UHF FM TRANSCEIVER

TK-860HG/862HG

SERVICE MANUAL

SUPPLEMENT

KENWOOD

B51-8539-00 (N) 1338

This service manual mainly covers TK-860HG K, M and TK-862HG K.
If information you require is missing from this service manual.
Please refer to the B51-8498-10 service manual.

TK-860HG (K)

TK-862HG (K)

CONTENTS

OPERATING FEATURES

Emergency

Pressing this key for longer than 1 second causes the transceiver to enter the emergency mode. The transceiver jumps to the programmed "Emergency the group and channel" and transmits for 25 seconds.

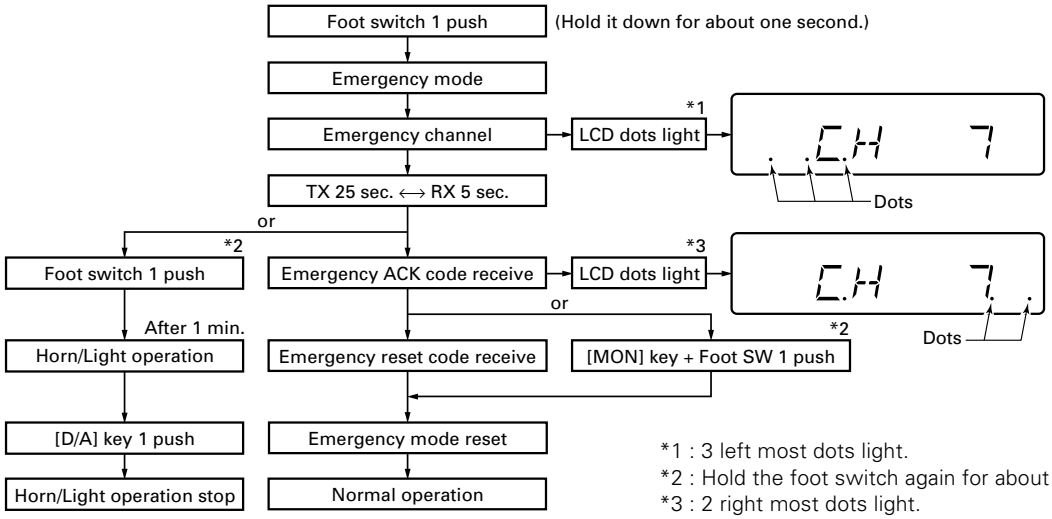
The transceiver disables mic mute while transmitting. After finishing transmission, the transceiver receivers for 5 seconds. The transceiver mutes the speaker while receiving. Following the above sequence, the transceiver continues to transmit and receive.

Radio Password (TK-860HG only)

When the password is set in the transceiver, user can not use the transceiver unless enter the correct password.

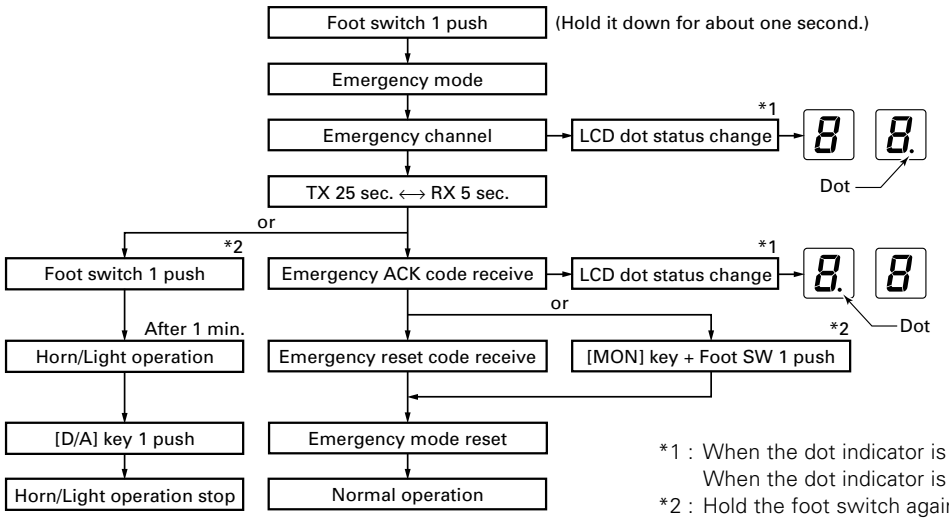
This code can be up to 6 digits from 0 to 9 and input with the key, and "SCN" key.

■ Emergency mode system chart (TK-860HG)



*1 : 3 left most dots light.
*2 : Hold the foot switch again for about one second.
*3 : 2 right most dots light.

■ Emergency mode system chart (TK-862HG)



*1 : When the dot indicator is on, it turns off.
When the dot indicator is off, it turns on.
*2 : Hold the foot switch again for about one second.

REALIGNMENT

Clone Mode

Programming data can be transferred from one radio to another by connecting them via their modular microphone jacks. The operation is as follows (the transmit radio is the master and the receive radio is the slave).

1. Turn the master TK-860HG power ON with the [▼] key held down. If the password is set to the TK-860HG, the TK-860HG displays "CLN LOCK". If the password is not set, the TK-860HG displays "CLONE".
2. When "CLN LOCK" is displayed, only the [CH▲/▼] key and [SCN], and [0] to [9] keys can be accepted. When you enter the correct password, and "CLONE" is displayed, the TK-860HG can be used as the cloning master. The following describes how to enter the password.
3. How to enter the password with the microphone keypad;
   If you press a key while "CLN LOCK" is displayed, the number that was pressed is displayed on the TK-860HG. Each press of the key shifts the display in order to the left. When you enter the password and press the [SCN] key, "CLONE" is displayed if the entered password is correct. If the password is incorrect, "CLN LOCK" is redisplayed.
   How to enter the password with the [CH▲/▼] key;
   If the [CH▲/▼] key is pressed while "CLN LOCK" is displayed, numbers (0 to 9) are displayed flashing. When you press the [SCN] key, the currectly selected number is determined, and the display shifts to the left. If you press the [SCN] key after entering the password in this procedure, "CLONE" is displayed if the entered password is correct. If the password is incorrect, "CLN LOCK" is redisplayed.
4. Power on the slave TK-860HG/862HG.
5. Connect the cloning cable (No. E30-3382-05) to the modular microphone jacks on the master and slave.
6. Press the [SCN] key on the master while the master displays "CLONE". The data of the master is sent to the slave. While the slave is receiving the data, "–PC–" is displayed. When cloning of data is completed, the master displays "END", and the slave automatically operates in the User mode. The slave can then be operated by the same program as the master.
7. The other slave can be continuously cloned. When the [SCN] key on the master is pressed while the master displays "END", the master displays "CLONE". Carry out the operation in step 4 to 6.

Note :

You can clone the programmed data between the transceiver frequency version must be same.

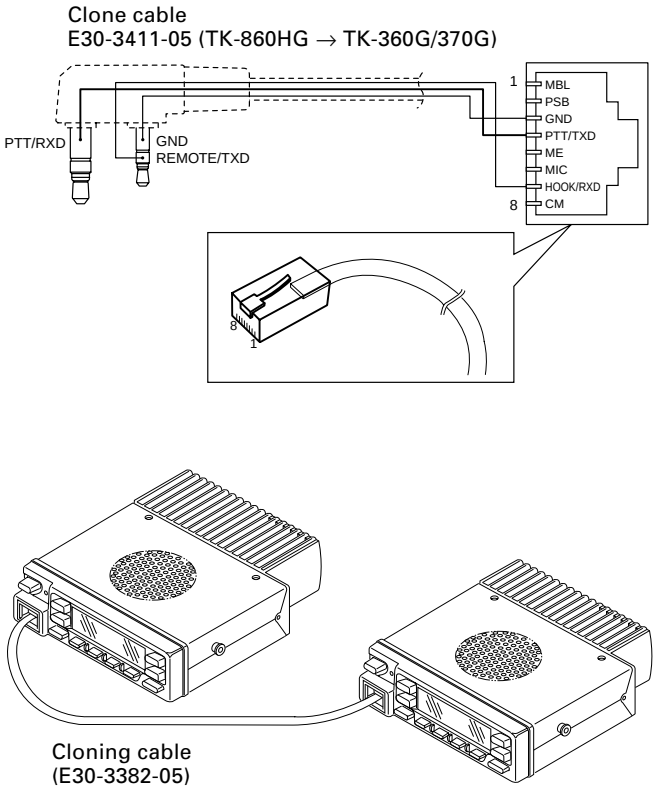


Fig. 1

INSTALLATION

Ignition Sense Cable (KCT-18 : Option)

The KCT-18 is an optional cable for enabling the ignition function. The ignition function lets you turn the power to the transceiver on and off with the car ignition key.

If you use the Horn Alert function or the Manual Relay function, you can turn the function off while driving with the ignition key.

■ Connecting the KCT-18 to the Transceiver

1. Install the KCT-19 in the transceiver.
2. Insert the KCT-18 lead terminal (❷) into pin 3 of the square plug (❶) supplied with the KCT-19, then insert the square plug into the KCT-19 connector (❸).

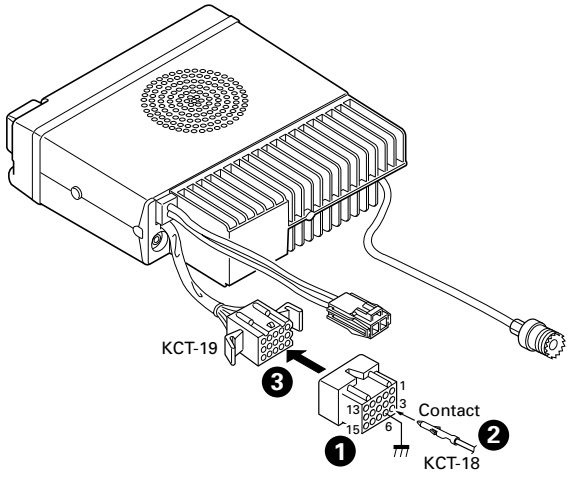


Fig. 1

■ Modifying the Transceiver

Modify the transceiver as follows to turn the power or the Horn Alert or Manual Relay function on and off with the ignition key.

1. Remove the lower half of the transceiver case.
2. Set jumper resistors (0Ω) R134 and R135 of the TX-RX unit (A/2) as shown in Table 1.

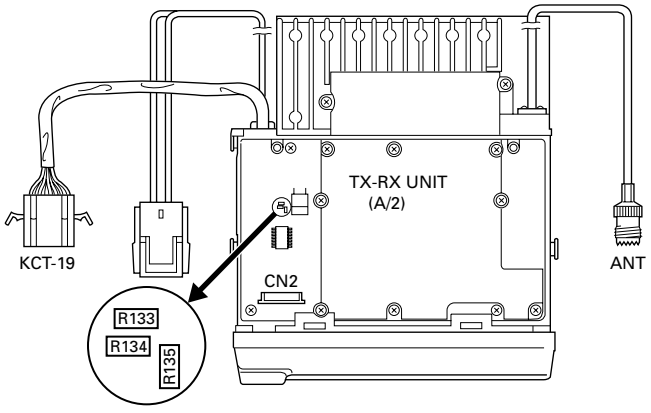


Fig. 2

Operation when KCT-18 is connected	R134	R135	
	Enable	Enable	← **KCT-18 cannot be connected**
Power on/off and Horn Alert or AUX-A on/off	Disable	Enable	
Horn Alert or AUX-A on/off	Enable	Disable	
	Disable	Disable	← **Power cannot be turned on**

Table 1 R134 and R135 setup chart

PA/HA Unit (KAP-1 : Option)

■ Installing the KAP-1 in the Transceiver

The Horn Alert (max. 2A drive) and Public Address functions are enabled by inserting the KAP-1 W1 (3P; white/black/red) into CN3 on the TX-RX unit, inserting W2 (3P; green) into CN7 on the TX-RX unit, and connecting the KCT-19 (option) to CN2 and CN3 of the KAP-1.

- **Installation procedure**

1. Open the upper case of the transceiver.
2. Insert the two cables (❶) with connectors from the KAP-1 switch unit into the connectors on the transceiver.
3. Secure the switch unit board to the chassis with a screw (❸). The notch (❷) in the board must be placed at the front left side.
4. Attach the cushion on the top of the KAP-1 switch unit.

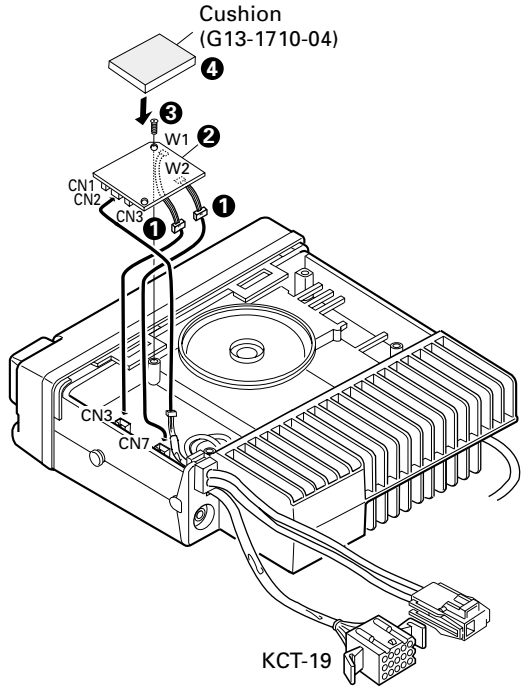


Fig. 3

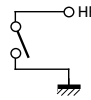
INSTALLATION

■ Modifying the Transceiver

• Horn alert

The signal from pin 4 of IC9 on the TX-RX unit turns Q5 and Q1 on and off and drives KAP-1 HA relay K2 to drive the horn with a maximum of 2A.

The default output is HR1. The relay open output can be obtained between HR1 and HR2 by removing R1 in the KAP-1.

	R1	Output form
HR1 (Default)	Enable	
HR2	Disable	

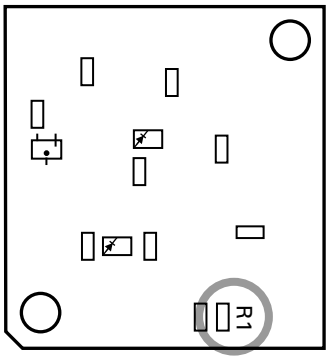


Fig. 4 KAP-1 foil side view

• Public address

The signal from pin 13 of IC9 on the TX-RX unit drives PA relay K1 in the KAP-1 and switches the audio power amplifier output between the external PA system (through KCT-19) and internal and external speakers.

To use the PA function, R153 on the TX-RX unit must be removed.

	R153
Use the PA function	Disable
Do not use the PA function	Enable

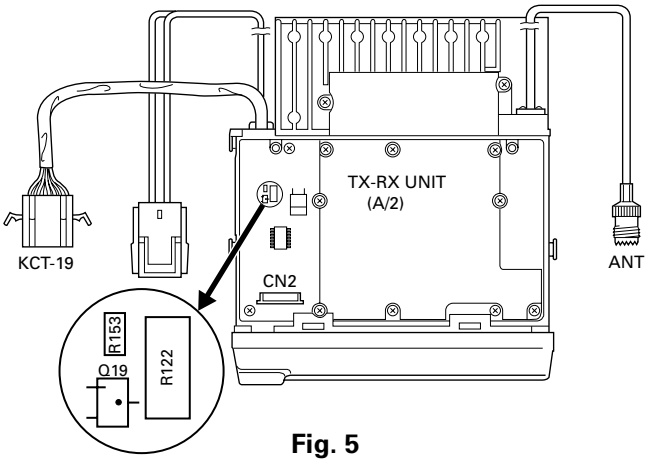


Fig. 5

■ Others

If the PA and HR2 are not necessary and the speaker output is output to an external unit through the KCT-19, connect the KCT-19 C connector to CN8 on the TX-RX unit.

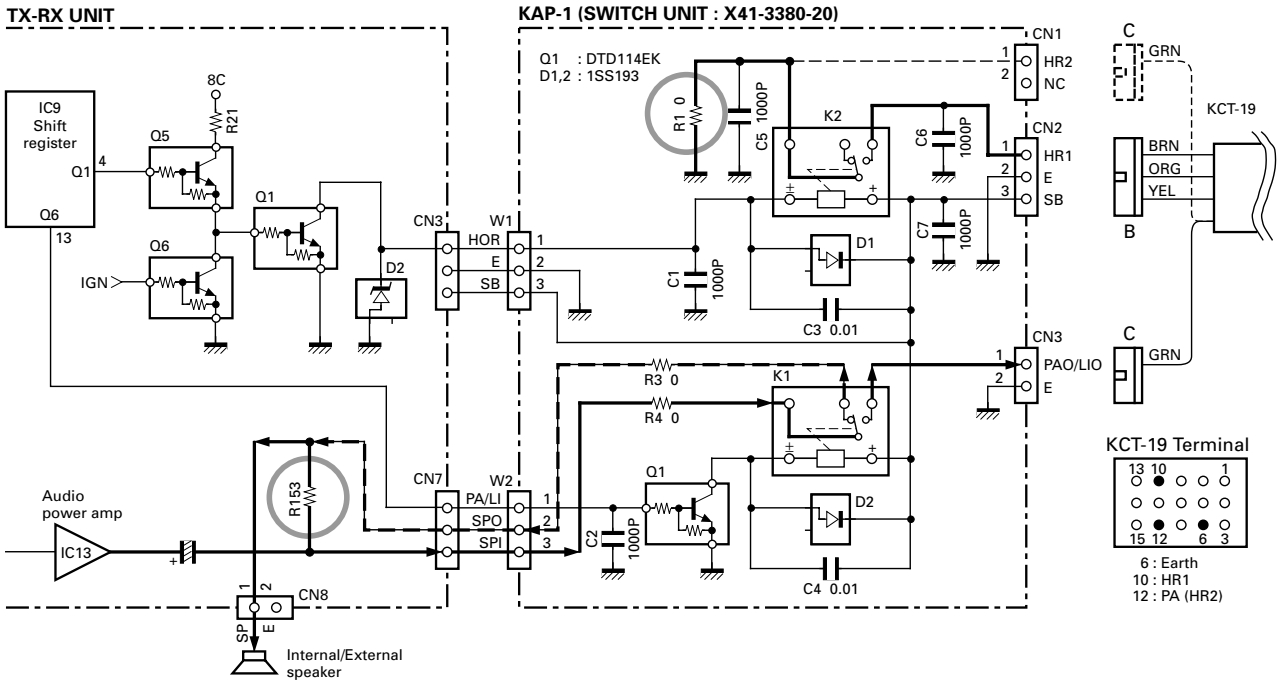


Fig. 6

INSTALLATION

Emergency Mode

■ Transceiver Modification Procedure

- **Install the foot switch**

Install the foot switch through the KCT-19 and KCT-18. When the switch is treaded on, the radio enters the emergency mode.

- **Change the power switch circuit**

TX-RX unit (B/2) : Control section
$R705 : Attach (R92-1252-05, 0Ω)

TX-RX unit (A/2) : RF section
R142 : Remove (RK73GB1J473J, 47kΩ)

Once the transceiver is modified, it cannot be turned on and off with the power switch. The power switch turns the LCD backlight and display on and off. (The power is switched on and off by IGNITION SENSE.)

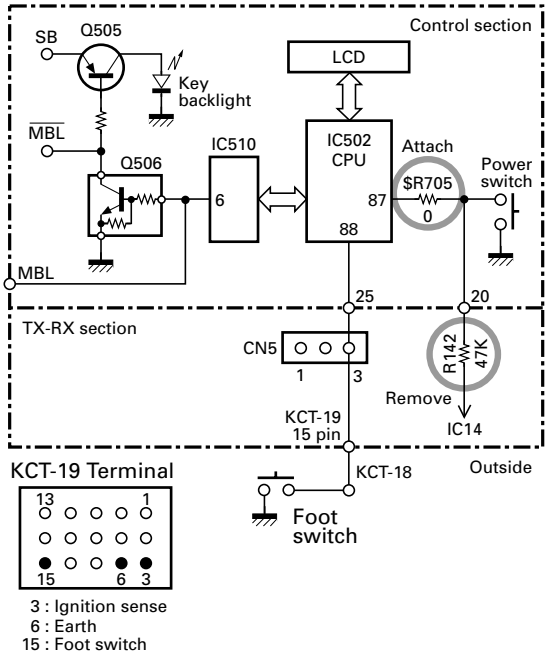


Fig. 7

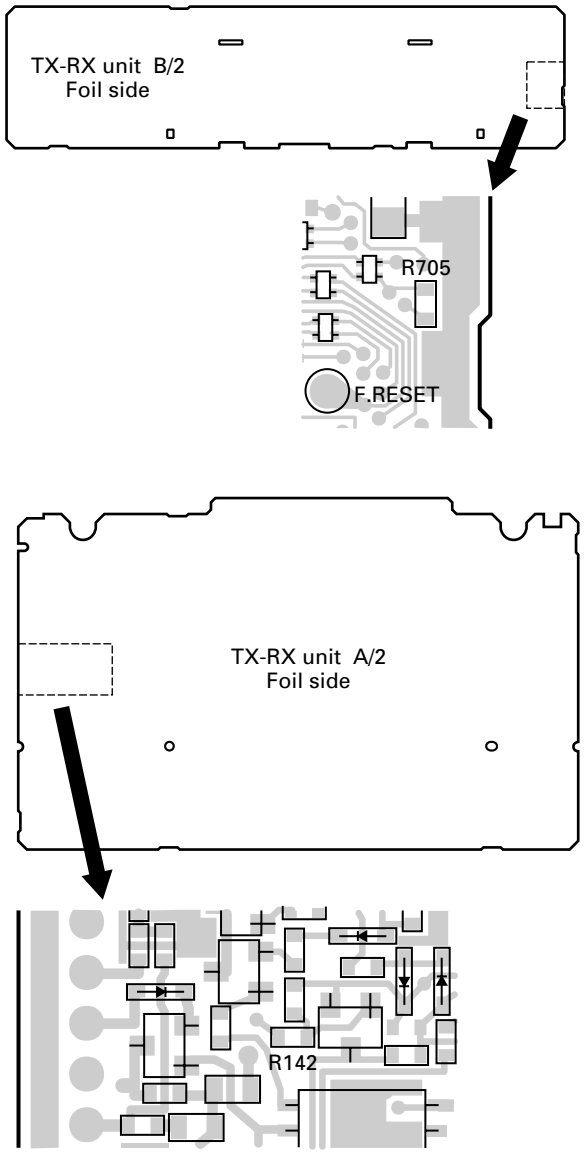


Fig. 8

TK-860HG/862HG

PARTS LIST

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

L: Scandinavia **K**: USA **P**: Canada
Y: PX (Far East, Hawaii) **T**: England **E**: Europe
Y: AAFES (Europe) **X**: Australia **M**: Other Areas

TK-860HG/862HG
DISPLAY UNIT (X54-3270-10) : TK-860HG, DISPLAY UNIT (X54-3280-10) : TK-862HG

Ref. No.	Address	New parts	Parts No.	Description	Destination
TK-860HG/862HG					
1	1B,1E		A01-2165-13	CABINET UPPER	
2	2A,2D		A01-2166-13	CABINET LOWER	
3	2A		A62-0642-03	PANEL ASSY	860
3	2D		A62-0731-03	PANEL ASSY	862
5	1G		B09-0235-05	CAP	
6	2B		B11-1226-03	ILLUMINATION GUIDE	860
6	2E		B11-1230-03	ILLUMINATION GUIDE	862
7	2A		B38-0824-05	LCD	860
7	2E		B38-0825-05	LCD	862
8	2G		B62-1257-20	INSTRUCTION MANUAL	M
8	2G	∗	B62-1258-20	INSTRUCTION MANUAL	K
9	1C		B72-1822-04	MODEL NAME PLATE	860K
9	1C		B72-1823-04	MODEL NAME PLATE	860M
9	1F		B72-1824-04	MODEL NAME PLATE	862
11	2B		E29-1179-04	INTER CONNECTOR	860
11	2E		E29-1183-04	INTER CONNECTOR	862
12	1C,1F		E30-2145-15	ANTENNA CABLE	
13	1G		E30-3339-05	DC CORD ACC	
14	1C,1F		E30-3340-05	DC CORD RADIO	
-	-		E30-3404-05	EXTENSION CABLE	
16	1C,1F		E37-0790-25	LEAD WIRE WITH CONNECTOR (SP)	
17	2B,2E		E37-0815-05	FLAT CABLE	
18	2B,2E		F12-0435-04	CONDUCTIVE SHEET	
19	1G		F51-0017-05	FUSE (6*30)	
21	1C,1F		G02-0791-04	FLAT SPRING AF, APC	
-	-		G02-0841-14	FLAT SPRING	
22	1B,1E		G10-1221-04	FIBROUS SHEET SIDE	
23	1B,1E		G10-1222-14	FIBROUS SHEET UP, DOWN	
24	1A,1D		G10-1223-14	FIBROUS SHEET SHIELD	
25	1C,1F		G13-1468-04	CUSHION DC CORD	
26	1B,1E		G13-1759-04	CUSHION SP	
27	2C,2F		G53-0796-04	PACKING PHONE JACK	
28	2E		G53-0889-04	PACKING DISPLAY UNIT	862
30	3G		H10-6628-02	POLYSTYRENE FOAMED FIXTURE (F)	
31	2H		H10-6629-02	POLYSTYRENE FOAMED FIXTURE (R)	
32	1G		H12-1391-03	INNER PACKING CASE	
33	1H,2H		H25-0720-04	PROTECTION BAG (200X350)	
34	3H		H52-1653-02	ITEM CARTON CASE	
36	2G		J19-1584-05	HOLDER ACC	
37	2A,2D		J21-8382-03	HARDWARE FIXTURE	
38	1G		J29-0627-23	BRACKET	
40	2A		K29-5343-02	KEY TOP	860
40	2D		K29-5344-02	KEY TOP	862
A	2A,2D		N33-2606-45	OVAL HEAD MACHINE SCREW	
B	2C,2F		N67-3008-46	PAN HEAD SEMS SCREW W	
C	2B,2E		N87-2606-46	BRAZIER HEAD TAPTITE SCREW	
D	2B,2E		N87-2612-46	BRAZIER HEAD TAPTITE SCREW	
42	2G		N99-0395-05	SCREW SET	
44	1B,1E		T07-0368-05	SPEAKER	
45	1G		T91-0597-25	MICROPHONE	K

Ref. No.	Address	New parts	Parts No.	Description	Destination
DISPLAY UNIT (X54-3270-10) : TK-860HG					
D802-805			B30-2220-05	LED (2P/YELLOW)	
C801-803			CC73GCH1H101J	CHIP C 100PF J	
C804			CK73GF1A105Z	CHIP C 1.0UF Z	
C805			CK73GB1H102K	CHIP C 1000PF K	
C806,807			CK73GB1H471K	CHIP C 470PF K	
CN801			E40-6020-05	PIN ASSY	
L801			L92-0138-05	FERRITE CHIP	
R801-803			RK73GB1J103J	CHIP R 10K J 1/16W	
R804			RK73GB1J473J	CHIP R 47K J 1/16W	
R805			RK73GB1J474J	CHIP R 470K J 1/16W	
R806			R92-1252-05	CHIP R 0 OHM	
R808			RK73GB1J392J	CHIP R 3.9K J 1/16W	
R809			RK73FB2A270J	CHIP R 27 J 1/10W	
D801			MA2S111	DIODE	
D808			HSB123	DIODE	
IC801			LC75823W	IC (LCD DRIVER)	
Q801			2SB1132(Q,R)	TRANSISTOR	
DISPLAY UNIT (X54-3280-10) : TK-862HG					
D801			B30-2204-05	LED (RED/YELLOW)	
D803			B30-2220-05	LED (2P/YELLOW)	
D804			B30-2204-05	LED (RED/YELLOW)	
C801			CK73GB1H471K	CHIP C 470PF K	
C802-804			CC73GCH1H101J	CHIP C 100PF J	
C805			CK73GF1A105Z	CHIP C 1.0UF Z	
C806			CK73GB1H471K	CHIP C 470PF K	
C807			CK73GB1H102K	CHIP C 1000PF K	
C808			CK73GB1H471K	CHIP C 470PF K	
C812			CK73GB1H471K	CHIP C 470PF K	
CN801			E40-6020-05	PIN ASSY	
L801			L92-0138-05	FERRITE CHIP	
R801,802			RK73GB1J103J	CHIP R 10K J 1/16W	
R803			RK73FB2A123J	CHIP R 12K J 1/10W	
R804			RK73GB1J103J	CHIP R 10K J 1/16W	
R805			RK73FB2A332J	CHIP R 3.3K J 1/10W	
R806			RK73GB1J474J	CHIP R 470K J 1/16W	
R807			R92-1252-05	CHIP R 0 OHM	
R808			RK73GB1J393J	CHIP R 39K J 1/16W	
R809			RK73FB2A123J	CHIP R 12K J 1/10W	
R810			RK73FB2A332J	CHIP R 3.3K J 1/10W	
R812			RK73FB2A561J	CHIP R 560 J 1/10W	
R813-816			RK73GB1J473J	CHIP R 47K J 1/16W	
D802			MA2S111	DIODE	
IC801			LC75833W	IC (LCD DRIVER)	
Q801-803			DTA114EKA	DIGITAL TRANSISTOR	
Q804			KRA225S	DIGITAL TRANSISTOR	
Q805			DTA114EKA	DIGITAL TRANSISTOR	
Q806-809			2SK1824	FET	

TK-860HG : K,M
TK-862HG : K

PARTS LIST

Ref. No.	Address	New parts	Parts No.	Description			Destination
TX-RX UNIT (X57-5960-XX) -15 : TK-860HG -16 : TK-862HG							
D509-514			B30-2050-05	LED			
D521			B30-2151-05	LED (RED/GREEN)			
C1-11			CK73GB1H471K	CHIP C	470PF	K	
C13-19			CK73GB1H471K	CHIP C	470PF	K	
C20			C92-0507-05	CHIP-TAN	4.7UF	6.3WV	
C21			CK73GB1H471K	CHIP C	470PF	K	
C22			CK73GB1C104K	CHIP C	0.10UF	K	
C23,24			C92-0507-05	CHIP-TAN	4.7UF	6.3WV	
C25			CC73GCH1H060D	CHIP C	6.0PF	D	
C26			CK73GB1H471K	CHIP C	470PF	K	
C28			CC73GCH1H060D	CHIP C	6.0PF	D	
C29			C92-0507-05	CHIP-TAN	4.7UF	6.3WV	
C30			CC73GCH1H030C	CHIP C	3.0PF	C	
C31			CK73GB1H102K	CHIP C	1000PF	K	
C32			C92-0662-05	CHIP-TAN	15UF	6.3WV	
C33			CC73GCH1H220J	CHIP C	22PF	J	
C35			CK73GB1C104K	CHIP C	0.10UF	K	
C36			CK73GB1H102K	CHIP C	1000PF	K	
C37			CK73FB1C334K	CHIP C	0.33UF	K	
C40,41			CK73GB1H103K	CHIP C	0.010UF	K	
C43			C92-0507-05	CHIP-TAN	4.7UF	6.3WV	
C44			CK73GB1H331K	CHIP C	330PF	K	
C45			CK73GB1H102K	CHIP C	1000PF	K	
C46			CK73GB1H103K	CHIP C	0.010UF	K	
C47			C92-0561-05	CHIP-ELE	22UF	16WV	
C49			CK73GB1H102K	CHIP C	1000PF	K	
C51			CK73GB1C104K	CHIP C	0.10UF	K	
C52			CC73GCH1H680J	CHIP C	68PF	J	
C53			CK73GB1C104K	CHIP C	0.10UF	K	
C54			CK73GB1H103K	CHIP C	0.010UF	K	
C56			CC73GCH1H220J	CHIP C	22PF	J	
C58			CK73GB1E223K	CHIP C	0.022UF	K	
C60,61			CK73GB1H102K	CHIP C	1000PF	K	
C62			CC73GCH1H101J	CHIP C	100PF	J	
C63			CK73GB1C104K	CHIP C	0.10UF	K	
C64			CK73GB1H103K	CHIP C	0.010UF	K	
C66			CK73GB1H102K	CHIP C	1000PF	K	
C67			CK73GB1H471K	CHIP C	470PF	K	
C68			CC73GCH1H101J	CHIP C	100PF	J	
C69			CK73GB1E223K	CHIP C	0.022UF	K	
C70			C92-0507-05	CHIP-TAN	4.7UF	6.3WV	
C71			CC73GCH1H101J	CHIP C	100PF	J	
C72			C92-0507-05	CHIP-TAN	4.7UF	6.3WV	
C73			CC73GCH1H101J	CHIP C	100PF	J	
C74,75			CK73GB1H471K	CHIP C	470PF	K	
C78			CK73GB1H102K	CHIP C	1000PF	K	
C79,80			CK73GB1H221K	CHIP C	220PF	K	
C81			CK73GB1H471K	CHIP C	470PF	K	
C82			C92-0507-05	CHIP-TAN	4.7UF	6.3WV	
C83			CC73GCH1H270J	CHIP C	27PF	J	
C84			C92-0507-05	CHIP-TAN	4.7UF	6.3WV	
C86			C92-0662-05	CHIP-TAN	15UF	6.3WV	
C87			CC73GCH1H330J	CHIP C	33PF	J	
C88			CK73GB1H103K	CHIP C	0.010UF	K	
C89			CK73GB1H471K	CHIP C	470PF	K	
C91			CC73GCH1H020B	CHIP C	2.0PF	B	
C92			CK73GB1H471K	CHIP C	470PF	K	
C93			C92-0555-05	CHIP-TAN	0.047UF	35WV	
C94-96			CK73GB1H471K	CHIP C	470PF	K	
C97			C92-0546-05	CHIP-TAN	68UF	6.3WV	
C98			CK73GB1H103K	CHIP C	0.010UF	K	
C99			C92-0697-05	CHIP-TAN	3.3UF	16WV	
C100			CC73GCH1H020B	CHIP C	2.0PF	B	
C101			CK73GB1H471K	CHIP C	470PF	K	
C102			CC73GCH1H020B	CHIP C	2.0PF	B	
C103			CK73GB1H471K	CHIP C	470PF	K	
C104			C92-0001-05	CHIP C	0.1UF	35WV	
C105			CK73GB1H471K	CHIP C	470PF	K	
C106			CC73GCH1H180J	CHIP C	18PF	J	
C107			CK73GB1H471K	CHIP C	470PF	K	
C108			CC73GCH1H020B	CHIP C	2.0PF	B	
C109			CK73GB1H471K	CHIP C	470PF	K	
C110			CC73GCH1H090D	CHIP C	9.0PF	D	
C111			CC73GCH1H030C	CHIP C	3.0PF	C	
C112			CK73GB1H471K	CHIP C	470PF	K	
C113			C92-0507-05	CHIP-TAN	4.7UF	6.3WV	
C114			C92-0697-05	CHIP-TAN	3.3UF	16WV	
C115			CK73GB1H471K	CHIP C	470PF	K	
C116			CK73GB1H103K	CHIP C	0.010UF	K	
C117			CK73GB1H102K	CHIP C	1000PF	K	
C118			CK73GB1H471K	CHIP C	470PF	K	
C119			CK73GB1H103K	CHIP C	0.010UF	K	
C120			CC73GCH1H040C	CHIP C	4.0PF	C	
C121			CK73GB1H471K	CHIP C	470PF	K	
C122,123			CK73GB1C104K	CHIP C	0.10UF	K	
C125			C92-0004-05	CHIP-TAN	1.0UF	16WV	
C126			CC73GCH1H120J	CHIP C	12PF	J	
C127			CK73GB1H103K	CHIP C	0.010UF	K	
C128			C92-0543-05	CHIP-TAN	3.3UF	10WV	
C129			CK73FF1C105Z	CHIP C	1.0UF	Z	
C130			CK73GB1H103K	CHIP C	0.010UF	K	
C131			CK73GB1H102K	CHIP C	1000PF	K	
C133			CK73GB1H471K	CHIP C	470PF	K	
C134			CK73FB1E104K	CHIP C	0.10UF	K	
C135			CC73GCH1H180J	CHIP C	18PF	J	
C138			CK73FB1E104K	CHIP C	0.10UF	K	
C139,140			CK73GB1H471K	CHIP C	470PF	K	
C141			C92-0719-05	ELECTRO	47UF	25WV	
C142,143			CK73GB1H471K	CHIP C	470PF	K	
C144			CK73GB1H102K	CHIP C	1000PF	K	
C145			CC73GCH1H090D	CHIP C	9.0PF	D	
C146			CK73GB1H471K	CHIP C	470PF	K	
C148,149			CK73GB1H471K	CHIP C	470PF	K	
C150			CK73FF1C105Z	CHIP C	1.0UF	Z	
C152			CC73GCH1H080D	CHIP C	8.0PF	D	
C153			CC73GCH1H040C	CHIP C	4.0PF	C	
C154			CK73GB1H102K	CHIP C	1000PF	K	
C155			CC73GCH1H060D	CHIP C	6.0PF	D	
C156			CK73GB1H471K	CHIP C	470PF	K	
C157			CK73GB1H102K	CHIP C	1000PF	K	
C158			CK73GB1H471K	CHIP C	470PF	K	
C160,161			C92-0719-05	ELECTRO	47UF	25WV	
C162,163			CK73GB1H471K	CHIP C	470PF	K	
C164			CK73GB1H102K	CHIP C	1000PF	K	
C165			C92-0719-05	ELECTRO	47UF	25WV	
C166			CE04EW1E471M	ELECTRO	470UF	25WV	
C167			CK73GB1H471K	CHIP C	470PF	K	

TK-860HG : K,M
TK-862HG : K

PARTS LIST

TX-RX UNIT (X57-5960-XX)

Ref. No.	Address	New parts	Parts No.	Description			Destination
C168			CC73GCH1H080D	CHIP C	8.0PF	D	
C169			CK73GB1H471K	CHIP C	470PF	K	
C172			CE04EW1E471M	ELECTRO	470UF	25WV	
C173			CK73GB1C104K	CHIP C	0.10UF	K	
C174			CK73GB1H471K	CHIP C	470PF	K	
C175			CC73GCH1H020B	CHIP C	2.0PF	B	
C177			CC73FCH1H220J	CHIP C	22PF	J	
C178			CC73GCH1H080D	CHIP C	8.0PF	D	
C179			CK73GB1H471K	CHIP C	470PF	K	
C181			CK73GB1H471K	CHIP C	470PF	K	
C183			CK73GB1C104K	CHIP C	0.10UF	K	
C185			CK73GB1C104K	CHIP C	0.10UF	K	
C186			CK73GB1H471K	CHIP C	470PF	K	
C187			CC73GCH1H080D	CHIP C	8.0PF	D	
C188			CC73GCH1H040C	CHIP C	4.0PF	C	
C189,190			CK73GB1H471K	CHIP C	470PF	K	
C191			CK73GB1C104K	CHIP C	0.10UF	K	
C192			C92-0719-05	ELECTRO	47UF	25WV	
C195			CK73GB1C104K	CHIP C	0.10UF	K	
C196,197			CK73GB1H471K	CHIP C	470PF	K	
C198			C92-0719-05	ELECTRO	47UF	25WV	
C201			CK73GB1H471K	CHIP C	470PF	K	
C202			CK73GB1C104K	CHIP C	0.10UF	K	
C203			CK73GB1H471K	CHIP C	470PF	K	
C204			C92-0501-05	CHIP-TAN	1.5UF	10WV	
C206			CK73GB1H102K	CHIP C	1000PF	K	
C207			CK73GB1H103K	CHIP C	0.010UF	K	
C208			CC73GCH1H070D	CHIP C	7.0PF	D	
C209			CC73FCH1H050C	CHIP C	5.0PF	C	
C210			CK73GB1H103K	CHIP C	0.010UF	K	
C211			CC73GCH1H180J	CHIP C	18PF	J	
C212			CK73GB1H471K	CHIP C	470PF	K	
C215			CC73FCH1H060D	CHIP C	6.0PF	D	
C216			CC73GCH1H0R5B	CHIP C	0.5PF	B	
C217			CC73GCH1H020B	CHIP C	2.0PF	B	
C218			CK73GB1C104K	CHIP C	0.10UF	K	
C219			CC73FCH1H040C	CHIP C	4.0PF	C	
C220			CK73GB1H471K	CHIP C	470PF	K	
C221			C93-0554-05	CHIP C	4.0PF	C	
C222			CC73GCH1H0R5B	CHIP C	0.5PF	B	
C223			CC73GCH1H020B	CHIP C	2.0PF	B	
C224			CK73GB1H471K	CHIP C	470PF	K	
C225			C93-0603-05	CHIP C	1000PF	K	
C226			C93-0556-05	CHIP C	6.0PF	D	
C227			C93-0558-05	CHIP C	8.0PF	D	
C229			C93-0556-05	CHIP C	6.0PF	D	
C230,231			CK73GB1C104K	CHIP C	0.10UF	K	
C245			CK73GB1C104K	CHIP C	0.10UF	K	
C248			C92-0585-05	CHIP-TAN	4.7UF	16WV	
C250			CK73FF1C105Z	CHIP C	1.0UF	Z	
C254			CK73GB1C104K	CHIP C	0.10UF	K	
C259			CK73GB1C104K	CHIP C	0.10UF	K	
C265			CK73GB1H102K	CHIP C	1000PF	K	
C267			CK73GB1H102K	CHIP C	1000PF	K	
C270			CK73GB1H471K	CHIP C	470PF	K	
C271			CK73GB1H472K	CHIP C	4700PF	K	
C275			CK73GB1H102K	CHIP C	1000PF	K	
C276			C90-2046-05	ELECTRO	22UF	10WV	
C290			C92-0004-05	CHIP-TAN	1.0UF	16WV	
C501			CK73GB1H102K	CHIP C	1000PF	K	

Ref. No.	Address	New parts	Parts No.	Description			Destination
C502			CK73GB1C104K	CHIP C	0.10UF	K	
C503			CK73GB1H471K	CHIP C	470PF	K	
C504			CK73GB1H103K	CHIP C	0.010UF	K	
C505			CK73GB1C104K	CHIP C	0.10UF	K	
C506,507			CK73GB1H103K	CHIP C	0.010UF	K	
C508			CK73GB1H472K	CHIP C	4700PF	K	
C509			C92-0507-05	CHIP-TAN	4.7UF	6.3WV	
C514			CC73GCH1H680J	CHIP C	68PF	J	
C515			CK73GB1H103K	CHIP C	0.010UF	K	
C516			CC73GCH1H270J	CHIP C	27PF	J	
C517			CK73GB1C683K	CHIP C	0.068UF	K	
C518			CC73GCH1H270J	CHIP C	27PF	J	
C519			CK73GB1H102K	CHIP C	1000PF	K	
C520			CK73GB1C104K	CHIP C	0.10UF	K	
C521			CK73GB1H102K	CHIP C	1000PF	K	
C522			C92-0507-05	CHIP-TAN	4.7UF	6.3WV	
C523			CC73GCH1H221J	CHIP C	220PF	J	
C524			CK73GB1H103K	CHIP C	0.010UF	K	
C525			CK73GB1E123K	CHIP C	0.012UF	K	
C526			CK73GB1C683K	CHIP C	0.068UF	K	
C527			CK73GB1H222K	CHIP C	2200PF	K	
C528			CK73GB1H103K	CHIP C	0.010UF	K	
C529			CK73GB1H272K	CHIP C	2700PF	K	
C530			CK73GB1H152K	CHIP C	1500PF	K	
C531			CK73GB1H272K	CHIP C	2700PF	K	
C532,533			CK73GB1C104K	CHIP C	0.10UF	K	
C534,535			CK73GB1H103K	CHIP C	0.010UF	K	
C536,537			CK73GB1C104K	CHIP C	0.10UF	K	
C538			C92-0566-05	CHIP-TAN	10UF	6.3WV	
C539			CK73GB1H103K	CHIP C	0.010UF	K	
C540,541			CK73GB1C104K	CHIP C	0.10UF	K	
C542			CC73GCH1H331J	CHIP C	330PF	J	
C543			CK73GB1H102K	CHIP C	1000PF	K	
C544-546			CK73GB1H562K	CHIP C	5600PF	K	
C547			CC73GCH1H030C	CHIP C	3.0PF	C	
C548-550			CK73GB1H272K	CHIP C	2700PF	K	
C551			CC73GCH1H151J	CHIP C	150PF	J	
C552			CC73GCH1H030C	CHIP C	3.0PF	C	
C553			CK73GB1H102K	CHIP C	1000PF	K	
C554			CK73GB1H122K	CHIP C	1200PF	K	
C555			C92-0566-05	CHIP-TAN	10UF	6.3WV	
C556			CK73GB1C333K	CHIP C	0.033UF	K	
C557			CK73GB1C104K	CHIP C	0.10UF	K	
C558			CC73GCH1H101J	CHIP C	100PF	J	
C559			CK73GB1H102K	CHIP C	1000PF	K	
C560-563			CK73GB1C104K	CHIP C	0.10UF	K	
C564			C92-0507-05	CHIP-TAN	4.7UF	6.3WV	
C565,566			CK73GB1H472K	CHIP C	4700PF	K	
C567			CC73GCH1H101J	CHIP C	100PF	J	
C568			C92-0507-05	CHIP-TAN	4.7UF	6.3WV	
C569			CK73GB1E223K	CHIP C	0.022UF	K	
C570			CK73FF1C105Z	CHIP C	1.0UF	Z	
C571,572			CK73GB1H102K	CHIP C	1000PF	K	
C573			CK73FB1H563K	CHIP C	0.056UF	K	
C574			CC73GCH1H470J	CHIP C	47PF	J	
C575			CK73GB1H102K	CHIP C	1000PF	K	
C576			CK73GB1C104K	CHIP C	0.10UF	K	
C577,578			CK73GB1H103K	CHIP C	0.010UF	K	
C579			CC73GCH1H101J	CHIP C	100PF	J	
C580			CK73GB1C104K	CHIP C	0.10UF	K	

TK-860HG : K,M
TK-862HG : K

PARTS LIST

TX-RX UNIT (X57-5960-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination
C581			CK73GB1H102K	CHIP C 1000PF K	
C582			CK73GB1C473K	CHIP C 0.047UF K	
C583			C92-0566-05	CHIP-TAN 10UF 6.3WV	
C584			CK73GB1H103K	CHIP C 0.010UF K	
C585			CC73GCH1H101J	CHIP C 100PF J	
C587			CK73GB1H103K	CHIP C 0.010UF K	
C589			C92-0606-05	CHIP-TAN 4.7UF 10WV	
C590			CK73GB1H102K	CHIP C 1000PF K	
C594			CK73GB1H102K	CHIP C 1000PF K	
C596			CK73GB1H102K	CHIP C 1000PF K	
C597			CC73GCH1H101J	CHIP C 100PF J	
C598			CK73GB1H102K	CHIP C 1000PF K	
C599			CC73GCH1H101J	CHIP C 100PF J	
C600			CK73GB1H102K	CHIP C 1000PF K	
C601,602			CC73GCH1H101J	CHIP C 100PF J	
C603			CK73GB1H102K	CHIP C 1000PF K	
C604-606			CC73GCH1H101J	CHIP C 100PF J	
C608-610			CC73GCH1H101J	CHIP C 100PF J	
C611,612			CK73GB1H471K	CHIP C 470PF K	
C613			CC73GCH1H101J	CHIP C 100PF J	
C615			CK73GB1H471K	CHIP C 470PF K	
C616			CC73GCH1H101J	CHIP C 100PF J	
C618			CK73GB1H102K	CHIP C 1000PF K	
C620			CK73GB1H471K	CHIP C 470PF K	
C621			CK73GB1H102K	CHIP C 1000PF K	
C623			CK73GB1H102K	CHIP C 1000PF K	
C626			CK73GB1C104K	CHIP C 0.10UF K	
C628			CK73GB1C104K	CHIP C 0.10UF K	
C629			CC73GCH1H470J	CHIP C 47PF J	
C630			C92-0507-05	CHIP-TAN 4.7UF 6.3WV	
C631			CK73GB1H103K	CHIP C 0.010UF K	
C632			CK73FF1C105Z	CHIP C 1.0UF Z	
C633			CK73GB1C104K	CHIP C 0.10UF K	
C720			C92-0566-05	CHIP-TAN 10UF 6.3WV	
CN1			E40-6047-05	PIN ASSY	
CN2			E40-6021-05	FLAT CABLE CONNECTOR	
CN3			E40-3247-05	PIN ASSY	
CN4			E40-5737-05	PIN ASSY	
CN5			E40-5738-05	PIN ASSY	
CN7			E40-3247-05	PIN ASSY	
CN8			E40-3246-05	PIN ASSY	
CN501			E40-6021-05	FLAT CABLE CONNECTOR	
J1			E11-0442-05	3.5D PHONE JACK (3P)	
J501			E08-0877-05	MODULAR JACK	
F1			F53-0108-05	FUSE	
-			J31-0543-05	COLLAR (LH-5-1.5)	
CF1			L72-0959-05	CERAMIC FILTER	
CF2			L72-0973-05	CERAMIC FILTER	
L1			L40-1005-34	SMALL FIXED INDUCTOR (10UH/8)	
L2-4			L40-3381-86	SMALL FIXED INDUCTOR (0.33U/160)	
L5			L34-4530-05	COIL	
L6			L40-8275-77	SMALL FIXED INDUCTOR (82NH/1608)	
L7			L40-5685-85	SMALL FIXED INDUCTOR (0.56U/252)	
L8			L40-8285-85	SMALL FIXED INDUCTOR (0.82U/252)	
L9			L40-1575-77	SMALL FIXED INDUCTOR (15NH/1608)	
L10			L40-2775-77	SMALL FIXED INDUCTOR (27NH/1608)	
L11,12			L40-1575-34	SMALL FIXED INDUCTOR (15NH/8)	
L13			L79-1585-05	HELICAL BLOCK	

Ref. No.	Address	New parts	Parts No.	Description	Destination
L14			L40-1875-77	SMALL FIXED INDUCTOR (18NH/1608)	
L15			L40-4775-77	SMALL FIXED INDUCTOR (47NH/1608)	
L16			L40-6875-34	SMALL FIXED INDUCTOR (68NH/8)	
L17			L40-1875-77	SMALL FIXED INDUCTOR (18NH/1608)	
L18			L40-1075-34	SMALL FIXED INDUCTOR (10NH/8)	
L19			L40-5675-77	SMALL FIXED INDUCTOR (56NH/1608)	
L20			L40-1875-77	SMALL FIXED INDUCTOR (18NH/1608)	
L21			L34-4478-05	AIR-CORE COIL	
L22			L79-1585-05	HELICAL BLOCK	
L24			L92-0179-05	FERRITE CHIP	
L26			L40-3375-34	SMALL FIXED INDUCTOR (33NH/8)	
L27			L40-1575-34	SMALL FIXED INDUCTOR (15NH/8)	
L29			L34-1185-05	AIR-CORE COIL	
L30,31			L34-1039-05	AIR-CORE COIL	
L32			L34-4478-05	AIR-CORE COIL	
L33,34			L92-0179-05	FERRITE CHIP	
L501			L92-0138-05	FERRITE CHIP	
L503,504			L92-0138-05	FERRITE CHIP	
L510			L92-0138-05	FERRITE CHIP	
X1			L77-1826-05	TCXO (16.8M)	
X501			L77-1708-05	CRYSTAL RESONATOR (3.579545MHZ)	
X502			L78-0462-05	RESONATOR (9.8304M/8*2.5)	
XF1			L71-0551-15	MCF (49.95MHZ/5.0K)	
CP501-505			R90-0741-05	MULTIPLE RESISTOR	
CP508-514			R90-0741-05	MULTIPLE RESISTOR	
CP516-524			R90-0741-05	MULTIPLE RESISTOR	
CP526,527			R90-0741-05	MULTIPLE RESISTOR	
CP529-536			R90-0741-05	MULTIPLE RESISTOR	
CP538			R90-0741-05	MULTIPLE RESISTOR	
CP539			R90-0724-05	MULTI-COMP 1K X4	
R1			R92-1252-05	CHIP R 0 OHM	
R2			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R3			R92-1252-05	CHIP R 0 OHM	
R4			RK73GB1J333J	CHIP R 33K J 1/16W	
R6			R92-1252-05	CHIP R 0 OHM	
R7,8			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R9,10			R92-1252-05	CHIP R 0 OHM	
R11			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R12			RK73GB1J104J	CHIP R 100K J 1/16W	
R13			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R14			RK73GB1J474J	CHIP R 470K J 1/16W	
R15			RK73GB1J104J	CHIP R 100K J 1/16W	
R16			RK73GB1J220J	CHIP R 22 J 1/16W	
R17			RK73GB1J154J	CHIP R 150K J 1/16W	
R18			RK73GB1J103J	CHIP R 10K J 1/16W	
R19			RK73GB1J392J	CHIP R 3.9K J 1/16W	
R20			RK73GB1J224J	CHIP R 220K J 1/16W	
R21			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R22			RK73GB1J474J	CHIP R 470K J 1/16W	
R23			RK73GB1J223J	CHIP R 22K J 1/16W	
R24			RK73GB1J563J	CHIP R 56K J 1/16W	
R25			R92-1252-05	CHIP R 0 OHM	
R26			RK73GB1J104J	CHIP R 100K J 1/16W	
R29			R92-1252-05	CHIP R 0 OHM	
R30			RK73GB1J103J	CHIP R 10K J 1/16W	
R31			RK73GB1J152J	CHIP R 1.5K J 1/16W	
R32			RK73GB1J103J	CHIP R 10K J 1/16W	
R33			R92-1252-05	CHIP R 0 OHM	
R34,35			RK73GB1J104J	CHIP R 100K J 1/16W	

TK-860HG : K,M
TK-862HG : K

PARTS LIST

TX-RX UNIT (X57-5960-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination
R36			RK73GB1J223J	CHIP R 22K J 1/16W	
R37			RK73GB1J100J	CHIP R 10 J 1/16W	
R38-40			RK73GB1J103J	CHIP R 10K J 1/16W	
R41			RK73GB1J224J	CHIP R 220K J 1/16W	
R42			RK73GB1J473J	CHIP R 47K J 1/16W	
R43			RK73GB1J683J	CHIP R 68K J 1/16W	
R44			RK73GB1J153J	CHIP R 15K J 1/16W	
R46			RK73GB1J223J	CHIP R 22K J 1/16W	
R47			RK73GB1J101J	CHIP R 100 J 1/16W	
R48			RK73GB1J184J	CHIP R 180K J 1/16W	
R49			RK73GB1J152J	CHIP R 1.5K J 1/16W	
R50			RK73GB1J473J	CHIP R 47K J 1/16W	
R51-53			RK73GB1J562J	CHIP R 5.6K J 1/16W	
R54,55			R92-1252-05	CHIP R 0 OHM	
R56			RK73GB1J100J	CHIP R 10 J 1/16W	
R57			RK73GB1J471J	CHIP R 470 J 1/16W	
R58			RK73GB1J332J	CHIP R 3.3K J 1/16W	
R59			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R60			RK73GB1J334J	CHIP R 330K J 1/16W	
R61			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R62			RK73GB1J224J	CHIP R 220K J 1/16W	
R63			RK73GB1J474J	CHIP R 470K J 1/16W	
R64,65			RK73GB1J223J	CHIP R 22K J 1/16W	
R66			RK73GB1J101J	CHIP R 100 J 1/16W	
R67			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R68			RK73GB1J182J	CHIP R 1.8K J 1/16W	
R69			R92-1252-05	CHIP R 0 OHM	
R70,71			RK73GB1J103J	CHIP R 10K J 1/16W	
R72			R92-1252-05	CHIP R 0 OHM	
R73			RK73GB1J223J	CHIP R 22K J 1/16W	
R75			R92-1252-05	CHIP R 0 OHM	
R76			RK73GB1J223J	CHIP R 22K J 1/16W	
R77			RK73GB1J224J	CHIP R 220K J 1/16W	
R78			RK73GB1J104J	CHIP R 100K J 1/16W	
R79			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R80			RK73GB1J471J	CHIP R 470 J 1/16W	
R81			RK73GB1J101J	CHIP R 100 J 1/16W	
R82			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R83			RK73GB1J684J	CHIP R 680K J 1/16W	
R84			R92-1252-05	CHIP R 0 OHM	
R85,86			RK73GB1J122J	CHIP R 1.2K J 1/16W	
R87			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R88			RK73GB1J271J	CHIP R 270 J 1/16W	
R89			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R90			RK73GB1J104J	CHIP R 100K J 1/16W	
R91			RK73GB1J823J	CHIP R 82K J 1/16W	
R92			RK73GB1J822J	CHIP R 8.2K J 1/16W	
R93			RK73GB1J152J	CHIP R 1.5K J 1/16W	
R94			RK73GB1J392J	CHIP R 3.9K J 1/16W	
R95			RK73GB1J103J	CHIP R 10K J 1/16W	
R97,98			RK73GB1J101J	CHIP R 100 J 1/16W	
R99			RK73GB1J331J	CHIP R 330 J 1/16W	
R100,101			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R103			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R104			RK73GB1J682J	CHIP R 6.8K J 1/16W	
R105			RK73GB1J101J	CHIP R 100 J 1/16W	
R106			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R107			RK73GB1J473J	CHIP R 47K J 1/16W	
R108			RK73GB1J152J	CHIP R 1.5K J 1/16W	
R109			RK73GB1J103J	CHIP R 10K J 1/16W	

Ref. No.	Address	New parts	Parts No.	Description	Destination
R110			RK73GB1J470J	CHIP R 47 J 1/16W	
R111			RK73GB1J101J	CHIP R 100 J 1/16W	
R112			RK73GB1J471J	CHIP R 470 J 1/16W	
R113			RK73GB1J100J	CHIP R 10 J 1/16W	
R114			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R115			RK73GB1J223J	CHIP R 22K J 1/16W	
R116			RK73GB1J473J	CHIP R 47K J 1/16W	
R117			RK73GB1J221J	CHIP R 220 J 1/16W	
R118			RK73GB1J681J	CHIP R 680 J 1/16W	
R119			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R120			R92-1252-05	CHIP R 0 OHM	
R121			RK73GB1J100J	CHIP R 10 J 1/16W	
R122			R92-1215-05	CHIP R 470 J 1/2W	
R123			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R124			RK73GB1J103J	CHIP R 10K J 1/16W	
R125			RK73GB1J333J	CHIP R 33K J 1/16W	
R126			RK73GB1J471J	CHIP R 470 J 1/16W	
R127,128			RK73GB1J104J	CHIP R 100K J 1/16W	
R129			RK73GB1J331J	CHIP R 330 J 1/16W	
R130			RK73GB1J152J	CHIP R 1.5K J 1/16W	
R131			RK73GB1J681J	CHIP R 680 J 1/16W	
R132			R92-0670-05	CHIP R 0 OHM	
R133-136			R92-1252-05	CHIP R 0 OHM	
R138			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R139			R92-0699-05	CHIP R 10 J 1/2W	
R140			RK73FB2A2R2J	CHIP R 2.2 J 1/10W	
R142			RK73GB1J473J	CHIP R 47K J 1/16W	
R143			RK73GB1J101J	CHIP R 100 J 1/16W	
R144			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R145,146			RK73GB1J473J	CHIP R 47K J 1/16W	
R147			RK73GB1J683J	CHIP R 68K J 1/16W	
R148			RK73GB1J104J	CHIP R 100K J 1/16W	
R149			RK73GB1J151J	CHIP R 150 J 1/16W	
R150			RK73GB1J104J	CHIP R 100K J 1/16W	
R151			RK73FB2A102J	CHIP R 1.0K J 1/10W	
R152			R92-1252-05	CHIP R 0 OHM	
R153			R92-0670-05	CHIP R 0 OHM	
R154			RK73GB1J152J	CHIP R 1.5K J 1/16W	
R155			RK73GB1J103J	CHIP R 10K J 1/16W	
R156			RK73FB2A5R6J	CHIP R 5.6 J 1/10W	
R158			R92-0670-05	CHIP R 0 OHM	
R159			RK73GB1J473J	CHIP R 47K J 1/16W	
R160			RK73FB2A102J	CHIP R 1.0K J 1/10W	
R161,162			RK73GB1J104J	CHIP R 100K J 1/16W	
R163			R92-0670-05	CHIP R 0 OHM	
R164			R92-1215-05	CHIP R 470 J 1/2W	
R166			RK73GB1J151J	CHIP R 150 J 1/16W	
R169			RK73GB1J103J	CHIP R 10K J 1/16W	
R170			RK73FB2A222J	CHIP R 2.2K J 1/10W	
R171			RK73GB1J153J	CHIP R 15K J 1/16W	
R172			RK73GB1J683J	CHIP R 68K J 1/16W	
R173			RK73GB1J822J	CHIP R 8.2K J 1/16W	
R174			RK73GB1J103J	CHIP R 10K J 1/16W	
R175			RK73GB1J682J	CHIP R 6.8K J 1/16W	
R176			RK73GB1J103J	CHIP R 10K J 1/16W	
R177			R92-1214-05	CHIP R 120 J 1/2W	
R178			RK73GB1J822J	CHIP R 8.2K J 1/16W	
R179			RK73GB1J273J	CHIP R 27K J 1/16W	
R180,181			RK73GB1J562J	CHIP R 5.6K J 1/16W	
R182			R92-0670-05	CHIP R 0 OHM	

TK-860HG : K,M
TK-862HG : K

PARTS LIST

TX-RX UNIT (X57-5960-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination
R184			R92-1252-05	CHIP R 0 OHM	
R185			RK73GB1J473J	CHIP R 47K J 1/16W	
R186			RK73GB1J100J	CHIP R 10 J 1/16W	
R187			RK73GB1J220J	CHIP R 22 J 1/16W	
R188			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R189			RK73GB1J101J	CHIP R 100 J 1/16W	
R190			RK73GB1J473J	CHIP R 47K J 1/16W	
R192			RK73GB1J103J	CHIP R 10K J 1/16W	
R193			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R196			RK73GB1J332J	CHIP R 3.3K J 1/16W	
R197			R92-1252-05	CHIP R 0 OHM	
R198			RK73GB1J104J	CHIP R 100K J 1/16W	
R199-202			R92-1252-05	CHIP R 0 OHM	
R207			R92-1252-05	CHIP R 0 OHM	
R208			R92-0670-05	CHIP R 0 OHM	
R210			R92-1252-05	CHIP R 0 OHM	
R219			R92-1252-05	CHIP R 0 OHM	
R221			R92-1252-05	CHIP R 0 OHM	
R501			RK73GB1J473J	CHIP R 47K J 1/16W	
R502			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R503			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R504-507			RK73GB1J473J	CHIP R 47K J 1/16W	
R508			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R509,510			R92-1252-05	CHIP R 0 OHM	
R511			RK73GB1J473J	CHIP R 47K J 1/16W	
R512			RK73GB1J104J	CHIP R 100K J 1/16W	
R513			RK73GB1J223J	CHIP R 22K J 1/16W	
R514			RK73GB1J473J	CHIP R 47K J 1/16W	
R515,516			RK73GB1J223J	CHIP R 22K J 1/16W	
R517			RK73GB1J473J	CHIP R 47K J 1/16W	
R518			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R519			RK73GB1J103J	CHIP R 10K J 1/16W	
R520-523			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R526			RK73GB1J154J	CHIP R 150K J 1/16W	
R527			R92-1252-05	CHIP R 0 OHM	
R528			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R529			RK73GB1J154J	CHIP R 150K J 1/16W	
R530			RK73GB1J473J	CHIP R 47K J 1/16W	
R531			RK73GB1J394J	CHIP R 390K J 1/16W	
R532			RK73GB1J103J	CHIP R 10K J 1/16W	
R533			RK73GB1J104J	CHIP R 100K J 1/16W	
R534			RK73GB1J823J	CHIP R 82K J 1/16W	
R535			RK73GB1J103J	CHIP R 10K J 1/16W	
R536			RK73GB1J153J	CHIP R 15K J 1/16W	
R537			RK73GB1J105J	CHIP R 1.0M J 1/16W	
R538			RK73GB1J103J	CHIP R 10K J 1/16W	
R539			R92-1252-05	CHIP R 0 OHM	
R540			RK73GB1J223J	CHIP R 22K J 1/16W	
R541			RK73GB1J184J	CHIP R 180K J 1/16W	
R542			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R543			RK73GB1J184J	CHIP R 180K J 1/16W	
R544			RK73GB1J103J	CHIP R 10K J 1/16W	
R545			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R546			RN73GH1J913D	CHIP R 91K D 1/16W	
R547			RK73GB1J103J	CHIP R 10K J 1/16W	
R548			RN73GH1J333D	CHIP R 33K D 1/16W	
R549			RN73GH1J913D	CHIP R 91K D 1/16W	
R550			RN73GH1J683D	CHIP R 68K D 1/16W	
R551,552			RK73GB1J223J	CHIP R 22K J 1/16W	
R553			RK73GB1J105J	CHIP R 1.0M J 1/16W	

Ref. No.	Address	New parts	Parts No.	Description	Destination
R554			RN73GH1J913D	CHIP R 91K D 1/16W	
R555,556			RK73GB1J104J	CHIP R 100K J 1/16W	
R557			RN73GH1J274D	CHIP R 270K D 1/16W	
R558			R92-1252-05	CHIP R 0 OHM	
R559			RK73GB1J333J	CHIP R 33K J 1/16W	
R560			RK73GB1J474J	CHIP R 470K J 1/16W	
R561			RK73GB1J333J	CHIP R 33K J 1/16W	
R562			R92-1252-05	CHIP R 0 OHM	
R563			RK73GB1J473J	CHIP R 47K J 1/16W	
R564			RK73GB1J223J	CHIP R 22K J 1/16W	
R565			R92-1252-05	CHIP R 0 OHM	
R566			RK73GB1J563J	CHIP R 56K J 1/16W	
R567			RK73GB1J334J	CHIP R 330K J 1/16W	
R568			RK73GB1J473J	CHIP R 47K J 1/16W	
R569			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R570			RK73GB1J155J	CHIP R 1.5M J 1/16W	
R571			RN73GH1J682D	CHIP R 6.8K D 1/16W	
R572			RK73GB1J473J	CHIP R 47K J 1/16W	
R573			RK73GB1J474J	CHIP R 470K J 1/16W	
R574			RN73GH1J683D	CHIP R 68K D 1/16W	
R575			RK73GB1J101J	CHIP R 100 J 1/16W	
R576			RK73GB1J224J	CHIP R 220K J 1/16W	
R577			RK73GB1J103J	CHIP R 10K J 1/16W	
R578			RN73GH1J682D	CHIP R 6.8K D 1/16W	
R579			RK73GB1J223J	CHIP R 22K J 1/16W	
R580			R92-1252-05	CHIP R 0 OHM	
R581			RK73GB1J394J	CHIP R 390K J 1/16W	
R582			RK73GB1J273J	CHIP R 27K J 1/16W	
R583			RK73GB1J470J	CHIP R 47 J 1/16W	
R584			RK73GB1J220J	CHIP R 22 J 1/16W	
R585			R92-1252-05	CHIP R 0 OHM	
R586			RK73GB1J473J	CHIP R 47K J 1/16W	
R587			R92-1252-05	CHIP R 0 OHM	
R588			RK73GB1J103J	CHIP R 10K J 1/16W	
R590			RK73GB1J333J	CHIP R 33K J 1/16W	
R591			R92-1252-05	CHIP R 0 OHM	
R592			RK73GB1J103J	CHIP R 10K J 1/16W	
R593			RK73GB1J181J	CHIP R 180 J 1/16W	
R594			RK73GB1J392J	CHIP R 3.9K J 1/16W	
R595			RK73GB1J181J	CHIP R 180 J 1/16W	
R598			RK73GB1J473J	CHIP R 47K J 1/16W	
R599			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R600			R92-1252-05	CHIP R 0 OHM	
R602			RK73GB1J473J	CHIP R 47K J 1/16W	
R603			RK73GB1J101J	CHIP R 100 J 1/16W	
R604			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R605			RK73GB1J332J	CHIP R 3.3K J 1/16W	
R606			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R607			RK73GB1J101J	CHIP R 100 J 1/16W	
R608			RK73GB1J122J	CHIP R 1.2K J 1/16W	
R610,611			RK73GB1J473J	CHIP R 47K J 1/16W	
R612			R92-1201-05	CHIP R 220 1/2W	
R613			RK73GB1J103J	CHIP R 10K J 1/16W	
R614,615			R92-1252-05	CHIP R 0 OHM	
R616			RK73GB1J474J	CHIP R 470K J 1/16W	
R617			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R618			RK73GB1J683J	CHIP R 68K J 1/16W	
R619			RK73GB1J104J	CHIP R 100K J 1/16W	
R620,621			RK73GB1J103J	CHIP R 10K J 1/16W	
R622			RK73GB1J473J	CHIP R 47K J 1/16W	

TK-860HG : K,M
TK-862HG : K

PARTS LIST

TX-RX UNIT (X57-5960-XX)
PLL/VCO (X58-4670-12)

Ref. No.	Address	New parts	Parts No.	Description	Destination
R630			R92-1252-05	CHIP R 0 OHM	
R701			RK73GB1J473J	CHIP R 47K J 1/16W	
R704			RK73GB1J223J	CHIP R 22K J 1/16W	
R720			R92-1252-05	CHIP R 0 OHM	
R722			R92-1252-05	CHIP R 0 OHM	
D1			HSB123	DIODE	
D2			02DZ20(Y,Z)	ZENER DIODE	
D3-5			HSB123	DIODE	
D8			DAN235K	DIODE	
D9			1SS355	DIODE	
D10			DAN235K	DIODE	
D11			MA742	DIODE	
D14			1SS355	DIODE	
D15			DAN202K	DIODE	
D16			DAN235K	DIODE	
D17			HSB123	DIODE	
D18			1SV280	VARIABLE CAPACITANCE DIODE	
D19,20			1SS355	DIODE	
D21			02DZ18(X,Y)	ZENER DIODE	
D23			1SV280	VARIABLE CAPACITANCE DIODE	
D24			02DZ15(X,Y)	ZENER DIODE	
D25			22ZR-10D	SURGE ABSORBER	
D26			DSA3A1-FK	DIODE	
D27			1SS355	DIODE	
D28			1SV280	VARIABLE CAPACITANCE DIODE	
D30			MA4PH633	DIODE	
D31			1SV280	VARIABLE CAPACITANCE DIODE	
D33,34			XB15A709	DIODE	
D35,36			MA742	DIODE	
D37			MA4PH633	DIODE	
D39			UDZ4.7(B)	ZENER DIODE	
D40			MA742	DIODE	
D41			1SS355	DIODE	
D42			HZU5ALL	DIODE	
D501-504			MA2S111	DIODE	
D505			MA2S111	DIODE	862
D506,507			MA2S111	DIODE	
D508			MA742	DIODE	
D523			DAN202U	DIODE	
D524,525			HSB123	DIODE	
D526			1812L075PR	VARISTOR	
D527,528			HSB123	DIODE	
D529			MA742	DIODE	
IC1,2			TA75S01F	IC (OP AMP)	
IC3			MB15A02	IC (PLL)	
IC4			NJM4558M	IC (OP AMP X2)	
IC5			TA31136FN	IC (FM IF DETECTOR)	
IC6			M62363FP	IC (8bit D/A CONVERTER)	
IC7			NJM2904M	IC (OP AMP X2)	
IC9			BU4094BCF	IC (8-STAGE SHIFT/STORE REGISTER)	
IC10			NJM78L05UA	IC (VOLTAGE REGULATOR/ +5V)	
IC11			AN8009M	IC (REGULATOR)	
IC12			TA7808S	IC (REGULATOR)	
IC13			LA4422	IC (AF POWER AMP/ 5.8W)	
IC14			TC4013BF(N)	IC (MEMORY)	
IC15			TA75S01F	IC (OP AMP)	
IC400	2C,2F		M68769H-22	IC (POWER MODULE)	
IC501			AT29C020-90TI	IC (FLASH ROM)	
IC502			30622M4102GP	CPU	
IC503			RH5VL42C	IC (REGULATOR)	

Ref. No.	Address	New parts	Parts No.	Description	Destination
IC505			AT2408N10SI2.5	IC (8kbit SERIAL EEPROM)	
IC507			NJM2904V	IC (APC)	
IC508			TC35453F	IC (AUDIO PROCESSOR)	
IC509			BU4066BCFV	IC (ANALOG SWITCH X4)	
IC510			BU4094BCFV	IC (8bit SHIFT/STORE REGISTER)	
IC511			LC73872M	IC (DTMF RECEIVER)	
IC512			NJM78L05UA	IC (VOLTAGE REGULATOR)	
IC513			TA75W558FU	IC (OP AMP X2)	
IC514			TC75W51FU	IC (OP AMP X2)	
Q1			DTD114EK	DIGITAL TRANSISTOR	
Q2			KRA225S	DIGITAL TRANSISTOR	
Q3			DTA114EKA	DIGITAL TRANSISTOR	
Q4-6			DTC114EKA	DIGITAL TRANSISTOR	
Q7			2SC4649(N,P)	TRANSISTOR	
Q8			2SC2412K	TRANSISTOR	
Q9			2SC4215(Y)	TRANSISTOR	
Q10			2SC2412K	TRANSISTOR	
Q11			2SA1832(GR)	TRANSISTOR	
Q12			2SC4738(GR)	TRANSISTOR	
Q13			2SC4649(N,P)	TRANSISTOR	
Q14			2SC5110(O)	TRANSISTOR	
Q15			3SK228	FET	
Q16			DTC114EKA	DIGITAL TRANSISTOR	
Q17			DTC363EU	DIGITAL TRANSISTOR	
Q18			2SA1745(6,7)	TRANSISTOR	
Q19			DTC114EKA	DIGITAL TRANSISTOR	
Q20			DTA114EKA	DIGITAL TRANSISTOR	
Q21			DTC114EKA	DIGITAL TRANSISTOR	
Q22			2SC4093	TRANSISTOR	
Q23			2SA1641(S,T)	TRANSISTOR	
Q24			DTA114EKA	DIGITAL TRANSISTOR	
Q25			2SC3357	TRANSISTOR	
Q26			DTA114EKA	DIGITAL TRANSISTOR	
Q27			2SC2954	TRANSISTOR	
Q28			2SB1132(Q,R)	TRANSISTOR	
Q29			DTC114EKA	DIGITAL TRANSISTOR	
Q31			2SC2412K	TRANSISTOR	
Q32			2SB1565(E,F)	TRANSISTOR	
Q33			DTC114EKA	DIGITAL TRANSISTOR	
Q34			3SK228	FET	
Q35			DTC144EKA	DIGITAL TRANSISTOR	
Q36			2SC2412K	TRANSISTOR	
Q37,38			2SK1824	FET	
Q501			2SC4619	TRANSISTOR	
Q502,503			DTC114EE	DIGITAL TRANSISTOR	
Q504			2SC4617(S)	TRANSISTOR	
Q505			2SB1132(Q,R)	TRANSISTOR	
Q506			DTC114EE	DIGITAL TRANSISTOR	
Q508			2SC4617(S)	TRANSISTOR	
Q509			DTC363EU	DIGITAL TRANSISTOR	
TH1			157-153-65001	THERMISTOR	

PLL/VCO (X58-4670-12)

C102			CK73GB1H471K	CHIP C	470PF	K	
C104			CC73GCH1H060D	CHIP C	6.0PF	D	
C105			CC73GCH1H070D	CHIP C	7.0PF	D	
C107			CC73GCH1H030B	CHIP C	3.0PF	B	
C108			CC73GCH1HR75B	CHIP C	0.75PF	B	

TK-860HG : K,M
TK-862HG : K

PARTS LIST

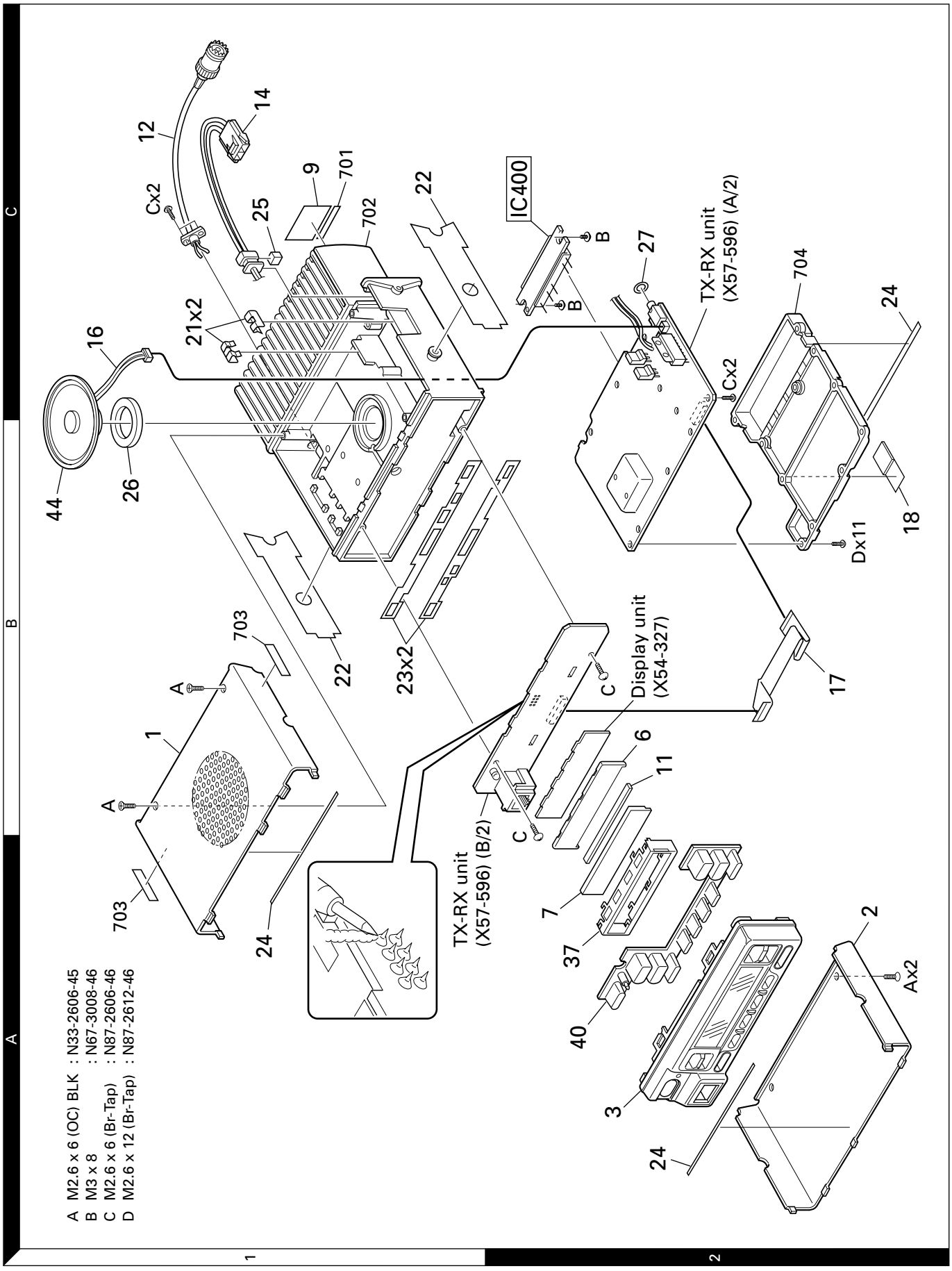
PLL/VCO (X58-4670-12)

Ref. No.	Address	New parts	Parts No.	Description	Destination
C110			CC73GCH1H060D	CHIP C 6.0PF D	
C111			CC73GCH1H050B	CHIP C 5.0PF B	
C112			CC73GCH1H1R5B	CHIP C 1.5PF B	
C113			CC73GCH1H010B	CHIP C 1.0PF B	
C114			CC73GCH1H040B	CHIP C 4.0PF B	
C115			CC73GCH1H060D	CHIP C 6.0PF D	
C116			CC73GCH1H050B	CHIP C 5.0PF B	
C117			CK73GB1H471K	CHIP C 470PF K	
C118			CC73GCH1H050B	CHIP C 5.0PF B	
C119,120			CK73GB1H471K	CHIP C 470PF K	
C121			CC73GCH1H050B	CHIP C 5.0PF B	
C122			CC73GCH1H0R5B	CHIP C 0.5PF B	
C123			CK73GB1H471K	CHIP C 470PF K	
C124			CC73GCH1H0R5B	CHIP C 0.5PF B	
C125			CK73GB1H102K	CHIP C 1000PF K	
C126			CK73GB1H471K	CHIP C 470PF K	
C127			CC73GCH1H050B	CHIP C 5.0PF B	
TC106			C05-0384-05	CERAMIC TRIMMER CAP (10P/8)	
TC109			C05-0384-05	CERAMIC TRIMMER CAP (10P/8)	
CN101			E40-6019-05	PIN ASSY	
-			F10-2279-04	SHIELDING CASE	
L101-104			L40-1595-34	SMALL FIXED INDUCTOR (1.5UH/8)	
L105			L40-3975-34	SMALL FIXED INDUCTOR (39NH/8)	
L106			L40-2775-34	SMALL FIXED INDUCTOR (27NH/8)	
L107,108			L40-1098-76	SMALL FIXED INDUCTOR (1UH/2522)	
L109,110			L40-1595-34	SMALL FIXED INDUCTOR (1.5UH/8)	
L112			L34-4548-05	AIR-CORE COIL	
L115			L34-4547-05	AIR-CORE COIL	
R101,102			RK73GB1J101J	CHIP R 100 J 1/16W	
R103			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R104			RK73GB1J101J	CHIP R 100 J 1/16W	
R105			RK73GB1J154J	CHIP R 150K J 1/16W	
R106			RK73GB1J470J	CHIP R 47 J 1/16W	
R107-110			RK73GB1J103J	CHIP R 10K J 1/16W	
R111			RK73GB1J331J	CHIP R 330 J 1/16W	
R112,113			RK73GB1J221J	CHIP R 220 J 1/16W	
R114			RK73GB1J470J	CHIP R 47 J 1/16W	
R115			RK73GB1J103J	CHIP R 10K J 1/16W	
R116			RK73GB1J392J	CHIP R 3.9K J 1/16W	
R117			RK73GB1J101J	CHIP R 100 J 1/16W	
D101-104			1SV283	VARIABLE CAPACITANCE DIODE	
D105			1SV214	VARIABLE CAPACITANCE DIODE	
Q101			2SK508NV(K52)	FET	
Q102			DTC114EUA	DIGITAL TRANSISTOR	
Q103			2SK508NV(K52)	FET	
Q104,105			2SC4081	TRANSISTOR	
Q106			2SC4226(R24)	TRANSISTOR	

Ref. No.	Address	New parts	Parts No.	Description	Destination

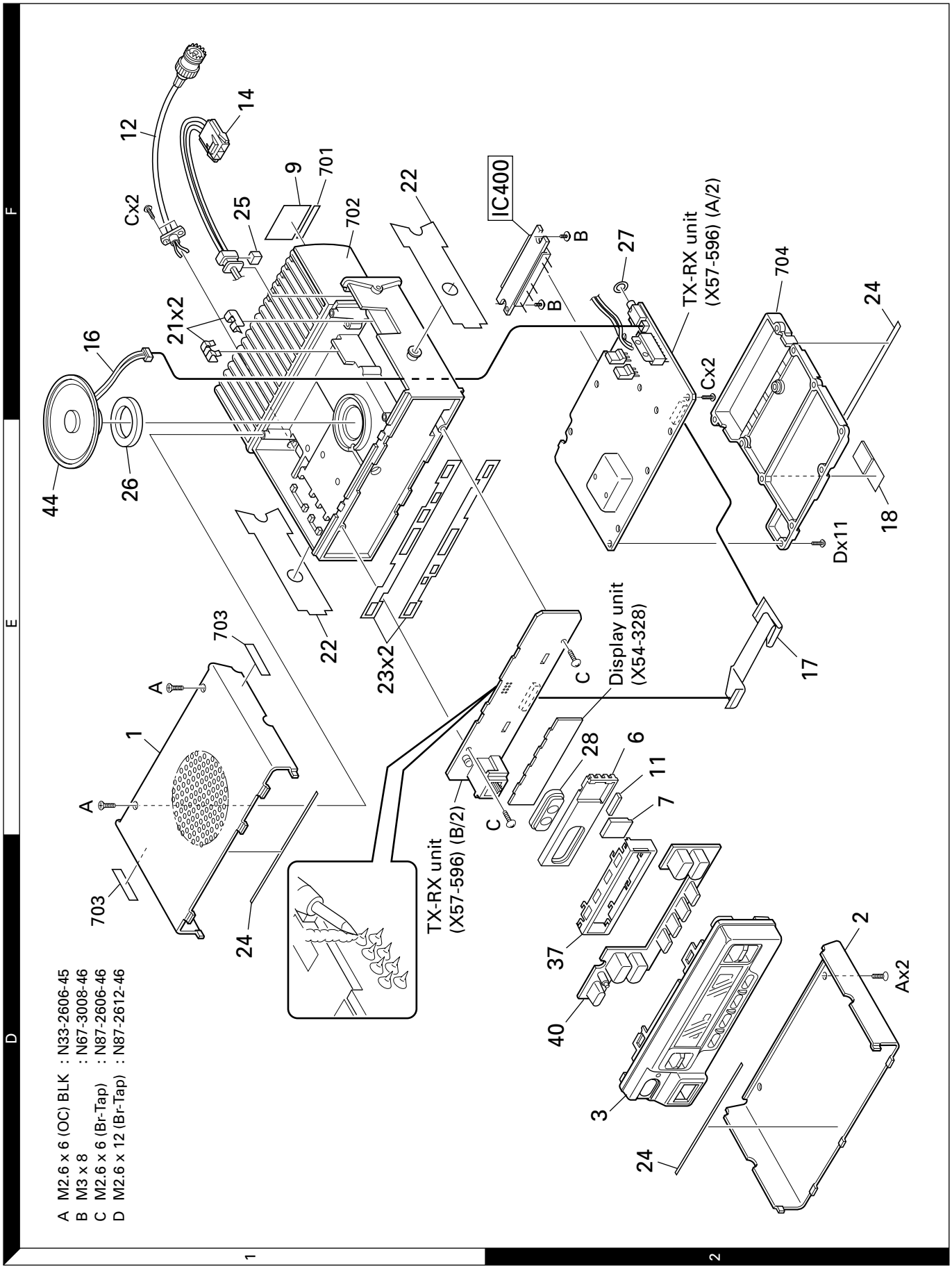
TK-860HG : K,M
TK-862HG : K

EXPLODED VIEW (TK-860HG)



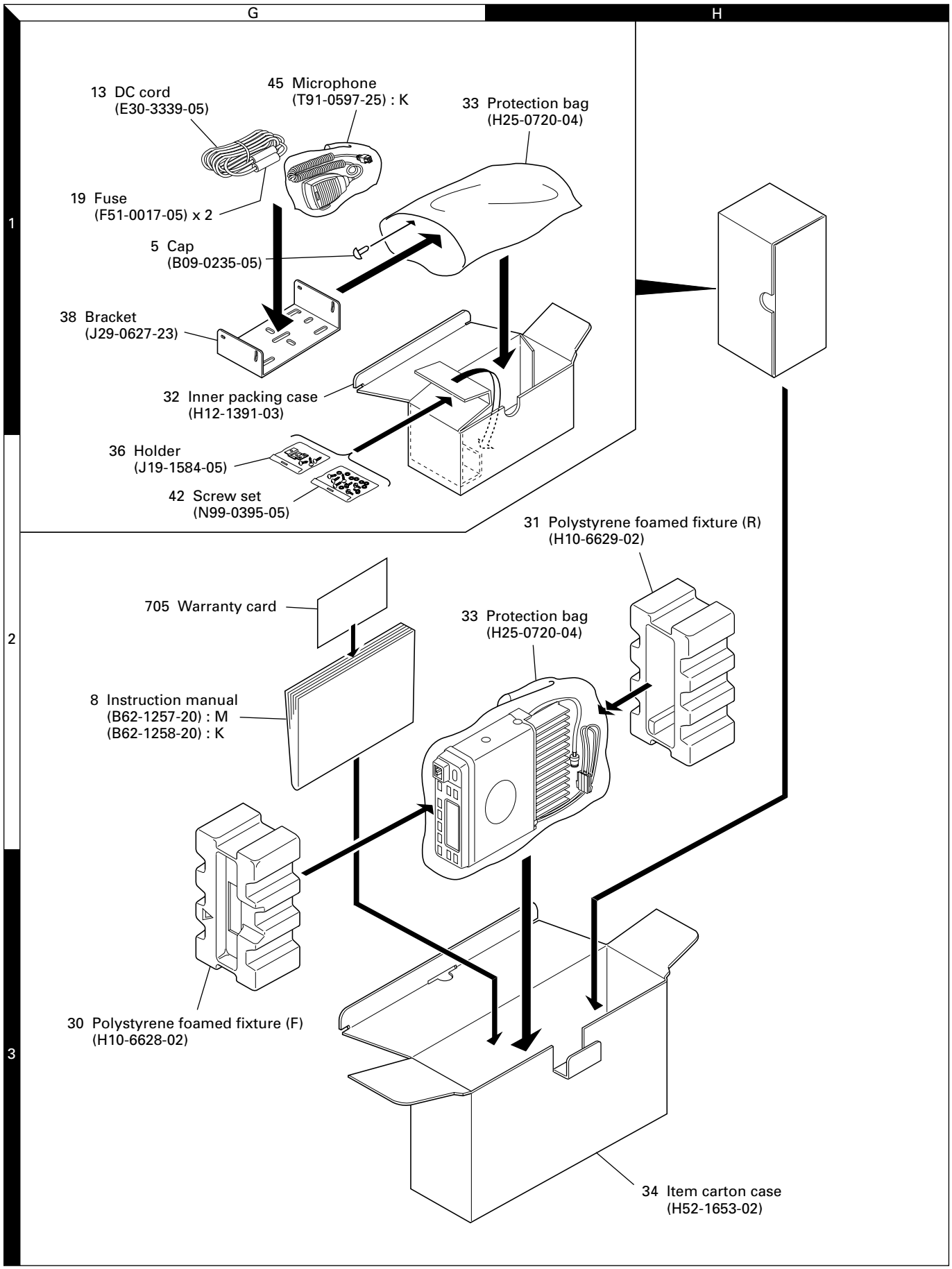
Parts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (TK-862HG)



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

PACKING



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

ADJUSTMENT

Test Mode (TK-860HG Only)

■ Test Mode Operating Features

This transceiver has a test mode. ***To enter test mode, press [SCN] key and turn power on. Hold [SCN] key until test channel No. and test signalling No. appears on LCD.*** Test mode can be inhibited by programming. To exit test mode, switch the power on again. The following functions are available in test mode.

- **Controls**

[PTT]	Used when making a transmission.
[MON]	Monitor on and off.
[SCN]	Sets to the tuning mode.
[A]	Function on.
[D/A]	RF power high and low.
[▼]	Changes signalling.
[▲]	Changes wide and narrow
[CH▲/▼]	Changes channel.
[Volume▲/▼]	Volume up/down.

- **LCD indicator**

"SCN"	Unused.
"AUX"	Lights at RF power low.
"MON"	Lights at monitor on.
"Right side dot"	Lights at narrow.

- **LED indicator**

Red LED	Lights during transmission.
Green LED	Lights when there is a carrier.

■ Frequency and Signalling

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

- **Frequency (MHz)**

Channel No.	RX	TX
1 (Center)	470.050	470.100
2 (Low)	450.050	450.100
3 (High)	489.950	489.900
4	470.000	470.000
5	470.200	470.200
6	470.400	470.400
7~16	–	–

- **Signalling**

Signalling No.	RX	TX
1	None	None
2	None	100Hz square
3	QT 67.0Hz	QT 67.0Hz
4	QT 151.4Hz	QT 151.4Hz
5	QT 210.7Hz	QT 210.7Hz
6	QT 250.3Hz	QT 250.3Hz
7	DQT D023N	DQT D023N
8	DQT D754I	DQT D754I
9	DTMF DEC, (159D)	DTMF ENC, (159D)
10	None	DTMF tone (9)
11	2-tone 321.7/928.1Hz	None
12	Single tone 1200Hz	Single tone 1200Hz

- **Preparations for tuning the transceiver**

Before attempting to tune the transceiver, connect the unit to a suitable power supply.

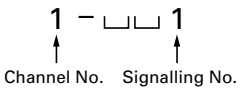
Whenever the transmitter is turned, the unit must be connected to a suitable dummy load (i.e. power meter).

The speaker output connector must be terminated with a 4Ω dummy load and connected to an AC voltmeter and an audio distortion meter or a SINAD measurement meter at all times during tuning.

- **Transceiver tuning**
  (To place transceiver in tuning mode)

Channel appears on LCD. Set channel according to tuning requirements.

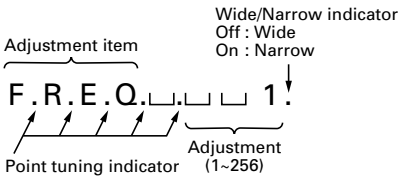
LCD display (Test mode)



Press [SCN], now in tuning mode. Use [D/A] button to write tuning data through tuning modes, and [CH▲/▼] to adjust tuning requirements (1 to 256 appears on LCD).

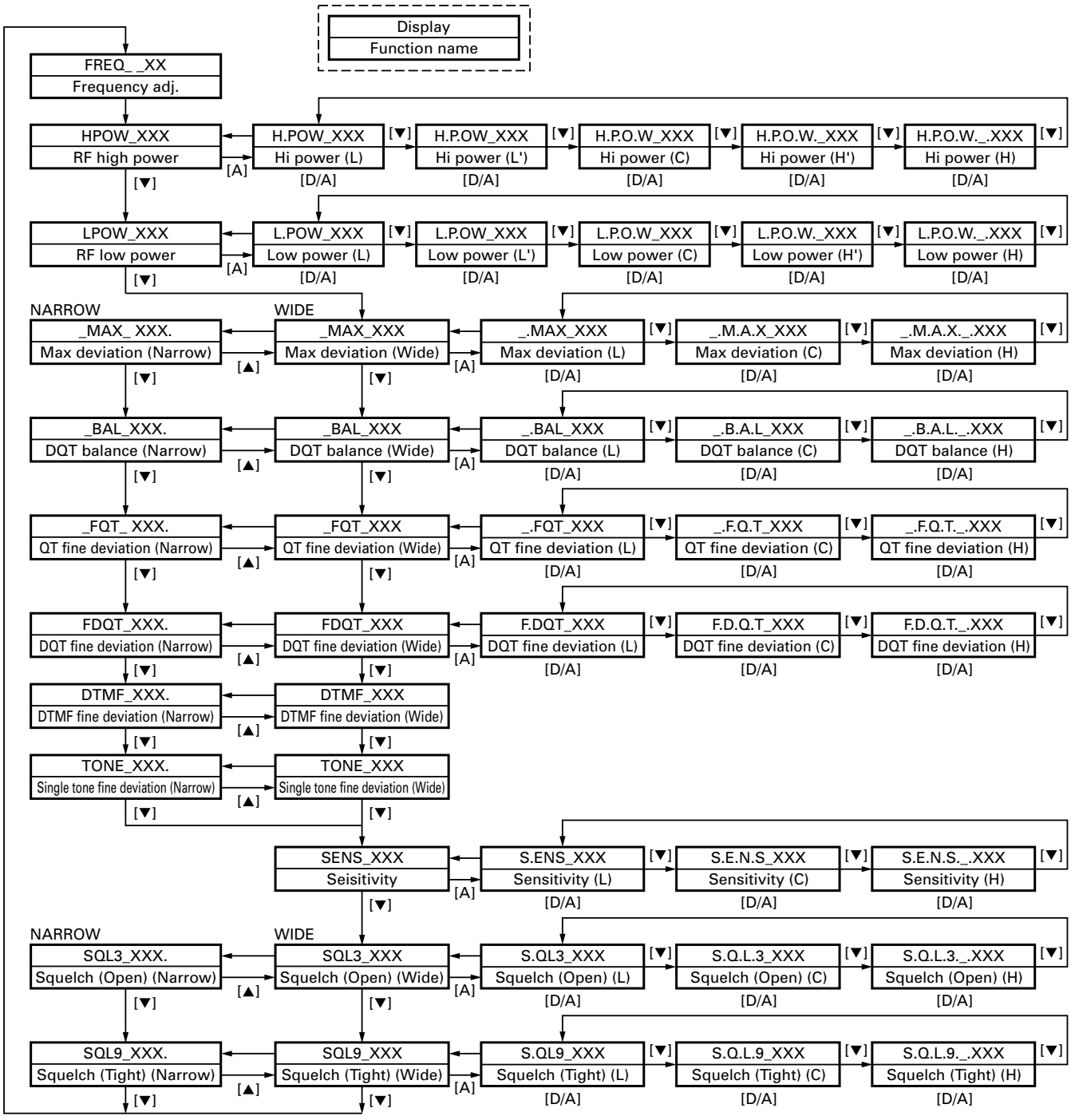
Use [▼] button to select the adjustment item through tuning modes. Use [A] button to adjust 3-point or 5-point tuning, and use [▲] button to switch between wide/narrow.

LCD display (Tuning mode)



ADJUSTMENT

■ Tuning Mode



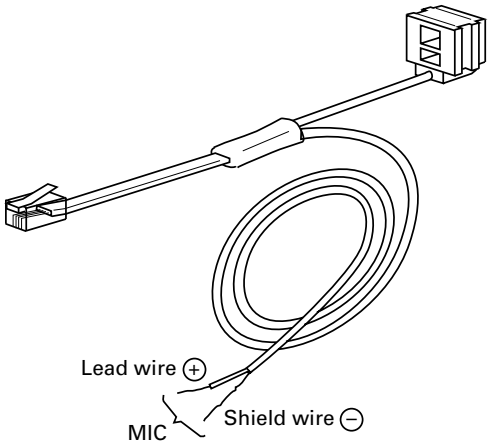
ADJUSTMENT

Test Equipment Required for Alignment

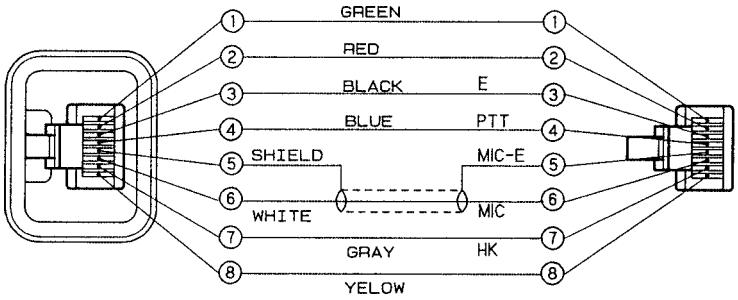
Test Equipment	Major Specifications	
1. Standard Signal Generator (SSG)	Frequency Range Modulation Output	400 to 520MHz Frequency modulation and external modulation –127dBm/0.1μV to greater than –7dBm/100mV
2. Power Meter	Input Impedance Operation Frequency Measurement Capability	50Ω 400 to 520MHz or more Vicinity of 100W
3. Deviation Meter	Frequency Range	400 to 520MHz
4. Digital Volt Meter (DVM)	Measuring Range Accuracy	1 to 20V DC High input impedance for minimum circuit loading
5. Oscilloscope		DC through 30MHz
6. High Sensitivity Frequency Counter	Frequency Range Frequency Stability	10Hz to 1000MHz 0.2ppm or less
7. Ammeter		20A
8. AF Volt Meter (AF VTVM)	Frequency Range Voltage Range	50Hz to 10kHz 1mV to 3V
9. Audio Generator (AG)	Frequency Range Output	20Hz to 20kHz or more 0 to 1V
10. Distortion Meter	Capability Input Level	3% or less at 1kHz 50mV to 10Vrms
11. 4Ω Dummy Load		Approx. 4Ω, 10W or more
12. Regulated Power Supply		13.6V, approx. 20A (adjustable from 9 to 17V) Useful if ammeter requipped

Tuning cable (E30-3383-05)

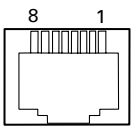
Adapter cable (E30-3383-05) is required for injecting an audio if PC tuning is used.
See "PC Mode" section for the connection.



Test cable for microphone input (E30-3360-08)



MIC connector (Front view)

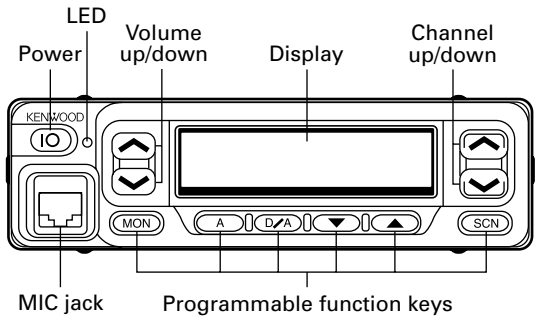


1 : BLC
2 : PSB
3 : E
4 : PTT
5 : ME
6 : MIC
7 : HOOK
8 : CM

ADJUSTMENT

Adjustment Location

■ **Switch (TK-860HG)**



■ **Note**

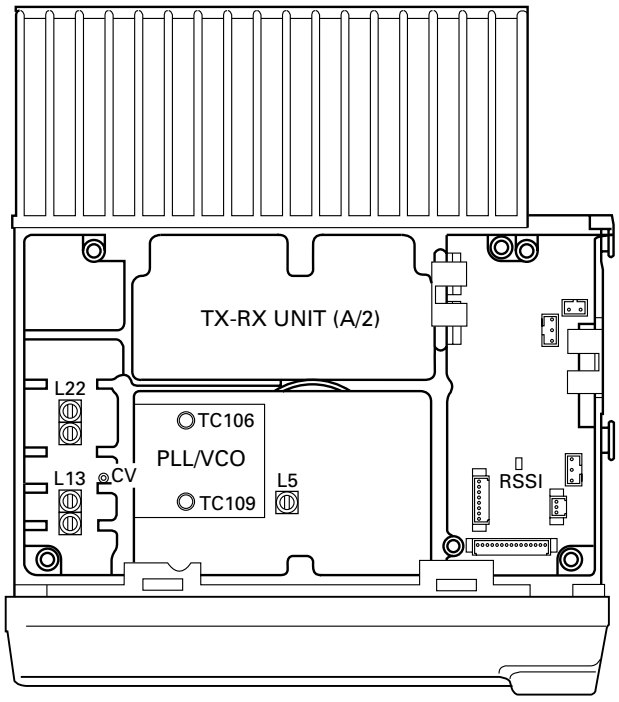
• **Flash memory**

The firmware program (User mode, Test mode, Tuning mode, etc.) and the data programmed by the FPU (KPG-56D) for the flash memory, is stored in memory. When parts are changed, program the data again.

• **EEPROM**

The tuning data (Deviation, Squelch, etc.) for the EEPROM, is stored in memory. When parts are changed, readjust the transceiver.

■ **Adjustment Point**



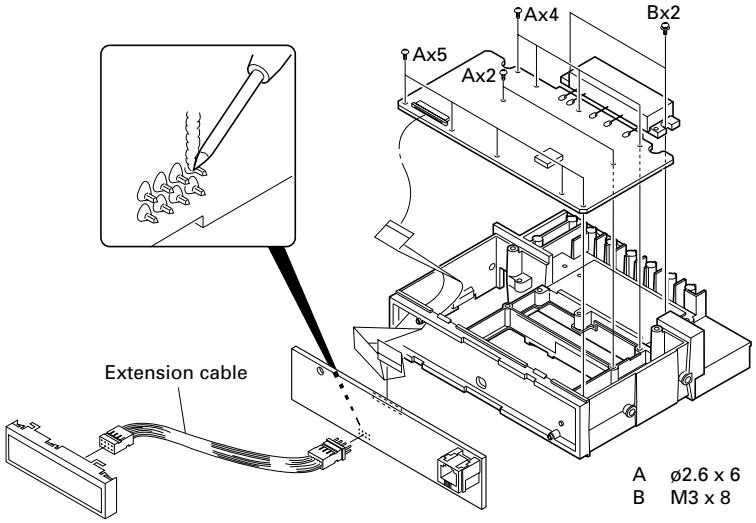
■ **Repair Jig**

• **Chassis**

Use jig (Part No. : A10-4010-02) for repairing the TK-860HG/862HG. The jig facilitates the voltage check when the voltage on the component side TX-RX unit is checked during repairs.

• **Extension cable**

Part No. : E30-3404-05



ADJUSTMENT

Common Section

Since the TK-862HG cannot be tuned from the panel, the FPU (KPG-56D) should be used for adjustment.

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. PLL lock voltage RX	1) Set test mode CH : CH3 - Sig1	DVM Power meter F. conter	TX-RX (A/2)	CV	PLL	TC106	7.5V	±0.1V
TX	2) PTT : ON (Transmit)					TC109	7.5V	
RX	3) CH : CH2 - Sig1 AUX : ON (talk-around mode)						Check	0.9V or more
TX	4) PTT : ON (Transmit)							0.9V or more

Receiver Section

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Discriminator • Wide	1) Set test mode CH : CH1 - Sig1 SSG output : –53dBm/501µV SSG MOD : 3kHz AF : 1.4V/4Ω	SSG AF VTVM Oscilloscope	Rear panel	ANT ACC (EXT.SP)	TX-RX (A/2)	L5	AF output maximum.	
2. Sensitivity • Wide	1) Set test mode Select "SENS" in tuning mode. "S.E.N.S._." Adjust [250] SSG freq' : 489.950MHz SSG output : –116dBm/0.35µV SSG MOD : 3kHz AF output : 1V/4Ω	SSG AF VTVM Distortion meter Oscilloscope AG DVM	Rear panel TX-RX (A/2)	ANT ACC (EXT.SP) RSSI	TX-RX (A/2)	L13 L22	RSSI voltage maximum.	
	2) "S.ENS" Adjust [∗∗∗] SSG freq' : 450.050MHz				Front panel	CH∧/∨	RSSI voltage maximum.	
	3) "S.E.N.S" Adjust [∗∗∗] SSG freq' : 470.050MHz							
3. Squelch 3 • Wide	1) Set test mode Select "SQL3" in tuning mode. "S.QL3" Adjust [∗∗∗] SSG freq' : 450.050MHz SSG output : –125dBm/0.12µV SSG MOD : 3kHz (Wide) 1.5kHz (Narrow)						Adjust to the squelch threshold point.	

ADJUSTMENT

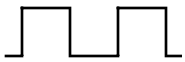
Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
	2) "S.Q.L.3" Adjust [∗∗∗] SSG freq' : 470.050MHz	SSG AF VTVM Distortion meter Oscilloscope AG	Rear panel	ANT ACC (EXT.SP)	Front panel	CH∧/∨	Adjust to the squelch threshold point.	
	3) "S.Q.L.3._." Adjust [∗∗∗] SSG freq' : 489.950MHz							
• Narrow	4) "SQL3∗∗∗." Adjust [∗∗∗] SSG freq' : 470.050MHz							
4. Squelch 9 • Wide	1) Set test mode Select "SQL9" in tuning mode. "S.QL9" Adjust [∗∗∗] SSG freq' : 450.050MHz SSG output : –115dBm/0.4µV SSG MOD : 3kHz (Wide) 1.5kHz (Narrow)							
	2) "S.Q.L.9" Adjust [∗∗∗] SSG freq' : 470.050MHz							
	3) "S.Q.L.9._." Adjust [∗∗∗] SSG freq' : 489.950MHz							
• Narrow	4) "SQL9∗∗∗." Adjust [∗∗∗] SSG freq' : 470.050MHz							
5. Squelch check	1) Set test mode CH : CH1 - Sig1~CH3 - Sig1 SSG output : –116dBm/0.35µV						Check	Squelch must be opened. (Wide/Narrow)
	2) SSG output : OFF							Squelch must be closed. (Wide/Narrow)
6. QT check	1) Set test mode CH : CH1 - Sig4 SSG MOD INT : 3kHz (Wide) 1.5kHz (Narrow) EXT : 151.4Hz SSG system MOD DEV : ±3.75kHz (Wide) : ±1.85kHz (Narrow) SSG output : 10dB SINAD level							
	2) CH : CH1 - Sig3 CH1 - Sig5 CH1 - Sig6						Check	Squelch must be opened.

ADJUSTMENT

Transmitter Section

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Frequency	1) Set test mode Select "FREQ" in tuning mode. PTT : ON Adjust [_**]	Power meter F. counter	Rear panel	ANT	Front panel	CH∧/∨	Check	470.100MHz±100Hz
2. Power output	1) Maximum power Set test mode Select "HPOW" in tuning mode. "H.POW" Adjust [256] PTT : ON						Check	More than 42.0W
3. High power	1) Set test mode Select "HPOW" in tuning mode. "H.POW" PTT : ON Adjust [***]						40.0W	±2.0W
	2) "H.P.OW" PTT : ON Adjust [***]							
	3) "H.P.O.W" PTT : ON Adjust [***]							
	4) "H.P.O.W." PTT : ON Adjust [***]							
	5) "H.P.O.W._." PTT : ON Adjust [***]							
4. Low power	1) Set test mode Select "LPOW" in tuning mode. "L.POW" PTT : ON Adjust [***]	Power mete					10.0W	±1.0W
	2) "L.P.OW" PTT : ON Adjust [***]							
	3) "L.P.O.W" PTT : ON Adjust [***]							
	4) "L.P.O.W." PTT : ON Adjust [***]							
	5) "L.P.O.W._." PTT : ON Adjust [***]							
5. Power check	1) Set test mode CH : CH1 - Sig1 CH2 - Sig1 CH3 - Sig1 PTT : ON	Power meter Ammeter	Rear panel	ANT DC IN			Check	40W±2W, 12A or less

ADJUSTMENT

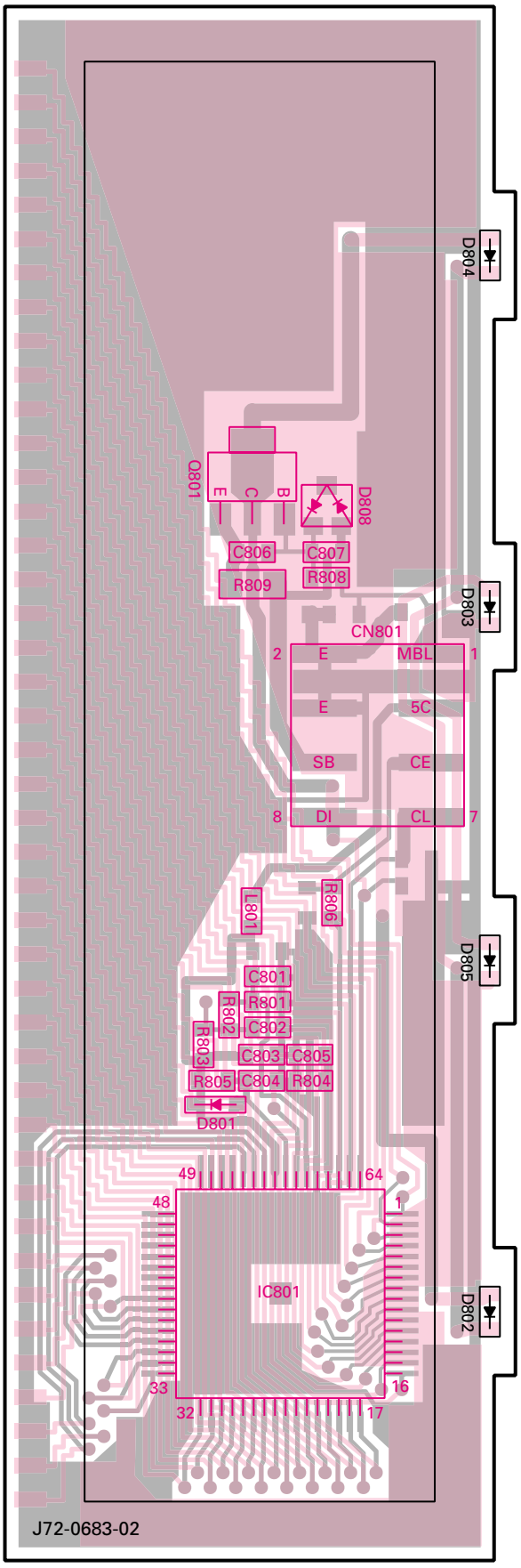
Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
6. Modulation balanced • Wide	1) Set test mode MIC input : OFF Select "BAL" in tuning mode. "_.BAL" Deviation meter filter LPF : 3kHz HPF : OFF De-emphasis : OFF PTT : ON Adjust [∗∗∗]	Power meter Deviation meter Oscilloscope AF VTVM AG	Rear panel Front panel	ANT MIC	Front panel	CH∧/∨	Make the de-modulation waveform neat.	(Wide/Narrow) 
	2) "_.B.A.L" PTT : ON Adjust [∗∗∗]							
	3) "_.B.A.L._." PTT : ON Adjust [∗∗∗]							
• Narrow	4) "_BAL∗∗∗." PTT : ON Adjust [∗∗∗]							
7. Maximum deviation • Wide	1) Set test mode Connect AG to the MIC terminal. Select "MAX" in tuning mode. "_.MAX" AG : 1kHz/50mV Deviation meter filter LPF : 15kHz HPF : OFF De-emphasis : OFF PTT : ON Adjust [∗∗∗]						3.95kHz (Wide) 1.75kHz (Narrow) (According to the larger +, –)	±50Hz (Wide/Narrow)
	2) "_.M.A.X" PTT : ON Adjust [∗∗∗]							
	3) "_.M.A.X._." PTT : ON Adjust [∗∗∗]							
• Narrow	4) "_MAX∗∗∗." PTT : ON Adjust [∗∗∗]							
8. MIC seisitivity check	1) Set test mode CH : CH1 - Sig1 AG : 1kHz/5mV PTT : ON Adjust [∗∗∗]						Check	±3kHz±0.2kHz (Wide) ±1.5kHz±0.05kHz (Narrow)
9. QT deviation • Wide	1) Set test mode Select "FQT" in tuning mode. "_.FQT" Deviation meter filter LPF : 3kHz HPF : OFF PTT : ON Adjust [∗∗∗]				Front panel	CH∧/∨	0.75kHz	±50Hz (Wide/Narrow)

ADJUSTMENT

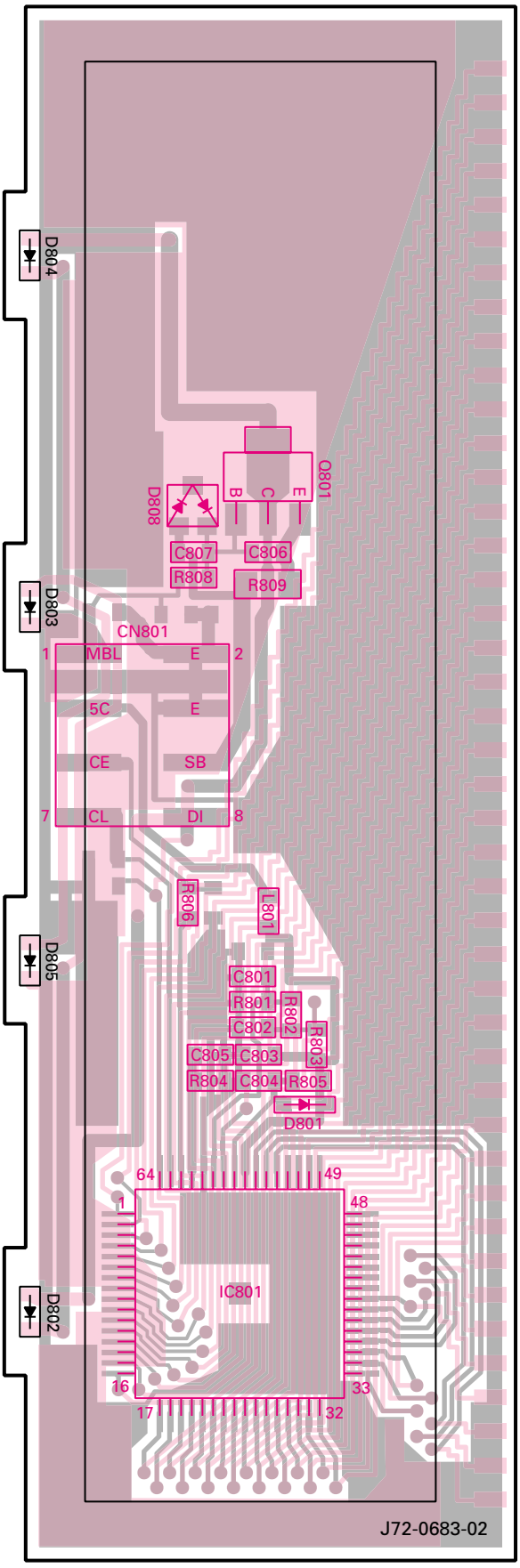
Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
	2) "_.F.Q.T" PTT : ON Adjust [∗∗∗]	Power meter Deviation meter Oscilloscope	Rear panel	ANT	Front panel	CH∧/∨	0.75kHz	±50Hz (Wide/Narrow)
	3) "_.F.Q.T._." PTT : ON Adjust [∗∗∗]	AF VTVM AG	Front panel	MIC				
• Narrow	4) "_FQT∗∗∗." PTT : ON Adjust [∗∗∗]						0.35kHz	
10. DQT deviation • Wide	1) Set test mode Select "FDQT" in tuning mode. "F.DQT" Deviation meter filter LPF : 3kHz, HPF : OFF PTT : ON Adjust [∗∗∗]				Front panel	CH∧/∨	0.75kHz	±50Hz
	2) "F.D.Q.T" PTT : ON Adjust [∗∗∗]							
	3) "F.D.Q.T._." PTT : ON Adjust [∗∗∗]							
• Narrow	4) "FDQT∗∗∗." PTT : ON Adjust [∗∗∗]						0.36kHz	±40Hz
11. DTMF deviation • Wide	1) Set test mode Select "DTMF" in tuning mode. Deviation meter filter LPF : 15kHz HPF : OFF PTT : ON Adjust [∗∗∗]				Front panel	CH∧/∨	3.0kHz	±0.2kHz
• Narrow	2) "DTMF∗∗∗." PTT : ON Adjust [∗∗∗]						1.5kHz	±0.1kHz
12. TONE deviation • Wide	1) Set test mode Select "TONE" in tuning mode. Deviation meter filter LPF : 15kHz HPF : OFF PTT : ON Adjust [∗∗∗]				Front panel	CH∧/∨	3.0kHz	±0.1kHz (Wide/Narrow)
• Narrow	2) "TONE∗∗∗." PTT : ON Adjust [∗∗∗]						1.5kHz	

TK-860HG/862HG PC BOARD VIEWS

DISPLAY UNIT (X54-3270-10) : TK-860HG
Component side view

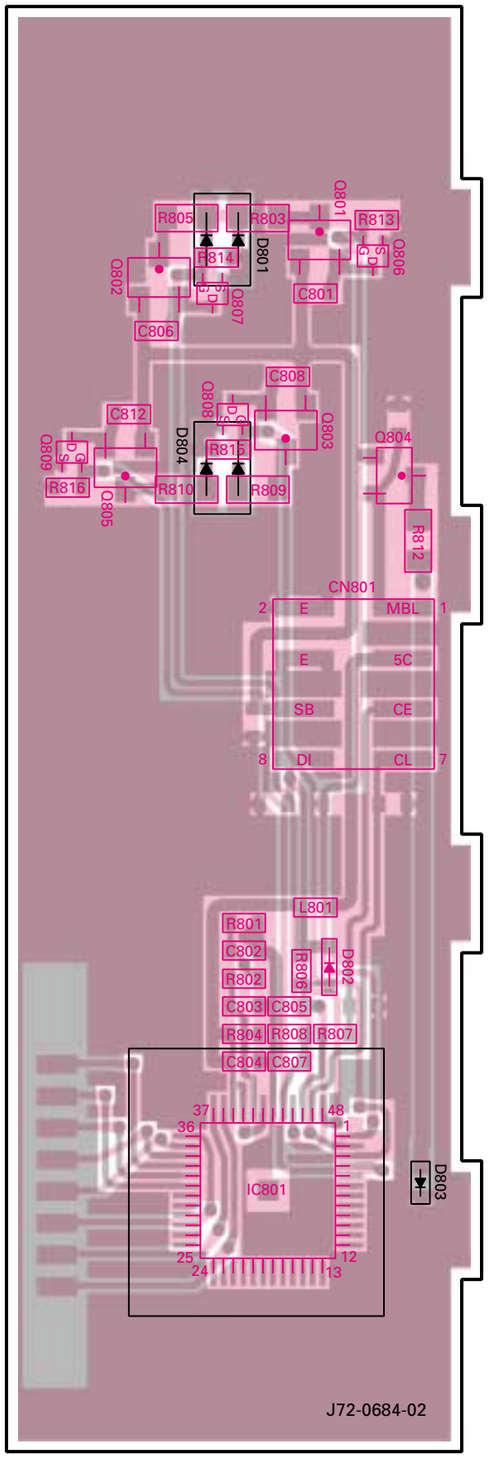


DISPLAY UNIT (X54-3270-10) : TK-860HG
Foil side view

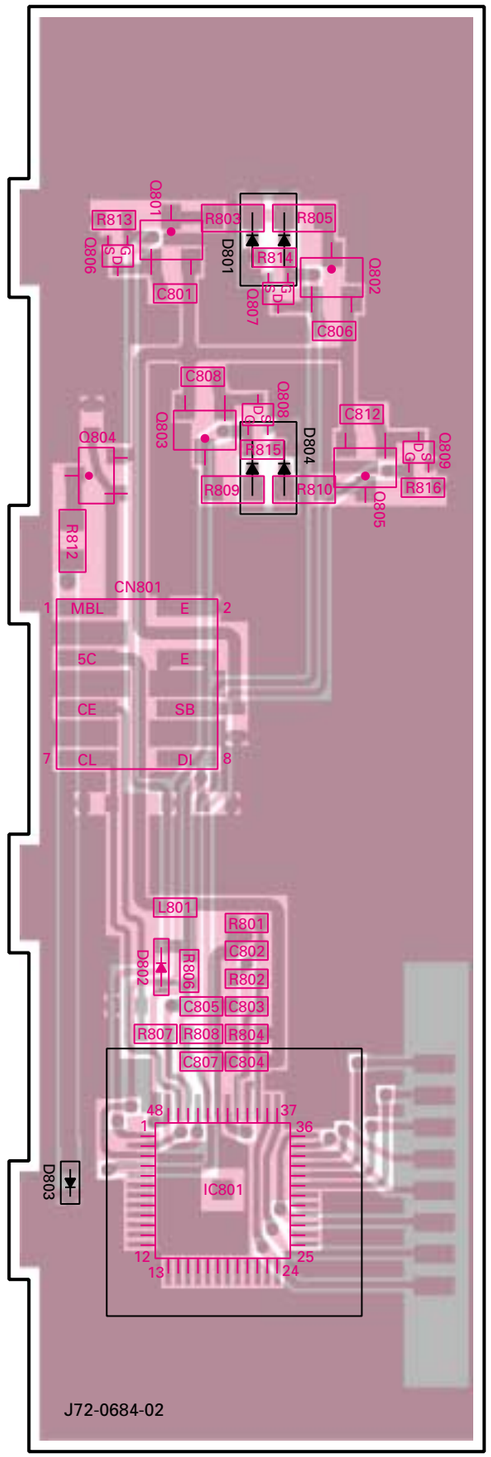


Component side Foil side

DISPLAY UNIT (X54-3280-10) : TK-862HG
Component side view

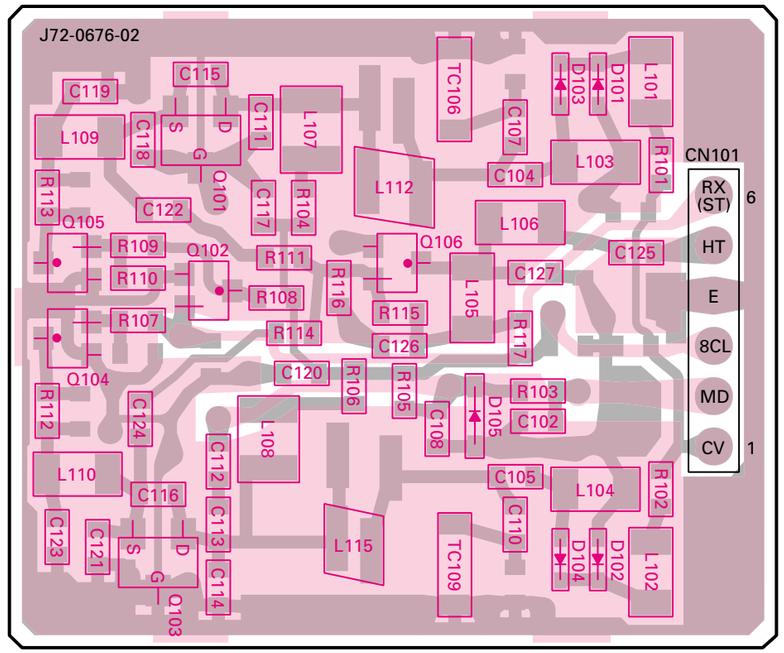


DISPLAY UNIT (X54-3280-10) : TK-862HG
Foil side view

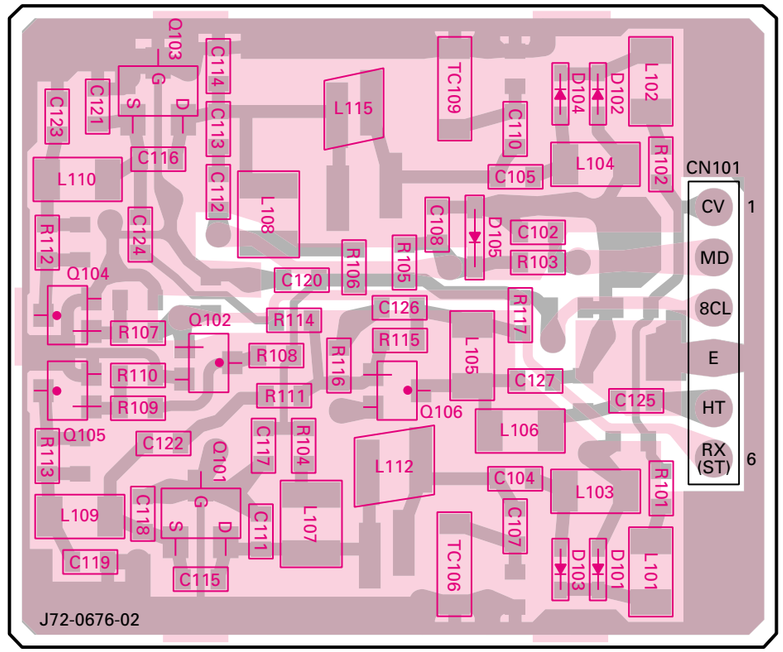


Component side Foil side

PLL/VCO (X58-4670-12) Component side view



PLL/VCO (X58-4670-12) Foil side view

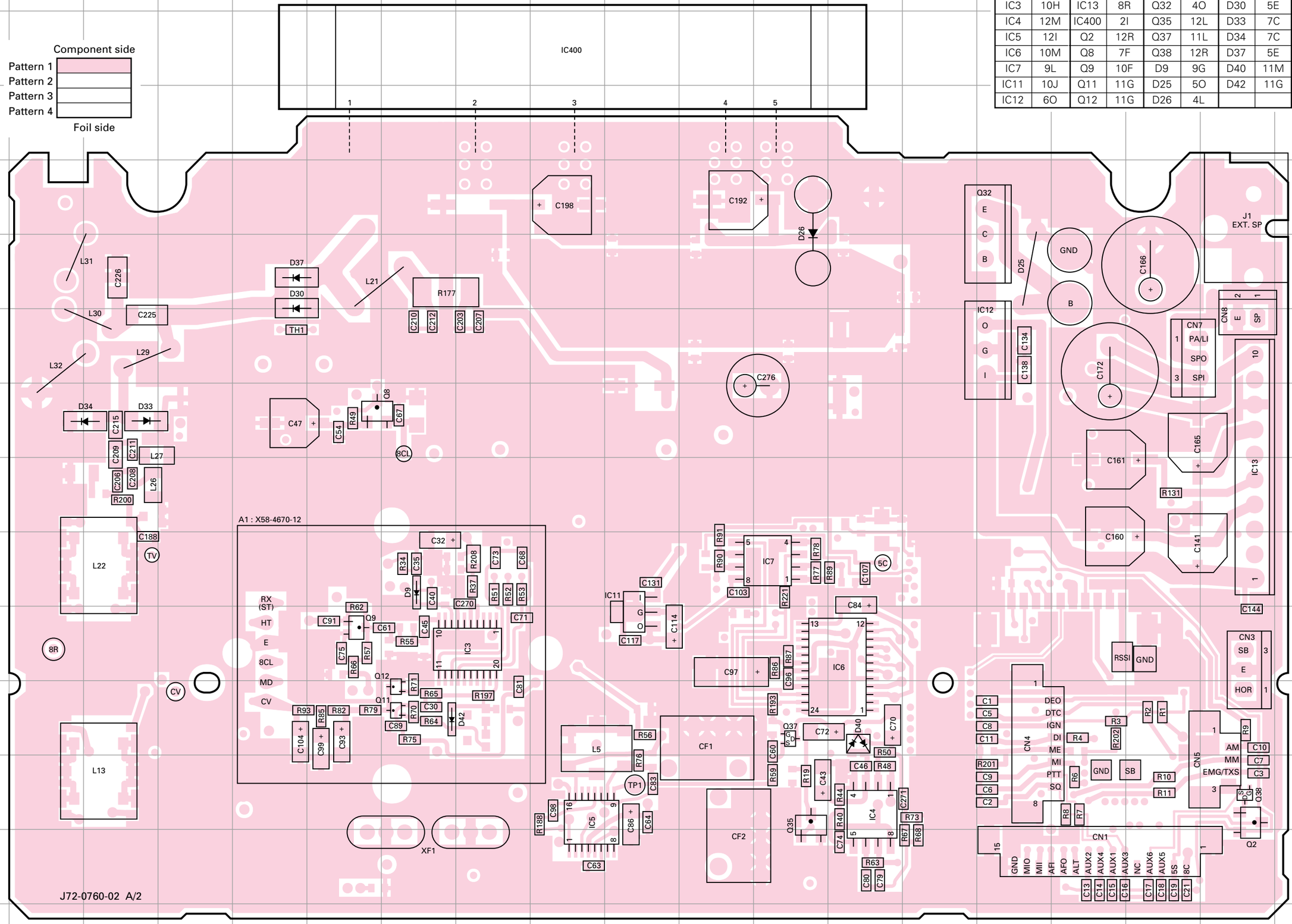


Component side Foil side

TK-860HG/862HG PC BOARD VIEW

TX-RX UNIT (X57-5960-XX) (A/2) Component side view
-15 : TK-860HG -16 : TK-862HG

Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC3	10H	IC13	8R	Q32	4O	D30	5E
IC4	12M	IC400	2I	Q35	12L	D33	7C
IC5	12I	Q2	12R	Q37	11L	D34	7C
IC6	10M	Q8	7F	Q38	12R	D37	5E
IC7	9L	Q9	10F	D9	9G	D40	11M
IC11	10J	Q11	11G	D25	5O	D42	11G
IC12	6O	Q12	11G	D26	4L		

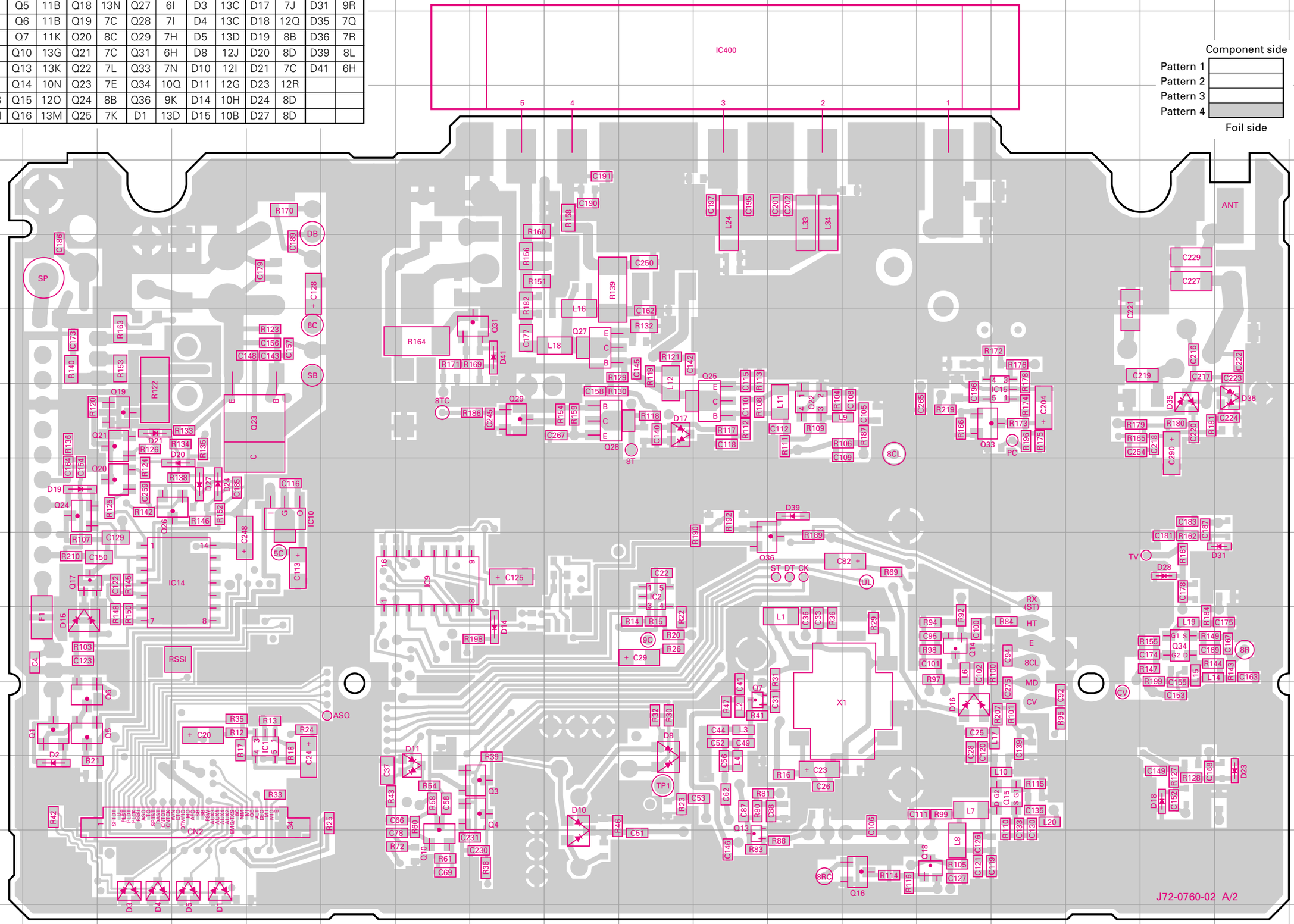


J72-0760-02 A/2

Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC1	11E	Q4	12H	Q17	9B	Q26	8C	D2	12B	D16	11N	D28	9Q
IC2	9J	Q5	11B	Q18	13N	Q27	6I	D3	13C	D17	7J	D31	9R
IC9	9G	Q6	11B	Q19	7C	Q28	7I	D4	13C	D18	12Q	D35	7Q
IC10	8E	Q7	11K	Q20	8C	Q29	7H	D5	13D	D19	8B	D36	7R
IC14	9D	Q10	13G	Q21	7C	Q31	6H	D8	12J	D20	8D	D39	8L
IC15	7O	Q13	13K	Q22	7L	Q33	7N	D10	12I	D21	7C	D41	6H
IC400	2K	Q14	10N	Q23	7E	Q34	10Q	D11	12G	D23	12R		
Q1	11B	Q15	12O	Q24	8B	Q36	9K	D14	10H	D24	8D		
Q3	12H	Q16	13M	Q25	7K	D1	13D	D15	10B	D27	8D		

TX-RX UNIT (X57-5960-XX) (A/2) Foil side view
-15 : TK-860HG -16 : TK-862HG

PC BOARD VIEW TK-860HG/862HG



TK-860HG/862HG **PC BOARD VIEW**

TX-RX UNIT (X57-5960-XX) (A/2)
-15 : TK-860HG -16 : TK-862HG
Component side view + Foil side

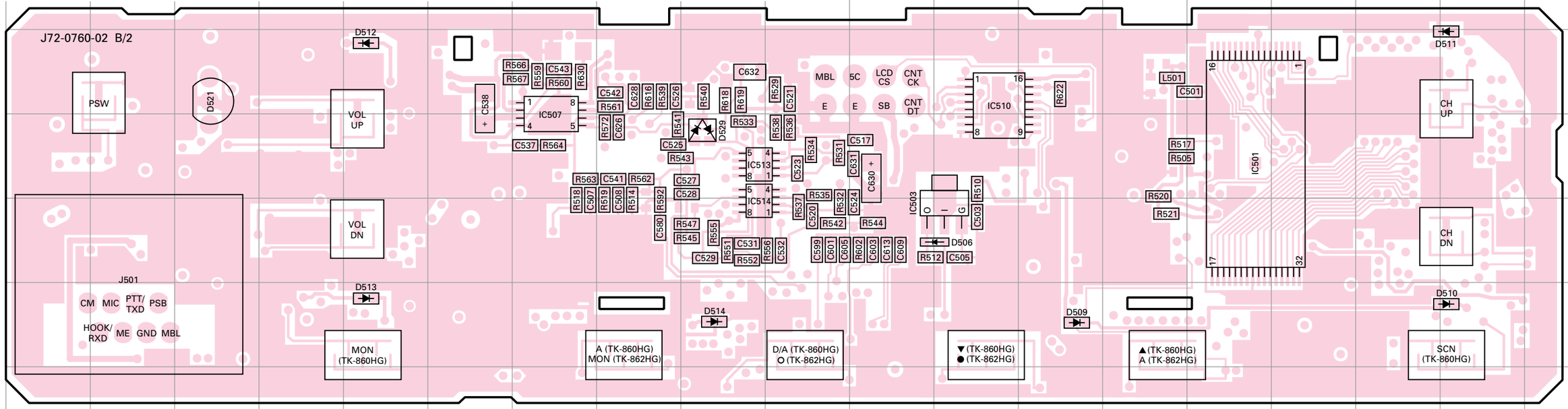
Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC1	11O	IC13	8R	Q8	7F	Q19	7Q	Q31	6L	D4	13Q	D19	8R	D33	7C
IC2	9J	IC14	9P	Q9	10F	Q20	8Q	Q32	4O	D5	13P	D20	8P	D34	7C
IC3	10H	IC15	7E	Q10	13M	Q21	7Q	Q33	7F	D8	12J	D21	7Q	D35	7C
IC4	12M	IC400	2I	Q11	11G	Q22	7H	Q34	10C	D9	9G	D23	12B	D36	7B
IC5	12I	Q1	11R	Q12	11G	Q23	7O	Q35	12L	D10	12K	D24	8P	D37	5E
IC6	10M	Q2	12R	Q13	13I	Q24	8R	Q36	9I	D11	12M	D25	5O	D39	8H
IC7	9L	Q3	12L	Q14	10F	Q25	7I	Q37	11L	D14	10L	D26	4L	D40	11M
IC9	9M	Q4	12L	Q15	12E	Q26	8Q	Q38	12R	D15	10R	D27	8P	D41	6L
IC10	8O	Q5	11R	Q16	13G	Q27	6K	D1	13P	D16	11F	D28	9C	D42	11G
IC11	10J	Q6	11R	Q17	9R	Q28	7K	D2	12R	D17	7J	D30	5E		
IC12	6O	Q7	11I	Q18	13F	Q29	7L	D3	13Q	D18	12C	D31	9B		

Component side
- Pattern 1 🟪
- Pattern 2 ☐
- Pattern 3 ☐
- Pattern 4 ▨

Foil side

● Connect 1 and 4

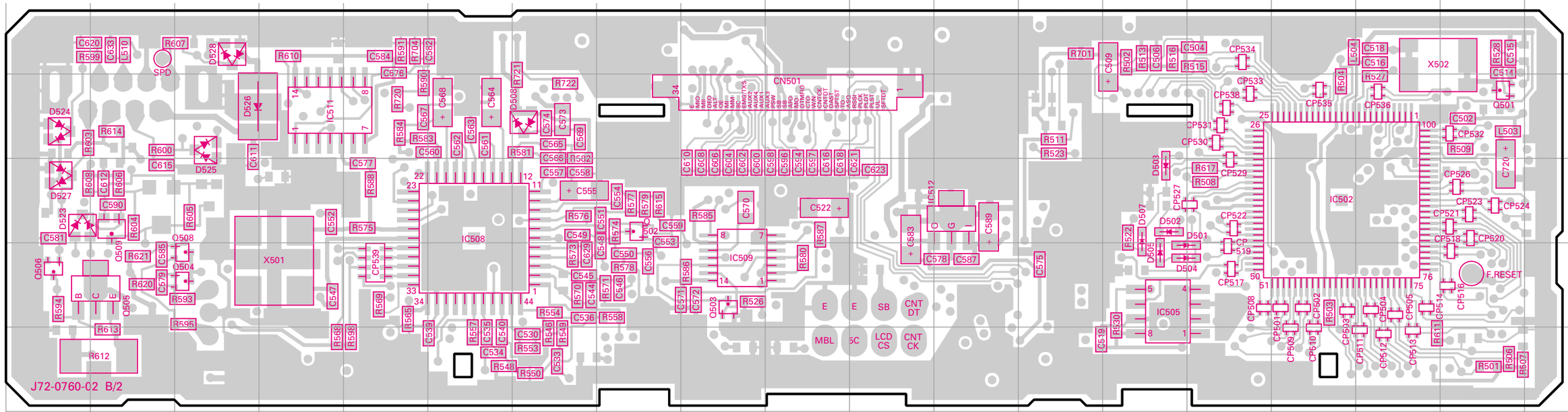
TX-RX UNIT (X57-5960-XX) (B/2) -15 : TK-860HG -16 : TK-862HG Component side view



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC501	3O	IC510	2L	D506	4L	D511	2R	D514	5I
IC503	4L	IC513	3I	D509	5M	D512	2E	D521	2C
IC507	3G	IC514	4I	D510	5R	D513	5E	D529	3I

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

TX-RX UNIT (X57-5960-XX) (B/2) -15 : TK-860HG -16 : TK-862HG Foil side view

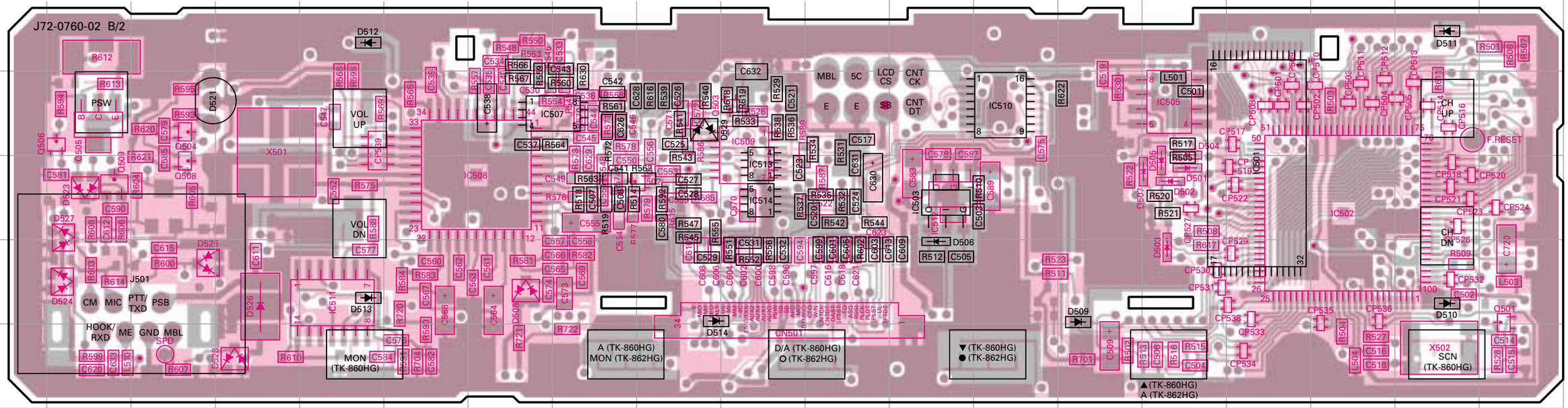


Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC502	10P	IC509	11I	Q501	9R	Q504	11C	Q508	11C	D502	10N	D505	11N	D523	10A	D526	9C
IC505	11N	IC511	9D	Q502	10H	Q505	11B	Q509	10B	D503	10N	D507	10N	D524	9A	D527	10A
IC508	10F	IC512	10L	Q503	11I	Q506	11A	D501	11N	D504	11N	D508	9G	D525	9C	D528	8C

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

TK-860HG/862HG PC BOARD VIEW

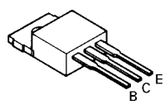
TX-RX UNIT (X57-5960-XX) (B/2) -15 : TK-860HG -16 : TK-862HG Component side view + Foil side



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC501	4P	IC510	3M	Q503	3J	D502	4O	D509	5N	D523	4B
IC502	4Q	IC511	5E	Q504	3C	D503	5O	D510	5R	D524	5B
IC503	4L	IC512	4L	Q505	3B	D504	4O	D511	2R	D525	5C
IC505	3O	IC513	4J	Q506	3B	D505	4O	D512	2E	D526	5D
IC507	3H	IC514	4J	Q508	4C	D506	5L	D513	5E	D527	4B
IC508	4G	Q501	5S	Q509	4B	D507	4O	D514	5I	D528	6D
IC509	3J	Q502	4I	D501	4O	D508	5G	D521	3C	D529	3I

Component side
Pattern 1
Pattern 2
Pattern 3
Pattern 4
Foil side
● Connect 1 and 4

2SB1565



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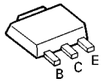
2SA1832
2SC2412K
2SC4215
2SC4226
2SC4617

2SC4619
2SC4738
2SC5110

2SB1132
2SC2954
2SC3357



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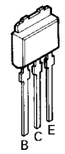

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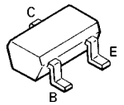

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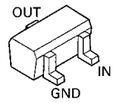

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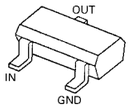
DTC114EKA
DTC114EUA
DTC144EKA
DTD114EK
KRA225S



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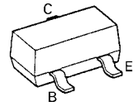

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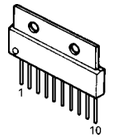

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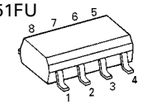

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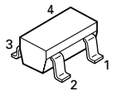

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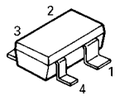

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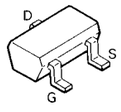

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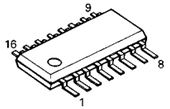

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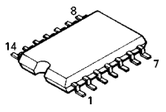

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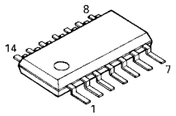

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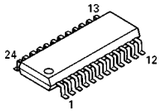

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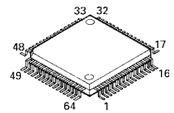

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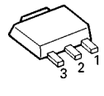

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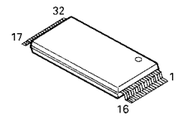

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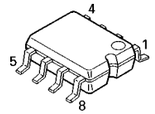

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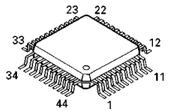

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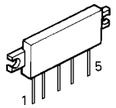

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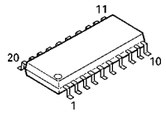

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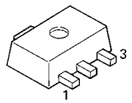

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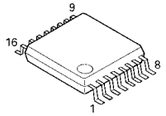

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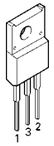

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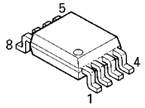

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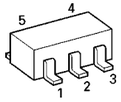

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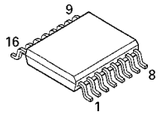

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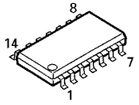

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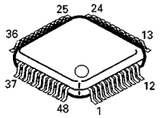

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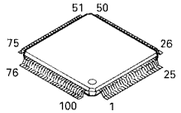


SCHEMATIC DIAGRAM TK-860HG

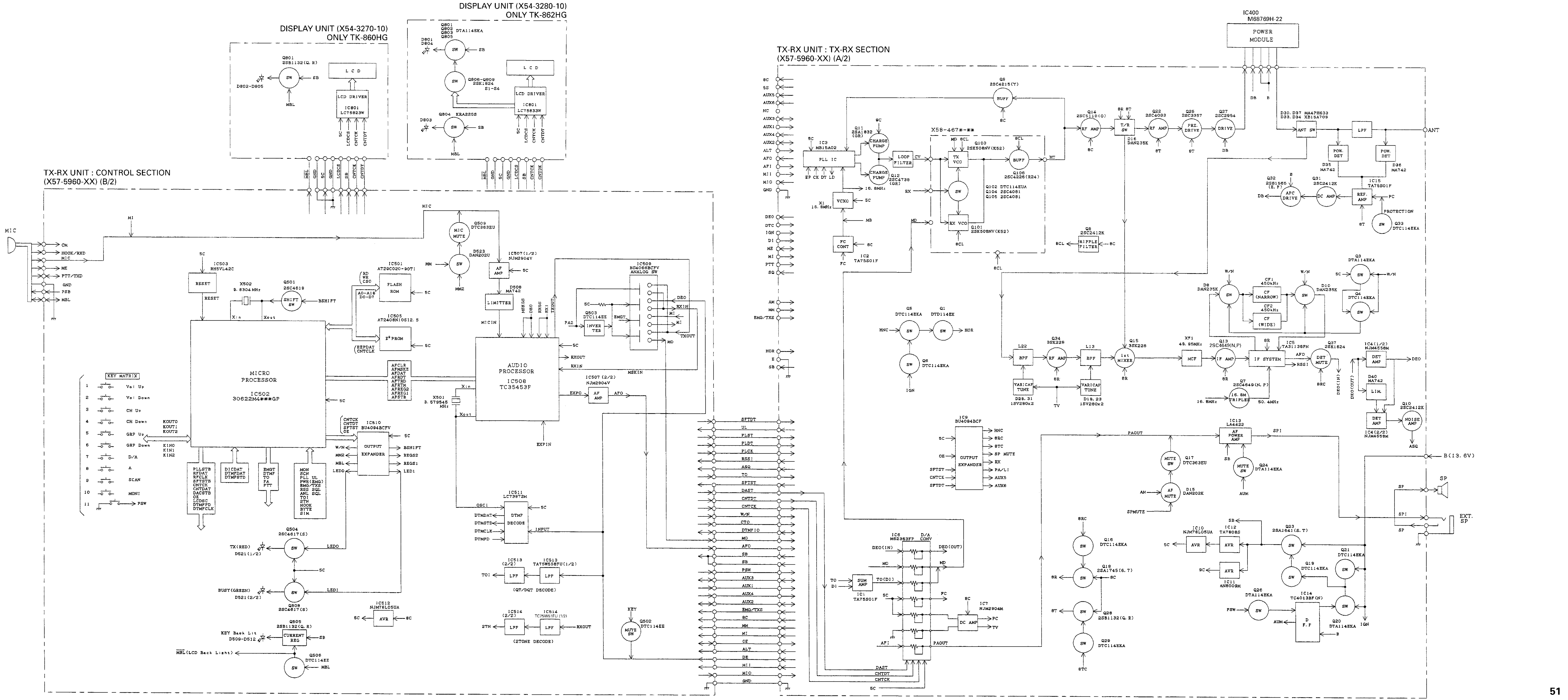
Note : Components marked with a dot (-) are parts of patterun 1.

TK-862HG **SCHEMATIC DIAGRAM**

Note : Components marked with a dot (·) are parts of patterun 1.

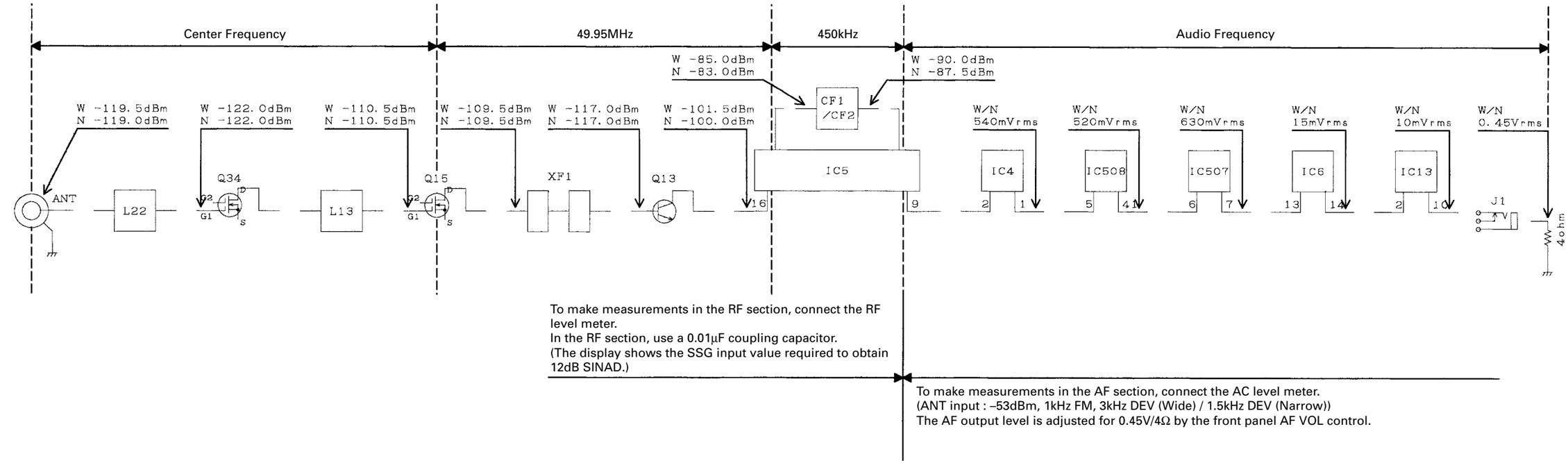
TK-860HG/862HG

BLOCK DIAGRAM

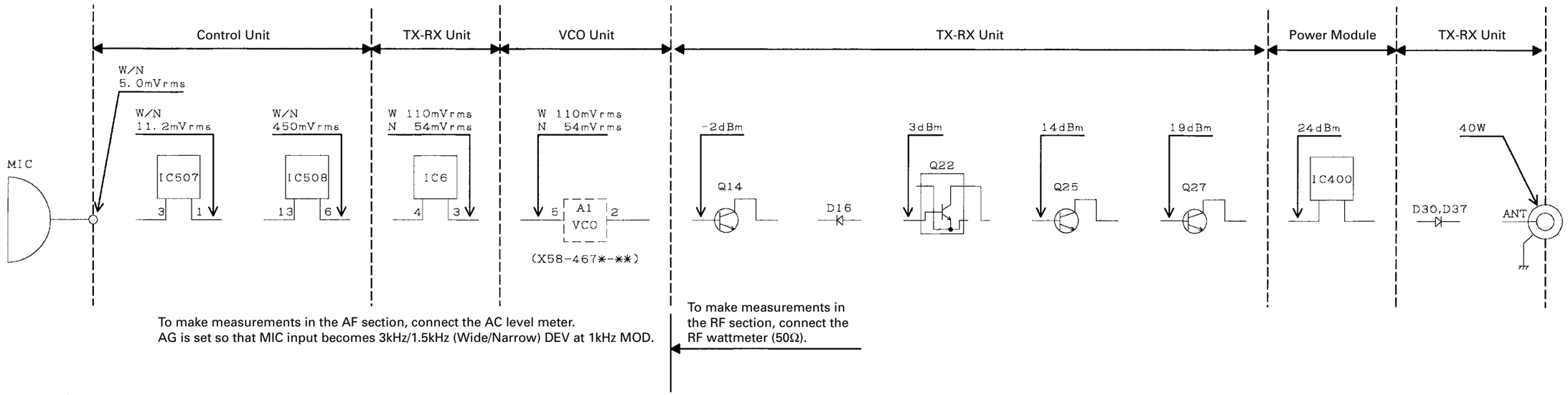


LEVEL DIAGRAM

Receiver Section



Transmitter Section



TERMINAL FUNCTION

CN1 (TX-RX Unit)

Pin No.	Name	Function
1	8C	DC 8V output.
2	5S	DC 5V output.
3	AUX5	SMRD : Reset output. *1
4	AUX6	5SC : 5S control (Cannot use). *1
5	NC	Non-connection
6	AUX3	SMCK : Clock pulse output. *1
		SQ : Squelch detect output. *2
7	AUX1	SMRQ : Ack Req input. *1
		PTT : External PTT input. *2
8	AUX4	TXD : Serial control data output. *1
9	AUX2	RXD : Serial control data input. *1
		DTC : Data channel control/External hook input.
		CHDATA : Channel control serial data input.
10	ALT	Alert tone input.
11	AFO	Receiver audio signal output.
12	AFI	Reseiver audio signal input.
13	MII	Transmit audio signal input.
14	MIO	Transmit audio signal output.
15	GND	Ground

CN2 (TX-RX Unit) ⟷ CN501 (Control Unit)

Pin No.	Name	Function
1	SFTDT	Serial data for IC9 (Shift register).
2	UL	Lock detect.
3	PLST	Strobe signal for IC3 (PLL IC).
4	PLDT	Serial data for IC3 (PLL IC).
5	PLCK	Clock pulse for IC3 (PLL IC).
6	RSSI	Receive signal strength indicator.
7	ASQ	Analog squelch.
8	TO	Transmit sub-tone signal output.
9	SFTST	Strobe signal for IC9 (Shift register).
10	DAST	Strobe signal for IC6 (Shift register).
11	CNTDT	Control serial data for IC6.
12	CNTCK	Control clock pulse for IC6.
13	W/N	Change signal of wide or narrow.
14	CTO	Received sub-tone signal.
15	DTMFIO	DTMF signal.
16	MO	Modulation signal.
17	AFO	Receiver audio signal.
18	SB	Switched B.
19	SB	Switched B.
20	PSW	Power switch.
21	AUX3	Optional unit control signal.
22	AUX1	Optional unit control signal.
23	AUX4	Optional unit control singal.
24	AUX2	Optional unit control signal.
25	EMG/TXS	Foot switch input signal.
26	8C	DC 8V.
27	MM	MIC mute.
28	MI	External MIC input signal.
29	OE	Output enable.
30	ALT	Alert tone signal.
31	DEO	Receiver detector output.
32	MII	Transmit audio signal input.
33	MIO	Transmit audio signal output.
34	GND	Grond.

*1 : SmarTrunk OMNI mode
*2 : MDT mode
*3 : Emergency mode

CN3 (TX-RX Unit)

Pin No.	Name	Function
1	HOR	Horn alert/call output.
2	E	Ground.
3	SB	Switched B+, DC 13.6V output, Maximum 1A.

CN4 (TX-RX Unit)

Pin No.	Name	Function
1	DEO	Receiver detector output. Level : 0.5Vrms (Atandard modulation)
2	DTC	Data channel control/External hook input.
3	IGN	Ignition sense input.
4	DI	Data modulation input.
5	ME	External microphone ground.
6	MI	EXternal microphone input.
7	PTT	External PTT input, active low.
8	SQ	Squelch detect output.

CN5 (TX-RX Unit)

Pin No.	Name	Function
1	AM	Speaker mute input, active high.
2	MM	MIC mute input, active high
3	EMG/TXS	EMG : Foot switch input, active low. *3

CN7 (TX-RX Unit)

Pin No.	Name	Function
1	PA/LI	Relay for PA function KAP-1 control. "H" : PA/LI on, "L" : PA/LI off
2	SPO	Audio signal output to KAP-1
3	SPI	Audio signal inpt from KAP-1

CN8 (TX-RX Unit)

Pin No.	Name	Function
1	SP	Audio signal output to internal/external speaker.
2	E	Ground

J501 (Control Unit)

Pin No.	Name	Function
1	MBL	MIC backlight control.
2	PSB	13.6V.
3	GND	Ground.
4	PTT/TXD	PTT.
5	ME	MIC ground.
6	MIC	MIC signal input.
7	HOOK/RXD	Hook detection
8	CM	MIC data detection.

CN101 (PLL/VCO) ⟷ TX-RX Unit

Pin No.	Name	Function
1	CV	Control voltage input.
2	MD	Modulation input.
3	8CL	8V input.
4	E	Ground.
5	HT	Signal output.
6	RX (ST)	Switched transmit input. H : Transmit

SPECIFICATIONS

GENERAL

Frequency Range	450 to 490MHz
Number of Channels	TK-862HG : Maximum 8 channels TK-860HG : Maximum 128 channels
Number of Groups	TK-860HG : Maximum 128 groups
Channel Spacing	Wide : 25kHz Narrow : 12.5kHz
PLL Channel Stepping	5, 6.25kHz
Operating Voltage	13.6V DC ±15%
Current Drain	Less than 0.4A on standby Less than 1.0A on receive Less than 12.0A on transmit
Operating Temperature Range	–30°C to +60°C (–22°F to +140°F)
Dimensions & Weight	140 (5-33/64) W x 40 (1-37/64) H x 148 (5-53/64) D mm (inch), 1050g (2.31 lbs)
Channel Frequency Spread	40MHz

RECEIVER (Measurements made per EIA standard EIA/TIA-204-D)

Sensitivity (12dB SINAD)	Wide : 0.28µV Narrow : 0.35µV
Selectivity	Wide : 80dB Narrow : 65dB
Intermodulation	Wide : 75dB Narrow : 63dB
Spurious Responce	85dB
Audio Power Output	4.0W
Frequency Stability	±2.5ppm

TRANSMITTER (Measurements made per EIA standard EIA-152-C)

RF Power Output	40W
Spurious and Harmonics	65dB
Modulation	Wide : 16K0F3E Narrow : 11K0F3E
FM Noise	Wide : 50dB Narrow : 45dB
Audio Distortion	Less than 3%
Frequency Stability	±2.5ppm

TK-860HG/862HG

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