

# KENWOOD

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# TK-3160

## SERVICE MANUAL

### SUPPLEMENT

This TK-3160 service manual contains a number of sections which differ from the service manual (B51-8653-00) for the TK-3160. For items other than those in this TK-3160 service manual please refer to the service manual (B51-8653-00) for the TK-3160.



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

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### Service Manual List

Title	Parts number	Remarks	Destination
TK-3160	B51-8653-00		K, M
TK-3160	B51-8672-00 (This service manual)	SUPPLEMENT	K2,M2,K3,M3

# TK-3160

## 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.

### PERSONAL SAFETY

The following precautions are recommended for personal safety:

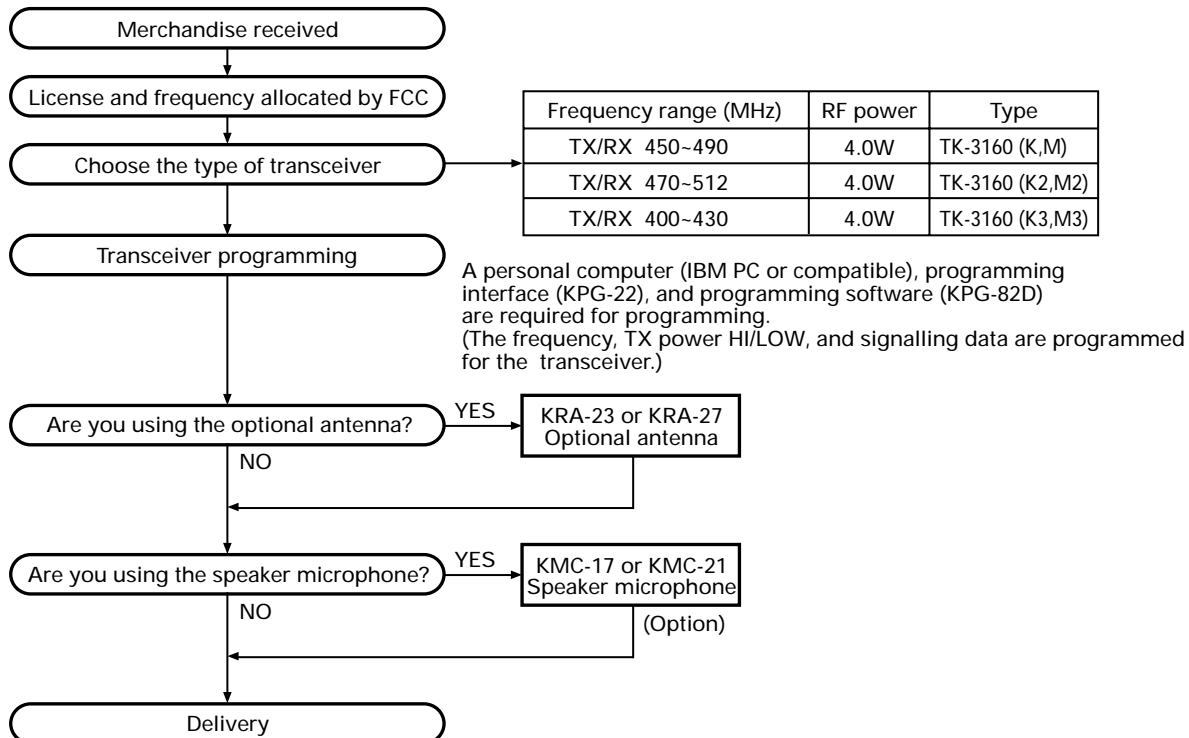
- DO NOT transmit until all RF connectors are verified secure and any open connectors are properly terminated.
- SHUT OFF and DO NOT operate this equipment near electrical blasting caps or in an explosive atmosphere.
- This equipment should be serviced by a qualified technician only.

### SERVICE

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

Unit		TX-RX Unit	Frequency range	Remarks
Model & destination				
TK-3160	K,M	X57-6730-10	450~490MHz	IF1 : 49.95MHz LOC : 50.4MHz
	K2, M2	X57-6730-11	470~512MHz	
	K3, M3	X57-6730-12	400~430MHz	

### SYSTEM SET-UP



## PARTS LIST

\* New Parts.  $\Delta$  indicates safety critical components.  
 Parts without **Parts No.** are not supplied.  
 Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.  
 Teile ohne **Parts No.** werden nicht geliefert.

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

### TK-3160 (Y50-5790-XX) TX-RX UNIT (X57-6730-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
<b>TK-3160</b>											
1	1B		A02-3826-43	CABINET ASSY		D	3B		N30-2612-46	PAN HEAD MACHINE SCREW	
2	2B		A10-4068-31	CHASSIS		E	3A,3B		N30-3006-45	PAN HEAD MACHINE SCREW	
3	3A		A82-0054-02	REAR PANEL		F	2D		N35-3004-45	BINDING HEAD MACHINE SCREW	
4	3A		B01-0694-03	ESCUTCHEON		G	3A,3B		N78-2040-46	PAN HEAD TAPTITE SCREW	
5	2D		B09-0676-13	CAP                      ACCESSORY		H	2A,2B		N83-2005-46	PAN HEAD TAPTITE SCREW	
6	1C		B62-1716-00	INSTRUCTION MANUAL	K,K2,K3	44	2A		R31-0650-05	VARIABLE RESISTOR	
6	1C		B62-1747-00	INSTRUCTION MANUAL	M,M2,M3	45	2A		S60-0420-05	ROTARY SWITCH	
7	3B		B72-2178-14	MODEL NAME PLATE	K	46	1B		T07-0369-05	SPEAKER	
7	3B		B72-2181-04	MODEL NAME PLATE	M	<b>TX-RX UNIT (X57-6730-XX) 0-10: K,M 0-11: K2,M2 0-12: K3,M3</b>					
7	3B	*	B72-2251-04	MODEL NAME PLATE	K2	D802			B30-2156-05	LED(RED)	
7	3B	*	B72-2252-04	MODEL NAME PLATE	K3	D803			B30-2157-05	LED(YELLOW)	
7	3B	*	B72-2253-04	MODEL NAME PLATE	M2	C1			CK73GB1H392K	CHIP C    3900PF    K	K,K2,M2
7	3B	*	B72-2254-04	MODEL NAME PLATE	M3	C1			CK73GB1H392K	CHIP C    3900PF    K	M3
8	3A		E04-0446-05	RF COAXIAL RECEPTACLE(SMA)		C1			CK73GB1H472K	CHIP C    4700PF    K	K,M
10	2A		E37-1101-05	SPEAKER WIRE(RED)		C2			CK73GB1H471K	CHIP C    470PF    K	
11	2A		E37-1102-05	SPEAKER WIRE(BLACK)		C3			CK73GB1H103K	CHIP C    0.010UF    K	
12	3A		E72-0416-23	BATT TERMINAL BLOCK		C4			CK73GB0J225K	CHIP C    2.2UF    K	K,M
13	2B		G11-4090-04	SHEET(FINAL FET)		C5			CK73GB1H471K	CHIP C    470PF    K	
14	3B		G11-4254-04	SHEET(PTT)		C6			CK73GB1H103K	CHIP C    0.010UF    K	
15	3A		G11-4287-04	SHEET(BATT TERMINAL BLOCK)		C7			CK73GB1H471K	CHIP C    470PF    K	
16	3A		G11-4289-04	SHEET(CHASSIS)		C8			CC73GCH1H100D	CHIP C    10PF    D	
17	3B	*	G11-4293-04	SHEET		C9			CK73GB1H103K	CHIP C    0.010UF    K	
18	2A	*	G11-4294-04	SHEET		C10			CC73GCH1H100D	CHIP C    10PF    D	
19	3B	*	G11-4295-04	SHEET		C11-13			CC73GCH1H101J	CHIP C    100PF    J	
20	1A	*	G11-4306-04	SHEET		C14			C92-0713-05	CHIP-TAN    10UF    6.3WV	
21	2A	*	G11-4312-04	SHEET		C15			CK73GB1H102K	CHIP C    1000PF    K	
22	2B		G13-2001-04	CUSHION(CHASSIS)		C16			CC73GCH1H470J	CHIP C    47PF    J	
23	2B	*	G13-2014-04	CUSHION(CCHASSIS BOTTOM)		C18,19			CK73GB1C104K	CHIP C    0.10UF    K	
24	2B		G13-2017-04	CUSHION		C22			CK73GB1C104K	CHIP C    0.10UF    K	
25	2B		G13-2018-04	CUSHION		C24			C92-0713-05	CHIP-TAN    10UF    6.3WV	
26	3A		G13-2019-04	CUSHION		C25			CK73GB1H471K	CHIP C    470PF    K	
27	2B		G13-2020-04	CUSHION		C27			CK73GB1H103K	CHIP C    0.010UF    K	
28	3A	*	G13-2026-04	CUSHION?????		C28			CC73GCH1H560J	CHIP C    56PF    J	
29	3A	*	G13-2027-04	CUSHION?????		C29			CK73GB1H471K	CHIP C    470PF    K	
30	2B		G53-1580-03	PACKING(CHASSIS)		C30			CC73GCH1H220J	CHIP C    22PF    J	
31	1B		G53-1581-12	PACKING(SPEAKER)		C31			CC73GCH1H560J	CHIP C    56PF    J	
32	3B		G53-1582-03	PACKING(BATT TERMINAL BLOCK)		C32			C92-0002-05	CHIP-TAN    0.22UF    35WV	
33	3A		G53-1641-02	PACKING		C33			CC73GCH1H470J	CHIP C    47PF    J	
34	3C		H12-3150-02	PACKING FIXTURE		C34			CK73GB1H471K	CHIP C    470PF    K	
35			H25-2345-04	PROTECTION BAG		C35			CC73GCH1H680J	CHIP C    68PF    J	
36	1D		H52-2000-02	ITEM CARTON CASE		C36			C92-0585-05	CHIP-TAN    4.7UF    16WV	
37	2A		J19-5454-03	HOLDER		C37			CK73GB1H103K	CHIP C    0.010UF    K	K,M,K2
38	2D		J21-8464-04	HARDWARE FIXTURE    ACCESSORY		C37			CK73GB1H103K	CHIP C    0.010UF    K	M2
39	2C		J29-0701-05	HOOK                      ACCESSORY		C37			CK73GB1H822K	CHIP C    8200PF    K	K3,M3
41	3A		J30-1275-04	SPACER(CH KNOB)		C38,39			C92-0002-05	CHIP-TAN    0.22UF    35WV	
41	1A		K29-9278-13	KNOB(VOLUME)		C40			CK73GB1H183K	CHIP C    0.018UF    K	
45	3A		K29-9280-13	KNOB(CH SELECTOR)		C41,42			CK73GB1A105K	CHIP C    1.0UF    K	
43	1B	*	K29-9332-03	KNOB(PTT)		C43,44			CC73HCH1H101J	CHIP C    100PF    J	
A	3A		N14-0583-04	CIRCULAR NUT(CH)		C45			CC73HCH1H020B	CHIP C    2.0PF    B	K,M
B	3A		N14-0805-04	CIRCULAR NUT(VOLUME)		C45			CC73HCH1H040B	CHIP C    4.0PF    B	K2,M2
C	3A		N30-2604-46	PAN HEAD MACHINE SCREW		C45			CC73HCH1H050B	CHIP C    5.0PF    B	K3,M3

# TK-3160

## PARTS LIST

### TX-RX UNIT (X57-6730-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
C46			CC73HCH1H220J	CHIP C 22PF J	K3,M3	C75,76			CK73HB1H471K	CHIP C 470PF K	
C46			CC73HCH1H270J	CHIP C 27PF J	K,M	C77			C92-0713-05	CHIP-TAN 10UF 6.3WV	
C46			CC73HCH1H390J	CHIP C 39PF J	K2,M2	C78			CK73HB1H471K	CHIP C 470PF K	
C47			CK73GB1H471K	CHIP C 470PF K		C80			CC73HCH1H070D	CHIP C 7.0PF D	
C48			CC73HCH1H110J	CHIP C 11PF J	K,M	C82			CC73HCH1H330J	CHIP C 33PF J	
C48			CC73HCH1H120J	CHIP C 12PF J	K3,M3	C83-85			CK73HB1H471K	CHIP C 470PF K	
C48			CC73HCH1H150J	CHIP C 15PF J	K2,M2	C86			CC73HCH1H070D	CHIP C 7.0PF D	
C49			CC73HCH1H330J	CHIP C 33PF J	K,M	C92			CK73GB1H471K	CHIP C 470PF K	
C49			CC73HCH1H390J	CHIP C 39PF J	K3,M3	C94,95			CK73HB1A104K	CHIP C 0.10UF K	
C49			CC73HCH1H470J	CHIP C 47PF J	K2,M2	C201,202			CK73GB1H471K	CHIP C 470PF K	
C50			CC73HCH1H020C	CHIP C 2.0PF C	K,K3,M2	C205			CK73GB1A224K	CHIP C 0.22UF K	
C50			CC73HCH1H020C	CHIP C 2.0PF C	M3	C223			CK73GB1H471K	CHIP C 470PF K	
C50			CC73HCH1H050C	CHIP C 5.0PF C	K,M	C224			CC73GCH1H040C	CHIP C 4.0PF C	K2,M2
C51			CC73HCH1H150J	CHIP C 15PF J	K,M	C224			CC73GCH1H070D	CHIP C 7.0PF D	K,M
C51			CC73HCH1H220J	CHIP C 22PF J	K,K2,M2	C224			CC73GCH1H090D	CHIP C 9.0PF D	K3,M3
C51			CC73HCH1H220J	CHIP C 22PF J	M3	C226			CK73GB1H471K	CHIP C 470PF K	
C52			CC73GCH1H050C	CHIP C 5.0PF C	K,M,K2	C233			CK73GB1H471K	CHIP C 470PF K	
C52			CC73GCH1H050C	CHIP C 5.0PF C	M2	C241			CK73GB1H471K	CHIP C 470PF K	
C52			CC73GCH1H070D	CHIP C 7.0PF D	K3,M3	C242			CC73GCH1H060D	CHIP C 6.0PF D	
C53			CC73HCH1H020B	CHIP C 2.0PF B	K,M	C243			CK73GB1C104K	CHIP C 0.10UF K	
C53			CC73HCH1H030B	CHIP C 3.0PF B	K2,M2	C248			CC73GCH1H050C	CHIP C 5.0PF C	K3,M3
C53			CC73HCH1H050B	CHIP C 5.0PF B	K3,M3	C249			CC73GCH1H130J	CHIP C 13PF J	
C54			CC73HCH1H020C	CHIP C 2.0PF C	K3,M3	C255			CK73GB1H471K	CHIP C 470PF K	
C54			CC73HCH1H030C	CHIP C 3.0PF C	K2,M2	C258			CK73GB1C104K	CHIP C 0.10UF K	
C54			CC73HCH1H050C	CHIP C 5.0PF C	K,M	C280			CC73GCH1H100D	CHIP C 10PF D	K2,M2
C55,56			CC73HCH1H010B	CHIP C 1.0PF B		C280			CC73GCH1H330J	CHIP C 33PF J	K,M,K3
C57			CC73GCH1H030C	CHIP C 3.0PF C	K,M,K2	C280			CC73GCH1H330J	CHIP C 33PF J	M3
C57			CC73GCH1H030C	CHIP C 3.0PF C	M2	C282			CC73GCH1H101J	CHIP C 100PF J	K3,M3
C57			CC73GCH1H040C	CHIP C 4.0PF C	K3,M3	C282			CC73GCH1H330G	CHIP C 33PF J	K,M
C58			CC73HCH1H040B	CHIP C 4.0PF B	K2,M2	C282			CC73GCH1H680J	CHIP C 68PF J	K2,M2
C58			CC73HCH1H050B	CHIP C 5.0PF B	K,M,K3	C283			CC73GCH1H100D	CHIP C 10PF D	
C58			CC73HCH1H050B	CHIP C 5.0PF B	M3	C284			CC73GCH1H200J	CHIP C 20PF J	
C59			CC73GCH1H050C	CHIP C 5.0PF C	K,M,K2	C286			C92-0565-05	CHIP-TAN 6.8UF 10WV	
C59			CC73GCH1H050C	CHIP C 5.0PF C	M2	C288			CK73GB1A105K	CHIP C 1.0UF K	
C59			CC73GCH1H070D	CHIP C 7.0PF D	K3,M3	C290-293			CK73GB1H471K	CHIP C 470PF K	
C60			CC73HCH1H040B	CHIP C 4.0PF B	K,M,K2	C294			CC73GCH1H101J	CHIP C 100PF J	
C60			CC73HCH1H040B	CHIP C 4.0PF B	M2	C295			CC73GCH1H270J	CHIP C 27PF J	
C60			CC73HCH1H050B	CHIP C 5.0PF B	K3,M3	C296			CK73GB1H471K	CHIP C 470PF K	
C61			CK73HB1H471K	CHIP C 470PF K		C297			CK73GB1H103K	CHIP C 0.010UF K	
C62			CC73HCH1H070B	CHIP C 7.0PF B	K,M	C298			CK73GB1C104K	CHIP C 0.10UF K	
C62			CC73HCH1H090B	CHIP C 9.0PF B	K2,K3,M2	C299			CK73GB1A105K	CHIP C 1.0UF K	
C62			CC73HCH1H090B	CHIP C 9.0PF B	M3	C300			CC73GCH1H180J	CHIP C 18PF J	
C63			CC73GCH1H100D	CHIP C 10PF D		C301			CK73GB1H103K	CHIP C 0.010UF K	
C64			CC73HCH1H050B	CHIP C 5.0PF B	K,M,K2	C308			CC73GCH1H120J	CHIP C 12PF J	K2,M2
C64			CC73HCH1H050B	CHIP C 5.0PF B	M2	C308			CC73GCH1H150J	CHIP C 15PF J	K3,M3
C64			CC73HCH1H060B	CHIP C 6.0PF B	K3,M3	C308			CC73GCH1H270J	CHIP C 27PF J	K,M
C65			CC73HCH1H101J	CHIP C 100PF J		C309			CK73GB1H471K	CHIP C 470PF K	
C66			CC73HCH1H090B	CHIP C 9.0PF B	K2,M2	C317			CC73GCH1H010B	CHIP C 1.0PF B	K,M
C66			CC73HCH1H100B	CHIP C 10PF B	K,M	C317			CC73GCH1H150J	CHIP C 15PF J	K2,M2
C66			CC73HCH1H120J	CHIP C 12PF J	K3,M3	C326			CK73GB1H471K	CHIP C 470PF K	
C67			CK73HB1H471K	CHIP C 470PF K		C333			CC73GCH1H040B	CHIP C 4.0PF B	K3,M3
C68			CK73GB1H471K	CHIP C 470PF K		C341			CC73GCH1H150J	CHIP C 15PF J	K3,M3
C69			CC73HCH1H050B	CHIP C 5.0PF B	K,M1,K2	C349			CC73GCH1H060B	CHIP C 6.0PF B	K2,M2
C69			CC73HCH1H050B	CHIP C 5.0PF B	M2	C349			CC73GCH1H070B	CHIP C 7.0PF B	K,M,K3
C69			CC73HCH1H070B	CHIP C 7.0PF B	K3,M3	C349			CC73GCH1H070B	CHIP C 7.0PF B	M3
C70			CK73HB1H471K	CHIP C 470PF K		C351			CC73GCH1H150J	CHIP C 15PF J	K2,M2
C71			CC73GCH1H0R5B	CHIP C 0.5PF B		C351			CC73GCH1H270J	CHIP C 27PF J	K,M,K3
C72			CC73HCH1H0R5B	CHIP C 0.5PF B		C351			CC73GCH1H270J	CHIP C 27PF J	M3
C73			CK73GB1H471K	CHIP C 470PF K		C352			CK73GB1H471K	CHIP C 470PF K	
C74			CC73HCH1H100D	CHIP C 10PF D		C353			CC73GCH1H040B	CHIP C 4.0PF B	

## PARTS LIST

TX-RX UNIT (X57-6730-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
C355			CC73GCH1H050B	CHIP C 5.0PF B		C434			CC73GCH1H090B	CHIP C 9.0PF B	K3,M3
C356			CC73GCH1H101J	CHIP C 100PF J	K,M,K3	C435			CK73GB1H471K	CHIP C 470PF K	
C356			CC73GCH1H101J	CHIP C 100PF J	M3	C439			CC73GCH1H180J	CHIP C 18PF J	K3,M3
C356			CK73GB1H471K	CHIP C 470PF K	K2,M2	C439			CK73GB1H471K	CHIP C 470PF K	K,M,K2
C358			CC73GCH1H030B	CHIP C 3.0PF B	K,M,K2	C439			CK73GB1H471K	CHIP C 470PF K	M2
C358			CC73GCH1H030B	CHIP C 3.0PF B	M2	C445			CC73GCH1H3R5B	CHIP C 3.5PF B	K3,M3
C358			CC73GCH1H040B	CHIP C 4.0PF B	K3,M3	C445			CC73GCH1H4R5B	CHIP C 4.5PF B	K,M,K2
C359			CC73GCH1H010B	CHIP C 1.0PF B	K3,M3	C445			CC73GCH1H4R5B	CHIP C 4.5PF B	M2
C359			CC73GCH1H1R5B	CHIP C 1.5PF B	K,M,K2	C447			CC73GCH1H180J	CHIP C 18PF J	K2,M2
C359			CC73GCH1H1R5B	CHIP C 1.5PF B	M2	C447			CC73GCH1H470J	CHIP C 47PF J	K,M,K3
C360			CC73GCH1H060B	CHIP C 6.0PF B	K2,M2	C447			CC73GCH1H470J	CHIP C 47PF J	M3
C360			CC73GCH1H080B	CHIP C 8.0PF B	K3,M3	C448			CC73GCH1H030B	CHIP C 3.0PF B	K,M
C360			CC73GCH1H3R5B	CHIP C 3.5PF B	K,M	C448			CC73GCH1H1R5B	CHIP C 1.5PF B	K2,M2
C361			CC73GCH1H020B	CHIP C 2.0PF B	K2,M2	C448			CC73GCH1H4R5B	CHIP C 4.5PF B	K3,M3
C361			CC73GCH1H2R5B	CHIP C 2.5PF B	K,M,K3	C456			CK73HB1H471K	CHIP C 470PF K	
C361			CC73GCH1H2R5B	CHIP C 2.5PF B	M3	C464			CC73GCH1H020B	CHIP C 2.0PF B	K,M
C363			CC73GCH1H060B	CHIP C 6.0PF B	K2,M2	C464			CC73GCH1H1R5B	CHIP C 1.5PF B	K2,M2
C363			CC73GCH1H070B	CHIP C 7.0PF B	K3,M3	C464			CC73GCH1H4R5B	CHIP C 4.5PF B	K3,M3
C363			CC73GCH1H4R5B	CHIP C 4.5PF B	K,M	C465			CC73GCH1H010B	CHIP C 1.0PF B	K,M
C364			CC73GCH1H0R5B	CHIP C 0.5PF B	K2,M2	C465			CC73GCH1H060B	CHIP C 6.0PF B	K2,M2
C364			CC73GCH1H020B	CHIP C 2.0PF B	K,M	C465			CC73GCH1H1R5B	CHIP C 1.5PF B	K3,M3
C364			CC73GCH1H1R5B	CHIP C 1.5PF B	K3,M3	C466			CC73GCH1H180J	CHIP C 18PF J	K2,M2
C365			CC73GCH1H020B	CHIP C 2.0PF B	K2,M2	C466			CC73GCH1H470J	CHIP C 47PF J	K,M,K3
C368			CC73GCH1H070D	CHIP C 7.0PF D	K2,M2	C466			CC73GCH1H470J	CHIP C 47PF J	M3
C368			CC73GCH1H150J	CHIP C 15PF J	K,M,K3	C467			CK73HB1H471K	CHIP C 470PF K	
C368			CC73GCH1H150J	CHIP C 15PF J	M3	C468			CC73GCH1H020B	CHIP C 2.0PF B	K2,M2
C371			CC73GCH1H010B	CHIP C 1.0PF B	K,M,K2	C468,469			CC73GCH1H030B	CHIP C 3.0PF B	K,M
C371			CC73GCH1H010B	CHIP C 1.0PF B	M2	C468,469			CC73GCH1H3R5B	CHIP C 3.5PF B	K3,M3
C371			CC73GCH1H020B	CHIP C 2.0PF B	K3,M3	C469			CC73GCH1H1R5B	CHIP C 1.5PF B	K2,M2
C372			CK73GB1H471K	CHIP C 470PF K		C470			CK73HB1H471K	CHIP C 470PF K	
C401			CK73GB1H182K	CHIP C 1800PF K		C471			CC73GCH1H180J	CHIP C 18PF J	K2,M2
C402,403			CC73GCH1H331J	CHIP C 330PF J		C471			CC73GCH1H470J	CHIP C 47PF J	K,M,K3
C405			CC73GCH1H390J	CHIP C 39PF J		C471			CC73GCH1H470J	CHIP C 47PF J	M3
C406			C92-0713-05	CHIP-TAN 10UF 6.3WV		C472			C92-0714-05	CHIP-TAN 4.7UF 6.3WV	
C407			CK73GB1H103K	CHIP C 0.010UF K		C473			CC73HCH1H050B	CHIP C 5.0PF B	K2,M2
C408			CK73GB1C104K	CHIP C 0.10UF K		C473			CC73HCH1H060B	CHIP C 6.0PF B	K,M
C409			CC73GCH1H680J	CHIP C 68PF J		C473			CC73HCH1H070B	CHIP C 7.0PF B	K3,M3
C410			CK73GB1H471K	CHIP C 470PF K		C474,475			CK73GB1H471K	CHIP C 470PF K	
C411-413			CK73GB1C104K	CHIP C 0.10UF K		C478,479			CK73HB1H471K	CHIP C 470PF K	
C414			CC73GCH1H100D	CHIP C 10PF D		C481,482			CK73GB1H471K	CHIP C 470PF K	
C415			CK73GB1H471K	CHIP C 470PF K		C483			CC73GCH1H050B	CHIP C 5.0PF B	K2,M2
C416,417			CK73GB1H103K	CHIP C 0.010UF K		C483			CC73GCH1H060B	CHIP C 6.0PF B	K3,M3
C418			CK73GB1H471K	CHIP C 470PF K		C483			CC73GCH1H4R5B	CHIP C 4.5PF B	K,M
C419			CC73GCH1H010B	CHIP C 1.0PF B		C484			CC73GCH1H180J	CHIP C 18PF J	K2,M2
C420			CK73GB1C104K	CHIP C 0.10UF K		C484			CC73GCH1H470J	CHIP C 47PF J	K,M,K3
C421			CC73GCH1H080B	CHIP C 8.0PF B		C484			CC73GCH1H470J	CHIP C 47PF J	M3
C422			CK73GB1H103K	CHIP C 0.010UF K		C485			CC73GCH1H030B	CHIP C 3.0PF B	K,M,K2
C424			CK73GB1H103K	CHIP C 0.010UF K		C485			CC73GCH1H030B	CHIP C 3.0PF B	M2
C425			CC73GCH1H060D	CHIP C 6.0PF D		C485			CC73GCH1H2R5B	CHIP C 2.5PF B	K3,M3
C426			CC73GCH1H020B	CHIP C 2.0PF B	K,M,K2	C487			CK73GB1H471K	CHIP C 470PF K	
C426			CC73GCH1H020B	CHIP C 2.0PF B	M2	C488			CC73GCH1H030B	CHIP C 3.0PF B	K,M,K3
C426			CC73GCH1H2R5B	CHIP C 2.5PF B	K3,M3	C488			CC73GCH1H030B	CHIP C 3.0PF B	M3
C427			CC73GCH1H100D	CHIP C 10PF D		C488			CC73GCH1H2R5B	CHIP C 2.5PF B	K2,M2
C428			CK73GB1H471K	CHIP C 470PF K		C489			CC73GCH1H180J	CHIP C 18PF J	K2,M2
C429			CC73GCH1H120J	CHIP C 12PF J		C489			CC73GCH1H470J	CHIP C 47PF J	K,M,K3
C430			CK73GB1H471K	CHIP C 470PF K		C489			CC73GCH1H470J	CHIP C 47PF J	M3
C431			CK73GB1H103K	CHIP C 0.010UF K		C490			CC73GCH1H010B	CHIP C 1.0PF B	K3,M3
C432			CK73GB1H471K	CHIP C 470PF K		C490			CC73GCH1H080B	CHIP C 8.0PF B	K2,M2
C434			CC73GCH1H050B	CHIP C 5.0PF B	K,M,K2	C491			CC73GCH1H050B	CHIP C 5.0PF B	K3,M3
C434			CC73GCH1H050B	CHIP C 5.0PF B	M2	C491			CC73GCH1H060B	CHIP C 6.0PF B	K,M

## PARTS LIST

### TX-RX UNIT (X57-6730-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
C491			CC73GCH1H330J	CHIP C 33PF J	K2,M2	C662,663			CK73GB1C104K	CHIP C 0.10UF K	
C492			CC73GCH1H030B	CHIP C 3.0PF B	K,M	C664			CK73GB1H102K	CHIP C 1000PF K	
C492			CC73GCH1H3R5B	CHIP C 3.5PF B	K2,M2	C665			CK73GB1H471K	CHIP C 470PF K	
C492			CC73GCH1H4R5B	CHIP C 4.5PF B	K3,M3	C667			CK73GB1H471K	CHIP C 470PF K	
C493			CK73GB1H471K	CHIP C 470PF K		C668			CK73GB1H103K	CHIP C 0.010UF K	
C494			CK73GB1H103K	CHIP C 0.010UF K		C669			CK73GB1H471K	CHIP C 470PF K	
C495			CC73GCH1H010C	CHIP C 1.0PF C		C671			CK73GB1C104K	CHIP C 0.10UF K	
C501			CK73GB1H471K	CHIP C 470PF K		C672,673			CK73GB1H392K	CHIP C 3900PF K	
C503			CC73HCH1H1R5B	CHIP C 1.5PF B	K2,M2	C674			CC73GCH1H221J	CHIP C 220PF J	
C504			CK73HB1H471K	CHIP C 470PF K		C675,676			C92-0804-05	CHIP-TAN 1.5UF 15WV	
C506			CK73GB1A105K	CHIP C 1.0UF K	K2,K3,M2	C677			CK73GB1H332K	CHIP C 3300PF K	
C506			CK73GB1A105K	CHIP C 1.0UF K	M3	C678			CK73FB1C474K	CHIP C 0.47UF K	
C506,507			CK73GB1A105K	CHIP C 1.0UF K	K,M	C679			CC73GCH1H101J	CHIP C 100PF J	
C507			CK73GB0J225K	CHIP C 2.2UF K	K2,K2,M2	C680			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C507			CK73GB0J225K	CHIP C 2.2UF K	M3	C681			CK73GB1C223K	CHIP C 0.022UF K	K2,K3,M2
C508			CK73GB1H471K	CHIP C 470PF K		C681			CK73GB1C223K	CHIP C 0.022UF K	M3
C601			CK73GB1A224K	CHIP C 0.22UF K		C681			CK73GB1C273K	CHIP C 0.027UF K	K,M
C605			C92-0632-05	CHIP-TAN 6.8UF 6.3WV		C684			CK73GB1C104K	CHIP C 0.10UF K	
C607			CK73GB1H103K	CHIP C 0.010UF K		C686			CK73GB1C473K	CHIP C 0.047UF K	
C608			CK73GB1H392K	CHIP C 3900PF K		C687			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C609			CK73GB1H103K	CHIP C 0.010UF K		C688			CC73GCH1H221J	CHIP C 220PF J	
C610			C92-0714-05	CHIP-TAN 4.7UF 6.3WV		C689			CK73GB1C223K	CHIP C 0.022UF K	
C611			CK73GB1A105K	CHIP C 1.0UF K		C690			CK73GB1H102K	CHIP C 1000PF K	
C613-615			CK73GB1C104K	CHIP C 0.10UF K		C691			C92-0665-05	TANTAL 100UF 6.3WV	
C616			CK73GB1H332K	CHIP C 3300PF K		C692			CC73GCH1H221J	CHIP C 220PF J	
C618			CK73GB1C104K	CHIP C 0.10UF K		C693			CK73GB1H471K	CHIP C 470PF K	
C619			CK73GB1H392K	CHIP C 3900PF K		C695			CK73GB1H471K	CHIP C 470PF K	
C621,622			C92-0714-05	CHIP-TAN 4.7UF 6.3WV		C696			CK73GB1A224K	CHIP C 0.22UF K	
C624			CK73GB1C104K	CHIP C 0.10UF K		C801			CK73GB1A105K	CHIP C 1.0UF K	
C625			CC73GCH1H680J	CHIP C 68PF J		C802			CK73GB1H103K	CHIP C 0.010UF K	
C627			CK73GB1E123K	CHIP C 0.012UF K		C803,804			CK73GB1A105K	CHIP C 1.0UF K	
C628			CK73GB1H222K	CHIP C 2200PF K		C805			CK73GB1H471K	CHIP C 470PF K	
C629			CK73GB1C104K	CHIP C 0.10UF K		C807			CK73GB1H471K	CHIP C 470PF K	
C630			CC73GCH1H101J	CHIP C 100PF J		C809			CK73GB1A105K	CHIP C 1.0UF K	
C631			CK73GB1E123K	CHIP C 0.012UF K		C811			CK73GB1C104K	CHIP C 0.10UF K	
C632			CK73GB1C104K	CHIP C 0.10UF K		C812			CK73GB1H103K	CHIP C 0.010UF K	
C633			CC73GCH1H020B	CHIP C 2.0PF B		C814			CK73GB1H103K	CHIP C 0.010UF K	
C634			CK73GB1H102K	CHIP C 1000PF K		C816,817			CK73GB1H471K	CHIP C 470PF K	
C635			CK73GB1C104K	CHIP C 0.10UF K		C818			CK73GB1H103K	CHIP C 0.010UF K	
C636			CK73GB1C683K	CHIP C 0.068UF K		C819			CK73GB1H471K	CHIP C 470PF K	
C637			CC73GCH1H101J	CHIP C 100PF J		C820,821			CK73GB1A105K	CHIP C 1.0UF K	
C638			CK73GB1H471K	CHIP C 470PF K		C822			CK73GB1H471K	CHIP C 470PF K	
C639			CC73GCH1H470J	CHIP C 47PF J		C823			CK73GB1H103K	CHIP C 0.010UF K	
C640			CC73GCH1H101J	CHIP C 100PF J		C825			C92-0713-05	CHIP-TAN 10UF 6.3WV	
C641,642			CK73GB1C104K	CHIP C 0.10UF K		C828			CK73GB1H471K	CHIP C 470PF K	
C643			CC73GCH1H680J	CHIP C 68PF J		C830			CK73GB1C104K	CHIP C 0.10UF K	
C645			CK73GB0J225K	CHIP C 2.2UF K		C833			CK73GB1A105K	CHIP C 1.0UF K	
C646			CK73GB1H821K	CHIP C 820PF K		C834			CK73GB1C104K	CHIP C 0.10UF K	
C647			CK73GB1H471K	CHIP C 470PF K		C835,836			CK73GB1A105K	CHIP C 1.0UF K	
C648,649			CK73GB1C104K	CHIP C 0.10UF K		C837			CK73GB1H471K	CHIP C 470PF K	
C650			C92-0713-05	CHIP-TAN 10UF 6.3WV		C840			CK73GB1H471K	CHIP C 470PF K	
C652			CK73GB1H471K	CHIP C 470PF K		C841			CK73GB1H103K	CHIP C 0.010UF K	
C653			CK73GB1A224K	CHIP C 0.22UF K		C842			CC73GCH1H150J	CHIP C 15PF J	
C654			CK73GB1H103K	CHIP C 0.010UF K		C843			CC73GCH1H030C	CHIP C 3.0PF C	
C655			CK73GB1C223K	CHIP C 0.022UF K		C845			CC73GCH1H150J	CHIP C 15PF J	
C656			CK73GB1C104K	CHIP C 0.10UF K		C846			CK73GB1H103K	CHIP C 0.010UF K	
C657			CC73GCH1H470J	CHIP C 47PF J		C847			C92-0712-05	CHIP-TAN 22UF 6.3WV	
C658			CK73GB1C104K	CHIP C 0.10UF K		C849			CK73GB1H471K	CHIP C 470PF K	
C659			CK73GB1H103K	CHIP C 0.010UF K		C850			CK73GB1H103K	CHIP C 0.010UF K	
C660			CK73GB1A105K	CHIP C 1.0UF K		C852,853			CK73GB1H471K	CHIP C 470PF K	

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TX-RX UNIT (X57-6730-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
C854			CK73GB1H103K	CHIP C 0.010UF K		L404			L40-2785-92	SMALL FIXED INDUCTOR(270NH)	
C861			CK73FB1A475K	CHIP C 4.7UF K		L405			L40-2275-92	SMALL FIXED INDUCTOR(22NH)	K2,M2
CTC1,2			C05-0384-05	CERAMIC TRIMMER CAP(10PF)		L405			L40-2775-92	SMALL FIXED INDUCTOR(27NH)	K,M
9	3B		E37-1085-05	FLAT CABLE		L405			L40-3375-92	SMALL FIXED INDUCTOR(33NH)	K3,M3
CN801			E40-5932-05	PIN ASSY SOCKET		L407-409			L41-6868-14	SMALL FIXED INDUCTOR	K,M,K2
J601			E11-0457-05	PHONE JACK (2.5/3.5)		L407-409			L41-6868-14	SMALL FIXED INDUCTOR	M2
F801		*	F20-3352-04	INSULATING SHEET		L407-409			L41-8268-14	SMALL FIXED INDUCTOR	K3,M3
			F53-0190-05	FUSE		L410			L92-0138-05	FERRITE CHIP	
			G11-4300-04	RUBBER CUSHION		L411			L41-2285-03	SMALL FIXED INDUCTOR	
		*	J99-0374-04	ADHESIVE TAPE		L413,414			L41-6868-14	SMALL FIXED INDUCTOR	K,M,K2
CD401			L79-1582-05	TUNING COIL		L413,414			L41-6868-14	SMALL FIXED INDUCTOR	M2
CF401		*	L72-1015-05	CERAMIC FILTER		L413,414			L41-8268-14	SMALL FIXED INDUCTOR	K3,M3
L1			L40-4795-85	SMALL FIXED INDUCTOR(4.7UH)		L415			L41-3978-03	SMALL FIXED INDUCTOR	K2,M2
L3			L40-1581-86	SMALL FIXED INDUCTOR(0.15UH)		L415			L41-4778-03	SMALL FIXED INDUCTOR	K,M,K3
L5			L92-0138-05	FERRITE CHIP		L415			L41-4778-03	SMALL FIXED INDUCTOR	M3
L6			L40-1085-92	SMALL FIXED INDUCTOR(100NH)		L416			L40-5681-86	SMALL FIXED INDUCTOR(0.56UH)	
L7			L92-0138-05	FERRITE CHIP		L601			L92-0140-05	FERRITE CHIP	
L8			L40-1885-92	SMALL FIXED INDUCTOR(180NH)		L602			L92-0149-05	FERRITE CHIP	
L9			L40-2785-92	SMALL FIXED INDUCTOR(270NH)		L801			L92-0149-05	FERRITE CHIP	
L10			L92-0163-05	BEADS CORE		L802			L92-0140-05	FERRITE CHIP	
L11			L40-1885-92	SMALL FIXED INDUCTOR(180NH)		L803-807			L92-0138-05	FERRITE CHIP	
L12			L40-2785-92	SMALL FIXED INDUCTOR(270NH)	K2,M2	X1			L77-1932-05	TCXO (16.8MHZ)	
L14			L41-1278-14	SMALL FIXED INDUCTOR	K,M	X801			L77-1933-05	CRYSTAL RESONATOR(7.3728MHZ)	
L14			L41-1578-14	SMALL FIXED INDUCTOR	K3,M3	XF401			L71-0617-15	MCF (49.95MHZ)	
L14			L41-1878-14	SMALL FIXED INDUCTOR		CP1,2			RK75HA1J473J	CHIP-COM 47K J 1/16W	
L15			L41-1578-14	SMALL FIXED INDUCTOR	K2,M2	CP3,4			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
L15			L41-1878-14	SMALL FIXED INDUCTOR	K,M	CP801,802			RK75HA1J473J	CHIP-COM 47K J 1/16W	
L15			L41-2278-14	SMALL FIXED INDUCTOR	K3,M3	CP803-805			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
L16			L40-1275-92	SMALL FIXED INDUCTOR(12NH)		CP806			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
L17,18			L41-2285-03	SMALL FIXED INDUCTOR					RK75HA1J473J	CHIP-COM 47K J 1/16W	
L19			L40-1875-92	SMALL FIXED INDUCTOR(18NH)		CP807			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
L20,21			L40-3391-86	SMALL FIXED INDUCTOR(3.3UH)		CP808			RK75HA1J472J	CHIP-COM 4.7K J 1/16W	
L22			L92-0163-05	BEADS CORE		CP809-818			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
L23			L40-1875-92	SMALL FIXED INDUCTOR(18NH)	K2,M2	R1			RK73GB1J223J	CHIP R 22K J 1/16W	
L23			L40-2275-92	SMALL FIXED INDUCTOR(22NH)	K,M	R2			RK73GB1J103J	CHIP R 10K J 1/16W	
L23			L40-2775-92	SMALL FIXED INDUCTOR(27NH)	K3,M3	R3			RK73GB1J124J	CHIP R 120K J 1/16W	K,M
L25			L40-2275-92	SMALL FIXED INDUCTOR(22NH)		R3			RK73GB1J474J	CHIP R 470K J 1/16W	K2,K3,M2
L205			L40-1875-92	SMALL FIXED INDUCTOR(18NH)		R3			RK73GB1J474J	CHIP R 470K J 1/16W	M3
L207			L40-1875-92	SMALL FIXED INDUCTOR(18NH)		R4			R92-1252-05	CHIP R 0 OHM J 1/16W	
L208			L92-0138-05	FERRITE CHIP		R5			RK73GB1J224J	CHIP R 220K J 1/16W	
L209			L40-8265-92	SMALL FIXED INDUCTOR(8.2NH)		R6			RK73GB1J473J	CHIP R 47K J 1/16W	
L213			L40-8265-92	SMALL FIXED INDUCTOR(8.2NH)		R7			R92-1252-05	CHIP R 0 OHM J 1/16W	K,M
L216			L40-1575-54	SMALL FIXED INDUCTOR(15NH)		R7,8			R92-1252-05	CHIP R 0 OHM J 1/16W	K2,K3,M2
L217			L92-0149-05	FERRITE CHIP		R7,8			R92-1252-05	CHIP R 0 OHM J 1/16W	M3
L218			L40-1263-92	SMALL FIXED INDUCTOR(1.2NH)	K,M1	R9			RK73GB1J393J	CHIP R 39K J 1/16W	
L218			L40-1563-92	SMALL FIXED INDUCTOR(1.5NH)	K3,M3	R12			RK73GB1J101J	CHIP R 100 J 1/16W	
L220			L34-4602-05	AIR-CORE COIL		R13			R92-1252-05	CHIP R 0 OHM J 1/16W	
L221			L92-0149-05	FERRITE CHIP		R14			RK73GB1J222J	CHIP R 2.2K J 1/16W	
L222			L40-2285-54	SMALL FIXED INDUCTOR(220NH)		R15			R92-1252-05	CHIP R 0 OHM J 1/16W	
L223			L34-4572-05	AIR-CORE COIL		R16			RK73GB1J102J	CHIP R 1.0K J 1/16W	
L224-226			L34-4564-05	AIR-CORE COIL		R17			RK73GB1J101J	CHIP R 100 J 1/16W	
L227			L40-1092-81	SMALL FIXED INDUCTOR		R18			RK73GB1J474J	CHIP R 470K J 1/16W	
L228			L41-3369-16	SMALL FIXED INDUCTOR	K3,M3	R19			RK73GB1J100J	CHIP R 10 J 1/16W	
L401			L92-0138-05	FERRITE CHIP		R20,21			R92-1252-05	CHIP R 0 OHM J 1/16W	
L402			L40-1875-92	SMALL FIXED INDUCTOR(18NH)		R22			RK73GB1J122J	CHIP R 1.2K J 1/16W	K2,K3,M2
L403			L40-5685-85	SMALL FIXED INDUCTOR(0.56UH)		R22			RK73GB1J122J	CHIP R 1.2K J 1/16W	M3
						R22			RK73GB1J821J	CHIP R 820 J 1/16W	K,M
						R23			RK73GB1J471J	CHIP R 470 J 1/16W	K3,M3
						R23,24			RK73GB1J681J	CHIP R 680 J 1/16W	K,M,K2
						R23,24			RK73GB1J681J	CHIP R 680 J 1/16W	M2



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### TX-RX UNIT (X57-6730-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
R24			RK73GB1J102J	CHIP R 1.0K J 1/16W	K3,M3	R258			R92-1252-05	CHIP R 0 OHM J 1/16W	K2,M2
R25			RK73GB1J103J	CHIP R 10K J 1/16W		R259			RK73GB1J473J	CHIP R 47K J 1/16W	K2,M2
R26			RK73GB1J223J	CHIP R 22K J 1/16W		R259,260			RK73GB1J473J	CHIP R 47K J 1/16W	K,M
R27			RK73GB1J103J	CHIP R 10K J 1/16W		R259,260			RK73GB1J683J	CHIP R 68K J 1/16W	K3,M3
R28			RK73GB1J393J	CHIP R 39K J 1/16W		R260			RK73GB1J823J	CHIP R 82K J 1/16W	K2,M2
R29			RK73GB1J104J	CHIP R 100K J 1/16W	K,M	R261			RK73EB2ER39K	CHIP R 0.39 K 1/4W	
R29			RK73GB1J154J	CHIP R 150K J 1/16W	K2,M2	R262			R92-0670-05	CHIP R 0 OHM	
R29			RK73GB1J823J	CHIP R 82K J 1/16W	K3,M3	R263			RK73GB1J101J	CHIP R 100 J 1/16W	
R30			RK73HB1J123J	CHIP R 12K J 1/16W	K3,M3	R264,265			RK73GH1J154D	CHIP R 150K D 1/16W	
R30			RK73HB1J333J	CHIP R 33K J 1/16W	K,M,K2	R267-270			RK73GH1J154D	CHIP R 150K D 1/16W	
R30			RK73HB1J333J	CHIP R 33K J 1/16W	M2	R271			RK73GB1J103J	CHIP R 10K J 1/16W	
R31			RK73GB1J560J	CHIP R 56 J 1/16W		R272			RK73GB1J473J	CHIP R 47K J 1/16W	
R32			RK73HB1J153J	CHIP R 15K J 1/16W		R273			R92-1252-05	CHIP R 0 OHM J 1/16W	
R33			RK73HB1J473J	CHIP R 47K J 1/16W		R274			RK73GB1J105J	CHIP R 1.0M J 1/16W	
R34			RK73GB1J473J	CHIP R 47K J 1/16W		R275			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R35			RK73GB1J220J	CHIP R 22 J 1/16W		R276,277			RK73GB1J104J	CHIP R 100K J 1/16W	
R36			RK73HB1J100J	CHIP R 10 J 1/16W		R278			R92-0670-05	CHIP R 0 OHM K,M,K2	
R37			RK73HB1J181J	CHIP R 180 J 1/16W		R278			R92-0670-05	CHIP R 0 OHM M2	
R38			RK73HB1J100J	CHIP R 10 J 1/16W		R279,280			RK73GB1J271J	CHIP R 270 J 1/16W	
R39			RK73HB1J151J	CHIP R 150 J 1/16W		R281,282			R92-1252-05	CHIP R 0 OHM J 1/16W	
R40			RK73GB1J102J	CHIP R 1.0K J 1/16W		R401			RK73GB1J100J	CHIP R 10 J 1/16W	
R41			RK73GB1J154J	CHIP R 150K J 1/16W		R403			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R43			RK73HB1J154J	CHIP R 150K J 1/16W		R404			RK73GB1J334J	CHIP R 330K J 1/16W	
R44			RK73HB1J472J	CHIP R 4.7K J 1/16W		R406			RK73GB1J332J	CHIP R 3.3K J 1/16W	
R46			RK73HB1J101J	CHIP R 100 J 1/16W		R407			RK73GB1J474J	CHIP R 470K J 1/16W	
R47			RK73HB1J682J	CHIP R 6.8K J 1/16W		R408			RK73GB1J332J	CHIP R 3.3K J 1/16W	
R48			RK73HB1J103J	CHIP R 10K J 1/16W		R409			RK73GB1J392J	CHIP R 3.9K J 1/16W	
R49			RK73G1J333D	CHIP R 33K D 1/16W		R412			RK73GB1J122J	CHIP R 1.2K J 1/16W	K,M
R50			RK73HB1J331J	CHIP R 330 J 1/16W		R412			RK73GB1J331J	CHIP R 330 J 1/16W	K2,K3,M2
R51			RK73G1J104D	CHIP R 100K D 1/16W		R412			RK73GB1J331J	CHIP R 330 J 1/16W	M3
R55			RK73HB1J222J	CHIP R 2.2K J 1/16W		R413			RK73GB1J124J	CHIP R 120K J 1/16W	
R56			RK73HB1J470J	CHIP R 47 J 1/16W		R414			RK73GB1J681J	CHIP R 680 J 1/16W	
R57			R92-1368-05	CHIP R 0 OHM		R415			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R58			RK73GB1J472J	CHIP R 4.7K J 1/16W		R416			RK73GB1J101J	CHIP R 100 J 1/16W	
R202			RK73GB1J472J	CHIP R 4.7K J 1/16W		R417			RK73GB1J470J	CHIP R 47 J 1/16W	
R203			R92-1252-05	CHIP R 0 OHM J 1/16W		R419			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R204			RK73GB1J153J	CHIP R 15K J 1/16W		R420			RK73GB1J151J	CHIP R 150 J 1/16W	
R207			RK73GB1J333J	CHIP R 33K J 1/16W		R422			RK73GB1J104J	CHIP R 100K J 1/16W	
R215			R92-1252-05	CHIP R 0 OHM J 1/16W		R423			RK73GB1J563J	CHIP R 56K J 1/16W	
R222			RK73GB1J331J	CHIP R 330 J 1/16W		R424			RK73HB1J104J	CHIP R 100K J 1/16W	
R224			RK73GB1J220J	CHIP R 22 J 1/16W		R425			RK73GB1J563J	CHIP R 56K J 1/16W	
R229			RK73GB1J331J	CHIP R 330 J 1/16W		R427			R92-1252-05	CHIP R 0 OHM J 1/16W	
R230			RK73GB1J180J	CHIP R 18 J 1/16W		R430,431			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R231,232			RK73GB1J331J	CHIP R 330 J 1/16W		R438			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R234			RK73GB1J103J	CHIP R 10K J 1/16W		R440			RK73HB1J221J	CHIP R 220 J 1/16W	
R235			RK73GB1J101J	CHIP R 100 J 1/16W		R441			RK73HB1J101J	CHIP R 100 J 1/16W	K,M,K3
R237			RK73GB1J123J	CHIP R 12K J 1/16W	K3,M3	R441			RK73HB1J101J	CHIP R 100 J 1/16W	M3
R237			RK73GB1J223J	CHIP R 22K J 1/16W	K,M,K2	R441			RK73HB1J680J	CHIP R 68 J 1/16W	K2,M2
R237			RK73GB1J223J	CHIP R 22K J 1/16W	M2	R457			RK73HB1J104J	CHIP R 100K J 1/16W	
R242			RK73GB1J124J	CHIP R 120K J 1/16W	K,M,K2	R459			RK73GB1J104J	CHIP R 100K J 1/16W	
R242			RK73GB1J124J	CHIP R 120K J 1/16W	M2	R460			RK73GB1J683J	CHIP R 68K J 1/16W	
R242			RK73GB1J563J	CHIP R 56K J 1/16W	K3,M3	R461			R92-1252-05	CHIP R 0 OHM J 1/16W	
R247			RK73GB1J473J	CHIP R 47K J 1/16W	K,M,K3	R462,463			RK73GB1J105J	CHIP R 1.0M J 1/16W	
R247			RK73GB1J473J	CHIP R 47K J 1/16W	M3	R464			R92-0670-05	CHIP R 0 OHM	
R247			RK73GB1J683J	CHIP R 68K J 1/16W	K2,M2	R465			RK73GB1J332J	CHIP R 3.3K J 1/16W	
R251			R92-1252-05	CHIP R 0 OHM J 1/16W		R469			RK73GB1J221J	CHIP R 220 J 1/16W	
R252			RK73GB1J220J	CHIP R 22 J 1/16W		R471			RK73GB1J104J	CHIP R 100K J 1/16W	
R253			R92-1252-05	CHIP R 0 OHM J 1/16W		R474			RK73GB1J103J	CHIP R 10K J 1/16W	K,M,K3
R255			R92-1252-05	CHIP R 0 OHM J 1/16W		R474			RK73GB1J103J	CHIP R 10K J 1/16W	M3
R256,257			RK73EB2ER39K	CHIP R 0.39 K 1/4W		R474			RK73GB1J223J	CHIP R 22K J 1/16W	K2,M2

## PARTS LIST

TX-RX UNIT (X57-6730-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
R475			RK73GB1J104J	CHIP R 100K J 1/16W	K2,M2	R673			RK73GB1J272J	CHIP R 2.7K J 1/16W	
R475			RK73GB1J473J	CHIP R 47K J 1/16W	K,M	R674			R92-1252-05	CHIP R 0 OHM J 1/16W	
R475			RK73GB1J683J	CHIP R 68K J 1/16W	K3,M3	R675			RK73GB1J822J	CHIP R 8.2K J 1/16W	
R476			RK73GB1J103J	CHIP R 10K J 1/16W		R676			RK73GB1J151J	CHIP R 150 J 1/16W	
R601			R92-1252-05	CHIP R 0 OHM J 1/16W		R677-679			R92-1252-05	CHIP R 0 OHM J 1/16W	
R602			RK73GB1J124J	CHIP R 120K J 1/16W	K2,K3,M2	R681			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R602			RK73GB1J124J	CHIP R 120K J 1/16W	M3	R682			RK73GB1J100J	CHIP R 10 J 1/16W	
R602			RK73GB1J184J	CHIP R 180K J 1/16W	K,M	R683			RK73GB1J474J	CHIP R 470K J 1/16W	
R603			R92-1252-05	CHIP R 0 OHM J 1/16W		R684			RK73GB1J182J	CHIP R 1.8K J 1/16W	
R604			RK73GB1J184J	CHIP R 180K J 1/16W		R686			RK73GB1J471J	CHIP R 470 J 1/16W	
R607-609			RK73GB1J103J	CHIP R 10K J 1/16W		R687			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R610			RK73GB1J472J	CHIP R 4.7K J 1/16W		R688,689			RK73GB1J101J	CHIP R 100 J 1/16W	
R612			RK73GB1J273J	CHIP R 27K J 1/16W		R691			RK73GB1J333J	CHIP R 33K J 1/16W	
R613			RK73GB1J824J	CHIP R 820K J 1/16W		R692			R92-1252-05	CHIP R 0 OHM J 1/16W	
R615			RK73GB1J334J	CHIP R 330K J 1/16W		R693			RK73GB1J273J	CHIP R 27K J 1/16W	
R616			R92-1252-05	CHIP R 0 OHM J 1/16W		R694,695			R92-1252-05	CHIP R 0 OHM J 1/16W	
R617			RK73GB1J473J	CHIP R 47K J 1/16W		R696			RK73GB1J103J	CHIP R 10K J 1/16W	
R618			RK73G1J364D	CHIP R 360K D 1/16W		R697			R92-1252-05	CHIP R 0 OHM J 1/16W	
R621			RK73GB1J473J	CHIP R 47K J 1/16W		R698			RK73GB1J152J	CHIP R 1.5K J 1/16W	
R622			RK73GB1J684J	CHIP R 680K J 1/16W		R802			RK73GB1J101J	CHIP R 100 J 1/16W	
R623			RK73GB1J274G	CHIP R 270K G 1/16W		R803,804			R92-1252-05	CHIP R 0 OHM J 1/16W	
R624			RK73GB1J562J	CHIP R 5.6K J 1/16W		R805			RK73GB1J153J	CHIP R 15K J 1/16W	
R625			RK73GB1J563J	CHIP R 56K J 1/16W		R807			RK73GB1J103J	CHIP R 10K J 1/16W	
R626,627			RK73GB1J184J	CHIP R 180K J 1/16W		R808			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R628			RK73GB1J224J	CHIP R 220K J 1/16W		R809			RK73GB1J272J	CHIP R 2.7K J 1/16W	
R629			RK73GB1J394J	CHIP R 390K J 1/16W		R810			RK73GB1J334J	CHIP R 330K J 1/16W	
R630			RK73GB1J684J	CHIP R 680K J 1/16W		R811			RK73GB1J332J	CHIP R 3.3K J 1/16W	
R631			RK73GB1J394J	CHIP R 390K J 1/16W		R812			RK73GB1J334J	CHIP R 330K J 1/16W	
R632			RK73GB1J823J	CHIP R 82K J 1/16W		R813			RK73GB1J332J	CHIP R 3.3K J 1/16W	
R633			RK73GB1J223J	CHIP R 22K J 1/16W		R814			RK73GB1J153J	CHIP R 15K J 1/16W	
R634			RK73GB1J153J	CHIP R 15K J 1/16W		R815			R92-1252-05	CHIP R 0 OHM J 1/16W	
R636			RK73GB1J474J	CHIP R 470K J 1/16W		R816			RK73GB1J224J	CHIP R 220K J 1/16W	
R637			RK73GB1J394J	CHIP R 390K J 1/16W		R817			RK73GB1J272J	CHIP R 2.7K J 1/16W	
R639			RK73GB1J393J	CHIP R 39K J 1/16W		R818			RK73GB1J821J	CHIP R 820 J 1/16W	
R640			RK73GB1J184J	CHIP R 180K J 1/16W		R819			RK73GB1J103J	CHIP R 10K J 1/16W	
R641,642			RK73GB1J124J	CHIP R 120K J 1/16W		R820			RK73GB1J561J	CHIP R 560 J 1/16W	
R643			RK73GB1J184J	CHIP R 180K J 1/16W		R821			RK73GB1J331J	CHIP R 330 J 1/16W	
R644,645			RK73GB1J472J	CHIP R 4.7K J 1/16W		R823			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R646			RK73GB1J823J	CHIP R 22K J 1/16W		R824			RK73GB1J183J	CHIP R 18K J 1/16W	
R647			R92-1252-05	CHIP R 0 OHM J 1/16W		R825			RK73GB1J473J	CHIP R 47K J 1/16W	
R648			RK73GB1J103J	CHIP R 10K J 1/16W		R827			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R649			RK73GB1J104J	CHIP R 100K J 1/16W		R828			RK73GB1J332J	CHIP R 3.3K J 1/16W	
R650			RK73GB1J102J	CHIP R 1.0K J 1/16W		R829			RK73GB1J272J	CHIP R 2.7K J 1/16W	
R651			R92-1252-05	CHIP R 0 OHM J 1/16W		R830			RK73GB1J821J	CHIP R 820 J 1/16W	
R652			RK73GB1J273J	CHIP R 27K J 1/16W		R833,834			RK73GH1J474D	CHIP R 470K D 1/16W	
R653			RK73GB1J392J	CHIP R 3.9K J 1/16W		R835,836			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R654			RK73GB1J103J	CHIP R 10K J 1/16W		R839,840			RK73GB1J473J	CHIP R 47K J 1/16W	
R655,656			RK73GB1J105J	CHIP R 1.0M J 1/16W		R841			R92-1252-05	CHIP R 0 OHM J 1/16W	
R657			RK73GB1J332J	CHIP R 3.3K J 1/16W		R842			R92-1368-05	CHIP R 0 OHM	
R658			RK73GB1J103J	CHIP R 10K J 1/16W		R844			RK73GB1J473J	CHIP R 47K J 1/16W	
R660			RK73GB1J154J	CHIP R 150K J 1/16W		R845			R92-1368-05	CHIP R 0 OHM	
R661			RK73GB1J684J	CHIP R 680K J 1/16W		R847,848			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R665			R92-1252-05	CHIP R 0 OHM J 1/16W		R849			R92-1252-05	CHIP R 0 OHM J 1/16W	
R666			RK73GB1J822J	CHIP R 8.2K J 1/16W		R851			R92-1368-05	CHIP R 0 OHM	
R667			RK73GB1J104J	CHIP R 100K J 1/16W		R852			RK73HB1J473J	CHIP R 47K J 1/16W	
R668			RK73GB1J473J	CHIP R 47K J 1/16W		R854			RK73GB1J680J	CHIP R 68 J 1/16W	
R669			RK73GB1J222J	CHIP R 2.2K J 1/16W		R855-857			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R670			RK73GB1J102J	CHIP R 1.0K J 1/16W		R858			R92-1368-05	CHIP R 0 OHM	
R671			RK73GB1J683J	CHIP R 68K J 1/16W		R859			RK73GB1J104J	CHIP R 100K J 1/16W	
R672			RK73GB1J102J	CHIP R 1.0K J 1/16W							

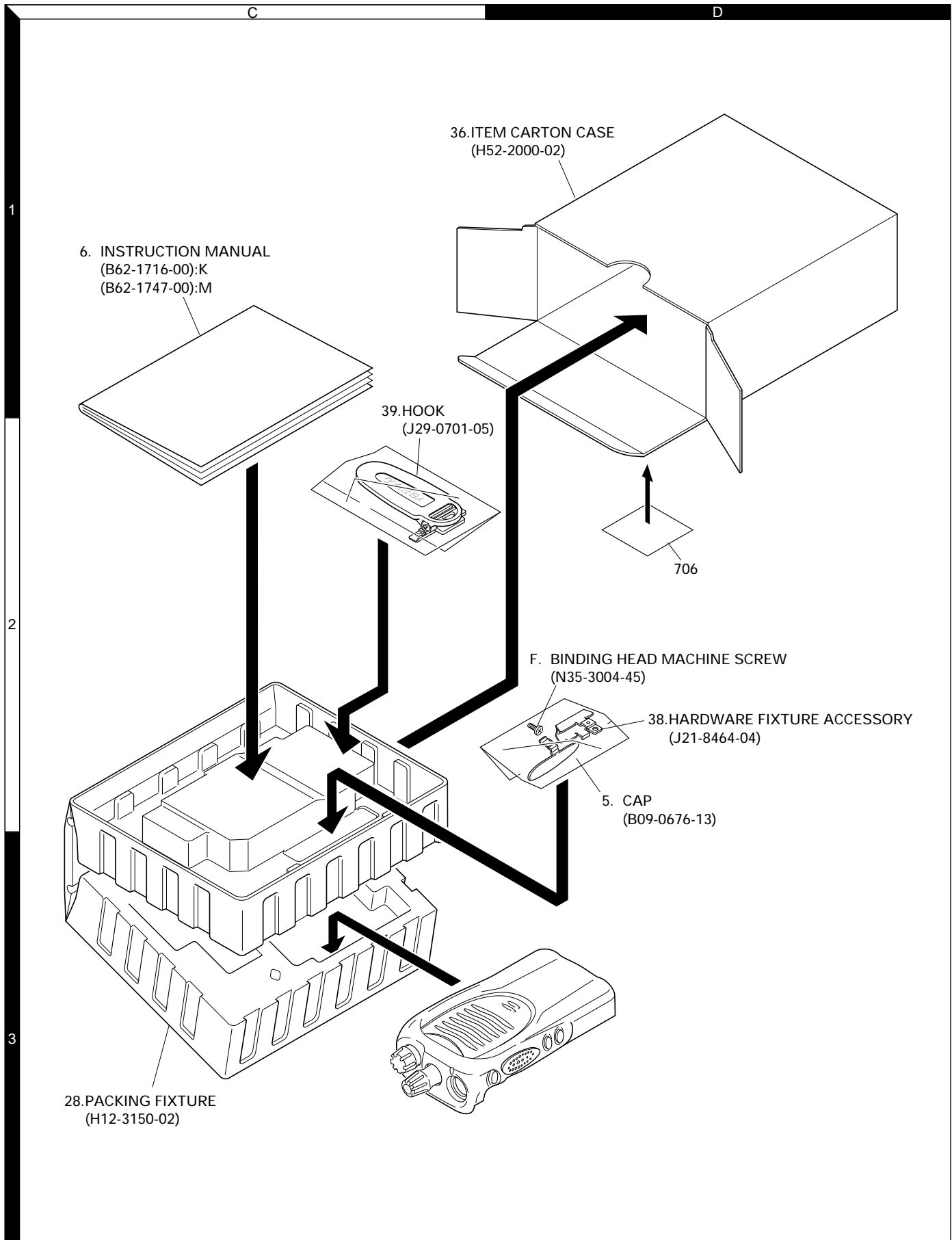
## PARTS LIST

### TX-RX UNIT (X57-6730-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
VR1			R12-7491-05	TRIMMING POT.(68K)		Q603			DTC144EE	DIGITAL TRANSISTOR	
S802-805			S70-0457-05	TACT SWITCH		Q604			2SA1362(GR)	TRANSISTOR	
MIC60			T91-0543-05	MIC ELEMENT		Q605			2SC4116(Y)	TRANSISTOR	
D3,4			1SV325	VARIABLE CAPACITANCE DIODE		Q606			2SA1586(Y,GR)	TRANSISTOR	
D7			1SV325	VARIABLE CAPACITANCE DIODE		Q607			DTC144EE	DIGITAL TRANSISTOR	
D9			1SV325	VARIABLE CAPACITANCE DIODE		Q608			2SK1588	FET	
D10			1SV278	VARIABLE CAPACITANCE DIODE		Q801			UMG3N	TRANSISTOR	
D11			HSC277	DIODE		Q802			UPA672T	FET	
D201			HSC277	DIODE		Q803			FP210	TRANSISTOR	
D203			HZU5CLL	ZENER DIODE		Q804			UMG3N	TRANSISTOR	
D204			HVC131	DIODE		Q805			UMG9N	TRANSISTOR	
D206			HVC131	DIODE		Q806			KTA1298(Y)	TRANSISTOR	
D208			HVC131	DIODE		Q807			UMG3N	TRANSISTOR	
D212			HVC131	DIODE		Q808,809			DTA123JE	DIGITAL TRANSISTOR	
D401			HSC277	DIODE		Q810			2SK1824	FET	
D402-406			HVC369B	VARIABLE CAPACITANCE DIODE		TH1			B57331V2104J	THERMISTOR	
D407			RB521S-30	DIODE		TH600			B57331V2104J	THERMISTOR	
D603-606			RB706F-40	DIODE							
D801			RB521S-30	DIODE							
D805			1SR154-400	DIODE							
IC1			MB15E03SL	MOS IC							
IC201			TA75W01FU	MOS IC							
IC401			TA31136FN	MOS IC							
IC601			AQUA	MOS IC							
IC602			TC75S51FE	MOS IC							
IC603			TC75W51FU	MOS IC							
IC604			TC75S51FE	MOS IC							
IC605			TA7368F	MOS IC							
IC801			XC6204B502MR	MOS IC							
IC802			PST9134NR	MOS IC							
IC803			XC61CN5002NR	MOS IC							
IC804			CAT24WC64JI	ROM IC							
IC805			30622MCA-7G7GP	MPU							
IC806			TC7W74FU	MOS IC							
Q1			DTC144EE	DIGITAL TRANSISTOR							
Q2,3			UMG9N	TRANSISTOR							
Q4			KTC4082	TRANSISTOR							
Q5,6			2SK508NV(K52)	FET							
Q7			2SC5108(Y)	TRANSISTOR							
Q8			2SJ347	FET							
Q9			2SC5108(Y)	TRANSISTOR							
Q10			2SC4617(S)	TRANSISTOR							
Q11			2SC5108(Y)	TRANSISTOR							
Q12			2SJ347	FET							
Q205			2SC5108(Y)	TRANSISTOR							
Q206			2SK3077	FET							
Q207			2SK2596	FET							
Q208			DTC114EE	DIGITAL TRANSISTOR							
Q209			2SK879(GR)	FET							
Q210			DTC114EE	DIGITAL TRANSISTOR							
Q211			2SK3476	FET							
Q212			2SK1824	FET							
Q213			DTA144EE	DIGITAL TRANSISTOR							
Q401			DTA144EE	DIGITAL TRANSISTOR							
Q402			2SC4649(N,P)	TRANSISTOR							
Q403,404			3SK318	FET							
Q407,408			2SK1824	FET							
Q601,602			2SK1824	FET							



## PACKING



# ADJUSTMENT

## Test Equipment Required for Alignment

Test Equipment	Major Specifications	
1. Standard Signal Generator (SSG)	Frequency Range Modulation Output	400 ~ 512MHz Frequency modulation and external modulation. -127dBm/0.1μV to greater than -47dBm/1mV
2. Power Meter	Input Impedance Operation Frequency Measurement Range	50Ω. 400 ~ 512MHz Vicinity of 10W
3. Deviation Meter	Frequency Range	400 ~ 512MHz
4. Digital Volt Meter (DVM)	Measuring Range Input Impedance	10mV to 10V DC High input impedance for minimum circuit loading.
5. Oscilloscope		DC through 30MHz.
6. High Sensitivity Frequency Counter	Frequency Range Frequency Stability	10Hz to 1000MHz. 0.2ppm or less.
7. Ammeter		5A.
8. AF Volt Meter (AF VTVM)	Frequency Range Voltage Range	50Hz to 10kHz. 1mV to 10V.
9. Audio Generator (AG)	Frequency Range Output	50Hz to 5kHz or more. 0 to 1V.
10. Distortion Meter	Capability Input Level	3% or less at 1kHz. 50mV to 10Vrms.
11. 8Ω Dummy Load		Approx. 8Ω, 3W.
12. Regulated Power Supply		5V to 10V, approx. 3A Useful if ammeter equipped.

## ■ The following parts are required for adjustment

### 1. Antenna connector adapter

The antenna connector of this radio uses an SMA terminal.

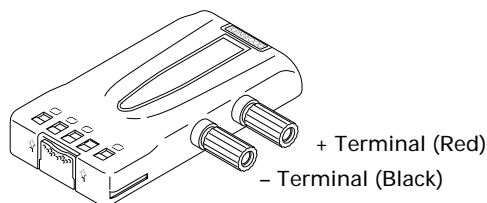
Use an antenna connector adapter [SMA(f) – BNC(f) or SMA(f) – N(f)] for adjustment. (The adapter is not provided as an option, so buy a commercially-available one.)

### 2. Repair Jig (Chassis)

Use jig (part No.: A10-4082-02) for repairing the TK-3160. Place the TX-RX unit on the jig and fit it with screws.

The jig facilitates the voltage check and protects the final amplifier FET when the voltage on the flow side of the TX-RX unit is checked during repairs.

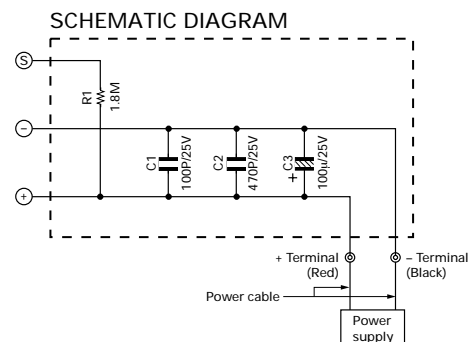
### 3. Battery Jig (W05-0909-00)



Connect the power cable properly between the battery jig installed in the transceiver and the power supply, and be sure output voltage and the power supply polarity prior to switching the power supply ON, otherwise over voltage and reverse connection may damage the transceiver, or the power supply or both.

When using the battery jig in user mode, the transceiver assumes that a lithium-ion battery pack is attached to the transceiver. In adjustment mode, battery type detection is not performed. Refer to page 10 for details.

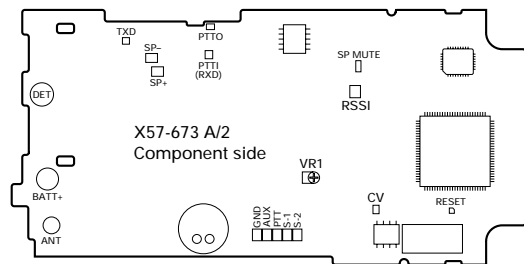
**Note:** When using the battery jig, you must measure the voltage at the terminals of the battery jig. Otherwise, a slight voltage drop may occur within the power cable, between the power supply and the battery jig, especially while the transceiver transmits.



## ADJUSTMENT

### Adjustment points TX-RX unit (X57-673)

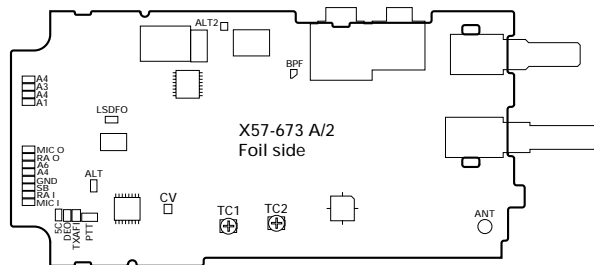
#### Component side view



VR1 : Frequency adjustment

RSSI : Band-pass wave form test point

#### Foil Side View



TC1 : Transmit lock voltage adjustment

TC2 : Receive lock voltage adjustment

CV : Lock voltage adjustment terminal.

**Fig. 1 Adjustment points**

#### ■ Frequency and signalling

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

#### Frequency (MHz) K, M type

Channel No.	RX Frequency	TX Frequency
1	470.050	470.100
2	450.050	450.100
3	489.950	489.900
4	470.000	470.000
5	470.200	470.200
6	470.400	470.400
7~16	—	—

#### Frequency (MHz) K2, M2 type

Channel No.	RX Frequency	TX Frequency
1	491.050	491.100
2	470.050	470.100
3	511.950	511.900
4	491.000	491.000
5	491.200	491.200
6	491.400	491.400
7~16	—	—

#### Frequency (MHz) K3, M3 type

Channel No.	RX Frequency	TX Frequency
1	415.050	415.100
2	400.050	400.100
3	429.950	429.900
4	415.000	415.000
5	415.200	415.200
6	415.400	415.400
7~16	—	—

### Signalling

Signalling No.	RX	TX
1	None	None
2	None	100Hz Square Wave
3	QT 67.0Hz	QT 67.0Hz
4	QT 151.4Hz	QT 151.4Hz
5	QT 210.7Hz	QT 210.7Hz
6	QT 254.1Hz	QT 254.1Hz
7	DOT D023N	DOT D023N
8	DOT D754I	DOT D754I
9	DTMF 159D	DTMF 159D
10	None	DTMF tone 9
11	2 Tone: A:321.7Hz B:928.1Hz	2 Tone: A:321.7Hz B:928.1Hz
12	None	Single Tone:1000Hz
13	None	MSK
14	MSK Code	MSK Code

#### • Preparations for tuning the transceiver

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

Whenever the transmitter is tuned, 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.

#### Adjustment Frequency (K, M type)

TEST CH	K,M	
	RX	TX
Center	470.050MHz	470.100MHz
Low	450.050MHz	450.100MHz
High	489.950MHz	489.900MHz
Low'	460.050MHz	460.100MHz
High'	480.050MHz	480.100MHz
	470.000MHz	470.000MHz
	470.200MHz	470.200MHz
	470.400MHz	470.400MHz

#### Adjustment Frequency (K2, M2 type)

TEST CH	K2,M2	
	RX	TX
Center	491.050MHz	491.100MHz
Low	470.050MHz	470.100MHz
High	511.950MHz	511.900MHz
Low'	480.550MHz	480.600MHz
High'	501.550MHz	501.600MHz
	491.000MHz	491.000MHz
	491.200MHz	491.200MHz
	491.400MHz	491.400MHz

#### Adjustment Frequency (K3, M3 type)

TEST CH	K3,M3	
	RX	TX
Center	415.050MHz	415.100MHz
Low	400.050MHz	400.100MHz
High	429.950MHz	429.900MHz
Low'	407.550MHz	407.600MHz
High'	422.550MHz	422.600MHz
	415.000MHz	415.000MHz
	415.200MHz	415.200MHz
	415.400MHz	415.400MHz

## ADJUSTMENT

## Common Section


Item	Condition	Measurement		Adjustment		Specifications/ Remark
		Test equipment	Terminal	Parts	Method	
1.Setting	1) BATT terminal vorage:7.5V 2) SSG standard modulation [Wide] MOD:1kHz,DEV:3kHz [Narrow] MOD:1kHz,DEV:1.5kHz					
2.VCO lock voltage RX	1) CH:High	Power meter DVM	ANT CV	TC2	ADJ	3.8V±0.2V(K,M) 3.5V±0.2V (K2,M2,K3,M3)
	2) CH:Low				Check	0.6V or more
3.VCO lock voltage TX	3) CH:High PTT:ON			TC1	ADJ	3.8V±0.2V(K,M) 3.5V±0.2V (K2,M2,K3,M3)
	4) CH:Low PTT:ON				Check	0.6V or more

## Transmitter Section

Item	Condition	Measurement		Adjustment		Specifications/ Remark
		Test equipment	Terminal	Parts	Method	
1.Frequency Adjust [Wide]	1) CH:Center 2) PTT:ON	Frequency counter	ANT	VR1		Center frequency ±50Hz
2.High power Adjust [Wide]	TEST CH: Low Low' Center High' High (5 points) BATT terminal voltage:7.5V PTT:ON	Power meter Ampere meter		Programming Software:KPG-82D		4.0W ±0.1W 2.0 A or less
3.Low power Adjust [Wide]	TEST CH: Low Low' Center High' High (5 points) BATT terminal voltage:7.5V PTT:ON					1.0W ±0.1W 1.0 A or less
4. Max deviation Adjust [Wide]	TEST CH: Low Center High (3 points) AG:1kHz/150mV Dev meter filter LPF:15kHz HPF:OFF PTT:ON	Power meter Dev meter Oscilloscope AG AF VTVM	ANT SP/MIC connector		4.2kHz (According to the lager +,-)	±50Hz
	[Narrow]				TEST CH:Center PTT:ON	2.1kHz (According to the lager +,-)
5.VOX 1 Writing [Wide]	TEST CH: Center AG:1KHz/60mV	Power meter Dev meter Oscilloscope				
6.VOX 10 Writing [Wide]	TEST CH: Center AG:1KHz/4.0mV	AG AF VTVM				



## ADJUSTMENT

Item	Condition	Measurement		Adjustment		Specifications/ Remark		
		Test equipment	Terminal	Parts	Method			
7.DQT TCXO Balance Writing [Wide] [Narrow]	TEST CH: Center	Power mete Dev meter Oscilloscope AG AF VTVM	ANT	Programming Software:KPG-82D	Write	70 hex(K,M) 200 hex(K2,M2,K3,M3)		
						40 hex(K,M) 120 hex(K2,M2,K3,M3)		
8.DQT VCO Balance Adjust [Wide] [Narrow]	TEST CH: Low Center High (3 points) LPF:3kHz HPF:OFF PTT:ON				Make the demodulation wave into square waves		0.8kHz	±40Hz
	TEST CH: Center PTT:ON							
9.QT Deviation Adjust [Wide] [Narrow]	TEST CH: Low Center High (3 points) LPF:3kHz HPF:OFF PTT:ON				0.4kHz	±40Hz		
	TEST CH:Center PTT:ON							
10.DQT Deviation Adjust [Wide] [Narrow]	TEST CH: Low Center High (3 points) LPF:3kHz HPF:OFF PTT:ON				0.75kHz	±40Hz		
	TEST CH: Center PTT:ON							
11.Tone Deviation Adjust [Wide] [Narrow]	TEST CH: Center LPF:15kHz HPF:OFF PTT:ON				3.0kHz	±100Hz		
							1.5kHz	±100Hz
12.DTMF Deviation Adjust [Wide] [Narrow]	TEST CH: Center LPF:15kHz HPF:OFF PTT:ON				3.0kHz	±100Hz		
							1.5kHz	±100Hz
13.MSK Deviation Adjust [Wide] [Narrow]	TEST CH: Low Center High (3 points) LPF:15kHz HPF:OFF PTT:ON				3.0kHz	±100Hz		
	TEST CH: Center PTT:ON						1.5kHz	±100Hz
14.BATT Detection Writing [Wide]	BATT terminal voltage:5.9V PTT:ON	Power meter DVM	ANT BATT terminal	Write	BATT terminal voltage:5.9V			

## ADJUSTMENT

Item	Condition	Measurement		Adjustment		Specifications/ Remark
		Test equipment	Terminal	Parts	Method	
15.BATT Detection Check	1) BATT terminal voltage:5.5V PTT:ON	Power meter DVM	ANT BATT terminal		Check	LED blinks
	2) BATT terminal voltage:7.5V PTT:ON					LED does not blink

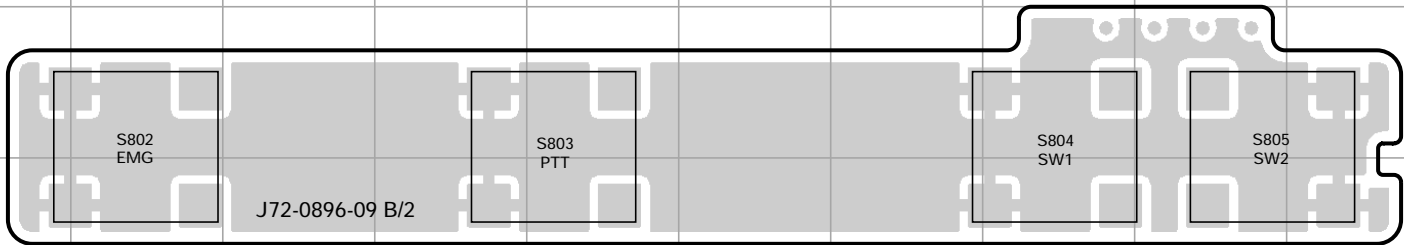
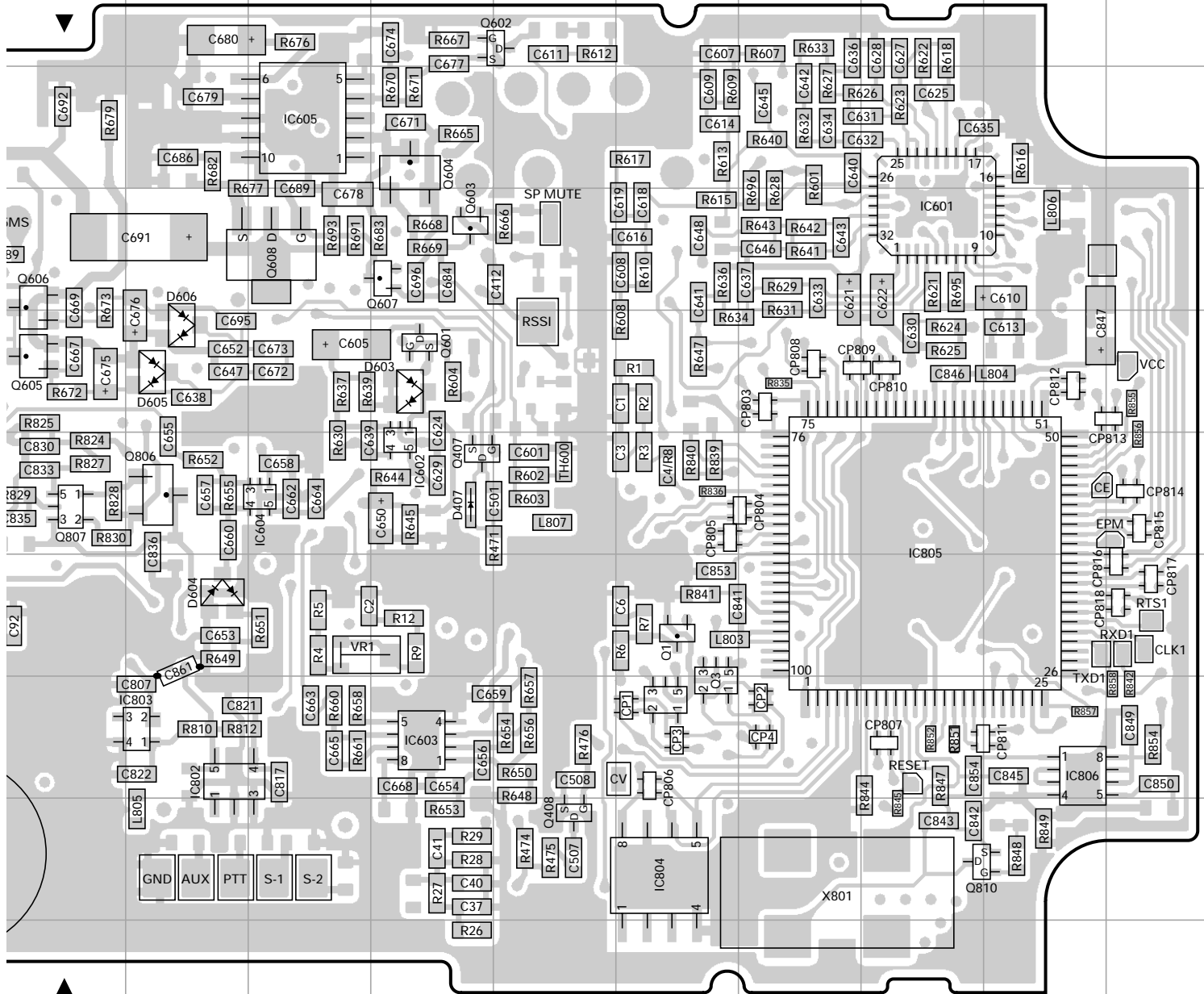
## Receiver Section

Item	Condition	Measurement		Adjustment		Specifications/ Remark
		Test equipment	Terminal	Parts	Method	
1.BPF Wave form ADJ [Wide]	TEST CH:Low Low' Center High' High (5 points) SSG otuput:-103 dBm(1.58μV)	SSG DVM Oscilloscope AF VTVM	ANT RSSI	Programming Software:KPG-82D	RSSI MAX	
	2.Sesitivity check [Wide]					TEST CH:Low Low' Center High' High (5 points) SSG otuput:-117 dBm(0.3μV) SSG MOD:3kHz
[Narrow]	TEST CH:Center SSG otuput:-115 dBm(0.4μV) SSG MOD:1.5kHz					12dB SINAD or more
3.Squelch tight writing [Wide]	TEST CH:Center SSG otuput:-117 dBm(0.3μV) SSG MOD:3.0kHz			Programming Software:KPG-82D		Squelch open
	[Narrow]	TEST CH:Center SSG otuput:-116 dBm(0.35μV) SSG MOD:1.5kHz				Squelch open
4. Squelch threshold writing [Wide]	TEST CH:Center SSG otuput:-122 dBm(0.18μV) SSG MOD:3.0kHz					Squelch open
	[Narrow]	TEST CH:Center SSG otuput:-121 dBm(0.2μV) SSG MOD:1.5kHz				Squelch open
5.RSSI writing [Wide]	TEST CH:Center SSG otuput:-123 dBm(0.16μV) SSG MOD:off					
	[Narrow]	TEST CH:Center SSG otuput:-122 dBm(0.18μV) SSG MOD:off				



# PC BOARD TK-3160

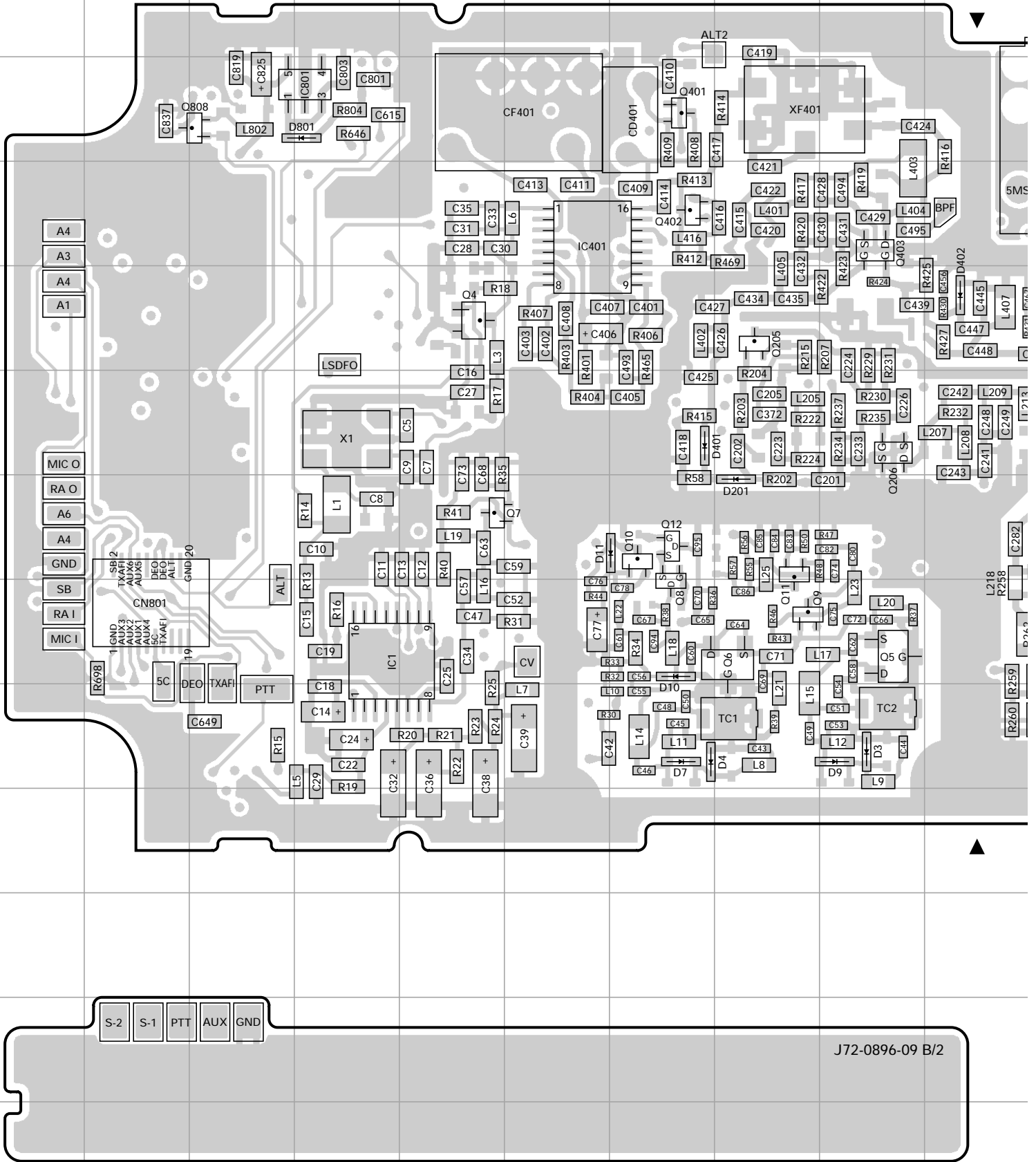
TX-RX UNIT (X57-6730-XX) -10 : K,M -11 : K2,M2 -12 : K3,M3  
Component side view (J72-0896-09)



# TK-3160 PC BOARD

TX-RX UNIT (X57-6730-XX) -10 : K,M -11 : K2,M2 -12 : K3,M3

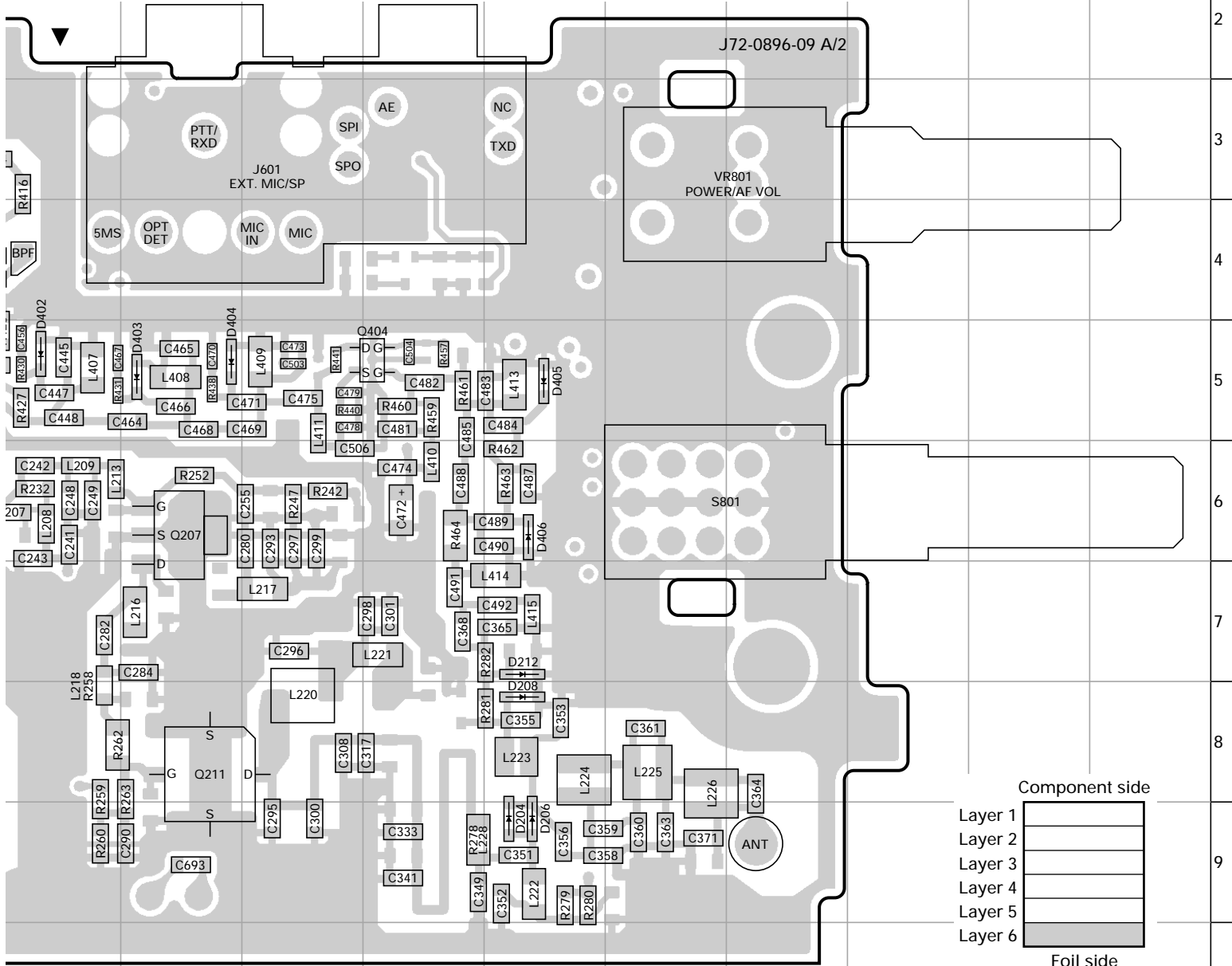
Foil side view (J72-0896-09)



J72-0896-09 B/2

# PC BOARD TK-3160

TX-RX UNIT (X57-6730-XX) -10 : K,M -11 : K2,M2 -12 : K3,M3  
 Foil side view (J72-0896-09)



TX-RX UNIT (X57-6730-XX)

Ref. NO.	Address
IC1	8D
IC401	4F
IC801	3D
Q4	5E
Q5	8I
Q6	8H
Q7	7E
Q8	8G
Q9	8H
Q10	7G
Q11	7H
Q12	7G
Q205	5H
Q206	6I

Ref. NO.	Address
Q207	6K
Q211	8K
Q401	3G
Q402	4G
Q403	4I
Q404	5M
Q808	3C
D3	9I
D4	9G
D7	9G
D9	9I
D10	8G
D11	7G
D201	7H

Ref. NO.	Address
D204	9N
D206	9N
D208	8N
D212	7N
D401	6G
D402	5J
D403	5K
D404	5K
D405	5N
D406	6N
D801	3D

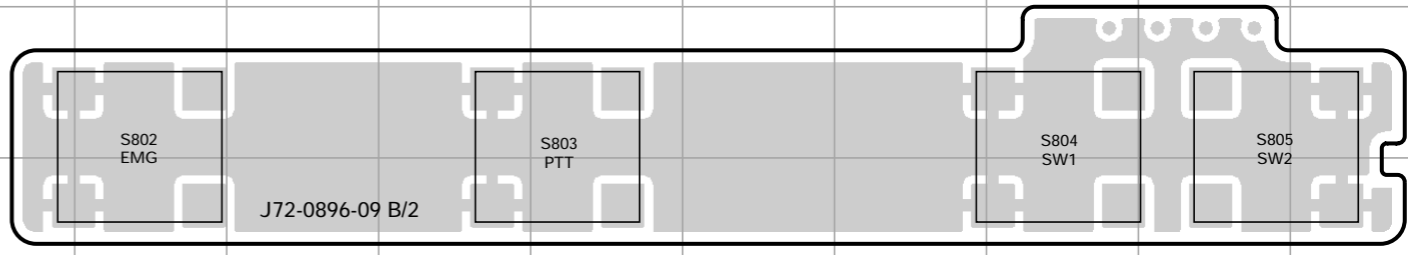
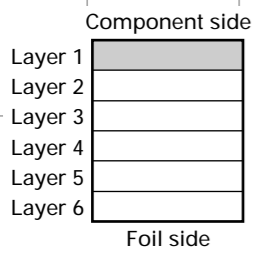
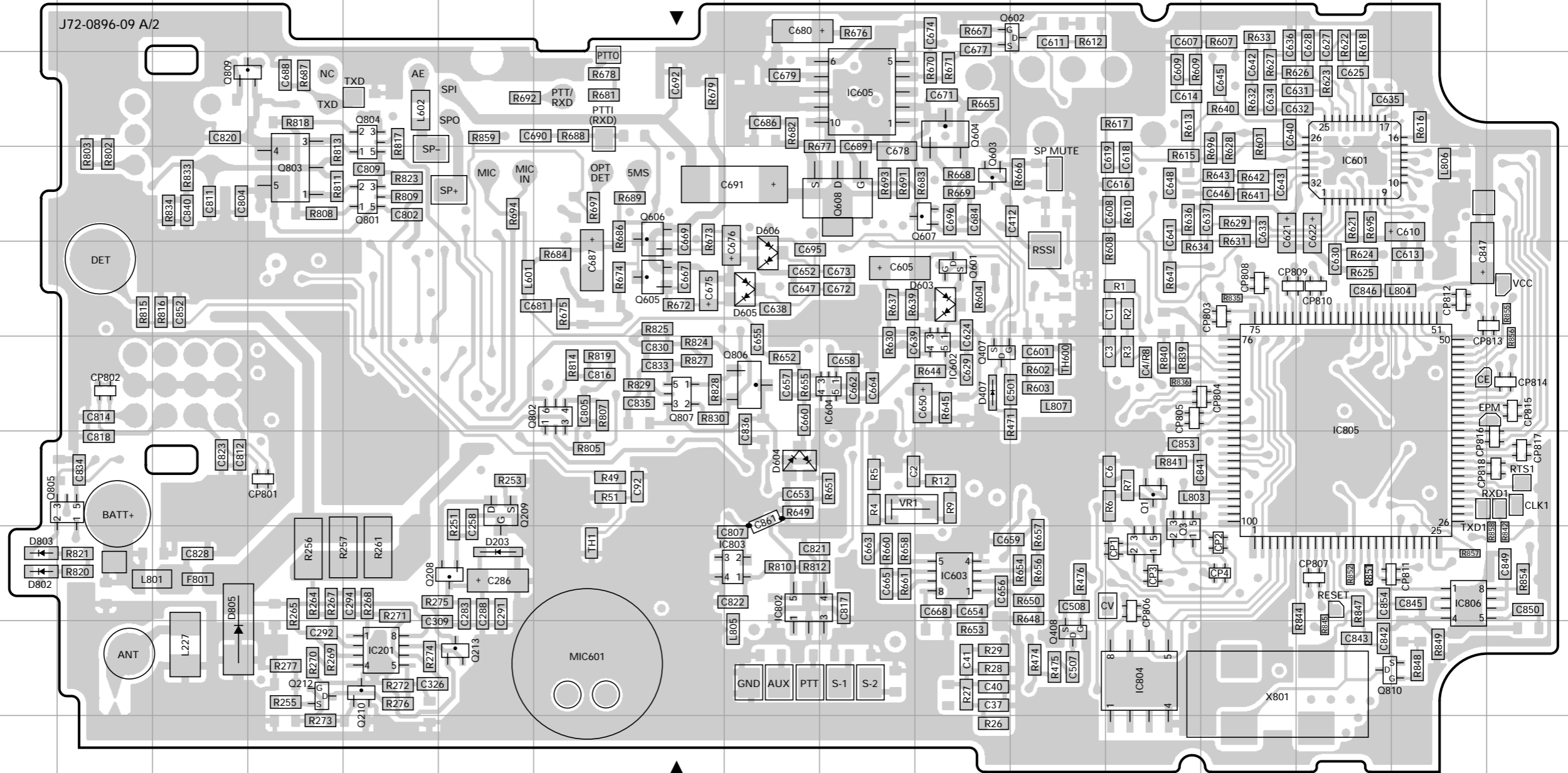
# TK-3160 PC BOARD

# PC BOARD TK-3160

TX-RX UNIT (X57-6730-XX) -10 : K,M -11 : K2,M2 -12 : K3,M3  
Component side view (J72-0896-09)

### TX-RX UNIT (X57-6730-XX)

Ref. NO.	Address
IC201	9G
IC601	4Q
IC602	6M
IC603	8M
IC604	6L
IC605	3L
IC802	8K
IC803	8K
IC804	9O
IC805	7Q
IC806	8R
Q1	7O
Q3	8O
Q208	8H
Q209	7H
Q210	9G
Q212	9F
Q213	9H
Q407	6M
Q408	9N
Q601	5M
Q602	2N
Q603	4M
Q604	3M
Q605	5J
Q606	4J
Q607	4M
Q608	4L
Q801	4G
Q802	6I
Q803	4F
Q804	3G
Q805	7D
Q806	6K
Q807	6J
Q809	3E
Q810	9R
D203	8H
D407	6M
D603	5M
D604	7K
D605	5K
D606	5K
D802	8C
D803	8C
D805	9E







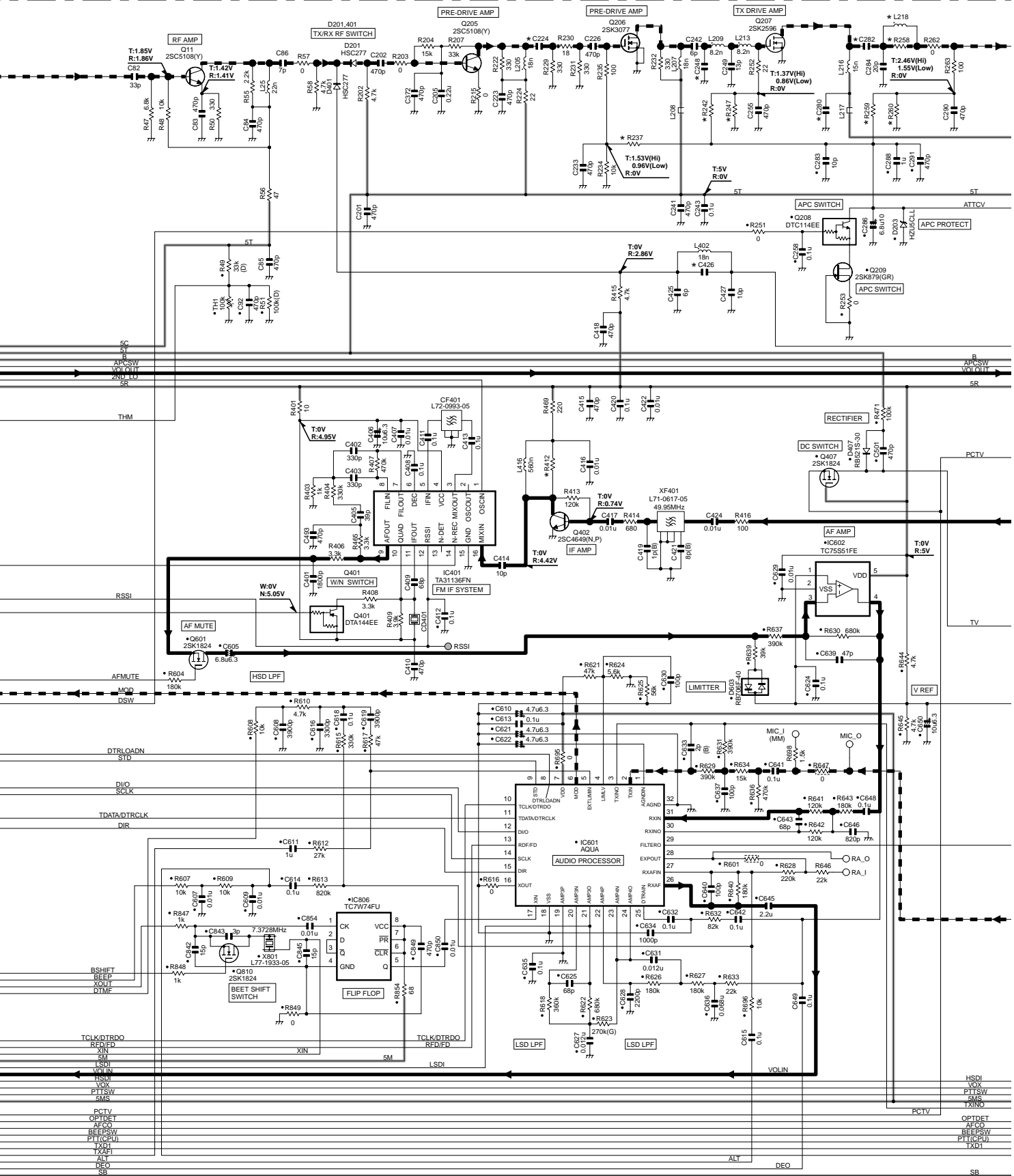




# TK-3160 SCHEMATIC DIAGRAM

X57-6730-XX	C360	C361	C363	C364	C365	C368	C371	C426	C434	C439	C445	C447	C448	C464	C465	C466	C468	C469	C471	C473	C483	C484	C485	C488	C489	C490	C491	C492	
-10	K.M	3.5p(B)	2.5p(B)	4.5p(B)	2p(B)	NO	15p	1p(B)	2p(B)	5p(B)	47p	4.5p(B)	47p	3p(B)	2p(B)	1p(B)	47p	3p(B)	3p(B)	47p	6p(B)	4.5p(B)	47p	3p(B)	2.5p(B)	18p	6p(B)	3p(B)	
-11	K2.M2	6p(B)	2p(B)	2p(B)	0.5p(B)	2p(B)	7p	1p(B)	2p(B)	47p	47p	4.5p(B)	18p	1.5p(B)	1.5p(B)	6p(B)	18p	2p(B)	1.5p(B)	18p	5p(B)	5p(B)	18p	2.5p(B)	8p(B)	33p	8p(B)	3.5p(B)	
-12	K3.M3	8p(B)	2.5p(B)	7p(B)	1.5p(B)	NO	15p	2p(B)	2.5p(B)	9p(B)	18p	3.5p(B)	47p	4.5p(B)	4.5p(B)	1.5p(B)	47p	3.5p(B)	3.5p(B)	47p	7p(B)	6p(B)	47p	2.5p(B)	3p(B)	47p	1p(B)	5p(B)	4.5p(B)

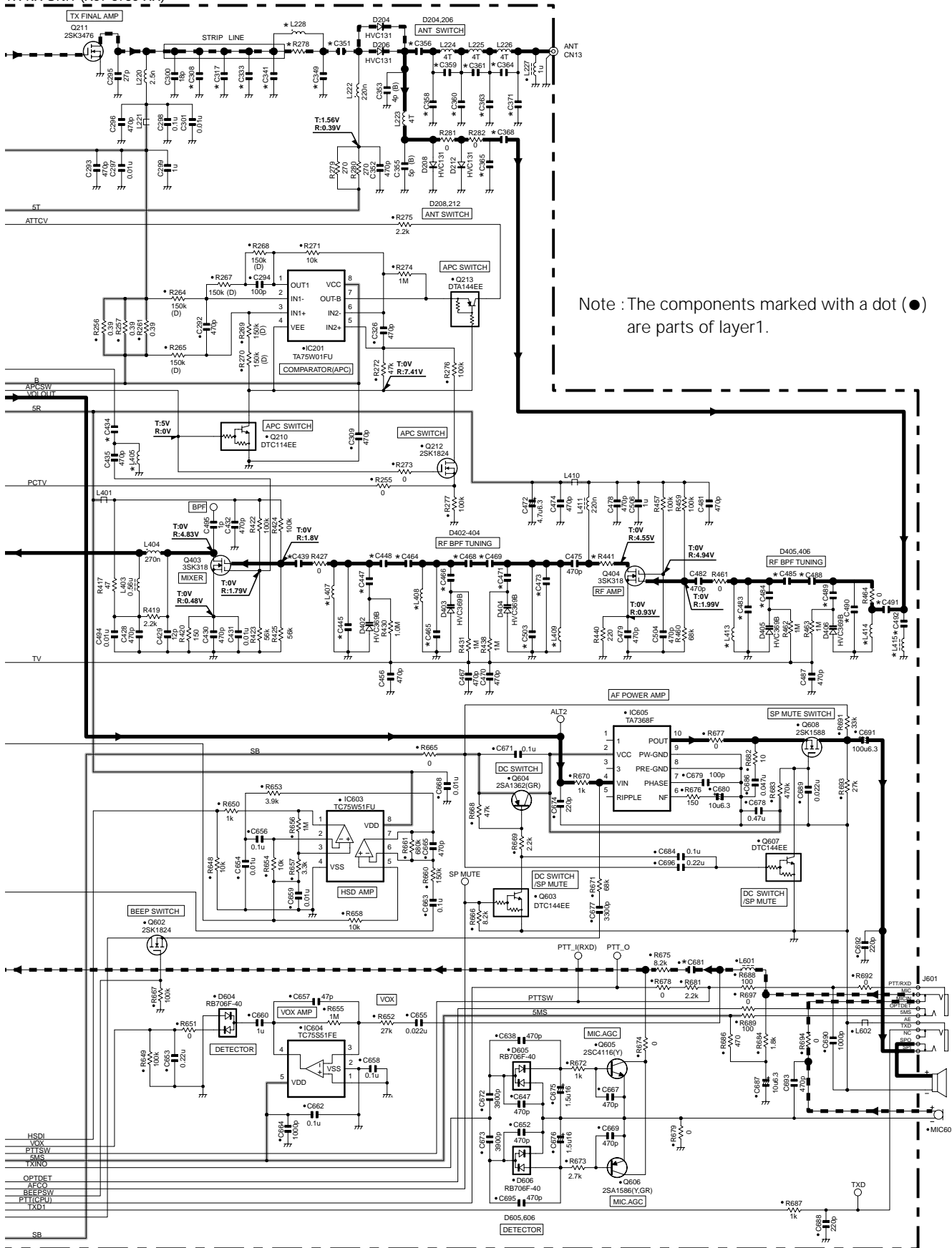
## TX-RX UNIT (X57-6730-XX)



# SCHEMATIC DIAGRAM TK-3160

X57-6730-XX	C503	C507	C681	R3	R8	R22	R23	R24	R29	R30	R237	R242	R247	R258	R259	R260	R278	R412	R441	R474	R475	R602	L14	L15	L23	L218	L228	L405	L407	L408	L409	L413	L414	L415
-10	K.M	NO	1u	0.027u	120k	NO	820	680	680	100k	33k	22k	120k	47k	NO	47k	47k	0	1.2k	100	10k	47k	180k	15n	18n	22n	1.2n	NO	27n	6.8n	6.8n	6.8n	6.8n	47n
-11	K2.M2	1.5p(B)	2.2u	0.022u	470k	0	1.2k	680	680	150k	33k	22k	120k	68k	0	47k	82k	0	330	68	22k	100k	120k	12n	15n	18n	NO	NO	22n	6.8n	6.8n	6.8n	6.8n	39n
-12	K3.M3	NO	2.2u	0.022u	470k	0	1.2k	470	1k	82k	12k	12k	56k	47k	NO	68k	68k	NO	330	100	10k	68k	120k	18n	22n	27n	1.5n	3.3n	33n	8.2n	8.2n	8.2n	8.2n	47n

## TX-RX UNIT (X57-6730-XX)









# TK-3160

## SPECIFICATIONS

### General

Frequency Range .....	450~490MHz (K, M), 470~512MHz (K2, M2), 400~430MHz (K3, M3)
Number of channels .....	Max. 16
Number of groups .....	Max. 16
Channel Spacing .....	25kHz (Wide) 12.5kHz (Narrow)
PLL Channel Stepping .....	5kHz, 6.25kHz
Operating Voltage .....	7.5 VDC $\pm$ 20%
Battery Life .....	More than 9 hours at 4 watts (5-5-90 duty cycle with KNB-24L battery)
Operating Temperature range .....	-30°C to +60°C (-22 °F to +140 °F)
Dimensions and Weight	
With KNB-24L (1400mAh battery) .....	56 (2-3/16) W x 109.3 (4-5/16) H x 34.5 (1-3/8) D mm (in) 290g (0.64lbs)
With KNB-25A (1200mAh battery) .....	56 (2-3/16) W x 109.3 (4-5/16) H x 40.7 (1-5/8) D mm (in) 355g (0.78lbs)
With KNB-26N (2000mAh battery) .....	56 (2-3/16) W x 109.3 (4-5/16) H x 40.7 (1-5/8) D mm (in) 400g (0.88lbs)

### Receiver (Measurements made per EIA standard EIA-603)

Sensitivity	
EIA 12dB SINAD .....	0.25 $\mu$ V (Wide)/0.28 $\mu$ V (Narrow)
Selectivity .....	70dB (Wide)/62dB (Narrow)
Intermodulation .....	65dB (Wide)/62dB (Narrow)
Spurious response .....	65dB
Audio Power Output .....	500mW/8 $\Omega$
Frequency Stability .....	$\pm$ 2.5ppm
Channel Frequency Spread .....	40MHz (K, M), 42MHz (K2, M2), 30MHz (K3, M3)

### Transmitter (Measurements made per EIA standard EIA-603)

RF Power output .....	4W/1W
Spurious and Harmonics .....	70dB
Modulation .....	16K $\phi$ F3E (Wide)/11K $\phi$ F3E (Narrow)
FM Noise .....	45dB (Wide)/40dB (Narrow)
Audio Distortion .....	Less than 5%
Frequency Stability .....	$\pm$ 2.5ppm
Channel Frequency Spread .....	40MHz (K, M), 42MHz (K2, M2), 30MHz (K3, M3)

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