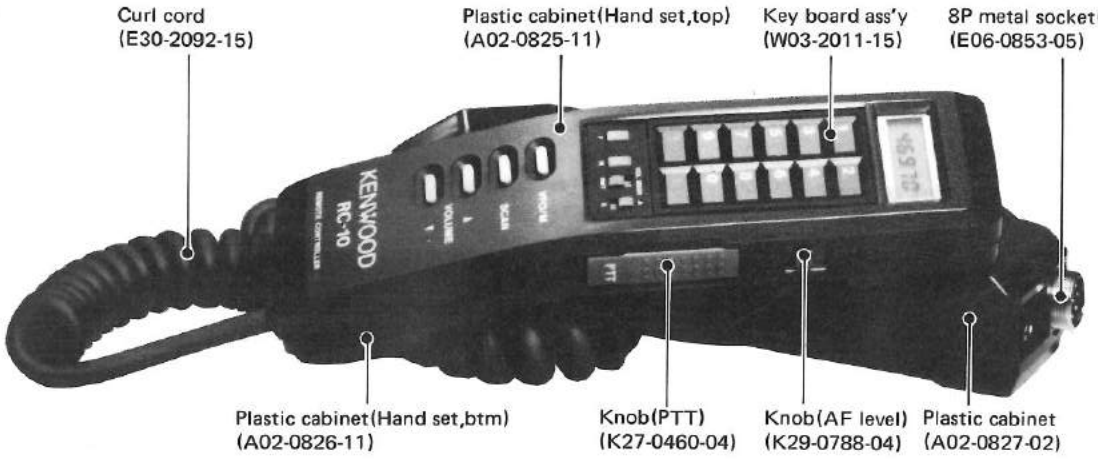
REMOTE CONTROLLER

RC-10

SERVICE MANUAL

KENWOOD

B51-3286-00 (O) 1031



CONTENTS

CIRCUIT DESCRIPTION

When connecting the RC-10 to TM-221 or TM-421

The RC-10 is provided with two microphone connectors, which are denoted as connector A and connector B.

For connector B, the microprocessor operation is different when a microphone is connected instead of the transceiver.

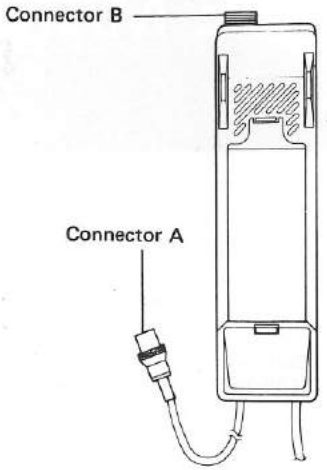


Fig. 1

Microphone input/output selection circuit

- **With a microphone is disconnected to connector B**

The output of the handset microphone enters pin 8 of IC1-c by way of Q102. At this time, pin 1 (P41) of the microprocessor is "H", so pin 8 of IC1-c goes "H". Thus, IC1-c turns ON, and the output is emitted from MCA.

- **With a microphone connected to connector B**

The input from a microphone connected to connector B enters pin 1 of IC1-a. At this time, pin 13 of IC1-a is "H", so IC1-a turns ON. Likewise, IC1-b turns ON. Thus, the output is emitted from MCA.

- **With a transceiver connected to connector B**

When the A/B selection switch is set to "A", pin 1 (P41) of the microprocessor goes "H", and pin 13 of IC1-a , as well as pin 5 of IC1-b, goes "L". Thus, pin 8 of IC1-c goes "H" and pin 12 of IC1-d goes "L". So only IC1-c turns ON to emit the output from MCA.

When the A/B selection switch is set to "B", pin 1 (P41) of the microprocessor goes "L", and pin 13 of IC1-a, as well as pin 5 of IC1-b, goes "L". Thus, pin 6 of IC1-c is "L", and no output is emitted from MCA. Then, since pins 1 and 2 of IC2-a are "L", its output, pin 3, is "H". Subsequently, pin 12 of IC1-d goes "H" so that only IC1-d turns ON to emit the output from MCB.

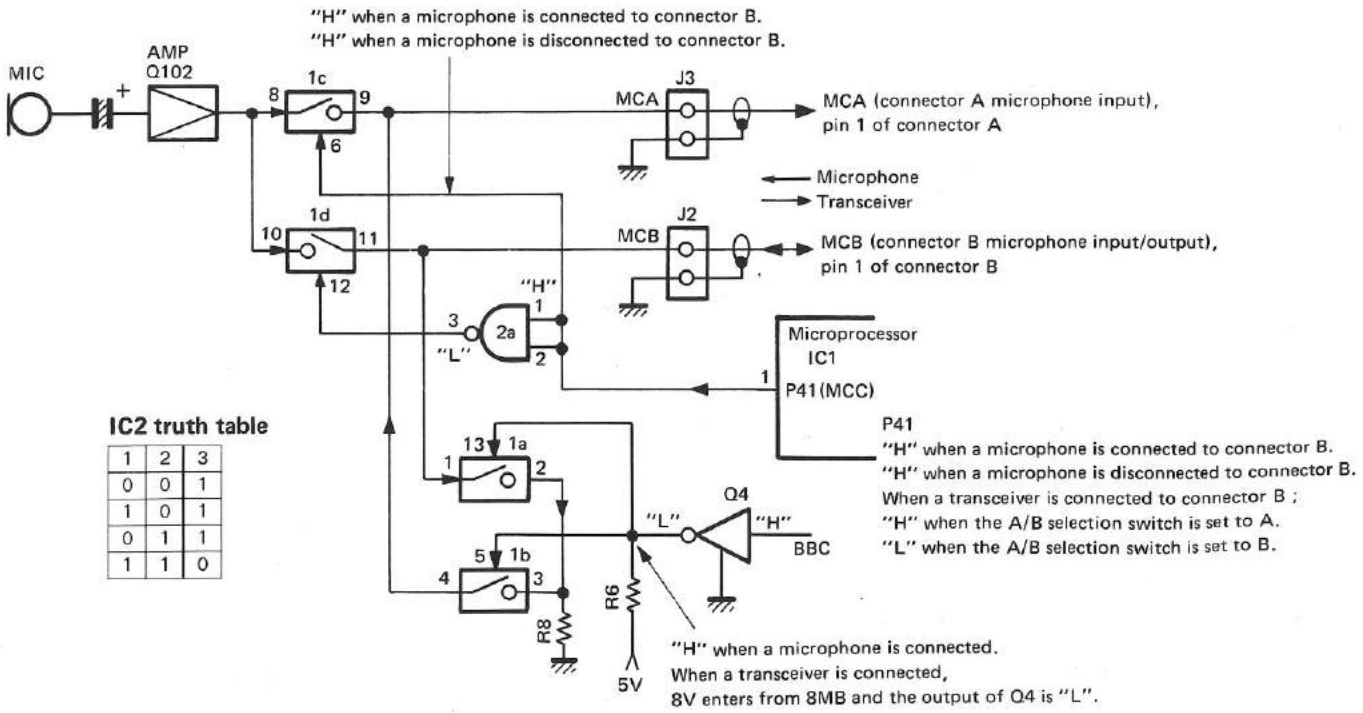


Fig. 2 Microphone input/output selection circuit

CIRCUIT DESCRIPTION

The BUSY selection circuit when two transceivers are connected

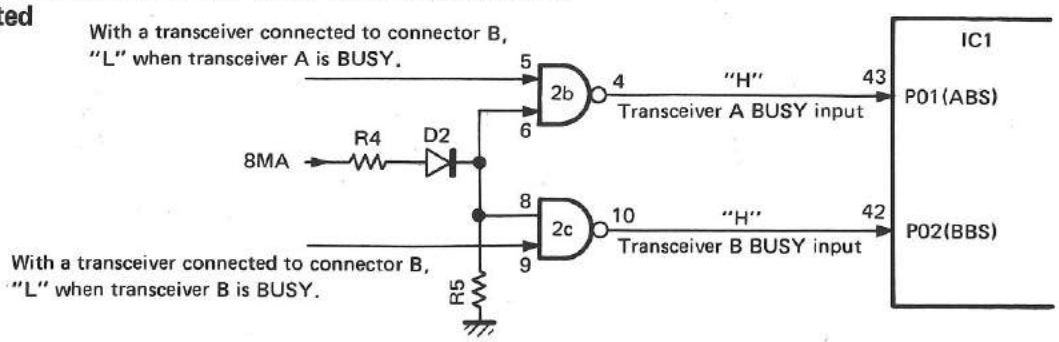


Fig. 3 The BUSY selection circuit when two transceiver are connected

AF-A/AF-B selection circuit

This circuit selects the AF output, with the A/B selection switch, when two transceivers are connected.

Reception circuit

The reception demodulation outut (about 150mV/600 ohms) which entered through connector A (RDA) or connector B (RDB) is inputted to squelch unit SQL-A or SQL-B (X59-3150-00) in the TM-221/421. This output is amplified by Q6 in SQL-A or SQL-B, and enters the AF BPF unit (X59-3250-10). It is then power-amplified by AF amplifier IC5, after the DE-EMPHASIS, HPF, NOTCH, and LPF circuits, to drive the speaker.

A slide switch is provided to vary the speaker sound volume, in 3 steps, to a comfortable level.

A part of the reception demodulation output is sent to the noise amplifier unit (X59-3270-00) by way of a noise filter.

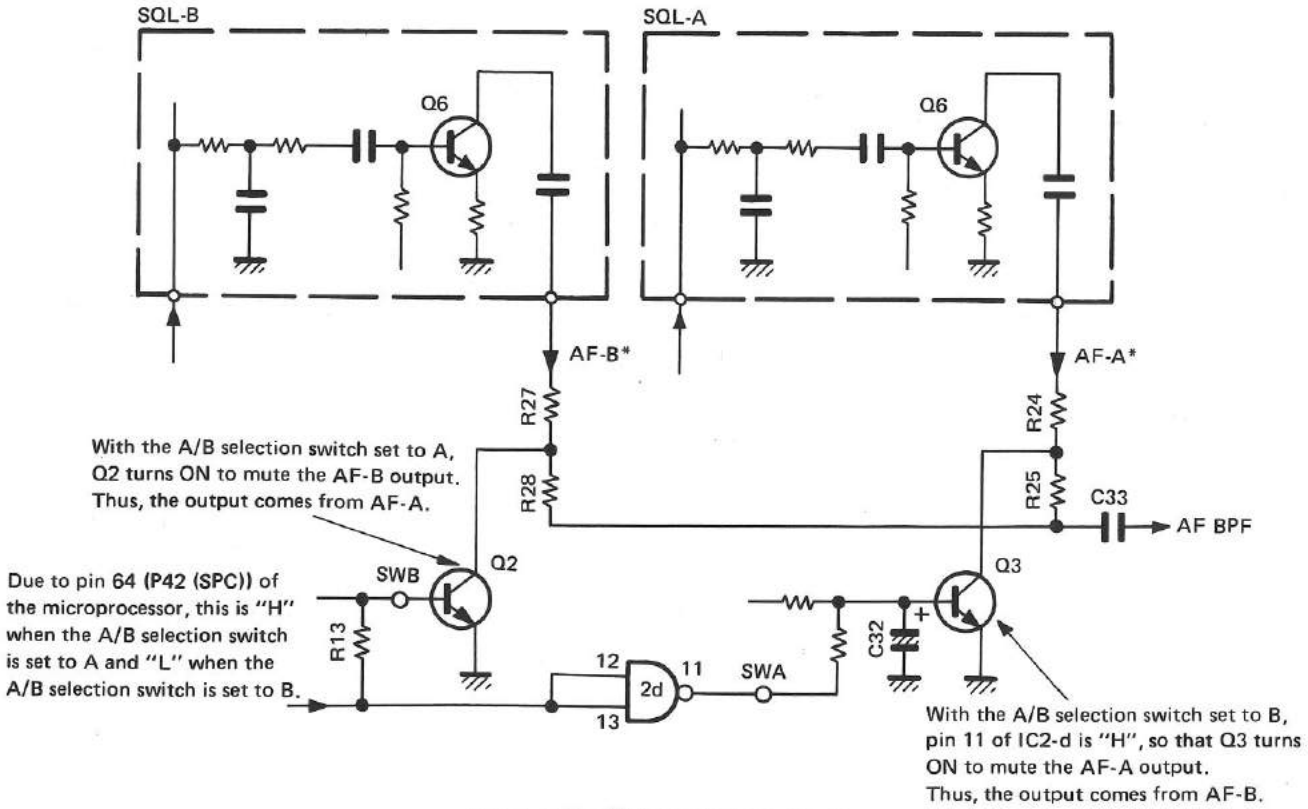


Fig. 4 AF-A/AF-B selection circuit

CIRCUIT DESCRIPTION

Keyboard ass'y (W03-2011-15)

The Keyboard ass'y basically consists of a keyboard, microprocessor IC1, an LCD, and LCD driver IC4. The following shows the data exchange through the microprocessor ports.

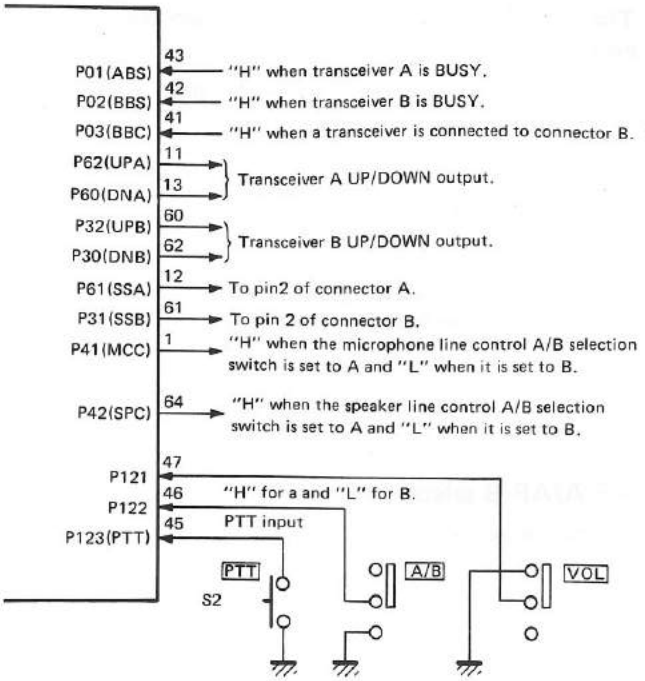


Fig. 5 Keyboard ass'y (W03-2011-15)

Terminal No.	Name	I/O	Function	Terminal No.	Name	I/O	Function
1	P41(MCC)	O	Microphone line control. "H" for SET A and "L" for SET B.	33	PTH01	–	Unused.
				34	PTH00	–	
2	P40(RPC)	O	Repeater control, active "L".	35	TI0	–	
3	P53	I		36	TI1	–	
4	P52	I		37	P23	–	
5	P51	I		38	P22/PCL	O	LCD driver DATA.
6	P50	I		39	P21/PT01	O	LCD driver CLOCK.
7	RESET	I	Reset input, active "L".	40	P20/PT00	O	LCD driver CE.
8	X2	–	Crystal oscillator, 4.194304MHz.	41	P03(BCC)	I	SET B connection check, active "H".
9	X1	–		42	P02(BBS)	I	SET B BUSY input, active "H".
10	P63(RDA)	O	Serial interface ready. Active "H" for SET A.	43	P01(ABS)	I	SET A BUSY input, active "H".
				44	P00/INT4	I	
11	P62(UPA)	O	MIC UP output, active "L".	45	P123(PTT)	I	PTT switch input, active "L".
12	P61(SSA)	I/O	SET A serial input. MIC PTT output, active "L".	46	P122	I	SET A/B selection switch input. "H" for A and "L" for B.
13	P60(DNA)	O	SET A serial output. MIC DOWN output, active "L".	47	P121	I	VR selection switch input. "H" for electronic VR and "L" for VR of the equipment itself.
14	P73	–	Unused.	48	P120	I	Key scan return bit 4
15	P72	–		49	P133	I	Key scan return bit 3
16	P71	–		50	P132	I	Key scan return bit 2
17	P70	I		51	P131	I	Key scan return bit 1
18	P83	O	DTMF output bit 3	52	P130	I	Key scan return bit 0
19	P82	O	DTMF output bit 2	53	P143	O	Key scan signal output.
20	P81	O	DTMF output bit 1	54	P142	O	
21	P80	O	DTMF output bit 0	55	P141	O	
22	P93	O	DTMF output bit 7	56	P140	O	
23	P92	O	DTMF output bit 6	57	NC	–	Unused.
24	P91	O	DTMF output bit 5	58	VDD	–	Power pin (5V).
25	P90	O	DTMF output bit 4	59	P33(RDB)	O	Serial interface ready, active "H" for SET A.
26	Vss	–	GND pin.	60	P32(UPB)	O	MIC UP output, active "L".
27	P13/INT3	–	Unused.	61	P31(SSB)	I/O	SET B serial input, MIC PTT output, active "L".
28	P12/INT2	–		62	P30(DNB)	O	SET B serial output. MIC DOWN output, active "L".
29	P11/INT1	–					
30	P10(RPT)	I	Repeater operation enable, active "H".	63	P43	–	Unused.
31	PTH03	–	Unused.	64	P42(SPC)	O	Speaker line control. "H" for SET A and "L" for SET B.
32	PTH02	–					

Table 1 μPD75104G-531-1B pin functions (Keyboard ass'y IC1)

DESCRIPTION OF COMPONENTS

AF UNIT (X49-3010-XX)

Component	Use/Function	Operation/Condition/Compatibility
IC1	Microphone line switching	
IC2	Microphone line, BUSY line	Speaker line control.
IC3	AVR 5V	For digital circuit.
IC4	AVR 4V	For AF amplification.
IC5	AF amplification	
Q1	Microphone monitor amplification	Operation stops for repeater.
Q2	Speaker line control	ON when A/B switch is set to A, OFF when it is set to B.
Q3	Speaker line control	OFF when A/B switch is set to A, ON when it is set to B.
Q4	Microphone line control	ON when a transceiver is connected to connector B, OFF when a microphone is connected.
Q5	Q1 control	OFF only for repeater.
Q6	Connector B power switch	OFF when a transceiver is connected to connector B, ON when a microphone is connected.
Q7	Q6 control	ON when a transceiver is connected to connector B, OFF when a microphone is connected.
Q8	Connector B power switch	ON when a transceiver is connected to connector B, OFF when a microphone is connected.
Q9, 10	Noise blanker	OFF when data is sent out.
Q101	Q102 control	OFF only for repeater.
Q102	Microphone amplification	Operation stops for repeater.
D1	Power supply	Power supply for connector B to connector A.
D2	For wired OR	Operates as a level shift.
D3	Repeater amplification control	OFF only for repeater.
D4	Repeater amplification control	OFF only when the transceiver connected to connector B is BUSY.
D5	Repeater amplification control	OFF only when the transceiver connected to connector A is BUSY.
D6	Connector B power switch	OFF when a transceiver is connected to connector B, ON when a microphone is connected.
D7	Q3 control	ON when Q9 is OFF, OFF when Q9 is ON.
D8	Q2 control	ON when Q10 is OFF, OFF when Q10 is ON.
D9	Connector B power switch	ON when a transceiver is connected to connector B, OFF when a microphone is connected.

SQL (X59-3150-00)

Component	Use/Function	Operation/Condition/Compatibility
Q1	Noise amplification	
Q2	Squelch switching	ON when squelch is ON.
Q3, 4	DC amplification	OFF when squelch is ON.
Q5	Low-frequency amplification	For RD terminal.
Q6	Low-frequency amplification	OFF when squelch is ON.
D1	Squelch noise rectification	
D2	Base bias setting	

AF BPF (X59-3250-10)

Component	Use/Function	Operation/Condition/Compatibility
IC1, 2	Active filter	Determines the reception frequency characteristics.

NOISE AMPLIFIER (X59-3270-10)

Component	Use/Function	Operation/Condition/Compatibility
Q1, 2	Amplification	Noise amplification when a transceiver is connected to connector A.
Q3, 4	Amplification	Noise amplification when a transceiver is connected to connector B.

BUFFER AMPLIFIER (X59-3280-10)

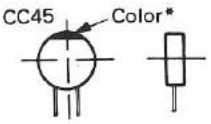
Component	Use/Function	Operation/Condition/Compatibility
Q1	Q2 control	Turns OFF only when transceiver attached to connector A or B is BUSY in repeater mode.
Q2	Amplification	Transfers the discrete output from transceiver attached to connector B to the microphone line of transceiver attached to connector A.
Q3	Q4 control	Turns OFF only when transceiver attached to connector A or B is BUSY in repeater mode.
Q4	Amplification	Transfers the discrete output from transceiver attached to connector A to the microphone line of transceiver attached to connector A.

PARTS LIST

CAPACITORS

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

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



• Capacitor value

0 1 0 = 1pF
1 0 0 = 10pF
1 0 1 = 100pF
1 0 2 = 1000pF = 0.001μF
1 0 3 = 0.01μF

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 10μF−10~+50 Less than 4.7μF−10~+75

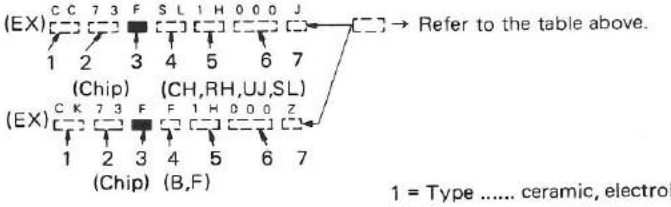
Code	B	C	D	F	G
(pF)	± 0.1	± 0.25	± 0.5	± 1	± 2

Less than 10 pF

• Rating voltage

2nd word / 1st word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	–
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	–
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	–

• Chip capacitors



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

RESISTORS

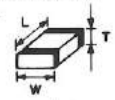
• Chip resistor (Carbon)

• Carbon resistor (Normal type)

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



PARTS LIST

SEMICONDUCTOR

N : New parts

Item	Re-marks	Parts No.
Diode		1SS133
		MA151K
		MC931
Chip diode		1SS181
		1SS226
LCD	N	FTD-8526A
LED		LN01801C
TR		2SA1048(Y)
		2SC2458(Y)
		2SC3327
Chip TR		2SC2712(Y)
		2SC3295(B)

Item	Re-marks	Parts No.
Digital TR		DTC144ES
IC		KRR-C001
		LA4147
	N	LA5004
		LA5005
		LC7582
	N	M51951AML
		NJM4558M
		TC4011BP
		TC4066BP
	N	μPD75104G-531-1B

PARTS LIST

* New Parts
Parts without Parts No. are not supplied.
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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	Destination 仕向	Remarks 備考
			RC-10			
1	1A	*	A02-0825-11	PLASTIC CABINET(HAND SET,TOP)		
2	3A	*	A02-0826-11	PLASTIC CABINET(HAND SET,BTM)		
3	1B	*	A02-0827-02	PLASTIC CABINET		
4	2C	*	A13-0651-13	MOUNTING BRACKET(L TYPE)		
5	2C	*	A13-0652-14	MOUNTING BRACKET		
6	1B	*	A21-1512-04	DRESSING PANEL	K	
6	1B	*	A21-1513-04	DRESSING PANEL	M	
7	2B	*	A40-0613-13	BOTTOM PLATE		
10	2B	*	B40-3755-04	MODEL NAME PLATE		
11	2B	*	B42-3320-04	STIKER (SQ ADJ)		
12	3A	*	B45-0703-04	STIKER (KENWOOD)		
13	1B		B46-0411-10	WARRANTY CARD	K	
14	1C	*	B50-8176-10	INSTRUCTION MANUAL		
18	2B	*	D32-0408-24	STOPPER		
20	1B		E06-0853-05	8P METAL SOCKET(CONNECTOR B)		
21	1B	*	E30-2091-05	CONNECTION CABLE(CONNECTOR A)		
22	2A	*	E30-2092-15	CURL CORD		
23	1C	*	E30-2104-05	CONNECTION CABLE(GND)		
24	1B	*	E31-3272-05	LEAD WIRE WITH CONNECTOR		
27	3A	*	F15-0650-04	FILTER (MIC)		
28	3A	*	F15-0651-04	FILTER (SPEAKER)		
29	3A	*	F19-0629-04	BLIND PLATE		
30	2B	*	F20-0536-14	INSULATING BOARD		
33	2B,3B	*	G01-0824-04	SPRING		
34	2A	*	G02-0539-04	SPRING		
35	1C	*	G13-0689-04	CUSHION (ACSY)		
36	2C	*	G13-0696-14	CUSHION (ACSY)		
37	2B	*	G13-0857-04	CUSHION		
38	1A	*	G13-0858-04	CUSHION		
–			G53-0508-04	FELT		
41	3C	*	H01-8115-04	ITEM CARTON BOX		
42	2D	*	H10-2599-03	POLYSYRENE FOAMED FIXTURE		
43	1C		H12-1368-04	PACKING FIXTURE		
44	1C		H25-0029-04	PROTECTION BAG (CUSHION,ETC)		
45	1D		H25-0036-04	PROTECTION BAG (MIC CABLE)		
46	2D		H25-0113-04	PROTECTION BAG		
50	2B,3B	*	J02-0447-04	FOOT		
51	1A	*	J21-4121-13	MOUNTING HARDWARE		
52	2B	*	J30-0531-04	SPACER		
53	1B		J31-0141-04	SPACER RING (MIC)		
–			J61-0307-05	WIRE BAND		
56	1A	*	K27-0460-04	KNOB (PTT)		
57	1A	*	K29-0788-04	KNOB (AF LEVEL)		
–			L77-1313-05	CRYSTAL RESONATOR(4.194304MHZ)		
60	1C		N99-0310-05	SCREW SET		
A	2A,3A		N09-0608-05	SCREW (MIC,SP)		
B	2B		N09-0675-05	SCREW (STOPPER)		
C	3A,2B		N35-3006-45	BINDING SCREW (CASE)		
D	2A		N35-3006-46	BINDING SCREW (KEY BOARD)		

E: Scandinavia & Europe K: USA P: Canada
U: PX(Far East, Hawaii) T: England M: Other Areas
UE: AAFES(Europe) X: Australia

⚠ indicates safety critical components.

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E	2A		N87-2606-46	BRAZIER TAPTITE SCREW(PCB,STC)		
F	3B		N89-3006-46	BINDING TAPTITE SCREW(FRNTS)		
G	2B		N89-3008-46	BINDING TAPTITE SCREW(BTM CASE		
63	2A		T07-0232-05	LOUDSPEAKER(FULLRANGE)		
64	3A		T91-0338-05	MICROPHONE		
-		*	FTD-8526A	LCD		
D1 ,2			LN01801C	LED		
D3			MA151K	DIODE		
IC1		*	75104G-531-1B	IC(CPU)		
IC2		*	M51951AML	IC(SYSTEM RESET)		
IC3			KRR-C001	IC		
IC4			LC7582	IC(LCD DRIVER)		
67	1C		W01-0406-14	ADJ TOOL		
68	1A	*	W03-2011-15	KEY BOARD ASSY		
70	2A,2B	*	X49-3010-10	AF PC BOARD ASSY	K	
70	2A,2B	*	X49-3010-21	AF PC BOARD ASSY	M	
AF UNIT(X49-3010-XX) -10 : K -21 : M						
C1			CE04EW1H010M	ELECTRO 1.0UF 50WV		
C2			CE04EW1A470M	ELECTRO 47UF 10WV		
C3			CK45F1H103Z	CERAMIC 0.010UF Z		
C4 ,5			CE04EW1A471M	ELECTRO 470UF 10WV		
C6			CE04BW1H010M	NP-ELEC 1.0UF 50WV		
C7 ,8			C91-0117-05	CERAMIC 0.01UF K		
C9			CE04BW1H010M	NP-ELEC 1.0UF 50WV		
C10			CC45SL1H101J	CERAMIC 100PF J		
C11			CE04EW1H010M	ELECTRO 1.0UF 50WV		
C12			C91-0117-05	CERAMIC 0.01UF K		
C13			CE04EW1A101M	ELECTRO 100UF 10WV		
C14			C91-0117-05	CERAMIC 0.01UF K		
C15			CK45B1H471K	CERAMIC 470PF K		
C16			CQ92M1H683K	MYLAR 0.068UF K		
C17			CE04EW1A470M	ELECTRO 47UF 10WV		
C18			CE04EW1A221M	ELECTRO 220UF 10WV		
C19			CE04EW1H0R1M	ELECTRO 0.1UF 50WV		
C22			CC45SL1H101J	CERAMIC 100PF J		
C23			CK45B1H102K	CERAMIC 1000PF K		
C24			CQ92M1H103K	MYLAR 0.010UF K		
C25			CC45SL1H101J	CERAMIC 100PF J		
C26			CK45B1H102K	CERAMIC 1000PF K		
C27			CQ92M1H103K	MYLAR 0.010UF K		
C28			CE04EW1C100M	ELECTRO 10UF 16WV		
C29			CE04EW1A470M	ELECTRO 47UF 10WV		
C30			CE04EW1C100M	ELECTRO 10UF 16WV		
C31			CE04EW1A470M	ELECTRO 47UF 10WV		
C32			CE04EW1H0R1M	ELECTRO 0.1UF 50WV		
C33			CQ92M1H222K	MYLAR 2200PF K		
C34			CE04EW1H0R1M	ELECTRO 0.1UF 50WV		
C35			CE04EW1A470M	ELECTRO 47UF 10WV		
C36			CK45F1H103Z	CERAMIC 0.010UF Z		
C37			CE04EW1A470M	ELECTRO 47UF 10WV		
C38 ,39			CE04EW1H010M	ELECTRO 1.0UF 50WV		
C40 -42			CC45SL1H101J	CERAMIC 100PF J		

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C43			C91-0457-05	CERAMIC 0.022UF K		
C101,102			C90-1248-05	ELECTRO 1UF 50WV		
C103			C91-0430-05	MYLAR 0.047UF K		
C104			C90-0868-05	ELECTRO 10UF 16WV		
J1			E40-5018-05	PIN CONNECTOR (4P)		
J2			E40-5019-05	PIN CONNECTOR (5P)		
J3			E40-5016-05	PIN CONNECTOR (2P)		
J4			E40-5018-05	PIN CONNECTOR (4P)		
J5			E40-5016-05	PIN CONNECTOR (2P)		
J6			E40-5019-05	PIN CONNECTOR (5P)		
J7			E40-5022-05	PIN CONNECTOR (8P)		
J8 ,9			E40-5017-05	PIN CONNECTOR (3P)		
J101,102		*	E40-5109-05	PIN CONNECTOR (5P)		
J103			E40-5120-05	PIN CONNECTOR (9P)		
J104		*	E40-5117-05	PIN CONNECTOR (5P)		
J105		*	E40-5118-05	PIN CONNECTOR (6P)		
J106			E40-5119-05	PIN CONNECTOR (8P)		
W3 ,4			E31-1449-05	SHORT JUMPER WIRE(7.5MM)		
W5 -16			E31-1448-05	SHORT JUMPER WIRE(5MM)		
W19 -21			E31-1448-05	SHORT JUMPER WIRE(5MM)		
W23 -25		*	E31-3266-05	CONNECTION CABLE		
W101			E31-1448-05	SHORT JUMPER WIRE(5MM)		
L1 ,2			L40-1021-12	SMALL FIXED INDUCTOR(1MH)		
R1			RD14CB2C472J	RD 4.7K J 1/6W		
R2			RD14BB2C222J	RD 2.2K J 1/6W		
R3			RD14CB2C474J	RD 470K J 1/6W		
R4			RD14CB2C332J	RD 3.3K J 1/6W		
R5			RD14CB2C103J	RD 10K J 1/6W		
R6			RD14CB2C473J	RD 47K J 1/6W		
R7			RD14CB2C560J	RD 56 J 1/6W		
R8			RD14CB2C104J	RD 100K J 1/6W		
R9 ,10			RD14CB2C103J	RD 10K J 1/6W		
R11			RD14CB2C472J	RD 4.7K J 1/6W		
R12			RD14CB2C272J	RD 2.7K J 1/6W		
R13			RD14BB2C223J	RD 22K J 1/6W		
R14			RD14BB2C273J	RD 27K J 1/6W		
R15			RD14CB2C273J	RD 27K J 1/6W		
R16 ,17			RD14BB2C332J	RD 3.3K J 1/6W		
R18			RD14CB2C102J	RD 1.0K J 1/6W		
R19			RD14BB2C472J	RD 4.7K J 1/6W		
R20 -23			RD14BB2C102J	RD 1.0K J 1/6W		
R22			RD14BB2C472J	RD 4.7K J 1/6W		
R24 ,25			RD14CB2C472J	RD 4.7K J 1/6W		
R26			RD14CB2C223J	RD 22K J 1/6W		
R27			RD14CB2C472J	RD 4.7K J 1/6W		
R28			RD14BB2C472J	RD 4.7K J 1/6W		
R29			RD14CB2C471J	RD 470 J 1/6W		
R30			RD14CB2C103J	RD 10K J 1/6W		
R31			RD14BB2C473J	RD 47K J 1/6W		
R32 -34			RD14CB2C102J	RD 1.0K J 1/6W		
R35			RD14BB2C472J	RD 4.7K J 1/6W		
R36 ,37			RD14CB2C223J	RD 22K J 1/6W		
R38			RD14BB2C472J	RD 4.7K J 1/6W		

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R39			RD14CB2C103J	RD 10K J 1/6W		
R40			RD14CB2C180J	RD 18 J 1/6W		
R41			RD14BB2C273J	RD 27K J 1/6W		
R101			RD14BB2C474J	RD 470K J 1/6W		
R102			RD14BB2C102J	RD 1.0K J 1/6W		
R103			RD14BB2C272J	RD 2.7K J 1/6W		
R104			RD14BB2C102J	RD 1.0K J 1/6W		
R105			RD14CB2C470J	RD 47 J 1/6W		
R106			RD14CB2C271J	RD 270 J 1/6W		
R107			RD14CB2C563J	RD 56K J 1/6W	K	
R108			RD14CB2C563J	RD 56K J 1/6W	M	
R109-111			RD14BB2C123J	RD 12K J 1/6W		
VR1 ,2		*	R12-3133-05	TRIMMING POT. (47K)		
W1 ,2			R92-1061-05	JUMPER REST 0 OHM		
W18			R92-1061-05	JUMPER REST 0 OHM		
W22			R92-1061-05	JUMPER REST 0 OHM		
S1			S31-2408-05	SLIDE SWITCH (SP LEVEL)		
S2			S50-1415-05	SENSITIVE SWITCH(PTT)		
D1 -8			1SS133	DIODE		
D9			MC931	DIODE		
IC1			TC4066BP	IC(BILATERAL SWITCH X4)		
IC2			TC4011BP	IC(NAND X4)		
IC3			LA5005	IC(LOW SATURATION REGULATOR)		
IC4		*	LA5004	IC(LOW SATURATION REGULATOR)		
IC5			LA4147	IC(AF POWER AMP)		
Q1			2SC2458(Y)	TRANSISTOR		
Q2 ,3			2SC3327	TRANSISTOR		
Q4 ,5			DTC144ES	DIGITAL TRANSISTOR		
Q6			2SC2458(Y)	TRANSISTOR		
Q7			DTC144ES	DIGITAL TRANSISTOR		
Q8			2SA1048(Y)	TRANSISTOR		
Q9 ,10			DTC144ES	DIGITAL TRANSISTOR		
Q101			DTC144ES	DIGITAL TRANSISTOR		
Q102			2SC2458(Y)	TRANSISTOR		
-			X59-3150-00	SQL UNIT		
-		*	X59-3250-10	AF. BPF UNIT		
-		*	X59-3270-10	NOISE AMP UNIT		
-		*	X59-3280-10	BUFFER AMP UNIT		
SQL(X59-3150-00)						
C1			CK73FB1H102K	CHIP C 1000PF K		
C2			CC73FCH1H330J	CHIP C 33PF J		
C4			C92-0005-05	CHIP-TAN 2.2UF 6.3WV		
C5			CK73EF1C105Z	CHIP C 1.0UF Z		
C6			C92-0504-05	CHIP-TAN 0.68UF 20WV		
C7 ,8			CK73FB1E393K	CHIP C 0.039UF K		
C9			CK73FB1H153K	CHIP C 0.015UF K		
C10			CK73FB1H333K	CHIP C 0.033UF K		
-			E23-0471-05	TERMINAL		
R1			RD41FB2B104J	CYLND CHIP R 100K J 1/8W		
R2			RD41FB2B272J	CYLND CHIP R 2.7K J 1/8W		
R3			RD41FB2B222J	CYLND CHIP R 2.2K J 1/8W		
R4			RD41FB2B223J	CYLND CHIP R 22K J 1/8W		

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R5			RD41FB2B332J	CYLND CHIP R 3.3K J 1/8W		
R6			RD41FB2B682J	CYLND CHIP R 6.8K J 1/8W		
R7			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
R8			RD41FB2B474J	CYLND CHIP R 470K J 1/8W		
R9			RD41FB2B472J	CYLND CHIP R 4.7K J 1/8W		
R10			RD41FB2B474J	CYLND CHIP R 470K J 1/8W		
R11			RD41FB2B273J	CYLND CHIP R 27K J 1/8W		
R12			RD41FB2B223J	CYLND CHIP R 22K J 1/8W		
R13			RD41FB2B222J	CYLND CHIP R 2.2K J 1/8W		
R14			RD41FB2B393J	CYLND CHIP R 39K J 1/8W		
R15			RD41FB2B273J	CYLND CHIP R 27K J 1/8W		
R16			RD41FB2B331J	CYLND CHIP R 330 J 1/8W		
R17			RD41FB2B222J	CYLND CHIP R 2.2K J 1/8W		
D1			1SS226	CHIP DIODE		
D2			1SS181	CHIP DIODE		
Q1 ,2			2SC2712(Y)	CHIP TRANSISTOR		
Q3 ,4			2SC3295(B)	CHIP TRANSISTOR		
Q5 ,6			2SC2712(Y)	CHIP TRANSISTOR		
AF BPF(X59-3250-10)						
C1 -4		*	C93-0502-05	CERAMIC 1800PF J		
C5 -9			C93-0501-05	CERAMIC 680PF J		
C10 ,11		*	C93-0502-05	CERAMIC 1800PF J		
C12			CC73FCH1H101J	CHIP C 100PF J		
-			E23-0471-05	TERMINAL		
R1			RD41FB2B184J	CYLND CHIP R 180K J 1/8W		
R2 ,3			RD41FB2B563J	CYLND CHIP R 56K J 1/8W		
R4			RD41FB2B394J	CYLND CHIP R 390K J 1/8W		
R5		*	R92-0692-05	CLYND CHIP R 130K J 1/8W		
R6 ,7			RK73FB2A225J	CHIP R 2.2M J 1/10W		
R8		*	R92-0691-05	CLYND CHIP R 68K J 1/8W		
R9 ,10		*	R92-0695-05	CLYND CHIP R 1M J 1/8W		
R11 ,12			RD41FB2B105J	CYLND CHIP R 1.0M J 1/8W		
R13 ,14			RD41FB2B473J	CYLND CHIP R 47K J 1/8W		
R15		*	R92-0690-05	CLYND CHIP R 30K J 1/8W		
R16		*	R92-0694-05	CLYND CHIP R 510K J 1/8W		
R17			RD41FB2B124J	CYLND CHIP R 120K J 1/8W		
R18 ,19			RD41FB2B433J	CYLND CHIP R 43K J 1/8W		
R20 ,21			RD41FB2B513J	CYLND CHIP R 51K J 1/8W		
R22		*	R92-0693-05	CLYND CHIP R 160K J 1/8W		
IC1 ,2			NJM4558M	IC(OP AMP X2)		
NOISE AMPLIFIER(X59-3270-10)						
C1			CK73FB1H102K	CHIP C 1000PF K		
C2			CC73FCH1H330J	CHIP C 33PF J		
C3			CK73FB1H102K	CHIP C 1000PF K		
C4			C92-0003-05	CHIP TAN 0.47UF 25WV		
C5			C92-0004-05	CHIP TAN 1UF 16WV		
C6			C92-0003-05	CHIP TAN 0.47UF 25WV		
C7			CK73FB1H103K	CHIP C 0.010UF K		
C8			CK73FB1H102K	CHIP C 1000PF K		
C9			CC73FCH1H330J	CHIP C 33PF J		
C10			CK73FB1H102K	CHIP C 1000PF K		
C11			C92-0003-05	CHIP TAN 0.47UF 25WV		
C12			C92-0004-05	CHIP TAN 1UF 16WV		

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C13			C92-0003-05	CHIP TAN 0.47UF 25WV		
C14			CK73FB1H103K	CHIP C 0.010UF K		
-			E23-0471-05	TERMINAL		
R1			RD41FB2B474J	CYLND CHIP R 470K J 1/8W		
R2 ,3			RD41FB2B102J	CYLND CHIP R 1.0K J 1/8W		
R4			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
R5			RD41FB2B474J	CYLND CHIP R 470K J 1/8W		
R6			RD41FB2B471J	CYLND CHIP R 470 J 1/8W		
R7			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
R8			RD41FB2B474J	CYLND CHIP R 470K J 1/8W		
R9 ,10			RD41FB2B102J	CYLND CHIP R 1.0K J 1/8W		
R11			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
R12			RD41FB2B474J	CYLND CHIP R 470K J 1/8W		
R13			RD41FB2B471J	CYLND CHIP R 470 J 1/8W		
R14			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
Q1 -4			2SC2712(Y)	CHIP TRANSISTOR		
BUFFER AMPLIFIER(X59-3280-10)						
C1 ,2			CK73FB1H103K	CHIP C 0.010UF K		
-			E23-0471-05	TERMINAL		
R1			RD41FB2B823J	CYLND CHIP R 82K J 1/8W		
R2			RD41FB2B223J	CYLND CHIP R 22K J 1/8W		
R3			RD41FB2B332J	CYLND CHIP R 3.3K J 1/8W		
R4			RD41FB2B472J	CYLND CHIP R 4.7K J 1/8W		
R5			RD41FB2B224J	CYLND CHIP R 220K J 1/8W		
R6			RD41FB2B474J	CYLND CHIP R 470K J 1/8W		
R7			RD41FB2B473J	CYLND CHIP R 47K J 1/8W		
R8			RD41FB2B823J	CYLND CHIP R 82K J 1/8W		
R9			RD41FB2B223J	CYLND CHIP R 22K J 1/8W		
R10			RD41FB2B332J	CYLND CHIP R 3.3K J 1/8W		
R11			RD41FB2B472J	CYLND CHIP R 4.7K J 1/8W		
R12			RD41FB2B224J	CYLND CHIP R 220K J 1/8W		
R13			RD41FB2B474J	CYLND CHIP R 470K J 1/8W		
R14			RD41FB2B473J	CYLND CHIP R 47K J 1/8W		
Q1 -4			2SC2712(Y)	CHIP TRANSISTOR		

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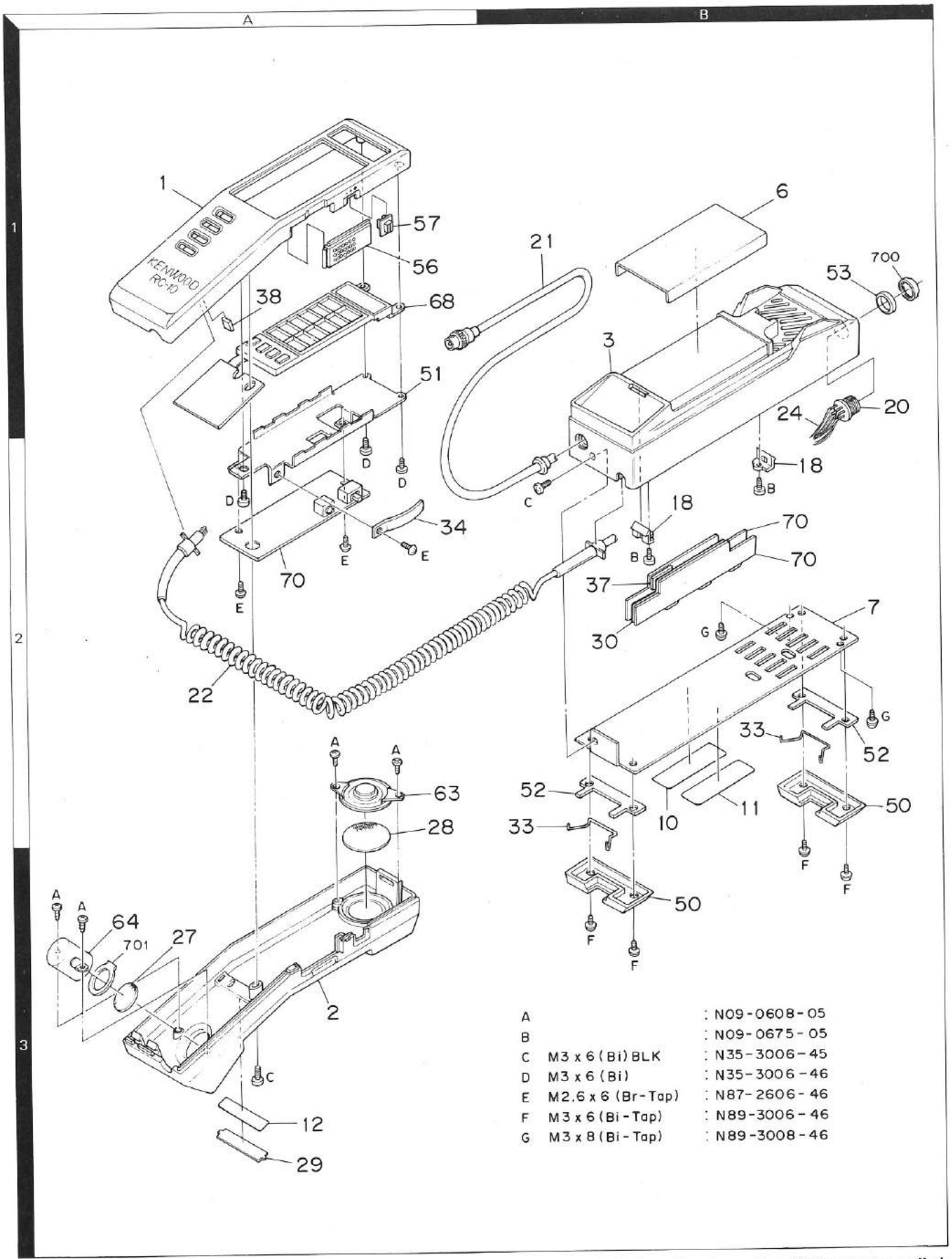
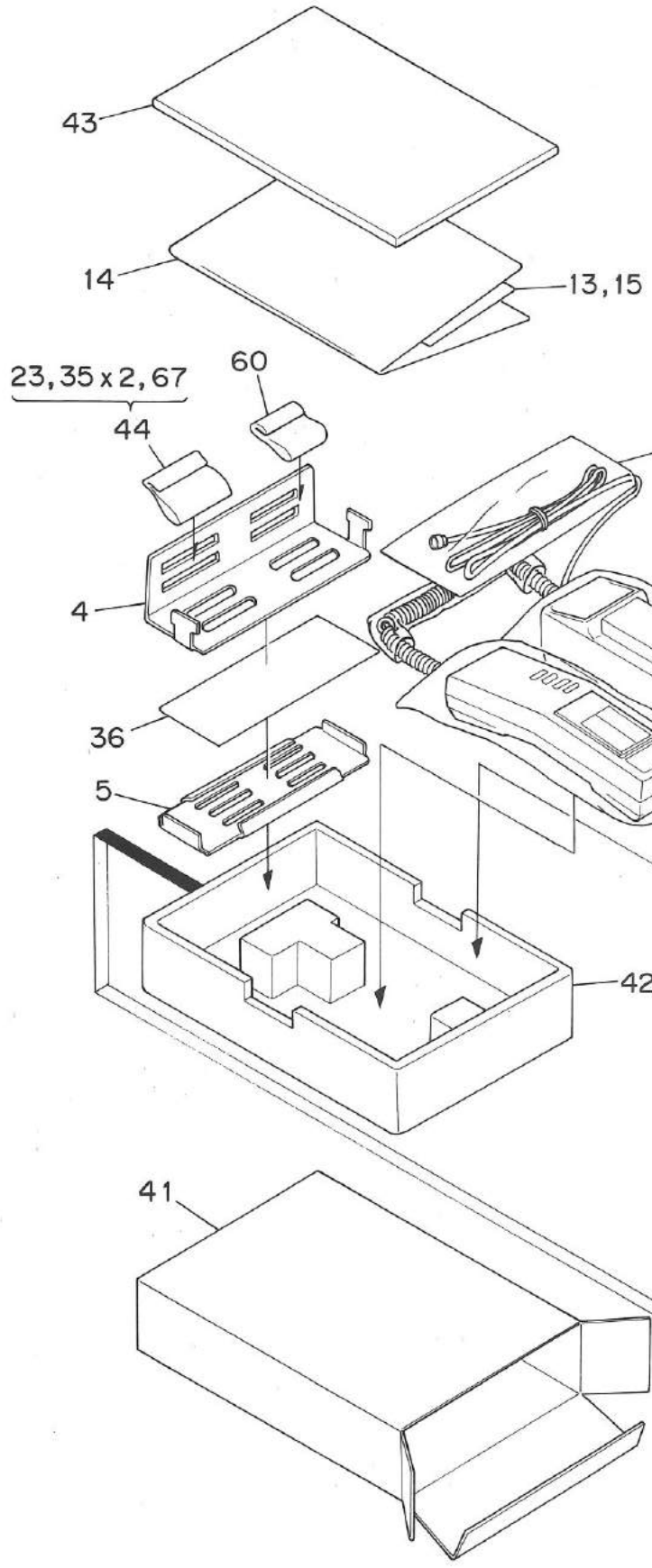
EXPLODED VIEW



A		: N09-0608-05
B		: N09-0675-05
C	M3 x 6 (Bi) BLK	: N35-3006-45
D	M3 x 6 (Bi)	: N35-3006-46
E	M2.6 x 6 (Br-Tap)	: N87-2606-46
F	M3 x 6 (Bi-Tap)	: N89-3006-46
G	M3 x 8 (Bi-Tap)	: N89-3008-46

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

PACKING

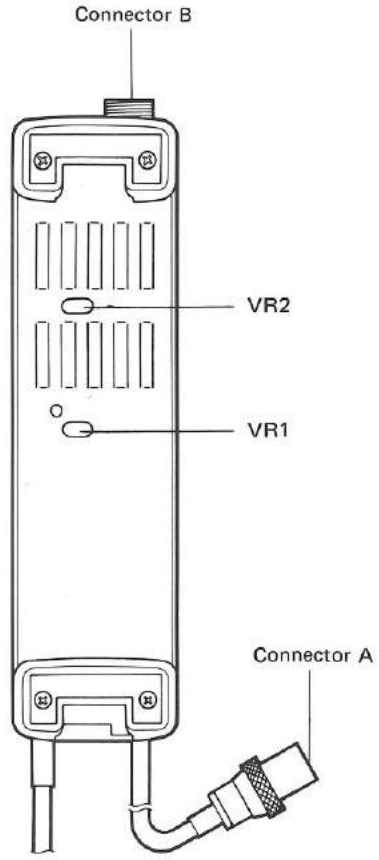


accessary
Mounting bracket(L type)(A13-0651-13)
Mounting bracket(A13-0652-14)
Warranty card(B46-0411-10) **:K**
Instruction manual(B50-8176-10)
Connection cable(GND)(E30-2104-05)
Cushion(G13-0689-04)
Screw set(N99-0310-05)
Adj tool(W01-0406-14)

Item carton box(H01-8115-04)
Polystyrene foamed fixture(H10-2599-03)
Packing fixture(H12-1368-04)
Protection bag(Acsy)(H25-0029-04)
Protection bag(Mic cable)(H25-0036-04)
Protection bag(H25-0113-04)

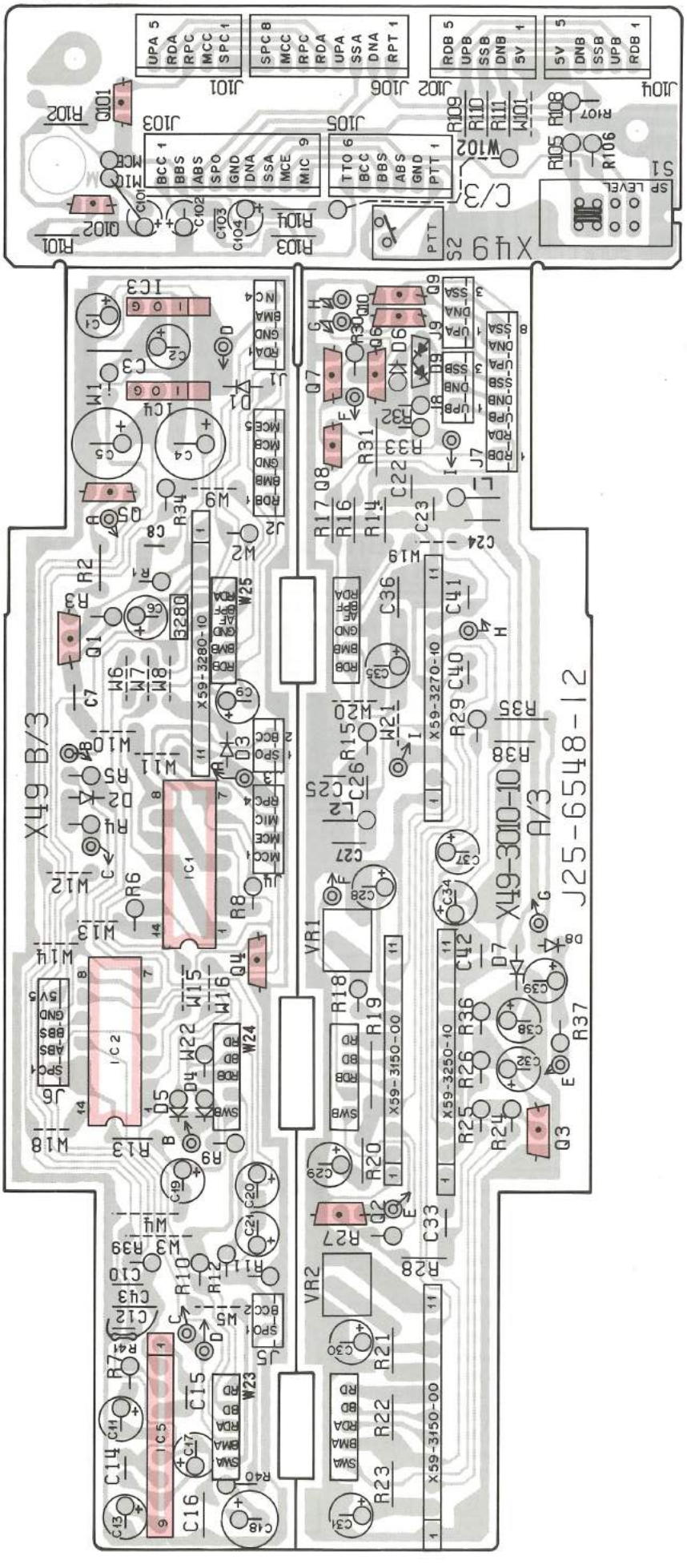
ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specification/Remarks
		Test equipment	Unit	Terminal	Unit	Part	Method	
1. Squelch	1) Connect a TM-221 or TM-421 to connector A and to connector B. 2) Turn ON the power switch of the transceiver connected to connector A. 3) Set the handset A/B selection switch to A.		Equip-ment itself	SP	AF (A/3)	VR2	Adjust to the point at which the noise is eliminated.	
	4) Turn ON the power switch of the transceiver connected to connector B. 5) Set the handset A/B selection switch to B.					VR1		



PC BOARD VIEW RC-10

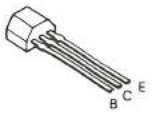
AF UNIT(X49-3010-XX) -10 : K -21 : M
Component side view



R107 : K type only.
R108 : M type only.

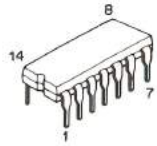
Q1,6,102 : 2SC2458(Y) Q2,3 : 2SC3327 Q4,5,7,9,10,101 : DTC144ES Q8 : 2SA1048(Y)
IC1 : TC4066BP IC2 : TC4011BP IC3 : LA5005 IC4 : LA5004 IC5 : LA4147
D1–8 : 1SS133 D9 : MC931

2SA1048(Y)
2SC2458(Y)
2SC3327

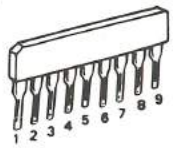


DTC144ES

TC4011BP
TC4066BP



LA4147

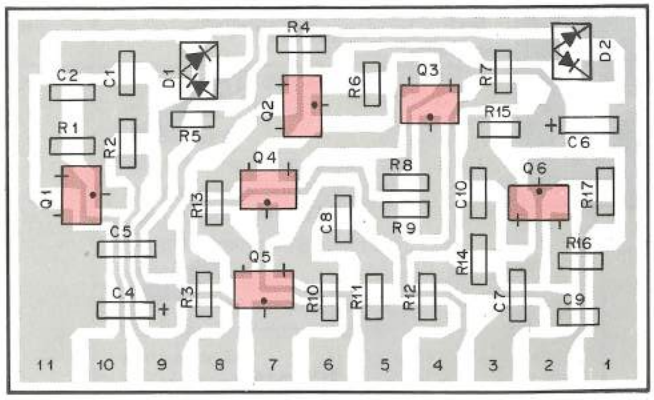


LA5004

LA5005

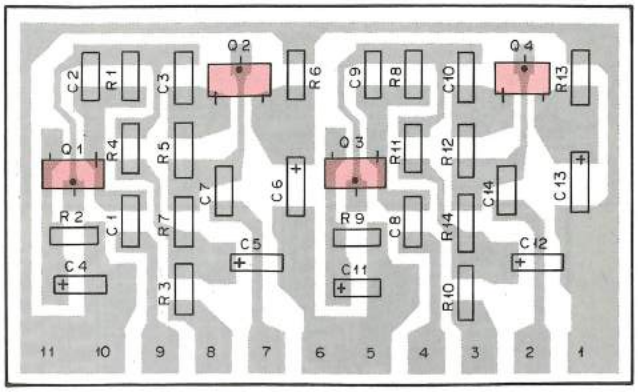
RC-10 PC BOARD VIEWS

SQL(X59-3150-00)
Component side view



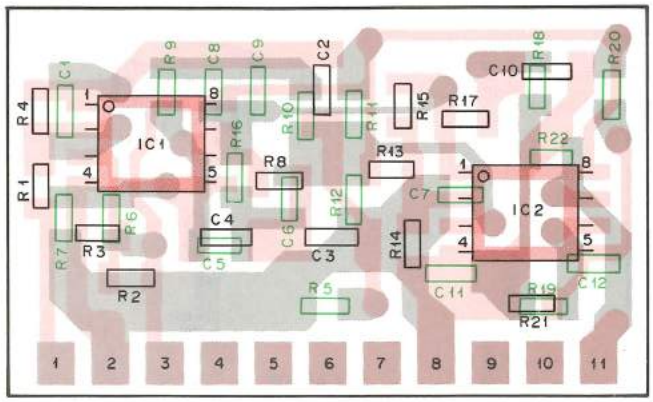
Q1,2,5,6 : 2SC2712(Y) Q3,4 : 2SC3295(B)
D1 : 1SS226 D2 : 1SS181

NOISE AMPLIFIER(X59-3270-10)
Component side view



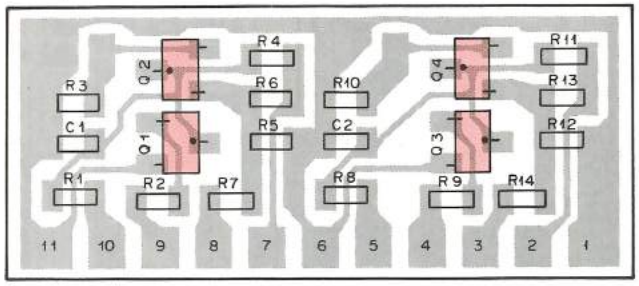
Q1–4 : 2SC2712(Y)

AF BPF(X59-3250-10)
Component side view



IC1,2 : NJM4558M

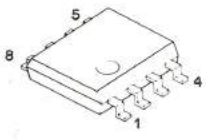
BUFFER AMPLIFIER(X59-3280-10)
Component side view



Q1–4 : 2SC2712(Y)

2SC2712(Y)
2SC3295(B)

NJM4558M



SCHEMATIC DIAGRAM

Signal line — Control line — Common DC line

AF UNIT (X49-3010-XX) (B/3) -10:K -21:M

BUFFER AMP (X59-3280-10) Q1~4 : 2SC2712(Y)

AF UNIT (X49-3010-XX) (C/3) -10:K -21:M

KEYBOARD ASS'Y (W03-2011-

AF UNIT (X49-3010-XX) (A/3) -10:K -21:M

NOISE AMP (X59-3270-10) Q1~4 : 2SC2712(Y)

SQL-B (X59-3150-00)

SQL-A (X59-3150-00)

Q1,2,5,6 : 2SC2712(Y)
Q3,4 : 2SC3295(B)
D1 : 1SS226
D2 : 1SS181

IC1 : μPD75104G-531-1B
IC2 : M51951AML
IC3 : KRR-C001
IC4 : LC7582
D1,2
D3

SCHEMATIC DIAGRAM

AF UNIT (X49-3010-XX) (C/3) -10 : K -21 : M

KEYBOARD ASS'Y (W03-2011-15)

IC1 : μPD75104G-531-1B
IC2 : M51951AML
IC3 : KRR-C001
IC4 : LC7582

D1, 2 : LN01B01C
D3 : MA151K

-21 : M

SQL-B (X59-3150-00)

SQL-A (X59-3150-00)

Q1,2,5,6 : 2SC2712(Y)
Q3,4 : 2SC3295(B)
D1 : 1SS226
D2 : 1SS181

AF BPF (X59-3250-10)

IC1,2 : NJM4558M

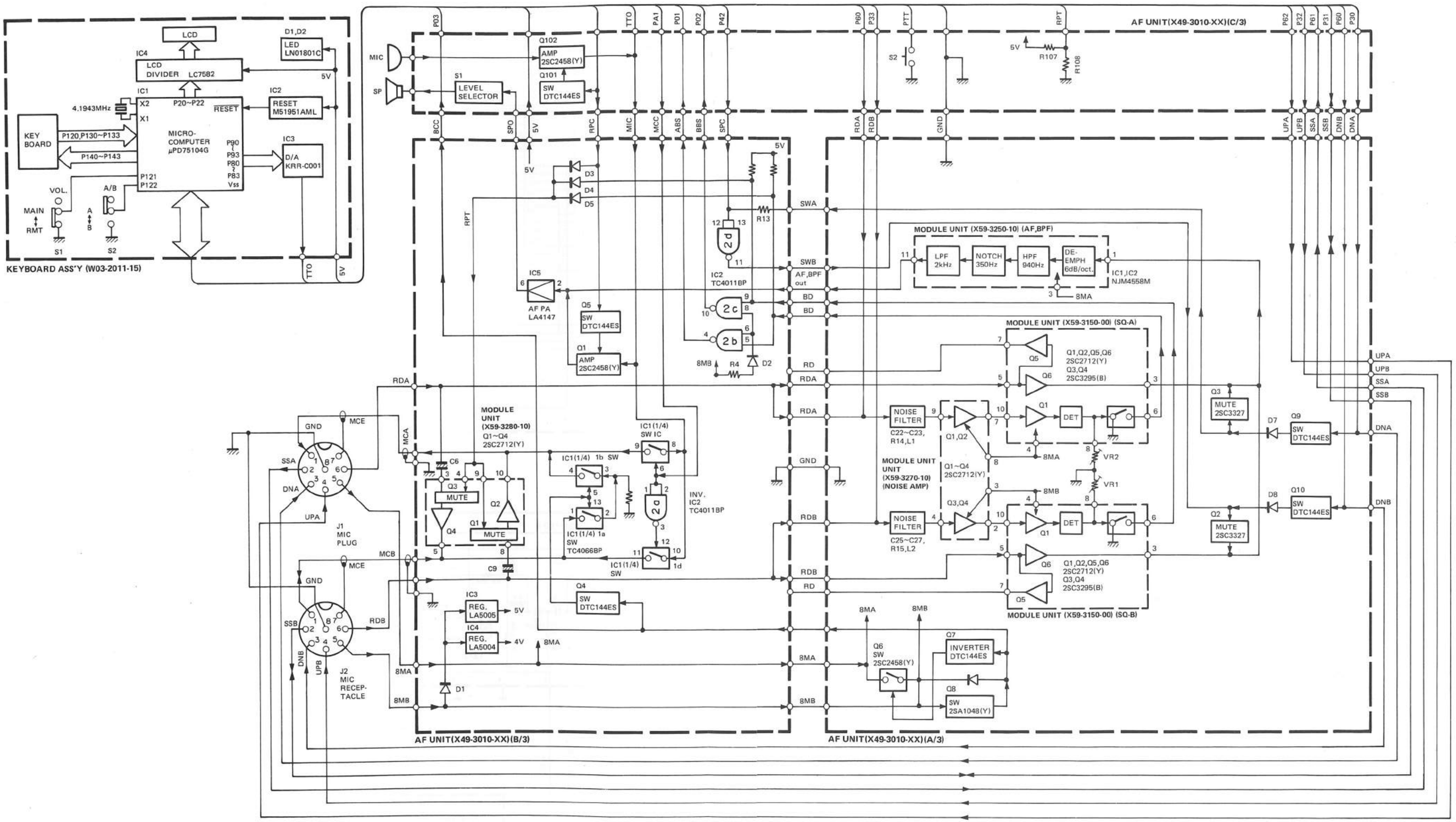
(X49-3010-21)
Q1,6,102 : 2SC2458(Y)
Q2,3 : 2SC3327
Q4,5,7,9,10,101 : DTC144ES
Q8 : 2SA1048(Y)

IC1 : TC40668P
IC2 : TC4011BP
IC3 : LA5005
IC4 : LA5004
IC5 : LA4147

D1~8 : 1SS133
D9 : MC931

RC-10

BLOCK DIAGRAM



SPECIFICATIONS

MODEL / SPECIFICATIONS	RC-10
Operating temperature	−10°C to +50°C (14°F to 122°F)
Power requirements	Supply power from the transceiver MIC connector (8 VDC)
Current drain	Less than 100 mA
Dimensions (Projections included, W×H×D mm)	50×80×200 mm (2″×3-5/32″×7-7/8″)
Weight	700 g (1.54 lbs)
Microphone impedance	600 ohms
Speaker impedance	8 ohms

Note:
Circuit and ratings are subject to change without notice due to advancement in technology.

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