

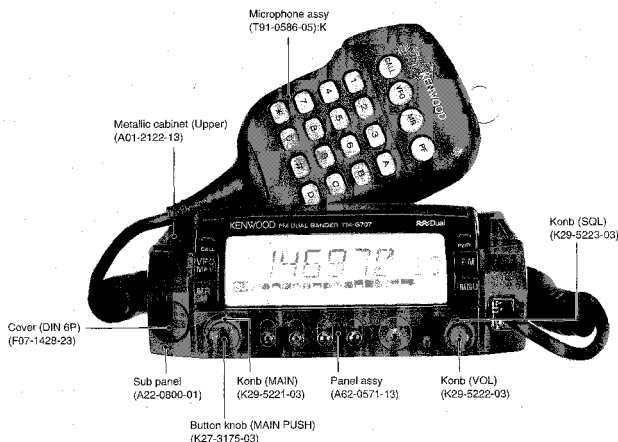
144/430/440MHz FM DUAL BANDER

# TM-G707A/E

## SERVICE MANUAL

# KENWOOD

© 1998-2 PRINTED IN JAPAN  
B51-8418-00(B) 834



**Photo is K Type**

## CONTENTS

|                                 |    |
|---------------------------------|----|
| CIRCUIT DESCRIPTION .....       | 2  |
| ACCESSORY MICROPHONE .....      | 12 |
| SEMICONDUCTOR DATA .....        | 14 |
| DESCRIPTION OF COMPONENTS ..... | 17 |
| TERMINAL FUNCTION .....         | 18 |
| PARTS LIST .....                | 19 |
| EXPLODED VIEW .....             | 28 |
| PACKING .....                   | 29 |
| ADJUSTMENT .....                | 30 |

|                                    |            |
|------------------------------------|------------|
| PC BOARD VIEWS                     |            |
| LCD ASSY(B38-0797-35) .....        | 40         |
| TX-RX UNIT(X57-557X-XX)(A/3) ..... | 41         |
| TX-RX UNIT(X57-557X-XX)(B/3) ..... | 47         |
| TX-RX UNIT(X57-557X-XX)(C/3) ..... | 49         |
| SCHEMATIC DIAGRAM .....            | 51         |
| BLOCK DIAGRAM .....                | 59         |
| WIRING DIAGRAM .....               | 61         |
| LEVEL DIAGRAM .....                | 62         |
| SPECIFICATIONS .....               | BACK COVER |

# TM-G707A/E

## CIRCUIT DESCRIPTION

### Outline

This device is a dual-band 144/430MHz FM car transceiver planned and designed for amateur radio communications and has the following features.

1. The display backlighting uses ultra-high brightness yellow LEDs. The display is a 13-segment positive type.
2. The main unit is 40x140 mm. The detachable operation panel is 51.5x105 mm.
3. 180 channels in memory.
4. The chassis is diecast aluminum with the heat radiation fins formed into one piece with the chassis.
5. Built-in CTCSS functions with 38 different selectable tones.
6. Data terminal having 1200 bps/9600 bps packet communication and computer interface.
7. Audio announce mode that announces the display frequency, name of the key pressed, etc. (when VS-3 option installed)

### List of Destinations

| Model    |    | Guarantee frequency range (MHz) |         | Output power (W) |                 |
|----------|----|---------------------------------|---------|------------------|-----------------|
|          |    | 144                             | 430     | 144              | 430             |
| TM-G707A | K  | 144~148 <sup>1</sup>            | 438~450 | 50 <sup>2</sup>  | 35 <sup>2</sup> |
|          | M2 |                                 | 430~440 |                  |                 |
|          | M4 |                                 |         |                  |                 |
| TM-G707E | E  | 144~148                         | 430~440 | 50               | 35              |
|          | E3 |                                 |         |                  |                 |

<sup>1</sup> Taiwan : 144 ~ 148 MHz

<sup>2</sup> Taiwan : 25 W (both bands)

### Accessories

| Parts name         | Parts No.   | Q'ty | Destination |
|--------------------|-------------|------|-------------|
| Warranty card      | -           | 1    | K,E,E3      |
| Instruction manual | -           | -    | all         |
| DC cord            | E30-2111-15 | 1    | all         |
| Fuse (15A)         | F51-0017-05 | 1    | all         |
| Microphone         | T91-0395-05 | 1    | M2,M4,E,E3  |
| Microphone (DTMF)  | T91-0586-05 | 1    | K           |
| Mobile bracket     | J29-0632-13 | 1    | all         |
| Screw set          | N99-0331-05 | 1    | M2,M4,E,E3  |
| Screw set          | N99-0382-05 | 1    | K           |
| Microphone hanger  | J19-1526-04 | 1    | K           |

### Units for Each Model and Destination

| Model    |    | TX-RX UNIT (A,B,B3,C,B) | LCD ASSY    |
|----------|----|-------------------------|-------------|
| TM-G707A | K  | X57-5570-11             | B38-0797-XX |
|          | M2 | X57-5570-22             |             |
|          | M4 | X57-5570-24             |             |
| TM-G707E | E  | X57-5572-71             |             |
|          | E3 |                         |             |

## CIRCUIT DESCRIPTION

### Frequency configuration

Since the TM-G707A/E uses the same PLL and IF for both the VHF and UHF band, these sections are used switching bands.

The 144MHz band reception system is mixed down with the 1st local frequency 182.850 MHz to 184.845 MHz (E), 182.850 MHz to 186.845 MHz (K, M) to make the 1st intermediate frequency of 38.85 MHz. This frequency is further mixed down with the 2nd local frequency of 38.4 MHz to obtain the 2nd intermediate frequency of 450 kHz.

The 430MHz band reception system is mixed down with the 1st local frequency 391.150 MHz to 401.145 MHz (M, E), 399.150 MHz to 406.145 MHz (K) to make the 1st intermediate frequency of 38.85MHz. This is mixed down with the 2nd local frequency of 38.4 MHz to obtain the 2nd intermediate frequency of 450 kHz. Thus, the reception systems form a double conversion system with two intermediate frequencies.

The transmission system uses direct oscillation for both the 144MHz and the 430MHz band and is made up of a PLL circuit formed through direct frequency division. Signals are amplified with straight amps and transmitted.

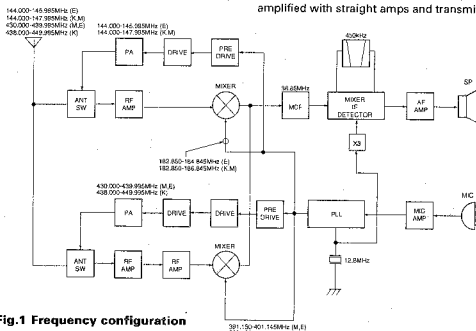


Fig.1 Frequency configuration

### ●PLL synthesizer section

The VCO section is in the shielding case and the PLL section is on the TX-RX board. The 12.8MHz reference oscillator (X1) is oscillated with the PLL IC (IC1). The 5kHz and 6.25kHz reference frequencies are obtained by frequency dividing this signal.

5kHz, 10kHz, 15kHz, 20kHz, 6.25kHz, 12.5kHz, 25kHz, and 50kHz step PLL synthesizers are configured through phase comparison with the reference frequencies obtained by frequency dividing HT. The VHF VCO is configured with one PLL IC by using a switch. For VHF, IC2 (analog switch) is

switched to the VHF side and D1 comes on. For UHF, IC2 is switched to the UHF side and D2 comes on. In this way, the two groups are formed. For VHF-band reception, oscillation is 182.85 to 184.845MHz (E), 182.85 to 186.845MHz (K, M) and for transmission, oscillation is 144.00 to 145.995MHz (E), 144.00 to 147.995MHz (K, M).

For UHF band reception, oscillation is 384.95 to 394.945MHz (M, E), 392.95 to 404.945MHz (K) and for transmission, oscillation is 430 to 439.995MHz (M, E), 438.00 to 449.995MHz (K).

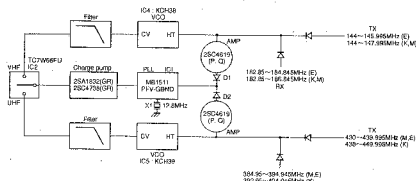


Fig.2 PLL synthesizer circuit

## CIRCUIT DESCRIPTION

### Unlock Detect Circuit

The signal whose phase has been compared from the PLL IC (IC1) is output, goes through the waveform circuit, and is input to the microprocessor. If the level after waveforming is low, the microprocessor judges this to be the unlock signal

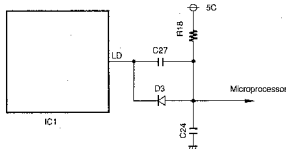


Fig.3 Unlock detect circuit

### Transmit Circuit

#### ●Outline

The transmitter directly oscillates the target frequency with the dedicated 144MHz band and 430MHz band VCO and amplifies to the target power. Frequency modulation is applied directly with a variable-capacity diode.

#### ●Modulation circuit

In the control unit, the audio signals are amplified and limited and passed through a splatter filter, then mixed with subtones from the microprocessor, and directly frequency modulated by a VCO (144MHz band: IC4; 430MHz band: IC5) with a variable-capacity diode.

#### ●Younger stage circuit

The signals from the PLL unit are input to the drive circuit (144MHz band: Q16, Q18, 430MHz band: Q15, Q17, Q19). The drive amps carry out stable amplification over a broad band without regulation and can obtain adequate output to drive the final module.

and does not transmit and does not send the transmission signals to the shift registers. The microprocessor also generates the beep to announce the unlocking. Unlocking is announced in the same manner for reception too.

#### ●APC circuit

The automatic transmission output control circuit (APC) uses a differential amplifier circuit (IC6) to compare and amplify the reference voltage that forms the CPU PWM output and the DC voltage that detects part of the transmission power with diodes (VHF: D20 and D23; UHF: D19 and D21) and for that output controls the DB voltage with a preamp (Q21) and control transistor (Q20) and holds the transmission output constant.

Six sets of PWM data, high-, medium-, and low-power each for VHF and UHF are stored into EEPROM memory (IC511) and for each power condition, the data is extracted from the EEPROM to control the power.

The PWM output from the CPU is used as the BPF tuning voltage for reception.

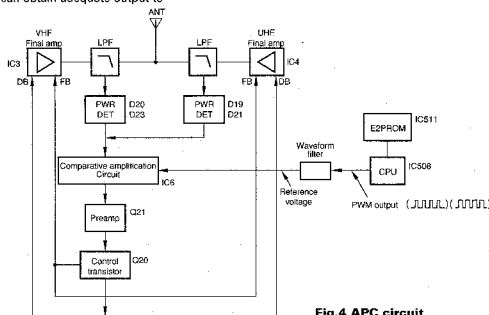


Fig.4 APC circuit

## CIRCUIT DESCRIPTION

## Reception Circuit

## ●144MHz Band

After the 144MHz antenna input signals pass through the final section antenna switching diode, they go through the front section tuning coil for matching and tuning are amplified with the GaAs field effect transistor. The unwanted signal is eliminated with a band pass filter made up of a 2-stage variable-capacity diode tuning and the result goes to the first mixer. The variable-capacity tuning comprises three stages. The tuning voltage is supplied from the microcomputer. For the tuning voltage, the PWM used for APC during transmission is switched to use for tuning for reception. In the first mixer, the signals are mixed with the first local signal from the PLL and converted to the first intermediate frequency signal of 38.85MHz, then the unwanted proximate signal is eliminated in the 2-stage MCF.

The first intermediate frequency signal is amplified and input to the FM IC (IC8). This intermediate frequency signal is mixed with the second local oscillator frequency of 38.4MHz to make the second intermediate frequency of 450kHz and

after the unwanted proximate signal is eliminated with an FM ceramic filter. The signal is input to IC8 again. Here, second intermediate frequency is amplified and detection are carried out to form the audio signal. From the IF (38.85 MHz) stage onward, the circuits are shared with the 430MHz band and switched for each band.

## ●430MHz Band

After the 430MHz antenna input signals pass through the final section antenna switching diode, they go through the front section matching coil, are amplified with the GaAs field effect transistor, go through a divider, go through a SAW filter to eliminate the unwanted signal and the result is input to the first mixer. Here, the signals are mixed with the first local signal from the PLL and converted to the first intermediate frequency signal of 38.85MHz, from the IF stage onward, the circuits are shared with the VHF reception circuit.

| Item                   | Rating                                                                                      |
|------------------------|---------------------------------------------------------------------------------------------|
| Center Frequency       | 38.85MHz                                                                                    |
| Pass band width        | $\pm 7.5\text{kHz}$ or more at 3dB                                                          |
| Attenuation band width | $\pm 25\text{kHz}$ or less at 36dB<br>$\pm 45\text{kHz}$ or less at 58dB                    |
| Guaranteed attenuation | 80dB or more within $\pm 1\text{MHz}$<br>(Spurious: 40dB or more within $\pm 1\text{MHz}$ ) |
| Ripple                 | 1dB or less                                                                                 |
| Insertion loss         | 3dB or less                                                                                 |
| Termination impedance  | $550\Omega \pm 10\%$ , $2.5\text{pF} \pm 0.5\text{pF}$                                      |

MCF (L71-0481-05)(TX-RX Unit XF1)

| Item                               | Rating                                         |
|------------------------------------|------------------------------------------------|
| Nominal center frequency           | 450kHz                                         |
| 6dB band width                     | $\pm 7.5\text{kHz}$ or more (from 450kHz)      |
| 50dB band width                    | $\pm 15.0\text{kHz}$ or more (from 450kHz)     |
| Ripple                             | 3dB or less (within $450 \pm 5\text{kHz}$ )    |
| Insertion loss                     | 6dB or less (at minimum lost point)            |
| Guaranteed attenuation             | 35dB or more (within $450 \pm 100\text{kHz}$ ) |
| I/O matching terminating impedance |                                                |

Ceramic filter (L72-0931-05)(TX-RX Unit CF1)

## S Meter Circuit

S meter output voltage from the FM IC (IC8) is connected to the control unit and A/D converted by the CPU to drive the LCD bar meter.

## Squelch Circuit

The squelch control angle is read into the panel section microprocessor and converted from analog to 6-bit digital. For adjustment mode, on the main unit side, the threshold level signal is received and the SQ voltage at that time are stored into the microprocessor. The microprocessor calculates the squelch release voltage using this voltage as the reference. This voltage and the panel section squelch control voltage are compared and the squelch switched ON and OFF.

## Shift Register Circuits

The TX-RX units have a shift register (IC7) and carry out the control of the right figure.

| Pin No. | Name    | Function          |
|---------|---------|-------------------|
| 1       | E       | GND               |
| 2       | DTS     | Serial data input |
| 3       | CK      | Clock             |
| 4       | 8R SW   | U/V RX Power SW   |
| 5       | UTX SW  | UHF TX Power SW   |
| 6       | VTX SW  | VHF TX Power SW   |
| 7       | 8CU SW  | UHF Power SW      |
| 8       | 8CV SW  | VHF Power SW      |
| 9       | 14R SW  | VHF RX SW         |
| 10      | VAIP SW | VHF AIP SW        |
| 11      | UAIP SW | UHF AIP SW        |
| 12      | 80R SW  |                   |
| 13      | 43R SW  | UHF Power SW      |
| 14      | 36R SW  |                   |
| 15      | USHIFT  | UHF VCO Shift SW  |
| 16      | 5C      | VDD               |

## CIRCUIT DESCRIPTION

### AF Signal System

After the RD detection signal from the FM IC (IC8) enters the base band (IC506), it is combined with the VO signal from the audio synthesis unit and the beep and DTMF signals from the CPU and goes into the electronic control. The electronic control has two channels, one of which is used for the internal speaker (AO1) and the other of which is used for the speaker mic (AO0). The audio signals whose levels have been adjusted by the electronic control pass through the mute circuit, are amplified by the power amp (IC207), and are output to the built-in speaker and the speaker mic.

(K type has no speaker microphone circuit)

### Beep Circuit, Mute Circuit

When a key is pressed, the beep sound is output from Pin 46 of the microcomputer. While the beep sound is output, the RD signal is muted within the base band IC. In the same manner, while VO signals or DTMF signals are output, the RD signal is muted within the base band IC.

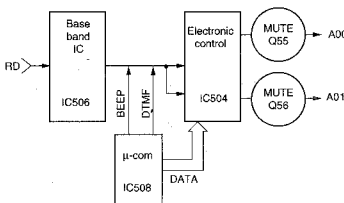


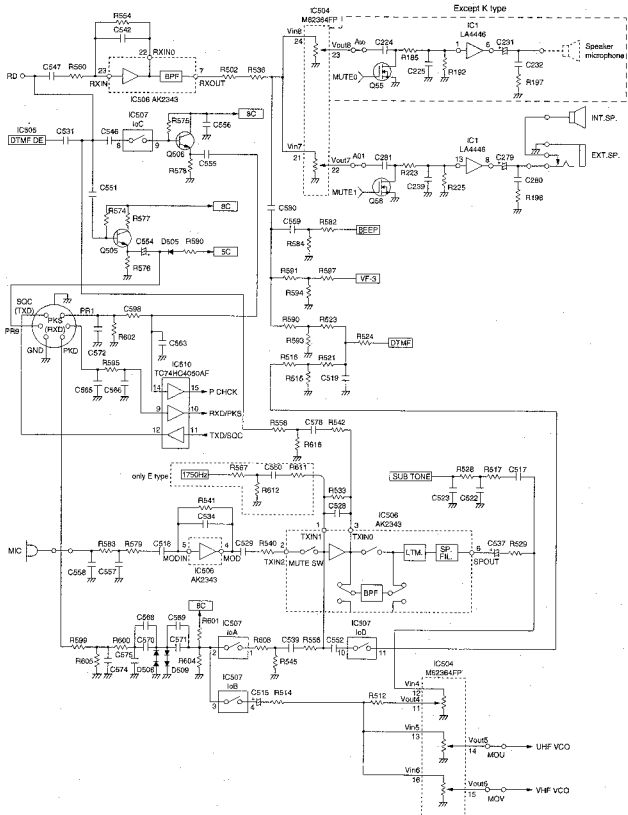
Fig. 5 AF Block Diagram

### Mic Amp Circuit (Refer to Fig.6)

The audio signals from the microphone are impedance matched and enter AK2343 (IC506). AK2343 comprises a 2-stage amp, mute circuit, band pass filter circuit, limiter circuit, and splatter filter circuit. It provides the audio signal amplification and preemphasis characteristic. During data transmission from the DATA terminal, the IC507 mute switch

is switched off to mute audio signals from the mic. The level for the mic amp output is set with the electronic control (IC504). The modulation circuits are directly connected with the VCO variable-capacity diode for the 144MHz band and the VCO variable-capacity diode for the 430MHz band and apply frequency modulation.

## CIRCUIT DESCRIPTION



# TM-G707A/E

## CIRCUIT DESCRIPTION

### Digital Control Circuit (Refer to Fig.6)

The digital control section controls each function with one microprocessor (IC508) and comprises the subtone signal, DTMF encode and DTMF decode circuit (IC505), the electronic control circuit (IC504), the analog signal select switch (IC507), and the base band circuit (IC506). The reset and backup circuits, mic amp circuit, and microphone key input circuit are also included in the control unit.

### Data Communications Between Panel and Control Unit

Figure 7 shows the control unit data communication circuits. SI is the serial data in and SO is the serial data out. There are Buffer amplifiers for protecting the microprocessor board.

Data communication is asynchronous, with a communications speed of 19200 bps. The control unit side microprocessor checks the connection once every 0.5 second and if the connection is NG twice in a row, in other words if the panel section is removed for more than one second, the power is cut off.

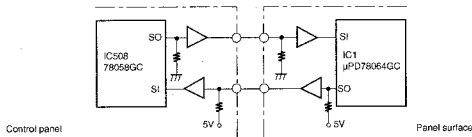


Fig. 7 Circuit for Data Communications Between Panel and Control Unit

### Speaker Switching Circuit (Refer to Fig.6)

Each of the AF signals, AO0 and AO1, is input to one of the two independent power amps (IC1: LA4446). Switching between the internal speaker and external speaker is controlled by the electronic control (IC504) and the mute circuit of Q55 and Q56.

### Tone Output Circuit (Refer to Fig.6)

The tone signals (38 waves within 67.0 to 250.3Hz) are output from ANO0 of the microprocessor (IC508) analog output port.

### ●DTMF decode signals

The DTMF signals from a mic with DTMF (M2, E, E3 : optional), go into the DTMF decoder IC (IC505 : LC73881M). When a valid tone pair is detected, STD of the DTMF decoder IC goes high. This is input to the P56 port of the microprocessor (IC508), the serial clock is output from P54 of the microprocessor to the DTMF decoder IC, and the serial data is sent to the P55 port of the microprocessor.

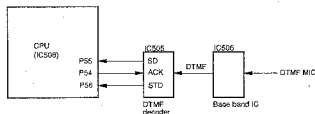


Fig.8 DTMF decode circuit

## CIRCUIT DESCRIPTION

### Reset and Backup Circuits

When power is supplied to the set, the reset circuit generates a delay in the reset IC (IC503: PST9130NR) and the delay signal is input to the reset terminal of the main unit microprocessor to carry out a power ON reset. When the power voltage drops, the voltage is detected and the reset signal is generated.

The reset switch circuit resets the main unit microprocessor when the reset switch (S501) is pressed. The microcomputer checks the RST port level after reset is performed. If the switch is released within 1 second (when RST port has set to LOW level) at this time, then operation is the same as VFO reset (VFO+POWER ON). However, if the switch is pressed for longer than 1 second (RST port has set to HIGH level for more than 1 second), then operation is the same as ALL reset (MR+POWER ON). The RST port is normally low. The backup circuit detects any voltage drop in the power supply voltage 13.8V line and sets B CHCK of the microprocessor high, causing the microprocessor to send the backup data to the EEPROM (IC511) and go into STOP mode to reduce power consumption.

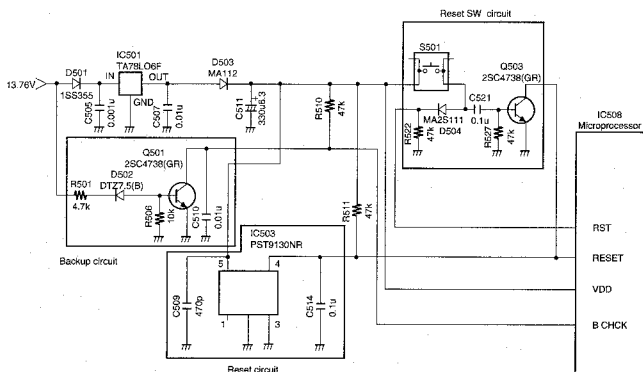


Fig.9 Reset backup circuit

## CIRCUIT DESCRIPTION

### Microphone Key Input

The microphone UP/DOWN and function keys are connected to the microprocessor analog input. The voltage when a key is ON operates the corresponding function. Also, the key input interrupt circuit is for switching the power ON/OFF with the microphone. When the DOWN, MR, and PF keys

are pressed, an interrupt is generated and the microprocessor is awoken from stop mode. However, with the TM-G707A/E, the power ON/OFF switch function can be registered to the PF key on the microphone.

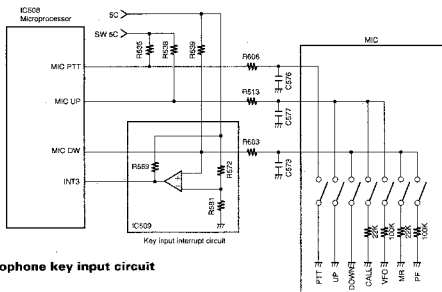


Fig.10 Microphone key input circuit

### Data Terminal and Peripheral Circuits (Refer to Fig.6)

J501 (data terminal) is the data communications terminal on the front. It handles transmission control, data input/output, and squelch signals.

There are two data communications modes: 9600bps mode and 1200bps mode. 9600bps mode communications are GMSK and G3RUH packet communications. Unlike with 1200bps AFSK, with this type of high-speed modulation, frequency modulation is carried out after the digital base band signals (rectangular wave) are passed through a band limiting filter. For 9600bps GMSK for example, compared to 4800Hz signals (nearly sine wave signals passed through a filter), these signals have a hissing sound like digital modulation when listened to by ear. Different types of modulation, such as GMSK and G3RUH, are distinguished by the type of band limiting filter.

### ●Transmission signals

Transmission modulation signals enter from PKD of the data terminals (J501). The path to the modulation depends on whether communications are 1200bps or 9600bps mode.

For 1200bps mode, the transmission modulation signals pass through IoA of the analog switch (IC507) and are input to IC506 TX IN1 (Pin 1). The signals pass through the audio amp within AK2343, are switched by the electronic control, and are input to the VCO.

| Pin No. | Pin name | Specification                                                |
|---------|----------|--------------------------------------------------------------|
| 1       | PKD      | bps switching 1200bps 9600bps                                |
|         |          | Modulation input 40mVp-p 2Vp-p                               |
|         |          | Frequency shift 3±0.5kHz 2.2±0.5kHz                          |
| 4       | PR9      | Output level 500mVp-p/10kΩ<br>Always output during reception |
| 5       | PR1      | Output level 500mVp-p/10kΩ<br>Not output when squelch off    |

### DATA terminal input/output level

For 9600bps mode, the transmission modulation signals pass through IoB of IC507, are switched by the electronic control, and are input to the VCO.

The frequency shift depends on the input signal level, so there is an amplitude limiting circuit (D508, 509) to hold the signal below 4 Vp-p to avoid extreme shifts.

Thanks to this circuit, the PKD signal does not go above 4 Vp-p and the frequency shift does not fluctuate extremely.

## CIRCUIT DESCRIPTION

### ●Reception signals

PR9 is the 9600bps data communications reception output. It outputs the FM detection circuit output (RD signals) through a buffer amp (Q505 : 2SC4738 (GR)). These signals are always output whether the squelch is open or closed.

PR1 is the 1200bps data communications reception output. It outputs the FM detection circuit output (RDT signals) through a buffer amp (Q506 : 2SC4738 (GR)). Output is controlled with the analog switch (IoC of IC507) according to whether squelch is open or closed.

### ●Squelch signal output circuit (Refer to Fig.6)

The squelch circuit is input to the TNC to prevent conflicts from occurring between simultaneous receive mode and transmit mode traffic during packet communications. (only during 1200bps) The signal is output from Pin 12 of IC510 to the data terminal. The logic is as shown in the Table below.

| SQC terminal output | L:SQ CLOSE |
|---------------------|------------|
| (J 501 Pin 6)       | H:SQ BUSY  |

### Panel Section (LCD ASSY: B38-0797-35)

The panel section controls serial communications with the main unit control section, the key input circuit, the display circuit, and the dimmer circuit through the microprocessor (IC1).

### ●Serial communications circuit

A buffer amp is inserted in order to protect the microprocessor ports.

### ●Key, Volume input circuit

Circuits to operate the panel section keys are connected to each microprocessor port. The PSW key is pulled down and the other keys are pulled up with software within the microprocessor. Rotary encoder operating circuits are connected directly to the microprocessor. The control divides the power supply voltage, reads the A/D port of the microprocessor, and transfers that data to the main unit.

### ●Display circuit

The display is a 13-segment positive type. The segments are controlled directly by drivers in the microprocessor.

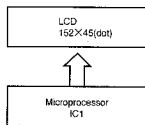


Fig.11 Display circuit

### ●Dimmer circuit

The dimmer circuit switches the lamp brightness to one of four levels or OFF. (See table) the current flowing to the LEDs is varied by selecting resistors from R36 to R41.

R42 is for adjusting for variation in the brightness of the LED. R42 is adjusted at the factory so that the brightness at the center of the LED is  $24 \pm 5$  cd/m<sup>2</sup>.

| Dimmer level | P100 | P101 | P102 | P103 |
|--------------|------|------|------|------|
| 1            | H    | L    | L    | L    |
| 2            | L    | H    | L    | L    |
| 3            | L    | L    | H    | L    |
| 4            | L    | L    | L    | H    |
| OFF          | L    | L    | L    | L    |

### Port logic

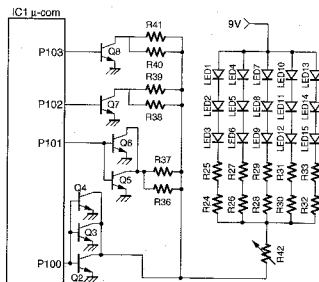


Fig.12 Dimmer circuit

# TM-G707A/E

## ACCESSORY MICROPHONE T91-0586-05 : K type (MC-53DM)

### EXTERNAL VIEW



### PARTS LIST

| Ref. No. | Address | New Parts | Part No.    | Description                    |
|----------|---------|-----------|-------------|--------------------------------|
|          |         |           | A02-1992-08 | CASE (FRONT)                   |
|          |         |           | A02-1993-08 | CASE (REAR)                    |
|          |         |           | E30-3240-08 | MICROPHONE CORD ASSY (MODULER) |
|          |         |           | K29-5101-06 | KN08 (PTT)                     |
|          |         |           | K29-6102-08 | KN08 (UP/DOWN)                 |
|          |         |           | K29-5103-08 | KEY TOP (20KEY)                |
|          |         |           | K29-5104-06 | KN08 (LOCK)                    |
| SW3,4    | -       | -         | S40-1117-06 | TACT SWITCH (UP/DOWN)          |
| SW2      | -       | -         | S02-0441-08 | SLIDE SWITCH (LOCK)            |
| SW1      | -       | -         | S70-0459-08 | TACT SWITCH (PTT)              |
|          |         |           | T91-0570-08 | MICROPHONE ELEMENT             |
| IC1      |         |           | LR40672     | IC                             |
| 01-3     |         |           | 2SC1623     | TRANSISTOR                     |

### SPECIFICATIONS

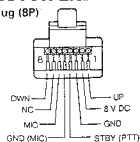
| Type              | Electret capacitor                            |
|-------------------|-----------------------------------------------|
| Power requirement | 8.0 V DC $\pm 10\%$                           |
| Current drain     | 35 mA or less                                 |
| Sensitivity       | $-72 \pm 3$ dB (at 1 kHz) (0 dB = 1 V/0.1 pa) |
| Impedance         | $900\Omega \pm 30\%$ (at 1 kHz)               |

### ADJUSTMENT

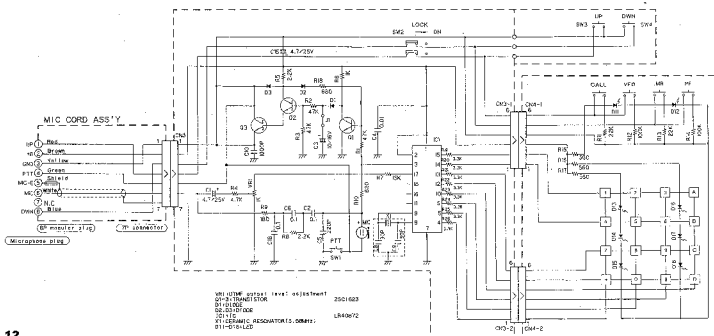
| Item              | Condition                     | Test equipment/Measurement             | Adjustment | Specifications/Remarks           |
|-------------------|-------------------------------|----------------------------------------|------------|----------------------------------|
| DTMF output level | [3] [6] key at same time push | AF VTVM<br>BP Modulator plug<br>B (BV) | VR1        | $2.4\text{mV} \pm 0.01\text{mV}$ |

### CONNECTOR END VIEW

Moduler plug (8P)



### SCHEMATIC DIAGRAM



# TM-G707A/E

## ACCESSORY MICROPHONE T91-0396-05 : E, M type (MC-45)

### EXTERNAL VIEW



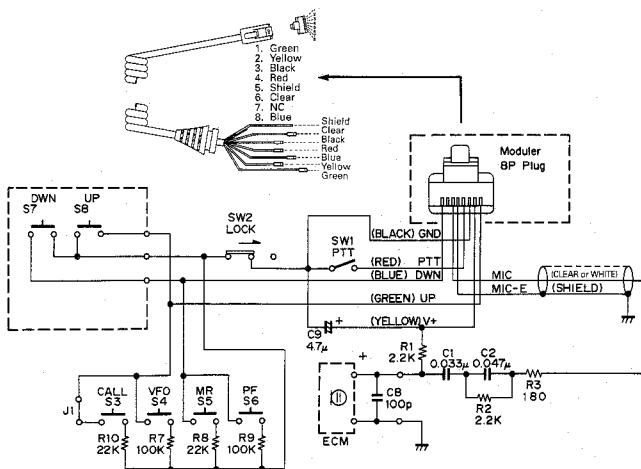
### PARTS LIST

| Ref. No. | Address | New Parts | Parts No.   | Description                     |
|----------|---------|-----------|-------------|---------------------------------|
|          |         |           | A02-0836-08 | CASE (FRONT)                    |
|          |         |           | A02-0900-08 | CASE (REAR)                     |
|          |         |           | E30-3006-08 | CURL CORD ASSY                  |
|          |         |           | G13-0933-08 | CUSHION (UP,DWN)                |
|          |         |           | K29-3165-08 | KNOB (PTT)                      |
|          |         |           | K29-3166-10 | KNOB (UP)                       |
|          |         |           | K29-3169-10 | KNOB (DWN)                      |
|          |         |           | K29-3170-08 | KNOB (CALL, VFO, MR, PF)        |
| SW3-6    |         |           | S58-1409-28 | SWITCH ASSY (UP,DWN)            |
| SW7-8    |         |           | S40-1431-08 | TACT SWITCH (CALL, VFO, MR, PF) |
| SW1      |         |           | S40-1437-08 | TACT SWITCH (UP,DWN)            |
| SW2      |         |           | S50-1431-08 | MICRO SWITCH LOCK               |
|          |         |           | S31-1422-08 | SLIDE SWITCH LOCK               |
|          |         |           | T91-0393-08 | MICROPHONE ELEMENT              |

### SPECIFICATIONS

| Type              | Electret capacitor                                 |
|-------------------|----------------------------------------------------|
| Power requirement | 8.0 V DC $\pm$ 10%                                 |
| Current drain     | 0.6 mA or less                                     |
| Sensitivity       | -71.5 $\pm$ 3.5 dB (at 500 Hz) (0 dB = 1 V/0.1 pa) |
| Impedance         | 3.1k $\Omega$ $\pm$ 30% (at 1kHz)                  |

### SCHEMATIC DIAGRAM



## SEMICONDUCTOR DATA

### 78P064GCJTUB (LCD DISPLAY ASSY CPU:IC1)

| Pin No. | Port name      | I/O | Function                                                                    | Active Level |
|---------|----------------|-----|-----------------------------------------------------------------------------|--------------|
| 1       | P11/ANI1       | AI  | AF VOL                                                                      | -            |
| 2       | P12/ANI2       | AI  | Photo transistor                                                            | -            |
| 3       | P13/ANI3       | AI  | Dimmer reference                                                            | -            |
| 4       | P14/ANI4       | I   | Dimmer detect terminal                                                      | -            |
| 5~7     | P15~17/ANI5~7  | -   | Open                                                                        | -            |
| 8       | AVDD           | -   | VDD                                                                         | -            |
| 9       | AVREF          | -   | VDD                                                                         | -            |
| 10, 11  | P100, P101     | O   | Dimmer control1, 2                                                          | H            |
| 12      | VSS            | -   | GND                                                                         | -            |
| 13, 14  | P102, P103     | O   | Dimmer control3, 4                                                          | H            |
| 15      | P30/TO0        | O   | SC SW                                                                       | -            |
| 16      | P31/TO1        | I   | [BAND] key                                                                  | L            |
| 17      | P32/TO2        | I   | [PM] key                                                                    | L            |
| 18      | P33/TO3        | I   | [MENU] key                                                                  | L            |
| 19      | P34/TO4        | I   | [DIM] key                                                                   | L            |
| 20      | P35/PCL        | -   | Open                                                                        | -            |
| 21      | P36/BUZ        | -   | Open                                                                        | -            |
| 22      | P37            | -   | Open                                                                        | -            |
| 23~26   | COM0~3         | O   | LCD COM0~LCD COM3                                                           | -            |
| 27      | BIAS           | -   | BIAS                                                                        | -            |
| 28~30   | VLC0~2         | -   | VLC0~VLC2                                                                   | -            |
| 31      | VSS            | -   | GND                                                                         | -            |
| 32~55   | S0~23          | O   | LCD S0~LCD S23                                                              | -            |
| 56~71   | P97~P80/S24~39 | O   | LCD S24~LCD S39                                                             | -            |
| 72      | P25/SIO/SB0    | I   | Main unit microcomputer communication SI                                    | -            |
| 73      | P28/SO0/SB1    | O   | Main unit microcomputer communication SO                                    | -            |
| 74      | P27/SCK0       | -   | Open                                                                        | -            |
| 75      | P70/SI2/RXD    | -   | Open                                                                        | -            |
| 76      | P71/SO2/TXD    | -   | Open                                                                        | -            |
| 77      | P72/SCK/ASCK   | -   | Open                                                                        | -            |
| 78      | IC             | -   | Open                                                                        | -            |
| 79      | X2             | -   | Clock oscillator connection (4.194304 MHz)                                  | -            |
| 80      | X1             | -   | Clock oscillator connection (4.194304 MHz)                                  | -            |
| 81      | VDD            | -   | VDD                                                                         | -            |
| 82      | XT1/P07        | -   | Open                                                                        | -            |
| 83      | XT2            | -   | Open                                                                        | -            |
| 84      | RESET          | -   | Reset input                                                                 | -            |
| 85      | P00/INTP0/TI00 | I   | Encoder clock                                                               | -            |
| 86      | P01/INTP1/TI01 | I   | Main unit microcomputer communications request detect (connected to Pin 72) | -            |
| 87      | P02/INTP2      | I   | [PWR] key                                                                   | L            |
| 88      | P03/INTP3      | I   | Encoder data                                                                | -            |
| 89      | P04/INTP4      | -   | Open                                                                        | -            |
| 90      | P05/INTP5      | -   | Open                                                                        | -            |
| 91      | P110           | I   | [VFO] key                                                                   | L            |
| 92      | P111           | I   | [CALL] key                                                                  | L            |
| 93      | P112           | I   | [MR] key                                                                    | L            |
| 94      | P113           | I   | [MHz] key                                                                   | L            |
| 95      | P114           | I   | [F] key                                                                     | L            |
| 96      | P115           | I   | [TONE] key                                                                  | L            |
| 97      | P116           | I   | [REV] key                                                                   | L            |
| 98      | P117           | I   | [LOW] key                                                                   | L            |
| 99      | AVSS           | -   | GND                                                                         | -            |
| 100     | P10/ANI0       | AI  | Squelch VR                                                                  | -            |

## SEMICONDUCTOR DATA

## I/O port specification

78058GC-A7X8BT (CONTROL UNIT CPU:IC508)

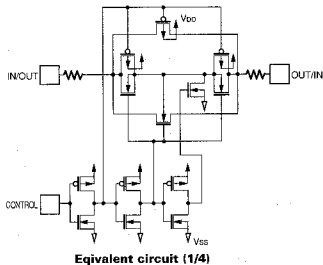
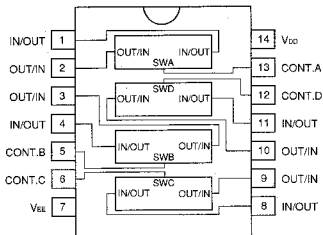
| Pin No. | Port name | I/O | Function                                                                | Active Level                                                                                               |
|---------|-----------|-----|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| 1       |           | I   | Open (connected to Vdd)                                                 | -                                                                                                          |
| 2       | MIC DW    | AI  | MIC [DOWN] [MR] [PF] key                                                | H:No operation, 4.7V max; SP MIC, 4.3V max; [PF] pressed, 2.5V max; [MR] pressed, 0.6V max; [DOWN] pressed |
| 3       | MIC UP    | AI  | MIC [UP] [CALL] [VFO] key                                               | H:No operation, 4.3V max; [VFO] pressed, 2.5V max; [CALL] pressed, 0.6V max; [UP] pressed                  |
| 4       | AVSS      | -   | A/D conversion circuit VSS terminal (connected to ground)               | -                                                                                                          |
| 5       | SUB TONE  | O   | Sub tone signal D/A output terminal                                     | -                                                                                                          |
| 6       | DTMF      | O   | DTMF signal D/A output terminal                                         | -                                                                                                          |
| 7       | AVREF1    | -   | D/A conversion circuit reference voltage terminal (connected to Vdd)    | -                                                                                                          |
| 8       | RxD/PKS   | I   | RS-232C RxD terminal                                                    | -                                                                                                          |
| 9       | TxD/SOC   | O   | RS-232C TxD terminal                                                    | -                                                                                                          |
| 10      | MIC PTT   | I   | MIC [PTT] key                                                           | H:No operation, L:pressed                                                                                  |
| 11      | PLL EN    | O   | PLL enable                                                              | L:Enable                                                                                                   |
| 12      | PLL CK    | O   | PLL & shift register clock                                              | -                                                                                                          |
| 13      | PLL DT    | O   | PLL data                                                                | -                                                                                                          |
| 14      | SFT DT    | O   | Shift register data                                                     | -                                                                                                          |
| 15      | PLL UL    | I   | PLL unlock signal                                                       | -                                                                                                          |
| 16      | SI        | I   | Panel microcomputer communications SI                                   | -                                                                                                          |
| 17      | SO        | O   | Panel microcomputer communications SO                                   | -                                                                                                          |
| 18      | RST       | I   | Reset switch input                                                      | H:pressed, L:No operation                                                                                  |
| 19      | MUTE0     | O   | SPMIC AF MUTE SW                                                        | H:MUTE ON                                                                                                  |
| 20      | MUTE1     | O   | Internal/external AF mute switch                                        | H:MUTE ON                                                                                                  |
| 21      |           | O   | Open (connect Vdd)                                                      | -                                                                                                          |
| 22      | AGC       | O   | AGC                                                                     | H:AGC ON                                                                                                   |
| 23      | FAN       | O   | FAN                                                                     | H:FAN ON                                                                                                   |
| 24      | PLL SW    | O   | PLL SW                                                                  | H: One moment when PPT On                                                                                  |
| 25      | V SHIFT   | O   | VHF VCO SHIFT SW                                                        | -                                                                                                          |
| 26      | PSW       | O   | Power Switch                                                            | H:PSW ON, L:PSW OFF                                                                                        |
| 27      |           |     |                                                                         | -                                                                                                          |
| 28      | AM SW     | O   | AM SW                                                                   | H:AM, L:FM                                                                                                 |
| 29~30   |           | I   | Open (connect Vdd)                                                      | -                                                                                                          |
| 31      | DM CK     | O   | DTMF decoder clock                                                      | -                                                                                                          |
| 32      | DM DT     | O   | DTMF decoder data                                                       | -                                                                                                          |
| 33      | VSS       | -   | Microcomputer ground potential                                          | -                                                                                                          |
| 34      | DM STD    | I   | DTMF decoder detect terminal                                            | -                                                                                                          |
| 35      | 5CSW      | O   | 5C switch control                                                       | H:5C OFF, L:5C ON                                                                                          |
| 36~39   | SIM0~3    | I   | Destination Bit 0~3                                                     | -                                                                                                          |
| 40      | EEP SO    | I   | EEPROM SO                                                               | -                                                                                                          |
| 41      | EEP CS    | O   | EEPROM chip select                                                      | H, L select                                                                                                |
| 42      | EEP CK    | O   | EEPROM clock                                                            | -                                                                                                          |
| 43      | EEP SI    | O   | EEPROM SI                                                               | -                                                                                                          |
| 44      | APWM      | O   | APC control, BPF control (PWM)                                          | -                                                                                                          |
| 45      | P CHCK    | I   | Packet connection check                                                 | -                                                                                                          |
| 46      | BEEP      | O   | Beep output                                                             | -                                                                                                          |
| 47      | ASW 1200  | O   | Packet signal input select 1200bps                                      | H:1200bps side input                                                                                       |
| 48      | ASW DM    | O   | DTMF monitor ON/OFF                                                     | H:MONI ON                                                                                                  |
| 49      | ASW 9600  | O   | Packet signal input select 9600bps                                      | H:9600bps side input                                                                                       |
| 50      | 1750HZ    | O   | 1750Hz                                                                  | -                                                                                                          |
| 51      | ASW SQ    | O   | PR1 squelch control analog switch                                       | L:PR1 MUTE                                                                                                 |
| 52      | MIC BUSY  | O   | Speaker mic Busy LED                                                    | H:BUSY LED ON                                                                                              |
| 53      | V NAR     | O   | Audio synthesis IC serial input enable                                  | L:Enable                                                                                                   |
| 54      | V RST     | O   | Audio synthesis IC reset                                                | -                                                                                                          |
| 55      | V CS      | O   | Audio synthesis chip select                                             | -                                                                                                          |
| 56      | V DT      | O   | CTCSS data/audio synthesis IC data                                      | -                                                                                                          |
| 57      | V/CT CK   | O   | CTCSS clock/audio synthesis IC clock, connection check                  | -                                                                                                          |
| 58      | CT DE     | O   | CTCSS detected                                                          | L:Detected                                                                                                 |
| 59      | CT EN     | O   | CTCSS enable                                                            | -                                                                                                          |
| 60      | RESET     | I   | External reset terminal                                                 | -                                                                                                          |
| 61      | SIM CH    | I   | CH display jumper                                                       | L:jumper present                                                                                           |
| 62      | B CHK     | I   | Power supply check                                                      | H:Voltage drop                                                                                             |
| 63      | INT2      | I   | Panel microcomputer communications request detect (connected to Pin 16) | L:Communications request                                                                                   |
| 64      | INT3      | I   | (Connected to Pin 2)                                                    | -                                                                                                          |
| 65      | VR CK     | O   | Electronic VR clock                                                     | -                                                                                                          |
| 66      | VR EN     | O   | Electronic VR enable                                                    | -                                                                                                          |
| 67      | VR DT     | O   | Electronic VR data                                                      | -                                                                                                          |
| 68      | VDD       | -   | Positive power supply terminal                                          | -                                                                                                          |
| 69      | X2        | -   | System clock (4.194304MHz)                                              | -                                                                                                          |
| 70      | X1        | I   | System clock (4.194304MHz)                                              | -                                                                                                          |
| 71      | VPP       | -   | Connected to VSS                                                        | -                                                                                                          |
| 72      |           | -   | Open                                                                    | -                                                                                                          |
| 73      |           | -   | Open (Connected to VSS)                                                 | -                                                                                                          |
| 74      | AVDD      | -   | A/D conversion circuit power supply terminal (connected to VDD)         | -                                                                                                          |
| 75      | AVREF0    | -   | A/D conversion circuit reference voltage terminal (connected to VDD)    | -                                                                                                          |
| 76      | SQ IN     | I   | Squelch input                                                           | -                                                                                                          |
| 77      | SM IN     | I   | S meter input                                                           | -                                                                                                          |
| 78~80   |           | I   | Open (Connected to Vdd)                                                 | -                                                                                                          |

# TM-G707A/E

## SEMICONDUCTOR DATA

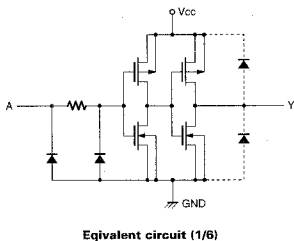
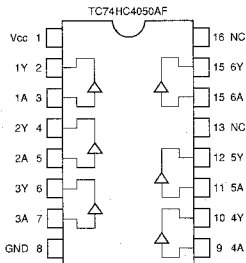
### BU4066BCF

#### CONTORL UNIT:IC507



### TC74HC4050AF

#### CONTORL UNIT:IC510



## DESCRIPTION OF COMPONENTS

### TX-RX UNIT (X57-557X-XX)

| Ref.No.  | Application/Function    | Operation/Condition/Compatibility |
|----------|-------------------------|-----------------------------------|
| Q1       | Fan switch              |                                   |
| Q2       | Buffer amp              | 12.8MHz                           |
| Q3       | F in amp                | UHF                               |
| Q4       | F in amp                | VHF                               |
| Q5, Q6   | Charge pump             | VHF/UHF common                    |
| Q11      | VCO power select switch | VHF or UHF On                     |
| Q12      | VCO 8CL ripple filter   | VHF-UHF common                    |
| Q13      | Common amp              | VHF                               |
| Q14      | Common amp              | UHF                               |
| Q15      | Transmission driver     | UHF transmission on               |
| Q16      | Transmission driver     | VHF transmission on               |
| Q17      | Transmission driver     | UHF transmission on               |
| Q18      | Transmission driver     | VHF transmission on               |
| Q19      | Transmission driver     | UHF transmission on               |
| Q20, Q21 | APC control             | VHF/UHF common transmission on    |
| Q22      | Protection switch       | APC temperature protection        |
| Q23, Q24 | AVR                     | For PB                            |
| Q25      | Protection switch       | Excess voltage protection         |
| Q26      | Power switch            | For 8R                            |
| Q27      | Power switch            | For 8TU                           |
| Q28      | Power switch            | For 8TV                           |
| Q29      | Power switch            | For 8CU                           |
| Q30      | Power switch            | For 8CV                           |
| Q31      | Power select switch     | 43R/80R selection                 |
| Q32      | Power select switch     | 14R/36R selection                 |
| Q33      | RF amp                  | When VHF reception on             |
| Q34      | RF amp                  |                                   |
| Q35      | Doubler                 |                                   |
| Q36      | RF amp                  | When UHF reception on             |
| Q37      | First mixer             |                                   |
| Q38      | First mixer switch      |                                   |
| Q39      | RF amp                  |                                   |
| Q40      | RF amp                  | When UHF reception on             |
| Q42      | Switch for band switch  | When UHF reception on             |
| Q43      | First mixer switch      | When VHF reception on             |
| Q44      | First mixer switch      | When UHF reception on             |
| Q45      | First mixer             | When VHF reception on             |
| Q46      | First mixer             | When UHF reception on             |
| Q47      | AGC amp                 |                                   |
| Q48      | First IF amp            | VHF/UHF common transmission on    |
| Q49      | Tripler                 | Second local                      |
| Q50      | Select switch           |                                   |
| Q51, Q53 | Power switch            | Power Switch                      |
| Q52      | Noise amp               | Squelch                           |
| Q54      | AGC amp                 |                                   |
| Q55      | Mute switch             | When speaker mic used             |
| Q56      | Mute switch             | When internal speaker used        |
| Q60      | Mute switch             | When internal speaker used        |
| Q61, Q62 | Mute switch             | When internal speaker used        |
| Q501     | Backup switch           | Backup on off                     |
| Q502     | Power switch            | For SW5C                          |
| Q503     | Reset switch            | Reset when on                     |
| Q504     | BUSY LED switch         | When speaker mic used             |
| Q505     | Buffer amp              | 9600bps RD                        |
| Q506     | Buffer amp              | 1200bps RD                        |

| Ref.No.       | Application/Function          | Operation/Condition/Compatibility |
|---------------|-------------------------------|-----------------------------------|
| IC1           | PLL IC                        | PLL                               |
| IC2           | Select switch                 | Loop filter switching             |
| IC3           | Speed up                      | Loop filter                       |
| IC4           | VCO                           | VHF                               |
| IC5           | VCO                           | UHF                               |
| IC6           | Comparator                    | APC                               |
| IC7           | Shift register                |                                   |
| IC8           | FM wave detection             |                                   |
| IC9           | Select switch                 |                                   |
| IC10          | 5V regulator                  | 5C                                |
| IC1           | Microcomputer                 | LCD display assy                  |
| IC1           | Audio amp                     | (Main)                            |
| IC2           | 8V AVR                        | 8C (Main)                         |
| IC3           | Power module                  | VHF (Main)                        |
| IC4           | Power module                  | UHF (Main)                        |
| IC501         | 6V regulator                  |                                   |
| IC502         | 5V regulator                  | 5C                                |
| IC503         | Reset detect                  |                                   |
| IC504         | Electronic control            |                                   |
| IC505         | DTMF decoder                  |                                   |
| IC506         | Base band IC                  |                                   |
| IC507         | Analog switch                 |                                   |
| IC508         | Microcomputer                 |                                   |
| IC509         | Comparator                    | For speaker mic power switch      |
| IC510         | Buffer amp                    | PRI/TXD/RXD/PSI/PSO               |
| IC511         | EEPROM                        |                                   |
| D1, D2        | Select switch                 | F in switch                       |
| D3            | Lock detect                   | Lock detect                       |
| D4            | Reduce voltage                | Charge pump                       |
| D5            | Quick charge                  | VCO ripple filter                 |
| D6-D9         | Select switch                 | Hetero switch                     |
| D10-D12       | Voltage stabilizer            | Q18, Q18, Q19 base bias           |
| D13, D43      | Excess power prevention       | Q33 protection                    |
| D14, D18      | Antenna switch                | UHF                               |
| D15-D17, D42  | Antenna switch                | VHF                               |
| D19, D21      | Power detection               | UHF                               |
| D20, D23      | Power detection               | VHF                               |
| D22           | OR circuit                    | 8TV/8TU                           |
| D24           | Voltage stabilization         | Q23 base bias                     |
| D25           | Excess voltage prevention     | For PB                            |
| D26           | Excess power prevention       | Q36 protection                    |
| D27           | Band switch                   |                                   |
| D28, D29, D31 | Band bus tuning               | VHF front end                     |
| D30           | Band switch                   |                                   |
| D33           | OR circuit                    | 43R/36R                           |
| D34, D35      | Back current prevention       | VCO power switch                  |
| D37, D38      | Select switch                 | Hetero switch                     |
| D39           | Rectifier                     | Noise amp output                  |
| D40, D41      | Diverse connection prevention |                                   |
| D501, D503    | Back current prevention       | IC501                             |
| D502          | Voltage stabilization         | Q501                              |
| D504          | Reduce voltage                | RST port                          |
| D505, D506    | Back current prevention       | Data terminal                     |
| D507          | Back current prevention       | MIC terminal                      |
| D508, D509    | Limiter                       | PKD                               |

## TERMINAL FUNCTION

### TX-RX UNIT (X57-557X-XX:A/3)

| CN No. | Pin No. | Name    | Function                                                 |
|--------|---------|---------|----------------------------------------------------------|
| CN1    | 1       | FAN     | SB output for fan                                        |
|        | 2       | E       | GND                                                      |
| CN3    | 1       | AF      | Audio signal output for speaker mic                      |
|        | 2       | AF      | Audio signal output for speaker mic                      |
|        | 3       | E       | GND                                                      |
|        | 4       | E       | GND                                                      |
|        | 5       | PWM     | APC and VHF-BPF control                                  |
|        | 6       | UL      | Unlock detect output                                     |
|        | 7       |         | Not used                                                 |
|        | 8       | DTP     | PLL data input                                           |
|        | 9       | CK      | PLL shift register clock input                           |
|        | 10      | EP      | PLL enable input                                         |
|        | 11      | E       | GND                                                      |
|        | 12      |         | Not used                                                 |
|        | 13      | MOV     | VHF modulation input                                     |
|        | 14      | MOU     | UHF modulation input                                     |
|        | 15      | E       | GND                                                      |
|        | 16      | A00     | Audio signal input for speaker mic                       |
|        | 17      | A01     | Audio signal input for internal/external speakers        |
|        | 18      | E       | GND                                                      |
|        | 19      | SPE     | Ground for speaker mic                                   |
|        | 20      | SPE     | Ground for speaker mic                                   |
| CN4    | 1       | PB      | Panel power supply output                                |
|        | 2       | B       | 13.8V                                                    |
|        | 3       | E       | GND                                                      |
|        | 4       | PSW     | Power switch control input                               |
|        | 5       | PE      | Panel ground                                             |
|        | 6       | 8C      | Common 8V                                                |
|        | 7       | MUTE0   | Mute control signal input for speaker mic                |
|        | 8       | RD      | Demodulation audio output                                |
|        | 9       | E       | GND                                                      |
|        | 10      | MUTE1   | Mute control signal input for internal/external speakers |
|        | 11      | SQ      | Squelch voltage output                                   |
|        | 12      | SM      | S meter voltage output                                   |
|        | 13      | AGC     | AGC control signal input                                 |
|        | 14      | FAN     | Fan control signal input                                 |
|        | 15      | DTS     | Shift register data input                                |
|        | 16      | PLL SW  | PLL select switch                                        |
|        | 17      | V.SHIFT | VHF VCO frequency shift switch                           |
|        | 18      | U.SHIFT | UHF VCO frequency shift switch                           |
|        | 19      | AM SW   | AM select switch                                         |
|        | 20      | E       | GND                                                      |
| CN5    | 1       |         | Internal speaker output                                  |
|        | 2       |         | GND                                                      |

### LCD ASSY (B38-0797-35)

| CN No. | Pin No. | Name | Function                        |
|--------|---------|------|---------------------------------|
| CN1    | 1       | E    | GND                             |
|        | 2       | SW   | Band select switch signal input |
|        | 3       | SQ   | Squelch volume voltage input    |
|        | 4       | VOL  | AF volume voltage input         |
|        | 5       | VDD  | Reference voltage output (5V)   |

### CONTROL UNIT (X57-557X-XX:B/3)

| CN No. | Pin No. | Name    | Function                                                  |
|--------|---------|---------|-----------------------------------------------------------|
| CN501  | 1       | PSI     | Serial data input                                         |
|        | 2       | PSO     | Serial data output                                        |
| CN502  | 3       | PE      | Panel ground                                              |
|        | 4       | PB      | Panel power supply output                                 |
|        | 1       | PB      | Panel power supply input                                  |
|        | 2       | B       | 13.8V                                                     |
|        | 3       | E       | GND                                                       |
|        | 4       | PSW     | Power switch control output                               |
|        | 5       | PE      | Panel ground                                              |
|        | 6       | 8C      | Common 8V                                                 |
|        | 7       | MUTE0   | Mute control signal output for speaker mic                |
|        | 8       | RD      | Demodulation audio input                                  |
|        | 9       | E       | GND                                                       |
|        | 10      | MUTE1   | Mute control signal output for internal/external speakers |
|        | 11      | SQ      | Squelch voltage input                                     |
|        | 12      | SM      | S meter voltage input                                     |
|        | 13      | AGC     | AGC control signal input                                  |
|        | 14      | FAN     | Fan control signal input                                  |
|        | 15      | DTS     | Shift register data output                                |
|        | 16      | PLL SW  | PLL select switch                                         |
|        | 17      | V.SHIFT | VHF VCO frequency shift switch                            |
|        | 18      | U.SHIFT | UHF VCO frequency shift switch                            |
|        | 19      | AM SW   | AM select switch                                          |
|        | 20      | E       | GND                                                       |
| CN503  | 1       | AF      | Audio signal input for speaker mic                        |
|        | 2       | AF      | Audio signal input for speaker mic                        |
|        | 3       | E       | GND                                                       |
|        | 4       | E       | GND                                                       |
|        | 5       | PWM     | APC and VHF BPF control                                   |
|        | 6       | UL      | Unlock detect input                                       |
|        | 7       |         | Not used                                                  |
|        | 8       | DTP     | PLL data input                                            |
|        | 9       | CK      | PLL shift register clock output                           |
|        | 10      | EP      | PLL enable output                                         |
|        | 11      | E       | GND                                                       |
|        | 12      |         | Not used                                                  |
| CN504  | 13      | MOV     | VHF modulation output                                     |
|        | 14      | MOU     | UHF modulation output                                     |
|        | 15      | E       | GND                                                       |
|        | 16      | A00     | Audio signal output for speaker mic                       |
|        | 17      | A01     | Audio signal output for internal/external speakers        |
|        | 18      | E       | GND                                                       |
|        | 19      | SPE     | Ground for speaker mic                                    |
|        | 20      | SPE     | Ground for speaker mic                                    |
|        | 1       | VCK     | VS-3 clock output                                         |
|        | 2       | VDT     | VS-3 data output                                          |
|        | 3       | VCS     | VS-3 chip select                                          |
|        | 4       | RST     | VS-3 reset output                                         |
| CN701  | 5       | NAR     | VS-3 input enable output                                  |
|        | 6       | E       | GND                                                       |
|        | 7       | 5C      | Common 5V                                                 |
|        | 8       | V0      | Audio input                                               |
|        | 1       | E       | GND                                                       |
|        | 2       | SW      | Band select switch signal output                          |
|        | 3       | SQ      | Squelch volume voltage output                             |
|        | 4       | VOL     | AF volume voltage output                                  |
|        | 5       | VDD     | Reference voltage input (5V)                              |

## PARTS LIST

### CAPACITORS

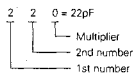
|    |    |    |    |     |   |
|----|----|----|----|-----|---|
| CC | 45 | TH | 1H | 220 | J |
| 1  | 2  | 3  | 4  | 5   | 6 |

- 1 = Type ... ceramic, electrolytic, etc.  
 2 = Shape ... round, square, ect.  
 3 = Temp. coefficient  
 4 = Voltage rating  
 5 = Value  
 6 = Tolerance



#### Capacitor value

- 010 = 1pF  
 100 = 10pF  
 101 = 100pF  
 102 = 1000pF = 0.001μF  
 103 = 0.01μF



#### Temperature coefficient

| 1st Word | C     | L   | P      | R      | S     | T    | U      |
|----------|-------|-----|--------|--------|-------|------|--------|
| Color*   | Black | Red | Orange | Yellow | Green | Blue | Violet |
| ppm/°C   | 0     | -80 | -150   | -220   | -330  | -470 | -750   |

| 2nd Word | G   | H   | J    | K    | L    |
|----------|-----|-----|------|------|------|
| ppm/°C   | ±30 | ±60 | ±120 | ±250 | ±500 |

Example : CC45TH = -470 ± 60ppm/°C

#### Tolerance (More than 10pF)

| Code | C     | D    | G  | J  | K   | M   | X   | Z   | P    | No code                   |
|------|-------|------|----|----|-----|-----|-----|-----|------|---------------------------|
| (%)  | ±0.25 | ±0.5 | ±2 | ±5 | ±10 | ±20 | +40 | +80 | +100 | More than 10μF -10 ~ +50  |
|      |       |      |    |    |     |     | -20 | -20 | -0   | Less than 4.7μF -10 ~ +75 |

#### (Less than 10pF)

| Code | B    | C     | D    | F  | G  |
|------|------|-------|------|----|----|
| (pF) | ±0.1 | ±0.25 | ±0.5 | ±1 | ±2 |

#### Voltage rating

| 2nd word | A | B    | C    | D    | E    | F    | G    | H    | J    | K    | V    |
|----------|---|------|------|------|------|------|------|------|------|------|------|
| 1st word | 0 | 1.0  | 1.25 | 1.6  | 2.0  | 2.5  | 3.15 | 4.0  | 5.0  | 6.3  | 8.0  |
|          | 1 | 10   | 12.5 | 16   | 20   | 25   | 31.5 | 40   | 50   | 63   | 80   |
|          | 2 | 100  | 125  | 160  | 200  | 250  | 315  | 400  | 500  | 630  | 800  |
|          | 3 | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 | 6300 | 8000 |

#### Chip capacitors

(EX) C C 7 3 F S L 1 H 0 0 0 J  
 1 2 3 4 5 6 7  
 (Chip) (CH, RH, UJ, SL)

(EX) C K 7 3 F F 1 H 0 0 0 Z  
 1 2 3 4 5 6 7  
 (Chip) (B, F)

#### Dimension (Chip capacitors)

| Dimension code | L         | W          | T              |
|----------------|-----------|------------|----------------|
| Empty          | 5.6 ± 0.5 | 5.0 ± 0.5  | Less than 2.0  |
| A              | 4.5 ± 0.5 | 3.2 ± 0.4  | Less than 2.0  |
| B              | 4.5 ± 0.5 | 2.0 ± 0.3  | Less than 2.0  |
| C              | 4.5 ± 0.5 | 1.25 ± 0.2 | Less than 1.25 |
| D              | 3.2 ± 0.4 | 2.5 ± 0.3  | Less than 1.5  |
| E              | 3.2 ± 0.2 | 1.6 ± 0.2  | Less than 1.25 |
| F              | 2.0 ± 0.3 | 1.25 ± 0.2 | Less than 1.25 |
| G              | 1.6 ± 0.2 | 0.8 ± 0.2  | Less than 1.0  |

### RESISTORS

#### Chip resistor (Carbon)

(EX) R K 7 3 E B 2 B 0 0 0 J  
 1 2 3 4 5 6 7  
 (Chip) (B, F)

#### Carbon resistor (Normal type)

(EX) R D 1 4 B B 2 C 0 0 0 J  
 1 2 3 4 5 6 7

- 1 = Type  
 2 = Shape  
 3 = Dimension  
 4 = Temp. coefficient  
 5 = Rating wattage  
 6 = Value  
 7 = Tolerance

#### Dimension



#### Dimension (Chip resistor)

| Dimension code | L         | W          | T         |
|----------------|-----------|------------|-----------|
| E              | 3.2 ± 0.2 | 1.6 ± 0.2  | 1.0       |
| F              | 2.0 ± 0.3 | 1.25 ± 0.2 | 1.0       |
| G              | 1.6 ± 0.2 | 0.8 ± 0.2  | 0.5 ± 0.1 |

#### Rating wattage

| Code | Wattage | Code | Wattage | Code | Wattage |
|------|---------|------|---------|------|---------|
| 1J   | 1/16W   | 2C   | 1/8W    | 3A   | 1W      |
| 2A   | 1/10W   | 2E   | 1/4W    | 3D   | 2W      |
| 2B   | 1/8W    | 2H   | 1/2W    |      |         |

# TM-G707A/E

## PARTS LIST

\* New Parts. Δ indicates safety critical components.

Parts without **Parts No.** are not supplied.

Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.

Teile ohne **Parts No.** werden nicht geliefert.

L Scandinavia

Y PX (Far East, Hawaii)

Y AAPES (Europe)

K USA

T England

X Australia

P Canada

E Europe

M Other Areas

### TM-G707A/E

| Ref. No.          | Address | New parts | Parts No.   | Description                  | Destination | Ref. No. | Address | New parts | Parts No.    | Description                    | Destination |
|-------------------|---------|-----------|-------------|------------------------------|-------------|----------|---------|-----------|--------------|--------------------------------|-------------|
| <b>TM-G707A/E</b> |         |           |             |                              |             |          |         |           |              |                                |             |
| 1                 | 3B      |           | A01-2121-13 | CABINET (LOWER)              |             | 40       | 2B      | *         | G11-2533-04  | SHEET                          |             |
| 2                 | 1B      |           | A01-2122-13 | CABINET (UPPER)              |             | 41       | 3A      |           | G13-1573-24  | CUSHION (PANEL)                |             |
| 3                 | 3A      | *         | A22-0600-01 | SUB PANEL                    |             | 42       | 2B      |           | G13-1602-04  | CUSHION                        |             |
| 4                 | 3A      | *         | A22-0571-13 | PANEL ASSY                   |             | 43       | 3A      |           | G13-1625-04  | CUSHION (PANEL)                |             |
| 5                 | 3B      | *         | A22-0028-01 | REAR PANEL                   |             | 44       | 3A      | *         | G13-1642-14  | CUSHION (PANEL/BAND KEY)       |             |
| 6                 | 1B      | *         | B19-4395-45 | CAP (PHONE)                  |             | 45       | -       |           | H19-6605-01  | FOAM PACKING MOLD              |             |
| 7                 | 3A      | *         | B19-2519-42 | FRONT GLASS                  |             | 46       | -       |           | H11-0887-04  | POLYSTYRENE FOAMED BOARD       |             |
| 8                 | 3A      | *         | B11-1193-48 | REFLECTOR (LCD ASSY)         |             | 47       | -       |           | H25-0103-04  | PROTECTION BAG (125/25MM/0.07) |             |
| LED1-15           |         |           | B30-2167-48 | LED (LCD ASSY)               |             | 48       | -       |           | H25-0337-04  | PROTECTION BAG (180/30MM/0.03) |             |
| 8                 | 3A      | *         | B38-0197-35 | LCD ASSY                     |             | 49       | -       |           | H25-0723-04  | PROTECTION BAG (230/40MM/0.07) |             |
| -                 |         | *         | B38-0199-48 | LCD (LCD ASSY)               |             | 50       | -       | *         | H52-1078-02  | ITEM CARTON CASE               | K           |
| 9                 | 1B      |           | B42-2455-04 | STICKER (M4&M4X)             |             | 50       | -       | *         | H52-1079-02  | ITEM CARTON CASE               | M2,M4       |
| 10                | -       | *         | B46-0337-03 | WARRANTY CARD                | ACSY E.E3   | 50       | -       | *         | H52-1980-02  | ITEM CARTON CASE               | E.E3        |
| 10                | -       | *         | B46-0488-10 | WARRANTY CARD                | ACSY K      | 51       | -       |           | J19-1526-04  | HOLDER                         | ACSY K      |
| 11                | -       | *         | B62-0864-00 | INSTRUCTION MANUAL (ENGLISH) | ACSY K,M2,E | 52       | -       |           | J29-0532-13  | BRACKET (MOBILE)               | ACSY        |
| 12                | -       | *         | B62-0865-00 | INSTRUCTION MANUAL (ITALY)   | ACSY E      | 53       | 3A      |           | J36-1237-14  | SPACER                         |             |
| 13                | -       | *         | B62-0866-00 | INSTRUCTION MANUAL (GERMANY) | ACSY E.E3   | 54       | 3A      |           | K27-3164-13  | BUTTON KNOB (KEYS+OIM)         |             |
| 14                | -       | *         | B62-0867-00 | INSTRUCTION MANUAL (SPANISH) | ACSY K.E3   | 55       | 3A      |           | K27-3165-03  | BUTTON KNOB (POWER/CALL)       |             |
| 15                | -       | *         | B62-0868-00 | INSTRUCTION MANUAL (FRENCH)  | ACSY E3     | 56       | 3A      |           | K27-3166-23  | BUTTON KNOB (VFO)              |             |
| 16                | -       | *         | B62-0869-00 | INSTRUCTION MANUAL (CHINESE) | ACSY M4     | 57       | 3A      |           | K27-3167-33  | BUTTON KNOB (MR)               |             |
| 17                | -       | *         | B62-0870-00 | INSTRUCTION MANUAL (DUTCH)   | ACSY E3     | 58       | 3A      |           | K27-3168-23  | BUTTON KNOB (PM)               |             |
| 18                | 3B      | *         | B62-1425-04 | MODEL NAME PLATE (FRA TA)    | E3          | 59       | 3A      |           | K27-3169-33  | BUTTON KNOB (MENU)             |             |
| 19                | 3B      | *         | B72-1340-04 | MODEL NAME PLATE             | K           | 60       | 3B      |           | K27-3170-13  | LEVER KNOB (RELEASE)           |             |
| 19                | 3B      | *         | B72-1341-04 | MODEL NAME PLATE             | M2,M4       | 61       | 3A      | *         | K27-3174-13  | BUTTON KNOB (BAND)             |             |
| 19                | 3B      | *         | B72-1342-04 | MODEL NAME PLATE             | E.E3        | 62       | 3A      | *         | K27-3175-03  | BUTTON KNOB (MHz)              |             |
| 20                | 1B      |           | E04-0167-05 | RF COAXIAL RECEPTACLE(M)     | K,M2,M4     | 63       | 3A      | *         | K29-5221-03  | KNOB (ENCODER)                 |             |
| 20                | 1B      |           | E04-0170-05 | RF COAXIAL RECEPTACLE(M)     | E.E3        | 64       | 3A      | *         | K29-5222-03  | KNOB (VOL)                     |             |
| 21                | -       |           | E30-2111-15 | DC CORD ASSY(MOBILE)         | ACSY        | 65       | 3A      | *         | K29-5223-03  | KNOB (ISOL)                    |             |
| 22                | 1B      |           | E30-2137-15 | DC CORD                      |             | A        | 3A      |           | N14-0569-04  | CIRCULAR NUT(VOL)              |             |
| -                 |         |           | E30-3006-08 | MIC CABLE (CABLET SERVICE)   | E.E3        | B        | 1B,3B   |           | N33-2806-45  | OVAL HEAD MACHINE SCREW (CAB)  |             |
| 23                | 1B      |           | E38-3806-38 | MIC CABLE (CABLET SERVICE)   | M2,M4,E     | C        | 2B,3B   |           | N37-3008-45  | PAN HEAD SEMS SCREW W (MODULE) |             |
| 24a               | 2A      |           | E39-3240-48 | MIC CABLE (CABLET SERVICE)   | K           | D        | 3B      |           | N80-2018-45  | PAN HEAD TAPITE SCREW (PANEL)  |             |
| 24b               | 2A      |           | E31-3197-15 | LEAD WIRE WITH CONNECTOR(SP) |             | E        | 1B      |           | N80-2810-45  | PAN HEAD TAPITE SCREW (FAN)    |             |
| 25                | 2A      |           | E37-0632-45 | FLAT CABLE (20P)             |             | F        | 2A      |           | N83-2005-46  | PAN HEAD TAPITE SCREW          |             |
| 26a               | 2A      |           | E37-0724-05 | FLAT CABLE (20P)             | E.E3        | G        | 1B,2B   |           | N83-2808-46  | PAN HEAD TAPITE SCREW          |             |
| DN1               | -       |           | E40-5563-05 | PIN ASSY (LCD ASSY)          |             | H        | 2B      |           | N87-2806-46  | BRAZIER HEAD TAPITE SCREW      |             |
| DN2               | -       |           | E40-5409-05 | PIN ASSY (LCD ASSY)          |             | 66       | -       |           | N89-0331-05  | SCREW SET (MOBILE)             | ACSY E.E3   |
| 25                | 2A      |           | F07-1428-23 | COVER (DIN 8P)               |             | 66       | -       |           | N89-0331-05  | SCREW SET (MOBILE)             | ACSY M2,M4  |
| 26                | 1B      |           | F07-1429-03 | COVER (FAN)                  |             | 67       | -       |           | N89-0382-05  | SCREW SET                      | ACSY K      |
| 27                | 2B      |           | F19-2233-04 | SHIELDING COVER (VCO)        |             | SW1-3    | -       |           | S70-8499-05  | TACT SWITCH (LCD ASSY)         |             |
| 28                | -       |           | F51-0017-05 | FUSE6*30115A                 | ACSY        | SW4      | 3A      |           | W12-1921-05  | ENCODER (LCD ASSY)             |             |
| 28                | 1B      |           | F51-0017-05 | FUSE6*30115A                 |             | SW5-8    | -       |           | S70-8439-05  | TACT SWITCH (LCD ASSY)         |             |
| 29                | -       |           | F51-0018-05 | FUSE6*30120A                 | ACSY        | SP       | 1B      |           | T07-0331-05  | SPEAKER                        |             |
| 30                | 2A      |           | G02-0794-04 | FLAT SPRING (CONT UNIT)      |             | SB       | 1B      |           | T42-0311-15  | FAN MOTOR                      |             |
| 31                | 1B      |           | G02-0803-03 | FLAT SPRING (AF AMP/AVR)     |             | MIC      | -       |           | T91-0395-05  | MICROPHONE                     | ACSY E.E3   |
| 32                | -       |           | G02-0809-04 | FLAT SPRING (TX-RX UNIT)     |             | MIC      | -       |           | T91-0395-05  | MICROPHONE                     | ACSY M2,M4  |
| 33                | 3B      |           | G09-0434-14 | SPRING                       |             | -        | -       |           | T91-0570-08  | MIC ELEMENT (TO SERVICE)       | K           |
| 34                | 2A,3A   |           | G10-0792-14 | FIBROUS SHEET                |             | MIC      | -       | *         | T91-0686-05  | MICROPHONE                     | ACSY K      |
| 35                | 2A      |           | G10-0793-14 | FIBROUS SHEET                |             | IC1      | -       |           | LA4446       | IC(AMP POWER AMP)              |             |
| 36                | 2A      |           | G10-0794-14 | FIBROUS SHEET                |             | IC7      | -       |           | TA7808S      | IC(REGULATOR)                  |             |
| 37                | 1B      |           | G11-0778-04 | RUBBER CUSHION (SP)          |             | IC3      | 2B      | *         | M67746       | IC(POWER MODULE-VHF)           |             |
| 38                | 2A      |           | G11-0779-04 | SHEET                        |             | IC4      | 2B      | *         | M57738MR-24  | IC(POWER MODULE-430-450MH/35W) |             |
| 39                | 3B      |           | G11-0794-14 | SHEET                        |             | IC1      | -       | *         | 78P064GCTJUB | IC(PULSED ASSY)                |             |

## PARTS LIST

TX-RX UNIT (X57-557X-XX)

| Ref. No.                                                      | Address | New parts | Parts No.     | Description | Destination | Ref. No. | Address | New parts | Parts No.     | Description | Destination |
|---------------------------------------------------------------|---------|-----------|---------------|-------------|-------------|----------|---------|-----------|---------------|-------------|-------------|
| TX-RX UNIT (X57-557X-XX) 0-11:K, 0-22:M2, 0-24:M4, 2-71:E, E3 |         |           |               |             |             |          |         |           |               |             |             |
| C1,2                                                          |         |           | CK73GB1H102K  | CHP C       | 1000PF K    | C77      |         |           | CK73GB1H471K  | CHP C       | 470PF K     |
| C3                                                            |         |           | C92-0528-05   | CHP-ELE     | 100UF 16WV  | C78      |         |           | CK73GB1H102K  | CHP C       | 1000PF K    |
| C4                                                            |         |           | CK73GB1H103K  | CHP C       | 0.0K0UF K   | C79      |         |           | CK73GB1H471K  | CHP C       | 470PF K     |
| C5                                                            |         |           | CK73GB1E223K  | CHP C       | 0.022UF K   | C80      |         |           | CK73GB1A105K  | CHP C       | 1.0UF K     |
| C6                                                            |         |           | CK73GB1H102K  | CHP C       | 1000PF K    | C81      |         |           | CK73GB1H455C  | CHP C       | 5.0PF C     |
| C7                                                            |         |           | CK73GB1H1040B | CHP C       | 1.0PF B     | C82      |         |           | CK73GB1H330J  | CHP C       | 33PF J      |
| C8,9                                                          |         |           | CK73GB1H1040C | CHP C       | 4.0PF C     | C83      |         |           | C92-0523-05   | CHP-ELE     | 10UF 16WV   |
| C10                                                           |         |           | CK73GB1H102K  | CHP C       | 1000PF K    | C84      |         |           | CK73GB1H102K  | CHP C       | 1000PF K    |
| C11                                                           |         |           | CK73GB1H103K  | CHP C       | 0.010UF K   | C85      |         |           | CK73GB1H101J  | CHP C       | 100PF J     |
| C12                                                           |         |           | CK73GB1H102K  | CHP C       | 1000PF K    | C87      |         |           | CK73GB1H102K  | CHP C       | 1000PF K    |
| C13                                                           |         |           | CK73GB1H103K  | CHP C       | 0.010UF K   | C88      |         |           | CK73GB1H101J  | CHP C       | 100PF J     |
| C14,15                                                        |         |           | CK73GB1H1030C | CHP C       | 3.0PF C     | C89      |         |           | CK73GB1H102K  | CHP C       | 1000PF K    |
| C17                                                           |         |           | CK73GB1H471K  | CHP C       | 470PF K     | C90,91   |         |           | CK73GB1H103K  | CHP C       | 0.010UF K   |
| C18                                                           |         |           | CK73GB1H1030C | CHP C       | 3.0PF C     | C92,93   |         |           | CK73GB1H102K  | CHP C       | 1000PF K    |
| C19                                                           |         |           | CK73GB1H1060D | CHP C       | 6.0PF D     | C94      |         |           | C92-0523-05   | CHP-ELE     | 10UF 16WV   |
| C20                                                           |         |           | CK73GB1H1010D | CHP C       | 10PF D      | C95,96   |         |           | CK73GB1H102K  | CHP C       | 1000PF K    |
| C21                                                           |         |           | CK73GB1H471K  | CHP C       | 470PF K     | C97      |         |           | C92-0522-05   | CHP C       | 100PF J     |
| C23,24                                                        |         |           | CK73GB1C104K  | CHP C       | 0.10UF K    | C98      |         |           | C93-0555-05   | CHP C       | 5.0PF C     |
| C25                                                           |         |           | CK73GB1H471K  | CHP C       | 470PF K     | C99      |         |           | CK73GB1H103K  | CHP C       | 0.010UF K   |
| C27                                                           |         |           | CK73GB1H101J  | CHP C       | 100PF J     | C101     |         |           | CK73GB1H102K  | CHP C       | 1000PF K    |
| C29                                                           |         |           | CK73GB1H102K  | CHP C       | 1000PF K    | C102     |         |           | C93-0550-05   | CHP C       | 10PF D      |
| C30                                                           |         |           | CK73GB1C473K  | CHP C       | 0.047UF K   | C103     |         |           | CK73GB1H0R5B  | CHP C       | 6.5PF B     |
| C33,34                                                        |         |           | C92-0002-05   | CHP-TAN     | 0.22UF 35WV | C104     |         |           | CK73GB1H101J  | CHP C       | 100PF J     |
| C35,36                                                        |         |           | C92-0505-05   | CHP-TAN     | 10UF 10WV   | C105     |         |           | C92-0610-05   | CHP-ELE     | 47UF 16WV   |
| C37,38                                                        |         |           | C92-0511-05   | CHP-TAN     | 0.15UF 35WV | C106     |         |           | C93-0554-05   | CHP C       | 4.0PF C     |
| C39                                                           |         |           | C92-0606-05   | CHP-TAN     | 4.7UF 10WV  | C107     |         |           | CK73GB1C104K  | CHP C       | 0.10UF K    |
| C40                                                           |         |           | CK73GB1H101J  | CHP C       | 100PF J     | C108     |         |           | CK73GB1H390J  | CHP C       | 39PF J      |
| C41                                                           |         |           | CK73GB1H103K  | CHP C       | 0.010UF K   | C109,110 |         |           | CK73GB1H102K  | CHP C       | 1000PF K    |
| C42                                                           |         |           | C92-0606-05   | CHP-TAN     | 4.7UF 10WV  | C111     |         |           | C93-0572-05   | CHP C       | 100PF J     |
| C43                                                           |         |           | CK73GB1H101J  | CHP C       | 100PF J     | C112     |         |           | C93-0574-05   | CHP C       | 22PF J      |
| C44                                                           |         |           | CK73GB1H103K  | CHP C       | 0.010UF K   | C113     |         |           | C93-0588-05   | CHP C       | 8.0PF D     |
| C45                                                           |         |           | C92-0553-05   | CHP-ELE     | 33UF 10WV   | C114,115 |         |           | CK73GB1H102K  | CHP C       | 1000PF K    |
| C46                                                           |         |           | CK73GB1H102K  | CHP C       | 1000PF K    | C116     |         |           | CK73GB1H0R5B  | CHP C       | 0.5PF B     |
| C47                                                           |         |           | CK73GB1H1030C | CHP C       | 3.0PF C     | C117     |         |           | CK73GB1H1020B | CHP C       | 2.0PF B     |
| C48,50                                                        |         |           | CK73GB1H1040C | CHP C       | 4.0PF C     | C118     |         |           | CK73GB1H0R5B  | CHP C       | 0.5PF B     |
| C51                                                           |         |           | CK73GB1H1150J | CHP C       | 15PF J      | C119     |         |           | CK73GB1H1010B | CHP C       | 1.0PF B     |
| C52,53                                                        |         |           | CK73GB1H102K  | CHP C       | 1000PF K    | C120     |         |           | CK73GB1H0R5B  | CHP C       | 0.5PF B     |
| C54                                                           |         |           | CK73GB1H455C  | CHP C       | 5.0PF C     | C121     |         |           | CK73GB1H1020B | CHP C       | 2.0PF B     |
| C55                                                           |         |           | CK73GB1H1060D | CHP C       | 6.0PF D     | C123     |         |           | CK73GB1H103K  | CHP C       | 0.010UF K   |
| C56                                                           |         |           | CK73GB1H1010B | CHP C       | 1.0PF B     | C124     |         |           | C93-0556-05   | CHP C       | 33PF J      |
| C57                                                           |         |           | CK73GB1H171K  | CHP C       | 470PF K     | C125     |         |           | C93-0557-05   | CHP C       | 7.0PF D     |
| C58                                                           |         |           | CK73GB1H102K  | CHP C       | 1000PF K    | C126     |         |           | CK73GB1H102K  | CHP C       | 1000PF K    |
| C59                                                           |         |           | CK73GB1A105K  | CHP C       | 1.0UF K     | C127     |         |           | CK73GB1C104K  | CHP C       | 0.10UF K    |
| C60                                                           |         |           | CK73GB1H101J  | CHP C       | 100PF J     | C128     |         |           | C93-0557-05   | CHP C       | 39PF J      |
| C61-63                                                        |         |           | CK73GB1H102K  | CHP C       | 1000PF K    | C129     |         |           | CK73GB1H0R5B  | CHP C       | 0.5PF B     |
| C64                                                           |         |           | CK73GB1H471K  | CHP C       | 470PF K     | C130     |         |           | CK73GB1H0R5B  | CHP C       | 0.5PF B     |
| C65                                                           |         |           | CK73GB1H102J  | CHP C       | 12PF J      | C131     |         |           | CK73GB1C104K  | CHP C       | 0.10UF K    |
| C66                                                           |         |           | CK73GB1H102K  | CHP C       | 1000PF K    | C132     |         |           | CK73GB1H0R5B  | CHP C       | 0.5PF B     |
| C67                                                           |         |           | CK73GB1H471K  | CHP C       | 470PF K     | C133     |         |           | CK73GB1H1010B | CHP C       | 1.0PF B     |
| C68                                                           |         |           | CK73GB1H102K  | CHP C       | 1000PF K    | C134     |         |           | CK73GB1C104K  | CHP C       | 0.10UF K    |
| C69                                                           |         |           | CK73GB1H471K  | CHP C       | 470PF K     | C135     |         |           | C93-0558-05   | CHP C       | 5.0PF C     |
| C70                                                           |         |           | CK73GB1H1030C | CHP C       | 3.0PF C     | C136     |         |           | C93-0557-05   | CHP C       | 7.0PF D     |
| C71                                                           |         |           | CK73GB1H102K  | CHP C       | 1000PF K    | C137     |         |           | CK73GB1H102K  | CHP C       | 1000PF K    |
| C72                                                           |         |           | CK73GB1H471K  | CHP C       | 470PF K     | C138     |         |           | C93-0554-05   | CHP C       | 22PF J      |
| C73                                                           |         |           | CK73GB1C104K  | CHP C       | 0.10UF K    | C139,140 |         |           | C93-0556-05   | CHP C       | 5.0PF C     |
| C74                                                           |         |           | CK73GB1H1060D | CHP C       | 6.0PF D     | C141     |         |           | C92-0554-05   | CHP-ELE     | 100UF 16WV  |
| C75                                                           |         |           | CK73GB1H471K  | CHP C       | 470PF K     | C142     |         |           | CK73GB1H103K  | CHP C       | 0.010UF K   |
| C76                                                           |         |           | CK73GB1H102K  | CHP C       | 1000PF K    | C143     |         |           | CK73GB1A105K  | CHP C       | 1.0UF K     |
|                                                               |         |           |               |             |             | C144,146 |         |           | CK73GB1H103K  | CHP C       | 0.010UF K   |
|                                                               |         |           |               |             |             | C147,148 |         |           | C92-0610-05   | CHP-ELE     | 47UF 16WV   |

## PARTS LIST

TX-RX UNIT (X57-557X-XX)

| Ref. No. | Address | New parts | Parts No.     | Description | Destination | Ref. No. | Address | New parts | Parts No.     | Description | Destination |
|----------|---------|-----------|---------------|-------------|-------------|----------|---------|-----------|---------------|-------------|-------------|
| C149     |         |           | 02736CH1030C  | CHIP C      | 3.0PF C     | C221     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    |
| C150     |         |           | 02736CH1010J  | CHIP C      | 100PF J     | C222     |         |           | 02736CH1080D  | CHIP C      | 8.0PF D     |
| C151     |         |           | 02736CH1024G  | CHIP C      | 240PF J     | C223     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    |
| C152     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    | C224     |         |           | 0K736B1E223K  | CHIP C      | 0.022UF K   |
| C153     |         |           | 0K736B1H471K  | CHIP C      | 470PF K     | C224     |         |           | 0K736B1E223K  | CHIP C      | 0.022UF K   |
| C154     |         |           | 02736CH1010J  | CHIP C      | 100PF J     | C225     |         |           | 0K736B1H562K  | CHIP C      | 5600PF K    |
| C155     |         |           | 0K736B1H471K  | CHIP C      | 470PF K     | C225     |         |           | 0K736B1H562K  | CHIP C      | 5600PF K    |
| C156     |         |           | 02736CH1020C  | CHIP C      | 3.0PF C     | C226     |         |           | 0K736B1H403K  | CHIP C      | 0.010UF K   |
| C157     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    | C227     |         |           | C32-0558-05   | CHIP-ELE    | 100UF 16WV  |
| C158     |         |           | 02736CH1020B  | CHIP C      | 2.0PF B     | C228     |         |           | C04EW1H470M   | ELECTRO     | 47UF 50WV   |
| C159     |         |           | 0K736B1H471K  | CHIP C      | 470PF K     | C229     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    |
| C160     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    | C230     |         |           | C32-0610-05   | CHIP-ELE    | 47UF 16WV   |
| C161     |         |           | 0K736B1H471K  | CHIP C      | 470PF K     | C230     |         |           | C32-0610-05   | CHIP-ELE    | 47UF 16WV   |
| C162     |         |           | 02736CH1H185B | CHIP C      | 1.5PF B     | C231     |         |           | C04EW1C471M   | ELECTRO     | 470UF 16WV  |
| C163-165 |         |           | 02736CH1010J  | CHIP C      | 100PF J     | C231     |         |           | C04EW1C471M   | ELECTRO     | 470UF 16WV  |
| C166,167 |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    | C232     |         |           | 0K736B1C104K  | CHIP C      | 0.10UF K    |
| C168     |         |           | 02736CH1020C  | CHIP C      | 3.0PF C     | C232     |         |           | 0K736B1C104K  | CHIP C      | 0.10UF K    |
| C169     |         |           | 0K736B1H102K  | CHIP C      | 0.010UF K   | C233     |         |           | 02736CH1H101J | CHIP C      | 100PF J     |
| C170     |         |           | 0K736B1H471K  | CHIP C      | 470PF K     | C234     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    |
| C171     |         |           | 02736CH1020B  | CHIP C      | 2.0PF B     | C235     |         |           | 0K736B1H103K  | CHIP C      | 0.010UF K   |
| C172     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    | C236     |         |           | C32-0610-05   | CHIP-ELE    | 47UF 16WV   |
| C173     |         |           | 02736CH1H20B  | CHIP C      | 2.0PF B     | C237     |         |           | C04EW1H470M   | ELECTRO     | 47UF 50WV   |
| C174     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    | C238     |         |           | 0K736B1H103K  | CHIP C      | 0.010UF K   |
| C175     |         |           | 02736CH1H20B  | CHIP C      | 27PF J      | C239     |         |           | 0K736B1H562K  | CHIP C      | 5600PF K    |
| C176     |         |           | 02736CH1H20B  | CHIP C      | 2.0PF B     | C240     |         |           | 0K736B1C104K  | CHIP C      | 0.10UF K    |
| C177     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    | C241     |         |           | 02736CH1H390J | CHIP C      | 39PF J      |
| C178     |         |           | 02736CH1H270J | CHIP C      | 27PF J      | C242     |         |           | 02736CH1H260J | CHIP C      | 82PF J      |
| C179     |         |           | 02736CH1H101J | CHIP C      | 100PF J     | C243     |         |           | C32-0610-05   | CHIP-ELE    | 47UF 16WV   |
| C180     |         |           | 02736CH1H20B  | CHIP C      | 2.0PF B     | C244     |         |           | 0K736B1C104K  | CHIP C      | 0.10UF K    |
| C181     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    | C245     |         |           | 02736CH1H880J | CHIP C      | 68PF J      |
| C183     |         |           | 02736CH1H055B | CHIP C      | 0.5PF B     | C246     |         |           | 02736CH1H101J | CHIP C      | 100PF J     |
| C184     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    | C247     |         |           | 02736CH1H260J | CHIP C      | 82PF J      |
| C185     |         |           | 0K736B1H471K  | CHIP C      | 470PF K     | C248     |         |           | 0K736B1H103K  | CHIP C      | 0.010UF K   |
| C186     |         |           | 02736CH1H270J | CHIP C      | 27PF J      | C249     |         |           | 02736CH1H190J | CHIP C      | 18PF J      |
| C187     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    | C250     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    |
| C188     |         |           | 02736CH1H040C | CHIP C      | 4.0PF C     | C251     |         |           | 0K736B1H103K  | CHIP C      | 0.010UF K   |
| C191     |         |           | 0K736B1H471K  | CHIP C      | 470PF K     | C252-254 |         |           | 0K736B1C104K  | CHIP C      | 0.10UF K    |
| C193     |         |           | 0K736B1H471K  | CHIP C      | 470PF K     | C255     |         |           | C32-0004-06   | CHIP-TAN    | 1.0UF 16WV  |
| C196     |         |           | 0K736B1H471K  | CHIP C      | 470PF K     | C256     |         |           | 0K736B1C333K  | CHIP C      | 0.033UF K   |
| C197     |         |           | 02736CH1H185B | CHIP C      | 1.5PF B     | C257,258 |         |           | 02736CH1H101J | CHIP C      | 100PF J     |
| C198     |         |           | 0K736B1H471K  | CHIP C      | 470PF K     | C259     |         |           | 0K736B1C473K  | CHIP C      | 0.047UF K   |
| C200     |         |           | 0K736B1H471K  | CHIP C      | 470PF K     | C260     |         |           | 0K736B1H103K  | CHIP C      | 0.010UF K   |
| C202     |         |           | 0K736B1H103K  | CHIP C      | 1000PF K    | C262     |         |           | 0K736B1H103K  | CHIP C      | 0.010UF K   |
| C203     |         |           | 0K736B1H471K  | CHIP C      | 470PF K     | C263     |         |           | C32-0558-05   | CHIP-ELE    | 100UF 16WV  |
| C205     |         |           | 0K736B1H103K  | CHIP C      | 0.010UF K   | C264     |         |           | 02736CH1H101J | CHIP C      | 100PF J     |
| C207     |         |           | 0K736B1H471K  | CHIP C      | 470PF K     | C266     |         |           | 0K736B1H103K  | CHIP C      | 0.010UF K   |
| C208     |         |           | 02736CH1H090D | CHIP C      | 9.0PF D     | C267     |         |           | 02736CH1H270J | CHIP C      | 27PF J      |
| C209     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    | C268,269 |         |           | 0K736B1H103K  | CHIP C      | 0.010UF K   |
| C210     |         |           | 02736CH1H20B  | CHIP C      | 2.0PF B     | C270     |         |           | 0K736B1H272K  | CHIP C      | 2700PF K    |
| C211     |         |           | 0K736B1E223K  | CHIP C      | 0.022UF K   | C271     |         |           | 0K736B1H103K  | CHIP C      | 0.010UF K   |
| C211     |         |           | 0K736B1E223K  | CHIP C      | 0.022UF K   | C272     |         |           | 0K736B1C104K  | CHIP C      | 0.10UF K    |
| C212     |         |           | 0K736B1H050B  | CHIP C      | 1.0PF B     | C273     |         |           | C32-0001-05   | CHIP C      | 0.1UF 35WV  |
| C213     |         |           | 0K736B1H103K  | CHIP C      | 0.010UF K   | C274     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    |
| C214     |         |           | 02736CH1H040C | CHIP C      | 4.0PF C     | C275     |         |           | C32-0004-05   | ELEC-CAP    | 1000UF 16WV |
| C215     |         |           | 02736CH1H260J | CHIP C      | 82PF J      | C276     |         |           | C32-0004-05   | CHIP-TAN    | 1.0UF 16WV  |
| C216     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    | C277     |         |           | C32-0004-05   | ELEC-CAP    | 1000UF 16WV |
| C217     |         |           | 0K736B1H471K  | CHIP C      | 470PF K     | C278     |         |           | C32-0610-05   | CHIP-ELE    | 47UF 16WV   |
| C218     |         |           | 0K736B1H103K  | CHIP C      | 0.010UF K   | C279     |         |           | C04EW1C471M   | ELECTRO     | 470UF 16WV  |
| C219     |         |           | 0K736B1H102K  | CHIP C      | 1000PF K    | C280     |         |           | 0K736B1C104K  | CHIP C      | 0.10UF K    |
| C220     |         |           | 0K736B1H103K  | CHIP C      | 0.010UF K   | C281     |         |           | 0K736B1E223K  | CHIP C      | 0.022UF K   |

## PARTS LIST

TX-RX UNIT (X57-557X-XX)

| Ref. No. | Address | New parts | Parts No.    | Description          | Destination | Ref. No.  | Address | New parts | Parts No.    | Description                  | Destination |
|----------|---------|-----------|--------------|----------------------|-------------|-----------|---------|-----------|--------------|------------------------------|-------------|
| C282     |         |           | CK73GB1H103K | CHIP C 0.010UF K     |             | C580      |         |           | CK73GB1C104K | CHIP C 0.10UF K              |             |
| C283-287 |         |           | CK73GB1H102K | CHIP C 1000PF K      |             | C582      |         |           | CK73GB1H103K | CHIP C 0.010UF K             |             |
| C288     |         |           | CK73GB1H223K | CHIP C 0.022UF K     |             | TC1       |         |           | C05-0384-05  | CERAMIC TRIMMER CAP(10P)     |             |
| C290     |         |           | CK73FB1A105K | CHIP C 1.0UF K       |             | CN1       |         |           | E40-3237-05  | PIN ASSY(2P)                 |             |
| C291     |         |           | CK73GB1H162K | CHIP C 1000PF K      | E.E3        | CN2       |         |           | E23-0405-05  | TERMINAL                     |             |
| C291     |         |           | CK73GB1H102K | CHIP C 1000PF K      | M2,M4       | CN3,4     |         |           | E40-5744-05  | FLAT CABLE CONNECTOR(23P)    |             |
| C292     |         |           | CK73GB1C104K | CHIP C 0.10UF K      | E.E3        | CN5       |         |           | E40-3237-05  | PIN ASSY(2P)                 |             |
| C585,506 |         |           | CK73GB1H102K | CHIP C 1000PF K      | M2,M4       | CN501     |         |           | E40-5652-45  | PIN ASSY(4P)                 |             |
| C587     |         |           | CK73GB1H103K | CHIP C 0.010UF K     |             | CN502,503 |         |           | E40-5744-05  | FLAT CABLE CONNECTOR(23P)    |             |
| C588     |         |           | CK73GB1H101J | CHIP C 100PF J       |             | CN564     |         |           | E40-5618-05  | FLAT CABLE CONNECTOR(8P)     |             |
| C589     |         |           | CK73GB1H471K | CHIP C 470PF K       |             | CN761     |         |           | E40-5392-05  | PIN ASSY(5P)                 |             |
| C510     |         |           | CK73GB1H103K | CHIP C 0.010UF K     |             | J1        |         |           | E11-0448-05  | 3.5D PHONE JACK(2P)          |             |
| C511     |         |           | CE0404WJ031M | ELECTRO 330UF 6.3WV  |             | J501      |         |           | E58-0404-05  | RF COAXIAL RECEPTACLE(ROUND) |             |
| C512     |         |           | CK73GB1H101J | CHIP C 100PF J       |             | J502      |         |           | E08-0677-05  | MODULAR JACK                 |             |
| C513     |         |           | C82-0545-05  | CHIP-TAN 88UF 6.3WV  |             | W501,502  |         |           | E37-0459-05  | PROCESSED LEAD WIRE          | K           |
| C514     |         |           | CK73GB1C104K | CHIP C 0.10UF K      |             | F1        |         |           | F53-0128-05  | FUSE (0.5A 50V)              |             |
| C515     |         |           | C82-0605-05  | CHIP-TAN 4.7UF 10WV  |             | F2,3      |         |           | F53-0106-05  | FUSE (1.8A 50V)              |             |
| C516     |         |           | C82-0605-05  | CHIP-ELE 100UF 16WV  |             | F4        |         |           | F53-0114-05  | FUSE (0.7A 50V)              |             |
| C517     |         |           | CK73GB1H103K | CHIP C 0.01UF K      |             | F501      |         |           | F53-0108-05  | FUSE (1.8A 50V)              |             |
| C518     |         |           | CK73FB1A105K | CHIP C 1.0UF K       |             | Q1        |         |           | L78-1113-05  | TUNING COIL(450KHZ)          |             |
| C519     |         |           | CK73GB1H471K | CHIP C 470PF K       |             | Q1        |         |           | L72-9931-05  | CERAMIC FILTER               |             |
| C521     |         |           | CK73GB1C104K | CHIP C 0.10UF K      |             | L1        |         |           | L40-4771-36  | SMALL FIXED INDUCTOR(47NH)   |             |
| C522,523 |         |           | CK73GB1H103K | CHIP C 0.010UF K     |             | L2        |         |           | L40-3971-36  | SMALL FIXED INDUCTOR(39NH)   |             |
| C524,525 |         |           | CK73GB1C104K | CHIP C 0.10UF K      |             | L3        |         |           | L40-2261-37  | SMALL FIXED INDUCTOR(220NH)  |             |
| C526     |         |           | CK73GB1H223K | CHIP C 0.022UF K     |             | L4        |         |           | L40-2271-36  | SMALL FIXED INDUCTOR(22NH)   |             |
| C529     |         |           | CK73GB1H102K | CHIP C 1000PF K      | K,M2,M4     | L5        |         |           | L40-1591-37  | SMALL FIXED INDUCTOR(159NH)  |             |
| C531     |         |           | CK73GB1H101J | CHIP C 0.010UF K     |             | L8,7      |         |           | L40-2271-36  | SMALL FIXED INDUCTOR(22NH)   |             |
| C532     |         |           | CK73GB1H103K | CHIP C 100PF J       |             | L8        |         |           | L40-1271-36  | SMALL FIXED INDUCTOR(12NH)   |             |
| C534     |         |           | CK73GB1H530J | CHIP C 53PF J        |             | L9        |         |           | L40-3371-36  | SMALL FIXED INDUCTOR(33NH)   |             |
| C535     |         |           | CK73GB1H103K | CHIP C 0.010UF K     | K,M2,M4     | L10       |         |           | L40-1571-36  | SMALL FIXED INDUCTOR(15NH)   |             |
| C536     |         |           | CK73GB1H100D | CHIP C 10PF D        |             | L11       |         |           | L40-2771-36  | SMALL FIXED INDUCTOR(27NH)   |             |
| C537     |         |           | C82-4005-05  | CHIP-TAN 2.2UF 6.3WV |             | L12       |         |           | L40-8971-36  | SMALL FIXED INDUCTOR(89NH)   |             |
| C538     |         |           | CK73GB1E22K  | CHIP C 0.022UF K     |             | L13,14    |         |           | L34-1225-05  | AIR-CORE COIL(19.5T)         |             |
| C540     |         |           | CK73GB1H102K | CHIP C 1000PF K      |             | L15       |         |           | L34-4404-05  | AIR-CORE COIL(3.5T)          |             |
| C541     |         |           | CK73GB1H100D | CHIP C 10PF D        |             | L16       |         |           | L34-0742-05  | AIR-CORE COIL(5T)            |             |
| C542     |         |           | CK73GB1H103K | CHIP C 0.010UF K     |             | L17       |         |           | L34-0955-05  | AIR-CORE COIL(5T)            |             |
| C543,544 |         |           | C82-0004-05  | CHIP-TAN 1.0UF 10WV  |             | L18       |         |           | L34-1195-05  | AIR-CORE COIL(2.5T)          |             |
| C546     |         |           | CK73GB1C104K | CHIP C 0.10UF K      |             | L19       |         |           | L34-0459-05  | AIR-CORE COIL(4T)            |             |
| C547     |         |           | CK73FB1C47K  | CHIP C 0.47UF K      |             | L20       |         |           | L34-1239-05  | AIR-CORE COIL(10.5T)         |             |
| C548     |         |           | CK73GB1H102K | CHIP C 1000PF K      |             | L21       |         |           | L34-1195-05  | AIR-CORE COIL(2.5T)          |             |
| C550     |         |           | CK73GB1H103K | CHIP C 0.010UF K     | E.E3        | L22       |         |           | L34-0459-05  | AIR-CORE COIL(4T)            |             |
| C551,552 |         |           | CK73GB1C104K | CHIP C 0.10UF K      |             | L23       |         |           | L34-1058-05  | AIR-CORE COIL(2.5T)          |             |
| C553     |         |           | CK73GB1H103K | CHIP C 0.010UF K     |             | L24       |         |           | L34-1228-05  | AIR-CORE COIL(1T)            |             |
| C554     |         |           | C82-0605-05  | CHIP-TAN 4.7UF 10WV  |             | L25       |         |           | L34-1052-05  | AIR-CORE COIL(1.5T)          |             |
| C555     |         |           | CK73FB1A105K | CHIP C 1.0UF K       |             | L26       |         |           | L34-0459-05  | AIR-CORE COIL(4T)            |             |
| C556     |         |           | CK73GB1C104K | CHIP C 0.10UF K      |             | L27       |         |           | L34-4402-05  | AIR-CORE COIL(2.5T)          |             |
| C557,558 |         |           | CK73GB1H471K | CHIP C 470PF K       |             | L28       |         |           | L34-0459-05  | AIR-CORE COIL(4T)            |             |
| C559     |         |           | CK73GB1H272K | CHIP C 2700PF K      |             | L29       |         |           | L34-4402-05  | AIR-CORE COIL(2.5T)          |             |
| C560,561 |         |           | CK73GB1H101J | CHIP C 100PF J       |             | L30       |         |           | L40-4771-36  | SMALL FIXED INDUCTOR(47NH)   |             |
| C562     |         |           | CK73GB1H103K | CHIP C 0.010UF K     |             | L31       |         |           | L40-9275-54  | SMALL FIXED INDUCTOR(92NH)   |             |
| C563     |         |           | CK73GB1H101J | CHIP C 1000PF J      | K,M2,M4     | L32       |         |           | L40-1071-36  | SMALL FIXED INDUCTOR(10NH)   |             |
| C564     |         |           | CK73GB1H103K | CHIP C 0.010UF K     | E.E3        | L33       |         |           | L40-4771-36  | SMALL FIXED INDUCTOR(47NH)   |             |
| C565,566 |         |           | CK73GB1H101J | CHIP C 1000PF J      |             | L34       |         |           | L40-8951-36  | SMALL FIXED INDUCTOR(89NH)   |             |
| C567     |         |           | CK73GB1H102K | CHIP C 1000PF K      |             | L35       |         |           | L40-1271-36  | SMALL FIXED INDUCTOR(12NH)   |             |
| C568-571 |         |           | CK73FB1A105K | CHIP C 1.0UF K       |             | L36-40    |         |           | L40-8951-36  | SMALL FIXED INDUCTOR(89NH)   |             |
| C572-575 |         |           | CK73GB1H101J | CHIP C 100PF J       |             | L41       |         |           | L78-1432-05  | FILTER (435KHZ)              | E.E3        |
| C576,577 |         |           | CK73GB1H403K | CHIP C 0.010UF K     |             | L41       |         |           | L78-1432-05  | FILTER (435MHz)              | M2,M4       |
| C578     |         |           | CK73GB1H103K | CHIP C 0.010UF K     | K,M2,M4     |           |         |           |              |                              |             |

## PARTS LIST

TX-RX UNIT (X57-557X-XX)

| Ref. No. | Address | New parts | Parts No.    | Description                   | Destination | Ref. No. | Address | New parts | Parts No.    | Description | Destination |
|----------|---------|-----------|--------------|-------------------------------|-------------|----------|---------|-----------|--------------|-------------|-------------|
| L41      |         |           | L78-1433-05  | FILTER (44MHZ)                | K           | R46.47   |         |           | RK73GB1J472J | CHIP R      | 4.7K J 1/8W |
| L42      |         |           | L40-8851-38  | SMALL FIXED INDUCTOR(8NH)     |             | R48      |         |           | RK73GB1J471J | CHIP R      | 470 J 1/8W  |
| L43      |         |           | L34-4545-05  | COIL (2.5T)                   |             | R49,50   |         |           | RK73GB1J473J | CHIP R      | 47K J 1/8W  |
| L44      |         |           | L40-1075-44  | SMALL FIXED INDUCTOR(10.0NH)  |             | R51      |         |           | RK73GB1J102J | CHIP R      | 10K J 1/8W  |
| L45      |         |           | L40-2771-36  | SMALL FIXED INDUCTOR(27NH)    |             | R52      |         |           | RK73GB1J470J | CHIP R      | 47 J 1/8W   |
| L46      |         |           | L40-2271-36  | SMALL FIXED INDUCTOR(22NH)    |             | R52      |         |           | R52-1252-05  | CHIP R      | 0 OHM       |
| L48      |         |           | L34-4542-05  | COIL (3T)                     |             | R53      |         |           | RK73GB1J471J | CHIP R      | 470 J 1/8W  |
| L49      |         |           | L40-4771-36  | SMALL FIXED INDUCTOR(47NH)    |             | R54      |         |           | RK73GB1J222J | CHIP R      | 2.2K J 1/8W |
| L51      |         |           | L40-1091-37  | SMALL FIXED INDUCTOR(1.000UH) |             | R55      |         |           | RK73GB1J102J | CHIP R      | 1.0K J 1/8W |
| L52      |         |           | L34-4542-05  | COIL (3T)                     |             | R56      |         |           | RK73GB1J470J | CHIP R      | 47 J 1/8W   |
| L53      |         |           | L78-1525-05  | FILTER MODULE(435MHZ)         | E.E3        | R58      |         |           | R58-1252-05  | CHIP R      | 0 OHM       |
| L53      |         |           | L78-1525-05  | FILTER MODULE(435MHZ)         | M2,M4       | R57,58   |         |           | RK73GB1J222J | CHIP R      | 2.2K J 1/8W |
| L54      |         |           | L78-1525-05  | FILTER MODULE(444MHZ)         | K           | R59      |         |           | RK73GB1J100J | CHIP R      | 10 J 1/8W   |
| L55      |         |           | L40-3971-36  | SMALL FIXED INDUCTOR(39NH)    |             | R60      |         |           | RK73GB1J222J | CHIP R      | 2.2K J 1/8W |
| L56      |         |           | L40-1551-37  | SMALL FIXED INDUCTOR(155UH)   |             | R61      |         |           | RK73GB1J223J | CHIP R      | 22K J 1/8W  |
| L57      |         |           | L40-2271-36  | SMALL FIXED INDUCTOR(22NH)    |             | R62      |         |           | RK73GB1J222J | CHIP R      | 8.2K J 1/8W |
| L58      |         |           | L40-1551-37  | SMALL FIXED INDUCTOR(155UH)   |             | R63      |         |           | RK73GB1J222J | CHIP R      | 2.2K J 1/8W |
| L59      |         |           | L40-4771-36  | SMALL FIXED INDUCTOR(47NH)    |             | R64      |         |           | RK73GB1J100J | CHIP R      | 10 J 1/8W   |
| L60      |         |           | L40-5661-37  | SMALL FIXED INDUCTOR(566UH)   |             | R65      |         |           | RK73GB1J101J | CHIP R      | 100 J 1/8W  |
| L61      |         |           | L40-1291-37  | SMALL FIXED INDUCTOR(129UH)   |             | R66,67   |         |           | RK73GB1J222J | CHIP R      | 2.2K J 1/8W |
| L63      |         |           | L40-6861-38  | SMALL FIXED INDUCTOR(68NH)    |             | R68      |         |           | RK73GB1J350J | CHIP R      | 56 J 1/8W   |
| L500     |         |           | L52-0131-05  | FERRITE CHIP                  |             | R69      |         |           | RK73GB1J471J | CHIP R      | 470 J 1/8W  |
| X1       |         |           | L77-1573-05  | CRYSTAL RESONATOR(12.8MHZ)    |             | R70      |         |           | RK73GB1J221J | CHIP R      | 220 J 1/8W  |
| X501     |         |           | L77-1476-05  | CRYSTAL RESONATOR(14.7434MHZ) |             | R71      |         |           | RK73GB1J473J | CHIP R      | 47 J 1/8W   |
| XF1      |         |           | L71-6481-05  | MCIF (385215B)                |             | R72      |         |           | RK73GB1J470J | CHIP R      | 47 J 1/8W   |
| CP501    |         |           | R90-0724-05  | MULTI-COMP 1K X4              |             | R73      |         |           | RK73GB1J152J | CHIP R      | 1.5K J 1/8W |
| CP502    |         |           | R90-0714-05  | MULTI-COMP 10K X4             |             | R74      |         |           | RK73GB1J100J | CHIP R      | 10 J 1/8W   |
| R1       |         |           | R26-0685-05  | CHIP R 22 J 1/2W              |             | R75      |         |           | RK73GB1J222J | CHIP R      | 2.2K J 1/8W |
| R2       |         |           | RK73GB1J102J | CHIP R 1.0K J 1/8W            |             | R76      |         |           | RK73GB1J061J | CHIP R      | 680 J 1/8W  |
| R3       |         |           | RK73GB1J101J | CHIP R 100 J 1/8W             |             | R77      |         |           | RK73GB2A100J | CHIP R      | 10 J 1/2W   |
| R4       |         |           | RK73GB1J471J | CHIP R 470 J 1/8W             |             | R78      |         |           | RK73GB1J331J | CHIP R      | 330 J 1/8W  |
| R5       |         |           | RK73GB1J473J | CHIP R 47K J 1/8W             |             | R79      |         |           | RK73GB1J152J | CHIP R      | 1.5K J 1/8W |
| R7,8     |         |           | RK73GB1J470J | CHIP R 47K J 1/8W             |             | R80      |         |           | R52-0685-05  | CHIP R      | 22 J 1/2W   |
| R10,11   |         |           | RK73GB1J331J | CHIP R 330 J 1/8W             |             | R82      |         |           | R52-0685-05  | CHIP R      | 22 J 1/2W   |
| R12,13   |         |           | RK73GB1J222J | CHIP R 2.2K J 1/8W            |             | R85      |         |           | RK73GB2A221J | CHIP R      | 820 J 1/10W |
| R14,15   |         |           | RK73GB1J472J | CHIP R 4.7K J 1/8W            |             | R86      |         |           | RK73GB2A566J | CHIP R      | 5.6 J 1/10W |
| R16      |         |           | RK73GB1J223J | CHIP R 22K J 1/8W             |             | R87      |         |           | R52-0670-05  | CHIP R      | 0 OHM       |
| R17      |         |           | RK73GB1J220J | CHIP R 22 J 1/8W              |             | R88      |         |           | R52-2581-05  | RESISTOR    | 220 1W      |
| R18      |         |           | RK73GB1J223J | CHIP R 2.2K J 1/8W            |             | R89,90   |         |           | R52-1213-05  | CHIP R      | 100 J 1/2W  |
| R19,21   |         |           | RK73GB1J102J | CHIP R 1.0K J 1/8W            |             | R91,92   |         |           | RK73GB1J103J | CHIP R      | 10K J 1/8W  |
| R22      |         |           | RK73GB1J273J | CHIP R 27K J 1/8W             |             | R93      |         |           | R52-2581-05  | RESISTOR    | 220 1W      |
| R23      |         |           | RK73GB1J183J | CHIP R 18K J 1/8W             |             | R94      |         |           | RK73GB1J222J | CHIP R      | 2.2K J 1/8W |
| R24      |         |           | R52-1252-05  | CHIP R 0 OHM                  |             | R95      |         |           | RK73GB1J103J | CHIP R      | 10K J 1/8W  |
| R25      |         |           | RK73GB1J333J | CHIP R 33K J 1/8W             |             | R96      |         |           | RK73GB1J153J | CHIP R      | 15K J 1/8W  |
| R26      |         |           | RK73GB1J332J | CHIP R 3.3K J 1/8W            |             | R97      |         |           | RK73GB1J222J | CHIP R      | 2.2K J 1/8W |
| R27      |         |           | RK73GB1J103J | CHIP R 10K J 1/8W             |             | R98      |         |           | RK73GB1J883J | CHIP R      | 88K J 1/8W  |
| R30      |         |           | RK73GB1J101J | CHIP R 100 J 1/8W             |             | R99      |         |           | RK73GB1J223J | CHIP R      | 22K J 1/8W  |
| R31      |         |           | RK73GB1J473J | CHIP R 47K J 1/8W             |             | R100     |         |           | RK73GB1J272J | CHIP R      | 2.7K J 1/8W |
| R32      |         |           | RK73GB1J472J | CHIP R 4.7K J 1/8W            |             | R101     |         |           | RK73GB1J103J | CHIP R      | 10K J 1/8W  |
| R33      |         |           | RK73GB1J122J | CHIP R 1.2K J 1/8W            |             | R102     |         |           | RK73GB1J223J | CHIP R      | 22K J 1/8W  |
| R34      |         |           | RK73GB1J331J | CHIP R 3.3K J 1/8W            |             | R103     |         |           | RK73GB1J103J | CHIP R      | 10K J 1/8W  |
| R35      |         |           | RK73GB1J122J | CHIP R 1.2K J 1/8W            |             | R104     |         |           | RK73GB1J883J | CHIP R      | 88K J 1/8W  |
| R36      |         |           | RK73GB1J331J | CHIP R 3.3K J 1/8W            |             | R105     |         |           | RK73GB1J103J | CHIP R      | 10K J 1/8W  |
| R37      |         |           | RK73GB1J182J | CHIP R 1.8K J 1/8W            |             | R106     |         |           | RK73GB1J222J | CHIP R      | 3.3K J 1/8W |
| R38      |         |           | RK73GB1J331J | CHIP R 3.3K J 1/8W            |             | R107     |         |           | RK73GB1J473J | CHIP R      | 47K J 1/8W  |
| R39      |         |           | RK73GB1J471J | CHIP R 47K J 1/8W             |             | R108     |         |           | RK73GB1J223J | CHIP R      | 22K J 1/8W  |
| R40,41   |         |           | RK73GB1J332J | CHIP R 3.3K J 1/8W            |             | R109     |         |           | RK73GB1J471J | CHIP R      | 470 J 1/8W  |
| R42      |         |           | RK73GB1J473J | CHIP R 47K J 1/8W             |             | R110     |         |           | RK73GB1J103J | CHIP R      | 10K J 1/8W  |
| R43      |         |           | RK73GB1J332J | CHIP R 3.3K J 1/8W            |             | R111     |         |           | R52-1252-05  | CHIP R      | 0 OHM       |
| R44,45   |         |           | RK73GB1J101J | CHIP R 100 J 1/8W             |             | R112     |         |           | RK73GB1J101J | CHIP R      | 100 J 1/8W  |

## PARTS LIST

TX-RX UNIT (X57-557X-XX)

| Ref. No. | Address | New parts | Parts No.    | Description         | Destination | Ref. No. | Address | New parts | Parts No.    | Description         | Destination |
|----------|---------|-----------|--------------|---------------------|-------------|----------|---------|-----------|--------------|---------------------|-------------|
| R113-117 |         |           | RK73GB1J103J | CHIP R 18K J 1/16W  |             | R189     |         |           | RK73GB1J122J | CHIP R 1.2K J 1/16W |             |
| R118-122 |         |           | RK73GB1J182J | CHIP R 18K J 1/16W  |             | R190     |         |           | RK73GB1J47J  | CHIP R 470 J 1/16W  |             |
| R123     |         |           | RK73GB1J222J | CHIP R 2.2K J 1/16W |             | R191     |         |           | RK73GB1J181J | CHIP R 18K J 1/16W  |             |
| R124     |         |           | R92-1252-05  | CHIP R 0 OHM        |             | R192     |         |           | RK73GB1J184J | CHIP R 180K J 1/16W | E.E3        |
| R125     |         |           | RK73GB1J184J | CHIP R 180K J 1/16W |             | R192     |         |           | RK73GB1J184J | CHIP R 180K J 1/16W | M2.M4       |
| R126     |         |           | RK73GB1J223J | CHIP R 2.2K J 1/16W |             | R193     |         |           | RK73GB1J272J | CHIP R 2.7K J 1/16W |             |
| R127     |         |           | RK73GB1J101J | CHIP R 10K J 1/16W  |             | R194     |         |           | RK73GB1J103J | CHIP R 10K J 1/16W  | E.E3        |
| R128     |         |           | RK73GB1J104J | CHIP R 100K J 1/16W |             | R194     |         |           | RK73GB1J103J | CHIP R 10K J 1/16W  | M2.M4       |
| R129     |         |           | RK73GB1J222J | CHIP R 2.2K J 1/16W |             | R194     |         |           | R92-1252-05  | CHIP R 0 OHM        | K           |
| R130     |         |           | RK73GB1J333J | CHIP R 33K J 1/16W  |             | R195     |         |           | RK73GB1J47J  | CHIP R 4.7 J 1/16W  | E.E3        |
| R131     |         |           | RK73GB1J221J | CHIP R 2.2K J 1/16W |             | R197     |         |           | RK73GB1J482J | CHIP R 4.7 J 1/16W  |             |
| R132     |         |           | RK73GB1J154J | CHIP R 150K J 1/16W |             | R197     |         |           | RK73GB1J482J | CHIP R 4.7 J 1/16W  | M2.M4       |
| R133     |         |           | RK73GB1J823J | CHIP R 82K J 1/16W  |             | R199     |         |           | R92-1252-05  | CHIP R 0 OHM        |             |
| R134     |         |           | RK73GB1J472J | CHIP R 4.7K J 1/16W |             | R200     |         |           | RK73GB1J334J | CHIP R 330K J 1/16W |             |
| R135     |         |           | RK73GB1J104J | CHIP R 100K J 1/16W |             | R201     |         |           | R92-1252-05  | CHIP R 0 OHM        |             |
| R136,137 |         |           | R92-1252-05  | CHIP R 0 OHM        |             | R202     |         |           | RK73GB1J470J | CHIP R 4.7 J 1/16W  |             |
| R138     |         |           | RK73GB1J473J | CHIP R 4.7K J 1/16W |             | R203     |         |           | RK73GB1J222J | CHIP R 2.2K J 1/16W |             |
| R139     |         |           | RK73GB1J472J | CHIP R 4.7K J 1/16W |             | R204     |         |           | RK73GB1J272J | CHIP R 2.7K J 1/16W |             |
| R140     |         |           | RK73GB1J222J | CHIP R 2.2K J 1/16W |             | R205     |         |           | RK73GB1J103J | CHIP R 10K J 1/16W  |             |
| R141     |         |           | RK73GB1J471J | CHIP R 470 J 1/16W  |             | R206     |         |           | RK73GB1J474J | CHIP R 470K J 1/16W |             |
| R142     |         |           | RK73GB1J222J | CHIP R 2.2K J 1/16W |             | R207     |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             |
| R143     |         |           | RK73GB1J471J | CHIP R 470 J 1/16W  |             | R209     |         |           | RK73GB1J182J | CHIP R 1.8K J 1/16W |             |
| R144     |         |           | RK73GB1J101J | CHIP R 10K J 1/16W  |             | R209     |         |           | RK73GB1J473J | CHIP R 4.7K J 1/16W |             |
| R145     |         |           | R92-1252-05  | CHIP R 0 OHM        |             | R210     |         |           | RK73GB1J331J | CHIP R 330 J 1/16W  |             |
| R146     |         |           | RK73GB1J222J | CHIP R 2.2K J 1/16W |             | R211     |         |           | RK73GB1J104J | CHIP R 100K J 1/16W |             |
| R147     |         |           | RK73GB1J101J | CHIP R 10K J 1/16W  |             | R212     |         |           | RK73GB1J332J | CHIP R 3.3K J 1/16W |             |
| R148     |         |           | R92-1252-05  | CHIP R 0 OHM        |             | R213     |         |           | RK73GB1J334J | CHIP R 330K J 1/16W |             |
| R149,150 |         |           | RK73GB1J104J | CHIP R 100K J 1/16W |             | R214,215 |         |           | RK73GB1J332J | CHIP R 3.3K J 1/16W |             |
| R151     |         |           | RK73GB1J151J | CHIP R 15K J 1/16W  |             | R216     |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             |
| R152     |         |           | RK73GB1J104J | CHIP R 100K J 1/16W |             | R217     |         |           | R92-1252-05  | CHIP R 0 OHM        |             |
| R153     |         |           | RK73GB1J184J | CHIP R 180K J 1/16W |             | R218     |         |           | RK73GB1J103J | CHIP R 10K J 1/16W  |             |
| R154     |         |           | RK73GB1J222J | CHIP R 2.2K J 1/16W |             | R219     |         |           | R92-1252-05  | CHIP R 0 OHM        |             |
| R155     |         |           | RK73GB1J472J | CHIP R 4.7K J 1/16W |             | R220     |         |           | RK73GB1J182J | CHIP R 1.8K J 1/16W | K           |
| R156     |         |           | RK73GB1J104J | CHIP R 100K J 1/16W |             | R220     |         |           | R92-1252-05  | CHIP R 0 OHM        | E.E3        |
| R157     |         |           | RK73GB1J222J | CHIP R 2.2K J 1/16W |             | R220     |         |           | R92-1252-05  | CHIP R 0 OHM        | M2.M4       |
| R158     |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             | R221     |         |           | RK73GB1J333J | CHIP R 33K J 1/16W  |             |
| R159     |         |           | RK73GB1J471J | CHIP R 470 J 1/16W  |             | R223     |         |           | RK73GB1J104J | CHIP R 100K J 1/16W |             |
| R160     |         |           | RK73GB1J472J | CHIP R 4.7K J 1/16W |             | R225     |         |           | RK73GB1J104J | CHIP R 100K J 1/16W |             |
| R161,162 |         |           | R92-1252-05  | CHIP R 0 OHM        |             | R250,251 |         |           | RK73GB1J222J | CHIP R 2.2K J 1/16W |             |
| R163,164 |         |           | RK73GB1J221J | CHIP R 2.2K J 1/16W |             | R252     |         |           | R92-1252-05  | CHIP R 0 OHM        |             |
| R165     |         |           | RK73GB1J152J | CHIP R 15K J 1/16W  |             | R253     |         |           | RK73GB1J184J | CHIP R 180K J 1/16W | E.E3        |
| R166     |         |           | RK73GB1J472J | CHIP R 4.7K J 1/16W |             | R253     |         |           | RK73GB1J184J | CHIP R 180K J 1/16W | M2.M4       |
| R168     |         |           | RK73GB1J471J | CHIP R 470 J 1/16W  |             | R254,255 |         |           | RK73GB1J472J | CHIP R 4.7K J 1/16W |             |
| R172     |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             | R501     |         |           | RK73GB1J472J | CHIP R 4.7K J 1/16W |             |
| R172     |         |           | RK73GB1J473J | CHIP R 4.7K J 1/16W |             | R502     |         |           | R92-1252-05  | CHIP R 0 OHM        |             |
| R172     |         |           | RK73GB1J473J | CHIP R 4.7K J 1/16W |             | R506     |         |           | RK73GB1J103J | CHIP R 10K J 1/16W  |             |
| R173     |         |           | RK73GB1J472J | CHIP R 4.7K J 1/16W |             | R507     |         |           | RK73GB1J122J | CHIP R 1.2K J 1/16W |             |
| R174,175 |         |           | RK73GB1J223J | CHIP R 2.2K J 1/16W |             | R508     |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             |
| R176     |         |           | RK73GB1J222J | CHIP R 2.2K J 1/16W |             | R509     |         |           | RK73GB1J103J | CHIP R 10K J 1/16W  |             |
| R177     |         |           | RK73GB1J222J | CHIP R 2.2K J 1/16W |             | R510,511 |         |           | RK73GB1J473J | CHIP R 4.7K J 1/16W |             |
| R178     |         |           | RK73GB1J470J | CHIP R 47 J 1/16W   |             | R512     |         |           | RK73GB1J552J | CHIP R 55K J 1/16W  |             |
| R178,180 |         |           | RK73GB1J101J | CHIP R 10K J 1/16W  |             | R513     |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             |
| R181     |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             | R514     |         |           | RK73GB1J223J | CHIP R 2.2K J 1/16W |             |
| R182     |         |           | R92-1252-05  | CHIP R 0 OHM        |             | R515     |         |           | RK73GB1J823J | CHIP R 82K J 1/16W  |             |
| R183,184 |         |           | RK73GB1J331J | CHIP R 330 J 1/16W  |             | R516     |         |           | RK73GB1J554J | CHIP R 550K J 1/16W |             |
| R185     |         |           | RK73GB1J124J | CHIP R 120K J 1/16W |             | R517     |         |           | RK73GB1J894J | CHIP R 890K J 1/16W |             |
| R186     |         |           | RK73GB1J124J | CHIP R 120K J 1/16W |             | R521     |         |           | RK73GB1J334J | CHIP R 330K J 1/16W |             |
| R186     |         |           | RK73GB1J103J | CHIP R 10K J 1/16W  |             | R522     |         |           | RK73GB1J473J | CHIP R 4.7K J 1/16W |             |
| R187     |         |           | RK73GB1J473J | CHIP R 4.7K J 1/16W |             | R523     |         |           | RK73GB1J104J | CHIP R 100K J 1/16W |             |
| R188     |         |           | RK73GB1J103J | CHIP R 10K J 1/16W  |             | R524     |         |           | RK73GB1J103J | CHIP R 10K J 1/16W  |             |

## PARTS LIST

TX-RX UNIT (X57-557X-XX)

| Ref. No. | Address | New parts | Parts No.    | Description         | Destination | Ref. No. | Address | New parts | Parts No.      | Description                    | Destination |
|----------|---------|-----------|--------------|---------------------|-------------|----------|---------|-----------|----------------|--------------------------------|-------------|
| R525,526 |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             | R604     |         |           | RK73GB1J104J   | CHIP R 100K J 1/16W            |             |
| R527     |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  |             | R605     |         |           | RK73GB1J103J   | CHIP R 10K J 1/16W             |             |
| R528     |         |           | RK73GB1J103J | CHIP R 10K J 1/16W  |             | R606     |         |           | RK73GB1J102J   | CHIP R 1.0K J 1/16W            |             |
| R529     |         |           | RK73GB1J323J | CHIP R 82K J 1/16W  |             | R607     |         |           | RK73GB1J474J   | CHIP R 47K J 1/16W             |             |
| R530,531 |         |           | RK73GB1J222J | CHIP R 2.2K J 1/16W |             | R608     |         |           | RK73GB1J101J   | CHIP R 100 J 1/16W             |             |
| R532     |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  | K,M2,M4     | R609     |         |           | R52-1252-05    | CHIP R 0 OHM                   |             |
| R533     |         |           | RK73GB1J884J | CHIP R 880K J 1/16W |             | R610     |         |           | RK73GB1J473J   | CHIP R 47K J 1/16W             |             |
| R535     |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  |             | R611     |         |           | RK73GB1J105J   | CHIP R 1.0M J 1/16W            | E.E3        |
| R536     |         |           | RK73GB1J163J | CHIP R 10K J 1/16W  |             | R612     |         |           | RK73GB1J104J   | CHIP R 100K J 1/16W            | E.E3        |
| R537     |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  |             | R614     |         |           | RK73GB1J471J   | CHIP R 47J J 1/16W             | E.E3,M2,M4  |
| R538,539 |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  |             | R615     |         |           | RK73GB1J473J   | CHIP R 47K J 1/16W             |             |
| R540     |         |           | RK73GB1J103J | CHIP R 10K J 1/16W  |             | R616     |         |           | RK73GB1J103J   | CHIP R 10K J 1/16W             | K,M2,M4     |
| R541     |         |           | RK73GB1J184J | CHIP R 180K J 1/16W | K,M2,M4     | VR701    | 3A      |           | R01-9019-05    | VARIABLE RESISTOR(VOL/SOL) 50K |             |
| R541     |         |           | RK73GB1J094J | CHIP R 390K J 1/16W | E.E3        | S501     |         |           | S70-9424-05    | (TACT SWITCH)HARD RESET        |             |
| R542     |         |           | RK73GB1J104J | CHIP R 100K J 1/16W | K,M2,M4     | S701     | 3B      |           | S70-9451-05    | (TACT SWITCH)BAND1             |             |
| R543     |         |           | RK73GB1J103J | CHIP R 10K J 1/16W  | K,M2,M4     | 01-2     |         |           | MA25077        | DIODE                          |             |
| R544     |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  |             | 00-4     |         |           | MA25111        | DIODE                          |             |
| R545     |         |           | RK73GB1J274J | CHIP R 270K J 1/16W |             | 06       |         |           | 1SS355         | DIODE                          |             |
| R546     |         |           | R52-0570-05  | CHIP R 0 OHM        | M4,E.E3     | 06-9     |         |           | MA25077        | DIODE                          |             |
| R547,548 |         |           | R52-1252-05  | CHIP R 0 OHM        |             | 010      |         |           | 1SS355         | DIODE                          |             |
| R549     |         |           | R52-0570-05  | CHIP R 0 OHM        | E.E3        | 011,12   |         |           | DA221          | DIODE                          |             |
| R550     |         |           | R52-0670-05  | CHIP R 0 OHM        | K,M2        | 013      |         |           | HVU131         | DIODE                          |             |
| R551     |         |           | R52-0670-05  | CHIP R 0 OHM        | K,E.E3      | 014-16   |         |           | MA4PH633       | DIODE                          |             |
| R552     |         |           | RK73GB1J034J | CHIP R 330K J 1/16W |             | 017,18   |         |           | MR609          | DIODE                          |             |
| R554     |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  |             | 019-21   |         |           | MA742          | DIODE                          |             |
| R555     |         |           | RK73GB1J123J | CHIP R 12K J 1/16W  |             | 022      |         |           | DAN222         | DIODE                          |             |
| R556     |         |           | RK73GB1J223J | CHIP R 22K J 1/16W  |             | 023      |         |           | MA742          | DIODE                          |             |
| R557     |         |           | RK73GB1J104J | CHIP R 100K J 1/16W |             | 024      |         |           | UD210(B)       | ZENER DIODE                    |             |
| R558     |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  |             | 025      |         |           | UD218(B)       | ZENER DIODE                    |             |
| R559     |         |           | RK73GB1J222J | CHIP R 8.2K J 1/16W | K,M2,M4     | 026      |         |           | MA742          | DIODE                          |             |
| R560     |         |           | RK73GB1J123J | CHIP R 12K J 1/16W  |             | 027      |         |           | MA25077        | DIODE                          |             |
| R562     |         |           | RK73GB1J882J | CHIP R 8.8K J 1/16W |             | 028,29   |         |           | HVU950         | VARIABLE CAPACITANCE DIODE     |             |
| R563     |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  |             | 030      |         |           | MA25077        | DIODE                          |             |
| R567     |         |           | RK73GB1J274J | CHIP R 270K J 1/16W | E.E3        | 031      |         |           | HVU950         | VARIABLE CAPACITANCE DIODE     |             |
| R569     |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  |             | 033      |         |           | DAN222         | DIODE                          |             |
| R571     |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  |             | 034,35   |         |           | 1SS355         | DIODE                          |             |
| R572     |         |           | RK73GB1J123J | CHIP R 12K J 1/16W  |             | 037,38   |         |           | MA25077        | DIODE                          |             |
| R574,575 |         |           | RK73GB1J224J | CHIP R 220K J 1/16W |             | 039      |         |           | MA742          | DIODE                          |             |
| R576     |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             | 040,41   |         |           | DSM3MA1        | DIODE                          |             |
| R577     |         |           | R52-1252-05  | CHIP R 0 OHM        |             | 042,43   |         |           | HVU131         | DIODE                          |             |
| R578     |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             | 0501     |         |           | 1SS355         | DIODE                          |             |
| R579,580 |         |           | RK73GB1J103J | CHIP R 10K J 1/16W  |             | 0502     |         |           | DTZ7.5(B)      | ZENER DIODE                    |             |
| R581     |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  |             | 0503     |         |           | MA112          | DIODE                          |             |
| R582     |         |           | RK73GB1J124J | CHIP R 120K J 1/16W |             | 0504,505 |         |           | MA25111        | DIODE                          |             |
| R583     |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             | 0506,507 |         |           | 1SS355         | DIODE                          |             |
| R584     |         |           | RK73GB1J103J | CHIP R 10K J 1/16W  |             | 0508,509 |         |           | DA221          | DIODE                          |             |
| R585     |         |           | RK73GB1J472J | CHIP R 47K J 1/16W  |             | IC1      |         |           | M91S111PV-68ND | (IC)PLL FREQUENCY SYNTHESIZER  |             |
| R586,587 |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  |             | IC2,3    |         |           | TC7W66PU       | IC                             |             |
| R588     |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             | IC4      |         |           | KD-Q9          | (IC)VHF VCO                    |             |
| R589,590 |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  |             | IC5      |         |           | KD-Q9          | (IC)UHF VCO                    |             |
| R591     |         |           | RK73GB1J033J | CHIP R 39K J 1/16W  |             | IC6      |         |           | TAT5581F       | (IC)OP AMP                     |             |
| R592,594 |         |           | RK73GB1J473J | CHIP R 47K J 1/16W  |             | IC7      |         |           | BLZ690PS       | (IC)SHIFT/STORE REGISTER       |             |
| R595     |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             | IC8      |         |           | TC1030DV       | (IC)1030DV                     |             |
| R596     |         |           | RK73GB1J033J | CHIP R 33 J 1/16W   |             | IC9      |         |           | TC7W66SFU      | (IC)2 INPUT NAND GATE          |             |
| R597,598 |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             | IC10     |         |           | TAT8L05F       | (IC)VOLTAGE REGULATOR(+5V)     |             |
| R599     |         |           | R52-1252-05  | CHIP R 0 OHM        |             | IC591    |         |           | TAT8L05F       | (IC)VOLTAGE REGULATOR(+5V)     |             |
| R600     |         |           | RK73GB1J106J | CHIP R 10 J 1/16W   |             | IC592    |         |           | TAT8L05F       | (IC)VOLTAGE REGULATOR(+5V)     |             |
| R601     |         |           | RK73GB1J224J | CHIP R 220K J 1/16W |             | IC593    |         |           | PS79130NP      | (IC)SYSTEM RESET               |             |
| R602     |         |           | RK73GB1J104J | CHIP R 100K J 1/16W |             | IC594    |         |           | MA2284P        | (IC)D/A CONVERTER              |             |
| R603     |         |           | RK73GB1J102J | CHIP R 1.0K J 1/16W |             | IC595    |         |           | LC73851M       | (IC)TMR DECODER                | K,M2,M4     |

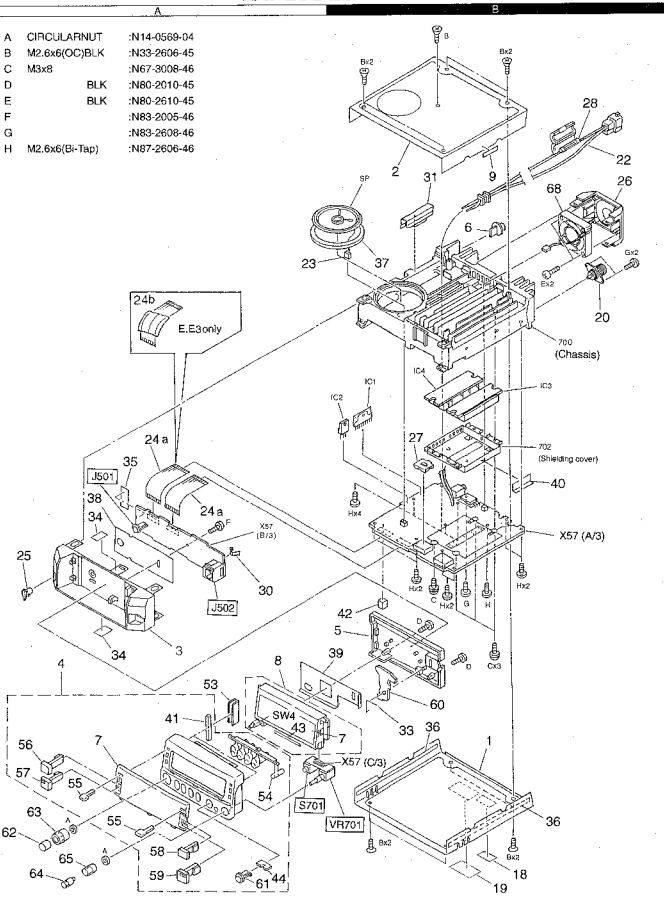
## PARTS LIST

TX-RX UNIT (X57-557X-XX)

| Ref. No. | Address | New parts | Parts No.      | Description             | Destination |
|----------|---------|-----------|----------------|-------------------------|-------------|
| IC506    |         |           | AK2943         | VOIC/SS ENCODER/DECODER |             |
| IC507    |         |           | BU4066BCF      | DIANALOG SWITCH X41     |             |
| IC508    |         |           | 780568G-A708BT | IC(CPU)                 | K           |
| IC509    |         |           | 780568G-A718BT | IC(CPU)                 | E.E3        |
| IC510    |         |           | 780568G-A718BT | IC(CPU)                 | M2,M4       |
| IC511    |         |           | 780568G-A718BT | IC(CPU)                 |             |
| Q1       |         |           | 1A755389F      | IC                      |             |
| Q2       |         |           | 1C749C4050AF   | IC(BUFFER CONVERTER)    |             |
| Q3       |         |           | X253030B-2.5   | IC(EEPROM)              |             |
| Q4       |         |           | DT0148K        | DIGITAL TRANSISTOR      |             |
| Q5       |         |           | 25C4738GR      | TRANSISTOR              |             |
| Q6       |         |           | 25C4619P D     | TRANSISTOR              |             |
| Q7       |         |           | 25A1632GR      | TRANSISTOR              |             |
| Q8       |         |           | 25C4738GR      | TRANSISTOR              |             |
| Q9       |         |           | FMA5           | TRANSISTOR              |             |
| Q10      |         |           | 25C4617(R)     | TRANSISTOR              |             |
| Q11      |         |           | 25C5108V       | TRANSISTOR              |             |
| Q12      |         |           | 25C5066(D)     | TRANSISTOR              |             |
| Q13      |         |           | 25C4093        | TRANSISTOR              |             |
| Q14      |         |           | 25C4988        | TRANSISTOR              |             |
| Q15      |         |           | 25C3357        | TRANSISTOR              |             |
| Q16      |         |           | 25C2954        | TRANSISTOR              |             |
| Q17      |         |           | 25B15956 F     | TRANSISTOR              |             |
| Q18      |         |           | 25C4617(R)     | TRANSISTOR              |             |
| Q19      |         |           | DT0144E        | DIGITAL TRANSISTOR      |             |
| Q20      |         |           | 25C4617(R)     | TRANSISTOR              |             |
| Q21      |         |           | 25B1132(D,R)   | TRANSISTOR              |             |
| Q22      |         |           | DT0114EE       | DIGITAL TRANSISTOR      |             |
| Q23      |         |           | 25A1362(V)     | TRANSISTOR              |             |
| Q24      |         |           | 25B1132(D,R)   | TRANSISTOR              |             |
| Q25      |         |           | 25A1362(V)     | TRANSISTOR              |             |
| Q26      |         |           | 25B1132(D,R)   | TRANSISTOR              |             |
| Q27      |         |           | 25A1362(V)     | TRANSISTOR              |             |
| Q28      |         |           | FMA5           | TRANSISTOR              |             |
| Q29      |         |           | 3SK239A        | FET                     |             |
| Q30      |         |           | 25C5066(D)     | TRANSISTOR              |             |
| Q31      |         |           | 3SK239A        | FET                     |             |
| Q32      |         |           | 3SK241(R)      | FET                     |             |
| Q33      |         |           | DT0114EE       | DIGITAL TRANSISTOR      |             |
| Q34      |         |           | 25C5066(D)     | TRANSISTOR              |             |
| Q35      |         |           | 3SK239A        | FET                     |             |
| Q36      |         |           | DT0114EE       | DIGITAL TRANSISTOR      |             |
| Q37      |         |           | 3SK241(R)      | FET                     |             |
| Q38      |         |           | 25B1386(R)     | TRANSISTOR              |             |
| Q39      |         |           | 25C4617(R)     | TRANSISTOR              |             |
| Q40      |         |           | 25K1824        | FET                     |             |
| Q41      |         |           | DT0114EE       | DIGITAL TRANSISTOR      |             |
| Q42      |         |           | 3SK241(R)      | FET                     |             |
| Q43      |         |           | 25B1386(R)     | TRANSISTOR              |             |
| Q44      |         |           | 25C4617(R)     | TRANSISTOR              |             |
| Q45      |         |           | 25K1824        | FET                     |             |
| Q46      |         |           | DT0114EE       | DIGITAL TRANSISTOR      |             |
| Q47      |         |           | 3SK241(R)      | FET                     |             |
| Q48      |         |           | 25B1386(R)     | TRANSISTOR              |             |
| Q49      |         |           | 25C4617(R)     | TRANSISTOR              |             |
| Q50      |         |           | 25K1824        | FET                     |             |
| Q51      |         |           | DT0114EE       | DIGITAL TRANSISTOR      |             |
| Q52      |         |           | 25C4738GR      | TRANSISTOR              |             |
| Q53      |         |           | 25B1386(R)     | TRANSISTOR              |             |
| Q54      |         |           | 25C4617(R)     | TRANSISTOR              |             |
| Q55      |         |           | 25K1824        | FET                     | E.E3        |
| Q56      |         |           | 25K1824        | FET                     | M2,M4       |
| Q57      |         |           | 25K1824        | FET                     | E.E3        |
| Q58      |         |           | 25K1824        | FET                     | M2,M4       |
| Q59      |         |           | DT0114EE       | DIGITAL TRANSISTOR      | E.E3        |
| Q60      |         |           | DT0114EE       | DIGITAL TRANSISTOR      | M2,M4       |
| Q61      |         |           | 25C4738GR      | TRANSISTOR              |             |
| Q62      |         |           | 25A1519        | TRANSISTOR              |             |
| Q63      |         |           | 25C4738GR      | TRANSISTOR              |             |
| Q64      |         |           | DT0114EE       | DIGITAL TRANSISTOR      | E.E3,M2,M4  |
| Q65      |         |           | 25C4738GR      | TRANSISTOR              |             |
| Q66      |         |           | 157-153-65001  | THERMISTOR(15K)         |             |

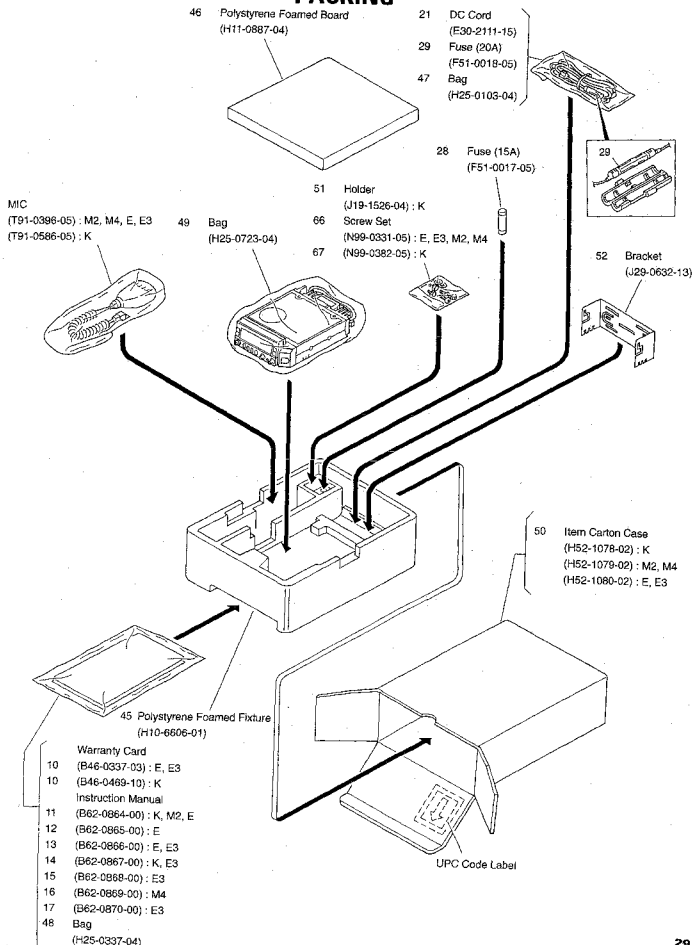
EXPLODED VIEW

- A CIRCULAR NUT :N14-0569-04  
B M2.6x6(OC)BLK :N33-2606-45  
C M3x8 :N67-3008-46  
D BLK :N80-2010-45  
E BLK :N80-2610-45  
F :N83-2005-46  
G :N83-2608-46  
H M2.6x6(Bi-Tap) :N87-2606-46



Parts with the exploded numbers larger than 700 are not supplied.

## PACKING



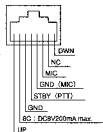
## ADJUSTMENT

### Measuring Equipment for Adjustment

1. **Digital voltmeter (D.V.M)**  
Input impedance: High
2. **RF valve voltmeter (RF V.M)**  
Input impedance:  $1\text{M}\Omega$  or more,  $2\text{pF}$  or less  
Voltage range: Full scale =  $10\text{mV}$  to  $300\text{V}$   
Measurable frequency range: up to  $450\text{MHz}$
3. **Frequency counter (f.counter)**  
Input sensitivity: About  $50\text{mV}$   
Measurable frequency:  $450\text{MHz}$  or more
4. **DC power supply**  
Voltage: Variable in the range 10 to  $17\text{V}$   
Current:  $13\text{A}$  or more
5. **Power meter**  
Measurement power:  $60\text{W}$ ,  $30\text{W}$ ,  $10\text{W}$   
Impedance:  $50\Omega$   
Measurable frequency:  $450\text{MHz}$
6. **AF valve voltmeter (AF V.M)**  
Input impedance:  $1\text{M}\Omega$  or more  
Voltage range: Full scale =  $1\text{mV}$  to  $30\text{V}$   
Measurable frequency range:  $50\text{Hz}$  to  $10\text{kHz}$
7. **AF generator (AG)**  
Output frequency:  $100\text{Hz}$  to  $10\text{kHz}$   
Output voltage:  $0.5\text{mV}$  to  $1\text{V}$
8. **Linear detector**  
Measurable frequency:  $450\text{MHz}$
9. **Spectrum analyzer**  
Measurable frequency:  $450\text{MHz}$
10. **Directional coupler**
11. **Oscilloscope**  
High sensitivity with horizontal input terminal
12. **Standard signal generator (SSG)**  
The standard signal generator must be able to generate the  $1\text{GHz}$  band frequencies and vary the amplitude and frequency.  
Output:  $-133\text{dBm}$  to greater than  $-13\text{dBm}$
13. **Dummy load (for AF)**  
 $8\Omega$ , about  $5\text{W}$
14. **Distortion meter**
15. **Adjustment jig**

### Preparation

#### ●Microphone connector



**Microphone socket**  
(as viewed from the front of the set)

- Use an insulated rod, such as a plastic rod, for adjustment (especially for trimmers, coils, etc.).
- To protect the signal generator, never connect the microphone to the microphone socket when the receiver section is adjusted.
- Before the power cord is connected, make sure the power switch is off.
- Without specification of SSG, standard modulation is applied (MOD :  $1\text{kHz}$ , DEV :  $\pm 3\text{kHz}$ , AF output :  $0.63\text{V}/8\Omega$ )
- See the instruction manual for transmit and receive operations.
- Use service jigs as necessary.
- It is good to copy critical data with clone operations before making adjustments. For details on clone operations, see "Reference" on Page 39.

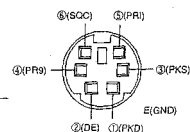
## ADJUSTMENT

### Adjustment Service Jig

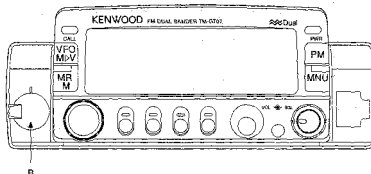


Data terminal short plug (W05-0611-00)

#### ●Service jigs usage



Pin assignment seen from direction B



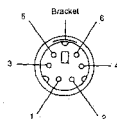
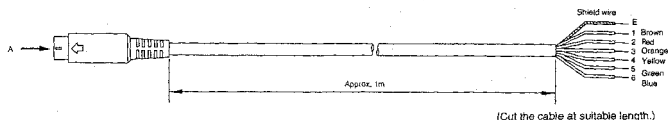
#### Short plug

Terminals ③ and ⑤ are short circuited.

[Reference] ③ PKS (SEND switch for DATA terminal)  
Connect PTT output. If PKS is set to "L", data are sent and the microphone will be mute.  
⑤ SOC (Squelch control output)  
This outputs squelch control output.

#### ●Service jigs specification

Plug cable with 6P mini-DIN : Model PG-5A (cable parts No. : E30-3202-05) processed like under fig.

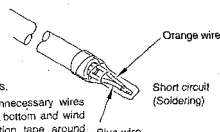


Pin assignment seen from direction A

| DIN pin No. | Color  |
|-------------|--------|
| 1           | Brown  |
| 2           | Red    |
| (3)         | Orange |
| 4           | Yellow |
| 5           | Green  |
| (6)         | Blue   |
| Bracket     | Shield |

Join these DIN pins.

Cut unnecessary wires at the bottom and wind insulation tape around top edge.





## ADJUSTMENT

### Adjustment mode

- This is the adjustment mode for making adjustments or setting levels.
- The following items can be adjusted or set.
  - A Squelch release sensitivity (SQL.)
  - B S meter light-up start level (S.-1.)
  - C S meter all light-up level (S.ALL.)
  - D Transmission output (TX.POW.)
  - E Transmission modulation factor (DEVI.)
  - F VHF BPF (B.P.F.1, B.P.F.2, B.P.F.3, B.P.F.4)

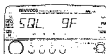
### Adjustment mode startup method

1. Switch OFF **[PWR]** and insert the adjustment plug at the set data terminal.
2. Switch ON **[PWR]** while pressing the **[F]** key and the **[TONE]** key at the same time.
3. When the set goes into adjustment mode, the "T." mark is displayed at the head of the frequency display. See the figure below.

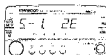


#### Adjustment mode display

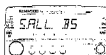
4. In adjustment mode, the desired band and frequency can be selected with **[VFO]**, **[MR]**, **[ENCODER]**, **[MRZ]** and **[BAND]**. You can also switch the transmission output with the **[LOW]** key.
5. When you press the **[MENU]** key, the set goes into adjustment enabled mode.
6. Pressing the **[◀]** or **[▶]** key switches the adjustment item to the previous item or the next item among the six adjustment items A-F (9 adjustments).
- A. Squelch release sensitivity adjustment (values set independently for 144 MHz and 430 MHz)
  - ①. When **[SQL]** is displayed with the **[◀]** or **[▶]** key, the value currently input for the squelch level is displayed and the squelch level can be adjusted. (See the figure below.)



- ②. In adjustment enabled mode, the **[VFO]** and **[MR]** keys function as the Up and Down keys, increasing/decreasing the frequency for VFO mode or the memory channel for MR mode.
- ③. When you apply the prescribed SSG input from the ANT terminal and press the **[OK]** key, the adjustment value is set and the adjustment mode moves to the next item. If you press the **[ESC]** key, the adjustment value is not set.
- B. S meter light-up start level (value set for each band)
  - ①. When you display **[S-1]** with the **[◀]** or **[▶]** key, the value currently input for the S meter is displayed and the value can be adjusted. (See the figure below.)

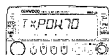


- ②. When you apply the prescribed SSG input from the ANT terminal and press the **[OK]** key, the adjustment value is set.
- C. S meter all light-up level (value set for each band)
  - ①. When you display **[S.ALL.]** with the **[◀]** or **[▶]** key, the value currently input for the S meter is displayed and the value can be adjusted. (See the figure below.)

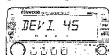


- ②. When you apply the prescribed SSG input from the ANT terminal and press the **[OK]** key, the adjustment value is set and the adjustment mode moves to the next item.

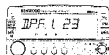
- D. Transmission output (values set independently for 144 MHz and 430 MHz)
  - ①. After setting the frequency, switch to the desired output range with the **[LOW]** key.
  - ②. When you display **[TX.POW.]** with the **[◀]** or **[▶]** key, the current setting for the output is displayed blinking. (See the figure below.)



- ③. Connect the power meter to the ANT terminal, then press the mic PTT switch to transmit. Turn the **[ENCODER]** knob to adjust the power meter reading to the prescribed output.
- ④. When the prescribed output is reached, switch the PTT switch off and press the **[OK]** key to set the adjustment value.
- E. Transmission modulation factor (values set independently for 144 MHz and 430 MHz)
  - ①. When you display **[DEVI.]** with the **[◀]** or **[▶]** key, the current setting is displayed blinking. (See the figure below.)



- ②. Connect the direct wave detector and power meter to the ANT terminal, apply the prescribed A.G. input from the MIC input terminal, and transmit. Turn the **[ENCODER]** knob to adjust the direct wave detector reading to the prescribed value.
- ③. When the prescribed value is reached, stop transmission and press the **[OK]** key to set the adjustment value.
- F. VHF BPF adjustments (4 points: near 120MHz, 132 MHz, 160 MHz, and 170 MHz)
  - ①. When you display any of "B.P.F.1." through "B.P.F.4" with the **[◀]** or **[▶]** key, the setting is displayed blinking. (See the figure below.)



BPF4 56

- ②. Connect the signal generator to the ANT terminal and the digital voltmeter to the TX-RX unit (solder side) SM terminal.
  - ③. Apply a signal of the prescribed output with the specified frequency from the signal generator. Turn the **[ENCODER]** knob and adjust to maximize the voltage at the SM terminal.
  - ④. When the maximum value is reached, press the **[OK]** key to set the adjusted value.
- Set "B.P.F.2", "B.P.F.3", and "B.P.F.4" in the same manner.

#### Note:

- The **[ENCODER]** knob only works in frequency display and for transmission power, modulation factor, and BPF adjustments.
- When you press the **[OK]** key, the adjusted value is set and adjustment mode moves to the next item, but if you press the **[ESC]** key, the adjusted value is not set.
- To end adjustment mode, switch off the power.

## ADJUSTMENT

### Common section

| Item                  | Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Measurement          |      |                           | Adjustment       |                   |                           | Specifications/<br>Remarks |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------|---------------------------|------------------|-------------------|---------------------------|----------------------------|
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Test-<br>equipment   | Unit | Terminal                  | Unit             | Parts             | Method                    |                            |
| 1. Setting            | 1) Power voltage: 13.8V<br>2) VOL, SQL knob: MIN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      |      |                           |                  |                   |                           |                            |
| 2. Reset              | <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><b>■ Partial Reset (VFO)</b><br/>Use to initialize all settings except the memory channels, the Call channel, the PM channels, and Memory Channel Lockout.</p> <p>1 Press [VFO]+ POWER ON.<br/>• A confirmation message appears.</p>  <p>2 Press [OK].</p> </div> <div style="width: 30%;"> <p><b>■ Full Reset (Memory)</b><br/>Use to initialize all settings that you have customized.</p> <p>1 Press [MR]+ POWER ON.<br/>• A confirmation message appears.</p>  <p>2 Press [OK].</p> </div> <div style="width: 30%;"> <p><b>■ Hard Reset</b><br/>You can also use the RESET switch to initialize settings. Push the switch momentarily to do Partial Reset or press it for 1 second or longer to do Full Reset. No confirmation message appears. Use this switch when the microcomputer and/or the memory chip malfunction because of ambient factors.</p>  <p>Reset with the test pencil removed.</p> </div> </div> |                      |      |                           |                  |                   |                           |                            |
| 3. Lock voltage check | 1) VHF band<br>FREQ.: 146.050MHz:K,M<br>FREQ.: 145.050MHz:E<br><br>2) UHF band<br>FREQ.: 444.050MHz:K<br>FREQ.: 435.050MHz:M,E<br><br>3) UHF band<br>FREQ.: 443.980MHz:K<br>FREQ.: 434.980MHz:M,E<br>transmission<br><br>4) VHF band<br>FREQ.: 145.980MHz:K,M<br>FREQ.: 144.980MHz:E<br>transmission                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | D.V.M                |      | TX-RX (A/3)               | CVV (TP6)        | Check             |                           | about 2.5V                 |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |      |                           | CVU (TP7)        |                   |                           | about 4.0V                 |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Power Meter<br>D.V.M |      | Rear panel<br>TX-RX (A/3) | ANT<br>CVU (TP7) |                   |                           | about 3.0V                 |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |      |                           | CVV (TP6)        |                   |                           | about 2.0V                 |
| 4. BPF Adjust         | 1) FREQ.: 146.050MHz:K,M<br>FREQ.: 145.050MHz:E<br>SSG: -93dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |      |                           | TX-RX (A/3)      | L43<br>L48<br>L52 | Voltage max               | 2.5V or more               |
| 5. BPF Write          | Switch to adjustment mode and carry out the operations for item F. SSG: -93dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SSG<br>D.V.M         |      | Rear panel<br>TX-RX (A/3) | ANT<br>SM        | Display           | Encoder<br>[OK] key write | Voltage max                |

## ADJUSTMENT

### Receiver section

| Item                                                  | Condition                                                                                                                                                                                    | Measurement                                         |               |               | Adjustment |          |        | Specifications/<br>Remarks                         |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------------|---------------|------------|----------|--------|----------------------------------------------------|
|                                                       |                                                                                                                                                                                              | Test-<br>equipment                                  | Unit          | Terminal      | Unit       | Parts    | Method |                                                    |
| 1. High level<br>input S/N and<br>distortion<br>check | 1) VHF band<br>FREQ.:146.050MHz:K,M<br>FREQ.:145.050MHz:E<br>SSG:— 53dBm<br>AF output:2.63V/8 Ω                                                                                              | SSG<br>Oscilloscope<br>AFV.M<br>Distortion<br>meter | Rear<br>panel | ANT<br>EXT.SP |            |          | Check  | S/N 42dB or more<br>Distortion rate:4% or less     |
|                                                       | 2) UHF band<br>FREQ.:444.050MHz:K<br>FREQ.:435.050MHz:M,E<br>SSG:— 53dBm<br>AF output:2.63V/8 Ω                                                                                              |                                                     |               |               |            |          |        |                                                    |
| 2. Sensitivity<br>check                               | 1) VHF band<br>FREQ.:146.050MHz:K,M<br>FREQ.:145.050MHz:E<br>FREQ.:144.050MHz<br>FREQ.:147.925MHz:K,M<br>FREQ.:145.925MHz:E<br>SSG:— 120dBm:M,E<br>SSG:— 119dBm:K<br>AF output:0.63V/8 Ω     | SSG<br>Distortion<br>meter<br>Oscilloscope<br>AFV.M | Rear<br>panel | ANT<br>EXT.SP |            |          | Check  | SINAD 12dB or more                                 |
|                                                       | 2) UHF band<br>FREQ.:444.050MHz:K<br>FREQ.:435.050MHz:M,E<br>FREQ.:438.050MHz:K<br>FREQ.:430.050MHz:M,E<br>FREQ.:449.975MHz:K<br>FREQ.:439.925MHz:M,E<br>SSG:— 122dBm<br>AF output:0.63V/8 Ω |                                                     |               |               |            |          |        |                                                    |
| 3. Squelch<br>write                                   | Switch to adjustment mode and<br>carry out the operations for Item A.<br>1) VHF band<br>FREQ.:146.050MHz:K,M<br>FREQ.:145.050MHz:E<br>SSG:— 130dBm:M,E<br>SSG:— 127dBm:K                     | SSG                                                 | Rear<br>panel | ANT<br>EXP.SP | Display    | [OK] key | Write  |                                                    |
|                                                       | 2) UHF band<br>FREQ.:444.050MHz:K<br>FREQ.:435.050MHz:M,E<br>SSG:— 130dBm                                                                                                                    |                                                     |               |               |            |          |        |                                                    |
| 4. Squelch<br>check                                   | 1) VHF band<br>FREQ.:146.050MHz:K,M<br>FREQ.:145.050MHz:E<br>SSG:OFF<br>Set to the point where noise will<br>be erased by turning the squelch<br>knob.                                       | SSG<br>Oscilloscope                                 | Rear<br>panel | ANT<br>EXP.SP | Display    |          | Check  | Knob position:<br>8:00 ~ 11:00<br>Busy lights off. |
|                                                       | 2) SSG:— 126dBm:M,E<br>SSG:— 125dBm:K                                                                                                                                                        |                                                     |               |               |            |          |        | Squelch open. BUSY lights on.                      |
|                                                       | 3) Squelch knob:<br>clockwise MAX                                                                                                                                                            |                                                     |               |               |            |          |        | AF output disappear.<br>BUSY lights off.           |
|                                                       | 4) UHF band<br>FREQ.:444.050MHz:K<br>FREQ.:435.050MHz:M,E<br>Set to the point where noise will<br>be erased by turning the squelch<br>knob.                                                  |                                                     |               |               |            |          |        | Knob position:<br>8:00 ~ 11:00<br>Busy lights off. |
|                                                       | 5) SSG:— 126dBm                                                                                                                                                                              |                                                     |               |               |            |          |        | Squelch open. BUSY lights on.                      |
|                                                       | 6) Squelch knob:<br>clockwise MAX                                                                                                                                                            |                                                     |               |               |            |          |        | AF output disappear.<br>BUSY lights off.           |

## ADJUSTMENT

### Receiver section

| Item             | Condition                                                                                                          | Measurement    |            |          | Adjustment |          |        | Specifications/<br>Remarks           |
|------------------|--------------------------------------------------------------------------------------------------------------------|----------------|------------|----------|------------|----------|--------|--------------------------------------|
|                  |                                                                                                                    | Test-equipment | Unit       | Terminal | Unit       | Parts    | Method |                                      |
| 5. S-meter write | Switch to adjustment mode and carry out the operations for item 3.C                                                | SSG            | Rear panel | ANT      | Display    | [OK] key | Write  | S-meter one segment (S1) lights on.  |
|                  | 1) 144MHz band (S-1)<br>FREQ.:148.050MHz:K,M<br>FREQ.:145.050MHz:E<br>SSG: -118dBm                                 |                |            |          |            |          |        |                                      |
|                  | 2) 144MHz band (S.ALL)<br>SSG: -96dBm                                                                              |                |            |          |            |          |        | S-meter all segment (ALL) lights on. |
|                  | 3) 430MHz band (S-1)<br>FREQ.:444.050MHz:K<br>FREQ.:435.050MHz:M,E<br>SSG: -118dBm                                 |                |            |          |            |          |        | S-meter one segment (S1) lights on.  |
|                  | 4) 430MHz band (S.ALL)<br>SSG: -96dBm                                                                              |                |            |          |            |          |        | S-meter all segment (ALL) lights on. |
|                  | 5) 118MHz band (S-1)<br>FREQ.:130.050MHz<br>SSG: -100dBm                                                           |                |            |          |            |          |        | S-meter one segment (S1) lights on.  |
|                  | 6) 118MHz band (S.ALL)<br>SSG: -83dBm                                                                              |                |            |          |            |          |        | S-meter all segment (ALL) lights on. |
|                  | 7) 300MHz band (S-1)<br>FREQ.:370.100MHz<br>SSG: -110dBm                                                           |                |            |          |            |          |        | S-meter one segment (S1) lights on.  |
|                  | 8) 300MHz band (S.ALL)<br>SSG: -90dBm                                                                              |                |            |          |            |          |        | S-meter all segment (ALL) lights on. |
|                  | 9) 800MHz band (S-1)<br>FREQ.:865.975MHz:K<br>FREQ.:870.100MHz:M,E<br>SSG: -105dBm                                 |                |            |          |            |          |        | S-meter one segment (S1) lights on.  |
|                  | 10) 800MHz band (S.ALL)<br>SSG: -85dBm                                                                             |                |            |          |            |          |        | S-meter all segment (ALL) lights on. |
| 6. S-meter check | 1) FREQ.:146.050MHz:K,M<br>FREQ.:145.050MHz:E<br>FREQ.:444.050MHz:K<br>FREQ.:435.050MHz:M,E<br>SSG: -114 ~ -124dBm | SSG            | Rear panel | ANT      | Display    | S-meter  | Check  | S-meter one segment (S1) lights on.  |
|                  | 2) FREQ.:146.050MHz:K,M<br>FREQ.:145.050MHz:E<br>FREQ.:444.050MHz:K<br>FREQ.:435.050MHz:M,E<br>SSG: -90 ~ -102dBm  |                |            |          |            |          |        | S-meter all segment (ALL) lights on. |

## ADJUSTMENT

### Transmission section

| Item                                        | Condition                                                                                                                                                               | Measurement               |               |          | Adjustment     |                    |                                | Specifications/<br>Remarks                                                                                                        |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------|----------|----------------|--------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
|                                             |                                                                                                                                                                         | Test-<br>equipment        | Unit          | Terminal | Unit           | Parts              | Method                         |                                                                                                                                   |
| 1. Transmission<br>frequency<br>Adjust      | 1) UHF band<br>FREQ.:444.000MHz:K<br>FREQ.:435.000MHz:M,E                                                                                                               | f.counter<br>Dummy        | Rear<br>panel | ANT      | TX-RX<br>(A/3) | TC1                | 444.000MHz:K<br>435.000MHz:M,E | Not warm up the set.<br>$\pm 500\text{Hz}$                                                                                        |
| 2-1. POWER<br>VHF band<br>write or<br>check | For 1), 2) and 4), switch to adjustment<br>mode and carry out the operations for item D.<br>1) POWER:LOW<br>FREQ.:144.000MHz:K,M<br>FREQ.:144.975MHz:E<br>Transmission. | Power<br>meter<br>Ammeter | Rear<br>panel | ANT      | Display        | Encode<br>[OK] key | UP/DOWN<br>write               | 5.0W $\pm$ 0.5W                                                                                                                   |
|                                             | 2) POWER:MID<br>Transmission.                                                                                                                                           |                           |               |          |                |                    |                                | 12W $\pm$ 1.0W                                                                                                                    |
|                                             | 3) POWER:MAX<br>Transmission.                                                                                                                                           |                           |               |          |                |                    |                                | 48W or more                                                                                                                       |
|                                             | 4) POWER:HI<br>Transmission.                                                                                                                                            |                           |               |          | Display        | Encode<br>[OK] key | UP/DOWN<br>write               | M4:22.5W $\pm$ 1.0W<br>K,E,M2:MAX Power 52W or more.<br>50.0W $\pm$ 1.0W<br>MAX Power 48W or more.<br>(MAX Power - 2W) $\pm$ 1.0W |
|                                             | 5) FREQ.:144.000MHz<br>FREQ.:147.975MHz: (K,M)<br>FREQ.:145.975MHz: (E)<br>POWER:HI<br>Transmission.                                                                    |                           |               |          |                |                    | Check                          | K,E,M2:4 ~ 60W<br>M4:20 ~ 25W                                                                                                     |
|                                             | 6) POWER:MID<br>Transmission.                                                                                                                                           |                           |               |          |                |                    |                                | 10 ~ 14W                                                                                                                          |
|                                             | 7) POWER:LOW<br>Transmission.                                                                                                                                           |                           |               |          |                |                    |                                | 3 ~ 10W                                                                                                                           |
|                                             |                                                                                                                                                                         |                           |               |          |                |                    |                                |                                                                                                                                   |
| 2-2. POWER<br>UHF band<br>write or<br>check | For 1), 2) and 4), switch to adjustment<br>mode and carry out the operations for item D.<br>1) POWER:LOW<br>FREQ.:444.000MHz:K<br>FREQ.:435.000MHz:M,E<br>Transmission. | Power<br>meter            | Rear<br>panel | ANT      | Display        | Encode<br>[OK] key | UP/DOWN<br>write               | 5.0W $\pm$ 0.5W                                                                                                                   |
|                                             | 2) POWER:MID<br>FREQ.:438.000MHz:K<br>FREQ.:430.000MHz:M,E<br>Transmission.                                                                                             |                           |               |          |                |                    |                                | 12.0W $\pm$ 1.0W                                                                                                                  |
|                                             | 3) POWER:MAX<br>FREQ.:449.975MHz:K<br>FREQ.:439.975MHz:M,E<br>Transmission.                                                                                             |                           |               |          |                |                    |                                | 33W or more                                                                                                                       |
|                                             | 4) POWER:HI<br>FREQ.:449.975MHz:K<br>FREQ.:439.975MHz:M,E<br>Transmission.                                                                                              |                           |               |          | Display        | Encode<br>[OK] key | UP/DOWN<br>write               | M4:22.5W $\pm$ 1.0W<br>K,E,M2:MAX Power 37W or more.<br>35.0W $\pm$ 1.0W<br>MAX Power 33W or more.<br>(MAX Power - 2W) $\pm$ 1.0W |
|                                             | 5) FREQ.:438.000MHz:K<br>FREQ.:430.000MHz:M,E<br>FREQ.:449.975MHz:K<br>FREQ.:439.975MHz:M,E<br>POWER:HI<br>Transmission.                                                |                           |               |          |                |                    | Check                          | K,E,M2:28 ~ 42W<br>M4:20 ~ 25W                                                                                                    |
|                                             | 6) POWER:MID<br>Transmission.                                                                                                                                           |                           |               |          |                |                    |                                | 10 ~ 14W                                                                                                                          |
|                                             | 7) POWER:LOW<br>Transmission.                                                                                                                                           |                           |               |          |                |                    |                                | 3 ~ 10W                                                                                                                           |
|                                             |                                                                                                                                                                         |                           |               |          |                |                    |                                |                                                                                                                                   |

## ADJUSTMENT

### Transmission section

| Item                  | Condition                                                                                                                                                                                           | Measurement                                       |               |          | Adjustment |                    |                  | Specifications/<br>Remarks                                         |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------|----------|------------|--------------------|------------------|--------------------------------------------------------------------|
|                       |                                                                                                                                                                                                     | Test-<br>equipment                                | Unit          | Terminal | Unit       | Parts              | Method           |                                                                    |
| 3. DEV write or check | For 1) and 3), switch to adjustment mode and carry out the operations for item E.<br>1) VHF band<br>FREQ.:146.000MHz:K,M<br>FREQ.:144.975MHz:E<br>AG:1kHz25mV:E<br>AG:1kHz250mV:K,M<br>Transmission | Power meter<br>Linear<br>detector<br>Oscilloscope | Rear<br>panel | ANT      | Display    | Encode<br>[OK] key | UP/DOWN<br>Write | $\pm 4.2\text{kHz} \pm 0.2\text{kHz}$                              |
|                       | 2) Down AG output from the above state by<br>20dB (1kHz/2.5mV):E<br>20dB (1kHz/5.0mV):K,M<br>Transmission                                                                                           | AG<br>AF V.M                                      |               | MIC      |            |                    | Check            | $\pm 2.3 \sim 4.2\text{kHz}:E$<br>$\pm 2.4 \sim 4.1\text{kHz}:K,M$ |
|                       | 3) UHF band<br>FREQ.:444.000MHz:K<br>FREQ.:435.000MHz:M,E<br>AG:1kHz25mV:E<br>AG:1kHz250mV:K,M<br>Transmission                                                                                      |                                                   |               |          | Display    | Encode<br>[OK] key | UP/DOWN<br>write | $\pm 4.2\text{kHz} \pm 0.2\text{kHz}$                              |
|                       | 4) Down AG output from the above state by<br>20dB (1kHz/2.5mV):E<br>20dB (1kHz/5.0mV):K,M<br>Transmission                                                                                           |                                                   |               |          |            |                    | Check            | $\pm 2.3 \sim 4.2\text{kHz}:E$<br>$\pm 2.4 \sim 4.1\text{kHz}:K,M$ |
| 4. TONE DEV check     | 1) VHF band<br>FREQ.:145.100MHz<br>TONE:88.5Hz<br>Transmission                                                                                                                                      | Power meter<br>Linear<br>detector<br>Oscilloscope | Rear<br>panel | ANT      |            |                    | Check            | $\pm 0.5 \sim 1.3\text{kHz}$                                       |
|                       | 2) UHF band<br>FREQ.:445.100MHz:K<br>FREQ.:435.100MHz:M,E<br>TONE:88.5Hz<br>Transmission                                                                                                            |                                                   |               |          |            |                    |                  |                                                                    |
| 5. Protection check   | 1) VHF band<br>FREQ.:146.000MHz:K,M<br>FREQ.:144.975MHz:E<br>Power:Hi<br>ANT:short circuit and open<br>Transmission                                                                                 | Ammeter                                           |               |          |            |                    | Check            | 12.0A or less                                                      |
|                       | 2) UHF band<br>FREQ.:444.000MHz:K<br>FREQ.:435.000MHz:M,E<br>Power:Hi<br>ANT:short circuit and open<br>Transmission                                                                                 |                                                   |               |          |            |                    |                  | 12.0A or less                                                      |

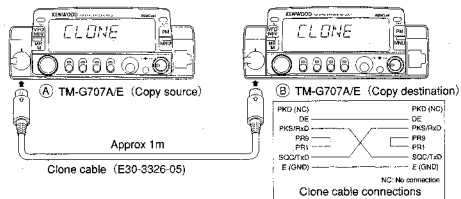
# TM-G707A/E

## ADJUSTMENT

### [Reference]

#### Clone operation method

#### ● Connection diagram



#### ● Operations

- ① Connect the data terminals on the copy source set and the copy destination set with the clone cable.
- ② Start the clone function on the copy destination set by switching on its power while holding down the [F] and [REV] keys. "CLONE" appears is displayed.
- ③ Start the clone function on the copy source set by switching on its power while holding down the [F] and [REV] keys. "CLONE" appears is displayed.
- ④ Press the [CALL] key on the copy source set to start data transfer. "SEND" is displayed.

SEND

- ⑤ When clone processing ends, [END] is displayed on the copy source set.

END

- ⑥ If clone processing fails, [ERROR] is displayed on the copy source set.

ERROR

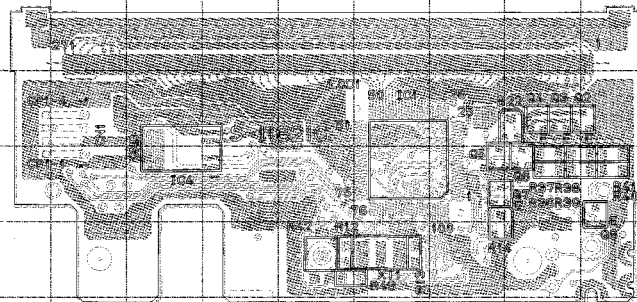
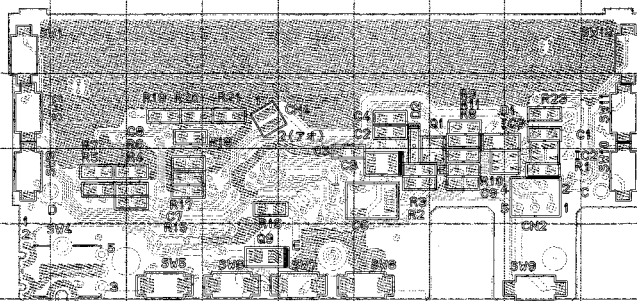
- ⑦ Switching the power OFF, then ON again returns the sets to normal operation.

#### Note:

- All the data in the copy destination set is overwritten.
- If clone operation are stopped midway, the data in the copy destination set may be lost.
- The two TM-G707 transceivers must be the same market versions to use the Clone function.

## PC BOARD VIEWS TM-G707A/E

### LCD ASSY (B38-0797-35)

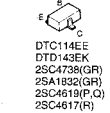
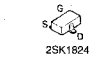
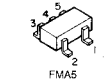
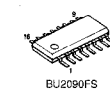
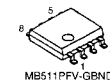
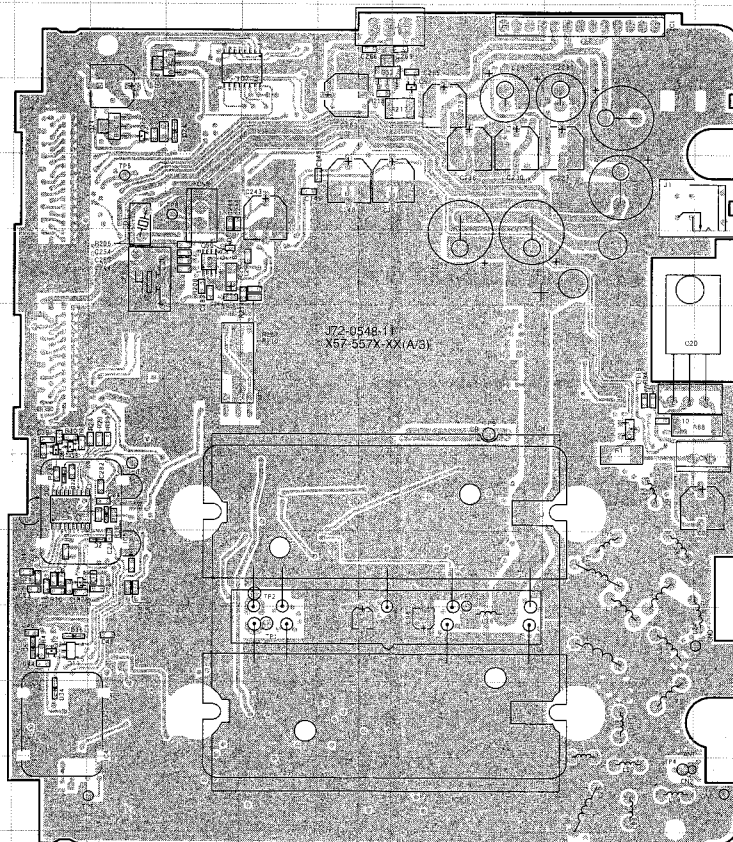
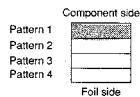


# TM-G707A/E PC BOARD VIEW

TX-RX UNIT (A/3) (X57-557X-XX) 0-11:K, 0-22:M2, 0-24:M4, 2-71:E, E3 (Component side view)

TX-RX UNIT (A/3)  
(Component side)

| Ref. NO. | Address |
|----------|---------|
| IC1      | 9F      |
| IC4      | 12F     |
| IC5      | 10G     |
| IC7      | 3I      |
| IC9      | 6H      |
| IC10     | 3G      |
| Q1       | 8N      |
| Q3       | 10G     |
| Q5       | 8F      |
| Q6       | 8F      |
| Q11      | 11G     |
| Q12      | 11F     |
| Q20      | 7O      |
| Q23      | 4G      |
| Q24      | 4G      |
| Q50      | 6H      |
| Q51      | 3K      |
| Q53      | 3J      |
| D2       | 10G     |
| D3       | 9G      |
| D4       | 9G      |
| D5       | 11F     |
| D24      | 4H      |
| D34      | 12F     |
| D35      | 11F     |



# PC BOARD VIEW TM-G707A/E

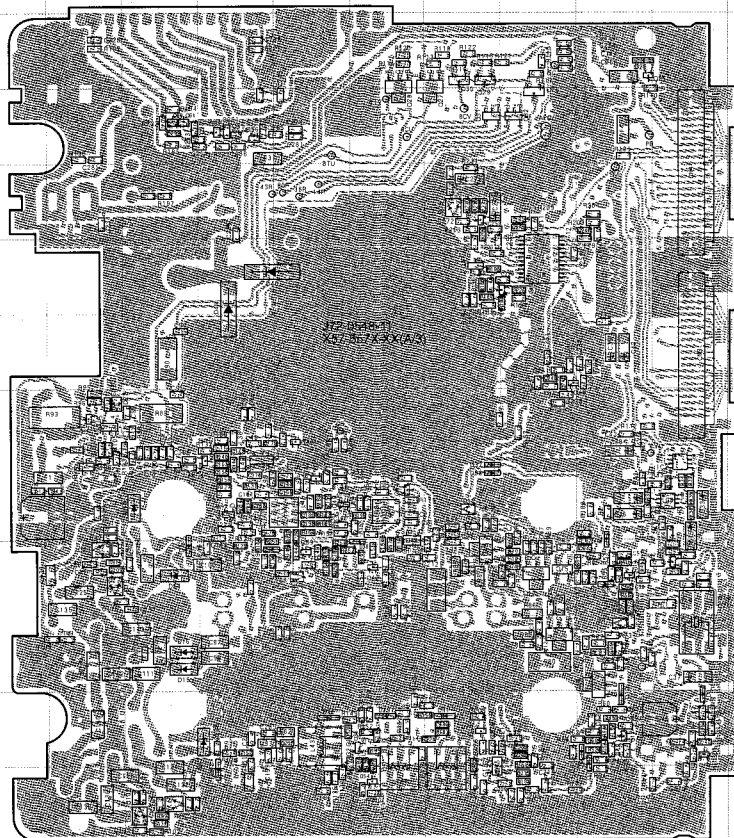
TX-RX UNIT (A/3) (X57-557X-XX) 0-11:K, 0-22:M2, 0-24:M4, 2-71:E, E3 (Foil side view)

TX-RX UNIT (A/3)  
(Foil side)

| Ref. NO. | Address |
|----------|---------|
| IC2      | 9N      |
| IC3      | 9N      |
| IC6      | 8G      |
| IC8      | 6M      |
| Q2       | 10N     |
| Q4       | 13O     |
| Q13      | 12N     |
| Q14      | 10N     |
| Q15      | 10M     |
| Q16      | 12M     |
| Q17      | 10L     |
| Q18      | 11M     |
| Q19      | 10L     |
| Q21      | 8G      |
| Q22      | 9F      |
| Q25      | 4N      |
| Q26      | 4M      |
| Q27      | 4K      |
| Q28      | 4K      |
| Q29      | 4L      |
| Q30      | 4L      |
| Q31      | 4L      |
| Q32      | 4L      |
| Q33      | 9H      |
| Q34      | 9H      |
| Q35      | 9J      |
| Q36      | 12J     |
| Q37      | 9I      |
| Q38      | 8I      |
| Q39      | 10I     |
| Q40      | 9J      |
| Q42      | 10J     |
| Q43      | 12L     |
| Q44      | 9K      |
| Q45      | 13L     |
| Q46      | 10K     |
| Q47      | 8L      |
| Q48      | 6L      |
| Q49      | 8M      |
| Q52      | 5L      |
| Q54      | 13J     |
| Q55      | 4H      |
| Q56      | 4H      |
| Q60      | 4G      |
| Q61      | 4H      |
| Q62      | 4G      |
| D1       | 12O     |
| D6       | 13M     |
| D7       | 13M     |
| D8       | 10M     |
| D9       | 10M     |
| D10      | 12N     |
| D11      | 11M     |
| D12      | 9L      |
| D13      | 10H     |

| Ref. NO. | Address |
|----------|---------|
| D14      | 10H     |
| D15      | 11H     |
| D16      | 11H     |
| D17      | 13H     |
| D18      | 9G      |
| D19      | 10G     |
| D20      | 13H     |
| D21      | 10G     |
| D22      | 8G      |
| D23      | 13G     |
| D25      | 3N      |
| D27      | 10I     |
| D28      | 12J     |
| D29      | 12K     |
| D30      | 10J     |
| D31      | 12K     |
| D33      | 10I     |
| D37      | 9L      |
| D38      | 9L      |
| D39      | 5K      |
| D40      | 6I      |
| D41      | 7H      |
| D42      | 13H     |

部品面  
パターン1  
パターン2  
パターン3  
パターン4  
ハンタ面



TK10930V



DA221



25C4093



FMA5



25B1132(Q,R)  
25C2854  
25C3357



25K879(Y)  
35K241(R)



SGM2014M



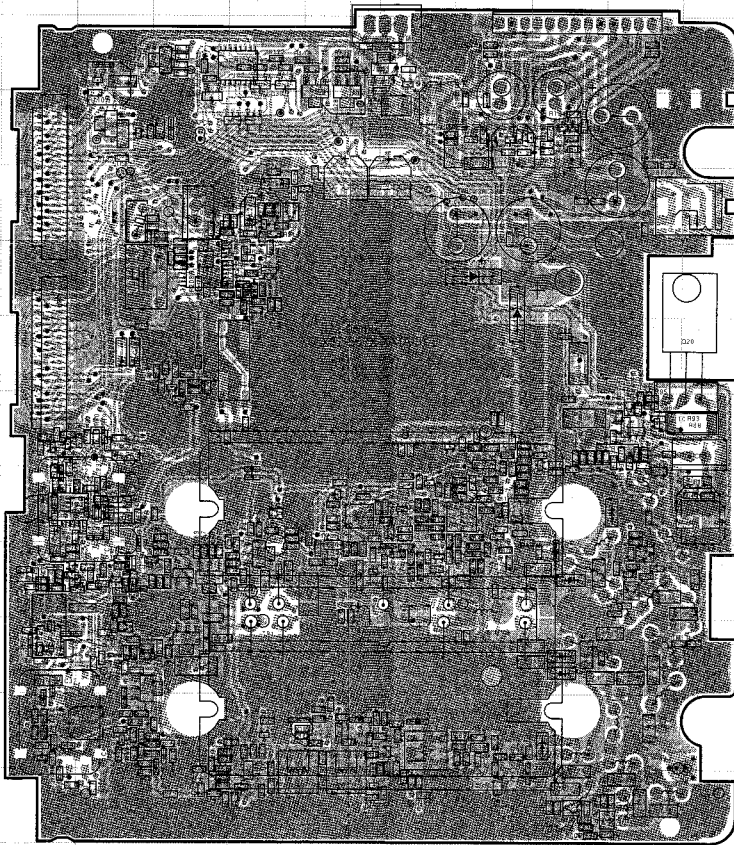
DTC114EE  
DTD144EU  
25A1362(Y)  
25C4619(P,Q)  
25C4738(G,F)  
25C4617(R)

# TM-G707A/E PC BOARD VIEW

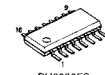
TX-RX UNIT (A/3) (X57-557X-XX) 0-11:K, 0-22:M2, 0-24:M4, 2-71:E, E3 (Component side view) + (Foil side view)

TX-RX UNIT (A/3)  
(Component side) + (Foil side)

| Ref. NO. | Address | Ref. NO. | Address |
|----------|---------|----------|---------|
| IC1      | 9G      | Q49      | 8H      |
| IC2      | 9G      | Q50      | 8H      |
| IC3      | 9G      | Q51      | 3K      |
| IC4      | 12F     | Q52      | 5I      |
| IC5      | 9G      | Q53      | 3J      |
| IC6      | 8N      | Q54      | 13K     |
| IC7      | 3I      | Q55      | 4L      |
| IC8      | 6H      | Q56      | 4L      |
| IC9      | 6H      | Q60      | 4M      |
| IC10     | 3G      | Q61      | 4L      |
| Q1       | 8N      | Q62      | 4M      |
| Q2       | 10G     | D1       | 12F     |
| Q3       | 10G     | D2       | 10G     |
| Q4       | 13F     | D3       | 9G      |
| Q5       | 8F      | D4       | 9G      |
| Q6       | 8F      | D5       | 11F     |
| Q11      | 11G     | D6       | 13H     |
| Q12      | 11F     | D7       | 13H     |
| Q13      | 12G     | D8       | 10H     |
| Q14      | 10G     | D9       | 10H     |
| Q15      | 10H     | D10      | 12G     |
| Q16      | 12H     | D11      | 11H     |
| Q17      | 10I     | D12      | 9I      |
| Q18      | 11H     | D13      | 10M     |
| Q19      | 10I     | D14      | 10M     |
| Q20      | 7O      | D15      | 11M     |
| Q21      | 8N      | D16      | 11M     |
| Q22      | 9O      | D17      | 13M     |
| Q23      | 4G      | D18      | 9M      |
| Q24      | 4G      | D19      | 10N     |
| Q25      | 4G      | D20      | 13M     |
| Q26      | 4H      | D21      | 10N     |
| Q27      | 4J      | D22      | 8N      |
| Q28      | 4K      | D23      | 13N     |
| Q29      | 4I      | D24      | 4H      |
| Q30      | 4I      | D25      | 3G      |
| Q31      | 4I      | D27      | 10L     |
| Q32      | 4I      | D28      | 12K     |
| Q33      | 9M      | D29      | 12J     |
| Q34      | 9M      | D30      | 10K     |
| Q35      | 9K      | D31      | 12J     |
| Q36      | 12K     | D33      | 10L     |
| Q37      | 9L      | D34      | 12F     |
| Q38      | 8L      | D35      | 11F     |
| Q39      | 10L     | D37      | 9I      |
| Q40      | 9K      | D38      | 9I      |
| Q42      | 10K     | D39      | 5J      |
| Q43      | 12I     | D40      | 6L      |
| Q44      | 9J      | D41      | 7M      |
| Q45      | 13I     | D42      | 13M     |
| Q46      | 10J     |          |         |
| Q47      | 6I      |          |         |
| Q48      | 6I      |          |         |



MB511PFV-GBND



BU2090FS



TA78L05F



FMA5



2SB1132(Q,R)  
2SC2954  
2SC3357



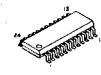
2SK1824



2SB1565(E,F)



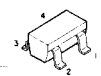
DTC114EE  
DTC114EU  
DTD143EK  
2SA1362(Y)  
2SA1832(GR)  
2SC4619(P,C)  
2SC4738(GR)  
2SC4617(R)



TK10930V



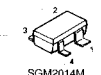
DA221



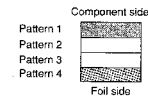
2SC4093



2SK879(Y)  
3SK241(R)



SGM2014M



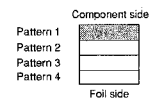
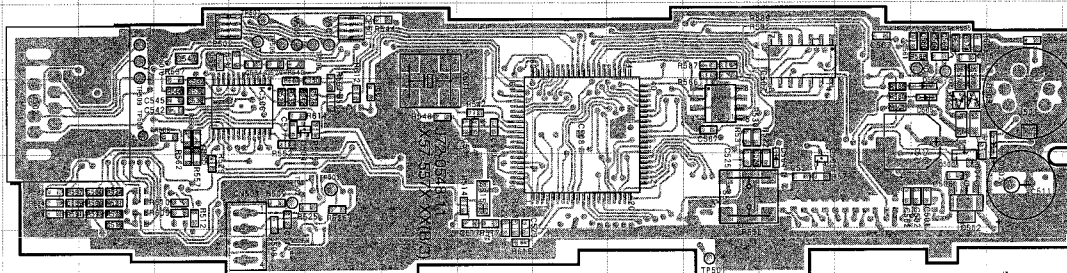
● Connect 1 and 4.

# PC BOARD VIEW TM-G707A/E

## TX-RX UNIT (B/3) (X57-557X-XX) 0-11:K, 0-22:M2, 0-24:M4, 2-71:E, E3 (Component side view)

TX-RX UNIT (B/3)  
(Component side view)

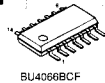
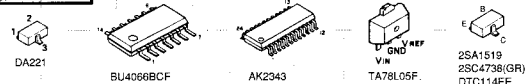
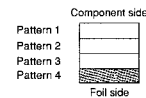
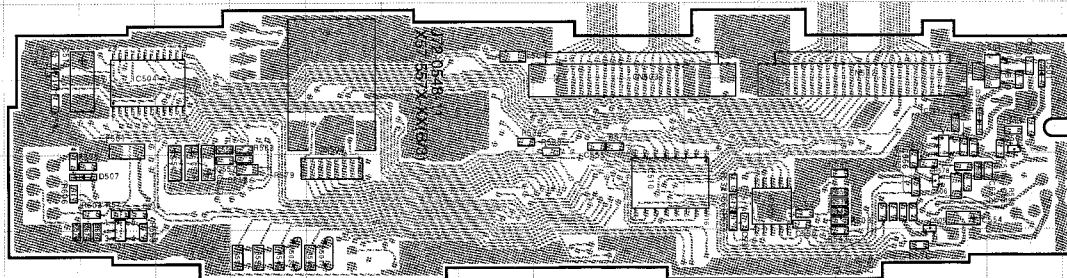
| Ref. NO. | Address |
|----------|---------|
| IC502    | 50      |
| IC506    | 4F      |
| IC507    | 3M      |
| IC508    | 4J      |
| IC511    | 4L      |
| Q502     | 50      |
| Q503     | 5M      |
| Q504     | 4F      |
| D502     | 4P      |
| D504     | 5M      |
| D505     | 4D      |
| D506     | 4D      |
| D508     | 4D      |
| D509     | 4D      |



## TX-RX UNIT (B/3) (X57-557X-XX) 0-11:K, 0-22:M2, 0-24:M4, 2-71:E, E3 (Foil side)

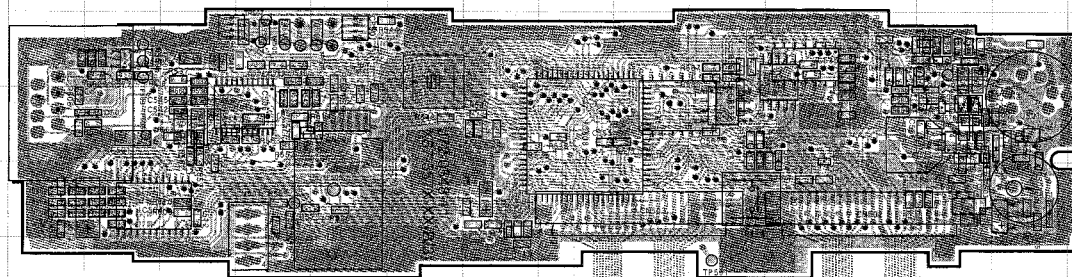
TX-RX UNIT (B/3)  
(Foil side)

| Ref. NO. | Address |
|----------|---------|
| IC501    | 8P      |
| IC503    | 90      |
| IC504    | 9D      |
| IC506    | 10C     |
| IC509    | 11D     |
| IC510    | 10K     |
| Q501     | 9P      |
| Q505     | 11O     |
| D501     | 9P      |
| D503     | 9C      |
| D507     | 10D     |



# TM-G707A/E PC BOARD VIEW

TX-RX UNIT (B/3) (X57-557X-XX) 0-11:K, 0-22:M2, 0-24:M4, 2-71:E, E3 (Component side view) + (Foil side view)



Component  
Pattern 1  
Pattern 2  
Pattern 3  
Pattern 4  
Foil side

● Connect 1 and 4



DA221



BU4066BCF



AK2343



TA78L06F



2SA1519  
2SC4738(GR)  
DTC114EE



PST9130NR  
TA75S393F



TC74HC4050AF

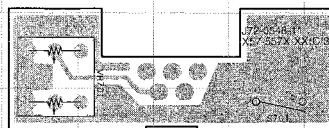


TA78L06F

TX-RX UNIT (B/3)  
(Component side) + (Foil side)

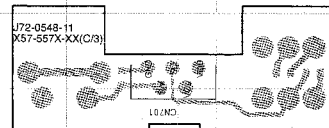
| Ref. NO. | Address |
|----------|---------|
| IC501    | 5P      |
| IC502    | 5D      |
| IC503    | 4D      |
| IC504    | 5D      |
| IC506    | 4F      |
| IC507    | 3M      |
| IC508    | 4J      |
| IC509    | 3D      |
| IC510    | 4K      |
| IC511    | 4L      |
| Q501     | 4P      |
| Q502     | 5O      |
| Q503     | 5M      |
| Q504     | 4F      |
| Q505     | 3O      |
| Q506     | 10O     |
| D501     | 5P      |
| D502     | 4P      |
| D503     | 5O      |
| D504     | 5M      |
| D505     | 4O      |
| D506     | 4O      |
| D507     | 4D      |
| D508     | 4O      |
| D509     | 4O      |

TX-RX UNIT (C/3) (Component side view)  
(X57-557X-XX)0-11:K, 0-22:M2, 0-24:M4, 2-71:E, E3



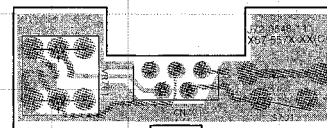
Component side  
Pattern 1  
Pattern 2  
Pattern 3  
Pattern 4  
Foil side

TX-RX UNIT (C/3) (Foil side)  
(X57-557X-XX)0-11:K, 0-22:M2, 0-24:M4, 2-71:E, E3



Component side  
Pattern 1  
Pattern 2  
Pattern 3  
Pattern 4  
Foil side

TX-RX UNIT (C/3) (Component side view) + (Foil side view)  
(X57-557X-XX)0-11:K, 0-22:M2, 0-24:M4, 2-71:E, E3



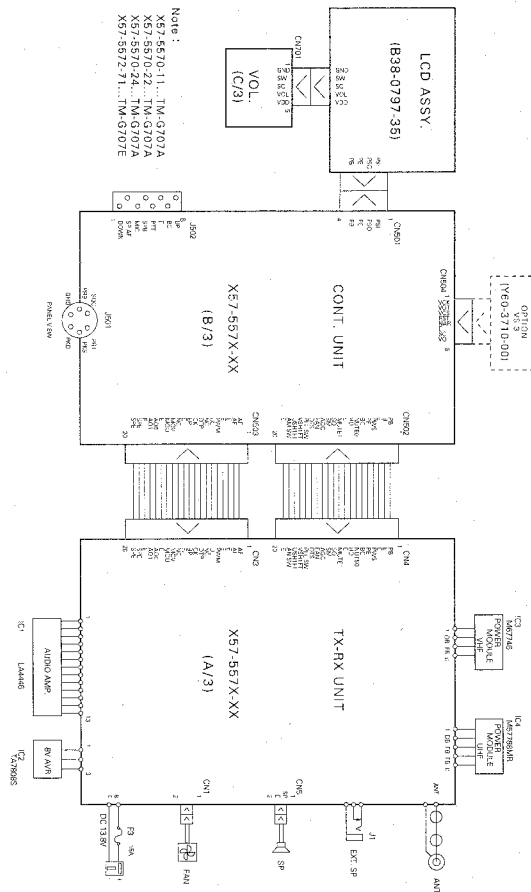
Component side  
Pattern 1  
Pattern 2  
Pattern 3  
Pattern 4  
Foil side

### BLOCK DIAGRAM



# TM-G707A/E

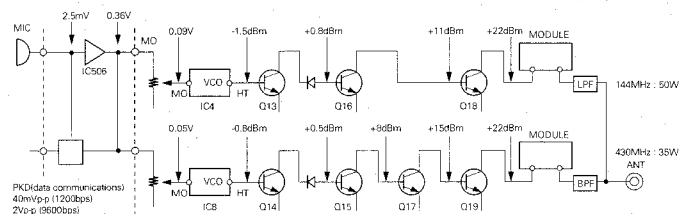
## WIRING DIAGRAM



# TM-G707A/E

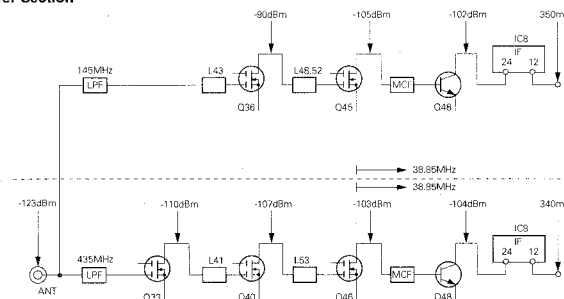
## LEVEL DIAGRAM

### Transmitter Section



- Note 1: Set the AG so that the microphone socket input is 3kHz deviation at 1kHz modulation. The data communication connector input level is 3kHz deviation at 1kHz modulation for 1200bps and 2kHz deviation at 1kHz modulation for 9600bps.
- Note 2: The transmit frequency is 145.0 or 435.0MHz.
- Note 3: The HI/MD/LOW switch is set to HI.
- Note 4: The measurements with the power meter, except for the ANT connector, are the values with the APC off.

### Receiver Section

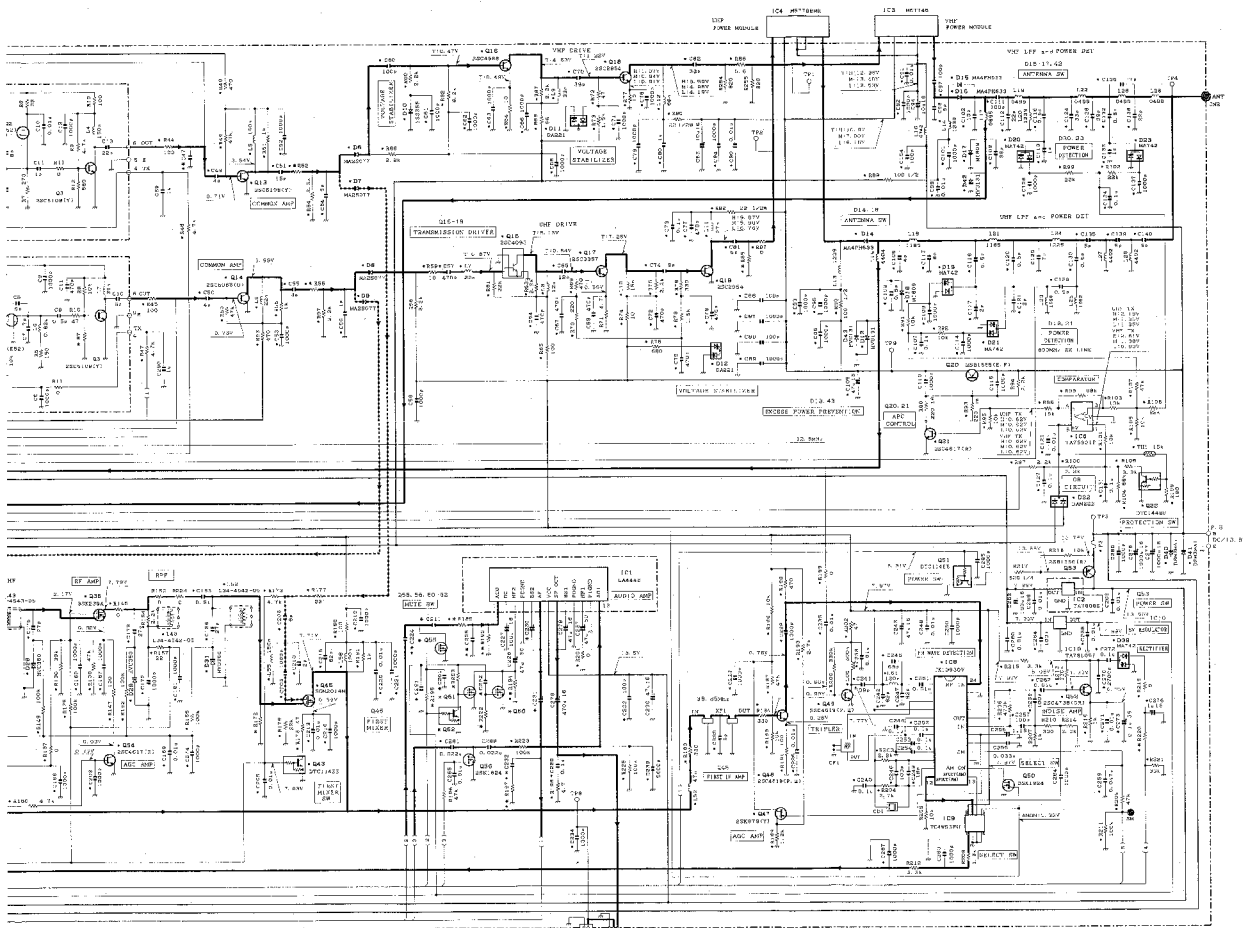


- Note 1: The 12dB SINAD levels were plotted using a standard signal generator through a 0.01μF ceramic capacitor at each point from the RF to the first IF.
- Note 2: The AF levels were measured with an AF voltmeter when the -73dBm (50μV) standard signal generator signal modulated by a 1kHz modulation frequency and a 3kHz deviation was received and the AF output was adjusted to 0.63V/8Ω by the AF VR.



# TM-G707A/E

## SCHEMATIC DIAGRAM



|      |           |                         |            |      |                    |                             |         |                         |        |         |        |
|------|-----------|-------------------------|------------|------|--------------------|-----------------------------|---------|-------------------------|--------|---------|--------|
| Q11  | 2SC2097   | Q26, 28, 42, 44, 51, 62 | 17C1149F   | Q47  | (NONE)             | D1, 2, 8, 9, 17, 30, 37, 39 | HAZ0077 | D17, 18                 | 1N4001 | D40, 41 | 1N4001 |
| Q12  | 2N3638    | Q29, 30, 31             | 18A130217Y | Q48  | 90V, 50V, 60V, 10V | Q2, 4                       | HAZ0078 | D19, 21, 22, 23, 25, 26 | 1N4001 |         |        |
| Q13  | 2N3638    | Q32, 36, 40             | 18C279A    | Q49  | 100V, 40V          | Q10, 11, 34, 35             | 18C279A | D20, 24                 | 1N4001 |         |        |
| Q14  | 100V, 40V | Q37                     | 18C279A    | Q50  | 100V, 40V          | Q12, 13                     | 18C279A | D21, 22                 | 1N4001 |         |        |
| Q15  | 100V, 40V | Q38, 41                 | 18C279A    | Q51  | 100V, 40V          | Q14, 15, 16                 | 18C279A | D23, 24                 | 1N4001 |         |        |
| Q16  | 100V, 40V | Q39, 42                 | 18C279A    | Q52  | 100V, 40V          | Q17, 18                     | 18C279A | D25, 26                 | 1N4001 |         |        |
| Q17  | 100V, 40V | Q40, 43                 | 18C279A    | Q53  | 100V, 40V          | Q19, 20                     | 18C279A | D27, 28                 | 1N4001 |         |        |
| Q18  | 100V, 40V | Q41, 44                 | 18C279A    | Q54  | 100V, 40V          | Q21, 22                     | 18C279A | D29, 30                 | 1N4001 |         |        |
| Q19  | 100V, 40V | Q42, 45                 | 18C279A    | Q55  | 100V, 40V          | Q23, 24                     | 18C279A | D31, 32                 | 1N4001 |         |        |
| Q20  | 100V, 40V | Q43, 46                 | 18C279A    | Q56  | 100V, 40V          | Q25, 26                     | 18C279A | D33, 34                 | 1N4001 |         |        |
| Q21  | 100V, 40V | Q44, 47                 | 18C279A    | Q57  | 100V, 40V          | Q27, 28                     | 18C279A | D35, 36                 | 1N4001 |         |        |
| Q22  | 100V, 40V | Q45, 48                 | 18C279A    | Q58  | 100V, 40V          | Q29, 30                     | 18C279A | D37, 38                 | 1N4001 |         |        |
| Q23  | 100V, 40V | Q46, 49                 | 18C279A    | Q59  | 100V, 40V          | Q31, 32                     | 18C279A | D39, 40                 | 1N4001 |         |        |
| Q24  | 100V, 40V | Q47, 50                 | 18C279A    | Q60  | 100V, 40V          | Q33, 34                     | 18C279A | D41, 42                 | 1N4001 |         |        |
| Q25  | 100V, 40V | Q48, 51                 | 18C279A    | Q61  | 100V, 40V          | Q35, 36                     | 18C279A | D43, 44                 | 1N4001 |         |        |
| Q26  | 100V, 40V | Q49, 52                 | 18C279A    | Q62  | 100V, 40V          | Q37, 38                     | 18C279A | D45, 46                 | 1N4001 |         |        |
| Q27  | 100V, 40V | Q50, 53                 | 18C279A    | Q63  | 100V, 40V          | Q39, 40                     | 18C279A | D47, 48                 | 1N4001 |         |        |
| Q28  | 100V, 40V | Q51, 54                 | 18C279A    | Q64  | 100V, 40V          | Q41, 42                     | 18C279A | D49, 50                 | 1N4001 |         |        |
| Q29  | 100V, 40V | Q52, 55                 | 18C279A    | Q65  | 100V, 40V          | Q43, 44                     | 18C279A | D51, 52                 | 1N4001 |         |        |
| Q30  | 100V, 40V | Q53, 56                 | 18C279A    | Q66  | 100V, 40V          | Q45, 46                     | 18C279A | D53, 54                 | 1N4001 |         |        |
| Q31  | 100V, 40V | Q54, 57                 | 18C279A    | Q67  | 100V, 40V          | Q47, 48                     | 18C279A | D55, 56                 | 1N4001 |         |        |
| Q32  | 100V, 40V | Q55, 58                 | 18C279A    | Q68  | 100V, 40V          | Q49, 50                     | 18C279A | D57, 58                 | 1N4001 |         |        |
| Q33  | 100V, 40V | Q56, 59                 | 18C279A    | Q69  | 100V, 40V          | Q51, 52                     | 18C279A | D59, 60                 | 1N4001 |         |        |
| Q34  | 100V, 40V | Q57, 60                 | 18C279A    | Q70  | 100V, 40V          | Q53, 54                     | 18C279A | D61, 62                 | 1N4001 |         |        |
| Q35  | 100V, 40V | Q58, 61                 | 18C279A    | Q71  | 100V, 40V          | Q55, 56                     | 18C279A | D63, 64                 | 1N4001 |         |        |
| Q36  | 100V, 40V | Q59, 62                 | 18C279A    | Q72  | 100V, 40V          | Q57, 58                     | 18C279A | D65, 66                 | 1N4001 |         |        |
| Q37  | 100V, 40V | Q60, 63                 | 18C279A    | Q73  | 100V, 40V          | Q59, 60                     | 18C279A | D67, 68                 | 1N4001 |         |        |
| Q38  | 100V, 40V | Q61, 64                 | 18C279A    | Q74  | 100V, 40V          | Q61, 62                     | 18C279A | D69, 70                 | 1N4001 |         |        |
| Q39  | 100V, 40V | Q62, 65                 | 18C279A    | Q75  | 100V, 40V          | Q63, 64                     | 18C279A | D71, 72                 | 1N4001 |         |        |
| Q40  | 100V, 40V | Q63, 66                 | 18C279A    | Q76  | 100V, 40V          | Q65, 66                     | 18C279A | D73, 74                 | 1N4001 |         |        |
| Q41  | 100V, 40V | Q64, 67                 | 18C279A    | Q77  | 100V, 40V          | Q67, 68                     | 18C279A | D75, 76                 | 1N4001 |         |        |
| Q42  | 100V, 40V | Q65, 68                 | 18C279A    | Q78  | 100V, 40V          | Q69, 70                     | 18C279A | D77, 78                 | 1N4001 |         |        |
| Q43  | 100V, 40V | Q66, 69                 | 18C279A    | Q79  | 100V, 40V          | Q71, 72                     | 18C279A | D79, 80                 | 1N4001 |         |        |
| Q44  | 100V, 40V | Q67, 70                 | 18C279A    | Q80  | 100V, 40V          | Q73, 74                     | 18C279A | D81, 82                 | 1N4001 |         |        |
| Q45  | 100V, 40V | Q68, 71                 | 18C279A    | Q81  | 100V, 40V          | Q75, 76                     | 18C279A | D83, 84                 | 1N4001 |         |        |
| Q46  | 100V, 40V | Q69, 72                 | 18C279A    | Q82  | 100V, 40V          | Q77, 78                     | 18C279A | D85, 86                 | 1N4001 |         |        |
| Q47  | 100V, 40V | Q70, 73                 | 18C279A    | Q83  | 100V, 40V          | Q79, 80                     | 18C279A | D87, 88                 | 1N4001 |         |        |
| Q48  | 100V, 40V | Q71, 74                 | 18C279A    | Q84  | 100V, 40V          | Q81, 82                     | 18C279A | D89, 90                 | 1N4001 |         |        |
| Q49  | 100V, 40V | Q72, 75                 | 18C279A    | Q85  | 100V, 40V          | Q83, 84                     | 18C279A | D91, 92                 | 1N4001 |         |        |
| Q50  | 100V, 40V | Q73, 76                 | 18C279A    | Q86  | 100V, 40V          | Q85, 86                     | 18C279A | D93, 94                 | 1N4001 |         |        |
| Q51  | 100V, 40V | Q74, 77                 | 18C279A    | Q87  | 100V, 40V          | Q87, 88                     | 18C279A | D95, 96                 | 1N4001 |         |        |
| Q52  | 100V, 40V | Q75, 78                 | 18C279A    | Q88  | 100V, 40V          | Q89, 90                     | 18C279A | D97, 98                 | 1N4001 |         |        |
| Q53  | 100V, 40V | Q76, 79                 | 18C279A    | Q89  | 100V, 40V          | Q91, 92                     | 18C279A | D99, 100                | 1N4001 |         |        |
| Q54  | 100V, 40V | Q77, 80                 | 18C279A    | Q90  | 100V, 40V          | Q93, 94                     | 18C279A | D101, 102               | 1N4001 |         |        |
| Q55  | 100V, 40V | Q78, 81                 | 18C279A    | Q91  | 100V, 40V          | Q95, 96                     | 18C279A | D103, 104               | 1N4001 |         |        |
| Q56  | 100V, 40V | Q79, 82                 | 18C279A    | Q92  | 100V, 40V          | Q97, 98                     | 18C279A | D105, 106               | 1N4001 |         |        |
| Q57  | 100V, 40V | Q80, 83                 | 18C279A    | Q93  | 100V, 40V          | Q99, 100                    | 18C279A | D107, 108               | 1N4001 |         |        |
| Q58  | 100V, 40V | Q81, 84                 | 18C279A    | Q94  | 100V, 40V          | Q101, 102                   | 18C279A | D109, 110               | 1N4001 |         |        |
| Q59  | 100V, 40V | Q82, 85                 | 18C279A    | Q95  | 100V, 40V          | Q103, 104                   | 18C279A | D111, 112               | 1N4001 |         |        |
| Q60  | 100V, 40V | Q83, 86                 | 18C279A    | Q96  | 100V, 40V          | Q105, 106                   | 18C279A | D113, 114               | 1N4001 |         |        |
| Q61  | 100V, 40V | Q84, 87                 | 18C279A    | Q97  | 100V, 40V          | Q107, 108                   | 18C279A | D115, 116               | 1N4001 |         |        |
| Q62  | 100V, 40V | Q85, 88                 | 18C279A    | Q98  | 100V, 40V          | Q109, 110                   | 18C279A | D117, 118               | 1N4001 |         |        |
| Q63  | 100V, 40V | Q86, 89                 | 18C279A    | Q99  | 100V, 40V          | Q111, 112                   | 18C279A | D119, 120               | 1N4001 |         |        |
| Q64  | 100V, 40V | Q87, 90                 | 18C279A    | Q100 | 100V, 40V          | Q113, 114                   | 18C279A | D121, 122               | 1N4001 |         |        |
| Q65  | 100V, 40V | Q88, 91                 | 18C279A    | Q101 | 100V, 40V          | Q115, 116                   | 18C279A | D123, 124               | 1N4001 |         |        |
| Q66  | 100V, 40V | Q89, 92                 | 18C279A    | Q102 | 100V, 40V          | Q117, 118                   | 18C279A | D125, 126               | 1N4001 |         |        |
| Q67  | 100V, 40V | Q90, 93                 | 18C279A    | Q103 | 100V, 40V          | Q119, 120                   | 18C279A | D127, 128               | 1N4001 |         |        |
| Q68  | 100V, 40V | Q91, 94                 | 18C279A    | Q104 | 100V, 40V          | Q121, 122                   | 18C279A | D129, 130               | 1N4001 |         |        |
| Q69  | 100V, 40V | Q92, 95                 | 18C279A    | Q105 | 100V, 40V          | Q123, 124                   | 18C279A | D131, 132               | 1N4001 |         |        |
| Q70  | 100V, 40V | Q93, 96                 | 18C279A    | Q106 | 100V, 40V          | Q125, 126                   | 18C279A | D133, 134               | 1N4001 |         |        |
| Q71  | 100V, 40V | Q94, 97                 | 18C279A    | Q107 | 100V, 40V          | Q127, 128                   | 18C279A | D135, 136               | 1N4001 |         |        |
| Q72  | 100V, 40V | Q95, 98                 | 18C279A    | Q108 | 100V, 40V          | Q129, 130                   | 18C279A | D137, 138               | 1N4001 |         |        |
| Q73  | 100V, 40V | Q96, 99                 | 18C279A    | Q109 | 100V, 40V          | Q131, 132                   | 18C279A | D139, 140               | 1N4001 |         |        |
| Q74  | 100V, 40V | Q97, 100                | 18C279A    | Q110 | 100V, 40V          | Q133, 134                   | 18C279A | D141, 142               | 1N4001 |         |        |
| Q75  | 100V, 40V | Q98, 101                | 18C279A    | Q111 | 100V, 40V          | Q135, 136                   | 18C279A | D143, 144               | 1N4001 |         |        |
| Q76  | 100V, 40V | Q99, 102                | 18C279A    | Q112 | 100V, 40V          | Q137, 138                   | 18C279A | D145, 146               | 1N4001 |         |        |
| Q77  | 100V, 40V | Q100, 103               | 18C279A    | Q113 | 100V, 40V          | Q139, 140                   | 18C279A | D147, 148               | 1N4001 |         |        |
| Q78  | 100V, 40V | Q101, 104               | 18C279A    | Q114 | 100V, 40V          | Q141, 142                   | 18C279A | D149, 150               | 1N4001 |         |        |
| Q79  | 100V, 40V | Q102, 105               | 18C279A    | Q115 | 100V, 40V          | Q143, 144                   | 18C279A | D151, 152               | 1N4001 |         |        |
| Q80  | 100V, 40V | Q103, 106               | 18C279A    | Q116 | 100V, 40V          | Q145, 146                   | 18C279A | D153, 154               | 1N4001 |         |        |
| Q81  | 100V, 40V | Q104, 107               | 18C279A    | Q117 | 100V, 40V          | Q147, 148                   | 18C279A | D155, 156               | 1N4001 |         |        |
| Q82  | 100V, 40V | Q105, 108               | 18C279A    | Q118 | 100V, 40V          | Q149, 150                   | 18C279A | D157, 158               | 1N4001 |         |        |
| Q83  | 100V, 40V | Q106, 109               | 18C279A    | Q119 | 100V, 40V          | Q151, 152                   | 18C279A | D159, 160               | 1N4001 |         |        |
| Q84  | 100V, 40V | Q107, 110               | 18C279A    | Q120 | 100V, 40V          | Q153, 154                   | 18C279A | D161, 162               | 1N4001 |         |        |
| Q85  | 100V, 40V | Q108, 111               | 18C279A    | Q121 | 100V, 40V          | Q155, 156                   | 18C279A | D163, 164               | 1N4001 |         |        |
| Q86  | 100V, 40V | Q109, 112               | 18C279A    | Q122 | 100V, 40V          | Q157, 158                   | 18C279A | D165, 166               | 1N4001 |         |        |
| Q87  | 100V, 40V | Q110, 113               | 18C279A    | Q123 | 100V, 40V          | Q159, 160                   | 18C279A | D167, 168               | 1N4001 |         |        |
| Q88  | 100V, 40V | Q111, 114               | 18C279A    | Q124 | 100V, 40V          | Q161, 162                   | 18C279A | D169, 170               | 1N4001 |         |        |
| Q89  | 100V, 40V | Q112, 115               | 18C279A    | Q125 | 100V, 40V          | Q163, 164                   | 18C279A | D171, 172               | 1N4001 |         |        |
| Q90  | 100V, 40V | Q113, 116               | 18C279A    | Q126 | 100V, 40V          | Q165, 166                   | 18C279A | D173, 174               | 1N4001 |         |        |
| Q91  | 100V, 40V | Q114, 117               | 18C279A    | Q127 | 100V, 40V          | Q167, 168                   | 18C279A | D175, 176               | 1N4001 |         |        |
| Q92  | 100V, 40V | Q115, 118               | 18C279A    | Q128 | 100V, 40V          | Q169, 170                   | 18C279A | D177, 178               | 1N4001 |         |        |
| Q93  | 100V, 40V | Q116, 119               | 18C279A    | Q129 | 100V, 40V          | Q171, 172                   | 18C279A | D179, 180               | 1N4001 |         |        |
| Q94  | 100V, 40V | Q117, 120               | 18C279A    | Q130 | 100V, 40V          | Q173, 174                   | 18C279A | D181, 182               | 1N4001 |         |        |
| Q95  | 100V, 40V | Q118, 121               | 18C279A    | Q131 | 100V, 40V          | Q175, 176                   | 18C279A | D183, 184               | 1N4001 |         |        |
| Q96  | 100V, 40V | Q119, 122               | 18C279A    | Q132 | 100V, 40V          | Q177, 178                   | 18C279A | D185, 186               | 1N4001 |         |        |
| Q97  | 100V, 40V | Q120, 123               | 18C279A    | Q133 | 100V, 40V          | Q179, 180                   | 18C279A | D187, 188               | 1N4001 |         |        |
| Q98  | 100V, 40V | Q121, 124               | 18C279A    | Q134 | 100V, 40V          | Q181, 182                   | 18C279A | D189, 190               | 1N4001 |         |        |
| Q99  | 100V, 40V | Q122, 125               | 18C279A    | Q135 | 100V, 40V          | Q183, 184                   | 18C279A | D191, 192               | 1N4001 |         |        |
| Q100 | 100V, 40V | Q123, 126               | 18C279A    | Q136 | 100V, 40V          | Q185, 186                   | 18C279A | D193, 194               | 1N4001 |         |        |
| Q101 | 100V, 40V | Q124, 127               | 18C279A    | Q137 | 100V, 40V          | Q187, 188                   | 18C279A | D195, 196               | 1N4001 |         |        |
| Q102 | 100V, 40V | Q125, 128               | 18C279A    | Q138 | 100V, 40V          | Q189, 190                   | 18C279A | D197, 198               |        |         |        |



Note) ● Ref. No. : Parts of pattern 1.



# TM-G707A/E

## SPECIFICATIONS

Specifications are subject to change without notice due to advancements in technology.

| General                                 |                        | VHF Band                               | UHF Band         |
|-----------------------------------------|------------------------|----------------------------------------|------------------|
| Frequency range                         | U.S.A/Canada           | 144~148MHz                             | 438~450MHz       |
|                                         | General                | 144~148MHz <sup>1</sup>                | 430~440MHz       |
|                                         | Europe                 | 144~146MHz                             | 430~440MHz       |
| Mode                                    |                        | F3E(FM)                                |                  |
| Antenna impedance                       |                        | 50Ω                                    |                  |
| Usable temperature range                |                        | - 20° C~+60° C(- 4° F~+140° F)         |                  |
| Power supply                            |                        | 13.8V DC±15% (11.7~15.8V)              |                  |
| Grounding method                        |                        | Negative ground                        |                  |
| Current                                 | Transmit (max.)        | 11.0A or less                          | 10.0A or less    |
|                                         | Receive (at 2W output) | 1.0A or less                           |                  |
| Frequency stability (- 10° C~+50° C)    |                        | Within±3ppm                            |                  |
| Dimensions (WxHxD projections included) |                        | 140x54.5x205.5mm/5.51"x1.57"x7.44"     |                  |
| Weight                                  |                        | 1.2kg/2.6lb                            |                  |
| Transmitter                             |                        |                                        |                  |
| Power output                            | High                   | 50W <sup>2</sup>                       | 35W <sup>2</sup> |
|                                         | Medium                 | Approx. 10W                            |                  |
|                                         | Low                    | Approx. 5W                             |                  |
| Modulation                              |                        | Reactance                              |                  |
| Spurious emissions                      |                        | - 60dB or less                         |                  |
| Maximum frequency deviation             |                        | ±5kHz                                  |                  |
| Audio distortion (at 60% modulation)    |                        | 3% or less                             |                  |
| Microphone impedance                    |                        | 600Ω                                   |                  |
| Receiver                                |                        |                                        |                  |
| Circuitry                               |                        | Double conversion                      |                  |
| Intermediate frequency (1st/2nd)        |                        | 38.85MHz/450kHz                        |                  |
| Sensitivity (12dB SINAD)                |                        | 0.16μV or less:M,E<br>0.22μV or less:K | 0.16μV or less   |
| Selectivity (- 6dB)                     |                        | 12kHz or more                          |                  |
| Selectivity (- 60dB)                    |                        | 28kHz or less                          |                  |
| Squelch sensitivity                     |                        | 0.1μV or less:M,E<br>0.11μV or less:K  | 0.1μV or less    |
| Audio output (8 ohms,5% distortion)     |                        | 2W or higher                           |                  |
| Audio output impedance                  |                        | 8Ω                                     |                  |

<sup>1</sup> Taiwan : 144 ~ 146MHz

<sup>2</sup> Taiwan : 25W (both bands)

## KENWOOD CORPORATION

14-6, Dogenzaka 1-chome, Shibuya-ku, Tokyo 150-8501, Japan

### KENWOOD SERVICE CORPORATION

P.O. BOX 22745, 2201 East Dominguez Street, Long Beach, CA 90801-5745, U.S.A.

### KENWOOD ELECTRONICS LATIN AMERICA S.A.

P.O. BOX 55-2791, P.O. 5 Plaza Chate Cl. 47 y Aquilino de la Guardia Penaria, Republic of Panama

### KENWOOD ELECTRONICS CANADA INC.

5070 Keele Road, Mississauga, Ontario, Canada L5T 1S8

### KENWOOD ELECTRONICS DEUTSCHLAND GMBH

Rembrandt Str. 18, 63153 Heusenstamm, Germany

### KENWOOD ELECTRONICS BELGIUM N.V.

Machelsesteenweg 418 B-1930 Zaventem, Belgium

### KENWOOD ELECTRONICS FRANCE S.A.

13, Boulevard Ney, 75018 Paris, France

### KENWOOD ELECTRONICS U.K. LIMITED

Kenwood House, Dwight Road, Watford, Herts., WD1 1EB United Kingdom

### KENWOOD ELECTRONICS EUROPE B.V.

Amsterdamweg 37, 1422 AC Uithoorn, The Netherlands

### KENWOOD ELECTRONICS ITALIA S.p.A.

Via C. Saraceni, 78 20128 Milano, Italy

### KENWOOD IBERICA S.A.

Bolivia, 239 08020 Barcelona, Spain

### KENWOOD ELECTRONICS AUSTRALIA PTY. LTD.

(A.C.N. 621 199 074)

P.O. Box 504, 3 Hattree Drive, Australia Centre, Hornbush, N.S.W. 2148, Australia

### KENWOOD & LEE ELECTRONICS, LTD.

Unit 37/3724, Level 37, Tower One Niconex, 223 Hing Hong Road, Kwai Fong N.T., Hong Kong