



SERVICE MANUAL

VHF TRANSCEIVER

IC-H11

UHF TRANSCEIVER

IC-U11

INTRODUCTION

This service manual describes the latest service information for the **IC-H11** VHF TRANSCEIVER/**IC-U11** UHF TRANSCEIVER at the time of publication.

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

DANGER

NEVER connect the transceiver to an AC outlet or to a DC power supply that uses more than 9 V. This will ruin the transceiver.

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

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

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

ORDERING PARTS

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

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

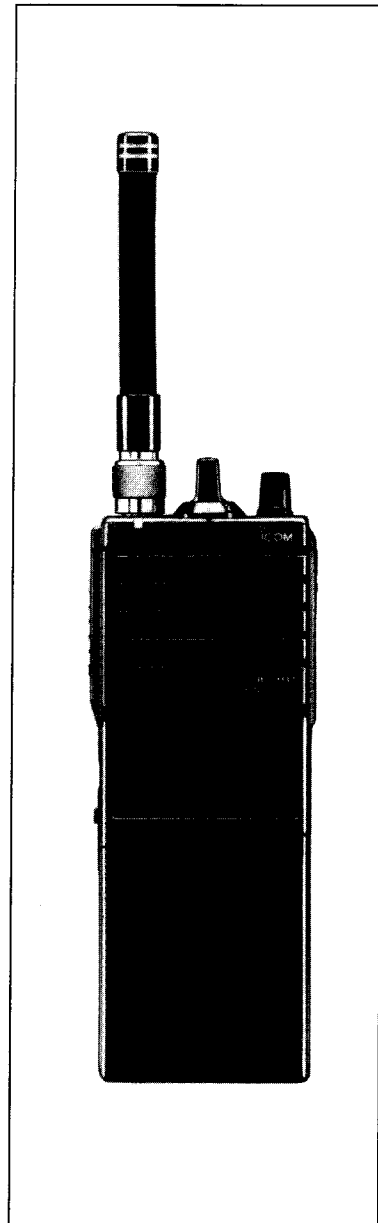
<SAMPLE ORDER>

1120001590	S. IC	M5236ML-73A	IC-H11	LOGIC UNIT	5 pieces
8810000740	Screw	PH A M2 × 15 ZK	IC-U11	Rear panel	10 pieces

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

REPAIR NOTES

1. Make sure a problem is internal before disassembling the transceiver.
2. **DO NOT** open the transceiver until the transceiver is disconnected from its power source.
3. **DO NOT** force any of the variable components. Turn them slowly and smoothly.
4. **DO NOT** short any circuits or electronic parts. An insulated tuning tool **MUST** be used for all adjustments.
5. **DO NOT** keep power ON for a long time when the transceiver is defective.
6. **DO NOT** transmit power into a signal generator or a sweep generator.
7. **ALWAYS** connect a 40 dB to 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.



VERSIONS

IC-H11

VERSION NUMBER	VERSION	SYMBOL	FREQUENCY RANGE	CHANNEL SPACING	CHANNEL PITCH
#01	General	GEN	146-162 MHz	25 kHz	5 kHz
#02	General	GEN-1	162-174 MHz	25 kHz	5 kHz
#03	General	GEN-2	146-162 MHz	12.5 kHz	6.25 kHz
#04	General	GEN-3	162-174 MHz	12.5 kHz	6.25 kHz
#05	General	GEN-4	146-162 MHz	25 kHz	5 kHz
#06	General	GEN-5	162-174 MHz	25 kHz	5 kHz
#07	General	GEN-6	146-162 MHz	12.5 kHz	6.25 kHz
#08	General	GEN-7	162-174 MHz	12.5 kHz	6.25 kHz
#09	France	FRA	146-162 MHz	12.5 kHz	6.25 kHz
#10	General	GEN-8	146-162 MHz	25 kHz	6.25 kHz
#11	General	GEN-9	162-174 MHz	25 kHz	6.25 kHz
#13	Sweden	SWE	146-162 MHz	25 kHz	6.25 kHz
#14	Sweden	SWE-1	162-174 MHz	25 kHz	6.25 kHz
#15	Germany	FRG	146-162 MHz	20 kHz	5 kHz
#16	United Kingdom	UK	162-174 MHz	12.5 kHz	6.25 kHz

IC-U11

VERSION NUMBER	VERSION	SYMBOL	FREQUENCY RANGE	CHANNEL SPACING	CHANNEL PITCH
#03	France	FRA	450-460 MHz	12.5 kHz	12.5 kHz
#04	France	FRA-1	460-470 MHz	12.5 kHz	12.5 kHz
#05	France	FRA-2	TX: 450-460 MHz RX: 460-470 MHz	12.5 kHz	12.5 kHz
#06	Sweden	SWE	400-420 MHz	25 kHz	12.5 kHz
#07	Sweden	SWE-1	420-440 MHz	25 kHz	12.5 kHz
#08	Holland	HOL	450-460 MHz	20 kHz	10 kHz
#09	United Kingdom	UK	425-440 MHz	12.5 kHz	12.5 kHz
#10	Greece	GRE	400-420 MHz	25 kHz	12.5 kHz
#11	Sweden	SWE-2	450-460 MHz	25 kHz	12.5 kHz

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To program the operating frequency, tone frequency, etc., see the separately available EX-704 PROGRAMMING MANUAL.

SECTION 1 SPECIFICATIONS

1-1 IC-H11

■ GENERAL

- Frequency range : See VERSIONS on the right page of inside cover.
- Mode : 16K0F3E (#01, #02, #05, #06, #10, #11, #13, #14)
14K0F3E (#15)
8K50F3E (#03, #04, #07, #08, #09, #16)
- Channel spacing : 25 kHz (#01, #02, #05, #06, #10, #11, #13, #14)
20 kHz (#15)
12.5 kHz (#03, #04, #07, #08, #09, #16)
- Number of channels : Up to 2 channels (#01–#04)
Up to 6 channels (#05–#16)
- Frequency stability : $\pm 0.0005\%$ (-25°C to $+55^{\circ}\text{C}$)
- Antenna impedance : $50\ \Omega$ unbalanced
- Acceptable battery pack : CM-80
- Current drain (with CM-80) : Transmit 900 mA
Receive (max. audio) 250 mA
Receive (standby) 70 mA
- Usable temperature range : -25°C to $+55^{\circ}\text{C}$ (-13°F to $+131^{\circ}\text{F}$)
- Dimensions (with CM-80) : $58\ (\text{W}) \times 149\ (\text{H}) \times 29\ (\text{D})\ \text{mm}$
 $2.3\ (\text{W}) \times 5.9\ (\text{H}) \times 1.1\ (\text{D})\ \text{in}$
(Projections not included)
- Weight (with CM-80) : 420 g (14.8 oz)

■ TRANSMITTER

- Output power : 1.5 W (with CM-80)
- Modulation system : Variable reactance frequency modulation
- Microphone impedance : $1.2\ \text{k}\Omega$
- Maximum deviation : $\pm 5\ \text{kHz}$ (#01, #02, #05, #06, #10, #11, #13, #14)
 $\pm 4\ \text{kHz}$ (#15)
 $\pm 2.5\ \text{kHz}$ (#03, #04, #07, #08, #09, #16)
- Spurious emissions : $< 0.25\ \mu\text{W}$
- Harmonic emissions : $< 0.25\ \mu\text{W}$
- Noise and hum : $> 40\ \text{dB}$ (#01, #02, #05, #06, #10, #11, #13, #14, #15)
 $> 35\ \text{dB}$ (#03, #04, #07, #08, #09, #16)
- Audio response : $+1\ \text{dB}$ to $-3\ \text{dB}$ of $+6\ \text{dB/octave}$ with 300 Hz to 3000 Hz input
- Limiting of modulator : 70% to 100%

■ RECEIVER

- Receive system : Double-conversion superheterodyne
- Sensitivity : $0.35\ \mu\text{V}$ (PD) for 12 dB SINAD signal input modulated by 1 kHz tone at 60% peak deviation
- Squelch sensitivity (threshold) : $0.35\ \mu\text{V}$
- Intermediate frequency : 1st 21.8 MHz
2nd 455 kHz
- Adjacent channel selectivity : $> 70\ \text{dB}$ (#01, #02, #05, #06, #10, #11, #13, #14, #15)
 $> 60\ \text{dB}$ (#03, #04, #07, #08, #09, #16)
- Intermodulation rejection : $> 70\ \text{dB}$
- Spurious rejection : $> 70\ \text{dB}$
- Noise and hum : $> 40\ \text{dB}$
- Audio response : $+1\ \text{dB}$ to $-3\ \text{dB}$ of $-6\ \text{dB/octave}$ with 300 Hz to 3000 Hz modulation
- Audio output power (with CM-80) : 300 mW with an $8\ \Omega$ load
- Audio output impedance : $8\ \Omega$

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

1-2 IC-U11

■ GENERAL

- Frequency range : See VERSIONS on the right page of inside cover.
- Mode : 16K0F3E (#06, #07, #10, #11)
14K0F3E (#08)
8K50F3F (#03, #04, #05, #09)
- Channel spacing : 25 kHz (#06, #07, #10, #11)
20 kHz (#08)
12.5 kHz (#03, #04, #05, #09)
- Number of channels : Up to 6 channels
- Frequency stability : $\pm 0.0005\%$ (-25°C to $+55^{\circ}\text{C}$)
- Antenna impedance : 50 Ω unbalanced
- Acceptable battery pack : CM-80
- Current drain (with CM-80) : Transmit 1 A
Receive (max. audio) 250 mA
Receive (standby) 75 mA
- Usable temperature range : -25°C to $+55^{\circ}\text{C}$ (-13°F to $+131^{\circ}\text{F}$)
- Dimension (with CM-80) : 58 (W) \times 149 (H) \times 29 (D) mm
2.3 (W) \times 5.9 (H) \times 1.1 (D) in
(Projections not included)
- Weight (with CM-80) : 400 g (14.1 oz)

■ TRANSMITTER

- Output power : 1.5 W (with CM-80)
- Modulation system : Variable reactance frequency modulation
- Microphone impedance : 1.2 k Ω
- Maximum deviation : ± 5 kHz (#06, #07, #10, #11)
 ± 4 kHz (#08)
 ± 2.5 kHz (#03, #04, #05, #09)
- Spurious emissions : < 0.25 μW
- Harmonic emissions : < 0.25 μW
- Noise and hum : > 40 dB (#06, #07, #08, #10, #11)
 > 35 dB (#03, #04, #05, #09)
- Audio response : $+1$ dB to -3 dB of $+6$ dB/octave with 300 Hz to 3000 Hz input
(#06, #07, #08, #10, #11)
 $+1$ dB to -3 dB of $+6$ dB/octave with 300 Hz to 2550 Hz input
(#03, #04, #05, #09)
- Limiting of modulator : 70% to 100%

■ RECEIVER

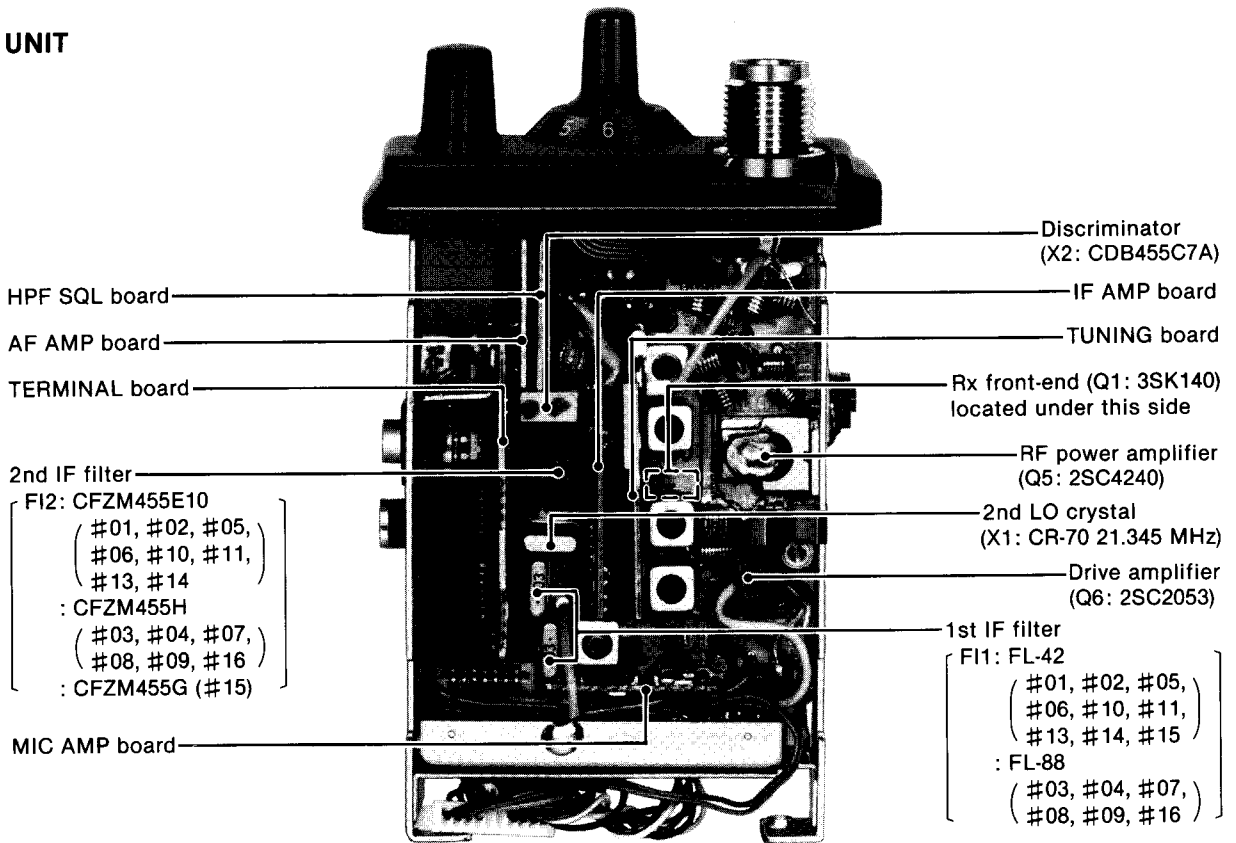
- Receive system : Double-conversion superheterodyne
- Sensitivity : 0.32 μV (PD) for 12 dB SINAD signal input modulated by 1 kHz tone at 60% peak deviation
- Squelch sensitivity (threshold) : 0.32 μV
- Intermediate frequency : 1st 45.15 MHz
2nd 455 kHz
- Adjacent channel selectivity : > 70 dB (#06, #07, #08, #10, #11)
 > 60 dB (#03, #04, #05, #09)
- Intermodulation rejection : > 70 dB
- Spurious rejection : > 70 dB
- Noise and hum : > 40 dB
- Audio response : $+1$ dB to -3 dB of -6 dB/octave with 300 Hz to 3000 Hz modulation
(#06, #07, #08, #10, #11)
 $+1$ dB to -3 dB of $+6$ dB/octave with 300 Hz to 2550 Hz modulation
(#03, #04, #05, #09)
- Audio output power (with CM-80) : 300 mW with an 8 Ω load
- Audio output impedance : 8 Ω

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

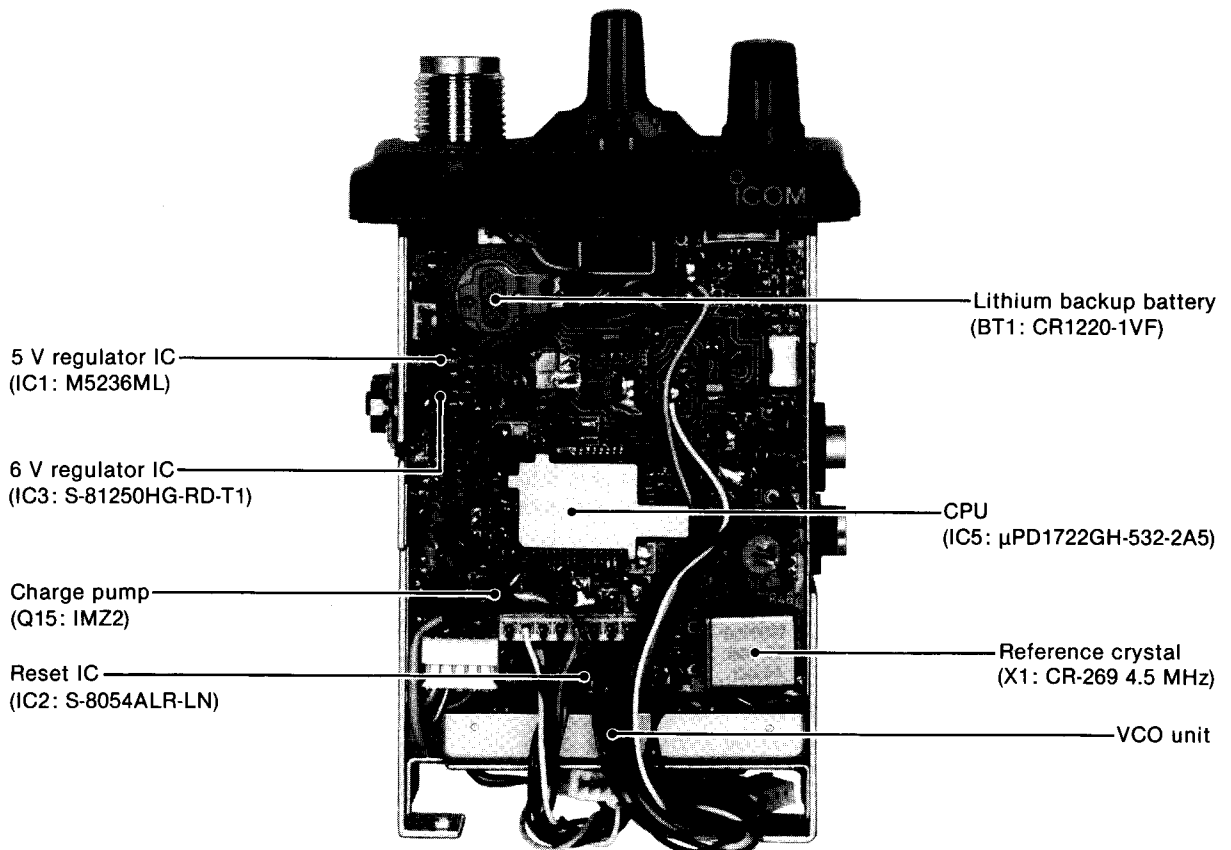
SECTION 2 INSIDE VIEWS

2-1 IC-H11

• RF UNIT

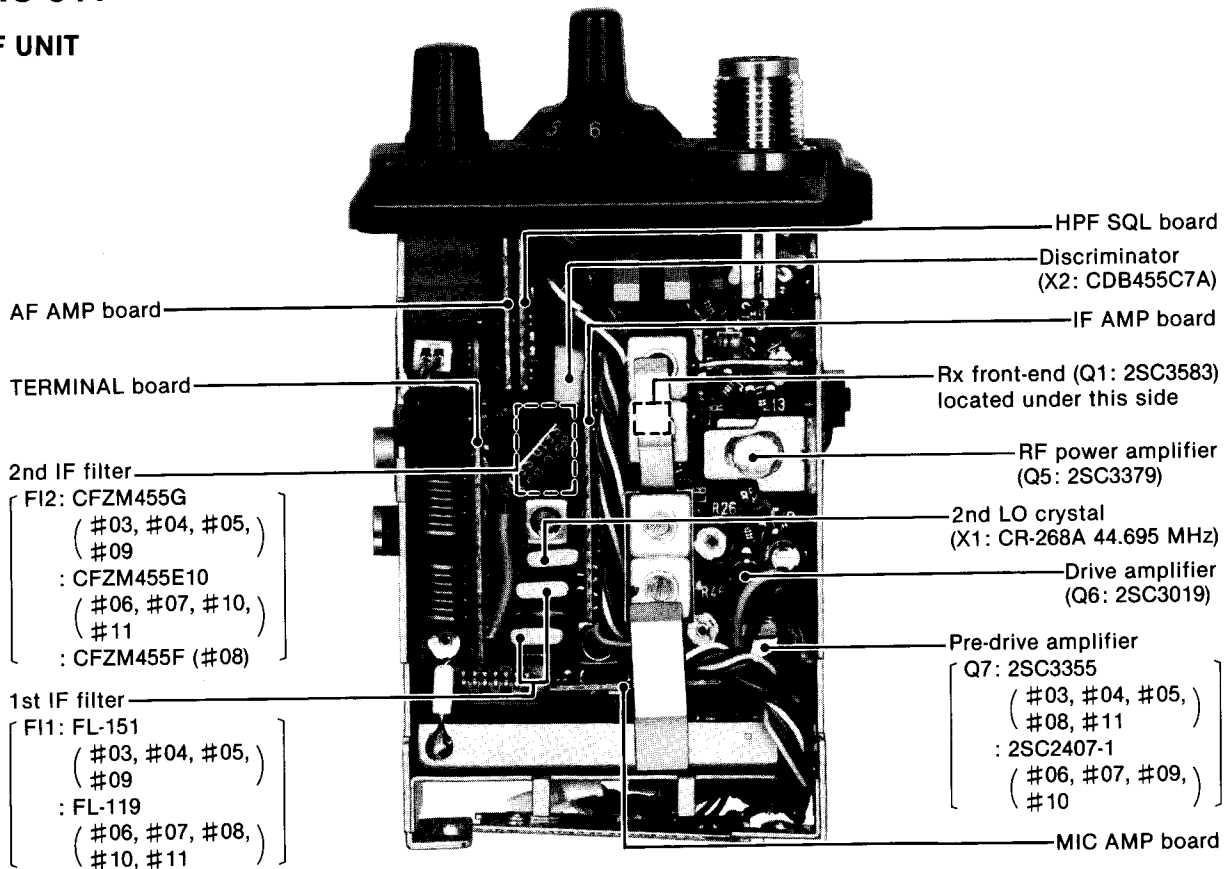


• LOGIC UNIT



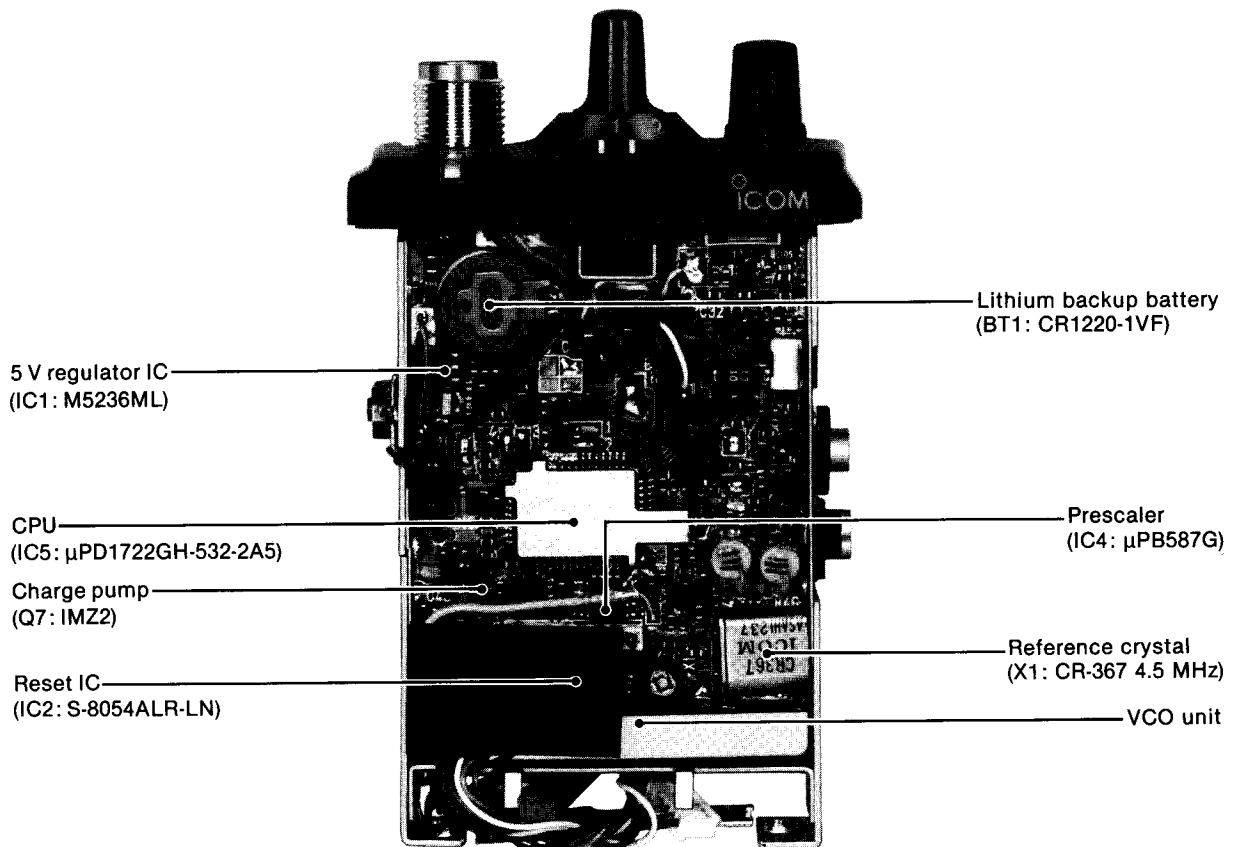
2-2 IC-U11

• RF UNIT



IC-U11

• LOGIC UNIT



IC-H11

3-1 RECEIVER CIRCUITS

3-1-1 ANTENNA SWITCHING CIRCUIT (RF UNIT AND TUNING BOARD)

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 signals from the antenna connector pass through a two-stage Chebyshev low-pass filter (L9, L10, C53-C57) to suppress out-of-band signals and are then applied to the $\lambda/4$ type antenna switching circuit (D5, D6, L7, L8, C50-C52).

D5 and D6 are turned OFF while receiving. The signals from the antenna switching circuit pass through a two-stage bandpass filter (L1, L2 on the RF unit; D1, D2 on the TUNING board) to suppress out-of-band signals and are then applied to the RF circuit.

3-1-2 RF CIRCUIT (RF UNIT AND TUNING BOARD)

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

The RF amplifier (Q1) amplifies the RF signals with a low noise/high gain FET (3SK140). The amplified signals pass through a two-stage bandpass filter (L3, L4 on the RF unit; D3, D4 on the TUNING board) to suppress out-of-band signals and are then applied to a 1st mixer circuit.

D1-D4 employ varactor diodes, that are controlled by the PLL lock voltage, to track the bandpass filters. These varactor diodes tune the center frequency of an RF passband for wide bandwidth receiving and good image rejection.

3-1-3 1ST MIXER AND IF CIRCUITS (RF 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 the 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 RF circuit are mixed at Q2 with a 1st LO signal coming from the VCO circuit to produce a 1st IF signal.

The 21.8 MHz 1st IF signal is obtained at L5 and is then applied to a pair of crystal filters (F1) in order to obtain wide selection capability and to pass only the desired signals. The filtered signal is amplified at a 1st IF amplifier (Q1) on the IF AMP board and is then applied to a 2nd mixer circuit.

3-1-4 2ND IF AND DEMODULATOR CIRCUITS (IF AMP BOARD AND RF 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 Q1 is applied to a 2nd mixer section of IC1 (pin 16) and is then mixed with a 2nd LO signal for conversion to a 455 kHz 2nd IF signal.

IC1 contains the 2nd mixer, local oscillator circuit, limiter amplifier, quadrature detector circuit and active filter circuit. The local oscillator section and X1 generate 21.345 MHz for the 2nd LO signal.

The 2nd IF signal from the 2nd mixer (IC1, pin 3) passes through a high-quality ceramic filter (F2) on the RF unit to suppress unwanted heterodyned frequency signals. It is then amplified at the limiter amplifier section (IC1, pin 5) and applied to the quadrature detector section (IC1, pin 8) and ceramic discriminator X2 to demodulate the 2nd IF signal into an AF signal. The AF signal is output from IC1 (pin 9).

• IF IC BLOCK DIAGRAM

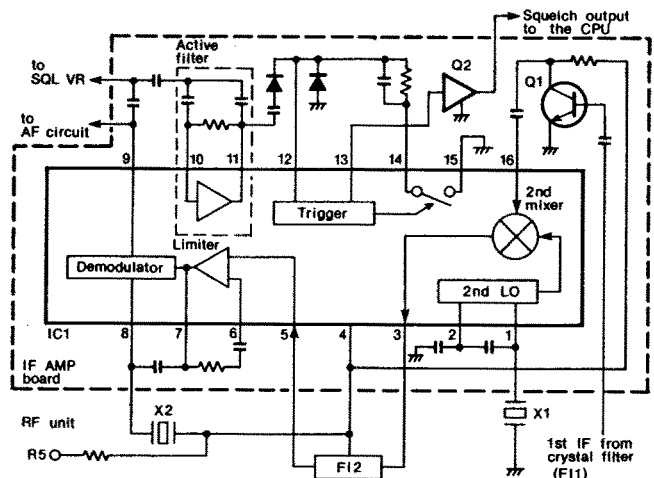


Fig. 1

3-1-5 AF CIRCUIT (HPF SQL AND AF AMP BOARDS)

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

The AF signal output from IC1 (pin 9) on the IF AMP board is applied to the de-emphasis circuit (R22, C39) on the RF unit. This de-emphasis circuit is an integrated circuit with frequency characteristics of -6 dB/octave. The resulting signal is applied to Q1 and Q2 on the HPF SQL board. Q1 and Q2 are active filters that function as high-pass filters to suppress tone signals for tone operation.

The filtered signal is applied to the [VOL] control (R25) on the RF unit. The AF signal is power-amplified at the AF power amplifier (IC1) on the AF AMP board to drive the speaker. When the squelch is closed, the AF mute circuit (Q8 on the RF unit; Q1 on the AF AMP board) cut off the power source of the AF power amplifier.

3-1-6 SQUELCH CIRCUIT (IF AMP BOARD)

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 IC1 (pin 9) are applied to an active filter section (IC1, pin 10). The [SQL] control (R21) on the RF unit is connected in parallel to IC1 (pin 10) to adjust pin 10 input level.

The active filter section in IC1 amplifies the noise components of frequency 20 kHz and above. The noise signals are output from IC1 (pin 11) and are then rectified by D1 for conversion to DC voltage.

The rectified voltage is applied to the squelch trigger section in IC1 (pin 12). The resulting from pin 13 of IC1 is inverted at Q2 and is then applied to the CPU (IC5, pin 8) on the LOGIC unit. This signal controls the [TX/BUSY] indicator (D1) on the LED unit.

The CPU (IC5 on the LOGIC unit) outputs the mute signal (MUT) from pin 18 when pin 8 receives "LOW." The "MUT" signal from pin 18 deactivates the AF mute circuit (Q8 on the RF unit; Q1 on the AF AMP board) to cut off the AF signal.

3-2 TRANSMITTER CIRCUITS

3-2-1 MICROPHONE AMPLIFIER CIRCUIT (MIC AMP BOARD)

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 AF signals from the built-in condenser microphone or from the [EXT MIC] jack are applied to IC1a (pin 3). IC1a includes a low level amplifier with pre-emphasis and a limiter amplifier. Pre-emphasis is made by C5 and R3 which are connected to pin 2. The output signals from IC1a (pin 1) pass through a splatter filter circuit (IC1b) which eliminates signal components greater than 3 kHz. The "MOD" signal is output from IC1b (pin 7) and is then applied to the VCO unit as the "MOD1" signal.

3-2-2 MODULATION CIRCUIT (VCO UNIT)

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

The "MOD1" signal changes the reactance of a diode (D3) to modulate the oscillated signal at the transmitter VCO (Q1, D1, D2). The oscillated signal passes through the transmit/receive switching diode (D4) and is then buffer-amplified at Q2 and Q3. The buffer-amplified signal passes through the transmit/receive switching diode (D5) and is then applied to the drive amplifier circuit.

3-2-3 DRIVE AND RF POWER AMPLIFIER CIRCUITS (RF UNIT)

The drive and RF power amplifier circuits amplifies the VCO oscillating signal to provide a stable 1.5 W (at DC 7.2 V) of output power.

The signal from the transmit/receive switching diode (D5) on the VCO unit is amplified at the pre-drive amplifier (Q7) and is then re-amplified at a drive amplifier (Q6). The transmit output level is adjusted at R33.

The amplified signal is amplified at the power amplifier (Q5) and is then applied to the antenna connector through the antenna switching circuit and the low-pass filter circuit.

3-2-4 ANTENNA SWITCHING CIRCUIT (RF UNIT)

The antenna switching circuit applies the received signal to the receiver circuit and the transmitter signal to the antenna connector.

D5 is turned ON to form a parallel resonant circuit (L7, L8, C50-C52) while transmitting. The parallel resonant circuit does not allow the RF output signal from Q5 to enter the receiver circuit. The RF output signal from Q5 passes through the low-pass filter (L9, L10, C53-C57) and is then applied to an antenna connector.

3-3 PLL CIRCUITS

3-3-1 GENERAL

PLL circuits provide steady oscillation of the transmit frequency and the receive 1st LO frequency. The PLL output frequency is controlled by the divided ratio (N-data) of the programmable divider.

3-3-2 PLL CIRCUIT (LOGIC UNIT)

The PLL circuit, using the CPU (IC5), directly generates the transmit frequency with the transmitter VCO (Q1, D1, D2) and the receive 1st LO frequency with the receiver VCO (Q4, D6, D7) on the VCO unit. The prescaler section in the CPU (IC5) sets the dividing ratio of the programmable divider and compares the phase of the VCO signal with the reference oscillator frequency. The phase detector section in the CPU (IC5) detects the out-of-step phase and outputs it from IC5 (pins 1 and 2). A reference frequency is oscillated at Q12 and X1.

3-3-3 REFERENCE OSCILLATOR CIRCUIT (LOGIC UNIT)

A 4.5 MHz reference frequency is generated by Q12 and X1 and is adjusted with C30. D10, R46 and R47 compensate for temperature to maintain frequency stability within ± 5 ppm (-25°C to $+55^{\circ}\text{C}$; -13°F to $+131^{\circ}\text{F}$). The signal is applied to the CPU (IC5, pin 21).

3-3-4 VCO CIRCUIT (VCO UNIT)

The VCO circuit consists of the transmitter VCO (Q1, D1, D2) and the receiver VCO (Q4, D6, D7) and generates the transmit frequency and the receive 1st LO frequency. The varactor diodes (D1, D2, D6, D7) provide frequency control. The output signal from the VCO circuit passes through the transmit/receive switching diode (D4) and is then applied to a buffer amplifier (Q2).

The amplified signal is re-amplified at Q3 and Q5 which amplify VCO oscillation and do not permit the latter circuit to affect the VCO oscillation. The amplified signal at Q3 passes through the transmit/receive switching diode (D5) and is then applied to the RF unit as the receive 1st LO signal and the transmitter signal. At the same time, the amplified signal at Q5 is applied to the CPU (IC5, pin 5).

3-3-5 PROGRAMMABLE DIVIDER AND PHASE DETECTOR CIRCUITS (LOGIC UNIT)

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

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

IC5 is a CPU that contains a prescaler, a pulse counter, a programmable divider and a phase detector.

The input signal from the CPU (IC5, pin 5) passes through the prescaler and the programmable counter sections of IC5. A 4.5 MHz reference frequency from Q12 and X1 is applied to IC5 (pin 21) and passes through a programmable reference counter section of IC5. Both of the divided signals are compared at a phase detector section of IC5. The phase-detected signal (pulse signal) is output from IC5 (pins 1 and 2).

• PLL CIRCUITS

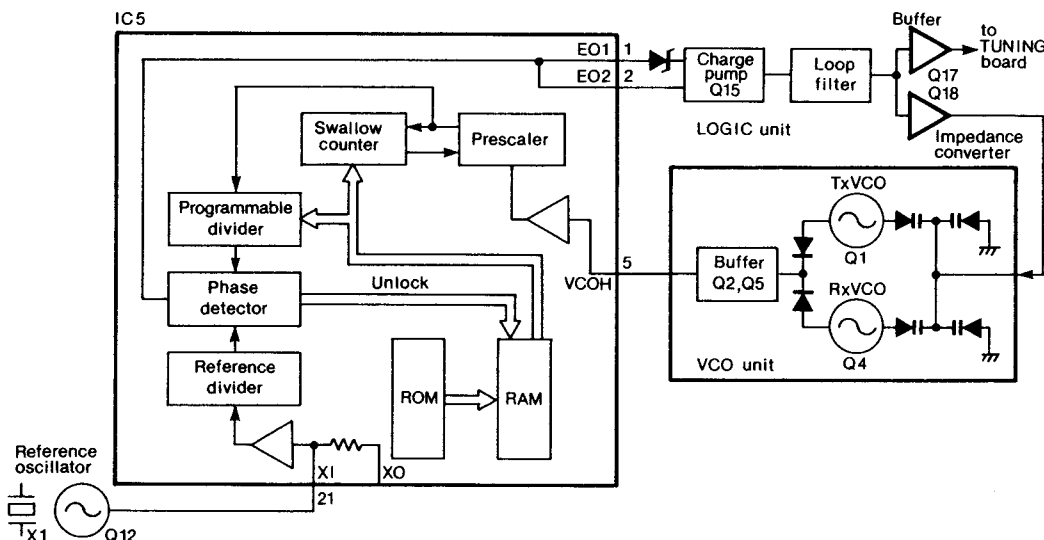


Fig. 2

3-3-6 CHARGE PUMP AND LOOP FILTER CIRCUITS (LOGIC UNIT)

The phase-detected signal (pulse signal) from IC5 (pin 1 and 2) is applied to the charge pump (Q15) to expand the range of the PLL lock voltage and is then applied to a lag-lead loop filter (R22, R23, R69, C20, C39, C65). The pulse signal is converted to DC voltage (PLL voltage) and is then buffer-amplified at Q17 and Q18.

The output voltage from Q18 changes the reactance of the varactor diodes (D1, D2, D6, D7) on the VCO unit. As the same time, the output voltage from Q17 controls the bandpass filter on the TUNING board.

3-4 VOLTAGE LINES (LOGIC UNIT)

LINE	DESCRIPTION
Vcc	Attached battery pack voltage (7.2 V; CM-80) passed through the [PWR/VOL] control (R25) on the RF unit.
5VS	5 V controlled by the power saver function. When the power saver is turned ON, a "PSV" signal from the CPU (IC5, pin 17) interrupts the "5VS" line intermittently to save power. This voltage is converted from the Vcc line at Q1 and Q23 using IC1 output as the reference voltage.
5 V	Common 5 V converted from the Vcc line at the 5 V regulator circuit (IC1, Q20).
Rx5V	This voltage is supplied to the receiver VCO (Q4, D6, D7) on the VCO unit and controlled by the power saver function and a "PL2" signal from the CPU (IC5, pin 25). While receiving, pin 25 of IC5 becomes "LOW." Therefore, Q22 is connected to "Rx5V" line. This voltage is converted from the 5VS line at Q22.
Tx5V	This voltage is supplied to the transmitter VCO (Q1, D1, D2) on the VCO unit and controlled by the power saver function and a "PL2" signal from the CPU (IC5, pin 25). While transmitting, pin 25 of IC5 becomes "HIGH." Therefore, Q21 is connected to the "Tx5V" line. This voltage is converted from the 5VS line at Q21.
R5	Receive 5 V controlled by the power saver function and a "TxEN" signal from the CPU (IC5, pin 23). While receiving, pin 23 of IC5 becomes "LOW." Therefore, Q2 is connected to the "R5" line. This voltage is converted from the 5VS line at Q2.
T5	Transmit 5 V controlled by the power saver function and a "TxEN" signal from the CPU (IC5, pin 23). While transmitting, pin 23 of IC5 becomes "HIGH." Therefore, Q4 is connected to the "T5" line. This voltage is converted from the Vcc line at Q4 using IC1 output as the reference voltage. 5 V from IC1 is supplied to Q4 regardless of the power saver function.
6.0 V	This voltage is supplied to the charge pump (Q15) and converted from the Vcc line at the 6 V regulator (IC3).
CPU5	When the power switch is turned OFF and the external battery pack is discharged, this voltage is applied to the CPU (IC5, pins 3 and 7) via R1 from the lithium backup battery (BT1) installed in the transceiver to provide the backup for the memory contents. This voltage is converted from the Vcc line at the 5 V regulator circuit (IC1) on the TERMINAL board.

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3-5 RECEIVER CIRCUITS

3-5-1 ANTENNA SWITCHING CIRCUIT (RF 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 signals from the antenna connector pass through a two-stage Chebyshev low-pass filter (L1, L2, C1-C3, C5, C10) to suppress out-of-band signals and are then applied to the $\lambda/4$ type antenna switching circuit (D1, D2, L3, C6).

D1 and D2 are turned OFF while receiving. The signals from the antenna switching circuit pass through a helical bandpass filter (L5) to suppress out-of-band signals and are then applied to the RF circuit. D3 protects an RF amplifier (Q1) from distortion when excessively strong signals are received.

3-5-2 RF CIRCUIT (RF UNIT)

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

The RF amplifier (Q1) amplifies the RF signals with a low noise/high gain transistor (2SC3583). The amplified signals pass through a helical bandpass filter (L8) to suppress out-of-band signals and are then applied to a 1st mixer circuit through L9.

3-5-3 1ST MIXER AND IF CIRCUITS (RF 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 the 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 RF circuit are mixed at Q2 with a 1st LO signal coming from the VCO circuit to produce a 1st IF signal.

The 45.150 MHz 1st IF signal is obtained at L11 and is then applied to a pair of crystal filters (F11) in order to obtain wide selection capability and to pass only the desired signals. The filtered signal is amplified at a 1st IF amplifier (Q1) on the IF AMP board and is then applied to a 2nd mixer circuit.

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3-5-4 2ND IF AND DEMODULATOR CIRCUITS (IF AMP BOARD AND RF 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 Q1 is applied to a 2nd mixer section of IC1 (pin 16) and is then mixed with a 2nd LO signal for conversion to a 455 kHz 2nd IF signal.

IC1 contains the 2nd mixer, local oscillator circuit, limiter amplifier, quadrature detector circuit and active filter circuit. The local oscillator section and X1 generate 44.695 MHz for the 2nd LO signal.

The 2nd IF signal from the 2nd mixer (IC1, pin 3) passes through a high-quality ceramic filter (F12) on the RF unit to suppress unwanted heterodyned frequency signals. It is then amplified at the limiter amplifier section (IC1, pin 5) and applied to the quadrature detector section (IC1, pin 8 and ceramic discriminator X2) to demodulate the 2nd IF signal into an AF signal. The AF signal is output from IC1 (pin 9).

• IF IC BLOCK DIAGRAM

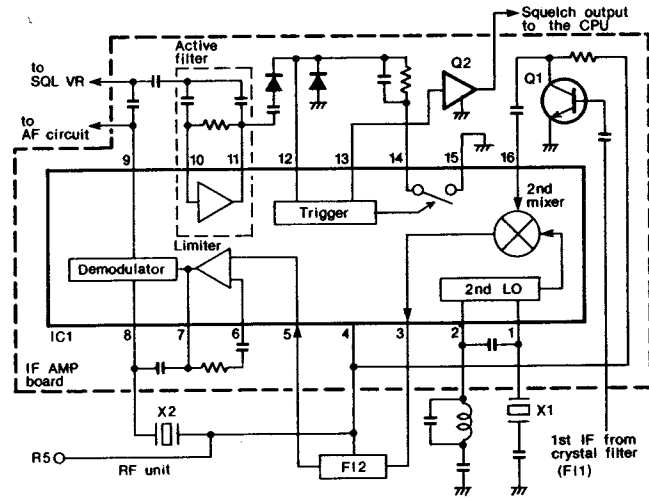


Fig. 3

3-5-5 AF CIRCUIT (HPF SQL AND AF AMP BOARDS)

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

The AF signal output from IC1 (pin 9) on the IF AMP board is applied to the de-emphasis circuit (R6, C32) on the RF unit. This de-emphasis circuit is an integrated circuit with frequency characteristics of -6 dB/octave. The resulting signal is applied to Q1 and Q2 on the HPF SQL board. Q1 and Q2 are active filters that function as high-pass filters to suppress tone signals for tone operation.

The filtered signal is applied to the [VOL] control (R18) on the RF unit. The AF signal is power-amplified at the AF power amplifier (IC1) on the AF AMP board to drive the speaker. When the squelch is closed, the AF mute circuit (Q4 on the RF unit; Q1 on the AF AMP board) cut off the power source of the AF power amplifier.

3-5-6 SQUELCH CIRCUIT (IF AMP BOARD)

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 IC1 (pin 9) are applied to an active filter section (IC1, pin 10). The [SQL] control (R13) on the RF unit is connected in parallel to IC1 (pin 10) to adjust pin 10 input level.

The active filter section in IC1 amplifies the noise components of frequency 20 kHz and above. The noise signals are output from IC1 (pin 11) and are then rectified by D1 for conversion to DC voltage.

The rectified voltage is applied to the squelch trigger section in IC1 (pin 12). The resulting from pin 13 of IC1 is inverted at Q2 and is then applied to the CPU (IC5, pin 8) on the LOGIC unit. This signal controls the [TX/BUSY] indicator (D1) on the LED unit.

The CPU (IC5 on the LOGIC unit) outputs the mute signal (MUT) from pin 18 when pin 8 receives "LOW." The "MUT" signal from pin 18 of IC5 deactivates the AF mute circuit (Q4 on the RF unit; Q1 on the AF AMP board) to cut off the AF signal.

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3-6 TRANSMITTER CIRCUITS

3-6-1 MICROPHONE AMPLIFIER CIRCUIT (MIC AMP BOARD)

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 AF signals from the built-in condenser microphone or from the [EXT MIC] jack are applied to IC1a (pin 3). IC1a includes a low level amplifier with pre-emphasis and a limiter amplifier. Pre-emphasis is made by C5 and R3 which are connected to pin 2. The output signals from IC1a (pin 1) pass through a splatter filter circuit (IC1b) which eliminates signal components greater than 3 kHz. The "MOD" signal is output from IC1b (pin 7) and is then applied to the VCO unit as the "MOD" signal.

3-6-2 MODULATION CIRCUIT (VCO UNIT)

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

The "MOD" signal changes the reactance of a varactor diode (D1) to modulate the oscillated signal at the transmitter VCO (Q3, D2). The oscillated signal is buffer-amplified at Q2 and Q4 and is then applied to the drive amplifier circuit.

3-6-3 DRIVE AND RF POWER AMPLIFIER CIRCUITS (RF UNIT)

The drive and RF power amplifier circuits amplifies the VCO oscillating signal to provide a stable 1.5 W (at DC 7.2 V) of output power.

The signal from the VCO circuit on the VCO unit is amplified at the pre-drive amplifier (Q7) and is then re-amplified at a drive amplifier (Q6). The transmit output level is adjusted at R26.

The amplified signal is amplified at the power amplifier (Q5) and is then applied to the antenna connector through the antenna switching circuit and the low-pass filter circuit.

3-6-4 ANTENNA SWITCHING CIRCUIT (RF UNIT)

The antenna switching circuit applies the received signal to the receiver circuit and the transmitter signal to the antenna connector.

D1 is turned ON to form a parallel resonant circuit (L3, C6) while transmitting. The parallel resonant circuit does not allow the RF output signal from Q5 to enter the receiver circuit. The RF output signal from Q5 passes through the low-pass filter (L1, L2, C1-C3, C5, C10) and is then applied to an antenna connector.

3-7 PLL CIRCUITS

3-7-1 GENERAL

PLL circuits provide steady oscillation of the transmit frequency and the receive 1st LO frequency. The PLL output frequency is controlled by the divided ratio (N-data) of the programmable divider.

3-7-2 PLL CIRCUIT (LOGIC UNIT)

The PLL circuit, using the CPU (IC5), directly generates the transmit frequency with the transmitter VCO (Q3, D2) and the receive 1st LO frequency with the receiver VCO (Q6, D3) on the VCO unit. The prescaler section in the CPU (IC5) sets the dividing ratio of the programmable divider and compares the phase of the VCO signal with the reference oscillator frequency. The phase detector section in the CPU (IC5) detects the out-of-step phase and outputs it from IC5 (pins 1 and 2). A reference frequency is oscillated at Q12 and X1.

3-7-3 REFERENCE OSCILLATOR CIRCUIT (LOGIC UNIT)

A 4.5 MHz reference frequency is generated by Q12 and X1 and is adjusted with C30. D10, R46 and R47 compensate for temperature to maintain frequency stability within ± 5 ppm (-25°C to $+55^{\circ}\text{C}$; -13°F to $+131^{\circ}\text{F}$). The signal is applied to the CPU (IC5, pin 21).

3-7-4 VCO CIRCUIT (VCO UNIT)

The VCO circuit consists of the transmitter VCO (Q3, D2) and the receiver VCO (Q6, D3) and generates the transmit frequency and the receive 1st LO frequency. The varactor diodes (D2, D3) provide frequency control. The output signal from the VCO circuit is applied to a buffer amplifier (Q2).

The amplified signal is re-amplified at Q1, Q4 and Q5 which amplify VCO oscillation and do not permit the latter circuit to affect the VCO oscillation.

The amplified signal at Q1 is applied to the RF unit as the receive 1st LO signal. The amplified signal at Q4 is applied to the RF unit as the transmitter signal. The amplified signal at Q5 is prescaled by 2 at IC4 and is then applied to the CPU (IC5, pin 5) on the LOGIC unit.

3-7-5 PROGRAMMABLE DIVIDER AND PHASE DETECTOR CIRCUITS (LOGIC UNIT)

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

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

IC5 is a CPU that contains a prescaler, a pulse counter, a programmable divider and a phase detector.

The input signal from the CPU (IC5, pin 5) passes through the prescaler and the programmable counter sections of IC5. A 4.5 MHz reference frequency from Q12 and X1 is applied to IC5 (pin 21) and passes through a programmable reference counter section of IC5. Both of the divided signals are compared at a phase detector section of IC5. The phase-detected signal (pulse signal) is output from IC5 (pins 1 and 2).

3-7-6 CHARGE PUMP AND LOOP FILTER CIRCUITS (LOGIC UNIT)

The phase-detected signal (pulse signal) from IC5 (pin 1 and 2) passes through the charge pump (Q7) and is then applied to a loop filter (R23, R70, R71, C20, C41, C43). The pulse signal is converted to DC voltage (PLL voltage) to control the oscillation from the VCO circuit.

The charge pump (Q7) is used to expand the range of the PLL lock voltage. The PLL lock voltage changes the reactance of the varactor diodes (D2, D3) on the VCO unit.

• PLL CIRCUITS

3-8 VOLTAGE LINES (LOGIC UNIT)

LINE	DESCRIPTION
Vcc	Attached battery pack voltage (7.2 V; CM-80) passed through the [PWR/VOL] control (R18) on the RF unit.
5VS	5 V controlled by the power saver function. When the power saver is turned ON, a "PSV" signal from the CPU (IC5, pin 17) interrupts the "5VS" line intermittently to save power. This voltage is converted from the Vcc line at Q1, Q3 and Q15 using IC1 output as the reference voltage.
5 V	Common 5 V converted from the Vcc line at the 5 V regulator circuit (IC1, Q20).
Rx5V	This voltage is supplied to the receiver VCO (Q6, D3) on the VCO unit and controlled by the power saver function and a "PL2" signal from the CPU (IC5, pin 25). While receiving, pin 25 of IC5 becomes "LOW." Therefore, Q22 is connected to "Rx5V" line. This voltage is converted from the 5VS line at Q22.
Tx5V	This voltage is supplied to the transmitter VCO (Q3, D2) on the VCO unit and controlled by the power saver function and a "PL2" signal from the CPU (IC5, pin 25). While transmitting, pin 25 of IC5 becomes "HIGH." Therefore, Q21 is connected to the "Tx5V" line. This voltage is converted from the 5VS line at Q21.
R5	Receive 5 V controlled by the power saver function and a "TxEN" signal from the CPU (IC5, pin 23). While receiving, pin 23 of IC5 becomes "LOW." Therefore, Q2 is connected to the "R5" line. This voltage is converted from the 5VS line at Q2.
T5	Transmit 5 V controlled by the power saver function and a "TxEN" signal from the CPU (IC5, pin 23). While transmitting, pin 23 of IC5 becomes "HIGH." Therefore, Q9 is connected to the "T5" line. This voltage is converted from the Vcc line at Q9 using IC1 output as the reference voltage. 5 V from IC1 is supplied to Q9 regardless of the power saver function.
3.6 V	This voltage is supplied to the prescaler (IC14) and converted from the Vcc line at the 3.6 V regulator (IC6).
CPU5	When the power switch is turned OFF and the external battery pack is discharged, this voltage is applied to the CPU (IC5, pins 3 and 7) via R1 from the lithium backup battery (BT1) installed in the transceiver to provide the backup for the memory contents. This voltage is converted from the Vcc line at the 5 V regulator circuit (IC1) on the TERMINAL board.

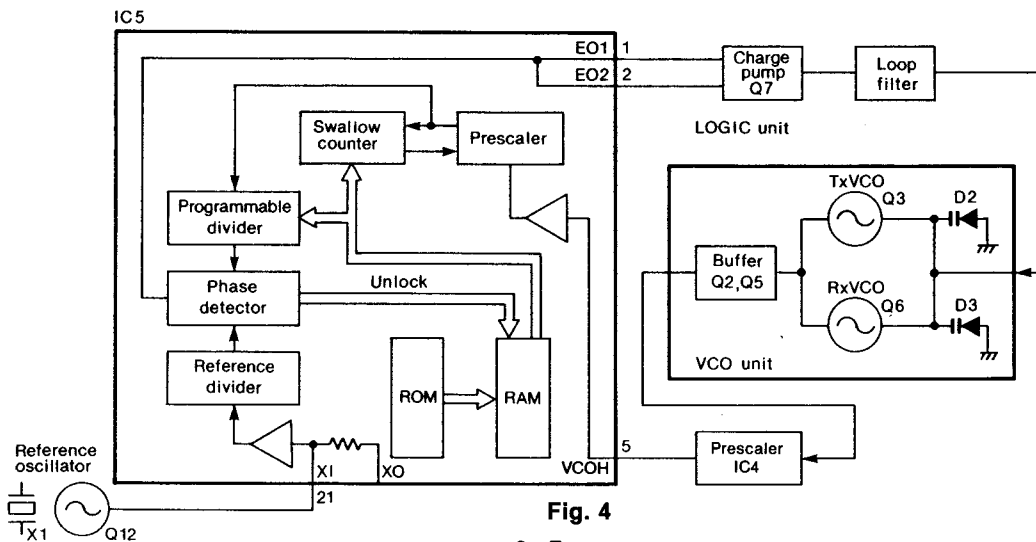


Fig. 4

IC-U11

COMMON CIRCUIT

3-9 PORT ALLOCATIONS

• CPU (LOGIC UNIT IC5)

PORT NAME	PIN NUMBER	DESCRIPTION
EO1, EO2	1, 2	Output the PLL phase-detected signals. This port becomes "LOW" when the reference frequency is higher than the programmed one in the CPU.
VDD1, VDD2	3, 7	Power source
VCOL	4	Not used.
VCOH	5	Input port for the VCO signal. For IC-U11, the divided VCO signal by the prescaler (IC4) is input.
CE	6	Detects a signal for the standby mode of the CPU. The CPU enters the standby mode when this port becomes "LOW."
SQ	8	Detects a squelch signal. This port becomes "LOW" when the squelch opens.
PC1-PC3	9-11	Input matrix select signals for the channel selector.
PTT	12	This port becomes "LOW" when the CPU detects that the [PTT] switch has been pushed.
DATA	13	Outputs serial data for the UT-54 CTCSS TONE ENCODER/DECODER unit.
SEND	14	Input port for T/R switching signal. This port is also used as the cloning data input.
CPO	15	Outputs cloning data.
CK	16	Outputs a clock signal for the UT-54 CTCSS TONE ENCODER/DECODER unit.
PSV	17	Outputs a power save control signal. This port becomes "LOW" when the power save function is activated.
MUTE	18	Outputs a receive mute signal. This port becomes "LOW" under the following conditions; Squelch closes, Transmitting, Tone squelch closes, PLL is unlocked.
STB	19	Outputs a strobe signal for the UT-54 CTCSS TONE ENCODER/DECODER unit.
XO	20	This port is connected internally to the XI port.
XI	21	Input port for the external clock signal.
GND	22, 32-42	Ground
TxEN	23	Outputs a receive/transmit switching signal. This port becomes "HIGH" when transmitting.
PL3, PL2, PL0	24, 25, 27	Output ports for the key matrix.
PL1	26	Outputs beep signals.
NC	28-31	Not used.
K1-K3	43-45	Input ports for the key matrix.

PORT NAME	PIN NUMBER	DESCRIPTION
DET	46	Input port for tone squelch detector signal. This port becomes "HIGH" when the CPU detects that the same tone frequency is received.
INT	48	Inputs an interrupt signal for the standby mode of the CPU. The CPU enters the standby mode when the port becomes "LOW."

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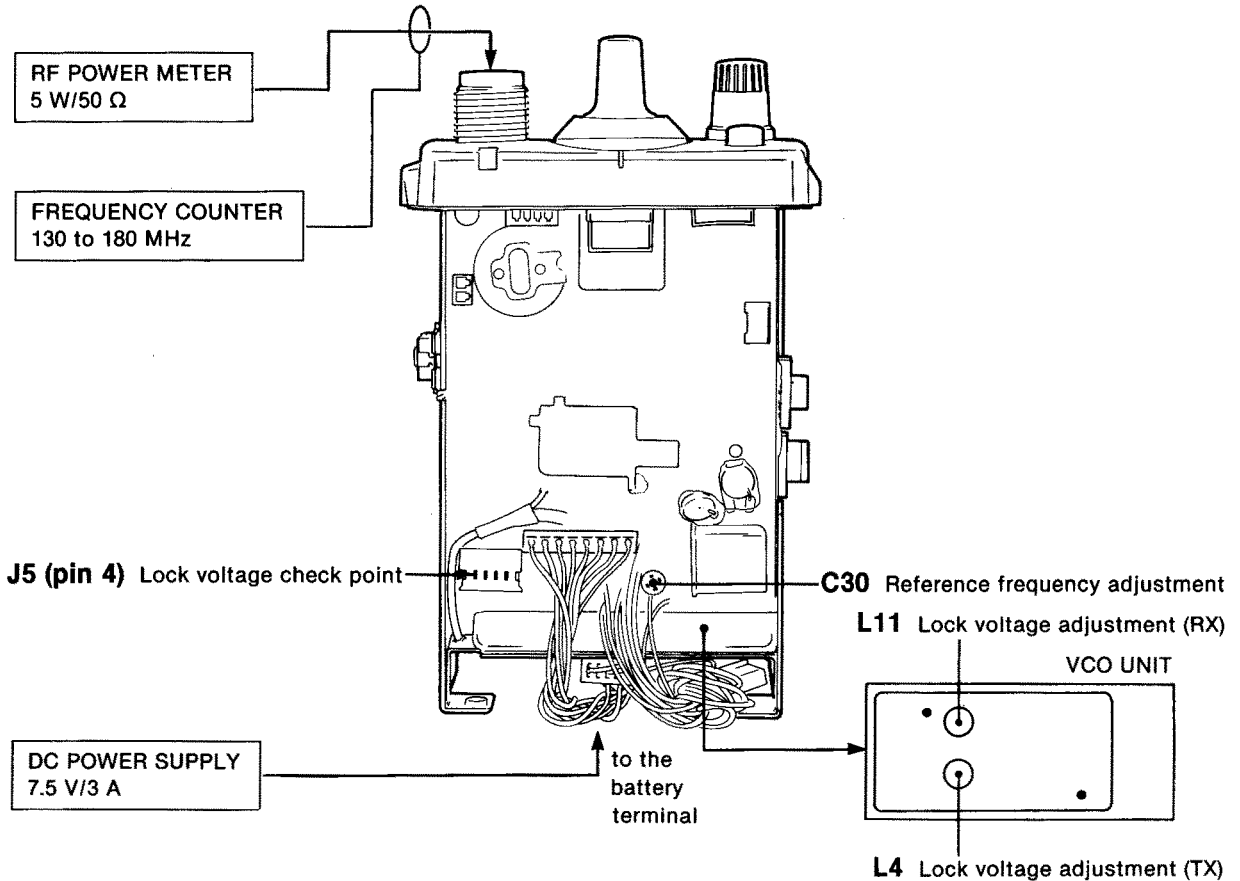
SECTION 4 ADJUSTMENT PROCEDURES

IC-H11

4-1 PLL ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
		UNIT	LOCATION		UNIT	ADJUST
LOCK VOLTAGE	1 <ul style="list-style-type: none"> • Operating frequency: 146.000 MHz (#01, #03, #05, #07, #09, #10, #13, #15) 174.000 MHz (#02, #04, #06, #08, #11, #14, #16) • Receiving 	LOGIC	Connect the digital multimeter or oscilloscope to J5 (pin 4).	1.9 V (#01, #03, #05, #07, #09, #10, #13, #15) 5.0 V (#02, #04, #06, #08, #11, #14, #16)	VCO	L11
	2 <ul style="list-style-type: none"> • Transmitting 					1.5 V (#01, #03, #05, #07, #09, #10, #13, #15) 5.0 V (#02, #04, #06, #08, #11, #14, #16)
REFERENCE FREQUENCY	1 <ul style="list-style-type: none"> • Select any channel. • Connect the RF power meter or a 50 Ω dummy load to the antenna connector. • Transmitting 	Top panel	Loosely couple the frequency counter to the antenna connector.	Same frequency as the programmed one. To check the programmed frequency, use the EX-704.	LOGIC	C30

• LOGIC AND VCO UNITS

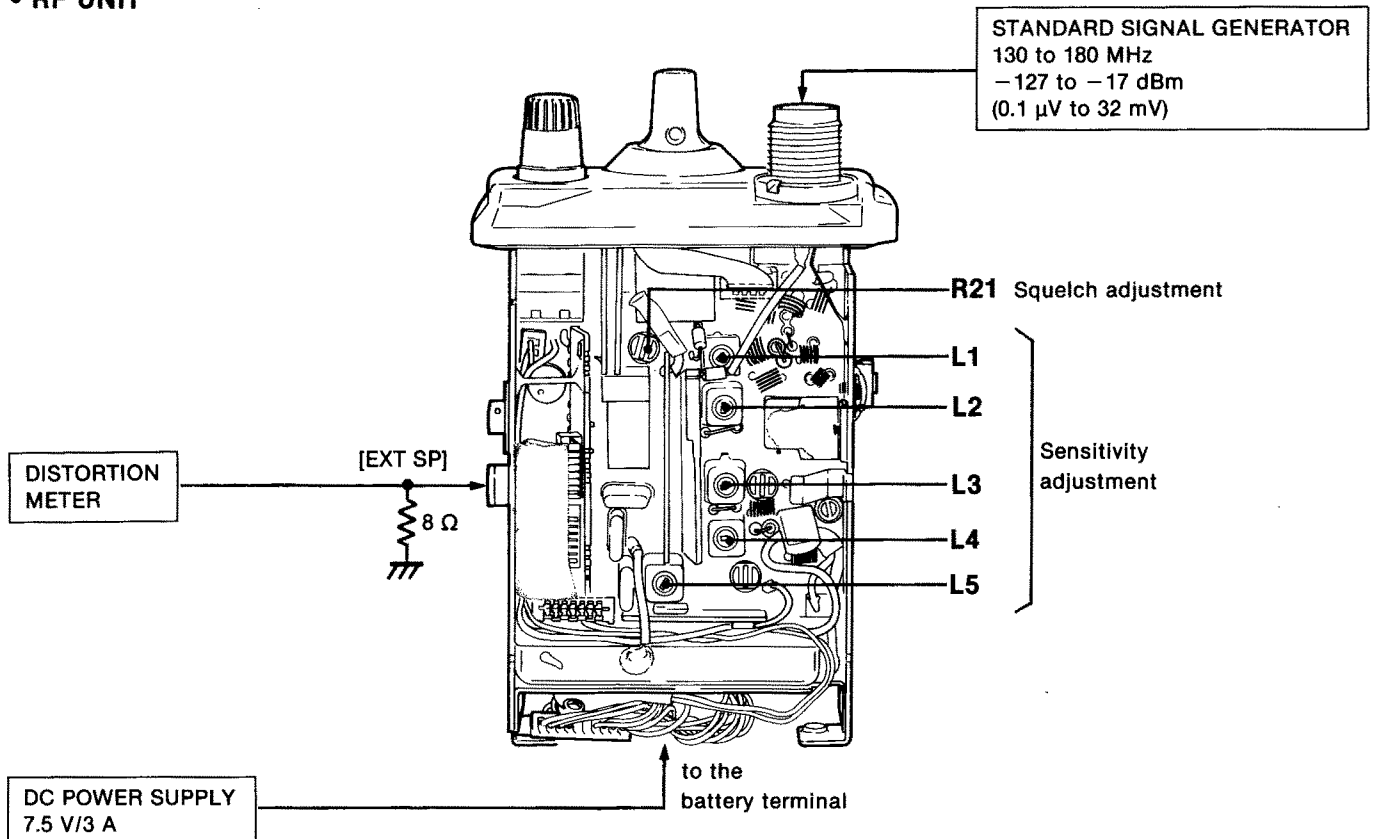


4-2 RECEIVER ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
		UNIT	LOCATION		UNIT	ADJUST
SENSITIVITY	1 <ul style="list-style-type: none"> • Operating frequency: 154.000 MHz (#01, #05, #10, #13, #15) 168.000 MHz (#02, #06, #11, #14) 146.000 MHz (#03, #07, #09) 174.000 MHz (#04, #08, #16) • Connect the SSG to the antenna connector and set as: Level : 1 mV* (-47 dBm) Modulation: 1 kHz Deviation : ±3.0 kHz (#01, #02, #05, #06, #10, #11, #13, #14) ±2.4 kHz (#15) ±1.5 kHz (#03, #04, #07, #08, #09, #16) • [MONITOR] switch: ON • Receiving 	Side panel	Connect the distortion meter to the [EXT SP] jack with an 8 Ω load.	Minimum distortion level	RF	Adjust in sequence L5, L1, L2, L3, L4
SQUELCH	1 <ul style="list-style-type: none"> • Operating frequency: Lower of the frequency coverage • Connect the SSG to the antenna connector and set as: Level : 0.13 μV* (-125 dBm) Modulation: 1 kHz Deviation : ±3.0 kHz (#01, #02, #05, #06, #10, #11, #13, #14) ±2.4 kHz (#15) ±1.5 kHz (#03, #04, #07, #08, #09, #16) • [MONITOR] switch: ON • Receiving 	Front panel	Speaker	Squelch just closes	RF	R21

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

• RF UNIT

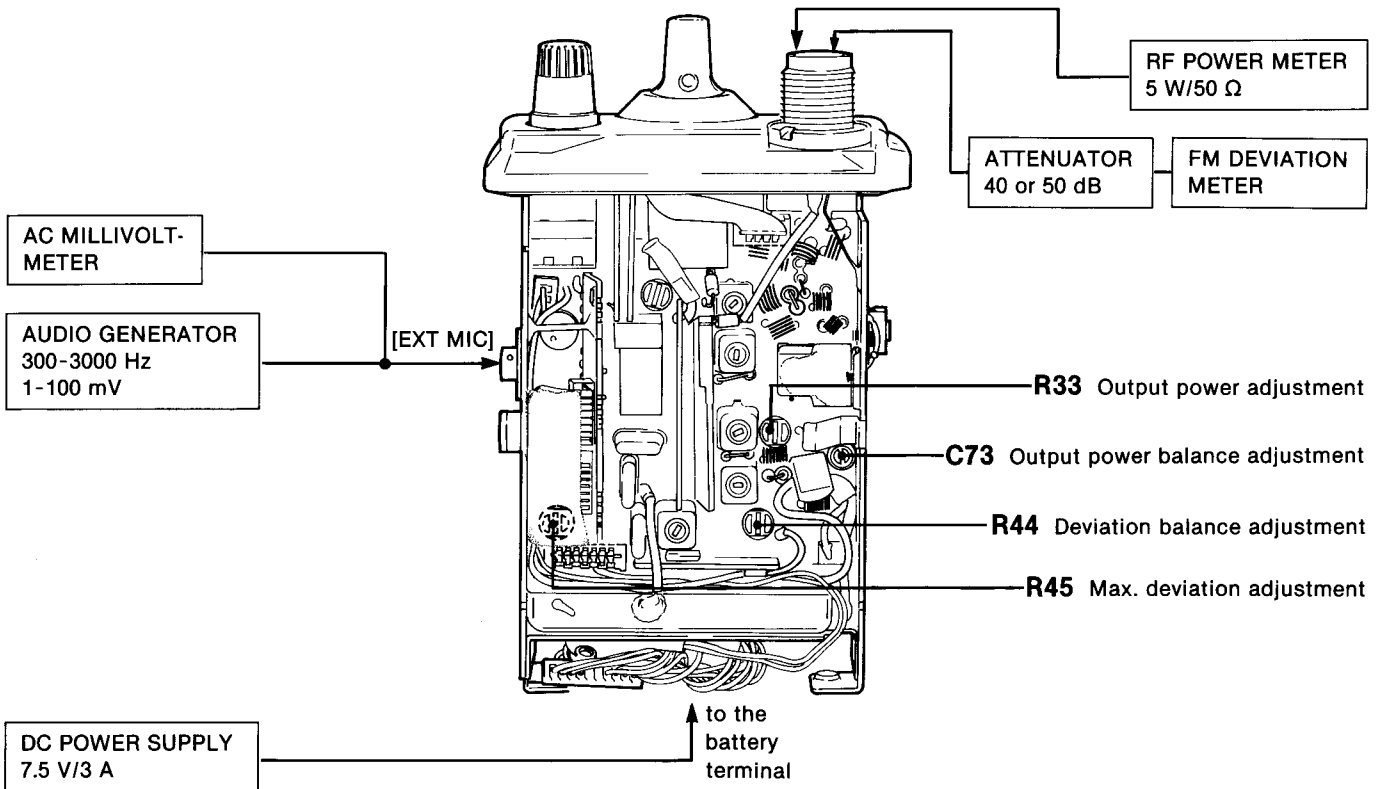


IC-H11

4-3 TRANSMITTER ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
		UNIT	LOCATION		UNIT	ADJUST
OUTPUT POWER	1 • Operating frequency: Lowest and highest frequencies in the frequency range • R33 (MAIN unit): Max. clockwise • Transmitting	Top panel	Connect the RF power meter to the antenna connector.	The same output power on both frequencies with maximum power.	RF	C73
	2 • Center of the frequency coverage					1.5 W
DEVIATION	1 • Operating frequency: Higher of the frequency coverage • Connect the audio generator to the microphone connector with an AC millivoltmeter and set as: Level : 100 mV Frequency : 1.0 kHz • Set the FM deviation meter as: HPF : OFF LPF : 20 kHz De-emphasis: OFF Detector : (P-P)/2 • Transmitting	Top panel	Connect the FM deviation meter to the antenna connector via the attenuator.	± 4.2 kHz (#01, #02, #05, #06, #10, #11, #13, #14) ± 3.3 kHz (#15) ± 2.1 kHz (#03, #04, #07, #08, #09, #16)	RF	R45
	2 • Set the FM deviation meter as: Detector : P and -P					Symmetrical deviation level

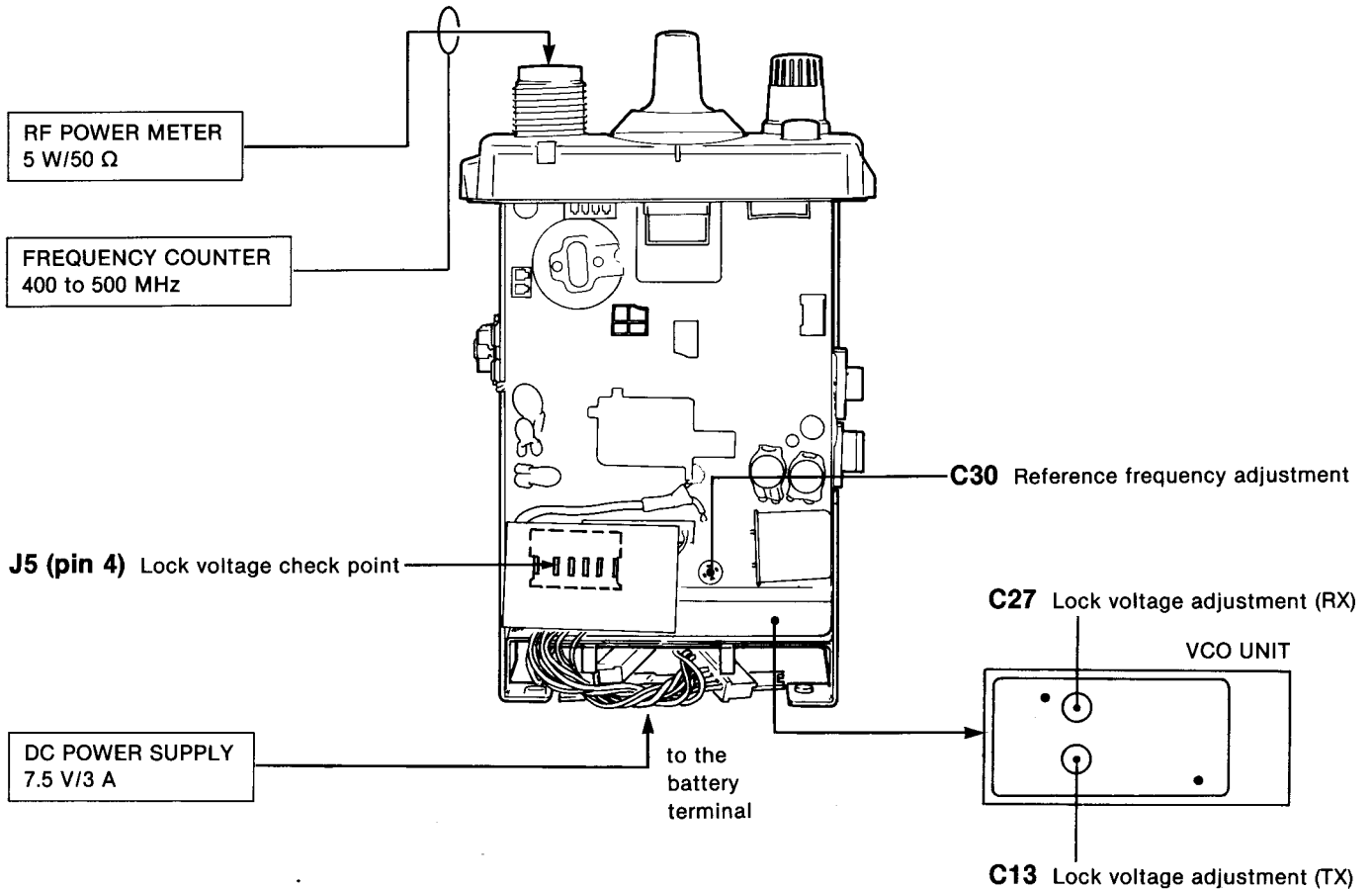
• RF UNIT



4-4 PLL ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
		UNIT	LOCATION		UNIT	ADJUST
LOCK VOLTAGE	1 <ul style="list-style-type: none"> • Operating frequency: <ul style="list-style-type: none"> 450.000 MHz (#03, #08, #11) 460.000 MHz (#04, #05) 400.000 MHz (#06, #10) 420.000 MHz (#07) 425.000 MHz (#09) • Receiving 	LOGIC	Connect the digital multimeter or oscilloscope to J5 (pin 4).	0.8 V (#03, #08, #11) 1.7 V (#04, #05) 1.0 V (#06, #07, #10) 1.5 V (#09)	VCO	C27
	2 <ul style="list-style-type: none"> • Operating frequency: <ul style="list-style-type: none"> 450.000 MHz (#03, #05, #08, #11) 460.000 MHz (#04) 400.000 MHz (#06, #10) 420.000 MHz (#07) 425.000 MHz (#09) • Transmitting 					
REFERENCE FREQUENCY	1 <ul style="list-style-type: none"> • Operating frequency: <ul style="list-style-type: none"> Center of the frequency coverage • Connect the RF power meter of a 50 Ω dummy load to the antenna connector. • Transmitting 	Top panel	Loosely couple the frequency counter to the antenna connector.	Same frequency as the programmed one. To check the programmed frequency, use the EX-704.	LOGIC	C30

• LOGIC AND VCO UNITS



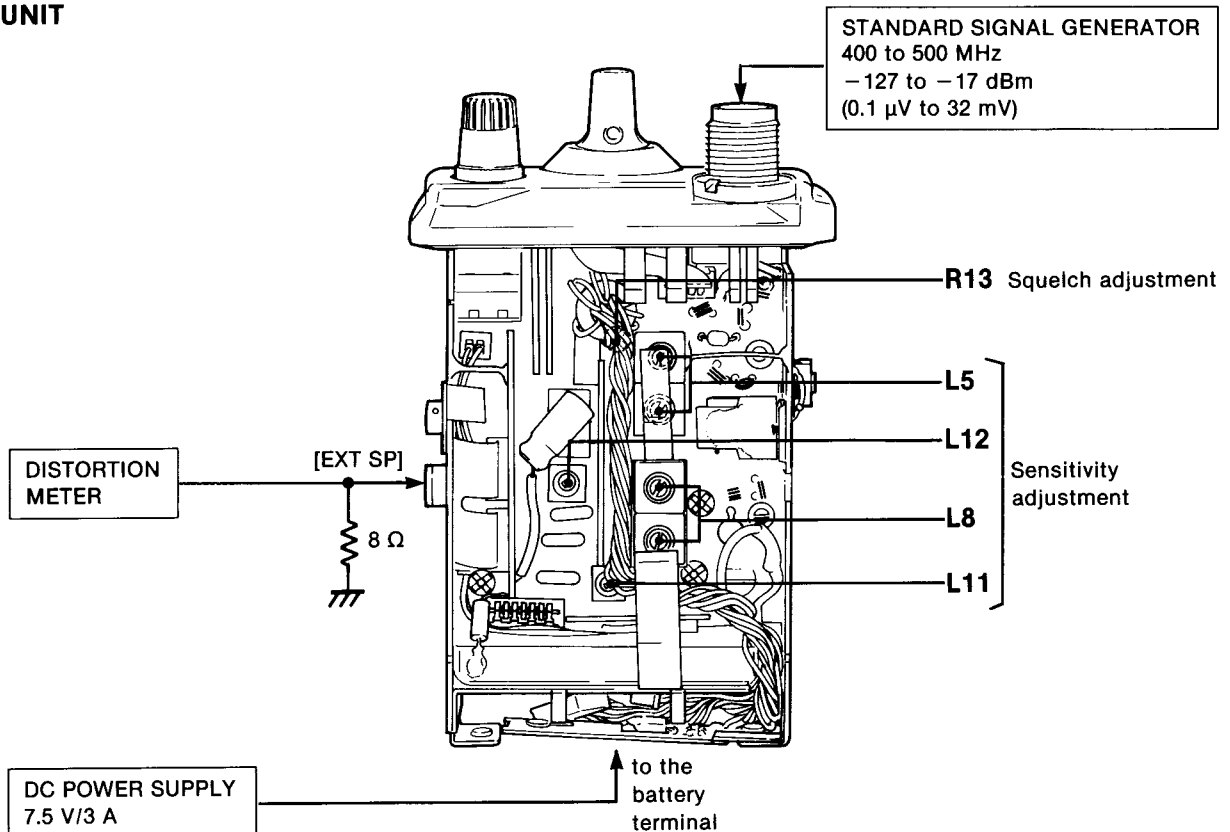
4-5 RECEIVER ADJUSTMENT

IC-U11

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
		UNIT	LOCATION		UNIT	ADJUST
SENSITIVITY	1 <ul style="list-style-type: none"> • Operating frequency: Center of the frequency coverage • Connect the SSG to the antenna connector and set as: <ul style="list-style-type: none"> Level : 1 mV* (-47 dBm) Modulation: 1 kHz Deviation : ±3.0 kHz <ul style="list-style-type: none"> (#06, #07, #10, #11) ±2.4 kHz (#08) ±1.5 kHz <ul style="list-style-type: none"> (#03, #04, #05, #09) • Receiving 	Side panel	Connect the distortion meter to the [EXT SP] jack with an 8 Ω load.	Minimum distortion level	RF	Adjust in sequence L5, L8, L11, L12
SQUELCH	1 <ul style="list-style-type: none"> • Operating frequency: Center of the frequency coverage • Connect the SSG to the antenna connector and set as: <ul style="list-style-type: none"> Level : 0.25 μV* (-119 dBm) Modulation: 1 kHz Deviation : ±3.0 kHz <ul style="list-style-type: none"> (#06, #07, #10, #11) ±2.4 kHz (#08) ±1.5 kHz <ul style="list-style-type: none"> (#03, #04, #05, #09) • Receiving 	Front panel	Speaker	Squelch just opens	RF	R13

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

• RF UNIT

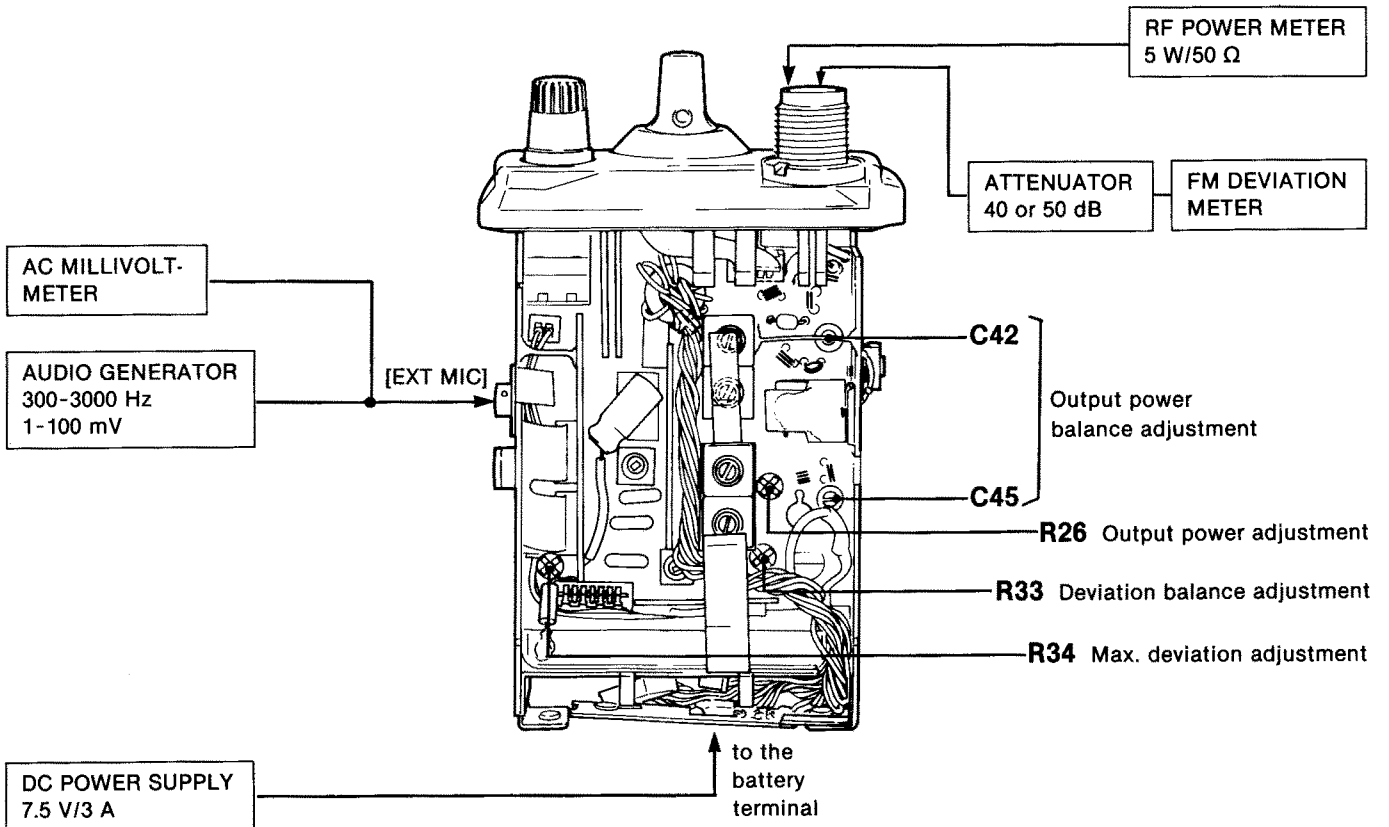


4-6 TRASMITTER ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
		UNIT	LOCATION		UNIT	ADJUST
OUTPUT POWER	1	Top panel	Connect the RF power meter to the antenna connector.	The same output power on the both frequencies with maximum power.	RF	C42, C45
	2					• Operating frequency: Center of the frequency coverage
DEVIATION	1	Top panel	Connect the FM deviation meter to the antenna connector via the attenuator.	± 4.2 kHz (#06, #07, #10, #11) ± 3.3 kHz (#08) ± 2.1 kHz (#03, #04, #05, #09)	RF	R34
	2					• Set the FM deviation meter as: Detector : P and -P

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• RF UNIT



SECTION 5 PARTS LIST

5-1 IC-H11

[CH SW UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
L1	6180002410	COIL	LAL 02NA R39K
L2	6180002190	COIL	LAL 02NA R47K
C1	4040000510	BARRIER	RAU 05SA 151K
S1	2250000060	ENCODER	EC10RP10-01 [CHANNEL SELECTOR]
EP1	0910025041	PCB	B 2437A (CH SW)

[FRONT PARTS]

REF. NO.	ORDER NO.	DESCRIPTION	
MC1	7700000861	MICROPHONE	WM-62A103
SP1	2510000650	SPEAKER	EAS-3P127D

[RF UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1580000340	S. FET	3SK140-GR (TE85R)
Q2	1580000390	S. FET	3SK131K-T1
Q4	1510000510	S. TRANSISTOR	2SA1576 T107 R
Q5	1530002540	S. TRANSISTOR	2SC4240
Q6	1530000810	TRANSISTOR	2SC2053
Q7	1530002030	S. TRANSISTOR	2SC3772-3-TA
Q8	1530001950	S. TRANSISTOR	2SC2712-GR (TE85R)
Q9	1590000680	S. TRANSISTOR	DTC114EU T107
D5	1790000450	S. DIODE	MA862 (TX)
D6	1710000580	DIODE	1SS265
D7	1710000600	DIODE	1SS254
D8	1750000020	S. DIODE	1SS184 (TE85R)
D9	1790000450	S. DIODE	MA862 (TX)

[RF UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
D10	1750000050	S. DIODE	1SS193 (TE85R)
D11	1750000230	S. DIODE	1SS315 TPH-3
X1	6050002000	XTAL	CR-70
X2	6070000010	DISCRIMINATOR	CDB455C7A
FI1	2010000200	FILTER	21M15B3 (FL-42) (#01, #02, #05, #06, #10, #11, #13, #14, #15)
	2010000650	FILTER	21M 7B2 (FL-88) (#03, #04, #07, #08, #09, #16)
FI2	2020000490	CERAMIC	CFZM455E10 (#01, #02, #05, #06, #10, #11, #13, #14)
	2020000630	CERAMIC	CFZM455H (#03, #04, #07, #08, #09, #16)
	2020000770	CERAMIC	CFZM455G (#15)
L1	6150003510	COIL	LS-388
L2	6150003280	COIL	LS-355
L3	6150003440	COIL	LS-376
L4	6150003280	COIL	LS-355
L5	6150003140	COIL	LS-330
L7	6110001530	COIL	LA-233
L8	6110001530	COIL	LA-233
L9	6110001540	COIL	LA-234
L10	6110001040	COIL	LA-135
L11	6180000680	COIL	LAL 02NA 4R7K
L12	6110002000	COIL	LA-226
L13	6110002010	COIL	LA-224 (#02, #04, #06, #08, #11, #14, #16)
	6110002040	COIL	LA-225 (#01, #03, #05, #07, #09, #10, #13, #15)
L14	6110001550	COIL	LA-235
L15	6110001560	COIL	LA-236
L16	6110001530	COIL	LA-233 (#01, #03, #05, #07, #09, #10, #13, #15)
	6110001590	COIL	LA-242 (#02, #04, #06, #08, #11, #14, #16)
L17	6110002050	COIL	LA-229
L18	6110002050	COIL	LA-229
R1	7030003420	S. RESISTOR	ERJ3GEYJ 681 V (680 Ω)
R2	7030000360	S. RESISTOR	MCR10EZHZJ 680 Ω (681)
R3	7030000580	S. RESISTOR	MCR10EZHZJ 47 kΩ (473)
R4	7010003650	RESISTOR	ELR20J 82 kΩ
R5	7030000620	S. RESISTOR	MCR10EZHZJ 100 kΩ (104)
R6	7030000280	S. RESISTOR	MCR10EZHZJ 150 Ω (151)
R7	7010003160	RESISTOR	ELR20J 10 Ω
R12	7030000580	S. RESISTOR	MCR10EZHZJ 47 kΩ (473)
R13	7030000580	S. RESISTOR	MCR10EZHZJ 47 kΩ (473)
R14	7030000350	S. RESISTOR	MCR10EZHZJ 560 Ω (561)
R19	7030000400	S. RESISTOR	MCR10EZHZJ 1.5 kΩ (152)
R20	7030003320	S. RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R21	4610001300	TRIMMER	EVM-LGGA00 B13 (102)
R22	7030000540	S. RESISTOR	MCR10EZHZJ 22 kΩ (223)
R23	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)

S. = Surface mount

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[RF UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R24	7030003610	S. RESISTOR	ERJ3GEYJ 273 V (27 kΩ)
R25	7210001500	VARIABLE	RK097111102AA (10KA) [PWR/VOL]
R26	7030003440	S. RESISTOR	ERJ3GEYJ 102 V (1 kΩ) (#03, #04, #07, #08, #09, #15, #16)
	7030003600	S. RESISTOR	ERJ3GEYJ 223 V (22 kΩ) (#01, #02, #05, #06, #10, #11, #13, #14)
R27	7030003320	S. RESISTOR	ERJ3GEYJ 101 V (100 Ω) (#16)
	7030003440	S. RESISTOR	ERJ3GEYJ 102 V (1 kΩ) (#01, #02, #05, #06, #10, #11, #13, #14, #15)
	7030003860	S. JUMPER	ERJ3GE JPW V (#03, #04, #07, #08, #09)
R28	7030000140	S. RESISTOR	MCR10EZHZ 10 Ω (100)
R29	7030000300	S. RESISTOR	MCR10EZHZ 220 Ω (221)
R30	7030003240	S. RESISTOR	ERJ3GEYJ 220 V (22 Ω)
R32	7010003160	RESISTOR	ELR20J 10 Ω
R33	4610001310	TRIMMER	EVM-LGGA00 B12 (101)
R34	7030000220	S. RESISTOR	MCR10EZHZ 47 Ω (470)
R36	7030000220	S. RESISTOR	MCR10EZHZ 47 Ω (470)
R37	7030000140	S. RESISTOR	MCR10EZHZ 10 Ω (100)
R38	7030000340	S. RESISTOR	MCR10EZHZ 470 Ω (471)
R39	7030000310	S. RESISTOR	MCR10EZHZ 270 Ω (271)
R40	7030003420	S. RESISTOR	ERJ3GEYJ 681 V (680 Ω)
R42	7030003420	S. RESISTOR	ERJ3GEYJ 681 V (680 Ω)
R43	7030000460	S. RESISTOR	MCR10EZHZ 4.7 kΩ (472) (#01, #02, #05, #06, #10, #11, #13, #14)
	7030000480	S. RESISTOR	MCR10EZHZ 6.8 kΩ (682) (#03, #04, #07, #08, #09, #15, #16)
R44	4610001250	TRIMMER	EVM-LGGA00 B25 (204)
R45	4610001040	TRIMMER	EVM-LGGA00 B54 (503)
R46	7030000600	S. RESISTOR	MCR10EZHZ 68 kΩ (683)
R47	7030000710	S. RESISTOR	MCR10EZHZ 560 kΩ (564)
R54	7030000400	S. RESISTOR	MCR10EZHZ 1.5 kΩ (152)
R55	7030000240	S. RESISTOR	MCR10EZHZ 68 Ω (680)
R56	7030003520	S. RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R57	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R58	7030003520	S. RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R60	7030000720	S. RESISTOR	MCR10EZHZ 680 kΩ (684)
R64	7030000370	S. RESISTOR	MCR10EZHZ 820 Ω (821) (#03, #04, #07, #08, #09, #16)
	7030000400	S. RESISTOR	MCR10EZHZ 1.5 kΩ (152) (#01, #02, #05, #06, #10, #11, #13, #14, #15)
R65	7030003330	S. RESISTOR	ERJ3GEYJ 121 V (120 Ω) (#01, #03, #05, #07, #09, #10, #13, #15)
	7030003340	S. RESISTOR	ERJ3GEYJ 151 V (150 Ω) (#02, #04, #06, #08, #11, #14, #16)
R66	7030000270	S. RESISTOR	MCR10EZHZ 120 Ω (121)
C1	4030000720	S. CERAMIC	GRM40 SL 680J 50PT
C2	4550002890	S. TANTALUM	TESVA 1A 225M1-8L
C8	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C10	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C11	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C13	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C14	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C23	4030000620	S. CERAMIC	GRM40 SL 080D 50PT
C26	4030001140	S. CERAMIC	GRM40 F 103Z 50PT
C29	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C31	4030000590	S. CERAMIC	GRM40 SL 050C 50PT (#01, #02, #05, #06, #10, #11, #13, #14, #15)
	4030000640	S. CERAMIC	GRM40 SL 120J 50PT (#03, #04, #07, #08, #09, #16)

[RF UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C34	4030001140	S. CERAMIC	GRM40 F 103Z 50PT
C35	4550003030	S. TANTALUM	TEMSVA 0J 475M-8L
C39	4550000530	S. TANTALUM	TESVA 1V 104M1-8L
C40	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C41	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C47	4030000670	S. CERAMIC	GRM40 SL 120J 50PT
C50	4030000670	S. CERAMIC	GRM40 SL 220J 50PT
C51	4030000960	S. CERAMIC	GRM40 CH 390J 50PT
C52	4030000930	S. CERAMIC	GRM40 CH 180J 50PT
C53	4030000910	S. CERAMIC	GRM40 SL 120J 50PT
C54	4030000880	S. CERAMIC	GRM40 CH 070D 50PT
C55	4030003580	S. CERAMIC	GRM40 CH 270J 50PT
C56	4030000840	S. CERAMIC	GRM40 CJ 030C 50PT
C57	4030000920	S. CERAMIC	GRM40 CH 150J 50PT
C58	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C60	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C61	4030000930	S. CERAMIC	GRM40 CH 180J 50PT
C62	4030000930	S. CERAMIC	GRM40 CH 120J 50PT
C64	4030000960	S. CERAMIC	GRM40 CH 390J 50PT
C65	4030000940	S. CERAMIC	GRM40 CH 220J 50PT
C66	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C69	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C70	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C71	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C72	4030006630	S. CERAMIC	C1608 SL 1H 150J-T-A (#01, #03, #05, #07, #09, #10, #13, #15)
	4030006660	S. CERAMIC	C1608 SL 1H 220J-T-A (#02, #04, #06, #08, #11, #14, #16)
C73	4610000380	TRIMMER	ECR-GA020 E30
C74	4030006700	S. CERAMIC	C1608 SL 1H 390J-T-A
C75	4030001140	S. CERAMIC	GRM40 F 103Z 50PT
C76	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C77	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C78	4030006890	S. CERAMIC	C1608 JF 1H 103Z-T-A
C79	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C80	4030006620	S. CERAMIC	C1608 SL 1H 120J-T-A (#02, #04, #06, #08, #11, #14, #16)
	4030006630	S. CERAMIC	C1608 SL 1H 150J-T-A (#01, #03, #05, #09, #10, #13, #15)
C81	4030001140	S. CERAMIC	GRM40 F 103Z 50PT
C82	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C83	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C84	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C85	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C87	4550003110	S. TANTALUM	TEMSVC 1A 226M-12L
C88	4550001950	TANTALUM	DN 0J 101M
C89	4550003060	S. TANTALUM	TEMSVC 0J 336M-12L
C92	4030001150	S. CERAMIC	GRM40 F 104Z 25PT
C93	4030001150	S. CERAMIC	GRM40 F 104Z 25PT
C94	4550002010	TANTALUM	DN 1A 6R8M
C95	4030003050	S. CERAMIC	GRM40 SL 270J 50PT
C96	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C97	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C99	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C100	4030006700	S. CERAMIC	C1608 SL 1H 390J-T-A
C101	4030000870	S. CERAMIC	GRM40 CH 060D 50PT
C102	4030007060	S. CERAMIC	C1608 CH 1H 270J-T-A (#01, #03, #05, #07, #09, #10, #13, #15)
	4030007070	S. CERAMIC	C1608 CH 1H 330J-T-A (#02, #04, #06, #08, #11, #14, #16)
C103	4550002980	S. TANTALUM	TEMSVA 1C 225M-8L
C104	4030006890	S. CERAMIC	C1608 JF 1H 103Z-T-A
C105	4550000920	S. TANTALUM	TESVA 1D 474M1-8L
C106	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C112	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C113	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C115	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A

S. = Surface mount

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[RF UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
J1	6510007080	CONNECTOR	PI28A-02M
J2	6510008310	CONNECTOR	IL-FPC-4S-S1-T1
J3	6510008320	CONNECTOR	IL-FPC-7S-S1-T1
W2	7120000380	JUMPER	JPW 01 R-01
W3	7030000010	S. JUMPER	MCR10EZHZ JPW (000)
W4	7030000010	S. JUMPER	MCR10EZHZ JPW (000)
W5	7030000010	S. JUMPER	MCR10EZHZ JPW (000)
W8	7030000010	S. JUMPER	MCR10EZHZ JPW (000)
W9	7120000380	JUMPER	JPW 01 R-01
W10	7120000380	JUMPER	JPW 01 R-01
W11	7030000010	S. JUMPER	MCR10EZHZ JPW (000)
W12	7120000380	JUMPER	JPW 01 R-01
EP1	0910024476	PCB	B 2350F (RF)
EP3	6910000970	BEAD	DL 2OP 2.6-3-1.2H

[IF AMP BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
C6	4030003590	S. CERAMIC	GRM40 B 152K 50PT
C7	4030000730	S. CERAMIC	GRM40 SL 820J 50PT
C8	4550000740	S. TANTALUM	TESVB2 0J 685M-8L
C9	4030008630	S. CERAMIC	C1608 JF 1C 104Z-T-A
C10	4030008630	S. CERAMIC	C1608 JF 1C 104Z-T-A
C11	4030000730	S. CERAMIC	GRM40 SL 820J 50PT
C12	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C14	4030006760	S. CERAMIC	C1608 SL 1H 121J-T-A
C15	4030008580	S. CERAMIC	GRM40 B 183K 50PT
C16	4550003030	S. TANTALUM	TEMSVA 0J 475M-8L
C17	4030008590	S. CERAMIC	C1608 JF 1E 333Z-T-A
C18	4030003340	S. CERAMIC	GRM40 B 332K 50PT (#03, #04, #07, #08, #09, #15, #16)
C19	4550002950	S. TANTALUM	TESVA 0J 335M1-8L
C20	4030001120	S. CERAMIC	GRM40 B 472K 50PT
W1	7030003860	S. JUMPER	ERJ3GE JPW V
EP1	0910026702	PCB	B 2642B (IF AMP)
EP2	0910026870	FPC	B 2699
EP4	6910003110	LEADFRAME	HFB2.0-0.7-8 (N)

[IF AMP BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110001020	S. IC	MC3357DR
Q1	1530002610	S. TRANSISTOR	2SC2620 QB-TR
Q2	1530000980	S. TRANSISTOR	2SC3395-TA
D1	1790000490	S. DIODE	HSM88AS-TR
D2	1750000020	S. DIODE	1SS184 (TE85R)
R1	7030000610	S. RESISTOR	MCR10EZHZ 82 kΩ (823)
R2	7030003440	S. RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R3	7030003320	S. RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R4	7030003700	S. RESISTOR	ERJ3GEYJ 154 V (150 kΩ) (#03, #04, #07, #08, #09, #15, #16)
	7030003720	S. RESISTOR	ERJ3GEYJ 224 V (220 kΩ) (#01, #02, #05, #06, #10, #11, #13, #14)
R5	7030000680	S. RESISTOR	MCR10EZHZ 330 kΩ (334)
R7	7030000420	S. RESISTOR	MCR10EZHZ 2.2 kΩ (222)
R8	7030003460	S. RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)
R9	7030003670	S. RESISTOR	ERJ3GEYJ 823 V (82 kΩ)
R13	7030003640	S. RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R14	7030003600	S. RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R15	7030003660	S. RESISTOR	ERJ3GEYJ 683 V (68 kΩ)
R16	7030003670	S. RESISTOR	ERJ3GEYJ 823 V (82 kΩ)
R17	7510000130	THERMISTOR	ERT-D2FHL 333S
R18	7030003660	S. RESISTOR	ERJ3GEYJ 683 V (68 kΩ)
R19	7030000440	S. RESISTOR	MCR10EZHZ 3.3 kΩ (332) (#01, #02, #05, #06, #10, #11, #13, #14)
C1	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C2	4030000670	S. CERAMIC	GRM40 SL 220J 50PT
C3	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C4	4030006890	S. CERAMIC	C1608 JF 1H 103Z-T-A
C5	4030003660	S. CERAMIC	GRM40 SL 240J 50PT

[MIC AMP BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110000960	S. IC	NJM4558M (T1)
R1	7030000650	S. RESISTOR	MCR10EZHZ 180 kΩ (184)
R2	7030000650	S. RESISTOR	MCR10EZHZ 180 kΩ (184)
R3	7030000350	S. RESISTOR	MCR10EZHZ 560 Ω (561)
R4	7030000670	S. RESISTOR	MCR10EZHZ 270 kΩ (274)
R5	7030000630	S. RESISTOR	MCR10EZHZ 120 kΩ (124)
R6	7030000650	S. RESISTOR	MCR10EZHZ 180 kΩ (184)
R7	7030000550	S. RESISTOR	MCR10EZHZ 27 kΩ (273)
R8	7030000660	S. RESISTOR	MCR10EZHZ 220 kΩ (224)
R9	7030000610	S. RESISTOR	MCR10EZHZ 82 kΩ (823)
R10	7030000610	S. RESISTOR	MCR10EZHZ 82 kΩ (823)
R11	7030000380	S. RESISTOR	MCR10EZHZ 1 kΩ (102)
R12	7030000460	S. RESISTOR	MCR10EZHZ 4.7 kΩ (472)
R13	7030000500	S. RESISTOR	MCR10EZHZ 10 kΩ (103)
R15	7030000580	S. RESISTOR	MCR10EZHZ 47 kΩ (473)
C1	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C2	4550002980	S. TANTALUM	TEMSVA 1C 225M-8L
C3	4030006480	S. CERAMIC	GRM42-6 B 104K 50PT
C4	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C5	4030006480	S. CERAMIC	GRM42-6 B 104K 50PT
C6	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C7	4030000740	S. CERAMIC	GRM40 SL 101J 50PT
C8	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C9	4030000980	S. CERAMIC	GRM40 CH 560J 50PT (#01, #02, #05, #06, #10, #11, #13, #14, #15)
	4030001010	S. CERAMIC	GRM40 CH 101J 50PT (#03, #04, #07, #08, #09, #16)

S. = Surface mount

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[MIC AMP BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
C10	4030001110	S. CERAMIC	GRM40 B 222K 50PT (#03, #04, #07, #08, #09, #16)
	4030003340	S. CERAMIC	GRM40 B 332K 50PT (#01, #02, #05, #06, #10, #11, #13, #14)
C11	4030000740	S. CERAMIC	GRM40 SL 101J 50PT
C12	4030001130	S. CERAMIC	GRM40 B 103K 50PT
EP1	0910027853	PCB	B 1731C (MIC AMP)
EP2	6910003110	LEADFRAME	HFB2.0-0.7-8 (N)

[TERMINAL BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1180000530	S. IC	S-81250HG-RD-T1
D1	1790000590	S. DIODE	MA110 (TW)
D3	1750000200	S. DIODE	1SS319 (TE85R)
D4	1750000040	S. DIODE	1SS190 (TE85R)
R1	7030000550	S. RESISTOR	MCR10EZHZ 27 kΩ (273)
R2	7030000560	S. RESISTOR	MCR10EZHZ 33 kΩ (333)
R3	7030000310	S. RESISTOR	MCR10EZHZ 270 Ω (271)
R5	7030000620	S. RESISTOR	MCR10EZHZ 100 kΩ (104)
R6	7030002930	S. RESISTOR	MCR10EZHF 56 kΩ (563)
R7	7030002840	S. RESISTOR	MCR10EZHF 5.6 kΩ (562)
C1	4030001150	S. CERAMIC	GRM40 F 104Z 25PT
C2	4030003620	S. CERAMIC	GRM40 B 103K 25PT
C5	4550002980	S. TANTALUM	TEMSVA 1C 225M-8L
C6	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C8	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C10	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C11	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C12	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C13	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C14	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C15	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C16	4510005280	ELECTROLYTIC	6.3 MV 220 HC
J1	6510008170	CONNECTOR	07FM-1.0ST
J2	6510008170	CONNECTOR	07FM-1.0ST
EP1	0910024924	PCB	B 2369D (TERMINAL)
EP3	6910003110	LEADFRAME	HFB2.0-0.7-8 (N)
EP4	6910003110	LEADFRAME	HFB2.0-0.7-8 (N)

[TUNNING BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
D1	1790000460	S. DIODE	MA334B (TX)
D2	1790000460	S. DIODE	MA334B (TX)
D3	1790000460	S. DIODE	MA334B (TX)
D4	1790000460	S. DIODE	MA334B (TX)
R1	7030000660	S. RESISTOR	MCR10EZHZ 220 kΩ (224)
R2	7030000660	S. RESISTOR	MCR10EZHZ 220 kΩ (224)
R3	7030000660	S. RESISTOR	MCR10EZHZ 220 kΩ (224)
R4	7030000660	S. RESISTOR	MCR10EZHZ 220 kΩ (224)
R5	7030000580	S. RESISTOR	MCR10EZHZ 47 kΩ (473)
R6	7030000010	S. JUMPER	MCR10EZHZ JPW (000) (#02, #04, #06, #08, #11, #14)
	7030000020	S. RESISTOR	MCR10EZHZ 1 Ω (010) (#16)
	7030000550	S. RESISTOR	MCR10EZHZ 27 kΩ (273) (#01, #03, #05, #07, #09, #10, #13, #15)
C1	4030000690	S. CERAMIC	GRM40 SL 390J 50PT (#01, #03, #05, #07, #09, #10, #13, #15)
	4030003050	S. CERAMIC	GRM40 SL 270J 50PT (#02, #04, #06, #08, #11, #14, #16)
C2	4030000550	S. CERAMIC	GRM40 SL 010C 50PT (#02, #04, #06, #08, #11, #14, #16)
	4030003170	S. CERAMIC	GRM40 SL 0R75C 50PT (#01, #03, #05, #07, #09, #10, #13, #15)
C4	4030000690	S. CERAMIC	GRM40 SL 330J 50PT (#02, #04, #06, #08, #11, #14, #16)
	4030000720	S. CERAMIC	GRM40 SL 680J 50PT (#01, #03, #05, #07, #09, #10, #13, #15)
C5	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C6	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C7	4030000680	S. CERAMIC	GRM40 SL 330J 50PT (#02, #04, #06, #08, #11, #14, #16)
	4030000690	S. CERAMIC	GRM40 SL 390J 50PT (#01, #03, #05, #07, #09, #10, #13, #15)
C8	4030000540	S. CERAMIC	GRM40 SL 0R5C 50PT (#02, #04, #06, #08, #11, #14, #16)
	4030003170	S. CERAMIC	GRM40 SL 0R75C 50PT (#01, #03, #05, #07, #09, #10, #13, #15)
C9	4030000550	S. CERAMIC	GRM40 SL 010C 50PT (#02, #04, #06, #08, #11, #14, #16)
C10	4030000690	S. CERAMIC	GRM40 SL 390J 50PT (#02, #04, #06, #08, #11, #14, #16)
	4030000710	S. CERAMIC	GRM40 SL 560J 50PT (#01, #03, #05, #07, #09, #10, #13, #15)
C11	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C12	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C13	4030001100	S. CERAMIC	GRM40 B 102K 50PT
W2	7120000380	JUMPER	JPW 01 R-01
EP1	0910026720	PCB	B 2653 (TUNNING)
EP3	6910003110	LEADFRAME	HFB2.0-0.7-8 (N)

IC-H11

S.=Surface mount

[VCO UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1560000430	S. FET	2SK302-GR (TE85R)
Q2	1530002030	S. TRANSISTOR	2SC3772-3-TA
Q3	1530002030	S. TRANSISTOR	2SC3772-3-TA
Q4	1560000430	S. FET	2SK302-GR (TE85R)
Q5	1530002030	S. TRANSISTOR	2SC3772-3-TA
D1	1790000530	S. VARICAP	MA333 (TW)
D2	1790000530	S. VARICAP	MA333 (TW)
D3	1750000080	S. DIODE	1SS153-T2
D4	1750000140	S. DIODE	1SS268 (TE85R)
D5	1750000140	S. DIODE	1SS268 (TE85R)
D6	1720000220	S. VARICAP	1SV166-T2B
D7	1720000220	S. VARICAP	1SV166-T2B
L1	6200000870	S. COIL	NL 322522T-2R2M
L2	6200000880	S. COIL	NL 322522T-4R7M
L3	6200000870	S. COIL	NL 322522T-2R2M
L4	6130002310	S. COIL	LB-253
L5	6200000880	S. COIL	NL 322522T-4R7M
L6	6200000870	S. COIL	NL 322522T-2R2M
L8	6200000890	S. COIL	NL 322522T-R15M
L9	6200000870	S. COIL	NL 322522T-2R2M
L10	6200000870	S. COIL	NL 322522T-2R2M
L11	6130002240	S. COIL	LB-247
L12	6200000870	S. COIL	NL 322522T-2R2M
L13	6200000870	S. COIL	NL 322522T-2R2M
L14	6200000880	S. COIL	NL 322522T-4R7M
L15	6200000890	S. COIL	NL 322522T-R15M
R1	7030000620	S. RESISTOR	MCR10EZHZ 100 kΩ (104)
R2	7030000250	S. RESISTOR	MCR10EZHZ 82 Ω (820)
R3	7030000500	S. RESISTOR	MCR10EZHZ 10 kΩ (103)
R4	7030000530	S. RESISTOR	MCR10EZHZ 18 kΩ (183)
R5	7030000540	S. RESISTOR	MCR10EZHZ 22 kΩ (223)
R6	7030000390	S. RESISTOR	MCR10EZHZ 1.2 kΩ (122)
R7	7030000140	S. RESISTOR	MCR10EZHZ 10 Ω (100)
R8	7030000550	S. RESISTOR	MCR10EZHZ 27 kΩ (273)
R9	7030000330	S. RESISTOR	MCR10EZHZ 390 Ω (391)
R10	7030000540	S. RESISTOR	MCR10EZHZ 22 kΩ (223)
R11	7030000500	S. RESISTOR	MCR10EZHZ 10 kΩ (103)
R12	7030000500	S. RESISTOR	MCR10EZHZ 10 kΩ (103)
R13	7030000260	S. RESISTOR	MCR10EZHZ 100 Ω (101)
R14	7030000500	S. RESISTOR	MCR10EZHZ 10 kΩ (103)
R15	7030000550	S. RESISTOR	MCR10EZHZ 27 kΩ (273)
R16	7030000330	S. RESISTOR	MCR10EZHZ 390 Ω (391)
R17	7030000580	S. RESISTOR	MCR10EZHZ 47 kΩ (473)
R18	7030000620	S. RESISTOR	MCR10EZHZ 100 kΩ (104)
R19	7030000740	S. RESISTOR	MCR10EZHZ 1 MΩ (105)
R20	7030000270	S. RESISTOR	MCR10EZHZ 120 Ω (121)
C1	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C2	4030000970	S. CERAMIC	GRM40 CH 470J 50PT
C3	4030002560	S. CERAMIC	GRM40 UJ 030C 50PT (#02, #04, #06, #08, #11, #14, #16)
	4030002570	S. CERAMIC	GRM40 UJ 040C 50PT (#01, #03, #05, #07, #09, #10, #13, #15)
C4	4030000640	S. CERAMIC	GRM40 SL 120J 50PT (#02, #04, #06, #08, #11, #14, #16)
	4030000660	S. CERAMIC	GRM40 SL 180J 50PT (#01, #03, #05, #07, #09, #10, #13, #15)
C5	4030000960	S. CERAMIC	GRM40 CH 390J 50PT
C6	4030002560	S. CERAMIC	GRM40 UJ 030C 50PT
C7	4030002560	S. CERAMIC	GRM40 UJ 030C 50PT
C8	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C9	4030001130	S. CERAMIC	GRM40 B 103K 50PT
C10	4030000900	S. CERAMIC	GRM40 CH 100D 50PT
C11	4030001100	S. CERAMIC	GRM40 B 102K 50PT

[VCO UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C12	4030003580	S. CERAMIC	GRM40 CH 270J 50PT
C13	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C14	4030000670	S. CERAMIC	GRM40 SL 220J 50PT
C15	4030000670	S. CERAMIC	GRM40 SL 220J 50PT (#01, #03, #05, #07, #09, #10, #13, #15)
	4030000680	S. CERAMIC	GRM40 SL 330J 50PT (#02, #04, #06, #08, #11, #14, #16)
C16	4030000700	S. CERAMIC	GRM40 SL 470J 50PT
C17	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C18	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C19	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C20	4030000720	S. CERAMIC	GRM40 SL 680J 50PT
C21	4030000660	S. CERAMIC	GRM40 SL 180J 50PT (#02, #04, #06, #08, #11, #14, #16)
	4030000670	S. CERAMIC	GRM40 SL 220J 50PT (#01, #03, #05, #07, #09, #10, #13, #15)
C22	4030000630	S. CERAMIC	GRM40 SL 100D 50PT (#01, #03, #05, #07, #09, #10, #13, #15)
	4030002560	S. CERAMIC	GRM40 UJ 030C 50PT (#02, #04, #06, #08, #11, #14, #16)
C23	4030000630	S. CERAMIC	GRM40 SL 100D 50PT (#01, #03, #05, #07, #09, #10, #13, #15)
	4030002560	S. CERAMIC	GRM40 UJ 030C 50PT (#02, #04, #06, #08, #11, #14, #16)
C24	4030001100	S. CERAMIC	GRM40 B 102K 50PT (#02, #04, #06, #08, #11, #14, #16)
	4030001150	S. CERAMIC	GRM40 F 104Z 25PT (#01, #03, #05, #07, #09, #10, #13, #15)
C25	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C26	4030000550	S. CERAMIC	GRM40 SL 010C 50PT
C27	4030000900	S. CERAMIC	GRM40 CH 100D 50PT
C28	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C29	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C30	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C31	4030000540	S. CERAMIC	GRM40 SL 0R5C 50PT
C32	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C33	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C34	4030000570	S. CERAMIC	GRM40 SL 030C 50PT
C35	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C36	4030001100	S. CERAMIC	GRM40 B 102K 50PT
EP1	0910026710	PCB	B 2650 (VCO)

[LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1120001590	S. IC	M5236ML-73A
IC2	1110001500	S. IC	S-8054ALR-LN-T1
IC3	1180000530	S. IC	S-81250HG-RD-T1
IC5	1130006700	S. IC	μPD1722GH-532-2A5

S.=Surface mount

IC-H11

[LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1510000600	S. TRANSISTOR	2SA1298-Y (TE85R)
Q2	1510000600	S. TRANSISTOR	2SA1298-Y (TE85R)
Q3	1590001030	S. TRANSISTOR	DTC144WU T107
Q4	1510000600	S. TRANSISTOR	2SA1298-Y (TE85R)
Q5	1590001030	S. TRANSISTOR	DTC144WU T107
Q6	1590000720	S. TRANSISTOR	DTA144EU T107
Q8	1590001030	S. TRANSISTOR	DTC144WU T107
Q10	1590000910	S. TRANSISTOR	IMZ2 T108
Q11	1590000720	S. TRANSISTOR	DTA144EU T107
Q12	1530001950	S. TRANSISTOR	2SC2712-GR (TE85R)
Q13	1530001950	S. TRANSISTOR	2SC2712-GR (TE85R)
Q14	1510000110	S. TRANSISTOR	2SA1162-Y (TE85R)
Q15	1590000910	S. TRANSISTOR	IMZ2 T108
Q17	1560000360	S. FET	2SK209-Y (TE85R)
Q18	1560000360	S. FET	2SK209-Y (TE85R)
Q19	1590001030	S. TRANSISTOR	DTC144WU T107
Q20	1510000600	S. TRANSISTOR	2SA1298-Y (TE85R)
Q21	1590000910	S. TRANSISTOR	IMZ2 T108
Q22	1590000920	S. TRANSISTOR	DTA114EK T146
Q23	1510000110	S. TRANSISTOR	2SA1162-Y (TE85R)
Q24	1510000110	S. TRANSISTOR	2SA1162-Y (TE85R)
D1	1750000020	S. DIODE	1SS184 (TE85R)
D2	1790000650	S. DIODE	MA713 (TX)
D3	1750000060	S. DIODE	1SS196 (TE85R)
D4	1160000060	S. DIODE	DAN202U T107
D6	1160000060	S. DIODE	DAN202U T107
D7	1750000110	S. DIODE	1SS272 (TE85R)
D8	1750000110	S. DIODE	1SS272 (TE85R)
D10	1720000220	S. VARICAP	1SV166-T2B
D11	1160000070	S. DIODE	DAN202K T146
D13	1160000060	S. DIODE	DAN202U T107
D17	1730000590	S. ZENER	RD3.0M-T2B2
D19	1160000050	S. DIODE	DAP202U T107
X1	6050005550	XTAL	CR-269
L1	6200000720	S. COIL	LQN 2A 10NM
R1	7030003520	S. RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R2	7030003520	S. RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R3	7030003480	S. RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R4	7030003640	S. RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R5	7030003640	S. RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R6	7030003480	S. RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R7	7030003480	S. RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R8	7030003320	S. RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R9	7030003360	S. RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R14	7030003600	S. RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R15	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R17	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R18	7030003480	S. RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R19	7030003420	S. RESISTOR	ERJ3GEYJ 681 V (680 Ω)
R22	7030003440	S. RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R23	7030003480	S. RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R24	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R25	7030003660	S. RESISTOR	ERJ3GEYJ 683 V (68 kΩ)
R27	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R28	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R29	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R30	7030003640	S. RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R31	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R32	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R33	7030003500	S. RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R34	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R35	7030003320	S. RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R36	7030003620	S. RESISTOR	ERJ3GEYJ 333 V (33 kΩ)
R37	7030003450	S. RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)
R38	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R39	7030003640	S. RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R40	7030003320	S. RESISTOR	ERJ3GEYJ 101 V (100 Ω)

[LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R41	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R42	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R43	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R44	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R45	7030003580	S. RESISTOR	ERJ3GEYJ 153 V (15 kΩ)
R46	7510000090	THERMISTOR	ERT-D2FGL 202S
R47	7510000090	THERMISTOR	ERT-D2FGL 202S
R48	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R49	7030003660	S. RESISTOR	ERJ3GEYJ 683 V (68 kΩ)
R50	7030003420	S. RESISTOR	ERJ3GEYJ 681 V (680 Ω)
R51	7030003640	S. RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R52	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R53	7030003800	S. RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R54	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R55	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R56	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R57	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R58	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R59	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R60	7030003650	S. RESISTOR	ERJ3GEYJ 563 V (56 kΩ)
R62	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R63	7030003800	S. RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R64	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R65	7030003400	S. RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R66	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R67	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R68	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R69	7030003590	S. RESISTOR	ERJ3GEYJ 183 V (18 kΩ)
R70	7030003420	S. RESISTOR	ERJ3GEYJ 681 V (680 Ω)
R71	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R72	7030003500	S. RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R73	7030002810	S. RESISTOR	MCR10EZHFX 3.3 kΩ (332)
R74	7030002750	S. RESISTOR	MCR10EZHFX 1 kΩ (102)
R75	7030003580	S. RESISTOR	ERJ3GEYJ 153 V (15 kΩ)
R77	7030003720	S. RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R78	7030003320	S. RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R79	7030003500	S. RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R80	7030003600	S. RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R81	7030003340	S. RESISTOR	ERJ3GEYJ 151 V (150 Ω)
R82	7030003280	S. RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R83	7310002720	S. TRIMMER	RV-148 (RH03A3AS3X0DA) 472
C1	4550003490	TANTALUM	DSB 0J 686M
C2	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C4	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C5	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C6	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C7	4550003100	S. TANTALUM	TEMSVB 1A 106M-12L
C8	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C9	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C10	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C11	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C12	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C13	4550000010	TANTALUM	DN 1C 4R7M
C14	4030006890	S. CERAMIC	C1608 JF 1H 103Z-T-A
C16	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C17	4030006610	S. CERAMIC	C1608 SL 1H 100D-T-A
C18	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C19	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C20	4030006900	S. CERAMIC	C1608 JB 1E 103K-T-A
C21	4030006890	S. CERAMIC	C1608 JF 1H 103Z-T-A
C22	4030006990	S. CERAMIC	C1608 CH 1H 080D-T-A
C23	4030008370	S. CERAMIC	C1608 UJ 1H 121J-T-A
C24	4030008370	S. CERAMIC	C1608 UJ 1H 121J-T-A
C25	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C26	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C27	4030006890	S. CERAMIC	C1608 JF 1H 103Z-T-A
C28	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C29	4030006550	S. CERAMIC	C1608 SL 1H 040C-T-A
C30	4610000850	S. TRIMMER	TZB04R200BA006
C31	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C32	4550002940	TANTALUM	DSB 1A 106M
C34	4030006720	S. CERAMIC	C1608 SL 1H 560J-T-A

IC-H11

S. = Surface mount

5-2 IC-U11

[LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C35	4030007070	S. CERAMIC	C1608 CH 1H 330J-T-A
C36	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C37	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C38	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C39	4550000400	TANTALUM	DN 1C 2R2M
C40	4550003570	TANTALUM	DSB 1A 336M
C41	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C42	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C43	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C44	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C45	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C46	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C47	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C48	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C49	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C50	4550000460	S. TANTALUM	TESVA 1C 105M1-8L
C51	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C52	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C53	4030006540	S. CERAMIC	C1608 SL 1H 030C-T-A
C54	4550003030	S. TANTALUM	TEMSVA 0J 475M-8L
C55	4550003110	S. TANTALUM	TEMSVC 1A 226M-12L
C56	4550000010	TANTALUM	DN 1C 4R7M
C57	4030006730	S. CERAMIC	C1608 SL 1H 680J-T-A
C58	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C59	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C60	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C61	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C62	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C63	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C64	4030001150	S. CERAMIC	GRM40 F 104Z 25PT
C65	4030001150	S. CERAMIC	GRM40 F 104Z 25PT
C66	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C67	4030006870	S. CERAMIC	C1608 JB 1H 222K-T-A
C68	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C69	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C70	4550003570	TANTALUM	DSB 1A 336M
C71	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C72	4550000460	S. TANTALUM	TESVA 1C 105M1-8L
S1	2260000580	SWITCH	SKHLAD035A [CLONE]
BT1	3020000060	LITHIUM	CR1220-1VF
J1	6450000130	CONNECTOR	HSJ1102-01-540 [EXT SP]
J2	6450000110	CONNECTOR	HSJ0836-01-010 [EXT MIC]
J3	6510009370	CONNECTOR	B4B-ZR
J4	6510009380	CONNECTOR	B5B-ZR
J5	6510008270	CONNECTOR	PI28B-05M
W25	8900003380	CABLE	OPC-341
EP1	0910038020	PCB	B 3753 (LOGIC)
EP5	0910026100	FPC	B 2646
EP8	0910025842	FPC	B 2624B
EP9	0910026051	FPC	B 2637A

[CH SW UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
S1	2250000060	ENCODER	EC10RP10-01 [CHANNEL SELECTOR]
EP1	0910031270	PCB	B 3154 (CH SW)

[FRONT PARTS]

REF. NO.	ORDER NO.	DESCRIPTION	
C1	4030001100	S. CERAMIC	GRM40 B 102K 50PT
MC1	7700000861	MICROPHONE	WM-62A103
SP1	2510000450	SPEAKER	EAS-3P123D

[EMI UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C1	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C2	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C3	4580000100	LC	DSS306-55B471M100
EP1	0910037611	PCB	B 3716A (EMI)

[RF UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1530002640	S. TRANSISTOR	2SC3583 R34-T2B
Q2	1580000340	S. FET	3SK140-GR (TE85R)
Q3	1510000500	S. TRANSISTOR	2SA1162-GR (TE85R)
Q4	1530001950	S. TRANSISTOR	2SC2712-GR (TE85R)
Q5	1530002510	S. TRANSISTOR	2SC3379
Q6	1530000900	TRANSISTOR	2SC3019
Q7	1530001810	TRANSISTOR	2SC3355
	1530001890	TRANSISTOR	(#03, #04, #05, #08, #11) 2SC2407 (1)
Q8	1590000680	S. TRANSISTOR	(#06, #07, #09, #10) DTC114EU T107
D1	1710000580	DIODE	1SS265
D2	1790000450	S. DIODE	MA862 (TX)
D3	1790000490	S. DIODE	HSM88AS-TR
D4	1750000170	S. DIODE	DA115 T107
D5	1790000450	S. DIODE	MA862 (TX)
D7	1750000020	S. DIODE	1SS184 (TE85R)

S. = Surface mount

[RF UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
D8	1750000060	S. DIODE	1SS196 (TE85FR)
X1	6050005541	XTAL	CR-268A
X2	6070000010	DISCRIMINATOR	CDB455C7A
F11	2010000960	FILTER	FL-119 45.150 (#06, #07, #08, #10, #11)
	2010001330	XTAL	FL-151 45.150 (#03, #04, #05, #09)
F12	2020000490	CERAMIC	CFZM455E10 (#06, #07, #10, #11)
	2020000770	CERAMIC	CFZM455G (#03, #04, #05, #09)
	2020000830	CERAMIC	CFZM455F (#08)
L1	6110001440	COIL	LA-189 (#03, #04, #05, #08, #11)
	6110001520	COIL	LA-232 (#06, #07, #09, #10)
L2	6110001980	COIL	LA-222 (#03, #04, #05, #08, #11)
	6110002110	COIL	LA-382 (#06, #07, #09, #10)
L3	6110001520	COIL	LA-232 (#06, #07, #09, #10)
	6110002010	COIL	LA-224 (#03, #04, #05, #08, #11)
L4	6180002400	COIL	LAL 02NA 1R0K
L5	6150003710	COIL	LS-421 (#03, #04, #05, #08, #11)
	6150003750	COIL	LS-433 (#06, #10)
	6150004070	COIL	LS-456 (#07, #09)
L6	6110001980	COIL	LA-222
L7	6110001990	COIL	LA-223
L8	6150003710	COIL	LS-421 (#03, #04, #05, #08, #11)
	6150003750	COIL	LS-433 (#06, #10)
	6150004070	COIL	LS-456 (#07, #09)
L9	6200000760	S. COIL	LQN 2A 56NM
L11	6150003320	COIL	LS-362
L12	6150003310	COIL	LS-361
L13	6110001980	COIL	LA-222
L14	6110001990	COIL	LA-223 (#03, #04, #05, #08, #11)
	6110002010	COIL	LA-224 (#06, #07, #09, #10)
L16	6110001980	COIL	LA-222
L17	6110001990	COIL	LA-223
L18	6110001440	COIL	LA-189
L19	6110002040	COIL	LA-225
L20	6200000100	S. COIL	LQN 2A 22NM
R1	7030000310	S. RESISTOR	MCR10EZHZJ 270 Ω (271)
R2	7030003660	S. RESISTOR	ERJ3GEYJ 683 V (68 kΩ)
R3	7030000560	S. RESISTOR	MCR10EZHZJ 33 kΩ (333)
R4	7030003320	S. RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R5	7030000260	S. RESISTOR	MCR10EZHZJ 100 Ω (101)
R6	7030003600	S. RESISTOR	ERJ3GEYJ 223 V (22 kΩ) (#03, #04, #05, #09)
	7030003650	S. RESISTOR	ERJ3GEYJ 563 V (56 kΩ) (#08)
	7030003660	S. RESISTOR	ERJ3GEYJ 683 V (68 kΩ) (#06, #07, #10, #11)
R7	7030003440	S. RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R8	7030000360	S. RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R9	7030000280	S. RESISTOR	MCR10EZHZJ 150 Ω (151) (#03, #04, #05, #09)
	7030000320	S. RESISTOR	MCR10EZHZJ 330 Ω (331) (#06, #07, #08, #10, #11)
R10	7030000500	S. RESISTOR	MCR10EZHZJ 10 kΩ (103)
R11	7030000400	S. RESISTOR	MCR10EZHZJ 1.5 kΩ (152)
R12	7030000410	S. RESISTOR	MCR10EZHZJ 1.8 kΩ (182)
R13	7310001750	TRIMMER	RH0421CJ3J09A (222)

[RF UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R15	7030003610	S. RESISTOR	ERJ3GEYJ 273 V (27 kΩ)
R17	7030000140	S. RESISTOR	MCR10EZHZJ 10 Ω (100)
R18	7210001500	VARIABLE	RK097111102AA (10KA) [PWR/VOL]
R19	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R20	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R21	7030003420	S. RESISTOR	ERJ3GEYJ 681 V (680 Ω)
R22	7030003420	S. RESISTOR	ERJ3GEYJ 681 V (680 Ω)
R23	7030003620	S. RESISTOR	ERJ3GEYJ 333 V (33 kΩ)
R25	7030000240	S. RESISTOR	MCR10EZHZJ 68 Ω (680)
R26	7310001690	TRIMMER	RH0421C12J04A (101)
R27	7030000460	S. RESISTOR	MCR10EZHZJ 4.7 kΩ (472)
R28	7030000290	S. RESISTOR	MCR10EZHZJ 180 Ω (181)
R29	7030000340	S. RESISTOR	MCR10EZHZJ 470 Ω (471)
R30	7030000410	S. RESISTOR	MCR10EZHZJ 1.8 kΩ (182)
R31	7030003440	S. RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R32	7030003540	S. RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R33	7310001770	TRIMMER	RH0421CJ5J06A (224)
R34	7310001850	TRIMMER	RH0421CS4J08A (473)
R35	7030000550	S. RESISTOR	MCR10EZHZJ 27 kΩ (273)
R37	7010003180	RESISTOR	ELR20J 15 Ω
R40	7030003440	S. RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R41	7010003870	RESISTOR	R20J 2.2 Ω
R45	7030000680	S. RESISTOR	MCR10EZHZJ 330 kΩ (334)
R46	7010003220	RESISTOR	ELR20J 33 Ω (#03, #04, #05, #08, #11)
	7010003280	RESISTOR	ELR20J 100 Ω (#06, #07, #09, #10)
R47	7030003420	S. RESISTOR	ERJ3GEYJ 681 V (680 Ω)
R48	7030003420	S. RESISTOR	ERJ3GEYJ 681 V (680 Ω)
R49	7030000500	S. RESISTOR	MCR10EZHZJ 10 kΩ (103)
R51	7010003160	RESISTOR	ELR20J 10 Ω
R52	7030003520	S. RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R53	7030003530	S. RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)
R54	7030000220	S. RESISTOR	MCR10EZHZJ 47 Ω (470) (#03, #04, #05, #08, #11)
R56	7030003440	S. RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R57	7030003380	S. RESISTOR	ERJ3GEYJ 331 V (330 Ω)
R58	7030003320	S. RESISTOR	ERJ3GEYJ 101 V (100 Ω) (#06, #07, #09, #10)
C1	4030000600	S. CERAMIC	GRM40 SL 060D 50PT (#06, #07, #09, #10)
	4030000610	S. CERAMIC	GRM40 SL 070D 50PT (#03, #04, #05, #08, #11)
C2	4030000630	S. CERAMIC	GRM40 SL 100D 50PT (#06, #07, #09, #10)
	4030000650	S. CERAMIC	GRM40 SL 150J 50PT (#03, #04, #05, #08, #11)
C3	4030000650	S. CERAMIC	GRM40 SL 150J 50PT
C4	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C5	4030000550	S. CERAMIC	GRM40 SL 010C 50PT (#03, #04, #05, #08, #11)
	4030000560	S. CERAMIC	GRM40 SL 020C 50PT (#06, #10)
	4030000830	S. CERAMIC	GRM40 CK 020C 50PT (#07, #09)
C6	4030000560	S. CERAMIC	GRM40 SL 020C 50PT (#03, #04, #05, #08, #11)
	4030000610	S. CERAMIC	GRM40 SL 070D 50PT (#06, #07, #09, #10)
C7	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C8	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C9	4030000550	S. CERAMIC	GRM40 SL 010C 50PT (#03, #04, #05, #08, #11)
C10	4030000560	S. CERAMIC	GRM40 SL 020C 50PT (#03, #04, #05, #08, #11)
	4030000820	S. CERAMIC	GRM40 CK 010C 50PT (#07, #09)
	4030003860	S. CERAMIC	GRM40 CK R75C 50PT (#06, #10)
C11	4030006610	S. CERAMIC	C1608 SL 1H 100D-T-A
C12	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C13	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A

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S.=Surface mount

[RF UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C14	4030006590	S. CERAMIC	C1608 SL 1H 080D-T-A (#03, #04, #05, #08, #11)
	4030006710	S. CERAMIC	C1608 SL 1H 470J-T-A (#06, #07, #09, #10)
C15	4550002010	TANTALUM	DN 1A 6R8M
C16	4030006560	S. CERAMIC	C1608 SL 1H 050C-T-A (03, #04, #05, #08, #11)
	4030006570	S. CERAMIC	C1608 SL 1H 060D-T-A (#07, #09)
	4030006600	S. CERAMIC	C1608 SL 1H 090D-T-A (#06, #10)
C17	4030006850	S. CERAMIC	C1608 JB 1H 471K-T-A
C18	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C19	4550003030	S. TANTALUM	TEMSVA 0J 475M-8L
C20	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C23	4030001790	S. CERAMIC	GRM40 RH 120J 50PT
C24	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C25	4030000650	S. CERAMIC	GRM40 SL 150J 50PT (#06, #07, #08, #10, #11)
	4030000660	S. CERAMIC	GRM40 SL 180J 50PT (#03, #04, #05, #09)
C26	4030001140	S. CERAMIC	GRM40 F 103Z 50PT
C27	4030001860	S. CERAMIC	GRM40 RH 560J 50PT
C28	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C29	4030006560	S. CERAMIC	C1608 SL 1H 050C-T-A (#03, #04, #05, #08, #11)
	4030006620	S. CERAMIC	C1608 SL 1H 120J-T-A (#06, #07, #09, #10)
C32	4550003840	TANTALUM	DSB 1V 104M
C33	4030001150	S. CERAMIC	GRM40 F 104Z 25PT
C34	4030006890	S. CERAMIC	C1608 JF 1H 103Z-T-A
C35	4030006890	S. CERAMIC	C1608 JF 1H 103Z-T-A
C36	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C37	4030000830	S. CERAMIC	GRM40 CK 020C 50PT (#03, #04, #05, #08, #11)
	4030000840	S. CERAMIC	GRM40 CJ 030C 50PT (#07, #09)
	4030000860	S. CERAMIC	GRM40 CH 050C 50PT (#06, #10)
C39	4550003110	S. TANTALUM	TEMSVC 1A 226M-12L
C40	4550001950	TANTALUM	DN 0J 101M
C41	4550003060	S. TANTALUM	TEMSVC 0J 336M-12L
C42	4610000280	TRIMMER	ECR-GA010 D30
C43	4030000890	S. CERAMIC	GRM40 CH 080D 50PT (#04, #07, #09)
	4030005150	S. CERAMIC	GRM40 CH 090D 50PT (03, #05, #06, #08, #10, #11)
C45	4610000280	TRIMMER	ECR-GA010 D30
C46	4030000870	S. CERAMIC	GRM40 CH 060D 50PT
C48	4030000870	S. CERAMIC	GRM40 CH 060D 50PT (#03, #04, #05, #07, #08, #09, #11)
	4030000890	S. CERAMIC	GRM40 CH 080D 50PT (#06, #10)
C49	4030000840	S. CERAMIC	GRM40 CJ 030C 50PT (#04)
	4030000860	S. CERAMIC	GRM40 CH 050C 50PT (#06, #10)
	4030000870	S. CERAMIC	GRM40 CH 060D 50PT (#03, #05, #07, #08, #09, #11)
C51	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C52	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C53	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C54	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C55	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C56	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C57	4030006850	S. CERAMIC	C1608 JB 1H 471K-T-A
C58	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C59	4030000560	S. CERAMIC	GRM40 SL 020C 50PT (#03, #04, #05, #07, #08, #09, #11)
	4030000830	S. CERAMIC	GRM40 CK 020C 50PT (#06, #10)

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[RF UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C60	4550000530	S. TANTALUM	TESVA 1V 104M1-8L
C61	4030006700	S. CERAMIC	C1608 SL 1H 390J-T-A (#03, #04, #05, #06, #08, #10, #11)
	4030006720	S. CERAMIC	C1608 SL 1H 560J-T-A (#07, #09)
C62	4030006640	S. CERAMIC	C1608 SL 1H 180J-T-A
C63	4030006850	S. CERAMIC	C1608 JB 1H 471K-T-A
C64	4550002010	TANTALUM	DN 1A 6R8M
C65	4550000460	S. TANTALUM	TESVA 1C 105M1-8L
C66	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C69	4030008630	S. CERAMIC	C1608 JF 1C 104Z-T-A
C71	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C73	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C74	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C75	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C77	4550002980	S. TANTALUM	TEMSVA 1C 225M-8L
C78	4030006870	S. CERAMIC	C1608 JB 1H 222K-T-A
C79	4030006870	S. CERAMIC	C1608 JB 1H 222K-T-A
C80	4030006890	S. CERAMIC	C1608 JF 1H 103Z-T-A
C81	4550000270	S. TANTALUM	TESVA 1E 474M1-8L
C82	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C83	4030006530	S. CERAMIC	C1608 SL 1H 020C-T-A
C84	4030006560	S. CERAMIC	C1608 SL 1H 050C-T-A (#03, #04, #05, #08, #11)
C88	4030006610	S. CERAMIC	C1608 SL 1H 100D-T-A
C90	4030006850	S. CERAMIC	C1608 JB 1H 471K-T-A
C91	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C92	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C93	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
J1	6510007080	CONNECTOR	PI28A-02M
J2	6510008310	CONNECTOR	IL-FPC-4S-S1-T1
J3	6510008320	CONNECTOR	IL-FPC-7S-S1-T1
W1	7120000380	JUMPER	JPW 01 R-01
W2	7120000380	JUMPER	JPW 01 R-01
W3	7120000380	JUMPER	JPW 01 R-01
W5	7120000380	JUMPER	JPW 01 R-01
EP1	0910028056	PCB	B 2793F (RF)
EP7	6910000970	BEAD	DL 20P 2.6-3-1.2H

[IF AMP BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110001020	S. IC	MC3357DR
Q1	1530002610	S. TRANSISTOR	2SC2620 QB-TR
Q2	1530000980	S. TRANSISTOR	2SC3395-TA
D1	1790000490	S. DIODE	HSM88AS-TR
D2	1750000020	S. DIODE	1SS184 (TE85R)
L1	6200001520	S. COIL	MLF2012D R82K-T
R1	7030000660	S. RESISTOR	MCR10EZHZ 220 kΩ (224)
R3	7030003440	S. RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R4	7030003780	S. RESISTOR	ERJ3GEYJ 684 V (680 kΩ)
R5	7030000680	S. RESISTOR	MCR10EZHZ 330 kΩ (334)
R7	7030000420	S. RESISTOR	MCR10EZHZ 2.2 kΩ (222)
R8	7030003460	S. RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)

S.=Surface mount

[IF AMP BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
R9	7030003640	S. RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R13	7030003640	S. RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R14	7030000460	S. RESISTOR	MCR10EZHZ 4.7 kΩ (472)
R15	7030003660	S. RESISTOR	ERJ3GEYJ 683 V (68 kΩ)
R16	7030003600	S. RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
C1	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C2	4030006500	S. CERAMIC	GRM40 CH 300J 50PT
C3	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C4	4030006890	S. CERAMIC	C1608 JF 1H 103Z-T-A
C5	4030003660	S. CERAMIC	GRM40 SL 240J 50PT
C6	4030003590	S. CERAMIC	GRM40 B 152K 50PT
C7	4030000700	S. CERAMIC	GRM40 SL 470J 50PT
C8	4550000740	S. TANTALUM	TESVB2 0J 685M-8L
C9	4030008630	S. CERAMIC	C1608 JF 1C 104Z-T-A
C10	4030008630	S. CERAMIC	C1608 JF 1C 104Z-T-A
C11	4030000730	S. CERAMIC	GRM40 SL 820J 50PT
C12	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C15	4030008580	S. CERAMIC	GRM40 B 183K 50PT
C16	4550003030	S. TANTALUM	TEMSVA 0J 475M-8L
C17	4030008630	S. CERAMIC	C1608 JF 1C 104Z-T-A
C18	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C19	4550000730	S. TANTALUM	TESVA 0J 225M1-8L
C20	4030001110	S. CERAMIC	GRM40 B 222K 50PT
W1	7030003860	S. JUMPER	ERJ3GE JPW V
EP1	0910027795	PCB	B 2801E (IF AMP)
EP2	6910003110	LEADFRAME	HFB2.0-0.7-8 (N)

[MIC AMP BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
C11	4030000740	S. CERAMIC	GRM40 SL 101J 50PT
C12	4030001130	S. CERAMIC	GRM40 B 103K 50PT
EP1	0910027810	PCB	B 2803 (MIC AMP)
EP2	6910003110	LEADFRAME	HFB2.0-0.7-8 (N)

[TERMINAL BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1180000530	S. IC	S-81250HG-RD-T1
D1	1790000590	S. DIODE	MA110 (TW)
D2	1750000200	S. DIODE	1SS319 (TE85R)
D3	1750000040	S. DIODE	1SS190 (TE85R)
R1	7030000550	S. RESISTOR	MCR10EZHZ 27 kΩ (273)
R2	7030000560	S. RESISTOR	MCR10EZHZ 33 kΩ (333)
R3	7030000310	S. RESISTOR	MCR10EZHZ 270 Ω (271)
R5	7030000620	S. RESISTOR	MCR10EZHZ 100 kΩ (104)
R6	7030002930	S. RESISTOR	MCR10EZHFX 56 kΩ (563)
R7	7030002840	S. RESISTOR	MCR10EZHFX 5.6 kΩ (562)
C1	4030001150	S. CERAMIC	GRM40 F 104Z 25PT
C2	4030003620	S. CERAMIC	GRM40 B 103K 25PT
C4	4030001110	S. CERAMIC	GRM40 B 222K 50PT
C5	4550002980	S. TANTALUM	TEMSVA 1C 225M-8L
C6	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C8	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C9	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C10	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C11	4030000740	S. CERAMIC	GRM40 SL 101J 50PT
C12	4030000700	S. CERAMIC	GRM40 SL 470J 50PT
C13	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C14	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C15	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C18	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C19	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C20	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C21	4510005280	ELECTROLYTIC	6.3 MV 220 HC
J1	6510008170	CONNECTOR	07FM-1.0ST
J2	6510008170	CONNECTOR	07FM-1.0ST
EP1	0910028022	PCB	B 2800B (TERMINAL)
EP3	6910003110	LEADFRAME	HFB2.0-0.7-8 (N)
EP4	6910003110	LEADFRAME	HFB2.0-0.7-8 (N)

IC-U11

[MIC AMP BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110000960	S. IC	NJM4558M (T1)
R1	7030000650	S. RESISTOR	MCR10EZHZ 180 kΩ (184)
R2	7030000650	S. RESISTOR	MCR10EZHZ 180 kΩ (184)
R3	7030000350	S. RESISTOR	MCR10EZHZ 560 Ω (561)
R4	7030001550	S. RESISTOR	MCR10EZHZ 200 kΩ (204)
R5	7030000630	S. RESISTOR	MCR10EZHZ 120 kΩ (124)
R6	7030000650	S. RESISTOR	MCR10EZHZ 180 kΩ (184)
R7	7030000550	S. RESISTOR	MCR10EZHZ 27 kΩ (273)
R8	7030000660	S. RESISTOR	MCR10EZHZ 220 kΩ (224)
R9	7030000610	S. RESISTOR	MCR10EZHZ 82 kΩ (823)
R10	7030000610	S. RESISTOR	MCR10EZHZ 82 kΩ (823)
R11	7030000380	S. RESISTOR	MCR10EZHZ 1 kΩ (102)
R12	7030000460	S. RESISTOR	MCR10EZHZ 4.7 kΩ (472)
R13	7030000500	S. RESISTOR	MCR10EZHZ 10 kΩ (103)
R14	7510000170	S. THERMISTOR	157-252-13013-TP
R15	7030000260	S. RESISTOR	MCR10EZHZ 100 Ω (101)
C1	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C2	4550002980	S. TANTALUM	TEMSVA 1C 225M-8L
C3	4030006480	S. CERAMIC	GRM42-6 B 104K 50PT
C4	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C5	4030006480	S. CERAMIC	GRM42-6 B 104K 50PT
C6	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C7	4030000740	S. CERAMIC	GRM40 SL 101J 50PT
C8	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C9	4030000720	S. CERAMIC	GRM40 SL 680J 50PT (#06, #07, #08, #10, #11)
	4030000740	S. CERAMIC	GRM40 SL 101J 50PT (#03, #04, #05, #09)
C10	4030001110	S. CERAMIC	GRM40 B 222K 50PT

[VCO UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1530002480	S. TRANSISTOR	2SC3011 (TE85R)
Q2	1530002480	S. TRANSISTOR	2SC3011 (TE85R)
Q3	1560000490	S. FET	2SK508 K52 T2B
Q4	1530002620	S. TRANSISTOR	2SC3585 R44-T2B
Q5	1530002480	S. TRANSISTOR	2SC3011 (TE85R)
Q6	1560000490	S. FET	2SK508 K52 T2B
Q7	1560000420	S. FET	2SK209-GR (TE85R)

S.=Surface mount

[VCO UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
D1	1720000180	S. VARICAP	1SV164-T2B
D2	1720000180	S. VARICAP	1SV164-T2B
D3	1720000180	S. VARICAP	1SV164-T2B
L1	6110002000	COIL	LA-226
L2	6200000140	S. COIL	LQH 3N 1R0M
L3	6170000360	COIL	LW-35
L4	6110001990	COIL	LA-223
L5	6200000140	S. COIL	LQH 3N 1R0M
L6	6110002000	COIL	LA-226
L7	6110002000	COIL	LA-226
L8	6200000140	S. COIL	LQH 3N 1R0M
L9	6170000360	COIL	LW-35
L10	6110002010	COIL	LA-224
L11	6200000140	S. COIL	LQH 3N 1R0M
R1	7030000340	S. RESISTOR	MCR10EZHZ 470 Ω (471)
R2	7030000660	S. RESISTOR	MCR10EZHZ 220 kΩ (224)
R3	7030000240	S. RESISTOR	MCR10EZHZ 68 Ω (680)
R4	7030000360	S. RESISTOR	MCR10EZHZ 680 Ω (681)
R5	7030000560	S. RESISTOR	MCR10EZHZ 33 kΩ (333)
R6	7030000240	S. RESISTOR	MCR10EZHZ 68 Ω (680)
R7	7030000280	S. RESISTOR	MCR10EZHZ 150 Ω (151)
R8	7030000500	S. RESISTOR	MCR10EZHZ 10 kΩ (103)
R9	7030000220	S. RESISTOR	MCR10EZHZ 47 Ω (470)
R10	7030000260	S. RESISTOR	MCR10EZHZ 100 Ω (101)
R11	7030000540	S. RESISTOR	MCR10EZHZ 22 kΩ (223)
R12	7030000340	S. RESISTOR	MCR10EZHZ 470 Ω (471)
R13	7030000640	S. RESISTOR	MCR10EZHZ 150 kΩ (154)
R14	7030000260	S. RESISTOR	MCR10EZHZ 100 Ω (101)
R15	7030000280	S. RESISTOR	MCR10EZHZ 150 Ω (151)
R16	7030000580	S. RESISTOR	MCR10EZHZ 47 kΩ (473)
R17	7030000220	S. RESISTOR	MCR10EZHZ 47 Ω (470)
R18	7030000200	S. RESISTOR	MCR10EZHZ 33 Ω (330)
R19	7030000570	S. RESISTOR	MCR10EZHZ 39 kΩ (393)
R20	7030000560	S. RESISTOR	MCR10EZHZ 33 kΩ (333)
R21	7030000380	S. RESISTOR	MCR10EZHZ 1 kΩ (102)
R22	7030003440	S. RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
C1	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C2	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C3	4030000630	S. CERAMIC	GRM40 SL 100D 50PT
C4	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C5	4030000540	S. CERAMIC	GRM40 SL 0R5C 50PT
C6	4030000840	S. CERAMIC	GRM40 CJ 030C 50PT
C7	4030000870	S. CERAMIC	GRM40 CH 060D 50PT
C8	4030001140	S. CERAMIC	GRM40 F 103Z 50PT
C9	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C10	4030000830	S. CERAMIC	GRM40 CK 020C 50PT (#03, #04, #05, #07, #08, #09, #11)
	4030000840	S. CERAMIC	GRM40 CJ 030C 50PT (#06, #10)
C11	4030003170	S. CERAMIC	GRM40 SL 0R75C 50PT
C12	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C13	4610000840	S. TRIMMER	TZB04Z030BA006
C14	4030000840	S. CERAMIC	GRM40 CJ 030C 50PT (#07, #09)
	4030000850	S. CERAMIC	GRM40 CH 040C 50PT (#06, #10)
C15	4030000660	S. CERAMIC	GRM40 SL 180J 50PT (#03, #04, #05, #08, #11)
	4030002700	S. CERAMIC	GRM40 UJ 470J 50PT (#07, #09)
	4030002740	S. CERAMIC	GRM40 UJ 680J 50PT (#06, #10)
C16	4030000700	S. CERAMIC	GRM40 SL 470J 50PT
C17	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C18	4030000630	S. CERAMIC	GRM40 SL 100D 50PT
C19	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C20	4030000630	S. CERAMIC	GRM40 SL 100D 50PT
C21	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A

[VCO UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C22	4030000540	S. CERAMIC	GRM40 SL 0R5C 50PT
C23	4030000870	S. CERAMIC	GRM40 CH 060D 50PT
C24	4030000850	S. CERAMIC	GRM40 CH 040C 50PT (#03, #04, #05, #08, #11)
	4030000880	S. CERAMIC	GRM40 CH 070D 50PT (#06, #07, #09, #10)
C25	4030000830	S. CERAMIC	GRM40 CK 020C 50PT (#07, #09)
	4030000840	S. CERAMIC	GRM40 CJ 030C 50PT (#03, #04, #05, #08, #11)
	4030000850	S. CERAMIC	GRM40 CH 040C 50PT (#06, #10)
C26	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C27	4610000840	S. TRIMMER	TZB04Z030BA006
C29	4030000650	S. CERAMIC	GRM40 SL 150J 50PT (#03, #04, #05, #08, #11)
	4030002720	S. CERAMIC	GRM40 UJ 560J 50PT (#06, #10)
	4030002750	S. CERAMIC	GRM40 UJ 820J 50PT (#07, #09)
C30	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C31	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C32	4030001150	S. CERAMIC	GRM40 F 104Z 25PT
C33	4030001150	S. CERAMIC	GRM40 F 104Z 25PT
C34	4030000740	S. CERAMIC	GRM40 SL 101J 50PT
C35	4550002930	TANTALUM	DSB 0J 336M
C36	4550002930	TANTALUM	DSB 0J 336M
C37	4030000600	S. CERAMIC	GRM40 SL 060D 50PT
C38	4030000590	S. CERAMIC	GRM40 SL 050C 50PT
C39	4030000630	S. CERAMIC	GRM40 SL 100D 50PT
C40	4030000740	S. CERAMIC	GRM40 SL 101J 50PT
C41	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C42	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C43	4030000700	S. CERAMIC	GRM40 SL 470J 50PT
C44	4030001090	S. CERAMIC	GRM40 B 471K 50PT
C45	4030000700	S. CERAMIC	GRM40 SL 470J 50PT
C47	4030000700	S. CERAMIC	GRM40 SL 470J 50PT
W14	7120000010	JUMPER	JPW 02A
EP1	0910030681	PCB	B 3120A (VCO)
EP2	0910025852	FPC	B 2633B

[LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1120001590	S. IC	M5236ML-73A
IC2	1110001500	S. IC	S-8054ALR-LN-T1
IC4	1110001830	S. IC	UPB587G
IC5	1130006700	S. IC	μPD1722GH-532-2A5
IC6	1110001820	S. IC	μPC1093T
Q1	1510000600	S. TRANSISTOR	2SA1298-Y (TE85R)
Q2	1510000600	S. TRANSISTOR	2SA1298-Y (TE85R)
Q3	1590001030	S. TRANSISTOR	DTC144WU T107
Q4	1510000600	S. TRANSISTOR	2SA1298-Y (TE85R)
Q5	1590001030	S. TRANSISTOR	DTC144WU T107
Q6	1590000720	S. TRANSISTOR	DTA144EU T107
Q7	1590000910	S. TRANSISTOR	IMZ2 T108
Q8	1590001030	S. TRANSISTOR	DTC144WU T107
Q9	1590001010	S. TRANSISTOR	DTB113ZK T147
Q10	1590000910	S. TRANSISTOR	IMZ2 T108
Q11	1590000720	S. TRANSISTOR	DTA144EU T107
Q12	1530001950	S. TRANSISTOR	2SC2712-GR (TE85R)
Q13	1530001950	S. TRANSISTOR	2SC2712-GR (TE85R)
Q14	1510000110	S. TRANSISTOR	2SA1162-Y (TE85R)

S.=Surface mount

IC-U11

[LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
Q15	1510000110	S. TRANSISTOR	2SA1162-Y (TE85R)
Q19	1590001030	S. TRANSISTOR	DTC144WU T107
Q20	1510000600	S. TRANSISTOR	2SA1298-Y (TE85R)
Q21	1590000910	S. TRANSISTOR	IMZ2 T108
Q22	1590000920	S. TRANSISTOR	DTA114EK T146
Q23	1510000110	S. TRANSISTOR	2SA1162-Y (TE85R)
D1	1750000020	S. DIODE	1SS184 (TE85R)
D2	1790000650	S. DIODE	MA713 (TX)
D3	1750000060	S. DIODE	1SS196 (TE85R)
D4	1160000050	S. DIODE	DAP202U T107
D5	1790000490	S. DIODE	HSM88AS-TR
D6	1160000060	S. DIODE	DAN202U T107
D7	1750000110	S. DIODE	1SS272 (TE85R)
D8	1750000110	S. DIODE	1SS272 (TE85R)
D9	1160000050	S. DIODE	DAP202U T107
D10	1720000220	S. VARICAP	1SV166-T2B
D11	1790000490	S. DIODE	HSM88AS-TR
D12	1160000050	S. DIODE	DAP202U T107
D13	1160000060	S. DIODE	DAN202U T107
X1	6050007750	XTAL	CR-367
L1	6200000880	S. COIL	NL 322522T-4R7M
R1	7030003520	S. RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R2	7030003520	S. RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R3	7030003480	S. RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R4	7030003640	S. RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R5	7030003640	S. RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R6	7030003480	S. RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R7	7030003480	S. RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R8	7030003320	S. RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R9	7030003360	S. RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R12	7030003500	S. RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R13	7030003600	S. RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R14	7030003600	S. RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R15	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R16	7030003450	S. RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R17	7030003220	S. RESISTOR	ERJ3GEYJ 150 V (15 Ω)
R20	7030002640	S. RESISTOR	MCR10EZHFX 120 Ω (121)
R21	7030003800	S. RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R22	7030003320	S. RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R23	7030003520	S. RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R24	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R25	7030003660	S. RESISTOR	ERJ3GEYJ 683 V (68 kΩ)
R26	7030003500	S. RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R27	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R28	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R29	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R30	7030003640	S. RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R31	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R32	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R33	7030003500	S. RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R34	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R35	7030003320	S. RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R36	7030003620	S. RESISTOR	ERJ3GEYJ 333 V (33 kΩ)
R37	7030003450	S. RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)
R38	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R39	7030003640	S. RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R40	7030003320	S. RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R41	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R42	7030003650	S. RESISTOR	ERJ3GEYJ 563 V (56 kΩ)
R43	7030003650	S. RESISTOR	ERJ3GEYJ 563 V (56 kΩ)
R44	7030003560	S. RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R45	7030003580	S. RESISTOR	ERJ3GEYJ 153 V (15 kΩ)
R46	7510000090	THERMISTOR	ERT-D2FGL 202S
R47	7510000090	THERMISTOR	ERT-D2FGL 202S
R48	7030003400	S. RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R49	7030003660	S. RESISTOR	ERJ3GEYJ 683 V (68 kΩ)
R50	7030003420	S. RESISTOR	ERJ3GEYJ 681 V (680 Ω)

[LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R51	7030003640	S. RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R52	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R53	7030003800	S. RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R54	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R55	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R56	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R57	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R58	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R59	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R60	7030003650	S. RESISTOR	ERJ3GEYJ 563 V (56 kΩ)
R62	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R63	7030003800	S. RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R64	7030003680	S. RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R65	7030003400	S. RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R66	7030003520	S. RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R67	7030003520	S. RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R68	7030002870	S. RESISTOR	MCR10EZHFX 10 kΩ (103)
R69	7030002910	S. RESISTOR	MCR10EZHFX 3.3 kΩ (333)
R70	7030003390	S. RESISTOR	ERJ3GEYJ 391 V (390 Ω)
R71	7030003400	S. RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R72	7030003500	S. RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R73	7030002810	S. RESISTOR	MCR10EZHFX 3.3 kΩ (332)
R74	7030002750	S. RESISTOR	MCR10EZHFX 1 kΩ (102)
R75	7030003580	S. RESISTOR	ERJ3GEYJ 153 V (15 kΩ)
R76	7030003340	S. RESISTOR	ERJ3GEYJ 151 V (150 Ω)
R77	7030003280	S. RESISTOR	ERJ3GEYJ 470 V (47 Ω)
C1	4550003490	TANTALUM	DSB 0J 686M
C2	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C4	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C5	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C6	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C7	4550003100	S. TANTALUM	TEMSVB 1A 106M-12L
C8	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C9	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C10	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C11	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C12	4030006590	S. CERAMIC	C1608 SL 1H 080D-T-A
C13	4550000280	S. TANTALUM	TESVB2 1A 475M-8L
C14	4030006890	S. CERAMIC	C1608 JF 1H 103Z-T-A
C15	4550002940	TANTALUM	DSB 1A 106M
C16	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C17	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C18	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C19	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C20	4030006480	S. CERAMIC	GRM42-6 B 104K 50PT
C21	4030006890	S. CERAMIC	C1608 JF 1H 103Z-T-A
C22	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C23	4030007140	S. CERAMIC	C1608 CH 1H 121J-T-A
C24	4030007140	S. CERAMIC	C1608 CH 1H 121J-T-A
C25	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C26	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C27	4030006890	S. CERAMIC	C1608 JF 1H 103Z-T-A
C28	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C29	4030006950	S. CERAMIC	C1608 CH 1H 040C-T-A
C30	4610000850	S. TRIMMER	TZB04R200BA006
C31	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C32	4550002940	TANTALUM	DSB 1A 106M
C34	4030006720	S. CERAMIC	C1608 SL 1H 560J-T-A
C35	4030008290	S. CERAMIC	C1608 UJ 1H 270J-T-A
C36	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C37	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C38	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C39	4550003100	S. TANTALUM	TEMSVB 1A 106M-12L
C40	4550002930	TANTALUM	DSB 0J 336M
C41	4030006480	S. CERAMIC	GRM42-6 B 104K 50PT
C42	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C43	4550002940	TANTALUM	DSB 1A 106M
C44	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C45	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C46	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C47	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C48	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C49	4030006850	S. CERAMIC	C1608 JB 1H 471K-T-A

IC-U11

S.=Surface mount

5-3 COMMON PARTS

[LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C50	4550000460	S. TANTALUM	TESVA 1C 105M1-8L
C51	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C52	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C53	4030007040	S. CERAMIC	C1608 CH 1H 180J-T-A
C54	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C55	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C56	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C57	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C58	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C59	4030006890	S. CERAMIC	C1608 JF 1H 103Z-T-A
C60	4030001150	S. CERAMIC	GRM40 F 104Z 25PT
C61	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C62	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C63	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C64	4030006750	S. CERAMIC	C1608 SL 1H 101J-T-A
C66	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C67	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C69	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C71	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C72	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C73	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C74	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C75	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C76	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C77	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C78	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C79	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C80	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C81	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C82	4030006980	S. CERAMIC	C1608 CH 1H 070D-T-A
C83	4030006870	S. CERAMIC	C1608 JB 1H 222K-T-A
C84	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C85	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C86	4550002930	TANTALUM	DSB 0J 336M
C88	4030006860	S. CERAMIC	C1608 JB 1H 102K-T-A
C89	4550000460	S. TANTALUM	TESVA 1C 105M1-8L
S1	2260000580	SWITCH	SKHLAD035A [CLONE]
BT1	3020000060	LITHIUM	CR1220-1VF
J1	6450000110	CONNECTOR	HSJ0836-01-010 [EXT SP]
J2	6450000130	CONNECTOR	HSJ1102-01-540 [EXT MIC]
J3	6510009370	CONNECTOR	B4B-ZR
J4	6510009380	CONNECTOR	B5B-ZR
J5	6510008270	CONNECTOR	PI28B-05M
W25	7030003860	S. JUMPER	ERJ3GE JPW V
W26	8900003390	CABLE	OPC-342
EP1	0910030614	PCB	B 3108D (LOGIC)
EP4	0910026100	FPC	B 2646
EP8	0910025842	FPC	B 2624B
EP9	0910026051	FPC	B 2637A

[CHASSIS PART]

REF. NO.	ORDER NO.	DESCRIPTION	
J1	6510008242	CONNECTOR	TNC-R109B [ANTENNA]

[PTT UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
S1	2260000600	SWITCH	SKHMPD004A [PTT]
EP1	0910018591	PCB	B 1755A (PTT)

[LED UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
D1	5040001120	LED	TLSG222 [TX/BUSY]
EP1	0910018675	PCB	B 1785E (LED)
EP2	0910019710	FPC	B 1902

[HPF SQL BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1530001950	S. TRANSISTOR	2SC2712-GR (TE85R)
Q2	1530001950	S. TRANSISTOR	2SC2712-GR (TE85R)
R1	7030000520	S. RESISTOR	MCR10EZHZ 15 kΩ (153)
R2	7030000720	S. RESISTOR	MCR10EZHZ 680 kΩ (684)
R3	7030000460	S. RESISTOR	MCR10EZHZ 4.7 kΩ (472)
R4	7030000680	S. RESISTOR	MCR10EZHZ 330 kΩ (334)
R5	7030000410	S. RESISTOR	MCR10EZHZ 1.8 kΩ (182)
R6	7030000600	S. RESISTOR	MCR10EZHZ 68 kΩ (683)
R7	7030000720	S. RESISTOR	MCR10EZHZ 680 kΩ (684)
R8	7030000390	S. RESISTOR	MCR10EZHZ 1.2 kΩ (122)
R9	7030000480	S. RESISTOR	MCR10EZHZ 6.8 kΩ (682)
C3	4030006490	S. CERAMIC	GRM40 B 153K 50PT
C4	4030006490	S. CERAMIC	GRM40 B 153K 50PT
C5	4030006490	S. CERAMIC	GRM40 B 153K 50PT
C6	4030003360	S. CERAMIC	GRM40 F 473Z 50PT
C7	4550000270	S. TANTALUM	TESVA 1E 474M1-8L
C9	4030001100	S. CERAMIC	GRM40 B 102K 50PT
W1	7030000010	S. JUMPER	MCR10EZHZ JPW (000)

S.=Surface mount

[HPF SQL BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
EP1	0910026732	PCB	B 2681B (IC-H11 HPF SQL)
EP1	0910027800	PCB	B 2802 (IC-U11 HPF SQL)
EP4	6910003110	LEADFRAME	HFB2.0-0.7-8 (N)

[AF AMP BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110001810	S. IC	TA7368F (TP1)
Q1	1510000600	S. TRANSISTOR	2SA1298-Y (TE85R)
R1	7030000580	S. RESISTOR	MCR10EZHZ 47 kΩ (473)
R2	7030000380	S. RESISTOR	MCR10EZHZ 1 kΩ (102)
C1	4030001110	S. CERAMIC	GRM40 B 22K 50PT
C2	4030000740	S. CERAMIC	GRM40 SL 101J 50PT
C3	4030001100	S. CERAMIC	GRM40 B 102K 50PT
C4	4030000740	S. CERAMIC	GRM40 SL 101J 50PT
EP1	0910030360	PCB	B 3023 (IC-H11 AF AMP)
EP1	0910027820	PCB	B 2804 (IC-U11 AF AMP)
EP2	6910003110	LEADFRAME	HFB2.0-0.7-8 (N)

[T. SQL UNIT] (IC-H11 #09, #16
IC-U11 #03, #04, #05, #09 only)

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130001830	S. IC	MN6520
IC2	1130000830	S. IC	μPD4094BG-T1
IC3	1130003760	S. IC	TC4S81F (TE85R)
IC4	1130003760	S. IC	TC4S81F (TE85R)
Q1	1590000720	S. TRANSISTOR	DTA144EU T107
Q2	1590000720	S. TRANSISTOR	DTA144EU T107
Q3	1590000430	S. TRANSISTOR	DTC144EU T107
Q4	1530002060	S. TRANSISTOR	2SC4081 T107 R
D1	1750000130	S. DIODE	DA204U T107
D2	1750000050	S. DIODE	1SS193 (TE85R)
X1	6050005090	XTAL	CR-245
R1	7030002310	S. RESISTOR	MCR03EZHZ 18 kΩ (183)
R2	7030002300	S. RESISTOR	MCR03EZHZ 15 kΩ (153)
R3	7030002440	S. RESISTOR	MCR03EZHZ 150 kΩ (154)
R4	7030002200	S. RESISTOR	MCR03EZHZ 2.2 kΩ (222)
R5	7030002280	S. RESISTOR	MCR03EZHZ 10 kΩ (103)
R6	7030002280	S. RESISTOR	MCR03EZHZ 10 kΩ (103)
R7	7030002420	S. RESISTOR	MCR03EZHZ 100 kΩ (104)
R8	7030002360	S. RESISTOR	MCR03EZHZ 47 kΩ (473)

[T. SQL UNIT] (IC-H11 #09, #16
IC-U11 #03, #04, #05, #09 only)

REF. NO.	ORDER NO.	DESCRIPTION	
R9	7030002320	S. RESISTOR	MCR03EZHZ 22 kΩ (223)
R10	7310002760	S. TRIMMER	RV-152 (RH03A3AJ4X0HA) 223
R11	7030002420	S. RESISTOR	MCR03EZHZ 100 kΩ (104)
R12	7030002420	S. RESISTOR	MCR03EZHZ 100 kΩ (104)
R13	7030002550	S. RESISTOR	MCR03EZHZ 1 MΩ (105)
R14	7030002240	S. RESISTOR	MCR03EZHZ 4.7 kΩ (472)
R15	7030002590	S. RESISTOR	MCR03EZHZ 2.2 MΩ (225)
C1	4030001150	S. CERAMIC	GRM40 F 104Z 25PT
C2	4030001150	S. CERAMIC	GRM40 F 104Z 25PT
C3	4030003880	S. CERAMIC	GRM39 SL 180J 50PT
C4	4030003880	S. CERAMIC	GRM39 SL 180J 50PT
C5	4550000700	S. TANTALUM	TESVC 0G 336M-12L
C6	4030003890	S. CERAMIC	GRM39 B 471K 50PT
C7	4550000460	S. TANTALUM	TESVA 1C 105M1-8L
C8	4550000460	S. TANTALUM	TESVA 1C 105M1-8L
C9	4030001150	S. CERAMIC	GRM40 F 104Z 25PT
J1	6510009130	CONNECTOR	PI28I-10M
EP1	0910024042	PCB	B 2321B (T.SQL)

IC-H11
IC-U11

S.=Surface mount

SECTION 6 MECHANICAL PARTS AND DISASSEMBLY

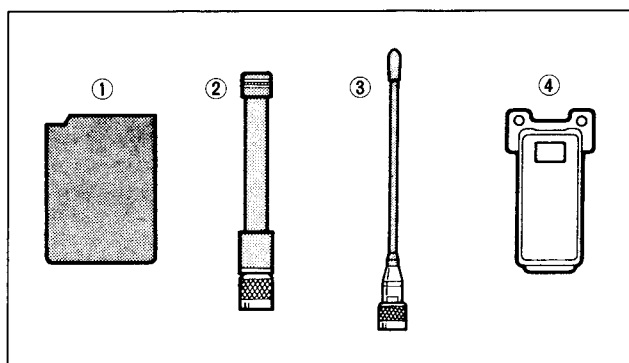
• CHASSIS PARTS

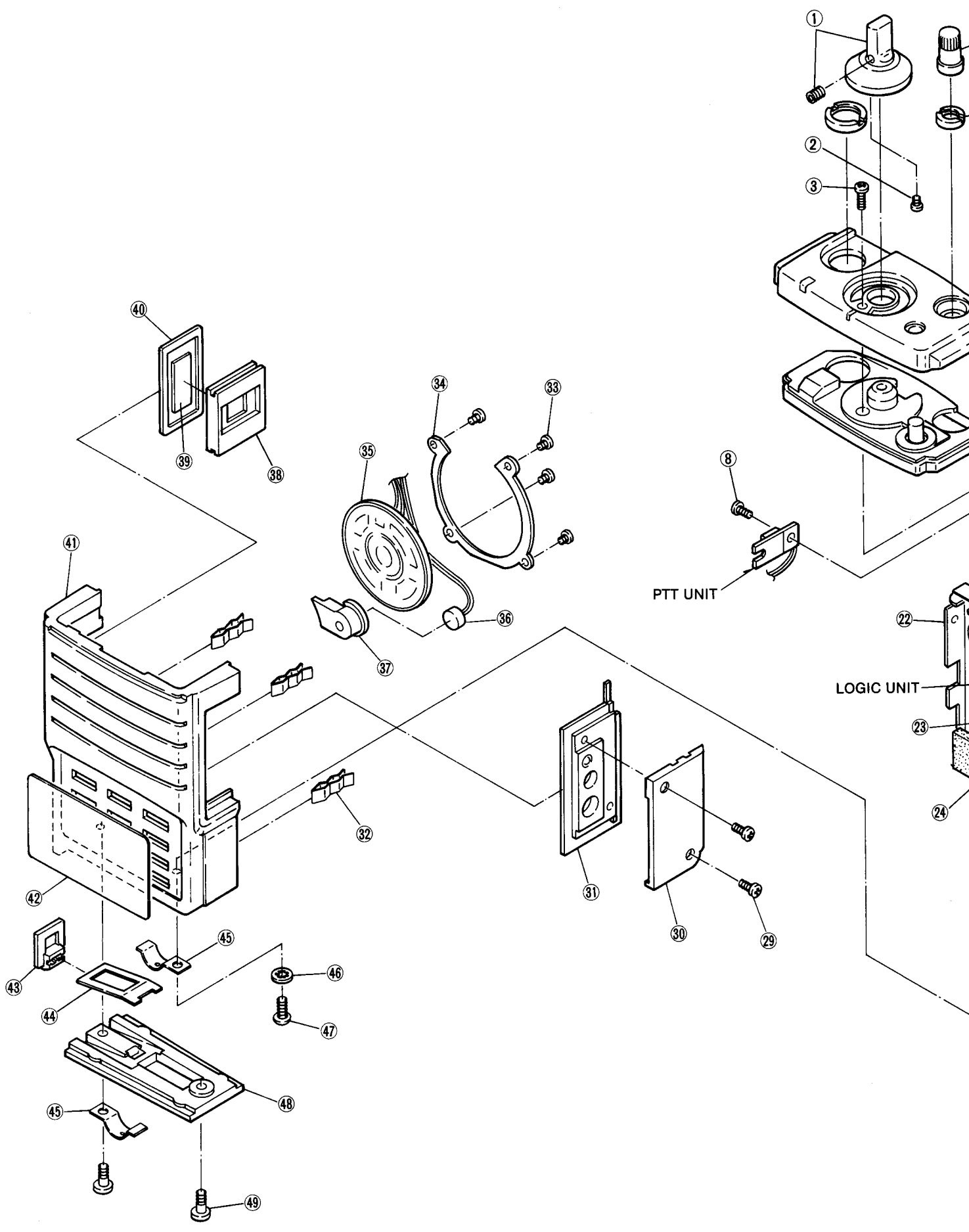
LABEL NUMBER	ORDER NO.	DESCRIPTION	QTY.	LABEL NUMBER	ORDER NO.	DESCRIPTION	QTY.
①	8610004920	Knob N135 [CHANNEL SELECTOR] (except IC-H11 #01 - #04)	1	②⑤	8510005721	VCO case (A) -1	1
	8610006440	Knob N135 (A) [CHANNEL SELECTOR] (IC-H11 #01 - #04)	1	②⑥	8930017470	853 insulate plate	1
②	8810006160	Screw (A) (IC-H11 #01 - #04 only)	1	②⑦	8860000010	Screw lug M2 (IC-U11 only)	1
③	8810000530	Screw No. 0 M2 × 5 ZK	1	②⑧	8860000010	Screw lug M2 (IC-H11 only)	1
④	8610004910	Knob N134 [PWR/VOL]	1	②⑨	8810000100	Screw PH M2 × 4 ZK	2
⑤	8830000550	VR nut (E)	1	③①	8930014380	Side plate	1
⑥	8210004451	Top panel -1	1	③②	8930014421	Side seal -1 (assembled with metal plate)	1
⑦	8930014411	Top seal -1	1	③③	8930024110	858 spring (IC-U11 only)	3
⑧	8810004870	Screw PH No. 0 M2 × 2.5	4	③④	8810006100	Screw PH B0 No. 0 M2 × 3.5 NI	4
⑨	8930014180	VR plate	1	③⑤	8930017361	Speaker plate (A) -1	1
⑩	8930018630	CH plate	1	③⑥	2510000650	Speaker EAS-3P127D (IC-H11)	1
⑪	2250000060	Encoder EC10RP10-01 [CHANNEL SELECTOR] (incl. nut, washer)	1	③⑦	2510000450	Speaker EAS-3P123D (IC-U11)	1
				③⑧	7700000861	Microphone WM-62A103	1
⑫	6510008242	Antenna connector TNC-R109B (incl. nut)	1	③⑨	8930020130	Mic seal	1
				③⑩	8930014430	PTT switch rubber	1
⑬	8930027370	854 ANT shield	1	③⑪	8930018260	Insulate plate BP	1
⑭	8010008383	Chassis -3 (IC-H11)	1	④①	8930014392	PTT switch button -2	1
	8010014383	Chassis (B) -3 (IC-U11)	1	④②	8210005853	Front panel (F) -3 (IC-H11)	1
⑮	8810005580	Screw FH No. 0 M2 × 2.5	7	④③	8210006002	Front panel (G) -1 (IC-U11)	1
⑯	8410001480	677 PA heat sink	1	④④	8310016471	Front plate -1	1
⑰	7210001500	Variable resistor RK097111102AA (10KA) [PWR/VOL]	1	④⑤	8930014371	Lock button -1	1
				④⑥	8930014161	Lock spring -1	1
⑱	8930018730	853 spring (IC-H11 only)	1	④⑦	8930028610	858 contact terminal	2
⑲	8930019820	Side-spring (IC-U11 only)	1	④⑧	8850001180	Star washer M2 SUS	1
⑳	6910000710	Ground lug	1	④⑨	8810002570	Screw BuH M2 × 5 NI BS	1
㉑	8930018300	Copper sheet	1	④⑩	8010008181	Sliding guide plate -1	1
				④⑪	8810006090	Icom screw E5	2
㉒	8930017312	CPU shield (A) -2 (IC-H11)	1	⑤①	8930014451	Front seal -1	1
	8510006851	LOGIC shield -1 (IC-U11)	1	⑤②	8010008172	Rear panel -2	1
㉓	8510006590	853 shield plate	1	⑤③	8810000740	Screw PH A M2 × 15 ZK	4
㉔	8930016710	Sponge (BW) (IC-U11 only)	1	⑤④	8810003710	Icom screw B5	2

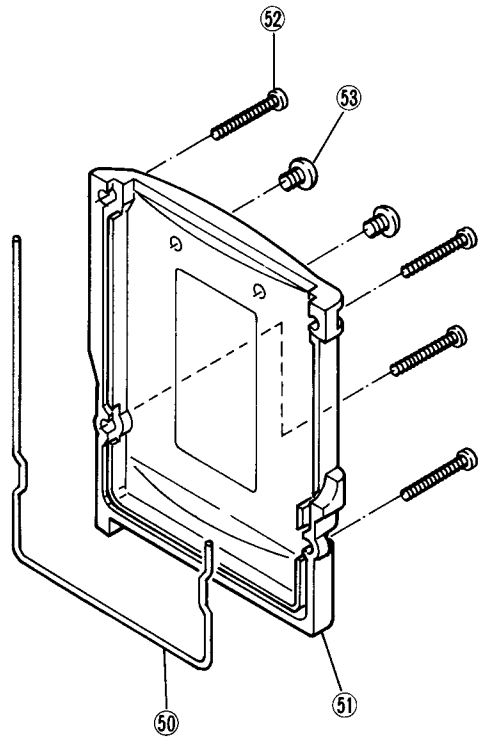
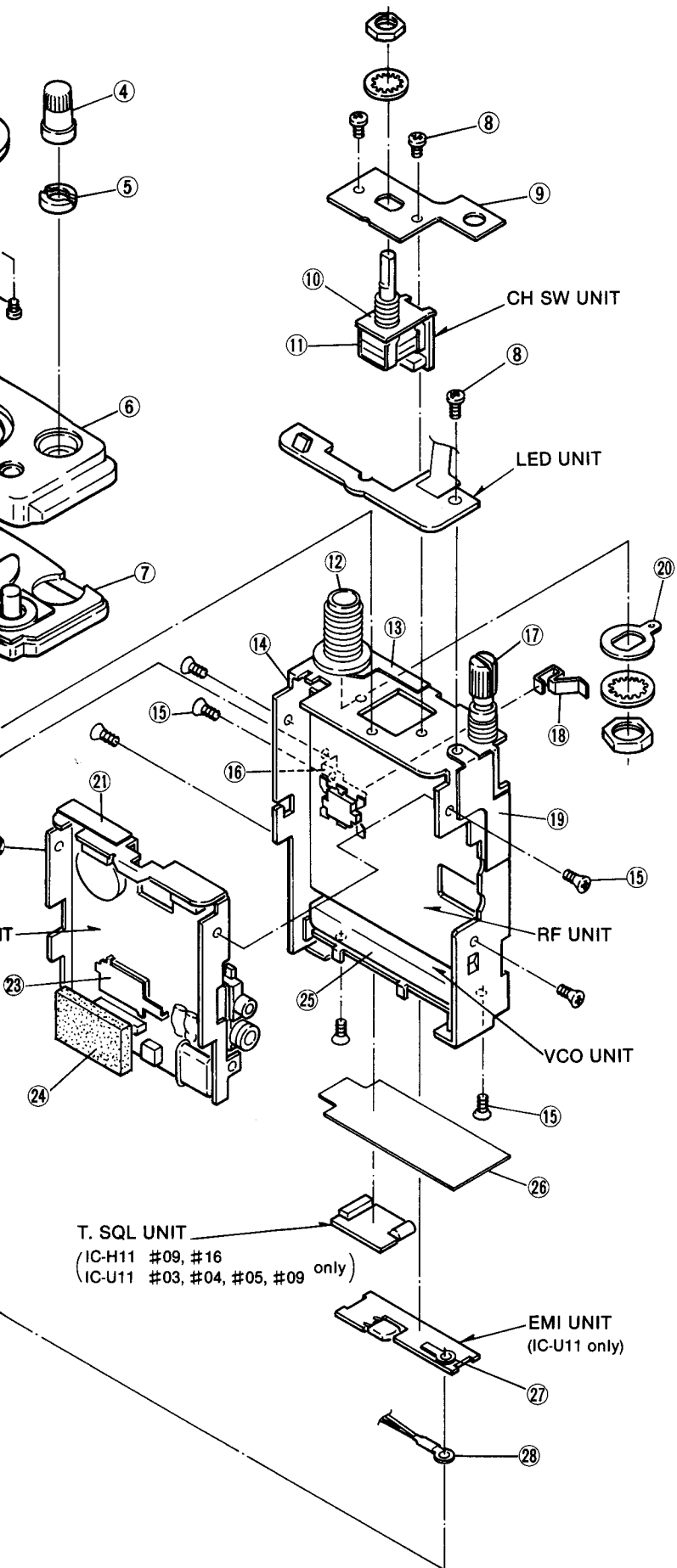
Screw abbreviations PH: Pan head FH: Flat head BuH: Button head B0: Self-tapping NI: Nickel
SUS: Stainless BS: Brass ZK: Black

• ACCESSORIES

LABEL NUMBER	ORDER NO.	DESCRIPTION	QTY.
①	Optional product	CM-80 BATTERY PACK	1
②	Optional product	FA-150TB FLEXIBLE ANTENNA (IC-H11)	1
③	Optional product	FA-450TA FLEXIBLE ANTENNA (IC-U11 #03, #04, #05, #08, #11)	1
	Optional product	FA-410T FLEXIBLE ANTENNA (IC-U11 #06, #07, #09, #10)	1
④	Optional product	MB-22 ALLIGATOR CLIP	1







IC-H11

IC-U11

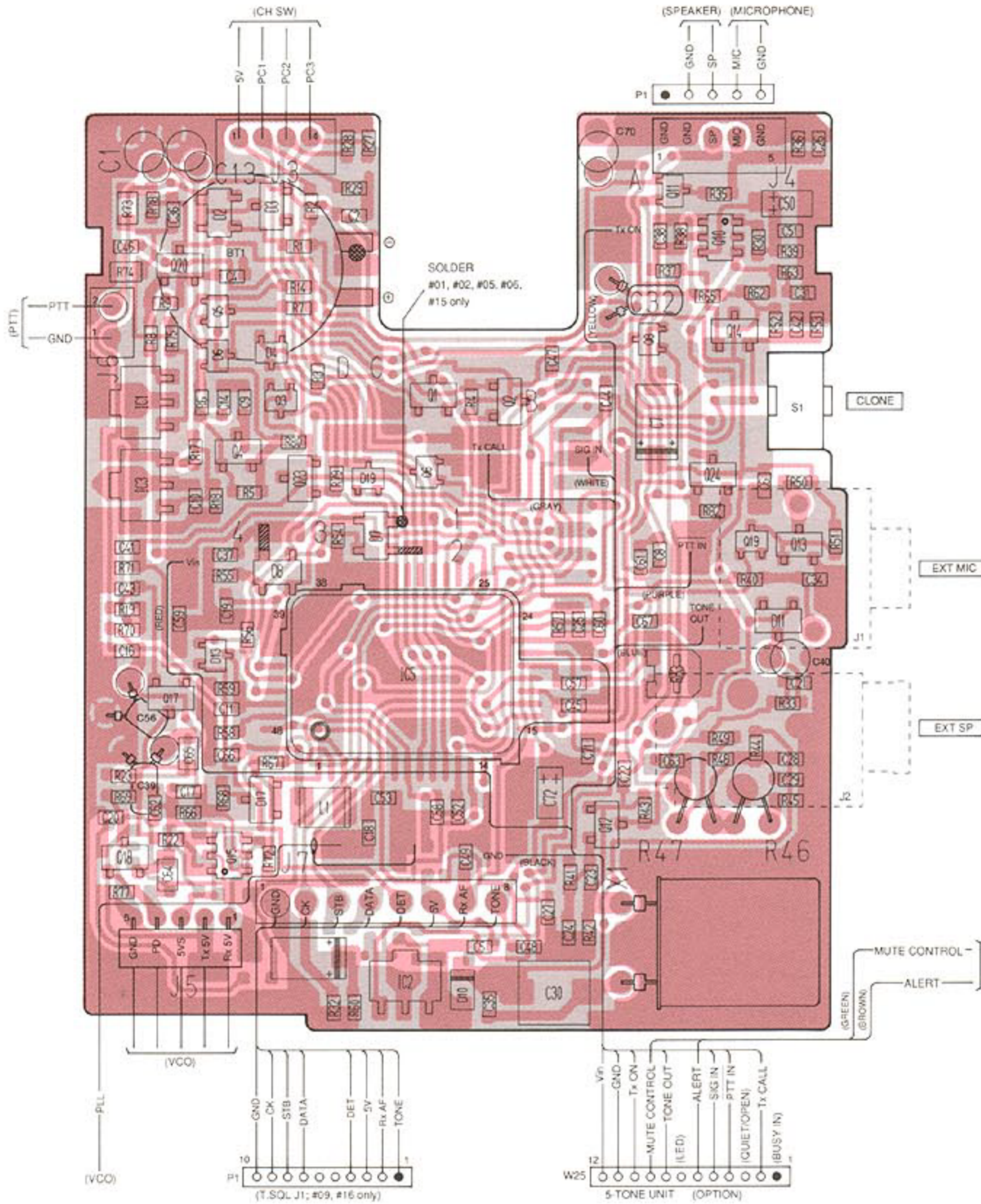
SECTION 7 BOARD LAYOUTS

IC-H11

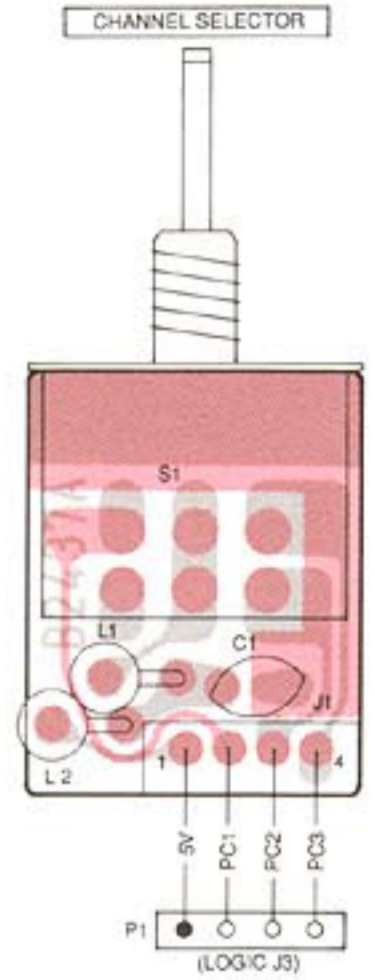
7-1 LOGIC UNIT

• LOGIC UNIT

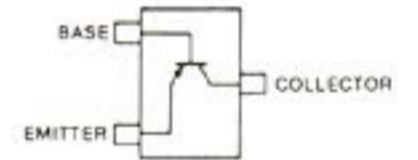
The combination of this page and the next page show the unit layout in the same configuration as the actual P.C. Board.



• CH SW UNIT

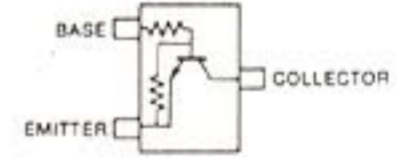


2SA1298 Y
(Symbol: IY)



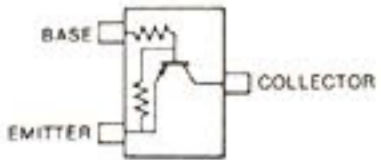
Q1, Q2, Q4, Q20

DTC144WU
(Symbol: 86)



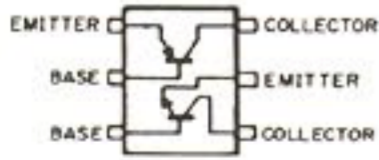
Q3, Q5, Q8, Q19

DTA144EU
(Symbol: 16)



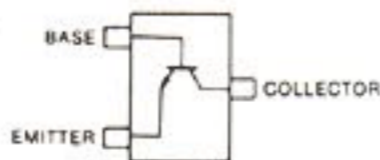
Q6, Q11

IMZ2
(Symbol: Z2)



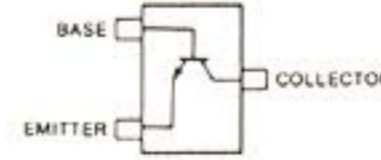
Q10, Q15

2SC2712 GR
(Symbol: LG)



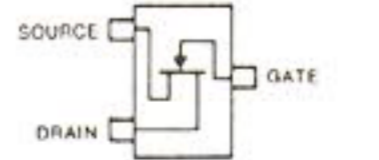
Q12, Q13

2SA1162 Y
(Symbol: SY)



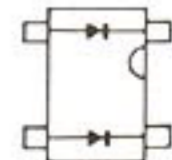
Q14, Q23, Q24

2SK209 Y
(Symbol: XY)



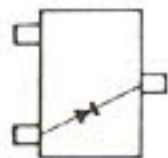
Q17, Q18

MA713
(Symbol: M1N)



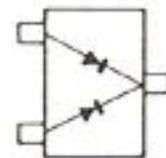
D2

1SS196
(Symbol: G3)



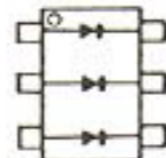
D3

DAN202U
(Symbol: N)



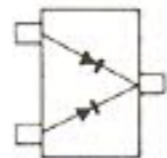
D4, D6, D13

1SS272
(Symbol: A1)



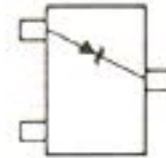
D7, D8

DAN202K
(Symbol: N)



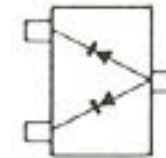
D11

RD3.0M B2
(Symbol: 302)



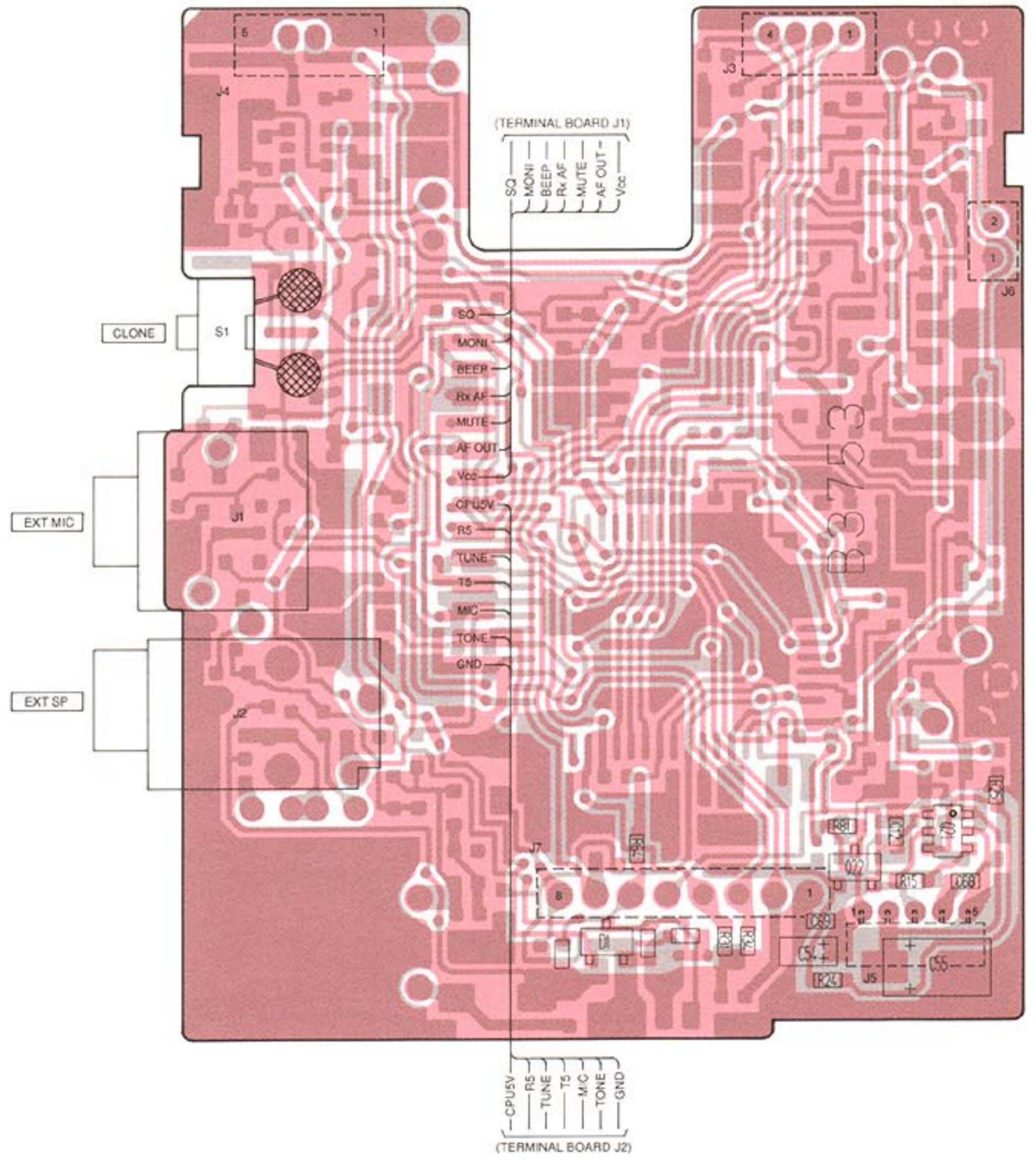
D17

DAP202U
(Symbol: P)

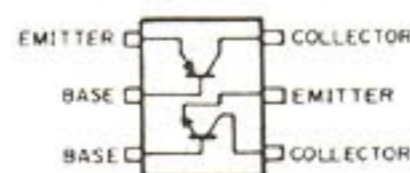


D19

IC-H11

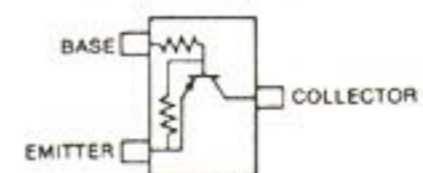


IMZ2
(Symbol: Z2)



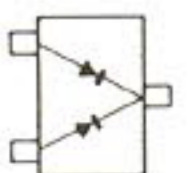
Q21

DTA114EK
(Symbol: 14)



Q22

1SS184
(Symbol: B3)

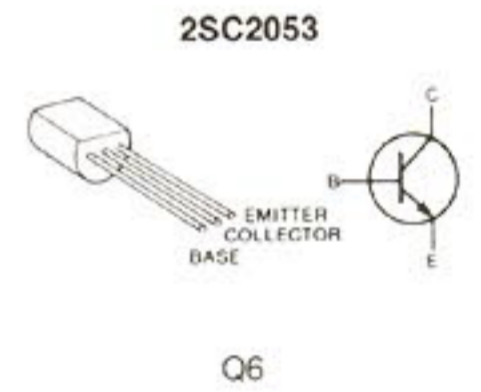
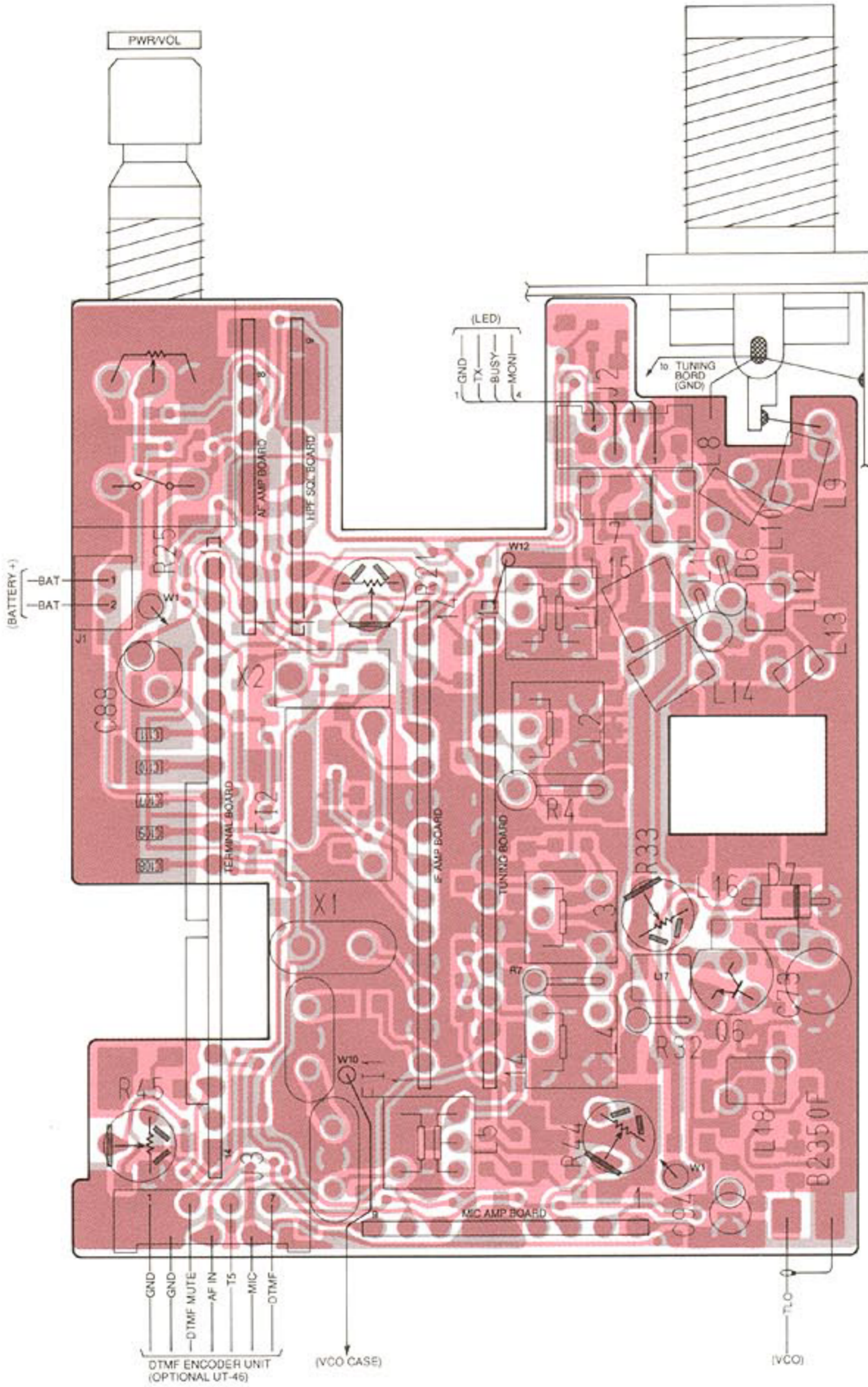


D1

7-2 RF UNIT

• RF UNIT

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

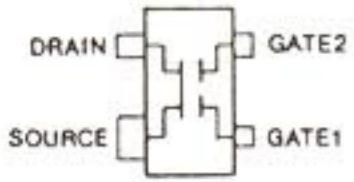


IC-H11

• RF UNIT

3SK140 GR

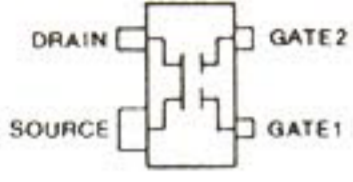
(Symbol: UG)



Q1

3SK131K

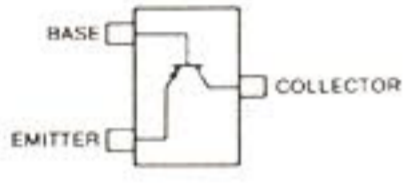
(Symbol: V13)



Q2

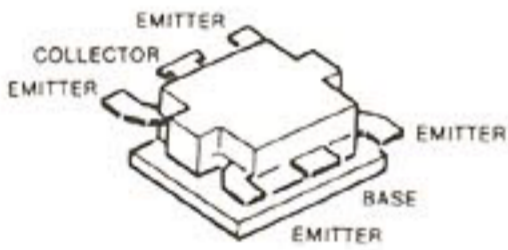
2SA1576 R

(Symbol: FR)



Q4

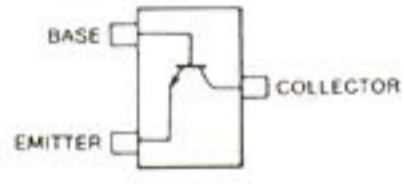
2SC4240



Q5

2SC3772 3

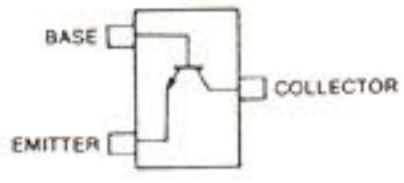
(Symbol: LY3)



Q7

2SC2712 GR

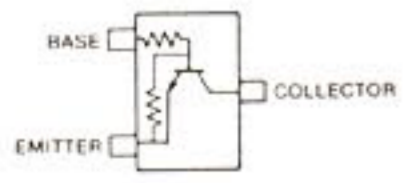
(Symbol: LG)



Q8

DTC114EU

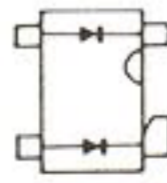
(Symbol: 24)



Q9

MA862

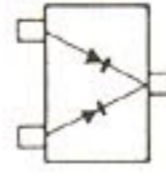
(Symbol: M11)



D5, D9

1SS184

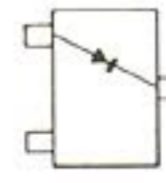
(Symbol: B3)



D8

1SS193

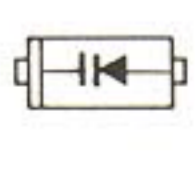
(Symbol: F3)



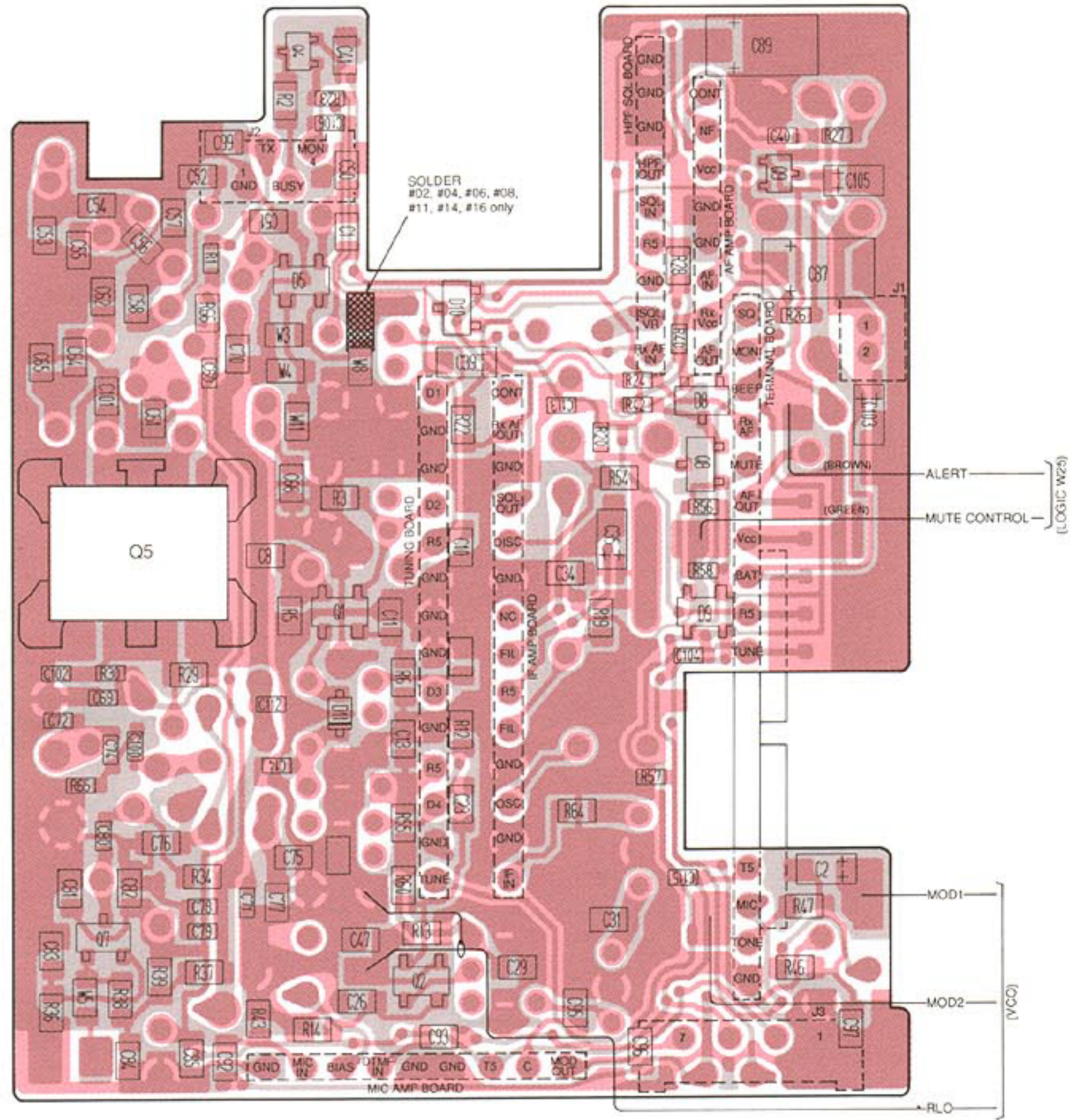
D10

1SS315

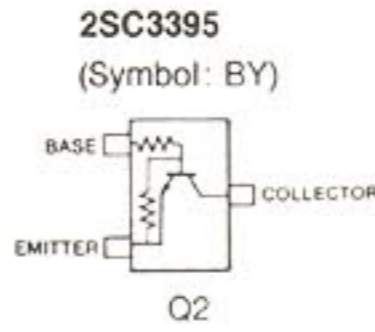
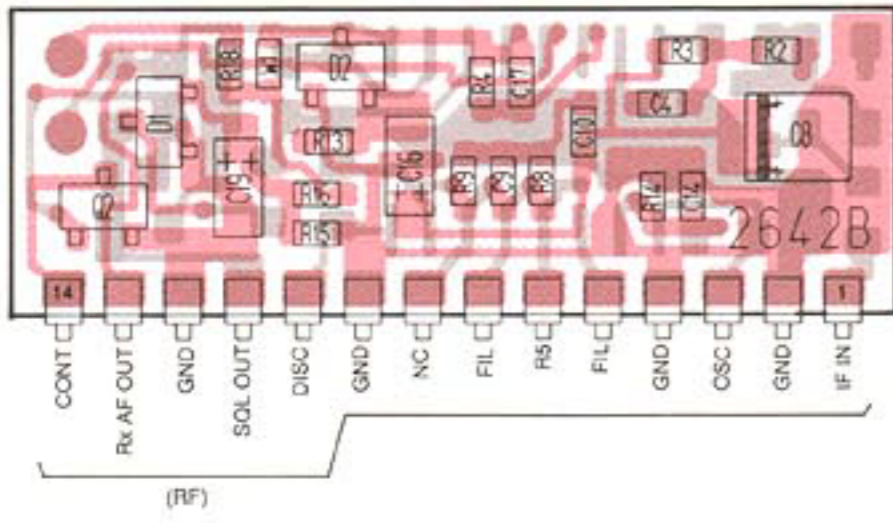
(Symbol: S2)



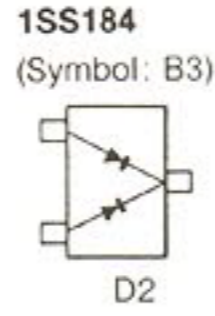
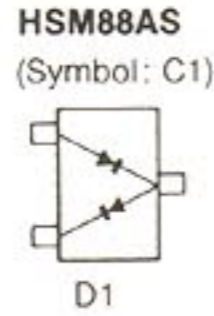
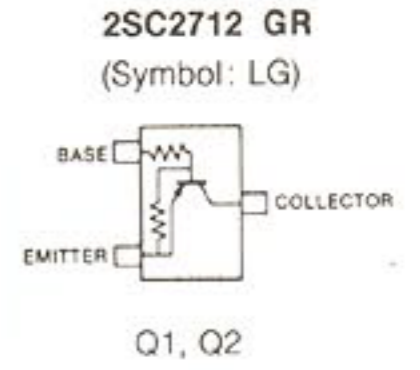
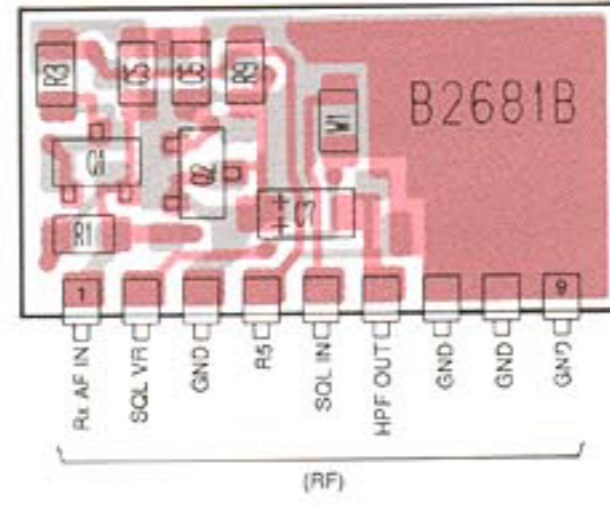
D11



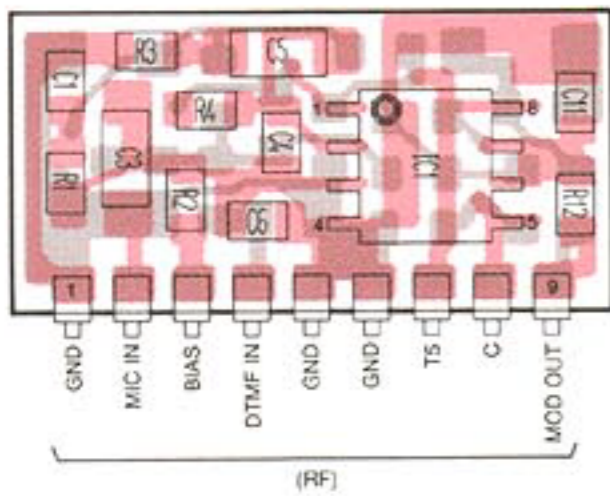
• IF AMP BOARD



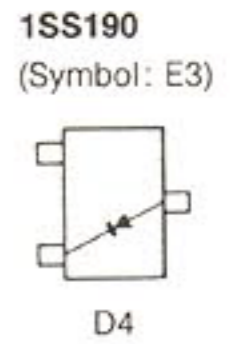
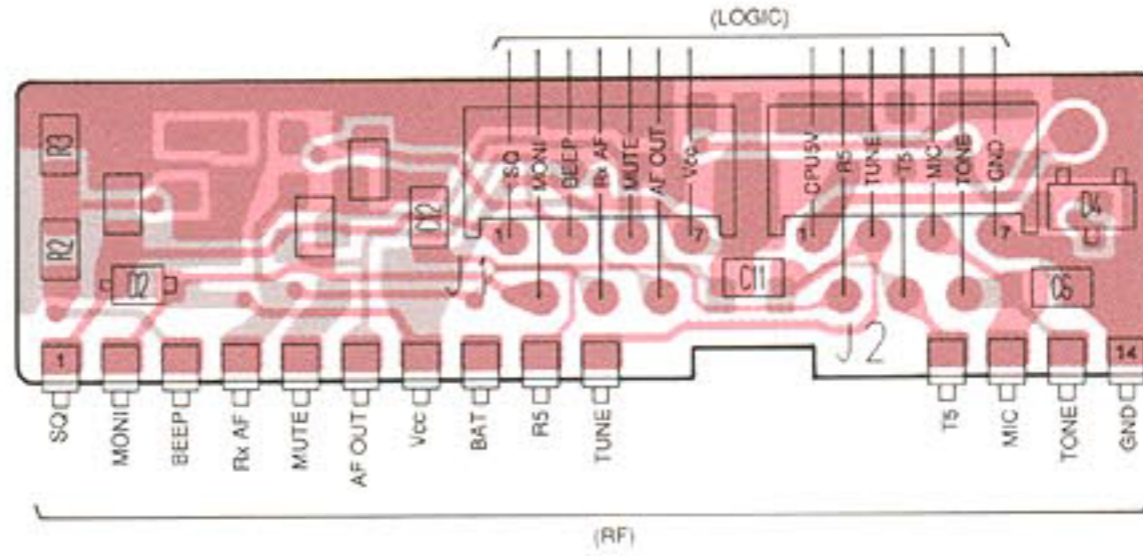
• HPF SQL BOARD



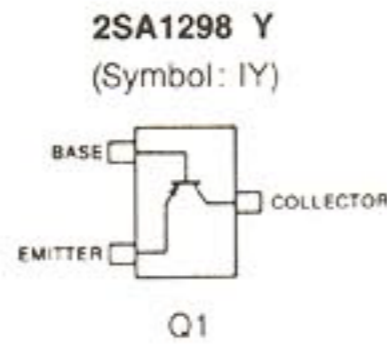
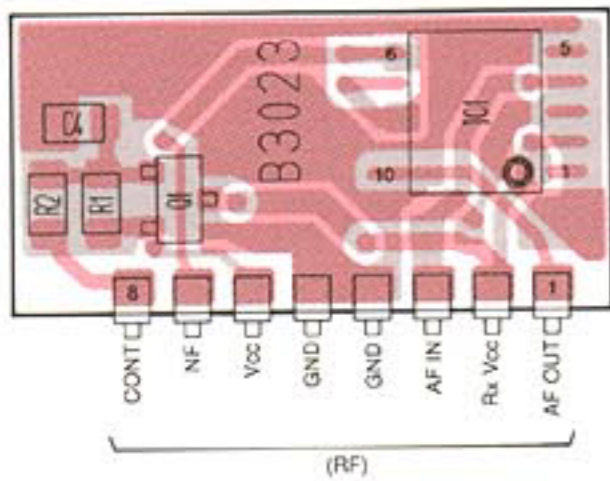
• MIC AMP BOARD



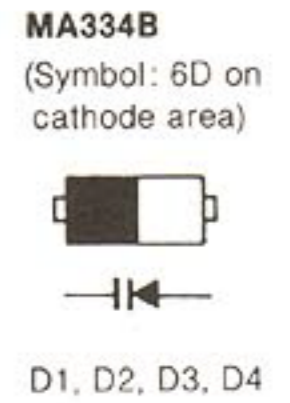
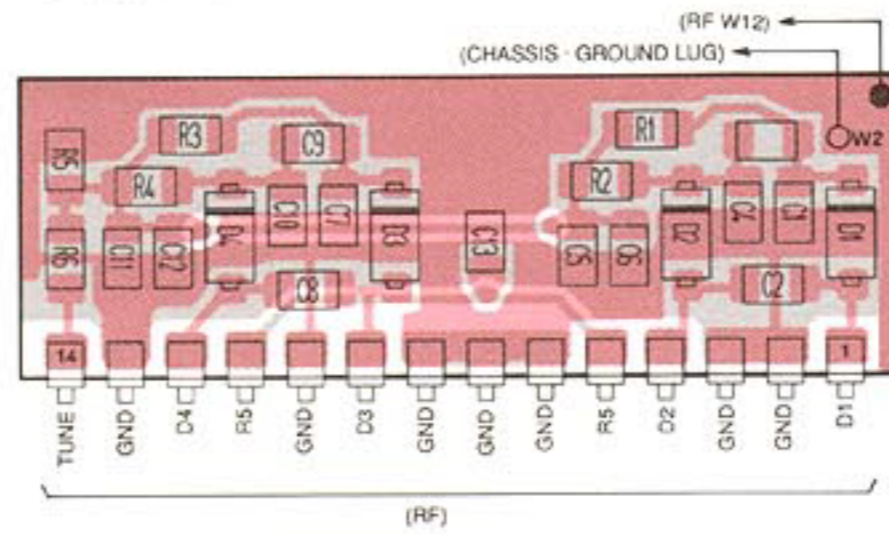
• TERMINAL BOARD



• AF AMP BOARD



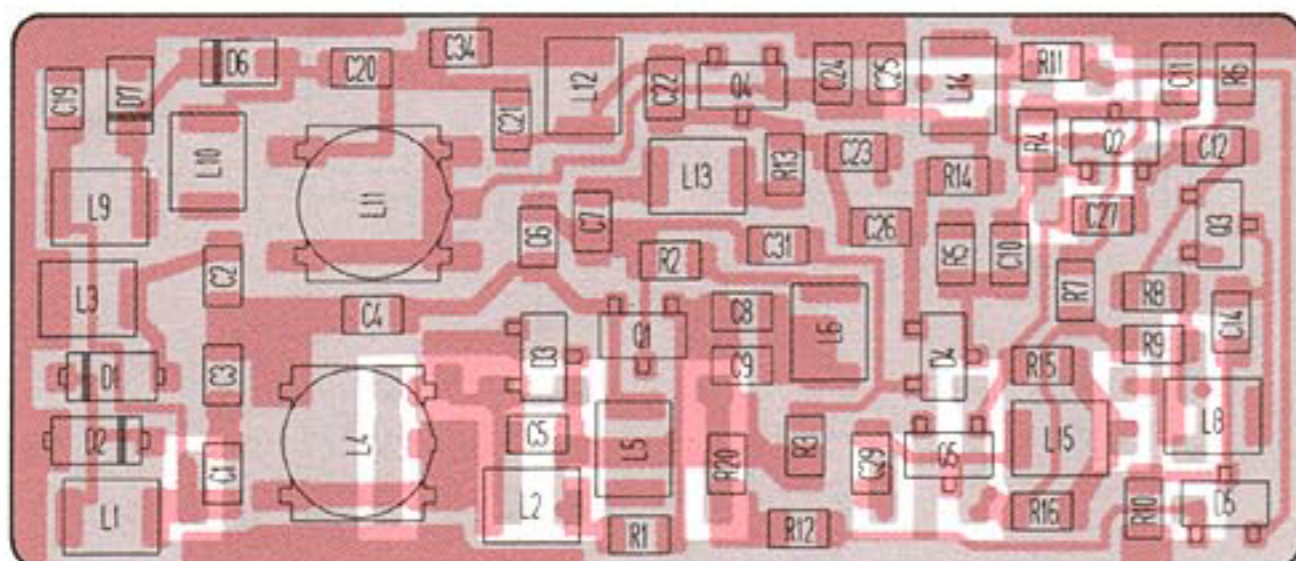
• TUNING BOARD



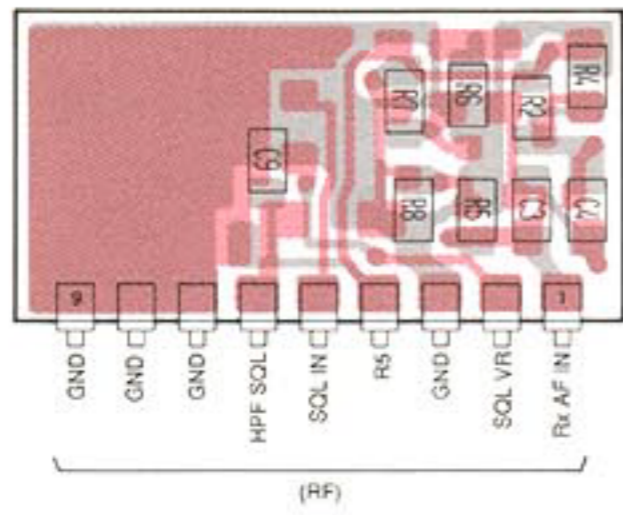
7-3 VCO UNIT

• VCO UNIT

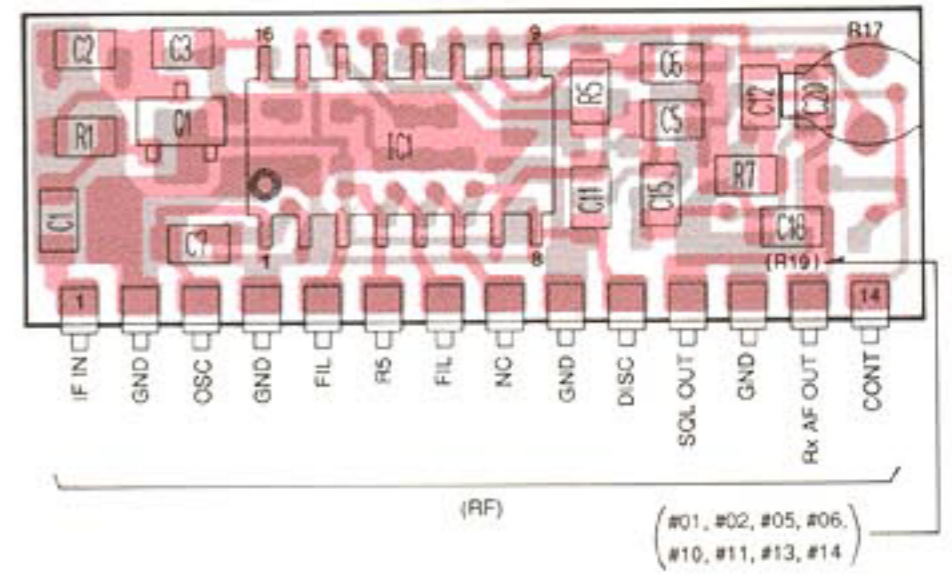
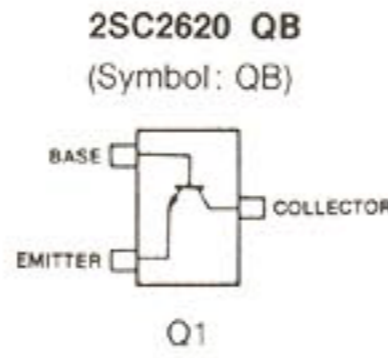
The combination of this page and the next page show the unit layout in the same configuration as the actual P.C. Board.



• HPF SQL BOARD



• IF AMP BOARD

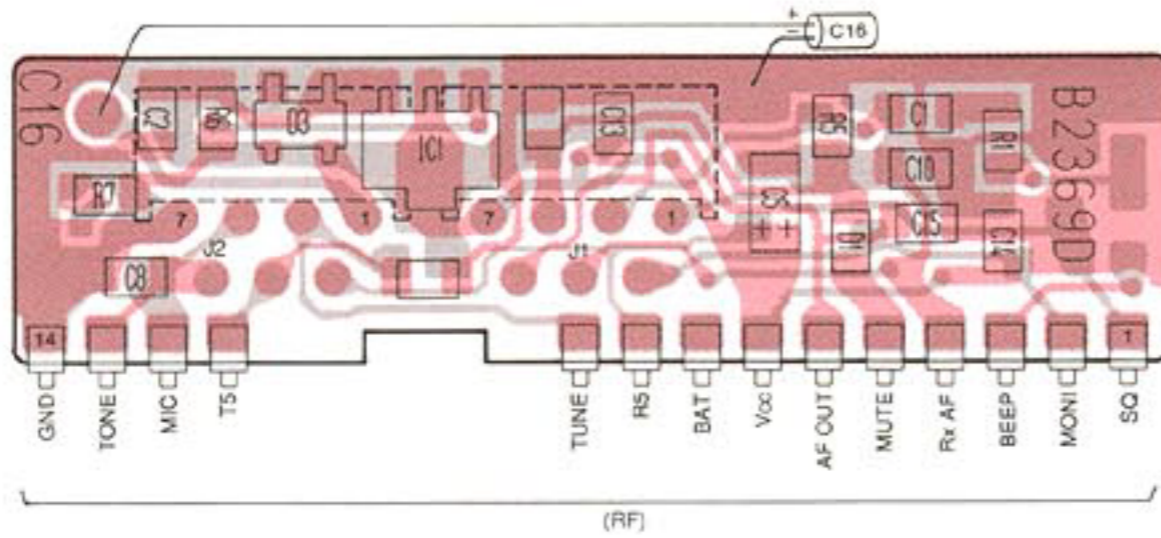


• TERMINAL BOARD

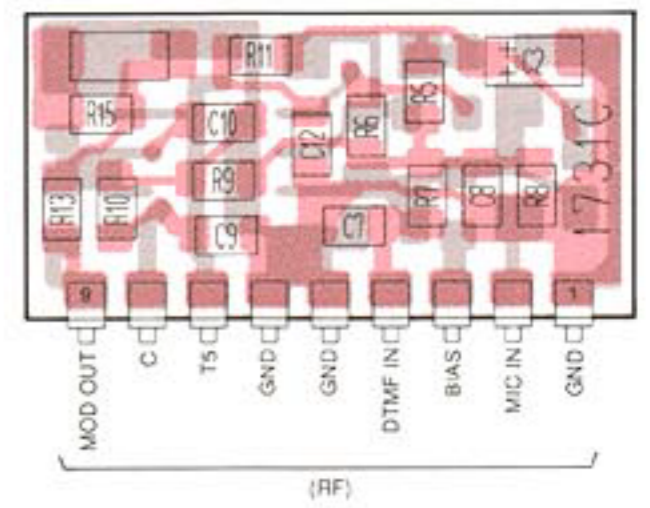
1SS319
(Symbol: A4)



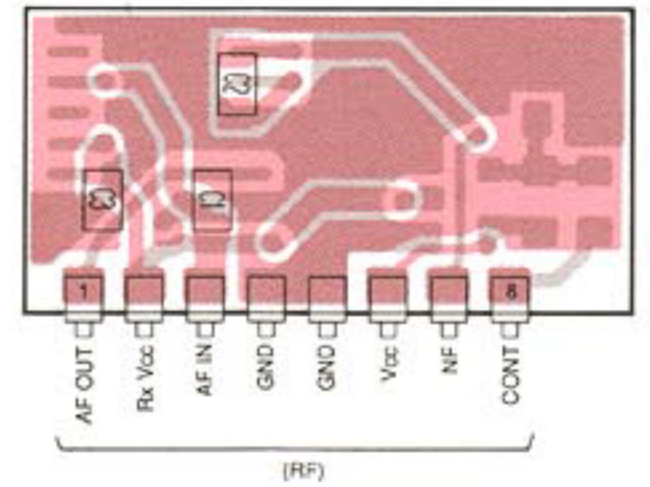
D3



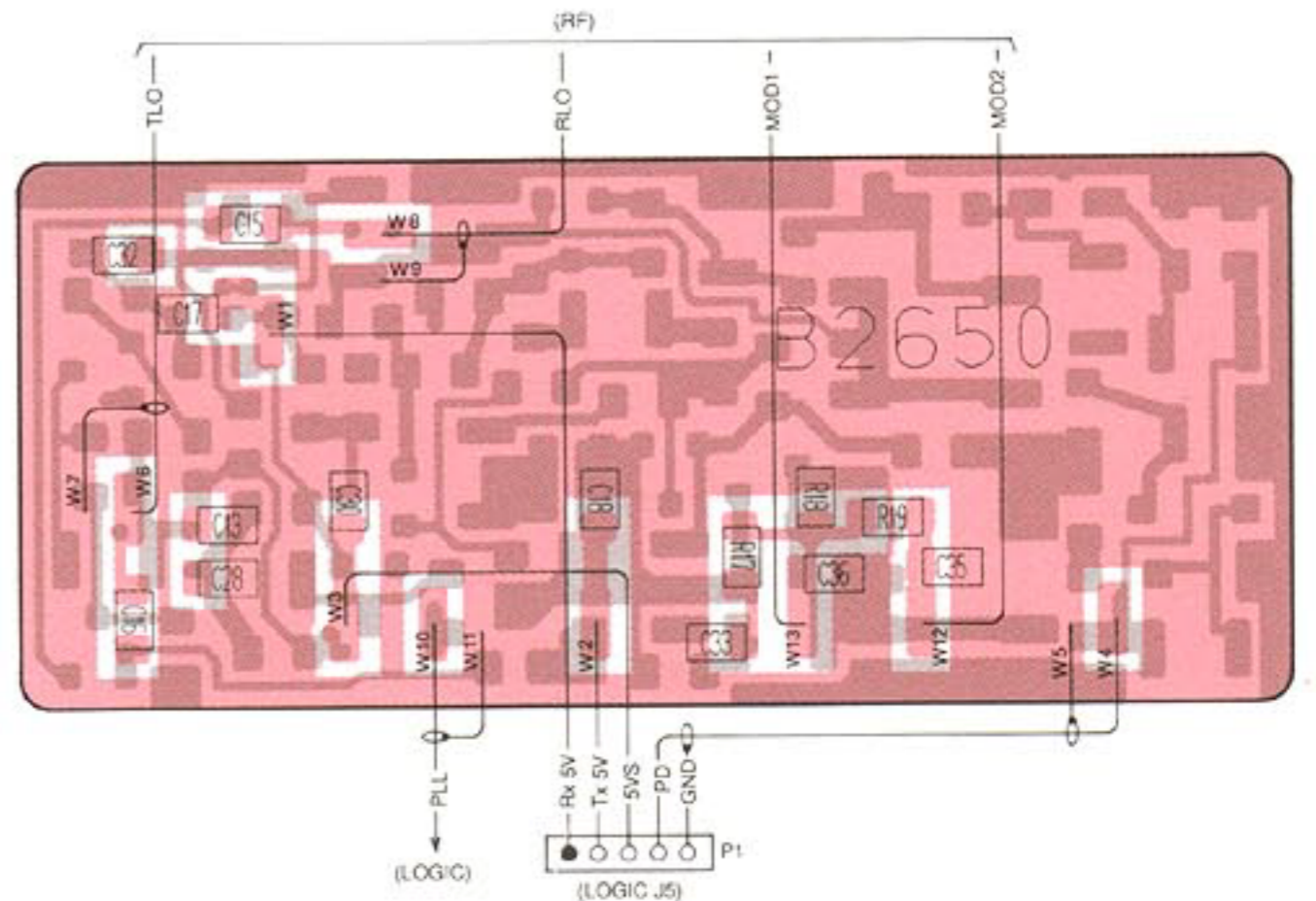
• MIC AMP BOARD



• AF AMP BOARD



• VCO UNIT

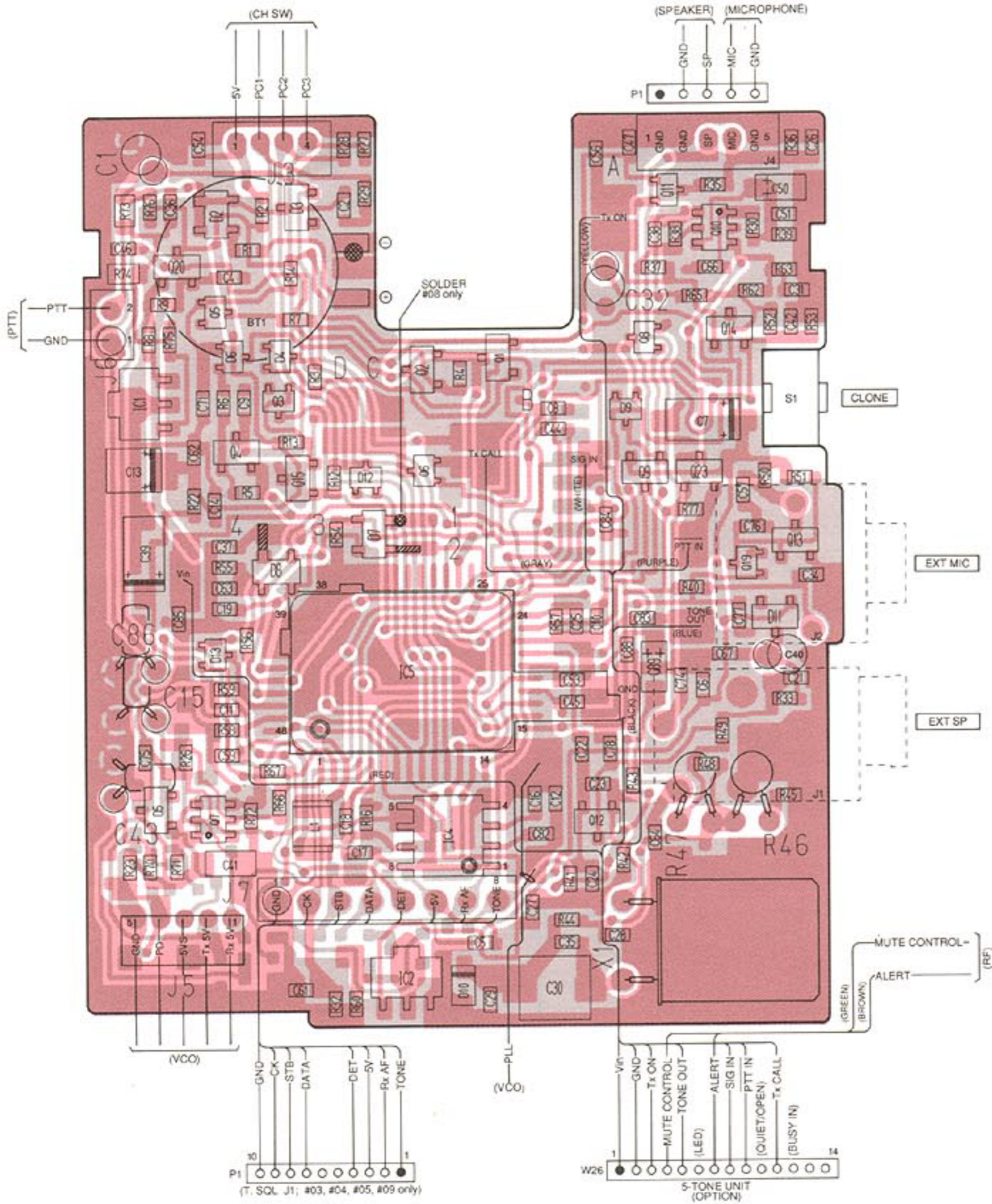


IC-U11

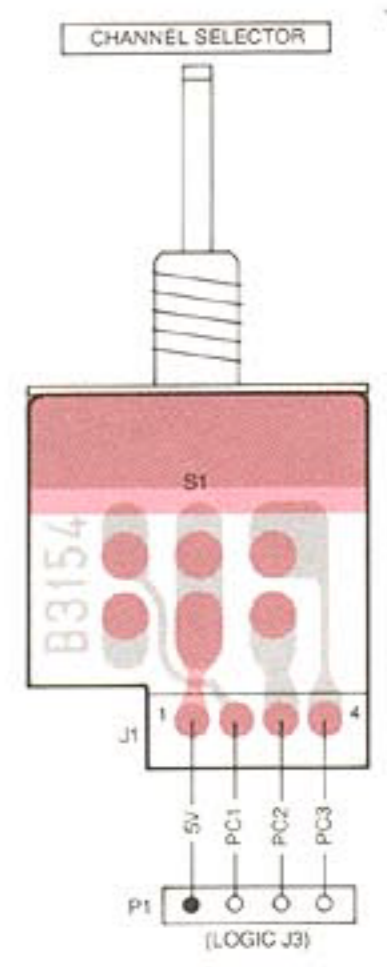
7-4 LOGIC UNIT

• LOGIC UNIT

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

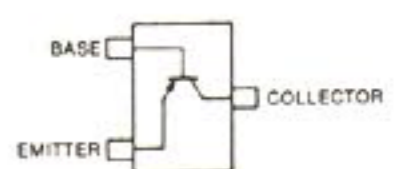


• CH SW UNIT



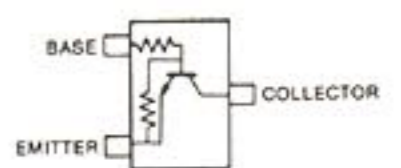
IC-U11

2SA1298 Y
(Symbol: IY)



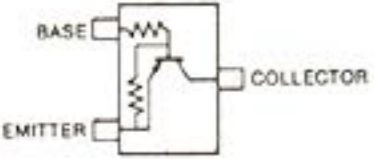
Q1, Q2, Q4, Q20

DTC144WU
(Symbol: 86)



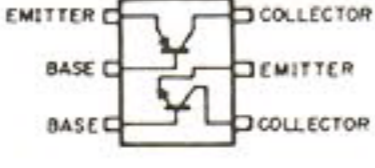
Q3, Q5, Q8, Q19

DTA144EU
(Symbol: 16)



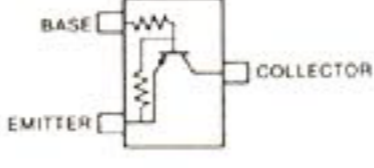
Q6, Q11

IMZ2
(Symbol: Z2)



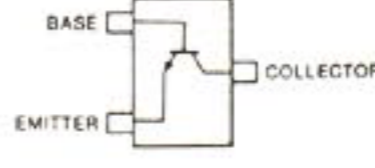
Q7, Q10

DTB113ZK
(Symbol: G11)



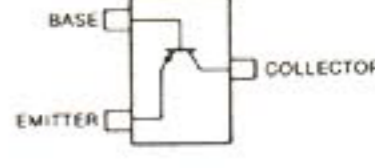
Q9

2SC2712 GR
(Symbol: LG)



Q12, Q13

2SA1162 Y
(Symbol: SY)



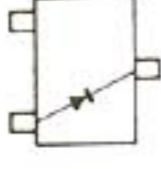
Q14, Q15, Q23

MA713
(Symbol: M1N)



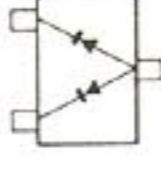
D2

1SS196
(Symbol: G3)



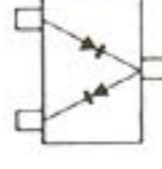
D3

DAP202U
(Symbol: P)



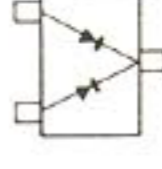
D4, D9, D12

HSM88AS
(Symbol: C1)



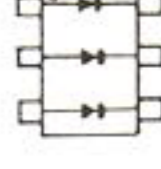
D5, D11

DAN202U
(Symbol: N)

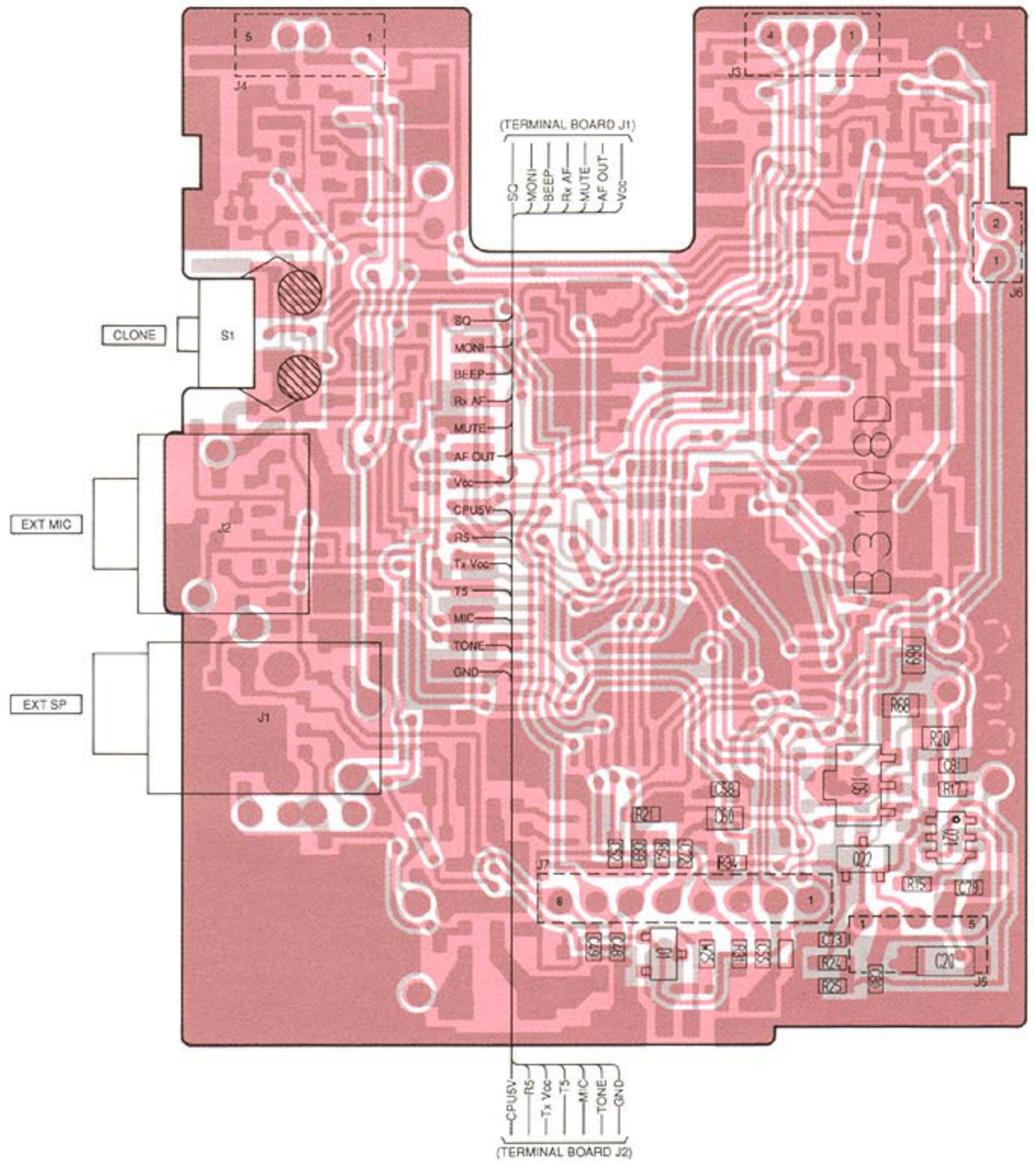


D6, D13

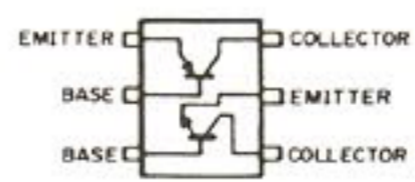
1SS272
(Symbol: A1)



D7, D8

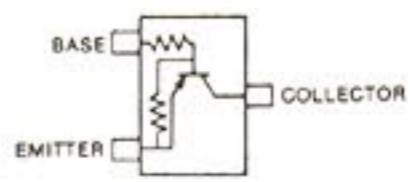


IMZ2
(Symbol: Z2)



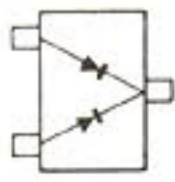
Q21

DTA114EK
(Symbol: 14)



Q22

1SS184
(Symbol: B3)

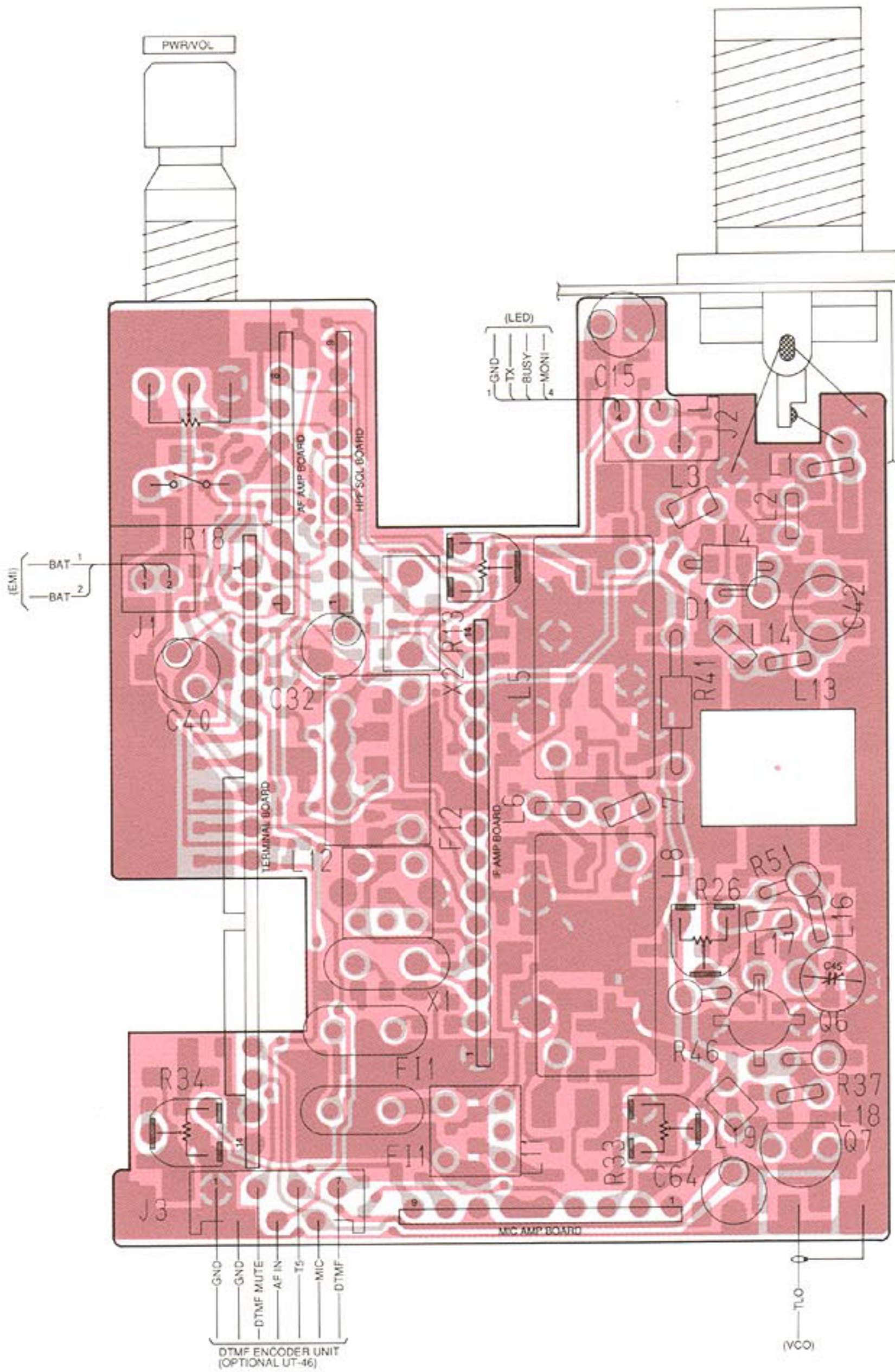


D1

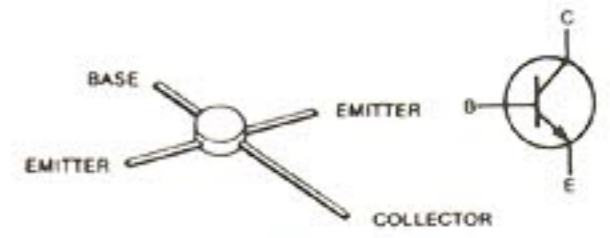
7-5 RF UNIT

• RF UNIT

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



2SC3019



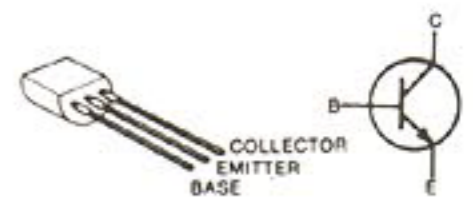
Q6

2SC3355



Q7 (#03, #04, #05, #08, #11)

2SC2407

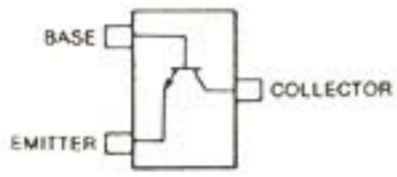


Q7 (#06, #07, #09, #10)

IC-U11

• RF UNIT

2SC3583 R34
(Symbol: R34)



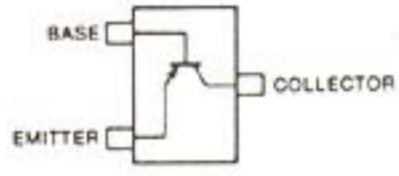
Q1

3SK140 GR
(Symbol: UG)



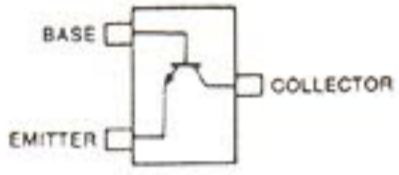
Q2

2SA1162 GR
(Symbol: SG)



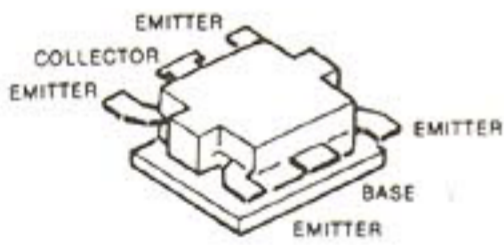
Q3

2SC2712 GR
(Symbol: LG)



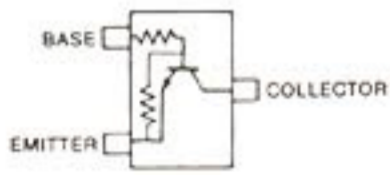
Q4

2SC3379



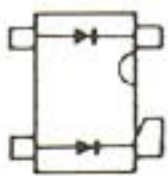
Q5

DTC114EU
(Symbol: 24)



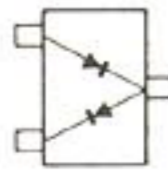
Q8

MA862
(Symbol: M11)



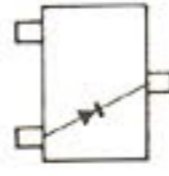
D2, D5

HSM88AS
(Symbol: C1)



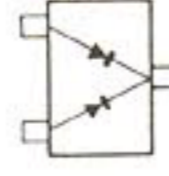
D3

DA115
(Symbol: AU)



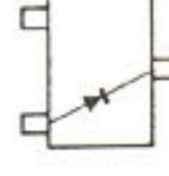
D4

1SS184
(Symbol: B3)

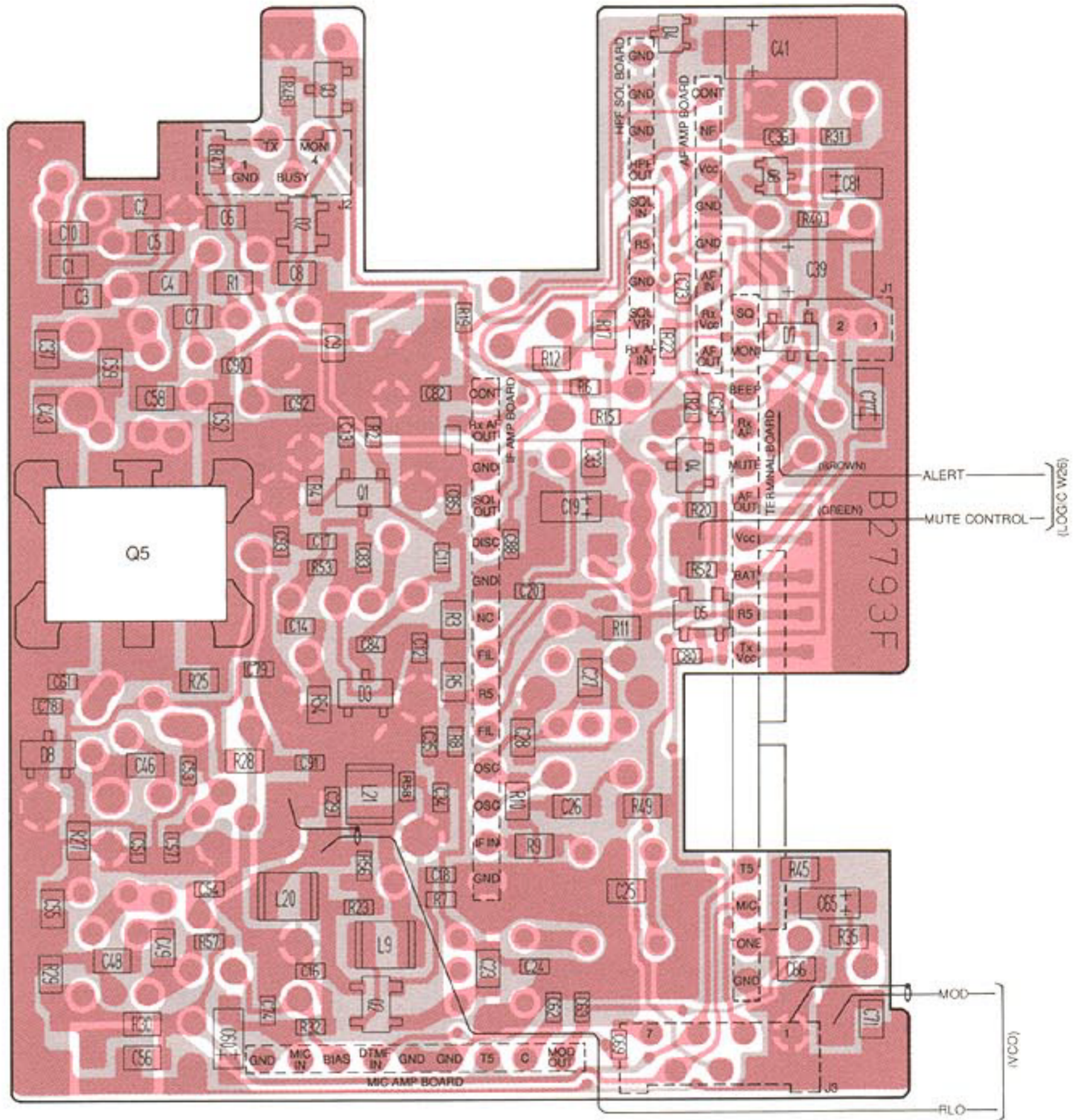


D7

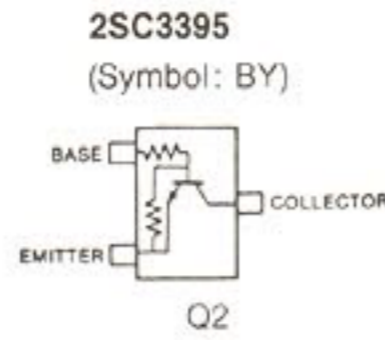
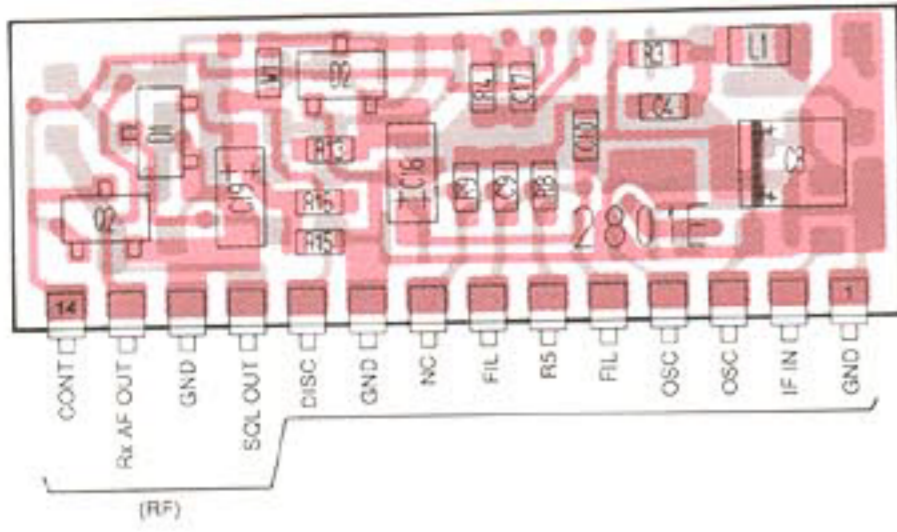
1SS196
(Symbol: G3)



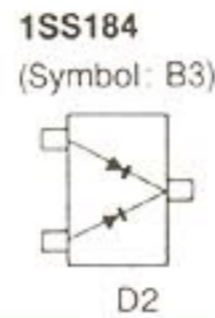
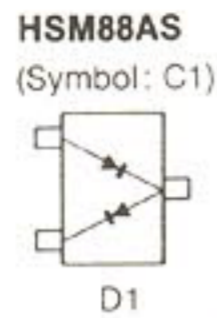
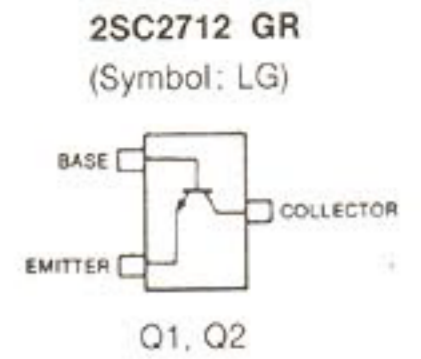
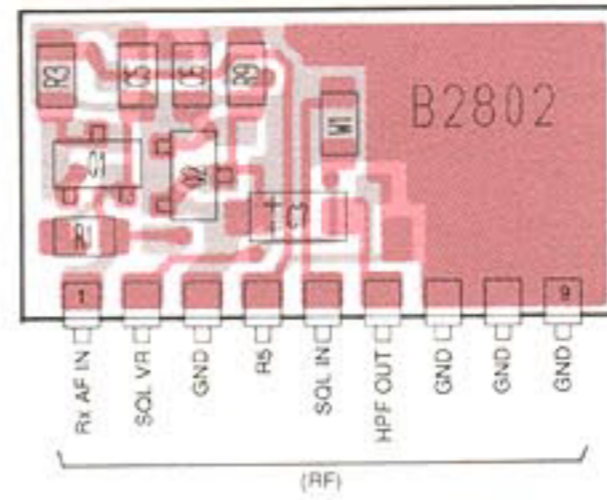
D8



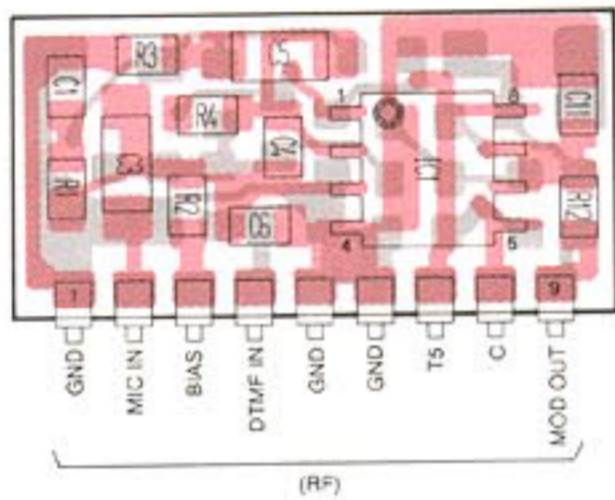
• IF AMP BOARD



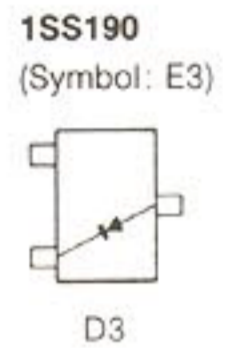
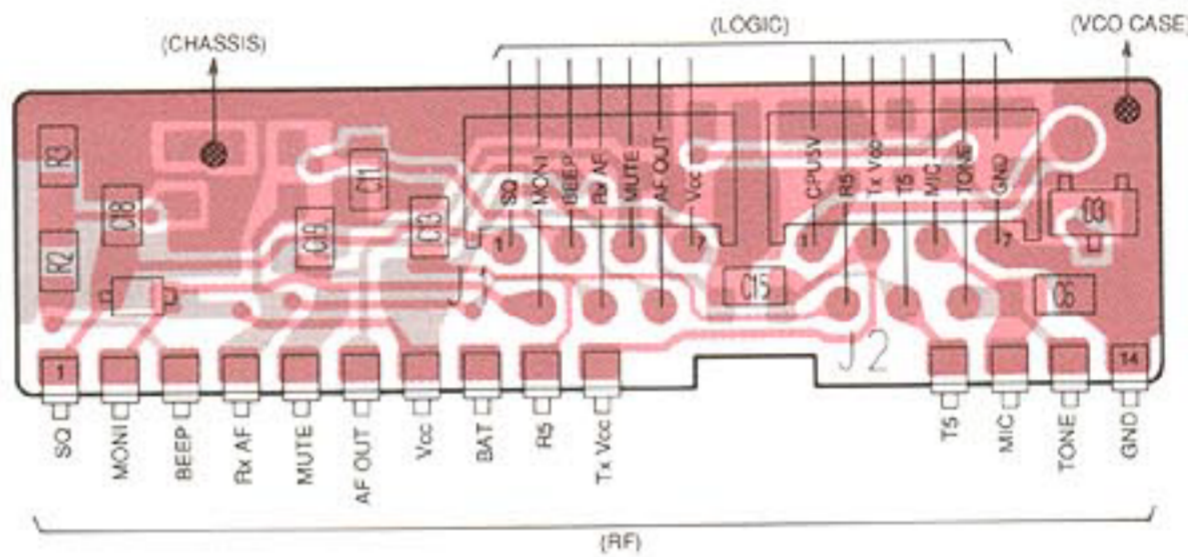
• HPF SQL BOARD



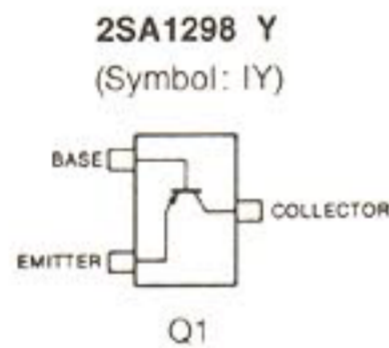
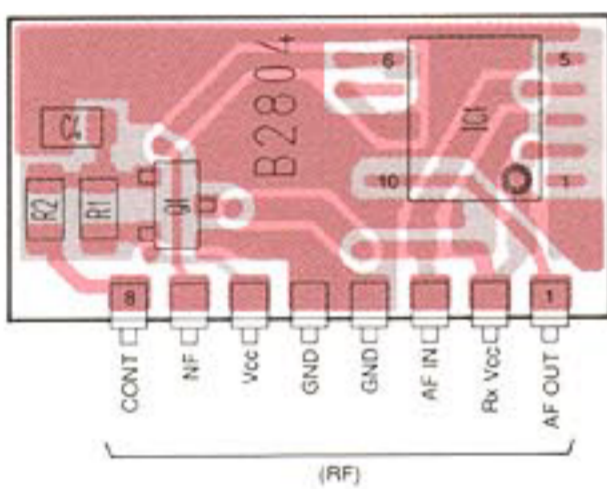
• MIC AMP BOARD



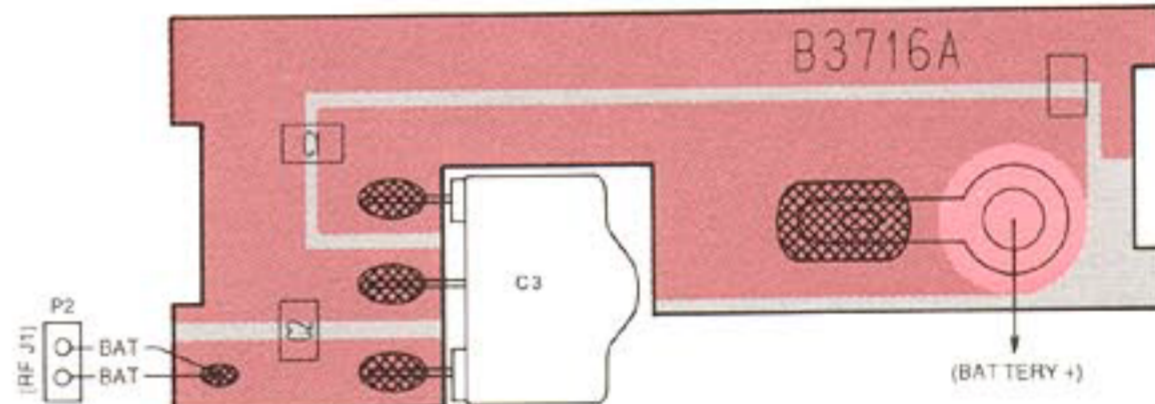
• TERMINAL BOARD



• AF AMP BOARD

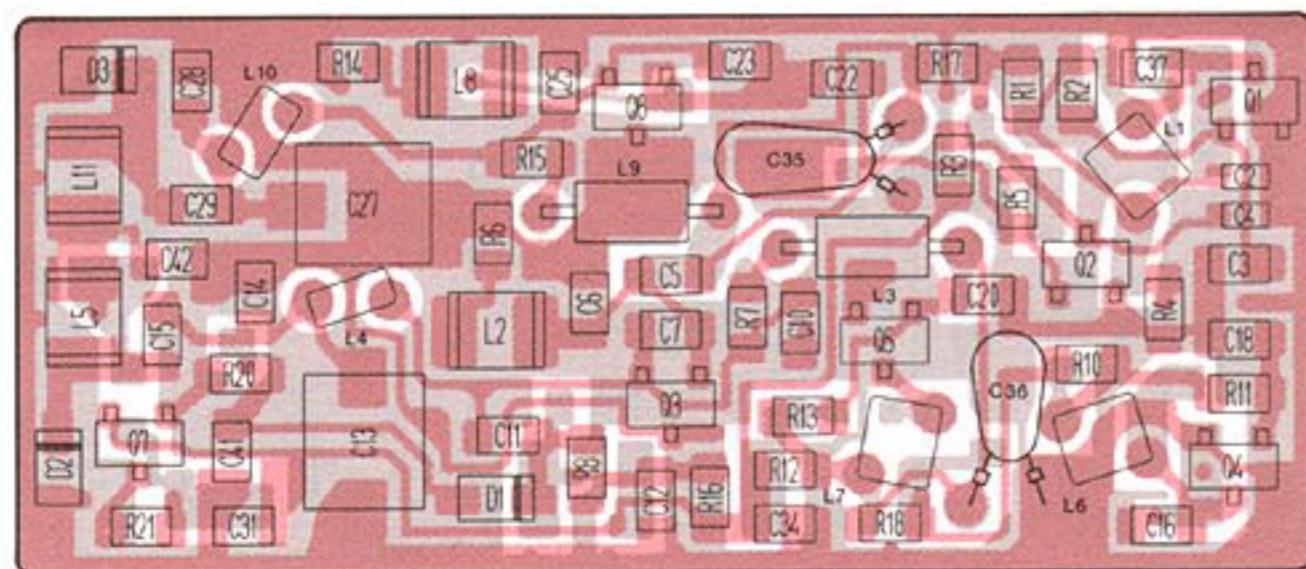


• EMI UNIT

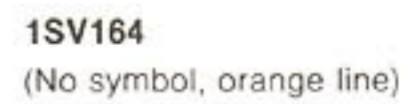
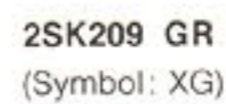
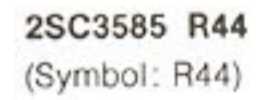
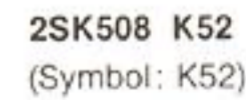


7-6 VCO UNIT

• VCO UNIT

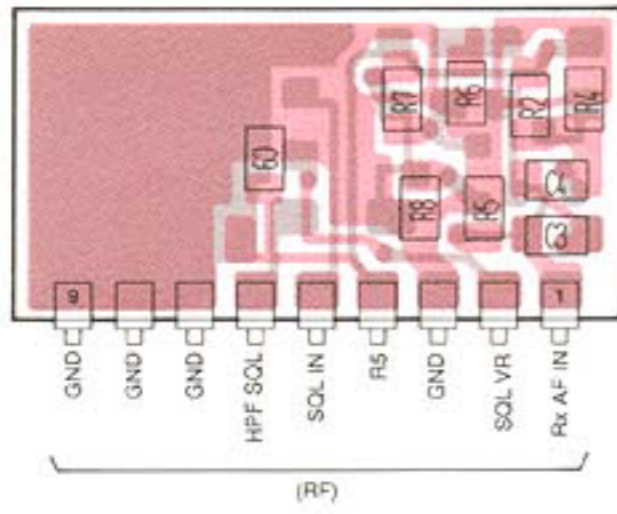


The combination of this page and the next page show the unit layout in the same configuration as the actual P.C. Board.

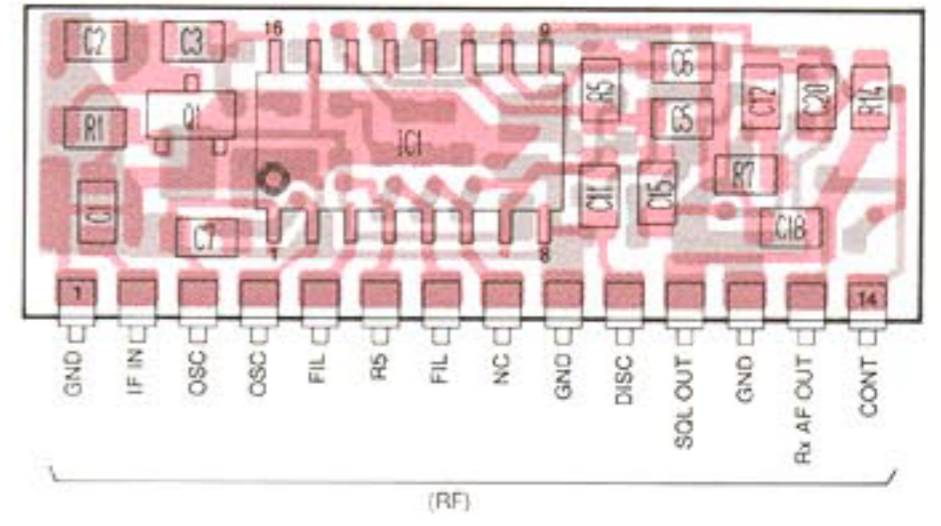
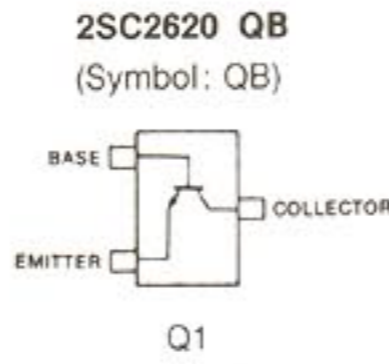


IC-U11

• HPF SQL BOARD



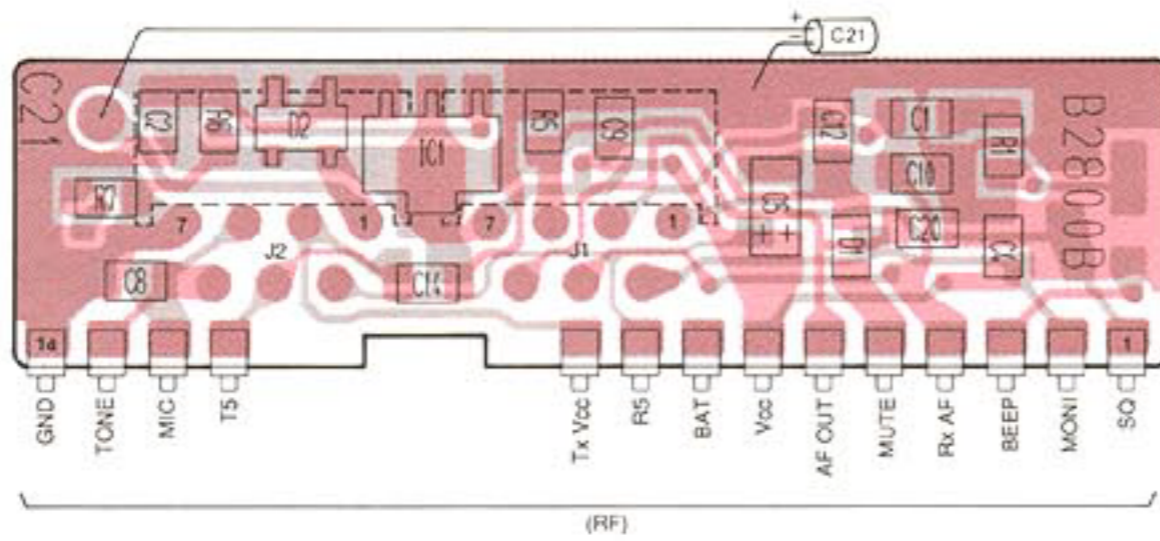
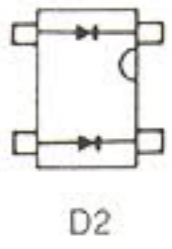
• IF AMP BOARD



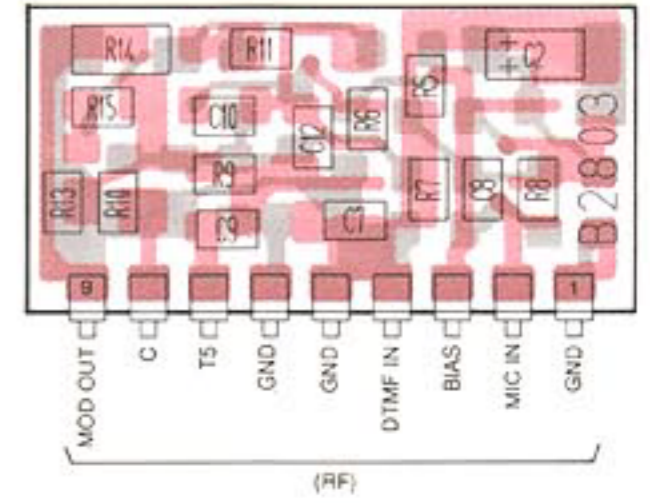
IC-U11

• TERMINAL BOARD

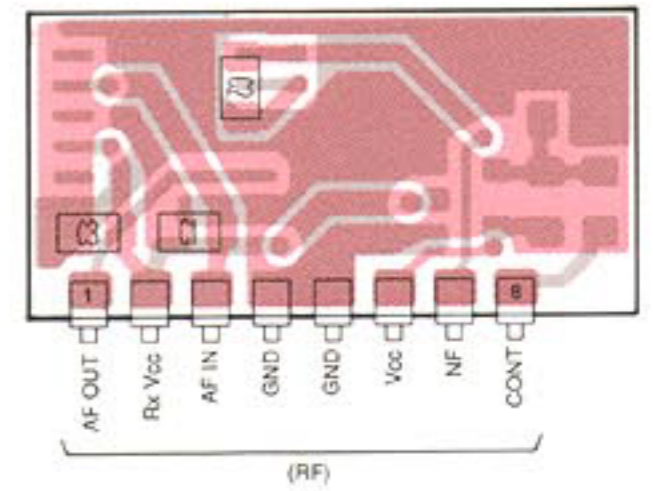
1SS319
(Symbol: A4)



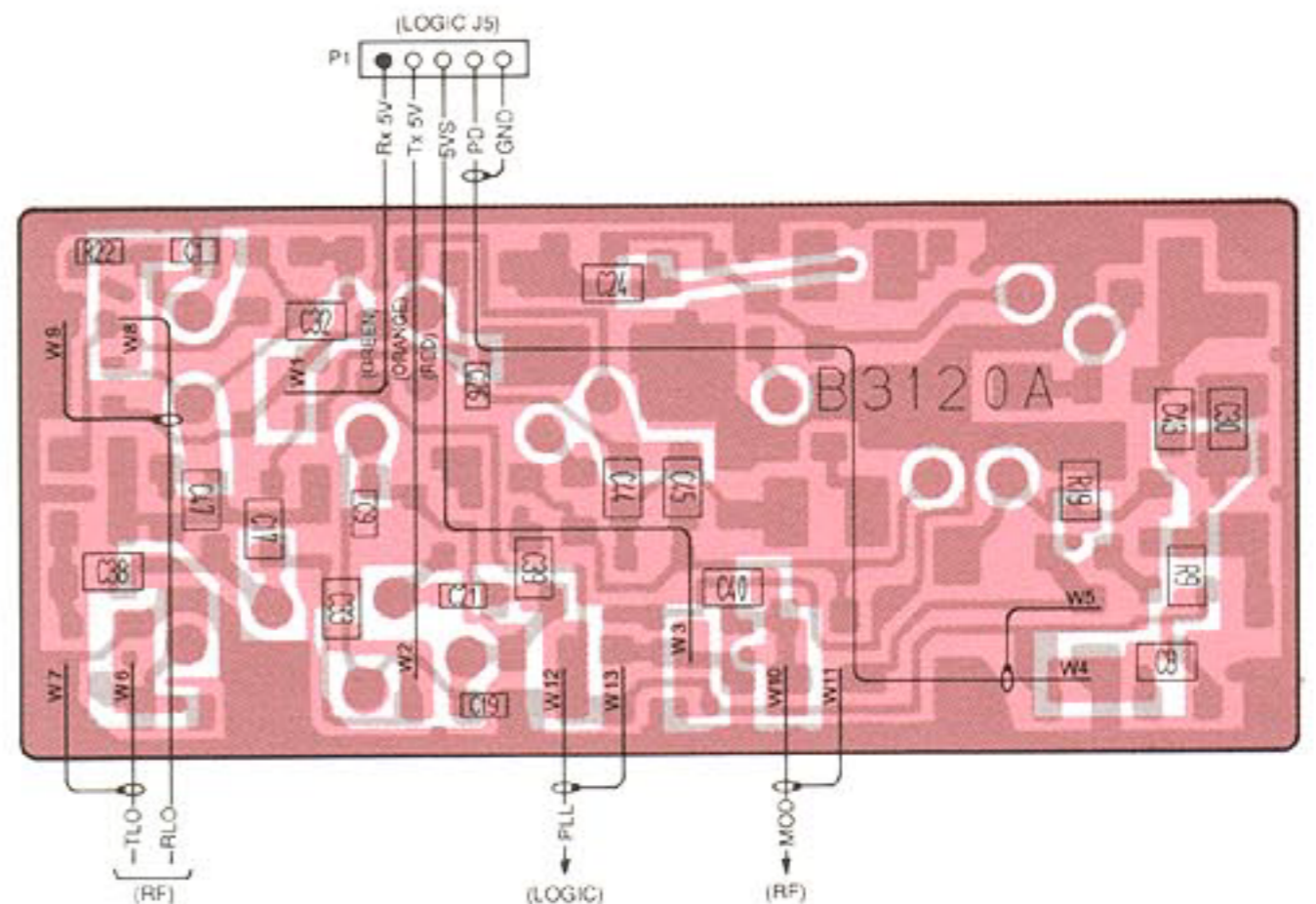
• MIC AMP BOARD



• AF AMP BOARD



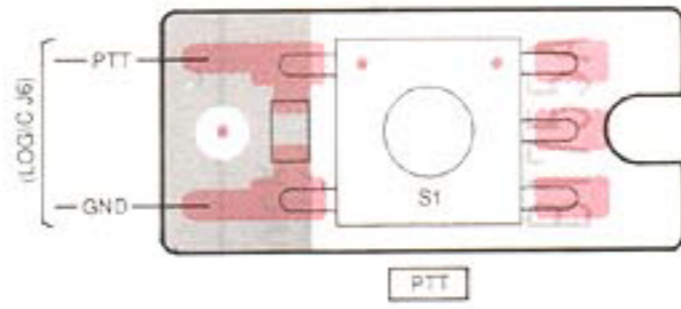
• VCO UNIT



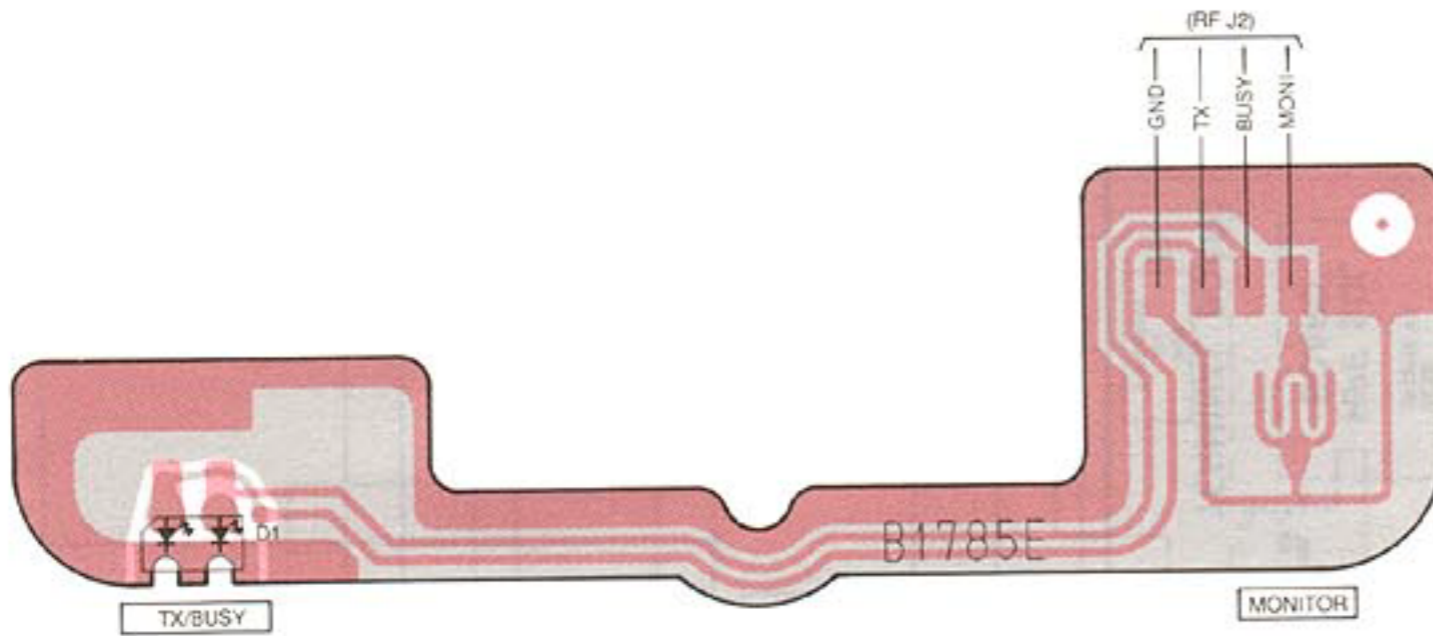
■ COMMON

7-7 PTT, LED AND T. SQL UNITS

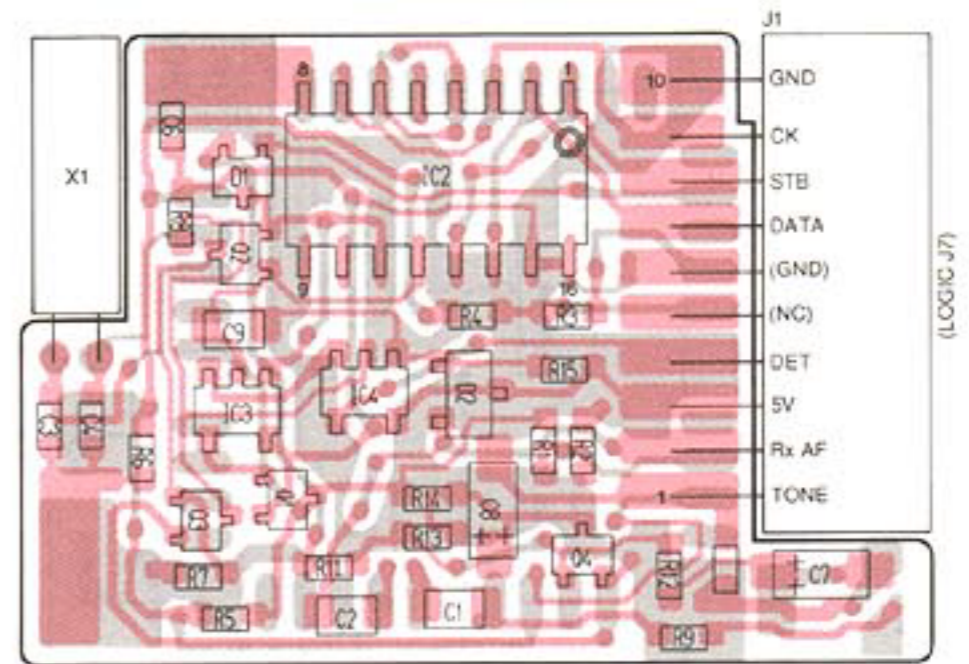
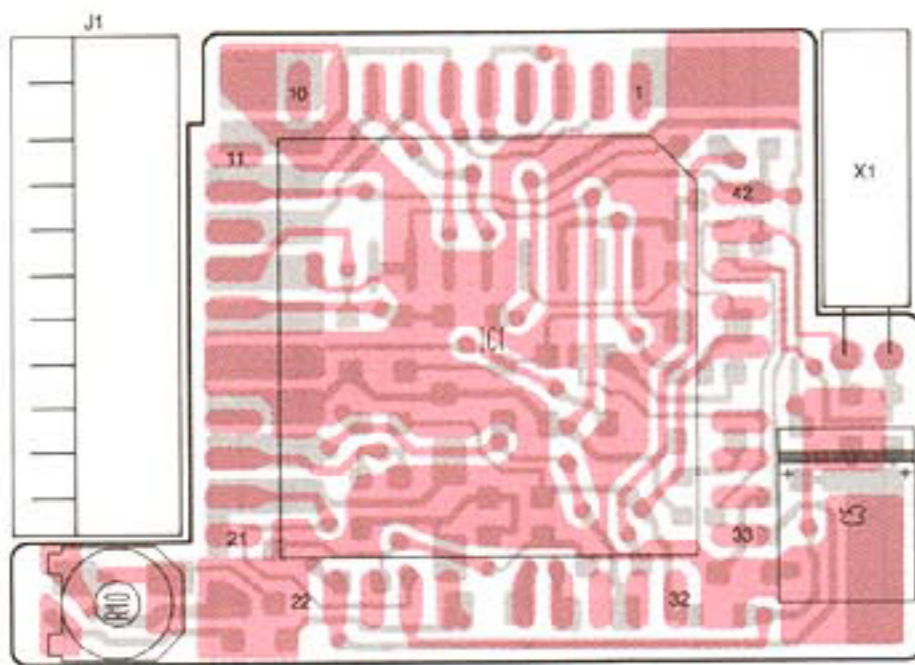
• PTT UNIT



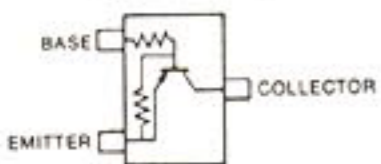
• LED UNIT



• T. SQL UNIT (IC-H11 #09, #16; IC-U11 #03, #04, #05, #09 only)

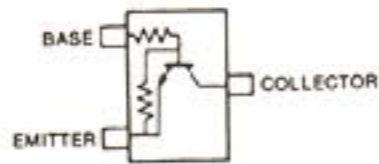


DTA144EU
(Symbol: 16)



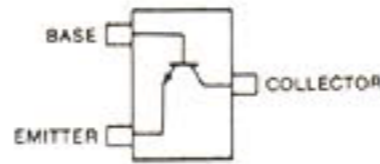
Q1, Q2

DTC144EU
(Symbol: 26)



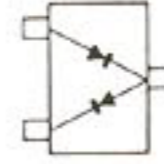
Q3

2SC4081 R
(Symbol: BR)



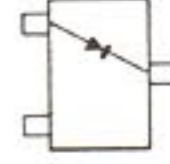
Q4

DA204U
(Symbol: K)



D1

1SS193
(Symbol: F3)

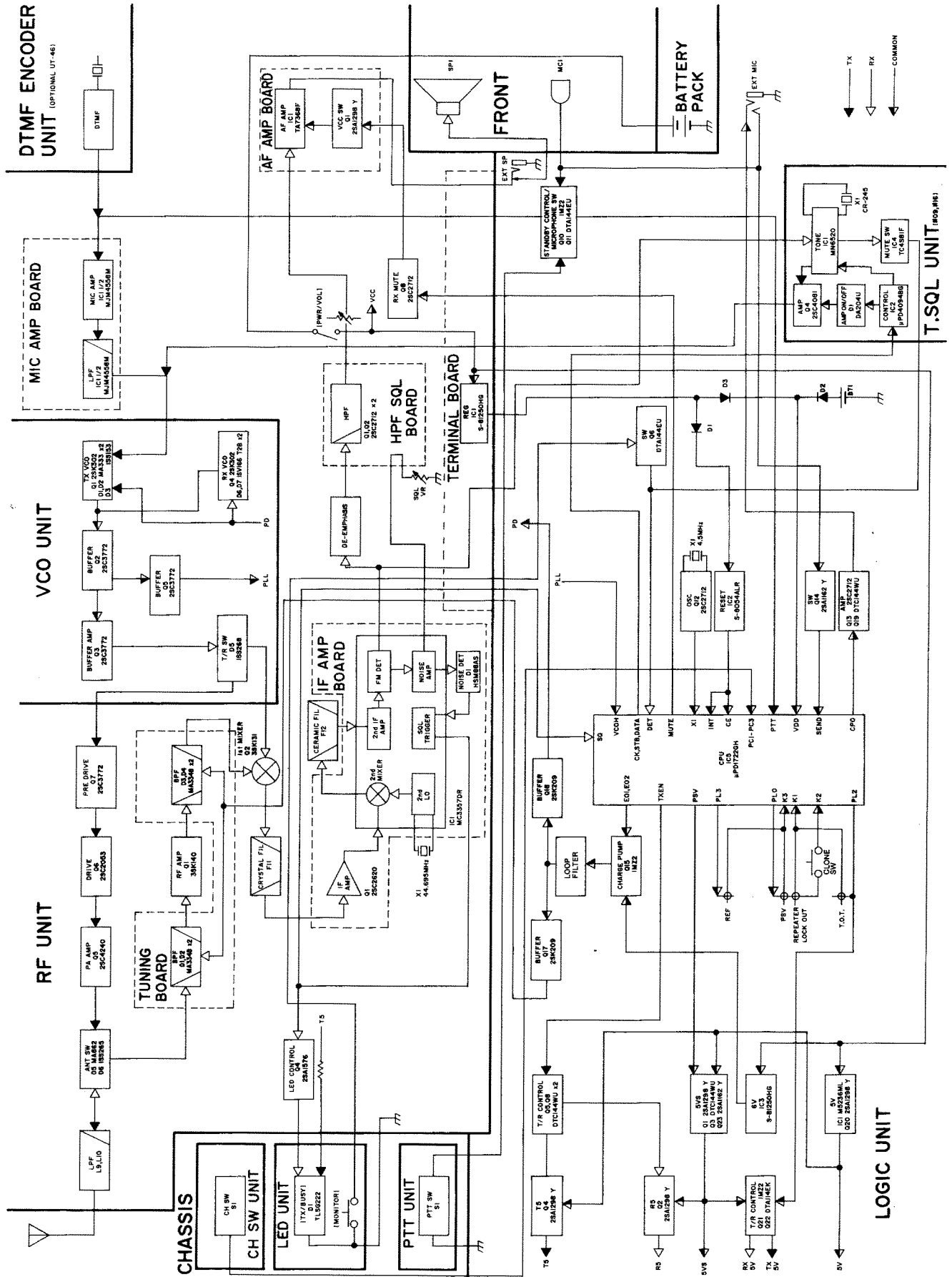


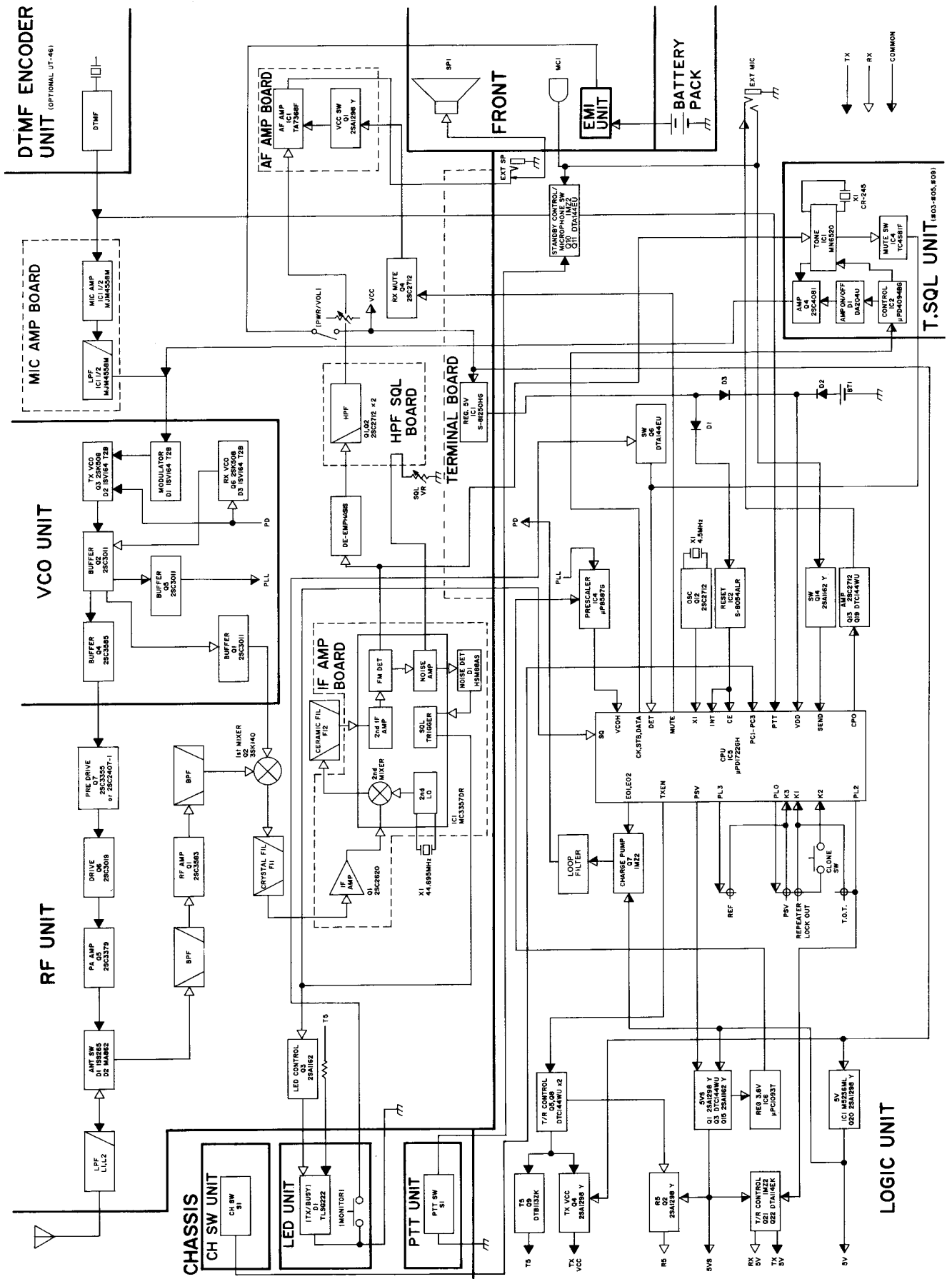
D2

SECTION 8 BLOCK DIAGRAMS

8-1 IC-H11

IC-H11



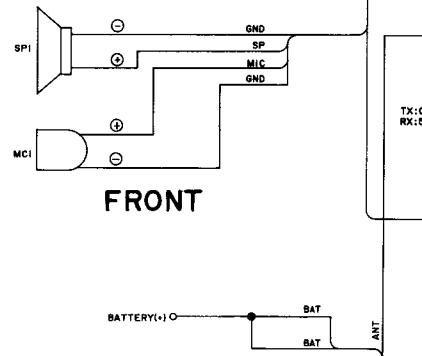
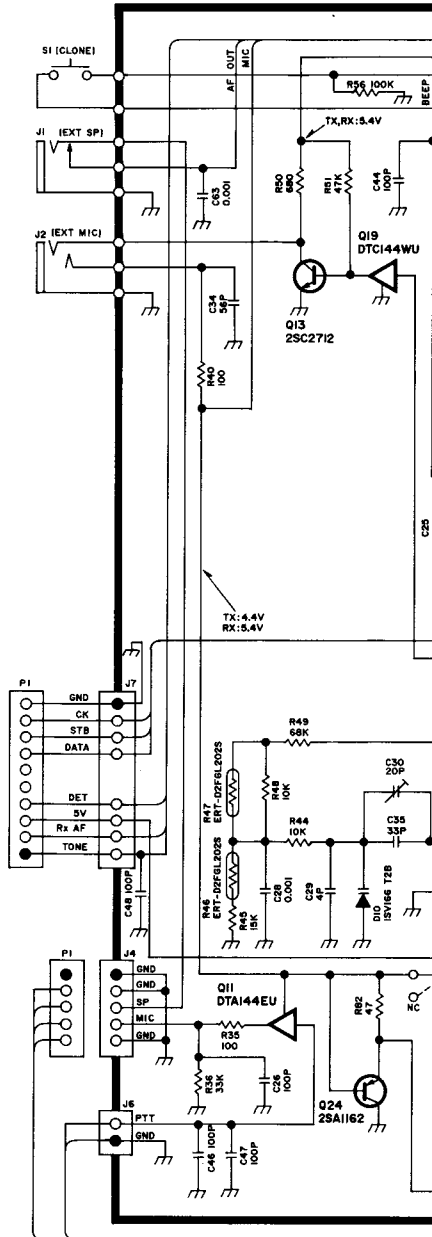
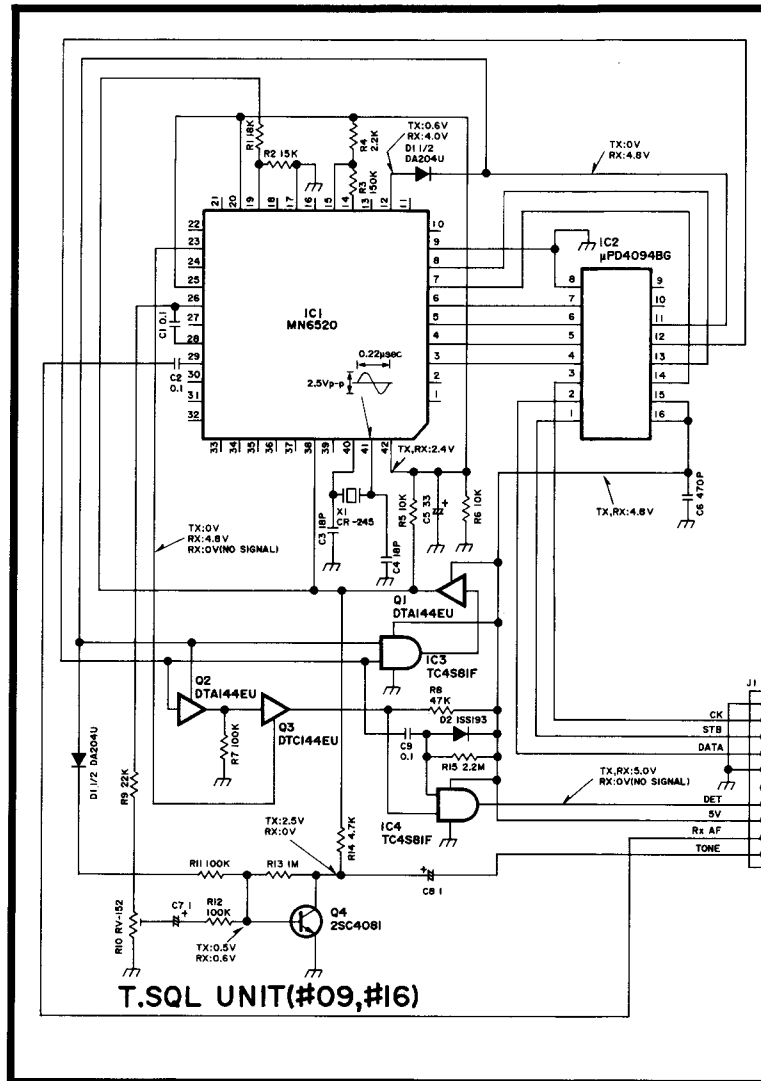


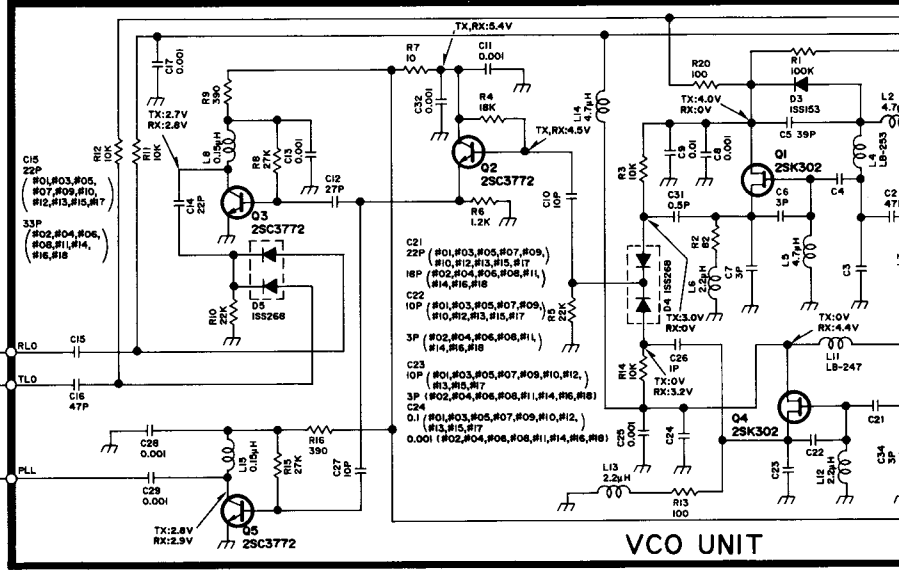
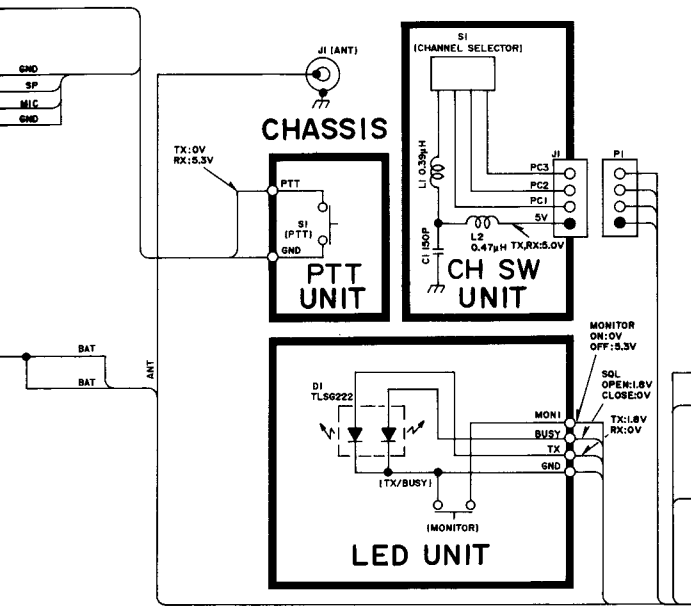
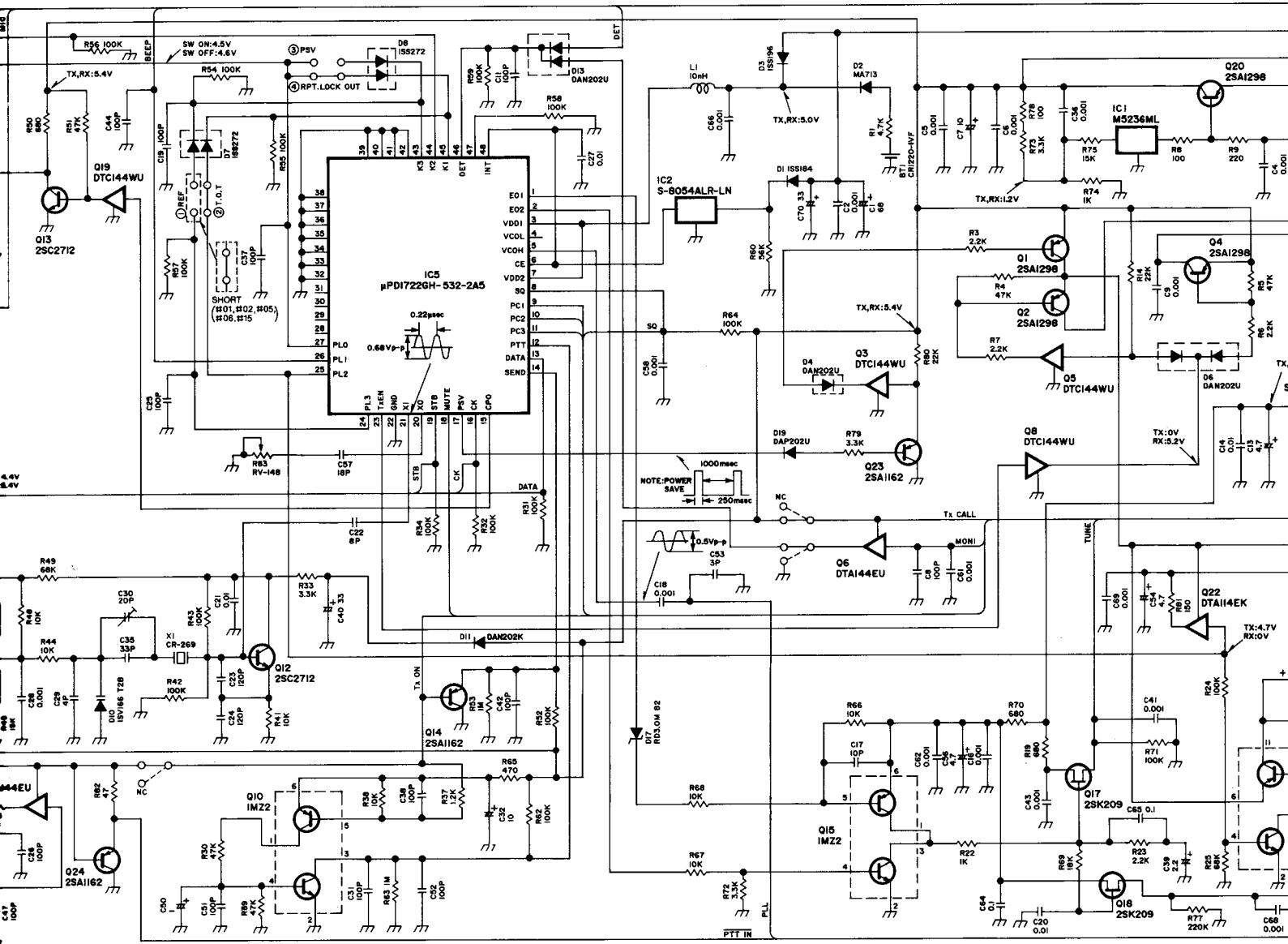
IC-U11

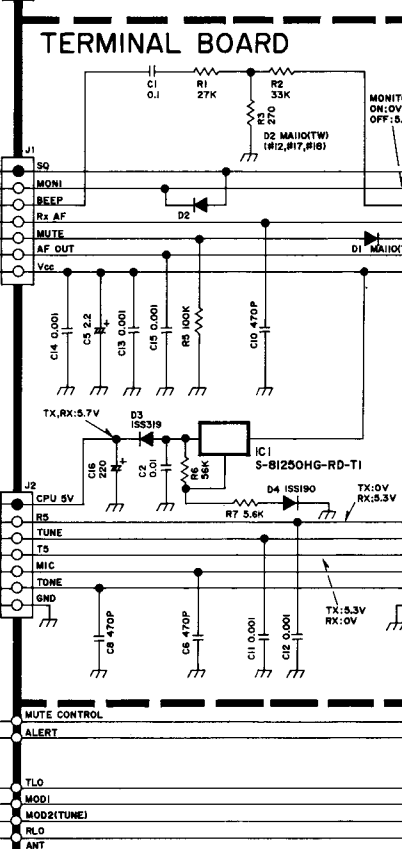
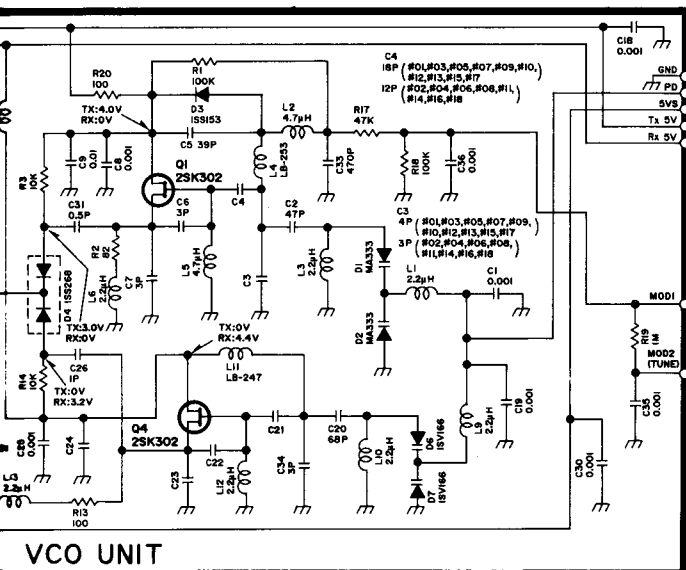
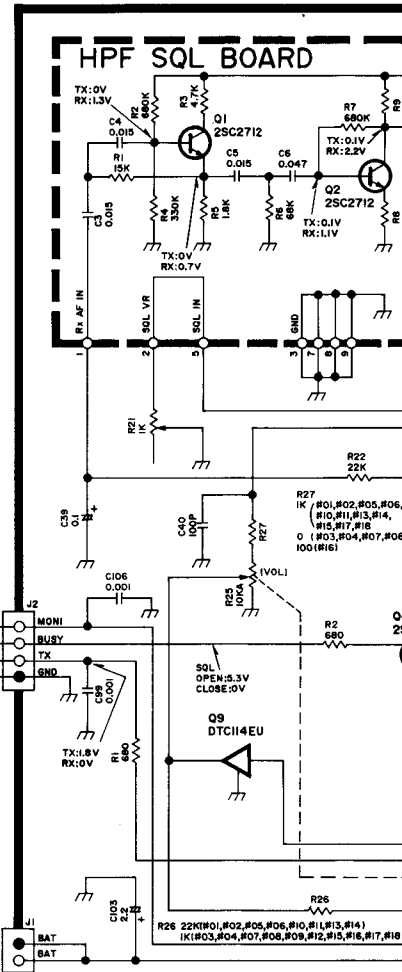
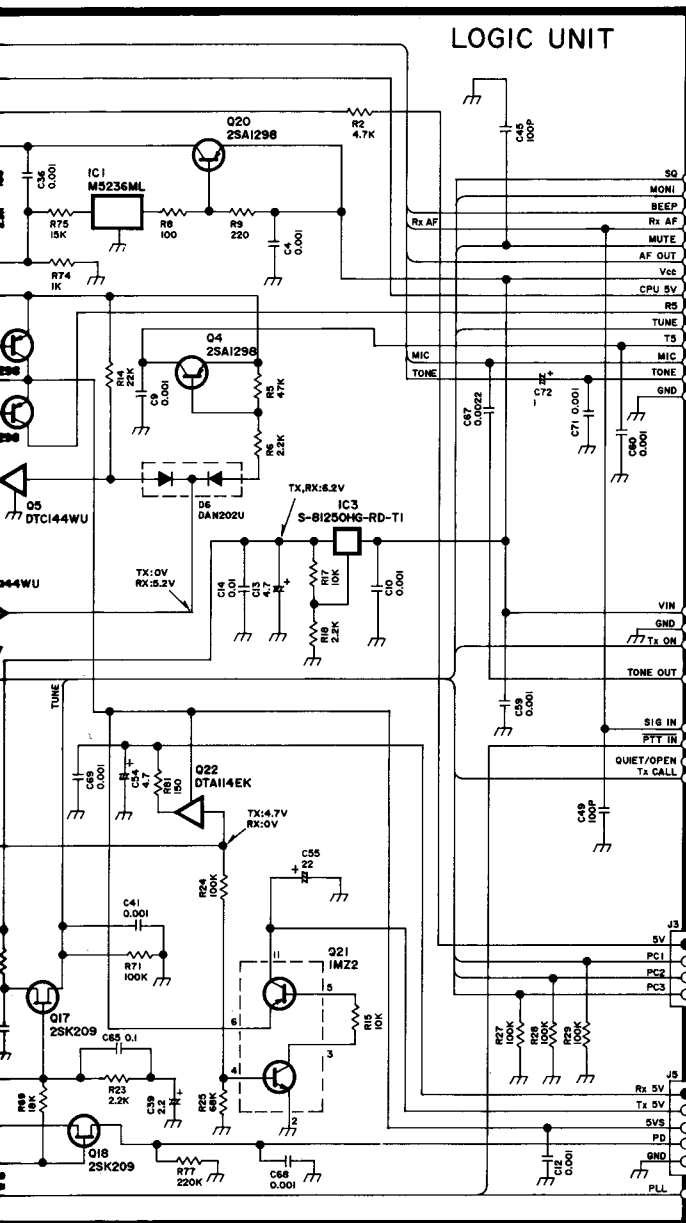
SECTION 9

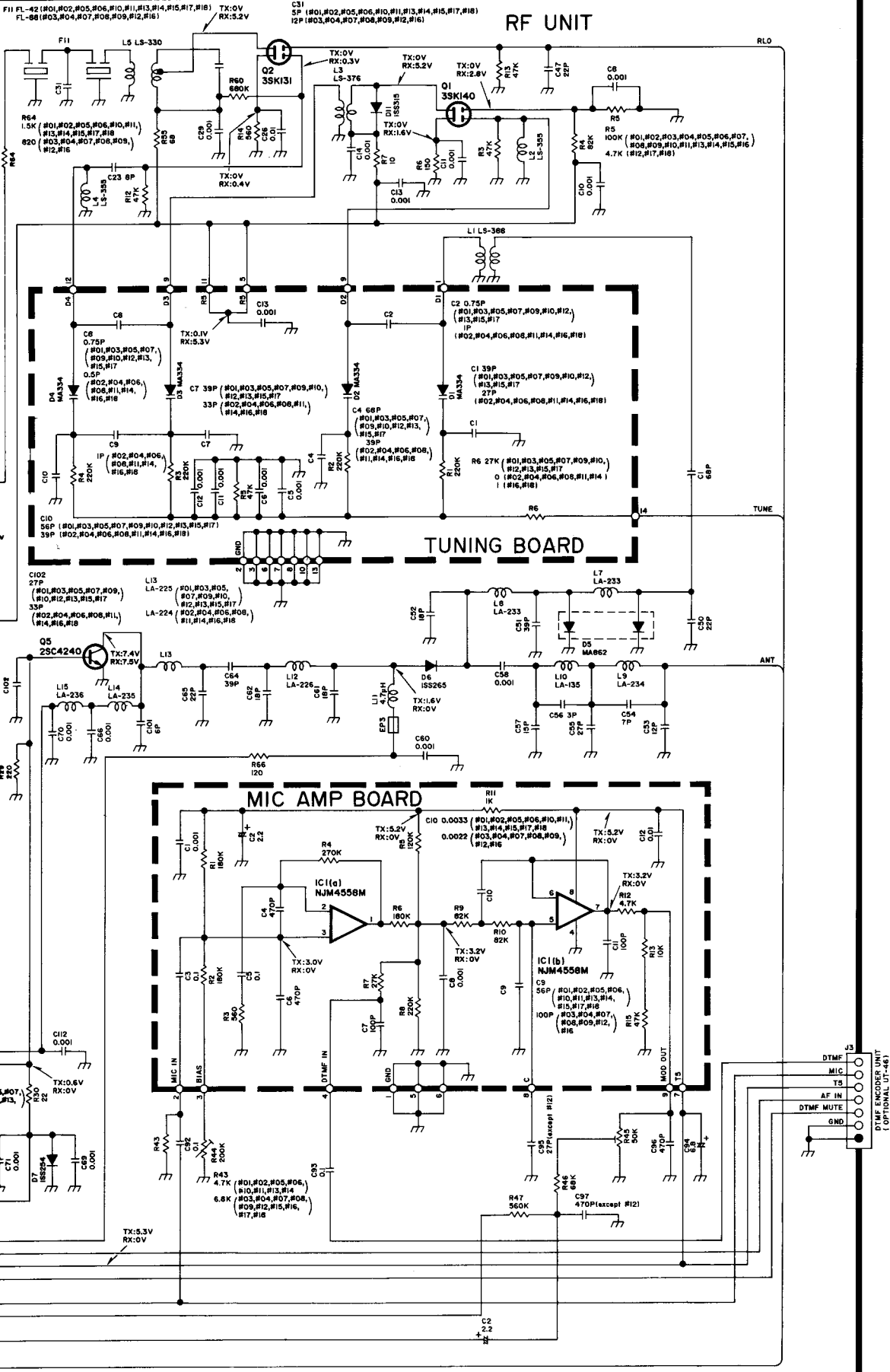
VOLTAGE DIAGRAMS

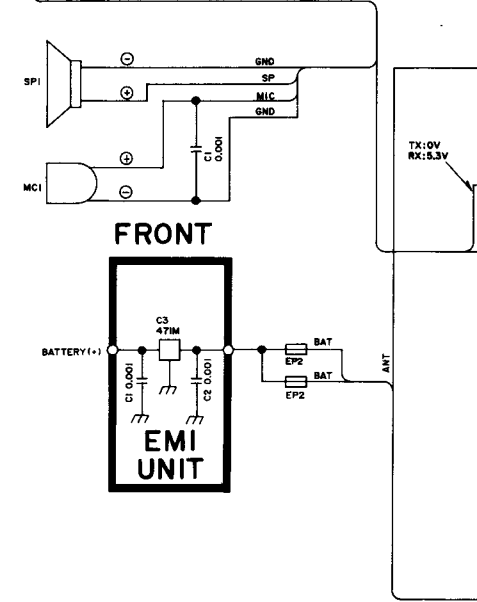
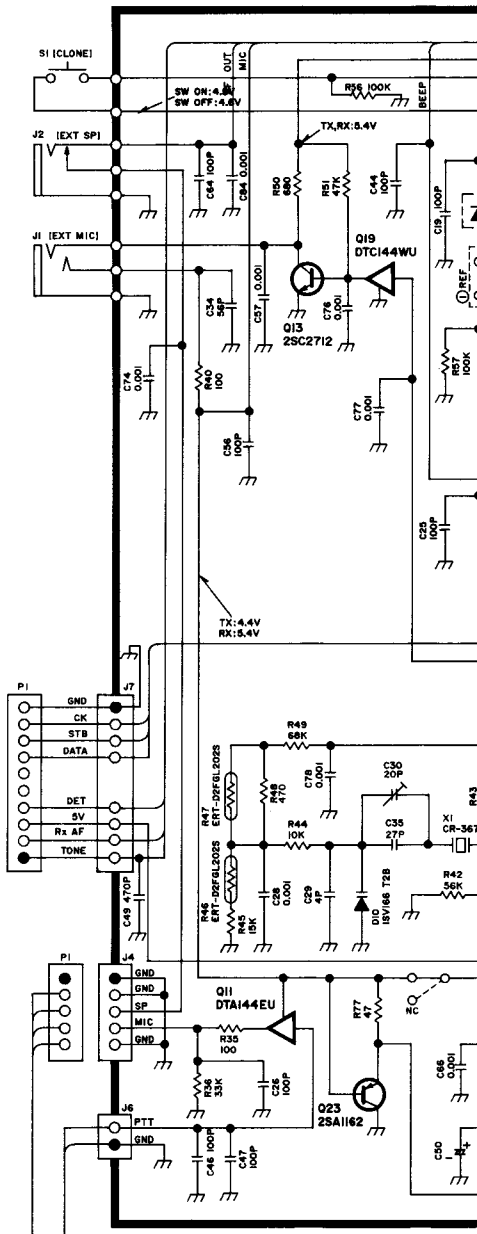
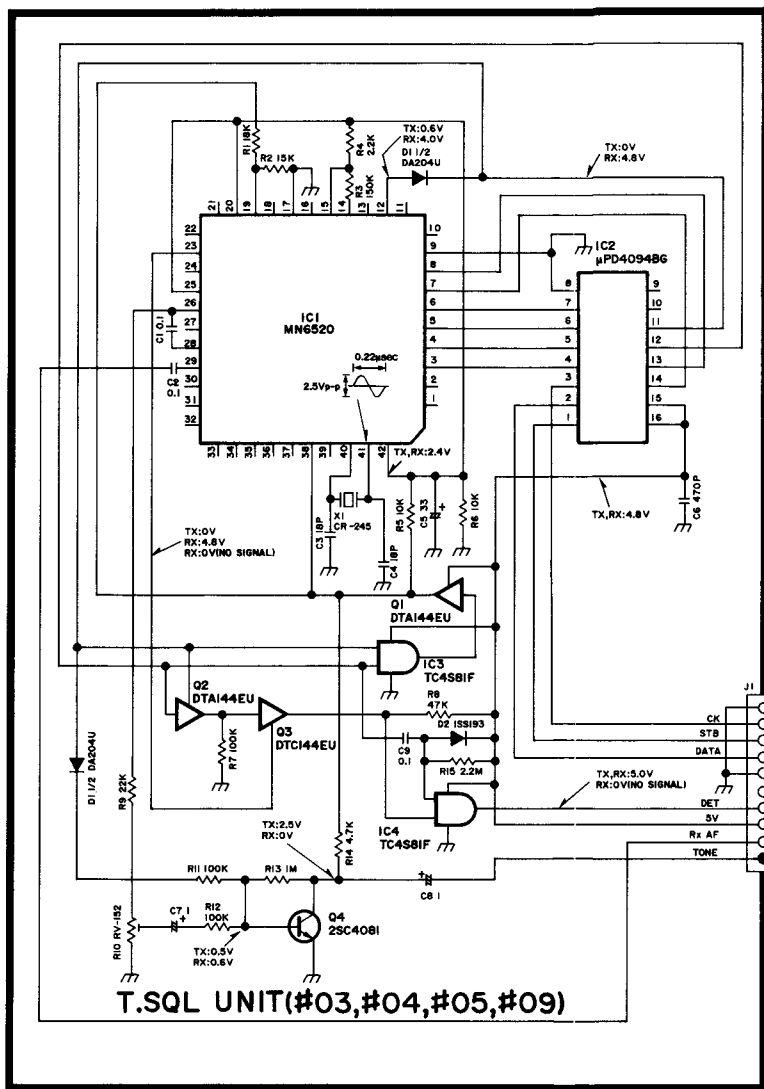
9-1 IC-H11

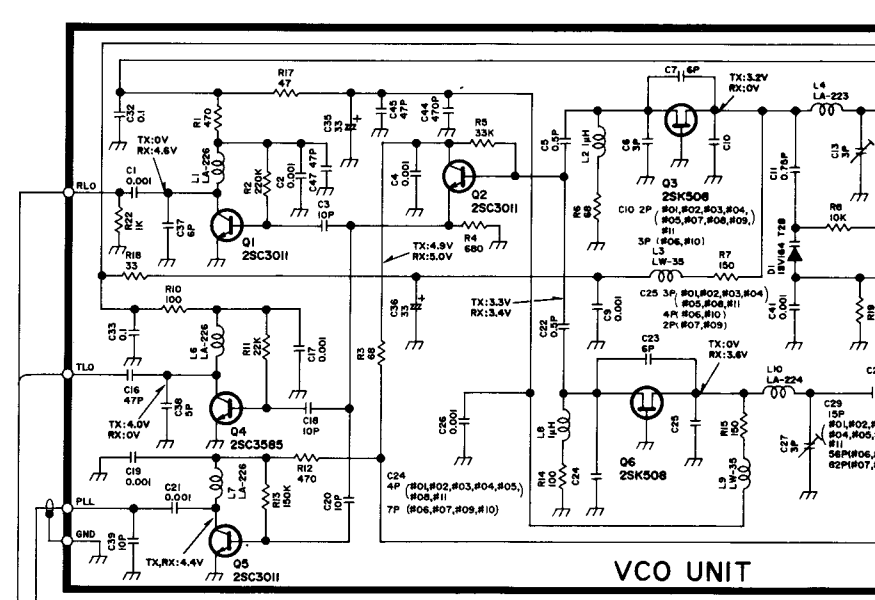
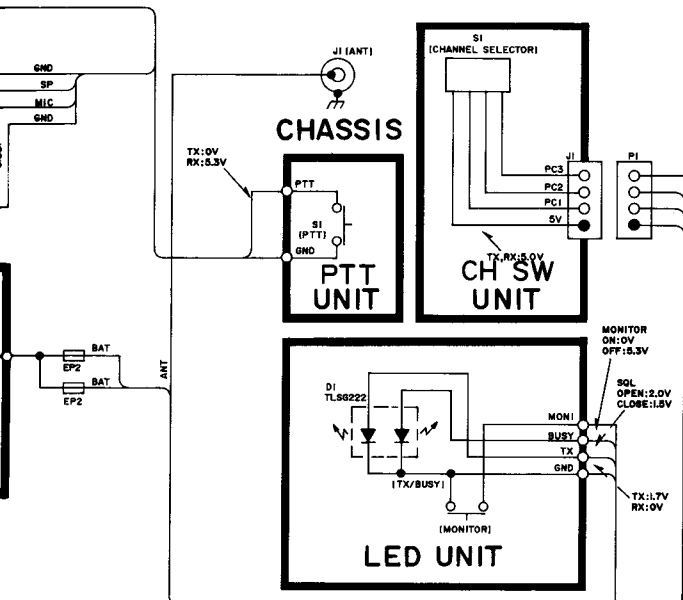
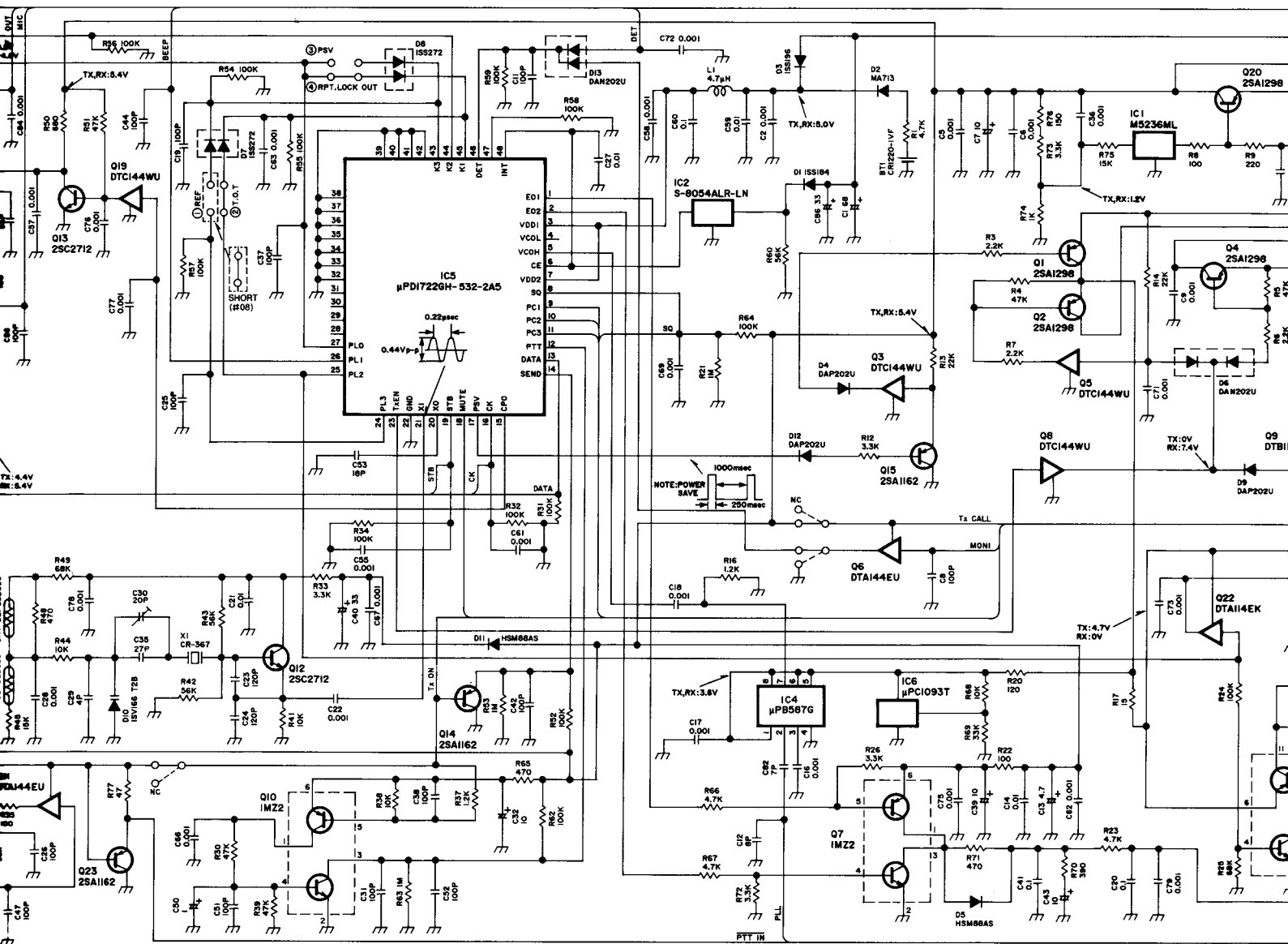


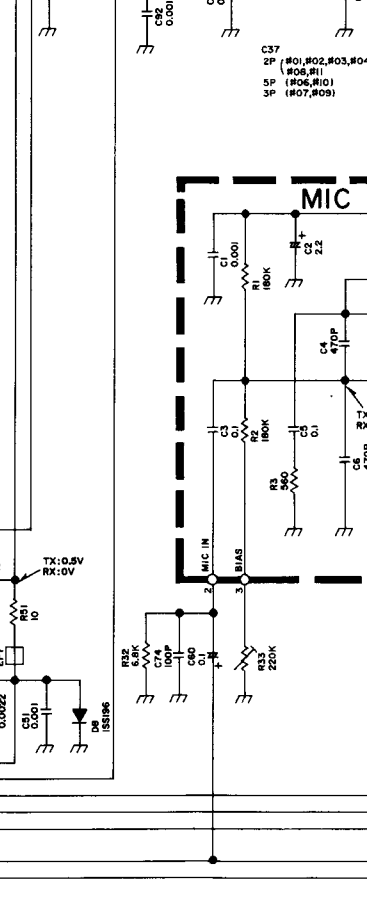
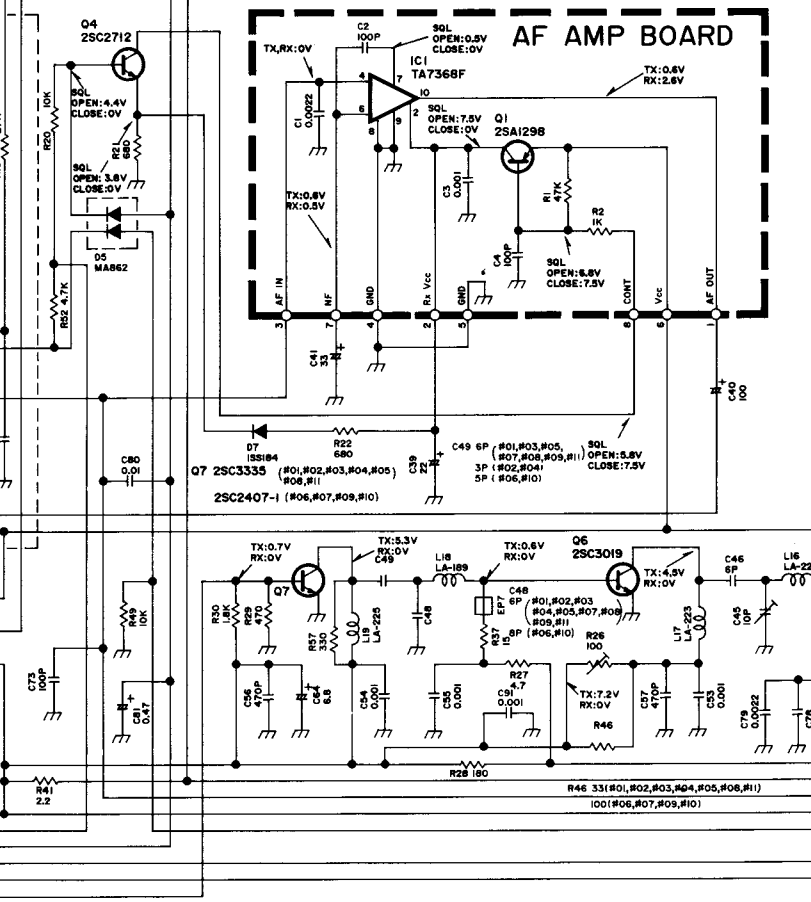
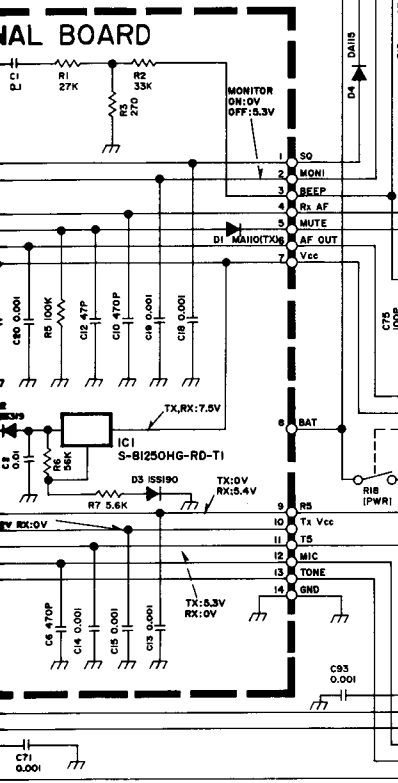
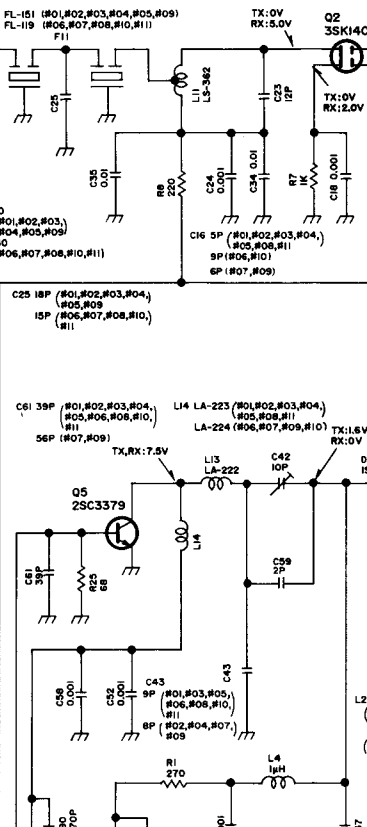
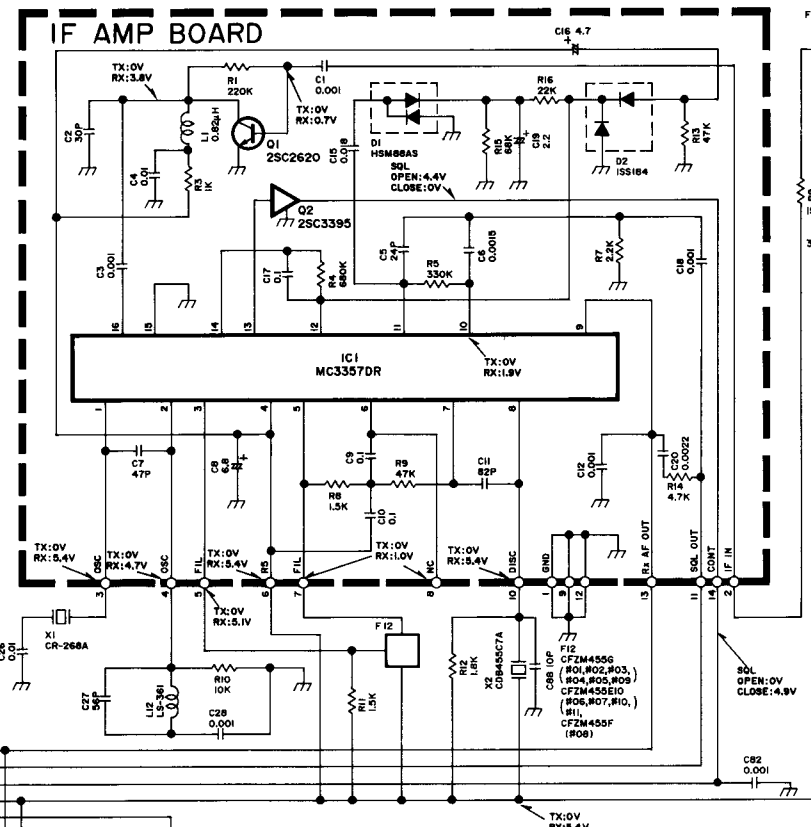
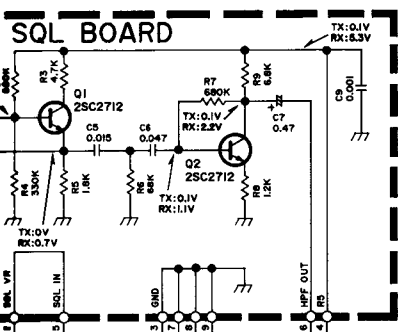


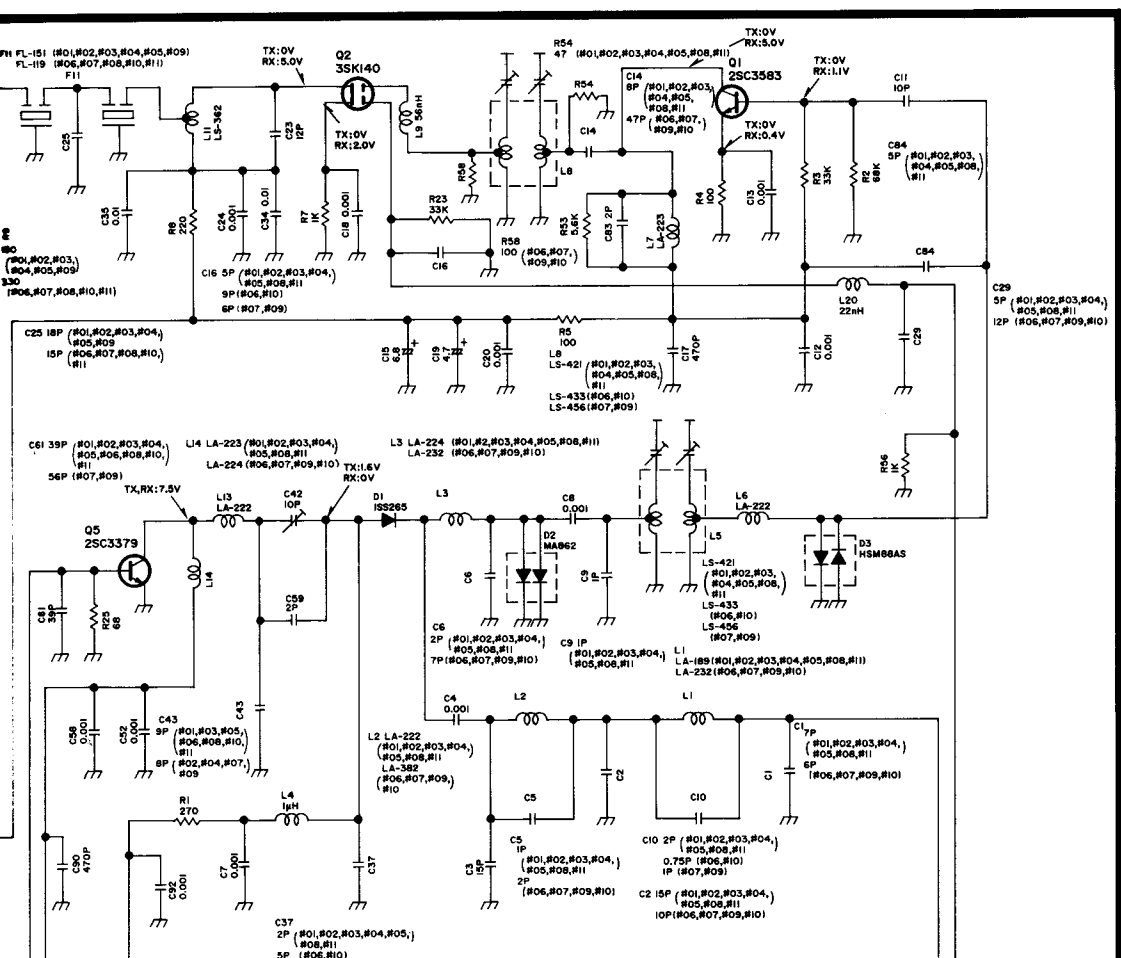




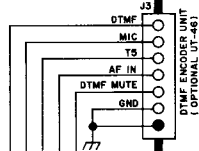
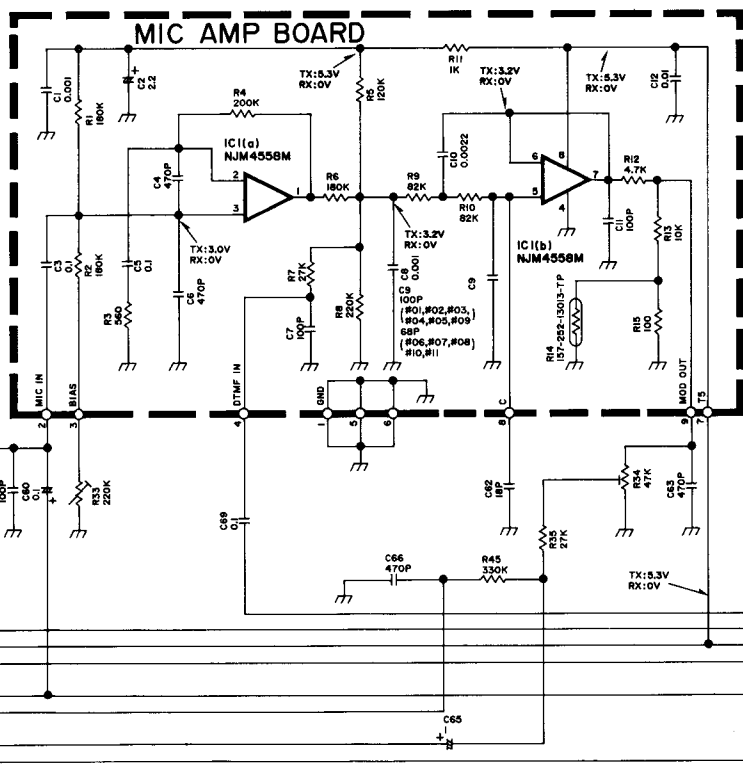








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