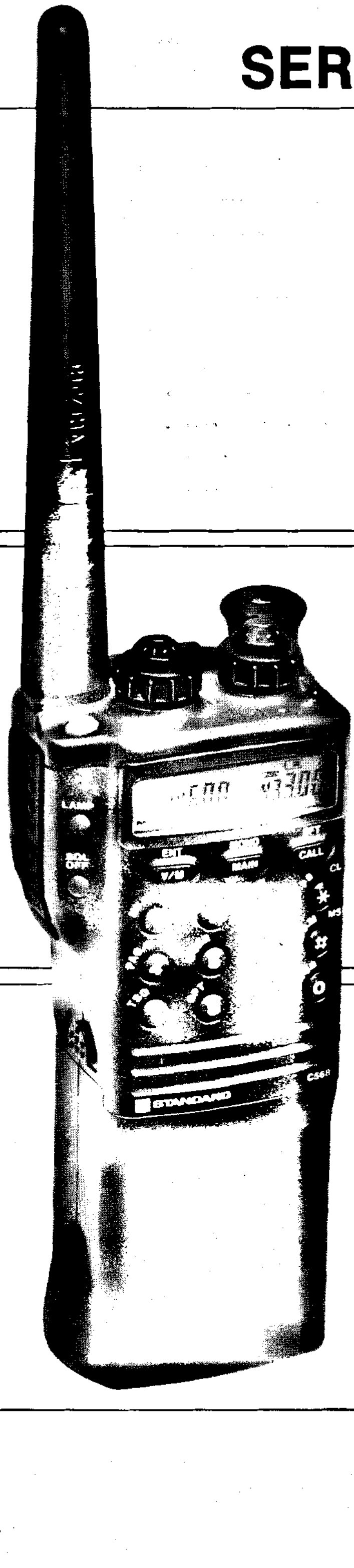
STANDARD

Twin-Band FM Transceiver

C568/C568S/C568A

SERVICE MANUAL



CONTENTS

1. INTRODUCTION 2
2. CONTROLS AND CONNECTIONS 3
3. THEORY OF OPERATION 5
   - 3.1 PLL Block 5
   - 3.2 Receiver Block 13
   - 3.3 Transmitter Block 20
   - 3.4 Control Block 23
   - 3.5 Power Supply Block 30
4. DISASSEMBLY AND INSTALLATION OF OPTIONS 33
   - 4.1 Transceiver Disassembly 33
   - 4.2 Installation of Options 37
5. ADJUSTMENT 39
   - 5.1 Adjustment Connection Diagram 39
   - 5.2 Adjustment Reference Points 40
   - 5.3 Adjustment Procedure and Confirmation Procedure 42
     - 5.3.1 Power Supply Block 42
     - 5.3.2 PLL Block 42
     - 5.3.3 Receiver Block 43
     - 5.3.4 Transmitter Block 45
6. SPECIFICATIONS 48
   - 6.1 General 48
   - 6.2 Receiver Block 48
   - 6.3 Transmitter Block 49
   - 6.4 DTMF 49
   - 6.5 Tone Squelch Unit (CTN560) 49
7. PARTS LIST 50
8. EXPLODED PARTS VIEW 66
9. PACKING DIAGRAM AND PARTS LIST 67
10. BLOCK DIAGRAM 70
11. COMPREHENSIVE WIRING DIAGRAM 71
12. SCHEMATIC DIAGRAM AND COMPONENT OVERLAY 72

1. INTRODUCTION

Overview of Transceiver

- This service manual is for use with the C568, C568S, and C568A transceivers.
- Information specific to the C568 is designated with the indication [C568].
- Information specific to the C568S is designated with the indication [C568S].
- Information specific to the C568A is designated with the indication [C568A].
- This product is a twin-band transceiver with transmission and reception functions for the 144 MHz and 430 MHz bands.
- It is also equipped with transmission and reception functions for the 1,200 MHz band (transmission output power: approximately 35 mW).

Accessories and Options

- The accessories and options for the transceiver are listed below.
- The transceiver already has a memory unit (4 kbit) installed.
- The C568A already has a tone squelch unit (CTN560) installed.
- Options marked with an asterisk (*) are compatible with the C568A only.

Accessories

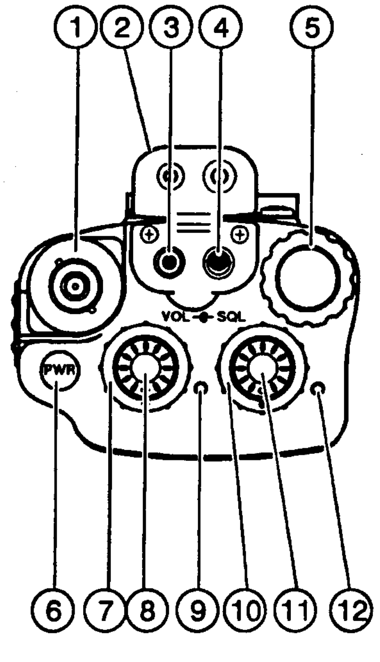
— C568/C568S —
- Antenna
- Owner's Manual
- Block diagram

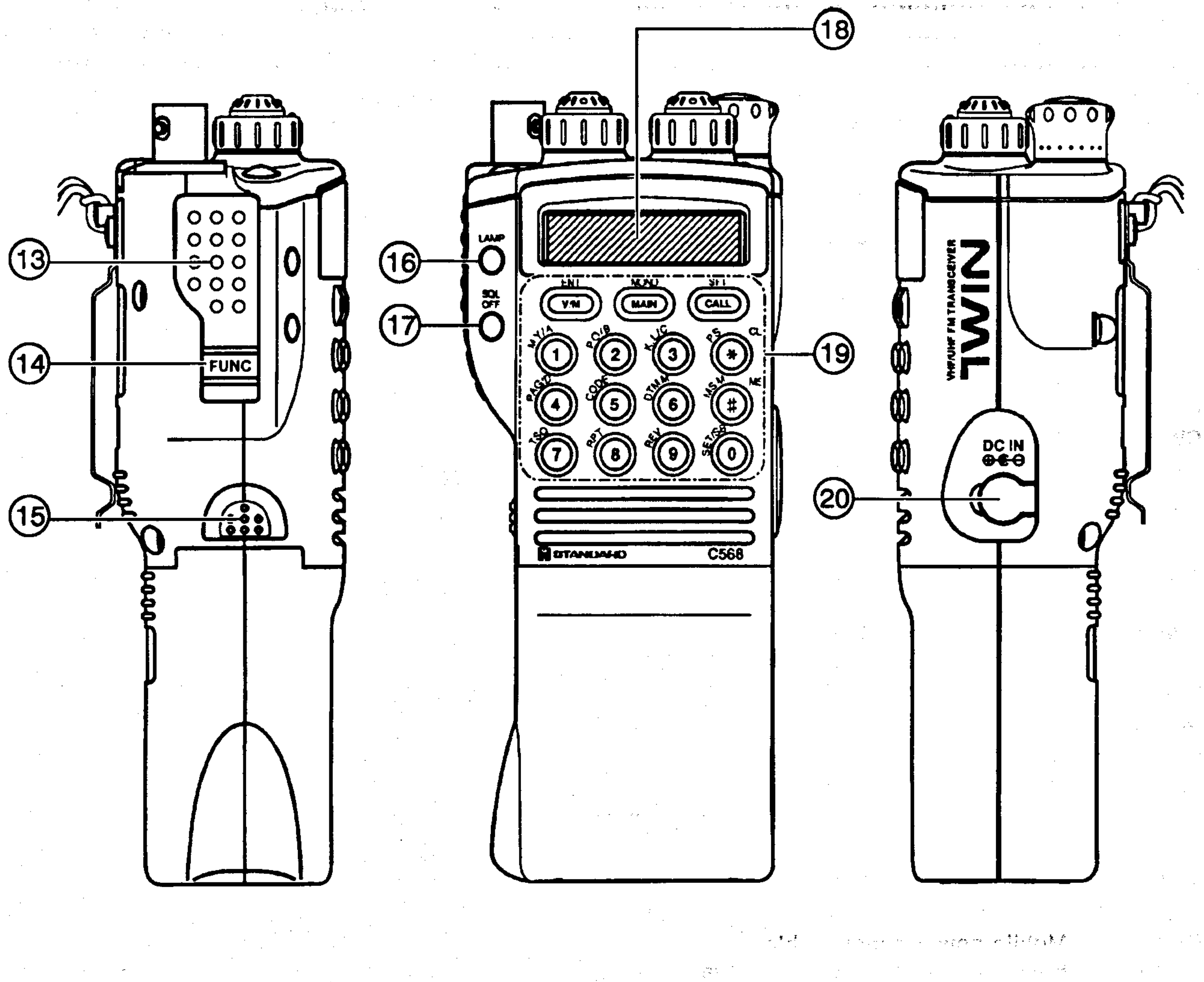
— C568A —
- Antenna
- Owner's Manual
- Warranty card
- Block diagram
- Rechargeable battery pack (CNB171)
- Wall charger (CWC150A)

Options

- Microphones
  CHP111 : Headset with PTT switch
  CHP150 : Headset with VOX function
  CMP111 : Microphone and speaker
  CMP113 : Tiepin microphone
  CMP115 : Compact microphone and speaker
- Chargers
  CSA181E : Desktop charger (input voltage: 220 V AC)
  *CSA181A : Desktop charger (input voltage: 120 V AC)
  CWC115E : AC charger (input voltage: 220 V AC)
  *CWC115A : AC charger (input voltage: 120 V AC)
  CWC150E : Wall charger for CNB171/CNB173 (input voltage: 220 V AC)
  *CWC150A : Wall charger for CNB171/CNB173 (input voltage: 120 V AC)
  CWC151E : Wall charger for CNB172 (input voltage: 220 V AC)
  *CWC151A : Wall charger for CNB172 (input voltage: 120 V AC)
  CMC150 : Mobile charger for CNB171/CNB173
- Rechargeable battery packs
  CNB171 : (7.2 V, 700 mAh)
  CNB172 : (12.0 V,600 mAh)
  CNB173 : (7.2 V,1,100 mAh)
- Battery case for AA size
  CBT171 : Battery case (holds 6 AA batteries)
- Cables
  CAW150 : Mobile power supply cable
  CAW151 : Base station power supply cable
  CAW152 : Mobile power supply cable (with noise filter)
- Mobile bracket
  CMB112 : Mobile bracket
- Cases
  CLC560 : Soft case (For transceiver with CBT171/CNB171 mounted)
  CLC561 : Soft case (For transceiver with CNB172/CNB173 mounted)
  CLC562 : Hard case
  CLC555 : Handy pocket
- Cover/clip
  CAX03 : Bottom cover
  CMB600 : Helmet clip (for CHP150)
- Tone squelch unit
  CTN560 : CTCSS unit
- Memory units
  CMU160 : Memory unit (40-channel)
  CMU161 : Memory unit (200-channel)

2. CONTROLS AND CONNECTIONS





① Antenna Connector Socket (BNC)

② Waterproof Cap
Always close this cap when the external microphone socket and external speaker socket are not in use.

③ MIC
External microphone socket

④ SPK
External speaker socket

⑤ Rotary Channel Selector
This knob is for setting the frequency. The rotary channel selector is also used to make various mode settings.

⑥ PWR (power key)
Press this key to supply power to the transceiver.

⑦ VOL (volume control for left display band)
This knob is the volume control for the left display band. Turn clockwise to increase the volume.

⑧ SQL (squelch control for left display band)
This knob is the squelch control for the left display band.

⑨ TX/BUSY (for left display band)
This LED lights green when the SQL OFF key is pressed for the left display band or when a signal is received. It lights red when the PTT switch is pressed for the left display band.

⑩ VOL (volume control for right display band)
This knob is the volume control for the right display band. Turn clockwise to increase the volume.

⑪ SQL (squelch control for right display band)
This knob is the squelch control for the right display band.

⑫ TX/BUSY (for right display band)
This LED lights green when the SQL OFF key is pressed for the right display band or when a signal is received. It lights red when the PTT switch is pressed for the right display band.

⑬ PTT (PTT switch)
The transceiver switches to the transmit mode for as long as this switch is held down.

⑭ FUNC (function key)
The transceiver switches to the function mode for as long as this switch is held down. This mode is used to make a variety of special function settings.

⑮ Battery Lock Button

⑯ LAMP (lamp key)
Pressing this key causes the display illumination lamp to light for approximately five seconds.
Pressing this key with the function key held down causes the display illumination lamp to light continuously.

⑰ SQL OFF (squelch off key)
Squelch is disabled for the main band for as long as this key is held down.
Pressing this key with the function key held down disables squelch for the sub-band.
Also, pressing the squelch off key during transmission on the main band disables squelch for the sub-band.

⑱ Display

⑲ Keyboard

⑳ DC IN (external power supply connector socket)
Make sure the transceiver is switched off before inserting or removing an external power supply plug. The power supply range when an external power supply is used is DC 5.0 V - DC 16.0 V.

3. THEORY OF OPERATION

The circuitry of the transceiver can be divided roughly into four blocks: the RF-UHF circuit block, the RF-VHF circuit block, the AF circuit block, and the control circuit block. Also, the RF circuitry for the right display bands (UHF band, 1.2 GHz band, and VHF band) and the left display bands (VHF band and UHF band) is composed of an separate P.C. board.

3.1 PLL Block

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

The UHF band PLL block comprises UHF-VCO P.C. board P702, VHF-VCO Q646, crystal oscillator X402, PLL IC Q653, and a PLL loop filter. UHF-VCO P.C. board P702 is composed of a UHF VCO circuit and a 1.2 GHz VCO circuit. UHF band VCO output and 1.2 GHz band VCO output are obtained from UHF-VCO P.C. board P702. Also, VHF band VCO output is obtained from VHF-VCO Q646. Based on the operating frequency set using the rotary channel selector, clock, serial, and strobe signals are output from pins 17, 19, and 18 of microprocessor Q209. This output data is input to pins 11, 13, and 14 of PLL IC Q653. Based on the input data, the dividing ratio and frequency are determined internally by PLL IC Q653.

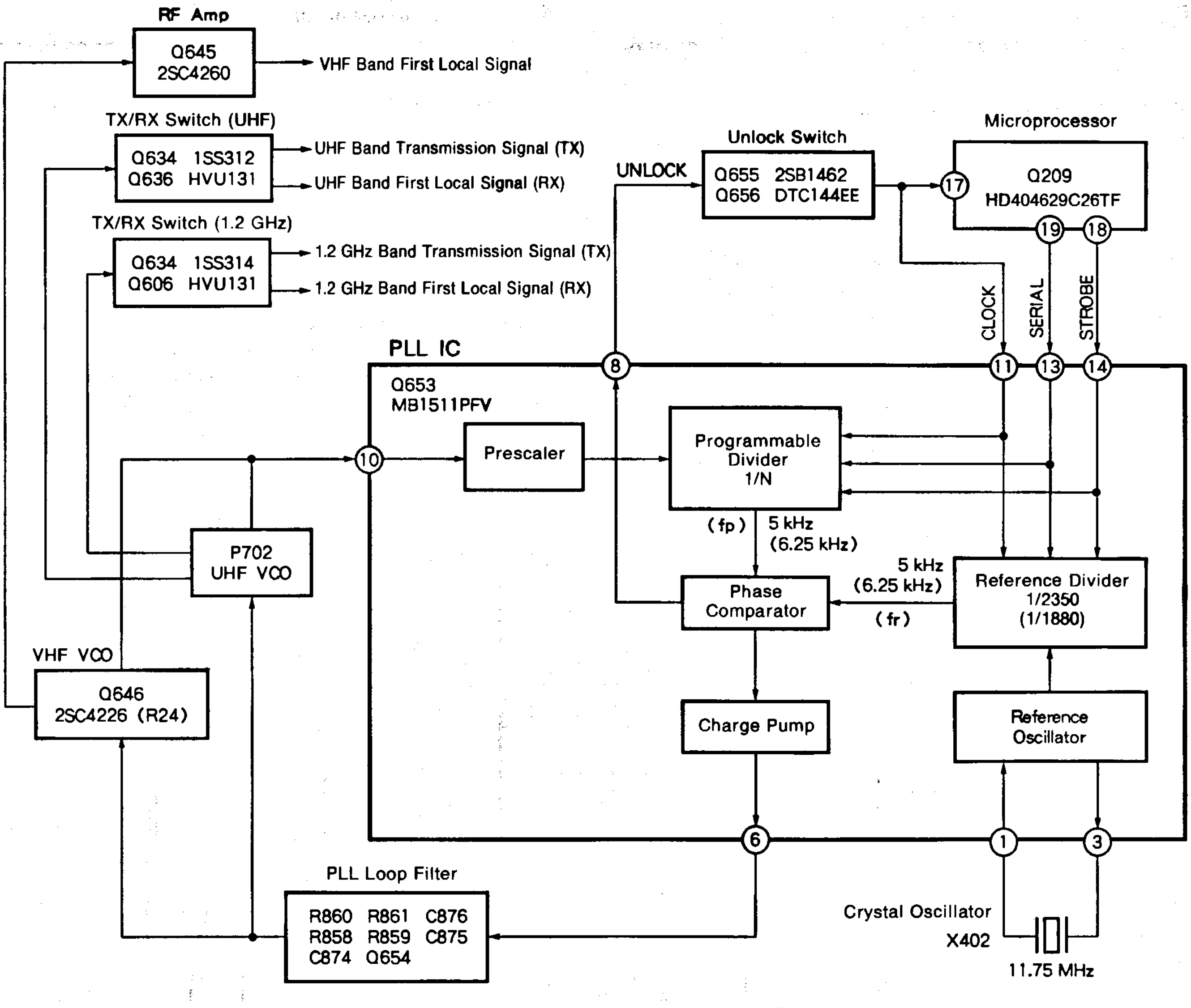


Figure 3-1 Right Display Band PLL Block Diagram

— If the transceiver's left display band is the VHF band or UHF band —

The VHF band PLL block comprises VHF-VCO P.C. board P701, crystal oscillator X402, PLL IC Q445, and a PLL loop filter. VHF-VCO P.C. board P701 is composed of a VHF VCO circuit and a UHF VCO circuit. VHF band VCO output and UHF band VCO output are obtained from VHF-VCO P.C. board P701. Based on the operating frequency set using the rotary channel selector, clock, serial data and strobe signals are output from pins 20, 19, and 21 of microprocessor Q209. This output data is input to pins 11, 13, and 14 of PLL IC Q445. Based on the input data, the dividing ratio and frequency are determined internally by PLL IC Q445.

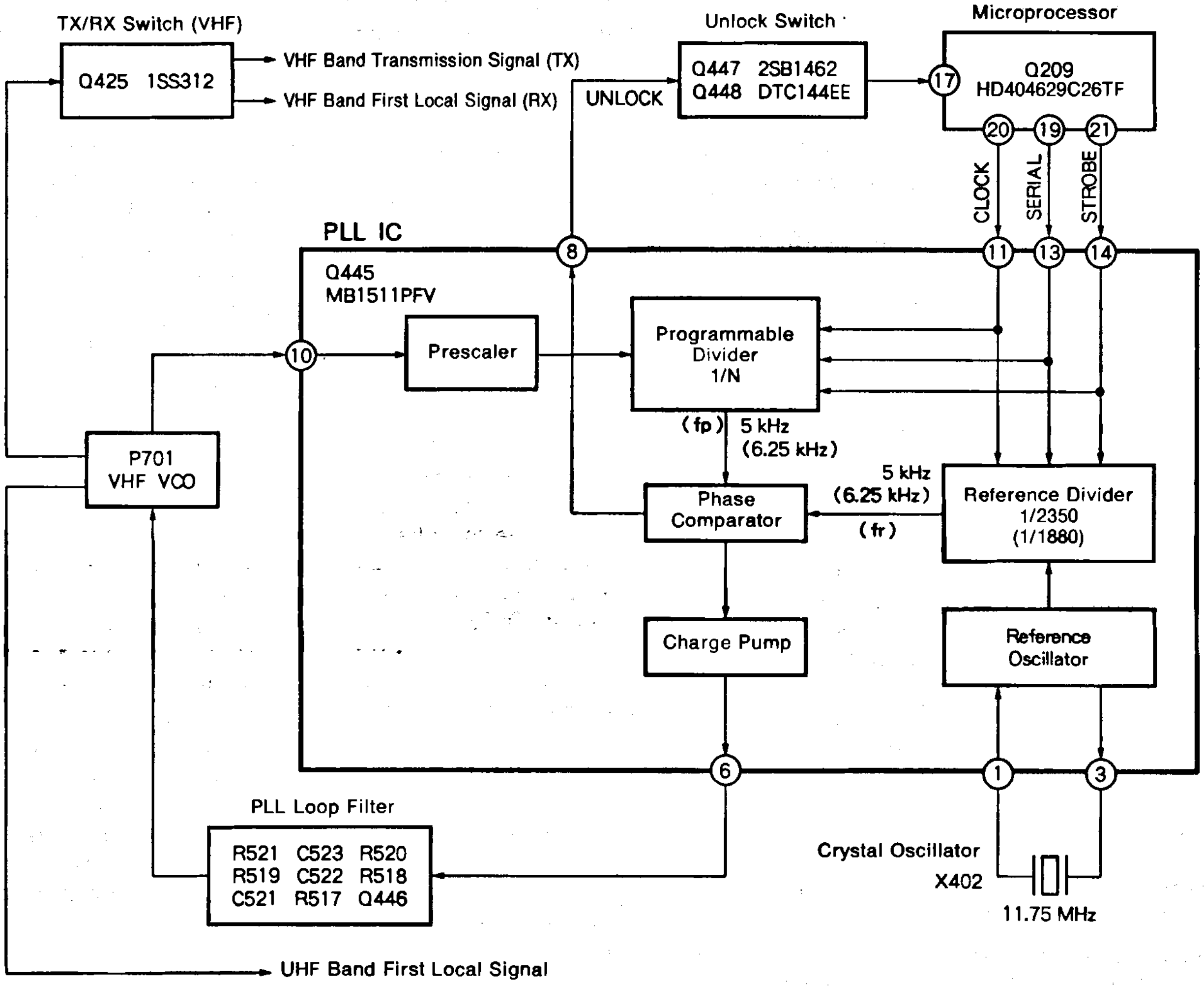


Figure 3-2 Left Display Band PLL Block Diagram

3.1.1 Programmable Divider

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

The programmable divider consists of a 19-bit shift register, 18-bit latch, 7-bit swallow counter, and an 11-bit programmable counter. The oscillation frequencies from UHF-VCO P.C. board P702 and VHF-VCO Q646 pass through diode Q652 and are input to PLL IC Q653 pin 10. The input oscillation frequency passes through a prescaler built into the PLL IC and is input to the programmable divider. Also, data based on the operating frequency is input to the programmable divider from microprocessor Q209. Based on the data from microprocessor Q209, the programmable divider frequency divides the oscillation frequency to 1/N to produce a comparison frequency (fp) of 5 kHz or 6.25 kHz. This comparison frequency (fp) is then input to the phase comparator built into the PLL IC.

— If the transceiver's left display band is the VHF band or UHF band —

The programmable divider consists of a 19-bit shift register, 18-bit latch, 7-bit swallow counter, and an 11-bit programmable counter. The oscillation frequency from VHF-VCO P.C. board P701 passes through pin 10 of PLL IC Q445 and is input to a prescaler built into the PLL IC. After passing through the prescaler, the oscillation frequency is input to the programmable divider. Also, data based on the operating frequency is input to the programmable divider from microprocessor Q209. Based on the data from microprocessor Q209, the programmable divider frequency divides the oscillation frequency to 1/N to produce a comparison frequency (fp) of 5 kHz or 6.25 kHz. This comparison frequency (fp) is then input to the phase comparator built into the PLL IC.

3.1.2 Reference Divider

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

The reference divider is a circuit that creates a reference frequency (fr) of 5 kHz or 6.25 kHz based on data from microprocessor Q209. The reference divider consists of a 16-bit shift register, 15-bit latch, and a binary 14-bit reference counter. The 11.75 MHz reference oscillation frequency from crystal oscillator X402 passes through pin 1 of PLL IC Q653 and is input to the reference divider built into the PLL IC. At this point, if the tuning step setting is 5, 10, 15, 20, 25, 30, or 50 kHz, the 11.75 MHz oscillation frequency is frequency divided to 1/2,350 to produce a reference frequency of 5 kHz. If the tuning step setting is 6.25, 12.5 or 25 kHz, the 11.75 MHz oscillation frequency is frequency divided to 1/1,880 to produce a reference frequency of 6.25 kHz. The frequency divided reference frequency (fr) is then input to the phase comparator built into PLL IC Q653.

— If the transceiver's left display band is the VHF band or UHF band —

The reference divider is a circuit that creates a reference frequency (fr) of 5 kHz or 6.25 kHz based on data from microprocessor Q209. The reference divider consists of a 16-bit shift register, 15-bit latch, and a binary 14-bit reference counter. The 11.75 MHz reference oscillation frequency from crystal oscillator X402 passes through pin 1 of PLL IC Q445 and is input to the reference divider built into the PLL IC. At this point, if the tuning step setting is 5, 10, 15, 20, 25, 30, or 50 kHz, the 11.75 MHz oscillation frequency is frequency divided to 1/2,350 to produce a reference frequency of 5 kHz. If the tuning step setting is 6.25, 12.5 or 25 kHz, the 11.75 MHz oscillation frequency is frequency divided to 1/1,880 to produce a reference frequency of 6.25 kHz. The frequency divided reference frequency (fr) is then input to the phase comparator built into PLL IC Q445.

3.1.3 Phase Comparator

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

The phase comparator built into PLL IC Q653 compares the frequency divided comparison frequency (fp) from the programmable divider and the frequency divided reference frequency (fr) from the reference divider to determine the phase difference. The phase comparator outputs this phase difference as a square wave. This square wave is input to the charge pump built into PLL IC Q653.

— If the transceiver's left display band is the VHF band or UHF band —

The phase comparator built into PLL IC Q445 compares the frequency divided comparison frequency (fp) from the programmable divider and the frequency divided reference frequency (fr) from the reference divider to determine the phase difference. The phase comparator outputs this phase difference as a square wave. This square wave is input to the charge pump built into PLL IC Q445.

3.1.4 Charge Pump

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

The square wave output from the phase comparator built into PLL IC Q653 passes through the charge pump and is output from pin 6 of PLL IC Q653. (See Table 3-1 regarding the square wave level.) The charge pump is used to charge and discharge the electrical charge accumulated in the PLL loop filter consisting of R860, R861, C876, R858, R859, C875, and C874.

Table 3-1

Output relationship	Output level of PLL IC Q653 pin 6
fr > fp	High (8 V)
fr = fp	High impedance
fr < fp	Low (0 V)

fr: Reference frequency
fp: Comparison frequency

— If the transceiver's left display band is the VHF band or UHF band —

The square wave output from the phase comparator built into PLL IC Q445 passes through the charge pump and is output from pin 6 of PLL IC Q445. (See Table 3-2 regarding the square wave level.) The charge pump is used to charge and discharge the electrical charge accumulated in the PLL loop filter consisting of R520, C523, R521, R518, C522, R519, C521 and R517.

Table 3-2

Output relationship	Output level of PLL IC Q445 pin 6
fr > fp	High (8 V)
fr = fp	High impedance
fr < fp	Low (0 V)

fr: Reference frequency
fp: Comparison frequency

3.1.5 PLL Loop Filter (Low-Pass Filter)

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

The PLL loop filter consisting of R860, R861, C876, R858, R859, C875, and C874 integrates the square wave output from pin 6 of PLL IC Q653, converting it into a DC voltage (UHF band: 2.3 V - 3.0 V during reception, 3.7 V - 4.4 V during transmission [C568/-C568S], 2.7 V - 3.5 V during reception, 4.2 V - 5.0 V during transmission [C568A]/1.2 GHz band: 1.2 V - 3.1 V during reception, 1.8 V - 4.0 V during transmission-/VHF band: 0.3 V - 0.7 V during reception [C568/-C568A], 0.3 V - 0.5 V during reception [C568S]). The DC voltage produced by the conversion is input to a varicap diode on UHF-VCO P.C. board P702 and VHF band varicap diodes Q647 and Q648.

— If the transceiver's left display band is the VHF band or UHF band —

The PLL loop filter consisting of R520, C523, R521, R518, C522, R519, C521 and R517 integrates the square wave output from pin 6 of PLL IC Q445, converting it into a DC voltage (VHF band: 0.7 V - 1.1 V during reception, 1.4 V - 1.8 V during transmission [C568/-C568A], 0.7 V - 0.9 V during reception, 1.4 V - 1.6 V during transmission [C568S]/UHF band: 2.0 V - 2.4 V during reception [C568/C568S], 2.3 V - 2.7 V during reception [C568A]). The DC voltage produced by the conversion is input to a varicap diode on VHF-VCO P.C. board P701.

3.1.6 VCO Circuit

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

(UHF band/1.2 GHz band)

If the right-hand portion of the transceiver's display shows the UHF band, the UHF VCO circuit built into UHF-VCO P.C. board P702 operates during transmission and reception. The power supply voltage for the UHF VCO circuit on UHF-VCO P.C. board P702 is supplied by 3.2 V regulators Q810 and Q811. Power supply switching is controlled by data from microprocessor Q209.
Power supply switching operation is illustrated in Table 3-3.

Also, if the right-hand portion of the transceiver's display shows the 1.2 GHz band, the 1.2 GHz VCO circuit built into UHF-VCO P.C. board P702 operates during transmission and reception. The power supply voltage for the 1.2 GHz VCO circuit on UHF-VCO P.C. board P702 is supplied by 3.2 V regulators Q810 and Q811.

Right Display Band (UHF Band) VCO Power Supply Operation **Table 3-3**

Transceiver right display band	Shift register IC Q819 pin 6 →	UHF/VHF VCO power switch Q817 (UHF VCO side) →	UHF-VCO P.C. board P702 UHF VCO circuit
UHF band	Low →	On →	3.2 V supplied

Power supply switching is controlled by data from microprocessor Q209.
Power supply switching operation is illustrated in Table 3-4.

The DC voltage converted by the PLL loop filter consisting of R860, R861, C876, R858, R859, C875, and C874 is input to a varicap diode on UHF-VCO P.C. board P702. This DC voltage changes the capacitance between the electrodes of the varicap diode, thereby controlling the oscillation frequency of the UHF VCO circuit and 1.2 GHz VCO circuit built into UHF-VCO P.C. board P702.

- **UHF Band First Local Oscillator Circuit**

When the transceiver is in receive status, the oscillation frequency from UHF-VCO P.C. board P702 is amplified 10 dB by a buffer amplifier built into the UHF-VCO P.C. board. The amplified oscillation frequency passes through TX/RX switches Q634 and Q636, and is then input to the base of first mixer Q630 as an approximately –3 dBm first local signal (f_{VCO-U}). TX/RX switches Q634 and Q636 are controlled by data from microprocessor Q209.
The operation of TX/RX switches Q634 and Q636 is illustrated in Table 3-5.

- **UHF Band Frequency Modulator Circuit**

When the transceiver is in transmit status, the audio signal from the microphone passes through microphone amplifier Q222 and is input to UHF-VCO P.C. board P702. The audio signal input to UHF-VCO P.C. board P702 is input to a UHF band modulator varicap diode built into the UHF-VCO P.C. board, where it is frequency modulated. The frequency modulated oscillation frequency is amplified 10 dB by a buffer amplifier built into the UHF-VCO P.C. board, then output from UHF-VCO P.C. board P702 as the transmission signal. The transmission signal output from UHF-VCO P.C. board P702 passes through TX/RX switches Q634 and Q636, and is input to the transmitter circuit.
The operation of TX/RX switches Q634 and Q636 is illustrated in Table 3-5.

- **1.2 GHz Band First Local Oscillator Circuit**

When the transceiver is in receive status, the oscillation frequency from UHF-VCO P.C. board P702 is amplified 10 dB by a buffer amplifier built into the UHF-VCO P.C. board. The amplified oscillation frequency is amplified a further 10 dB by buffer amplifier Q633, then input to TX/RX switches Q632 and Q606. After passing through TX/RX switches Q632 and Q606, the oscillation frequency is input to the base of first mixer Q622 as an approximately –20 dBm first local signal (f_{VCO-G}). TX/RX switches Q632 and Q606 are controlled by data from microprocessor Q209.
The operation of TX/RX switches Q632 and Q606 is illustrated in Table 3-6.

Right Display Band (1.2 GHz Band) VCO Power Supply Operation — **Table 3-4**

Transceiver right display band	Shift register IC Q818 pin 7 →	1.2G RX power switch Q813 (1.2 GHz VCO side) →	UHF-VCO P.C. board P702 1.2 GHz VCO circuit
1.2 GHz band	Low →	On →	3.2 V supplied

Switching Operation of TX/RX Switches Q634 and Q636 — **Table 3-5**

Transceiver status	Shift register →		Transistor switch →		TX/RX switches	
Receive status	Q818 pin 12	Low	UHF RX power switch Q816	On	RX side Q634	On
	Q818 pin 13	High	UHF TX/PLL IC power switch Q815	Off	TX side Q636	Off
Transmit status	Q818 pin 12	High	UHF RX power switch Q816	Off	RX side Q634	Off
	Q818 pin 13	Low	UHF TX/PLL IC power switch Q815	On	TX side Q636	On

Switching Operation of TX/RX Switch Q632 — **Table 3-6**

Transceiver status	Shift register IC →		Transistor switch →		TX/RX switch	
Receive status	Q818 pin 6	Low	1.2 G RX power switch Q813	On	RX side Q632	On
	Q819 pin 11 pin 13	Low High	UHF/1.2 G TX power switches Q806 and Q807 5 V regulators Q804 and Q805	Off Off	TX side Q606	Off
Transmit status	Q818 pin 6	High	1.2 G RX power	Off	RX side Q632	Off
	Q819 pin 11 pin 13	High Low	UHF/1.2 G TX power switches Q806 and Q807 5 V regulators Q804 and Q805	On On	TX side Q606	On

- **1.2 GHz Band Frequency Modulator Circuit**

When the transceiver is in transmit status, the audio signal from the microphone passes through microphone amplifier Q222 and is input to UHF-VCO P.C. board P702. The audio signal input to UHF-VCO P.C. board P702 is input to a 1.2 GHz band modulator varicap diode built into the UHF-VCO P.C. board, where it is frequency modulated. The frequency modulated oscillation frequency is amplified 10 dB by a buffer amplifier built into the UHF-VCO P.C. board, then amplified an additional 10 dB by buffer amplifier Q633. The amplified oscillation frequency passes through TX/RX switches Q632 and Q606, and is input to the transmitter circuit as the transmission signal.
TX/RX switches Q632 and Q606 are controlled by data from microprocessor Q209.
The operation of TX/RX switches Q632 and Q606 is illustrated in Table 3-6.

(VHF band)

If the right-hand portion of the transceiver's display shows the VHF band, VHF-VCO Q646 operates during reception. The power supply voltage for VHF-VCO Q646 is supplied by 3.2 V regulators Q810 and Q811. Power supply switching is controlled by data from microprocessor Q209.
Power supply switching operation is illustrated in Table 3-7.
The DC voltage converted by the PLL loop filter consisting of R860, R861, C876, R858, R859, C875, and C874 is input to VHF band varicap diodes Q647 and Q648.
This DC voltage changes the capacitance between the electrodes of the varicap diodes, thereby controlling the oscillation frequency of VHF-VCO Q646. Also, the VHF VCO circuit on VHF-VCO P.C. board P701 operates during transmission. The power supply voltage for the VHF VCO circuit on VHF-VCO P.C. board P701 is supplied by 3.2 V regulators Q457 and Q458. Power supply switching is controlled by data from microprocessor Q209.
Power supply switching operation is illustrated in Table 3-8.
The DC voltage converted by the PLL loop filter consisting of R520, C523, R521, R518, C522, R519, C521 and R517 is input to a varicap diode built into VHF-VCO P.C. board P701.
This DC voltage changes the capacitance between the electrodes of the varicap diode, thereby controlling the oscillation frequency of the VHF VCO circuit on VHF-VCO P.C. board P701.

- **VHF Band First Local Oscillator Circuit**

When the transceiver is in receive status, the oscillation frequency from VHF-VCO Q646 is amplified 20 dB by RF amplifier Q645. The amplified oscillation frequency is input to the base of first mixer Q650 as an approximately –19 dBm first local signal ($f_{VCO\text{-}V}$).

- **VHF Band Frequency Modulator Circuit**

When the transceiver is in transmit status, the audio signal from the microphone passes through microphone amplifier Q222 and is input to VHF-VCO P.C. board P701. The audio signal input to VHF-VCO P.C. board P701 is input to a VHF band modulator varicap diode built into the VHF-VCO P.C. board, where it is frequency modulated. The frequency modulated oscillation frequency is amplified 10 dB by a buffer amplifier built into the VHF-VCO P.C. board, then output from VHF-VCO P.C. board P701 as the transmission signal. The transmission signal output from VHF-VCO P.C. board P701 passes through TX/RX switch Q425 and is input to the transmitter circuit. TX/RX switch Q425 is controlled by data from microprocessor Q209.
The operation of TX/RX switch Q425 is illustrated in Table 3-9.

Right Display Band (VHF Band) VCO Power Supply Operation **Table 3-7**

Transceiver right display band	Shift register IC Q819 pin 5 →	UHF/VHF VCO power switch Q817 (VHF VCO side) →	VHF-VCO Q646
VHF band	Low →	On →	3.2 V supplied

Right Display Band (VHF Band) VCO Power Supply Operation **Table 3-8**

Transceiver right display band	Shift register IC Q454 pin 7 →	VHF VCO power switch Q455 →	VHF-VCO P.C. board P701 VHF VCO circuit
VHF band	Low →	On →	3.2 V supplied

Switching Operation of TX/RX Switch Q425 **Table 3-9**

Transceiver status	Shift register IC →		Transistor switch →		TX/RX switch Q425	
Transmit status	Q449 pin 6	High	VHF RX power switch Q452	Off	RX side	Off
	Q454 pin 4	Low	5 V regulators Q421 and Q422	On	TX side	On
Receive status	Q449 pin 6	Low	VHF RX power switch Q452	On	RX side	On
	Q454 pin 4	High	5 V regulators Q421 and Q422	Off	TX side	Off

— If the transceiver's left display band is the VHF band or UHF band —

(VHF band)

If the left-hand portion of the transceiver's display shows the VHF band, the VHF VCO circuit on VHF-VCO P.C. board P701 operates during transmission and reception.
The power supply voltage for the VHF VCO circuit on VHF-VCO P.C. board P701 is supplied by 3.2 V regulators Q457 and Q458.
Power supply switching operation is identical to that illustrated in Table 3-8.
The DC voltage converted by the PLL loop filter consisting of R520, C523, R521, R518, C522, R519, C521 and R517 is input to a varicap diode built into VHF-VCO P.C. board P701.
This DC voltage changes the capacitance between the electrodes of the varicap diode, thereby controlling the oscillation frequency of the VHF VCO circuit on VHF-VCO P.C. board P701.

- **VHF Band First Local Oscillator Circuit**

When the transceiver is in receive status, the oscillation frequency from the VHF-VCO P.C. board P701 is amplified 10 dB by a buffer amplifier built into the VHF-VCO P.C. board. The amplified oscillation frequency passes through TX/RX switch Q425 and is input to the source of first mixer Q433 as an approximately –7 dBm first local signal (f_{VCO-V}). The operation of TX/RX switch Q425 is identical to that illustrated in Table 3-9.

- **VHF Band Frequency Modulator Circuit**

Operation is identical to when right-hand portion of the transceiver's display shows the VHF band.

(UHF band)

If the left-hand portion of the transceiver's display shows the UHF band, the UHF VCO circuit on VHF-VCO P.C. board P701 operates during reception.
The power supply voltage for the UHF VCO circuit on VHF-VCO P.C. board P701 is supplied by 3.2 V regulators Q457 and Q458.
Power supply switching operation is controlled by data from microprocessor Q209.
Power supply switching operation is illustrated in Table 3-10.

The DC voltage converted by the PLL loop filter consisting of R520, C523, R521, R519, C522, R518, C521 and R517 is input to a varicap diode built into VHF-VCO P.C. board P701.
This DC voltage changes the capacitance between the electrodes of the varicap diode, thereby controlling the oscillation frequency of the VHF VCO P.C. on VHF-VCO P.C. board P701.
Also, the UHF VCO circuit on UHF-VCO P.C. board P702 operates during transmission.

- **UHF Band First Local Oscillator Circuit**

When the transceiver is in receive status, the oscillation frequency from VHF-VCO P.C. board P701 is amplified 10 dB by a buffer amplifier built into the UHF-VCO P.C. board. The amplified oscillation frequency is input to the base of first mixer Q953, which is built into VHF-SUB P.C. board P901, as an approximately –3 dBm first local signal (f_{VCO-U}).

- **UHF Band Frequency Modulator Circuit**

Operation is identical to when right-hand portion of the transceiver's display shows the UHF band.

Left Display Band (UHF Band) VCO Power Supply Operation — **Table 3-10**

Transceiver left display band	Shift register IC Q454 pin 12	→	UHF VCO power/VHF shift switch Q453 (UHF VCO side)	→	VHF-VCO P.C. board P701 UHF VCO circuit
UHF band	Low	→	On	→	3.2 V supplied

3.1.7 Unlock Detect Circuit

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

The unlock detect circuit determines whether the PLL circuit is locked or unlocked by means of output from pin 8 of PLL IC Q653 to pin 17 of microprocessor Q209. If the phase comparator built into PLL IC Q653 detects no phase difference (PLL circuit locked), it produces a high level output. This high level output signal is input to unlock switches Q655 and Q656, causing them to turn off. When Q655 and Q656 switch off, a high level output signal is input to pin 17 of microprocessor Q209. The high level input causes microprocessor Q209 to determine that the PLL circuit is locked.
If there is a phase difference (PLL circuit unlocked), the phase comparator produces a low level output. This low level output signal is input to unlock switches Q655 and Q656, causing them to turn on. When Q655 and Q656 switch on, a low level output signal is input to pin 17 of microprocessor Q209. The low level input causes microprocessor Q209 to determine that the PLL circuit is unlocked.

— If the transceiver's left display band is the VHF band or UHF band —

The unlock detect circuit determines whether the PLL circuit is locked or unlocked by means of output from pin 8 of PLL IC Q445 to pin 17 of microprocessor Q209. If the phase comparator built into PLL IC Q445 detects no phase difference (PLL circuit locked), it produces a high level output. This high level output signal is input to unlock switches Q447 and Q448, causing them to turn off. When Q447 and Q448 switch off, a high level output signal is input to pin 17 of microprocessor Q209. The high level input causes microprocessor Q209 to determine that the PLL circuit is locked.
If there is a phase difference (PLL circuit unlocked), the phase comparator produces a low level output.
This low level output signal is input to unlock switches Q447 and Q448, causing them to turn on. When Q447 and Q448 switch on, a low level output signal is input to pin 17 of microprocessor Q209. The low level input causes microprocessor Q209 to determine that the PLL circuit is unlocked.

3.2 Receiver Block

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

The reception method is double-conversion super heterodyne with a first IF frequency of 23.05 MHz (lower) and a second IF frequency of 450 kHz (upper).
The receiver block comprises an RF amplifier circuit, first mixer circuit, first IF amplifier circuit, second IF circuit, and audio circuit.

— If the transceiver's left display band is the VHF band or UHF band —

The reception method is double-conversion super heterodyne with a first IF frequency of 21.80 MHz (lower) and a second IF frequency of 455 kHz (lower).
The receiver block comprises an RF amplifier circuit, first mixer circuit, first IF amplifier circuit, second IF circuit, and audio circuit.

3.2.1 RF Amplifier Circuit

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

(UHF band)

The reception frequency (f_{RX-U}) from antenna connector socket J603 passes through a low-pass filter consisting of C607, C608, L601, L602, and L603 and a high-pass filter consisting of C621, C622, and L607 before being input to an antenna switch circuit consisting of Q613, Q614, Q615, Q616, and Q619.
The operation of the antenna switch circuit is illustrated in Table 3-11.
After passing through the antenna switch circuit, the reception frequency passes through band-pass filter L610 and is input to RF amplifier Q624. The input reception frequency is amplified by approximately 20 dB by RF amplifier Q624, then input to a band-pass filter consisting of L611 and L612. After again passing through a band-pass filter, the reception frequency is input to RF amplifier Q627, where it is amplified by approximately 20 dB. The amplified reception frequency passes through a band-pass filter consisting of L613 and L614, and is input to the base of first mixer (UHF) Q630. Unnecessary frequency elements are eliminated from the reception frequency by the band-pass filters.
The band-pass filter in the RF amplifier circuitry performs varicap tuning. Varicap diodes Q623, Q625, Q626, Q628, and Q629 in the band-pass filter (trunking circuit) change the bandwidth based on the DC voltage from a PLL loop filter consisting of R860, R861, C876, R858, R859, C875, and C874.

Antenna Switch Circuit Operation (UHF) Band **Table 3-11**

Transceiver status	Shift register IC →		Transistor switches →		Antenna switches	
Receive status	Q819 pin 12 (high/middle/low)	Low	UHF/1.2 G TX power switches Q806, Q807	Off	Q613, Q614, Q619	Off
	Q819 pin 14 (EL)	Low	UHF EL power switches Q808, Q820	Off	Q615, Q616	Off
Transmit status	Q819 pin 12 (high/middle/low)	High	UHF/1.2 G TX power switches Q806, Q807	On	Q613, Q614, Q619	On
	Q819 pin 14 (EL)	High	UHF EL power switches Q808, Q820	On	Q615, Q616	On

(1.2 GHz band)

The reception frequency (f_{RX-G}) from antenna connector socket J603 passes through a high-pass filter consisting of C601, C602, and a pattern coil as well as a low-pass filter consisting of C603, C604, and a pattern coil before being input to an antenna switch circuit consisting of Q601, Q602, and Q607.
The operation of the antenna switch circuit is illustrated in Table 3-12.
After passing through the antenna switch circuit, the reception frequency is amplified by approximately 12 dB by RF amplifier Q621, then input to the base of first mixer (1.2G) Q622.

(VHF band)

The reception frequency (f_{RX-V}) from antenna connector socket J603 passes through a low-pass filter (C607, C608, L601, L602, L603) (C889, C890, L606) (C402, C403, L401) and is input to an antenna switch circuit consisting of Q403, Q404, Q406, Q408, Q405, and Q407.
The operation of the antenna switch circuit is illustrated in Table 3-13.
After passing through the antenna switch circuit, the reception frequency is input to RF amplifier Q649, where it is amplified by approximately 10 dB. The amplified reception frequency is then input to the base of first mixer (VHF) Q650.

— If the transceiver's left display band is the VHF band or UHF band —

(VHF band)

The reception frequency (f_{RX-V}) from antenna connector socket J603 passes through a low-pass filter (C607, C608, L601, L602, L603) (C889, C890, L606) (C402, C403, L401) and is input to an antenna switch circuit consisting of Q403, Q404, Q406, Q408, Q405, and Q407.
The operation of the antenna switch circuit is identical to that illustrated in Table 3-13.
After passing through the antenna switch circuit, the reception frequency passes through band-pass filter L409 and is input to RF amplifier Q427. The input reception frequency is amplified by approximately 15 dB by RF amplifier Q427, after which it is input to a band-pass filter consisting of L411 and L412.
After passing through the band-pass filter, the reception frequency is input to the gate of first mixer (VHF) Q433. Also, unnecessary frequency elements are eliminated from the reception frequency by the band-pass filters. The band-pass filter in the RF amplifier circuitry performs varicap tuning.
Varicap diodes Q426, Q429, Q430, and Q431 in the band-pass filter (trunking circuit) change the bandwidth based on the PWM (pulse width modulation) signal from pin 32 of microprocessor Q209. The PWM signal is based on the frequency setting and output from pin 32 of microprocessor Q209. The PWM signal is converted into a DC voltage by a PWM amplifier circuit consisting of Q240 and Q241.

Antenna Switch Circuit Operation (1.2 GHz Band) **Table 3-12**

Transceiver status	Shift register IC Q819 pin 11 →	UHF/1.2 G TX power switches Q806, Q807 →	Antenna switches Q601, Q602, Q607
Receive status	Low	Off	Off
Transmit status	High	On	On

Antenna Switch Circuit Operation (VHF Band) **Table 3-13**

Transceiver status	Shift register IC →		Transistor switches →		Antenna switches	
Receive status	Q449 pin 11 (high/middle/low)	Low	VHF TX power switch Q423	Off	Q403, Q404, Q406	Off
	Q449 pin 12 (EL)	Low	VHF TX EL power switch Q424	Off	Q408, Q405, Q407	Off
Transmit status	Q449 pin 11 (high/middle/low)	High	VHF TX power switch Q423	On	Q403, Q404, Q406	On
	Q449 pin 12 (EL)	High	VHF TX EL power switch Q424	On	Q408, Q405, Q407	On

(UHF band)

The reception frequency (f_{RX-U}) from antenna connector socket J603 passes through a low-pass filter consisting of C607, C608, L601, L602, and L603 and a high-pass filter consisting of C621, C622, and L607 before being input to an antenna switch circuit consisting of Q613, Q614, Q615, Q616, and Q619. The operation of the antenna switch circuit is identical to that illustrated in Table 3-11.
After passing through the antenna switch circuit, the reception frequency is amplified by approximately 20 dB by RF amplifier Q952, then input to the base of first mixer (UHF) Q953.

3.2.2 First Mixer Circuit

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

(UHF band)

After passing through the band-pass filter consisting of L613 and L614, the reception frequency (f_{RX-U}) is input to the base of first mixer (UHF) Q630. Also, the first local signal (f_{VCO-U}) from the UHF VCO built into UHF-VCO P.C. board P702 is input to the base of first mixer (UHF) Q630.
The reception frequency and first local signal are mixed by Q630, and two first IF signals consisting of their sum and difference are created.

$f_{RX-U} - f_{VCO-U} = 23.05$ (MHz)
f_{RX-U}: Reception frequency
f_{VCO-U}: First local signal

The sum and difference first IF signals created by first mixer Q630 are input to crystal filter F601. The difference of the input first IF signals (23.05 MHz) is created by the crystal filter, and adjacent signal elements are eliminated.
After this, the first IF signal (23.05 MHz) is input to first IF amplifier Q631.

(1.2 GHz band)

After being amplified by RF amplifier Q621, the reception frequency (f_{RX-G}) is input to the base of first mixer (1.2G) Q622. Also, the first local signal (f_{VCO-G}) from the 1.2 GHz VCO built into UHF-VCO P.C. board P702 is input to the base of first mixer (1.2G) Q622.
The reception frequency and first local signal are mixed by Q622, and two first IF signals consisting of their sum and difference are created.

$f_{RX-G} - f_{VCO-G} = 23.05$ (MHz)
f_{RX-G}: Reception frequency
f_{VCO-G}: First local signal

The sum and difference first IF signals created by first mixer Q622 are input to crystal filter F601. The difference of the input first IF signals (23.05 MHz) is created by the crystal filter, and adjacent signal elements are eliminated.
After this, the first IF signal (23.05 MHz) is input to first IF amplifier Q631.

(VHF band)

After being amplified by RF amplifier Q649, the reception frequency (f_{RX-V}) is input to the base of first mixer (VHF) Q650. Also, the first local signal (f_{VCO-V}) from VHF-VCO Q646 is input to the base of first mixer (VHF) Q650. The reception frequency and first local signal are mixed by Q650, and two first IF signals consisting of their sum and difference are created.

$f_{RX-V} - f_{VCO-V} = 23.05$ (MHz)
f_{RX-V}: Reception frequency
f_{VCO-V}: First local signal

The sum and difference first IF signals created by first mixer Q650 are input to crystal filter F601. The difference of the input first IF signals (23.05 MHz) is created by the crystal filter, and adjacent signal elements are eliminated. After this, the first IF signal (23.05 MHz) is input to first IF amplifier Q631.

— If the transceiver's left display band is the VHF band or UHF band —

(VHF band)

After passing through the band-pass filter consisting of L411 and L412, the reception frequency (f_{RX-V}) is input to the gate of first mixer (VHF) Q433. Also, the first local signal (f_{VCO-V}) from the VHF VCO built into VHF-VCO P.C. board P701 is input to the source of first mixer (VHF) Q433. The reception frequency and first local signal are mixed by Q433, and two first IF signals consisting of their sum and difference are created.

$f_{RX-V} - f_{VCO-V} = 21.80$ (MHz)
f_{RX-V}: Reception frequency
f_{VCO-V}: First local signal

The sum and difference first IF signals created by first mixer Q433 are input to crystal filter F401. The difference of the input first IF signals (21.80 MHz) is created by the crystal filter, and adjacent signal elements are eliminated.
After this, the first IF signal (21.80 MHz) is input to first IF amplifier Q435.

(UHF band)

After being amplified by RF amplifier Q952, the reception frequency (f_{RX-U}) is input to the base of first mixer (UHF) Q953. Also, the first local signal (f_{VCO-U}) from the UHF VCO built into VHF-VCO P.C. board P701 is input to the base of first mixer (UHF) Q953.
The reception frequency and first local signal are mixed by Q953, and two first IF signals consisting of their sum and difference are created.

$f_{VCO-U} - f_{RX-U} = 21.80$ (MHz)
f_{RX-U}: Reception frequency
f_{VCO-U}: First local signal

The sum and difference first IF signals created by first mixer Q953 are input to crystal filter F401. The difference of the input first IF signals (21.80 MHz) is created by the crystal filter, and adjacent signal elements are eliminated.
After this, the first IF signal (21.80 MHz) is input to first IF amplifier Q435.

3.2.3 First IF Amplifier Circuit

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

The UHF band, 1.2 GHz band, and VHF band 23.05 MHz first IF signals created by crystal filter F601 are input to first IF amplifier Q631. After being amplified by approximately 15 dB by Q631, these first IF signals are input to pin 16 of second IF IC Q437.

— If the transceiver's left display band is the VHF band or UHF band —

The VHF band and UHF band 21.80 MHz first IF signals created by crystal filter F401 are input to first IF amplifier Q435. After being amplified by approximately 15 dB by Q435, these first IF signals are input to pin 16 of second IF IC Q440.

3.2.4 Second IF Circuit

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

The UHF band, 1.2 GHz band, and VHF band first IF signals amplified by first IF amplifier Q631 are input to pin 16 of second IF IC Q437.
The first IF signal amplified by the first IF amplifier passes through pin 16 of second IF IC Q437 and is input to the second mixer built into Q437. Also, the 11.75 MHz reference oscillator frequency from crystal oscillator X402 is input to reference amplifier Q436. The input reference oscillator frequency is boosted to twice its frequency by Q436 and becomes the 23.5 MHz second local signal. This 23.5 MHz second local signal passes through pin 1 of second IF IC Q437 and is input to the second mixer. The first IF signal and second local signal are mixed by the second mixer built into second IF IC Q437, and the first IF signal is converted into a 450 kHz second IF signal. After being converted to 450 kHz, the second IF signal passes through pin 3 of Q437, after adjacent signal elements are eliminated by ceramic filter F402 (6 dB bandwidth ±7.5 kHz and above), input to pin 5 of Q437. The input second IF signal is converted into an audio signal by the second IF amplifier and a quadrature wave detector. The result is then output from pin 9 of Q437.

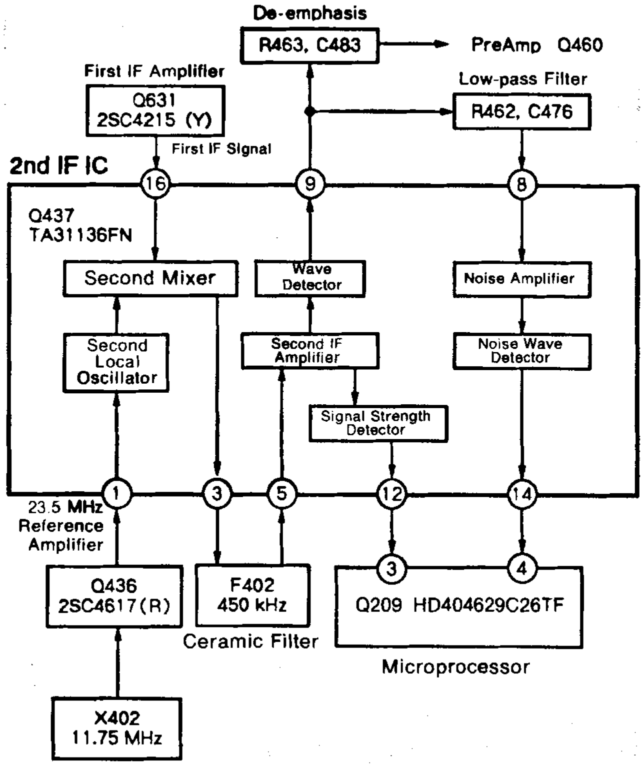


Figure 3-3 Second IF IC Block Diagram

— If the transceiver's left display band is the VHF band or UHF band —

The VHF band and UHF band first IF signals amplified by first IF amplifier Q435 are input to pin 16 of second IF IC Q440.

The first IF signal amplified by the first IF amplifier passes through pin 16 of second IF IC Q440 and is input to the second mixer built into Q440. Also, the 21.345 MHz second local signal from crystal oscillator X401 passes through pin 1 of second IF IC Q440 and is input to the second mixer. The first IF signal and second local signal are mixed by the second mixer built into second IF IC Q440, and the first IF signal is converted into a 455 kHz second IF signal. After being converted to 455 kHz, the second IF signal passes through pin 3 of Q440, after adjacent signal elements are eliminated by ceramic filter F403 (6 dB bandwidth ± 7.5 kHz and above), and input to pin 5 of Q440. The input second IF signal is converted into an audio signal by the second IF amplifier and a quadrature wave detector. The result is then output from pin 9 of Q440.

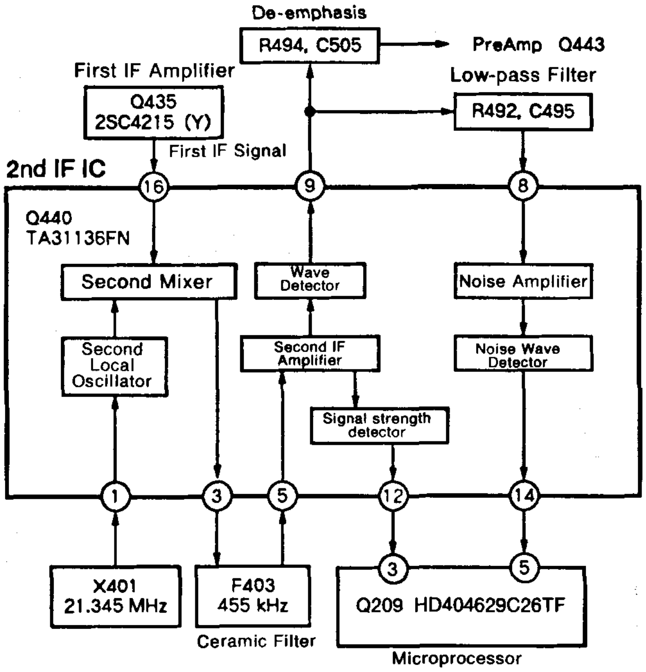


Figure 3-4 Second IF IC Block Diagram

3.2.5 Audio Circuit

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

A portion of the audio signal output from pin 9 of second IF IC Q437 is input to a deemphasis circuit consisting of R463 and C483. The deemphasis circuit consisting of R463 and C483 has -6 dB/oct frequency characteristics, and it performs compensation on the audio signal. After passing through the deemphasis circuit, the audio signal is input to preamplifier Q460, where it is amplified by approximately 13 dB. The amplified audio signal passes through AF mute switch Q235 and is input to AF volume R347 (1/2). The input audio signal is level adjusted by AF volume R347 (1/2) and input to active low-pass filter Q233. Active low-pass filter Q233 eliminates unnecessary audio signal elements above 3.0 kHz. After passing through the active low-pass filter, the audio signal is input to pin 1 of analog switch IC Q230. The function of analog switch IC Q230 is switching between the internal and external speakers.

The operation of analog switch IC Q230 is illustrated in table 3-14.

Operation of Analog Switch IC Q230 — Table 3-14

Transceiver speaker status	Micropro-cessor Q209 pin 34	Analog switch IC Q230 on status
Internal speaker	High	Pin 1 → Pin 6
External speaker	Low	Pin 1 → Pin 7

If the internal speaker is being used, the audio signal is output from pin 6 of Q230 and input to pin 7 of audio power amplifier Q228. The audio signal input to audio power amplifier Q228 is amplified to approximately 0.35 W and output from Q228 pin 1. The output audio signal drives internal speaker E201.

If the external speaker is being used, the audio signal is output from pin 7 of Q230 and input to pin 6 of audio power amplifier Q228. The audio signal input to audio power amplifier Q228 is amplified to approximately 0.35 W and output from Q228 pin 3. The output audio signal is then output to external speaker socket J381.

— If the transceiver's left display band is the VHF band or UHF band —

A portion of the audio signal output from pin 9 of second IF IC Q440 is input to a deemphasis circuit consisting of R494 and C505. The deemphasis circuit consisting of R494 and C505 has -6 dB/oct frequency characteristics, and it performs compensation on the audio signal. After passing through the deemphasis circuit, the audio signal is input to preamplifier Q443, where it is amplified by approximately 15 dB. The amplified audio signal passes through AF mute switch Q237 and is input to AF volume R346 (1/2). The input audio signal is level adjusted by AF volume R346 (1/2) and input to active low-pass filter Q234. Active low-pass filter Q234 eliminates unnecessary audio signal elements above 3.0 kHz. After passing through the active low-pass filter, the audio signal is input to pin 1 of analog switch IC Q232. The function of analog switch IC Q232 is switching between the internal and external speakers.

The operation of analog switch IC Q232 is illustrated in table 3-15.

Operation of Analog Switch IC Q232 — Table 3-15

Transceiver speaker status	Micropro-cessor Q209 pin 33	Analog switch IC Q232 on status
Internal speaker	High	Pin 1 → Pin 6
External speaker	Low	Pin 1 → Pin 7

If the internal speaker is being used, the audio signal is output from pin 6 of Q232 and input to pin 7 of audio power amplifier Q228. The audio signal input to audio power amplifier Q228 is amplified to approximately 0.35 W and output from Q228 pin 1. The output audio signal drives internal speaker E201.

If the external speaker is being used, the audio signal is output from pin 7 of Q232 and input to pin 6 of audio power amplifier Q228. The audio signal input to audio power amplifier Q228 is amplified to approximately 0.35 W and output from Q228 pin 3. The output audio signal is then output to external speaker socket J381.

3.2.6 Squelch Circuit

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

A portion of the audio signal output from pin 9 of second IF IC Q437 is input to a low-pass filter consisting of R462 and C476. After 450 kHz elements are eliminated from the audio signal by the low-pass filter, it is input to pins 7 and 8 of second IF IC Q437. The audio signal input to pins 7 and 8 of second IF IC Q437 has approximately 30 kHz elements only amplified by a noise amplifier built into Q437 to create the squelch signal. This squelch signal is converted into a DC signal by the noise wave detector built into second IF IC Q437 and then output from pin 14 of Q437. The output squelch signal passes through squelch control R347 (2/2). The squelch level is adjusted by R347 (2/2).
After this, the squelch signal is input to pin 4 of microprocessor Q209.
If the squelch signal input to pin 4 of microprocessor Q209 is approximately 0.4 V or greater, a high level signal is output from pin 27 of microprocessor Q209. This high level output causes AF mute switch Q235 to turn off, turning squelch operation on for the transceiver.
However, If the squelch signal input to pin 4 of microprocessor Q209 is less than approximately 0.4 V, a low level signal is output from pin 27 of microprocessor Q209. This low level output causes AF mute switch Q235 to turn on, turning the transceiver's squelch operation off.

— If the transceiver's left display band Is the VHF band or UHF band —

A portion of the audio signal output from pin 9 of second IF IC Q440 is input to a low-pass filter consisting of R492 and C495. After 455 kHz elements are eliminated from the audio signal by the low-pass filter, it is input to pins 7 and 8 of second IF IC Q440. The audio signal input to pins 7 and 8 of second IF IC Q440 has approximately 30 kHz elements only amplified by a noise amplifier built into Q440 to create the squelch signal. This squelch signal is converted into a DC signal by the noise wave detector built into second IF IC Q440 and then output from pin 14 of Q440. The output squelch signal passes through squelch control R346 (2/2). The squelch level is adjusted by R346 (2/2). After this, the squelch signal is input to pin 5 of microprocessor Q209.
If the squelch signal input to pin 5 of microprocessor Q209 is approximately 0.4 V or greater, a high level signal is output from pin 26 of microprocessor Q209. This high level output causes AF mute switch Q237 to turn off, turning squelch operation on for the transceiver.
However, If the squelch signal input to pin 5 of microprocessor Q209 is less than approximately 0.4 V, a low level signal is output from pin 26 of microprocessor Q209. This low level output causes AF mute switch Q237 to turn on, turning the transceiver's squelch operation off.

3.2.7 Signal Strength Meter Circuit

— If the transceiver's right display band Is the UHF band, 1.2 GHz band, or VHF band —

A portion of the second IF signal is input to the signal strength meter detector circuit built into second IF IC Q437, and a DC voltage between 0.6 V and 1.9 V and corresponding to the reception signal strength is output from pin 12 of Q437. This DC voltage is input to semi-fixed resistor R471. After signal strength meter adjustment by semi-fixed resistor R471, the DC voltage is input to pin 6 of analog switch IC Q215. The function of analog switch IC Q215 is switching the signal strength meter display between the right and left display frequencies.
The operation of analog switch IC Q215 is illustrated in Table 3-16.

Operation of Analog Switch IC Q215 Table 3-16

Transceiver display	Microprocessor Q209 pin 56	Analog switch IC Q215 on status
Right display	High	Pin 6 → Pin 1
Left display	Low	Pin 7 → Pin 1

After passing through analog switch IC Q215, the DC voltage is input to pin 3 of microprocessor Q209, where it undergoes A/D conversion.
After A/D conversion, the digital signal is output from pins 35 and 37 of microprocessor Q209 and input to pins 7 and 9 of LCD driver IC Q101. Based on the digital signal input, LCD driver IC Q101 drives LCD Q102 to produce the signal strength meter indication.

— If the transceiver's left display band is the VHF band or UHF band —

A portion of the second IF signal is input to the signal strength meter detector circuit built into second IF IC Q440, and a DC voltage between 0.5 V and 1.7 V corresponding to the reception signal strength is output from pin 12 of Q440. This DC voltage is input to semi-fixed resistor R473. After signal strength meter adjustment by semi-fixed resistor R473, the DC voltage is input to pin 7 of analog switch IC Q215. The operation of analog switch IC Q215 is illustrated in Table 3-16. The description of subsequent circuit operations is identical to that set forth in the section covering if the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band.

3.2.8 DTMF Decoder

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

A portion of the audio signal output from pin 9 of second IF IC Q437 passes through preamplifier Q460 and is input to pin 1 of DTMF IC Q216. The DTMF signal, including the audio signal, is decoded into a digital signal inside DTMF IC Q216. The decoded digital signal is output from pins 6, 7, and 9 of DTMF IC Q216, and input to pins 45, 47, and 46 of microprocessor Q209.
After this, microprocessor Q209 detects internally whether or not a digital signal corresponding to the transceiver's DTMF signal setting matches the decoded digital signal. If microprocessor Q209 determines that they match, an alarm tone sounds and the audio signal is output via internal speaker E201.

— If the transceiver's left display band is the VHF band or UHF band —

A portion of the audio signal output from pin 9 of second IF IC Q440 passes through preamplifier Q443 and is input to pin 1 of DTMF IC Q217. The DTMF signal, including the audio signal, is decoded into a digital signal inside DTMF IC Q217. The decoded digital signal is output from pins 6, 7, and 9 of DTMF IC Q217, and input to pins 45, 44, and 43 of microprocessor Q209.
The description of subsequent circuit operations is identical to that set forth in the section covering if the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band.

3.2.9 Tone Decoder (CTN560)

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

A portion of the audio signal output from pin 9 of second IF IC Q437 passes through preamplifier Q460 and is input to pin 3 of CTCSS socket J202. The tone signal, included in the audio signal, passes through pin 3 of CTCSS socket J202 and is input to an IC inside the tone squelch unit (CTN560). At this point, the IC in the tone squelch unit detects whether or not the input tone signal and the transceiver's tone signal setting match.
If the input tone signal and the transceiver's tone signal setting match, a low level signal is output from pin 11 of CTCSS socket J202 and input to pin 49 of microprocessor Q209. This low level signal causes microprocessor Q209 to output the audio signal via internal speaker E201.

— If the transceiver's left display band is the VHF band or UHF band —

A portion of the audio signal output from pin 9 of second IF IC Q440 passes through preamplifier Q443 and is input to pin 4 of CTCSS socket J202. The tone signal, included in the audio signal, passes through pin 4 of CTCSS socket J202 and is input to an IC inside the tone squelch unit (CTN560). At this point, the IC in the tone squelch unit detects whether or not the input tone signal and the transceiver's tone signal setting match.
If the input tone signal and the transceiver's tone signal setting match, a low level signal is output from pin 12 of CTCSS socket J202 and input to pin 48 of microprocessor Q209. This low level signal causes microprocessor Q209 to output the audio signal via internal speaker E201.

3.3 Transmitter Block

3.3.1 Microphone Amplifier

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

When the user depresses PTT switch S204 and speaks into the transceiver, an audio signal is input to pin 3 of microphone amplifier Q222 (1/2) and amplified by approximately 54 dB. Microphone amplifier Q222 (1/2) has a built-in preemphasis circuit (6 dB/oct frequency characteristics), which modulates boost the high components of the audio signal. The audio signal is output from pin 1 of Q222 (1/2) and input to pin 6 of low-pass filter Q222 (2/2). The audio signal gains the -12 dB/oct frequency characteristic from low-pass filter to limit the bandwidth. After this, the audio signal is output from pin 7 of Q222 (2/2).
If the right display band is UHF band, the output audio signal is deviation adjusted by semi-fixed resistor R544, then input to the UHF band modulator circuit on UHF-VCO P.C. board P702.
If the right display band is 1.2 GHz band, the output audio signal is deviation adjusted by semi-fixed resistor R545, then input to the 1.2 GHz band modulator circuit on UHF-VCO P.C. board P702.
If the right display band is VHF band, the output audio signal is deviation adjusted by semi-fixed resistor R547, then input to the VHF band modulator circuit on VHF-VCO P.C. board P701.

— If the transceiver's left display band is the VHF band or UHF band —

The circuitry operates identically to the description in the section covering if the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band.

3.3.2 TX Preamplifier

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

(UHF band)

The audio signal is input to UHF-VCO P.C. board P702 and output from the UHF VCO circuit as the transmission signal. The approximately –4 dBm transmission signal output from the UHF VCO circuit passes through TX/RX switch Q636 and is input to TX preamplifier Q660.
Refer to Table 3-5 for details of the switching operation of TX/RX switch Q636. The transmission signal is amplified approximately 25 dB by TX preamplifier Q660. The amplified transmission signal is then input to TX power switch Q659.

(1.2 GHz band)

The audio signal is input to UHF-VCO P.C. board P702 and output from the 1.2 GHz VCO circuit as the transmission signal. The approximately –6 dBm transmission signal output from the 1.2 GHz VCO circuit passes through TX/RX switches Q632 and Q606, and is input to TX preamplifier Q611. Refer to Table 3-6 for details of the switching operation of TX/RX switches Q632 and Q606. The transmission signal is amplified approximately 16 dB by TX preamplifier Q611. The amplified transmission signal is then input to EL power amplifier Q609.

(VHF band)

The audio signal is input to VHF-VCO P.C. board P701 and output from the VHF VCO circuit as the transmission signal. The approximately –4 dBm transmission signal output from the VHF VCO circuit passes through TX/RX switch Q425 and is input to TX preamplifier Q415.
Refer to Table 3-9 for details of the switching operation of TX/RX switch Q425. The transmission signal is amplified approximately 20 dB by TX preamplifier Q415. The amplified transmission signal is then input to TX power switch Q414.

— If the transceiver's left display band is the VHF band or UHF band —

The circuitry operates identically to the description in the section covering if the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band.

3.3.3 Final Power Amplifier

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

(UHF band)

The transmission signal amplified by TX preamplifier Q660 is input to TX power switch Q659. TX power switch Q659 performs switching of the final power amplifier based on the transceiver's transmission output power setting.
The operation of TX power switch Q659 is illustrated in Table 3-17.

Switching Operation of TX Power Switch Q659 **Table 3-17**

Transmission power status	Shift register IC →		Transistor switches →		TX power switch Q659	
High, middle, low power	Q819 pin 12	High	UHF/1.2G TX power switches Q806, Q807	On	High, middle, low side	On
EL power	Q819 pin 14	High	UHF EL power switches Q808, Q820	On	EL side	On

- If the transceiver is set to high, middle, or low power, the transmission signal that passes through TX power switch Q659 is input to pin 1 of power module Q641. The input transmission signal is amplified approximately 5.0 W (power supply voltage: 13.8 V) by power module Q641 and output from pin 4 of Q641. The transmission signal output from pin 4 of Q641 passes through a low-pass filter consisting of C675, L617, and C673, and then input to antenna switches Q613, Q614, and Q619. Refer to Table 3-11 for details of the operation of antenna switches Q613, Q614, and Q619. After passing through antenna switches Q613, Q614, and Q619, the transmission signal passes through another low-pass filter and is supplied to antenna connector socket J603.
- If the transceiver is set to EL power, the transmission signal that passes through TX power switch Q659 is input to EL power amplifier Q638. The input transmission signal is amplified approximately 50 mW (power supply voltage: 7.2 V) by EL power amplifier Q638 and input to antenna switches Q615 and Q616. Refer to Table 3-11 for details of the operation of antenna switches Q615 and Q616. After passing through antenna switches Q615 and Q616, the transmission signal passes through another low-pass filter and is supplied to antenna connector socket J603.

(1.2 GHz band)

If the transceiver's right display band is the 1.2 GHz band, "EL" is the only available transmission power setting.

After being amplified by TX preamplifier Q611, the transmission signal is input to EL power amplifier Q609. The input transmission signal is amplified approximately 20 mW (power supply voltage: 7.2 V) by EL power amplifier Q609 and input to a low-pass filter consisting of C611, L604, and C613. After passing through the low-pass filter consisting of C611, L604, and C613, the transmission signal is input to antenna switches Q601, Q602, and Q607.

Refer to Table 3-12 for details of the operation of antenna switches Q601, Q602, and Q607.

After passing through antenna switches Q601, Q602, and Q607, the transmission signal passes through another low-pass filter and is supplied to antenna connector socket J603.

(VHF band)

The transmission signal amplified by TX preamplifier Q415 is input to TX power switch Q414. TX power switch Q414 performs switching of the final power amplifier based on the transceiver's transmission output power setting.

The operation of TX power switch Q414 is illustrated in Table 3-18.

- If the transceiver is set to high, middle, or low power, the transmission signal that passes through TX power switch Q414 is input to pin 1 of power module Q413. The input transmission signal is amplified approximately 5.0 W (power supply voltage: 13.8 V) by power module Q413 and output from pin 4 of Q413. The transmission signal output from pin 4 of Q413 passes through a low-pass filter consisting of C423, L406, and C419, and then input to antenna switches Q403, Q404, and Q406. Refer to Table 3-13 for details of the operation of antenna switches Q403, Q404, and Q406. After passing through antenna switches Q403, Q404, and Q406, the transmission signal passes through another low-pass filter and is supplied to antenna connector socket J603.
- If the transceiver is set to EL power, the transmission signal that passes through TX power switch Q414 is input to EL power amplifier Q409. The input transmission signal is amplified approximately 50 mW (power supply voltage: 7.2 V) by EL power amplifier Q409 and input to antenna switches Q408, Q405, and Q407.
  Refer to Table 3-13 for details of the operation of antenna switches Q408, Q405, and Q407. After passing through antenna switches Q408, Q405, and Q407, the transmission signal passes through another low-pass filter and is supplied to antenna connector socket J603.

— If the transceiver's left display band is the VHF band or UHF band —

The circuitry operates identically to the description in the section covering if the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band.

Switching Operation of TX Power Switch Q414 **Table 3-18**

Transmission power status	Shift register IC →		Transistor switch →		TX power switch Q414	
High, middle, low power	Q449 pin 11	High	VHF TX power switch Q423	On	High, middle, low side	On
EL power	Q449 pin 12	High	VHF TX EL power switch Q424	On	EL side	On

3.3.4 Auto Power Control (APC) Circuit

— If the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band —

(UHF band)

A portion of the transmission signal output from pin 4 of power module Q641 is input to APC detector Q640. The input transmission signal is wave detected by APC detector Q640 and converted into a DC voltage. The wave detected DC voltage (wave detection voltage) is input to APC amplifier Q642. Also, an output voltage corresponding to the transceiver's high, middle, or low power setting is output from pins 22 and 23 of microprocessor Q209 and undergoes transmission output adjustment by semi-fixed resistors R231, R230, and R229. After transmission output adjustment the output voltage is input to APC amplifier Q642 as the reference voltage.

APC amplifier Q642 compares the input reference voltage and the wave detection voltage.

As a result, a difference voltage is output from APC amplifier Q642 and input to APC amplifiers Q643 and Q644. At this point, if the wave detection voltage is higher than the reference voltage, the output voltage from APC amplifiers Q643 and Q644 causes the voltage input to pin 2 of power module Q641 to drop.

On the other hand, if the wave detection voltage is lower than the reference voltage, the voltage input to pin 2 of power module Q641 increases. In this way, power module Q641 maintains the transmission output at a constant level.

(VHF band)

A portion of the transmission signal output from pin 4 of power module Q413 is input to APC detector Q412. The input transmission signal is wave detected by APC detector Q412 and converted into a DC voltage. The wave detected DC voltage (wave detection voltage) is input to APC amplifier Q418.

Also, an output voltage corresponding to the transceiver's high, middle, or low power setting is output from pins 22 and 23 of microprocessor Q209 and undergoes transmission output adjustment by semi-fixed resistors R231, R230, and R229. After transmission output adjustment, the output voltage is input to APC amplifier Q418 as the reference voltage.

APC amplifier Q418 compares the input reference voltage and the wave detection voltage.

As a result, a difference voltage is output from APC amplifier Q418 and input to APC amplifiers Q416 and Q417. At this point, if the wave detection voltage is higher than the reference voltage, the output voltage from APC amplifiers Q416 and Q417 causes the voltage input to TX preamplifier Q415 to drop.

On the other hand, if the wave detection voltage is lower than the reference voltage, the voltage input to TX preamplifier Q415 increases. In this way, TX preamplifier Q415 maintains the transmission output at a constant level.

— If the transceiver's left display band is the VHF band or UHF band —

The circuitry operates identically to the description in the section covering if the transceiver's right display band is the UHF band, 1.2 GHz band, or VHF band.

3.3.5 DTMF Encoder

DTMF signals are output from pins 98 and 99 of microprocessor Q209. The output DTMF signals are DTMF deviation adjusted by semi-fixed resistor R265 and then input to pin 3 of microphone amplifier Q222 (1/2). The input DTMF signals are amplified approximately 54 dB by microphone amplifier Q222 (1/2). The amplified DTMF signals are input to the UHF band modulator circuit on UHF-VCO P.C. board P702, the 1.2 GHz band modulator circuit on UHF-VCO P.C. board P702, or the VHF band modulator circuit on VHF-VCO P.C. board P701.

3.3.6 Tone Burst

Tone burst signals are output from pin 30 of microprocessor Q209.

Tone burst signals are 1,750 Hz square waves produced by microprocessor Q209.

The tone burst signal output from pin 30 of microprocessor Q209 is tone burst deviation adjusted by semi-fixed resistor R281 and then passes through a low-pass filter consisting of R280, R276, and C233. After passing through the low-pass filter, the tone burst signal is input to pin 5 of microphone amplifier Q222 (2/2). The input tone burst signal is mixed with the audio signal and output from pin 7 of microphone amplifier Q222 (2/2). The output tone burst signal is input to the UHF band modulator circuit on UHF-VCO P.C. board P702, the 1.2 GHz band modulator circuit on UHF-VCO P.C. board P702, or the VHF band modulator circuit on VHF-VCO P.C. board P701.

3.3.7 Tone Encoder (CTN560)

Serial data output from pin 19 of microprocessor Q209 passes through pin 5 of CTCSS socket J202 and is input to tone squelch unit CTN560. Tone squelch unit CTN560 then outputs the tone signal specified by the serial data from microprocessor.

The output tone signal passes through pin 10 of CTCSS socket J202 and is input to pin 6 of microphone amplifier Q222 (2/2). The input internal tone signal is mixed with the audio signal and output from pin 7 of microphone amplifier Q222 (2/2). The output internal tone signal is input to the UHF band modulator circuit on UHF-VCO P.C. board P702, the 1.2 GHz band modulator circuit on UHF-VCO P.C. board P702, or the VHF band modulator circuit on VHF-VCO P.C. board P701.

3.4 Control Block

3.4.1 Microprocessor Q209

Microprocessor Q209 controls all the operations of the transceiver. The power supply voltage from DC IN (external power supply connector socket) J403 and the battery terminal are regulated at 3.2 V by 3.2 V regulator Q201 and applied to pin 97 of microprocessor Q209. The 4.00 MHz signal from oscillator X201 is input as the main clock to pins 8 and 9 of Q209.
The functions of the I/O ports of microprocessor Q209 are listed below.

Table 3-19

Pin No.	I/O	Symbol	Port name	Description
1	—	AVcc	AVcc	A/D converter power supply 3.2 V input
2	I	AN0	BATT	+B line voltage detect
3	I	AN1	SM	Signal strength meter level detect during reception
4	I	AN2	SQLU	Right band noise squelch detect
5	I	AN3	SQLV	Left band noise squelch detect
6	—	AVss	AVss	A/D converter ground
7	—	$\overline{\text{TEST}}$	TEST	Used fixed at Vcc
8	—	OSC1	X1	System clock oscillator terminal 4 MHz
9	—	OSC2	X2	System clock oscillator terminal 4 MHz
10	I	RESET	RESET	High input at Vcc 3.0 V or less: Reset
11	—	X1	Not used	Vcc 3.2 V
12	—	X2	Not used	Not used Open
13	—	GND	GND	Ground
14	O	D0	POWSW	System power control High: Power supply on
15	I/O	D1	ESDA	EEPROM data input/output
16	I/O	D2	ESCL	EEPROM clock output High: EEPROM present detect
17	I/O	D3	CKU	Right band serial clock output Low: Unlock detect
18	O	D4	PEU	Right band PLL, shift register enable signal output
19	I/O	D5	SO	Serial data line Low: FUNC detect
20	I/O	D6	CKV	Left band clock/Low: PTT detect/TSQ serial clock
21	O	D7	PEV	Left band PLL, shift register enable signal output
22	O	D8	$\overline{\text{MID}}$	Low: Middle TX power and RX HI-Z: High, Low and EL (V, U, 1.2G) TX power
23	O	D9	$\overline{\text{LOW}}$	Low: Low TX power and RX HI-Z: High, middle and EL (V, U, 1.2G) TX power
24	I	D10	$\overline{\text{POWSW}}$	Low: Power switch detect
25	I	D11	$\overline{\text{CK4V}}$	Low input at Vcc 4 V or less
26	O	R00	SQCV	Left band squelch control Low: Left band audio output
27	O	R01	SQCU	Right band squelch control Low: Right band audio output
28	I	R02	$\overline{\text{UP}}$	Low: ENC up detect
29	I	R03	$\overline{\text{DOWN}}$	Low: ENC down detect
30	I/O	R10	ITONE	Tone burst transmission and Low: Matrix detect
31	I/O	R11	KEY BEEP/$\overline{\text{SPSW}}$	Beep tone/Low: Speaker socket detect
32	O	R12	PWM	Left band RX trunking signal output
33	O	R13	SWV	Left band speaker switch High: Internal speaker Low: External speaker
34	O	R20	SWU	Right band speaker switch High: Internal speaker Low: External

Table 3-19

Pin No.	I/O	Symbol	Port name	Description
35	O	R21	LCK	Clock output to LCD driver IC
36	I	R22	LSI	Data reception/key data input from LCD driver IC
37	O	R23/SO	LSO	Data output to LCD driver IC
38	O	R30	PDV	High: Left band DTMF power down
39	O	R31	PDU	High: Right band DTMF power down
40	O	R32	PDT	High: TSQ power down control
41	I/O	R33	TEU	Right band TSQ enable signal output High: TSQ installed detect
42	I/O	R40	TEV	Left band TSQ enable signal output Low: Matrix set
43	I	R41	DVV	Left band DTMF data detect
44	O	R42	DTCV	Left band DTMF clock output
45	I	R43	DSI	DTMF serial data input
46	I	R50	DVU	Right band DTMF data detect
47	O	R51	DTCU	Right band DTMF clock output
48	I	R52	$\overline{SQTV}$	Low: Left band TSQ tone detect
49	I	R3	$\overline{SQTU}$	Low: Right band TSQ tone detect
50	O	R60	KCK	Key serial clock output
51	O	R61	MONI	AF amplifier power supply control High: On Low: Off
52	O	R62	MUTE	High: Transmit microphone mute on
53	I	R63	$\overline{LAMP}$	Low: Lamp switch detect
54	I	R70	$\overline{SQLOFF}$	Low: Squelch off detect
55	O	R71	$\overline{MICAMP}$	Low: Microphone amplifier power supply on
56	I/O	R72	SMSW	Signal strength meter (High: Right band, Low: Left band) Low: Matrix set
57 - 96	—	—	—	Not used
97	—	Vcc	Vcc	Power supply 3.2 V
98	O	TONEC	TONEC	DTMF generator output
99	O	TONER	TONER	DTMF generator output
100	—	VTref	TVref	DTMF reference voltage

NOTE: $\overline{}$ indicates negative logic.
HI-Z = high impedance

3.4.2 Shift Register IC Q818

Shift register IC Q818 is controlled by signals from microprocessor Q209.
The functions of the I/O ports of shift register IC Q818 are listed below. **Table 3-20**

Pin No.	I/O	Symbol	Port name	Description
1	I	STROBE	PEU	Right band PLL, shift register enable signal input
2	I	SERIALIN	SO	Serial interface data input
3	I	CLOCK	CKU	Right band serial clock input
4	O	Q1	$\overline{RXU}$	Low: Right band IF circuit power supply on
5	O	Q2	$\overline{RXU2}$	Low: Modulation off during right band (430 MHz, 1.2 GHz band) reception High: Modulation on during right band (430 MHz, 1.2 GHz band) transmission
6	O	Q3	$\overline{RG}$	Low: 1.2 GHz band receiver block on
7	O	Q4	$\overline{VG}$	Low: 1.2 GHz band VCO power supply on, 1.2 GHz band modulator volume on
8	—	V_{SS}	GND	Ground
9	—	Qs	—	Open
10	O	Q's	SO	To serial interface data output Q819
11	O	Q8		
12	O	Q7	$\overline{R4U}$	Low: Right band 430 MHz band receiver block on
13	O	Q6	$\overline{TUSW}$	Low: 430 MHz band high, middle, low, EL TX diode switch on
14	O	Q5	$\overline{PLU}$	Low: Right band PLL IC power supply on
15	I/O	ENABLE	SW3.2V	High: Enable on
16	I	V_{DD}	V_{DD}	System power supply 3.2 V input

3.4.3 Shift Register IC Q819

Shift register IC Q819 is controlled by signals from microprocessor Q209.
The functions of the I/O ports of shift register IC Q819 are listed below. **Table 3-21**

Pin No.	I/O	Symbol	Port name	Description
1	I	STROBE	PEU	Right band PLL, shift register enable signal input
2	I	SERIALIN	SO	Serial interface data input from Q818
3	I	CLOCK	CKU	Right band serial clock input
4	O	Q1		
5	O	Q2	$\overline{RVU}$	Low: Right band (144 MHz band) receiver block, VCO power supply on
6	O	Q3	$\overline{VUU}$	Low: Right band (430 MHz band) VCO power supply on
7	O	Q4	—	Open
8	—	V_{SS}	GND	Ground
9	—	Qs	—	Open
10	O	Q's	PSOU	To serial interface data output PLL
11	O	Q8	TG	High: 1.2 GHz band transmit on
12	O	Q7	TU	High: 430 MHz band high, middle, low transmit on
13	O	Q6	$\overline{TXU}$	Low: 430 MHz band, 1.2 GHz band transmit power supply on
14	O	Q5	TUMINI	High: 430 MHz band EL power transmit on
15	I/O	ENABLE	SW3.2V	High: Enable on
16	I	V_{DD}	V_{DD}	System power supply 3.2 V input

3.4.4 Shift Register IC Q449

Shift register IC Q449 is controlled by signals from microprocessor Q209.
The functions of the I/O ports of shift register IC Q449 are listed below.

Table 3-22

Pin No.	I/O	Symbol	Port name	Description
1	I	STROBE	PEV	Left band PLL data enable signal input
2	I	SERIALIN	SO	Serial interface data input
3	I	CLOCK	CKV	Left band serial clock
4	O	Q1	$\overline{PLV}$	Low: Left band PLL IC power supply on
5	O	Q2		
6	O	Q3	$\overline{RVV}$	Low: Left band 144 MHz band receiver block on/Modulation mute on
7	O	Q4	$\overline{RXV}$	Low: Left band IF circuit power supply on
8	—	Vss	GND	Ground
9	—	Qs	Not used	
10	O	Q's	Serial	To interface data output Q454
11	O	Q8	TV	High: 144 MHz band transmit high, middle, low on
12	O	Q7	TVMINI	High: 144 MHz band EL power transmitter block on
13	O	Q6		
14	O	Q5	$\overline{R4V}$	Low: Left band 400 MHz band receiver block on
15	I/O	ENABLE	SW3.2V	High: Enable on
16	I	V_{DD}	System power supply	3.2 V input

3.4.5 Shift Register IC Q454

Shift register IC Q454 is controlled by signals from microprocessor Q209.
The functions of the I/O ports of shift register IC Q454 are listed below.

Table 3-23

Pin No.	I/O	Symbol	Port name	Description
1	I	STROBE	PEV	Left band PLL data enable signal input
2	I	SERIALIN	Serial	Interface data input from Q449
3	I	CLOCK	CKV	Left band serial clock input
4	O	Q1	$\overline{TXV}$	Low: 144 MHz band transmit power supply on
5	O	Q2	Not used	
6	O	Q3	$\overline{SHIFT}$	Low: VHF VCO shift on when left band is 144 MHz band reception
7	O	Q4	$\overline{VVV}$	Low: VCO power supply on when left band is 144 MHz band
8	—	Vss	GND	Ground
9	—	Qs	Not used	
10	O	Q's	Serial	To interface data output PLL
11	—	Q8	Not used	
12	O	Q7	$\overline{VUV}$	Low: VCO power supply on when left band is 430 MHz band
13	—	Q6	Not used	
14	—	Q5	Not used	
15	I/O	ENABLE	SW3.2V	High: Enable on
16	I	V_{DD}	System power supply	3.2 V input

3.4.6 EEPROM (Memory Unit)

If the transceiver has a memory unit (sold separately as CMU160/CMU161) installed, control and digital signals from pins 15 and 16 of microprocessor Q209 are input to pins 9 and 10 of EEPROM Q701. EEPROM Q701 reads and writes digital signals based on the control signals from microprocessor Q209.

3.4.7 Keyboard

Input data from the keys (10KEY, V/M, MAIN, CALL) is converted into serial data by key decoder IC Q151 and input to pin 36 of microprocessor Q209.

3.4.8 Beep

A single tone is output from pin 31 of microprocessor Q209. The output single tone is input to either UHF band active low-pass filter Q233 or VHF band active low-pass filter Q234. Then the single tone passes through the audio circuit and is output from internal speaker E201 as the beep tone.

3.4.9 Display Block

Digital signals are sent from pins 35, 36, and 37 of microprocessor Q209 to pins 7, 8, 9, and 10 of LCD driver IC Q101. LCD driver IC Q101 drives LCD Q102 based on these digital signals. The display uses a field effect type dynamic drive LCD (liquid crystal display). The display system uses 45 segment terminals and four common terminals. It is driven at a 1/4 duty ratio.
The functions of the I/O ports of LCD driver IC Q101 are listed below.

Table 3-24

Pin No.	I/O	Symbol	Port name	Description
1	—	Vss	Vss	GND
2	O	X1	X1	System clock 4.19 MHz
3	I	X0	X2	System clock 4.19 MHz
4	I/O	RSTX	$\overline{\text{RESET}}$	Low: Reset
5		MOD1	GND	
6	I	MOD0	GND	
7	I	SCKX	LCCK(SCK)	Clock input
8	O	SO	LCSI(SO)	Serial data output
9	I	SI	LCSO(SI)	Serial data input
10	O	P42/INT1	BUSY	High: Data reception
11	I/O	P41/PWM	Not used	
12	I/O	P40	Not used	
13	I	P31	MX4	Low: Matrix pin 4 reception
14	I	P32	MX3	Low: Matrix pin 3 reception
15	I	P33	MX2	Low: Matrix pin 2 reception
16	I	P30/INTO	MX1	Low: Matrix pin 1 reception
17	I/O	P25	RULED	High impedance: UHF RX LED on
18	I/O	P24	TVLED	High impedance: VHF TX LED on
19	I/O	P23	TULED	High impedance: UHF TX LED on
20	I/O	P22	RVLED	High impedance: VHF RX LED on
21	I/O	P21	LAMP	High impedance: Illumination LED on
22	I/O	P20	LEDSW	Low: Illumination LED, left band/right band TX/BUSY LED switch
23	I	Vcc	Vcc	System power supply 3.2 V input
24	I/O	P17	Not used	
25	I/O	P16	Not used	
26	I/O	P15	Not used	
27	I/O	P14	Not used	
28	I/O	P13	Not used	
29	O	P12	SEG44	LED segment output
30	O	P11	SEG43	LED segment output
31	O	A10	SEG42	LCD segment output
32	O	P07	SEG41	LCD segment output

Table 3-24

Pin No.	I/O	Symbol	Port name	Description
33	O	P06	SEG40	LCD segment output
34	O	P05	SEG39	LCD segment output
35	O	P04	SEG38	LCD segment output
36	O	P03	SEG37	LCD segment output
37	O	P02	SEG36	LCD segment output
38	O	P01	SEG35	LCD segment output
39	O	P00	SEG34	LCD segment output
40	O		SEG33	LCD segment output
41	O		SEG32	LCD segment output
42	O		SEG31	LCD segment output
43	O		SEG30	LCD segment output
44	O		SEG29	LCD segment output
45	O		SEG28	LCD segment output
46	O		SEG27	LCD segment output
47	O		SEG26	LCD segment output
48	O		SEG25	LCD segment output
49	O		SEG24	LCD segment output
50	O		SEG23	LCD segment output
51	O		SEG22	LCD segment output
52	O		SEG21	LCD segment output
53	O		SEG20	LCD segment output
54	O		SEG19	LCD segment output
55	O		SEG18	LCD segment output
56	O		SEG17	LCD segment output
57	O		SEG16	LCD segment output
58	O		SEG15	LCD segment output
59	O		SEG14	LCD segment output
60	O		SEG13	LCD segment output
61	O		SEG12	LCD segment output
62	O		SEG11	LCD segment output
63	O		SEG10	LCD segment output
64	O		SEG9	LCD segment output
65	O		SEG8	LCD segment output
66	O		SEG7	LCD segment output
67	O		SEG6	LCD segment output
68	O		SEG5	LCD segment output
69	O		SEG4	LCD segment output
70	O		SEG3	LCD segment output
71	O		SEG2	LCD segment output
72	O		SEG1	LCD segment output
73	O		SEG0	LCD segment output
74	O		COM3	LCD common output
75	O		COM2	LCD common output
76	O		COM1	LCD common output
77	O		COM0	LCD common output
78	—	—	V3	LCD drive reference voltage
79	—	—	V2	LCD drive reference voltage
80	—	—	V1	LCD drive reference voltage

The LCD segment indications and common indications are illustrated in the figure below.

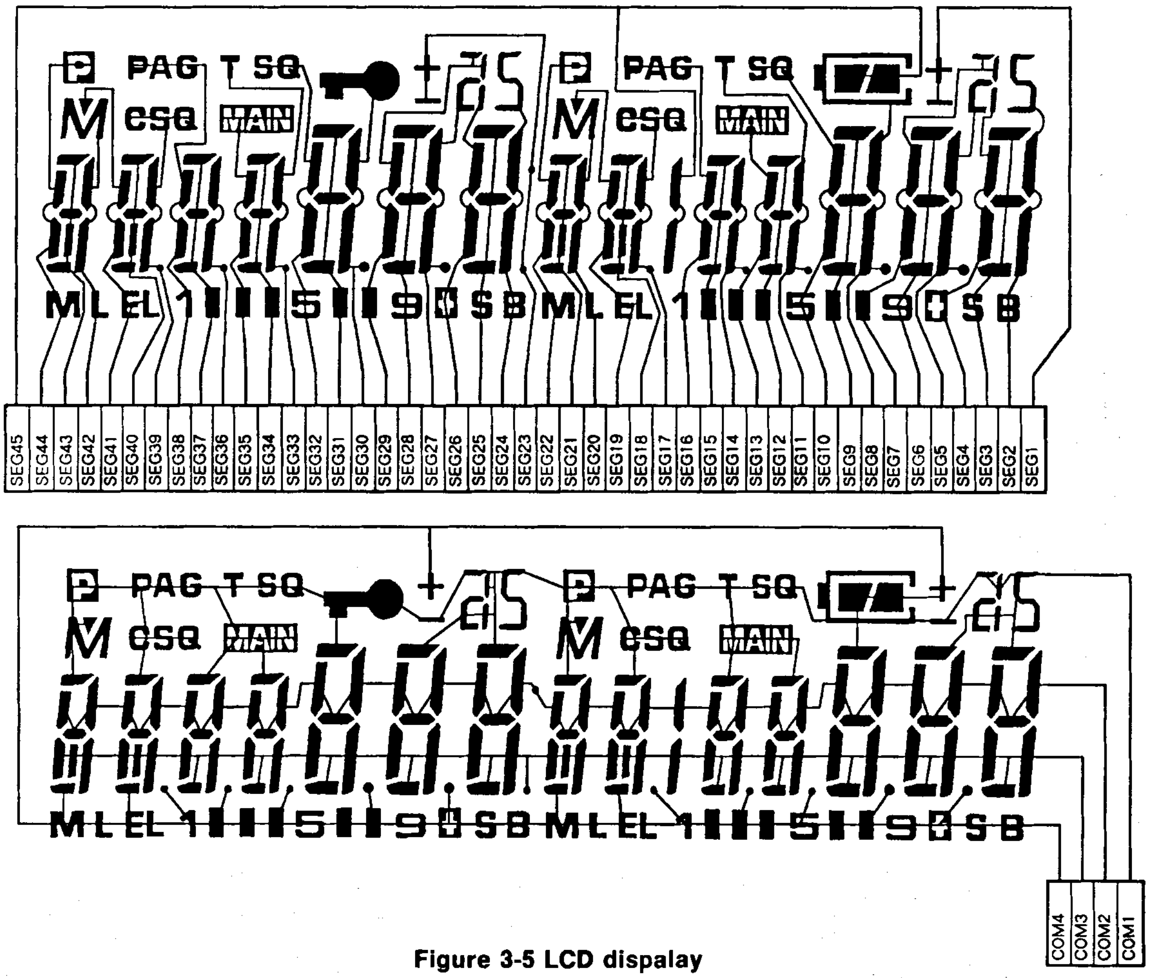


Figure 3-5 LCD dispalay

3.4.10 TX/BUSY LED

— TX/BUSY LED (right band) —

When the transceiver is in receive status, control signals from microprocessor Q209 cause a high impedance level signal to be output from pin 17 of LCD driver IC Q101. This high impedance level signal is input to right band RX LED switch Q111, causing Q111 to turn on. When right band RX LED switch Q111 turns on, TX/BUSY LED Q106 lights green.

When the transceiver is in transmit status, control signals from microprocessor Q209 cause a high impedance level signal to be output from pin 19 of LCD driver IC Q101. This high impedance level signal is input to right band TX LED switch Q112, causing Q112 to turn on. When right band TX LED switch Q112 turns on, TX/BUSY LED Q106 lights red.

— TX/BUSY LED (VHF band) —

When the transceiver is in receive status, control signals from microprocessor Q209 cause a high impedance level signal to be output from pin 20 of LCD driver IC Q101. This high impedance level signal is input to left band RX LED switches Q109 and Q114, causing Q109 and Q114 to turn on.

When left band RX LED switches Q109 and Q114 turn on, TX/BUSY LED Q105 lights green. When the transceiver is in transmit status, control signals from microprocessor Q209 cause a high impedance level signal to be output from pin 18 of LCD driver IC Q101. This high impedance level signal is input to left band TX LED switch Q110, causing Q110 to turn on. When left band TX LED switch Q110 turns on, TX/BUSY LED Q105 lights red.

3.4.11 LCD Illumination LED

When the transceiver's lamp key is pressed, control signals from microprocessor Q209 cause a high impedance level signal to be output from pin 21 of LCD driver IC Q101. This high impedance level signal is input to LCD lamp switches Q107 and Q108, causing Q107 and Q108 to turn on. When LCD lamp switches Q107 and Q108 turn on, LCD lamp LEDs Q103 and Q104 illuminate.

3.5 Power Supply Block

The power supply voltage (+B) from DC IN (external power supply connector socket) J403 and the battery terminal are supplied to the various circuits as illustrated below.

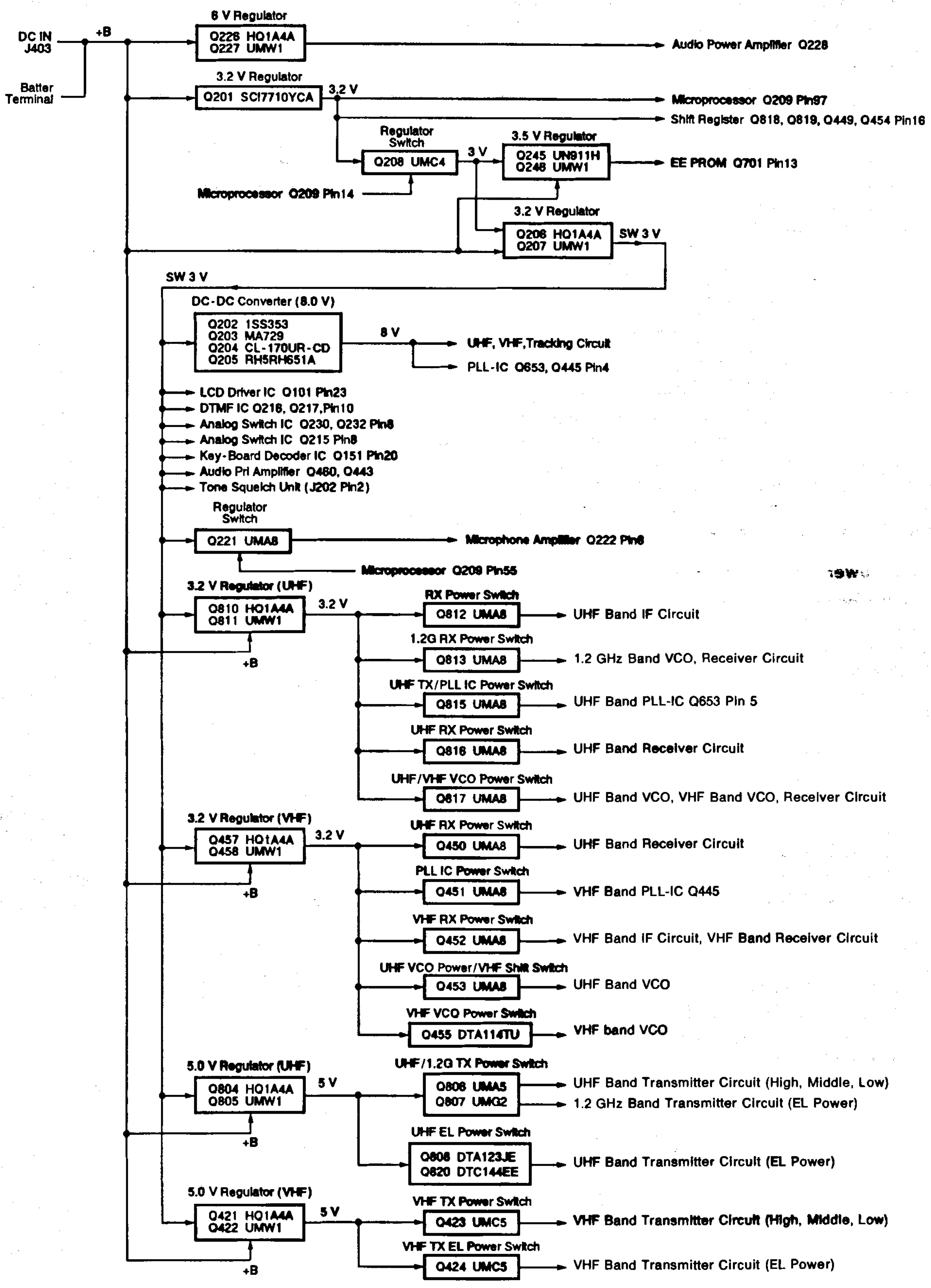


Figure 3-6 Power Supply Block Diagram

3.5.1 Microprocessor Power Supply and Shift Register IC Power Supply

A portion of the power supply voltage (+B) from DC IN (external power supply connector socket) J403 and the battery terminal is regulated at 3.2 V by 3.2 V regulator Q201. The regulated 3.2 V power supply voltage is supplied to pin 97 of microprocessor Q209 and to pin 16 of shift register ICs Q818, Q819, Q449, and Q454.

3.5.2 EEPROM Power Supply

A portion of the voltage regulated by 3.2 V regulator Q201 is applied to regulator switch Q208. Regulator switch Q208 is controlled by signals from pin 14 of microprocessor Q209. The operation of regulator switch Q208 is illustrated in Table 3-25.

Table 3-25

Transceiver power key →	Microprocessor Q209 pin 14 →	Regulator switch Q208
Off	Low	Off
On	High	On

Turning on the power key of the transceiver causes regulator switch Q208 to turn on, and 3.5 V regulators Q245 and Q246 begin to function. The power supply voltage (+B) is input to 3.5 V regulators Q245 and Q246, which regulate its level at 3.5 V. This 3.5 V output is supplied to pin 13 of EEPROM Q701.

3.5.3 Audio Power Amplifier Power Supply

A portion of the power supply voltage (+B) from DC IN (external power supply connector socket) J403 and the battery terminal is applied to 6 V regulators Q226 and Q227. The power supply (6 V) regulated by 6 V regulators Q226 and Q227 is supplied to pin 2 of audio power amplifier Q228.

3.5.4 Tracking Circuit Power Supply and PLL IC Power Supply

A portion of the power supply voltage (+B) from DC IN (external power supply connector socket) J403 and the battery terminal is applied to 3.2 V regulators Q206 and Q207. Turning on the power key of the transceiver causes regulator switch Q208 to turn on, and 3.2 V regulators Q206 and Q207 begin to function. A portion of the voltage (3.2 V) regulated by 3.2 V regulators Q206 and Q207 is applied to a DC-DC converter consisting of Q202, Q203, Q204, and Q205. The applied voltage (3.2 V) is regulated to 8 V by the DC-DC converter, and then applied to pin 4 of tracking circuit and PLL IC Q653 and Q445.

3.5.5 LCD Driver IC, Tone Squelch Unit, and Keyboard Decoder IC Power Supply

A portion of the voltage (3.2 V) regulated by 3.2 V regulators Q206 and Q207 is supplied to pin 23 of LCD driver IC Q101, the tone squelch unit, and pin 20 of keyboard decoder IC Q151.

3.5.6 DTMF IC, Preamplifier, and Analog Switch IC Power Supply

A portion of the voltage (3.2 V) regulated by 3.2 V regulators Q206 and Q207 is supplied to pin 10 of DTMF decoders Q216 and Q217, to preamplifiers Q460 and Q443, and to pin 8 of analog switch ICs Q230, Q232, and Q215.

3.5.7 Microphone Amplifier Power Supply

A portion of the voltage (3.2 V) regulated by 3.2 V regulators Q206 and Q207 is supplied to regulator switch Q221. Regulator switch Q221 is controlled by signals from pin 55 of microprocessor Q209. The operation of regulator switch Q221 is illustrated in Table 3-26.

Table 3-26

Transceiver status →	Microprocessor Q209 pin 55 →	Regulator switch Q221
Receive status	High	Off
Transmit status	Low	On

When regulator switch Q221 turns on, voltage (3.2 V) is supplied to pin 8 of microphone amplifier Q222.

3.5.8 RF-UHF P.C. Board P601 (IF P.C. Board, PLL IC, VCO Circuit, Receiver Circuit)

A portion of the power supply voltage (+B) from DC IN (external power supply connector socket) J403 and the battery terminal is applied to 3.2 V regulators Q810 and Q811. The voltage (3.2 V) regulated by 3.2 V regulators Q810 and Q811 is supplied to RX power switch Q812, 1.2 G RX power switch Q813, UHF TX/PLL IC power switch Q815, UHF RX power switch Q816, and UHF/VHF VCO power switch Q817.

Switches Q812, Q813, Q815, Q816, and Q817 are controlled by signals from shift register ICs Q818 and Q819.

3.5.9 RF-VHF P.C. Board P401 (IF Circuit, PLL IC, VCO Circuit, Receiver Circuit) Power Supply

A portion of the power supply voltage (+B) from DC IN (external power supply connector socket) J403 and the battery terminal is applied to 3.2 V regulators Q457 and Q458. The voltage (3.2 V) regulated by 3.2 V regulators Q457 and Q458 is supplied to UHF RX power switch Q450, PLL IC power switch Q451, VHF RX power switch Q452, UHF VCO power/VHF shift switch Q453, and VHF VCO power switch Q455.
Switches Q450, Q451, Q452, Q453, and Q455 are controlled by signals from shift register ICs Q449 and Q454.

3.5.10 RF-UHF P.C. Board P601 (Transmitter Circuit) Power Supply

A portion of the power supply voltage (+B) from DC IN (external power supply connector socket) J403 and the battery terminal is applied to 5 V regulators Q804 and Q805. The voltage (5 V) regulated by 5 V regulators Q804 and Q805 is supplied to UHF/1.2G TX power switches Q806 and Q807, and UHF EL power switch Q808.
Switches Q806, Q807, and Q808 are controlled by signals from shift register ICs Q818 and Q819.

3.5.11 RF-VHF P.C. Board P401 (Transmitter Circuit) Power Supply

A portion of the power supply voltage (+B) from DC IN (external power supply connector socket) J403 and the battery terminal is applied to 5 V regulators Q421 and Q422. The voltage (5 V) regulated by 5 V regulators Q421 and Q422 is supplied to VHF TX power switch Q423 and VHF TX EL power switch Q424.
Switches Q423 and Q424 are controlled by signals from shift register ICs Q818 and Q819.

4. DISASSEMBLY AND INSTALLATION OF OPTIONS

4.1 Transceiver Disassembly

4.1.1 Removing Accessories

(a) Switch off power before removing any screws.
(b) Remove the antenna and battery case as shown in the diagram.

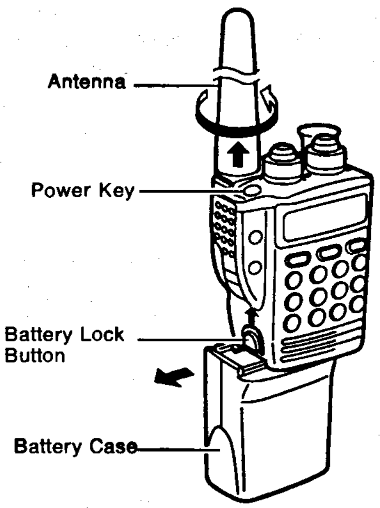


Figure 4-1

4.1.2 Removing the Front Case and Rear Case

(a) Turn the transceiver over so that the front case (display) is facing downward. Remove the four screws Ⓐ holding the release spring in place.
(b) Remove the two screws Ⓑ and two screws Ⓒ holding the rear case in place.

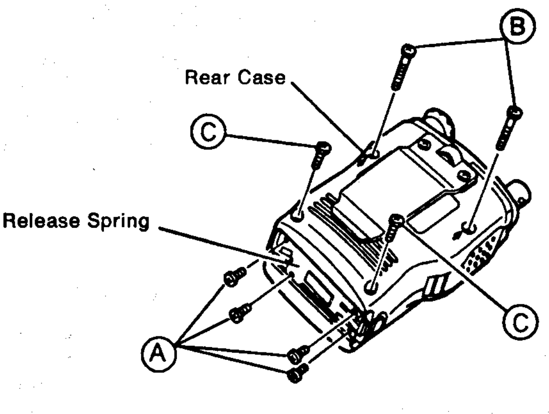


Figure 4-2

(c) Turn the transceiver over so that the front case (display) is facing up. Slowly open the front case to the right.

NOTE: Do not pull on the left side of the front case when opening it.
Doing so could damage the flexible P.C. board inside.

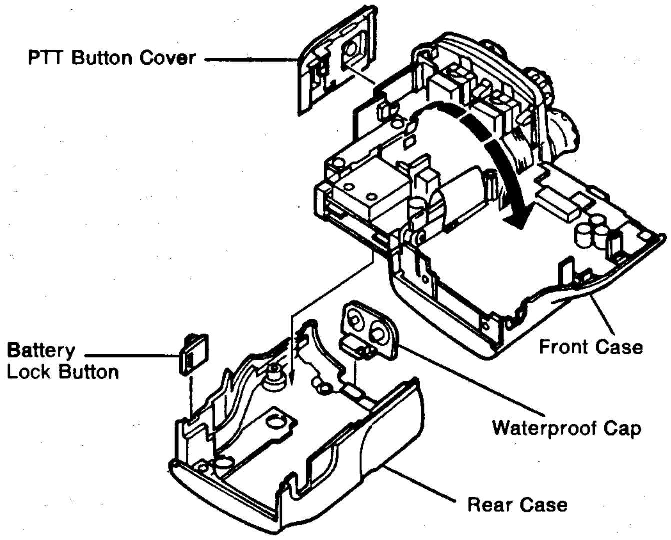


Figure 4-3

4.1.3 Removing the Control P.C. Board, Keyboard P.C. Board, and LCD P.C. Board

(a) Remove the two screws Ⓓ and two screws Ⓔ .
(b) Remove the solder from locations ① and ②, and remove the two screws Ⓕ . The LCD P.C. board, speaker, and control P.C. board can now be removed.
(c) Remove the two screws Ⓖ . The keyboard P.C. board can now be removed.

NOTE: Remove the flexible P.C. board before removing any of the above P.C. boards singly.

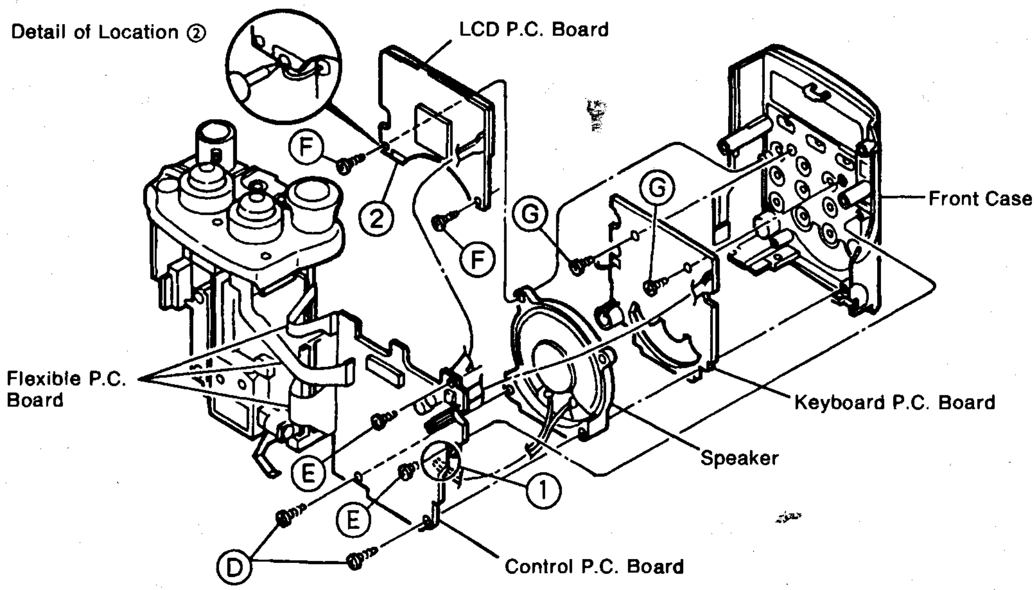


Figure 4-4

4.1.4 Removing the Top Cover

(a) Remove the rotary channel selector knob, volume knob, squelch control knob, and antenna cover as shown in the diagram below.
(b) Remove the two nuts Ⓗ and the single nut Ⓘ . The top cover can now be removed.

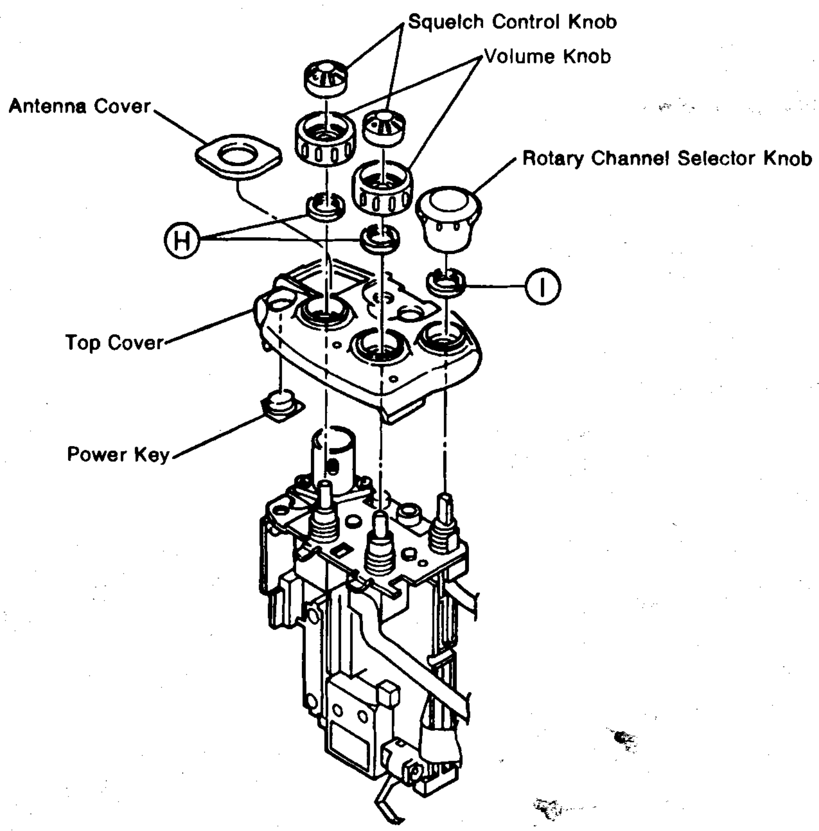


Figure 4-5

4.1.5 Removing the Power Switch P.C. Board, PTT P.C. Board, and Function P.C. Board

(a) Remove the solder from location ③, the two screws Ⓙ, and the two screws Ⓚ. The antenna connector socket and volume bracket can now be removed from the diecast frame.
(b) Remove the single screw Ⓛ. The power switch P.C. board can now be removed.
(c) Remove the single screw Ⓜ. The PTT P.C. board can now be removed.
(d) Remove the single screw Ⓝ. The function P.C. board can now be removed.

NOTE: Remove the flexible P.C. board before removing any of the above P.C. boards singly.

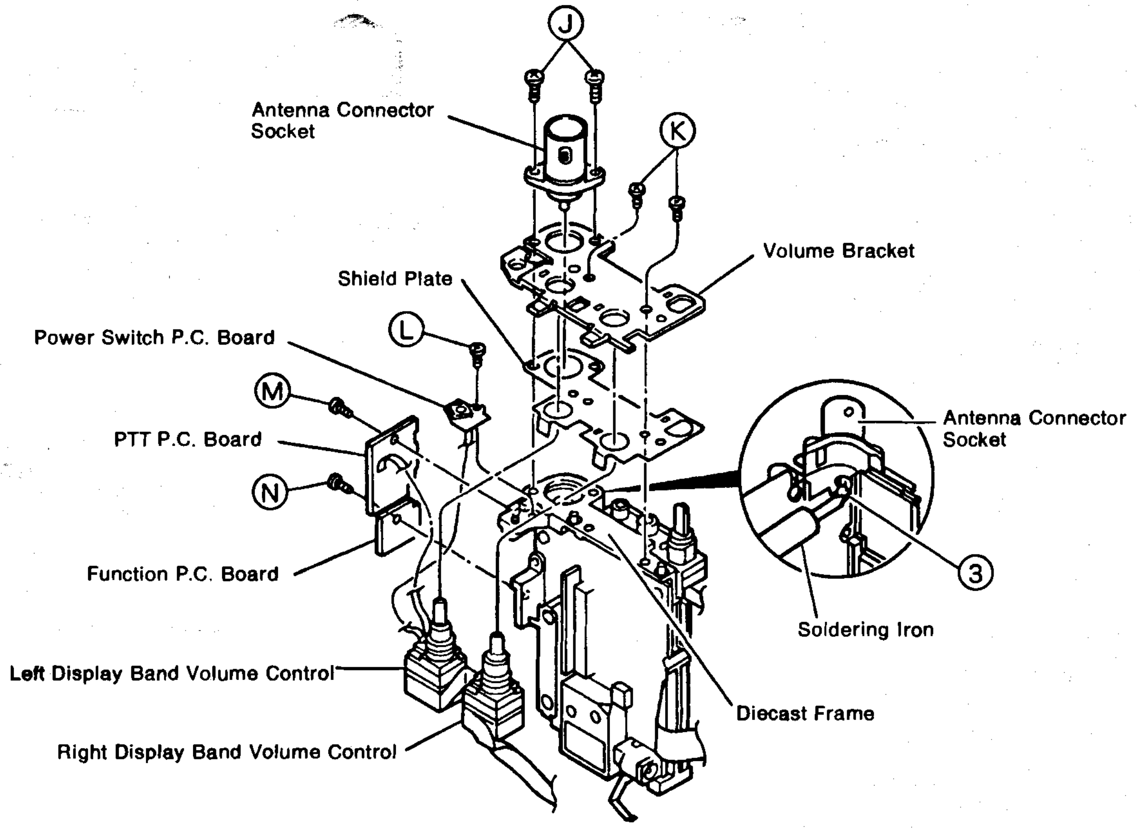


Figure 4-6

4.1.6 Removing the RF-VHF P.C. Board

(a) Remove the four screws Ⓞ and two screws Ⓟ. The RF-VHF P.C. board can now be removed from the diecast frame.

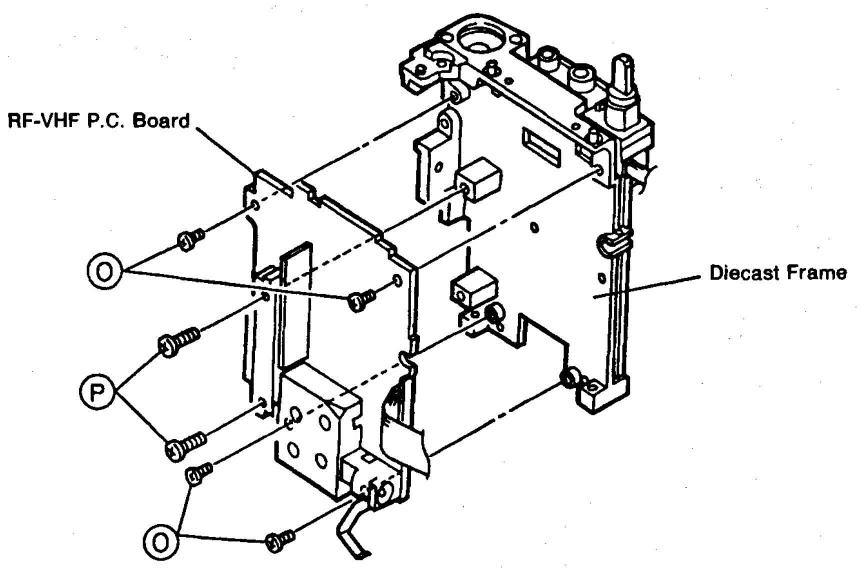


Figure 4-7

4.1.7 Removing the RF-UHF P.C. Board and SPK/MIC Socket P.C. Board

(a) Remove the two screws Ⓠ. The SPK/MIC socket P.C. board can now be removed.
(b) Remove the two supports Ⓡ, the four screws Ⓢ, and the two screws Ⓣ. The RF-UHF P.C. board can now be removed from the diecast frame.

NOTE: Remove the flexible P.C. board before removing any of the above P.C. boards singly.

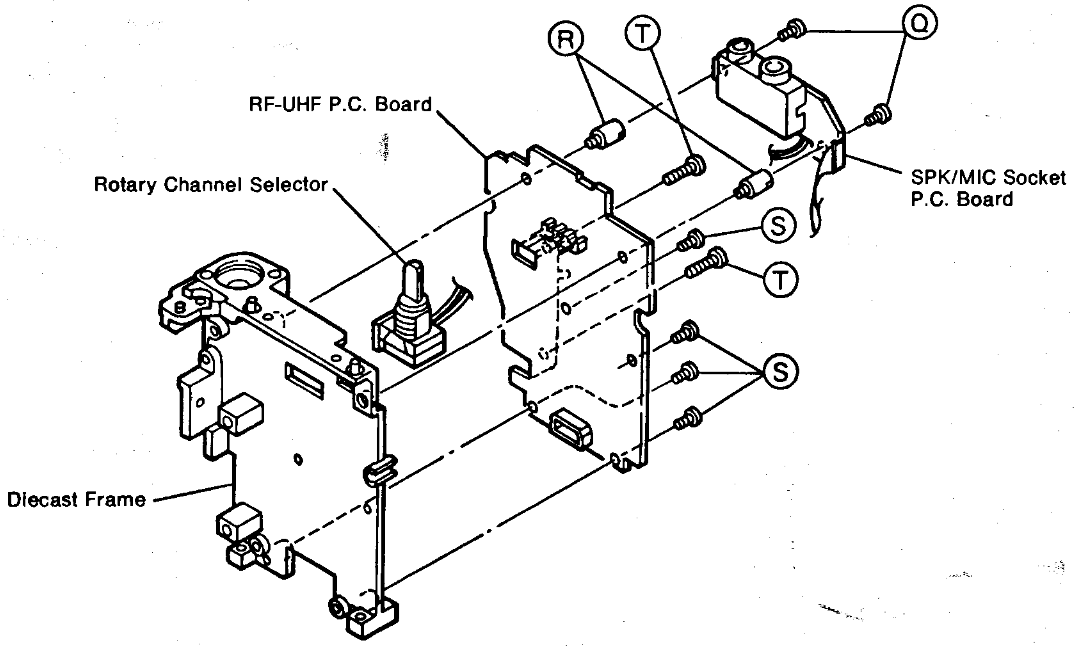


Figure 4-8

4.2 Installation of Options

4.2.1 Installing the Memory Unit (CMU160/CMU161)

NOTE: Be sure to switch off the transceiver's power before installing the CMU160/CMU161.

(a) Remove the battery case from the transceiver as shown in Figure 4-9.
The connector for mounting the memory unit (CMU160/CMU161) is located on the base of the transceiver.

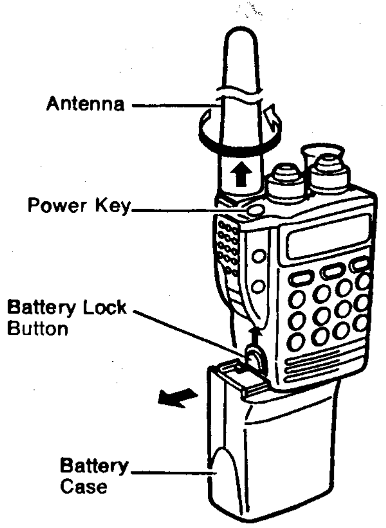


Figure 4-9

(b) To remove the previously installed memory unit from the transceiver, insert the tip of a tweezers or the like into the round hole as shown in the diagram below and pull it out.

NOTE: Do not insert the tip of the tweezers too far into the round hole in the memory unit. Doing so could damage it.

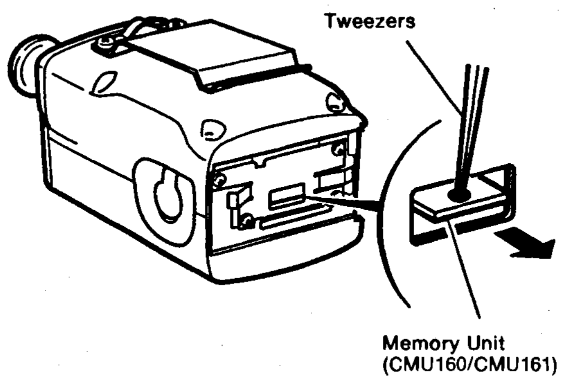


Figure 4-10

(c) Install the memory unit (CMU160/CMU161) in the transceiver. Orient the memory unit (CMU160/-CMU161) as shown in the diagram below and push it straight into the connector.

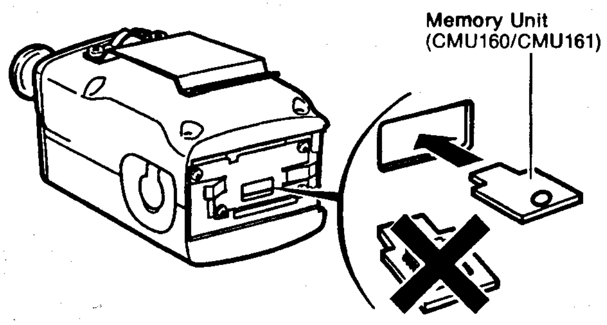


Figure 4-11

NOTE:

1. Push the CMU160/CMU161 all the way into the connector. If it is not fully inserted, it may malfunction or sustain damage. Also, the memory unit will not function if installed upside down.
2. Perform an all-reset after installing the memory unit.

4.2.2 Installing the Tone Squelch Unit (CTN560)

NOTE: The C568A comes with the tone squelch unit (CTN 560) already installed.

(a) Switch off the transceiver's power.
(b) Remove the antenna and battery case.

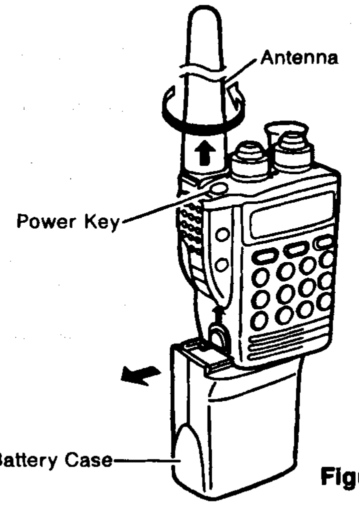


Figure 4-12

(c) As shown in the diagram, remove the two screws Ⓤ holding the release spring in place.
(d) Remove the two screws Ⓥ holding the rear case in place.

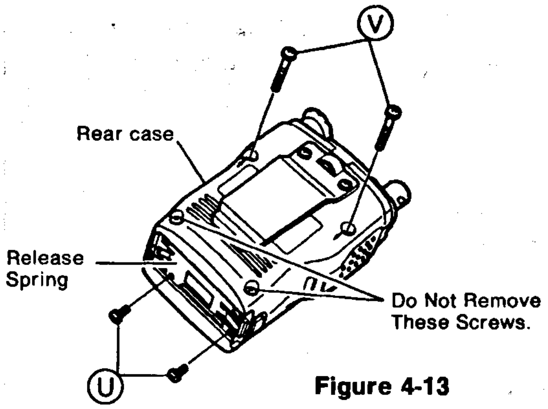


Figure 4-13

(e) Place the transceiver so that the front case **is** facing up. Grasp the front case and slowly open it to the right.

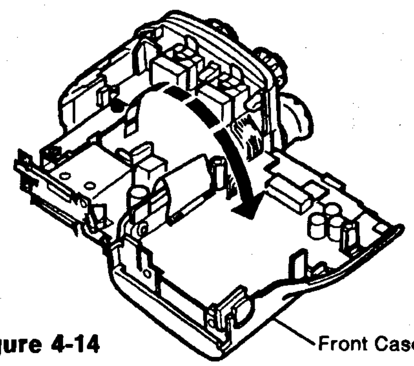


Figure 4-14

NOTE:
1 Do not pull on the left side of the front case **when** opening it. Doing so could damage the flexible P.C. board inside.
2 There is a flexible P.C. board on the side of the transceiver where the external power supply connector socket (DC IN) is located. Do not pull on it with excess force.

(f) Plug the CTN560 into the connector as shown in the diagram.

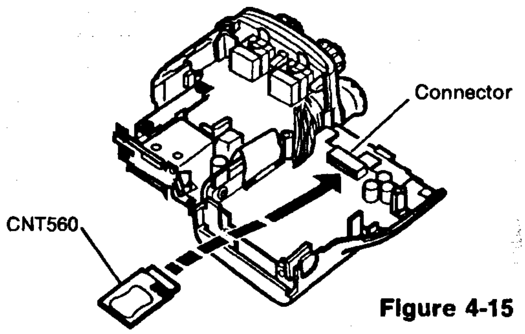


Figure 4-15

NOTE: When inserting the CTN560 into the connector, make sure it is not tilted and be sure to plug it in all the way.

(g) Put the front and rear cases back together like they were originally. Secure the rear case in place with the screws Ⓥ .
(h) Next replace the two screws Ⓤ .

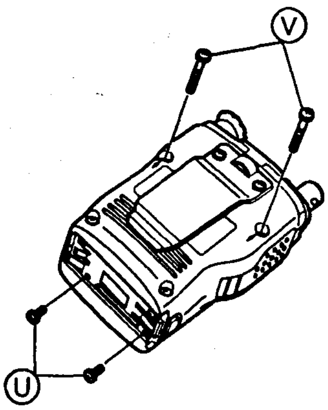


Figure 4-16

(i) This completes the installation procedure for the CTN560. The transceiver now has tone squelch capabilities.

NOTE: There is no need to perform all-reset or VFO reset.

5. ADJUSTMENT

5.1 Adjustment Connection Diagrams

Use properly calibrated measuring equipment and allow sufficient time after turning power on for it to warm up to a stable operating condition.

Standard conditions

Power supply voltage	7.2 V DC
Audio load	8 Ω
Audio output	100 mW
Standard modulation frequency	1 kHz
Standard frequency deviation	±3.5 kHz
Transmission load	50 Ω

Adjustment frequencies

UHF band (RX)	435.04 MHz [C568/C568S] 444.04 MHz [C568A]
UHF band (TX)	435.00 MHz [C568/C568S] 444.00 MHz [C568A]
VHF band (RX)	146.06 MHz [C568/C568A] 145.06 MHz [C568S]
VHF band (TX)	146.02 MHz [C568/C568A] 145.02 MHz [C568S]
1.2 GHz band (RX)	1,270.04 MHz
1.2 GHz band (TX)	1,270.00 MHz

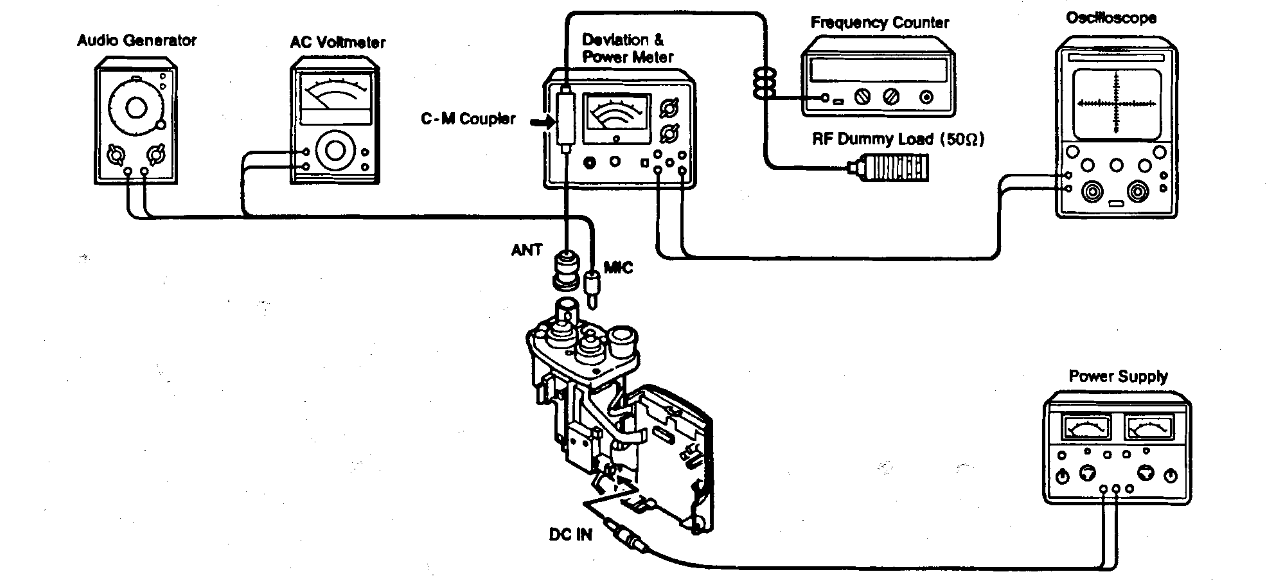


Figure 5-1 Transmission Adjustment Connection Diagram

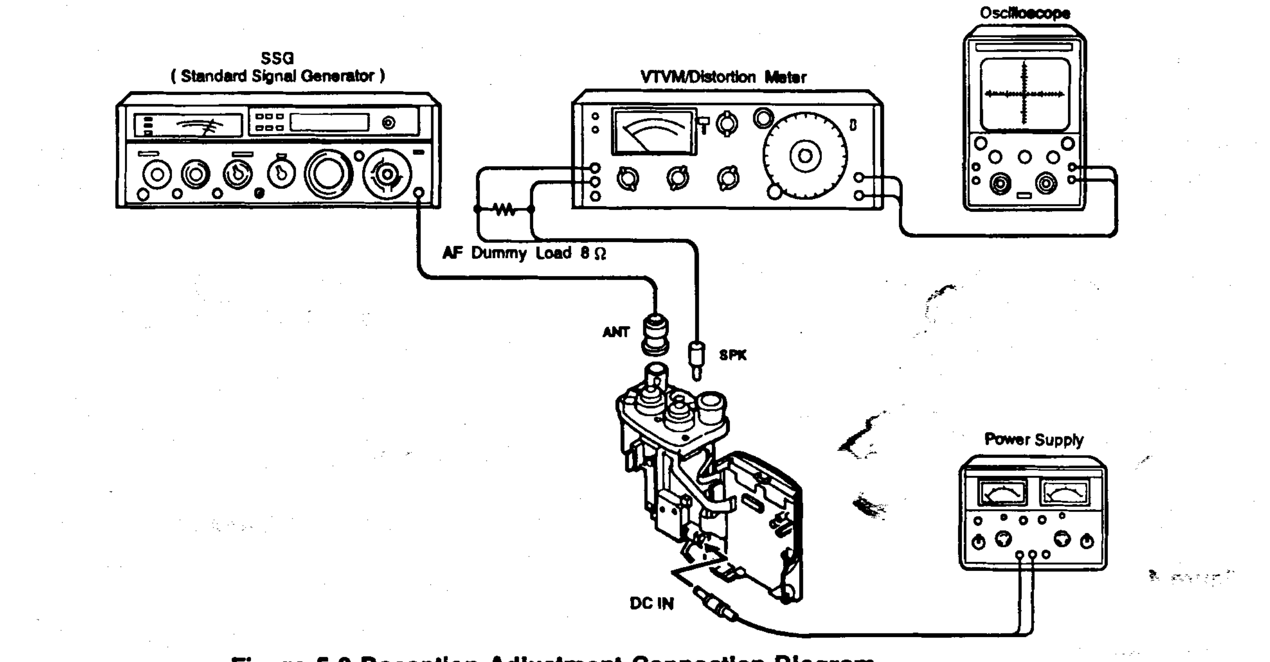


Figure 5-2 Reception Adjustment Connection Diagram

5.2 Adjustment Reference Points

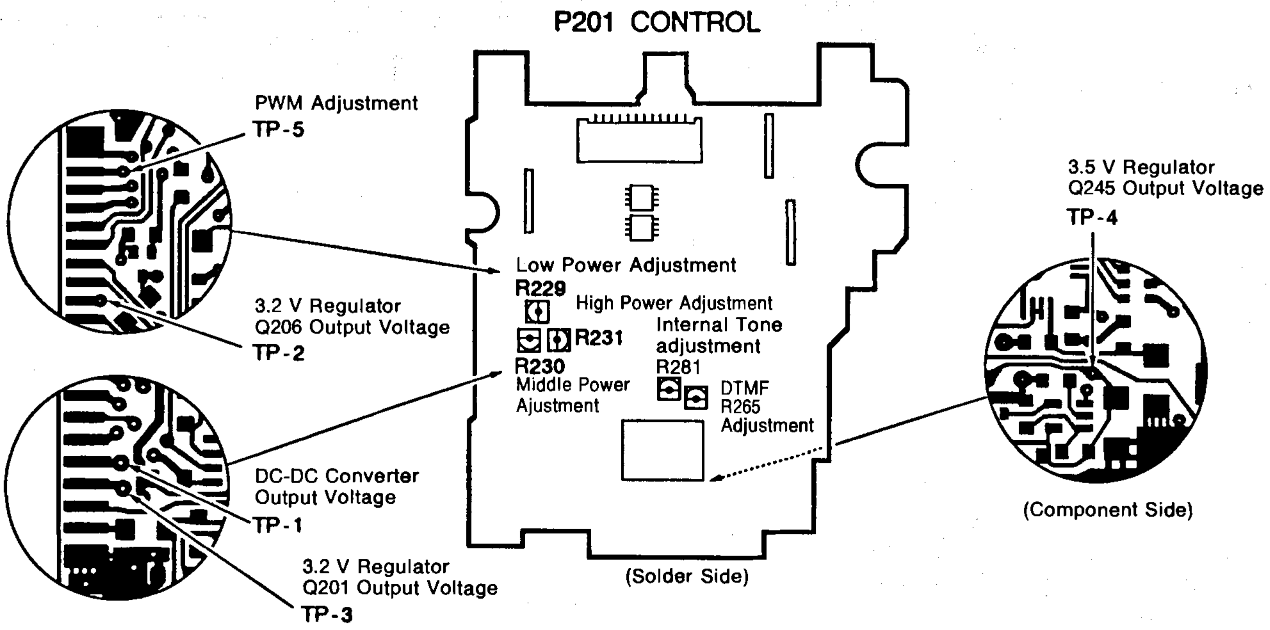


Figure 5-3 Adjustment Points (a)

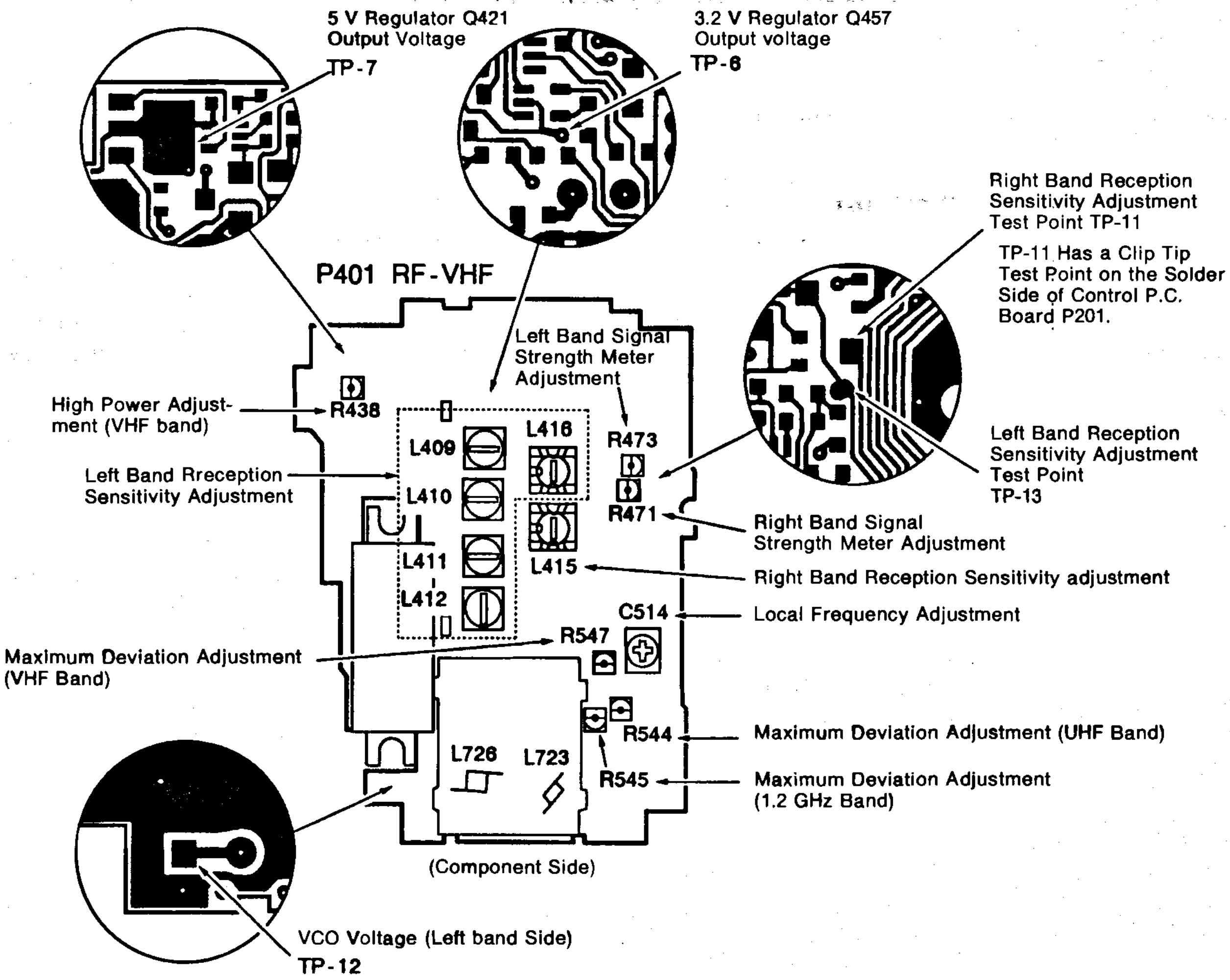


Figure 5-4 Adjustment Points (b)

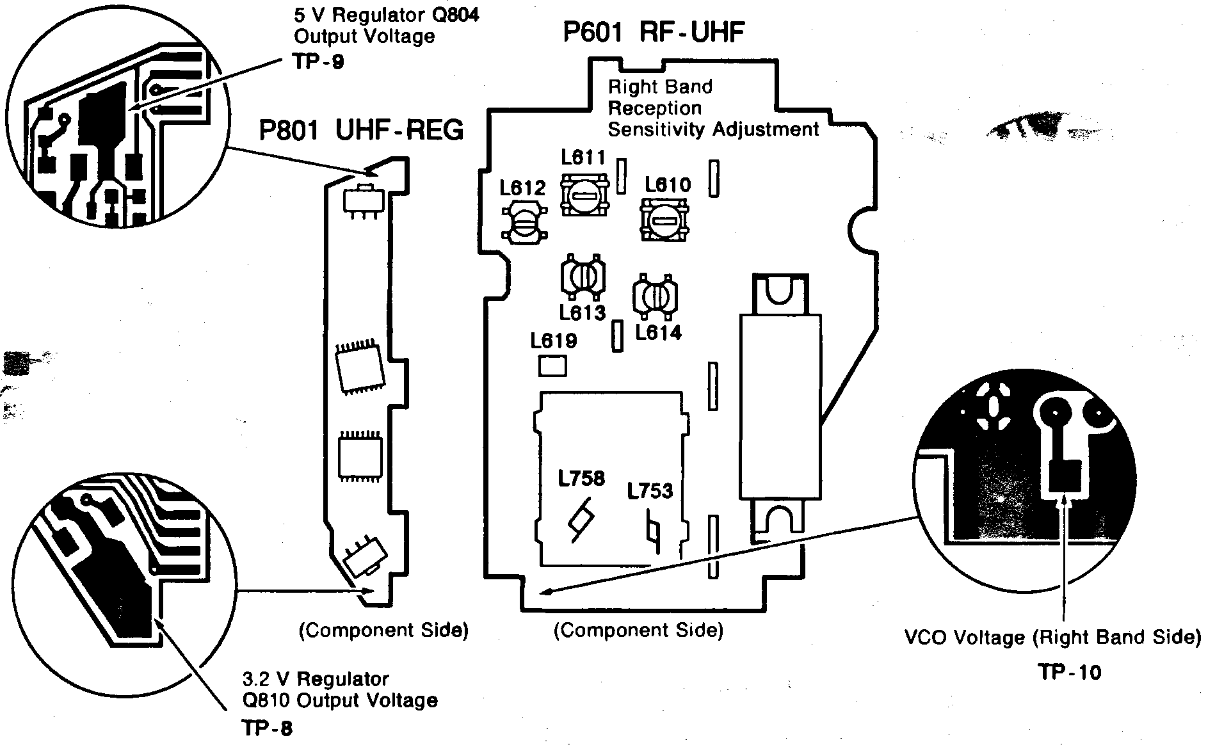


Figure 5-5 Adjustment Points (c)

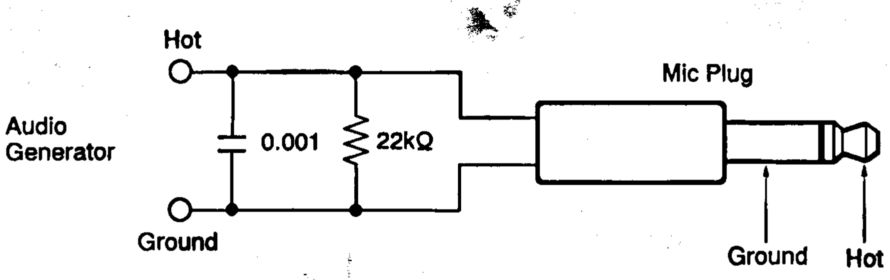


Figure 5-6 Microphone Plug

5.3 Adjustment Procedure and Confirmation Procedure

5.3.1 Power Supply Block

— Idle current confirmation —

(a) After applying a 7.2 V power supply to the transceiver, switch it on using the power key.
(b) Turn the transceiver's right and left display band squelch controls all the way clockwise.
(c) Press the MAIN key to select left display band VHF as the main band. Press the FUNC and MAIN keys at the same time to obtain a mono-band display of the VHF band.
(d) Use key input to set the transceiver frequency to 146.06 MHz [C568/C568A] or 145.06 MHz [C568S].
(e) Confirm that the VHF band current consumption is approximately 43 mA or less [C568/C568S] or approximately 46 mA or less [C568A].
(f) Use key input to set the transceiver frequency to 435.04 MHz [C568/C568S] or 444.04 MHz [C568A].
(g) Confirm that the UHF band current consumption is approximately 46 mA or less [C568/C568S] or approximately 49 mA or less [C568A].
(h) Press the MAIN key to return to twin-band display. Then select right display band UHF as the main band. Press the FUNC and MAIN keys at the same time to obtain a mono-band display of the UHF band.
(i) Use key input to set the transceiver frequency to 435.04 MHz [C568/C568S] or 444.04 MHz [C568A].
(j) Confirm that the UHF band current consumption is approximately 52 mA or less [C568/C568S] or approximately 55 mA or less [C568A].
(k) Use key input to set the transceiver frequency to 146.06 MHz [C568/C568A] or 145.06 MHz [C568S].
(l) Confirm that the VHF band current consumption is approximately 43 mA or less [C568/C568S] or approximately 46 mA or less [C568A].
(m) Use key input to set the transceiver frequency to 1,270.04 MHz.
(n) Confirm that the 1.2 GHz band current consumption is approximately 55 mA or less [C568/C568S] or approximately 58 mA or less [C568A].

— Voltage confirmation for various blocks —

(a) After applying a 7.2 V power supply to the transceiver, switch it on using the power key.
(b) In the receive mode, select left display band VHF as the main band, then set the transceiver frequency to 146.06 MHz [C568/C568A] or 145.06 MHz [C568S].
(c) Connect a voltmeter to TP-3 and confirm that the output voltage from 3.2 V regulator Q201 is approximately 3.05 V - 3.35 V.
(d) Connect a voltmeter to TP-2 and confirm that the output voltage from 3.2 V regulator Q206 is approximately 3.05 V - 3.35 V.
(e) Connect a voltmeter to TP-1 and confirm that the output voltage from the DC-DC converter is approximately 7.5 V - 8.5 V.
(f) Connect a voltmeter to TP-6 and confirm that the output voltage from 3.2 V regulator Q457 is approximately 3.15 V - 3.45 V.
(g) Connect a voltmeter to TP-7 and confirm that the output voltage from 5 V regulator Q421 is approximately 5.05 V - 5.35 V when the PTT switch is depressed.
(h) Connect a voltmeter to TP-5 and confirm that the PWM voltage is approximately 3.3 V - 3.6 V.
(i) Select right display band UHF as the main band and set the transceiver frequency to 435.04 MHz [C568/C568S] or 444.04 MHz [C568A].
(j) Connect a voltmeter to TP-8 and confirm that the output voltage from 3.2 V regulator Q810 is approximately 3.15 V - 3.45 V.
(k) Connect a voltmeter to TP-9 and confirm that the output voltage from 5 V regulator Q804 is approximately 5.05 V - 5.35 V when the PTT switch is depressed.
(l) Connect a voltmeter to TP-4 and confirm that the output voltage from 3.5 V regulator Q245 is approximately 3.3 V - 3.7 V.

5.3.2 PLL Block

NOTE: Adjustments should be performed with the RF-UHF P.C. board and RF-VHF P.C. board mounted on the aluminum diecast frame.

— Right display band VCO —

Press the MAIN key to select right display band UHF as the main band.

- **UHF-VCO Confirmation**

(a) In the receive mode, set the transceiver frequency to 435.00 MHz [C568/C568S] or 444.00 MHz [C568A].
(b) Connect a voltmeter to TP-10 and confirm that the voltage is 2.45 V - 2.75 V [C568/C568S] or 2.95 V - 3.25 V [C568A].
(c) With the frequency set to 435.00 MHz [C568/C568S] or 444.00 MHz [C568A], press the PTT switch and confirm that the voltage at TP-10 is 3.75 V - 4.25 V [C568/C568S] or 4.35 V - 4.85 V [C568A].

- **1.2 GHz-VCO Confirmation**

(a) In the receive mode, set the transceiver frequency to 1,299.99 MHz.
(b) Connect a voltmeter to TP-10 and confirm that the voltage is 2.8 V - 3.2 V.
(c) Without changing the frequency setting, press the PTT switch and confirm that the voltage at TP-10 is 3.7 V - 4.3 V.

- **VHF-VCO Confirmation**

(a) In the receive mode, set the transceiver frequency to 145.99 MHz.
(b) Connect a voltmeter to TP-10 and confirm that the voltage is 0.46 V - 0.50 V.

— Left display band VCO —

Press the MAIN key to select left display band VHF as the main band.

- **VHF-VCO Confirmation**

(a) In the receive mode, set the transceiver frequency to 145.99 MHz.
(b) Connect a voltmeter to TP-12 and confirm that the voltage is 0.85 V - 1.15 V.
(c) Without changing the frequency setting, press the PTT switch and confirm that the voltage at TP-12 is 1.4 V - 1.8 V.

- **UHF-VCO Confirmation**

(a) In the receive mode, set the transceiver frequency to 483.50 MHz.
(b) Connect a voltmeter to TP-12 and confirm that the voltage is 3.6 V - 4.25 V.

— Local frequency adjustment and Confirmation —

NOTE: Adjustments should be performed with the RF-UHF P.C. board and RF-VHF P.C. board mounted on the aluminum diecast frame. If the RF P.C. board is removed from the aluminum diecast frame after being adjusted, it will need to be readjusted.

(a) Set the transceiver frequency to 1,270.00 MHz.
(b) Press the PTT switch and use a frequency counter to measure the output via a directional coupler.
(c) Adjust C514 so that the frequency counter reading is 1,270.00 MHz ± 100 Hz.
(d) Set the transceiver frequency to 435.00 MHz [C568/C568S] or 444.00 MHz [C568A].
(e) Press the PTT switch and confirm that the reading on the frequency counter is 435.00 MHz ±300 Hz [C568/C568S] or 444.00 MHz ± 300 Hz [C568A].
(f) Set the transceiver frequency to 146.02 MHz [C568/C568A] or 145.02 MHz [C568S].
(g) Press the PTT switch and confirm that the reading on the frequency counter is 146.02 MHz ± 200 Hz [C568/C568A] or 145.02 MHz ± 200 Hz [C568S].

5.3.3 Receiver Block

— Reception sensitivity adjustment —

NOTE: Adjustments should be performed with the RF-UHF P.C. board and RF-VHF P.C. board mounted on the aluminum diecast frame.

- **Right display band adjustment**

(a) Press the MAIN key to select right display band UHF as the main band. Press the FUNC and MAIN keys at the same time to obtain a mono-band display of the UHF band.
(b) Turn the transceiver's right display band squelch control knob all the way counterclockwise.
(c) Set the frequency of the transceiver and SSG to 435.04 MHz [C568/C568S] or 444.04 MHz [C568A]. Set the SSG to standard modulation (standard modulation frequency: 1 kHz, standard frequency deviation: ±3.5 kHz).
Use the right display band volume knob to set the audio level to approximately 0.6 V.
(d) Connect a DC voltmeter to TP-11 and adjust the SSG output level so that the voltage is approximately 0.5 V.
(e) Adjust L610 through L614, in that order, so that the voltmeter reading is maximized.
When performing these adjustments, turn the core of coil L610 counterclockwise.
(f) Set the SSG output level to 60 dBμ. Adjust L415 so that the audio level is maximized.
(g) Once again, perform the adjustment described in step (e). After adjustment are complete, turn the core of coil L610 approximately one turn counterclockwise.

- **Left display band adjustment**

(a) Press the MAIN key to select left display band VHF as the main band. Press the FUNC and MAIN keys at the same time to obtain a mono-band display of the VHF band.
(b) Turn the transceiver's left display band squelch control knob all the way counterclockwise.
(c) Set the frequency of the transceiver and SSG to 145.06 MHz. Set the SSG to standard modulation (standard modulation frequency: 1 kHz, standard frequency deviation: ±3.5 kHz). Use the left display band volume knob to set the audio level to approximately 0.6 V.
(d) Connect a DC voltmeter to TP-13 and adjust the SSG output level so that the voltage is approximately 0.5 V.
(e) Turn the core of coil L411 clockwise approximately one turn above the surface of the case.
(f) Adjust L409 through L412, in that order, so that the voltmeter reading is maximized.
(g) Set the SSG output level to 60 dBμ. Adjust L416 so that the audio level is maximized.
(h) Once again, perform the adjustment described in step (f).
(i) Turn the core of coil L409 one-quarter turn clockwise.
(j) If reception sensitivity is still outside specification, repeat the steps listed under "Reception sensitivity adjustment."

— Reception sensitivity confirmation —

NOTE: The rear case should be mounted on the aluminum diecast frame when performing the following confirmation. At this time, secure the two short screws only at the bottom of the rear case.

- **Right display band confirmation**

(a) Press the MAIN key to select right display band UHF as the main band. Press the FUNC and MAIN keys at the same time to obtain a mono-band display of the UHF band.
(b) Confirm that 12 dB SINAD is –8.0 dBμ or less at frequencies between 430.05 MHz and 439.995 MHz [C568/C568S] or 438.05 MHz and 449.995 MHz [C568A].
(c) Confirm that 12 dB SINAD balance is within 1.0 dB at frequencies between 430.05 MHz and 439.995 MHz [C568/C568S] or 438.05 MHz and 449.995 MHz [C568A].
(d) Set the frequency of the transceiver and SSG to 435.04 MHz [C568/C568S] or 444.04 MHz [C568A]. Confirm that 20 dB QS is –6.5 dBμ or less.
(e) Set the transceiver frequency to 439.95 MHz [C568/C568S] or 449.95 MHz [C568A] and the SSG frequency to 393.85 MHz [C568/C568S] or 403.85 MHz [C568A]. At this point, confirm that the first image ratio is 46 dB or greater.
(f) Set the SSG frequency to 435.04 MHz [C568/C568S] or 444.04 MHz [C568A] and the SSG output level to 60 dBμ.
At this point, confirm that the S/N is 40 dB or greater.
(g) Set the frequency of the transceiver and SSG to 1,270.04 MHz and confirm that 12 dB SINAD is –3.0 dBμ or less.
(h) Set the frequency of the transceiver and SSG to 146.06 MHz [C568/C568A] or 145.06 MHz [C568S] and confirm that 12 dB SINAD is –7.0 dBμ or less.

- **Left display band confirmation**

(a) Press the MAIN key to select left display band VHF as the main band. Press the FUNC and MAIN keys at the same time to obtain a mono-band display of the VHF band.
(b) At frequencies between 144.05 MHz and 147.99 MHz [C568/C568A] or 144.05 MHz and 145.99 MHz [C568S], confirm that 12 dB SINAD is –8.5 dBμ or less.
(c) At frequencies between 144.05 MHz and 147.99 MHz [C568/C568A] or 144.05 MHz and 145.99 MHz [C568S], confirm that 12 dB SINAD balance is within 1.0 dB.
(d) Set the transceiver frequency to 147.95 MHz [C568/C568A] or 145.95 MHz [C568S] and the SSG frequency to 104.35 MHz [C568/C568A] or 102.35 MHz [C568S]. At this point, confirm that the first image ratio is 60 dB or greater.
(e) Set the SSG frequency to 146.06 MHz [C568/C568A] or 145.06 MHz [C568S] and the SSG output level to 60 dBμ. At this point, confirm that the S/N is 42 dB or greater.
(f) Set the frequency of the transceiver and SSG to 435.04 MHz [C568/C568S] or 444.04 MHz [C568A] and confirm that 12 dB SINAD is –6.0 dBμ or less.
(g) If reception sensitivity is still outside specification, repeat the steps listed under "Reception sensitivity adjustment." Note that the sub-band and 1.2 GHz band do not require adjustment.

— Signal strength meter adjustment and confirmation —

- **Right display band adjustment and confirmation**

(a) Set the frequency of the transceiver and SSG to 435.04 MHz [C568/C568S] or 444.04 MHz [C568A] and the SSG output level to 20 dBμ.
(b) Adjust R471 so that all the indications ▯ on the signal strength meter display appear.
(c) Adjust the SSG output level at 430.02 MHz and 439.98 MHz [C568/C568S] or 438.05 MHz and 449.95 MHz [C568A] so that all the indications ▯ on the signal strength meter display appear. At this point, confirm that the SSG output level is between 15 dBμ and 25 dBμ.

- **Left display band adjustment and confirmation**

(a) Set the frequency of the transceiver and SSG to 146.06 MHz [C568/C568A] or 145.06 MHz [C568S] and the SSG output level to 20 dBμ.
(b) Adjust R473 so that all the indications ▯ on the signal strength meter display appear.
(c) Adjust the SSG output level at 144.05 MHz and 147.95 MHz [C568/C568A] or 144.05 MHz and 145.95 MHz [C568S] so that all the indications ▯ on the signal strength meter display appear. At this point, confirm that the SSG output level is between 15 dBμ and 25 dBμ.

5.3.4 Transmitter Block

NOTE: Adjustments should be performed with the RF-UHF P.C. board and RF-VHF P.C. board mounted on the aluminum diecast frame. Also, when switching to the transmit mode, transmission adjustments and confirmations should be performed quickly, and the transceiver switched back to the receive mode immediately afterward. Transmission adjustments and confirmations may be performed using either the right or left display band.

— Output power adjustment —

(a) Set the transceiver's power supply voltage to 13.8 V and set the right display band to 439.99 MHz [C568/C568S] or 449.99 MHz [C568A].
Set transmission output to high power.

(b) Connect a power meter to the antenna connector socket and press the PTT switch.
At this point, adjust R231 so that the transmission output is maximized.
Confirm that the maximum output power is 6.0 W or greater.
After confirmation, return the transceiver to the receive mode.

(c) Set the transceiver's left display band to 146.02 MHz [C568/C568A] or 145.02 MHz [C568S].
Set transmission output to high power.

(d) Press the PTT switch and adjust R231 and R438 so that the transmission output is maximized.
Confirm that the maximum output power is 6.0 W or greater.
After confirmation, return the transceiver to the receive mode.

(e) Set the transceiver's right display band to 439.99 MHz [C568/C568S] or 444.00 MHz [C568A].
Set transmission output to high power.

(f) Press the PTT switch and adjust R231 so that the transmission output is 5.2 W.
At this point, confirm that the current consumption is 1,400 mA or less.
After confirmation, return the transceiver to the receive mode.

(g) Set transmission output to middle power.

(h) Press the PTT switch and adjust R230 so that the transmission output is 2.5 W.
At this point, confirm that the current consumption is 1,100 mA or less.
After confirmation, return the transceiver to the receive mode.

(i) Set transmission output to low power.

(j) Press the PTT switch and adjust R229 so that the transmission output is 0.35 W.
At this point, confirm that the current consumption is 550 mA or less.
After confirmation, return the transceiver to the receive mode.

(k) Set the transceiver's left display band to 146.02 MHz [C568/C568A] or 145.02 MHz [C568S].
Set transmission output to high power.

(l) Press the PTT switch and adjust R438 so that the transmission output is 5.2 W.
At this point, confirm that the current consumption is 1,250 mA or less.
After confirmation, return the transceiver to the receive mode.

— Output power confirmation —

(a) Set the transceiver's power supply voltage to 13.8 V and set transmission output to high power.

(b) Confirm that the transmission output is 5.0 W or greater at frequencies between 430.00 MHz and 439.99 MHz [C568/C568S] or 438.00 MHz and 449.99 MHz [C568A]. At this point, confirm that the current consumption is 1,400 mA or less.

(c) Confirm that the difference between the maximum and minimum transmission output values is 0.55 W or less at frequencies between 430.00 MHz and 439.99 MHz [C568/C568S] or 438.00 MHz and 449.99 MHz [C568A].

(d) Confirm that the transmission output is 5.0 W or greater at frequencies between 144.00 MHz and 147.99 MHz [C568/C568A] or 144.00 MHz and 145.99 MHz [C568S]. At this point, confirm that the current consumption is 1,250 mA or less.

(e) Confirm that the difference between the maximum and minimum transmission output values is 0.55 W or less at frequencies between 144.00 MHz and 147.99 MHz [C568/C568A] or 144.00 MHz and 145.99 MHz [C568S].

(f) Set transmission output to middle power.

(g) Set the frequency to 146.02 MHz [C568/C568A] or 145.02 MHz [C568S] and confirm that the transmission output is between 2.1 W and 2.7 W.
At this point, confirm that the current consumption is 1,050 mA or less.

(h) Set the frequency to 435.00 MHz [C568/C568S] or 444.00 MHz [C568A] and confirm that the transmission output is between 2.1 W and 2.7 W.
At this point, confirm that the current consumption is 1,100 mA or less.

(i) Set transmission output to low power.

(j) Set the frequency to 435.00 MHz [C568/C568S] or 444.00 MHz [C568A] and confirm that the transmission output is between 0.25 W and 0.5 W.
At this point, confirm that the current consumption is 650 mA or less.

(k) Set the frequency to 146.02 MHz [C568/C568A] or 145.02 MHz [C568S] and confirm that the transmission output is between 0.25 W and 0.5 W.
At this point, confirm that the current consumption is 700 mA or less.

(l) Set the transceiver's power supply voltage to 7.2 V and set transmission output to EL power.

(m) Set the frequency to 435.00 MHz [C568/C568S] or 444.00 MHz [C568A] and confirm that the transmission output is between 40 mW and 85 mW.
At this point, confirm that the current consumption is 130 mA or less.

(n) Set the frequency to 146.02 MHz [C568/C568A] or 145.02 MHz [C568S] and confirm that the transmission output is between 40 mW and 85 mW.
At this point, confirm that the current consumption is 115 mA or less.

(o) Set the frequency to 1,270.00 MHz and confirm that the transmission output is between 40 mW and 85 mW .
At this point, confirm that the current consumption is 130 mA or less.

— **Modulation adjustment** —

● **UHF band**

(a) Set the transceiver's power supply voltage to 7.2 V and set the frequency to 435.00 MHz [C568/C568S] or 444.00 MHz [C568A].
Set transmission output to EL power.

(b) Turn on the 750 μsec. filter on the modulation analyzer.

(c) Insert a microphone plug of the sort shown in Figure 5-6 into the external microphone socket.
Set AG output to 1 kHz, 60 mV sine wave. Switch the transceiver to transmit mode.

(d) Adjust R544 so that maximum deviation is ±5.0 kHz.

(e) Confirm that the difference between the positive and negative maximum deviation (±5.0 kHz) is 0.3 kHz or less. After confirmation, return the transceiver to the receive mode.

(f) Set the modulation analyzer's high-pass filter to 50 Hz and the low-pass filter to 20 kHz. Turn on the 750 μsec. filter. Switch the transceiver to transmit mode.

(g) Adjust the output of the AG so that deviation is ±3.5 kHz.
At this point, confirm that distortion is 4% or less. After confirmation, return the transceiver to the receive mode.

(h) Remove the microphone plug from the AG. Confirm that the AG output voltage is between 3 mV and 9 mV.

● **VHF band**

(a) Set the transceiver's power supply voltage to 7.2 V and set the frequency to 146.02 MHz [C568/C568A] or 145.02 MHz [C568S].
Set transmission output to EL power.

(b) Turn on the 750 μsec. filter on the modulation analyzer.

(c) Insert a microphone plug of the sort shown in Figure 5-6 into the external microphone socket.
Set AG output to 1 kHz, 60 mV sine wave. Switch the transceiver to transmit mode.

(d) Adjust R547 so that maximum deviation is ±5.0 kHz.

(e) Confirm that the difference between the positive and negative maximum deviation (±5.0 kHz) is 0.3 kHz or less. After confirmation, return the transceiver to the receive mode.

(f) Set the modulation analyzer's high-pass filter to 50 Hz and the low-pass filter to 20 kHz. Turn on the 750 μsec. filter. Switch the transceiver to transmit mode.

(g) Adjust the output of the AG so that deviation is ±3.5 kHz.
At this point, confirm that distortion is 4% or less. After confirmation, return the transceiver to the receive mode.

(h) Remove the microphone plug from the AG. Confirm that the AG output voltage is between 3 mV and 9 mV.

● **1.2 GHz band**

(a) Set the transceiver's power supply voltage to 7.2 V and set the frequency to 1,270.00 MHz.
Confirm that transmission output is set to EL power.

(b) Turn on the 750 μsec. filter on the modulation analyzer.

(c) Insert a microphone plug of the sort shown in Figure 5-6 into the external microphone socket.
Set AG output to 1 kHz, 60 mV square wave. Switch the transceiver to transmit mode.

(d) Adjust R545 so that maximum deviation is ±5.0 kHz.

(e) Confirm that the difference between the positive and negative maximum deviation (±5.0 kHz) is 0.3 kHz or less. After confirmation, return the transceiver to the receive mode.

(f) Set the modulation analyzer's high-pass filter to 50 Hz and the low-pass filter to 20 kHz. Turn on the 750 μsec. filter.

(g) Adjust the output of the AG so that deviation is ±3.5 kHz. At this point, confirm that distortion is 4% or less. After confirmation, return the transceiver to the receive mode.

(h) Remove the microphone plug from the AG. Confirm that the AG output voltage is between 3 mV and 9 mV.

— **Tone burst adjustment and confirmation** —

(a) Set the transceiver's power supply voltage to 7.2 V and set the frequency to 435.00 MHz [C568/C568S] or 444.00 MHz [C568A].
Set transmission output to EL power.

(b) Insert a microphone plug of the sort shown in Figure 5-6 into the external microphone socket. Set AG output to 0 mV (non-modulated status).

(c) Set the modulation analyzer's high-pass filter to 50 Hz and the low-pass filter to 20 kHz. Turn on the 750 μsec. filter.

(d) Switch the transceiver to the transmit mode and press the CALL key. Adjust R281 so that tone deviation is ±3.5 kHz. At this point, confirm that distortion is 8% or less.

(e) Confirm that the tone frequency is 1,750 Hz ±10 Hz. After confirmation, return the transceiver to the receive mode.

(f) Set the transceiver frequency to 146.02 MHz [C568/C568A] or 145.02 MHz [C568S].

(g) Perform the same settings described in steps (b) through (c).

(h) Switch the transceiver to the transmit mode and press the CALL key. In this status, confirm that tone deviation is between ±3.0 kHz and ±4.0 kHz.

(i) Set the transceiver frequency to 1,270.00 MHz

(j) Perform the same settings described in steps (b) through (c).

(k) Switch the transceiver to the transmit mode and press the CALL key. In this status, confirm that tone deviation is between ±3.0 kHz and ±4.0 kHz.

— **DTMF adjustment and confirmation** —

(a) Set the transceiver's power supply voltage to 7.2 V and set the frequency to 435.00 MHz [C568/C568S] or 444.00 MHz [C568A].
Set transmission output to EL power.

(b) Set the modulation analyzer's high-pass filter to 50 Hz and the low-pass filter to 20 kHz. Turn on the 750 μsec. filter.

(c) Insert a microphone plug of the sort shown in Figure 5-6 into the external microphone socket. Set AG output to 0 mV (non-modulated status).

(d) Set the transceiver to transmit status and press the "8" key on the keyboard.
Adjust R265 so that DTMF deviation is ±3.0 kHz.

(e) At this point, confirm that the beep of a DTMF signal is audible from the transceiver's speaker.

(f) Set the transceiver frequency to 146.02 MHz [C568/C568A] or 145.02 MHz [C568S] and AG output to 0 mV (non-modulated status).
(g) Set the transceiver to transmit status and press the "8" key on the keyboard.
Confirm that DTMF deviation is between ±2.6 kHz and ±3.4 kHz.
(h) Set the transceiver frequency to 1,270.00 MHz and AG output to 0 mV (non-modulated status).
(i) Set the transceiver to transmit status and press the "8" key on the keyboard.
Confirm that DTMF deviation is between ±2.6 kHz and ±3.4 kHz.

— Tone squelch unit (CTN560) —

NOTE: The C568A comes with the tone squelch unit already installed.

- **Tone deviation confirmation**

(a) Install the tone squelch unit (CTN560) in the transceiver.
(b) Set the transceiver's power supply voltage to 7.2 V and switch it on using the power key. (It is not necessary to reset the transceiver.)
(c) Set the modulation analyzer's high-pass filter to off and the low-pass filter to 3 kHz. Turn on the 750 μsec. filter.
(d) Set the transceiver frequency to 435.00 MHz [C568/C568S] or 444.00 MHz [C568A].
(e) While holding down the FUNC key, press the 7/TSQ key twice to switch to the tone squelch mode.
Next, hold down the FUNC key and press the 0/SET/SB key to activate the set mode. Turn the rotary channel selector until "CF" appears on the display. Use the keyboard to set the tone frequency to 67.0 MHz.
(f) Insert a microphone plug of the sort shown in Figure 5-6 into the external microphone socket. Set AG output to 0 mV (non-modulated status).
(g) Switch the transceiver to the transmit mode and confirm that tone deviation is between ±0.5 kHz and ±0.9 kHz. At this point, confirm that distortion is 15% or less.
After confirmation, return the transceiver to the receive mode.
(h) Set the tone frequency to 250.3 Hz and switch to the transmit mode.
(i) Confirm that tone deviation is between ±0.5 kHz and ±0.9 kHz.
At this point, confirm that distortion is 15% or less. After confirmation, return the transceiver to the receive mode.
(j) Set the transceiver frequency to 146.02 MHz [C568/C568A] or 145.02 MHz [C568S]. Set AG output to 0 mV (non-modulated status).
(k) Set the tone frequency to 67.0 Hz and switch to the transmit mode.
(l) Confirm that tone deviation is between ±0.5 kHz and ±0.9 kHz.
At this point, confirm that distortion is 15% or less. After confirmation, return the transceiver to the receive mode.
(m) Set the tone frequency to 250.3 Hz and switch to the transmit mode.
(n) Confirm that tone deviation is between ±0.5 kHz and ±0.9 kHz.
At this point, confirm that distortion is 15% or less. After confirmation, return the transceiver to the receive mode.
(o) Set the transceiver frequency to 1,270.00 MHz and set AG output to 0 mV (non-modulated status).
(p) Set the tone frequency to 67.0 Hz and switch to the transmit mode.
(q) Confirm that tone deviation is between ±0.5 kHz and ±0.9 kHz.
At this point, confirm that distortion is 15% or less. After confirmation, return the transceiver to the receive mode.
(r) Set the tone frequency to 250.3 Hz and switch to the transmit mode.
(s) Confirm that tone deviation is between ±0.5 kHz and ±0.9 kHz.
At this point, confirm that distortion is 15% or less. After confirmation, return the transceiver to the receive mode.

NOTE: If the above adjustment values to not conform to specification, perform the deviation adjustment below.

- **Tone deviation adjustment**

(a) Set the transceiver's power supply voltage to 7.2 V and set the transceiver frequency to 435.00 MHz [C568/C568S] or 444.00 MHz [C568A].
(b) While holding down the FUNC key, press the 7/TSQ key twice to switch to the tone squelch mode.
Next, hold down the FUNC key and press the 0/SET/SB key to activate the set mode. Turn the rotary channel selector until "CF" appears on the display. Use the keyboard to set the tone frequency to 67.0 MHz.
(c) Set the modulation analyzer's high-pass filter to off and the low-pass filter to 3 kHz. Turn on the 750 μsec. filter.
(d) Insert a microphone plug of the sort shown in Figure 5-6 into the external microphone socket. Set AG output to 0 mV (non-modulated status).
(e) Switch the transceiver to the transmit mode. Adjust the semi-fixed resistor (UHF band) on the tone squelch unit so that tone deviation is ±0.6 kHz.
After adjustment, return the transceiver to the receive mode.
(f) Set the transceiver frequency to 146.02 MHz [C568/C568A] or 145.02 MHz [C568S] and the tone frequency to 67.0 Hz.
(g) Perform the same settings described in steps (c) and (d).
(h) Switch the transceiver to the transmit mode. Adjust the semi-fixed resistor (VHF band) on the tone squelch unit so that tone deviation is ±0.65 kHz.
After adjustment, return the transceiver to the receive mode.

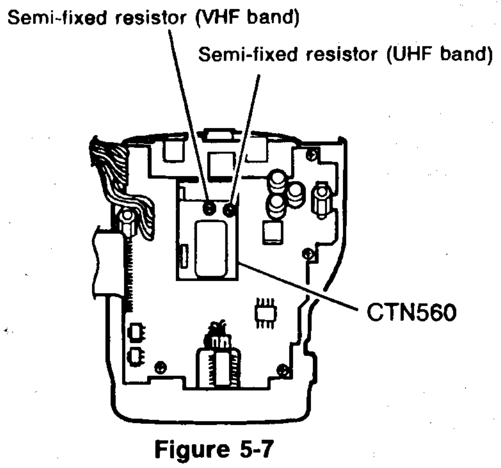


Figure 5-7

6. SPECIFICATIONS

6.1 General

Frequency range	144.000 - 147.995 MHz [C568/C568A]
	144.000 - 145.995 MHz [C568S]
	430.000 - 439.995 MHz [C568/C568S]
	438.000 - 449.995 MHz [C568A]
	1,240.000 - 1,299.990 MHz
Frequency types	F2, F3
Microphone input impedance	600 Ω
Speaker impedance	8 Ω
Operating voltage range	DC 4.5 V - 15.0 V (using battery terminal)
	DC 5.0 V - 16.0 V (using external power supply socket)
Rated voltage	DC 7.2 V
Current consumption (transmitting at 13.8 V)	[High 5 W] Approx. 1,100 mA (144 MHz band)
	Approx. 1,300 mA (430 MHz band)
	[Middle 2.5 W] Approx. 850 mA (144 MHz band)
	Approx. 950 mA (430 MHz band)
Current consumption (transmitting at 7.2 V)	[High 2.6 W] Approx. 880 mA (144 MHz band)
	Approx. 980 mA (430 MHz band)
	[Middle 2.5 W] Approx. 850 mA (144 MHz band)
	Approx. 950 mA (430 MHz band)
Current consumption (transmitting at 13.8 V/7.2 V)	[Low 0.35 W] Approx. 480 mA (144 MHz band/430 MHz band)
Current consumption (transmitting at 13.8 V/7.2 V)	[EL 50 mW] Approx. 100 mA (144 MHz band/430 MHz band)
Current consumption (transmitting at 13.8 V/7.2 V)	[EL 35 mW] Approx. 120 mA (1,200 MHz band)
Current consumption (standby mode)	Approx. 65 mA (twin band operation) [C568/C568S]
	Approx. 68 mA (twin band operation) [C568A]
	Approx. 34 mA (144 MHz mono band operation) [C568/C568S]
	Approx. 37 mA (144 MHz mono band operation) [C568A]
	Approx. 45 mA (430 MHz mono band operation) [C568/C568S]
	Approx. 48 mA (430 MHz mono band operation) [C568A]
	Approx. 49 mA (1,200 MHz mono band operation) [C568/C568S]
	Approx. 52 mA (1,200 MHz mono band operation) [C568A]
Current consumption (save 0.75-second mode)	Approx. 28 mA (twin band operation)
Dimensions (including battery, excluding protrusions)	47.0 (W) x 130.5 (H) x 34.0 (D) mm [C568/C568S]
	47.0 (W) x 134.5 (H) x 34.0 (D) mm [C568A]
Weight (including battery and antenna)	Approx. 360 g [C568/C568S]
	Approx. 390 g [C568A]

6.2 Receiver Block

Reception method	Double super heterodyne
Intermediate frequencies	(Left display band) first IF 21.8 MHz
	Second IF 455 kHz
	(Right display band) first IF 23.05 MHz
	Second IF 450 kHz
Reception sensitivity	(Left display band) 144 MHz band 0.16 μV
	430 MHz band 0.18 μV
	(Right display band) 144 MHz band 0.16 μV
	430 MHz band 0.16 μV
	1,200 MHz band 0.28 μV
S/N at 0.5 mV input	30 dB or greater
Squelch open sensitivity	0.1 μV
Audio output	250 mW (8 W, 10% distortion)

6.3 Transmitter Block

Transmission output power (high)
- Using CBT171 .... Approx. 2.5 W (144 MHz band/430 MHz band)
- Using CNB171/173 .... Approx. 2.6 W (144 MHz band/430 MHz band)
- Using CNB172 .... Approx. 5.0 W (144 MHz band/430 MHz band)

Transmission output power (middle) .... Approx. 2.5 W (144 MHz band/430 MHz band)
Transmission output power (low) .... Approx. 0.35 W (144 MHz band/430 MHz band)
Transmission output power (EL) .... Approx. 50 mW (144 MHz band)
Approx. 50 mW (430 MHz band)
Approx. 35 mW (1,200 MHz band)
Modulation method .... Reactance modulation
Maximum frequency deviation .... ±5 kHz
Spurious ratio .... 60 dB or greater
Internal microphone .... Electret condenser microphone

6.4 DTMF

— DTMF encoder —

Tone frequency (f) .... 697 Hz $\leqq$ f $\leqq$ 1,633 Hz
Tone frequency deviation .... ±3.0 kHz (at 435.00 MHz) [C568/C568S]
±3.0 kHz (at 444.00 MHz) [C568A]

— DTMF decoder —

Squelch open sensitivity .... 20 dB (SINAD) or less

NOTE: The squelch open sensitivity is the value when conditions (a) through (d) below are satisfied.
(a) The modulation frequency is flat.
(b) [8] key modulation is ±3.2 kHz.
(c) The paging mode is activated using the [777 ✱ 777] code.
(d) Activated using the set command [dtSP nor].

6.5 Tone Squelch Unit (CTN560)

Input voltage .... 3.2 V

— Encoder —

Tone frequency (f) .... 67.0 Hz $\leqq$ f $\leqq$ 250.3 Hz (total 39 waves)
Tone frequency deviation .... ±0.5%

Output level (at maximum volume) (179.9 Hz) .... 200 mV or greater
Tone frequency distortion .... 5% or less

— Decoder —

Open level .... 10 mV or less
Response time .... 250 msec. or less
Current consumption .... 3.5 mA or less

Due to performance improvements, specifications are subject to change without notice.

7. PARTS LIST

- Parts list

The parts list contains information on electrical and mechanical parts.
Electrical parts are listed first, followed by mechanical parts.
Parts used only in the C568 are indicates by the notation [C568] in the description column.
Parts used only in the C568S are indicates by the notation [C568S] in the description column.
Parts used only in the C568A are indicates by the notation [C568A] in the description column.

- Chip parts

Part numbers whose first three characters correspond to the following codes indicate chip parts.

– Capacitors –	– Resistors –	– Semiconductors –	– Coils –
DD4.......	NI........	BA........	LU........
DD5.......	NN........	HX........	
DD9.......	NY........	HY........	
DF9.......	RI........	HZ........	
DK4.......			
DK5.......			
DK9.......			
EY........			

- Ordering replacement parts

Please supply the following information.

Part symbol (4 characters)
Part number (10 characters)
"Description"
Model and serial number

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P201 CONTROL P.C.BOARD
P201	**1**	**WG266X2015**	**CONTROL P.C.BOARD**
C201	1	EY22600470	TANTALUM CAP. 22 µF/4 V
C202	1	DK96102300	1000 pF ± 10 %
C203	1	DK96102300	1000 pF ± 10 %
C204	1	EY47501050	TANTALUM CAP. 4.7 µF/10 V
C205	1	EY10600650	TANTALUM CAP. 10 µF/6.3 V
C206	1	DK96102300	1000 pF ± 10 %
C207	1	DK96102300	1000 pF ± 10 %
C208	1	EY33600450	TANTALUM CAP. 33 µF/4 V
C209	1	KC097X001R	TANTALUM CAP. 4.7 µF/6.3 V
C210	1	EY22600470	TANTALUM CAP. 22 µF/4 V
C211	1	KC097X001R	TANTALUM CAP. 4.7 µF/6.3 V
C212	1	DK96102300	1000 pF ± 10 %
C213	1	EY10600650	TANTALUM CAP. 10 µF/6.3 V
C214	1	DK96473200	0.047 µF ± 10 %
C215	1	DD95470300	47 pF ± 5 % (CG)
C216	1	DD95470300	47 pF ± 5 % (CG)
C217	1	DK58224200	0.22 µF
C218	1	DD95430300	43 pF ± 5 % (CG)
C219	1	DD95390300	39 pF ± 5 % (CG)
C220	1	DD95470300	47 pF ± 5 % (CG)
C221	1	DD95430300	43 pF ± 5 % (CG)
C222	1	DK96473200	0.047 µF ± 10 %
C223	1	DK96473200	0.047 µF ± 10 %
C224	1	DK96103200	0.01 µF ± 10 %
C225	1	DK96103200	0.01 µF ± 10 %
C226	1	DK96102300	1000 pF ± 10 %
C227	1	EY10503570	TANTALUM CAP. 1 µF/35 V
C228	1	DK96102300	1000 pF ± 10 %
C229	1	DK96272300	2700 pF ± 10 %
C230	1	DK96223200	0.022 µF ± 10 %
C231	1	DK96471300	470 pF ± 10 %
C232	1	DK56104200	0.1 µF ± 10 %
C233	1	DK56562300	5600 pF ± 10 %
C234	1	DD95680300	68 pF ± 5 % (CG)
C235	1	DK56104200	0.1 µF ± 10 %
C236	1	DK96103200	0.01 µF ± 10 %
C237	1	KC097X001R	TANTALUM CAP. 4.7 µF/6.3 V
C238	1	DK96472300	4700 pF ± 10 %
C239	1	DK56104200	0.1 µF ± 10 %
C241	1	DK96103200	0.01 µF ± 10 %
C242	1	EY10501610	TANTALUM CAP. 1 µF/16 V
C244	1	DK96102300	1000 pF ± 10 %
C245	1	DK96102300	1000 pF ± 10 %
C246	1	EG10700650	ELECT. CAP. 100 µF/6.3 V
C247	1	EG10700650	ELECT. CAP. 100 µF/6.3 V
C248	1	DK56563200	0.056 µF ± 10 %
C249	1	DK56563200	0.056 µF ± 10 %
C250	1	EY22500630	TANTALUM CAP. 2.2 µF/6.3 V
C251	1	EY22500630	TANTALUM CAP. 2.2 µF/6.3 V
C252	1	DK96102300	1000 pF ± 10 %
C253	1	DK96223200	0.022 µF ± 10 %
C254	1	DK96223200	0.022 µF ± 10 %
C255	1	DK96223200	0.022 µF ± 10 %
C256	1	DK96223200	0.022 µF ± 10 %
C257	1	EY22600470	TANTALUM CAP. 22 µF/4 V
C259	1	DK96471300	470 pF ± 10 %
C260	1	DK96332300	3300 pF ± 10 %

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P201 CONTROL P.C.BOARD
C261	1	DD95221300	220 pF ± 5 % (CG)
C263	1	DK96471300	470 pF ± 10 %
C264	1	DK96332300	3300 pF ± 10 %
C265	1	DK96223200	0.022 µF ± 10 %
C266	1	DK96223200	0.022 µF ± 10 %
C267	1	DD95221300	220 pF ± 5 % (CG)
C269	1	DK96103200	0.01 µF ± 10 %
C271	1	DK96103200	0.01 µF ± 10 %
C272	1	DK56104200	0.1 µF ± 10 %
C273	1	DK96102300	1000 pF ± 10 %
C274	1	EY10501610	TANTALUM CAP. 1 µF/16 V
C275	1	DK96102300	1000 pF ± 10 %
C276	1	DK96103200	0.01 µF ± 10 %
C277	1	DK96103200	0.01 µF ± 10 %
C278	1	DK96102300	1000 pF ± 10 %
C279	1	DD95101300	100 pF ± 5 % (CG)
C280	1	DD95101300	100 pF ± 5 % (CG)
C284	1	KC266X003R	TANTALUM CAP. 22 µF/10 V
C285	1	EY22600470	TANTALUM CAP. 22 µF/4 V
C287	1	DK96102300	1000 pF ± 10 %
C289	1	EY10700630	TANTALUM CAP. 100 µF/6.3 V
C291	1	KC097X001R	TANTALUM CAP. 4.7 µF/6.3 V
C292	1	DK96102300	1000 pF ± 10 %
C293	1	DK96102300	1000 pF ± 10 %
C296	1	DK96102300	1000 pF ± 10 %
C297	1	DK96103200	0.01 µF ± 10 %
C298	1	DK96103200	0.01 µF ± 10 %
C299	1	DK96102300	1000 pF ± 10 %
C300	1	DK96102300	1000 pF ± 10 %
C301	1	DK96473200	0.047 µF ± 10 %
C302	1	DK96473200	0.047 µF ± 10 %
C303	1	DK96473200	0.047 µF ± 10 %
C304	1	DK96103200	0.01 µF ± 10 %
E201	1	QK0036901R	SPEAKER T036S23D0010
J201	1	YJ0700958R	SOCKET 5PIN (EEPROM)
J202	1	YJ0700957R	SOCKET 12PIN (TONE SQL)
L201	1	LU1510401R	INDUCTOR 100nH ELJSC101K
L202	1	FC9002003R	FERRITE CORE BLM21A05PT
L204	1	FC9002003R	FERRITE CORE BLM21A05PT
L205	1	FC9002003R	FERRITE CORE BLM21A05PT
L206	1	KL102X002R	INDUCTOR 1 µH MLF2012A
Q001	1	KH044Y8010	CTCSS UNIT(CTN560) [C568A]
Q201	1	HC98A3253R	IC SCI7710YCA
Q202	1	HZ2002521R	DIODE 1SS353
Q203	1	HZ2004702R	DIODE MA729
Q204	1	HI1000186R	L.E.D. CL-170UR-CD-T
Q205	1	HC1000877R	IC RH5RH651A
Q206	1	BA1000306R	DIGITAL TRANSISTOR HQ1A4A
Q207	1	BA9000821R	DIGITAL TRANSISTOR UMW1
Q208	1	BA9001121R	DIGITAL TRANSISTOR UMC4
Q209	1	HU266XH10R	MICROPROCESSOR HD404629C26TF
Q210	1	HC1005753R	IC S-80740SN-D4

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P201 CONTROL P.C.BOARD
Q211	1	HC1001577R	IC RN5VL27CA
Q212	1	HX214621AR	TRANSISTOR 2SB1462
Q213	1	HZ2002521R	DIODE 1SS353
Q214	1	HZ2002521R	DIODE 1SS353
Q215	1	HC445305SR	IC TC4W53FU
Q216	1	HC1034303R	IC LC73881M
Q217	1	HC1034303R	IC LC73881M
Q218	1	HZ20013210	DIODE DAP202U
Q219	1	HC445305SR	IC TC4W53FU
Q220	1	HC1025405R	IC TC4S66F
Q221	1	BA1004221R	DIGITAL TRANSISTOR UMA8
Q222	1	HC1011809R	IC NJM2100E
Q223	1	BA2004321R	DIGITAL TRANSISTOR DTC144EE
Q224	1	HZ3075121R	DIODE DTZ7.5B
Q226	1	BA1000306R	DIGITAL TRANSISTOR HQ1A4A
Q227	1	BA9000821R	DIGITAL TRANSISTOR UMW1
Q228	1	HC10067090	IC NJM2073M
Q229	1	BA1004121R	DIGITAL TRANSISTOR UMG2
Q230	1	HC445305SR	IC TC4W53FU
Q231	1	HC408605IR	IC TC7S86FU
Q232	1	HC445305SR	IC TC4W53FU
Q233	1	HX346171BR	TRANSISTOR 2SC4617 (R)
Q234	1	HX346171BR	TRANSISTOR 2SC4617 (R)
Q235	1	HY101441AR	FET 2SJ144 (Y)
Q237	1	HY101441AR	FET 2SJ144 (Y)
Q238	1	BA2004321R	DIGITAL TRANSISTOR DTC144EE
Q239	1	BA1000802R	DIGITAL TRANSISTOR UN911H
Q240	1	HX214621AR	TRANSISTOR 2SB1462
Q241	1	BA9000821R	DIGITAL TRANSISTOR UMW1
Q242	1	HZ3160221R	DIODE DTZ16A
Q243	1	HZ3000321R	DIODE DTZ20B
Q245	1	BA1000802R	DIGITAL TRANSISTOR UN911H
Q246	1	BA9000821R	DIGITAL TRANSISTOR UMW1
Q247	1	HY2158000R	FET 2SK1580
Q248	1	HZ2005005R	DIODE 1SS366
Q249	1	HZ2005005R	DIODE 1SS368
R201	1	NN05151610	150 Ω ± 5 % 1/16 W
R202	1	NN05000610	0 Ω ± 5 % 1/16 W
R203	1	NN05100610	10 Ω ± 5 % 1/16 W
R204	1	NN05153610	15 k Ω ± 5 % 1/16 W
R205	1	NN05103610	10 k Ω ± 5 % 1/16 W
R206	1	NN05470610	47 Ω ± 5 % 1/16 W
R207	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R208	1	NN05103610	10 k Ω ± 5 % 1/16 W
R209	1	NN05224610	220 k Ω ± 5 % 1/16 W
R210	1	NN05105610	1 M Ω ± 5 % 1/16 W
R211	1	NN05564610	560 k Ω ± 5 % 1/16 W
R212	1	NN05224610	220 k Ω ± 5 % 1/16 W
R213	1	NN05224610	220 k Ω ± 5 % 1/16 W
R214	1	NN05103610	10 k Ω ± 5 % 1/16 W
R215	1	NN05332610	3.3 k Ω ± 5 % 1/16 W
R216	1	NN05332610	3.3 k Ω ± 5 % 1/16 W
R217	1	NN05104610	100 k Ω ± 5 % 1/16 W
R218	1	NN05105610	1 M Ω ± 5 % 1/16 W
R219	1	NN05474610	470 k Ω ± 5 % 1/16 W
R220	1	BW05102020	NETWORK RESISTOR 1 k Ω MNR14E0A

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P201 CONTROL P.C.BOARD
R221	1	NN05105610	1 M Ω ± 5 % 1/16 W
R222	1	NN05473610	47 k Ω ± 5 % 1/16 W
R223	1	NN05223610	22 k Ω ± 5 % 1/16 W
R224	1	NN05102610	1 k Ω ± 5 % 1/16 W
R225	1	NN05224610	220 k Ω ± 5 % 1/16 W
R226	1	NN05103610	10 k Ω ± 5 % 1/16 W
R227	1	NN05103610	10 k Ω ± 5 % 1/16 W
R228	1	NN05473610	47 k Ω ± 5 % 1/16 W
			[C568S/C568A]
R229	1	NY01030300	TRIMM.RESISTOR 10 k Ω MVR22
R230	1	NY01040300	TRIMM.RESISTOR 100 k Ω MVR22
R231	1	NY01040300	TRIMM.RESISTOR 100 k Ω MVR22
R232	1	NN05104610	100 k Ω ± 5 % 1/16 W
R233	1	NN05104610	100 k Ω ± 5 % 1/16 W
R234	1	NN05102610	1 k Ω ± 5 % 1/16 W
R235	1	NN05102610	1 k Ω ± 5 % 1/16 W
R236	1	NN05102610	1 k Ω ± 5 % 1/16 W
R237	1	NN05102610	1 k Ω ± 5 % 1/16 W
R238	1	NN05102610	1 k Ω ± 5 % 1/16 W
R239	1	NN05224610	220 k Ω ± 5 % 1/16 W
R240	1	NN05224610	220 k Ω ± 5 % 1/16 W
R241	1	NN05473610	47 k Ω ± 5 % 1/16 W
			[C568S]
R242	1	NN05224610	220 k Ω ± 5 % 1/16 W
R245	1	NN05474610	470 k Ω ± 5 % 1/16 W
R246	1	NN05124610	120 k Ω ± 5 % 1/16 W
R247	1	NN05103610	10 k Ω ± 5 % 1/16 W
R248	1	NN05124610	120 k Ω ± 5 % 1/16 W
R249	1	NN05103610	10 k Ω ± 5 % 1/16 W
R250	1	NN05104610	100 k Ω ± 5 % 1/16 W
R251	1	NN05473610	47 k Ω ± 5 % 1/16 W
R252	1	NN05333610	33 k Ω ± 5 % 1/16 W
R253	1	NN05333610	33 k Ω ± 5 % 1/16 W
R254	1	NN05104610	100 k Ω ± 5 % 1/16 W
R255	1	NN05104610	100 k Ω ± 5 % 1/16 W
R256	1	NN05273610	27 k Ω ± 5 % 1/16 W
R257	1	NN05273610	27 k Ω ± 5 % 1/16 W
R258	1	NN05000610	0 Ω ± 5 % 1/16 W
R259	1	NN05823610	82 k Ω ± 5 % 1/16 W
R260	1	NN05000610	0 Ω ± 5 % 1/16 W
R262	1	NN05563610	56 k Ω ± 5 % 1/16 W
R263	1	NN05393610	39 k Ω ± 5 % 1/16 W
R264	1	NN05124610	120 k Ω ± 5 % 1/16 W
R265	1	NY01040220	TRIMM.RESISTOR 100 k Ω EVM1XS
R266	1	NN05824610	820 k Ω ± 5 % 1/16 W
R268	1	NN05471610	470 Ω ± 5 % 1/16 W
R269	1	NN05333610	33 k Ω ± 5 % 1/16 W
R270	1	NN05153610	15 k Ω ± 5 % 1/16 W
R271	1	NN0139361R	39 k Ω ± 1 % 1/16 W
R272	1	NN05103610	10 k Ω ± 5 % 1/16 W
R273	1	NN0156361R	56 k Ω ± 1 % 1/16 W
R274	1	NN05102610	1 k Ω ± 5 % 1/16 W
R275	1	NN05474610	470 k Ω ± 5 % 1/16 W
R276	1	NN05683610	68 k Ω ± 5 % 1/16 W
R277	1	NN05223610	22 k Ω ± 5 % 1/16 W
R278	1	NN05683610	68 k Ω ± 5 % 1/16 W
R279	1	NN05102610	1 k Ω ± 5 % 1/16 W
R280	1	NN05102610	1 k Ω ± 5 % 1/16 W

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION		
			P201 CONTROL P.C.BOARD		
R261	1	NY01040220	TRIMM.RESISTOR 100 kΩ EVM1XS		
R282	1	NN05223610	22 kΩ	± 5 %	1/16 W
R283	1	NN05472610	4.7 kΩ	± 5 %	1/16 W
R284	1	NN05000610	0 Ω	± 5 %	1/16 W
R285	1	NN05022610	2.2 Ω	± 5 %	1/16 W
R286	1	NN05123610	12 kΩ	± 5 %	1/16 W
R287	1	NN05103610	10 kΩ	± 5 %	1/16 W
R288	1	NN05022610	2.2 Ω	± 5 %	1/16 W
R289	1	NN05022610	2.2 Ω	± 5 %	1/16 W
R290	1	NN05151610	150 Ω	± 5 %	1/16 W
R291	1	NN05102610	1 kΩ	± 5 %	1/16 W
R292	1	NN05102610	1 kΩ	± 5 %	1/16 W
R293	1	NN05151610	150 Ω	± 5 %	1/16 W
R294	1	NN05223610	22 kΩ	± 5 %	1/16 W
R295	1	NN05103610	10 kΩ	± 5 %	1/16 W
R296	1	NN05103610	10 kΩ	± 5 %	1/16 W
R297	1	NN05223610	22 kΩ	± 5 %	1/16 W
R298	1	NN05123610	12 kΩ	± 5 %	1/16 W
R299	1	NN05123610	12 kΩ	± 5 %	1/16 W
R300	1	NN05103610	10 kΩ	± 5 %	1/16 W
R301	1	NN05103610	10 kΩ	± 5 %	1/16 W
R302	1	NN05102610	1 kΩ	± 5 %	1/16 W
R303	1	NN05102610	1 kΩ	± 5 %	1/16 W
R304	1	NN05474610	470 kΩ	± 5 %	1/16 W
R305	1	NN05103610	10 kΩ	± 5 %	1/16 W
R306	1	NN05104610	100 kΩ	± 5 %	1/16 W
R307	1	NN05104610	100 kΩ	± 5 %	1/16 W
R308	1	NN05334610	330 kΩ	± 5 %	1/16 W
R309	1	NN0515561R	1.5 MΩ	± 5 %	1/16 W
R310	1	NN05222610	2.2 kΩ	± 5 %	1/16 W
R311	1	NN05474610	470 kΩ	± 5 %	1/16 W
R312	1	NN05103610	10 kΩ	± 5 %	1/16 W
R313	1	NN05104610	100 kΩ	± 5 %	1/16 W
R314	1	NN05104610	100 kΩ	± 5 %	1/16 W
R315	1	NN05334610	330 kΩ	± 5 %	1/16 W
R316	1	NN0515561R	1.5 MΩ	± 5 %	1/16 W
R317	1	NN05222610	2.2 kΩ	± 5 %	1/16 W
R318	1	NN05103610	10 kΩ	± 5 %	1/16 W
R319	1	NN05472610	4.7 kΩ	± 5 %	1/16 W
R320	1	NN05224610	220 kΩ	± 5 %	1/16 W
R321	1	NN05103610	10 kΩ	± 5 %	1/16 W
R323	1	NN05473610	47 kΩ	± 5 %	1/16 W
R324	1	NN05473610	47 kΩ	± 5 %	1/16 W
R326	1	NN05474610	470 kΩ	± 5 %	1/16 W
R327	1	NN05224610	220 kΩ	± 5 %	1/16 W
R328	1	NN05103610	10 kΩ	± 5 %	1/16 W
R329	1	NN05474610	470 kΩ	± 5 %	1/16 W
R330	1	NN05222610	2.2 kΩ	± 5 %	1/16 W
R332	1	NN05472610	4.7 kΩ	± 5 %	1/16 W
R333	1	NN05102610	1 kΩ	± 5 %	1/16 W
R334	1	NN05105610	1 MΩ	± 5 %	1/16 W
R335	1	NN05473610	47 kΩ	± 5 %	1/16 W
R336	1	NN05333610	33 kΩ	± 5 %	1/16 W
R337	1	NN05473610	47 kΩ	± 5 %	1/16 W
R338	1	NN05474610	470 kΩ	± 5 %	1/16 W
R339	1	NN05474610	470 kΩ	± 5 %	1/16 W
R340	1	NN05474610	470 kΩ	± 5 %	1/16 W

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION		
			P201 CONTROL P.C.BOARD		
R341	1	BW05102020	NETWORK RESISTOR 1 kΩ MNR14E0A		
R342	1	NN05102610	1 kΩ	± 5 %	1/16 W
R343	1	NN05104610	100 kΩ	± 5 %	1/16 W
R344	1	NN05104610	100 kΩ	± 5 %	1/16 W
R345	1	NN05103610	10 kΩ	± 5 %	1/16 W
R346	1	RD0104017R	VARIABLE RESISTOR 100 kΩ		
R347	1	RD0104017R	VARIABLE RESISTOR 100 kΩ		
R348	1	NN05474610	470 kΩ	± 5 %	1/16 W
R349	1	NN05124610	120 kΩ	± 5 %	1/16 W
R350	1	NN05470610	47 Ω	± 5 %	1/16 W
R351	1	NN05000610	0 Ω	± 5 %	1/16 W
R352	1	NN05220610	22 Ω	± 5 %	1/16 W
R353	1	NN05103610	10 kΩ	± 5 %	1/16 W
R354	1	NN05153610	15 kΩ	± 5 %	1/16 W
R355	1	NI05000110	0 Ω	± 5 %	1/10 W
R356	1	NN05474610	470 kΩ	± 5 %	1/16 W
R357	1	NN05000610	0 Ω	± 5 %	1/16 W
R358	1	NN05472610	4.7 kΩ	± 5 %	1/16 W
R359	1	NN05473610	47 kΩ	± 5 %	1/16 W
R360	1	NN05223610	22 kΩ	± 5 %	1/16 W
R361	1	NN05563610	56 kΩ	± 5 %	1/16 W
R362	1	NN05563610	56 kΩ	± 5 %	1/16 W
R363	1	NI05000110	0 Ω	± 5 %	1/10 W
R364	1	NN05104610	100 kΩ	± 5 %	1/16 W
R365	1	NN05105610	1 MΩ	± 5 %	1/16 W
R366	1	NN05105610	1 MΩ	± 5 %	1/16 W
R367	1	NP05224610	220 kΩ	± 5 %	1/16 W
R368	1	NP05224610	220 kΩ	± 5 %	1/16 W
S201	1	SP0101219R	PUSH SWITCH SKQGAB		
S202	1	SP0101219R	PUSH SWITCH SKQGAB		
W002	1	WE233X2002	FLEXIBLE P.C.BOARD		
W003	1	WE233X2002	FLEXIBLE P.C.BOARD		
W004	1	WE266X1000	FLEXIBLE P.C.BOARD		
W005	1	WE266X2000	FLEXIBLE P.C.BOARD		
W006	1	WE266X3000	FLEXIBLE P.C.BOARD		
X201	1	FQ0400406R	CERAMIC VIB. CSAC4.00MGC200		
X202	1	FQ0419406R	CERAMIC VIB. CSAC4.19MGC200		
X203	1	FQ0419406R	CERAMIC VIB. CSAC4.19MGC200		
			P202 PTT P.C.BOARD		
P202	1	WG266X2025	PTT P.C.BOARD		
C282	1	DK96102300	1000 pF	± 10 %	
C286	1	DD95470300	47 pF	± 5 %	(CG)
S204	1	SP0101219R	PUSH SWITCH SKQGAB		
			P203 FUNCTION P.C.BOARD		
P203	1	WG266X2035	FUNCTION P.C.BOARD		
S203	1	SP0101219R	PUSH AWITCH SKQGAB		

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P204 POWER SW P.C.BOARD
P204	1	WG266X2045	POWER SW P.C.BOARD
C283	1	DK96102300	1000 pF ± 10 %
S205	1	SP0101219R	PUSH SWITCH SKQGAB
			P205 KEY BOARD P.C.BOARD
P205	1	WG266X2055	KEY BOARD P.C.BOARD
C151	1	DK96102300	1000 pF ± 10 %
C152	1	DK96102300	1000 pF ± 10 %
C153	1	DK96102300	1000 pF ± 10 %
C154	1	DK96102300	1000 pF ± 10 %
L151	1	FC9002003R	FERRITE CORE BLM21A05PT
N151	1	MS5000043R	MICROPHONE UNIT WM-60AX
Q151	1	HC1011918R	IC MB88361PFV
Q152	1	HZ2002521R	DIODE 1SS353
Q153	1	HZ3075121R	DIODE DTZ7.5B
R151	1	BW05102020	NETWORK RESISTOR 1 kΩ MNR14E0A
R152	1	BW05102020	NETWORK RESISTOR 1 kΩ MNR14E0A
R153	1	BW05102020	NETWORK RESISTOR 1 kΩ MNR14E0A
R154	1	NN05102610	1 kΩ ± 5 % 1/16 W
R155	1	NN05102610	1 kΩ ± 5 % 1/16 W
R156	1	NN05102610	1 kΩ ± 5 % 1/16 W
R157	1	NN05104610	100 kΩ ± 5 % 1/16 W
R158	1	NN05101610	100 Ω ± 5 % 1/16 W
R159	1	NN05102610	1 kΩ ± 5 % 1/16 W
R160	1	NN05333610	33 kΩ ± 5 % 1/16 W
			P206 LCD P.C.BOARD
P206	1	WG266X2065	LCD P.C.BOARD
C101	1	DD95330300	33 pF ± 5 % (CG)
C102	1	DD95330300	33 pF ± 5 % (CG)
C103	1	DK96103200	0.01 μF ± 10 %
C104	1	DK96223200	0.022 μF ± 10 %
C105	1	DK96223200	0.022 μF ± 10 %
C106	1	DK96223200	0.022 μF ± 10 %
C109	1	DK96102300	1000 pF ± 10 %
Q101	1	HU266XF10R	MICROPROCESSOR MB89821
Q102	1	HQ2150132R	DISPLAY UNIT
Q103	1	HI1000130R	L.E.D PG1101F
Q104	1	HI1000130R	L.E.D. PG1101F
Q105	1	HI1000286R	L.E.D. CL-155UR/G-D-T
Q106	1	HI1000286R	L.E.D. CL-155UR/G-D-T
Q107	1	HX423511AR	TRANSISTOR 2SD2351 (V,W)
Q108	1	HX423511AR	TRANSISTOR 2SD2351 (V,W)
Q109	1	HX423511AR	TRANSISTOR 2SD2351 (V,W)
Q110	1	HX423511AR	TRANSISTOR 2SD2351 (V,W)
Q111	1	HX423511AR	TRANSISTOR 2SD2351 (V,W)
Q112	1	HX423511AR	TRANSISTOR 2SD2351 (V,W)
Q113	1	BA1003621R	DIGITAL TRANSISTOR DTA144EE
Q114	1	HX423511AR	TRANSISTOR 2SD2351 (V,W)

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P206 LCD P.C.BOARD
R101	1	NN05820610	82 Ω ± 5 % 1/16 W
R102	1	NN05470610	47 Ω ± 5 % 1/16 W
R103	1	NN05822610	8.2 kΩ ± 5 % 1/16 W
R104	1	NN05393610	39 kΩ ± 5 % 1/16 W
R105	1	NN05221610	220 Ω ± 5 % 1/16 W
R106	1	NN05221610	220 Ω ± 5 % 1/16 W
R107	1	NN05393610	39 kΩ ± 5 % 1/16 W
R108	1	NN05331610	330 Ω ± 5 % 1/16 W
R109	1	NN05823610	82 kΩ ± 5 % 1/16 W
R110	1	NN05471610	470 Ω ± 5 % 1/16 W
R111	1	NN05393610	39 kΩ ± 5 % 1/16 W
R112	1	NN05271610	270 Ω ± 5 % 1/16 W
R113	1	NN05823610	82 kΩ ± 5 % 1/16 W
R114	1	NN05681610	680 Ω ± 5 % 1/16 W
R115	1	NN05473610	47 kΩ ± 5 % 1/16 W [C568]
R116	1	NN05473610	47 kΩ ± 5 % 1/16 W [C568S]
R117	1	NN05473610	47 kΩ ± 5 % 1/16 W [C568A]
R119	1	NN05473610	47 kΩ ± 5 % 1/16 W [C568S/C568A]
R120	1	NN05473610	47 kΩ ± 5 % 1/16 W [C568/C568A]
R121	1	NN05473610	47 kΩ ± 5 % 1/16 W [C568/C568S]
R122	1	NN05473610	47 kΩ ± 5 % 1/16 W
R123	1	NN05103610	10 kΩ ± 5 % 1/16 W
R124	1	NN05473610	47 kΩ ± 5 % 1/16 W
R125	1	NN05223610	22 kΩ ± 5 % 1/16 W
R127	1	NN05102610	1 kΩ ± 5 % 1/16 W
R128	1	NN05102610	1 kΩ ± 5 % 1/16 W
R129	1	NN05102610	1 kΩ ± 5 % 1/16 W
R130	1	BW05102020	NETWORK RESISTOR 1 kΩ MNR14E0A
R131	1	NN05103610	10 kΩ ± 5 % 1/16 W
R132	1	NN05103610	10 kΩ ± 5 % 1/16 W
R133	1	NN05103610	10 kΩ ± 5 % 1/16 W
R134	1	NN05332610	3.3 kΩ ± 5 % 1/16 W
R135	1	NN05470610	47 Ω ± 5 % 1/16 W
R136	1	NN05331610	330 Ω ± 5 % 1/16 W
X101	1	FQ0419406R	CERAMIC VIB. CSAC4.19MGC200
W001	1	WE266X4000	FLEXIBLE P.C.BOARD
			P301 SPK/MIC SOCKET P.C.BOARD
P301	1	WG266X3050	SPK/MIC SOCKET P.C.BOARD
C381	1	DK96102300	1000 pF ± 10 %
C382	1	DK96102300	1000 pF ± 10 %
C383	1	DK96102300	1000 pF ± 10 %
C385	1	DK96102300	1000 pF ± 10 %
C388	1	DK96102300	1000 pF ± 10 %
J381	1	YJ01003670	SOCKET HSJ1466-01-010
Q381	1	HC2000921R	IC UMZ1

REF. DESIG.	QTY	PART NO.	DESCRIPTION
			P301 SPK/MIC SOCKET P.C.BOARD
R381	1	NN05153610	15 kΩ ± 5 % 1/16 W
R382	1	NN05105610	1 MΩ ± 5 % 1/16 W
R383	1	NN0515561R	1.5 MΩ ± 5 % 1/16 W
R384	1	NN05100610	10 Ω ± 5 % 1/16 W
R386	1	NN05100610	10 Ω ± 5 % 1/16 W
R387	1	NN05104610	100 kΩ ± 5 % 1/16 W
R388	1	NN05103610	10 kΩ ± 5 % 1/16 W
R389	1	NN05102610	1 kΩ ± 5 % 1/16 W
			P302 ROTARY P.C.BOARD
P302	1	WG266X2075	ROTARY P.C.BOARD
C386	1	DK96102300	1000 pF ± 10 %
C387	1	DK96102300	1000 pF ± 10 %
S381	1	SR0102005R	ROTARY SWITCH EC09P20-88
			P401 RF-VHF P.C.BOARD
P401	1	WG266X3010	RF-VHF P.C.BOARD
C401	1	DK96102300	1000 pF ± 10 %
C402	1	DD95200300	20 pF ± 5 % (CG)
C403	1	DD95360300	36 pF ± 5 % (CG)
C404	1	DD95390300	39 pF ± 5 % (CG)
C405	1	DK96102300	1000 pF ± 10 %
C406	1	DK96471300	470 pF ± 10 %
C407	1	DD95200300	20 pF ± 5 % (CG)
C408	1	DK96102300	1000 pF ± 10 %
C409	1	DK96102300	1000 pF ± 10 %
C410	1	DK96102300	1000 pF ± 10 %
C411	1	DD9514030R	14 pF ± 5 % (UJ)
C413	1	DK96102300	1000 pF ± 10 %
C414	1	DD95220300	22 pF ± 5 % (CG)
C415	1	DK96102300	1000 pF ± 10 %
C416	1	DK96102300	1000 pF ± 10 %
C417	1	DD90008360	0.8 pF ± 0.25 pF (UJ)
C418	1	DD90050300	5 pF ± 0.25 pF (CH)
C419	1	DD95240300	24 pF ± 5 % (CG)
C420	1	DK96103200	0.01 µF ± 10 %
C422	1	DK96102300	1000 pF ± 10 %
C423	1	DD95180300	18 pF ± 5 % (CG)
C424	1	DK96102300	1000 pF ± 10 %
C426	1	DD95220300	22 pF ± 5 % (CG)
C427	1	DK96102300	1000 pF ± 10 %
C428	1	DK96102300	1000 pF ± 10 %
C429	1	DK96102300	1000 pF ± 10 %
C430	1	EJ10701640	ELECT. CAP. 100 µF/16 V
C431	1	DK96102300	1000 pF ± 10 %
C432	1	DK96102300	1000 pF ± 10 %
C433	1	DK96102300	1000 pF ± 10 %
C434	1	EY10501610	TANTALUM CAP. 1 µF/16 V
C435	1	DK96102300	1000 pF ± 10 %
C436	1	DK96102300	1000 pF ± 10 %
C437	1	DK96102300	1000 pF ± 10 %
C438	1	DK96102300	1000 pF ± 10 %
C439	1	KC097X001R	TANTALUM CAP. 4.7 µF/6.3 V
C440	1	DK96102300	1000 pF ± 10 %

REF. DESIG.	QTY	PART NO.	DESCRIPTION
			P401 RF-VHF P.C.BOARD
C441	1	DK96102300	1000 pF ± 10 %
C442	1	DK96102300	1000 pF ± 10 %
C443	1	DD95220300	22 pF ± 5 % (CG)
C444	1	DD95270300	27 pF ± 5 % (CG)
C446	1	DD95270300	27 pF ± 5 % (CG)
C447	1	DK96102300	1000 pF ± 10 %
C448	1	DK96102300	1000 pF ± 10 %
C449	1	DD90020360	2 pF ± 0.25 pF (UJ)
C450	1	DD95560300	56 pF ± 5 % (CG)
C451	1	DD9001536R	1.5 pF ± 0.25 pF (UJ)
C452	1	DD90030360	3 pF ± 0.25 pF (UJ)
C453	1	DD95560300	56 pF ± 5 % (CG)
C454	1	DD9001536R	1.5 pF ± 0.25 pF (UJ)
C455	1	DK96102300	1000 pF ± 10 %
C456	1	DD90030360	3 pF ± 0.25 pF (UJ)
C457	1	DD95560300	56 pF ± 5 % (CG)
C458	1	DK96102300	1000 pF ± 10 %
C459	1	DD95560300	56 pF ± 5 % (CG)
C460	1	DK96102300	1000 pF ± 10 %
C461	1	DD95470300	47 pF ± 5 % (CG)
C462	1	DK96103200	0.01 µF ± 10 %
C463	1	DD91070300	7 pF ± 0.5 pF (CH)
C464	1	DK96102300	1000 pF ± 10 %
C465	1	DK96103200	0.01 µF ± 10 %
C466	1	DK96103200	0.01 µF ± 10 %
C467	1	DK96102300	1000 pF ± 10 %
C468	1	DD95390300	39 pF ± 5 % (CG)
C469	1	DD91100300	10 pF ± 0.5 pF (CH)
C470	1	DD95101300	100 pF ± 5 % (CG)
C471	1	DK96102300	1000 pF ± 10 %
C472	1	DK96102300	1000 pF ± 10 %
C474	1	DK58224200	0.22 µF R
C475	1	DD95330300	33 pF ± 5 % (CG)
C476	1	DK96102300	1000 pF ± 10 %
C477	1	DK96102300	1000 pF ± 10 %
C478	1	DK56104200	0.1 µF ± 10 %
C479	1	DD95221300	220 pF ± 5 % (CG)
C480	1	DD95221300	220 pF ± 5 % (CG)
C482	1	DD95221300	220 pF ± 5 % (CG)
C483	1	DK56104200	0.1 µF ± 10 %
C484	1	DK96223200	0.022 µF ± 10 %
C485	1	EY10502070	TANTALUM CAP. 1 µF/20 V
C486	1	EY10502070	TANTALUM CAP. 1 µF/20 V
C487	1	DK58224200	0.22 µF R
C488	1	DK96103200	0.01 µF ± 10 %
C489	1	EY10600650	TANTALUM CAP. 10 µF/6.3 V
C491	1	DK96223200	0.022 µF ± 10 %
C492	1	DK96223200	0.022 µF ± 10 %
C493	1	DK96473200	0.047 µF ± 10 %
C494	1	DD95330300	33 pF ± 5 % (CG)
C495	1	DK96102300	1000 pF ± 10 %
C496	1	DD95240300	24 pF ± 5 % (CG)
C497	1	DD95330300	33 pF ± 5 % (CG)
C498	1	DK96102300	1000 pF ± 10 %
C499	1	EY22600470	TANTALUM CAP. 22 µF/4 V
C500	1	DK56104200	0.1 µF ± 10 %

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P401 RF-VHF P.C.BOARD
C501	1	DD95221300	220 pF ± 5 % (CG)
C502	1	DD95221300	220 pF ± 5 % (CG)
C504	1	DD95221300	220 pF ± 5 % (CG)
C505	1	DK56104200	0.1 μF ± 10 %
C506	1	DK96473200	0.047 μF ± 10 %
C507	1	EY22600470	TANTALUM CAP. 22 μF/4 V
C508	1	DK96102300	1000 pF ± 10 %
C509	1	DK96473200	0.047 μF ± 10 %
C510	1	DK96103200	0.01 μF ± 10 %
C511	1	DD95101300	100 pF ± 5 % (CG)
C512	1	DD95101300	100 pF ± 5 % (CG)
C513	1	DD95200300	20 pF ± 5 % (CG)
C514	1	CX11000040	TRIMM.RESISTOR 10 pF
C515	1	DK96102300	1000 pF ± 10 %
C516	1	KC097X001R	TANTALUM CAP. 4.7 μF/6.3 V
C517	1	DD95101300	100 pF ± 5 % (CG)
C518	1	EY22600470	TANTALUM CAP. 22 μF/4 V
C519	1	DK96102300	1000 pF ± 10 %
C520	1	DK46224200	0.22 μF
C521	1	DK58224200	0.22 μF
C522	1	EY10601070	TANTALUM CAP. 10 μF/10 V
C523	1	DK56104200	0.1 μF ± 10 %
C524	1	EY10600650	TANTALUM CAP. 10 μF/6.3 V
C525	1	DK56473200	0.047 μF ± 10 %
C526	1	KC097X001R	TANTALUM CAP. 4.7 μF/6.3 V
C527	1	DK96102300	1000 pF ± 10 %
C528	1	DK96473200	0.047 μF ± 10 %
C530	1	DK96102300	1000 pF ± 10 %
C531	1	DD95470300	47 pF ± 5 % (CG)
C532	1	DK96102300	1000 pF ± 10 %
C533	1	EY22600470	TANTALUM CAP. 22 μF/4 V
C534	1	EY10500670	TANTALUM CAP. 1 μF/6.3 V
C535	1	DD90060300	6 pF ± 0.25 pF (CH)
C536	1	DK96102300	1000 pF ± 10 %
C537	1	DK96102300	1000 pF ± 10 %
C538	1	EY22600470	TANTALUM CAP. 22 μF/4 V
C539	1	DK56223300	0.022 μF ± 10 %
C540	1	DK96102300	1000 pF ± 10 %
C541	1	DK96102300	1000 pF ± 10 %
C542	1	DK96102300	1000 pF ± 10 %
C543	1	DK96102300	1000 pF ± 10 %
C544	1	DK96102300	1000 pF ± 10 %
C546	1	KC097X001R	TANTALUM CAP. 4.7 μF/6.3 V
C547	1	DK96102300	1000 pF ± 10 %
C548	1	DD90050300	5 pF ± 0.25 pF (CH)
C549	1	DK96473200	0.047 μF ± 10 %
C550	1	DD95470300	47 pF ± 5 % (CG)
C552	1	EY10500670	TANTALUM CAP. 1 μF/6.3 V
F401	1	XU721800NR	CRYSTAL 21.8MHz 21C2KN
F402	1	FG450304ER	CERAMIC FILTRE CFUM450E
F403	1	FG455304E3	CERAMIC FILTER CFUM455E
J401	1	YJ0603017R	SOCKET 4PIN
J402	1	YJ0603016R	SOCKET 18PIN
J403	1	YJ04001630	SOCKET HEC2781-010520

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P401 RF-VHF P.C.BOARD
L401	1	ML0200505R	AIR COIL 2D5T0.5UEW
L402	1	ML0160353R	AIR COIL 1.6D7T0.35UEW
L403	1	LU15470010	INDUCTOR 47 nH NL252018T
L404	1	LU15680010	INDUCTOR 68 nH NL252018T
L405	1	FC9002003R	FERRITE CORE BLM21A05PT
L406	1	ML0200506R	AIR COIL 2D6T0.5UEW
L407	1	LU12102010	INDUCTOR 1 μH NL322522T
L408	1	LU15680010	INDUCTOR 68 nH NL252018T
L409	1	LA5501812R	ANTENNA COIL KE-06126 (150MHz)
L410	1	LA5501813R	ANTENNA COIL KE-06127 (150MHz)
L411	1	LA5501813R	ANTENNA COIL KE-06127 (150MHz)
L412	1	LA5501813R	ANTENNA COIL KE-06127 (150MHz)
L413	1	LU1510201R	INDUCTOR 1 μH NL252018T
L414	1	LU1510201R	INDUCTOR 1 μH NL252018T
L415	1	LA5012602R	ANTENNA COIL 303LC-1773BS
L416	1	LA5012602R	ANTENNA COIL 303LC-1773BS
L417	1	KL102X002R	INDUCTOR 1 μH MLF2012A
Q401	1	HZ20029050	DIODE 1SS314
Q402	1	HZ20029050	DIODE 1SS314
Q403	1	HZ2001721R	DIODE RLS135
Q404	1	HZ2001721R	DIODE RLS135
Q405	1	HZ20029050	DIODE 1SS314
Q406	1	BA2005821R	DIGITAL TRANSISTOR DTC114TE
Q407	1	BA2005821R	DIGITAL TRANSISTOR DTC114TE
Q408	1	HZ20029050	DIODE 1SS314
Q409	1	HX333561B0	TRANSISTOR 2SC3356 (R24)
Q410	1	HZ2002521R	DIODE 1SS353
Q411	1	HZ2002521R	DIODE 1SS353
Q412	1	HZ2004601R	DIODE HSU88
Q413	1	HC10104010	IC PF0310A
Q414	1	HZ2003305R	DIODE 1SS312
Q415	1	HX342261A0	TRANSISTOR 2SC4226 (R24)
Q416	1	HX214621AR	TRANSISTOR 2SB1462
Q417	1	BA2005821R	DIGITAL TRANSISTOR DTC114TE
Q418	1	BA10045210	DIGITAL TRANSISTOR UMA4
Q419	1	HZ2000710R	DIODE EC15QSC02L
Q420	1	HZ2000710R	DIODE EC15QSC02L
Q421	1	BA1000306R	DIGITAL TRANSISTOR HQ1A4A
Q422	1	BA9000821R	DIGITAL TRANSISTOR UMW1
Q423	1	BA9001221R	DIGITAL TRANSISTOR UMC5
Q424	1	BA9001221R	DIGITAL TRANSISTOR UMC5
Q425	1	HZ2003305R	DIODE 1SS312
Q426	1	HZ2004801R	DIODE HVU350
Q427	1	HY203601AR	FET 2SK360 (1GD)
Q428	1	HX346171BR	TRANSISTOR 2SC4617 (R)
Q429	1	HZ2004801R	DIODE HVU350
Q430	1	HZ2004801R	DIODE HVU350
Q431	1	HZ2004801R	DIODE HVU350
Q432	1	BA2004321R	DIGITAL TRANSISTOR DTC144EE
Q433	1	HY203601AR	FET 2SK360 (1GD)
Q434	1	HX346171BR	TRANSISTOR 2SC4617 (R)
Q435	1	HX342151AR	TRANSISTOR 2SC4215 (Y)
Q436	1	HX346171BR	TRANSISTOR 2SC4617 (R)
Q437	1	HC10352050	IC TA31136FN
Q438	1	HX346171BR	TRANSISTOR 2SC4617 (R)
Q439	1	BA2004321R	DIGITAL TRANSISTOR DTC144EE
Q440	1	HC10352050	IC TA31136FN

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P401 RF - VHF P.C.BOARD
Q441	1	HX346171BR	TRANSISTOR 2SC4617 (R)
Q442	1	HZ2002721R	DIODE DAN222
Q443	1	HX346171BR	TRANSISTOR 2SC4617 (R)
Q444	1	BA9000721R	DIGITAL TRANSISTOR UMX1
Q445	1	HC10082180	IC MB1511PFV
Q446	1	HZ20018050	DIODE 1SS302
Q447	1	HX214621AR	TRANSISTOR 2SB1462
Q448	1	BA2004321R	DIGITAL TRANSISTOR DTC144EE
Q449	1	HC409421Y0	IC BU4094BCFV
Q450	1	BA1004221R	DIGITAL TRANSISTOR UMA8
Q451	1	BA1004221R	DIGITAL TRANSISTOR UMA8
Q452	1	BA1004221R	DIGITAL TRANSISTOR UMA8
Q453	1	BA1004221R	DIGITAL TRANSISTOR UMA8
Q454	1	HC409421Y0	IC BU4094BCFV
Q455	1	BA10018210	DIGITAL TRANSISTOR DTA114YU
Q456	1	BA2004321R	DIGITAL TRANSISTOR DTC144EE
Q457	1	BA1000306R	DIGITAL TRANSISTOR HQ1A4A
Q458	1	BA9000621R	DIGITAL TRANSISTOR UMW1
Q459	1	BA1004221R	DIGITAL TRANSISTOR UMA8
Q460	1	HX346171BR	TRANSISTOR 2SC4617 (R)
R401	1	NN05104610	100 k Ω ± 5 % 1/16 W
R402	1	NN05104610	100 k Ω ± 5 % 1/16 W
R403	1	NN05101610	100 Ω ± 5 % 1/16 W
R404	1	NN05103610	10 k Ω ± 5 % 1/16 W
R405	1	NN05103610	10 k Ω ± 5 % 1/16 W
R406	1	NN05100610	10 Ω ± 5 % 1/16 W
R407	1	NN05470610	47 Ω ± 5 % 1/16 W
R408	1	NN05221610	220 Ω ± 5 % 1/16 W
R409	1	NN05474610	470 k Ω ± 5 % 1/16 W
R410	1	NN05103610	10 k Ω ± 5 % 1/16 W
R411	1	NN05104610	100 k Ω ± 5 % 1/16 W
R412	1	NN05104610	100 k Ω ± 5 % 1/16 W
R413	1	NN05104610	100 k Ω ± 5 % 1/16 W
R414	1	NN05152610	1.5 k Ω ± 5 % 1/16 W
R415	1	NN05470610	47 Ω ± 5 % 1/16 W
R416	1	NN05103610	10 k Ω ± 5 % 1/16 W
R417	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R418	1	NN05101610	100 Ω ± 5 % 1/16 W
R419	1	NN05122610	1.2 k Ω ± 5 % 1/16 W
R420	1	NN05122610	1.2 k Ω ± 5 % 1/16 W
R421	1	NN05564610	560 k Ω ± 5 % 1/16 W
R422	1	NN05101610	100 Ω ± 5 % 1/16 W
R423	1	NN05103610	10 k Ω ± 5 % 1/16 W
R424	1	NN05102610	1 k Ω ± 5 % 1/16 W
R425	1	NN05101610	100 Ω ± 5 % 1/16 W
R426	1	NN05222610	2.2 k Ω ± 5 % 1/16 W
R427	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R428	1	NN05822610	8.2 k Ω ± 5 % 1/16 W
R429	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R430	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R431	1	NN05000610	0 Ω ± 5 % 1/16 W
R432	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R433	1	NN05101610	100 Ω ± 5 % 1/16 W
R434	1	NN05101610	100 Ω ± 5 % 1/16 W
R436	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R437	1	NN0551261R	5.1 k Ω ± 5 % 1/16 W
R438	1	NY0503030R	TRIMM.RESISTOR 50 k Ω MVR22(B)
R439	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R440	1	NN05102610	1 k Ω ± 5 % 1/16 W

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P401 RF - VHF P.C.BOARD
R441	1	NN05473610	47 k Ω ± 5 % 1/16 W
R442	1	NN05223610	22 k Ω ± 5 % 1/16 W
R443	1	NN05223610	22 k Ω ± 5 % 1/16 W
R444	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R445	1	NN05562610	5.6 k Ω ± 5 % 1/16 W
R446	1	NN05103610	10 k Ω ± 5 % 1/16 W
R447	1	NN05332610	3.3 k Ω ± 5 % 1/16 W
R448	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R449	1	NN05102610	1 k Ω ± 5 % 1/16 W
R450	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R451	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R452	1	NN05102610	1 k Ω ± 5 % 1/16 W
R453	1	NN05101610	100 Ω ± 5 % 1/16 W
R454	1	NN05103610	10 k Ω ± 5 % 1/16 W
R455	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R456	1	NN05684610	680 k Ω ± 5 % 1/16 W
R457	1	NN05102610	1 k Ω ± 5 % 1/16 W
R458	1	NN05332610	3.3 k Ω ± 5 % 1/16 W
R459	1	NN05101610	100 Ω ± 5 % 1/16 W
R460	1	NN05104610	100 k Ω ± 5 % 1/16 W
R461	1	NN05153610	15 k Ω ± 5 % 1/16 W
R462	1	NN05102610	1 k Ω ± 5 % 1/16 W
R463	1	NN05682610	6.8 k Ω ± 5 % 1/16 W
R464	1	NN05154610	150 k Ω ± 5 % 1/16 W
R465	1	NN05562610	5.6 k Ω ± 5 % 1/16 W
R466	1	NN05103610	10 k Ω ± 5 % 1/16 W
R467	1	NN05220610	22 Ω ± 5 % 1/16 W
R468	1	NN05103610	10 k Ω ± 5 % 1/16 W
R470	1	NN05822610	8.2 k Ω ± 5 % 1/16 W
R471	1	NY0504030R	TRIMM.RESISTOR 500 k Ω EVM1XS
R472	1	NN05822610	8.2 k Ω ± 5 % 1/16 W
R473	1	NY0504030R	TRIMM.RESISTOR 500 k Ω EVM1XS
R474	1	NN05102610	1 k Ω ± 5 % 1/16 W
R475	1	NN05103610	10 k Ω ± 5 % 1/16 W
R476	1	NN05103610	10 k Ω ± 5 % 1/16 W
R477	1	NN05103610	10 k Ω ± 5 % 1/16 W
R478	1	NN05474610	470 k Ω ± 5 % 1/16 W
R479	1	NN05224610	220 k Ω ± 5 % 1/16 W
R480	1	NN05221610	220 Ω ± 5 % 1/16 W
R481	1	NN05103610	10 k Ω ± 5 % 1/16 W
R482	1	NN05222610	2.2 k Ω ± 5 % 1/16 W
R483	1	NN05562610	5.6 k Ω ± 5 % 1/16 W
R484	1	NN05684610	680 k Ω ± 5 % 1/16 W
R485	1	NN05391610	390 Ω ± 5 % 1/16 W
R486	1	NN05153610	15 k Ω ± 5 % 1/16 W
R487	1	NN05222610	2.2 k Ω ± 5 % 1/16 W
R488	1	NN05154610	150 k Ω ± 5 % 1/16 W
R489	1	NN05562610	5.6 k Ω ± 5 % 1/16 W
R490	1	NN05103610	10 k Ω ± 5 % 1/16 W
R491	1	NN05220610	22 Ω ± 5 % 1/16 W
R492	1	NN05102610	1 k Ω ± 5 % 1/16 W
R493	1	NN05101610	100 Ω ± 5 % 1/16 W
R494	1	NN05682610	6.8 k Ω ± 5 % 1/16 W
R495	1	NN05224610	220 k Ω ± 5 % 1/16 W
R496	1	NN05474610	470 k Ω ± 5 % 1/16 W
R497	1	NN05224610	220 k Ω ± 5 % 1/16 W
R498	1	NN05470610	47 Ω ± 5 % 1/16 W
R499	1	NN05272610	2.7 k Ω ± 5 % 1/16 W
R500	1	NN05684610	680 k Ω ± 5 % 1/16 W

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P401 RF - VHF P.C.BOARD
R501	1	NN05102610	1 k Ω ± 5 % 1/16 W
R502	1	NN05102610	1 k Ω ± 5 % 1/16 W
R503	1	NN05224610	220 k Ω ± 5 % 1/16 W
R504	1	NN05101610	100 Ω ± 5 % 1/16 W
R505	1	NN05221610	220 Ω ± 5 % 1/16 W
R506	1	NN05182610	1.8 k Ω ± 5 % 1/16 W
R507	1	NN05471610	470 Ω ± 5 % 1/16 W
R508	1	NN05102610	1 k Ω ± 5 % 1/16 W
R509	1	NN05392610	3.9 k Ω ± 5% 1/16W
R510	1	NN05682610	6.8 k Ω ± 5 % 1/16 W
R511	1	NN05153610	15 k Ω ± 5 % 1/16 W
R512	1	NN05100610	10 Ω ± 5 % 1/16 W
R513	1	NN05101610	100 Ω ± 5 % 1/16 W
R514	1	NN05101610	100 Ω ± 5 % 1/16 W
R515	1	NN05100610	10 Ω ± 5 % 1/16 W
R516	1	NN05102610	1 k Ω ± 5 % 1/16 W
R517	1	NN05222610	2.2 k Ω ± 5 % 1/16 W
R518	1	NN05272610	2.7 k Ω ± 5 % 1/16 W
R519	1	NN05561610	560 Ω ± 5 % 1/16 W
R520	1	NN05102610	1 k Ω ± 5 % 1/16 W
R521	1	NN05101610	100 Ω ± 5 % 1/16 W
R522	1	NN05474610	470 k Ω ± 5 % 1/16 W
R523	1	NN05474610	470 k Ω ± 5 % 1/16 W
R524	1	NN05474610	470 k Ω ± 5 % 1/16 W
R525	1	NN05000610	0 Ω ± 5 % 1/16 W
R526	1	NN05474610	470 k Ω ± 5 % 1/16 W
R527	1	NN05223610	22 k Ω ± 5 % 1/16 W
R528	1	NN05562610	5.6 k Ω ± 5 % 1/16 W
R529	1	NN05100610	10 Ω ± 5 % 1/16 W
R530	1	NN05100610	10 Ω ± 5 % 1/16 W
R531	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R532	1	NN05223610	22 k Ω ± 5 % 1/16 W
R533	1	NN05473610	47 k Ω ± 5 % 1/16 W
R534	1	NN05103610	10 k Ω ± 5 % 1/16 W
R535	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R536	1	NN05102610	1 k Ω ± 5 % 1/16 W
R537	1	NN05153610	15 k Ω ± 5 % 1/16 W
R538	1	NN05102610	1 k Ω ± 5 % 1/16 W
R539	1	NN05153610	15 k Ω ± 5 % 1/16 W
R540	1	NN05102610	1 k Ω ± 5 % 1/16 W
R541	1	NN05470610	47 Ω ± 5 % 1/16 W
R542	1	NN05103610	10 k Ω ± 5 % 1/16 W
R543	1	NN05333610	33 k Ω ± 5 % 1/16 W
R544	1	NY02030220	TRIMM.RESISTOR 20 k Ω EVM1XS
R545	1	NY02030220	TRIMM.RESISTOR 20 k Ω EVM1XS
R546	1	NN05103610	10 k Ω ± 5 % 1/16 W
R547	1	NY02030220	TRIMM.RESISTOR 20 k Ω EVM1XS
R548	1	NN0551261R	5.1 k Ω ± 5 % 1/16 W
R549	1	NN05103610	10 k Ω ± 5 % 1/16 W
R550	1	NN05102610	1 k Ω ± 5 % 1/16 W
R551	1	NN05102610	1 k Ω ± 5 % 1/16 W
R552	1	NI05102110	1 k Ω ± 5 % 1/10 W
R553	1	NN05391610	390 Ω ± 5 % 1/16 W
R554	1	NN05472610	4.7 k Ω ± 5 % 1/16 W
R555	1	NN05103610	10 k Ω ± 5 % 1/16 W
R556	1	NN05102610	1 k Ω ± 5 % 1/16 W
R557	1	NN05102610	1 k Ω ± 5 % 1/16 W
R558	1	NN05684610	680 k Ω ± 5 % 1/16 W
R559	1	NN05471610	470 Ω ± 5 % 1/16 W
R560	1	NN05272610	2.7 k Ω ± 5 % 1/16 W

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P401 RF - VHF P.C.BOARD
R561	1	NN05220610	22 Ω ± 5 % 1/16 W
X401	1	JX2100129R	CRYSTAL 21.345MHz 38CHT
X402	1	JX1100129R	CRYSTAL 11.75MHz 38CHT
			P601 RF - UHF P.C.BOARD
P601	1	WG266X3040	RF - UHF P.C.BOARD
C601	1	KC233X0020	2.5 pF (UJ)
C602	1	DD91080300	8 pF ± 0.5 pF (CH)
C603	1	DD90010360	1 pF ± 0.25 pF (UJ)
C604	1	KC233X0020	2.5 pF (UJ)
C605	1	DD95470300	47 pF ± 5 % (CG)
C606	1	DD90010360	1 pF ± 0.25 pF (UJ)
C607	1	DD90060300	6 pF ± 0.25 pF (CH)
C608	1	DD91070300	7 pF ± 0.5 pF (CH) [C568/C568S]
C608	1	DD91060300	6 pF ± 0.5 pF (CH) [C568A]
C609	1	DD91080300	8 pF ± 0.5 pF (CH)
C610	1	DK96102300	1000 pF ± 10 %
C611	1	DD91100300	10 pF ± 0.5 pF (CH)
C613	1	DK96102300	1000 pF ± 10 %
C615	1	DK96102300	1000 pF ± 10 %
C616	1	DD9001536R	1.5 pF ± 0.25 pF (UJ)
C617	1	KC233X0020	2.5 pF (UJ)
C618	1	DD95101300	100 pF ± 5 % (CG)
C619	1	DD90008360	0.8 pF ± 0.25 pF (UJ)
C620	1	DK96102300	1000 pF ± 10 %
C621	1	DD91070300	7 pF ± 0.5 pF (CH)
C622	1	DD91070300	7 pF ± 0.5 pF (CH)
C623	1	DD90050300	5 pF ± 0.25 pF (CH)
C624	1	DD91100300	10 pF ± 0.5 pF (CH)
C626	1	DD90040300	4 pF ± 0.25 pF (CH)
C627	1	DK96471300	470 pF ± 10 %
C628	1	DD95101300	100 pF ± 5 % (CG)
C629	1	DD95101300	100 pF ± 5 % (CG)
C630	1	DD9001536R	1.5 pF ± 0.25 pF (UJ)
C631	1	DK96102300	1000 pF ± 10 %
C632	1	DD90030360	3 pF ± 0.25 pF (UJ)
C633	1	DD95101300	100 pF ± 5 % (CG)
C635	1	DD95101300	100 pF ± 5 % (CG)
C636	1	DK96102300	1000 pF ± 10 %
C637	1	DD90005360	0.5 pF ± 0.25 pF (UJ)
C638	1	DD90020360	2 pF ± 0.25 pF (UJ)
C639	1	KC233X0010	3 pF (UJ)
C641	1	DD91080300	8 pF ± 0.5 pF (CH)
C642	1	DD91060300	6 pF ± 0.5 pF (CH)
C643	1	DD90020360	2 pF ± 0.25 pF (UJ)
C644	1	DK96102300	1000 pF ± 10 %
C645	1	DD90010360	1 pF ± 0.25 pF (UJ)
C646	1	DD9525030R	25 pF ± 5 % (CG)
C647	1	KC233X0030	0.3 pF (UJ)
C649	1	DD91100300	10 pF ± 0.5 pF (CH)
C650	1	DD90050300	5 pF ± 0.25 pF (CH)

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
		AO&	**P601 RF - UHF P.C.BOARD**
C651	1	DD95150300	15 pF ± 5 % (CG)
C652	1	DK96102300	1000 pF ± 10 %
C654	1	DD9525030R	25 pF ± 5 % (CG)
C655	1	DK96102300	1000 pF ± 10 %
C656	1	KC233X0030	0.3 pF (UJ)
C657	1	DD90010360	1 pF ± 0.25 pF (UJ)
C658	1	DD90005360	0.5 pF ± 0.25 pF (UJ)
C659	1	DD91100300	10 pF ± 0.5 pF (CH)
C660	1	DD91070300	7 pF ± 0.5 pF (CH)
C661	1	DD91060300	6 pF ± 0.5 pF (CH)
C662	1	DK96102300	1000 pF ± 10 %
C666	1	DD90005360	0.5 pF ± 0.25 pF (UJ)
C667	1	DD90040300	4 pF ± 0.25 pF (CH)
C668	1	DK96102300	1000 pF ± 10 %
C669	1	DD90040300	4 pF ± 0.25 pF (CH)
C670	1	DD95220300	22 pF ± 5 % (CG)
C671	1	DK96102300	1000 pF ± 10 %
C672	1	DD91080300	8 pF ± 0.5 pF (CH)
C673	1	DD90050300	5 pF ± 0.25 pF (CH)
C674	1	DK96102300	1000 pF ± 10 %
C675	1	DD90050300	5 pF ± 0.25 pF (CH) [C568/C568S]
C675	1	DD91060300	6 pF ± 0.5 pF (CH) [C568A]
C676	1	DK96102300	1000 pF ± 10 %
C677	1	DK96102300	1000 pF ± 10 %
C678	1	EY10500670	TANTALUM CAP. 1 μF/6.3 V
C680	1	DD95220300	22 pF ± 5 % (CG)
C681	1	DK96102300	1000 pF ± 10 %
C682	1	DK96102300	1000 pF ± 10 %
C683	1	DK96102300	1000 pF ± 10 %
C684	1	DK96102300	1000 pF ± 10 %
C685	1	DK96102300	1000 pF ± 10 %
C686	1	DK96102300	1000 pF ± 10 %
C687	1	KC097X001R	TANTALUM CAP. 4.7 μF/6.3 V
C688	1	DK96102300	1000 pF ± 10 %
C689	1	DK96471300	470 pF ± 10 %
C690	1	DK96102300	1000 pF ± 10 %
C691	1	DD95220300	22 pF ± 5 % (CG)
C693	1	DD90005360	0.5 pF ± 0.25 pF (UJ)
C694	1	DD91070300	7 pF ± 0.5 pF (CH)
C696	1	DK96103200	0.01 μF ± 10 %
C697	1	DD91070300	7 pF ± 0.5 pF (CH)
C698	1	DD90010360	1 pF ± 0.25 pF (UJ)
C850	1	DD95101300	100 pF ± 5 % (CG)
C851	1	DK96102300	1000 pF ± 10 %
C852	1	DD90010360	1 pF ± 0.25 pF (UJ)
C853	1	DD95180300	18 pF ± 5 % (CG)
C854	1	DK96102300	1000 pF ± 10 %
C855	1	DD90040300	4 pF ± 0.25 pF (CH)
C856	1	DD95270300	27 pF ± 5 % (CG)
C857	1	DD95470300	47 pF ± 5 % (CG)
C858	1	DK96102300	1000 pF ± 10 %
C859	1	DK96102300	1000 pF ± 10 %
C860	1	DD91090300	9 pF ± 0.5 pF (CH)

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
		AO&	**P601 RF - UHF P.C.BOARD**
C861	1	DD95220300	22 pF ± 5 % (CG)
C862	1	DK96102300	1000 pF ± 10 %
C863	1	DK96102300	1000 pF ± 10 %
C864	1	DD91070300	7 pF ± 0.5 pF (CH)
C865	1	DD9001536R	1.5 pF ± 0.25 pF (UJ)
C866	1	DD91070300	7 pF ± 0.5 pF (CH)
C867	1	DD95270300	27 pF ± 5 % (CG)
C868	1	DD90008360	0.8 pF ± 0.25 pF (UJ)
C870	1	EY22600470	TANTALUM CAP. 22 μF/4 V
C871	1	EY22600470	TANTALUM CAP. 22 μF/4 V
C872	1	DK96102300	1000 pF ± 10 %
C873	1	DD95101300	100 pF ± 5 % (CG)
C874	1	DK56224200	0.22 μF
C875	1	EY10601070	TANTALUM CAP. 10 μF/10 V
C876	1	DK56104200	0.1 μF ± 10 %
C877	1	DK96473200	0.047 μF ± 10 %
C878	1	EY10600650	TANTALUM CAP. 10 μF/6.3 V
C879	1	DD95220300	22 pF ± 5 % (CG)
C880	1	DK96102300	1000 pF ± 10 %
C881	1	KC097X001R	TANTALUM CAP. 4.7 μF/6.3 V
C884	1	DK96102300	1000 pF ± 10 %
C885	1	DK96103200	0.01 μF ± 10 %
C886	1	DK96102300	1000 pF ± 10 %
C887	1	DK96102300	1000 pF ± 10 %
C889	1	DD90020360	2 pF ± 0.25 pF (UJ)
C890	1	DD90020360	2 pF ± 0.25 pF (UJ)
C891	1	DK96102300	1000 pF ± 10 %
C892	1	DK56223300	0.022 μF ± 10 %
C894	1	DD90020360	2 pF ± 0.25 pF (UJ)
C895	1	DK96102300	1000 pF ± 10 %
C896	1	DK96102300	1000 pF ± 10 %
C897	1	DD95180300	18 pF ± 5 % (CG)
C899	1	DD95101300	100 pF ± 5 % (CG)
C900	1	DD95330300	33 pF ± 5 % (CG)
C904	1	DK96223200	0.022 μF ± 10 %
C905	1	DK96102300	1000 pF ± 10 %
F601	1	XU723050NR	CRYSTAL 23.05MHz 23C2KB
J601	1	YP0602054R	PLUG 4PIN
J602	1	YP0602053R	PLUG 18PIN
J603	1	YJ1000401R	ANTENNA SOCKET(BNC)
L601	1	ML0200502R	AIR COIL 2D3T0.5UEW
L602	1	ML0200504R	AIR COIL 2D4T0.5UEW
L603	1	ML0200502R	AIR COIL 2D3T0.5UEW
L604	1	LU24090010	INDUCTOR 8.8 nH LQN1A
L605	1	LU0306001R	INDUCTOR 6 nH NLS201206T
L606	1	ML0200505R	AIR COIL 2.5D5T0.5UEW
L607	1	ML0150302R	AIR COIL 1.5D3T0.3UEW
L608	1	ML0150302R	AIR COIL 1.5D3T0.3UEW
L609	1	LU24150010	INDUCTOR 15 nH LQN1A
L610	1	LA5015901R	ANTENNA COIL KE-06984C

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P601 RF-UHF P.C.BOARD
L611	1	LA5015902R	ANTENNA COIL KE-06983C
L612	1	LA5012905R	ANTENNA COIL KE-06984
L613	1	LA5012906R	ANTENNA COIL KE-06983
L614	1	LA5012905R	ANTENNA COIL KE-06984
L615	1	LU15220010	INDUCTOR 22 nH NL252018T
L616	1	LU1510201R	INDUCTOR 1 μH NL252018T
L617	1	ML0150502R	AIR COIL 1.5D3T0.5UEW
L618	1	LU15220010	INDUCTOR 22 nH NL252018T
L619	1	ML0190251R	AIR COIL 1.9D7T0.25UEW
L620	1	LU15820010	INDUCTOR 82 nH NL252018T
L621	1	LU15820010	INDUCTOR 82 nH NL252018T
L622	1	LU15820010	INDUCTOR 82 nH NL252018T
L623	1	LU1510201R	INDUCTOR 1 μH NL252018T
L624	1	FC9002003R	FERRITE CORE BLM21A05PT
L625	1	LU8056001R	INDUCTOR 56 nH LER012T
L626	1	FC9002003R	FERRITE CORE BLM21A05PT
L627	1	LU0406803R	INDUCTOR 6.8 nH HK1608
L628	1	LU0408203R	INDUCTOR 8.2 nH HK1608
L629	1	LU0306001R	INDUCTOR 6 nH NLS201208T
Q601	1	HZ20029050	DIODE 1SS314
Q602	1	HZ20029050	DIODE 1SS314
Q603	1	HZ20029050	DIODE 1SS314
Q604	1	HZ20029050	DIODE 1SS314
Q605	1	HZ2002521R	DIODE 1SS353
Q606	1	HZ2005501R	DIODE HVU131
Q607	1	BA2006221R	DIGITAL TRANSISTOR DTC114EE
Q608	1	HZ2002721R	DIODE DAN222
Q609	1	HX340941B0	TRANSISTOR 2SC4094 (R37)
Q610	1	HZ20008210	DIODE DA204U
Q611	1	HX3508010R	TRANSISTOR 2SC5080 (ZD)
Q612	1	HZ2002521R	DIODE 1SS353
Q613	1	HZ2001721R	DIODE RLS135
Q614	1	HZ2001721R	DIODE RLS135
Q615	1	HZ20029050	DIODE 1SS314
Q616	1	HZ20029050	DIODE 1SS314
Q617	1	HZ20029050	DIODE 1SS314
Q618	1	HZ2003305R	DIODE 1SS312
Q619	1	BA2005821R	DIGITAL TRANSISTOR DTC114TE
Q620	1	HZ2002721R	DIODE DAN222
Q621	1	HX3508010R	TRANSISTOR 2SC5080 (ZD)
Q622	1	HX342281AR	TRANSISTOR 2SC4228 (R44)
Q623	1	HZ4001805R	DIODE 1SV270
Q624	1	HX342261A0	TRANSISTOR 2SC4226 (R24)
Q625	1	HZ4001805R	DIODE 1SV270
Q626	1	HZ4001805R	DIODE 1SV270
Q627	1	HX342261A0	TRANSISTOR 2SC4226 (R24)
Q628	1	HZ4001805R	DIODE 1SV270
Q629	1	HZ4001805R	DIODE 1SV270
Q630	1	HX3457010R	TRANSISTOR 2SC4570 (T74)
Q631	1	HX342151AR	TRANSISTOR 2SC4215 (Y)
Q632	1	HZ20029050	DIODE 1SS314
Q633	1	HX342281AR	TRANSISTOR 2SC4228 (R44)
Q634	1	HZ2003305R	DIODE 1SS312
Q635	1	HZ20029050	DIODE 1SS314
Q636	1	HZ2005501R	DIODE HVU131
Q637	1	HZ2002521R	DIODE 1SS353
Q638	1	HX33356010	TRANSISTOR 2SC3356 (R24)
Q640	1	HZ2004601R	DIODE HSU88

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P601 RF-UHF P.C.BOARD
Q641	1	HC1019520R	IC M67799MA-01
Q642	1	BA10045210	DIGITAL TRANSISTOR UMA4
Q643	1	HX115861B0	TRANSISTOR 2SA1586 (GR)
Q644	1	BA2005821R	DIGITAL TRANSISTOR DTC114TE
Q645	1	HX342601AR	TRANSISTOR 2SC4260
Q646	1	HX342261A0	TRANSISTOR 2SC4226 (R24)
Q647	1	HZ4000801R	DIODE HVU359
Q648	1	HZ4000801R	DIODE HVU359
Q649	1	HY203601AR	FET 2SK360 (1GD)
Q650	1	HX3457010R	TRANSISTOR 2SC4570 (T74)
Q651	1	HY208821A0	FET 2SK882 (Y)
Q652	1	HZ2003305R	DIODE 1SS312
Q653	1	HC10082180	IC MB1511PFV
Q654	1	HZ20018050	DIODE 1SS302
Q655	1	HX214621AR	TRANSISTOR 2SB1462
Q656	1	BA2004321R	DIGITAL TRANSISTOR DTC144EE
Q657	1	BA2004321R	DIGITAL TRANSISTOR DTC144EE
Q658	1	BA2004321R	DIGITAL TRANSISTOR DTC144EE
Q659	1	HZ2003305R	DIODE 1SS312
Q660	1	HX342261A0	TRANSISTOR 2SC4226 (R24)
R602	1	NN05101610	100 Ω ±5% 1/16 W
R603	1	NN05104610	100 kΩ ±5% 1/16 W
R604	1	NN05103610	10 kΩ ±5% 1/16 W
R605	1	NN05472610	4.7 kΩ ±5% 1/16 W
R606	1	NN05102610	1 kΩ ±5% 1/16 W
R607	1	NN05101610	100 Ω ±5% 1/16 W
R608	1	NN05222610	2.2 kΩ ±5% 1/16 W
R609	1	NN05332610	3.3 kΩ ±5% 1/16 W
R611	1	NN05472610	4.7 kΩ ±5% 1/16 W
R612	1	NN05684610	680 kΩ ±5% 1/16 W
R614	1	NN05100610	10 Ω ±5% 1/16 W
R615	1	NN05222610	2.2 kΩ ±5% 1/16 W
R616	1	NN05222610	2.2 kΩ ±5% 1/16 W
R617	1	NN05332610	3.3 kΩ ±5% 1/16 W
R618	1	NN05470610	47 Ω ±5% 1/16 W
R619	1	NN05103610	10 kΩ ±5% 1/16 W
R620	1	NN05472610	4.7 kΩ ±5% 1/16 W
R621	1	NN05472610	4.7 kΩ ±5% 1/16 W
R622	1	NN05472610	4.7 kΩ ±5% 1/16 W
R623	1	NN05223610	22 kΩ ±5% 1/16 W
R624	1	NN05103610	10 kΩ ±5% 1/16 W
R625	1	NN05104610	100 kΩ ±5% 1/16 W
R626	1	NN05101610	100 Ω ±5% 1/16 W
R627	1	NN05102610	1 kΩ ±5% 1/16 W
R628	1	NN05472610	4.7 kΩ ±5% 1/16 W
R629	1	NN05101610	100 Ω ±5% 1/16 W
R630	1	NN05122610	1.2 kΩ ±5% 1/16 W
R631	1	NN05564610	560 kΩ ±5% 1/16 W
R632	1	NN05102610	1 kΩ ±5% 1/16 W
R633	1	NN05101610	100 Ω ±5% 1/16 W
R634	1	NN05223610	22 kΩ ±5% 1/16 W
R635	1	NN05101610	100 Ω ±5% 1/18 W
R636	1	NN05333610	33 kΩ ±5% 1/16 W
R637	1	NN05103610	10 kΩ ±5% 1/16 W
R638	1	NN05472610	4.7 kΩ ±5% 1/16 W
R639	1	NN05122610	1.2 kΩ ±5% 1/16 W
R640	1	NN05472610	4.7 kΩ ±5% 1/16 W

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P601 RF-UHF P.C.BOARD
R641	1	NN05104610	100 kΩ ± 5 % 1/16 W
R642	1	NN05103610	10 kΩ ± 5 % 1/16 W
R643	1	NN05221610	220 Ω ± 5 % 1/16 W
R644	1	NN05104610	100 kΩ ± 5 % 1/16 W
R645	1	NN05104610	100 kΩ ± 5 % 1/16 W
R646	1	NN05221610	220 Ω ± 5 % 1/16 W
R647	1	NN05103610	10 kΩ ± 5 % 1/16 W
R648	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R649	1	NN05100610	10 Ω ± 5 % 1/16 W
R650	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R651	1	NN05000610	0 Ω ± 5 % 1/16 W
R652	1	NN05104610	100 kΩ ± 5 % 1/16 W
R653	1	NN05104610	100 kΩ ± 5 % 1/16 W
R654	1	NN05104610	100 kΩ ± 5 % 1/16 W
R655	1	NN05223610	22 kΩ ± 5 % 1/16 W
R656	1	NN05103610	10 kΩ ± 5 % 1/16 W
R657	1	NN05331610	330 Ω ± 5 % 1/16 W
R658	1	NN05102610	1 kΩ ± 5 % 1/16 W
R659	1	NN05471610	470 Ω ± 5 % 1/16 W
R660	1	NN05152610	1.5 kΩ ± 5 % 1/16 W
R661	1	NN05272610	2.7 kΩ ± 5 % 1/16 W
R662	1	NN05222610	2.2 kΩ ± 5 % 1/16 W
R664	1	NN05223610	22 kΩ ± 5 % 1/16 W
R665	1	NN05102610	1 kΩ ± 5 % 1/16 W
R666	1	NN05101610	100 Ω ± 5 % 1/16 W
R667	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R668	1	NN05101610	100 Ω ± 5 % 1/16 W
R669	1	NN05222610	2.2 kΩ ± 5 % 1/16 W
R670	1	NN05103610	10 kΩ ± 5 % 1/16 W
R671	1	NN05102610	1 kΩ ± 5 % 1/16 W
R672	1	NN05560610	56 Ω ± 5 % 1/16 W
R673	1	NN05682610	6.8 kΩ ± 5 % 1/16 W
R674	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R675	1	NN05473610	47 kΩ ± 5 % 1/16 W
R676	1	NN05223610	22 kΩ ± 5 % 1/16 W
R677	1	NN05223610	22 kΩ ± 5 % 1/16 W
R678	1	NN05222610	2.2 kΩ ± 5 % 1/16 W
R679	1	NN05102610	1 kΩ ± 5 % 1/16 W
R680	1	NN05022610	2.2 Ω ± 5 % 1/16 W
R681	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R682	1	NN05102610	1 kΩ ± 5 % 1/16 W
R683	1	NN05331610	330 Ω ± 5 % 1/16 W
R684	1	NN05151610	150 Ω ± 5 % 1/16 W
R685	1	NN05224610	220 kΩ ± 5 % 1/16 W
R686	1	NN05101610	100 Ω ± 5 % 1/16 W
R687	1	NN05392610	3.9 kΩ ± 5 % 1/16 W
R688	1	NN05223610	22 kΩ ± 5 % 1/16 W
R689	1	NN05391610	390 Ω ± 5 % 1/16 W
R690	1	NN05562610	5.6 kΩ ± 5 % 1/16 W
R691	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R692	1	NN05222610	2.2 kΩ ± 5 % 1/16 W
R693	1	NN05104610	100 kΩ ± 5 % 1/16 W
R694	1	NN05000610	0 Ω ± 5 % 1/16 W
R695	1	NN05103610	10 kΩ ± 5 % 1/16 W
R696	1	NN05470610	47 Ω ± 5 % 1/16 W
R697	1	NN05101610	100 Ω ± 5 % 1/16 W
R698	1	NN05333610	33 kΩ ± 5 % 1/16 W
R699	1	NN05103610	10 kΩ ± 5 % 1/16 W
R850	1	NN05000610	0 Ω ± 5 % 1/16 W

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			P601 RF-UHF P.C.BOARD
R851	1	NN05100610	10 Ω ± 5 % 1/16 W
R852	1	NN05223610	22 kΩ ± 5 % 1/16 W
R853	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R854	1	NN05223610	22 kΩ ± 5 % 1/16 W
R855	1	NN05473610	47 kΩ ± 5 % 1/16 W
R856	1	NN05562610	5.6 kΩ ± 5 % 1/16 W
R857	1	NN05101610	100 Ω ± 5 % 1/16 W
R858	1	NN05222610	2.2 kΩ ± 5 % 1/16 W
R859	1	NN05821610	820 Ω ± 5 % 1/16 W
R860	1	NN05102610	1 kΩ ± 5 % 1/16 W
R861	1	NN05101610	100 Ω ± 5 % 1/16 W
R862	1	NN05474610	470 kΩ ± 5 % 1/16 W
R863	1	NN05474610	470 kΩ ± 5 % 1/16 W
R864	1	NN05104610	100 kΩ ± 5 % 1/16 W
R865	1	NN05474610	470 kΩ ± 5 % 1/16 W
R866	1	NN05100610	10 Ω ± 5 % 1/16 W
R867	1	NN05101610	100 Ω ± 5 % 1/16 W
R868	1	NN05474610	470 kΩ ± 5 % 1/16 W
R869	1	NN05102610	1 kΩ ± 5 % 1/16 W
R870	1	NN05821610	820 Ω ± 5 % 1/16 W
R871	1	NN05822610	8.2 kΩ ± 5 % 1/16 W
R872	1	NN05102610	1 kΩ ± 5 % 1/16 W
R873	1	NN05223610	22 kΩ ± 5 % 1/16 W
R874	1	NN05000610	0 Ω ± 5 % 1/16 W
R875	1	NN05100610	10 Ω ± 5 % 1/16 W
R876	1	NN05100610	10 Ω ± 5 % 1/16 W
R877	1	NN05473610	47 kΩ ± 5 % 1/16 W
R878	1	NN05000610	0 Ω ± 5 % 1/16 W
R879	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R880	1	NN05100610	10 Ω ± 5 % 1/16 W
			P701 VHF-VCO P.C.BOARD
P701	1	WG266X3020	VHF-VCO P.C.BOARD
C721	1	DK96102300	1000 pF ± 10 %
C722	1	DD90050300	5 pF ± 0.25 pF (CH)
C723	1	DD9001536R	1.5 pF ± 0.25 pF (UJ)
C724	1	DK96102300	1000 pF ± 10 %
C725	1	DD90008360	0.8 pF ± 0.25 pF (UJ)
C726	1	DD91100360	10 pF ± 0.5 pF (UJ)
C727	1	DD9514030R	14 pF ± 5 % (CH)
C728	1	DD95200300	20 pF ± 5 % (CG)
C729	1	DK96102300	1000 pF ± 10 %
C730	1	DK96471300	470 pF ± 10 %
C731	1	DK96102300	1000 pF ± 10 %
C732	1	DD90010360	1 pF ± 0.25 pF (UJ)
C733	1	DD90005360	0.5 pF ± 0.25 pF (UJ)
C734	1	DD90040360	4 pF ± 0.25 pF (UJ)
C735	1	DK96102300	1000 pF ± 10 %
C736	1	DD90050360	5 pF ± 0.25 pF (UJ)
C737	1	DD90020300	2 pF ± 0.25 pF (UJ)
C738	1	DK96102300	1000 pF ± 10 %
C740	1	DD95221300	220 pF ± 5 % (CG)
C741	1	DK96102300	1000 pF ± 10 %

REF. DESIG.	QTY	PART NO.	DESCRIPTION
			P701 VHF-VCO P.C.BOARD
L722	1	KL102X002R	INDUCTOR 1 μH MLF2012A
L723	1	ML0100302R	AIR COIL 1D4T0.3UEW
L724	1	LU8022001R	INDUCTOR 0.22 μH LER012T
L725	1	LU03222010	INDUCTOR 2.2 μH MLF2012A
L726	1	ML0200308R	AIR COIL 2D6T0.3UEW
L727	1	KL102X002R	INDUCTOR 1 μH MLF2012A
L728	1	LU03220020	INDUCTOR 0.22 μH MLF2012D
L729	1	LU0321001R	INDUCTOR 21 nH NLS201208T
Q721	1	HX3457010R	TRANSISTOR 2SC4570 (T74)
Q722	1	HX342261A0	TRANSISTOR 2SC4226 (R24)
Q723	1	HX342261A0	TRANSISTOR 2SC4226 (R24)
Q724	1	HZ4000901R	DIODE HVU350
Q725	1	HZ4000901R	DIODE HVU350
Q726	1	HX3424500R	TRANSISTOR 2SC4245
Q727	1	HY202171AR	FET 2SK217 (ZD)
Q728	1	HZ4001305R	DIODE 1SV215
Q729	1	HZ4001305R	DIODE 1SV215
Q730	1	HZ40010050	DIODE 1SV214
Q731	1	HZ4001305R	DIODE 1SV215
Q732	1	HZ20029050	DIODE 1SS314
Q733	1	HX342261A0	TRANSISTOR 2SC4226 (R24)
Q734	1	HZ2003305R	DIODE 1SS312
R721	1	NN05103610	10 kΩ ± 5 % 1/16 W
R722	1	NN05221610	220 Ω ± 5 % 1/16 W
R723	1	NN05224610	220 kΩ ± 5 % 1/16 W
R724	1	NN05474610	470 kΩ ± 5 % 1/16 W
R725	1	NN05331610	330 Ω ± 5 % 1/16 W
R726	1	NN05392610	3.9 kΩ ± 5 % 1/16 W
R727	1	NN05562610	5.6 kΩ ± 5 % 1/16 W
R728	1	NN05101610	100 Ω ± 5 % 1/16 W
R729	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R730	1	NN05474610	470 kΩ ± 5 % 1/16 W
R731	1	NI05331110	330 Ω ± 5 % 1/10 W
R732	1	NN05103610	10 kΩ ± 5 % 1/16 W
R733	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R734	1	NN05221610	220 Ω ± 5 % 1/16 W
R735	1	NN05470610	47 Ω ± 5 % 1/16 W
R736	1	NN05221610	220 Ω ± 5 % 1/16 W
R737	1	NN05103610	10 kΩ ± 5 % 1/16 W
R739	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R740	1	NN05103610	10 kΩ ± 5 % 1/16 W
R741	1	NN05222610	2.2 kΩ ± 5 % 1/16 W
R742	1	NN05104610	100 kΩ ± 5 % 1/16 W
R743	1	NN05102610	1 kΩ ± 5 % 1/16 W
			P702 UHF-VCO P.C.BOARD
P702	1	WG266X3060	UHF-VCO P.C.BOARD
C752	1	DK96102300	1000 pF ± 10 %
C753	1	DD90010360	1 pF ± 0.25 pF (UJ)
C754	1	KC233X0030	0.3 pF (UJ)
C755	1	DD90030360	3 pF ± 0.25 pF (UJ)
C756	1	DD90040360	4 pF ± 0.25 pF (UJ)
C757	1	DD90008360	0.8 pF ± 0.25 pF (UJ)
C758	1	DD95470360	47 pF ± 5 % (CG)
C759	1	DK96102300	1000 pF ± 10 %
C760	1	DK96102300	1000 pF ± 10 %

REF. DESIG.	QTY	PART NO.	DESCRIPTION
			P702 UHF-VCO P.C.BOARD
C761	1	DD90050300	5 pF ± 0.25 pF (CH)
C762	1	DK96102300	1000 pF ± 10 %
C763	1	DD90005360	0.5 pF ± 0.25 pF (UJ)
C764	1	DD90008360	0.8 pF ± 0.25 pF (UJ)
C765	1	DK96102300	1000 pF ± 10 %
C766	1	DD91060360	6 pF ± 0.5 pF (CH)
C767	1	DD90005360	0.5 pF ± 0.25 pF (UJ)
C768	1	DD95101360	100 pF ± 5 % (UJ)
C769	1	DD95221300	220 pF ± 5 % (CG)
C770	1	DD90050360	5 pF ± 0.25 pF (UJ)
C771	1	DK96102300	1000 pF ± 10 %
C772	1	DK96102300	1000 pF ± 10 %
C773	1	DD95101300	100 pF ± 5 % (CG)
C774	1	DD90020360	2 pF ± 0.25 pF (UJ)
L751	1	LU0306001R	INDUCTOR 6 nH NLS201208T
L752	1	KL102X002R	INDUCTOR 1 μH MLF2012A
L753	1	ML0150302R	AIR COIL 1.5D3T0.3UEW
L754	1	LU1510201R	INDUCTOR 1 μH NL252018T
L755	1	ML0140451R	AIR COIL 1.4D4T0.45UEW
L756	1	LU8015001R	INDUCTOR 15 nH LER012T
L757	1	KL102X002R	INDUCTOR 1 μH MLF2012A
L758	1	ML0150304R	AIR COIL 1.5D7T0.3UEW
L759	1	LU1510201R	INDUCTOR 1 μH NL252018T
L760	1	KL102X002R	INDUCTOR 1 μH MLF2012A
Q751	1	HX342281AR	TRANSISTOR 2SC4228 (R44)
Q752	1	HY205081A0	FET 2SK508 (K52)
Q753	1	HX342261A0	TRANSISTOR 2SC4226 (R24)
Q754	1	HZ4001905R	DIODE 1SV257
Q755	1	HZ4001905R	DIODE 1SV257
Q756	1	HZ4001905R	DIODE 1SV257
Q757	1	HZ2005302R	DIODE MA795WK
Q758	1	HX342261A0	TRANSISTOR 2SC4226 (R24)
Q759	1	HY205081C0	FET 2SK508(K51)
Q760	1	HZ40010050	DIODE 1SV214
Q761	1	HZ40009050	DIODE 1SV229
Q762	1	HZ4001805R	DIODE 1SV270
R751	1	NN05151610	150 Ω ± 5 % 1/16 W
R752	1	NN05103610	10 kΩ ± 5 % 1/16 W
R753	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R754	1	NN05151610	150 Ω ± 5 % 1/16 W
R755	1	NN05473610	47 kΩ ± 5 % 1/16 W
R756	1	NN05103610	10 kΩ ± 5 % 1/16 W
R757	1	NP05103610	10 kΩ ± 5 % 1/16 W
R758	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R759	1	NN05100610	10 Ω ± 5 % 1/16 W
R761	1	NN05151610	150 Ω ± 5 % 1/16 W
R762	1	NN05103610	10 kΩ ± 5 % 1/16 W
R763	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R764	1	NN05151610	150 Ω ± 5 % 1/16 W
R765	1	NN05103610	10 kΩ ± 5 % 1/16 W
R766	1	NN05100610	10 Ω ± 5 % 1/16 W
R767	1	NN05103610	10 kΩ ± 5 % 1/16 W
R768	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R770	1	NN05221610	220 Ω ± 5 % 1/16 W
R771	1	NN05223610	22 kΩ ± 5 % 1/16 W

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION		
			P703 UHF-SUB P.C.BOARD		
P703	1	WQ288X3070	UHF-SUB P.C.BOARD		
C781	1	DD90060300	6 pF	± 0.25 pF	(CH)
C782	1	DD95120300	12 pF	± 5 %	(CG)
C783	1	DK96102300	1000 pF	± 10 %	
C784	1	DD95220300	22 pF	± 5 %	(CG)
C785	1	DK96102300	1000 pF	± 10 %	
C786	1	KC233X0010	3 pF		(UJ)
C787	1	DD9514030R	14 pF	± 5 %	(CH)
C788	1	DD95130300	13 pF	± 5 %	(CG)
C789	1	DD95220300	22 pF	± 5 %	(CG)
C791	1	DD90010360	1 pF	± 0.25 pF	(UJ)
C792	1	DK96102300	1000 pF	± 10 %	
L781	1	LU0306001R	INDUCTOR 6 nH NLS201208T		
Q781	1	HX342261A0	TRANSISTOR 2SC4226 (R24)		
Q782	1	HX3457010R	TRANSISTOR 2SC4570		
R781	1	NN05472610	4.7 kΩ	± 5 %	1/16 W
R782	1	NN05103610	10 kΩ	± 5 %	1/16 W
R783	1	NN05472610	4.7 kΩ	± 5 %	1/16 W
R784	1	NN05221610	220 Ω	± 5 %	1/16 W
R785	1	NN05333610	33 kΩ	± 5 %	1/16 W
R786	1	NN05472610	4.7 kΩ	± 5 %	1/16 W
R787	1	NN05103610	10 kΩ	± 5 %	1/16 W
R788	1	NN05821610	820 Ω	± 5 %	1/16 W
			P704 MEMORY P.C.BOARD		
P704	1	WZ153X0010	MEMORY P.C.BOARD		
Q701	1	HC1000670R	IC AT24C04-10SC-2.7		
R701	1	NN05473610	47 kΩ	± 5 %	1/16 W
R702	1	NN05473610	47 kΩ	± 5 %	1/16 W
R703	1	NN05473610	47 kΩ	± 5 %	1/16 W
			P801 UHF-REG P.C.BOARD		
P801	1	WQ288X3080	UHF-REG P.C.BOARD		
C801	1	DD90020360	2 pF	± 0.25 pF	(UJ)
C802	1	DD90040300	4 pF	± 0.25 pF	(CH)
C803	1	DD90060300	6 pF	± 0.25 pF	(CH)
C804	1	DK96102300	1000 pF	± 10 %	
C806	1	DD90050300	5 pF	± 0.25 pF	(CH)
C807	1	KC233X0020	2.5 pF		(UJ)
C808	1	DD90060300	6 pF	± 0.25 pF	(CH)
C809	1	DD90050300	5 pF	± 0.25 pF	(CH)
C810	1	DD90020360	2 pF	± 0.25 pF	(UJ)

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION		
			P801 UHF-REG P.C.BOARD		
C811	1	KC233X0020	2.5 pF		(UJ)
C812	1	DK98102300	1000 pF	± 10 %	
C813	1	DD90010360	1 pF	± 0.25 pF	(UJ)
C814	1	DK96102300	1000 pF	± 10 %	
C815	1	DK96102300	1000 pF	± 10 %	
C816	1	EY10500670	TANTALUM CAP.	1 μF/6.3 V	
C817	1	EY22600470	TANTALUM CAP.	22 μF/4 V	
C818	1	KC097X001R	TANTALUM CAP.	4.7 μF/6.3 V	
C819	1	DK96102300	1000 pF	± 10 %	
C820	1	DK96102300	1000 pF	± 10 %	
C821	1	DK96102300	1000 pF	± 10 %	
Q801	1	HX342281AR	TRANSISTOR 2SC4228 (R44)		
Q802	1	HX342261A0	TRANSISTOR 2SC4226 (R24)		
Q803	1	HX342601AR	TRANSISTOR 2SC4260		
Q804	1	BA1000306R	DIGITAL TRANSISTOR HQ1A4A		
Q805	1	BA9000821R	DIGITAL TRANSISTOR UMW1		
Q806	1	BA1005821R	DIGITAL TRANSISTOR UMA5		
Q807	1	BA20060210	DIGITAL TRANSISTOR UMG2		
Q808	1	BA1004721R	DIGITAL TRANSISTOR DTA123JE		
Q810	1	BA1000306R	DIGITAL TRANSISTOR HQ1A4A		
Q811	1	BA9000821R	DIGITAL TRANSISTOR UMW1		
Q812	1	BA1004221R	DIGITAL TRANSISTOR UMA8		
Q813	1	BA1004221R	DIGITAL TRANSISTOR UMA8		
Q814	1	BA1005721R	DIGITAL TRANSISTOR DTA114YE		
Q815	1	BA1004221R	DIGITAL TRANSISTOR UMA8		
Q816	1	BA1004221R	DIGITAL TRANSISTOR UMA8		
Q817	1	BA1004221R	DIGITAL TRANSISTOR UMA8		
Q818	1	HC409421Y0	IC BU4094BCFV		
Q819	1	HC409421Y0	IC BU4094BCFV		
Q820	1	BA2004321R	DIGITAL TRANSISTOR DTC144EE		
R801	1	NN05472610	4.7 kΩ	± 5 %	1/16 W
R802	1	NN05823610	82 kΩ	± 5 %	1/16 W
R803	1	NN05000610	0 Ω	± 5 %	1/16 W
R804	1	NN05470610	47 Ω	± 5 %	1/16 W
R805	1	NN05331610	330 Ω	± 5 %	1/16 W
R806	1	NN05474610	470 kΩ	± 5 %	1/16 W
R807	1	NN05000610	0 Ω	± 5 %	1/16 W
R808	1	NN05221610	220 Ω	± 5 %	1/16 W
R809	1	NN05154610	150 kΩ	± 5 %	1/16W
R810	1	NN05472610	4.7 kΩ	± 5 %	1/16 W
R811	1	NN05562610	5.6 kΩ	± 5 %	1/16 W
R812	1	NN05103610	10 kΩ	± 5 %	1/16 W
R813	1	NN05332610	3.3 kΩ	± 5 %	1/16 W
R814	1	NN05472610	4.7 kΩ	± 5 %	1/16 W
R815	1	NN05472610	4.7 kΩ	± 5 %	1/16 W
R816	1	NN05472610	4.7 kΩ	± 5 %	1/16 W
R817	1	NN05102610	1 kΩ	± 5 %	1/16 W
R818	1	NN05102610	1 kΩ	± 5 %	1/16 W

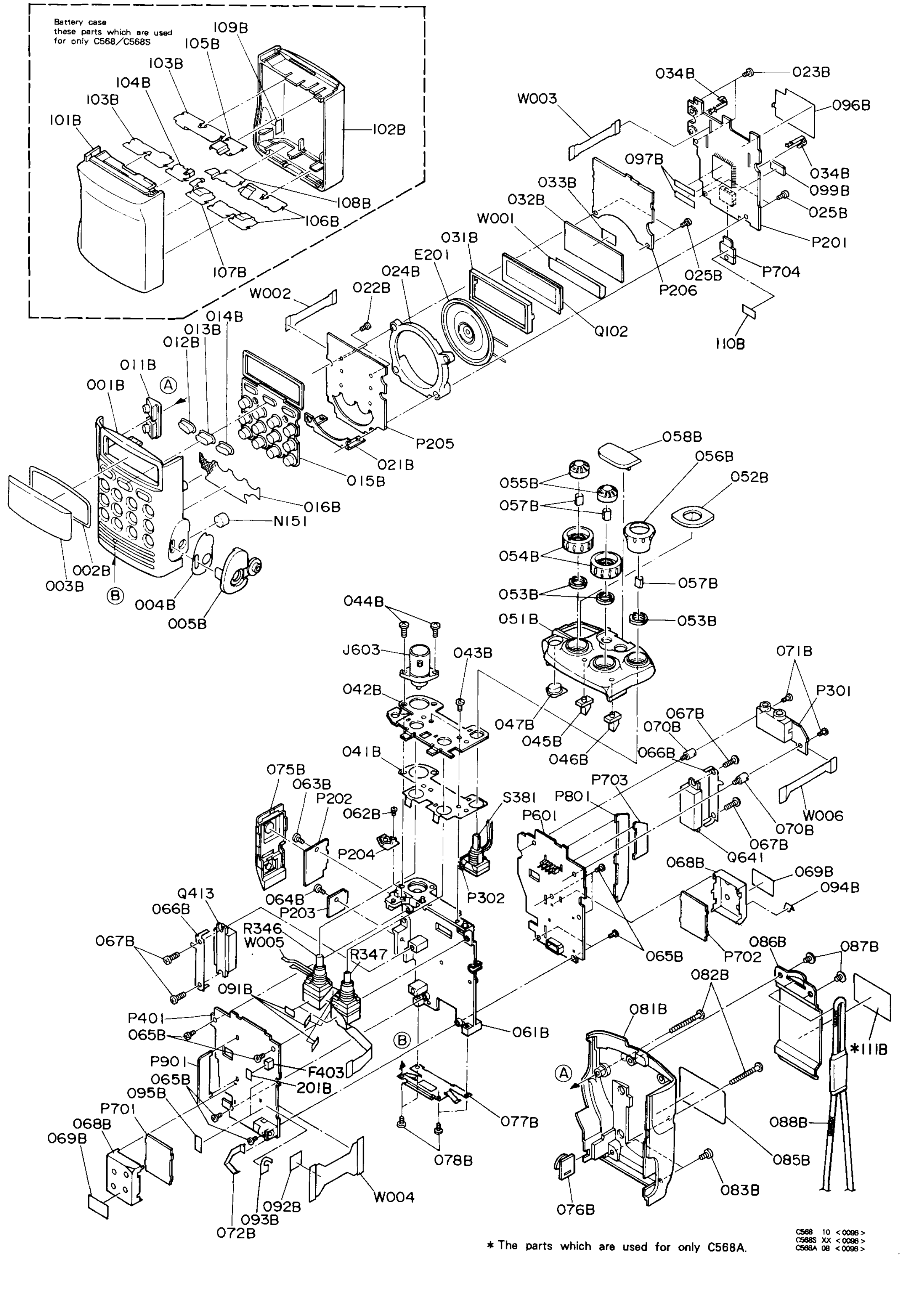
REF. DESIG.	QTY	PART NO.	DESCRIPTION
			P901 VHF - SUB P.C.BOARD
P901	1	WG266X3030	VHF - SUB P.C.BOARD
C951	1	DD90050300	5 pF ± 0.25 pF (CH) [C568/C568S]
C951	1	DD90040300	4 pF ± 0.25 pF (CH) [C568A]
C952	1	DK96102300	1000 pF ± 10 %
C953	1	DD91070300	7 pF ± 0.5 pF (CH) [C568/C568S]
C953	1	DD91060300	6 pF ± 0.5 pF (CH) [C568A]
C954	1	DD95120300	12 pF ± 5 % (CG)
C955	1	DD91070300	7 pF ± 0.5 pF (CH)
C956	1	DD90010360	1 pF ± 0.25 pF (UJ)
C957	1	DK96102300	1000 pF ± 10 %
C958	1	DD91080300	8 pF ± 0.5 pF (CH)
C959	1	DD95150300	15 pF ± 5 % (CG)
C960	1	KC233X0030	0.3 pF (UJ)
C963	1	DK96102300	1000 pF ± 10 %
C964	1	DD91060300	6 pF ± 0.5 pF (CH)
C965	1	DD9514030R	14 pF ± 5 % (CH)
C966	1	DD95220300	22 pF ± 5 % (CG)
C967	1	DK96102300	1000 pF ± 10 %
C969	1	KC233X0010	3 pF (UJ)
C970	1	DD95120300	12 pF ± 5 % (CG)
C971	1	DD95120300	12 pF ± 5 % (CG)
C972	1	DD95150300	15 pF ± 5 % (CG)
C973	1	DD9001536R	1.5 pF ± 0.25 pF (UJ)
C976	1	DD90020360	2 pF ± 0.25 pF (UJ)
L951	1	LU0306001R	INDUCTOR 6 nH NLS201208T
L952	1	LU0306001R	INDUCTOR 6 nH NLS201208T
Q951	1	HZ2003305R	DIODE 1SS312
Q952	1	HX342261A0	TRANSISTOR 2SC4226 (R24)
Q953	1	HX3457010R	TRANSISTOR 2SC4570 (T74)
Q954	1	HZ2003305R	DIODE 1SS312
Q955	1	HX342261A0	TRANSISTOR 2SC4226 (R24)
Q956	1	HX3457010R	TRANSISTOR 2SC4570 (T74)
Q957	1	HZ2003305R	DIODE 1SS312
R952	1	NN05103610	10 kΩ ± 5 % 1/16 W
R953	1	NN05221610	220 Ω ± 5 % 1/16 W
R954	1	NN05103610	10 kΩ ± 5 % 1/16 W
R955	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R956	1	NN05333610	33 kΩ ± 5 % 1/16 W
R957	1	NN05103610	10 kΩ ± 5 % 1/16 W
R958	1	NN05103610	10 kΩ ± 5 % 1/16 W
R959	1	NN05103610	10 kΩ ± 5 % 1/16 W
R960	1	NN05103610	10 kΩ ± 5 % 1/16 W
R961	1	NN05221610	220 Ω ± 5 % 1/16 W
R962	1	NN05103610	10 kΩ ± 5 % 1/16 W
R963	1	NN05472610	4.7 kΩ ± 5 % 1/16 W
R964	1	NN05333610	33 kΩ ± 5 % 1/16 W
R965	1	NN05103610	10 kΩ ± 5 % 1/16 W
R966	1	NN05103610	10 kΩ ± 5 % 1/16 W
R967	1	NN05000610	0 Ω ± 5 % 1/16 W

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			MECHANISM
001B	1	266X064030	FRONT CASE [C568/C568S]
001B	1	266X064040	FRONT CASE [C568A]
002B	1	266X122010	STICKER FOR FRONT CASE,WINDOW
003B	1	266X158010	LCD WINDOW
004B	1	266X122020	STICKER FOR FRONT CASE,DC CAP
005B	1	266X067010	DC CAP
011B	1	266X270010	BUTTON FOR LAMP/SQL
012B	1	266X270020	BUTTON FOR V/M
013B	1	266X270030	BUTTON FOR MAIN
014B	1	266X270040	BUTTON FOR CALL
015B	1	266X270050	BUTTON FOR RUBBER CONTACT
016B	1	266X202010	SPEAKER NET
021B	1	233X160010	RELEASE BRACKET
022B	2	124X010020	SCREW FOR KEY BOARD P.C.BOARD
023B	2	124X010020	SCREW FOR CONTROL P.C.BOARD
024B	1	266X118010	SPEAKER SPACER
025B	4	124X010030	SCREW FOR SPEAKER SPACER
031B	1	266X160010	LCD COVER
032B	1	266X151010	INTRODUCER
033B	1	233X122030	STICKER FOR CONTROL P.C.BOARD,032B
034B	2	266X123010	CONTACTOR FOR GROUND
041B	1	266X109010	SHIELGD FOR GROUND SPRING
042B	1	266X160020	VOLUME BRACKET
043B	2	233X010020	SCREW FOR VOLUME BRACKET
044B	2	266X010010	SCREW FOR ANTENNA SOCKET(BNC)
045B	1	266X151020	LED LENS A
046B	1	266X151030	LED LENS B
047B	1	266X270060	BUTTON FOR POWER
051B	1	266X063010	ESCUTCHEON
052B	1	266X053010	ANTENNA RUBBER COVER
053B	3	168X011010	NUT FOR CHANNEL,VOLUME
054B	2	266X154010	KNOB FOR VOLUME
055B	2	266X154020	KNOB FOR SQUELCH
056B	1	266X154030	KNOB FOR CHANNEL
057B	3	282C115010	D SPRING NO.7800
058B	1	266X067020	CAP FOR MIC/SPK SOCKET
061B	1	266X267010	BRACKET(HEATSINK)
062B	1	233X010020	SCREW FOR POWER SW P.C.BOARD
063B	1	233X010020	SCREW FOR PTT P.C.BOARD
064B	1	233X010020	SCREW FOR FUNCTION P.C.BOARD
065B	8	233X010020	SCREW FOR RF P.C.BOARD(VHF&UHF)
066B	2	266X109020	SHIELD FOR GROUND PLATE
067B	4	266X010010	SCREW FOR POWER MODULE
068B	2	266X109030	SHIELD CASE(VHF&UHF)
069B	2	102X107010	VCO ALUMINIUM TAPE
070B	2	266X055010	COLLAR
071B	2	233X010020	SCREW FOR SPK/MIC SOCKET P.C.BOARD
072B	1	266X123020	CONTACTOR
075B	1	266X270070	BUTTON FOR FUNCTION,PTT
076B	1	266X102010	RELEASE BUTTON
077B	1	266X116010	RELEASE SPRING
078B	4	124X010050	SCREW FOR RELEASE SPRING (077B)

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			MECHANISM
081B	1	266X064020	REAR CASE
082B	2	124X010010	SCREW FOR FRONT CASE,REAR CASE
083B	2	51100204U0	B.H.M. SCREW B2X4
085B	1	266X861030	MODEL LABEL [C568]
085B	1	266X861040	MODEL LABEL [C568S]
085B	1	266X861050	MODEL LABEL [C568A]
086B	1	266X155010	BELT CLIP
087B	2	51102603U0	B.H.M. SCREW B2.6X3
088B	1	061X156010	HAND STRAP
091B	4	233X122030	STICKER FOR VOL FLEXIBLE P.C.BOARD
092B	1	266X120010	INSULATOR FOR FLEXIBLE P.C.BOARD
093B	1	266X109050	SHIELD FOR CERAMIC FILTER (F402)
094B	1	124X116030	LEAF SPRING FOR UHF VCO CASE
095B	2	061X122010	STICKER FOR CRYSTAL(X401,X402)
096B	1	266X109040	SHIELD FOR CONTROL P.C.BOARD
097B	2	061X056010	BUFFER FOR MICROPROCESSOR (Q209)
099B	1	266X056010	BUFFER FOR EEPROM SOCKET(J201)
101B	1	233X064110	BATTERY CASE A [C568/C568S]
102B	1	233X064120	BATTERY CASE B [C568/C568S]
103B	2	233X123060	CONTACTOR E [C568/C568S]
104B	1	233X123020	CONTACTOR A [C568/C568S]
105B	1	233X123030	CONTACTOR B [C568/C568S]
106B	2	233X123070	CONTACTOR F [C568/C568S]
107B	1	233X123040	CONTACTOR C [C568/C568S]
108B	1	233X123050	CONTACTOR D [C568/C568S]
109B	1	159C861020	MONTHLY PRODUCTION LABEL
110B	1	159C861020	MONTHLY PRODUCTION LABEL FOR MEMORY UNIT(P704)
111B	1	1000861010	HYATT PATENT LABEL [C568A]
201B	1	233X122030	STICKER FOR FLEXIBLE P.C.BOARD

C568 10 <0096>
C568S XX <0096>
C568A 08 <0096>

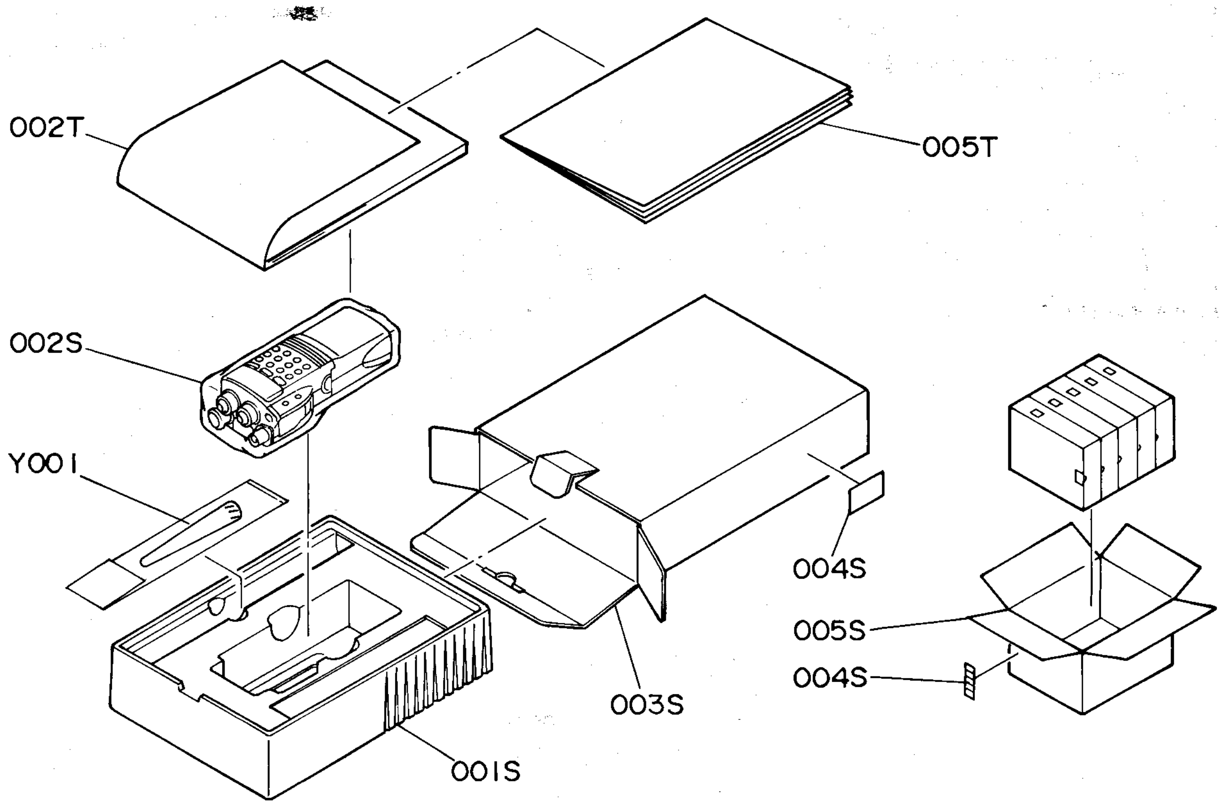
8. EXPLODED PARTS VIEW



* The parts which are used for only C568A.

9. PACKING DIAGRAM AND PARTS LIST

9.1 Transceiver (C568/C568S)



C568 10 <0096>
C568S XX <0096>

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
			PACKING (C568/C568S)
001S	1	266X809010	CUSHION
002S	1	9011020010	POLYETHYLENE BAG
003S	1	266X801020	PACKING CASE [C568]
003S	1	266X801030	PACKING CASE [C568S]
004S	2	9524520010	LABEL FOR SERIAL NUMBER
005S	1	266X805020	MASTER CARTON [C568]
005S	1	266X805030	MASTER CARTON [C568S]
002T	1	266X851010	USER MANUAL
005T	1	266X859020	BLOCK DIAGRAM
Y001	1	YR9901209R	WHIP ANTENNA

C568 10 <0096>
C568S XX <0096>