



TK-2107 (16 channels)

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GENERAL/REALIGNMENT

INTRODUCTION

SCOPE OF THIS MANUAL

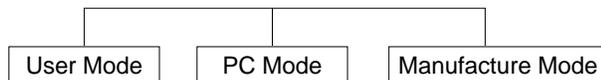
This manual is intended for use by experienced technicians familiar with similar types of commercial grade communications equipment. It contains all required service information for the equipment and is current as of the publication data. Changes which may occur after publication are covered by either Service Bulletins or Manual Revisions. These are issued as required.

ORDERING REPLACEMENT PARTS

When ordering replacement parts or equipment information, the full part identification number should be included. This applies to all parts : components, kits, or chassis. If the part number is not known, include the chassis or kit number of which it is a part, and a sufficient description of the required component for proper identification.

REALIGNMENT

1 Modes



| MODE | FUNCTION |
|------------------|--|
| User Mode | Use this mode for normal operation. |
| PC Mode | Use this mode, to make various settings by means of the FPU through the RS-232C port. |
| Manufacture Mode | Use this mode, to realign the various settings through the RS-232C port during manufacture work. |

2 How to enter each mode

| MODE | PROCEDURE |
|-----------|--|
| User Mode | Power ON |
| PC Mode | Connect to the IBM PC compatible machine and controled by the FPU. |

PERSONAL SAFETY

The following precautions are recommended for personal safety :

- DO NOT transmit until all RF connectors are verified secure and any open connectors are properly terminated.
- SHUT OFF and DO NOT operate this equipment near electrical blasting caps or in an explosive atmosphere.
- This equipment should be serviced by a qualified technician only.

SERVICE

This radio is designed for easy servicing. Refer to the schematic diagrams, printed circuit board views, and alignment procedures contained within.

| Destnation | Number of CH | RF power output |
|------------|--------------|-----------------|
| M3 | 16 | 5W |

3 Getting acquainted

① PTT (Push-To-Talk) switch

Press this switch, then speak into the microphone to call a station. Release the switch to receive.

② Monitor key

Press and hold to monitor how busy the current channel is and to monitor signals being received that do not contain the matched QT/DQT code.

③ Channel selector

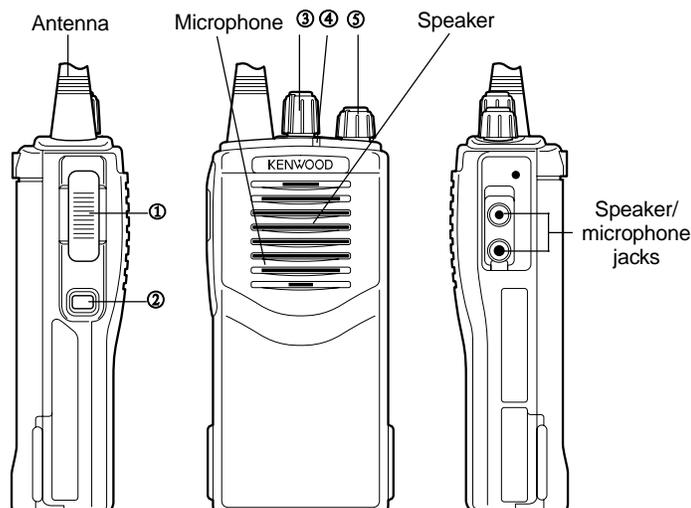
Rotate to select channels 1 ~ 16.

④ LED indicator

Lights red while transmitting, green while receiving a signal. Flashes red when the battery voltage is low while transmitting.

⑤ Power switch/ Volume control

Turn clockwise to switch the transceiver ON. Turn counterclockwise until a click sounds, to switch the transceiver OFF. Rotate to adjust the volume level.



REALIGNMENT

PC MODE

Preface

The transceiver is programmed by using a personal computer, programming interface (KPG-22) and programming software (KPG-55D).

The programming software can be used with an IBM PC or compatible. Figure 1 shows the setup of an IBM PC for programming.

Connention procedure

1. Connect the TK-2107 to the personal computer with the interface cable.
2. When data is transmitting from the transceiver the red LED lights.
When data is receiving by the transceiver the green LED lights.

Notes:

- The data stored in the personal computer must match the Model Name when it is written into the EEPROM.
- Do not press the [PTT] key during data transmission or reception.

• KPG-22 description

(PC programming interface cable: Option)

The KPG-22 is required to interface the TK-2107 with the computer. It has a circuit in its D-subconnector (25-pin) case that converts the RS-232C logic level to the TTL level. The KPG-22 connects the side panel jacks of the TK-2107 to the computer's RS-232C serial port.

• Programming software description

The KPG-55D Programming Disk is supplied in 3-1/2" the disk format. The Software on this disk allows a user to program TK-2107 radios via a Programming interface cable (KPG-22).

• Programming with IBM PC

If data is transferred to the transceiver from an IBM PC with the KPG-55D, the destination data (basic radio information) for each set can be modified. Normally, it is not necessary to modify the destination data because their values are determined automatically when the frequency range (frequency type) is set.

The values should be modified only if necessary.

Data can be programmed into the EEPROM in RS-232C format via the SP MIC plug.

In this mode the PTT line operates as TXD and RXD data lines respectively.

* M3 type has wide mode only.

All narrow data should be not available, even though data would be modified in test mode.

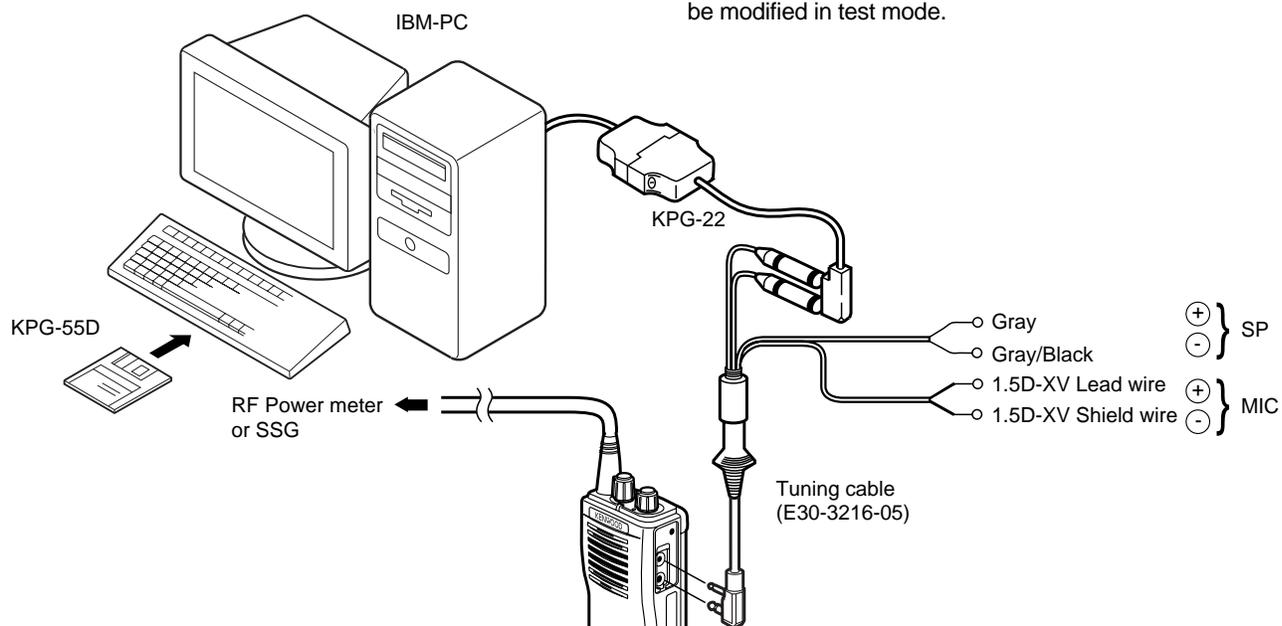
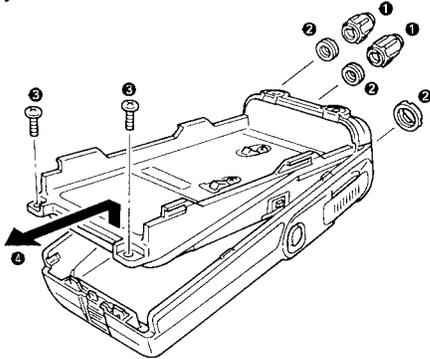


Fig. 1

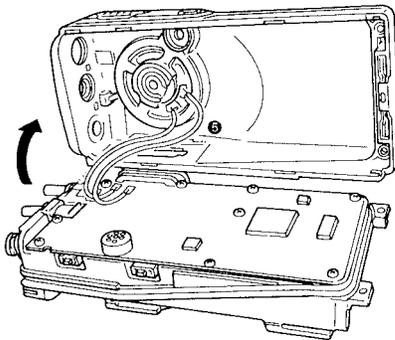
DISASSEMBLY FOR REPAIR

Separating the case assembly from the chassis

1. Remove the two knobs ① and three round nuts ② .
2. Remove the two screws ③ .
3. Expand the right and left sides of the bottom of the case assembly, lift the chassis, and remove it from the case assembly ④ .



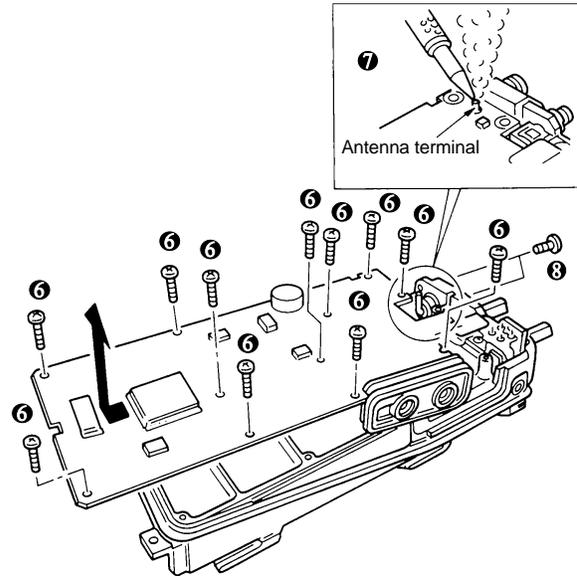
4. Taking care not to cut the speaker lead ⑤, open the chassis and case assembly.



Separating the chassis from the unit

1. Remove the eleven screws ⑥ .
2. Remove the solder from the antenna terminal using a soldering iron then lift the unit off ⑦ .
3. Remove the two screws ⑧ and remove the antenna connector.

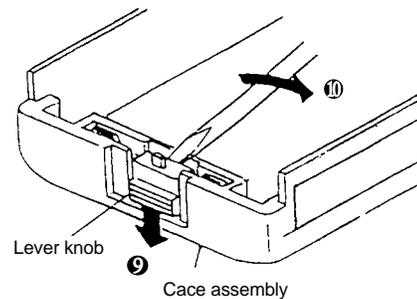
Note : When reassembling the unit in the chassis, be sure to solder the antenna terminal.



Removing the lever

1. Raise the lever on the lower case ⑨, insert a small flat screwdriver into the space between the case and lever, open the case carefully ⑩ and lift the lever off.

Note : Do not force to separate the case from the lever.



CIRCUIT DESCRIPTION

1. Frequency configuration

The receiver utilizes double conversion. The first IF is 38.85MHz and the second IF is 450kHz. The first local oscillator signal is supplied from the PLL circuit.

The PLL circuit in the transmitter generates the necessary frequencies. Fig. 1 shows the frequencies.

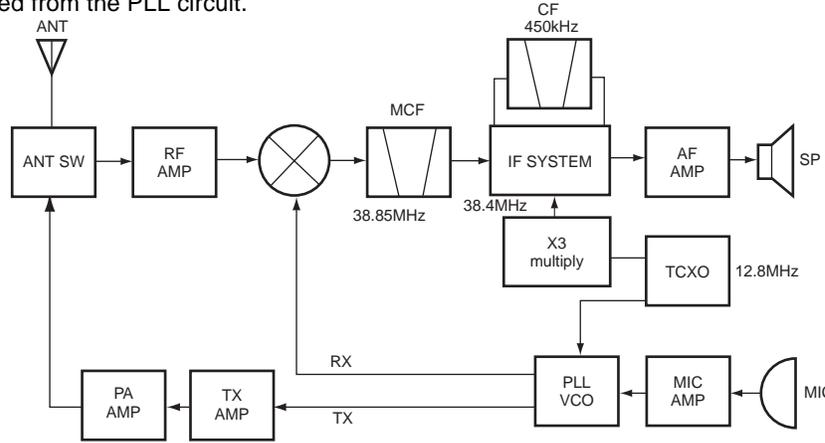


Fig. 1 Frequency configuration

2. Receiver

The receiver is double conversion superheterodyne, designed to operate in the frequency range of 216 to 223MHz (M3 type).

The frequency configuration is shown in Fig. 1.

1) Front - end RF amplifier

An incoming signal from the antenna is applied to an RF amplifier (Q203) after passing through a transmit/receive switch circuit (D102 and D103 are off) and a band pass filter (L208, L209 and L210). After the signal is amplified (Q203),

the signal is filtered through a band pass filter (L203 and L214) to eliminate unwanted signals before it is passed to the first mixer. (See Fig. 2)

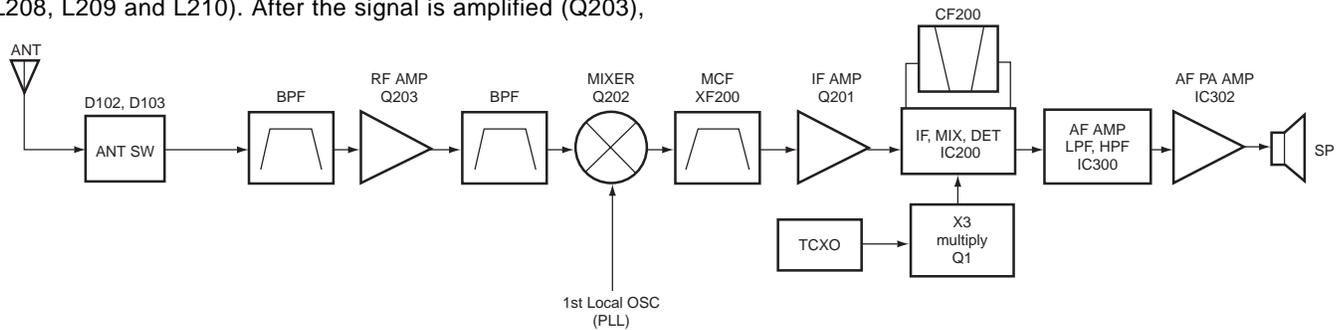


Fig. 2 Receiver section configuration

2) First Mixer

The signal from the RF amplifier is heterodyned with the first local oscillator signal from the PLL frequency synthesizer circuit at the first mixer (Q202) to create a 38.85MHz first intermediate frequency (1st IF) signal. The first IF signal is then fed through two monolithic crystal filters (MCFs : XF200) to further remove spurious signals.

3) IF amplifier

The first IF signal is amplified by Q201, and then enters IC200 (FM processing IC). The signal is heterodyned again with a second local oscillator signal within IC200 to create a 450kHz second IF signal. The second IF signal is then fed through a 450kHz ceramic filter (CF200) to further eliminate unwanted signals before it is amplified and FM detected in IC200.

4) AF amplifier

The recovered AF signal obtained from IC200 is amplified by IC300 (1/4), filtered by the IC300 low-pass filter (2/4) and IC300 high-pass filter (3/4) and (4/4), and de-emphasized by R303 and C306. The processed AF signal passes through an AF volume control and is amplified to a sufficient level to drive a loud speaker by an AF power amplifier (IC302).

CIRCUIT DESCRIPTION

XF200:L71-0535-05

| Item | Rating |
|--------------------------|------------------------------|
| Nominal center frequency | 38.850MHz |
| Pass band width | ± 7.5 kHz or more at 3dB |
| 40dB stop band width | ± 40.0 kHz or less |
| Ripple | 1.0dB or less |
| Insertion loss | 3.0dB or less |
| Guaranteed attenuation | 80dB or more at fo -1000kHz |
| Terminal impedance | 1200 Ω / 1.4PF |

CF200:L72-0979-05

| Item | Rating |
|--------------------------|------------------------------------|
| Nominal center frequency | 450kHz |
| 6dB band width | ± 7.5 kHz or more |
| 50dB band width | ± 15 kHz or less |
| Ripple | 2.0dB or less at fo ± 5 kHz |
| Insertion loss | 6.0dB or less |
| Guaranteed attenuation | 35.0dB or more at fo ± 100 kHz |
| Terminal impedance | 1.5 k Ω |

5) Squelch

Part of the AF signal from the IC enters the FM IC again, and the noise component is amplified and rectified by a filter and an amplifier to produce a DC voltage corresponding to the noise level.

The DC signal from the FM IC goes to the analog port of the microprocessor (IC403). IC403 determines whether to output

sounds from the speaker by checking whether the input voltage is higher or lower than the preset value.

To output sounds from the speaker, IC403 sends a high signal to the MUTE and AFCO lines and turns IC302 on through Q302, Q304, Q305, Q306 and Q307. (See Fig. 3)

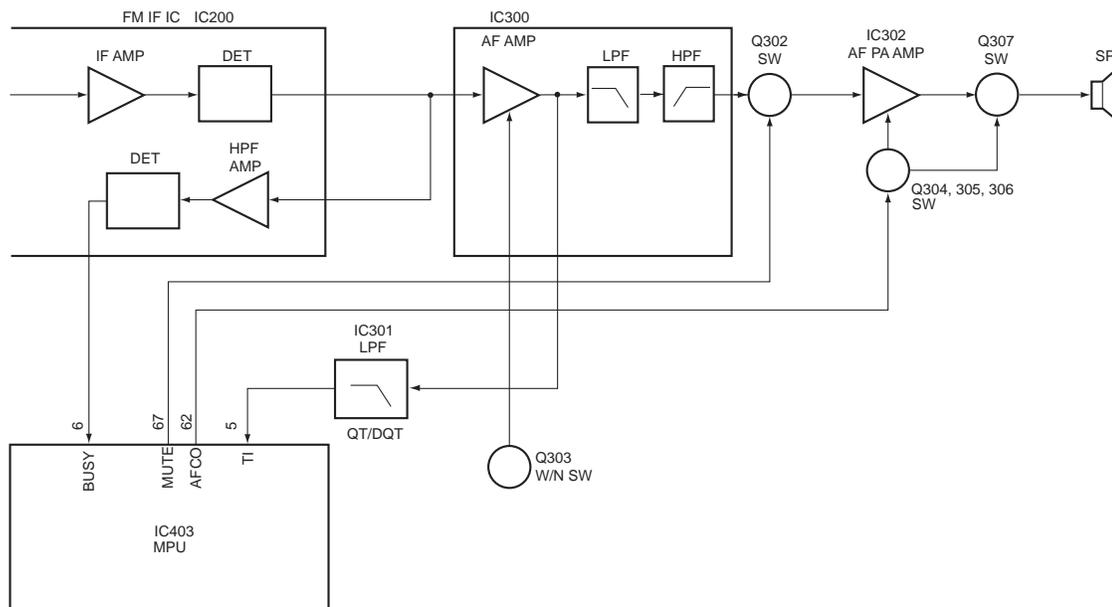


Fig. 3 AF Amplifier and squelch

6) Receive signaling

QT/DQT

300 Hz and higher audio frequencies of the output signal from IF IC are cut by a low-pass filter (IC301). The resulting signal enters the microprocessor (IC403). IC403 determines whether the QT or DQT matches the preset value, and controls the MUTE and AFCO and the speaker output sounds according to the squelch results.

3. PLL frequency synthesizer

The PLL circuit generates the first local oscillator signal for reception and the RF signal for transmission.

1) PLL

The frequency step of the PLL circuit is 5 or 6.25kHz.

A 12.8MHz reference oscillator signal is divided at IC1 by a fixed counter to produce the 5 or 6.25kHz reference frequency. The voltage controlled oscillator (VCO) output signal is buffer amplified by Q6, then divided in IC1 by a dual-module programmable counter. The divided signal is compared in phase with the 5 or 6.25kHz reference signal in the phase comparator in IC1. The output signal from the phase comparator is filtered through a low-pass filter and passed to the VCO to control the oscillator frequency. (See Fig.4)

CIRCUIT DESCRIPTION

2) VCO

The operating frequency is generated by Q4 in transmit mode and Q3 in receive mode. The oscillator frequency is controlled by applying the VCO control voltage, obtained from the phase comparator, to the varactor diodes (D2 and D4 in transmit mode and D1 and D3 in receive mode). The T/R pin is

set high in receive mode causing Q5 and Q7 to turn Q4 off, and turn Q3 on. The T/R pin is set low in transmit mode. The outputs from Q3 and Q4 are amplified by Q6 and sent to the buffer amplifiers.

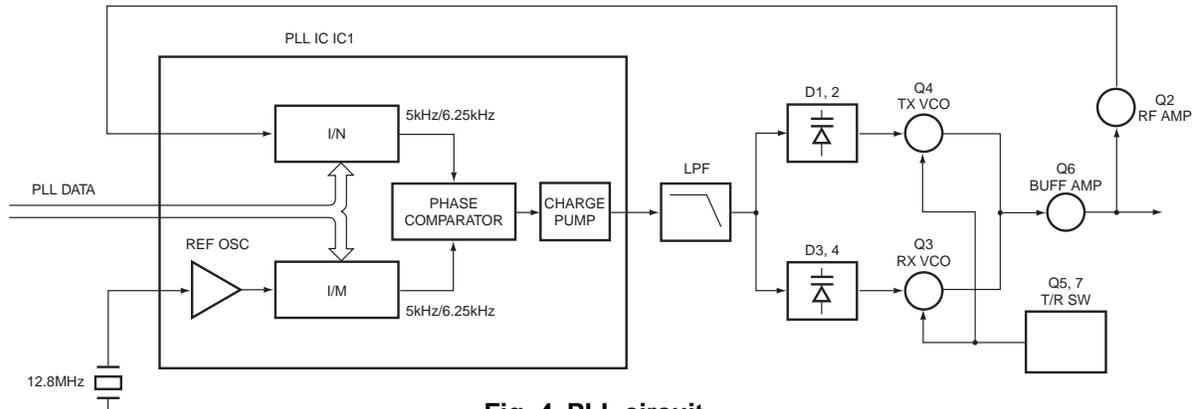


Fig. 4 PLL circuit

3) UNLOCK DETECTOR

If a pulse signal appears at the LD pin of IC1, an unlock condition occurs, and the DC voltage obtained from D7, R6, and C1 causes the voltage applied to the UL pin of the microprocessor to go low. When the microprocessor detects this condition, the transmitter is disabled, ignoring the push-to-talk switch input signal. (See Fig.5)

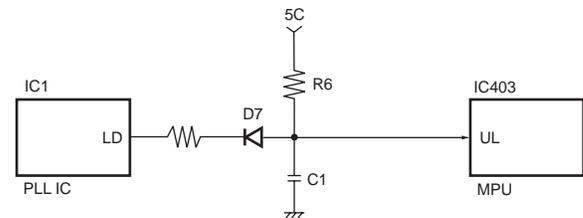


Fig. 5 Unlock detector circuit

4. Transmitter

1) Transmit audio

The modulation signal from the microphone is amplified by IC500 (1/2), passes through a preemphasis circuit, and amplified by the other IC500 (1/2) to perform IDC operation. The signal then passes through a low-pass filter (splatter filter) (Q501 and Q502) and cuts 3kHz and higher frequencies. The resulting signal goes to the VCO through the VCO modulation terminal for direct FM modulation. (See Fig. 6)

2) QT/DQT encoder

A necessary signal for QT/DQT encoding is generated by IC403 and FM-modulated to the PLL reference signal. Since the reference OSC does not modulate the loop characteristic frequency or higher, modulation is performed at the VCO side by adjusting the balance. (See Fig. 6)

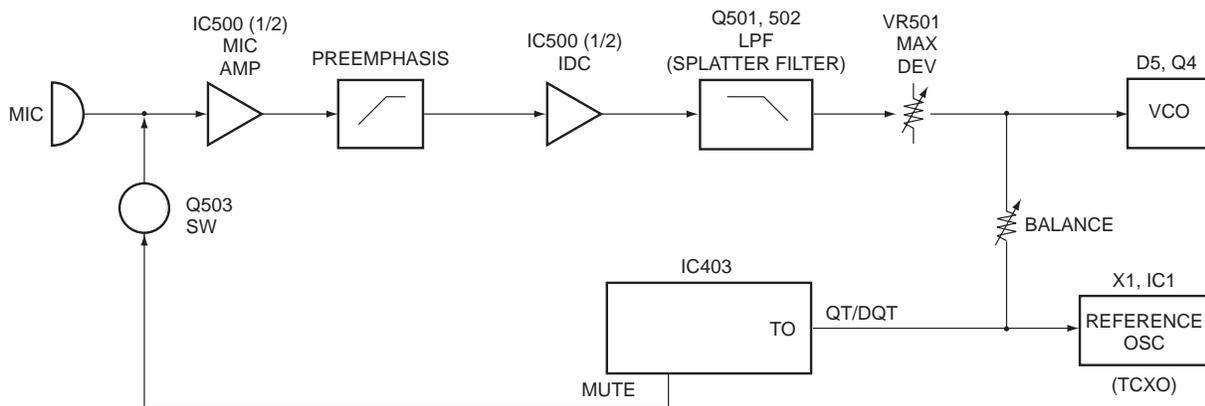


Fig. 6 Transmit audio QT/DQT

CIRCUIT DESCRIPTION

3) VCO and RF amplifier

The transmit signal obtained from the VCO buffer amplifier Q100, is amplified by Q101. This amplified signal is passed to the power amplifier, Q102 and Q105, which consists of a 2-stage FET amplifier and is capable of producing up to 5W of RF power. (See Fig.7)

4) ANT switch and LPF

The RF amplifier output signal is passed through a low-pass filter network and a transmit/receive switching circuit before it is passed to the antenna terminal. The transmit/receive switching circuit is comprised of D101, D102 and D103. D102 and D103 turned on (conductive) in transmit mode and off (isolated) in receive mode.

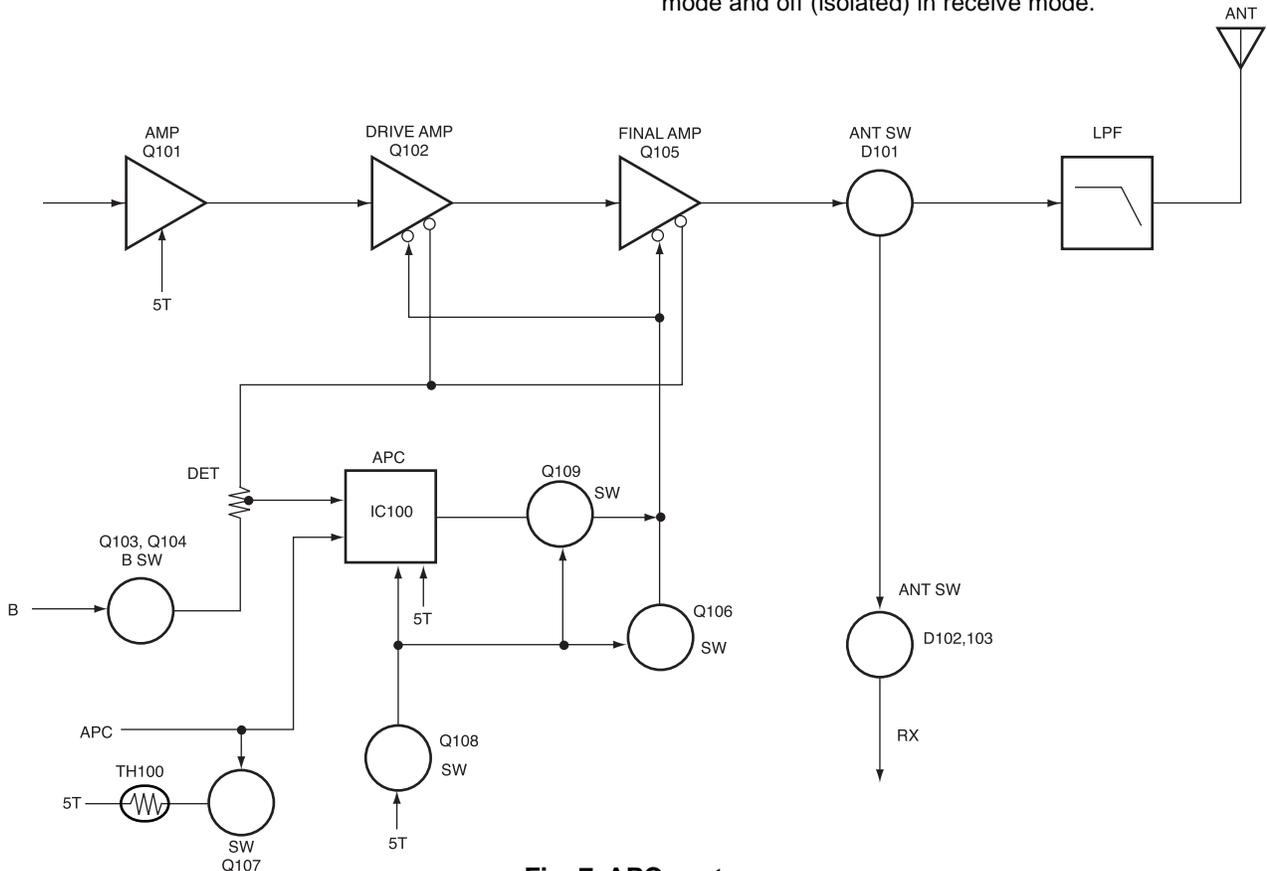


Fig. 7 APC system

5) APC

The automatic power control (APC) circuit stabilizes the transmitter output power at a predetermined level by sensing the drain current of the final amplifier Field Effect Transistor (FET). The voltage comparator, IC100 (2/2), compares the voltage obtained from the above drain current with a reference voltage which is set using the microprocessor. An APC voltage proportional to the difference between the sensed voltage and the reference voltage appears at the output of IC100 (1/2). This output voltage controls the gate of the FET power amplifier, which keeps the transmitter output power constant. The transmitter output power can be varied by the microprocessor which in turn changes the reference voltage and hence, the output power.

6) Terminal protection circuit

When the thermistor (TH100) reaches about 80°C, the protection circuit turns on Q107 to protect transmitting final amplifier (Q105) from the over heating.

5. Power supply

A 5V reference power supply [5M] for the control circuit is derived from an internal battery. This reference is used to provide a 5V supply in transmit mode [5T], a 5V supply in receive mode [5R], and a 5V supply common in both modes [5C] based on the control signal sent from the microprocessor.

6. Control system

The IC403 CPU operates at 7.37MHz. This oscillator has a circuit that shifts the frequency according to the EEPROM data.

SEMICONDUCTOR DATA

Microprocessor: M38267M8L241GP (IC403)

| Pin No. | I/O | Port Name | Function |
|---------|-----|-----------|--|
| 1 | O | VC1 | Variable capacity tune control |
| 2 | O | VC2 | Variable capacity tune control |
| 3 | I | NC | NC |
| 4 | I | TIBI | QT/DQT external circuit center point input |
| 5 | I | TI | QT/DQT signal input |
| 6 | I | BUSY | Busy input |
| 7 | I | BATT | Battery voltage detection |
| 8 | I | NC | NC |
| 9 | O | VCCN | Frequency regulation output |
| 10 | O | APC | TX : Auto power control D/A output RX : BPF tuning D/A output |
| 11 | I | NC | NC |
| 12 | I | NC | NC |
| 13 | I | NC | NC |
| 14 | I | NC | NC |
| 15 | O | BEEP | Beep output |
| 16 | O | TO | QT/DQT output |
| 17 | I | NC | NC |
| 18 | I | PTT | [PTT] key input Connected to RXD |
| 19 | O | TXD | RS-232C output Connected to SP/ MIC test(REM) |
| 20 | I | RXD | RS-232C input Connected to [PTT] line |
| 21 | I | NC | NC |
| 22 | I | SELF | Self program L : disable |
| 23 | I | MONI | [MONI] key input |
| 24 | I | NC | NC |
| 25 | I | NC | NC |
| 26 | I | NC | NC |
| 27 | I | NC | NC |
| 28 | I | ENC3 | Encode input (channel select) |
| 29 | I | ENC2 | Encode input (channel select) |
| 30 | I | ENC1 | Encode input (channel select) |
| 31 | I | ENC0 | Encode input (channel select) |
| 32 | I | INTO | Power detection control |
| 33 | I | RST | Reset input |
| 34 | I | NC | NC |
| 35 | O | NC | NC |
| 36 | I | XIN | 7.3728MHz oscillator |
| 37 | O | XOUT | 7.3728MHz oscillator |
| 38 | I | VSS | GND |
| 39 | O | SHIFT | Beat shift H : shift on |
| 40 | O | PABC | Final supply H : on |
| 41 | O | WNRC | Audio reference sensitivity L : narrow |
| 42 | O | WNTC | MAX Dev. Control Narrow: H |
| 43 | I | NC | NC |
| 44 | I | NC | NC |
| 45 | I | NC | NC |
| 46 | I | NC | NC |
| 47 | I/O | SDA | EEPROM data line |
| 48 | O | SCL | EEPROM clock line |
| 49 | I | UL | PLL unlock detection pin L : unlock |
| 50 | I | NC | NC |
| 51 | I | NC | NC |
| 52 | I | NC | NC |
| 53 | I | NC | NC |
| 54 | I | NC | NC |
| 55 | O | DT | Common data output |
| 56 | O | CK | Common clock output |
| 57 | O | NC | NC |
| 58 | O | LE | PLL IC enable H : latches |

| Pin No. | I/O | Port Name | Function |
|---------|-----|-----------|--|
| 59 | O | NC | NC |
| 60 | O | NC | NC |
| 61 | O | 5MC | Control of power supply (5M) for everything except the microcomputer and EEPROM L : Power supply ON |
| 62 | O | AFCO | AF amp power supply H : ON |
| 63 | O | RX | TX/RX VCO select H : RX |
| 64 | O | GLED | Green LED control H : Lit |
| 65 | O | RLED | RED LED control H : Lit |
| 66 | O | SAVE | Save control H : Save off |
| 67 | O | MUTE | Mute control H : Mic mute L : AF mute |
| 68 | O | 5RC | Reception power supply control L : on |
| 69 | O | 5TC | Transmission power supply control H : on |
| 70 | O | NC | NC |
| 71 | O | NC | NC |
| 72 | O | NC | NC |
| 73 | O | NC | NC |
| 74 | O | NC | NC |
| 75 | O | NC | NC |
| 76 | O | NC | NC |
| 77 | O | NC | NC |
| 78 | O | NC | NC |
| 79 | O | NC | NC |
| 80 | O | NC | NC |
| 81 | O | NC | NC |
| 82 | O | NC | NC |
| 83 | O | NC | NC |
| 84 | O | NC | NC |
| 85 | O | NC | NC |
| 86 | O | NC | NC |
| 87 | O | NC | NC |
| 88 | O | NC | NC |
| 89 | I | VCC | Microcomputer power supply, 5V input |
| 90 | I | VREF | A/D conversion reference voltage ; connected to Vcc |
| 91 | I | AVSS | A/D converter power supply ; connected to Vss |
| 92 | O | NC | NC |
| 93 | O | NC | NC |
| 94 | O | NC | NC |
| 95 | O | NC | NC |
| 96 | I | NC | NC |
| 97 | I | NC | NC |
| 98 | I | NC | NC |
| 99 | I | NC | NC |
| 100 | I | NC | NC |

FET : 2SK2596(Q102)

| Absolute Maximum Ratings (Ta=25°C) | | | | | | |
|------------------------------------|------------------|------------------|----------------|-----------------------|-----------------|------------------|
| Item | V _{BSS} | V _{CSS} | I _D | P _{ch} * | T _{ch} | T _{stg} |
| Rating | 17V | ±10V | 0.4A | 3W | 150°C | -45~+150°C |
| | | | | *T _C =25°C | | |

FET : 2SK2595(Q105)

| Absolute Maximum Ratings (Ta=25°C) | | | | | | |
|------------------------------------|-----------------|------------------|----------------|-----------------------|-----------------|------------------|
| Item | V _{DS} | V _{CSS} | I _D | P _{ch} * | T _{ch} | T _{stg} |
| Rating | 17V | ±10V | 1.1A | 20W | 150°C | -45~+150°C |
| | | | | *T _C =25°C | | |

DESCRIPTION OF COMPONENTS

TK-2107

| Ref No. | Semiconductor | Description |
|----------|----------------------------|-------------------------------|
| IC1 | IC | PHASE LOCKED LOOP SYSTEM |
| IC100 | IC | AUTOMATIC POWER CONTROL |
| IC200 | IC | IF SYSTEM |
| IC300 | IC | AUDIO AMP ACTIVE FILTER |
| IC301 | IC | ACTIVE FILTER |
| IC302 | IC | AUDIO POWER AMP |
| IC400 | IC | RESET SWITCH |
| IC401 | IC | EEPROM |
| IC402 | IC | VOLTAGE DETECT |
| IC403 | IC | MICRO PROCESSOR |
| IC404 | IC | VOLTAGE REGULATER |
| IC500 | IC | MIC AMP/LIMITER |
| Q1 | TRANSISTOR | TRIPLER |
| Q2 | TRANSISTOR | RF AMP |
| Q3 | FET | VCO RX |
| Q4 | FET | VCO TX |
| Q5 | FET | DC SWITCH |
| Q6 | TRANSISTOR | RF BUFFER AMP |
| Q7 | TRANSISTOR | DC SWITCH |
| Q8 | TRANSISTOR | RIPPLE FILTER |
| Q100 | TRANSISTOR | RF AMP |
| Q101 | TRANSISTOR | TX PRE-DRIVE |
| Q102 | FET | TX DRIVE |
| Q103 | FET | DC SWITCH |
| Q104 | TRANSISTOR | DC SWITCH |
| Q105 | FET | TX FINAL |
| Q106 | FET | DC SWITCH |
| Q107 | TRANSISTOR | TEMPERATURE PROTECTION SWITCH |
| Q108-200 | TRANSISTOR | DC SWITCH |
| Q201 | TRANSISTOR | IF AMP |
| Q202 | FET | MIXER |
| Q203 | FET | MIXER RF AMP |
| Q300 | TRANSISTOR | ACTIVE FILTER |
| Q302 | FET | AUDIO MUTE SWITCH |
| Q304-306 | TRANSISTOR | DC SWITCH |
| Q307 | FET | AUDIO MUTE SWITCH |
| Q400-402 | TRANSISTOR | DC SWITCH |
| Q403 | TRANSISTOR | BEAT SHIFT SWITCH |
| Q404 | TRANSISTOR | DC SWITCH |
| Q405 | FET | DC SWITCH |
| Q406-408 | TRANSISTOR | DC SWITCH |
| Q500 | FET | DC SWITCH |
| Q501,502 | TRANSISTOR | ACTIVE FILTER |
| Q503 | TRANSISTOR | MIC MUTE/ AGC |
| Q504 | TRANSISTOR | DC SWITCH |
| D1-4 | VARIABLE CAPACITANCE DIODE | FREQ. CONTROL |
| D5 | VARIABLE CAPACITANCE DIODE | TX MODULATION |
| D6 | DIODE | CURRENT STEERING |
| D7 | DIODE | UNLOCK DETECT |
| D100 | DIODE | RF SWITCH |
| D101-103 | DIODE | ANTENNA SWITCH |
| D200 | DIODE | RF SWITCH |
| D300 | DIODE | LIMITER |
| D400 | LED | TX |
| D401 | LED | BUSY |
| D500 | DIODE | AGC DETECT |
| D501 | DIODE | MIC MUTE/AGC SWITCH |
| D502 | DIODE | REVERSE PROTECTION |

PARTS LIST

* New Parts.  indicates safety critical components.
 Parts without **Parts No.** are not supplied.
 Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
 Teile ohne **Parts No.** werden nicht geliefert.
 TK-2107

| Ref. No. | Address | New parts | Parts No. | Description | Destination | Ref. No. | Address | New parts | Parts No. | Description | Destination |
|---------------------------------|---------|-----------|---------------|-------------------------------|-------------|----------|---------|-----------|---------------|-------------|-------------|
| TK-2107 | | | | | | | | | | | |
| 1 | 1A | * | A02-2448-13 | CABINET ASSY | | C7 | | | CK73GB1H102K | CHIP C | 1000PF K |
| 2 | 3B | | A82-0034-03 | REAR PANEL | | C8 | | | CK73FB1C224K | CHIP C | 0.22UF K |
| 3 | 3D | | B09-0351-03 | CAP | | C9 | | | CC73GCH1H100D | CHIP C | 10PF D |
| 5 | | * | B72-1847-04 | MODEL NAME PLATE | | C10 | | | CC73GCH1H470J | CHIP C | 47PF J |
| 6 | 2B | | E04-0413-05 | RF COAXIAL RECEPTACLE(SMA) | | C12 | | | CK73FB1C224K | CHIP C | 0.22UF K |
| 7 | 3B | | E23-1006-04 | RELAY TERMINAL(BATT -) | | C14 | | | CC73GCH1H100D | CHIP C | 10PF D |
| 8 | 1A | | G01-0881-04 | COIL SPRING(BATT RELEASE) | | C15 | | | C92-0565-05 | CHIP-TAN | 6.8UF 10WV |
| 9 | 2B | | G11-2583-04 | SHEET | | C16 | | | CC73GCH1H680J | CHIP C | 68PF J |
| 10 | 2B | | G11-2588-04 | RUBBER SHEET(CHASSIS) | | C17 | | | CK73GB1H331K | CHIP C | 330PF K |
| | | * | G13-1709-04 | CUSHION(VOL) | | C18 | | | C92-0504-05 | CHIP-TAN | 0.68UF 20WV |
| | | | G13-1763-04 | CUSHION(CHASSIS-BATT) | | C19,20 | | | CK73GB1H103K | CHIP C | 0.010UF K |
| 11 | 2B | | G53-0791-03 | PACKING(SP/MIC PLUG) | | C23 | | | C92-0560-05 | CHIP-TAN | 10UF 6.3WV |
| 12 | 2A | | G53-0842-13 | PACKING(SPEAKER) | | C24 | | | CK73GB1H681K | CHIP C | 680PF K |
| 13 | 2A | | G53-0860-04 | PACKING(SIDE) | | C25 | | | CK73GB1H471K | CHIP C | 470PF K |
| 14 | 1C | | H12-3037-02 | PACKING FIXTURE | | C26 | | | CC73GCH1H121J | CHIP C | 120PF J |
| 15 | 1C | | H25-0085-04 | PROTECTION BAG (100/200/0.07) | | C27 | | | CK73GB1H102K | CHIP C | 1000PF K |
| 16 | 2D | | H25-2012-04 | PROTECTION BAG (75/100/0.08) | | C28 | | | CC73GCH1H330J | CHIP C | 33PF J |
| 17 | 3C | | H52-1522-02 | ITEM CARTON CASE | | C29-31 | | | CK73GB1H102K | CHIP C | 1000PF K |
| 18 | 1A | | J19-1572-04 | HOLDER(BATT RELEASE) | | C32 | | | CC73GCH1H180J | CHIP C | 18PF J |
| 19 | 2B | | J19-5344-03 | HOLDER(VOL/CH S.W) | | C33 | | | CC73GCH1H120J | CHIP C | 12PF J |
| 20 | 3D | | J21-4493-04 | SP/MIC HOLDER | | C34 | | | CC73GCH1HR75B | CHIP C | 0.75PF B |
| 21 | 3B | | J29-0624-03 | BELT HOOK | | C35 | | | CC73GCH1H060D | CHIP C | 6.0PF D |
| | | | J82-0059-05 | FPC | | C36 | | | CC73GCH1H120J | CHIP C | 12PF J |
| 22 | 1B | | K29-5255-03 | KNOB(VOL) | | C37 | | | CC73GCH1H050B | CHIP C | 5.0PF B |
| 23 | 1A | | K29-5274-03 | BUTTON KNOB(MONI) | | C38 | | | CC73GCH1H150J | CHIP C | 15PF J |
| 24 | 1A | | K29-5275-13 | BUTTON KNOB(PTT) | | C39 | | | CK73GB1H103K | CHIP C | 0.010UF K |
| 25 | 1B | | K29-5278-03 | KNOB(CH S.W) | | C40,41 | | | CK73GB1H102K | CHIP C | 1000PF K |
| 26 | 1A | | K29-5337-03 | LEVER KNOB(BATT RELEASE) | | C42 | | | CK73GB1H103K | CHIP C | 0.010UF K |
| A | 2B | | N09-2319-05 | BINDING HEAD SCREW(SMA) | | C43,44 | | | CC73GCH1HOR5B | CHIP C | 0.5PF B |
| B | 1B | | N14-0581-04 | CIRCULAR NUT(VOL/CH S.W) | | C45,46 | | | CK73GB1H102K | CHIP C | 1000PF K |
| C | 1B | | N14-0582-14 | CIRCULAR NUT(SMA) | | C47 | | | CC73GCH1H330J | CHIP C | 33PF J |
| D | 3A | | N30-2606-46 | PAN HEAD MACHINE SCREW | | C48 | | | CC73GCH1H100D | CHIP C | 10PF D |
| E | 3B | | N79-2035-46 | PAN HEAD TAPTITE SCREW | | C49 | | | CK73GB1H102K | CHIP C | 1000PF K |
| F | 2A,2B | | N83-2005-46 | PAN HEAD TAPTITE SCREW | | C50 | | | C92-0507-05 | CHIP-TAN | 4.7UF 6.3WV |
| G | 3D | | N99-0396-05 | SCREW SET | | C51 | | | CC73GCH1H680J | CHIP C | 68PF J |
| | | | R31-0624-05 | VARIABLE RESISTOR | | C100 | | | CC73GCH1H150J | CHIP C | 15PF J |
| | | | S60-0410-05 | ROTARY SWITCH | | C101,102 | | | CK73GB1H102K | CHIP C | 1000PF K |
| SP | 1A | | T07-0369-05 | SPEAKER | | C103 | | | CC73GCH1H220J | CHIP C | 22PF J |
| ANT | 2C | | T90-0733-05 | HELICAL ANTENNA | | C104-107 | | | CK73GB1H102K | CHIP C | 1000PF K |
| TX-RX UNIT (X57-6020-21) | | | | | | | | | | | |
| D400 | | | B30-2156-05 | LED(REDF) | | C108 | | | CC73GCH1H120J | CHIP C | 12PF J |
| D401 | | | B30-2157-05 | LED(YELLOW) | | C109 | | | CK73GB1H102K | CHIP C | 1000PF K |
| C1 | | | CK73GB1C104K | CHIP C | 0.10UF K | C110 | | | CK73GB1C104K | CHIP C | 0.10UF K |
| C2,3 | | | CC73GCH1H101J | CHIP C | 100PF J | C111,112 | | | CK73GB1H102K | CHIP C | 1000PF K |
| C4 | | | CK73GB1C104K | CHIP C | 0.10UF K | C113 | | | CC73GCH1H390J | CHIP C | 39PF J |
| C5 | | | C92-0507-05 | CHIP-TAN | 4.7UF 6.3WV | C114-116 | | | CK73GB1H102K | CHIP C | 1000PF K |
| C6 | | | CC73GCH1H101J | CHIP C | 100PF J | C118-120 | | | CK73GB1H102K | CHIP C | 1000PF K |
| | | | | | | C121 | | | CK73EB1C105K | CHIP C | 1.0UF K |
| | | | | | | C122 | | | CC73GCH1H050C | CHIP C | 5.0PF C |
| | | | | | | C123 | | | CK73GB1H103K | CHIP C | 0.010UF K |
| | | | | | | C124 | | | CK73GB1H102K | CHIP C | 1000PF K |
| | | | | | | C125 | | | CK73GB1C104K | CHIP C | 0.10UF K |
| | | | | | | C126 | | | CC73GCH1H330J | CHIP C | 33PF J |
| | | | | | | C127 | | | C92-0565-05 | CHIP-TAN | 6.8UF 10WV |

PARTS LIST

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| Ref. No. | Address | New parts | Parts No. | Description | Destination | Ref. No. | Address | New parts | Parts No. | Description | Destination |
|----------|---------|-----------|---------------|---------------------|-------------|----------|---------|-----------|---------------|----------------------|-------------|
| C128 | | | CC73GCH1H030C | CHIP C 3.0PF C | | C304 | | | C92-0560-05 | CHIP-TAN 10UF 6.3WV | |
| C129 | | | CC73GCH1H4R5B | CHIP C 4.5PF B | | C305 | | | CK73GB1H103J | CHIP C 0.010UF J | |
| C130,131 | | | CK73GB1H102K | CHIP C 1000PF K | | C306 | | | CK73GB1C473K | CHIP C 0.047UF K | |
| C132 | | | CK73GB1H471K | CHIP C 470PF K | | C307 | | | C92-0560-05 | CHIP-TAN 10UF 6.3WV | |
| C133 | | | CK73GB1H102K | CHIP C 1000PF K | | C308 | | | CK73GB1H562K | CHIP C 5600PF K | |
| C134 | | | CC73GCH1H101J | CHIP C 100PF J | | C309 | | | CK73GB1H103J | CHIP C 0.010UF J | |
| C135 | | | CC73GCH1H270J | CHIP C 27PF J | | C311 | | | C92-0560-05 | CHIP-TAN 10UF 6.3WV | |
| C136 | | | CC73GCH1H070D | CHIP C 7.0PF D | | C312 | | | CK73GB1H103J | CHIP C 0.010UF J | |
| C137 | | | CK73GB1H102K | CHIP C 1000PF K | | C313 | | | CK73FB1A105K | CHIP C 1.0UF K | |
| C138 | | | CC73GCH1H050C | CHIP C 5.0PF C | | C314 | | | CK73GB1H102K | CHIP C 1000PF K | |
| C139 | | | CK73GB1H102K | CHIP C 1000PF K | | C316 | | | CK73GB1H103J | CHIP C 0.010UF J | |
| C140 | | | CC73GCH1H050C | CHIP C 5.0PF C | | C318 | | | CK73GB1C333K | CHIP C 0.033UF K | |
| C141 | | | CK73GB1H471K | CHIP C 470PF K | | C319 | | | CK73GB1C473K | CHIP C 0.047UF K | |
| C142 | | | CC73GCH1H130J | CHIP C 13PF J | | C320,321 | | | CK73GB1C333J | CHIP C 0.033UF J | |
| C143 | | | CC73GCH1H060D | CHIP C 6.0PF D | | C322 | | | CK73FB1E104K | CHIP C 0.10UF K | |
| C144 | | | CC73GCH1H040C | CHIP C 4.0PF C | | C327 | | | CK73GB1C104K | CHIP C 0.10UF K | |
| C146 | | | CC73GCH1H130J | CHIP C 13PF J | | C330 | | | CC73GCH1H101J | CHIP C 100PF J | |
| C147 | | | CC73GCH1H050C | CHIP C 5.0PF C | | C331 | | | CK73FB1C474K | CHIP C 0.47UF K | |
| C148 | | | CC73GCH1H030C | CHIP C 3.0PF C | | C332 | | | C92-0560-05 | CHIP-TAN 10UF 6.3WV | |
| C200 | | | C92-0560-05 | CHIP-TAN 10UF 6.3WV | | C333 | | | CK73GB1A474K | CHIP C 0.47UF K | |
| C201 | | | CK73GB1H103K | CHIP C 0.010UF K | | C334 | | | CC73GCH1H221J | CHIP C 220PF J | |
| C202 | | | CC73GCH1H100D | CHIP C 10PF D | | C335 | | | CK73GB1C473K | CHIP C 0.047UF K | |
| C203 | | | CK73GB1H471K | CHIP C 470PF K | | C336 | | | CK73GB1H103K | CHIP C 0.010UF K | |
| C204 | | | CK73GB1H472K | CHIP C 4700PFK | | C337 | | | C92-0665-05 | TANTAL 100UF 6.3WV | |
| C205,206 | | | CC73GCH1H221J | CHIP C 220PF J | | C338 | | | CC73GCH1H560J | CHIP C 56PF J | |
| C207 | | | CK73GB1C104K | CHIP C 0.10UF K | | C400 | | | CK73GB1C104K | CHIP C 0.10UF K | |
| C208 | | | CC73GCH1H270J | CHIP C 27PF J | | C402-404 | | | CK73GB1H102K | CHIP C 1000PF K | |
| C209 | | | CK73GB1C104K | CHIP C 0.10UF K | | C406,407 | | | CK73GB1H102K | CHIP C 1000PF K | |
| C210 | | | CK73GB1H103K | CHIP C 0.010UF K | | C408 | | | C92-0560-05 | CHIP-TAN 10UF 6.3WV | |
| C211 | | | CK73GB1C104K | CHIP C 0.10UF K | | C409 | | | CC73GCH1H030C | CHIP C 3.0PF C | |
| C212 | | | CC73GCH1H150J | CHIP C 15PF J | | C410 | | | CK73GB1H102K | CHIP C 1000PF K | |
| C213 | | | CK73GB1C104K | CHIP C 0.10UF K | | C411 | | | CK73GB1H471K | CHIP C 470PF K | |
| C214 | | | CK73GB1H103K | CHIP C 0.010UF K | | C412 | | | CC73GCH1H100D | CHIP C 10PF D | |
| C215 | | | CC73GCH1H3R5B | CHIP C 3.5PF B | | C413,414 | | | CK73GB1H102K | CHIP C 1000PF K | |
| C217 | | | CK73GB1H103K | CHIP C 0.010UF K | | C415 | | | CC73GCH1H100D | CHIP C 10PF D | |
| C218 | | | CK73GB1H102K | CHIP C 1000PF K | | C416 | | | CK73GB1H102K | CHIP C 1000PF K | |
| C219 | | | CC73GCH1H120J | CHIP C 12PF J | | C417 | | | CK73EF1C105Z | CHIP C 1.0UF Z | |
| C220 | | | CK73GB1H102K | CHIP C 1000PF K | | C418 | | | CK73GB1H103K | CHIP C 0.010UF K | |
| C221 | | | CK73GB1H103K | CHIP C 0.010UF K | | C420-422 | | | CK73GB1H103K | CHIP C 0.010UF K | |
| C222 | | | CC73GCH1H040C | CHIP C 4.0PF C | | C423 | | | CK73GB1C104K | CHIP C 0.10UF K | |
| C224,225 | | | CK73GB1C104K | CHIP C 0.10UF K | | C424 | | | CK73FB1A105K | CHIP C 1.0UF K | |
| C235 | | | CK73GB1C104K | CHIP C 0.10UF K | | C425 | | | CK73GB1H103K | CHIP C 0.010UF K | |
| C236 | | | CK73GB1H102K | CHIP C 1000PF K | | C427 | | | CK73GB1H102K | CHIP C 1000PF K | |
| C237 | | | CC73GCH1H120G | CHIP C 12PF G | | C429,430 | | | CK73FB1A105K | CHIP C 1.0UF K | |
| C241 | | | CC73GCH1H120G | CHIP C 12PF G | | C500,501 | | | CK73GB1C273K | CHIP C 0.027UF K | |
| C243 | | | CC73GCH1H020C | CHIP C 2.0PF C | | C502 | | | CK73GB1H392K | CHIP C 3900PF K | |
| C245,246 | | | CK73GB1H102K | CHIP C 1000PF K | | C503 | | | CK73GB1C333K | CHIP C 0.033UF K | |
| C248 | | | CC73GCH1H130J | CHIP C 13PF J | | C504 | | | C92-0507-05 | CHIP-TAN 4.7UF 6.3WV | |
| C250,251 | | | CK73GB1H102K | CHIP C 1000PF K | | C505 | | | CK73FB1A105K | CHIP C 1.0UF K | |
| C254 | | | CC73GCH1H010C | CHIP C 1.0PF C | | C507 | | | C92-0587-05 | CHIP-TAN 2.2UF 4WV | |
| C257 | | | CC73GCH1H1R5C | CHIP C 1.5PF C | | C508 | | | CK73GB1H103K | CHIP C 0.010UF K | |
| C258 | | | CC73GCH1H180J | CHIP C 18PF J | | C509 | | | CK73GB1H332K | CHIP C 3300PF K | |
| C261 | | | CC73GCH1H390J | CHIP C 39PF J | | C510 | | | CC73GCH1E821J | CHIP C 820PF J | |
| C300 | | | CK73GB1H822K | CHIP C 8200PF K | | C511 | | | CK73GB1C473K | CHIP C 0.047UF K | |
| C301 | | | CK73GB1E183K | CHIP C 0.018UF K | | C512 | | | CK73GB1H332K | CHIP C 3300PF K | |
| C302,303 | | | CK73GB1C104K | CHIP C 0.10UF K | | C513 | | | CC73GCH1E681J | CHIP C 680PF J | |

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| Ref. No. | Address | New parts | Parts No. | Description | Destination | Ref. No. | Address | New parts | Parts No. | Description | Destination |
|----------|---------|-----------|---------------|-----------------------------|-------------|----------|---------|-----------|--------------|------------------------------|-------------|
| C514 | | | CK73GB1C473K | CHIP C 0.047UF K | | L115 | | | L34-4549-05 | AIR-CORE COIL | |
| C515 | | | CK73GB1H103K | CHIP C 0.010UF K | | L117 | | | L34-4548-05 | AIR-CORE COIL | |
| C516 | | | CC73GCH1H100D | CHIP C 10PF D | | L118 | | | L40-1092-81 | SMALL FIXED INDUCTOR | |
| C517 | | | CK73GB1H102K | CHIP C 1000PF K | | L200 | | | L40-8285-85 | SMALL FIXED INDUCTOR(0.82U) | |
| C518 | | | CK73GB1E223J | CHIP C 0.022UF J | | L201 | | | L40-1085-85 | SMALL FIXED INDUCTOR(0.10U) | |
| C519 | | | C92-0507-05 | CHIP-TAN 4.7UF 6.3WV | | L202 | | | L40-2285-38 | SMALL FIXED INDUCTOR(220NH) | |
| C520 | | | CK73GB1E223J | CHIP C 0.022UF J | | L203 | | | L41-3378-03 | SMALL FIXED INDUCTOR | |
| C521 | | | CK73GB1H102K | CHIP C 1000PF K | | L204 | | | L40-3988-76 | SMALL FIXED INDUCTOR(0.39UH) | |
| C522 | | | CK73FB1E104K | CHIP C 0.10UF K | | L208-210 | | | L41-3378-03 | SMALL FIXED INDUCTOR | |
| C523 | | | C92-0587-05 | CHIP-TAN 2.2UF 4WV | | L212 | | | L34-4554-05 | COIL | |
| C524 | | | CK73GB1C273K | CHIP C 0.027UF K | | L212 | | | L34-4585-05 | COIL | |
| C525 | | | CK73GB1C104K | CHIP C 0.10UF K | | L214 | | | L41-3378-03 | SMALL FIXED INDUCTOR | |
| C526 | | | CK73GB1H471K | CHIP C 470PF K | | L400 | | | L40-2281-86 | SMALL FIXED INDUCTOR(0.22U) | |
| C527 | | | C92-0560-05 | CHIP-TAN 10UF 6.3WV | | L401 | | | L92-0140-05 | FERRITE CHIP | |
| C528 | | | CK73GB1H102K | CHIP C 1000PF K | | L402,403 | | | L40-2281-86 | SMALL FIXED INDUCTOR(0.22U) | |
| C529 | | | CK73FB1H102K | CHIP C 1000PF K | | L500 | | | L92-0140-05 | FERRITE CHIP | |
| C530,531 | | | CC73GCH1H221J | CHIP C 220PF J | | L501,502 | | | L92-0149-05 | FERRITE CHIP | |
| C532 | | | CK73GB1H471K | CHIP C 470PF K | | X1 | | | L77-1756-05 | TCXO (12.8MHZ) | |
| C533 | | | CK73GB1C104K | CHIP C 0.10UF K | | X400 | | | L77-1761-05 | CRYSTAL RESONATOR(7.3728MHZ) | |
| TC1,2 | | | C05-0383-05 | CERAMIC TRIMMER CAP(6P) | | XF200 | | | L71-0535-05 | MCF (38.85MHZ) | |
| TC201 | | | C05-0370-05 | CERAMIC TRIMMER CAP | | | | | N78-2640-46 | PAN HEAD TAPTITE SCREW | |
| CN400 | | | E23-1005-04 | RELAY TERMINAL | | CP1 | | | R90-0724-05 | MULTI-COMP 1K X4 | |
| J500 | | | E40-5998-05 | PIN ASSY | | R1 | | | RK73GB1J154J | CHIP R 150K J 1/16W | |
| F500 | | | E11-0457-05 | PHONE JACK (2.5/3.5D) | | R2 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | |
| | | | F53-0130-05 | FUSE | | R3 | | | RK73GB1J100J | CHIP R 10 J 1/16W | |
| 34 | 2B | | G53-0862-04 | PACKING | | R4 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | |
| | | | J19-1571-04 | HOLDER | | | | | | | |
| | | | J30-1249-04 | SPACER | | R5 | | | R92-1252-05 | CHIP R 0 OHM | |
| CF200 | | | L72-0979-05 | CERAMIC FILTER | | R6 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | |
| L1 | | | L92-0140-05 | FERRITE CHIP | | R7 | | | R92-1252-05 | CHIP R 0 OHM | |
| L2 | | | L40-1005-85 | SMALL FIXED INDUCTOR(10U) | | R8 | | | RK73GB1J334J | CHIP R 330K J 1/16W | |
| L4 | | | L40-4781-86 | SMALL FIXED INDUCTOR(0.47U) | | R9 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | |
| L5 | | | L40-5681-86 | SMALL FIXED INDUCTOR(0.56U) | | R10 | | | RK73GB1J151J | CHIP R 150 J 1/16W | |
| L6 | | | L40-6891-86 | SMALL FIXED INDUCTOR(6.8U) | | R11 | | | RK73GB1J473J | CHIP R 47K J 1/16W | |
| L7 | | | L92-0140-05 | FERRITE CHIP | | R12 | | | RK73GB1J274J | CHIP R 270K J 1/16W | |
| L8,9 | | | L40-6891-86 | SMALL FIXED INDUCTOR(6.8U) | | R13 | | | RK73GB1J151J | CHIP R 150 J 1/16W | |
| L10 | | | L33-0750-05 | SMALL FIXED INDUCTOR | | R14 | | | RK73GB1J101J | CHIP R 100 J 1/16W | |
| L11 | | | L33-0744-05 | SMALL FIXED INDUCTOR | | R15 | | | RK73GB1J103J | CHIP R 10K J 1/16W | |
| L12 | | | L40-8275-77 | SMALL FIXED INDUCTOR(82NH) | | R16 | | | RK73GB1J683J | CHIP R 68K J 1/16W | |
| L14 | | | L92-0140-05 | FERRITE CHIP | | R17 | | | RK73GB1J104J | CHIP R 100K J 1/16W | |
| L15 | | | L40-6891-86 | SMALL FIXED INDUCTOR(6.8U) | | R18 | | | RK73GB1J271J | CHIP R 270 J 1/16W | |
| L16,17 | | | L40-2285-38 | SMALL FIXED INDUCTOR(220NH) | | R19 | | | RK73GB1J473J | CHIP R 47K J 1/16W | |
| L100 | | | L40-1085-77 | SMALL FIXED INDUCTOR(100NH) | | R20 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | |
| L101 | | | L40-6875-77 | SMALL FIXED INDUCTOR(68NH) | | R21 | | | RK73GB1J104J | CHIP R 100K J 1/16W | |
| L102 | | | L92-0140-05 | FERRITE CHIP | | R22 | | | RK73GB1J271J | CHIP R 270 J 1/16W | |
| L103 | | | L40-1875-77 | SMALL FIXED INDUCTOR(18NH) | | R23 | | | RK73GB1J124J | CHIP R 120K J 1/16W | |
| L104 | | | L40-1098-76 | SMALL FIXED INDUCTOR(1UH) | | R24 | | | RK73GB1J104J | CHIP R 100K J 1/16W | |
| L105 | | | L92-0149-05 | FERRITE CHIP | | R25 | | | RK73GB1J681J | CHIP R 680 J 1/16W | |
| L106 | | | L40-3363-77 | SMALL FIXED INDUCTOR(3.3NH) | | R26 | | | RK73GB1J472J | CHIP R 4.7K J 1/16W | |
| L107 | | | L40-1575-54 | SMALL FIXED INDUCTOR(15NH) | | R27 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | |
| L108 | | | L34-4548-05 | AIR-CORE COIL | | R28,29 | | | R92-1252-05 | CHIP R 0 OHM | |
| L109 | | | L92-0149-05 | FERRITE CHIP | | R100 | | | RK73GB1J332J | CHIP R 3.3K J 1/16W | |
| L110,111 | | | L34-4650-05 | AIR-CORE COIL | | R101 | | | RK73GB1J123J | CHIP R 12K J 1/16W | |
| L112 | | | L40-1095-85 | SMALL FIXED INDUCTOR(1.0U) | | R102 | | | RK73GB1J221J | CHIP R 220 J 1/16W | |
| L113 | | | L34-4550-05 | AIR-CORE COIL | | R103 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | |
| L114 | | | L34-4548-05 | AIR-CORE COIL | | R104 | | | RK73GB1J101J | CHIP R 100 J 1/16W | |
| | | | | | | R105,106 | | | RK73GB1J332J | CHIP R 3.3K J 1/16W | |

PARTS LIST

TX-RX UNIT (X57-6020-21)

| Ref. No. | Address | New parts | Parts No. | Description | Destination | Ref. No. | Address | New parts | Parts No. | Description | Destination |
|----------|---------|-----------|--------------|---------------------|-------------|----------|---------|-----------|--------------|---------------------|-------------|
| R107 | | | RK73GB1J392J | CHIP R 3.9K J 1/16W | | R303 | | | RK73GB1J332J | CHIP R 3.3K J 1/16W | |
| R108 | | | RK73GB1J152J | CHIP R 1.5K J 1/16W | | R304 | | | RK73GB1J105J | CHIP R 1.0M J 1/16W | |
| R109 | | | RK73GB1J100J | CHIP R 10 J 1/16W | | R305 | | | RK73GB1J183J | CHIP R 18K J 1/16W | |
| R110 | | | RK73GB1J331J | CHIP R 330 J 1/16W | | R306 | | | RK73GB1J124J | CHIP R 120K J 1/16W | |
| R112 | | | RK73GB1J180J | CHIP R 18 J 1/16W | | R307 | | | RK73GB1J473J | CHIP R 47K J 1/16W | |
| R114,115 | | | RK73GB1J473J | CHIP R 47K J 1/16W | | R308 | | | RK73GB1J103J | CHIP R 10K J 1/16W | |
| R116,117 | | | RK73GB1J470J | CHIP R 47 J 1/16W | | R309 | | | RK73GB1J474J | CHIP R 470K J 1/16W | |
| R119 | | | RK73GB1J472J | CHIP R 4.7K J 1/16W | | R310,311 | | | R92-0670-05 | CHIP R 0 OHM | |
| R120 | | | RK73GB1J153J | CHIP R 15K J 1/16W | | R312 | | | RK73GB1J123J | CHIP R 12K J 1/16W | |
| R121 | | | RK73GB1J473J | CHIP R 47K J 1/16W | | R313 | | | RK73GB1J104J | CHIP R 100K J 1/16W | |
| R122 | | | RK73GB1J681J | CHIP R 680 J 1/16W | | R314 | | | RK73GH1J474D | CHIP R 470K D 1/16W | |
| R123 | | | R92-1252-05 | CHIP R 0 OHM | | R315 | | | RK73GH1J394D | CHIP R 390K D 1/16W | |
| R124 | | | RK73GB1J561J | CHIP R 560 J 1/16W | | R316 | | | RK73GB1J274J | CHIP R 270K J 1/16W | |
| R125 | | | RK73GB1J332J | CHIP R 3.3K J 1/16W | | R317 | | | RK73GH1J274D | CHIP R 270K D 1/16W | |
| R126 | | | RK73GB1J681J | CHIP R 680 J 1/16W | | R318 | | | RK73GB1J184J | CHIP R 180K J 1/16W | |
| R127,128 | | | RK73GB1J271J | CHIP R 270 J 1/16W | | R320 | | | RK73GB1J473J | CHIP R 47K J 1/16W | |
| R130-132 | | | RK73EB2ER39K | CHIP R 0.39 K 1/4W | | R321 | | | RK73GB1J223J | CHIP R 22K J 1/16W | |
| R133-138 | | | RK73GH1J154D | CHIP R 150K D 1/16W | | R322 | | | RK73GH1J224D | CHIP R 220K J 1/16W | |
| R140 | | | RK73GB1J103J | CHIP R 10K J 1/16W | | R323 | | | RK73GB1J104J | CHIP R 100K J 1/16W | |
| R141 | | | RK73GB1J473J | CHIP R 47K J 1/16W | | R324 | | | RK73GB1J562J | CHIP R 5.6K J 1/16W | |
| R142 | | | RK73GB1J105J | CHIP R 1.0M J 1/16W | | R325 | | | RK73GB1J104J | CHIP R 100K J 1/16W | |
| R143 | | | R92-1252-05 | CHIP R 0 OHM | | R326 | | | RK73GH1J562D | CHIP R 5.6K D 1/16W | |
| R144 | | | RK73GB1J331J | CHIP R 330 J 1/16W | | R327 | | | R92-1252-05 | CHIP R 0 OHM | |
| R145 | | | RK73GB1J184J | CHIP R 180K J 1/16W | | R328 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | |
| R146 | | | RK73GB1J104J | CHIP R 100K J 1/16W | | R330 | | | RK73GB1J473J | CHIP R 47K J 1/16W | |
| R147,148 | | | RK73GB1J331J | CHIP R 330 J 1/16W | | R331 | | | RK73GB1J222J | CHIP R 2.2K J 1/16W | |
| R200 | | | RK73GB1J100J | CHIP R 10 J 1/16W | | R332 | | | RK73GB1J151J | CHIP R 150 J 1/16W | |
| R201 | | | RK73GB1J392J | CHIP R 3.9K J 1/16W | | R333 | | | RK73GB1J474J | CHIP R 470K J 1/16W | |
| R202 | | | RK73GB1J184J | CHIP R 180K J 1/16W | | R334 | | | RK73GB1J100J | CHIP R 10 J 1/16W | |
| R203,204 | | | RK73GB1J332J | CHIP R 3.3K J 1/16W | | R335 | | | RK73GB1J563J | CHIP R 56K J 1/16W | |
| R205 | | | RK73GB1J153J | CHIP R 15K J 1/16W | | R336 | | | RK73GB1J333J | CHIP R 33K J 1/16W | |
| R206 | | | RK73GB1J184J | CHIP R 180K J 1/16W | | R338 | | | RK73GB1J473J | CHIP R 47K J 1/16W | |
| R207 | | | RK73GB1J104J | CHIP R 100K J 1/16W | | R339 | | | RK73GB1J822J | CHIP R 8.2K J 1/16W | |
| R208 | | | RK73GB1J684J | CHIP R 680K J 1/16W | | R340 | | | RK73GH1J124D | CHIP R 120K D 1/16W | |
| R209 | | | RK73GB1J272J | CHIP R 2.7K J 1/16W | | R400 | | | RK73GB1J334J | CHIP R 330K J 1/16W | |
| R210,211 | | | RK73GB1J821J | CHIP R 820 J 1/16W | | R401 | | | RK73GB1J104J | CHIP R 100K J 1/16W | |
| R212 | | | RK73GB1J330J | CHIP R 33 J 1/16W | | R402 | | | RK73GB1J221J | CHIP R 220 J 1/16W | |
| R213 | | | R92-1252-05 | CHIP R 0 OHM | | R403 | | | RK73GB1J181J | CHIP R 180 J 1/16W | |
| R214 | | | RK73GB1J103J | CHIP R 10K J 1/16W | | R404 | | | R92-1252-05 | CHIP R 0 OHM | |
| R215 | | | RK73GB1J271J | CHIP R 270 J 1/16W | | R405 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | |
| R216 | | | RK73GB1J222J | CHIP R 2.2K J 1/16W | | R406 | | | RK73GB1J222J | CHIP R 2.2K J 1/16W | |
| R217 | | | R92-1252-05 | CHIP R 0 OHM | | R407 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | |
| R220 | | | RK73GB1J122J | CHIP R 1.2K J 1/16W | | R408 | | | RK73GB1J104J | CHIP R 100K J 1/16W | |
| R222 | | | R92-1252-05 | CHIP R 0 OHM | | R409 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | |
| R223 | | | RK73GB1J101J | CHIP R 100 J 1/16W | | R410 | | | RK73GB1J822J | CHIP R 8.2K J 1/16W | |
| R225 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | | R411 | | | RK73GB1J224J | CHIP R 220K J 1/16W | |
| R228 | | | RK73GB1J470J | CHIP R 47 J 1/16W | | R412 | | | RK73GB1J100J | CHIP R 10 J 1/16W | |
| R229 | | | RK73GB1J471J | CHIP R 470 J 1/16W | | R413 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | |
| R231 | | | RK73GB1J101J | CHIP R 100 J 1/16W | | R414,415 | | | RK73GB1J473J | CHIP R 47K J 1/16W | |
| R232 | | | R92-1252-05 | CHIP R 0 OHM | | R416 | | | RK73GB1J472J | CHIP R 4.7K J 1/16W | |
| R233 | | | RK73GB1J224J | CHIP R 220K J 1/16W | | R417 | | | RK73GB1J100J | CHIP R 10 J 1/16W | |
| R234 | | | R92-1252-05 | CHIP R 0 OHM | | R418 | | | RK73GB1J222J | CHIP R 2.2K J 1/16W | |
| R235 | | | RK73GB1J104J | CHIP R 100K J 1/16W | | R419 | | | R92-1252-05 | CHIP R 0 OHM | |
| R240 | | | R92-1252-05 | CHIP R 0 OHM | | R420 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | |
| R300 | | | RK73GH1J913D | CHIP R 91K D 1/16W | | R421 | | | RK73GB1J473J | CHIP R 47K J 1/16W | |
| R301,302 | | | RK73GB1J562J | CHIP R 5.6K J 1/16W | | R422 | | | RK73GB1J272J | CHIP R 2.7K J 1/16W | |

PARTS LIST

TX-RX UNIT (X57-6020-21)

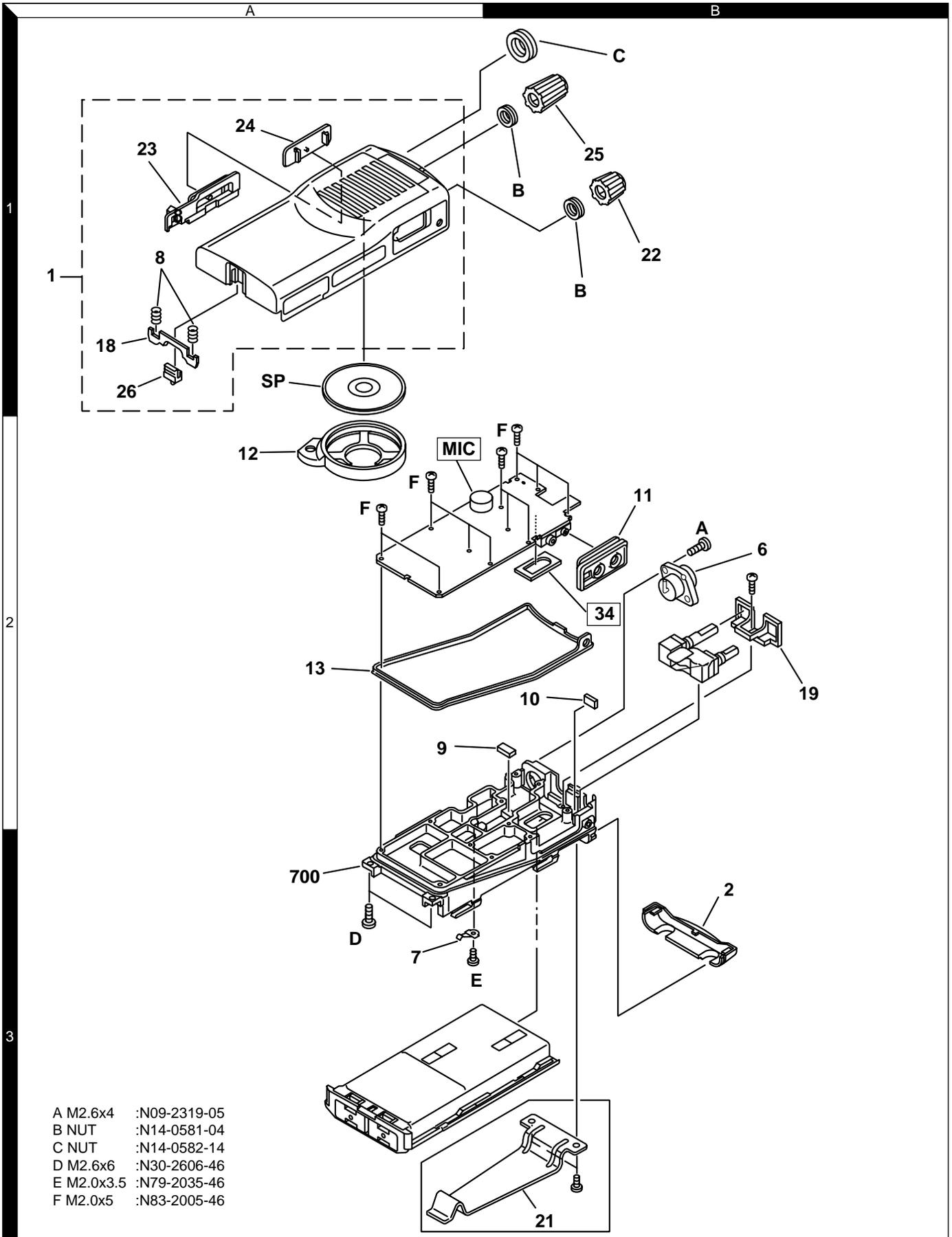
| Ref. No. | Address | New parts | Parts No. | Description | Destination | Ref. No. | Address | New parts | Parts No. | Description | Destination |
|----------|---------|-----------|--------------|----------------------------|-------------|----------|---------|-----------|----------------|----------------------------|-------------|
| R423 | | | RK73GB1J473J | CHIP R 47K J 1/16W | | D5 | | | 1SV214 | VARIABLE CAPACITANCE DIODE | |
| R424,425 | | | RK73GB1J332J | CHIP R 3.3K J 1/16W | | D6,7 | | | MA2S111 | DIODE | |
| R426 | | | RK73GB1J822J | CHIP R 8.2K J 1/16W | | D100 | | | HSC277 | DIODE | |
| R427 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | | D101 | | * | HSK277 | DIODE | |
| R428 | | | RK73GB1J272J | CHIP R 2.7K J 1/16W | | D102,103 | | | HSC277 | DIODE | |
| R429 | | | RK73GB1J821J | CHIP R 820 J 1/16W | | D200 | | | HSC277 | DIODE | |
| R430 | | | RK73GB1J101J | CHIP R 100 J 1/16W | | D300 | | | DA221 | DIODE | |
| R431 | | | R92-1252-05 | CHIP R 0 OHM | | D500 | | | 1SS372 | DIODE | |
| R432 | | | RK73GB1J103J | CHIP R 10K J 1/16W | | D501 | | | DAN222 | DIODE | |
| R433,434 | | | RK73GB1J153J | CHIP R 15K J 1/16W | | D502 | | | 1SR154-400 | DIODE | |
| R435 | | | RK73GB1J103J | CHIP R 10K J 1/16W | | IC1 | | | MB15A02 | IC | |
| R500,501 | | | RK73GB1J472J | CHIP R 4.7K J 1/16W | | IC100 | | | NJM2904V | IC(APC) | |
| R502 | | | RK73GB1J823J | CHIP R 82K J 1/16W | | IC200 | | | TA31136FN | IC(FM IF DETECTOR) | |
| R503 | | | RK73GB1J682J | CHIP R 6.8K J 1/16W | | IC300 | | | NJM2902V | IC | |
| R504 | | | RK73GB1J223J | CHIP R 22K J 1/16W | | IC301 | | | NJM2904V | IC(APC) | |
| R505 | | | RK73GB1J682J | CHIP R 6.8K J 1/16W | | IC302 | | | TA7368F | IC(AF POWER AMP) | |
| R506 | | | RK73GB1J821J | CHIP R 820 J 1/16W | | IC400 | | | PST9140NR | IC(RESET SW) | |
| R507 | | | RK73GB1J472J | CHIP R 4.7K J 1/16W | | IC401 | | | AT2408N10SI2.5 | IC(8bit SERIAL EEPROM) | |
| R508 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | | IC402 | | | RN5VL45C | IC(REGULATOR) | |
| R509 | | | RK73GB1J124J | CHIP R 120K J 1/16W | | IC403 | | | M38267M8L241GP | IC(MPU) | |
| R510 | | | RK73GB1J332J | CHIP R 3.3K J 1/16W | | IC404 | | | S-81350HG-KD | IC(VOLTAGE REGULATOR) | |
| R511 | | | RK73GB1J103J | CHIP R 10K J 1/16W | | IC500 | | | NJM2100V | IC(AUDIO AMP) | |
| R512 | | | RK73GB1J185J | CHIP R 1.8M J 1/16W | | Q1 | | | 2SC4649(N,P) | TRANSISTOR | |
| R513 | | | RK73GB1J153J | CHIP R 15K J 1/16W | | Q2 | | | 2SC5108(Y) | TRANSISTOR | |
| R514,515 | | | RK73GB1J333J | CHIP R 33K J 1/16W | | Q3,4 | | | 2SK1875(V) | FET | |
| R516 | | | RK73GB1J103J | CHIP R 10K J 1/16W | | Q5 | | | 2SJ243 | FET | |
| R517 | | | RK73GB1J185J | CHIP R 1.8M J 1/16W | | Q6 | | | 2SC5108(Y) | TRANSISTOR | |
| R518 | | | RK73GB1J154J | CHIP R 150K J 1/16W | | Q7 | | | UMC4 | TRANSISTOR | |
| R519,520 | | | RK73GB1J333J | CHIP R 33K J 1/16W | | Q8 | | | 2SC4617(S) | TRANSISTOR | |
| R521 | | | RK73GB1J332J | CHIP R 3.3K J 1/16W | | Q100 | | | 2SC5108(Y) | TRANSISTOR | |
| R522 | | | RK73GB1J182J | CHIP R 1.8K J 1/16W | | Q101 | | | 2SC4988 | TRANSISTOR | |
| R523 | | | RK73GB1J682J | CHIP R 6.8K J 1/16W | | Q102 | | | 2SK2596 | FET | |
| R524 | | | RK73GB1J513J | CHIP R 51K J 1/16W | | Q103 | | | 2SK1824 | FET | |
| R525 | | | RK73GB1J152J | CHIP R 1.5K J 1/16W | | Q104 | | | FMMT717 | TRANSISTOR | |
| R526,527 | | | RK73GH1J153D | CHIP R 15K D 1/16W | | Q105 | | | 2SK2595 | FET | |
| R528 | | | RK73GB1J754J | CHIP R 750K J 1/16W | | Q106 | | | 2SK1824 | FET | |
| R529 | | | RK73GB1J183J | CHIP R 18K J 1/16W | | Q107 | | | DTC114TE | DIGITAL TRANSISTOR | |
| R530 | | | RK73GB1J101J | CHIP R 100 J 1/16W | | Q108 | | | DTC114EE | DIGITAL TRANSISTOR | |
| R531 | | | R92-1252-05 | CHIP R 0 OHM | | Q109 | | | DTA1144EE | DIGITAL TRANSISTOR | |
| R532 | | | RK73GB1J821J | CHIP R 820 J 1/16W | | Q200 | | | DTA114EE | DIGITAL TRANSISTOR | |
| R533 | | | RK73GB1J104J | CHIP R 100K J 1/16W | | Q201 | | | 2SC4649(N,P) | TRANSISTOR | |
| R534 | | | RK73GB1J182J | CHIP R 1.8K J 1/16W | | Q202,203 | | | 3SK228 | FET | |
| R535 | | | RK73GB1J471J | CHIP R 470 J 1/16W | | Q300 | | | 2SC4617(S) | TRANSISTOR | |
| R536 | | | RK73GB1J102J | CHIP R 1.0K J 1/16W | | Q302 | | | 2SK1824 | FET | |
| R537,538 | | | RK73GB1J101J | CHIP R 100 J 1/16W | | Q304 | | | DTC1144EE | DIGITAL TRANSISTOR | |
| R539 | | | R92-1252-05 | CHIP R 0 OHM | | Q305 | | | 2SA1362(GR) | TRANSISTOR | |
| R540 | | | R92-0670-05 | CHIP R 0 OHM | | Q306 | | | DTC1144EE | DIGITAL TRANSISTOR | |
| R541 | | | RK73GB1J472J | CHIP R 4.7K J 1/16W | | Q307 | | | 2SK1588 | FET | |
| R542 | | | R92-1252-05 | CHIP R 0 OHM | | Q400,401 | | | DTC114EE | DIGITAL TRANSISTOR | |
| R548 | | | RK73GB1J332J | CHIP R 3.3K J 1/16W | | Q402 | | | DTA114YE | DIGITAL TRANSISTOR | |
| VR1 | | | R12-7491-05 | TRIMMING POT.(68K) | | Q403 | | | DTC1144EE | DIGITAL TRANSISTOR | |
| VR500 | | | R12-7491-05 | TRIMMING POT.(68K) | | Q404 | | | UMG3N | TRANSISTOR | |
| VR501 | | | R12-7487-05 | TRIMMING POT.(15K) | | Q405 | | | UPA672T | FET | |
| S402,403 | | | S70-0414-05 | TACT SWITCH | | Q406 | | | FP210 | TRANSISTOR | |
| MIC50 | 2B | | T91-0543-05 | MIC ELEMENT | | Q407 | | | UMG3N | TRANSISTOR | |
| D1-4 | | | 1SV283 | VARIABLE CAPACITANCE DIODE | | Q408 | | | DTA123JE | DIGITAL TRANSISTOR | |

PARTS LIST

TX-RX UNIT (X57-6020-21)

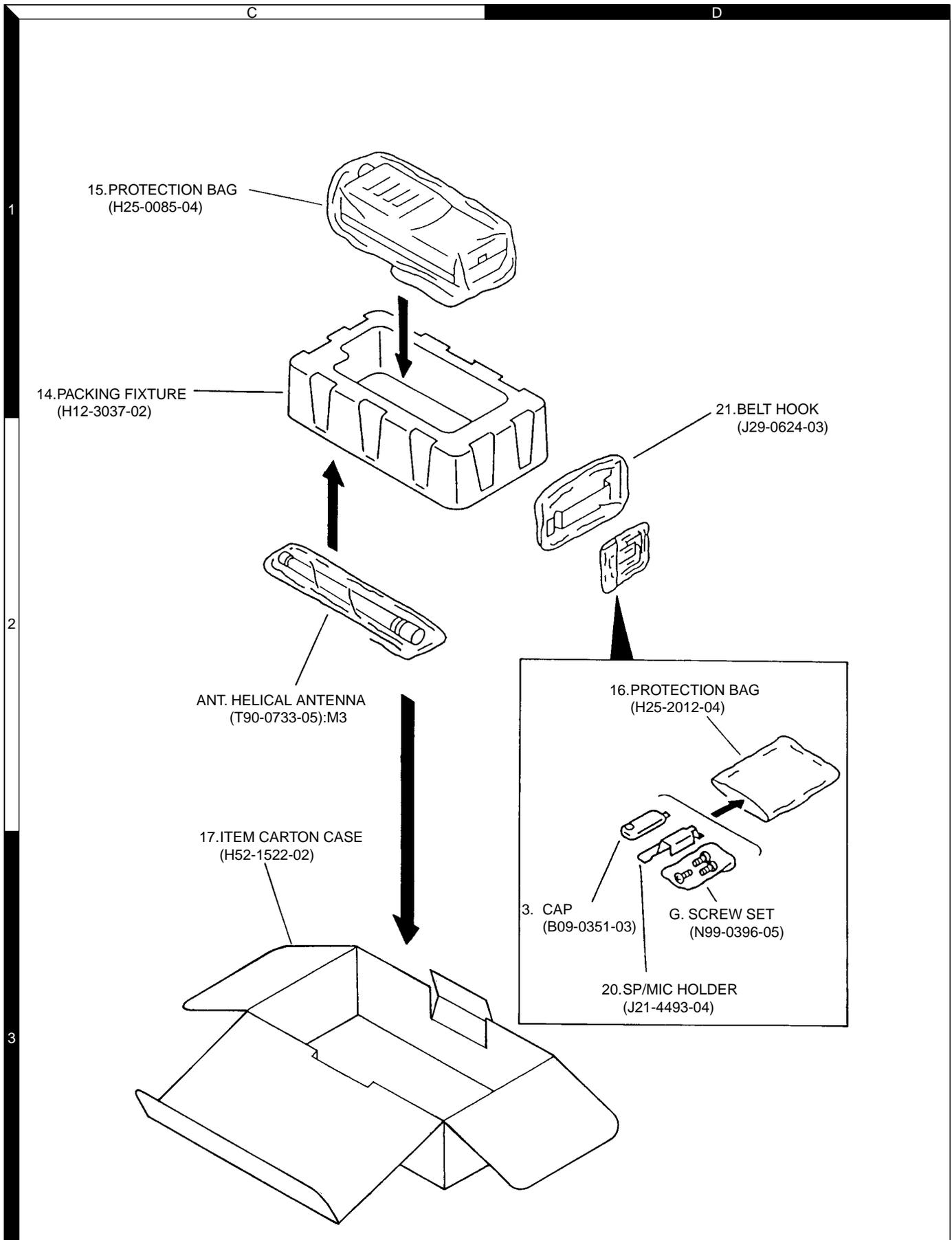
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| Q501.502 | | | 2SC4617(S) | TRANSISTOR | | | | | | | |
| Q503 | | | 2SC4919 | TRANSISTOR | | | | | | | |
| Q504 | | | DTA143ZE | DIGITAL TRANSISTOR | | | | | | | |
| TH100 | | | 157-503-65001 | THERMISTOR | | | | | | | |
| TH500 | | | 157-302-65801 | THERMISTOR | | | | | | | |

EXPLODED VIEW



- A M2.6x4 :N09-2319-05
- B NUT :N14-0581-04
- C NUT :N14-0582-14
- D M2.6x6 :N30-2606-46
- E M2.0x3.5 :N79-2035-46
- F M2.0x5 :N83-2005-46

PACKING



ADJUSTMENT

Required Test Equipment

1. Stabilized Power supply

1. The supply voltage can be changed between 5V and 18V, and the current is 3A or more.
2. The standard voltage is 7.5V.

2. DC Ammeter

1. Class 1 ammeter (17 ranges and other features).
2. The full scale can be set to either 300mA or 3A.
3. A cable of less internal loss must be used.

3. Frequency Counter (f. counter)

1. Frequencies of up to 1GHz or so can be measured.
2. The sensitivity can be changed to 500MHz or below, and measurements are highly stable and accurate (0.2ppm or so).

4. Power Meter

1. Measurable frequency : Up to 500MHz
2. Impedance : 50Ω, unbalanced
3. Measuring range : Full scale of 10W or so
4. A standard cable (5D2W 1m) must be used.

5. RF Voltmeter(RF V.M)

1. Measurable frequency : Up to 500MHz or so.

6. Linear Detector

1. Measurable frequency : Up to 500MHz or so
2. Characteristics are flat, and CN is 60dB or more.

7. Digital Voltmeter

1. Voltage range : FS=18V or so
2. Input resistance : 1MΩ or more

8. Oscilloscope

1. Measuring range : DC to 30MHz
2. Provides highly accurate measurements for 5 to 25MHz.

9. AF Voltmeter (AF V.M)

1. Measurable frequency : 50Hz to 1MHz
2. Maximum sensitivity : 1mV or more

10. Spectrum Analyzer

1. Measuring range : DC to 1GHz or more

11. Standard Signal Generator (SSG)

1. Maximum frequency : 500MHz or more
2. Output : -133dBm/0.05μV to 7dBm/501mV
3. Output impedance : 50Ω

12. Tracking Generator

1. Center frequency : 50kHz to 500MHz
2. Frequency deviation : ±35MHz
3. Output voltage : 100mV or more

13. Dummy Load

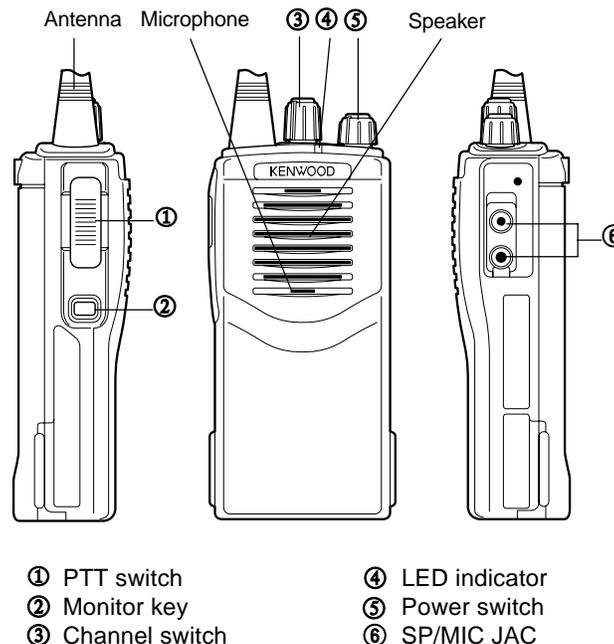
1. 8Ω, 3W or more

14. AF Generator(AG)

1. Frequency range : 100Hz to 100kHz
2. Output : 0.5mV to 1V

15. Distortion Meter

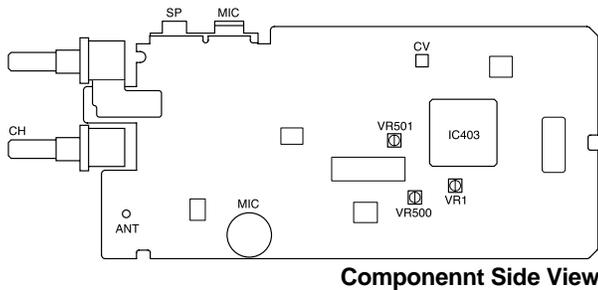
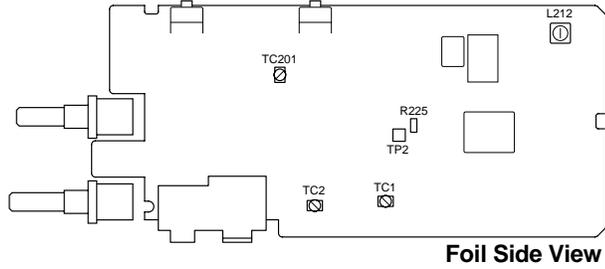
1. Measurable frequency : 30Hz to 100kHz
2. Input level : 50mV to 10Vrms



- Use a non-conductive rod such as a Ceramic rod for adjustment (especially of trimmers and coils).
Kenwood order No. A-0910 (0.4X0.9mm)
Kenwood order No. A-1310 (0.4X1.3mm)
- To protect the SSG, do not send out signals while adjusting the receiving unit.
- The indicated SSG output levels are for maximum output.

ADJUSTMENT

Adjustment point



- TC201: Band-pass filter waveform adjustment
- L212: AF level adjustment
- TC1: Transmit lock voltage adjustment
- TC2: Receive lock voltage adjustment
- TP2: Band-pass filter test point

- ANT: Antenna connector
- CH: Channel selector
- SP: Speaker jack
- MIC: Microphone jack
- CV: Lock voltage adjustment terminal
- VR500: DQT waveform adjustment
- VR501: DEV adjustment

Note : To fine tune the frequency when not using a computer, adjust VR1.

ADJUSTMENT FREQUENCY LIST

| Destination | M3 | |
|-------------|------------|------------|
| | TX f (MHz) | RX f (MHz) |
| Center | | 220.00 |
| Low | | 216.05 |
| Hi | | 222.95 |

Remarks

- Connect the transceiver to the PC
- Send the channel data to the transceiver, then backup the data.
- Program the adjustment frequencies which are in the list, into the transceiver.

Note : Remember to reload the channel data you backed up after making the adjustments.

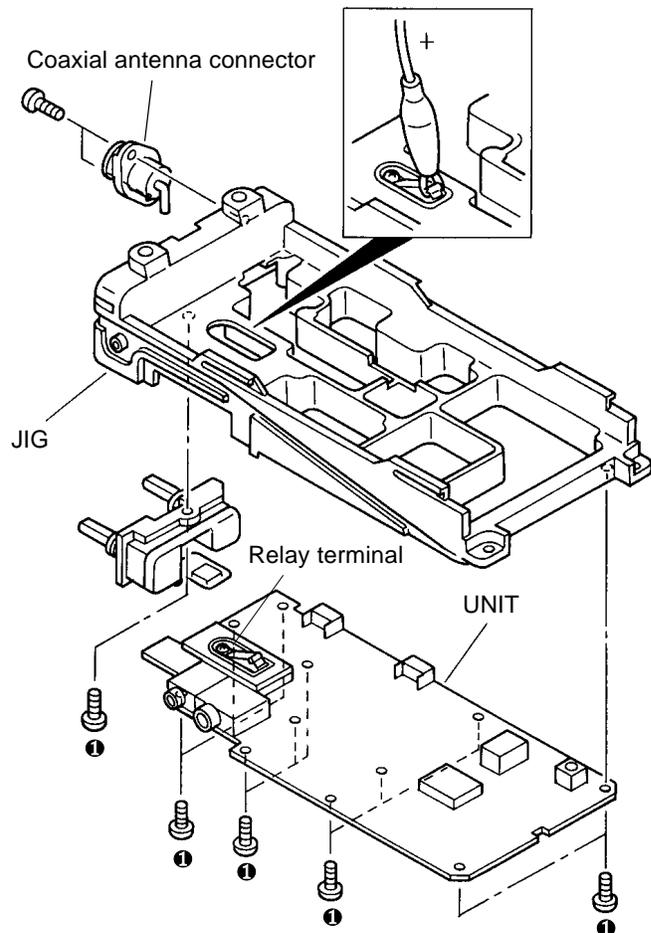
1. Jig (chassis) for adjustment (part number A10-1392-03)

2. Use the jig as follows:

1. Insert the coaxial antenna connector into the jig.
2. Place the unit on the jig and fix it with 12 screws. ①
3. Solder the antenna terminal to the terminal of the unit.

Notes: Supply power from an external power supply.

(Relay terminal: +
jig (chassis) : -)



ADJUSTMENT

Use the KPG-55D programming software for adjustment of the next item in PC MODE (see page 3).

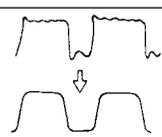
Squelch Level, Transmit frequency, DQT Balance, RF Power, QT Deviation, DQT Deviation, Battery Level Section common to the transmitter and receiver (VCO)

| Item | Condition | Measurement | | Adjustment | | Specifications/ Remarks | |
|---------------------|---|-------------------|----------|------------|--------|----------------------------|--|
| | | Test equipment | Terminal | Parts | Method | | |
| 1. Setting | 1) Power supply voltage Battery terminal: 7.5V | | | | | | |
| 2. VCO lock voltage | 1) CH: TX high | Digital voltmeter | CV | TC1 | 3.8V | ±0.1V | |
| | 2) CH: RX high | | | TC2 | 3.8V | ±0.1V | |
| | 3) CH: TX low | | | | | | |
| | 4) CH: RX low | | | | Check | more than 0.7V | |

Receiver Section

| Item | Condition | Measurement | | Adjustment | | Specifications/ Remarks |
|----------------------------|--|---|---|-----------------------------|---|-----------------------------|
| | | Test equipment | Terminal | Parts | Method | |
| 1. Band-pass filter | 1) CH: RX center 2) Tra generator output -40dBm Connect the spectrum analyzer to TP2 terminal. | Tra generator Spectrum analyzer | ANT TP2 | TC201 | Adjust the frequency so that it becomes the spectrum waveform shown in Fig.1. | |
| 2. AF level | 1) CH: RX center SSG output: -53dBm (501µV) MOD: 1kHz DEV: ±3.0kHz (Wide) | SSG Oscilloscope AF. V. M Distortion meter | ANT SP | L212 | Adjust to the MAX AF level | |
| 3. Sensitivity | 1) CH: RX center CH: RX LO CH: RX Hi SSG output: -116dBm (0.35µV) MOD: 1kHz DEV: ±3.0kHz (Wide) | | | | Check | SINAD: 12dB or higher |
| 4. Squelch Level (PC MODE) | 1) CH: RX center MONI: ON | | | PC key | Level 9 Adjust to close the squelch. | The squelch must be closed. |
| | 2) Level 9 SSG output: -117dBm (0.32µV) | | | | | |
| | 3) Level 3 SSG output: -125dBm (0.126µV) | | Level 3 Adjust to close the squelch. | The squelch must be closed. | | |

Transmitter section

| Item | Condition | Measurement | | Adjustment | | Specifications/ Remarks | |
|---------------------------------|---|--|----------|---|--|---|-----------------------|
| | | Test equipment | Terminal | Parts | Method | | |
| 1. Transmit frequency (PC MODE) | 1) CH: TX center PTT: ON | Frequency counter | ANT | PC key | Adjust to center frequency | within ± 100Hz | |
| 2. DQT/QT Balance (PC MODE) | 1) CH: TX center | Modulation analyzer or linear detector (LPF: 3kHz) Oscilloscope | | VR500 | Rectify the waveform to square wave |  | |
| 3. Power (PC MODE) | 1) CH: TX center Battery terminal: 7.5V PTT: ON | | | Power meter Ammeter | | Adjust it to 4.8W | ±0.1W |
| 4. MAX DEV | 1) CH: TX center AG: 1kHz/120mV PTT: ON | | | Modulation analyzer or linear detector (LPF: 15kHz) Oscilloscope | ANT MIC | VR501 | Adjust it to ± 4.2kHz |
| 5. MIC SENS | 1) CH: TX center AG: 1kHz/12mV | AG AF. V. M | | | Check (+, - Peak whichever is Maximum) | ±2.2kHz~3.6kHz: (Wide) | |
| 6. QT DEV (PC MODE) | 1) CH: TX center QT: 67.0Hz | Modulation analyzer or linear detector (LPF: 3kHz) Oscilloscope AG AF. V. M | ANT | PC key | Adjust it to ± 0.75kHz | ±50Hz | |
| 7. DQT DEV (PC MODE) | 1) CH: TX center | Modulation analyzer or linear detector (LPF: 3kHz) Oscilloscope | | PC key | Adjust it to ± 0.75kHz | ±50Hz | |
| 8. Battery Level (PC MODE) | 1) Battery terminal: 5.8V | Digital voltmeter | BATT | PC key | Adjust so that the LED flashes. | The LED must flash. | |

ADJUSTMENT

M3 BPF-Wave

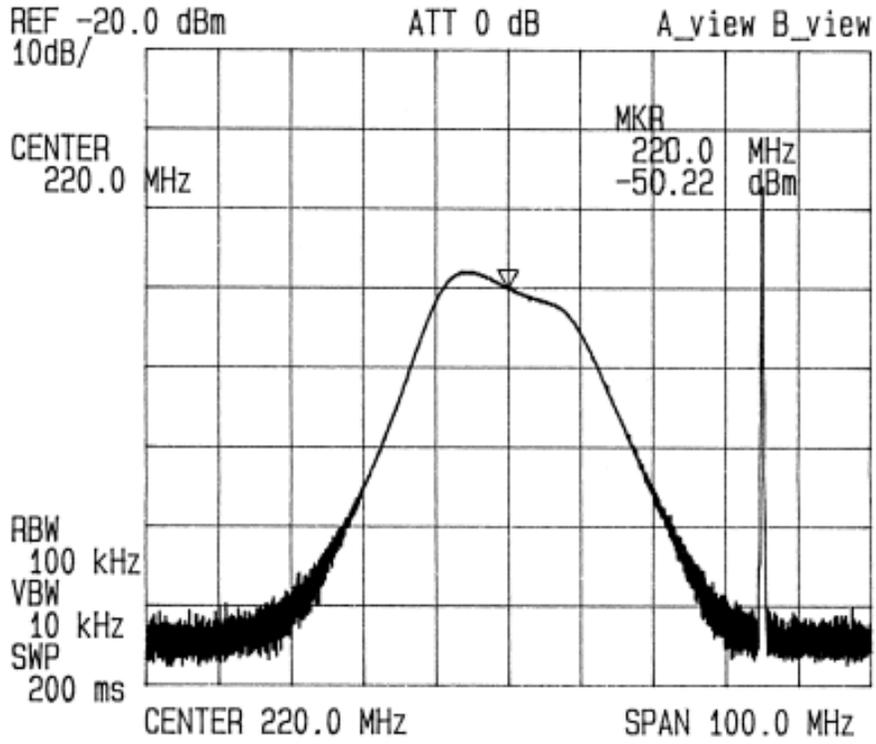
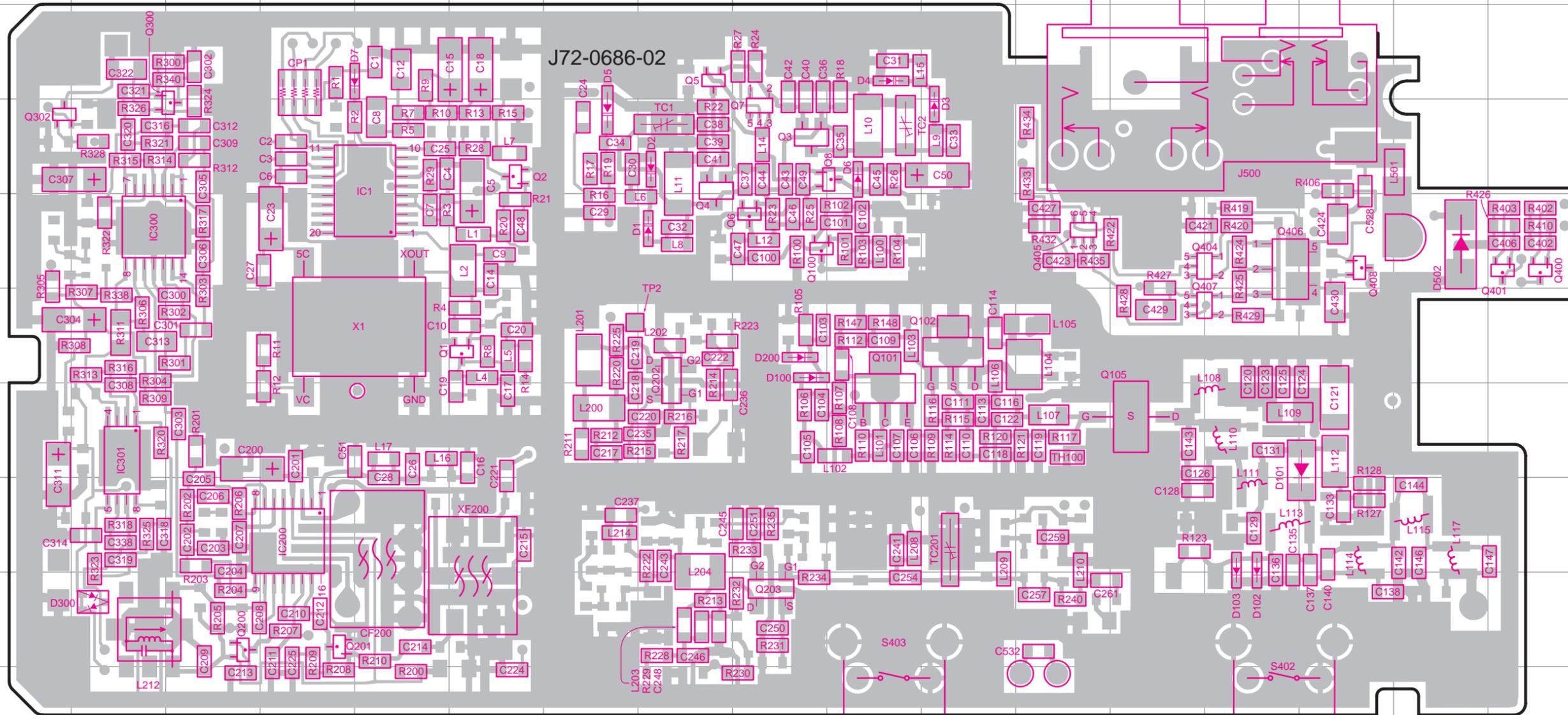


Fig. 1

TK-2107

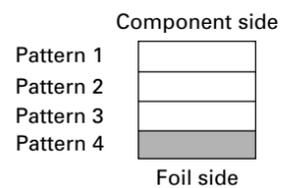
PC BOARD VIEW

TX-RX UNIT (X57-6020-21) Foil Side View

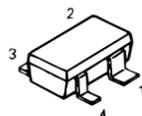


TX-RX UNIT (X57-6020-21) Foil Side View

| Ref. NO. | Address |
|----------|---------|
| IC1 | 4E |
| IC200 | 8D |
| IC300 | 5B |
| IC301 | 7B |
| Q1 | 6F |
| Q2 | 4F |
| Q3 | 4I |
| Q4 | 4H |
| Q5 | 3H |
| Q6 | 5I |
| Q7 | 4I |
| Q8 | 4I |
| Q100 | 5I |
| Q101 | 6J |
| Q102 | 6K |
| Q105 | 7M |
| Q200 | 9C |
| Q201 | 9D |
| Q202 | 6H |
| Q203 | 9I |
| Q300 | 4B |
| Q302 | 4A |
| Q400 | 5Q |
| Q401 | 5Q |
| Q404 | 5M |
| Q405 | 5L |
| Q406 | 5N |
| Q407 | 6M |
| Q408 | 5O |
| D1 | 5H |
| D2 | 4H |
| D3 | 4K |
| D4 | 3J |
| D5 | 4G |
| D6 | 4J |
| D7 | 3D |
| D100 | 6I |
| D101 | 7N |
| D102 | 8N |
| D103 | 8N |
| D200 | 6I |
| D300 | 9B |
| D502 | 5P |



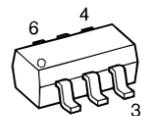
3SK228



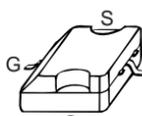
2SK1588
2SK2596



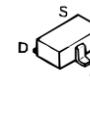
UPA672T



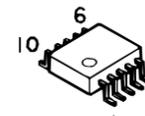
2SK2595



2SK1875



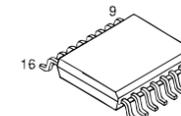
TA7368F



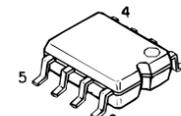
S-81350HG-KD



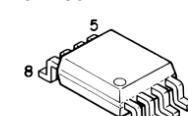
TA31136FN



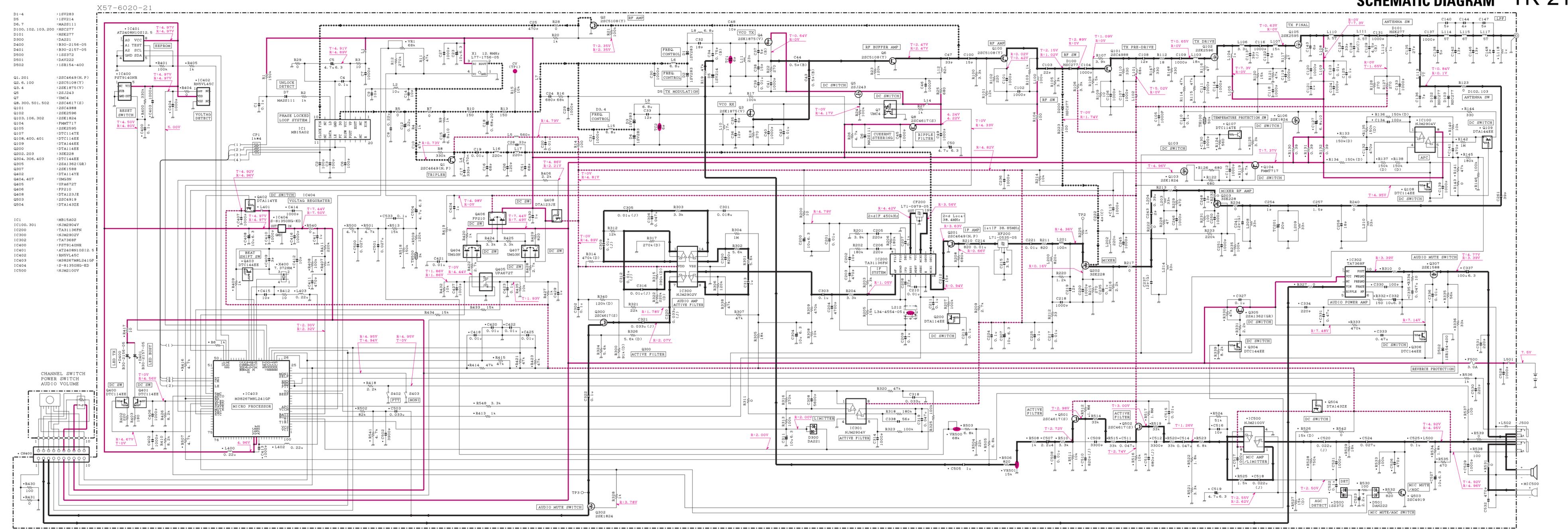
AT2408N10SI2.5



NJM2100V
NJM2904V



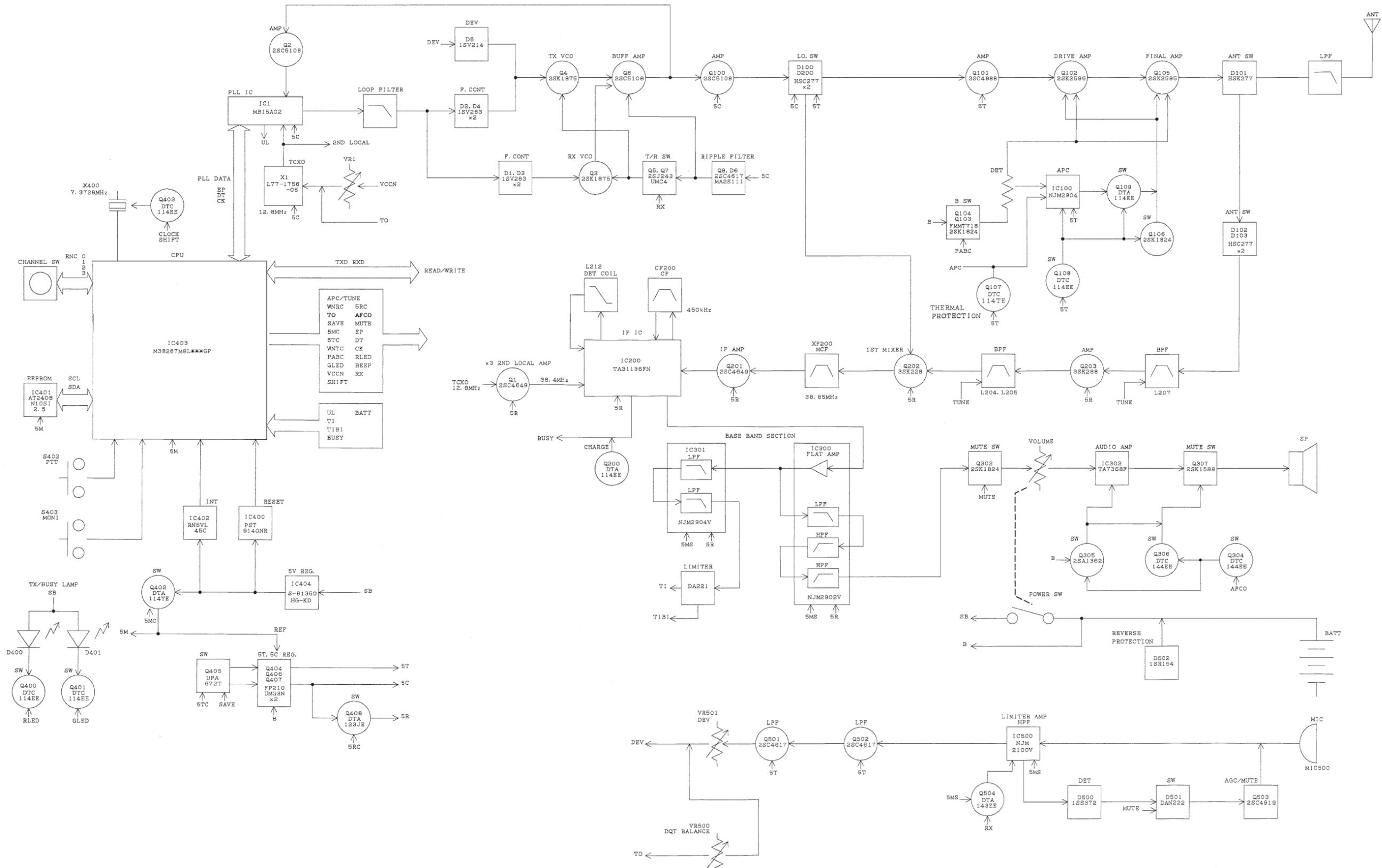
SCHEMATIC DIAGRAM TK-2107



Note : Component marked with a dot (●) are parts of pattern1.

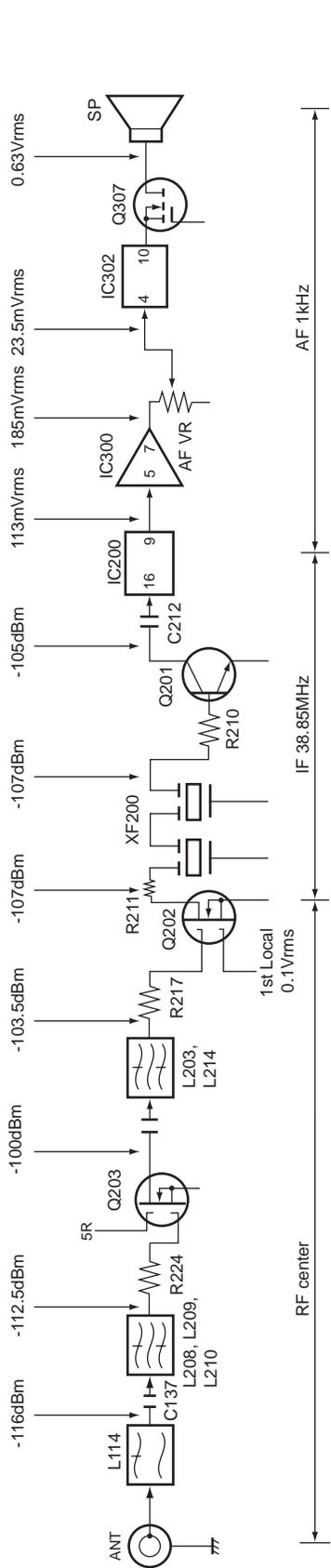
TK-2107 TK-2107

BLOCK DIAGRAM



LEVEL DIAGRAM

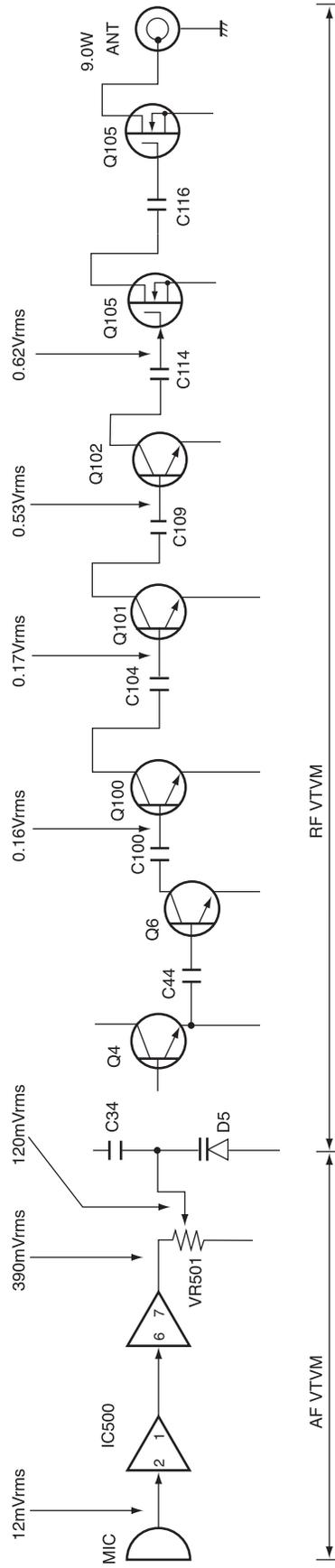
RX section



Modulate the AF level with a frequency of 1kHz and deviation of 1.5kHz (Narrow), 3kHz (Wide). Then take the signal from the signal generator output when set to -53dBm and obtain the level shown on an AF VTVM when the AF output has been adjusted to 0.63Vrms with the AF vol.

SG output level for obtaining 12dB / SINAD when injected to each point through a 470pF coupling capacitor. Measure the 1st Local level on a RF VTVM.

TX section



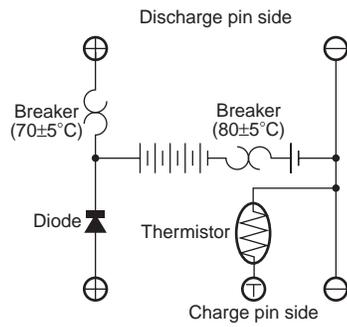
Measure the audio frequency on an AF VTVM and radio frequency on a RF VTVM at high impedance. Set the MIC input obtain a modulation factor of 60% with the transmit frequency at center and a modulation frequency of 1kHz.

KNB-15A (Ni-Cd Battery)

KNB-15A



CIRCUIT DIAGRAM



SPECIFICATIONS

| | |
|----------------------------|---|
| Voltage | : 7.2V (1.2V x 6) |
| Charging current | : 1100mAh |
| Dimensions | : 60.8W x 110.8H x 20.3D (mm) (projections included) |
| Charger and charging time: | |
| | KSC-15 (normal charger), approximately 8 hours |
| Weight | : 210g |

SPECIFICATIONS

GENERAL

| | |
|---|--|
| Frequency Range..... | 216 to 223 MHz : M3 |
| RF power output..... | 4.8W |
| Number of channels | 16CH |
| Operating Voltage | 7.5 VDC \pm 20 % |
| Temperature Range | -30 °C to + 60 °C (-22 °F to + 140 °F) |
| Dimensions and Weight | |
| with KNB-15A (7.2V 1100mAh battery) | 58 (2-5/16) W X 125.5 (4-15/16) H X 35 (1-3/8) D mm (inches) 380g (0.83lbs) |

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