



# SERVICE MANUAL

HF/VHF TRANSCEIVER

**IC-706MKII**

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## INTRODUCTION

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This service manual describes the latest service information for the **IC-706MK II 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.

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## DANGER

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

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

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

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



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## ORDERING PARTS

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

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

**<SAMPLE ORDER>**

1110004080 S.IC  $\mu$ PC2709T IC-706MK II MAIN UNIT 5 pieces  
8810009020 Screw FH M2.6 x 5 ZK IC-706MK II Top cover 10 pieces

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

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## REPAIR NOTES

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

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# SECTION 1 SPECIFICATIONS

## ■ GENERAL

- Frequency coverage :
  - Receive 0.030 – 200.000 MHz\*
  - Transmit 1.800 – 1.999 MHz\*
  - 3.500 – 3.999 MHz\*
  - 7.000 – 7.300 MHz\*
  - 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 – 54.000 MHz\*
  - 144.000 – 148.000 MHz\*
- \*Depending on version.
- Mode : USB, LSB, CW, RTTY (FSK), AM, FM, WFM (WFM is for receiver only)
- Number of memory ch. : 102 (99 regular, 2 scan edges, 1 call)
- Antenna connector : SO-239x2 (for HF/50 MHz and 144 MHz)/50 Ω
- Power supply requirement : 13.8 V DC ±15% (negative ground)
- Frequency stability : Less than ± 7 ppm from 1 min. to 60 min. after power ON. After that, rate of stability less than ±1 ppm/hr. at +25°C (+77°F). Temperature fluctuations 0°C to +50°C (+32°F to +122°F) less than ± 5 ppm.
- Current consumption :
  - Transmit max. power 20 A
  - Receive standby 1.8 A
  - max. audio 2.0 A
- Usable temperature range : -10°C to +60°C (+14°F to +140°F)
- Dimensions : 167(W) × 58(H) × 200(D) mm  
6<sup>9</sup>/<sub>16</sub>(W) × 2<sup>9</sup>/<sub>32</sub>(H) × 7<sup>7</sup>/<sub>8</sub>(D) inch
- Weight : 2.45 kg (5 lb 6 oz)
- CI-V connector : 2-conductor 3.5 (d) mm (1/8")/8 Ω
- ACC connector : 13-pin

## ■ TRANSMITTER

- Output power :
  - 1.8–50 MHz band SSB/CW/RTTY/FM 5–100 W  
AM 2–40 W
  - 144 MHz band SSB/CW/RTTY/FM 2–20 W  
AM 2–8 W
- Modulation system :
  - SSB Balanced modulation
  - AM Low level modulation
  - FM Variable reactance modulation
- Spurious emissions : Less than -50 dB (HF)  
Less than -60 dB (50, 144 MHz)
- Carrier suppression : More than 40 dB
- Unwanted sideband supp. : More than 50 dB
- Microphone connector : 8-pin modular jack (600 Ω)
- KEY connector : 3-conductor 6.35 (d) mm (1/4")
- RTTY connector : 3-conductor 3.5 (d) mm (1/8")

## ■ RECEIVER

- Receive system :
  - SSB/CW/AM/WFM Double superheterodyne
  - FM Triple superheterodyne

- Intermediate frequencies :

MODE	1st	2nd	3rd
SSB/FM	69.0115 MHz	9.0115 MHz	455 kHz*
AM/FM-N	69.0100 MHz	9.0100 MHz	455 kHz*
CW	69.0106 MHz	9.0106 MHz	—
RTTY	69.0105 MHz	9.0105 MHz	—
WFM	70.7000 MHz	10.7000 MHz	—

\*FM or FM-N mode only

- Receive sensitivity : (pre-amp ON)

FREQUENCY	SSB/CW	AM	FM
0.5 – 1.8 MHz	—	13 μV	—
1.8 – 28 MHz*	0.15 μV	2 μV	—
28 – 29.999 MHz	0.15 μV	2 μV	0.5 μV
50 MHz band	0.12 μV	1 μV	0.25 μV
144 MHz band	0.11 μV	1 μV	0.18 μV

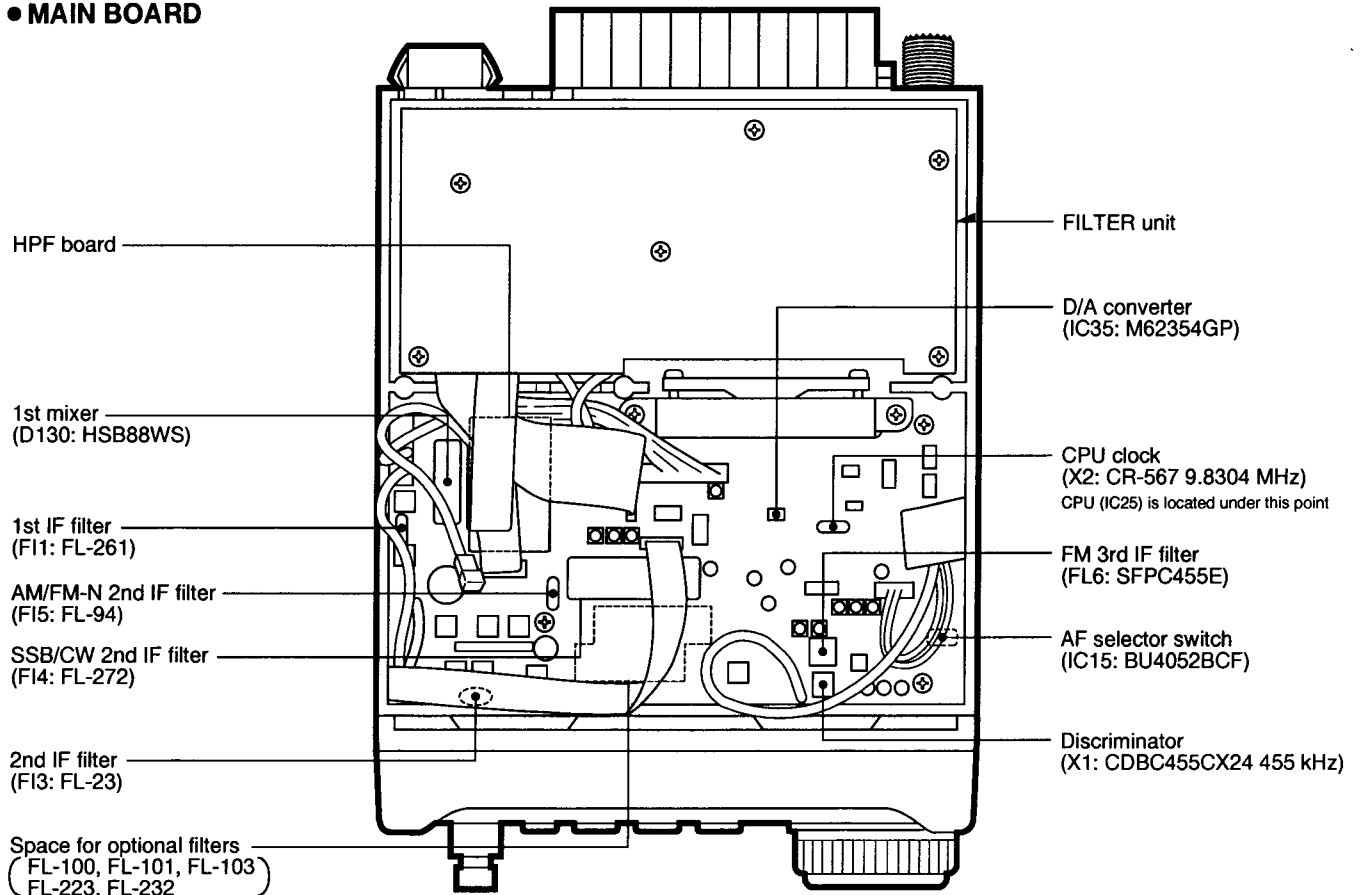
Note: SSB, CW and AM modes are measured at 10 dB S/N; FM mode at 12 dB SINAD.

\*Except 4–4.5 MHz, 8–9 MHz.

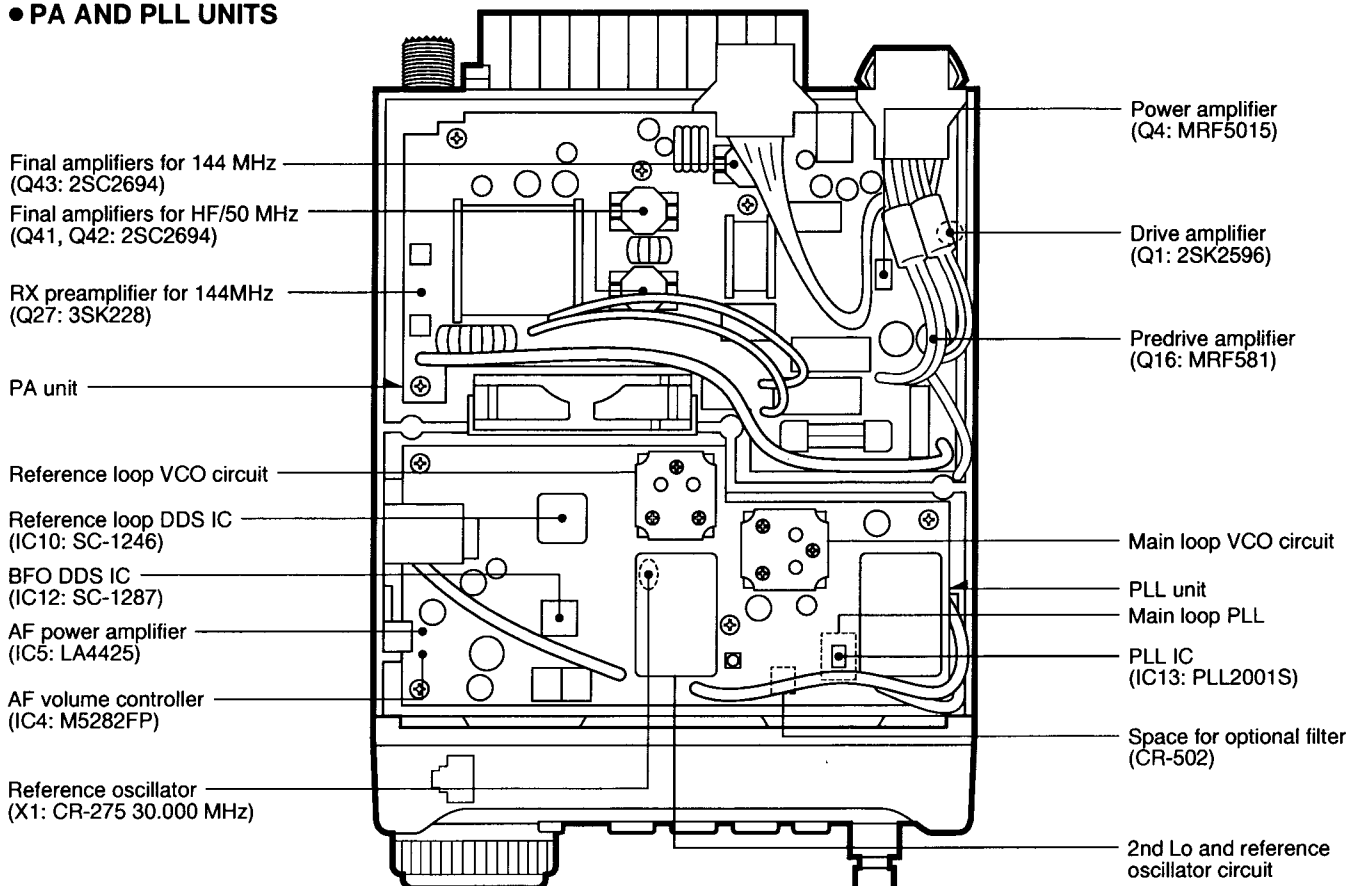
- Squelch Sensitivity : (pre-amp ON)
  - SSB Less than 5.6 μV
  - FM Less than 0.32 μV
- Selectivity\* :
  - SSB, CW, RTTY More than 2.4 kHz/-6 dB  
Less than 4.8 kHz/-60 dB
  - AM/FM-N More than 8.0 kHz/-6 dB  
Less than 30 kHz/-40 dB
  - FM More than 12 kHz/-6 dB  
Less than 30 kHz/-60 dB
- \*Without an optional filter unit and with mid bandwidth selected.
- Spurious and image rejection ratio:
  - 70 dB (except IF through/50 MHz)
  - 60 dB (144 MHz FM mode)
- Audio output power : More than 2.0 W at 10% distortion (at 13.8 V DC) with an 8 Ω load
- RIT variable range : ± 9.99 kHz
- PHONES connector : 3-conductor 3.5 (d) mm (1/8")/8 Ω
- EXT SP connector : 2-conductor 3.5 (d) mm (1/8")/8 Ω

## SECTION 2 INSIDE VIEWS

### ● MAIN BOARD



### ● PA AND PLL UNITS



# SECTION 3 CIRCUIT DESCRIPTION

## 3-1 RECEIVER CIRCUITS

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

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 (FILTER unit; RL1) and low-pass filter (FILTER unit; L1, L2, C1-C5), and are then applied to the MAIN board via J1 (FILTER unit).

#### • Used RF low-pass filter (FILTER board)

Band	Control signal	Input relay	Band [MHz]	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 board are applied to or bypass the 20 dB attenuator (R3, R4). The signals pass through the high-pass filter (L3, L4, C3-C7) 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), and then applied to the preamplifier circuit on the MAIN board.

#### (2) 2-30 MHz

The signals from the low-pass filter (L23, L24, C38-C42) are applied to one of 6 high-pass filters as at right above and are then applied to the preamplifier circuit on the MAIN board.

#### (3) 40-60 MHz

The signals pass through the low-pass filter (L25, L26, C43-C46, C60) and the high-pass filter (L29, L30, C47-C51) via D13 and are then applied to the preamplifier circuit on the MAIN board.

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

Band	Control signal	SW diode	Band [MHz]	Control signal	SW 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	D13

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

The VHF RF circuit passes and amplifies only the desired band signals and suppresses any undesired band signals. The VHF RF circuit has a preamplifier and 2 bandpass filters.

The VHF RF signals from the [ANT2] connector pass through the low-pass filter (L16, L17, C35-C39) and antenna switching circuit (D4, D14, D15, D24). The signals are amplified at the preamplifier circuit (Q27) between the 2 bandpass filters (D21, D33 and D19, D31).

The filtered signals are applied to the MAIN board via J12 (PA unit) and are then applied to the preamplifier circuit.

D19, D21, D31 and D33 are varactor diodes that tune the center frequency of an RF passband for wide bandwidth receiving and good image response rejection. When signals above 129 MHz are received, the switching diodes (D20, D22) are turned off by the control signal "LB" from the PLL unit, then the varactor diodes (D33, D31) are disconnected.

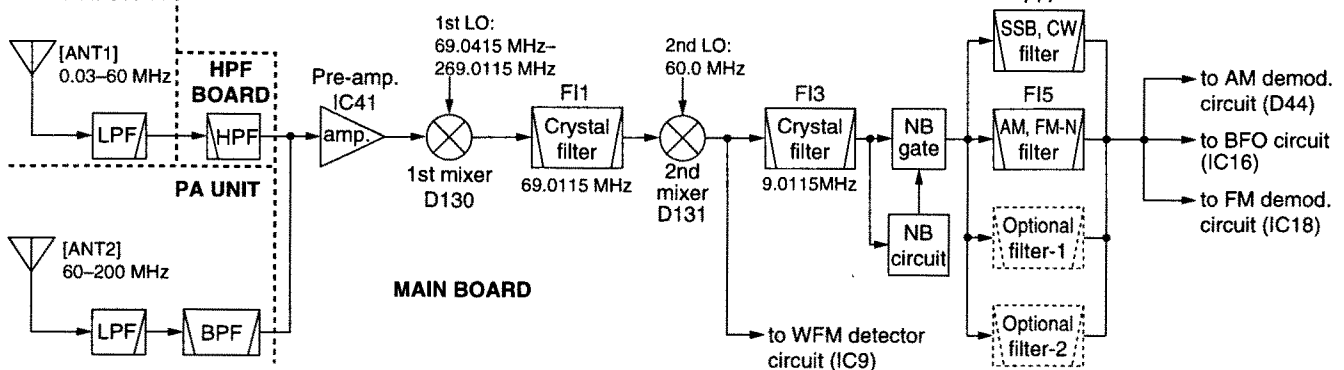
### 3-1-3 PREAMPLIFIER CIRCUIT (MAIN BOARD)

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

When the preamplifier is turned ON, the signals from the RF circuit are applied to the preamplifier (IC41) via D122. Amplified or bypassed signals are applied to the 1st mixer circuit (D130).

## • RECEIVER CONSTRUCTION

### FILTER BOARD :



### 3-1-4 1ST MIXER CIRCUIT (MAIN BOARD)

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 (D130).

The 1st LO signals (69.0415–269.0115 MHz) enter the MAIN board 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 BOARD)

The 1st IF circuit filters and amplifies the 1st IF signals. The 1st IF signals are applied to a Crystal Filter (F11) to suppress out-of-band signals.

The 69 MHz 1st IF signals (except WFM) pass through the crystal filter (F11), however, the 70.7 MHz 1st IF signal (WFM) passes through a bandpass filter (L104–L108, C358–C361). Then the filtered signals 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 circuit (D131) via the bandpass filter (L109–L112, C364–C367).

### 3-1-6 2ND MIXER CIRCUIT (MAIN BOARD)

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

The 1st IF signals from the band pass filter (L109–L112, C364–C367) are converted to 9 MHz or 10.7 MHz 2nd IF signals at the 2nd mixer (D131).

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

#### • 2st IF frequency

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

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 WFM demodulator circuit (IC9).

### 3-1-7 NOISE BLANKER CIRCUIT (MAIN BOARD)

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

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 converted voltages are then applied to the noise blanker switch (Q13, Q14). At the moment the detected voltage exceeds 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 noise 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 2nd IF signals from the noise blanker gate are then applied to the 2nd IF circuit.

### 3-1-8 2ND IF CIRCUIT

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

The 2nd IF signals from the noise blanker gate (D20, D21) are amplified at the IF amplifier (IC6) via the Tx/Rx switch (D22) and applied to a 2nd IF filter as shown below.

#### • Used 2nd IF filter

Mode	Used filter	Control signal
SSB, CW, RTTY AM nar.	FL-272 (F14)	2F23
AM, FM nar.	FL-94 (F15)	2F80
FM	Bypassed	2FTH
SSB nar.	Optional FL-223	OP1 or OP2
CW nar., RTTY nar.	Optional FL-100, FL101, FL-223, FL-232	OP1 or OP2
SSB wide, CW wide, RTTY wide	Optional FL-103	OP1 or OP2

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 at the demodulator circuit.

The amplified signals from the buffer amplifier (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 BOARD)

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 optional IF filters). This means 2nd IF signals do not pass through the center of 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-706MKII, 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 passband widths, and do not affect IF shift operation.

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

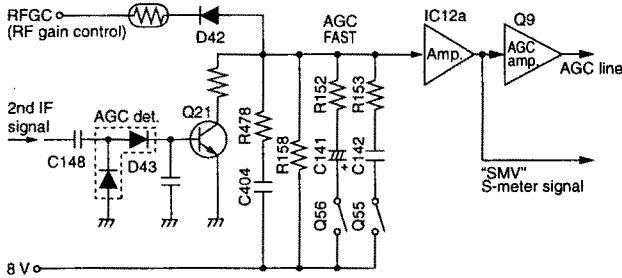
The AGC (Automatic Gain Control) circuit reduces IF amplifier gain to keep the audio output at a constant level. The receiver gain is determined by the voltage on the AGC line (Q9 collector).

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/SQ] 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, D14, D22, D23) to attenuate the received signals.

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

#### • AGC CIRCUIT



### 3-1-11 S-METER CIRCUIT (MAIN BOARD)

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 main CPU (IC25, pin 30) via Q68.

The S-meter signal from the main CPU (IC25) is applied to the sub CPU and is then displayed on the S-meter readout.

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

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

The S-meter signal is applied to the main CPU (IC25 pin 30) in SSB/CW/RTTY modes and is compared with the threshold level set by the [RF/SQ] control. The [RF/SQ] setting is picked up at the sub CPU (DISPLAY board; IC1, pin 99). The main CPU compares the S-meter signal and [RF/SQ] setting, and controls the AF selector switch (IC15) to cut out AF signals via IC27a.

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 noise squelch signal from pin 14 is applied to the main CPU (pin 31) via the "NSQV" signal line. The CPU then controls the AF selector switch (IC15).

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

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

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

#### (2) AM mode

The 2nd IF signals from the buffer amplifier (Q44) are detected at the AM detector (D44). The detected AF signal is applied to the AF selector switch (IC15, pin 15).

#### (3) FM/FM NARROW modes

The 2nd IF signals from the buffer amplifier (Q65) are applied to the FM IF IC (IC18, 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 14) via the de-emphasis circuit (IC12b).

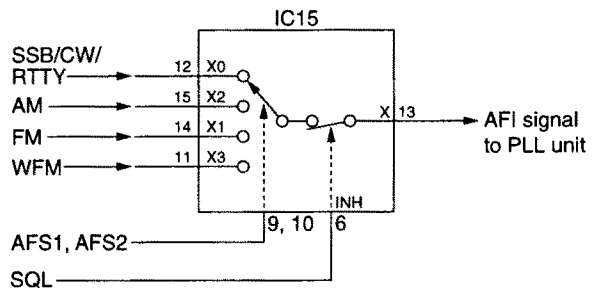
#### (4) WFM mode

The 2nd IF signals from the IF amplifier (Q5) pass through F12, 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 BOARD)

The AF signals from one of the detector circuits are 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 (PLL UNIT)

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

The AF signals from the AF selector switch (MAIN board; IC15) are applied to the PLL unit via the "AFI" signal line. The CW side tone/beep tone and optional synthesized voice are also applied to the PLL unit via the "AFBP" signal line.



The AF signals from the MAIN board are applied to the VCA (Voltage Controlled Amplifier) circuit (IC4). The AF gain setting from the main CPU is converted to DC voltage at the D/A converter (MAIN board IC35) and applied to the VCA control terminal (IC4, pin 8) via the "AFGC" signal line. The output 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 BOARD)

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

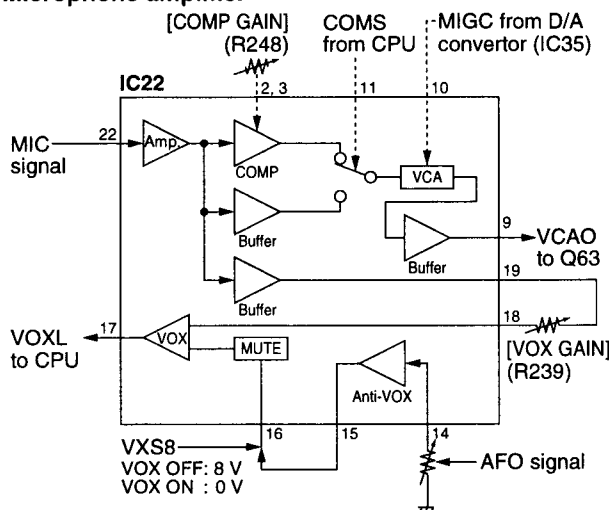
Audio signals from the front or rear panel [MIC] connector enter the microphone amplifier IC (IC22, pin 22) and are then amplified at the microphone amplifier or speech compressor section. Compression level is adjusted with the [COMP GAIN] control (R248).

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 the buffer amplifier (Q63) are applied to the AF selector switch (IC23) and then to the balanced modulator (IC17).

While in AM/FM mode, the amplified signals from the buffer amplifier (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 BOARD)

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 15). 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 BOARD)

The balanced modulator converts the AF signals 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 BOARD)

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 5 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 TRANSMITTER IF CIRCUIT (MAIN BOARD)

The 9 MHz IF signal from the modulation circuit passes through the 9 MHz IF filter (FI4 in SSB/CW/RTTY modes; FI5 in AM/FM-N modes; through in FM mode). The signal is amplified at IC6, and then passes through the total gain adjustment volume (R511), and the crystal filter (FI3). The signal is then applied to the 2nd mixer (D131).

The signal is mixed with the 2nd LO signal (60 MHz) and converted to a 69 MHz IF signal at the 2nd mixer (D131). 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 1st mixer (D130) with the 1st LO signal. The mixers (D130, D131) and IF amplifiers (IC4, IC6) are used commonly for both receiving and transmitting.

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

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

The RF circuit amplifies the displayed frequency signal to obtain 100 W of RF output power for HF/50 MHz bands and 20 W for the 144 MHz band.

The HF/50 MHz RF signal from the 1st mixer (D130) via the low-pass filter enters the HPF board and then passes through one of 6 high-pass filters (Refer to 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 board, is amplified at the YGR amplifier (IC1), and is then applied to the PA unit.

The 144 MHz RF signal from the 1st mixer (D130) via the low-pass filter bypasses the filters in the HPF board via the "TOTR" line and passes through the bandpass filter (L99-L101, C329-C333) in the MAIN board. The signal is amplified at the RF amplifier (IC38) and YGR amplifier (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 (Q4) in sequence. The amplified signal is applied to the band switch (RL1).

The HF/50 MHz RF signal from the band switch (RL1) is amplified at a power amplifier (Q41, Q42) to obtain a stable 100 W of RF output power. The power amplified signal is then applied to the [ANT1] connector via one of the low-pass filters in the FILTER board.

For the 144 MHz RF signal from the band switch (RL1), 20 W of RF output power is obtained at the power amplifier (Q43) and the signal is applied to the [ANT2] connector via the antenna switching circuit and low-pass filter.

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

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 the power detector (FILTER board; D9), buffer-amplified at IC1b and applied to the MAIN board as the "FOR" voltage. The

144 MHz RF power signal level is detected at the power detectors (PA unit; D2, D3) and applied to the MAIN board as the "VFOR" voltage.

The "FOR" and "VFOR" voltages are combined to the "FORV" voltage and 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 level determined by the RF power setting until the "FORV" and "POC" voltages are equalized.

In AM mode, IC7a operates as an averaging ALC amplifier with Q69 and C116. Q64 turns ON and the "POC" voltage is shifted for 40 W AM output power (maximum, 8 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 BOARD)

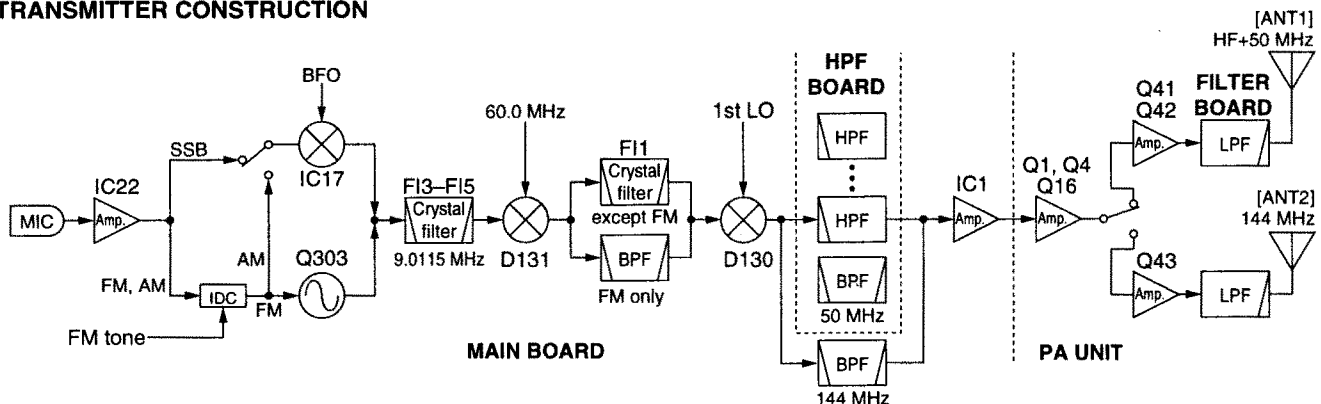
The APC (Automatic Power Control) circuit protects the power amplifiers on the PA unit from high SWR and excessive current for the HF/50 MHz bands.

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 board), buffer-amplified at IC1a and applied to the MAIN board 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 driving current at the power amplifier is detected in the voltages ("ICH" and "ICL") which appear at both terminals of a 0.012 Ω resistor (R35) on the PA unit. The detected voltages are applied to the differential amplifier (IC7d pins 12, 13). When the current of the power amplifier exceeds 22 A, IC7d controls the ALC line via IC7a to prevent excessive current flow.

## • TRANSMITTER CONSTRUCTION



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

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

#### (1) Power meter

The "FOR" and "VSOR" 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), an 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.

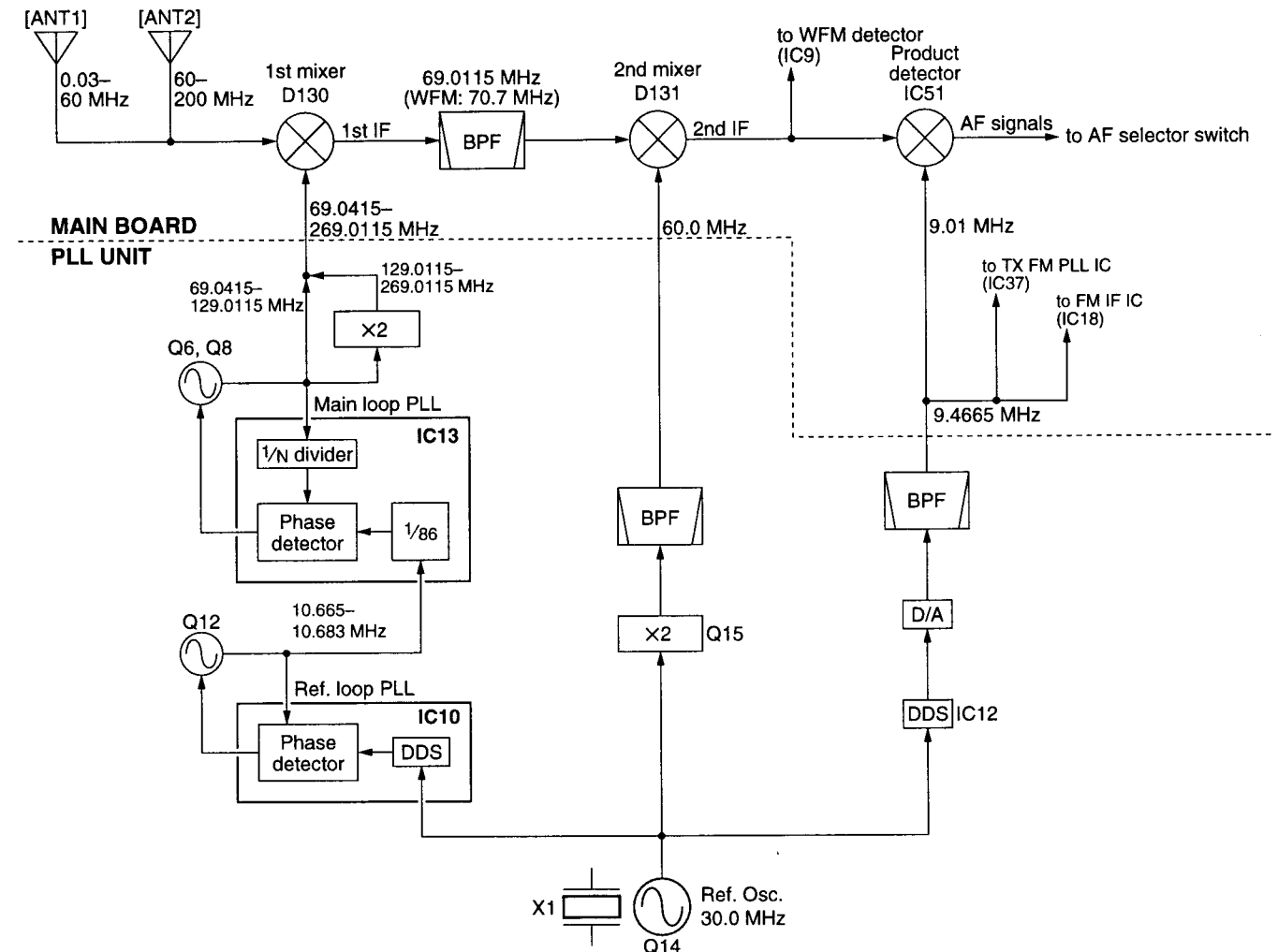
#### 3-3-2 1ST LO PLL CIRCUIT

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 at D8 for oscillating a wide frequency range.

### • FREQUENCY CONSTRUCTION



### (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 (IC 10, 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 at D8 and amplified at Q37.

The oscillated signal passes through a low-pass or bandpass filter and is then applied to the MAIN board 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 1st LO and BFO circuits as a system clock and for the 2nd LO signal.

The oscillated signal is buffer-amplified at Q27, doubles at Q15 and the 60 MHz frequency is picked up at the bandpass filter (L37, L38). The 60 MHz signal is applied to the MAIN board 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 (R116–R135). The analog wave is passed through the high-pass filter and low-pass filter. The 9 MHz BFO signal is then applied to the MAIN board 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 frequency as the 3rd LO signal.

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.

### • BFO frequency

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 (–CW pitch frequency)	9.0106 (–CW pitch frequency)
CW-R	9.0106 (+CW pitch frequency)	9.0106 (+CW pitch frequency)
RTTY	9.008375 (2125 Hz tone) 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 BOARD AND PLL UNIT)

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 board; IC35) or DDS IC (PLL unit; IC10) depending on the displayed frequency.

The A/D converter output from IC35 pin 5 is doubled 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
0.03–1.999999	L1	L1	3.76 V	VCO0	LOF1
2.0–3.999999	L2	L2	3.08 V		
4.0–7.999999	L3	L3	2.57 V		
8.0–10.999999	L4	L4	0 V		
11.0–14.999999			2.06 V		
15.0–21.999999	L5	L5	1.61 V		
22.0–29.999999	L6	L6	1.12 V	VCO1	LOF2
30.0–39.999999	B7W	L7	0.61 V		
40.0–59.999999	B7				
60.0–128.999999	B8W	L8		VCO0	LOF3
129.0–143.9999					
144.0–148.0000	B8			VCO1	LOF5
148.000001–200.000000	B8W				

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

Pin number	Port name	Description
13	DSHL	Input port for the external paddle (DASH). Low : During key down
14	DOTL	Input port for the external paddle (DOT) or straight key. Low : During key down
15	SNDL	Input port for the [RTTY] or [MIC] connector. High : While transmitting.
16	KEY	Input port for transmit control signal from the optional AT-180/AH-3 antenna tuners.
17	STRT	Input port for the optional AH-3 antenna tuner connection detection. High : When AH-3 is connected.
18	SQLS	Outputs a squelch control signal for the external unit.
19	PWK	Input port for the [POWER] switch. Low : When the [POWER] switch is pushed.
20	POWS	Outputs a power ON signal for the optional AH-3 antenna tuner. High : While power is ON.
21	ATST	Outputs start signal for the optional AT-180 antenna tuner.
22	BEEP	Output port : Beep audio signals while receiving. : CW side tone signals while transmitting.
23	AHST	Outputs start signal for the optional AH-3
24	AFMS	Outputs squelch mute control signal, applied to the AF selector switch (MAIN board; IC15). High : During squelch open.
30	SMV	S-meter level input port for squelch control.
31	NSQV	Noise level input port for squelch control in FM mode.
32	FORV	Forward RF power level input port for SWR meter indications.
33	REFV	Reflected RF power level input port for P0 and SWR meter indication.
34	ALCV	ALC level input port for ALC meter indication.
37	TONE	Outputs subaudible tone signals.
39	BUSY	Input port for the optional UT-102 (Voice synthesizer unit) activation signal. High : During speech synthesis.
40	ETON	Outputs 1750 Hz European tone signal.

### MAIN CPU PORT ALLOCATIONS (continued)

Pin number	Port name	Description
41	SPST	Outputs a strobe signal for the optional UT-102 (Voice synthesizer unit).
42	IDT	Outputs serial data for the I/O expanders, optional AT-180/UT-102.
43	ICK	Outputs a clock signal for the I/O expanders, optional AT-180/ UT-102.
44	IBST	Outputs a strobe signal for the I/O expander ICs (IC31, IC32).
45	IMST	Outputs a strobe signal for the I/O expander IC (IC30).
46	IAST	Outputs a strobe signal for the D/A converter IC (IC35).
48	PBST	Outputs a strobe signal for the BFO DDS IC (PLL unit; IC12).
49-51	CON2- CON0	Output mode control signals for the 1st LO DDS IC (PLL unit; IC10).
52	PDST	Outputs a strobe signal for the 1st LO DDS IC (PLL unit; IC10).
53	PCE	Outputs a strobe signal for the 1st LO PLL IC (PLL unit; IC13).
54	PDT	Outputs serial data for the DDS ICs (PLL unit; IC10, IC12) and PLL IC (PLL unit; IC13).
55	PCK	Outputs a clock signal for the DDS ICs (PLL unit; IC10, IC12) and PLL IC (PLL unit; IC13).
65	MCK	Input port for microphone ON/OFF switch.
66	MUD	Input port for microphone up/down switches.
74	SNDS	Input port for transmit/receive switching signals for the [ACC] connector. Low : While transmitting.
75	KDS	Outputs a CW keying signal or RTTY TX signal.
78	CTXD	Output port for CI-V bus line.
79	CRXD	Input port for CI-V bus line.

**3-4-3 SUB CPU PORT ALLOCATIONS  
(DISPLAY board IC1)**

Pin number	Port name	Description
1	SFTV	Input port for the [SHIFT] control.
18	PTTS	Outputs a PTT signal. Low : While transmitting.
19	AMBS	Outputs ON/OFF control signal for the display backlight. High : While display backlight is turned ON.
20	DIMS	Outputs a brightness control signal for the display backlight. High : While display backlight is dark.
80	PHNL	Input port for the [PHONES] jack connection detection. High : When the headphone or external speaker is connected to the [PHONES] jack.
81	RITK	Input port for the [RIT] switch.
96	PTTV	Input port for the [PTT] switch on the microphone.
97	MUDV	Input port for the microphone up/down signal.
98	AFGV	Input port for the [AF] control.
99	SQLV	Input port for the [RF/SQL] control.
100	RIT	Input port for the [RIT] control.

**MAIN board IC30 (continued)**

Pin number	Port name	Description
13	UNFM	Outputs non-FM mode select signal. High : When SSB/CW/RTTY/AM modes are selected.
14	MINH	Outputs an audio mute signal for the Tx AF selector switch (IC23). High : While transmitting in CW/RTTY modes.

**3-4-4 I/O EXPANDER PORT ALLOCATIONS  
MAIN board IC30**

Pin number	Port name	Description																			
4	MODS	Outputs select signal for the Tx AF selector switch (IC23). High : When AM and SSB modes are selected.																			
5	AMS	Outputs AM mode select signal. High : When AM mode is selected.																			
6	FMS	Outputs FM and FM-N modes select signal. High : When FM and FM-N modes are selected.																			
7	WFMS	Outputs WFM mode select signal. High : When WFM mode is selected.																			
11, 12	AFS1, AFS2	Output select signals for the Rx AF selector switch (IC15). <table border="1" style="margin-left: 20px;"> <thead> <tr> <th rowspan="2">PORT</th> <th colspan="4">MODE</th> </tr> <tr> <th>WFM</th> <th>FM</th> <th>AM</th> <th>SSB/CW/RTTY</th> </tr> </thead> <tbody> <tr> <td>AFS1</td> <td>High</td> <td>High</td> <td>Low</td> <td>Low</td> </tr> <tr> <td>AFS2</td> <td>High</td> <td>High</td> <td>Low</td> <td>Low</td> </tr> </tbody> </table>	PORT	MODE				WFM	FM	AM	SSB/CW/RTTY	AFS1	High	High	Low	Low	AFS2	High	High	Low	Low
PORT	MODE																				
	WFM	FM	AM	SSB/CW/RTTY																	
AFS1	High	High	Low	Low																	
AFS2	High	High	Low	Low																	

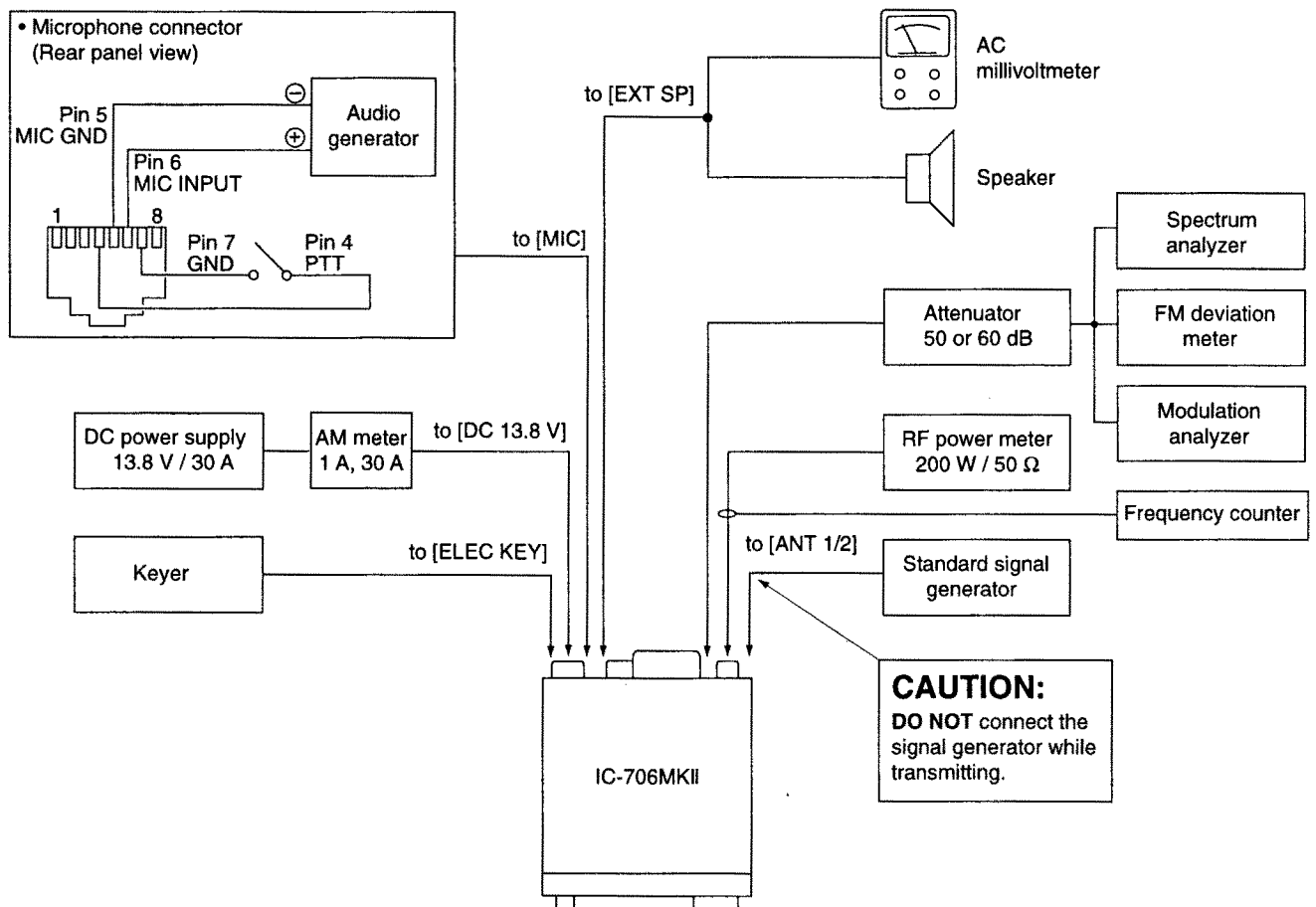
# SECTION 4 ADJUSTMENT PROCEDURES

## 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 kΩ/DC or better
RF power meter (terminated type)	Measuring range : 10–200 W	AM meter	Measurement capability: 1 A and 30 A
	Frequency range : 1.8–200 MHz	Audio generator	Frequency range : 300–3000 Hz
	Impedance : 50 Ω		Output level : 1–500 mV
	SWR : Less than 1.2:1	Attenuator	Power attenuation : 50 or 60 dB
Frequency counter	Frequency range : 0.1–200 MHz		Capacity : 150 W or more
	Frequency accuracy: ±1 ppm or better	Spectrum analyzer	Frequency range : At least 400 MHz
RF voltmeter	Frequency range : 0.1–200 MHz		Spectrum bandwidth: ±100MHz or more
	Measuring range : 0.01–10 V	FM deviation meter	Frequency range : At least 200 MHz
Digital multimeter	Input impedance : 10 MΩ/DC or better		Measuring range : 0 to ±10 kHz
Standard signal generator (SSG)	Frequency range : 0.1–200 MHz	Modulation analyzer	Frequency range : At least 150 MHz
	Output level : 0.1 μV–32 mV (–127 to –17 dBm)		Measuring range : 0–100 %
Distortion meter	Frequency range : 1 kHz ±10 %	External speaker	Impedance : 8 Ω
	Measuring range : 1–100 %		Max. Input power : 5 W
Oscilloscope	Frequency range : DC–20 MHz		
	Measuring range : 0.01–10 V		

### ■ CONNECTION



## 4-2 PLL ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT	
		UNIT	LOCATION		UNIT	ADJUST
REFERENCE FREQUENCY	<ul style="list-style-type: none"> <li>• Displayed freq. : Any</li> <li>• L36 (PLL unit) : Center</li> <li>• Receiveing</li> </ul>	PLL	Connect an RF voltmeter to check point P3.  Connect a frequency counter to check point P3.	Maximum level (0 dBm or more)  60.000000 MHz	PLL	L37, L38
						L34, L36
REFERENCE LOOP LOCK VOLTAGE	<ul style="list-style-type: none"> <li>• Displayed freq. : 0.03000 MHz</li> <li>• Mode : USB</li> <li>• Receiving</li> </ul>	PLL	Connect a digital multimeter or oscilloscope to check point CP1.	2.0 V	PLL	C104
MAIN LOOP LOCK VOLTAGE	<ul style="list-style-type: none"> <li>• Displayed freq. : 30.00000 MHz</li> <li>• Mode : USB</li> <li>• Receiving</li> </ul>	PLL	Connect a digital multimeter or oscilloscope to check point CP2.	1.1 V	PLL	L3
	<ul style="list-style-type: none"> <li>• Displayed freq. : 60.00000 MHz</li> <li>• Receiving</li> </ul>			1.1 V		L6

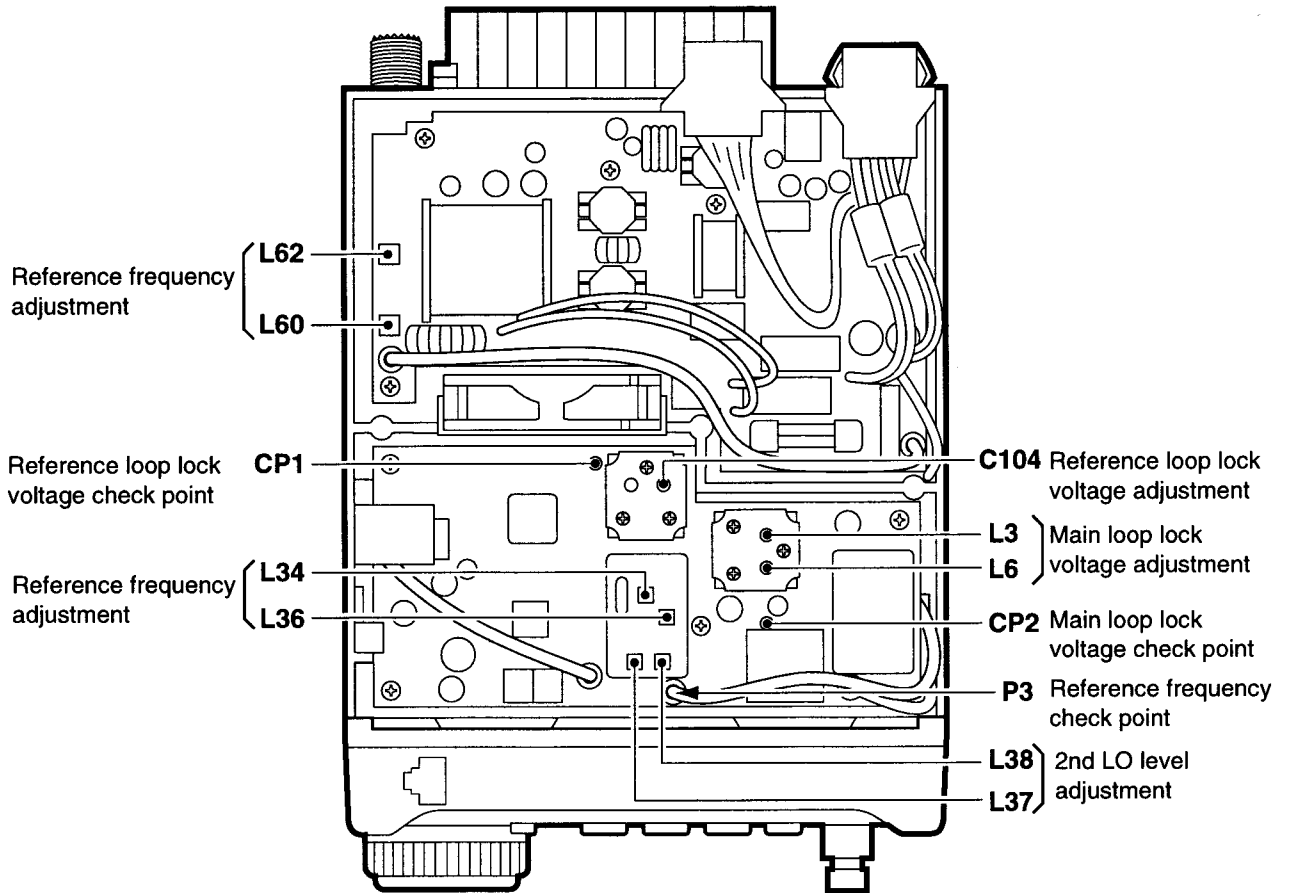
## 4-3 RECEIVER ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT		
		UNIT	LOCATION		UNIT	ADJUST	
SENSITIVITY	<ul style="list-style-type: none"> <li>• Displayed freq. : 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 ON</li> <li>• [VOX GAIN] : Center</li> <li>• [ANTI VOX] : Max counterclockwise</li> <li>• [COMP GAIN] : Center</li> <li>• [BEEP/SIDE T] : Center</li> <li>• Connect a standard signal generator to [ANT 1] and set as:                Frequency : 14.10150 MHz                Level : 0.5 <math>\mu</math>V* (-113 dBm)</li> <li>• Receiving</li> </ul>	Rear panel	Connect an AC millivoltmeter to [EXT SP] jack with an 8 $\Omega$ dummy load.	Maximum AF output level	MAIN	Adjust repeatedly L47, L48, L55, L84, L85	
				0.5 dB decrease from step 1.			L53
				0.5 dB decrease from step 2.			L54
				4	<ul style="list-style-type: none"> <li>• Displayed freq. : 146.00000 MHz</li> <li>• Connect a standard signal generator to [ANT 2] and set as:                Frequency : 146.001500 MHz</li> <li>• Receiving</li> </ul>		Maximum AF output level
RECEIVER TOTAL GAIN	<ul style="list-style-type: none"> <li>• Displayed freq. : 14.1000 MHz</li> <li>• Mode : USB</li> <li>• [P.AMP/ATT] : Preamp OFF</li> <li>• Connect a standard signal generator to [ANT 1] and set as:                Frequency : 14.1015 MHz                Level : 0.5 mV* (-53 dBm) and OFF</li> <li>• Modulation : OFF</li> <li>• Receiving</li> </ul>	Rear panel	Connect an AC millivoltmeter to [EXT SP] jack with an 8 $\Omega$ dummy load.	30 dB of AF level difference	MAIN	R401	

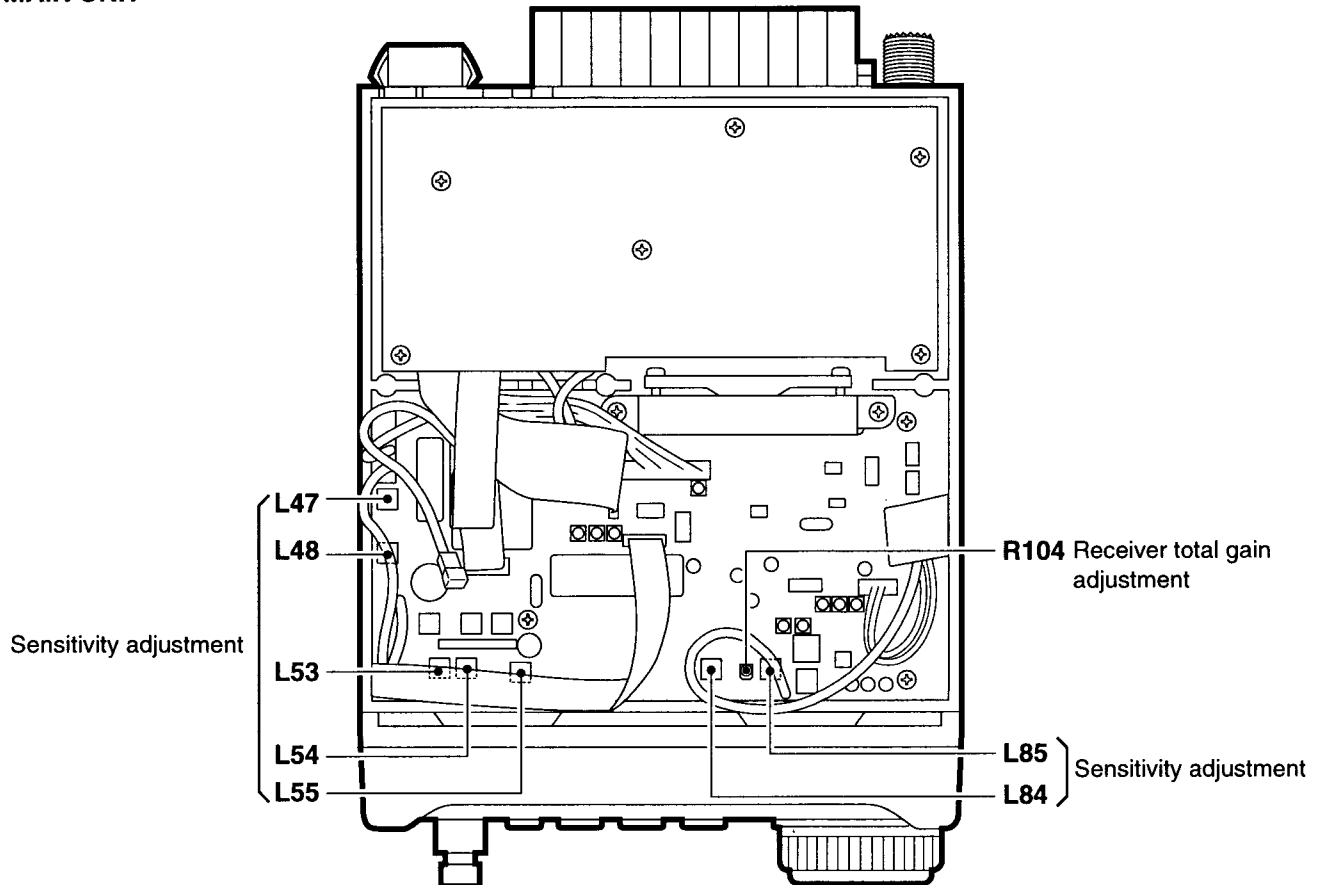
\*This output level of a standard signal generator (SSG) is indicated as SSG's open circuit.



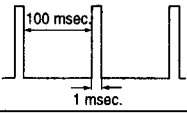
• PLL AND PA UNITS



• MAIN UNIT



## RECEIVER ADJUSTMENT (CONTINUED)

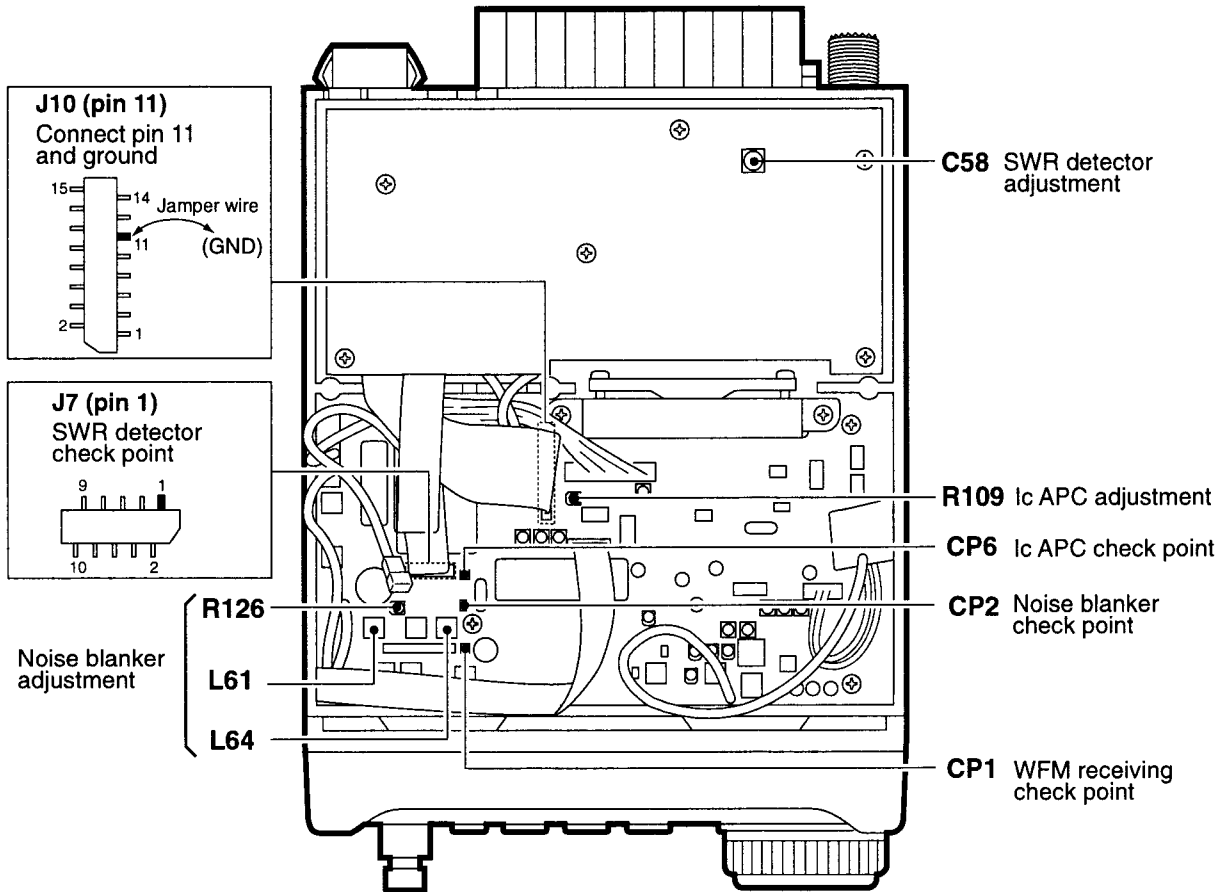
ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT	
		UNIT	LOCATION		UNIT	ADJUST
WFM RECEIVING	1 <ul style="list-style-type: none"> <li>• Displayed freq. : 80.00000 MHz</li> <li>• Mode : WFM</li> <li>• Connect a standard signal generator to [ANT 2] and set as:               <ul style="list-style-type: 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 check point CP1.	4.0 V	MAIN	L63
NOISE BLANKER	1 <ul style="list-style-type: none"> <li>• Displayed freq. : 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 <math>\mu</math>V* (-82 dBm)</li> </ul> </li> <li>and apply noise signal at right to [ANT 1] connector.</li> <li>• Receiving</li> </ul> 	MAIN	Connect an oscilloscope to check point CP2.	Maximum voltage	MAIN	L61, L64
	2 <ul style="list-style-type: none"> <li>• [M3 NB] : ON</li> <li>• Receiving</li> </ul>			Noise just reduces		R126

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

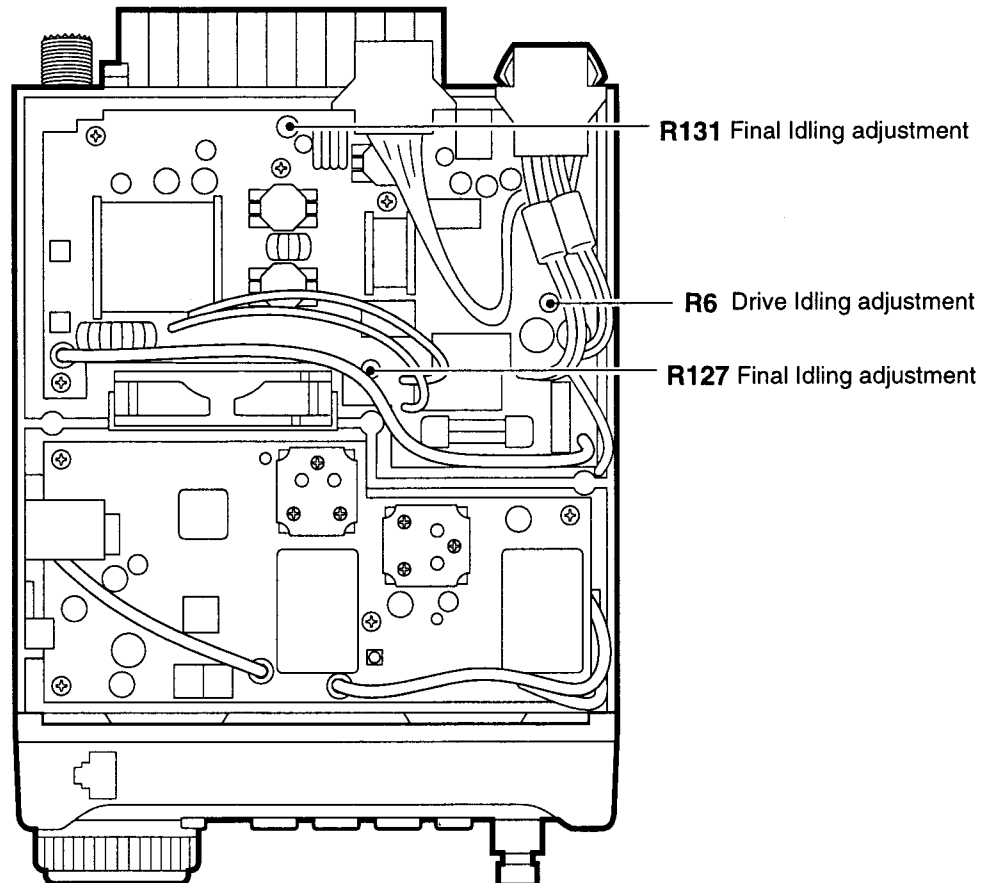
## 4-4 TRANSMITTER ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT	
		UNIT	LOCATION		UNIT	ADJUST
IDLING CURRENT (for drive amplifiers) ..... (for final amplifiers)	1 <ul style="list-style-type: none"> <li>• Displayed freq. : 14.10000 MHz</li> <li>• Mode : USB</li> <li>• [Q2 MIC GAIN] : 1 (minimum)</li> <li>• R6 (PA unit) : Max. counterclockwise</li> </ul>	PA	Connect a DC ammeter between the DC power supply and transceiver's DC power socket.	1.2 A increase from that R6 is in max. counterclockwise	PA	R6
	2 <ul style="list-style-type: none"> <li>• R131 (PA unit) : Max. counterclockwise</li> <li>• R127 (PA unit) : Max. counterclockwise</li> <li>• Transmitting</li> </ul>			0.5 A increase from step 1		R131
	3 <ul style="list-style-type: none"> <li>• Displayed freq. : 145.10000 MHz</li> <li>• Transmitting</li> </ul>			1.0 A increase from that R127 is in max. counterclockwise		R127
SWR DETECTOR	1 <ul style="list-style-type: none"> <li>• Displayed freq. : 14.1000 MHz</li> <li>• Mode : USB</li> <li>• Ground pin 11 of J10 (MAIN unit).</li> </ul>	Rear panel	Connect an RF power meter to [ANT 1] connector.	100 W	Quick set mode	Q2 MIC GAIN
	2 <ul style="list-style-type: none"> <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>	MAIN	Connect a digital multimeter to pin 1 of J7.	Minimum voltage	FILTER	C58
After adjustment, remove the jumper wire from J10.						
Ic 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	Connect a DC ammeter between the DC power supply and transceiver's DC power socket.	22 A	MAIN	R109
After adjustment, remove the jumper wire from CP6.						

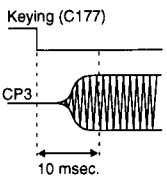
• MAIN AND FILTER UNITS



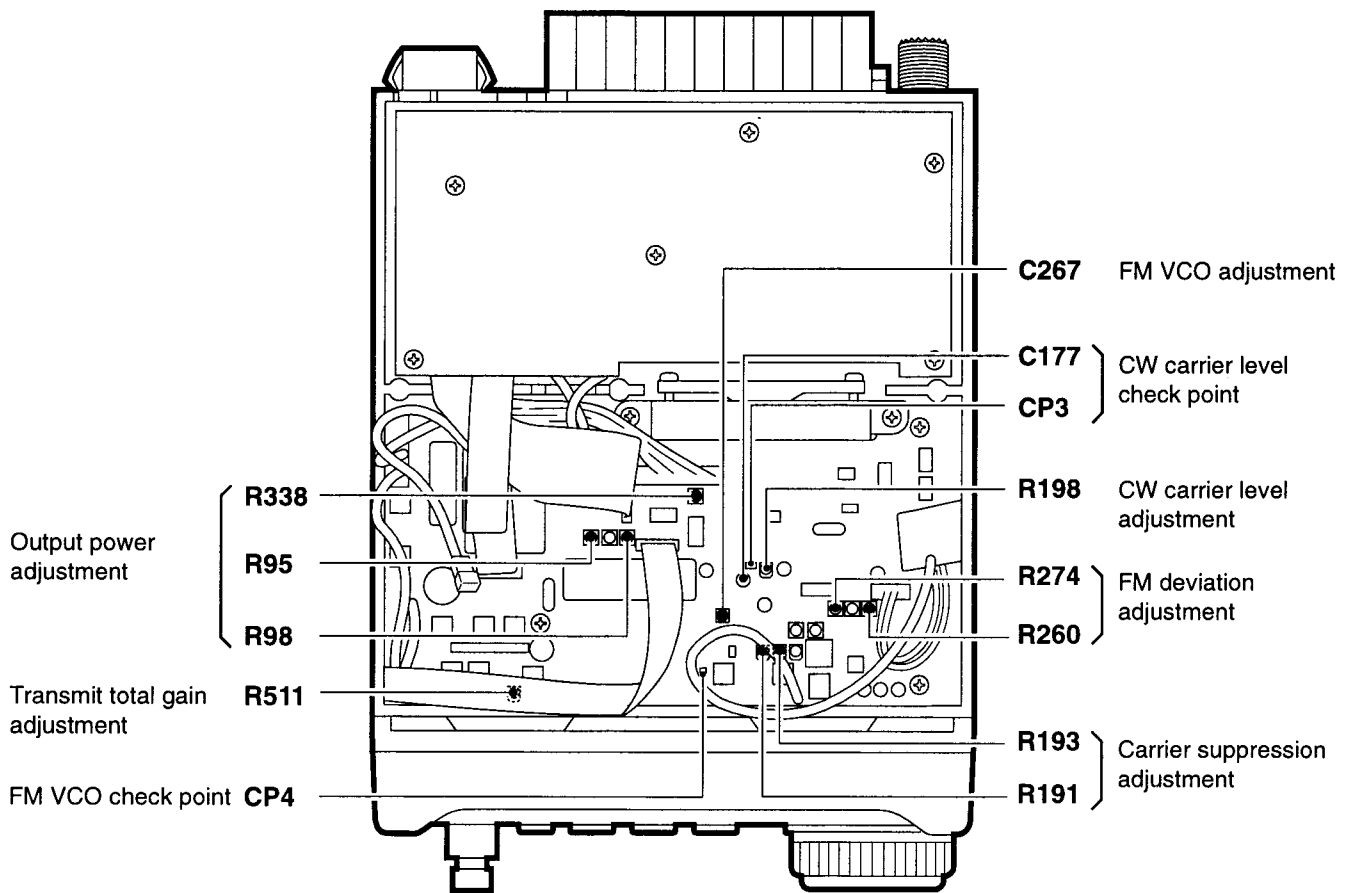
• PA UNIT



## TRANSMITTER ADJUSTMENT (CONTINUED)

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT	
		UNIT	LOCATION		UNIT	ADJUST
TRANSMIT TOTAL GAIN	1 <ul style="list-style-type: none"> <li>• Displayed freq. : 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: 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 freq. : 14.10000 MHz</li> <li>• Mode : USB and LSB</li> <li>• Apply no AF 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 freq. : 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: 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 freq. : 52.00000 MHz</li> <li>• Transmitting</li> </ul>			100 W		R98
	3 <ul style="list-style-type: none"> <li>• Displayed freq. : 145.00000 MHz</li> <li>• Transmitting</li> </ul>		Connect an RF power meter to [ANT 2] connector.	20 W		R338
CW CARRIER LEVEL	1 <ul style="list-style-type: none"> <li>• Displayed freq. : 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>• CW paddle : n</li> <li>• Transmit dots for a while using a paddle.</li> </ul>	MAIN	Connect an oscilloscope to check point CP3 and C177.	Adjust as follows: Keying (C177) 	MAIN	R198
FM VCO	1 <ul style="list-style-type: none"> <li>• Displayed freq. : 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 multimeter to check point CP4.	1.8 V	MAIN	C267
FM DEVIATION	1 <ul style="list-style-type: none"> <li>• Displayed freq. : 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: 300 mV / 1 kHz</li> <li>• Transmitting</li> </ul>	Rear panel	Connect an FM deviation meter to [ANT 1] via an attenuator.	±4.5 kHz	MAIN	R274
	2 <ul style="list-style-type: none"> <li>• Set the audio generator as: 10 mV / 1 kHz</li> <li>• Transmitting</li> </ul>			±3.5 kHz		R260

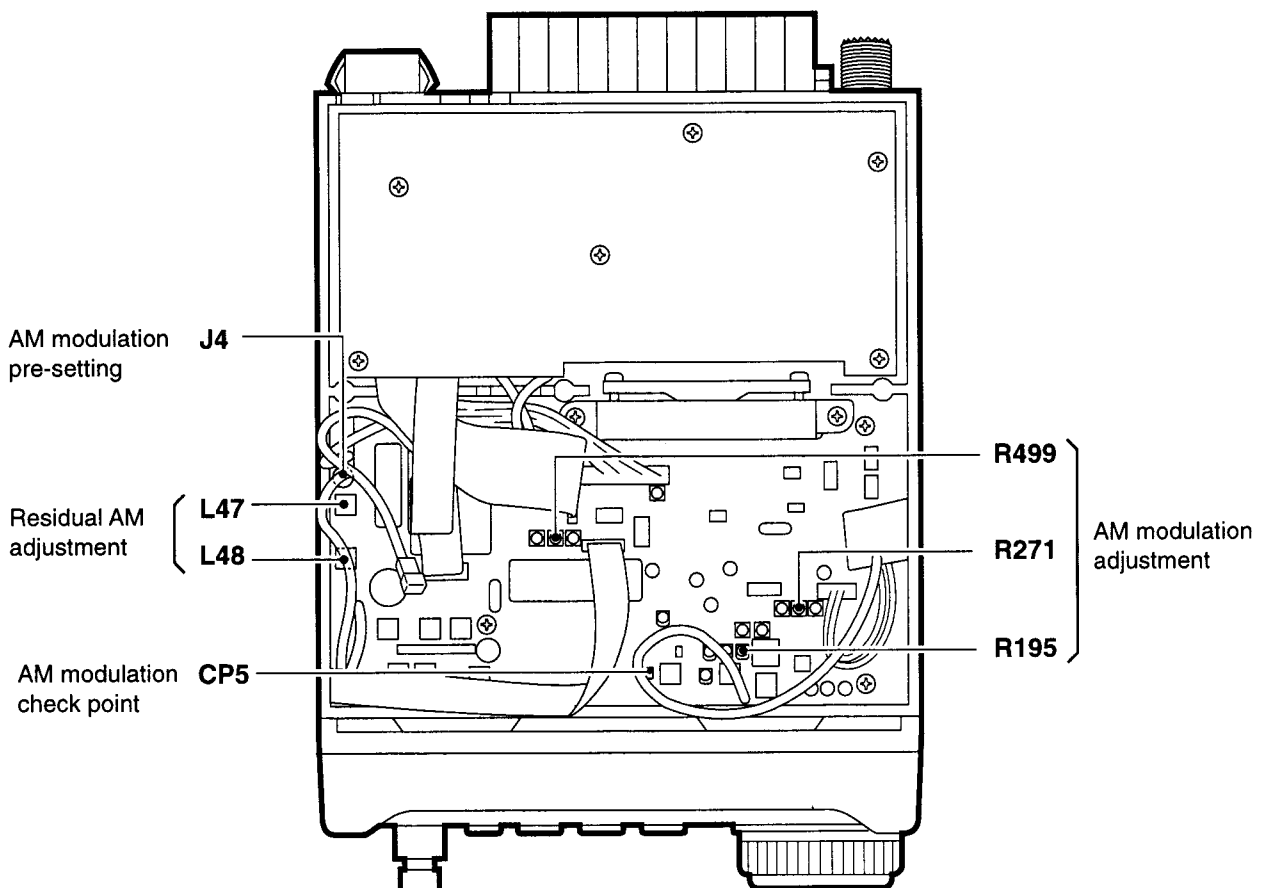
• MAIN UNIT



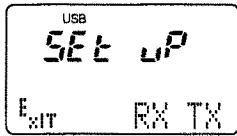
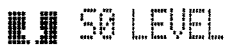
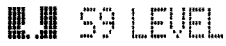

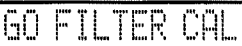
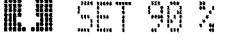
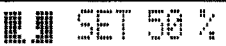
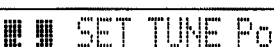
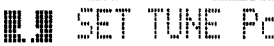
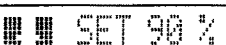
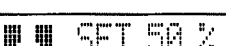
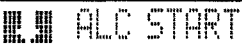
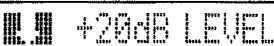
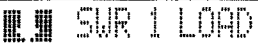
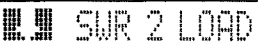
## TRANSMITTER ADJUSTMENT (CONTINUED)

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT	
		UNIT	LOCATION		UNIT	ADJUST
RESIDUAL AM	1 <ul style="list-style-type: none"> <li>• Displayed freq. : 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>• Connect an audio generator to [MIC] connector and set as: 100 mV /1 kHz and OFF</li> <li>• Transmitting</li> </ul>		Connect an RF power meter to [ANT 1] connector.	Minimum power difference with modulation and unmodulation.	MAIN	L47, L48
AM MODULATION	1 <ul style="list-style-type: none"> <li>• Displayed freq. : 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> <li>• Transmitting</li> </ul>	MAIN	Connect an oscilloscope to check point CP5.	100 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: 100 mV /1 kHz</li> <li>• Transmitting</li> </ul>		Connect a modulation analyzer to [ANT 1] via an attenuator.	90 % modulation		R271

### • MAIN UNIT



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

ADJUSTMENT	ADJUSTMENT CONDITIONS	DISPLAY	OPERATION
METER SET MODE	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)], [F-3 (TX)] to enter the RX, TX meter setting mode respectively.  Then advance to the following setting, or push [UP]/[DN] to scroll the display.
S-METER	1 <ul style="list-style-type: none"> <li>Connect a standard signal generator to [ANT 1] and set as: Frequency : 14.15150 Level : OFF</li> </ul>		Push [MENU] to set the "S0" level.
	2 <ul style="list-style-type: none"> <li>Set the standard signal generator as: Level : 50 <math>\mu</math>V* (-73 dBm) Modulation : OFF</li> </ul>		Push [MENU] to set the "S9" level.
	3 <ul style="list-style-type: none"> <li>Set the standard signal as: Level : 50 mV* (-13 dBm)</li> </ul>		Push [MENU] to set the "+60 dB" level. • The display returns to the same as the METER SET MODE above.
	4	Push [F-1 (EXIT)] to exit meter set mode, or push [F-3 (TX)] to enter the TX meter setting mode.	
FILTER CALIBRATION	1 <ul style="list-style-type: none"> <li>Connect an RF power meter to [ANT 1].</li> </ul>		Push and hold [MENU (GO)] to make the calibration. • Transceiver transmits for a while.
POWER METER (14 MHz)	2 <ul style="list-style-type: none"> <li>Transmit using an external PTT switch.</li> </ul>		Set to 90 W using main dial, then push [MENU] while transmitting.
	3 <ul style="list-style-type: none"> <li>Transmit using an external PTT switch.</li> </ul>		Set to 50 W using main dial, then push [MENU] while transmitting.
TUNING POWER (14 MHz)	4 <ul style="list-style-type: none"> <li>Transmit using an external PTT switch.</li> </ul>		Set to 10 W using main dial, then push [MENU] while transmitting.
	(50 MHz)	5 <ul style="list-style-type: none"> <li>Transmit using an external PTT switch.</li> </ul>	
POWER METER (145 MHz)	6 <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 18 W using main dial, then push [MENU] while transmitting.
	7 <ul style="list-style-type: none"> <li>Transmit using an external PTT switch.</li> </ul>		Set to 10 W using main dial, then push [MENU] while transmitting.
ALC METER	8 <ul style="list-style-type: none"> <li>Connect the RF power meter to [ANT 1].</li> </ul>		Push and hold [MENU] to set ALC reference level while transmitting.
	9 <ul style="list-style-type: none"> <li>Connect an audio generator to [MIC] connector and set as: Level : 100 mV / 1.5 kHz</li> <li>Transmit using an external PTT switch.</li> </ul>		Push [MENU] to set ALC zone level.
SWR METER	10 <ul style="list-style-type: none"> <li>Connect a 50 <math>\Omega</math> dummy load or power meter to [ANT 1].</li> </ul>		Push [MENU] to set SWR reference level. • Transceiver transmits for a while.
	11 <ul style="list-style-type: none"> <li>Connect a 100 <math>\Omega</math> or 25 <math>\Omega</math> dummy load to [ANT 1].</li> </ul>		Push [MENU] to set SWR 2 level. • Transceiver transmits for a while. • The display returns to the same as the METER SET MODE above.
	12	Push [F-1(EXIT)] to exit meter set mode.	

# SECTION 5 PARTS LIST

[DISPLAY BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
IC1	1140006690	S.IC	HD6433833A84H SX-1897S
IC2	1130007960	S.IC	SED1522F0C (QFP15-100PIN)
IC3	1130002660	S.IC	μPD4030BG-T1
IC4	1110001550	S.IC	S-8054ALB-LM-T1
IC5	1180001080	S.IC	S-81250PG-PD-T1
IC6	1140003630	S.IC	X24C01S-2.7T6
IC7	1130005820	S.IC	TC4S584F(TE85R)
Q1	1590000680	S.TRANSISTOR	DTC114EU T107
Q2	1520000200	S.TRANSISTOR	2SB798-T2 DK
Q3	1590002310	S.TRANSISTOR	DTC114EE TL
Q4	1540000440	S.TRANSISTOR	2SD1619-T-TD
Q5	1530002690	S.TRANSISTOR	2SC4116-GR (TE85R)
Q6	1540000250	S.TRANSISTOR	2SD999-T2 CK
Q7	1530003090	S.TRANSISTOR	2SC4213-B (TE85R)
Q8	1590002310	S.TRANSISTOR	DTC114EE TL
Q9	1590001870	S.TRANSISTOR	DTA114EE TL
Q10	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q11	1520000380	TRANSISTOR	2SB1143 S
Q12	1590002310	S.TRANSISTOR	DTC114EE TL
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	6050009660	S.XTAL	MA-406 (9.8304 MHz)
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
L6	6200003590	S.COIL	EXCCL3225U1
R1	7030003340	S.RESISTOR	ERJ3GEYJ 151 V (150 Ω)
R2	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R3	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R4	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R5	7030003340	S.RESISTOR	ERJ3GEYJ 151 V (150 Ω)
R6	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R7	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R8	7030003590	S.RESISTOR	ERJ3GEYJ 183 V (18 kΩ)
R9	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R10	7030003590	S.RESISTOR	ERJ3GEYJ 183 V (18 kΩ)
R11	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R12	7030003590	S.RESISTOR	ERJ3GEYJ 183 V (18 kΩ)
R13	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R14	7030003590	S.RESISTOR	ERJ3GEYJ 183 V (18 kΩ)
R15	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R16	7030003590	S.RESISTOR	ERJ3GEYJ 183 V (18 kΩ)
R17	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R18	7030003590	S.RESISTOR	ERJ3GEYJ 183 V (18 kΩ)
R19	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R20	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R21	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R22	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R23	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R24	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R25	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R26	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R27	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R29	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R30	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R31	7030000240	S.RESISTOR	MCR10EZJH 68 Ω (680)
R32	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R33	7010003830	RESISTOR	R20J 1 Ω

[DISPLAY BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
R34	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R35	7030000240	S.RESISTOR	MCR10EZJH 68 Ω (680)
R36	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R37	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R38	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R39	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R40	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R41	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R42	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R44	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R45	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R46	7030008060	S.RESISTOR	RR0816P-222-D (2.2kΩ)
R47	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R49	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R50	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R51	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R52	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R53	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R54	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R55	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R56	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R57	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R58	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R59	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R60	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R61	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R62	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R63	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R64	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R65	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R66	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R67	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R68	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R69	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R70	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R71	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R72	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R73	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R74	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R75	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R76	7030003840	S.RESISTOR	ERJ3GEYJ 225 V (2.2 MΩ)
R83	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R84	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R85	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R86	7010003830	RESISTOR	R20J 1 Ω
R89	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R90	7030000240	S.RESISTOR	MCR10EZJH 68 Ω (680)
R91	7030000240	S.RESISTOR	MCR10EZJH 68 Ω (680)
R92	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R93	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R94	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R95	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R96	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R97	7030003390	S.RESISTOR	ERJ3GEYJ 391 V (390 Ω)
R98	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R99	7030003340	S.RESISTOR	ERJ3GEYJ 151 V (150 Ω)
R100	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R101	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R102	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R103	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R104	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R105	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R106	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R107	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
C1	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C2	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C4	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C5	4030009110	S.CERAMIC	C3216 JB 1C 474K-T-A
C7	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C8	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C9	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C10	4030007020	S.CERAMIC	C1608 CH 1H 120J-T-A
C11	4030007020	S.CERAMIC	C1608 JB 1H 120J-T-A
C12	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N

S.=Surface mount



**[DISPLAY BOARD]**

REF NO.	ORDER NO.	DESCRIPTION	
C13	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C14	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C15	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C16	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C17	4030009660	S.CERAMIC	C1608 JF 1C 224Z-T-A
C18	4030009590	S.CERAMIC	C2012 JF 1C 225Z-T-A
C19	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C20	4030009590	S.CERAMIC	C2012 JF 1C 225Z-T-A
C21	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C22	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C23	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C24	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C25	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C26	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C27	4030009590	S.CERAMIC	C2012 JF 1C 225Z-T-A
C28	4030009590	S.CERAMIC	C2012 JF 1C 225Z-T-A
C29	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C30	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C31	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C32	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C33	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C34	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C35	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C36	4030006860	S.CERAMIC	C1608 JB 1H 102K-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	5010000210	LCD	DLC-7986YBGF
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	2260001680	S.SWITCH	SKQDPB
S12	2260001680	S.SWITCH	SKQDPB
S13	2260002250	S.SWITCH	LS22BB-2SD-PG-T
S14	2260001680	S.SWITCH	SKQDPB
J1	6510019120	S.CONNECTOR	S8B-PH-SM3-TB
J2	6450001630	CONNECTOR	HSJ1406-01-050
J3	6510018890	S.CONNECTOR	52559-1390
W1	7030003860	S.JUMPER	ERJ3GE JPW V
EP1	0910048473	PCB	B 4914C
EP2	8930039790	LCD CONTACT	SRCN-1691-ZSS-505

**[VR BOARD]**

REF NO.	ORDER NO.	DESCRIPTION	
R1	7210002780	VARIABLE	RV-300
R2	7210002940	VARIABLE	TP96D231E20-20F-10KB-1897
S1	2220000540	SWITCH	SW-162 (SSSS22-2-11)
J1	6510018890	S.CONNECTOR	52559-1390
EP1	0910048622	PCB	B 4915B

**[MAIN BOARD]**

REF NO.	ORDER NO.	DESCRIPTION	
IC1	1110004080	S.IC	µPC2709T-E3
IC4	1110003310	S.IC	µPC1688G-T1
IC6	1110003960	S.IC	µPC2713T-E3
IC7	1110003780	S.IC	NJM2902V-TE1
IC9	1110003140	IC	LA1150N
IC10	1160000130	S.IC	TD62783AF (TP1)
IC11	1160000130	S.IC	TD62783AF (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	TA31136FN (EL)
IC22	1140005280	S.IC	µPC5023GS-077-E1
IC23	1130006220	S.IC	TC4W53FU (TE12L)
IC24	1110002490	S.IC	M5218FP-73A
IC25	1140006270	S.IC	HD643336YL05F SX-1897A
IC26	1110001550	S.IC	S-8054ALB-LM-T1
IC27	1130005720	S.IC	TC7W04F (TE12L)
IC30	1130000830	S.IC	µPD4094BG-T1
IC31	1130000830	S.IC	µPD4094BG-T1
IC32	1130000830	S.IC	µPD4094BG-T1
IC33	1130003760	S.IC	TC4S81F (TE85R)
IC34	1110002700	S.IC	NJM2904M-T1
IC35	1110003690	S.IC	M62354GF 75EC
IC36	1160000130	S.IC	TD62783AF (TP1)
IC37	1130007660	S.IC	LC7153M-TLM
IC38	1110004100	S.IC	TA4001F (TE85L)
IC39	1130000830	S.IC	µPD4094BG-T1
IC40	1140005880	S.IC	X25320S8I-2.7T6
IC41	1110003970	S.IC	µPC1658G-E1
Q1	1590001940	S.TRANSISTOR	DTC144EE TL
Q2	1590002310	S.TRANSISTOR	DTC114EE TL
Q3	1590002310	S.TRANSISTOR	DTC114EE TL
Q4	1530003150	S.TRANSISTOR	2SC4673D-TD
Q5	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q6	1590002310	S.TRANSISTOR	DTC114EE TL
Q7	1590001940	S.TRANSISTOR	DTC144EE TL
Q8	1510000510	S.TRANSISTOR	2SA1576 T107 R
Q9	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q10	1560000560	S.FET	2SK882-GR (TE85L)
Q11	1510000510	S.TRANSISTOR	2SA1576 T107 R
Q12	1560000560	S.FET	2SK882-GR (TE85L)
Q13	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q14	1590001870	S.TRANSISTOR	DTA114EE TL
Q15	1590001940	S.TRANSISTOR	DTC144EE TL
Q16	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q21	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q23	1590001940	S.TRANSISTOR	DTC144EE TL
Q27	1530003090	S.TRANSISTOR	2SC4213-B (TE85R)
Q28	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q29	1510000510	S.TRANSISTOR	2SA1576 T107 R
Q30	1590001940	S.TRANSISTOR	DTC144EE TL
Q31	1590001870	S.TRANSISTOR	DTA114EE TL
Q32	1540000450	S.TRANSISTOR	2SD1623-T-TD
Q33	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q34	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q35	1510000510	S.TRANSISTOR	2SA1576 T107 R
Q36	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q37	1590001940	S.TRANSISTOR	DTC144EE TL
Q39	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q40	1560000330	S.FET	2SK210-GR (TE85R)
Q41	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q42	1580000620	S.FET	3SK131-T2 MAS
Q43	1560000560	S.FET	2SK882-GR (TE85L)
Q44	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q45	1590001940	S.TRANSISTOR	DTC144EE TL
Q46	1590002310	S.TRANSISTOR	DTC114EE TL
Q47	1590002310	S.TRANSISTOR	DTC114EE TL
Q48	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q49	1590002310	S.TRANSISTOR	DTC114EE TL
Q50	1590001940	S.TRANSISTOR	DTC144EE TL
Q51	1590001870	S.TRANSISTOR	DTA114EE TL
Q52	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q55	1590001540	S.TRANSISTOR	UMD6 TL
Q56	1590001540	S.TRANSISTOR	UMD6 TL
Q63	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q64	1590001940	S.TRANSISTOR	DTC144EE TL
Q65	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q66	1590001940	S.TRANSISTOR	DTC144EE TL
Q67	1590001920	S.TRANSISTOR	UN911F (TX)

S.=Surface mount

[MAIN BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
Q68	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q69	1590002310	S.TRANSISTOR	DTC114EE TL
Q70	1590001870	S.TRANSISTOR	DTA114EE TL
Q71	1590001870	S.TRANSISTOR	DTA114EE TL
Q72	1590001940	S.TRANSISTOR	DTC144EE TL
Q77	1590001870	S.TRANSISTOR	DTA114EE TL
Q78	1590001870	S.TRANSISTOR	DTA114EE TL
Q79	1590001940	S.TRANSISTOR	DTC144EE TL
Q80	1590001940	S.TRANSISTOR	DTC144EE TL
Q81	1590001940	S.TRANSISTOR	DTC144EE TL
Q82	1590001870	S.TRANSISTOR	DTA114EE TL
D1	1750000450	S.DIODE	1SV265-TL
D2	1750000210	S.DIODE	1SV237 (TE85R)
D13	1750000450	S.DIODE	1SV265-TL
D14	1750000450	S.DIODE	1SV265-TL
D15	1750000210	S.DIODE	1SV237 (TE85R)
D16	1790000450	S.DIODE	MA862 (TX)
D17	1790000450	S.DIODE	MA862 (TX)
D20	1790000450	S.DIODE	MA862 (TX)
D21	1790000450	S.DIODE	MA862 (TX)
D22	1750000450	S.DIODE	1SV265-TL
D23	1750000450	S.DIODE	1SV265-TL
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	1790001250	S.DIODE	MA2S111- (TX)
D37	1160000140	S.DIODE	DAP222 TL
D38	1790000450	S.DIODE	MA862 (TX)
D39	1790000490	S.DIODE	HSM88AS-TR
D42	1790001250	S.DIODE	MA2S111- (TX)
D43	1790000490	S.DIODE	HSM88AS-TR
D44	1790000490	S.DIODE	HSM88AS-TR
D46	1790000450	S.DIODE	MA862 (TX)
D47	1790001250	S.DIODE	MA2S111- (TX)
D48	1790000450	S.DIODE	MA862 (TX)
D50	1750000520	S.DIODE	DAN222TL
D51	1750000370	S.DIODE	DA221 TL
D52	1160000140	S.DIODE	DAP222 TL
D54	1790001250	S.DIODE	MA2S111- (TX)
D55	1790001250	S.DIODE	MA2S111- (TX)
D61	1790001250	S.DIODE	MA2S111- (TX)
D62	1790001250	S.DIODE	MA2S111- (TX)
D63	1790000490	S.DIODE	HSM88AS-TR
D64	1790000490	S.DIODE	HSM88AS-TR
D65	1750000520	S.DIODE	DAN222TL
D66	1750000520	S.DIODE	DAN222TL
D67	1720000590	S.VARICAP	MA357 (TX)
D68	1790000490	S.DIODE	HSM88AS-TR
D69	1790000490	S.DIODE	HSM88AS-TR
D70	1730000620	S.ZENER	RD3.6M-T2B2
D71	1160000140	S.DIODE	DAP222 TL
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
D87	1790000620	S.DIODE	MA77 (TW)
D89	1730000030	S.ZENER	RD5.6M-T2B2
D90	1790001250	S.DIODE	MA2S111- (TX)
D92	1730000840	S.ZENER	RD9.1M-T2B2
D93	1730000230	ZENER	RD11E B1
D94	1790000450	S.DIODE	MA862 (TX)
D97	1790001250	S.DIODE	MA2S111- (TX)
D99	1750000520	S.DIODE	DAN222TL
D100	1790001250	S.DIODE	MA2S111- (TX)
D102	1750000230	S.DIODE	1SS315 TPH-3 [FRA], [DEN]
	1790001250	S.DIODE	MA2S111- (TX) [EUR], [USA]
D103	1790001250	S.DIODE	MA2S111- (TX)
D106	1790001250	S.DIODE	MA2S111- (TX)
D109	1790000450	S.DIODE	MA862 (TX)
D110	1790000450	S.DIODE	MA862 (TX)
D111	1790001250	S.DIODE	MA2S111- (TX)

[FRA], [DEN] only

[MAIN BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
D112	1790001250	S.DIODE	MA2S111- (TX) [EUR], [FRA] only
D113	1790001250	S.DIODE	MA2S111- (TX)
D114	1790001250	S.DIODE	MA2S111- (TX)
D115	1790001250	S.DIODE	MA2S111- (TX)
D116	1790001250	S.DIODE	MA2S111- (TX)
D118	1790001250	S.DIODE	MA2S111- (TX)
D119	1790001250	S.DIODE	MA2S111- (TX)
D120	1750000530	S.DIODE	1SV271 (TPH3)
D121	1790000450	S.DIODE	MA862 (TX)
D122	1790000450	S.DIODE	MA862 (TX)
D123	1790000620	S.DIODE	MA77 (TW)
D124	1160000140	S.DIODE	DAP222 TL
D126	1750000370	S.DIODE	DA221 TL
D127	1790000620	S.DIODE	MA77 (TW)
D128	1750000520	S.DIODE	DAN222TL
D129	1790001250	S.DIODE	MA2S111- (TX)
D130	1750000430	S.DIODE	HSB88WSTR
D131	1750000430	S.DIODE	HSB88WSTR
D132	1750000520	S.DIODE	DAN222TL
D133	1750000210	S.DIODE	1SV237 (TE85R)
D134	1790001250	S.DIODE	MA2S111- (TX)
FI1	2010002090	FILTER	FL-261 (69.0115 MHz)
FI2	2020001140	S.CERAMIC	SFCEA10.7MA-5-A
FI3	2010000270	FILTER	FL-23
FI4	2010002130	D.FILTER	FL-272 (9.0115MHz)
FI5	2010000730	FILTER	FL-94
FI6	2020001050	S.CERAMIC	SFPC455E-TC01
X1	6070000150	S.DISCRIMINATOR	CDBC455CX24-TC
X2	6050009870	S.XTAL	CR-567 (9.8304 MHz)
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
L41	6140003210	S.COIL	LR-358
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	6150004970	S.COIL	LS-522
L48	6150004970	S.COIL	LS-522
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-515
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
L77	6200003260	S.COIL	NL 322522T-101J

S.=Surface mount

[MAIN BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
L78	6200002990	S.COIL	NL 322522T-2R2J-3
L81	6200001850	S.COIL	NL 322522T-5R6J
L82	6200003260	S.COIL	NL 322522T-101J
L84	6150004910	S.COIL	LS-516
L85	6150004910	S.COIL	LS-516
L87	6200001710	S.COIL	NL 322522T-220J
L88	6200001830	S.COIL	NL 322522T-100J
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
L132	6200004070	S.COIL	MLR1608M 22NJ-T
L133	6200001830	S.COIL	NL 322522T-100J
L134	6200004960	S.COIL	NL 252018T-R33J
L137	6200005560	S.COIL	ELJSC 101K-F
L138	6200003240	S.COIL	NL 322522T-221J
L139	6200003240	S.COIL	NL 322522T-221J
L140	6200005560	S.COIL	ELJSC 101K-F
L141	6200003240	S.COIL	NL 322522T-221J
L143	6200003120	S.COIL	NL 322522T-8R2J
L144	6200005560	S.COIL	ELJSC 101K-F
L145	6200004600	S.COIL	MLF1608D R15K-T
L146	6200004600	S.COIL	MLF1608D R15K-T
L147	6200004600	S.COIL	MLF1608D R15K-T
L149	6200002630	S.COIL	NL 252018T-R10J
L150	6200002640	S.COIL	NL 252018T-R15J
L151	6200002430	S.COIL	NL 252018T-082J
L152	6200002910	S.COIL	NL 252018T-R27J
L153	6200002040	S.COIL	NL 252018T-101J
L154	6200002810	S.COIL	ELJSC 560K-F
L155	6200004720	S.COIL	MLF1608D R10K-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)
R12	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R13	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
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)
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)

[MAIN BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
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)
R64	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R66	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R67	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R68	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R70	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R71	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R73	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R74	7030003560	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	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R92	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R93	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R94	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R95	7310002760	S.TRIMMER	RV-152
R98	7310002760	S.TRIMMER	RV-152
R99	7030003760	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	7030003560	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
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	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R119	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R120	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R121	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R122	7030003420	S.RESISTOR	ERJ3GEYJ 681 V (680 Ω)
R123	7030003560	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
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	7030003360	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)

S.=Surface mount

**[MAIN BOARD]**

REF NO.	ORDER NO.	DESCRIPTION
R142	7030003200	S.RESISTOR ERJ3GEYJ 100 V (10 Ω)
R143	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)
R144	7030003500	S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ)
R151	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)
R152	7030003560	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	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 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	7030003580	S.RESISTOR ERJ3GEYJ 153 V (15 kΩ)
R163	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)
R164	7030003660	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	7030003580	S.RESISTOR ERJ3GEYJ 153 V (15 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)
R186	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
R192	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)
R193	7310002740	S.TRIMMER RV-150
R194	7030003720	S.RESISTOR ERJ3GEYJ 224 V (220 kΩ)
R195	7310002580	S.TRIMMER RV-108
R196	7030003480	S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ)
R197	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)
R198	7310002590	S.TRIMMER RV-109
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	7030003630	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	7030003660	S.RESISTOR ERJ3GEYJ 683 V (68 kΩ)
R239	7310004260	TRIMMER EVN-D2AA03 B54
R240	7030003760	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	7030003600	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	7030003580	S.RESISTOR ERJ3GEYJ 153 V (15 kΩ)
R259	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)
R260	7310002720	S.TRIMMER RV-148
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)

**[MAIN BOARD]**

REF NO.	ORDER NO.	DESCRIPTION
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
R272	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)
R273	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)
R274	7310002720	S.TRIMMER RV-148
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)
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	7030003560	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	7030003560	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	7030003560	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)
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	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)
R338	7310002760	S.TRIMMER RV-152
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)
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)
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 103 V (10 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)

S.=Surface mount



**[MAIN BOARD]**

REF NO.	ORDER NO.	DESCRIPTION
R585	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)
R586	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)
R587	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)
R588	7030003300	S.RESISTOR ERJ3GEYJ 680 V (68 Ω)
R589	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)
R590	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)
R591	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)
R592	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)
C1	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C2	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
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	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C9	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C10	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C11	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C57	4030007070	S.CERAMIC C1608 CH 1H 330J-T-A
C58	4030007040	S.CERAMIC C1608 CH 1H 180J-T-A
C59	4030007050	S.CERAMIC C1608 CH 1H 220J-T-A
C60	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
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
C67	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
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
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
C91	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C92	4030007030	S.CERAMIC C1608 CH 1H 150J-T-A
C93	4030007040	S.CERAMIC C1608 CH 1H 180J-T-A
C94	4030006930	S.CERAMIC C1608 CH 1H 020C-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	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C105	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C106	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
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	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C114	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C115	4030008920	S.CERAMIC C1608 JB 1C 473K-T-A
C116	4510004630	S.ELECTROLYTIC ECEV1CA100SR
C117	4550002980	S.TANTALUM TEMSVA 1C 225M-8L
C118	4550000450	S.TANTALUM TESVC 1C 106M-12L
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	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C123	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C124	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C125	4030006880	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

**[MAIN BOARD]**

REF NO.	ORDER NO.	DESCRIPTION
C128	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C129	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C130	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C131	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C132	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C133	4030007140	S.CERAMIC C1608 CH 1H 121J-T-A
C134	4030006850	S.CERAMIC C1608 JB 1H 471K-T-A
C135	4510004640	S.ELECTROLYTIC ECEV1CA470SP
C136	4510004630	S.ELECTROLYTIC ECEV1CA100SR
C137	4550000450	S.TANTALUM TESVC 1C 106M-12L
C138	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C141	4510004630	S.ELECTROLYTIC 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	4030006870	S.CERAMIC C1608 JB 1H 222K-T-A
C147	4030006880	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	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C160	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C161	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C162	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C163	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C164	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C165	4510004630	S.ELECTROLYTIC ECEV1CA100SR
C166	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C167	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C168	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C169	4030010210	S.CERAMIC C3216 JB 1C 105M-T-A
C170	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C171	4510004630	S.ELECTROLYTIC ECEV1CA100SR
C172	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C173	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C174	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C175	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C176	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C177	4510004440	S.ELECTROLYTIC ECEV1HA010SR
C178	4510005870	S.ELECTROLYTIC ECEV1HA3R3SR
C179	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C180	4510004630	S.ELECTROLYTIC ECEV1CA100SR
C181	4030006900	S.CERAMIC C1608 JB 1E 103K-T-A
C182	4030006900	S.CERAMIC C1608 JB 1E 103K-T-A
C184	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
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	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C193	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C194	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C195	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C208	4510005860	S.ELECTROLYTIC ECEV1HA2R2SR
C209	4510005860	S.ELECTROLYTIC ECEV1HA2R2SR
C210	4030011340	S.CERAMIC C1608 CH 1H 471J-T-A
C211	4510005860	S.ELECTROLYTIC ECEV1HA2R2SR
C212	4030009000	S.CERAMIC C2012 JB 1C 224K-T-A
C213	4030010760	S.CERAMIC C1608 CH 1H 331J-T-A
C214	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C215	4030010210	S.CERAMIC C3216 JB 1C 105M-T-A
C216	4030007080	S.CERAMIC C1608 CH 1H 390J-T-A
C217	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C218	4030008900	S.CERAMIC C1608 JB 1C 333K-T-A
C219	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C220	4030010210	S.CERAMIC C3216 JB 1C 105M-T-A
C221	4030009000	S.CERAMIC C2012 JB 1C 224K-T-A
C222	4510004630	S.ELECTROLYTIC ECEV1CA100SR
C224	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C225	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C226	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C227	4030009110	S.CERAMIC C3216 JB 1C 474K-T-A
C228	4030009110	S.CERAMIC C3216 JB 1C 474K-T-A
C230	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C231	4030006870	S.CERAMIC C1608 JB 1H 222K-T-A
C232	4030007140	S.CERAMIC C1608 CH 1H 121J-T-A
C234	4510004630	S.ELECTROLYTIC ECEV1CA100SR
C235	4030007020	S.CERAMIC C1608 CH 1H 120J-T-A
C236	4030007020	S.CERAMIC C1608 CH 1H 120J-T-A
C237	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C238	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C239	4030011600	S.CERAMIC C1608 JB 1C 104KT-N

S.=Surface mount



[MAIN BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
C467	4510004430	S.ELECTROLYTIC	ECEV1CV220WR
C471	4030006990	S.CERAMIC	C1608 CH 1H 080D-T-A
C474	4030009650	S.CERAMIC	C1608 CH 1H 240J-T-A
C476	4030007030	S.CERAMIC	C1608 CH 1H 150J-T-A
C477	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C483	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C484	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C485	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C486	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C487	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C488	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C489	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C490	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C491	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C492	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C493	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C494	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C495	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C496	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C497	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C498	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C499	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C500	4030007050	S.CERAMIC	C1608 CH 1H 220J-T-A
C501	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C502	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C506	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C507	4030007010	S.CERAMIC	C1608 CH 1H 100D-T-A
C508	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C509	4550006250	S.TANTALUM	TEMSVA 1A 106M-8L
C510	4550006250	S.TANTALUM	TEMSVA 1A 106M-8L
C511	4030009540	S.CERAMIC	C1608 CH 1H 1R5B-T-A
C512	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C513	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C514	4030007060	S.CERAMIC	C1608 CH 1H 270J-T-A
C515	4030007080	S.CERAMIC	C1608 CH 1H 390J-T-A
C516	4030011540	S.CERAMIC	C1608 CH 1H 750J-T-A
C517	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C518	4030007020	S.CERAMIC	C1608 CH 1H 120J-T-A
C519	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C520	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C521	4030007110	S.CERAMIC	C1608 CH 1H 680J-T-A
C522	4030007070	S.CERAMIC	C1608 CH 1H 330J-T-A
C523	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C524	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C525	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C526	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C527	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C528	4030007050	S.CERAMIC	C1608 CH 1H 220J-T-A
C529	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
J1	6510007020	CONNECTOR	TMP-J01X-V6
J2	6510007020	CONNECTOR	TMP-J01X-V6
J3	6510007020	CONNECTOR	TMP-J01X-V6
J4	6510007020	CONNECTOR	TMP-J01X-V6
J5	6510007020	CONNECTOR	TMP-J01X-V6
J6	6510007020	CONNECTOR	TMP-J01X-V6
J7	6510019970	S.CONNECTOR	52808-1090
J8	6510018940	S.CONNECTOR	B13B-PH-SM3-TB
J9	6510018960	S.CONNECTOR	B2B-PH-SM3-TB
J10	6510020080	S.CONNECTOR	52808-2090
J11	6510020090	S.CONNECTOR	52808-0890
J12	6510018970	S.CONNECTOR	B4B-PH-SM3-TB
J13	6510019070	S.CONNECTOR	52559-3092
J14	6510019190	S.CONNECTOR	52365-0891
J15	6450001560	CONNECTOR	PD-72
J16	6450001560	CONNECTOR	PD-72
J17	6450001560	CONNECTOR	PD-72
J18	6450001560	CONNECTOR	PD-72
J20	6910010370	CONNECTOR	IPS-1340-01
J21	6450001560	CONNECTOR	PD-72
J22	6450001560	CONNECTOR	PD-72
J23	6450001560	CONNECTOR	PD-72
J24	6450001560	CONNECTOR	PD-72
J25	6510016430	S.CONNECTOR	53307-1491
J26	6510020380	CONNECTOR	JS0330-GT
J27	6510020380	CONNECTOR	JS0330-GT
J28	6510020380	CONNECTOR	JS0330-GT
J29	6510020380	CONNECTOR	JS0330-GT
W11	7030003860	S.JUMPER	ERJ3GE JPW V

[MAIN BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
W12	7030003860	S.JUMPER	ERJ3GE JPW V
W15	7030003860	S.JUMPER	ERJ3GE JPW V
W16	7030003860	S.JUMPER	ERJ3GE JPW V
W17	7120000380	JUMPER	JPW 01 R-01
W18	7030000010	S.JUMPER	MCR10EZHZ JPW (000)
W19	7030008240	S.JUMPER	ERJ12YJ0R00H
W20	7030000010	S.JUMPER	MCR10EZHZ JPW (000)
W21	7030000010	S.JUMPER	MCR10EZHZ JPW (000)
WS1	8970022920	OTHER	(1)/MA
EP1	0910048487	PCB	B 4916G
EP2	9021201001	TUBE	0.7 (d) L=7 (mm) [EUR], [USA]
	9029802001	TUBE	0.7 (d) L=9 (mm) [FRA], [DEN]
EP3	9021201001	TUBE	0.7 (d) L=7 (mm)

[HPF BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
Q3	1590000790	S.TRANSISTOR	DTC143TU T107
Q4	1560000650	S.FET	2SK1577-2-T7
Q5	1540000450	S.TRANSISTOR	2SD1623-T-TD
Q6	1590000660	S.TRANSISTOR	DTC144TU T107
Q7	1590000430	S.TRANSISTOR	DTC144EU T107
Q8	1590001060	S.TRANSISTOR	DTA114TU T107
Q9	1590001330	S.TRANSISTOR	DTA114EU T107
D5	1790001260	S.DIODE	MA2S077- (TX)
D6	1790001260	S.DIODE	MA2S077- (TX)
D7	1790001260	S.DIODE	MA2S077- (TX)
D8	1790001260	S.DIODE	MA2S077- (TX)
D10	1790001260	S.DIODE	MA2S077- (TX)
D12	1790001260	S.DIODE	MA2S077- (TX)
D13	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)
D28	1790001260	S.DIODE	MA2S077- (TX)
D80	1790001260	S.DIODE	MA2S077- (TX)
D81	1790001260	S.DIODE	MA2S077- (TX)
L1	6200005560	S.COIL	ELJSC 101K-F
L2	6200004880	S.COIL	ELJFC 3R3K-F
L3	6200004440	S.COIL	ELJFC 4R7M-F
L4	6200001620	S.COIL	ELJFC 1R0K-F
L5	6200001620	S.COIL	ELJFC 1R0K-F
L6	6200001620	S.COIL	ELJFC 1R0K-F
L7	6200002240	S.COIL	ELJFC 2R2K-F
L8	6200002710	S.COIL	ELJFC 1R8K-F
L9	6200002710	S.COIL	ELJFC 1R8K-F
L10	6200005560	S.COIL	ELJSC 101K-F
L11	6200005540	S.COIL	ELJNC R47K-F
L12	6200001960	S.COIL	ELJFC R56MF
L13	6200005560	S.COIL	ELJSC 101K-F
L14	6200002920	S.COIL	ELJNC R33K-F
L15	6200004160	S.COIL	ELJNC R39K-F
L16	6200005550	S.COIL	ELJFC 100K-F
L17	6200005550	S.COIL	ELJFC 100K-F
L22	6200003240	S.COIL	NL 322522T-221J
L23	6200002920	S.COIL	ELJNC R33K-F
L24	6200003350	S.COIL	ELJNC R27K-F
L25	6200002420	S.COIL	NL 252018T-068J
L26	6200002160	S.COIL	ELJNC 82N-K-F
L27	6200005560	S.COIL	ELJSC 101K-F
L28	6200005560	S.COIL	ELJSC 101K-F
L29	6200002910	S.COIL	NL 252018T-R27J
L30	6200002640	S.COIL	NL 252018T-R15J

S.=Surface mount



[HPF BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
L34	6200005560	S.COIL	ELJSC 101K-F
L35	6200005560	S.COIL	ELJSC 101K-F
L36	6200002800	S.COIL	ELJFC R68M-F
L37	6200005010	S.COIL	NL 252018T-100J
L38	6200002840	S.COIL	NL 252018T-R22J
L39	6200004960	S.COIL	NL 252018T-R33J
L40	6200003280	S.COIL	NL 252018T-2R2J
L41	6140002810	S.COIL	LR-317
L42	6200002180	S.COIL	NL 252018T-R12J
L80	6200005560	S.COIL	ELJSC 101K-F
L81	6200003640	S.COIL	MLF1608K 100K-T
L82	6200003640	S.COIL	MLF1608K 100K-T
L83	6200005560	S.COIL	ELJSC 101K-F
L84	6200004510	S.COIL	MLR1608M 47NJ-T
R5	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R7	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R18	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R19	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R20	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R26	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R27	7030003340	S.RESISTOR	ERJ3GEYJ 151 V (150 Ω)
R28	7030004050	S.RESISTOR	ERJ3GEYJ 1R0 V (1 Ω)
R29	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R30	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R32	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R33	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R34	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R35	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
C1	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C2	4030008470	S.CERAMIC	C1608 JB 1H 272K-T-A
C3	4030008860	S.CERAMIC	C1608 JB 1C 153K-T-A
C4	4030009980	S.CERAMIC	C1608 JB 1H 152K-T-A
C5	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C6	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C7	4030011330	S.CERAMIC	C1608 CH 1H 391J-T-A
C8	4030010030	S.CERAMIC	C1608 SL 1H 511J-T-A
C9	4030010760	S.CERAMIC	C1608 CH 1H 331J-T-A
C10	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C11	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C12	4030009580	S.CERAMIC	C1608 JB 1H 681K-T-A
C13	4030009980	S.CERAMIC	C1608 JB 1H 152K-T-A
C14	4030009580	S.CERAMIC	C1608 JB 1H 681K-T-A
C15	4030008470	S.CERAMIC	C1608 JB 1H 272K-T-A
C16	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C17	4030007160	S.CERAMIC	C1608 CH 1H 181J-T-A
C18	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C19	4030007150	S.CERAMIC	C1608 CH 1H 151J-T-A
C20	4030011330	S.CERAMIC	C1608 CH 1H 391J-T-A
C21	4030010210	S.CERAMIC	C3216 JB 1C 105M-T-A
C22	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C23	4030007170	S.CERAMIC	C1608 CH 1H 221J-T-A
C24	4030010020	S.CERAMIC	C1608 JB 1H 122K-T-A
C25	4030007130	S.CERAMIC	C1608 CH 1H 101J-T-A
C26	4030010760	S.CERAMIC	C1608 CH 1H 331J-T-A
C27	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C28	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C38	4030007120	S.CERAMIC	C1608 CH 1H 820J-T-A
C39	4030007010	S.CERAMIC	C1608 CH 1H 100D-T-A
C40	4030007150	S.CERAMIC	C1608 CH 1H 151J-T-A
C41	4030007040	S.CERAMIC	C1608 CH 1H 180J-T-A
C42	4030007120	S.CERAMIC	C1608 CH 1H 820J-T-A
C43	4030007080	S.CERAMIC	C1608 CH 1H 390J-T-A
C44	4030011540	S.CERAMIC	C1608 CH 1H 750J-T-A
C45	4030007150	S.CERAMIC	C1608 CH 1H 151J-T-A
C46	4030007150	S.CERAMIC	C1608 CH 1H 151J-T-A
C47	4030007140	S.CERAMIC	C1608 CH 1H 121J-T-A
C48	4030007110	S.CERAMIC	C1608 CH 1H 680J-T-A
C49	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C50	4030010760	S.CERAMIC	C1608 CH 1H 331J-T-A
C51	4030007120	S.CERAMIC	C1608 CH 1H 820J-T-A
C52	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C54	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C55	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C56	4030009580	S.CERAMIC	C1608 JB 1H 681K-T-A
C57	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C58	4030007170	S.CERAMIC	C1608 CH 1H 221J-T-A
C60	4030009650	S.CERAMIC	C1608 CH 1H 240J-T-A
C62	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A

[HPF BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
C66	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C67	4030007100	S.CERAMIC	C1608 CH 1H 560J-T-A
C68	4030007160	S.CERAMIC	C1608 CH 1H 181J-T-A
C69	4030007070	S.CERAMIC	C1608 CH 1H 330J-T-A
C70	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C71	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C72	4030007080	S.CERAMIC	C1608 CH 1H 390J-T-A
C73	4030007030	S.CERAMIC	C1608 CH 1H 150J-T-A
C74	4030007080	S.CERAMIC	C1608 CH 1H 390J-T-A
C80	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C81	4030007150	S.CERAMIC	C1608 CH 1H 151J-T-A
C82	4030007140	S.CERAMIC	C1608 CH 1H 121J-T-A
C83	4030007070	S.CERAMIC	C1608 CH 1H 330J-T-A
C84	4030007140	S.CERAMIC	C1608 CH 1H 121J-T-A
C85	4030007150	S.CERAMIC	C1608 CH 1H 151J-T-A
C86	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
J1	6910010810	CONNECTOR	IMSA-9210B-1-06Z041-T
J2	6910010810	CONNECTOR	IMSA-9210B-1-06Z041-T
EP1	0910048494	PCB	B 4917D

[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	1140003641	S.IC	SC-1246
IC11	1130003830	S.IC	TC7S04F (TE85R)
IC12	1140004550	S.IC	SC1287
IC13	1130003650	S.IC	PLL2001S-ET
Q5	1590002310	S.TRANSISTOR	DTC114EE TL
Q6	1560000720	S.FET	2SK2171-4-TD
Q7	1530003090	S.TRANSISTOR	2SC4213-B (TE85R)
Q8	1560000720	S.FET	2SK2171-4-TD
Q9	1530003090	S.TRANSISTOR	2SC4213-B (TE85R)
Q10	1530002570	S.TRANSISTOR	2SC4405-3-TL
Q12	1560000330	S.FET	2SK210-GR (TE85R)
Q13	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q14	1530002560	S.TRANSISTOR	2SC4403-3-TL
Q15	1530002560	S.TRANSISTOR	2SC4403-3-TL
Q16	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q18	1590001870	S.TRANSISTOR	DTA114EE TL
Q19	1590001870	S.TRANSISTOR	DTA114EE TL
Q20	1590001870	S.TRANSISTOR	DTA114EE TL
Q21	1590001870	S.TRANSISTOR	DTA114EE TL
Q22	1590002310	S.TRANSISTOR	DTC114EE TL
Q23	1510000510	S.TRANSISTOR	2SA1576 T107 R
Q24	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q26	1590001870	S.TRANSISTOR	DTA114EE TL
Q27	1530002560	S.TRANSISTOR	2SC4403-3-TL
Q30	1530002690	S.TRANSISTOR	2SC4116-GR (TE85R)
Q36	1530002560	S.TRANSISTOR	2SC4403-3-TL
Q37	1530002920	S.TRANSISTOR	2SC4226-T2 R25
Q43	1590002430	S.TRANSISTOR	DTA144EE TL
Q44	1590002430	S.TRANSISTOR	DTA144EE TL
Q45	1520000740	TRANSISTOR	2SB874 C
Q47	1560000540	S.FET	2SK880-Y (TE85R)
Q48	1530003000	S.TRANSISTOR	2SC4117-BL (TE85R)
Q49	1530003000	S.TRANSISTOR	2SC4117-BL (TE85R)
Q50	1560000540	S.FET	2SK880-Y (TE85R)
Q51	1530002280	S.TRANSISTOR	2SC4081 T107 S
D3	1750000130	S.DIODE	DA204U T107
D4	1720000540	S.VARICAP	HVM17-01TR
D5	1790000620	S.DIODE	MA77 (TW)
D6	1720000540	S.VARICAP	HVM17-01TR

S.=Surface mount

[PLL UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
D7	1790000620	S.DIODE	MA77 (TW)
D8	1750000200	S.DIODE	1SS319 (TE85R)
D9	1790000450	S.DIODE	MA862 (TX)
D11	1750000210	S.DIODE	1SV237 (TE85R)
D12	1750000210	S.DIODE	1SV237 (TE85R)
D13	1720000590	S.VARICAP	MA357 (TX)
D16	1790000620	S.DIODE	MA77 (TW)
D17	1790000450	S.DIODE	MA862 (TX)
D19	1790000450	S.DIODE	MA862 (TX)
D20	1750000130	S.DIODE	DA204U T107
D22	1750000160	S.DIODE	DA114 T107
D23	1790000590	S.DIODE	MA110 (TW)
D24	1720000590	S.VARICAP	MA357 (TX)
F11	2020001140	S.CERAMIC	SFECA10.7MA-5-A
X1	6050005711	XTAL	CR-275A (30.0000 MHz)
L1	6170000140	COIL	LW-15
L3	6130002900	COIL	LB-332
L4	6180000830	COIL	LAL 03NA 3R3K
L6	6130002830	COIL	LB-325
L7	6180000850	COIL	LAL 03NA 4R7K
L8	6200005010	S.COIL	NL 252018T-100J
L10	6200002160	S.COIL	ELJNC 82NK-F
L13	6200001630	S.COIL	ELJNC R10K-F
L15	6140002810	S.COIL	LR-317
L16	6200001630	S.COIL	ELJNC R10K-F
L17	6200002160	S.COIL	ELJNC 82NK-F
L18	6200003670	S.COIL	ELJNC 68NK-F
L19	6200003670	S.COIL	ELJNC 68NK-F
L21	6200002160	S.COIL	ELJNC 82NK-F
L22	6200001770	S.COIL	ELJNC 47NK-F
L23	6200002120	S.COIL	ELJNC 33NK-F
L25	6200002150	S.COIL	ELJNC 56NK-F
L26	6200001940	S.COIL	ELJNC 27NK-F
L27	6200002120	S.COIL	ELJNC 33NK-F
L28	6200001830	S.COIL	NL 322522T-100J
L29	6200005010	S.COIL	NL 252018T-100J
L30	6200003260	S.COIL	NL 322522T-101J
L31	6130001850	COIL	LB-185
L32	6200001830	S.COIL	NL 322522T-100J
L34	6130001100	COIL	LB-146
L35	6180000900	COIL	LAL 03NA 101K
L36	6150004520	S.COIL	LS-508
L37	6150004830	S.COIL	LS-509
L38	6150004830	S.COIL	LS-509
L39	6200003260	S.COIL	NL 322522T-101J
L40	6200003260	S.COIL	NL 322522T-101J
L41	6200003260	S.COIL	NL 322522T-101J
L42	6200001830	S.COIL	NL 322522T-100J
L43	6200003260	S.COIL	NL 322522T-101J
L44	6200005010	S.COIL	NL 252018T-100J
L45	6200003170	S.COIL	NL 322522T-330J
L46	6200003130	S.COIL	NL 322522T-120J
L47	6200003140	S.COIL	NL 322522T-150J
L48	6200003670	S.COIL	ELJNC 68NK-F
L49	6200003670	S.COIL	ELJNC 68NK-F
L50	6200002150	S.COIL	ELJNC 56NK-F
L51	6200001940	S.COIL	ELJNC 27NK-F
L52	6200003320	S.COIL	NL 322522T-3R3J-3
L53	6200003100	S.COIL	NL 322522T-3R9J-3
L54	6200002960	S.COIL	NL 322522T-4R7J-3
L56	6200001760	S.COIL	ELJNC 22NK-F
L57	6200003960	S.COIL	MLF1608A 1R0K-T
L62	6180001510	COIL	LAL 02NA 101K
L63	6200003260	S.COIL	NL 322522T-101J
L64	6200003260	S.COIL	NL 322522T-101J
L65	6200003540	S.COIL	MLF1608D R22K-T
L66	6200002160	S.COIL	ELJNC 82NK-F
L67	6200003260	S.COIL	NL 322522T-101J
L68	6200002180	S.COIL	NL 252018T-R12J
L69	6200004080	S.COIL	MLR1608M 33NJ-T
L70	6200003550	S.COIL	MLF1608A 4R7K-T
L71	6200003550	S.COIL	MLF1608A 4R7K-T
L72	6200003550	S.COIL	MLF1608A 4R7K-T
L73	6200003550	S.COIL	MLF1608A 4R7K-T
L74	6200003550	S.COIL	MLF1608A 4R7K-T

[PLL UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
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	7070000860	RESISTOR	ERG2SJ 150 (15 Ω)
R24	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R25	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R26	7030003730	S.RESISTOR	ERJ3GEYJ 274 V (270 kΩ)
R28	7030003560	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)
R52	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R53	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
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	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R60	7310002740	S.TRIMMER	RV-150
R61	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 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 (150 kΩ)
R71	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R72	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (47 Ω)
R73	7030003240	S.RESISTOR	ERJ3GEYJ 220 V (22 Ω)
R74	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R75	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R76	7030003360	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	7030003640	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)

S.=Surface mount

**[PLL UNIT]**

REF NO.	ORDER NO.	DESCRIPTION	
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)
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	7010003320	RESISTOR	ELR20J 220 Ω
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	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R160	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R161	7030003560	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	7030003260	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	7030003460	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)
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	MCR03EZJH 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

**[PLL UNIT]**

REF NO.	ORDER NO.	DESCRIPTION	
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	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R237	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)
R238	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R239	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R240	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R241	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R243	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R244	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R245	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R246	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R247	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R248	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R249	7510000071	THERMISTOR	ERT-D2ZHL 503S
R250	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)
R255	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R256	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R257	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
C1	4030009590	S.CERAMIC	C2012 JF 1C 225Z-T-A
C2	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C3	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C4	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C5	4030009590	S.CERAMIC	C2012 JF 1C 225Z-T-A
C6	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C7	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C8	4030009590	S.CERAMIC	C2012 JF 1C 225Z-T-A
C9	4030009590	S.CERAMIC	C2012 JF 1C 225Z-T-A
C10	4030006880	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	4550006080	S.TANTALUM	TEMSVB2 1C 106M-8L
C16	4030009110	S.CERAMIC	C3216 JB 1C 474K-T-A
C17	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C18	4030010750	S.CERAMIC	C1608 CH 1H 201J-T-A
C19	4030009110	S.CERAMIC	C3216 JB 1C 474K-T-A
C20	4550006080	S.TANTALUM	TEMSVB2 1C 106M-8L
C21	4510005600	S.ELECTROLYTIC	ECEV1CS100SR
C22	4510005600	S.ELECTROLYTIC	ECEV1CS100SR
C23	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C24	4030009110	S.CERAMIC	C3216 JB 1C 474K-T-A
C25	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C26	4510004600	ELECTROLYTIC	16 MV 1000 HC
C27	4510004590	ELECTROLYTIC	16 MV 470 HC
C28	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C29	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C32	4030008560	S.CERAMIC	C1608 CH 1H 300J-T-A
C33	4030006880	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	ELECTROLYTIC	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
C60	4030007130	S.CERAMIC	C1608 CH 1H 101J-T-A
C61	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C62	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C64	4030007090	S.CERAMIC	C1608 CH 1H 470J-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	4030007060	S.CERAMIC	C1608 CH 1H 270J-T-A
C70	4030008560	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	4030006960	S.CERAMIC	C1608 CH 1H 050C-T-A
C74	4030007040	S.CERAMIC	C1608 CH 1H 180J-T-A
C75	4030007020	S.CERAMIC	C1608 CH 1H 120J-T-A
C76	4030007110	S.CERAMIC	C1608 CH 1H 680J-T-A

S.=Surface mount

[PLL UNIT]

REF NO.	ORDER NO.	DESCRIPTION
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	4030007060	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	4030007120	S.CERAMIC C1608 CH 1H 820J-T-A
C92	4030007120	S.CERAMIC C1608 CH 1H 820J-T-A
C93	4030007120	S.CERAMIC C1608 CH 1H 820J-T-A
C94	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C95	4510005600	S.ELECTROLYTIC 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
C100	4510005600	S.ELECTROLYTIC 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	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C109	4030006960	S.CERAMIC C1608 CH 1H 050C-T-A
C110	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C111	4510005600	S.ELECTROLYTIC ECEV1CS100SR
C112	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C113	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C114	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C115	4030007060	S.CERAMIC C1608 CH 1H 270J-T-A
C116	4030007100	S.CERAMIC C1608 CH 1H 560J-T-A
C117	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C118	4030007100	S.CERAMIC C1608 CH 1H 560J-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	4030006880	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	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C127	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
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	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C135	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C136	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C137	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C138	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C139	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C140	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C141	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C142	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C143	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C144	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C145	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C146	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C147	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C148	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C149	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C150	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C151	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C152	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C153	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C154	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C155	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C156	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
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

[PLL UNIT]

REF NO.	ORDER NO.	DESCRIPTION
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	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
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	4030006980	S.CERAMIC C1608 CH 1H 070D-T-A
C178	4030006930	S.CERAMIC C1608 CH 1H 020C-T-A
C179	4030007010	S.CERAMIC C1608 CH 1H 100D-T-A
C180	4030009470	S.CERAMIC C1608 CH 1H R75C-T-A
C181	4030006990	S.CERAMIC C1608 CH 1H 080D-T-A
C182	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C183	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C184	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C185	4030006850	S.CERAMIC C1608 JB 1H 471K-T-A
C186	4510004990	ELECTROLYTIC 16 MV 100 HC
C188	4030006850	S.CERAMIC C1608 JB 1H 471K-T-A
C195	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C196	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C197	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C198	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C200	4510005600	S.ELECTROLYTIC ECEV1CS100SR
C201	4510005600	S.ELECTROLYTIC ECEV1CS100SR
C202	4510005600	S.ELECTROLYTIC ECEV1CS100SR
C204	4030006980	S.CERAMIC C1608 CH 1H 070D-T-A
C205	4030006980	S.CERAMIC C1608 CH 1H 070D-T-A
C206	4030007030	S.CERAMIC C1608 CH 1H 150J-T-A
C207	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C212	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C213	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C217	4030007030	S.CERAMIC C1608 CH 1H 150J-T-A
C218	4030006990	S.CERAMIC C1608 CH 1H 080D-T-A
C219	4030007030	S.CERAMIC C1608 CH 1H 150J-T-A
C220	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C223	4040000690	BARRIERLAYR UAT 08X 473K
C224	4510005000	ELECTROLYTIC 16 MV 220 HC
C225	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C226	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C227	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C228	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C237	4030006920	S.CERAMIC C1608 CH 1H 010C-T-A
C238	4030006850	S.CERAMIC C1608 JB 1H 471K-T-A
C239	4030006850	S.CERAMIC C1608 JB 1H 471K-T-A
C240	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C241	4550006080	S.TANTALUM TEMSVB2 1C 106M-8L
C242	4550006080	S.TANTALUM TEMSVB2 1C 106M-8L
C243	4040000690	BARRIERLAYR UAT 08X 473K
C244	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C245	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C246	4550000460	S.TANTALUM TESVA 1C 105M1-8L
C247	4030007100	S.CERAMIC C1608 CH 1H 010C-T-A
C248	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C249	4030007030	S.CERAMIC C1608 CH 1H 150J-T-A
C250	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C251	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C252	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C253	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C254	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C255	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C256	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C257	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C258	4030011600	S.CERAMIC C1608 JB 1C 104KT-N
C259	4030007050	S.CERAMIC C1608 CH 1H 220J-T-A
C260	4030007050	S.CERAMIC C1608 CH 1H 220J-T-A
C261	4030007050	S.CERAMIC C1608 CH 1H 220J-T-A
C262	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C263	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C264	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C265	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C266	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C267	4510004590	ELECTROLYTIC 16 MV 470 HC
C268	4030006880	S.CERAMIC C1608 JB 1H 472K-T-A
C269	4030009110	S.CERAMIC C3216 JB 1C 474K-T-A
C270	4030007060	S.CERAMIC C1608 CH 1H 270J-T-A

S.=Surface mount

[PLL UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
C271	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C272	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C273	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C274	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C275	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C276	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C277	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C278	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C279	4030007010	S.CERAMIC	C1608 CH 1H 100D-T-A
C280	4030007010	S.CERAMIC	C1608 CH 1H 100D-T-A
C281	4030007010	S.CERAMIC	C1608 CH 1H 100D-T-A
C282	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
RL1	6330001320	RELAY	AHY103
CP11	6910009670	S.CHECK POINT	HK3-S-T
CP12	6910009670	S.CHECK POINT	HK3-S-T
J1	6510020250	S.CONNECTOR	B9B-PH-SM3-TB
J2	6510019070	S.CONNECTOR	52559-3092
J3	6510019970	S.CONNECTOR	52808-1090
J4	6510009890	CONNECTOR	PD054-04M
J8	6510007900	CONNECTOR	TBP-P01X-A1
J9	6510007900	CONNECTOR	TBP-P01X-A1
J10	6510007900	CONNECTOR	TBP-P01X-A1
W16	7030003860	S.JUMPER	ERJ3GE JPW V
W17	7030003860	S.JUMPER	ERJ3GE JPW V
W18	7120000010	JUMPER	JPW 02A
WS1	8600035640	OTHER	P01xJ04PL
WS2	8970022451	OTHER	(3)/PL [EUR], [USA]
	8970022452	OTHER	(3)/PL [FRA], [DEN]
WS3	8970022840	OTHER	(1)/PL [EUR], [FRA]
	8970022840	OTHER	(1)/PL [DEN], [USA]
EP1	0910048506	PCB	B 4918F
EP2	9001602001	TUBE	0.7 (d) L=10 (mm)
EP3	9068000100	TUBE	5 (d) L=10 (mm)
EP4	9001602001	TUBE	0.7 (d) L=10 (mm)
EP5	9034701901	TUBE	0.7 (d) L=20 (mm)
EP6	9036505001	TUBE	0.7 (d) L=20 (mm)
EP7	6910000630	BEAD	FSOH070RN [EUR], [USA]
	9025608001	TUBE	1 (d) L=7 (mm) [FRA], [DEN]

[PA UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
Q1	1560000960	S.FET	2SK2596BXTL
Q4	1590002260	TRANSISTOR	MRF5015
Q5	1590001940	S.TRANSISTOR	DTC144EE TL
Q6	1510000510	S.TRANSISTOR	2SA1576 T107 R
Q7	1590001940	S.TRANSISTOR	DTC144EE TL
Q11	1590001940	S.TRANSISTOR	DTC144EE TL
Q12	1590001870	S.TRANSISTOR	DTA114EE TL
Q14	1590002310	S.TRANSISTOR	DTC114EE TL
Q16	1590002360	TRANSISTOR	MRF581
Q17	1590001940	S.TRANSISTOR	DTC144EE TL
Q20	1590001940	S.TRANSISTOR	DTC144EE TL
Q21	1590001870	S.TRANSISTOR	DTA114EE TL
Q22	1590001940	S.TRANSISTOR	DTC144EE TL
Q23	1590001870	S.TRANSISTOR	DTA114EE TL
Q27	1580000630	S.FET	3SK228XR-TL
Q28	1590001940	S.TRANSISTOR	DTC144EE TL
Q29	1590001940	S.TRANSISTOR	DTC144EE TL
Q30	1590001940	S.TRANSISTOR	DTC144EE TL
Q35	1590002310	S.TRANSISTOR	DTC114EE TL
Q36	1590001870	S.TRANSISTOR	DTA114EE TL
Q39	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q40	1520000450	S.TRANSISTOR	2SB1132 T100 Q
Q41	1530000880	TRANSISTOR	2SC2694

[PA UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
Q42	1530000880	TRANSISTOR	2SC2694
Q43	1530000880	TRANSISTOR	2SC2694
Q44	1540000560	S.TRANSISTOR	2SD1221-Y (TE16L)
Q45	1540000200	TRANSISTOR	2SD1406 Y
Q46	1590001870	S.TRANSISTOR	DTA114EE TL
Q47	1530002060	S.TRANSISTOR	2SC4081 T107 R
D1	1160000140	S.DIODE	DAP222 TL
D2	1720000360	S.DIODE	HSU88TRF
D3	1720000360	S.DIODE	HSU88TRF
D4	1710000310	DIODE	MI407
D11	1160000140	S.DIODE	DAP222 TL
D12	1790000700	DIODE	DSA3A1
D13	1790000700	DIODE	DSA3A1
D14	1710000290	DIODE	MI308
D15	1710000290	DIODE	MI308
D18	1750000520	S.DIODE	DAN222TL
D19	1720000540	S.VARICAP	HVM17-01TR
D20	1790000620	S.DIODE	MA77 (TW)
D21	1720000540	S.VARICAP	HVM17-01TR
D22	1790000620	S.DIODE	MA77 (TW)
D23	1790000450	S.DIODE	MA862 (TX)
D24	1710000290	DIODE	MI308
D25	1790000710	VARISTOR	MA29B
D26	1790000710	VARISTOR	MA29B
D27	1790000710	VARISTOR	MA29B
D28	1750000520	S.DIODE	DAN222TL
D29	1730000030	S.ZENER	RD5.6M-T2B2
D31	1720000540	S.VARICAP	HVM17-01TR
D32	1790000710	VARISTOR	MA29B
D33	1720000540	S.VARICAP	HVM17-01TR
D35	1790000620	S.DIODE	MA77 (TW)
L3	6140002220	COIL	LR-270 (TR6X3X2 3A9)
L5	6140003040	COIL	LR-322B
L8	6140003370	COIL	LR-378
L9	6140002030	COIL	LR-230 (SK-10M-15Y 120)
L10	6110001670	COIL	LA-253
L11	6110001660	COIL	LA-252
L12	6110001670	COIL	LA-253
L14	6200004740	S.COIL	NL 252018T-1R2J
L16	6110001740	COIL	LA-263
L17	6110001670	COIL	LA-253
L18	6110001670	COIL	LA-253
L19	6110001670	COIL	LA-253
L33	6200004740	S.COIL	NL 252018T-1R2J
L37	6200003950	S.COIL	HF50ACC 322513-T
L41	6200003590	S.COIL	EXCCL3225U1
L42	6180000900	COIL	LAL 03NA 101K
L45	6140000610	COIL	LR-83
L46	6140003350	COIL	LR-376
L50	6910003570	COIL	2943-666663
L51	6910003570	COIL	2943-666663
L52	6200005010	S.COIL	NL 252018T-100J
L53	6200005010	S.COIL	NL 252018T-100J
L60	6150002810	COIL	LS-291
L61	6200003710	S.COIL	NL 252018T-2R7J
L62	6150002810	COIL	LS-291
L63	6200004740	S.COIL	NL 252018T-1R2J
L64	6200004740	S.COIL	NL 252018T-1R2J
L77	2040000490	COIL	EXC-ELDR25C
L78	2040000490	COIL	EXC-ELDR25C
L79	6200003950	S.COIL	HF50ACC 322513-T
L80	6180000810	COIL	LAL 03NA 2R2M
L81	6110003270	COIL	LA-521
L82	2040000490	COIL	EXC-ELDR25C
L83	2040000490	COIL	EXC-ELDR25C
L86	6200004740	S.COIL	NL 252018T-1R2J
L87	6200004740	S.COIL	NL 252018T-1R2J
L88	6200004740	S.COIL	NL 252018T-1R2J
L89	6200004740	S.COIL	NL 252018T-1R2J
L91	6200003950	S.COIL	HF50ACC 322513-T
L92	6170000230	COIL	LW-25
L93	6200003590	S.COIL	HF50ACC 322513-T
R1	7030003420	S.RESISTOR	ERJ3GEYJ 681 V (680 Ω)
R2	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R3	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R4	7030006120	S.RESISTOR	ERJ1WYJ4R7H (4.7 Ω)
R6	7310003240	TRIMMER	EVN-2ACA00 B23 (202)
R7	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)

S.=Surface mount

[PA UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
R8	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R9	7030006230	S.RESISTOR	ERJ12YJ151H (150 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	7030007990	S.RESISTOR	ERJ12YJ820H (82 Ω)
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
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	7030008000	S.RESISTOR	ERJ1WYJ3R3H (3.3 Ω)
R51	7030006060	S.RESISTOR	ERJ12YJ100H (10 Ω)
R53	7030006060	S.RESISTOR	ERJ12YJ100H (10 Ω)
R54	7030008000	S.RESISTOR	ERJ1WYJ3R3H (3.3 Ω)
R56	7030006120	S.RESISTOR	ERJ1WYJ4R7H (4.7 Ω)
R61	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R62	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R63	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 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)
R89	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R90	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R91	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R92	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R93	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R94	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R95	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R97	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R98	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R99	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ)
R100	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R101	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R102	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R103	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R104	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R105	7030003290	S.RESISTOR	ERJ3GEYJ 560 V (56 Ω)
R106	7030003390	S.RESISTOR	ERJ3GEYJ 391 V (390 Ω)
R107	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R126	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R127	7310003240	TRIMMER	EVN-2ACA00 B23 (202)
R129	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R130	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R131	7310003240	TRIMMER	EVN-2ACA00 B23 (202)
R132	7030006120	S.RESISTOR	ERJ1WYJ4R7H (4.7 Ω)
R135	7510000070	THERMISTOR	ERT-D2FHL 503S
R136	7510000070	THERMISTOR	ERT-D2FHL 503S
R137	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ)
R138	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)
R139	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R140	7030007360	S.RESISTOR	ERJ1WYJ470H (47 Ω)
R141	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R142	7030006120	S.RESISTOR	ERJ1WYJ4R7H (4.7 Ω)
R143	7030006120	S.RESISTOR	ERJ1WYJ4R7H (4.7 Ω)
R144	7030006130	S.RESISTOR	ERJ1WYJ100H (10 Ω)
R145	7030006130	S.RESISTOR	ERJ1WYJ100H (10 Ω)
R146	7030008330	S.RESISTOR	ERJ1WRQR33U
R148	7030008330	S.RESISTOR	ERJ1WRQR33U
R152	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R153	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R154	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)
R155	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R156	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R157	7030007630	S.RESISTOR	MCR100JZJH 0.68 Ω (R68)
R158	7030007630	S.RESISTOR	MCR100JZJH 0.68 Ω (R68)
R159	7030004050	S.RESISTOR	ERJ3GEYJ 1R0 V (1 Ω)
C1	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C4	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C7	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C26	4030011200	S.CERAMIC	GRM42-6 CH 300J 500PT
C27	4030011180	S.CERAMIC	GRM42-6 CH 220J 500PT
C28	4030011180	S.CERAMIC	GRM42-6 CH 220J 500PT

[PA UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
C29	4030011260	S.CERAMIC	GRM42-6 W5R 102K 500PT
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
C66	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C67	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C68	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C69	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C70	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C71	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C72	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C73	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C75	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C76	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C77	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C78	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C79	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C80	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C81	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C82	4510004600	ELECTROLYTIC	16 MV 1000 HC
C83	4030008920	S.CERAMIC	C1608 JB 1C 473K-T-A
C84	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C89	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C90	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C91	4510004590	ELECTROLYTIC	16 MV 470 HC
C92	4510004590	ELECTROLYTIC	16 MV 470 HC
C93	4030008920	S.CERAMIC	C1608 JB 1C 473K-T-A
C94	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C95	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C99	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C105	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C106	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C110	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C112	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C115	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C116	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C117	4030011760	S.CERAMIC	GRM44-1 SL 682J 200PT
C118	4030011760	S.CERAMIC	GRM44-1 SL 682J 200PT
C126	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C128	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C130	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C131	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C134	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C138	4320001050	S.MICA	UC342H 3900J-T
C139	4320001080	S.MICA	UC342H 4700J-T
C143	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C144	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C145	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C146	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C148	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C157	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C158	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C161	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C167	4030011790	S.CERAMIC	GRM44-1 Y5V 684Z 100PT
C168	4010006900	CERAMIC	HE80SJ YB 472K 50V
C169	4030011260	S.CERAMIC	GRM42-6 W5R 102K 500PT
C170	4030011790	S.CERAMIC	GRM44-1 Y5V 684Z 100PT
C171	4030011260	S.CERAMIC	GRM42-6 W5R 102K 500PT
C172	4030011260	S.CERAMIC	GRM42-6 W5R 102K 500PT
C173	4030011790	S.CERAMIC	GRM44-1 Y5V 684Z 100PT
C179	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C180	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C188	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C189	4030007020	S.CERAMIC	C1608 CH 1H 120J-T-A
C190	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C193	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C194	4030009510	S.CERAMIC	C1608 CH 1H 010B-T-A
C195	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C196	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C197	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C198	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C199	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C200	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C201	4030006980	S.CERAMIC	C1608 CH 1H 070D-T-A
C204	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A

S.=Surface mount

[PA UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
C205	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C206	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C225	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C226	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C227	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C228	4510003910	ELECTROLYTIC	16 MV 47 HW
C229	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C230	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C231	4030011240	S.CERAMIC	GRM42-6 CH 470J 500PT
C235	4030011730	S.CERAMIC	GRM42-6 CH 101J 500PT
C236	4030011730	S.CERAMIC	GRM42-6 CH 101J 500PT
C237	4030011730	S.CERAMIC	GRM42-6 CH 101J 500PT
C238	4030011260	S.CERAMIC	GRM42-6 W5R 102K 500PT
C240	4030012480	S.CERAMIC	GRM42-6 CH 121J 500PT
C242	4610001580	TRIMMER	CVD30-41 30P
C244	4030012480	S.CERAMIC	GRM42-6 CH 121J 500PT
C245	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C246	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C247	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C248	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C250	4510003910	ELECTROLYTIC	16 MV 47 HW
C251	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C253	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C255	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C256	4510004590	ELECTROLYTIC	16 MV 470 HC
C259	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C261	4030011740	S.CERAMIC	GRM42-2 CH 201J 500PT
C262	4010005360	CERAMIC	HM11SJ SL 301J 500V
C264	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C265	4030007000	S.CERAMIC	C1608 CH 1H 090D-T-A
C266	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C267	4030007000	S.CERAMIC	C1608 CH 1H 090D-T-A
C270	4030011730	S.CERAMIC	GRM42-6 CH 101J 500PT
C271	4030011730	S.CERAMIC	GRM42-6 CH 101J 500PT
C272	4030011730	S.CERAMIC	GRM42-6 CH 101J 500PT
C273	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C274	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C275	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C276	4010005880	CERAMIC	HM95SJ SL 271J 500V
C278	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C279	4030011740	S.CERAMIC	GRM42-2 CH 201J 500PT
C281	4030011740	S.CERAMIC	GRM42-2 CH 201J 500PT
C283	4510003910	ELECTROLYTIC	16 MV 47 HW
C284	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C285	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C287	4010005680	CERAMIC	HM60SJ SL 270J 500V
C288	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C289	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C290	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C291	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C292	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C295	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C296	4010005700	CERAMIC	HM60SJ SL 330J 500V
C297	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C298	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C299	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C300	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C303	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C305	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C306	4030011740	S.CERAMIC	GRM42-2 CH 201J 500PT
C307	4030011740	S.CERAMIC	GRM42-2 CH 201J 500PT
C308	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C309	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C310	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C311	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C312	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C313	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C314	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C315	4030011260	S.CERAMIC	GRM42-6 W5R 102K 500PT
RL2	6330001060	RELAY	APQ 3311
RL3	6330001430	RELAY	NA-12W-K
CP20	6910009670	S.CHECK P	HK3-S-T
CP21	6910009670	S.CHECK P	HK3-S-T
F1	5210000130	FUSE	FGB 4A
F2	5220000020	HOLDER	S-N5051
F3	5220000020	HOLDER	S-N5051

[PA UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
J1	6510007020	CONNECTOR	TMP-J01X-V6
J2	6510009930	CONNECTOR	PD054-08M
J3	6510009890	CONNECTOR	PD054-04M
J4	6510009900	CONNECTOR	PD054-05M
J5	6510009920	CONNECTOR	PD054-07M
J6	6510009890	CONNECTOR	PD054-04M
J8	6450000140	CONNECTOR	HSJ0807-01-010
J11	6510007900	CONNECTOR	TBP-P01X-A1
J12	6510007900	CONNECTOR	TBP-P01X-A1
J14	6510018960	S.CONNECTOR	B2B-PH-SM3-TB
J15	6510003080	CONNECTOR	RT01T-1.0B
J19	6510001920	CONNECTOR	1490R
W50	7120000010	JUMPER	JPW 02A
W51	7120000010	JUMPER	JPW 02A
W52	7030000010	S.JUMPER	MCR10EZJH JPW (000)
	7120000380	JUMPER	JPW 01 R-01 [EUR], [USA]
W53	7120000010	JUMPER	JPW 02A [FRA], [DEN]
WS1	8970022461	OTHER	(1)/PA
WS2	8600035650	OTHER	P08PA
WS3	8600035661	OTHER	P04xJ02x04PA-1
WS4	8600035670	OTHER	P03x05xJ05x06PA
WS5	8970022471	OTHER	(2)/PA
WS6	8970022480	OTHER	(2)/PA
WS7	8600035681	OTHER	J03x19PA-1
EP1	0910048518	PCB	B 4920H
EP2	6910000610	BEAD	FSOH050RN01
EP5	6910000610	BEAD	FSOH050RN01
EP6	6910000610	BEAD	FSOH050RN01
EP7	6910000610	BEAD	FSOH050RN01
EP14	9036505001	TUBE	0.7 (d) L=15 (mm)
EP15	9036505001	TUBE	0.7 (d) L=15 (mm)
EP16	9036505001	TUBE	0.7 (d) L=15 (mm)
EP17	6910000600	BEAD	FSOH050RN
EP18	6910000600	BEAD	FSOH050RN
EP19	6910000600	BEAD	FSOH050RN
EP20	9018970370	TUBE	20 (d) L=25 (mm)

[FILTER BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
IC1	1110002700	S.IC	NJM2904M-T1
Q1	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q2	1590002310	S.TRANSISTOR	DTC114EE TL
Q3	1590002310	S.TRANSISTOR	DTC114EE TL
Q4	1590002310	S.TRANSISTOR	DTC114EE TL
Q5	1590002310	S.TRANSISTOR	DTC114EE TL
Q6	1590002310	S.TRANSISTOR	DTC114EE TL
Q7	1590002310	S.TRANSISTOR	DTC114EE TL
Q8	1590002310	S.TRANSISTOR	DTC114EE TL
Q9	1530003090	S.TRANSISTOR	2SC4213-B (TE85R)
Q10	1590002310	S.TRANSISTOR	DTC114EE TL
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

S.=Surface mount

[FILTER BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
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
D23	1160000140	S.DIODE	DAP222 TL
D24	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	6200003260	S.COIL	NL 322522T-101J
L10	6140001800	COIL	LR-216 (T50-2)
L11	6140001800	COIL	LR-216 (T50-2)
L12	6200003260	S.COIL	NL 322522T-101J
L13	6200003260	S.COIL	NL 322522T-101J
L14	6110002900	COIL	LA-479
L15	6110002890	COIL	LA-478
L16	6200003260	S.COIL	NL 322522T-101J
L17	6200003260	S.COIL	NL 322522T-101J
L18	6140002560	COIL	LR-293 (T50-10)
L19	6140002560	COIL	LR-293 (T50-10)
L20	6200003260	S.COIL	NL 322522T-101J
L21	6200003260	S.COIL	NL 322522T-101J
L22	6110002920	COIL	LA-481
L23	6110002910	COIL	LA-480
L24	6200003260	S.COIL	NL 322522T-101J
L25	6200003260	S.COIL	NL 322522T-101J
L26	6140001800	COIL	LR-216 (T50-2)
L27	6140001780	COIL	LR-214 (T50-2)
L28	6200003260	S.COIL	NL 322522T-101J
L29	6200003260	S.COIL	NL 322522T-101J
L30	6140002570	COIL	LR-294 (T50-2)
L31	6140002580	COIL	LR-295 (T50-2)
L32	6200003260	S.COIL	NL 322522T-101J
L33	6140002600	COIL	LR-297 (TR10X5X5 3A6)
L34	6200003260	S.COIL	NL 322522T-101J
L35	2040000490	COIL	EXC-ELDR25C
L36	6200003260	S.COIL	NL 322522T-101J
L37	6200003260	S.COIL	NL 322522T-101J
L39	2040000490	COIL	EXC-ELDR25C
L41	2040000490	COIL	EXC-ELDR25C
L42	2040000490	COIL	EXC-ELDR25C
L43	2040000490	COIL	EXC-ELDR25C
L44	6200003260	S.COIL	NL 322522T-101J
L45	6200003260	S.COIL	NL 322522T-101J
L46	6200003260	S.COIL	NL 322522T-101J
L47	6200003260	S.COIL	NL 322522T-101J
L48	6200003260	S.COIL	NL 322522T-101J
L49	6200003260	S.COIL	NL 322522T-101J
L50	6140002560	COIL	LR-293 (T50-10)
L51	2040000490	COIL	EXC-ELDR25C
L54	6200003260	S.COIL	NL 322522T-101J
L55	6200003260	S.COIL	NL 322522T-101J
L56	6200001830	S.COIL	NL 322522T-100J
L57	6200003260	S.COIL	NL 322522T-101J
L58	2040000490	COIL	EXC-ELDR25C
L59	2040000490	COIL	EXC-ELDR25C
L60	6200003260	S.COIL	NL 322522T-101J
L61	2040000490	COIL	EXC-ELDR25C
L62	6200003260	S.COIL	NL 322522T-101J
L63	6180000880	COIL	LAL 03NA 100K
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)

[FILTER BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
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)
R33	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R34	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R35	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R36	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R37	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R38	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R39	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R40	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R41	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R42	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R43	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	4030007100	S.CERAMIC	C1608 CH 1H 560J-T-A
C4	4030007030	S.CERAMIC	C1608 CH 1H 150J-T-A
C5	4030007080	S.CERAMIC	C1608 CH 1H 390J-T-A
C6	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C7	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C8	4010005700	CERAMIC	HM60SJ SL 330J 500V
C9	4010005570	CERAMIC	HM60SJ SL 060D 500V
C10	4010005770	CERAMIC	HM60SJ SL 820J 500V
C11	4010005630	CERAMIC	HM60SJ SL 150J 500V
C12	4010005760	CERAMIC	HM60SJ SL 750J 500V
C13	4010005700	CERAMIC	HM60SJ SL 330J 500V
C14	4010005660	CERAMIC	HM60SJ SL 220J 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	4010005750	CERAMIC	HM60SJ SL 680J 500V
C25	4010005620	CERAMIC	HM60SJ SL 120J 500V
C26	4010005780	CERAMIC	HM60SJ SL 101J 500V
C27	4010005700	CERAMIC	HM60SJ SL 330J 500V
C28	4010005750	CERAMIC	HM60SJ SL 680J 500V
C29	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C30	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C31	4010007610	CERAMIC	HM95SJ SL 241J 500V
C32	4010005810	CERAMIC	HM74SJ SL 111J 500V
C33	4010005880	CERAMIC	HM95SJ SL 271J 500V
C34	4010005740	CERAMIC	HM60SJ SL 560J 500V
C35	4010005780	CERAMIC	HM60SJ SL 111J 500V
C36	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C37	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C38	4010005770	CERAMIC	HM60SJ SL 820J 500V
C39	4010005640	CERAMIC	HM60SJ SL 180J 500V
C40	4010005880	CERAMIC	HM95SJ SL 271J 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	4010005930	CERAMIC	HM11SJ SL 391J 500V
C46	4010008160	CERAMIC	HM13SJ SL 431J 500V
C47	4010005870	CERAMIC	HM95SJ SL 221J 500V
C48	4010005810	CERAMIC	HM74SJ SL 111J 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	4030007160	S.CERAMIC	C1608 CH 1H 181J-T-A
C62	4030010760	S.CERAMIC	C1608 CH 1H 331J-T-A
C63	4030010760	S.CERAMIC	C1608 CH 1H 331J-T-A

S.=Surface mount



[FILTER BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
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
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	4010007590	CERAMIC	HM15SJ SL 681J 500V
C81	4010006410	CERAMIC	HM13SJ SL 471J 500V
C82	4010007500	CERAMIC	HM15SJ SL 751J 500V
C84	4010007490	CERAMIC	HM15SJ SL 561J 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	4030006860	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
C121	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C122	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C123	4030009110	S.CERAMIC	C3216 JB 1C 474K-T-A
C124	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C125	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C126	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C127	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C132	4010005640	CERAMIC	HM60SJ SL 180J 500V
C133	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C134	4010005780	CERAMIC	HM60SJ SL 101J 500V
C135	4010005820	CERAMIC	HM74SJ SL 121J 500V
C136	4030001420	S.CERAMIC	GR44 Y5V 684Z
C137	4010005770	CERAMIC	HM60SJ SL 820J 500V
C140	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C141	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C143	4010006410	CERAMIC	HM13SJ SL 471J 500V
C144	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C145	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C146	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C147	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C148	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C149	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C150	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C151	4010005540	CERAMIC	HM60SJ SL 030C 500V
C152	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
RL1	6330001330	RELAY	AG 201344
RL2	6330001430	RELAY	NA-12W-K
RL3	6330001430	RELAY	NA-12W-K
RL4	6330001320	RELAY	AHY103
RL5	6330001320	RELAY	AHY103
RL6	6330001320	RELAY	AHY103
RL7	6330001320	RELAY	AHY103

[FILTER BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
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
RL16	6330001320	RELAY	AHY103
J1	6510007900	CONNECTOR	TBP-P01X-A1
J2	6510007900	CONNECTOR	TBP-P01X-A1
J4	6450001490	CONNECTOR	HLJ7001-01-3010
J5	6450001640	CONNECTOR	TCS5044-01-4111
J7	6450001650	CONNECTOR	HSJ0836-01-500
J8	6450001660	CONNECTOR	EX345GLB
J9	6510020080	S.CONNECTOR	52808-2090
J10	6510009870	CONNECTOR	PD054-02M
J11	6510016170	CONNECTOR	52018-8835
J12	6510019970	S.CONNECTOR	52808-1090
J13	6510003250	CONNECTOR	TMP-J01X-A2
P1	6510003240	CONNECTOR	TMP-P01X-A1
P2	6510003240	CONNECTOR	TMP-P01X-A1
P3	6510018980	CONNECTOR	PHR-2
W1	7120000010	JUMPER	JPW 02A
W15	7030003860	S.JUMPER	ERJ3GE JPW V
W16	7030003860	S.JUMPER	ERJ3GE JPW V
W17	7030003860	S.JUMPER	ERJ3GE JPW V
W18	7120000010	JUMPER	JPW 02A
WS1	8970022491		(2)/FI
WS2	8600035690		P03XJ10FI
EP1	0910048525	PCB	B 4921E

S.=Surface mount

# SECTION 6

# MECHANICAL PARTS AND DISASSEMBLY

## [CHASSIS PARTS]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
J3	6510000370	Connector MR-DS [ANT1]	1
J4	6510000370	Connector MR-DS [ANT2]	1
W1	8900006050	Flat Cable OPC-594	1
W2	8900006060	Flat Cable OPC-595	1
W3	8900006150	Flat Cable OPC-602	1
EP1	8930021010	Domed plug DP-500	1
EP2	0910045921	Flexible PCB B-4598A	1
MF1	2710000580	Fan FBA06T12HF	1
SP1	2510000990	Speaker VS-66Y0811	1
MP1	8410002062	1897 heatsink-2	1
MP2	8110006060	1897 upper-cover (incl. MP10 and MP38)	1
MP3	8510011450	1897 lower-cover	1
MP7	8930043950	1897 fan guard	1
MP8	8820000530	Flange bolt M4 x 8 NI	1
MP10	8930015850	SP net	1
MP11	8930018520	TR.clip (A)	1
MP12	8950004180	1691 contact base(A)	1
MP15	8930036980	1691 earth spring	1
MP17	8930037000	1691 earth plate	1
MP19	8810008630	Screw PH BT M3 x 6 NI-ZU	5
MP20	8810007410	Screw PH M3 x 6 NI	2
MP21	8810009020	Screw FH M2.6 x 5 ZK	5
MP22	8850000140	Flat washer M4 NI BS	1
MP24	8810008990	Screw PH BT M2 x 10 ZK	1
MP25	8850001560	Ster 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	6
MP32	8810007410	Screw PH M3 x 6 NI	2
MP33	8810008490	Setscrew H M2.6 x 8 NI	2
MP34	8810008490	Setscrew H M2.6 x 8 NI	2
MP35	8810008490	Setscrew H M2.6 x 8 NI	2
MP36	8810009020	Screw FH M2.6 x 5 ZK	5
MP37	8810008490	Setscrew H M2.6 x 8 NI	1
MP38	8930038650	Sheet BE	1
MP40	8930038820	Aluminum sheet V	1
MP49	8930028390	Sheet AH	5
MP51	8930039430	1691 B-sheet	1
MP56	8930040270	Embossed sheet (H)	2
MP60	8930042440	1897 SP hoder	1
MP61	8810009020	Screw FT M2.6 x 5 ZK	4
MP62	8810009390	Screw PH BT M3 x 18 NI-ZU	4
MP63	8810007410	Screw PH M3 x 6 NI	2
MP64	8810008490	Setscrew H M2.6 x 8 NI	1
MP65	8810008630	Screw PH BT M3 x 6 NI-ZU	2
MP67	8930001180	Earth plate	1
MP68	8930028840	Sponge (DF)	1
MP69	8930043960	Sheet BQ	2
MP70	8930033930	Sheet DN	1
MP71	8950004610	Wire sticker S-5	1

## [FRONT UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
S1	2250000290	Encoder SW-159 (EC24B50B) (incl. nut, washer)	1
W1	8900006040	Flat cable OPC-593	1
W2	8900006250	Cable OPC-610	1
MP1	8210014212	1691 front panel (B)-2	1
MP2	8210012580	1691 rear panel	1
MP3	8930036720	1691 8-key	1
MP4	8930041650	1691 UP/DOWN key (A)	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 (include. MP28)	1
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	8930036691	1691 release button-1	1
MP17	8930036700	1691 lens	3
MP18	8310036280	1691 window plate	1
MP19	8310036273	1691 brake plate-3	1
MP20	8950004191	1691 contact base(b)-1	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
MP27	8610010360	Knob N260 (include. MP29)	1
MP28	8610007510	Knob spring No. 7800	1
MP29	8610007510	Knob spring No. 7800	1
	8210014470	1691 front panel (B)-2 assembly (include. MP1, 4, 5, 17 and 18)	1
	8610010111	Knob N239-1 assembly (include. MP9, 13, 14, 15 and 22)	1

## [DISPLAY BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
J2	6450001630	Connector HSJ1406-01-050 [PHONES]	1
DS4	5010000210	LCD DLC-7986YBGF	1
DS5	5030001290	LED D2264	1
EP2	8930039790	LCD contact SRCN-1691-ZSS-505	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	8930043470	1897 front plate	1

## [VR BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
R1	7210002780	Variable register RV-300	1
R2	7210002940	Variable register TP96D231E20-20F-10KB-1897	1
S1	2220000540	Switch SW-162 (SSSS22-2-11)	1

**[MAIN BOARD]**

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
MP3	8510011420	1897 M-case	1
MP4	8930014140	Earth spring (D)	1
MP6	8510011250	1897 main S-plate	1
MP7	8930024170	Earth spring (G)	1
MP8	8930024170	Earth spring (G)	1
MP9	8510010460	1691 main shield plate	1
MP10	8510010460	1691 main shield plate	1
MP11	8930044650	1897 M-spring	1

**[HPF BOARD]**

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
MP1	8510009180	1346 VCO case	1
MP2	8930028840	Sponge (DF)	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	8510011440	1897 P-cover	1
MP5	8510006970	VCO shield case	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
MP15	8810003960	Setscrew A M2.6 $\diamond$ 5	3
MP16	8810003960	Setscrew A M2.6 $\diamond$ 5	3
MP17	8510010150	1691 D/A case	1
MP19	8820000900	1691 screw	1
MP22	8510011160	1897 PLL shield case	1
MP23	8510010850	1897 D/A case	1
MP24	8510010460	1691 main shield plate	1
MP25	8950000180	Cable tie-80	2
MP26	8930001170	Earth spring (A)	1
MP27	8930012270	575 CPU shield plate	1
MP28	8930001170	Earth spring (A)	1

**[PA UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
J8	6450000140	Connector HSJ0807-01-010 [EXT SP]	1
J19	6510001920	Connector 1490R [TUNER]	1
P8	6510003780	Connector LLR-06 [DC 13.8V]	1
MP1	8950000180	Cable tie-80	1
MP3	8950000180	Cable tie-80	1
MP7	8860000100	Earth lug B 2 (M2.6) AG BS	1
MP8	8860000100	Earth lug B 2 (M2.6) AG BS	1
MP9	8860000100	Earth lug B 2 (M2.6) AG BS	1
MP10	8860000100	Earth lug B 2 (M2.6) AG BS	1
MP11	8860000100	Earth lug B 2 (M2.6) AG BS	1
MP12	8860000100	Earth lug B 2 (M2.6) AG BS	1
MP14	8930044800	1897 TR plate	1

**[FILTER BOARD]**

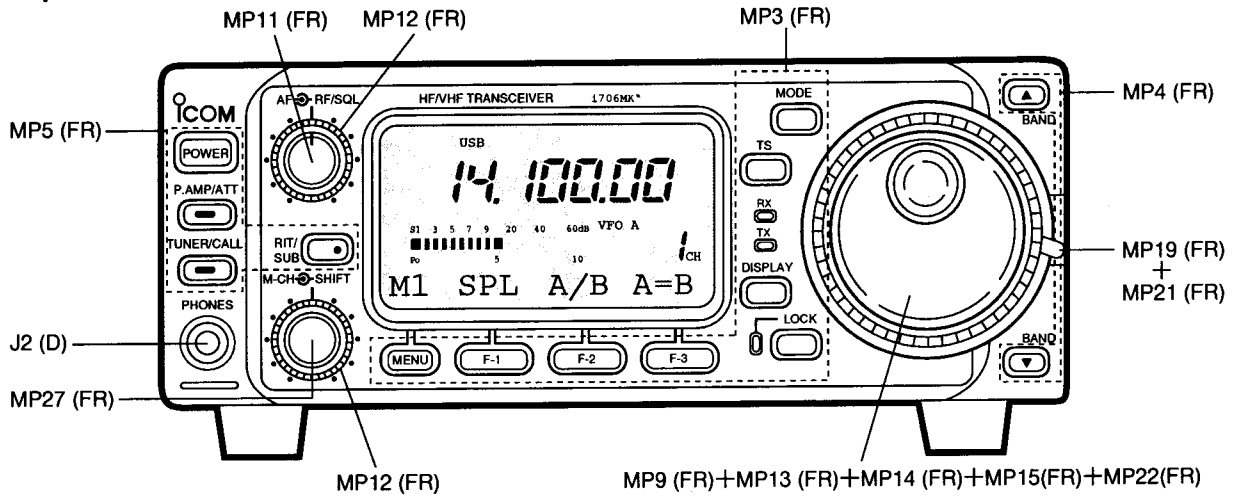
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J4	6450001490	Connector HLJ7001-01-3010 [ELEC-KEY]	1
J5	6450001640	Connector TCS5044-01-4111 [ACC]	1
J7	6450001650	Connector HSJ0836-01-500 [REMOTE]	1
J8	6450001660	Connector EX345GLB [RTTY]	1
J11	6510016170	Connector 52018-8835 [MIC]	1
MP2	8930014140	Earth spring (D)	1
MP3	8930014140	Earth spring (D)	1

**[UNPACKING]**

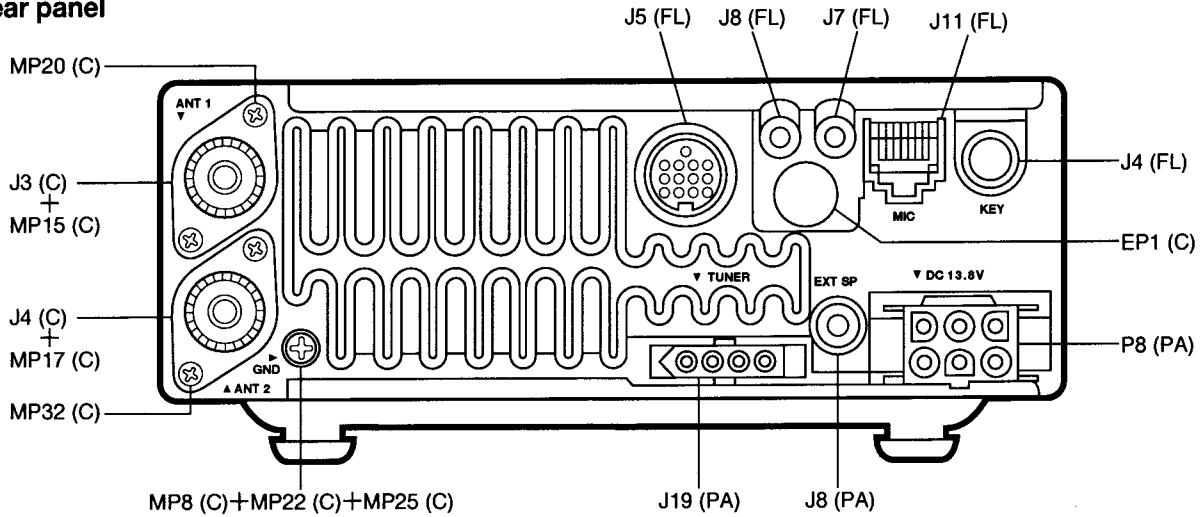
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F1	5210000090	Fuse FGB 30A	2
F2	5210000130	Fuse FGB 4A	1
P1	5610000050	Electronic keyer plug AP330	1
P2	5610000170	RTTY key plug AP370B	1
W1	8900006490	DC power cable OPC-025D [USA]	1
W2	8900006110	ACC cable OPC-596	1
MC1	7700002000	Hand microphone HM-103 ACC	1

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

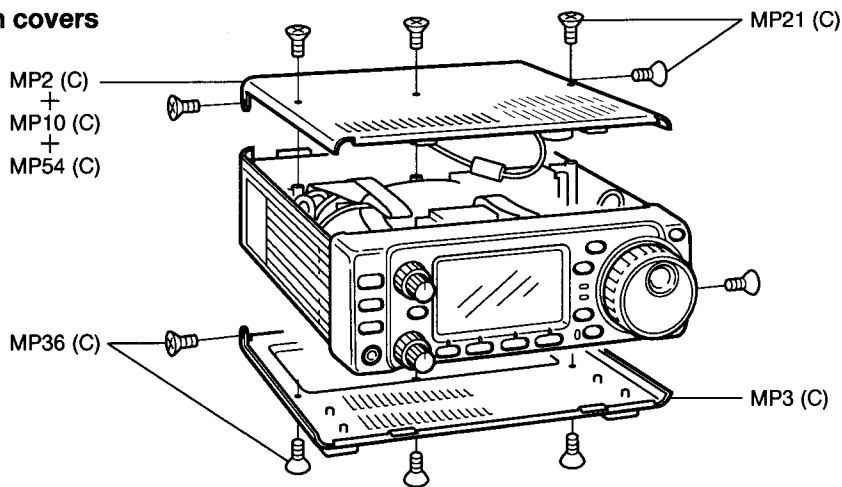
● Front panel



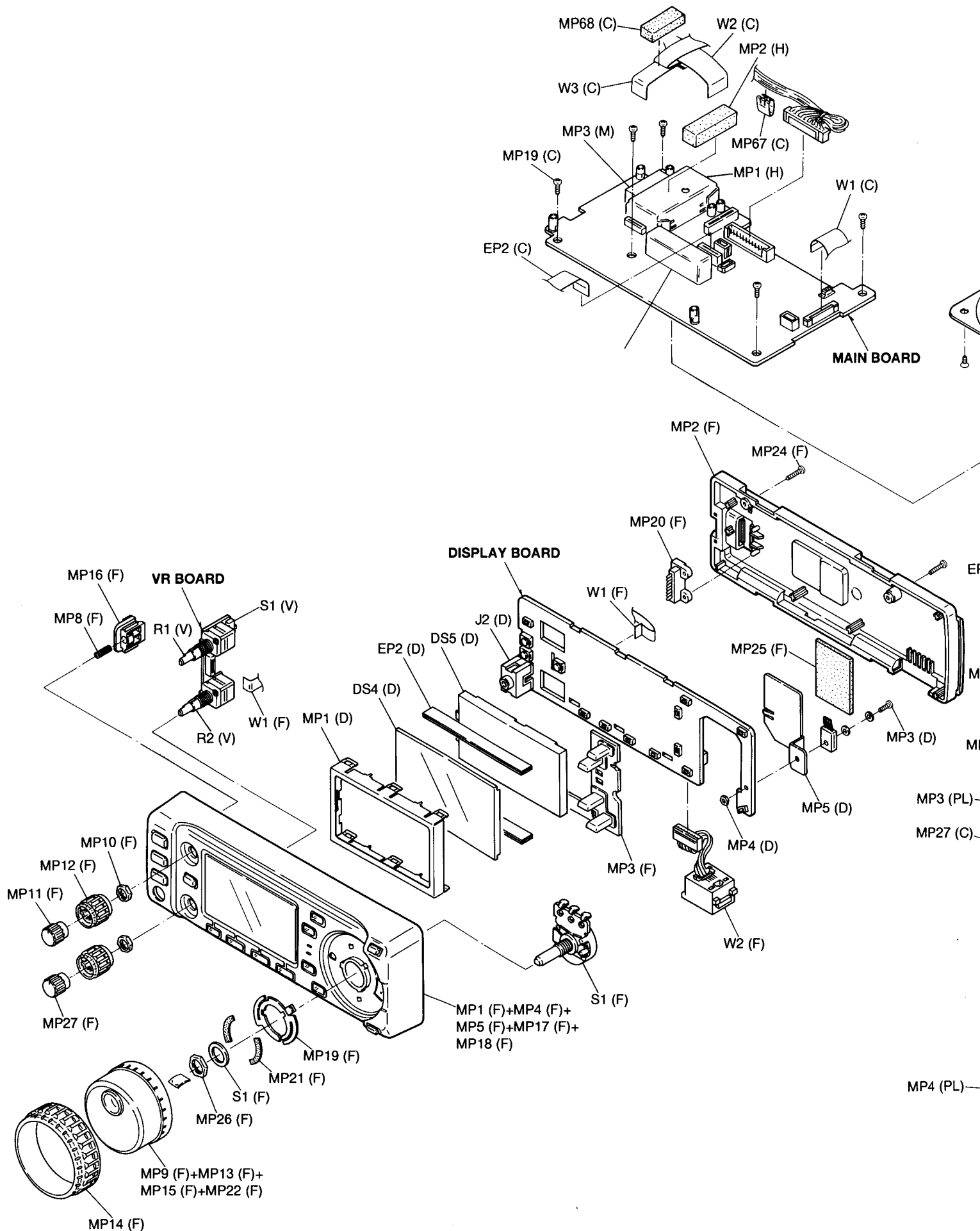
● Rear panel



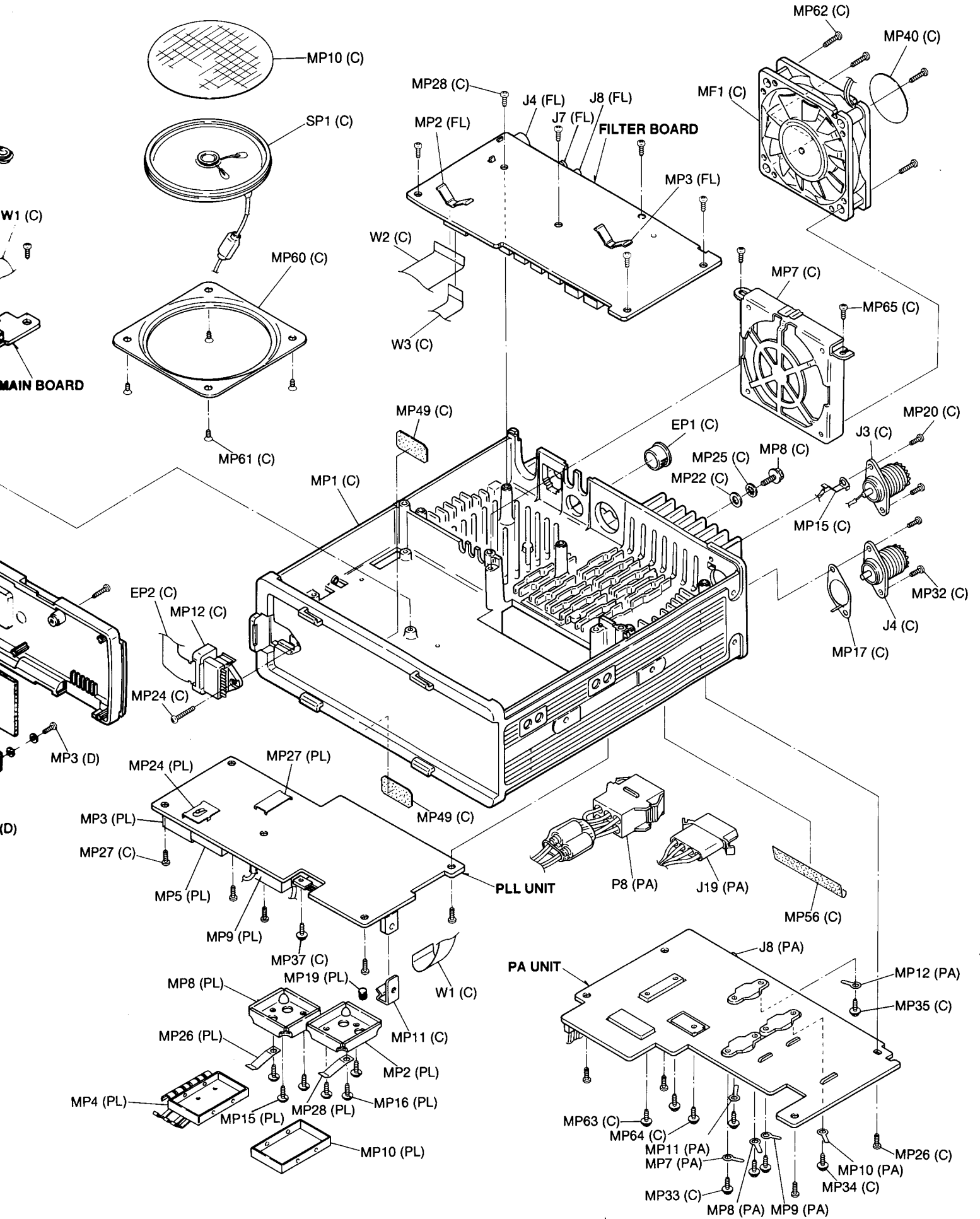
● Top and bottom covers



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





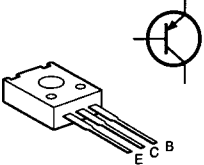

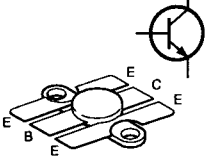









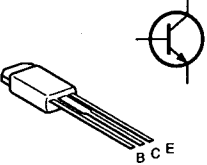
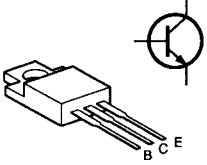



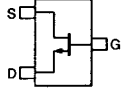
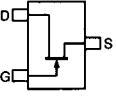
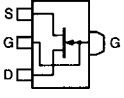
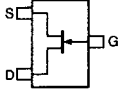
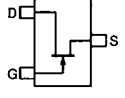
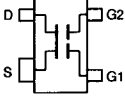
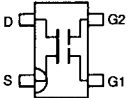




**Unit abbreviations:** (C): CHASSIS PARTS (FR): FRONT PARTS (D): DISPLAY BOARD (M): MAIN BOARD (PL): PLL UNIT (PA): PA UNIT (FL): FILTER BOARD (H): HPF BOARD








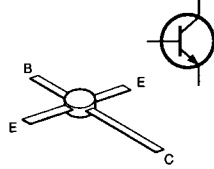




# SECTION 7

















# SEMI-CONDUCTOR INFORMATION

## • TRANSISTOR AND FET'S

<p><b>2SA1576 R</b> (Symbol: FR)</p> 	<p><b>2SB1132 Q</b> (Symbol: BA)</p> 	<p><b>2SB1143 S</b></p> 	<p><b>2SB798 DK</b> (Symbol: DK)</p> 	<p><b>2SC2694</b></p> 
<p><b>2SC4081 R</b> (Symbol: BR)</p> 	<p><b>2SC4081 S</b> (Symbol: BS)</p> 	<p><b>2SC4116 GR</b> (Symbol: LG)</p> 	<p><b>2SC4117 BL</b> (Symbol: DL)</p> 	<p><b>2SC4213 B</b> (Symbol: AB)</p> 
<p><b>2SC4226 R25</b> (Symbol: R25)</p> 	<p><b>2SC4403 3</b> (Symbol: LY3)</p> 	<p><b>2SC4405 3 TL</b> (Symbol: OY3)</p> 	<p><b>2SC4673D</b> (Symbol: CO)</p> 	<p><b>2SD1221 Y</b></p> 
<p><b>2SD1406</b></p> 	<p><b>2SD1619</b> (Symbol: DB)</p> 	<p><b>2SD1623</b> (Symbol: DF)</p> 	<p><b>2SD999 CK</b> (Symbol: CK)</p> 	<p><b>2SK1577 2 T7</b> (Symbol: P2)</p> 
<p><b>2SK210 GR</b> (Symbol: YG)</p> 	<p><b>2SK2171 4</b> (Symbol: No symbol)</p> 	<p><b>2SK880 Y</b> (Symbol: XY)</p> 	<p><b>2SK882 GR</b> (Symbol: TG)</p> 	<p><b>3SK131</b> (Symbol: VIT)</p> 
<p><b>3SK228XR</b> (Symbol: XR)</p> 	<p><b>DTA114EE</b> (Symbol: 14)</p> 	<p><b>DTA114EU</b> (Symbol: 14)</p> 	<p><b>DTA144EE TL</b> (Symbol: 16)</p> 	<p><b>DTC114EE TL</b> (Symbol: 24)</p> 

<b>DTA114TU</b> (Symbol: 94) 	<b>DTC114EU</b> (Symbol: 24) 	<b>DTC143TU</b> (Symbol: 03) 	<b>DTC144EE</b> (Symbol: 24) 	<b>DTC144EU</b> (Symbol: 26) 
<b>DTC144TU</b> (Symbol: 06) 	<b>MRF5015</b> 	<b>MRF581</b> 	<b>UMD6</b> (Symbol: D6) 	<b>UN911F</b> (Symbol: 6O) 

• DIODES

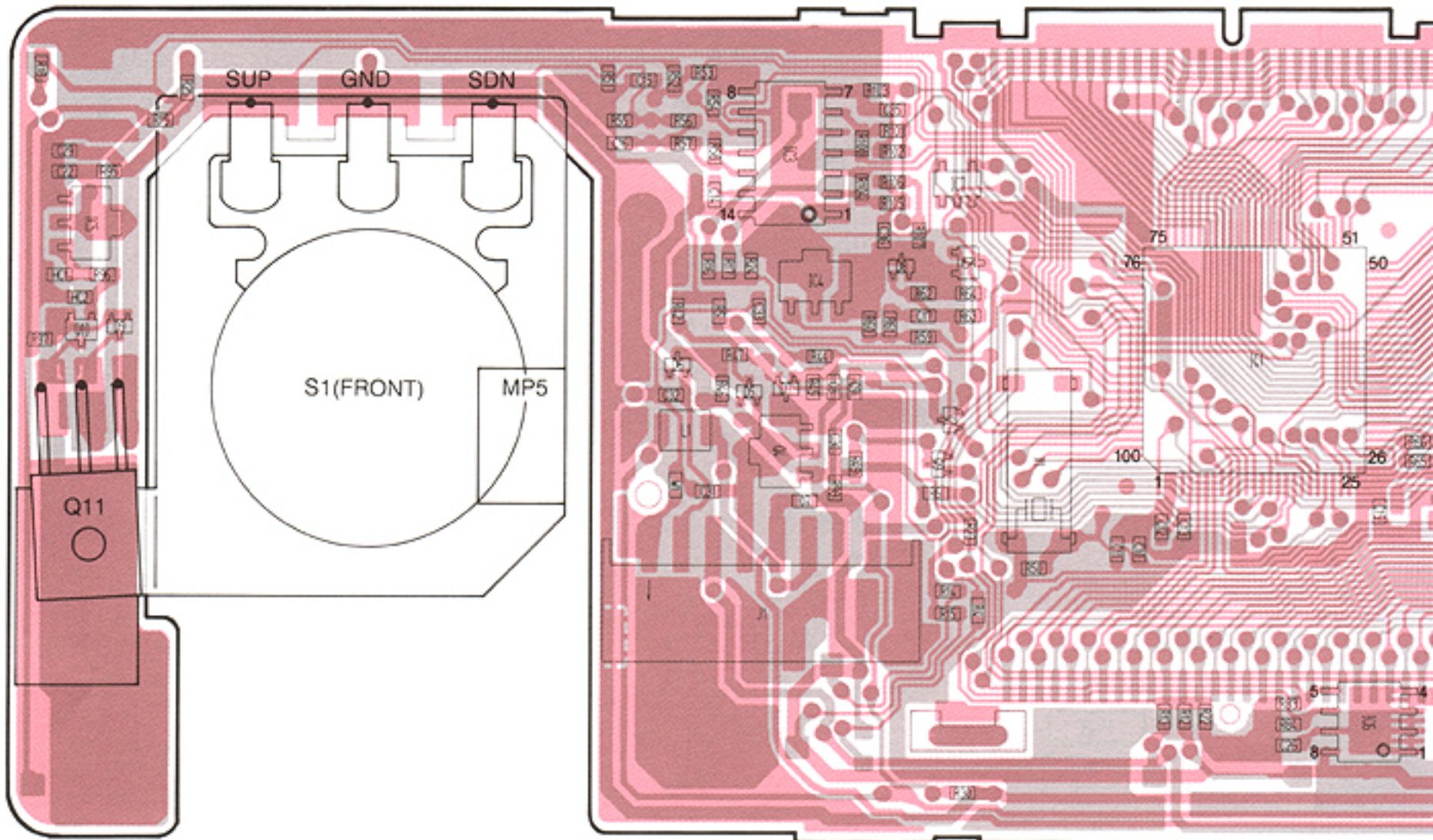
<b>1SS319</b> (Symbol: A4) 	<b>1SV237</b> (Symbol: BB) 	<b>1SV265 TL</b> (Symbol: LV) 	<b>1SV271</b> (Symbol: TG) 	<b>DA114</b> (Symbol: AV) 
<b>DA204U</b> (Symbol: K) 	<b>DA221</b> (Symbol: K) 	<b>DAN222</b> (Symbol: N) 	<b>DAP222</b> (Symbol: FR) 	<b>HSB88WSTR</b> (Symbol: Silver line) 
<b>HSM88AS</b> (Symbol: C1) 	<b>HVM17-01TR</b> (Symbol: T6) 	<b>MA862</b> (Symbol: M11) 	<b>RD3.6M B2</b> (Symbol: 362) 	<b>RD5.6M B2</b> (Symbol: 562) 
<b>RD9.1M B2</b> (Symbol: 912) 				



# SECTION 8 BOARD LAYOUTS

## 8-1 DISPLAY BOARD

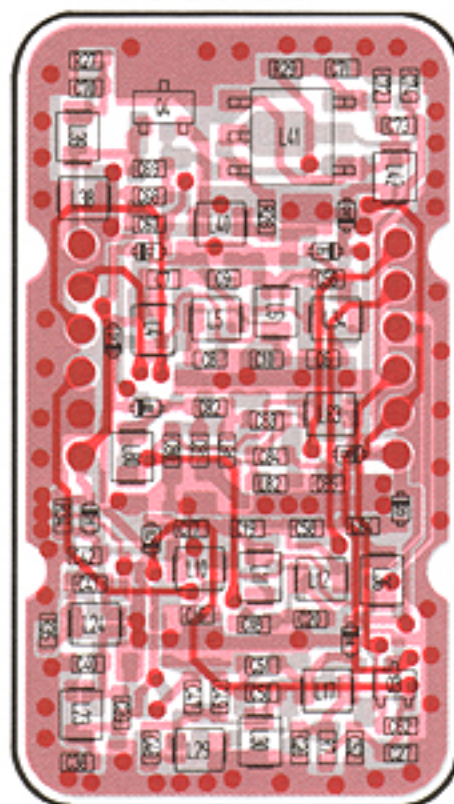
### • DISPLAY BOARD

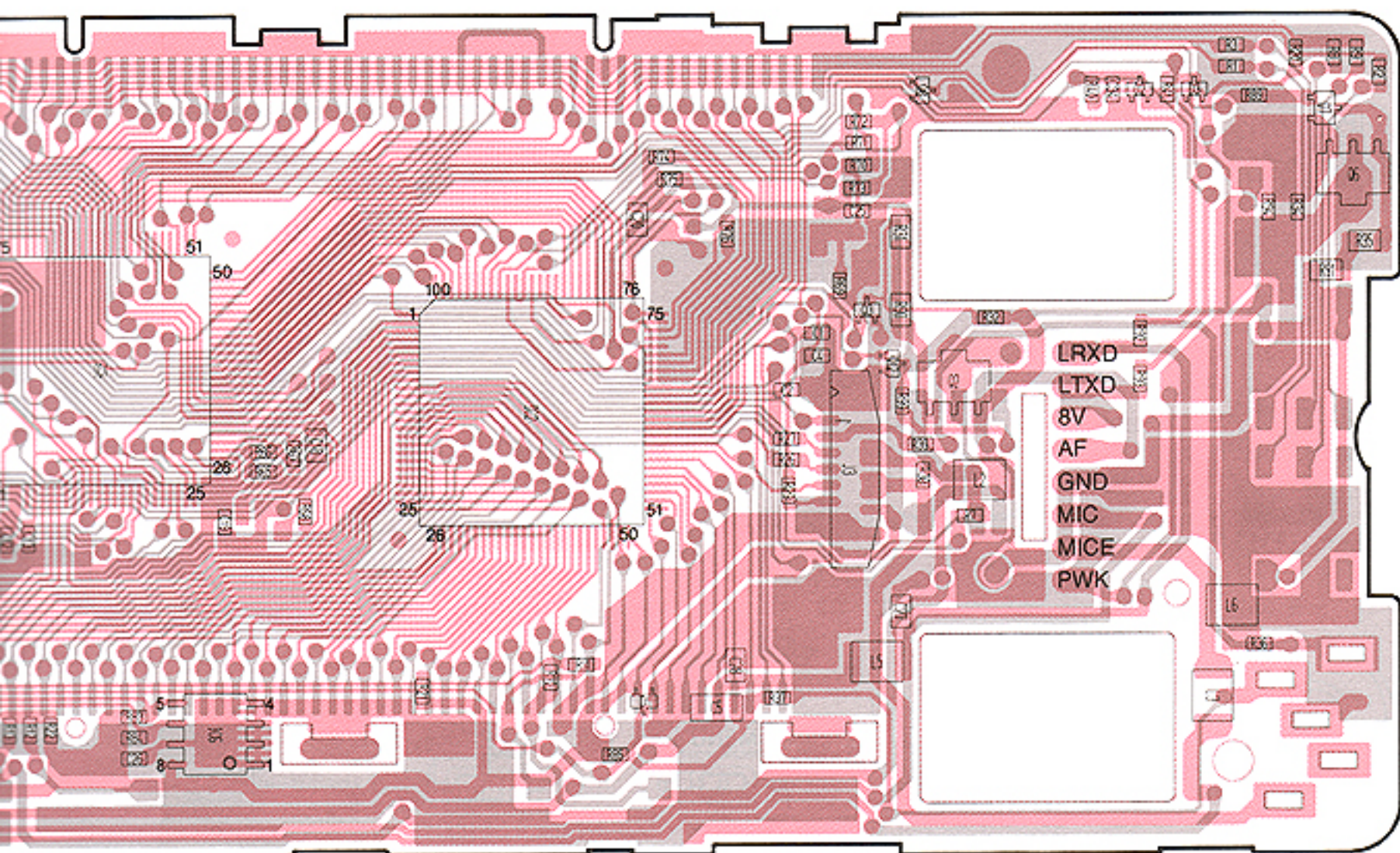


J1	1	8
	8V	
	U/D	
	AF	
	PTT	
	MICE	
	MIC	
	GND	
	SQLS	

TO FRONT  
UNIT W2

### • HPF BOARD



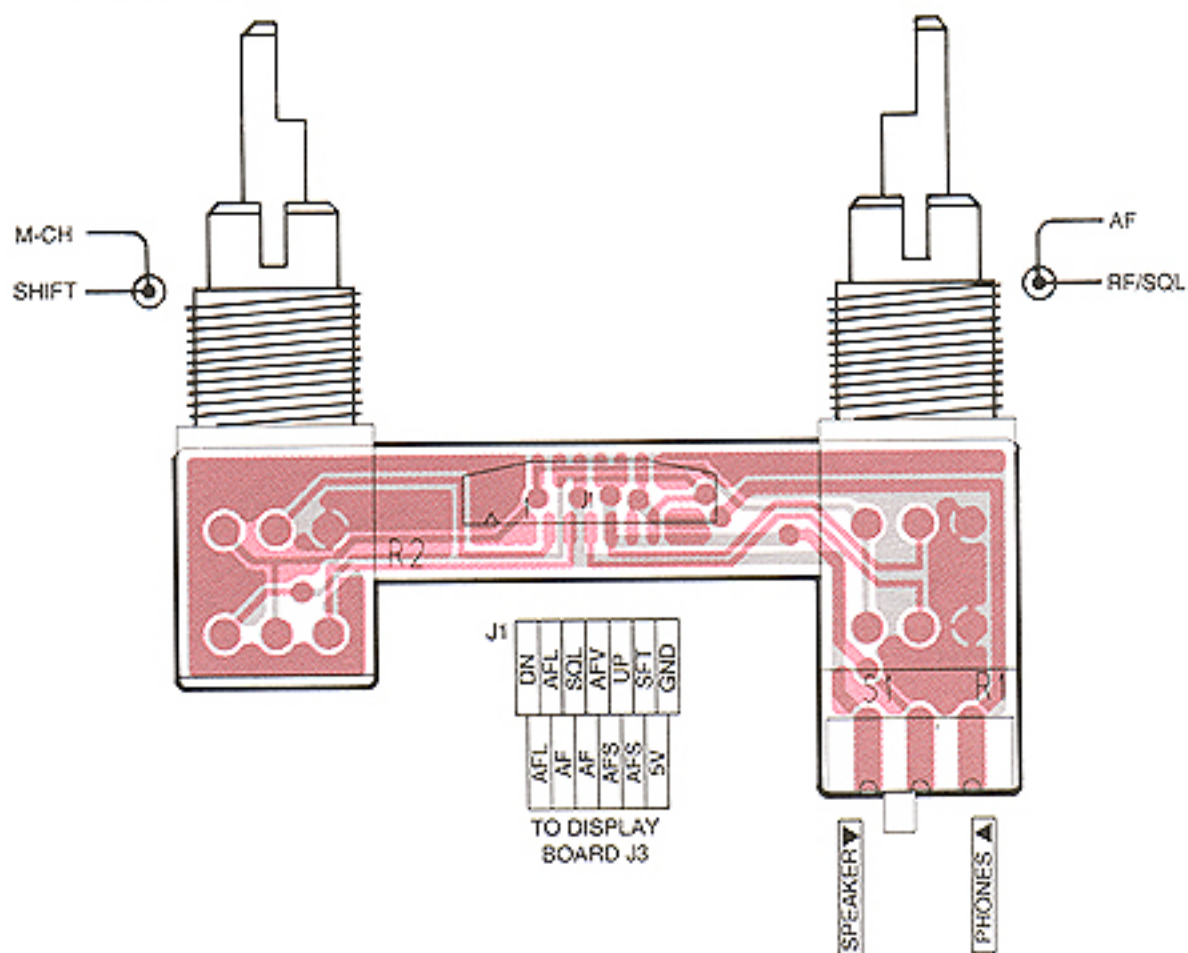


J3

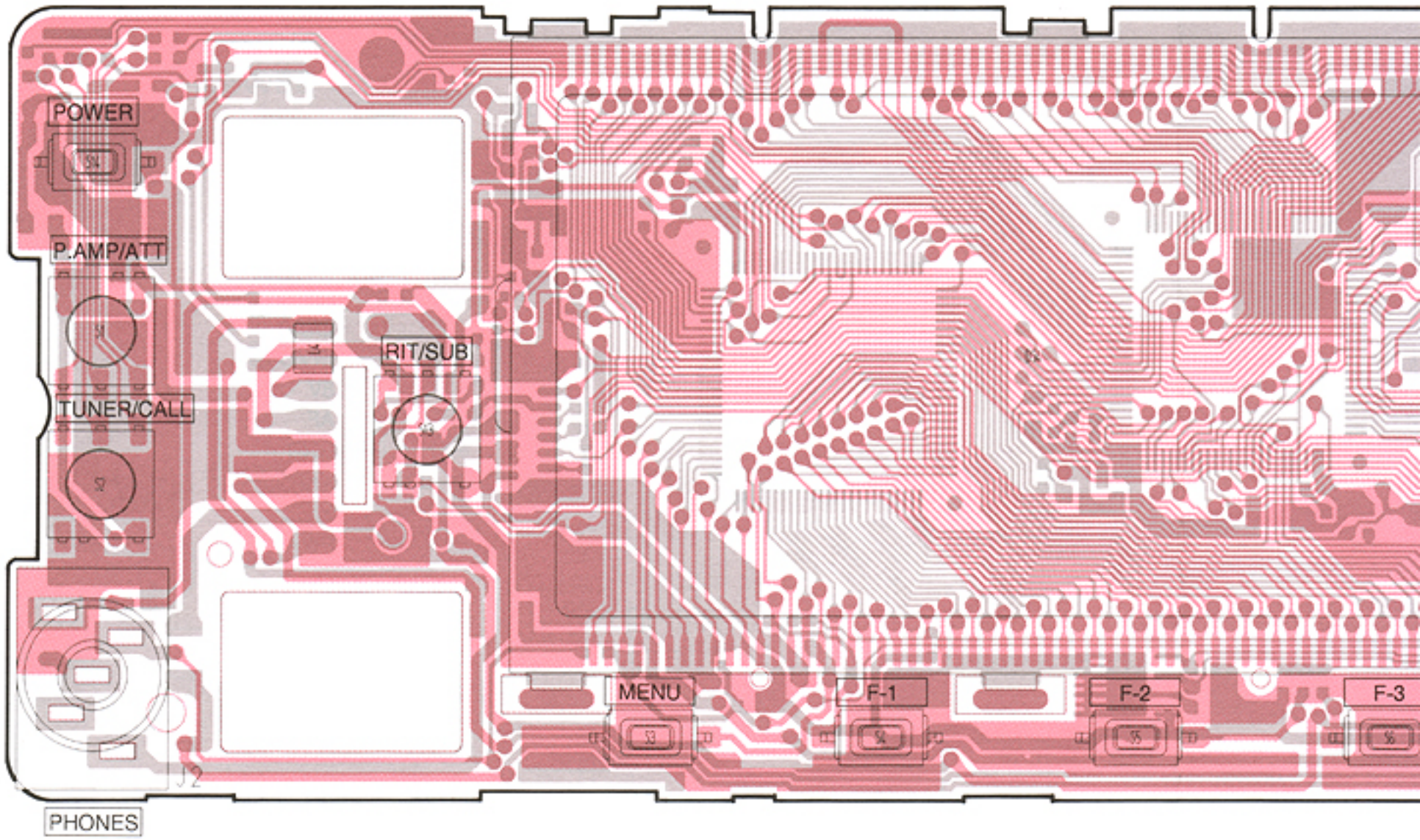
1	DN	AFL	2
	AFL	AF	
	SQL	AF	
	AFV	AFS	
	UP	AFS	
	SFT	5V	12
13	GND		

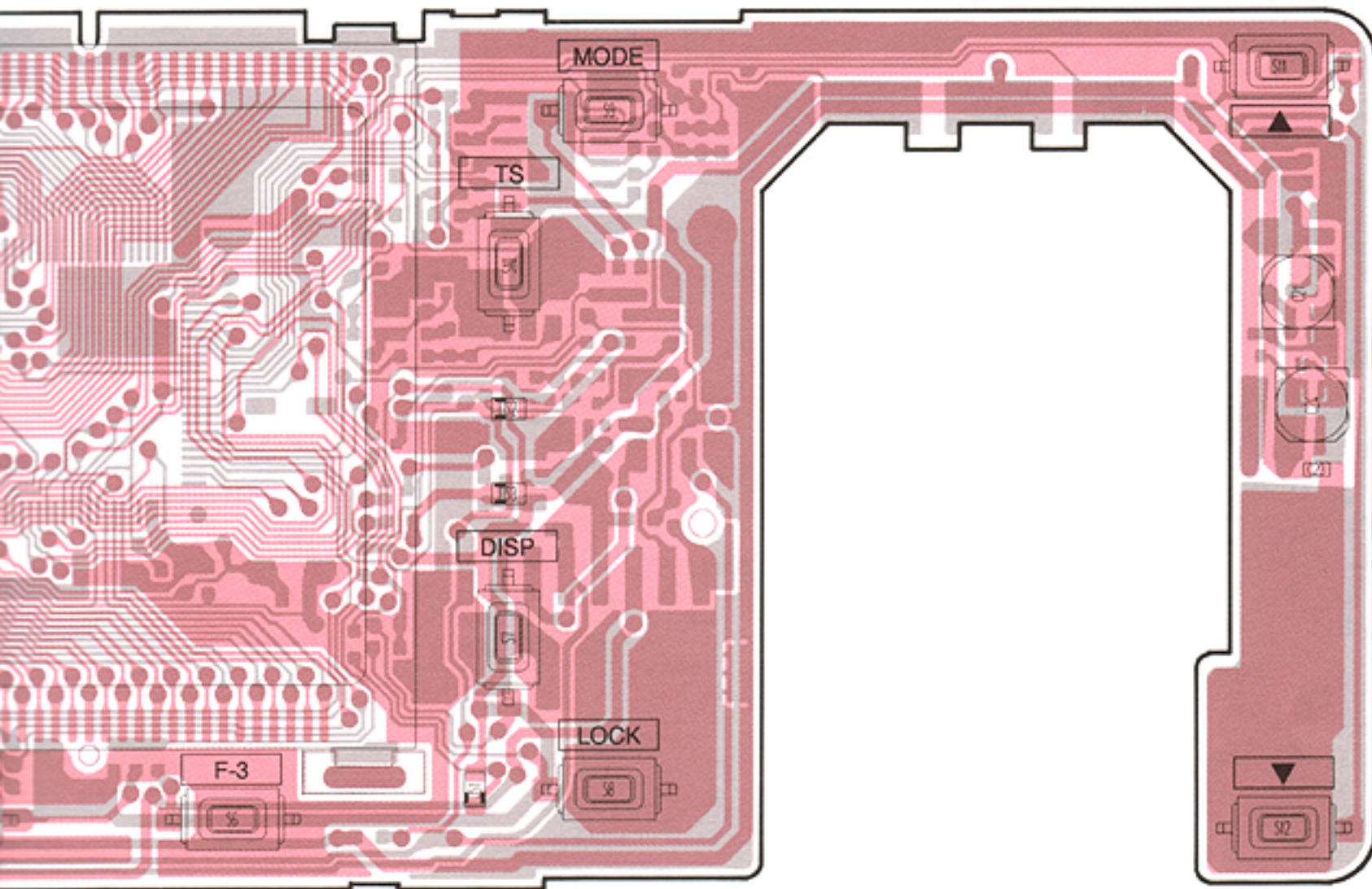
TO VR BOARD J1

● VR BOARD

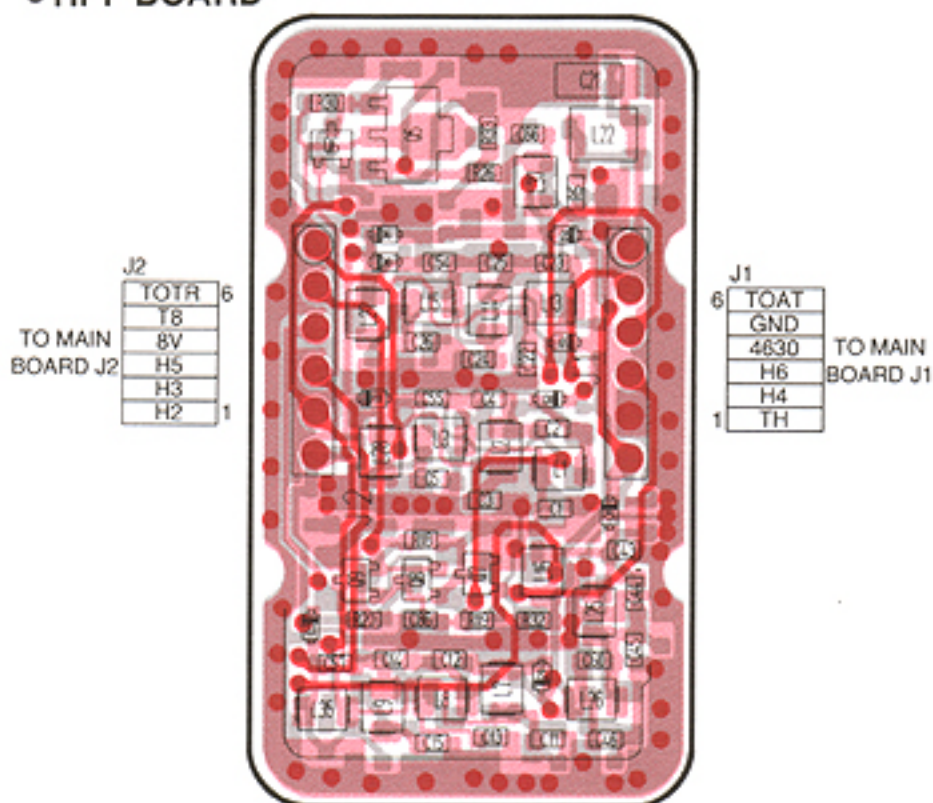


• DISPLAY BOARD

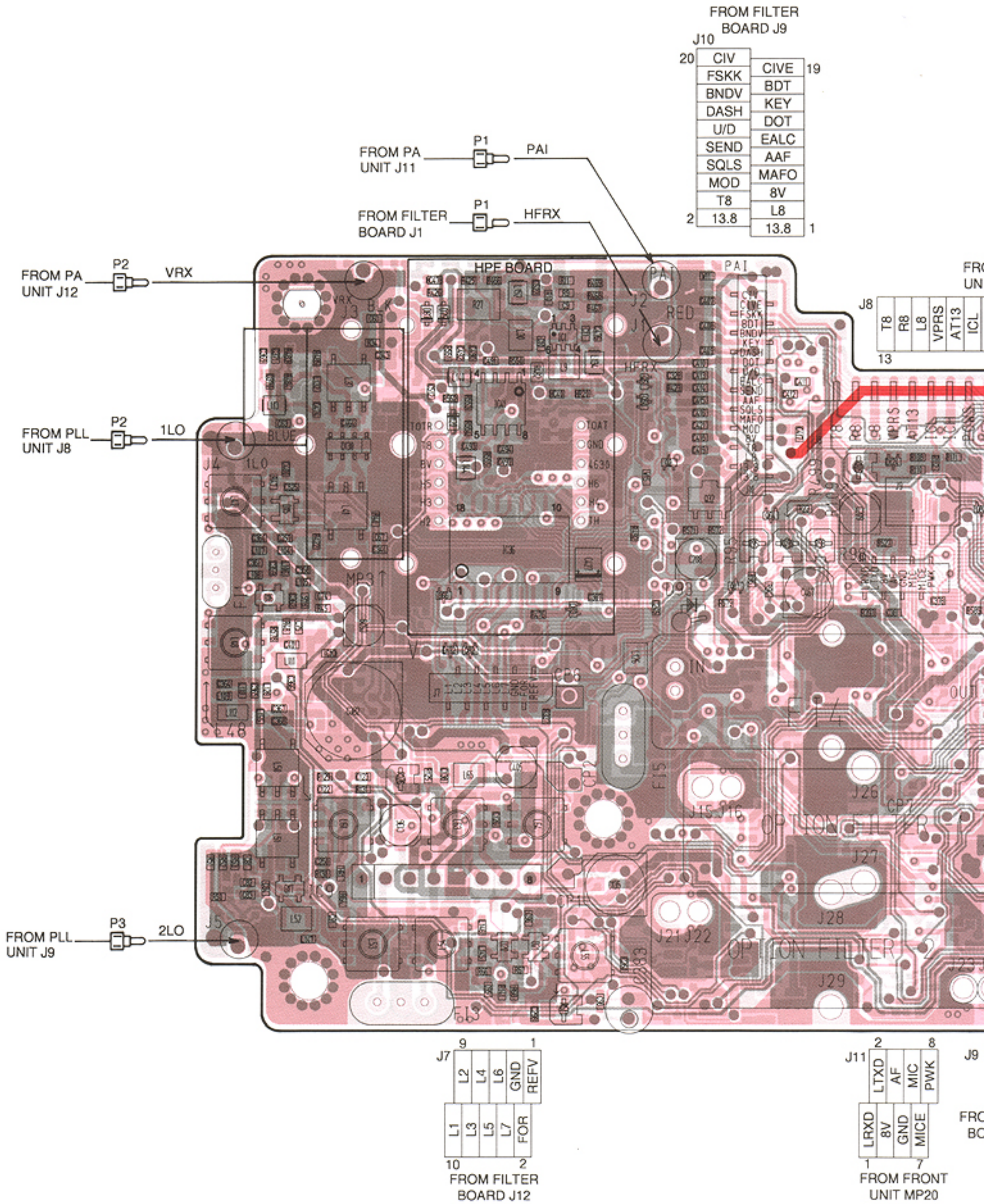




● HPF BOARD



# 8-2 MAIN BOARD



FROM PA  
UNIT J2,4

J8	T8	R8	L8	VPRS	AT13	ICL	ICH	POWS	KEY	STRT	VFOR	GND	8V
13													1

FROM optional  
UT-86

J25			
14	NC	NC	13
	DETO	NC	
	GND	GND	
	TSQL	NC	
	TSTB	NC	
	EDTO	OPU	
2	ECK	5V	1

FROM optional  
UT-102

J14			
7	GND	SPCH	14
	5V	SPCE	
	BUSY	ICK	
1	IDT	SPST	2

FROM PLL  
UNIT J2

J13			
30	H5V	DRES	29
	PDST	CON2	
	CON1	CON0	
	PCK	PDT	
	PBST	PCE	
	MLLV	SPS	
	AFGC	5V	
	DSPS	SLLV	
	AFBP	8V	
	8V	8V	
	AAF	8V	
	DINT	GND	
	IMST	ICK	
	FSKK	DDT	
2	13.8	13.8	1
		HV	

FROM PLL  
UNIT J4

J12			
1	AFI	4	
	AFIE		
	AFOE		
	AFO		

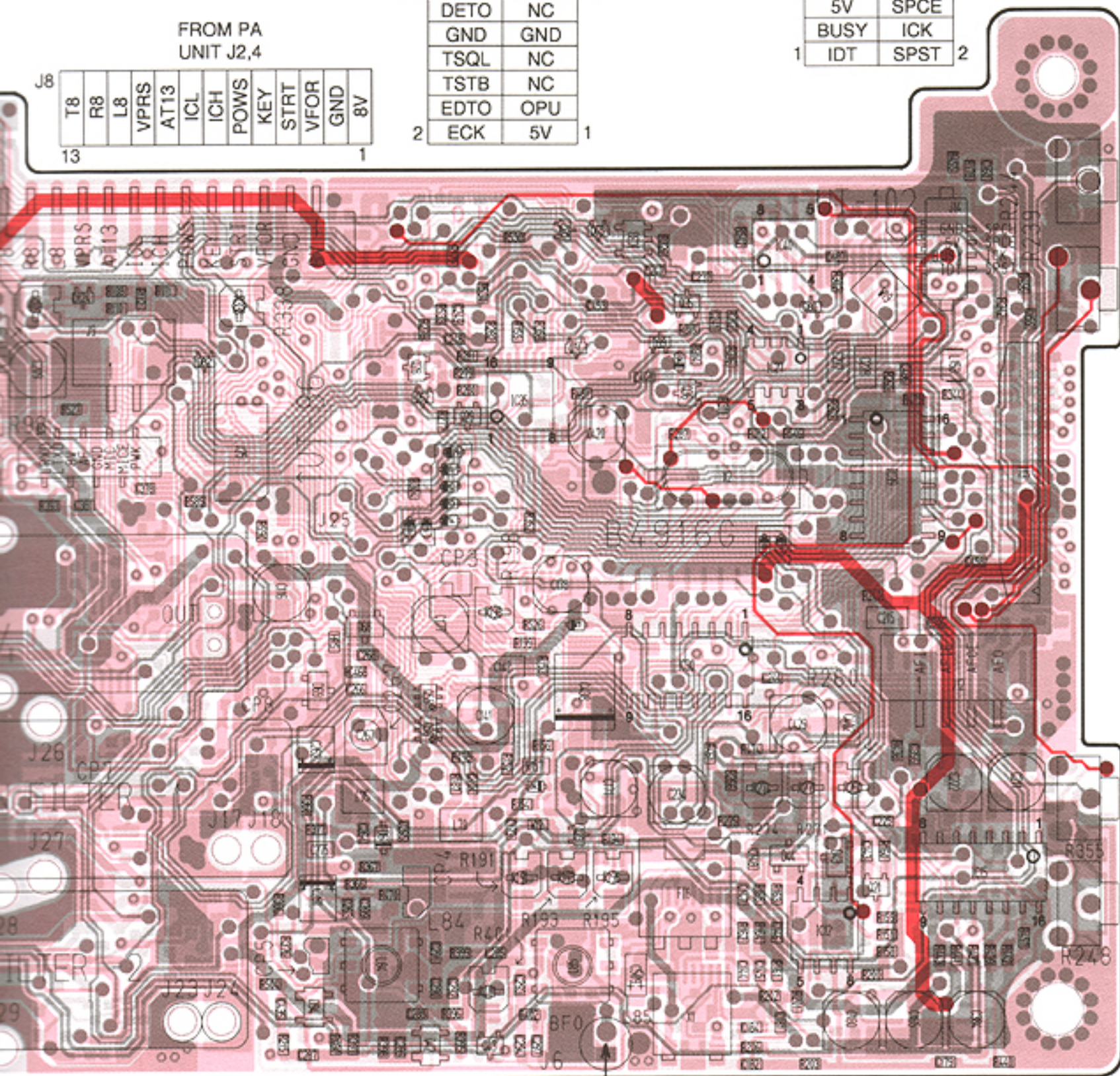
FROM FRONT  
UNIT MP20

J11	2	8
	LTXD	
	8V	
	GND	
	MICE	
1		7
	AF	
	MIC	
	PWK	

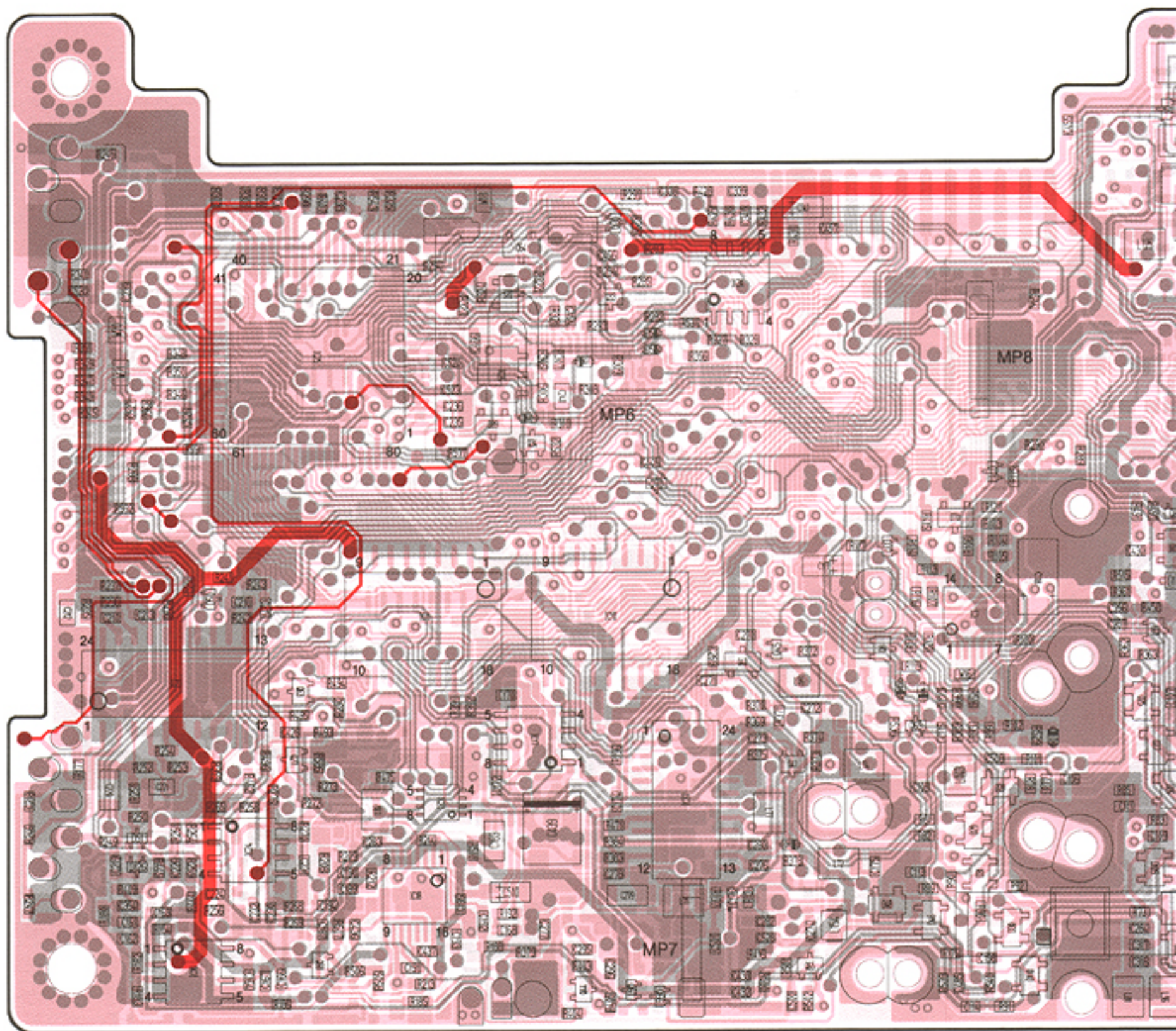
FROM FILTER  
BOARD J10

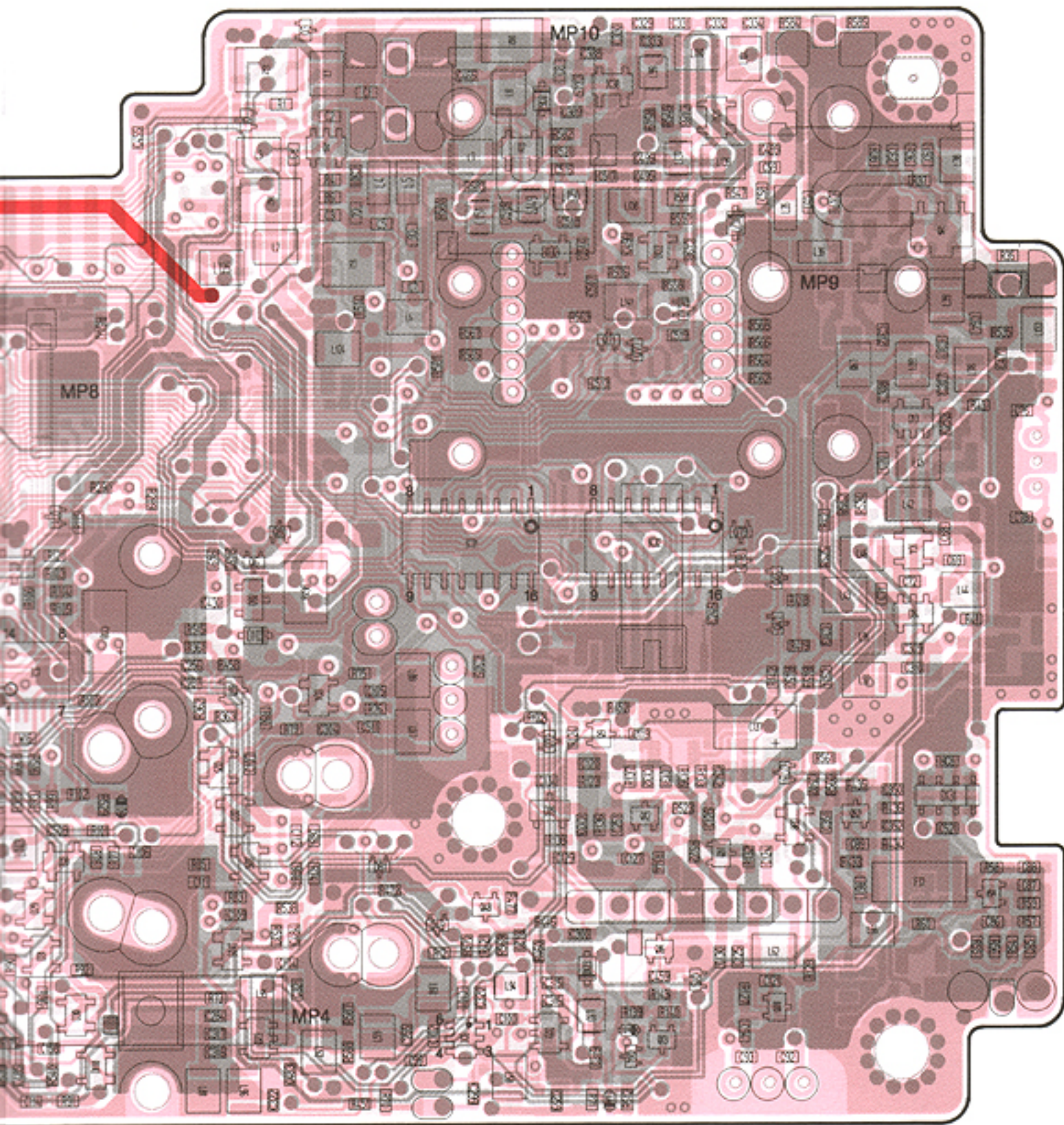
J9	1	2
	MIC	
	MICE	

BFO P4 FROM PLL  
UNIT J10



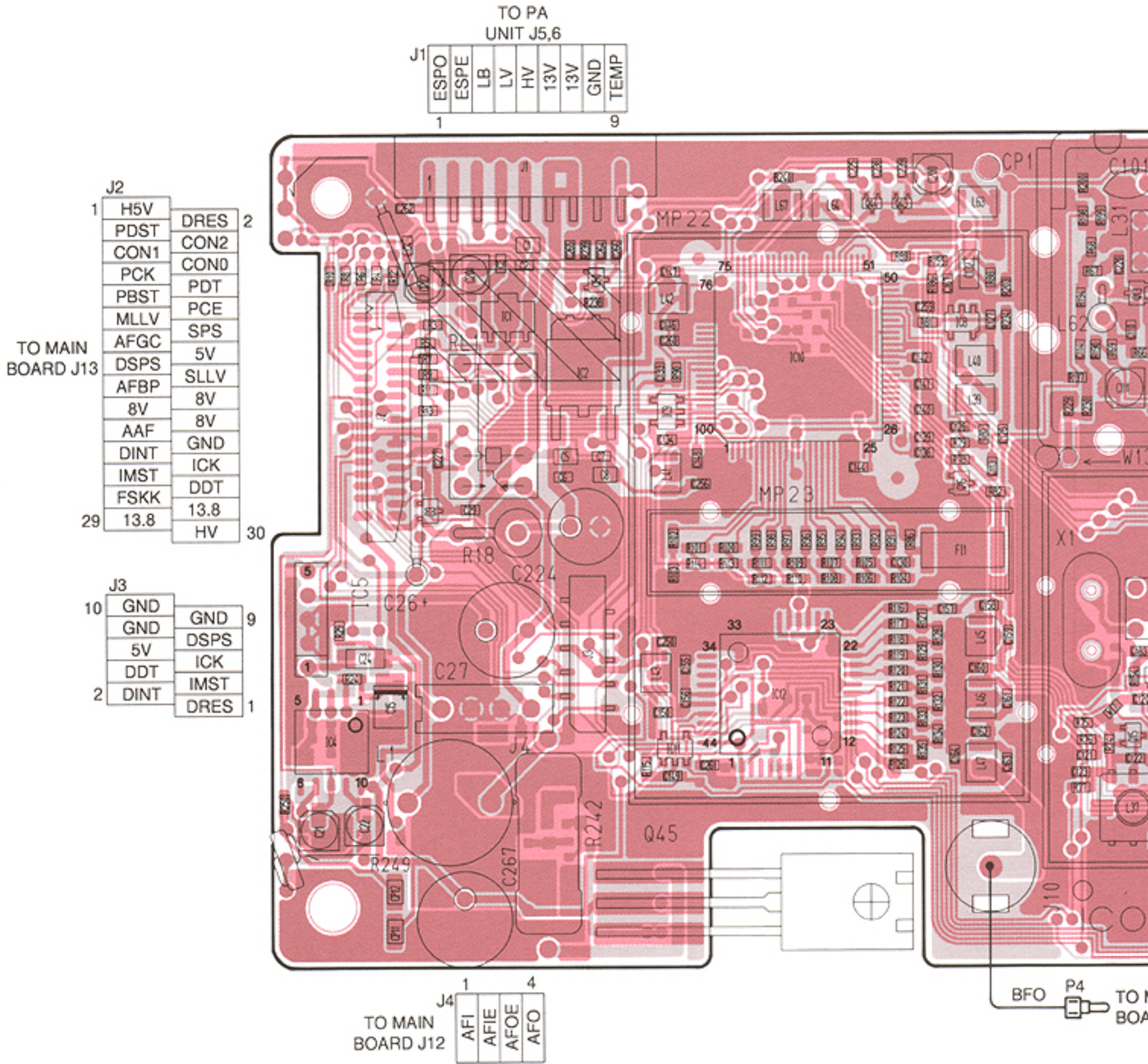
MAIN BOARD

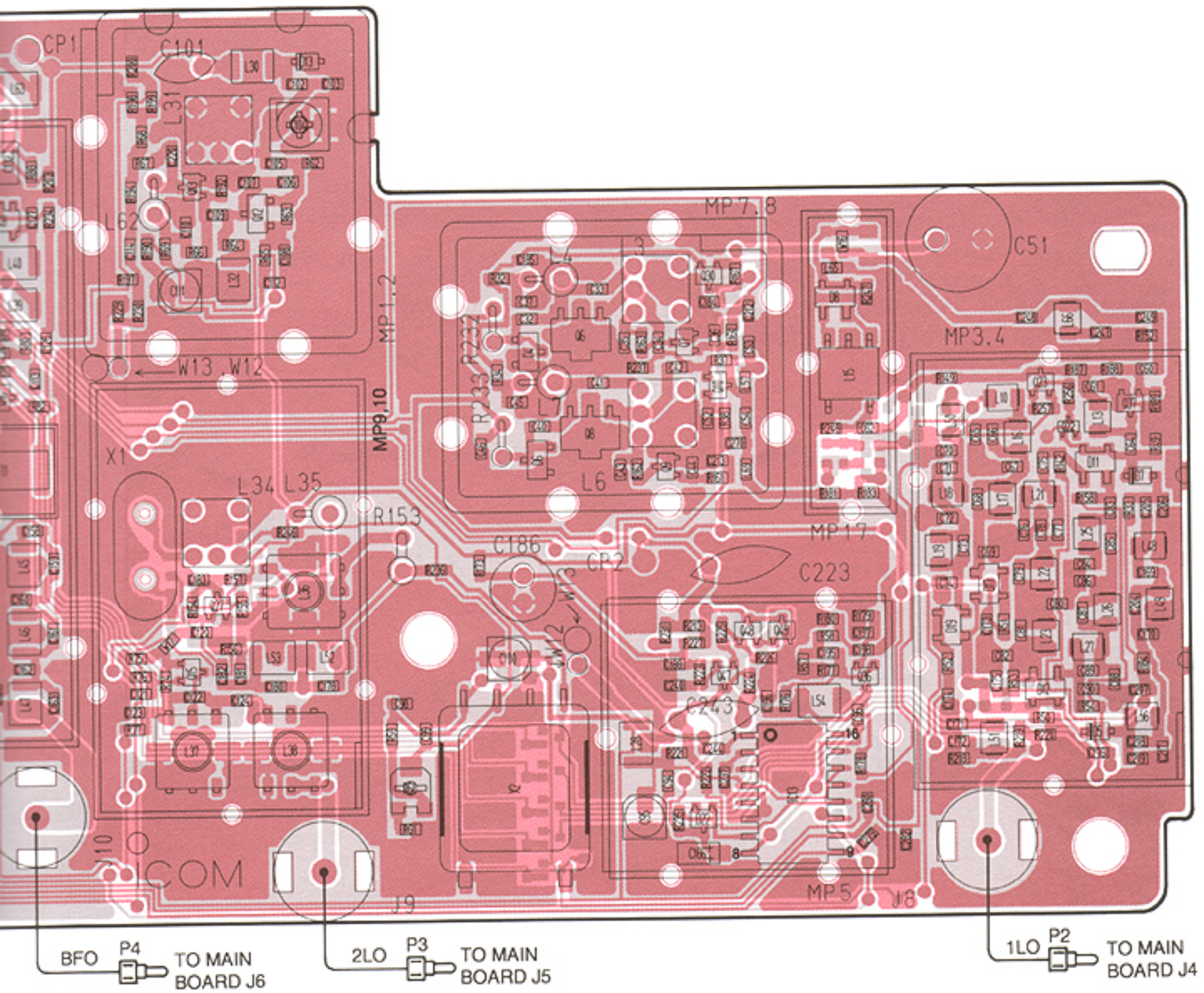




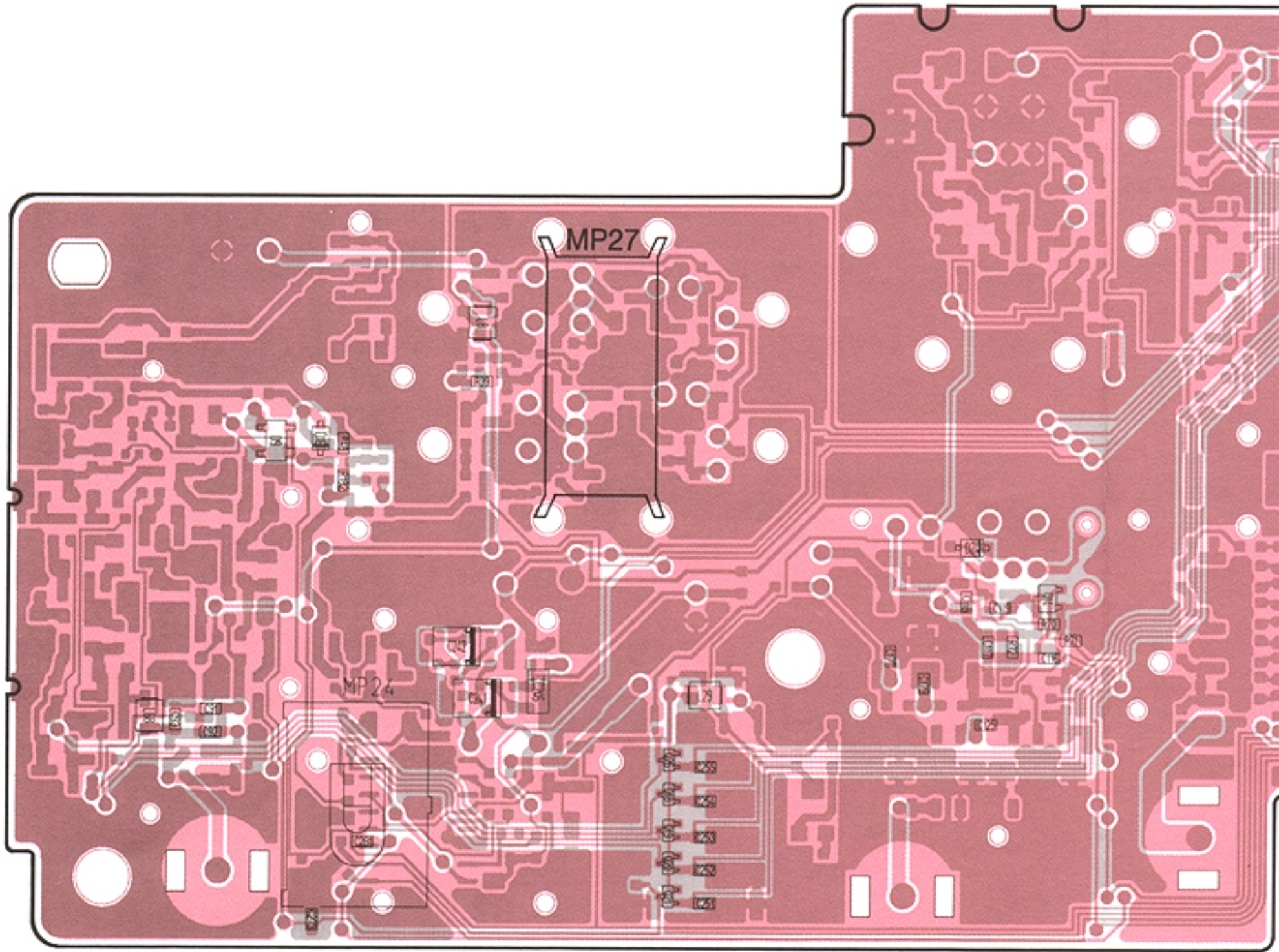


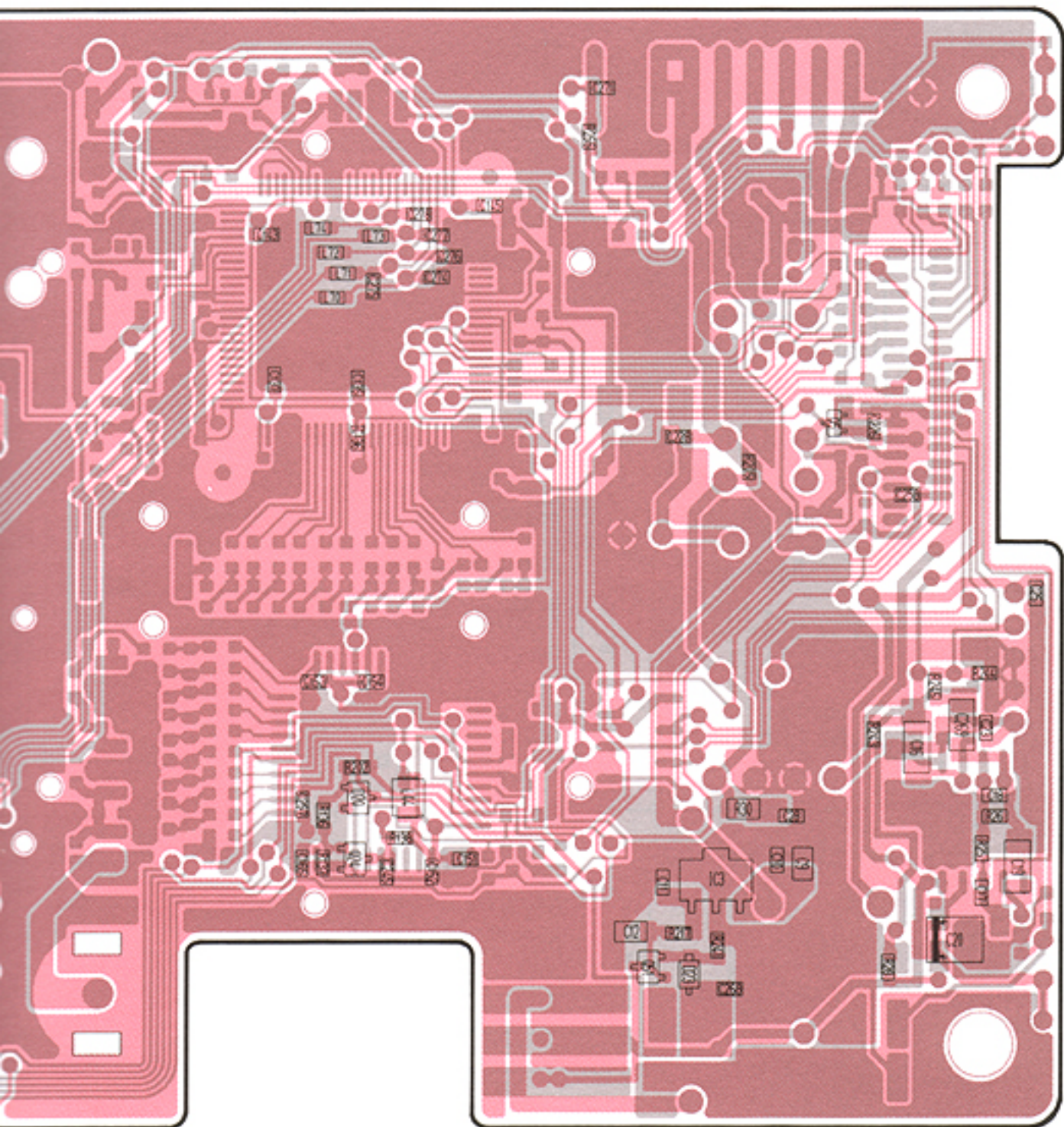
# 8-3 PLL UNIT



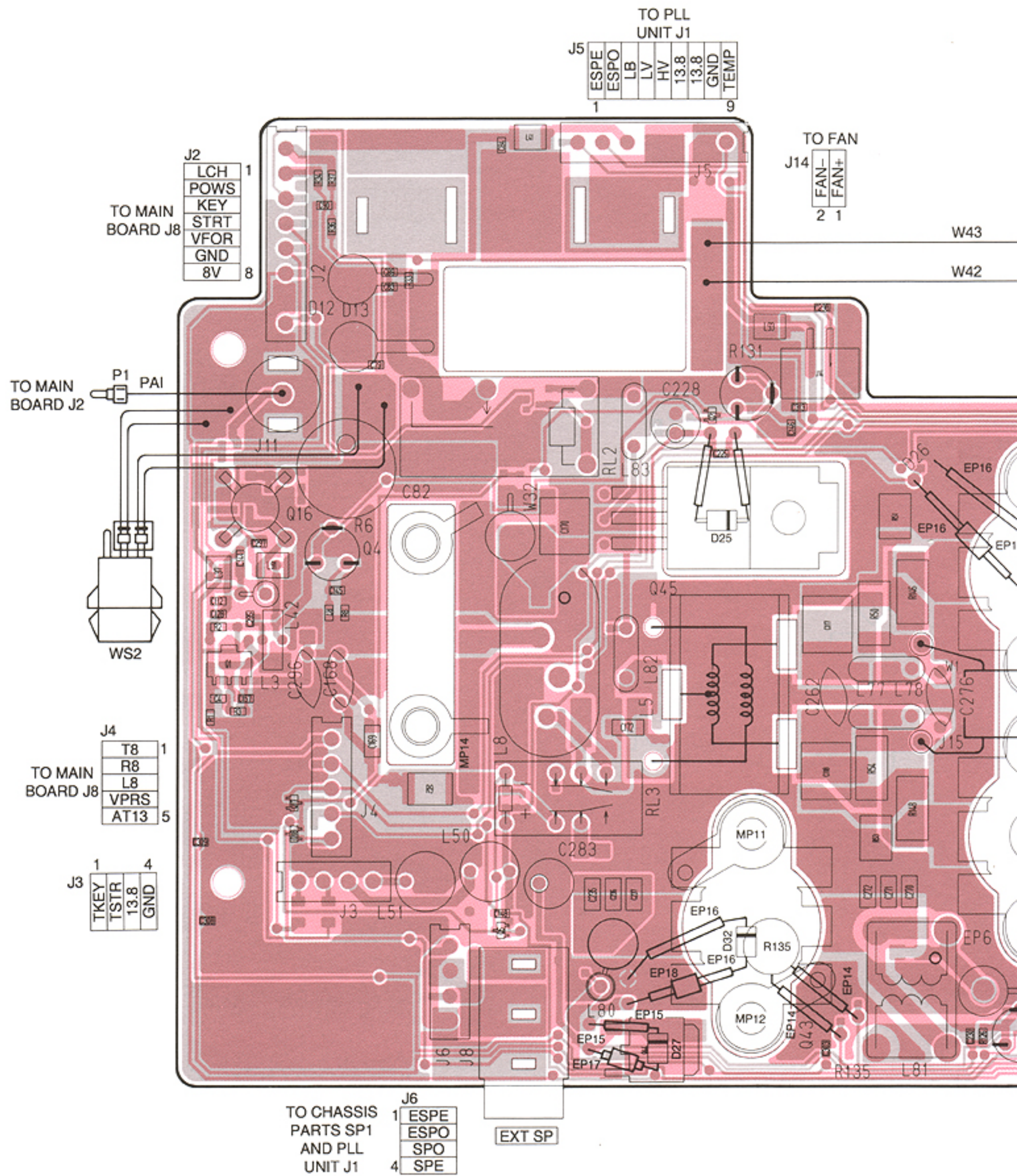


● PLL UNIT





# 8-4 PA UNIT



TO MAIN BOARD J8

J2	1
LCH	
POWS	
KEY	
STRT	
VFOR	
GND	
8V	8

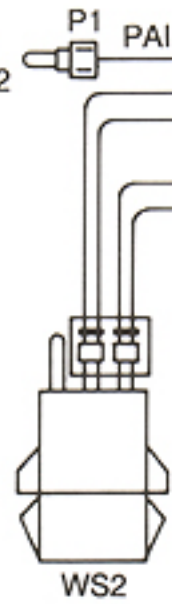
TO PLL UNIT J1

J5	1
ESPE	
ESPO	
LB	
LV	
HV	
13.8	
13.8	
GND	
TEMP	9

TO FAN J14

FAN-	2
FAN+	1

TO MAIN BOARD J2



TO MAIN BOARD J8

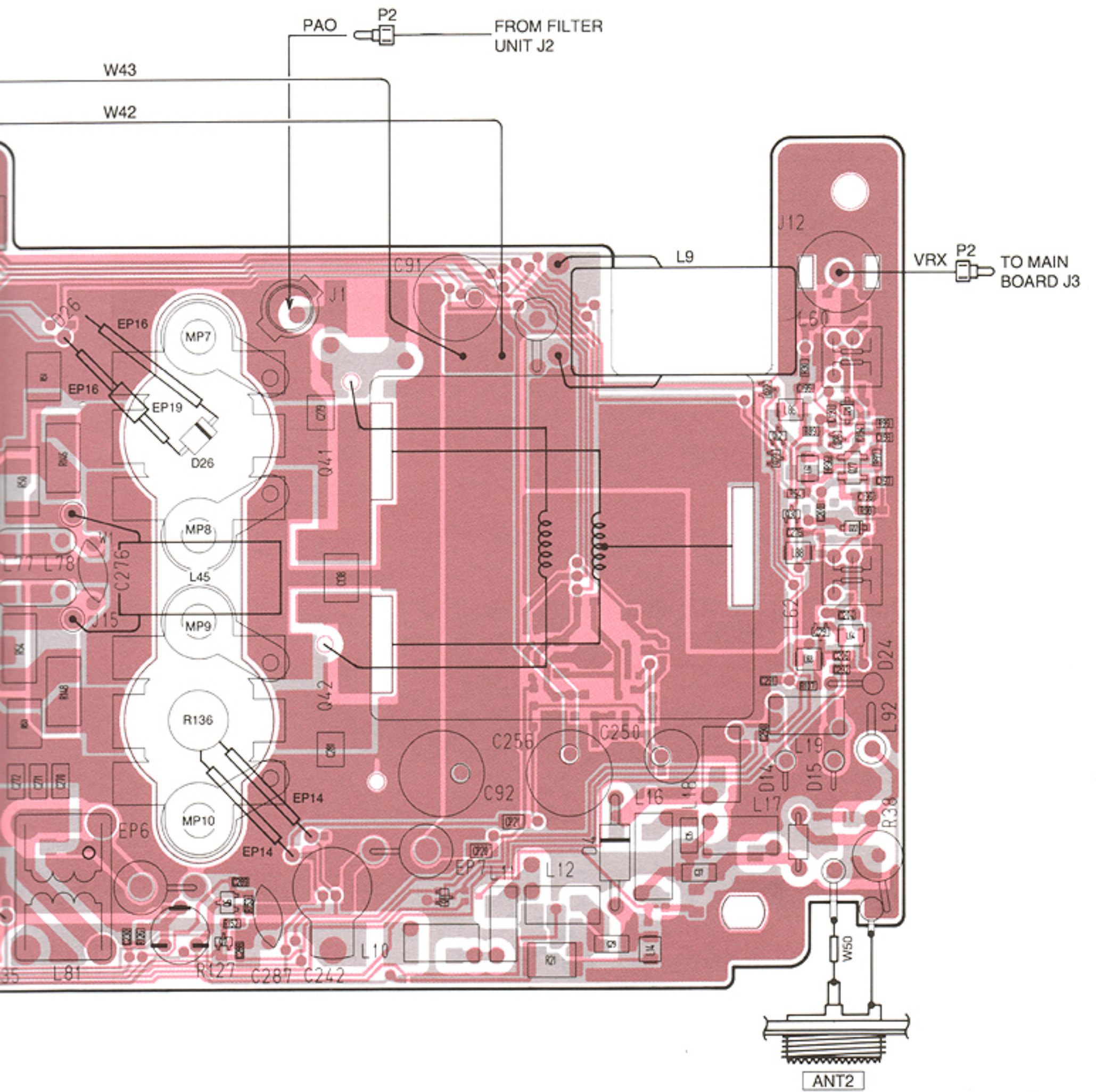
J4	1
T8	
R8	
L8	
VPRS	
AT13	5

J3

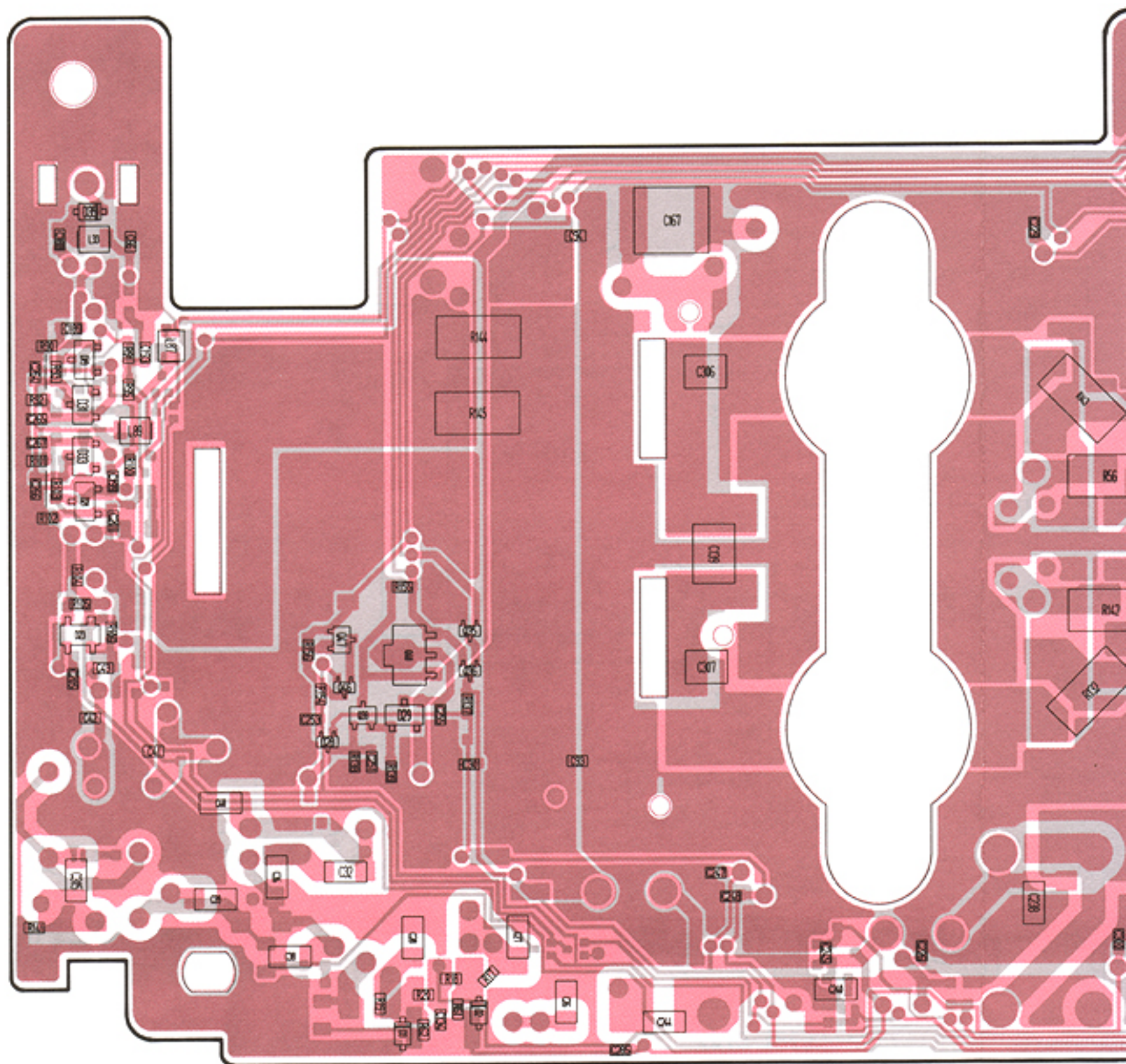
1	4
TKEY	
TSTR	
13.8	
GND	

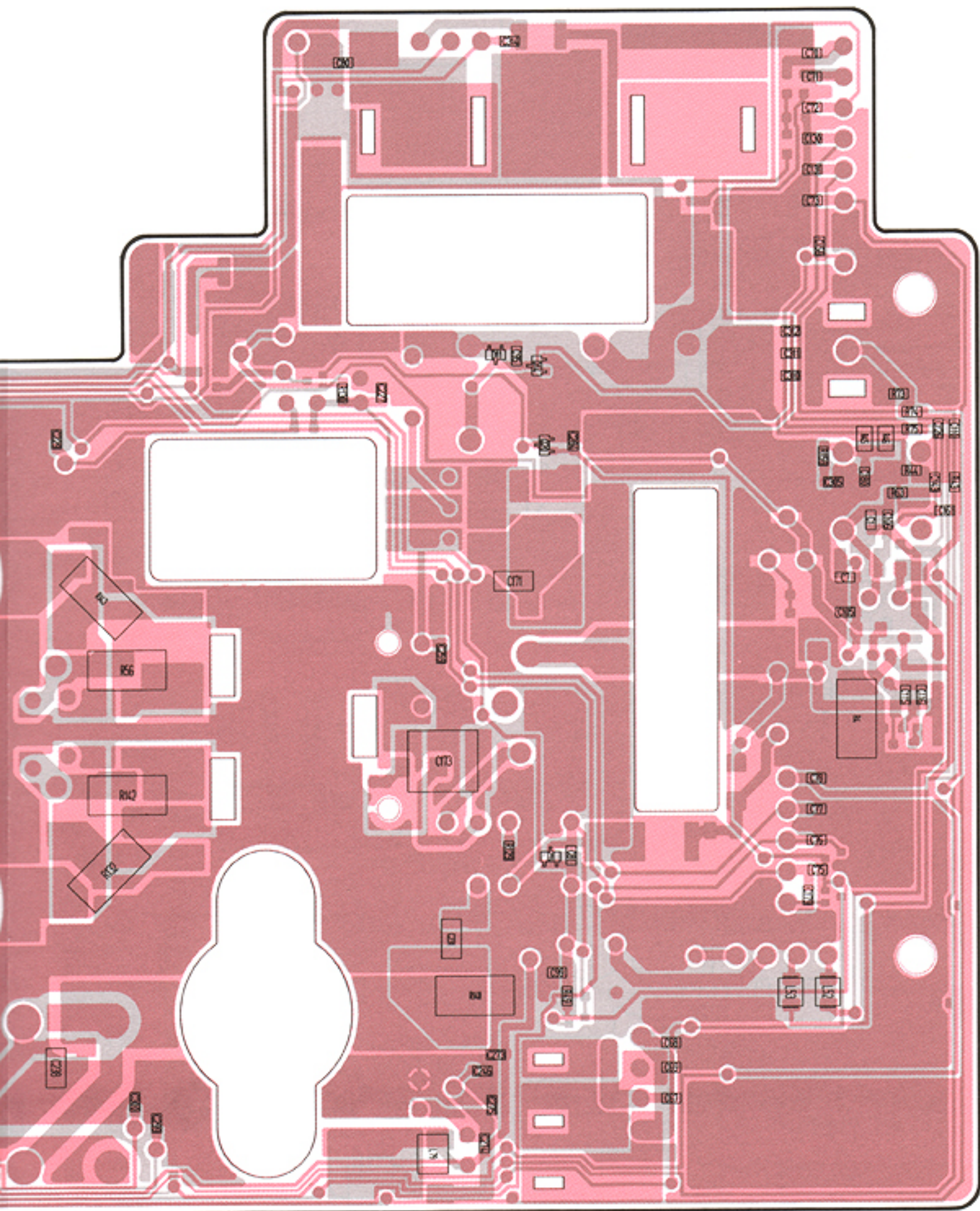
TO CHASSIS PARTS SP1 AND PLL UNIT J1

J6	1
ESPE	
ESPO	
SPO	
SPE	4



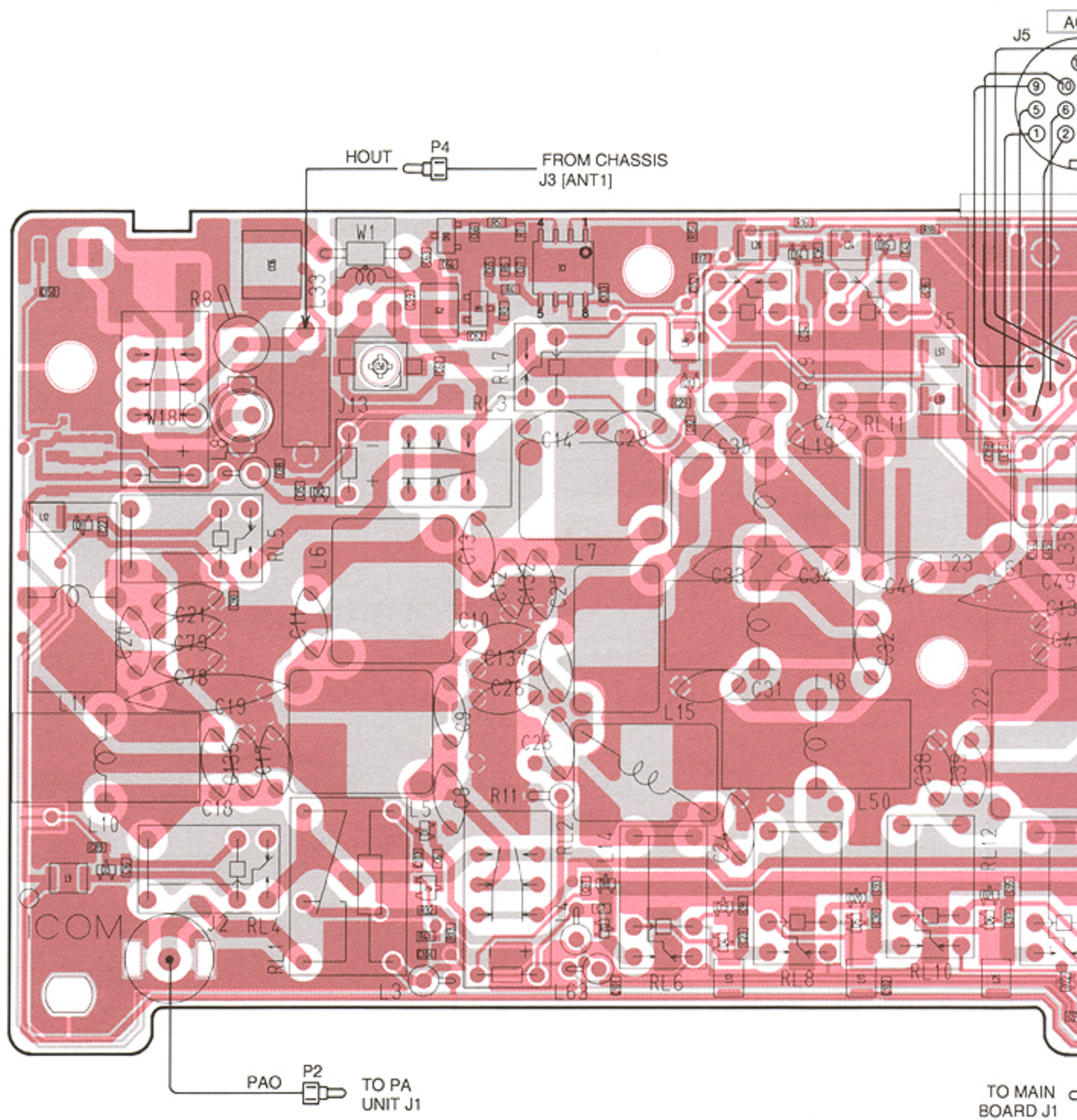
● PA UNIT

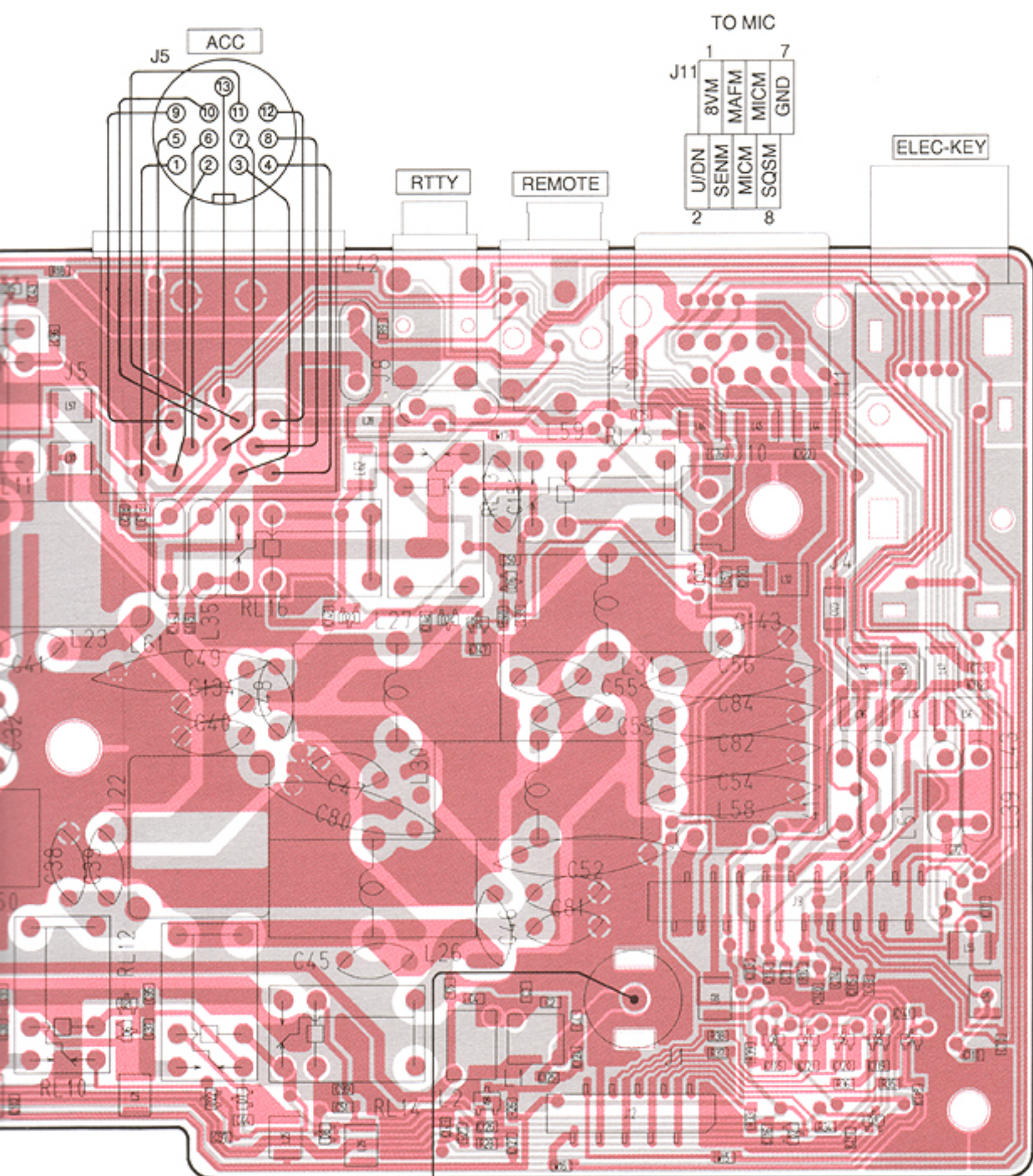






# 8-5 FILTER BOARD





J5 ACC

TO MIC

1	8VM	7
2	U/DN	8
	SENM	
	MICM	
	MAFM	
	MICM	
	SQSM	
	GND	

ELEC-KEY

J10

1	MIC
2	MICE

TO MAIN BOARD J9

TO MAIN BOARD J1

P1 HFRX

J12

9	FOR	1
10	REFV	2
	GND	
	L6	
	L4	
	L2	
	L7	
	L5	
	L3	
	L1	

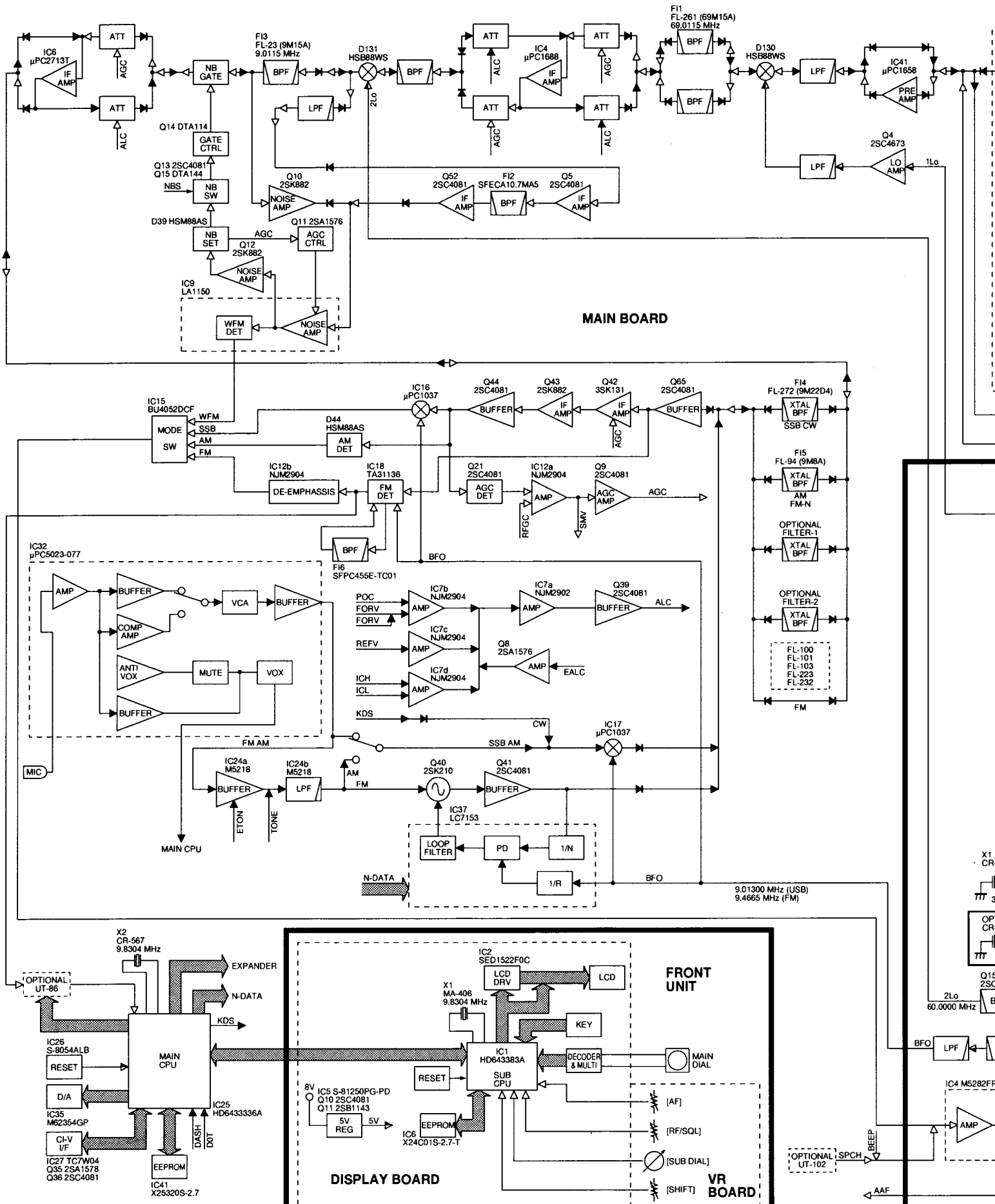
TO MAIN BOARD J7

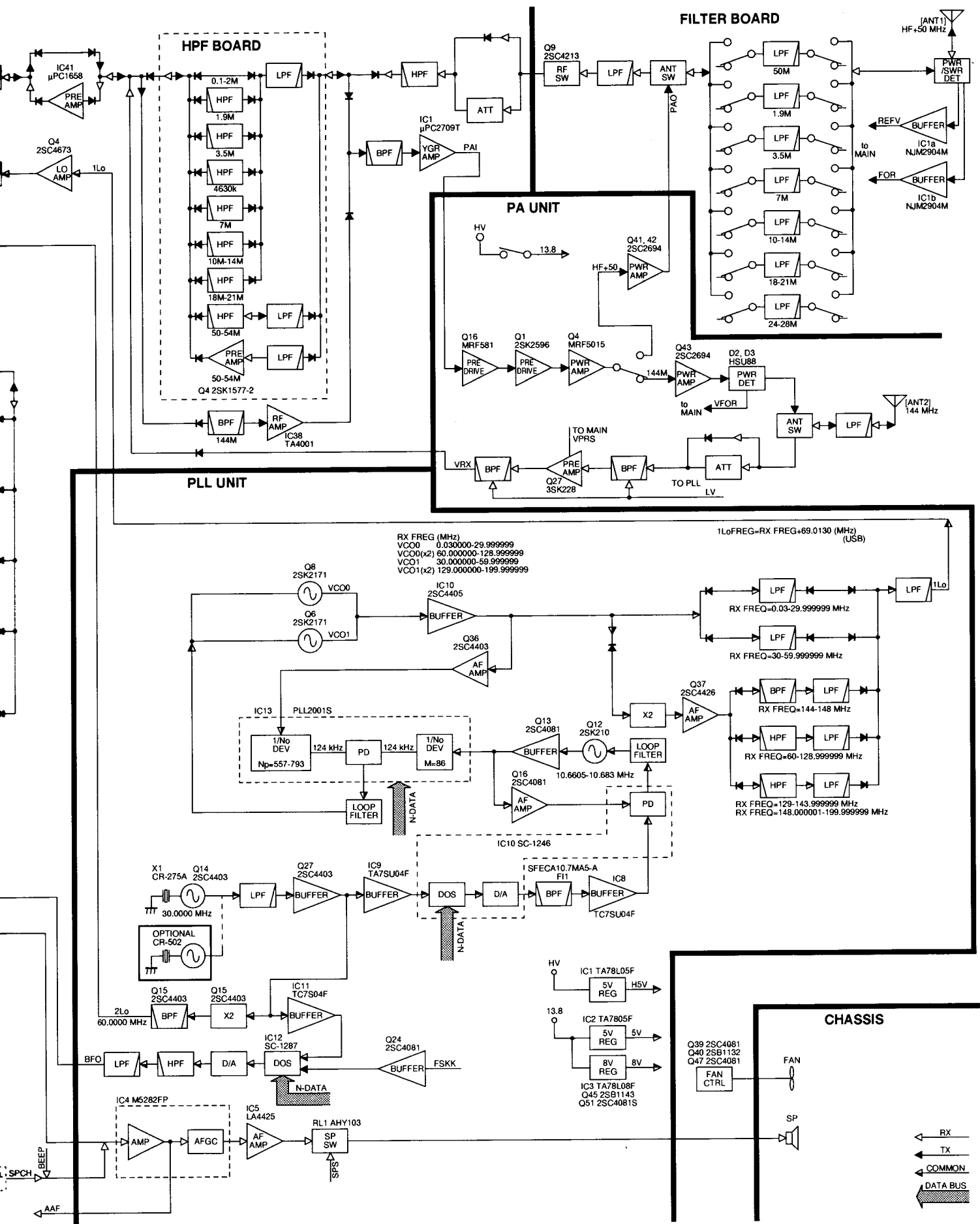
J9

19	MOD	1
20	13.8	2
	L8	
	8V	
	MAFO	
	AAF	
	EALC	
	DOT	
	KEY	
	BDT	
	CIVE	
	SQLS	
	SEND	
	U/D	
	DASH	
	BANDV	
	FSKK	
	CIV	
	T8	

TO MAIN BOARD J10

# SECTION 9 BLOCK DIAGRAM





**HPF BOARD**

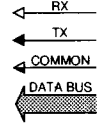
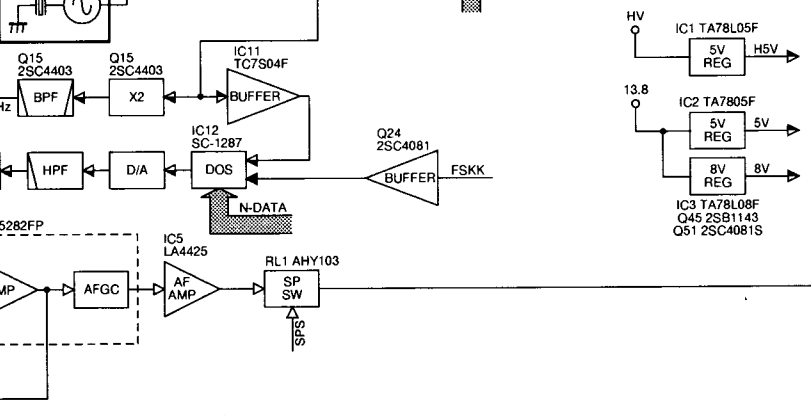
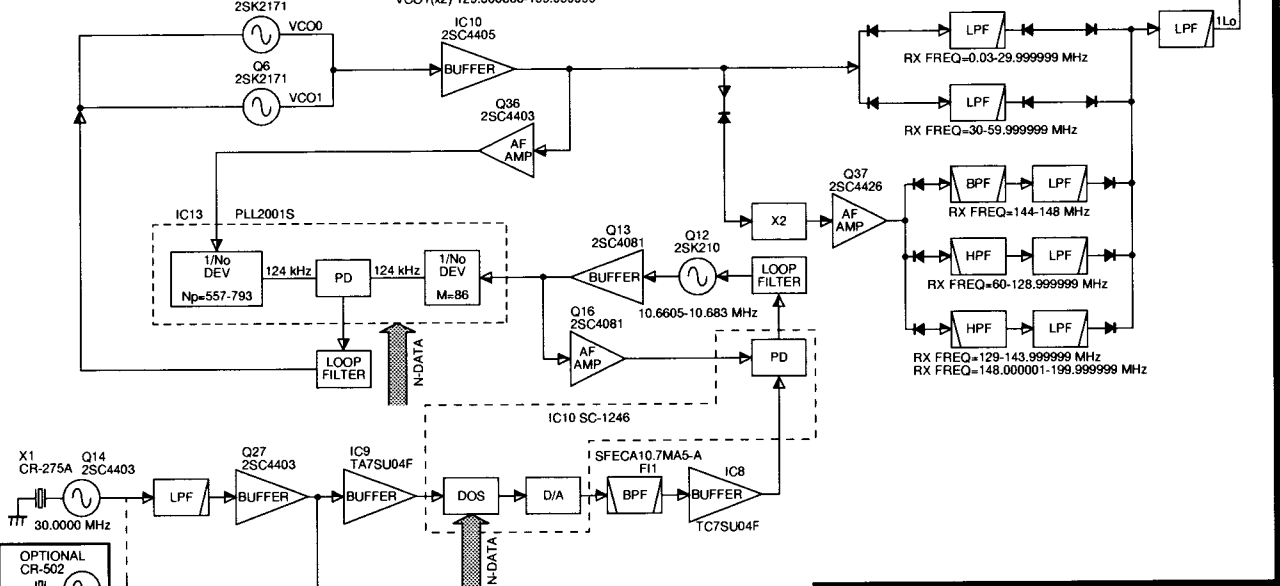
**FILTER BOARD**

**PA UNIT**

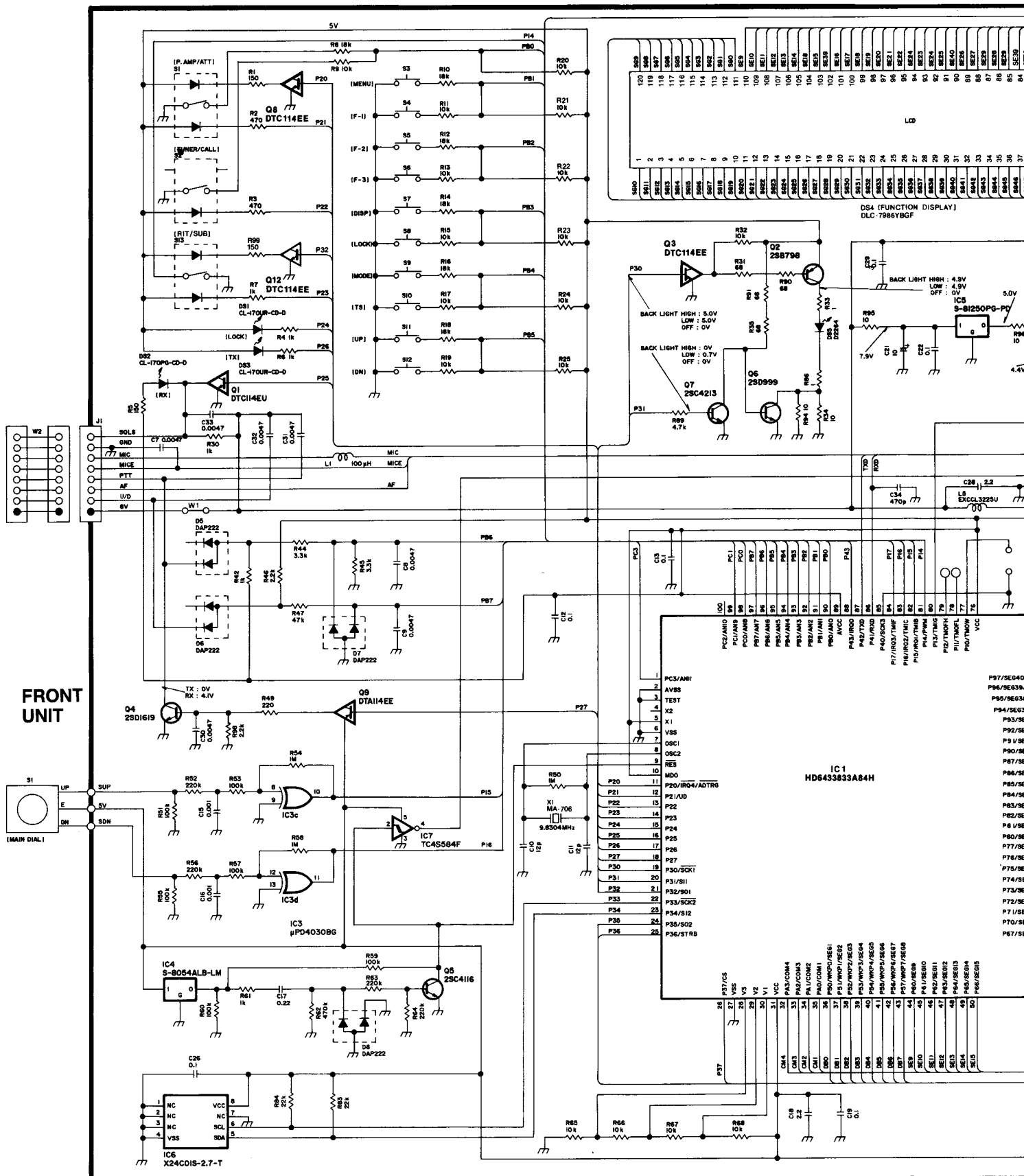
**PLL UNIT**

RX FREQ (MHz)  
 VCO0 0.030000-29.999999  
 VCO0(x2) 60.000000-128.999999  
 VCO1 30.000000-59.999999  
 VCO1(x2) 129.000000-199.999999

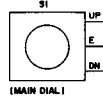
1LoFREQ=RX FREQ+69.0130 (MHz) (USB)



# SECTION 10 VOLTAGE DIAGRAM



**FRONT UNIT**



IC6 X24CD1S-2.7-T

IC1 HD643383A84H

P97/SEG40  
P96/SEG39  
P95/SEG38  
P94/SEG37  
P93/SEG36  
P92/SEG35  
P91/SEG34  
P90/SEG33  
P89/SEG32  
P88/SEG31  
P87/SEG30  
P86/SEG29  
P85/SEG28  
P84/SEG27  
P83/SEG26  
P82/SEG25  
P81/SEG24  
P80/SEG23  
P79/SEG22  
P78/SEG21  
P77/SEG20  
P76/SEG19  
P75/SEG18  
P74/SEG17  
P73/SEG16  
P72/SEG15  
P71/SEG14  
P70/SEG13  
P69/SEG12  
P68/SEG11  
P67/SEG10

SHO	S01	S02	S03	S04	S05	S06	S07	S08	S09	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21	S22	S23	S24	S25	S26	S27	S28	S29	S30	S31	S32	S33	S34	S35	S36	S37
120	119	118	117	116	115	114	113	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	

DS4 (FUNCTION DISPLAY) DLG-7986YBGF

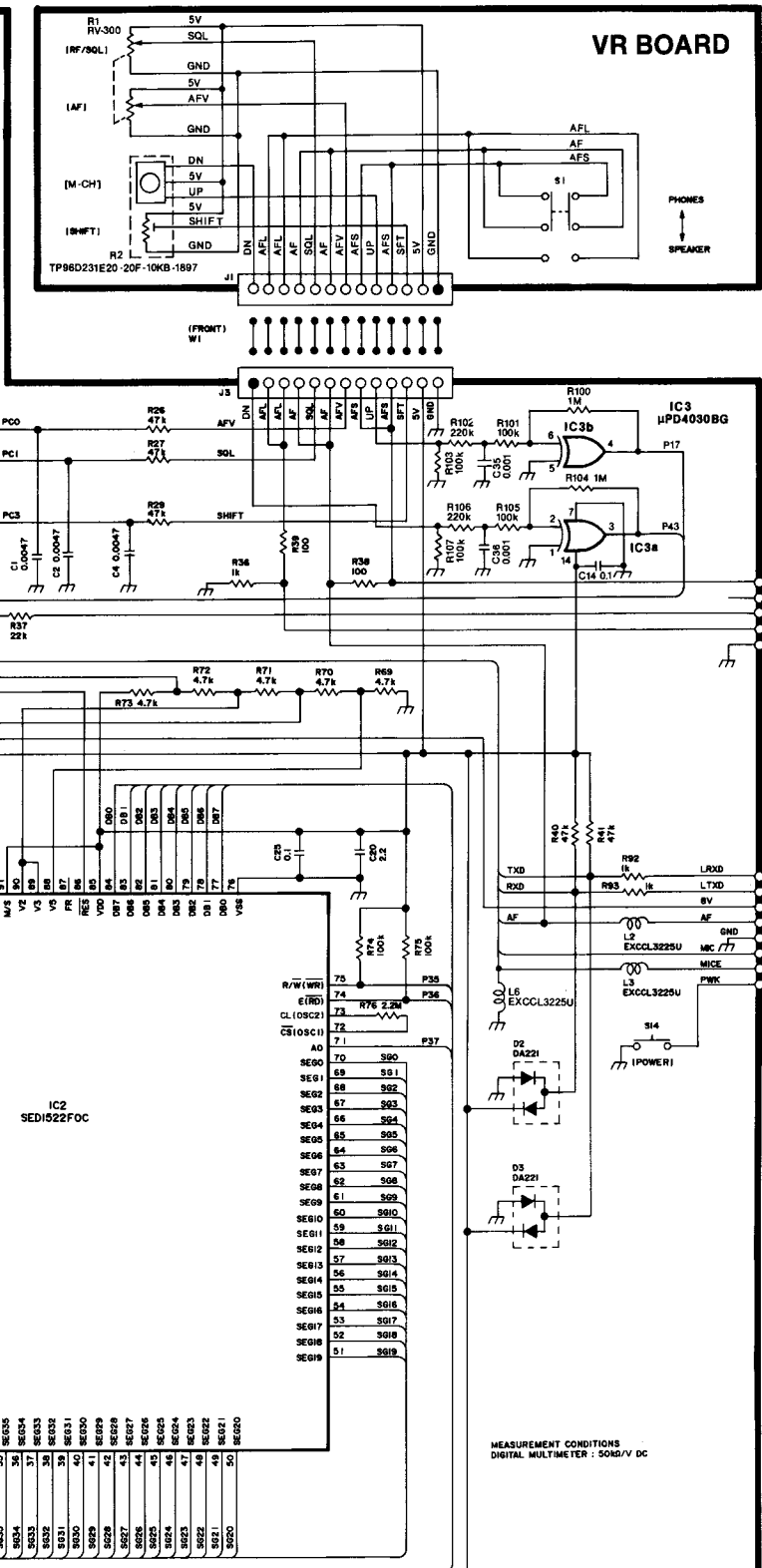
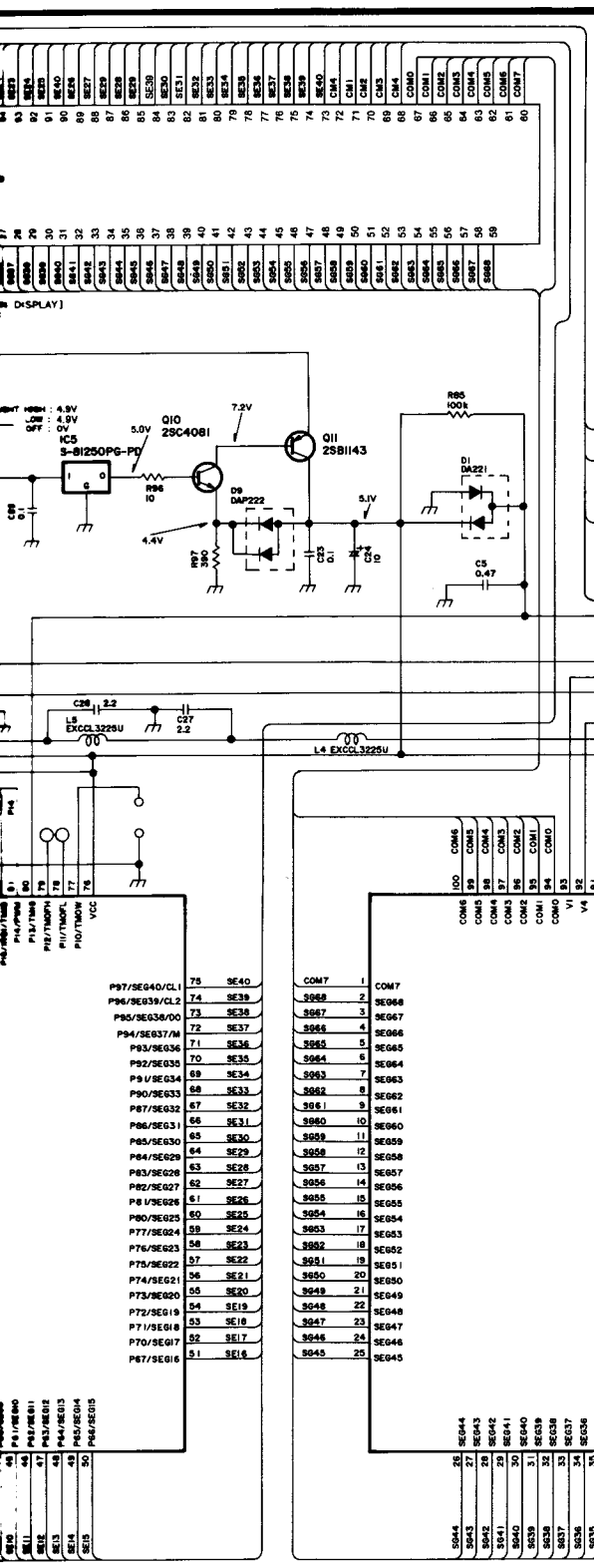
IC5 S-81250PG-P0

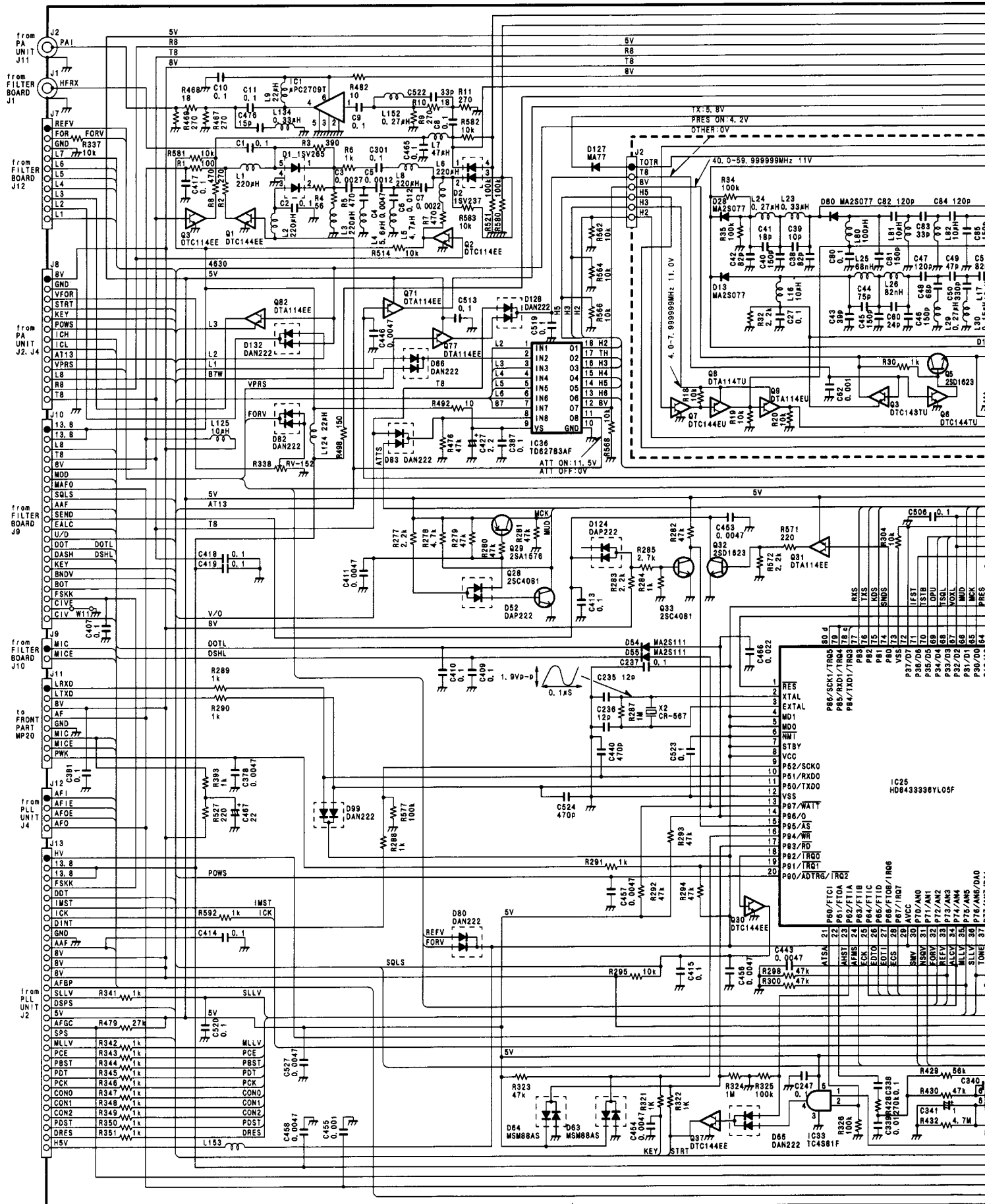
PC2/AN10	PC1/AN9	PC0/AN8	PC7/ANT	PC6/AN7	PC5/AN6	PC4/AN5	PC3/AN4	PC2/AN3	PC1/AN2	PC0/AN1	PC7/AN0	PC6/AN0	PC5/AN0	PC4/AN0	PC3/AN0	PC2/AN0	PC1/AN0	PC0/AN0
100	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82

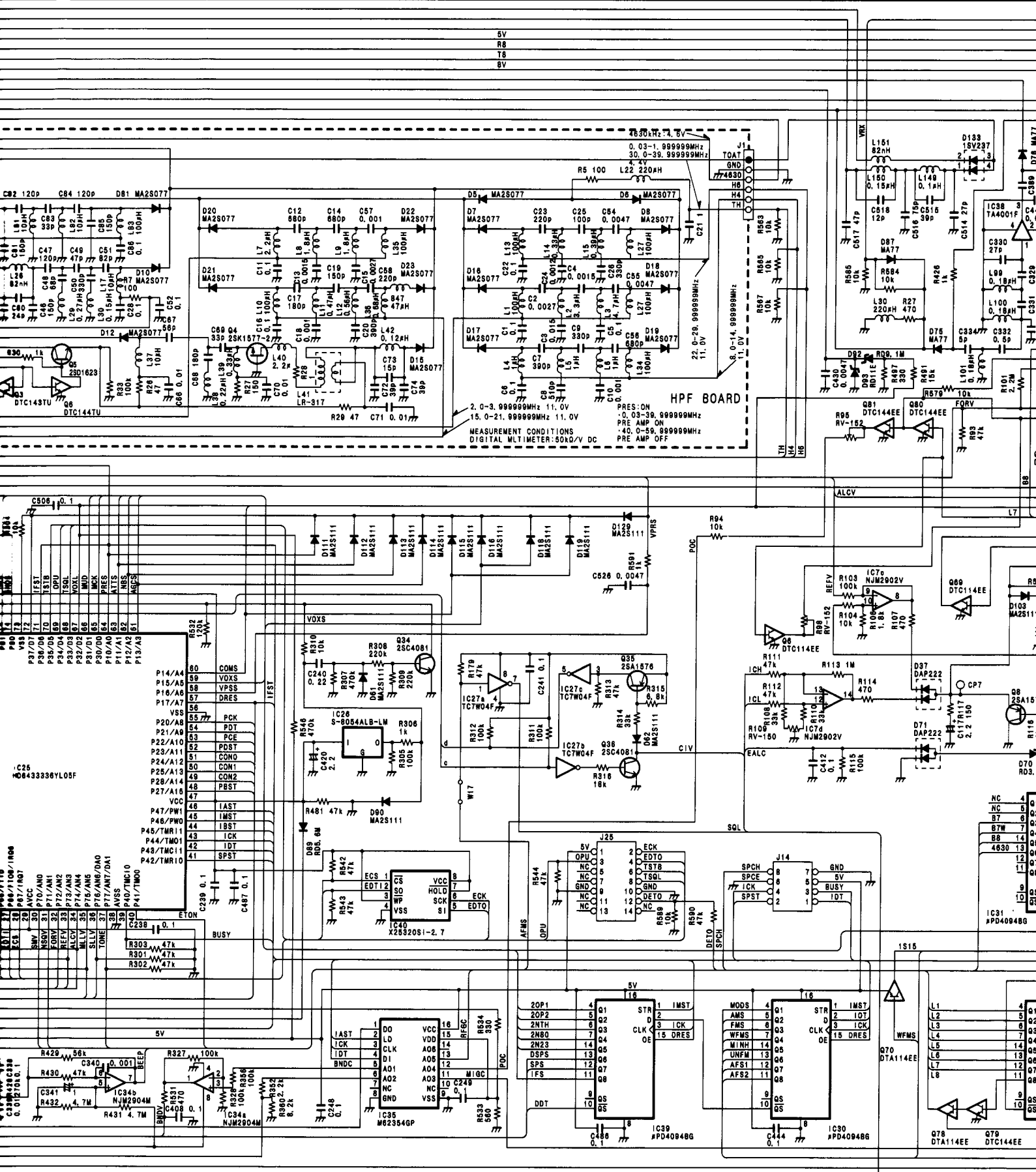
P27	P26	P25	P24	P23	P22	P21	P20	P19	P18	P17	P16	P15	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	P0
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38

P37/CE	P36/VSS	P35/V3	P34/V2	P33/V1	P32/VCC	P31/COM4	P30/COM3	P29/COM2	P28/COM1	P27/MP1/SE61	P26/MP2/SE2	P25/MP3/SE3	P24/MP4/SE4	P23/MP5/SE5	P22/MP6/SE6	P21/MP7/SE7	P20/MP8/SE8	P19/SE9	P18/SE10	P17/SE11	P16/SE12	P15/SE13	P14/SE14	P13/SE15	P12/SE16	P11/SE17	P10/SE18
36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63

P97/SEG40	P96/SEG39	P95/SEG38	P94/SEG37	P93/SEG36	P92/SEG35	P91/SEG34	P90/SEG33	P89/SEG32	P88/SEG31	P87/SEG30	P86/SEG29	P85/SEG28	P84/SEG27	P83/SEG26	P82/SEG25	P81/SEG24	P80/SEG23	P79/SEG22	P78/SEG21	P77/SEG20	P76/SEG19	P75/SEG18	P74/SEG17	P73/SEG16	P72/SEG15	P71/SEG14	P70/SEG13	P69/SEG12	P68/SEG11	P67/SEG10
64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94







5V  
R6  
T6  
8V

HPF BOARD

MEASUREMENT CONDITIONS  
DIGITAL MULTIMETER: 50kV DC

ALCV

CIV

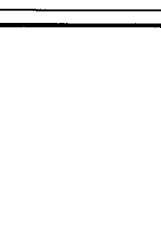
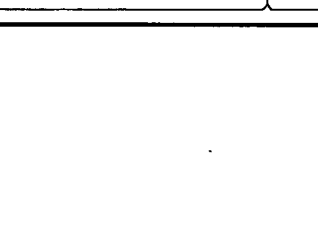
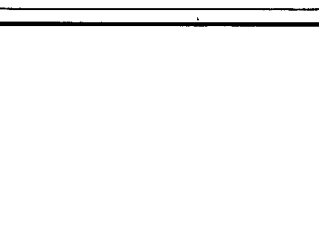
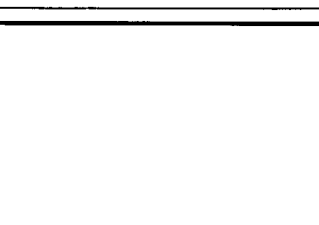
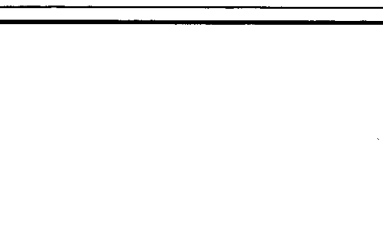
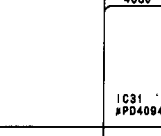
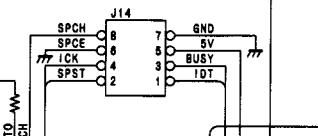
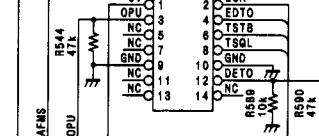
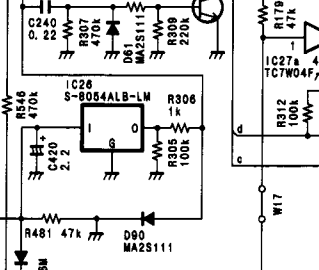
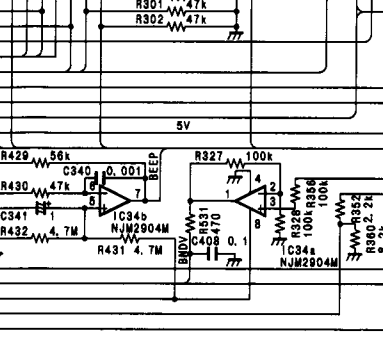
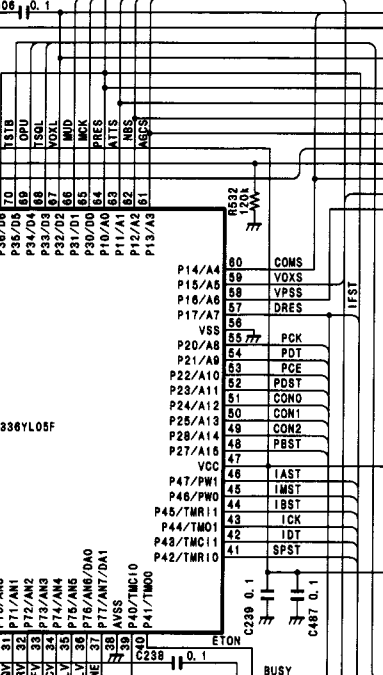
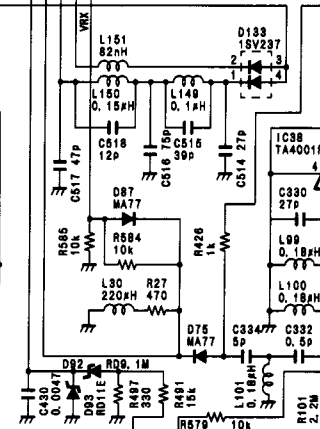
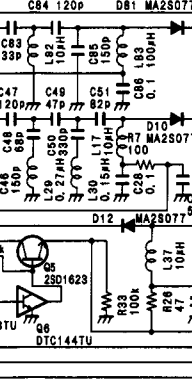
EALC

SOL

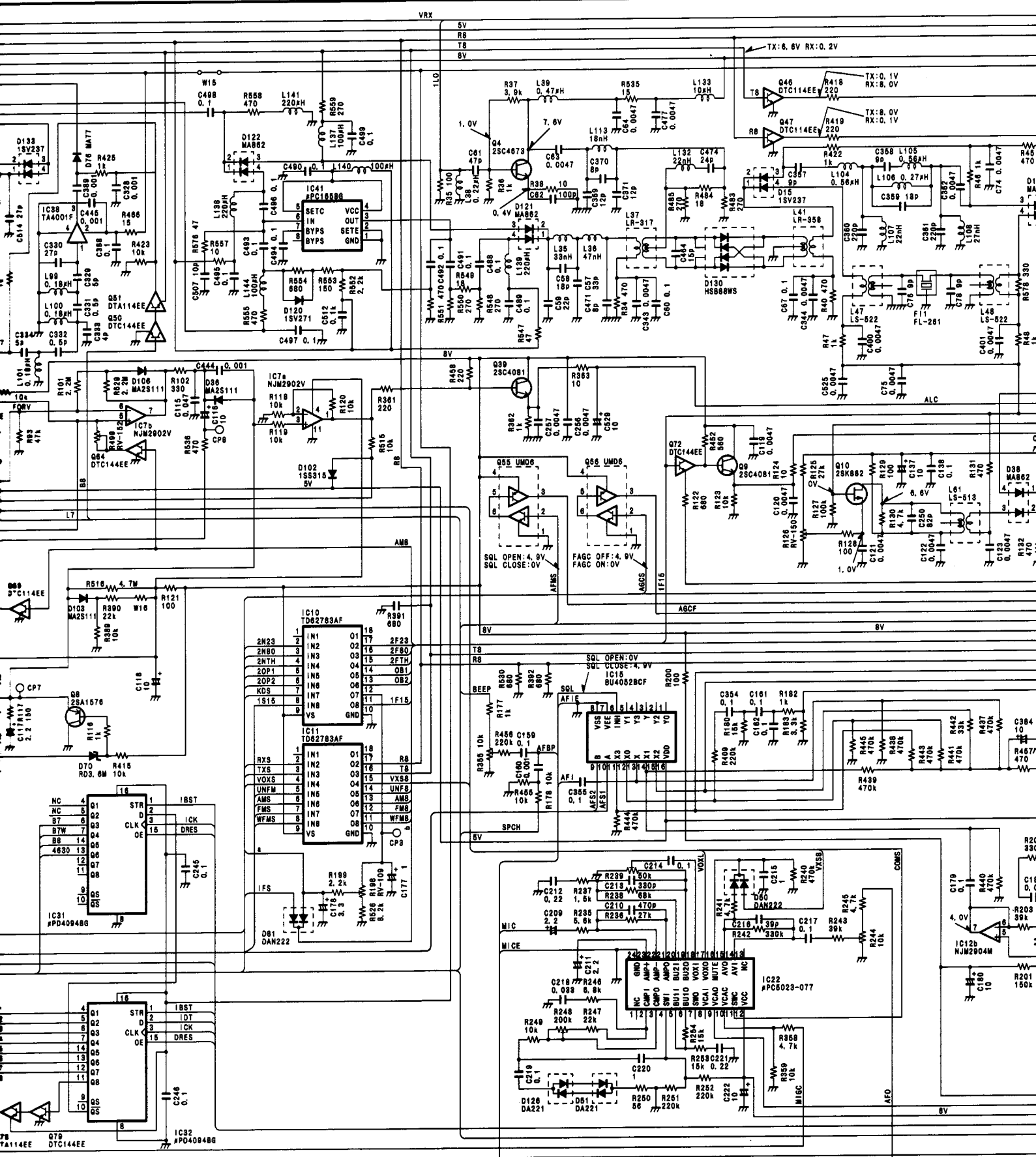
AFMS

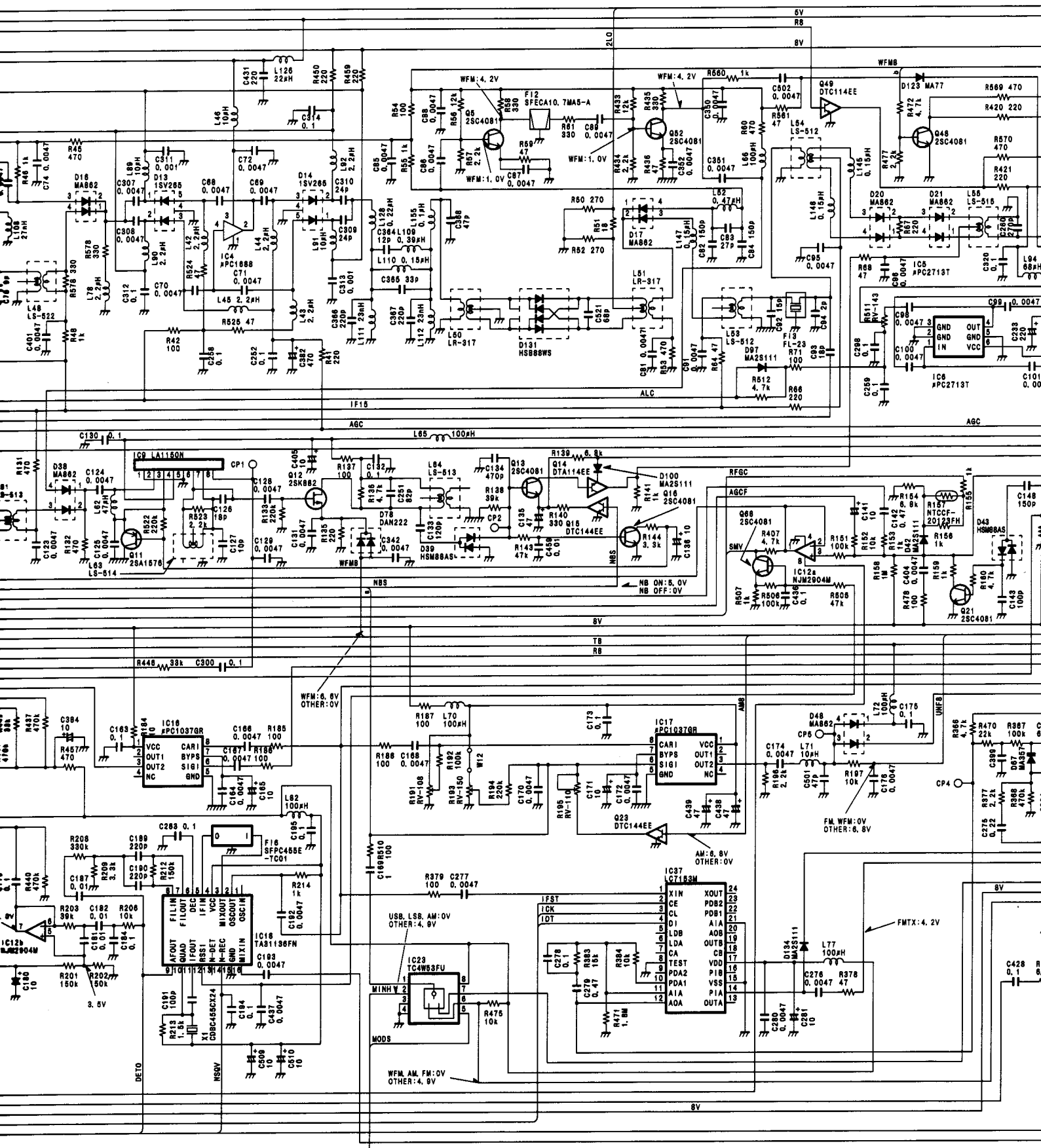
IS15

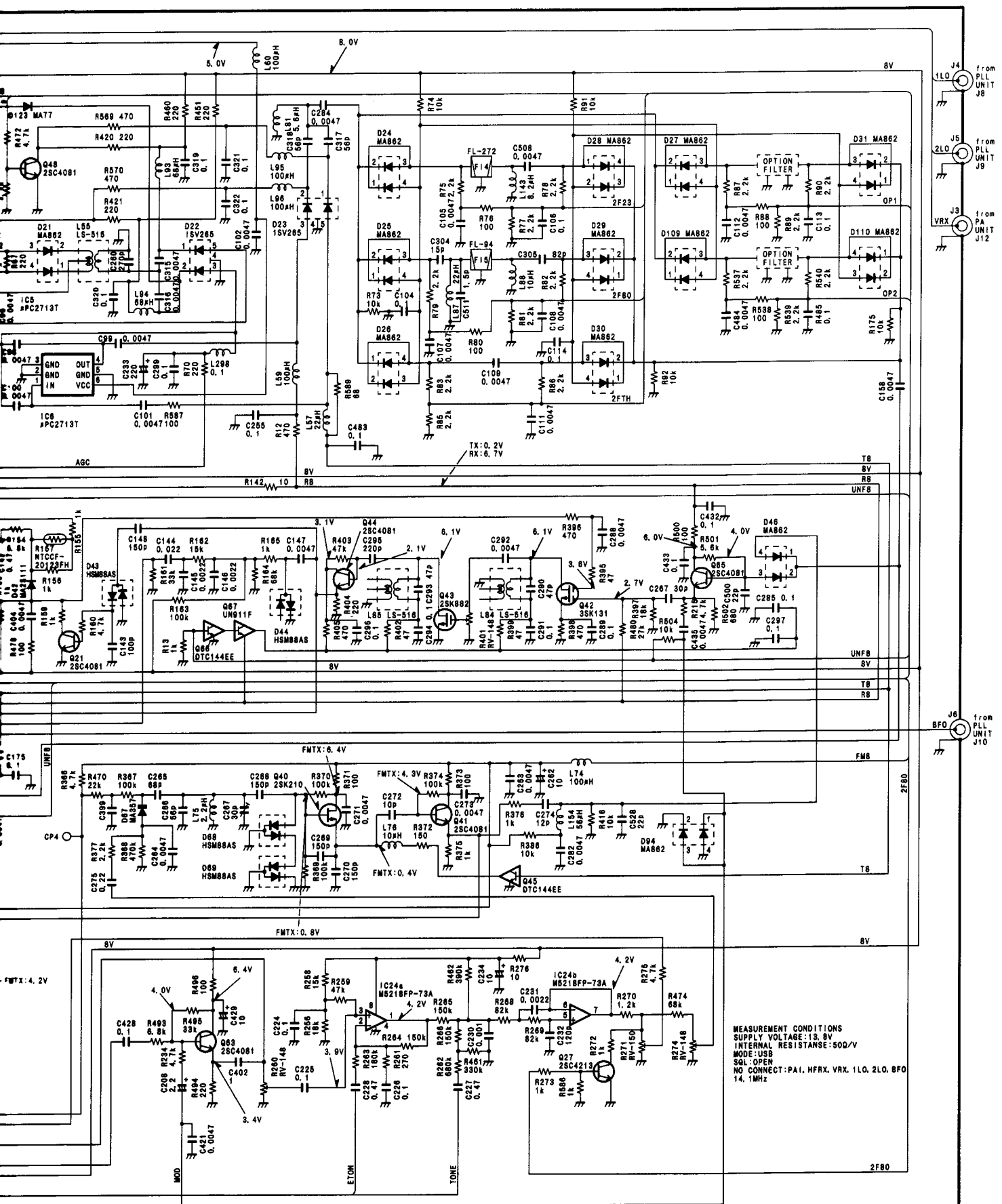
WFMS





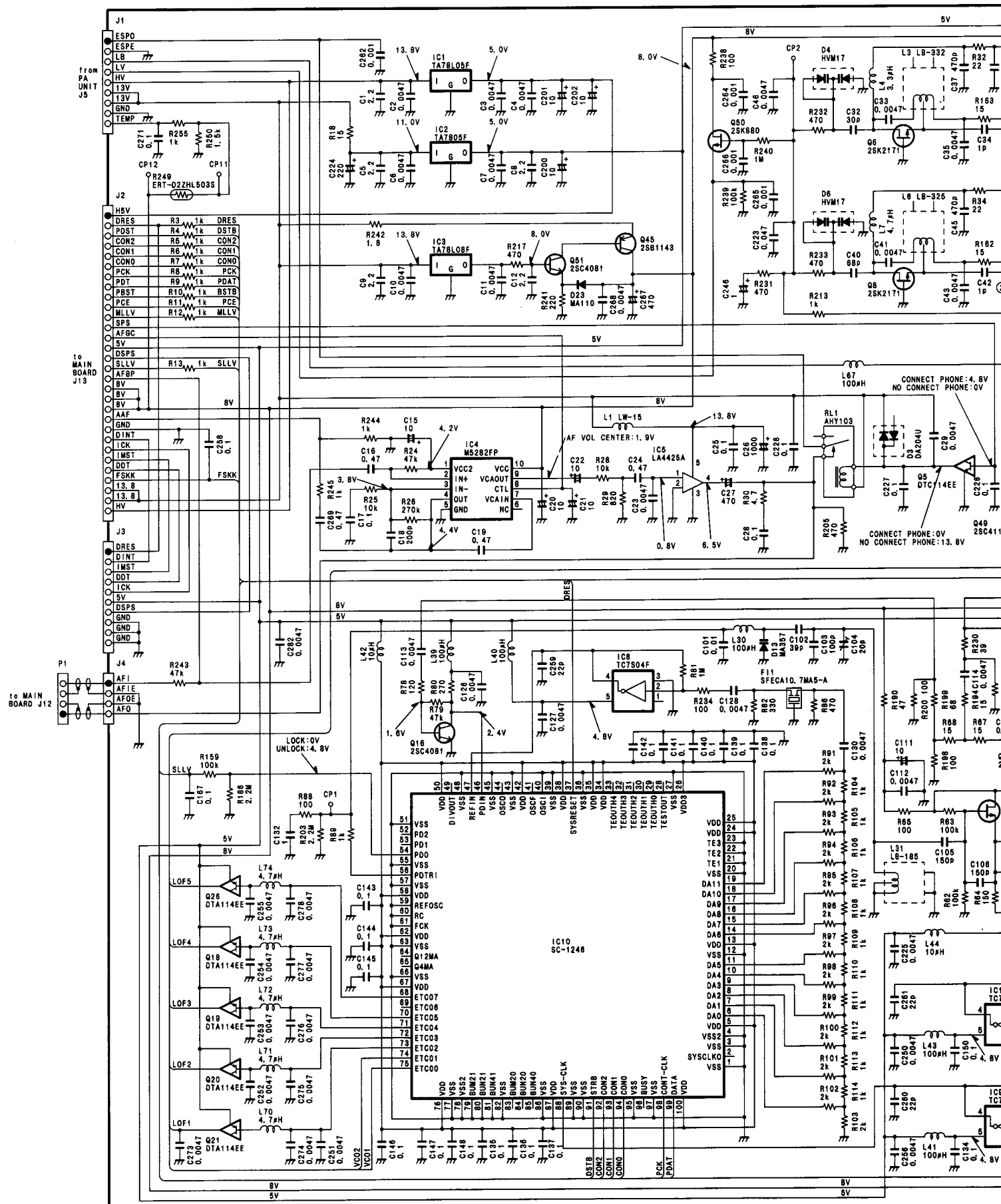


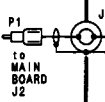
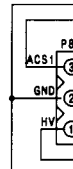
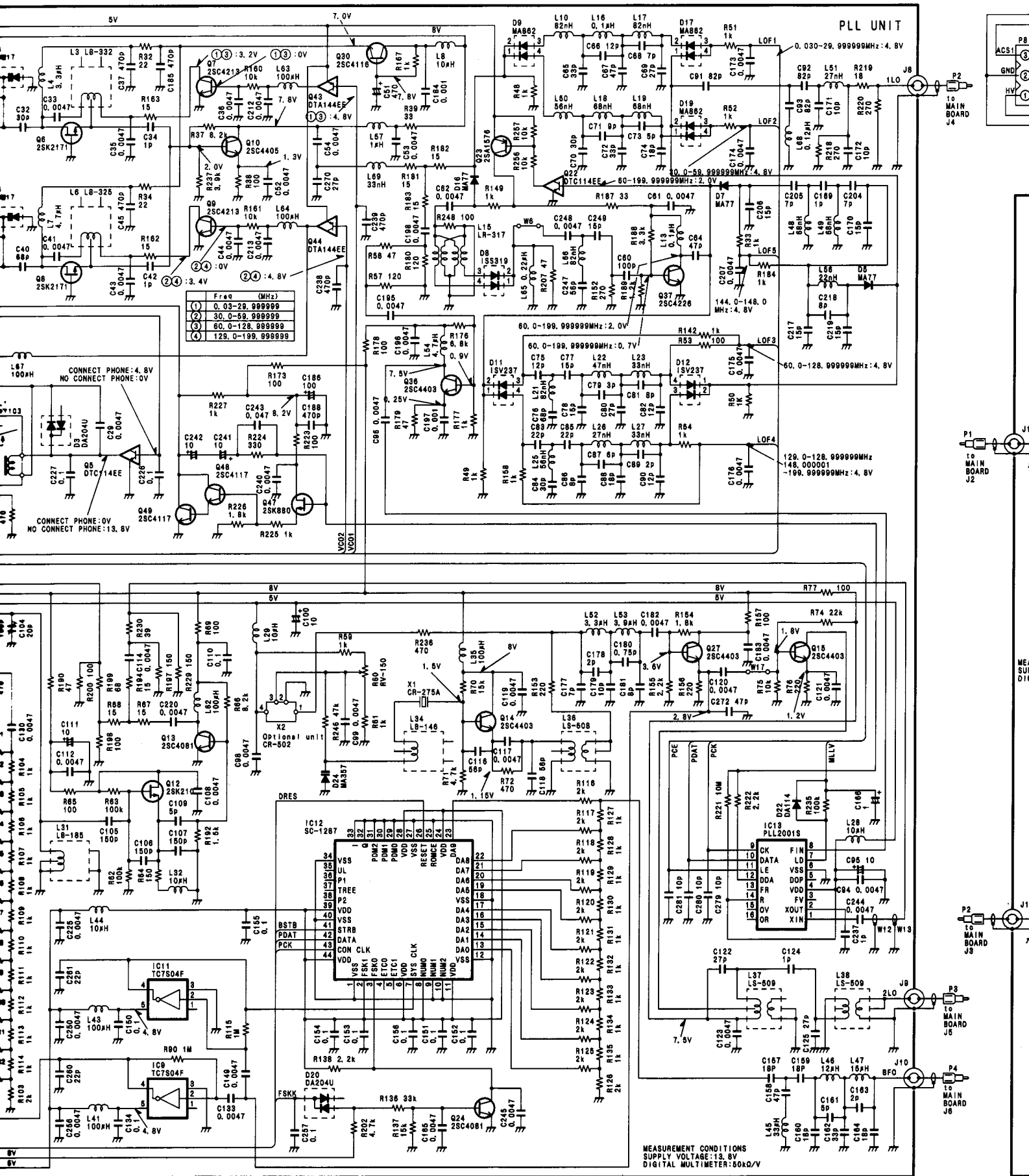




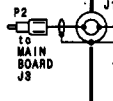
MEASUREMENT CONDITIONS  
 SUPPLY VOLTAGE: 13.8V  
 INTERNAL RESISTANCE: 500Ω/V  
 MODE: USB  
 SGL: OPEN  
 NO CONNECT: PAI, HFRX, VRX, 1LO, 2LO, BFO  
 14.1MHz

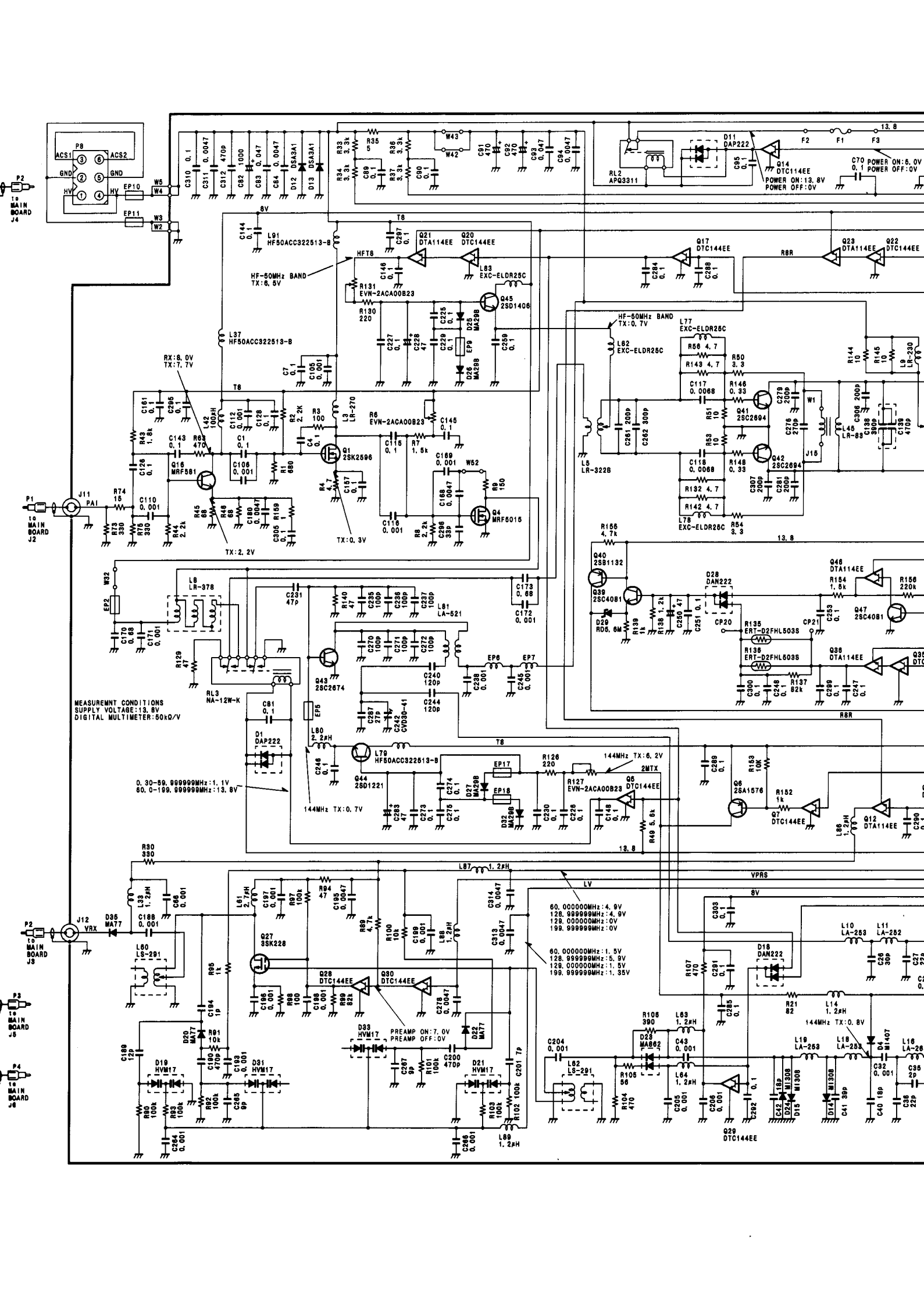
MAIN BOARD





MEAS SUP 016





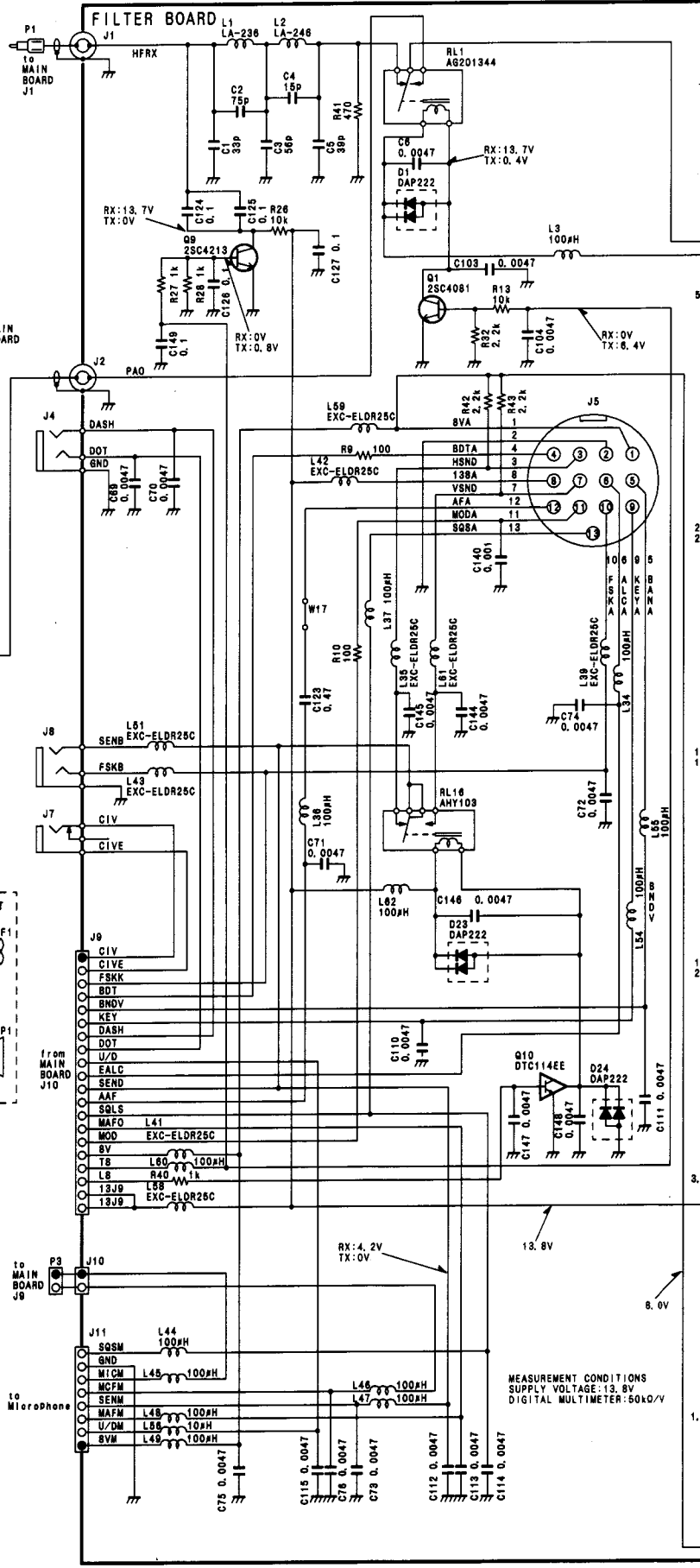
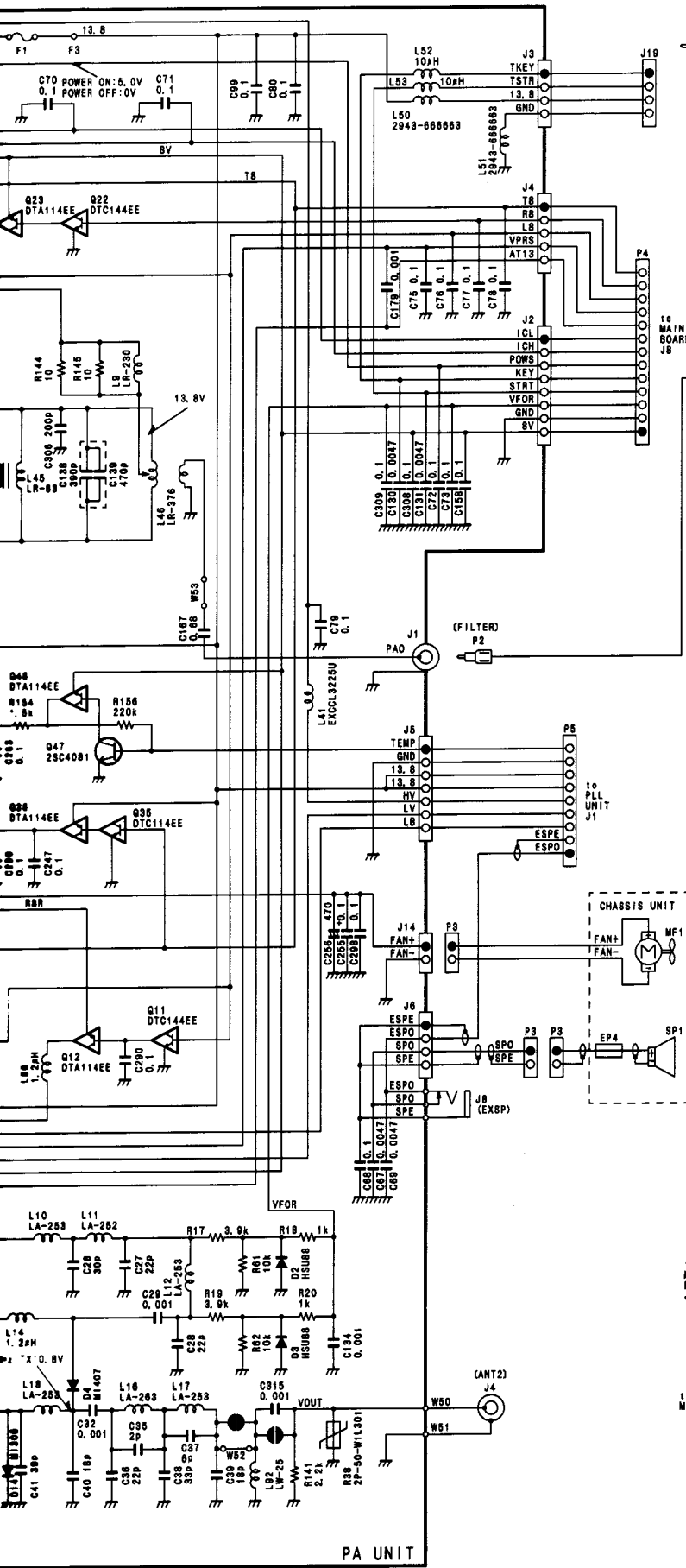
MEASUREMENT CONDITIONS  
SUPPLY VOLTAGE: 13.8V  
DIGITAL MULTIMETER: 500kV

0.30-99.999999MHz: 1.1V  
60.0-199.999999MHz: 13.9V

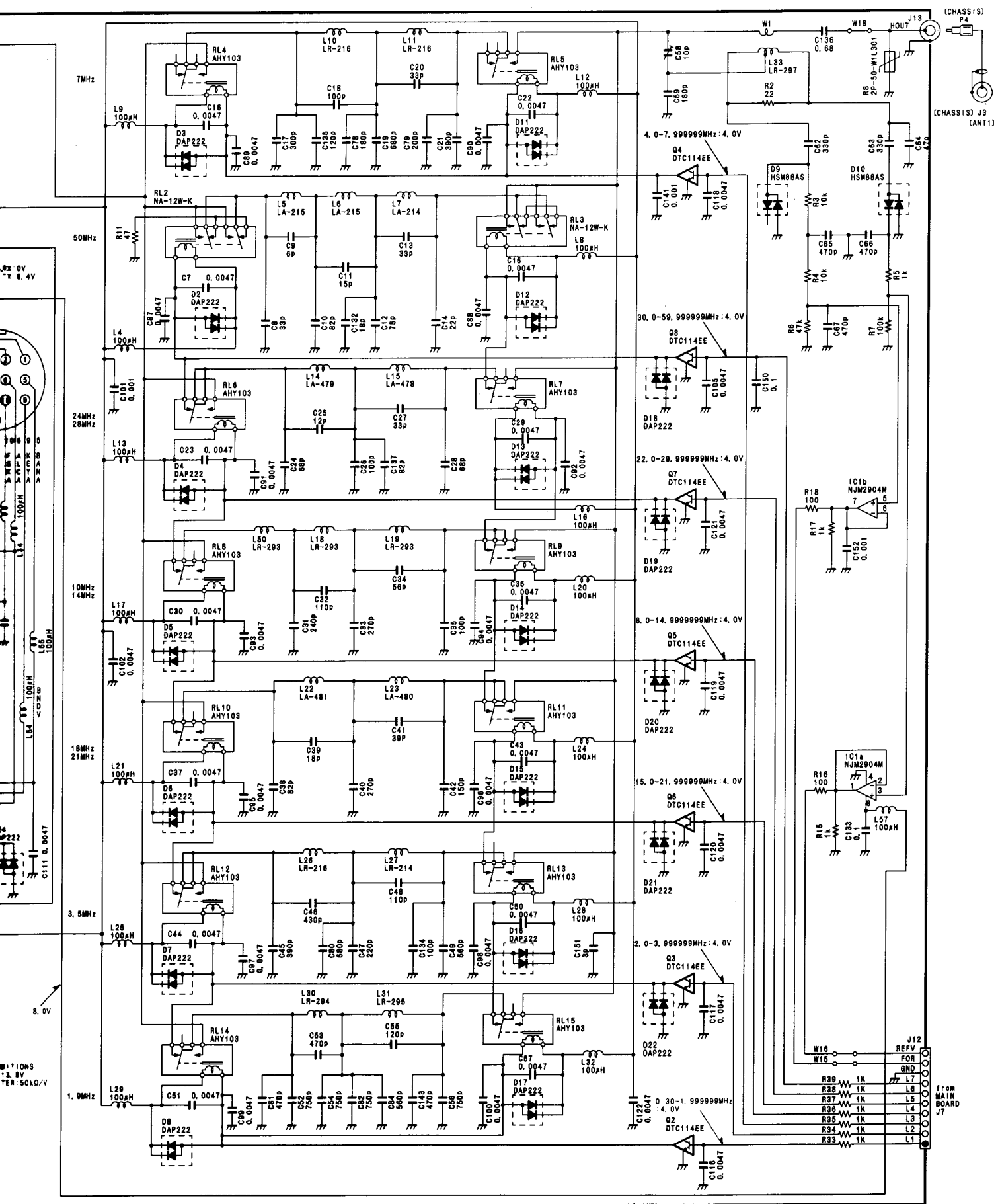
60.000000MHz: 4.9V  
128.999999MHz: 4.9V  
128.000000MHz: 0V  
199.999999MHz: 0V

60.000000MHz: 1.5V  
128.999999MHz: 5.5V  
128.000000MHz: 1.5V  
199.999999MHz: 1.35V

144MHz TX: 0.8V



MEASUREMENT CONDITIONS  
SUPPLY VOLTAGE: 13.8V  
DIGITAL MULTIMETER: 50kΩ/V





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