

COMPACT SYNTHESIZED
UHF FM TWO-WAY RADIO

TK-805

SERVICE MANUAL

KENWOOD

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GENERAL

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 date. 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.

PERSONNEL SAFETY

The following precautions are recommended for personnel safety:

- DO NOT transmit if someone is within two feet (0.6 meter) of the antenna.
- 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.
- All equipment should be properly grounded before power-up for safe operation.
- This equipment should be serviced by a qualified technician only.

FCC COMPLIANCE AND TYPE ACCEPTANCE NUMBERS

Type acceptance number	Frequency range	Compliance
ALHTK-805-1	450 ~ 470MHz	Parts 15, 22, 74, 90 and 95
ALHTK-805-2	470 ~ 490MHz	Parts 15, 22, 74, 90 and 95
ALHTK-805-3	490 ~ 512MHz	Parts 15, 22, 74, 90 and 95
ALHTK-805-4	406 ~ 430MHz	Parts 15, 22, 74, 90 and 95




1. POWER-UP

To turn on the radio, press the power switch (IO). The channel indicator will illuminate to indicate power is ON.

2. TO RECEIVE

Operation	Procedure
1. Disable QT (if so equipped)	Remove microphone from its hanger.
2. Unsquench radio	Press the SQUELCH switch (—√—).
3. Set VOLUME control	Adjust VOLUME control for a normal listening level.
4. Set SQUELCH control	Press the SQUELCH switch (—√—) again.
5. Select operating frequency. (Multichannel models only)	Rotate CH selector switch to desired channel.
The radio will now receive all traffic on the selected channel.	
6. Enable QT (if so equipped)	Insert microphone back into its hanger to activate KQT-8.
You will now hear messages for your system only.	

3. TO TRANSMIT

Operation	Procedure
1. Disable QT (if so equipped)	Press the MONITOR switch () or remove microphone from hanger.
2. Select operating frequency. (Multichannel models only)	
3. LISTEN	DO NOT TRANSMIT if channel is in use.
4. Key transmitter	Press and hold the microphone PTT switch. The LCD on the front panel will indicating the transmitter is ON ().
5. Transmit message	Hold microphone at about 2 inches distance and speak at a normal voice level. Keep transmissions brief.
6. Receive reply	Release the microphone PTT switch.
7. Enable QT at end of the conversation. (if QT equipped)	Press the MONITOR switch () and replace the microphone into its hanger.

GENERAL

PRE-INSTALLATION CONSIDERATIONS

1. UNPACKING

Unpack the radio from its shipping container and check for accessory items. If any item is missing, please contact KENWOOD immediately.

2. LICENSING REQUIREMENTS

Federal regulations require a station license for each radio installation (mobile or base) be obtained by the equipment owner. The licensee is responsible for ensuring transmitter power, frequency, and deviation are within the limits permitted by the station license.

Transmitter adjustments may be performed only by a licensed technician holding an FCC first, second or general class commercial radiotelephone operator's license. There is no license required to install or operate the radio.

3. PRE-INSTALLATION CHECKOUT

3-1. Introduction

Each radio is adjusted and tested before shipment. However, it is recommended that receiver and transmitter operation be checked for proper operation before installation.

3-2. Testing

The radio should be tested complete with all cabling and accessories as they will be connected in the final installation. Transmitter frequency, deviation, and power output should be checked, as should receiver sensitivity, squelch operation, and audio output. QT equipment operation should be verified.

4. PLANNING THE INSTALLATION

4-1. General

Inspect the vehicle and determine how and where the radio antenna and accessories will be mounted.

Plan cable runs for protection against pinching or crushing wiring, and radio installation to prevent overheating.

4-2. Antenna

The favored location for an antenna is in the center of a large, flat conductive area, usually at the roof center. The trunk lid may also provide a good antenna location. If the trunk lid is preferred, bond the trunk lid and vehicle chassis using ground straps to ensure the lid is at chassis ground.

4-3. Radio

The universal mount bracket allows the radio to be mounted in a variety of ways. Be sure the mounting surface is adequate to support the radio's weight. Allow sufficient space around the radio for air cooling. Position the radio close enough to the vehicle operator to permit easy access to the controls when driving.

4-4. DC Power and wiring

1. This radio may be installed in negative ground electrical systems only. Reverse polarity will cause the cable fuse to blow. Check the vehicle ground polarity before installation to prevent wasted time and effort.
2. Connect the positive power lead directly to the vehicle battery positive terminal. Connecting the Positive lead to any other positive voltage source in the vehicle is not recommended.

CAUTION:

If DC power is to be controlled by the vehicle ignition switch, a switching relay should be used to switch the positive power lead. The vehicle ignition switch then controls DC to the relay coil.

3. Connect the ground lead directly to the battery negative terminal.
4. The cable provided with the radio is sufficient to handle the maximum radio current demand. If the cable must be extended, be sure the additional wire is sufficient for the current to be carried and length of the added lead.

5. INSTALLATION PLANNING - CONTROL STATIONS

5-1. Antenna system

Control station. The antenna system selection depends on many factors and is beyond the scope of this manual. Your KENWOOD dealer can help you select an antenna system that will best serve your particular needs.

5-2. Radio location

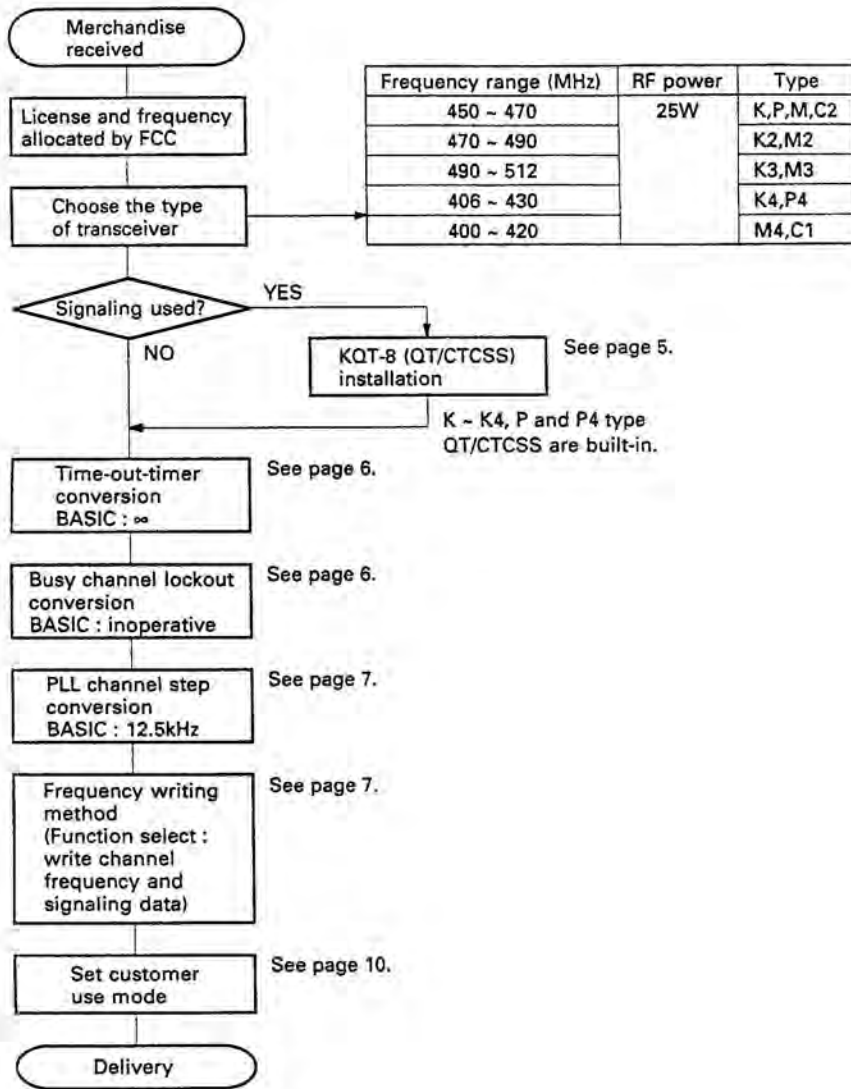
Select a convenient location for your control station radio which is as close as practical to the antenna cable entry point. Secondly, use your system's power supply (which supplies the voltage and current required for your system). Make sure sufficient air can flow around the radio and power supply to allow adequate cooling.

SERVICE

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

SYSTEM SET-UP

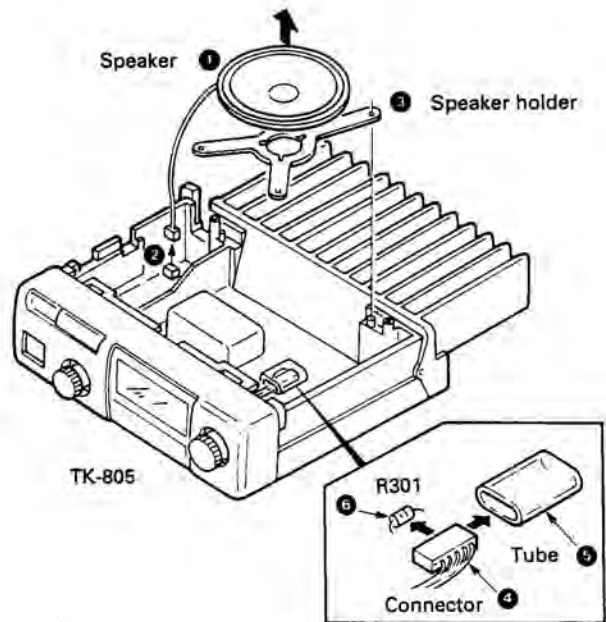
System Set-up



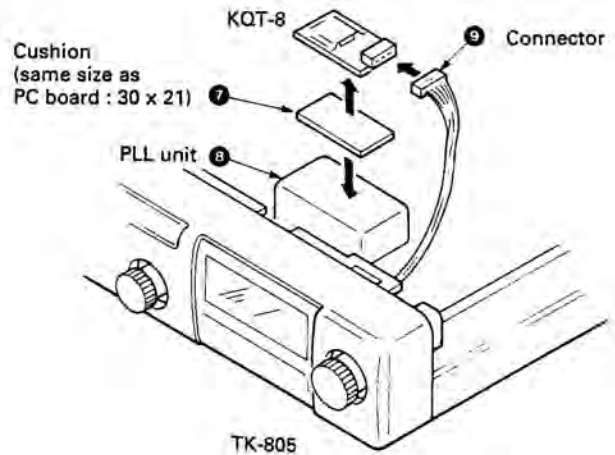
INSTALLATION

Installation of KQT-8

1. Remove the top case of the radio.
2. Remove the speaker (1) and cable with connector (2) from the radio.
3. Lift off the speaker holder from the radio (3).
4. Remove the tube (5) from the cable with connector (4) in the radio, then remove the resistor R301 : RD14BB2B2R2 (6).



5. Attach the cushion supplied with the KQT-8 to the foil side of the KQT-8 (7).
6. Remove the paper from the cushion attached to the KQT-8, and stick the cushion onto the top case of the PLL unit (8).
7. Connect the cable with connector (9) to the connector of the KQT-8.
8. Insert the cable with connector (2) of the speaker into the radio.
9. Reinstall the speaker holder (3) in its original position in the radio, and place the speaker in the holder.



CONVERSION

Time-out-timer Conversion (TOT)

The time-out-timer returns the unit to the receive state automatically when transmission continues beyond a certain length of time.

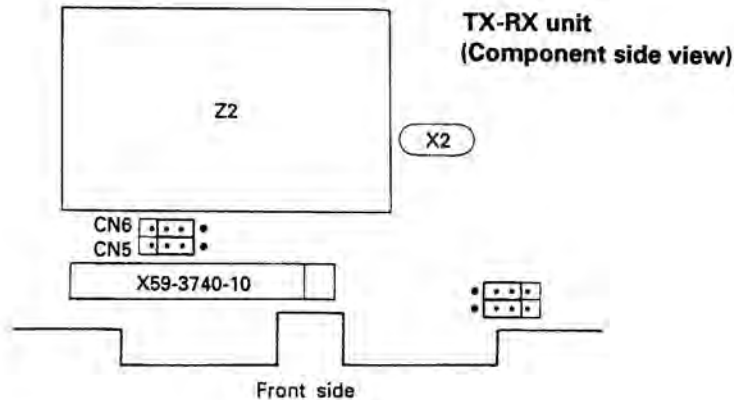
The time limit for the time-out-timer is set by changing the short socket (E18-0254-05) of the connectors (CN5 and CN6) on the TX-RX unit (A/2).

Remove the socket from above.

TOT (sec)	CN5	CN6
∞*	Side marked	Side marked
30	Side marked	Opposite side
60	Opposite side	Side marked
60	Opposite side	Opposite side

Side marked	Opposite side
Short socket	Short socket
Connector	Connector

* : BASIC



Busy Channel Lockout Conversion

Busy channel lockout inhibits transmission from the local unit when some signaling has been set for the local unit and BUSY is ON and signaling mismatches.

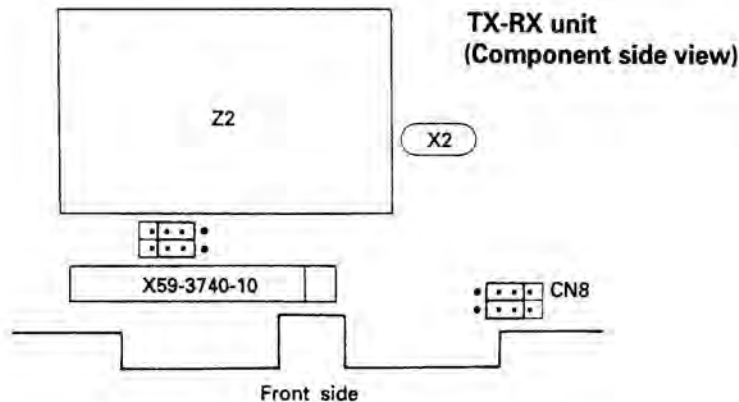
The busy channel lockout is set by changing the short socket of the connector (CN8) on the TX-RX unit (A/2).

Remove the socket from above.

CN8	
Opposite side	Side marked*
Function operative	Function inoperative

Side marked	Opposite side
Short socket	Short socket
Connector	Connector

* : BASIC



CONVERSION / FREQUENCY WRITING METHOD

PLL Channel Step Conversion

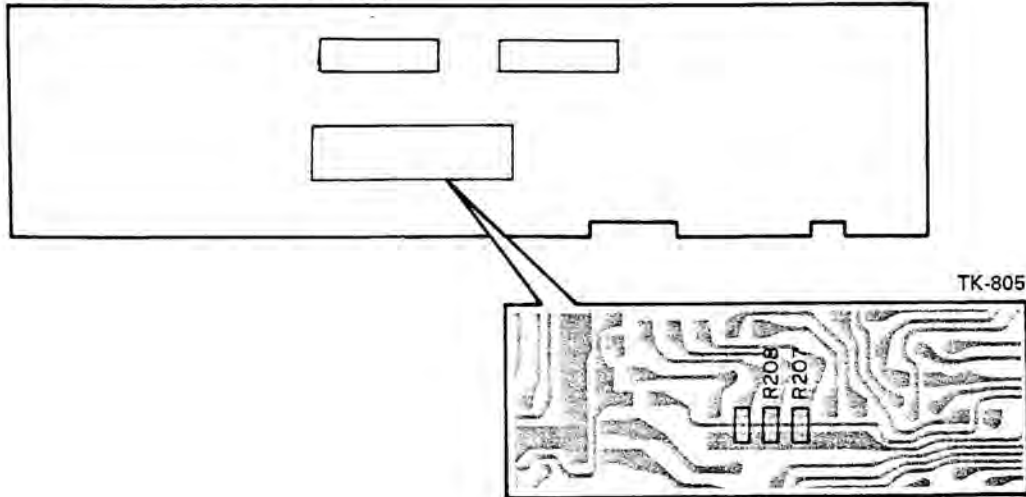
The PLL channel step frequency is changed from 12.5kHz to 10kHz.

The frequency is set by changing the chip jumpers R207, R208 : R92-0670-05 on the TX-RX unit (B/2)

	R207	R208
10kHz	○	X
12.5kHz*	X	X

* : BASIC
 ○ : Installed
 X : Removed

TX-RX unit (B/2) (Foil side view)



Frequency Writing Method (Function Select)

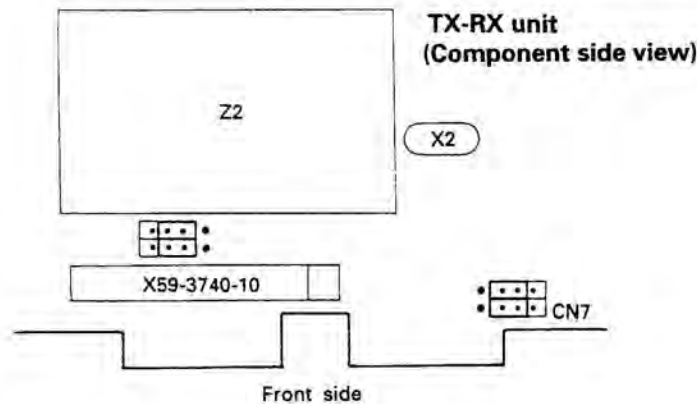
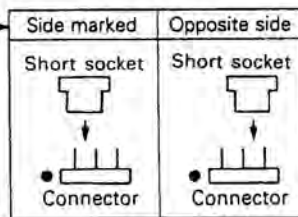
Function select I and II have the following mode 1) to 5). When frequencies and signaling data are written for the first time after delivery, use the frequency setting mode. Select an appropriate mode as required.

1. Function I and II setting method

To change the function to I or II, change the short socket of the connector CN7 on the TX-RX unit (A/2). Remove the socket from above.

	CN7
Function I	Side marked*
Function II	Opposite side

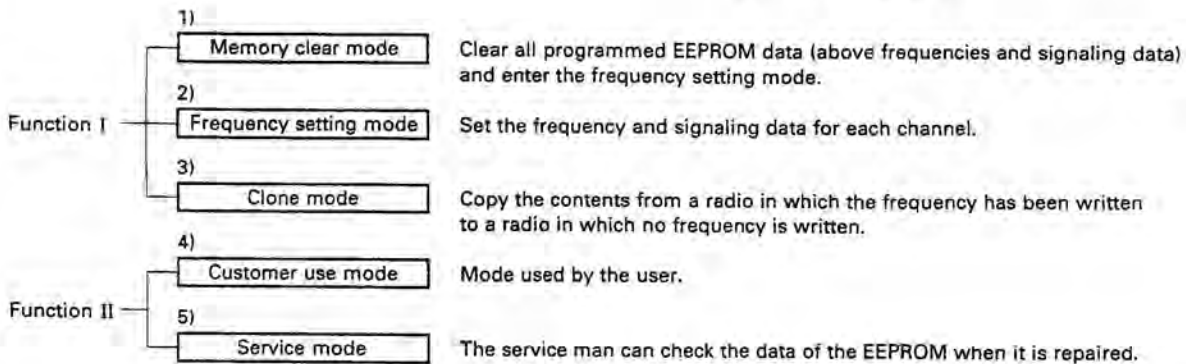
* : BASIC



FREQUENCY WRITING METHOD

2. Modes

Note : After checking or setting in each mode, deliver the product with the customer use mode of Function II set.



1) Memory clear mode

This mode is set by turning the POWER switch on while pressing the MONITOR switch (\square).

After all data of the built-in EEPROM (transmit/receive frequency and transmit/receive signaling data) has been cleared, the frequency setting mode is set.

2) Frequency setting mode

• Notes

Frequency setting is normal changed in 12.5kHz (10kHz) steps. If the channel selector is turned while pressing the SQUELCH switch (\sim), it is changed in 1MHz steps.

If the signaling unit is not installed, the transmit/receive signaling data setting is not displayed by the CHANNEL indicator.

Transmission or reception cannot be performed in this mode.

• Writing method (See flowchart)

When the power switch is turned on, the receive frequency setting mode of CH1 on the channel indicator is set. (Only CH1 is initialized to 450.000MHz.)

The transmit/receive frequency and transmit/receive signaling data are set for each channel using the following procedure :

1. Set the receive frequency with the channel selector.
2. Press the PTT switch. The receive frequency specified in step 1 is memorized and the channel indicator shows receive signaling data input mode. The initial indication is off.

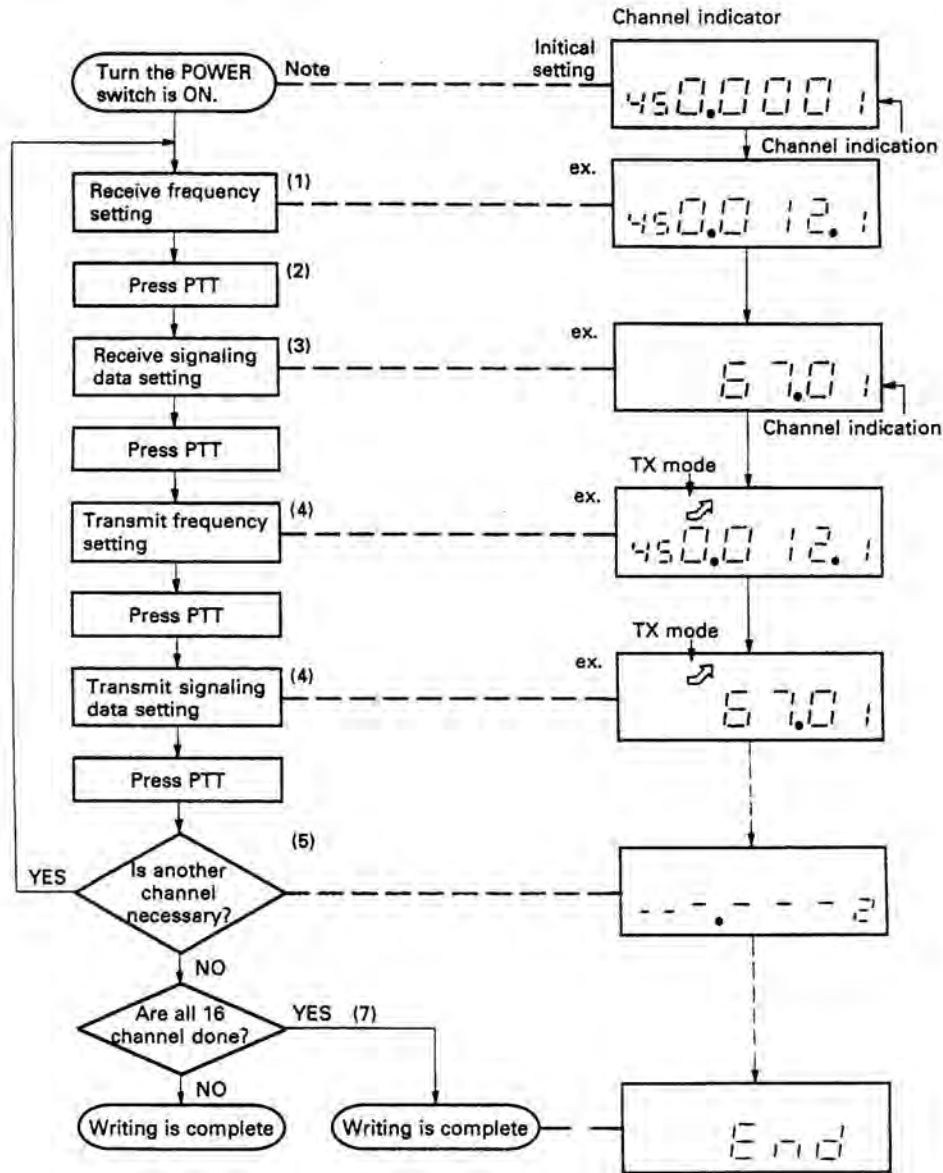
3. Set the receive signaling data with the channel selector and press the PTT switch. If the receive signaling data is not set, press the PTT switch.
4. The channel indicator now shows transmit frequency input mode. Set the transmit frequency by following step 1 to 3.



5. Repeat steps 1 to 4 for the channels for which frequencies need to be set.
6. If frequencies for a channel need not be set, simply press the PTT switch. The next step will be displayed.
7. When all 16 channels have been set up, "Er" is displayed.
8. When setting is finished, the written contents can be checked by pressing the MONITOR switch (\square). Even when channel data is being checked with the MONITOR switch, the CHANNEL selector, PTT, and SQUELCH switch are valid, and channel data can be rewritten.

FREQUENCY WRITING METHOD

• Flowchart of frequency setting mode



FREQUENCY WRITING METHOD

3) Clone mode

In this mode, two RADIOS are connected, and the contents of the EEPROM data written in one are copied to the EEPROM of the other.

Note : When using the clone mode, verify that the **Function Select (page 7) is set to Function I (the CN7 shorting socket is set to "Side marked")**.

The first IF and PLL step frequency must be set by the same model.

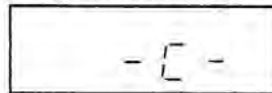
• Operation method

1. Pull out the CHANNEL selector knobs of the two radios.
2. Connect the two radios to the DC power supply. Connect the two radios with the supplied microphone cable (microphone connectors).
3. With the memory clear mode, clear the contents of the EEPROM of the radio to which the frequencies are to be written.
4. Set the two radios to the clone mode by turning on the POWER switch while pressing the "SET 1" key behind the CHANNEL selector with a thin insulating rod. The CHANNEL indicator will show "- [-".
5. Press again the "SET 1" key of the radio in which the frequencies have been written. The TX indicator will be displayed, and writing of frequencies will begin.

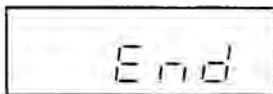
Radio from which data is written



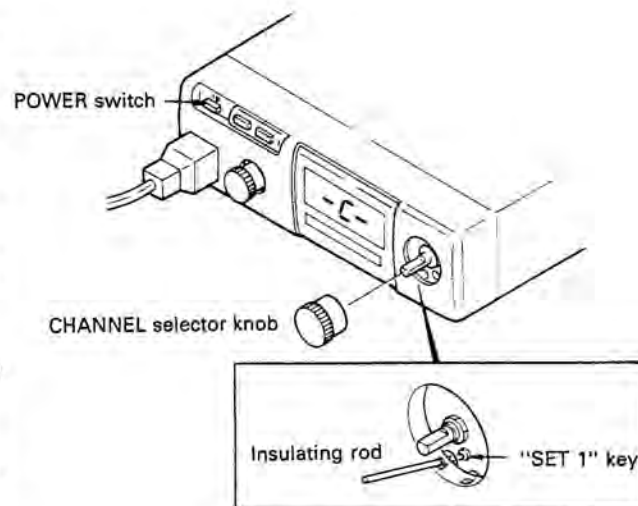
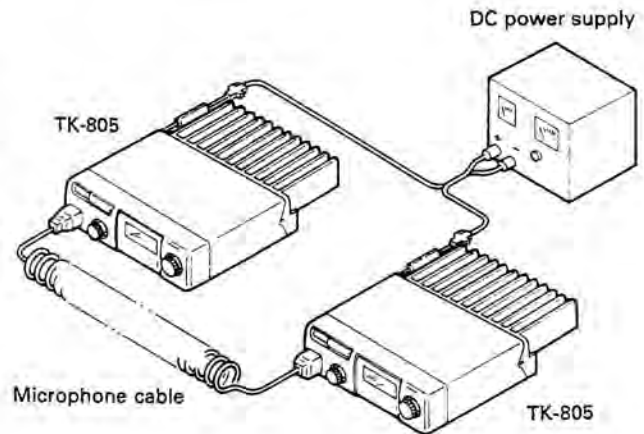
Radio to which data is written



6. Data transfer ends in about 15 seconds, a beep sounds, and the CHANNEL indicator shows "END" (on both radios).



7. Switch to the customer use mode of Function II, and finish writing.



4) Customer use mode

The user can use the radio in this mode.

Set Function II, then turn the POWER switch on to set this mode. (This mode is not set if the POWER switch is turned on while the "SET 1" key is held down.)

5) Service mode

The service man can check the data of the EEPROM in this mode during repair.

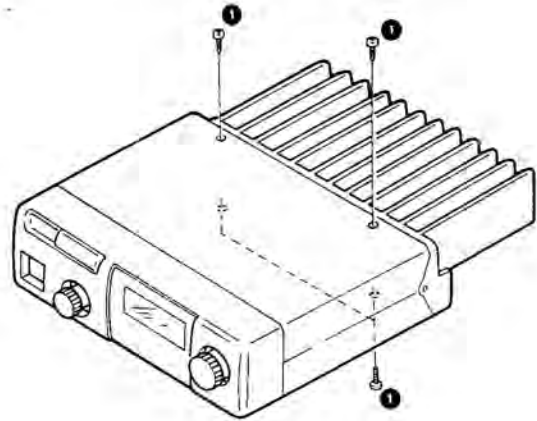
Set Function II, then turn the POWER switch on while the "SET 1" key is held down to set the service mode. The receive frequency of CH1 is displayed.

The data for each channel can be checked by pressing the MONITOR switch. However, the CHANNEL selector, PTT, and SQ OFF keys do not work.

DISASSEMBLY FOR REPAIR

Removing the Front Panel

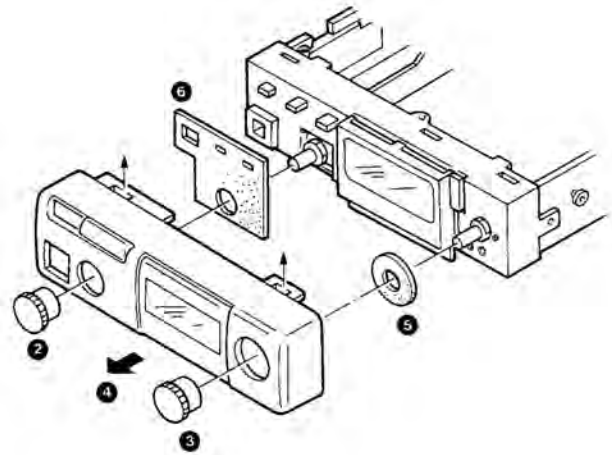
1. Remove the four screws holding the upper and lower cases (1).



2. Pull out the CHANNEL selector knob (2) and volume control knob (3).

3. Slightly lift the stoppers holding the top and bottom of the front panel and pull out the front panel (4).

4. Remove the cushions (5, 6).



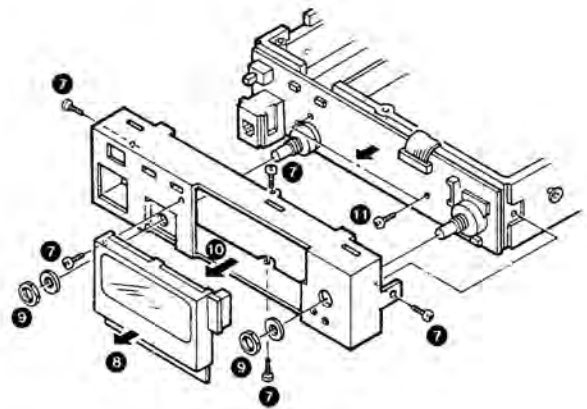
5. Remove the four screws on the sub-panel (7).

6. Pull the display section forward (8).

7. Remove the hexagonal nuts of the CHANNEL selector and volume controls (9).

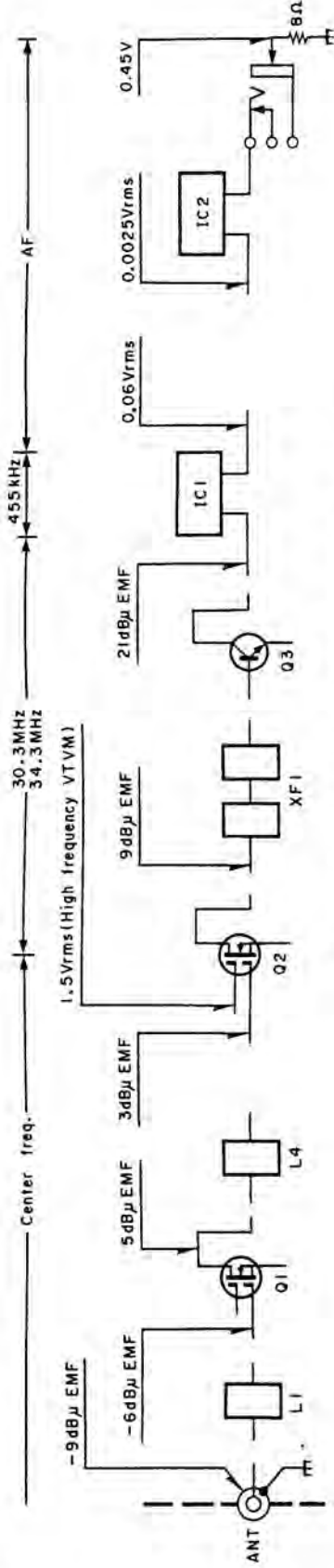
8. Pull the sub-panel forward (10).

9. Remove the two screws holding the TX-RX unit (B/2), and remove the unit (11).



LEVEL DIAGRAM

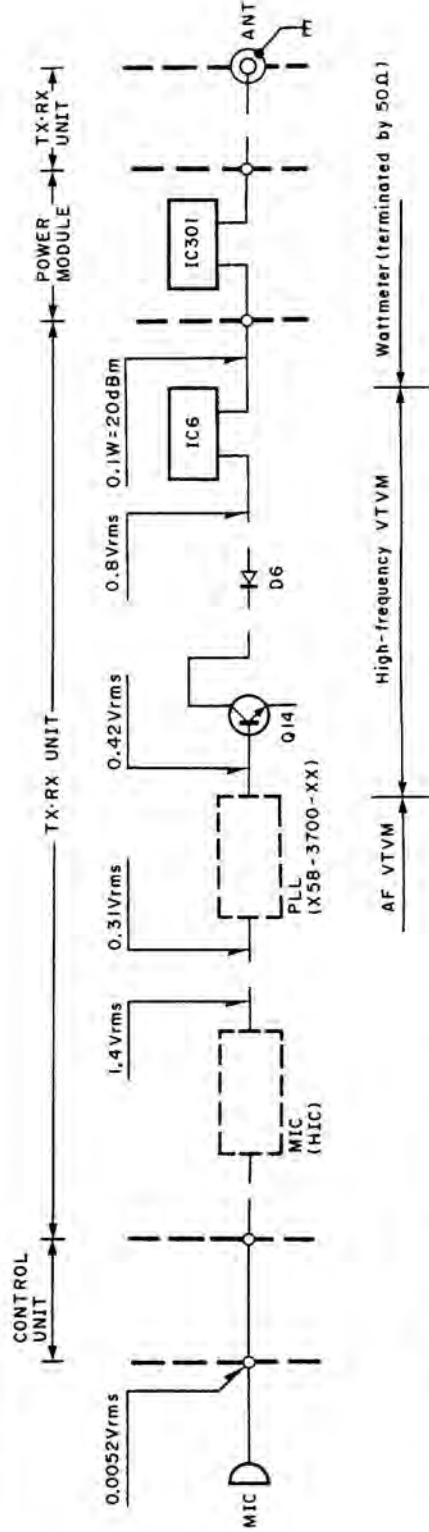
Receiver section



SG input level for 12dB SINAD are obtained. Measured by connecting the SG to each point via a 0.01μF capacitor.

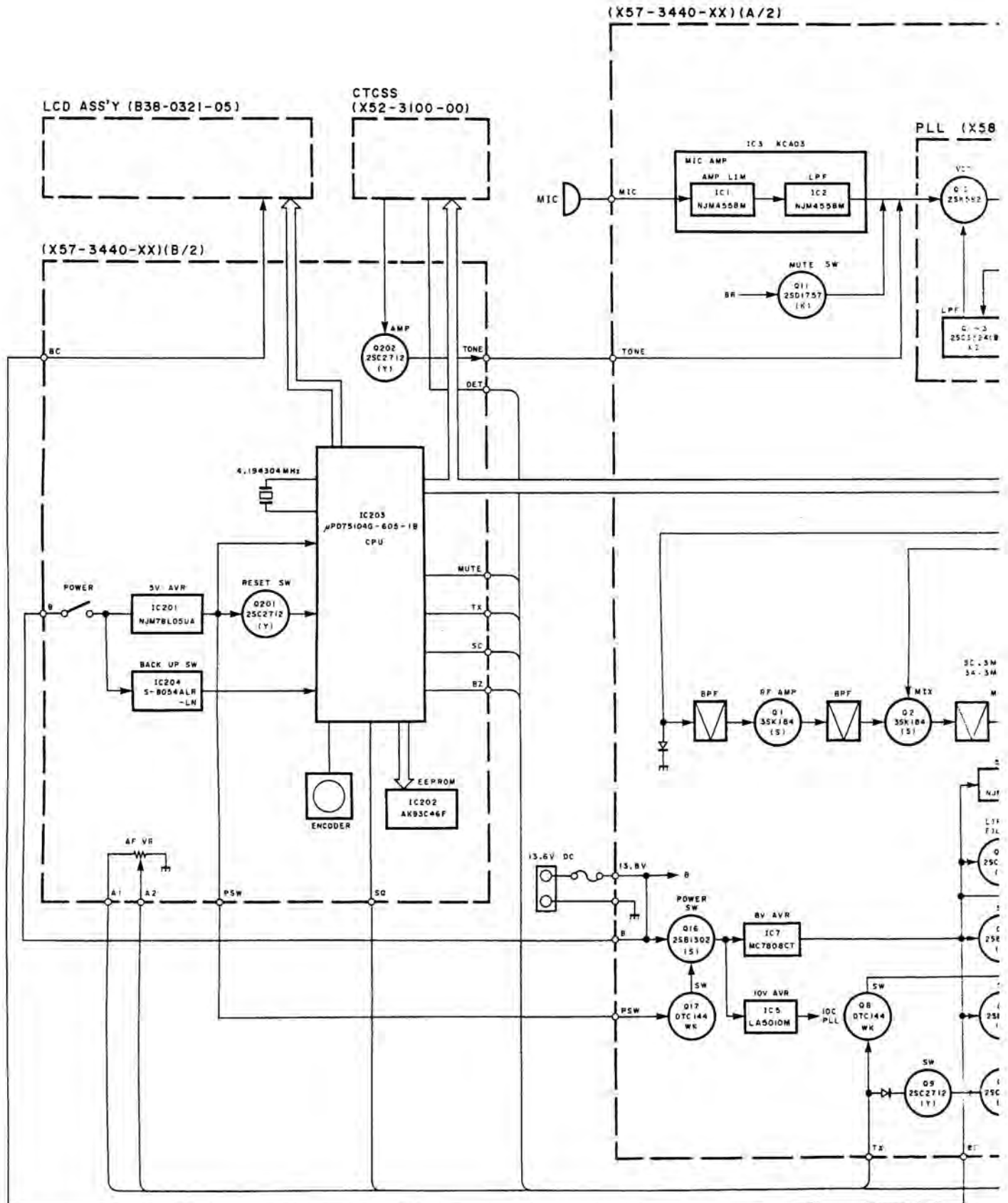
AF VTVM
AF level obtained when the AF output level is adjusted for 0.63V/8Ω with the front panel AF VOL control. Measured with AF voltmeter connected to the external speaker jack, receiving a 40dB EMF SSG signal modulated at 1kHz, DEV 3kHz

Transmitter section



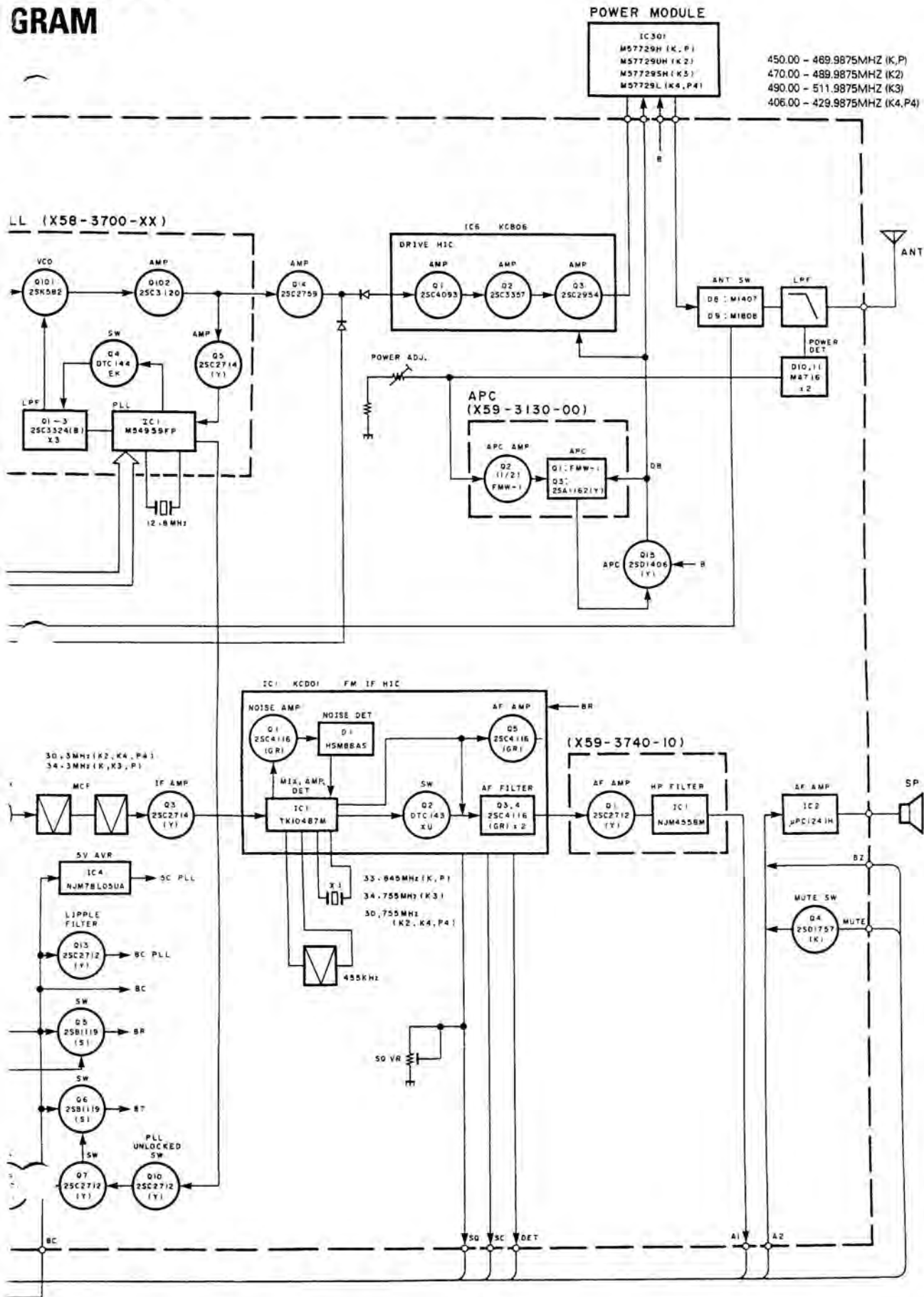
1. AG is set so that MIC input becomes 3kHz DEV at 1kHz mod.
2. Transmitting frequency : Center frequency

TK-805 TK BLOCK DIAGRAM



TK-805

GRAM



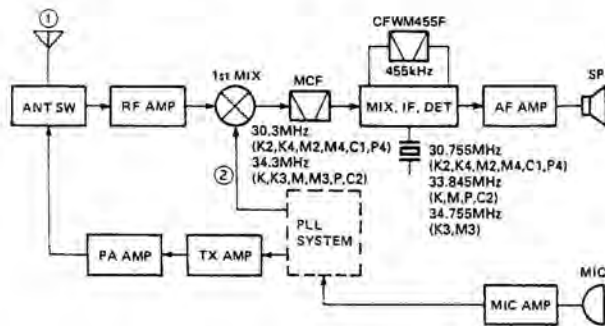
CIRCUIT DESCRIPTION

Circuit Configuration By Frequency

The TK-805 incorporates a PLL synthesizer which uses a digital VFO to allow any channel step of 10 and 12.5kHz to be selected (See Figure 1).

The receiving system utilizes double-conversion techniques. That is, an incoming signal is mixed down to the 1st intermediate frequency (IF), using a 1st local oscillator frequency. The 1st IF signal is then mixed with the 2nd local oscillator frequency of 30.3MHz or 34.3MHz to generate the 2nd IF of 455 kHz.

The transmitting system consists of a PLL circuit which allows direct modulation and direct frequency division. Signals from the PLL circuit are amplified by a linear amplifier for transmission.



	①	②
K, P, M, C2	450.000 ~ 469.9875	415.700 ~ 435.6875
K2, M2	470.000 ~ 489.9875	439.700 ~ 459.6875
K3, M3	490.000 ~ 511.9875	455.700 ~ 477.6875
K4, P4	406.000 ~ 429.9875	375.700 ~ 399.6875
M4, C1	400.000 ~ 419.9875	369.700 ~ 389.6875

(MHz)

Fig. 1 Frequency configuration

Receiving System

• Overview

Incoming signals from the antenna pass through a low-pass filter in the final block of the transmitter system, and are switched to the front-end of the receiver system via a receive/transmit switching diode.

The signals are then passed through two-pole helical resonator, where the high-frequency components are amplified by a GaAs FET. The signals are then fed into a three-pole helical resonator. The resulting signal from the second resonator is fed into the 1st mixer. The 1st mixer uses the same GaAs FET that are used in the RF stage to obtain better two-signal characteristics. The 1st mixer mixes the signal with the 1st local oscillator frequency and converts it to the 1st IF. The signal then passes through two monolithic crystal filters (MCFs) to remove unnecessary near-by frequency components. The signal from the MCFs is used as the 1st IF signal.

The 1st IF signal is amplified and fed into IC1 (KCD01) in the FM IF HIC. The IF signal is then mixed with the 2nd local oscillator frequency to generate the 2nd IF of 455kHz. The 455kHz signal is then passed through a six element ceramic filter (CFWM455F), and fed back into IC1 for additional amplification. The output signal from the IC1 is then fed into a power amplifier via the audio volume control for application to the speaker.

Item	Rating
Nominal center frequency	30.3MHz
Pass band width	±7.5kHz or less at 3dB
Attenuation band width	±28kHz or less at 40dB
Ripple	1.5dB or less
Insertion loss	3dB or less
Guaranteed attenuation	60dB or more within ±1MHz (Spurious : 40dB or more)
Terminating impedance	1.2kΩ/0.5pF

Table 1 MCF (L71-0294-05) (TX-RX unit XF1) (K2, K4, M2, M4, C1, P4)

Item	Rating
Nominal center frequency	34.3MHz
Pass band width	±7.5kHz or less at 3dB
Attenuation band width	±28kHz or less at 40dB
Ripple	1.5dB or less
Insertion loss	3dB or less
Guaranteed attenuation	60dB or more within ±1MHz (Spurious : 40dB or more)
Terminating impedance	800Ω/1.5pF

Table 2 MCF (L71-0296-05) (TX-RX unit XF1) (K, K3, M, M3, P, C2)

Item	Rating
Nominal center frequency	455kHz ± 1kHz
6dB bandwidth	±6kHz or more (from 455kHz)
50dB bandwidth	±12.5kHz or less (from 455kHz)
Ripple (within ±4kHz of 455kHz)	3dB or less
Insertion loss	6dB or less
Guaranteed attenuation (within ±100kHz of 455kHz)	35dB or more
I/O matching impedance	2.0kΩ

Table 3 Ceramic filter CFWM455F (L72-0372-05) (TX-RX unit CF1)

CIRCUIT DESCRIPTION

Transmitting System

• Overview

The transmitter produces the target frequency through the use of direct FM-modulation via a varactor diode.

• Modulation circuit

Audio signals from the microphone are fed into the mic amplifier HIC IC3 (KCA03) for amplification, and then into two operational amplifiers. The operational amplifiers form a splatter filter for pre-emphasis, amplification, limiting, and removal of unnecessary high-frequency components.

The FM modulation circuit directly FM-modulates the VCO signals, using a varactor diode.

• Pre-amplifier stage circuit

Signals from the VCO are applied to the drive HIC IC6 (KCBO6). The amplifier always operates in a linear mode so that signals can be amplified without degradation. Additionally, the amplifier is designed to cover a wide range of frequencies and can produce stable output without adjustment. The APC (Automatic Power Control) controls collector voltage from the last stage of the pre-amplifier.

• Power amplifier circuit

The drive signal is amplified to the required level by the power module.

• APC circuit

The APC circuit for automatic transmit output control detects part of the power module output, and amplifies it to provide a control voltage for output control. The output control voltage is in inverse proportion to the output from the power module, so it is maintained at the same level.

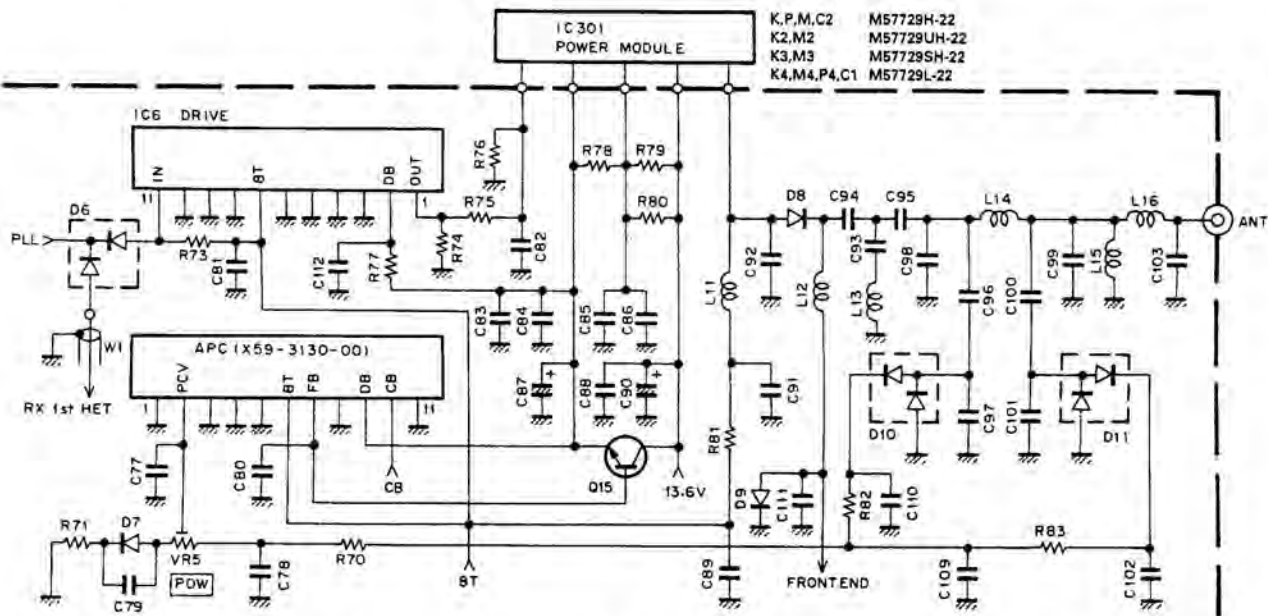


Fig. 2 Pre-amplifier stage, power amplifier, and APC circuits

(T_c = 25°C)

Item	Symbol	Condition	Rating	Unit
Operating voltage	V _{cc}		17	V
Current consumption	I _{cc}		10	A
Input power	P _{in}	Z _G = Z _L = 50Ω	0.6 (V _{cc1} ≤ 12.5V)	W
Output power	P _{out}	Z _G = Z _L = 50Ω	40	W
Operating case temperature	T _{c(top)}		-30 ~ +110	°C
Storage temperature	T _{stg}		-40 ~ +110	°C

Table 4 Power module maximum ratings (IC301)

CIRCUIT DESCRIPTION

PLL Synthesizer System

• Overview

Figure 3 is the PLL and VCO block diagram. In the TK-805, the PLL system is implemented as a sub-unit which is divided into the upper VCO and lower PLL blocks. The sub-unit is shielded to prevent external interference.

There are two reference frequencies, 6.25kHz and 5 kHz, available to allow 10 or 12.5kHz-step operation. The 6.25kHz is obtained by dividing the reference oscillator frequency of 12.8MHz by 2048, and the 5kHz is obtained by dividing it by 2560. The VCO directly generates

the requirement frequency. This requirement frequency is amplified once and then fed into a pulse swallow-type PLL IC for frequency division and phase comparison, in order to lock the frequency.

The PLL system is locked without switching between transmit mode and receive mode. By using a signal ("H" in transmit mode) from pin 10 of the PLL IC (M54959FP), the LPF is deactivated-activated by Q4 only for the moment when the TK-805 enters transmit mode. This helps produce lock more rapidly than previous methods.

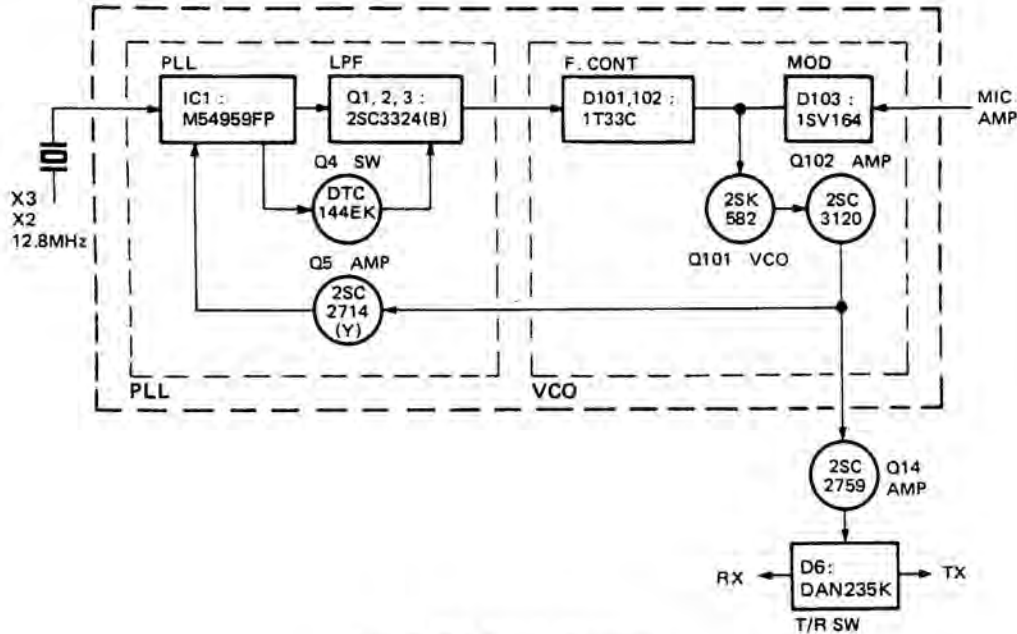


Fig. 3 PLL block diagram

• 8T (8V in transmit mode) and unlock circuits

In receive mode, the base of Q9 has 0.7V. As a result, Q9 is on, and Q7 and Q6 are off, and the collector of Q6 (8T) provides no voltage.

When the PTT switch is depressed. As a result, P121 of CPU becomes "L", turning Q9 off, and Q7 and Q6 on. The 8T line is therefore supplied with 8V.

The unlock circuit operates only in transmit mode. Q10 is a PLL unlocking switching transistor. Usually, the base of Q10 is supplied with 0V ("L"), and the collector is supplied with 8V ("H").

When the PLL is unlocked, the base of Q10 is supplied with 0.7V, turning Q10 on. As a result, the collector of Q10 becomes "L" (0V). This turns Q7 off and the collector of Q6 becomes 0V, turning it off. Therefore, when the PLL is unlocked, Q6 is off removing bias voltage from the 8T line. Without the 8T voltage no transmit signal is generated.

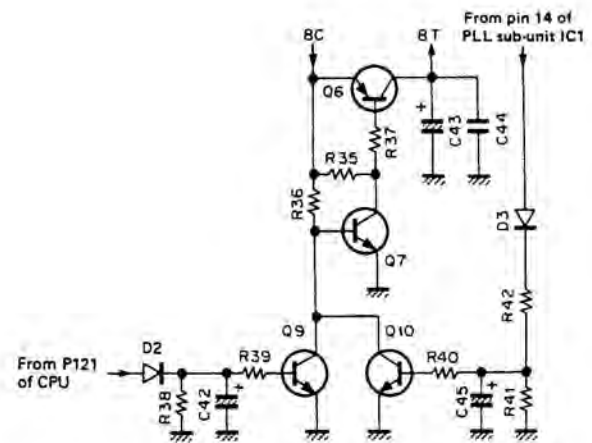


Fig. 4 8T and unlock circuits

CIRCUIT DESCRIPTION

Control System

• Overview

The control system consists of a 4 bit micro-controller (IC203), a reset circuit (Q201), a memory back-up circuit (IC204) and an Electronically Erasable Read Only Memory (EEROM).

• Frequency programming of transmit and receive

Transmit and receive frequencies are programmed by using the channel selector and the PTT switch on the transceiver when an internal jumper is installed.

After the internal jumper is removed, the transceiver reverts to the user mode and the channel selector only selects those frequencies already programmed into the EEROM.

• Reset and back-up circuits

Micro-controller reset and memory back-up are enabled by monitoring 5C voltage.

At initial power on, a differentiator (C203) turns on Q201 to initiate reset of the micro-controller (IC203). If the voltage rises slowly, the output voltage transient of IC204 is detected by IC203 and reset is initiated internally.

If 5C voltage falls below 4.5V, the output of IC204 becomes low, causing the micro-controller to go to the back-up mode.

• PLL data output

PLL data is available from P72 (CK), P73 (DT), and P71 (EN1) of the CPU. Figure 6 is a timing chart for PLL data transfer, and Figure 7 shows the format of PLL data.

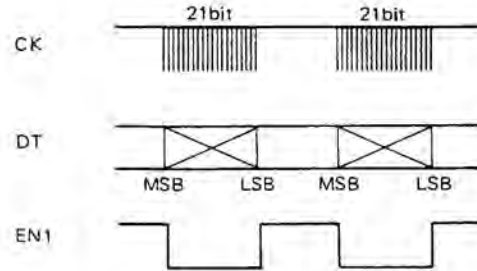
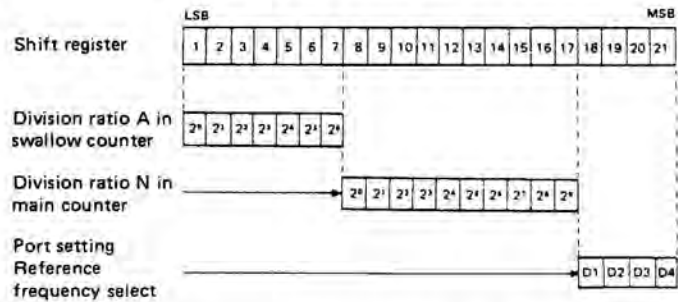


Fig. 6 timing chart for PLL data transfer



The 21-bit data is made up of the following:

1. Reference frequency (ref) select (2 bits)

Data	Phase reference frequency	
D1 D2		
L L	5kHz	10kHz step mode
H L	6.25kHz	12.5kHz step mode

2. Switch select (2 bits)

Data	Output port	
D3 D4	SW1 SW2	
L H	L H	RX mode
H L	H L	TX mode

Fig. 7 PLL data format

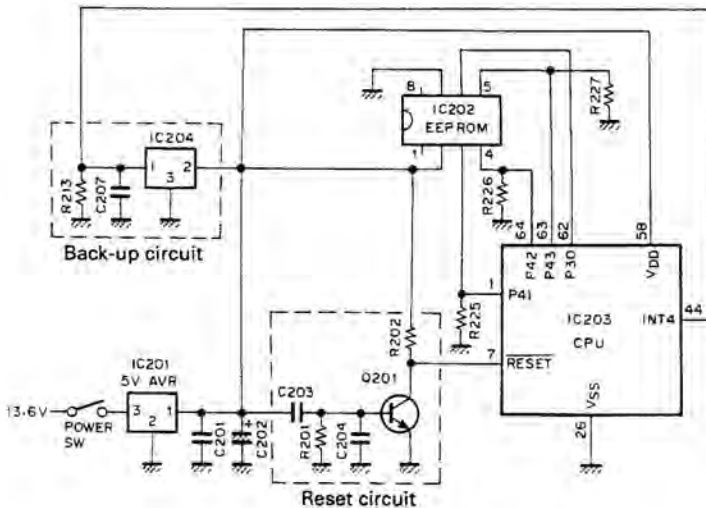


Fig. 5 Reset and back-up circuits

• Display circuit

The display circuit is contained in the LCD assembly. It consists of a LCD driver, its peripheral circuits, and an LCD. The LCD is dynamically operated at a 50% duty cycle. The LCD driver receives LCD data from P21, P22, and P23 of the CPU.

CIRCUIT DESCRIPTION

• Input and output of CTCSS unit (option)

The optional CTCSS unit receives data from P70, P72, and P73 of the CPU. Figure 8 is a timing chart for CTCSS data transfer, and Figure 9 shows the format of CTCSS data. When a tone from the CTCSS unit is detected, a "H" level signal is sent to P61 of the CPU, opening the squelch.

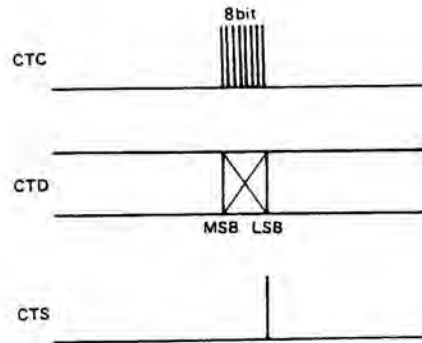
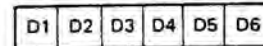


Fig. 8 Timing chart for QT/CTCSS data transfer

Tone frequency select data for CTCSS unit



Example : 88.5Hz L H L H H H

Fig. 9 QT/CTCSS data format

Pin No.	Pin name	I/O	Logic	Function	Pin No.	Pin name	I/O	Logic	Function
1	P41	O	-	CS of EEPROM.	33	PTH01	-	-	Not used.
2	P40	O	-	Not used.	34	PTH00	-	-	
3	P53	I	-	Distination.	35	TI1	-	-	
4	P52	I	-		36	TI0	-	-	
5	P51	I	-		37	P23	O	-	DATA of LCD.
6	P50	I	-		38	P22	O	-	CK of LCD.
7	RESET	I	L	Reset input.	39	P21	O	-	CE of LCD.
8	X2	-	-	4.194304MHz crystal oscillator.	40	P20	O	-	Beeper output.
9	X1	-	-		41	P03/SI	-	-	Not used.
10	P63	-	-	Not used.	42	P02/SO	-	-	
11	P62	I	L	Busy input. Busy : "L"	43	P01/SCK	-	-	
12	P61	I	H	QT/CTCSS tone matching input.	44	INT4	I	H	Back-up detect input.
13	P60	-	-	Not used.	45	P123	O	L	SQ off output. SQ off : "L"
14	P73	O	-	DATA of PLL IC and QT/CTCSS.	46	P122	-	-	Not used.
15	P72	O	-	CK of PLL IC and QT/CTCSS.	47	P121	O	L	TX/RX select.
16	P71	O	-	LE of PLL IC.	48	P120	O	L	Key output.
17	P70	O	-	ST of QT/CTCSS.	49	P133	-	-	Not used.
18	P83	O	H	MUTE output.	50	P132	-	-	
19	P82	-	-	Not used.	51	P131	I	-	Set 2 key input.
20	P81	-	-		52	P130	I	-	Set 1 key input.
21	P80	-	-		53	P143	I	-	SQ key input.
22	P93	I	-	Distination.	54	P142	I	-	Hook.
23	P92	I	-		55	P141	I	-	MONITOR input.
24	P91	I	-		56	P140	I	-	PTT key input.
25	P90	I	-		57	NC	-	-	Not used.
26	Vss	-	-	GND.	58	Vdd	-	-	Power supply pin.
27	INT3	-	-	Not used.	59	P33	-	-	Not used.
28	INT2	I	-	Encoder input.	60	P32	O	-	
29	INT1	I	-		61	P31	I	-	Jumper key output.
30	INT0	-	-	Not used.	62	P30	I	-	DO of EEPROM.
31	PTH03	I	-	S-meter analog input.	63	P43	O	-	DI of EEPROM.
32	PTH02	I	-	Not used.	64	P42	O	-	SK of EEPROM.

Table 5 75104G-605-1B terminal functions (TX-RX unit IC203)

DESCRIPTION OF COMPONENTS

TX-RX UNIT (X57-344X-XX)

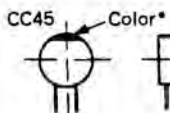
0-10 : K,P 0-11 : K2 0-12 : K3 0-21 : M,C2 0-22 : M2 0-23 : M3 0-24 : M4,C1 1-01 : K4,P4

Component	Use/Function	Operation/Condition/Compatibility
IC1	2nd local oscillator, IF amplification, detection, low-frequency amplification, noise amplification, noise detection, squelch switching	① 1st IF signal input. ③ ④ 2nd local oscillator. ⑨ Busy output. ⑩ Squelch control. ⑪ S-meter output. ⑬ RD output. ⑮ Low-frequency output.
IC2	AF amplification	① AF input. ② AF output.
IC3	MIC amplification	Mic amplification and splatter filter.
IC4	5V AVR	
IC5	10V AVR	For PLL.
IC6	Transmit drive	
IC7	8V AVR	
IC201	5V AVR	
IC202	EEPROM	
IC203	Microprocessor	
IC204	Back-up detection	
IC301	RF power amplification	
Q1	High-frequency amplification	Operates in receive mode.
Q2	1st mixer	
Q3	1st IF amplification	
Q4	AF mute	
Q5	8R switching	On in receive mode.
Q6	8T switching	On in transmit mode.
Q7	8T switching control	On in transmit mode.
Q8	8R switching control	On in receive mode.
Q9	8T switching control	On in transmit mode.
Q10	8T switching control	Off when PLL locked.
Q11	Mic amplifier mute	Off in transmit mode.
Q13	PLL 8V ripple filter	
Q14	PLL output amplification	
Q15	TX power control (APC)	
Q16	DC switch	
Q17	DC switch control	
Q201	Reset switch	On for approx. 3ms when system power turned on, usually off.
Q202	Tone amplification	
D1	Transmit/receive switching	
D2, 3	Reverse current prevention	
D5	12.8MHz tuning	
D6	VFO output switch	
D7	Temperature compensation	
D8, 9	Transmit/receive switching	
D10, 11	Power protection	For APC.
D12	Reverse current prevention	
D201	Microprocessor protection	

PARTS LIST

CAPACITORS

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



Capacitor value

1 0 3 = 0.01μF

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

- 0 1 0 = 1pF
- 1 0 0 = 10pF
- 1 0 1 = 100pF
- 1 0 2 = 1000pF = 0.001μF

2 2 0 = 22pF
 ↑ ↑
 1st number Multiplier
 2nd number

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±60 ppm/°C

Tolerance

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

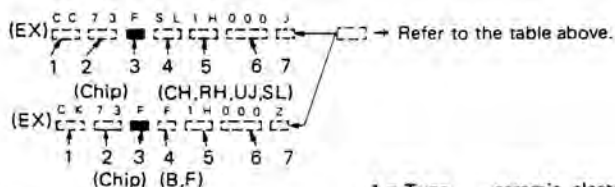
Code	B	C	D	F	G
(pF)	± 0.1	± 0.25	± 0.5	± 1	± 2

Less than 10 pF

Rating voltage

2nd word											
1st word	A	B	C	D	E	F	G	H	J	K	V
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	35
2	100	125	160	200	250	315	400	500	630	800	-
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	-

Chip capacitors

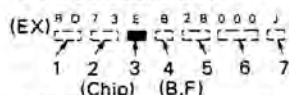


Dimension

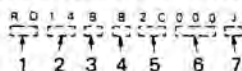
Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
E	3.2 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25

RESISTORS

Chip resistor (Carbon)



Carbon resistor (Normal type)



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

Dimension

Dimension code	L	W	T	Wattage
E	3.2 ± 0.2	1.6 ± 0.2	0.57	2B
F	2.0 ± 0.3	1.25 ± 0.2	0.45	2A

Rating wattage

Cord	Wattage	Cord	Wattage	Cord	Wattage
2A	1/10W	2E	1/4W	3A	1W
2B	1/8W	2H	1/2W	3D	2W
2C	1/6W				

Dimension



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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名/規格	Desti- nation 仕向	Re- marks 備考
TK-805						
1	1B		A01-1065-03	METALLIC CABINET (UPPER)		
2	2B		A01-1066-03	METALLIC CABINET (LOWER)		
3	1C		A10-1292-01	CHASSIS CALKED ASSY		
4	2A	*	A20-7032-03	PANEL ASSY		
5	2B	*	A22-0765-13	SUB PANEL		
7	2A	*	B03-0557-04	DRESSING PLATE		
8	2A	*	B10-1126-04	FRONT GLASS		
9	2B	*	B38-0321-05	LCD ASSY		
-		*	B38-0322-05	LED ASSY		
10	1C	*	B40-3990-04	MODEL NAME PLATE	KP	
10	1C	*	B40-3991-04	MODEL NAME PLATE	K2	
10	1C	*	B40-3992-04	MODEL NAME PLATE	K3	
10	1C	*	B40-3993-04	MODEL NAME PLATE	K4	
10	1C	*	B40-3994-04	MODEL NAME PLATE	MM2M3	
10	1C	*	B40-3994-04	MODEL NAME PLATE	M4P4C1	
10	1C	*	B40-3994-04	MODEL NAME PLATE	C2	
11	1B, 1C		B42-2455-04	LABEL(M4X8 MAX)		
-			B46-0409-20	WARRANTY CARD	KK2K3	
-			B46-0409-20	WARRANTY CARD	K4	
-		*	B50-8316-00	INSTRUCTION MANUAL		
-			E30-2036-05	GND WIRE (MIC)		
-			E30-2076-05	DC CORD ASSY		
-			E30-2089-08	CURL CORD(WITHOUT MIC)		
15	1C		E30-2145-05	ANT CABLE		
16	1C	*	E30-2172-05	DC CORD		
-		*	E31-3197-15	CONNECTING WIRE(SP)		
-		*	E40-9016-05	PIN CONNECTOR (LCD)		
19	1C		F05-1031-05	FUSE (10A)		
20	2C		F11-1133-04	SHIELDING COVER		
-			G02-0558-04	LEAF SPRING		
22	1B		G02-0576-14	LEAF SPRING		
23	1C	*	G02-0592-04	LEAF SPRING		
24	2A		G09-0405-05	KNOB FIXED SPRING		
25	1B		G10-0651-04	NON-WOVEN FABRIC		
26	1B, 2C		G10-0681-04	NON-WOVEN FABRIC(CHASSIS)		
27	1B, 2B		G10-0686-04	NON-WOVEN FABRIC(CABINET)		
28	1B		G13-0688-04	CUSHON (DC CORD)		
29	1B		G13-0818-04	CUSHON (KQT-8 UPPER)		
-			G13-0872-04	CUSHON (KQT-8 LOWER)		
31	2B	*	G13-0935-04	CUSHON (SQ)		
32	2A	*	G13-0936-04	CUSHON (VOL)		
33	2B	*	G13-0937-04	CUSHON (CH)		
-		*	H11-0830-04	POLYSTYRENE BOARD		
-			H13-0814-04	PROTECTION BOARD		
-		*	H01-8286-04	ITEM CARTON BOX		
-		*	H10-2677-02	POLYSTYRENE FOAMED FIXTURE		
-			H25-0103-04	PROTECTION BAG (DC CORD)		
-			H25-0720-04	PROTECTION BAG (TK-805)		
-			J19-1376-15	MIC HANGER		
35	1C	*	J19-1434-04	HOLDER (SP)		
-		*	J21-4282-08	MOUNTING HARDWARE(LCD)		

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UE: AAFES(Europe) X: Australia

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-		*	J29-0441-03	BRACKET		
40	2B	*	K27-3052-04	KNØB (POWER)		
41	2A	*	K29-4533-04	KNØB (CH)		
42	2A	*	K29-4534-04	KNØB (VOL)		
43	2B	*	K29-4535-04	KNØB (SQ)		
A	2B		N09-0626-04	SCREW (M3X10)		
B	2A, 2B		N09-0650-05	SCREW (LCD)		
C	1C, 2C		N33-2606-45	ØVAL HEAD MACHINE SCREW(CABINE		
D	1C, 2B		N87-2606-46	BRAZIER HEAD TAPTITE SCREW(PCB		
E	2A, 2B		N88-2606-46	FLAT HEAD TAPTITE SCREW(SUB PA		
-			N99-0321-05	SCREW SET		
R301			RD14BB2B2R2J	RD 2.2 J 1/8W	MM2M3	
R301			RD14BB2B2R2J	RD 2.2 J 1/8W	M4C1C2	
45	1B		T07-0246-05	LOUDSPEAKER(FULLRANGE)		
-			T91-0362-15	MICROPHONE(WITH CORD)		
-			T91-0374-1E	MICROPHONE(WITHOUT CORD)		
-			LC7582	IC(LCD DRIVER)		
-			X52-3100-00	QT/CTCSS UNIT		KK2K3
-			X52-3100-00	QT/CTCSS UNIT		K4PP4
47	2B, 2C	*	X57-3440-10	TX-RX UNIT		KP
47	2B, 2C	*	X57-3440-11	TX-RX UNIT		K2
47	2B, 2C	*	X57-3440-12	TX-RX UNIT		K3
47	2B, 2C	*	X57-3440-21	TX-RX UNIT		MC2
47	2B, 2C	*	X57-3440-22	TX-RX UNIT		M2
47	2B, 2C	*	X57-3440-23	TX-RX UNIT		M3
47	2B, 2C	*	X57-3440-24	TX-RX UNIT		M4C1
47	2B, 2C	*	X57-3441-01	TX-RX UNIT		K4P4
TX-RX UNIT (X57-344X-XX)						
C1			CC73FSL1H101J	CHIP C 100PF J		
C2			CC73FCH1H010C	CHIP C 1.0PF C		
C2			CC73FCH1H010C	CHIP C 1.0PF C		MM2M3
C3			CC73FCH1H030C	CHIP C 3.0PF C		KK2K3
C3			CC73FCH1H030C	CHIP C 3.0PF C		PC2
C3			CC73FCH1H030C	CHIP C 3.0PF C		MM2M3
C3			CC73FCH1H270D	CHIP C 27PF D		K4M4P4
C4			CK73FB1H102K	CHIP C 1000PF K		
C5			CC73FSL1H101J	CHIP C 100PF J		
C6			CK73FB1H102K	CHIP C 1000PF K		
C7			CC73FCH1H030C	CHIP C 3.0PF C		KK2K3
C7			CC73FCH1H030C	CHIP C 3.0PF C		MM2M3
C7			CC73FCH1H030C	CHIP C 3.0PF C		PC2
C7			CC73FCH1H020C	CHIP C 2.0PF C		K4M4
C7			CC73FCH1H020C	CHIP C 2.0PF C		P4C1
C8			CK73FB1H102K	CHIP C 1000PF K		
C9			CC73FCH1H010C	CHIP C 1.0PF C		K4M4P4
C9			CC73FCH1H010C	CHIP C 1.0PF C		C1
C9			CC73FCH1H020C	CHIP C 2.0PF C		K3M3
C10			CC73FCH1H180J	CHIP C 18PF J		KK2K3
C10			CC73FCH1H180J	CHIP C 18PF J		MM2M3
C10			CC73FCH1H180J	CHIP C 18PF J		PC2
C10		*	CC73FCH1H220C	CHIP C 22PF C		K4M4P4
C11			CK73FB1H102K	CHIP C 1000PF K		

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C12			CC73FCH1H050C	CHIP C 5.0PF C		
C13 ,14			CK73FB1H102K	CHIP C 1000PF K		
C15			CC73FCH1H070D	CHIP C 7.0PF D		K2K4M2
C15			CC73FCH1H070D	CHIP C 7.0PF D		M4P4C1
C15			CC73FCH1H100D	CHIP C 10PF D		KK3MM3
C15			CC73FCH1H100D	CHIP C 10PF D		C2
C16 ,18			CK73FB1H102K	CHIP C 1000PF K		
C19			CC73FCH1H470J	CHIP C 47PF J		
C20			CC73FCH1H390J	CHIP C 39PF J		
C21 ,22			CK73FB1H102K	CHIP C 1000PF K		
C23			CE04EW1A470M	ELECTRO 47UF 10WV		
C24			CK73EF1C105Z	CHIP C 1.0UF Z		
C25			C92-0511-05	CHIP TAN 0.15UF 35WV		
C26			CK73EB1H104K	CHIP C 0.10UF K		
C27			CK73FB1H102K	CHIP C 1000PF K		
C28			CK73EB1H104K	CHIP C 0.10UF K		
C29			CK73FB1H103K	CHIP C 0.010UF K		
C30			CE04EW1C470M	ELECTRO 47UF 16WV		
C31			CE04EW1A471M	ELECTRO 470UF 10WV		
C32 -34			CE04EW1A470M	ELECTRO 47UF 10WV		
C35			CK73FB1H273K	CHIP C 0.027UF K		
C36			CC73FSL1H101J	CHIP C 100PF J		
C37			CE04EW1C100M	ELECTRO 10UF 16WV		
C38 ,39			CK73EF1C105Z	CHIP C 1.0UF Z		
C40			CK73FB1H103K	CHIP C 0.010UF K		
C41			CE04EW1A470M	ELECTRO 47UF 10WV		
C42			C92-0504-05	CHIP-TAN 0.68UF 20WV		
C43			CE04EW1A470M	ELECTRO 47UF 10WV		
C44			CK73FB1H103K	CHIP C 0.010UF K		
C45			C92-0504-05	CHIP-TAN 0.68UF 20WV		
C46 ,47			CK73FB1H102K	CHIP C 1000PF K		
C49			CK73FB1H102K	CHIP C 1000PF K		
C51			CK73EF1C105Z	CHIP C 1.0UF Z		
C53			CC73FCH1H010C	CHIP C 1.0PF C		MM2M3
C53			CC73FCH1H010C	CHIP C 1.0PF C		M4C1C2
C54			CC73FCH1H150J	CHIP C 15PF J		MM2M3
C54			CC73FCH1H150J	CHIP C 15PF J		M4C1C2
C58			CK73FB1H102K	CHIP C 1000PF K		
C59			CC73FCH1H180J	CHIP C 18PF J		MM2M3
C59			CC73FCH1H180J	CHIP C 18PF J		M4C1C2
C60			CK73FB1H103K	CHIP C 0.010UF K		MM2M3
C60			CK73FB1H103K	CHIP C 0.010UF K		M4C1C2
C61			CK73FB1H103K	CHIP C 0.010UF K		
C62			CE04EW1A470M	ELECTRO 47UF 10WV		
C63			CK73FB1H103K	CHIP C 0.010UF K		
C64			CE04EW1A221M	ELECTRO 220UF 10WV		
C65			CE04EW1C100M	ELECTRO 10UF 16WV		
C66			CK73FB1H103K	CHIP C 0.010UF K		
C67			CK73FB1H102K	CHIP C 1000PF K		
C68			CK73EF1C105Z	CHIP C 1.0UF Z		
C69			CK73FB1H103K	CHIP C 0.010UF K		
C70			CK73FB1H102K	CHIP C 1000PF K		
C71			CE04EW1C471M	ELECTRO 470UF 16WV		
C72			CC73FSL1H101J	CHIP C 100PF J		
C73			CC73FCH1H070D	CHIP C 7.0PF D		

E: Scandinavia & Europe K: USA P: Canada W: Europe

U: PX(Far East, Hawaii) T: England M: Other Areas

PARTS LIST

× New Parts

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.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
C74 ,75			CK73FB1H102K	CHIP C 1000PF K		
C76			CC73FCH1H050C	CHIP C 5.0PF C		
C77 -81			CK73FB1H102K	CHIP C 1000PF K		
C82			CC73FCH1H040C	CHIP C 4.0PF C	K4M4P4	
C82			CC73FCH1H040C	CHIP C 4.0PF C	C1	
C83			CK73FB1H102K	CHIP C 1000PF K		
C84			CK73EF1C105Z	CHIP C 1.0UF Z		
C85			CK73FB1H102K	CHIP C 1000PF K		
C86			CK73EF1C105Z	CHIP C 1.0UF Z		
C87			CE04EW1C470M	ELECTR0 47UF 16WV		
C88			CC73FSL1H101J	CHIP C 100PF J		
C89			CK73FB1H102K	CHIP C 1000PF K		
C90			CE04EW1C100M	ELECTR0 10UF 16WV		
C91			CK73FB1H471K	CHIP C 470PF K		
C92			CM73F2H030D	CHIP C 3.0PF D	K2M2	
C92			CM73F2H050D	CHIP C 5.0PF D	KK3MM3	
C92			CM73F2H050D	CHIP C 5.0PF D	PC2K4	
C92			CM73F2H100D	CHIP C 10PF D	P4	
C93			CC45SL2H180J	CERAMIC 18PF J	K4C1	
C94			CC45SL2H150J	CERAMIC 15PF J		
C95			CC45SL2H220J	CERAMIC 22PF J		
C96			CC73FCH1H0R5C	CHIP C 0.5PF C		
C97			CC73FCH1H020C	CHIP C 2.0PF C		
C98			CC45SL2H040C	CERAMIC 4.0PF C	K2M2	
C98			CC45SL2H050C	CERAMIC 5.0PF C	KK3M	
C98			CC45SL2H050C	CERAMIC 5.0PF C	M3PC2	
C98			CC45SL2H060D	CERAMIC 6.0PF D	K4M4P4	
C98			CC45SL2H060D	CERAMIC 6.0PF D	C1	
C99			CC45SL2H060D	CERAMIC 6.0PF D	K2M2	
C99			CC45SL2H070D	CERAMIC 7.0PF D	KK3MM3	
C99			CC45SL2H070D	CERAMIC 7.0PF D	PC2	
C99			CC45SL2H100D	CERAMIC 10PF D	K4M4P4	
C99			CC45SL2H100D	CERAMIC 10PF D	C1	
C100			CC73FCH1H0R5C	CHIP C 0.5PF C		
C101			CC73FCH1H020C	CHIP C 2.0PF C		
C102			CK73FB1H102K	CHIP C 1000PF K		
C103			CM73F2H040D	CHIP C 4.0PF D	K2M2	
C103			CM73F2H050D	CHIP C 5.0PF D	KK3MM3	
C103			CM73F2H050D	CHIP C 5.0PF D	PC2	
C103			CM73F2H060D	CHIP C 6.0PF D	K4M4P4	
C103			CM73F2H060D	CHIP C 6.0PF D	C1	
C104			CK73FB1H103K	CHIP C 0.010UF K		
C105			CE04EW1C100M	ELECTR0 10UF 16WV		
C106,107			CK73FB1H103K	CHIP C 0.010UF K		
C108			C90-2092-05	ELECTR0 1800UF 16WV		
C109,110			CK73FB1H102K	CHIP C 1000PF K		
C111			CC73FCH1H020C	CHIP C 2.0PF C	K2M23	
C111			CC73FCH1H030C	CHIP C 3.0PF C	KK3MM3	
C111			CC73FCH1H030C	CHIP C 3.0PF C	PC2	
C111			CC73FCH1H040C	CHIP C 4.0PF C	K4M4P4	
C111			CC73FCH1H040C	CHIP C 4.0PF C	C1	
C112			CK73EF1C105Z	CHIP C 1.0UF Z		
C113,114			CK73FB1H102K	CHIP C 1000PF K		
C115			C92-0005-05	CHIP TAN 2.2UF 6.3WV		
C116			CC73ECH1H101J	CHIP C 100PF J		

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U: PX(Far East, Hawaii) T: England M: Other Areas

UE: AAFES(Europe) X: Australia

△ indicates safety critical components.

PARTS LIST

* New Parts

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Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位 置	New Parts 新	Parts No. 部 品 番 号	Description 部 品 名 / 規 格	Desti- nation 仕 向	Re- marks 備 考
C201			CK73FB1H103K	CHIP C 0.010UF K		
C202			CE04CW1C100M	ELECTRO 10UF 16WV		
C203			CK73FB1H223K	CHIP C 0.022UF K		
C204			CK73FB1H102K	CHIP C 1000PF K		
C205, 206			CC73FCH1H330J	CHIP C 33PF J		
C207			CC73FSL1H101J	CHIP C 100PF J		
C208-212			CK73FB1H102K	CHIP C 1000PF K		
C213			C92-0005-05	CHIP TAN 2.2UF 6.3WV		
C214			C92-0501-05	CHIP TAN 1.5UF 10WV		
C215			C92-0005-05	CHIP TAN 2.2UF 6.3WV		
TC1			C05-0348-05	TRIMMING CAP(6PF)		
TC2			C05-0346-05	TRIMMING CAP(6PF)	MM2M3	
TC2			C05-0346-05	TRIMMING CAP(6PF)	M4C1C2	
CN1			E40-3237-05	PIN CONNECTOR (SP)		
CN3, 4			E40-5202-05	PIN CONNECTOR (TX-RX)		
CN5 -8		*	E40-5328-05	PIN CONNECTOR (3P)		
CN201, 202			E40-5203-05	PIN CONNECTOR (CONT)		
CN203			E40-3485-05	PIN CONNECTOR (LCD)		
J1			E11-0425-05	SP JACK		
J2 -5			E18-0254-05	SOCKET		
J201			E08-0673-05	RECTANGULAR RECEPTACLE (MIC)		
TP1			E40-0211-05	PIN CONNECTOR		
TP2 -4			E23-0465-05	TERMINAL (TEST POINT)		
W1			E33-1902-05	FINISHED WIRE SET		
W201			E31-6062-05	CONNECTING WIRE (QT/CTCSS)		
			J30-0545-05	SPACER		
CD1			L79-0855-05	FILTER		
CF1			L72-0372-05	CERAMIC FILTER(CFWM455F)		
L1		*	L79-0877-05	HELICAL RESONATOR(455MHZ)	KMPC2	
L1		*	L79-0879-05	HELICAL RESONATOR(480MHZ)	K2M2	
L1		*	L79-0881-05	HELICAL RESONATOR(505MHZ)	K3M3	
L1		*	L79-0883-05	HELICAL RESONATOR(415MHZ)	K4M4P4	
L1		*	L79-0883-05	HELICAL RESONATOR(415MHZ)	C1	
L2			L40-1872-80	SMALL FIXED INDUCTOR(18NH)		
L3			L40-1072-80	SMALL FIXED INDUCTOR(10NH)		
L4		*	L79-0878-05	HELICAL RESONATOR(455MHZ)	KMPC2	
L4		*	L79-0880-05	HELICAL RESONATOR(480MHZ)	K2M2	
L4		*	L79-0882-05	HELICAL RESONATOR(505MHZ)	K3M3	
L4		*	L79-0884-05	HELICAL RESONATOR(415MHZ)	K4M4P4	
L4		*	L79-0884-05	HELICAL RESONATOR(415MHZ)	C1	
L5			L40-1072-80	SMALL FIXED INDUCTOR(10NH)	K2M2	
L5			L40-1272-48	SMALL FIXED INDUCTOR(12NH)	KMPC2	
L5			L40-2272-80	SMALL FIXED INDUCTOR(22NH)	K4M4P4	
L5			L40-2272-80	SMALL FIXED INDUCTOR(22NH)	C1	
L5			L40-1872-80	SMALL FIXED INDUCTOR(18NH)	K3M3	
L6			L40-1872-80	SMALL FIXED INDUCTOR(18NH)		
L7			L34-2157-05	COIL	K2K4M2	
L7			L34-2157-05	COIL	M4P4C2	
L7		*	L34-4191-05	COIL	KK3MP	
L7		*	L34-4191-05	COIL	M3C2	
L8			L40-1092-81	SMALL FIXED INDUCTOR(1UF)		
L9			L40-1001-19	SMALL FIXED INDUCTOR(10UF)		
L10			L40-2272-80	SMALL FIXED INDUCTOR(22NH)		

E: Scandinavia & Europe K: USA P: Canada W: Europe

U: PX(Far East, Hawaii) T: England M: Other Areas

PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕 向	Re- marks 備考
L11			L34-0908-05	COIL		
L12			L34-1052-05	COIL	K3M3	
L12			L34-1185-05	COIL	KK2K4	
L12			L34-1185-05	COIL	MM2M4	
L12			L34-1185-05	COIL	PP4	
L12			L34-1185-05	COIL	C1C2	
L13			L34-1032-05	COIL		
L14			L34-1052-05	COIL	KK2K4	
L14			L34-1052-05	COIL	MM2M4P	
L14			L34-1052-05	COIL	P4C1C2	
L14			L34-1083-05	COIL	K3M3	
L15			L34-0908-05	COIL		
L16			L34-1052-05	COIL	KK2K4	
L16			L34-1052-05	COIL	MM2M4P	
L16			L34-1052-05	COIL	P4C1C2	
L16			L34-1083-05	COIL	K3M3	
X1		*	L77-1419-05	CRYSTAL RESONATOR(30.755MHZ)	K2K4M2	
X1		*	L77-1419-05	CRYSTAL RESONATOR(30.755MHZ)	M4P4C1	
X1		*	L77-1420-05	CRYSTAL RESONATOR(33.845MHZ)	KMPC2	
X1		*	L77-1421-05	CRYSTAL RESONATOR(34.755MHZ)	K3M3	
X2			L77-1383-05	CRYSTAL RESONATOR(12.8MHZ)	MM2M3	
X2			L77-1383-05	CRYSTAL RESONATOR(12.8MHZ)	M4C1C2	
X3			L77-1376-25	TCXO(12.8MHZ)	KK2K3	
X3			L77-1376-25	TCXO(12.8MHZ)	K4PP4	
X201			L77-1397-05	CRYSTAL RESONATOR(4.194304MHZ)		
XF1		*	L71-0294-05	CRYSTAL FILTER(30.3MHZ)	K2K4M2	
XF1		*	L71-0294-05	CRYSTAL FILTER(30.3MHZ)	M4PC2	
XF1		*	L71-0296-05	CRYSTAL FILTER(34.3MHZ)	KK3MM3	
XF1		*	L71-0296-05	CRYSTAL FILTER(34.3MHZ)	PC2	
R1			RK73FB2A333J	CHIP R 33K J 1/10W		
R2			RK73FB2A104J	CHIP R 100K J 1/10W		
R3			RK73FB2A333J	CHIP R 33K J 1/10W		
R4	,5		RK73FB2A101J	CHIP R 100 J 1/10W		
R6			RK73FB2A223J	CHIP R 22K J 1/10W		
R7	-9		RK73FB2A102J	CHIP R 1.0K J 1/10W	K	
R10			RK73FB2A221J	CHIP R 220 J 1/10W		
R11			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R12			RK73FB2A470J	CHIP R 47 J 1/10W		
R13			R92-0670-05	CHIP R 0 OHM		
R14			RK73FB2A102J	CHIP R 1.0K J 1/10W	K2K4M2	
R14			RK73FB2A102J	CHIP R 1.0K J 1/10W	M4P4C1	
R14			RK73FB2A681J	CHIP R 680 J 1/10W	KK3	
R14			RK73FB2A681J	CHIP R 680 J 1/10W	MM3PC2	
R15			RK73FB2A334J	CHIP R 330K J 1/10W		
R16			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R17			RK73FB2A101J	CHIP R 100 J 1/10W		
R18			RK73FB2A103J	CHIP R 10K J 1/10W		
R19			RK73FB2A562J	CHIP R 5.6K J 1/10W		
R21			RK73FB2A273J	CHIP R 27K J 1/10W		
R22			R92-1220-05	CHIP R 1 J 1/10W		
R23			RK73FB2A101J	CHIP R 100 J 1/10W		
R24			R92-0670-05	CHIP R 0 OHM		
R25			RK73FB2A473J	CHIP R 47K J 1/10W		
R26			RK73FB2A333J	CHIP R 33K J 1/10W		

E: Scandinavia & Europe K: USA P: Canada W: Europe

U: PX(Far East, Hawaii) T: England M: Other Areas

UE: AAFES(Europe) X: Australia

△ indicates safety critical components

TK-805

PARTS LIST

× New Parts

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Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
R27			RK73FB2A473J	CHIP R 47K J 1/10W		
R28			RK73FB2A223J	CHIP R 22K J 1/10W		
R29			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R30			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R31			RK73FB2A153J	CHIP R 15K J 1/10W		
R32			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R33			RK73FB2A162J	CHIP R 1.8K J 1/10W		
R34 -36			RK73FB2A103J	CHIP R 10K J 1/10W		
R37			RK73FB2A182J	CHIP R 1.8K J 1/10W		
R38			RK73FB2A334J	CHIP R 330K J 1/10W		
R39 ,40			RK73FB2A223J	CHIP R 22K J 1/10W		
R41			RK73FB2A473J	CHIP R 47K J 1/10W		
R42			R92-0670-05	CHIP R 0 0HM		
R43			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R49			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R50			R92-0670-05	CHIP R 0 0HM		
R51			RK73FB2A562J	CHIP R 5.6K J 1/10W		
R52 ,53			R92-0670-05	CHIP R 0 0HM		
R54 ,55			RK73FB2A103J	CHIP R 10K J 1/10W		
R56			RK73FB2A473F	CHIP R 47K F 1/10W	MM2M3	
R56			RK73FB2A473F	CHIP R 47K F 1/10W	M4C1C2	
R57			RK73FB2A823F	CHIP R 82K F 1/10W	MM2M3	
R57			RK73FB2A823F	CHIP R 82K F 1/10W	M4C1C2	
R58			RK73FB2A104J	CHIP R 100K J 1/10W	MM2M3	
R58			RK73FB2A104J	CHIP R 100K J 1/10W	M4C1C2	
R59			RK73FB2A183F	CHIP R 18K F 1/10W	MM2M3	
R59			RK73FB2A183F	CHIP R 18K F 1/10W	M4C1C2	
R60			RK73FB2A331J	CHIP R 330 J 1/10W	KK2K3	
R60			RK73FB2A331J	CHIP R 330 J 1/10W	K4PP4	
R60			R92-0670-05	CHIP R 0 0HM	MM2M3	
R60			R92-0670-05	CHIP R 0 0HM	M4C1C2	
R61 ,62			RK73FB2A220J	CHIP R 22 J 1/10W		
R63			RK73FB2A122J	CHIP R 1.2K J 1/10W		
R64			R92-0670-05	CHIP R 0 0HM		
R65			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R66			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R67 ,68			RK73FB2A101J	CHIP R 100 J 1/10W		
R69			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R70			RK73FB2A104J	CHIP R 100K J 1/10W		
R71			R92-0670-05	CHIP R 0 0HM		
R72			RK73FB2A100J	CHIP R 10 J 1/10W		
R73 ,74			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R75			RK73FB2A5R6J	CHIP R 5.6 J 1/10W		
R76			RK73FB2A102J	CHIP R 1.0KM J 1/10W		
R77			R92-0685-05	CHIP R 22 J 1/2W	KK2K3	
R77			R92-0685-05	CHIP R 22 J 1/2W	MM2M3	
R77			R92-0685-05	CHIP R 22 J 1/2W	PC2	
R77			R92-0699-05	CHIP R 10 J 1/2W	K4M4P4	
R77			R92-0699-05	CHIP R 10 J 1/2W	C1	
R78			R92-0679-05	CHIP R 0 0HM	K4M4P4	
R78			R92-0679-05	CHIP R 0 0HM	C1	
R79			R92-0679-05	CHIP R 0 0HM		
R80			R92-0679-05	CHIP R 0 0HM	KK2K3	
R80			R92-0679-05	CHIP R 0 0HM	MM2M3	
R80			R92-0679-05	CHIP R 0 0HM	PC2	

E: Scandinavia & Europe K: USA P: Canada W: Europe

U: PX(Far East, Hawaii) T: England M: Other Areas

UJ: A&F&C (Japan) X: Avionics

A indicates safety critical components

PARTS LIST

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Telle ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名/規格	Desti- nation 仕向	Re- marks 備考
R81			R92-1214-05	CHIP R 120 J 1/2W		
R82 ,83			RK73FB2A103J	CHIP R 10K J 1/10W		
R84			R92-1215-05	CHIP R 470 1/2W		
R85			R92-0670-05	CHIP R 0 0HM		
R86			RK73FB2A103J	CHIP R 10K J 1/10W		
R87			R92-0670-05	CHIP R 0 0HM		
R88			RK73FB2A100J	CHIP R 10 J 1/10W		
R201			RK73FB2A563J	CHIP R 56K J 1/10W		
R202-206			RK73FB2A473J	CHIP R 47K J 1/10W		
R209			R92-0670-05	CHIP R 0 0HM	K2K4M2	
R209			R92-0670-05	CHIP R 0 0HM	M4P4C1	
R211			RK73FB2A473J	CHIP R 47K J 1/10W		
R212			RK73FB2A104J	CHIP R 100K J 1/10W		
R213			RK73FB2A183J	CHIP R 18K J 1/10W		
R214-216			RK73FB2A473J	CHIP R 47K J 1/10W		
R219,220			RK73FB2A473J	CHIP R 47K J 1/10W		
R221			R92-0670-05	CHIP R 0 0HM		
R222			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R223			RK73FB2A473J	CHIP R 47K J 1/10W		
R224			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R225-227			RK73FB2A473J	CHIP R 47K J 1/10W		
R228			RK73FB2A103J	CHIP R 10K J 1/10W		
R229			RK73FB2A334J	CHIP R 330K J 1/10W		
R230			RK73FB2A561J	CHIP R 560 J 1/10W		
R231			RK73FB2A102J	CHIP R 1.0K J 1/10W	K	
R232			RK73FB2A103J	CHIP R 10K J 1/10W		
VR1			R12-3132-05	TRIMMING POT.(SQ) 47K		
VR3			R12-6426-05	TRIMMING POT.(MIC SENS) 33K		
VR4			R12-5058-05	TRIMMING POT.(MAX DEV) 100K		
VR5			R12-3126-05	TRIMMING POT.(APC) 10K		
VR201		*	R05-3452-05	AF VOL. 10K(A)		
S201			S40-2440-15	PUSH SWITCH (POWER)		
S202,203			S40-1086-05	TAKT SWITCH (MONI,SQ)		
S204,205		*	S40-1436-05	TAKT SWITCH (SET1,2)		
D1			MI808	CHIP DIODE		
D2 ,3			1SS184	CHIP DIODE		
D5			MA344B	DIODE	MM2M3	
D5			MA344B	DIODE	M4C1C2	
D6			DAN235(K)	CHIP DIODE		
D7			1SS181	CHIP DIODE		
D8			MI407	DIODE		
D9			MI808	CHIP DIODE		
D10 ,11			MA716	CHIP DIODE		
D12			DSA3A1	DIODE		
D201			1SS226	CHIP DIODE		
IC1			KCD01	HIC(FM IF)		
IC2			UPC1241H	IC		
IC3			KCA03	HIC(MIC AMP)		
IC4			NJM78L05UA	IC(5V AVR)		
IC5			LA5010M	IC(LOW SATURATION REGULATOR)		
IC6			KCB06	HIC(DRIVE)		
IC7			MC7808CT	IC(VOLTAGE REGULATORS/ +8V)		
IC201			NJM78L05UA	IC(5V AVR)		
IC202			AK93C46F	IC		

E: Scandinavia & Europe K: USA P: Canada W: Europe

U: PX(Far East, Hawaii) T: England M: Other Areas

UE: AAFES(Europe) X: Australia

▲ indicates safety critical components.

TK-805

PARTS LIST

* New Parts

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.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
IC203		*	75104G-605-1B	MPU		
IC204			S-8054ALR-LN	IC(VOLTAGE DETECTOR)		
IC301		*	M57729H-22	IC(POWER MODULE)	KMPC2	
IC301		*	M57729L-22	IC(POWER MODULE)	K4P4M4	
IC301		*	M57729L-22	IC(POWER MODULE)	C1	
IC301		*	M57729SH-22	IC(POWER MODULE)	K3M3	
IC301		*	M57729UH-22	IC(POWER MODULE)	K2M2	
Q1 ,2			3SK184(S)	CHIP FET		
Q3			2SC2714(Y)	CHIP TRANSISTOR		
Q4			2SD1757(K)	CHIP TRANSISTOR		
Q5 ,6			2SB1119S	CHIP TRANSISTOR		
Q7			2SC2712(Y)	CHIP TRANSISTOR		
Q8			DTC144WK	DIGITAL TRANSISTOR		
Q9 ,10			2SC2712(Y)	CHIP TRANSISTOR		
Q11			2SD1757(K)	CHIP TRANSISTOR		
Q13			2SC2712(Y)	CHIP TRANSISTOR		
Q14			2SC2759(U23)	CHIP TRANSISTOR		
Q15			2SD1406(Y)	TRANSISTOR		
Q16			2SB1302S	CHIP TRANSISTOR		
Q17			DTC114WK	DIGITAL TRANSISTOR		
Q201, 202			2SC2712(Y)	CHIP TRANSISTOR		
TH1		*	157-252-55038	THERMISTOR	MM2M3	
TH1		*	157-252-55038	THERMISTOR	M4C1C2	
S206		*	W02-0866-05	ENCORDER		
Z1		*	X59-3740-10	HPF UNIT		
Z2		*	X58-3700-10	PLL ASSY	KMPC2	
Z2		*	X58-3700-11	PLL ASSY	K2M2	
Z2		*	X58-3700-12	PLL ASSY	K3M3	
Z2		*	X58-3700-13	PLL ASSY	K4M4P4	
Z2		*	X58-3700-13	PLL ASSY	C1	
Z3			X59-3130-00	APC UNIT		

E: Scandinavia & Europe K: USA P: Canada W: Europe

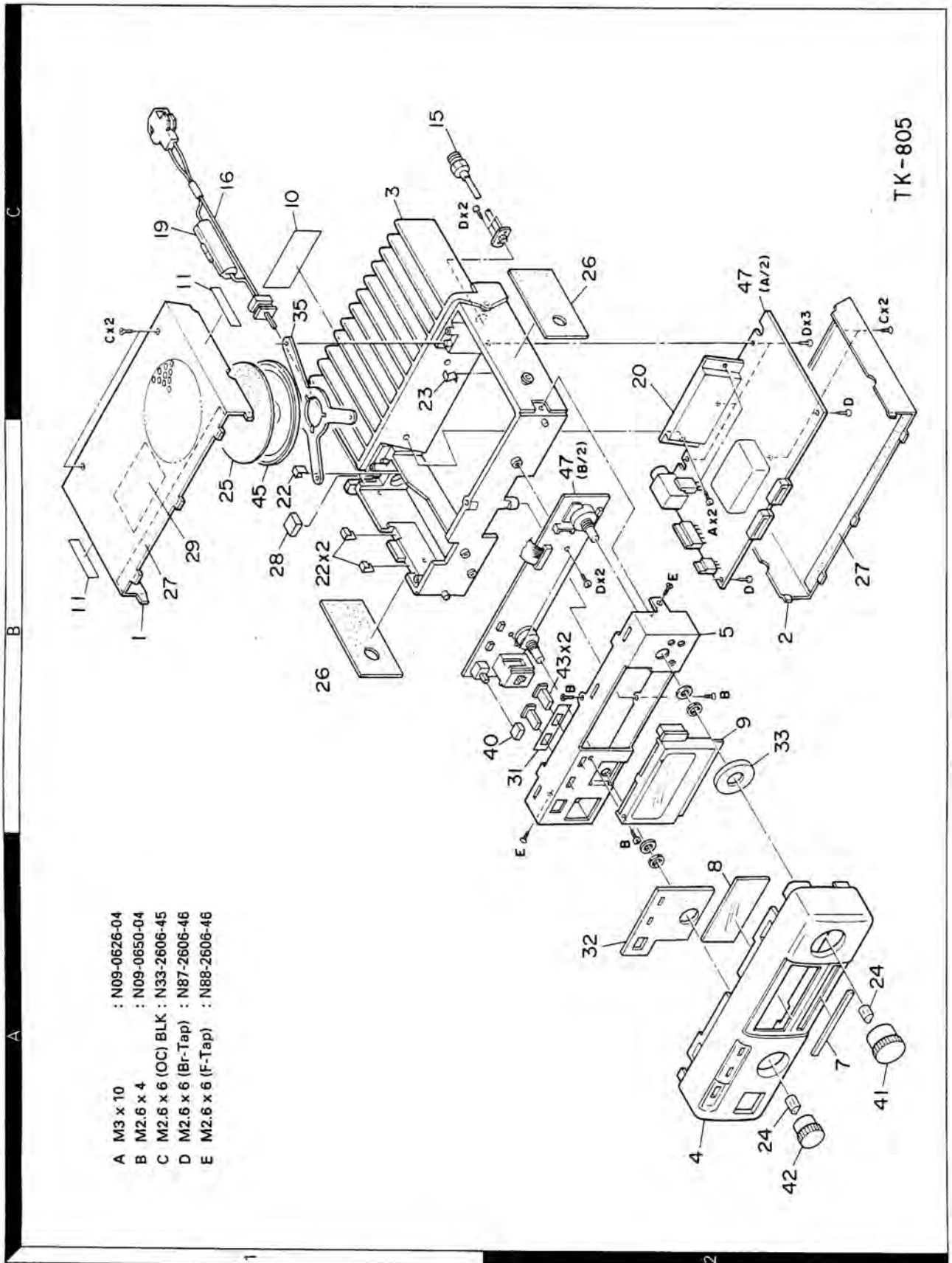
U: PX(Far East, Hawaii) T: England M: Other Areas

U: PX(Far East, Hawaii) T: England M: Other Areas

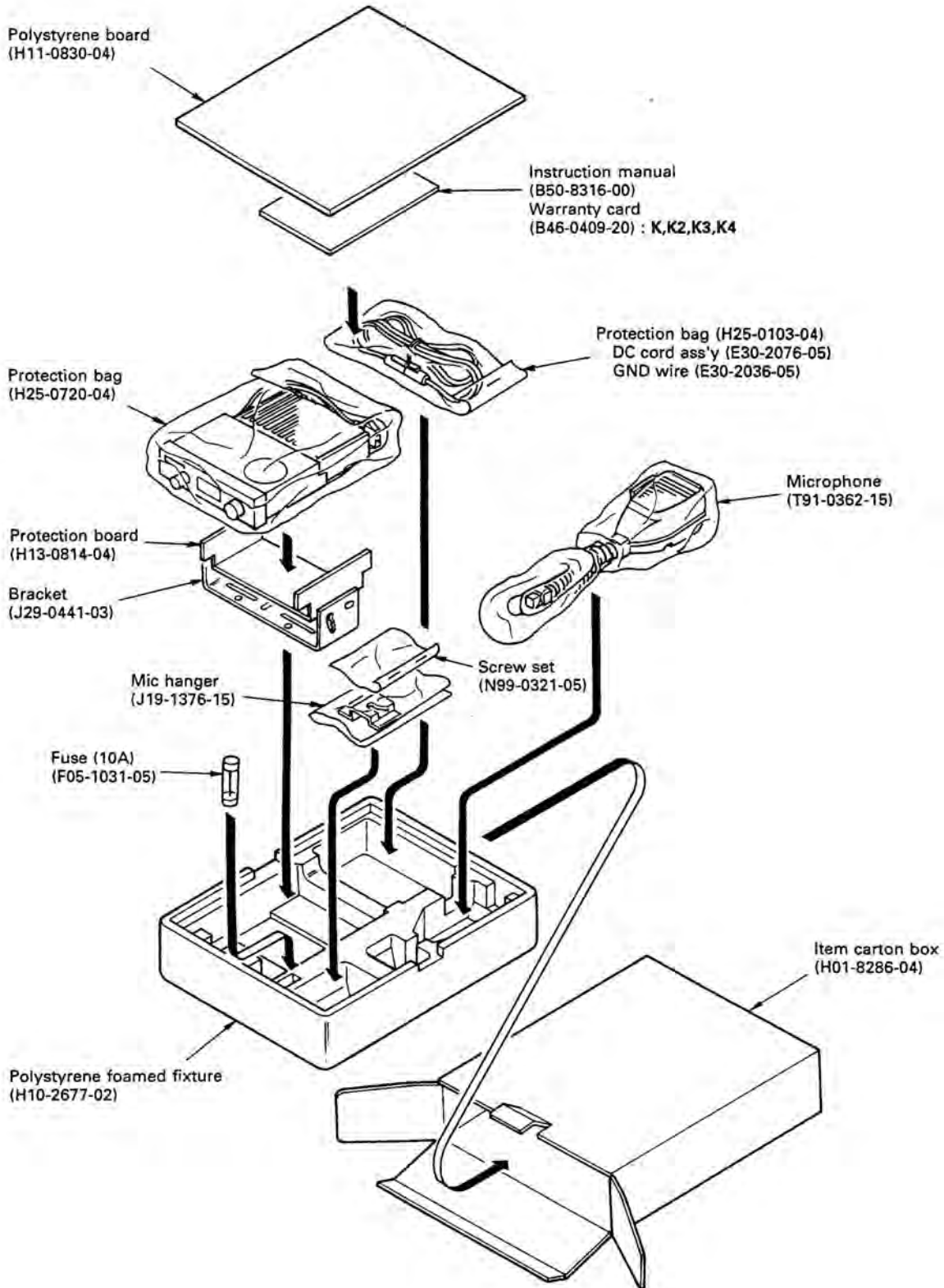
A: Indicates safety critical components

EXPLODED VIEW

TK-805



PACKING



ADJUSTMENT

Test Equipment Required for Alignment

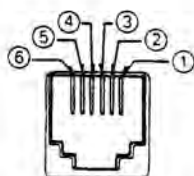
No.	Test Equipment	Major Specifications	
1	Standard Signal Generator (SSG)	Frequency Range Modulation Output	100 to 500MHz. Frequency modulation and external modulation. 0.1μV to greater than 1mV.
2	Power Meter	Input Impedance Operation Frequency Measurement Capability	50Ω. 100 to 500MHz or more. Vicinity of 60W.
3	Deviation Meter	Frequency Range	100 to 500MHz.
4	Digital Volt Meter (DVM)	Measuring Range Accuracy	1 to 30V DC. High input impedance for minimum circuit loading.
5	Oscilloscope		DC through 30MHz.
6	High Sensitivity Frequency Counter	Frequency Range Frequency Stability	10Hz to 500MHz. 0.2ppm or less.
7	Ammeter		15A.
8	AF Volt Meter (AFVTVM)	Frequency Range Voltage Range	50Hz to 10kHz. 3mV to 3V.
9	Audio Generator (AG)	Frequency Range Output	50Hz to 5kHz or more. 0 to 1V.
10	Distortion Meter	Capability Input Level	3% or less at 1kHz. 50mV to 10Vrms.
11	Voltmeter	Measuring Range Input Impedance	1.5 to 30V DC or less. 50kΩ/V or greater.
12	4Ω Dummy Load		Approx. 4Ω, 3W.
13	Regulated Power Supply		13.6V, approx. 15A (adjustable from 9 to 17V). Useful if ammeter equipped.
14	Tracking Generator		

The set has been adjusted for the frequencies shown in the following table. When required, re-adjust them following the adjustment procedure to obtain the frequencies you want in actual operation.

	RX freq' fR() MHz			TX freq' fT() MHz		
	L	M	H	L	M	H
K,P,M,C2	450.050	460.050	469.950	450.000	460.000	469.9875
K3,M3	490.050	500.050	509.950	490.000	500.000	509.9875
K4,P4,M4,C1	400.050	410.050	419.950	400.000	410.000	419.9875
K2,M2	470.050	480.050	489.950	470.000	480.000	489.9875

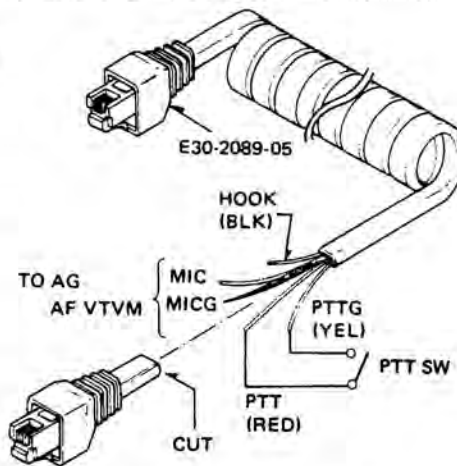
L : Low freq' M : Mid freq' H : Hi freq'

MIC connector front view



- ① SB
- ② PTTG
- ③ PTT
- ④ MICG
- ⑤ MIC
- ⑥ HOOK

• The following test cables are recommended.



Test cable for Microphone input

ADJUSTMENT

Common Section Adjustment

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Setting	1) Write in freq' and signaling data with EEPROM writer. Source voltage : DC 13.6V POWER SW : OFF VOL VR : Full counterclockwise (CCW). TX-RX unit VR1, 5 : CCW VR3, 4 : Center							
2. PLL	RX 1) CH : Channel with lowest RX FREQ' (f _{RL}).	DVM	TX-RX	TP3			Check	1.5 ~ 3.0V
	TX 2) CH : Channel with lowest TX FREQ' (f _{TL}). PTT : ON		Rear panel	ANT				6.0 ~ 8.5V
3. Transmit frequency adjustment	1) CH : Channel with TX center FREQ' (f _{TM}). PTT : ON	f. counter	Rear panel	ANT	TX-RX	TC2	Freq' adj. of TX.	±100Hz M,M2,M3,M4,C1,C2
		Power meter					Check	±400Hz K,K2,K3,K4,P1,P2

Receiver Section Adjustment

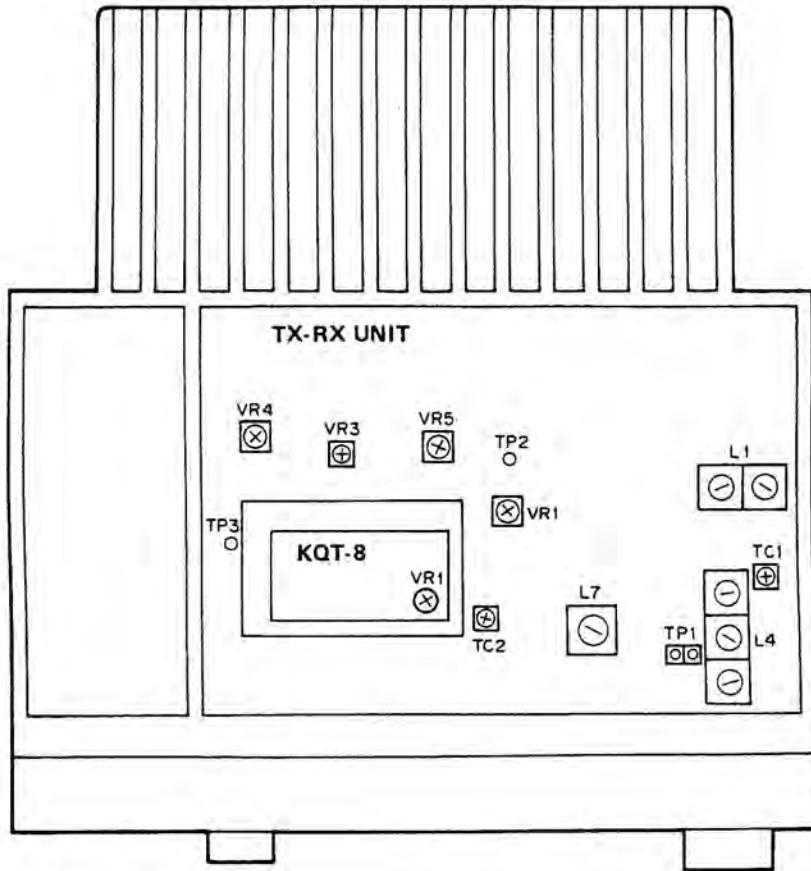
Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Heral	1) Connect the tracking generator to ANT. Connect the spectrum analyzer to TP1.	Tracking generator Spectrum analyzer	TX-RX Rear panel	TP1 ANT	TX-RX	TC1 L1, 4	Check whether required band obtained at max. gain.	Other type -10MHz fo +10MHz K4 type -5MHz fo +5MHz
2. GAIN	1) CH : Channel with RX center FREQ' (f _{RM}). SSG output : -107dBm/1μV MOD : 1kHz DEV : 3kHz	DC V.M	TX-RX	TP2	TX-RX	L7	MAX.	
3. Receiving sensitivity	1) CH : Channel with RX center FREQ' (f _{RM}). SSG output : -120dBm/0.6μV MOD : 1kHz DEV : 3kHz	AF V.M Oscilloscope Distortion meter	Rear panel	SP			Check	SINAD 12dB or more.
4. SQL	1) SSG output : 0.2μV/-121dBm	SSG	LCD		TX-RX	VR1	Set to the point at which SQL just open.	Busy indication () should light.
	2) SSG output : 0.1μV/-127dBm						Check	SQL should close.
	3) SSG output : 0.25μV/-119dBm							SQL should open.

ADJUSTMNET

Transmitter Section Adjustment

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. APC	1) CH : Channel with TX center FREQ' (f.m). PTT : ON	Power meter Ammeter	Rear panel	ANT			Check	30W or more.
2. DEV.	1) AG : 1kHz/50mV PTT : ON	Power meter Linear detector Oscilloscope	Rear panel	ANT	TX-RX	VR5	27W	±1W, 7.5A or less.
3. MIC sensitivity	1) AG : 1kHz/5mV					VR3	±3.0kHz	±100Hz
4. TONE	1) TONE : ON PTT : ON				KQT-8	VR1	±0.8kHz	±100Hz

Adjustment Point (Top View)



TERMINAL FUNCTIONS

Connector No.	Terminal No.	Terminal Name	Terminal Function
TX-RX UNIT (X57-344X-XX) (A/2)			
CN1	1	SP	Speaker input.
	2	E	GND.
CN3	1	E	GND.
	2	MODE	Function select.
	3	COM	Common.
	4	SC	Squelch busy control output.
	5	SQ	Squelch output.
	6	P91	Busy CH lockout control select.
	7	DET	Audio output.
	8	8C	Common +8V.
	9	TX	TX control.
	10	DP	PLL data.
	11	CP	PLL clock.
	12	EP	PLL enable.
	13	E	GND.
CN4	1	E	GND.
	2	A2	Audio input.
	3	P93	T.O.T. select.
	4	TO	Tone input.
	5	MIC	MIC input.
	6	ME	MIC GND.
	7	P92	T.O.T. select.
	8	BEEP	BEEP input.
	9	A1	AF output.
	10	MUTE	AF mute input.
	11	PSW	Power switch control input.
	12	B	+13.6V
	13	E	GND.

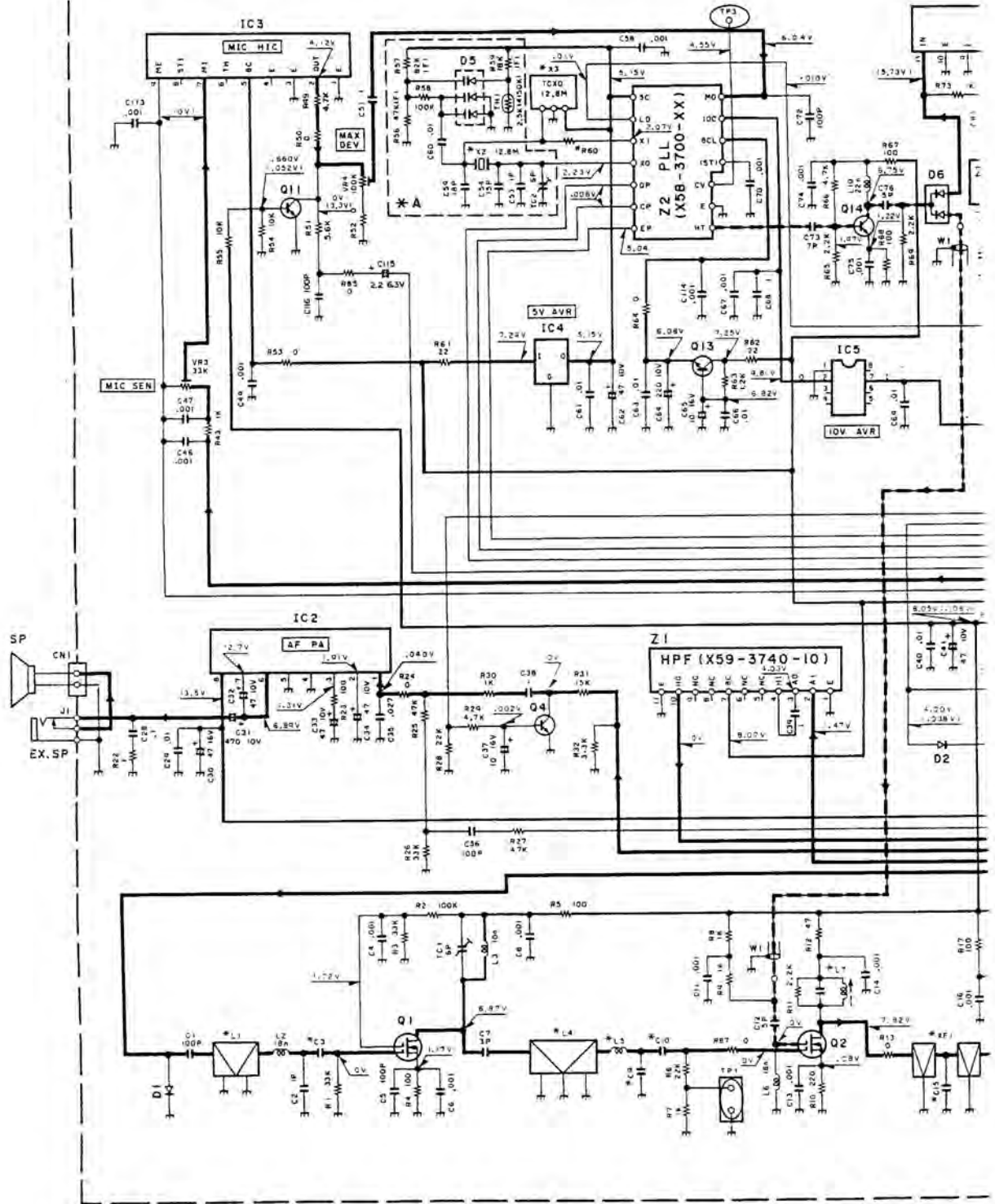
Connector No.	Terminal No.	Terminal Name	Terminal Function
TX-RX UNIT (X57-344X-XX) (B/2)			
CN201	1	E	GND.
	2	MODE	Function select.
	3	COM	Common.
	4	SC	Squelch busy control output.
	5	SQ	Squelch output.
	6	P91	Busy CH lockout control select.
	7	DET	Audio output.
	8	8C	Common +8V.
	9	TX	TX control.
	10	DP	PLL data.
	11	CP	PLL clock.
	12	EP	PLL enable.
	13	E	GND.
CN202	1	E	GND.
	2	A2	Audio input.
	3	P93	T.O.T. select.
	4	TO	Tone input.
	5	MIC	MIC input.
	6	ME	MIC GND.
	7	P92	T.O.T. select.
	8	BEEP	BEEP input.
	9	A1	AF output.
	10	MUTE	AF mute input.
	11	PSW	Power switch control input.
	12	B	+13.6V
	13	E	GND.
CN203	1	CE	Display enable.
	2	DT	Display data.
	3	CK	Display clock.
	4	E	GND.
	5	5C	Common +5V.
	6	8C	Common +8V.

Signal line

Control line

Common DC line

TX-RX UNIT (X57-344X-XX)(A/2) 1:1 TX



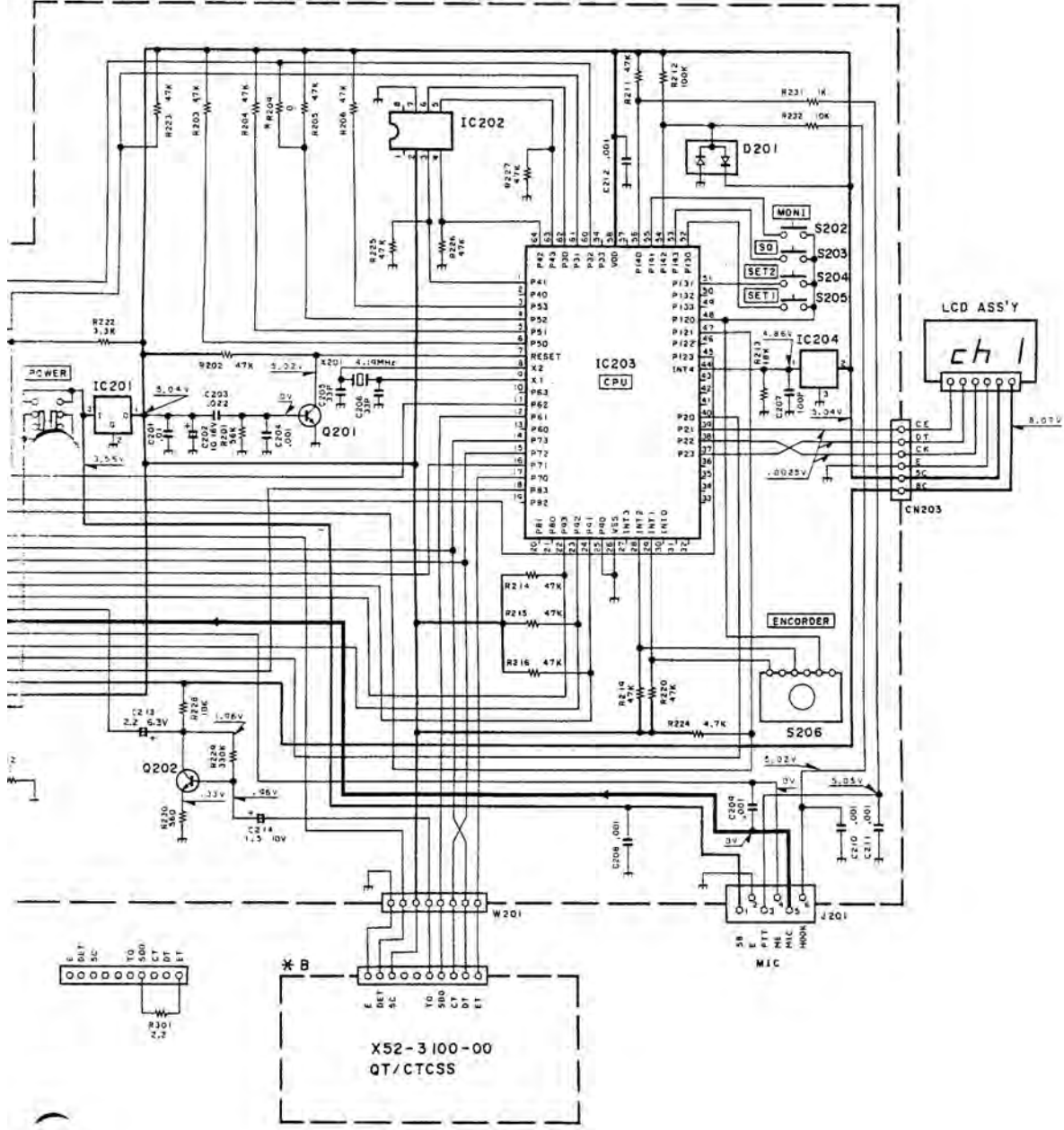
○: USED X: NOT USED

	X57-344X-XX	IC30V	Z2 X58-3700-4X	XF1	X1	X3	XA	XB	LC	LD	LE	LF
K.P	X57-3440-10	M57729H-22	X58-3700-10	L71-0246	L77-1420	○	○	○	L78-0877	L79-0878	12H	L34-4191
K.2	X57-3440-11	M57729H-22	X58-3700-11	L71-0246	L77-1410	○	X	○	L78-0876	L79-0880	10H	L34-4157
K.3	X57-3440-12	M57729SH-22	X58-3700-12	L71-0246	L77-1421	○	○	○	L78-0881	L79-0882	18H	L34-4191
K.4,04	X57-3441-01	M57729L-22	X58-3700-13	L71-0244	L77-1419	○	X	○	L78-0882	L79-0884	22H	L34-2157
M.C2	X57-3440-21	M57729H-22	X58-3700-10	L71-0246	L77-1420	X	○	OPT	L78-0877	L79-0878	12H	L34-4191
M.2	X57-3440-22	M57729H-22	X58-3700-11	L71-0244	L77-1418	X	○	OPT	L78-0879	L79-0880	10H	L34-2157
M.3	X57-3440-23	M57729SH-22	X58-3700-12	L71-0246	L77-1421	X	○	OPT	L78-0881	L79-0882	18H	L34-4191
M4.C1	X57-3440-24	M57729L-22	X58-3700-13	L71-0244	L77-1419	X	○	OPT	L78-0882	L79-0884	22H	L34-2157

SCHEMATIC DIAGRAM TK-805

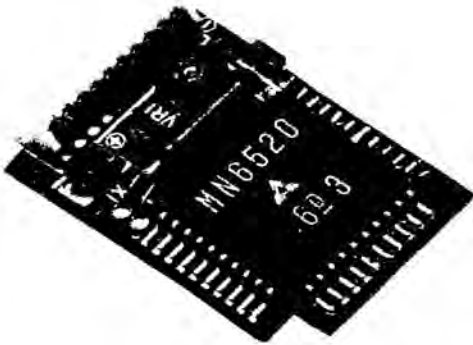
Q1, 3	: 3SK184(S)	D1, 9	: MI808	(B/2)	
Q3	: 25C2714(Y)	D2, 3	: ISS184	IC201	: NJM78L05UA
Q4, 11	: 2SD1757(K)	D5	: MA344B	IC202	: AK93C46F
Q5, 6	: 2SB1119S	D6	: DAN235K	IC203	: 751046-605-1B
Q7, 9, 10, 13	: 25C2712(Y)	D7	: ISS181	IC204	: S-8054ALR-LN
D8	: DTC144WK	D8	: MI407	Q201, 202	: 25C2712(Y)
D14	: 25C2759(U23)	D10, 11	: MA716		
D15	: 2SD1406(Y)	D12	: OSA3A1	D201	: ISS226
D16	: 2SB1302S				
Q17	: DTC114WK				

TX-RX UNIT (X57-344X-XX)(B/2)



KQT-8 (QT / CTCSS)

T-8 External View



KQT-8 Reference Data

Tone frequency and MN6520 (IC1) relationship

Tone frequency (Hz)	MN6520 terminal					
	S6	S5	S4	S3	S2	S1
	MN4094BS terminal					
	Q1	Q2	Q3	Q4	Q7	Q8
67.0	L	H	H	H	L	H
71.9	L	H	H	H	L	L
74.4	L	H	H	L	H	H
77.0	L	H	H	L	H	L
79.7	L	H	H	L	L	H
82.5	L	H	H	L	L	L
85.4	L	H	L	H	H	H
88.5	L	H	L	H	H	L
91.5	L	H	L	H	L	H
94.8	H	H	H	L	L	H
100.0	H	H	H	L	L	L
103.5	H	H	L	H	H	H
107.2	H	H	L	H	H	L
110.9	H	H	L	H	L	H
114.8	H	H	L	H	L	L
118.8	H	H	L	L	H	H
123.0	H	H	L	L	H	L
127.3	H	H	L	L	L	H
131.8	H	H	L	L	L	L
136.5	H	L	H	H	H	H
141.3	H	L	H	H	H	L
146.2	H	L	H	H	L	H
151.4	H	L	H	H	L	L
156.7	H	L	H	L	H	H
162.2	H	L	H	L	H	L
167.9	H	L	H	L	L	H
173.8	H	L	H	L	L	L
179.9	H	L	L	H	H	H
186.2	H	L	L	H	H	L
192.8	H	L	L	H	L	H
203.5	H	L	L	H	L	L
210.7	H	L	L	L	H	H
218.1	H	L	L	L	H	L
225.7	H	L	L	L	L	H
233.6	H	L	L	L	L	L
241.8	L	H	H	H	H	H
250.3	L	H	H	H	H	L

KQT-8 Parts List

Ref No.	New Parts	Parts No.	Description
QT/CTCSS UNIT (X52-3100-00)			
C1		CK73FB1H102K	Chip C 1000pF K
C2		C92-0010-05	Tantal 6.8μF 6.3WV
C3		C90-20B2-05	Tantal 22μF 4.0WV
C4,5		CK73EB1E104K	Chip C 0.1μF K
C6		CK73EB1H223K	Chip C 0.022μF K
C7		CK73EB1E104K	Chip C 0.1μF K
g		CC73FCH1H150J	Chip C 15pF J
.0		CK73FB1H102K	Chip C 1000pF K
C11		CK73FB1E473M	Chip C 0.047μF M
C12		C92-0507-05	Chip tan 4.7μF 6.3WV
C13		C92-0510-05	Chip tan 3.3μF 4.0WV
		E40-5152-05	Pin connector (10P)
X1		L77-1313-05	X'tal resonator 4.194304MHz
R1~10		RK73FB2AXXXJ	Chip R
R11		R92-0670-05	Chip R 0Ω
R12~14		RK73FB2AXXXJ	Chip R
VR1		R12-3460-05	Trimming pot. 33kΩ
Q1		DTC144TK	Digital transistor
Q2		DTA114EK	Digital transistor
Q3		2SC2712(GR)	Chip transistor
IC1		MN6520	IC
IC2		MN4094BS	IC

KQT-8 Fine Adjustment of Tone Frequency

The tone frequency can be fine adjusted with an interval of 0.5% step over the range of 0 to +1.5%. Ground the T1 (pin 10) and T2 (pin 9) of IC1 to obtain the desired frequency.

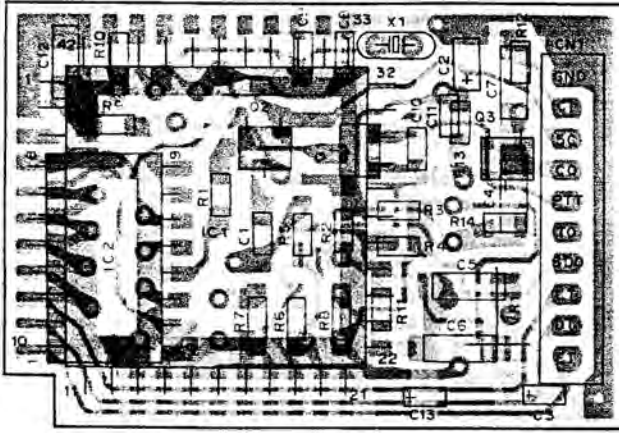
	T1	T2
0%	X	X
+0.5%	○	X
+1.0%	X	○
+1.5%	○	○

○ : GND, X : OPEN

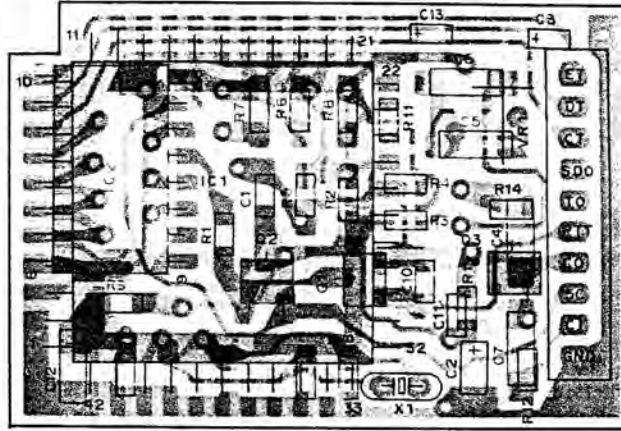
KQT-8 (QT / CTCSS)

T-8 PC Board View

Component side view

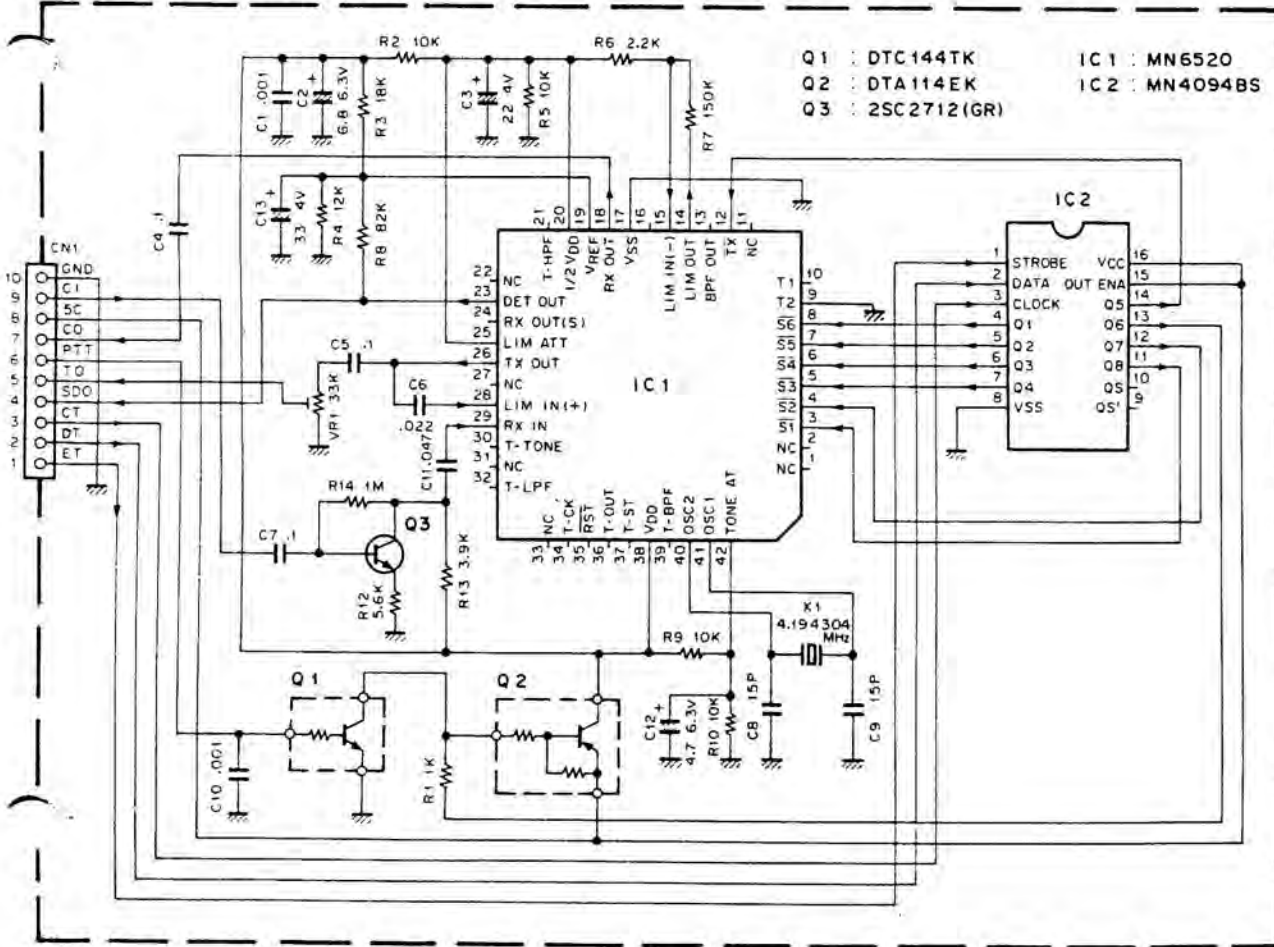


Foil side view



KQT-8 Circuit Diagram

QT/CTCSS UNIT (X52-3100-00)



SPECIFICATIONS

GENERAL

Frequency Range	400 ~ 420MHz (M4,C1 type) 406 ~ 430MHz (K4,P4 type) 450 ~ 470MHz (K,P,M,C2 type) 470 ~ 490MHz (K2,M2 type) 490 ~ 512MHz (K3,M3 type)
Number of Channels	16 semi-duplex channels
Channel Spacing	25kHz (PLL channel step 12.5kHz)
Input Voltage	13.6V DC negative ground
Current Drain	0.3A on standby 0.7A on receive 6.0A on transmit
Duty Cycle	Receiver 100%, Transmitter 20%
Temperature Range	-30°C to +60°C (-22°F to +140°F)
Dimensions and Weight	5.51" (140mm) W x 1.58" (40mm) H x 34" (161mm) D, 2.20lbs. (1.0kg)

RECEIVER

(Measurements made per EIA standard EIA-204-C)

RF Input Impedance	50Ω
Sensitivity	
EIA 12dB SINAD	0.2μV
20dB Quieting	0.3μV
Squelch Sensitivity	0.25μV threshold
Modulation Acceptance	±7kHz
Selectivity	-80dB
Intermodulation	-75dB
Spurious and Image Rejection	-85dB
Audio Power Output	4W at 4Ω less than 5% distortion
Frequency Stability	±0.0005% from -30°C to +60°C
Channel Frequency Spread	20MHz

TRANSMITTER

(Measurements made per EIA standard EIA-152-B)

RF Power Output	25 W adjustable to 5W
RF Output Impedance	50Ω
Spurious and Harmonics	-75dB
Modulation	F3E, ±5kHz for 100% at 1000Hz
FM Noise	-50dB
Microphone Impedance	Low impedance
Audio Distortion	1.0% at 1000Hz
Frequency Stability	±0.0005% from -30°C to +60°C
Channel Frequency Spread	20MHz

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