



SERVICE MANUAL

DUAL BAND FM TRANSCEIVER

IC-2410A
IC-2410E
IC-2410H

INTRODUCTION

This service manual describes the latest service information for the **IC-2410A/E/H** DUAL BAND FM TRANSCEIVER at the time of publication.

| MODEL | VERSION NO. | VERSION | SYMBOL |
|----------|-------------|-----------|--------|
| IC-2410A | #05, #25 | U.S.A. | USA |
| | #07, #27 | Australia | AUS |
| | #08, #28 | Asia | SEA |
| IC-2410E | #02, #22 | Europe | EUR |
| | #03, #23 | Italy | ITA |
| IC-2410H | #02, #22 | Europe | EUR-H |
| | #03, #23 | Italy | ITA-H |
| | #05, #25 | U.S.A. | USA-H |
| | #07, #27 | Australia | AUS-H |
| | #08, #28 | Asia | SEA-H |

DANGER

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

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

DO NOT reverse the polarities of the DC 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.



This picture shows the IC-2410H U.S.A. version.

ORDERING PARTS

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

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

< SAMPLE ORDER >

1110002200 IC MC3372MR IC-2410A/E/H MAIN-A UNIT 5 pieces
8810006230 Screw FH M2.6x4 ZK IC-2410A/E/H Top cover 10 pieces

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

REPAIR NOTES

1. Make sure a problem is internal before disassembling the transceiver.
2. **DO NOT** open the transceiver until the transceiver is disconnected from the 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 40 dB~50 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

| VERSION | VHF | UHF |
|-----------|--|-------------------|
| U.S.A. | 140.000~150.000*1 (Tx) 136.000~174.000*1 (Rx) | 440.000~450.000 |
| Italy | 136.000~174.000*1 | 400.000~479.000*2 |
| Europe | 144.000~146.000 | 430.000~440.000 |
| Australia | 144.000~148.000 | 430.000~440.000 |
| Asia | 140.000~150.000*1 (Tx) 136.000~174.000*1 (Rx) | 430.000~440.000 |

Unit: MHz

*1 Specifications guaranteed for 144.000~148.000 MHz.

*2 Specifications guaranteed for 430.000~440.000 MHz.

- Tuning step increments : 5, 10, 12.5, 15, 20, 25 kHz, 1 MHz or 10 MHz
- Number of memory channels

| | VHF | UHF |
|--------------------|-----|-----|
| Memory channels | 15 | 15 |
| Call channels | 1 | 1 |
| Scan edge channels | 2 | 2 |

- Mode : FM (F3)
- Antenna impedance : 50 Ω nominal
- Power supply requirement : 13.8 V DC \pm 15 % (negative ground)
- Usable temperature range : $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$ ($+14^{\circ}\text{F} \sim +140^{\circ}\text{F}$)
- Dimensions : 140 (W) \times 40 (H) \times 174.5 (D) mm
5.5 (W) \times 1.6 (H) \times 6.9 (D) in
(projections not included)
- Weight : 1.35 kg (3.0 lb)

TRANSMITTER

- Modulation system : Variable reactance frequency modulation
- Max. frequency deviation : ± 5 kHz
- Spurious emissions : Less than -60 dB
- Microphone impedance : 600 Ω
- Output power and current drain (at 13.8 V DC)

| | | IC-2410A/E | | IC-2410H | |
|-----|-------|------------|---------|----------|---------|
| | | POWER | CURRENT | POWER | CURRENT |
| VHF | High | 25 W | 7.0 A | 45 W | 10.5 A |
| | Low 2 | 10 W | 4.5 A | 10 W | 5.5 A |
| | Low 1 | 1 W | 2.5 A | 5 W | 4.0 A |
| UHF | High | 25 W | 8.0 A | 35 W | 10.5 A |
| | Low 2 | 10 W | 5.0 A | 10 W | 6.0 A |
| | Low 1 | 1 W | 3.0 A | 5 W | 4.5 A |

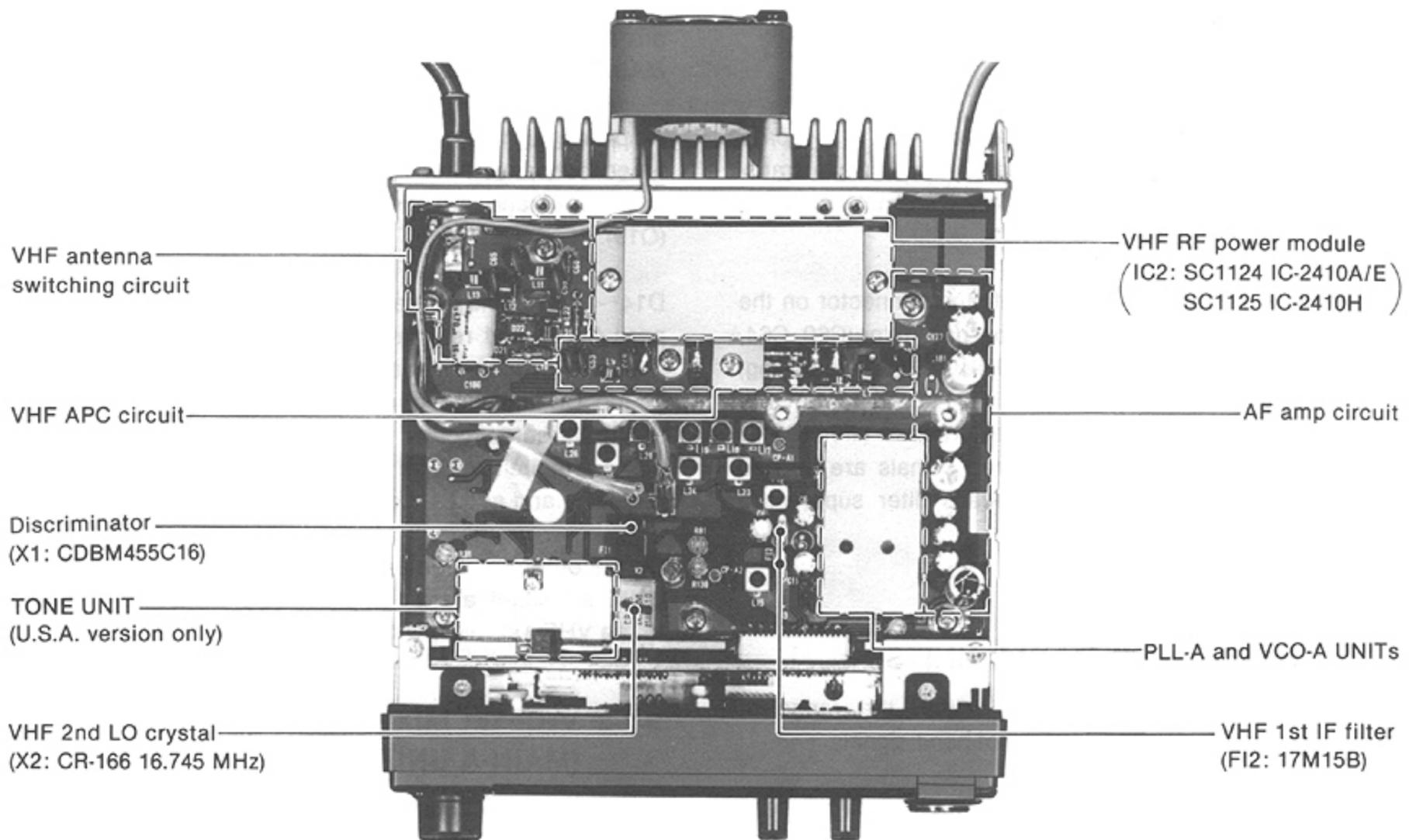
RECEIVER

- Receive system : Double-conversion superheterodyne
- Intermediate frequencies : 1st 17.2 MHz (VHF)
30.875 MHz (UHF)
2nd 455 kHz
- Sensitivity : Less than 0.16 μV for 12 dB SINAD
- Squelch threshold sensitivity : Less than 0.13 μV
- Selectivity : More than 15 kHz/ -6 dB
Less than 30 kHz/ -60 dB
- Spurious rejection ratio : More than 60 dB
- Audio output power : More than 2.4 W at 10 % distortion with an 8 Ω load
- Current drain : Max. audio output 1.8 A Squelched 1.2 A
- Audio output impedance : 4~8 Ω

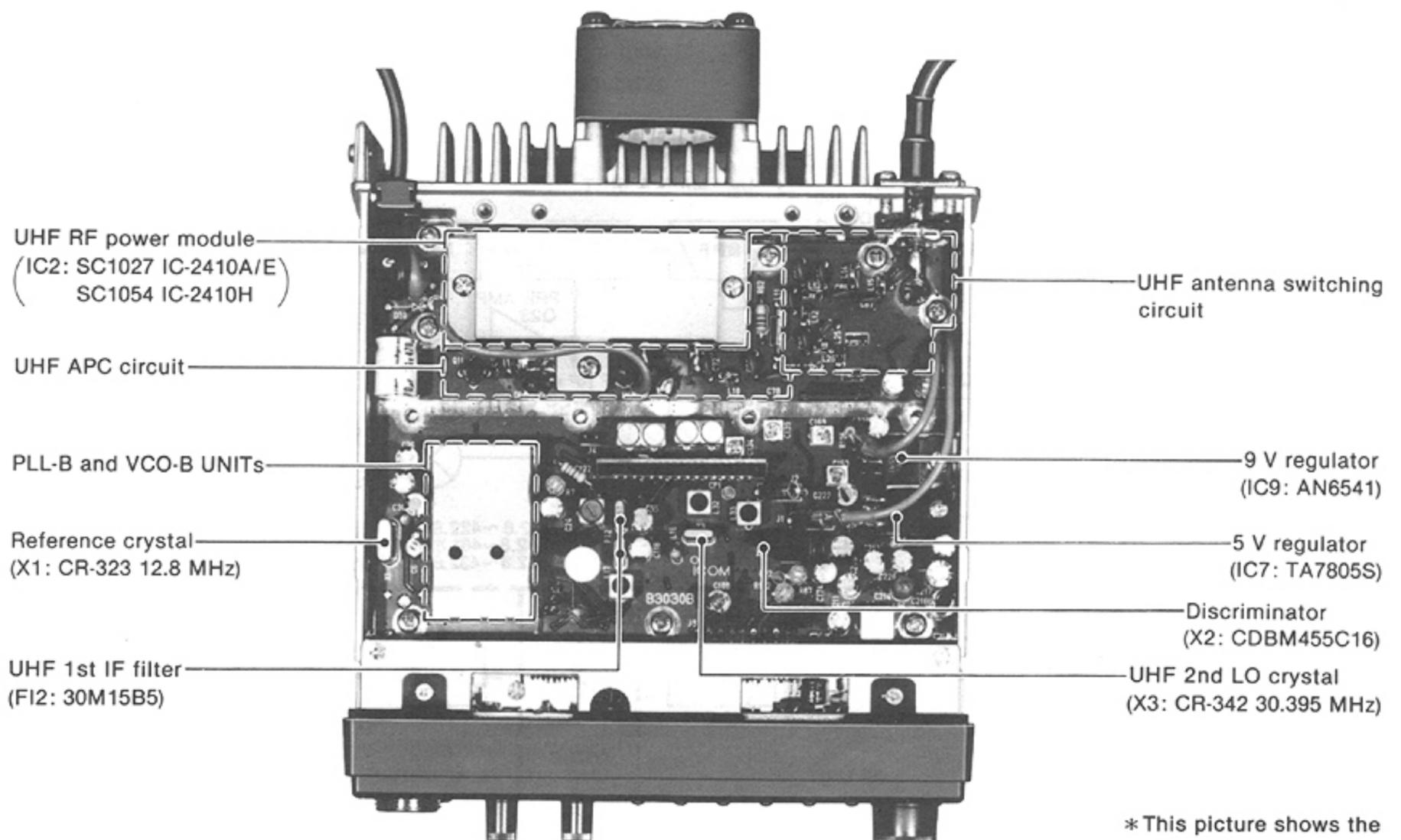
All stated specifications are subject to change without notice or obligation.

SECTION 2 INSIDE VIEWS

• MAIN-A UNIT



• MAIN-B UNIT



* This picture shows the IC-2410A U.S.A. version

SECTION 3 CIRCUIT DESCRIPTION

3-1 RECEIVER CIRCUITS

3-1-1 VHF ANTENNA SWITCHING CIRCUIT (MAIN-A UNIT)

The antenna switching circuit functions as a low-pass filter while receiving and a resonator circuit while transmitting. The circuit does not allow transmit signals to enter receiver circuits.

Received VHF signals enter the antenna connector on the MAIN-B UNIT and pass through a low-pass filter (C60, C64, C65, L11~L13) on the MAIN-A UNIT. When receiving, the antenna switching circuit (D9, D21, D22) turns OFF. The signals pass through a π -type low-pass filter (C117, C118, C120, L21, L22). The filtered signals are applied to the VHF RF circuit. The low-pass filter suppresses high harmonic components.

3-1-2 VHF RF CIRCUIT (MAIN-A AND MAIN-B UNITS)

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

The signals from the VHF antenna switching circuit pass through a RF switching diode (D19). When receiving one VHF frequency, 8 V from Q33 turn ON one side of D19. The VHF signals pass through a tuned bandpass filter (L20, C109, C110, C112, D17) and are applied to the RF amplifier (Q21).

When receiving two VHF frequencies simultaneously, 8 V from Q32 turn ON the other side of D19. The VHF signals are amplified at Q23, and then to RF amplifier (Q21) and MAIN-B UNIT through J1 respectively.

Amplified signals at Q21 are applied to a three-stage tuned bandpass filter (L17~L19, C97, C98, C100~C105, D14~D16) and are then applied to the VHF 1st mixer (Q19).

D14~D17 employ varactor diodes that track the bandpass filters and resonator circuits and are controlled by the VHF PLL lock voltage. The voltage is current-amplified at the DC amplifier circuit (Q4, Q5) and is then applied to the varactor diodes. These varactor diodes tune the center frequency of an RF passband for wide bandwidth receiving and good image response rejection.

On the other hand, entered signals from J1 on the MAIN-B UNIT amplified at RF amplifier (Q37) and then applied to the VHF 1st mixer (Q36).

3-1-3 VHF 1st MIXER CIRCUIT (MAIN-A UNIT)

The 1st mixer circuit converts the received signal to a fixed frequency of the 1st IF signal with a PLL output frequency. By changing a PLL frequency, only the desired frequency will be passed through a pair of crystal filters at the next stage of the 1st mixer.

The signals from the VHF RF circuit are mixed at Q19 with a 1st LO signal coming from the VHF VCO circuit to produce a 17.2 MHz 1st IF signal.

• VHF RECEIVER BLOCK DIAGRAM

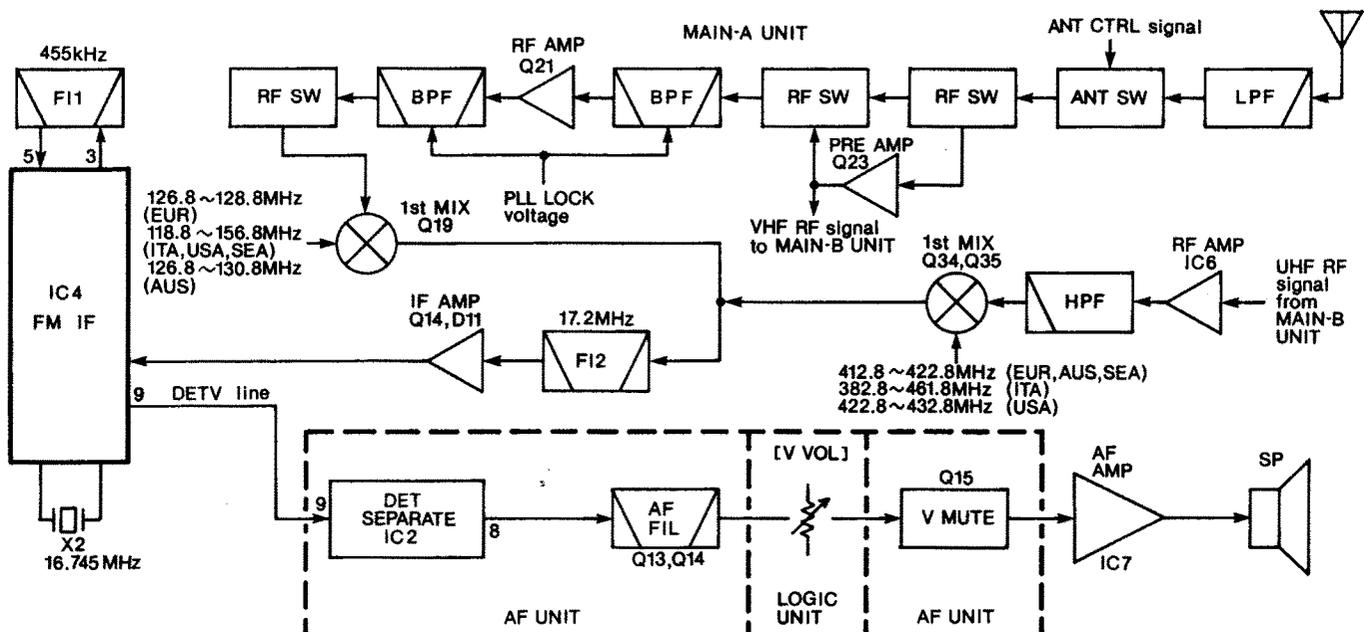


Fig. 1

3-1-4 VHF 1st IF CIRCUIT (MAIN-A UNIT)

The VHF 1st IF signal is applied to a matching circuit (L16, C93, C94). When receiving two UHF frequencies simultaneously, the UHF RF signals mixed at Q34 with a 1st LO signal coming from the VHF VCO circuit. The resulting 1st IF signal is applied to a pair of crystal filters (FI2) in order to obtain wide selection capability and to pass only the desired signals. The 1st IF signal passes through a matching circuit (L15, C88) and is then amplified at an IF amplifier (Q14). The amplified signal is applied to a demodulator circuit.

The limiter diode (D11) protects the following circuits from strong signals.

3-1-5 VHF 2nd IF AND DEMODULATOR CIRCUITS (MAIN-A UNIT)

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

The 1st IF signal from Q14 is applied to a 2nd mixer section of IC4 and is mixed with a 2nd LO signal for conversion to a 455 kHz 2nd IF signal.

IC4 contains the 2nd mixer, local oscillator circuit, limiter amplifier, quadrature detector circuit and active filter circuit. The local oscillator section and X2 generate 16.745 MHz for the 2nd LO signal.

The 2nd IF signal from the 2nd mixer (IC4, pin 3) passes through a high-quality ceramic filter (FI1) to suppress unwanted heterodyned frequency signals. It is then amplified at the limiter amplifier section (IC4, pin 5) and applied to the quadrature detector section (IC4, pin 5 and ceramic discriminator X1) to demodulate the 2nd IF signal into an AF signal.

The signal is output from IC4 (pin 9) as a "DETV" signal and then is applied to the AF UNIT.

3-1-6 VHF AF CIRCUIT (AF, LOGIC AND MAIN-A UNITS)

The AF circuit de-emphasizes demodulated the signal with -6 dB/octave and power-amplifies the signal to drive a speaker. The AF circuit includes a mute circuit to mute the signal with a noise squelch and a tone squelch.

The "DETV" signal from IC4 (pin 9) is applied to the IC switch (IC2) on the AF UNIT. IC3 controls the input level of IC2.

The AF signal from IC2 is applied to the active filter (Q13, Q14). The active filter (Q13, Q14) has frequency characteristics of -6 dB/octave and suppresses the tone signal for tone squelch operation.

The filtered signal is adjusted with the [V VOL] control (R23) on the LOGIC UNIT and is then amplified in the AF amplifier (IC7) on the MAIN-A UNIT to obtain the speaker driving level.

An AF mute transistor (Q15) cuts the input signals of the AF amplifier when the transceiver is transmitting or the squelch is closed.

3-1-7 VHF SQUELCH CIRCUIT (MAIN-A, AF AND LOGIC UNITS)

A squelch circuit cuts out AF signals when no RF signal is received. By detecting noise components in the AF signals, the squelch circuit switches the AF mute switches.

Some noise components in the AF signal from IC4 (pin 9) are applied to an active filter section (IC4, pin 10) via a de-emphasis circuit (R68, C73~C75). This circuit is an integrated circuit with frequency characteristics of -6 dB/octave. The binary output from the CPU (IC3, pins 27 and 28) on the LOGIC UNIT supplies the squelch level volume control signal. This control signal is controlled by Q20 and Q21 on the AF UNIT. The squelch level setting volume control (R130) on the MAIN-A UNIT adjusts the IC4 (pin 10) input level.

The active filter section amplifies noise components of frequencies of 20 kHz and above, and outputs the resulting signals from pin 11. Output signals are rectified by D12 and are then converted to DC voltage.

The rectified noise voltage triggers the squelch switch (Q15). The collector of Q15 outputs the squelch signal. The signal is applied to IC3 (pin 18) on the LOGIC UNIT through the "SQLSV" signal line.

• VHF SQUELCH CIRCUIT

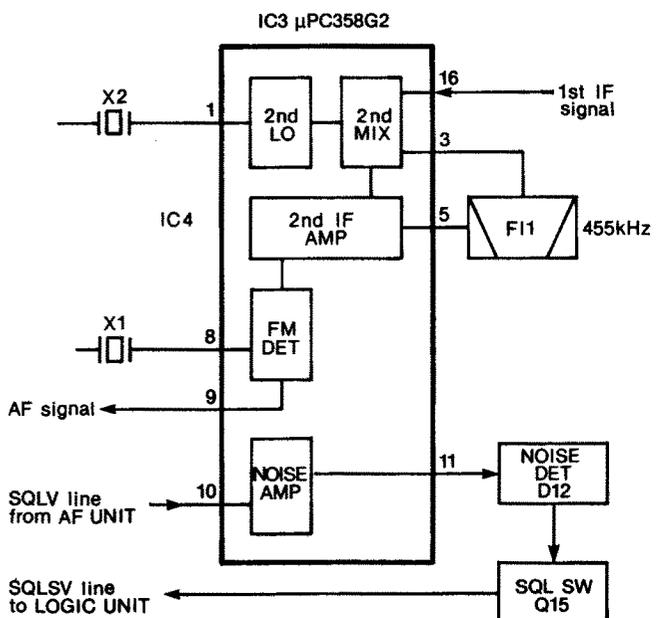


Fig. 2

3-1-8 UHF ANTENNA SWITCHING CIRCUIT (MAIN-B UNIT)

Received UHF signals enter the antenna connector and pass through a high-pass filter (C86~C88, L14, L15). When receiving, the antenna switching circuit (D9, D18, D19) turns OFF. The signals pass through a π -type low-pass filter (C82~85, C147, C148, C150, L12, L13, L25, L26). The filtered signals are applied to the UHF RF circuit.

3-1-9 UHF RF CIRCUIT (MAIN-A AND MAIN-B UNITS)

The signals from the UHF antenna switching circuit pass through an RF switching diode (D16). When receiving one UHF frequency, 8 V from Q34 turns ON one side of D16. The UHF signals pass through a tuned bandpass filter (L24, C139, C140) and are then applied to the RF amplifier (Q21). When receiving two UHF frequencies simultaneously, 8 V from Q33 turns ON the other side of D16. The UHF signals are amplified at Q22, and then to the RF amplifier (Q21) and MAIN-A UNIT through J1 respectively. Amplified signals are applied to the bandpass filter (L22) and are then amplified at Q20. The amplified signals pass through the bandpass filter (L21) and are then applied to the UHF 1st mixer (Q19).

The coils in the bandpass filters (L21, L22) employ a double tuned helical coil. They have good bandpass characteristics and eliminate signals outside of the range.

On the other hand, entered signals from J1 on the MAIN-A UNIT amplified at RF amplifier (IC6) and are applied to the UHF 1st mixer (Q34).

3-1-10 UHF 1st MIXER CIRCUIT (MAIN-B UNIT)

The signals from the UHF RF circuit are mixed at Q19 with a 1st LO signal coming from the UHF VCO circuit to produce a 30.850 MHz 1st IF signal.

3-1-11 UHF 1st IF CIRCUIT (MAIN-B UNIT)

The UHF 1st IF signal is applied to a matching circuit (L18, C124). When receiving two VHF frequencies simultaneously, the VHF RF signals are mixed at Q36 with a 1st LO signal coming from the UHF VCO circuit. The resulting 1st IF signal is applied to a pair of crystal filters (F12) in order to obtain wide selection capability and to pass only the desired signals. The 1st IF signal passes through a matching circuit (L17, C120) and is then amplified at an IF amplifier (Q16). The amplified signal is applied to a demodulator circuit.

The limiter diode (D12) protects the following circuits from strong signals.

3-1-12 UHF 2nd IF AND DEMODULATOR CIRCUITS (MAIN-B UNIT)

The 1st IF signal from Q16 is applied to a 2nd mixer section of IC4 and is mixed with a 2nd LO signal for conversion to a 455 kHz 2nd IF signal.

IC4 contains the 2nd mixer, local oscillator circuit, limiter amplifier, quadrature detector circuit and active filter circuit. The local oscillator section and X3 generate 30.395 MHz for the 2nd LO signal.

• UHF RECEIVER BLOCK DIAGRAM

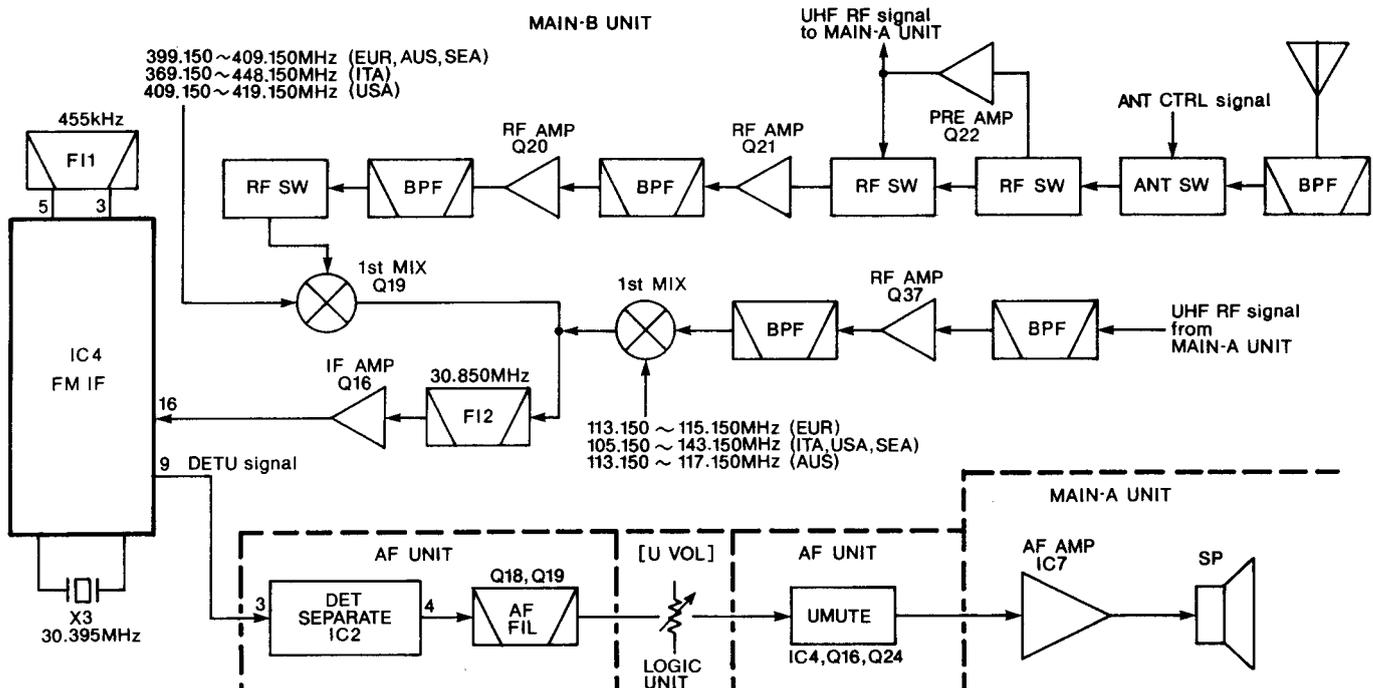


Fig. 3

The 2nd IF signal from the 2nd mixer (IC4, pin 3) passes through a high-quality ceramic filter (F11) to suppress unwanted heterodyned frequency signals. It is then amplified at the limiter amplifier section (IC4, pin 5) and applied to the quadrature detector section (IC4, pin 5 and ceramic discriminator X2) to demodulate the 2nd IF signal into an AF signal.

The signal is output from IC4 (pin 9) as a "DETU" signal and then is applied to the AF UNIT.

3-1-13 UHF AF CIRCUIT (MAIN-B, AF, LOGIC AND MAIN-A UNITS)

The "DETU" signal from IC4 (pin 9) is applied to the IC switch (IC2) on the AF UNIT. IC3 controls the input level of IC2.

The AF signal from IC2 is applied to the active filter (Q18, Q19). The active filter (Q18, Q19) has frequency characteristics of -6 dB/octave and suppresses the tone signal for tone squelch operation. The filtered signal is adjusted with the [U VOL] control (R24) on the LOGIC UNIT and is then amplified in the AF amplifier (IC7) on the MAIN-A UNIT to obtain the speaker driving level.

AF mute transistors (Q16, Q24) cut the input signals of the AF amplifier when the transceiver is transmitting or the squelch is closed.

3-1-14 UHF SQUELCH CIRCUIT (MAIN-B, AF AND LOGIC UNITS)

Some noise components in the AF signal from IC4 (pin 9) are applied to an active filter section (IC4, pin 10) via a de-emphasis circuit (R79, C101~C103). This circuit is an integrated circuit with frequency characteristics of -6 dB/octave.

The binary output from the CPU (IC3, pins 29 and 30) on the LOGIC UNIT supplies the squelch level volume control signal. This control signal is controlled by Q22 and Q23 on the AF UNIT. The squelch level setting volume control (R132) on the MAIN-B UNIT adjusts the IC4 (pin 10) input level.

The active filter section amplifies noise components of frequencies of 20 kHz and above, and outputs the resulting signals from pin 11. Output signals are rectified by D11 and are then converted to DC voltage.

The rectified noise voltage triggers the squelch switch (Q17). The collector of Q17 outputs the squelch signal. The signal is applied to IC3 (pin 19) on the LOGIC UNIT through the "SQLSU" signal line.

3-2 TRANSMITTER CIRCUITS

3-2-1 MICROPHONE AMPLIFIER CIRCUIT (LOGIC AND AF UNITS)

The microphone amplifier circuit amplifies audio signals with +6 dB/octave pre-emphasis from the microphone to a level needed for the modulation circuit. The microphone amplifier circuit is commonly used for both VHF and UHF bands.

The AF signals from the microphone on the LOGIC UNIT are applied to the AF UNIT and are then amplified at the microphone amplifier circuit (Q6) via the microphone mute switch circuit (Q2). The amplified signals are applied to IC1a (pin 2) and are then pre-emphasized to +6 dB/octave through C18 and R28 which are connected to pin 3. IC1a includes a low level amplifier with pre-emphasis and a limiter amplifier. The output signals from IC1a (pin 1) pass through a low-pass filter circuit (IC1b). The filtered signals are applied to either the MAIN-A UNIT as a "MODV" signal in the VHF band or the MAIN-B UNIT as a "MODU" signal in the UHF band.

• VHF TRANSMITTER BLOCK DIAGRAM

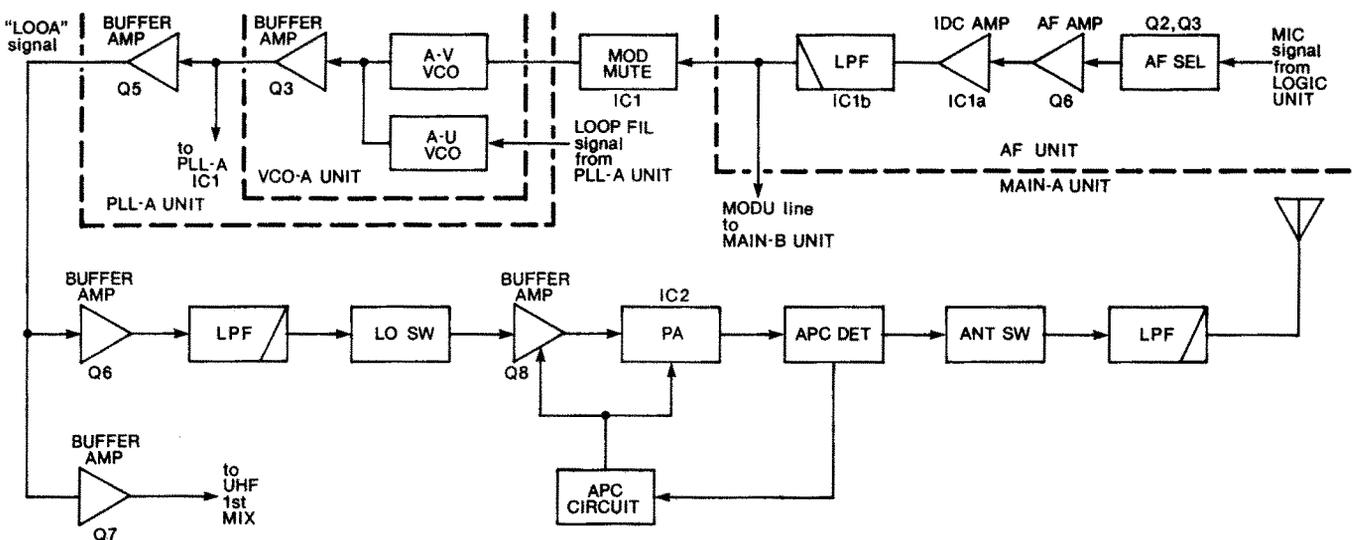


Fig. 4

3-2-2 VHF MODULATION CIRCUIT (VCO-A UNIT)

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

The audio signals from the AF UNIT (MODV signal) pass through the IC switch (IC1) and are then applied to the varactor diodes (D1~D4) to modulate the oscillated signals in the VHF VCO circuit. The VHF VCO circuit contains both the V-UHF VCO oscillator (Q1) and the V-VHF VCO oscillator (Q4). The oscillated signals are mixed together and then buffer-amplified at Q3. The amplified signals are applied to Q5 on the PLL-A UNIT through the "VCOOA" signal line. The resulting signals are output from the "LOOA" signal line and are then applied to the drive amplifier circuit.

3-2-3 VHF DRIVE AMPLIFIER CIRCUIT (MAIN-A UNIT)

The VCO output is buffer-amplified at Q6 and is then applied to a low-pass filter (C21, C22, C25, C28, L2, L5).

After passing through the transmit/receive switching circuit (D4), the VCO output is amplified at the drive amplifier (Q8) to obtain 200 mW (IC-2410H: 400 mW).

The control voltage from the APC circuit is applied to the collector of Q8 for stable RF output power from a power amplifier (IC2).

3-2-4 VHF POWER AMPLIFIER CIRCUIT (MAIN-A UNIT)

IC2 is a power module which provides a stable 25 W (IC-2410H: 45 W) of output power.

The RF signal from the drive amplifier (Q8) is applied to IC2 (pin 4). The amplified signal is output from IC2 (pin 1) and is then applied to the antenna connector through the antenna switching diode (D9) and low-pass filter circuit (C60, C64, C65, L11~L13).

3-2-5 VHF APC CIRCUIT (MAIN-A UNIT)

This circuit controls current in the power module's first stage and current in the driver amplifier to obtain stable RF output power.

The APC mismatch detector circuit consists of C49, C53, D7, D8, L9, R42, R43, R46 and R47. When the antenna impedance is matched at 50 Ω, the detected voltage by D7 and D8 is at its minimum. The detected voltage is applied to an APC amplifier (IC3b, pin 6) and an RF meter amplifier (IC3a, pin 3). The RF meter amplifier outputs RF meter voltage. The APC reference voltage is applied to pin 5 of IC3b.

When the antenna impedance is mismatched, the voltage of IC3b (pin 6) exceeds the reference voltage of IC3b (pin 5). The output level from IC3b (pin 7) decreases. Q12 amplifies the current from the APC amplifier (IC3b) which controls Q11. Q11 changes the supply voltage to Q8 and IC2.

This decreases the output power from the drive amplifier (Q8) and power amplifier (IC2) until the input voltage of IC3b (pin 6) reaches the same level as pin 5 of IC3b.

3-2-6 VHF OUTPUT POWER CONTROL CIRCUIT (MAIN-A UNIT)

The output power control circuit (Q9, Q10, R30~R32, R37, R39) selects 1 of 3 output power levels (HIGH, LOW-2 or LOW-1) and controls the output voltage from the APC circuit by the APC reference voltage.

When "HIGH" output power is selected, Q9 and Q10 are turned OFF. The APC reference voltage is determined by R30~R32 and is adjusted with R31.

When "LOW-2" output power is selected, Q10 is turned ON. The reference voltage is decreased by R39 connected to Q10.

When "LOW-1" output power is selected, Q9 is turned ON. The reference voltage is decreased by R37 connected to Q9.

• VHF POWER AND APC CIRCUIT

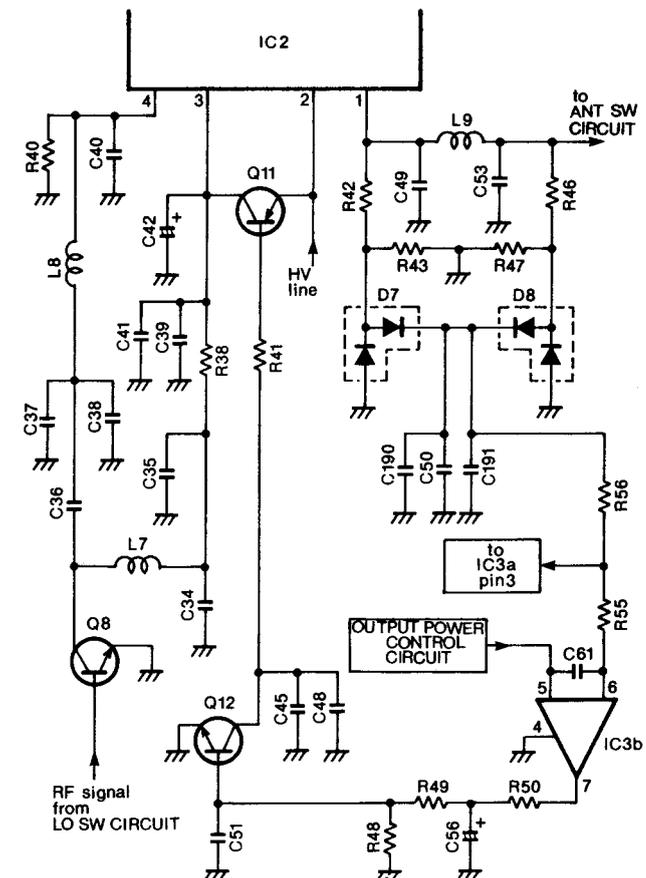


Fig. 5

3-2-7 VHF ANTENNA SWITCHING CIRCUIT (MAIN-A UNIT)

When transmitting, D9, D21 and D22 are turned ON. The RF output signal from IC2 is not permitted to enter the receiver circuit. The signal passes through L9, C55, D9 and a low-pass filter (C60, C64, C65, L11~L13) and is then output from an antenna connector. The low-pass filter suppresses high harmonic components.

3-2-8 UHF MODULATION CIRCUIT (VCO-B UNIT)

The audio signals from the AF UNIT (MODU signal) pass through the IC switch (IC1) and are then applied to the varactor diodes (D1~D4) to modulate the oscillated signals in the UHF VCO circuit. The UHF VCO circuit contains both the U-UHF VCO oscillator (Q1) and the U-VHF VCO oscillator (Q4). The oscillated signals are mixed together and then buffer-amplified at Q3. The amplified signals are applied to Q5 on the PLL-B UNIT through the "VCOOB" signal line. The resulting signals are output from the "LOOB" signal line and are then applied to the drive amplifier circuit.

3-2-9 UHF DRIVE AMPLIFIER CIRCUIT (MAIN-B UNIT)

The VCO output is buffer-amplified at Q8 and is then applied to a low-pass filter (C37~C39, L2).

After passing through the transmit/receive switching circuit (D4), the VCO output is amplified at the pre-drive amplifier (Q10). The amplified signal is re-amplified at the drive amplifier (Q11) to obtain 320 mW (IC-2410H: 500 mW).

The control voltage from the APC circuit is applied to the collector of Q11 for stable RF output power from a power amplifier (IC2).

3-2-10 UHF POWER AMPLIFIER CIRCUIT (MAIN-B UNIT)

IC2 is a power module which provides a stable 25 W (IC-2410H: 35 W) of output power.

The RF signal from the drive amplifier (Q11) is applied to IC2 (pin 1). The amplified signal is output from IC2 (pin 5) and is then applied to the antenna connector through the antenna switching diode (D9) and bandpass filter circuit (C83~C88, L12~L15).

• UHF TRANSMITTER BLOCK DIAGRAM

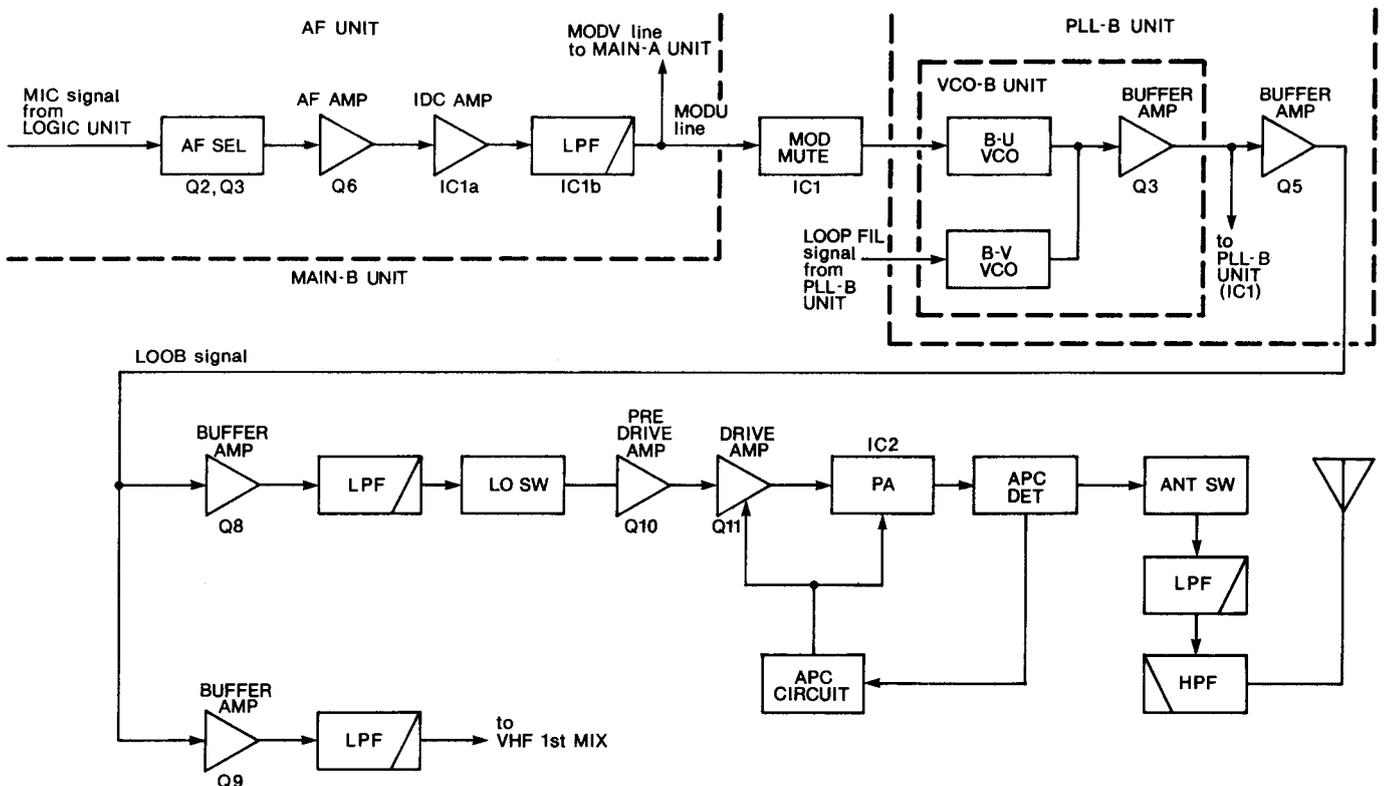


Fig. 6

3-2-11 UHF APC CIRCUIT (MAIN-B UNIT)

The APC mismatch detector circuit consists of C72, C75, D7, D8, L10, R53, R54, R60 and R61. When the antenna impedance is matched at 50 Ω, the detected voltage by D7 and D8 is at its minimum. The detected voltage is applied to an APC amplifier (IC3b, pin 6) and an RF meter amplifier (IC3a, pin 3). The RF meter amplifier outputs RF meter voltage. The APC reference voltage is applied to pin 5 of IC3b.

When the antenna impedance is mismatched, the voltage of IC3b (pin 6) exceeds the reference voltage of IC3b (pin 5). The output level from IC3b (pin 7) decreases. Q15 amplifies the current from the APC amplifier (IC3b) which controls Q14. Q14 changes the supply voltage to Q11 and IC2.

This decreases the output power from the drive amplifier (Q11) and power amplifier (IC2) until the input voltage of IC3b (pin 6) reaches the same level as pin 5 of IC3b.

3-2-12 VHF OUTPUT POWER CONTROL CIRCUIT (MAIN-B UNIT)

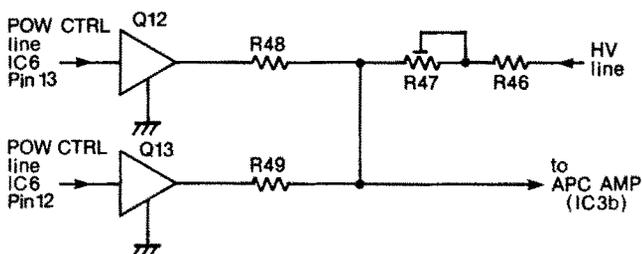
The output power control circuit (Q12, Q13, R46~R49) selects 1 of 3 output power levels (HIGH, LOW-2 or LOW-1) and controls the output voltage from the APC circuit by the APC reference voltage.

When "HIGH" output power is selected, Q12 and Q13 are turned OFF. The APC reference voltage is determined by R46, R47 and is adjusted with R47.

When "LOW-2" output power is selected, Q13 is turned ON. The reference voltage is decreased by R49 connected to Q13.

When "LOW-1" output power is selected, Q12 is turned ON. The reference voltage is decreased by R48 connected to Q12.

• UHF OUTPUT POWER CONTROL CIRCUIT



| | Q12 | Q13 |
|--------------|-----|-----|
| HIGH | OFF | OFF |
| LOW2 (LPO-2) | OFF | ON |
| LOW1 (LPO-1) | ON | OFF |

Fig. 7

3-2-13 UHF ANTENNA SWITCHING CIRCUIT (MAIN-B UNIT)

When transmitting, D9, D18 and D19 are turned ON. The RF output signal from IC2 is not permitted to enter the receiver circuit. The signal passes through L10, C78, D9 and a bandpass filter (C83~ C88, L12~L15) and is then output from an antenna connector.

3-3 PLL CIRCUITS

3-3-1 GENERAL

A PLL circuit steadily oscillates the transmit frequency and the receiver 1st LO frequency. The PLL circuit compares phases of the divided VCO frequency and reference frequency. The PLL output frequency is controlled by the divided ratio (N-data) of the programmable divider.

3-3-2 REFERENCE OSCILLATOR CIRCUIT (MAIN-B UNIT)

A 12.8 MHz reference frequency is determined by the oscillator (X1) and is then oscillated by a Colpitts oscillator circuit (Q3). The frequency is adjusted with C6. The reference frequency is buffer-amplified at Q4 and is then applied to both VHF and UHF PLL circuits.

3-3-3 VHF VCO CIRCUIT (VCO-A UNIT)

The VHF VCO circuit contains both V-UHF and V-VHF VCO circuits to obtain a 120 MHz~420 MHz oscillation for the VHF PLL circuit. This circuit is newly designed to receive two frequencies in the same band.

The V-UHF VCO circuit employs a Colpitts oscillator circuit (Q1). The output signal from the V-UHF VCO circuit is mixed with the V-VHF VCO oscillation via C10 and R9.

The V-VHF VCO circuits employs a Hartley oscillator circuit (Q4). The output signal from the V-VHF VCO circuit is mixed with the V-UHF VCO oscillation via C22 and R19.

Varactor diodes (D1~D4) provide frequency control. The buffer amplifier (Q3) amplifies VCO oscillation and does not permit the latter circuit to affect the VCO oscillation.

Pin 7 of IC1 on the PLL-A UNIT controls Q4 to activate either the V-VHF or the V-UHF VCO circuit.

3-3-4 VHF PROGRAMMABLE DIVIDER AND PHASE DETECTOR CIRCUITS (PLL-A UNIT)

The programmable divider shifts the dividing ratio with a prescaler depending on the operating frequency and determines the VCO oscillating frequency.

The phase detector circuit detects the off-phase components of the VCO frequency using a stable reference frequency.

The output signal from the VCO-A UNIT enters either PLL IC (IC1, pin 5) or a buffer amplifier (Q5) on the PLL-A UNIT.

IC1 is a one-chip PLL IC that contains a two-modulus prescaler, a pulse counter, a programmable divider and a phase detector.

The input signal from the PLL IC (IC1, pin 5) passes through the two-modulus prescaler and the programmable divider sections of IC1. A 12.8 MHz reference frequency from X1 on the MAIN-B UNIT is applied to IC1 (pin 15) and passes through a reference programmable divider section of IC1. Both of the divided signals are compared at a phase detector section of IC1. The phase-detected signal (pulse signal) is output from IC1 (pin 12).

3-3-5 VHF LOOP FILTER AND DC-DC-CONVERTER CIRCUITS (PLL-A AND MAIN-A UNITS)

Phase-detected signal (pulse signal) from IC1 (pin 12) is converted to DC voltage (PLL lock voltage) by a loop filter consisting of an active filter (Q1, Q2).

The VHF VCO oscillation on the VCO-A UNIT is controlled by varactor diodes (D1~D4). DC voltage (PLL lock voltage) is provided through the integrator circuit (C4, R5) and is then applied to a DC amplifier circuit (Q4, Q5). The voltage is used as the tuning voltage for the receiver bandpass filters.

30 V DC from the DC-DC converter circuit (IC8, Q40, Q41) on the MAIN-B UNIT is applied to the loop filter. The voltage is used to obtain a wide range of lock voltage for the PLL circuit.

3-3-6 VHF UNLOCK SENSOR CIRCUIT (PLL-A AND LOGIC UNITS)

When the PLL circuit is unlocked, IC1 (pin 13) becomes "HIGH". The "HIGH" signal is applied to the CPU (IC3, pin 20) as an unlock signal on the LOGIC UNIT.

• VHF PLL-A AND VCO-A BLOCK DIAGRAM

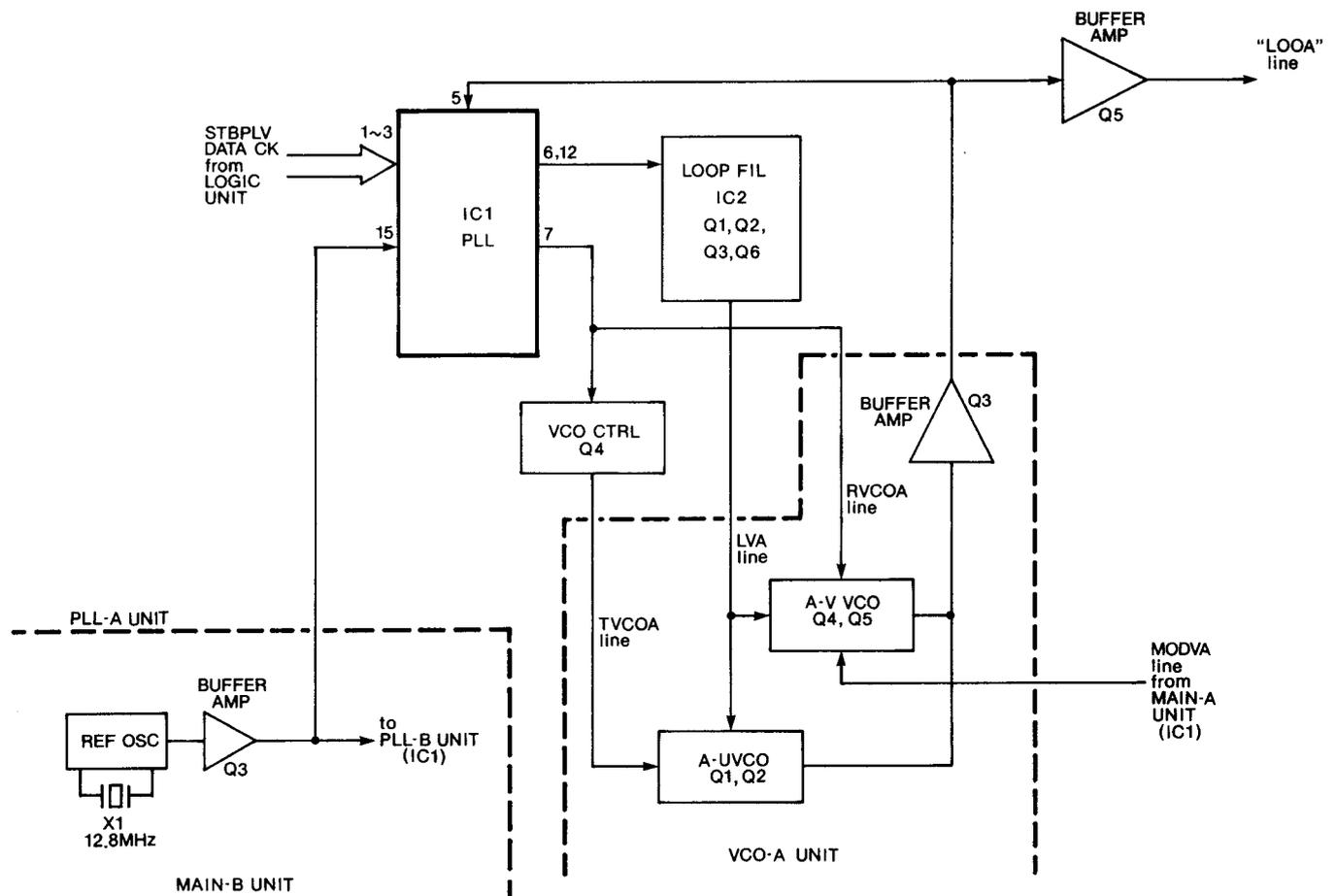


Fig. 8

3-3-7 UHF VCO CIRCUIT (VCO-B UNIT)

The UHF VCO circuit contains both U-UHF and U-VHF VCO circuits to obtain a 120 MHz~420 MHz oscillation for the UHF PLL circuit. This circuit is newly designed to receive two frequencies in the same band.

The U-UHF VCO circuit employs a Colpitts oscillator circuit (Q1). The output signal from the U-UHF VCO circuit is mixed with the U-VHF VCO oscillation via C10 and R9.

The U-VHF VCO circuit employs a Hartley oscillator circuit (Q4). The output signal from the U-VHF VCO circuit is mixed with the U-UHF VCO oscillation via C22 and R19.

Varactor diodes (D1~D4) provide frequency control. The buffer amplifier (Q3) amplifies VCO oscillation and does not permit the latter circuit to affect the VCO oscillation.

Pin 7 of IC1 on the PLL-B UNIT controls Q4 to activate either the U-VHF or the U-UHF VCO circuit.

3-3-8 UHF PROGRAMMABLE DIVIDER AND PHASE DETECTOR CIRCUITS (PLL-B UNIT)

The programmable divider shifts the dividing ratio with a prescaler depending on the operating frequency and determines the VCO oscillating frequency.

The phase detector circuit detects the off-phase components of the VCO frequency using a stable reference frequency.

The output signal from the VCO-B UNIT enters either PLL IC (IC1, pin 5) or a buffer amplifier (Q5) on the PLL-B UNIT.

IC1 is a one-chip PLL IC that contains a two-modulus prescaler, a pulse counter, a programmable divider and a phase detector.

The input signal from the PLL IC (IC1, pin 5) passes through the two-modulus prescaler and the programmable divider sections of IC1. A 12.8 MHz reference frequency from X1 is applied to IC1 (pin 15) and passes through a programmable divider section of IC1. Both of the divided signals are compared at a phase detector section of IC1. The phase-detected signal (pulse signal) is output from IC1 (pin 12).

3-3-9 UHF LOOP FILTER AND DC-DC-CONVERTER CIRCUITS (PLL-B AND MAIN-B UNITS)

Phase-detected signals (pulse signals) from IC1 (pin 12) are converted to DC voltage (PLL lock voltage) by a loop filter consisting of an active filter (Q1, Q2).

The UHF VCO oscillation on the VCO-B UNIT is controlled by varactor diodes (D1~D4). DC voltage (PLL lock voltage) is provided through the integrator circuit (C4, R5) and is then applied to a DC amplifier circuit (Q6, Q7). The voltage is used as the tuning voltage for the receiver bandpass filters.

30 V DC from the DC-DC converter circuit (IC8, Q40, Q41) is applied to a 24 V regulator (D1) to obtain a stable 24 V DC. The voltage is used at the loop filter to obtain a wide range of lock voltage for the PLL circuit.

3-3-10 UHF UNLOCK SENSOR CIRCUIT (PLL-B AND LOGIC UNITS)

When the PLL circuit is unlocked, IC1 (pin 13) becomes "HIGH". The "HIGH" signal is applied to the CPU (IC3, pin 21) as an unlock signal on the LOGIC UNIT.

• UHF PLL-B UNIT BLOCK DIAGRAM

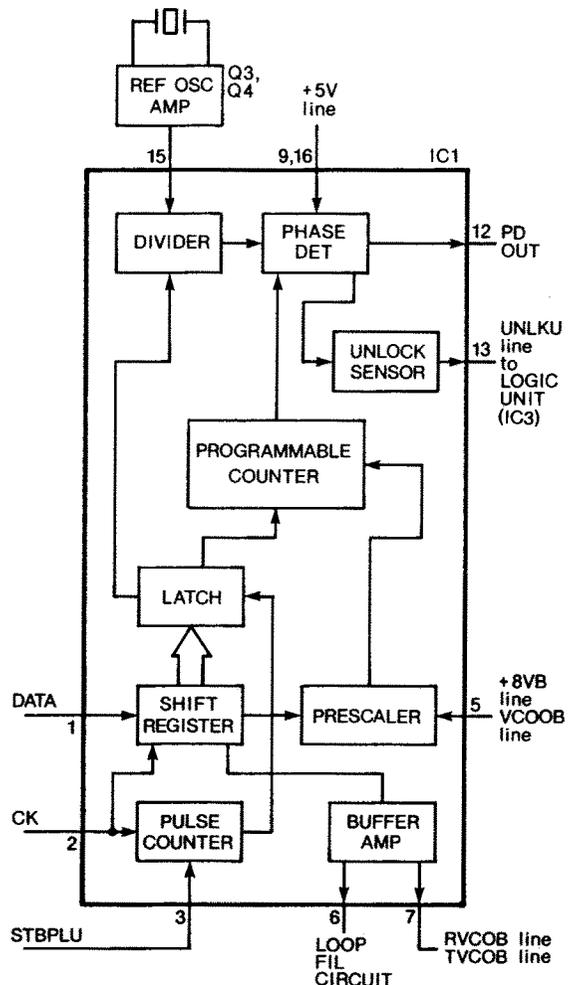


Fig. 9

3-4 OTHER CIRCUITS

3-4-1 VHF S/RF INDICATOR CIRCUIT (MAIN-A AND LOGIC UNITS)

The RF meter voltage from IC3a (pin 1) is rectified at an S/RF meter detector (D24). The detected voltage is output as the "SRFV" signal. The signal is applied to an S/RF comparator (IC4b, pin 5) on the LOGIC UNIT.

IC4b (pin 6) receives an S/RF indicator reference signal from the CPU (IC3, pins 4~7) using the D/A converter (R43~R46). These pins increase the reference signal level.

When the reference signal becomes greater than the "SRFV" signal, IC4b (pin 7) becomes "LOW". The CPU detects the signal strength level using the outputs from IC3 (pins 4~7) and indicates the signal strength level on the FUNCTION DISPLAY when receiving the "LOW" signal.

3-4-2 UHF S/RF INDICATOR CIRCUIT (MAIN-B AND LOGIC UNITS)

The RF meter voltage from IC3a (pin 1) is rectified at an S/RF meter detector (D21). The detected voltage is output as the "SRFU" signal. The signal is applied to an S/RF comparator (IC4a, pin 3) on the LOGIC UNIT.

IC4b (pin 2) receives an S/RF indicator reference signal from the CPU (IC3, pins 4~7) using the D/A converter (R43~R46). These pins increase the reference signal level.

When the reference signal becomes greater than the "SRFU" signal, IC4a (pin 1) becomes "LOW". The CPU detects the signal strength level using the outputs from IC3 (pins 4~7) and indicates the signal strength level on the FUNCTION DISPLAY when receiving the "LOW" signal.

3-4-3 CPU POWER SUPPLY CIRCUIT (LOGIC UNITS)

When the power switch is turned OFF, voltage is applied to the CPU (IC3, pin 26) via D3 from the lithium backup battery installed on the LOGIC UNIT to provide backup power for the memory contents.

3-4-4 CPU RESET CIRCUIT (LOGIC UNIT)

This circuit resets the CPU with a three-terminal voltage regulator IC (IC2). IC2 detects +5 V when the DC voltage is applied to the input terminal of IC2 and outputs 5V. When the 5 V line becomes higher than the threshold voltage of IC2, the CPU reset circuit outputs "HIGH" as the interrupt signal.

When the [POWER] switch is turned ON, the RESET port of the CPU (IC3, pin 43) becomes "HIGH". When the port receives "HIGH", the CPU restarts operation. The time constant (C14, R27, R28) provides sufficient reset time.

When the 5 V line becomes lower than the threshold voltage of IC2, the INT1 port of the CPU (IC3, pin 17) becomes "LOW", and the CPU enters the backup condition.

• CPU RESET CIRCUIT

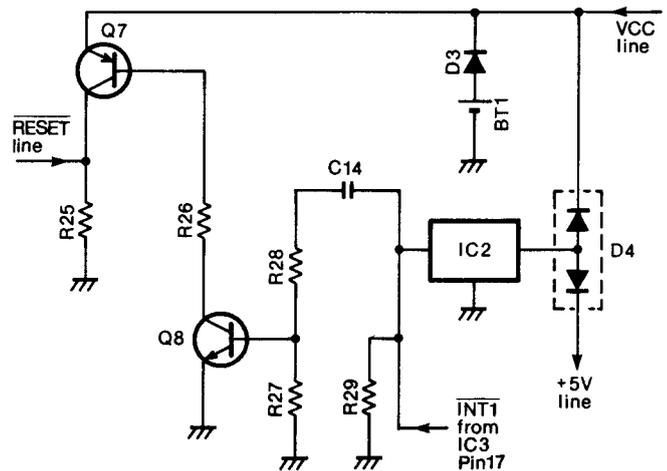


Fig. 10

3-4-5 DIMMER CIRCUIT (LOGIC UNIT)

The dimmer circuit consists of Q9~Q11 and other components and drives backlights (DS1~DS5), ensuring that brightness does not change even with a change of power supply.

The brightness of the FUNCTION DISPLAY is set at 1 of 5 levels using combinations of output levels in IC3 (pins 24 and 25). When the CPU (IC3, pins 24 and 25) changes its output level, Q11 changes the base voltage and the collector current of Q9 and Q10 changes. Therefore, the collector voltage is changed and the brightness of lamps DS1~DS5 changes.

• DIMMER CIRCUIT

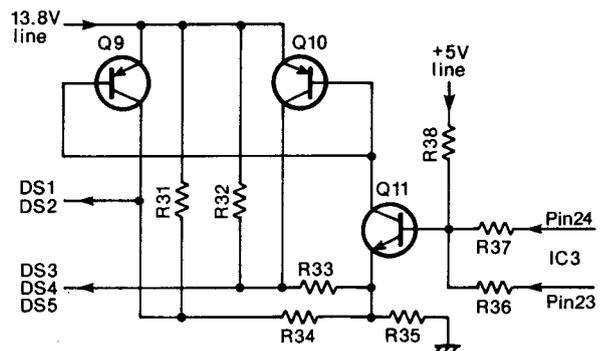


Fig. 11

3-4-6 REGULATOR CIRCUIT (MAIN-B UNIT)

IC9 is a 3-terminal voltage regulator IC chip. +13.8 V is applied to the input terminal. The output terminal outputs a regulated +9 V (+8 V line) to each unit.

Q38, Q39 and D29 produce a regulated 8 V (+8 V line) for the MAIN-A UNIT. This regulator is composed of a complementary connection to ensure high current amplification and supplies stable output voltage continuously with good temperature characteristics.

IC7 is a 3-terminal voltage regulator IC chip. +13.8 V is applied to the input terminal. The output terminal outputs a regulated +5.5 V (5 V line) using D28.

D1 produces a regulated 24 V for the UHF loop filter circuit. This voltage is converted from 30 V DC which is produced by the DC-DC converter (IC8, Q40, Q41).

3-5 CPU PORT ALLOCATIONS (LOGIC UNIT)

• IC3 CPU

| PORT No. | PIN No. | TERMINAL NAME | DESCRIPTION |
|----------|---------|---------------|---|
| D0 | 48 | T SQLV | Detects a VHF tone squelch signal. When the signal is "HIGH", an optional tone squelch opens. |
| D1 | 49 | T SQLU | Detects a UHF tone squelch signal. When the signal is "HIGH", an optional tone squelch opens. |
| D2 | 50 | UNIT. T | Becomes "LOW" when an optional UT-67 TONE SQUELCH UNIT is connected. |
| D3 | 51 | STB VC | Outputs a strobe signal for VHF control. |
| D4 | 52 | STB UC | Outputs a strobe signal for UHF control. |
| D5 | 53 | STB AC | Outputs a strobe signal for common control. |
| D6 | 54 | STB PLV | Outputs a strobe signal for VHF PLL data on the MAIN-A UNIT. |
| D7 | 55 | STB PLU | Outputs a strobe signal for UHF PLL data on the MAIN-B UNIT. |
| D8 | 56 | MIC CK | Input port for the microphone clock. |
| D9 | 57 | MIC U/D | Input port for the microphone up/down signal. |
| D10 | 58 | PTT | Inputs a signal on the PTT line. This port becomes "HIGH" when the PTT switch is pushed. |
| D11 | 59 | BEEP | Outputs a signal for beep tone. |
| D12 | 60 | S TONE | Outputs a signal for 88.5 Hz tone. |
| D13 | 61 | LINH | Outputs a control signal for LCD on the DISPLAY UNIT. |
| D14 | 62 | LCE1 | Outputs a signal for LCD driver (IC1) on the DISPLAY UNIT. |
| D15 | 63 | LCE2 | Outputs a signal for LCD driver (IC2) on the DISPLAY UNIT. |
| R00 | 64 | LDATA | Outputs serial data for LCD. |

| PORT No. | PIN No. | TERMINAL NAME | DESCRIPTION | | | | | | | | | | | | | | | |
|--------------|---------|---------------|--|-------|---|---|---|---|------|---|---|---|---|------|---|---|---|---|
| R01 | 1 | LCK | Outputs clock signals for LCD. | | | | | | | | | | | | | | | |
| R02~R03, R10 | 2~4 | INI S0~INI S2 | Output strobe signals for the initial matrix. | | | | | | | | | | | | | | | |
| R11~R13 | 5~7 | SRF 01~SRF 03 | Output counting signals for the S/R/F INDICATOR. | | | | | | | | | | | | | | | |
| R20~R23 | 8~11 | KEY I0~KEY I3 | Input ports for the key and initial matrix. | | | | | | | | | | | | | | | |
| R30 | 14 | DIAL UP | Input port for the up signal of the TUNING CONTROL. | | | | | | | | | | | | | | | |
| R31 | 15 | DIAL DN | Input port for the down signal of the TUNING CONTROL. | | | | | | | | | | | | | | | |
| R32 | 16 | INT0/ DIAL CK | Input port for the up/down clock signal of the TUNING CONTROL. | | | | | | | | | | | | | | | |
| R33 | 17 | INT1/ BACKUP | Input port for the signal of memory backup. | | | | | | | | | | | | | | | |
| R40~R41 | 27~28 | V SQL1~V SQL2 | Output control signals for VHF squelch level setting. | | | | | | | | | | | | | | | |
| R42~R43 | 29~30 | U SQL1~U SQL2 | Output control signals for UHF squelch level setting. | | | | | | | | | | | | | | | |
| R50 | 18 | SQLS V | Detects a VHF squelch signal. When the signal is "HIGH", the VHF squelch opens. | | | | | | | | | | | | | | | |
| R51 | 19 | SQLS U | Detects a UHF squelch signal. When the signal is "HIGH", the UHF squelch opens. | | | | | | | | | | | | | | | |
| R52 | 20 | UNLK V | Detects a VHF PLL unlock signal. When the signal is "HIGH", the VHF PLL is unlocked. Normally, this port is "LOW". | | | | | | | | | | | | | | | |
| R53 | 21 | UNLK U | Detects a UHF PLL unlock signal. When the signal is "HIGH", the UHF PLL is unlocked. Normally, this port is "LOW". | | | | | | | | | | | | | | | |
| R60 | 22 | CK | Outputs a clock signal for the serial data (DATA). | | | | | | | | | | | | | | | |
| R61 | 23 | DATA | Outputs serial data. | | | | | | | | | | | | | | | |
| R62~R63 | 24~25 | DIM0~DIM1 | For setting the LCD dimmer. Level 3 is the brightest. <table border="1" style="margin-left: 20px;"> <tr> <td>Level</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>DIM0</td> <td>L</td> <td>H</td> <td>L</td> <td>H</td> </tr> <tr> <td>DIM1</td> <td>L</td> <td>L</td> <td>H</td> <td>H</td> </tr> </table> | Level | 0 | 1 | 2 | 3 | DIM0 | L | H | L | H | DIM1 | L | L | H | H |
| Level | 0 | 1 | 2 | 3 | | | | | | | | | | | | | | |
| DIM0 | L | H | L | H | | | | | | | | | | | | | | |
| DIM1 | L | L | H | H | | | | | | | | | | | | | | |
| R70 | 31 | STB TV | Outputs a strobe signal for an optional UT-67 TONE SQUELCH UNIT control on the VHF band. | | | | | | | | | | | | | | | |
| R71 | 32 | STB TU | Outputs a strobe signal for an optional UT-67 TONE SQUELCH UNIT control on the UHF band. | | | | | | | | | | | | | | | |
| R72 | 33 | STB DT | Outputs a strobe signal for an optional UT-55 DTMF ENCODER/ DECODER UNIT control. | | | | | | | | | | | | | | | |
| R73 | 34 | STB SP | Outputs a strobe signal for an optional UT-66 VOICE SYNTHESIZER UNIT control. | | | | | | | | | | | | | | | |
| R81 | 36 | UNIT. S | Becomes "LOW" when an optional UT-66 VOICE SYNTHESIZER UNIT is connected. | | | | | | | | | | | | | | | |
| R82 | 37 | UNIT. T | Becomes "LOW" when an optional UT-55 DTMF ENCODER/ DECODER UNIT is connected. | | | | | | | | | | | | | | | |

| PORT No. | PIN No. | TERMINAL NAME | DESCRIPTION |
|-------------|-----------|---------------|--|
| R83 | 38 | STD | Becomes "HIGH" while DTMF is decoding. |
| R90~ R93 | 39~ 42 | D0~ D3 | DTMF decode data (4 bits). |
| RA0 | 12 | V SRFI | Inputs a resulting signal from the S/RF meter comparator on the VHF band. |
| RA1 | 13 | U SRFI | Inputs a resulting signal from the S/RF meter comparator on the UHF band. |
| RESET | 43 | RESET INPUT | When a "HIGH" signal is applied to this port, either the CPU is initialized or changes to stand-by mode. |
| OSC1 | 45 | | Input port for the oscillator of the CPU clock. |
| OSC2 | 46 | | Output port for the oscillator of the CPU clock. |
| GND | 47 | | Ground |
| VCC | 26 | | Input port for the power source of the CPU. |

• IC5 SHIFT REGISTER (MAIN-A UNIT)

| PORT No. | PIN No. | TERMINAL NAME | DESCRIPTION | | | | | | | | | | | | |
|-----------|-----------|---------------|--|-------|------|-------|-------|------|---|---|---|------|---|---|---|
| Q1 | 4 | VTX | Becomes "HIGH" while transmitting on the VHF band. | | | | | | | | | | | | |
| Q3 | 6 | V1RX | Becomes "HIGH" while receiving on the VHF band. | | | | | | | | | | | | |
| Q4 | 7 | V3RX | Becomes "HIGH" while receiving on the UHF band. | | | | | | | | | | | | |
| Q5~ Q6 | 14, 13 | VLP1~ VLP2 | For setting VHF RF output power. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Power</th> <th>High</th> <th>Low 1</th> <th>Low 2</th> </tr> </thead> <tbody> <tr> <td>VLP1</td> <td>L</td> <td>H</td> <td>L</td> </tr> <tr> <td>VLP2</td> <td>L</td> <td>L</td> <td>H</td> </tr> </tbody> </table> | Power | High | Low 1 | Low 2 | VLP1 | L | H | L | VLP2 | L | L | H |
| Power | High | Low 1 | Low 2 | | | | | | | | | | | | |
| VLP1 | L | H | L | | | | | | | | | | | | |
| VLP2 | L | L | H | | | | | | | | | | | | |

• IC6 SHIFT REGISTER (MAIN-B UNIT)

| PORT No. | PIN No. | TERMINAL NAME | DESCRIPTION | | | | | | | | | | | | |
|-----------|-----------|---------------|--|-------|------|-------|-------|------|---|---|---|------|---|---|---|
| Q1 | 4 | UTX | Becomes "HIGH" while transmitting on the UHF band. | | | | | | | | | | | | |
| Q2 | 5 | U1RX | Becomes "HIGH" while receiving on the VHF band. | | | | | | | | | | | | |
| Q3 | 6 | U3RX | Becomes "HIGH" while receiving on the UHF band. | | | | | | | | | | | | |
| Q6~ Q7 | 13, 12 | ULP1~ ULP2 | For setting UHF RF output power. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Power</th> <th>High</th> <th>Low 1</th> <th>Low 2</th> </tr> </thead> <tbody> <tr> <td>ULP1</td> <td>L</td> <td>H</td> <td>L</td> </tr> <tr> <td>ULP2</td> <td>L</td> <td>L</td> <td>H</td> </tr> </tbody> </table> | Power | High | Low 1 | Low 2 | ULP1 | L | H | L | ULP2 | L | L | H |
| Power | High | Low 1 | Low 2 | | | | | | | | | | | | |
| ULP1 | L | H | L | | | | | | | | | | | | |
| ULP2 | L | L | H | | | | | | | | | | | | |

• IC3 SHIFT REGISTER (AF UNIT)

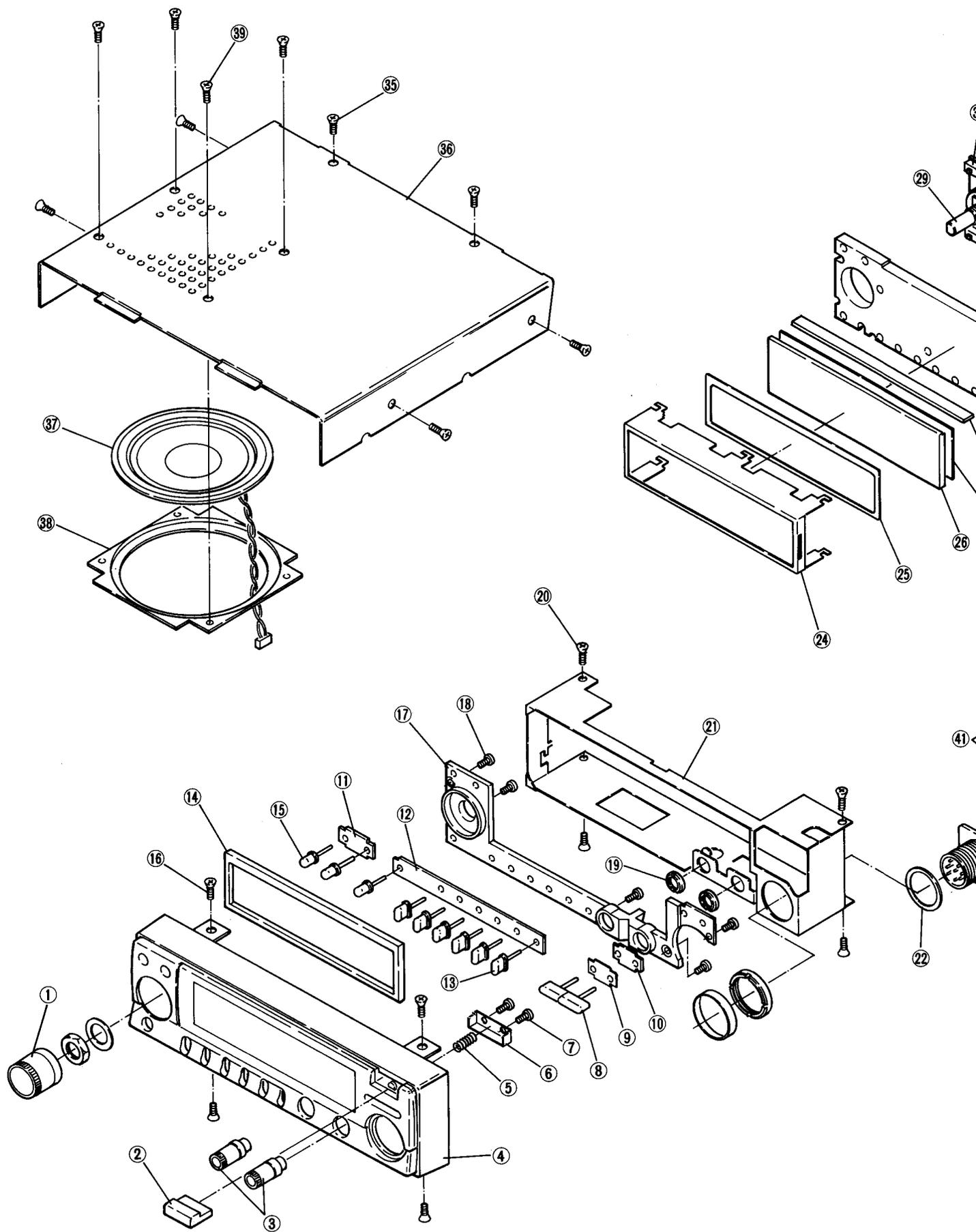
| PORT No. | PIN No. | TERMINAL NAME | DESCRIPTION |
|----------|---------|---------------|--|
| Q1 | 4 | VA MUTE | Becomes "HIGH" when the AF amplifier input is muted on the VHF band. |
| Q2 | 5 | UA MUTE | Becomes "HIGH" when the AF amplifier input is muted on the UHF band. |
| Q3 | 6 | VD MUTE | Becomes "HIGH" when the "DETV" signal is completely muted. |
| Q4 | 7 | UD MUTE | Becomes "HIGH" when the "DETV" signal is completely muted. |
| Q6 | 13 | M MUTE | Becomes "HIGH" when the microphone amplifier input is muted. |
| Q8 | 11 | V MAIN | Becomes "HIGH" when the VHF is main band. |

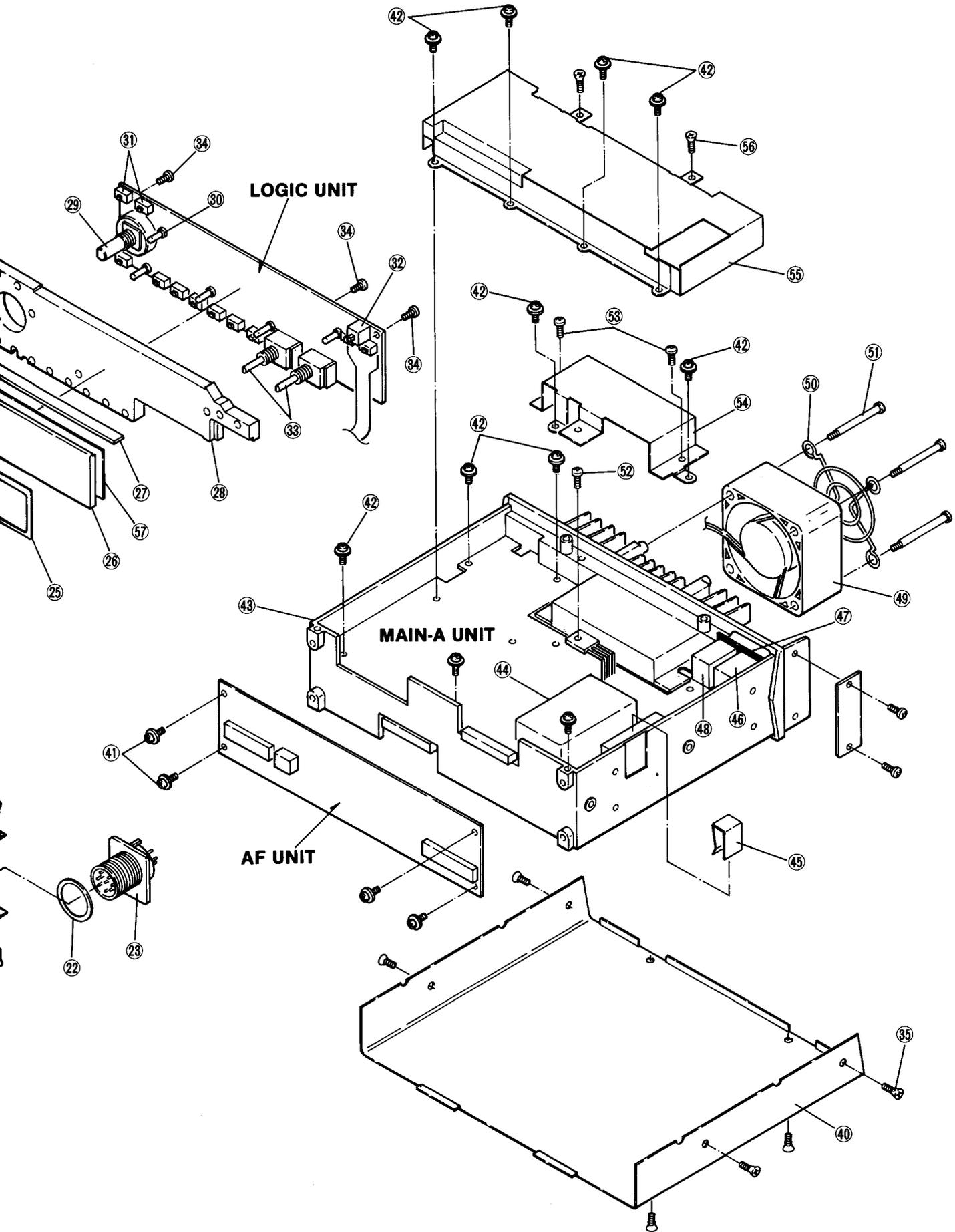
SECTION 4 MECHANICAL PARTS AND DISASSEMBLY

4-1 CHASSIS AND MAIN-A UNITS

| LABEL NUMBER | ORDER NO. | DESCRIPTION | QTY. | LABEL NUMBER | ORDER NO. | DESCRIPTION | QTY. |
|--------------|------------|--|------|--------------|------------|--|------|
| ① | 8610006890 | Knob N169 [TUNING CONTROL] | 1 | ②⑨ | 2250000050 | Switch EVQ-WQGF15 24B [TUNING CONTROL] | 1 |
| ② | 8610006880 | Button K174 [POWER] | 1 | | | | |
| ③ | 8610006900 | Knob N168 [U VOL,V VOL] | 2 | ③⑩ | 8930017650 | Lamp spacer | 5 |
| ④ | 8210006360 | Front panel (A) IC-2410A | 1 | ③① | 2260000580 | Switch SKHLAD035A [V/MHz], [M/CALL], [BAND], etc | 11 |
| | 8210006370 | Front panel (B) IC-2410E | | ③② | 2230000800 | Switch SW-112 (SPPH24) [POWER] | 1 |
| | 8210006380 | Front panel (C) IC-2410H | | ③③ | 7210001970 | Variable resistor RV-244 (RK0971110) 10KA [V VOL], [U VOL] | 2 |
| ⑤ | 8930021000 | Release spring (L) | 1 | ③④ | 8810000010 | Screw PH M2 × 4 | 3 |
| ⑥ | 8930021130 | SW plate | 1 | ③⑤ | 8810006230 | Screw OH M2.6 × 4 ZK | 12 |
| ⑦ | 8810006690 | Screw FH B0 No. 0-3 M1.4 × 4 NI | 2 | ③⑥ | 8110004290 | Top cover | 1 |
| ⑧ | 8610006930 | Button K175 [V SQL, U SQL] | 2 | ③⑦ | 2510000470 | Speaker EAS-6P100SA | 1 |
| ⑨ | 8930021080 | 175 seal | 1 | ③⑧ | 8930020660 | Speaker plate | 1 |
| ⑩ | 8930020870 | A-switch sponge | 1 | ③⑨ | 8810006230 | Screw FH M2.6 × 4 ZK | 4 |
| ⑪ | 8930020880 | B-switch sponge | 1 | ④⑩ | 8110004230 | Bottom cover | 1 |
| ⑫ | 8930020890 | C-switch sponge | 1 | ④① | 8810003960 | Setscrew A M2.6 × 5 | 4 |
| ⑬ | 8610006920 | Button K177 [BAND], [DUP], etc | 6 | ④② | 8810003160 | Setscrew A M3 × 6 | 11 |
| ⑭ | 8930020910 | LCD rubber | 1 | ④③ | 8010010900 | 969 Chassis | 1 |
| ⑮ | 8610006910 | Button K176 | 3 | ④④ | 8510006900 | 969 VCO case | 1 |
| | | [V/MHz], [M/CALL], [MW] | | ④⑤ | 8930020860 | IC holder | 1 |
| ⑯ | 8810002050 | Screw FH M2 × 4 | 4 | ④⑥ | 6450000140 | Connector HSJ0807-01-010 [430 (440) MHz SP] | 1 |
| ⑰ | 8010010860 | Reflector | 1 | ④⑦ | 8930020900 | Jack plate | 1 |
| ⑱ | 8810000980 | Screw PH B0 M2 × 4 | 5 | ④⑧ | 6450000140 | Connector HSJ0807-01-010 [144MHz SP] | 1 |
| ⑲ | 8830000550 | VR nut (E) | 2 | | | | |
| ⑳ | 8810002100 | Screw FH M2.6 × 4 | 4 | ④⑨ | 2710000340 | Fan motor MMF-04A12DM-ROA | 1 |
| ㉑ | 8010011020 | 969 SUB chassis | 1 | ⑤⑩ | 8930021020 | Finger guard FG-40A | 1 |
| ㉒ | 8850001200 | Icom washer (U) | 1 | ⑤① | 8820000650 | 970 screw | 4 |
| ㉓ | 6510000290 | Connector 8S-S-E [MICROPHONE] | 1 | ⑤② | 8810003660 | Icom screw A5 | 1 |
| ㉔ | 8930020690 | 969 LCD holder | 1 | ⑤③ | 8810001910 | Screw PH M3 × 6 NI BS | 2 |
| ㉕ | 8930021060 | Mask seal (black) | 1 | ⑤④ | 8930020680 | V module holder | 1 |
| ⑳ | 5030000760 | LCD FTD-10038AGH [FUNCTION DISPLAY] (black) | 1 | ⑤⑤ | 8510007030 | V PA shield | 1 |
| | 5030000770 | LCD FTD-10789AAH [FUNCTION DISPLAY] (orange) | 1 | ⑤⑥ | 8810002100 | Screw FH M2.6 × 4 | 2 |
| ㉗ | 8930021100 | LCD contact strip SRCN-969-W | 1 | ⑤⑦ | 8930023700 | 970 filter (orange) | 1 |
| ㉘ | 8010010850 | LCD reflector | 1 | | | | |

Screw abbreviations B0 : Self-tapping screw PH: Pan head FH: Flat head BS: Brass NI: Nickel
 ZK: Black OH: Oval countersunk head



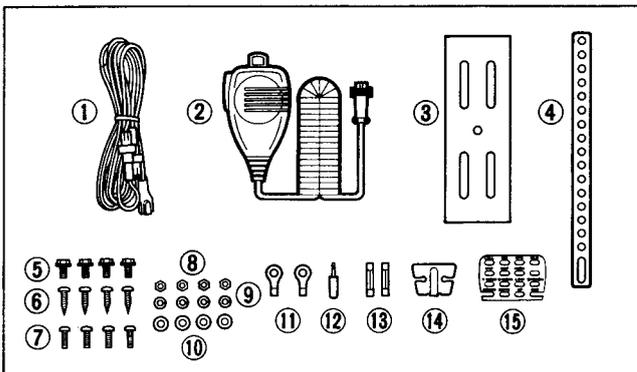


4-2 MAIN-B UNIT

| LABEL NUMBER | ORDER NO. | DESCRIPTION | QTY. |
|--------------|------------|-----------------------------------|------|
| ① | 8810003160 | Setscrew A M3×6 | 12 |
| ② | 8510006900 | 969 VCO case | 1 |
| ③ | 8810003660 | Icom screw A5 | 1 |
| ④ | 8930020670 | U module holder | 1 |
| ⑤ | 8810001910 | Screw PH M3×6 NI BS | 2 |
| ⑥ | 8810002100 | Screw FH M2.6×4 | 2 |
| ⑦ | 8510007040 | U PA shield | 1 |
| ⑧ | 8510006440 | ANT cover | 2 |
| ⑨ | 8810001910 | Screw PH M3×6 NI BS | 4 |
| ⑩ | 6950000040 | M type cap (ZK) | 1 |
| ⑪ | 8900002450 | Cable OPC-223 [ANTENNA CONNECTOR] | 1 |
| ⑫ | 8900002700 | Cable OPC-249 [DC 13.8 V] | 1 |
| ⑬ | 8810001910 | Screw PH M3×6 NI BS | 4 |
| ⑭ | 6510007650 | Pin LLM61T-2.0 (incl. ⑫) | 2 |

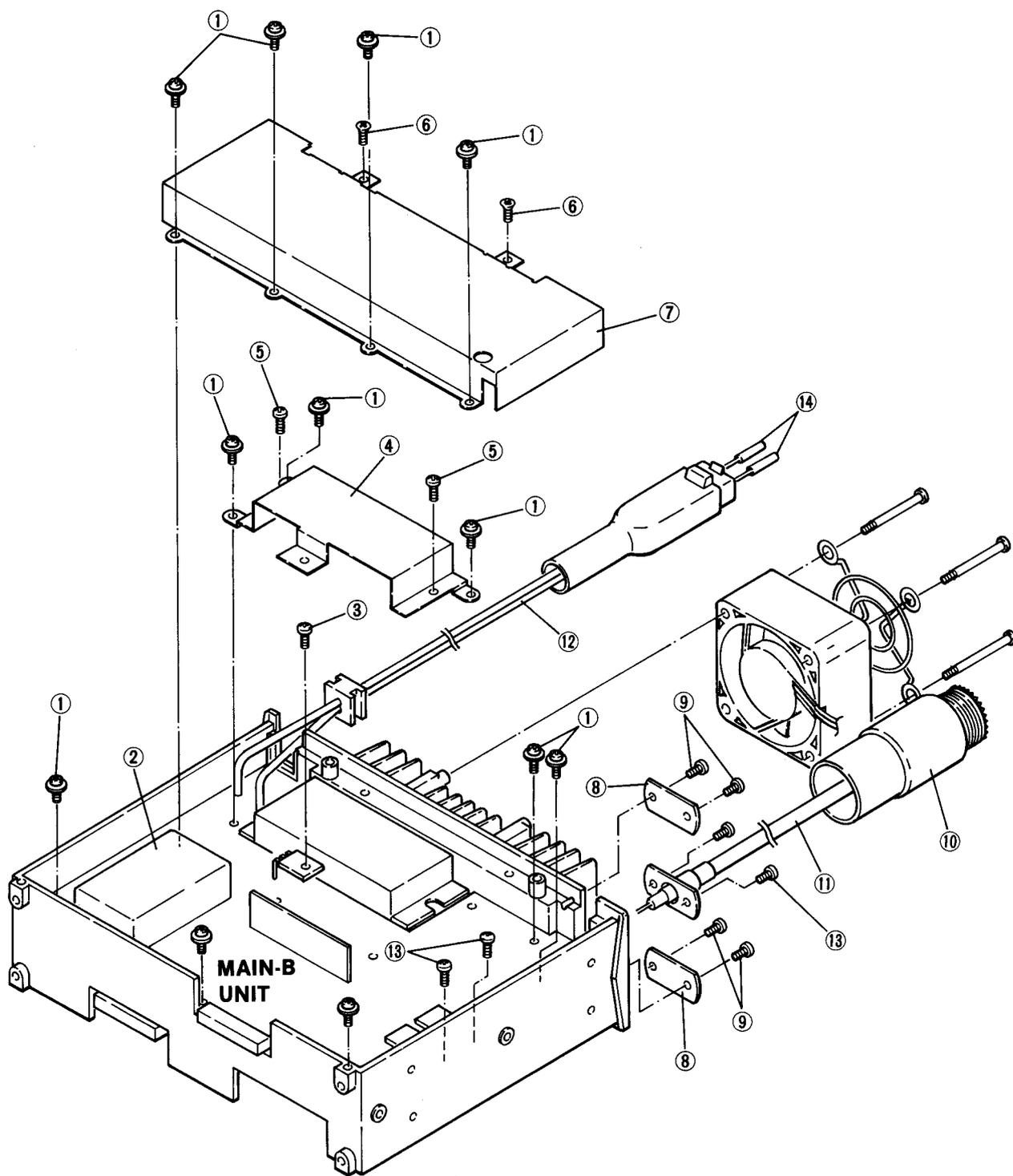
Screw abbreviations PH: Pan head FH: Flat head BS: Brass NI: Nickel ZK: Black

4-3 ACCESSORIES



| LABEL NUMBER | ORDER NO. | DESCRIPTION | QTY. |
|--------------|------------------|---|------|
| ① | Optional product | DC power cable OPC-044B | 1 |
| ② | Optional product | Microphone HM-56 IC-2410A/H (USA, SEA) | 1 |
| | | Microphone HM-58 IC-2410A/H (AUS) | |
| | | Microphone HM-59 IC-2410E/H (EUR, ITA) | |
| ③ | 8010005180 | Mounting bracket (B) ZK | 1 |
| ④ | 8010004060 | Mounting support bracket | 1 |
| ⑤ | 8820000530 | Mounting bolt | 4 |
| ⑥ | 8810000950 | Screw PH A M5×16 | 4 |
| ⑦ | 8810000470 | Screw PH M5×12 (+ -) | 4 |
| ⑧ | 8830000120 | Nut M5 | 4 |
| ⑨ | 8850000440 | Spring washer M5 NI | 4 |
| ⑩ | 8850000150 | Flat washer M5 NI BS | 4 |
| ⑪ | 6510003070 | Cable plug R5.5-8 | 2 |
| ⑫ | 5610000020 | AP313 3.5φ CS plug | 1 |
| ⑬ | 5210000120 | Fuse FGB 15A | 2 |
| ⑭ | 8930007300 | Microphone hanger | 1 |
| ⑮ | 8310022240 | Microphone sheet | 1 |

Screw abbreviations PH: Pan head



SECTION 5 PARTS LIST

[LOGIC UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|---|
| IC1 | 1130003920 | IC | TC4S69F (TE85R) |
| IC2 | 1110001500 | IC | S-8054ALR-LN-T1 |
| IC3 | 1140001810 | IC | HD404019RB02FS |
| IC4 | 1120000430 | IC | LA6393M-TP-T1 |
| IC5 | 1130003920 | IC | TC4S69F (TE85R) |
| Q1 | 1590000410 | Transistor | RN2404 (TE85R) |
| Q2 | 1530000160 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q3 | 1530000160 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q4 | 1530000160 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q5 | 1530000160 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q6 | 1530000160 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q7 | 1510000110 | Transistor | 2SA1182-Y (TE85R) |
| Q8 | 1530000160 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q9 | 1510000690 | Transistor | 2SA1734 (TE12R) |
| Q10 | 1510000690 | Transistor | 2SA1734 (TE12R) |
| Q11 | 1530000160 | Transistor | 2SC2712-Y (TE85RTEM) |
| D1 | 1730000840 | Zener | RD9.1M-T2B2 |
| D2 | 1750000050 | Diode | 1SS193 (TE85R) |
| D3 | 1750000050 | Diode | 1SS193 (TE85R) |
| D4 | 1750000010 | Diode | 1SS181 (TE85R) |
| D6 | 1750000040 | Diode | 1SS190 (TE85R) |
| | 1750000030 | Diode | (EUR,USA,EUR-H,USA-H) 1SS187 (TE85R) |
| | 1750000010 | Diode | (AUS,AUS-H) 1SS181 (TE85R) |
| D7 | 1750000040 | Diode | (SEA,SEA-H) 1SS190 (TE85R) |
| | 1750000030 | Diode | (EUR,EUR-H) 1SS187 (TE85R) |
| D8 | 1710000800 | Diode | (ITA,ITA-H) 1SS254 |
| | | | (ITA,USA,SEA,ITA-H, USA-H,SEA-H) |
| D9 | 1710000800 | Diode | 1SS254 |
| | | | (ITA,USA,SEA,ITA-H, USA-H,SEA-H) |
| D10 | 1710000800 | Diode | 1SS254 |
| | | | (USA,SEA,USA-H,SEA-H) |
| D12 | 1710000800 | Diode | 1SS254 |
| | | | (EUR,ITA,AUS,SEA, EUR-H,ITA-H,AUS-H,SEA-H) |
| D13 | 1750000030 | Diode | 1SS187 (TE85R) |
| | | | (EUR,AUS,EUR-H,AUS-H) |
| D14 | 1750000030 | Diode | 1SS187 (TE85R) |
| | | | (USA,USA-H) |
| | 1750000010 | Diode | 1SS181 (TE85R) |
| | | | (ITA,ITA-H) |
| D15 | 1750000010 | Diode | 1SS181 (TE85R) |
| D16 | 1750000010 | Diode | 1SS181 (TE85R) |
| D17 | 1750000010 | Diode | 1SS181 (TE85R) |
| D18 | 1750000010 | Diode | 1SS181 (TE85R) |
| D19 | 1750000010 | Diode | 1SS181 (TE85R) |
| D20 | 1750000050 | Diode | 1SS193 (TE85R) |
| X1 | 6060000230 | Crystal | FAR-C4CA-04194000-M01 |
| R1 | 7030003200 | Resistor | ERJ3GEYJ 100 V (10 Ω) |
| R2 | 7030003440 | Resistor | ERJ3GEYJ 102 V (1 k Ω) |
| R3 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R4 | 7030003600 | Resistor | ERJ3GEYJ 223 V (22 k Ω) |
| R5 | 7030003580 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R6 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R7 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R8 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R9 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R10 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |

[LOGIC UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------------|------------------------------------|
| R11 | 7030003800 | Resistor | ERJ3GEYJ 105 V (1 M Ω) |
| R12 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R13 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R14 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R15 | 7030003800 | Resistor | ERJ3GEYJ 105 V (1 M Ω) |
| R16 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R17 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R18 | 7030003610 | Resistor | ERJ3GEYJ 273 V (27 k Ω) |
| R19 | 7030003800 | Resistor | ERJ3GEYJ 105 V (1 M Ω) |
| R20 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R21 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R22 | 7030003610 | Resistor | ERJ3GEYJ 273 V (27 k Ω) |
| R23 | 7210001970 | Variable Resistor | RV-244 (RK0971110) 10KA [V VOL] |
| R24 | 7210001970 | Variable Resistor | RV-244 (RK0971110) 10KA [U VOL] |
| R25 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R26 | 7030003440 | Resistor | ERJ3GEYJ 102 V (1 k Ω) |
| R27 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R28 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R29 | 7030003720 | Resistor | ERJ3GEYJ 224 V (220 k Ω) |
| R30 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R31 | 7030001170 | Resistor | MCR50JZHJ 220 Ω (221) |
| R32 | 7030001170 | Resistor | MCR50JZHJ 220 Ω (221) |
| R33 | 7030003500 | Resistor | ERJ3GEYJ 332 V (3.3 k Ω) |
| R34 | 7030003500 | Resistor | ERJ3GEYJ 332 V (3.3 k Ω) |
| R35 | 7030003450 | Resistor | ERJ3GEYJ 122 V (1.2 k Ω) |
| R36 | 7030003650 | Resistor | ERJ3GEYJ 563 V (56 k Ω) |
| R37 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R38 | 7030003600 | Resistor | ERJ3GEYJ 223 V (22 k Ω) |
| R39 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R40 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R41 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R42 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R43 | 7030003760 | Resistor | ERJ3GEYJ 474 V (470 k Ω) |
| R44 | 7030003720 | Resistor | ERJ3GEYJ 224 V (220 k Ω) |
| R45 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R46 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R47 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R48 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R49 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R50 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R51 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R52 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R53 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R54 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R55 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R56 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R57 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R58 | 7030003800 | Resistor | ERJ3GEYJ 105 V (1 M Ω) |
| R59 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R60 | 7030003800 | Resistor | ERJ3GEYJ 105 V (1 M Ω) |
| R61 | 7030003800 | Resistor | ERJ3GEYJ 105 V (1 M Ω) |
| R62 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R63 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R64 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R65 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R66 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R67 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R68 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R69 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R70 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R71 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R72 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R73 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R74 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R75 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R76 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R77 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R78 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R81 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R82 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |

[LOGIC UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-----------------|---------------------------------|
| R83 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 kΩ) |
| R84 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 kΩ) |
| R85 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 kΩ) |
| R86 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 kΩ) |
| R87 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 kΩ) |
| R88 | 7030003510 | Resistor | ERJ3GEYJ 392 V (3.9 kΩ) |
| R89 | 7030003760 | Resistor | ERJ3GEYJ 474 V (470 kΩ) |
| R90 | 7030003760 | Resistor | ERJ3GEYJ 474 V (470 kΩ) |
| R91 | 7030003550 | Resistor | ERJ3GEYJ 822 V (8.2 kΩ) |
| C1 | 4030006860 | Ceramic | C1608 JB 1H 102K-T-A |
| C2 | 4030006860 | Ceramic | C1608 JB 1H 102K-T-A |
| C3 | 4030006860 | Ceramic | C1608 JB 1H 102K-T-A |
| C4 | 4030006860 | Ceramic | C1608 JB 1H 102K-T-A |
| C5 | 4030006860 | Ceramic | C1608 JB 1H 102K-T-A |
| C6 | 4030006860 | Ceramic | C1608 JB 1H 102K-T-A |
| C7 | 4030006860 | Ceramic | C1608 JB 1H 102K-T-A |
| C8 | 4030006830 | Ceramic | C1608 JF 1C 104Z-T-A |
| C9 | 4030006830 | Ceramic | C1608 JF 1C 104Z-T-A |
| C10 | 4030006830 | Ceramic | C1608 JF 1C 104Z-T-A |
| C11 | 4030006830 | Ceramic | C1608 JF 1C 104Z-T-A |
| C12 | 4030006830 | Ceramic | C1608 JF 1C 104Z-T-A |
| C13 | 4030006830 | Ceramic | C1608 JF 1C 104Z-T-A |
| C14 | 4030006830 | Ceramic | C1608 JF 1C 104Z-T-A |
| C15 | 4030006830 | Ceramic | C1608 JF 1C 104Z-T-A |
| C16 | 4030006830 | Ceramic | C1608 JF 1C 104Z-T-A |
| C17 | 4030006830 | Ceramic | C1608 JF 1C 104Z-T-A |
| C18 | 4030006830 | Ceramic | C1608 JF 1C 104Z-T-A |
| C19 | 4510004540 | Electrolytic | ECEV0JA470P |
| DS1 | 5080000150 | LED | HRS-7219A |
| DS2 | 5080000150 | LED | HRS-7219A |
| DS3 | 5080000150 | LED | HRS-7219A |
| DS4 | 5080000150 | LED | HRS-7219A |
| DS5 | 5080000150 | LED | HRS-7219A |
| S1 | 2230000800 | Switch | SW-112 (SPPH24) [POWER] |
| S2 | 2260000580 | Switch | SKHLAD035A [V/MHz] |
| S3 | 2260000580 | Switch | SKHLAD035A [M/CALL] |
| S4 | 2260000580 | Switch | SKHLAD035A [BAND] |
| S5 | 2260000580 | Switch | SKHLAD035A [DUP] |
| S6 | 2260000580 | Switch | SKHLAD035A [T/T.SQL] |
| S7 | 2260000580 | Switch | SKHLAD035A [PRG/CS] |
| S8 | 2260000580 | Switch | SKHLAD035A [HI/LOW] |
| S9 | 2260000580 | Switch | SKHLAD035A [SET] |
| S10 | 2260000580 | Switch | SKHLAD035A [V SQL] |
| S11 | 2260000580 | Switch | SKHLAD035A [U SQL] |
| S12 | 2260000580 | Switch | SKHLAD035A [MW] |
| S13 | 2250000050 | Switch | EVQ-WQGF15 24B [TUNING CONTROL] |
| BT1 | 3020000100 | Lithium Battery | CR2025-1T21 |
| EP2 | 0910030084 | P.C. Board | B 3027D (LOGIC) |
| EP3 | 0910006331 | F.P.C. Board | B 792A |
| EP7 | 0910029991 | P.C. Board | B 3047A (VR) |
| EP8 | 0910029991 | P.C. Board | B 3047A (VR) |

[DISPLAY UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------------|--|
| IC1 | 1130004190 | IC | LC7582A |
| IC2 | 1130004190 | IC | LC7582A |
| R1 | 7030003650 | Resistor | ERJ3GEYJ 563 V (56 kΩ) |
| R2 | 7030003650 | Resistor | ERJ3GEYJ 563 V (56 kΩ) |
| R3 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 kΩ) |
| R4 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 kΩ) |
| R5 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 kΩ) |
| R6 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 kΩ) |
| R7 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 kΩ) |
| C1 | 4030006830 | Ceramic | C1608 SL 1H 331J-T-A |
| C2 | 4030006830 | Ceramic | C1608 SL 1H 331J-T-A |
| DS1 | 5030000760 | LCD | FTD-10038AGH [FUNCTION DISPLAY] (black) |
| | 5030000770 | LCD | FTD-10789AAH [FUNCTION DISPLAY] (orange) |
| EP2 | 8930021100 | LCD contact strip | SRCN-969-W |
| EP1 | 0910029991 | P.C. Board | B 3026A (DISPLAY) |

[AF UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|-------------------------|
| IC1 | 1110000960 | IC | NJM4558M (T1) |
| IC2 | 1130004730 | IC | BU4068BF-T1 |
| IC3 | 1130005810 | IC | BU4094BF-T1 |
| IC4 | 1130003760 | IC | TC4S81F (TE85R) |
| Q1 | 1530001950 | Transistor | 2SC2712-GR (TE85R) |
| Q2 | 1590000380 | FET | 2SJ106-Y (TE85R) |
| Q3 | 1590000380 | FET | 2SJ106-Y (TE85R) |
| Q4 | 1590000420 | Transistor | RN1404 (TE85R) |
| Q5 | 1530001950 | Transistor | 2SC2712-GR (TE85R) |
| Q6 | 1530001950 | Transistor | 2SC2712-GR (TE85R) |
| Q7 | 1590000380 | FET | 2SJ106-Y (TE85R) |
| Q8 | 1590000380 | FET | 2SJ106-Y (TE85R) |
| Q9 | 1590000420 | Transistor | RN1404 (TE85R) |
| Q10 | 1590000380 | FET | 2SJ106-Y (TE85R) |
| Q11 | 1590000420 | Transistor | RN1404 (TE85R) |
| Q12 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q13 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q14 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q15 | 1530002550 | Transistor | 2SC3326-B (TE85R) |
| Q16 | 1530002550 | Transistor | 2SC3326-B (TE85R) |
| Q17 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q18 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q19 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q20 | 1530002550 | Transistor | 2SC3326-B (TE85R) |
| Q21 | 1530002550 | Transistor | 2SC3326-B (TE85R) |
| Q22 | 1530002550 | Transistor | 2SC3326-B (TE85R) |
| Q23 | 1530002550 | Transistor | 2SC3326-B (TE85R) |
| Q24 | 1530002550 | Transistor | 2SC3326-B (TE85R) |
| D1 | 1750000070 | Diode | 1SS226 (TE85R) |
| R1 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R2 | 7030003440 | Resistor | ERJ3GEYJ 102 V (1 kΩ) |
| R3 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 kΩ) |
| R4 | 7030003620 | Resistor | ERJ3GEYJ 333 V (33 kΩ) |
| R5 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 kΩ) |
| R6 | 7030003440 | Resistor | ERJ3GEYJ 102 V (1 kΩ) |

[AF UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION |
|----------|------------|---|
| R7 | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) (USA,USA-H) |
| | 7030003470 | Resistor ERJ3GEYJ 182 V (1.8 k Ω) (EUR,ITA,AUS,SEA,EUR-H,ITA-H,AUS-H,SEA-H) |
| R8 | 7030003450 | Resistor ERJ3GEYJ 122 V (1.2 k Ω) (USA,USA-H) |
| | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) (EUR,ITA,AUS,SEA,EUR-H,ITA-H,AUS-H,SEA-H) |
| R9 | 7030003570 | Resistor ERJ3GEYJ 123 V (12 k Ω) |
| R10 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R11 | 7030003840 | Resistor ERJ3GEYJ 225 V (2.2 M Ω) |
| R12 | 7030003840 | Resistor ERJ3GEYJ 225 V (2.2 M Ω) |
| R13 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R14 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R15 | 4810001370 | Trimmer EVML1GA00B24 20KB |
| R16 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R17 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R18 | 7030003320 | Resistor ERJ3GEYJ 101 V (100 Ω) |
| R19 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R20 | 7030003650 | Resistor ERJ3GEYJ 563 V (56 k Ω) |
| R21 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R22 | 7030003600 | Resistor ERJ3GEYJ 223 V (22 k Ω) |
| R23 | 7030003420 | Resistor ERJ3GEYJ 681 V (680 Ω) |
| R24 | 7030003280 | Resistor ERJ3GEYJ 470 V (47 Ω) |
| R25 | 7030003390 | Resistor ERJ3GEYJ 391 V (390 Ω) |
| R26 | 7030003320 | Resistor ERJ3GEYJ 101 V (100 Ω) |
| R27 | 7030003740 | Resistor ERJ3GEYJ 334 V (330 k Ω) |
| R28 | 7030003750 | Resistor ERJ3GEYJ 394 V (390 k Ω) |
| R29 | 7030003790 | Resistor ERJ3GEYJ 824 V (820 k Ω) |
| R30 | 7030003710 | Resistor ERJ3GEYJ 184 V (180 k Ω) |
| R31 | 7030003550 | Resistor ERJ3GEYJ 822 V (8.2 k Ω) |
| R32 | 7030003570 | Resistor ERJ3GEYJ 123 V (12 k Ω) |
| R33 | 7030003720 | Resistor ERJ3GEYJ 224 V (220 k Ω) |
| R34 | 7030003670 | Resistor ERJ3GEYJ 823 V (82 k Ω) |
| R35 | 7030003670 | Resistor ERJ3GEYJ 823 V (82 k Ω) |
| R36 | 7030003670 | Resistor ERJ3GEYJ 823 V (82 k Ω) |
| R39 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R40 | 7030003600 | Resistor ERJ3GEYJ 223 V (22 k Ω) |
| R41 | 7030003840 | Resistor ERJ3GEYJ 225 V (2.2 M Ω) |
| R42 | 7030003660 | Resistor ERJ3GEYJ 683 V (68 k Ω) |
| R43 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R44 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R45 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R46 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R47 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R48 | 7030003450 | Resistor ERJ3GEYJ 122 V (1.2 k Ω) |
| R49 | 7030003440 | Resistor ERJ3GEYJ 102 V (1 k Ω) |
| R50 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R51 | 7030003600 | Resistor ERJ3GEYJ 223 V (22 k Ω) |
| R52 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R53 | 7030003630 | Resistor ERJ3GEYJ 393 V (39 k Ω) |
| R54 | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) |
| R55 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R56 | 7030003740 | Resistor ERJ3GEYJ 334 V (330 k Ω) |
| R57 | 7030003280 | Resistor ERJ3GEYJ 470 V (47 Ω) |
| R58 | 7030003480 | Resistor ERJ3GEYJ 222 V (2.2 k Ω) |
| R59 | 7030003760 | Resistor ERJ3GEYJ 474 V (470 k Ω) |
| R60 | 7030003480 | Resistor ERJ3GEYJ 222 V (2.2 k Ω) |
| R61 | 7030003380 | Resistor ERJ3GEYJ 331 V (330 Ω) |
| R62 | 7030003580 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R63 | 7030003600 | Resistor ERJ3GEYJ 223 V (22 k Ω) |
| R64 | 7030003760 | Resistor ERJ3GEYJ 474 V (470 k Ω) |
| R65 | 7030003640 | Resistor ERJ3GEYJ 473 V (47 k Ω) |
| R66 | 7030003480 | Resistor ERJ3GEYJ 222 V (2.2 k Ω) |
| R67 | 7030003440 | Resistor ERJ3GEYJ 102 V (1 k Ω) |
| R68 | 7030003620 | Resistor ERJ3GEYJ 333 V (33 k Ω) |
| R69 | 7030003580 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R70 | 7030003620 | Resistor ERJ3GEYJ 333 V (33 k Ω) |
| R71 | 7030003580 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R72 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R73 | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) |
| R74 | 7030003740 | Resistor ERJ3GEYJ 334 V (330 k Ω) |
| R75 | 7030003480 | Resistor ERJ3GEYJ 222 V (2.2 k Ω) |
| R76 | 7030003280 | Resistor ERJ3GEYJ 470 V (47 Ω) |
| R77 | 7030003440 | Resistor ERJ3GEYJ 102 V (1 k Ω) |
| R78 | 7030003580 | Resistor ERJ3GEYJ 103 V (10 k Ω) |

[AF UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION |
|----------|------------|---|
| R79 | 7030003600 | Resistor ERJ3GEYJ 223 V (22 k Ω) |
| R80 | 7030003630 | Resistor ERJ3GEYJ 393 V (39 k Ω) |
| R81 | 7030003760 | Resistor ERJ3GEYJ 474 V (470 k Ω) |
| R82 | 7030003480 | Resistor ERJ3GEYJ 222 V (2.2 k Ω) |
| R83 | 7030003380 | Resistor ERJ3GEYJ 331 V (330 Ω) |
| R84 | 7030003600 | Resistor ERJ3GEYJ 223 V (22 k Ω) |
| R85 | 7030003760 | Resistor ERJ3GEYJ 474 V (470 k Ω) |
| R86 | 7030003640 | Resistor ERJ3GEYJ 473 V (47 k Ω) |
| R87 | 7030003480 | Resistor ERJ3GEYJ 222 V (2.2 k Ω) |
| R88 | 7030003440 | Resistor ERJ3GEYJ 102 V (1 k Ω) |
| R89 | 7030003500 | Resistor ERJ3GEYJ 332 V (3.3 k Ω) |
| R90 | 7030003440 | Resistor ERJ3GEYJ 102 V (1 k Ω) |
| R91 | 7030003440 | Resistor ERJ3GEYJ 102 V (1 k Ω) |
| R92 | 7030003500 | Resistor ERJ3GEYJ 332 V (3.3 k Ω) |
| R93 | 7030003600 | Resistor ERJ3GEYJ 223 V (22 k Ω) |
| R94 | 7030003600 | Resistor ERJ3GEYJ 223 V (22 k Ω) |
| R95 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R96 | 7030003640 | Resistor ERJ3GEYJ 473 V (47 k Ω) |
| R97 | 7030003640 | Resistor ERJ3GEYJ 473 V (47 k Ω) |
| R98 | 7030003640 | Resistor ERJ3GEYJ 473 V (47 k Ω) |
| R99 | 7030003640 | Resistor ERJ3GEYJ 473 V (47 k Ω) |
| R100 | 7030003620 | Resistor ERJ3GEYJ 333 V (33 k Ω) |
| R101 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R102 | 7030003550 | Resistor ERJ3GEYJ 822 V (8.2 k Ω) |
| R103 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R104 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R105 | 7030003760 | Resistor ERJ3GEYJ 474 V (470 k Ω) |
| R106 | 7030003760 | Resistor ERJ3GEYJ 474 V (470 k Ω) |
| R107 | 7030003760 | Resistor ERJ3GEYJ 474 V (470 k Ω) |
| R108 | 7030003760 | Resistor ERJ3GEYJ 474 V (470 k Ω) |
| R109 | 7030003760 | Resistor ERJ3GEYJ 474 V (470 k Ω) |
| R110 | 7030003760 | Resistor ERJ3GEYJ 474 V (470 k Ω) |
| C1 | 4510001370 | Electrolytic 16 MS5 47 μ F |
| C2 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C3 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C4 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C5 | 4030008680 | Ceramic C2012 JF 1C 105Z-T-A |
| C6 | 4030008680 | Ceramic C2012 JF 1C 105Z-T-A |
| C7 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C8 | 4030005090 | Ceramic C2012 JB 1H 223K-T-A |
| C9 | 4030005110 | Ceramic C2012 JB 1E 473K-T-A |
| C10 | 4030005110 | Ceramic C2012 JB 1E 473K-T-A |
| C11 | 4030006870 | Ceramic C1608 JB 1H 222K-T-A |
| C12 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C13 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C14 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C15 | 4510001350 | Electrolytic 16 MS5 10 μ F |
| C16 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C17 | 4030008660 | Ceramic C2012 JB 1H 333K-T-A |
| C18 | 4510001470 | Electrolytic 50 MS5 1 μ F |
| C19 | 4030007020 | Ceramic C1608 CH 1H 120J-T-A |
| C20 | 4030008680 | Ceramic C2012 JF 1C 105Z-T-A |
| C21 | 4030008680 | Ceramic C2012 SL 1H 821J-T-A |
| C22 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C23 | 4030008650 | Ceramic C1608 JB 1H 332K-T-A |
| C24 | 4030006740 | Ceramic C1608 SL 1H 820J-T-A |
| C25 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C26 | 4510001370 | Electrolytic 16 MS5 47 μ F |
| C27 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C28 | 4550000320 | Tantalum DN 1V 0R1M |
| C29 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C30 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C31 | 4030008680 | Ceramic C2012 JF 1C 105Z-T-A |
| C32 | 4030006900 | Ceramic C1608 JB 1E 103K-T-A |
| C33 | 4030006900 | Ceramic C1608 JB 1E 103K-T-A |
| C34 | 4030006470 | Ceramic C2012 JB 1H 153K-T-A |
| C35 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C36 | 4030008660 | Ceramic C2012 JB 1H 333K-T-A |
| C37 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C38 | 4030006470 | Ceramic C2012 JB 1H 153K-T-A |
| C39 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C40 | 4030008670 | Ceramic C2012 JB 1H 562K-T-A |
| C41 | 4030008670 | Ceramic C2012 JB 1H 562K-T-A |
| C42 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C43 | 4030008680 | Ceramic C2012 JF 1C 105Z-T-A |
| C44 | 4550000270 | Tantalum TESVA 1E 474M1-8L |

[AF UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|----------------------|
| C45 | 4550000270 | Tantalum | TESVA 1E 474M1-8L |
| C46 | 4030008630 | Ceramic | C1808 JF 1C 104Z-T-A |
| C47 | 4030008630 | Ceramic | C1808 JF 1C 104Z-T-A |
| C48 | 4030008600 | Ceramic | C1808 JB 1E 103K-T-A |
| C49 | 4030008900 | Ceramic | C1808 JB 1E 103K-T-A |
| C50 | 4030008470 | Ceramic | C2012 JB 1H 153K-T-A |
| C51 | 4030008660 | Ceramic | C2012 JB 1H 333K-T-A |
| C52 | 4030008470 | Ceramic | C2012 JB 1H 153K-T-A |
| C53 | 4030008630 | Ceramic | C1808 JF 1C 104Z-T-A |
| C54 | 4030008670 | Ceramic | C2012 JB 1H 562K-T-A |
| C55 | 4030008670 | Ceramic | C2012 JB 1H 562K-T-A |
| C56 | 4030008630 | Ceramic | C1808 JF 1C 104Z-T-A |
| C57 | 4030008680 | Ceramic | C2012 JF 1C 105Z-T-A |
| C58 | 4030008650 | Ceramic | C1808 JB 1H 471K-T-A |
| C59 | 4030008650 | Ceramic | C1808 JB 1H 471K-T-A |
| C60 | 4030008650 | Ceramic | C1808 JB 1H 471K-T-A |
| C61 | 4030008650 | Ceramic | C1808 JB 1H 471K-T-A |
| C62 | 4550000270 | Tantalum | TESVA 1E 474M1-8L |
| C63 | 4030008630 | Ceramic | C1808 JF 1C 104Z-T-A |
| C64 | 4030008630 | Ceramic | C1808 JF 1C 104Z-T-A |
| C65 | 4030008680 | Ceramic | C2012 JF 1C 105Z-T-A |
| C66 | 4030008680 | Ceramic | C2012 JF 1C 105Z-T-A |
| C67 | 4030008680 | Ceramic | C2012 JF 1C 105Z-T-A |
| C68 | 4030008680 | Ceramic | C2012 JF 1C 105Z-T-A |
| C69 | 4550002950 | Tantalum | TESVA 0J 335M1-8L |
| EP1 | 0910030233 | P.C. Board | B 3028C (AF) |

[MAIN-A UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|----------------|--|
| Q12 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q13 | 1590000380 | FET | 2SJ108-Y (TE85R) |
| Q14 | 1530002030 | Transistor | 2SC3772-3-TA |
| Q15 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q16 | 1530001950 | Transistor | 2SC2712-GR (TE85R) |
| Q17 | 1530001950 | Transistor | 2SC2712-GR (TE85R) |
| Q18 | 1590000830 | Transistor | FMG2 T149 |
| Q19 | 1580000350 | FET | 3SK140-Y (TE85R) |
| Q20 | 1590000420 | Transistor | RN1404 (TE85R) |
| Q21 | 1580000360 | FET | 3SK177-T2B U73 |
| Q22 | 1530002030 | Transistor | 2SC3772-3-TA |
| Q23 | 1580000360 | FET | 3SK177-T2B U73 |
| Q24 | 1590000690 | Transistor | IMD6 T108 |
| Q25 | 1590000460 | Transistor | RN1402 (TE85R) |
| Q26 | 1590000460 | Transistor | RN1402 (TE85R) |
| Q27 | 1590000460 | Transistor | RN1402 (TE85R) |
| Q28 | 1590000460 | Transistor | RN1402 (TE85R) |
| Q29 | 1590001000 | Transistor | RN2427 (TE85R) |
| Q30 | 1590001000 | Transistor | RN2427 (TE85R) |
| Q31 | 1590001000 | Transistor | RN2427 (TE85R) |
| Q32 | 1590001000 | Transistor | RN2427 (TE85R) |
| Q33 | 1590000460 | Transistor | RN1402 (TE85R) |
| Q34 | 1580000350 | FET | 3SK140-Y (TE85R) |
| Q35 | 1590000420 | Transistor | RN1404 (TE85R) |
| Q36 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q37 | 1520000200 | Transistor | 2SB798-T2 DK |
| D2 | 1750000050 | Diode | 1SS193 (TE85R) |
| D3 | 1750000020 | Diode | 1SS184 (TE85R) |
| D4 | 1750000080 | Diode | 1SS153-T2 |
| D5 | 1750000080 | Diode | 1SS153-T2 |
| D6 | 1750000050 | Diode | 1SS193 (TE85R) |
| D7 | 1790000490 | Diode | HSM88AS-TR |
| D8 | 1790000490 | Diode | HSM88AS-TR |
| D9 | 1710000290 | Diode | MI308 (EUR,ITA,USA,AUS,SEA) MI407 (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| D10 | 1730000730 | Zener | RD8.2M-T2B2 |
| D11 | 1750000070 | Diode | 1SS226 (TE85R) |
| D12 | 1790000490 | Diode | HSM88AS-TR |
| D13 | 1790000450 | Diode | MA862 (TX) |
| D14 | 1720000220 | Varicap | 1SV166-T2B |
| D15 | 1720000220 | Varicap | 1SV166-T2B |
| D16 | 1720000220 | Varicap | 1SV166-T2B |
| D17 | 1720000220 | Varicap | 1SV166-T2B |
| D18 | 1790000450 | Diode | MA862 (TX) |
| D19 | 1790000450 | Diode | MA862 (TX) |
| D20 | 1750000070 | Diode | 1SS226 (TE85R) |
| D21 | 1710000290 | Diode | MI308 |
| D22 | 1710000290 | Diode | MI308 |
| D23 | 1750000080 | Diode | 1SS153-T2 |
| D24 | 1750000050 | Diode | 1SS193 (TE85R) |
| D25 | 1750000010 | Diode | 1SS181 (TE85R) |
| D26 | 1750000010 | Diode | 1SS181 (TE85R) |
| D27 | 1750000050 | Diode | 1SS193 (TE85R) |
| D28 | 1750000020 | Diode | 1SS184 (TE85R) |
| D29 | 1730000410 | Zener | RD5.1M-T2B2 |
| D30 | 1730000730 | Zener | RD6.2M-T2B2 |
| X1 | 6070000080 | Discriminator | CDBM455C16 |
| X2 | 6050003010 | Crystal | CR-166 |
| FI1 | 2020000550 | Ceramic Filter | CFUM455E |
| FI2 | 2010000580 | Filter | 17M15B (FL-78) |
| L1 | 6200000830 | Coil | LQH 3N 3R3M |
| L2 | 6200000770 | Coil | LQN 2A 69NM |
| L3 | 6200000100 | Coil | LQN 2A 22NM |
| L4 | 6200000120 | Coil | LQN 2A 39NM |
| L5 | 6200000130 | Coil | LQN 2A 47NM |
| L6 | 6200000891 | Coil | NL 322522T-R15M-3 |

[MAIN-A UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|--|
| IC1 | 1130004200 | IC | TC4S66F (TE85R) |
| IC2 | 1150000920 | IC | SC1124 (EUR,ITA, USA,AUS,SEA) |
| | 1150000910 | IC | SC1125 (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| IC3 | 1110001240 | IC | μPC358G2-T1 |
| IC4 | 1110002200 | IC | MC3372MR |
| IC5 | 1130005810 | IC | BU4094BF-T1 |
| IC6 | 1110001971 | IC | μPC1676G-T1 |
| IC7 | 1110002540 | IC | LA4445 |
| Q1 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q2 | 1510000690 | Transistor | 2SA1734 (TE12R) |
| Q3 | 1530002050 | Transistor | 2SC3661-TA |
| Q4 | 1560000360 | FET | 2SK209-Y (TE85R) |
| Q5 | 1510000110 | Transistor | 2SA1162-Y (TE85R) |
| Q6 | 1530002030 | Transistor | 2SC3772-3-TA |
| Q7 | 1530002030 | Transistor | 2SC3772-3-TA |
| Q8 | 1530000840 | Transistor | 2SC2407 (A) (EUR,ITA,USA,AUS,SEA) |
| Q8 | 1590000390 | Transistor | MRF559 (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| Q9 | 1590000420 | Transistor | RN1404 (TE85R) |
| Q10 | 1590000420 | Transistor | RN1404 (TE85R) |
| Q11 | 1520000380 | Transistor | 2SB1143 S (EUR,ITA,USA,AUS,SEA) |
| | 1520000390 | Transistor | 2SB1135 R (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |

[MAIN-A UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|---|
| L7 | 6110001610 | Coil | LA - 244 (EUR,ITA,USA,AUS,SEA) |
| | 6110001680 | Coil | LA - 254 (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| L8 | 6110001530 | Coil | LA - 233 (EUR,ITA,USA,AUS,SEA) |
| | 6110001550 | Coil | LA - 235 (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| L9 | 6110001540 | Coil | LA - 234 |
| L10 | 6170000180 | Coil | LW - 19 |
| L11 | 6110001610 | Coil | LA - 244 |
| L12 | 6110001620 | Coil | LA - 245 |
| L13 | 6110001610 | Coil | LA - 244 |
| L14 | 6200000020 | Coil | LQH 3N 101K-S |
| L15 | 6150003150 | Coil | LS - 331 |
| L16 | 6150003150 | Coil | LS - 331 |
| L17 | 6150002810 | Coil | LS - 291 |
| L18 | 6150002810 | Coil | LS - 291 |
| L19 | 6150002810 | Coil | LS - 291 |
| L20 | 6150002810 | Coil | LS - 291 |
| L21 | 6110001550 | Coil | LA - 235 |
| L22 | 6110001550 | Coil | LA - 235 |
| L23 | 6150003120 | Coil | LS - 321 |
| L24 | 6150003120 | Coil | LS - 321 |
| L25 | 6150003120 | Coil | LS - 321 |
| L26 | 6150003120 | Coil | LS - 321 |
| L27 | 6200000100 | Coil | LQN 2A 22NM |
| L28 | 6200000100 | Coil | LQN 2A 22NM |
| R1 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R2 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R3 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R4 | 7030003580 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R5 | 4610001110 | Trimmer | EVMLGGA00B15 (104) |
| R6 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R7 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R8 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| R9 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| R10 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R11 | 7030003280 | Resistor | ERJ3GEYJ 470 V (47 Ω) |
| R12 | 7030003800 | Resistor | ERJ3GEYJ 105 V (1 M Ω) |
| R13 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R14 | 7030003420 | Resistor | ERJ3GEYJ 681 V (680 Ω) |
| R15 | 7030003280 | Resistor | ERJ3GEYJ 470 V (47 Ω) |
| R16 | 7030003720 | Resistor | ERJ3GEYJ 224 V (220 k Ω) |
| R17 | 7030003200 | Resistor | ERJ3GEYJ 100 V (10 Ω) |
| R18 | 7030003700 | Resistor | ERJ3GEYJ 154 V (150 k Ω) |
| R19 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R20 | 7030003440 | Resistor | ERJ3GEYJ 102 V (1 k Ω) |
| R21 | 7030003280 | Resistor | ERJ3GEYJ 470 V (47 Ω) |
| R22 | 7030003550 | Resistor | ERJ3GEYJ 822 V (8.2 k Ω) |
| R23 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R24 | 7030003500 | Resistor | ERJ3GEYJ 332 V (3.3 k Ω) |
| R25 | 7030003370 | Resistor | ERJ3GEYJ 271 V (270 Ω) |
| R26 | 7030003440 | Resistor | ERJ3GEYJ 102 V (1 k Ω) |
| R27 | 7030003230 | Resistor | ERJ3GEYJ 180 V (18 Ω) |
| R28 | 7030003370 | Resistor | ERJ3GEYJ 271 V (270 Ω) |
| R29 | 7030003440 | Resistor | ERJ3GEYJ 102 V (1 k Ω) |
| R30 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R31 | 4610001100 | Trimmer | EVMLGGA00B34 (303) |
| R32 | 7030003570 | Resistor | ERJ3GEYJ 123 V (12 k Ω) |
| R33 | 7030003490 | Resistor | ERJ3GEYJ 272 V (2.7 k Ω) |
| R34 | 7030003280 | Resistor | ERJ3GEYJ 470 V (47 Ω) |
| R37 | 7030003450 | Resistor | ERJ3GEYJ 122 V (1.2 k Ω) (EUR,ITA,USA,AUS,SEA) |
| | 7030003490 | Resistor | ERJ3GEYJ 272 V (2.7 k Ω) (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| R38 | 7030001010 | Resistor | MCR50JZHJ 10 Ω (100) |
| R39 | 7030003550 | Resistor | ERJ3GEYJ 822 V (8.2 k Ω) (EUR,ITA,USA,AUS,SEA) |
| | 7030003530 | Resistor | ERJ3GEYJ 562 V (5.6 k Ω) (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| R40 | 7030001150 | Resistor | MCR50JZHJ 150 Ω (151) |

[MAIN-A UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|---|
| R41 | 7030001190 | Resistor | MCR50JZHJ 330 Ω (331) |
| R42 | 7030003460 | Resistor | ERJ3GEYJ 152 V (1.5 k Ω) (EUR,ITA,USA,AUS,SEA) |
| | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| R43 | 7030003340 | Resistor | ERJ3GEYJ 151 V (150 Ω) |
| R46 | 7030003460 | Resistor | ERJ3GEYJ 152 V (1.5 k Ω) (EUR,ITA,USA,AUS,SEA) |
| | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| R47 | 7030003340 | Resistor | ERJ3GEYJ 151 V (150 Ω) |
| R48 | 7030003620 | Resistor | ERJ3GEYJ 333 V (33 k Ω) |
| R49 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R50 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R51 | 7030003790 | Resistor | ERJ3GEYJ 824 V (820 k Ω) |
| R52 | 7030001130 | Resistor | MCR50JZHJ 100 Ω (101) |
| R53 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R55 | 7030003600 | Resistor | ERJ3GEYJ 223 V (22 k Ω) |
| R56 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R57 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R58 | 7030003570 | Resistor | ERJ3GEYJ 123 V (12 k Ω) |
| R59 | 7030003720 | Resistor | ERJ3GEYJ 224 V (220 k Ω) |
| R60 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R61 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R62 | 7030003530 | Resistor | ERJ3GEYJ 562 V (5.6 k Ω) |
| R63 | 7030003470 | Resistor | ERJ3GEYJ 182 V (1.8 k Ω) |
| R64 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R65 | 7030003600 | Resistor | ERJ3GEYJ 223 V (22 k Ω) |
| R66 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R67 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R68 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| R69 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R70 | 7030003760 | Resistor | ERJ3GEYJ 474 V (470 k Ω) |
| R72 | 7030003430 | Resistor | ERJ3GEYJ 821 V (820 Ω) |
| R73 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R74 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R75 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| R76 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R77 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R78 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R79 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R80 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R81 | 4610001110 | Trimmer | EVMLGGA00B15 (104) |
| R82 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R83 | 7030003840 | Resistor | ERJ3GEYJ 225 V (2.2 M Ω) |
| R84 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R85 | 7030003700 | Resistor | ERJ3GEYJ 154 V (150 k Ω) |
| R86 | 7030003490 | Resistor | ERJ3GEYJ 272 V (2.7 k Ω) |
| R87 | 7030003470 | Resistor | ERJ3GEYJ 182 V (1.8 k Ω) |
| R89 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R90 | 7030003370 | Resistor | ERJ3GEYJ 271 V (270 Ω) |
| R91 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R92 | 7030003550 | Resistor | ERJ3GEYJ 822 V (8.2 k Ω) |
| R93 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R95 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R96 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R97 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R98 | 7030003280 | Resistor | ERJ3GEYJ 470 V (47 Ω) |
| R99 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R100 | 7030003200 | Resistor | ERJ3GEYJ 100 V (10 Ω) |
| R101 | 7030003230 | Resistor | ERJ3GEYJ 180 V (18 Ω) |
| R102 | 7030003610 | Resistor | ERJ3GEYJ 273 V (27 k Ω) |
| R103 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R104 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R106 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R107 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R108 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R110 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R111 | 7030003570 | Resistor | ERJ3GEYJ 123 V (12 k Ω) |
| R112 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R114 | 7030003440 | Resistor | ERJ3GEYJ 102 V (1 k Ω) |
| R115 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R116 | 7030003280 | Resistor | ERJ3GEYJ 470 V (47 Ω) |
| R117 | 7030003650 | Resistor | ERJ3GEYJ 563 V (56 k Ω) |
| R119 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R121 | 7030003200 | Resistor | ERJ3GEYJ 100 V (10 Ω) |

[MAIN-A UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION |
|----------|------------|---|
| R122 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R124 | 7030003280 | Resistor ERJ3GEYJ 470 V (47 Ω) |
| R125 | 7030003230 | Resistor ERJ3GEYJ 180 V (18 Ω) |
| R126 | 7030003680 | Resistor ERJ3GEYJ 104 V (10 k Ω) |
| R127 | 7030003600 | Resistor ERJ3GEYJ 223 V (22 k Ω) |
| R128 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R130 | 4610001230 | Trimmer EVMLGGA00B14 (103) |
| R131 | 7030003320 | Resistor ERJ3GEYJ 101 V (100 Ω) |
| R132 | 7030003480 | Resistor ERJ3GEYJ 222 V (2.2 k Ω) |
| R133 | 7030003370 | Resistor ERJ3GEYJ 271 V (270 Ω) |
| R134 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R135 | 7030000220 | Resistor MCR10EZHZ 47 Ω (470) |
| R136 | 7030003320 | Resistor ERJ3GEYJ 101 V (100 Ω) |
| R137 | 7030003320 | Resistor ERJ3GEYJ 101 V (100 Ω) |
| R138 | 7030003790 | Resistor ERJ3GEYJ 824 V (820 k Ω) |
| R139 | 7030003570 | Resistor ERJ3GEYJ 123 V (12 k Ω) |
| R140 | 7030000100 | Resistor MCR10EZHZ 4.7 Ω (4R7) |
| R141 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R142 | 7030003440 | Resistor ERJ3GEYJ 102 V (1 k Ω) |
| R143 | 7030000100 | Resistor MCR10EZHZ 4.7 Ω (4R7) |
| R144 | 7030003280 | Resistor ERJ3GEYJ 470 V (47 Ω) |
| R145 | 7030003480 | Resistor ERJ3GEYJ 222 V (2.2 k Ω) |
| R146 | 7030000220 | Resistor MCR10EZHZ 47 Ω (470) |
| R147 | 7510000450 | Thermistor DTN-T203C471LS (T) |
| C1 | 4550002950 | Tantalum TESVA 0J 335M1-8L |
| C3 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C5 | 4030006860 | Ceramic C2012 JF 1C 105Z-T-A |
| C6 | 4510003150 | Electrolytic 35 SS 33 μ F |
| C7 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C8 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C9 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C11 | 4510002640 | Electrolytic 25 SS 47 μ F |
| C12 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C13 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C14 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C15 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C16 | 4030006850 | Ceramic C1808 JB 1H 471K-T-A |
| C17 | 4030006860 | Ceramic C1808 SL 1H 220J-T-A |
| C18 | 4030006850 | Ceramic C1808 JB 1H 471K-T-A |
| C19 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C20 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C21 | 4030006570 | Ceramic C1808 SL 1H 080D-T-A |
| C22 | 4030006610 | Ceramic C1808 SL 1H 100D-T-A |
| C23 | 4030006440 | Ceramic C1808 SL 1H 1R5C-T-A |
| C24 | 4030006540 | Ceramic C1808 SL 1H 030C-T-A |
| C25 | 4030006660 | Ceramic C1808 SL 1H 220J-T-A |
| C26 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C27 | 4030006510 | Ceramic C1808 SL 1H 0R5C-T-A |
| C28 | 4030006610 | Ceramic C1808 SL 1H 100D-T-A |
| C29 | 4030006580 | Ceramic C1808 SL 1H 070D-T-A |
| C30 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C31 | 4030006660 | Ceramic C1808 SL 1H 220J-T-A |
| C32 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C33 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C34 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C35 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C36 | 4030006860 | Ceramic C1808 SL 1H 220J-T-A |
| C37 | 4030006860 | Ceramic C1808 SL 1H 220J-T-A (EUR,ITA,USA,AUS,SEA) |
| C38 | 4030006610 | Ceramic C1808 SL 1H 100D-T-A |
| C39 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C40 | 4030006860 | Ceramic C1808 SL 1H 220J-T-A |
| C41 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C42 | 4550000280 | Tantalum DN 1V 100M |
| C43 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C45 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C46 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C47 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C48 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C49 | 4010003880 | Ceramic DD06 SL 150K 500V |
| C50 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C51 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C52 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C53 | 4010003880 | Ceramic DD06 SL 150K 500V |
| C54 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C55 | 4010004110 | Ceramic DD05 B 471K 500V |

[MAIN-A UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION |
|----------|------------|--------------------------------|
| C56 | 4510001350 | Electrolytic 16 MS5 10 μ F |
| C57 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C58 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C59 | 4010004120 | Ceramic DD07 B 102K 500V |
| C80 | 4010003890 | Ceramic DD06 SL 180K 500V |
| C81 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C82 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C83 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C84 | 4010003930 | Ceramic DD06 SL 270K 500V |
| C85 | 4010003930 | Ceramic DD06 SL 270K 500V |
| C86 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C87 | 4030006830 | Ceramic C1808 JF 1C 104Z-T-A |
| C88 | 4030006830 | Ceramic C1808 JF 1C 104Z-T-A |
| C89 | 4030006780 | Ceramic C1808 SL 1H 121J-T-A |
| C70 | 4030006710 | Ceramic C1808 SL 1H 470K-T-A |
| C71 | 4030006660 | Ceramic C1808 SL 1H 220J-T-A |
| C72 | 4030006630 | Ceramic C1808 JF 1C 104Z-T-A |
| C73 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C74 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C75 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C76 | 4030006630 | Ceramic C1808 JF 1C 104Z-T-A |
| C77 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C78 | 4510002640 | Electrolytic 25 SS 47 μ F |
| C79 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C80 | 4030006890 | Ceramic C1808 JF 1H 103Z-T-A |
| C81 | 4030006690 | Ceramic C1808 SL 1H 330J-T-A |
| C82 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C83 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C84 | 4030006900 | Ceramic C1808 JB 1E 103K-T-A |
| C85 | 4030006900 | Ceramic C1808 JB 1E 103K-T-A |
| C86 | 4510002930 | Electrolytic 50 SS R47 μ F |
| C87 | 4030006660 | Ceramic C1808 SL 1H 220J-T-A |
| C88 | 4030006730 | Ceramic C1808 SL 1H 680J-T-A |
| C89 | 4030006630 | Ceramic C1808 JF 1C 104Z-T-A |
| C90 | 4030006540 | Ceramic C1808 SL 1H 030C-T-A |
| C91 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C92 | 4030006900 | Ceramic C1808 JB 1E 103K-T-A |
| C93 | 4030006730 | Ceramic C1808 SL 1H 680J-T-A |
| C94 | 4030006740 | Ceramic C1808 SL 1H 820J-T-A |
| C95 | 4030006900 | Ceramic C1808 JB 1E 103K-T-A |
| C96 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C97 | 4030006570 | Ceramic C1808 SL 1H 060D-T-A |
| C98 | 4030006630 | Ceramic C1808 SL 1H 150J-T-A |
| C100 | 4030006510 | Ceramic C1808 SL 1H 0R5C-T-A |
| C101 | 4030006610 | Ceramic C1808 SL 1H 100D-T-A |
| C102 | 4030006520 | Ceramic C1808 SL 1H 010C-T-A |
| C103 | 4030006510 | Ceramic C1808 SL 1H 0R5C-T-A |
| C104 | 4030006600 | Ceramic C1808 SL 1H 090D-T-A |
| C105 | 4030006510 | Ceramic C1808 SL 1H 0R5C-T-A |
| C106 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C107 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C108 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C109 | 4030006750 | Ceramic C1808 SL 1H 101J-T-A |
| C110 | 4030006670 | Ceramic C1808 SL 1H 270J-T-A |
| C112 | 4030006590 | Ceramic C1808 SL 1H 080D-T-A |
| C113 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C114 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C115 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C116 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C117 | 4030006860 | Ceramic C1808 SL 1H 220J-T-A |
| C118 | 4030006700 | Ceramic C1808 SL 1H 390J-T-A |
| C119 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C120 | 4010003890 | Ceramic DD06 SL 180K 500V |
| C121 | 4030006850 | Ceramic C1808 JB 1H 471K-T-A |
| C122 | 4030006620 | Ceramic C1808 SL 1H 120J-T-A |
| C123 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C124 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C125 | 4030006620 | Ceramic C1808 SL 1H 120J-T-A |
| C126 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C127 | 4030006690 | Ceramic C1808 SL 1H 330J-T-A |
| C128 | 4030006640 | Ceramic C1808 SL 1H 180J-T-A |
| C129 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C130 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C131 | 4030006620 | Ceramic C1808 SL 1H 120J-T-A |
| C132 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C133 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C134 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |
| C135 | 4030006860 | Ceramic C1808 JB 1H 102K-T-A |

[MAIN-A UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|--------------|-----------------------------|
| C137 | 4030008610 | Ceramic | C1608 SL 1H 100D-T-A |
| C138 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C139 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C140 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C141 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C142 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C144 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C145 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C146 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C147 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C148 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C149 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C150 | 4030008630 | Ceramic | C1608 JF 1C 104Z-T-A |
| C151 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C152 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C153 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C154 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C155 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C156 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C157 | 4030008750 | Ceramic | C1608 SL 1H 101J-T-A |
| C158 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C159 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C160 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C181 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C182 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C183 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C184 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C185 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C186 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C187 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C188 | 4030008900 | Ceramic | C1608 JB 1E 103K-T-A |
| C189 | 4030008610 | Ceramic | C1608 SL 1H 100D-T-A |
| C170 | 4030008560 | Ceramic | C1608 SL 1H 050C-T-A |
| C171 | 4030008610 | Ceramic | C1608 SL 1H 100D-T-A |
| C172 | 4030008850 | Ceramic | C1608 JB 1H 471K-T-A |
| C173 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C174 | 4510002640 | Electrolytic | 25 SS 47 μ F |
| C175 | 4510002440 | Electrolytic | 18 SS 220 μ F (8X11) |
| C176 | 4510002640 | Electrolytic | 25 SS 47 μ F |
| C177 | 4510002760 | Electrolytic | 10 SS 470 μ F |
| C178 | 4510002730 | Electrolytic | 10 SS 100 μ F |
| C179 | 4510001720 | Electrolytic | 18 SS 330 μ F (8X12.5) |
| C180 | 4510002730 | Electrolytic | 10 SS 100 μ F |
| C181 | 4510002760 | Electrolytic | 10 SS 470 μ F |
| C182 | 4030008760 | Ceramic | C2012 X7R 1C 104K-T-A |
| C183 | 4030008760 | Ceramic | C2012 X7R 1C 104K-T-A |
| C184 | 4030008630 | Ceramic | C1608 JF 1C 104Z-T-A |
| C185 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C186 | 4510002380 | Electrolytic | 18 SS 470 μ F (10X12.5) |
| C187 | 4030008860 | Ceramic | C2012 JF 1C 105Z-T-A |
| C188 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C189 | 4030008860 | Ceramic | C2012 JF 1C 105Z-T-A |
| C190 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C191 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C192 | 4030008860 | Ceramic | C2012 JF 1C 105Z-T-A |
| C193 | 4030008630 | Ceramic | C1608 JF 1C 104Z-T-A |
| EP1 | 0910030122 | P.C. Board | B 3029B (MAIN-A) |

[PLL-A UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|----------------------------------|
| IC1 | 1130005700 | IC | M58760FP |
| IC2 | 1130004200 | IC | TC4S86F (TE85R) |
| Q1 | 1580000360 | FET | 2SK209-Y (TE85R) |
| Q2 | 1530002490 | Transistor | 2SC3324-GR (TE85R) |
| Q3 | 1530000160 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q4 | 1590000420 | Transistor | RN1404 (TE85R) |
| Q5 | 1530002030 | Transistor | 2SC3772-3-TA |
| Q6 | 1590000480 | Transistor | RN2402 (TE85R) |
| R1 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R2 | 7030003530 | Resistor | ERJ3GEYJ 582 V (5.8 k Ω) |
| R3 | 7030003410 | Resistor | ERJ3GEYJ 581 V (580 Ω) |
| R4 | 7030000480 | Resistor | MCR10EZJ 4.7 k Ω (472) |
| R5 | 7030003530 | Resistor | ERJ3GEYJ 582 V (5.8 k Ω) |
| R6 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R7 | 7030003450 | Resistor | ERJ3GEYJ 122 V (1.2 k Ω) |
| R8 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R12 | 7030003530 | Resistor | ERJ3GEYJ 582 V (5.8 k Ω) |
| R13 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R14 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R15 | 7030003220 | Resistor | ERJ3GEYJ 150 V (15 Ω) |
| R16 | 7030003220 | Resistor | ERJ3GEYJ 150 V (15 Ω) |
| R17 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R18 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R19 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| R20 | 7030003220 | Resistor | ERJ3GEYJ 150 V (15 Ω) |
| R21 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R22 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R23 | 7030003360 | Resistor | ERJ3GEYJ 221 V (220 Ω) |
| R24 | 7030003580 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| C1 | 4030004750 | Ceramic | C2012 JB 1H 103K-T-A |
| C2 | 4030008900 | Ceramic | C1608 JB 1E 103K-T-A |
| C3 | 4030008900 | Ceramic | C1608 JB 1E 103K-T-A |
| C4 | 4550000550 | Tantalum | TESVA 1V 224M1-8L |
| C5 | 4550000940 | Tantalum | TESVB2 1D 225M-8L |
| C6 | 4550000940 | Tantalum | TESVB2 1D 225M-8L |
| C7 | 4030008860 | Ceramic | C2012 JF 1C 105Z-T-A |
| C8 | 4030008630 | Ceramic | C1608 JF 1C 104Z-T-A |
| C9 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C10 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C12 | 4030008860 | Ceramic | C2012 JF 1C 105Z-T-A |
| C13 | 4030008890 | Ceramic | C1608 JF 1H 103Z-T-A |
| C14 | 4030007010 | Ceramic | C1608 CH 1H 100D-T-A |
| C15 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C16 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C17 | 4030008890 | Ceramic | C1608 JF 1H 103Z-T-A |
| C18 | 4030008860 | Ceramic | C1608 SL 1H 220J-T-A |
| C19 | 4030008850 | Ceramic | C1608 JB 1H 471K-T-A |
| EP1 | 0910030701 | P.C. Board | B 3069A (PLL-A) |

[VCO-A UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|-------------------------|
| Q1 | 1560000650 | FET | 2SK1577-2-T7 |
| Q2 | 1590001280 | Transistor | RN1406 (TE85R) |
| Q3 | 1530002240 | Transistor | 2SC3775-3-TA |
| Q4 | 1560000640 | FET | 2SK1740-TA |
| Q5 | 1590001280 | Transistor | RN1406 (TE85R) |
| D1 | 1720000220 | Varicap | 1SV166-T2B |
| D2 | 1720000220 | Varicap | 1SV166-T2B |
| D3 | 1720000220 | Varicap | 1SV166-T2B |
| D4 | 1720000220 | Varicap | 1SV166-T2B |
| L1 | 6200001580 | Coil | LER 015T R68M |
| L2 | 6200001580 | Coil | LER 015T R68M |
| L3 | 6130002430 | Coil | LB-271 |
| L4 | 6200001570 | Coil | LER 015T 1R0M |
| L5 | 6200001570 | Coil | LER 015T 1R0M |
| L6 | 6200001580 | Coil | LER 015T 1R8M |
| L7 | 6200001580 | Coil | LER 015T 1R8M |
| L8 | 6200001580 | Coil | LER 015T 1R8M |
| L9 | 6130002420 | Coil | LB-270 |
| L10 | 6200001230 | Coil | MLF2012A 1R0M-T |
| R1 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R3 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R5 | 7030003280 | Resistor | ERJ3GEYJ 470 V (47 Ω) |
| R7 | 7030003310 | Resistor | ERJ3GEYJ 820 V (82 Ω) |
| R9 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| R10 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 kΩ) |
| R11 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 kΩ) |
| R12 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| R13 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| R14 | 7030003670 | Resistor | ERJ3GEYJ 823 V (82 kΩ) |
| R15 | 7030003280 | Resistor | ERJ3GEYJ 470 V (47 Ω) |
| R16 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R17 | 7030003600 | Resistor | ERJ3GEYJ 223 V (22 kΩ) |
| R18 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R19 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| C2 | 4030006880 | Ceramic | C1608 JB 1H 102K-T-A |
| C3 | 4030007110 | Ceramic | C1608 CH 1H 680J-T-A |
| C6 | 4030006880 | Ceramic | C1608 JB 1H 102K-T-A |
| C7 | 4030006950 | Ceramic | C1608 CH 1H 040C-T-A |
| C10 | 4030006910 | Ceramic | C1608 CH 1H 0R5C-T-A |
| C11 | 4030006880 | Ceramic | C1608 JB 1H 102K-T-A |
| C12 | 4030006900 | Ceramic | C1608 JB 1E 103K-T-A |
| C13 | 4030006610 | Ceramic | C1608 SL 1H 100D-T-A |
| C14 | 4030006880 | Ceramic | C1608 JB 1H 102K-T-A |
| C15 | 4030006900 | Ceramic | C1608 JB 1E 103K-T-A |
| C17 | 4030006880 | Ceramic | C1608 JB 1H 102K-T-A |
| C18 | 4030006880 | Ceramic | C1608 JB 1H 102K-T-A |
| C20 | 4030006880 | Ceramic | C1608 JB 1H 102K-T-A |
| C21 | 4030006880 | Ceramic | C1608 JB 1H 102K-T-A |
| C22 | 4030006920 | Ceramic | C1608 CH 1H 010C-T-A |
| C23 | 4030006880 | Ceramic | C1608 JB 1H 102K-T-A |
| C24 | 4030006880 | Ceramic | C1608 JB 1H 102K-T-A |
| C25 | 4030006850 | Ceramic | C1608 JB 1H 471K-T-A |
| EP1 | 0910029351 | P.C. Board | B 2991A (VCO-A) |

[MAIN-B UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|---|
| IC1 | 1130004200 | IC | TC4S66F (TE85R) |
| IC2 | 1150000180 | IC | SC1027 (EUR,ITA, USA,AUS,SEA) |
| | 1150000750 | IC | SC1054 (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| IC3 | 1110001240 | IC | μ PC358G2-T1 |
| IC4 | 1110002200 | IC | MC3372MR |
| IC5 | 1110001971 | IC | μ PC1676G-T1 |
| IC6 | 1130005810 | IC | BU4094BF-T1 |
| IC7 | 1110002020 | IC | TA7805S |
| IC8 | 1110001700 | IC | TL499ACPS |
| IC9 | 1110000490 | IC | AN6541 |
| Q1 | 1510000580 | Transistor | 2SA1362-GR (TE85R) |
| Q2 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q3 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q4 | 1530002380 | Transistor | 2SC2714-Y (TE85R) |
| Q5 | 1530002050 | Transistor | 2SC3661-TA |
| Q6 | 1560000360 | FET | 2SK209-Y (TE85R) |
| Q7 | 1510000110 | Transistor | 2SA1182-Y (TE85R) |
| Q8 | 1530002240 | Transistor | 2SC3775-3-TA |
| Q9 | 1530002030 | Transistor | 2SC3772-3-TA |
| Q10 | 1530002240 | Transistor | 2SC3775-3-TA |
| Q11 | 1590000390 | Transistor | MRF559 |
| Q12 | 1590000420 | Transistor | RN1404 (TE85R) |
| Q13 | 1590000420 | Transistor | RN1404 (TE85R) |
| Q14 | 1520000380 | Transistor | 2SB1143 S |
| Q15 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q16 | 1530002020 | Transistor | 2SC3770-3-TA |
| Q17 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q18 | 1590000420 | Transistor | RN1404 (TE85R) |
| Q19 | 1580000350 | FET | 3SK140-Y (TE85R) |
| Q20 | 1530002240 | Transistor | 2SC3775-3-TA |
| Q21 | 1580000360 | FET | 3SK177-T2B U73 |
| Q22 | 1580000360 | FET | 3SK177-T2B U73 |
| Q23 | 1590000690 | Transistor | IMD8 T108 |
| Q24 | 1590000480 | Transistor | RN1402 (TE85R) |
| Q25 | 1590000480 | Transistor | RN1402 (TE85R) |
| Q26 | 1590000480 | Transistor | RN1402 (TE85R) |
| Q27 | 1590000480 | Transistor | RN1402 (TE85R) |
| Q28 | 1590000980 | Transistor | DTB123EK T147 |
| Q29 | 1590000980 | Transistor | DTB123EK T147 |
| Q30 | 1590000980 | Transistor | DTB123EK T147 |
| Q31 | 1590000980 | Transistor | DTB123EK T147 |
| Q32 | 1590000480 | Transistor | RN1402 (TE85R) |
| Q33 | 1590000980 | Transistor | DTB123EK T147 |
| Q34 | 1590000480 | Transistor | RN1402 (TE85R) |
| Q35 | 1590000420 | Transistor | RN1404 (TE85R) |
| Q36 | 1580000350 | FET | 3SK140-Y (TE85R) |
| Q37 | 1530002030 | Transistor | 2SC3772-3-TA |
| Q38 | 1520000080 | Transistor | 2SB909M R |
| Q39 | 1530000180 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q40 | 1530001940 | Transistor | 2SC2712-BL (TE85R) |
| Q41 | 1540000150 | Transistor | 2SD1225M R |
| Q42 | 1590001000 | Transistor | RN2427 (TE85R) |
| Q43 | 1510000700 | Transistor | 2SA1736 (TE12R) |
| D1 | 1730001120 | Zener | RD24M-T2B2 |
| D2 | 1750000050 | Diode | 1SS193 (TE85R) |
| D3 | 1750000080 | Diode | 1SS196 (TE85R) |
| D4 | 1750000080 | Diode | 1SS153-T2 |
| D5 | 1790000450 | Diode | MA862 (TX) |
| D6 | 1750000050 | Diode | 1SS193 (TE85R) |
| D7 | 1790000490 | Diode | HSM88AS-TR |
| D8 | 1790000490 | Diode | HSM88AS-TR |
| D9 | 1710000290 | Diode | M1308 (EUR,ITA, USA,AUS,SEA) |
| | 1710000310 | Diode | M1407 (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| D10 | 1730000730 | Zener | RD6.2M-T2B2 |
| D11 | 1790000490 | Diode | HSM88AS-TR |
| D12 | 1750000070 | Diode | 1SS226 (TE85R) |

[MAIN-B UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|----------------|----------------------------------|
| D13 | 1790000450 | Diode | MA862 (TX) |
| D14 | 1790000450 | Diode | MA862 (TX) |
| D15 | 1790000450 | Diode | MA862 (TX) |
| D16 | 1790000450 | Diode | MA862 (TX) |
| D17 | 1750000070 | Diode | 1SS226 (TE85R) |
| D18 | 1710000290 | Diode | MI308 |
| D19 | 1710000290 | Diode | MI308 |
| D20 | 1730000410 | Zener | RD5.1M-T2B2 |
| D21 | 1750000020 | Diode | 1SS184 (TE85R) |
| D22 | 1750000020 | Diode | 1SS184 (TE85R) |
| D23 | 1750000020 | Diode | 1SS184 (TE85R) |
| D24 | 1750000020 | Diode | 1SS184 (TE85R) |
| D25 | 1750000020 | Diode | 1SS184 (TE85R) |
| D26 | 1720000270 | Varicap | 1SV217 (TPH2) |
| D27 | 1720000270 | Varicap | 1SV217 (TPH2) |
| D28 | 1750000050 | Diode | 1SS193 (TE85R) |
| D29 | 1750000050 | Diode | 1SS193 (TE85R) |
| D31 | 1790000700 | Diode | DSA3A1 |
| X1 | 6050006950 | Crystal | CR-323 |
| X2 | 6070000080 | Discriminator | CDBM455C16 |
| X3 | 6050007470 | Crystal | CR-342 |
| FI1 | 2020000550 | Ceramic Filter | CFUM455E |
| FI2 | 2010001140 | Filter | 30M15B5 (FL-138) |
| L1 | 6200000110 | Coil | LQN 2A 33NM |
| L2 | 6200000090 | Coil | LQN 2A 18NM |
| L3 | 6200000830 | Coil | LQH 3N 3R3M |
| L4 | 6200000770 | Coil | LQN 2A 68NM |
| L5 | 6200000130 | Coil | LQN 2A 47NM |
| L6 | 6200000110 | Coil | LQN 2A 33NM |
| L7 | 6200000720 | Coil | LQN 2A 10NM |
| L8 | 6200000110 | Coil | LQN 2A 33NM |
| L9 | 6200000090 | Coil | LQN 2A 18NM |
| L10 | 6110001150 | Coil | LA-153 |
| L11 | 6170000180 | Coil | LW-19 |
| L12 | 6110002110 | Coil | LA-382 |
| L13 | 6110001520 | Coil | LA-232 |
| L14 | 6110001590 | Coil | LA-242 |
| L15 | 6110001520 | Coil | LA-232 |
| L16 | 6180001210 | Coil | LAL 03NA 8R2K |
| L17 | 6150003220 | Coil | LS-320 |
| L18 | 6150002000 | Coil | LS-264 |
| L19 | 6200000090 | Coil | LQN 2A 18NM |
| L20 | 6200000100 | Coil | LQN 2A 22NM |
| L21 | 6150003240 | Coil | LS-338 (HR5W) |
| L22 | 6150003230 | Coil | LS-337 (HR5W) |
| L23 | 6200000720 | Coil | LQN 2A 10NM |
| L24 | 6200000720 | Coil | LQN 2A 10NM |
| L25 | 6110002110 | Coil | LA-382 |
| L26 | 6110001520 | Coil | LA-232 |
| L27 | 6200000090 | Coil | LQN 2A 18NM |
| L28 | 6200000090 | Coil | LQN 2A 18NM |
| L29 | 6200000720 | Coil | LQN 2A 10NM |
| L30 | 6200000720 | Coil | LQN 2A 10NM |
| L31 | 6200000891 | Coil | NL 322522T-R15M-3 |
| L32 | 6150003120 | Coil | LS-321 |
| L33 | 6150003120 | Coil | LS-321 |
| L34 | 6180002620 | Coil | RCR664D-101K |
| L35 | 6180001120 | Coil | FL 5H 101K |
| R1 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R2 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R3 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R5 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R6 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R7 | 4610001110 | Trimmer | EVMLGGA00B15 (104) |
| R8 | 7030003600 | Resistor | ERJ3GEYJ 223 V (22 k Ω) |
| R9 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R10 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R11 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R12 | 7030003740 | Resistor | ERJ3GEYJ 334 V (330 k Ω) |
| R13 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |

[MAIN-B UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|---|
| R14 | 7030003200 | Resistor | ERJ3GEYJ 100 V (10 Ω) |
| R15 | 7030003380 | Resistor | ERJ3GEYJ 331 V (330 Ω) |
| R16 | 7030003380 | Resistor | ERJ3GEYJ 331 V (330 Ω) |
| R17 | 7030003440 | Resistor | ERJ3GEYJ 102 V (1 k Ω) |
| R18 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| R19 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R20 | 7030003800 | Resistor | ERJ3GEYJ 105 V (1 M Ω) |
| R21 | 7030003720 | Resistor | ERJ3GEYJ 224 V (220 k Ω) |
| R22 | 7030003200 | Resistor | ERJ3GEYJ 100 V (10 Ω) |
| R23 | 7030003730 | Resistor | ERJ3GEYJ 274 V (270 k Ω) |
| R24 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R25 | 7030003280 | Resistor | ERJ3GEYJ 470 V (47 Ω) |
| R26 | 7030003440 | Resistor | ERJ3GEYJ 102 V (1 k Ω) |
| R27 | 7030003380 | Resistor | ERJ3GEYJ 221 V (220 Ω) |
| R28 | 7030003280 | Resistor | ERJ3GEYJ 470 V (47 Ω) |
| R29 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R30 | 7030003420 | Resistor | ERJ3GEYJ 661 V (660 Ω) |
| R31 | 7030000280 | Resistor | MCR10EZHZJ 100 Ω (101) |
| R32 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R33 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R34 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R35 | 7030003370 | Resistor | ERJ3GEYJ 271 V (270 Ω) |
| R36 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| R37 | 7030003230 | Resistor | ERJ3GEYJ 180 V (18 Ω) |
| R38 | 7030003370 | Resistor | ERJ3GEYJ 271 V (270 Ω) |
| R39 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R40 | 7030003450 | Resistor | ERJ3GEYJ 122 V (1.2 k Ω) |
| R41 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R42 | 7030003440 | Resistor | ERJ3GEYJ 102 V (1 k Ω) |
| R43 | 7030003340 | Resistor | ERJ3GEYJ 151 V (150 Ω) |
| R44 | 7030003440 | Resistor | ERJ3GEYJ 102 V (1 k Ω) |
| R46 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) (EUR,ITA,USA,AUS,SEA) |
| | 7030003540 | Resistor | ERJ3GEYJ 682 V (6.8 k Ω) (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| R47 | 4610001100 | Trimmer | EVMLGGA00B34 (303) |
| R48 | 7030003480 | Resistor | ERJ3GEYJ 152 V (1.5 k Ω) (EUR,ITA,USA,AUS,SEA) |
| | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| R49 | 7030003570 | Resistor | ERJ3GEYJ 123 V (12 k Ω) (EUR,ITA,USA,AUS,SEA) |
| | 7030003550 | Resistor | ERJ3GEYJ 822 V (8.2 k Ω) (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| R50 | 7030001050 | Resistor | MCR50JZHJ 22 Ω (220) |
| R51 | 7030001180 | Resistor | MCR50JZHJ 270 Ω (271) (EUR,ITA,USA,AUS,SEA) |
| R52 | 7010004130 | Resistor | R20J 330 Ω |
| R53 | 7030003480 | Resistor | ERJ3GEYJ 152 V (1.5 k Ω) (EUR,ITA,USA,AUS,SEA) |
| | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| R54 | 7030003330 | Resistor | ERJ3GEYJ 121 V (120 Ω) |
| R57 | 7030003580 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R58 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R59 | 7030003580 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R60 | 7030003480 | Resistor | ERJ3GEYJ 152 V (1.5 k Ω) (EUR,ITA,USA,AUS,SEA) |
| | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) (EUR-H,ITA-H, USA-H,AUS-H,SEA-H) |
| R61 | 7030003330 | Resistor | ERJ3GEYJ 121 V (120 Ω) |
| R62 | 7010004720 | Resistor | R50XJ 100 Ω |
| R63 | 7030003790 | Resistor | ERJ3GEYJ 824 V (820 k Ω) |
| R64 | 7030003580 | Resistor | ERJ3GEYJ 153 V (15 k Ω) |
| R65 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R66 | 7030003800 | Resistor | ERJ3GEYJ 223 V (22 k Ω) |
| R67 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R68 | 7030003570 | Resistor | ERJ3GEYJ 123 V (12 k Ω) |
| R69 | 7030003720 | Resistor | ERJ3GEYJ 224 V (220 k Ω) |
| R70 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R71 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R72 | 7030000250 | Resistor | MCR10EZHZJ 82 Ω (820) |
| R73 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |

[MAIN-B UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION |
|----------|------------|-----------------------------------|
| R74 | 7030003470 | Resistor ERJ3GEYJ 182 V (1.8 k Ω) |
| R75 | 7030003840 | Resistor ERJ3GEYJ 473 V (47 k Ω) |
| R76 | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) |
| R77 | 7030003450 | Resistor ERJ3GEYJ 122 V (1.2 k Ω) |
| R78 | 7030003440 | Resistor ERJ3GEYJ 102 V (1 k Ω) |
| R79 | 7030003400 | Resistor ERJ3GEYJ 471 V (470 Ω) |
| R80 | 7030003480 | Resistor ERJ3GEYJ 222 V (2.2 k Ω) |
| R82 | 7030003760 | Resistor ERJ3GEYJ 474 V (470 k Ω) |
| R83 | 7030003340 | Resistor ERJ3GEYJ 151 V (150 Ω) |
| R84 | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) |
| R85 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R86 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R87 | 4810001110 | Trimmer EVMLGGA00B15 (104) |
| R88 | 7030003320 | Resistor ERJ3GEYJ 101 V (100 Ω) |
| R89 | 7030003400 | Resistor ERJ3GEYJ 471 V (470 Ω) |
| R90 | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) |
| R91 | 7030003600 | Resistor ERJ3GEYJ 223 V (22 k Ω) |
| R92 | 7030003320 | Resistor ERJ3GEYJ 101 V (100 Ω) |
| R93 | 7030003200 | Resistor ERJ3GEYJ 100 V (10 Ω) |
| R94 | 7030003320 | Resistor ERJ3GEYJ 101 V (100 Ω) |
| R95 | 7030003480 | Resistor ERJ3GEYJ 222 V (2.2 k Ω) |
| R96 | 7030003350 | Resistor ERJ3GEYJ 181 V (180 Ω) |
| R97 | 7030003350 | Resistor ERJ3GEYJ 181 V (180 Ω) |
| R98 | 7030003260 | Resistor ERJ3GEYJ 330 V (33 Ω) |
| R99 | 7030003300 | Resistor ERJ3GEYJ 680 V (68 Ω) |
| R100 | 7030003480 | Resistor ERJ3GEYJ 222 V (2.2 k Ω) |
| R101 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R102 | 7030003440 | Resistor ERJ3GEYJ 102 V (1 k Ω) |
| R103 | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) |
| R104 | 7030003380 | Resistor ERJ3GEYJ 331 V (330 Ω) |
| R105 | 7030003320 | Resistor ERJ3GEYJ 101 V (100 Ω) |
| R106 | 7030003580 | Resistor ERJ3GEYJ 153 V (15 k Ω) |
| R107 | 7030003280 | Resistor ERJ3GEYJ 470 V (47 Ω) |
| R108 | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) |
| R109 | 7030003340 | Resistor ERJ3GEYJ 151 V (150 Ω) |
| R110 | 7030003250 | Resistor ERJ3GEYJ 270 V (27 Ω) |
| R111 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R112 | 7030003600 | Resistor ERJ3GEYJ 223 V (22 k Ω) |
| R113 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R114 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R115 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R116 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R117 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R118 | 7030003480 | Resistor ERJ3GEYJ 222 V (2.2 k Ω) |
| R119 | 7030003290 | Resistor ERJ3GEYJ 580 V (58 Ω) |
| R120 | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) |
| R121 | 7030000240 | Resistor MCR10EZJH 68 Ω (680) |
| R122 | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) |
| R123 | 7030003320 | Resistor ERJ3GEYJ 101 V (100 Ω) |
| R124 | 7030003220 | Resistor ERJ3GEYJ 150 V (15 Ω) |
| R125 | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) |
| R126 | 7030003250 | Resistor ERJ3GEYJ 270 V (27 Ω) |
| R127 | 7030003320 | Resistor ERJ3GEYJ 101 V (100 Ω) |
| R128 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R129 | 7030003620 | Resistor ERJ3GEYJ 333 V (33 k Ω) |
| R130 | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) |
| R131 | 7030003320 | Resistor ERJ3GEYJ 101 V (100 Ω) |
| R132 | 4810001140 | Trimmer EVMLGGA00B33 (302) |
| R133 | 7030003480 | Resistor ERJ3GEYJ 222 V (2.2 k Ω) |
| R134 | 7030003440 | Resistor ERJ3GEYJ 102 V (1 k Ω) |
| R135 | 7030003370 | Resistor ERJ3GEYJ 271 V (270 Ω) |
| R136 | 7030003440 | Resistor ERJ3GEYJ 102 V (1 k Ω) |
| R137 | 7030003230 | Resistor ERJ3GEYJ 180 V (18 Ω) |
| R138 | 7030003370 | Resistor ERJ3GEYJ 271 V (270 Ω) |
| R139 | 7030003370 | Resistor ERJ3GEYJ 271 V (270 Ω) |
| R140 | 7030003320 | Resistor ERJ3GEYJ 101 V (100 Ω) |
| R141 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R142 | 7030003280 | Resistor ERJ3GEYJ 470 V (47 Ω) |
| R143 | 7030003590 | Resistor ERJ3GEYJ 183 V (18 k Ω) |
| R144 | 7030003500 | Resistor ERJ3GEYJ 332 V (3.3 k Ω) |
| R145 | 7030003680 | Resistor ERJ3GEYJ 104 V (100 k Ω) |
| R148 | 7030000380 | Resistor MCR10EZJH 1 k Ω (102) |
| R149 | 7030003440 | Resistor ERJ3GEYJ 102 V (1 k Ω) |
| R150 | 7030003490 | Resistor ERJ3GEYJ 272 V (2.7 k Ω) |
| R151 | 7030003690 | Resistor ERJ3GEYJ 124 V (120 k Ω) |
| R152 | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) |
| R153 | 7030003400 | Resistor ERJ3GEYJ 471 V (470 Ω) |
| R154 | 7010004830 | Resistor R50XJ 4.7 Ω |

[MAIN-B UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION |
|----------|------------|-----------------------------------|
| R155 | 7030003360 | Resistor ERJ3GEYJ 221 V (220 Ω) |
| R156 | 7010004780 | Resistor R50XJ 470 Ω |
| R157 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R158 | 7030003520 | Resistor ERJ3GEYJ 472 V (4.7 k Ω) |
| R159 | 7030003560 | Resistor ERJ3GEYJ 103 V (10 k Ω) |
| R161 | 7030003260 | Resistor ERJ3GEYJ 330 V (33 Ω) |
| R162 | 7030003220 | Resistor ERJ3GEYJ 150 V (15 Ω) |
| R163 | 7030003440 | Resistor ERJ3GEYJ 102 V (1 k Ω) |
| R164 | 7510000450 | Thermistor DTN-T203C471LS (T) |
| C1 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C2 | 4030008690 | Ceramic C1608 JF 1H 103Z-T-A |
| C3 | 4510002930 | Electrolytic 50 SS R47 μF |
| C4 | 4030008630 | Ceramic C1608 JF 1C 104Z-T-A |
| C5 | 4030008680 | Ceramic C2012 JF 1C 105Z-T-A |
| C6 | 4810000380 | Trimmer ECRGA020E30 |
| C7 | 4030008560 | Ceramic C1608 CH 1H 300J-T-A |
| C8 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C9 | 4030004980 | Ceramic C2012 CH 1H 820J-T-A |
| C10 | 4030007090 | Ceramic C1608 CH 1H 470J-T-A |
| C11 | 4030008430 | Ceramic C1608 JF 1H 223Z-T-A |
| C12 | 4030008940 | Ceramic C1608 CH 1H 030C-T-A |
| C13 | 4030008430 | Ceramic C1608 JF 1H 223Z-T-A |
| C14 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C15 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C16 | 4030008430 | Ceramic C1608 JF 1H 223Z-T-A |
| C17 | 4030008650 | Ceramic C1608 JB 1H 471K-T-A |
| C18 | 4030008680 | Ceramic C2012 JF 1C 105Z-T-A |
| C23 | 4030008650 | Ceramic C1608 JB 1H 471K-T-A |
| C24 | 4510002840 | Electrolytic 25 SS 47 μF |
| C26 | 4510002730 | Electrolytic 10 SS 100 μF |
| C27 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C28 | 4030008650 | Ceramic C1608 JB 1H 471K-T-A |
| C29 | 4030008650 | Ceramic C1608 JB 1H 471K-T-A |
| C30 | 4510003150 | Electrolytic 35 SS 33 μF |
| C31 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C32 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C33 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C34 | 4030006590 | Ceramic C1608 SL 1H 080D-T-A |
| C35 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C37 | 4030006570 | Ceramic C1608 SL 1H 080D-T-A |
| C38 | 4030006580 | Ceramic C1608 SL 1H 070D-T-A |
| C39 | 4030006580 | Ceramic C1608 SL 1H 070D-T-A |
| C40 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C41 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C42 | 4030006570 | Ceramic C1608 SL 1H 080D-T-A |
| C43 | 4030008610 | Ceramic C1608 SL 1H 100D-T-A |
| C44 | 4030008660 | Ceramic C1608 SL 1H 220J-T-A |
| C45 | 4030008610 | Ceramic C1608 SL 1H 100D-T-A |
| C46 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C47 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C48 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C49 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C50 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C51 | 4030008660 | Ceramic C1608 SL 1H 220J-T-A |
| C52 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C53 | 4030008650 | Ceramic C1608 SL 1H 040C-T-A |
| C54 | 4030008610 | Ceramic C1608 SL 1H 100D-T-A |
| C55 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C56 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C57 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C58 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C59 | 4030008660 | Ceramic C1608 SL 1H 220J-T-A |
| C60 | 4030006570 | Ceramic C1608 SL 1H 080D-T-A |
| C61 | 4030006570 | Ceramic C1608 SL 1H 080D-T-A |
| C62 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C64 | 4550000260 | Tantalum DN 1V 100M |
| C65 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C66 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C67 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C68 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C69 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C70 | 4550000260 | Tantalum DN 1V 100M |
| C71 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C72 | 4010003820 | Ceramic DD06 SL 050C 500V |
| C73 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |
| C74 | 4030008660 | Ceramic C1608 JB 1H 102K-T-A |

[MAIN-B UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION |
|----------|------------|--------------------------------|
| C75 | 4010003820 | Ceramic DD06 SL 050C 500V |
| C76 | 4510002980 | Electrolytic 50 SS 10 μ F |
| C77 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C78 | 4010004110 | Ceramic DD05 B 471K 500V |
| C79 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C80 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C81 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C82 | 4010004110 | Ceramic DD05 B 471K 500V |
| C83 | 4010003820 | Ceramic DD06 SL 050C 500V |
| C84 | 4010003850 | Ceramic DD06 SL 080D 500V |
| C85 | 4010003830 | Ceramic DD06 SL 060D 500V |
| C86 | 4010003870 | Ceramic DD06 SL 120K 500V |
| C87 | 4010003820 | Ceramic DD06 SL 050C 500V |
| C88 | 4010003860 | Ceramic DD06 SL 100D 500V |
| C89 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C90 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C91 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C92 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C93 | 4030006860 | Ceramic C1608 JF 1C 104Z-T-A |
| C94 | 4030006860 | Ceramic C1608 JF 1C 104Z-T-A |
| C95 | 4510002980 | Electrolytic 50 SS 10 μ F |
| C96 | 4030006860 | Ceramic C1608 JF 1C 104Z-T-A |
| C97 | 4030006860 | Ceramic C1608 SL 1H 180J-T-A |
| C98 | 4030006720 | Ceramic C1608 SL 1H 580J-T-A |
| C99 | 4030006690 | Ceramic C1608 SL 1H 330J-T-A |
| C100 | 4030006860 | Ceramic C1608 JF 1C 104Z-T-A |
| C101 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C102 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C103 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C104 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C105 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C106 | 4030006890 | Ceramic C1608 JF 1H 103Z-T-A |
| C107 | 4030006690 | Ceramic C1608 SL 1H 330J-T-A |
| C108 | 4510002930 | Electrolytic 50 SS R47 μ F |
| C109 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C110 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C111 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C112 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C113 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C114 | 4030006890 | Ceramic C1608 JF 1H 103Z-T-A |
| C115 | 4030006890 | Ceramic C1608 JF 1H 103Z-T-A |
| C116 | 4030006890 | Ceramic C1608 JF 1H 103Z-T-A |
| C117 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C118 | 4510002980 | Electrolytic 50 SS 10 μ F |
| C119 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C120 | 4030006710 | Ceramic C1608 SL 1H 470J-T-A |
| C121 | 4030006610 | Ceramic C1608 SL 1H 100D-T-A |
| C122 | 4030006890 | Ceramic C1608 JF 1H 103Z-T-A |
| C124 | 4030006660 | Ceramic C1608 SL 1H 220J-T-A |
| C125 | 4030006890 | Ceramic C1608 JF 1H 103Z-T-A |
| C126 | 4030006550 | Ceramic C1608 SL 1H 040C-T-A |
| C127 | 4020000660 | Cylinder UP125 SL 120J |
| C128 | 4030006850 | Ceramic C1608 JB 1H 471K-T-A |
| C129 | 4030006850 | Ceramic C1608 JB 1H 471K-T-A |
| C130 | 4030006550 | Ceramic C1608 SL 1H 040C-T-A |
| C131 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C132 | 4030006850 | Ceramic C1608 JB 1H 471K-T-A |
| C133 | 4030006850 | Ceramic C1608 JB 1H 471K-T-A |
| C134 | 4610001340 | Trimmer ECR-LA010A12 |
| C135 | 4030006180 | Ceramic C2012 UJ 1H 040C-T-A |
| C136 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C137 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C138 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C139 | 4610001340 | Trimmer ECR-LA010A12 |
| C140 | 4030006580 | Ceramic C1608 SL 1H 050C-T-A |
| C141 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C142 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C144 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C145 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C146 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C147 | 4030006550 | Ceramic C1608 SL 1H 040C-T-A |
| C148 | 4030006550 | Ceramic C1608 SL 1H 040C-T-A |
| C149 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C150 | 4010003830 | Ceramic DD06 SL 060D 500V |
| C151 | 4030006850 | Ceramic C1608 JB 1H 471K-T-A |
| C152 | 4030006610 | Ceramic C1608 SL 1H 100D-T-A |
| C153 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C154 | 4030006580 | Ceramic C1608 SL 1H 050C-T-A |

[MAIN-B UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION |
|----------|------------|--|
| C155 | 4030006610 | Ceramic C1608 SL 1H 100D-T-A |
| C156 | 4030006850 | Ceramic C1608 JB 1H 471K-T-A |
| C157 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C158 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C159 | 4030006850 | Ceramic C1608 JB 1H 471K-T-A |
| C162 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C163 | 4610001340 | Trimmer ECR-LA010A12 |
| C164 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C165 | 4030006850 | Ceramic C1608 JB 1H 471K-T-A |
| C166 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C167 | 4030006850 | Ceramic C1608 JB 1H 471K-T-A |
| C168 | 4030006850 | Ceramic C1608 JB 1H 471K-T-A |
| C169 | 4610001340 | Trimmer ECR-LA010A12 |
| C170 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C171 | 4030006580 | Ceramic C1608 SL 1H 050C-T-A |
| C172 | 4030006830 | Ceramic C1608 JF 1C 104Z-T-A |
| C173 | 4030006830 | Ceramic C1608 JF 1C 104Z-T-A |
| C174 | 4510002940 | Electrolytic 50 SS 1 μ F |
| C177 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C178 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C179 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C180 | 4030006580 | Ceramic C1608 SL 1H 070D-T-A |
| C181 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C182 | 4030006640 | Ceramic C1608 SL 1H 180J-T-A |
| C183 | 4030006550 | Ceramic C1608 SL 1H 040C-T-A |
| C184 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C185 | 4030006550 | Ceramic C1608 SL 1H 040C-T-A |
| C186 | 4030006550 | Ceramic C1608 SL 1H 040C-T-A |
| C187 | 4030006550 | Ceramic C1608 SL 1H 040C-T-A |
| C188 | 4030006640 | Ceramic C1608 SL 1H 180J-T-A |
| C189 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C190 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C191 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C192 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C193 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C194 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C195 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C196 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C197 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C198 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C199 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C200 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C201 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C202 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C203 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C204 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C205 | 4030006750 | Ceramic C1608 SL 1H 101J-T-A |
| C206 | 4510002640 | Electrolytic 25 SS 47 μ F |
| C207 | 4030006830 | Ceramic C1608 JF 1C 104Z-T-A |
| C208 | 4030006830 | Ceramic C1608 JF 1C 104Z-T-A |
| C209 | 4510003150 | Electrolytic 35 SS 33 μ F |
| C211 | 4510003150 | Electrolytic 35 SS 33 μ F |
| C213 | 4510003150 | Electrolytic 35 SS 33 μ F |
| C214 | 4550000320 | Tantalum DN 1V 0R1M |
| C215 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C216 | 4510002870 | Electrolytic 25 SS 100 μ F |
| C217 | 4510002870 | Electrolytic 25 SS 100 μ F |
| C218 | 4030006830 | Ceramic C1608 JF 1C 104Z-T-A |
| C219 | 4510002640 | Electrolytic 25 SS 47 μ F |
| C220 | 4510002640 | Electrolytic 25 SS 47 μ F |
| C221 | 4030006830 | Ceramic C1608 JF 1C 104Z-T-A |
| C222 | 4510002730 | Electrolytic 10 SS 100 μ F |
| C223 | 4030006830 | Ceramic C1608 JF 1C 104Z-T-A |
| C224 | 4030006830 | Ceramic C1608 JF 1C 104Z-T-A |
| C225 | 4510002640 | Electrolytic 25 SS 47 μ F |
| C228 | 4510002380 | Electrolytic 18 SS 470 μ F (10X12.5) |
| C229 | 4030006830 | Ceramic C1608 JF 1C 104Z-T-A |
| C230 | 4030006830 | Ceramic C1608 JF 1C 104Z-T-A |
| C231 | 4030006830 | Ceramic C1608 JF 1C 104Z-T-A |
| C232 | 4030006830 | Ceramic C1608 JF 1C 104Z-T-A |
| C233 | 4030006830 | Ceramic C1608 JF 1C 104Z-T-A |
| C234 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C235 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C236 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C237 | 4030006860 | Ceramic C1608 JB 1H 102K-T-A |
| C238 | 4030006850 | Ceramic C1608 JB 1H 471K-T-A |
| C239 | 4030006830 | Ceramic C1608 JF 1C 104Z-T-A |
| C240 | 4030006860 | Ceramic C2012 JF 1C 105Z-T-A |

[MAIN-B UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|----------------------|
| C242 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C243 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C244 | 4030008860 | Ceramic | C2012 JF 1C 105Z-T-A |
| C245 | 4030008530 | Ceramic | C1608 SL 1H 020C-T-A |
| C246 | 4030008850 | Ceramic | C1608 JB 1H 471K-T-A |
| C248 | 4030008550 | Ceramic | C1608 SL 1H 040C-T-A |
| C249 | 4030008680 | Ceramic | C2012 JF 1C 105Z-T-A |
| C250 | 4550000890 | Tantalum | TESVC 1C 475M-12L |
| C251 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| EP1 | 0910030182 | P.C. Board | B 3030B (MAIN-B) |

[PLL-B UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|----------------------------------|
| IC1 | 1130005700 | IC | M58780FP |
| IC2 | 1130004200 | IC | TC4S68F (TE85R) |
| Q1 | 1560000360 | FET | 2SK209-Y (TE85R) |
| Q2 | 1530002490 | Transistor | 2SC3324-GR (TE85R) |
| Q3 | 1530000160 | Transistor | 2SC2712-Y (TE85RTEM) |
| Q4 | 1590000420 | Transistor | RN1404 (TE85R) |
| Q5 | 1530002030 | Transistor | 2SC3772-3-TA |
| Q6 | 1590000480 | Transistor | RN2402 (TE85R) |
| R1 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R2 | 7030003540 | Resistor | ERJ3GEYJ 682 V (6.8 k Ω) |
| R3 | 7030003410 | Resistor | ERJ3GEYJ 561 V (560 Ω) |
| R4 | 7030000460 | Resistor | MCR10EZHZ 4.7 k Ω (472) |
| R5 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R6 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R7 | 7030003450 | Resistor | ERJ3GEYJ 122 V (1.2 k Ω) |
| R8 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R12 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R13 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R14 | 7030003640 | Resistor | ERJ3GEYJ 473 V (47 k Ω) |
| R15 | 7030003220 | Resistor | ERJ3GEYJ 150 V (15 Ω) |
| R16 | 7030003220 | Resistor | ERJ3GEYJ 150 V (15 Ω) |
| R17 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R18 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R19 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| R20 | 7030003220 | Resistor | ERJ3GEYJ 150 V (15 Ω) |
| R21 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R22 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R23 | 7030003360 | Resistor | ERJ3GEYJ 221 V (220 Ω) |
| R24 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| C1 | 4030005110 | Ceramic | C2012 JB 1E 473K-T-A |
| C2 | 4030006900 | Ceramic | C1608 JB 1E 103K-T-A |
| C3 | 4030006900 | Ceramic | C1608 JB 1E 103K-T-A |
| C4 | 4550000550 | Tantalum | TESVA 1V 224M1-8L |
| C5 | 4550000940 | Tantalum | TESVB2 1D 225M-8L |
| C6 | 4550000940 | Tantalum | TESVB2 1D 225M-8L |
| C7 | 4030008680 | Ceramic | C2012 JF 1C 105Z-T-A |
| C8 | 4030008630 | Ceramic | C1608 JF 1C 104Z-T-A |
| C9 | 4030008880 | Ceramic | C1608 JB 1H 102K-T-A |
| C10 | 4030008880 | Ceramic | C1608 JB 1H 102K-T-A |
| C12 | 4030008680 | Ceramic | C2012 JF 1C 105Z-T-A |
| C13 | 4030008890 | Ceramic | C1608 JF 1H 103Z-T-A |
| C14 | 4030007010 | Ceramic | C1608 CH 1H 100D-T-A |
| C15 | 4030008880 | Ceramic | C1608 JB 1H 102K-T-A |
| C16 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C17 | 4030008890 | Ceramic | C1608 JF 1H 103Z-T-A |
| C18 | 4030008660 | Ceramic | C1608 SL 1H 220J-T-A |
| C19 | 4030008850 | Ceramic | C1608 JB 1H 471K-T-A |
| EP1 | 0910030721 | P.C. Board | B 3082A (PLL-B) |

[VCO-B UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|----------------------------------|
| Q1 | 1560000650 | FET | 2SK1577-2-T7 |
| Q2 | 1590001280 | Transistor | RN1408 (TE85R) |
| Q3 | 1530002240 | Transistor | 2SC3775-3-TA |
| Q4 | 1560000640 | FET | 2SK1740-TA |
| Q5 | 1590001280 | Transistor | RN1408 (TE85R) |
| D1 | 1720000220 | Varicap | 1SV166-T2B |
| D2 | 1720000220 | Varicap | 1SV166-T2B |
| D3 | 1720000220 | Varicap | 1SV166-T2B |
| D4 | 1720000220 | Varicap | 1SV166-T2B |
| L1 | 6200001560 | Coil | LER 015T R68M |
| L2 | 6200001560 | Coil | LER 015T R68M |
| L3 | 6130002450 | Coil | LB-273 |
| L4 | 6200001570 | Coil | LER 015T 1R0M |
| L5 | 6200001570 | Coil | LER 015T 1R0M |
| L6 | 6200001590 | Coil | LER 015T 2R2M |
| L7 | 6200001590 | Coil | LER 015T 2R2M |
| L8 | 6200001590 | Coil | LER 015T 2R2M |
| L9 | 6130002440 | Coil | LB-272 |
| L10 | 6200001230 | Coil | MLF2012A 1R0M-T |
| R1 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R3 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R5 | 7030003280 | Resistor | ERJ3GEYJ 470 V (47 Ω) |
| R6 | 7030003280 | Resistor | ERJ3GEYJ 470 V (47 Ω) |
| R7 | 7030003310 | Resistor | ERJ3GEYJ 820 V (82 Ω) |
| R8 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R9 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| R10 | 7030003480 | Resistor | ERJ3GEYJ 222 V (2.2 k Ω) |
| R11 | 7030003520 | Resistor | ERJ3GEYJ 472 V (4.7 k Ω) |
| R12 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| R15 | 7030003280 | Resistor | ERJ3GEYJ 470 V (47 Ω) |
| R18 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R19 | 7030003400 | Resistor | ERJ3GEYJ 471 V (470 Ω) |
| C2 | 4030006860 | Ceramic | C1608 JB 1H 102K-T-A |
| C3 | 4030007110 | Ceramic | C1608 CH 1H 880J-T-A |
| C6 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C7 | 4030008550 | Ceramic | C1608 SL 1H 040C-T-A |
| C9 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C10 | 4030006910 | Ceramic | C1608 CH 1H 0R5C-T-A |
| C11 | 4030008880 | Ceramic | C1608 JB 1H 102K-T-A |
| C12 | 4030006900 | Ceramic | C1608 JB 1E 103K-T-A |
| C13 | 4030008610 | Ceramic | C1608 SL 1H 100D-T-A |
| C15 | 4030006900 | Ceramic | C1608 JB 1E 103K-T-A |
| C17 | 4030008880 | Ceramic | C1608 JB 1H 102K-T-A |
| C18 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C21 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C22 | 4030006920 | Ceramic | C1608 CH 1H 010C-T-A |
| C23 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C24 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C25 | 4030008850 | Ceramic | C1608 JB 1H 471K-T-A |
| EP1 | 0910030710 | P.C. Board | B 3081 (VCO-B) |

[B-BAND UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|----------------------------------|
| Q1 | 1530002430 | Transistor | 2SC4315 (TE85R) |
| Q2 | 1580000360 | FET | 3SK177-T2B U73 |
| Q3 | 1590000420 | Transistor | RN1404 (TE85R) |
| Q4 | 1530002240 | Transistor | 2SC3775-3-TA |
| D1 | 1750000080 | Diode | 1SS153-T2 |
| L1 | 8200000720 | Coil | LQN 2A 10NM |
| R1 | 7030003540 | Resistor | ERJ3GEYJ 682 V (6.8 k Ω) |
| R2 | 7030003600 | Resistor | ERJ3GEYJ 223 V (22 k Ω) |
| R3 | 7030003360 | Resistor | ERJ3GEYJ 221 V (220 Ω) |
| R4 | 7030003580 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R5 | 7030003340 | Resistor | ERJ3GEYJ 151 V (150 Ω) |
| R6 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R7 | 7030003320 | Resistor | ERJ3GEYJ 101 V (100 Ω) |
| R8 | 7030003440 | Resistor | ERJ3GEYJ 102 V (1 k Ω) |
| R9 | 7030003580 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R10 | 7030003440 | Resistor | ERJ3GEYJ 102 V (1 k Ω) |
| C1 | 4030006540 | Ceramic | C1608 SL 1H 030C-T-A |
| C2 | 4030006540 | Ceramic | C1608 SL 1H 030C-T-A |
| C3 | 4030006540 | Ceramic | C1608 SL 1H 030C-T-A |
| C4 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C5 | 4030006550 | Ceramic | C1608 SL 1H 040C-T-A |
| C6 | 4030006550 | Ceramic | C1608 SL 1H 040C-T-A |
| C7 | 4030006700 | Ceramic | C1608 SL 1H 390J-T-A |
| C8 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C9 | 4030006540 | Ceramic | C1608 SL 1H 030C-T-A |
| C10 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| C11 | 4030008860 | Ceramic | C1608 JB 1H 102K-T-A |
| EP1 | 0910030691 | P.C. Board | B 2379A (B-BAND) |
| EP2 | 6910003330 | Lead Frame | PD2.0-0.9-8 |

[TONE UNIT] (U.S.A. only)

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|----------------------------------|
| IC1 | 1130005100 | IC | FX385LG |
| X1 | 6080000480 | Crystal | CSB1000J221T |
| R1 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| R2 | 7030003580 | Resistor | ERJ3GEYJ 153 V (15 k Ω) |
| R3 | 7310002600 | Trimmer | RV-110 (RH03 A3AS4X0AA)473 |
| R4 | 7030003800 | Resistor | ERJ3GEYJ 105 V (1 M Ω) |
| R5 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R6 | 7030003680 | Resistor | ERJ3GEYJ 104 V (100 k Ω) |
| R7 | 7030003560 | Resistor | ERJ3GEYJ 103 V (10 k Ω) |
| C1 | 4550000420 | Tantalum | TESVA 1A 105M1-8L |
| C2 | 4030008880 | Ceramic | C1608 JB 1C 223K-T-A |
| C3 | 4030007170 | Ceramic | C1608 CH 1H 221J-T-A |
| C4 | 4030007170 | Ceramic | C1608 CH 1H 221J-T-A |
| C5 | 4550002950 | Tantalum | TESVA 0J 335M1-8L |
| EP1 | 0910031021 | P.C. Board | B 3139A (TONE) |

SECTION 6 ADJUSTMENT PROCEDURES

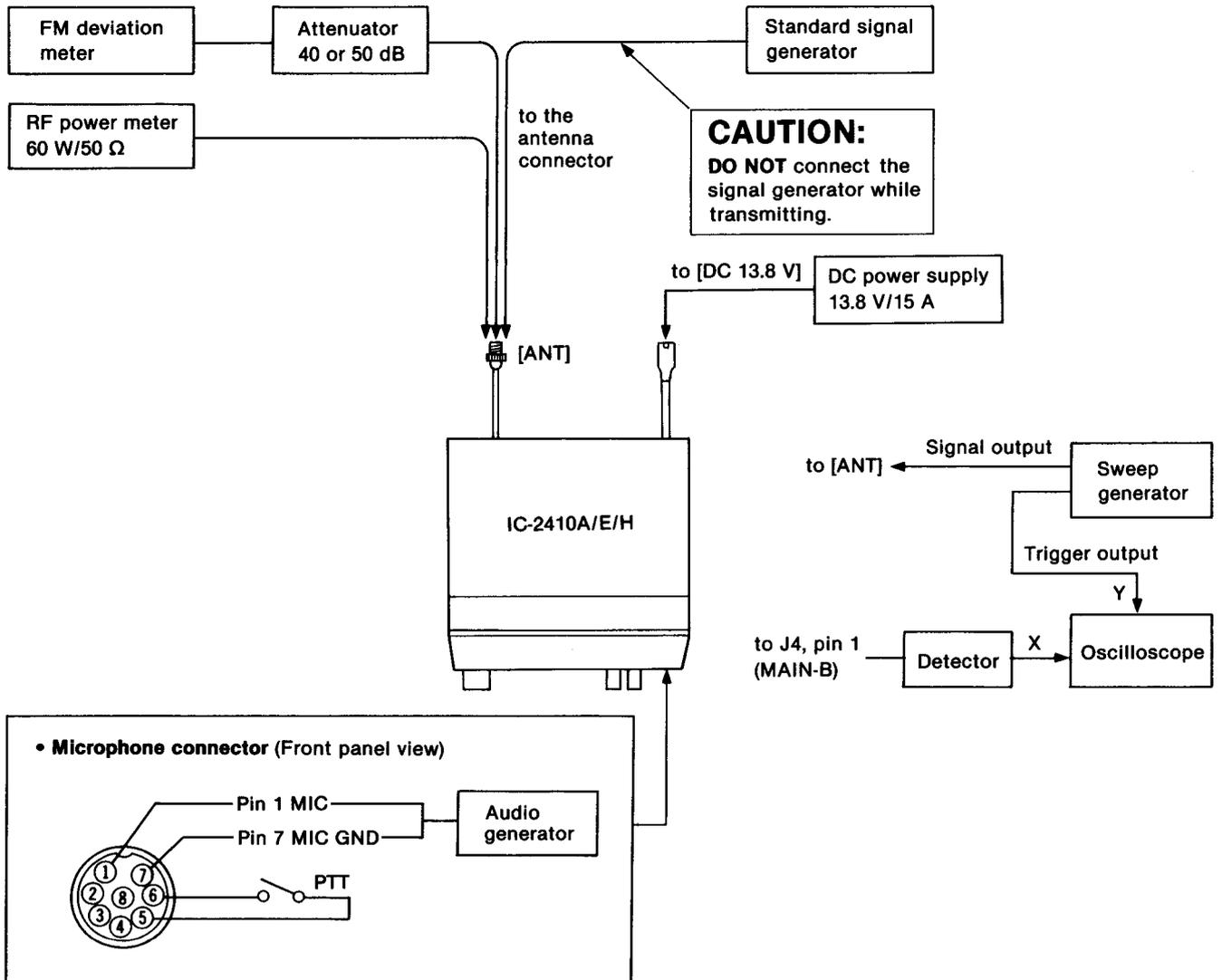
6-1 PREPARATION BEFORE SERVICING

REQUIRED TEST EQUIPMENT

| EQUIPMENT | GRADE AND RANGE | EQUIPMENT | GRADE AND RANGE |
|----------------------------------|--|-----------------|---|
| DC power supply | Output voltage : 13.8 V DC Current capacity : 15 A or more | Audio generator | Frequency range : 300~3000 Hz Output level : 1~500 mV |
| RF power meter (terminated type) | Measuring range : 1~60 W Frequency range : 120~460 MHz Impedance : 50 Ω SWR : Less than 1.2 : 1 | Attenuator | Power attenuation : 40 or 50 dB Capacity : 60 W or more |
| Frequency counter | Frequency range : 0.1~460 MHz Frequency accuracy : ±1 ppm or better Sensitivity : 100 mV or better | Sweep generator | Frequency range : 0.1~460 MHz Sweep bandwidth : At least 10 MHz Output impedance : 50 Ω |
| Oscilloscope | Frequency range : DC~20 MHz Measuring range : 0.01~10 V | Detector | |
| Standard signal generator (SSG) | Frequency range : 0.1~460 MHz Output level : -127~-17 dBm (0.1 μV~32 mV) | | |
| DC voltmeter | Input impedance : 50 kΩ/DC or better | | |

CW: Clockwise CCW: Counterclockwise CP: Check point

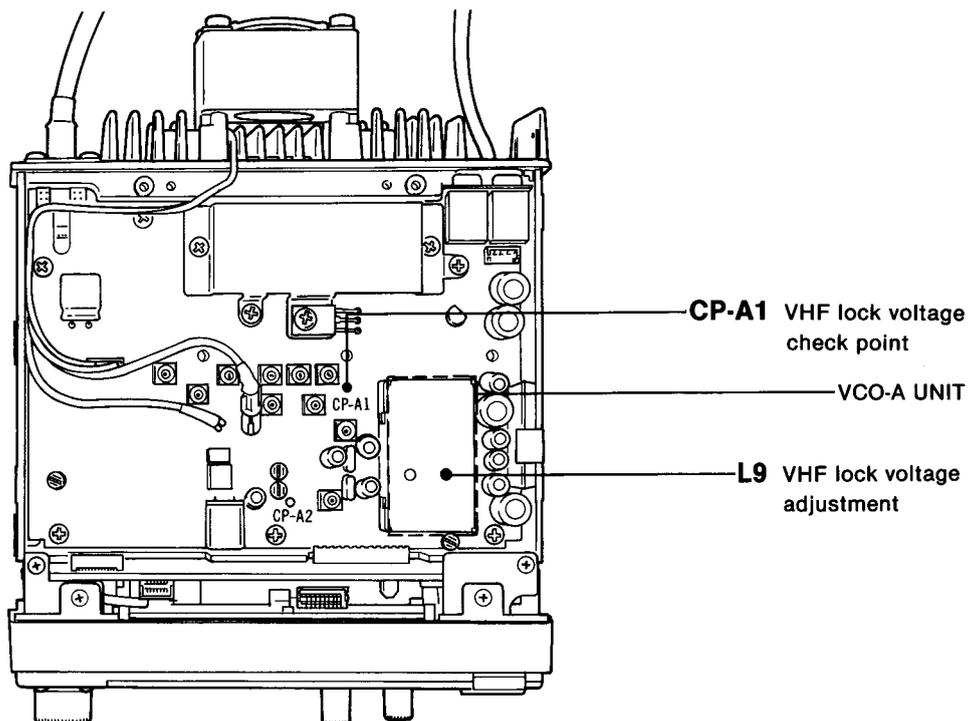
CONNECTION



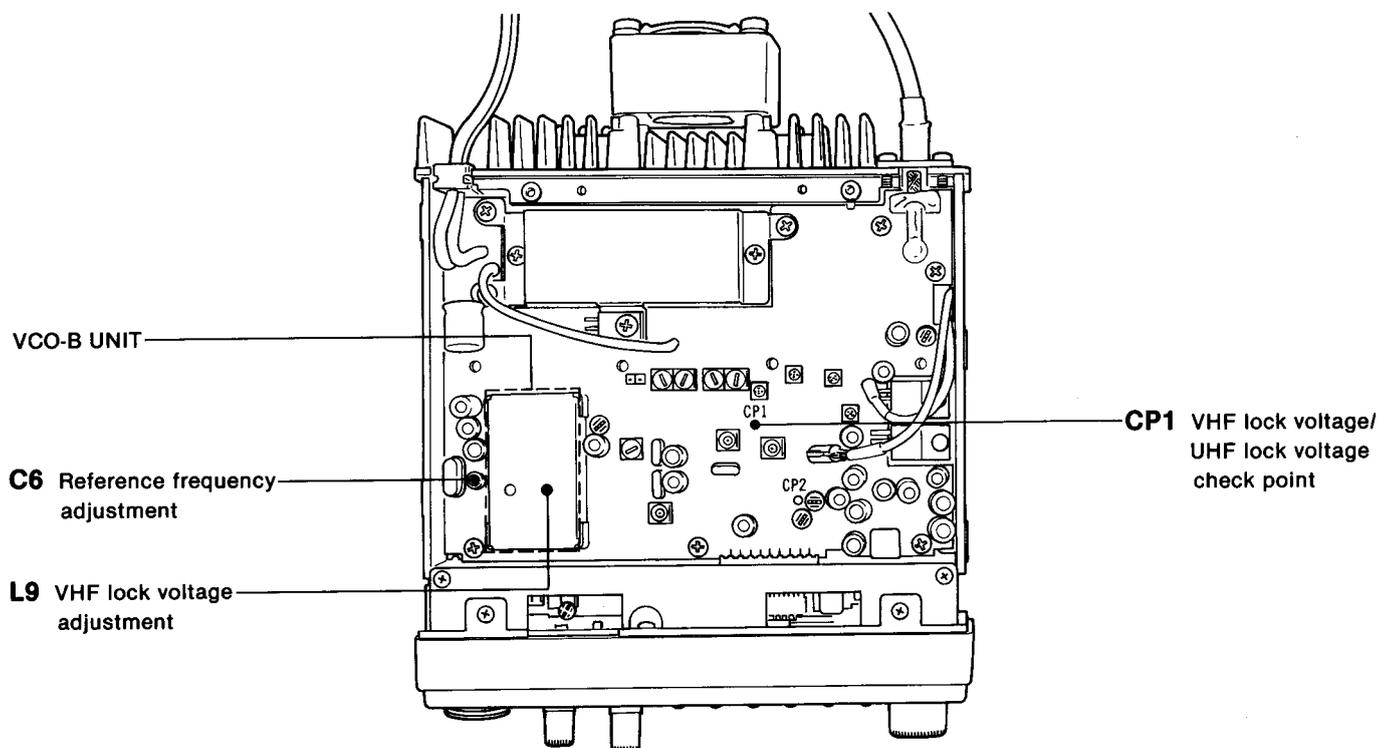
6-2 PLL ADJUSTMENT

| ADJUSTMENT | | ADJUSTMENT CONDITIONS | MEASUREMENT | | VALUE | ADJUSTMENT POINT | |
|---------------------|---|---|-------------|--|---|------------------|--------|
| | | | UNIT | LOCATION | | UNIT | ADJUST |
| REFERENCE FREQUENCY | 1 | <ul style="list-style-type: none"> Displayed frequency [U DISPLAY]: 445.0000 MHz (USA version) 435.0000 MHz (All other versions) Connect the RF power meter or a 50 Ω dummy load to the [ANT] connector. Simplex Transmitting | Rear panel | Loosely couple the frequency counter to the [ANT] connector. | 445.0000 MHz (USA version) 435.0000 MHz (All other versions) | MAIN-B | C6 |
| VHF LOCK VOLTAGE | 1 | <ul style="list-style-type: none"> Displayed frequency [V DISPLAY]: 145.0000 MHz Receiving | MAIN-A | Connect the DC voltmeter to CP-A1. | 7.5 V | MAIN-A (VCO-A) | L9 |
| | 2 | <ul style="list-style-type: none"> Displayed frequency [U DISPLAY]: 145.0000 MHz | MAIN-B | Connect the DC voltmeter to CP1. | 5.5 V | MAIN-B (VCO-B) | L9 |
| UHF LOCK VOLTAGE | 1 | <ul style="list-style-type: none"> Displayed frequency [U DISPLAY]: 445.0000 MHz (USA version) 435.0000 MHz (All other versions) Receiving | MAIN-B | Connect the DC voltmeter to CP1. | 12 V \pm 0.5 V (USA version) 11 V \pm 0.5 V (All other versions) | MAIN-B | Verify |

• MAIN-A UNIT

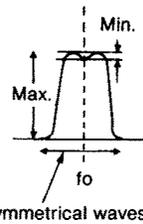


• MAIN-B UNIT



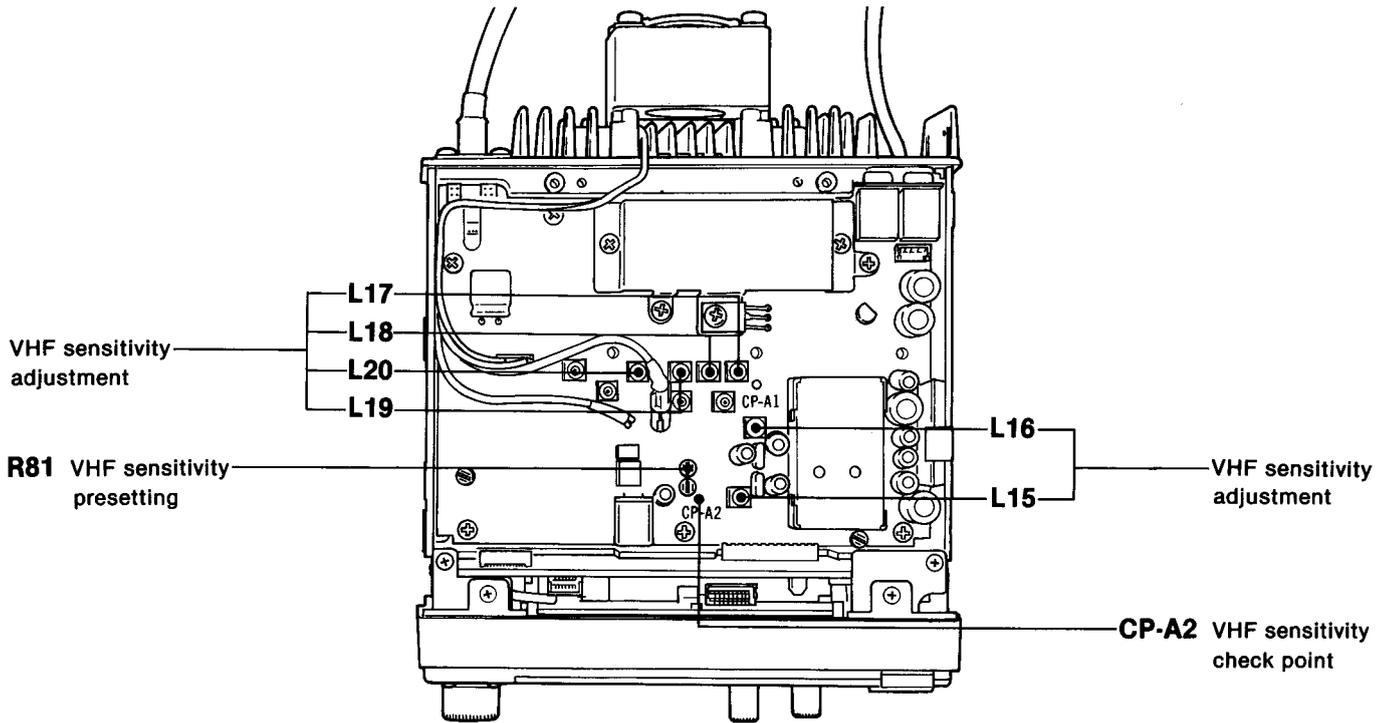
6-3 RECEIVER ADJUSTMENT

| ADJUSTMENT | ADJUSTMENT CONDITIONS | MEASUREMENT | | VALUE | ADJUSTMENT POINT | | |
|--|-----------------------|--|----------|---|--------------------|--------|---------------------------------------|
| | | UNIT | LOCATION | | UNIT | ADJUST | |
| VHF SENSITIVITY | 1 | <ul style="list-style-type: none"> Displayed frequency [V DISPLAY]: 146.0000 MHz (USA version) 145.0000 MHz (All other versions) Connect the SSG to the [ANT] connector and set as: Level : 10 μV* (-87 dBm) Modulation: 1 kHz Deviation : \pm3.5 kHz R81 (MAIN-A) : Max. CW Receiving | MAIN-A | Connect the DC voltmeter to CP-A2. | Maximum | MAIN-A | Adjust in sequence L20, L19, L18, L17 |
| | 2 | <ul style="list-style-type: none"> Displayed frequency [U DISPLAY]: 146.0000 MHz (USA version) 145.0000 MHz (All other versions) | MAIN-B | Connect the DC voltmeter to CP2. | Maximum | MAIN-B | Adjust in sequence L32, L33 |
| | 3 | <ul style="list-style-type: none"> Displayed frequency [V DISPLAY]: 146.0000 MHz (USA version) 145.0000 MHz (All other versions) Set the SSG as: Deviation : \pm7.0 kHz | MAIN-A | Connect the DC voltmeter to CP-A2. | Maximum | MAIN-A | Adjust in sequence L16, L15 |
| NOTE: Adjust the standard signal generator output level so that the DC voltmeter needle remains at all times in the lowest 30 % of the full range. | | | | | | | |
| UHF SENSITIVITY | 1 | <ul style="list-style-type: none"> Displayed frequency [U DISPLAY]: 445.0000 MHz (USA version) 435.0000 MHz (All other versions) Connect the sweep generator to the [ANT] connector and set as: Sweep level: 22 mV* (-20 dBm) Center frequency: Same as the displayed frequency Sweep bandwidth: 10 MHz or 20 MHz Receiving | MAIN-B | Connect the oscilloscope to J4, pin 1 via the detector. | Adjust as follows: | MAIN-B | C139, C134, L22, L21 |
| | 2 | <ul style="list-style-type: none"> Connect the SSG to the [ANT] connector and set as: Level : 10 μV* (-87 dBm) Modulation: 1 kHz Deviation : \pm7.0 kHz R87 (MAIN-B) : Max. CW | | Connect the DC voltmeter to CP2. | Maximum | | |
| NOTE: Adjust the standard signal generator output level so that the DC voltmeter needle remains at all times in the lowest 30 % of the full range. | | | | | | | |

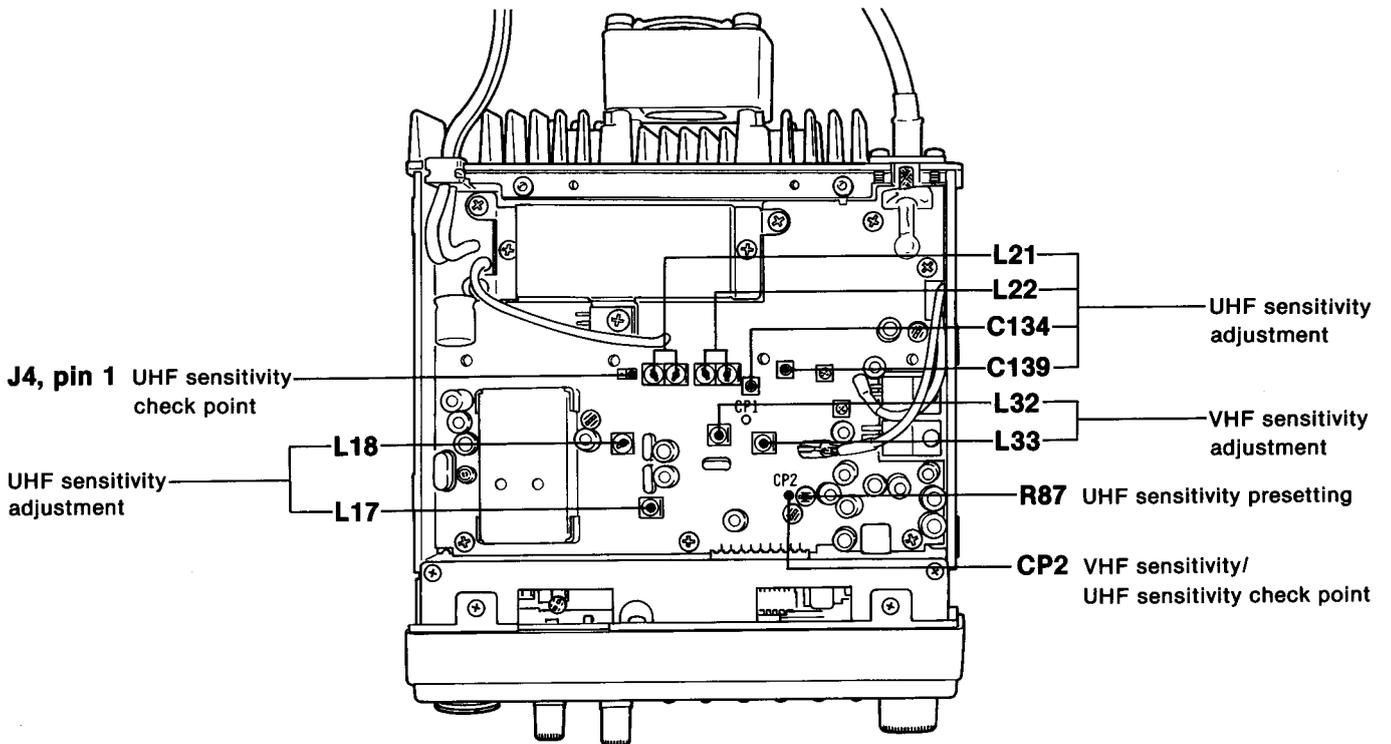


* This output level of the standard signal generator (SSG) is indicated as SSG's open circuit.

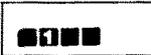
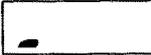
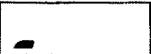
• MAIN-A UNIT



• MAIN-B UNIT

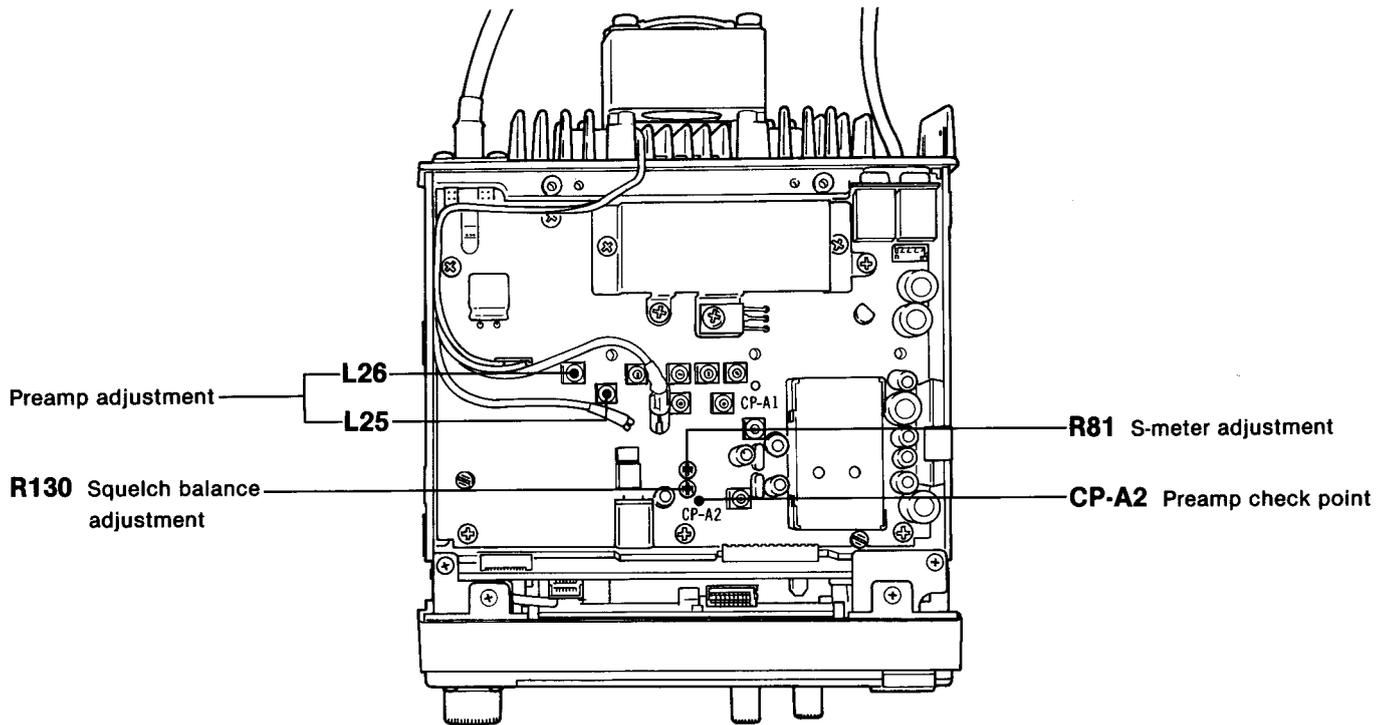


RECEIVER ADJUSTMENT (CONTINUED)

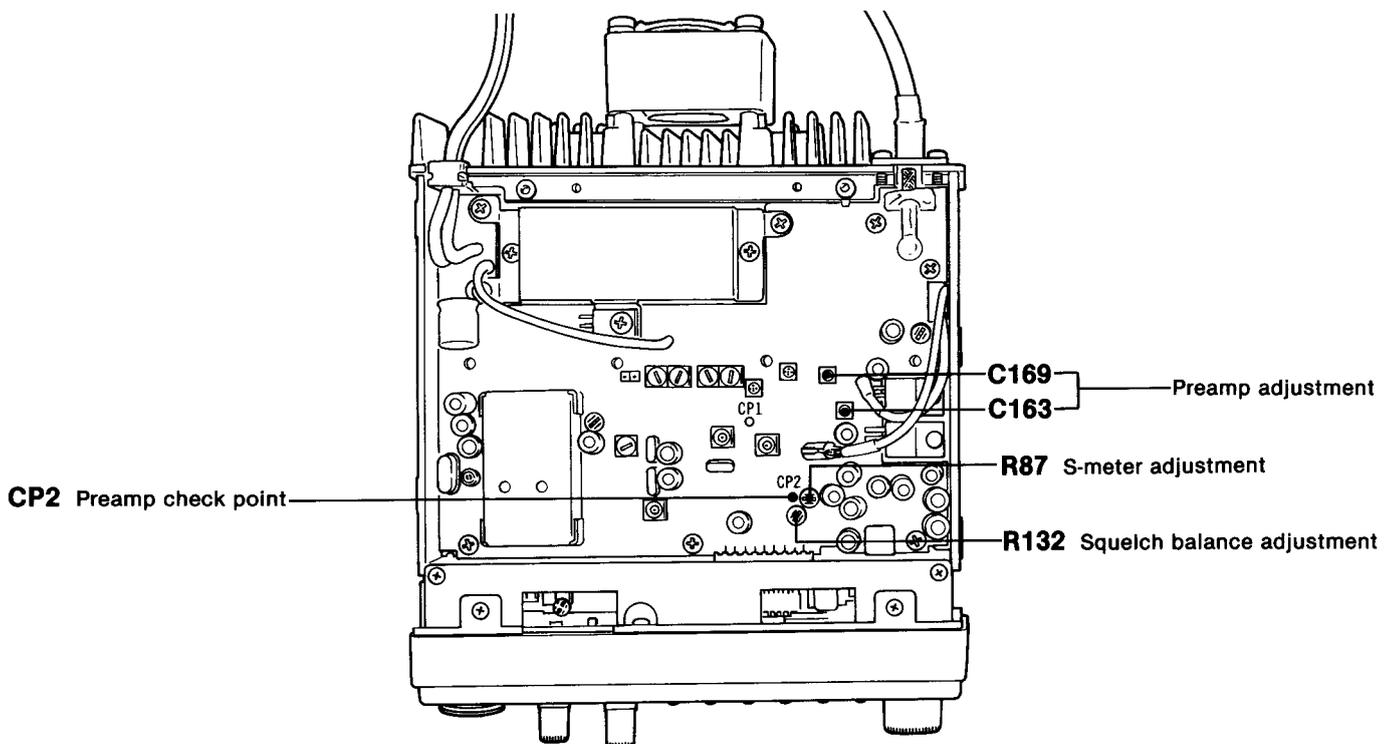
| ADJUSTMENT | ADJUSTMENT CONDITIONS | MEASUREMENT | | VALUE | ADJUSTMENT POINT | | |
|-----------------|--|---|------------------|------------------------------------|---|-------------|-----------------------------|
| | | UNIT | LOCATION | | UNIT | ADJUST | |
| PREAMP | 1 | <ul style="list-style-type: none"> Displayed frequency [V and U DISPLAYS]: 146.0000 MHz (USA version) 145.0000 MHz (All other versions) Connect the SSG to the [ANT] connector and set as: Level : 3.2 μV^* (-97 dBm) Modulation: 1 kHz Deviation : ± 3.5 kHz Receiving | MAIN-A | Connect the DC voltmeter to CP-A2. | Maximum | MAIN-A | Adjust in sequence L25, L26 |
| | 2 | <ul style="list-style-type: none"> Displayed frequency [V and U DISPLAYS]: 445.0000 MHz (USA version) 435.0000 MHz (All other versions) | MAIN-B | Connect the DC voltmeter to CP2. | Maximum | MAIN-B | C163, C169 |
| | NOTE: Adjust the standard signal generator output level so that the DC voltmeter needle remains at all times in the lowest 30 % of the full range. | | | | | | |
| S-METER | 1 | <ul style="list-style-type: none"> Displayed frequency [V DISPLAY]: 146.0000 MHz (USA version) 145.0000 MHz (All other versions) Connect the SSG to the [ANT] connector and set as: Level : 1.0 μV^* (-107 dBm) Modulation: 1 kHz Deviation : ± 3.5 kHz Receiving | Function display | S indicator [V DISPLAY] | 4 dots (S3)  | MAIN-A | R81 |
| | 2 | <ul style="list-style-type: none"> Displayed frequency [U DISPLAY]: 445.0000 MHz (USA version) 435.0000 MHz (All other versions) | | S indicator [U DISPLAY] | 4 dots (S3)  | | |
| SQUELCH BALANCE | 1 | <ul style="list-style-type: none"> Displayed frequency [V DISPLAY]: 146.0000 MHz (USA version) 145.0000 MHz (All other versions) Connect the SSG to the [ANT] connector and set as: Level : 0.1 μV^* (-127 dBm) Modulation: 1 kHz Deviation : ± 3.5 kHz | Function display | Squelch indicator [V DISPLAY] | 1 dot (SQL1)  | Front panel | [V SQL] switch |
| | 2 | <ul style="list-style-type: none"> R130 (MAIN-A) : Max. CW Receiving | | Top cover | Speaker | | |
| | 3 | <ul style="list-style-type: none"> Displayed frequency [U DISPLAY]: 445.0000 MHz (USA version) 435.0000 MHz (All other versions) | Function display | Squelch indicator [U DISPLAY] | 1 dot (SQL1)  | Front panel | [U SQL] switch |
| | 4 | | | Top cover | Speaker | | |

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

• MAIN-A UNIT



• MAIN-B UNIT



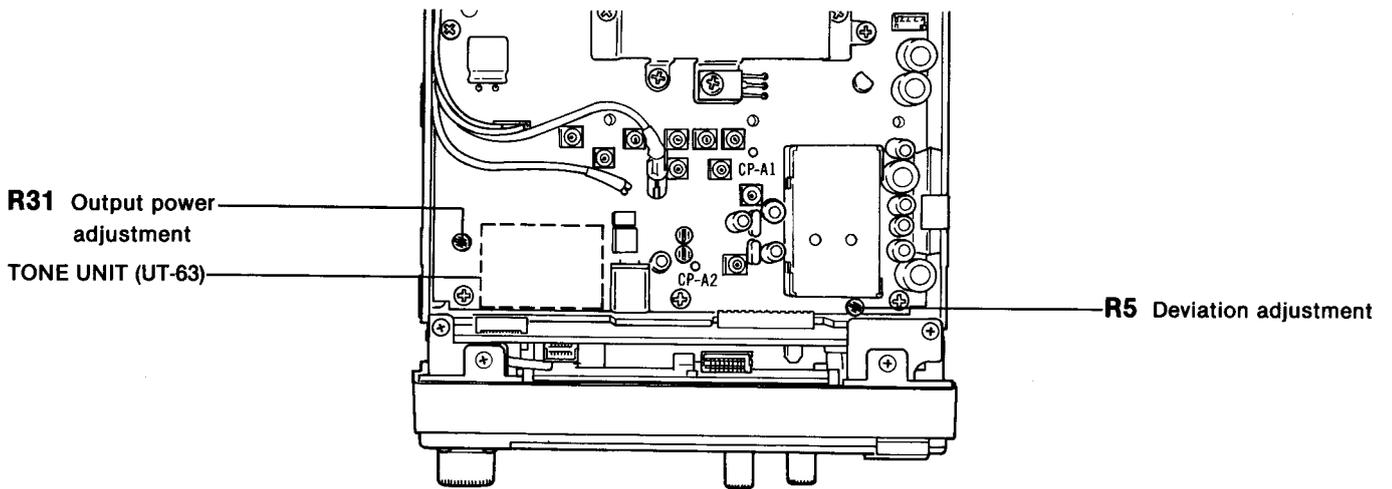
6-4 TRANSMITTER ADJUSTMENT

| ADJUSTMENT | ADJUSTMENT CONDITIONS | MEASUREMENT | | VALUE | ADJUSTMENT POINT | | | |
|---------------------------|-----------------------|---|------------|---|--------------------------------------|--------|------------------------------------|--------|
| | | UNIT | LOCATION | | UNIT | ADJUST | | |
| OUTPUT POWER | 1 | <ul style="list-style-type: none"> Displayed frequency [V DISPLAY]: 146.0000 MHz (USA version) 145.0000 MHz (All other versions) [HI/LOW] switch : HI Simplex Transmitting | Rear panel | Connect the RF power meter to the [ANT] connector. | 25 W (IC-2410A/E) 45 W (IC-2410H) | MAIN-A | R31 | |
| | 2 | <ul style="list-style-type: none"> SET mode : LPo-1 [HI/LOW] switch : LOW | | | | | 1 W (IC-2410A/E) 5 W (IC-2410H) | Verify |
| | 3 | <ul style="list-style-type: none"> SET mode : LPo-2 [HI/LOW] switch : LOW | | | | | 10 W (IC-2410A/E/H) | |
| | 4 | <ul style="list-style-type: none"> Displayed frequency [U DISPLAY]: 445.0000 MHz (USA version) 435.0000 MHz (All other versions) [HI/LOW] switch : HI | | | 25 W (IC-2410A/E) 35 W (IC-2410H) | MAIN-B | R47 | |
| | 5 | <ul style="list-style-type: none"> SET mode : LPo-1 [HI/LOW] switch : LOW | | | | | 1 W (IC-2410A/E) 5 W (IC-2410H) | Verify |
| | 6 | <ul style="list-style-type: none"> SET mode : LPo-2 [HI/LOW] switch : LOW | | | | | 10 W (IC-2410A/E/H) | |
| DEVIATION | 1 | <ul style="list-style-type: none"> Displayed frequency [V DISPLAY]: 146.0000 MHz (USA version) 145.0000 MHz (All other versions) [HI/LOW] switch : HI [T/T. SQL] switch : OFF Connect the audio generator to the microphone connector and set as: 65 mV/1.0 kHz (USA version) 20 mV/1.0 kHz (All other versions) Set the FM deviation meter as: HPF : 50 Hz LPF : 20 kHz De-emphasis: OFF Detector : (P-P)/2 Transmitting | Rear panel | Connect the FM deviation meter to the [ANT] connector via the attenuator. | ±4.8 kHz | MAIN-A | R5 | |
| | 2 | <ul style="list-style-type: none"> Displayed frequency [U DISPLAY]: 445.0000 MHz (USA version) 435.0000 MHz (All other versions) | | | | | MAIN-B | R7 |
| TONE DEVIATION (USA only) | 1 | <ul style="list-style-type: none"> Displayed frequency [U DISPLAY]: 445.0000 MHz [T/T. SQL] switch : ON Remove TONE UNIT. Apply no signal to the microphone connector. Set the tone frequency as: 88.5 Hz Set the FM deviation meter as: HPF : OFF LPF : 20 kHz De-emphasis: OFF Detector : (P-P)/2 Transmitting | Rear panel | Connect the FM deviation meter to the [ANT] connector via the attenuator. | ±0.8 kHz | AF | R15 | |
| | 2 | <ul style="list-style-type: none"> Connect TONE UNIT. | | | | | TONE (UT-63) | R3 |

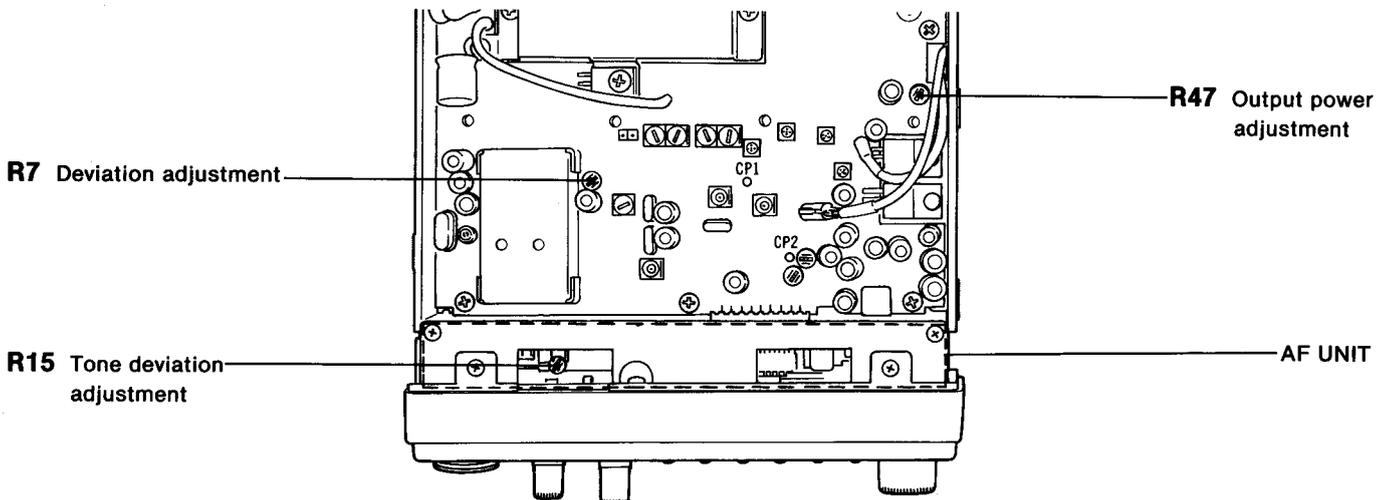
TRANSMITTER ADJUSTMENT (CONTINUED)

| ADJUSTMENT | ADJUSTMENT CONDITIONS | MEASUREMENT | | VALUE | ADJUSTMENT POINT | |
|--|--|-------------|---|----------|------------------|--------|
| | | UNIT | LOCATION | | UNIT | ADJUST |
| TONE DEVIATION (All other versions) | 1 <ul style="list-style-type: none"> • Displayed frequency [U DISPLAY]: 435.0000 MHz • [T/T. SQL] switch : ON • Apply no signal to the microphone connector. • Set the tone frequency as: 88.5 Hz • Set the FM deviation meter as: <ul style="list-style-type: none"> HPF : OFF LPF : 20 kHz De-emphasis: OFF Detector : (P-P)/2 • Transmitting | Rear panel | Connect the FM deviation meter to the [ANT] connector via the attenuator. | ±0.8 kHz | AF | R15 |

• MAIN-A UNIT

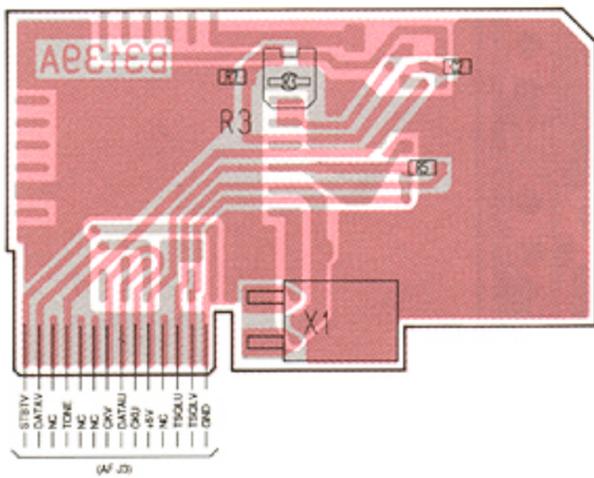
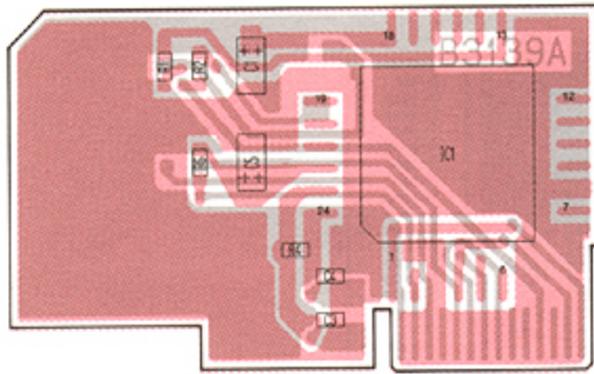


• MAIN-B UNIT

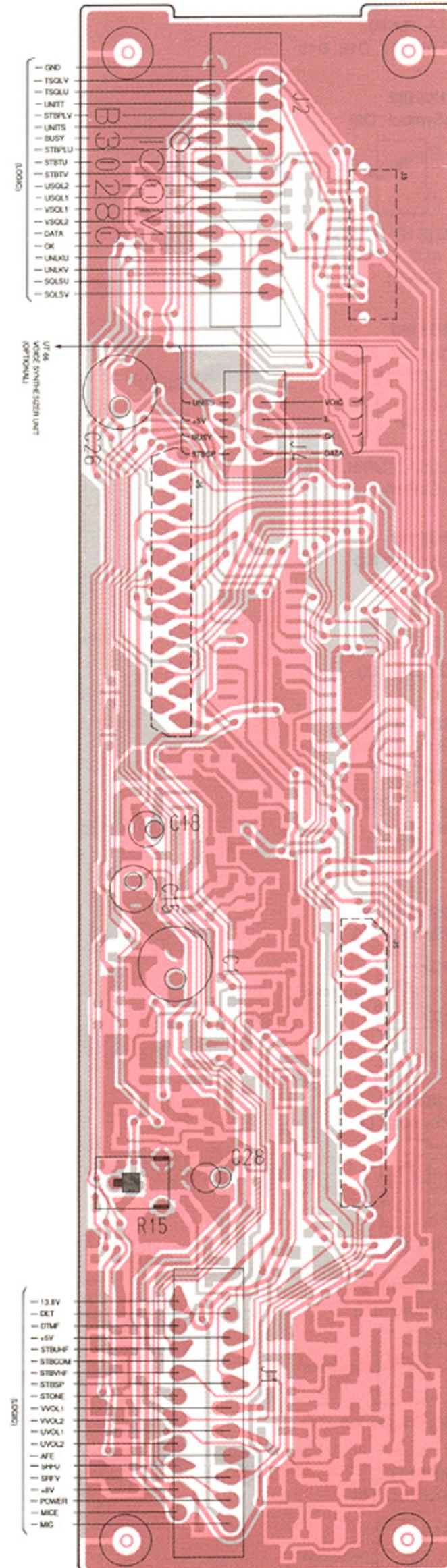


7-2 AF AND TONE (U.S.A. only) UNITS

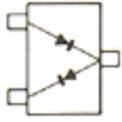
• TONE (U.S.A. only) UNIT



• AF UNIT

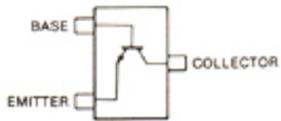


1SS226
(Symbol: C3)



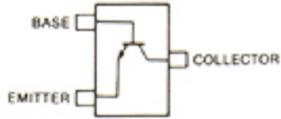
D1

2SC2712 GR
(Symbol: LG)



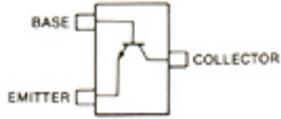
Q1, Q5, Q6

2SC2712 Y
(Symbol: LY)



Q12, Q13, Q14, Q17
Q18, Q19

2SC3326
(Symbol: CCB)



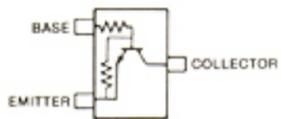
Q15, Q16, Q20, Q21
Q22, Q23, Q24

2SJ106 Y
(Symbol: VY)

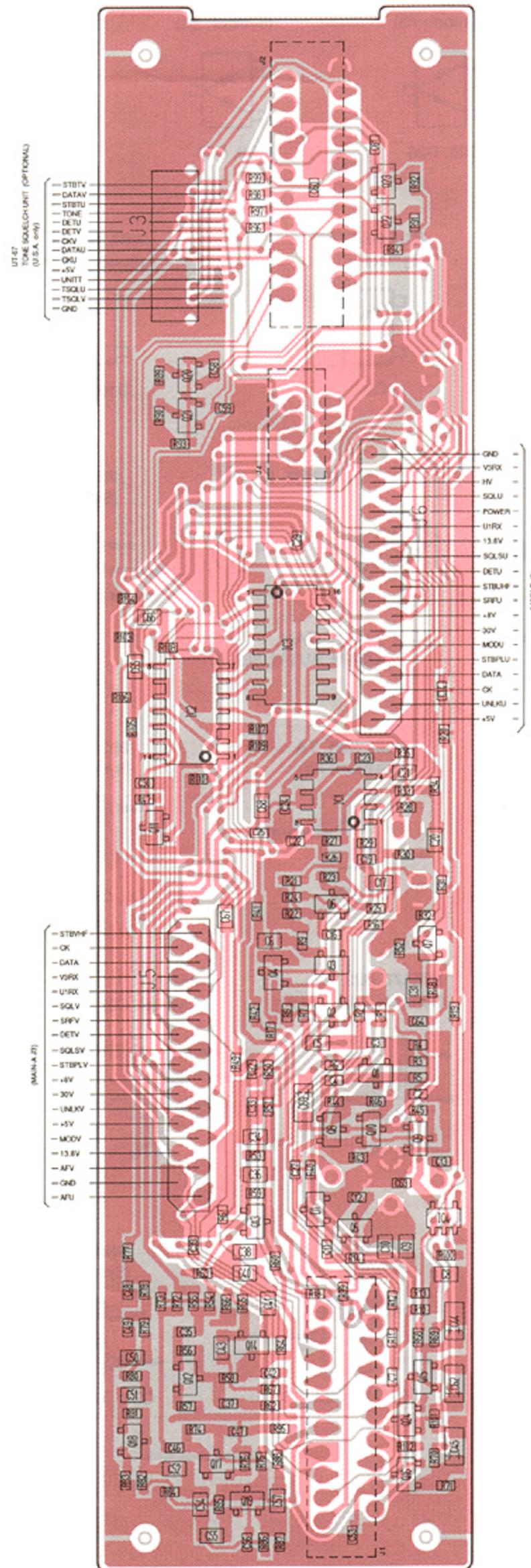


Q2, Q3, Q7, Q8, Q10

RN1404
(Symbol: XD)



Q4, Q9, Q11



7-3 MAIN-A, PLL-A AND VCO-A UNITS

• MAIN-A UNIT

1SS153
(Symbol: A9)



D4, D5, D23

1SS181
(Symbol: A3)



D25, D26

1SS184
(Symbol: B3)



D3, D28

1SS193
(Symbol: F3)



D2, D6, D24, D27

1SS226
(Symbol: C3)



D11, D20

HSM88AS
(Symbol: C1)



D7, D8, D12

MA862
(Symbol: M11)



D13, D18, D19

RD5.1M-T2B2
(Symbol: 512)



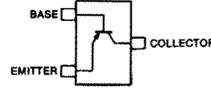
D29

RD6.2M B2
(Symbol: 622)



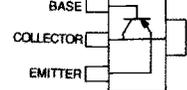
D10, D30

2SA1162 Y
(Symbol: SY)



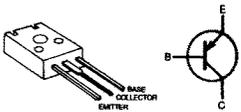
Q5

2SA1734
(Symbol: LB)



Q2

2SB1143 S



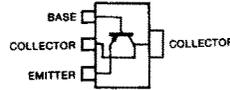
Q11 (EUR, ITA, USA, AUS, SEA)

2SB1135 R



Q11 (EUR-H, ITA-H, USA-H, AUS-H, SEA-H)

2SB798 DK
(Symbol: DK)



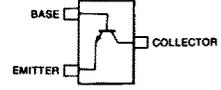
Q37

2SC2407 (A)



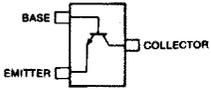
Q8 (EUR, ITA, USA, AUS, SEA)

2SC2712 GR
(Symbol: LG)



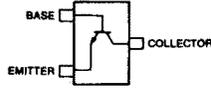
Q16, Q17

2SC2712 Y
(Symbol: LY)



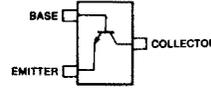
Q1, Q12, Q15, Q36

2SC3661 TA
(Symbol: FY)



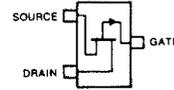
Q3

2SC3772 3
(Symbol: LY3)



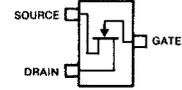
Q6, Q7, Q14, Q22

2SJ106 Y
(Symbol: VY)



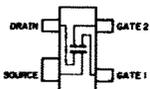
Q13

2SK209 Y
(Symbol: XY)



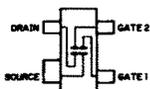
Q4

3SK140 Y
(Symbol: UG)



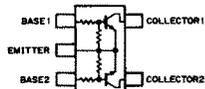
Q19, Q34

3SK177 U73
(Symbol: U73)



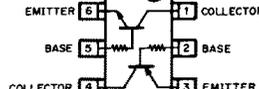
Q21, Q23

FMG2
(Symbol: G2)



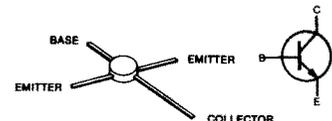
Q18

IMD6
(Symbol: D6)



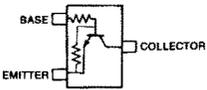
Q24

MRF559



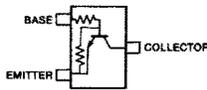
Q8 (EUR-H, ITA-H, USA-H, AUS-H, SEA-H)

RN1402
(Symbol: XB)



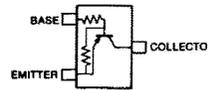
Q25, Q26, Q27, Q28, Q33

RN1404
(Symbol: XD)



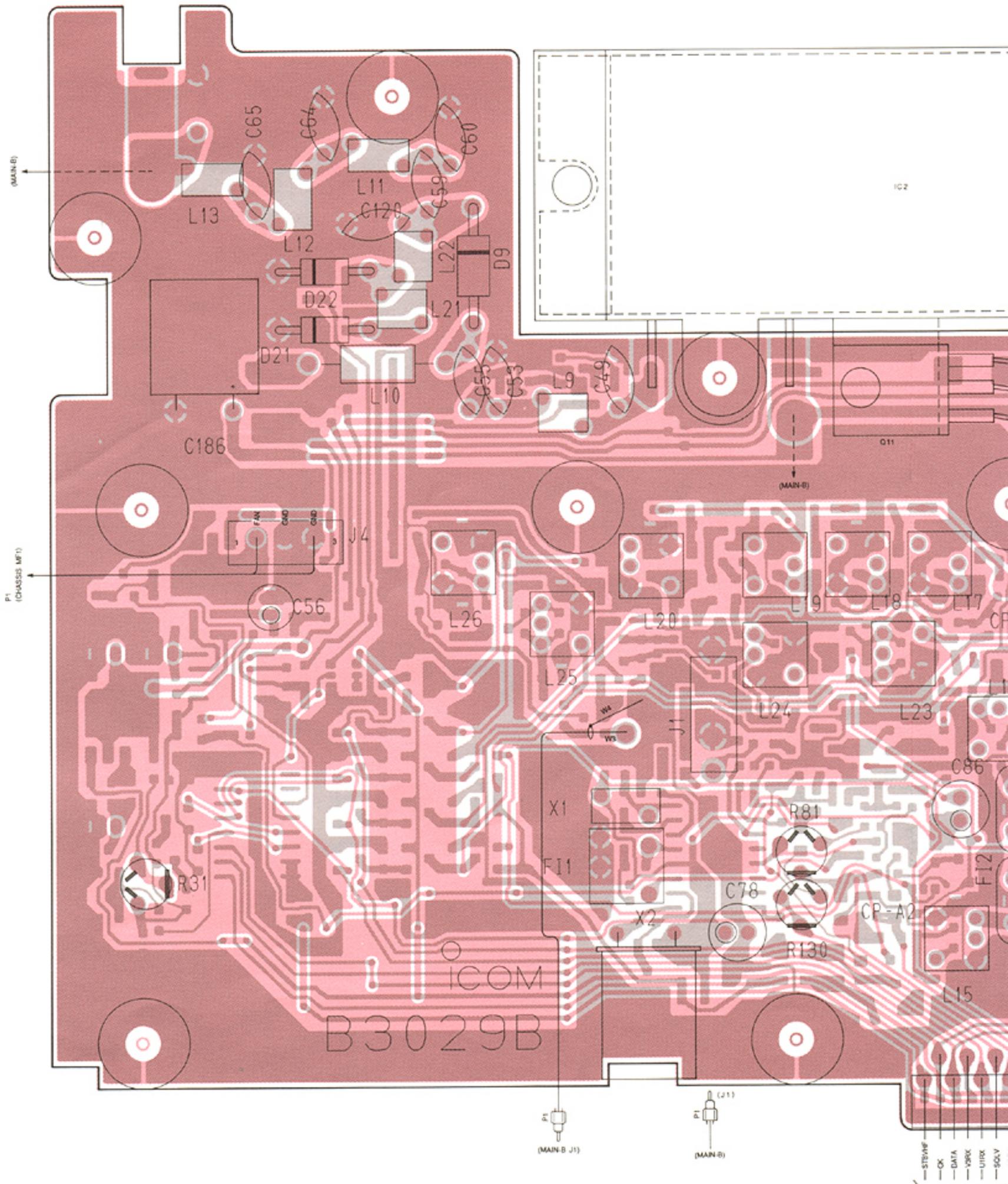
Q9, Q10, Q20, Q35

RN2427
(Symbol: RG)

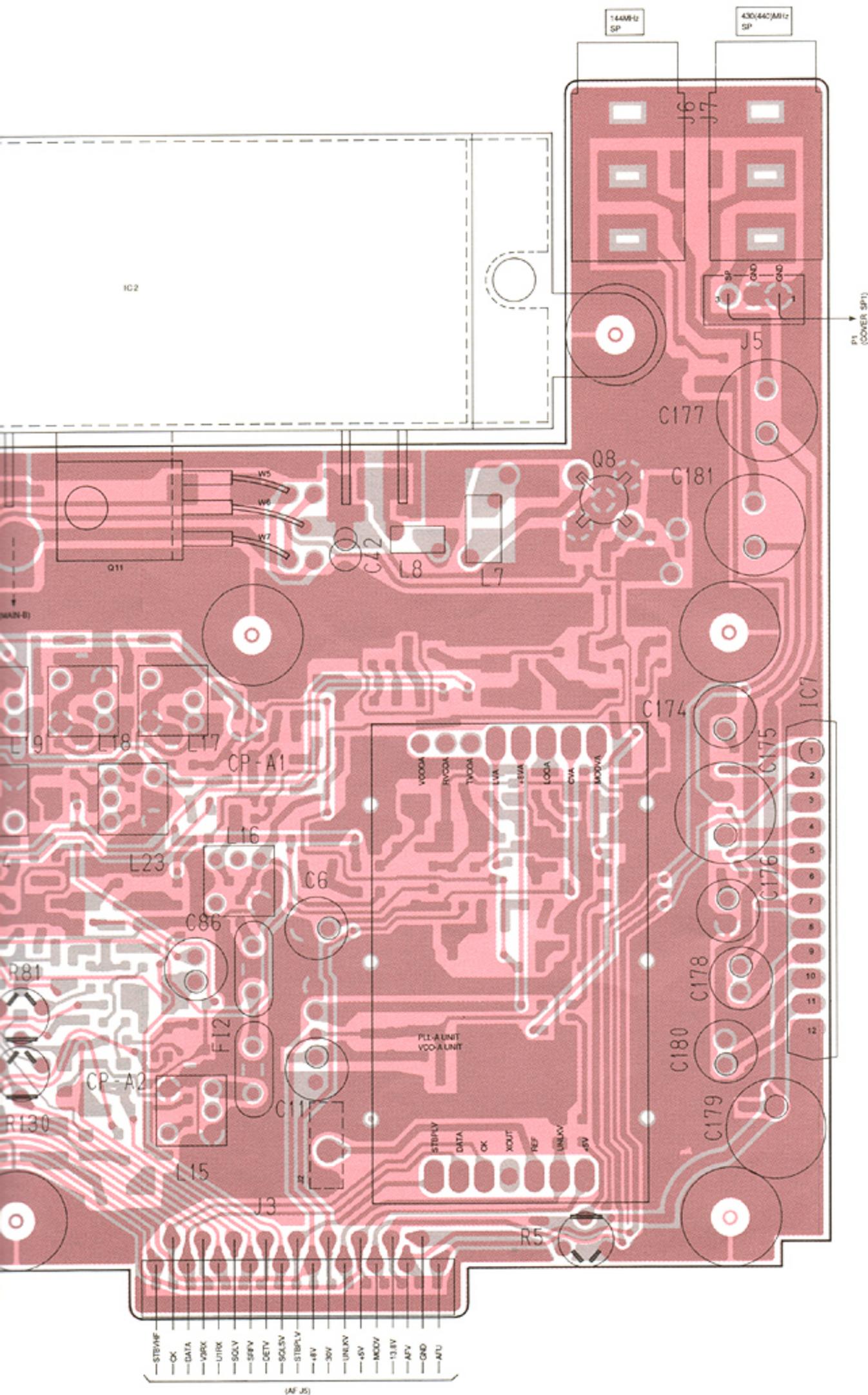


Q29, Q30, Q31, Q32

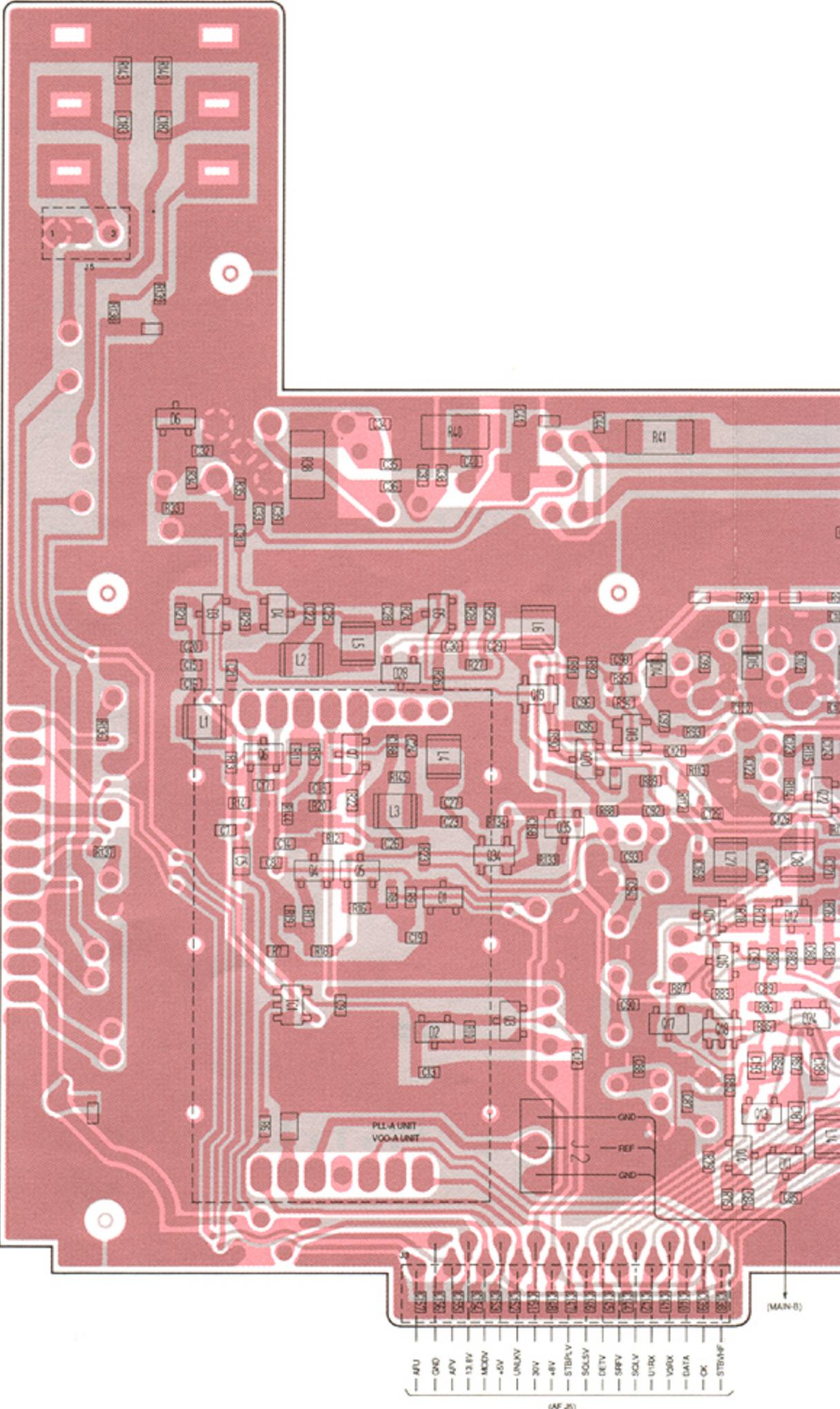
• MAIN-A UNIT (TOP VIEW)



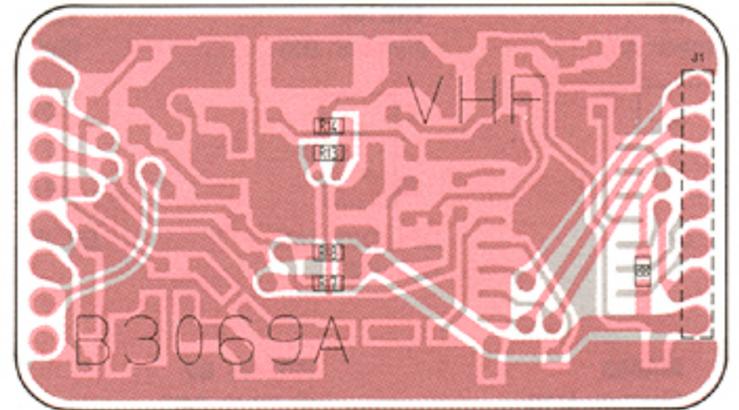
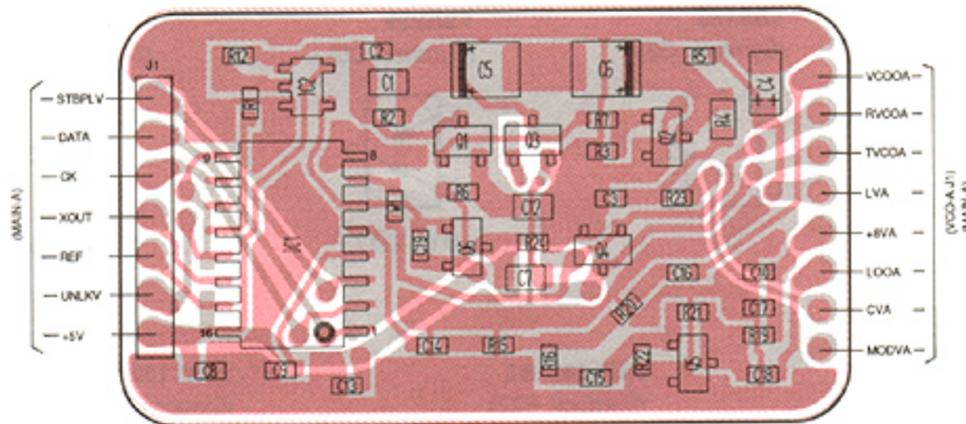
The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.



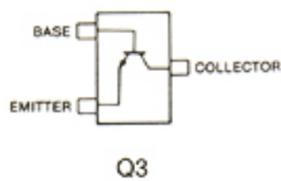
• MAIN-A UNIT (BOTTOM VIEW)



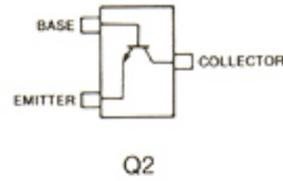
• PLL-A UNIT



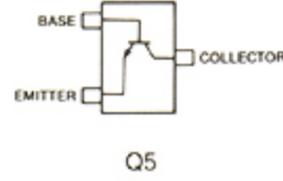
2SC2712 Y
(Symbol: LY)



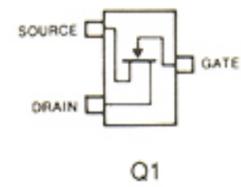
2SC3324-GR
(Symbol: CBG)



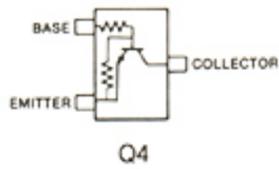
2SC3772 3
(Symbol: LY3)



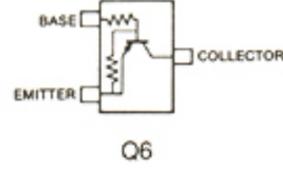
2SK209 Y
(Symbol: XY)



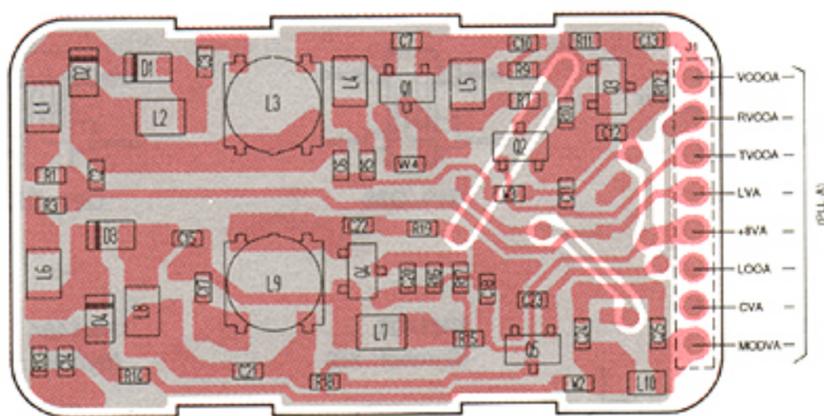
RN1404
(Symbol: XD)



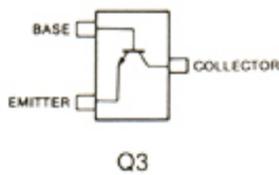
RN2402
(Symbol: YB)



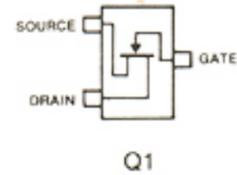
• VCO-A UNIT



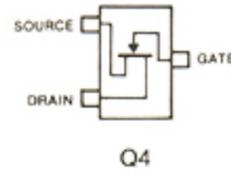
2SC3775 3
(Symbol: OY3)



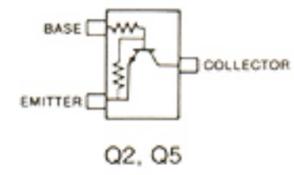
2SK1577-2-T7
(Symbol: P2)



2SK1740-TA
(Symbol: IJ)

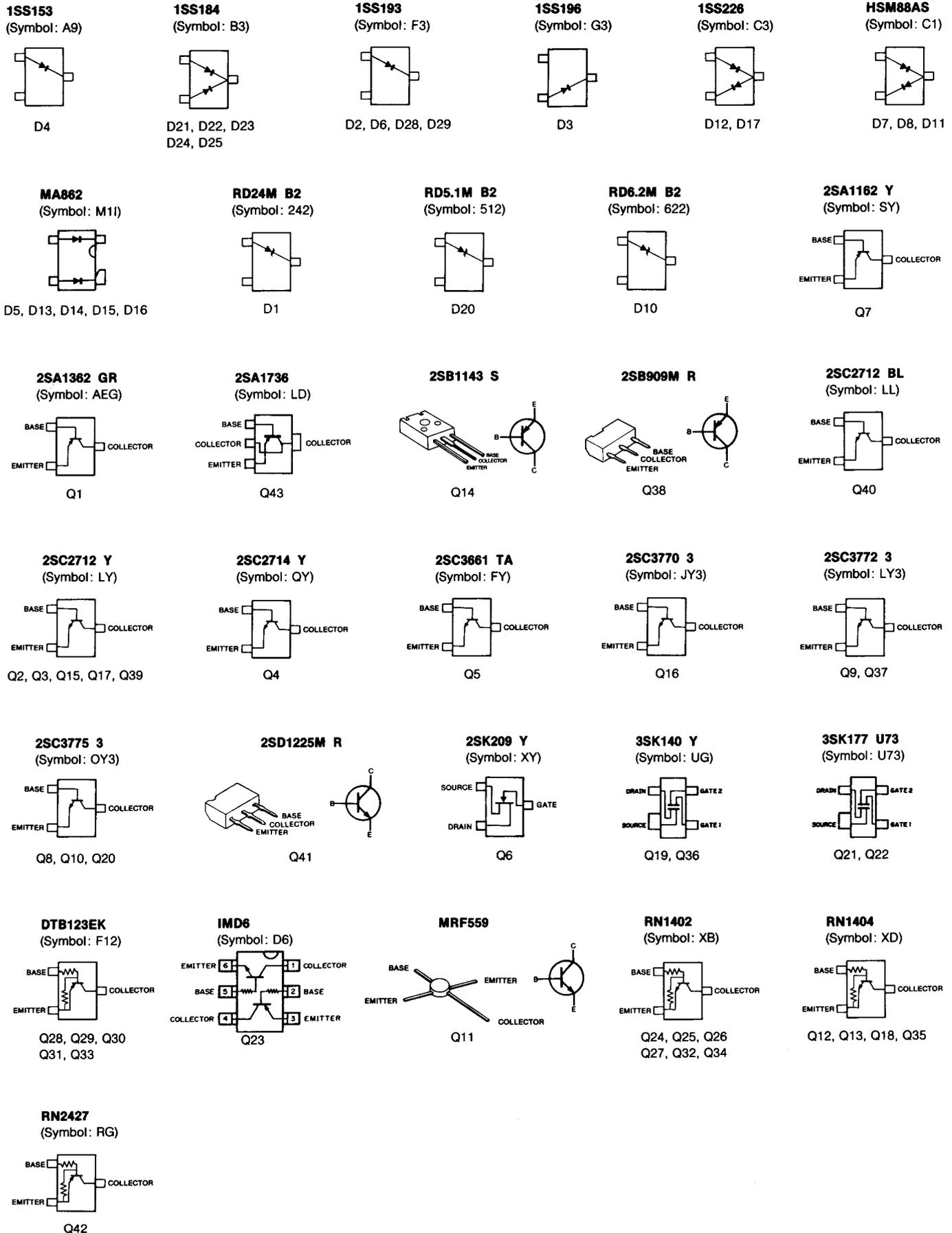


RN1406
(Symbol: XF)

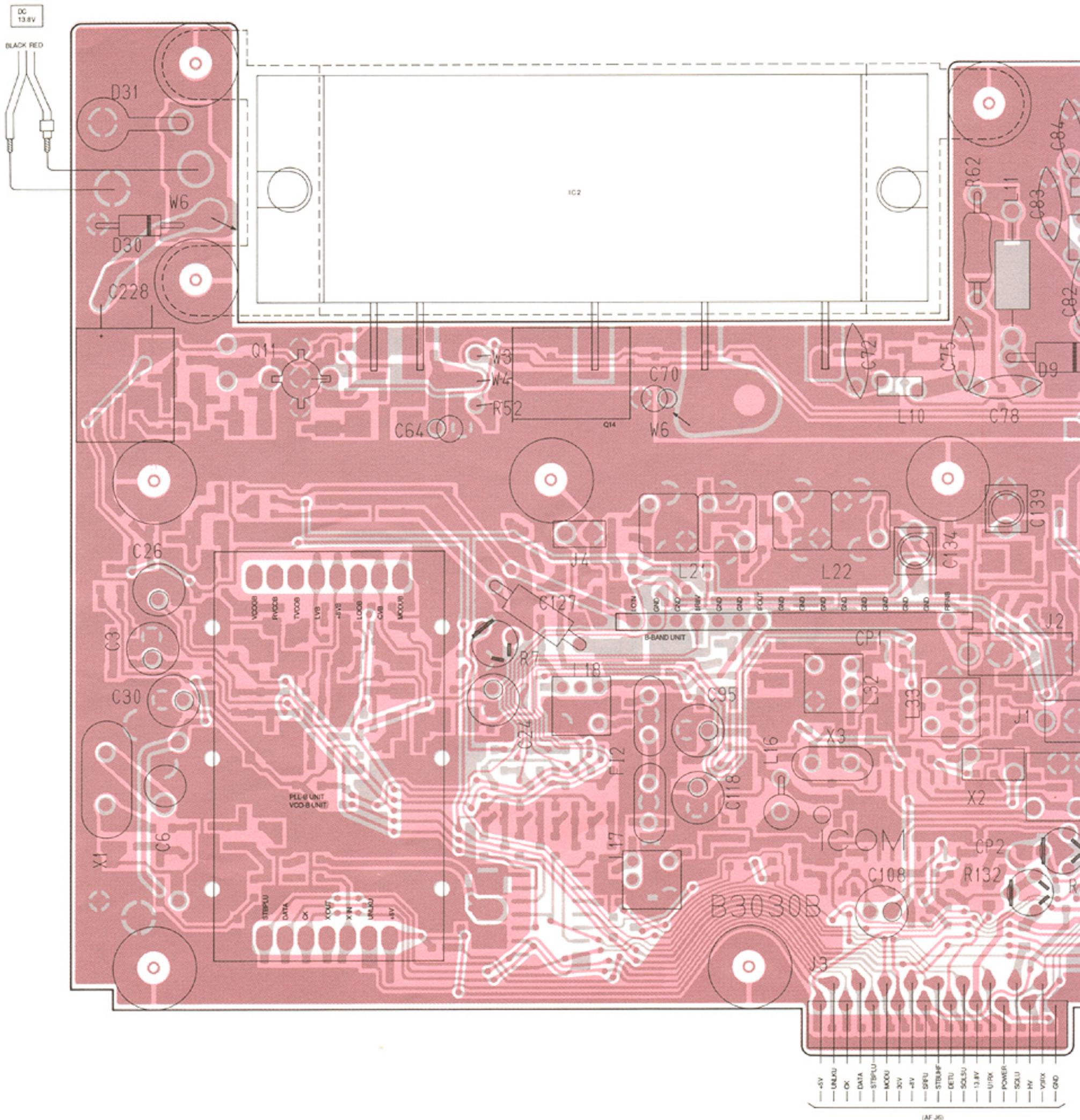


7-4 MAIN-B, PLL-B, VCO-B AND B-BAND UNITS

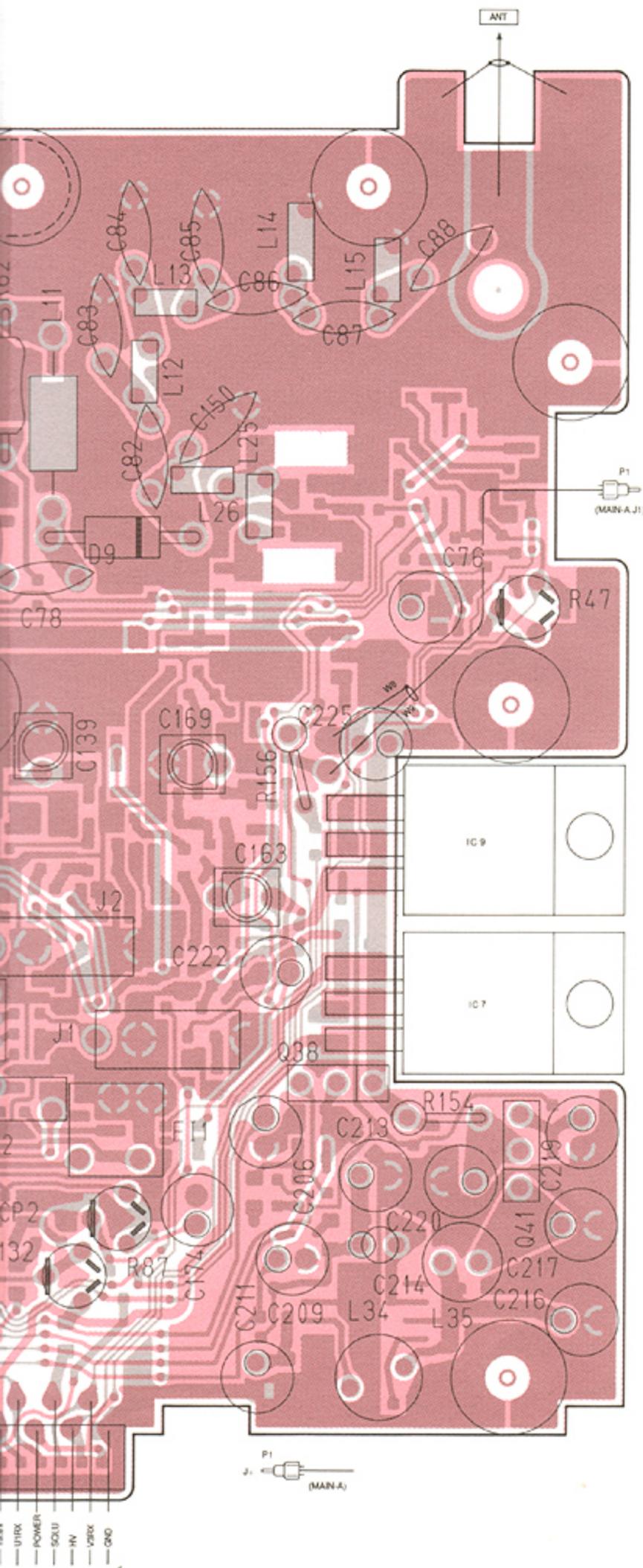
• MAIN-B UNIT



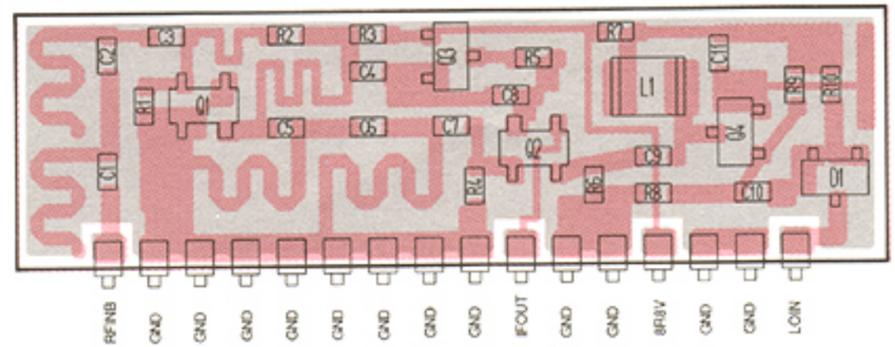
• MAIN-B UNIT (TOP VIEW)



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



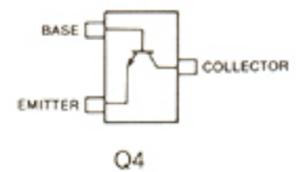
• B-BAND UNIT



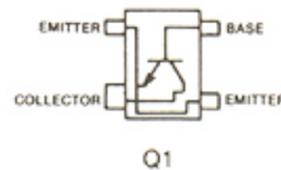
1SS153
(Symbol: A9)



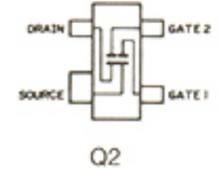
2SC3775 3
(Symbol: OY3)



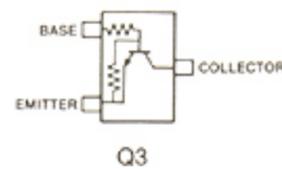
2SC4315
(Symbol: MK)



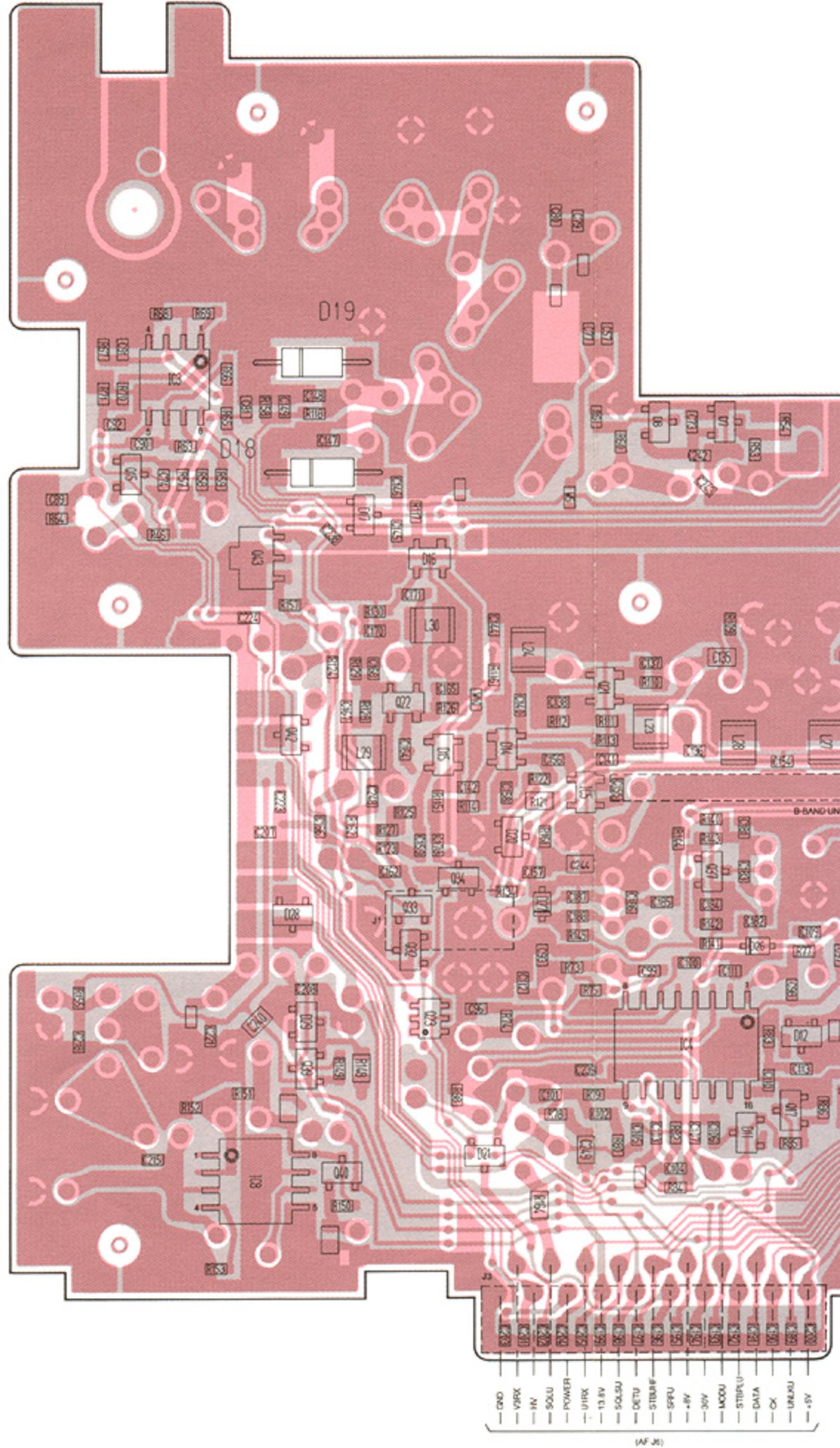
3SK177 U73
(Symbol: U73)

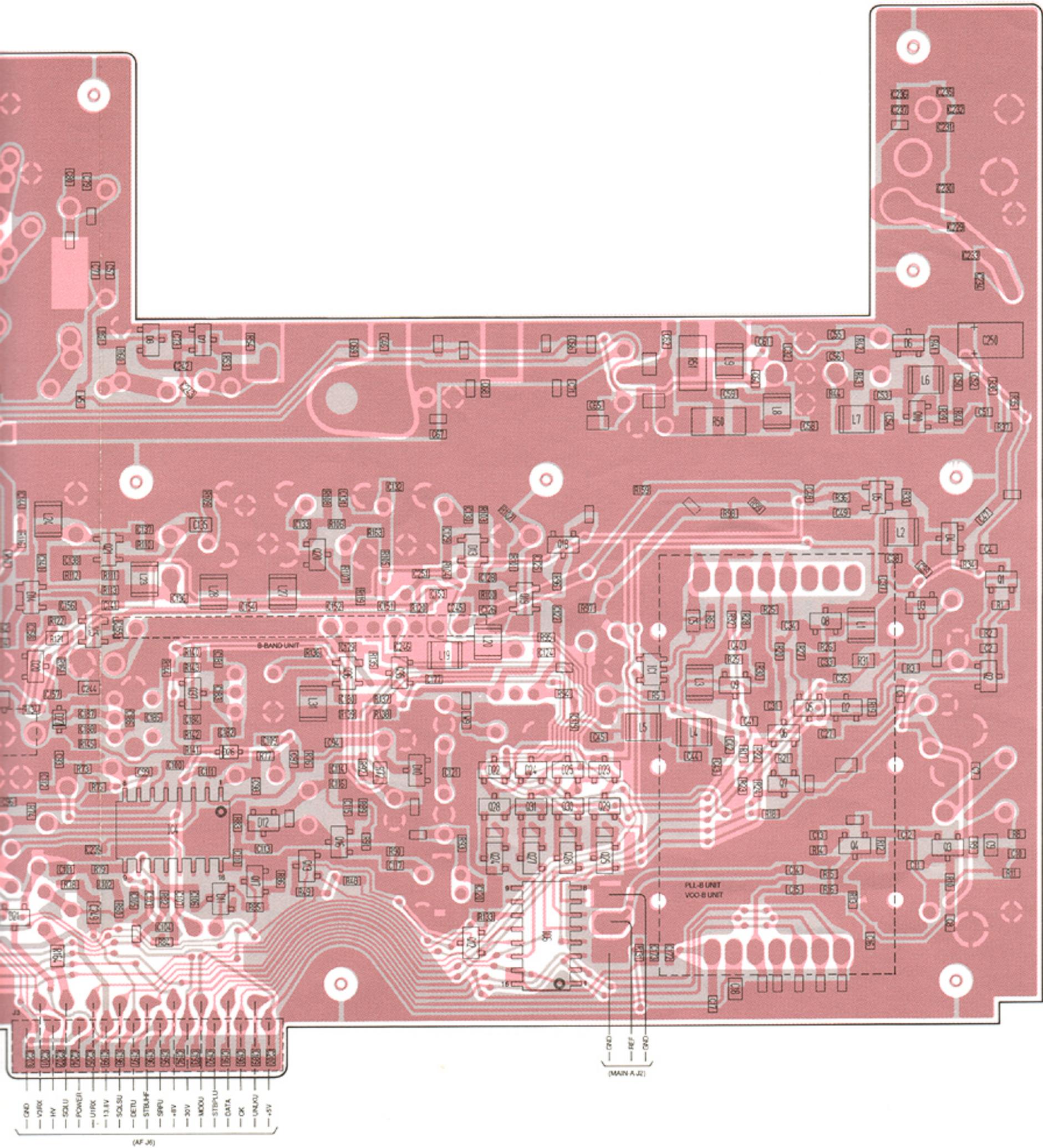


RN1404
(Symbol: XD)

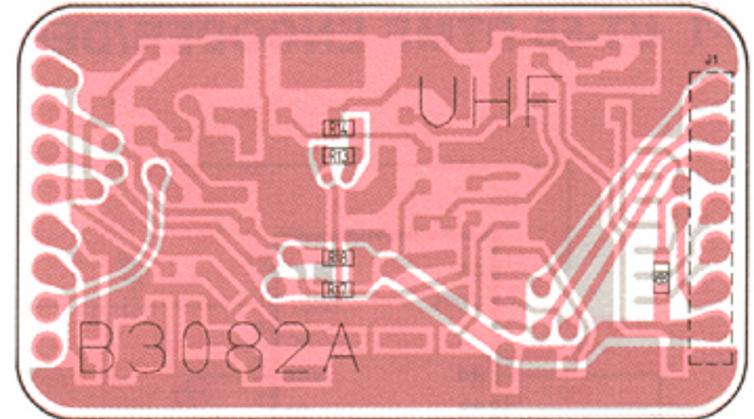
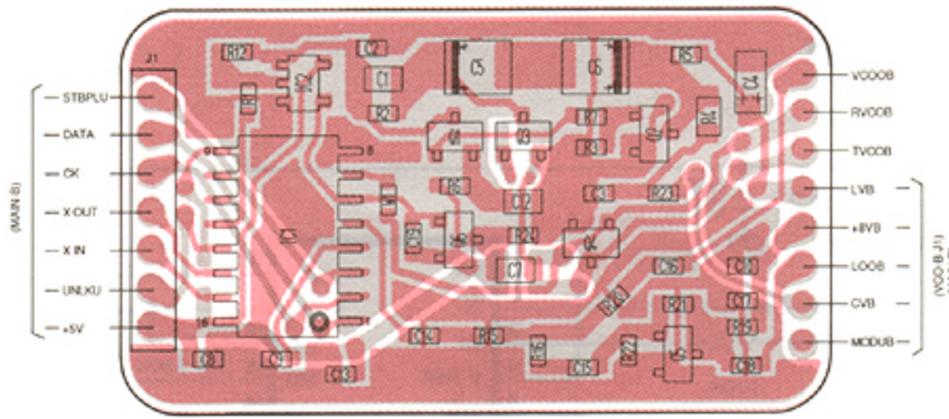


• MAIN-B UNIT (BOTTOM VIEW)

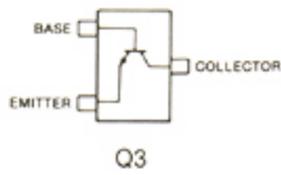




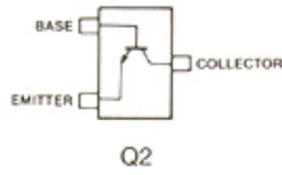
• PLL-B UNIT



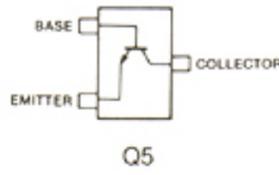
2SC2712 Y
(Symbol: LY)



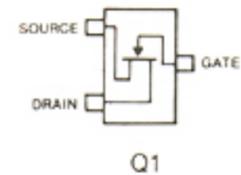
2SC3324-GR
(Symbol: CBG)



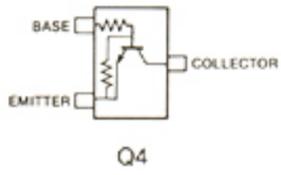
2SC3772 3
(Symbol: LY3)



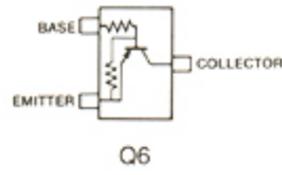
2SK209 Y
(Symbol: XY)



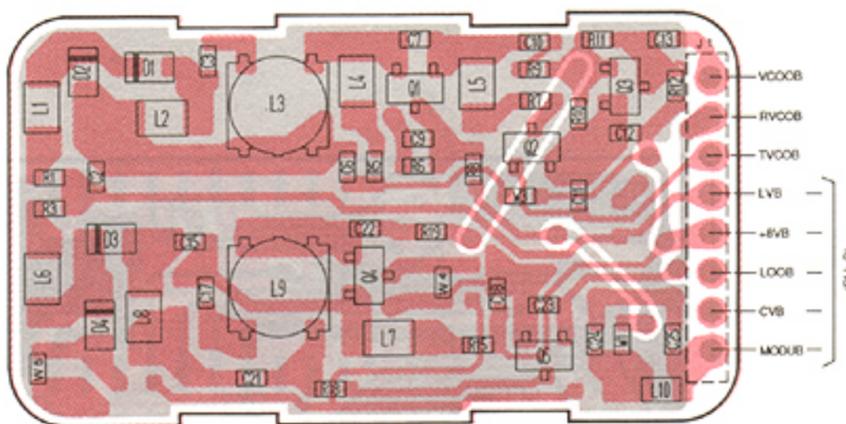
RN1404
(Symbol: XD)



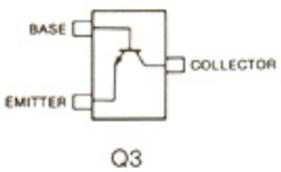
RN2402
(Symbol: YB)



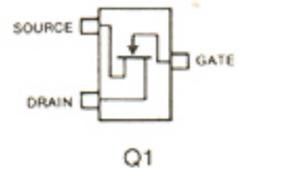
• VCO-B UNIT



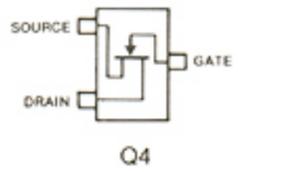
2SC3775 3
(Symbol: OY3)



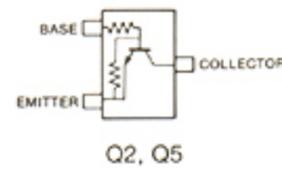
2SK1577-2
(Symbol: P2)



2SK1740-TA
(Symbol: IJ)

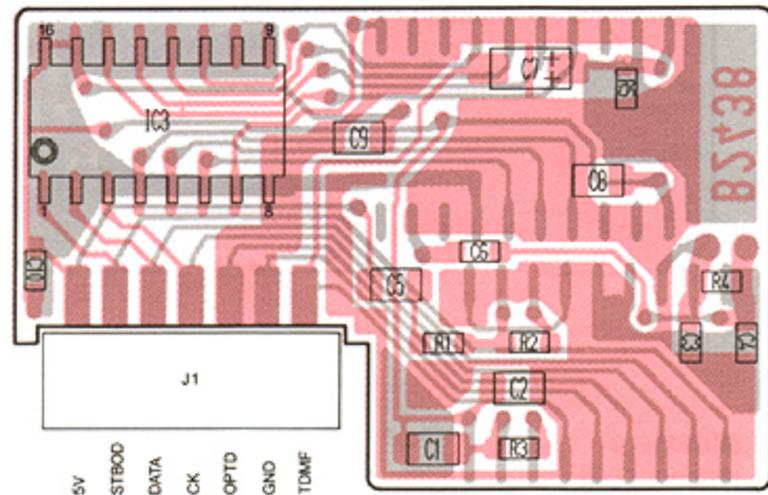
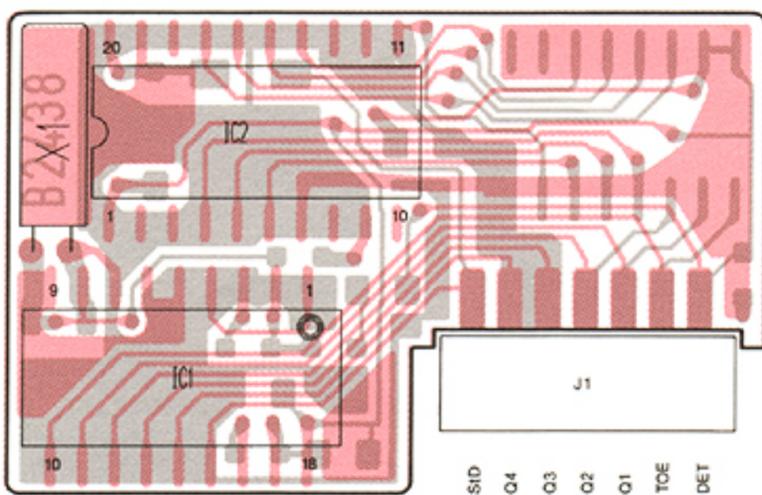
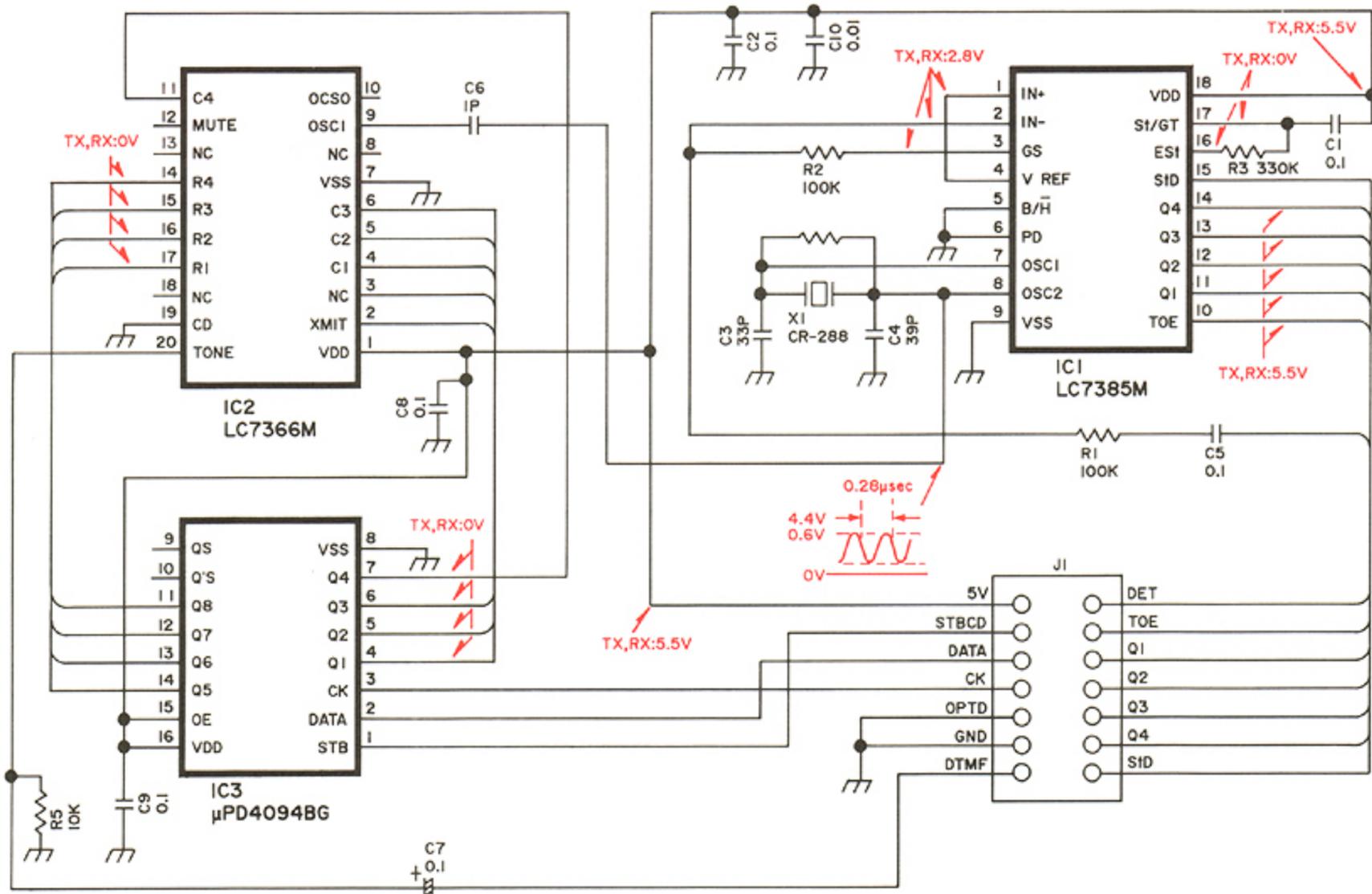


RN1406
(Symbol: XF)

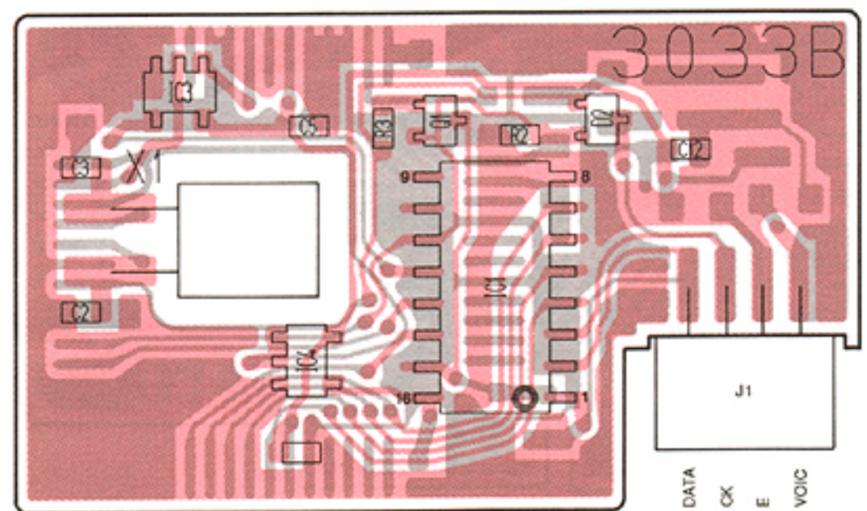
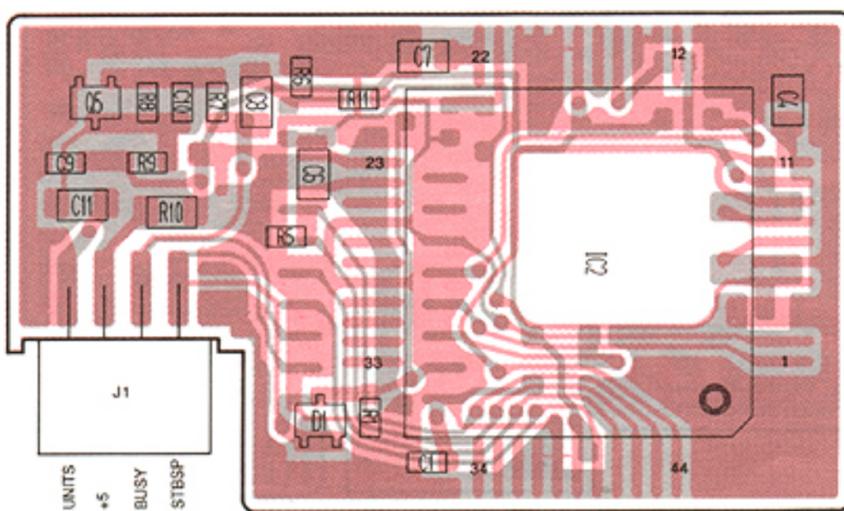
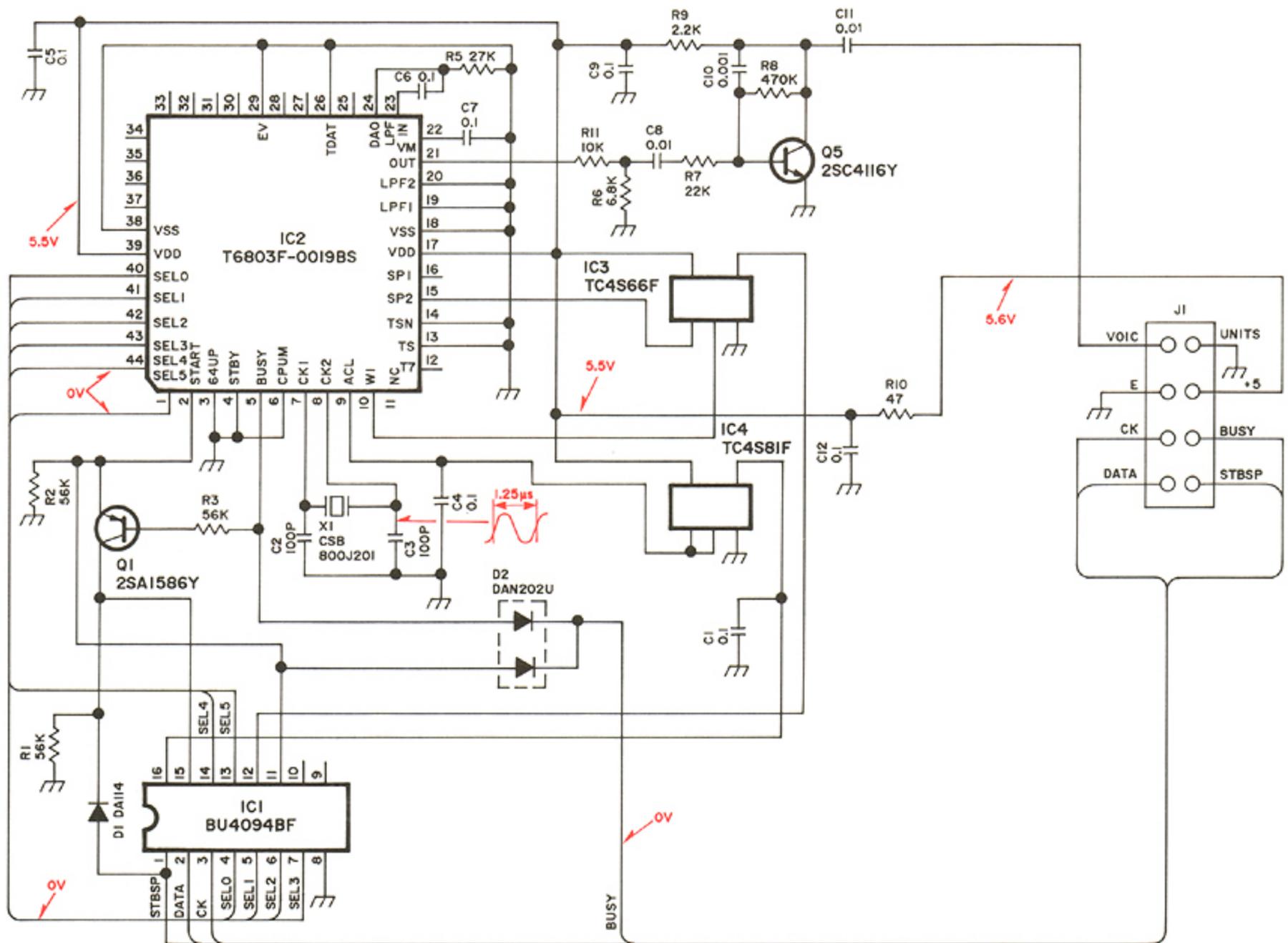


SECTION 8 OPTIONAL UNITS

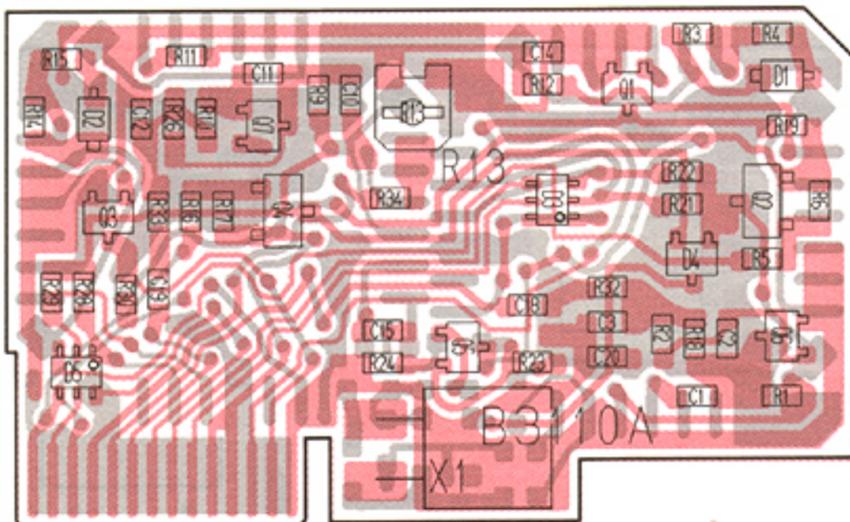
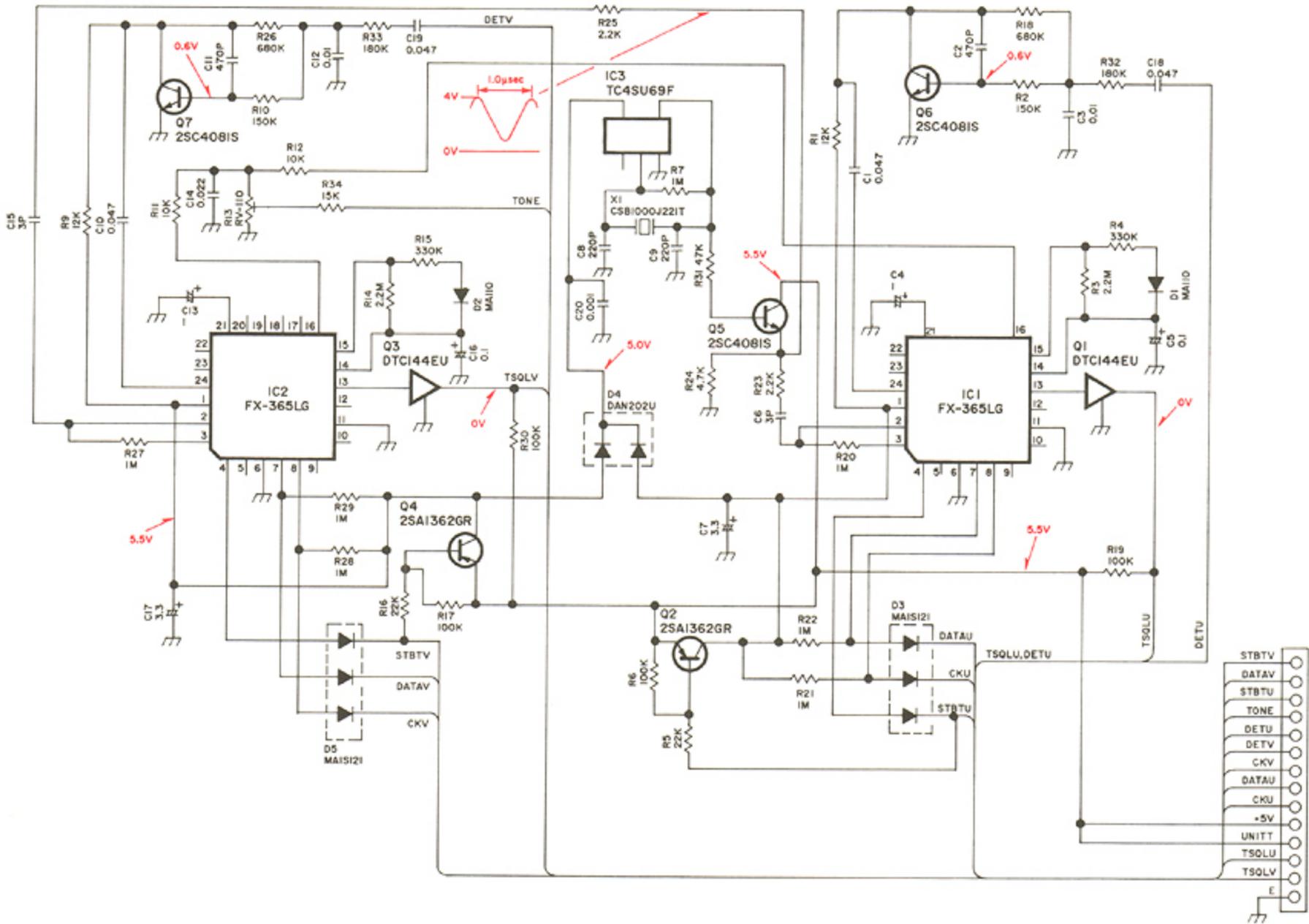
8-1 UT-55 DTMF ENCODER/DECODER UNIT



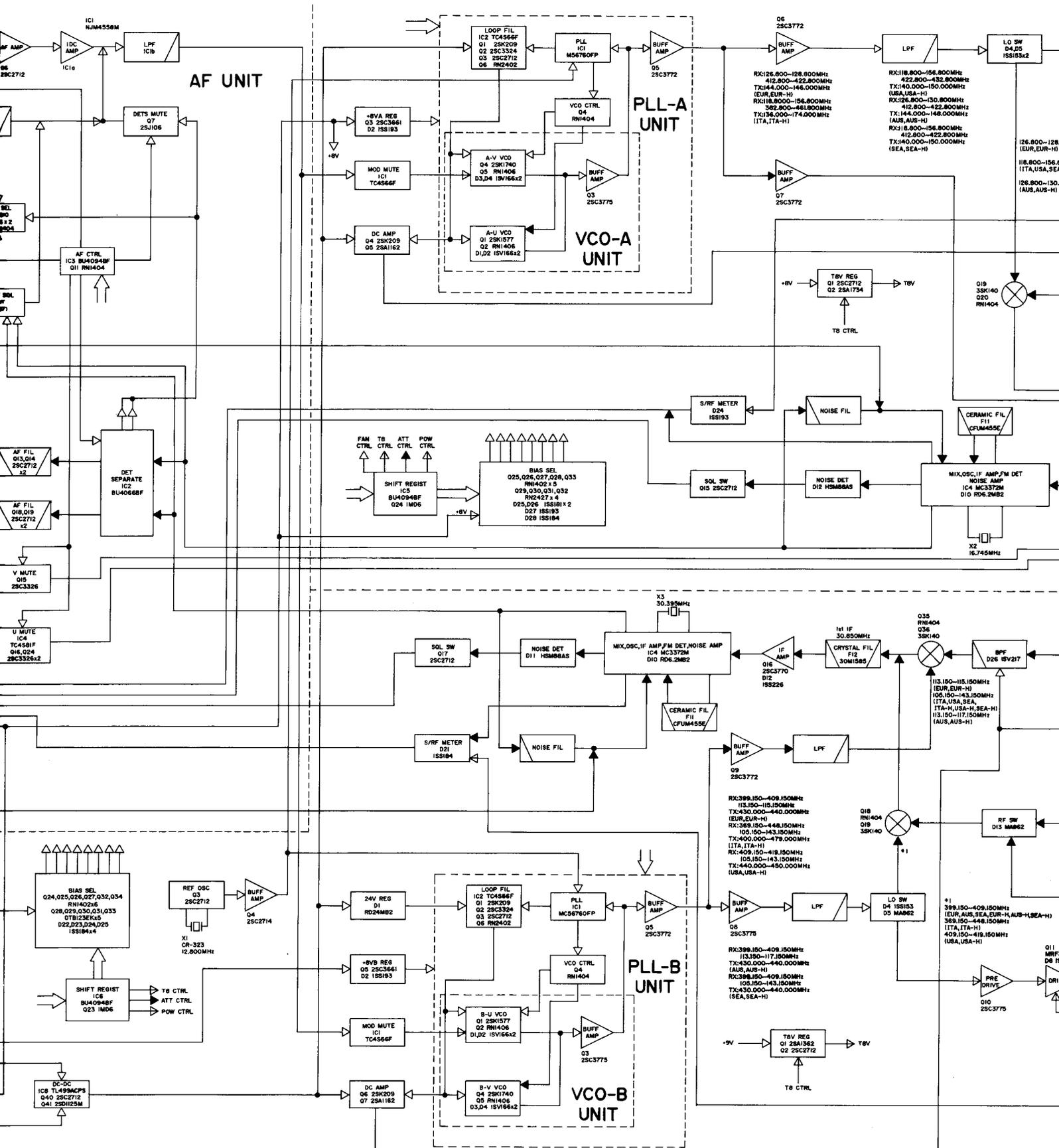
8-2 UT-66 VOICE SYNTHESIZER UNIT

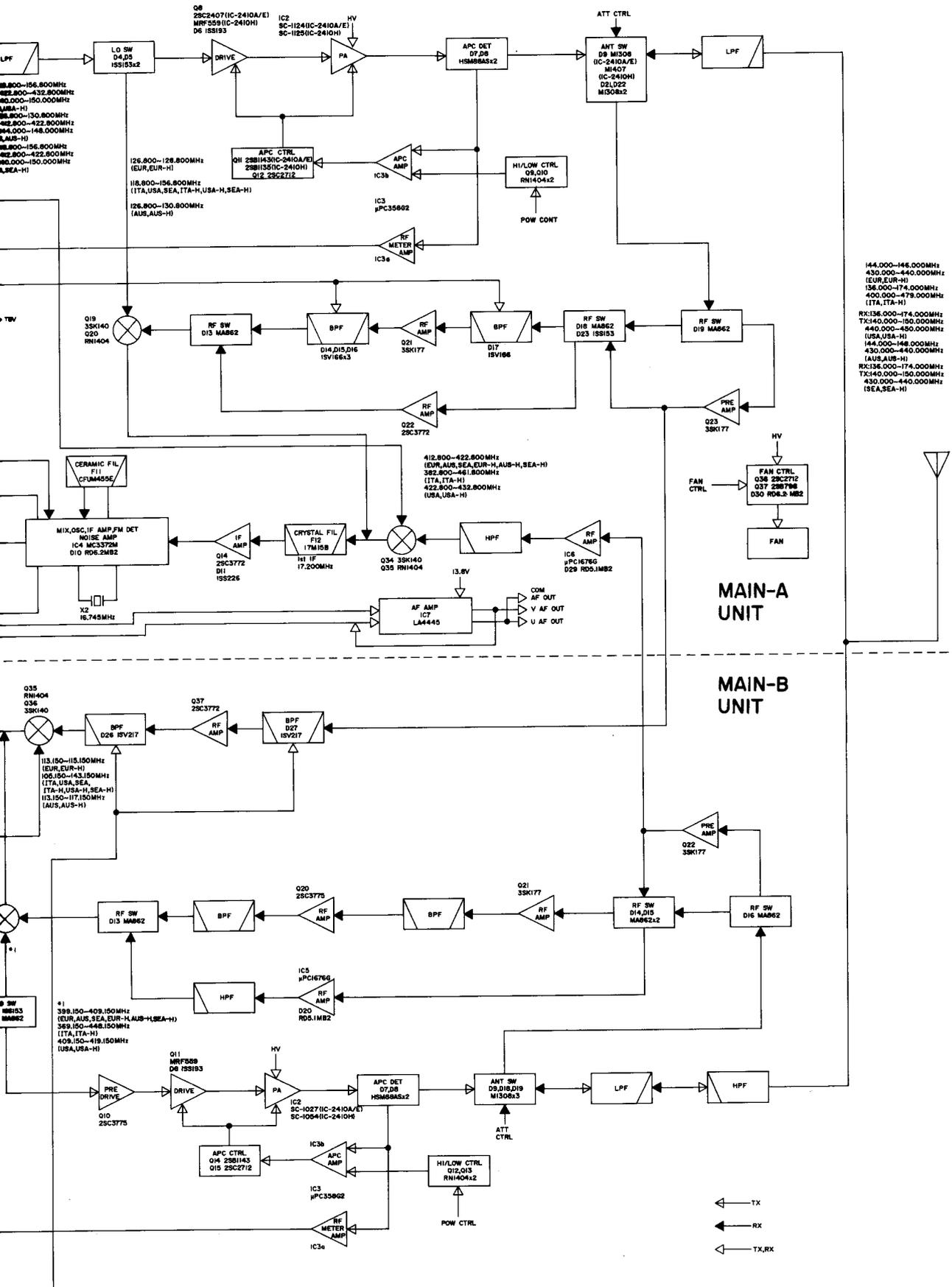


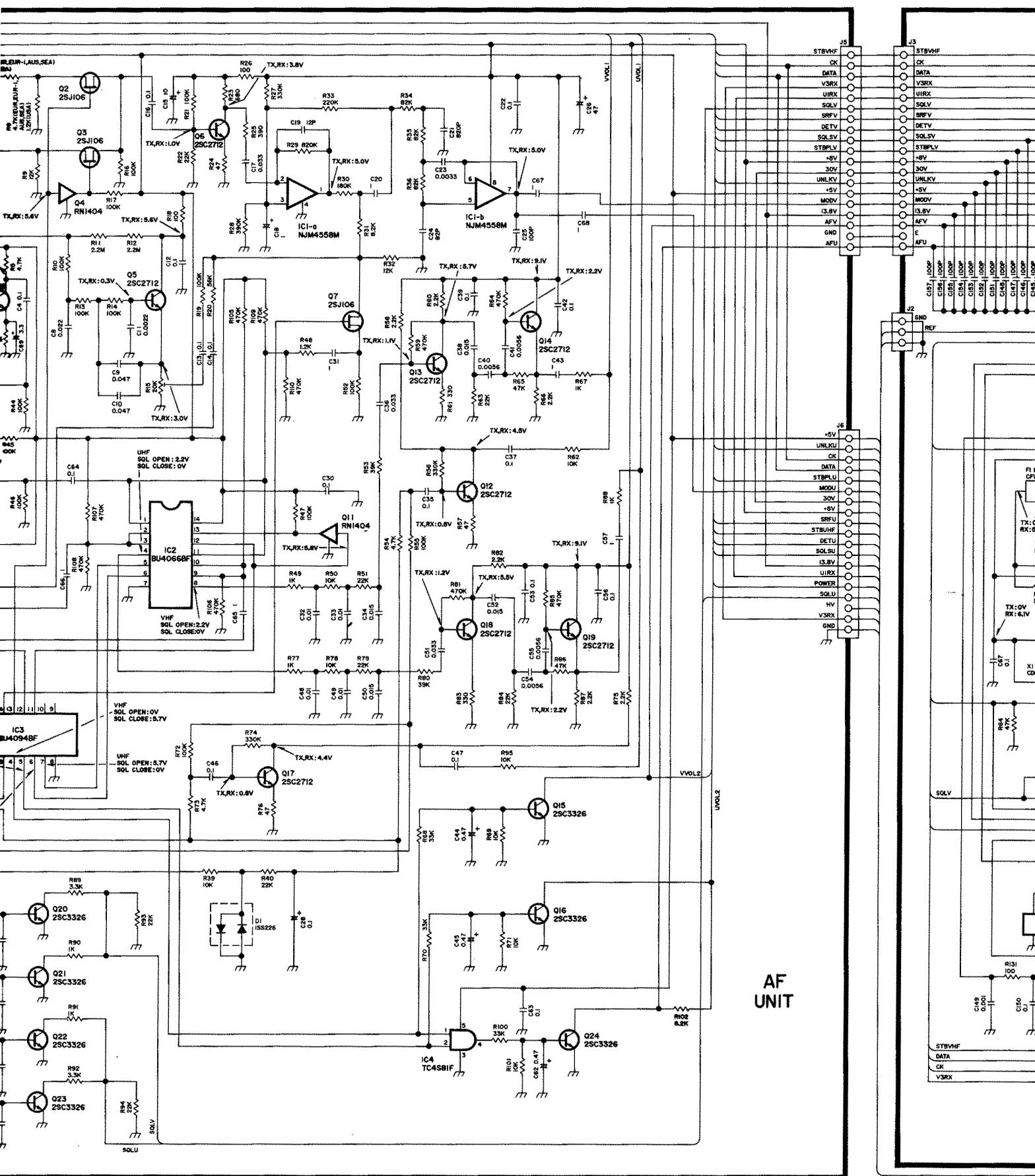
8-3 UT-67 TONE SQUELCH UNIT



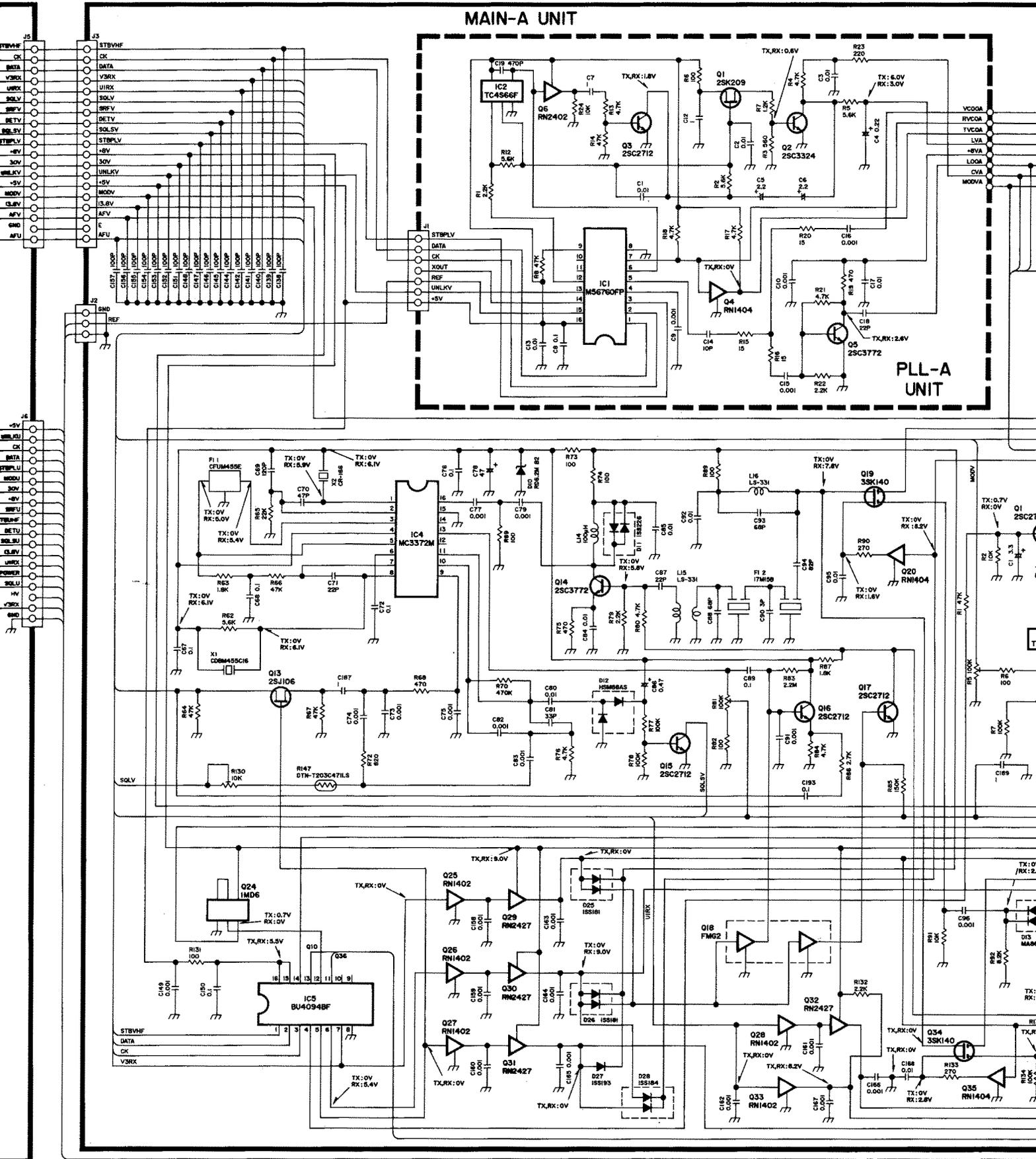
STBTU
DATAV
STBTU
TONE
DETU
DETV
CKV
DATAU
CKU
+5V
UNITT
TSOLU
TSOLV
E

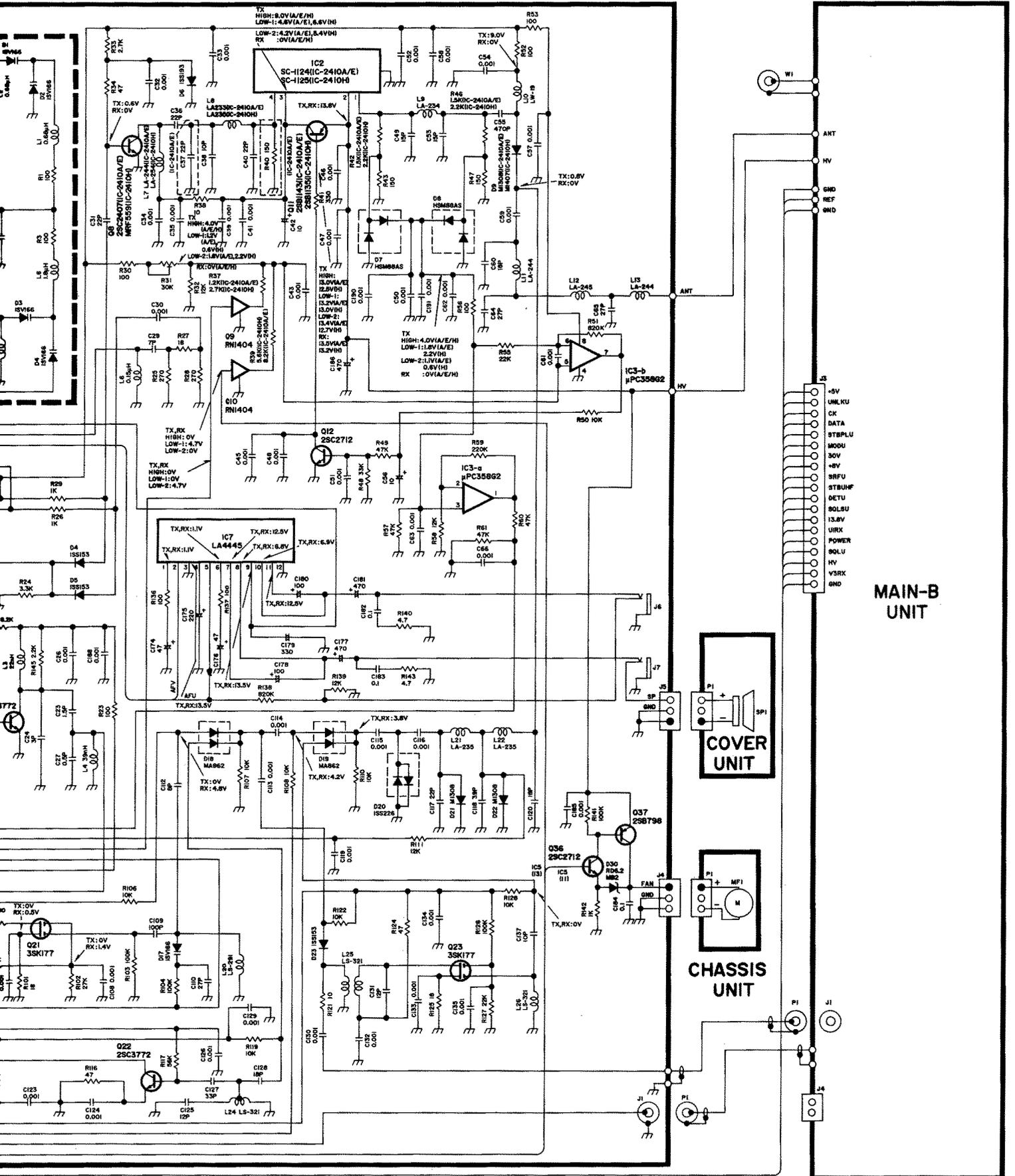


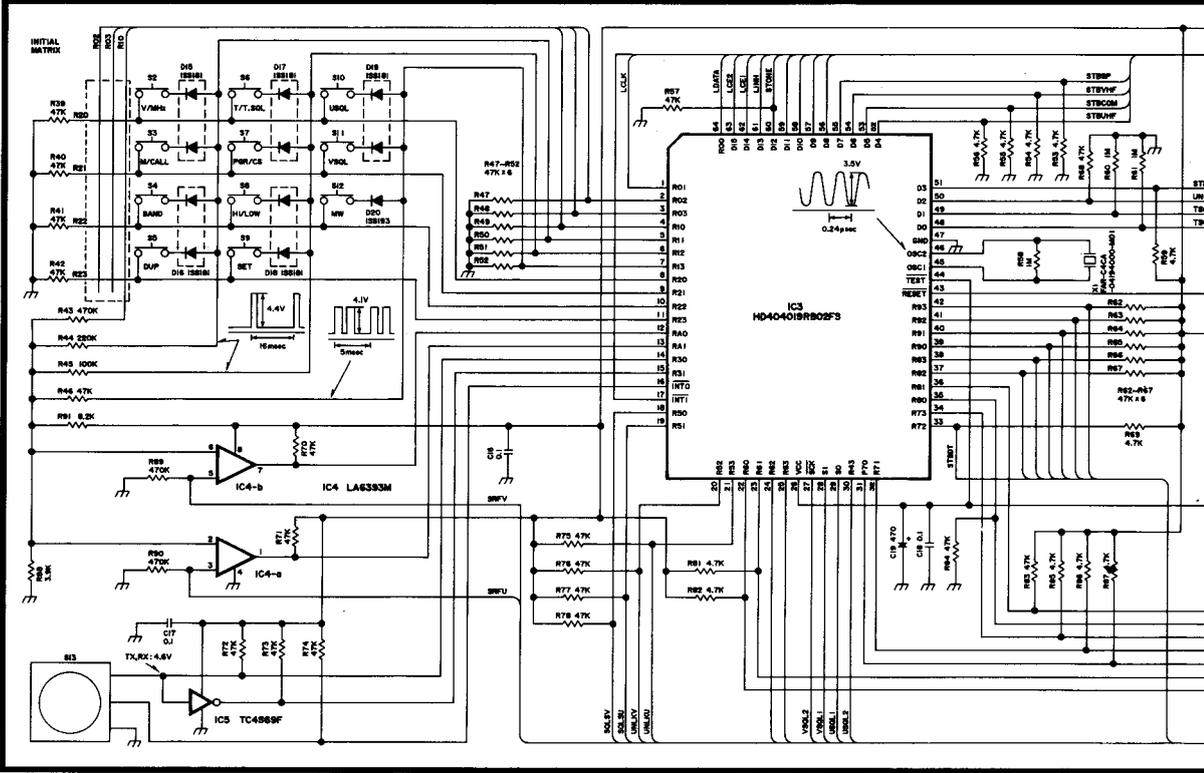
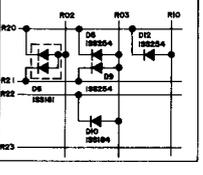
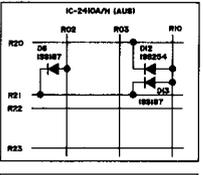
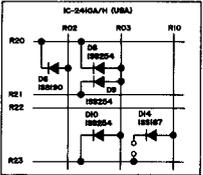
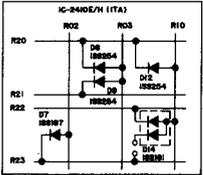
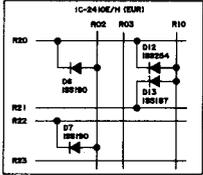
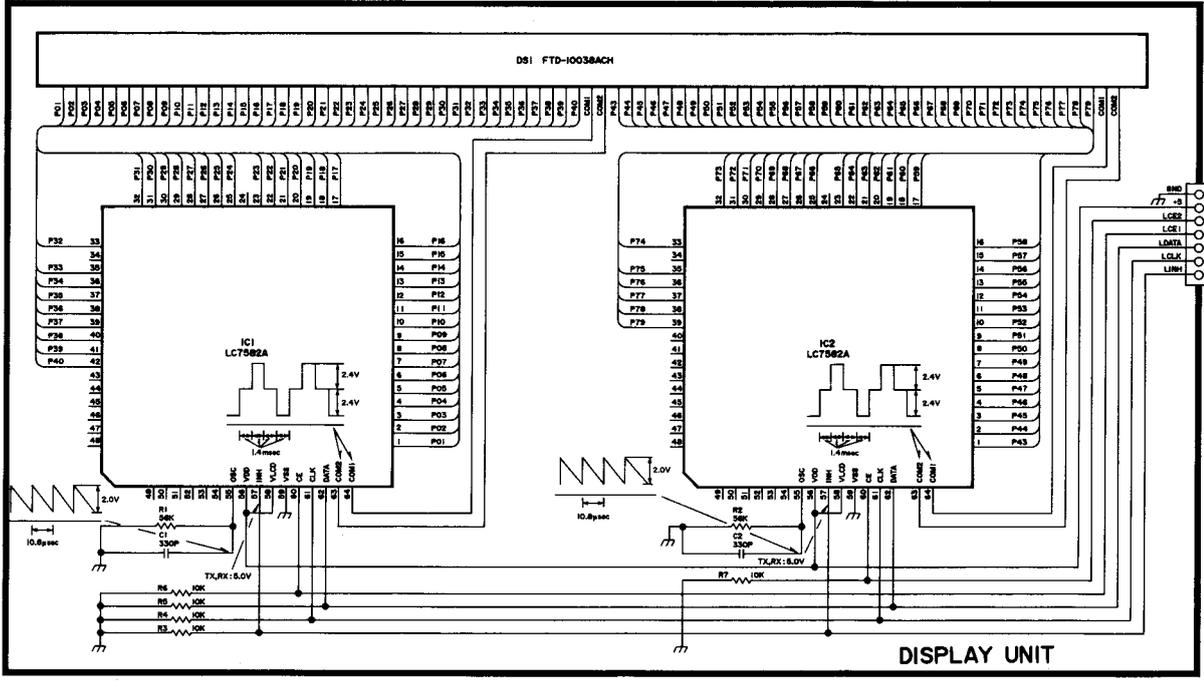


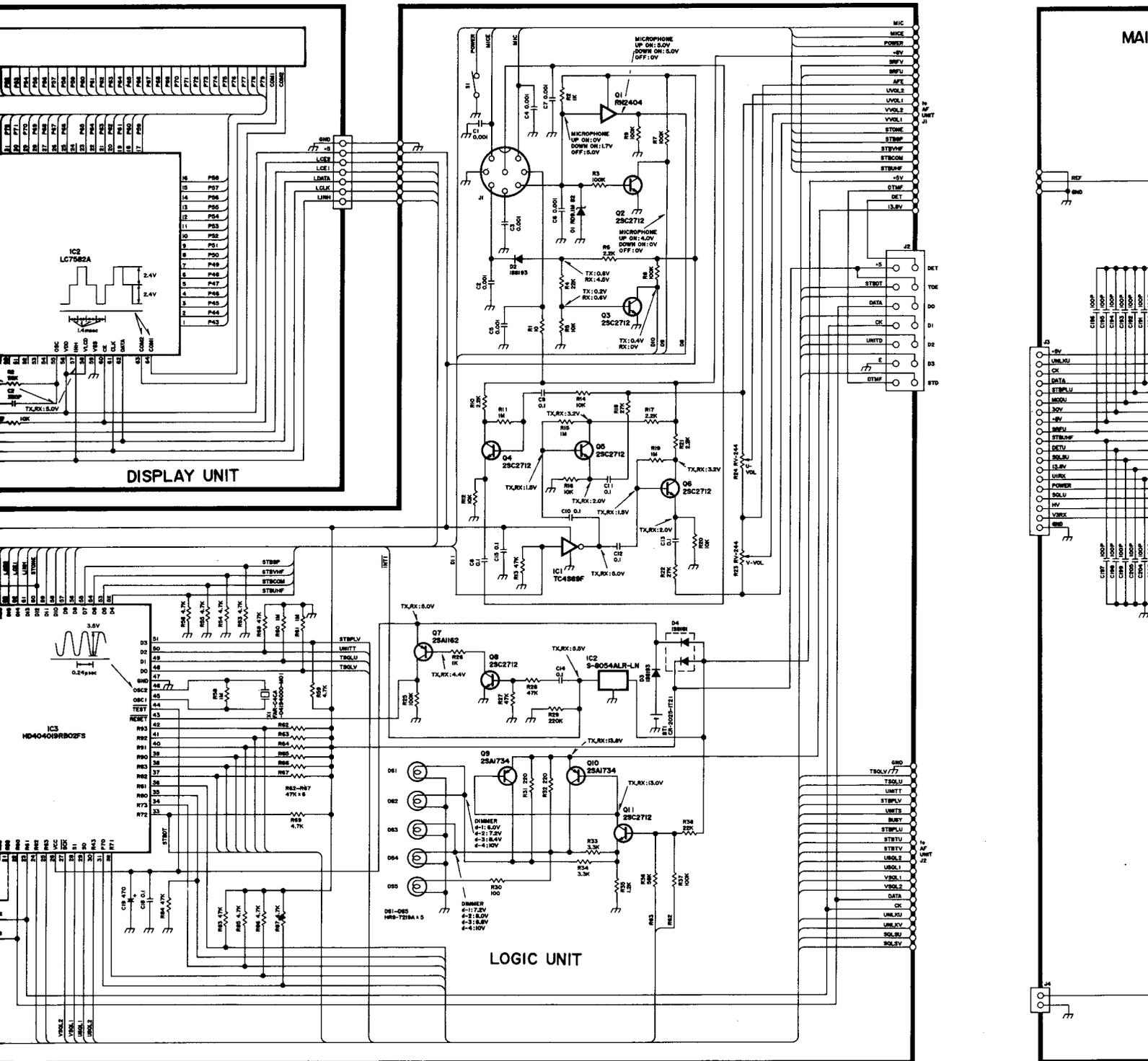


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