UHF FM TRANSCEIVER

TK-3180

SERVICE MANUAL

SUPPLEMENT

KENWOOD

B51-8699-00 (N) 1048

TK-3180 K,K2 **TK-3180 K3,K4**

Does not come with antenna.
Antenna is available as an option.

CONTENTS

GENERAL / SYSTEM SET-UP

INTRODUCTION

SCOPE OF THIS MANUAL

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

ORDERING REPLACEMENT PARTS

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

PERSONNEL SAFETY

The following precautions are recommended for personnel safety:

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

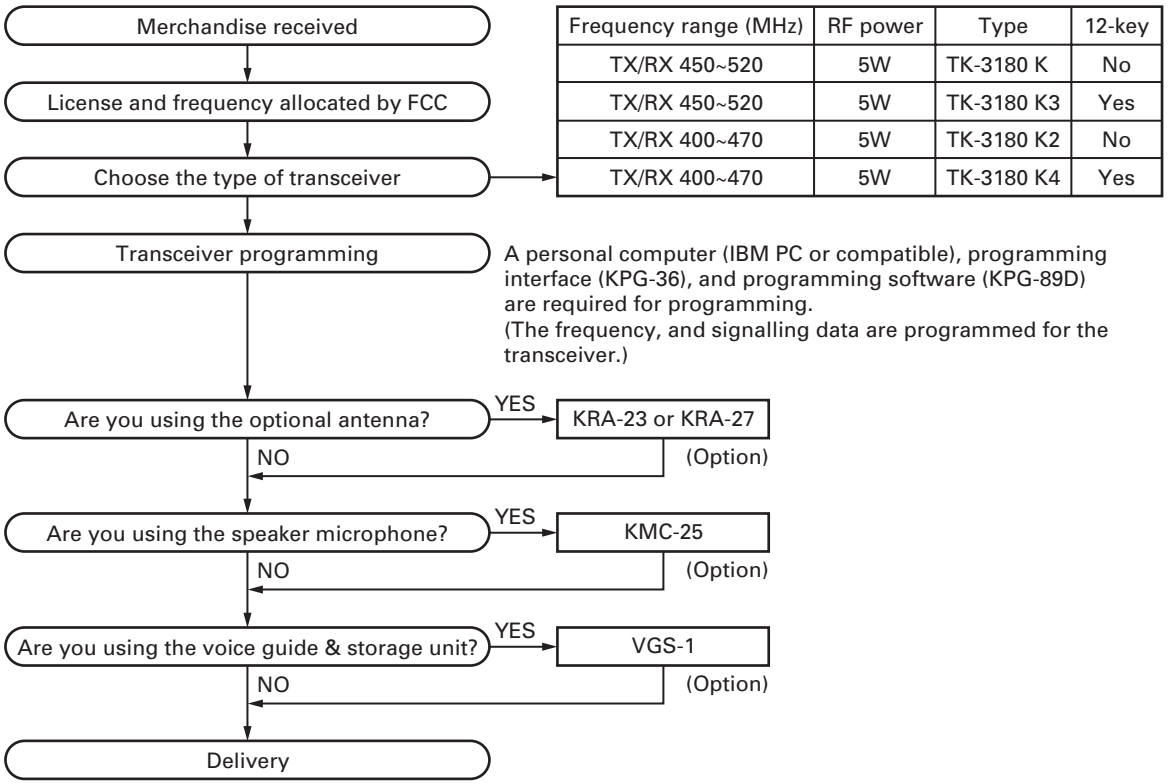
SERVICE

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

SERVICE MANUAL LIST

Title	Part Number	Remarks	Destination
TK-3180	B51-8690-00		K,K3
TK-3180	B51-8699-00 (This service manual)	SUPPLEMENT	K2,K4

SYSTEM SET-UP



Frequency range (MHz)	RF power	Type	12-key
TX/RX 450~520	5W	TK-3180 K	No
TX/RX 450~520	5W	TK-3180 K3	Yes
TX/RX 400~470	5W	TK-3180 K2	No
TX/RX 400~470	5W	TK-3180 K4	Yes

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-3180 (Y50-5880-XX)
DISPLAY UNIT (X54-3470-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination
TK-3180					
1	1B		A02-3847-03	PLASTIC CABINET ASSY	K,K2
2	1A		A02-3848-03	PLASTIC CABINET ASSY	K3,K4
3	3A		A10-4076-21	CHASSIS	
4	3B		A62-1093-02	PANEL	
6	2D		B09-0625-03	CAP ACCESSORY	
7	1A		B10-2752-22	FRONT GLASS	
8	2A		B11-1815-04	FILTER (LCD)	
9	2A		B11-1816-12	ILLUMINATION GUIDE (LCD)	
10	3B		B11-1820-04	ILLUMINATION GUIDE (BUSY/TX)	
11	2A		B38-0900-05	LCD ASSY	
12	2C		B62-1759-10	INSTRUCTION MANUAL	
13	3A		B72-2260-04	MODEL NAME-PLATE	K
13	3A	✻	B72-2261-04	MODEL NAME-PLATE	K2
13	3A		B72-2262-04	MODEL NAME-PLATE	K3
13	3A	✻	B72-2263-04	MODEL NAME-PLATE	K4
15	2B		E04-0416-05	RF COAXIAL RECEPTACLE (SMA)	
16	3B		E23-1104-04	TERMINAL	
17	2A		E37-1101-05	SPEAKER WIRE (RED)	
18	2A		E37-1102-05	SPEAKER WIRE (BLACK)	
19	2A		E37-1107-05	FLAT CABLE	
20	3B		E58-0511-05	RECTANGULAR RECEPTACLE	
21	3B		E72-0419-03	TERMINAL BLOCK	
23	3A		F07-1880-04	COVER	
24	2B	✻	F12-0476-04	SHIELDING SHEET	
25	2B	✻	F12-0477-04	SHIELDING SHEET	
26	2A	✻	F15-1012-04	SHADE	
27	3B		F20-3350-04	INSULATING SHEET	
29	2A	✻	G10-1340-04	FIBROUS SHEET	
30	2A	✻	G10-1341-04	FIBROUS SHEET	
31	2A		G11-4272-04	RUBBER CUSHION	
32	3A		G11-4273-14	SHEET	
33	3A	✻	G11-4308-14	RUBBER SHEET (FINAL FET)	
34	1A	✻	G11-4326-04	SHEET	
35	3A		G11-4332-04	SHEET	
36	2B		G13-1934-04	CUSHION	
37	2A		G13-2055-04	CUSHION	
38	2A	✻	G13-2068-04	CUSHION	
39	2B		G53-1598-01	PACKING	K,K2
40	1A		G53-1599-01	PACKING	K3,K4
41	3B	✻	G53-1600-12	PACKING	
42	3B		G53-1601-04	PACKING	
43	3A		G53-1602-14	PACKING	
44	2B,3B		G53-1603-04	PACKING	
46	2C,1D		H12-3157-02	PACKING FIXTURE	
47	3D		H52-2060-02	ITEM CARTON CASE	
49	2A		J19-5460-02	HOLDER	
50	2B		J19-5478-03	HOLDER	
51	2C		J29-0710-05	HOOK ACCESSORY	
52	3B		J30-1279-04	SPACER	
53	2B		J82-0089-05	FPC (VOLUME/SELCTOR)	
54	3B		J82-0090-15	FPC (UNIVERSAL CONNECTOR)	
55	3A		J82-0091-15	FPC (PTT)	
57	1A		K29-9302-23	KNOB (PTT)	
58	1A		K29-9303-03	BUTTON KNOB (SIDE)	
59	1B		K29-9304-03	KNOB (VOLUME)	
60	1A		K29-9305-03	KNOB (CH SELECTOR)	
A	2D		N08-0548-04	DRESSED SCREW ACCESSORY	
B	3B		N09-2426-04	HEXAGON HEAD SCREW	
C	3B		N14-0806-04	CIRCULAR NUT (VOLUME)	
D	3B		N14-0810-04	CIRCULAR NUT (CH SELECTOR)	
E	2A,3A		N30-2004-45	PAN HEAD MACHINE SCREW	
F	2B		N30-2604-46	PAN HEAD MACHINE SCREW	
G	3A		N30-2608-45	PAN HEAD MACHINE SCREW	
H	2C		N30-3008-60	PAN HEAD MACHINE SCREW ACC	
J	2A,2B		N83-2005-46	PAN HEAD TAPTITE SCREW	
62	3B		R31-0652-05	VARIABLE RESISTOR	
64	2B		S60-0430-05	ROTARY SWITCH	
66	1A		T07-0749-15	SPEAKER	
68	3A		W09-0971-05	LITHIUM CELL	
DISPLAY UNIT (X54-3470-XX) -10 : K,K2 -11 : K3,K4					
D501,502			B30-2215-05	LED	
D511-516			B30-2215-05	LED	K3,K4
D517-520			B30-2210-05	LED (TLY)	
C500-503			CK73HB1H471K	CHIP C 470PF K	
C508			CK73HB1H471K	CHIP C 470PF K	
C513			CK73GB1C104K	CHIP C 0.10UF K	
C518			CK73HB1H471K	CHIP C 470PF K	
C522			CK73HB1H102K	CHIP C 1000PF K	
C523,524			C92-0827-05	CHIP-TAN 4.7UF 10WV	
C525			CK73HB1H471K	CHIP C 470PF K	
C527,528			C92-0826-05	CHIP-TAN 1.0UF 16WV	
C537,538			CK73GB0J475K	CHIP C 4.7UF K	
C539-546			CC73HCH1H470J	CHIP C 47PF J	
C548-551			CC73HCH1H470J	CHIP C 47PF J	
C553,554			CK73HB1H102K	CHIP C 1000PF K	
C555			CK73HB0J105K	CHIP C 1.0UF K	
C556			CK73HB1H102K	CHIP C 1000PF K	
C562			CK73HB0J105K	CHIP C 1.0UF K	
CN507			E40-6410-05	FLAT CABLE CONNECTOR	
CN508,509			E40-6413-05	FLAT CABLE CONNECTOR	
L550			L92-0163-05	BEADS CORE	
L553,554			L92-0419-15	CHIP FERRITE	
L555			L92-0163-05	BEADS CORE	
CP501			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP503,504			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP506,507			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP509			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
R500,501			RK73HB1J102J	CHIP R 1.0K J 1/16W	

PARTS LIST

DISPLAY UNIT (X54-3470-XX)
TX-RX UNIT (X57-6940-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination
R517			R92-1368-05	CHIP R 0 OHM	
R518			RK73HB1J331J	CHIP R 330 J 1/16W	
R520			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R522			RK73HB1J391J	CHIP R 390 J 1/16W	
R524-526			RK73HB1J391J	CHIP R 390 J 1/16W	K3,K4
R527			R92-1368-05	CHIP R 0 OHM	
R531			R92-1368-05	CHIP R 0 OHM	
R533			R92-1368-05	CHIP R 0 OHM	
R534			RK73HB1J101J	CHIP R 100 J 1/16W	
R535			R92-1368-05	CHIP R 0 OHM	
R537			RK73HB1J101J	CHIP R 100 J 1/16W	
R540-543			RK73HB1J471J	CHIP R 470 J 1/16W	
R544			RK73HB1J184J	CHIP R 180K J 1/16W	
R545			RK73HH1J474D	CHIP R 470K D 1/16W	
R546			RK73HH1J273D	CHIP R 27K D 1/16W	
R547			RK73HB1J223J	CHIP R 22K J 1/16W	
R552			RK73HB1J471J	CHIP R 470 J 1/16W	
R559			R92-1368-05	CHIP R 0 OHM	
R560			RK73HB1J474J	CHIP R 470K J 1/16W	
R561			RK73HB1J103J	CHIP R 10K J 1/16W	
R562-568			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R570			R92-1252-05	CHIP R 0 OHM J 1/16W	
R571			R92-1368-05	CHIP R 0 OHM	
R573			RK73HB1J474J	CHIP R 470K J 1/16W	
R574,575			R92-1368-05	CHIP R 0 OHM	
MIC500	2A		T91-0579-05	MIC ELEMENT	
D500			MA2S111	DIODE	
D522			DA221	DIODE	
IC500			BU2099FV	MOS-IC	
IC501			XC6201P352MR	MOS-IC	
IC502,503			HD74LV2G34AUS	MOS-IC	
Q501			2SC4617(S)	TRANSISTOR	
Q502			2SB1132(Q,R)	TRANSISTOR	
Q504			2SK1830	FET	
Q505		✻	2SJ144(Y)	FET	
TX-RX UNIT (X57-6940-XX) -10 : K,K3 -11 : K2,K4					
D400			B30-2278-05	LED (RED/YELLOW)	
C1,2			CC73HCH1H101J	CHIP C 100PF J	
C3			CC73HCH1H100C	CHIP C 10PF C	
C4			CK73HB1C103K	CHIP C 0.010UF K	
C5			CC73HCH1H100C	CHIP C 10PF C	
C6			CK73HB1H102K	CHIP C 1000PF K	
C7,8			CC73HCH1H470J	CHIP C 47PF J	
C9-13			CC73HCH1H101J	CHIP C 100PF J	
C14-16			CC73HCH1H470J	CHIP C 47PF J	
C17			CC73HCH1H080B	CHIP C 8.0PF B	K,K3
C17			CC73HCH1H120G	CHIP C 12PF G	K2,K4
C18			CC73HCH1H101J	CHIP C 100PF J	
C19			CC73HCH1H090B	CHIP C 9.0PF B	K,K3
C19			CC73HCH1H100B	CHIP C 10PF B	K2,K4
C20			CC73HCH1H101J	CHIP C 100PF J	
C21			CK73HB1C223K	CHIP C 0.022UF K	
C22			CC73HCH1H1R5B	CHIP C 1.5PF B	
C23			CC73HCH1H020B	CHIP C 2.0PF B	K2,K4
C23			CC73HCH1H030B	CHIP C 3.0PF B	K,K3
C24			C92-0001-05	CHIP-TAN 0.1UF 35WV	
C25			C92-0588-05	CHIP-TAN 1.5UF 16WV	

Ref. No.	Address	New parts	Parts No.	Description	Destination
C26			CC73HCH1H030B	CHIP C 3.0PF B	K,K3
C26			CC73HCH1H060B	CHIP C 6.0PF B	K2,K4
C27			CC73HCH1H020B	CHIP C 2.0PF B	K,K3
C27			CC73HCH1H2R5B	CHIP C 2.5PF B	K2,K4
C28			CC73HCH1H050B	CHIP C 5.0PF B	K,K3
C28			CC73HCH1H090B	CHIP C 9.0PF B	K2,K4
C29			CC73HCH1H470J	CHIP C 47PF J	
C30			C92-0001-05	CHIP-TAN 0.1UF 35WV	
C31			CC73HCH1H470J	CHIP C 47PF J	
C32,33			CC73HCH1H101J	CHIP C 100PF J	
C35			CC73HCH1H470J	CHIP C 47PF J	
C37			CC73HCH1H470J	CHIP C 47PF J	
C38			CC73GCH1H560J	CHIP C 56PF J	K,K3
C38			CC73GCH1H820J	CHIP C 82PF J	K2,K4
C41			CC73GCH1H121J	CHIP C 120PF J	K2,K4
C41			CC73GCH1H820J	CHIP C 82PF J	K,K3
C43			CK73HB0J105K	CHIP C 1.0UF K	
C44			CC73HCH1H130J	CHIP C 13PF J	K,K3
C44			CC73HCH1H150J	CHIP C 15PF J	K2,K4
C45			CC73HCH1H090B	CHIP C 9.0PF B	
C46			CC73HCH1H030B	CHIP C 3.0PF B	K2,K4
C46			CC73HCH1H040B	CHIP C 4.0PF B	K,K3
C47			CC73HCH1H010B	CHIP C 1.0PF B	K2,K4
C47			CC73HCH1H020B	CHIP C 2.0PF B	K,K3
C48			CC73HCH1HR75B	CHIP C 0.75PF B	
C49			CC73HCH1H2R5B	CHIP C 2.5PF B	K2,K4
C49,50			CC73HCH1H020B	CHIP C 2.0PF B	K,K3
C50			CC73HCH1H030B	CHIP C 3.0PF B	K2,K4
C51			CC73HCH1H050B	CHIP C 5.0PF B	K,K3
C51			CC73HCH1H070B	CHIP C 7.0PF B	K2,K4
C52			CC73HCH1H040B	CHIP C 4.0PF B	
C53			CC73HCH1H101J	CHIP C 100PF J	K,K3
C53			CC73HCH1H330J	CHIP C 33PF J	K2,K4
C54			CC73HCH1H060B	CHIP C 6.0PF B	K,K3
C54			CC73HCH1H070B	CHIP C 7.0PF B	K2,K4
C55			CC73HCH1H040B	CHIP C 4.0PF B	
C56			CC73HCH1H101J	CHIP C 100PF J	
C57,58			CC73GCH1H0R5B	CHIP C 0.5PF B	
C59-62			CC73HCH1H101J	CHIP C 100PF J	
C63			C92-0713-05	CHIP-TAN 10UF 6.3WV	
C64			CC73HCH1H101J	CHIP C 100PF J	
C65			CC73HCH1H070D	CHIP C 7.0PF D	
C66			CC73HCH1H100C	CHIP C 10PF C	
C67			CC73HCH1H100C	CHIP C 10PF C	K2,K4
C67			CC73HCH1H330J	CHIP C 33PF J	K,K3
C68-70			CK73HB1H471K	CHIP C 470PF K	
C71			CC73HCH1H070D	CHIP C 7.0PF D	
C72-74			CC73HCH1H470J	CHIP C 47PF J	
C75			CC73HCH1H030B	CHIP C 3.0PF B	K,K3
C75			CC73HCH1H040B	CHIP C 4.0PF B	K2,K4
C78			CC73HCH1H101J	CHIP C 100PF J	
C79			CK73HB1H222K	CHIP C 2200PF K	
C100,101			CK73HB1H471K	CHIP C 470PF K	
C103,104			CK73HB1H471K	CHIP C 470PF K	
C105			CC73HCH1H060D	CHIP C 6.0PF D	K2,K4
C105			CC73HCH1H070D	CHIP C 7.0PF D	K,K3
C106,107			CK73HB1H471K	CHIP C 470PF K	
C109			CK73HB1H471K	CHIP C 470PF K	
C111			CK73HB1A104K	CHIP C 0.10UF K	
C113			CK73HB1H471K	CHIP C 470PF K	

PARTS LIST

TX-RX UNIT (X57-6940-XX)

Ref. No.	Address	New parts	Parts No.	Description			Destination
C114			CC73HCH1H090D	CHIP C	9.0PF	D	K2,K4
C114			CC73HCH1H100C	CHIP C	10PF	C	K,K3
C116			CK73HB1H471K	CHIP C	470PF	K	
C117			CK73HB1A104K	CHIP C	0.10UF	K	
C118			CC73HCH1H220J	CHIP C	22PF	J	K2,K4
C118			CC73HCH1H330J	CHIP C	33PF	J	K,K3
C119,120			CC73HCH1H100C	CHIP C	10PF	C	
C121			CK73GB1E105K	CHIP C	1.0UF	K	
C122			CK73HB1H471K	CHIP C	470PF	K	
C123			C92-0565-05	CHIP-TAN	6.8UF	10WV	
C125-128			CK73HB1H471K	CHIP C	470PF	K	
C129			CC73HCH1H180J	CHIP C	18PF	J	K,K3
C129			CC73HCH1H270J	CHIP C	27PF	J	K2,K4
C131			CK73HB1H471K	CHIP C	470PF	K	
C132			CC73HCH1H101J	CHIP C	100PF	J	
C133			CK73HB1H471K	CHIP C	470PF	K	
C134			C93-0765-05	CHIP C	51PF	50WV	K2,K4
C135			CK73HB1H471K	CHIP C	470PF	K	
C136			CK73HB1C103K	CHIP C	0.010UF	K	
C137			C93-0764-05	CHIP C	47PF	50WV	K,K3
C138			CK73HB1H471K	CHIP C	470PF	K	
C139			CK73GB1C104K	CHIP C	0.10UF	K	
C140			CK73GB1E105K	CHIP C	1.0UF	K	
C141			C93-0754-05	CHIP C	18PF	J	K,K3
C142			C93-0760-05	CHIP C	33PF	50WV	K,K3
C142			C93-0764-05	CHIP C	47PF	50WV	K2,K4
C143			CK73HB1C103K	CHIP C	0.010UF	K	
C144			CK73HB1H471K	CHIP C	470PF	K	
C145			C93-0753-05	CHIP C	16PF	50WV	K2,K4
C149			CC73GCH1H101J	CHIP C	100PF	J	
C150			CK73HB1H471K	CHIP C	470PF	K	
C151			CC73GCH1H030B	CHIP C	3.0PF	B	
C152			CC73GCH1H101J	CHIP C	100PF	J	K,K3
C152			CC73GCH1H470J	CHIP C	47PF	J	K2,K4
C153			CC73HCH1H050B	CHIP C	5.0PF	B	K,K3
C153			CC73HCH1H070B	CHIP C	7.0PF	B	K2,K4
C154			CC73HCH1H1R5B	CHIP C	1.5PF	B	K,K3
C154			CC73HCH1H2R5B	CHIP C	2.5PF	B	K2,K4
C155			CC73HCH1H060B	CHIP C	6.0PF	B	K,K3
C155			CC73HCH1H100B	CHIP C	10PF	B	K2,K4
C156			CC73GCH1H020B	CHIP C	2.0PF	B	
C157			CC73HCH1H070B	CHIP C	7.0PF	B	K,K3
C157			CC73HCH1H110J	CHIP C	11PF	J	K2,K4
C159			CC73HCH1H040B	CHIP C	4.0PF	B	K,K3
C159			CC73HCH1H050B	CHIP C	5.0PF	B	K2,K4
C161			C93-0744-05	CHIP C	6.0PF	50WV	K2,K4
C161			C93-0745-05	CHIP C	7.0PF	50WV	K,K3
C163		*	C93-0757-05	CHIP C	24PF	50WV	K2,K4
C200			CK73HB1A104K	CHIP C	0.10UF	K	
C201			CK73HB1C103K	CHIP C	0.010UF	K	
C202			CK73HB1C223K	CHIP C	0.022UF	K	
C203			CK73HB1H102K	CHIP C	1000PF	K	
C204			CK73HB1A104K	CHIP C	0.10UF	K	
C205			CK73HB1C103K	CHIP C	0.010UF	K	
C206			CK73HB1H102K	CHIP C	1000PF	K	
C207			CK73HB1A104K	CHIP C	0.10UF	K	
C208			CK73HB1H182K	CHIP C	1800PF	K	
C209,210			CK73HB1A104K	CHIP C	0.10UF	K	
C211,212			CK73HB1H221K	CHIP C	220PF	K	
C213			CC73HCH1H101J	CHIP C	100PF	J	

Ref. No.	Address	New parts	Parts No.	Description			Destination
C214			C92-0773-05	CHIP-TAN	15UF	6.3WV	
C215,216			CK73HB1A104K	CHIP C	0.10UF	K	
C217			CC73HCH1H680J	CHIP C	68PF	J	
C218			CC73HCH1H470J	CHIP C	47PF	J	
C219			CK73HB1A333K	CHIP C	0.033UF	K	
C220			CK73HB1C103K	CHIP C	0.010UF	K	
C221			C92-0713-05	CHIP-TAN	10UF	6.3WV	
C222			CK73HB1A104K	CHIP C	0.10UF	K	
C226			CK73HB1H471K	CHIP C	470PF	K	
C227,228			CK73HB1C103K	CHIP C	0.010UF	K	
C229			CC73HCH1H040B	CHIP C	4.0PF	B	
C230			CC73HCH1H270J	CHIP C	27PF	J	
C231			CC73HCH1H040B	CHIP C	4.0PF	B	
C232			CK73HB1C103K	CHIP C	0.010UF	K	
C233			CK73HB1H471K	CHIP C	470PF	K	
C234			CK73HB1A104K	CHIP C	0.10UF	K	
C235,236			CK73HB1C103K	CHIP C	0.010UF	K	
C237			CK73HB1H471K	CHIP C	470PF	K	
C238			CC73HCH1H060D	CHIP C	6.0PF	D	K,K3
C238			CC73HCH1H100D	CHIP C	10PF	D	K2,K4
C239			CC73HCH1H090B	CHIP C	9.0PF	B	
C240			CC73HCH1H020B	CHIP C	2.0PF	B	K,K3
C240			CC73HCH1H040B	CHIP C	4.0PF	B	K2,K4
C241			CC73HCH1H100C	CHIP C	10PF	C	K,K3
C241			CC73HCH1H120G	CHIP C	12PF	G	K2,K4
C242			CK73HB1H471K	CHIP C	470PF	K	
C243			CK73HB1C103K	CHIP C	0.010UF	K	
C244			CC73HCH1H020B	CHIP C	2.0PF	B	K,K3
C244			CC73HCH1H040B	CHIP C	4.0PF	B	K2,K4
C245			CK73HB1H471K	CHIP C	470PF	K	
C246			CC73HCH1H100C	CHIP C	10PF	C	K,K3
C246			CC73HCH1H120G	CHIP C	12PF	G	K2,K4
C247			CC73HCH1H040B	CHIP C	4.0PF	B	K,K3
C247			CC73HCH1H050B	CHIP C	5.0PF	B	K2,K4
C248			CK73HB1H471K	CHIP C	470PF	K	
C250			CK73HB1H471K	CHIP C	470PF	K	
C251			CC73HCH1H040B	CHIP C	4.0PF	B	K2,K4
C251			CC73HCH1H3R5B	CHIP C	3.5PF	B	K,K3
C252			CC73HCH1H330J	CHIP C	33PF	J	
C253			CK73HB1H471K	CHIP C	470PF	K	
C255			CC73GCH1HR75B	CHIP C	0.75PF	B	K,K3
C255			CC73GCH1H010B	CHIP C	1.0PF	B	K2,K4
C256			CC73GCH1H040B	CHIP C	4.0PF	B	K2,K4
C256			CC73GCH1H3R5B	CHIP C	3.5PF	B	K,K3
C257			CC73HCH1H330J	CHIP C	33PF	J	
C258			CK73HB1H471K	CHIP C	470PF	K	
C260			CC73GCH1H010B	CHIP C	1.0PF	B	
C261			CK73HB1H471K	CHIP C	470PF	K	
C262			CC73HCH1H330J	CHIP C	33PF	J	
C263			CC73HCH1H040B	CHIP C	4.0PF	B	
C264			C92-0714-05	CHIP-TAN	4.7UF	6.3WV	
C265,266			CK73HB1H471K	CHIP C	470PF	K	
C269,270			CK73HB1H471K	CHIP C	470PF	K	
C271			CK73HB0J105K	CHIP C	1.0UF	K	
C273-275			CK73HB1H471K	CHIP C	470PF	K	
C276			CC73GCH1H2R5B	CHIP C	2.5PF	B	K,K3
C276			CC73GCH1H3R5B	CHIP C	3.5PF	B	K2,K4
C277			CC73HCH1H330J	CHIP C	33PF	J	
C279			CC73GCH1H1R5B	CHIP C	1.5PF	B	
C280			CK73HB1H471K	CHIP C	470PF	K	

PARTS LIST

TX-RX UNIT (X57-6940-XX)

Ref. No.	Address	New parts	Parts No.	Description			Destination
C281			CC73HCH1H330J	CHIP C	33PF	J	
C282			CC73HCH1H010B	CHIP C	1.0PF	B	K,K3
C282			CC73HCH1H1R5B	CHIP C	1.5PF	B	K2,K4
C283			CC73HCH1H050B	CHIP C	5.0PF	B	
C284			CC73GCH1H030B	CHIP C	3.0PF	B	
C285			CK73HB1H471K	CHIP C	470PF	K	
C286			CC73GCH1H101J	CHIP C	100PF	J	
C287			CC73GCH1H090B	CHIP C	9.0PF	B	
C288			CC73HCH1H050B	CHIP C	5.0PF	B	K2,K4
C289			CC73HCH1H040B	CHIP C	4.0PF	B	K,K3
C290			CK73HB0J224K	CHIP C	0.22UF	K	
C292			CK73HB1C103K	CHIP C	0.010UF	K	
C294			CC73GCH1H200J	CHIP C	20PF	J	K,K3
C401,402			CK73HB1H471K	CHIP C	470PF	K	
C404-414			CK73HB1H471K	CHIP C	470PF	K	
C415			CK73FB1A475K	CHIP C	4.7UF	K	
C416			CK73HB1H102K	CHIP C	1000PF	K	
C418			CK73HB1H102K	CHIP C	1000PF	K	
C419			CK73GB1E105K	CHIP C	1.0UF	K	
C420			CK73GB1C104K	CHIP C	0.10UF	K	
C421			CK73GB1A224K	CHIP C	0.22UF	K	
C422			CK73GB1E105K	CHIP C	1.0UF	K	
C423			C92-0825-05	CHIP-TAN	10UF	10WV	
C425			CK73GB1E105K	CHIP C	1.0UF	K	
C426			CC73HCH1H101J	CHIP C	100PF	J	
C427			CK73GB1E105K	CHIP C	1.0UF	K	
C428			CK73HB1H471K	CHIP C	470PF	K	
C429			CK73GB1E105K	CHIP C	1.0UF	K	
C431			CK73HB1H471K	CHIP C	470PF	K	
C432			C92-0825-05	CHIP-TAN	10UF	10WV	
C433			CK73HB1H471K	CHIP C	470PF	K	
C434			CC73HCH1H101J	CHIP C	100PF	J	
C435			CK73GB1A224K	CHIP C	0.22UF	K	
C436			CK73GB1H103K	CHIP C	0.010UF	K	
C437			CC73HCH1H101J	CHIP C	100PF	J	
C441			CK73GB1E105K	CHIP C	1.0UF	K	
C442			CK73GB1A224K	CHIP C	0.22UF	K	
C443			CK73GB1E105K	CHIP C	1.0UF	K	
C445			CC73HCH1H470J	CHIP C	47PF	J	
C446			CK73HB1H471K	CHIP C	470PF	K	
C447			CK73HB1E472K	CHIP C	4700PF	K	
C450,451			CK73GB0J475K	CHIP C	4.7UF	K	
C500			C92-0712-05	CHIP-TAN	22UF	6.3WV	
C502			C92-0712-05	CHIP-TAN	22UF	6.3WV	
C503			CK73GB1E105K	CHIP C	1.0UF	K	
C505-508			CK73GB1E105K	CHIP C	1.0UF	K	
C509			CC73HCH1H270J	CHIP C	27PF	J	
C510			CC73HCH1H040C	CHIP C	4.0PF	C	
C511			CC73HCH1H270J	CHIP C	27PF	J	
C512			CK73HB1C103K	CHIP C	0.010UF	K	
C514			CK73HB1C103K	CHIP C	0.010UF	K	
C515			CC73HCH1H150G	CHIP C	15PF	G	
C516			CK73HB1C103K	CHIP C	0.010UF	K	
C517			CK73HB1A104K	CHIP C	0.10UF	K	
C518			CK73HB0J105K	CHIP C	1.0UF	K	
C600			CK73HB1A104K	CHIP C	0.10UF	K	
C601			CC73HCH1H220J	CHIP C	22PF	J	
C602			CK73HB1A104K	CHIP C	0.10UF	K	
C603			CK73HB1E472K	CHIP C	4700PF	K	
C604,605			CC73HCH1H680J	CHIP C	68PF	J	

Ref. No.	Address	New parts	Parts No.	Description			Destination
C608			CK73HB1A104K	CHIP C	0.10UF	K	
C609,610			CK73HB1C103K	CHIP C	0.010UF	K	
C611			CC73HCH1H101J	CHIP C	100PF	J	
C612,613			CK73HB1A104K	CHIP C	0.10UF	K	
C614			CK73HB1H471K	CHIP C	470PF	K	
C615			CC73HCH1H101J	CHIP C	100PF	J	
C616			CK73HB1H471K	CHIP C	470PF	K	
C617			C92-0656-05	CHIP-TAN	2.2UF	6.3WV	
C618			C92-0713-05	CHIP-TAN	10UF	6.3WV	
C619			CK73HB1H561K	CHIP C	560PF	K	
C620			CK73HB1A104K	CHIP C	0.10UF	K	
C621			CK73HB1C103K	CHIP C	0.010UF	K	
C622			CK73HB1E562K	CHIP C	5600PF	K	
C625			CK73HB1A104K	CHIP C	0.10UF	K	
C627			CK73HB1C103K	CHIP C	0.010UF	K	
C628			CK73HB1A104K	CHIP C	0.10UF	K	
C630			CK73HB1H271K	CHIP C	270PF	K	
C631			CK73HB1A104K	CHIP C	0.10UF	K	
C632			CK73GB1E105K	CHIP C	1.0UF	K	
C633			CK73HB1C103K	CHIP C	0.010UF	K	
C635			CC73HCH1H101J	CHIP C	100PF	J	
C636			CK73HB1A104K	CHIP C	0.10UF	K	
C638			CK73HB1H102K	CHIP C	1000PF	K	
C640,641			CK73GB0J475K	CHIP C	4.7UF	K	
C642		*	CK73HB1A473J	CHIP C	0.047UF	J	
C644			CK73HB1C123K	CHIP C	0.012UF	K	
C645			CK73HB1A104K	CHIP C	0.10UF	K	
C646			CK73GB0J475K	CHIP C	4.7UF	K	
C647			CK73HB1C123K	CHIP C	0.012UF	K	
C648			CK73HB1H102K	CHIP C	1000PF	K	
C650,651			CK73HB1A104K	CHIP C	0.10UF	K	
C652			CC73HCH1H680J	CHIP C	68PF	J	
C653-655			CK73HB1A104K	CHIP C	0.10UF	K	
C656			CK73HB0J224K	CHIP C	0.22UF	K	
C657			CC73HCH1H330J	CHIP C	33PF	J	
C658			CK73HB1A104K	CHIP C	0.10UF	K	
C659,660			CK73GB1C104K	CHIP C	0.10UF	K	
C661			CK73HB1A104K	CHIP C	0.10UF	K	
C662			CK73HB1H102K	CHIP C	1000PF	K	
C663			CK73HB0J105K	CHIP C	1.0UF	K	
C665			CK73GB1E223K	CHIP C	0.022UF	K	
C666			CK73HB1A104K	CHIP C	0.10UF	K	
C667			CC73HCH1H470J	CHIP C	47PF	J	
C668			CC73HCH1H220J	CHIP C	22PF	J	
C669			CK73HB1H102K	CHIP C	1000PF	K	
C670			CK73HB1A104K	CHIP C	0.10UF	K	
C672			CK73HB1H102K	CHIP C	1000PF	K	
C673-675			CK73HB1A104K	CHIP C	0.10UF	K	
C676			CC73HCH1H470J	CHIP C	47PF	J	
C677			CK73HB1H222K	CHIP C	2200PF	K	
C678			CK73GB1C104K	CHIP C	0.10UF	K	
C679,680			CK73HB1A104K	CHIP C	0.10UF	K	
C681			CK73HB1H102K	CHIP C	1000PF	K	
C682			CK73HB1C153K	CHIP C	0.015UF	K	
C683			CK73HB1C123K	CHIP C	0.012UF	K	
C684			CK73HB1H102K	CHIP C	1000PF	K	
C685			CK73HB1A104K	CHIP C	0.10UF	K	
C686			CK73HB1A683K	CHIP C	0.068UF	K	
C687			C92-0713-05	CHIP-TAN	10UF	6.3WV	
C688			CK73GB1A474K	CHIP C	0.47UF	K	

PARTS LIST

TX-RX UNIT (X57-6940-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination
C689			CK73HB1C103K	CHIP C 0.010UF K	
C690			CC73HCH1H470J	CHIP C 47PF J	
C691			CK73GB1A474K	CHIP C 0.47UF K	
C692			CC73HCH1H470J	CHIP C 47PF J	
C693			CK73GB1A474K	CHIP C 0.47UF K	
C694			CK73HB1H152K	CHIP C 1500PF K	
C695			CK73HB1A104K	CHIP C 0.10UF K	
C696			CK73HB1C103K	CHIP C 0.010UF K	
C697,698			CK73HB1A104K	CHIP C 0.10UF K	
C699			C92-0816-05	CHIP-TAN 10UF 16WV	
C700			CC73HCH1H470J	CHIP C 47PF J	
C702-710			CC73HCH1H470J	CHIP C 47PF J	
C711-714			CK73HB1H102K	CHIP C 1000PF K	
C715-717			CK73HB1A104K	CHIP C 0.10UF K	
C718			CC73HCH1H180J	CHIP C 18PF J	
C719			CC73HCH1H220J	CHIP C 22PF J	
C720			CK73HB1H471K	CHIP C 470PF K	
C721			CK73HB1H102K	CHIP C 1000PF K	
C725			CK73HB1H392K	CHIP C 3900PF K	
C727			CK73HB1A104K	CHIP C 0.10UF K	
C728			CK73HB0J105K	CHIP C 1.0UF K	
C729			CK73HB1H271K	CHIP C 270PF K	
C730			CK73HB1H332K	CHIP C 3300PF K	
C732			CK73HB1H471K	CHIP C 470PF K	
C734			CC73HCH1H220J	CHIP C 22PF J	
C736			CC73HCH1H470J	CHIP C 47PF J	
C737			CK73GB0J475K	CHIP C 4.7UF K	
C738			CK73HB1H331K	CHIP C 330PF K	
C739-751			CC73HCH1H470J	CHIP C 47PF J	
C752,753			CC73HCH1H050B	CHIP C 5.0PF B	
C754			CK73HB1A104K	CHIP C 0.10UF K	
C755			CK73HB1E472K	CHIP C 4700PF K	
C756			CK73HB1A104K	CHIP C 0.10UF K	
C757			CK73HB1E472K	CHIP C 4700PF K	
C759			CK73HB1C123K	CHIP C 0.012UF K	
C763			CK73HB1H471K	CHIP C 470PF K	
TC1,2			C05-0384-05	CERAMIC TRIMMER CAPACITOR (10PF)	
CN400			E40-5823-05	FLAT CABLE CONNECTOR	
CN500			E40-6413-05	FLAT CABLE CONNECTOR	
CN502,503			E23-0342-05	TEST TERMINAL	
CN600			E40-6389-05	PIN ASSY	
CN602			E40-5856-05	FLAT CABLE CONNECTOR	
CN603			E23-1263-05	TERMINAL	
F400			F53-0190-05	FUSE	
F601,602			F53-0315-05	FUSE	
CN501			J19-5386-05	HOLDER	
CD200			L79-1072-05	TUNING COIL	
CF200			L72-1013-05	CERAMIC FILTER	
CF201			L72-1014-05	CERAMIC FILTER	
L1			L40-4795-85	SMALL FIXED INDUCTOR (4.7UH)	
L2		*	L41-1867-31	SMALL FIXED INDUCTOR	K2,K4
L2			L41-2767-31	SMALL FIXED INDUCTOR	K,K3
L3			L41-3367-31	SMALL FIXED INDUCTOR	
L4			L41-1878-31	SMALL FIXED INDUCTOR	
L6			L40-2275-92	SMALL FIXED INDUCTOR (22NH)	K2,K4
L6			L41-1878-31	SMALL FIXED INDUCTOR	K,K3
L8			L40-1075-92	SMALL FIXED INDUCTOR (10NH)	

Ref. No.	Address	New parts	Parts No.	Description	Destination
L9			L92-0138-05	CHIP FERRITE	
L10			L40-1891-86	SMALL FIXED INDUCTOR (1.8UH)	K,K3
L10			L40-2702-86	SMALL FIXED INDUCTOR (27UH)	K2,K4
L11			L40-3391-86	SMALL FIXED INDUCTOR (3.3UH)	
L12			L92-0163-05	BEADS CORE	
L13			L40-1891-86	SMALL FIXED INDUCTOR (1.8UH)	K,K3
L13			L40-2702-86	SMALL FIXED INDUCTOR (27UH)	K2,K4
L14			L40-3391-86	SMALL FIXED INDUCTOR (3.3UH)	
L17			L40-1578-67	SMALL FIXED INDUCTOR (15NH)	K,K3
L17			L40-1878-67	SMALL FIXED INDUCTOR (18NH)	K2,K4
L18			L40-2278-67	SMALL FIXED INDUCTOR (22NH))	K,K3
L18			L40-2778-67	SMALL FIXED INDUCTOR (27NH)	K2,K4
L19,20			L40-2785-92	SMALL FIXED INDUCTOR (270NH)	K,K3
L20			L40-2785-92	SMALL FIXED INDUCTOR (270NH)	K2,K4
L21,22			L40-3391-86	SMALL FIXED INDUCTOR (3.3UH)	
L23			L92-0163-05	BEADS CORE	
L24,25			L40-2275-92	SMALL FIXED INDUCTOR (22NH)	
L27			L40-1075-92	SMALL FIXED INDUCTOR (10NH)	
L30			L40-2285-92	SMALL FIXED INDUCTOR (220NH)	K2,K4
L100			L40-3375-92	SMALL FIXED INDUCTOR (33NH)	K2,K4
L100,101			L40-1875-92	SMALL FIXED INDUCTOR (18NH)	K,K3
L101			L40-2275-92	SMALL FIXED INDUCTOR (22NH)	K2,K4
L102			L92-0138-05	CHIP FERRITE	
L103			L40-1275-92	SMALL FIXED INDUCTOR (12NH)	K,K3
L103			L40-1575-92	SMALL FIXED INDUCTOR (15NH)	K2,K4
L104			L40-1575-54	SMALL FIXED INDUCTOR (15NH)	K,K3
L104			L40-1875-54	SMALL FIXED INDUCTOR (18NH)	K2,K4
L105			L92-0149-05	CHIP FERRITE	
L106			L40-2275-92	SMALL FIXED INDUCTOR (22NH)	
L107			L34-4566-05	AIR-CORE COIL	
L108			L92-0149-05	CHIP FERRITE	
L109			L40-2285-54	SMALL FIXED INDUCTOR (220NH)	
L110			L34-4572-05	AIR-CORE COIL	
L111-113			L34-4564-05	AIR-CORE COIL	
L115			L41-8669-16	SMALL FIXED INDUCTOR	K2,K4
L200			L92-0141-05	CHIP FERRITE	
L201			L40-1091-86	SMALL FIXED INDUCTOR (1.0UH)	
L202			L40-1591-86	SMALL FIXED INDUCTOR (1.5UH)	
L203			L92-0138-05	CHIP FERRITE	
L204			L40-2785-85	SMALL FIXED INDUCTOR (0.27UH)	
L206,207			L40-1575-92	SMALL FIXED INDUCTOR (15NH)	K2,K4
L206,207			L40-1875-92	SMALL FIXED INDUCTOR (18NH)	K,K3
L208			L40-2275-92	SMALL FIXED INDUCTOR (22NH)	K,K3
L208			L40-3375-92	SMALL FIXED INDUCTOR (33NH)	K2,K4
L210-212			L41-1078-14	SMALL FIXED INDUCTOR	K2,K4
L210-212			L41-8268-14	SMALL FIXED INDUCTOR	K,K3
L213			L92-0138-05	CHIP FERRITE	
L214			L41-2285-03	SMALL FIXED INDUCTOR	
L215,216			L41-1078-14	SMALL FIXED INDUCTOR	K2,K4
L215,216			L41-8268-14	SMALL FIXED INDUCTOR	K,K3
L217			L41-3378-03	SMALL FIXED INDUCTOR	K,K3
L217			L41-3978-03	SMALL FIXED INDUCTOR	K2,K4
L218			L40-8265-92	SMALL FIXED INDUCTOR (8.2NH)	
L220			L40-5685-85	SMALL FIXED INDUCTOR (0.56UH)	
L400			L92-0149-05	CHIP FERRITE	
L500-503			L92-0163-05	BEADS CORE	
L600			L92-0163-05	BEADS CORE	
L601			L92-0419-15	CHIP FERRITE	
L602-607			L92-0163-05	BEADS CORE	
L608,609			L92-0467-05	CHIP FERRITE	

PARTS LIST

TX-RX UNIT (X57-6940-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination
L610,611			L92-0408-05	CHIP FERRITE	
L612			L92-0163-05	BEADS CORE	
L615			L92-0163-05	BEADS CORE	
X1			L77-1952-05	TCXO (16.8MHZ)	
X200			L77-1957-05	CRYSTAL RESONATOR (59.395MHZ)	
X500			L77-1958-05	CRYSTAL RESONATOR (11.0592MHZ)	
X501			L77-1802-05	CRYSTAL RESONATOR (32768HZ)	
X600			L77-1965-05	CRYSTAL RESONATOR (3.6864MHZ)	
XF200			L71-0622-05	MCF (59.85MHZ)	
CP400,401			RK75HA1J473J	CHIP-COM 47K J 1/16W	
CP500-510			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP511			RK75HA1J331J	CHIP-COM 330 J 1/16W	
CP512-515			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP516			RK75HA1J103J	CHIP-COM 10K J 1/16W	
CP517			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP518			RK75HA1J473J	CHIP-COM 47K J 1/16W	
CP519			RK75HA1J103J	CHIP-COM 10K J 1/16W	
CP521			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP522			RK75HA1J101J	CHIP-COM 100 J 1/16W	
CP600			RK75HA1J473J	CHIP-COM 47K J 1/16W	
CP601-603			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP604,605			RK75HA1J331J	CHIP-COM 330 J 1/16W	
CP606			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP607,608			RK75HA1J101J	CHIP-COM 100 J 1/16W	
R2			RK73HB1J101J	CHIP R 100 J 1/16W	
R3			R92-1368-05	CHIP R 0 OHM	
R4			RK73HB1J100J	CHIP R 10 J 1/16W	
R5			RK73HB1J103J	CHIP R 10K J 1/16W	
R6,7			RK73HB1J223J	CHIP R 22K J 1/16W	
R8-10			RK73HB1J100J	CHIP R 10 J 1/16W	
R11			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R12			RK73HB1J272J	CHIP R 2.7K J 1/16W	
R13			RK73HB1J154J	CHIP R 150K J 1/16W	
R14,15			RK73HB1J100J	CHIP R 10 J 1/16W	
R16			RK73HB1J821J	CHIP R 820 J 1/16W	
R17,18			RK73HB1J271J	CHIP R 270 J 1/16W	
R19,20			RK73HB1J223J	CHIP R 22K J 1/16W	
R21			RK73HB1J681J	CHIP R 680 J 1/16W	
R22			RK73HB1J103J	CHIP R 10K J 1/16W	
R23,24			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R29			RK73HB1J184J	CHIP R 180K J 1/16W	
R30,31			RK73HB1J473J	CHIP R 47K J 1/16W	
R32			RK73HB1J100J	CHIP R 10 J 1/16W	
R33			RK73HB1J181J	CHIP R 180 J 1/16W	
R34			RK73HB1J151J	CHIP R 150 J 1/16W	
R35			RK73HB1J100J	CHIP R 10 J 1/16W	
R36			RK73HB1J154J	CHIP R 150K J 1/16W	
R37			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R38			RK73HB1J101J	CHIP R 100 J 1/16W	
R39			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R40			RK73HB1J682J	CHIP R 6.8K J 1/16W	
R41			RK73HB1J103J	CHIP R 10K J 1/16W	
R42			RK73HB1J331J	CHIP R 330 J 1/16W	
R43			RK73HB1J222J	CHIP R 2.2K J 1/16W	
R44			RK73HB1J470J	CHIP R 47 J 1/16W	
R45			R92-1368-05	CHIP R 0 OHM	
R46			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R47			RK73HB1J474J	CHIP R 470K J 1/16W	
R51			R92-1368-05	CHIP R 0 OHM	
R53			R92-1368-05	CHIP R 0 OHM	
R100			RK73HH1J333D	CHIP R 33K D 1/16W	
R101			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R102			RK73HB1J223J	CHIP R 22K J 1/16W	
R103			RK73HB1J822J	CHIP R 8.2K J 1/16W	
R104			RK73HB1J473J	CHIP R 47K J 1/16W	
R105			RK73HB1J100J	CHIP R 10 J 1/16W	
R106			RK73HB1J331J	CHIP R 330 J 1/16W	
R107			RK73HB1J220J	CHIP R 22 J 1/16W	
R108			RK73HB1J331J	CHIP R 330 J 1/16W	
R109			RK73HB1J180J	CHIP R 18 J 1/16W	
R110			RK73HB1J331J	CHIP R 330 J 1/16W	
R111			RK73HB1J101J	CHIP R 100 J 1/16W	
R112			RK73HB1J103J	CHIP R 10K J 1/16W	
R113			RK73HB1J822J	CHIP R 8.2K J 1/16W	
R115			RK73HB1J331J	CHIP R 330 J 1/16W	
R116			RK73HB1J103J	CHIP R 10K J 1/16W	
R117			RK73HB1J473J	CHIP R 47K J 1/16W	
R119			RK73HB1J470J	CHIP R 47 J 1/16W	
R120			R92-1368-05	CHIP R 0 OHM	
R122			RK73HB1J271J	CHIP R 270 J 1/16W	
R123			RK73HB1J561J	CHIP R 560 J 1/16W	
R124			R92-1368-05	CHIP R 0 OHM	
R125			RK73EB2ER39K	CHIP R 0.39 K 1/4W	
R126			RK73HB1J470J	CHIP R 47 J 1/16W	
R127			RK73EB2ER39K	CHIP R 0.39 K 1/4W	
R128			RK73HH1J104D	CHIP R 100K D 1/16W	
R130			RK73EB2ER39K	CHIP R 0.39 K 1/4W	
R132,133			RK73HH1J154D	CHIP R 150K D 1/16W	
R134			R92-1368-05	CHIP R 0 OHM	
R135			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R137-140			RK73HH1J154D	CHIP R 150K D 1/16W	
R141			RK73HB1J103J	CHIP R 10K J 1/16W	
R142			RK73HB1J473J	CHIP R 47K J 1/16W	
R143			R92-1368-05	CHIP R 0 OHM	
R144			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R145			RK73HB1J102J	CHIP R 1.0K J 1/16W	K,K3
R145			RK73HB1J222J	CHIP R 2.2K J 1/16W	K2,K4
R146,147			RK73HB1J104J	CHIP R 100K J 1/16W	
R148,149			RK73HB1J271J	CHIP R 270 J 1/16W	
R150			R92-0670-05	CHIP R 0 OHM	K,K3
R152			R92-1368-05	CHIP R 0 OHM	
R153			RK73HB1J393J	CHIP R 39K J 1/16W	
R154			R92-1368-05	CHIP R 0 OHM	
R155			RK73EB2E823J	CHIP R 82K J 1/4W	
R157,158			R92-1368-05	CHIP R 0 OHM	
R200			RK73HB1J824J	CHIP R 820K J 1/16W	
R202			RK73HB1J224J	CHIP R 220K J 1/16W	
R203			RK73HB1J683J	CHIP R 68K J 1/16W	
R204			RK73HB1J104J	CHIP R 100K J 1/16W	
R205			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R206			RK73HB1J152J	CHIP R 1.5K J 1/16W	
R207			R92-1368-05	CHIP R 0 OHM	
R208,209			RK73HB1J223J	CHIP R 22K J 1/16W	
R210			RK73HB1J332J	CHIP R 3.3K J 1/16W	
R211,212			RK73HB1J223J	CHIP R 22K J 1/16W	
R213			RK73HB1J471J	CHIP R 470 J 1/16W	
R214			RK73HB1J334J	CHIP R 330K J 1/16W	
R215			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R216			RK73HB1J392J	CHIP R 3.9K J 1/16W	

PARTS LIST

TX-RX UNIT (X57-6940-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination
R217			RK73HB1J184J	CHIP R 180K J 1/16W	
R218			RK73HB1J822J	CHIP R 8.2K J 1/16W	
R219			RK73GB1J153J	CHIP R 15K J 1/16W	
R220			RK73HB1J334J	CHIP R 330K J 1/16W	
R221			RK73GB1J332J	CHIP R 3.3K J 1/16W	
R222			RK73HB1J272J	CHIP R 2.7K J 1/16W	
R223			RK73HB1J474J	CHIP R 470K J 1/16W	
R224			RK73HB1J392J	CHIP R 3.9K J 1/16W	
R225			RK73HB1J100J	CHIP R 10 J 1/16W	
R226			RK73HB1J562J	CHIP R 5.6K J 1/16W	
R227			R92-1368-05	CHIP R 0 OHM	
R228			RK73HB1J221J	CHIP R 220 J 1/16W	
R230			RK73HB1J564J	CHIP R 560K J 1/16W	
R231			RK73HB1J121J	CHIP R 120 J 1/16W	
R232			RK73HB1J221J	CHIP R 220 J 1/16W	
R233			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R234			RK73HB1J470J	CHIP R 47 J 1/16W	
R236			RK73HB1J681J	CHIP R 680 J 1/16W	
R237			RK73HB1J151J	CHIP R 150 J 1/16W	
R239			RK73HB1J104J	CHIP R 100K J 1/16W	
R240			RK73HB1J154J	CHIP R 150K J 1/16W	
R241			RK73HB1J104J	CHIP R 100K J 1/16W	
R242			RK73HB1J184J	CHIP R 180K J 1/16W	
R243			R92-1252-05	CHIP R 0 OHM J 1/16W	
R244-246			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R248			RK73HB1J680J	CHIP R 68 J 1/16W	
R249			RK73HB1J221J	CHIP R 220 J 1/16W	
R251			RK73HB1J104J	CHIP R 100K J 1/16W	
R253			RK73HB1J104J	CHIP R 100K J 1/16W	
R254			RK73HB1J683J	CHIP R 68K J 1/16W	
R255			RK73HB1J104J	CHIP R 100K J 1/16W	
R256-258			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R259			R92-1252-05	CHIP R 0 OHM J 1/16W	K2,K4
R400			R92-1368-05	CHIP R 0 OHM	
R402			RK73HB1J821J	CHIP R 820 J 1/16W	
R403			RK73HB1J561J	CHIP R 560 J 1/16W	
R404			RK73HB1J103J	CHIP R 10K J 1/16W	
R405			RK73HB1J104J	CHIP R 100K J 1/16W	
R406			RK73HB1J224J	CHIP R 220K J 1/16W	
R407			RK73HB1J684J	CHIP R 680K J 1/16W	
R408,409			RK73HB1J474J	CHIP R 470K J 1/16W	
R410			RK73HB1J103J	CHIP R 10K J 1/16W	
R411,412			RK73HH1J474D	CHIP R 470K D 1/16W	
R414			RK73HB1J103J	CHIP R 10K J 1/16W	
R415			RK73HB1J153J	CHIP R 15K J 1/16W	
R416			R92-1368-05	CHIP R 0 OHM	
R417			RK73HB1J684J	CHIP R 680K J 1/16W	
R418			RK73HB1J474J	CHIP R 470K J 1/16W	
R419			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R421			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R422			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R423,424			RK73HB1J103J	CHIP R 10K J 1/16W	
R425-427			RK73HB1J473J	CHIP R 47K J 1/16W	
R428			RK73HB1J124J	CHIP R 120K J 1/16W	
R430			RK73HB1J103J	CHIP R 10K J 1/16W	
R500			R92-1368-05	CHIP R 0 OHM	
R504			R92-1368-05	CHIP R 0 OHM	
R505,506			RK73HB1J473J	CHIP R 47K J 1/16W	
R507			RK73HB1J474J	CHIP R 470K J 1/16W	
R508-510			RK73HB1J473J	CHIP R 47K J 1/16W	

Ref. No.	Address	New parts	Parts No.	Description	Destination
R511			R92-1368-05	CHIP R 0 OHM	
R512			RK73HB1J473J	CHIP R 47K J 1/16W	
R513			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R514			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R515			RK73HB1J473J	CHIP R 47K J 1/16W	
R516,517			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R518			RK73HB1J103J	CHIP R 10K J 1/16W	
R519			RK73HB1J474J	CHIP R 470K J 1/16W	
R520			RK73HB1J103J	CHIP R 10K J 1/16W	
R521			RK73HH1J272D	CHIP R 2.7K D 1/16W	
R522			RK73HH1J512D	CHIP R 5.1K D 1/16W	
R523,524			R92-1368-05	CHIP R 0 OHM	
R525			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R526			R92-1252-05	CHIP R 0 OHM J 1/16W	
R527			RK73HB1J473J	CHIP R 47K J 1/16W	
R528			RK73HB1J474J	CHIP R 470K J 1/16W	
R600			RK73HB1J684J	CHIP R 680K J 1/16W	
R601			RK73HB1J394J	CHIP R 390K J 1/16W	
R603			R92-1368-05	CHIP R 0 OHM	
R604			RK73HB1J184J	CHIP R 180K J 1/16W	
R605			RK73HB1J393J	CHIP R 39K J 1/16W	
R606			RK73HB1J184J	CHIP R 180K J 1/16W	
R607			RK73HB1J223J	CHIP R 22K J 1/16W	
R609			RK73HB1J104J	CHIP R 100K J 1/16W	
R612			RK73HB1J103J	CHIP R 10K J 1/16W	
R613			RK73HB1J104J	CHIP R 100K J 1/16W	
R614			RK73HB1J683J	CHIP R 68K J 1/16W	
R615			RK73HB1J473J	CHIP R 47K J 1/16W	
R616			RK73HB1J104J	CHIP R 100K J 1/16W	
R617			RK73HB1J683J	CHIP R 68K J 1/16W	
R618			R92-1368-05	CHIP R 0 OHM	
R619			RK73HB1J184J	CHIP R 180K J 1/16W	
R623			RK73HB1J104J	CHIP R 100K J 1/16W	
R624			R92-1368-05	CHIP R 0 OHM	
R625			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R626			RK73HB1J184J	CHIP R 180K J 1/16W	
R627			RK73HB1J684J	CHIP R 680K J 1/16W	
R628,629			R92-1368-05	CHIP R 0 OHM	
R631			RK73HB1J474J	CHIP R 470K J 1/16W	
R633			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R635,636			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R637			RK73HB1J332J	CHIP R 3.3K J 1/16W	
R638			RK73HB1J103J	CHIP R 10K J 1/16W	
R641			RK73HB1J273J	CHIP R 27K J 1/16W	
R642			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R643			RK73HB1J104J	CHIP R 100K J 1/16W	
R644			RK73HB1J103J	CHIP R 10K J 1/16W	
R645			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R648			RK73HB1J104J	CHIP R 100K J 1/16W	
R650			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R652			RK73HB1J103J	CHIP R 10K J 1/16W	
R654			RK73HB1J683J	CHIP R 68K J 1/16W	
R655			RK73HB1J682J	CHIP R 6.8K J 1/16W	
R656			RK73HB1J563J	CHIP R 56K J 1/16W	
R657			RK73HB1J564J	CHIP R 560K J 1/16W	
R658			RK73HB1J473J	CHIP R 47K J 1/16W	
R659			R92-1252-05	CHIP R 0 OHM J 1/16W	
R660			R92-1368-05	CHIP R 0 OHM	
R661			RK73HB1J334J	CHIP R 330K J 1/16W	
R663			RK73HB1J103J	CHIP R 10K J 1/16W	

PARTS LIST

TX-RX UNIT (X57-6940-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination
R664			RK73HB1J124J	CHIP R 120K J 1/16W	
R666			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R667			RK73HB1J394J	CHIP R 390K J 1/16W	
R668			RK73HB1J154J	CHIP R 150K J 1/16W	
R669			RK73HB1J124J	CHIP R 120K J 1/16W	
R670			R92-1252-05	CHIP R 0 OHM J 1/16W	
R671			RK73HB1J104J	CHIP R 100K J 1/16W	
R672			RK73HB1J224J	CHIP R 220K J 1/16W	
R673,674			R92-1368-05	CHIP R 0 OHM	
R675			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R676			RK73HB1J274J	CHIP R 270K J 1/16W	
R677			RK73HB1J223J	CHIP R 22K J 1/16W	
R679			R92-1368-05	CHIP R 0 OHM	
R680			RK73HB1J274J	CHIP R 270K J 1/16W	
R681			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R682			RK73HB1J272J	CHIP R 2.7K J 1/16W	
R683			RK73HB1J154J	CHIP R 150K J 1/16W	
R684			R92-1252-05	CHIP R 0 OHM J 1/16W	
R685			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R686			RK73HH1J474D	CHIP R 470K D 1/16W	
R687			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R688			RK73HB1J273J	CHIP R 27K J 1/16W	
R689,690			R92-1368-05	CHIP R 0 OHM	
R691			RK73HB1J103J	CHIP R 10K J 1/16W	
R692			RK73HB1J823J	CHIP R 82K J 1/16W	
R693			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R694			RK73HH1J104D	CHIP R 100K D 1/16W	
R695			RK73HB1J103J	CHIP R 10K J 1/16W	
R696			RK73HB1J184J	CHIP R 180K J 1/16W	
R697			RK73HB1J474J	CHIP R 470K J 1/16W	
R698			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R699			RK73HB1J334J	CHIP R 330K J 1/16W	
R700			RK73HB1J184J	CHIP R 180K J 1/16W	
R701			RK73HB1J223J	CHIP R 22K J 1/16W	
R702,703			RK73HB1J473J	CHIP R 47K J 1/16W	
R704			RK73HB1J471J	CHIP R 470 J 1/16W	
R705,706			RK73HB1J153J	CHIP R 15K J 1/16W	
R707			RK73HB1J182J	CHIP R 1.8K J 1/16W	
R708			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R709			RK73HB1J104J	CHIP R 100K J 1/16W	
R710			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R711			RK73HB1J473J	CHIP R 47K J 1/16W	
R712			RK73HB1J104J	CHIP R 100K J 1/16W	
R713			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R714			RK73HB1J104J	CHIP R 100K J 1/16W	
R715			RK73HB1J272J	CHIP R 2.7K J 1/16W	
R716			RK73HB1J104J	CHIP R 100K J 1/16W	
R717-720			RK73HB1J101J	CHIP R 100 J 1/16W	
R721			RK73HB1J103J	CHIP R 10K J 1/16W	
R722			RK73HB1J474J	CHIP R 470K J 1/16W	
R723			RK73HB1J470J	CHIP R 47 J 1/16W	
R724			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R725,726			RK73HB1J331J	CHIP R 330 J 1/16W	
R728-734			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R735			RK73HB1J473J	CHIP R 47K J 1/16W	
R736,737			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R738			RK73HB1J124J	CHIP R 120K J 1/16W	
R739			RK73HB1J184J	CHIP R 180K J 1/16W	
R740,741			RK73HB1J123J	CHIP R 12K J 1/16W	
R742			RK73HB1J822J	CHIP R 8.2K J 1/16W	

Ref. No.	Address	New parts	Parts No.	Description	Destination
R744			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R745			RK73HB1J823J	CHIP R 82K J 1/16W	
R747			R92-1368-05	CHIP R 0 OHM	
R748			RK73HB1J104J	CHIP R 100K J 1/16W	
R750			RK73HB1J823J	CHIP R 82K J 1/16W	
R752			R92-1368-05	CHIP R 0 OHM	
R753			RK73HB1J103J	CHIP R 10K J 1/16W	
R754			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R755			R92-1252-05	CHIP R 0 OHM J 1/16W	
R758			RK73HB1J473J	CHIP R 47K J 1/16W	
R760			RK73HB1J104J	CHIP R 100K J 1/16W	
R761			RK73HB1J222J	CHIP R 2.2K J 1/16W	
R762			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R764,765			R92-1252-05	CHIP R 0 OHM J 1/16W	
R766			RK73HB1J222J	CHIP R 2.2K J 1/16W	
R767			RK73HB1J474J	CHIP R 470K J 1/16W	
R768			RK73HB1J101J	CHIP R 100 J 1/16W	
R769-771			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R772			R92-1368-05	CHIP R 0 OHM	
R773			RK73HB1J823J	CHIP R 82K J 1/16W	
R775			RK73HB1J563J	CHIP R 56K J 1/16W	
R776			RK73HB1J473J	CHIP R 47K J 1/16W	
R777			RK73HB1J100J	CHIP R 10 J 1/16W	
R780			RK73HB1J103J	CHIP R 10K J 1/16W	
R781,782			R92-1368-05	CHIP R 0 OHM	
R783			RK73HB1J683J	CHIP R 68K J 1/16W	
R784			RK73HB1J473J	CHIP R 47K J 1/16W	
R785			RK73HH1J123D	CHIP R 12K D 1/16W	
R786		*	RK73HH1J562D	CHIP R 5.6K D 1/16W	
R787			RK73HH1J103D	CHIP R 10K D 1/16W	
R788			RK73HB1J473J	CHIP R 47K J 1/16W	
R790			R92-1368-05	CHIP R 0 OHM	
R792			RK73HB1J223J	CHIP R 22K J 1/16W	
R794			R92-1368-05	CHIP R 0 OHM	
R796			R92-1252-05	CHIP R 0 OHM J 1/16W	
S400			S70-0483-05	TACT SWITCH	
D1-4			HVC131	DIODE	
D6			1SV325	VARIABLE CAPACITANCE DIODE	K2,K4
D7			1SV325	VARIABLE CAPACITANCE DIODE	K,K3
D9			1SV325	VARIABLE CAPACITANCE DIODE	
D11			1SV325	VARIABLE CAPACITANCE DIODE	K,K3
D11,12			1SV325	VARIABLE CAPACITANCE DIODE	K2,K4
D13			1SV325	VARIABLE CAPACITANCE DIODE	K,K3
D17			1SV278	VARIABLE CAPACITANCE DIODE	
D18			MA2S111	DIODE	
D100			HSC277	DIODE	
D103		*	HZU3BLL	ZENER DIODE	
D106,107			HVC131	DIODE	
D108			HZU2ALL	ZENER DIODE	
D200			MA2S111	DIODE	
D201			DAN222	DIODE	
D202			RB706F-40	DIODE	
D203			DAN222	DIODE	
D204			MA2S111	DIODE	
D205			HSC277	DIODE	
D206-210			HVC369B	VARIABLE CAPACITANCE DIODE	
D212			HVC369B	VARIABLE CAPACITANCE DIODE	
D213,214			HVC131	DIODE	
D314			MA2S111	DIODE	

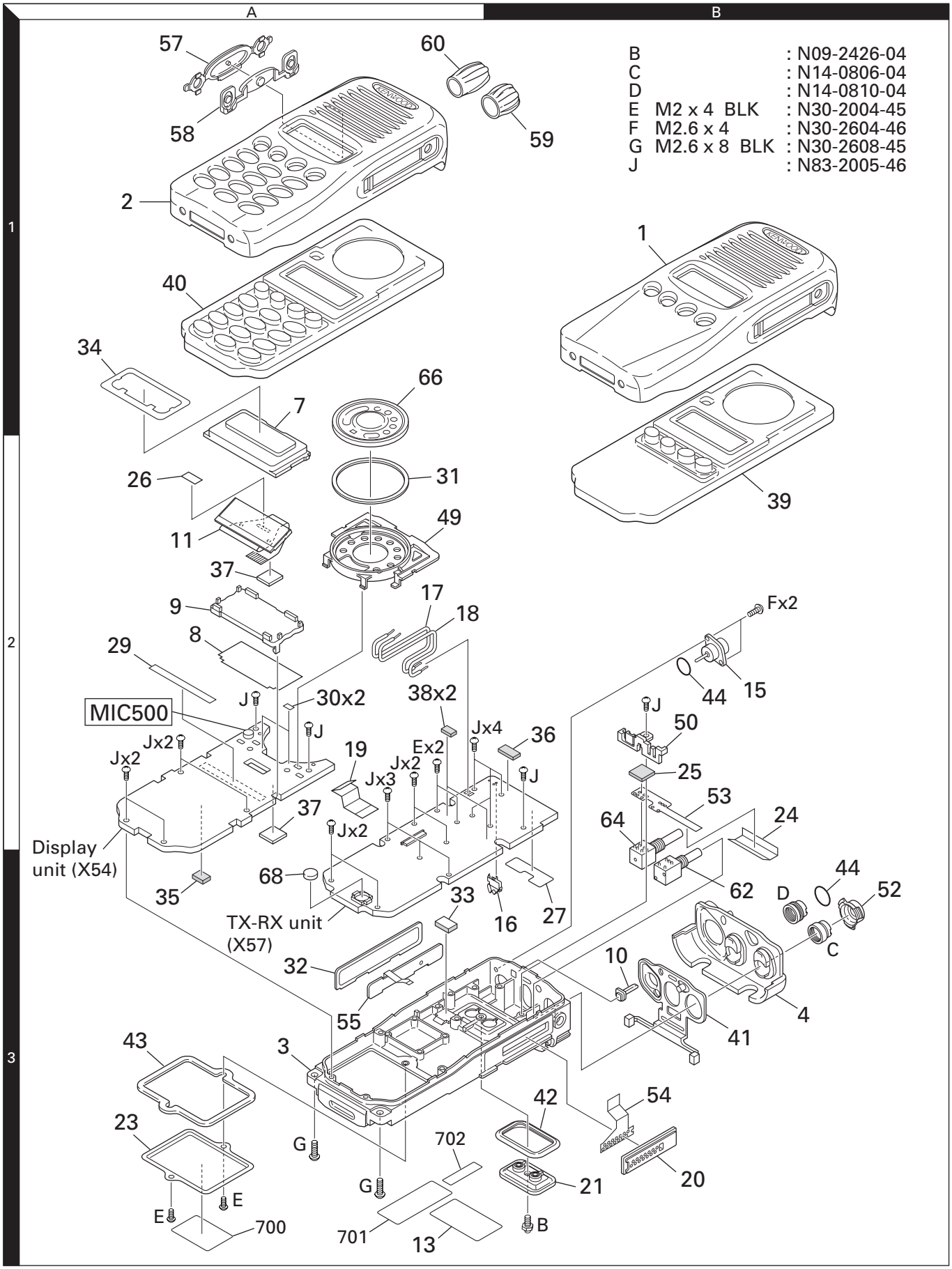
PARTS LIST

TX-RX UNIT (X57-6940-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination
D402			1SR154-400	DIODE	
D403			1SS301	DIODE	
D404			MA2S111	DIODE	
D405			RB521S-30	DIODE	
D406			MA2S111	DIODE	
D408			MA2S111	DIODE	
D500			MA2S111	DIODE	
D501,502			1SS388	DIODE	
D600-603			RB706F-40	DIODE	
D604			015AZ6.8	ZENER DIODE	
D605			1SS373	DIODE	
D606			015AZ6.8	ZENER DIODE	
D607			015AZ2.4-X	ZENER DIODE	
D608			015AZ6.8	ZENER DIODE	
D609,610			DA221	DIODE	
D611			NNCD6.8G	ZENER DIODE	
D612			015AZ6.8	ZENER DIODE	
D613			DA221	DIODE	
D614			DAN222	DIODE	
IC1			ADF4111BCP7	MOS-IC	
IC100			TA75W01FU	MOS-IC	
IC200			TA31136FN	MOS-IC	
IC400			XC61CC5602NR	MOS-IC	
IC401			TK11250CUCB	MOS-IC	
IC402,403			XC6204B502MR	MOS-IC	
IC404			TC75S51FE	MOS-IC	
IC405			S-80942CNNBG9C	MOS-IC	
IC406			TK11250CUCB	MOS-IC	
IC500			AT29C040A-90TI	ROM IC	
IC502			30625MGP-169GP	MICROPROCESSOR IC	
IC503			RV5C386A	MOS-IC	
IC504			AT24256N10SI27	ROM IC	
IC505			TC7W53FK	HYBRID IC	
IC600-604			TC75W51FK	MOS-IC	
IC605			M62364FP	MOS-IC	
IC606			TC7W53FK	HYBRID IC	
IC607			AQUA-L	MOS-IC	
IC608			TC75W51FK	MOS-IC	
IC609			TDA7053AT	BI-POLAR IC	
Q1			DTA144EE	DIGITAL TRANSISTOR	
Q2			DTC144EE	DIGITAL TRANSISTOR	
Q6,7			2SK508NV(K52)	FET	
Q8,9				FET	
Q10			2SC5108(Y)	TRANSISTOR	
Q11			2SK1830	FET	
Q12			2SC4617(S)	TRANSISTOR	
Q13-15			2SC5108(Y)	TRANSISTOR	
Q100			2SC5108(Y)	TRANSISTOR	
Q101			2SK3077	FET	
Q102			2SK3391	FET	
Q104			2SC4738(GR)	TRANSISTOR	
Q105			RD07MVS1	FET	
Q106			DTC114EE	DIGITAL TRANSISTOR	
Q107,108			2SK1824	FET	
Q200			HN1L02FU	FET	
Q201			2SC4617(S)	TRANSISTOR	
Q202			2SJ243	FET	
Q203			2SK1824	FET	
Q204			DTA144EE	DIGITAL TRANSISTOR	
Q205			2SC5108(Y)	TRANSISTOR	

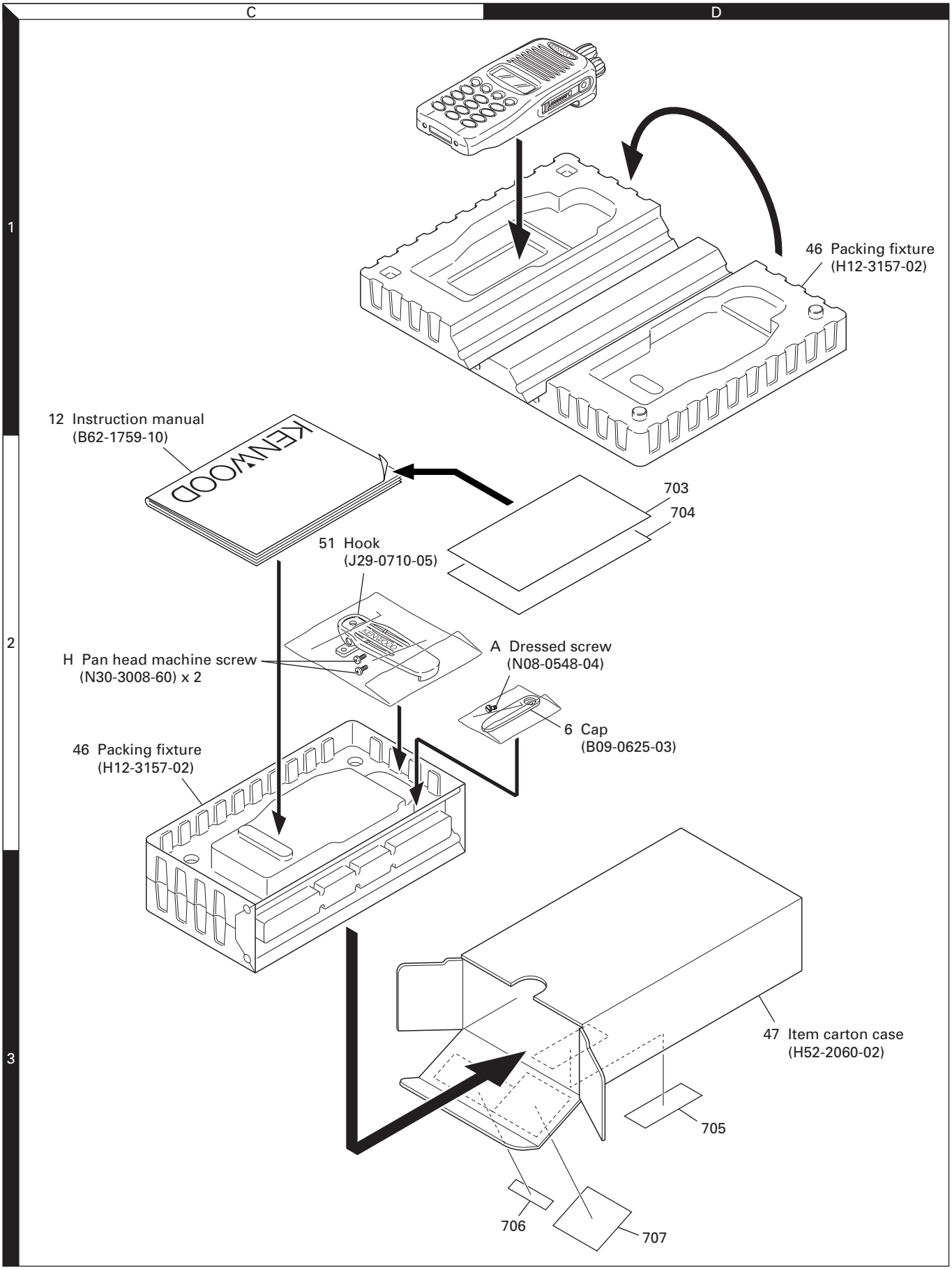
Ref. No.	Address	New parts	Parts No.	Description	Destination
Q206,207			3SK318	FET	
Q400			UMG9N	TRANSISTOR	
Q401			SSM3K15TE	FET	
Q402			2SK1830	FET	
Q403			2SA1955(A)	TRANSISTOR	
Q404			DTC144EE	DIGITAL TRANSISTOR	
Q405			2SJ347	FET	
Q406			2SA1955(A)	TRANSISTOR	
Q407			2SK1830	FET	
Q408			2SA1955(A)	TRANSISTOR	
Q409			2SJ347	FET	
Q502			SSM3K15TE	FET	
Q602			DTA114EE	DIGITAL TRANSISTOR	
Q605			RN4910	TRANSISTOR	
Q606			2SC4738(GR)	TRANSISTOR	
Q607			2SA1832(GR)	TRANSISTOR	
Q608-610			2SJ243	FET	
Q611			HN1L02FU	FET	
Q612			2SC4617(S)	TRANSISTOR	
Q613			2SB1132(Q,R)	TRANSISTOR	
Q614			2SJ347	FET	
Q615			2SC4617(S)	TRANSISTOR	
Q616,617			UPA672T	FET	
Q618			2SK1824	FET	
Q619			2SJ243	FET	
Q620			DTA144TE	DIGITAL TRANSISTOR	
Q621			2SC4649(N,P)	TRANSISTOR	
Q622			FMMT717	TRANSISTOR	
Q623,624			2SK1830	FET	
TH100			ERTJ0EV104H	THERMISTOR	
TH200			ERTJ0EV104H	THERMISTOR	

EXPLODED VIEW



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

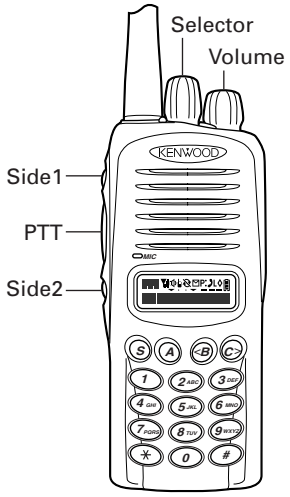
PACKING



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

ADJUSTMENT

Controls



Panel Test Mode

■ Test mode operation features

This transceiver has a test mode. ***To enter test mode, press [A] key and turn power on. Hold [A] key until frequency version 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.

■ Key operation

Key	"FNC" not appears	
	Function	**Display**
[S]	Shifts to Panel tuning mode	-
[A]	Function on	"FNC" appears
[B]	MSK 1200bps and 2400bps	2400bps : ✉ icon appears
[C]	Test signaling CH up	Signaling No.
[Selector]	Test frequency CH up/down	Channel No.
[Side1]	Squelch on/off	🔇
[Side2]	Narrow/Wide 4k/Wide 5k	Narrow : "n" Wide 4k : "s" Wide 5k : "w"
[PTT]	Transmit	-
[0] to [9] and [#],[*]	Use as the DTMF keypad. If a key is pressed during transmission, the DTMF corresponding to the key that was presses is sent.	-

Key	"FNC" appears	
	Function	**Display**
[S]	High power / Low power	Low : L icon appears
[A]	Function off	-
[B]	Compander on/off	On :) icon appears
[C]	Beat shift on/off	On : ◊ icon appears
[Selector]	Test frequency CH up/down	-
[Side1]	Squelch level 0	On : P• icon appears
[Side2]	LCD all lights	LCD all point appears
[PTT]	Transmit	-
[0] to [9] and [#],[*]	Function off	-

Notes :

- If a [S], [A], [B], [C] key is pressed during transmission, the DTMF corresponding to the key that was pressed is sent.
- The "Wide 4k" can not use, please skip it.

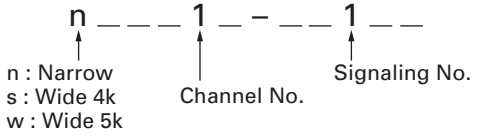
• LED indicator

Red LED Lights during transmission. Blinks at the low battery voltage warning.
Green LED Lights when there is carrier.

• Sub LCD indicator

"FNC" Appears at function on.

• LCD display in panel test mode



■ Frequency and Signaling

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

• Test frequency

CH	K,K3		K2,K4	
	RX (MHz)	**TX (MHz)**	**RX (MHz)**	**TX (MHz)**
1	485.05000	485.10000	435.05000	435.10000
2	450.05000	450.10000	400.05000	400.10000
3	519.95000	519.90000	469.95000	469.90000
4	485.00000	485.00000	435.00000	435.00000
5	485.20000	485.20000	435.20000	435.20000
6	485.40000	485.40000	435.40000	435.40000
7~16	-	-	-	-

ADJUSTMENT

• Test signaling

No.	RX	TX
1	None	None
2	None	100Hz Square Wave
3	LTR Data : AREA=0, GOTO=12 HOME=12 ID=47, FREE=25	LTR Data : AREA=0, GOTO=12 HOME=12 ID=47, FREE=25
4	QT : 67.0Hz	QT : 67.0Hz
5	QT : 151.4Hz	QT : 151.4Hz
6	QT : 210.7Hz	QT : 210.7Hz
7	QT : 254.1Hz	QT : 254.1Hz
8	DQT : 023N	DQT : 023N
9	DQT : 754I	DQT : 754I
10	DTMF : 159D	DTMF : 159D
11	None	DTMF Code 9
12	2-tone : A : 304.7Hz B : 3106.0Hz	2-tone : A : 304.7Hz B : 3106.0Hz
13	Single Tone : 979.9Hz	Single Tone : 979.9Hz
14	None	Single Tone : 1000Hz
15	5-tone (CCIR 12345)	5-tone (CCIR 12345)
16	None	MSK
17	MSK : Preamble : 0xAAAA Sync : 0x23EB Data : 0x230960C6AAAA CRC : 0xC4D7	MSK : Preamble : 0xAAAA Sync : 0x23EB Data : 0x230960C6AAAA CRC : 0xC4D7

Note : The "5-tone signaling" can not use, please skip it.

Panel Tuning Mode

■ 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 8Ω dummy load and connected to an AC voltmeter and an audio distortion meter or a SINAD measurement meter at all times during tuning.

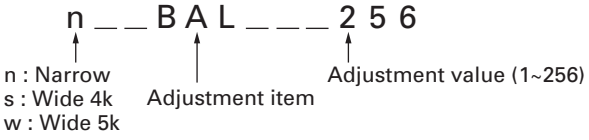
■ Transceiver tuning (To place transceiver in tuning mode)

Press [S] key, now in tuning mode. Use [B] key to write tuning data through tuning modes, and [Selector] to adjust tuning requirements (1 to 256 appeares on LCD).

Use [C] key to select the adjustment item through tuning modes. Use [A] key to adjust 3 or 5 reference level adjustments, and use [Side2] key to switch between Wide 5k/Wide 4k/Narrow.

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

• LCD display in panel tuning mode



■ Key operation

Key	Function	
	Push	Hold (1 second)
[S]	End of panel tuning mode	-
[A]	To enter 3 or 5 reference level adjustments	-
[B]	Writes the adjustment value	-
[C]	Go to next adjustment item	Back to last adjustment item
[Selector]	Adjustment value up/down	
[Volume]	Volume level up/down	
[Side1]	Squelch on/off	-
[Side2]	Selects Narrow, Wide 4k, Wide 5k	-

■ 3 or 5 reference level adjustments frequency

Tuning point	K,K3		K2,K4	
	RX (MHz)	TX (MHz)	RX (MHz)	TX (MHz)
Low	450.05000	450.10000	400.05000	400.10000
Low'	469.05000	467.60000	427.05000	417.60000
Center	485.05000	485.10000	435.05000	435.10000
High'	502.55000	502.60000	452.55000	452.60000
High	519.95000	519.90000	469.95000	469.90000

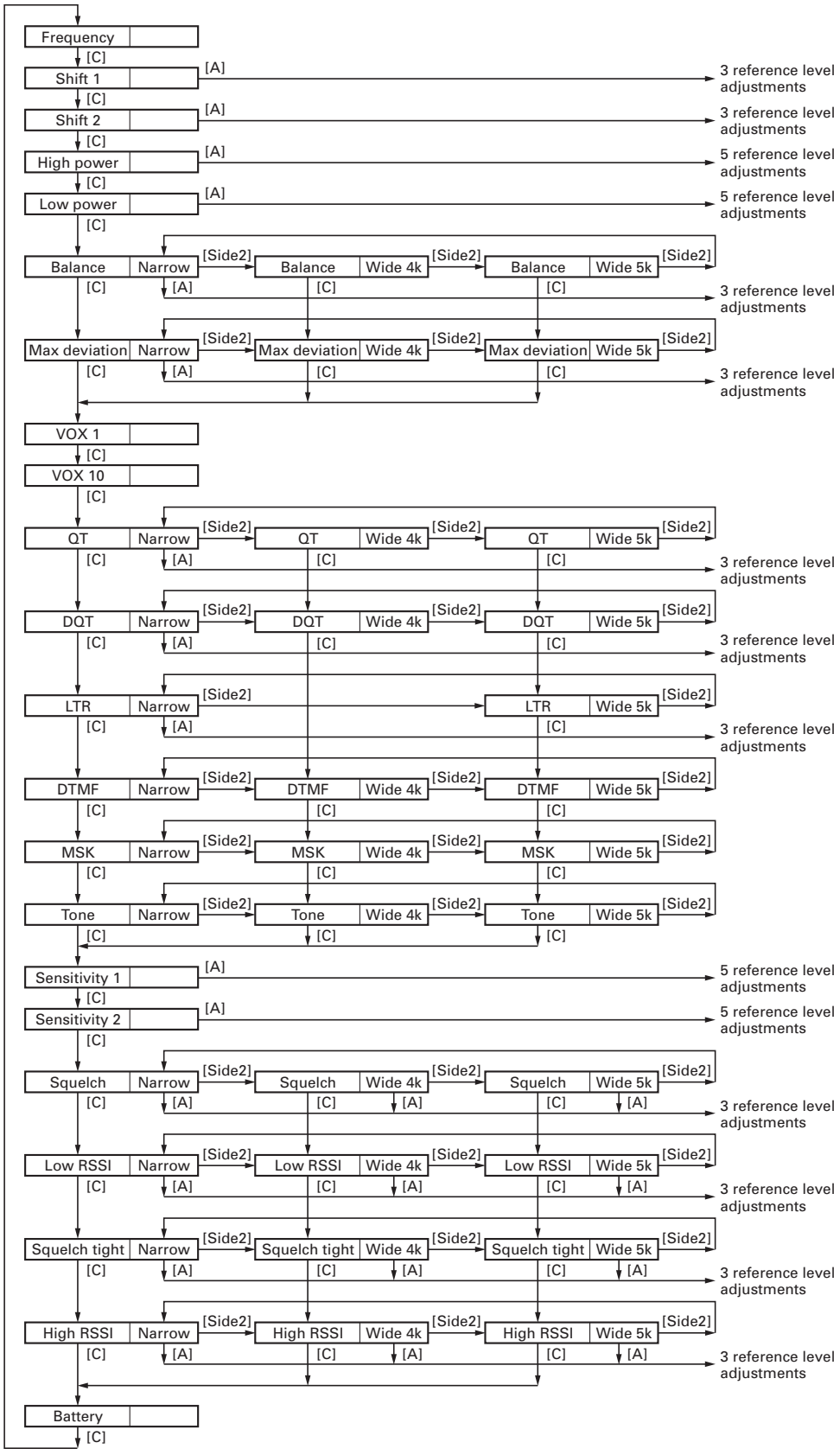
■ Adjustment item and Display (✳✳✳ : 1~256)

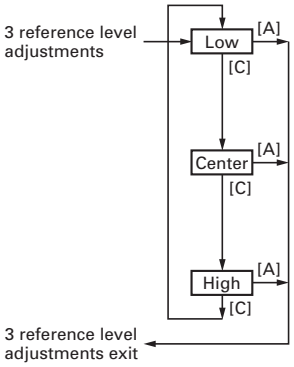
Order	Adjustment item	Display
1	Frequency	FREQ ✳✳✳
2	Shift 1	SHFT1 ✳✳✳
3	Shift 2	SHFT2 ✳✳✳
4	High power	HPWR ✳✳✳
5	Low power	LPWR ✳✳✳
6	Balance	BAL ✳✳✳
7	Max deviation	DEV ✳✳✳
8	VOX 1	VOX1 ✳✳✳
9	VOX 10	VOX10 ✳✳✳
10	QT	QT ✳✳✳
11	DQT	DQT ✳✳✳
12	LTR	LTR ✳✳✳
13	DTMF	DTMF ✳✳✳
14	MSK	MSK ✳✳✳
15	Tone	TONE ✳✳✳
16	Sensitivity 1	SENS1 ✳✳✳
17	Sensitivity 2	SENS2 ✳✳✳
18	Squelch	SQL ✳✳✳
19	Low RSSI	LRSSI ✳✳✳
20	Squelch tight	SQLT ✳✳✳
21	High RSSI	HRSSI ✳✳✳
22	Battery	BATT ✳✳✳

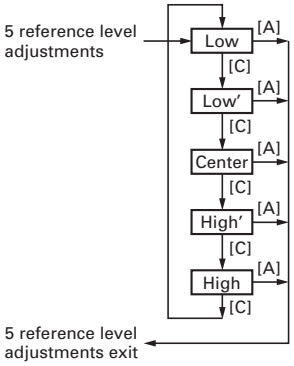
ADJUSTMENT

■ Flow chart

Note : The "Wide 4k" can not use, please skip it.







ADJUSTMENT

Test Equipment Required for Alignment

Test Equipment	Major Specifications	
1. Standard Signal Generator (SSG)	Frequency Range	400 to 520MHz
	Modulation	Frequency modulation and external modulation
	Output	–127dBm/0.1μV to greater than –47dBm/1mV
2. Power Meter	Input Impedance	50Ω
	Operation Frequency	400 to 520MHz or more
	Measurement Capability	Vicinity of 10W
3. Deviation Meter	Frequency Range	400 to 520MHz
4. Digital Volt Meter (DVM)	Measuring Range	10mV to 10V DC
	Input Impedance	High input impedance for minimum circuit loading
5. Oscilloscope		DC through 30MHz
6. High Sensitivity Frequency Counter	Frequency Range	10Hz to 1000MHz
	Frequency Stability	0.2ppm or less
7. Ammeter		5A
8. AF Volt Meter (AF VTVM)	Frequency Range	50Hz to 10kHz
	Voltage Range	1mV to 10V
9. Audio Generator (AG)	Frequency Range	50Hz to 5kHz or more
	Output	0 to 1V
10. Distortion Meter	Capability	3% or less at 1kHz
	Input Level	50mV to 10Vrms
11. 8Ω Dummy Load		Approx. 8Ω, 3W
12. Regulated Power Supply		5V to 10V, approx. 5A
		Useful if ammeter equipped

■ Universal connector

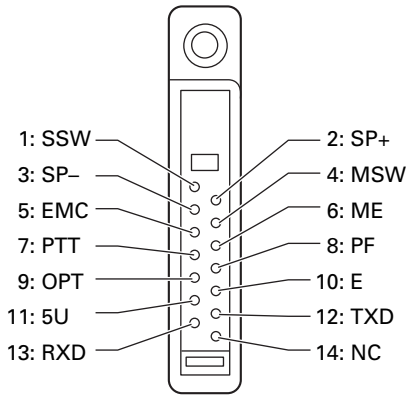
Use the interface cable (KPG-36) for PC tuning or the lead wire with plug (E30-3287-18) and screw (N08-0535-08) for panel tuning. Connect the plug to the universal connector of the radio and tighten the screw.

The lead wire with plug (E30-3287-18) and screw (N08-0535-08) terminals are as follows. Numbers are universal connector terminal numbers.

Caution

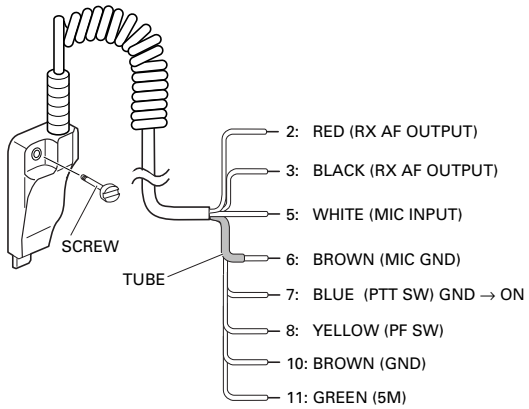
1. When connecting the plug to the universal connector of the radio, a short circuit may occur. To prevent this, be sure to turn the radio POWER switch off.
2. Since the RX AF output is a BTL output, there is a DC component. Isolate this with a capacitor or transformer as shown in the figure.
3. Do not connect an instrument between red or black and GND.

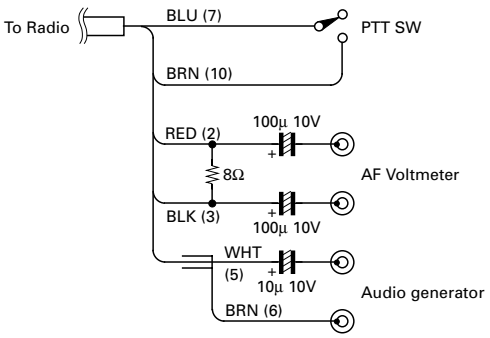
• Universal connector



ADJUSTMENT

• Panel tuning

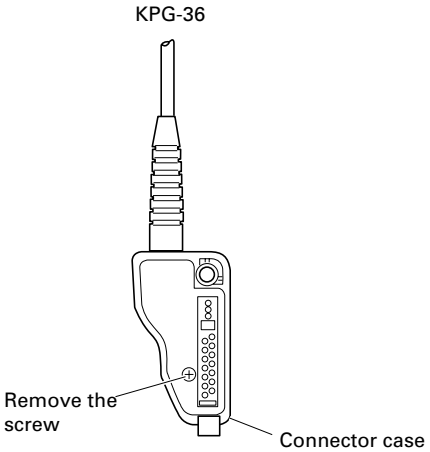


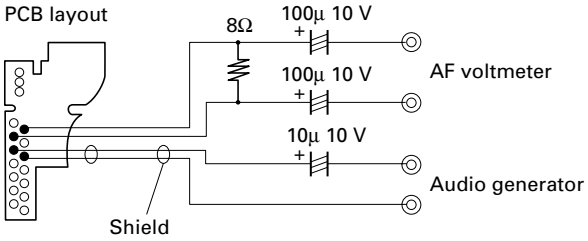


• PC tuning

Connect the wires to the PCB in the connector case of interface cable.

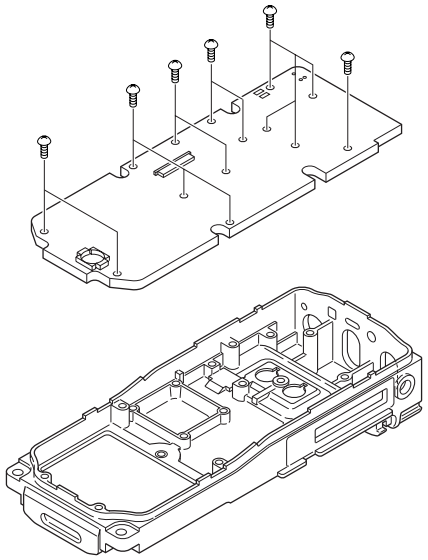
For output the wires out of the connector case, need to process the connector case.





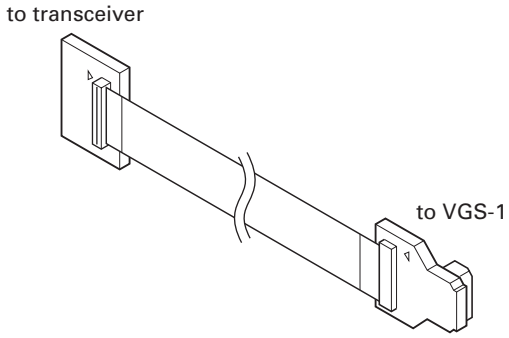
■ Repair jig (Chassis)

Use jig (part No. : A10-4077-04) for repairing the transceiver. Place the TX-RX unit on the jig and fit it with 14 screws.



■ Check Jig for the VGS-1

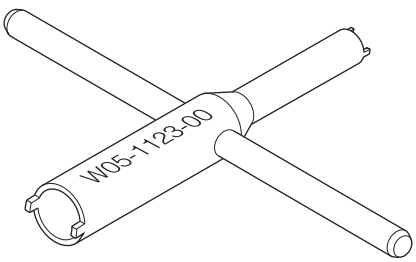
KENWOOD part No. : W05-1127-00



■ Nut wrench

In order to turn the volume nut and the channel selector nut, use a recommendation tool.

KENWOOD part No. : W05-1123-00



ADJUSTMENT

Common Section

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Setting	1) BATT terminal voltage : 7.5V 2) SSG standard modulation [Wide 5k] MOD : 1kHz, DEV : 3kHz [Wide 4k] MOD : 1kHz, DEV : 2.4kHz [Narrow] MOD : 1kHz, DEV : 1.5kHz							
2. VCO lock voltage • RX	**[Panel test mode]** 1) CH-Sig : 3-1	Power meter DVM	Panel TX-RX	ANT CV	TX-RX	TC2	4.20V **K,K3** 4.30V **K2,K4**	±0.1V **K,K3** ±0.05V **K2,K4**
	2) CH-Sig : 2-1						Check	0.7V or more **K,K3** 0.6V or more **K2,K4**
• TX	**[Panel tuning mode] LPWR*** 3) CH-Sig : 3-1 PTT : ON				TX-RX	TC1	4.20V **K,K3** 4.30V **K2,K4**	±0.1V **K,K3** ±0.05V **K2,K4**
	4) CH-Sig : 2-1 PTT : ON						Check	0.7V or more **K,K3** 0.6V or more **K2,K4**

* TX can be continued on unlock condition in panel tuning mode.

Transmitter Section (K market model skips adjustment of Wide 4k.)

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Frequency adjust	1) Adj item : [FREQ] Adjust : [✳✳✳] PTT : ON	f. counter	Panel	ANT	Panel	Selector knob	Center frequency ±80Hz	Note : After replacing the TCXO (X1) align frequency.
2. Frequency shift 1 adjust	1) Adj item : [SHFT1] Adjust : [✳✳✳] 2) Adj item : [L SHFT1] → [C SHFT1] → [H SHFT1] Adjust : [✳✳✳] PTT : ON						[L SHFT1] Low frequency+5.00kHz [C SHFT1] Center frequency+5.00kHz [H SHFT1] High frequency+5.00kHz	±80Hz
3. Frequency shift 2 adjust	1) Adj item : [SHFT2] Adjust : [✳✳✳] 2) Adj item : [L SHFT2] → [C SHFT2] → [H SHFT2] Adjust : [✳✳✳] PTT : ON						[L SHFT2] Low frequency+6.25kHz [C SHFT2] Center frequency+6.25kHz [H SHFT2] High frequency+6.25kHz	±80Hz
4. High power adjust	1) Adj item : [HPWR] Adjust : [✳✳✳] 2) Adj item : [L HPWR] → [L' HPWR] → [C HPWR] → [H' HPWR] → [H HPWR] Adjust : [✳✳✳] PTT : ON	Power meter Ammeter					5.0W	±0.1W 2.3A or less
5. High power check	**[Panel test mode]** 1) CH-Sig : 1-1 PTT : ON						Check	4.5~5.5W 2.4A or less
	2) CH-Sig : 2-1 PTT : ON							
	3) CH-Sig : 3-1 PTT : ON							

ADJUSTMENT

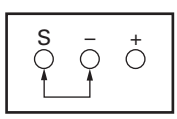
Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
6. Low power adjust	1) Adj item : [LPWR] Adjust : [✳✳✳] 2) Adj item : [L LPWR] → [L' LPWR] → [C LPWR] → [H' LPWR] → [H LPWR] Adjust : [✳✳✳] PTT : ON	Power meter Ammeter	Panel	ANT	Panel	Selector knob	1.0W	±0.1W 1.2A or less
7. Low power check	**[Panel test mode]** 1) CH-Sig : 1-1 Set low power (Push [S]) PTT : ON						Check	0.7~1.4W 1.2A or less
	2) CH-Sig : 2-1 PTT : ON							
	3) CH-Sig : 3-1 PTT : ON							
8. DQT balance adjust	1) Adj item : [n BAL] Adjust : [✳✳✳] Deviation meter filter LPF : 3kHz HPF : OFF	Deviation meter Oscilloscope AG AF VTVM	Panel	ANT Universal connector	Panel	Selector knob	Make the demodulation waves into square waves.	
• Narrow	2) Adj item : [nL BAL] → [nC BAL] → [nH BAL] Adjust : [✳✳✳] PTT : ON							
• Wide 4k	3) Adj item : [s BAL] Adjust : [✳✳✳] PTT : ON							
• Wide 5k	4) Adj item : [w BAL] Adjust : [✳✳✳] PTT : ON							
9. Max DEV adjust	1) Adj item : [n DEV] Adjust : [✳✳✳] AG : 1kHz/125mV at MIC terminal Deviation meter filter LPF : 15kHz HPF : OFF						2.10kHz (According to the larger +, –)	±50Hz
• Narrow	2) Adj item : [nL DEV] → [nC DEV] → [nH DEV] Adjust : [✳✳✳] PTT : ON							
• Wide 4k	3) Adj item : [s DEV] Adjust : [✳✳✳] PTT : ON						3.35kHz (According to the larger +, –)	±50Hz
• Wide 5k	4) Adj item : [w DEV] Adjust : [✳✳✳] PTT : ON						4.40kHz (According to the larger +, –)	±50Hz
10. MIC sensitivity check	**[Panel test mode]** 1) CH-Sig : 1-1 DEV : 1.5kHz (Narrow) 2.4kHz (Wide 4k) 3.0kHz (Wide 5k) Deviation meter filter LPF : 15kHz HPF : OFF PTT : ON						Check	AG : 1kHz/6.7mV~18.3mV at MIC terminal

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
11. VOX1 adjust	1) Adj item : [VOX1] Adjust : [✳✳✳] AG : 1kHz/45mV at MIC terminal	AG	Panel	Universal connector	Panel		After apply signal from AG, press [B] key that numeric will be stored in memory.	
12. VOX10 adjust	1) Adj item : [VOX10] Adjust : [✳✳✳] AG : 1kHz/3mV at MIC terminal							
13. QT deviation adjust • Narrow	1) Remove the panel tuning cable assembly from the universal connector. Adj item : [n QT] Adjust : [✳✳✳] Deviation meter filter LPF : 3kHz HPF : OFF 2) Adj item : [nL QT] → [nC QT] → [nH QT] Adjust : [✳✳✳] PTT : ON	Power meter Deviation meter Oscilloscope AG AF VTVM	Panel	ANT Universal connector	Panel	Selector knob	0.35kHz	±50Hz
• Wide 4k	3) Adj item : [s QT] Adjust : [✳✳✳] PTT : ON						0.60kHz	±50Hz
• Wide 5k	4) Adj item : [w QT] Adjust : [✳✳✳] PTT : ON						0.75kHz	±50Hz
14. DQT deviation adjust • Narrow	1) Adj item : [n DQT] Adjust : [✳✳✳] Deviation meter filter LPF : 3kHz HPF : OFF 2) Adj item : [nL DQT] → [nC DQT] → [nH DQT] Adjust : [✳✳✳] PTT : ON						0.35kHz	±50Hz
• Wide 4k	3) Adj item : [s DQT] Adjust : [✳✳✳] PTT : ON						0.60kHz	±50Hz
• Wide 5k	4) Adj item : [w DQT] Adjust : [✳✳✳] PTT : ON						0.75kHz	±50Hz
15. LTR deviation adjust • Narrow	1) Adj item : [n LTR] Adjust : [✳✳✳] Deviation meter filter LPF : 3kHz HPF : OFF 2) Adj item : [nL LTR] → [nC LTR] → [nH LTR] Adjust : [✳✳✳] PTT : ON						0.75kHz	±0.10kHz
• Wide	3) Adj item : [w LTR] Adjust : [✳✳✳] PTT : ON						1.00kHz	±0.10kHz

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
16. DTMF deviation adjust • Narrow	1) Adj item : [n DTMF] Adjust : [✳✳✳] Deviation meter filter LPF : 15kHz HPF : OFF PTT : ON	Power meter Deviation meter Oscilloscope AG AF VTVM	Panel	ANT Universal connector	Panel	Selector knob	1.25kHz	±0.1kHz
• Wide 4k	2) Adj item : [s DTMF] Adjust : [✳✳✳] PTT : ON						2.0kHz	±0.1kHz
• Wide 5k	3) Adj item : [w DTMF] Adjust : [✳✳✳] PTT : ON						2.5kHz	±0.1kHz
17. MSK deviation adjust • Narrow	1) Adj item : [n MSK] Adjust : [✳✳✳] Deviation meter filter LPF : 15kHz HPF : OFF PTT : ON						1.5kHz	±0.1kHz
• Wide 4k	2) Adj item : [s MSK] Adjust : [✳✳✳] PTT : ON						2.4kHz	±0.1kHz
• Wide 5k	3) Adj item : [w MSK] Adjust : [✳✳✳] PTT : ON						3.0kHz	±0.1kHz
18. TONE deviation adjust • Narrow	1) Adj item : [n TONE] Adjust : [✳✳✳] Deviation meter filter LPF : 15kHz HPF : OFF PTT : ON						1.5kHz	±0.1kHz
• Wide 4k	2) Adj item : [s TONE] Adjust : [✳✳✳] PTT : ON						2.4kHz	±0.1kHz
• Wide 5k	3) Adj item : [w TONE] Adjust : [✳✳✳] PTT : ON						3.0kHz	±0.1kHz
19. BATT detection writing	1) Adj item : [BATT] Adjust : [✳✳✳] PTT : ON	Power meter DVM	Panel	ANT BATT terminal	Panel		After pressing the PTT switch, confirm that one predetermined numeric in the range 1 to 256 appears and then press [B] key. That numeric will be stored in memory.	BATT terminal voltage : 5.8V
20. BATT detection check	**[Panel test mode]** 1) CH-Sig : 1-1 BATT terminal voltage : 6.6V Connect "S" terminal to GND. PTT : ON						Check	The transceiver can transmit without causing the LED to blink.
	2) BATT terminal voltage : 5.8V Connect "S" terminal to GND. PTT : ON							The transceiver should not transmit and LED blinking.



ADJUSTMENT

Receiver Section (K market model skips adjustment of Wide 4k.)

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Sensitivity fixed value write **K,K3**	1) Adj item : [H SENS1]	SSG	Panel	ANT	Panel	Selector knob		Write the value to "150"
	2) Adj item : [L SENS2] → [L' SENS2] → [C SENS2] → [H' SENS2]	AF VTVM Oscilloscope		Universal connector				Write the value as followings [L SENS2] : "1" [L' SENS2] : "27" [C SENS2] : "49" [H' SENS2] : "63"
K2,K4	1) Adj item : [H' SENS1]→ [H SENS1]							Write the value as followings [H' SENS1] : "100" [H SENS1] : "256"
	2) Adj item : [L SENS2] → [L' SENS2] → [C SENS2]							Write the value as followings [L SENS2] : "1" [L' SENS2] : "20" [C SENS2] : "40"
2. Sensitivity 2 adjust **K,K3**	1) Adj item : [H SENS2] Adjust : [✳✳✳] SSG output : –119dBm (0.25µV) (MOD : 1kHz/±1.5kHz)						Adjust for 12dB SINAD	Rotate the selector knob and increase the adjustment value starting from "1" to obtain SINAD 12dB.
K2,K4	1) Adj item : [H SENS2] [H' SENS2] Adjust : [✳✳✳] SSG output : –119dBm (0.25µV) (MOD : 1kHz/±1.5kHz)							
3. Sensitivity 1 adjust **K,K3**	1) Adj item : [SENS1] Adjust : [✳✳✳] 2) Adj item : [L SENS1] → [L' SENS1] → [C SENS1] → [H' SENS1] Adjust : [✳✳✳] SSG output : –119dBm (0.25µV) (MOD : 1kHz/±1.5kHz)							Rotate the selector knob and decrease the adjustment value starting from "256" to obtain SINAD 12dB.
K2,K4	1) Adj item : [SENS1] Adjust : [✳✳✳] 2) Adj item : [L SENS1] → [L' SENS1] → [C SENS1] SSG output : –119dBm (0.25µV) (MOD : 1kHz/±1.5kHz)							
4. Sensitivity check	**[Panel test mode]** 1) CH-Sig : 1-1 SSG output Wide 5k : –118dBm (0.28µV) (MOD : 1kHz/±3kHz) Narrow : –118dBm (0.28µV) (MOD : 1kHz/±1.5kHz)						Check	12dB SINAD or more
5. Squelch (Preset) adjust • Narrow	1) Adj item : [n SQL] Adjust : [✳✳✳] SSG output : –118dBm (0.28µV) (MOD : 1kHz/±1.5kHz)				Panel	Selector knob	After input signal from SSG, press [B] key. That numeric will be stored in memory.	After adjusting SQL, check SQL open/close. SSG –118dBm : Open SSG OFF : Close [nC SQL] MOD 1kHz/±1.5kHz [sC SQL] MOD 1kHz/±2.4kHz [wC SQL] MOD 1kHz/±3.0kHz
	2) Adj item : [nL SQL] → [nC SQL] → [nH SQL] Adjust : [✳✳✳]							

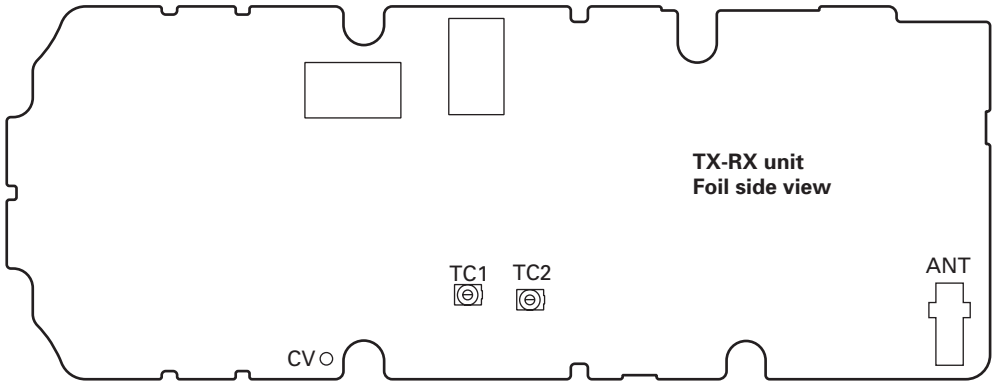
ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
• Wide 4k	3) Adj item : [s SQL] Adjust : [✳✳✳] SSG output : –118dBm (0.28µV) (MOD : 1kHz/±2.4kHz)	SSG AF VTVM Oscilloscope	Panel	ANT Universal connector	Panel	Selector knob	After input signal from SSG, press [B] key. That numeric will be stored in memory.	After adjusting SQL, check SQL open/close. SSG –118dBm : Open SSG OFF : Close [nC SQL] MOD 1kHz/±1.5kHz [sC SQL] MOD 1kHz/±2.4kHz [wC SQL] MOD 1kHz/±3.0kHz
	4) Adj item : [sL SQL] → [sC SQL] → [sH SQL] Adjust : [✳✳✳]							
• Wide 5k	5) Adj item : [w SQL] Adjust : [✳✳✳] SSG output : –118dBm (0.28µV) (MOD : 1kHz/±3.0kHz)							
	6) Adj item : [wL SQL] → [wC SQL] → [wH SQL] Adjust : [✳✳✳]							
6. Low RSSI adjust • Narrow	1) Adj item : [n LRSSI] Adjust : [✳✳✳] SSG output : –118dBm (0.28µV) (MOD : 1kHz/±1.5kHz)						After input signal from SSG, press [B] key. That numeric will be stored in memory.	
	2) Adj item : [nL LRSSI] → [nC LRSSI] → [nH LRSSI] Adjust : [✳✳✳]							
• Wide 4k	3) Adj item : [s LRSSI] Adjust : [✳✳✳] SSG output : –118dBm (0.28µV) (MOD : 1kHz/±2.4kHz)							
	4) Adj item : [sL LRSSI] → [sC LRSSI] → [sH LRSSI] Adjust : [✳✳✳]							
• Wide 5k	5) Adj item : [w LRSSI] Adjust : [✳✳✳] SSG output : –118dBm (0.28µV) (MOD : 1kHz/±3.0kHz)							
	6) Adj item : [wL LRSSI] → [wC LRSSI] → [wH LRSSI] Adjust : [✳✳✳]							
7. Squelch (Tight) adjust • Narrow	1) Adj item : [n SQLT] Adjust : [✳✳✳] SSG output : –113dBm (0.5µV) (MOD : 1kHz/±1.5kHz)						After input signal from SSG, press [B] key. That numeric will be stored in memory.	After adjusting SQL, check SQL open/close. SSG –113dBm : Open SSG OFF : Close [nC SQLT] MOD 1kHz/±1.5kHz [sC SQLT] MOD 1kHz/±2.4kHz [wC SQLT] MOD 1kHz/±3.0kHz
	2) Adj item : [nL SQLT] → [nC SQLT] → [nH SQLT] Adjust : [✳✳✳]							
• Wide 4k	3) Adj item : [s SQLT] Adjust : [✳✳✳] SSG output : –113dBm (0.5µV) (MOD : 1kHz/±2.4kHz)							
	4) Adj item : [sL SQLT] → [sC SQLT] → [sH SQLT] Adjust : [✳✳✳]							

ADJUSTMENT

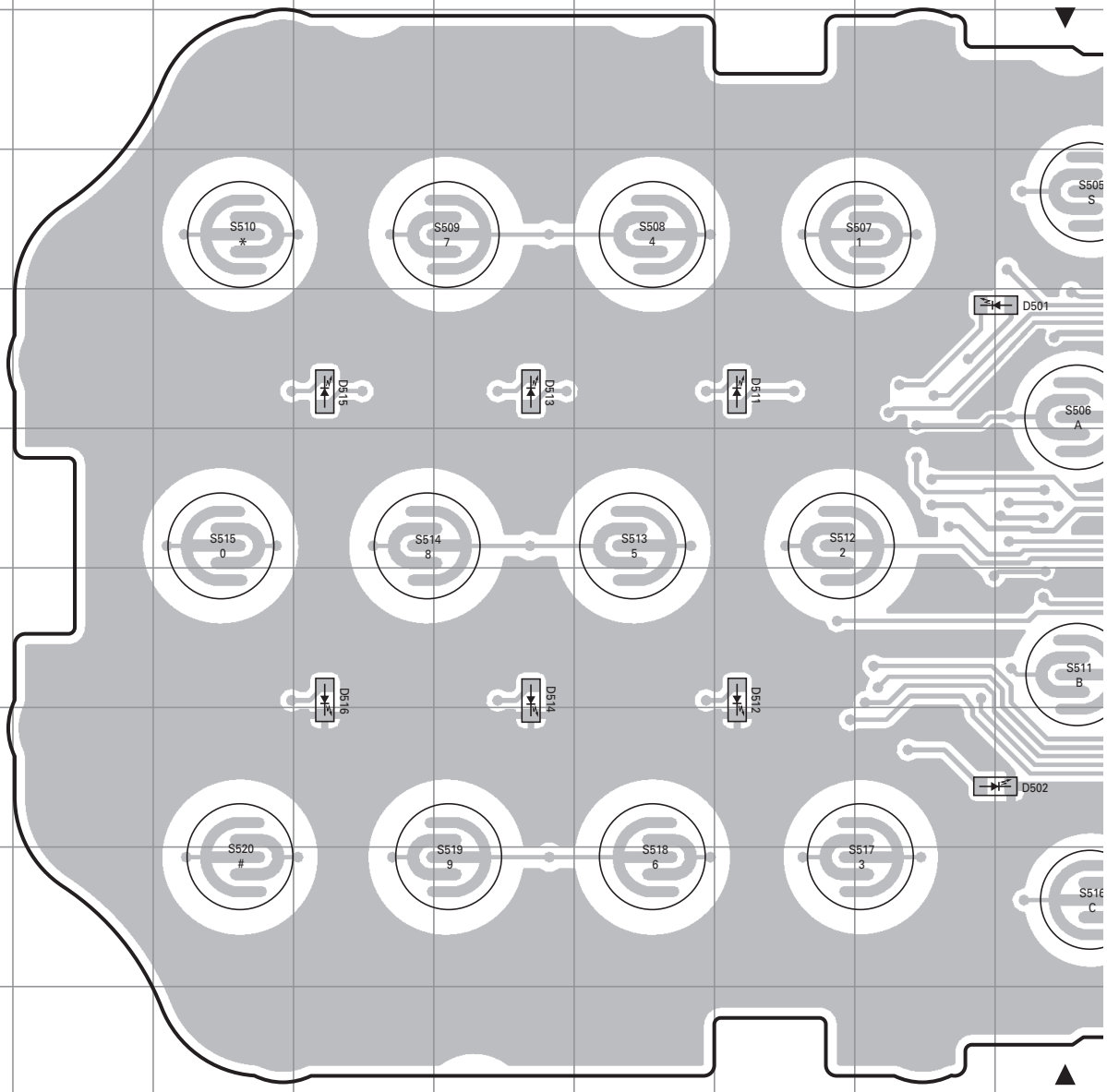
Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
• Wide 5k	5) Adj item : [w SQLT] Adjust : [✳✳✳] SSG output : –113dBm (0.5µV) (MOD : 1kHz/±3.0kHz)	SSG AF VTVM Oscilloscope	Panel	ANT Universal connector	Panel	Selector knob	After input signal from SSG, press [B] key. That numeric will be stored in memory.	After adjusting SQL, check SQL open/close. SSG –113dBm : Open SSG OFF : Close [nC SQLT] MOD 1kHz/±1.5kHz [sC SQLT] MOD 1kHz/±2.4kHz [wC SQLT] MOD 1kHz/±3.0kHz
	6) Adj item : [wL SQLT] → [wC SQLT] → [wH SQLT] Adjust : [✳✳✳]							
8. High RSSI adjust • Narrow	1) Adj item : [n HRSSI] Adjust : [✳✳✳] SSG output : –70dBm (MOD : 1kHz/±1.5kHz)							
	2) Adj item : [nL HRSSI] → [nC HRSSI] → [nH HRSSI] Adjust : [✳✳✳]							
• Wide 4k	3) Adj item : [s HRSSI] Adjust : [✳✳✳] SSG output : –70dBm (MOD : 1kHz/±2.4kHz)							
	4) Adj item : [sL HRSSI] → [sC HRSSI] → [sH HRSSI] Adjust : [✳✳✳]							
• Wide 5k	5) Adj item : [w HRSSI] Adjust : [✳✳✳] SSG output : –70dBm (MOD : 1kHz/±3.0kHz)							
	6) Adj item : [wL HRSSI] → [wC HRSSI] → [wH HRSSI] Adjust : [✳✳✳]							

Adjustment Points



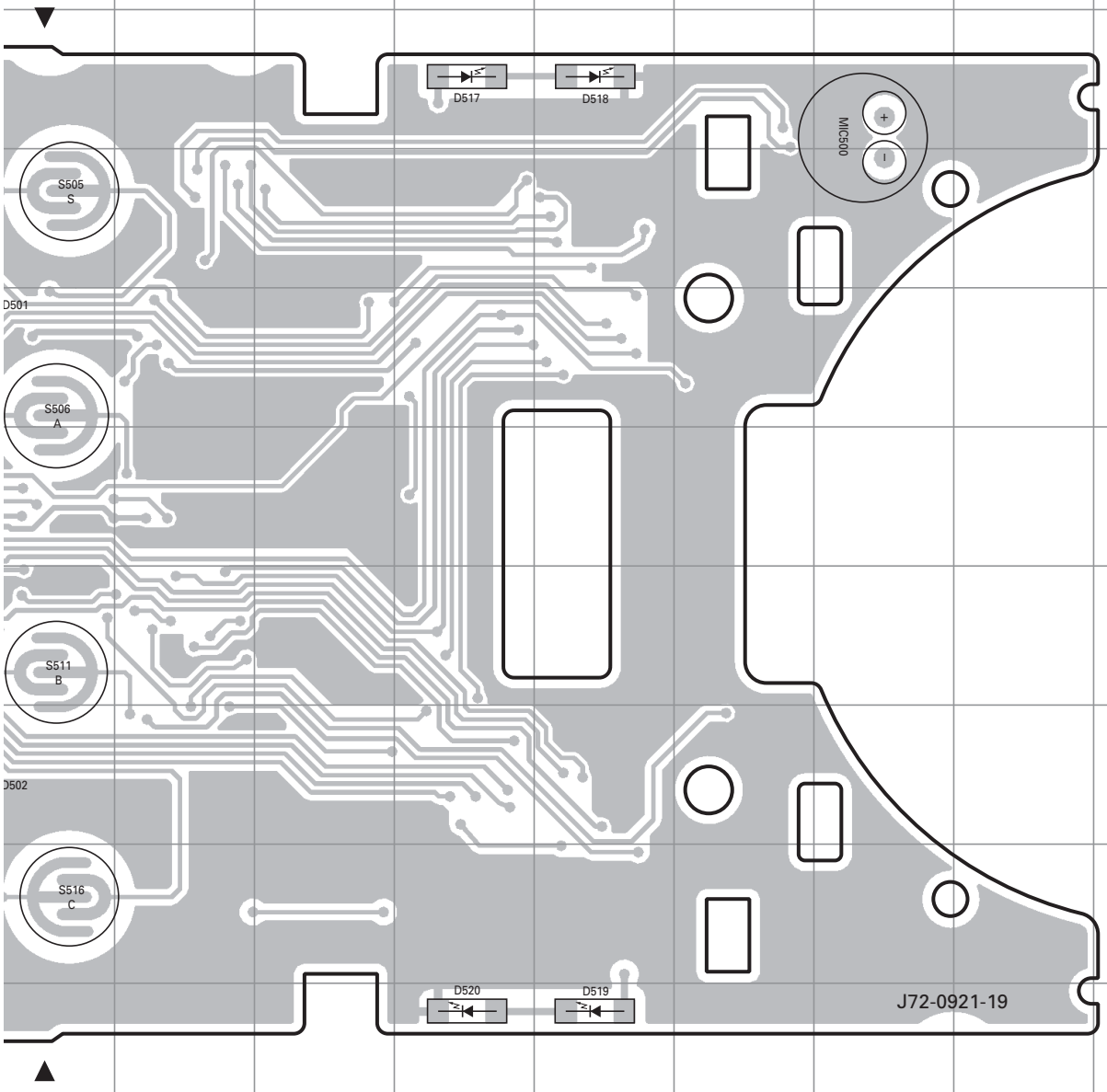
TK-3180 PC BOARD

DISPLAY UNIT (X54-3470-XX) -10 : K,K2 -11 : K3,K4
Component side view (J72-0921-19)



Ref. No.	Address	Ref. No.	Address
D501	5J	D515	5E
D502	8J	D516	7E
D511	5H	D517	3M
D512	7H	D518	3N
D513	5F	D519	10N
D514	7F	D520	10M

DISPLAY UNIT (X54-3470-XX) -10 : K,K2 -11 : K3,K4
Component side view (J72-0921-19)



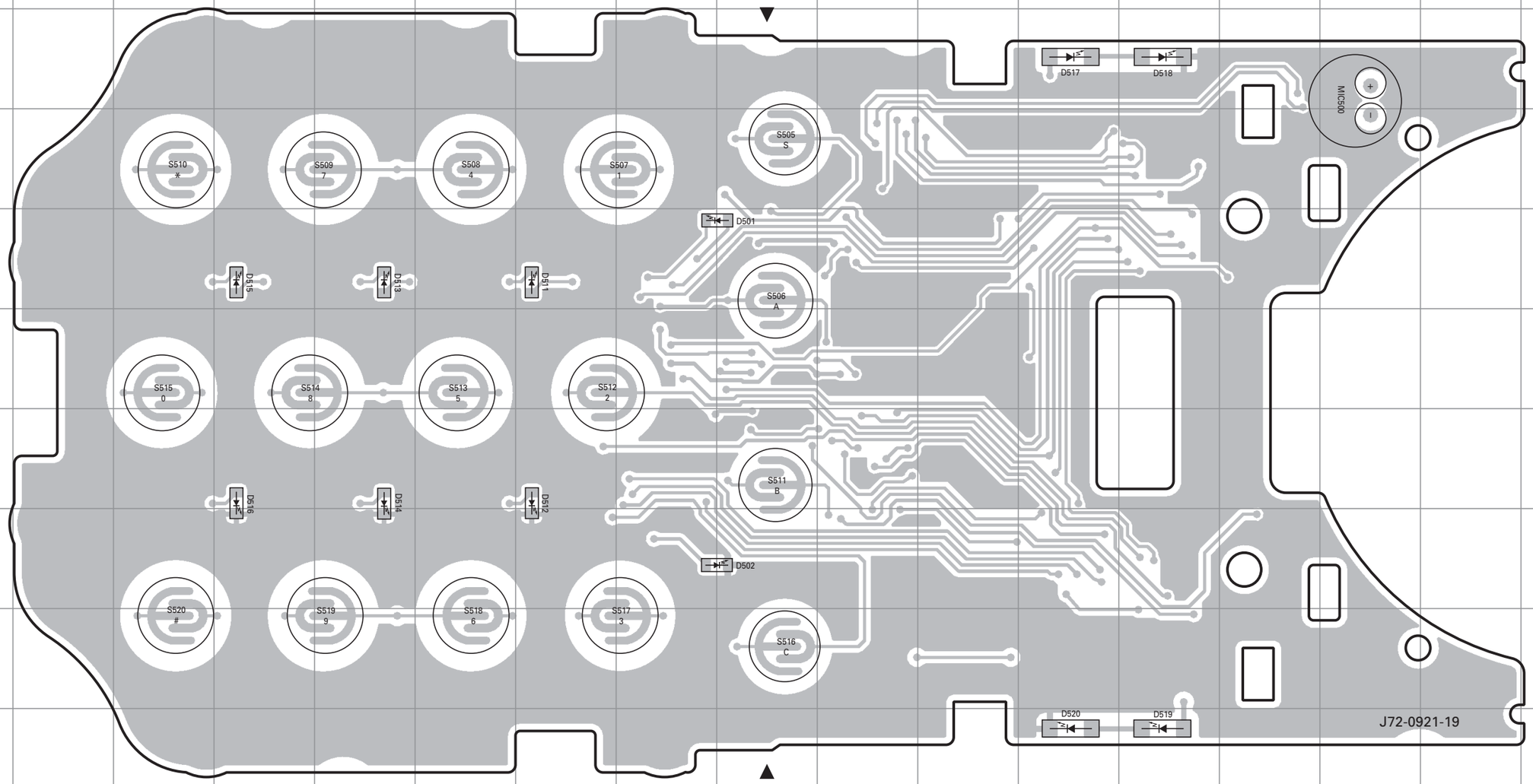
Component side
Layer 1
Layer 2
Foil side

TK-3180 PC BOARD

PC BOARD TK-3180

DISPLAY UNIT (X54-3470-XX) -10 : K,K2 -11 : K3,K4
Component side view (J72-0921-19)

DISPLAY UNIT (X54-3470-XX) -10 : K,K2 -11 : K3,K4
Component side view (J72-0921-19)

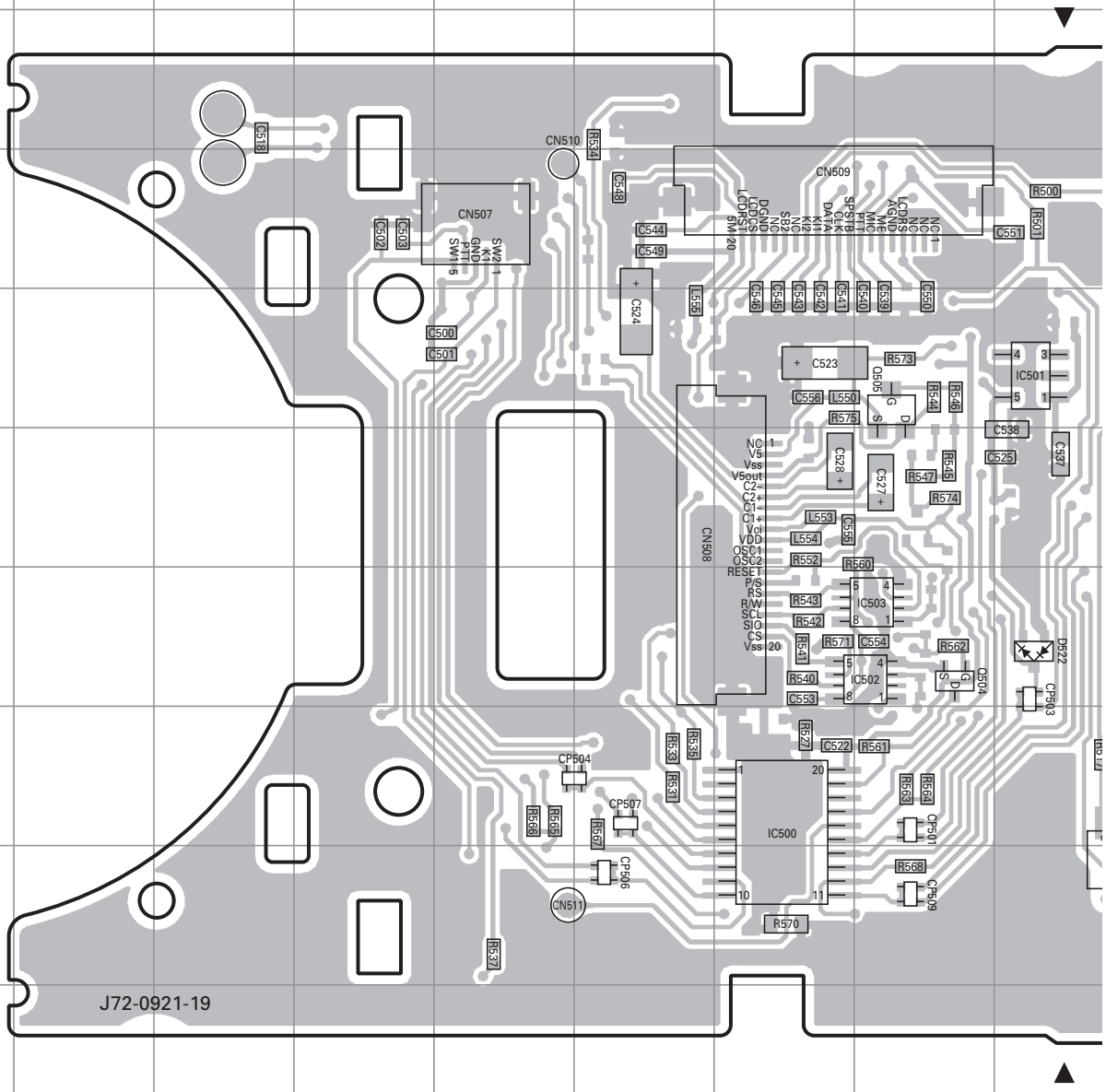


Ref. No.	Address	Ref. No.	Address
D501	5J	D515	5E
D502	8J	D516	7E
D511	5H	D517	3M
D512	7H	D518	3N
D513	5F	D519	10N
D514	7F	D520	10M

Component side
Layer 1
Layer 2
Foil side

TK-3180 PC BOARD

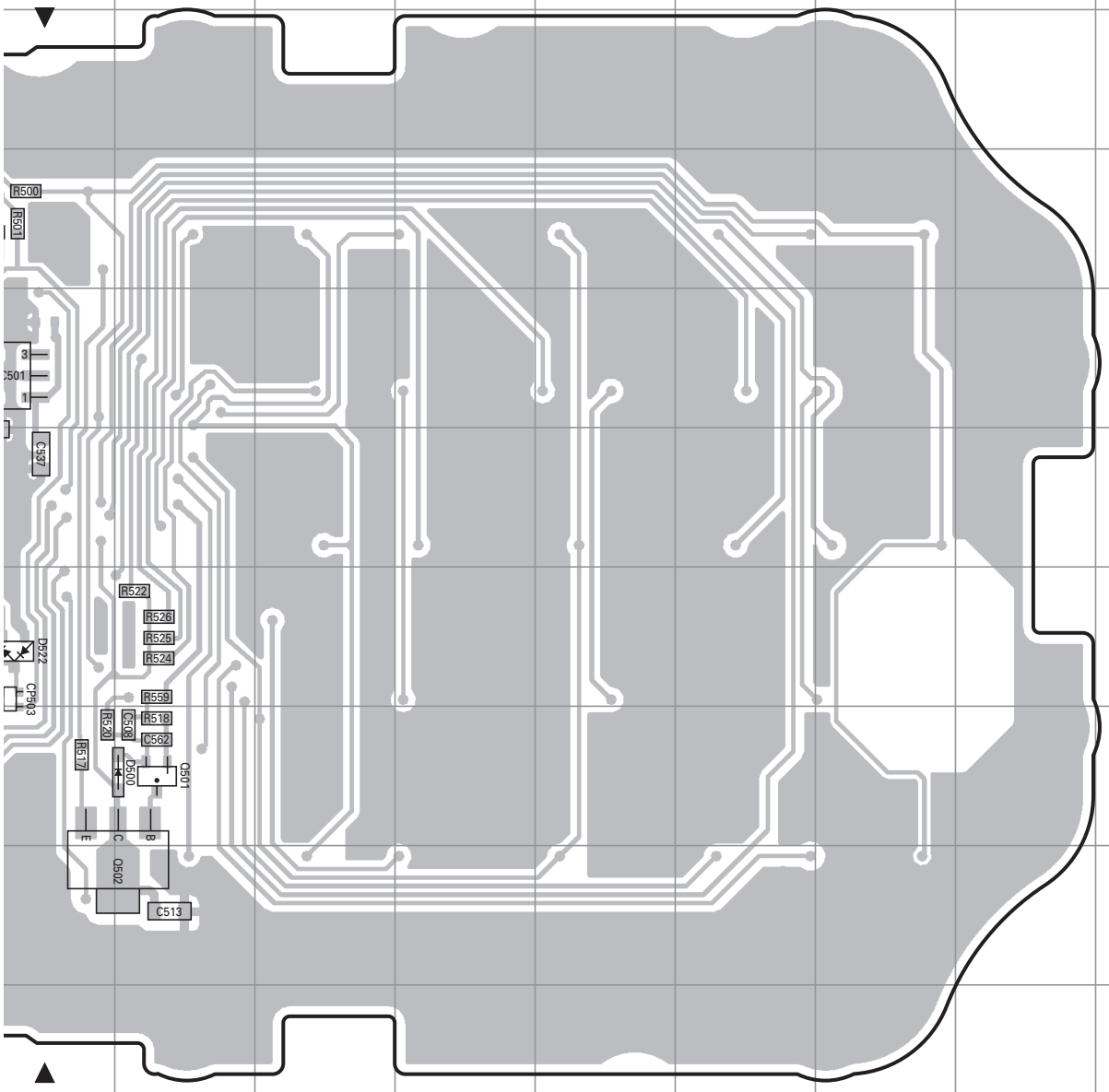
DISPLAY UNIT (X54-3470-XX) -10 : K,K2 -11 : K3,K4
Foil side view (J72-0921-19)



Ref. No.	Address	Ref. No.	Address
IC500	8H	Q502	9K
IC501	5J	Q504	7I
IC502	7I	Q505	5I
IC503	7I	D500	8K
Q501	8K	D522	7J

PC BOARD TK-3180

DISPLAY UNIT (X54-3470-XX) -10 : K,K2 -11 : K3,K4
Foil side view (J72-0921-19)



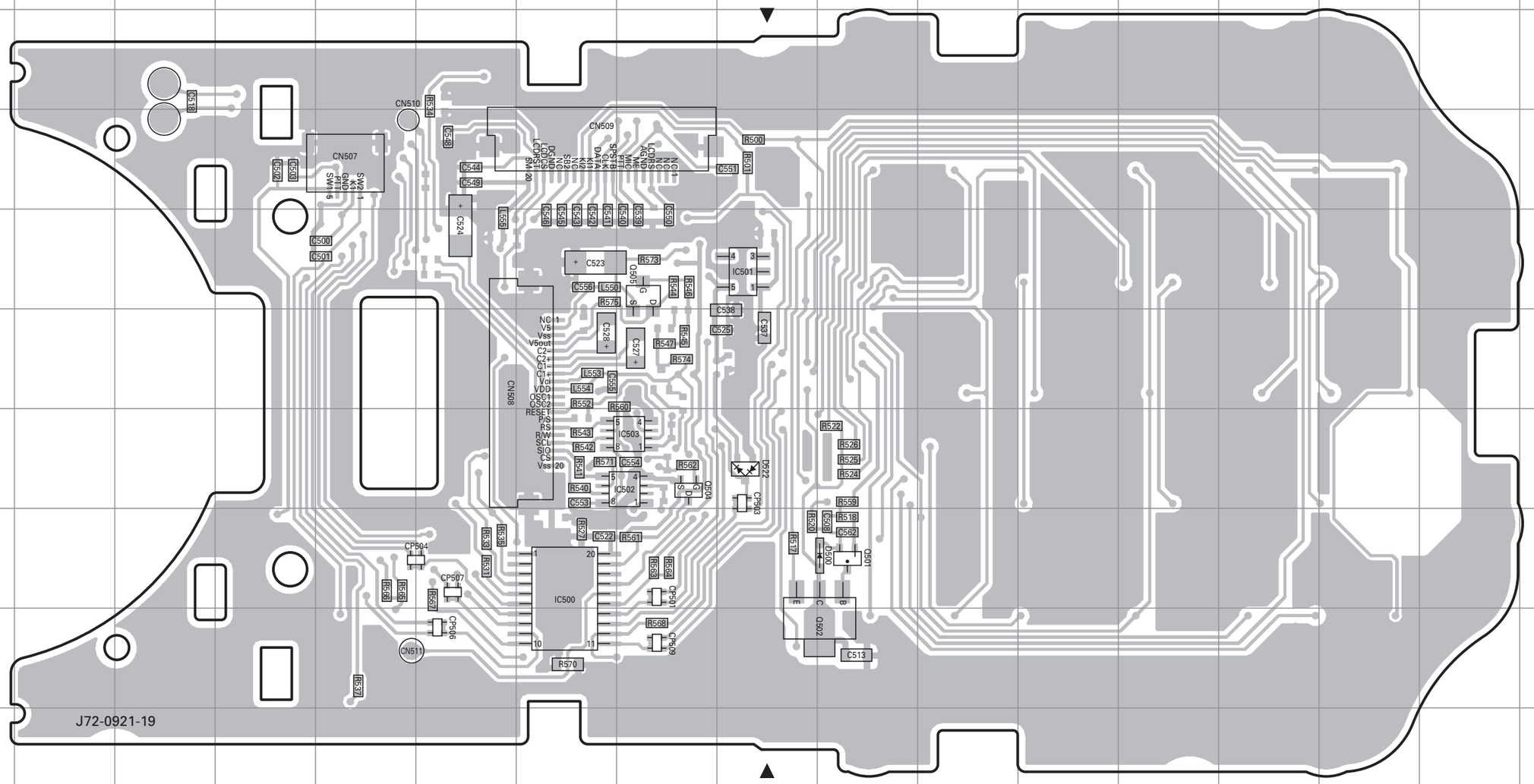
Component side
Layer 1
Layer 2
Foil side

TK-3180 PC BOARD

PC BOARD TK-3180

DISPLAY UNIT (X54-3470-XX) -10 : K,K2 -11 : K3,K4
Foil side view (J72-0921-19)

DISPLAY UNIT (X54-3470-XX) -10 : K,K2 -11 : K3,K4
Foil side view (J72-0921-19)

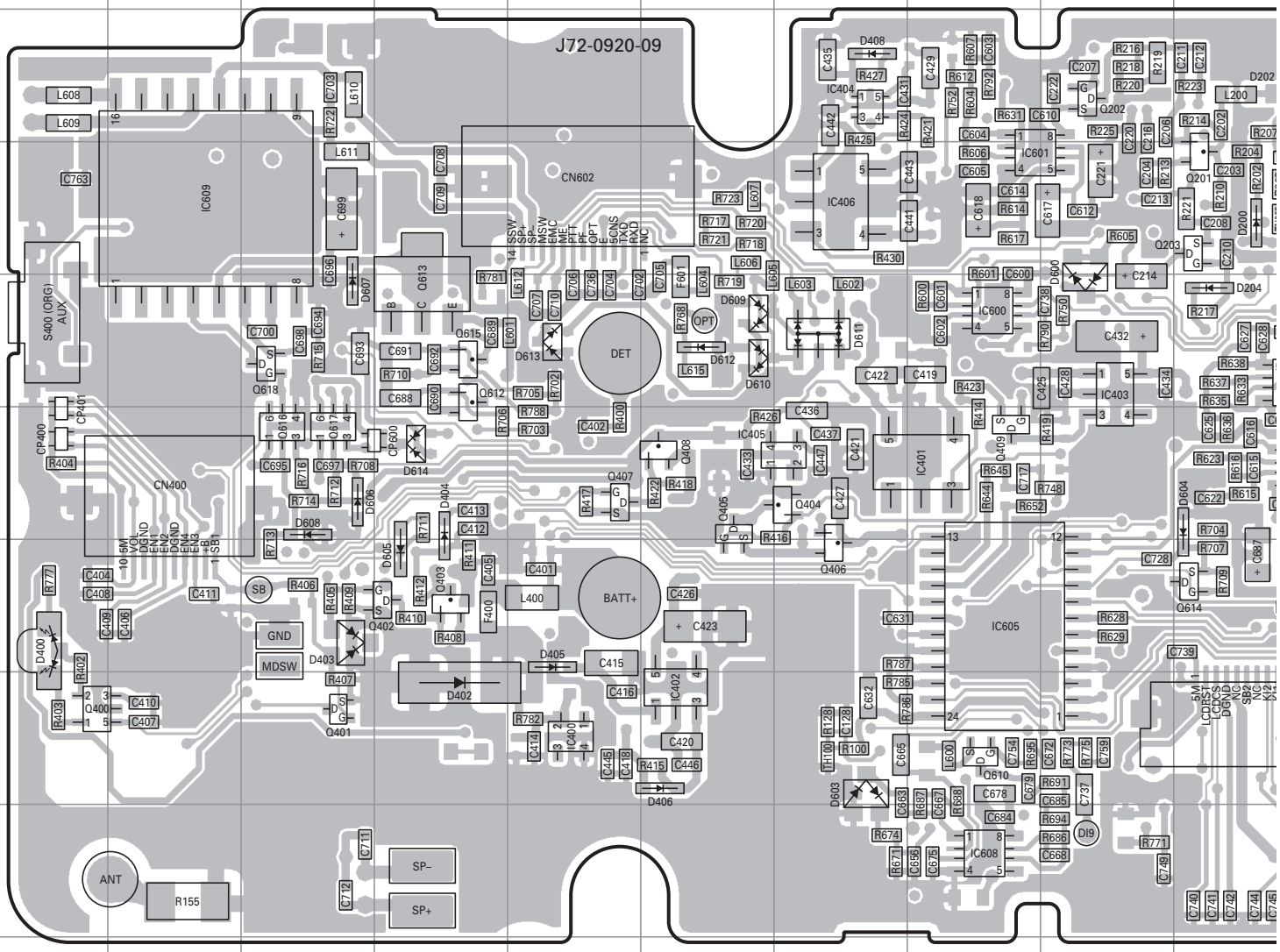


Ref. No.	Address	Ref. No.	Address
IC500	8H	Q502	9K
IC501	5J	Q504	7I
IC502	7I	Q505	5I
IC503	7I	D500	8K
Q501	8K	D522	7J

Component side
Layer 1
Layer 2
Foil side

TK-3180 PC BOARD

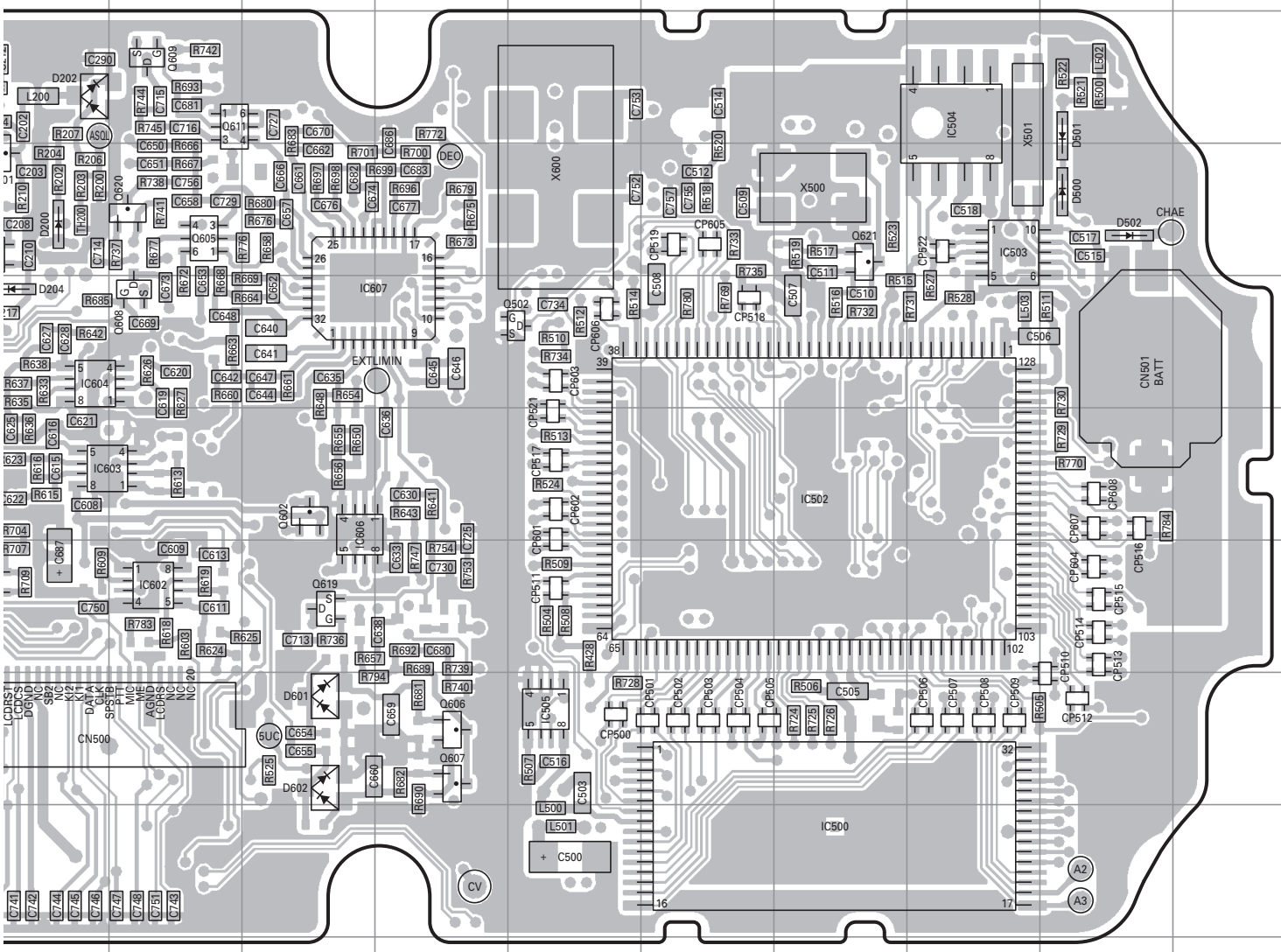
TX-RX UNIT (X57-6940-XX) -10 : K,K3 -11 : K2,K4
Component side view (J72-0920-09)



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC400	8E	IC602	7K	Q403	7D	Q610	8H	D204	5J	D603	8G
IC401	6H	IC603	6J	Q404	6G	Q611	3K	D400	7A	D604	6J
IC402	8F	IC604	5J	Q405	6F	Q612	5D	D402	8D	D605	7D
IC403	5I	IC605	7H	Q406	7G	Q613	5D	D403	7C	D606	6C
IC404	3G	IC606	6L	Q407	6E	Q614	7J	D404	6D	D607	5C
IC405	6G	IC607	5L	Q408	6F	Q615	5D	D405	7E	D608	6C
IC406	4G	IC608	9H	Q409	6H	Q616	6C	D406	8F	D609	5F
IC500	9P	IC609	4B	Q502	5N	Q617	6C	D408	3G	D610	5F
IC502	6P	Q201	4J	Q602	6L	Q618	5C	D500	4R	D611	5G
IC503	4Q	Q202	3I	Q605	4K	Q619	7L	D501	3R	D612	5F
IC504	3Q	Q203	4J	Q606	8M	Q620	4K	D502	4R	D613	5E
IC505	8N	Q400	8A	Q607	8M	Q621	4P	D600	5I	D614	6D
IC600	5H	Q401	8C	Q608	5K	D200	4J	D601	8L		
IC601	4H	Q402	7D	Q609	3K	D202	3J	D602	8L		

PC BOARD TK-3180

TX-RX UNIT (X57-6940-XX) -10 : K,K3 -11 : K2,K4
Component side view (J72-0920-09)



Component side

Layer 1	
Layer 2	
Layer 3	
Layer 4	
Layer 5	
Layer 6	

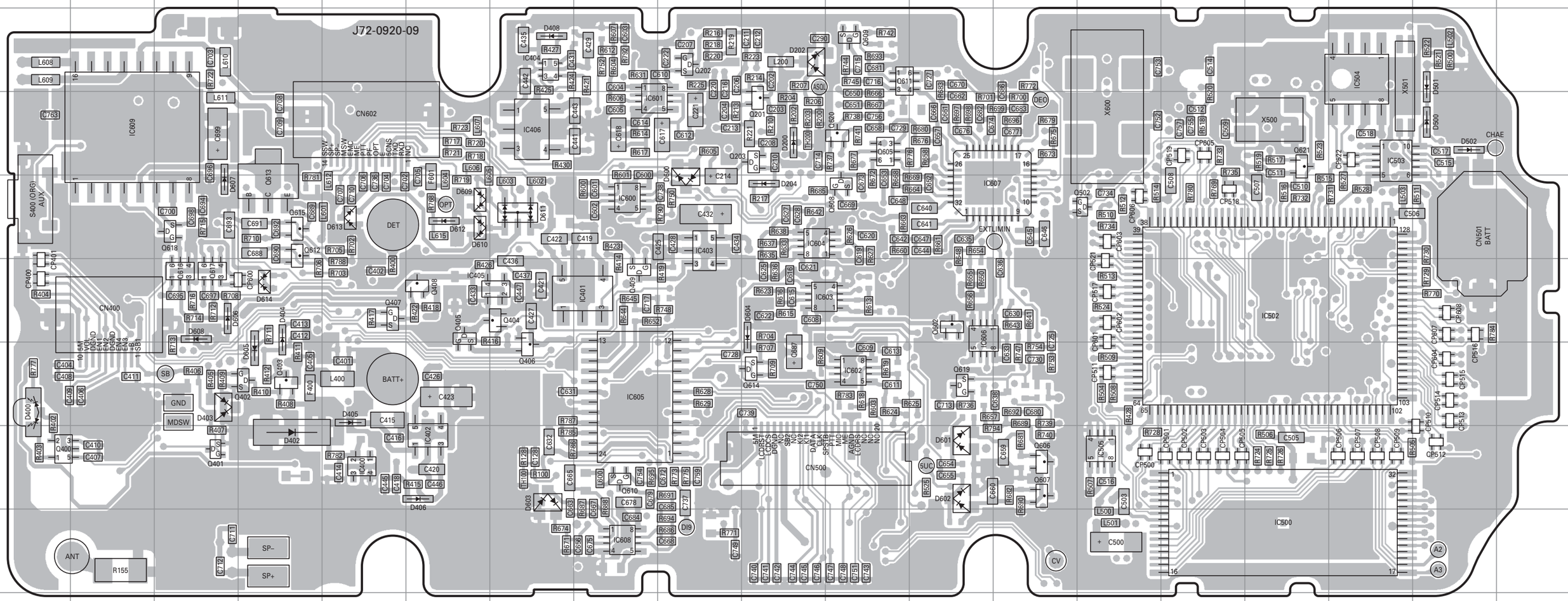
Foil side

TK-3180 PC BOARD

PC BOARD TK-3180

TX-RX UNIT (X57-6940-XX) -10 : K,K3 -11 : K2,K4
Component side view (J72-0920-09)

TX-RX UNIT (X57-6940-XX) -10 : K,K3 -11 : K2,K4
Component side view (J72-0920-09)

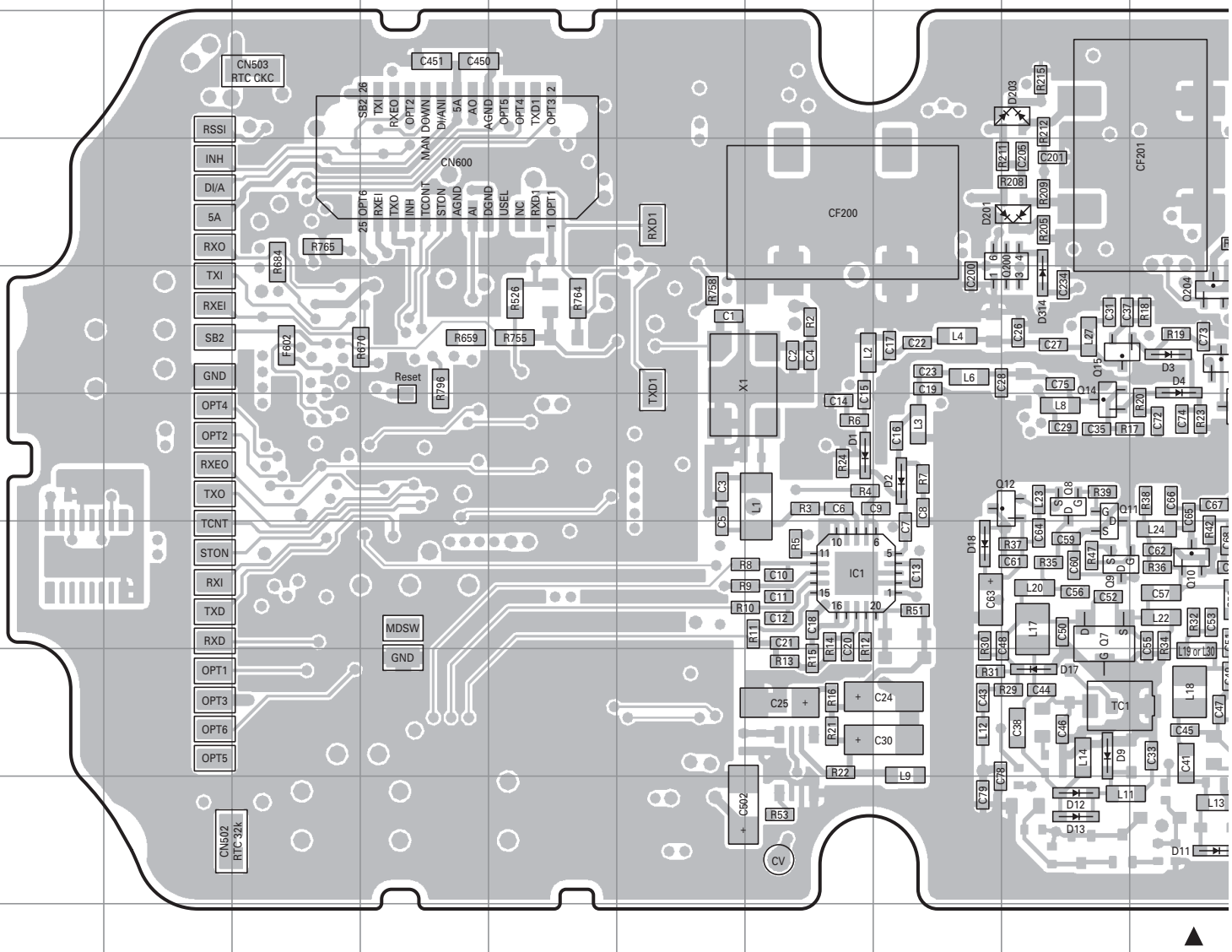


Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC400	8E	IC602	7K	Q403	7D	Q610	8H	D204	5J	D603	8G
IC401	6H	IC603	6J	Q404	6G	Q611	3K	D400	7A	D604	6J
IC402	8F	IC604	5J	Q405	6F	Q612	5D	D402	8D	D605	7D
IC403	5I	IC605	7H	Q406	7G	Q613	5D	D403	7C	D606	6C
IC404	3G	IC606	6L	Q407	6E	Q614	7J	D404	6D	D607	5C
IC405	6G	IC607	5L	Q408	6F	Q615	5D	D405	7E	D608	6C
IC406	4G	IC608	9H	Q409	6H	Q616	6C	D406	8F	D609	5F
IC500	9P	IC609	4B	Q502	5N	Q617	6C	D408	3G	D610	5F
IC502	6P	Q201	4J	Q602	6L	Q618	5C	D500	4R	D611	5G
IC503	4Q	Q202	3I	Q605	4K	Q619	7L	D501	3R	D612	5F
IC504	3Q	Q203	4J	Q606	8M	Q620	4K	D502	4R	D613	5E
IC505	8N	Q400	8A	Q607	8M	Q621	4P	D600	5I	D614	6D
IC600	5H	Q401	8C	Q608	5K	D200	4J	D601	8L		
IC601	4H	Q402	7D	Q609	3K	D202	3J	D602	8L		

Component side
Layer 1
Layer 2
Layer 3
Layer 4
Layer 5
Layer 6
Foil side

TK-3180 PC BOARD

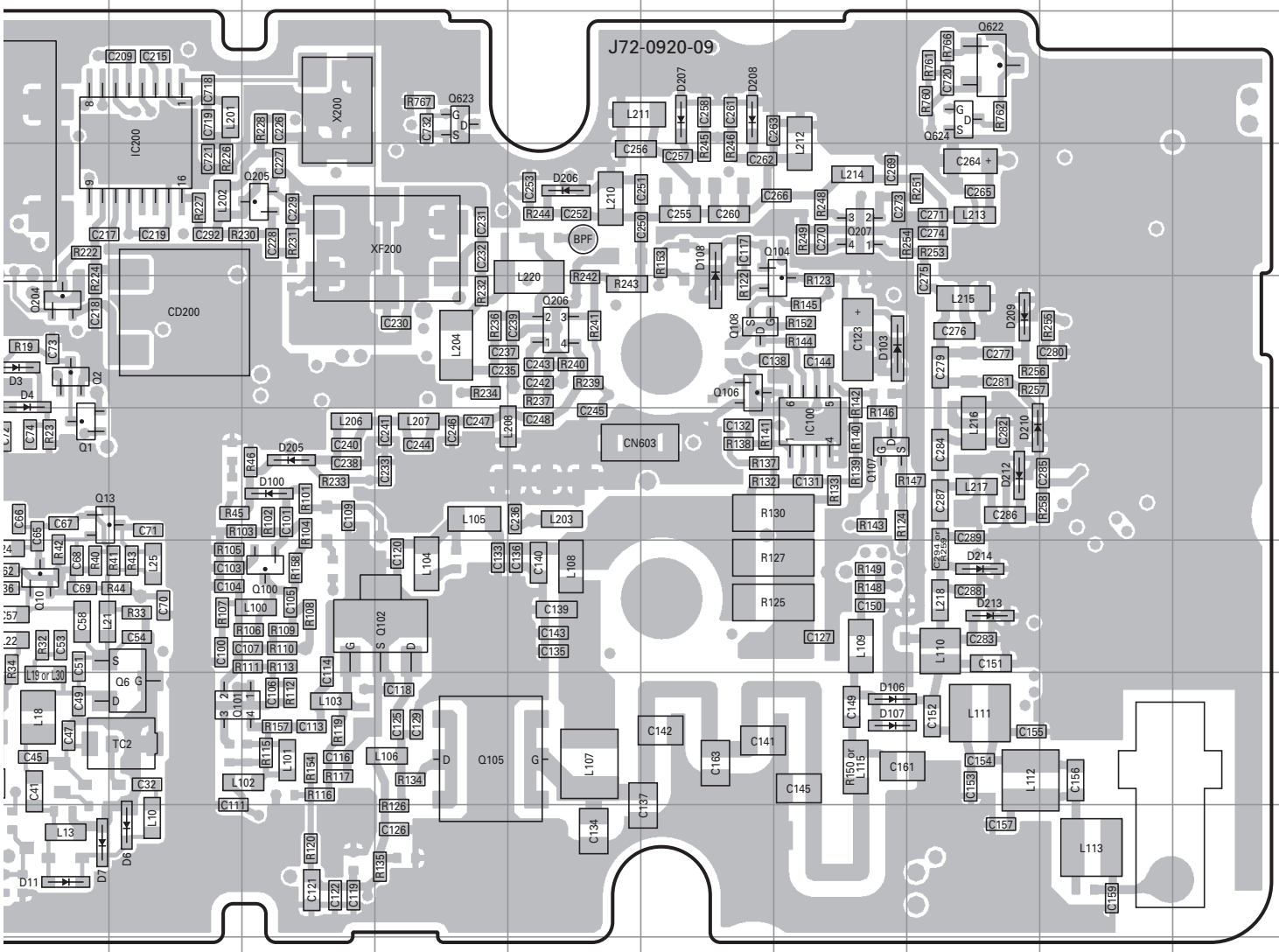
TX-RX UNIT (X57-6940-XX) -10 : K,K3 -11 : K2,K4
Foil side view (J72-0920-09)



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC1	7G	Q11	6I	Q106	5O	Q624	3Q	D13	9I	D205	6L
IC100	6P	Q12	6I	Q107	6P	D1	6G	D17	8I	D206	4N
IC200	3K	Q13	6J	Q108	5O	D2	6H	D18	7H	D207	3O
Q1	6J	Q14	6I	Q200	5I	D3	5J	D100	6L	D208	3O
Q2	5J	Q15	5I	Q204	5J	D4	5J	D103	5P	D209	5Q
Q6	8K	Q100	7L	Q205	4L	D6	9K	D106	8P	D210	6Q
Q7	7I	Q101	8K	Q206	5N	D7	9J	D107	8P	D212	6Q
Q8	6I	Q102	7M	Q207	4P	D9	8I	D108	4O	D213	7Q
Q9	7I	Q104	4P	Q622	3Q	D11	9J	D201	4I	D214	7Q
Q10	7J	Q105	8M	Q623	3M	D12	9I	D203	3I	D314	5I

PC BOARD TK-3180

TX-RX UNIT (X57-6940-XX) -10 : K,K3 -11 : K2,K4
Foil side view (J72-0920-09)



Component side

Layer 1	
Layer 2	
Layer 3	
Layer 4	
Layer 5	
Layer 6	

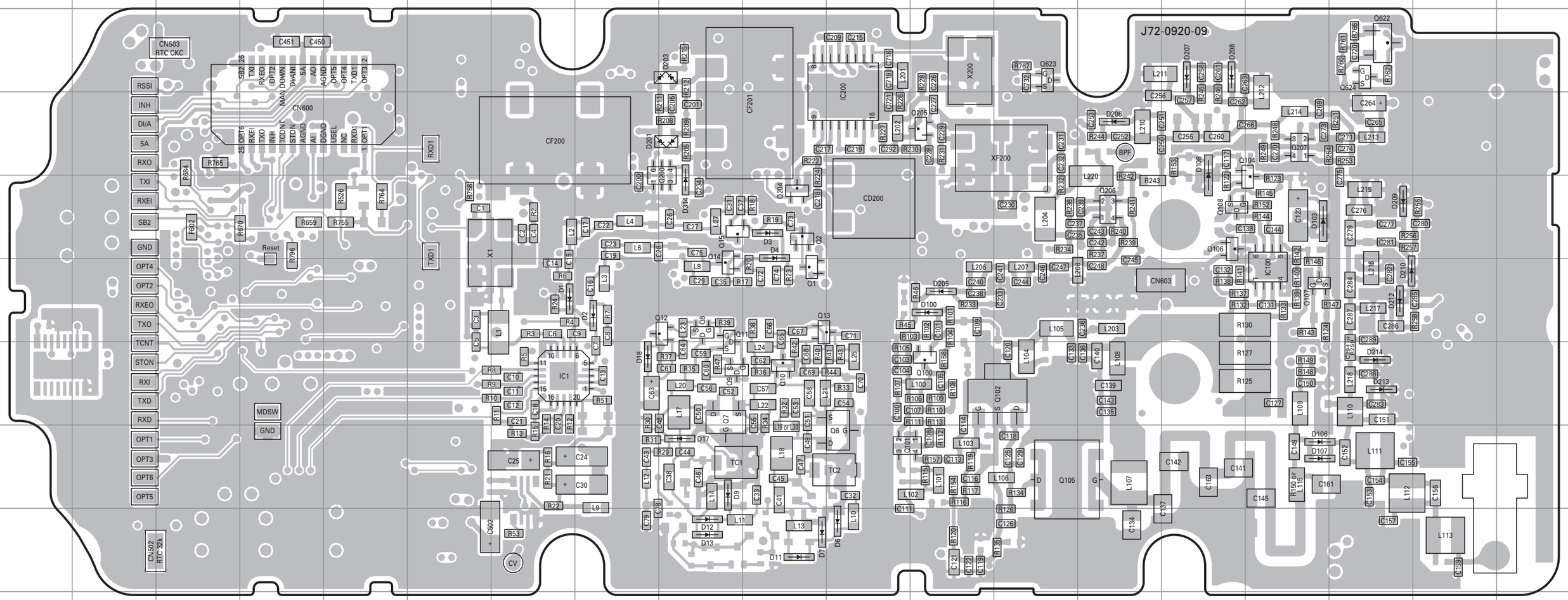
Foil side

TK-3180 PC BOARD

PC BOARD TK-3180

TX-RX UNIT (X57-6940-XX) -10 : K,K3 -11 : K2,K4
Foil side view (J72-0920-09)

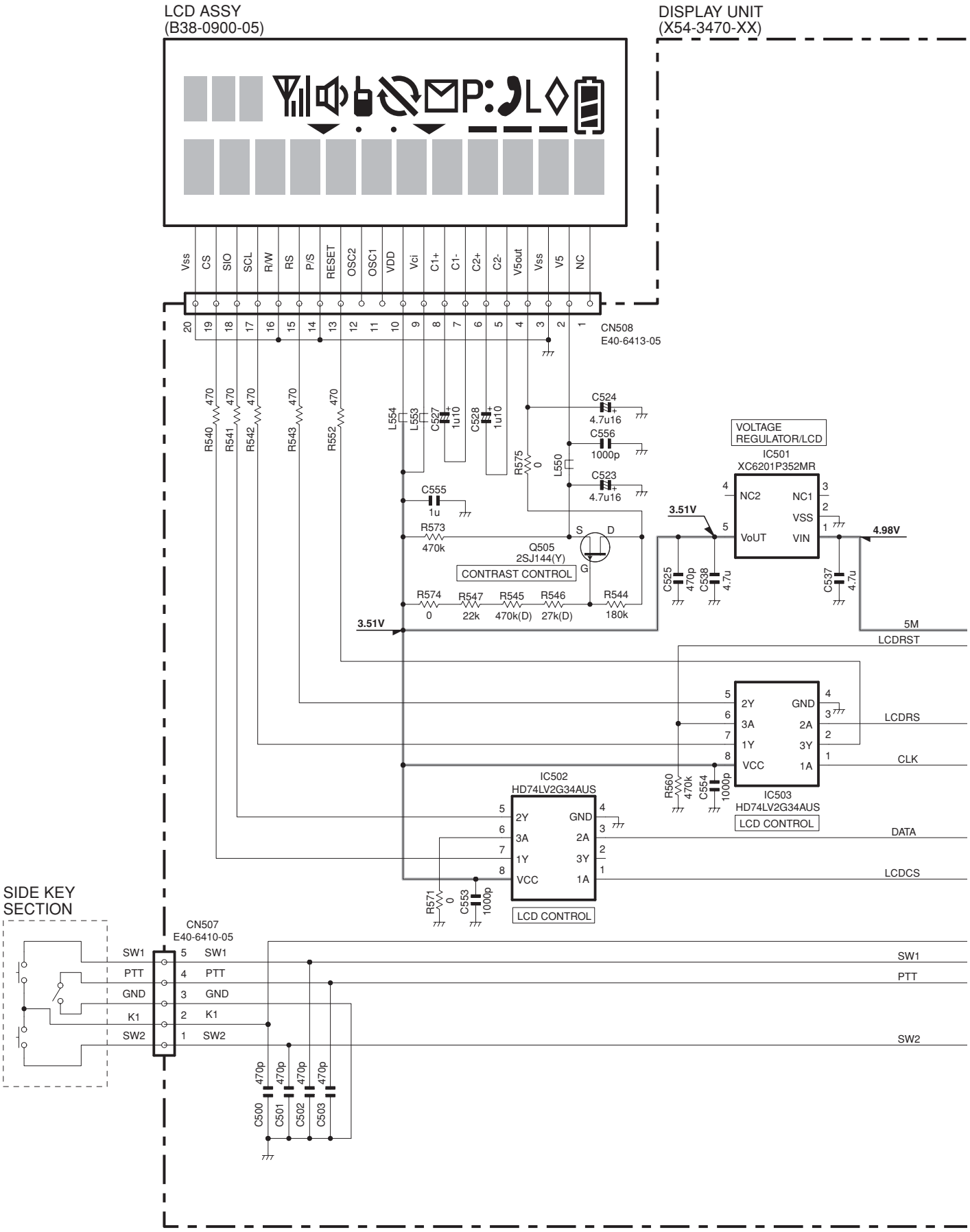
TX-RX UNIT (X57-6940-XX) -10 : K,K3 -11 : K2,K4
Foil side view (J72-0920-09)



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC1	7G	Q11	6I	Q106	5O	Q624	3Q	D13	9I	D205	6L
IC100	6P	Q12	6I	Q107	6P	D1	6G	D17	8I	D206	4N
IC200	3K	Q13	6J	Q108	5O	D2	6H	D18	7H	D207	3O
Q1	6J	Q14	6I	Q200	5I	D3	5J	D100	6L	D208	3O
Q2	5J	Q15	5I	Q204	5J	D4	5J	D103	5P	D209	5Q
Q6	8K	Q100	7L	Q205	4L	D6	9K	D106	8P	D210	6Q
Q7	7I	Q101	8K	Q206	5N	D7	9J	D107	8P	D212	6Q
Q8	6I	Q102	7M	Q207	4P	D9	8I	D108	4O	D213	7Q
Q9	7I	Q104	4P	Q622	3Q	D11	9J	D201	4I	D214	7Q
Q10	7J	Q105	8M	Q623	3M	D12	9I	D203	3I	D314	5I

Component side
Layer 1
Layer 2
Layer 3
Layer 4
Layer 5
Layer 6
Foil side

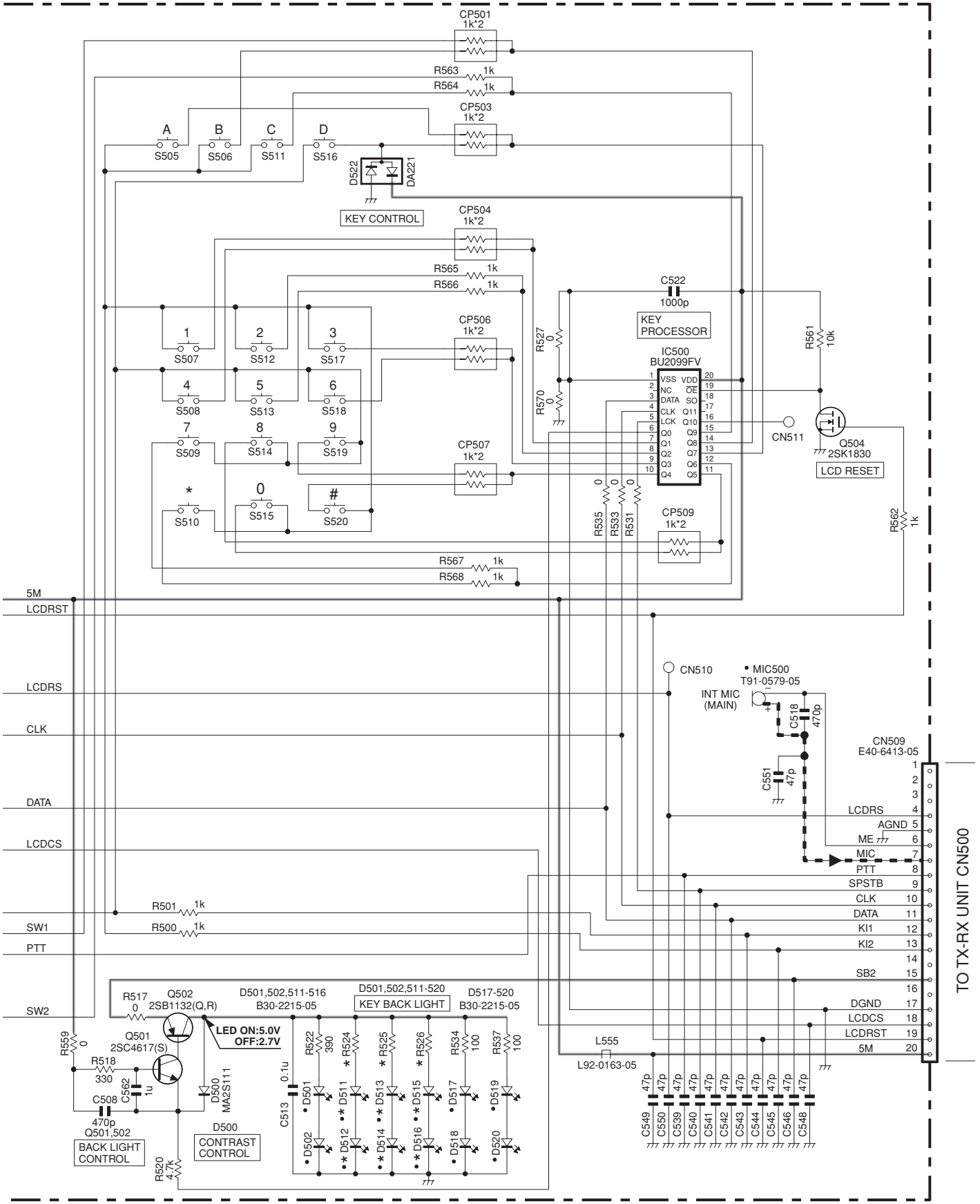
TK-3180 SCHEMATIC DIAGRAM



Note : The components marked with a dot (•) are parts of layer 1.

SCHEMATIC DIAGRAM TK-3180

DISPLAY UNIT (X54-3470-XX)



X54-3470-XX		D511	D512	D513	D514	D515	D516	R524	R525	R526
-10	K,K2	NO	NO	NO	NO	NO	NO	NO	NO	NO
-11	K3,K4	B30-2215-05	B30-2215-05	B30-2215-05	B30-2215-05	B30-2215-05	B30-2215-05	390	390	390

LCD ASSY
(B38-0900-05)

DISPLAY UNIT
(X54-3470-XX)

CN508
E40-6413-05

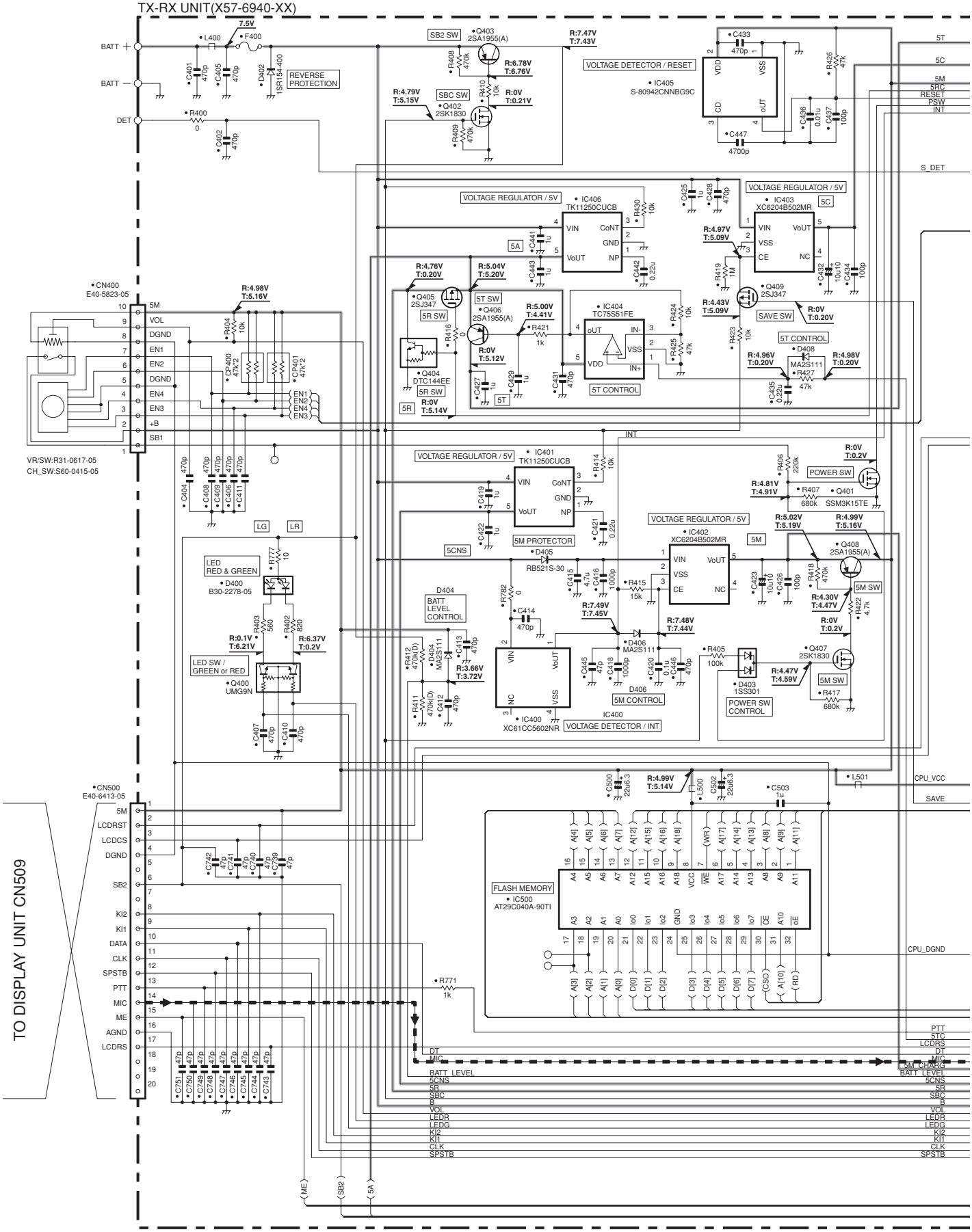
CN507
E40-6410-05

SIDE KEY
SECTION

TO TX-RX UNIT CN500

X54-3470-XX		D511	D512	D513	D514	D515	D516	R524	R525	R526
-10	K,K2	NO	NO	NO	NO	NO	NO	NO	NO	NO
-11	K3,K4	B30-2215-05	B30-2215-05	B30-2215-05	B30-2215-05	B30-2215-05	B30-2215-05	390	390	390

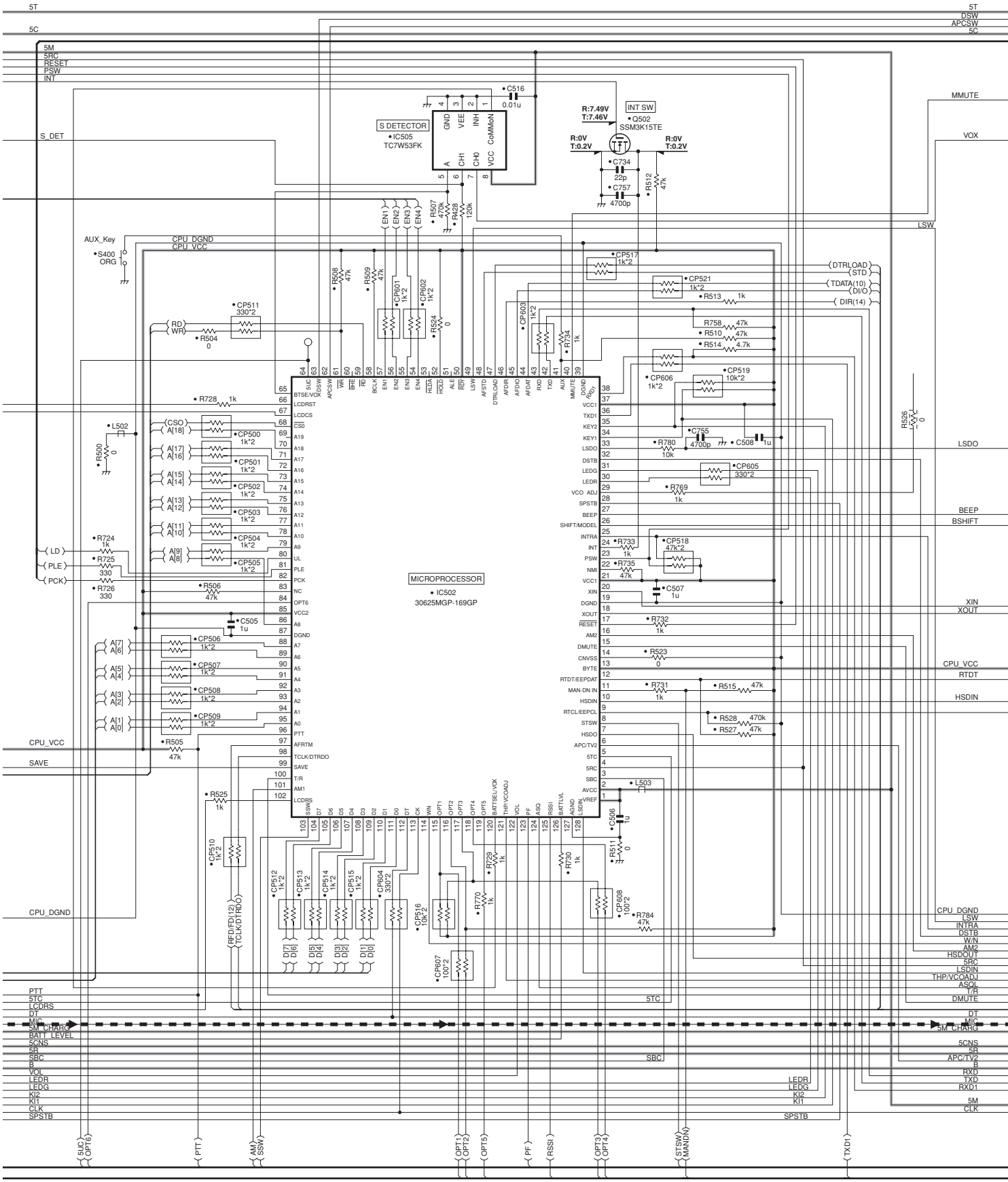
TK-3180 SCHEMATIC DIAGRAM



Note : The components marked with a dot (•) are parts of layer 1.

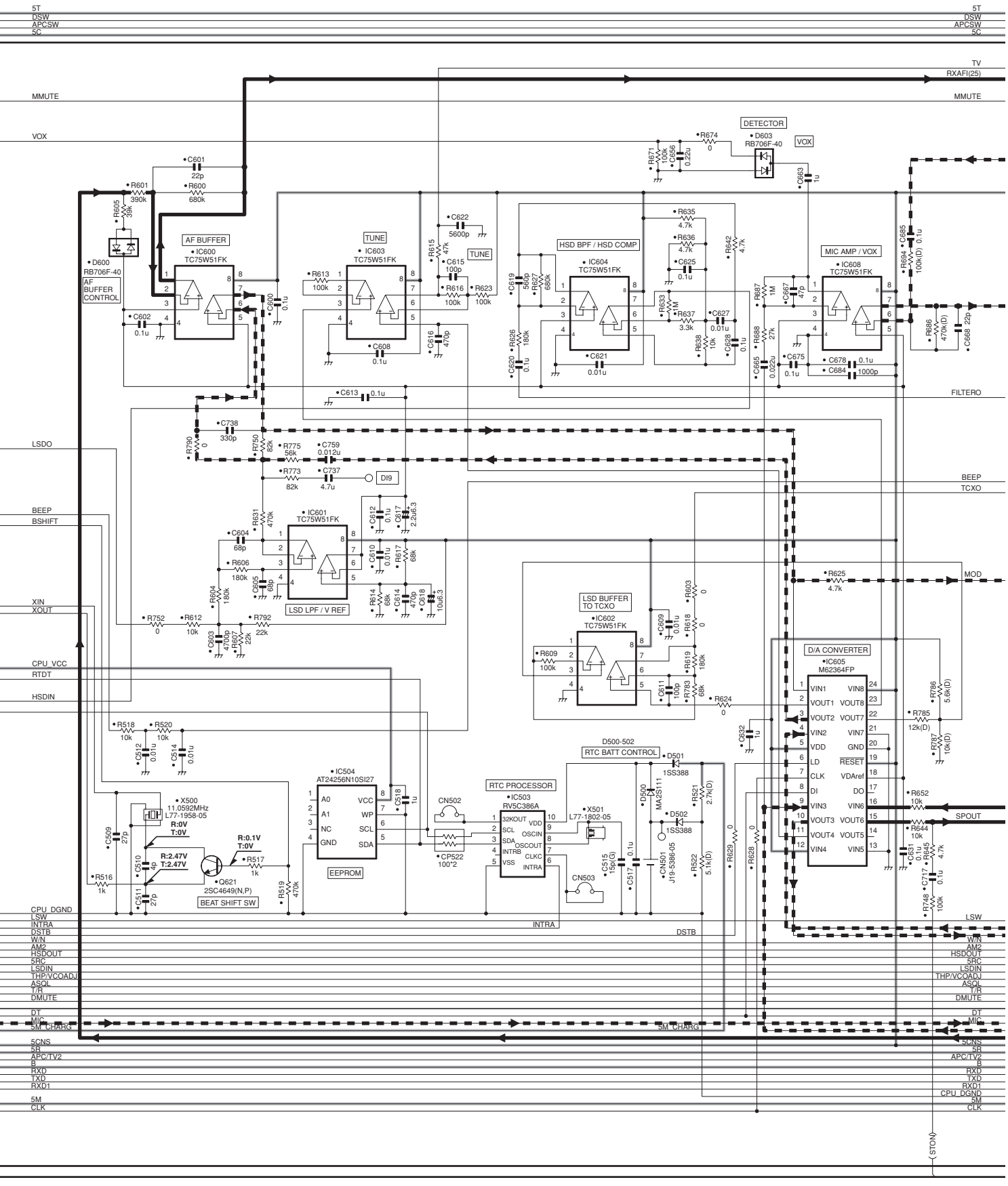
SCHEMATIC DIAGRAM TK-3180

TX-RX UNIT (X57-6940-XX)



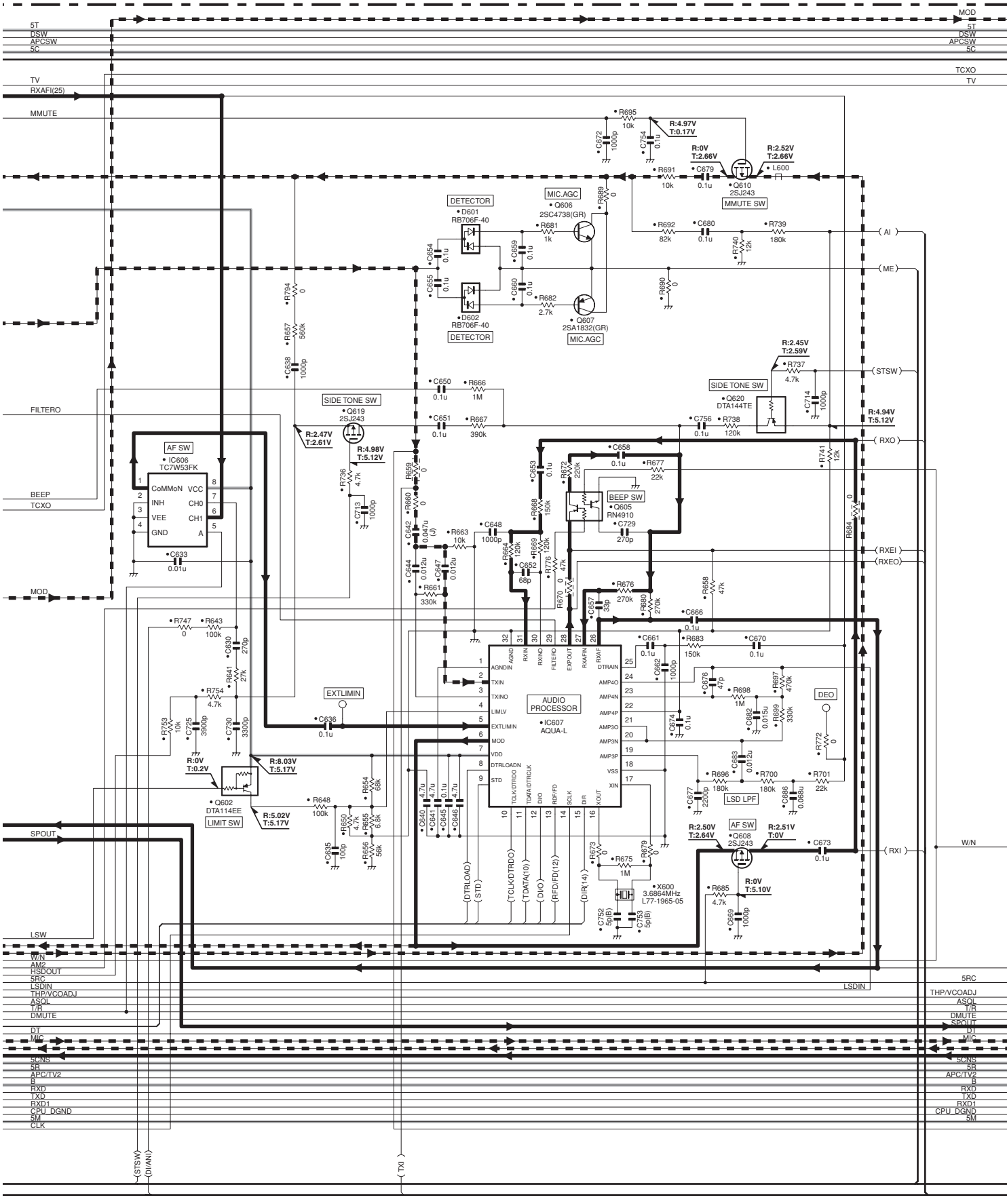
TK-3180 SCHEMATIC DIAGRAM

TX-RX UNIT (X57-6940-XX)



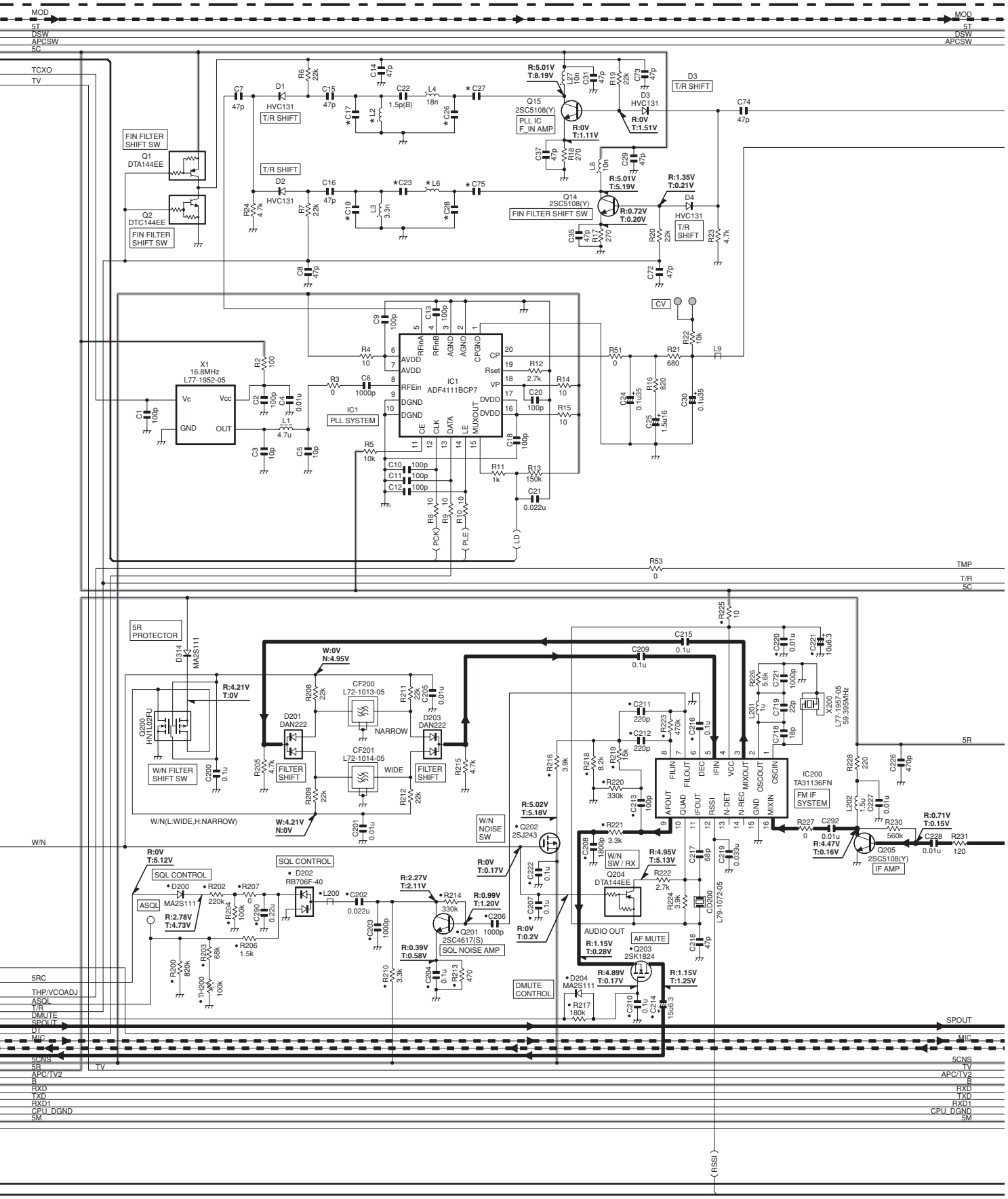
SCHEMATIC DIAGRAM TK-3180

TX-RX UNIT (X57-6940-XX)



TK-3180 SCHEMATIC DIAGRAM

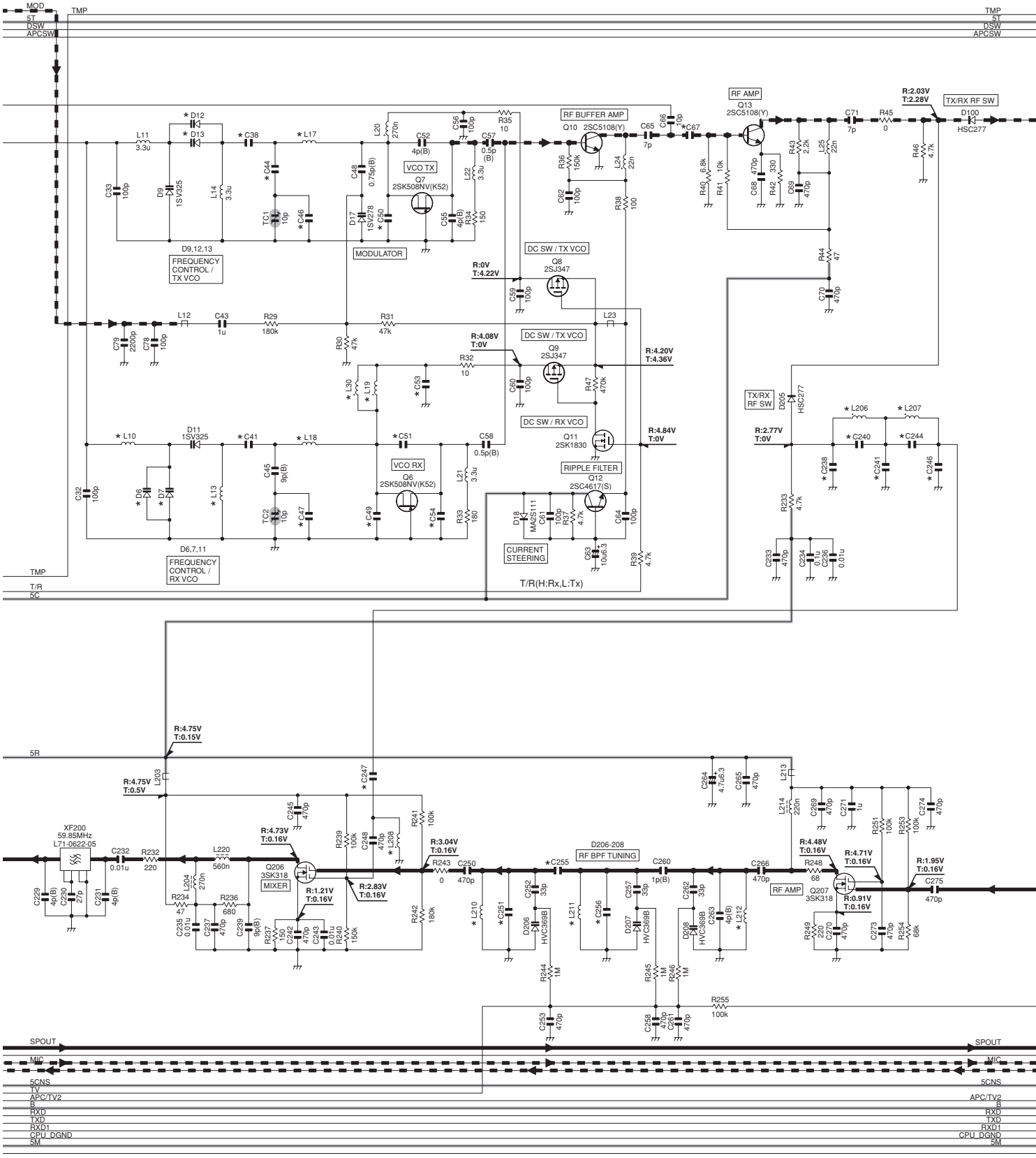
TX-RX UNIT (X57-6940-XX)



X57-6940-XX	C17	C19	C23	C26	C27	C28	C75	L2	L6
-10	K,K2	8p(B)	9p(B)	3p(B)	3p(B)	2p(B)	5p(B)	3p(B)	2.7n	18n
-11	K3,K4	12p(G)	10p(B)	2p(B)	6p(B)	2.5p(B)	9p(B)	4p(B)	1.8n	22n

SCHEMATIC DIAGRAM TK-3180

TX-RX UNIT (X57-6940-XX)

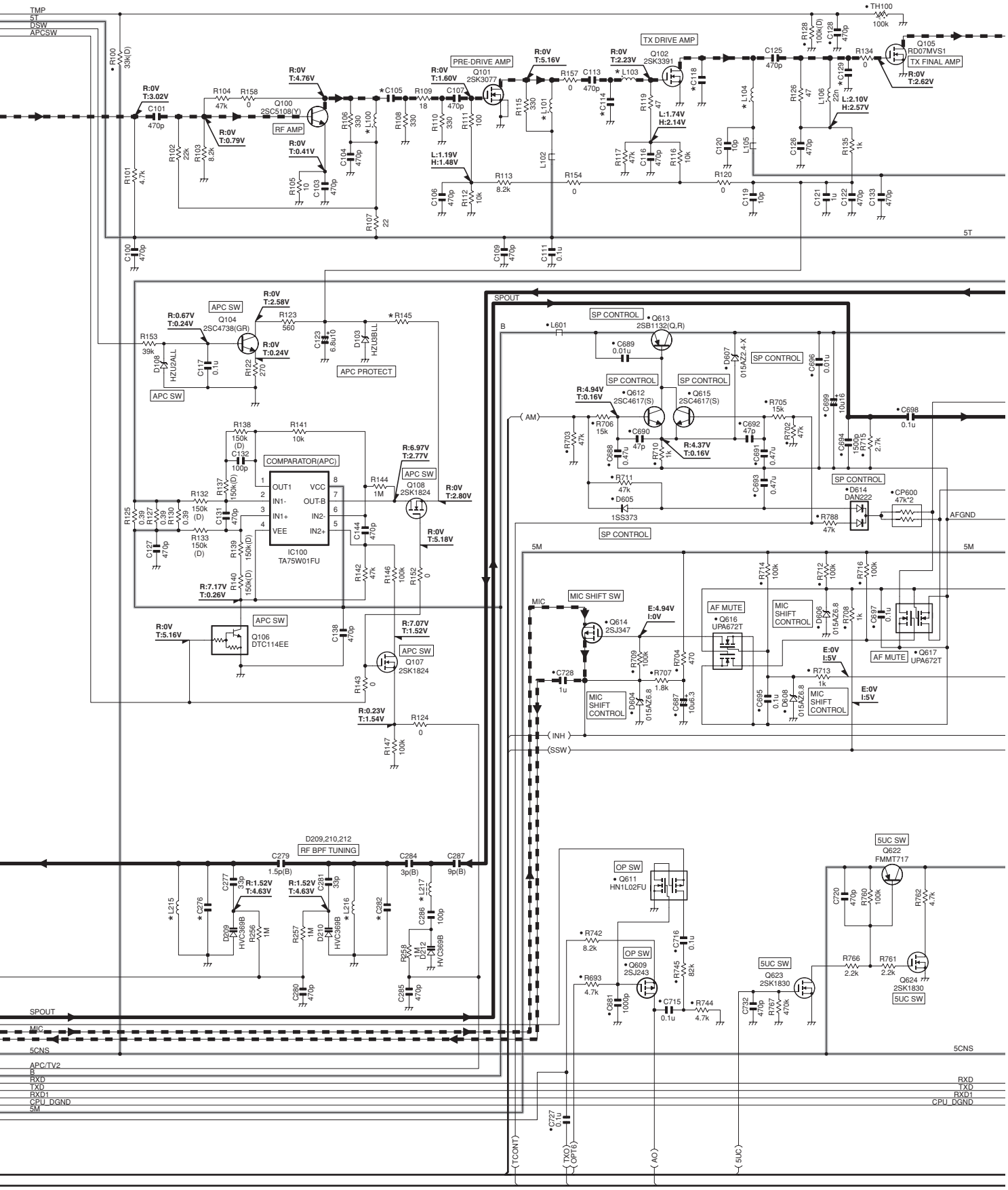


X57-6940-XX		C38	C41	C44	C46	C47	C49	C50	C51	C53	C54	C67	C238	C240	C241	C244	C246	C247	C251	C255	C256
-10	K,K2	56p	82p	13p	4p(B)	2p(B)	2p(B)	2p(B)	5p(B)	100p	6p(B)	33p	6p	2p(B)	10p	2p(B)	10p	4p(B)	3.5p(B)	0.75p(B)	3.5p(B)
-11	K3,K4	82p	120p	15p	3p(B)	1p(B)	2.5p(B)	3p(B)	7p(B)	33p	7p(B)	10p(C)	10p	4p(B)	12p(G)	4p(B)	12p(G)	5p(B)	4p(B)	1p(B)	4p(B)

X57-6940-XX		L10	L13	L17	L18	L19	L30	L206	L207	L208	L210	L211	L212	D6	D7	D12	D13
-10	K,K2	1.8u	1.8u	15n	22n	270n	NO	18n	18n	22n	8.2n	8.2n	8.2n	NO	1SV325	NO	1SV325
-11	K3,K4	27u	27u	18n	27n	NO	220n	15n	15n	33n	10n	10n	10n	1SV325	NO	1SV325	NO

TK-3180 SCHEMATIC DIAGRAM

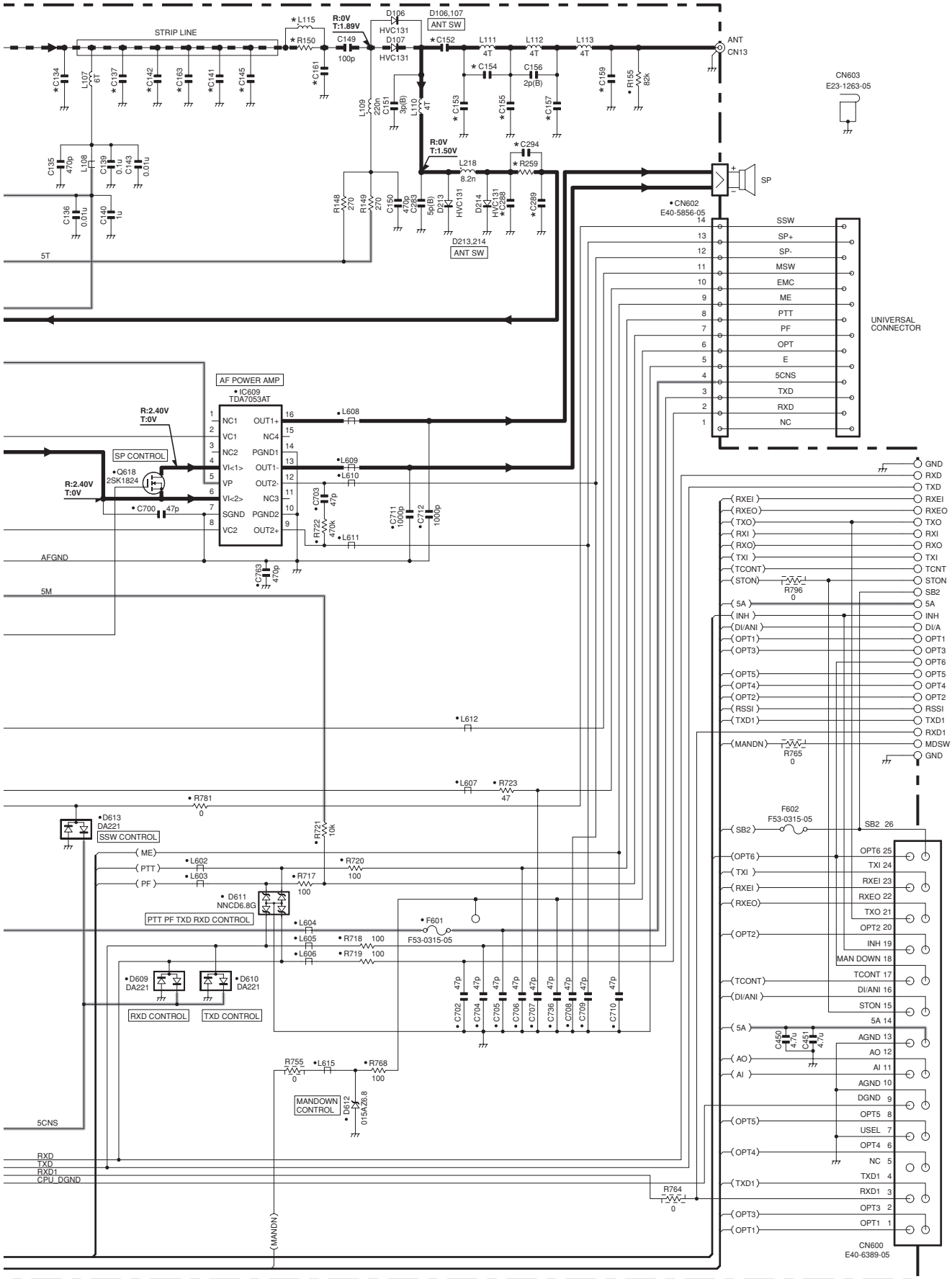
TX-RX UNIT (X57-6940-XX)



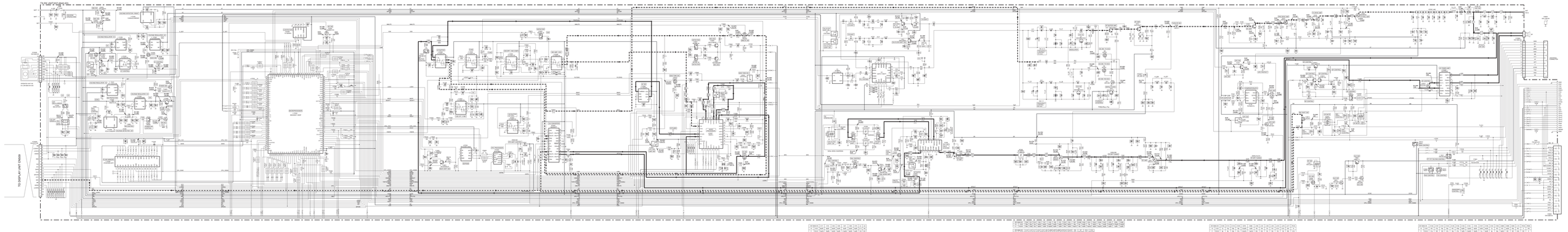
X57-6940-XX		C105	C114	C118	C129	C276	C282	L100	L101	L103	L104	L215	L216	L217	R145
-10	K,K2	7p	10p	33p	18p	2.5p(B)	1p(B)	18n	18n	12n	15n	8.2n	8.2n	33n	1k
-11	K3,K4	6p	9p	22p	27p	3.5p(G)	1.5p(G)	33n	22n	15n	18n	10n	10n	39n	2.2k

SCHEMATIC DIAGRAM TK-3180

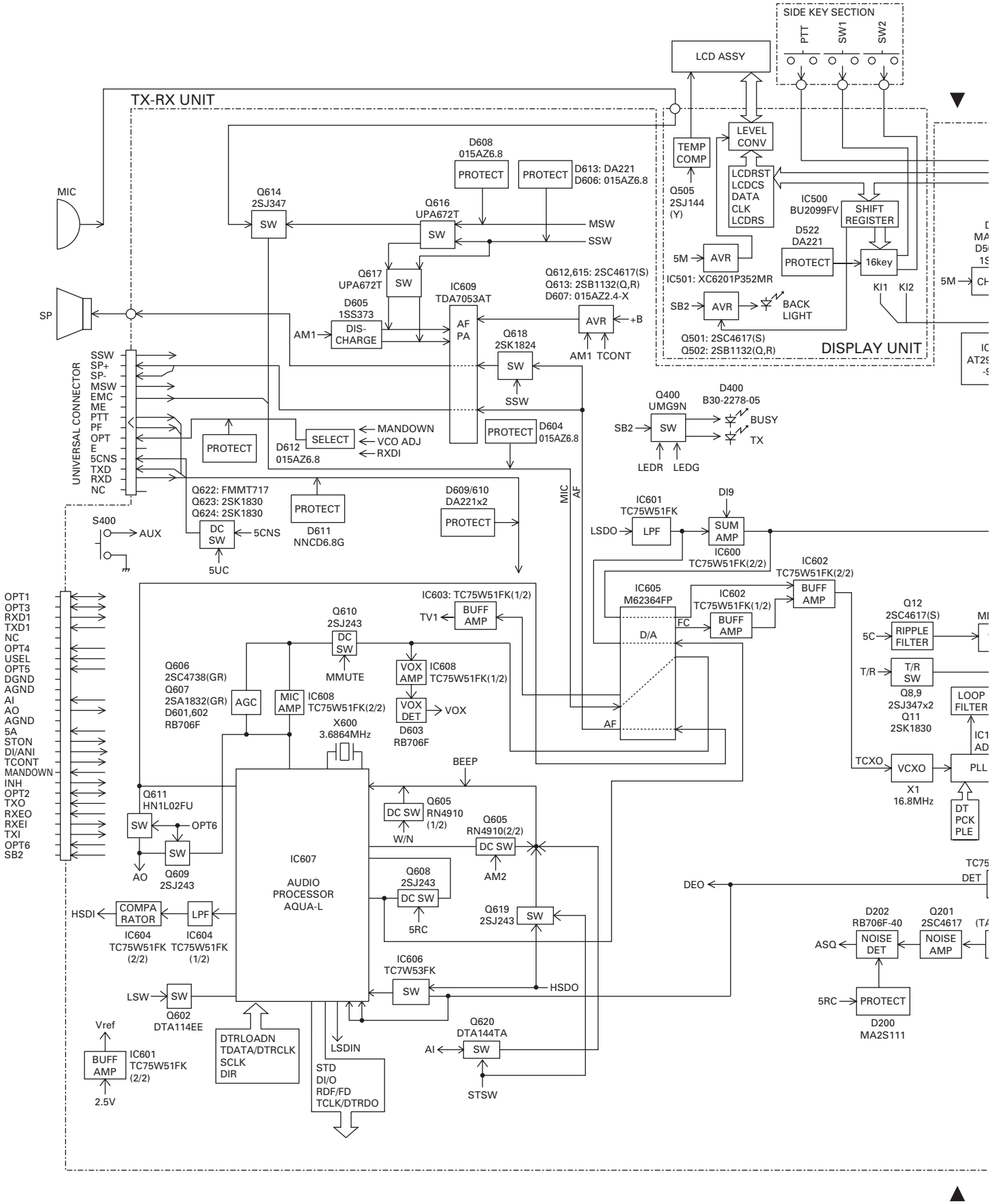
TX-RX UNIT (X57-6940-XX)



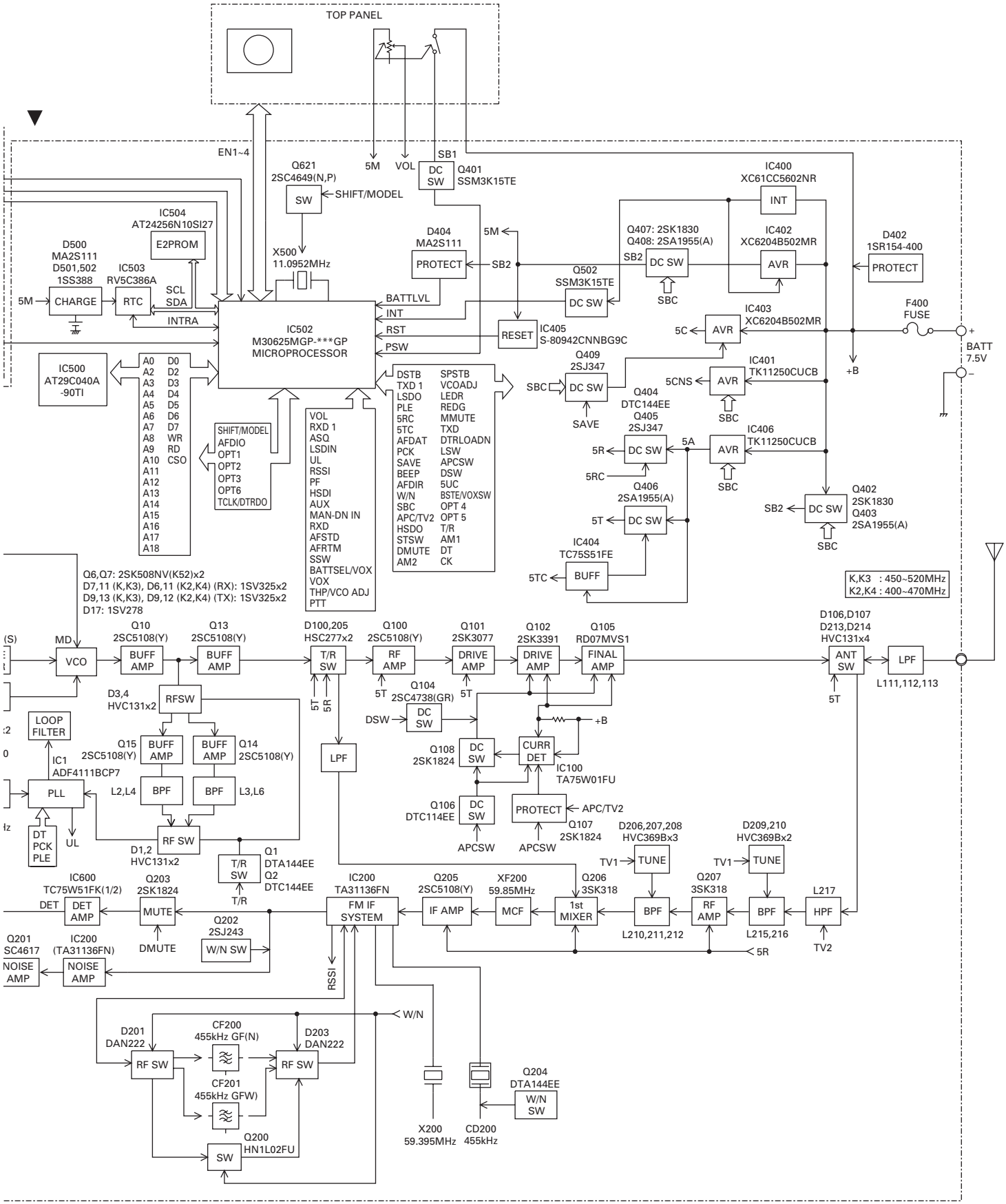
X57-6940-XX		C134	C137	C141	C142	C145	C152	C153	C154	C155	C157	C159	C161	C163	C288	C289	C294	L115	R150	R259
-10	K,K2	NO	47p	18p	33p	NO	100p	5p(B)	1.5p(B)	6p(B)	7p(B)	4p(B)	7p	NO	NO	4p(B)	20p	NO	0	NO
-11	K3,K4	51p	NO	NO	47p	16p	47p	7p(B)	2.5p(B)	10p(B)	11p	5p(B)	6p	24p	5p(B)	NO	NO	8.6n	NO	0



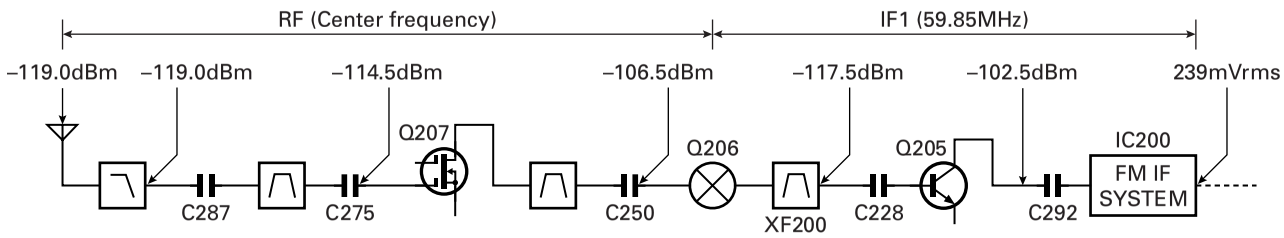
BLOCK DIAGRAM



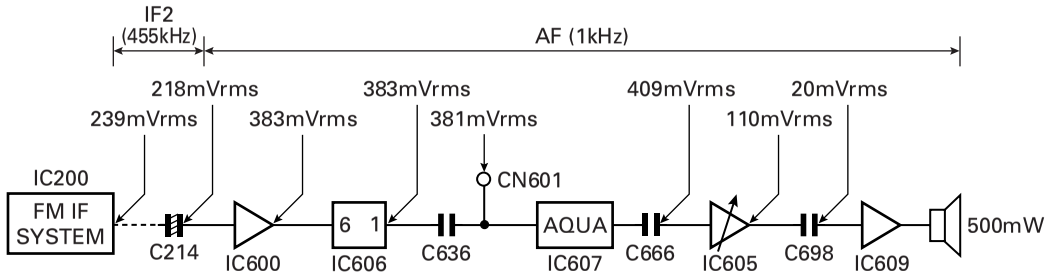
BLOCK DIAGRAM



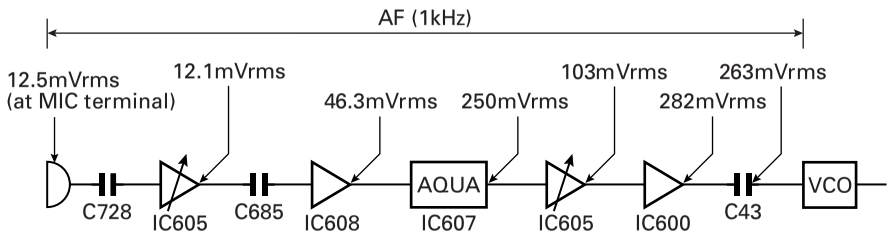
Receiver Section



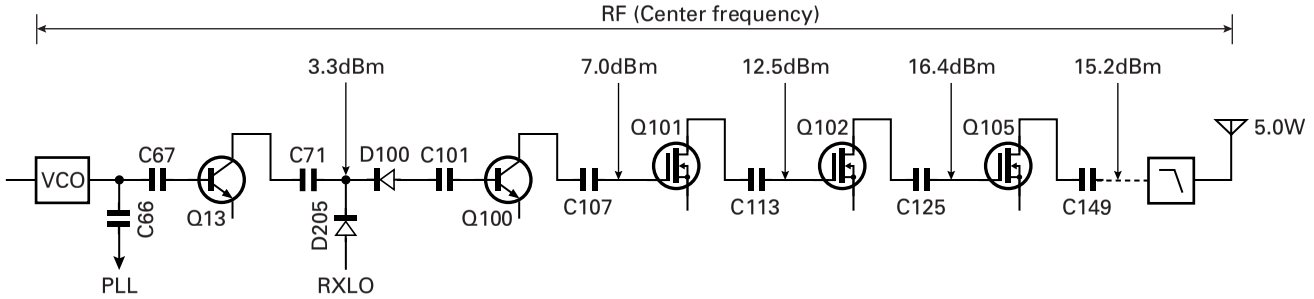
To make measurements in the AF section, connect the AC level meter.
(ANT input : –53dB, 1kHz FM, 3kHz DEV (Wide))
In the RF section, use a 1000pF coupling capacitor.
(The display shows the SSG input value required to obtain 12dB SINAD without local level.)



Transmitter Section



AG is set to the MIC input becomes 3kHz DEV
at 1kHz MOD (Wide).
To make measurements in the AF section,
connect the AC level meter.
In the RF section, use a 1000pF coupling capacitor.



SPECIFICATIONS

GENERAL

Frequency range	K,K3 : 450~520MHz K2,K4 : 400~470MHz
Number of channels	Zone : Max. 128 per radio Ch/GID : Max. 250 per zone (Max. 512 [Conv. Ch's + GID's] total per radio)
Channel spacing	Wide : 25kHz Narrow : 12.5kHz
Battery voltage	7.5V DC ±20%
Battery life (5-5-90 duty cycle, during hi-power)	
KNB-31A (1700mAh)	Approx. 9 hours
KNB-32N (2500mAh)	Approx. 14 hours
KNB-33L (1700mAh)	Approx. 10 hours
Operating temperature range	–22°F~+140°F (–30°C~+60°C)
Frequency stability	±0.00025% (–22°F~+140°F)
Antenna impedance	50Ω
Channel frequency spread	70MHz
Dimensions (W x H x D)	2-5/16 x 5-6/16 x 1-5/16 in. (58 x 136 x 33 mm) with KNB-33L battery
(Projections not included)	2-5/16 x 5-6/16 x 1-9/16 in. (58 x 136 x 39.5 mm) with KNB-31A or 32N battery
Weight (net)	14.1 oz. (400 g) with battery (KNB-33L), antenna (KRA-23) and beltclip (KBH-11)

RECEIVER (Measurements made per EIA/TIA-603)

Sensitivity (12dB SINAD)	Wide : 0.25μV Narrow : 0.28μV
Selectivity	Wide : 70dB Narrow : 63dB
Intermodulation distortion	W/N : 70dB (±50, 100kHz)
Spurious response	70dB
Audio output (8Ω impedance)	500mW with less than 3% distortion

TRANSMITTER (Measurements made per EIA/TIA-603)

RF output power	HI : 5W LO : 1W
Spurious response	70dB
Type of emission	Wide : 16K0F3E Narrow : 11K0F3E
FM hum & noise	Wide : 45dB Narrow : 40dB
Audio distortion	W/N : 3%

TK-3180

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