

The ICOM logo features a stylized lowercase 'i' with a small circle above it, followed by the uppercase letters 'COM' in a bold, sans-serif font.

# SERVICE MANUAL

HF/VHF TRANSCEIVER

**IC-706**

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Icom Inc.

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## INTRODUCTION

This service manual describes the latest service information for the **IC-706 HF/VHF TRANSCEIVER** at the time of publication.

| VERSION NO. | VERSION | SYMBOL |
|-------------|---------|--------|
| #02         | Europe  | EUR    |
| #03         | France  | FRA    |
| #04         | Denmark | DEN    |
| #05         | U.S.A.  | USA    |

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

## DANGER

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

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

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

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



## ORDERING PARTS

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

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

### <SAMPLE ORDER>

1110004080 S.I.C.  $\mu$ PC2709T-E3 IC-706 MAIN UNIT 5 pieces  
8810008960 Screw OH M2.6 x 5 ZK IC-706 Top cover 10 pieces

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

## REPAIR NOTES

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

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# SECTION 1 SPECIFICATIONS

## GENERAL

- Frequency coverage : Receive
    - 30 kHz–200 MHz
    - Range restricted in some versions
    - Specifications guaranteed:
      - 500 kHz–4.00 MHz
      - 4.50 MHz–8.00 MHz
      - 9.0 MHz–29.955 MHz
      - 50 MHz–54 MHz
      - 144 MHz–148 MHz
  - Transmit
    - 1.800–1.99999 MHz\*<sup>1</sup>
    - 3.500–3.9999 MHz\*<sup>2</sup>
    - 7.000–7.300 MHz\*<sup>3</sup>
    - 10.100–10.150 MHz
    - 14.000–14.350 MHz
    - 18.068–18.168 MHz
    - 21.000–21.450 MHz
    - 24.890–24.990 MHz
    - 28.000–29.700 MHz
    - 50.000–50.400 MHz\*<sup>4</sup>
    - 144.000–148.000 MHz\*<sup>5</sup>
    - \*<sup>1</sup> 1.810–1.850 MHz France version
    - \*<sup>2</sup> 3.500–3.800 MHz France version
    - \*<sup>3</sup> 7.000–7.100 MHz France version
    - \*<sup>4</sup> 5.000–5.200 MHz Denmark version
    - \*<sup>5</sup> 144.000–146.000 MHz all European versions
  - Mode : SSB, CW, AM, FM, WFM, RTTY (WFM is for receiver only)
  - Number of memory : 102 (split memory: 99; scan edge: 2; channels call channel: 1)
  - Antenna impedance : 50 Ω nominal
  - Usable temperature : –10°C to +60°C (+14°F to +140°F) range
  - Frequency stability : Less than ±0.0007% from 1 min. to 60 min. after power ON. After that, rate of stability change is less than ±0.0001%/hr. at +25°C (+77°F). Temperature fluctuations (0°C to +50°C; +32°F to +122°F) less than ±0.0005%.
  - Power supply requirement : 13.8 V DC ± 15% (20 A)
  - Current drain : Transmit 20 A  
Receiver squelched 1.7 A  
max. audio 1.9 A
  - Dimensions : 167(W) × 200(D) × 58(H) mm  
6<sup>9</sup>/<sub>16</sub>(W) × 7<sup>7</sup>/<sub>8</sub>(D) × 2<sup>9</sup>/<sub>32</sub>(H) in (projections not included)
  - Weight : 2.5 kg (5.5 lb)
- ## TRANSMITTER
- Output power :
 

|            |                   |         |
|------------|-------------------|---------|
| HF, 50 MHz | SSB, CW, FM, RTTY | 5–100 W |
|            | AM                | 2–40 W  |
| 144 MHz    | SSB, CW, FM, RTTY | 1–10 W  |
|            | AM                | 1–4 W   |
  - Spurious emissions :
 

|         |                  |
|---------|------------------|
| HF      | Less than –50 dB |
| 50 MHz  | Less than –60 dB |
| 144 MHz | Less than –60 dB |
  - Carrier suppression : More than 40 dB
  - Unwanted sideband : More than 50 dB
  - Microphone impedance : 600 Ω

## RECEIVER

- Receive system :
  - SSB, CW, AM, RTTY, Double-conversion superheterodyne
  - WFM FM Triple-conversion superheterodyne
- Intermediate frequencies:
 

| MODE | 1st         | 2nd         | 3rd     |
|------|-------------|-------------|---------|
| SSB  | 69.0115 MHz | 9.0115 MHz  | –       |
| AM   | 69.0100 MHz | 9.0100 MHz  | –       |
| CW   | 69.0106 MHz | 9.0106 MHz  | –       |
| FM   | 69.0115 MHz | 9.0115 MHz  | 455 kHz |
| RTTY | 69.0105 MHz | 9.0105 MHz  | –       |
| WFM  | 70.7000 MHz | 10.0115 MHz | –       |
- Sensitivity (preamp ON):
 

|                   |                   |
|-------------------|-------------------|
| SSB, CW           | 1.8–29.9950 MHz*  |
| (for 10 dB S/N)   | Less than 0.16 μV |
|                   | 50–54 MHz         |
|                   | Less than 0.16 μV |
|                   | 144–148 MHz       |
|                   | Less than 0.16 μV |
| AM                | 0.5–1.8 MHz       |
| (for 10 dB S/N)   | Less than 31.6 μV |
|                   | 1.8–29.9950 MHz*  |
|                   | Less than 2.0 μV  |
|                   | 50–54 MHz         |
|                   | Less than 2.0 μV  |
|                   | 144–148 MHz       |
|                   | Less than 2.0 μV  |
| FM                | 28.0–29.7 MHz     |
| (for 12 dB SINAD) | Less than 0.5 μV  |
|                   | 50–54 MHz         |
|                   | Less than 0.3 μV  |
|                   | 144–148 MHz       |
|                   | Less than 0.3 μV  |
| WFM               | 76–108 MHz        |
| (for 12 dB SINAD) | Less than 10.0 μV |

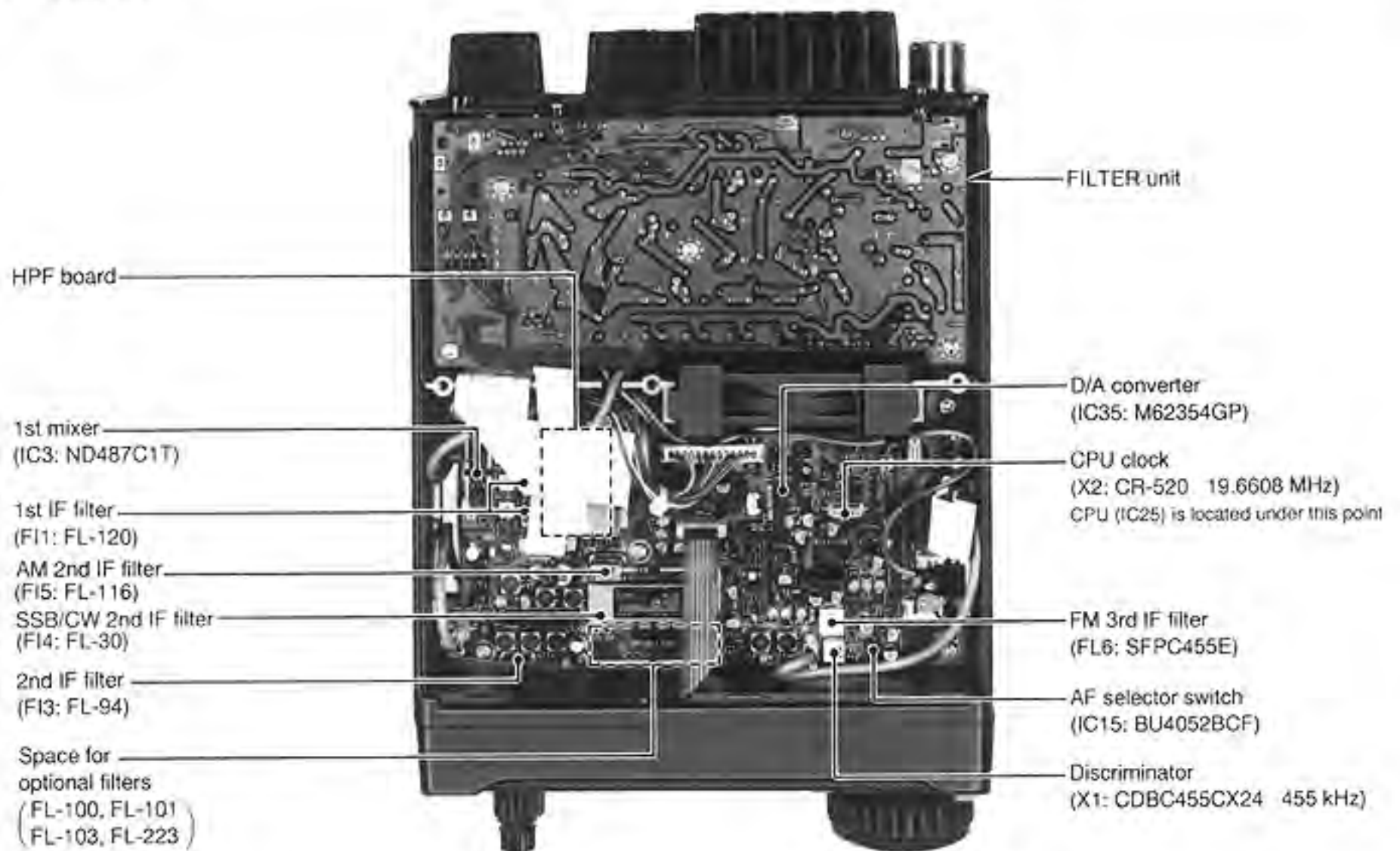
\*Some frequency ranges outside of the ham bands are not guaranteed.
- Squelch sensitivity (preamp ON) :
 

|     |                               |
|-----|-------------------------------|
| SSB | Less than 5.6 μV at threshold |
| FM  | Less than 0.5 μV at threshold |
- Selectivity (normal filter selection) :
 

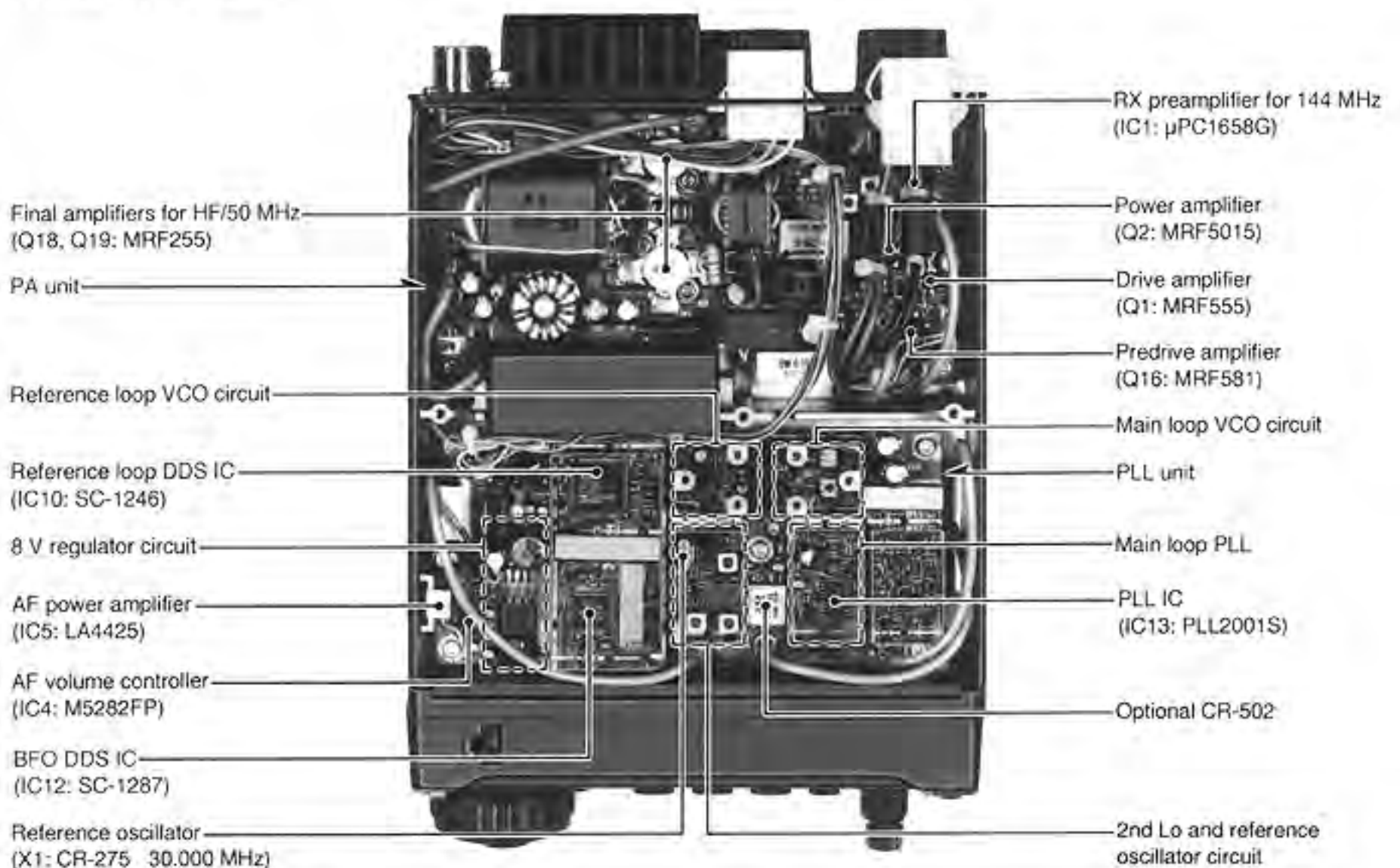
|               |                           |
|---------------|---------------------------|
| SSB, CW, RTTY | More than 2.3 kHz/–6 dB   |
|               | Less than 4.0 kHz/–60 dB  |
| AM            | More than 6.0 kHz/–6 dB   |
|               | Less than 20.0 kHz/–40 dB |
| FM            | More than 12.0 kHz/–6 dB  |
|               | Less than 30.0 kHz/–50 dB |
| FM narrow     | More than 8.0 kHz/–6 dB   |
- Spurious and image rejection ratio : More than 70 dB (HF bands only)
- Audio output power : More than 2.0 W (at 10% distortion with an 8 Ω load)
- RIT variable range : ±1.0 kHz max.

## SECTION 2 INSIDE VIEWS

### • MAIN UNIT



### • PA AND PLL UNITS



# SECTION 3 CIRCUIT DESCRIPTION

## 3-1 RECEIVER CIRCUITS

### 3-1-1 HF/50 MHz RF CIRCUIT (FILTER AND MAIN UNITS, HPF BOARD)

HF/50 MHz RF filters pass only the desired band signals and suppress any undesired band signals. The HF/50 MHz RF circuit has 7 low-pass filters and 6 high-pass filters for specified band use.

HF/50 MHz RF signals from the [ANT1] connector, pass through one of 7 low-pass filters as below, the transmit/receive switching relay (RL1) and low-pass filter (L1, L2, C1-C5), and are then applied to the MAIN unit via P1 (MAIN unit J1).

#### Used RF low-pass filter (FILTER unit)

| Band       | Control signal | Input relay | Band      | Control signal | Input relay |
|------------|----------------|-------------|-----------|----------------|-------------|
| 0.03-2 MHz | L1             | RL15        | 15-22 MHz | L5             | RL11        |
| 2-4 MHz    | L2             | RL13        | 22-30 MHz | L6             | RL7         |
| 4-8 MHz    | L3             | RL5         | 30-60 MHz | L7             | RL3         |
| 8-15 MHz   | L4             | RL9         |           |                |             |

The signals from the FILTER unit are applied to or bypass the 20 dB attenuator (R3, R4, Q1, D1). The signals pass through the high-pass filter (L3-L7, C3-C7, R5-R7) to suppress strong signals below 1.6 MHz and are then applied to the HPF board via the "TOAT" terminal.

#### (1) 0.03-2 MHz and 30-40 MHz

The signals pass through a low-pass filter (L23, L24, C38-C42), bypass the high-pass filters via D5 and are then applied to the preamplifier circuit.

#### (2) 2-30 MHz

The signals pass through the low-pass filter (L23, L24, C38-C42). The filtered signals are applied to one of 5 high-pass filters as at right above and are then applied to the preamplifier circuit.

#### (3) 40-60 MHz

The signals pass through the high-pass filter (L29-L31, C47-C51) via D12 and are then applied to the preamplifier circuit.

#### Used RF high-pass filter (HPF board)

| Band       | Control signal | Input diode | Band      | Control signal | Input diode |
|------------|----------------|-------------|-----------|----------------|-------------|
| 0.03-2 MHz | TH             | D5          | 15-22 MHz | H5             | D21         |
| 2-4 MHz    | H2             | D16         | 22-30 MHz | H6             | D7          |
| 4-8 MHz    | H3             | D20         | 30-40 MHz | TH             | D5          |
| 8-15 MHz   | H4             | D17         | 40-60 MHz | BV, T8         | D12         |

### 3-1-2 VHF RF CIRCUIT (PA UNIT)

VHF RF bandpass filters pass only the desired band signals and suppress any undesired band signals. The VHF RF circuit has 2 bandpass filters.

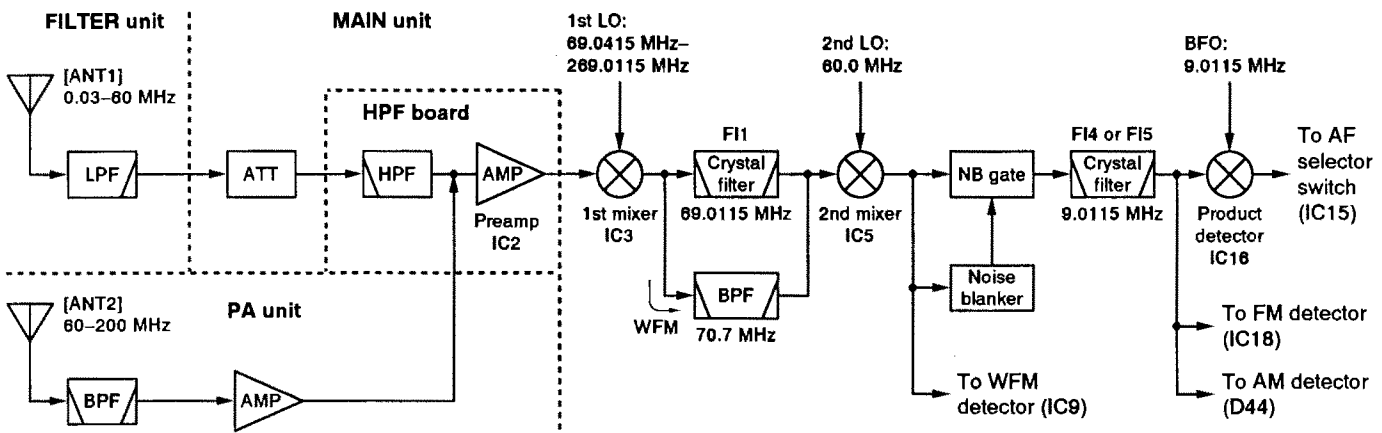
VHF RF signals from the [ANT2] connector, pass through a low-pass filter, antenna switching circuit (D4, D14, D15) and one of 2 bandpass filters. The signals within 144-148 MHz pass through one bandpass filter (L29, L30, C45-C49) and the signals within 60-144 MHz or 148-200 MHz pass through another bandpass filter (L25, L26, L40, L49, C52-C57, C151-C154).

The filtered signals pass through the RF attenuator (R27, Q24), are amplified at the RF amplifier (IC1), applied to the MAIN unit via P2 (MAIN unit J3) and are then applied to the preamplifier circuit in the HPF board.

### 3-1-3 PREAMPLIFIER CIRCUIT (HPF BOARD)

The preamplifier circuit in the IC-706 has approx. 15 dB gain over a wideband frequency range.

## • RECEIVER CONSTRUCTION



When the preamplifier is turned ON, the signals from the RF circuit are applied to the preamplifier (IC1) via D25. Amplified or bypassed signals enter the MAIN unit via the "AMPI" terminal and are applied to the 1st mixer circuit (IC3).

### 3-1-4 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 69 or 70.7 MHz 1st IF.

The signals from the preamplifier circuit, or signals which bypass the preamplifier, are applied to a low-pass filter and then to the 1st mixer (IC3).

The 1st LO signal (69.0415–269.0115 MHz) enters the MAIN unit from the PLL unit via J4. The LO signal is amplified at Q4, filtered by a low-pass filter, and then, applied to the 1st mixer.

**1st IF frequency**

| Mode     | Frequency   |
|----------|-------------|
| SSB, FM  | 69.0115 MHz |
| CW, RTTY | 69.0106 MHz |
| AM       | 69.0100 MHz |
| WFM      | 70.7000 MHz |

### 3-1-5 1st IF CIRCUIT (MAIN UNIT)

The 1st IF circuit filters and amplifies the 1st IF signals. The 1st IF signals are applied to an MCF (Monolithic Crystal Filter; F11a, F11b) to suppress out-of-band signals.

While in non-WFM modes, the 69 MHz 1st IF signals pass through the pair of MCF's (F11) and are applied to the IF amplifier (IC4). While in WFM mode, the 70.7 MHz 1st IF signal pass through a bandpass filter (L104–L108, C358–C361) and are applied to the IF amplifier (IC4).

The AGC voltage is supplied to the transmit/receive switching circuit (D13, D14) and D13/D14 function as PIN attenuators for AGC operation.

The amplified signals are then applied to the 2nd mixer (IC5).

### 3-1-6 2nd MIXER CIRCUIT (MAIN UNIT)

The 2nd mixer circuit mixes the amplified 1st IF signals and 2nd LO signal (60.00 MHz) to convert the 1st IF to a 2nd IF.

The 1st IF signals from IC4 are converted to 9 MHz or 10.7 MHz 2nd IF signals at the 2nd mixer (IC5).

The 2nd IF signals are applied to F13 to suppress undesired signals such as the 2nd LO signal, and are then applied to the noise blanker gate (D20, D21).

**2nd IF frequency**

| Mode     | Frequency   |
|----------|-------------|
| SSB, FM  | 9.0115 MHz  |
| CW, RTTY | 9.0106 MHz  |
| AM       | 9.0100 MHz  |
| WFM      | 10.7000 MHz |

While in FM (normal) mode, the IF signals pass through the low-pass filter (L52, C82–C84) bypassing F11 and the noise blanker gate and are then applied to the 2nd IF circuit.

While in WFM mode, the IF signals pass through the low-pass filter (L52, C82–C84), IF amplifier (Q5), ceramic filter (F12) and IF amplifier (Q52). The signals are then applied to the FM IF IC (IC9) for demodulation into AF signals.

### 3-1-7 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 F13 are applied to the noise blanker gate (D20, D21). A portion of the signals from F13 are amplified at the noise amplifiers (Q10, Q12, amplifier section of IC9), then detected at the noise detector (D39) to convert the noise components to DC voltages.

The signals are then applied to the noise blanker switch (Q13, Q14). At the moment the detected voltage exceeds the Q13's threshold level, Q14 outputs a blanking signal to close the noise blanker gate (D20, D21) by applying reverse-biased voltage.

The detected voltage from D39 is also applied to the noise blanker AGC circuit (Q11, Q16) and is then fed back to the amplifier (IC9) as a bias voltage. The noise AGC circuit prevents closure of the noise blanker gate for long periods by non-pulse-type noise. The time constant of the noise blanker AGC circuit is determined by R143 and C459.

The signals from the noise blanker gate are then applied to the 2nd IF circuit.

### 3-1-8 2nd IF CIRCUIT (MAIN UNIT)

The 2nd IF circuit amplifies and filters the 2nd IF signals.

Both the signals passed through and bypassing the noise blanker gate (D20, D21) are amplified at IC6 via D22 and applied to a 2nd IF filter as shown in the following table.

**2nd IF filters**

| Mode                                  | Used filter                     | Control signal |
|---------------------------------------|---------------------------------|----------------|
| SSB med., CW med., RTTY med., AM nar. | FL-30 (F14)                     | 2F23           |
| AM                                    | FL-116 (F15)                    | 2F60           |
| FM, FM nar.                           | Bypassed                        | 2NTH           |
| SSB nar.                              | Optional FL-223                 | 2FOP           |
| CW nar., RTTY nar.                    | Optional FL-100, FL-101, FL-223 | 2FOP           |
| SSB wide, CW wide, RTTY wide          | Optional FL-103                 | 2FOP           |

The AGC voltage is supplied to the transmit/receive switching circuit (D22, D23) and D22/D23 function as PIN attenuators for AGC operation.



The filtered or bypassed signals are applied to the buffer amplifier (Q65), IF amplifiers (Q42, Q43) and buffer amplifier (Q44) to obtain a detectable level. The AGC voltage is supplied to the 2nd gate of Q42 for AGC operation.

Output signals from Q44 are shared between the SSB/CW/RTTY detector (IC16), AM detector (D44) and AGC detector (D43). Output signals from Q65 are applied to the FM IF IC (IC18).

### 3-1-9 IF SHIFT CIRCUIT (MAIN UNIT)

The IF shift circuit shifts the center frequency of IF signals to electronically shift the center frequency.

The IF shift circuit shifts the 1st LO and BFO within  $\pm 1.2$  kHz in SSB/CW/RTTY modes or  $\pm 250$  Hz in CW-N/RTTY-N modes. As a result, the 2nd IF (also 1st IF) is shifted from the center frequency of the 2nd IF filter (F14, F15 or an optional IF filter). This means 2nd IF signals do not pass through the center of the 2nd IF filter because the passband width is fixed in the 2nd IF filter. Therefore, the higher or lower frequency components of the IF are cut out. Since the BFO frequency is also shifted the same value as the 1st IF, frequency is corrected at the detector.

In the IC-706, the 1st LO frequency is shifted to change the 2nd IF because a fixed 2nd LO frequency (60 MHz) is used. The 1st IF filter (F11) and crystal filter (F13) have 15 kHz and 8 kHz passband widths, respectively, and do not affect IF shift operation.

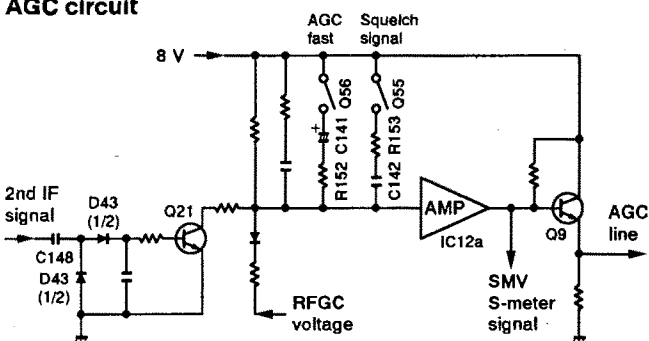
### 3-1-10 AGC CIRCUIT (MAIN UNIT)

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 (Q9 collector).

The 2nd IF signal from the buffer amplifier (Q44) is detected at the AGC detector (D43) and applied to the AGC amplifiers (Q21, IC12a, Q9). IC12a sets the receiver gain with the [RF/SQL] control via the "RFGC" signal line.

When receiving strong signals, the detected voltage increases and the AGC voltage decreases via the DC amplifier (Q9). The AGC voltage is used for the bias voltage of the transmit/receive switching PIN diodes (D13/14, D22/D23) to attenuate the received signals.

AGC circuit



When AGC slow is selected, C141 and R152 are connected in parallel to obtain appropriate AGC characteristics.

### 3-1-11 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 output voltage of the AGC amplifier (IC12a pin 1) is applied to the main CPU (IC25 pin 30) as an S-meter signal via the "SMV" signal line. The FM S-meter signal from the FM IF IC (IC18 pin 12) is also applied to the "SMV" signal line via Q68.

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

### 3-1-12 SQUELCH CIRCUIT (MAIN UNIT)

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

The S-meter signal is applied to the main CPU (IC25 pin 30) and is compared with the threshold level set by the [RF/SQL] control. The [RF/SQL] setting is picked up at the sub CPU (DISPLAY unit IC1 pin 99). The CPU compares the S-meter signal and [RF/SQL] setting to close or open the squelch.

In addition, the noise squelch signal from the FM IF IC (IC18 pin 14) is applied to the main CPU (pin 31) in FM mode. A portion of the AF signals from the FM IF IC (IC18 pin 9) are applied to the active filter section (pin 8) where noise components above 20 kHz are amplified. The signals are rectified at the noise detector section and then output from pin 14. The resulting signal is applied to the main CPU via the "NSQV" signal line.

### 3-1-13 DEMODULATOR CIRCUITS (MAIN UNIT)

#### (1) SSB/CW/RTTY modes

The 2nd IF signals from Q44 are mixed with the BFO signal from the PLL unit at the product detector (IC16 pin 6). The detected AF signal from IC16 (pin 3) is applied to the AF selector switch (IC15 pin 12).

#### (2) AM mode

The 2nd IF signals from Q44 are detected at D44. The detected AF signal is applied to the AF selector switch (IC15 pin 14).

#### (3) FM/FM narrow modes

The 2nd IF signals from the buffer amplifier (Q65) are applied to the FM IF IC (IC15 pin 16) where the IF signals are converted into 455 kHz IF signals. The signals pass through F16 and are applied to the quadrature detector section. X1 is used for quadrature detector. The detected AF signals from pin 9 are then applied to the AF selector switch (IC15 pin 15) via the de-emphasis circuit (IC12b).



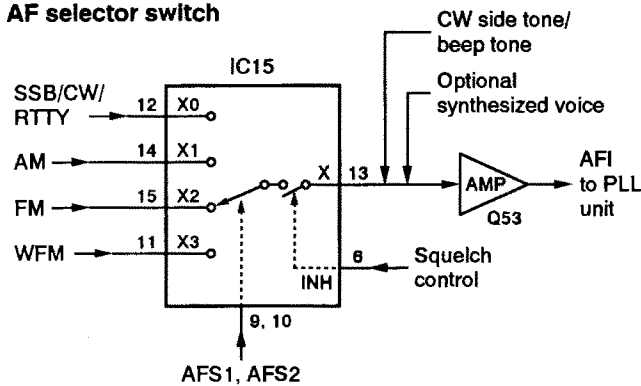
#### (4) WFM mode

The 2nd IF signals from the IF amplifier (Q5) pass through FI2, are amplified at Q52 and are then applied to the FM IF IC (IC9 pins 2, 3) where the IF signals are converted into AF signals. The detected AF signals from pin 8 are then applied to the AF selector switch (IC15 pin 11).

### 3-1-14 AF SELECTOR SWITCH (MAIN UNIT)

The AF signal from one of the detector circuits is applied to the AF selector switch (IC15). IC15 consists of dual 4-channel analog switches which are selected with a mode signal and the squelch control signal.

#### AF selector switch



### 3-1-15 AF AMPLIFIER CIRCUIT (MAIN AND PLL UNITS)

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

The AF signal from the AF selector switch (IC15) is applied to the AF amplifier (Q53). The CW side tone/beep tone and optional synthesized voice are also applied to Q53. The amplified signal is then applied to the PLL unit.

The signals from the MAIN unit are applied to the VCA (Voltage Controlled Amplifier, IC4) circuit. The AF gain setting from the main CPU is converted to DC voltage at the D/A converter (MAIN unit IC35) and applied to the VCA control terminal (IC4 pin 8) via the "AFGC" signal line. The AF signal from IC4 (pin 9) is power-amplified at IC5 to drive the speaker.

## 3-2 TRANSMITTER CIRCUITS

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

The microphone amplifier circuit amplifies microphone input signals and outputs the amplified signals to the balanced modulator or FM modulation circuit.

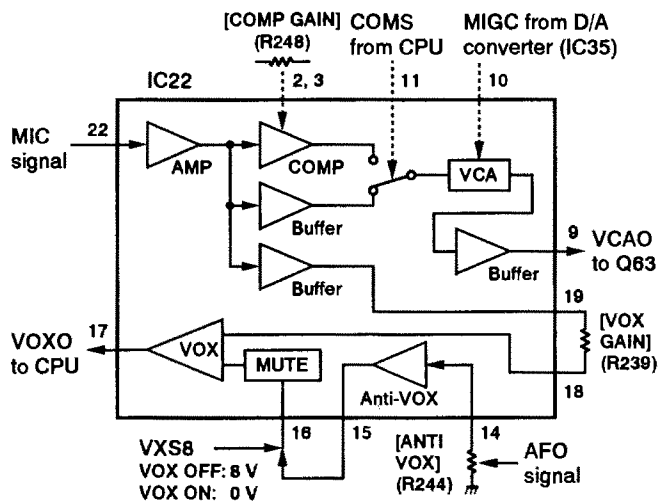
Audio signals from the front or rear panel [MIC] connector enter the microphone amplifier IC (IC22 pin 22) and are then amplified at the microphone amplifier or speech compressor section. Compression level is adjusted with the [COMP GAIN] control (R248).

The amplified or compressed signals are applied to the VCA section of IC22. The microphone gain setting from the D/A converter (IC35 pin 11) is applied to the VCA control terminal (IC22 pin 10). The resulting signals from pin 9 are then applied to the buffer amplifier (Q63). External modulation input from the [ACC] socket (pin 11) is also applied to Q63.

While in SSB mode, the amplified signals from Q63 are applied to the AF selector switch (IC23) and then to the balanced modulator (IC17).

While in FM/AM mode, the amplified signals from Q63 are applied to the limiter amplifier (IC24a) and splatter filter (IC24b). The signals are then applied to the AF selector switch (IC23) in AM mode or to the varactor diode (D67) in FM mode.

#### Microphone amplifier



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

The VOX (Voice-Operated-Transmission) circuit sets transmitting conditions according to voice input. The microphone amplifier IC (IC22) includes the VOX circuit.

The microphone signals from IC22 (pin 19) pass through the [VOX GAIN] control (R239) and are then applied to the VOX comparator section (IC22 pin 18) to switch the keying input of the main CPU (IC25 pin 14). When voice levels exceed the reference level, the VOX circuit sets the transceiver to transmit.

On the other hand, a speaker drive signal from the AF power amplifier (PLL unit IC5) is applied to the anti-VOX comparator section (IC22 pin 14) via the [ANTI VOX] control (R244). When the audio output level increases, this comparator cuts out the VOX comparator via the MUTE terminal (IC22 pin 16).

### 3-2-3 BALANCED MODULATOR (MAIN UNIT)

The balanced modulator converts the AF signal from the microphone amplifier to a 9 MHz IF signal with a BFO (Beat Frequency Oscillator) signal.

Microphone signals from the AF selector switch (IC23) are applied to the balanced modulator (IC17 pin 6). The BFO signal from the PLL unit is applied to IC17 (pin 8) as a carrier signal.

IC17 is a double balanced mixer IC and outputs a double side band (DSB) signal with -40 dB of carrier suppression. R191 and R193 adjust the balanced level of IC17 for maximum carrier suppression. The resulting signal passes through a 9 MHz IF filter (FI4 in SSB/CW/RTTY modes) to suppress unwanted sideband signals.

In AM mode, R195 is connected to upset the balance of IC17 via Q23 for leaking the BFO signal as a carrier signal. The CW keying/RTTY TX signal is applied to IC17 pin 6.

### 3-2-4 FM MODULATION CIRCUIT (MAIN UNIT)

The microphone signals from Q63 are applied to the limiter amplifier (IC24a) and the splatter filter (IC24b). The 1750 Hz European tone signal from the main CPU (IC25 pin 40) is also applied to IC24a pin 2 for European repeaters. The subaudible tone signal (67.0-254.1 Hz) from the main CPU (IC25 pin 37) is also applied to IC24b pin 2 for repeater use.

The resulting signals are applied to the VCO circuit (Q40, D67) via R274 to change the reactance of the varactor diode (D67) for FM modulation. The modulated signal is buffer-amplified at Q41 and bypasses the 9 MHz IF filter.

### 3-2-5 IF AMPLIFIER (MAIN UNIT)

The 9 MHz IF signal from a modulation circuit passes through the 9 MHz IF filter (FI4 in SSB/CW/RTTY modes; FI5 in AM mode; through in FM mode). The signal is amplified at IC6, passes through R511 and L55, and the low-pass filter (L52, C82-C84) in non-FM modes or FI3 in FM mode. The signal is then applied to the mixer (IC5).

The signal is mixed with the 2nd LO signal (60 MHz) and converted to a 69 MHz IF signal at IC5. The 69 MHz IF signal passes through a bandpass filter, the IF amplifier (IC4) and the 69 MHz IF filter (FI1) and is then converted to the displayed frequency at the balanced mixer (IC3) with the 1st LO signal. The mixers (IC3, IC5) and IF amplifiers (IC4, IC6) are used in both receiving and transmitting commonly.

The ALC voltage is supplied to the transmit/receive switching circuit (D13/D14 and D22/D23) of IF amplifiers. D13/D14 and D22/D23 function as PIN attenuators for ALC operation.

### 3-2-6 RF CIRCUIT (MAIN AND PA UNITS, HPF BOARD)

The RF circuit amplifies the displayed frequency signal to obtain 100 W of RF output power for HF/50 MHz bands and 10 W for 144 MHz band.

The HF/50 MHz RF signal from the balanced mixer (IC3) enters the HPF board and then passes through one of 6 high-pass filters. (Refer to p. 3-1 for used RF high-pass filter.) The 50 MHz RF signal passes through a low-pass filter additionally. The filtered signal returns to the MAIN unit, is amplified at IC1, and is then applied to the PA unit.

The 144 MHz RF signal from the balanced mixer (IC3) bypasses the filters in the HPF board via "TOTR" line and passes through the bandpass filter (L99-L101, C329-C333) in the MAIN unit. The signal is amplified at IC38 and IC1 and is then applied to the PA unit.

The signal from IC1 enters the PA unit and is amplified at the predrive amplifiers (Q16, Q1) and drive amplifier (Q2) in sequence. For the 144 MHz RF signal, 10 W of RF output power is obtained at Q2 and the signal is applied to the low-pass filter circuit via RL1.

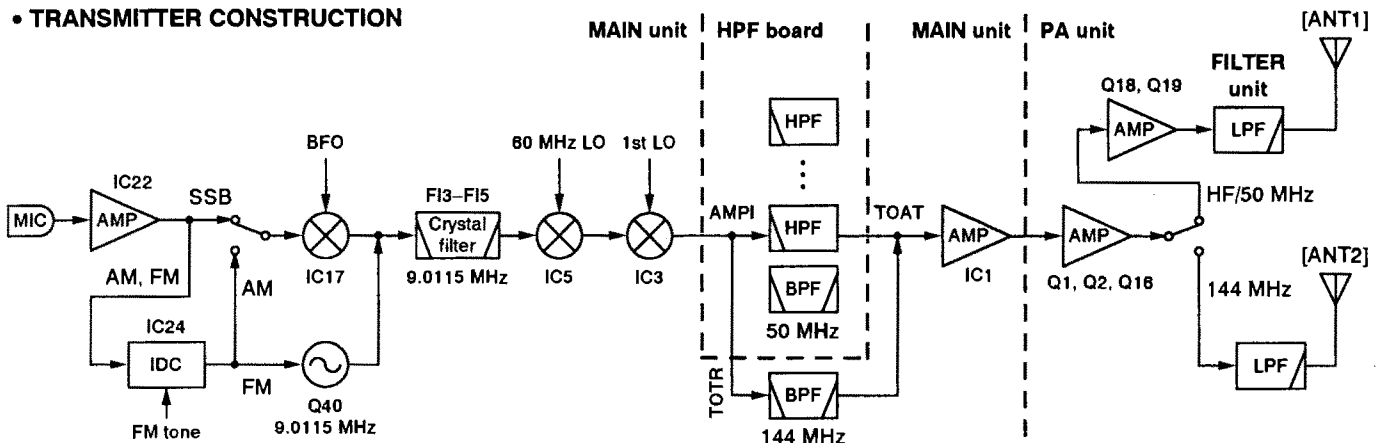
The HF/50 MHz RF signal from Q2 is amplified at power amplifier (Q18, Q19) to obtain a stable 100 W of RF output power. The signal is then applied to one of the low-pass filters in the FILTER unit.

### 3-2-7 LOW-PASS FILTER CIRCUIT (FILTER AND PA UNITS)

The low-pass filter circuit consists of 8 Chebyshev low-pass filters to suppress the higher harmonic components.

The HF/50 MHz RF signal from the power amplifier passes through the transmit/receive switching circuit (FILTER unit RL1) is applied to one of the 7 low-pass filters. According to the operating frequency, the band signals (L1-L7) from the MAIN unit select a low-pass filter. The filtered signal is then applied to the [ANT1] connector.

## • TRANSMITTER CONSTRUCTION



The 144 MHz RF signal from Q2 (PA unit) passes through the band selector relay (RL1), the RF power detector circuit (L12, D2, D3), transmit/receive switching circuit (D4, D14, D15) and is then applied to the low-pass filter (L16, L17, C35–C39). The filtered signal is then applied to the [ANT2] connector.

### 3-2-8 ALC CIRCUIT (MAIN UNIT)

The ALC (Automatic Level Control) circuit reduces the gain of IF amplifiers in order for the transceiver to output a constant RF power set by the RF power setting even when the supplied voltage shifts, etc.

The HF/50 MHz RF power signal level is detected at D9 (FILTER unit), buffer-amplified at IC1b and applied to the MAIN unit as the "FOR" voltage. The 144 MHz RF power signal level is detected at D2 and D3 (PA unit) and applied to the MAIN unit as the "VFOR" voltage.

The "FOR" and "VFOR" voltages are combined to "FORV" voltage and it is then applied to IC7b (pin 6). The "POC" voltage from the D/A converter (IC35 pin 12), determined by the RF power setting, is applied to IC7b (pin 5) as the reference voltage.

When the "FORV" voltage exceeds the "POC" voltage, ALC bias voltage from IC7a (pin 1) controls the PIN diodes (D13, D14, D22, D23) using Q39. This adjusts the output power to the determined level by the RF power setting until the "FORV" and "POC" voltages are equalized.

In AM mode, IC7a operates as an averaging ALC amplifier with Q7 and C116. Q64 turns ON and the "POC" voltage is shifted for 40 W AM output power (maximum, 4 W for 144 MHz band) through R499.

The ALC bias voltage from IC7a is also applied to the main CPU (IC25 pin 34) as "ALCV" voltage for ALC meter indication.

An external ALC input (minus voltage) from the [ACC] socket (pin 6) is shifted to plus voltage at D70 and is applied to the buffer amplifier (Q8). External ALC operation is identical to that of the internal ALC.

### 3-2-9 APC CIRCUIT (MAIN UNIT)

The APC (Automatic Power Control) circuit protects the power amplifiers on the PA unit from high SWR and excessive current for HF/50 MHz bands.

The reflected wave signal appears and increases on the antenna connector when the antenna is mismatched. The HF/50 MHz reflected signal level is detected at D10 (FILTER unit), buffer-amplified at IC1a and applied to the MAIN unit as the "REFV" voltage.

When the "REFV" signal level increases, IC7c decreases the ALC voltage via IC7a to activate the ALC.

For the current 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 (R35) on the PA unit. The detected voltage is applied to the differential amplifier (IC7d pins 12, 13). When the current of the final transistors is more than 22 A, IC7d controls the ALC line via IC7a to prevent excessive current flow.

### 3-2-10 RF, ALC, SWR METER CIRCUITS (MAIN UNIT)

While transmitting, RF, ALC or SWR meter readings are available and can be selected with the [MET] switch.

#### (1) Power meter

The "FOR" and "VFOR" voltages are combined to "FORV" voltage and it is then applied to the main CPU (IC25 pin 32) for indicating the output power.

#### (2) ALC meter

The ALC bias voltage from IC7a pin 1 is applied to the main CPU (IC25 pin 34) for indicating the ALC level.

#### (3) SWR meter

The "FORV" and "REFV" voltages are applied to the main CPU pins 32 and 33, respectively. The main CPU compares the ratio of "FORV" to "REFV" voltage and indicates the SWR for the [ANT1] connector.

## 3-3 PLL CIRCUITS

### 3-3-1 GENERAL

The PLL unit generates a 1st LO frequency (69.0415–269.0115 MHz), a 2nd LO frequency (60 MHz), a BFO frequency (9.01 MHz), FM 3rd LO frequency (9.4665/9.4650 MHz) and a TX FM PLL reference frequency (9.0115/9.0100 MHz).

The 1st LO PLL adopts a mixerless dual loop PLL system and has 2 VCO circuits. The BFO uses a DDS and the 2nd LO uses a fixed frequency double that of the crystal oscillator.

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

The 1st LO PLL contains a main loop and reference loop forming a dual loop system.

The reference loop generates a 10.6605 to 10.683 MHz frequency using a DDS circuit, and the main loop generates a 69.0415 to 134.50575 MHz frequency using the reference loop frequency.

While operating on 60 MHz and above, the output is doubled by 2 at D8 for oscillating a wide frequency range.

### (1) REFERENCE LOOP PLL

The oscillated signal at the reference VCO (Q12, D13) is amplified at the amplifiers (Q13, Q16) and is then applied to the DDS IC (IC10 pin 46). The signal is then divided and detected on phase with the DDS generated frequency.

The detected signal output from IC10 (pin 56) is converted into a DC voltage (lock voltage) at the loop filter (R88, R203, C132) and then fed back to the varactor diode (D13) in the VCO circuit.

### (2) MAIN LOOP PLL

The oscillated signal at one of the main loop VCOs (Q6, Q8) is amplified at the buffer amplifiers (Q10, Q36) and is then applied to the PLL IC (IC13 pin 8). The signal is then divided and detected on phase with the reference loop output frequency.

The detected signal output from IC13 (pin 12) is converted into a DC voltage (lock voltage) at the active loop filter (Q47-Q49) and then fed back to one of the varactor diodes (D4, D6) in the VCO circuits. While operating on 60 MHz and above, the VCO output is doubled by 2 at D8 and amplified at Q37.

The oscillated signal passes through a low-pass or band-pass filter and is then applied to the MAIN unit as a 1st LO signal.

### 3-3-3 2ND LO AND REFERENCE OSCILLATOR CIRCUITS

The reference oscillator (X1, Q14) generates a 30.0 MHz frequency used for the 2 DDS ICs as a system clock and for the LO output. The oscillated signal is buffer-amplified at Q27, doubled by 2 at Q15 and the 60 MHz frequency is picked up at the bandpass filter (L37, L38). The 60 MHz signal is applied to the IF unit as a 2nd LO signal.

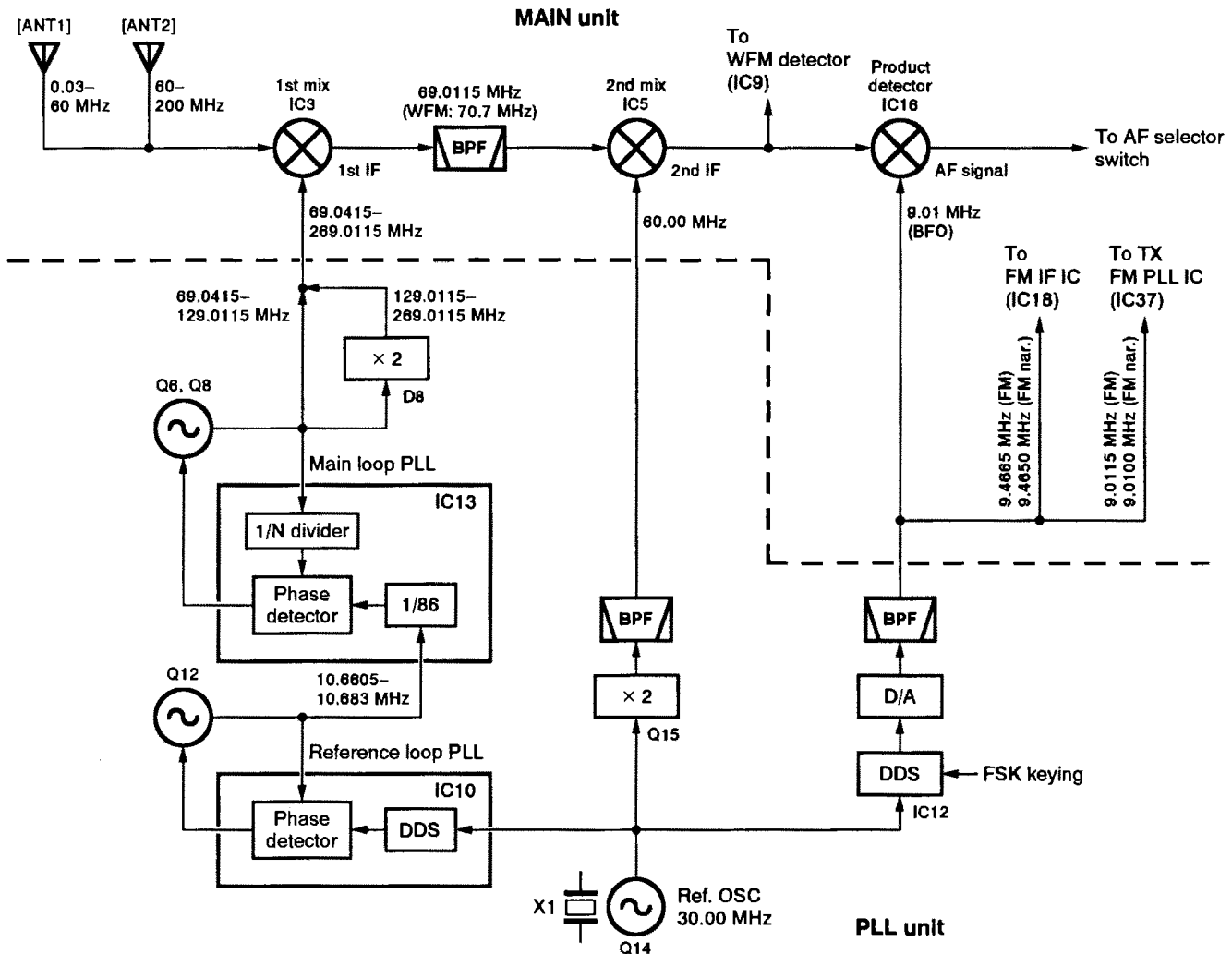
### 3-3-4 BFO CIRCUIT

The DDS IC (IC12) generates a 10-bit digital signal. The signal is converted to an analog wave signal at the D/A converter. The analog wave is passed through the high-pass filter and low-pass filter. The 9 MHz BFO signal passes through the bandpass filter and is then applied to the MAIN unit via the "BFO" signal line.

While transmitting in RTTY mode, the RTTY keying signal is applied to IC12 pin 3 to shift the generated frequency and to obtain 2 frequencies for FSK operation.

While receiving in FM or FM narrow mode, the BFO circuit generates a 9.4665 MHz or 9.4650 MHz frequency as the 3rd LO signal, respectively.

### Frequency construction



While transmitting in FM or FM narrow mode, the BFO circuit generates a 9.0115 MHz or 9.0100 MHz frequency as the TX FM PLL reference frequency, respectively.

| Mode    | RX BFO/3rd LO frequency [MHz]                      | TX BFO/FM PLL ref. frequency [MHz] |
|---------|--|------------------------------------|
| USB     | 9.0130   | 9.0130                             |
| LSB     | 9.0100   | 9.0100                             |
| CW      | 9.0106<br>(- CW pitch frequency)                   | 9.0106<br>(- CW pitch frequency)   |
| CW-R    | 9.0106<br>(+ CW pitch frequency)                   | 9.0106<br>(+ CW pitch frequency)   |
| RTTY    | 9.008375 (2125 Hz tone)<br>9.008885 (1615 Hz tone) | 9.0105 (MARK)                      |
| AM      | No output  | 9.0100                             |
| FM      | 9.4665 (3rd LO)                                    | 9.0115 (PLL ref.)                  |
| FM nar. | 9.4650 (3rd LO)                                    | 9.0100 (PLL ref.)                  |
| WFM     | No output  | No output                          |

IF shift: Center RTTY: Normal polarity

### 3-4 LOGIC CIRCUITS

#### 3-4-1 BAND SELECTION DATA (MAIN AND PLL UNITS)

To select the correct RF low-pass filter, high-pass filter and VCOs on the PLL unit, the CPU outputs the following band selection data from the I/O expander (MAIN unit IC31, IC32), the A/D converter (MAIN unit IC35) or DDS IC (PLL unit IC10) depending on the displayed frequency.

The A/D converter output from IC35 pin 5 is doubled by 2 at IC34a to obtain the band voltage for external equipment.

##### Band selection data

| Frequency (MHz)       | IC31, IC32 (MAIN) |     | IC35 (MAIN)      | IC10 (PLL) |         |
|-----------------------|-------------------|-----|------------------|------------|---------|
|                       | HPF BPF           | LPF | 1/2 band voltage | VCO        | LPF BPF |
| 0.03-1.999            | L1                | L1  | 3.76 V           | VCO1       | LOF1    |
| 2.0-3.999             | L2                | L2  | 3.08 V           |            |         |
| 4.0-7.999             | L3                | L3  | 2.57 V           |            |         |
| 8.0-10.999            | L4                | L4  | 0 V              |            |         |
| 11.0-14.999           |                   |     | 2.06 V           |            |         |
| 15.0-21.999           | L5                | L5  | 1.61 V           |            |         |
| 22.0-29.999           | L6                | L6  | 1.12 V           | VCO2       | LOF2    |
| 30.0-39.999           | B7W               | L7  | 0.61 V           |            |         |
| 40.0-59.999           | B7                |     |                  |            |         |
| 60.0-128.999          | B8W               | L8  |                  | VCO1       | LOF3    |
| 129.0-143.999         |                   |     |                  | LOF4       |         |
| 144.0-148.000         | B8                |     |                  | VCO2       | LOF5    |
| 148.000001-200.000000 | B8W               |     |                  | LOF4       |         |

#### 3-4-2 MAIN CPU PORT ALLOCATIONS (MAIN UNIT IC25)

| Pin number | Port name  | Description   |
|------------|------------|---|
| 9          | SPS (P52)  | Outputs a mute signal for AF power amplifier according to the [PHONES] jack.                      |
| 13         | DASH (P97) | Input port for DASH signal of the paddle to the internal keyer.                                   |
| 14         | DOT (P96)  | Input port for DOT signal of the paddle to the internal keyer.                                    |
| 15         | SNDL (P95) | Input port for transmit/receive switching signals. This port becomes "High" while transmitting.   |
| 16         | TKEY (P94) | Input port for the keying signal of optional AT-180/AH-3 antenna tuners.                          |
| 17         | TCON (P93) | Input port for the optional AH-3 antenna tuner.   |
| 19         | PWK (P91)  | Input port for the [POWER] switch.  |
| 20         | POWS (P90) | Outputs a power ON signal.  |
| 21         | ATST (P60) | Outputs start signal for the optional AT-180 antenna tuner.                                       |
| 22         | BEEP (P61) | Outputs beep tone and CW side tone signals.   |
| 23         | AHST (P62) | Outputs start signal for the optional AH-3 antenna tuner.   |
| 24         | SQSS (P63) | Outputs a squelch control signal.   |
| 30         | SMV (P70)  | S-meter level input for squelch control.  |
| 31         | NSQV (P71) | FM noise level input for squelch control.   |
| 32         | FORV (P72) | Forward RF power level input for Po and SWR meter indications.                                    |
| 33         | REFV (P73) | Reflected RF power level input for SWR meter indication.  |
| 34         | ALCV (P74) | ALC level input for ALC meter indication.   |
| 37         | TONE (P77) | Outputs subaudible tone signals.  |
| 39         | BUSY (P40) | Input port for the optional UT-102 busy signal. This port becomes "High" during speech synthesis. |
| 40         | ETON (P40) | Outputs tone burst signals for European repeaters.  |
| 41         | SPST (P42) | Outputs a strobe signal for the optional UT-102.  |
| 42         | IDT (P43)  | Outputs serial data for the I/O expanders, optional AT-180/UT-102.                                |
| 43         | ICK (P44)  | Outputs a clock signal for the I/O expanders, optional AT-180/UT-102.                             |

### MAIN CPU PORT ALLOCATIONS (Continued)

| Pin number | Port name           | Description   |
|------------|---------------------|---|
| 44         | IBST (P45)          | Outputs a strobe signal for the I/O expander ICs (IC31, IC32).  |
| 45         | IMST (P46)          | Outputs a strobe signal for the I/O expander IC (IC30).   |
| 46         | IAST (P47)          | Outputs a strobe signal for the D/A converter IC (IC35).  |
| 48         | PBST (P27)          | Outputs a strobe signal for the BFO DDS IC (IC12).  |
| 49–51      | CON2–CON0 (P26–P24) | Output mode control signals for the 1st LO DDS IC (IC10).   |
| 52         | PDST (P23)          | Outputs a strobe signal for the 1st LO DDS IC (IC10).   |
| 53         | PCE (P22)           | Outputs a strobe signal for the 1st LO PLL IC (IC13).   |
| 54         | PDT (P21)           | Outputs serial data for the DDS ICs and PLL IC.   |
| 55         | PCK (P20)           | Outputs a clock signal for the DDS ICs and PLL IC.  |
| 65         | MCK (P30)           | Inputs a clock signal for microphone up/down switches.  |
| 66         | MUD (P31)           | Input port for microphone up/down switches.   |
| 74         | SNDS (P80)          | Input port for transmit/receive switching signals for the [ACC] socket. This port becomes "Low" while transmitting. |
| 75         | KDS (P81)           | Outputs a CW keying signal or RTTY TX signal.   |
| 78         | TXD1 (P84)          | Output port for CI-V bus line.  |
| 79         | RXD1 (P85)          | Input port for CI-V bus line.   |

### 3-4-3 SUB CPU PORT ALLOCATIONS (DISPLAY UNIT IC1)

| Pin number | Port name  | Description  |
|------------|------------|--|
| 1          | SFTV (PC3) | Input port for the [SHIFT] control.                        |
| 18         | PTTS (P27) | Outputs a PTT signal. Becomes "Low" while transmitting.    |
| 19         | AMBS (P30) | Outputs a control signal for backlighting.                 |
| 20         | DIMS (P31) | Outputs a dimmer control signal for backlighting.          |
| 80         | PHNL (P13) | Input port for the connection signal of the [PHONES] jack. |

### SUB CPU PORT ALLOCATIONS (Continued)

| Pin number | Port name         | Description  |
|------------|-------------------|--|
| 81         | RITK (P14)        | Input port for the [RIT] switch.   |
| 90–95      | KI0–KI5 (PB0–PB5) | Input ports for the [P.AMP/ATT], [TUNER/CALL], [MENU], [F-1]–[F-3], [DISP], [LOCK], [MODE], [TS], [UP] and [DN] switches on the front panel. |
| 96         | PTTV (PB6)        | Input port for the [PTT] switch on the microphone.   |
| 97         | MUDV (PB7)        | Input port for the up/down switches on the microphone.   |
| 98         | AFGV (PC0)        | Input port for the [AF] control.   |
| 99         | SQLV (PC1)        | Input port for the [RF/SQL] control.   |
| 100        | RITV (PC2)        | Input port for the [RIT] control.  |

### 3-4-4 I/O EXPANDER PORT ALLOCATIONS

#### (1) Output ports (MAIN unit IC30)

| Pin number | Port name           | Description   |
|------------|---------------------|---|
| 4          | MODS (Q1)           | Outputs selection signal for the modulation signal.               |
| 5          | AMS (Q2)            | Outputs selection signal for AM mode.                             |
| 6          | FMS (Q3)            | Outputs selection signal for FM and FM narrow modes.              |
| 7          | WFMS (Q3)           | Outputs selection signal for WFM mode.                            |
| 11, 12     | AFS1, AFS2 (Q8, Q7) | Output selection signals for the AF signal.                       |
| 13         | UNFM (Q6)           | Outputs selection signal for SSB/CW/RTTY/AM modes.                |
| 14         | MINH (Q5)           | Outputs an inhibit signal for the microphone mute circuit (IC23). |

#### (2) Output ports (MAIN unit IC31)

| Pin number   | Port name                         | Description  |
|--------------|-----------------------------------|--|
| 6, 7, 13, 14 | B7, B7W, B8W, B8 (Q3, Q4, Q6, Q5) | Output selection signals for the bandpass filters. |
| 11, 12       | 2N80, 1S15 (Q8, Q7)               | Output selection signals for the IF filters.       |

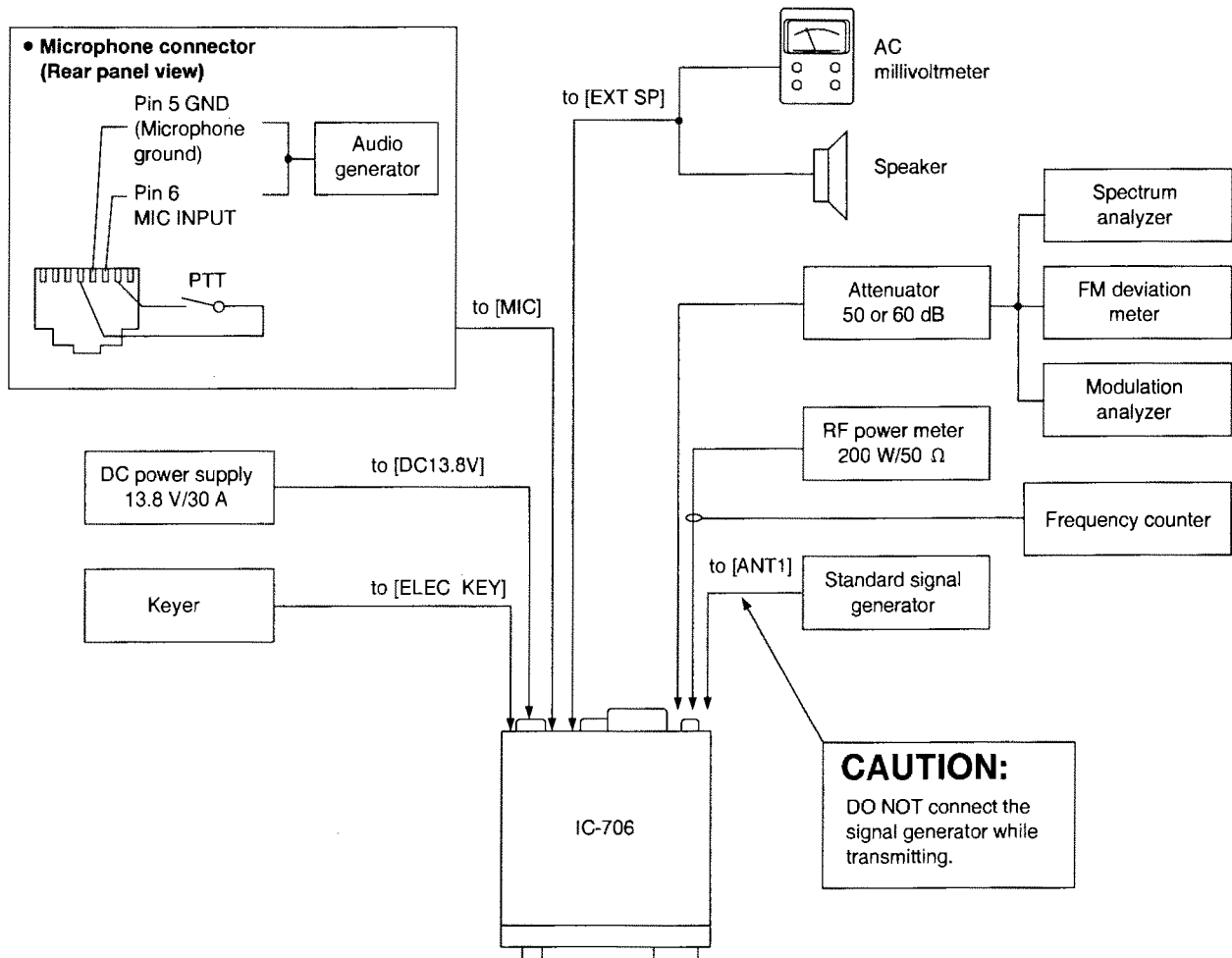
# SECTION 4 ADJUSTMENT PROCEDURES

## 4-1 PREPARATION BEFORE SERVICING

### REQUIRED TEST EQUIPMENT

| EQUIPMENT                           | GRADE AND RANGE                                       | EQUIPMENT                                  | GRADE AND RANGE                               |
|-------------------------------------|---|--|---|
| DC power supply                     | Output voltage : 13.8 V DC                            | AC millivoltmeter                          | Measuring range : 10 mV—10 V                  |
|                                     | Current capacity : 30 A or more                       | DC voltmeter                               | Input Impedance : 50 k $\Omega$ /DC or better |
| RF power meter<br>(terminated type) | Measuring range : 10—200 W                            | Ammeter                                    | Measurement capability : 1 A and 30 A         |
|                                     | Frequency range : 1.8—30 MHz                          | Audio generator                            | Frequency range : 300—3000 Hz                 |
|                                     | Impedance : 50 $\Omega$                               | Output level : 1—500 mV                    |   |
|                                     | SWR : Less than 1.2:1                                 |  |   |
| Frequency counter                   | Frequency range : 0.1—100 MHz                         | Attenuator                                 | Power attenuation : 50 or 60 dB               |
|                                     | Frequency accuracy : $\pm 1$ ppm or better            | Capacity : 150 W or more                   |   |
| Sensitivity : 100 mV or better      |   | Spectrum analyzer                          | Frequency range : At least 400 MHz            |
|                                     |   | Spectrum bandwidth : $\pm 100$ MHz or more |   |
| RF voltmeter                        | Frequency range : 0.1—100 MHz                         | FM deviation meter                         | Frequency range : At least 200 MHz            |
|                                     | Measuring range : 0.01—10 V                           | Measuring range : 0 to $\pm 10$ kHz        |   |
| Digital multimeter                  | Input impedance : 10 M $\Omega$ /DC or better         | Modulation analyzer                        | Frequency range : At least 150 MHz            |
| Standard signal generator (SSG)     | Frequency range : 0.1—100 MHz                         | Measuring range : 0—100%                   |   |
|                                     | Output level : 0.1 $\mu$ V—32 mV<br>(-127 to -17 dBm) | External speaker                           | Impedance : 8 $\Omega$                        |
| Distortion meter                    | Frequency range : 1 kHz $\pm 10\%$                    | Max. Input power : 5 W                     |   |
|                                     | Measuring range : 1—100%                              |  |   |
| Oscilloscope                        | Frequency range : DC—20 MHz                           |  |   |
|                                     | Measuring range : 0.01—10 V                           |  |   |

### CONNECTION





## 4-2 PLL ADJUSTMENT

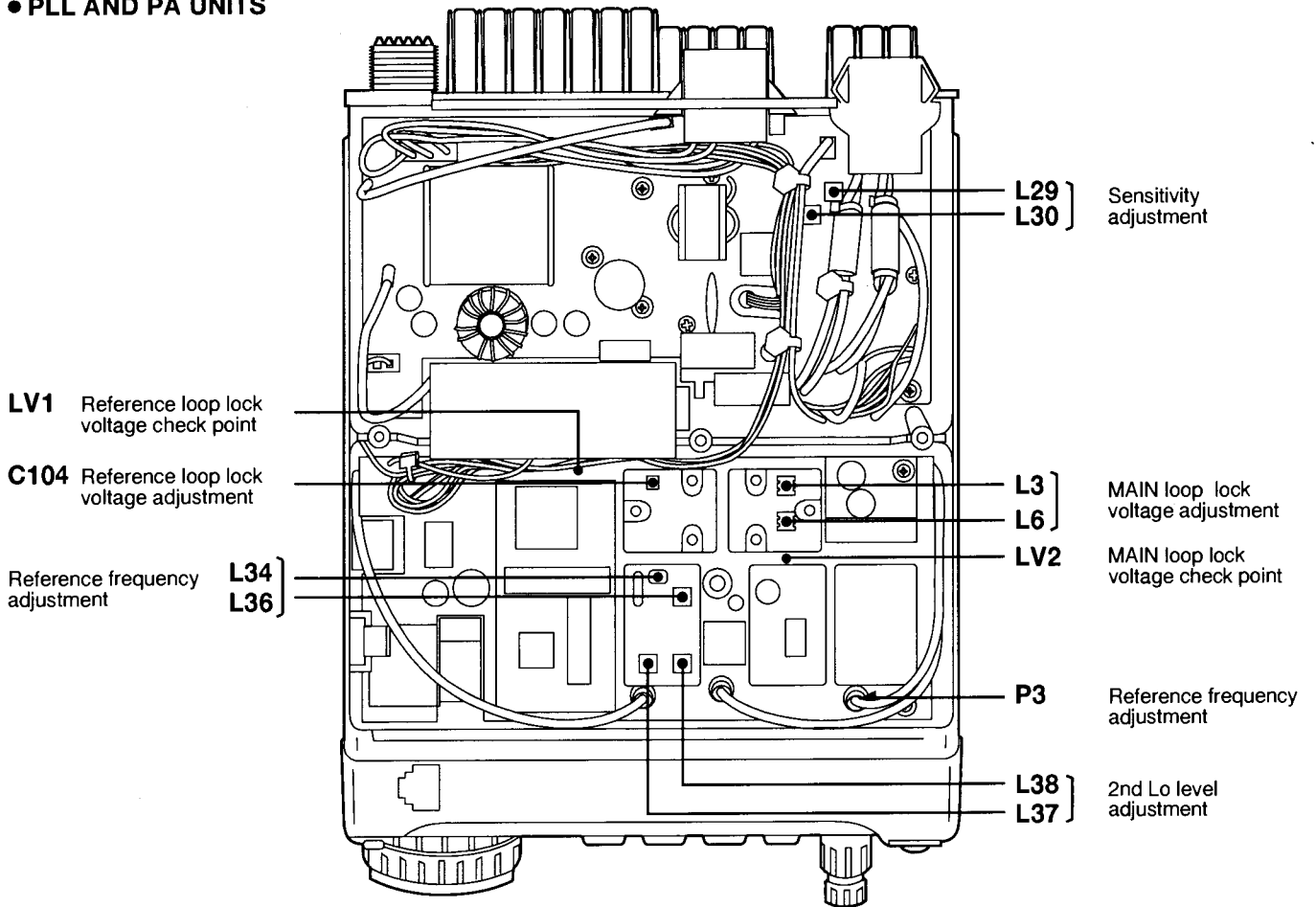
| ADJUSTMENT                  | ADJUSTMENT CONDITIONS  | MEASUREMENT |  | VALUE                         | ADJUSTMENT POINT |               |
|-----------------------------|--|-------------|--|-------------------------------|------------------|---------------|
|                             |  | UNIT        | LOCATION   |                               | UNIT             | ADJUST        |
| REFERENCE FREQUENCY         | <ul style="list-style-type: none"> <li>Displayed frequency: Any</li> <li>L36 (PLL unit) : Center</li> <li>Receiving</li> </ul> | PLL         | Connect an RF voltmeter to P3.                       | Maximum level (0 dBm or more) | PLL              | L37, L38      |
|                             |  |             | Connect a frequency counter to P3.                   |                               |                  | 60.000000 MHz |
| REFERENCE LOOP LOCK VOLTAGE | <ul style="list-style-type: none"> <li>Displayed frequency: 0.03000 MHz</li> <li>Mode : USB</li> <li>Receiving</li> </ul>      | PLL         | Connect a digital multimeter or oscilloscope to LV1. | 2.0 V                         | PLL              | C104          |
| MAIN LOOP LOCK VOLTAGE      | <ul style="list-style-type: none"> <li>Displayed frequency: 30.00000 MHz</li> <li>Mode : USB</li> <li>Receiving</li> </ul>     | PLL         | Connect a digital multimeter or oscilloscope to LV2. | 1.1 V                         | PLL              | L6            |
|                             | <ul style="list-style-type: none"> <li>Displayed frequency: 60.00000 MHz</li> </ul>  |             |  | 1.1 V                         |                  | L3            |

## 4-3 RECEIVER ADJUSTMENT

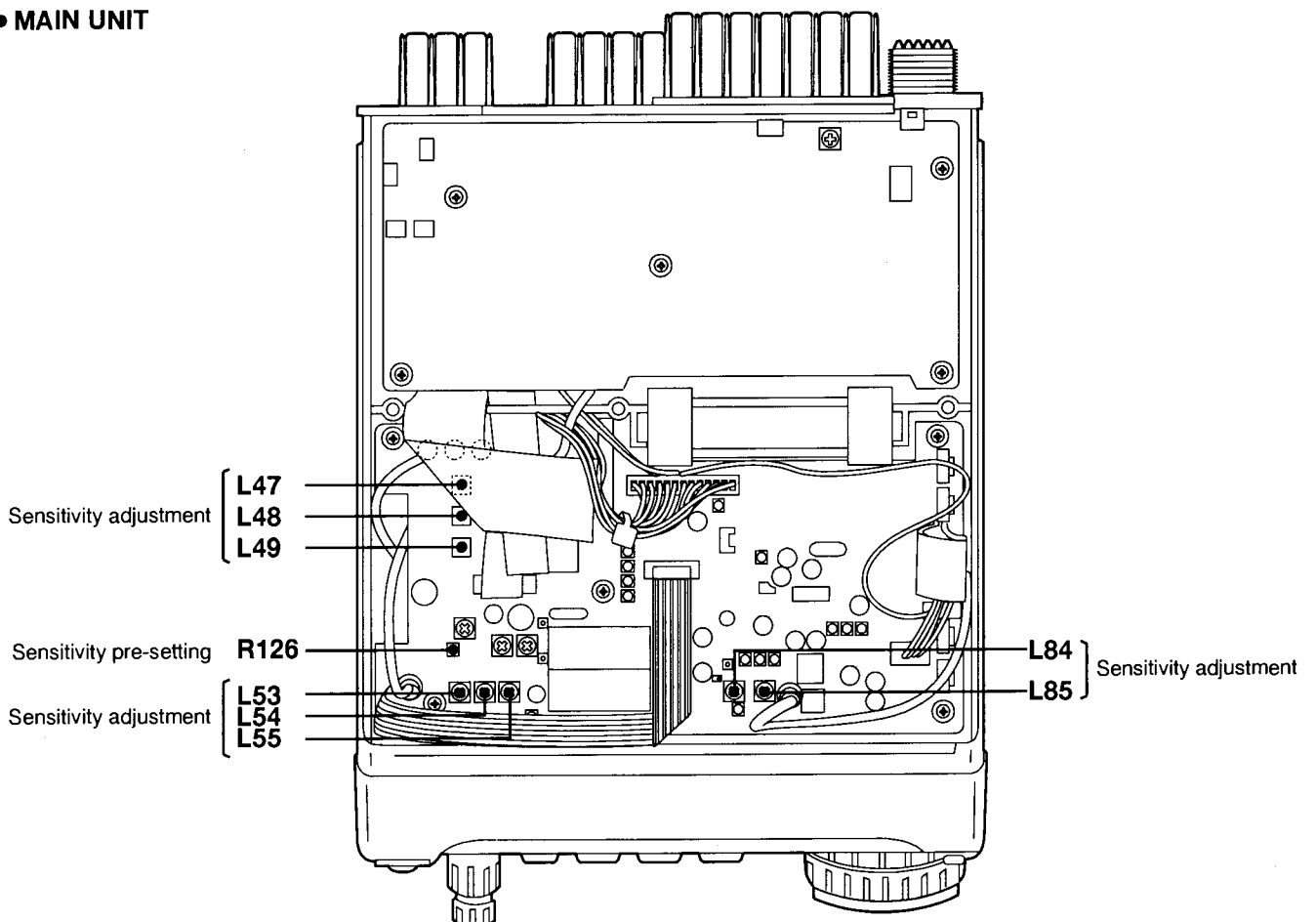
| ADJUSTMENT  | ADJUSTMENT CONDITIONS  | MEASUREMENT |  | VALUE                | ADJUSTMENT POINT |  |                                 |
|-------------|--|-------------|--|----------------------|------------------|--|---------------------------------|
|             |  | UNIT        | LOCATION   |                      | UNIT             | ADJUST   |                                 |
| SENSITIVITY | <ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : USB</li> <li>[RIT] : OFF</li> <li>[M4 AGC] : Fast (F AGC)</li> <li>[M3 NB] : OFF</li> <li>[P.AMP/ATT] : Preamp</li> <li>[COMP GAIN] : Center</li> <li>[BEEP/SIDE T] : Center</li> <li>[VOX GAIN] : Center</li> <li>[ANTI VOX] : Max. counterclockwise</li> <li>R126 (MAIN unit): Max. counterclockwise</li> <li>Connect a standard signal generator to [ANT 1] and set as: <ul style="list-style-type: none"> <li>Frequency : 14.10150 MHz</li> <li>Level : 0.5 <math>\mu</math>V * (-113 dBm)</li> <li>Modulation: OFF</li> </ul> </li> <li>Receiving</li> </ul> | Rear panel  | Connect an AC millivoltmeter to [EXT SP] jack with an 8 $\Omega$ dummy load. | Maximum output level | MAIN             | Adjust repeatedly L47, L48, L49, L53, L54, L55, L84, L85 |                                 |
|             | <ul style="list-style-type: none"> <li>Mode : FM</li> <li>[M3 NAR] : OFF</li> <li>Set the standard signal generator as: <ul style="list-style-type: none"> <li>Frequency : 14.10000 MHz</li> <li>Level : 0.5 mV * (-53 dBm)</li> <li>Modulation: 1 kHz</li> <li>Deviation : <math>\pm</math>5 kHz</li> </ul> </li> </ul>   |             | Connect a distortion meter to [EXT SP] jack.                                 |                      |                  | Minimum distortion level                                 | Adjust repeatedly L47, L48, L49 |
|             | <ul style="list-style-type: none"> <li>[M3 NAR] : ON</li> <li>Set the standard signal generator as: <ul style="list-style-type: none"> <li>Deviation : <math>\pm</math>4 kHz</li> </ul> </li> </ul>  |             |  |                      |                  |  | Adjust repeatedly L53, L54      |
|             | <ul style="list-style-type: none"> <li>Displayed frequency: 146.00000 MHz</li> <li>[M3 NAR] : OFF</li> <li>Connect the standard signal generator to [ANT 2] and set as: <ul style="list-style-type: none"> <li>Frequency : 146.00000 MHz</li> <li>Deviation : <math>\pm</math>3.5 kHz</li> </ul> </li> </ul>   |             |  |                      |                  |  | PA                              |

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

● PLL AND PA UNITS



● MAIN UNIT



## RECEIVER ADJUSTMENT (CONTINUED)

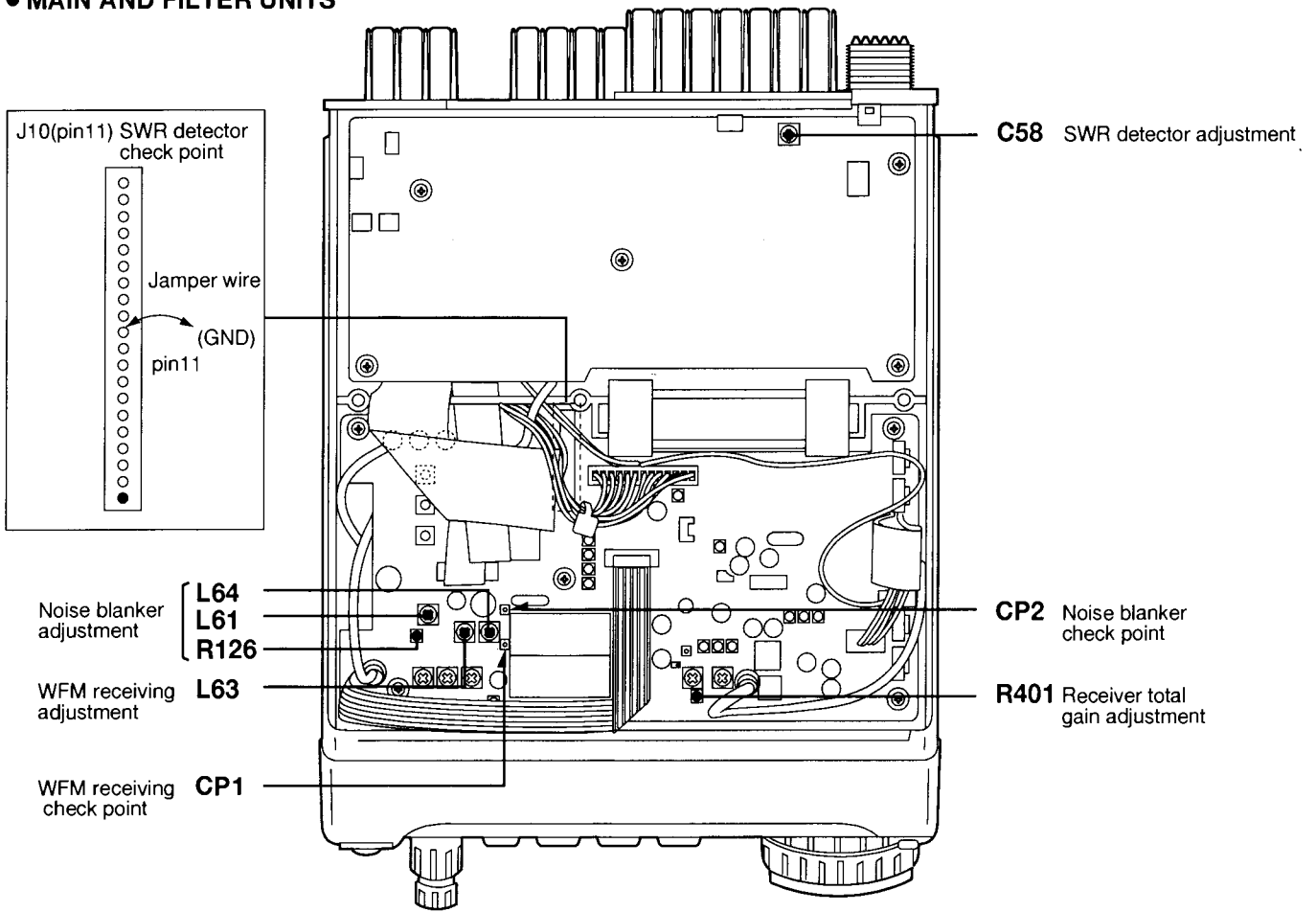
| ADJUSTMENT          | ADJUSTMENT CONDITIONS  | MEASUREMENT |   | VALUE                        | ADJUSTMENT POINT |          |
|---------------------|--|-------------|---|------------------------------|------------------|----------|
|                     |  | UNIT        | LOCATION  |                              | UNIT             | ADJUST   |
| RECEIVER TOTAL GAIN | 1 <ul style="list-style-type: none"> <li>Displayed frequency: 14.1000 MHz</li> <li>Mode : USB</li> <li>[P.AMP/ATT] : OFF</li> <li>Connect a standard signal generator to [ANT 1] and set as: <ul style="list-style-type: none"> <li>Frequency: 14.1015 MHz</li> <li>Level : 0.5 mV * (-53 dBm) and OFF</li> <li>Modulation: OFF</li> </ul> </li> </ul>                             | Rear panel  | Connect an AC millivoltmeter to [EXT SP] jack with an 8 Ω dummy load. | 30 dB of AF level difference | MAIN             | R401     |
| WFM RECEIVING       | 1 <ul style="list-style-type: none"> <li>Displayed frequency: 80.00000 MHz</li> <li>Mode : WFM</li> <li>Connect a standard signal generator to [ANT 2] and set as: <ul style="list-style-type: none"> <li>Frequency: 80.00000 MHz</li> <li>Level : 0.5 mV * (-53 dBm)</li> </ul> </li> <li>Receiving</li> </ul>  | MAIN        | Connect a digital multimeter or oscilloscope to CP1.                  | 4.0 V                        | MAIN             | L63      |
| NOISE BLANKER       | 1 <ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : USB</li> <li>[M3 NB] : OFF</li> <li>[P.AMP/ATT] : Preamp</li> <li>R126 (MAIN unit): Center</li> <li>Connect a standard signal generator to [ANT 1] and set as: <ul style="list-style-type: none"> <li>Frequency: 14.1015 MHz</li> <li>Level : 1.8 μV * (-82 dBm)</li> </ul> </li> </ul> | MAIN        | Connect an oscilloscope to CP2.                                       | Maximum voltage              | MAIN             | L61, L64 |
|                     | 2 <ul style="list-style-type: none"> <li>[M3 NB] : ON</li> </ul>   |             |   | Noise just reduces.          |                  |          |
| S-METER             | See p. 4-9 METER ADJUSTMENT  |             |   |                              |                  |          |

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

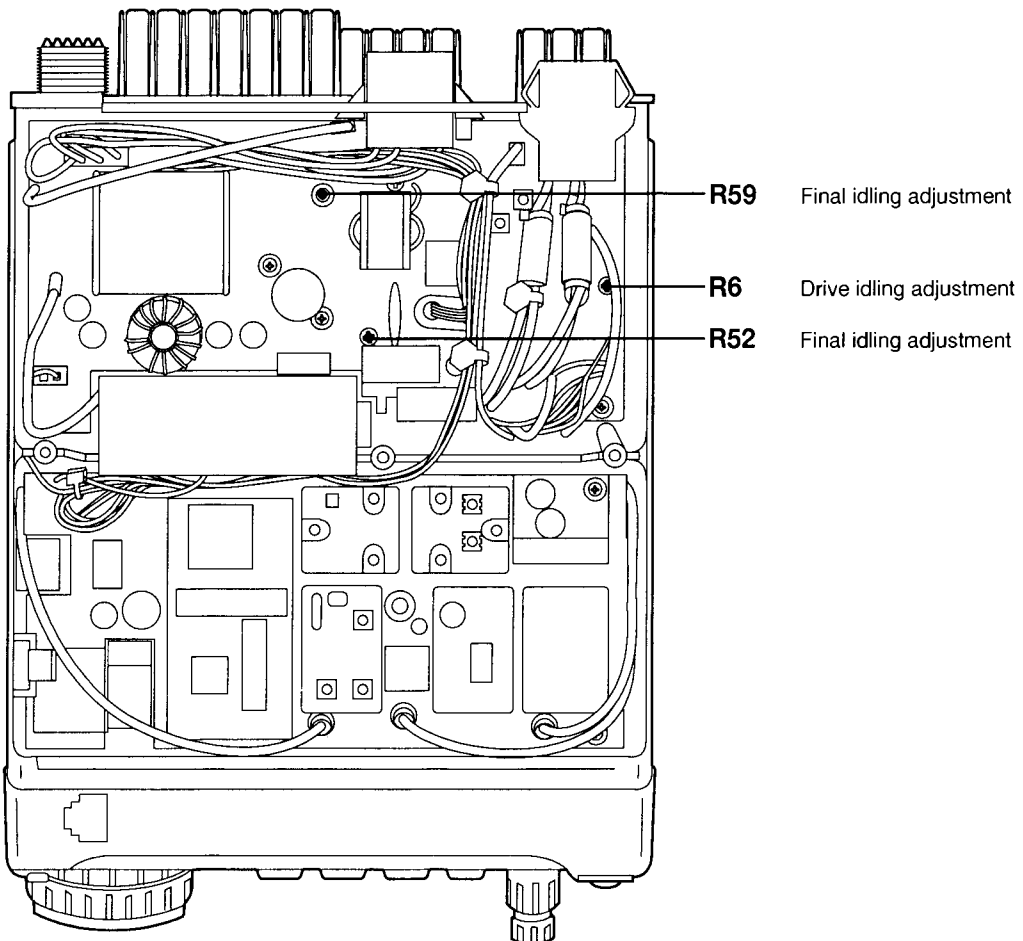
## 4-4 TRANSMITTER ADJUSTMENT

| ADJUSTMENT   | ADJUSTMENT CONDITIONS  | MEASUREMENT |   | VALUE   | ADJUSTMENT POINT |             |   |                            |     |
|--|--|-------------|---|---|------------------|-------------|---|----------------------------|-----|
|  |  | UNIT        | LOCATION  |   | UNIT             | ADJUST      |   |                            |     |
| IDLING CURRENT<br>(for drive amplifiers)           | 1 <ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : USB</li> <li>[Q2 MIC GAIN] : 1 (minimum)</li> <li>R6 (PA unit) : Max. counterclockwise</li> <li>R52 (PA unit) : Max. counterclockwise</li> </ul>  | Rear panel  | Connect a DC ammeter between the DC power supply and transceiver's DC power socket. | 1 A increase from that R6 is in max. counterclockwise | PA               | R6          |   |                            |     |
|  |  |             |   | (for final amplifiers)                                |                  |             | 2 <ul style="list-style-type: none"> <li>R59 (PA unit) : Max. counterclockwise</li> <li>Transmitting</li> </ul> | 0.5 A increase from step 1 | R52 |
|  |  |             |   | 3   |                  |             |   | 0.5 A increase from step 2 | R59 |
| SWR DETECTOR                                       | 1 <ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : USB</li> <li>Ground pin 11 of J10 (MAIN unit).</li> <li>Connect an audio generator to [MIC] connector and set as: <ul style="list-style-type: none"> <li>10 mV / 1.5 kHz</li> </ul> </li> <li>Transmitting</li> </ul> | Rear panel  | Connect an RF power meter to [ANT 1] connector.                                     | 100 W   | Quick set mode   | Q2 MIC GAIN |   |                            |     |
|  |  | 2           | MAIN  | Connect a digital multimeter to pin 1 of J7.          | Minimum voltage  | FILTER      | C58   |                            |     |
| After adjustment, remove the jumper wire from J10. |  |             |   |   |                  |             |   |                            |     |

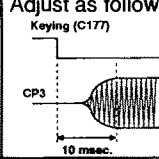
● MAIN AND FILTER UNITS



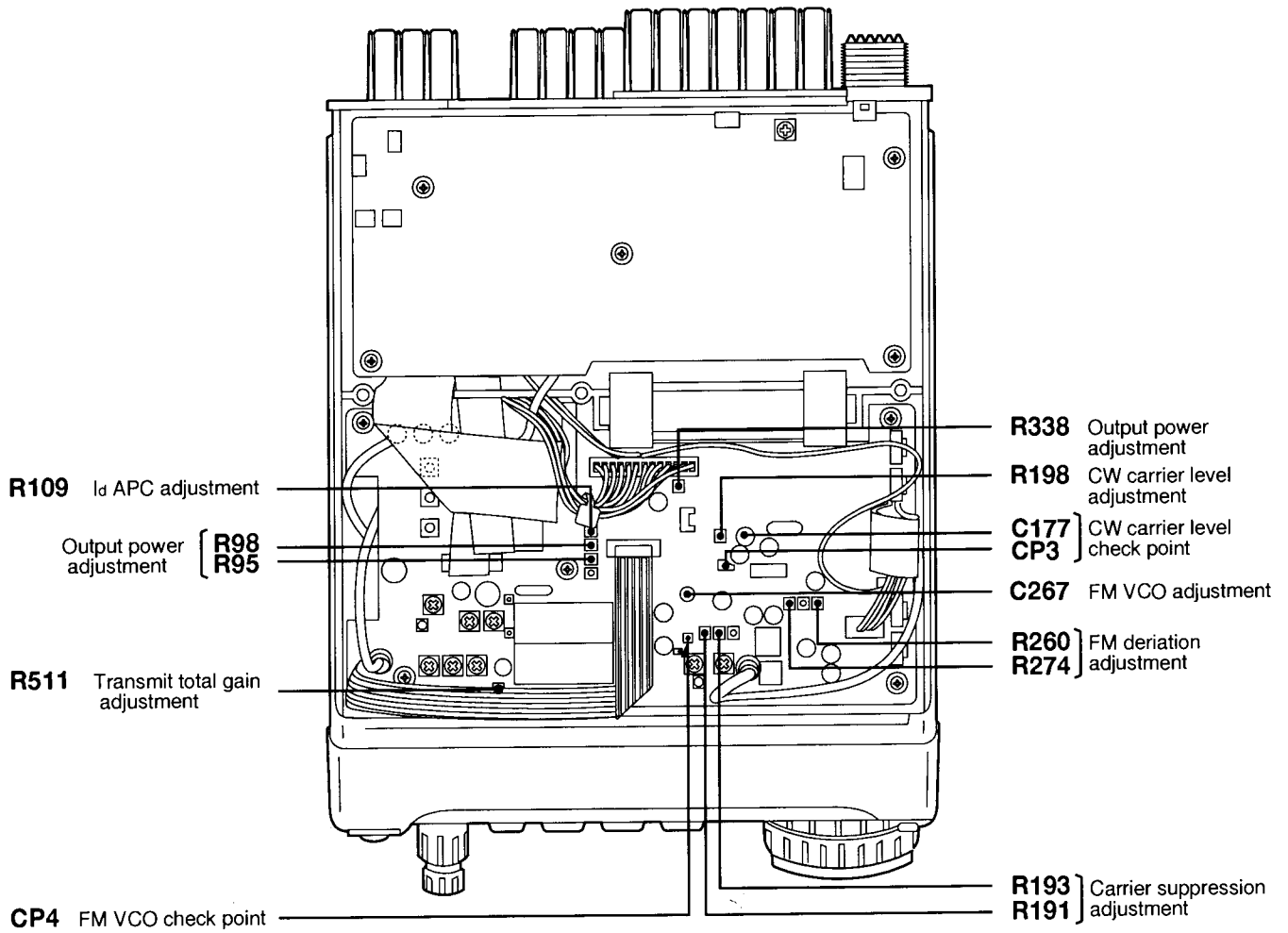
● PA UNIT



## TRANSMITTER ADJUSTMENT (CONTINUED)

| ADJUSTMENT   | ADJUSTMENT CONDITIONS   | MEASUREMENT |  | VALUE  | ADJUSTMENT POINT |                              |
|--|---|-------------|--|--|------------------|------------------------------|
|  |   | UNIT        | LOCATION   |  | UNIT             | ADJUST                       |
| Id APC   | 1 <ul style="list-style-type: none"> <li>Displayed frequency : 3.50000 MHz</li> <li>Mode : RTTY</li> <li>[Q1 RF POWER] : H</li> <li>R95 (MAIN unit) : 3 o'clock position</li> <li>R109 (MAIN unit): 3 o'clock position</li> <li>R198 (MAIN unit): Max. clockwise</li> <li>Ground CP6 with a jumper wire.</li> <li>Transmitting</li> </ul> | Rear panel  | Ammeter on the DC power supply                             | 22 A   | MAIN             | R109                         |
| After adjustment, remove the jumper wire from CP6. |   |             |  |  |                  |                              |
| TRANSMIT TOTAL GAIN                                | 1 <ul style="list-style-type: none"> <li>Displayed frequency : 14.10000 MHz</li> <li>Mode : USB</li> <li>[Q1 RF POWER] : H</li> <li>[Q2 MIC GAIN] : 5</li> <li>Connect an audio generator to [MIC] connector and set as:<br/>10 mV / 1.5 kHz</li> <li>Transmitting</li> </ul>   | Rear panel  | Connect an RF power meter to [ANT 1] connector.            | 50 W   | MAIN             | R511                         |
| CARRIER SUPPRESSION                                | 1 <ul style="list-style-type: none"> <li>Displayed frequency : 14.10000 MHz</li> <li>Mode : USB and LSB</li> <li>Apply no signal to [MIC] connector.</li> <li>Transmitting</li> </ul>   | Rear panel  | Connect a spectrum analyzer to [ANT 1] via an attenuator.  | Minimum carrier level  | MAIN             | Adjust repeatedly R191, R193 |
| OUTPUT POWER                                       | 1 <ul style="list-style-type: none"> <li>Displayed frequency : 14.10000 MHz</li> <li>Mode : USB</li> <li>[Q2 MIC GAIN] : 5</li> <li>Connect an audio generator to [MIC] connector and set as:<br/>100 mV / 1.5 kHz</li> <li>Transmitting</li> </ul>   | Rear panel  | Connect an RF power meter to [ANT 1] connector.            | 100 W  | MAIN             | R95                          |
|  | 2 <ul style="list-style-type: none"> <li>Displayed frequency : 52.00000 MHz</li> </ul>  |             |  | 100 W  |                  | R98                          |
|  | 3 <ul style="list-style-type: none"> <li>Displayed frequency : 145.00000 MHz</li> </ul>   |             | Connect an RF power meter to [ANT 2] connector.            | 10 W   |                  | R338                         |
| CW CARRIER LEVEL                                   | 1 <ul style="list-style-type: none"> <li>Displayed frequency : 14.10000 MHz</li> <li>Mode : CW</li> <li>[Q1 RF POWER] : H</li> <li>[Q5 KEY SPEED] : 60</li> <li>[M4 BRK] : BK (semi break-in)</li> <li>Transmit dots for a while using a paddle.</li> </ul>   | MAIN        | Connect an oscilloscope to CP3 and C177.                   | Adjust as follows:<br>Keying (C177)<br> | MAIN             | R198                         |
| FM VCO   | 1 <ul style="list-style-type: none"> <li>Displayed frequency : 29.10000 MHz</li> <li>Mode : FM</li> <li>[M4 TON] : OFF</li> <li>[Q1 RF POWER] : H</li> <li>Apply no signal to [MIC] connector.</li> <li>Transmitting</li> </ul>   | MAIN        | Connect a digital multi-meter to CP4.                      | 1.5 V  | MAIN             | C267                         |
| FM DEVIATION                                       | 1 <ul style="list-style-type: none"> <li>Displayed frequency : 29.10000 MHz</li> <li>Mode : FM</li> <li>[M4 TON] : OFF</li> <li>[Q1 RF POWER] : H</li> <li>[Q2 MIC GAIN] : 5</li> <li>R260 (MAIN unit): Center</li> <li>Connect an audio generator to [MIC] connector and set as:<br/>300 mV / 1 kHz</li> <li>Transmitting</li> </ul>     | Rear panel  | Connect an FM deviation meter to [ANT1] via an attenuator. | ± 4.8 kHz  | MAIN             | R274                         |
|  | 2 <ul style="list-style-type: none"> <li>Set the audio generator as:<br/>10 mV / 1 kHz</li> </ul>   |             |  | ± 3.5 kHz  |                  | R260                         |

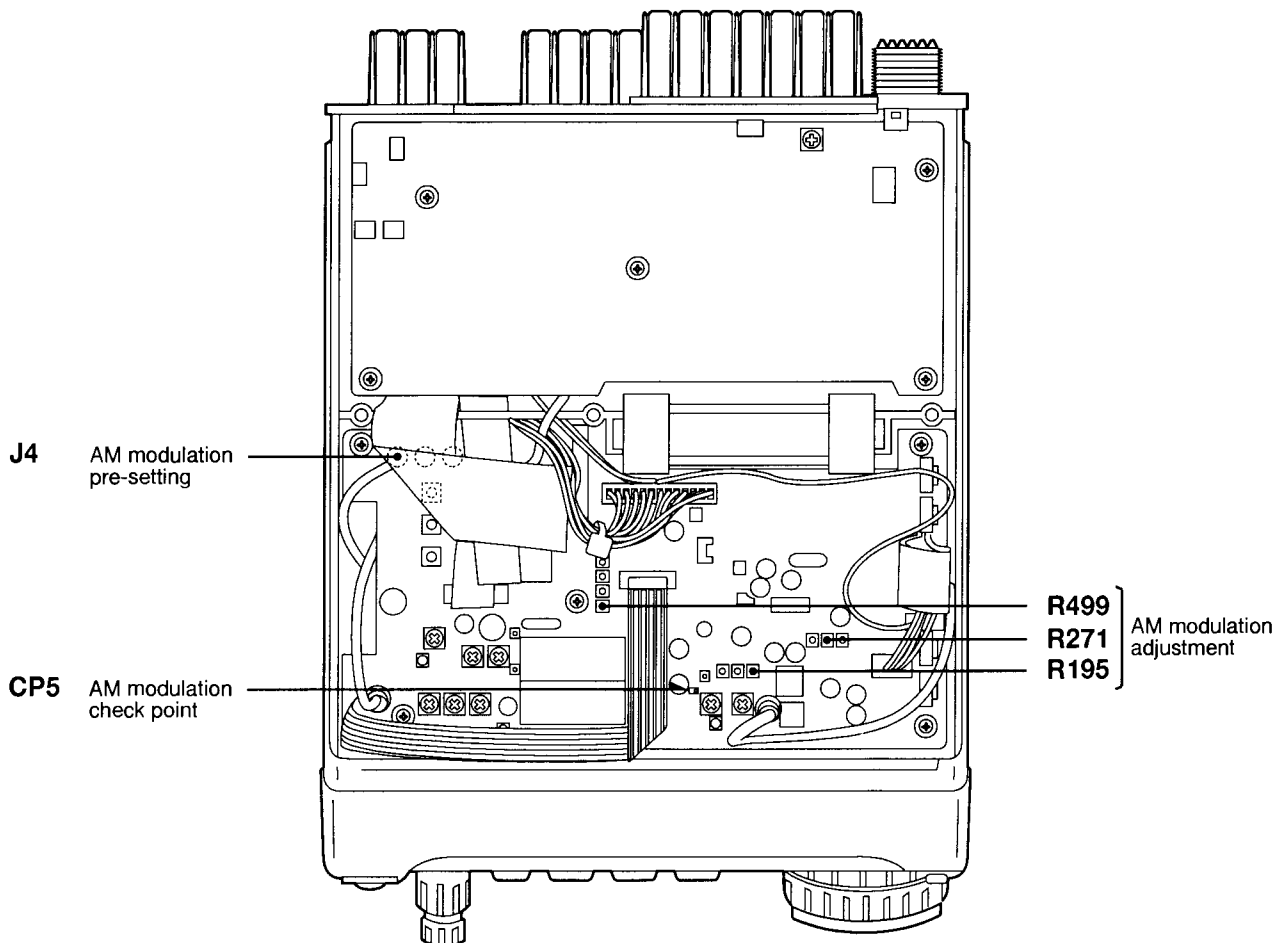
● MAIN UNIT



## TRANSMITTER ADJUSTMENT (CONTINUED)

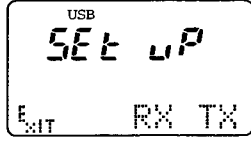
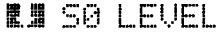
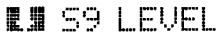

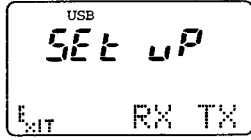
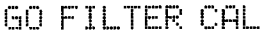

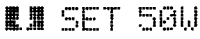
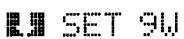
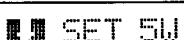
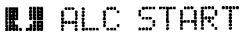

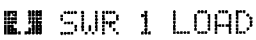
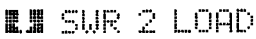
| ADJUSTMENT    | ADJUSTMENT CONDITIONS  | MEASUREMENT |  | VALUE          | ADJUSTMENT POINT |        |
|---------------|--|-------------|--|----------------|------------------|--------|
|               |  | UNIT        | LOCATION   |                | UNIT             | ADJUST |
| AM MODULATION | 1 <ul style="list-style-type: none"> <li>• Displayed frequency: 14.10000 MHz</li> <li>• Mode : AM</li> <li>• [Q1 RF POWER] : H</li> <li>• [Q2 MIC GAIN] : 5</li> <li>• Disconnect the plug from J4 (MAIN unit).</li> </ul> | MAIN        | Connect an oscilloscope to CP5.                            | 200 mVp-p      | MAIN             | R195   |
|               | 2 <ul style="list-style-type: none"> <li>• Connect the plug to J4 (MAIN unit).</li> <li>• Apply no signal to [MIC] connector.</li> <li>• Transmitting</li> </ul>   | Rear panel  | Connect an RF power meter to [ANT 1] connector.            | 35 W           |                  | R499   |
|               | 3 <ul style="list-style-type: none"> <li>• Connect an audio generator to [MIC] connector and set as:<br/>100 mV / 1 kHz</li> </ul>   |             | Connect a modulation analyzer to [ANT1] via an attenuator. | 85% modulation |                  | R271   |

### • MAIN UNIT





## 4-5 METER ADJUSTMENT (METER SET MODE)

| ADJUSTMENT         | ADJUSTMENT CONDITIONS | DISPLAY  | OPERATION  |   |
|--------------------|-----------------------|--|--|---|
| S-METER            | 1                     | <ul style="list-style-type: none"> <li>Enter Meter set mode:                             <ul style="list-style-type: none"> <li>Turn power OFF.</li> <li>Terminate the [REMOTE] jack with a 3.5(d) mm mini-plug.</li> <li>While pushing [P.AMP/ATT] and [TUNE/CALL], turn power ON.</li> </ul> </li> </ul> |    | Push [F-2(RX)] to enter S-meter setting mode.<br><br>Then advance to the following setting, or push [UP]/[DN] to scroll the display.        |
|                    | 2                     | <ul style="list-style-type: none"> <li>Connect a standard signal generator to [ANT 1] and set as:                             <ul style="list-style-type: none"> <li>Frequency : 14.15150 MHz</li> <li>Level : OFF</li> </ul> </li> </ul>  |    | Push [MENU] to set the "S0" level.  |
|                    | 3                     | <ul style="list-style-type: none"> <li>Set the standard signal generator as:                             <ul style="list-style-type: none"> <li>Level : 50 μV * (-73 dBm)</li> <li>Modulation: OFF</li> </ul> </li> </ul>  |    | Push [MENU] to set the "S9" level.  |
|                    | 4                     | <ul style="list-style-type: none"> <li>Set the standard signal generator as:                             <ul style="list-style-type: none"> <li>Level : 50 mV * (-13 dBm)</li> </ul> </li> </ul>   |    | Push [MENU] to set the "+60 dB" level.<br>The display returns to the same as that in step 1.  |
|                    | 5                     | Push [MENU (EXIT)] to exit meter set mode, or advance to transmit meter setting from step 2 below.   |  |   |
| TRANSMIT METERS    | 1                     | <ul style="list-style-type: none"> <li>Enter Meter set mode:                             <ul style="list-style-type: none"> <li>See "S-METER" item, step 1 above.</li> </ul> </li> </ul>   |   | Push [F-3(TX)] to enter transmit meter setting mode.<br><br>Then advance to the following setting, or push [UP]/[DN] to scroll the display. |
| Filter calibration | 2                     | <ul style="list-style-type: none"> <li>Connect an RF power meter to [ANT 1].</li> </ul>  |  | Push [MENU(GO)] to make the calibration.<br>Transceiver transmits for a while.  |
| Power meter        | 3                     | <ul style="list-style-type: none"> <li>Transmit using an external PTT switch.</li> </ul>   |  | Set to <b>90 W</b> using main dial, then push [MENU].   |
|                    | 4                     | <ul style="list-style-type: none"> <li>Transmit using an external PTT switch.</li> </ul>   |  | Set to <b>50 W</b> using main dial, then push [MENU].   |
|                    | 5                     | <ul style="list-style-type: none"> <li>Connect the RF power meter to [ANT 2].</li> <li>Transmit using an external PTT switch.</li> </ul>   |   | Set to <b>9 W</b> using main dial, then push [MENU].  |
|                    | 6                     | <ul style="list-style-type: none"> <li>Transmit using an external PTT switch.</li> </ul>   |   | Set to <b>5 W</b> using main dial, then push [MENU].  |
| ALC meter          | 7                     | <ul style="list-style-type: none"> <li>Connect the RF power meter to [ANT 1].</li> <li>Wait for 2 sec. while receiving for the ALC function to engage.</li> </ul>  |  | Push [MENU] to set ALC reference level.<br>Transceiver transmits for a while.   |
|                    | 8                     | <ul style="list-style-type: none"> <li>Connect an audio generator to [MIC] connector and set as:                             <ul style="list-style-type: none"> <li>Level : 100 mV / 1.5 kHz</li> </ul> </li> <li>Transmit using an external PTT switch.</li> </ul>  |  | Push [MENU] to set ALC zone level.  |
| SWR meter          | 9                     | <ul style="list-style-type: none"> <li>Connect a 50 Ω dummy load or power meter to [ANT 1].</li> </ul>   |  | Push [MENU] to set SWR reference level.<br>Transceiver transmits for a while.   |
|                    | 9                     | <ul style="list-style-type: none"> <li>Connect a 100 Ω or 25 Ω dummy load to [ANT 1].</li> </ul>   |  | Push [MENU] to set SWR 2 level.<br>Transceiver transmits for a while.<br>The display returns to the same as that in step 1.                 |
|                    | 10                    | Push [F-1 (EXIT)] to exit Meter set mode.  |  |   |

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

# SECTION 5 PARTS LIST

## 5-1 IC-706

[DISPLAY UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                                 |
|----------|------------|--------------|---------------------------------|
| IC1      | 1140005390 | S.IC         | HD8433834A41H                   |
| IC2      | 1130007960 | S.IC         | SED1522F0C<br>(QFP15-100PIN)    |
| IC3      | 1130002680 | S.IC         | $\mu$ PD4030BG-T1               |
| IC4      | 1110001550 | S.IC         | S-8054ALB-LM-T1                 |
| IC5      | 1180001080 | S.IC         | S-81250PG-PD-T1                 |
| IC6      | 1140003630 | S.IC         | X24C01S-2.7                     |
| IC7      | 1130005820 | S.IC         | TC4S584F(TE85R)                 |
| Q1       | 1590000680 | S.TRANSISTOR | DTC114EU T107                   |
| Q2       | 1520000200 | S.TRANSISTOR | 2SB788-T2 DK                    |
| Q3       | 1590001150 | S.TRANSISTOR | UN9211(TX)                      |
| Q4       | 1540000440 | S.TRANSISTOR | 2SD1819-T-TD                    |
| Q5       | 1530002690 | S.TRANSISTOR | 2SC4116-GR (TE85R)              |
| Q6       | 1540000250 | S.TRANSISTOR | 2SD989-T2 CK                    |
| Q7       | 1530003090 | S.TRANSISTOR | 2SC4213-B (TE85R)               |
| Q8       | 1580001150 | S.TRANSISTOR | UN9211(TX)                      |
| Q9       | 1590001870 | S.TRANSISTOR | DTA114EE TL                     |
| Q10      | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R                  |
| Q11      | 1520000380 | TRANSISTOR   | 2SB1143 S                       |
| D1       | 1750000370 | S.DIODE      | DA221 TL                        |
| D2       | 1750000370 | S.DIODE      | DA221 TL                        |
| D3       | 1750000370 | S.DIODE      | DA221 TL                        |
| D5       | 1160000140 | S.DIODE      | DAP222 TL                       |
| D6       | 1160000140 | S.DIODE      | DAP222 TL                       |
| D7       | 1160000140 | S.DIODE      | DAP222 TL                       |
| D8       | 1160000140 | S.DIODE      | DAP222 TL                       |
| D9       | 1160000140 | S.DIODE      | DAP222 TL                       |
| X1       | 6050008160 | S.XTAL       | CR-410 (9.8304MHz)              |
| L1       | 6200003260 | S.COIL       | NL 322522T-101J                 |
| L2       | 6200003590 | S.COIL       | EXCCL3225U1                     |
| L3       | 6200003590 | S.COIL       | EXCCL3225U1                     |
| L4       | 6200003590 | S.COIL       | EXCCL3225U1                     |
| L5       | 6200003590 | S.COIL       | EXCCL3225U1                     |
| R1       | 7030003340 | S.RESISTOR   | ERJ3GEYJ 151 V (150 $\Omega$ )  |
| R2       | 7030003400 | S.RESISTOR   | ERJ3GEYJ 471 V (470 $\Omega$ )  |
| R3       | 7030003400 | S.RESISTOR   | ERJ3GEYJ 471 V (470 $\Omega$ )  |
| R4       | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 k $\Omega$ )  |
| R5       | 7030003340 | S.RESISTOR   | ERJ3GEYJ 151 V (150 $\Omega$ )  |
| R6       | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 k $\Omega$ )  |
| R7       | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 k $\Omega$ )  |
| R8       | 7030003590 | S.RESISTOR   | ERJ3GEYJ 183 V (18 k $\Omega$ ) |
| R9       | 7030003580 | S.RESISTOR   | ERJ3GEYJ 103 V (10 k $\Omega$ ) |
| R10      | 7030003590 | S.RESISTOR   | ERJ3GEYJ 183 V (18 k $\Omega$ ) |
| R11      | 7030003580 | S.RESISTOR   | ERJ3GEYJ 103 V (10 k $\Omega$ ) |
| R12      | 7030003590 | S.RESISTOR   | ERJ3GEYJ 183 V (18 k $\Omega$ ) |
| R13      | 7030003580 | S.RESISTOR   | ERJ3GEYJ 103 V (10 k $\Omega$ ) |
| R14      | 7030003590 | S.RESISTOR   | ERJ3GEYJ 183 V (18 k $\Omega$ ) |
| R15      | 7030003580 | S.RESISTOR   | ERJ3GEYJ 103 V (10 k $\Omega$ ) |
| R16      | 7030003590 | S.RESISTOR   | ERJ3GEYJ 183 V (18 k $\Omega$ ) |
| R17      | 7030003580 | S.RESISTOR   | ERJ3GEYJ 103 V (10 k $\Omega$ ) |
| R18      | 7030003590 | S.RESISTOR   | ERJ3GEYJ 183 V (18 k $\Omega$ ) |
| R19      | 7030003580 | S.RESISTOR   | ERJ3GEYJ 103 V (10 k $\Omega$ ) |
| R20      | 7030003580 | S.RESISTOR   | ERJ3GEYJ 103 V (10 k $\Omega$ ) |
| R21      | 7030003580 | S.RESISTOR   | ERJ3GEYJ 103 V (10 k $\Omega$ ) |

[DISPLAY UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                                  |
|----------|------------|-------------|----------------------------------|
| R22      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R23      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R24      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R25      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R26      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R27      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R28      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R29      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R30      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R31      | 7030000240 | S.RESISTOR  | MCR10EZHZJ 68 $\Omega$ (880)     |
| R32      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R33      | 7010003830 | RESISTOR    | R20J 1 $\Omega$                  |
| R34      | 7030003200 | S.RESISTOR  | ERJ3GEYJ 100 V (10 $\Omega$ )    |
| R35      | 7030000240 | S.RESISTOR  | MCR10EZHZJ 68 $\Omega$ (880)     |
| R36      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R37      | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 k $\Omega$ )  |
| R38      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R39      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 $\Omega$ )   |
| R40      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R41      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R42      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R44      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 k $\Omega$ ) |
| R45      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 k $\Omega$ ) |
| R46      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 k $\Omega$ ) |
| R47      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 k $\Omega$ )  |
| R49      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 221 V (220 $\Omega$ )   |
| R50      | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 M $\Omega$ )   |
| R51      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R52      | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 k $\Omega$ ) |
| R53      | 7030003880 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R54      | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 M $\Omega$ )   |
| R55      | 7030003880 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R56      | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 k $\Omega$ ) |
| R57      | 7030003880 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R58      | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 M $\Omega$ )   |
| R59      | 7030003880 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R60      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R61      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R62      | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 k $\Omega$ ) |
| R63      | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 k $\Omega$ ) |
| R64      | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 k $\Omega$ ) |
| R65      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R66      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R67      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R68      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 k $\Omega$ )  |
| R69      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R70      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R71      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R72      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R73      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R74      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R75      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R78      | 7030003840 | S.RESISTOR  | ERJ3GEYJ 225 V (2.2 M $\Omega$ ) |
| R83      | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 k $\Omega$ )  |
| R84      | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 k $\Omega$ )  |
| R85      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 k $\Omega$ ) |
| R88      | 7010003830 | RESISTOR    | R20J 1 $\Omega$                  |
| R89      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 k $\Omega$ ) |
| R90      | 7030000240 | S.RESISTOR  | MCR10EZHZJ 68 $\Omega$ (880)     |
| R91      | 7030000240 | S.RESISTOR  | MCR10EZHZJ 68 $\Omega$ (880)     |
| R92      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R93      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 k $\Omega$ )   |
| R94      | 7030003200 | S.RESISTOR  | ERJ3GEYJ 100 V (10 $\Omega$ )    |
| R95      | 7030003200 | S.RESISTOR  | ERJ3GEYJ 100 V (10 $\Omega$ )    |
| R96      | 7030003200 | S.RESISTOR  | ERJ3GEYJ 100 V (10 $\Omega$ )    |
| R97      | 7030003390 | S.RESISTOR  | ERJ3GEYJ 391 V (390 $\Omega$ )   |
| R98      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 k $\Omega$ ) |

S.=Surface mount

[DISPLAY UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION    |                       |
|----------|------------|----------------|-----------------------|
| C1       | 4030006880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C2       | 4030006880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C3       | 4030006880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C4       | 4030006880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C5       | 4030009110 | S.CERAMIC      | C3216 JB 1C 474K-T-A  |
| C7       | 4030006880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C8       | 4030006880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C9       | 4030006880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C10      | 4030007020 | S.CERAMIC      | C1808 CH 1H 120J-T-A  |
| C11      | 4030007020 | S.CERAMIC      | C1808 CH 1H 120J-T-A  |
| C12      | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C13      | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C14      | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C15      | 4030008880 | S.CERAMIC      | C1808 JB 1H 102K-T-A  |
| C16      | 4030008880 | S.CERAMIC      | C1808 JB 1H 102K-T-A  |
| C17      | 4030009860 | S.CERAMIC      | C1808 JF 1C 224Z-T-A  |
| C18      | 4030009590 | S.CERAMIC      | C2012 JF 1C 225Z-T-A  |
| C19      | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C20      | 4030009590 | S.CERAMIC      | C2012 JF 1C 225Z-T-A  |
| C21      | 4510004830 | S.ELECTROLITIC | ECEV1CA100SR          |
| C22      | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C23      | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C24      | 4510004830 | S.ELECTROLITIC | ECEV1CA100SR          |
| C25      | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C26      | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C27      | 4030009590 | S.CERAMIC      | C2012 JF 1C 225Z-T-A  |
| C28      | 4030009590 | S.CERAMIC      | C2012 JF 1C 225Z-T-A  |
| C29      | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C30      | 4030006880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C31      | 4030006880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C32      | 4030006880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C33      | 4030006880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C34      | 4030006850 | S.CERAMIC      | C1808 JB 1H 471K-T-A  |
| DS1      | 5040002020 | S.LED          | CL-170UR-CD-T         |
| DS2      | 5040002010 | S.LED          | CL-170PG-CD-T         |
| DS3      | 5040002020 | S.LED          | CL-170UR-CD-T         |
| DS4      | 5010000171 | LCD            | DLC-7973YBGF-1        |
| DS5      | 5030001290 | LED            | D2264                 |
| S1       | 2260002250 | S.SWITCH       | LS22BB-2SD-PG-T       |
| S2       | 2260002240 | S.SWITCH       | LS21BB-2SD-T          |
| S3       | 2260001890 | S.SWITCH       | SKQDPA                |
| S4       | 2260001890 | S.SWITCH       | SKQDPA                |
| S5       | 2260001890 | S.SWITCH       | SKQDPA                |
| S6       | 2260001890 | S.SWITCH       | SKQDPA                |
| S7       | 2260001890 | S.SWITCH       | SKQDPA                |
| S8       | 2260001890 | S.SWITCH       | SKQDPA                |
| S9       | 2260001890 | S.SWITCH       | SKQDPA                |
| S10      | 2260001890 | S.SWITCH       | SKQDPA                |
| S11      | 2260001890 | S.SWITCH       | SKQDPA                |
| S12      | 2260001890 | S.SWITCH       | SKQDPA                |
| S13      | 2260002240 | S.SWITCH       | LS21BB-2SD-T          |
| S14      | 2260001890 | S.SWITCH       | SKQDPA                |
| J1       | 6510019120 | S.CONNECTOR    | S8B-PH-SM3-TB         |
| J2       | 6450001830 | CONNECTOR      | HSJ1408-01-050        |
| J3       | 6510018890 | S.CONNECTOR    | 52559-1390            |
| W1       | 7030003860 | S.JUMPER       | ERJ3GE JPW V          |
| EP1      | 0910045817 | PCB            | B 4558G               |
| EP2      | 8930037591 | LCD CONTACT    | SRCN-1691-ZNN-505-1   |

[VR UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                                 |
|----------|------------|-------------|---------------------------------|
| R1       | 7210002780 | VARIABLE    | RV-300 (RK0972210)<br>10KB/10KB |
| R2       | 7210002790 | VARIABLE    | RV-301 (RK097221)<br>10KB/10KB  |
| S1       | 2220000540 | SWITCH      | SW-162 (SSSS22-2-11)            |
| J1       | 6510018890 | S.CONNECTOR | 52559-1390                      |
| EP1      | 0910045822 | PCB         | B 4559B                         |

S.=Surface mount

[MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                   |
|----------|------------|--------------|-------------------|
| IC1      | 1110004080 | S.IC         | μPC2709T-E3       |
| IC3      | 1110003280 | S.IC         | ND487C1T-E3       |
| IC4      | 1110003310 | S.IC         | μPC1688G-T1       |
| IC5      | 1110003280 | S.IC         | ND487C1T-E3       |
| IC6      | 1110003980 | S.IC         | μPC2713T-E3       |
| IC7      | 1110003780 | S.IC         | NJM2902V-TE1      |
| IC9      | 1110003140 | IC           | LA1150N           |
| IC10     | 1160000130 | S.IC         | TD82783AF (TP1)   |
| IC11     | 1160000130 | S.IC         | TD82783AF (TP1)   |
| IC12     | 1110002700 | S.IC         | NJM2904M-T1       |
| IC15     | 1130007820 | S.IC         | BU4052BCF-T1      |
| IC16     | 1110003350 | S.IC         | μPC1037GR-E1(MS)  |
| IC17     | 1110003350 | S.IC         | μPC1037GR-E1(MS)  |
| IC18     | 1110003200 | S.IC         | TA31138FN(EL)     |
| IC22     | 1140005280 | S.IC         | μPC5023GS-077-E1  |
| IC23     | 1130006220 | S.IC         | TC4W53FU (TE12L)  |
| IC24     | 1110002490 | S.IC         | M5218FP-73A       |
| IC25     | 1140005700 | S.IC         | HD6433378A77F     |
| IC26     | 1110001550 | S.IC         | S-8054ALB-LM-T1   |
| IC27     | 1130005720 | S.IC         | TC7W04F (TE12L)   |
| IC28     | 1140004620 | S.IC         | X24C16S8-2.7      |
| IC29     | 1140004620 | S.IC         | X24C16S8-2.7      |
| IC30     | 1130000830 | S.IC         | μPD4094BG-T1      |
| IC31     | 1130000830 | S.IC         | μPD4094BG-T1      |
| IC32     | 1130000830 | S.IC         | μPD4094BG-T1      |
| IC33     | 1130003780 | S.IC         | TC4S81F (TE85R)   |
| IC34     | 1110002700 | S.IC         | NJM2904M-T1       |
| IC35     | 1110003690 | S.IC         | M62354GP 75EC     |
| IC36     | 1160000130 | S.IC         | TD82783AF (TP1)   |
| IC37     | 1130007680 | S.IC         | LC7153M-TLM       |
| IC38     | 1110004100 | S.IC         | TA4001F (TE85L)   |
| Q1       | 1590001940 | S.TRANSISTOR | DTC144EE TL       |
| Q2       | 1590001150 | S.TRANSISTOR | UN9211(TX)        |
| Q3       | 1590001150 | S.TRANSISTOR | UN9211(TX)        |
| Q4       | 1530003150 | S.TRANSISTOR | 2SC4673D-TD       |
| Q5       | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q6       | 1590001940 | S.TRANSISTOR | DTC144EE TL       |
| Q7       | 1590001940 | S.TRANSISTOR | DTC144EE TL       |
| Q8       | 1510000510 | S.TRANSISTOR | 2SA1578 T107 R    |
| Q9       | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q10      | 1560000560 | S.FET        | 2SK882-GR (TE85L) |
| Q11      | 1510000510 | S.TRANSISTOR | 2SA1578 T107 R    |
| Q12      | 1560000560 | S.FET        | 2SK882-GR (TE85L) |
| Q13      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q14      | 1590001870 | S.TRANSISTOR | DTA114EE TL       |
| Q15      | 1590001940 | S.TRANSISTOR | DTC144EE TL       |
| Q16      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q21      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q23      | 1590001940 | S.TRANSISTOR | DTC144EE TL       |
| Q27      | 1530003090 | S.TRANSISTOR | 2SC4213-B (TE85R) |
| Q28      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q29      | 1510000510 | S.TRANSISTOR | 2SA1578 T107 R    |
| Q30      | 1590001940 | S.TRANSISTOR | DTC144EE TL       |
| Q31      | 1590001870 | S.TRANSISTOR | DTA114EE TL       |
| Q32      | 1540000450 | S.TRANSISTOR | 2SD1623-T-TD      |
| Q33      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q34      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q35      | 1510000510 | S.TRANSISTOR | 2SA1578 T107 R    |
| Q36      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q37      | 1590001940 | S.TRANSISTOR | DTC144EE TL       |
| Q38      | 1510000510 | S.TRANSISTOR | 2SA1578 T107 R    |
| Q39      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q40      | 1580000330 | S.FET        | 2SK210-GR (TE85R) |
| Q41      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q42      | 1580000820 | S.FET        | 3SK131-T2 MAS     |
| Q43      | 1560000560 | S.FET        | 2SK882-GR (TE85L) |
| Q44      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q45      | 1590001940 | S.TRANSISTOR | DTC144EE TL       |
| Q46      | 1590001150 | S.TRANSISTOR | UN9211(TX)        |
| Q47      | 1590001150 | S.TRANSISTOR | UN9211(TX)        |
| Q48      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R    |
| Q49      | 1590001150 | S.TRANSISTOR | UN9211(TX)        |
| Q50      | 1590001940 | S.TRANSISTOR | DTC144EE TL       |
| Q51      | 1590001870 | S.TRANSISTOR | DTA114EE TL       |

[MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |  |
|----------|------------|--------------|--|
| Q52      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R   |
| Q53      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R   |
| Q55      | 1590001540 | S.TRANSISTOR | UMD8 TL  |
| Q56      | 1590001540 | S.TRANSISTOR | UMD8 TL  |
| Q63      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R   |
| Q64      | 1590001940 | S.TRANSISTOR | DTC144EE TL  |
| Q65      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R   |
| Q66      | 1590001940 | S.TRANSISTOR | DTC144EE TL  |
| Q67      | 1590001920 | S.TRANSISTOR | UN911F(TX)   |
| Q68      | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R   |
| D1       | 1750000450 | S.DIODE      | 1SV285-TR  |
| D2       | 1750000210 | S.DIODE      | 1SV237 (TE85R)   |
| D13      | 1750000450 | S.DIODE      | 1SV285-TR  |
| D14      | 1750000450 | S.DIODE      | 1SV265-TR  |
| D15      | 1750000210 | S.DIODE      | 1SV237 (TE85R)   |
| D16      | 1790000450 | S.DIODE      | MA862(TX)  |
| D17      | 1790000450 | S.DIODE      | MA862(TX)  |
| D18      | 1790000450 | S.DIODE      | MA862(TX)  |
| D19      | 1790000620 | S.DIODE      | MA77(TW)   |
| D20      | 1790000450 | S.DIODE      | MA862(TX)  |
| D21      | 1790000450 | S.DIODE      | MA862(TX)  |
| D22      | 1750000450 | S.DIODE      | 1SV265-TR  |
| D23      | 1750000450 | S.DIODE      | 1SV265-TR  |
| D24      | 1790000450 | S.DIODE      | MA862(TX)  |
| D25      | 1790000450 | S.DIODE      | MA862(TX)  |
| D26      | 1790000450 | S.DIODE      | MA862(TX)  |
| D27      | 1790000450 | S.DIODE      | MA862(TX)  |
| D28      | 1790000450 | S.DIODE      | MA862(TX)  |
| D29      | 1790000450 | S.DIODE      | MA862(TX)  |
| D30      | 1790000450 | S.DIODE      | MA862(TX)  |
| D31      | 1790000450 | S.DIODE      | MA862(TX)  |
| D36      | 1180000140 | S.DIODE      | DAP222 TL  |
| D37      | 1180000140 | S.DIODE      | DAP222 TL  |
| D38      | 1790000450 | S.DIODE      | MA862(TX)  |
| D39      | 1790000490 | S.DIODE      | HSM88AS-TR   |
| D42      | 1180000140 | S.DIODE      | DAP222 TL  |
| D43      | 1790000490 | S.DIODE      | HSM88AS-TR   |
| D44      | 1790000490 | S.DIODE      | HSM88AS-TR   |
| D46      | 1790000450 | S.DIODE      | MA862(TX)  |
| D47      | 1180000140 | S.DIODE      | DAP222 TL  |
| D48      | 1790000450 | S.DIODE      | MA862(TX)  |
| D50      | 1750000520 | S.DIODE      | DAN222TL   |
| D51      | 1750000370 | S.DIODE      | DA221 TL   |
| D52      | 1180000140 | S.DIODE      | DAP222 TL  |
| D53      | 1750000520 | S.DIODE      | DAN222TL   |
| D54      | 1180000140 | S.DIODE      | DAP222 TL  |
| D55      | 1180000140 | S.DIODE      | DAP222 TL  |
| D57      | 1750000520 | S.DIODE      | DAN222TL   |
| D58      | 1750000520 | S.DIODE      | [FRA], [DEN] only<br>DAN222TL<br>[EUR], [FRA] only<br>DAN222TL<br>[USA] only<br>DAN222TL |
| D59      | 1750000520 | S.DIODE      | DAN222TL   |
| D60      | 1750000520 | S.DIODE      | DAN222TL [USA] only  |
| D61      | 1750000520 | S.DIODE      | DAN222TL   |
| D62      | 1750000520 | S.DIODE      | DAN222TL   |
| D63      | 1790000490 | S.DIODE      | HSM88AS-TR   |
| D64      | 1790000490 | S.DIODE      | HSM88AS-TR   |
| D65      | 1750000520 | S.DIODE      | DAN222TL   |
| D66      | 1750000520 | S.DIODE      | DAN222TL   |
| D67      | 1720000490 | S.VARICAP    | SVC252-TA  |
| D68      | 1790000490 | S.DIODE      | HSM88AS-TR   |
| D69      | 1790000490 | S.DIODE      | HSM88AS-TR   |
| D70      | 1730000620 | S.ZENER      | RD3.6M-T2B2  |
| D71      | 1180000140 | S.DIODE      | DAP222 TL  |
| D72      | 1750000520 | S.DIODE      | DAN222TL   |
| D75      | 1790000620 | S.DIODE      | MA77(TW)   |
| D76      | 1790000620 | S.DIODE      | MA77(TW)   |
| D78      | 1750000520 | S.DIODE      | DAN222TL   |
| D80      | 1750000520 | S.DIODE      | DAN222TL   |
| D81      | 1750000520 | S.DIODE      | DAN222TL   |
| D82      | 1750000520 | S.DIODE      | DAN222TL   |
| D83      | 1750000520 | S.DIODE      | DAN222TL   |
| D84      | 1750000520 | S.DIODE      | DAN222TL [FRA] only  |
| D85      | 1750000520 | S.DIODE      | DAN222TL [FRA] only  |

S.=Surface mount

[MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION     |                     |
|----------|------------|-----------------|---------------------|
| D86      | 1160000140 | S.DIODE         | DAP222 TL           |
| D87      | 1750000210 | S.DIODE         | 1SV237 (TE85R)      |
| D89      | 1730000030 | S.ZENER         | RD5.6M-T2B2         |
| D90      | 1750000520 | S.DIODE         | DAN222TL            |
| D92      | 1730000840 | S.ZENER         | RD9.1M-T2B2         |
| D93      | 1730000230 | ZENER           | RD11E B1            |
| D94      | 1790000450 | S.DIODE         | MA862(TX)           |
| D97      | 1750000520 | S.DIODE         | DAN222TL            |
| D99      | 1750000520 | S.DIODE         | DAN222TL            |
| D100     | 1750000520 | S.DIODE         | DAN222TL            |
| D102     | 1750000520 | S.DIODE         | DAN222TL            |
| D103     | 1160000140 | S.DIODE         | DAP222 TL           |
| D105     | 1750000520 | S.DIODE         | DAN222TL            |
| D106     | 1790001250 | S.DIODE         | MA2S111-(TX)        |
| D107     | 1730002300 | S.ZENER         | MA8082-M(TX)        |
| FI1      | 2010001010 | FILTER          | FL-120              |
| FI2      | 2020001140 | S.CERAMIC       | SFECA10.7MA-5-A     |
| FI3      | 2010000730 | FILTER          | FL-94               |
| FI4      | 2010000320 | FILTER          | FL-30               |
| FI5      | 2010000950 | FILTER          | FL-116              |
| FI6      | 2020001050 | S.CERAMIC       | SFPC455E-TC01       |
| X1       | 6070000150 | S.Discriminator | CDBC455CX24-TC      |
| X2       | 6050009520 | S.XTAL          | CR-520 (19.6608MHz) |
| L1       | 6200003240 | S.COIL          | NL 322522T-221J     |
| L2       | 6200003240 | S.COIL          | NL 322522T-221J     |
| L3       | 6200003240 | S.COIL          | NL 322522T-221J     |
| L4       | 6200000510 | S.COIL          | MLF3216E 5R6M-T     |
| L5       | 6200000500 | S.COIL          | MLF3216A 4R7M-T     |
| L6       | 6200003240 | S.COIL          | NL 322522T-221J     |
| L7       | 6200003190 | S.COIL          | NL 322522T-470J     |
| L8       | 6200003240 | S.COIL          | NL 322522T-221J     |
| L9       | 6200001710 | S.COIL          | NL 322522T-220J     |
| L30      | 6200003240 | S.COIL          | NL 322522T-221J     |
| L35      | 6200002360 | S.COIL          | LQN 1A 33NJ04       |
| L36      | 6200002820 | S.COIL          | LQN 1A 47NJ04       |
| L37      | 6140002810 | S.COIL          | LR-317              |
| L38      | 6200003000 | S.COIL          | NL 322522T-R22J-3   |
| L39      | 6200003030 | S.COIL          | NL 322522T-R47J-3   |
| L40      | 6200001830 | S.COIL          | NL 322522T-100J     |
| L41      | 6140002810 | S.COIL          | LR-317              |
| L42      | 6200002990 | S.COIL          | NL 322522T-2R2J-3   |
| L43      | 6200002990 | S.COIL          | NL 322522T-2R2J-3   |
| L44      | 6200002990 | S.COIL          | NL 322522T-2R2J-3   |
| L45      | 6200002990 | S.COIL          | NL 322522T-2R2J-3   |
| L46      | 6200001830 | S.COIL          | NL 322522T-100J     |
| L47      | 6150004390 | S.COIL          | LS-492              |
| L48      | 6150004390 | S.COIL          | LS-492              |
| L49      | 6150004390 | S.COIL          | LS-492              |
| L50      | 6140002810 | S.COIL          | LR-317              |
| L51      | 6140002810 | S.COIL          | LR-317              |
| L52      | 6200003030 | S.COIL          | NL 322522T-R47J-3   |
| L53      | 6150004870 | S.COIL          | LS-512              |
| L54      | 6150004870 | S.COIL          | LS-512              |
| L55      | 6150004900 | S.COIL          | LS-512              |
| L57      | 6200001710 | S.COIL          | NL 322522T-220J     |
| L58      | 6200003260 | S.COIL          | NL 322522T-101J     |
| L59      | 6200003260 | S.COIL          | NL 322522T-101J     |
| L60      | 6200003260 | S.COIL          | NL 322522T-101J     |
| L61      | 6150004880 | S.COIL          | LS-513              |
| L62      | 6200003190 | S.COIL          | NL 322522T-470J     |
| L63      | 6150004890 | S.COIL          | LS-514              |
| L64      | 6150004880 | S.COIL          | LS-513              |
| L65      | 6200003260 | S.COIL          | NL 322522T-101J     |
| L66      | 6200003260 | S.COIL          | NL 322522T-101J     |
| L70      | 6200003260 | S.COIL          | NL 322522T-101J     |
| L71      | 6200001830 | S.COIL          | NL 322522T-100J     |
| L72      | 6200003260 | S.COIL          | NL 322522T-101J     |
| L74      | 6200003260 | S.COIL          | NL 322522T-101J     |
| L75      | 6200002990 | S.COIL          | NL 322522T-2R2J-3   |
| L76      | 6200001830 | S.COIL          | NL 322522T-100J     |

[MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                         |
|----------|------------|-------------|-------------------------|
| L77      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L78      | 6200002990 | S.COIL      | NL 322522T-2R2J-3       |
| L81      | 6200003100 | S.COIL      | NL 322522T-3R6J-3       |
| L82      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L84      | 6150004910 | S.COIL      | LS-516                  |
| L85      | 6150004910 | S.COIL      | LS-516                  |
| L87      | 6200003160 | S.COIL      | NL 322522T-270J         |
| L88      | 6200003160 | S.COIL      | NL 322522T-270J         |
| L89      | 6200001830 | S.COIL      | NL 322522T-100J         |
| L90      | 6200002990 | S.COIL      | NL 322522T-2R2J-3       |
| L91      | 6200001830 | S.COIL      | NL 322522T-100J         |
| L92      | 6200002990 | S.COIL      | NL 322522T-2R2J-3       |
| L93      | 6200002900 | S.COIL      | ELJSC 680K-F            |
| L94      | 6200002900 | S.COIL      | ELJSC 680K-F            |
| L95      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L96      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L99      | 6200002520 | S.COIL      | ELJNC R18K-F            |
| L100     | 6180002960 | S.COIL      | NL 322522T-R18J-3       |
| L101     | 6180002960 | S.COIL      | NL 322522T-R18J-3       |
| L104     | 6200005190 | S.COIL      | MLF1608D R56K-T         |
| L105     | 6200005190 | S.COIL      | MLF1608D R56K-T         |
| L106     | 6200004940 | S.COIL      | MLF1608D R27K-T         |
| L107     | 6200004070 | S.COIL      | MLR1608M 22NJ-T         |
| L108     | 6200004220 | S.COIL      | MLR1608M 27NJ-T         |
| L109     | 6200005180 | S.COIL      | MLF1608D R39K-T         |
| L110     | 6200004600 | S.COIL      | MLF1608D R15K-T         |
| L111     | 6200002340 | S.COIL      | LQN 1A 23NJ04           |
| L112     | 6200002340 | S.COIL      | LQN 1A 23NJ04           |
| L113     | 6200001650 | S.COIL      | ELJNC 18NK-F            |
| L124     | 6200001710 | S.COIL      | NL 322522T-220J         |
| L125     | 6200001830 | S.COIL      | NL 322522T-100J         |
| L126     | 6200001710 | S.COIL      | NL 322522T-220J         |
| L128     | 6200003540 | S.COIL      | MLF1608D R22K-T         |
| L130     | 6200002460 | S.COIL      | ELJNC 82NK-F            |
| L131     | 6200004630 | S.COIL      | MLR1608M 56NJ-T         |
| L132     | 6200004070 | S.COIL      | MLR1608M 22NJ-T         |
| R1       | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R2       | 7030006250 | S.RESISTOR  | ERJ12YJ271H (270 Ω)     |
| R3       | 7030003390 | S.RESISTOR  | ERJ3GEYJ 391 V (390 Ω)  |
| R4       | 7030003290 | S.RESISTOR  | ERJ3GEYJ 560 V (56 Ω)   |
| R5       | 7030006260 | S.RESISTOR  | ERJ12YJ471H (470 Ω)     |
| R6       | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R7       | 7030006260 | S.RESISTOR  | ERJ12YJ471H (470 Ω)     |
| R8       | 7030006260 | S.RESISTOR  | ERJ12YJ471H (470 Ω)     |
| R9       | 7030003370 | S.RESISTOR  | ERJ3GEYJ 271 V (270 Ω)  |
| R10      | 7030003230 | S.RESISTOR  | ERJ3GEYJ 180 V (18 Ω)   |
| R11      | 7030003370 | S.RESISTOR  | ERJ3GEYJ 271 V (270 Ω)  |
| R27      | 7030006260 | S.RESISTOR  | ERJ12YJ471H (470 Ω)     |
| R34      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R35      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R36      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R37      | 7030003510 | S.RESISTOR  | ERJ3GEYJ 392 V (3.9 kΩ) |
| R38      | 7030003200 | S.RESISTOR  | ERJ3GEYJ 100 V (10 Ω)   |
| R39      | 7030006070 | S.RESISTOR  | ERJ12YJ101H (100 Ω)     |
| R40      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R41      | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)  |
| R42      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R43      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R45      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R46      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R47      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R48      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R50      | 7030003370 | S.RESISTOR  | ERJ3GEYJ 271 V (270 Ω)  |
| R51      | 7030003230 | S.RESISTOR  | ERJ3GEYJ 180 V (18 Ω)   |
| R52      | 7030003370 | S.RESISTOR  | ERJ3GEYJ 271 V (270 Ω)  |
| R53      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R54      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R55      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R56      | 7030003570 | S.RESISTOR  | ERJ3GEYJ 123 V (12 kΩ)  |
| R57      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R58      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)  |
| R59      | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)   |
| R60      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R61      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)  |

S.=Surface mount

[MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                            |
|----------|------------|-------------|----------------------------|
| R63      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R64      | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)      |
| R66      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)     |
| R67      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)     |
| R68      | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)      |
| R70      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)     |
| R71      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R73      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R74      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R75      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R76      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R77      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R78      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R79      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R80      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R81      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R82      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R83      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R85      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R86      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R87      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R88      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R89      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R90      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R91      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R92      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R93      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R94      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R95      | 7310002780 | S.TRIMMER   | RV-152 (RH03A3AJX0HA) 223  |
| R99      | 7030003780 | S.RESISTOR  | ERJ3GEYJ 474 V (470 kΩ)    |
| R100     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R101     | 7030003840 | S.RESISTOR  | ERJ3GEYJ 225 V (2.2 MΩ)    |
| R102     | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)     |
| R103     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R104     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R105     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)      |
| R106     | 7030003470 | S.RESISTOR  | ERJ3GEYJ 182 V (1.8 kΩ)    |
| R107     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R108     | 7030003620 | S.RESISTOR  | ERJ3GEYJ 333 V (33 kΩ)     |
| R109     | 7310002740 | S.TRIMMER   | RV-150 (RH03A3A14X0FC) 103 |
| R110     | 7030003620 | S.RESISTOR  | ERJ3GEYJ 333 V (33 kΩ)     |
| R111     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R112     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R113     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)      |
| R114     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R115     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R116     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R117     | 7030003340 | S.RESISTOR  | ERJ3GEYJ 151 V (150 Ω)     |
| R118     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R119     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R120     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R121     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R122     | 7030003420 | S.RESISTOR  | ERJ3GEYJ 881 V (880 Ω)     |
| R123     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R124     | 7030003200 | S.RESISTOR  | ERJ3GEYJ 100 V (10 Ω)      |
| R125     | 7030003610 | S.RESISTOR  | ERJ3GEYJ 273 V (27 kΩ)     |
| R126     | 7310002740 | S.TRIMMER   | RV-150 (RH03A3A14X0FC) 103 |
| R127     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R128     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R129     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R130     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R131     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R132     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R133     | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ)    |
| R135     | 7030003380 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)     |
| R136     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R137     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R138     | 7030003630 | S.RESISTOR  | ERJ3GEYJ 393 V (39 kΩ)     |
| R139     | 7030003540 | S.RESISTOR  | ERJ3GEYJ 682 V (6.8 kΩ)    |
| R140     | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)     |
| R141     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R142     | 7030003200 | S.RESISTOR  | ERJ3GEYJ 100 V (10 Ω)      |
| R143     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |

[MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                            |
|----------|------------|--------------|----------------------------|
| R144     | 7030003500 | S.RESISTOR   | ERJ3GEYJ 332 V (3.3 kΩ)    |
| R151     | 7030003880 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ)    |
| R152     | 7030003580 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)     |
| R153     | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)      |
| R154     | 7030003540 | S.RESISTOR   | ERJ3GEYJ 682 V (6.8 kΩ)    |
| R155     | 7030003490 | S.RESISTOR   | ERJ3GEYJ 272 V (2.7 kΩ)    |
| R156     | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)      |
| R157     | 7510000860 | S.THERMISTOR | NTCCF2012 3FH 222KC-T      |
| R158     | 7030003800 | S.RESISTOR   | ERJ3GEYJ 105 V (1 MΩ)      |
| R159     | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)      |
| R160     | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R161     | 7030003620 | S.RESISTOR   | ERJ3GEYJ 333 V (33 kΩ)     |
| R162     | 7030003540 | S.RESISTOR   | ERJ3GEYJ 682 V (6.8 kΩ)    |
| R163     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ)    |
| R164     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 683 V (68 kΩ)     |
| R165     | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)      |
| R175     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)     |
| R177     | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)      |
| R178     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)     |
| R179     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)     |
| R180     | 7030003500 | S.RESISTOR   | ERJ3GEYJ 332 V (3.3 kΩ)    |
| R182     | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)      |
| R183     | 7030003500 | S.RESISTOR   | ERJ3GEYJ 332 V (3.3 kΩ)    |
| R184     | 7030003200 | S.RESISTOR   | ERJ3GEYJ 100 V (10 Ω)      |
| R185     | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)     |
| R188     | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)     |
| R187     | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)     |
| R188     | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)     |
| R191     | 7310002740 | S.TRIMMER    | RV-150 (RH03A3A14X0FC) 103 |
| R192     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ)    |
| R193     | 7310002740 | S.TRIMMER    | RV-150 (RH03A3A14X0FC) 103 |
| R194     | 7030003720 | S.RESISTOR   | ERJ3GEYJ 224 V (220 kΩ)    |
| R195     | 7310002800 | S.TRIMMER    | RV-110 (RH03A3AS4X0AA) 473 |
| R196     | 7030003480 | S.RESISTOR   | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R197     | 7030003580 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)     |
| R198     | 7310002590 | S.TRIMMER    | RV-109 (RH03A3AJ3X0BA) 222 |
| R199     | 7030003480 | S.RESISTOR   | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R200     | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω)     |
| R201     | 7030003700 | S.RESISTOR   | ERJ3GEYJ 154 V (150 kΩ)    |
| R202     | 7030003700 | S.RESISTOR   | ERJ3GEYJ 154 V (150 kΩ)    |
| R203     | 7030003830 | S.RESISTOR   | ERJ3GEYJ 393 V (39 kΩ)     |
| R206     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)     |
| R208     | 7030003740 | S.RESISTOR   | ERJ3GEYJ 334 V (330 kΩ)    |
| R209     | 7030003500 | S.RESISTOR   | ERJ3GEYJ 332 V (3.3 kΩ)    |
| R212     | 7030003700 | S.RESISTOR   | ERJ3GEYJ 154 V (150 kΩ)    |
| R213     | 7030003460 | S.RESISTOR   | ERJ3GEYJ 152 V (1.5 kΩ)    |
| R214     | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)      |
| R215     | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R234     | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R235     | 7030003530 | S.RESISTOR   | ERJ3GEYJ 562 V (5.6 kΩ)    |
| R236     | 7030003610 | S.RESISTOR   | ERJ3GEYJ 273 V (27 kΩ)     |
| R237     | 7030003460 | S.RESISTOR   | ERJ3GEYJ 152 V (1.5 kΩ)    |
| R238     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 683 V (68 kΩ)     |
| R239     | 7310004280 | TRIMMER      | EVN-D2AA03 B54             |
| R240     | 7030003780 | S.RESISTOR   | ERJ3GEYJ 474 V (470 kΩ)    |
| R241     | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R242     | 7030003740 | S.RESISTOR   | ERJ3GEYJ 334 V (330 kΩ)    |
| R243     | 7030003630 | S.RESISTOR   | ERJ3GEYJ 393 V (39 kΩ)     |
| R244     | 7310003820 | TRIMMER      | EVN-D2AA03 B14             |
| R245     | 7030003520 | S.RESISTOR   | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R246     | 7030003540 | S.RESISTOR   | ERJ3GEYJ 682 V (6.8 kΩ)    |
| R247     | 7030003800 | S.RESISTOR   | ERJ3GEYJ 223 V (22 kΩ)     |
| R248     | 7310004250 | TRIMMER      | EVN-D2AA03 B25             |
| R249     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)     |
| R250     | 7030003290 | S.RESISTOR   | ERJ3GEYJ 560 V (56 Ω)      |
| R251     | 7030003720 | S.RESISTOR   | ERJ3GEYJ 224 V (220 kΩ)    |
| R252     | 7030003720 | S.RESISTOR   | ERJ3GEYJ 224 V (220 kΩ)    |
| R253     | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)     |
| R254     | 7030003580 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)     |
| R256     | 7030003590 | S.RESISTOR   | ERJ3GEYJ 183 V (18 kΩ)     |
| R258     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 153 V (15 kΩ)     |
| R259     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)     |

S.=Surface mount

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                            |
|----------|------------|-------------|----------------------------|
| R260     | 7310002720 | S.TRIMMER   | RV-148 (RH03A3AS3X0DA) 472 |
| R261     | 7030003370 | S.RESISTOR  | ERJ3GEYJ 271 V (270 Ω)     |
| R262     | 7030003780 | S.RESISTOR  | ERJ3GEYJ 684 V (680 kΩ)    |
| R263     | 7030003710 | S.RESISTOR  | ERJ3GEYJ 184 V (180 kΩ)    |
| R264     | 7030003700 | S.RESISTOR  | ERJ3GEYJ 154 V (150 kΩ)    |
| R265     | 7030003700 | S.RESISTOR  | ERJ3GEYJ 154 V (150 kΩ)    |
| R266     | 7030003700 | S.RESISTOR  | ERJ3GEYJ 154 V (150 kΩ)    |
| R268     | 7030003670 | S.RESISTOR  | ERJ3GEYJ 823 V (82 kΩ)     |
| R269     | 7030003670 | S.RESISTOR  | ERJ3GEYJ 823 V (82 kΩ)     |
| R270     | 7030003450 | S.RESISTOR  | ERJ3GEYJ 122 V (1.2 kΩ)    |
| R271     | 7310002740 | S.TRIMMER   | RV-150 (RH03A3A14X0FC) 103 |
| R272     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R273     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R274     | 7310002720 | S.TRIMMER   | RV-148 (RH03A3AS3X0DA) 472 |
| R275     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R276     | 7030003200 | S.RESISTOR  | ERJ3GEYJ 100 V (10 Ω)      |
| R277     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R278     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R279     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R280     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R281     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R282     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R283     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R284     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R285     | 7030003490 | S.RESISTOR  | ERJ3GEYJ 272 V (2.7 kΩ)    |
| R286     | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)     |
| R287     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)      |
| R288     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R289     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R290     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R291     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R292     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R293     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R294     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R295     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R298     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R300     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R301     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R302     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R303     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R304     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R305     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R306     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R307     | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 kΩ)    |
| R308     | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ)    |
| R309     | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ)    |
| R310     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R311     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R312     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R313     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R314     | 7030003620 | S.RESISTOR  | ERJ3GEYJ 333 V (33 kΩ)     |
| R315     | 7030003540 | S.RESISTOR  | ERJ3GEYJ 682 V (6.8 kΩ)    |
| R316     | 7030003590 | S.RESISTOR  | ERJ3GEYJ 183 V (18 kΩ)     |
| R317     | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)     |
| R318     | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)     |
| R319     | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)     |
| R320     | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)     |
| R321     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R322     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R323     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R324     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)      |
| R325     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R326     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R327     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R328     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R337     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R338     | 7310002760 | S.TRIMMER   | RV-152 (RH03A3AJ4X0HA) 223 |
| R341     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R342     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R343     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R344     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R345     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                            |
|----------|------------|-------------|----------------------------|
| R346     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R347     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R348     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R349     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R350     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R351     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R352     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R353     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R354     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R355     | 7310003820 | TRIMMER     | EVN-D2AA03 B14             |
| R356     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R358     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R359     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 102 V (100 kΩ)    |
| R360     | 7030003550 | S.RESISTOR  | ERJ3GEYJ 822 V (8.2 kΩ)    |
| R361     | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)     |
| R362     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R363     | 7030003200 | S.RESISTOR  | ERJ3GEYJ 100 V (10 Ω)      |
| R366     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R367     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R368     | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 kΩ)    |
| R369     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R370     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R371     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R372     | 7030003340 | S.RESISTOR  | ERJ3GEYJ 151 V (150 Ω)     |
| R373     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R374     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R375     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R376     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R377     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R378     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)      |
| R379     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R383     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 153 V (15 kΩ)     |
| R384     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R386     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R388     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R389     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R390     | 7030003600 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)     |
| R391     | 7030003420 | S.RESISTOR  | ERJ3GEYJ 681 V (680 Ω)     |
| R392     | 7030003420 | S.RESISTOR  | ERJ3GEYJ 681 V (680 Ω)     |
| R393     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R395     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)      |
| R396     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R397     | 7030003590 | S.RESISTOR  | ERJ3GEYJ 183 V (18 kΩ)     |
| R398     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R399     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)      |
| R401     | 7310002720 | S.TRIMMER   | RV-148 (RH03A3AS3X0DA) 472 |
| R402     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)      |
| R403     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R404     | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)     |
| R405     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R406     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R407     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R409     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R415     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R416     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R418     | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)     |
| R419     | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)     |
| R420     | 7030003360 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)     |
| R421     | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)     |
| R422     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R423     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R425     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R426     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R428     | 7030003730 | S.RESISTOR  | ERJ3GEYJ 274 V (270 kΩ)    |
| R429     | 7030003650 | S.RESISTOR  | ERJ3GEYJ 563 V (56 kΩ)     |
| R430     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R431     | 7030004710 | S.RESISTOR  | ERJ3GEYJ 475 V (4.7 MΩ)    |
| R432     | 7030004710 | S.RESISTOR  | ERJ3GEYJ 475 V (4.7 MΩ)    |
| R433     | 7030003570 | S.RESISTOR  | ERJ3GEYJ 123 V (12 kΩ)     |
| R434     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ)    |
| R435     | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)     |
| R436     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)      |
| R437     | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 kΩ)    |
| R438     | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 kΩ)    |
| R439     | 7030003760 | S.RESISTOR  | ERJ3GEYJ 474 V (470 kΩ)    |

S.=Surface mount



[MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                          |
|----------|------------|--------------------------------------|
| R440     | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ)   |
| R441     | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ)   |
| R442     | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)    |
| R443     | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ)   |
| R444     | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ)   |
| R445     | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ)   |
| R446     | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)    |
| R447     | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ)   |
| R448     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R450     | 7030003360 | S.RESISTOR ERJ3GEYJ 221 V (220 Ω)    |
| R451     | 7030003360 | S.RESISTOR ERJ3GEYJ 221 V (220 Ω)    |
| R452     | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω)    |
| R453     | 7030003380 | S.RESISTOR ERJ3GEYJ 331 V (330 Ω)    |
| R454     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)    |
| R455     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R456     | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ)   |
| R457     | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω)    |
| R458     | 7030003360 | S.RESISTOR ERJ3GEYJ 221 V (220 Ω)    |
| R459     | 7030003360 | S.RESISTOR ERJ3GEYJ 221 V (220 Ω)    |
| R460     | 7030003360 | S.RESISTOR ERJ3GEYJ 221 V (220 Ω)    |
| R461     | 7030003740 | S.RESISTOR ERJ3GEYJ 334 V (330 kΩ)   |
| R462     | 7030003750 | S.RESISTOR ERJ3GEYJ 394 V (390 kΩ)   |
| R465     | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ)   |
| R468     | 7030003220 | S.RESISTOR ERJ3GEYJ 150 V (15 Ω)     |
| R467     | 7030003370 | S.RESISTOR ERJ3GEYJ 185 V (1.8 MΩ)   |
| R468     | 7030003230 | S.RESISTOR ERJ3GEYJ 180 V (18 Ω)     |
| R469     | 7030003370 | S.RESISTOR ERJ3GEYJ 271 V (270 Ω)    |
| R470     | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)    |
| R471     | 7030003830 | S.RESISTOR ERJ3GEYJ 185 V (1.8 MΩ)   |
| R472     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)   |
| R474     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)    |
| R475     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R476     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)    |
| R477     | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ)   |
| R478     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)    |
| R479     | 7030003610 | S.RESISTOR ERJ3GEYJ 273 V (27 kΩ)    |
| R480     | 7030003610 | S.RESISTOR ERJ3GEYJ 273 V (27 kΩ)    |
| R481     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)    |
| R482     | 7030000140 | S.RESISTOR MCR10EZHJ 10 Ω (100)      |
| R483     | 7030003370 | S.RESISTOR ERJ3GEYJ 271 V (270 Ω)    |
| R484     | 7030003230 | S.RESISTOR ERJ3GEYJ 180 V (18 Ω)     |
| R485     | 7030003370 | S.RESISTOR ERJ3GEYJ 271 V (270 Ω)    |
| R491     | 7030003580 | S.RESISTOR ERJ3GEYJ 153 V (15 kΩ)    |
| R492     | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω)     |
| R493     | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ)   |
| R494     | 7030003360 | S.RESISTOR ERJ3GEYJ 221 V (220 Ω)    |
| R495     | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)    |
| R496     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)    |
| R497     | 7030003380 | S.RESISTOR ERJ3GEYJ 331 V (330 Ω)    |
| R498     | 7030008230 | S.RESISTOR ERJ12YJ151H (150 Ω)       |
| R499     | 7310002740 | S.TRIMMER RV-150 (RH03A3A14X0FC) 103 |
| R500     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)    |
| R501     | 7030003530 | S.RESISTOR ERJ3GEYJ 582 V (5.8 kΩ)   |
| R502     | 7030003420 | S.RESISTOR ERJ3GEYJ 681 V (680 Ω)    |
| R504     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R505     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)    |
| R506     | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)   |
| R507     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R510     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)    |
| R511     | 7310002670 | S.TRIMMER RV-143 (RH03A3AS2) 471     |
| R512     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)   |
| R514     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R515     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)     |
| R516     | 7030004710 | S.RESISTOR ERJ3GEYJ 475 V (4.7 MΩ)   |
| R517     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R518     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R519     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R520     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)    |
| R521     | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)   |
| R522     | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ)   |
| R523     | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ)   |
| R524     | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω)     |
| R525     | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω)     |
| R526     | 7030003550 | S.RESISTOR ERJ3GEYJ 822 V (8.2 kΩ)   |
| R527     | 7030003360 | S.RESISTOR ERJ3GEYJ 221 V (220 Ω)    |

[MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                        |
|----------|------------|------------------------------------|
| R528     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)  |
| R529     | 7030003840 | S.RESISTOR ERJ3GEYJ 225 V (2.2 MΩ) |
| R530     | 7030003420 | S.RESISTOR ERJ3GEYJ 681 V (680 Ω)  |
| R531     | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω)  |
| R532     | 7030003690 | S.RESISTOR ERJ3GEYJ 124 V (120 kΩ) |
| R533     | 7030008520 | S.RESISTOR RR0816P-561-D (560 Ω)   |
| R534     | 7080001130 | RESISTOR CRB25FX 330 Ω             |
| C1       | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A    |
| C2       | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A    |
| C3       | 4030008470 | S.CERAMIC C1608 JB 1H 272K-T-A     |
| C4       | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C5       | 4030010020 | S.CERAMIC C1608 JB 1H 122K-T-A     |
| C6       | 4030008850 | S.CERAMIC C1608 JB 1C 123K-T-A     |
| C7       | 4030006870 | S.CERAMIC C1608 JB 1H 222K-T-A     |
| C8       | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A    |
| C9       | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A    |
| C10      | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A    |
| C11      | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A    |
| C57      | 4030007070 | S.CERAMIC C1608 X7S 1C 104K-T-A    |
| C58      | 4030007040 | S.CERAMIC C1608 CH 1H 180J-T-A     |
| C59      | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T-A     |
| C60      | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A    |
| C61      | 4030007090 | S.CERAMIC C1608 CH 1H 470J-T-A     |
| C62      | 4030007130 | S.CERAMIC C1608 CH 1H 101J-T-A     |
| C63      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C64      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C65      | 4030007130 | S.CERAMIC C1608 CH 1H 101J-T-A     |
| C66      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C67      | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A    |
| C68      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C69      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C70      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C71      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C72      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C74      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C75      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C76      | 4030007000 | S.CERAMIC C1608 CH 1H 090D-T-A     |
| C77      | 4030006980 | S.CERAMIC C1608 CH 1H 070D-T-A     |
| C78      | 4030007000 | S.CERAMIC C1608 CH 1H 090D-T-A     |
| C81      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C82      | 4030007150 | S.CERAMIC C1608 CH 1H 151J-T-A     |
| C83      | 4030007060 | S.CERAMIC C1608 CH 1H 270J-T-A     |
| C84      | 4030007150 | S.CERAMIC C1608 CH 1H 151J-T-A     |
| C85      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C86      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C87      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C88      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C89      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C90      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C91      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C92      | 4030007040 | S.CERAMIC C1608 CH 1H 180J-T-A     |
| C93      | 4030007030 | S.CERAMIC C1608 CH 1H 150J-T-A     |
| C94      | 4030006950 | S.CERAMIC C1608 CH 1H 040C-T-A     |
| C95      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C96      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C98      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C99      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C100     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C101     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C102     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C104     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A    |
| C105     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C106     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A    |
| C107     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C108     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C109     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C111     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C112     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C113     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A    |
| C114     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A    |
| C115     | 4030008920 | S.CERAMIC C1608 JB 1C 473K-T-A     |
| C116     | 4510004630 | S.ELECTROLITIC ECEV1CA100SR        |
| C117     | 4550002980 | S.TANTALUM TEMSVA 1C 225M-8L       |
| C118     | 4550000450 | S.TANTALUM TESVC 1C 106M-12L       |

S.=Surface mount

[MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                     |
|----------|------------|---------------------------------|
| C119     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C120     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C121     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C122     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C123     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C124     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C125     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C126     | 4030007040 | S.CERAMIC C1608 CH 1H 180J-T-A  |
| C127     | 4030007010 | S.CERAMIC C1608 CH 1H 100D-T-A  |
| C128     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C129     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C130     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C131     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C132     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C133     | 4030007140 | S.CERAMIC C1608 CH 1H 121J-T-A  |
| C134     | 4030008850 | S.CERAMIC C1608 JB 1H 471K-T-A  |
| C135     | 4510004640 | S.ELECTROLITIC ECEV1CA470SP     |
| C136     | 4510004630 | S.ELECTROLITIC ECEV1CA100SR     |
| C137     | 4550000450 | S.TANTALUM TESVC 1C 106M-12L    |
| C138     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C141     | 4510004630 | S.ELECTROLITIC ECEV1CA100SR     |
| C142     | 4030009110 | S.CERAMIC C3216 JB 1C 474K-T-A  |
| C143     | 4030007130 | S.CERAMIC C1608 CH 1H 101J-T-A  |
| C144     | 4030008880 | S.CERAMIC C1608 JB 1C 223K-T-A  |
| C145     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C146     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C147     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C148     | 4030007150 | S.CERAMIC C1608 CH 1H 151J-T-A  |
| C158     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C159     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C180     | 4030006880 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C181     | 4030009110 | S.CERAMIC C3216 JB 1C 474K-T-A  |
| C182     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C183     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C184     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C185     | 4510004630 | S.ELECTROLITIC ECEV1CA100SR     |
| C186     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C187     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C188     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C189     | 4030010210 | S.CERAMIC C3216 JB 1C 105M-T-A  |
| C170     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C171     | 4510004630 | S.ELECTROLITIC ECEV1CA100SR     |
| C172     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C173     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C174     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C175     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C176     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C177     | 4510004440 | S.ELECTROLITIC ECEV1HA010SR     |
| C178     | 4510005860 | S.ELECTROLITIC ECEV1HA2R2SR     |
| C179     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C180     | 4510004630 | S.ELECTROLITIC ECEV1CA100SR     |
| C181     | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A  |
| C182     | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A  |
| C184     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C187     | 4030006900 | S.CERAMIC C1608 JB 1E 103K-T-A  |
| C189     | 4030007170 | S.CERAMIC C1608 CH 1H 221J-T-A  |
| C190     | 4030007170 | S.CERAMIC C1608 CH 1H 221J-T-A  |
| C191     | 4030007130 | S.CERAMIC C1608 CH 1H 101J-T-A  |
| C192     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C193     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C194     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C195     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C208     | 4510005860 | S.ELECTROLITIC ECEV1HA2R2SR     |
| C209     | 4510005860 | S.ELECTROLITIC ECEV1HA2R2SR     |
| C210     | 4030011340 | S.CERAMIC C1608 CH 1H 471J-T-A  |
| C211     | 4510005860 | S.ELECTROLITIC ECEV1HA2R2SR     |
| C212     | 4030009000 | S.CERAMIC C2012 JB 1C 224K-T-A  |
| C213     | 4030010760 | S.CERAMIC C1608 CH 1H 331J-T-A  |
| C214     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C215     | 4030010210 | S.CERAMIC C3216 JB 1C 105M-T-A  |
| C216     | 4030007080 | S.CERAMIC C1608 CH 1H 390J-T-A  |
| C217     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C218     | 4030008900 | S.CERAMIC C1608 JB 1C 333K-T-A  |
| C219     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C220     | 4030010210 | S.CERAMIC C3216 JB 1C 105M-T-A  |
| C221     | 4030009000 | S.CERAMIC C2012 JB 1C 224K-T-A  |

[MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                     |
|----------|------------|---------------------------------|
| C222     | 4510004630 | S.ELECTROLITIC ECEV1CA100SR     |
| C224     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C225     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C226     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C227     | 4030009110 | S.CERAMIC C3216 JB 1C 474K-T-A  |
| C228     | 4030009110 | S.CERAMIC C3216 JB 1C 474K-T-A  |
| C230     | 4030008860 | S.CERAMIC C1608 JB 1H 102K-T-A  |
| C231     | 4030008870 | S.CERAMIC C1608 JB 1H 222K-T-A  |
| C232     | 4030007140 | S.CERAMIC C1608 CH 1H 121J-T-A  |
| C234     | 4510004630 | S.ELECTROLITIC ECEV1CA100SR     |
| C235     | 4030007020 | S.CERAMIC C1608 CH 1H 120J-T-A  |
| C236     | 4030007020 | S.CERAMIC C1608 CH 1H 120J-T-A  |
| C237     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C238     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C239     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C240     | 4030009000 | S.CERAMIC C2012 JB 1C 224K-T-A  |
| C241     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C242     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C243     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C244     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C245     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C246     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C247     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C248     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C249     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C250     | 4030007120 | S.CERAMIC C1608 CH 1H 820J-T-A  |
| C251     | 4030007120 | S.CERAMIC C1608 CH 1H 820J-T-A  |
| C252     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C255     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C256     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C257     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C258     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C259     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C260     | 4030011280 | S.CERAMIC C1608 CH 1H 271J-T-A  |
| C262     | 4510004630 | S.ELECTROLITIC ECEV1CA100SR     |
| C263     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C264     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C265     | 4030007110 | S.CERAMIC C1608 CH 1H 880J-T-A  |
| C266     | 4030007100 | S.CERAMIC C1608 CH 1H 560J-T-A  |
| C267     | 4610001980 | S.TRIMMER CTZ3E-30C-W1          |
| C268     | 4030007150 | S.CERAMIC C1608 CH 1H 151J-T-A  |
| C269     | 4030007150 | S.CERAMIC C1608 CH 1H 151J-T-A  |
| C270     | 4030007150 | S.CERAMIC C1608 CH 1H 151J-T-A  |
| C271     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C272     | 4030007010 | S.CERAMIC C1608 CH 1H 100D-T-A  |
| C273     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C274     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C275     | 4030009000 | S.CERAMIC C2012 JB 1C 224K-T-A  |
| C276     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C277     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C278     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C279     | 4030009110 | S.CERAMIC C3216 JB 1C 474K-T-A  |
| C280     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C281     | 4510004630 | S.ELECTROLITIC ECEV1CA100SR     |
| C282     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C283     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C284     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C285     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C287     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C288     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C289     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C290     | 4030007100 | S.CERAMIC C1608 CH 1H 560J-T-A  |
| C291     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C292     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C293     | 4030007100 | S.CERAMIC C1608 CH 1H 560J-T-A  |
| C294     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C295     | 4030007170 | S.CERAMIC C1608 CH 1H 221J-T-A  |
| C296     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C297     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C298     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C299     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C300     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C301     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C304     | 4030007030 | S.CERAMIC C1608 CH 1H 150J-T-A  |
| C305     | 4030007030 | S.CERAMIC C1608 CH 1H 150J-T-A  |
| C307     | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |

S.=Surface mount

[MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION    |                       |
|----------|------------|----------------|-----------------------|
| C308     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C309     | 4030008850 | S.CERAMIC      | C1808 CH 1H 240J-T-A  |
| C310     | 4030009850 | S.CERAMIC      | C1808 CH 1H 240J-T-A  |
| C311     | 4030008880 | S.CERAMIC      | C1808 JB 1H 102K-T-A  |
| C312     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C313     | 4030008880 | S.CERAMIC      | C1808 JB 1H 102K-T-A  |
| C314     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C315     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C318     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C317     | 4030007120 | S.CERAMIC      | C1808 CH 1H 820J-T-A  |
| C318     | 4030007120 | S.CERAMIC      | C1808 CH 1H 820J-T-A  |
| C319     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C320     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C321     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C322     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C328     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C329     | 4030009820 | S.CERAMIC      | C1808 CH 1H 050B-T-A  |
| C330     | 4030007060 | S.CERAMIC      | C1808 CH 1H 270J-T-A  |
| C331     | 4030009500 | S.CERAMIC      | C1808 CH 1H 0R5B-T-A  |
| C332     | 4030009500 | S.CERAMIC      | C1808 CH 1H 0R5B-T-A  |
| C333     | 4030009350 | S.CERAMIC      | C1808 CH 1H 3R5B-T-A  |
| C334     | 4030009920 | S.CERAMIC      | C1808 CH 1H 050B-T-A  |
| C337     | 4030008880 | S.CERAMIC      | C1808 JB 1H 102K-T-A  |
| C338     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C339     | 4030008900 | S.CERAMIC      | C1808 JB 1E 103K-T-A  |
| C340     | 4030008880 | S.CERAMIC      | C1808 JB 1H 102K-T-A  |
| C341     | 4550000480 | S.TANTALUM     | TESVA 1C 105M1-8L     |
| C342     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C343     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C344     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C350     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C351     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C352     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C354     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C355     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C358     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C357     | 4030007000 | S.CERAMIC      | C1808 CH 1H 090D-T-A  |
| C358     | 4030007000 | S.CERAMIC      | C1808 CH 1H 090D-T-A  |
| C359     | 4030007040 | S.CERAMIC      | C1808 CH 1H 180J-T-A  |
| C360     | 4030007170 | S.CERAMIC      | C1808 CH 1H 221J-T-A  |
| C361     | 4030007170 | S.CERAMIC      | C1808 CH 1H 221J-T-A  |
| C362     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C364     | 4030007020 | S.CERAMIC      | C1808 CH 1H 120J-T-A  |
| C365     | 4030007070 | S.CERAMIC      | C1808 CH 1H 330J-T-A  |
| C366     | 4030007170 | S.CERAMIC      | C1808 CH 1H 221J-T-A  |
| C367     | 4030007170 | S.CERAMIC      | C1808 CH 1H 221J-T-A  |
| C368     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C369     | 4030007020 | S.CERAMIC      | C1808 CH 1H 120J-T-A  |
| C370     | 4030008990 | S.CERAMIC      | C1808 CH 1H 080D-T-A  |
| C371     | 4030007020 | S.CERAMIC      | C1808 CH 1H 120J-T-A  |
| C378     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C379     | 4030008850 | S.CERAMIC      | C1808 JB 1H 471K-T-A  |
| C380     | 4030008850 | S.CERAMIC      | C1808 JB 1H 471K-T-A  |
| C381     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C382     | 4510005940 | ELECTROLITIC   | 10 MV 470 HC          |
| C383     | 4510005980 | ELECTROLITIC   | 10 MV 220 HC          |
| C384     | 4510004830 | S.ELECTROLITIC | ECEV1CA100SR          |
| C387     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C388     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C389     | 4030008880 | S.CERAMIC      | C1808 JB 1H 102K-T-A  |
| C399     | 4030008900 | S.CERAMIC      | C1808 JB 1E 103K-T-A  |
| C400     | 4030007090 | S.CERAMIC      | C1808 CH 1H 470J-T-A  |
| C401     | 4030007090 | S.CERAMIC      | C1808 CH 1H 470J-T-A  |
| C402     | 4030010210 | S.CERAMIC      | C3216 JB 1C 105M-T-A  |
| C404     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C405     | 4510004830 | S.ELECTROLITIC | ECEV1CA100SR          |
| C407     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C408     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C409     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C410     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C411     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |
| C412     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C413     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C414     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C415     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A |
| C416     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A  |

[MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION    |                            |
|----------|------------|----------------|----------------------------|
| C417     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A      |
| C418     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A      |
| C419     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A      |
| C420     | 4510005880 | S.ELECTROLITIC | ECEV1HA2R2SR               |
| C421     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A       |
| C423     | 4510003830 | ELECTROLITIC   | 50 MV R47 SW               |
| C427     | 4550003230 | S.TANTALUM     | TEMSVB2 1E 225M-8L         |
| C428     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A      |
| C429     | 4510004630 | S.ELECTROLITIC | ECEV1CA100SR               |
| C430     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A       |
| C431     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A      |
| C432     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A      |
| C433     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A      |
| C434     | 4030008920 | S.CERAMIC      | C1808 CH 1H 010C-T-A       |
| C435     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A       |
| C436     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A      |
| C437     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A       |
| C438     | 4510004990 | ELECTROLITIC   | 16 MV 100 HC               |
| C440     | 4030008850 | S.CERAMIC      | C1808 JB 1H 471K-T-A       |
| C441     | 4030008920 | S.CERAMIC      | C1808 JB 1C 473K-T-A       |
| C442     | 4030008880 | S.CERAMIC      | C1808 JB 1C 223K-T-A       |
| C443     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A       |
| C444     | 4030008880 | S.CERAMIC      | C1808 JB 1H 102K-T-A       |
| C445     | 4030008880 | S.CERAMIC      | C1808 JB 1H 102K-T-A       |
| C446     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A       |
| C453     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A       |
| C454     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A       |
| C455     | 4030008880 | S.CERAMIC      | C1808 JB 1H 102K-T-A       |
| C456     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A       |
| C457     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A       |
| C458     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A       |
| C459     | 4030008900 | S.CERAMIC      | C1808 JB 1E 103K-T-A       |
| C464     | 4030007030 | S.CERAMIC      | C1808 CH 1H 150J-T-A       |
| C465     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A      |
| C466     | 4030008880 | S.CERAMIC      | C1808 JB 1C 223K-T-A       |
| C467     | 4550008080 | S.TANTALUM     | TEMSVB2 1C 106M-8L         |
| C468     | 4030008950 | S.CERAMIC      | C1808 CH 1H 040C-T-A       |
| C469     | 4550008080 | S.TANTALUM     | TEMSVB2 1C 106M-8L         |
| C470     | 4030007050 | S.CERAMIC      | C1808 CH 1H 220J-T-A       |
| C471     | 4030008990 | S.CERAMIC      | C1808 CH 1H 080D-T-A       |
| C474     | 4030009650 | S.CERAMIC      | C1808 CH 1H 240J-T-A       |
| C475     | 4030007080 | S.CERAMIC      | C1808 CH 1H 390J-T-A       |
| J1       | 8510007020 | CONNECTOR      | TMP-J01X-V8                |
| J2       | 8510007020 | CONNECTOR      | TMP-J01X-V8                |
| J3       | 8510007020 | CONNECTOR      | TMP-J01X-V8                |
| J4       | 8510007020 | CONNECTOR      | TMP-J01X-V8                |
| J5       | 8510007020 | CONNECTOR      | TMP-J01X-V8                |
| J6       | 8510007020 | CONNECTOR      | TMP-J01X-V8                |
| J7       | 8510019140 | S.CONNECTOR    | 52610-1090                 |
| J8       | 8510018940 | S.CONNECTOR    | B13B-PH-SM3-TB             |
| J9       | 8510018960 | S.CONNECTOR    | B2B-PH-SM3-TB              |
| J10      | 8510019180 | S.CONNECTOR    | 52610-2090                 |
| J11      | 8510019150 | S.CONNECTOR    | 52610-0890                 |
| J12      | 8510018970 | S.CONNECTOR    | B4B-PH-SM3-TB              |
| J13      | 8510019070 | S.CONNECTOR    | 52559-3092                 |
| J14      | 8510019190 | S.CONNECTOR    | 52365-0891                 |
| J15      | 8450001580 | CONNECTOR      | PD-72                      |
| J16      | 8450001580 | CONNECTOR      | PD-72                      |
| J17      | 8450001580 | CONNECTOR      | PD-72                      |
| J18      | 8450001580 | CONNECTOR      | PD-72                      |
| J20      | 8910010370 | CONNECTOR      | IPS-1340-01                |
| W4       | 7030003880 | S.JUMPER       | ERJ3GE JPW V<br>[USA] only |
| W10      | 7030003880 | S.JUMPER       | ERJ3GE JPW V               |
| EP1      | 0910046395 | PCB            | B 4668E                    |

S.=Surface mount

## [HPF BOARD]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                        |
|----------|------------|--------------|------------------------|
| IC1      | 1110003970 | S.IC         | µPC1658G-E1            |
| Q1       | 1590002400 | S.TRANSISTOR | IMH3 T110              |
| Q2       | 1590000680 | S.TRANSISTOR | DTC144TU T107          |
| Q3       | 1590000790 | S.TRANSISTOR | DTC143TU T107          |
| D5       | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D6       | 1790001280 | S.DIODE      | MA2S077-(TX)           |
| D7       | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D8       | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| 10       | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D12      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D13      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D14      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D15      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D16      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D17      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D18      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D19      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D20      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D21      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D22      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D23      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D24      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D25      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D26      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D27      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| D28      | 1790001260 | S.DIODE      | MA2S077-(TX)           |
| L1       | 8200005580 | S.COIL       | ELJSC 101K-F           |
| L2       | 8200004880 | S.COIL       | ELJFC 3R3K-F           |
| L3       | 8200004440 | S.COIL       | ELJFC 4R7M-F           |
| L4       | 8200001620 | S.COIL       | ELJFC 1R0K-F           |
| L5       | 8200001620 | S.COIL       | ELJFC 1R0K-F           |
| L6       | 8200001620 | S.COIL       | ELJFC 1R0K-F           |
| L7       | 8200002240 | S.COIL       | ELJFC 2R2K-F           |
| L8       | 8200002710 | S.COIL       | ELJFC 1R8K-F           |
| L9       | 8200002710 | S.COIL       | ELJFC 1R8K-F           |
| L10      | 8200005580 | S.COIL       | ELJSC 101K-F           |
| L11      | 8200005540 | S.COIL       | ELJNC R47K-F           |
| L12      | 8200001980 | S.COIL       | ELJFC R56MF            |
| L13      | 8200005580 | S.COIL       | ELJSC 101K-F           |
| L14      | 8200002920 | S.COIL       | ELJNC R33K-F           |
| L15      | 8200004160 | S.COIL       | ELJNC R39K-F           |
| L16      | 8200005550 | S.COIL       | ELJFC 100K-F           |
| L17      | 8200005550 | S.COIL       | ELJFC 100K-F           |
| L18      | 8200003240 | S.COIL       | NL 322522T-221J        |
| L19      | 8200005580 | S.COIL       | ELJSC 101K-F           |
| L20      | 8200003240 | S.COIL       | NL 322522T-221J        |
| L21      | 8200003240 | S.COIL       | NL 322522T-221J        |
| L22      | 8200003240 | S.COIL       | NL 322522T-221J        |
| L23      | 8200002920 | S.COIL       | ELJNC R33K-F           |
| L24      | 8200003350 | S.COIL       | ELJNC R27K-F           |
| L25      | 8200003670 | S.COIL       | ELJNC 88NK-F           |
| L26      | 8200002160 | S.COIL       | ELJNC 82NK-F           |
| L27      | 8200005580 | S.COIL       | ELJSC 101K-F           |
| L28      | 8200005580 | S.COIL       | ELJSC 101K-F           |
| L29      | 8200003300 | S.COIL       | ELJNC R22K-F           |
| L30      | 8200001920 | S.COIL       | ELJNC R15K-F           |
| L31      | 8200005550 | S.COIL       | ELJFC 100K-F           |
| L32      | 8200005580 | S.COIL       | ELJSC 101K-F           |
| L33      | 8200005580 | S.COIL       | ELJSC 101K-F           |
| L34      | 8200005580 | S.COIL       | ELJSC 101K-F           |
| L35      | 8200005580 | S.COIL       | ELJSC 101K-F           |
| L36      | 8200002800 | S.COIL       | ELJFC R88M-F           |
| R1       | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)  |
| R5       | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω) |
| R7       | 7030003320 | S.RESISTOR   | ERJ3GEYJ 101 V (100 Ω) |
| R8       | 7030003400 | S.RESISTOR   | ERJ3GEYJ 471 V (470 Ω) |
| R9       | 7030000310 | S.RESISTOR   | MCR10EZMJ 270 Ω (271)  |
| R10      | 7030003280 | S.RESISTOR   | ERJ3GEYJ 470 V (47 Ω)  |
| R11      | 7030003280 | S.RESISTOR   | ERJ3GEYJ 470 V (47 Ω)  |
| R12      | 7030000310 | S.RESISTOR   | MCR10EZMJ 270 Ω (271)  |

## [HPF BOARD]

| REF. NO. | ORDER NO.  | DESCRIPTION |                        |
|----------|------------|-------------|------------------------|
| R13      | 7030003370 | S.RESISTOR  | ERJ3GEYJ 271 V (270 Ω) |
| R14      | 7030003230 | S.RESISTOR  | ERJ3GEYJ 180 V (18 Ω)  |
| R15      | 7030003370 | S.RESISTOR  | ERJ3GEYJ 271 V (270 Ω) |
| R16      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω) |
| R17      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω) |
| R18      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ) |
| R19      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ) |
| R20      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ) |
| C1       | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C2       | 4030008470 | S.CERAMIC   | C1808 JB 1H 272K-T-A   |
| C3       | 4030008860 | S.CERAMIC   | C1808 JB 1C 153K-T-A   |
| C4       | 4030008980 | S.CERAMIC   | C1808 JB 1H 152K-T-A   |
| C5       | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C6       | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C7       | 4030008840 | S.CERAMIC   | C1808 SL 1H 391J-T-A   |
| C8       | 4030010030 | S.CERAMIC   | C1808 SL 1H 511J-T-A   |
| C9       | 4030010760 | S.CERAMIC   | C1808 CH 1H 331J-T-A   |
| C10      | 4030008860 | S.CERAMIC   | C1808 JB 1H 102K-T-A   |
| C11      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C12      | 4030009580 | S.CERAMIC   | C1808 JB 1H 681K-T-A   |
| C13      | 4030009980 | S.CERAMIC   | C1808 JB 1H 152K-T-A   |
| C14      | 4030009580 | S.CERAMIC   | C1808 JB 1H 681K-T-A   |
| C15      | 4030008470 | S.CERAMIC   | C1808 JB 1H 272K-T-A   |
| C16      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C17      | 4030007160 | S.CERAMIC   | C1808 CH 1H 181J-T-A   |
| C18      | 4030008860 | S.CERAMIC   | C1808 JB 1H 102K-T-A   |
| C19      | 4030007150 | S.CERAMIC   | C1808 CH 1H 151J-T-A   |
| C20      | 4030008840 | S.CERAMIC   | C1808 SL 1H 391J-T-A   |
| C21      | 4030010210 | S.CERAMIC   | C3216 JB 1C 105M-T-A   |
| C22      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C23      | 4030007170 | S.CERAMIC   | C1808 CH 1H 221J-T-A   |
| C24      | 4030010020 | S.CERAMIC   | C1808 JB 1H 122K-T-A   |
| C25      | 4030007130 | S.CERAMIC   | C1808 CH 1H 101J-T-A   |
| C26      | 4030008830 | S.CERAMIC   | C1808 SL 1H 331J-T-A   |
| C27      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C28      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C29      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C30      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C31      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C32      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C33      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C34      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C35      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C36      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C37      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C38      | 4030007120 | S.CERAMIC   | C1808 CH 1H 820J-T-A   |
| C39      | 4030007010 | S.CERAMIC   | C1808 CH 1H 100D-T-A   |
| C40      | 4030007150 | S.CERAMIC   | C1808 CH 1H 151J-T-A   |
| C41      | 4030007040 | S.CERAMIC   | C1808 CH 1H 180J-T-A   |
| C42      | 4030007120 | S.CERAMIC   | C1808 CH 1H 820J-T-A   |
| C43      | 4030007080 | S.CERAMIC   | C1808 CH 1H 390J-T-A   |
| C44      | 4030011540 | S.CERAMIC   | C1808 CH 1H 750J-T-A   |
| C45      | 4030007150 | S.CERAMIC   | C1808 CH 1H 151J-T-A   |
| C46      | 4030007150 | S.CERAMIC   | C1808 CH 1H 151J-T-A   |
| C47      | 4030007140 | S.CERAMIC   | C1808 CH 1H 121J-T-A   |
| C48      | 4030007130 | S.CERAMIC   | C1808 CH 1H 101J-T-A   |
| C49      | 4030007090 | S.CERAMIC   | C1808 CH 1H 470J-T-A   |
| C50      | 4030010760 | S.CERAMIC   | C1808 CH 1H 331J-T-A   |
| C51      | 4030007120 | S.CERAMIC   | C1808 CH 1H 820J-T-A   |
| C52      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C54      | 4030007170 | S.CERAMIC   | C1808 CH 1H 221J-T-A   |
| C55      | 4030008880 | S.CERAMIC   | C1808 JB 1H 472K-T-A   |
| C56      | 4030009580 | S.CERAMIC   | C1808 JB 1H 681K-T-A   |
| C57      | 4030008860 | S.CERAMIC   | C1808 JB 1H 102K-T-A   |
| C58      | 4030007170 | S.CERAMIC   | C1808 CH 1H 221J-T-A   |
| C59      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C60      | 4030007070 | S.CERAMIC   | C1808 CH 1H 330J-T-A   |
| C61      | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A  |
| C62      | 4030008860 | S.CERAMIC   | C1808 JB 1H 102K-T-A   |
| J1       | 6510019350 | CONNECTOR   | IMSA-9210B-1-07Z041-T  |
| J2       | 6510019350 | CONNECTOR   | IMSA-9210B-1-07Z041-T  |
| EP1      | 0910048692 | PCB         | B 4746B                |

S.=Surface mount

[PLL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                    |
|----------|------------|--------------|--------------------|
| IC1      | 1180000420 | S.IC         | TA78L05F (TE12R)   |
| IC2      | 1180001070 | S.IC         | TA7805F(TE16L)     |
| IC3      | 1180001540 | S.IC         | TA78L08F (TE12R)   |
| IC4      | 1110003300 | S.IC         | M5282FP 70CD       |
| IC5      | 1110003090 | IC           | LA4425A            |
| IC8      | 1130003830 | S.IC         | TC7S04F (TE85R)    |
| IC9      | 1130003830 | S.IC         | TC7S04F (TE85R)    |
| IC10     | 1140003841 | S.IC         | SC-1248            |
| IC11     | 1130003830 | S.IC         | TC7S04F (TE85R)    |
| IC12     | 1140004550 | S.IC         | SC-1287            |
| IC13     | 1130003850 | S.IC         | PLL2001S-ET        |
| Q5       | 1590000880 | S.TRANSISTOR | DTC114EU T107      |
| Q6       | 1580000720 | S.FET        | 2SK2171-4-TD       |
| Q7       | 1530003090 | S.TRANSISTOR | 2SC4213-B (TE85R)  |
| Q8       | 1580000720 | S.FET        | 2SK2171-4-TD       |
| Q9       | 1530003090 | S.TRANSISTOR | 2SC4213-B (TE85R)  |
| Q10      | 1530002570 | S.TRANSISTOR | 2SC4405-3-TR       |
| Q12      | 1580000330 | S.FET        | 2SK210-GR (TE85R)  |
| Q13      | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R     |
| Q14      | 1530002560 | S.TRANSISTOR | 2SC4403-3-TR       |
| Q15      | 1530002560 | S.TRANSISTOR | 2SC4403-3-TR       |
| Q16      | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R     |
| Q18      | 1590001330 | S.TRANSISTOR | DTA114EU T107      |
| Q19      | 1590001330 | S.TRANSISTOR | DTA114EU T107      |
| Q20      | 1590001330 | S.TRANSISTOR | DTA114EU T107      |
| Q21      | 1590001330 | S.TRANSISTOR | DTA114EU T107      |
| Q22      | 1590000680 | S.TRANSISTOR | DTC114EU T107      |
| Q23      | 1590001330 | S.TRANSISTOR | DTA114EU T107      |
| Q24      | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R     |
| Q28      | 1590001330 | S.TRANSISTOR | DTA114EU T107      |
| Q27      | 1530002560 | S.TRANSISTOR | 2SC4403-3-TR       |
| Q30      | 1530002890 | S.TRANSISTOR | 2SC4118-GR (TE85R) |
| Q36      | 1530002560 | S.TRANSISTOR | 2SC4403-3-TR       |
| Q37      | 1530002920 | S.TRANSISTOR | 2SC4228-T2 R25     |
| Q43      | 1590000850 | S.TRANSISTOR | DTA144TU T107      |
| Q44      | 1580000850 | S.TRANSISTOR | DTA144TU T107      |
| Q45      | 1520000510 | TRANSISTOR   | 2SB1133 R          |
| Q46      | 1530002280 | S.TRANSISTOR | 2SC4081 T107 S     |
| Q47      | 1580000540 | S.FET        | 2SK880-Y (TE85R)   |
| Q48      | 1530003000 | S.TRANSISTOR | 2SC4117-BL (TE85R) |
| Q49      | 1530003000 | S.TRANSISTOR | 2SC4117-BL (TE85R) |
| D3       | 1750000130 | S.DIODE      | DA204U T107        |
| D4       | 1720000540 | S.VARICAP    | HVM17-01TR         |
| D5       | 1790000820 | S.DIODE      | MA77(TW)           |
| D6       | 1720000540 | S.VARICAP    | HVM17-01TR         |
| D7       | 1790000820 | S.DIODE      | MA77(TW)           |
| D8       | 1750000200 | S.DIODE      | 1SS319 (TE85R)     |
| D9       | 1790000450 | S.DIODE      | MA862(TX)          |
| D11      | 1790000450 | S.DIODE      | MA862(TX)          |
| D12      | 1790000450 | S.DIODE      | MA862(TX)          |
| D13      | 1720000590 | S.VARICAP    | MA357(TX)          |
| D16      | 1790000820 | S.DIODE      | MA77(TW)           |
| D17      | 1790000450 | S.DIODE      | MA862(TX)          |
| D19      | 1790000450 | S.DIODE      | MA862(TX)          |
| D20      | 1750000130 | S.DIODE      | DA204U T107        |
| D21      | 1790000590 | S.DIODE      | MA110(TW)          |
| D22      | 1750000160 | S.DIODE      | DA114 T107         |
| F11      | 2020001140 | S.CERAMIC    | SFECA10.7MA-5-A    |
| X1       | 8050005710 | XTAL         | CR-275             |
| L1       | 8170000140 | COIL         | LW-15              |
| L3       | 8130002900 | COIL         | LB-332             |
| L4       | 8180000830 | COIL         | LAL 03NA 3R3K      |
| L6       | 8130002830 | COIL         | LB-325             |
| L7       | 8180000850 | COIL         | LAL 03NA 4R7K      |
| L8       | 8200001830 | S.COIL       | NL 322522T-100J    |
| L10      | 8200002160 | S.COIL       | ELJNC 82NK-F       |

[PLL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                         |
|----------|------------|-------------|-------------------------|
| L12      | 8200001470 | S.COIL      | NL 322522T-R12J-3       |
| L13      | 8200001630 | S.COIL      | ELJNC R10K-F            |
| L15      | 8140002810 | S.COIL      | LR-317                  |
| L16      | 8200001630 | S.COIL      | ELJNC R10K-F            |
| L17      | 8200002160 | S.COIL      | ELJNC 82NK-F            |
| L18      | 8200003670 | S.COIL      | ELJNC 88NK-F            |
| L19      | 8200003670 | S.COIL      | ELJNC 88NK-F            |
| L21      | 8200002160 | S.COIL      | ELJNC 82NK-F            |
| L22      | 8200001770 | S.COIL      | ELJNC 47NK-F            |
| L23      | 8200002120 | S.COIL      | ELJNC 33NK-F            |
| L25      | 8200002150 | S.COIL      | ELJNC 58NK-F            |
| L26      | 8200001940 | S.COIL      | ELJNC 27NK-F            |
| L27      | 8200002120 | S.COIL      | ELJNC 33NK-F            |
| L28      | 8200001830 | S.COIL      | NL 322522T-100J         |
| L29      | 8200001830 | S.COIL      | NL 322522T-100J         |
| L30      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L31      | 8130001850 | COIL        | LB-185                  |
| L32      | 8200001830 | S.COIL      | NL 322522T-100J         |
| L34      | 8130001090 | COIL        | LB-145                  |
| L35      | 8180000900 | COIL        | LAL 03NA 101K           |
| L36      | 8150004520 | S.COIL      | LS-508                  |
| L37      | 8150004830 | S.COIL      | LS-509                  |
| L38      | 8150004830 | S.COIL      | LS-509                  |
| L39      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L40      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L41      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L42      | 8200001830 | S.COIL      | NL 322522T-100J         |
| L43      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L44      | 8200001830 | S.COIL      | NL 322522T-100J         |
| L45      | 8200003170 | S.COIL      | NL 322522T-330J         |
| L46      | 8200003130 | S.COIL      | NL 322522T-120J         |
| L47      | 8200003140 | S.COIL      | NL 322522T-150J         |
| L48      | 8200003670 | S.COIL      | ELJNC 88NK-F            |
| L49      | 8200003670 | S.COIL      | ELJNC 88NK-F            |
| L50      | 8200002150 | S.COIL      | ELJNC 58NK-F            |
| L51      | 8200001940 | S.COIL      | ELJNC 27NK-F            |
| L52      | 8200003320 | S.COIL      | NL 322522T-3R3J-3       |
| L53      | 8200003100 | S.COIL      | NL 322522T-3R9J-3       |
| L54      | 8200002980 | S.COIL      | NL 322522T-4R7J-3       |
| L56      | 8200001780 | S.COIL      | ELJNC 22NK-F            |
| L57      | 8200003980 | S.COIL      | MLF1608A 1R0K-T         |
| L62      | 8180001510 | COIL        | LAL 02NA 101K           |
| L63      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L64      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L65      | 8200003540 | S.COIL      | MLF1608D R22K-T         |
| L66      | 8200002180 | S.COIL      | ELJNC 82NK-F            |
| R3       | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R4       | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R5       | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R6       | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R7       | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R8       | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R9       | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R10      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R11      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R12      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R13      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R18      | 7070000440 | RESISTOR    | CRH200 R-02J 15 Ω       |
| R24      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R25      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R26      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R28      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R29      | 7030003430 | S.RESISTOR  | ERJ3GEYJ 821 V (820 Ω)  |
| R30      | 7030000100 | S.RESISTOR  | MCR10EZJH 4.7 Ω (4R7)   |
| R32      | 7030003240 | S.RESISTOR  | ERJ3GEYJ 220 V (22 Ω)   |
| R33      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R34      | 7030003240 | S.RESISTOR  | ERJ3GEYJ 220 V (22 Ω)   |
| R37      | 7030003550 | S.RESISTOR  | ERJ3GEYJ 822 V (8.2 kΩ) |
| R38      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R39      | 7030003260 | S.RESISTOR  | ERJ3GEYJ 330 V (33 Ω)   |
| R48      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R49      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R50      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R51      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |

S.=Surface mount

## [PLL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                            |
|----------|------------|-------------|----------------------------|
| R52      | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)      |
| R53      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R54      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R57      | 7030003330 | S.RESISTOR  | ERJ3GEYJ 121 V (120 Ω)     |
| R58      | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)      |
| R59      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R60      | 7310002740 | S.TRIMMER   | RV-150 (RH03A3A14X0FC) 103 |
| R61      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R62      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R63      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ)    |
| R64      | 7030003340 | S.RESISTOR  | ERJ3GEYJ 151 V (150 Ω)     |
| R65      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R66      | 7030003550 | S.RESISTOR  | ERJ3GEYJ 822 V (8.2 kΩ)    |
| R67      | 7030003220 | S.RESISTOR  | ERJ3GEYJ 150 V (15 Ω)      |
| R68      | 7030003220 | S.RESISTOR  | ERJ3GEYJ 150 V (15 Ω)      |
| R69      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R70      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 153 V (15 kΩ)     |
| R71      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ)    |
| R72      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R73      | 7030003240 | S.RESISTOR  | ERJ3GEYJ 220 V (22 Ω)      |
| R74      | 7030003800 | S.RESISTOR  | ERJ3GEYJ 223 V (22 kΩ)     |
| R75      | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)     |
| R76      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)     |
| R77      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R78      | 7030003330 | S.RESISTOR  | ERJ3GEYJ 121 V (120 Ω)     |
| R79      | 7030003840 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)     |
| R80      | 7030003370 | S.RESISTOR  | ERJ3GEYJ 271 V (270 Ω)     |
| R81      | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)      |
| R82      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)     |
| R86      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)     |
| R88      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)     |
| R89      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)      |
| R90      | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)      |
| R91      | 7030005370 | S.RESISTOR  | RR0816P-202-B (2 kΩ)       |
| R92      | 7030005370 | S.RESISTOR  | RR0816P-202-B (2 kΩ)       |
| R93      | 7030005370 | S.RESISTOR  | RR0816P-202-B (2 kΩ)       |
| R94      | 7030005370 | S.RESISTOR  | RR0816P-202-B (2 kΩ)       |
| R95      | 7030005370 | S.RESISTOR  | RR0816P-202-B (2 kΩ)       |
| R96      | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R97      | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R98      | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R99      | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R100     | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R101     | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R102     | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R103     | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R104     | 7030005380 | S.RESISTOR  | RR0816P-102-B (1 kΩ)       |
| R105     | 7030005380 | S.RESISTOR  | RR0816P-102-B (1 kΩ)       |
| R106     | 7030005380 | S.RESISTOR  | RR0816P-102-B (1 kΩ)       |
| R107     | 7030005380 | S.RESISTOR  | RR0816P-102-B (1 kΩ)       |
| R108     | 7030005380 | S.RESISTOR  | RR0816P-102-B (1 kΩ)       |
| R109     | 7030005390 | S.RESISTOR  | RR0816P-102-D (1 kΩ)       |
| R110     | 7030005390 | S.RESISTOR  | RR0816P-102-D (1 kΩ)       |
| R111     | 7030005390 | S.RESISTOR  | RR0816P-102-D (1 kΩ)       |
| R112     | 7030005390 | S.RESISTOR  | RR0816P-102-D (1 kΩ)       |
| R113     | 7030005390 | S.RESISTOR  | RR0816P-102-D (1 kΩ)       |
| R114     | 7030005390 | S.RESISTOR  | RR0816P-102-D (1 kΩ)       |
| R115     | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)      |
| R116     | 7030005370 | S.RESISTOR  | RR0816P-202-B (2 kΩ)       |
| R117     | 7030005370 | S.RESISTOR  | RR0816P-202-B (2 kΩ)       |
| R118     | 7030005370 | S.RESISTOR  | RR0816P-202-B (2 kΩ)       |
| R119     | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R120     | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R121     | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R122     | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R123     | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R124     | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R125     | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R126     | 7030005400 | S.RESISTOR  | RR0816P-202-D (2 kΩ)       |
| R127     | 7030005380 | S.RESISTOR  | RR0816P-102-B (1 kΩ)       |
| R128     | 7030005380 | S.RESISTOR  | RR0816P-102-B (1 kΩ)       |
| R129     | 7030005380 | S.RESISTOR  | RR0816P-102-B (1 kΩ)       |
| R130     | 7030005390 | S.RESISTOR  | RR0816P-102-D (1 kΩ)       |
| R131     | 7030005390 | S.RESISTOR  | RR0816P-102-D (1 kΩ)       |
| R132     | 7030005390 | S.RESISTOR  | RR0816P-102-D (1 kΩ)       |

## [PLL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                         |
|----------|------------|-------------|-------------------------|
| R133     | 7030005390 | S.RESISTOR  | RR0816P-102-D (1 kΩ)    |
| R134     | 7030005390 | S.RESISTOR  | RR0816P-102-D (1 kΩ)    |
| R135     | 7030005390 | S.RESISTOR  | RR0816P-102-D (1 kΩ)    |
| R136     | 7030003620 | S.RESISTOR  | ERJ3GEYJ 333 V (33 kΩ)  |
| R137     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 153 V (15 kΩ)  |
| R138     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R142     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R149     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R152     | 7030003370 | S.RESISTOR  | ERJ3GEYJ 271 V (270 Ω)  |
| R153     | 7010003400 | RESISTOR    | ELR20J 1 kΩ             |
| R154     | 7030003470 | S.RESISTOR  | ERJ3GEYJ 182 V (1.8 kΩ) |
| R155     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R156     | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)  |
| R157     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R158     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R159     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R160     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R161     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R162     | 7030003220 | S.RESISTOR  | ERJ3GEYJ 150 V (15 Ω)   |
| R163     | 7030003220 | S.RESISTOR  | ERJ3GEYJ 150 V (15 Ω)   |
| R167     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R173     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R176     | 7030003540 | S.RESISTOR  | ERJ3GEYJ 682 V (6.8 kΩ) |
| R177     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R178     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R179     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)   |
| R180     | 7030003330 | S.RESISTOR  | ERJ3GEYJ 121 V (120 Ω)  |
| R181     | 7030003220 | S.RESISTOR  | ERJ3GEYJ 150 V (15 Ω)   |
| R182     | 7030003220 | S.RESISTOR  | ERJ3GEYJ 150 V (15 Ω)   |
| R183     | 7030003220 | S.RESISTOR  | ERJ3GEYJ 150 V (15 Ω)   |
| R184     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R186     | 7030003840 | S.RESISTOR  | ERJ3GEYJ 225 V (2.2 MΩ) |
| R187     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 330 V (33 Ω)   |
| R188     | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 kΩ) |
| R189     | 7030003450 | S.RESISTOR  | ERJ3GEYJ 122 V (1.2 kΩ) |
| R190     | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)   |
| R192     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 152 V (1.5 kΩ) |
| R194     | 7030003220 | S.RESISTOR  | ERJ3GEYJ 150 V (15 Ω)   |
| R197     | 7030003340 | S.RESISTOR  | ERJ3GEYJ 151 V (150 Ω)  |
| R198     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R199     | 7030003300 | S.RESISTOR  | ERJ3GEYJ 680 V (68 Ω)   |
| R200     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R202     | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R203     | 7030003840 | S.RESISTOR  | ERJ3GEYJ 225 V (2.2 MΩ) |
| R205     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R213     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R216     | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)  |
| R217     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R218     | 7030003370 | S.RESISTOR  | ERJ3GEYJ 271 V (270 Ω)  |
| R219     | 7030003230 | S.RESISTOR  | ERJ3GEYJ 180 V (18 Ω)   |
| R220     | 7030003370 | S.RESISTOR  | ERJ3GEYJ 271 V (270 Ω)  |
| R221     | 7030007490 | S.RESISTOR  | MCR03EZHJ 10 M Ω (106)  |
| R222     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R223     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R224     | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)  |
| R225     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R226     | 7030003470 | S.RESISTOR  | ERJ3GEYJ 182 V (1.8 kΩ) |
| R227     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R229     | 7030003340 | S.RESISTOR  | ERJ3GEYJ 151 V (150 Ω)  |
| R230     | 7030003270 | S.RESISTOR  | ERJ3GEYJ 390 V (39 Ω)   |
| R231     | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R232     | 7010004150 | RESISTOR    | R20J 470 Ω              |
| R233     | 7010004150 | RESISTOR    | R20J 470 Ω              |
| R234     | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R235     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R236     | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R237     | 7030003510 | S.RESISTOR  | ERJ3GEYJ 392 V (3.9 kΩ) |
| C1       | 4030009590 | S.CERAMIC   | C2012 JF 1C 225Z-T-A    |
| C2       | 4030006880 | S.CERAMIC   | C1808 JB 1H 472K-T-A    |
| C3       | 4030006880 | S.CERAMIC   | C1808 JB 1H 472K-T-A    |
| C4       | 4030006880 | S.CERAMIC   | C1808 JB 1H 472K-T-A    |
| C5       | 4030009590 | S.CERAMIC   | C2012 JF 1C 225Z-T-A    |
| C6       | 4030006880 | S.CERAMIC   | C1808 JB 1H 472K-T-A    |
| C7       | 4030006880 | S.CERAMIC   | C1808 JB 1H 472K-T-A    |

S.=Surface mount



[PLL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                     |
|----------|------------|---------------------------------|
| C8       | 4030009590 | S.CERAMIC C2012 JF 1C 225Z-T-A  |
| C9       | 4030009590 | S.CERAMIC C2012 JF 1C 225Z-T-A  |
| C10      | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C11      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C12      | 4030009590 | S.CERAMIC C2012 JF 1C 225Z-T-A  |
| C15      | 4510005600 | S.ELECTROLITIC ECEV1CS100SR     |
| C16      | 4030009110 | S.CERAMIC C3216 JB 1C 474K-T-A  |
| C17      | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C18      | 4030008850 | S.CERAMIC C1608 JB 1H 471K-T-A  |
| C19      | 4030009110 | S.CERAMIC C3216 JB 1C 474K-T-A  |
| C20      | 4510005600 | S.ELECTROLITIC ECEV1CS100SR     |
| C21      | 4510005600 | S.ELECTROLITIC ECEV1CS100SR     |
| C22      | 4510005600 | S.ELECTROLITIC ECEV1CS100SR     |
| C23      | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C24      | 4510005600 | S.ELECTROLITIC ECEV1CS100SR     |
| C25      | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C26      | 4510004590 | ELECTROLITIC 16 MV 470 HC       |
| C27      | 4510004590 | ELECTROLITIC 16 MV 470 HC       |
| C28      | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C29      | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C32      | 4030008560 | S.CERAMIC C1608 CH 1H 300J-T-A  |
| C33      | 4030008880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C34      | 4030009510 | S.CERAMIC C1608 CH 1H 010B-T-A  |
| C35      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C36      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C37      | 4030006850 | S.CERAMIC C1608 JB 1H 471K-T-A  |
| C40      | 4030007110 | S.CERAMIC C1608 CH 1H 680J-T-A  |
| C41      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C42      | 4030009510 | S.CERAMIC C1608 CH 1H 010B-T-A  |
| C43      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C44      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C45      | 4030006850 | S.CERAMIC C1608 JB 1H 471K-T-A  |
| C46      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C51      | 4510004590 | ELECTROLITIC 16 MV 470 HC       |
| C52      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C53      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C54      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C57      | 4030007120 | S.CERAMIC C1608 CH 1H 820J-T-A  |
| C58      | 4030007120 | S.CERAMIC C1608 CH 1H 221J-T-A  |
| C59      | 4030007120 | S.CERAMIC C1608 CH 1H 820J-T-A  |
| C60      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C61      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C62      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C64      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C65      | 4030007070 | S.CERAMIC C1608 CH 1H 330J-T-A  |
| C66      | 4030007020 | S.CERAMIC C1608 CH 1H 120J-T-A  |
| C67      | 4030007090 | S.CERAMIC C1608 CH 1H 470J-T-A  |
| C68      | 4030006980 | S.CERAMIC C1608 CH 1H 070D-T-A  |
| C69      | 4030007080 | S.CERAMIC C1608 CH 1H 270J-T-A  |
| C70      | 4030008580 | S.CERAMIC C1608 CH 1H 300J-T-A  |
| C71      | 4030007000 | S.CERAMIC C1608 CH 1H 090D-T-A  |
| C72      | 4030007070 | S.CERAMIC C1608 CH 1H 330J-T-A  |
| C73      | 4030006980 | S.CERAMIC C1608 CH 1H 050C-T-A  |
| C74      | 4030007040 | S.CERAMIC C1608 CH 1H 180J-T-A  |
| C75      | 4030006930 | S.CERAMIC C1608 CH 1H 020C-T-A  |
| C76      | 4030007110 | S.CERAMIC C1608 CH 1H 680J-T-A  |
| C77      | 4030007030 | S.CERAMIC C1608 CH 1H 150J-T-A  |
| C78      | 4030007030 | S.CERAMIC C1608 CH 1H 150J-T-A  |
| C79      | 4030006940 | S.CERAMIC C1608 CH 1H 030C-T-A  |
| C80      | 4030007080 | S.CERAMIC C1608 CH 1H 270J-T-A  |
| C81      | 4030006990 | S.CERAMIC C1608 CH 1H 080D-T-A  |
| C82      | 4030007020 | S.CERAMIC C1608 CH 1H 120J-T-A  |
| C83      | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T-A  |
| C84      | 4030008560 | S.CERAMIC C1608 CH 1H 300J-T-A  |
| C85      | 4030007050 | S.CERAMIC C1608 CH 1H 220J-T-A  |
| C86      | 4030006990 | S.CERAMIC C1608 CH 1H 080D-T-A  |
| C87      | 4030006970 | S.CERAMIC C1608 CH 1H 060D-T-A  |
| C88      | 4030007040 | S.CERAMIC C1608 CH 1H 180J-T-A  |
| C89      | 4030006930 | S.CERAMIC C1608 CH 1H 020C-T-A  |
| C90      | 4030007020 | S.CERAMIC C1608 CH 1H 120J-T-A  |
| C91      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C94      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C95      | 4510005600 | S.ELECTROLITIC ECEV1CS100SR     |
| C96      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C98      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C99      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |

[PLL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                     |
|----------|------------|---------------------------------|
| C100     | 4510005600 | S.ELECTROLITIC ECEV1CS100SR     |
| C101     | 4040000190 | BARRIERLAYR UAT 05X 103K        |
| C102     | 4030007080 | S.CERAMIC C1608 CH 1H 390J-T-A  |
| C103     | 4030011570 | S.CERAMIC CM105 CH 101G 50AT    |
| C104     | 4610001260 | S.TRIMMER ECR-JA020 E12W        |
| C105     | 4030007150 | S.CERAMIC C1608 CH 1H 151J-T-A  |
| C106     | 4030007150 | S.CERAMIC C1608 CH 1H 151J-T-A  |
| C107     | 4030007150 | S.CERAMIC C1608 CH 1H 151J-T-A  |
| C108     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C109     | 4030006960 | S.CERAMIC C1608 CH 1H 050C-T-A  |
| C110     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C111     | 4510005600 | S.ELECTROLITIC ECEV1CS100SR     |
| C112     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C113     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C114     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C115     | 4030007100 | S.CERAMIC C1608 CH 1H 560J-T-A  |
| C116     | 4030007120 | S.CERAMIC C1608 CH 1H 820J-T-A  |
| C117     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C118     | 4030007110 | S.CERAMIC C1608 CH 1H 680J-T-A  |
| C119     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C120     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C121     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C122     | 4030007060 | S.CERAMIC C1608 CH 1H 270J-T-A  |
| C123     | 4030006860 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C124     | 4030006920 | S.CERAMIC C1608 CH 1H 010C-T-A  |
| C125     | 4030007060 | S.CERAMIC C1608 CH 1H 270J-T-A  |
| C126     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C127     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C128     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C130     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C132     | 4550000460 | S.TANTALUM TESVA 1C 105M1-8L    |
| C133     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C134     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C135     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C136     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C137     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C138     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C139     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C140     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C141     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C142     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C143     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C144     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C145     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C146     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C147     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C148     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C149     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C150     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C151     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C152     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C153     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C154     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C155     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C156     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C157     | 4030007040 | S.CERAMIC C1608 CH 1H 180J-T-A  |
| C158     | 4030007090 | S.CERAMIC C1608 CH 1H 470J-T-A  |
| C159     | 4030007040 | S.CERAMIC C1608 CH 1H 180J-T-A  |
| C160     | 4030007040 | S.CERAMIC C1608 CH 1H 180J-T-A  |
| C161     | 4030006960 | S.CERAMIC C1608 CH 1H 050C-T-A  |
| C162     | 4030007070 | S.CERAMIC C1608 CH 1H 330J-T-A  |
| C163     | 4030006930 | S.CERAMIC C1608 CH 1H 020C-T-A  |
| C164     | 4030007040 | S.CERAMIC C1608 CH 1H 180J-T-A  |
| C165     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C166     | 4550000460 | S.TANTALUM TESVA 1C 105M1-8L    |
| C167     | 4030010070 | S.CERAMIC C1608 X7S 1C 104K-T-A |
| C169     | 4030006920 | S.CERAMIC C1608 CH 1H 010C-T-A  |
| C170     | 4030007030 | S.CERAMIC C1608 CH 1H 150J-T-A  |
| C171     | 4030007010 | S.CERAMIC C1608 CH 1H 100D-T-A  |
| C172     | 4030007010 | S.CERAMIC C1608 CH 1H 100D-T-A  |
| C173     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C174     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C175     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C176     | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A  |
| C177     | 4030006960 | S.CERAMIC C1608 CH 1H 070D-T-A  |
| C178     | 4030006930 | S.CERAMIC C1608 CH 1H 020C-T-A  |

S.=Surface mount



[PLL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION    |                          |
|----------|------------|----------------|--------------------------|
| C179     | 4030007010 | S.CERAMIC      | C1808 CH 1H 100D-T-A     |
| C180     | 4030009470 | S.CERAMIC      | C1808 CH 1H R75C-T-A     |
| C181     | 4030008990 | S.CERAMIC      | C1808 CH 1H 080D-T-A     |
| C182     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C183     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C184     | 4030008880 | S.CERAMIC      | C1808 JB 1H 102K-T-A     |
| C185     | 4030008850 | S.CERAMIC      | C1808 JB 1H 471K-T-A     |
| C186     | 4510004990 | ELECTROLITIC   | 18 MV 100 HC             |
| C188     | 4030008850 | S.CERAMIC      | C1808 JB 1H 471K-T-A     |
| C195     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C196     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C197     | 4030008880 | S.CERAMIC      | C1808 JB 1H 102K-T-A     |
| C198     | 4030007010 | S.CERAMIC      | C1808 CH 1H 100D-T-A     |
| C200     | 4510005800 | S.ELECTROLITIC | ECEV1CS100SR             |
| C201     | 4510005800 | S.ELECTROLITIC | ECEV1CS100SR             |
| C202     | 4510005800 | S.ELECTROLITIC | ECEV1CS100SR             |
| C204     | 4030008980 | S.CERAMIC      | C1808 CH 1H 070D-T-A     |
| C205     | 4030008980 | S.CERAMIC      | C1808 CH 1H 070D-T-A     |
| C206     | 4030007030 | S.CERAMIC      | C1808 CH 1H 150J-T-A     |
| C207     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C212     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C213     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C217     | 4030007030 | S.CERAMIC      | C1808 CH 1H 150J-T-A     |
| C218     | 4030008990 | S.CERAMIC      | C1808 CH 1H 080D-T-A     |
| C219     | 4030007030 | S.CERAMIC      | C1808 CH 1H 150J-T-A     |
| C220     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C223     | 4040000690 | BARRIERLAYR    | UAT 08X 473K             |
| C224     | 4510005000 | ELECTROLITIC   | 18 MV 220 HC             |
| C225     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C226     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A    |
| C227     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A    |
| C228     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A    |
| C233     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C236     | 4510004590 | ELECTROLITIC   | 18 MV 470 HC             |
| C237     | 4030008920 | S.CERAMIC      | C1808 CH 1H 010C-T-A     |
| C238     | 4030008850 | S.CERAMIC      | C1808 JB 1H 471K-T-A     |
| C239     | 4030008850 | S.CERAMIC      | C1808 JB 1H 471K-T-A     |
| C240     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C241     | 4550008080 | S.TANTALUM     | TEMSVB2 1C 106M-8L       |
| C242     | 4550008080 | S.TANTALUM     | TEMSVB2 1C 106M-8L       |
| C243     | 4040000690 | BARRIERLAYR    | UAT 08X 473K             |
| C244     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C245     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C246     | 4550000460 | S.TANTALUM     | TESVA 1C 105M1-8L        |
| C247     | 4030007100 | S.CERAMIC      | C1808 CH 1H 580J-T-A     |
| C248     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C249     | 4030007030 | S.CERAMIC      | C1808 CH 1H 150J-T-A     |
| C250     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C251     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C252     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C253     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C254     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C255     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C256     | 4030008880 | S.CERAMIC      | C1808 JB 1H 472K-T-A     |
| C257     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A    |
| C258     | 4030010070 | S.CERAMIC      | C1808 X7S 1C 104K-T-A    |
| C259     | 4030007050 | S.CERAMIC      | C1808 CH 1H 220J-T-A     |
| C260     | 4030007050 | S.CERAMIC      | C1808 CH 1H 220J-T-A     |
| C261     | 4030007050 | S.CERAMIC      | C1808 CH 1H 220J-T-A     |
| RL1      | 6330001320 | RELAY          | AHY103                   |
| J1       | 6510018950 | S.CONNECTOR    | B7B-PH-SM3-TB            |
| J2       | 6510019070 | S.CONNECTOR    | 52559-3092               |
| J5       | 6510018960 | S.CONNECTOR    | B2B-PH-SM3-TB            |
| WS1      | 8600034620 | CABLE          | 1691 P01*J04PL           |
| WS2      | 8970022090 | CABLE          | 1691 1.5D COAXIAL (3)/PL |
| EP1      | 0910045448 | PCB            | B 4561H                  |

[PA UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                         |
|----------|------------|--------------|-------------------------|
| IC1      | 1110003970 | S.IC         | µPC1658G-E1             |
| Q1       | 1590002020 | TRANSISTOR   | MRF555                  |
| Q2       | 1590002260 | TRANSISTOR   | MRF5015                 |
| Q5       | 1590001940 | S.TRANSISTOR | DTC144EE TL             |
| Q6       | 1590001870 | S.TRANSISTOR | DTA114EE TL             |
| Q7       | 1590001940 | S.TRANSISTOR | DTC144EE TL             |
| Q8       | 1590001940 | S.TRANSISTOR | DTC144EE TL             |
| Q9       | 1590001870 | S.TRANSISTOR | DTA114EE TL             |
| Q10      | 1590000680 | S.TRANSISTOR | DTC114EU T107           |
| Q11      | 1590001940 | S.TRANSISTOR | DTC144EE TL             |
| Q12      | 1590001870 | S.TRANSISTOR | DTA114EE TL             |
| Q14      | 1590001150 | S.TRANSISTOR | UN9211(TX)              |
| Q15      | 1540000250 | S.TRANSISTOR | 2SD999-T2 CK            |
| Q16      | 1590002360 | TRANSISTOR   | MRF581                  |
| Q17      | 1590001940 | S.TRANSISTOR | DTC144EE TL             |
| Q18      | 1590002280 | FET          | MRF255                  |
| Q19      | 1590002280 | FET          | MRF255                  |
| Q20      | 1590001940 | S.TRANSISTOR | DTC144EE TL             |
| Q21      | 1590001870 | S.TRANSISTOR | DTA114EE TL             |
| Q22      | 1590001940 | S.TRANSISTOR | DTC144EE TL             |
| Q23      | 1590001870 | S.TRANSISTOR | DTA114EE TL             |
| Q24      | 1590001940 | S.TRANSISTOR | DTC144EE TL             |
| Q25      | 1590001940 | S.TRANSISTOR | DTC144EE TL             |
| D1       | 1160000140 | S.DIODE      | DAP222 TL               |
| D2       | 1790000490 | S.DIODE      | HSM88AS-TR              |
| D3       | 1790000490 | S.DIODE      | HSM88AS-TR              |
| D4       | 1710000730 | S.DIODE      | MI809-T11               |
| D6       | 1790000450 | S.DIODE      | MA862(TX)               |
| D7       | 1750000450 | S.DIODE      | 1SV265-TR               |
| D11      | 1160000140 | S.DIODE      | DAP222 TL               |
| D12      | 1790000700 | DIODE        | DSA3A1                  |
| D13      | 1790000700 | DIODE        | DSA3A1                  |
| D14      | 1710000730 | S.DIODE      | MI809-T11               |
| D15      | 1710000730 | S.DIODE      | MI809-T11               |
| D16      | 1750000270 | S.DIODE      | 1SS301 (TE85R)          |
| D17      | 1750000270 | S.DIODE      | 1SS301 (TE85R)          |
| D18      | 1750000520 | S.DIODE      | DAN222TL                |
| L3       | 6140002220 | COIL         | LR-270 (TR6X3X2 3A9)    |
| L4       | 6140003030 | COIL         | LR-321B                 |
| L5       | 6140003040 | COIL         | LR-322B                 |
| L9       | 6140002030 | COIL         | LR-230 (SK-10M-15Y 120) |
| L10      | 6110001570 | COIL         | LA-237                  |
| L11      | 6110002150 | COIL         | LA-385                  |
| L12      | 6110002070 | COIL         | LA-227                  |
| L13      | 6200004740 | S.COIL       | NL 252018T-1R2J         |
| L14      | 6200004740 | S.COIL       | NL 252018T-1R2J         |
| L16      | 6110002120 | COIL         | LA-228                  |
| L17      | 6110002070 | COIL         | LA-227                  |
| L18      | 6110002070 | COIL         | LA-227                  |
| L19      | 6110002070 | COIL         | LA-227                  |
| L20      | 6200004740 | S.COIL       | NL 252018T-1R2J         |
| L22      | 6200004740 | S.COIL       | NL 252018T-1R2J         |
| L25      | 6200002640 | S.COIL       | NL 252018T-R15J         |
| L26      | 6200002650 | S.COIL       | NL 252018T-R18J         |
| L27      | 6200004740 | S.COIL       | NL 252018T-1R2J         |
| L29      | 6150002780 | COIL         | LS-295                  |
| L30      | 6150002780 | COIL         | LS-295                  |
| L31      | 6200004740 | S.COIL       | NL 252018T-1R2J         |
| L33      | 6200004740 | S.COIL       | NL 252018T-1R2J         |
| L35      | 6200002410 | S.COIL       | NL 252018T-056J         |
| L37      | 6200003950 | S.COIL       | HF50ACC 322513-T        |
| L40      | 6200002420 | S.COIL       | NL 252018T-068J         |
| L41      | 6200003590 | S.COIL       | EXCCL3225U1             |
| L42      | 6180000900 | COIL         | LAL 03NA 101K           |
| L43      | 6140003060 | COIL         | LR-324                  |
| L44      | 6140003060 | COIL         | LR-324                  |
| L45      | 6140000610 | COIL         | LR-83                   |
| L46      | 6140003051 | COIL         | LR-323B                 |
| L48      | 6200002630 | S.COIL       | NL 252018T-R10J         |
| L49      | 6200002430 | S.COIL       | NL 252018T-082J         |

S.=Surface mount

## [PA UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                         |
|----------|------------|-------------|-------------------------|
| L50      | 6910003570 | COIL        | 2943-866663             |
| L51      | 6910003570 | COIL        | 2943-866663             |
| L52      | 6200001830 | S.COIL      | NL 322522T-100J         |
| L53      | 6200001830 | S.COIL      | NL 322522T-100J         |
| L54      | 6200004740 | S.COIL      | NL 252018T-1R2J         |
| L55      | 6140003070 | COIL        | LR-355                  |
| R1       | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)  |
| R2       | 7030003420 | S.RESISTOR  | ERJ3GEYJ 681 V (680 Ω)  |
| R3       | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)  |
| R4       | 7030006120 | S.RESISTOR  | ERJ1WYJ4R7H (4.7 Ω)     |
| R6       | 7310003170 | TRIMMER     | EVN-2ACA00 B53 (502)    |
| R7       | 7030003460 | S.RESISTOR  | ERJ3GEYJ 152 V (1.5 kΩ) |
| R8       | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R9       | 7030006220 | S.RESISTOR  | ERJ12YJ470H (47 Ω)      |
| R16      | 7070000250 | RESISTOR    | CRH200 R-02J 4.7 Ω      |
| R17      | 7030003510 | S.RESISTOR  | ERJ3GEYJ 392 V (3.9 kΩ) |
| R18      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R19      | 7030003510 | S.RESISTOR  | ERJ3GEYJ 392 V (3.9 kΩ) |
| R20      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R21      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R24      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R25      | 7030003330 | S.RESISTOR  | ERJ3GEYJ 121 V (120 Ω)  |
| R26      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R27      | 7030003400 | S.RESISTOR  | ERJ3GEYJ 471 V (470 Ω)  |
| R28      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R30      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)  |
| R33      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 kΩ) |
| R34      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 kΩ) |
| R35      | 7100000640 | RESISTOR    | 5 SI 0.012 Ω (J)        |
| R36      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 kΩ) |
| R37      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 kΩ) |
| R38      | 7540000130 | ABSORBER    | 2P-50A-301              |
| R41      | 7030006080 | S.RESISTOR  | ERJ1WYJ220H (22 Ω)      |
| R42      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R43      | 7030003470 | S.RESISTOR  | ERJ3GEYJ 182 V (1.8 kΩ) |
| R44      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R45      | 7030000240 | S.RESISTOR  | MCR10EZJH 68 Ω (680)    |
| R46      | 7030000240 | S.RESISTOR  | MCR10EZJH 68 Ω (680)    |
| R49      | 7030003530 | S.RESISTOR  | ERJ3GEYJ 562 V (5.6 kΩ) |
| R50      | 7070000540 | RESISTOR    | CRH200 R-02J 27 Ω       |
| R51      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R52      | 7310003200 | TRIMMER     | EVN-2ACA00 B14 (103)    |
| R53      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R54      | 7070000540 | RESISTOR    | CRH200 R-02J 27 Ω       |
| R55      | 7030006080 | S.RESISTOR  | ERJ1WYJ220H (22 Ω)      |
| R56      | 7030006080 | S.RESISTOR  | ERJ1WYJ220H (22 Ω)      |
| R59      | 7310003200 | TRIMMER     | EVN-2ACA00 B14 (103)    |
| R61      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R62      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R63      | 7030003370 | S.RESISTOR  | ERJ3GEYJ 271 V (270 Ω)  |
| R64      | 7070000210 | RESISTOR    | CRH100X R-02J 47 Ω      |
| R65      | 7030007360 | S.RESISTOR  | ERJ1WYJ470H (470 Ω)     |
| R66      | 7030003350 | S.RESISTOR  | ERJ3GEYJ 181 V (180 Ω)  |
| R67      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R68      | 7030003740 | S.RESISTOR  | ERJ3GEYJ 334 V (330 kΩ) |
| R69      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R70      | 7030003350 | S.RESISTOR  | ERJ3GEYJ 181 V (180 Ω)  |
| R71      | 7030003260 | S.RESISTOR  | ERJ3GEYJ 330 V (33 Ω)   |
| R72      | 7030003350 | S.RESISTOR  | ERJ3GEYJ 181 V (180 Ω)  |
| R73      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)  |
| R74      | 7030003220 | S.RESISTOR  | ERJ3GEYJ 150 V (15 Ω)   |
| R75      | 7030003380 | S.RESISTOR  | ERJ3GEYJ 331 V (330 Ω)  |
| R76      | 7010003280 | RESISTOR    | ELR20J 100 Ω            |
| R77      | 7030000080 | S.RESISTOR  | MCR10EZJH 3.3 Ω (3R3)   |
| R78      | 7070000270 | RESISTOR    | CRH100X R-02J 100 Ω     |
| C1       | 4030010070 | S.CERAMIC   | C1608 X7S 1C 104K-T-A   |
| C3       | 4030010070 | S.CERAMIC   | C1608 X7S 1C 104K-T-A   |
| C4       | 4030010070 | S.CERAMIC   | C1608 X7S 1C 104K-T-A   |
| C7       | 4030010070 | S.CERAMIC   | C1608 X7S 1C 104K-T-A   |
| C12      | 4030011260 | S.CERAMIC   | GRM42-6 W5R 102K 500PT  |
| C14      | 4030001420 | S.CERAMIC   | GR44 Y5V 684Z           |
| C15      | 4030011260 | S.CERAMIC   | GRM42-6 W5R 102K 500PT  |

## [PA UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                        |
|----------|------------|--------------|------------------------|
| C20      | 4010007600 | CERAMIC      | HM17SJ YB 103K 500V    |
| C21      | 4030011260 | S.CERAMIC    | GRM42-6 W5R 102K 500PT |
| C26      | 4030011140 | S.CERAMIC    | GRM42-6 CH 120J 500PT  |
| C27      | 4030011180 | S.CERAMIC    | GRM42-6 CH 220J 500PT  |
| C28      | 4030011180 | S.CERAMIC    | GRM42-6 CH 220J 500PT  |
| C29      | 4030011260 | S.CERAMIC    | GRM42-6 W5R 102K 500PT |
| C31      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C32      | 4030011260 | S.CERAMIC    | GRM42-6 W5R 102K 500PT |
| C35      | 4030011040 | S.CERAMIC    | GRM42-6 CK 020C 500PT  |
| C36      | 4030011180 | S.CERAMIC    | GRM42-6 CH 220J 500PT  |
| C37      | 4030011080 | S.CERAMIC    | GRM42-6 CH 060D 500PT  |
| C38      | 4030011210 | S.CERAMIC    | GRM42-6 CH 330J 500PT  |
| C39      | 4030011170 | S.CERAMIC    | GRM42-6 CH 180J 500PT  |
| C40      | 4030011170 | S.CERAMIC    | GRM42-6 CH 180J 500PT  |
| C41      | 4030007080 | S.CERAMIC    | C1608 CH 1H 390J-T-A   |
| C42      | 4030007040 | S.CERAMIC    | C1608 CH 1H 180J-T-A   |
| C43      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C44      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C45      | 4030007020 | S.CERAMIC    | C1608 CH 1H 120J-T-A   |
| C46      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C47      | 4030009470 | S.CERAMIC    | C1608 JB 1H R75C-T-A   |
| C48      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C49      | 4030007020 | S.CERAMIC    | C1608 CH 1H 120J-T-A   |
| C50      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C51      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C52      | 4030007040 | S.CERAMIC    | C1608 CH 1H 180J-T-A   |
| C53      | 4030009990 | S.CERAMIC    | C1608 CH 1H 200J-T-A   |
| C54      | 4030007170 | S.CERAMIC    | C1608 CH 1H 221J-T-A   |
| C55      | 4030007050 | S.CERAMIC    | C1608 CH 1H 220J-T-A   |
| C56      | 4030007120 | S.CERAMIC    | C1608 CH 1H 820J-T-A   |
| C57      | 4030007080 | S.CERAMIC    | C1608 CH 1H 270J-T-A   |
| C58      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C59      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C60      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C61      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C63      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C64      | 4030007050 | S.CERAMIC    | C1608 CH 1H 220J-T-A   |
| C65      | 4030007050 | S.CERAMIC    | C1608 CH 1H 220J-T-A   |
| C66      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C67      | 4030006860 | S.CERAMIC    | C1608 JB 1H 472K-T-A   |
| C68      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C69      | 4030006860 | S.CERAMIC    | C1608 JB 1H 472K-T-A   |
| C70      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C71      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C72      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C73      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C75      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C76      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C77      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C78      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C79      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C80      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C81      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C82      | 4510004600 | ELECTROLITIC | 18 MV 1000 HC          |
| C83      | 4030006860 | S.CERAMIC    | C1608 JB 1C 473K-T-A   |
| C84      | 4030006860 | S.CERAMIC    | C1608 JB 1H 472K-T-A   |
| C89      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C90      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C91      | 4510004590 | ELECTROLITIC | 16 MV 470 HC           |
| C92      | 4510004590 | ELECTROLITIC | 18 MV 470 HC           |
| C93      | 4030006860 | S.CERAMIC    | C1608 JB 1C 473K-T-A   |
| C94      | 4030006860 | S.CERAMIC    | C1608 JB 1H 472K-T-A   |
| C95      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C96      | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C99      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C105     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C106     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C109     | 4510005350 | ELECTROLITIC | 25 MV 220 HC           |
| C110     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C111     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C112     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C113     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C115     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A  |
| C116     | 4030006860 | S.CERAMIC    | C1608 JB 1H 102K-T-A   |
| C117     | 4030001370 | S.CERAMIC    | GR44 CH 682K           |
| C118     | 4030001370 | S.CERAMIC    | GR44 CH 682K           |

S.=Surface mount

[PA UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                            |
|----------|------------|--------------|----------------------------|
| C119     | 4030001370 | S.CERAMIC    | GR44 CH 682K               |
| C120     | 4030001370 | S.CERAMIC    | GR44 CH 682K               |
| C126     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C127     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C128     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C130     | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A       |
| C131     | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A       |
| C134     | 4030006880 | S.CERAMIC    | C1608 JB 1H 102K-T-A       |
| C136     | 4030006880 | S.CERAMIC    | C1608 JB 1H 102K-T-A       |
| C137     | 4030006880 | S.CERAMIC    | C1608 JB 1H 102K-T-A       |
| C138     | 4320001080 | S.MICA       | UC342H 3900J               |
| C139     | 4320001080 | S.MICA       | UC342H 3900J               |
| C141     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C142     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C143     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C144     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C145     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C146     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C148     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C149     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C150     | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A       |
| C151     | 4030009850 | S.CERAMIC    | C1608 CH 1H 240J-T-A       |
| C152     | 4030009990 | S.CERAMIC    | C1608 CH 1H 200J-T-A       |
| C153     | 4030007020 | S.CERAMIC    | C1608 CH 1H 120J-T-A       |
| C154     | 4030009990 | S.CERAMIC    | C1608 CH 1H 200J-T-A       |
| C155     | 4320001070 | S.MICA       | UC342H 3300J-T             |
| C157     | 4030010760 | S.CERAMIC    | C1608 CH 1H 331J-T-A       |
| C158     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C159     | 4510004590 | ELECTROLITIC | 16 MV 470 HC               |
| C160     | 4030006880 | S.CERAMIC    | C1608 JB 1H 102K-T-A       |
| C161     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C162     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C163     | 4030006880 | S.CERAMIC    | C1608 JB 1H 102K-T-A       |
| C164     | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A       |
| C165     | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A       |
| C166     | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A      |
| C167     | 4030001420 | S.CERAMIC    | GR44 Y5V 684Z              |
| C170     | 4010005740 | CERAMIC      | HM60SJ SL 580J 500V        |
| C171     | 4010005860 | CERAMIC      | HM95SJ SL 201J 500V        |
| C172     | 4010005860 | CERAMIC      | HM95SJ SL 201J 500V        |
| RL1      | 6330001300 | RELAY        | UM1-12W-K                  |
| RL2      | 6330001080 | RELAY        | APQ 3311                   |
| F1       | 5210000130 | FUSE         | FGB 4A                     |
| F2       | 5220000020 | HOLDER       | S-N5051                    |
| F3       | 5220000020 | HOLDER       | S-N5051                    |
| J1       | 6510003250 | CONNECTOR    | TMP-J01X-A2                |
| J3       | 6510003400 | CONNECTOR    | B04B-EH-S                  |
| J8       | 6450000140 | CONNECTOR    | HSJ0807-01-010             |
| J13      | 6510003250 | CONNECTOR    | TMP-J01X-A2                |
| J14      | 6510018960 | S.CONNECTOR  | B2B-PH-SM3-TB              |
| J15      | 6510003080 | CONNECTOR    | RT01T-1.0B                 |
| W32      | 9045201001 | WIRE         | 74/98/040/X98/X98          |
| W35      | 9045201001 | WIRE         | 74/98/040/X98/X98          |
| WS1      | 8970022130 | CABLE        | 1691 J-BOARD SET (1)/PA    |
| WS2      | 8600034632 | CABLE        | 1691 J10PA-2               |
| WS3      | 8600034470 | CABLE        | 1691 P04*J02*04PA          |
| WS4      | 8600034650 | CABLE        | 1691 P05*J05PA             |
| WS5      | 8970022141 | CABLE        | 1691 1.5D COAXIAL-1 (2)/PA |
| WS6      | 8600034490 | CABLE        | 1691 P07*J07PA             |
| WS7      | 8600034700 | CABLE        | 1691 P03*J06PA             |
| EP1      | 0910045887 | PCB          | B 4562G                    |
| EP2      | 6910000610 | BEAD         | FSOH050RN01                |
| EP6      | 6910000630 | BEAD         | FSOH070RN                  |

[FILTER UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                       |
|----------|------------|--------------|-----------------------|
| IC1      | 1110002700 | S.IC         | NJM2904M-T1           |
| Q1       | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R        |
| Q2       | 1590000680 | S.TRANSISTOR | DTC114EU T107         |
| Q3       | 1590000680 | S.TRANSISTOR | DTC114EU T107         |
| Q4       | 1590000680 | S.TRANSISTOR | DTC114EU T107         |
| Q5       | 1590000680 | S.TRANSISTOR | DTC114EU T107         |
| Q6       | 1590000680 | S.TRANSISTOR | DTC114EU T107         |
| Q7       | 1590000680 | S.TRANSISTOR | DTC114EU T107         |
| Q8       | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R        |
| Q9       | 1530003090 | S.TRANSISTOR | 2SC4213-B (TE85R)     |
| D1       | 1160000140 | S.DIODE      | DAP222 TL             |
| D2       | 1160000140 | S.DIODE      | DAP222 TL             |
| D3       | 1160000140 | S.DIODE      | DAP222 TL             |
| D4       | 1160000140 | S.DIODE      | DAP222 TL             |
| D5       | 1160000140 | S.DIODE      | DAP222 TL             |
| D6       | 1160000140 | S.DIODE      | DAP222 TL             |
| D7       | 1160000140 | S.DIODE      | DAP222 TL             |
| D8       | 1160000140 | S.DIODE      | DAP222 TL             |
| D9       | 1790000490 | S.DIODE      | HSM88AS-TR            |
| D10      | 1790000490 | S.DIODE      | HSM88AS-TR            |
| D11      | 1160000140 | S.DIODE      | DAP222 TL             |
| D12      | 1160000140 | S.DIODE      | DAP222 TL             |
| D13      | 1160000140 | S.DIODE      | DAP222 TL             |
| D14      | 1160000140 | S.DIODE      | DAP222 TL             |
| D15      | 1160000140 | S.DIODE      | DAP222 TL             |
| D16      | 1160000140 | S.DIODE      | DAP222 TL             |
| D17      | 1160000140 | S.DIODE      | DAP222 TL             |
| D18      | 1160000140 | S.DIODE      | DAP222 TL             |
| D19      | 1160000140 | S.DIODE      | DAP222 TL             |
| D20      | 1160000140 | S.DIODE      | DAP222 TL             |
| D21      | 1160000140 | S.DIODE      | DAP222 TL             |
| D22      | 1160000140 | S.DIODE      | DAP222 TL             |
| L1       | 6110001560 | COIL         | LA-236                |
| L2       | 6110001630 | COIL         | LA-246                |
| L3       | 6180000900 | COIL         | LAL 03NA 101K         |
| L4       | 6180000900 | COIL         | LAL 03NA 101K         |
| L5       | 6110002230 | COIL         | LA-215                |
| L6       | 6110002230 | COIL         | LA-215                |
| L7       | 6110002220 | COIL         | LA-214                |
| L8       | 6180000900 | COIL         | LAL 03NA 101K         |
| L9       | 6200003280 | S.COIL       | NL 322522T-101J       |
| L10      | 6140001800 | COIL         | LR-216 (T50-2)        |
| L11      | 6140001800 | COIL         | LR-216 (T50-2)        |
| L12      | 6200003280 | S.COIL       | NL 322522T-101J       |
| L13      | 6200003280 | S.COIL       | NL 322522T-101J       |
| L14      | 6110002900 | COIL         | LA-479                |
| L15      | 6110002890 | COIL         | LA-478                |
| L16      | 6200003280 | S.COIL       | NL 322522T-101J       |
| L17      | 6200003280 | S.COIL       | NL 322522T-101J       |
| L18      | 6140002580 | COIL         | LR-293 (T50-10)       |
| L19      | 6140002580 | COIL         | LR-293 (T50-10)       |
| L20      | 6200003280 | S.COIL       | NL 322522T-101J       |
| L21      | 6200003280 | S.COIL       | NL 322522T-101J       |
| L22      | 6110002920 | COIL         | LA-481                |
| L23      | 6110002910 | COIL         | LA-480                |
| L24      | 6200003280 | S.COIL       | NL 322522T-101J       |
| L25      | 6200003280 | S.COIL       | NL 322522T-101J       |
| L26      | 6140001780 | COIL         | LR-214 (T50-2)        |
| L27      | 6140001790 | COIL         | LR-215 (T50-2)        |
| L28      | 6200003280 | S.COIL       | NL 322522T-101J       |
| L29      | 6200003280 | S.COIL       | NL 322522T-101J       |
| L30      | 6140002570 | COIL         | LR-294 (T50-2)        |
| L31      | 6140002580 | COIL         | LR-295 (T50-2)        |
| L32      | 6200003280 | S.COIL       | NL 322522T-101J       |
| L33      | 6140002800 | COIL         | LR-297 (TR10X5X5 3A6) |
| L34      | 6200003280 | S.COIL       | NL 322522T-101J       |
| L35      | 2040000490 | COIL         | EXC-ELDR25C           |
| L36      | 6200003280 | S.COIL       | NL 322522T-101J       |
| L37      | 6200003280 | S.COIL       | NL 322522T-101J       |
| L39      | 2040000490 | COIL         | EXC-ELDR25C           |

S.=Surface mount

[FILTER UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                         |
|----------|------------|-------------|-------------------------|
| L41      | 2040000490 | COIL        | EXC-ELDR25C             |
| L42      | 2040000490 | COIL        | EXC-ELDR25C             |
| L43      | 2040000490 | COIL        | EXC-ELDR25C             |
| L44      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L45      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L46      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L47      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L48      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L49      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L50      | 8140002560 | COIL        | LR-293 (T50-10)         |
| L51      | 2040000490 | COIL        | EXC-ELDR25C             |
| L54      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L55      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L56      | 8200001830 | S.COIL      | NL 322522T-100J         |
| L57      | 8200003260 | S.COIL      | NL 322522T-101J         |
| L58      | 2040000490 | COIL        | EXC-ELDR25C             |
| L59      | 2040000490 | COIL        | EXC-ELDR25C             |
| L60      | 8200003260 | S.COIL      | NL 322522T-101J         |
| R2       | 7030007190 | S.RESISTOR  | ERJ12YJ220H (22 Ω)      |
| R3       | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R4       | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R5       | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R6       | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R7       | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R8       | 7540000130 | ABSORBER    | 2P-50A-301              |
| R9       | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R10      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R11      | 7010004030 | RESISTOR    | R20J 47 Ω               |
| R13      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R14      | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 kΩ) |
| R15      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R16      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R17      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R18      | 7030003320 | S.RESISTOR  | ERJ3GEYJ 101 V (100 Ω)  |
| R26      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R27      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R28      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R32      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| C1       | 4030007070 | S.CERAMIC   | C1608 CH 1H 330J-T-A    |
| C2       | 4030011540 | S.CERAMIC   | C1608 CH 1H 750J-T-A    |
| C3       | 4030007120 | S.CERAMIC   | C1608 CH 1H 820J-T-A    |
| C4       | 4030007030 | S.CERAMIC   | C1608 CH 1H 150J-T-A    |
| C5       | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A    |
| C6       | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A    |
| C7       | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A    |
| C8       | 4010005730 | CERAMIC     | HM60SJ SL 470J 500V     |
| C9       | 4010005570 | CERAMIC     | HM60SJ SL 080D 500V     |
| C10      | 4010005760 | CERAMIC     | HM60SJ SL 101J 500V     |
| C11      | 4010005630 | CERAMIC     | HM60SJ SL 150J 500V     |
| C12      | 4010005770 | CERAMIC     | HM60SJ SL 820J 500V     |
| C13      | 4010005680 | CERAMIC     | HM60SJ SL 270J 500V     |
| C14      | 4010005700 | CERAMIC     | HM60SJ SL 330J 500V     |
| C15      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A    |
| C16      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A    |
| C17      | 4010005360 | CERAMIC     | HM11SJ SL 301J 500V     |
| C18      | 4010005780 | CERAMIC     | HM60SJ SL 101J 500V     |
| C19      | 4010007590 | CERAMIC     | HM15SJ SL 681J 500V     |
| C20      | 4010005700 | CERAMIC     | HM60SJ SL 330J 500V     |
| C21      | 4010005930 | CERAMIC     | HM11SJ SL 391J 500V     |
| C22      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A    |
| C23      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A    |
| C24      | 4010005700 | CERAMIC     | HM60SJ SL 330J 500V     |
| C25      | 4010005620 | CERAMIC     | HM60SJ SL 120J 500V     |
| C26      | 4010005620 | CERAMIC     | HM74SJ SL 121J 500V     |
| C27      | 4010005720 | CERAMIC     | HM60SJ SL 390J 500V     |
| C28      | 4010005740 | CERAMIC     | HM60SJ SL 560J 500V     |
| C29      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A    |
| C30      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A    |
| C31      | 4010007810 | CERAMIC     | HM95SJ SL 241J 500V     |
| C32      | 4010005780 | CERAMIC     | HM60SJ SL 101J 500V     |
| C33      | 4010005880 | CERAMIC     | HM95SJ SL 271J 500V     |
| C34      | 4010005720 | CERAMIC     | HM60SJ SL 390J 500V     |

[FILTER UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                      |
|----------|------------|-------------|----------------------|
| C35      | 4010005770 | CERAMIC     | HM60SJ SL 820J 500V  |
| C36      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C37      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C38      | 4010005780 | CERAMIC     | HM60SJ SL 101J 500V  |
| C39      | 4010005640 | CERAMIC     | HM60SJ SL 180J 500V  |
| C40      | 4010005870 | CERAMIC     | HM95SJ SL 221J 500V  |
| C41      | 4010005720 | CERAMIC     | HM60SJ SL 390J 500V  |
| C42      | 4010005830 | CERAMIC     | HM74SJ SL 151J 500V  |
| C43      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C44      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C45      | 4010007490 | CERAMIC     | HM15SJ SL 561J 500V  |
| C46      | 4010005870 | CERAMIC     | HM95SJ SL 221J 500V  |
| C47      | 4010007590 | CERAMIC     | HM15SJ SL 681J 500V  |
| C48      | 4010005750 | CERAMIC     | HM60SJ SL 680J 500V  |
| C49      | 4010007490 | CERAMIC     | HM15SJ SL 561J 500V  |
| C50      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C51      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C52      | 4010007500 | CERAMIC     | HM15SJ SL 751J 500V  |
| C53      | 4010006410 | CERAMIC     | HM13SJ SL 471J 500V  |
| C54      | 4010007500 | CERAMIC     | HM15SJ SL 751J 500V  |
| C55      | 4010005820 | CERAMIC     | HM74SJ SL 121J 500V  |
| C56      | 4010007500 | CERAMIC     | HM15SJ SL 751J 500V  |
| C57      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C58      | 4610002050 | S.TRIMMER   | ECR-JC010 A12W       |
| C59      | 4030007180 | S.CERAMIC   | C1608 CH 1H 181J-T-A |
| C62      | 4030006830 | S.CERAMIC   | C1608 SL 1H 331J-T-A |
| C63      | 4030006830 | S.CERAMIC   | C1608 SL 1H 331J-T-A |
| C64      | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A |
| C65      | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-T-A |
| C66      | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-T-A |
| C67      | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-T-A |
| C68      | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-T-A |
| C69      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C70      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C71      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C72      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C73      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C74      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C75      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C76      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C78      | 4010005850 | CERAMIC     | HM95SJ SL 181J 500V  |
| C79      | 4010005860 | CERAMIC     | HM95SJ SL 201J 500V  |
| C80      | 4010005390 | CERAMIC     | HM15SJ SL 621J 500V  |
| C81      | 4010006410 | CERAMIC     | HM13SJ SL 471J 500V  |
| C82      | 4010007500 | CERAMIC     | HM15SJ SL 751J 500V  |
| C84      | 4010007490 | CERAMIC     | HM15SJ SL 561J 500V  |
| C86      | 4010005700 | CERAMIC     | HM60SJ SL 330J 500V  |
| C87      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C88      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C89      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C90      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C91      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C92      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C93      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C94      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C95      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C96      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C97      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C98      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C99      | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C100     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C101     | 4030006880 | S.CERAMIC   | C1608 JB 1H 102K-T-A |
| C102     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C103     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C104     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C105     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C110     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C111     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C112     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C113     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C114     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C115     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C116     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C117     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C118     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C119     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |
| C120     | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-T-A |

S.=Surface mount

[FILTER UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                          |
|----------|------------|-------------|--------------------------|
| C121     | 4030008880 | S.CERAMIC   | C1808 JB 1H 472K-T-A     |
| C122     | 4030008880 | S.CERAMIC   | C1808 JB 1H 472K-T-A     |
| C123     | 4030009110 | S.CERAMIC   | C3216 JB 1C 474K-T-A     |
| C124     | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A    |
| C125     | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A    |
| C126     | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A    |
| C127     | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A    |
| C128     | 4030008880 | S.CERAMIC   | C1808 JB 1H 472K-T-A     |
| C131     | 4010005370 | CERAMIC     | HM11SJ SL 331J 500V      |
| C132     | 4010005580 | CERAMIC     | HM80SJ SL 080D 500V      |
| C133     | 4030010070 | S.CERAMIC   | C1808 X7S 1C 104K-T-A    |
| C134     | 4010005820 | CERAMIC     | HM74SJ SL 121J 500V      |
| C135     | 4010005820 | CERAMIC     | HM74SJ SL 121J 500V      |
| C136     | 4030001420 | S.CERAMIC   | GR44 Y5V 684Z            |
| C137     | 4010005730 | CERAMIC     | HM80SJ SL 470J 500V      |
| C138     | 4010005730 | CERAMIC     | HM80SJ SL 470J 500V      |
| RL1      | 6330000720 | RELAY       | DS1-M-DC12V (AG2013)     |
| RL2      | 6330000720 | RELAY       | DS1-M-DC12V (AG2013)     |
| RL3      | 6330000720 | RELAY       | DS1-M-DC12V (AG2013)     |
| RL4      | 6330001320 | RELAY       | AHY103                   |
| RL5      | 6330001320 | RELAY       | AHY103                   |
| RL6      | 6330001320 | RELAY       | AHY103                   |
| RL7      | 6330001320 | RELAY       | AHY103                   |
| RL8      | 6330001320 | RELAY       | AHY103                   |
| RL9      | 6330001320 | RELAY       | AHY103                   |
| RL10     | 6330001320 | RELAY       | AHY103                   |
| RL11     | 6330001320 | RELAY       | AHY103                   |
| RL12     | 6330001320 | RELAY       | AHY103                   |
| RL13     | 6330001320 | RELAY       | AHY103                   |
| RL14     | 6330001320 | RELAY       | AHY103                   |
| RL15     | 6330001320 | RELAY       | AHY103                   |
| J4       | 6450001490 | CONNECTOR   | HLJ7001-01-3010          |
| J5       | 6450001640 | CONNECTOR   | TCS5044-01-4111          |
| J7       | 6450001650 | CONNECTOR   | HSJ0836-01-500           |
| J8       | 6450001660 | CONNECTOR   | EX345GLB                 |
| J9       | 6510019160 | S.CONNECTOR | 52810-2090               |
| J11      | 6510016170 | CONNECTOR   | 52018-8835               |
| J12      | 6510019140 | S.CONNECTOR | 52810-1090               |
| J13      | 6510003250 | CONNECTOR   | TMP-J01X-A2              |
| W1       | 7120000010 | JUMPER      | JPW 02A                  |
| W8       | 7030003860 | S.JUMPER    | ERJ3GE JPW V             |
| W9       | 7030003860 | S.JUMPER    | ERJ3GE JPW V             |
| W10      | 7030003860 | S.JUMPER    | ERJ3GE JPW V             |
| W11      | 7030003860 | S.JUMPER    | ERJ3GE JPW V             |
| W12      | 7030003860 | S.JUMPER    | ERJ3GE JPW V             |
| W13      | 7030003860 | S.JUMPER    | ERJ3GE JPW V             |
| W14      | 7030003860 | S.JUMPER    | ERJ3GE JPW V             |
| W15      | 7030003860 | S.JUMPER    | ERJ3GE JPW V             |
| W16      | 7030003860 | S.JUMPER    | ERJ3GE JPW V             |
| W17      | 7030003860 | S.JUMPER    | ERJ3GE JPW V             |
| WS1      | 8970022150 | CABLE       | 1691 1.5D COAXIAL (2)/FI |
| WS2      | 8600034510 | CABLE       | 1691 P03-J10FI           |
| EP1      | 0910045636 | PCB         | B 4563F                  |

[FRONT PARTS]

| REF. NO. | ORDER NO.  | DESCRIPTION |                     |
|----------|------------|-------------|---------------------|
| S1       | 2250000290 | ENCODER     | SW-159 (EC24B50B)   |
| W1       | 8900006040 | CABLE       | OPC-593 (N:13 L:50) |
| W2       | 8900006250 | CABLE       | OPC-610             |

[CHASSIS PARTS]

| REF. NO. | ORDER NO.  | DESCRIPTION |                      |
|----------|------------|-------------|----------------------|
| MF1      | 2710000580 | FAN         | FBA06T12HF           |
| J3       | 6510000370 | CONNECTOR   | MR-DS                |
| J4       | 6510000370 | CONNECTOR   | MR-DS                |
| W1       | 8900006050 | CABLE       | OPC-584 (N:30 L:100) |
| W2       | 8900006060 | CABLE       | OPC-595 (N:20 L:150) |
| W3       | 8900006150 | CABLE       | OPC-602 (N:10 L:150) |
| WS1      | 8600034603 | CABLE       | 1691 P03CH-3         |
| WS2      | 8600034440 | CABLE       | 1691 P01-J02CH       |
| WS3      | 8970022084 | CABLE       | 1691 1.5D COAXIAL-4  |
| (2)/CH   |            |             |                      |
| SP1      | 2510000670 | SPEAKER     | VS-50-0827           |
| EP1      | 8930021010 | PLUG        | DOMED PLUG DP-500    |
| EP2      | 0910045921 | FPC         | B 4598A              |
| EP8      | 9016910500 | TUBE        |                      |

S.=Surface mount

## 5-2 AT-180

### [TUNER UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                      |
|----------|------------|-------------|----------------------|
| IC1      | 1120000970 | IC          | M54582P              |
| IC2      | 1120000970 | IC          | M54582P              |
| L1       | 8110003010 | COIL        | LA-488               |
| L2       | 8110003020 | COIL        | LA-489               |
| L3       | 8110003020 | COIL        | LA-489               |
| L4       | 8110003030 | COIL        | LA-490               |
| L5       | 8110003020 | COIL        | LA-489               |
| L6       | 8110003030 | COIL        | LA-490               |
| L7       | 8140002700 | COIL        | LR-307 (T130-2)      |
| L8       | 8140002690 | COIL        | LR-308 (T88-6)       |
| L9       | 8140002690 | COIL        | LR-308 (T88-6)       |
| L10      | 8140002690 | COIL        | LR-308 (T88-6)       |
| L11      | 8140002690 | COIL        | LR-308 (T88-6)       |
| L13      | 2040000490 | COIL        | EXC-ELDR25C          |
| R1       | 7410000170 | ARRAY       | RMX- 8 102K          |
| R2       | 7410000170 | ARRAY       | RMX- 8 102K          |
| C1       | 4620000110 | VARIABLE    | UV35 150P            |
| C2       | 4010004260 | CERAMIC     | DE0907 SL 820J 3KV   |
| C3       | 4010004280 | CERAMIC     | DE1207 SL 151J 3KV   |
| C4       | 4010004250 | CERAMIC     | DE1007 SL 101J 3KV   |
| C5       | 4620000110 | VARIABLE    | UV35 150P            |
| C6       | 4010004250 | CERAMIC     | DE1007 SL 101J 3KV   |
| C7       | 4010004280 | CERAMIC     | DE1207 SL 151J 3KV   |
| C8       | 4010004250 | CERAMIC     | DE1007 SL 101J 3KV   |
| C9       | 4040000150 | BARRIERLAYR | UAT 05X 472K         |
| C10      | 4040000150 | BARRIERLAYR | UAT 05X 472K         |
| C11      | 4040000150 | BARRIERLAYR | UAT 05X 472K         |
| C12      | 4040000150 | BARRIERLAYR | UAT 05X 472K         |
| C13      | 4040000150 | BARRIERLAYR | UAT 05X 472K         |
| C14      | 4040000150 | BARRIERLAYR | UAT 05X 472K         |
| C15      | 4040000150 | BARRIERLAYR | UAT 05X 472K         |
| C16      | 4040000150 | BARRIERLAYR | UAT 05X 472K         |
| C17      | 4040000150 | BARRIERLAYR | UAT 05X 472K         |
| C18      | 4040000150 | BARRIERLAYR | UAT 05X 472K         |
| C19      | 4040000150 | BARRIERLAYR | UAT 05X 472K         |
| C20      | 4040000150 | BARRIERLAYR | UAT 05X 472K         |
| C21      | 4040000150 | BARRIERLAYR | UAT 05X 472K         |
| C22      | 4010000520 | CERAMIC     | DD107-601 B 472K 50V |
| C23      | 4040000150 | BARRIERLAYR | UAT 05X 472K         |
| C24      | 4010004250 | CERAMIC     | DE1007 SL 101J 3KV   |
| C25      | 4530000250 | ARRAY       | B8XC0112-32N         |
| C26      | 4530000250 | ARRAY       | B8XC0112-32N         |
| C27      | 4010005070 | CERAMIC     | DE0707 SL 390J 3KV   |
| C28      | 4010005070 | CERAMIC     | DE0707 SL 390J 3KV   |
| C29      | 4010004250 | CERAMIC     | DE1007 SL 101J 3KV   |
| C30      | 4010000500 | CERAMIC     | DD104 B 102K 50V     |
| RL1      | 8330001110 | RELAY       | NY-12W-K             |
| RL2      | 8330001110 | RELAY       | NY-12W-K             |
| RL3      | 8330001110 | RELAY       | NY-12W-K             |
| RL4      | 8330001110 | RELAY       | NY-12W-K             |
| RL5      | 8330001110 | RELAY       | NY-12W-K             |
| RL6      | 8330001110 | RELAY       | NY-12W-K             |
| RL7      | 8330001110 | RELAY       | NY-12W-K             |
| RL8      | 8330001110 | RELAY       | NY-12W-K             |
| RL9      | 8330001110 | RELAY       | NY-12W-K             |
| RL10     | 8330001110 | RELAY       | NY-12W-K             |
| RL11     | 8330001110 | RELAY       | NY-12W-K             |
| RL12     | 8330001110 | RELAY       | NY-12W-K             |
| RL13     | 8330001110 | RELAY       | NY-12W-K             |
| RL14     | 8330001110 | RELAY       | NY-12W-K             |
| RL15     | 8330001110 | RELAY       | NY-12W-K             |
| J5       | 6510003100 | CONNECTOR   | RT01T-1.3B           |
| J6       | 6510003100 | CONNECTOR   | RT01T-1.3B           |

### [TUNER UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                            |
|----------|------------|-------------|----------------------------|
| WS1      | 8970022230 | CABLE       | 1732 1.5D Coaxial (2)/TU   |
| WS2      | 8600034870 | CABLE       | 1732 P01 *J01TU            |
| WS3      | 8600034880 | CABLE       | 1732 P02 *J02TU            |
| EP1      | 0910046781 | PCB         | B 4739A                    |
| MP1      | 8930030100 | ANGLE       | 1414 ANGLE                 |
| MP2      | 8810003160 | SCREW       | Set screw A M3 X 6 [2 pcs] |
| MP3      | 8810003160 | SCREW       | Set screw A M3 X 6 [4 pcs] |

### [CTRL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                    |
|----------|------------|--------------|--------------------|
| IC1      | 1110000980 | S.IC         | NJM4558M(T1)       |
| IC2      | 1110001850 | IC           | MC10116 L          |
| IC3      | 1110001860 | IC           | MC10125 L          |
| IC4      | 1120002251 | S.IC         | TC74ACT32F(TP1)    |
| IC5      | 1120002241 | S.IC         | TC74AC112F(TP1)    |
| IC6      | 1110000980 | S.IC         | NJM4558M(T1)       |
| IC7      | 1180001070 | S.IC         | TA7805F(TE16L)     |
| IC8      | 1180001140 | S.IC         | S-8437AF-ZA-T1     |
| IC9      | 1180000110 | S.IC         | TD82164AF(TP1)     |
| IC10     | 1180000110 | S.IC         | TD82164AF(TP1)     |
| IC11     | 1140003610 | S.IC         | X24C04S8-2.7       |
| IC12     | 1140004120 | S.IC         | M38022M2-138FP     |
| IC13     | 1110001550 | S.IC         | S-8054ALB-LM-T1    |
| IC14     | 1130003920 | S.IC         | TC4S89F (TE85R)    |
| IC16     | 1130003920 | S.IC         | TC4S89F (TE85R)    |
| IC17     | 1180000040 | IC           | TA78L009AP         |
| IC18     | 1110002690 | S.IC         | NJM2903M-T1        |
| Q1       | 1580000040 | FET          | 2SK30ATM-Y         |
| Q2       | 1520000530 | S.TRANSISTOR | 2SB1119S-TD        |
| Q3       | 1590001220 | S.TRANSISTOR | RN1302 (TE85R)     |
| Q8       | 1530002690 | S.TRANSISTOR | 2SC4116-GR (TE85R) |
| Q9       | 1530002690 | S.TRANSISTOR | 2SC4116-GR (TE85R) |
| Q10      | 1510000780 | S.TRANSISTOR | 2SA1586-Y (TE85R)  |
| Q11      | 1590001220 | S.TRANSISTOR | RN1302 (TE85R)     |
| Q12      | 1510000780 | S.TRANSISTOR | 2SA1586-Y (TE85R)  |
| Q15      | 1530002690 | S.TRANSISTOR | 2SC4116-GR (TE85R) |
| D1       | 1790000070 | DIODE        | 1SS237             |
| D2       | 1790000070 | DIODE        | 1SS237             |
| D3       | 1710000580 | DIODE        | 1SS265             |
| D4       | 1710000580 | DIODE        | 1SS265             |
| D5       | 1710000580 | DIODE        | 1SS265             |
| D6       | 1710000580 | DIODE        | 1SS265             |
| D7       | 1750000220 | S.DIODE      | DA113W T107        |
| D8       | 1750000220 | S.DIODE      | DA113W T107        |
| D9       | 1790000240 | DIODE        | 1SS99              |
| D10      | 1790000240 | DIODE        | 1SS99              |
| D11      | 1790000070 | DIODE        | 1SS237             |
| D12      | 1790000070 | DIODE        | 1SS237             |
| D13      | 1750000220 | S.DIODE      | DA113W T107        |
| D14      | 1750000220 | S.DIODE      | DA113W T107        |
| D20      | 1710000550 | DIODE        | 1S954              |
| D21      | 1790001130 | S.DIODE      | D2FS4-4063         |
| D24      | 1750000220 | S.DIODE      | DA113W T107        |
| D25      | 1730000410 | S.ZENER      | RD5.1M-T2B2        |
| D26      | 1730000410 | S.ZENER      | RD5.1M-T2B2        |
| D29      | 1750000120 | S.DIODE      | DWA010-TE          |
| D30      | 1750000120 | S.DIODE      | DWA010-TE          |
| D31      | 1750000200 | S.DIODE      | 1SS319 (TE85R)     |
| D32      | 1790000070 | DIODE        | 1SS237             |

S.=Surface mount

[MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                         |
|----------|------------|-------------|-------------------------|
| X1       | 6050009080 | XTAL        | AT-49 (6.144MHz)        |
| L1       | 6180000450 | COIL        | RFC L6 222K             |
| L2       | 6140000100 | COIL        | LR-22A                  |
| L3       | 6200003260 | S.COIL      | NL 322522T-101J         |
| L4       | 6200003260 | S.COIL      | NL 322522T-101J         |
| L5       | 6200001830 | S.COIL      | NL 322522T-100J         |
| L6       | 6180000960 | COIL        | LAL 03NA 102K           |
| L7       | 6140002660 | COIL        | LR-299                  |
| L8       | 6180000960 | COIL        | LAL 03NA 102K           |
| L9       | 6200003260 | S.COIL      | NL 322522T-101J         |
| L10      | 6140002650 | COIL        | LR-298                  |
| L11      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L12      | 6200003280 | S.COIL      | NL 322522T-101J         |
| L13      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L16      | 6180000990 | COIL        | LAL 04NA 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           |
| L23      | 6180000900 | COIL        | LAL 03NA 101K           |
| L24      | 6180000900 | COIL        | LAL 03NA 101K           |
| L25      | 6180000900 | COIL        | LAL 03NA 101K           |
| L26      | 6180000900 | COIL        | LAL 03NA 101K           |
| L27      | 6910000670 | COIL        | BL01RN1-A62-001         |
| L28      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L29      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L30      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L31      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L32      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L33      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L34      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L35      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L36      | 6200003280 | S.COIL      | NL 322522T-101J         |
| L37      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L38      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L39      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L40      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L41      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L42      | 6180000450 | COIL        | RFC L6 222K             |
| L43      | 6200003260 | S.COIL      | NL 322522T-101J         |
| L44      | 6190000220 | COIL        | S0971136-101K           |
| L45      | 6180000990 | COIL        | LAL 04NA 101K           |
| L46      | 6180000990 | COIL        | LAL 04NA 101K           |
| L47      | 6140002660 | COIL        | LR-299                  |
| L48      | 6910000670 | COIL        | BL01RN1-A62-001         |
| L49      | 6910000670 | COIL        | BL01RN1-A62-001         |
| L50      | 6200003260 | S.COIL      | NL 322522T-101J         |
| R2       | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R3       | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R4       | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ) |
| R5       | 7030003670 | S.RESISTOR  | ERJ3GEYJ 823 V (82 kΩ)  |
| R7       | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ) |
| R8       | 7030003670 | S.RESISTOR  | ERJ3GEYJ 823 V (82 kΩ)  |
| R9       | 7030003730 | S.RESISTOR  | ERJ3GEYJ 274 V (270 kΩ) |
| R10      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R11      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R12      | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ) |
| R13      | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ) |
| R14      | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ) |
| R16      | 7030003430 | S.RESISTOR  | ERJ3GEYJ 821 V (820 Ω)  |
| R17      | 7030000080 | S.RESISTOR  | MCR10EZJH 3.3 Ω (3R3)   |
| R19      | 7030003330 | S.RESISTOR  | ERJ3GEYJ 121 V (120 Ω)  |
| R20      | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)   |
| R22      | 7030003410 | S.RESISTOR  | ERJ3GEYJ 561 V (560 Ω)  |
| R23      | 7030001070 | S.RESISTOR  | MCR50JZHJ 33 Ω (330)    |
| R24      | 7030000080 | S.RESISTOR  | MCR10EZJH 3.3 Ω (3R3)   |
| R25      | 7030003330 | S.RESISTOR  | ERJ3GEYJ 121 V (120 Ω)  |
| R26      | 7030003280 | S.RESISTOR  | ERJ3GEYJ 470 V (47 Ω)   |
| R27      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R28      | 7030003360 | S.RESISTOR  | ERJ3GEYJ 221 V (220 Ω)  |
| R30      | 7030001100 | S.RESISTOR  | MCR50JZHJ 56 Ω (560)    |
| R31      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |

[MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION |                         |
|----------|------------|-------------|-------------------------|
| R32      | 7030003800 | S.RESISTOR  | ERJ3GEYJ 105 V (1 MΩ)   |
| R33      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R34      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R35      | 7030003520 | S.RESISTOR  | ERJ3GEYJ 472 V (4.7 kΩ) |
| R36      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R37      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R38      | 7030003670 | S.RESISTOR  | ERJ3GEYJ 823 V (82 kΩ)  |
| R39      | 7030003480 | S.RESISTOR  | ERJ3GEYJ 222 V (2.2 kΩ) |
| R40      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R41      | 7030003780 | S.RESISTOR  | ERJ3GEYJ 684 V (680 kΩ) |
| R42      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R43      | 7030003590 | S.RESISTOR  | ERJ3GEYJ 183 V (18 kΩ)  |
| R44      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R45      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R46      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R47      | 7030003780 | S.RESISTOR  | ERJ3GEYJ 684 V (680 kΩ) |
| R48      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R50      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R51      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R57      | 7070000510 | RESISTOR    | CRH100X R-02J 18 Ω      |
| R62      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R63      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R64      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R65      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R66      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R67      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R68      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R69      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R70      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R71      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R72      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R73      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R74      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R75      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R76      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R77      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R78      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R79      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R80      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R81      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R82      | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ) |
| R83      | 7030003720 | S.RESISTOR  | ERJ3GEYJ 224 V (220 kΩ) |
| R84      | 7030003780 | S.RESISTOR  | ERJ3GEYJ 474 V (470 kΩ) |
| R85      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R86      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R87      | 7030003410 | S.RESISTOR  | ERJ3GEYJ 561 V (560 Ω)  |
| R88      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R89      | 7030003410 | S.RESISTOR  | ERJ3GEYJ 561 V (560 Ω)  |
| R90      | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R92      | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R93      | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R94      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R95      | 7030003650 | S.RESISTOR  | ERJ3GEYJ 563 V (56 kΩ)  |
| R96      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R97      | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R100     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R101     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R102     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R103     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R104     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R105     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R106     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R107     | 7030003640 | S.RESISTOR  | ERJ3GEYJ 473 V (47 kΩ)  |
| R108     | 7030003500 | S.RESISTOR  | ERJ3GEYJ 332 V (3.3 kΩ) |
| R109     | 7030003580 | S.RESISTOR  | ERJ3GEYJ 153 V (15 kΩ)  |
| R110     | 7030003570 | S.RESISTOR  | ERJ3GEYJ 123 V (12 kΩ)  |
| R111     | 7540000100 | ABSORBER    | SRVH-350L               |
| R112     | 7030003410 | S.RESISTOR  | ERJ3GEYJ 561 V (560 Ω)  |
| R113     | 7030003680 | S.RESISTOR  | ERJ3GEYJ 104 V (100 kΩ) |
| R116     | 7030001090 | S.RESISTOR  | MCR50JZHJ 47 Ω (470)    |
| R117     | 7030001090 | S.RESISTOR  | MCR50JZHJ 47 Ω (470)    |
| R118     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R119     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R120     | 7030003440 | S.RESISTOR  | ERJ3GEYJ 102 V (1 kΩ)   |
| R121     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |
| R122     | 7030003560 | S.RESISTOR  | ERJ3GEYJ 103 V (10 kΩ)  |

S.=Surface mount

## [CTRL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                         |
|----------|------------|--------------|-------------------------|
| R123     | 7030001070 | S.RESISTOR   | MCR50JZHJ 33 Ω (330)    |
| R124     | 7030003690 | S.RESISTOR   | ERJ3GEYJ 124 V (120 kΩ) |
| R127     | 7030003720 | S.RESISTOR   | ERJ3GEYJ 224 V (220 kΩ) |
| R129     | 7030003720 | S.RESISTOR   | ERJ3GEYJ 224 V (220 kΩ) |
| R129     | 7030003760 | S.RESISTOR   | ERJ3GEYJ 474 V (470 kΩ) |
| R130     | 7030003670 | S.RESISTOR   | ERJ3GEYJ 823 V (82 kΩ)  |
| R130     | 7030003690 | S.RESISTOR   | ERJ3GEYJ 124 V (120 kΩ) |
| R131     | 7030003440 | S.RESISTOR   | ERJ3GEYJ 102 V (1 kΩ)   |
| R132     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R133     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R134     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R135     | 7030003560 | S.RESISTOR   | ERJ3GEYJ 103 V (10 kΩ)  |
| R136     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R137     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R138     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R139     | 7030003680 | S.RESISTOR   | ERJ3GEYJ 104 V (100 kΩ) |
| R140     | 7030003640 | S.RESISTOR   | ERJ3GEYJ 473 V (47 kΩ)  |
| C1       | 4030008560 | S.CERAMIC    | C1608 CH 1H 300J-T-A    |
| C2       | 4030006880 | S.CERAMIC    | C1608 JB 1H 102K-T-A    |
| C3       | 4010005540 | CERAMIC      | HM60SJ SL 030C 500V     |
| C4       | 4030006880 | S.CERAMIC    | C1608 JB 1H 102K-T-A    |
| C5       | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A    |
| C6       | 4510003790 | ELECTROLITIC | 16 MV 10 SW             |
| C8       | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A    |
| C9       | 4510003790 | ELECTROLITIC | 16 MV 10 SW             |
| C11      | 4010005530 | CERAMIC      | HM60SJ SL 020C 500V     |
| C12      | 4030007040 | S.CERAMIC    | C1608 CH 1H 180J-T-A    |
| C13      | 4030007040 | S.CERAMIC    | C1608 CH 1H 180J-T-A    |
| C14      | 4030007080 | S.CERAMIC    | C1608 CH 1H 390J-T-A    |
| C15      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A    |
| C16      | 4510003790 | ELECTROLITIC | 16 MV 10 SW             |
| C18      | 4030007170 | S.CERAMIC    | C1608 CH 1H 221J-T-A    |
| C19      | 4030007080 | S.CERAMIC    | C1608 CH 1H 390J-T-A    |
| C20      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C21      | 4030007170 | S.CERAMIC    | C1608 CH 1H 221J-T-A    |
| C22      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C24      | 4510003790 | ELECTROLITIC | 16 MV 10 SW             |
| C25      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A    |
| C26      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A    |
| C27      | 4030007170 | S.CERAMIC    | C1608 CH 1H 221J-T-A    |
| C28      | 4030006850 | S.CERAMIC    | C1608 JB 1H 471K-T-A    |
| C29      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A    |
| C30      | 4010005540 | CERAMIC      | HM60SJ SL 030C 500V     |
| C31      | 4030007130 | S.CERAMIC    | C1608 CH 1H 101J-T-A    |
| C32      | 4030007130 | S.CERAMIC    | C1608 CH 1H 101J-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 102K-T-A    |
| C36      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A    |
| C37      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A    |
| C38      | 4030007170 | S.CERAMIC    | C1608 CH 1H 221J-T-A    |
| C39      | 4030006850 | S.CERAMIC    | C1608 JB 1H 471K-T-A    |
| C40      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A    |
| C41      | 4510003790 | ELECTROLITIC | 16 MV 10 SW             |
| C43      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A    |
| C44      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A    |
| C45      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A    |
| C51      | 4510004590 | ELECTROLITIC | 16 MV 470 HC            |
| C52      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A   |
| C53      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A   |
| C54      | 4510003790 | ELECTROLITIC | 16 MV 10 SW             |
| C55      | 4510004590 | ELECTROLITIC | 16 MV 470 HC            |
| C56      | 4510005000 | ELECTROLITIC | 16 MV 220 HC            |
| C57      | 4510003910 | ELECTROLITIC | 16 MV 47 HW             |
| C73      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A   |
| C74      | 4030010070 | S.CERAMIC    | C1608 X7S 1C 104K-T-A   |
| C75      | 4030009990 | S.CERAMIC    | C1608 CH 1H 200J-T-A    |
| C76      | 4030009990 | S.CERAMIC    | C1608 CH 1H 200J-T-A    |
| C77      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A    |
| C78      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A    |
| C79      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-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    |

## [CTRL UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION  |                          |
|----------|------------|--------------|--------------------------|
| C83      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C84      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C85      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C86      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C87      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C88      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C89      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C90      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A     |
| C91      | 4030006880 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C92      | 4030006880 | S.CERAMIC    | C1608 JB 1H 102K-T-A     |
| C93      | 4550002860 | S.TANTALUM   | TESVA 1V 224K1-8L        |
| C94      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A     |
| C95      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C96      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C97      | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C98      | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A     |
| C101     | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C102     | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C103     | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C106     | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C108     | 4030006900 | S.CERAMIC    | C1608 JB 1E 103K-T-A     |
| C109     | 4030006900 | S.CERAMIC    | C1608 JB 1E 103K-T-A     |
| C110     | 4030007070 | S.CERAMIC    | C1608 CH 1H 330J-T-A     |
| C111     | 4030007100 | S.CERAMIC    | C1608 CH 1H 580J-T-A     |
| C112     | 4030007100 | S.CERAMIC    | C1608 CH 1H 580J-T-A     |
| C113     | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C114     | 4030008920 | S.CERAMIC    | C1608 JB 1C 473K-T-A     |
| C115     | 4510003790 | ELECTROLITIC | 16 MV 10 SW              |
| C120     | 4030006880 | S.CERAMIC    | C1608 JB 1H 102K-T-A     |
| C122     | 4030006880 | S.CERAMIC    | C1608 JB 1H 472K-T-A     |
| RL1      | 6330001090 | RELAY        | FXE-12                   |
| RL2      | 6330001090 | RELAY        | FXE-12                   |
| DS1      | 5040001720 | LED          | TLG221                   |
| S1       | 2220000420 | SWITCH       | ESD-11H120               |
| S2       | 2220000420 | SWITCH       | ESD-11H120               |
| J2       | 6510007020 | CONNECTOR    | TMP-J01X-V6              |
| J4       | 6510007020 | CONNECTOR    | TMP-J01X-V6              |
| J5       | 6510003530 | CONNECTOR    | S05B-EH-S                |
| J6       | 6510003530 | CONNECTOR    | S05B-EH-S                |
| J7       | 6510003530 | CONNECTOR    | S05B-EH-S                |
| J8       | 6510003420 | CONNECTOR    | B06B-EH-S                |
| J9       | 6510003460 | CONNECTOR    | B10B-EH-S                |
| J11      | 6510003080 | CONNECTOR    | RT01T-1.0B               |
| W1       | 7120000010 | JUMPER       | JPW 02A                  |
| W2       | 7120000010 | JUMPER       | JPW 02A                  |
| W3       | 7120000010 | JUMPER       | JPW 02A                  |
| W8       | 7030003660 | S.JUMPER     | ERJ3GE JPW V             |
| W12      | 7120000010 | JUMPER       | JPW 02A                  |
| W13      | 7120000380 | JUMPER       | JPW 01 R-01              |
| W14      | 7120000380 | JUMPER       | JPW 01 R-01              |
| WS1      | 8970022240 | CABLE        | 1732 1.5D Coaxial (2)/CT |
| EP1      | 0910040207 | PCB          | B 3932G                  |
| MP1      | 8510004470 | CASE         | 331 VCO Case             |
| MP2      | 8510008790 | COVER        | VCO Case cover (B) 1414  |
| MP3      | 8930005410 | SHEET        | Insulator A              |

S.=Surface mount



[CON-A BOARD]

| REF. NO. | ORDER NO.  | DESCRIPTION               |
|----------|------------|---------------------------|
| J1       | 6450001670 | CONNECTOR TCS5093-10-4151 |
| J2       | 6510018890 | S.CONNECTOR 52559-1390    |
| EP1      | 0910046642 | PCB B 4658B               |

[CON-B BOARD]

| REF. NO. | ORDER NO.  | DESCRIPTION                        |
|----------|------------|------------------------------------|
| Q1       | 1510000510 | S.TRANSISTOR 2SA1578 T107 R        |
| Q2       | 1540000450 | S.TRANSISTOR 2SD1623-T-TD          |
| Q3       | 1590000680 | S.TRANSISTOR DTC114EU T107         |
| D1       | 1750000270 | S.DIODE 1SS301 (TE85R)             |
| L1       | 2040000490 | COIL EXC-ELDR25C                   |
| L2       | 6200000150 | S.COIL NL 322522T-1R0M             |
| L3       | 6200000150 | S.COIL NL 322522T-1R0M             |
| L4       | 2040000490 | COIL EXC-ELDR25C                   |
| R1       | 7030007510 | S.RESISTOR ERJ12YJ270H (27 Ω)      |
| R2       | 7010003440 | RESISTOR ELR20J 2.2 kΩ             |
| R3       | 7030003410 | S.RESISTOR ERJ3GEYJ 581 V (580 Ω)  |
| R4       | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)   |
| R5       | 7030003530 | S.RESISTOR ERJ3GEYJ 582 V (5.8 kΩ) |
| R6       | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R7       | 7030003780 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| C1       | 4510003910 | ELECTROLITIC 16 MV 47 HW           |
| C2       | 4510003790 | ELECTROLITIC 16 MV 10 SW           |
| C3       | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C4       | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C5       | 4510004990 | ELECTROLITIC 16 MV 100 HC          |
| C8       | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C9       | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C10      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C11      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C12      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C13      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| C14      | 4030006880 | S.CERAMIC C1608 JB 1H 472K-T-A     |
| J3       | 6510018890 | S.CONNECTOR 52559-1390             |
| J4       | 6450000160 | CONNECTOR TCS4470-01-1111          |
| J5       | 6450001670 | CONNECTOR TCS5093-10-4151          |
| J7       | 6510018960 | S.CONNECTOR B2B-PH-SM3-TB          |
| WS1      | 8600034850 | CABLE 1732 P01 *J06CO-B            |
| EP2      | 0910046652 | PCB B 4657B                        |

[CON-C BOARD]

| REF. NO. | ORDER NO.  | DESCRIPTION                      |
|----------|------------|----------------------------------|
| J8       | 6510007020 | CONNECTOR TMP-J01X-V6            |
| J9       | 6510007020 | CONNECTOR TMP-J01X-V6            |
| W3       | 7120000010 | JUMPER JPW 02A                   |
| WS1      | 8970022220 | CABLE 1732 1.5D Coaxial (1)/CO-C |
| EP3      | 0910046662 | PCB B 4658B                      |

[CHASSIS PARTS]

| REF. NO. | ORDER NO.  | DESCRIPTION                        |
|----------|------------|------------------------------------|
| MF1      | 2710000580 | FAN FBA06T12HF                     |
| MF2      | 2710000460 | MOTOR MP28GA                       |
| MF3      | 2710000460 | MOTOR MP28GA                       |
| J10      | 6510000370 | CONNECTOR MR-DS                    |
| J11      | 6510000370 | CONNECTOR MR-DS                    |
| P2       | 6510018980 | CONNECTOR PHR-2                    |
| W9       | 8900006040 | CABLE OPC-593 (N:13 L:50)          |
| MP1      | 8210012880 | PANEL 1732 Front panel             |
| MP2      | 8010016390 | CHASSIS 1732 Chassis               |
| MP3      | 8110005660 | COVER 1732 Cover                   |
| MP4      | 8930038260 | ANGLE 1732 Angle                   |
| MP5      | 8930037010 | RUBBER 1691 Fan rubber             |
| MP7      | 8930005230 | STAND Rubber foot (D) [2 pcs]      |
| MP8      | 8930005790 | STAND Foot (A)                     |
| MP9      | 8930005800 | STAND Foot (B)                     |
| MP10     | 8010001490 | STAND Stand (D)                    |
| MP11     | 8930037000 | PLATE 1691 Grounding plate [2 pcs] |
| MP12     | 8810008660 | SCREW PH BT M3 X 8 NI-ZU [2 pcs]   |
| MP13     | 8810009030 | SCREW RFH M3 X 8 ZK [2 pcs]        |
| MP14     | 8810009030 | SCREW RFH M3 X 8 ZK [2 pcs]        |
| MP15     | 8810009030 | SCREW RFH M3 X 8 ZK                |
| MP16     | 8810009030 | SCREW RFH M3 X 8 ZK [4 pcs]        |
| MP17     | 8810008450 | SCREW BiH M4 X 8 ZK [4 pcs]        |
| MP18     | 8820000530 | SCREW Flange bolt M4 X 8 NI        |
| MP19     | 8850000140 | WASHER Flat washer M 4 NI BS       |
| MP20     | 8850001560 | WASHER Int. tooth washer M 4       |
| MP21     | 8810008660 | SCREW PH BT M3 X 8 NI-ZU [2 pcs]   |
| MP22     | 8810008660 | SCREW PH BT M3 X 8 NI-ZU [2 pcs]   |
| MP23     | 8810008660 | SCREW PH BT M3 X 8 NI-ZU           |
| MP24     | 8810008660 | SCREW PH BT M3 X 8 NI-ZU [2 pcs]   |
| MP25     | 8810008660 | SCREW PH BT M3 X 8 NI-ZU [2 pcs]   |
| MP26     | 8930038280 | SHEET 1732 Sheet                   |
| MP27     | 8930038290 | SHEET Insulator EA                 |
| MP29     | 8010015141 | CHASSIS 1414 U-Chassis-1           |
| MP30     | 8010015151 | CHASSIS 1414 L-Chassis-1           |
| MP31     | 8510008592 | PLATE 1414 Shield plate-2          |
| MP32     | 8930030111 | PLATE 1414 Plate-1 [2 pcs]         |
| MP33     | 8820000811 | SCREW 1414 Screw-1 [4 pcs]         |
| MP34     | 8810008630 | SCREW PH BT M3 X 8 NI-ZU [2 pcs]   |
| MP35     | 8810008630 | SCREW PH BT M3 X 8 NI-ZU [2 pcs]   |
| MP36     | 8810008630 | SCREW PH BT M3 X 8 NI-ZU [3 pcs]   |
| MP37     | 8810008630 | SCREW PH BT M3 X 8 NI-ZU [5 pcs]   |
| MP38     | 8810007840 | SCREW RFH B1 M3 X 8 ZK [4 pcs]     |
| MP39     | 8810007840 | SCREW RFH B1 M3 X 8 ZK [3 pcs]     |
| MP40     | 8810007840 | SCREW RFH B1 M3 X 8 ZK             |
| MP41     | 8810007840 | SCREW RFH B1 M3 X 8 ZK             |
| MP42     | 8950003200 | Coupling UJ6-5 [2 pcs]             |
| MP43     | 8510008750 | PLATE 1414 A-Shield plate          |
| MP44     | 8930038760 | SHEET Insulating seet (H)          |
| MP45     | 8310037080 | PLATE 1732 Name plate              |

[UNPACKING]

| REF. NO. | ORDER NO.  | DESCRIPTION   |
|----------|------------|---------------|
| W1       | 8900001160 | CABLE OPC-125 |
| W2       | 8900006120 | CABLE OPC-597 |

S.=Surface mount

# SECTION 6

# MECHANICAL PARTS AND DISASSEMBLY

## [CHASSIS PARTS]

| REF. NO. | ORDER NO.  | DESCRIPTION                                | QTY. |
|----------|------------|--|------|
| J2       | 6510001920 | Connector 1490R [TUNER]                    | 1    |
| J3       | 6510000370 | Connector MR-DS [ANT1]                     | 1    |
| J4       | 6510000370 | Connector MR-DS [ANT2]                     | 1    |
| W1       | 8900006050 | Flat cable OPC-594 (N: 30, L: 100)         | 1    |
| W2       | 8900006060 | Flat cable OPC-595 (N: 20, L: 150)         | 1    |
| W3       | 8900006150 | Flat cable OPC-602 (N: 10, L: 150)         | 1    |
| EP1      | 8930021010 | Domed plug DP-500                          | 1    |
| EP2      | 0910045921 | Flexible PCB B-4598A                       | 1    |
| MF1      | 2710000580 | Fan FBA06T12HF                             | 1    |
| MP1      | 8410002022 | 1691 heatsink -2                           | 1    |
| MP2      | 8110005600 | 1691 upper cover                           | 1    |
| MP3      | 8110005610 | 1691 lower cover                           | 1    |
| MP4      | 8010001490 | Stand (D)                                  | 1    |
| MP5      | 8930005790 | Plastic foot (A)                           | 1    |
| MP6      | 8930005800 | Plastic foot (B)                           | 1    |
| MP7      | 8930037010 | 1691 fan rubber                            | 1    |
| MP8      | 8820000530 | Flange bolt M4 x 8 NI                      | 1    |
| MP9      | 8930002820 | Rubber foot (D)                            | 2    |
| MP10     | 8930014980 | SP net                                     | 1    |
| MP11     | 8930018520 | Tr. clip (A)                               | 1    |
| MP12     | 8950004180 | 1691 contact base (A)                      | 1    |
| MP13     | 8930036950 | 1691 SP rubber                             | 1    |
| MP14     | 8930036960 | 1691 SP plate                              | 1    |
| MP15     | 8930036980 | 1691 ground spring                         | 1    |
| MP16     | 8930036990 | 1691 fan guard                             | 1    |
| MP17     | 8930037000 | 1691 ground plate                          | 1    |
| MP19     | 8810008630 | Screw PH BT M3 x 6 NI-ZU                   | 5    |
| MP20     | 8810007410 | Screw PH M3 x 6 NI                         | 2    |
| MP21     | 8810008960 | Screw OH M2.6 x 5 ZK                       | 5    |
| MP22     | 8850000140 | Flat washer M4 NI BS                       | 1    |
| MP23     | 8310036490 | Serial No. label (AU) 706 FCC (USA)        | 1    |
|          | 8310036500 | Serial No. label (AU) 706 (other versions) | 1    |
| MP24     | 8810008990 | Screw PH BT M2 x 10 ZK                     | 1    |
| MP25     | 8850001560 | Star washer M4                             | 1    |
| MP26     | 8810008630 | Screw PH BT M3 x 6 NI-ZU                   | 4    |
| MP27     | 8810008630 | Screw PH BT M3 x 6 NI-ZU                   | 5    |
| MP28     | 8810008630 | Screw PH BT M3 x 6 NI-ZU                   | 5    |
| MP29     | 8810004430 | Screw PH M3 x 6 ZK (for MP9)               | 2    |
| MP30     | 8810004430 | Screw PH M3 x 6 ZK (for MP5)               | 2    |
| MP31     | 8810004430 | Screw PH M3 x 6 ZK (for MP6)               | 2    |
| MP32     | 8810007410 | Screw PH M3 x 6 NI                         | 2    |
| MP33     | 8810003170 | Setscrew A M3 x 8                          | 2    |
| MP34     | 8810009040 | Setscrew H M2.6 x 10 NI                    | 2    |
| MP35     | 8810009040 | Setscrew H M2.6 x 10 NI                    | 2    |
| MP36     | 8810008960 | Screw OH M2.6 x 5 ZK                       | 5    |
| MP37     | 8810003170 | Setscrew A M3 x 8                          | 1    |
| MP38     | 8930038650 | Sheet (BE)                                 | 1    |
| MP39     | 8310037390 | 1691 display label (B)                     | 1    |
| MP40     | 8930038820 | Aluminum sheet V                           | 1    |
| MP41     | 8950000180 | Cable tie -80                              | 2    |
| MP42     | 8310029180 | FCC part 15 label (A) (USA only)           | 1    |
| MP43     | 8930001180 | Ground plate                               | 1    |
| MP44     | 8950000010 | Tape 9510 12 x 50000 mm                    | 1    |
| MP45     | 8950000010 | Tape 9510 12 x 50000 mm                    | 1    |
| MP46     | 8930028840 | Sponge (DF)                                | 1    |
| MP47     | 8930028840 | Sponge (DF)                                | 2    |
| MP48     | 8930028390 | Sheet (AH)                                 | 4    |
| MP49     | 8930039420 | 1691 A-sheet                               | 4    |
| MP50     | 8930037890 | Sheet (BA)                                 | 2    |
| MP51     | 8930039430 | 1691 B-sheet                               | 2    |
| MP52     | 8930039440 | 1691 SP plate sheet                        | 1    |
| MP53     | 8930039450 | 1691 cover sheet                           | 1    |
| MP54     | 8930032450 | 1346 SP-T sponge                           | 1    |
| MP55     | 8930001180 | Ground plate                               | 1    |
| SP1      | 2510000670 | Speaker VS-50-0827                         | 1    |

## [FRONT PARTS]

| REF. NO. | ORDER NO.  | DESCRIPTION                                    | QTY. |
|----------|------------|--|------|
| S1       | 2250000290 | Encoder SW-159 (incl. nut, washer)             | 1    |
| W1       | 8900006040 | Flat cable OPC-593 (N: 13, L: 50)              | 1    |
| W2       | 8900006250 | Cable OPC-610                                  | 1    |
| MP1      | 8210012982 | 1691 front panel (A) -2 (incl. MP4, 5, 17, 18) | 1    |
| MP2      | 8210012580 | 1691 rear panel                                | 1    |
| MP3      | 8930036720 | 1691 8-key                                     | 1    |
| MP4      | 8930036680 | 1691 UP/DOWN key                               | 1    |
| MP5      | 8930036731 | 1691 4-key -1                                  | 1    |
| MP8      | 8930036751 | Spring (Y) -1                                  | 1    |
| MP9      | 8930032340 | 1424 N-spring                                  | 1    |
| MP10     | 8830001010 | Hex nut (A)                                    | 2    |
| MP11     | 8610010000 | Knob N237                                      | 2    |
| MP12     | 8610010010 | Knob N238                                      | 2    |
| MP13     | 8610010021 | Knob N239 base -1                              | 1    |
| MP14     | 8610010030 | Knob N239 cover                                | 1    |
| MP15     | 8610010040 | Knob N239 finger rest                          | 1    |
| MP16     | 8930036690 | 1691 release button                            | 1    |
| MP17     | 8930036700 | 1691 lens                                      | 3    |
| MP18     | 8310036280 | 1691 window plate                              | 1    |
| MP19     | 8310036272 | 1691 brake plate -2                            | 1    |
| MP20     | 8950004190 | 1691 contact base (B)                          | 1    |
| MP21     | 8930036740 | 1691 brake pad                                 | 2    |
| MP22     | 8930037111 | 1691 brake sheet -1                            | 1    |
| MP23     | 8310036583 | 1691 caution label (S) -3                      | 1    |
| MP24     | 8810008990 | Screw PH BT M2 x 10 ZK                         | 2    |
| MP25     | 8930038940 | Sponge (EF)                                    | 1    |
| MP26     | 8830001100 | Nut (for tube) M9 B11-H2                       | 1    |

## [DISPLAY UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION                       | QTY. |
|----------|------------|-----------------------------------|------|
| J2       | 6450001630 | Connector HSJ1406-01-050 [PHONES] | 1    |
| DS4      | 5010000171 | LCD DLC-7973YBGF-1                | 1    |
| DS5      | 5030001290 | LED D2264                         | 1    |
| EP2      | 8930037591 | LCD contact SRCN-1691-ZNN-505-1   | 2    |
| MP1      | 8930036710 | 1691 LCD holder                   | 1    |
| MP3      | 8810009040 | Setscrew H M2.6 x 10 NI           | 1    |
| MP4      | 8830000180 | Nut M2.6 NI BS                    | 1    |
| MP5      | 8930038770 | 1691 front plate                  | 1    |
| MP7      | 8930028380 | Embossed tape (C)                 | 1    |

## [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION             | QTY. |
|----------|------------|-------------------------|------|
| MP1      | 8930014140 | Ground spring (D)       | 1    |
| MP2      | 8930024170 | Ground spring (G)       | 1    |
| MP3      | 8510010150 | 1691 D/A case           | 1    |
| MP4      | 8510010330 | 1691 amp. shield plate  | 1    |
| MP5      | 8510010321 | 1691 connector plate -1 | 1    |
| MP6      | 8930034550 | Insulation sheet DO     | 1    |
| MP8      | 8930020980 | Shield plate            | 2    |
| MP9      | 8930008680 | Insulation sheet AH     | 2    |
| MP10     | 8930024170 | Ground spring (G)       | 1    |

## [HPF BOARD]

| REF. NO. | ORDER NO.  | DESCRIPTION   | QTY. |
|----------|------------|---------------|------|
| MP1      | 8510009180 | 1346 VCO case | 1    |

**[PLL UNIT]**

| REF. NO. | ORDER NO.  | DESCRIPTION           | QTY. |
|----------|------------|-----------------------|------|
| MP1      | 8510010050 | 1691 shield case      | 1    |
| MP2      | 8510010060 | 1691 shield cover     | 1    |
| MP3      | 8510005980 | 724 shield case       | 1    |
| MP4      | 8510005990 | 724 shield case cover | 1    |
| MP5      | 8510005980 | 724 shield case       | 1    |
| MP6      | 8510005990 | 724 shield case cover | 1    |
| MP7      | 8510010050 | 1691 shield case      | 1    |
| MP8      | 8510010060 | 1691 shield cover     | 1    |
| MP9      | 8510005980 | 724 shield case       | 1    |
| MP10     | 8510005990 | 724 shield case cover | 1    |
| MP11     | 8510010070 | 1691 DDS case         | 1    |
| MP12     | 8510003510 | 406 shield case cover | 1    |
| MP13     | 8510005330 | Coil case             | 1    |
| MP14     | 8510010150 | 1691 D/A case         | 1    |
| MP15     | 8810003960 | Setscrew A M2.6 x 5   | 3    |
| MP16     | 8810003960 | Setscrew A M2.6 x 5   | 3    |
| MP17     | 8510010150 | 1691 D/A case         | 1    |
| MP18     | 8930014140 | Ground spring (D)     | 1    |
| MP19     | 8820000900 | 1691 screw            | 1    |
| MP20     | 8930014140 | Ground spring (D)     | 1    |
| MP21     | 8930001160 | Ground spring         | 1    |
| MP22     | 8930028840 | Sponge (DF)           | 1    |

**[PA UNIT]**

| REF. NO. | ORDER NO.  | DESCRIPTION                       | QTY. |
|----------|------------|-----------------------------------|------|
| J8       | 6450000140 | Connector HSJ0807-01-010 [EXT SP] | 1    |
| J10      | 6510003780 | Connector LLR-06 [DC 13.8V]       | 1    |
| MP1      | 8950000180 | Cable tie -80                     | 1    |
| MP3      | 8950000180 | Cable tie -80                     | 1    |
| MP5      | 8860000100 | Ground lug B 2 (M2.6) AG BS       | 1    |
| MP6      | 6910008240 | Clip 59TN4772                     | 1    |
| MP7      | 8860000100 | Ground lug B 2 (M2.6) AG BS       | 1    |

**[FILTER UNIT]**

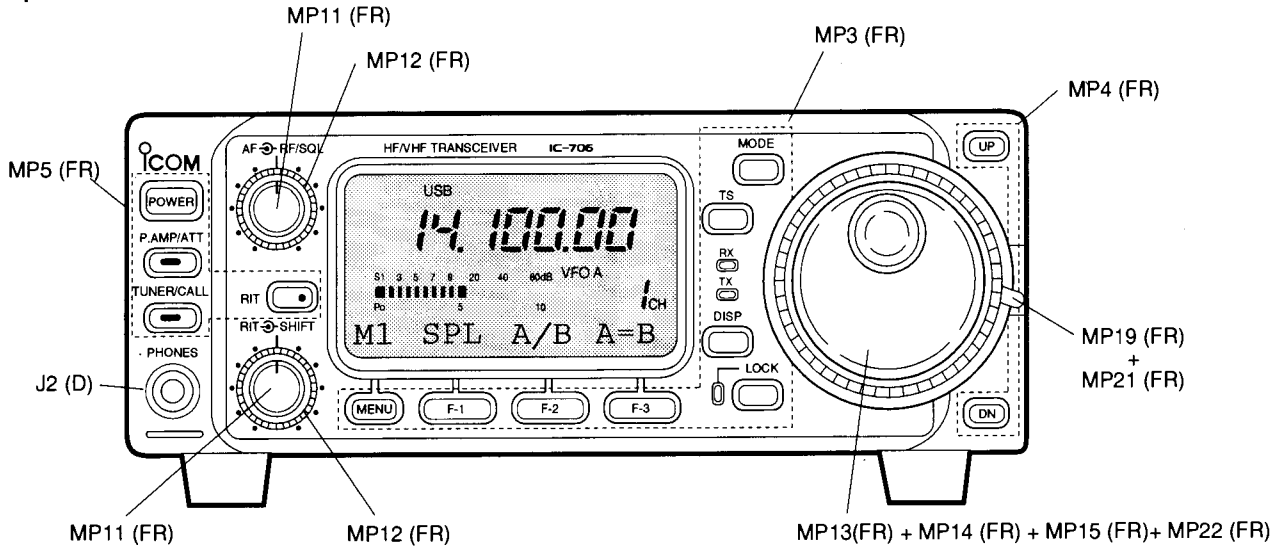
| REF. NO. | ORDER NO.  | DESCRIPTION                          | QTY. |
|----------|------------|--------------------------------------|------|
| J4       | 6450001490 | Connector HLJ7001-01-3010 [ELEC-KEY] | 1    |
| J5       | 6450001640 | Connector TCS5044-01-4111 [ACC]      | 1    |
| J7       | 6450001650 | Connector HSJ0836-01-500 [REMOTE]    | 1    |
| J8       | 6450001660 | Connector EX345GLB [RTTY]            | 1    |
| J11      | 6510016170 | Connector 52018-8835 [MIC]           | 1    |
| MP1      | 8930001160 | Ground spring                        | 1    |
| MP2      | 8930014140 | Ground spring (D)                    | 1    |

**[UNPACKING]**

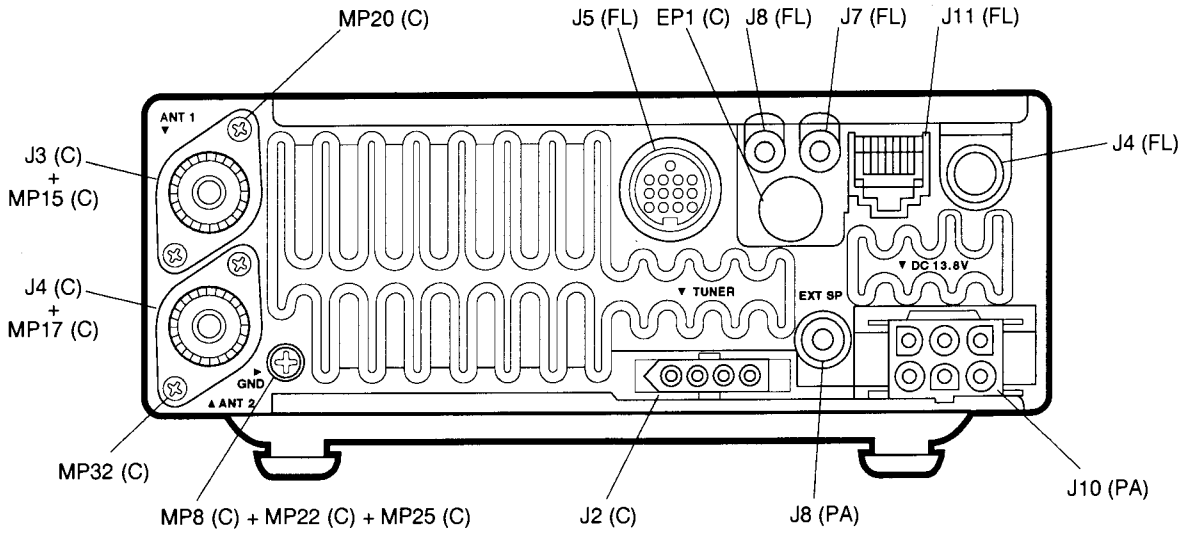
| REF. NO. | ORDER NO.  | DESCRIPTION                 | QTY. |
|----------|------------|-----------------------------|------|
| F1       | 5210000090 | Spare fuse FGB (30 A)       | 2    |
| F2       | 5210000130 | Spare fuse FGB (4 A)        | 1    |
| P1       | 5610000050 | Electronic keyer plug AP330 | 1    |
| P2       | 5610000170 | RTTY key plug AP370B        | 1    |
| W1       | 8900006490 | DC power cable OPC-025 D    | 1    |
| W2       | 8900006110 | ACC cable OPC-596           | 1    |
| MC1      | 7700002000 | Hand microphone HM-103      | 1    |

**Screw abbreviations**    BT: Self-tapping    PH: Pan head  
                                   OH: Oval countersunk head  
                                   NI: Nickel    NI-ZU: Nickel-zinc  
                                   BS: Brass    ZK: Black

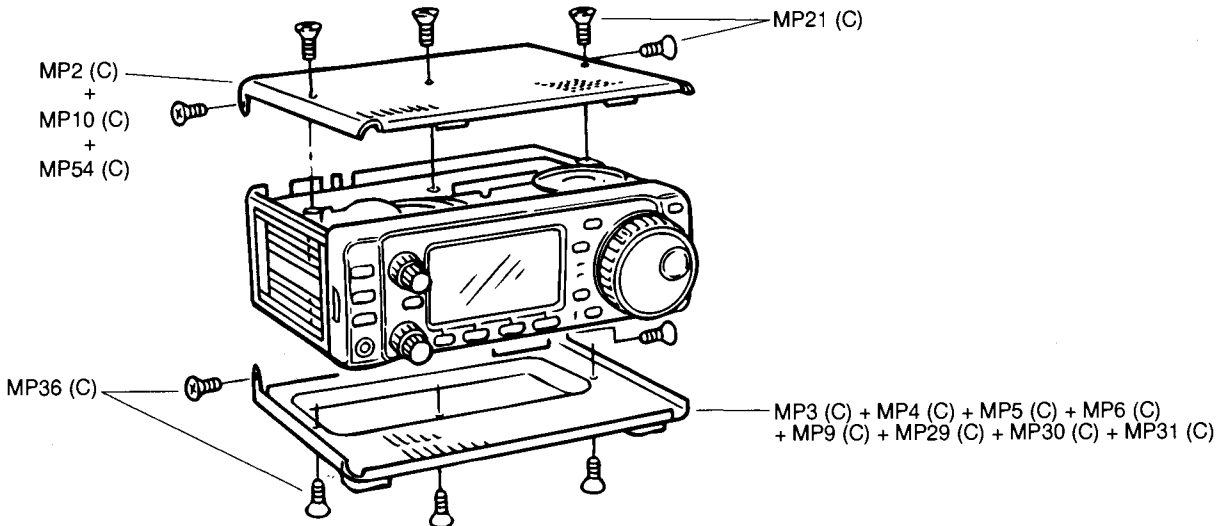
● Front panel



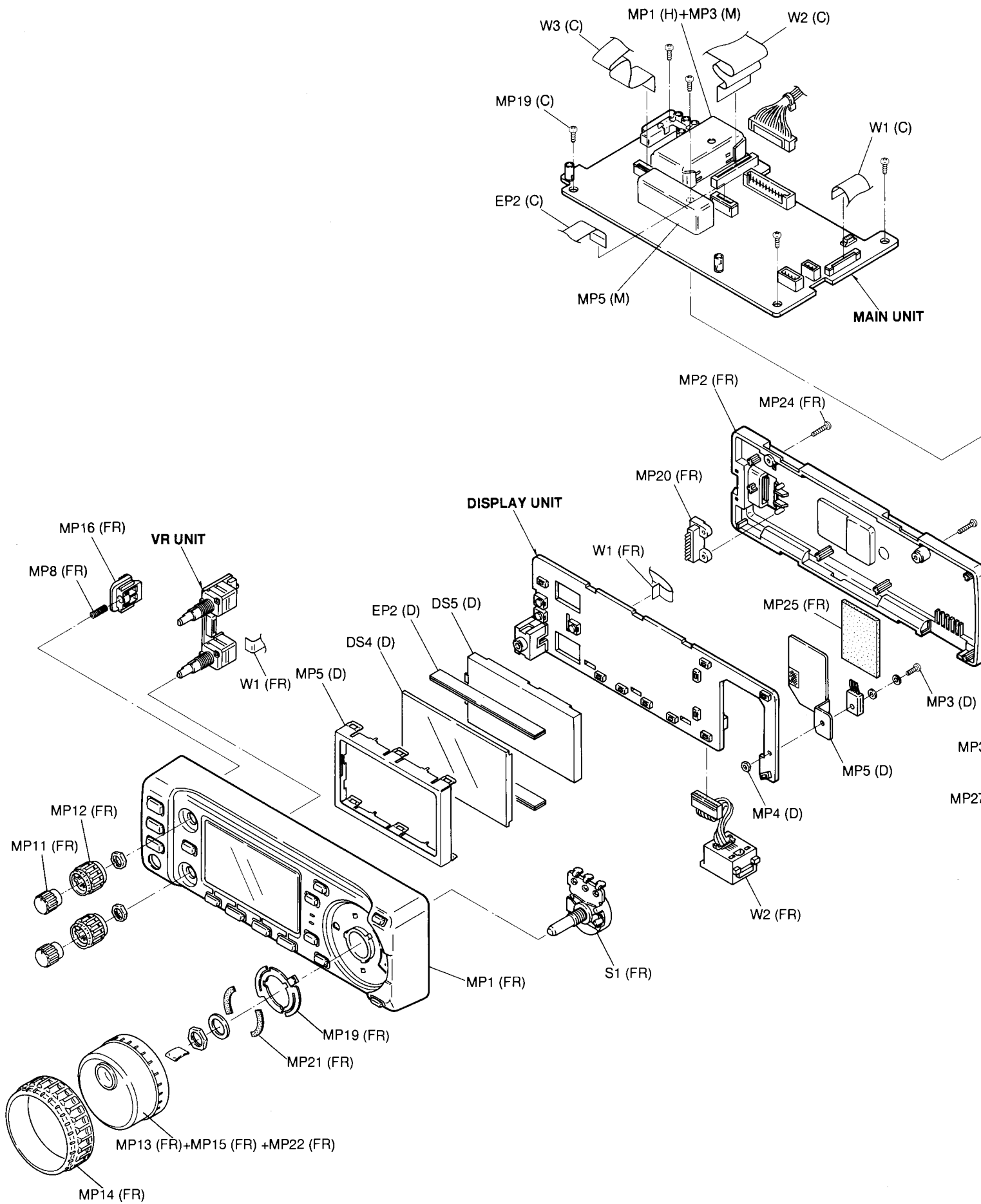
● Rear panel



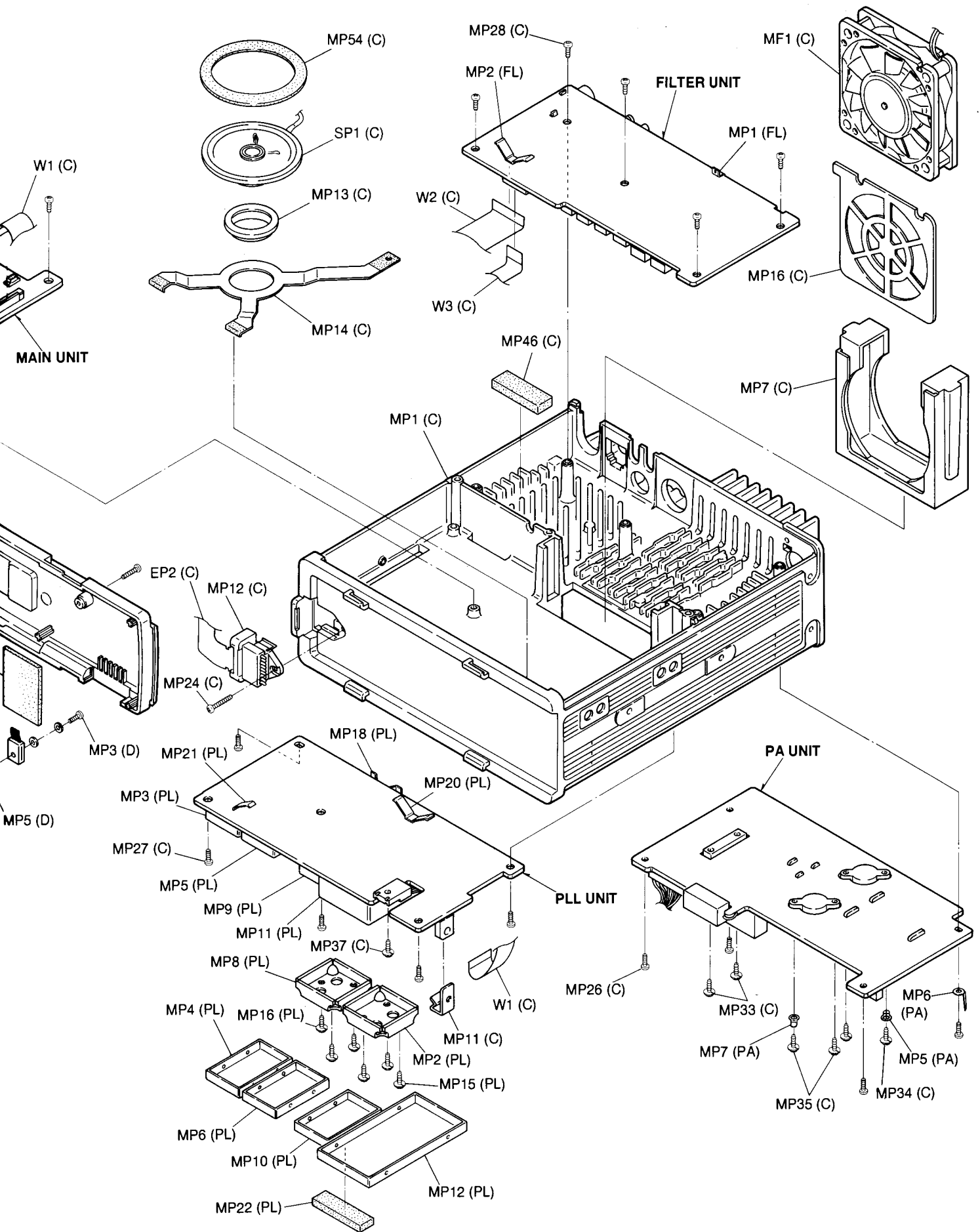
● Top and bottom covers



Unit abbreviations: (C) : CHASSIS PARTS (FR) : FRONT PARTS (D) : DISPLAY UNIT  
(PA) : PA UNIT (FL) : FILTER UNIT




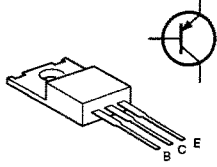
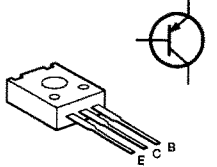













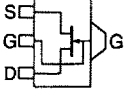
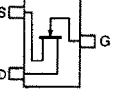
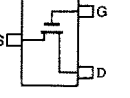





**Unit abbreviations:** (C) : CHASSIS PARTS (FR) : FRONT PARTS (D) : DISPLAY UNIT (M) : MAIN UNIT (H) : HPF BOARD



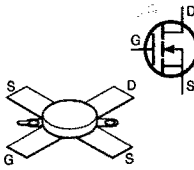

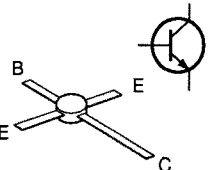
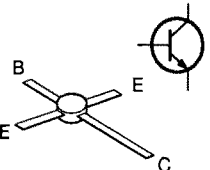





(M) : MAIN UNIT (PL) : PLL UNIT (PA) : PA UNIT (FL) : FILTER UNIT
















# SECTION 7 SEMI-CONDUCTOR INFORMATION

## • TRANSISTORS AND FET'S

|  |   |  |  |
|--|---|--|--|
| <p><b>2SA1576 R</b><br/>(Symbol: FR)</p>              | <p><b>2SB1133 R</b></p>                      | <p><b>2SB1143 S</b></p>                      | <p><b>2SB798 DK</b><br/>(Symbol: DK)</p>      |
| <p><b>2SC4081 R / S</b><br/>(Symbol: BR / BS)</p>     | <p><b>2SC4116 GR</b><br/>(Symbol: LG)</p>    | <p><b>2SC4117 BL</b><br/>(Symbol: DL)</p>    | <p><b>2SC4213 B</b><br/>(Symbol: AB)</p>      |
| <p><b>2SC4226 R25</b><br/>(Symbol: R25)</p>         | <p><b>2SC4403 3</b><br/>(Symbol: LY3)</p>  | <p><b>2SC4405 3</b><br/>(Symbol: OY3)</p>  | <p><b>2SC4673D</b><br/>(Symbol: CO)</p>     |
| <p><b>2SD1619 TD</b><br/>(Symbol: DB)</p>           | <p><b>2SD1623 TD</b><br/>(Symbol: DF)</p>  | <p><b>2SD999 CK</b><br/>(Symbol: CK)</p>   | <p><b>2SK210 GR</b><br/>(Symbol: YG)</p>    |
| <p><b>2SK2171</b><br/>(No symbol)</p>               | <p><b>2SK880 Y</b><br/>(Symbol: XY)</p>    | <p><b>2SK882 GR</b><br/>(Symbol: TG)</p>   | <p><b>3SK131 MAS</b><br/>(Symbol: V11)</p>  |
| <p><b>DTA114 EE / EU</b><br/>(Symbol: 14 / 14)</p>  | <p><b>DTA144TU</b><br/>(Symbol: 96)</p>    | <p><b>DTC114EU</b><br/>(Symbol: 24)</p>    | <p><b>DTC143TU</b><br/>(Symbol: 03)</p>     |

|  |   |   |   |
|--|---|---|---|
| <p><b>DTC144 EE / TU</b><br/>(Symbol: 26 / 06)</p>  | <p><b>IMH3</b><br/>(Symbol: H3)</p>  | <p><b>MRF255</b></p>                | <p><b>MRF5015</b><br/>(No symbol)</p>  |
| <p><b>MRF555</b></p>                                | <p><b>MRF581</b></p>                 | <p><b>UMD6</b><br/>(Symbol: D6)</p>  | <p><b>UN911F</b><br/>(Symbol: 60)</p>  |
| <p><b>UN9211</b><br/>(Symbol: 8A)</p>               |   |   |   |

• DIODES

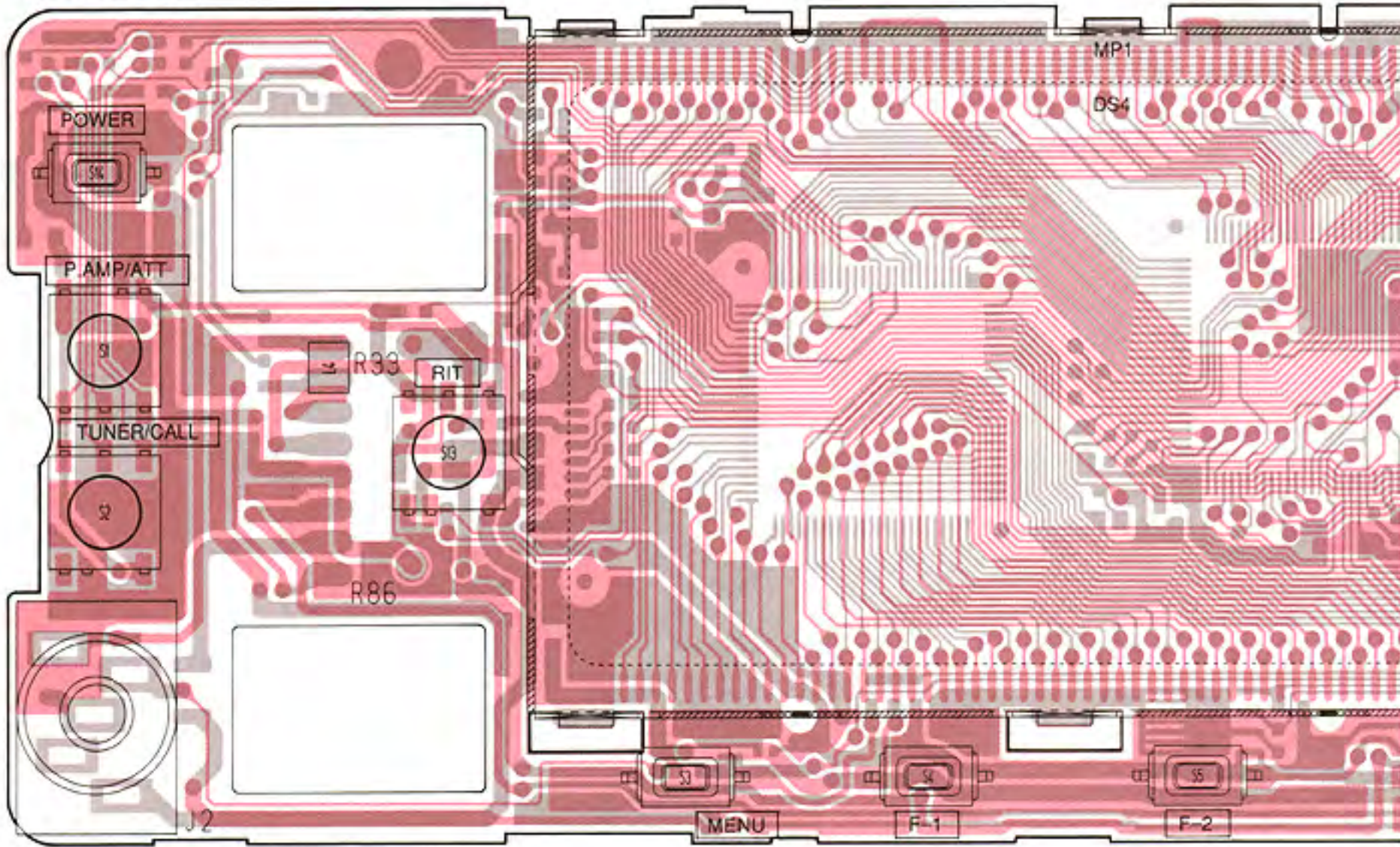
|   |   |  |   |
|---|---|--|---|
| <p><b>1SS301</b><br/>(Symbol: B3)</p>  | <p><b>1SS319</b><br/>(Symbol: A4)</p>    | <p><b>1SV237</b><br/>(Symbol: BB)</p>       | <p><b>1SV265</b><br/>(Symbol: D9)</p>  |
| <p><b>DA114</b><br/>(Symbol: AV)</p>   | <p><b>DA204U</b><br/>(Symbol: K)</p>   | <p><b>DA221</b><br/>(Symbol: K)</p>         | <p><b>DAN222</b><br/>(Symbol: N)</p>   |
| <p><b>DAP222</b><br/>(Symbol: FR)</p>  | <p><b>HSM88AS</b><br/>(Symbol: C1)</p>   | <p><b>HVM17-01</b><br/>(Symbol: KM 4Q)</p>  | <p><b>MA357</b><br/>(Symbol: NL)</p>   |
| <p><b>MA862</b><br/>(Symbol: M11)</p>  | <p><b>RD3.6M B2 / RD5.6M B2 / RD9.1M B2</b><br/>(Symbol: 362 / 562 / 912)</p>  |  | <p><b>SVC252</b><br/>(Symbol: HV)</p>  |



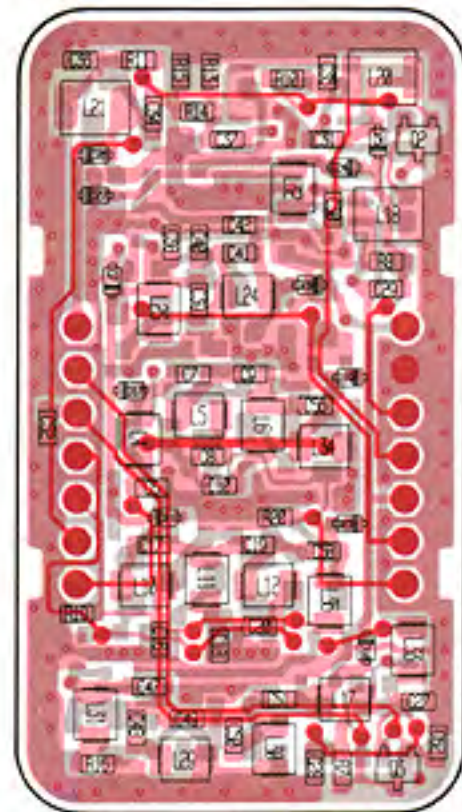
# SECTION 8 BOARD LAYOUTS

## 8-1 DISPLAY UNIT

### • DISPLAY UNIT

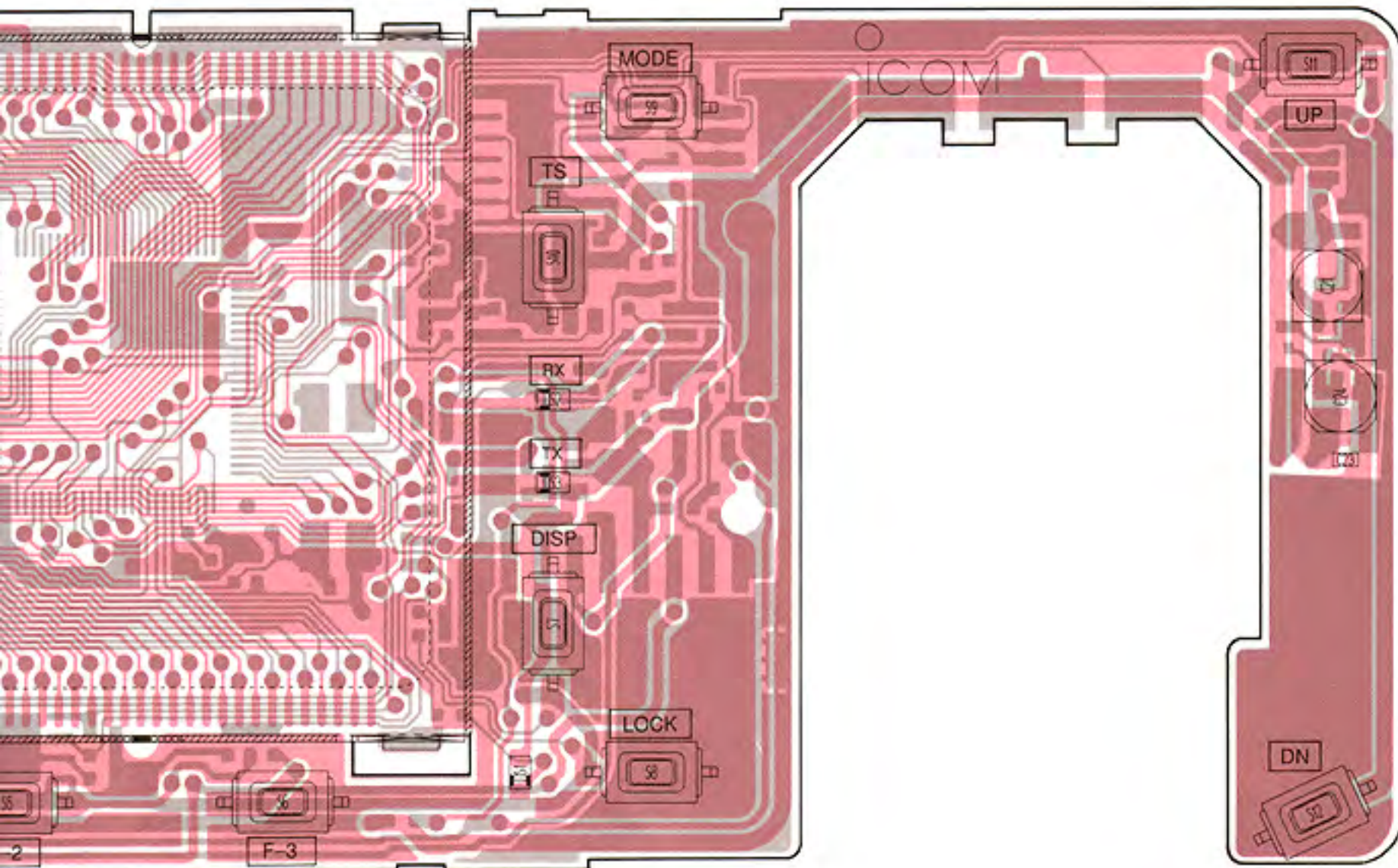


### • HPF BOARD

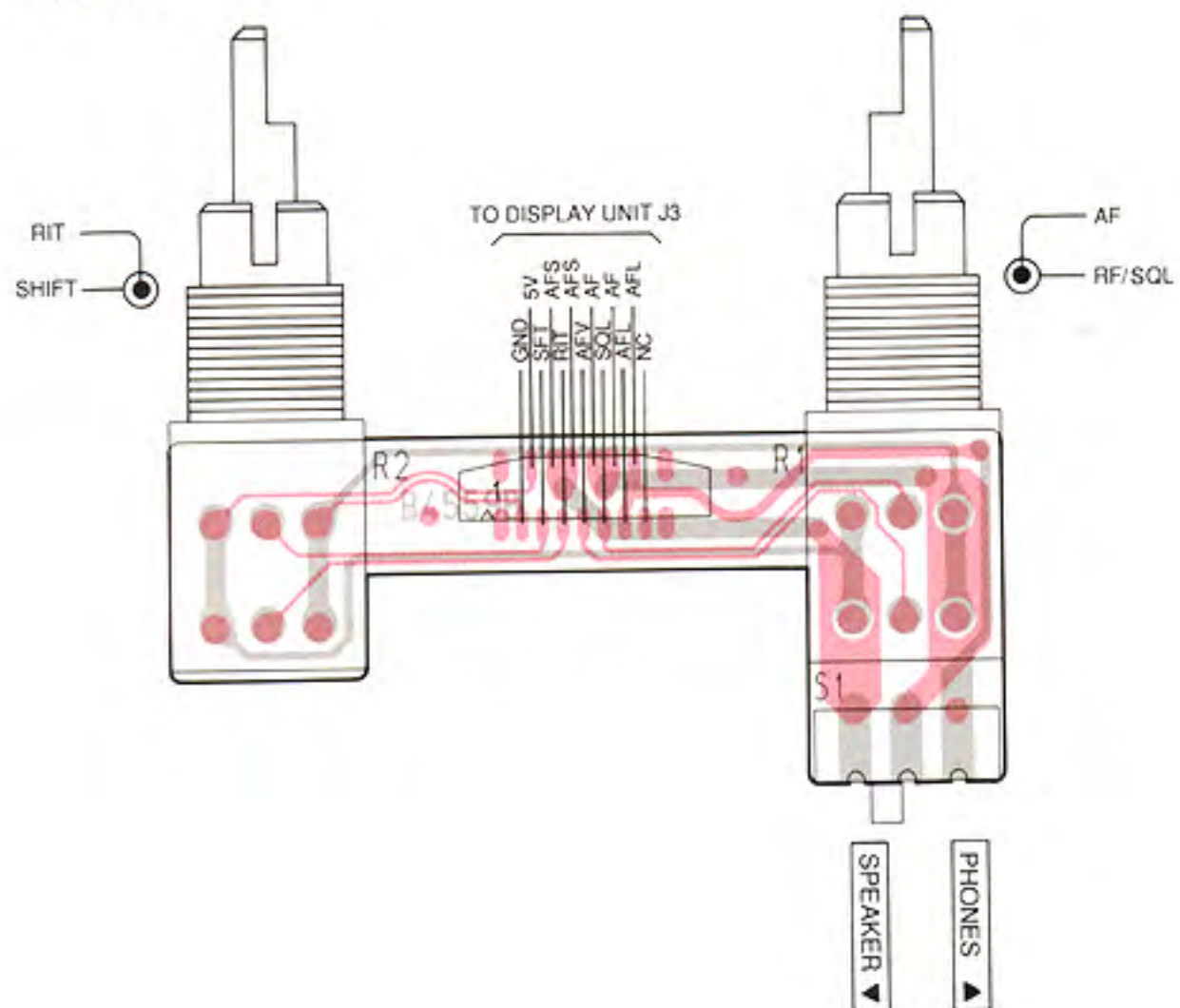




The combination of this page and the next page show the unit layout in the same configuration as the actual P. C. Board.

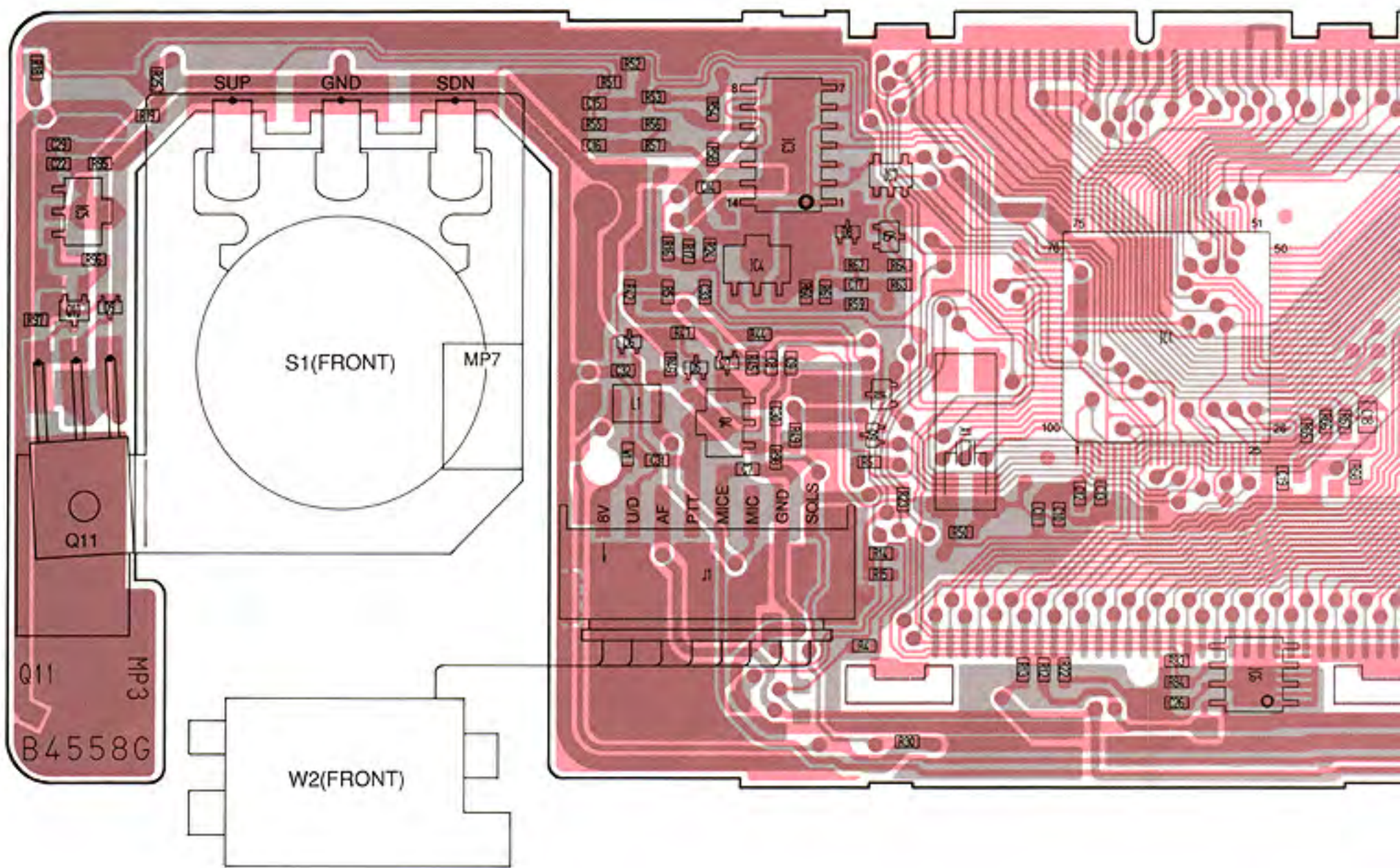


• VR UNIT

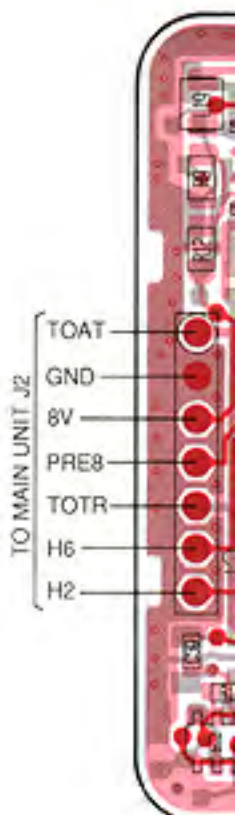




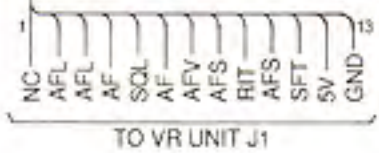
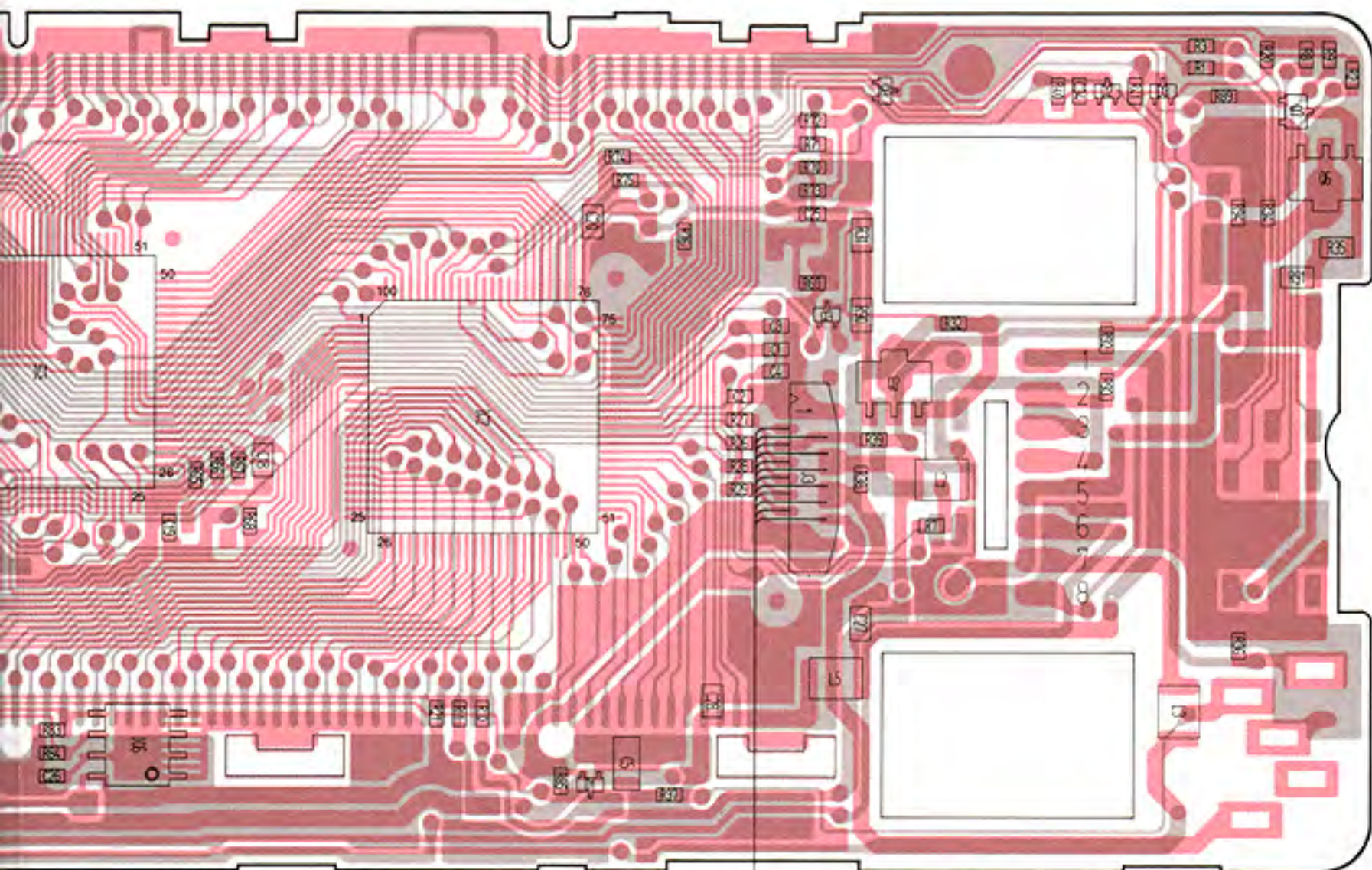
DISPLAY UNIT



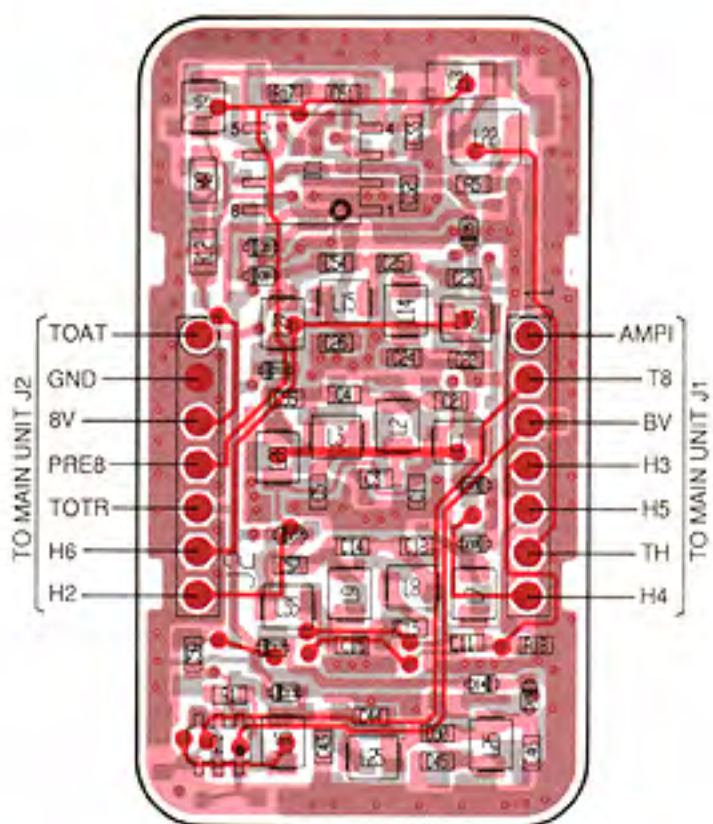
● HPF BOARD





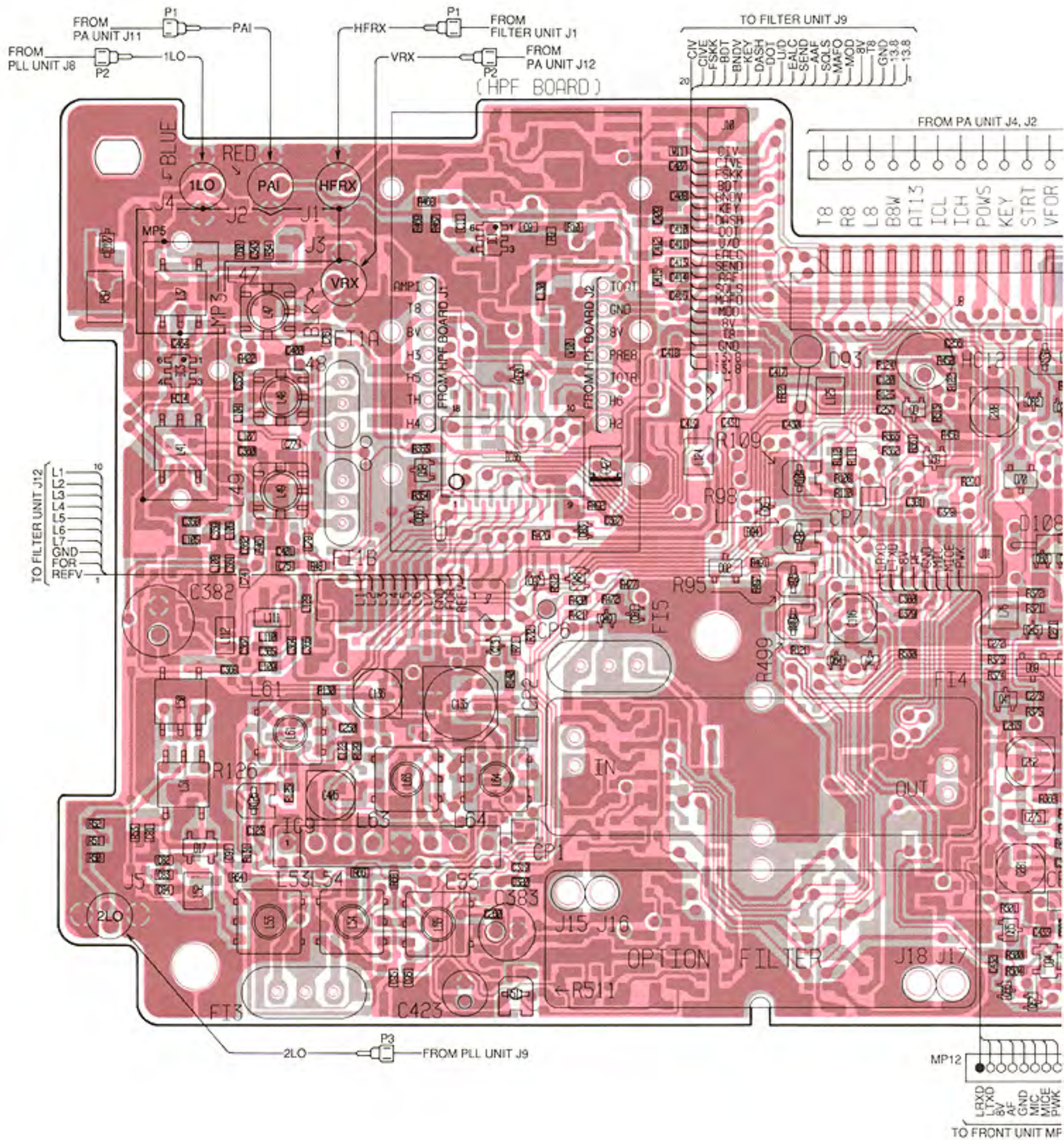


● HPF BOARD





## 8-2 MAIN UNIT



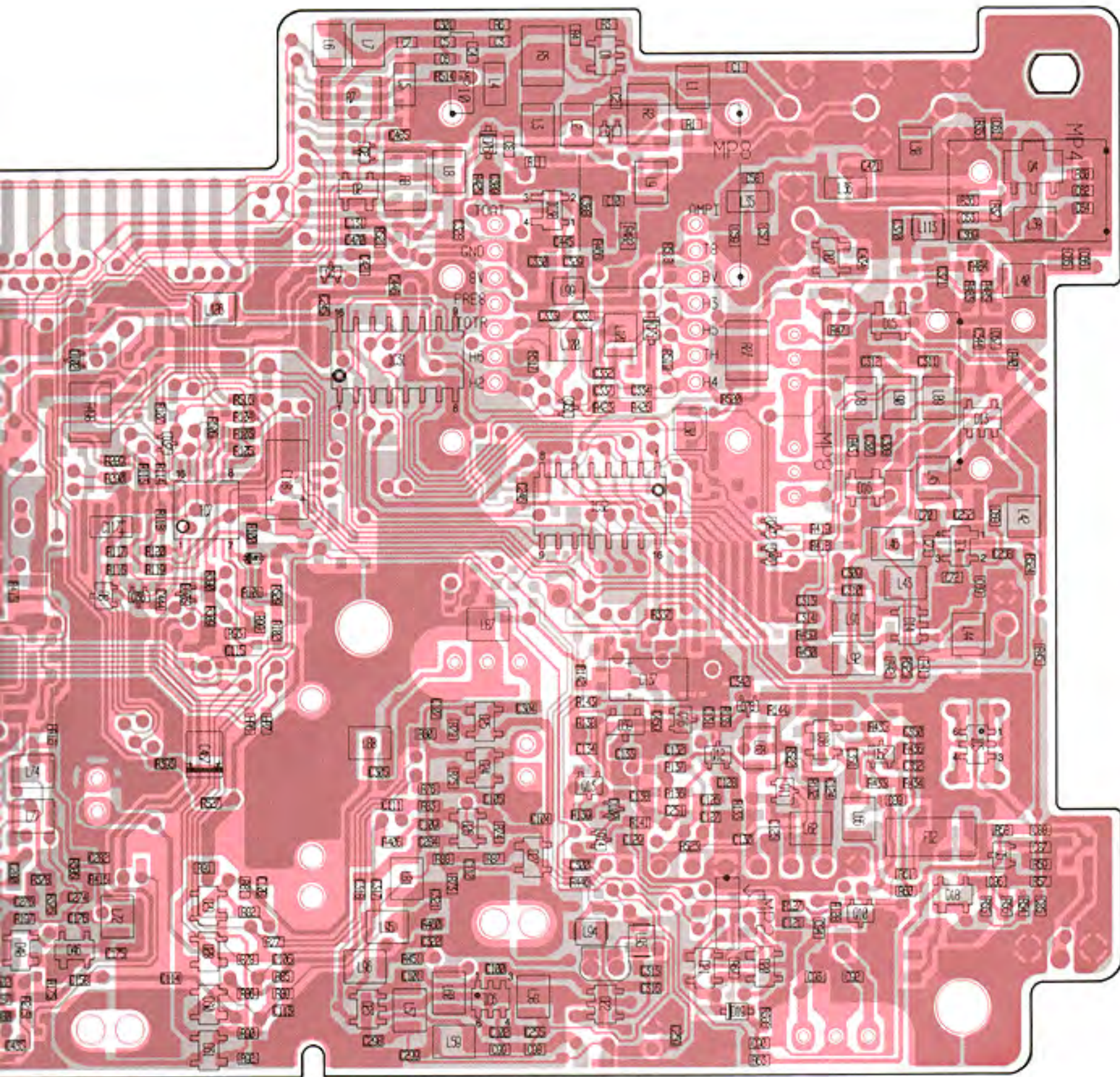






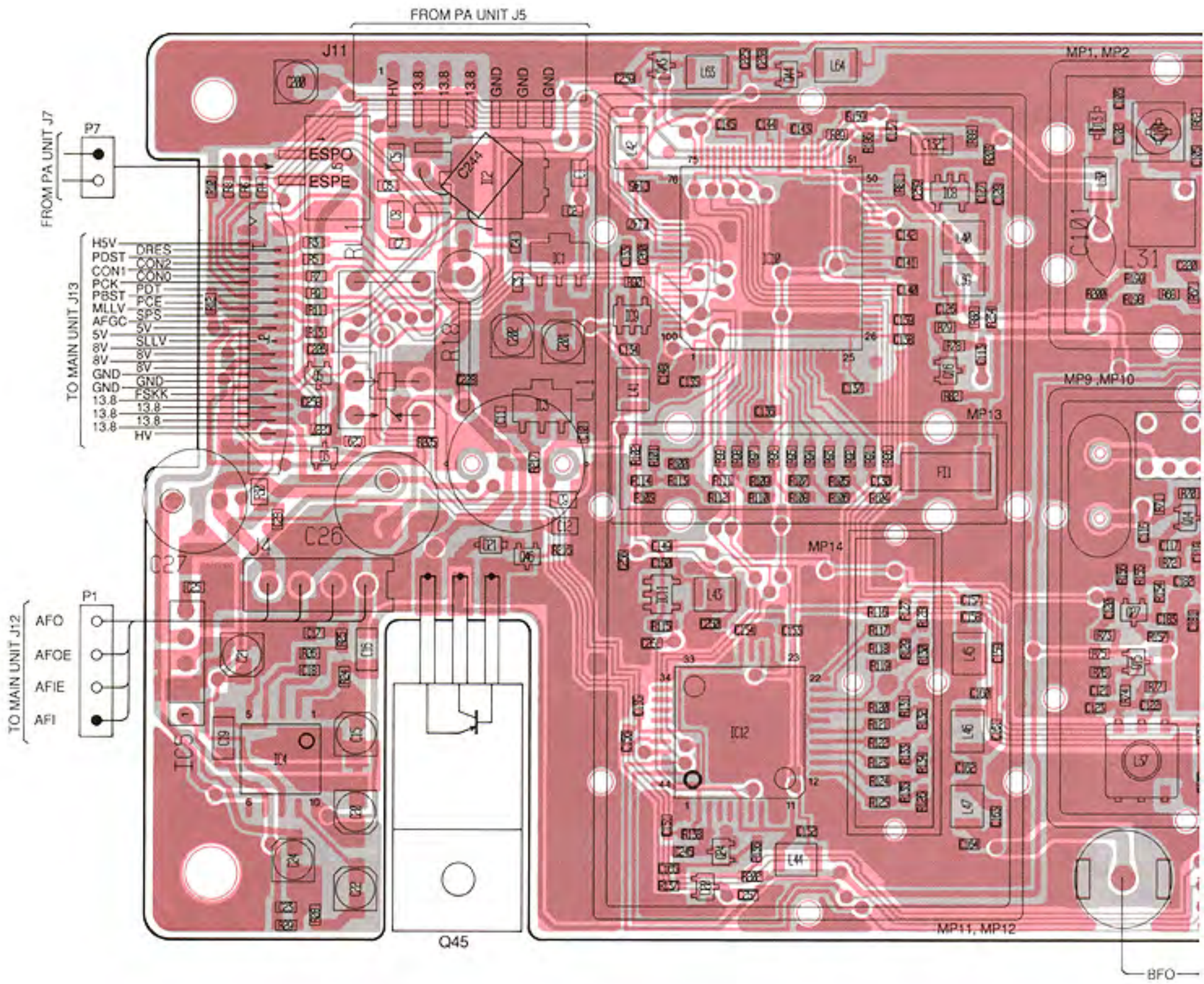




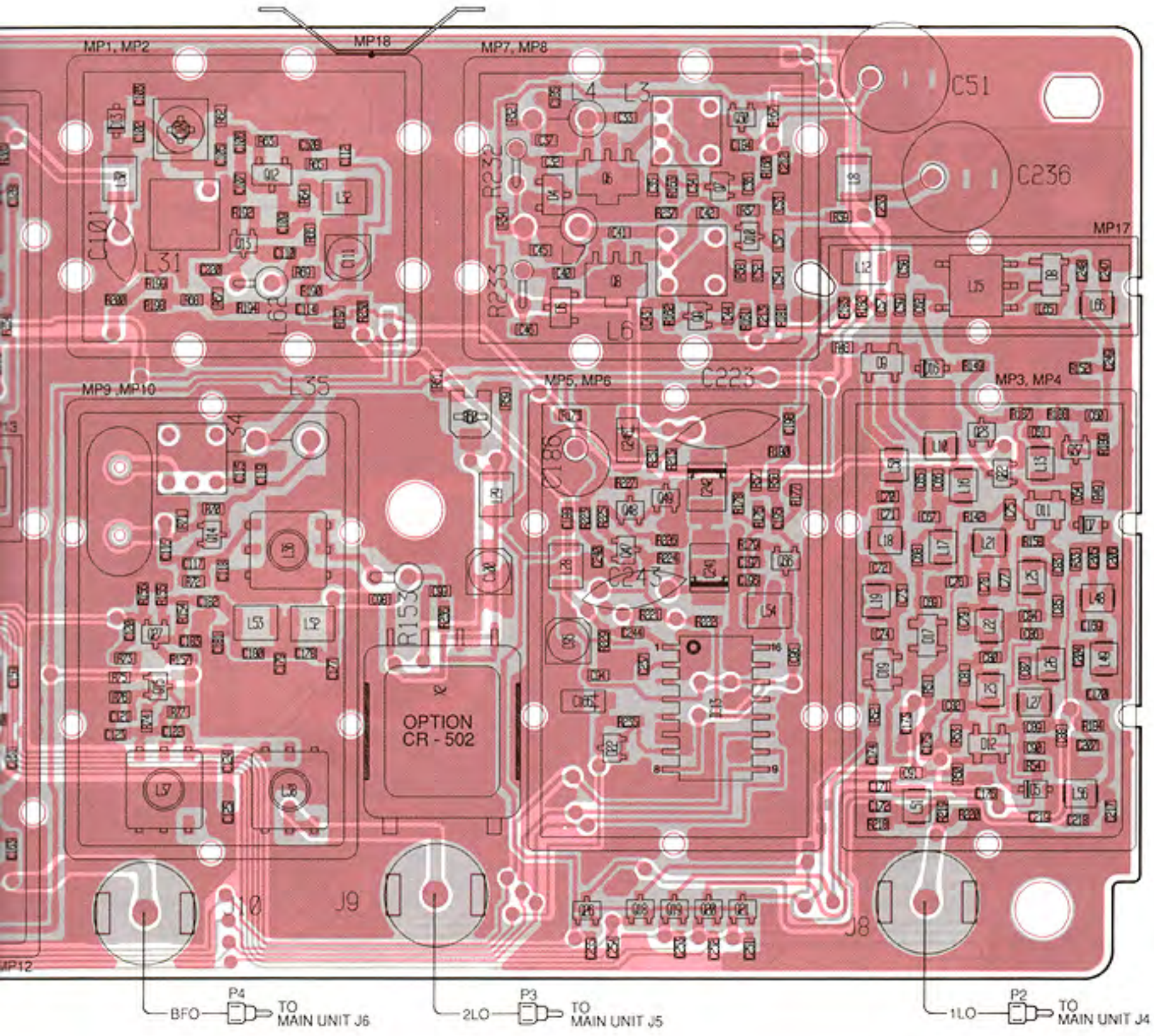




# 8-3 PLL UNIT

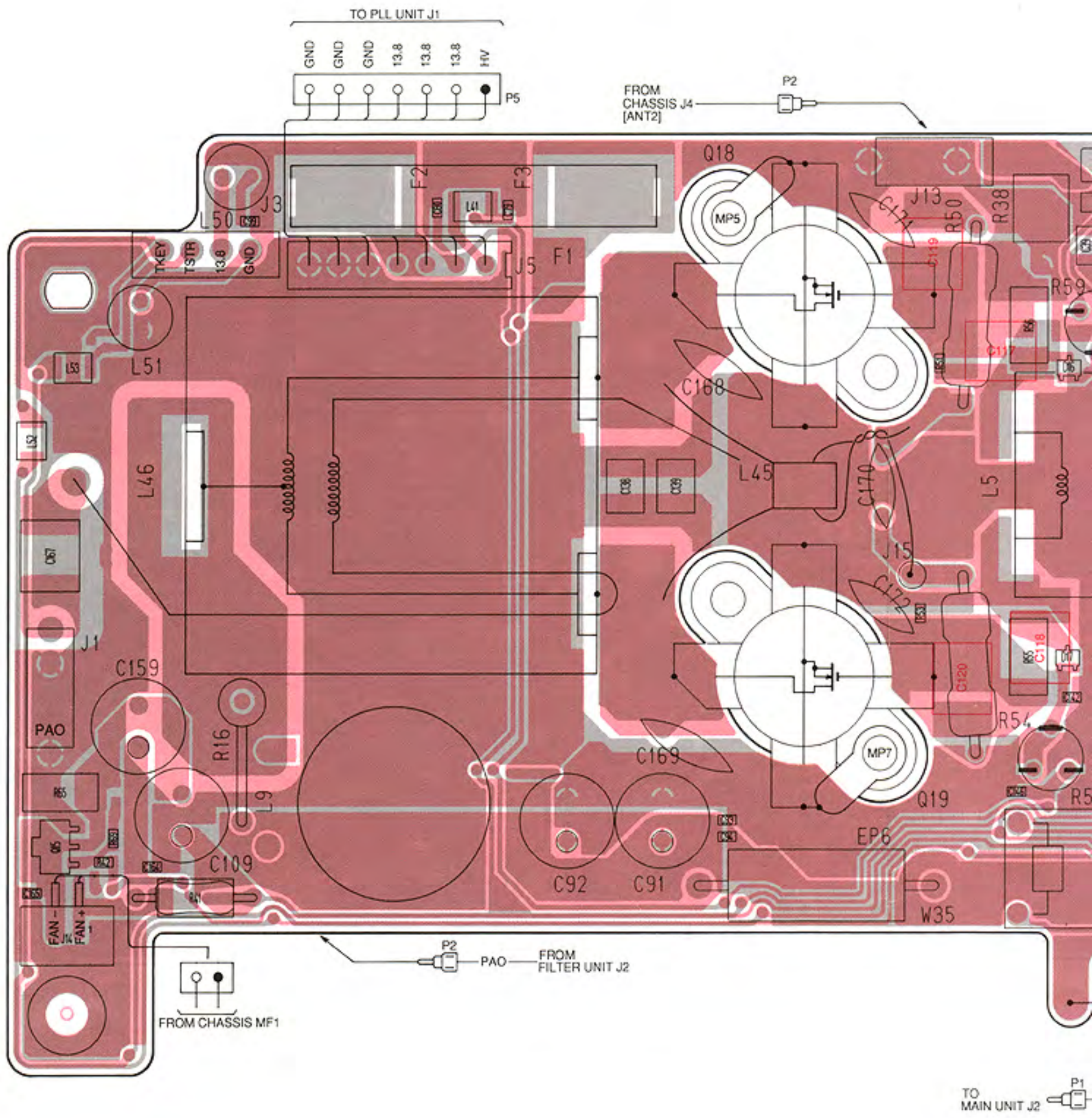




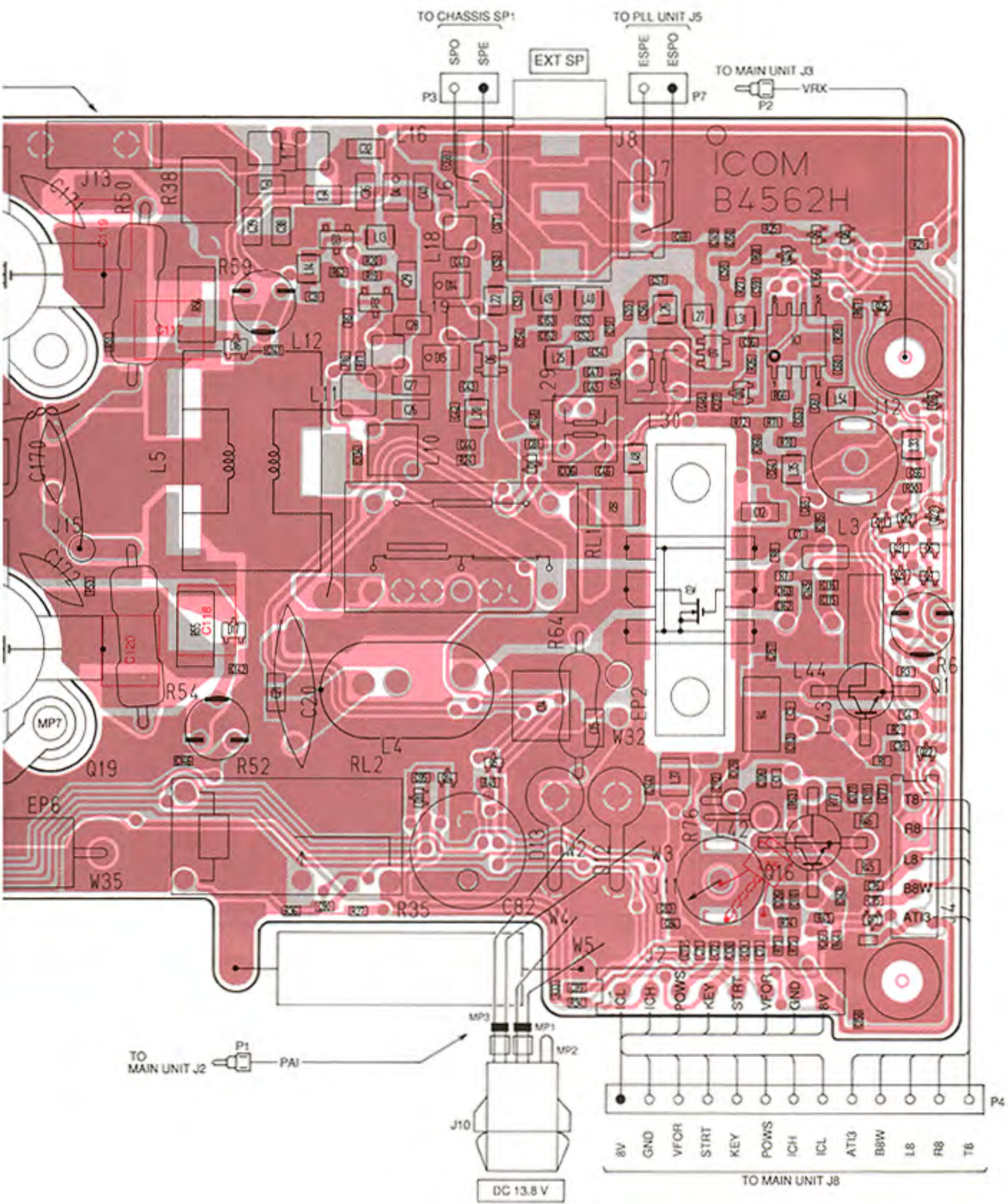




# 4 PA UNIT

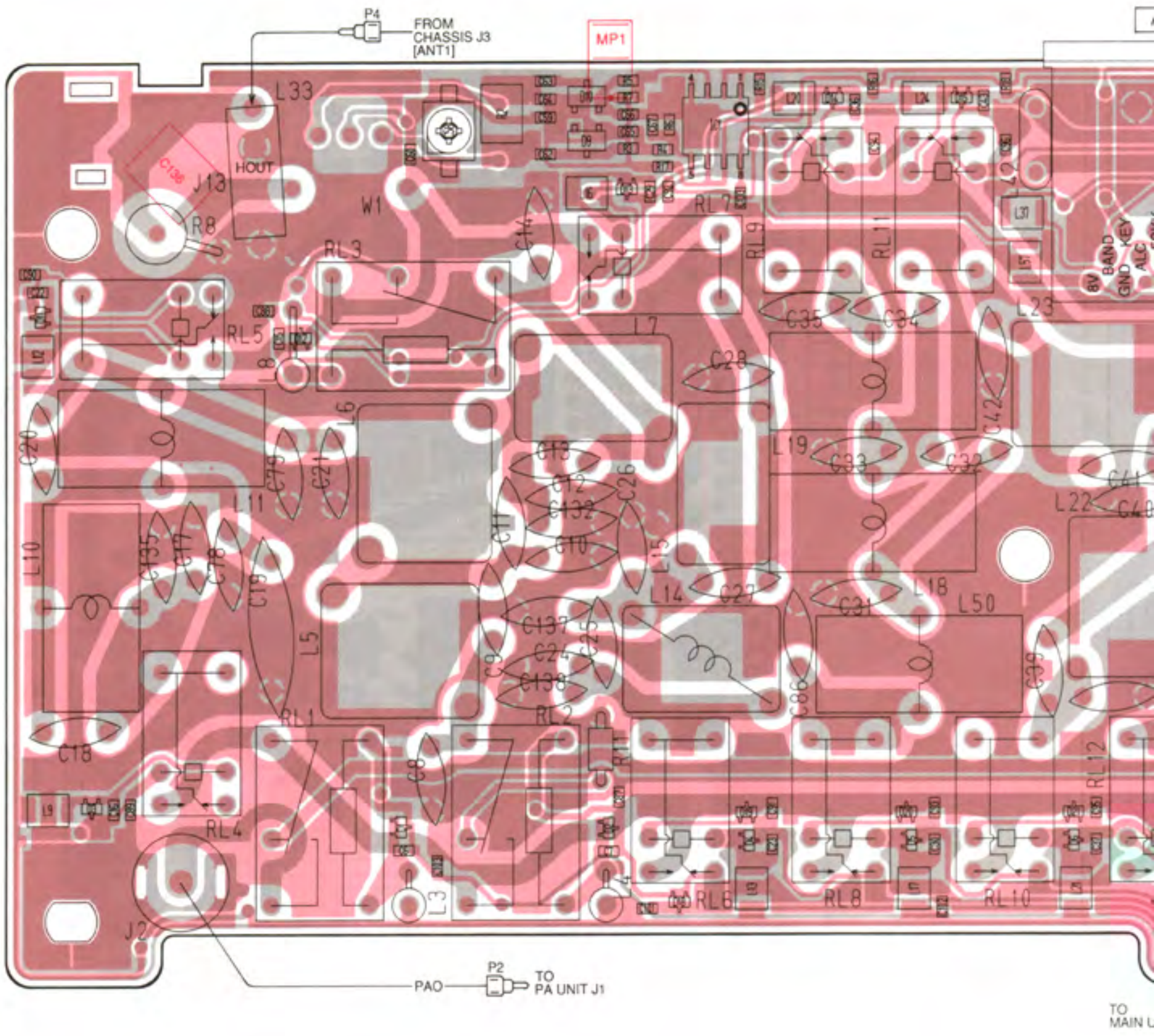




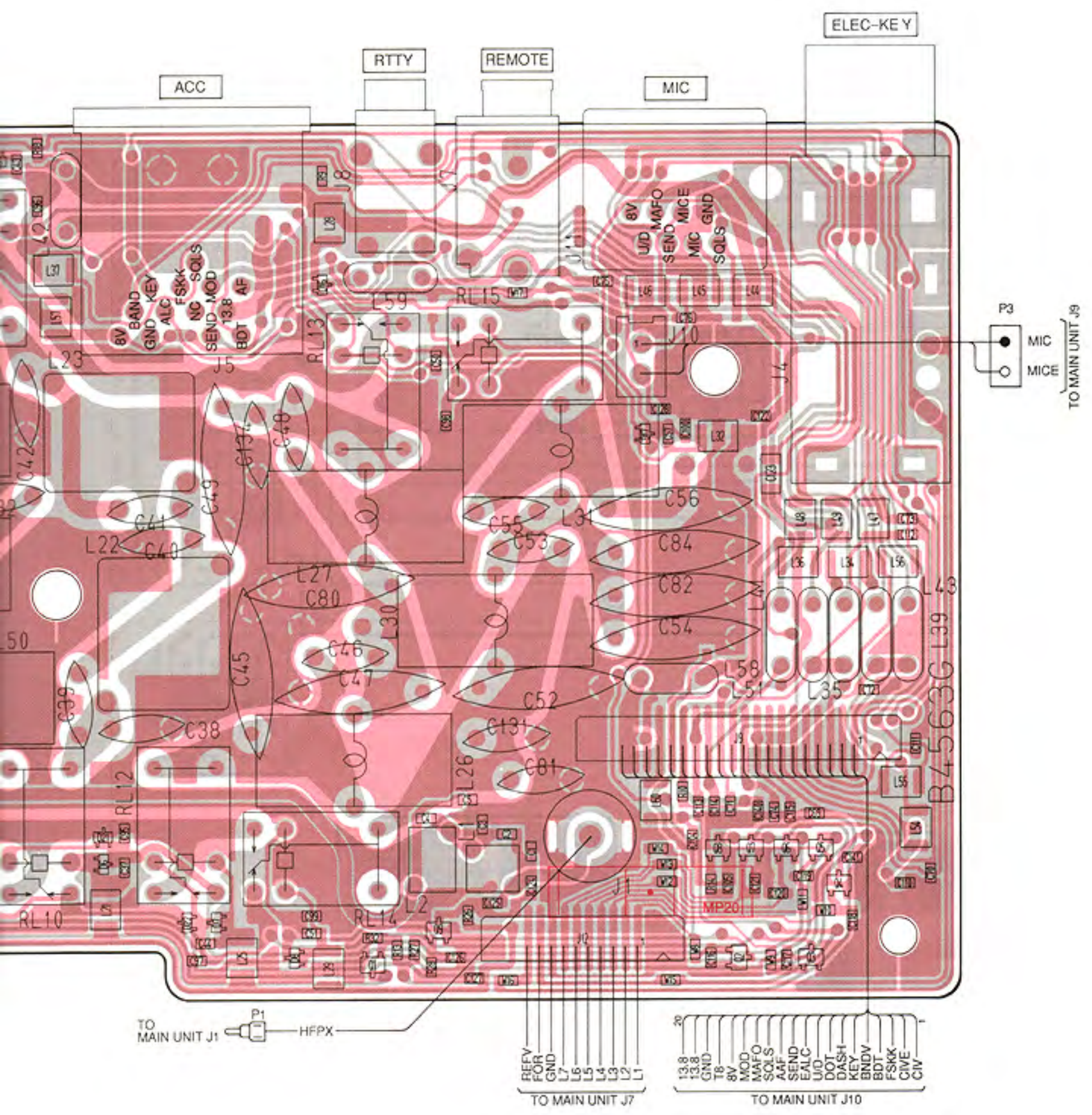




# 8-5 FILTER UNIT







TO MAIN UNIT J1 P1 HFPX

REFV FOR GND L7 L6 L5 L4 L3 L2 L1  
TO MAIN UNIT J7

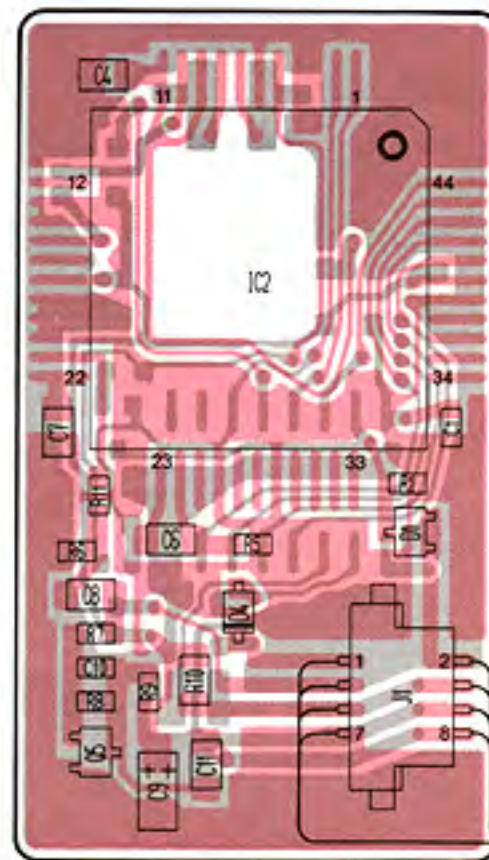
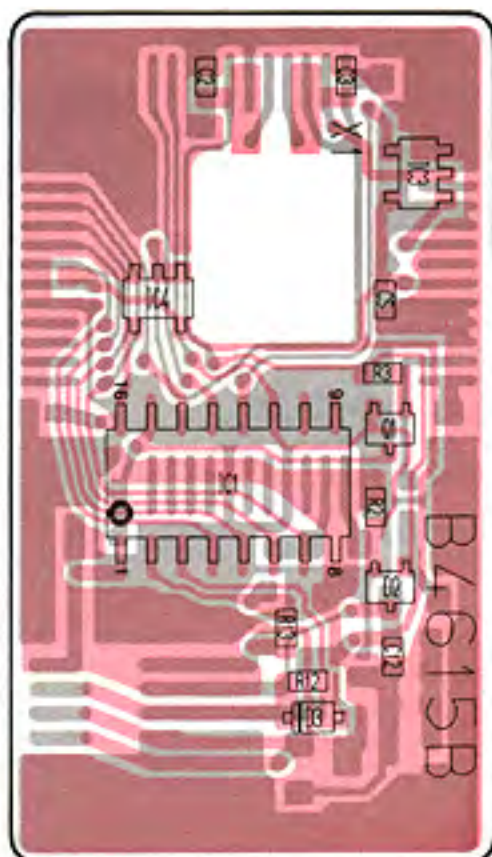
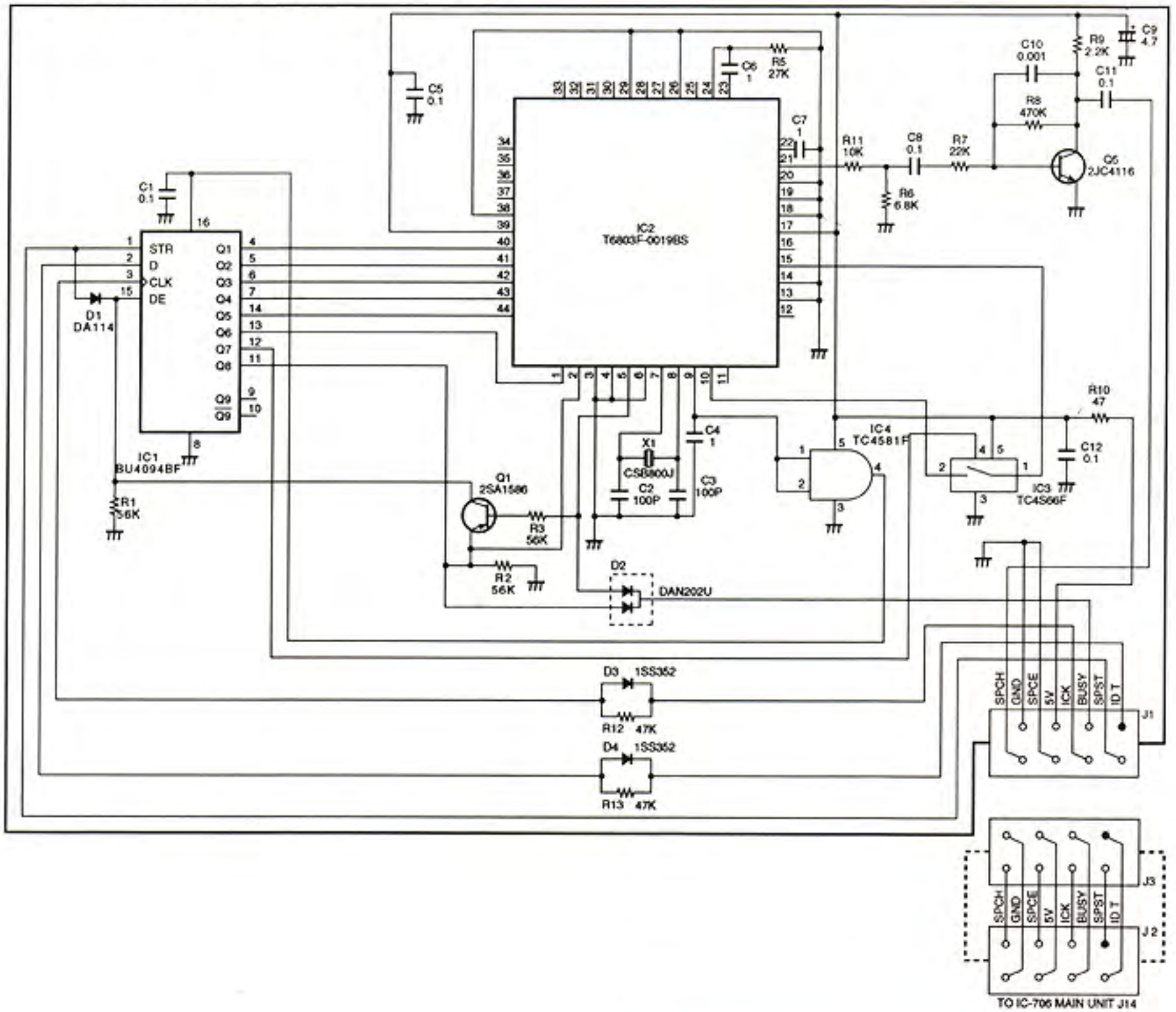
13.8 13.8 GND T8 8V MOD MAFO SOLS AAF SEND EALC U/D DOT DASH KEY BNDV BDT FSKK CIVE CIV  
TO MAIN UNIT J10

P3 MIC MICE  
TO MAIN UNIT J9



# SECTION 9 OPTIONAL UNITS

## 9-1 UT-102 VOICE SYNTHESIZER UNIT

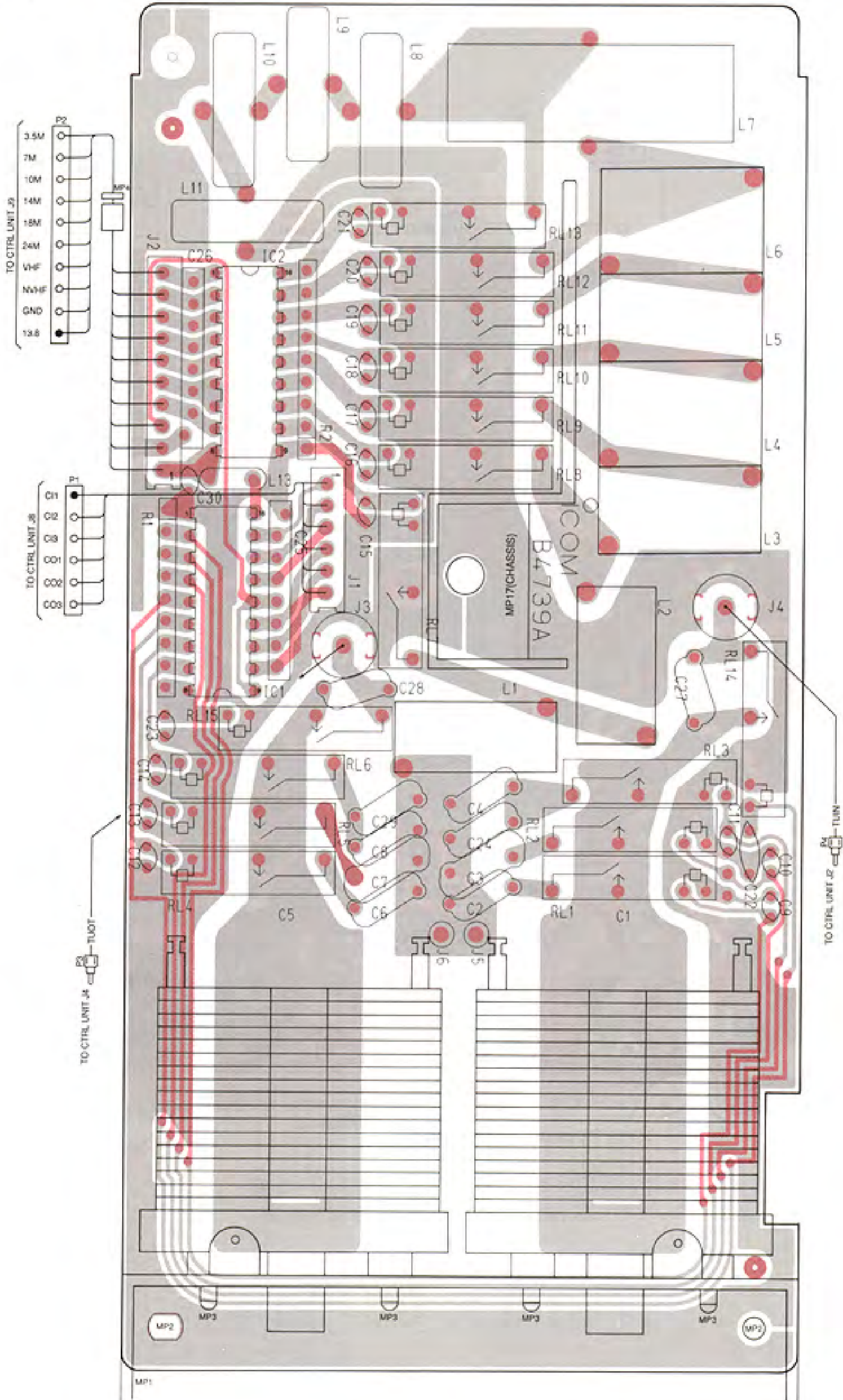


TO IC-706 MAIN UNIT J14



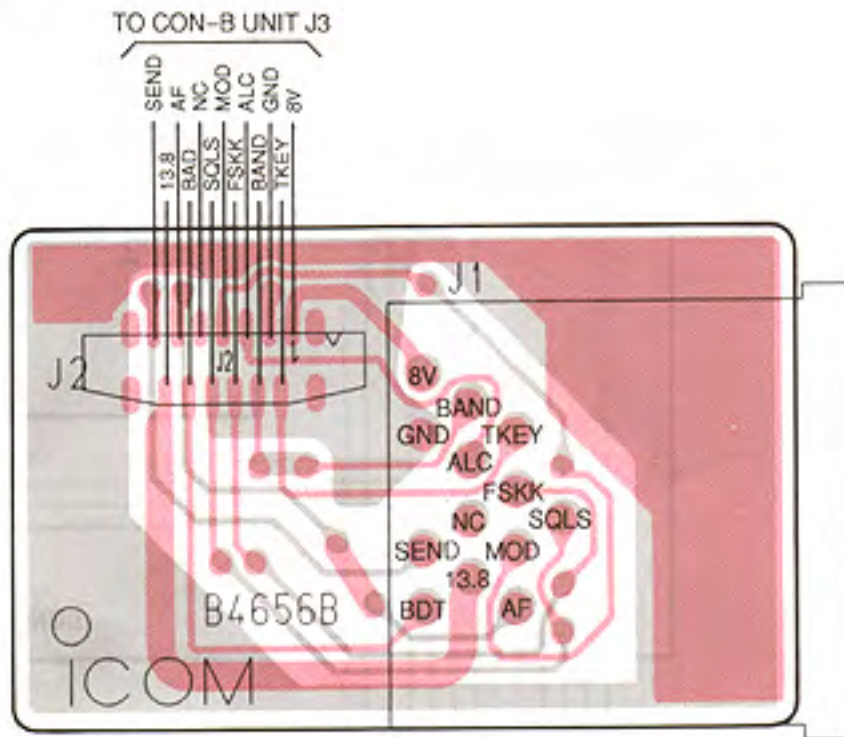
# 9-2 AT-180 HF/50 MHz AUTOMATIC ANTENNA TUNER

## • TUNER UNIT

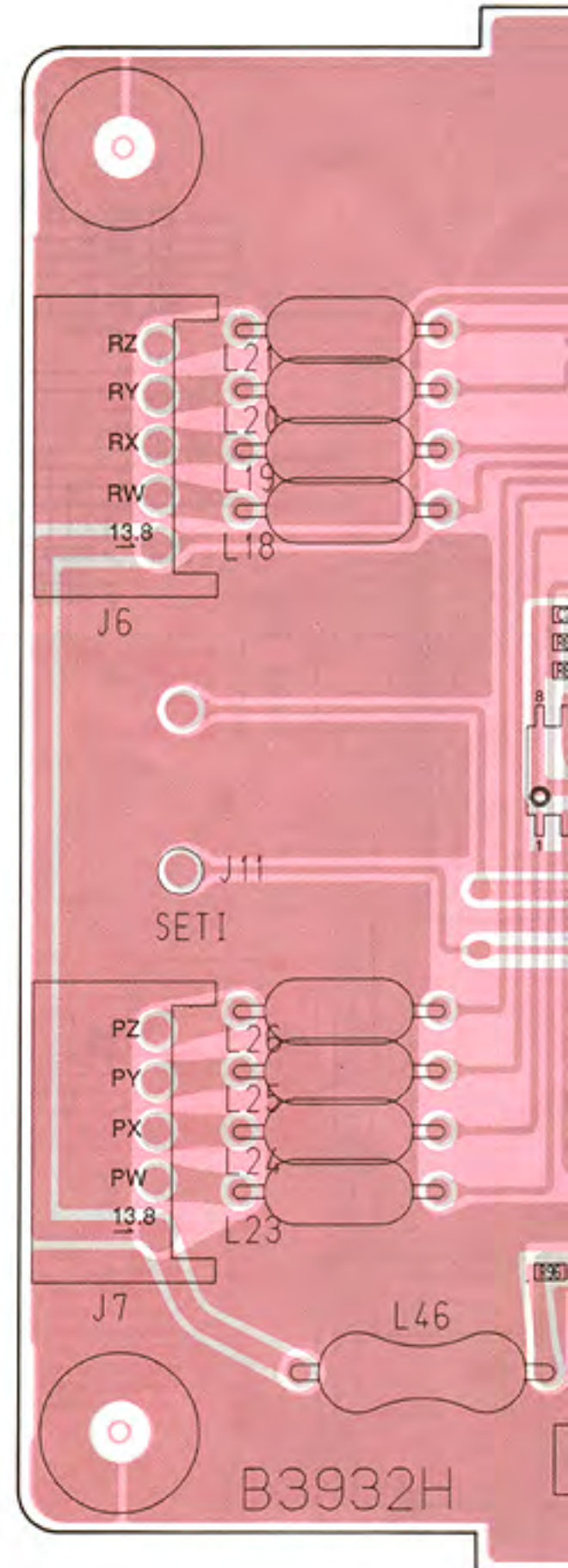




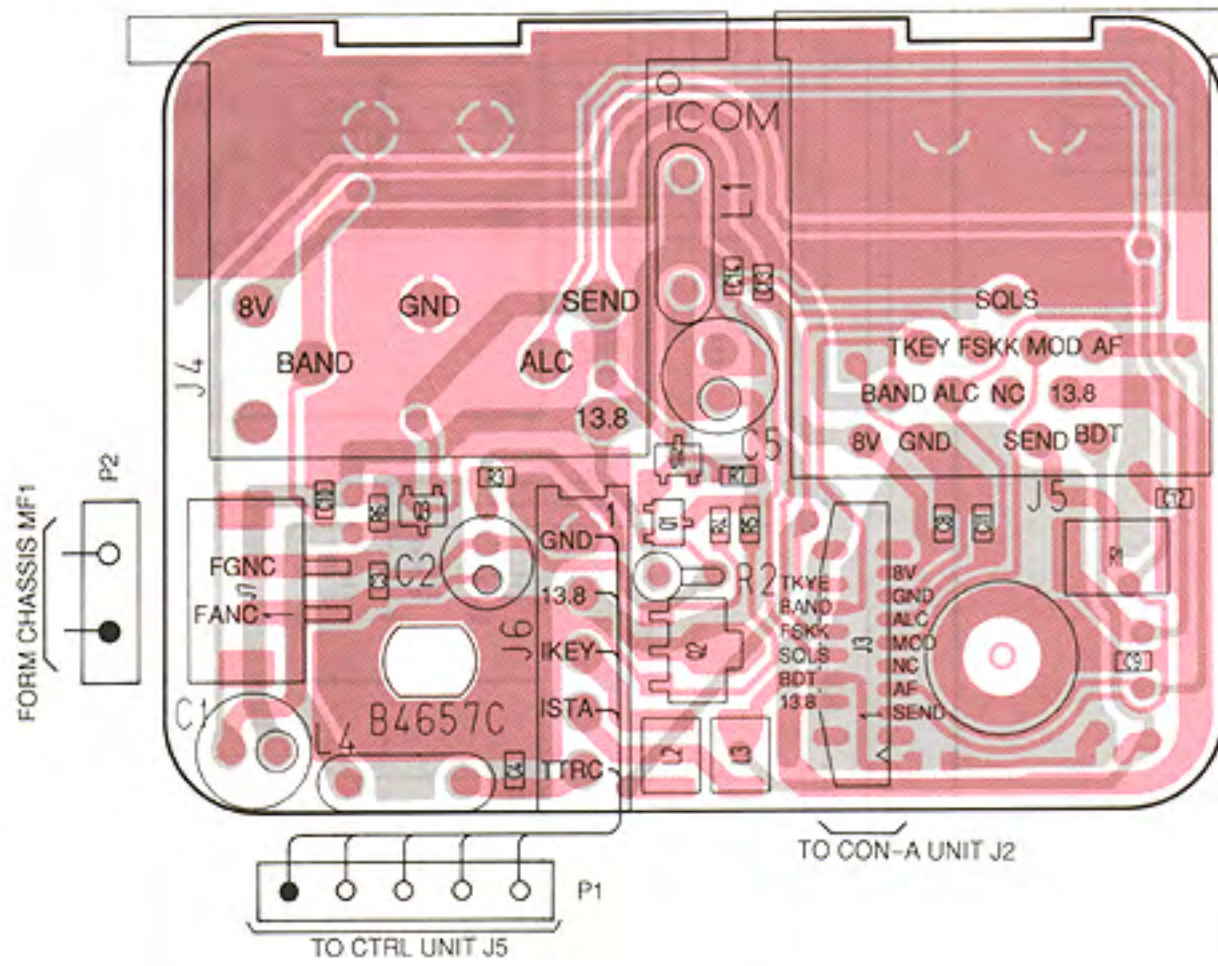
● CON-A UNIT



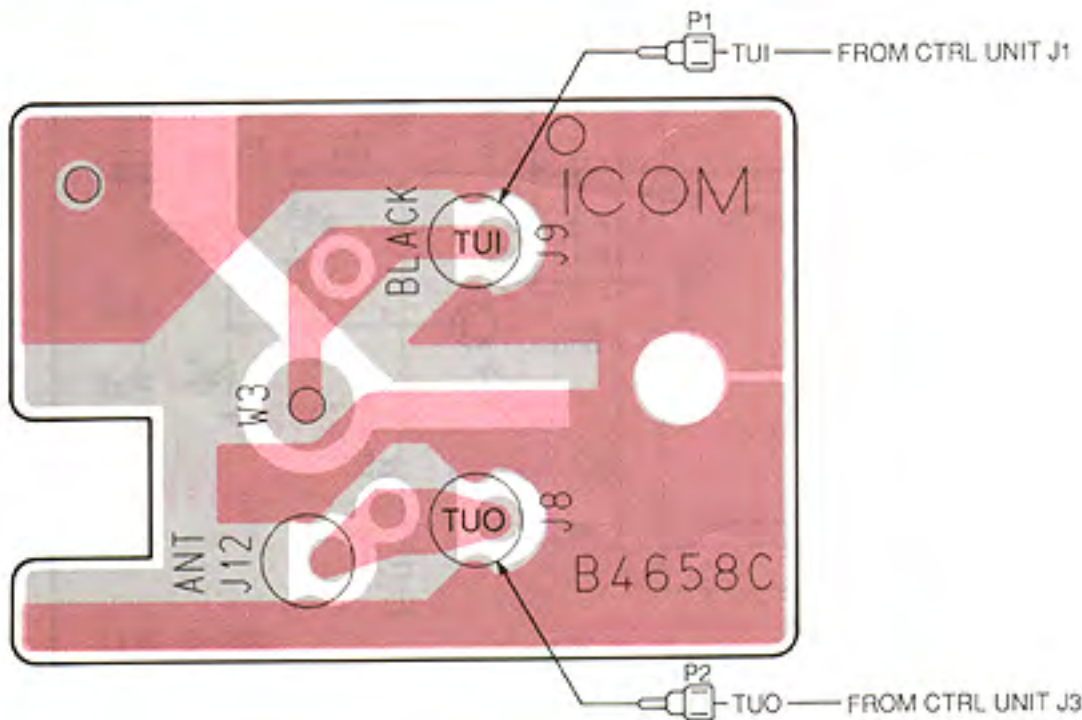
● CTRL UNIT



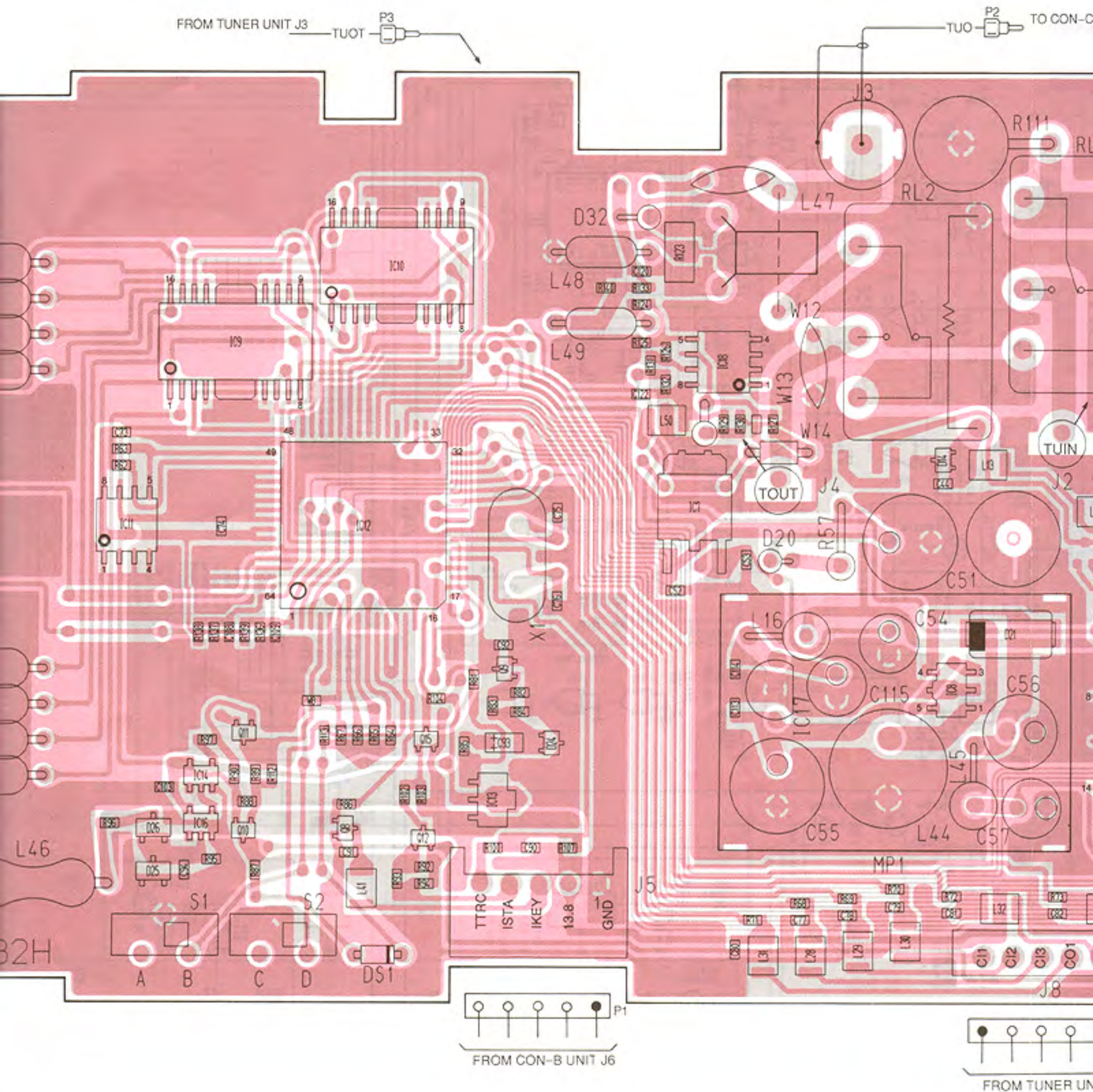
● CON-B UNIT



● CON-C UNIT



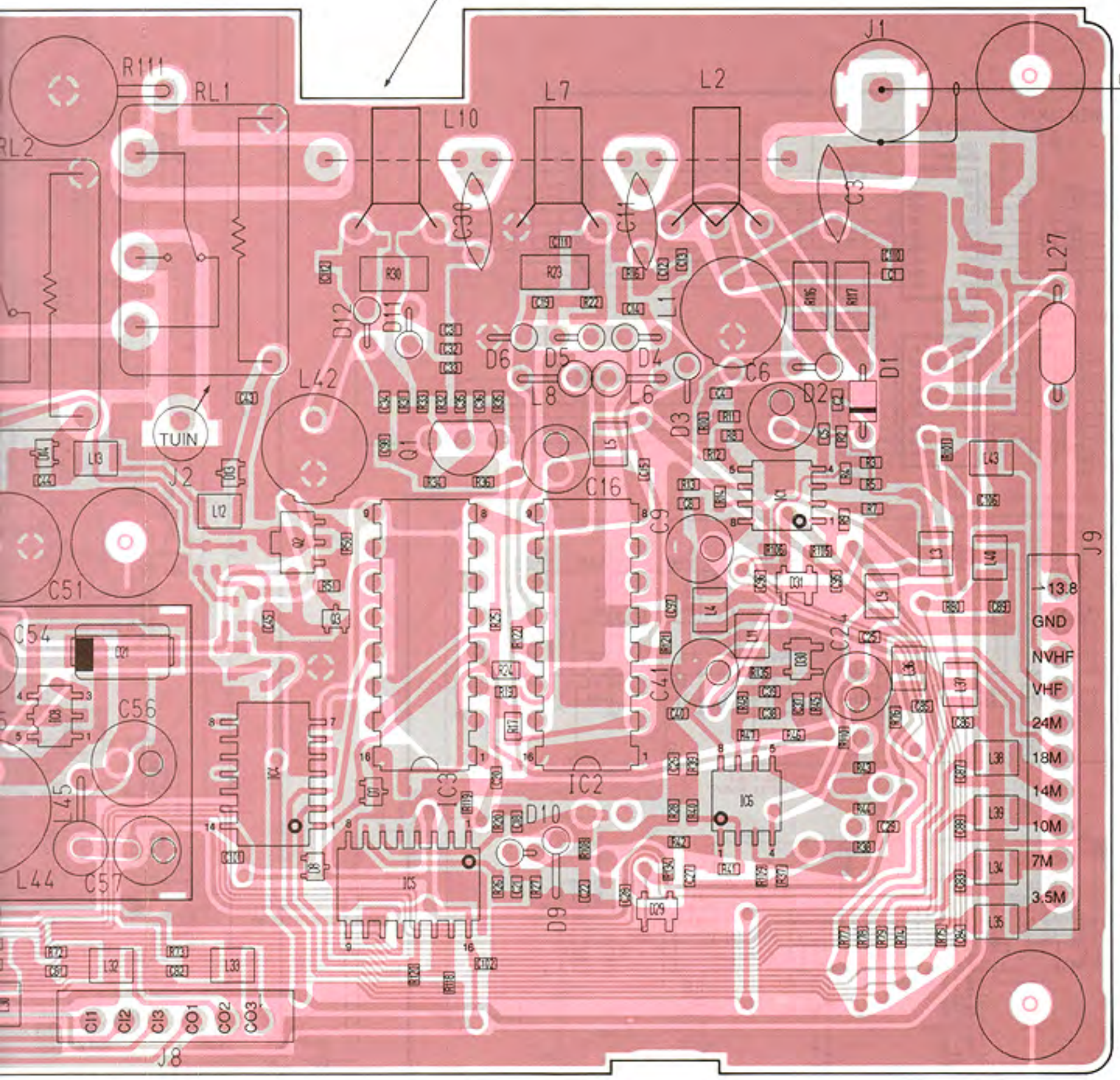






TUO P2 TO CON-C UNIT J8

P4 TUIN FROM TUNER UNIT J4



BLACK

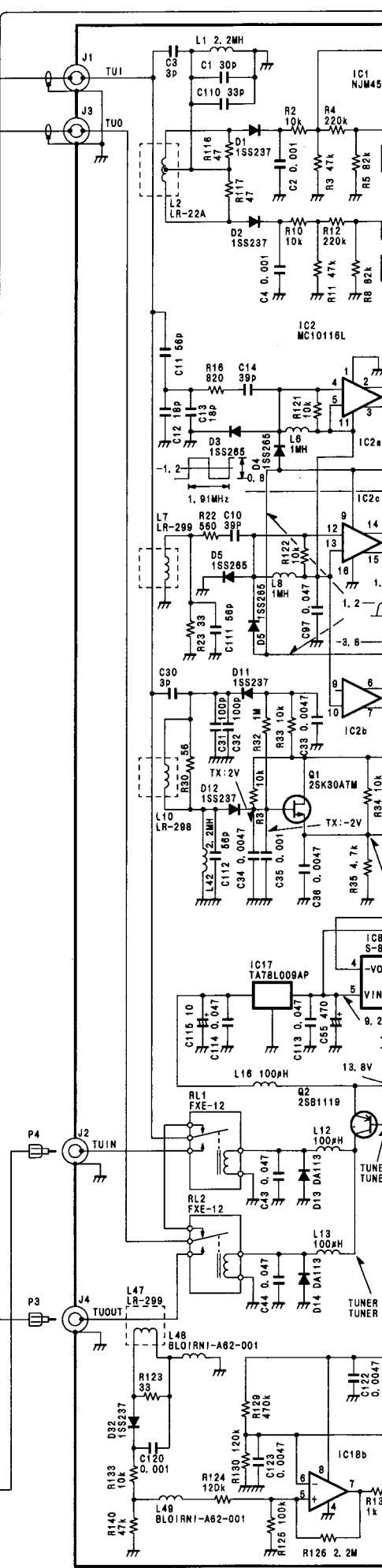
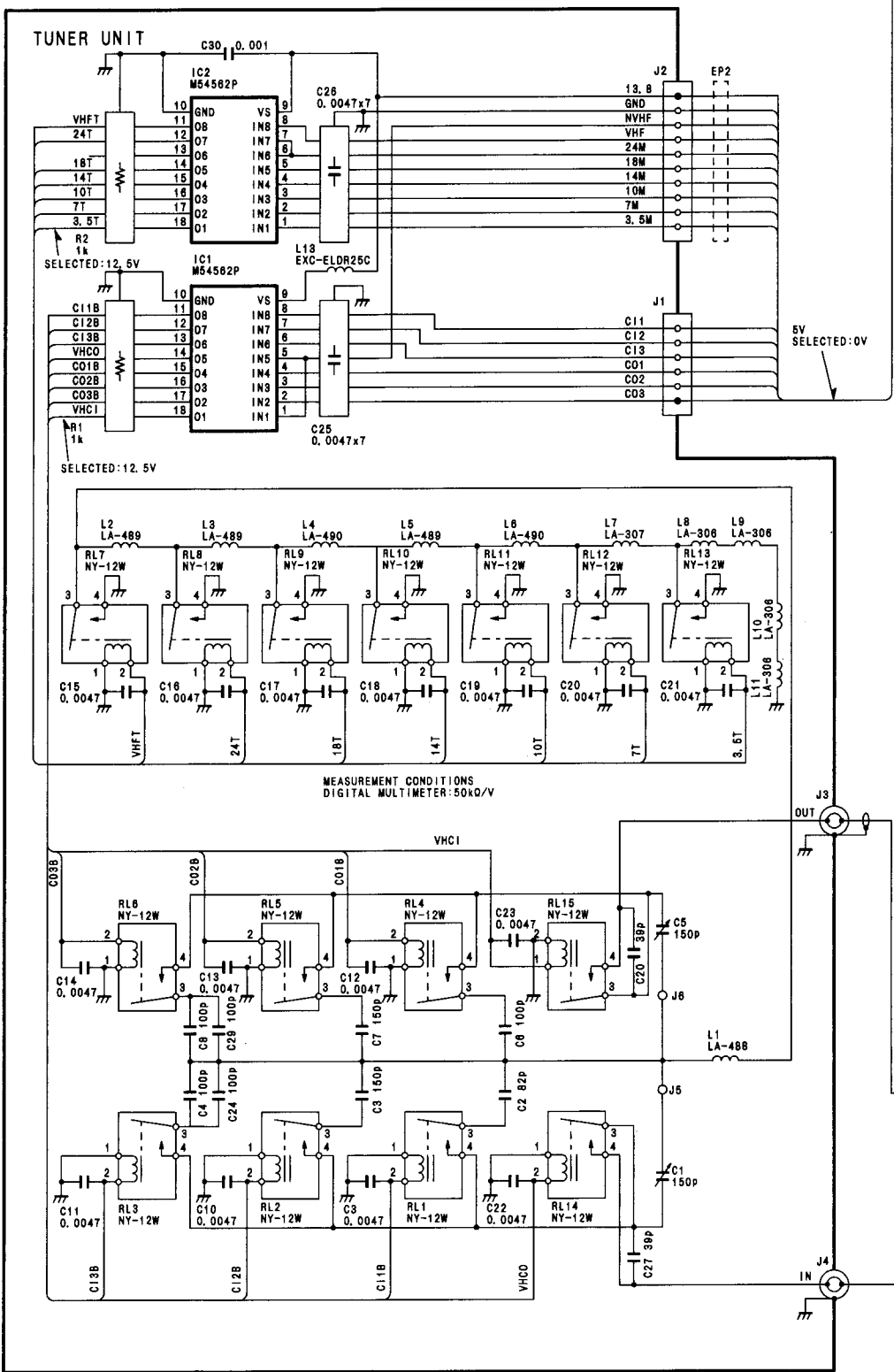
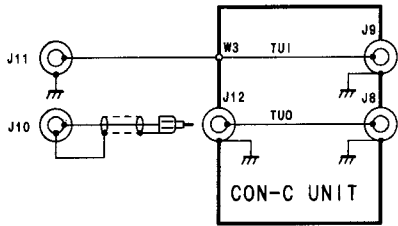
P1 TUIN TO CON-C UNIT J9

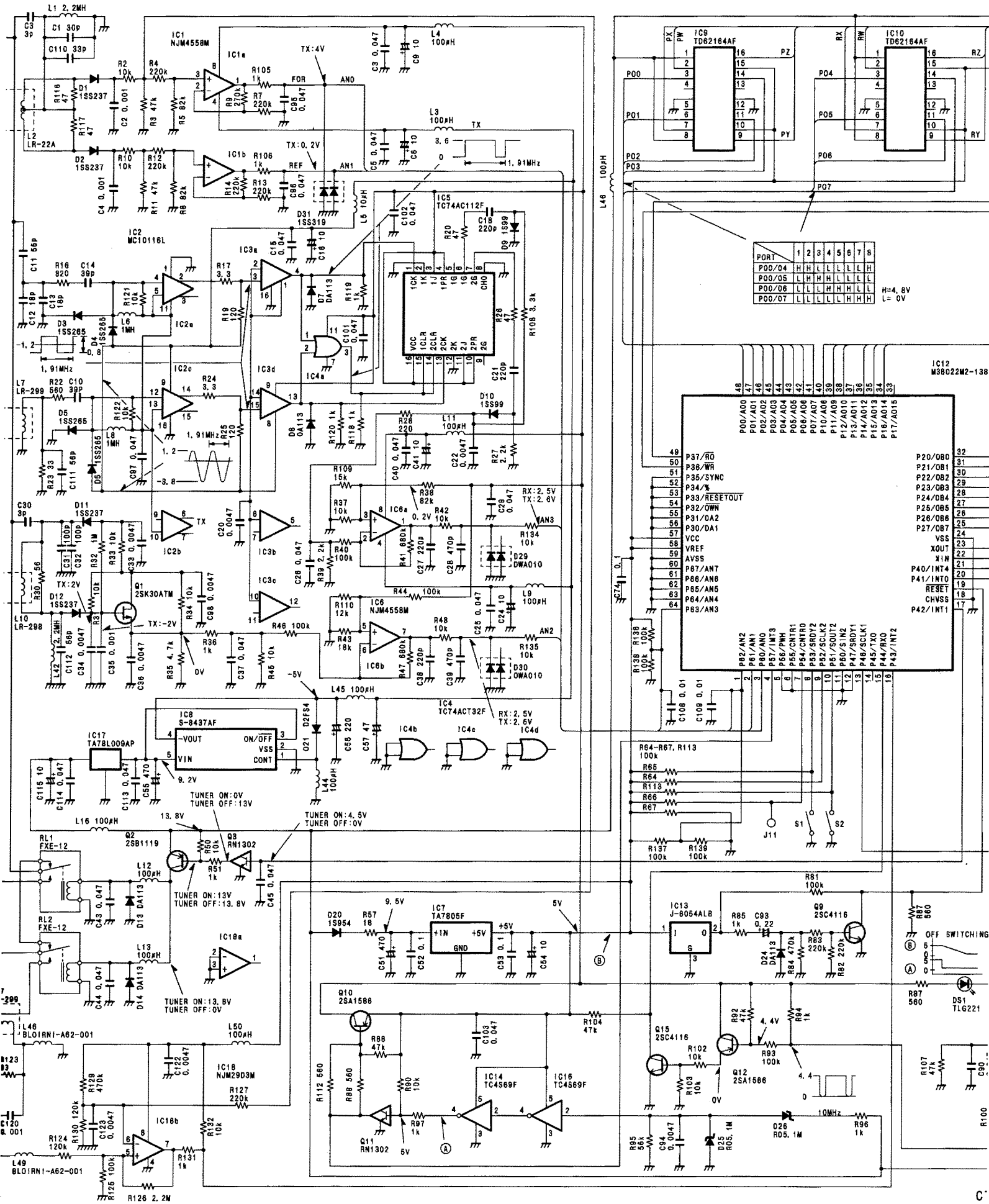
P2 FROM TUNER UNIT J2

P1 FROM TUNER UNIT J1

- 13.8
- GND
- NVHF
- VHF
- 24M
- 18M
- 14M
- 10M
- 7M
- 3.5M

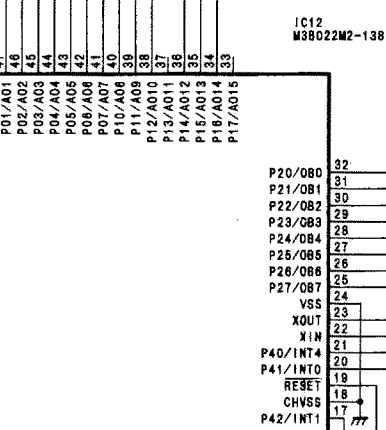


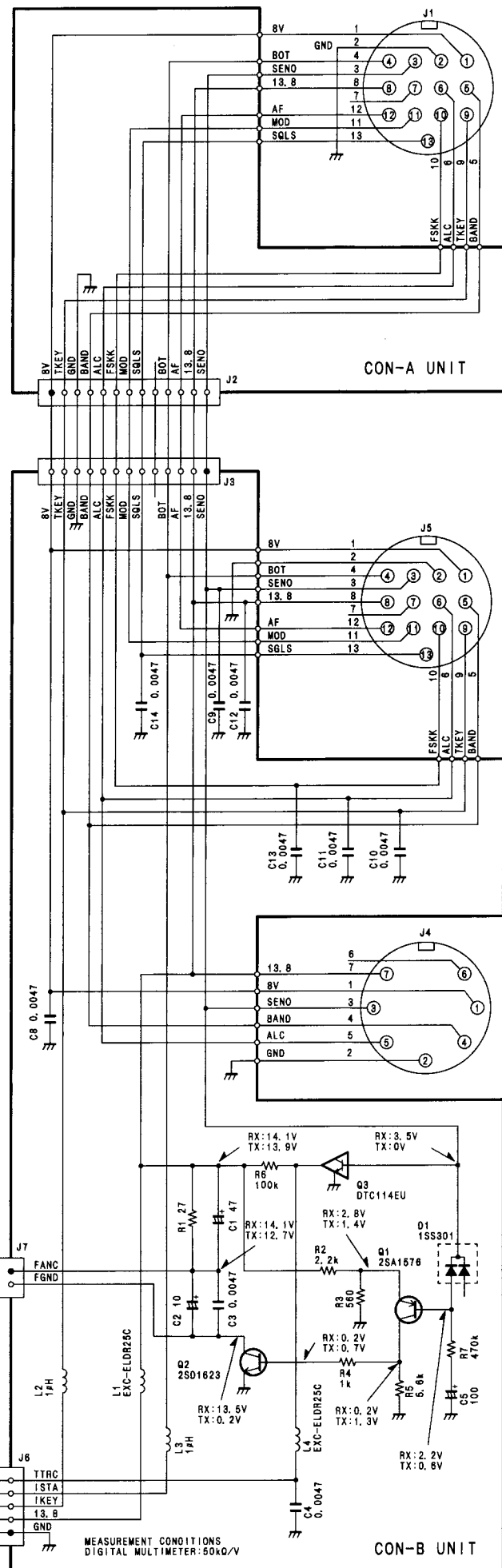
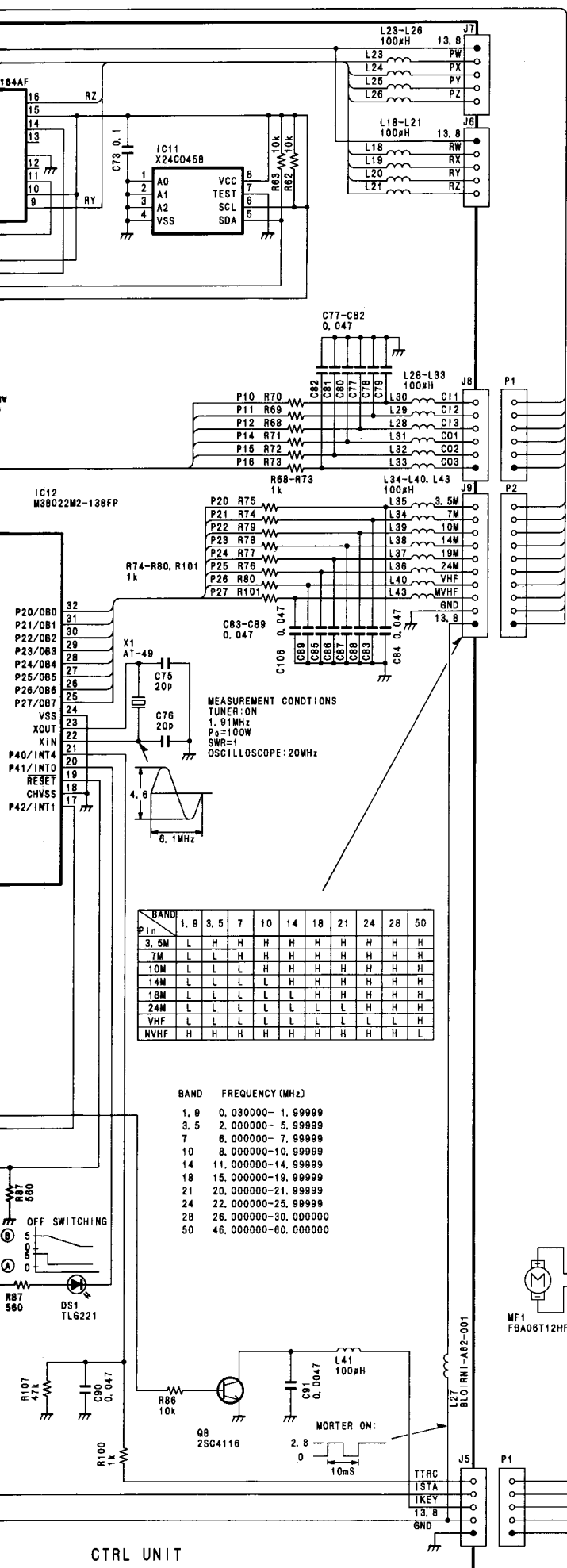




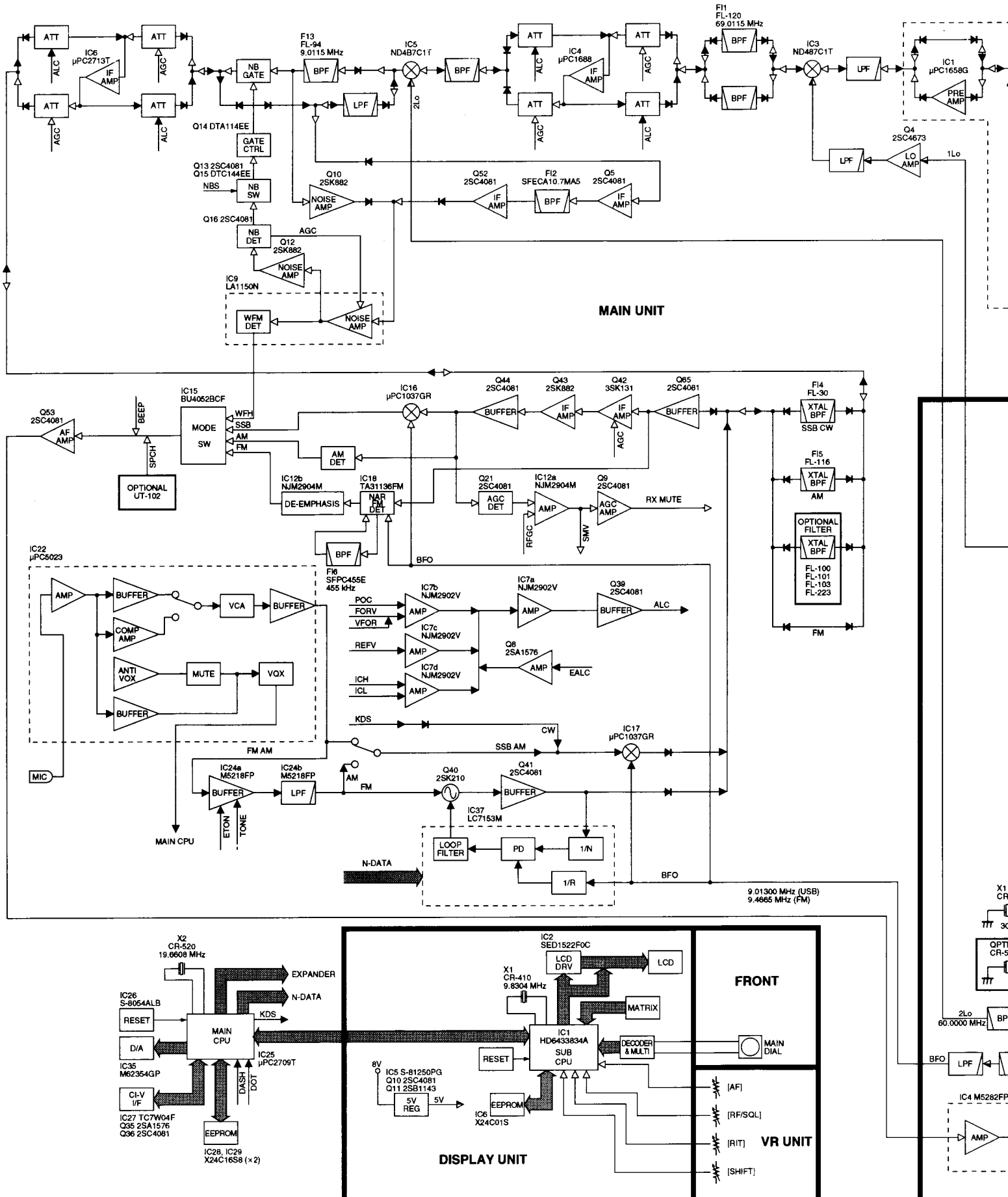
| PORT   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------|---|---|---|---|---|---|---|---|
| P00/04 | H | L | L | L | L | L | L | L |
| P00/05 | L | H | H | H | L | L | L | L |
| P00/06 | L | L | L | H | H | L | L | L |
| P00/07 | L | L | L | L | L | H | H | H |

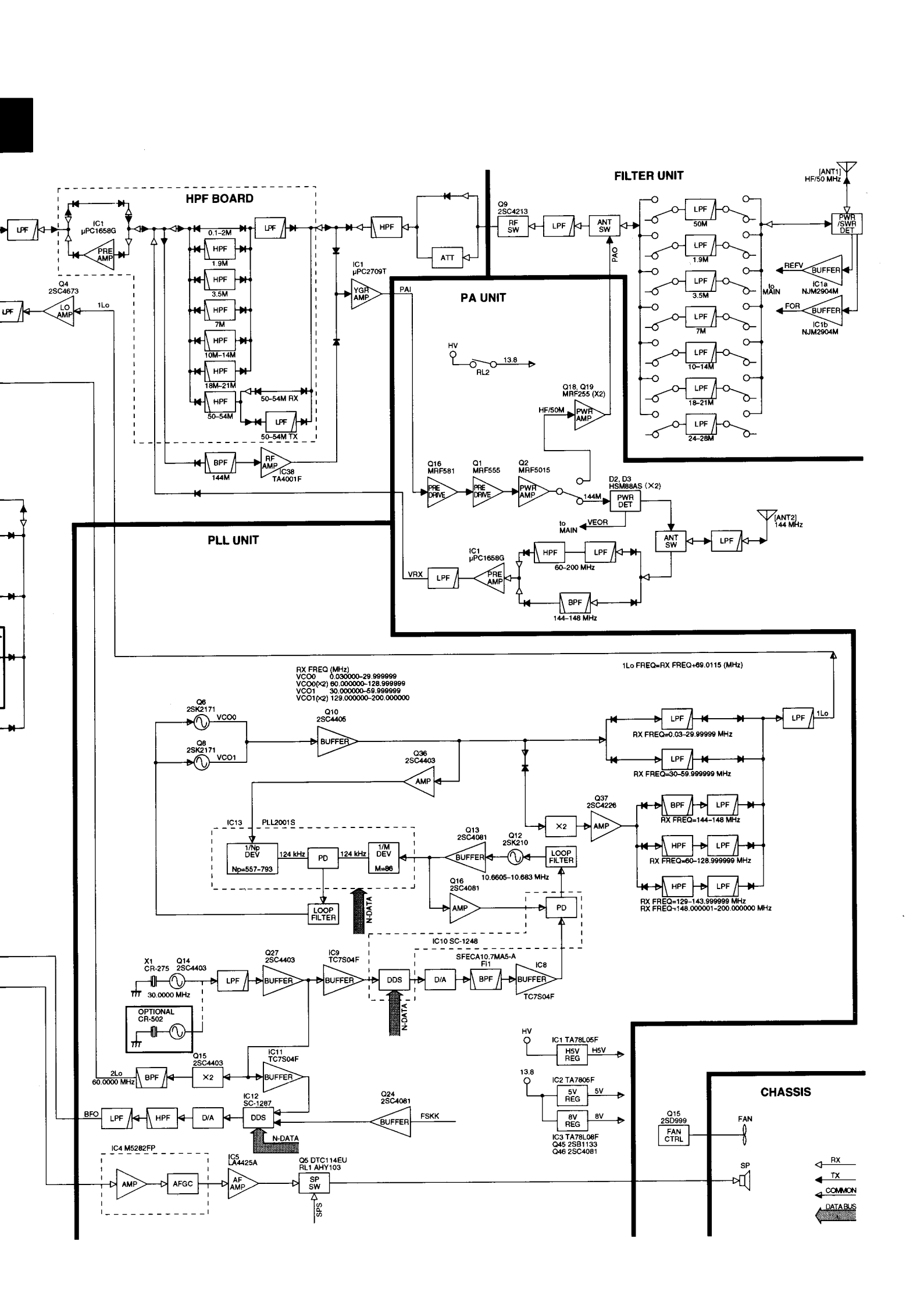
H=4, 8V  
L= 0V





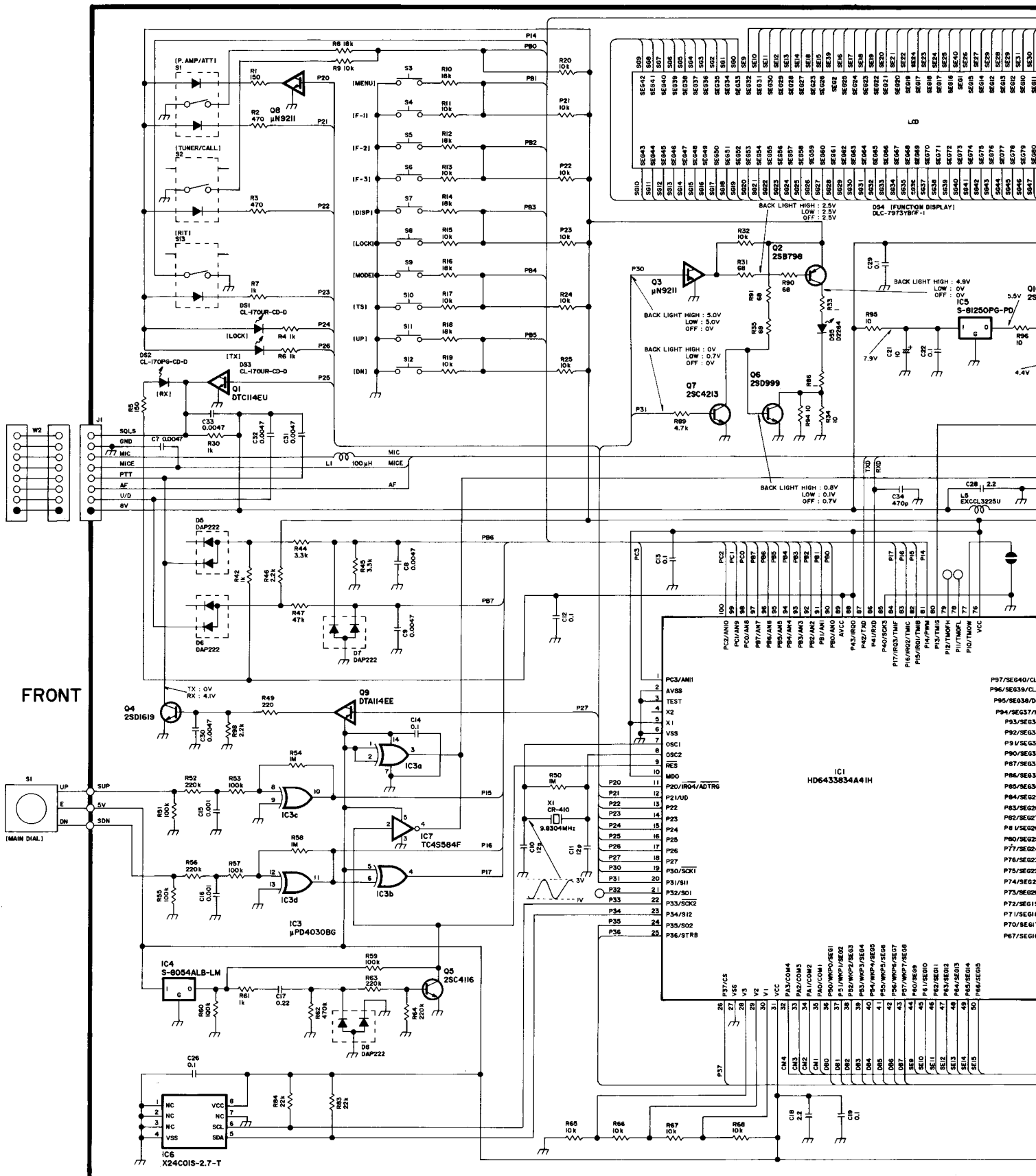
# SECTION 10 BLOCK DIAGRAM



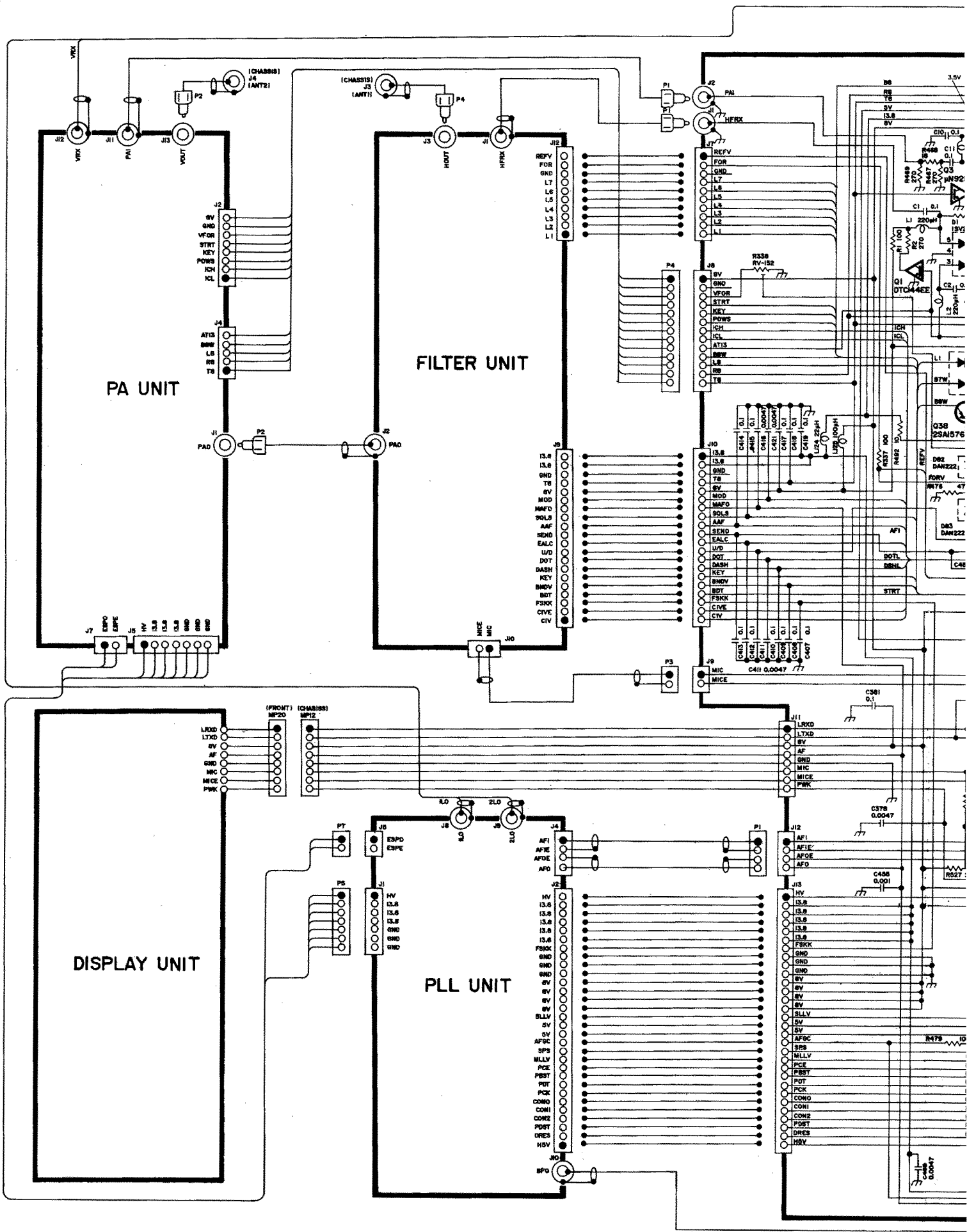


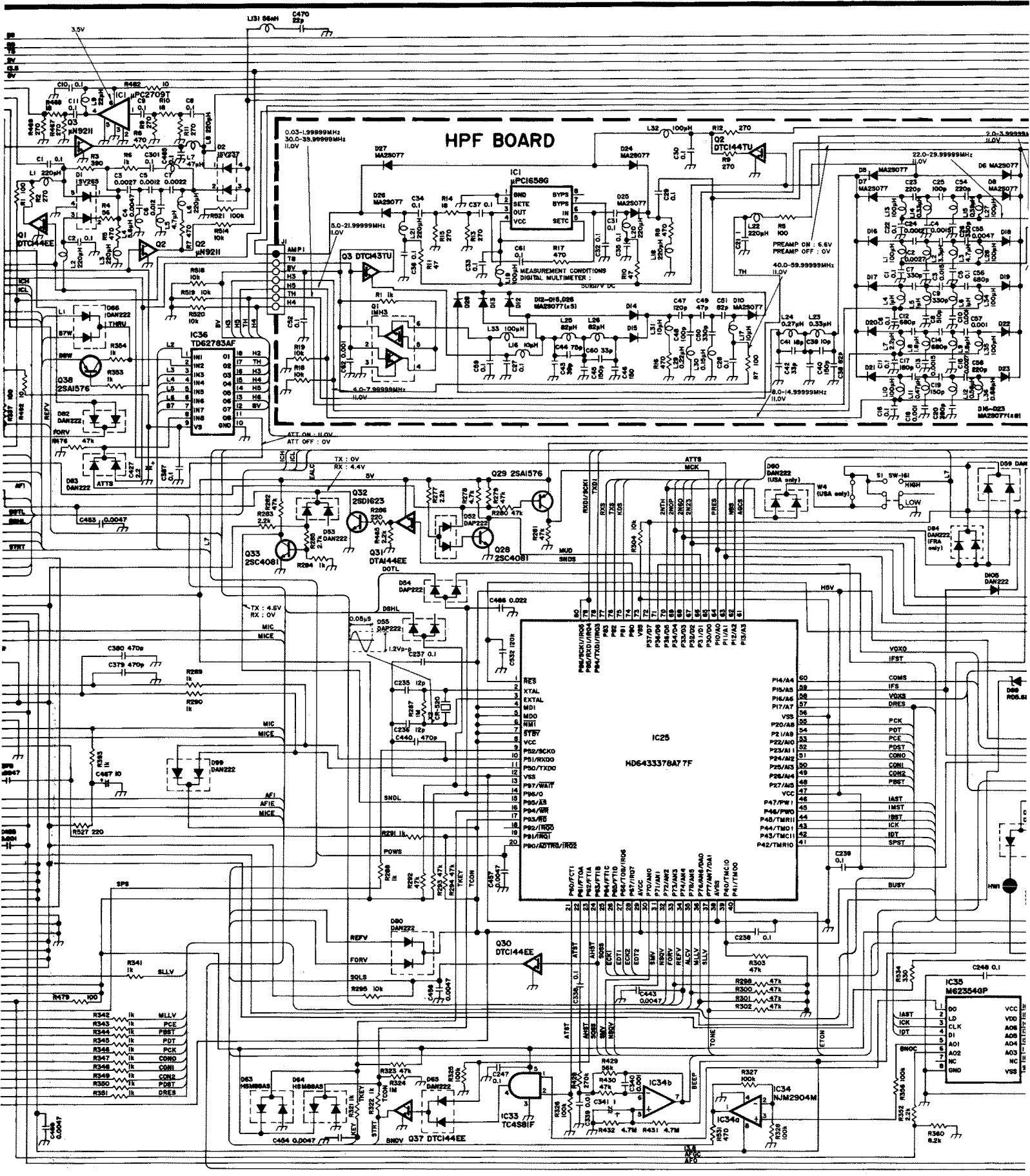


# SECTION 11 VOLTAGE DIAGRAM









**HPF BOARD**

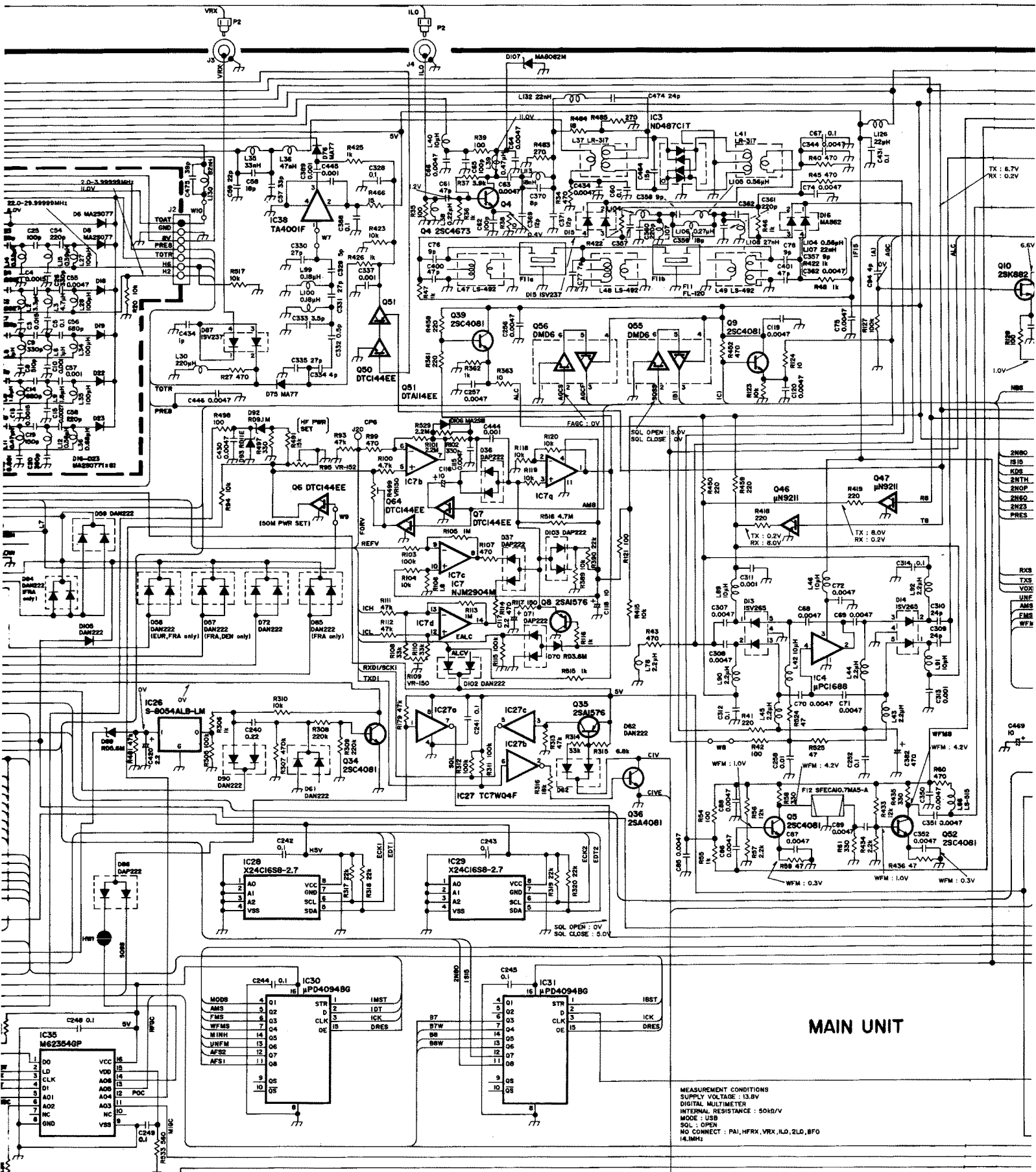
**IC25**  
**HD6433376A7 F7**

|           |    |
|-----------|----|
| P14/A4    | 60 |
| P15/A5    | 69 |
| P16/A6    | 57 |
| P17/A7    | 58 |
| VSS       | 56 |
| P20/A8    | 54 |
| P21/A9    | 53 |
| P23/A1    | 52 |
| P24/A2    | 51 |
| P25/A3    | 50 |
| P26/A4    | 49 |
| P27/A5    | 48 |
| VCC       | 47 |
| P47/PW1   | 46 |
| P48/PW0   | 45 |
| P49/TMR11 | 44 |
| P44/TMR10 | 43 |
| P45/TMR1  | 42 |
| IDT       | 41 |
| SPST      |    |
| BUSY      |    |
| ETON      |    |
| VOXS      |    |
| IFS       |    |
| COMS      |    |
| IFST      |    |
| VOXD      |    |
| DRES      |    |
| PCK       |    |
| PCE       |    |
| PDST      |    |
| CONO      |    |
| CON1      |    |
| CON2      |    |
| FRST      |    |
| P42/TMR10 | 41 |
| P43/TMR1  | 42 |
| P41/TMR0  | 43 |
| P40/A0    | 44 |
| P39/A1    | 45 |
| P38/A2    | 46 |
| P37/A3    | 47 |
| P36/A4    | 48 |
| P35/A5    | 49 |
| P34/A6    | 50 |
| P33/A7    | 51 |
| P32/A8    | 52 |
| P31/A9    | 53 |
| P30/A0    | 54 |
| P29/A1    | 55 |
| P28/A2    | 56 |
| P27/A3    | 57 |
| P26/A4    | 58 |
| P25/A5    | 59 |
| P24/A6    | 60 |
| P23/A7    | 61 |
| P22/A8    | 62 |
| P21/A9    | 63 |
| P20/A0    | 64 |
| P19/A1    | 65 |
| P18/A2    | 66 |
| P17/A3    | 67 |
| P16/A4    | 68 |
| P15/A5    | 69 |
| P14/A6    | 70 |

**IC35**  
**M62354GP**

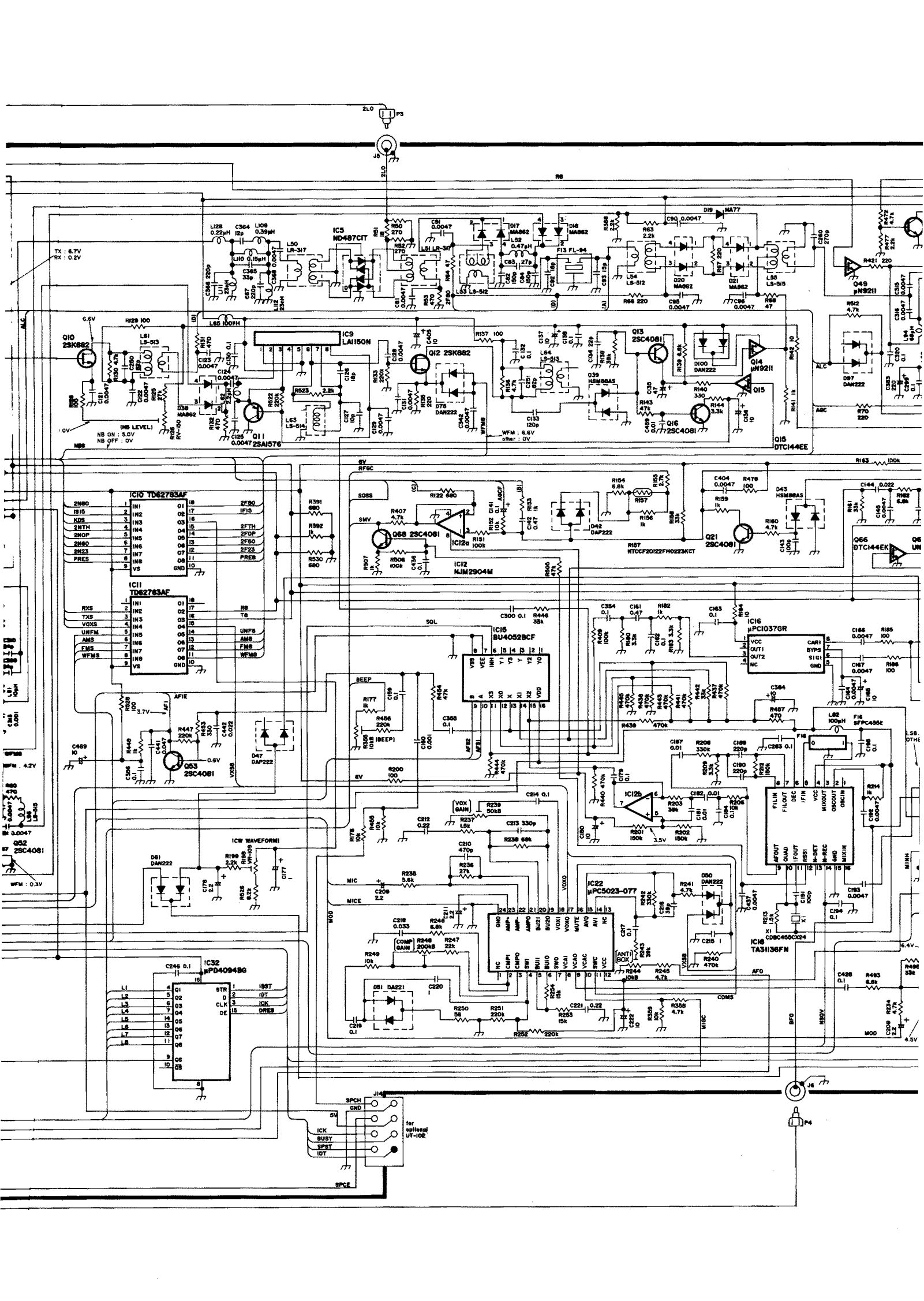
|      |    |     |
|------|----|-----|
| IABT | 1  | VCC |
| ICK  | 2  | VDD |
| IDT  | 3  | A06 |
|      | 4  | CLK |
|      | 5  | D1  |
|      | 6  | A01 |
|      | 7  | A02 |
|      | 8  | NC  |
|      | 9  | NC  |
|      | 10 | VSS |

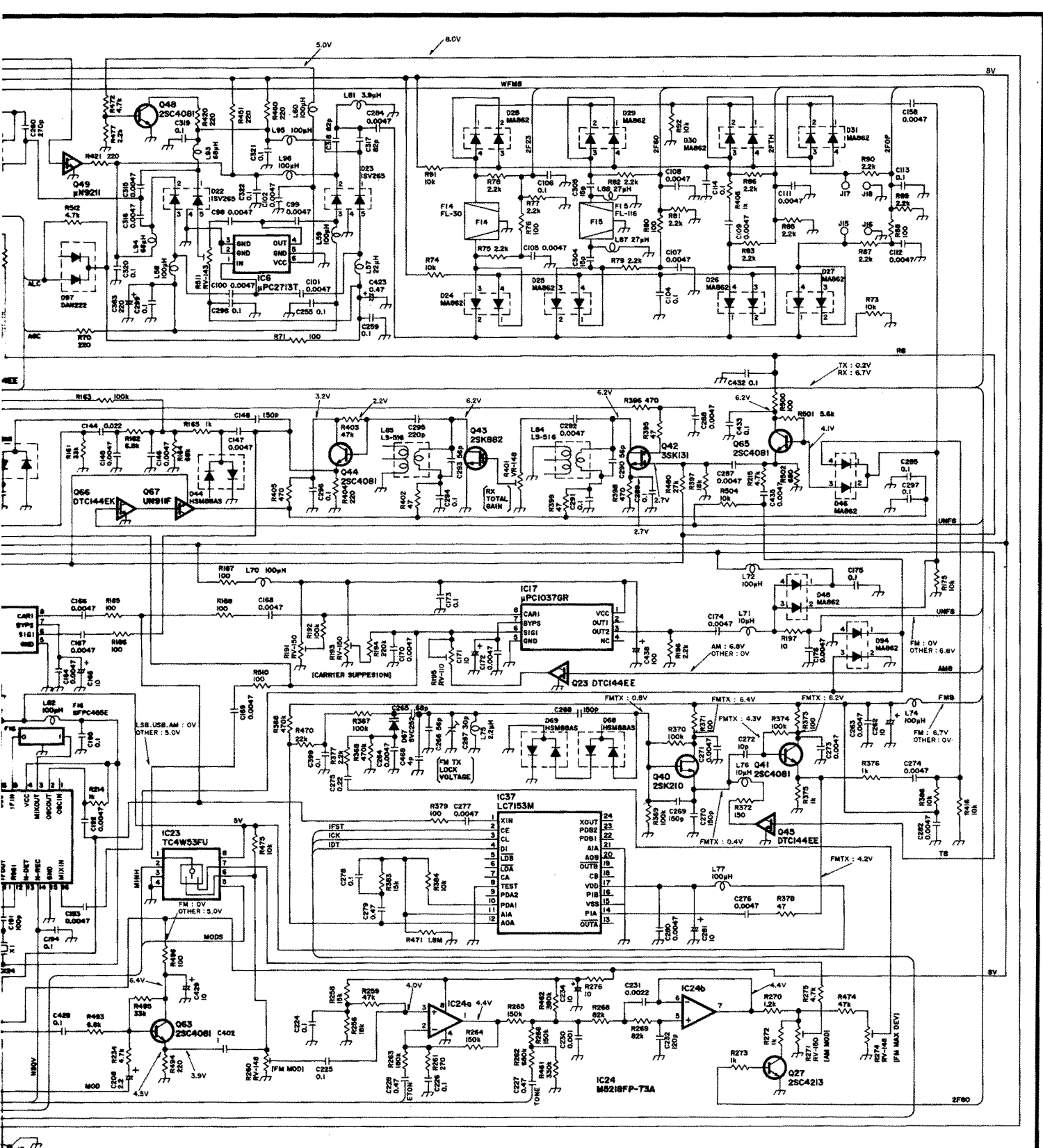
- R342 1K MLLV
- R343 1K PCE
- R344 1K FRST
- R345 1K PDT
- R346 1K PCK
- R347 1K COMD
- R348 1K COM1
- R349 1K COM2
- R350 1K FRST
- R351 1K DRES



**MAIN UNIT**

MEASUREMENT CONDITIONS  
 SUPPLY VOLTAGE : 13.0V  
 DIGITAL MULTIMETER  
 INTERNAL RESISTANCE : 50kΩ/V  
 MODE : USB  
 SOL : OPEN  
 NO CONNECT : PAI, HFRX, VRX, IL0, 2L0, BFO  
 14.1MHz





5.0V

6.0V

8V

WFMB

TX: 0.2V  
RX: 6.7V

3.2V

2.2V

6.2V

2.7V

6.2V

4.1V

IC17 µPC1037GR

Q23 DTC144EE

IC37 LC7153M

Q40 2SK210

Q41 2SC4081

Q45 DTC144EE

IC23 TC4W53FU

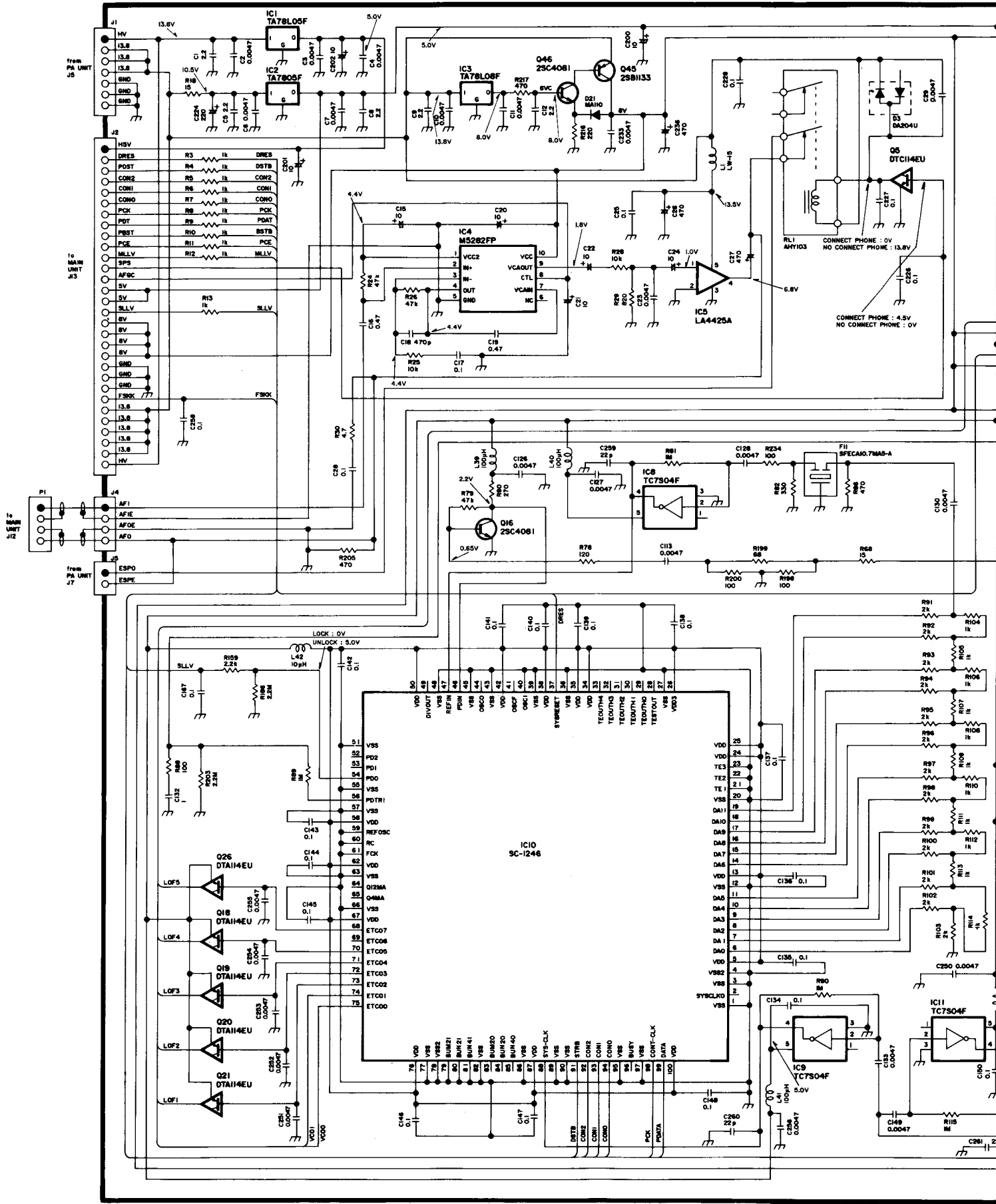
IC24a 4.4V

IC24b 7

IC24 M8218FP-73A

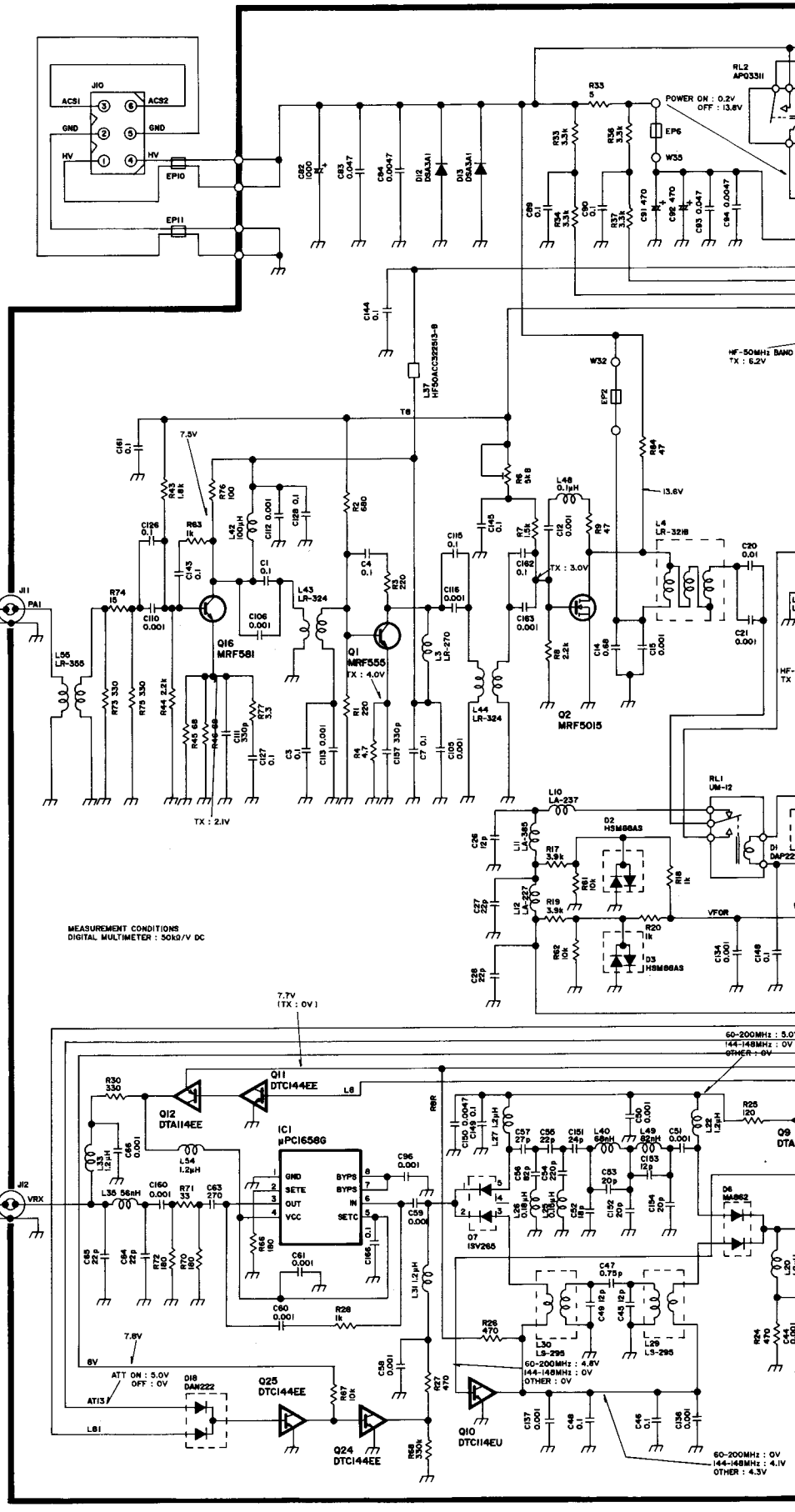
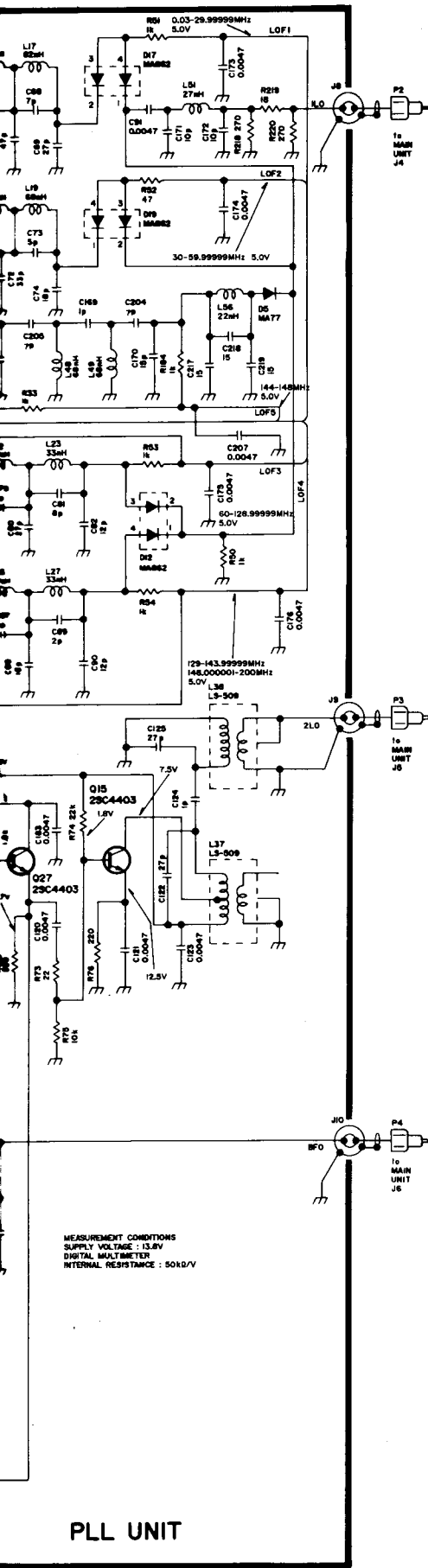
Q27 2SC4213

2F90





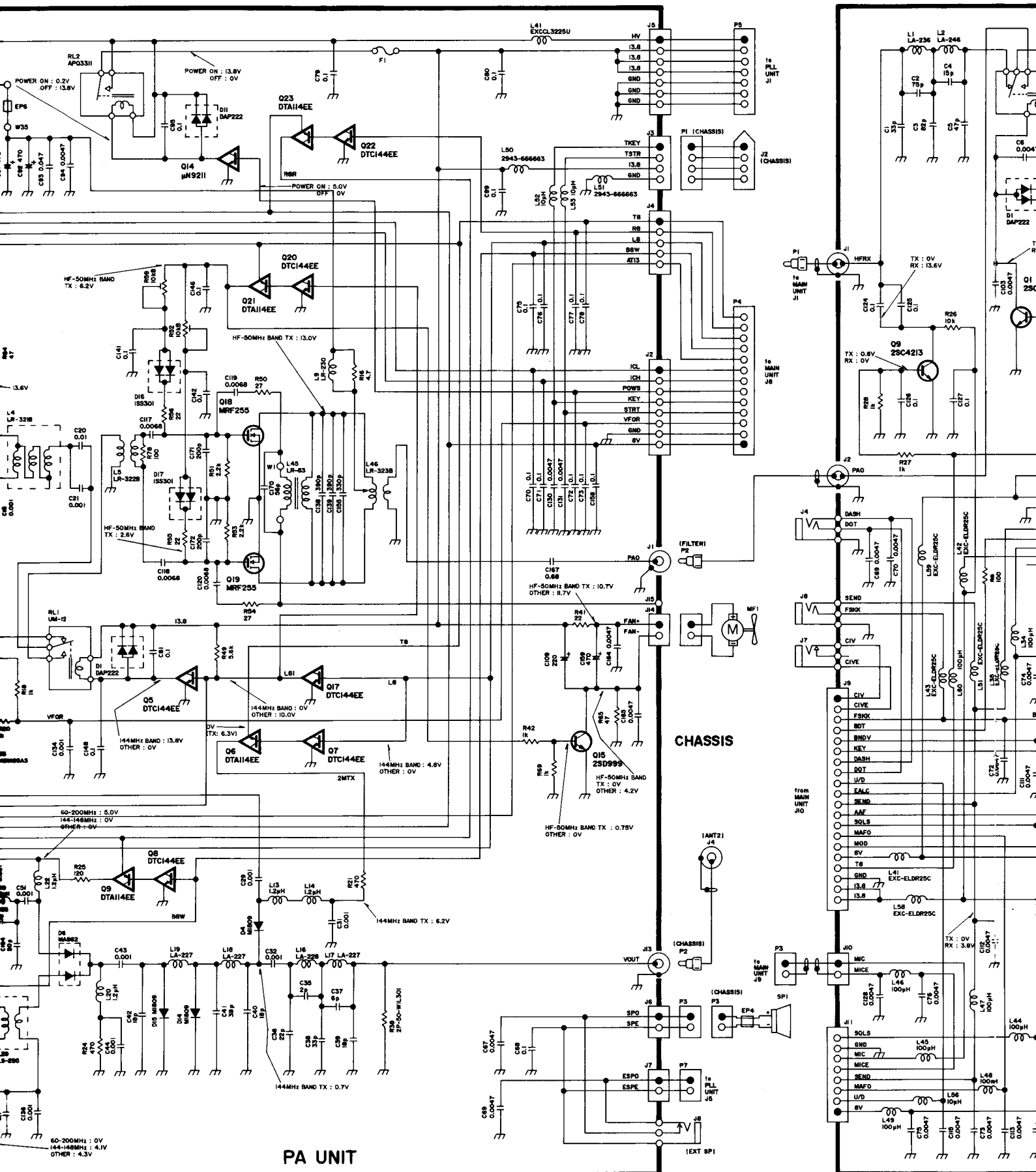




PLL UNIT

60-200MHz : 5.0V  
144-148MHz : 0V  
OTHER : 0V

60-200MHz : 0V  
144-148MHz : 4.1V  
OTHER : 4.3V



**PA UNIT**

**CHASSIS**

to PLL UNIT  
J1

J2 (CHASSIS)

J3

J4

J5

J6

J7

J8

J9

J10

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J12

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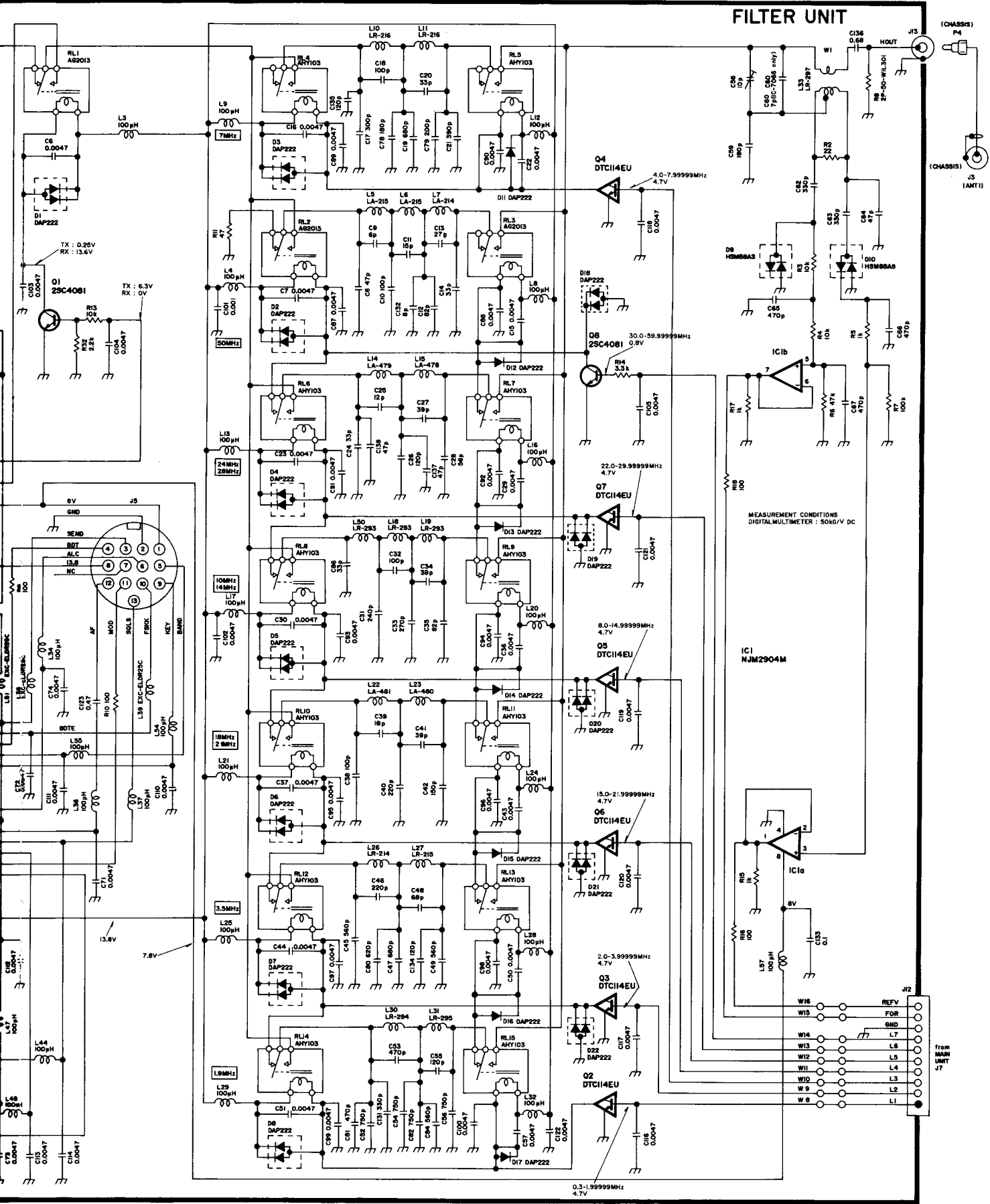
J281

J282

J283

J284

# FILTER UNIT



MEASUREMENT CONDITIONS  
DIGITAL MULTIMETER : 50kV DC

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