

KENWOOD

Synthesized  
FM Two-Way Radio  
32 Channel Capability  
30-60W 29.7-50MHz.  
F1, F2, F3

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# TK-601S

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**SERVICE MANUAL**



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# 1. SPECIFICATIONS

## (GENERAL)

Frequency Range.....	29.7 ~ 50MHz
Number of Channels.....	6 channel on basic unit 16 semi-duplex channels, or 32 simplex channels, adaptable.
Channel Spacing .....	20kHz (PLL channel step 2.5kHz)
Input Voltage.....	13.6V DC negative ground
Current Drain.....	0.5A on standby 1.0A on receive 12A on transmit
Duty Cycle.....	Receiver 100%, Transmitter 20%
Temperature Range.....	-30°C to +60°C (-22°F to +140°F)
Dimensions.....	2.56" (65 mm) H x 7.29" (185 mm) W x 9.45" (240 mm) D
Weight.....	4.9 lbs (2.2 kg)

## (RECEIVER)

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

RF Input Impedance.....	50Ω
Sensitivity	
EIA 12 dB SINAD .....	0.25μV
20 dB Quieting .....	0.35μV
Squelch Sensitivity.....	0.2μV threshold
Modulation Acceptance .....	±7 kHz
Selectivity.....	-80 dB
Intermodulation.....	-75 dB
Spurious and Image Rejection.....	-85 dB
Audio Power Output.....	4 watts at less than 5% distortion
Frequency Stability.....	±0.0005% from -30°C to +60°C
Channel Frequency Spread.....	1 MHz

## (TRANSMITTER)

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

RF Power Output.....	60 watts adjustable to 30 watts
RF Output Impedance.....	50Ω
Spurious and Harmonics .....	-70 dB
Modulation .....	16F3, ±5 kHz for 100% at 1000 Hz Direct FM Modulation
FM Noise .....	-45 dB
Microphone Impedance.....	Low impedance
Audio Distortion .....	Less than 3% at 1000 Hz
Frequency Stability.....	±0.002% from -30°C to +60°C
Channel Frequency Spread.....	1 MHz

## 2. 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 Bulletin's 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.

### PERSONAL SAFETY

The following precautions are recommended for personal 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.

### OPERATING INSTRUCTIONS



Fig. 2-1 Operating Controls and Indicators

# TK-601S

## 1. POWER-UP

To turn on the radio, rotate the OFF-VOLUME control clockwise until a click is heard. The channel lamp 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	Turn SQUELCH control counterclockwise until noise is heard.
3. Set VOLUME control	Adjust VOLUME control for a normal listening level.
4. Set SQUELCH control	Advance SQUELCH control clockwise until noise just stops.
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-1 or -2.
You will now hear messages for your system only.	

## 3. TO TRANSMIT

Operation	Procedure
1. Disable QT (if so equipped)	Depress MONITOR button ON. -- 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 Red LED on the front panel will glow 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)	Depress MONITOR to the out position. and Replace the microphone into its hanger.

## PRE-INSTALLATION CONSIDERATIONS

### 1. UNPACKING

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

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#### **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.*

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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

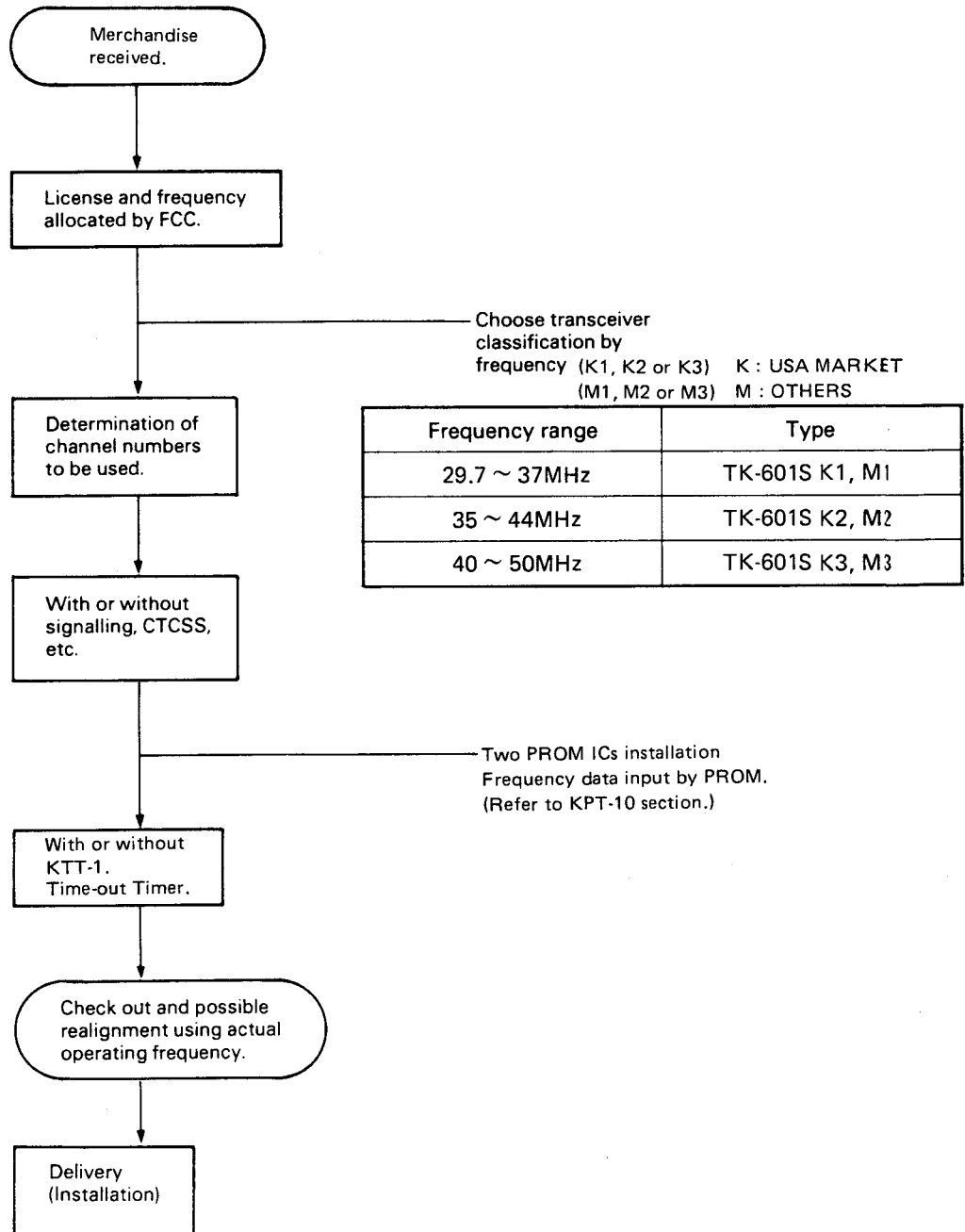
Select a convenient location for your control station radio which is as close as practical to the antenna cable entry point. Secondly, a source of 117 volt, 60 Hz power must be available. Make sure sufficient air can flow around the radio and power supply to allow adequate cooling.

### SERVICE

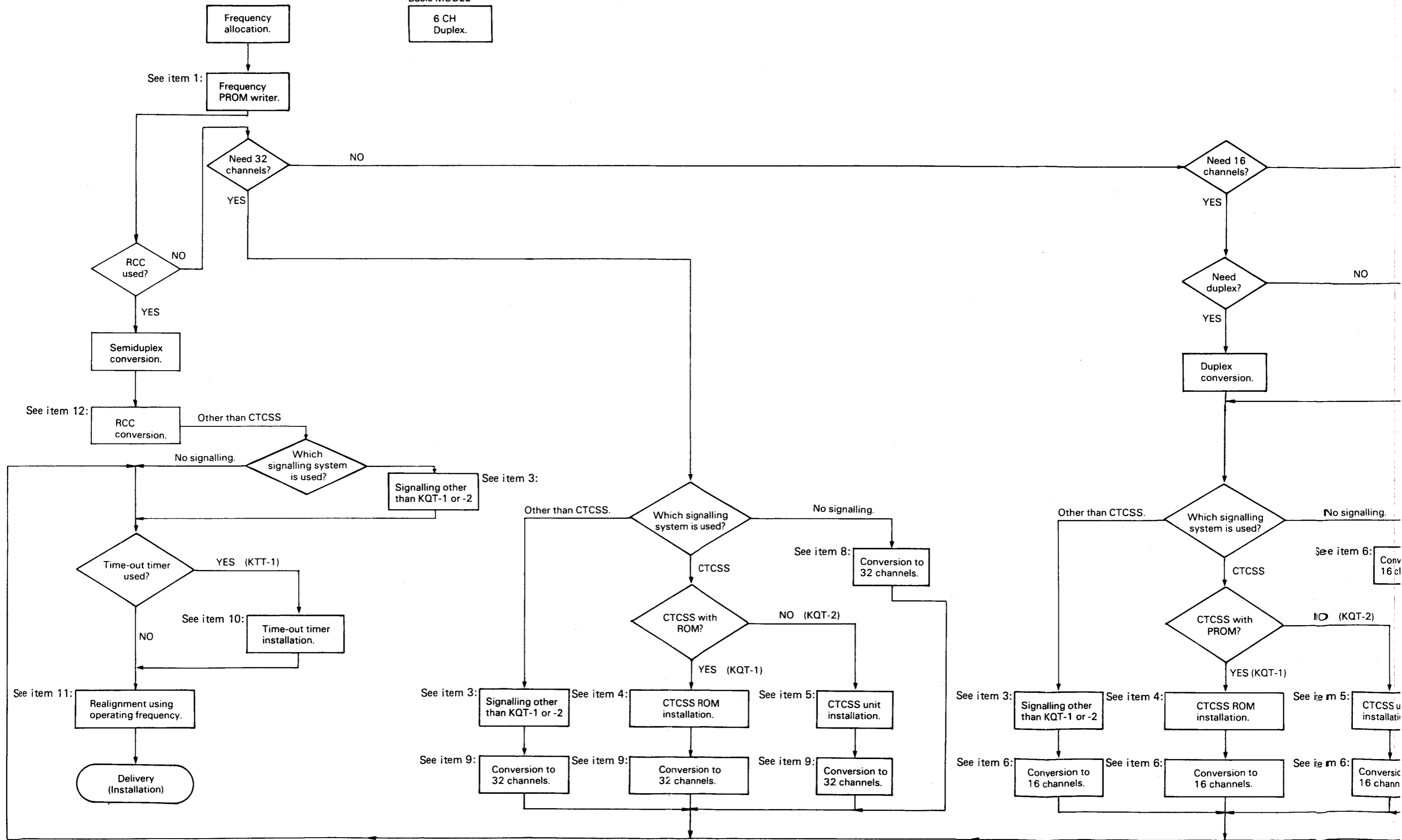
This radio is designed for easy servicing. Refer to the schematic diagrams, printed circuit board views, and alignment procedures contained in this manual.

### 3. FIELD REALIGNMENT

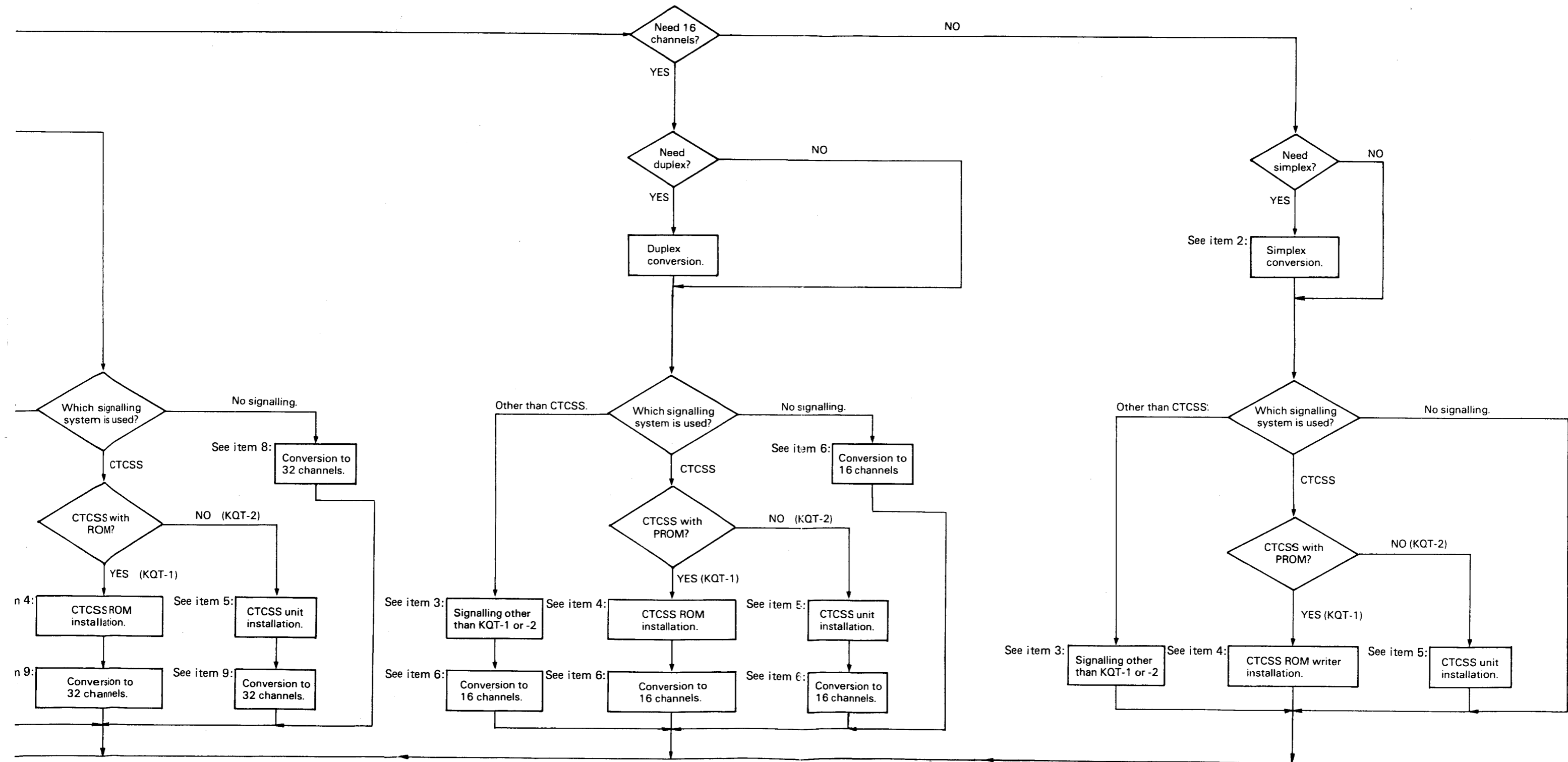
#### 1. DEALER SALES FLOW CHART



Basic MODEL  
6 CH  
Duplex.







## 3. INSTALLATION AND CONVERSION

### 1. Writing a frequency into PROM

Input an allocated frequency with the PROM writer. For simplex, duplex, etc., input, refer to the PROM writer instructions.

### 2. To modify a 6CH, 16CH transceiver for simplex, open JU20 on the PLL unit.

### 3. Installing Signalling other than KQT-1, -2.

Refer to the manual supplied with the Signalling device.

### 4. Installing KQT-1 (Fig. 3-2, 3-3)

Connect plug P32 (E31-2181-05) to J32 on the CTCSS unit and that of E31-2181-05 supplied to PLL unit J9. To install a CTCSS unit, remove the screws in the CTCSS mounting holes, secure the supplied hex bosses in their holes, remove P12 from PLL unit J6 and install the CTCSS plug in J6. Secure the CTCSS unit to the hex bosses with two machine screws.

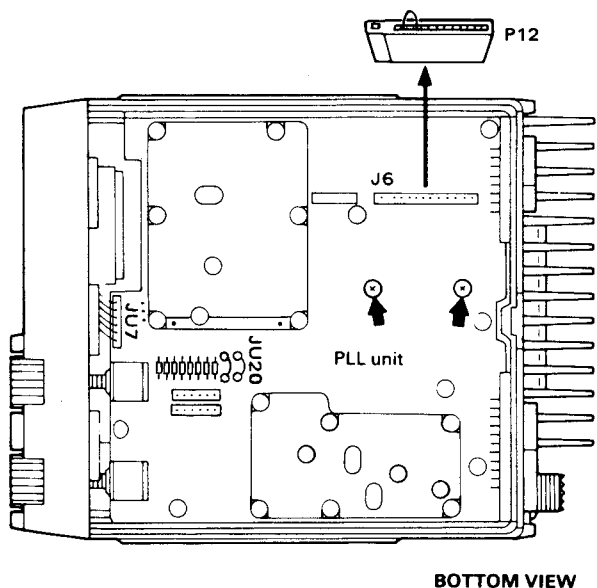


Fig. 3-1

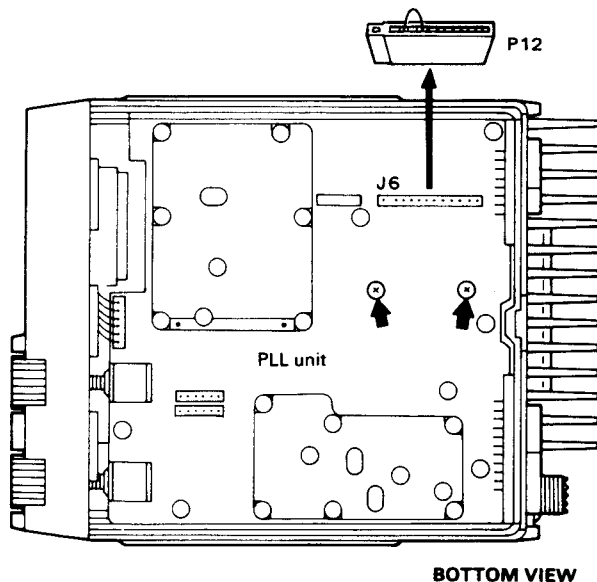


Fig. 3-2

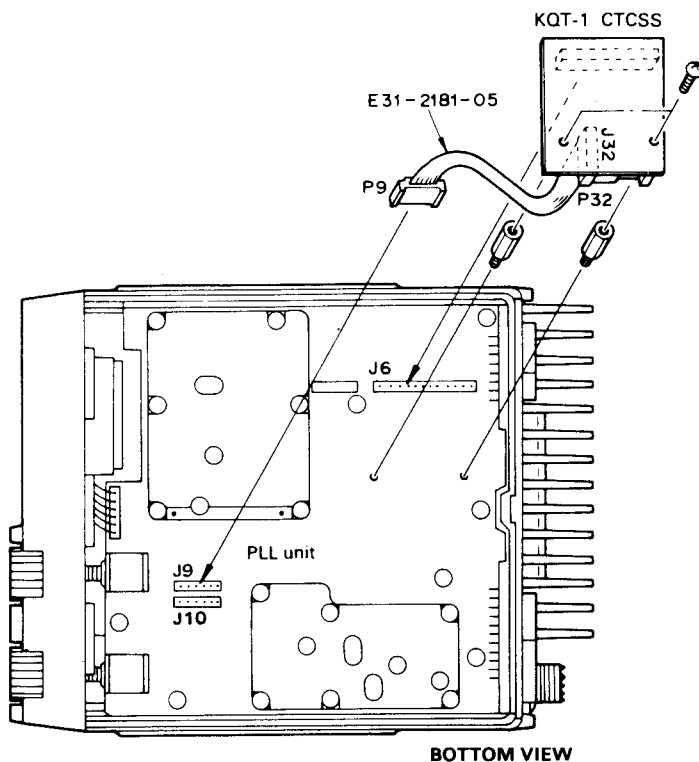


Fig. 3-3

5. Installing KQT-2 (Fig. 3-5)

For installation on the PLL unit, proceed as in item 4. In this case, the cable assembly with plug is not supplied with the CTCSS unit.

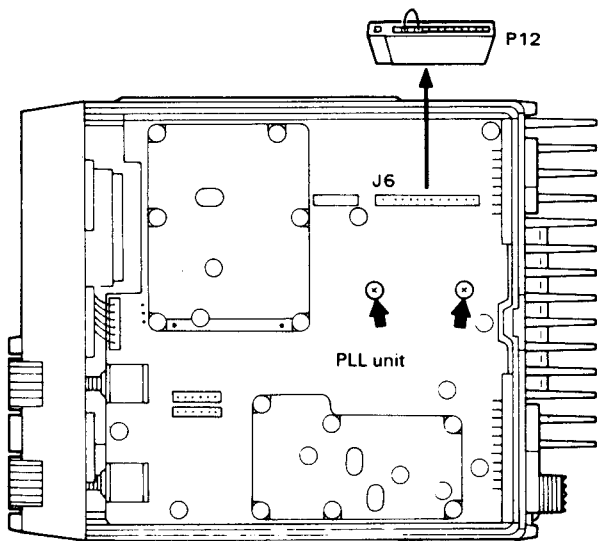


Fig. 3-4 BOTTOM VIEW

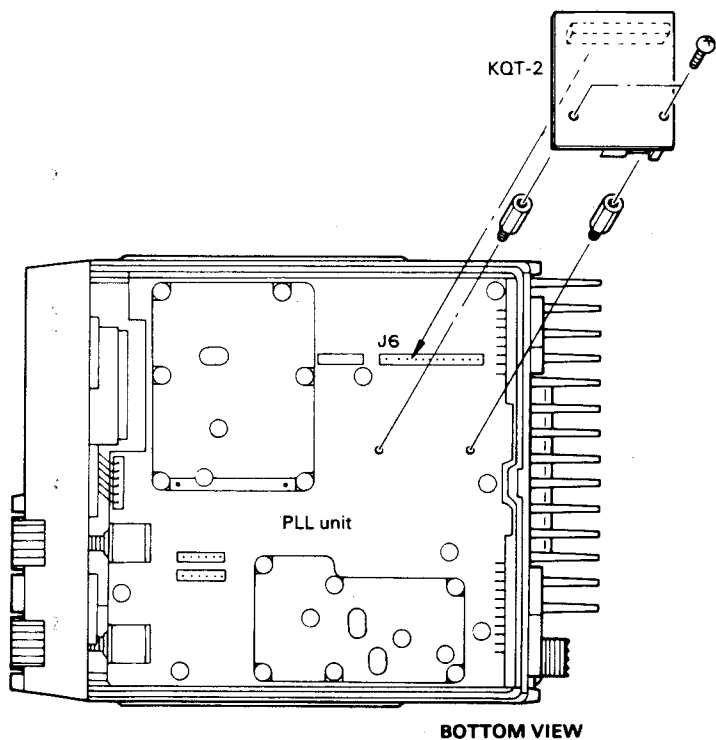


Fig. 3-5

6. Conversion to 16CH without CTCSS.

Disengage the front panel, remove the 6CH rotary switch S01-1433-05 secured to the chassis, then disconnect the rotary switch plug connected to PLL unit J7. Install the new rotary switch S29-1432-05 and cable E31-2176-05 to the 16CH revision kit PC board, Secure the rotary switch to the chassis and connect the cable plug P9 to PLL unit J10. Cut off the brown and red wires from the plug, since these two wires are not used.

7. Conversion to 16CH with KQT-1, -2 (Fig. 3-3, 3-5)

For installing on the PLL unit is shown item 4 and 5, proceed after item 6.

8. Conversion to 32CH without signalling or CTCSS

Basically the same as in item 7. Use the 32CH revision kit in lieu of the 16CH kit, then open JU204 on the TX-RX unit, JU20 on the PLL unit, and place jumper wire JU201 on the TX-RX unit, JU22, JU23 on the PLL unit.

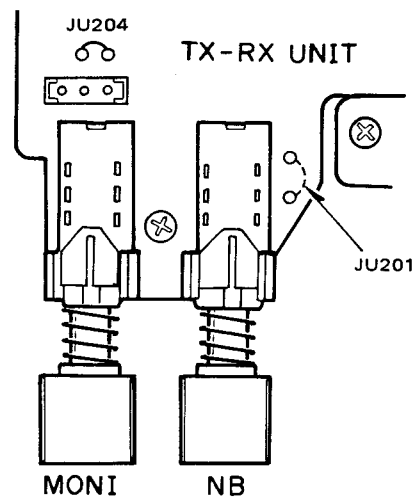


Fig. 3-6

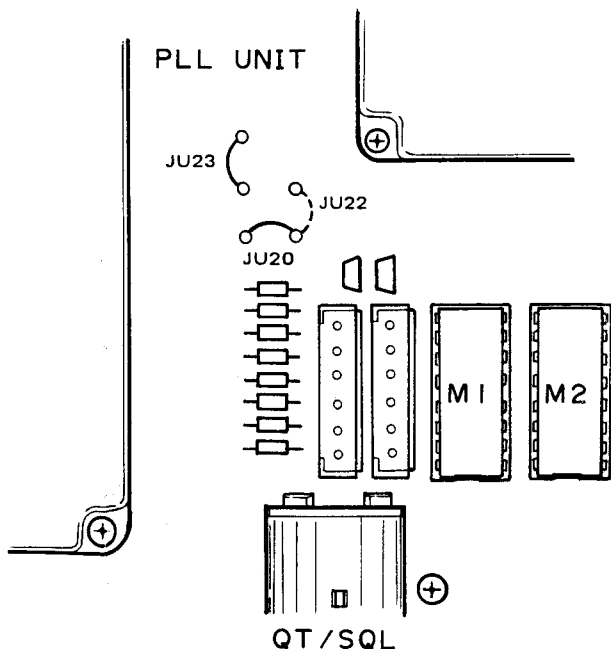


Fig. 3-7

9. Conversion to 32CH with KQT-1, -2, (Fig. 3-3, 3-5)  
For installing on the PLL unit as shown item 4 and 5, proceed after item 8.
10. Installing time-out timer KTT-1 (Fig. 3-8)  
Install the Time-out timer in place on the PLL unit as shown. Connect Time-out timer plug P45 to PLL unit J5, then open PLL unit JU9.

11. Perform operating frequency realignment, following the alignment procedure, page 5-7.
12. For RCC  
Refer to item 13, channel setting.

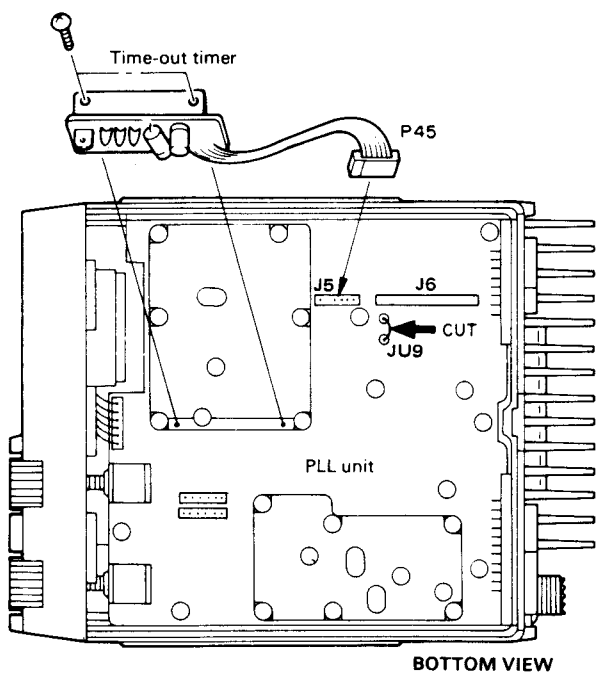


Fig. 3-8

## 13. Channel settings

	Unit	TX-RX		PLL						Factory set position
	Jumper No. JU	201	202	20	21	22	23	24	26	
	6/16CH. Duplex	O	O	S	O	O	O	O	S	Factory set position
*	32CH. Simplex	S	O	O	O	S	S	O	S	
*	RCC, Home CH.	O	S	S	O	O	S	S	O	
*	RPT/TALK Around	O	S	O	S	S	O	O	S	

S : Short, O : Open

Fig. 3-9

\* For using NB/AUX switch S202, either of the following change is required.

(1) NB should always set to ON (by opening JU204).

(2) MON switch S201 should be used as the NB switch (by opening JU204, short-circuiting JU205, and opening JU206).

## 4. JUMPER FUNCTION LIST

## TX-RX UNIT

Jumper No.	Function	Open	Short	Normal	
				Open	Short
JU201	AUX switch	Use of S202 as NB switch.	AUX switch NO-AUX O/C connected.	○	
JU202	AUX switch	Use of S202 as NB switch.	AUX switch NC-AUX O/C connected.	○	
JU203	NB common	Use of NB switch as AUX.	NB common GND connected.		○
JU204	NB switch	Use of NB switch as AUX.	Use of S202 as NB switch		○
JU205	NB switch	Use of S202 as NB switch.	Use of MON switch NB ON/OFF.	○	
JU206	Connection between MON line and MON switch	Use of MON switch as NB switch ON/OFF.	Use of S201 as MON switch.		○
JU207	Connection between BUSY and CALL	Independent use of BUSY and CALL.	Flashing during call operation.		○

Fig. 3-10

## PLL UNIT

Jumper No.	Function	Open	Short	Normal		
				Open	Short	
JU1	Alert tone modulation		Alert tone is input to microphone amp.		○	
JU2	Line out to power cable		AVI signal is output.	○		
JU3	Phone control output	Signal is output only via the switch.	Phone control line signal is output directly.	○		
JU4	TX inhibit	Transmission can be inhibited by external control.	Power is always supplied to the TX PA section.		○	
JU5	Microphone hook line input		Hook signal is connected to the hook line.	○		
JU6	Condenser function selection		Condenser microphone can be used.		○	
JU7			SB is output to the microphone.	○		
JU8			C8 is output to the microphone.	○		
JU9	TOT	TOT can be used.	TOT cannot be used.		○	
JU10	Hook/Disc selection	Disk	Hook		○	
JU11	Hook/Disc selection	Hook	Disc	○		
JU12	BZ/ALERT output		BZ and ALERT are output at LINE OUT.		○	
JU13	BZ/ALERT output		BZ and ALERT are output from the built-in speakers.	○		
JU14	CALL-AC function separation	CALL and AC function are separated.	CALL and AC lines are connected.		○	
JU15	Signaling unit's KEY-PTT separation		KEY and PTT of the signaling unit are connected.		○	
JU16	AFO-AFI line separation	Signaling unit or P12 can be used.	AFO and AFI are always connected.	○		
JU17	AV0 line separation		AV0 line is connected.		○	
JU18	AFI line separation		AVI line is connected		○	
JU19	MON line control		MON line is controlled by the QT switch.		○	
JU20	Channel setting		16/6 CH, duplex operation		○	
JU21					○	
JU22					○	
JU23			See Fig. 3-9.		○	
JU24					○	
JU26				16/6 CH, duplex operation		○
JU27				COM. PLL shift	When shifting is required.	When shifting is not required.
JU28	Offset OSC power shifting		T8V is supplied.	○		
JU29	Offset OSC power shifting		C8V is supplied.		○	

Fig. 3-11

## 4. CIRCUIT DESCRIPTION

### Transceiver General

The TK-601S VHF (low band) transceiver is comprised of two circuit boards; a phase locked type frequency synthesizer (PLL unit), and a TX-RX unit. Frequency synthesizer levels for both RX LO and TX drive are delivered from the PLL unit to the TX-RX unit at approximately a 10dBm level.

### Frequency synthesizer General

The frequency synthesizer is divided into two major loops; a common loops, used for both RX LO injection, and secondarily for TX loop offset, and a TX loop, which develops the transmitter drive signal.

### Frequency synthesizer Common loop

The frequency synthesizer common loop affords 2.5kHz channel step, and is built in a dual modulus counter configuration, centered on a monolithic frequency synthesizer IC (U3 : MC145152P). U3 contains a reference divider (1/2048), a Phase Detector, and a programmable counter (1/n). This loop operates in the F1 version from 40.4MHz–47.7MHz, in the F2 version from 45.7–54.7MHz, and in the F3 version from 50.7MHz–60.7MHz.

Phase detector output is sent to the VCO Q1 via charge pump U6, a passive loop filter, consisting of R1–5, C2–4, & L2. VCO output is buffered by Q2, and is amplified by Q3 to a 10dBm output level. The RX path is diode steered through D12, and the TX path is through D11.

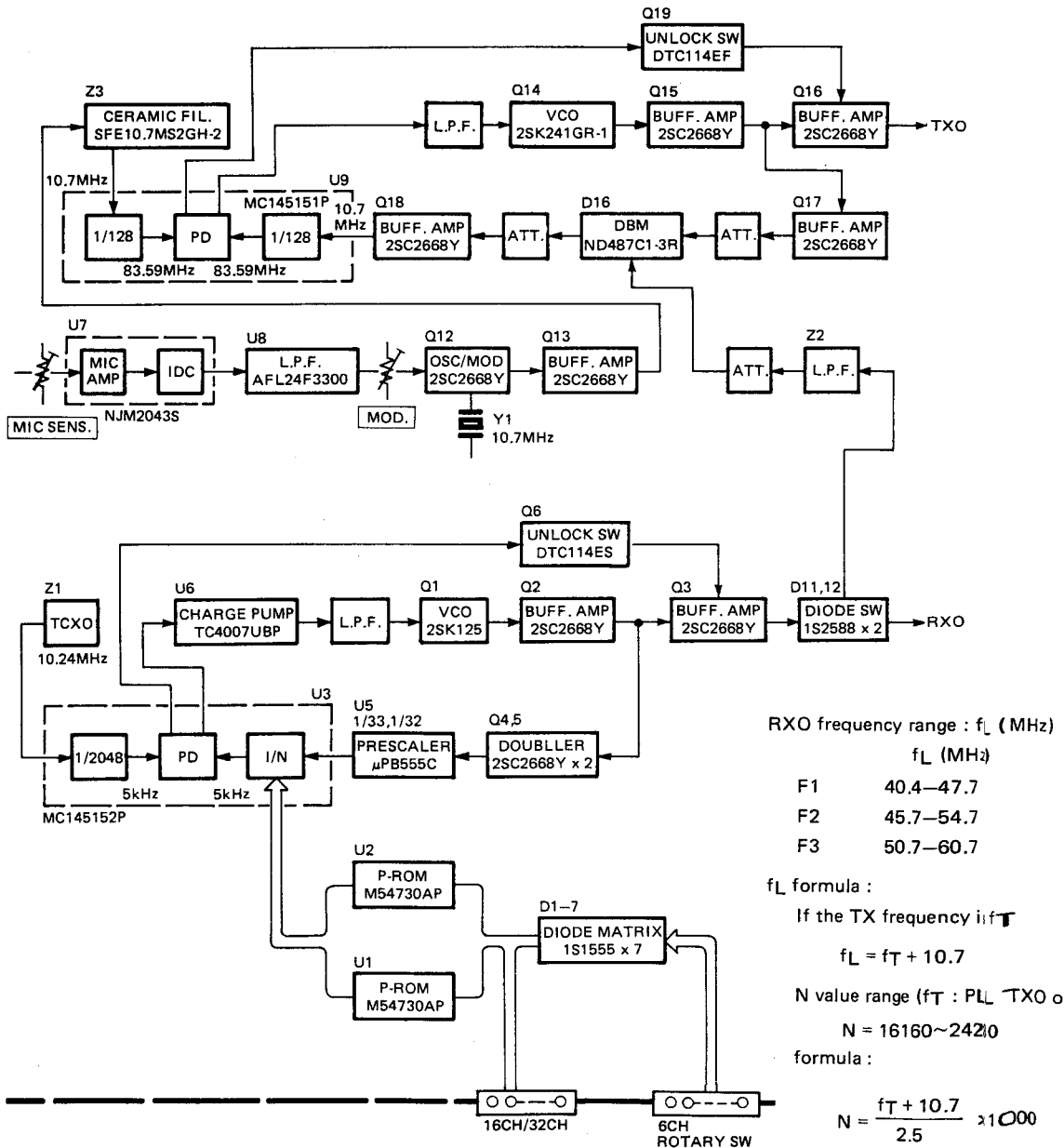


Fig. 4-1 PLL Loop

A portion of the signal from Q2 is frequency doubled by Q4 & Q5, and prescaled by U5 (1/32, 1/33). This is delivered back to the programmable divider within U3 for frequency division to 5kHz. Similarly, the reference oscillator, a TCXO operating at  $\pm 3$ ppm, is divided to 5kHz for comparison in the Phase Detector. The presence of frequency doubler Q4 & Q5 within the loop yields a 2.5kHz channel step.

The programmable divider within U3 is controlled from the channel selector switch, via diodes D1–7. The transceiver can be either a single channel, two through six channels (selectable), sixteen channels simplex or semi-duplex, or thirty-two channels simplex only, by selecting the correct channel selector switch, and programming channel frequency data into the PROMs (U1 & U2). Data from the PROMs is delivered to U3 in 16 bit parallel form.

If for any reason this loop should unlock, Q3 will be shut off via Q6, from U3 unlock Detector output. This will prevent the frequency synthesizer from generating signals under "unlock" conditions.

### Frequency synthesizer TX loop

The TX loop operates in the F1 version from 29.7–37 MHz, in the F2 version from 35–44MHz and in the F3 version from 40–50MHz. General design philosophy is similar to the Common loop in that the circuit is built around a monolithic frequency synthesizer IC (U9 :

MC145151P). Phase detector output is sent to the VCO Q14 via a passive loop filter (R70–R74, C68–C72, L15 & L16). The VCO output is buffered by Q15 & Q16, and sent off the board to the TX-RX unit as the TX drive signal. Q16 is controlled by Q19 from the unlock detector. If this loop should unlock, no output is allowed.

A portion of Q15 output is further buffered by Q17, is attenuated, and delivered to Double Balanced Mixer D16. The Common loop output is also delivered to this mixer through a low pass filter, Z2. The output product is buffered by Q18, and this 10.7MHz signal is returned to U9 for 1/128 division to an 83.59kHz signal for phase comparison against the TX loop reference.

The TX loop reference is a 10.7MHz signal, generated at the reference oscillator Q12 & Y1, similarly divided within U9 to 1/128. This signal is also used as the point of modulation impression. The TX audio signal is first preemphasized, amplified by 1/2 of U7, limited by 2/2 of U7, and actively filtered by U8, a quadruple chebyshev-type low pass filter (–24dB/OCT). This audio signal is applied as a modulation signal to the reference oscillator via varactor diode D14.

If for any reason this loop should unlock, Q16 will shut off via Q19, from U9, unlock Detector output. This will prevent the frequency synthesizer from generating signals under "unlock" conditions.

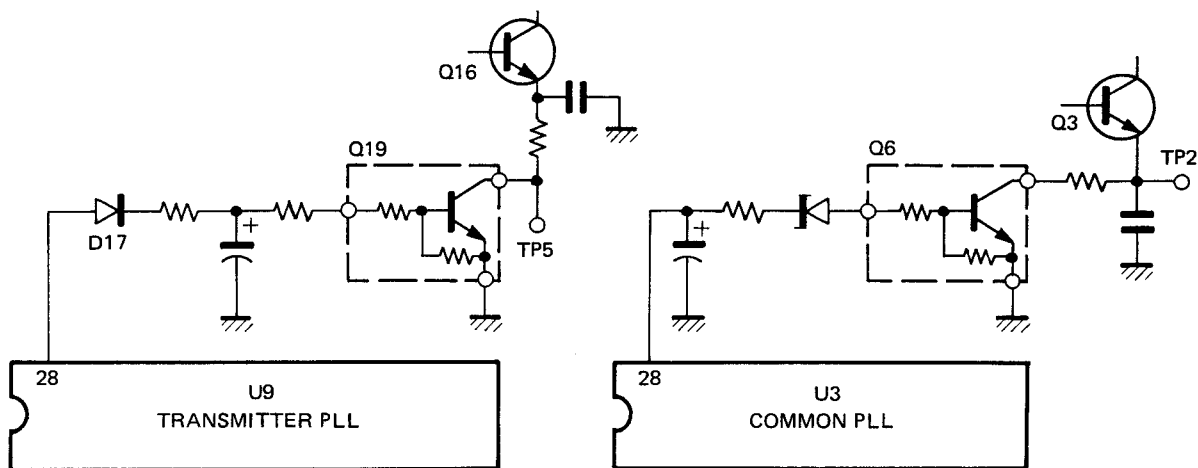


Fig. 4–2 Unlock detection circuit



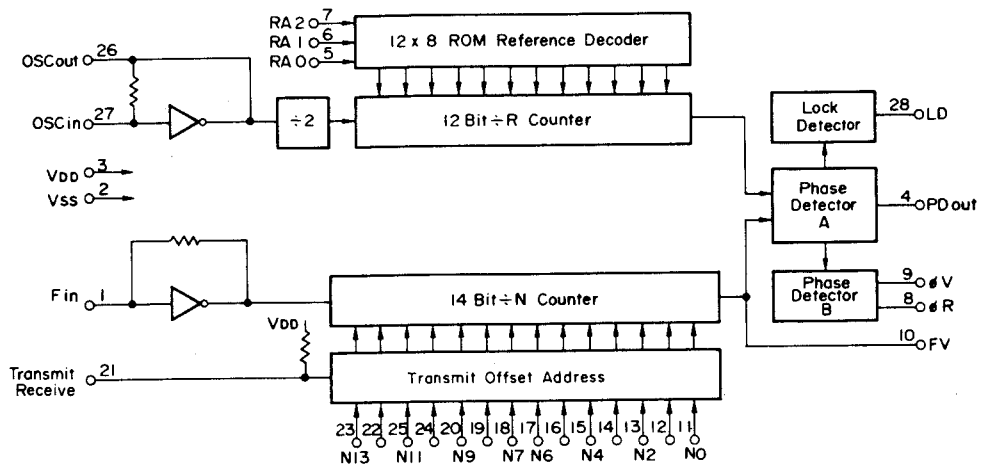


Fig. 4-3 MC145151P (PLL unit U9)

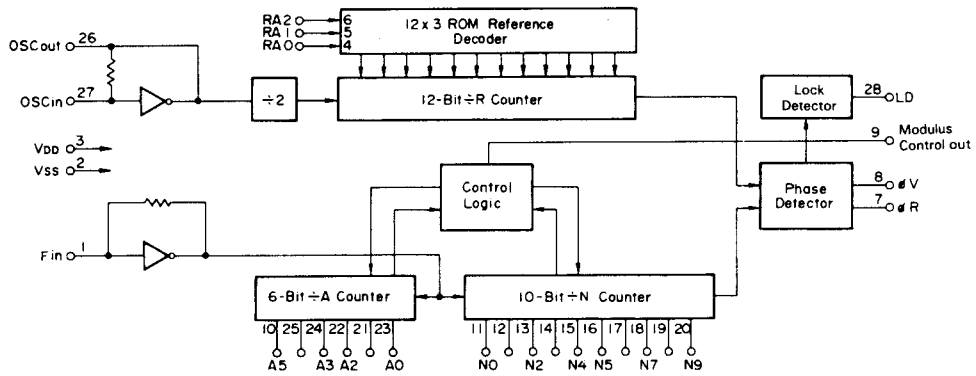


Fig. 4-4 MC145152 (PLL unit U3)

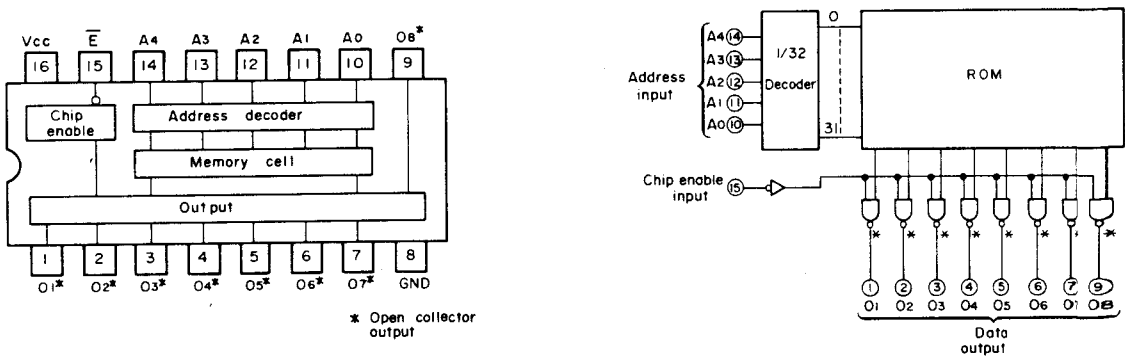


Fig. 4-5 M54730AP (PLL unit U1, U2)

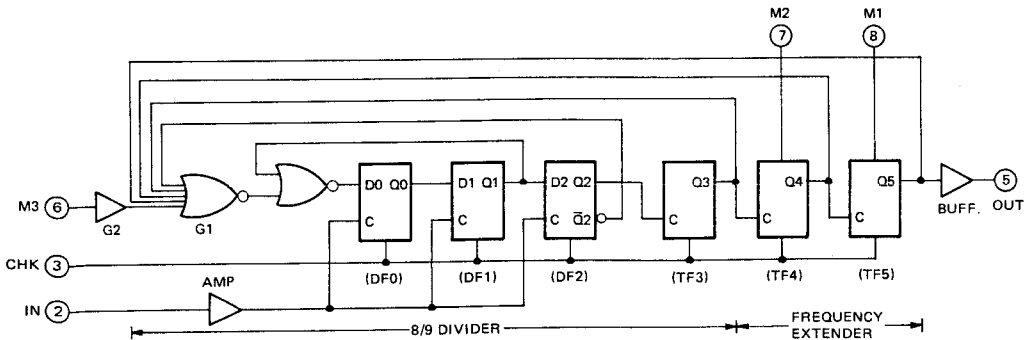


Fig. 4-6 μPB555C (PLL unit U5)

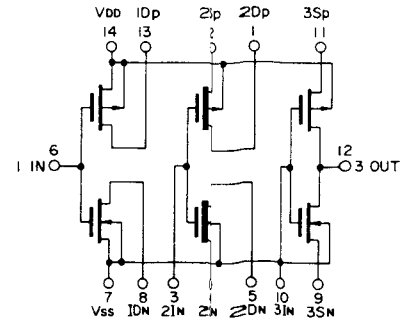


Fig. 4-7 TC4007JEP (PLL unit U6)

# TK-601S

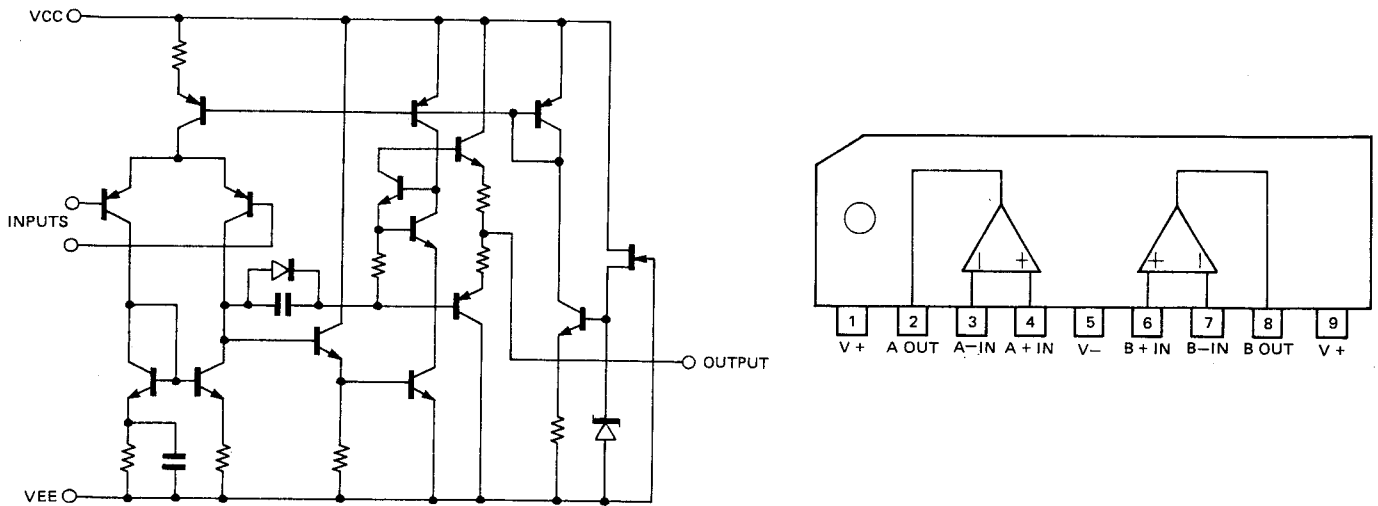


Fig. 4-8 NJM2043S (PLL unit U7)

## TX frequency shift circuit

In the duplex mode, the first address bit (B4) is set to logic high by T8 (8V voltage of TX) in order to change the data (i.e. change address) in the PROM during transmission.

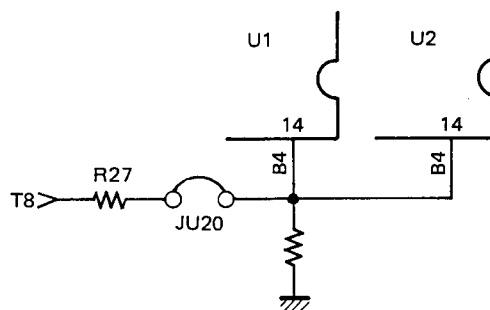


Fig. 4-9 TX frequency shift circuit

## Diode matrix

Diodes D1 through D7 (all 1S1555) from a matrix circuit which converts the rotary channel switch status to PROM address data during 6-channel operation.

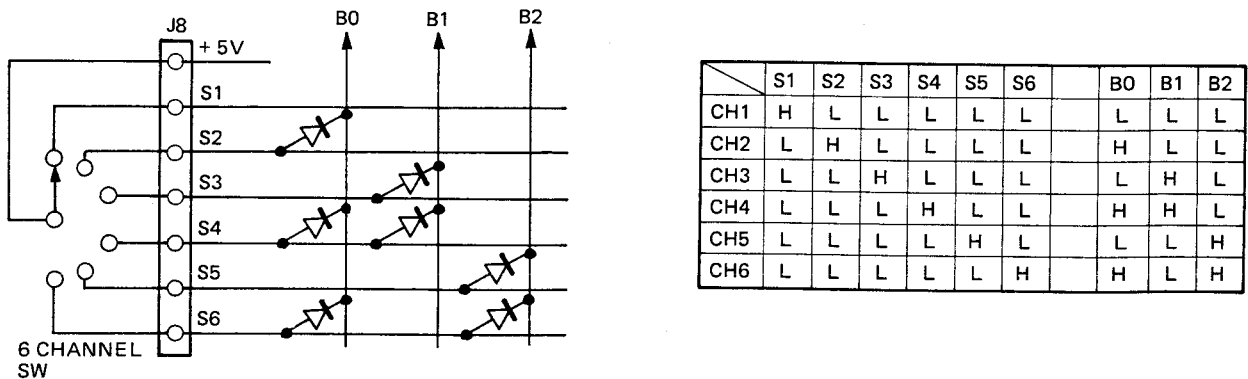


Fig. 4-10 Diode matrix

**TX-RX unit**

This unit contains the RX & TX portions of the transceiver, plus ancilliary circuits.

**TX section**

The TX drive signal is delivered from the PLL unit at approximately a 10dBm level. This is amplified by Q201, predriver Q202, driver Q203, and final amplifier Q204. RF output proceeds through the APC (Automatic Power Control, D203, D204, Q205 & Q206), antenna switch diode (D207), and low pass filter sections to the antenna.

The APC circuit, located between the PA matching network and the antenna, measures both forward and reflected power, detected separately. Normally, with a proper load, forward power controls the APC differential amplifier

Q206 & darlington Q205 to level transmitter power output by regulating B+ to Q202 & Q203. If a bad load is presented to the radio, the reflected power assumes control of the APC to severely reduce B+ to the predriver and driver, thereby reducing transmitter output to protect the transceiver.

Antenna switching for the transmitter is through diode D207, while the RX path is additionally switched through relay K201.

**LPF**

Spurious radiation suppression is provided by a seven pole Chbyshev -type filter, affording greater than 50dB harmonics suppression to 500MHz, with an insertion loss of less than 0.5dB.

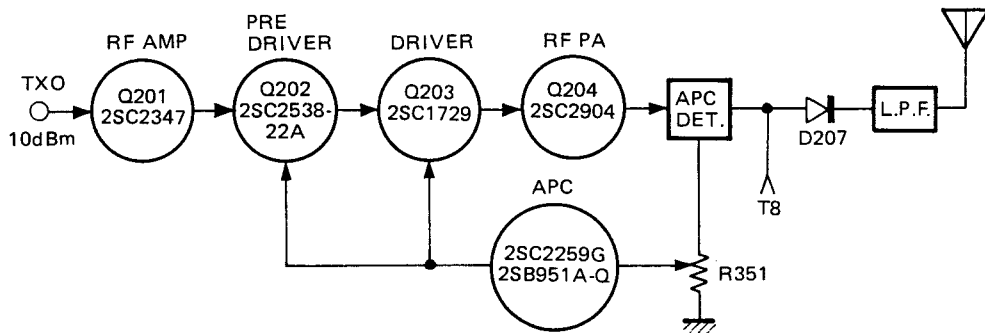


Fig. 4-11 TX Block diagram

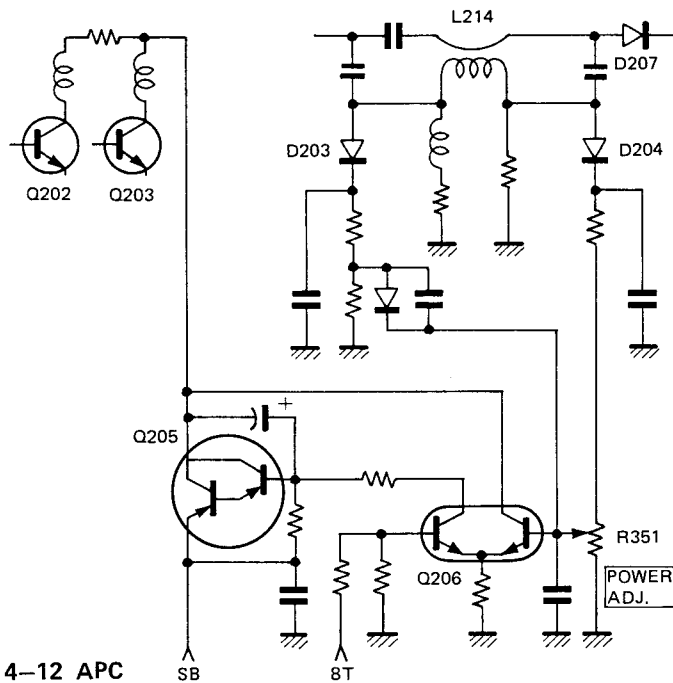


Fig. 4-12 APC

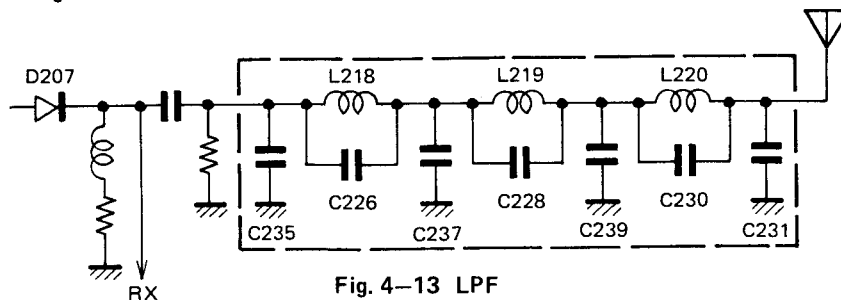


Fig. 4-13 LPF

# TK-601S

## RX section

Received RF signals are passed through the shared low pass filter, switched through the antenna relay K201, and amplified by Q212 & Q213. This is delivered to double balanced mixer D216 via a band pass filter, along with the first RX LO signal developed in the PLL. Mixer output at 10.7MHz is buffered by Q214 & Q215, and sent through the Noise Blanker gate, D217 & D218. This signal is filtered

by Z202, amplified by Q216, and delivered to U201, a monolithic second IF IC containing the second oscillator, mixer, squelch switch, noise amplifier, IF amplifiers, limiters, and quadrature detector. The output of this IC is at recovered audio frequency, which is delivered to Q217 for audio amplification, and then is sent to the volume control. This signal, returned from the volume control is power amplified by U202 to a 4W level, and delivered to the speaker.

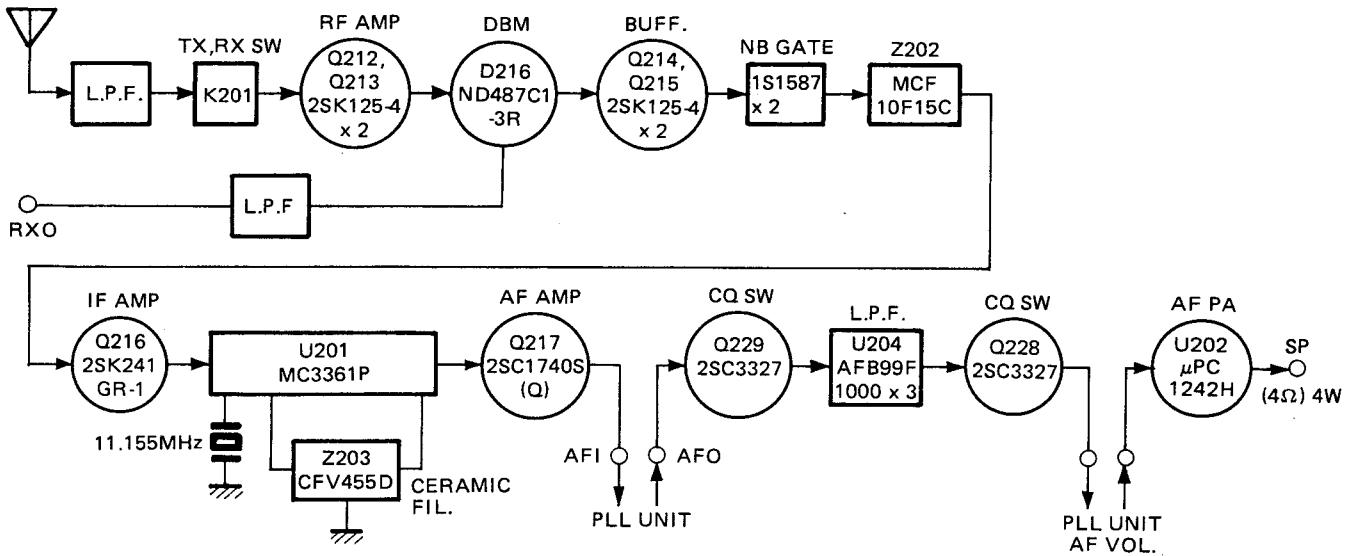


Fig. 4-14 RX Block diagram

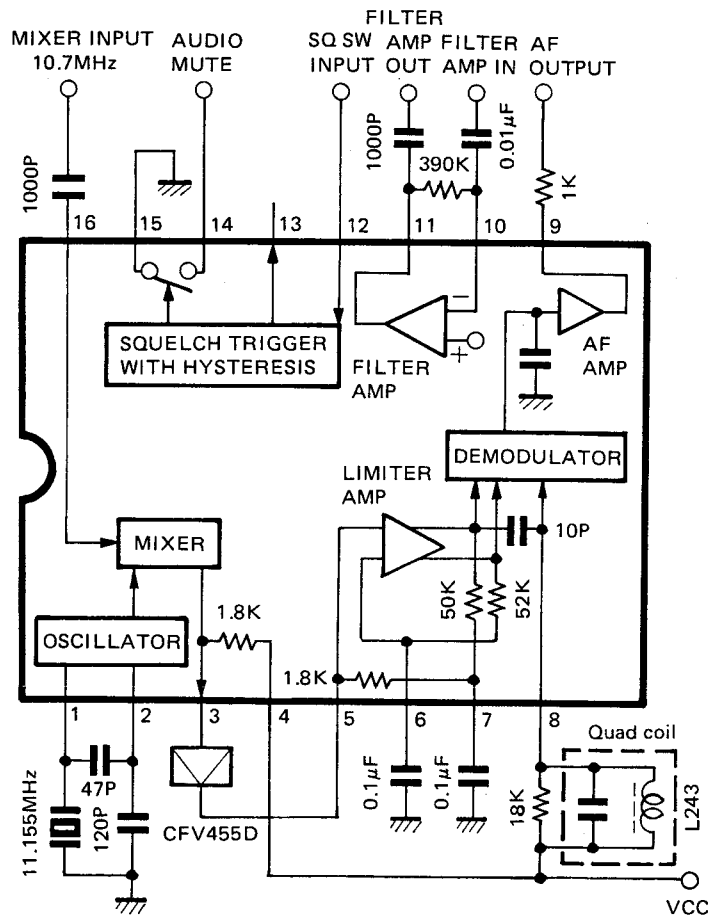


Fig. 4-15 Function block diagram of U201 : MC3361P

### Noise Blanker

Part of the received signal from the antenna circuit is routed to the noise blanker amplifiers, Q207 and Q208, operating in the 22MHz range. Their output is AM detect-

ed by D210 & D211. This is applied to both the NB AGC, and to NB switches Q210 & Q211. Depending on the pulse width and amplitude, a control signal is output to the NB gate D217 & D218 to suppress ignition-type impulse noise.

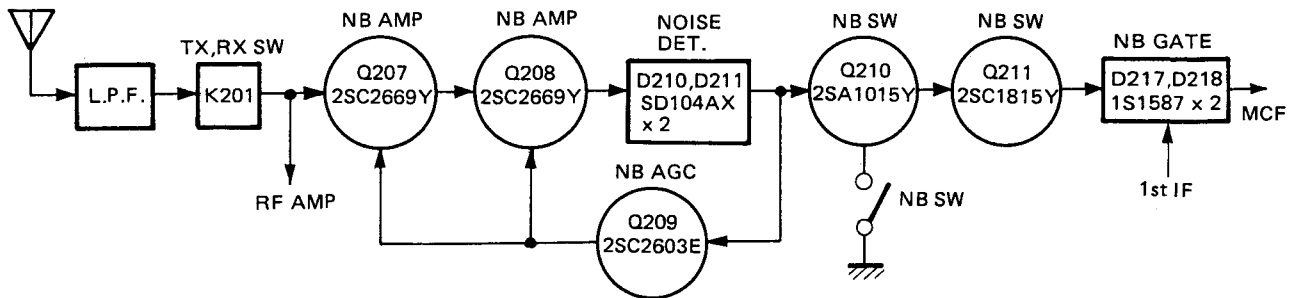


Fig. 4-16 NB Block diagram

### Squelch circuit

The squelch circuit includes the noise squelch circuit and signalling squelch circuit. (Refer to the squelch circuit block diagram : Fig. 4-17.)

#### (1) Noise squelch circuit

The operation of the noise squelch circuit is as follows; The noise component, included in the AF output from the IF IC (U201), is selected and amplified by the HPF and noise amp (70kHz noise). It is shaped by D221 and D222 so that a DC level proportional to the noise output is obtained at the SQ line.

The noise squelch opening sensitivity is controlled by varying the load impedance of the SQ line two potentiometers are used to vary the load impedance.

They are the QT/SQ VR (R155) on the front panel and trimmer VR 8R153, the squelch.

One of the two potentiometer is selected by the QT switch. When it is in the "QT" position, transistor switch Q8 on the PLL unit turns ON and the preset VR (R153) is selected. When the QT switch is not in the "QT" position, Q8 turns OFF, Q10 turns ON and R155 is selected so that the squelch opening sensitivity can be adjusted using the SQL potentiometer on the front panel. This noise detection output is input to U201 switching circuit. The output is "High" when noise above a specified level is detected, and "Low" when noise is not detected (while a signal is received or the SQ potentiometer is set for squelch opening.)

When a signal is received and the output level from U201-14 becomes "Low", the logic is inverted by Q223 and Q227, and audio switches at the input and

output of the HPF U204 are turned OFF to pass the AF signal. Simultaneously, LED driver Q225 connected to Q223 turns ON and the "BUSY" LED on the front panel lights.

The timing noise which might otherwise occur during RX-TX switching is eliminated by maintaining Q224 ON ("Low" output) for a specified period.

#### (2) Signaling squelch circuit

The function of the signaling squelch circuit is the logical combinations of the decode condition of any optional signaling unit connected to the PLL unit, and the microphone hook status, QT switch, etc.. AF output control using the "MON" and "CALL" lines, and the "BUSY" LED,

When signaling is installed and an appropriate detected is received, the AC line (J6-4) and CALL line levels become "Low" and the C-MOS OSC (U205) on the TX-RX unit is enabled, this causes the LED driver (Q226) to turn ON and OFF at an interval of approx. 0.4 seconds, and the "BUSY" LED flashes.

In the normal standby mode with a signaling unit installed, the QT/SQ is set to "QT" the MIC is ON HOOK, and the MON SW is OFF. In this condition, the "BUSY" LED is OFF and no AF signal is output. When an inappropriate, or no signal is received, the "BUSY" LED lights, but no AF signal is output since the MIC HOOK is ON ("Low" level), the MON line is "High", Q227 of the TX-RX unit is OFF, and SQ switches Q228, Q229 are closed.

Receiver audio (the AF signal) can be output by placing the MIC OFF HOOK or the MON SW to ON.

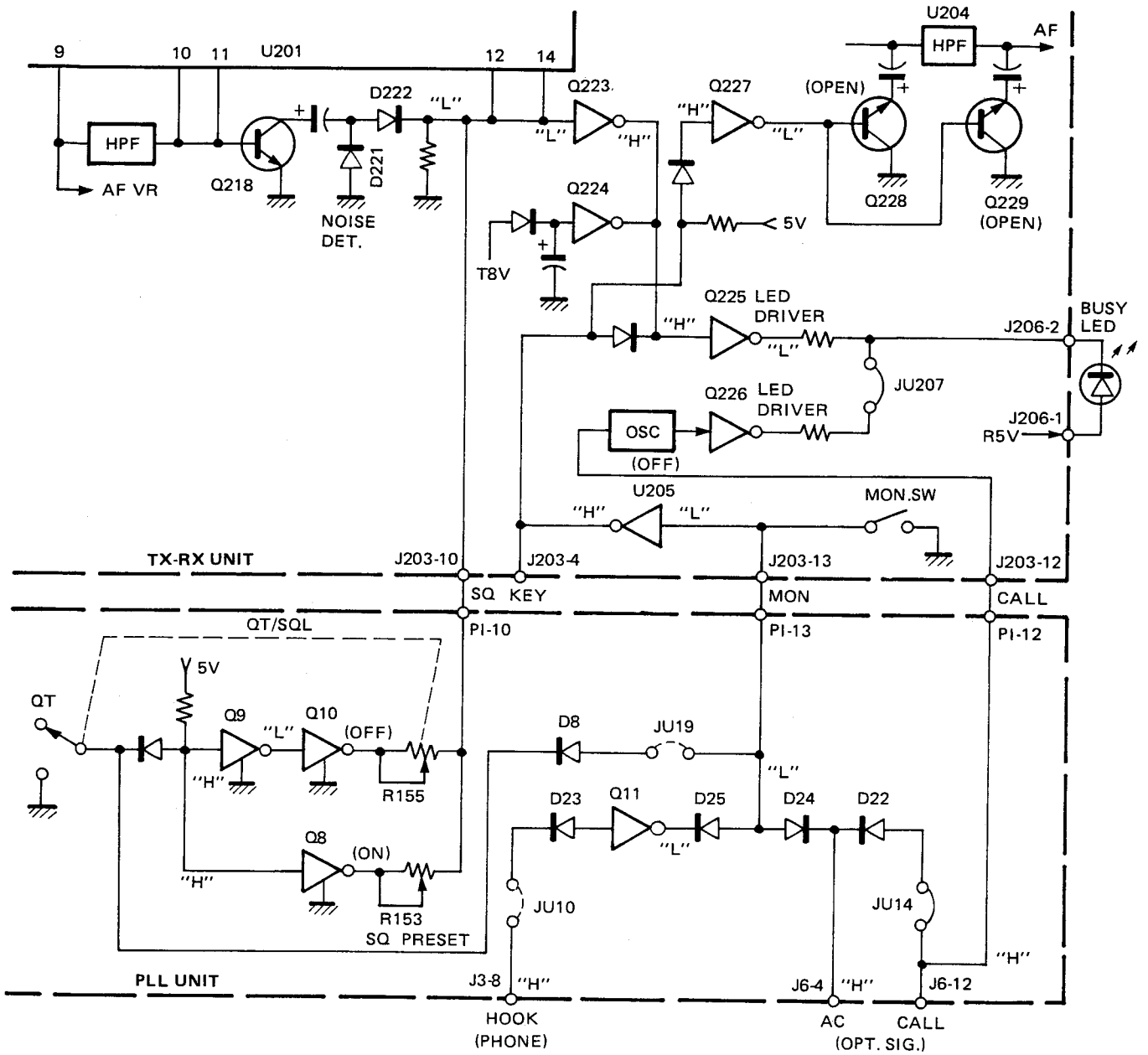


Fig. 4-17 Squelch circuit Block diagram

	QT/ SQL	MIC HOOK	MON. SW	REC SIGNAL	TONE SIGNAL	BUSY LED	AF OUTPUT
1	SQL CCW	-	-	X	-	OFF	X
2	SQL CCW	-	-	○	-	ON	○
3	QT	ON	OFF	○	NO	ON	X
4	QT	ON	ON	○	NO	ON	○
5	QT	OFF	-	○	NO	ON	○
6	QT	OFF	-	○	YES	FLASHES	○
7	QT	ON	-	○	YES	FLASHES	○

- 1) Tone signal YES : CTCSS Tone require  
NO: CTCSS Tone not require  
2) "-" : No logic priority

Fig. 4-18 Squelch operation input levels.

**Power Supply sections**

The TX-RX unit power supply section is comprised of automatic voltage regulator IC U203 : MB3756 which supplies Common 8V, 8V for transmission and 8V for reception, and the Automatic Voltage Regulator circuit Q219 : 2SB698E, Q220 : 2SC2603E for reception circuits, There is also an AVR circuit (Q222 : 2SC2703) which supplies 5V to U205 : TC4001 and the "BUSY" LED, and an AVR Q221 : 2SC2703Y for the lamps. The PLL unit has a 5V 3-terminal regulator IC U4 : L78M05 for ICs U1, U2, U5, but the power for all other PLL unit circuitry is supplied from the TX-RX unit.

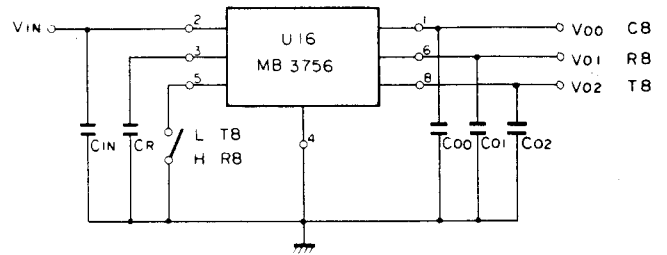


Fig. 4-19 Operation diagram of U203 : MB3756

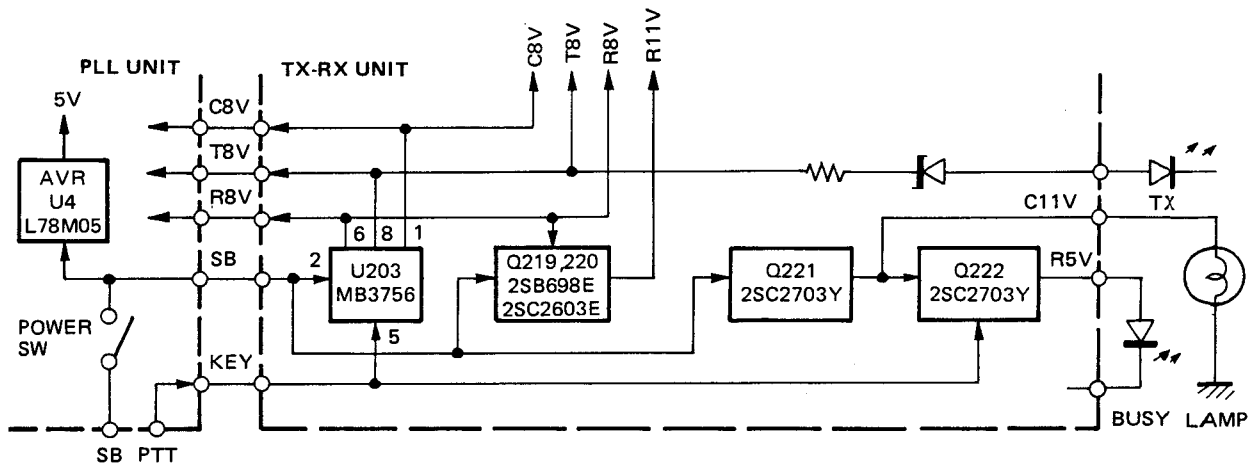


Fig. 4-20 Power supply and LED circuit

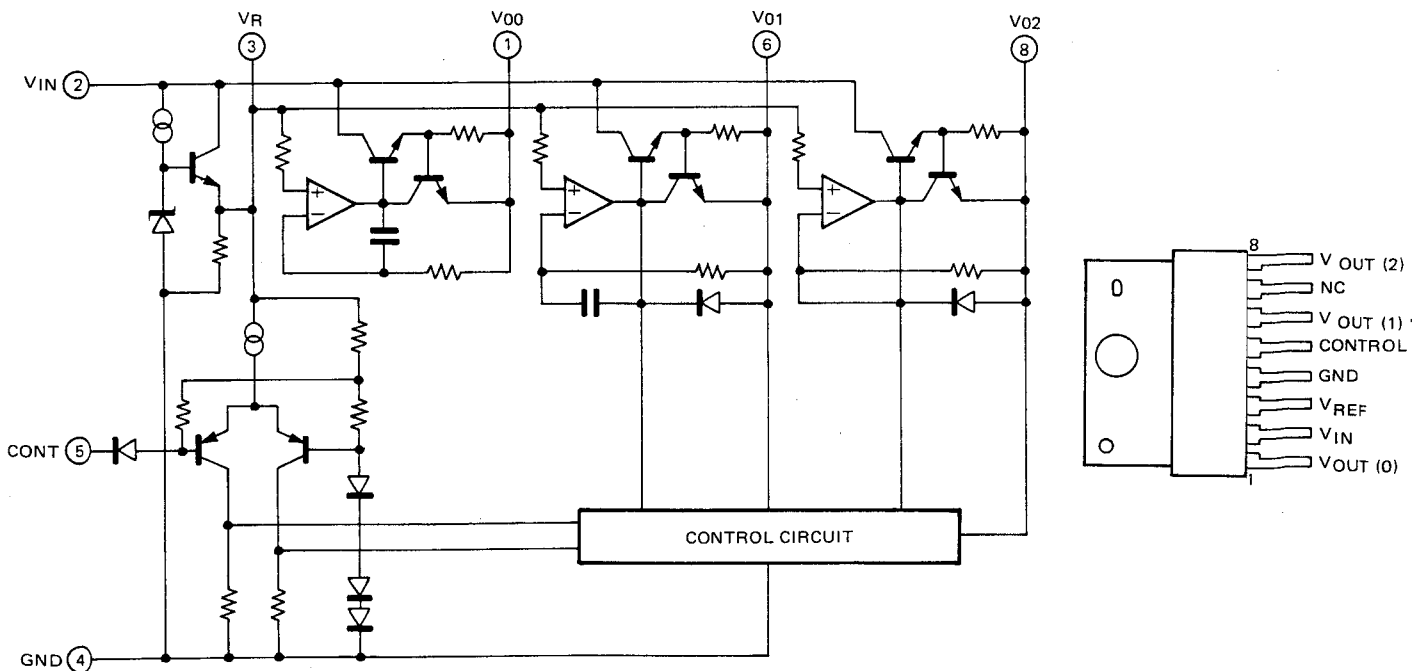
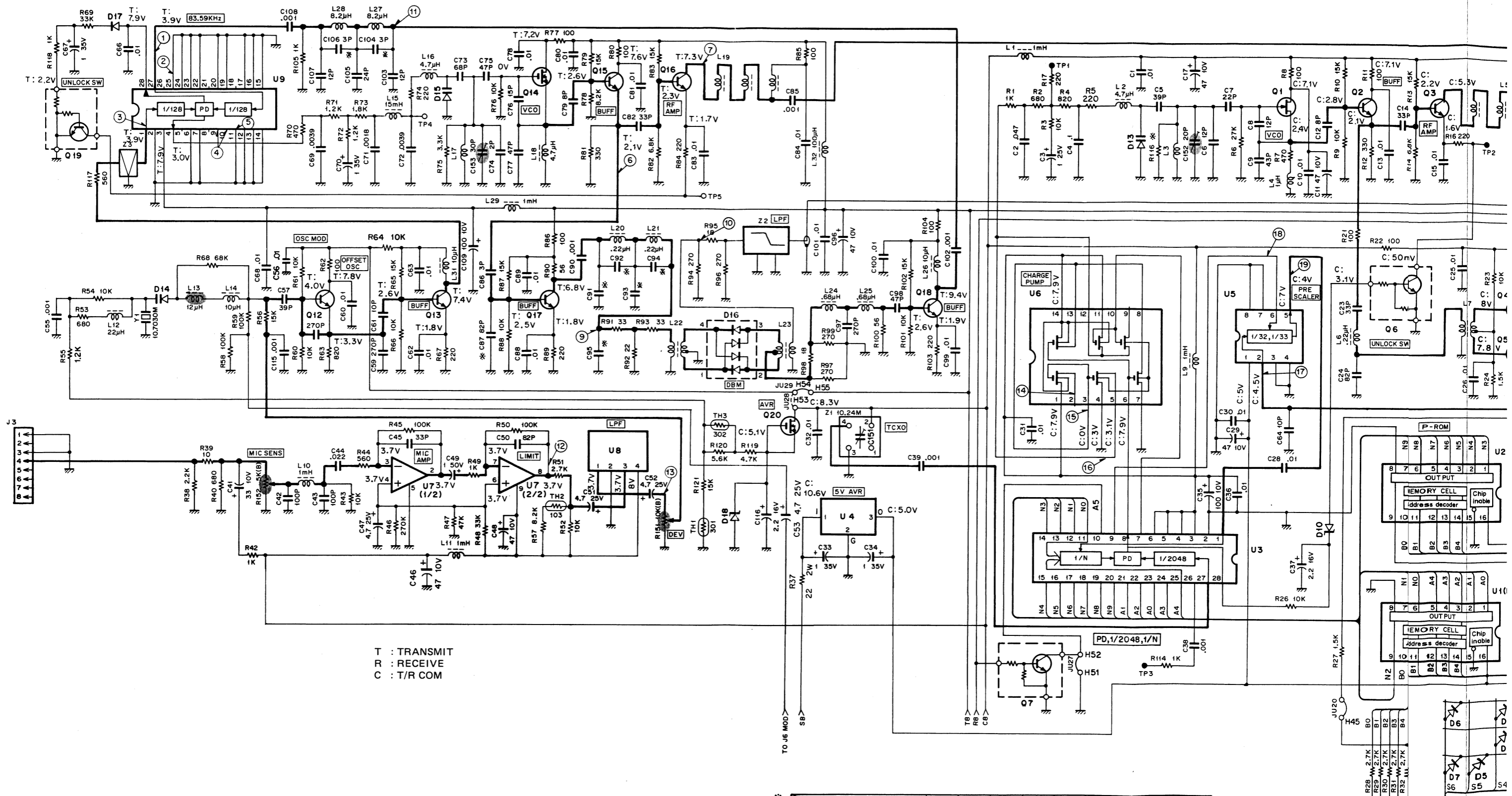


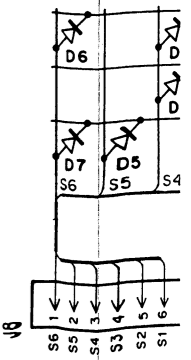
Fig. 4-21 Equivalent circuit of U203 : MB3756



T : TRANSMIT  
 R : RECEIVE  
 C : T/R COM

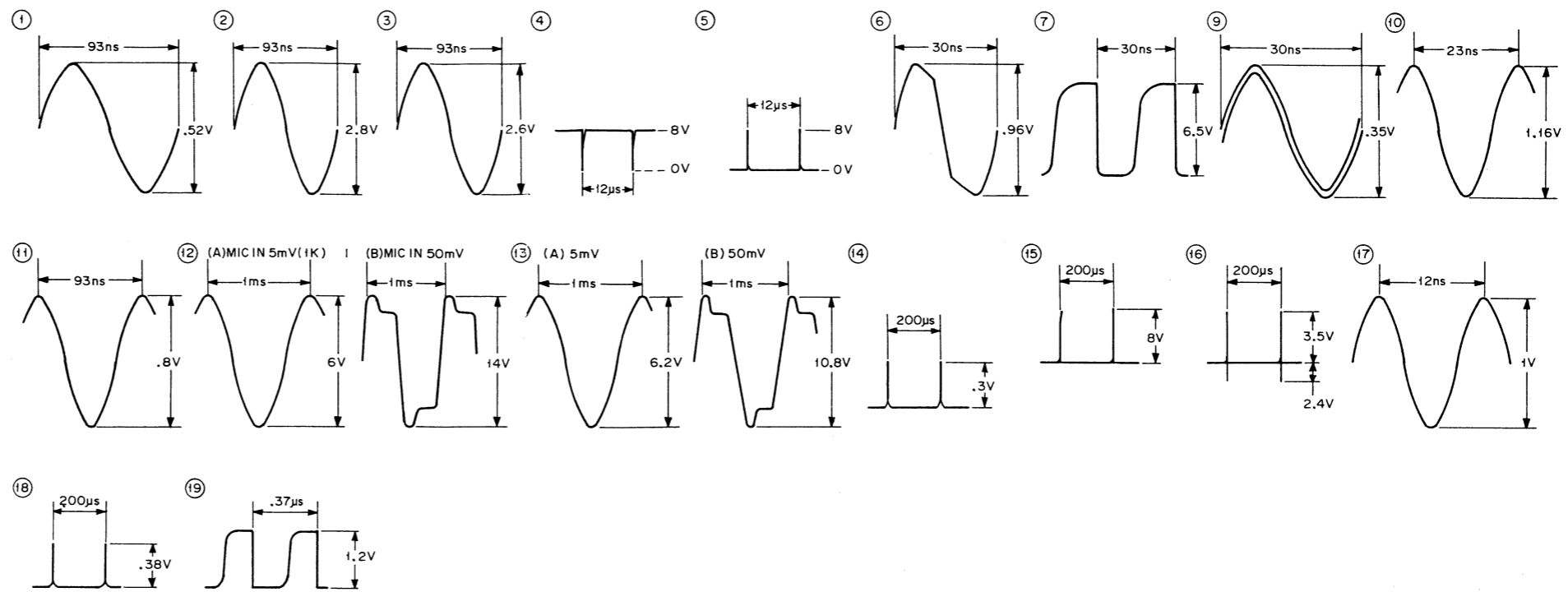
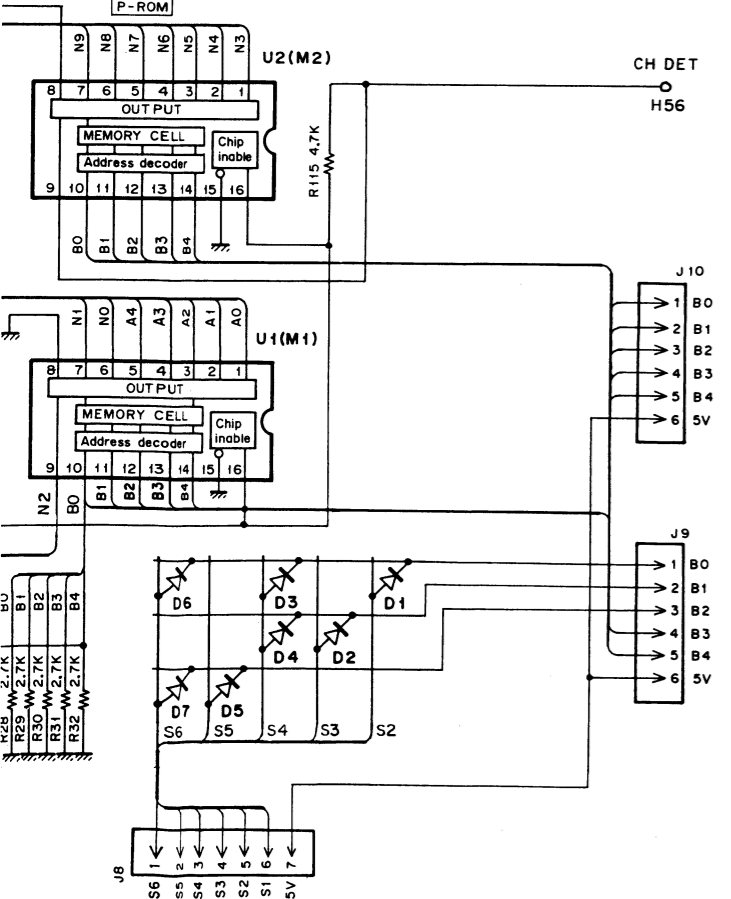
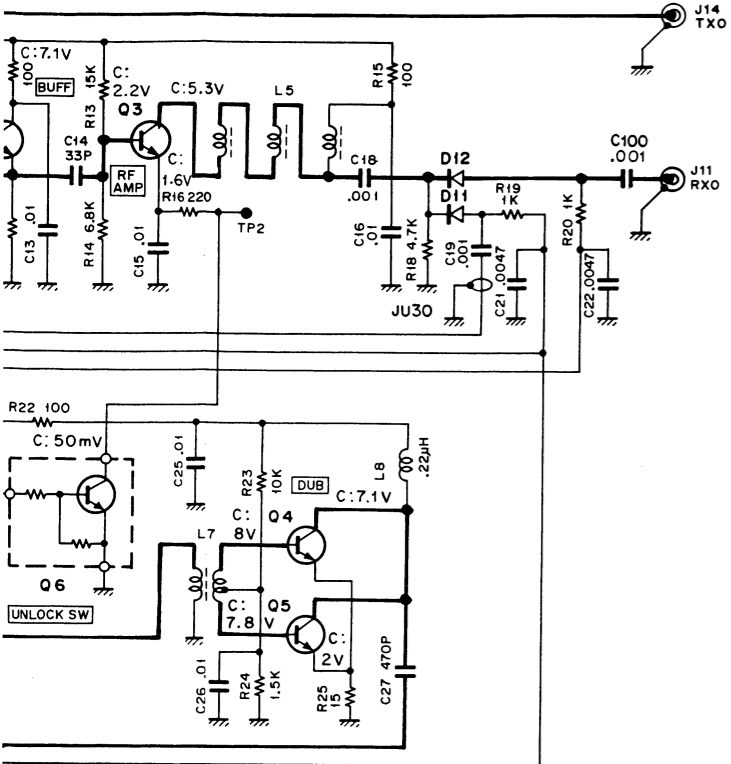
\* UNIT No. CR No.

UNIT No.	CR No.	C87	C91	C92	C93	C94	C95	C104	C106	R116
X61-1340-10(29.7-37MHz)		82P	56P	27P	120P	27P	56P	3P	3P	6.8K
X61-1340-11(35-44MHz)		82P	47P	18P	100P	18P	47P	3P	3P	8.2K
X61-1340-12(40-50MHz)		39P	27P	15P	56P	15P	27P	-	-	12K





PLL Signal Path Diagram

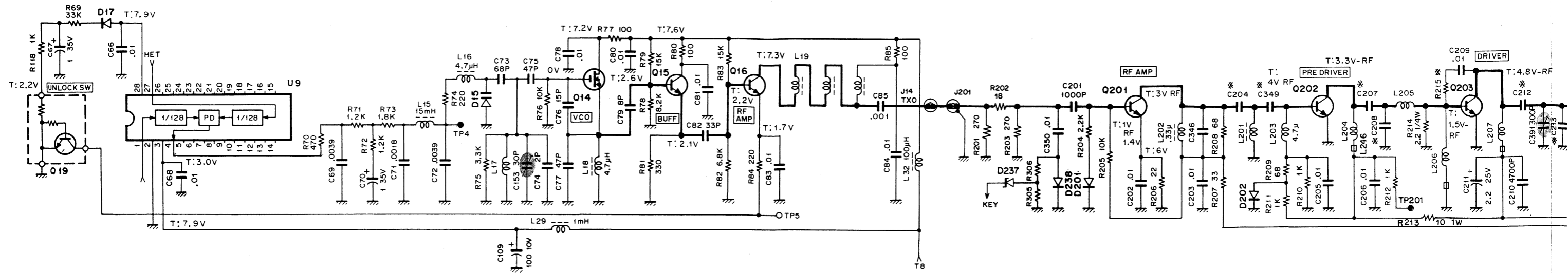


Terminal functions  
PLL UNIT

Connector No.	Terminal No.	Terminal name	Terminal function
P1	1	ESP	External speaker line output
	2	C8	8V common power source line
	3	SB	Switched + B to regulated power source
	4	KEY	TX/RX data output ("L" : TX, "H" : RX)
	5	R8	8V when receiving from TX-RX unit
	6	T8	8V when transmitting from TX-RX unit
	7	AVO	Voice signal output from AF volume cont.
	8	AVI	Voice signal input to AF volume cont.
	9	AFO	Voice signal output to TX-RX unit
	10	SQ	Noise squelch control line
	11	AFI	Voice signal input from TX-RX unit
	12	CALL	Call LED control line
	13	MON	Monitor control line
	14	AUX COM	Auxiliary switch common
	15	AUX O/C	Auxiliary switch "NO" or "NC"
	16	ALARM	Alarm signal output to TX-RX unit
P2	1	B	+ B line to transmit final stage
	2	B	+ B line to transmit final stage
	3	B	+ B line to transmit final stage
	4	B	+ B line to transmit final stage
J3	1	A -	Microphone PTT grounded
	2	PTT	Microphone PTT input
	3	MIC-L	Microphone grounded
	4	MIC-H	Microphone input
	5	LINE IN	Line input
	6	ESP-H	External speaker line output
	7	C8/SB	C8 or SB output
	8	HOOK/DISK	Microphone hook input or AF signal output
J4	1	A + (REC)	+ B for reception only
	2	SPARE 1	Spare
	3	ESP-H	External speaker line output
	4	LINE OUT	Voice signal line output
	5	HORN	Horn control line output

Connector No.	Terminal No.	Terminal name	Terminal function	
J4	6	ESP-L	External speaker GND (-)	
	7	A -	GND	
	8	A -	GND	
	9	SPARE 2	Spare	
	10	A +	+ B line output (13.6V)	
	11	A +	+ B line output (13.6V)	
	J5	1	GND	GND
		2	BZ	Beeper line output
		3	C8	8V common power source line
		4	KEY	TX/RX data output ("L" : TX, "H" : RX)
		5	PTT	Microphone PTT input
J6	1	GND	GND	
	2	DET	RX CTCSS input	
	3	AFI	Voice signal output to signalling unit	
	4	AC	Audio control output	
	5	AFO	Voice signal input from signalling unit	
	6	SB	Switched + B to regulated power source	
	7	MOD	Tone signal input from signalling unit	
	8	KEY	TX data input ("L" : TX, "H" : RX)	
	9	PTT	Microphone PTT output to signalling unit	
	10	C8	8V common power source line	
	11	ALERT	Alert signal input	
	12	CALL	Call LED control line	
	13	HORN	Horn control line	
	14	RESET	Signalling reset output to signalling unit	
	15	T8	Approx. 8V when transmitting	
J7	1	S6	Channel switch 6	
	2	S5	Channel switch 5	
	3	S4	Channel switch 4	
	4	S3	Channel switch 3	
	5	S2	Channel switch 2	
	6	S1	Channel switch 1	
	7	+ 5V	5V common line	

Connector No.	Terminal No.	Terminal name	Terminal function
J8	1	S6	Channel switch 6
	2	S5	Channel switch 5
	3	S4	Channel switch 4
	4	S3	Channel switch 3
	5	S2	Channel switch 2
	6	S1	Channel switch 1
	7	+ 5V	5V common line
J9	1	B0	ROM address input
	2	B1	ROM address input
	3	B2	ROM address input
	4	B3	ROM address input
	5	B4	ROM address input
	6	+ 5V	5V common line
J10	1	B0	ROM address input
	2	B1	ROM address input
	3	B2	ROM address input
	4	B3	ROM address input
J11	1	RXO	Receive local signal output
	2	GND	GND
	3	MIC-H	Microphone input
	4	HOOK	Microphone hook line
J13	1	GND	GND
	2	MIC-H	Microphone input
	3	HOOK	Microphone hook line
	4	AC	Audio control
J14	1	TXO	Transmit signal output
	2	REFO	PLL reference signal output
	3	NC	Spare
	4	NC	Spare
J15	1	NC	Spare
	2	NC	Spare
	3	NC	Spare
	4	GND	GND
J16	1	FIN	Offset signal output
	2	PD OUT	PLL line input
	3	GND	GND
	4	+ 8V	8V common or transmit line output

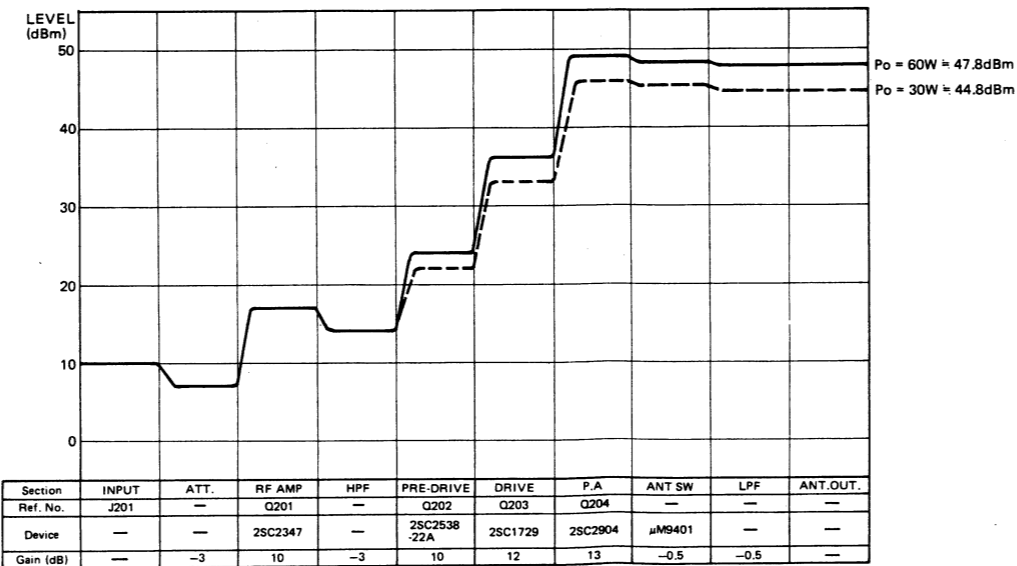


✱

UNIT No.	CR No.	C204	C207	C208	C212	C213	C218	C225	C226	C227	C228	C229	C230	C231	C346	C349
X61-1330-10(29.7-37MHz)		270P	180P	330P	180P	220P	680P	82P	8P	150P	22P	120P	51P	62P	75P	180P
X61-1330-11(35-44MHz)		220P	150P	300P	100P	120P	470P	75P	6P	120P	18P	100P	39P	51P	51P	150P
X61-1330-12(40-50MHz)		180P	120P	240P	150P	220P	180P	62P	5P	100P	12P	91P	30P	47P	36P	120P

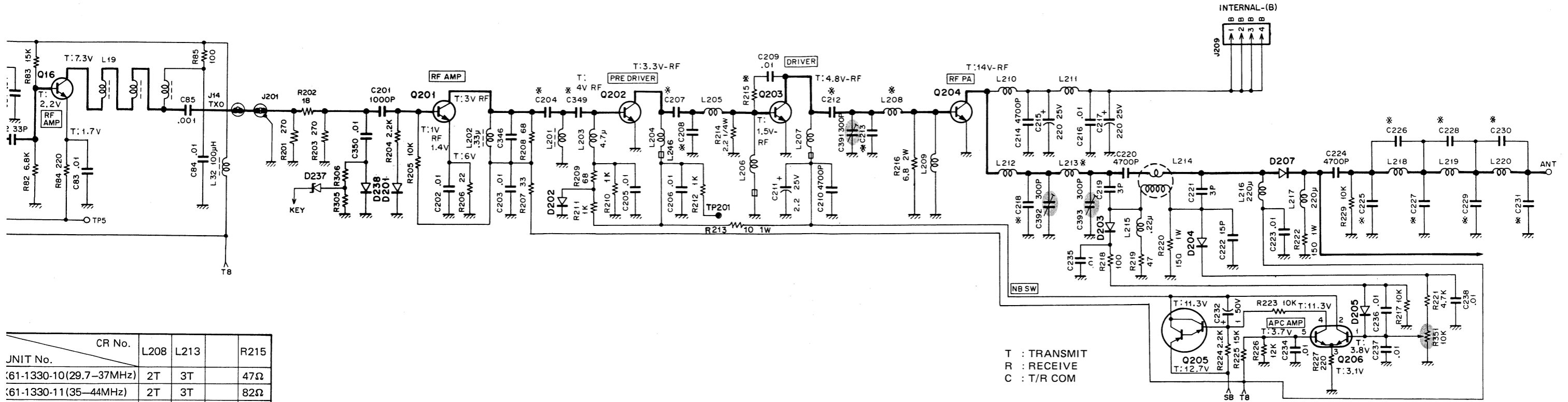
UNIT No.	CR No.	L208	L213	R215
X61-1330-10(29.7-37MHz)		2T	3T	47Ω
X61-1330-11(35-44MHz)		2T	3T	82Ω
X61-1330-12(45-50MHz)		1T	2T	82Ω

Transmitter Level Diagram



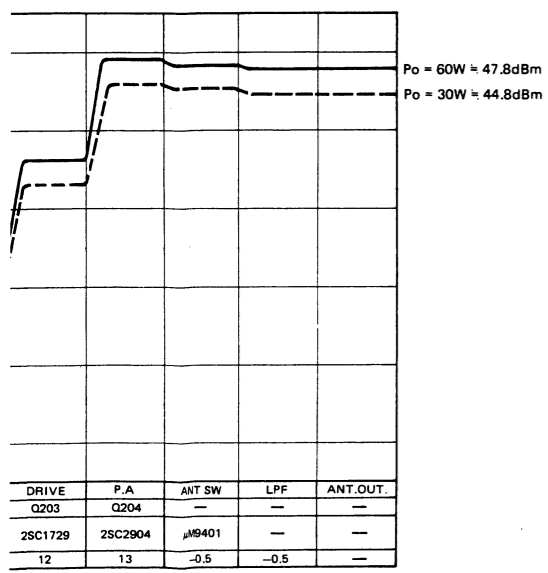
Terminal functions  
TX-RX UNIT

Connector No.	Terminal No.	Terminal name	Tr
J201	—	TXO	Tr
J202	—	RXO	Re
J203	1	ESP	Ex
	2	C8	8V
	3	SB	Sw
	4	KEY	TX
	5	R8	8V
	6	T8	8V
	7	AVO	Vc
	8	AVI	Vc
	9	AFO	Vc
	10	SQ	Nc
	11	AFI	Vc
	12	CALL	Ca
	13	MON	Mc
	14	AUX COM	Au
	15	AUX O/C	Au
	16	ALARM	Al



CR No.	L208	L213	R215
JNIT No.			
{61-1330-10(29.7-37MHz)	2T	3T	47Ω
{61-1330-11(35-44MHz)	2T	3T	82Ω
{61-1330-12(45-50MHz)	1T	2T	82Ω

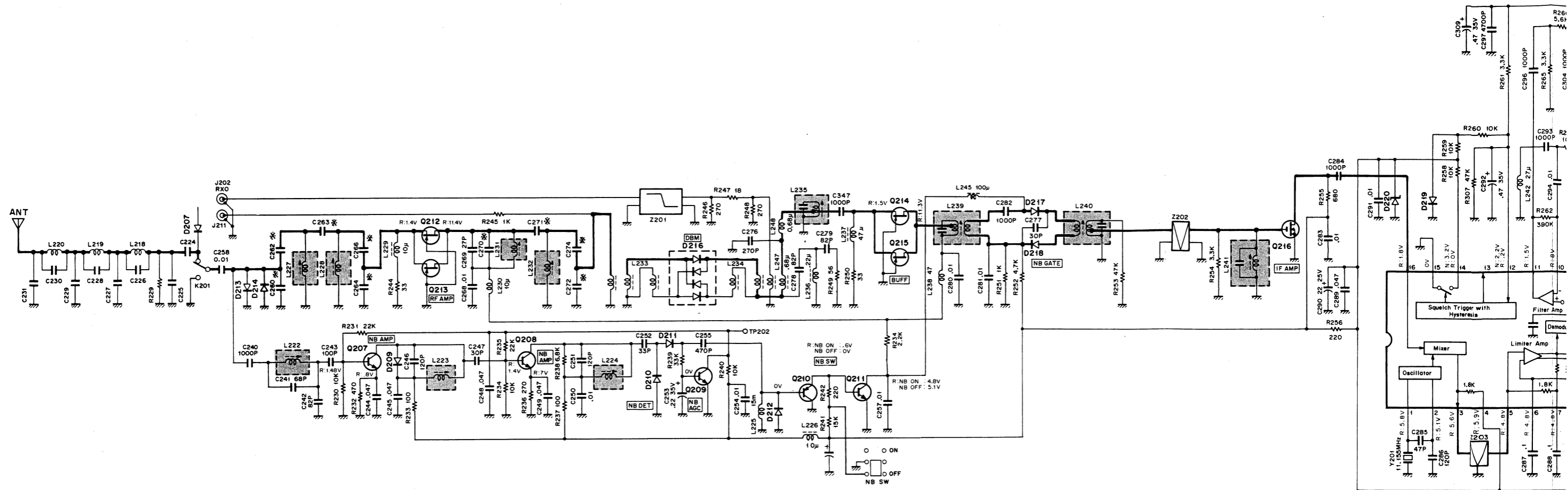
T : TRANSMIT  
R : RECEIVE  
C : T/R COM



Terminal functions  
TX-RX UNIT

Connector No.	Terminal No.	Terminal name	Terminal function
J201	-	TXO	Transmit signal input from PLL unit
J202	-	RXO	Receiver local signal input from PLL unit
J203	1	ESP	External speaker line output
	2	C8	8V common power source line output
	3	SB	Switched + B to regulated power source
	4	KEY	TX/RX data input ("L" : TX, "H" : RX)
	5	R8	8V when receiving to PLL unit
	6	T8	8V when transmitting to PLL unit
	7	AVO	Voice signal input from AF volume cont.
	8	AVI	Voice signal output from AF volume cont.
	9	AFO	Voice signal input from PLL unit
	10	SQ	Noise squelch control line
	11	AFI	Voice signal output to PLL unit
	12	CALL	Call LED control line
	13	MON	Monitor control line
	14	AUX COM	Auxiliary switch common
	15	AUX O/C	Auxiliary switch "No" or "NC"
	16	ALARM	Alarm signal input

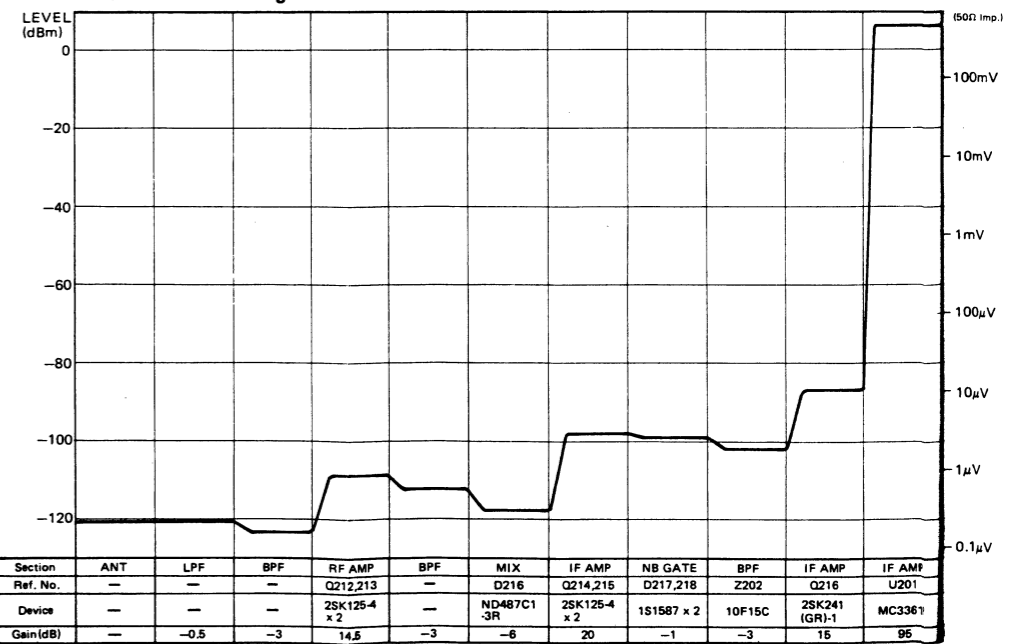
Connector No.	Terminal No.	Terminal name	Terminal function
J204	1	NC	Auxiliary switch "NC"
	2	COM	Auxiliary switch "Common"
	3	NO	Auxiliary switch "NO"
J205	1	NC	Monitor switch "NC"
	2	COM	Monitor switch "Common"
	3	NO	Monitor switch "NO"
	4	TX	TX indication LED cont.
	5	GND	GND
J206	1	COM	Common power source for LED
	2	BSY	BUSY indication LED cont.
	3	CAL	Call indication LED cont.
	4	TX	TX indication LED cont.
	5	GND	GND
J207	1	LAMP	Channel illumination lamp +
	2	GND	GND -
J209	1	B	+ B line to transmit final stage
	2	B	+ B line to transmit final stage
	3	B	+ B line to transmit final stage
	4	B	+ B line to transmit final stage

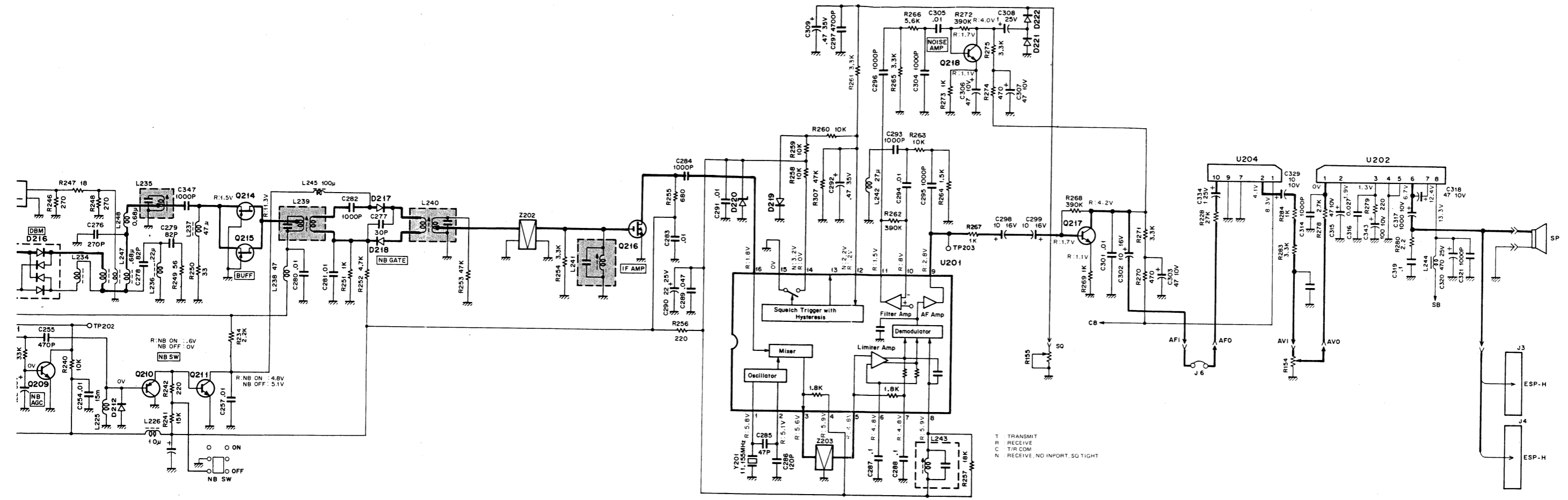


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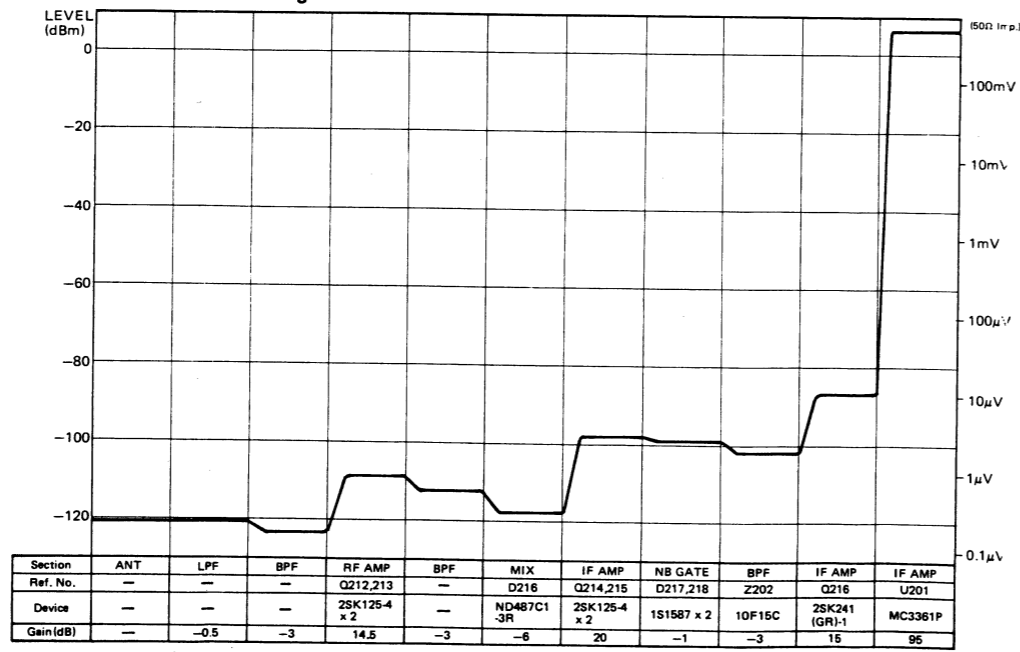
UNIT No.	CR. No.	C260	C262	C263	C264	C266	C270	C271	C272	C274
X61-1330-10(29.7-37MHz)		270P	82P	5P	270P	82P	30P	4P	270P	82P
X61-1330-11(35-44MHz)		220P	56P	4P	220P	56P	12P	2P	220P	56P
X61-1330-12(40-50MHz)		150P	43P	3P	150P	43P	-	2P	150P	43P

Receiver Level Diagram





Receiver Level Diagram



## 5. DISASSEMBLY

### 1. Case screw removal

Remove one screw each securing the top and bottom covers at the rear.

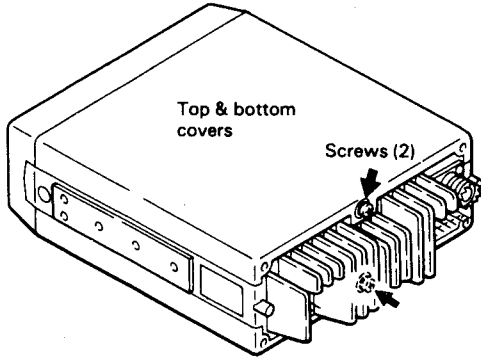


Fig. 5-1

### 2. Cover removal

- 1) Remove one screw securing the top cover.
- 2) Slide the cover to the rear, as shown.

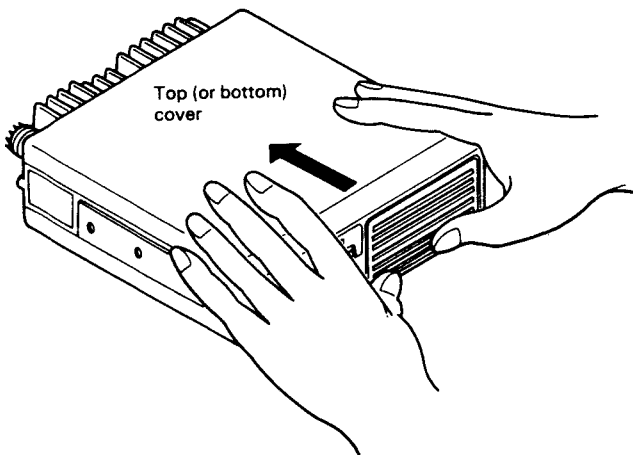
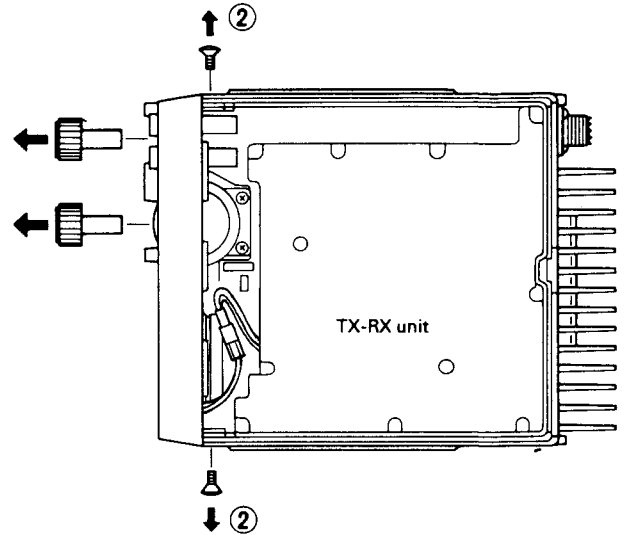


Fig. 5-2

### Front panel removal

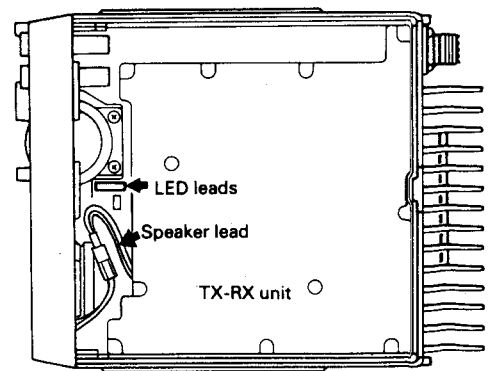
- 1) To remove the OFF/VOL and QT/SQL knobs from the front panel, pull forward.
- 2) Remove two screws securing the right and left sides of the front panel.



TOP VIEW

Fig. 5-3

- 3) Unplug two connectors to the front panel.



TOP VIEW

Fig. 5-4

- 4) Remove the front panel by pulling forward

# TK-601S

## 4. TX-RX unit removal

1) Remove 12 screws securing the cast shield.

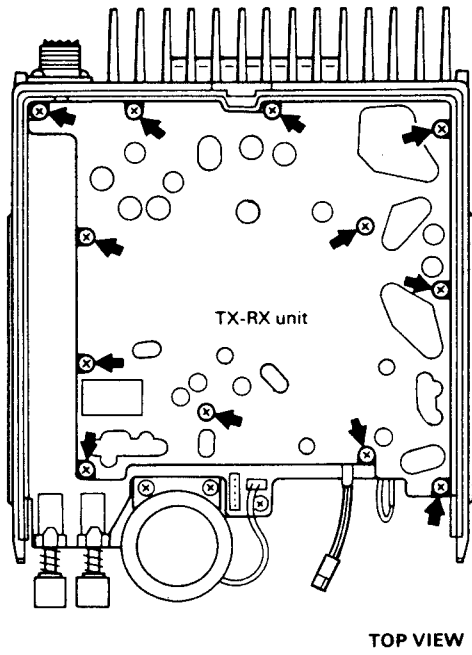


Fig. 5-5

2) Remove 10 screws securing components to chassis.

3) Unplug connectors J201, J202 and J207.

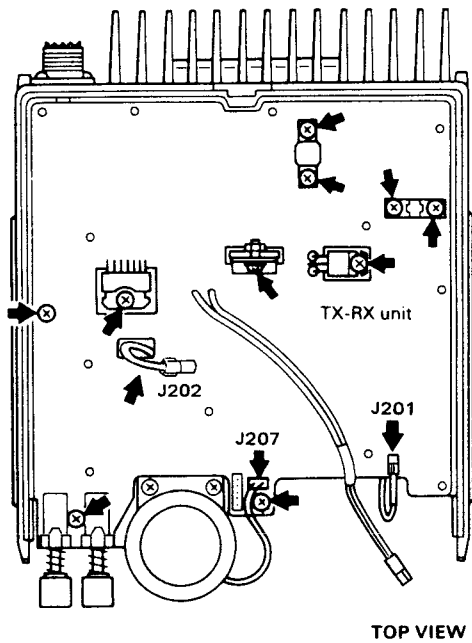


Fig. 5-6

4) Remove two screws securing the UHF connector to the rear panel.

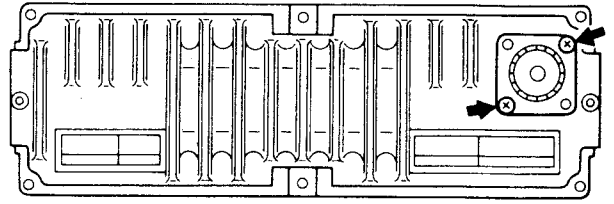


Fig. 5-7

5) Desolder the UHF connector from the TX-RX unit.

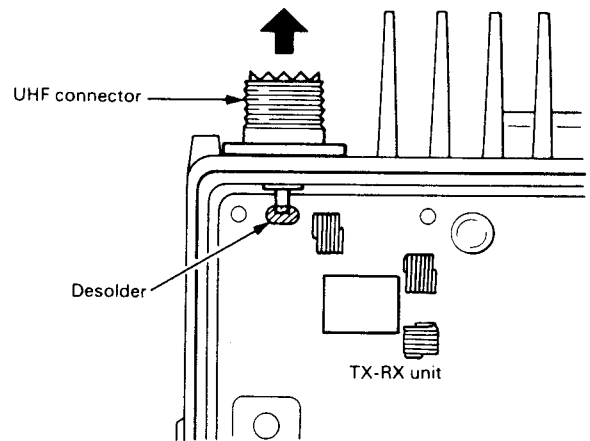


Fig. 5-8

*Note: When reassembling the unit, do not forget to solder the UHF connector. When soldering the connector, press the pin downward.*

6) Remove the TX-RX unit. Lift the front first and then withdraw the circuit board.

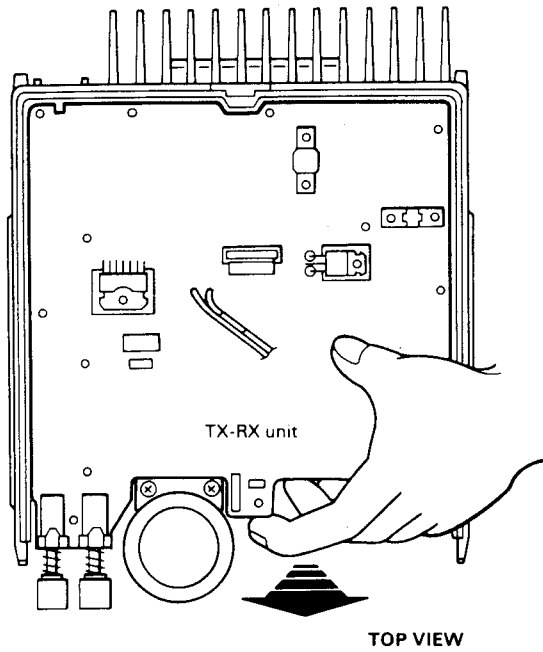


Fig. 5-9

2) Unplug three connectors as shown.

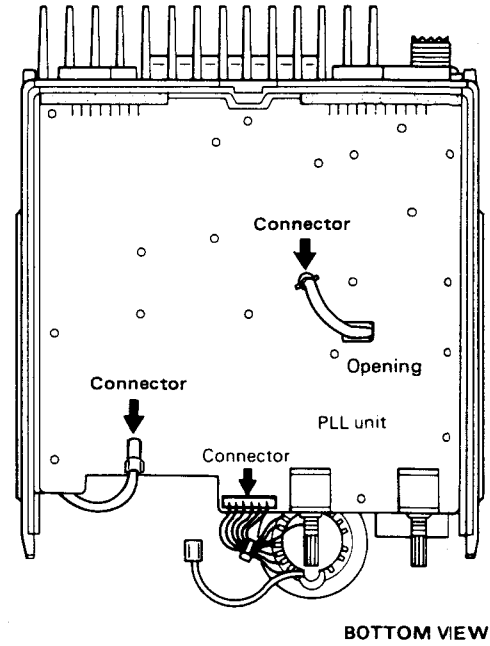


Fig. 5-11

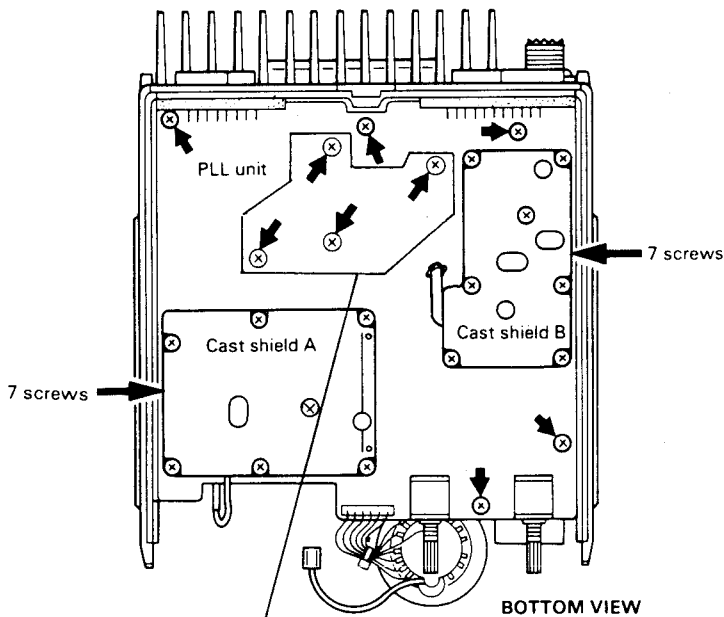
**5. PLL unit removal**

(Front panel must be removed. Perform step 3 first)

To remove the PLL unit, perform steps 1, 2 and 3.

1) Remove all screws as shown.

- Cast shield A: 7 screws
- Cast shield B: 7 screws
- PLL unit: 9 screws



These 4 screws are machine screws. Do not replace with tapping screws.

Fig. 5-10

When reinstalling the connector, note that it must be passed through this opening.

3) First lift the front of the unit, then remove.

**6. Speaker removal**

Perform front panel removal step 3 first.

- 1) Remove four screws holding the speaker.
- 2) When replacing the speaker, desolder and reuse the speaker leads.

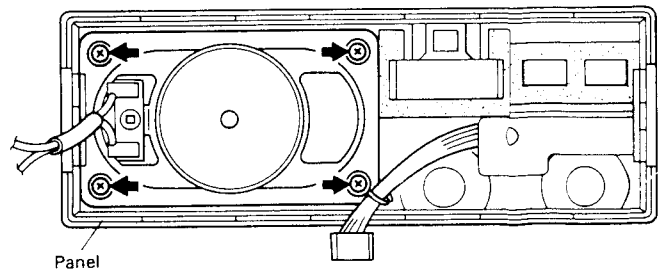


Fig. 5-12a

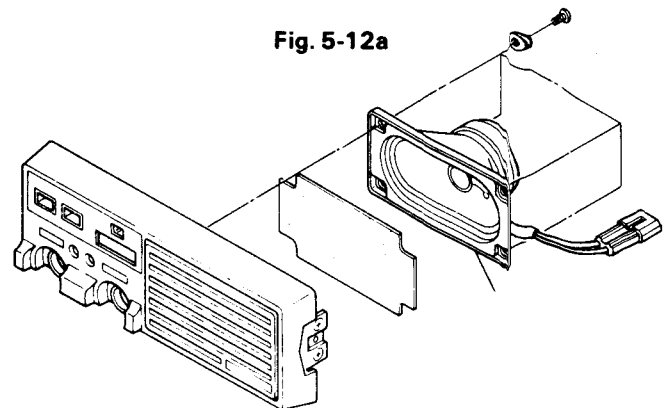


Fig. 5-12b



# TK-601S

## 7. LED replacement

(Proceed after step 3.)

Replacement:

- 1) Remove one screw holding the LED circuit board to the front panel.

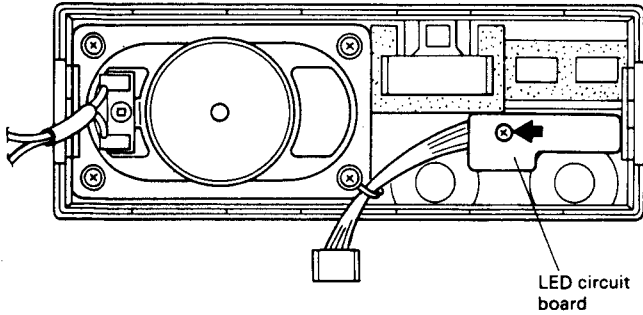


Fig. 5-13

- 2) Replace the LED as required. Note terminal polarity when replacing.

## 8. Installing a Yellow CAL (CALL) LED: PY5534S for D903

- 1) Remove one screw securing the LED PCB to the front panel.
- 2) Solder the CAL LED to the LED circuit board. Observe polarity.

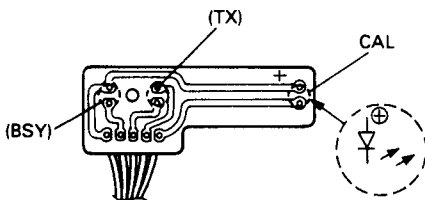


Fig. 5-14

- 3) Remove the metal plate securing the panel.

- 4) Using a 5 mm or 13/64 inch drill, carefully open the CALL LED mounting on the front panel. Protect the panel face from scratching.

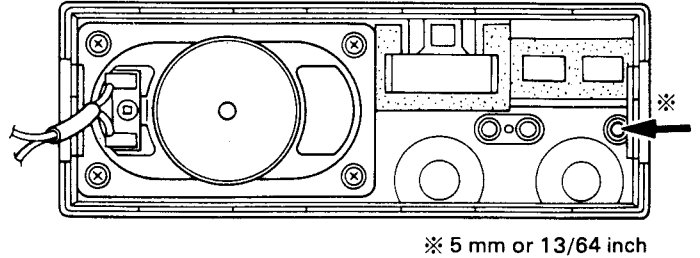


Fig. 5-15

- 5) Use a countersink to finish the outside edge of the hole on the front panel.

- 6) Reinstall the LED PCB board. (Now has three LEDs)

- 7) Reinstall the threaded metal plate to the front panel.

## 9. Channel illumination lamp replacement

- 1) To remove the channel knob from the switch, pull UP.
- 2) Remove the old lamp from the keyway on the channel switch mounting plate and replace with a new lamp assembly.

Illumination lamp: B30-0829-05

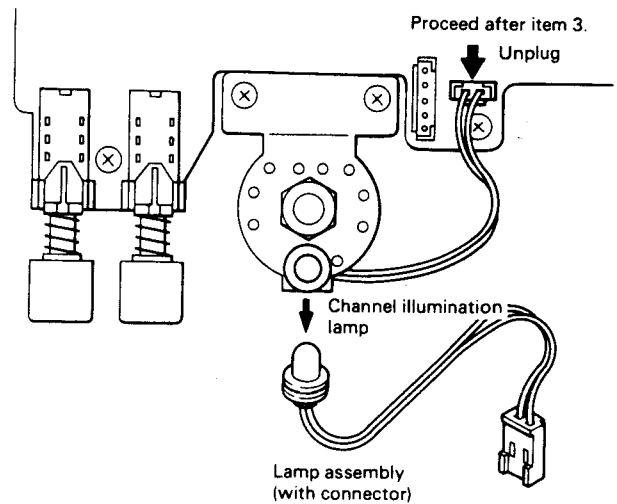


Fig. 5-16

**10. Channel switch replacement (1 ~ 6 CH)**

**Note:** For replacement of the 16 CH or 32 CH switches, refer to item 16/32 channel conversion kit.

Proceed after item 3.

- 1) Pull the channel knob UP from the channel switch.
- 2) Remove and replace the rotary switch assembly as shown.

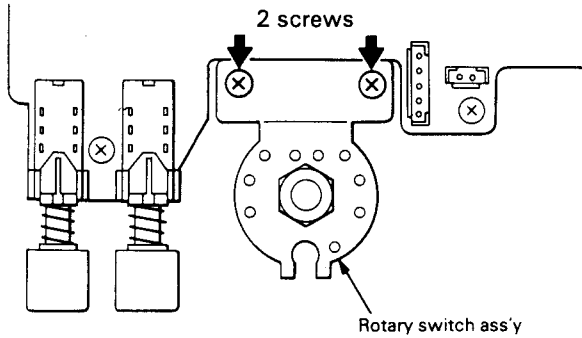


Fig. 5-17a

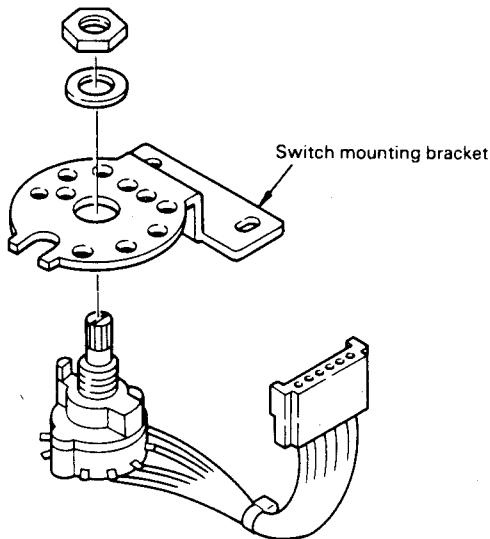


Fig. 5-17b

**11. Channel limit switch stop screw placement**

Proceed after item 3. Installing the stop screw in the specified channel hole limits the number of channels available from the channel switch.

- 1) Remove the channel selector knob.
- 2) Reposition the stop screw in the designated channel hole.

**Note:** For six channel configuration, the stop screw is not needed and may be stored as shown.

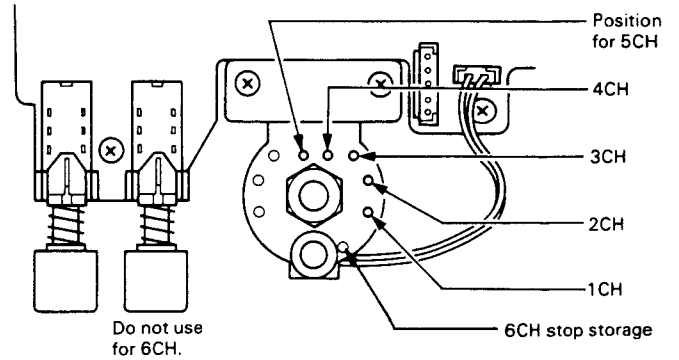


Fig. 5-18

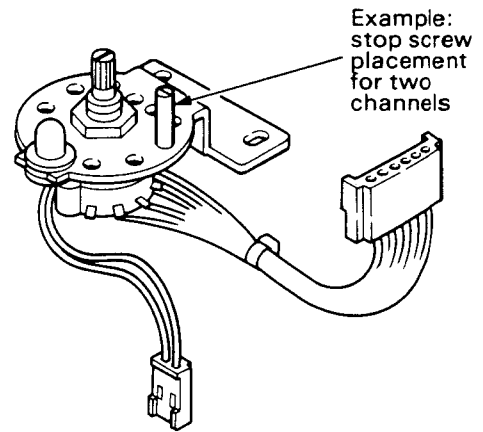


Fig. 5-19

Location stop	Channels					
	1	2	3	4	5	6
for CH1	█					
for CH2	█	█				
for CH3	█	█	█			
for CH4	█	█	█	█		
for CH5	█	█	█	█	█	
None	█	█	█	█	█	█

Fig. 5-20

# TK-601S

## 12. Test equipment required

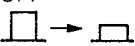
Test Equipment		Major Specifications
1. Standard Signal Generator (SSG)	Frequency range Modulation Output	20 ~ 80 MHz Frequency modulation and external modulation. 0.1 $\mu$ V to greater than 1 mV.
2. Power meter	Input impedance Operation frequency Measurement capability	50 ohms 100 MHz or more Vicinity of 100W
3. Deviation meter	Frequency range	20 ~ 100 MHz
4. Digital volt meter (DVM)	Measuring range Accuracy	1 ~ 10V DC. High input impedance for minimum circuit loading.
5. Oscilloscope		DC through 30 MHz.
6. Frequency counter	Frequency range Frequency stability	10 MHz to 200 MHz. 0.2 ppm or less.
7. Ammeter		15A
8. AF volt meter	Frequency range Voltage range	50 Hz to 10 kHz. 3 mV to 30V.
9. Audio generator	Frequency range Output	50 Hz to 5 kHz or more. Fine adjustment capable between 0 and 1V.
10. Distortion meter	Capability Input level	3% or less at 1 kHz. 50 mV to 10V rms.
11. VOM	Measuring range Input impedance	Measurable between 1.5 ~ 10V DC or less. 50kohms/V or greater.
12. 4 ohm dummy load		Approx. 4 ohm, 10W.
13. Regulated power source		13.8V, approx. 15A (adjustable from 9 to 17V) Useful if ammeter equipped.
14. Spectrum analyzer	Frequency range	0 ~ 1000 MHz (2nd ~ 10th harmonic frequencies measurable) Frequency within $f_0 \pm 100$ kHz measurable.
15. Noise generator		Capable of pulse type noise from approx. 1sec to 1msec.

## 13. Alignment

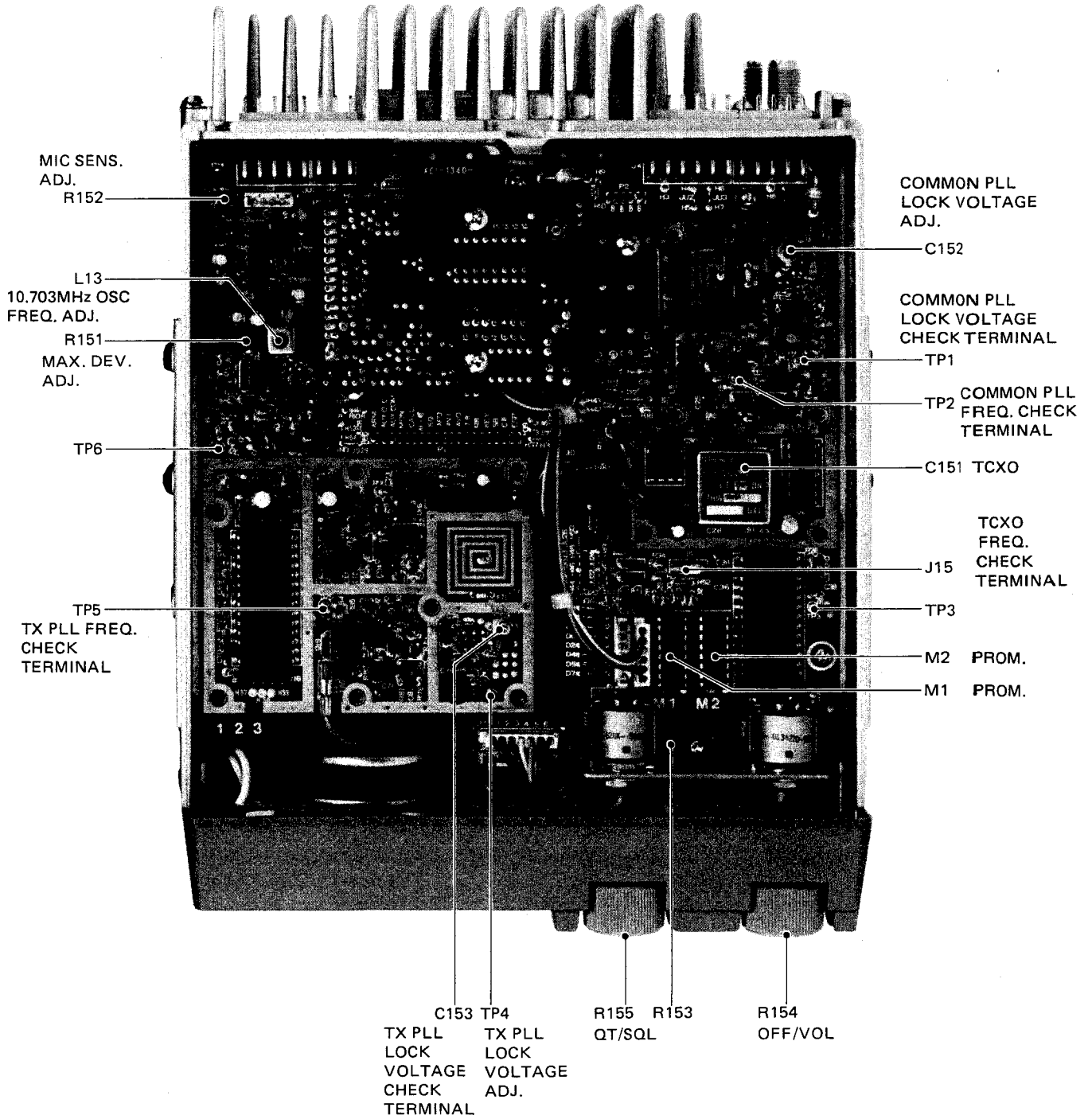
This adjustment is applied to multi-channel operation. However, when using only one channel, adjust that channel only.

Item	Condition	Measurement			Adjustment			Specification/Remarks
		Test equipment	Unit	Terminal	Unit	Part	Method	
1. Initial set-up	1) PLL unit : Insert PROM (M1, M2 FREQ. stored.)							
	2) CH : Any							
	3) Front panel : MONI switch set to out position. QT/SQL just opened.							
	4) Rear panel : Connect power cable and microphone cable.							
	5) CH knob should not be loose. The VOL, QT/SQL, MONI, and AUX knobs should not be pulled off easily.							
	6) Power switch : ON							
2. Common PLL lock voltage	1) CH : Channel in the vicinity of TX center FREQ. PTT : ON	Digital volt meter	PLL	TP1	PLL	C152	3.0V±0.2V	Verify 65V or less in high FREQ. channel and 1.6V or more in low FREQ. channel.
3. TCXO FREQ. ADJ.	1) PTT : OFF	FREQ. counter	PLL	J11 RXO	PLL	C151	RX FREQ. + 10.7 MHz adjustment	Within ±50Hz DO NOT adjust if in-spec!
	2) CH : Check other CH storing frequencies.						Verify RX FREQ. in each channel + 10.7MHz.	
4. Transmit PLL lock voltage	1) PTT : ON	Digital volt meter	PLL	TP4	PLL	C153	3.5V±0.2V	Verify 65V or less in high FREQ. channel and 1.6V or more in low FREQ. channel.
5. Sensitivity	1) CH : Channel in the vicinity of RX center FREQ. QT/SQL : Openend	SCOPE AF volt meter SSG	Rear panel	ESP (J4-3.7)	Front panel	OFF/ VOL	0.78V/4Ω (noise)	
	2) SSG FREQ. : CH 1 Output : 1000μV/-53dBm Modulation : OFF						TX-RX L227 L228 L231 L232 L235 L239	
	3) SSG Output : 1000μV/-53dBm Modulation : 1kHz/±3kHz dev.	SCOPE Distortion meter	Rear panel	ESP (J4-3.7)	TX-RX	L243	Adjust L32 for MAX AF output.	} Repeat twice. SINAD ≥37dB S/N ≥50dB
	4) SSG output : 0.7μV/-116dBm					L240 L241	At minimum distortion.	
6. Squelch preset	1) Front panel QT/SQL (R155) : CCW (OFF)	SP			PLL	R153	Turn CCW and adjust until squelch just closes.	
	2) Front panel QT : SQL (R155) : Threshold	SCOPE BUSY	Rear panel	ESP (J4-3.7)			Check	11 : 00 - 13 : 00 threshold.
	3) ANT SSG Output : 0.4μV/-121dBm	SCOPE BUSY	Rear panel	ESP (J4-3.7)			Check	Squelch should open. Busy Light on.

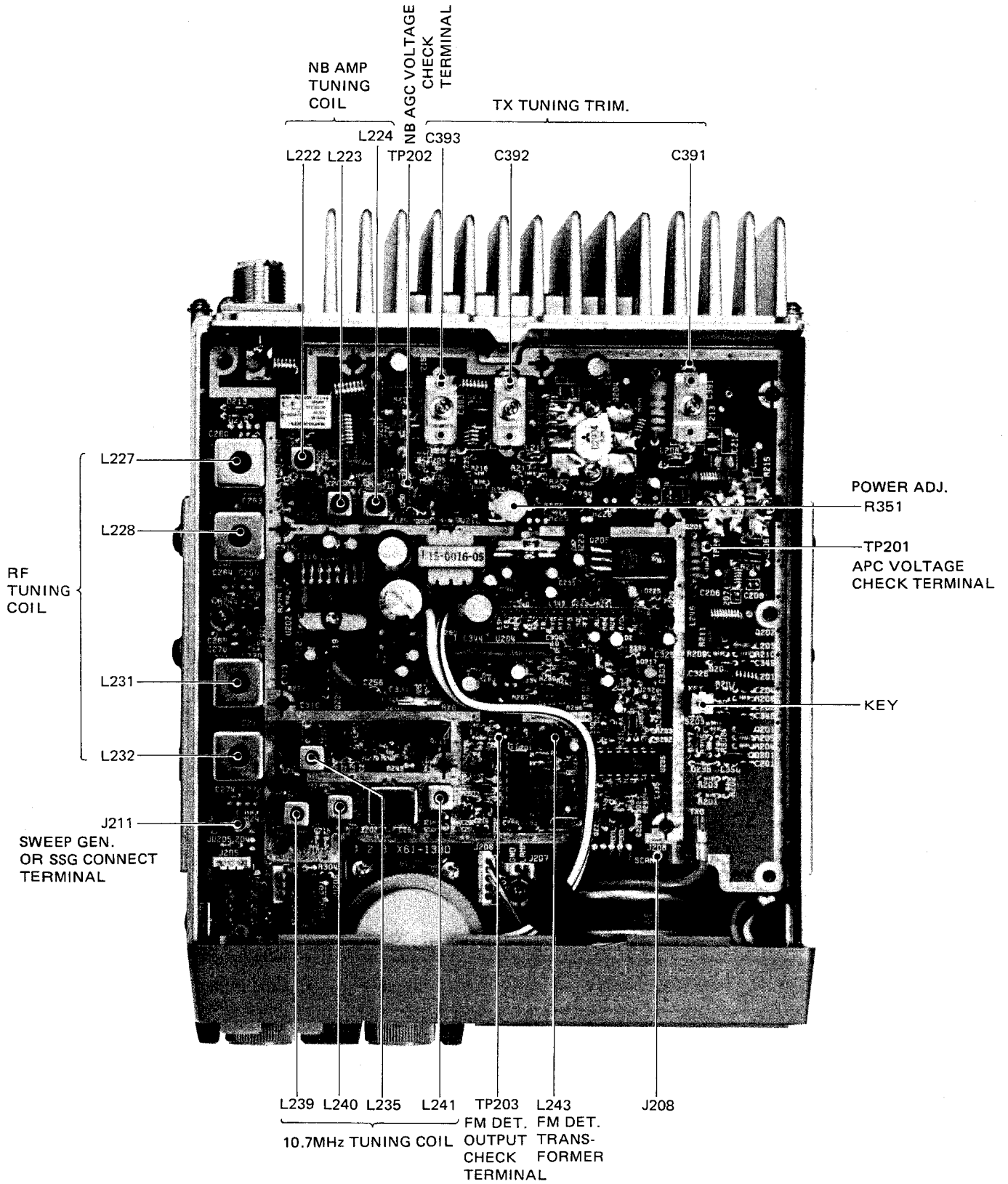
# TK-601S

Item	Condition	Measurement			Adjustment			Specification/Remarks
		Test equipment	Unit	Terminal	Unit	Part	Method	
6. Squelch preset	4) QT/SQL (R155) : MAX (CCW)	BUSY	Front panel				Check	Busy Light off.
	5) SSG Output : $2\mu\text{V}/-107\text{dBm}$	SCOPE					Check	Squelch should open. Busy Light on.
	6) SSG Output : OFF MONI SW : OFF MONI SW : 							Check
7. NB	1) SSG Output : $70\mu\text{V}/22\text{MHz}$	VOM	TX-RX	TP202	TX-RX	L222 L223 L224	Minimum. Repeat twice.	MIN
	2) NB : ON SSG Output : $10\mu\text{V}$ Modulation : $1\text{kHz}/\pm 3\text{kHz}$ dev.	SSG Noise GEN.						Confirm noise reduce by NB on.
8. Drive	1) CH : Channel vicinity of TX center FREQ. ANT : Power meter TX-RX unit R351 : Full CW PTT : ON	TX lamp Power meter					Check	TX lamp lights.
					TX-RX	C391	} Maximum Repeat twice.	
9. Final	1) CH : Channel vicinity of TX center FREQ. PTT : ON	Power meter	Rear panel	ANT	TX-RX	C392 C393		
		Ammeter				C393		13A or less
	2) CH : Any channel except 2 and 3	Power meter				R351	MIN (CCW)	30W or less
		Ammeter					Specified power ADJ.	60W
10. Transmit FREQ. ADJ.	1) CH : Channel vicinity of TX center FREQ. PTT : ON	FREQ. counter	TX-RX	ANT	PLL	L13	FREQ. ADJ. of TX	$\pm 50\text{Hz}$
	2) CH : Check other channels.						Verify TX FREQ.	
11. MAX. de- viation ADJ.	1) MIC-H1 AG : $1\text{kHz}/50\text{mV}$ PLL unit R152 : MAX (CW) PTT : ON CH : Channel vicinity of TX center FREQ.	Deviation meter			PLL	R151	$\pm 4.4\text{kHz}$ ADJ. Adjust one more than the other by switching between -P and + P.	$\pm 0.1\text{kHz}$
12. Deviation ADJ.	1) MIC-H1 (Rear panel J3-4) AG : $1\text{kHz}/5\text{mV}$	Deviation meter				R152	$\pm 3\text{kHz}$ ADJ.	$\pm 50\text{Hz}$
	2) MIC-H2 (Rear panel J3-5) AG : $1\text{kHz}/5\text{mV}$						Check	$\pm 3\text{kHz}$ or less
13. Spurious	1) CH : To the center channel of the desired band. PTT : ON	Spectrum analyzer	TX-RX	ANT			Near higher harmonic	65dB or more
							FREQ. (2f-10th) within $\text{fo}\pm 100\text{kHz}$	65dB or more
14. Monitor	1) Connect the speaker leads.	Power meter	TX-RX	ANT			Mutually communi- cate to monitor.	*The sound should be out- put correctly.  * The sound should not rattle.
	2) Connect CTCSS (if available).							
	3) Connect the supplied micro phone.							

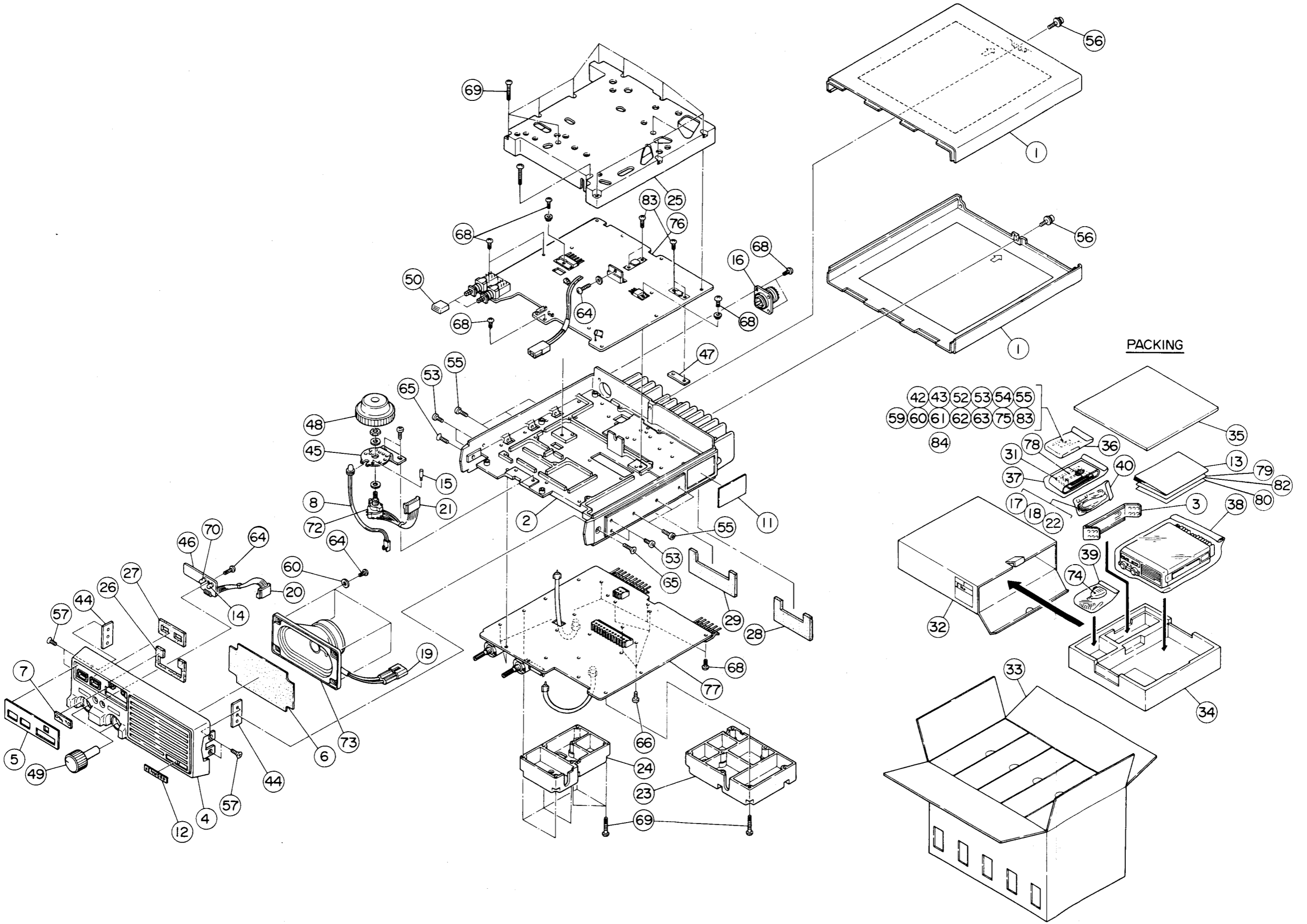
14. ADJUSTMENT PARTS



# TK-601S



A  
B  
C  
D  
E  
F  
T



1 2 3 4 5 6 7 8 9



× 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 / 规格	Desti- nation 仕向	Re- marks 備考
<b>TK-601S GENERAL</b>						
1	8B, 8C		A01-0951-02	CASEX2		
2	2D		A10-1248-15	CHASSIS		
3	9D		A13-0641-03	BRACKET, MOBILE MOUNT KIT		
4	2F		A20-2477-02	PANEL		
5	1F	*	A21-0796-04	DRESSING PANEL		
6	3F		B05-0728-14	SARAN NET (SPEAKER)		
7	1E		B08-0303-14	DISPLAY WINDOW		
8	3D		B30-0829-05	LAMP WITH CONNECTOR (14V, 480MA)		
11	6D	*	B40-3620-04	MODEL NAME PLATE F1	K1M1	
11	6D	*	B40-3621-04	MODEL NAME PLATE F2	K2M2	
11	6D	*	B40-3630-04	MODEL NAME PLATE F3	K3M3	
12	2F		B43-0691-14	BADGE		
13	9D	*	B50-8042-00	INSTRUCTION MANUAL		
14	2E		BG5514S	LED (GRN, BUSY)		
15	4D		D32-0406-04	STOP SCREW, CHANNEL		
16	6B		E04-0161-05	RF RECEPTACLE (M TYPE)		
17	8D		E30-2011-05	DC CABLE ASSY		
18	8D		E30-1733-15	CABLE WITH CONNECTOR		
19	3E	*	E31-3142-05	CONNECTING WIRE (SPEAKER)		
20	2E		E31-2178-15	CONNECTING WIRE (LED)		
21	4D		E31-2186-05	CONNECTING WIRE (CHANNEL SW)		
22	8D		F05-1531-05	FUSE (15A)		
22	8D		F05-1531-05	FUSE (15A) SPARE		
23	5F		F11-0832-15	SHIELDING COVER(A)		
24	5F		F11-0833-15	SHIELDING COVER(B)		
25	5B		F11-0834-15	SHIELDING COVER(C)		
26	1E		G13-0673-04	DUST SEAL(A) CHANNEL		
27	1D		G13-0674-14	DUST SEAL(B) PUSH SWITCH		
28	6E		G13-0699-04	DUST SEAL(C) CONNECTOR		
29	6E		G13-0700-04	DUST SEAL(D) CONNECTOR		
31	8D		G13-0682-04	CONDUCTIVE SEAL (ROM)		
32	7E	*	H01-4676-03	ITEM CARTON BOX		
33	8E	*	H03-2271-04	OUTER PACKING CASE		
34	9E		H10-2574-02	POLYSTYRENE FOAMED FIXTURE		
35	9C		H10-2575-04	POLYSTYRENE FOAMED FIXTURE		
36	8C		H25-0029-04	PROTECTION BAG (ROM)		
37	8D		H25-0077-03	PROTECTION BAG (SCREW, STOPPER)		
38	9D		H25-0106-04	PROTECTION BAG (BODY)		
39	8D		H25-0079-04	PROTECTION BAG (MIC)		
40	8D		H25-0105-04	PROTECTION BAG (DC CABLE)		
42	7C		J19-1376-15	MIC HANGER (ACSY)		
43	7C		J19-1382-05	NYLON LEAD HOLDE (ACSY)		
44	1E, 2F		J21-2796-04	MOUNTING HARDWARE (PANEL)		
45	3D		J21-2797-04	MOUNTING HARDWARE (SWITCH)		
46	2D		J25-3179-04	PRINTED CIRCUIT BOARD (LED)		
47	5C		J30-0524-04	SPACER (TR)		
48	3C		K23-0758-13	KNOB (CHANNEL)		
49	1F		K23-0759-04	KNOB (VOL, SQL)		
50	3B		K27-0448-04	KNOB (BUTTON) (MONI, NB)		
52	7C		NO9-0008-04	HEX. BOLT X6 (MOUNT KIT)		
53	3C, 7C		N35-4006-41	BINDING HEAD MACHINE SCREW X4		
54	7C		NO9-0633-05	SCREW X4 (MIC HANGER)		
55	8C, 4C		NO9-0648-15	HEX. SOCKET HEAD SCREW X6		

K1, M1 : 29.7-37MHz  
 K2, M2 : 35-44MHz  
 K3, M3 : 40-50MHz

K : USA MARKET  
 M : OTHERS

\* 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.

## 6. DIAGRAM AND PARTS LIST

## 1. DISASSEMBLY DIAGRAM AND PARTS LIST

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
56	8A,8B		N09-0649-05	SCREW X2 (SEMUS) CASE		
57	1E,2F		N09-0650-05	SCREW X4 (PANEL BRACKET)		
59	7C		N14-0510-04	FLANGE NUT X6 (MOUNT KIT)		
60	7C,5C		N15-1030-46	FLAT WASHER X8 (SPEAKER)		
61	7C		N15-1060-46	FLAT WASHER X6 (MOUNT KIT)		
62	5B,7C		N16-0030-46	SPRING WASHER X4		
63	7C		N16-0060-46	SPRING WASHER X6 (MOUNT KIT)		
64	3D,5C		N87-3006-46	BRAZIER HEAD TAPTITE SCREW X5		
65	3C,5D		N33-4010-41	OVAL HEAD MACHINE SCREW (PANEL)		
66	5F		N35-3008-46	BINDING HEAD MACHINE SCREW X7		
68	4B,4C		N87-3008-46	BRAZIER HEAD TAPTITE SCREW X16		
69	4A,5F		N87-3020-46	BRAZIER HEAD TAPTITE SCREW X26		
70	2D		PR5534S	LED (RED, FOR D902)		
72	3D		S01-1433-05	ROTARY SWITCH (CHANNEL)		
73	3F		T07-0227-05	LOUDSPEAKER(40HMS,3W, FOR SP901)		
74	8D		T91-0330-35	MICROPHONE (400 OHMS)		
75	8C		W01-0407-05	HEX. WRENCH (2.5MM)		
76	5B	*	X61-1330-10	L. M. R UNIT (TX-RX) 29.7-37MHZ	K1M1	
76	5B	*	X61-1330-11	L. M. R UNIT (TX-RX) 35-44MHZ	K2M2	
76	5B	*	X61-1330-12	L. M. R UNIT (TX-RX) 40-50MHZ	K3M3	
77	5E	*	X61-1340-10	L. M. R UNIT (PLL) 29.7-37MHZ	K1M1	
77	5E	*	X61-1340-11	L. M. R UNIT (PLL) 35-44MHZ	K2M2	
77	5E	*	X61-1340-12	L. M. R UNIT (PLL) 40-50MHZ	K3M3	
78	8D		M54730AP	IC (PR0M)		
79	9D		B46-0409-00	WARRANTY CARD	K1K2K3	
80	9D		B50-4088-00	INSTRUCTION MANUAL (INSTALL)		
82	9D	*	B58-0671-00	CAUTION CARD		
83	7C		N09-0623-04	SCREW (SEMUS,3MM, FOR Q203,204)		
84	7C		N09-0672-05	SCREW X5 (MOUNT KIT)		
-			E31-3092-05	CONNECTING WIRE		

K1, M1 : 29.7-37MHz

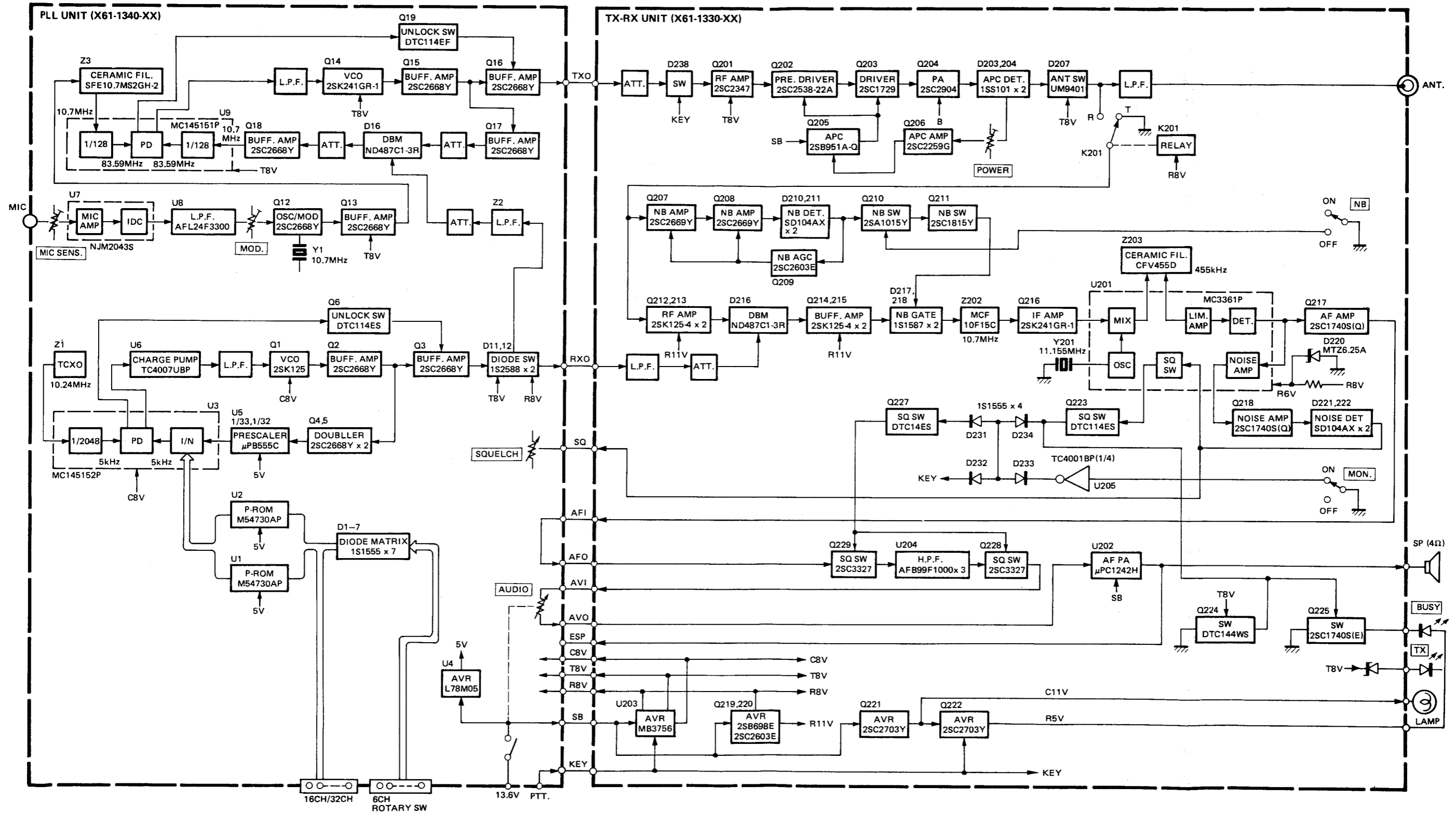
K2, M2 : 35-44MHz

K3, M3 : 40-50MHz

K : USA MARKET

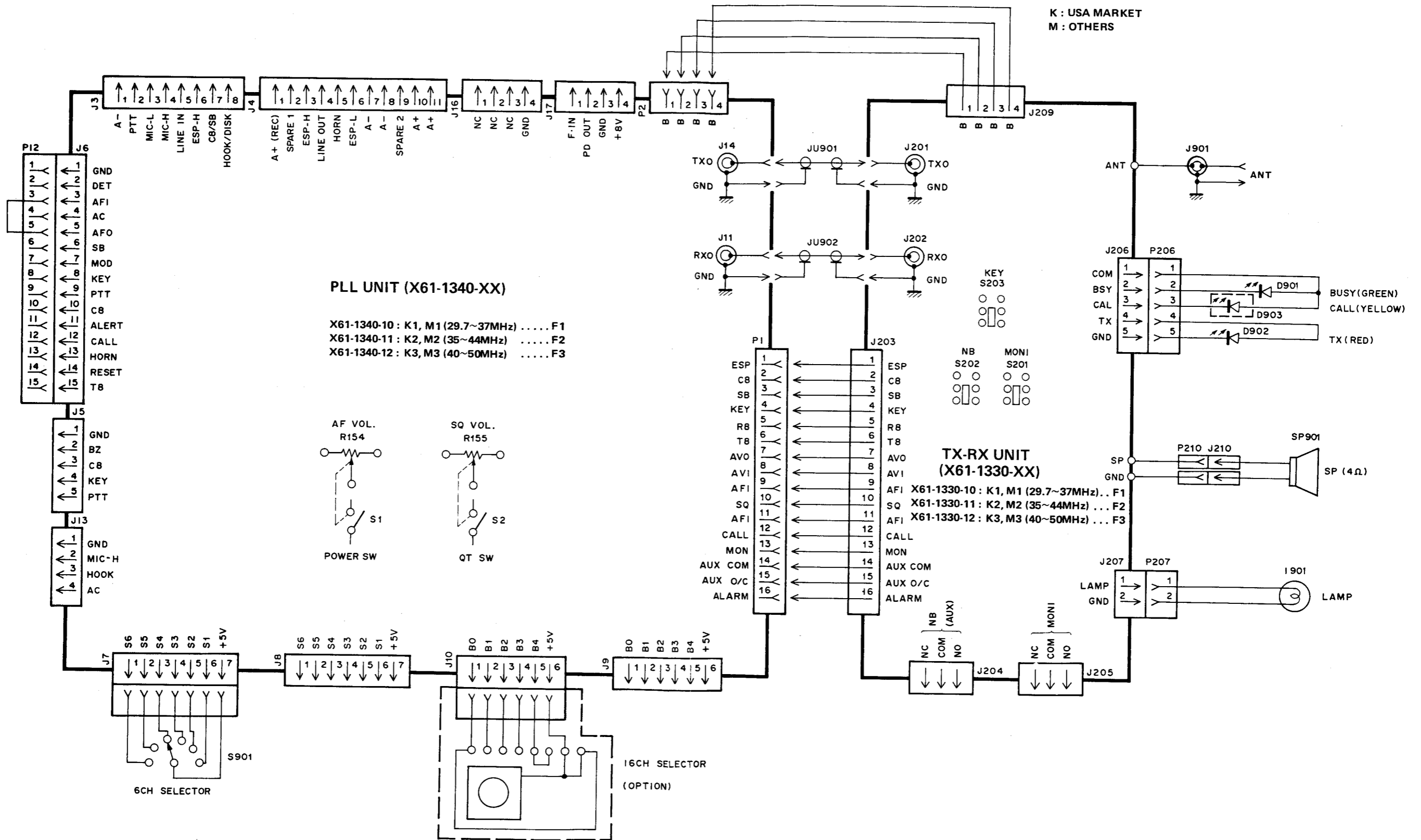
M : OTHERS

2. CIRCUIT BLOCK DIAGRAM



3. SCHEMATIC DIAGRAM

K : USA MARKET  
M : OTHERS



## PARTS LIST

× New Parts

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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
<b>PLL UNIT (X61-1340-XX)</b>						
C1			C91-0131-05	CERAMIC	0.01UF	K
C2			C91-0430-05	MYLAR	0.047UF	K
C3			CS15E1E010M	TANTAL	1.0UF	25WV
C4			C91-0431-05	MYLAR	0.1UF	K
C5			CC73FCH1H390J	CHIP C	39PF	J
C6			CC73FCH1H120J	CHIP C	12PF	J
C7			CC73FCH1H220J	CHIP C	22PF	J
C8			CC73FCH1H120J	CHIP C	12PF	J
C9			CC73FCH1H430J	CHIP C	43PF	J
C10			C91-0131-05	CERAMIC	0.01UF	K
C11			CE04W1A470M	ELECTRØ	47UF	10WV
C12			CC45CH1H080D	CERAMIC	8.0PF	D
C13			C91-0131-05	CERAMIC	0.01UF	K
C14			CC45CH1H330J	CERAMIC	33PF	J
C15 ,16			C91-0131-05	CERAMIC	0.01UF	K
C17			CE04W1A470M	ELECTRØ	47UF	10WV
C18 -20			CK45B1H102K	CERAMIC	1000PF	K
C21 ,22			C91-0105-05	CERAMIC	0.0047UF	K
C23			CC45CH1H330J	CERAMIC	33PF	J
C24			C91-1026-05	MYLAR	82PF	J
C25 ,26			C91-0131-05	CERAMIC	0.01UF	K
C27			CK45B1H471K	CERAMIC	470PF	K
C28			C91-0131-05	CERAMIC	0.01UF	K
C29			CE04W1A470M	ELECTRØ	47UF	10WV
C30 -32			C91-0131-05	CERAMIC	0.01UF	K
C33 ,34			CS15E1V010M	TANTAL	1.0UF	35WV
C35			CE04W1A101M	ELECTRØ	100UF	10WV
C36			C91-0131-05	CERAMIC	0.01UF	K
C37			CS15E1C2R2M	TANTAL	2.2UF	16WV
C38 ,39			CK45B1H102K	CERAMIC	1000PF	K
C40			CE04W1H010M	ELECTRØ	1.0UF	50WV
C41			CE04W1A330M	ELECTRØ	33UF	10WV
C42 ,43			CC45SL1H101J	CERAMIC	100PF	J
C44			CQ92M1H223K	MYLAR	0.022UF	K
C45			CC45CH1H330J	CERAMIC	33PF	J
C46			CE04W1A470M	ELECTRØ	47UF	10WV
C47			CE04W1H4R7M	ELECTRØ	4.7UF	50WV
C48			CE04W1A470M	ELECTRØ	47UF	10WV
C49			CE04W1H010M	ELECTRØ	1.0UF	50WV
C50			C91-1026-05	MYLAR	82PF	J
C51 -53			CE04W1H4R7M	ELECTRØ	4.7UF	50WV
C54			CE04W1A101M	ELECTRØ	100UF	10WV
C55			CK45B1H102K	CERAMIC	1000PF	K
C56			C91-0131-05	CERAMIC	0.01UF	K
C57			CC45UJ1H390J	CERAMIC	39PF	J
C58 ,59			C91-1041-05	MYLAR	270PF	J
C60			C91-0131-05	CERAMIC	0.01UF	K
C61			CC45CH1H100D	CERAMIC	10PF	D
C62 ,63			C91-0131-05	CERAMIC	0.01UF	K
C64			CC45CH1H100D	CERAMIC	10PF	D
C65			CK45B1H102K	CERAMIC	1000PF	K
C66			C91-0131-05	CERAMIC	0.01UF	K
C67			CS15E1V010M	TANTAL	1.0UF	35WV

K1, M1 : X61-1340-10 (29.7-37MHz)

K2, M2 : X61-1340-11 (35-44MHz)

K3, M3 : X61-1340-12 (40-50MHz)

K : USA MARKET

M : OTHERS

# TK-601S

\* New Parts

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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
C68			C91-0131-05	CERAMIC 0.01UF K		
C69			CQ92M1H392K	MYLAR 3900PF K		
C70			CS15E1V010M	TANTAL 1.0UF 35WV		
C71			CQ92M1H182K	MYLAR 1800PF K		
C72			CQ92M1H392K	MYLAR 3900PF K		
C73			CC73FCH1H680J	CHIP C 68PF J		
C74			CC73FCH1H020C	CHIP C 2.0PF C		
C75			CC73FCH1H470J	CHIP C 47PF J		
C76			CC73FCH1H150J	CHIP C 15PF J		
C77			CC73FCH1H470J	CHIP C 47PF J		
C78			C91-0131-05	CERAMIC 0.01UF K		
C79			CC45CH1H080D	CERAMIC 8.0PF D	K2M2	
C79			CC45CH1H080D	CERAMIC 8.0PF D	K1M1	
C80 ,81			C91-0131-05	CERAMIC 0.01UF K		
C82			CC45CH1H330J	CERAMIC 33PF J		
C83 ,84			C91-0131-05	CERAMIC 0.01UF K		
C85			CK45B1H102K	CERAMIC 1000PF K		
C86			CC45CH1H030C	CERAMIC 3.0PF C		
C87			C91-1026-05	MYLAR 82PF J		
C88 ,89			C91-0131-05	CERAMIC 0.01UF K		
C90			CK45B1H102K	CERAMIC 1000PF K		
C91			C91-1023-05	MYLAR 47PF J	K2M2	
C91			C91-1024-05	MYLAR 56PF J	K1M1	
C91		*	C91-1062-05	MYLAR 27PF J	K3M3	
C92			CC45CH1H150J	CERAMIC 15PF J	K3M3	
C92			CC45CH1H180J	CERAMIC 18PF J	K2M2	
C92			CC45CH1H270J	CERAMIC 27PF J	K1M1	
C93			C91-1024-05	MYLAR 56PF J	K3M3	
C93			C91-1027-05	MYLAR 100PF J	K2M2	
C93			C91-1028-05	MYLAR 120PF J	K1M1	
C94			CC45CH1H150J	CERAMIC 15PF J	K3M3	
C94			CC45CH1H180J	CERAMIC 18PF J	K2M2	
C94			CC45CH1H270J	CERAMIC 27PF J	K1M1	
C95			C91-1023-05	MYLAR 47PF J	K2M2	
C95			C91-1024-05	MYLAR 56PF J	K1M1	
C95		*	C91-1062-05	MYLAR 27PF J	K3M3	
C96			CE04W1A470M	ELECTR0 47UF 10WV		
C97			C91-1041-05	MYLAR 270PF J		
C98			CC45SL1H470J	CERAMIC 47PF J		
C99 -101			C91-0131-05	CERAMIC 0.01UF K		
C102			CK45B1H102K	CERAMIC 1000PF K		
C103			CC45CH1H120J	CERAMIC 12PF J		
C104			CC45CH1H030C	CERAMIC 3.0PF C	K1M1	
C105			CC45CH1H240J	CERAMIC 24PF J		
C106			CC45CH1H030C	CERAMIC 3.0PF C	K1M1	
C107			CC45CH1H120J	CERAMIC 12PF J		
C108			CK45B1H102K	CERAMIC 1000PF K		
C109			CE04W1A101M	ELECTR0 100UF 10WV		
C110,111			C91-0131-05	CERAMIC 0.01UF K		
C112,113			CS15E1V010M	TANTAL 1.0UF 35WV		
C114,115			CK45B1H102K	CERAMIC 1000PF K		
C116			CS15E1C2R2M	TANTAL 2.2UF 16WV		
C152		*	C05-0338-05	TRIMMING CAP (20PF)		
C153		*	C05-0337-05	TRIMMING CAP (30PF)		

K1, M1 : X61-1340-10 (29.7-37MHz)

K2, M2 : X61-1340-11 (35-44MHz)

K3, M3 : X61-1340-12 (40-50MHz)

K : USA MARKET

M : OTHERS

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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
-			E02-0120-05	IC SOCKET (16P, PROM)		
J3			E40-7203-05	PIN CONNECTOR (3P)		
J3 ,4			E40-7205-05	PIN CONNECTOR (5P)		
J4			E40-7206-05	PIN CONNECTOR (6P)		
J5			E40-0564-05	PIN CONNECTOR (5P)		
J6			E40-1564-05	PIN CONNECTOR (15P)		
J7 ,8			E40-0773-05	PIN CONNECTOR (7P, MINI)		
J9 ,10			E40-0673-05	PIN CONNECTOR (6P, MINI)		
J11			E04-0154-05	RF COAXIAL CABLE JACK (V TYPE)		
J13			E40-0473-05	PIN CONNECTOR (4P, MINI)		
J14 ,15			E04-0159-05	RF COAXIAL CABLE JACK (A TYPE)		
J16 ,17			E40-5060-05	PIN CONNECTOR (4P)		
P1			E40-3236-05	PIN CONNECTOR (16P)		
P2			E40-3229-05	PIN CONNECTOR (4P)		
P12			E31-3130-05	CONNECTING WIRE WITH CONNECTOR		
TP1 ,2			E23-0435-05	TERMINAL (ROUND)		
TP3			E23-0430-05	TERMINAL (ROUND)		
TP4 ,5			E23-0435-05	TERMINAL (ROUND)		
TP6			E23-0430-05	TERMINAL (ROUND)		
-			J21-2798-04	MOUNTING HARDWARE (VR)		
L1			L40-1021-14	SMALL FIXED INDUCTOR (1MH)		
L2			L40-4791-14	SMALL FIXED INDUCTOR (4.7UH)		
L4			L40-1092-14	SMALL FIXED INDUCTOR (1UH)		
L5		*	L19-0358-05	TOROIDAL TRANSFORMER		
L6			L40-2282-14	SMALL FIXED INDUCTOR (0.22UH)		
L7		*	L19-0359-05	TOROIDAL TRANSFORMER		
L8			L40-2282-14	SMALL FIXED INDUCTOR (0.22UH)		
L9 -11			L40-1021-14	SMALL FIXED INDUCTOR (1MH)		
L12			L40-2201-14	SMALL FIXED INDUCTOR (22UH)		
L13		*	L32-0683-05	OSCILLATING COIL (12UH)		
L14			L40-1001-14	SMALL FIXED INDUCTOR (10UH)		
L15		*	L33-0688-05	CHOKE COIL (15MH)		
L16			L40-4791-14	SMALL FIXED INDUCTOR (4.7UH)		
L18			L40-4791-14	SMALL FIXED INDUCTOR (4.7UH)		
L19		*	L19-0358-05	TOROIDAL TRANSFORMER		
L20 ,21			L40-2282-14	SMALL FIXED INDUCTOR (0.22UH)		
L22 ,23		*	L19-0359-05	TOROIDAL TRANSFORMER		
L24 ,25			L40-6882-14	SMALL FIXED INDUCTOR (0.68UH)		
L26			L40-1001-14	SMALL FIXED INDUCTOR (10UH)		
L27 ,28			L40-8291-14	SMALL FIXED INDUCTOR (8.2UH)		
L29 ,30			L40-1021-14	SMALL FIXED INDUCTOR (1MH)		
L31			L40-1001-14	SMALL FIXED INDUCTOR (10UH)		
L32			L40-1011-14	SMALL FIXED INDUCTOR (100UH)		
Y1		*	L77-1292-05	CRYSTAL RESONATOR (10.7030MHZ)		
Z1		*	L77-1293-05	CRYSTAL RESONATOR (10.2400MHZ)		
Z2		*	L79-0676-05	FILTER (LPF)		
Z3		*	L72-0145-05	CERAMIC FILTER (10.7MHZ)		
R1			RD14CB2C102J	RD 1.0K J 1/6W		
R2			RD14CB2C681J	RD 680 J 1/6W		
R3			RD14CB2C103J	RD 10K J 1/6W		
R4			RD14CB2C821J	RD 820 J 1/6W		
R5			RD14CB2C221J	RD 220 J 1/6W		
R6			RD14CB2C273J	RD 27K J 1/6W		

K1, M1 : X61-1340-10 (29.7-37MHz)

K2, M2 : X61-1340-11 (35-44MHz)

K3, M3 : X61-1340-12 (40-50MHz)

K : USA MARKET

M : OTHERS

# TK-601S

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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
R7			RD14CB2C471J	RD 470 J 1/6W		
R8			RD14CB2C101J	RD 100 J 1/6W		
R9			RD14CB2C103J	RD 10K J 1/6W		
R10			RD14CB2C153J	RD 15K J 1/6W		
R11			RD14CB2C101J	RD 100 J 1/6W		
R12			RD14CB2C331J	RD 330 J 1/6W		
R13			RD14CB2C153J	RD 15K J 1/6W		
R14			RD14CB2C682J	RD 6.8K J 1/6W		
R15			RD14CB2C101J	RD 100 J 1/6W		
R16 ,17			RD14CB2C221J	RD 220 J 1/6W		
R18			RD14CB2C472J	RD 4.7K J 1/6W		
R19 ,20			RD14BB2C102J	RD 1.0K J 1/6W		
R21 ,22			RD14CB2C101J	RD 100 J 1/6W		
R23			RD14CB2C103J	RD 10K J 1/6W		
R24			RD14CB2C152J	RD 1.5K J 1/6W		
R25			RD14CB2C150J	RD 15 J 1/6W		
R26			RD14CB2C103J	RD 10K J 1/6W		
R27			RD14BB2C152J	RD 1.5K J 1/6W		
R28 -32			RD14CB2C272J	RD 2.7K J 1/6W		
R33 ,34			RD14CB2C103J	RD 10K J 1/6W		
R35 ,36			RD14CB2C101J	RD 100 J 1/6W		
R37		*	R92-0677-05	RS 22 K 1/10W		
R38			RD14CB2C222J	RD 2.2K J 1/6W		
R39			RD14CB2C100J	RD 10 J 1/6W		
R40			RD14CB2C681J	RD 680 J 1/6W		
R41			RD14CB2C562J	RD 5.6K J 1/6W		
R42			RD14CB2C102J	RD 1.0K J 1/6W		
R43			RD14CB2C103J	RD 10K J 1/6W		
R44			RD14CB2C561J	RD 560 J 1/6W		
R45			RD14CB2C104J	RD 100K J 1/6W		
R46			RD14CB2C274J	RD 270K J 1/6W		
R47			RD14CB2C473J	RD 47K J 1/6W		
R48			RD14CB2C333J	RD 33K J 1/6W		
R49			RD14CB2C102J	RD 1.0K J 1/6W		
R50			RD14CB2C104J	RD 100K J 1/6W		
R52			RD14CB2C103J	RD 10K J 1/6W		
R53			RD14CB2C681J	RD 680 J 1/6W		
R54			RD14CB2C103J	RD 10K J 1/6W		
R55			RD14CB2C123J	RD 12K J 1/6W		
R56			RD14CB2C153J	RD 15K J 1/6W		
R57			RD14CB2C822J	RD 8.2K J 1/6W		
R58 ,59			RD14CB2C104J	RD 100K J 1/6W		
R60 ,61			RD14CB2C103J	RD 10K J 1/6W		
R62			RD14CB2C101J	RD 100 J 1/6W		
R63			RD14CB2C821J	RD 820 J 1/6W		
R64			RD14CB2C101J	RD 100 J 1/6W		
R65			RD14CB2C153J	RD 15K J 1/6W		
R66			RD14CB2C103J	RD 10K J 1/6W		
R67			RD14CB2C221J	RD 220 J 1/6W		
R68			RD14CB2C683J	RD 68K J 1/6W		
R69			RD14CB2C333J	RD 33K J 1/6W		
R70			RD14CB2C471J	RD 470 J 1/6W		
R71 ,72			RD14CB2C122J	RD 1.2K J 1/6W		
R73			RD14CB2C182J	RD 1.8K J 1/6W		
R74			RD14CB2C221J	RD 220 J 1/6W		

K1, M1 : X61-1340-10 (29.7-37MHz)

K2, M2 : X61-1340-11 (35-44MHz)

K3, M3 : X61-1340-12 (40-50MHz)

K : USA MARKET  
M : OTHERS



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R75			RD14BB2C332J	RD 3.3K J 1/6W		
R76			RD14CB2C103J	RD 10K J 1/6W		
R77			RD14CB2C101J	RD 100 J 1/6W		
R78			RD14CB2C822J	RD 8.2K J 1/6W		
R79			RD14CB2C153J	RD 15K J 1/6W		
R80			RD14CB2C101J	RD 100 J 1/6W		
R81			RD14CB2C331J	RD 330 J 1/6W		
R82			RD14CB2C682J	RD 6.8K J 1/6W		
R83			RD14CB2C153J	RD 15K J 1/6W		
R84			RD14CB2C221J	RD 220 J 1/6W		
R85 ,86			RD14CB2C101J	RD 100 J 1/6W		
R87			RD14CB2C153J	RD 15K J 1/6W		
R88			RD14CB2C103J	RD 10K J 1/6W		
R89			RD14CB2C221J	RD 220 J 1/6W		
R90			RD14CB2C560J	RD 56 J 1/6W		
R91			RD14CB2C330J	RD 33 J 1/6W		
R92			RD14CB2C220J	RD 22 J 1/6W		
R93			RD14CB2C330J	RD 33 J 1/6W		
R94			RD14CB2C271J	RD 270 J 1/6W		
R95			RD14CB2C180J	RD 18 J 1/6W		
R96			RD14CB2C271J	RD 270 J 1/6W		
R97			RD14CB2C271J	RD 270 J 1/6W		
R98			RD14CB2C180J	RD 18 J 1/6W		
R99			RD14CB2C271J	RD 270 J 1/6W		
R100			RD14CB2C560J	RD 56 J 1/6W		
R101			RD14CB2C103J	RD 10K J 1/6W		
R102			RD14CB2C153J	RD 15K J 1/6W		
R103			RD14CB2C221J	RD 220 J 1/6W		
R104			RD14CB2C101J	RD 100 J 1/6W		
R105			RD14CB2C102J	RD 1.0K J 1/6W		
R106,107			RD14CB2C223J	RD 22K J 1/6W		
R108			RD14BB2C223J	RD 22K J 1/6W		
R109,110			RD14BB2C273J	RD 27K J 1/6W		
R111-113			RD14BB2C103J	RD 10K J 1/6W		
R114			RD14CB2C102J	RD 1.0K J 1/6W		
R115			RD14BB2C473J	RD 47K J 1/6W		
R116			RD14BB2C123J	RD 12K J 1/6W	K3M3	
R116			RD14BB2C682J	RD 6.8K J 1/6W	K1M1	
R116			RD14BB2C822J	RD 8.2K J 1/6W	K2M2	
R117			RD14CB2C561J	RD 560 J 1/6W		
R118			RD14CB2C102J	RD 1.0K J 1/6W		
R119			RD14CB2C472J	RD 4.7K J 1/6W		
R120			RD14CB2C562J	RD 5.6K J 1/6W		
R121			RD14CB2C153J	RD 15K J 1/6W		
R122			RD14CB2C473J	RD 47K J 1/6W		
R151			R12-3430-05	TRIMMING PØT. (10KB)DEV		
R152			R12-2409-05	TRIMMING PØT. (5KB)MIC GAIN		
R153			R12-4408-05	TRIMMING PØT. (50KB)SQ		
R154			R01-3427-05	PØTENTIØMETER (10KA)VØL		
R155		*	R01-4415-05	PØTENTIØMETER (50KB)SQ		
D1 -9			1S1555	DIØDE		
D10			MTZ3.0JA	ZENER DIØDE		
D11 ,12			1S2588	DIØDE		
D13			1SV50E	DIØDE		
D14			1S2208	DIØDE		

K1, M1 : X61-1340-10 (29.7-37MHz)

K2, M2 : X61-1340-11 (35-44MHz)

K3, M3 : X61-1340-12 (40-50MHz)

K : USA MARKET

M : OTHERS

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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
D15			1SV50E	DIODE		
D16			ND487C1-3R	DIODE		
D17			1S1555	DIODE		
D18			MTZ5.1JA	ZENER DIODE		
D19			1S1555	DIODE		
D20			U05B	DIODE		
D21			U15B	DIODE		
D22 -25			1S1555	DIODE		
Q1			2SK125-4	FET		
Q2 -5			2SC2668(Y)	TRANSISTOR		
Q6 -11			DTC114ES	DIGITAL TRANSISTOR		
Q12 ,13			2SC2668(Y)	TRANSISTOR		
Q14			2SK241(GR)-1	FET		
Q15 -18			2SC2668(Y)	TRANSISTOR		
Q19			DTC114ES	DIGITAL TRANSISTOR		
Q20			2SK241(GR)-1	FET		
TH-1			112-301-2	THERMISTOR (300)		
TH-2			112-103-2	THERMISTOR (10K)		
TH-3		*	112-302-2	THERMISTOR (3K)		
U3			MC145152P	IC (CMOS LSI)		
U4			L78M05	IC (5V REGULATOR)		
U5			UPB555C	IC		
U6			TC4007UBP	IC (COMPLEMENTARY PAIR PLUS INV		
U7		*	NJM20435	IC (INVERTER)		
U8			AFL24F3300E10	IC		
U9			MC145151P	IC (COMS LSI)		

K1, M1 : X61-1340-10 (29.7-37MHz)

K2, M2 : X61-1340-11 (35-44MHz)

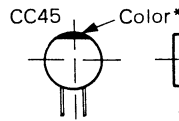
K3, M3 : X61-1340-12 (40-50MHz)

K : USA MARKET

M : OTHERS

## 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

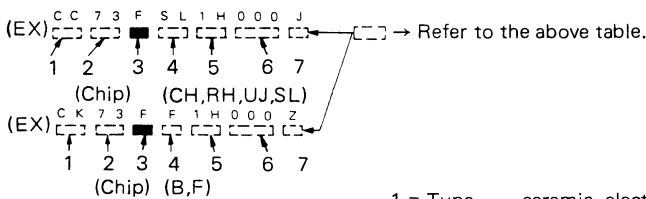
Code	B	C	D	F	G
(pF)	± 0.1	± 0.25	± 0.5	± 1	± 2

Less than 10 pF

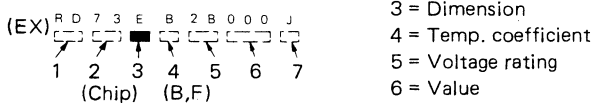
### Rating voltage

1st word \ 2nd 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	-

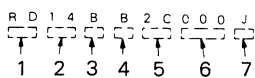
### Chip capacitors



### 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
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

### Dimension

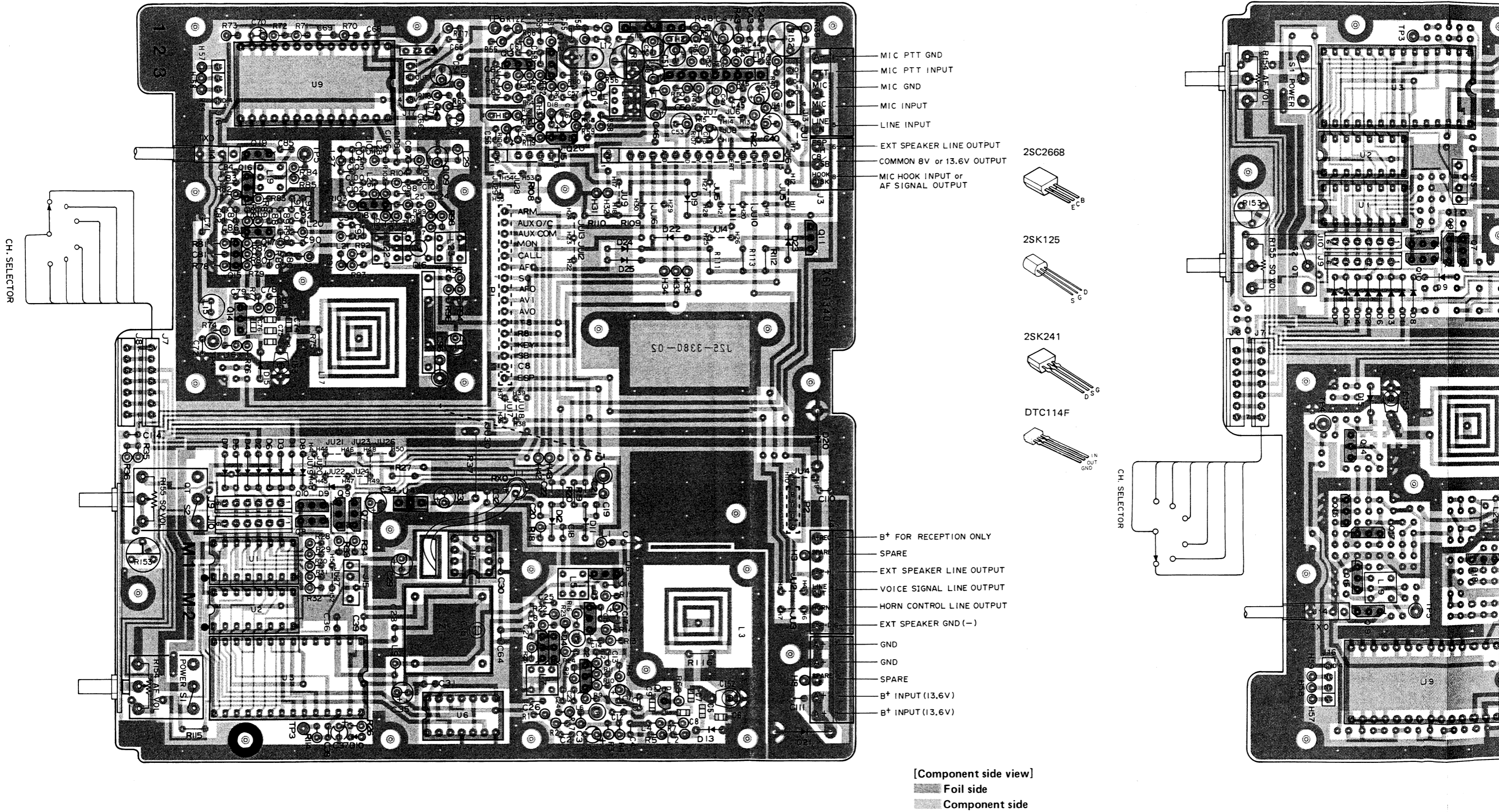
Dimension code	L	W	T	Wattage
E	3.2 ± 0.2	1.6 ± 0.2	0.57	2B
F	2.0 ± 0.3	1.25 ± 0.2	0.45	2A

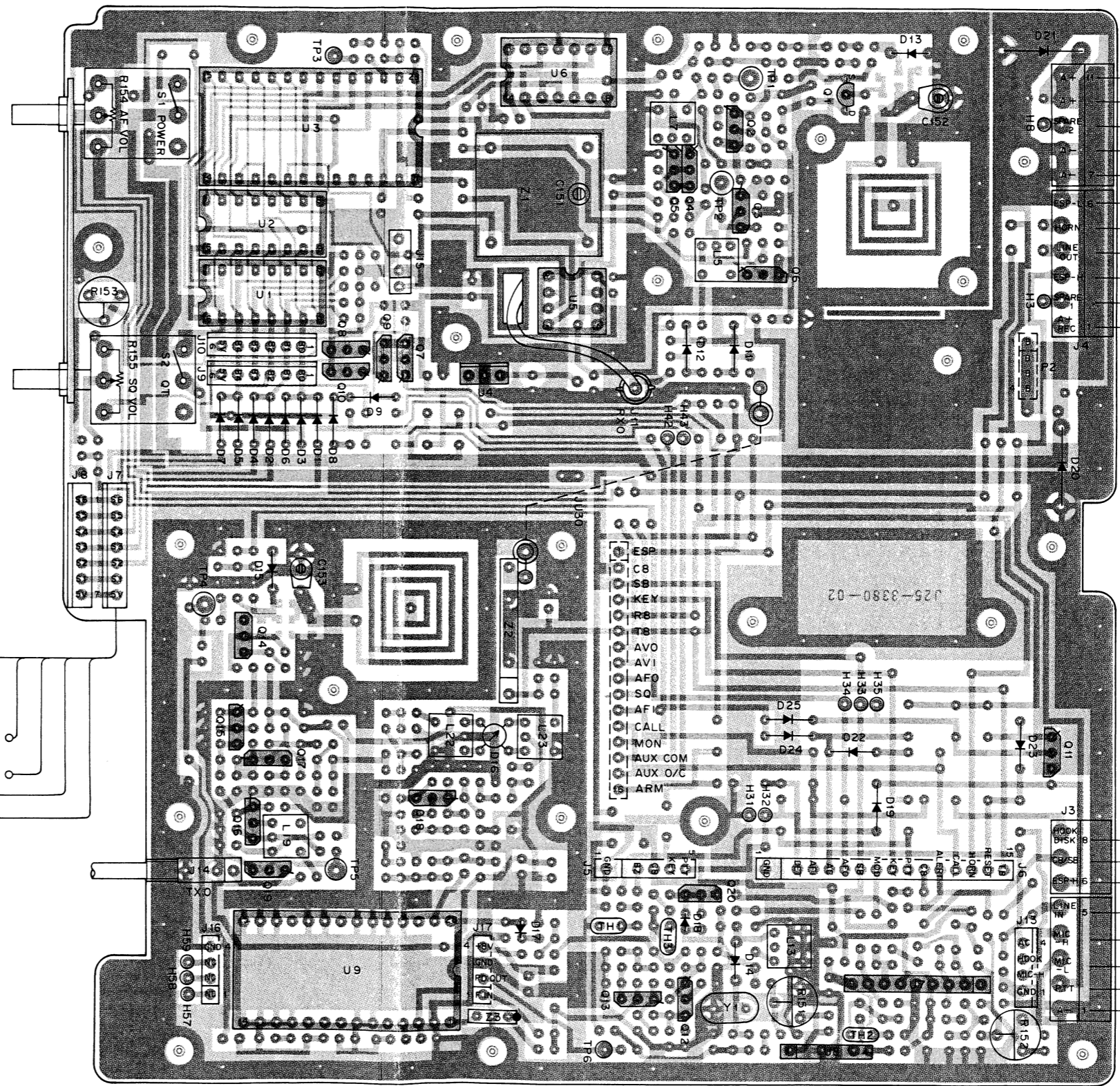
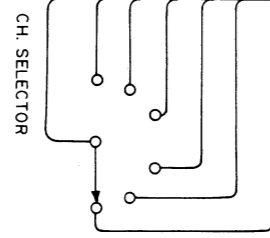
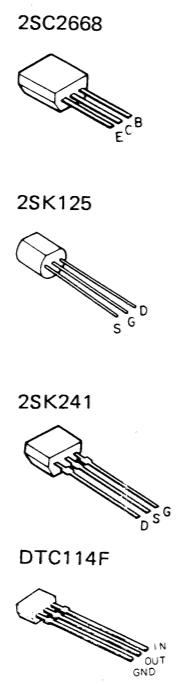
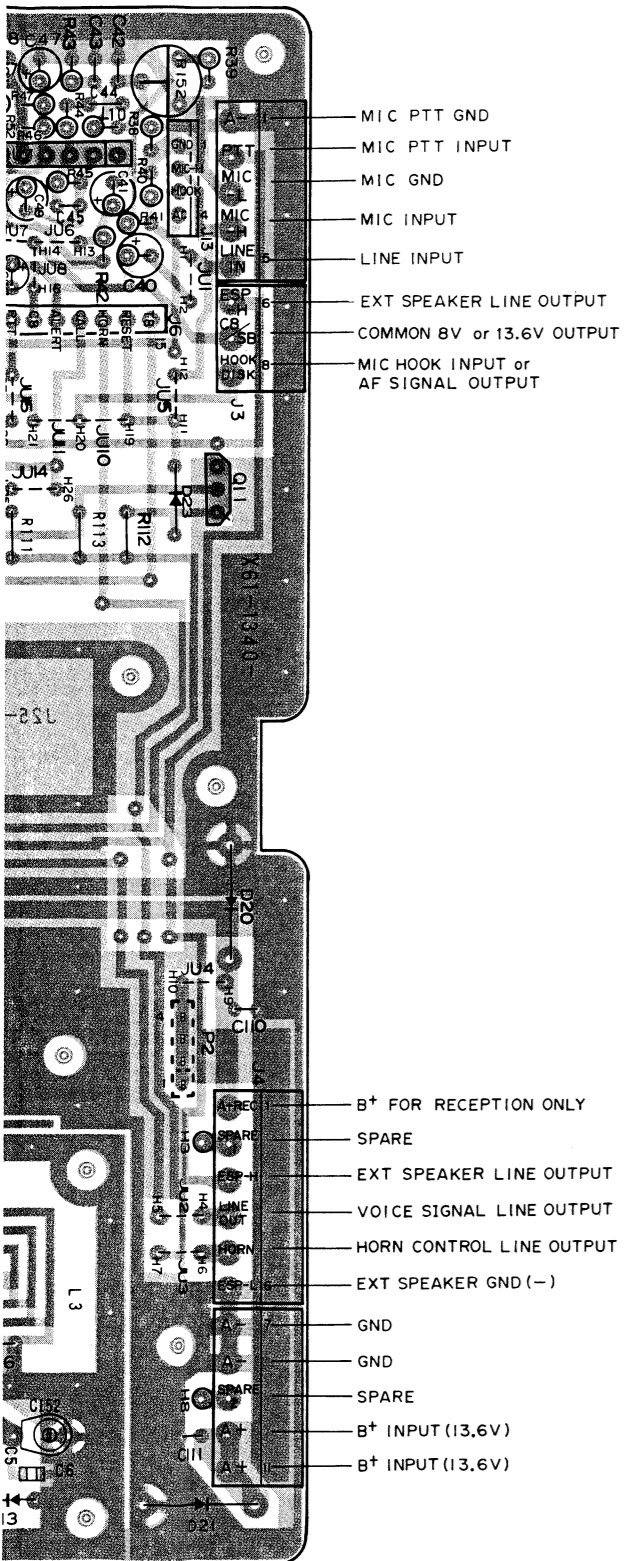
### Rating wattage

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



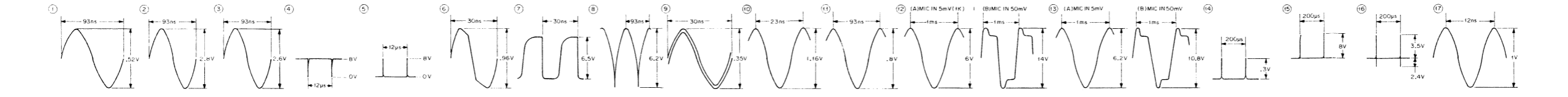




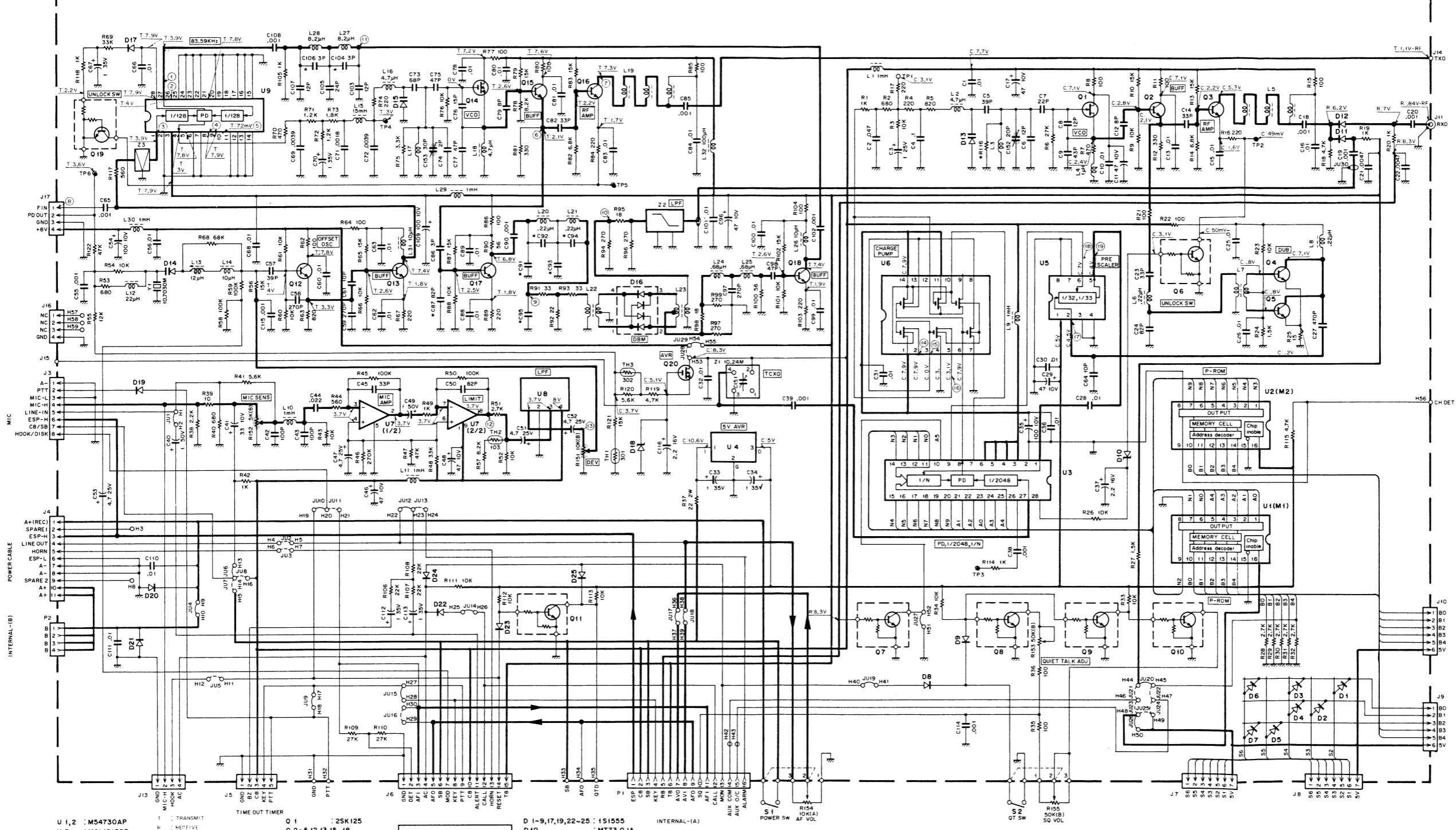
[Component side view]  
 Foil side  
 Component side

[Foil side view]  
 Foil side  
 Component side

PLL UNIT  
Schematic Diagram



PLL UNIT (X61-1340-XX)



- U 1, 2 : M54730AP
- U 3 : MC145152P
- U 4 : L78M05
- U 5 : µPB555C
- U 6 : TC4007UBP
- U 7 : NJM2043S
- U 8 : AFL24F3300E10
- U 9 : MC145151P
- T : TRANSMIT
- H : NEGATIVE
- C : 1/2K LOGM
- DATA : F VERSION (F1)
- CH : 1
- FREQ : 33.5MHz
- Q 1 : 25K125
- Q 2~5,12,13,15-18 : 25C2668(Y)
- Q 6~11,19 : DTC114F
- Q 14,20 : 25K241(GR)
- D 1~9,17,19,22-25 : 1S1555
- D 10 : MT23.0JA
- D 11,12 : 1S2588
- D 13,15 : 1SV50E
- D 14 : 1S220B
- D 16 : ND487C1-3R
- D 20 : U05B
- D 21 : U15B
- D 18 : MT25.1JA
- INTERNAL-(A)
- D 10 : MT23.0JA
- D 11,12 : 1S2588
- D 13,15 : 1SV50E
- D 14 : 1S220B
- D 16 : ND487C1-3R
- D 20 : U05B
- D 21 : U15B
- D 18 : MT25.1JA

UNIT No.	CR No.	C87	C91	C92	C93	C94	C95	C104	C106	R116
X61-1340-10(29.7-37MHz)	82P	56P	27P	120P	27P	56P	3P	3P	3P	6.8K
X61-1340-11(35-44MHz)	82P	47P	18P	100P	18P	47P	3P	3P	3P	8.2K
X61-1340-12(40-50MHz)	39P	27P	15P	56P	15P	27P	3P	3P	3P	12K

— Signal line  
— Common DC line  
● Adjusting points

\* 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.

## PARTS LIST

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
<b>TX-RX UNIT (X61-1330-XX)</b>						
C201			CK45B1H102K	CERAMIC 1000PF K		
C202, 203			C91-0131-05	CERAMIC 0.01UF K		
C204			C91-1030-05	MYLAR 180PF J	K1M1	
C204		*	C91-1040-05	MYLAR 220PF J	K2M2	
C204		*	C91-1041-05	MYLAR 270PF J	K1M1	
C205, 206			C91-0131-05	CERAMIC 0.01UF K		
C207			CC73FSL1H121J	CHIP C 120PF J	K3M3	
C207			CC73FSL1H151J	CHIP C 150PF J	K2M2	
C207			CC73FSL1H181J	CHIP C 180PF J	K1M1	
C208			CC73FSL1H241J	CHIP C 240PF J	K3M3	
C208			CC73FSL1H301J	CHIP C 300PF J	K2M2	
C208			CC73FSL1H331J	CHIP C 330PF J	K1M1	
C209			CK45F1H103Z	CERAMIC 0.010UF Z		
C210		*	C91-1056-05	CHIP C 4700PF K		
C211			CE04W1E220M	ELECTRN 22UF 25WV		
C212			CM73F2H101J	CHIP C 100PF J	K2M2	
C212			CM73F2H151J	CHIP C 150PF J	K3M3	
C212			CM73F2H181J	CHIP C 180PF J	K1M1	
C213			CM73F2H121J	CHIP C 120PF J	K2M2	
C213			CM73F2H221J	CHIP C 220PF J	K3M3	
C214		*	C91-1056-05	CHIP C 4700PF K		
C215			C90-0870-05	ELECTRN 220UF 25WV		
C216			C91-0131-05	CERAMIC 0.01UF K		
C217			C90-0870-05	ELECTRN 220UF 25WV		
C218			CM73F2H181J	CHIP C 180PF J	K3M3	
C218			CM73F2H471J	CHIP C 470PF J	K2M2	
C218			CM73F2H681J	CHIP C 680PF J	K1M1	
C219			CC45CH1H030C	CERAMIC 3.0PF C		
C220		*	C91-1056-05	CHIP C 4700PF K		
C221			CC45CH1H030C	CERAMIC 3.0PF C		
C222			CC45CH1H150J	CERAMIC 15PF J		
C223			C91-0131-05	CERAMIC 0.01UF K		
C224		*	C91-1056-05	CHIP C 4700PF K		
C225			CM73F2H620J	CHIP C 62PF J	K3M3	
C225			CM73F2H750J	CHIP C 75PF J	K2M2	
C225			CM73F2H820J	CHIP C 82PF J	K1M1	
C226			CM73F2H050C	CHIP C 5.0PF C	K3M3	
C226			CM73F2H060D	CHIP C 6.0PF D	K2M2	
C226			CM73F2H080D	CHIP C 8.0PF D	K1M1	
C227			CM73F2H101J	CHIP C 100PF J	K3M3	
C227			CM73F2H121J	CHIP C 120PF J	K2M2	
C227			CM73F2H151J	CHIP C 150PF J	K1M1	
C228			CM73F2H120J	CHIP C 12PF J	K3M3	
C228			CM73F2H180J	CHIP C 18PF J	K2M2	
C228			CM73F2H220J	CHIP C 22PF J	K1M1	
C229			CM73F2H101J	CHIP C 100PF J	K2M2	
C229			CM73F2H121J	CHIP C 120PF J	K1M1	
C229			CM73F2H910J	CHIP C 91PF J	K3M3	
C230			CM73F2H300J	CHIP C 30PF J	K3M3	
C230			CM73F2H390J	CHIP C 39PF J	K2M2	
C230			CM73F2H510J	CHIP C 51PF J	K1M1	
C231			CM73F2H470J	CHIP C 47PF J	K3M3	
C231			CM73F2H510J	CHIP C 51PF J	K2M2	

K1, M1 : X61-1330-10 (29.7-37MHz)

K2, M2 : X61-1330-11 (35-44MHz)

K3, M3 : X61-1330-12 (40-50MHz)

K : USA MARKET

M : OTHERS

# TK-601S

× New Parts

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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
C231			CM73F2H620J	CHIP C 62PF J	K1M1	
C232			CE04W1H010M	ELECTRO 1.0UF 50WV		
C233-239			C91-0131-05	CERAMIC 0.01UF K		
C240			CK45B1H102K	CERAMIC 1000PF K		
C241		*	C91-1045-05	MYLAR 68PF J		
C242		*	C91-1047-05	MYLAR 82PF J		
C243			C91-1027-05	MYLAR 100PF J		
C244,245			C91-0430-05	MYLAR 0.047UF K		
C246		*	C91-1049-05	MYLAR 120PF J		
C247			CC45CH1H300J	CERAMIC 30PF J		
C248,249			C91-0430-05	MYLAR 0.047UF K		
C250			C91-0131-05	CERAMIC 0.01UF K		
C251		*	C91-1049-05	MYLAR 120PF J		
C252			CC45CH1H330J	CERAMIC 33PF J		
C253			CS15E1VR22M	TANTAL 0.22UF 35WV		
C254			C91-0131-05	CERAMIC 0.01UF K		
C255			CK45B1H471K	CERAMIC 470PF K		
C256			CS15E1C3R3M	TANTAL 3.3UF 16WV		
C257			C91-0422-05	MYLAR 0.01UF K		
C258			C91-0131-05	CERAMIC 0.01UF K		
C260			C91-1029-05	MYLAR 150PF J	K3M3	
C260		*	C91-1040-05	MYLAR 220PF J		K2M2
C260		*	C91-1041-05	MYLAR 270PF J		K1M1
C262		*	C91-1044-05	MYLAR 56PF J		K2M2
C262		*	C91-1047-05	MYLAR 82PF J		K1M1
C262		*	C91-1061-05	MYLAR 43PF J	K3M3	
C263			CC45CH1H030C	CERAMIC 3.0PF C	K3M3	
C263			CC45CH1H040C	CERAMIC 4.0PF C	K2M2	
C263			CC45CH1H050C	CERAMIC 5.0PF C	K1M1	
C264			C91-1029-05	MYLAR 150PF J	K3M3	
C264		*	C91-1040-05	MYLAR 220PF J	K2M2	
C264		*	C91-1041-05	MYLAR 270PF J		
C266		*	C91-1044-05	MYLAR 56PF J		
C266		*	C91-1047-05	MYLAR 82PF J		
C266		*	C91-1061-05	MYLAR 43PF J		
C268			C91-0131-05	CERAMIC 0.01UF K		
C269			CC45RH1H270J	CERAMIC 27PF J		
C270			CC45RH1H120J	CERAMIC 12PF J		
C270			CC45RH1H300J	CERAMIC 30PF J		
C271			CC45CH1H020C	CERAMIC 2.0PF C		
C271			CC45CH1H020C	CERAMIC 2.0PF C		
C271			CC45CH1H040C	CERAMIC 4.0PF C		
C272			C91-1029-05	MYLAR 150PF J		
C272		*	C91-1040-05	MYLAR 220PF J		
C272		*	C91-1041-05	MYLAR 270PF J		
C274		*	C91-1044-05	MYLAR 56PF J	K2M2	
C274		*	C91-1047-05	MYLAR 82PF J		
C274		*	C91-1061-05	MYLAR 43PF J		
C276		*	C91-1041-05	MYLAR 270PF J		
C277			CC45CH1H300J	CERAMIC 30PF J		
C278,279			C91-1026-05	MYLAR 82PF J		
C280			C91-0131-05	CERAMIC 0.01UF K		
C281			C91-0431-05	MYLAR 0.1UF K		
C282			CK45B1H102K	CERAMIC 1000PF K		
C283			C91-0131-05	CERAMIC 0.01UF K		

K1, M1 : X61-1330-10 (29.7-37MHz)

K2, M2 : X61-1330-11 (35-44MHz)

K3, M3 : X61-1330-12 (40-50MHz)

K : USA MARKET

M : OTHERS



\* New Parts

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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
C284			CK45B1H102K	CERAMIC 1000PF K		
C285			C91-1023-05	MYLAR 47PF J		
C286			C91-1028-05	MYLAR 120PF J		
C287, 288			C91-0431-05	MYLAR 0.1UF K		
C289			CQ92M1H473K	MYLAR 0.047UF K		
C290			CE04W1E220M	ELECTR0 22UF 25WV		
C291			C91-0131-05	CERAMIC 0.01UF K		
C292			CS15E1VR47M	TANTAL 0.47UF 35WV		
C293			CQ92M1H102K	MYLAR 1000PF K		
C294			CQ92M1H103K	MYLAR 0.010UF K		
C295, 296			CQ92M1H102K	MYLAR 1000PF K		
C297			CQ92M1H472K	MYLAR 4700PF K		
C298, 299			CS15E1C100M	TANTAL 10UF 16WV		
C301			CQ92M1H103K	MYLAR 0.010UF K		
C302			CE04W1C100M	ELECTR0 10UF 16WV		
C303			CE04W1A470M	ELECTR0 47UF 10WV		
C304			CQ92M1H102K	MYLAR 1000PF K		
C305			CQ92M1H103K	MYLAR 0.010UF K		
C306, 307			CE04W1A470M	ELECTR0 47UF 10WV		
C308			CS15E1E010M	TANTAL 1.0UF 25WV		
C309			CS15E1VR47M	TANTAL 0.47UF 35WV		
C310, 311			C91-0131-05	CERAMIC 0.01UF K		
C312			CE04W1E100M	ELECTR0 10UF 25WV		
C313			C91-0131-05	CERAMIC 0.01UF K		
C314			CQ92M1H102K	MYLAR 1000PF K		
C315			CE04W1A470M	ELECTR0 47UF 10WV		
C316			CQ92M1H273K	MYLAR 0.027UF K		
C317		*	C90-2030-05	ELECTR0 1000UF 10WV		
C318			CE04W1A470M	ELECTR0 47UF 10WV		
C319			CQ92M1H104K	MYLAR 0.10UF K		
C320			C90-0818-05	ELECTR0 470UF 25WV		
C321			CK45B1H102K	CERAMIC 1000PF K		
C322			C91-0131-05	CERAMIC 0.01UF K		
C323			CE04W1C330M	ELECTR0 33UF 16WV		
C324			C91-0131-05	CERAMIC 0.01UF K		
C325			CE04W1A470M	ELECTR0 47UF 10WV		
C326			C91-0131-05	CERAMIC 0.01UF K		
C327			CQ92M1H103K	MYLAR 0.010UF K		
C328			CE04W1A101M	ELECTR0 100UF 10WV		
C329			CS15E1A100M	TANTAL 10UF 10WV		
C330			CE04W1A470M	ELECTR0 47UF 10WV		
C331			C91-0131-05	CERAMIC 0.01UF K		
C332			CE04W1A470M	ELECTR0 47UF 10WV		
C333			CE04W1A101M	ELECTR0 100UF 10WV		
C334			CS15E1E010M	TANTAL 1.0UF 25WV		
C334			C90-0818-05	ELECTR0 470UF 25WV		
C335			C91-0131-05	CERAMIC 0.01UF K		
C336, 337			CS15E1VR47M	TANTAL 0.47UF 35WV		
C338			CE04W1H3R3M	ELECTR0 3.3UF 50WV		
C339			CE04W1A470M	ELECTR0 47UF 10WV		
C340			C91-0131-05	CERAMIC 0.01UF K		
C341			CE04W1C330M	ELECTR0 33UF 16WV		
C342			C91-0131-05	CERAMIC 0.01UF K		
C343			CE04W1A470M	ELECTR0 47UF 10WV		
C344			C90-0818-05	ELECTR0 470UF 25WV		

K1, M1 : X61-1330-10 (29.7-37MHz)

K2, M2 : X61-1330-11 (35-44MHz)

K3, M3 : X61-1330-12 (40-50MHz)

K : USA MARKET

M : OTHERS

# TK-601S

\* New Parts

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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
C345			CE04W1A470M	ELECTRO 47UF 10WV		
C346		*	C91-1043-05	MYLAR 51PF J	K2M2	
C346		*	C91-1046-05	MYLAR 75PF J	K1M1	
C346		*	C91-1060-05	MYLAR 36PF J	K3M3	
C347			CK45B1H102K	CERAMIC 1000PF K		
C348			CE04W1A101M	ELECTRO 100UF 10WV		
C349			C91-1028-05	MYLAR 120PF J	K3M3	
C349			C91-1029-05	MYLAR 150PF J	K2M2	
C349			C91-1030-05	MYLAR 180PF J	K1M1	
C350			C91-0131-05	CERAMIC 0.01UF K		
C391-393		*	C05-0336-05	TRIMMING CAP (300P)		
J201,202			E04-0159-05	RF COAXIAL CABLE JACK		
J203			E40-5061-05	PIN CONNECTOR (16P)		
J204,205			E40-0373-05	PIN CONNECTOR (3P)		
J206			E40-0573-05	PIN CONNECTOR (5P)		
J207			E40-0273-05	PIN CONNECTOR (2P)		
J208			E23-0430-05	TERMINAL (ROUND)		
J209			E40-5060-05	PIN CONNECTOR (4P)		
J211			E04-0154-05	RF COAXIAL CABLE JACK		
P210		*	E31-3147-05	CONNECTING WIRE (SPEAKER)		
TP201-203			E23-0435-05	TERMINAL (ROUND)		
-			F11-0844-05	SHIELDING COVER (L227,228,231,2	32)	
L201			L34-0452-05	COIL (AIR,3MM DIA,6T)		
L202			L40-3382-14	SMALL FIXED INDUCTOR (0.33UH)		
L203			L40-4791-14	SMALL FIXED INDUCTOR (4.7UH)		
L204			L34-1088-05	COIL (AIR,4MM DIA,10T)		
L205		*	L34-1145-05	COIL (AIR,3MM DIA,5T)		
L206			L33-0666-05	CHOKER COIL		
L207		*	L33-0687-05	CHOKER COIL (0.8UEW,100,1W-6T)		
L208		*	L34-1146-05	COIL (AIR,6MM DIA,2T)	K1M1	
L208		*	L34-1146-05	COIL (AIR,6MM DIA,2T)	K2M2	
L208			L34-1148-05	COIL (AIR,6MM DIA,1T)		
L209			L34-0499-05	COIL (AIR,3MM DIA,4T)		
L210		*	L34-1134-05	COIL (AIR,5MM DIA,5T)		
L211		*	L34-1147-05	COIL (AIR,4MM DIA,7T)		
L212		*	L34-1148-05	COIL (AIR,6MM DIA,1T)		
L213		*	L34-1146-05	COIL (AIR,6MM DIA,2T)	K3M3	
L213		*	L34-1149-05	COIL (AIR,6MM DIA,3T)	K1M1	
L213		*	L34-1149-05	COIL (AIR,6MM DIA,3T)	K2M2	
L214		*	L19-0360-05	TOROIDAL TRANSFORMER		
L215			L40-2282-14	SMALL FIXED INDUCTOR (0.22UH)		
L216,217			L40-2211-03	SMALL FIXED INDUCTOR (220UH)		
L218,219		*	L34-1150-05	COIL (AIR,6MM DIA,8T)		
L220		*	L34-1151-05	COIL (AIR,6MM DIA,6T)		
L221			L40-1001-14	SMALL FIXED INDUCTOR (10UH)		
L222-224		*	L34-2263-05	COIL (TUNING,NB)		
L225			L33-0688-05	CHOKER COIL (15MH)		
L226			L40-1001-14	SMALL FIXED INDUCTOR (10UH)		
L227,228		*	L34-2258-05	COIL (TUNING,7.5T)		
L229,230			L40-1001-14	SMALL FIXED INDUCTOR (10UH)		
L231,232		*	L34-2258-05	COIL (TUNING,7.5T)		
L233,234			L19-0359-05	TOROIDAL TRANSFORMER		
L235		*	L30-0534-05	IFT		

K1, M1 : X61-1330-10 (29.7-37MHz)

K2, M2 : X61-1330-11 (35-44MHz)

K3, M3 : X61-1330-12 (40-50MHz)

K : USA MARKET

M : OTHERS

× New Parts

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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
L236 L237,238 L239,240 L241 L242		*	L40-2282-14 L40-4701-14 L30-0502-05 L30-0534-05 L40-2701-14	SMALL FIXED INDUCTOR (0.22UH) SMALL FIXED INDUCTOR (47UH) IFT IFT SMALL FIXED INDUCTOR (27UH)		
L243 L244 L245 L246 L247,248			L30-0503-05 L15-0016-05 L40-1011-14 L92-0110-05 L40-6882-14	IFT HASH CHOKE SMALL FIXED INDUCTOR (100UH) FERRITE CORE SMALL FIXED INDUCTOR (0.68UH)		
L249 Y201 Z201 Z202 Z203		*	L92-0110-05 L77-1294-05 L79-0676-05 L71-0257-05 L72-0339-05	FERRITE CORE CRYSTAL RESONATOR(11.155MHZ) FILTER (LOW PASS) CRYSTAL FILTER (MCF,10F15C) CERAMIC FILTER (CFV455D)		
R201 R202 R203 R204 R205			RD14BB2C271J RD14BB2C180J RD14BB2C271J RD14BB2C222J RD14BB2C103J	RD 270 J 1/6W RD 18 J 1/6W RD 270 J 1/6W RD 2.2K J 1/6W RD 10K J 1/6W		
R206 R207 R208,209 R210-212 R213			RD14BB2C220J RD14BB2C330J RD14BB2C680J RD14BB2C102J RS14AB3A100J	RD 22 J 1/6W RD 33 J 1/6W RD 68 J 1/6W RD 1.0K J 1/6W FL-PROOF RS 10 J 1W		
R214 R214 R215 R215 R215			RD14BB2E220J RD14CB2E103J RS14AB3A470J RS14AB3A820J RS14AB3A820J	RD 22 J 1/4W RD 10K J 1/4W FL-PROOF RS 47 J 1W FL-PROOF RS 82 J 1W FL-PROOF RS 82 J 1W		K1M1 K2M2 K3M3
R216 R217 R218 R219 R220			RS14AB3D6R8J RD14BB2C103J RD14BB2C101J RD14CB2C470J RS14AB3A151J	FL-PROOF RS 6.8 J 2W RD 10K J 1/6W RD 100 J 1/6W RD 47 J 1/6W FL-PROOF RS 150 J 1W		
R221 R222 R223 R224 R225			RD14BB2C472J RS14AB3A151J RD14CB2C100J RD14CB2C222J RD14BB2C153J	RD 4.7K J 1/6W FL-PROOF RS 150 J 1W RD 10 J 1/6W RD 2.2K J 1/6W RD 15K J 1/6W		
R226 R227 R228 R229,230 R231			RD14BB2C123J RD14BB2C221J RD14CB2C102J RD14CB2C103J RD14CB2C223J	RD 12K J 1/6W RD 220 J 1/6W RD 1.0K J 1/6W RD 10K J 1/6W RD 22K J 1/6W		
R232 R233 R234 R235 R236			RD14CB2C471J RD14BB2C101J RD14CB2C103J RD14CB2C223J RD14CB2C271J	RD 470 J 1/6W RD 100 J 1/6W RD 10K J 1/6W RD 22K J 1/6W RD 270 J 1/6W		
R237 R238 R239 R240 R241			RD14BB2C101J RD14CB2C682J RD14BB2C333J RD14CB2C103J RD14CB2C153J	RD 100 J 1/6W RD 6.8K J 1/6W RD 33K J 1/6W RD 10K J 1/6W RD 15K J 1/6W		

K1, M1 : X61-1330-10 (29.7-37MHz)  
K2, M2 : X61-1330-11 (35-44MHz)  
K3, M3 : X61-1330-12 (40-50MHz)

K : USA MARKET  
M : OTHERS

× New Parts

Parts without Parts No. are not supplied.

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

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
R242			RD14CB2C221J	RD 220 J 1/6W		
R243			RD14CB2C222J	RD 2.2K J 1/6W		
R244			RD14CB2C330J	RD 33 J 1/6W		
R245			RD14BB2C102J	RD 1.0K J 1/6W		
R246			RD14CB2C271J	RD 270 J 1/6W		
R247			RD14CB2C180J	RD 18 J 1/6W		
R248			RD14CB2C271J	RD 270 J 1/6W		
R249			RD14CB2C560J	RD 56 J 1/6W		
R250			RD14CB2C330J	RD 33 J 1/6W		
R251			RD14CB2C102J	RD 1.0K J 1/6W		
R252			RD14CB2C472J	RD 4.7K J 1/6W		
R253			RD14BB2C473J	RD 47K J 1/6W		
R254			RD14CB2C332J	RD 3.3K J 1/6W		
R255			RD14CB2C681J	RD 680 J 1/6W		
R256			RD14CB2C221J	RD 220 J 1/6W		
R257			RD14CB2C183J	RD 18K J 1/6W		
R258-260			RD14CB2C103J	RD 10K J 1/6W		
R261			RD14CB2C332J	RD 3.3K J 1/6W		
R262			RD14CB2C394J	RD 390K J 1/6W		
R263			RD14CB2C103J	RD 10K J 1/6W		
R264			RD14CB2C152J	RD 1.5K J 1/6W		
R265			RD14CB2C332J	RD 3.3K J 1/6W		
R266			RD14CB2C562J	RD 5.6K J 1/6W		
R267			RD14CB2C102J	RD 1.0K J 1/6W		
R268			RD14CB2C394J	RD 390K J 1/6W		
R269			RD14CB2C102J	RD 1.0K J 1/6W		
R270			RD14CB2C471J	RD 470 J 1/6W		
R271			RD14CB2C332J	RD 3.3K J 1/6W		
R272			RD14CB2C394J	RD 390K J 1/6W		
R273			RD14CB2C102J	RD 1.0K J 1/6W		
R274			RD14CB2C471J	RD 470 J 1/6W		
R275			RD14CB2C332J	RD 3.3K J 1/6W		
R276			RD14CB2C472J	RD 4.7K J 1/6W		
R277			RD14CB2C332J	RD 3.3K J 1/6W		
R278			RD14BB2C272J	RD 2.7K J 1/6W		
R279			RD14CB2C221J	RD 220 J 1/6W		
R280			RD14CB2C2R2J	RD 2.2 J 1/6W		
R281			RD14CB2C102J	RD 1.0K J 1/6W		
R282, 283			RD14CB2C332J	RD 3.3K J 1/6W		
R284, 285			RD14CB2C102J	RD 1.0K J 1/6W		
R286			RD14CB2C272J	RD 2.7K J 1/6W		
R287			RD14CB2C102J	RD 1.0K J 1/6W		
R288			RD14CB2C273J	RD 27K J 1/6W		
R289			RD14CB2C472J	RD 4.7K J 1/6W		
R290, 291			RD14CB2C103J	RD 10K J 1/6W		
R292			RD14CB2C473J	RD 47K J 1/6W		
R293			RD14CB2C103J	RD 10K J 1/6W		
R294			RD14CB2E225J	RD 2.2M J 1/4W		
R295			RD14CB2C103J	RD 10K J 1/6W		
R296			RD14CB2C221J	RD 220 J 1/6W		
R297, 298			RD14CB2C103J	RD 10K J 1/6W		
R299			RD14CB2C103J	RD 10K J 1/6W		
R301			RD14CB2E151J	RD 150 J 1/4W		
R302			RD14CB2C333J	RD 33K J 1/6W		
R303			RD14CB2E151J	RD 150 J 1/4W		

K1, M1 : X61-1330-10 (29.7-37MHz)

K2, M2 : X61-1330-11 (35-44MHz)

K3, M3 : X61-1330-12 (40-50MHz)

K : USA MARKET

M : OTHERS

\* 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
R304 R305 R306 R307,308 R351			RD14CB2C103J RD14BB2C333J RD14BB2C103J RD14CB2C473J R12-3413-05	RD 10K J 1/6W RD 33K J 1/6W RD 10K J 1/6W RD 47K J 1/6W TRIMMING PØT. (10KB) APC		
K201 S201,202 S203		*	S51-1427-05 S40-2447-05 S40-2446-05	RELAY PUSH SWITCH (MØNI,NB) PUSH SWITCH (KEY)		
D201,202 D203-205 D207 D208-211 D212			1S1555 1S101 UM9401 SD104AX 1S101	DIØDE DIØDE DIØDE DIØDE DIØDE		
D213,214 D216 D217,218 D219 D220			1S1555 ND487C1-3R 1S1587 1S1555 MTZ6.2JA	DIØDE DIØDE DIØDE DIØDE ZENER DIØDE		
D221,222 D223 D224,225 D226 D227,228			SD104AX MTZ10JC 1S1555 MTZ5.1JB 1S1555	DIØDE DIØDE DIØDE DIØDE ZENER DIØDE DIØDE		
D230 D231-236 D237 D238 Q201			MTZ3.9JB 1S1555 MTZ3.0JA BA282 25C2347	ZENER DIØDE DIØDE ZENER DIØDE DIØDE TRANSISTØR		
Q202 Q203 Q204 Q205 Q206		* * * *	25C2538-22-A 25C1729 25C2904 25B951A(Q) 25C2259(G)	TRANSISTØR TRANSISTØR TRANSISTØR TRANSISTØR TRANSISTØR		
Q207,208 Q209 Q210 Q211 Q212-215			25C2669(Y) 25C2603(E) 25A1015(Y) 25C1815(Y) 25K125-4	TRANSISTØR TRANSISTØR TRANSISTØR TRANSISTØR FET		
Q216 Q217,218 Q219 Q220 Q221,222			25K241(GR)-1 25C1740S(Q) 25B698(E) 25C2603(E) 25C2703(Y)	FET TRANSISTØR TRANSISTØR TRANSISTØR TRANSISTØR		
Q223 Q224 Q225,226 Q227 Q228,229			DTC114ES DTC144WS 25C1740S(E) DTC114ES 25C3327	DIGITAL TRANSISTØR DIGITAL TRANSISTØR TRANSISTØR DIGITAL TRANSISTØR		
U201 U202 U203 U204 U205			MC3361P UPC1242H MB3756 AFB99F1000X3 TC4001BP	IC (FM IF) IC IC (REGULATØR) IC (LPF) IC(NØR X6)		

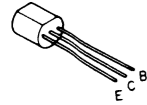
K1, M1 : X61-1330-10 (29.7-37MHz)  
K2, M2 : X61-1330-11 (35-44MHz)  
K3, M3 : X61-1330-12 (40-50MHz)

K : USA MARKET  
M : OTHERS

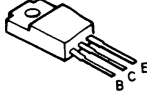
# TK-601S

## TX-RX UNIT PC Board

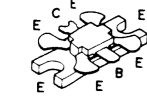
2SA1015 2SC2347  
2SB698 2SC2603  
2SC1815



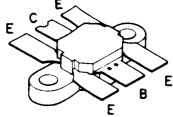
2SB951A(Q)



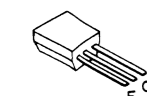
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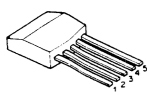
2SC2904



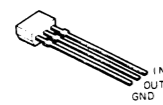
2SC1740  
2SC2669  
2SC3327



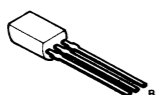
2SC2559G



DTC114EF  
.DTC144WF



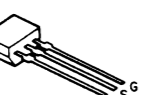
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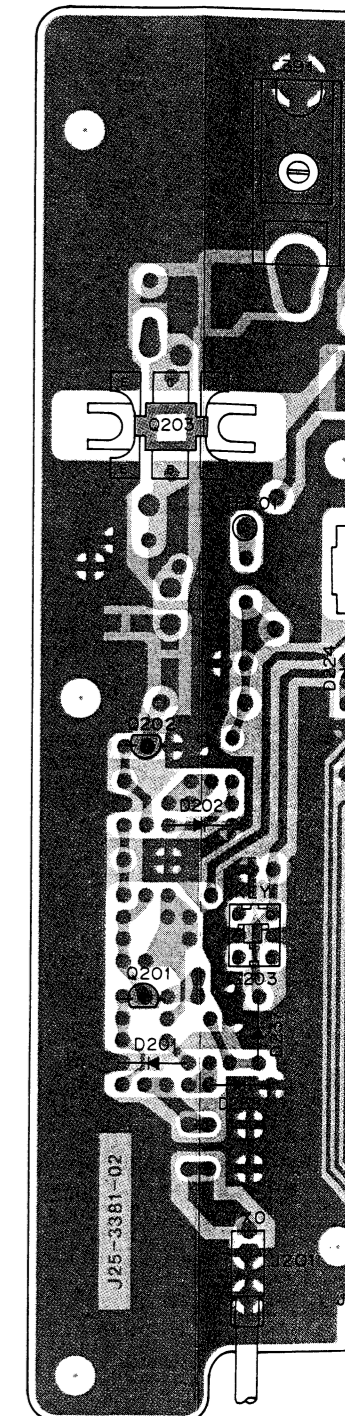
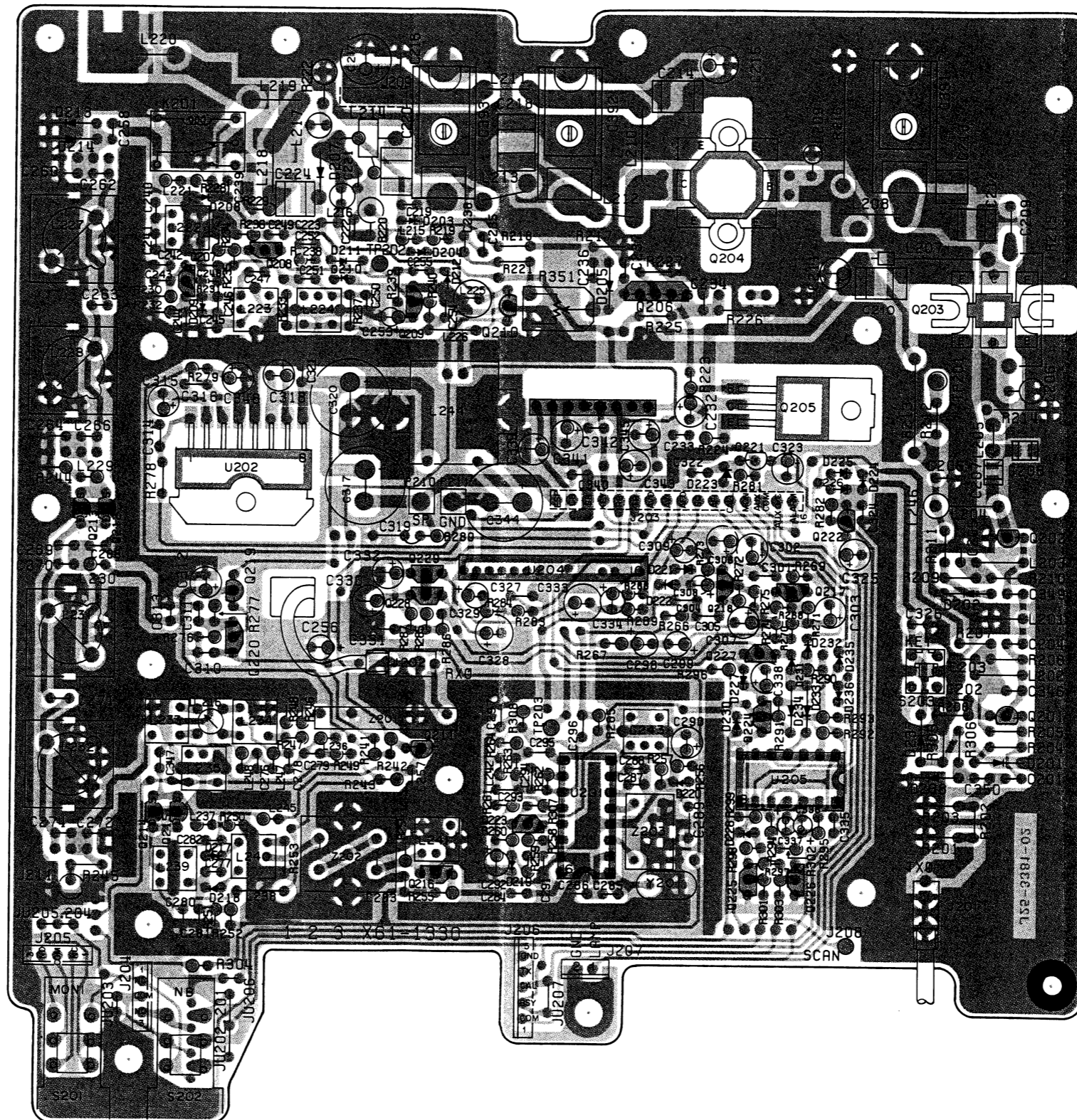
2SK125



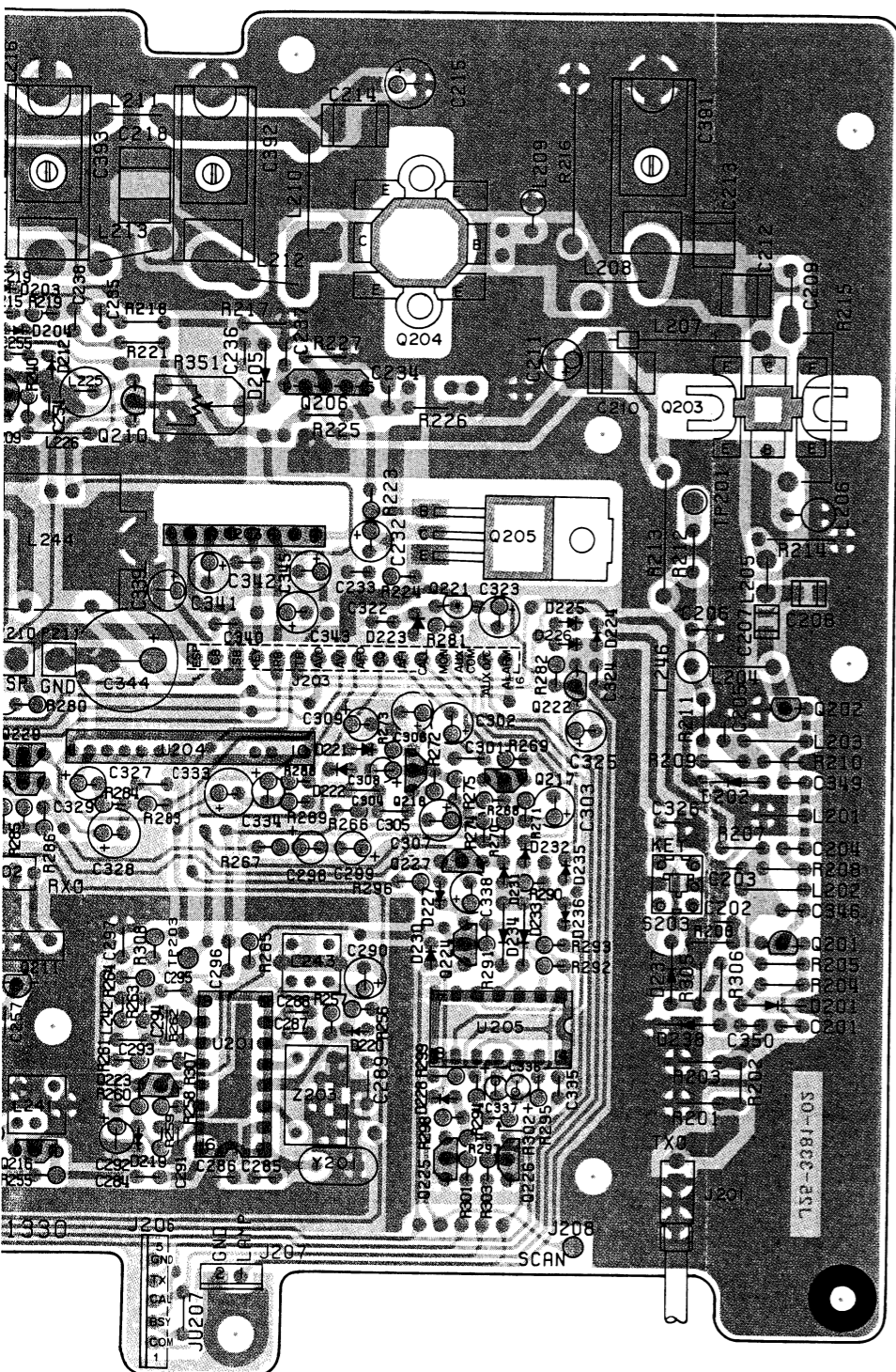
2SK241



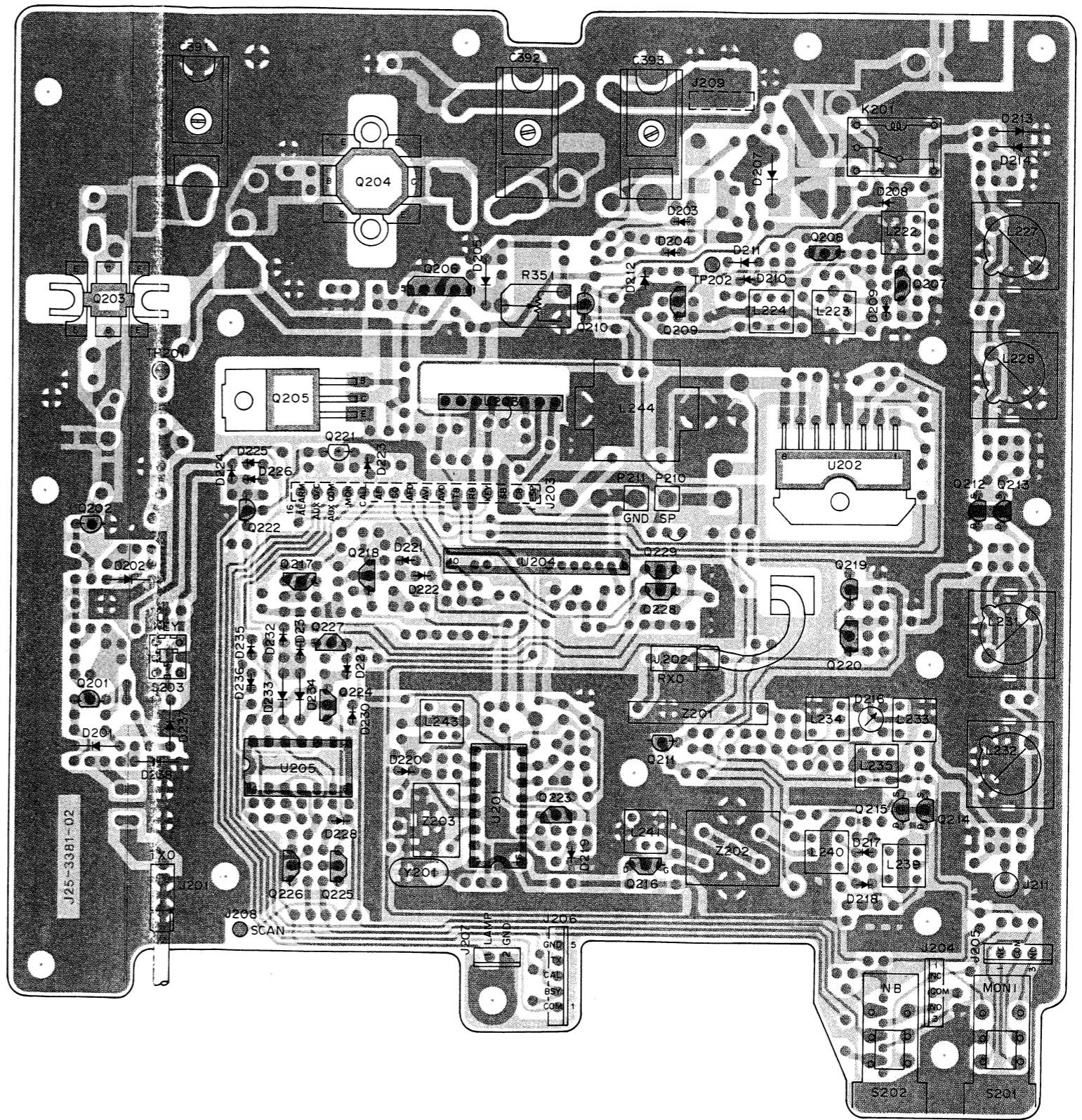
2SC2538-22A



[Component side view]  
 Foil side  
 Component side

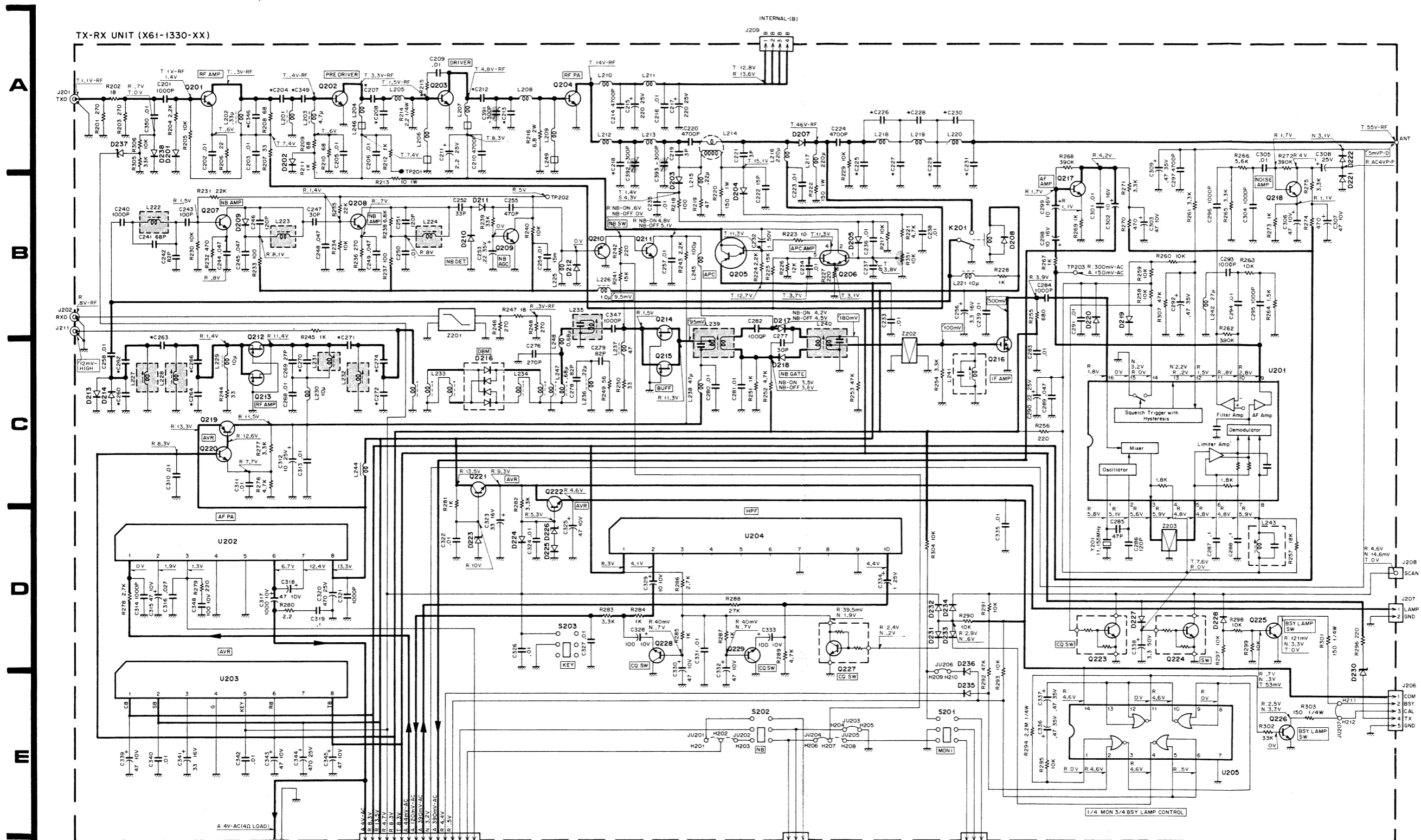


[Component side view]  
 ■ Foil side  
 ■ Component side



[Foil side view]  
 ■ Foil side  
 ■ Component side

TX-RX UNIT  
Schematic Diagram



- |                     |                        |                         |                                       |                  |                                   |
|---------------------|------------------------|-------------------------|---------------------------------------|------------------|-----------------------------------|
| U201 : MC3361P      | Q 201 : 2SC2347        | Q 212-215 : 2SK125-4    | D 201,202,213,214,219,224,225,228,227 | D 226 : MT25.1JB | T : TRANSMIT (P <sub>0</sub> 60W) |
| U202 : μPC1242H     | Q 202 : 2SC2538-22A    | Q 216 : 2SK241(GR)-1    | 231-236 : 1S1555                      | D 230 : MT23.9JB | S : ANTENNA SHORT                 |
| U203 : MB3756       | Q 203 : 2SC1729        | Q 217,218 : 2SC1740S(Q) | D 203-205,212 : 1S5101                | D 237 : MT23.0JB | R : RECEIVE(No IMPORT), SQ OPEN   |
| U204 : AFB99F1000X3 | Q 204 : 2SC2904        | Q 219 : 2SB698(E)       | D 207 : UM9401                        | D 238 : BA282    | N : RECEIVE, NO IMPORT, SQ TIGHT  |
| U205 : TC4001BP     | Q 205 : 2SB951A(O)     | Q 221,222 : 2SC2703(Y)  | D 208-211,221,222                     |                  | A : RECEIVE, 40dBμV 1KHz 60% MOD  |
|                     | Q 206 : 2SC2259G       | Q 223,227 : DTC114EF    |                                       |                  |                                   |
|                     | Q 207,208 : 2SC2669(Y) | Q 224 : DTC144WF        |                                       |                  |                                   |
|                     | Q 209,220 : 2SC2603(E) | Q 225,226 : 2SC1740S(E) |                                       |                  |                                   |
|                     | Q 210 : 2SA1015(Y)     | Q 228,229 : 2SC3327     |                                       |                  |                                   |
|                     | Q 211 : 2SC1615(Y)     |                         |                                       |                  |                                   |

UNIT No.	CR No.	C204	C207	C208	C212	C213	C218	C225	C226	C227	C228	C229	C230	C231	C346	C349
X61-1330-10(29.7-37MHz)		270P	180P	330P	180P	220P	680P	82P	8P	150P	22P	120P	51P	62P	75P	180P
X61-1330-11(35-44MHz)		220P	150P	300P	100P	120P	470P	75P	6P	120P	18P	100P	39P	51P	51P	150P
X61-1330-12(40-50MHz)		180P	120P	240P	150P	220P	180P	62P	5P	100P	12P	91P	30P	47P	36P	120P

UNIT No.	CR No.	C260	C262	C263	C264	C266	C270	C271	C272	C274
X61-1330-10(29.7-37MHz)		270P	82P	5P	270P	82P	30P	4P	270P	82P
X61-1330-11(35-44MHz)		220P	56P	4P	220P	56P	12P	2P	220P	56P
X61-1330-12(40-50MHz)		150P	43P	3P	150P	43P	-	2P	150P	43P

UNIT No.	CR No.	L208	L213	R215
X61-1330-10(29.7-37MHz)		2T	3T	47Ω
X61-1330-11(35-44MHz)		2T	3T	82Ω
X61-1330-12(45-50MHz)		1T	2T	82Ω

— Signal line  
 — Common DC line  
 ● Adjusting points



# TRIO-KENWOOD CORPORATION

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## TRIO-KENWOOD COMMUNICATIONS

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## TRIO-KENWOOD (AUSTRALIA) PTY. LTD. (INCORPORATED IN N.S.W.)

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