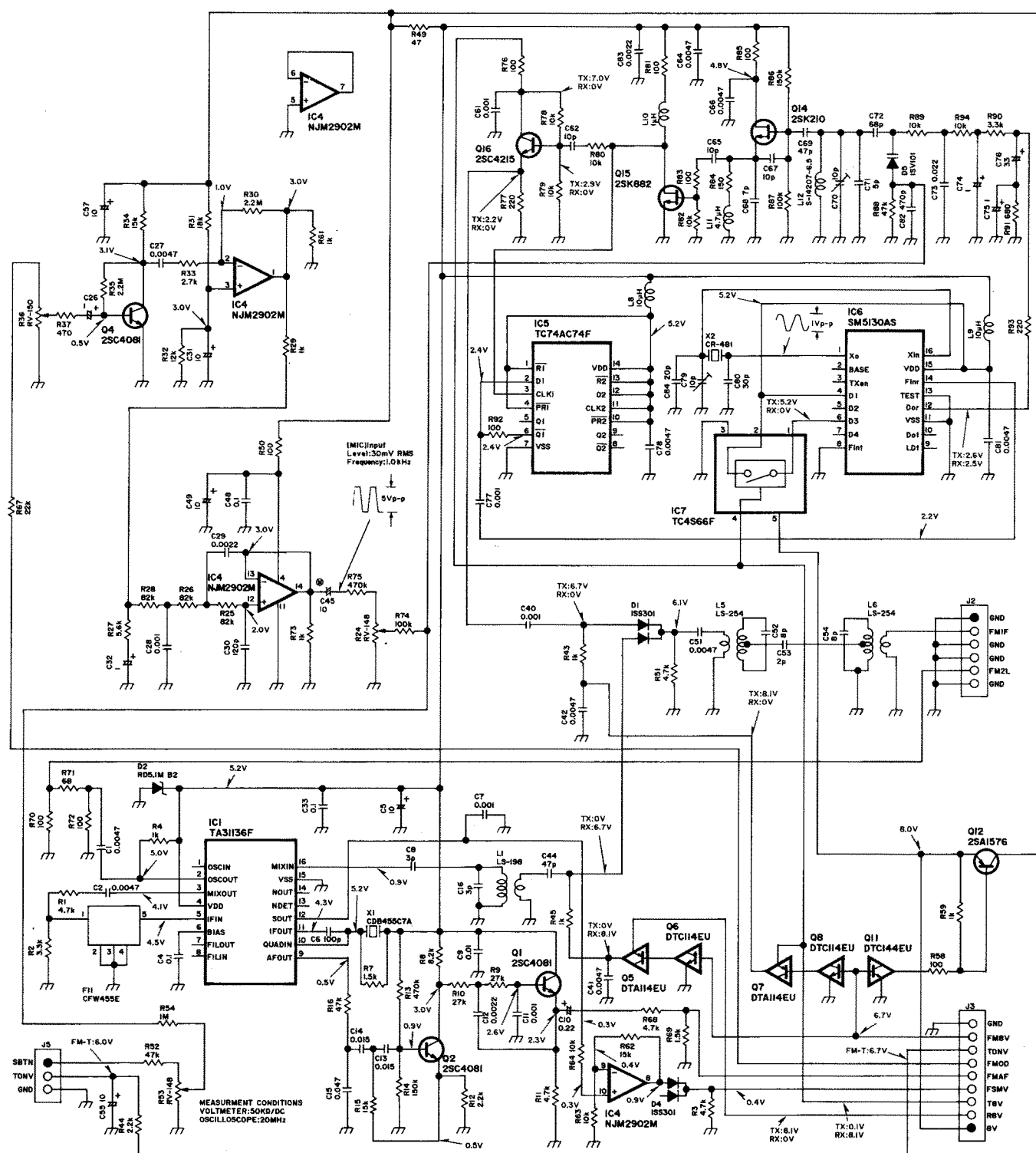
Q6

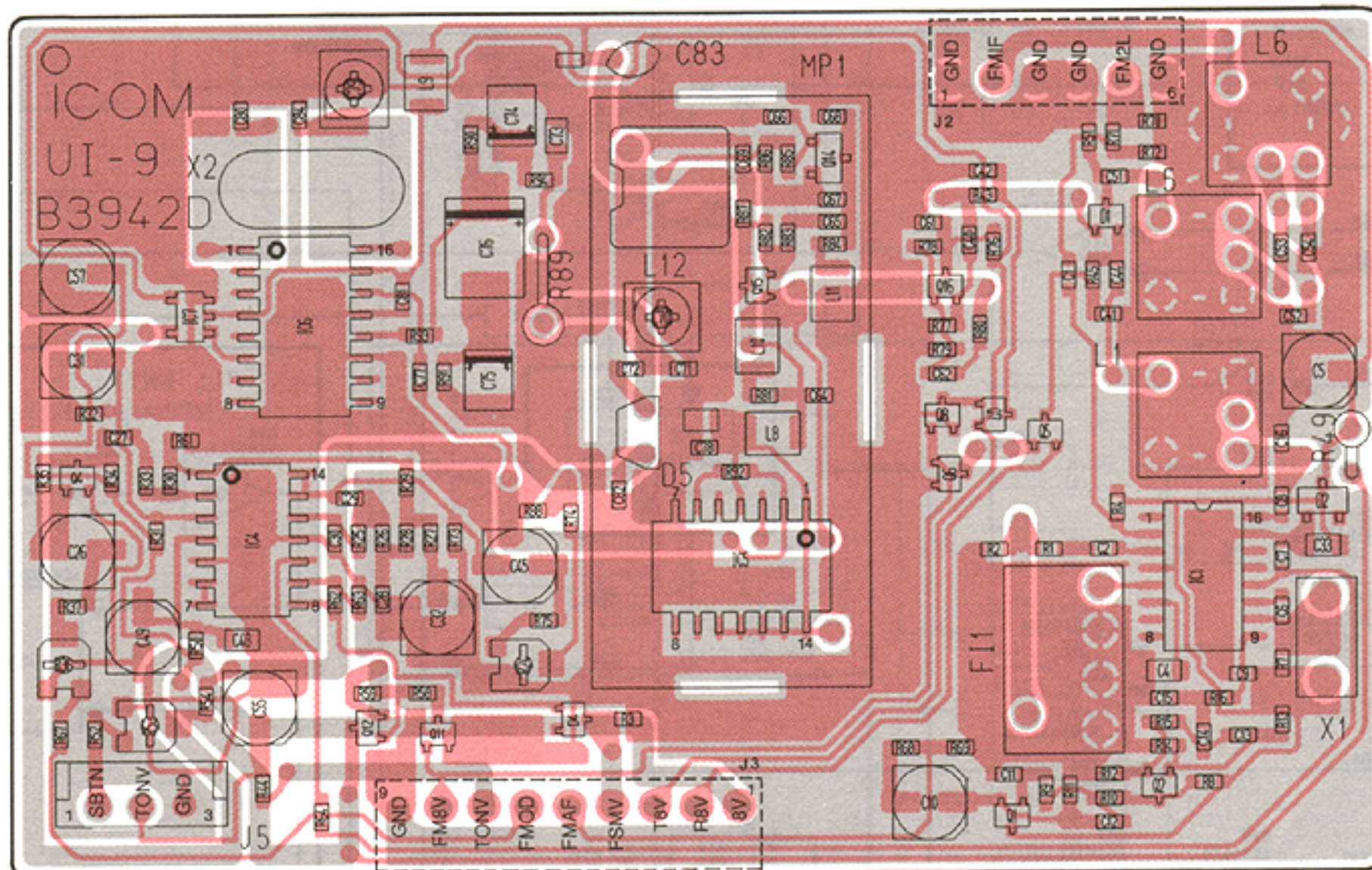
8-5 FILTER UNIT





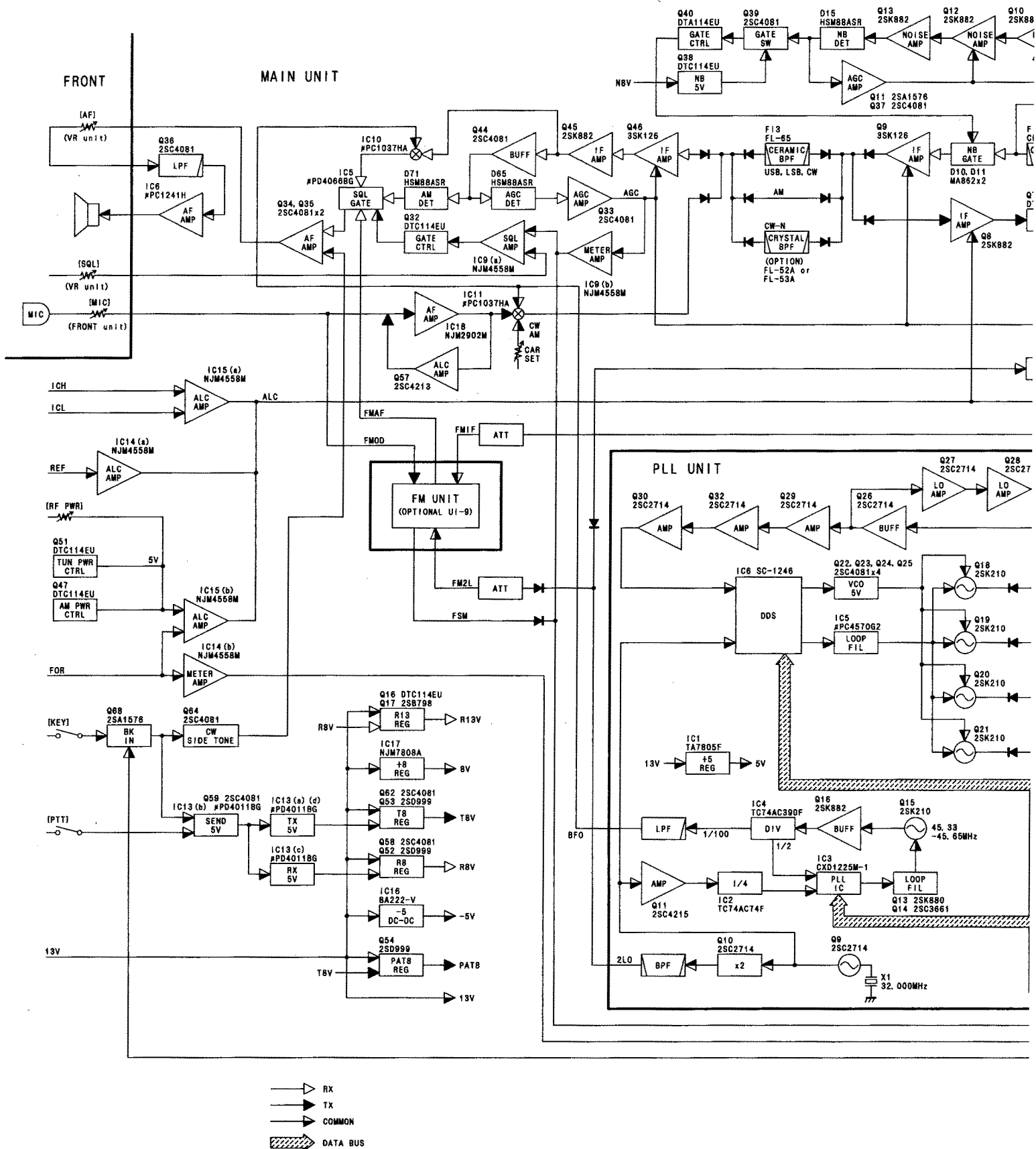
## SECTION 9      OPTIONAL UNIT







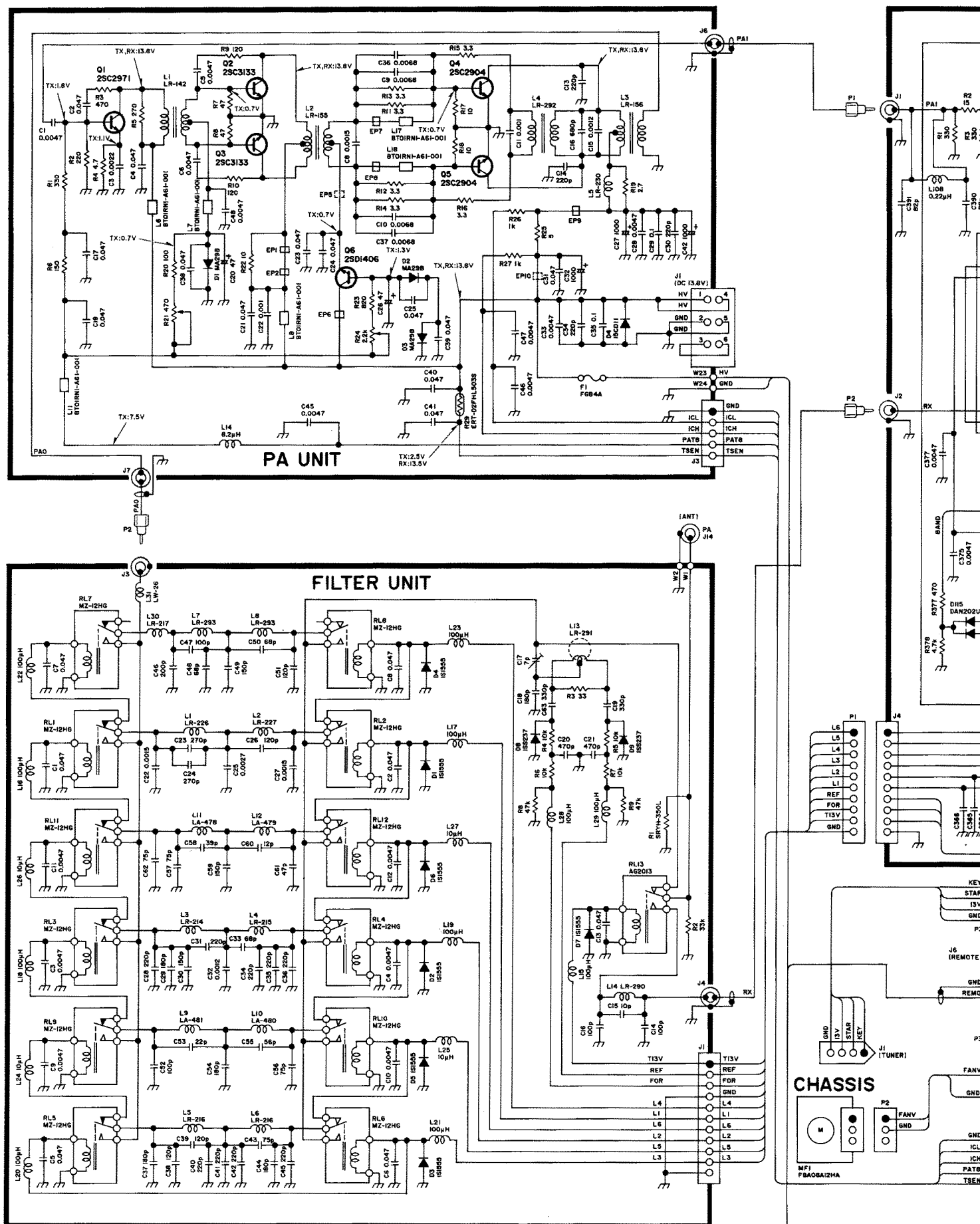
# SECTION 10 BLOCK DIAGRAM

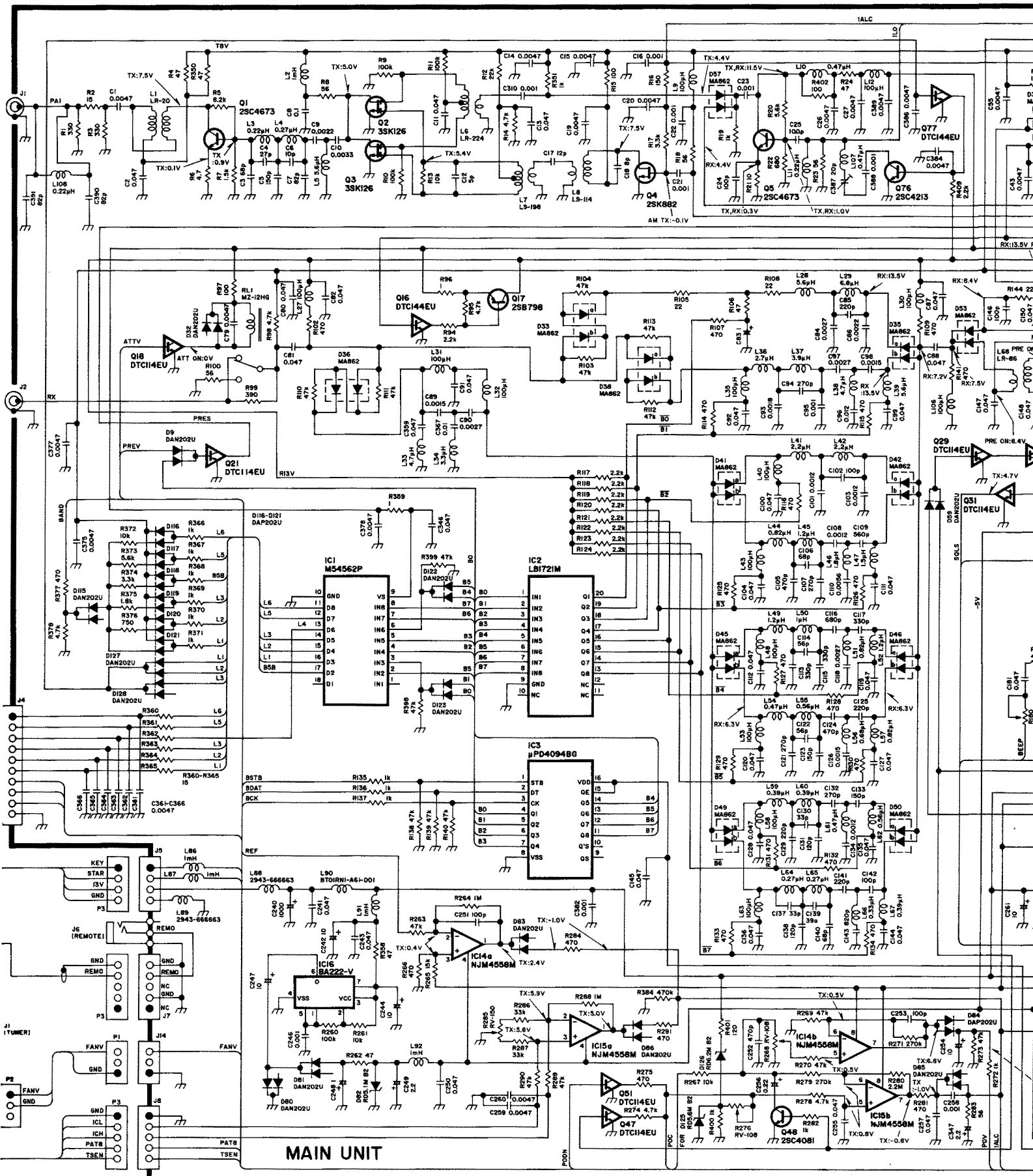




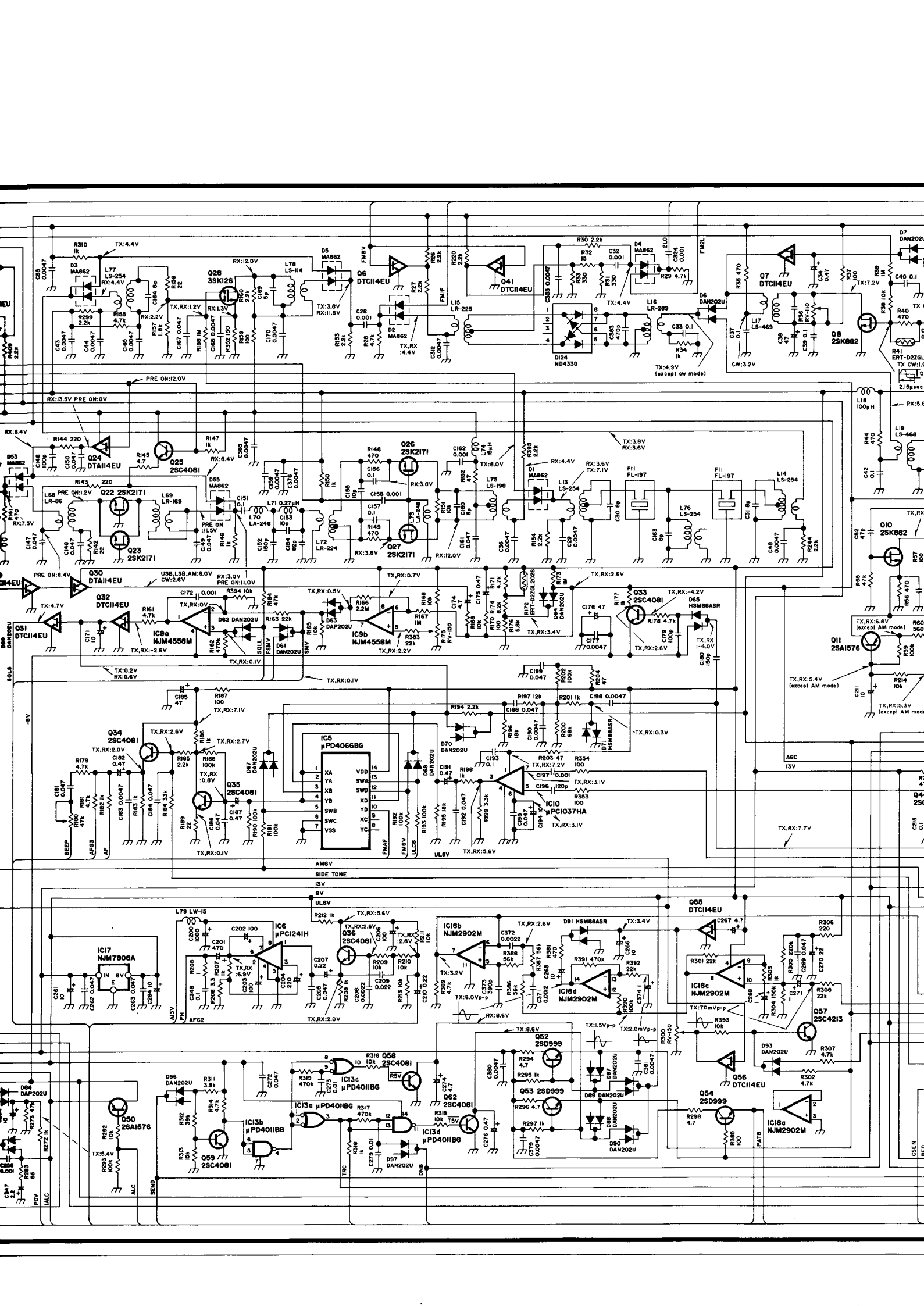


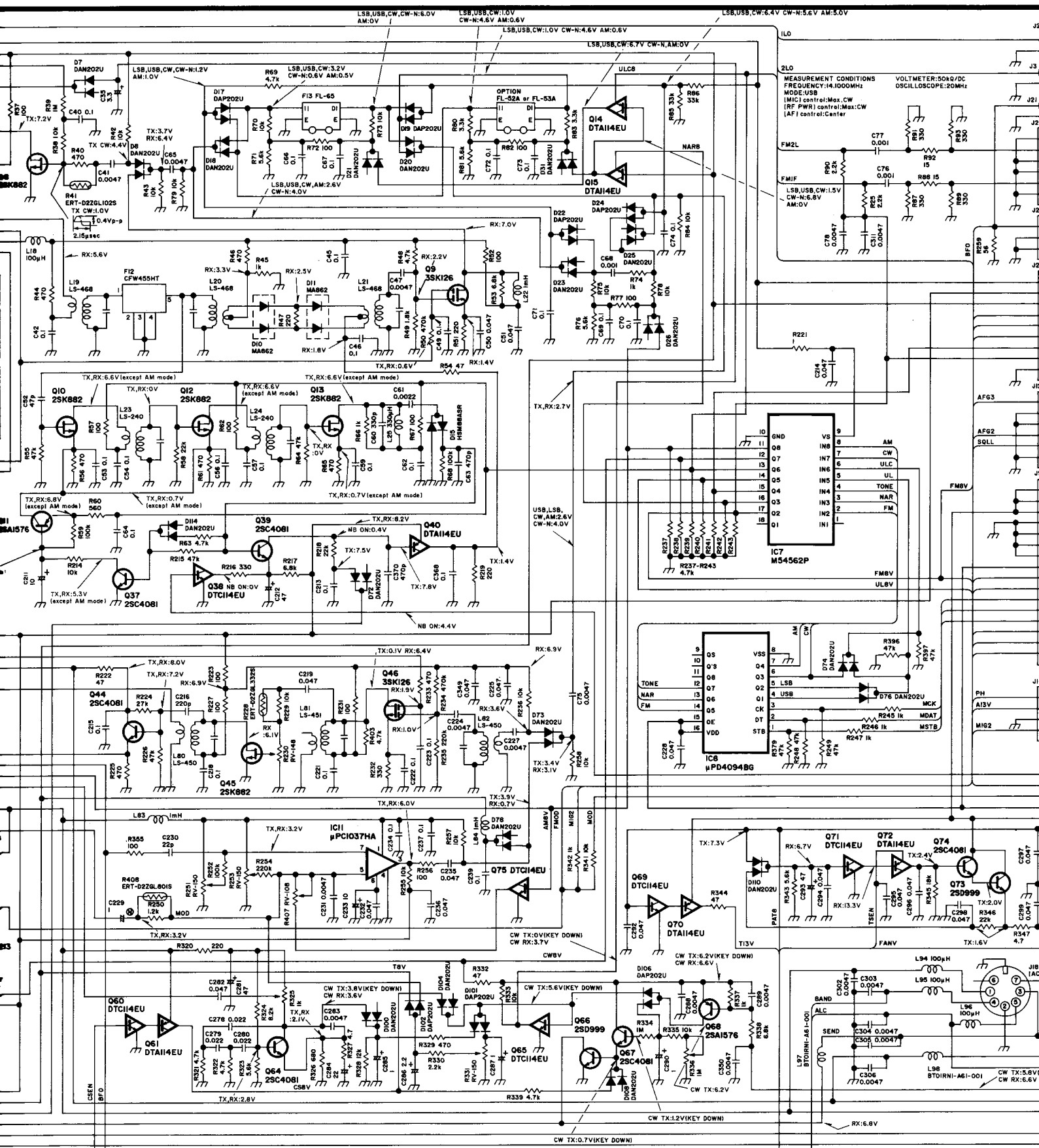
## 11-1 MAIN, PA AND FILTER UNITS



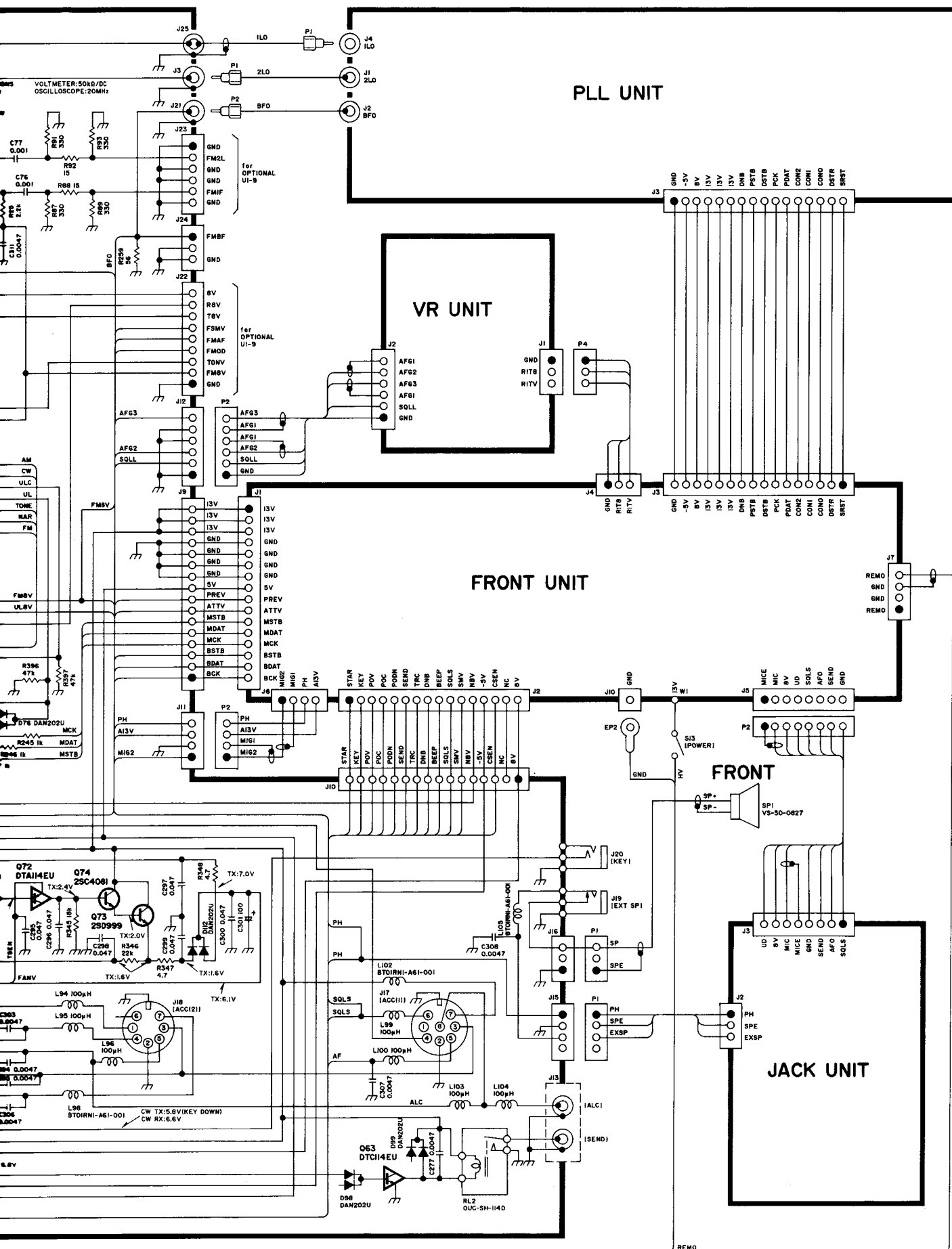




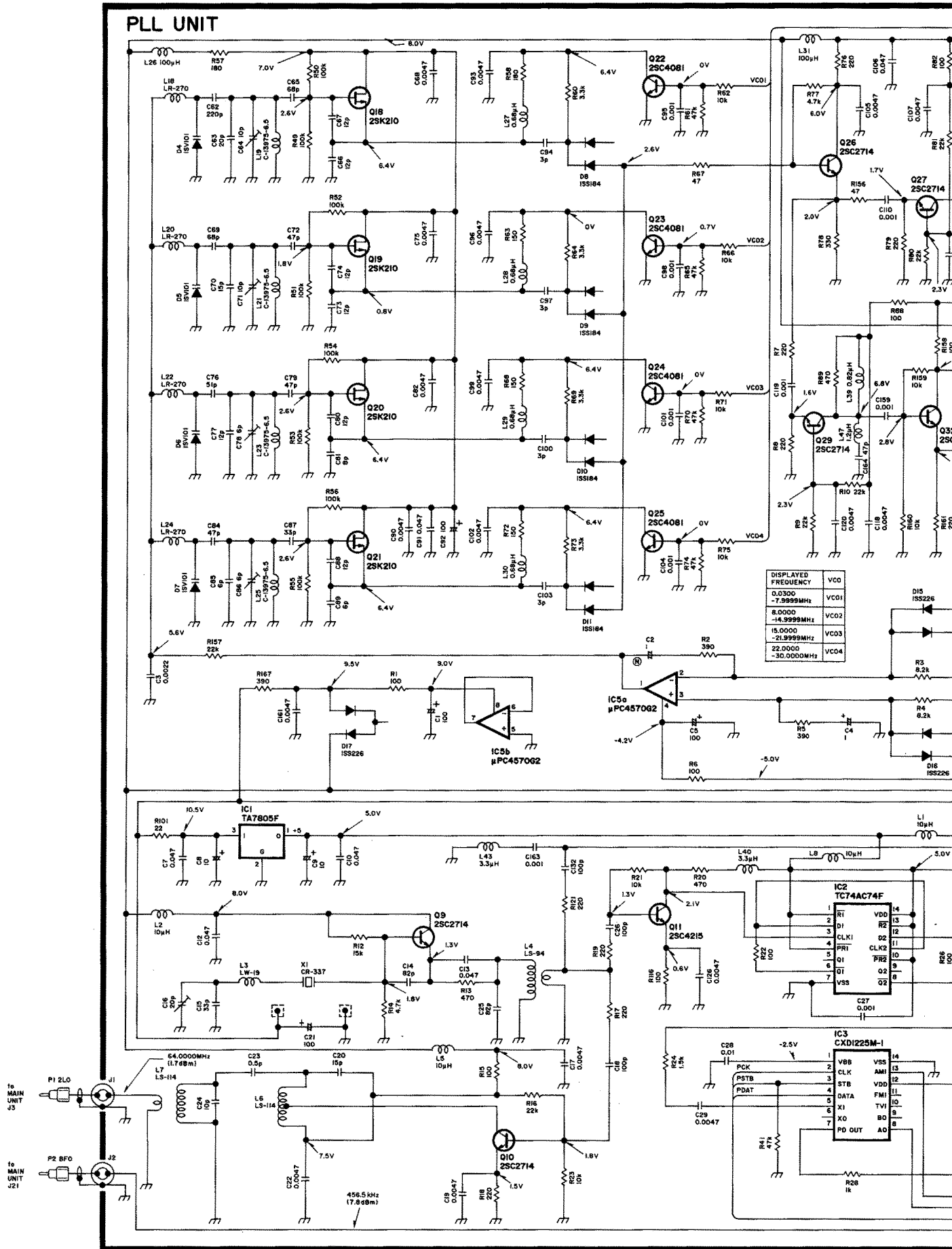




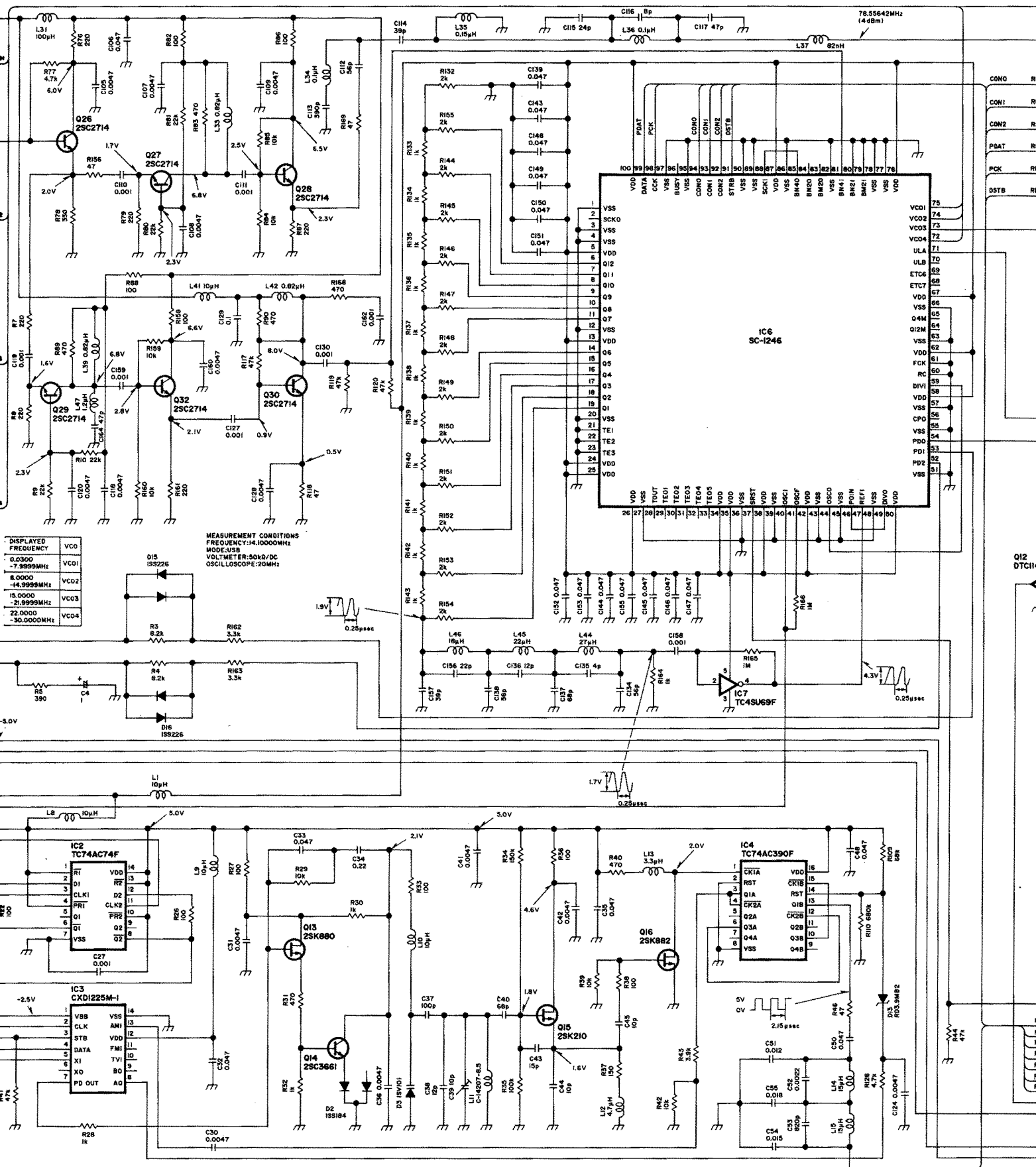




11-2 PLL AND FRONT UNITS

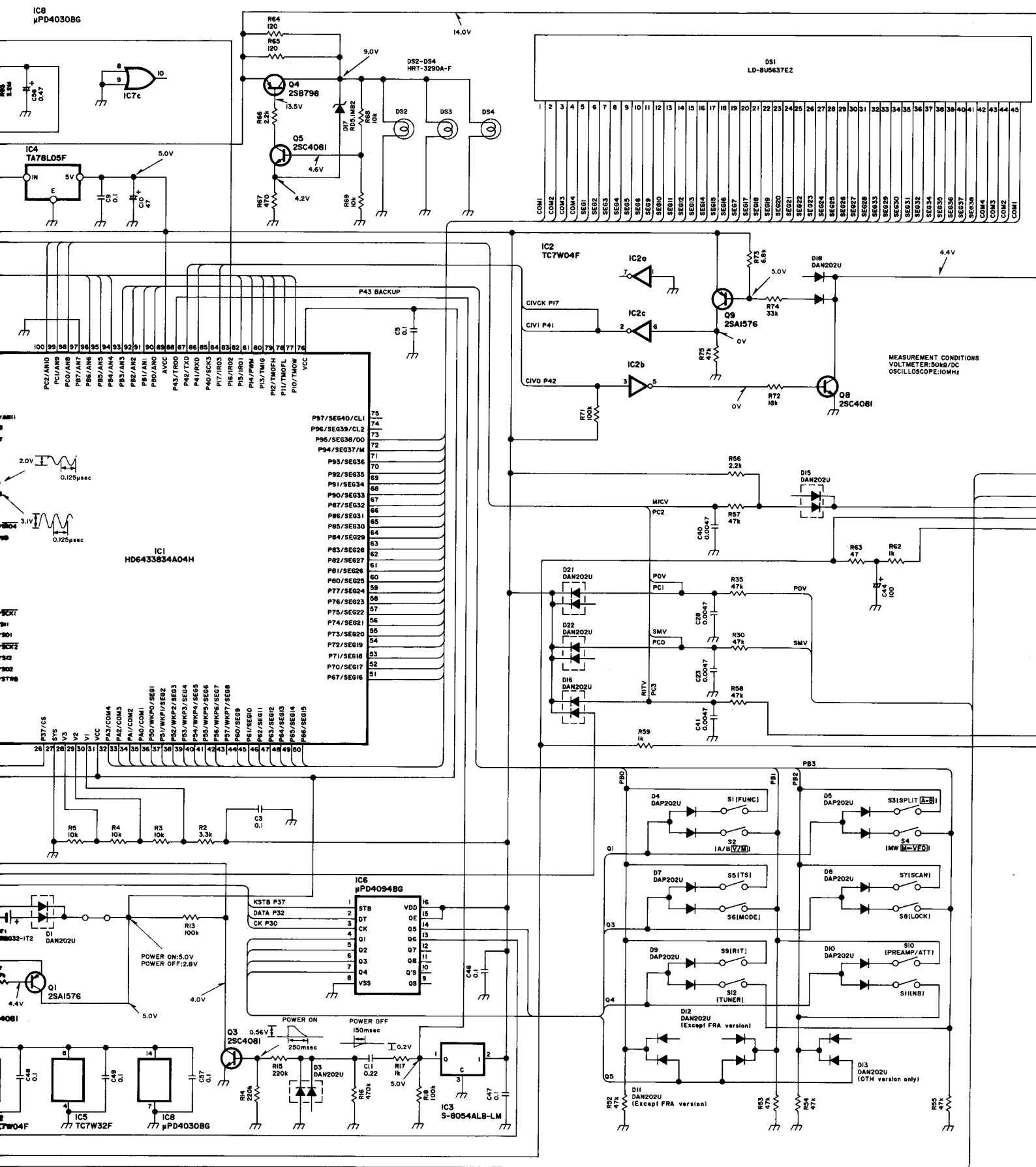


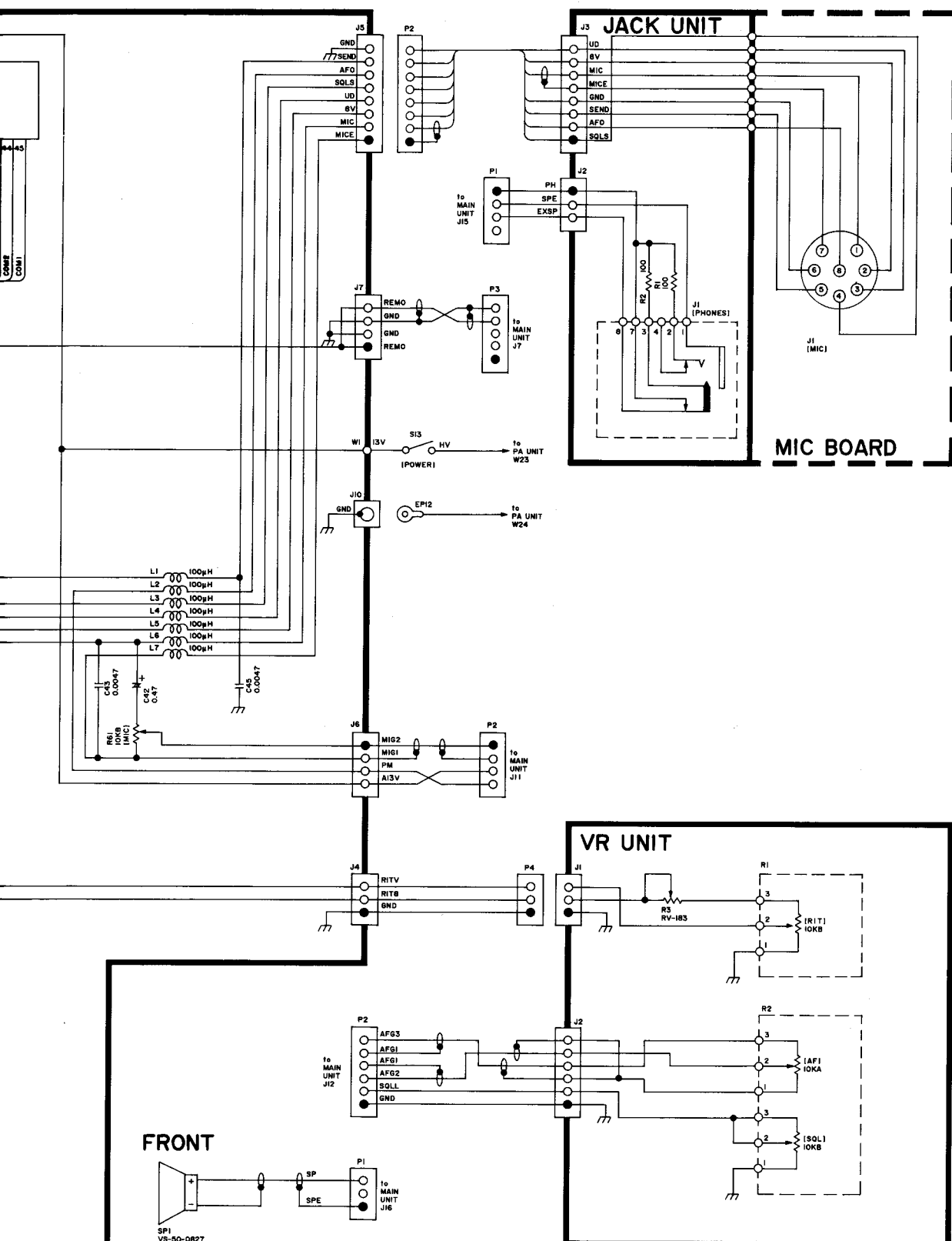












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