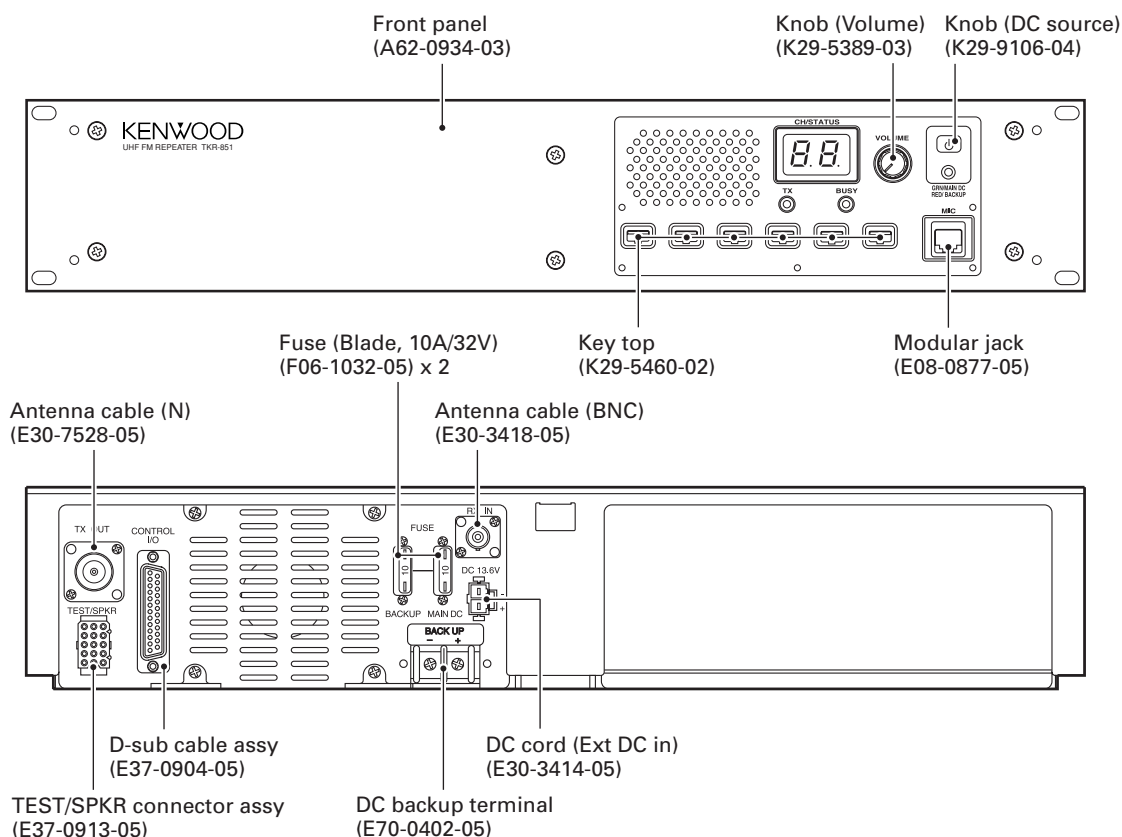


This TKR-851 service manual contains a number of sections which differ from the service manual (B51-8684-00 and B51-8701-00) for the TKR-851.  
For items other than those in this TKR-851 service manual please refer to the service manual (B51-8684-00 and B51-8701-00) for the TKR-851.



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# TKR-851

## 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 this publication date. Changes which may occur after publication are covered by either Service Bulletins or Manual Revisions, which 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, and 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 secure and any open connectors are properly terminated.
- SHUT OFF this equipment when near electrical blasting caps or while in an explosive atmosphere.
- This equipment should be serviced by only qualified technicians.

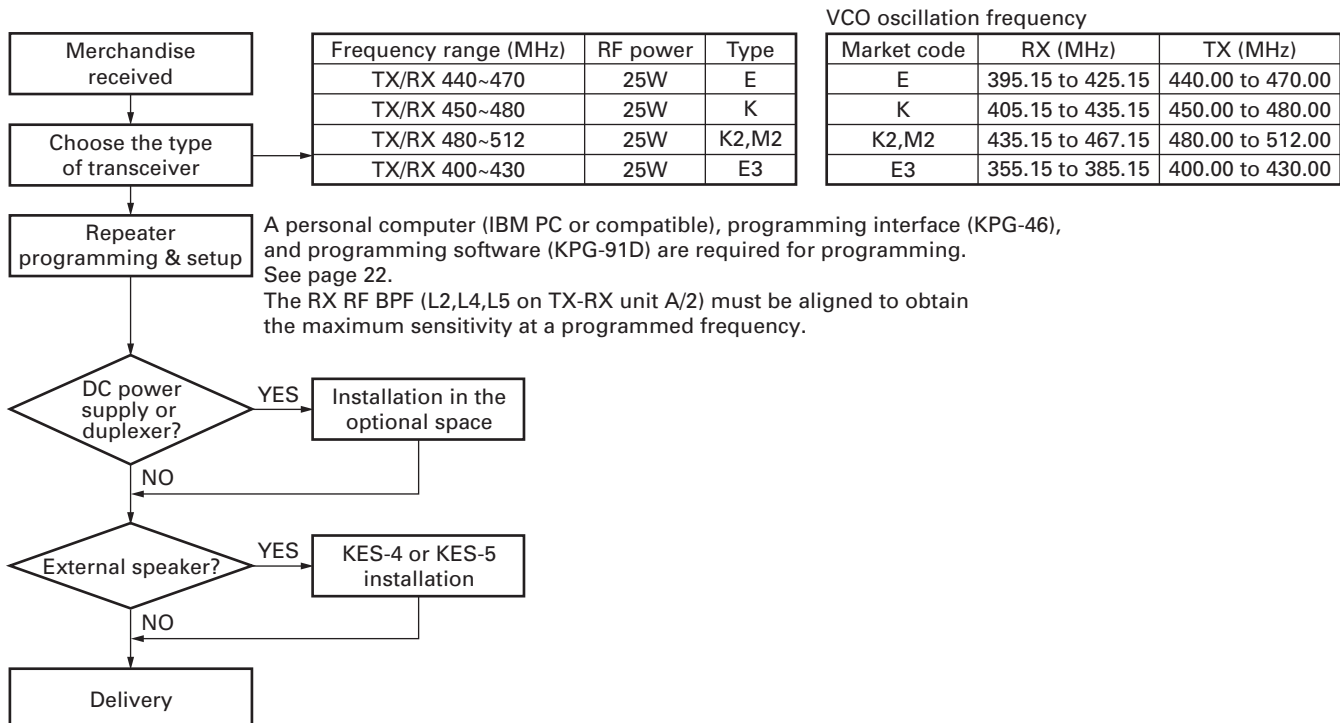
### SERVICE

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

#### Service Manual List

Title	Parts number	Remarks	Market code	Final unit
TKR-851	B51-8684-00	First edition	K,E	J72-0911-09
TKR-851	B51-8701-00	Supplement Final unit only	K,E	J72-0971-19
TKR-851	B51-8709-00	Supplement II (This service manual)	K2,M2,E3	J72-0971-29

### 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

**Y** : PX (Far East, Hawaii)

**Y** : AAFES (Europe)

**K** : USA

**T** : England

**X** : Australia

**P** : Canada

**E** : Europe

**M** : Other Areas

### TKR-851 (Y54-323X-XX)

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation	Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
<b>TKR-851</b>						47	3C,2D		G10-1264-04	FIBROUS SHEET (PANEL)	
1	2B		A10-4037-21	CHASSIS		-			G10-1344-04	FIBROUS SHEET	
2	1B		A62-0836-04	PANEL (TX/RX)		-			G10-1345-04	FIBROUS SHEET	
3	1B		A62-0837-04	PANEL (FINAL)		48	1F		G13-1801-04	CUSHION ACCESSORY	
4	1D		A62-0840-03	PANEL (OUTER)		49	1F		G13-1802-04	CUSHION ACCESSORY	
5	3A		A62-0933-13	PANEL ASSY (INNER)		50	2B		G13-1886-04	CUSHION (BNC CABLE)	
6	3C		A62-0934-03	FRONT PANEL		58	2C	*	G13-2054-04	CUSHION	
8	1F		B10-2635-04	FRONT GLASS ACCESSORY		52	1E		H25-0029-04	PROTECTION BAG (60/110/0.07)	
9	1F		B11-1259-04	FILTER ACCESSORY		53	1F		H25-0747-04	PROTECTION BAG (250X350)	
7	3B	*	B41-1856-04	CAUTION STICKER (FRONT PANEL)	K2	54	1E		H25-0762-04	PROTECTION BAG (120X300)	
10	3B		B42-7158-04	STICKER (MODEL NAME)		55	1F		H25-2328-04	PROTECTION BAG (80/250/0.07)	
11	1F	*	B62-1774-10	INSTRUCTION MANUAL	E,E3	57	3F		H52-2013-02	ITEM CARTON CASE	
11	1F	*	B62-1775-10	INSTRUCTION MANUAL	K,K2,M2	59	1E		J02-0475-05	FOOT ACCESSORY	
12	2C,3D		B72-2202-04	MODEL NAME-PLATE	E	60	1E		J02-0492-04	FOOT ACCESSORY	
12	2C,3D	*	B72-2203-04	MODEL NAME-PLATE	E3	61	1F		J21-8402-04	MOUNTING HARDWARE ACCESSORY	
12	2C,3D	*	B72-2204-04	MODEL NAME-PLATE	M2	64	1B		J21-8467-04	MOUNTING HARDWARE (DRIVE FET)	
12	2C,3D		B72-2205-04	MODEL NAME-PLATE	K	62	1E		J59-0302-05	GROMMET ACCESSORY	
12	2C,3D	*	B72-2206-04	MODEL NAME-PLATE	K2	63	1E		J61-0307-05	BAND	
14	2C		E30-3414-05	DC CORD (EXT DC IN)		65	1E		K01-0418-15	HANDLE ACCESSORY	
15	1C		E30-3418-05	ANTENNA CABLE (BNC)		66	3A		K29-5389-03	KNOB (VOLUME)	
17	1E		E30-3427-15	DC CORD ACCESSORY		67	3A		K29-5460-02	KEY TOP	
16	2C	*	E30-7528-05	ANTENNA CABLE (N)		68	3A		K29-9106-04	KNOB (DC SOURCE)	
18	1E		E31-3228-05	TEST/SPKR PLUG ACCESSORY		71	2B		L79-1419-05	LINE FILTER (DC CABLE)	E,E3
19	1B		E37-0902-05	DC WIRE (RED)		72	1E	*	L79-1854-05	LINE FILTER (EXT DC IN)	E,E3
20	1B		E37-0903-05	DC WIRE (BLACK)		A	2C		N09-2292-05	HEXAGON HEAD SCREW	
21	2C		E37-0904-05	D-SUB CABLE ASSY		B	1C,2C		N30-2606-46	PAN HEAD MACHINE SCREW	
22	3B		E37-0905-15	SPEAKER CABLE		C	2A,1E		N30-4006-46	PAN HEAD MACHINE SCREW	
23	3A		E37-0906-05	LEAD WIRE WITH CONNECTOR (CONT-DIP)		D	2B,2C		N30-4014-46	PAN HEAD MACHINE SCREW	
24	3A		E37-0908-05	LEAD WIRE WITH CONNECTOR (11P)		E	1C		N30-4020-45	PAN HEAD MACHINE SCREW	
25	2B		E37-0909-05	LEAD WIRE WITH CONNECTOR (9P)		F	1C,2C		N32-3006-46	FLAT HEAD MACHINE SCREW	
26	1B		E37-0911-05	LEAD WIRE WITH CONNECTOR (3P)		G	3B,3C		N32-4008-45	FLAT HEAD MACHINE SCREW	
27	2B		E37-0912-05	COAXIAL CABLE		H	1B		N33-3006-45	OVAL HEAD MACHINE SCREW	
28	2C		E37-0913-05	TEST/SPKR CONNECTOR ASSY		J	1E		N35-3006-45	BINDING HEAD MACHINE SCREW ACCESSORY	
29	1B		E37-0934-05	DC WIRE (ORANGE)		K	1C		N35-4006-45	BINDING HEAD MACHINE SCREW	
30	2C		E37-0964-05	DC BACKUP WIRE (BLACK)		L	1B,3B		N67-3008-46	PAN HEAD SEMS SCREW	
31	2C		E37-0965-05	DC BACKUP WIRE (RED)		M	1C		N80-2608-45	PAN HEAD TAPTITE SCREW	
32	2B		E37-0967-05	FLAT CABLE (36P)		N	2C		N87-2606-46	BRAZIER HEAD TAPTITE SCREW	
33	2C		E70-0402-05	DC BACKUP TERMINAL		O	3A		N87-3005-45	BRAZIER HEAD TAPTITE SCREW	
35	1C,1E		F06-1032-05	FUSE (BLADE TYPE) (10A/32V)		P	2B,3B		N87-3006-46	BRAZIER HEAD TAPTITE SCREW	
36	2C		F09-0445-05	CAP (D-SUB) ACCESSORY		R	2C		N90-3014-46	TP HEAD MACHINE SCREW	
37	2C		F09-0471-05	FAN MOTOR		70	3A		T07-0247-05	SPEAKER	
-			F10-2374-04	SHIELDING PLATE (TX/RX)		-			490-0174-05	ADHESIVE TAPE	
-			F10-2379-04	SHIELDING CASE (TX/RX COMP)							
-			F10-2409-04	SHIELDING CASE (TX/RX FOIL)							
41	1C		F20-3322-04	INSULATING SHEET (BACKUP)							
43	1B,2B		G02-0576-14	FLAT SPRING							
42	2B		G02-0729-14	FLAT SPRING							
44	2B		G02-0829-14	FLAT SPRING							
45	3B		G02-0885-13	EARTH SPRING							
51	1B		G02-0894-04	EARTH SPRING (FINAL FET)							
39	2D	*	G02-1817-04	EARTH SPRING (REAR COVER)							
40	2D	*	G02-1818-04	EARTH SPRING (REAR COVER)							
46	2B,3B		G10-1263-04	FIBROUS SHEET (CHASSIS)							

## PARTS LIST

### FINAL UNIT (X45-374X-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination
<b>FINAL UNIT (X45-374X-XX) 0-13 : K2,M2 2-71 : K,E 2-72 : E3</b>					
C1			CC73GCH1H100D	CHIP C 10PF D	K2,M2,E3
C1			CK73GB1H471K	CHIP C 470PF K	K,E
C3			C90-2146-05	ELECTRO 100UF 25WV	
C6,7			CK73GB1H471K	CHIP C 470PF K	
C8			CC73GCH1H030C	CHIP C 3.0PF C	K2,M2
C8			CC73GCH1H080D	CHIP C 8.0PF D	K,E
C8			CC73GCH1H100D	CHIP C 10PF D	E3
C10			CK73GB1H471K	CHIP C 470PF K	
C12-15			CK73GB1H471K	CHIP C 470PF K	
C17			CC73GCH1H050C	CHIP C 5.0PF C	K,M2,E
C17			CC73GCH1H050C	CHIP C 5.0PF C	K2
C17			CC73GCH1H070D	CHIP C 7.0PF D	E3
C18,19			CK73GB1H471K	CHIP C 470PF K	
C20			CK73FB1H471K	CHIP C 470PF K	
C21			CC73FCH1H100D	CHIP C 10PF D	K2,M2
C21			CC73FCH1H120J	CHIP C 12PF J	K,E
C21			CC73FCH1H220J	CHIP C 22PF J	E3
C22			CC73FCH1H060D	CHIP C 6.0PF D	K,E
C22			CC73FCH1H090D	CHIP C 9.0PF D	K2,M2
C22			CC73FCH1H120J	CHIP C 12PF J	E3
C23			CK73FB1H471K	CHIP C 470PF K	
C24	*		C90-5640-05	ELECTRO 100UF 16WV	
C26			CC73GCH1H101J	CHIP C 100PF J	E3
C26			CC73GCH1H471J	CHIP C 470PF J	K,M2,E
C26			CC73GCH1H471J	CHIP C 470PF J	K2
C27			CK73GB1H471K	CHIP C 470PF K	
C28			CK73FB1E104K	CHIP C 0.10UF K	
C29			CK73GB1H471K	CHIP C 470PF K	
C30			CK73FB1E224K	CHIP C 0.22UF K	K,M2,E
C30			CK73FB1E224K	CHIP C 0.22UF K	K2
C30			CK73FB1E474K	CHIP C 0.47UF K	E3
C31			C93-0599-05	CHIP C 470PF K	
C32			C93-0558-05	CHIP C 8.0PF D	K,E,E3
C32			C93-0559-05	CHIP C 9.0PF D	K2,M2
C33,34			C93-0565-05	CHIP C 27PF J	K,M2,E
C33,34			C93-0565-05	CHIP C 27PF J	K2
C33,34			C93-0567-05	CHIP C 39PF J	E3
C35			C93-0599-05	CHIP C 470PF K	
C36			CK73FB1E104K	CHIP C 0.10UF K	
C38			CK73GB1H471K	CHIP C 470PF K	
C39			C93-0558-05	CHIP C 8.0PF D	K2,M2
C39			C93-0561-05	CHIP C 12PF J	K,E,E3
C40			C93-0564-05	CHIP C 22PF J	K,E
C40			C93-0565-05	CHIP C 27PF J	K2,M2
C41			C93-0599-05	CHIP C 470PF K	
C42			CC73FCH1H220J	CHIP C 22PF J	
C43			CM73F2H180J	CHIP C 18PF J	K2,M2
C43			CM73F2H220J	CHIP C 22PF J	K,E,E3
C44			C93-0556-05	CHIP C 6.0PF D	K,E
C44			C93-0560-05	CHIP C 10PF D	E3
C46			C93-0599-05	CHIP C 470PF K	
C48			CK73GB1H471K	CHIP C 470PF K	
C49			CC73GCH1H101J	CHIP C 100PF J	
C50			CK73FB1E104K	CHIP C 0.10UF K	
C51			C90-2143-05	ELECTRO 47UF 25WV	
C52			CC73GCH1H101J	CHIP C 100PF J	
C53			CK73FB1E104K	CHIP C 0.10UF K	
C54			C90-2146-05	ELECTRO 100UF 25WV	
C55			C93-0599-05	CHIP C 470PF K	
C56			CC73FCH1H220J	CHIP C 22PF J	
C59			CM73F2H150J	CHIP C 15PF J	K,M2,E
C59			CM73F2H150J	CHIP C 15PF J	K2
C59			CM73F2H270J	CHIP C 27PF J	E3
C60			C93-0556-05	CHIP C 6.0PF D	K2,M2
C60			C93-0562-05	CHIP C 15PF J	E3
C61			CM73F2H820J	CHIP C 82PF J	
C68			CK73GB1H471K	CHIP C 470PF K	
C69			CC73GCH1H101J	CHIP C 100PF J	
C70			CK73FB1E104K	CHIP C 0.10UF K	
C71,72			CK73GB1H471K	CHIP C 470PF K	
C75			CK73GB1H471K	CHIP C 470PF K	
C77			CC73GCH1H101J	CHIP C 100PF J	
C78			CK73GB1H471K	CHIP C 470PF K	
C79			CK73FB1E104K	CHIP C 0.10UF K	
C80			C92-0777-05	ELECTRO 1000UF 25WV	
C81			CM73F2H820J	CHIP C 82PF J	
C83			C93-0555-05	CHIP C 5.0PF C	K2,M2
C83			C93-0556-05	CHIP C 6.0PF D	K,E
C83			C93-0557-05	CHIP C 7.0PF D	E3
C85			C93-0561-05	CHIP C 12PF J	E3
C86			C93-0558-05	CHIP C 8.0PF D	K2,M2
C86			C93-0560-05	CHIP C 10PF D	K,E
C89			C93-0555-05	CHIP C 5.0PF C	K,M2,E
C89			C93-0555-05	CHIP C 5.0PF C	K2
C89			C93-0556-05	CHIP C 6.0PF D	E3
C91-98			CK73GB1H471K	CHIP C 470PF K	
C99			CK73FB1E104K	CHIP C 0.10UF K	
C100-102			CK73GB1H471K	CHIP C 470PF K	
C103			C92-0628-05	CHIP-TAN 10UF 10WV	
C104			CC73GCH1H101J	CHIP C 100PF J	
C105			CK73GB1H471K	CHIP C 470PF K	
C106			CK73FB1E104K	CHIP C 0.10UF K	
C107			CC73GCH1H101J	CHIP C 100PF J	
C108			CK73FB1E104K	CHIP C 0.10UF K	
C109			CC73GCH1H101J	CHIP C 100PF J	
C112			CK73GB1H471K	CHIP C 470PF K	
C113			CK73FB1E104K	CHIP C 0.10UF K	
C114			CK73GB1H471K	CHIP C 470PF K	
C115			CK73FB1E104K	CHIP C 0.10UF K	
C116			CK73GB1H471K	CHIP C 470PF K	
C117			CK73FB1E104K	CHIP C 0.10UF K	
C118			C93-0558-05	CHIP C 8.0PF D	K,E
C119			CK73GB1H471K	CHIP C 470PF K	
C120			CK73FB1H223K	CHIP C 0.022UF K	
C121,122			CM73F2H150J	CHIP C 15PF J	K,E
C121,122			CM73F2H180J	CHIP C 18PF J	K2,M2,E3
C123			CM73F2H220J	CHIP C 22PF J	K2,M2
C123,124			CM73F2H220J	CHIP C 22PF J	K,E
C123,124			CM73F2H270J	CHIP C 27PF J	E3
C124			CM73F2H180J	CHIP C 18PF J	K2,M2
C155			C93-0599-05	CHIP C 470PF K	
C157			CK73GB1H471K	CHIP C 470PF K	
C160			CM73F2H820J	CHIP C 82PF J	
C161			CC73GCH1H220J	CHIP C 22PF J	
C165,166			CK73FB1H471K	CHIP C 470PF K	
C167,168			CC73GCH1H220J	CHIP C 22PF J	
C169			CC73FCH1H560J	CHIP C 56PF J	
C170-172			CC73GCH1H220J	CHIP C 22PF J	

## PARTS LIST

FINAL UNIT (X45-374X-XX)

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation	Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
C173,174			CC73FCH1H220J	CHIP C 22PF J		R19			RK73FB2A104J	CHIP R 100K J 1/10W	
C177			CC73FCH1H150J	CHIP C 15PF J		R20,21			R92-1252-05	CHIP R 0 OHM J 1/16W	
C178			C93-0553-05	CHIP C 3.0PF C	K,M2,E	R22			R92-1213-05	CHIP R 100 J 1/2W	
C178			C93-0553-05	CHIP C 3.0PF C	K2	R23			RK73FB2A124J	CHIP R 120K J 1/10W	
C178			C93-0554-05	CHIP C 4.0PF C	E3	R24			RK73FB2A104J	CHIP R 100K J 1/10W	
C179			CC73FCH1H030C	CHIP C 3.0PF C		R26			RK73GB1J101J	CHIP R 100 J 1/16W	
C186-191			CC73GCH1H820J	CHIP C 82PF J	E3	R31			RK73GB1J224J	CHIP R 220K J 1/16W	
CN1			E04-0154-05	PIN SOCKET		R34			R92-1252-05	CHIP R 0 OHM J 1/16W	
CN3			E40-5632-05	PIN ASSY		R35			RK73GB1J104J	CHIP R 100K J 1/16W	
CN4			E40-3246-05	PIN ASSY		R36			R92-1252-05	CHIP R 0 OHM J 1/16W	
CN5			E40-5703-05	PIN ASSY		R37			R92-0670-05	CHIP R 0 OHM	
CN6-8			E23-0462-05	TERMINAL		R38			RK73GB1J473J	CHIP R 47K J 1/16W	
F1			F53-0217-05	FUSE		R40			R92-1204-05	CHIP R 100 J 1/4W	
CN51,52			J13-0071-05	FUSE HOLDER		R41,42			R92-1252-05	CHIP R 0 OHM J 1/16W	
L1			L40-1075-92	SMALL FIXED INDUCTOR (10NH)	K,M2,E	R44			R92-0670-05	CHIP R 0 OHM	
L1			L40-1075-92	SMALL FIXED INDUCTOR (10NH)	K2	R45			RK73GB1J223J	CHIP R 22K J 1/16W	
L1			L40-3963-92	SMALL FIXED INDUCTOR (3.9NH)	E3	R46			RK73GB1J471J	CHIP R 470 J 1/16W	
L2			L40-1075-34	SMALL FIXED INDUCTOR (10NH)	K,E	R47			RK73GB1J222J	CHIP R 2.2K J 1/16W	K,E
L2			L40-1875-34	SMALL FIXED INDUCTOR (18NH)	K2,M2	R48			RK73GB1J332J	CHIP R 3.3K J 1/16W	K2,M2,E3
L2			L40-1875-34	SMALL FIXED INDUCTOR (18NH)	E3	R49			RK73GB1J471J	CHIP R 470 J 1/16W	
L3			L40-1875-92	SMALL FIXED INDUCTOR (18NH)		R50			R92-1217-05	CHIP R 0 OHM	
L5			L41-6865-20	SMALL FIXED INDUCTOR (6.8NH)		R54			R92-1317-05	CHIP R 18 J 1W	
L6,7			L34-4517-05	AIR-CORE COIL		R55			RK73GB1J102J	CHIP R 1.0K J 1/16W	
L9			L34-4517-05	AIR-CORE COIL		R56			RK73GB1J474J	CHIP R 470K J 1/16W	
L11			L34-4517-05	AIR-CORE COIL		R57			RK73GB1J471J	CHIP R 470 J 1/16W	
L12			L34-4523-05	AIR-CORE COIL		R58			RK73GB1J474J	CHIP R 470K J 1/16W	
L14			L40-1575-34	SMALL FIXED INDUCTOR (15NH)	K,E	R59			R92-1252-05	CHIP R 0 OHM J 1/16W	
L14,15			L40-1075-34	SMALL FIXED INDUCTOR (10NH)	K2,M2,E3	R60			RK73GB1J103J	CHIP R 10K J 1/16W	
L15			L40-1075-34	SMALL FIXED INDUCTOR (10NH)	K,E	R61			R92-2687-05	RESISTOR 5.6 J 5W	
L16			L40-1075-92	SMALL FIXED INDUCTOR (10NH)		R62			RK73GB1J103J	CHIP R 10K J 1/16W	
L17			L40-1875-92	SMALL FIXED INDUCTOR (18NH)		R70			R92-1252-05	CHIP R 0 OHM J 1/16W	
L19			L34-4667-05	AIR-CORE COIL		R71			R92-1214-05	CHIP R 120 J 1/2W	
L20			L34-4758-05	AIR-CORE COIL		R72			RK73GB1J184J	CHIP R 180K J 1/16W	
R1			RK73GB1J103J	CHIP R 10K J 1/16W		R73			R92-1204-05	CHIP R 100 J 1/4W	
R2			RK73GB1J222J	CHIP R 2.2K J 1/16W	K,E,E3	R77			RK73GB1J154J	CHIP R 150K J 1/16W	
R2			RK73GB1J472J	CHIP R 4.7K J 1/16W	K2,M2	VR1			R12-6429-05	TRIMMING POT. (100K)	
R3			RK73GB1J470J	CHIP R 47 J 1/16W		K1			S76-0426-05	RELAY	
R4			RK73GB1J100J	CHIP R 10 J 1/16W	K2,M2	D2			Q2DZ6.2(Y)	ZENER DIODE	
R4			RK73GB1J220J	CHIP R 22 J 1/16W	K,E,E3	D4,5			HSM88AS	DIODE	
R6			RK73GB1J100J	CHIP R 10 J 1/16W	K2,M2	D7			ZSA5A27	ZENER DIODE	
R6			RK73GB1J470J	CHIP R 47 J 1/16W	K,E,E3	D8			RB051L-40	DIODE	
R7			RK73GB1J682J	CHIP R 6.8K J 1/16W		D9			MINISMDC050-02	VARISTOR	
R8			RK73FB2A100J	CHIP R 10 J 1/10W		D10			1SS355	DIODE	
R9			RK73FB2A220J	CHIP R 22 J 1/10W		D51,52			DSA3A1	DIODE	
R11			RK73GB1J104J	CHIP R 100K J 1/16W	K,M2,E	D53			MA4PH633	DIODE	
R11			RK73GB1J104J	CHIP R 100K J 1/16W	K2	D55,56			MA4PH633	DIODE	
R11			RK73GB1J333J	CHIP R 33K J 1/16W	E3	IC1			MAX6502UKP035	ANALOGUE IC	
R12			RK73GB1J153J	CHIP R 15K J 1/16W	E3	IC2			NJM78L05UA	BI-POLAR IC	
R12			RK73GB1J183J	CHIP R 18K J 1/16W	K,M2,E	IC3			TA75W01FU	MOS-IC	
R12			RK73GB1J183J	CHIP R 18K J 1/16W	K2	Q1			2SC5110(Q)	TRANSISTOR	
R13			RK73FB2A220J	CHIP R 22 J 1/10W	E3	Q2			2SC3356(R24)	TRANSISTOR	
R13			RK73FB2A470J	CHIP R 47 J 1/10W	K,M2,E	Q3			2SK2596	FET	
R13			RK73FB2A470J	CHIP R 47 J 1/10W	K2	Q4			PD55008S	DRIVE FET	
R14			R92-2571-05	CHIP R 270 J 1/2W		Q5			RD60HUF1-01	FINAL FET	
R15			R92-1259-05	CHIP R 18 J 1/2W		Q8			2SC4116(Y)	TRANSISTOR	
R16			R92-2571-05	CHIP R 270 J 1/2W		Q9			DTD123EK	DIGITAL TRANSISTOR	
R17			RK73FB2A124J	CHIP R 120K J 1/10W		TH1			PTH9M04BE471TS	THERMISTOR	
R18			RK73EB2B101J	CHIP R 100 J 1/8W							

# TKR-851

## PARTS LIST

DISPLAY UNIT (X54-3330-21)

TX-RX UNIT (X57-696X-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination
<b>DISPLAY UNIT (X54-3330-21)</b>					
D503-505			B30-2151-05	LED (RED/GREEN)	
C501			C92-0628-05	CHIP-TAN 10UF 10WV	
C502,503			C92-0501-05	CHIP-TAN 1.5UF 10WV	
C504,505			CK73GB1C104K	CHIP C 0.10UF K	
C506			CC73GCH1H470J	CHIP C 47PF J	
C507,508			CK73GB1C104K	CHIP C 0.10UF K	
C509			CK73GB1H103K	CHIP C 0.010UF K	
C510			C92-0628-05	CHIP-TAN 10UF 10WV	
C511,512			CK73GB1E103K	CHIP C 0.010UF K	
C513-518			CC73GCH1H101J	CHIP C 100PF J	
C519,520			CK73GB1E103K	CHIP C 0.010UF K	
C521			C92-0628-05	CHIP-TAN 10UF 10WV	
C522			CK73GB1C104K	CHIP C 0.10UF K	
C523		*	CK73FB1E334K	CHIP C 0.33UF K	
C524			C92-0628-05	CHIP-TAN 10UF 10WV	
C525			CK73GB1C104K	CHIP C 0.10UF K	
C526		*	CK73FB1E334K	CHIP C 0.33UF K	
C601			CC73GCH1H101J	CHIP C 100PF J	
C602			CK73GB1H102K	CHIP C 1000PF J	
C603			CC73GCH1H101J	CHIP C 100PF J	
C606			CC73GCH1H101J	CHIP C 100PF J	
C607			CK73GB1C104K	CHIP C 0.10UF K	
CN501			E40-6140-05	PIN ASSY	
CN502			E40-6102-05	PIN ASSY	
CN601			E40-6141-05	PIN ASSY	
J601			E08-0877-05	MODULAR JACK	
-			J31-0543-05	COLLAR (LH-5-1.5)	
CP501-504			RK75GB1J471J	CHIP-COM 470 J 1/16W	
R502,503			R92-1252-05	CHIP R 0 OHM J 1/16W	
R505			RK73GB1J683J	CHIP R 68K J 1/16W	
R506			RK73GB1J103J	CHIP R 10K J 1/16W	
R507			RK73GB1J682J	CHIP R 6.8K J 1/16W	
R508			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R509			RK73GB1J103J	CHIP R 10K J 1/16W	
R510			RK73GB1J224J	CHIP R 220K J 1/16W	
R511,512			RK73GB1J103J	CHIP R 10K J 1/16W	
R513			RK73GB1J104J	CHIP R 100K J 1/16W	
R514			RK73GB1J154J	CHIP R 150K J 1/16W	
R516			R92-2565-05	CHIP R 1.2K J 1/2W	
R517			R92-2023-05	CHIP R 820 J 1/2W	
R518,519			R92-2565-05	CHIP R 1.2K J 1/2W	
R520-526			R92-2023-05	CHIP R 820 J 1/2W	
R529-540			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R541-544			RK73GB1J103J	CHIP R 10K J 1/16W	
R601			RK73GB1J681J	CHIP R 680 J 1/16W	
R604,605			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R606			RK73GB1J473J	CHIP R 47K J 1/16W	
VR501		*	R32-0689-05	SEMI FIXED VARIABLE RESISTOR	
VR601			R31-0630-05	VARIABLE RESISTOR	
S501-506			S70-0410-15	TACT SWITCH	
S507			S68-0410-05	PUSH SWITCH	
D501,502			HSM88AS	DIODE	
D506,507			LA-501DD	LED	
D508-514			DA204U	DIODE	
D601,602			DA204U	DIODE	
<b>TX-RX UNIT (X57-696X-XX) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3</b>					
D603			MINISMDC020	VARISTOR	
IC501			NJM4558E	MOS-IC	
IC502-505			BU4094BCFV	MOS-IC	
IC506,507			TA78L05F	MOS-IC	
Q501			2SC4116(Y)	TRANSISTOR	
Q502			2SA1586(Y,GR)	TRANSISTOR	
Q503,504			UPA672T	FET	
Q506			DTA114EUA	DIGITAL TRANSISTOR	
Q507			UPA672T	FET	
Q508-511			DTA114EUA	DIGITAL TRANSISTOR	
Q512-514			UPA672T	FET	
Q516-519			UPA672T	FET	
Q521-524			UPA672T	FET	
Q525			2SK1824	FET	
C2			CC73GCH1H010C	CHIP C 1.0PF C	E3
C3			CC73GCH1H100D	CHIP C 10PF D	K2,M2,E3
C3			CC73GCH1H120J	CHIP C 12PF J	K,E
C4,5			CK73GB1H471K	CHIP C 470PF K	
C7			CC73GCH1H070D	CHIP C 7.0PF D	K2,M2
C7			CC73GCH1H080D	CHIP C 8.0PF D	E3
C7			CC73GCH1H120J	CHIP C 12PF J	K,E
C8			CC73GCH1H0R5C	CHIP C 0.5PF C	K,E
C8			CC73GCH1H010C	CHIP C 1.0PF C	K2,M2,E3
C13			CK73GB1H471K	CHIP C 470PF K	
C14,15			CC73GCH1H060D	CHIP C 6.0PF D	K,E
C14,15			CC73GCH1H070D	CHIP C 7.0PF D	E3
C14,15			CC73GCH1H080D	CHIP C 8.0PF D	K2,M2
C24			C92-0695-05	CHIP-TAN 10UF 10WV	
C25			C92-0628-05	CHIP-TAN 10UF 10WV	
C28			CC73GCH1H080D	CHIP C 8.0PF D	E3
C28,29			CC73GCH1H020C	CHIP C 2.0PF C	K,M2,E
C28,29			CC73GCH1H020C	CHIP C 2.0PF C	K2
C29			CC73GCH1H110J	CHIP C 11PF J	E3
C30			CC73GCH1H680J	CHIP C 68PF J	
C31			CC73GCH1H331J	CHIP C 330PF J	
C32			CK73GB1H103K	CHIP C 0.010UF K	
C33			CC73GCH1H330J	CHIP C 33PF J	
C34			CK73GB1H103K	CHIP C 0.010UF K	
C36,37			CK73GB1H103K	CHIP C 0.010UF K	
C38,39			CC73GCH1H680J	CHIP C 68PF J	
C40,41			CK73GB1H103K	CHIP C 0.010UF K	
C42,43			CC73GCH1H030C	CHIP C 3.0PF C	
C44,45			CC73GCH1H040C	CHIP C 4.0PF C	
C46,47			CC73GCH1H030C	CHIP C 3.0PF C	
C48			CK73GB1H103K	CHIP C 0.010UF K	
C49,50			CC73GCH1H680J	CHIP C 68PF J	
C51			CK73GB1H103K	CHIP C 0.010UF K	
C52			CK73GB1H103J	CHIP C 0.010UF J	
C53			CK73GB1H102K	CHIP C 1000PF K	
C54			CK73GB1H103J	CHIP C 0.010UF J	
C55,56			CK73GB1H103K	CHIP C 0.010UF K	
C57			CK73GB1H103J	CHIP C 0.010UF J	
C58			CC73GCH1H180J	CHIP C 18PF J	
C59			CC73GCH1H150J	CHIP C 15PF J	

## PARTS LIST

TX-RX UNIT (X57-696X-XX)

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation	Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
C60			CK73GB1H103K	CHIP C 0.010UF K		C149			CK73GB1H103K	CHIP C 0.010UF K	
C61			CC73GCH1H080D	CHIP C 8.0PF D		C150			C92-0633-05	CHIP-TAN 22UF 10WV	
C62,63			CK73GB1H103K	CHIP C 0.010UF K		C151			C92-0008-05	CHIP-TAN 3.3UF 16WV	
C64			CK73GB1C104K	CHIP C 0.10UF K		C152			CK73GB1H103K	CHIP C 0.010UF K	
C65			C92-0628-05	CHIP-TAN 10UF 10WV		C153			CK73GB1H471K	CHIP C 470PF K	
C66,67			CC73GCH1H331J	CHIP C 330PF J		C154			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C68-70			CK73GB1C104K	CHIP C 0.10UF K		C155			CK73GB1H103K	CHIP C 0.010UF K	
C71			CK73GB1H103K	CHIP C 0.010UF K		C156			CK73GB1H102K	CHIP C 1000PF K	
C72			C92-0628-05	CHIP-TAN 10UF 10WV		C157			CK73GB1H103K	CHIP C 0.010UF K	
C73			CK73GB1C104K	CHIP C 0.10UF K		C158			C92-0008-05	CHIP-TAN 3.3UF 16WV	
C74			CK73GB1H102K	CHIP C 1000PF K		C159			CK73GB1H471K	CHIP C 470PF K	
C75			CK73GB1C104K	CHIP C 0.10UF K		C160			CK73GB1H102K	CHIP C 1000PF K	
C76			C92-0696-05	CHIP-TAN 47UF 10WV		C161-163			CK73GB1H103K	CHIP C 0.010UF K	
C77			CK73GB1H102K	CHIP C 1000PF K		C164			CK73GB1H471K	CHIP C 470PF K	
C78			CK73GB1C104K	CHIP C 0.10UF K		C166,167			CK73GB1H471K	CHIP C 470PF K	
C79			CK73FB1C224K	CHIP C 0.22UF K		C171			CK73GB1H471K	CHIP C 470PF K	
C80,81			C92-0628-05	CHIP-TAN 10UF 10WV		C172			CK73GB1H102K	CHIP C 1000PF K	
C82-84			CK73GB1H103K	CHIP C 0.010UF K		C173			CK73GB1H103K	CHIP C 0.010UF K	
C86			CK73GB1H102K	CHIP C 1000PF K		C174			C92-0008-05	CHIP-TAN 3.3UF 16WV	
C87			C92-0628-05	CHIP-TAN 10UF 10WV		C175			CK73GB1H102K	CHIP C 1000PF K	
C88			CK73GB1H102K	CHIP C 1000PF K		C176			CK73GB1H103K	CHIP C 0.010UF K	
C89,90			CK73GB1H103J	CHIP C 0.010UF J		C177			CK73GB1H471K	CHIP C 470PF K	
C91			CC73GCH1H040C	CHIP C 4.0PF C	K,M2,E	C178			C92-0606-05	CHIP-TAN 4.7UF 10WV	
C91			CC73GCH1H040C	CHIP C 4.0PF C	K2	C179			CK73GB1H103K	CHIP C 0.010UF K	
C91			CC73GCH1H050C	CHIP C 5.0PF C	E3	C184,185			CK73GB1H102K	CHIP C 1000PF K	
C92,93			CK73GB1H471K	CHIP C 470PF K		C189,190			CK73GB1H102K	CHIP C 1000PF K	
C94			CC73GCH1H030C	CHIP C 3.0PF C	K,M2,E	C191-195			CK73GB1H103K	CHIP C 0.010UF K	
C94			CC73GCH1H030C	CHIP C 3.0PF C	K2	C197			CK73FB1H333K	CHIP C 0.033UF K	
C94,95			CC73GCH1H040C	CHIP C 4.0PF C	E3	C198			CK73GB1C104K	CHIP C 0.10UF K	
C95			CC73GCH1H040C	CHIP C 4.0PF C	K,E	C199			CK73GB1H103K	CHIP C 0.010UF K	
C95			CC73GCH1H060D	CHIP C 6.0PF D	K2,M2	C204-208			CC73GCH1H101J	CHIP C 100PF J	
C96-99			CK73GB1H471K	CHIP C 470PF K		C210			CC73GCH1H060D	CHIP C 6.0PF D	K2,M2
C100			CC73GCH1H060D	CHIP C 6.0PF D	E3	C210			CC73GCH1H080D	CHIP C 8.0PF D	K,E
C100,101			CC73GCH1H050C	CHIP C 5.0PF C	K,M2,E	C210			CC73GCH1H100D	CHIP C 10PF D	E3
C100,101			CC73GCH1H050C	CHIP C 5.0PF C	K2	C211			CC73GCH1H120J	CHIP C 12PF J	K,E
C101			CC73GCH1H050C	CHIP C 5.0PF C	E3	C212-214			CK73GB1H103K	CHIP C 0.010UF K	
C102			CK73GB1H471K	CHIP C 470PF K		C215			CC73GCH1H050C	CHIP C 5.0PF C	K2,M2
C104			CK73GB1H471K	CHIP C 470PF K		C216			CK73GB1H471K	CHIP C 470PF K	
C105			CC73GCH1H070D	CHIP C 7.0PF D		C217			CK73GB1H102K	CHIP C 1000PF K	
C106			CK73GB1H471K	CHIP C 470PF K		C218			CK73GB1E103K	CHIP C 0.010UF K	
C107			CC73GCH1H060D	CHIP C 6.0PF D		C223			CC73GCH1H101J	CHIP C 100PF J	K,E
C109			CC73GCH1H120J	CHIP C 12PF J		C224			CC73GCH1H030C	CHIP C 3.0PF C	E3
C111			CC73GCH1H060D	CHIP C 6.0PF D		C231			C92-0633-05	CHIP-TAN 22UF 10WV	
C114-117			CC73GCH1H100D	CHIP C 10PF D		C232-234			CK73GB1H103J	CHIP C 0.010UF J	
C120,121			CK73GB1H471K	CHIP C 470PF K		C235			CC73GCH1H101J	CHIP C 100PF J	E3
C122,123			CK73GB1H103K	CHIP C 0.010UF K		C251			CC73GCH1H020C	CHIP C 2.0PF C	K2,M2
C124,125			C92-1341-05	ELECTRO 100UF 16WV		C251			CC73GCH1H030C	CHIP C 3.0PF C	E3
C126,127			C92-0633-05	CHIP-TAN 22UF 10WV		C600			CK73GB1C104K	CHIP C 0.10UF K	
C128,129			CK73GB1H103K	CHIP C 0.010UF K		C602			CK73GB1C104K	CHIP C 0.10UF K	
C130,131			CK73GB1H102K	CHIP C 1000PF K		C605			CK73GB1C104K	CHIP C 0.10UF K	
C132,133			CK73GB1H471K	CHIP C 470PF K		C613,614			CK73GB1E103K	CHIP C 0.010UF K	
C134,135			CK73GB1H103K	CHIP C 0.010UF K		C616			CK73GB1E103K	CHIP C 0.010UF K	
C136-139			C90-4016-05	ELECTRO 47UF 16WV		C623			CK73GB1C104K	CHIP C 0.10UF K	
C140,141			CK73GB1H103K	CHIP C 0.010UF K		C629			CC73GCH1H101J	CHIP C 100PF J	
C142,143			CK73GB1H102K	CHIP C 1000PF K		C634,635			CC73GCH1H220J	CHIP C 22PF J	
C144			CK73GB1H471K	CHIP C 470PF K		C638			CK73GB1C104K	CHIP C 0.10UF K	
C145			C92-0606-05	CHIP-TAN 4.7UF 10WV		C639			CK73GB1E103K	CHIP C 0.010UF K	
C146			CK73GB1H471K	CHIP C 470PF K		C640			C92-0628-05	CHIP-TAN 10UF 10WV	
C147			C92-0633-05	CHIP-TAN 22UF 10WV		C641			CK73GB1C104K	CHIP C 0.10UF K	
C148			CK73GB1H102K	CHIP C 1000PF K		C642			CK73GB1E103K	CHIP C 0.010UF K	



## PARTS LIST

### TX-RX UNIT (X57-696X-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
C643			C92-0628-05	CHIP-TAN 10UF 10WV		C756,757			C92-0628-05	CHIP-TAN 10UF 10WV	
C644			CK73GB1E103K	CHIP C 0.010UF K		C758			CK73FB1C105K	CHIP C 1.0UF K	
C645,646			C92-0628-05	CHIP-TAN 10UF 10WV		C759			CK73GB1H471K	CHIP C 470PF K	
C647			CC73GCH1H101J	CHIP C 100PF J		C760			CK73GB1H102K	CHIP C 1000PF K	
C648			CK73GB1E103K	CHIP C 0.010UF K		C761			CK73GB1C104K	CHIP C 0.10UF K	
C649			CC73GCH1H330J	CHIP C 33PF J		C762,763			CK73GB1H102K	CHIP C 1000PF K	
C652			CC73GCH1H101J	CHIP C 100PF J		C764,765			CK73GB1E103K	CHIP C 0.010UF K	
C657			CK73GB1E103K	CHIP C 0.010UF K		C766-768			CC73GCH1H101J	CHIP C 100PF J	
C662			C92-0628-05	CHIP-TAN 10UF 10WV		C769-771			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C663			C92-0519-05	CHIP-TAN 1.0UF 25WV		C772			C92-0823-05	CHIP-TAN 100UF 10WV	
C670			C92-0003-05	CHIP-TAN 0.47UF 25WV		C773			C92-0514-05	CHIP-TAN 2.2UF 10WV	
C679			C92-0628-05	CHIP-TAN 10UF 10WV		C774			CK73FB1C105K	CHIP C 1.0UF K	
C681			C92-0546-05	CHIP-TAN 68UF 6.3WV		C775-779			C92-0519-05	CHIP-TAN 1.0UF 25WV	
C684			CC73GCH1H101J	CHIP C 100PF J		C780-782			CK73FB1C105K	CHIP C 1.0UF K	
C685			CK73GB1E103K	CHIP C 0.010UF K		C783			CK73GB1H471K	CHIP C 470PF K	
C690			CC73GCH1H101J	CHIP C 100PF J		C784			CK73FB1C105K	CHIP C 1.0UF K	
C691,692			CK73GB1E103K	CHIP C 0.010UF K		C785,786			CK73GB1C104K	CHIP C 0.10UF K	
C693,694			C92-0628-05	CHIP-TAN 10UF 10WV		C787			CK73FB1C105K	CHIP C 1.0UF K	
C695,696			CK73GB1H471K	CHIP C 470PF K		C788			CC73GCH1H101J	CHIP C 100PF J	
C697,698			C92-0628-05	CHIP-TAN 10UF 10WV		C789			CE04EW1E331M	ELECTRO 330UF 25WV	
C700,701			C92-0628-05	CHIP-TAN 10UF 10WV		C790			CC73GCH1H101J	CHIP C 100PF J	
C703,704			CK73GB1C104K	CHIP C 0.10UF K		C791			CK73GB1H471K	CHIP C 470PF K	
C705			CK73GB1E103K	CHIP C 0.010UF K		C792-794			CK73GB1H102K	CHIP C 1000PF K	
C706			C92-0628-05	CHIP-TAN 10UF 10WV		C795			CC73GCH1H101J	CHIP C 100PF J	
C707-709			CK73GB1E103K	CHIP C 0.010UF K		C796,797			CK73GB1H102K	CHIP C 1000PF K	
C710			C92-0628-05	CHIP-TAN 10UF 10WV		C798			CE04EW1E470M	ELECTRO 47UF 25WV	
C711			CK73GB1H471K	CHIP C 470PF K		C799			CK73GB1H102K	CHIP C 1000PF K	
C712			CK73GB1E103K	CHIP C 0.010UF K		C800			CE04EW1E470M	ELECTRO 47UF 25WV	
C713,714			C92-0628-05	CHIP-TAN 10UF 10WV		C801			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C715			CK73GB1E103K	CHIP C 0.010UF K		C802-805			CK73GB1H102K	CHIP C 1000PF K	
C716,717			CK73GB1H471K	CHIP C 470PF K		C806			CE04EW1E470M	ELECTRO 47UF 25WV	
C718,719			CK73GB1E103K	CHIP C 0.010UF K		C807-810			CK73GB1H102K	CHIP C 1000PF K	
C720			C92-0532-05	CHIP-TAN 1.0UF 10WV		C811			CE04EW1E470M	ELECTRO 47UF 25WV	
C721,722			C92-0628-05	CHIP-TAN 10UF 10WV		C812,813			CK73GB1H102K	CHIP C 1000PF K	
C723			CK73FB1C105K	CHIP C 1.0UF K		C814			C92-0777-05	ELECTRO 1000UF 25WV	
C724			CK73GB1H182K	CHIP C 1800PF K		C815			CK73FB1E104K	CHIP C 0.10UF K	
C725			CC73GCH1H470J	CHIP C 47PF J		C816			CK73GB1H102K	CHIP C 1000PF K	
C726			CC73GCH1H181J	CHIP C 180PF J		C817			CE04EW1E470M	ELECTRO 47UF 25WV	
C727,728			CK73GB1E103K	CHIP C 0.010UF K		C818-820			CK73GB1H102K	CHIP C 1000PF K	
C729			C92-0628-05	CHIP-TAN 10UF 10WV		C821,822			CC73GCH1H101J	CHIP C 100PF J	
C730,731			CK73GB1E103K	CHIP C 0.010UF K		C823			C92-0619-05	CHIP-TAN 47UF 4WV	
C732			CK73GB1H471K	CHIP C 470PF K		C824			CK73GB1H472K	CHIP C 4700PF K	
C733			C92-0628-05	CHIP-TAN 10UF 10WV		C825			CK73GB1C104K	CHIP C 0.10UF K	
C734			CC73GCH1H270J	CHIP C 27PF J		C826			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C735			CC73GCH1H150J	CHIP C 15PF J		C827			C92-0823-05	CHIP-TAN 100UF 10WV	
C736			CK73GB1H182K	CHIP C 1800PF K		C828			C92-0514-05	CHIP-TAN 2.2UF 10WV	
C737			CC73GCH1H270J	CHIP C 27PF J		C829			CK73GB1C104K	CHIP C 0.10UF K	
C738			CK73GB1E103K	CHIP C 0.010UF K		C830			CK73GB1E103K	CHIP C 0.010UF K	
C739			CC73GCH1H181J	CHIP C 180PF J		C831			CK73GB1H102K	CHIP C 1000PF K	
C740			CC73GCH1H101J	CHIP C 100PF J		C832,833			CK73GB1E103K	CHIP C 0.010UF K	
C741			CK73GB1E103K	CHIP C 0.010UF K		C834,835			CK73GB1C104K	CHIP C 0.10UF K	
C742			CK73GB1H471K	CHIP C 470PF K		C836-838			CK73GB1E103K	CHIP C 0.010UF K	
C743			CK73GB1E103K	CHIP C 0.010UF K		C839			CK73GB1H271K	CHIP C 270PF K	
C744-746			C92-0628-05	CHIP-TAN 10UF 10WV		C840			CK73GB1H472K	CHIP C 4700PF K	
C747,748			CK73GB1E103K	CHIP C 0.010UF K		C841			CK73FB1C105K	CHIP C 1.0UF K	
C749			CK73GB1H471K	CHIP C 470PF K		C842			C92-0519-05	CHIP-TAN 1.0UF 25WV	
C750,751			CK73GB1E103K	CHIP C 0.010UF K		C843,844			CK73GB1C104K	CHIP C 0.10UF K	
C752			CK73GB1H471K	CHIP C 470PF K		C851			CK73GB1C104K	CHIP C 0.10UF K	
C753,754			C92-0628-05	CHIP-TAN 10UF 10WV		C852			CK73GB1H102K	CHIP C 1000PF K	
C755			CK73GB1H471K	CHIP C 470PF K							



## PARTS LIST

TX-RX UNIT (X57-696X-XX)

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation	Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
CN1			E04-0154-05	PIN SOCKET		L40			L92-0158-05	CHIP FERRITE	
CN2			E40-5538-05	PIN ASSY		L42			L40-1875-92	SMALL FIXED INDUCTOR (18NH)	E3
CN3			E04-0154-05	PIN SOCKET		L42			L40-6865-92	SMALL FIXED INDUCTOR (6.8NH)	K,M2,E
CN4			E40-5538-05	PIN ASSY		L42			L40-6865-92	SMALL FIXED INDUCTOR (6.8NH)	K2
CN14			E40-6009-05	FLAT CABLE CONNECTOR		L43			L92-0140-05	CHIP FERRITE	
CN15			E40-5703-05	PIN ASSY		L45			L40-1875-92	SMALL FIXED INDUCTOR (18NH)	E3
CN16			E40-5632-05	PIN ASSY		L600-608			L92-0140-05	CHIP FERRITE	
CN18,19			E04-0154-05	PIN SOCKET		L611-613			L92-0140-05	CHIP FERRITE	
CN600			E40-6102-05	PIN ASSY		X1			L77-1762-05	CRYSTAL RESONATOR (44.395MHZ)	
CN601			E40-5701-05	PIN ASSY		X2,3			L77-1849-05	VCXO (16.8MHZ)	
CN602			E40-6009-05	FLAT CABLE CONNECTOR		X600			L78-0431-05	RESONATOR (14.7456MHZ)	
CN603			E40-5887-05	PIN ASSY		X601			L77-1799-05	CRYSTAL RESONATOR (16.515MHZ)	
CN604			E40-5702-05	PIN ASSY		XF1			L71-0513-05	MCF (44.85MHZ NARR)	
CN605			E40-5704-05	PIN ASSY		XF2			L71-0512-05	MCF (44.85MHZ WIDE)	K,K2,M2
CN606			E40-5960-05	PIN ASSY		XF2			L71-0627-05	MCF (44.85M WIDE S)	E,E3
F1			F53-0217-05	FUSE		CP600,601			R90-0725-05	MULTI-COMP 1K X2	
CF1			L72-0366-05	CERAMIC FILTER		CP603			R90-1019-05	MULTI-COMP 100 X2	
CF2			L72-0376-05	CERAMIC FILTER		CP604,605			R90-0725-05	MULTI-COMP 1K X2	
L1			L34-4616-05	AIR-CORE COIL		CP606			R90-0719-05	MULTI-COMP 4.7K X2	
L2			L79-1849-05	HELICAL BLOCK	K,E	CP607,608			R90-0725-05	MULTI-COMP 1K X2	
L2		*	L79-1852-05	HELICAL BLOCK	K2,M2	CP609			R90-1019-05	MULTI-COMP 100 X2	
L2		*	L79-1853-05	HELICAL BLOCK	E3	CP610,611			R90-0750-05	CHIP COM 10 J 1/16W	
L3			L40-1575-34	SMALL FIXED INDUCTOR (15NH)	K2,M2,E3	CP612-614			R90-0725-05	MULTI-COMP 1K X2	
L3			L40-1875-34	SMALL FIXED INDUCTOR (18NH)	K,E	CP615-619			R90-0750-05	CHIP COM 10 J 1/16W	
L4,5			L79-1849-05	HELICAL BLOCK	K,E	CP620			R90-1019-05	MULTI-COMP 100 X2	
L4,5		*	L79-1852-05	HELICAL BLOCK	K2,M2	R2			RK73GB1J122J	CHIP R 1.2K J 1/16W	
L4,5		*	L79-1853-05	HELICAL BLOCK	E3	R3			RK73GB1J102J	CHIP R 1.0K J 1/16W	
L6			L40-1875-34	SMALL FIXED INDUCTOR (18NH)	K,M2,E	R5			RK73GB1J101J	CHIP R 100 J 1/16W	
L6			L40-1875-34	SMALL FIXED INDUCTOR (18NH)	K2	R8			RK73GB1J151J	CHIP R 150 J 1/16W	
L6			L40-2275-34	SMALL FIXED INDUCTOR (22NH)	E3	R9			RK73GB1J223J	CHIP R 22K J 1/16W	
L10			L40-1581-37	SMALL FIXED INDUCTOR (0.150UH)		R10			RK73GB1J180J	CHIP R 18 J 1/16W	
L11			L40-1885-34	SMALL FIXED INDUCTOR (180NH)		R11			RK73GB1J271J	CHIP R 270 J 1/16W	
L12			L40-3381-37	SMALL FIXED INDUCTOR (0.330UH)		R13			RK73GB1J271J	CHIP R 270 J 1/16W	
L13			L40-1005-34	SMALL FIXED INDUCTOR (10UH)		R14			RK73GB1J333J	CHIP R 33K J 1/16W	
L14			L34-4527-05	COIL		R17			RK73GB1J824J	CHIP R 820K J 1/16W	
L15			L34-4526-05	COIL		R18			RK73GB1J684J	CHIP R 680K J 1/16W	
L16			L34-4527-05	COIL		R19			RK73GB1J474J	CHIP R 470K J 1/16W	
L17,18			L34-4526-05	COIL		R20			RK73GB1J224J	CHIP R 220K J 1/16W	
L19			L34-4527-05	COIL		R30			RK73GB1J821J	CHIP R 820 J 1/16W	
L20			L40-1095-34	SMALL FIXED INDUCTOR (1UH)		R31			RK73GB1J5R6J	CHIP R 5.6 J 1/16W	
L21			L40-1005-34	SMALL FIXED INDUCTOR (10UH)		R32			RK73GB1J821J	CHIP R 820 J 1/16W	
L23			L40-1095-34	SMALL FIXED INDUCTOR (1UH)		R33			RK73GB1J470J	CHIP R 47 J 1/16W	
L24			L34-4459-05	COIL		R34			RK73GB1J102J	CHIP R 1.0K J 1/16W	
L25			L40-2775-34	SMALL FIXED INDUCTOR (27NH)		R35			RK73GB1J182J	CHIP R 1.8K J 1/16W	
L26			L40-1575-34	SMALL FIXED INDUCTOR (15NH)	K,M2,E	R36			RK73GB1J102J	CHIP R 1.0K J 1/16W	
L26			L40-1575-34	SMALL FIXED INDUCTOR (15NH)	K2	R37			RK73GB1J682J	CHIP R 6.8K J 1/16W	
L26-28			L40-2275-34	SMALL FIXED INDUCTOR (22NH)	E3	R38			R92-1252-05	CHIP R 0 OHM J 1/16W	
L27			L40-2275-34	SMALL FIXED INDUCTOR (22NH)	K,E	R39			RK73GB1J560J	CHIP R 56 J 1/16W	
L27,28			L40-1875-34	SMALL FIXED INDUCTOR (18NH)	K2,M2	R40			RK73GB1J270J	CHIP R 27 J 1/16W	
L28			L40-1875-34	SMALL FIXED INDUCTOR (18NH)	K,E	R41			RK73GB1J222J	CHIP R 2.2K J 1/16W	
L29,30			L40-1875-92	SMALL FIXED INDUCTOR (18NH)	K,M2,E	R42-45			RK73GB1J223J	CHIP R 22K J 1/16W	
L29,30			L40-1875-92	SMALL FIXED INDUCTOR (18NH)	K2	R46			RK73GB1J222J	CHIP R 2.2K J 1/16W	
L29,30			L40-2275-92	SMALL FIXED INDUCTOR (22NH)	E3	R47			RK73GB1J153J	CHIP R 15K J 1/16W	
L31,32			L40-1005-34	SMALL FIXED INDUCTOR (10UH)		R48			RK73GB1J473J	CHIP R 47K J 1/16W	
L33			L40-1575-92	SMALL FIXED INDUCTOR (15NH)	K,E	R49			RK73GB1J221J	CHIP R 220 J 1/16W	
L33			L40-1875-92	SMALL FIXED INDUCTOR (18NH)	K2,M2	R50			RK73GB1J153J	CHIP R 15K J 1/16W	
L33			L40-2275-92	SMALL FIXED INDUCTOR (22NH)	E3	R51			R92-1252-05	CHIP R 0 OHM J 1/16W	
L34			L40-1005-34	SMALL FIXED INDUCTOR (10UH)		R52			RK73GB1J223J	CHIP R 22K J 1/16W	
L35-39			L92-0140-05	CHIP FERRITE		R53			RK73GB1J682J	CHIP R 6.8K J 1/16W	
						R54			RK73GB1J102J	CHIP R 1.0K J 1/16W	

## PARTS LIST

### TX-RX UNIT (X57-696X-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
R55			RK73GB1J223J	CHIP R 22K J 1/16W		R150			RK73GB1J180J	CHIP R 18 J 1/16W	
R56			RK73GB1J682J	CHIP R 6.8K J 1/16W		R151-158			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R57			RK73GB1J332J	CHIP R 3.3K J 1/16W		R160,161			RK73GB1J471J	CHIP R 470 J 1/16W	
R58			RK73GB1J153J	CHIP R 15K J 1/16W		R162-164			RK73GB1J271J	CHIP R 270 J 1/16W	
R60			RK73GB1J103J	CHIP R 10K J 1/16W		R165			RK73GB1J471J	CHIP R 470 J 1/16W	
R61			RK73GB1J274J	CHIP R 270K J 1/16W		R166			RK73GB1J223J	CHIP R 22K J 1/16W	
R62			RK73GB1J222J	CHIP R 2.2K J 1/16W		R168			RK73GB1J271J	CHIP R 270 J 1/16W	E3
R63			RK73GB1J183J	CHIP R 18K J 1/16W		R168			R92-1252-05	CHIP R 0 OHM J 1/16W	K,M2,E
R65			RK73GB1J472J	CHIP R 4.7K J 1/16W		R168			R92-1252-05	CHIP R 0 OHM J 1/16W	K2
R66			RK73GB1J334J	CHIP R 330K J 1/16W		R169			RK73GB1J392J	CHIP R 3.9K J 1/16W	
R67			RK73GB1J560J	CHIP R 56 J 1/16W		R171			R92-1252-05	CHIP R 0 OHM J 1/16W	
R68,69			RK73GB1J332J	CHIP R 3.3K J 1/16W		R173-175			R92-1252-05	CHIP R 0 OHM J 1/16W	K2,M2
R70			RK73GB1J102J	CHIP R 1.0K J 1/16W		R173,174			R92-1252-05	CHIP R 0 OHM J 1/16W	E3
R71			RK73GB1J823J	CHIP R 82K J 1/16W		R174,175			R92-1252-05	CHIP R 0 OHM J 1/16W	K,E
R72			RK73GB1J334J	CHIP R 330K J 1/16W		R175			RK73GB1J391J	CHIP R 390 J 1/16W	E3
R73			RK73GB1J474J	CHIP R 470K J 1/16W		R176			RK73GB1J473J	CHIP R 47K J 1/16W	
R74,75			RK73GB1J220J	CHIP R 22 J 1/16W		R178			R92-1252-05	CHIP R 0 OHM J 1/16W	E3
R76			RK73GB1J104J	CHIP R 100K J 1/16W		R178,179			R92-1252-05	CHIP R 0 OHM J 1/16W	K,M2,E
R77,78			RK73GB1J473J	CHIP R 47K J 1/16W		R178,179			R92-1252-05	CHIP R 0 OHM J 1/16W	K2
R79			RK73GB1J104J	CHIP R 100K J 1/16W		R181			RK73GB1J182J	CHIP R 1.8K J 1/16W	
R82			RK73GB1J474J	CHIP R 470K J 1/16W		R182			R92-1252-05	CHIP R 0 OHM J 1/16W	
R83			R92-1252-05	CHIP R 0 OHM J 1/16W		R600			RK73GB1J473J	CHIP R 47K J 1/16W	
R87,88			RK73GB1J102J	CHIP R 1.0K J 1/16W		R601			R92-0670-05	CHIP R 0 OHM	
R90			R92-1252-05	CHIP R 0 OHM J 1/16W		R602			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R91			RK73GB1J472J	CHIP R 4.7K J 1/16W		R603			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R92			RK73GB1J182J	CHIP R 1.8K J 1/16W		R604			RK73GB1J333J	CHIP R 33K J 1/16W	
R93			RK73GB1J101J	CHIP R 100 J 1/16W	K2,M2	R605			RK73GB1J104J	CHIP R 100K J 1/16W	
R93,94			RK73GB1J101J	CHIP R 100 J 1/16W	K,E,E3	R606			RK73GB1J473J	CHIP R 47K J 1/16W	
R94			RK73GB1J820J	CHIP R 82 J 1/16W	K2,M2	R607-613			R92-1252-05	CHIP R 0 OHM J 1/16W	
R95			RK73GB1J472J	CHIP R 4.7K J 1/16W		R614			RK73GB1J473J	CHIP R 47K J 1/16W	
R96			RK73GB1J182J	CHIP R 1.8K J 1/16W		R615			R92-1252-05	CHIP R 0 OHM J 1/16W	
R97			RK73GB1J332J	CHIP R 3.3K J 1/16W		R616			RK73GB1J473J	CHIP R 47K J 1/16W	
R98			RK73GB1J102J	CHIP R 1.0K J 1/16W		R618			R92-1252-05	CHIP R 0 OHM J 1/16W	
R99			RK73GB1J101J	CHIP R 100 J 1/16W		R619			RK73GB1J473J	CHIP R 47K J 1/16W	
R100			RK73GB1J680J	CHIP R 68 J 1/16W		R620-622			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R101			RK73GB1J470J	CHIP R 47 J 1/16W		R623,624			R92-1252-05	CHIP R 0 OHM J 1/16W	
R102			RK73GB1J332J	CHIP R 3.3K J 1/16W		R625-627			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R103			RK73GB1J102J	CHIP R 1.0K J 1/16W		R629			R92-1252-05	CHIP R 0 OHM J 1/16W	
R105			RK73GB1J270J	CHIP R 27 J 1/16W		R630,631			RK73GB1J473J	CHIP R 47K J 1/16W	
R106			R92-1252-05	CHIP R 0 OHM J 1/16W		R633,634			RK73GB1J473J	CHIP R 47K J 1/16W	
R107			RK73GB1J470J	CHIP R 47 J 1/16W		R635			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R109			RK73GB1J101J	CHIP R 100 J 1/16W		R637			R92-1252-05	CHIP R 0 OHM J 1/16W	
R113			RK73GB1J471J	CHIP R 470 J 1/16W		R638			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R114			R92-1252-05	CHIP R 0 OHM J 1/16W		R639			R92-1252-05	CHIP R 0 OHM J 1/16W	
R120,121			RK73GB1J152J	CHIP R 1.5K J 1/16W		R640			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R122,123			RK73GB1J100J	CHIP R 10 J 1/16W		R641			R92-1252-05	CHIP R 0 OHM J 1/16W	
R124,125			RK73GB1J152J	CHIP R 1.5K J 1/16W		R642			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R126,127			RK73GB1J100J	CHIP R 10 J 1/16W		R643			RK73GB1J473J	CHIP R 47K J 1/16W	
R128			RK73GB1J472J	CHIP R 4.7K J 1/16W		R644			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R129,130			RK73GB1J473J	CHIP R 47K J 1/16W		R645,646			RK73GB1J473J	CHIP R 47K J 1/16W	
R131			RK73GB1J102J	CHIP R 1.0K J 1/16W		R647,648			RK73GB1J101J	CHIP R 100 J 1/16W	
R134			RK73GB1J821J	CHIP R 820 J 1/16W		R649-651			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R135			RK73GB1J5R6J	CHIP R 5.6 J 1/16W		R652			RK73GB1J101J	CHIP R 100 J 1/16W	
R136			RK73GB1J821J	CHIP R 820 J 1/16W		R653,654			R92-0670-05	CHIP R 0 OHM	
R137,138			RK73GB1J102J	CHIP R 1.0K J 1/16W		R655			RK73GB1J473J	CHIP R 47K J 1/16W	
R139-142			R92-1252-05	CHIP R 0 OHM J 1/16W		R656			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R143			RK73GB1J102J	CHIP R 1.0K J 1/16W		R657-661			RK73GB1J473J	CHIP R 47K J 1/16W	
R144			RK73GB1J472J	CHIP R 4.7K J 1/16W		R662			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R145			RK73FB2A470J	CHIP R 47 J 1/10W		R663-667			RK73GB1J473J	CHIP R 47K J 1/16W	
R148			RK73GB1J472J	CHIP R 4.7K J 1/16W		R668			RK73GB1J183J	CHIP R 18K J 1/16W	

## PARTS LIST

TX-RX UNIT (X57-696X-XX)

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation	Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
R669-671			RK73GB1J223J	CHIP R 22K J 1/16W		R760			RK73GB1J122J	CHIP R 1.2K J 1/16W	
R672			RK73GB1J104J	CHIP R 100K J 1/16W		R762			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R673			RK73GB1J224J	CHIP R 220K J 1/16W		R763			RK73GB1J103J	CHIP R 10K J 1/16W	
R674			RK73GB1J823J	CHIP R 82K J 1/16W		R764,765			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R675			RK73GB1J104J	CHIP R 100K J 1/16W		R766			RK73GB1J122J	CHIP R 1.2K J 1/16W	
R676			RK73GB1J823J	CHIP R 82K J 1/16W		R767			RK73GB1J473J	CHIP R 47K J 1/16W	
R678			RK73GB1J104J	CHIP R 100K J 1/16W		R768			RK73GB1J122J	CHIP R 1.2K J 1/16W	
R679,680			RK73GB1J223J	CHIP R 22K J 1/16W		R771			RK73GB1J122J	CHIP R 1.2K J 1/16W	
R681			RK73GB1J183J	CHIP R 18K J 1/16W		R772			RK73GB1J473J	CHIP R 47K J 1/16W	
R682			RK73GB1J153J	CHIP R 15K J 1/16W		R773			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R683			RK73GB1J124J	CHIP R 120K J 1/16W		R774			RK73GB1J105J	CHIP R 1.0M J 1/16W	
R684			RK73GB1J473J	CHIP R 47K J 1/16W		R775			RK73GB1J473J	CHIP R 47K J 1/16W	
R685,686			RK73GB1J104J	CHIP R 100K J 1/16W		R776			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R687			RK73GB1J223J	CHIP R 22K J 1/16W		R777			RK73GB1J473J	CHIP R 47K J 1/16W	
R688-690			RK73GB1J473J	CHIP R 47K J 1/16W		R778			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R691-693			R92-1252-05	CHIP R 0 OHM J 1/16W		R779			RK73GB1J473J	CHIP R 47K J 1/16W	
R694,695			RK73GB1J101J	CHIP R 100 J 1/16W		R780			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R696			RK73GB1J103J	CHIP R 10K J 1/16W		R781			RK73GB1J471J	CHIP R 470 J 1/16W	
R697			RK73GB1J101J	CHIP R 100 J 1/16W		R782			RK73GB1J473J	CHIP R 47K J 1/16W	
R698			RK73GB1J103J	CHIP R 10K J 1/16W		R783			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R699			R92-1252-05	CHIP R 0 OHM J 1/16W		R785			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R700			RK73GB1J101J	CHIP R 100 J 1/16W		R786			RK73GB1J473J	CHIP R 47K J 1/16W	
R701			R92-1252-05	CHIP R 0 OHM J 1/16W		R787			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R702			RK73GB1J473J	CHIP R 47K J 1/16W		R789			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R703			R92-1252-05	CHIP R 0 OHM J 1/16W		R790			RK73GB1J473J	CHIP R 47K J 1/16W	
R704,705			RK73GB1J473J	CHIP R 47K J 1/16W		R791			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R707-709			RK73GB1J223J	CHIP R 22K J 1/16W		R793			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R710			RK73GB1J473J	CHIP R 47K J 1/16W		R794			RK73GB1J473J	CHIP R 47K J 1/16W	
R712			RK73GB1J473J	CHIP R 47K J 1/16W		R795			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R713			RK73GB1J273J	CHIP R 27K J 1/16W		R798			RK73GB1J473J	CHIP R 47K J 1/16W	
R714			RK73GB1J223J	CHIP R 22K J 1/16W		R799			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R715			RK73GB1J103J	CHIP R 10K J 1/16W		R802			RK73GB1J223J	CHIP R 2.2 J 1/10W	
R717,718			RK73GB1J473J	CHIP R 47K J 1/16W		R803			RK73GB1J473J	CHIP R 47K J 1/16W	
R719			RK73GB1J154J	CHIP R 150K J 1/16W		R804			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R720			RK73GB1J473J	CHIP R 47K J 1/16W		R805			RK73GB1J473J	CHIP R 47K J 1/16W	
R721			RK73GB1J223J	CHIP R 22K J 1/16W		R806			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R722			RK73GB1J334J	CHIP R 330K J 1/16W		R807			RK73GB1J473J	CHIP R 47K J 1/16W	
R723,724			R92-1252-05	CHIP R 0 OHM J 1/16W		R808			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R726			RK73GB1J473J	CHIP R 47K J 1/16W		R809			RK73GB1J473J	CHIP R 47K J 1/16W	
R727			R92-1252-05	CHIP R 0 OHM J 1/16W		R810			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R728,729			RK73GB1J223J	CHIP R 22K J 1/16W		R811			RK73GB1J473J	CHIP R 47K J 1/16W	
R730			RK73GB1J101J	CHIP R 100 J 1/16W		R812			RK73GB1J223J	CHIP R 22K J 1/16W	
R731			RK73GB1J472J	CHIP R 4.7K J 1/16W		R813,814			RK73GB1J473J	CHIP R 47K J 1/16W	
R732			RK73GB1J473J	CHIP R 47K J 1/16W		R815			RK73GB1J104J	CHIP R 100K J 1/16W	
R733			R92-1252-05	CHIP R 0 OHM J 1/16W		R817			RK73GB1J101J	CHIP R 100 J 1/16W	
R734			RK73GB1J473J	CHIP R 47K J 1/16W		R818			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R735			RK73GB1J333J	CHIP R 33K J 1/16W		R819-822			RK73GB1J103J	CHIP R 10K J 1/16W	
R736,737			RK73GB1J473J	CHIP R 47K J 1/16W		R823			RK73GB1J474J	CHIP R 470K J 1/16W	
R738			RK73GB1J274J	CHIP R 270K J 1/16W		R824			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R739			RK73GB1J103J	CHIP R 10K J 1/16W		R825,826			RK73GB1J824J	CHIP R 820K J 1/16W	
R740			RK73GB1J104J	CHIP R 100K J 1/16W		R827			RK73GB1J822J	CHIP R 8.2K J 1/16W	
R741			RK73GB1J154J	CHIP R 150K J 1/16W		R828			RK73GB1J273J	CHIP R 27K J 1/16W	
R742			R92-0670-05	CHIP R 0 OHM		R829			RK73GB1J224J	CHIP R 220K J 1/16W	
R743			RK73GB1J473J	CHIP R 47K J 1/16W		R830			RK73GB1J563J	CHIP R 56K J 1/16W	
R744			RK73GB1J393J	CHIP R 39K J 1/16W		R831			RK73GB1J154J	CHIP R 150K J 1/16W	
R745			RK73GB1J473J	CHIP R 47K J 1/16W		R832			RK73GB1J822J	CHIP R 8.2K J 1/16W	
R747			RK73GB1J103J	CHIP R 10K J 1/16W		R833			RK73GB1J223J	CHIP R 22K J 1/16W	
R749-752			R92-1252-05	CHIP R 0 OHM J 1/16W		R834			RK73GB1J332J	CHIP R 3.3K J 1/16W	
R753,754			RK73GB1J473J	CHIP R 47K J 1/16W		R836			RK73GB1J473J	CHIP R 47K J 1/16W	
R758			RK73GB1J103J	CHIP R 10K J 1/16W		R837			RK73GB1J332J	CHIP R 3.3K J 1/16W	

## PARTS LIST

### TX-RX UNIT (X57-696X-XX)

### RX VCO UNIT (X58-480X-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination
R839,840			RK73GB1J561J	CHIP R 560 J 1/16W	
R841,842			R92-0670-05	CHIP R 0 OHM	
R843			RK73GB1J274J	CHIP R 270K J 1/16W	
R844			RK73GB1J334J	CHIP R 330K J 1/16W	
K1			S76-0401-05	RELAY	
D1-4			DAN235K	DIODE	
D5			MA742	DIODE	
D7			1SS355	DIODE	
D8			DAN235K	DIODE	
D11			02DZ5.1(Y)	ZENER DIODE	
D12			02DZ18(X,Y)	ZENER DIODE	
D13			MA742	DIODE	
D600			DA204U	DIODE	
D606-612			DA204U	DIODE	
D614-616			DA204U	DIODE	
D618-623			DA204U	DIODE	
D626			MINISMDE190	VARIATOR	
D627,628			1SS355	DIODE	
D629			DA204U	DIODE	
IC1,2			NJM4558E	MOS-IC	
IC3			NJM78L05UA	BI-POLAR IC	
IC4			NJM7808FA	BI-POLAR IC	
IC5			AN8009M	MOS-IC	
IC6			M62354GP	MOS-IC	
IC7			BU4094BCF	MOS-IC	
IC9			TK14489V	BI-POLAR IC	
IC10			TA7808F	ANALOGUE IC	
IC11			NJM78L05UA	BI-POLAR IC	
IC600			AT24C08A10S118	ROM IC	
IC601			RH5VL42C	MOS-IC	
IC602			BU4094BCFV	MOS-IC	
IC603			TC74LVX4245FS	MOS-IC	
IC604			30622M6P-177GP	MICROPROCESSOR IC	
IC605			BU4053BCF	MOS-IC	
IC606			TC74LVX4245FS	MOS-IC	
IC607			NJM4558E	MOS-IC	
IC608			TA75S01F	MOS-IC	
IC609			AT29C020-90TI	ROM IC	
IC610			TA75S01F	MOS-IC	
IC611			NJM4558E	MOS-IC	
IC612			TC7S04FU	MOS-IC	
IC613			TC74VHC4040FT	MOS-IC	
IC614			AK4550VT	MOS-IC	
IC615			M62364FP	MOS-IC	
IC616,617			NJM4558E	MOS-IC	
IC618			320VC5402PGE	MICROPROCESSOR IC	
IC619			TC75W51FU	MOS-IC	
IC620			ADM202EARN	MOS-IC	
IC621			TC7S00FU	MOS-IC	
IC622			TC7S66FU	MOS-IC	
IC623			BU4094BCFV	MOS-IC	
IC624			XC62FP1802P	MOS-IC	
IC625,626			XC62FP3302P	MOS-IC	
IC627,628			TA78L05F	MOS-IC	
IC629			LA4422	BI-POLAR IC	
IC630			TA78L05F	MOS-IC	
IC631,632			TA75W01FU	MOS-IC	
Q1,2			2SC3357	TRANSISTOR	
Q3			2SC3356(R24)	TRANSISTOR	
Q4			DTC144EUA	DIGITAL TRANSISTOR	
Q5			DTA144EUA	DIGITAL TRANSISTOR	
Q6			DTC144EUA	DIGITAL TRANSISTOR	
Q7			2SC4617(S)	TRANSISTOR	
Q8,9			2SC3356	TRANSISTOR	
Q10			2SC3357	TRANSISTOR	
Q11			2SC3356(R24)	TRANSISTOR	
Q12-15			2SC4116(GR)	TRANSISTOR	
Q16			2SB1132(Q,R)	TRANSISTOR	
Q17			DTC114EUA	DIGITAL TRANSISTOR	
Q18			2SB1386(R)	TRANSISTOR	
Q19			DTC114EUA	DIGITAL TRANSISTOR	
Q23			DTC114EUA	DIGITAL TRANSISTOR	
Q24			DTD114EK	DIGITAL TRANSISTOR	
Q25,26			DTC114EUA	DIGITAL TRANSISTOR	
Q27			DTC144EUA	DIGITAL TRANSISTOR	
Q600			2SK1824	FET	
Q601			DTC114EUA	DIGITAL TRANSISTOR	
Q602			2SK1824	FET	
Q603			DTC114EUA	DIGITAL TRANSISTOR	
Q604			2SK1824	FET	
Q605			DTC114EUA	DIGITAL TRANSISTOR	
Q606			DTC363EU	DIGITAL TRANSISTOR	
Q607,608			DTC144EUA	DIGITAL TRANSISTOR	
Q609			DTC114EUA	DIGITAL TRANSISTOR	
Q610			2SJ506(S)	FET	
Q611			DTC114EUA	DIGITAL TRANSISTOR	
Q612			DTC144EUA	DIGITAL TRANSISTOR	
Q613,614			DTD123TK	DIGITAL TRANSISTOR	
Q615			DTC144EUA	DIGITAL TRANSISTOR	
TH1			157-503-53006	THERMISTOR	
TH700,701			B57331V2103J	THERMISTOR	
A1			W02-1939-05	DBM	
<b>RX VCO UNIT (X58-480X-XX) 0-10 : K,E 0-11 : K2,M2 0-12 : E3</b>					
C304,305			CK73GB1H102K	CHIP C 1000PF K	
C306			CK73GB1H103K	CHIP C 0.010UF K	
C307			CK73GB1H471K	CHIP C 470PF K	
C308-310			CK73FB1E104K	CHIP C 0.10UF K	
C311			C92-0001-05	CHIP-TAN 0.1UF 35WV	
C312			CC73GCH1H060D	CHIP C 6.0PF D	K2,M2
C312			CC73GCH1H070D	CHIP C 7.0PF D	K,E
C312			CC73GCH1H080D	CHIP C 8.0PF D	E3
C314			CC73GCH1H120J	CHIP C 12PF J	K,E
C314			CC73GCH1H150J	CHIP C 15PF J	K2,M2
C314			CC73GCH1H180J	CHIP C 18PF J	E3
C315			CK73FB1H473K	CHIP C 0.047UF K	
C317			CC73GCH1H060D	CHIP C 6.0PF D	K2,M2
C317			CC73GCH1H070D	CHIP C 7.0PF D	K,E
C317			CC73GCH1H080D	CHIP C 8.0PF D	E3
C318			C92-0514-05	CHIP-TAN 2.2UF 10WV	
C319			CK73GB1H471K	CHIP C 470PF K	
C320			C92-0514-05	CHIP-TAN 2.2UF 10WV	
C321			CC73GCH1H040C	CHIP C 4.0PF C	
C322			CK73GB1H471K	CHIP C 470PF K	

## PARTS LIST

RX VCO UNIT (X58-480X-XX)

TX VCO UNIT (X58-481X-XX)

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation	Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
C323			CK73FB1E224K	CHIP C 0.22UF K		R315			RK73GB1J151J	CHIP R 150 J 1/16W	
C324			C92-0002-05	CHIP-TAN 0.22UF 35WV		R316			RK73FB2A152J	CHIP R 1.5K J 1/10W	
C325			CC73GCH1H040C	CHIP C 4.0PF C		R317,318			R92-1252-05	CHIP R 0 OHM J 1/16W	
C350,351			CK73GB1H471K	CHIP C 470PF K		R319			RK73GB1J330J	CHIP R 33 J 1/16W	
C354			CK73GB1H471K	CHIP C 470PF K		R320			RK73GB1J222J	CHIP R 2.2K J 1/16W	
C355			CC73GCH1H050B	CHIP C 5.0PF B	K,M2,E	R321			RK73GB1J273J	CHIP R 27K J 1/16W	
C355			CC73GCH1H050B	CHIP C 5.0PF B	K2	R322			RK73GB1J103J	CHIP R 10K J 1/16W	
C355			CC73GCH1H060B	CHIP C 6.0PF B	E3	R350-353			R92-1252-05	CHIP R 0 OHM J 1/16W	
C356			CC73GCH1H060B	CHIP C 6.0PF B	K,M2,E	R354,355			RK73GB1J330J	CHIP R 33 J 1/16W	
C356			CC73GCH1H060B	CHIP C 6.0PF B	K2	R356			RK73GB1J181J	CHIP R 180 J 1/16W	K2,M2
C356			CC73GCH1H070B	CHIP C 7.0PF B	E3	R356			RK73GB1J221J	CHIP R 220 J 1/16W	K,E,E3
C357			CK73GB1H471K	CHIP C 470PF K		R357			RK73GB1J151J	CHIP R 150 J 1/16W	K2,M2
C358,359			CC73GCH1H1R5B	CHIP C 1.5PF B		R357			RK73GB1J181J	CHIP R 180 J 1/16W	K,E,E3
C360,361			CK73FB1E104K	CHIP C 0.10UF K		R358,359			RK73GB1J470J	CHIP R 47 J 1/16W	
C362			CC73GCH1H220G	CHIP C 22PF G		R360-363			RK73GB1J472J	CHIP R 4.7K J 1/16W	
C363			CC73GCH1H150G	CHIP C 15PF G	K,E,E3	R364			RK73GB1J103J	CHIP R 10K J 1/16W	
C363			CC73GCH1H180G	CHIP C 18PF G	K2,M2	R365			RK73GB1J333J	CHIP R 33K J 1/16W	
C364,365			CK73GB1H471K	CHIP C 470PF K		R366			RK73GB1J103J	CHIP R 10K J 1/16W	
C366-369			CC73GCH1H070B	CHIP C 7.0PF B		R367			RK73GB1J101J	CHIP R 100 J 1/16W	
C370,371			CC73GCH1H100C	CHIP C 10PF C		R368			RK73GB1J330J	CHIP R 33 J 1/16W	
C372,373			CK73GB1H471K	CHIP C 470PF K		D350-353			1SV282	VARIABLE CAPACITANCE DIODE	
C374,375			CC73GCH1H0R5B	CHIP C 0.5PF B		IC300			CD8468	MOS-IC	
C376-378			CK73GB1H471K	CHIP C 470PF K		IC300			SA7025DK	MOS-IC	
C379			CC73GCH1H040C	CHIP C 4.0PF C		Q300,301			2SC4116(GR)	TRANSISTOR	
C383			CK73GB1H471K	CHIP C 470PF K		Q302			2SC4226(R24)	TRANSISTOR	
C386			CC73GCH1H101J	CHIP C 100PF J	K,E,E3	Q350,351			2SK508NV(K52)	FET	
C386			CC73GCH1H220J	CHIP C 22PF J	K2,M2	Q352,353			2SC4116(Y)	TRANSISTOR	
TC350,351			C05-0396-05	CERAMIC TRIMMER CAPACITOR (8PF)		Q354			DTC114EUA	DIGITAL TRANSISTOR	
Q355						Q355			2SC4226(R24)	TRANSISTOR	
CN300			E40-5699-05	PIN ASSY							
CN350			E40-5755-05	PIN ASSY							
CN351			E40-6098-05	PIN ASSY							
-			F10-2377-04	SHIELDING CASE							
L300			L92-0148-05	CHIP FERRITE							
L301,302			L40-1575-34	SMALL FIXED INDUCTOR (15NH)	K2,M2						
L301,302			L40-1875-34	SMALL FIXED INDUCTOR (18NH)	K,E,E3						
L303			L40-1875-34	SMALL FIXED INDUCTOR (18NH)	K2,M2						
L303			L40-2275-34	SMALL FIXED INDUCTOR (22NH)	K,E						
L303			L40-2775-34	SMALL FIXED INDUCTOR (27NH)	E3						
L350-355			L40-1095-34	SMALL FIXED INDUCTOR (1UH)							
L356,357			L34-4607-05	AIR-CORE COIL	K2,M2						
L356,357			L34-4608-05	AIR-CORE COIL	K,E						
L356,357			L34-4609-05	AIR-CORE COIL	E3						
L358-361			L40-1595-34	SMALL FIXED INDUCTOR (1.5UH)							
L362			L40-2775-34	SMALL FIXED INDUCTOR (27NH)	K2,M2						
L362			L40-3371-34	SMALL FIXED INDUCTOR (33NH)	K,E,E3						
R300			RK73GB1J100J	CHIP R 10 J 1/16W		C304,305			CK73GB1H102K	CHIP C 1000PF K	
R301-304			RK73GB1J101J	CHIP R 100 J 1/16W		C306			CK73GB1H103K	CHIP C 0.010UF K	
R305			R92-1252-05	CHIP R 0 OHM J 1/16W		C307			CK73GB1H471K	CHIP C 470PF K	
R306			RK73GB1J220J	CHIP R 22 J 1/16W		C308-310			CK73FB1E104K	CHIP C 0.10UF K	
R308			RK73GB1J560J	CHIP R 56 J 1/16W		C311			C92-0001-05	CHIP-TAN 0.1UF 35WV	
R309			RK73GB1J331J	CHIP R 330 J 1/16W	K,E,E3	C312			CC73GCH1H050C	CHIP C 5.0PF C	K2,M2
R309			RK73GB1J331J	CHIP R 330 J 1/16W	K2,M2	C312			CC73GCH1H060D	CHIP C 6.0PF D	K,E
R310			RK73GB1J332J	CHIP R 3.3K J 1/16W		C312			CC73GCH1H070D	CHIP C 7.0PF D	E3
R311			RK73GB1J103J	CHIP R 10K J 1/16W		C314			CC73GCH1H100D	CHIP C 10PF D	K2,M2
R312			RK73GB1J331J	CHIP R 330 J 1/16W	K,E,E3	C314			CC73GCH1H120J	CHIP C 12PF J	K,E,E3
R312			RK73GB1J391J	CHIP R 390 J 1/16W		C315			CK73FB1H473K	CHIP C 0.047UF K	
R313			RK73GB1J222J	CHIP R 2.2K J 1/16W	K2,M2	C317			CC73GCH1H050C	CHIP C 5.0PF C	K2,M2
R314			RK73GB1J474J	CHIP R 470K J 1/16W		C317			CC73GCH1H060D	CHIP C 6.0PF D	K,E
						C317			CC73GCH1H070D	CHIP C 7.0PF D	E3
						C318			C92-0514-05	CHIP-TAN 2.2UF 10WV	
						C319			CK73GB1H471K	CHIP C 470PF K	
						C320			C92-0514-05	CHIP-TAN 2.2UF 10WV	
						C321			CC73GCH1H040C	CHIP C 4.0PF C	
						C322			CK73GB1H471K	CHIP C 470PF K	
						C323			CK73FB1E224K	CHIP C 0.22UF K	
						C324			C92-0002-05	CHIP-TAN 0.22UF 35WV	K,M2,E
						C324			C92-0002-05	CHIP-TAN 0.22UF 35WV	K2
						C324			C92-0502-05	CHIP-TAN 0.33UF 35WV	E3
						C325			CC73GCH1H040C	CHIP C 4.0PF C	
						C329,330			CK73GB1H471K	CHIP C 470PF K	

## TX VCO UNIT (X58-481X-XX) 0-10 : K,E 0-11 : K2,M2 0-12 : E3

## PARTS LIST

### TX VCO UNIT (X58-481X-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
C350,351			CK73GB1H471K	CHIP C 470PF K	K,M2,E	L352-354			L40-1095-34	SMALL FIXED INDUCTOR (1UH)	K2
C351			CK73GB1H471K	CHIP C 470PF K	K2	L355			L40-1095-34	SMALL FIXED INDUCTOR (1UH)	E3
C352			CK73GB1H471K	CHIP C 470PF K	E3	L356			L34-4605-05	AIR-CORE COIL	K2,M2
C353			CC73GCH1H101J	CHIP C 100PF J	K,E,E3	L356			L34-4645-05	AIR-CORE COIL	K,E
C354			CK73GB1H471K	CHIP C 470PF K	E3	L357			L34-4607-05	AIR-CORE COIL	E3
C354			CK73GB1H471K	CHIP C 470PF K	K,M2,E	L358			L40-1095-34	SMALL FIXED INDUCTOR (1UH)	K,M2,E
C355			CK73GB1H471K	CHIP C 470PF K	K2	L358			L40-1095-34	SMALL FIXED INDUCTOR (1UH)	K2
C355			CC73GCH1H100C	CHIP C 10PF C	E3	L359			L40-1595-34	SMALL FIXED INDUCTOR (1.5UH)	E3
C356			CC73GCH1H070B	CHIP C 7.0PF B	K2,M2	L360			L40-1095-34	SMALL FIXED INDUCTOR (1UH)	K,M2,E
C356			CC73GCH1H080B	CHIP C 8.0PF B	K,E	L360			L40-1095-34	SMALL FIXED INDUCTOR (1UH)	K2
C357			CK73GB1H471K	CHIP C 470PF K	E3	L361			L40-1595-34	SMALL FIXED INDUCTOR (1.5UH)	E3
C358			CC73GCH1H030B	CHIP C 3.0PF B	E3	L362			L40-2275-34	SMALL FIXED INDUCTOR (22NH)	K2,M2
C359			CC73GCH1H1R5B	CHIP C 1.5PF B	K,M2,E	L362			L40-3371-34	SMALL FIXED INDUCTOR (33NH)	K,E,E3
C359			CC73GCH1H1R5B	CHIP C 1.5PF B	K2						
C360			CK73FB1E104K	CHIP C 0.10UF K	K,M2,E	R300			RK73GB1J100J	CHIP R 10 J 1/16W	
C360			CK73FB1E104K	CHIP C 0.10UF K	K2	R301-304			RK73GB1J101J	CHIP R 100 J 1/16W	
C361			CK73FB1E104K	CHIP C 0.10UF K	E3	R305			R92-1252-05	CHIP R 0 OHM J 1/16W	
C362			CC73GCH1H120G	CHIP C 12PF G	K,M2,E	R306			RK73GB1J220J	CHIP R 22 J 1/16W	
C362			CC73GCH1H120G	CHIP C 12PF G	K2	R308			RK73GB1J560J	CHIP R 56 J 1/16W	
C363			CC73GCH1H180G	CHIP C 18PF G	E3	R309			RK73GB1J331J	CHIP R 330 J 1/16W	
C364			CK73GB1H471K	CHIP C 470PF K	K,M2,E	R310			RK73GB1J332J	CHIP R 3.3K J 1/16W	
C364			CK73GB1H471K	CHIP C 470PF K	K2	R311			RK73GB1J103J	CHIP R 10K J 1/16W	
C365			CK73GB1H471K	CHIP C 470PF K	E3	R312			RK73GB1J331J	CHIP R 330 J 1/16W	
C366			CC73GCH1H070B	CHIP C 7.0PF B	K,M2,E	R313			RK73GB1J222J	CHIP R 2.2K J 1/16W	
C366			CC73GCH1H070B	CHIP C 7.0PF B	K2	R314			RK73GB1J474J	CHIP R 470K J 1/16W	
C367			CC73GCH1H070B	CHIP C 7.0PF B	E3	R315			RK73GB1J151J	CHIP R 150 J 1/16W	
C368			CC73GCH1H070B	CHIP C 7.0PF B	K,M2,E	R316			RK73FB2A152J	CHIP R 1.5K J 1/10W	
C368			CC73GCH1H070B	CHIP C 7.0PF B	K2	R317,318			R92-1252-05	CHIP R 0 OHM J 1/16W	
C369			CC73GCH1H080B	CHIP C 8.0PF B	E3	R319			RK73GB1J330J	CHIP R 33 J 1/16W	
C370			CC73GCH1H070B	CHIP C 7.0PF B	K,M2,E	R320			RK73GB1J222J	CHIP R 2.2K J 1/16W	
C370			CC73GCH1H070B	CHIP C 7.0PF B	K2	R321			RK73GB1J273J	CHIP R 27K J 1/16W	
C371			CC73GCH1H080B	CHIP C 8.0PF B	E3	R322			RK73GB1J103J	CHIP R 10K J 1/16W	
C374			CC73GCH1H0R5B	CHIP C 0.5PF B	K,M2,E	R350			R92-1252-05	CHIP R 0 OHM J 1/16W	E3
C374			CC73GCH1H0R5B	CHIP C 0.5PF B	K2	R351			R92-1252-05	CHIP R 0 OHM J 1/16W	K,M2,E
C375			CC73GCH1H0R5B	CHIP C 0.5PF B	E3	R351			R92-1252-05	CHIP R 0 OHM J 1/16W	K2
C375			CC73GCH1H0R5B	CHIP C 0.5PF B	E3	R352			R92-1252-05	CHIP R 0 OHM J 1/16W	E3
C375			CC73GCH1H0R5B	CHIP C 0.5PF B	E3	R353			R92-1252-05	CHIP R 0 OHM J 1/16W	K,M2,E
C377,378			CK73GB1H471K	CHIP C 470PF K		R353			R92-1252-05	CHIP R 0 OHM J 1/16W	K2
C379			CC73GCH1H040C	CHIP C 4.0PF C		R354			RK73GB1J330J	CHIP R 33 J 1/16W	K,M2,E
C380			CC73GCH1H0R5B	CHIP C 0.5PF B	K,M2,E	R354			RK73GB1J330J	CHIP R 33 J 1/16W	K,M2,E
C380			CC73GCH1H0R5B	CHIP C 0.5PF B	K2	R354			RK73GB1J330J	CHIP R 33 J 1/16W	K2
C381			CC73GCH1H0R5B	CHIP C 0.5PF B	E3	R355			RK73GB1J330J	CHIP R 33 J 1/16W	E3
C382,383			CC73GCH1H471J	CHIP C 470PF J		R358			RK73GB1J470J	CHIP R 47 J 1/16W	E3
TC350			C05-0396-05	CERAMIC TRIMMER (8PF)	K,M2,E	R359			RK73GB1J470J	CHIP R 47 J 1/16W	K,M2,E
TC350			C05-0396-05	CERAMIC TRIMMER (8PF)	K2	R359			RK73GB1J470J	CHIP R 47 J 1/16W	K2
TC351			C05-0396-05	CERAMIC TRIMMER (8PF)	E3	R365			RK73GB1J333J	CHIP R 33K J 1/16W	
CN300			E40-5699-05	PIN ASSY		R366			RK73GB1J103J	CHIP R 10K J 1/16W	
CN350			E40-5755-05	PIN ASSY		R367			RK73GB1J820J	CHIP R 82 J 1/16W	
CN351			E40-6098-05	PIN ASSY		R368			RK73GB1J330J	CHIP R 33 J 1/16W	
-			F10-2377-04	SHIELDING CASE		R372,373			RK73GB1J104J	CHIP R 100K J 1/16W	K,M2,E
L300			L92-0148-05	CHIP FERRITE		R372,373			RK73GB1J104J	CHIP R 100K J 1/16W	K2
L301,302			L40-1575-34	SMALL FIXED INDUCTOR (15NH)	K,M2,E	R374,375			RK73GB1J104J	CHIP R 100K J 1/16W	E3
L301,302			L40-1575-34	SMALL FIXED INDUCTOR (15NH)	K2	R376			RK73GB1J151J	CHIP R 150 J 1/16W	K2,M2
L301,302			L40-1875-34	SMALL FIXED INDUCTOR (18NH)	E3	R376			RK73GB1J181J	CHIP R 180 J 1/16W	K,E
L303			L40-1875-34	SMALL FIXED INDUCTOR (18NH)	K2,M2	R377			RK73GB1J181J	CHIP R 180 J 1/16W	E3
L303			L40-2275-34	SMALL FIXED INDUCTOR (22NH)	K,E	D350			1SV282	VARIABLE CAPACITANCE DIODE	K,M2,E
L303			L40-2775-34	SMALL FIXED INDUCTOR (27NH)	E3	D350			1SV282	VARIABLE CAPACITANCE DIODE	K2
L304-307			L92-0140-05	CHIP FERRITE		D351			1SV282	VARIABLE CAPACITANCE DIODE	E3
L350,351			L40-1095-34	SMALL FIXED INDUCTOR (1UH)	E3	D352			1SV282	VARIABLE CAPACITANCE DIODE	K,M2,E
L352-354			L40-1095-34	SMALL FIXED INDUCTOR (1UH)	K,M2,E	D352			1SV282	VARIABLE CAPACITANCE DIODE	K2
						D353			1SV282	VARIABLE CAPACITANCE DIODE	E3

## PARTS LIST

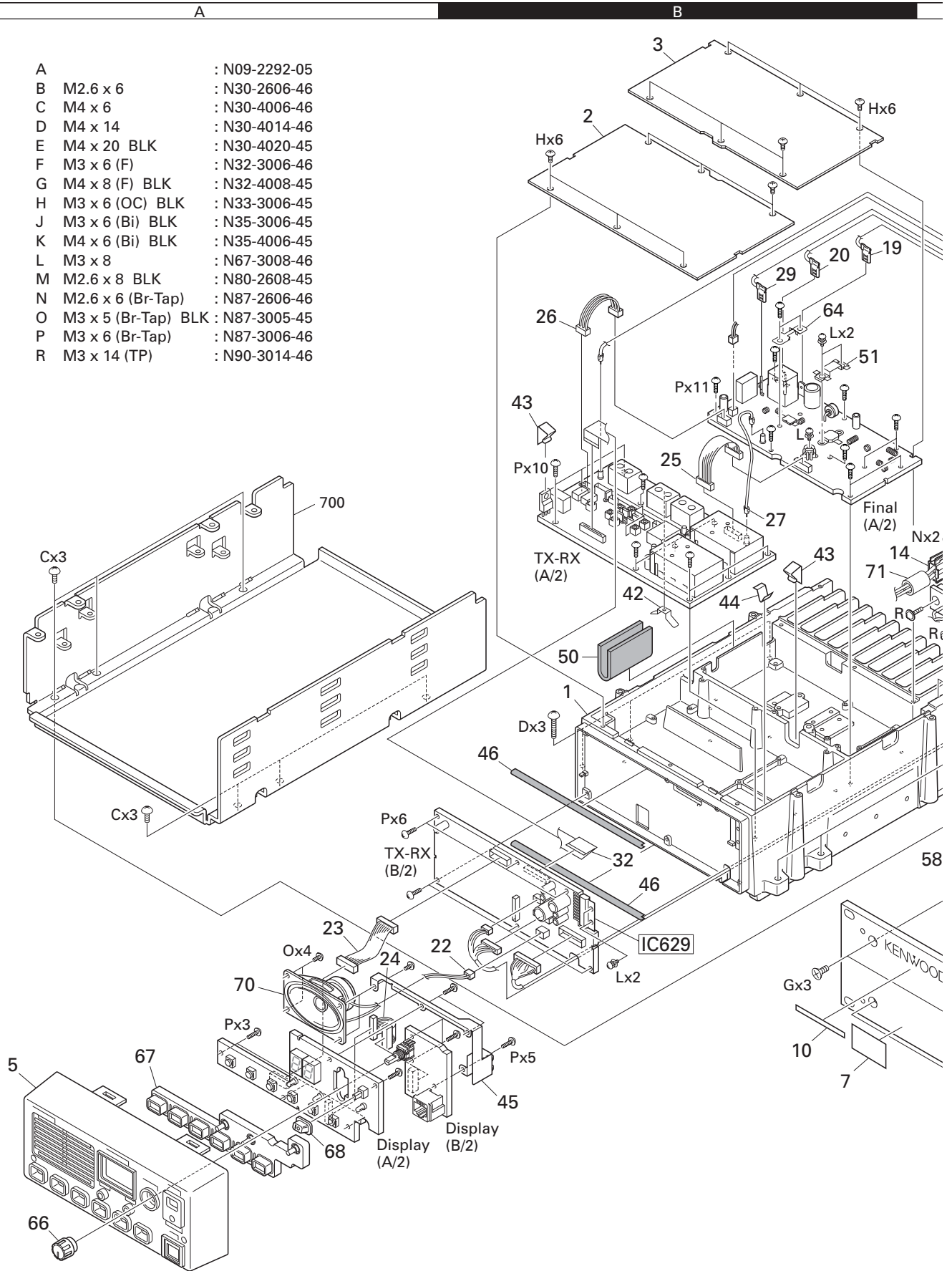
TX VCO UNIT (X58-481X-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
D354			1SV214	VARIABLE CAPACITANCE DIODE	K,M2,E						
D354			1SV214	VARIABLE CAPACITANCE DIODE	K2						
D355			1SV214	VARIABLE CAPACITANCE DIODE	E3						
IC300			CD8468	MOS-IC							
IC300			SA7025DK	MOS-IC							
Q300,301			2SC4116(GR)	TRANSISTOR							
Q302			2SC4226(R24)	TRANSISTOR							
Q350			2SK508NV(K52)	FET	K,M2,E						
Q350			2SK508NV(K52)	FET	K2						
Q351			2SK508NV(K52)	FET	E3						
Q355			2SC4226(R24)	TRANSISTOR							

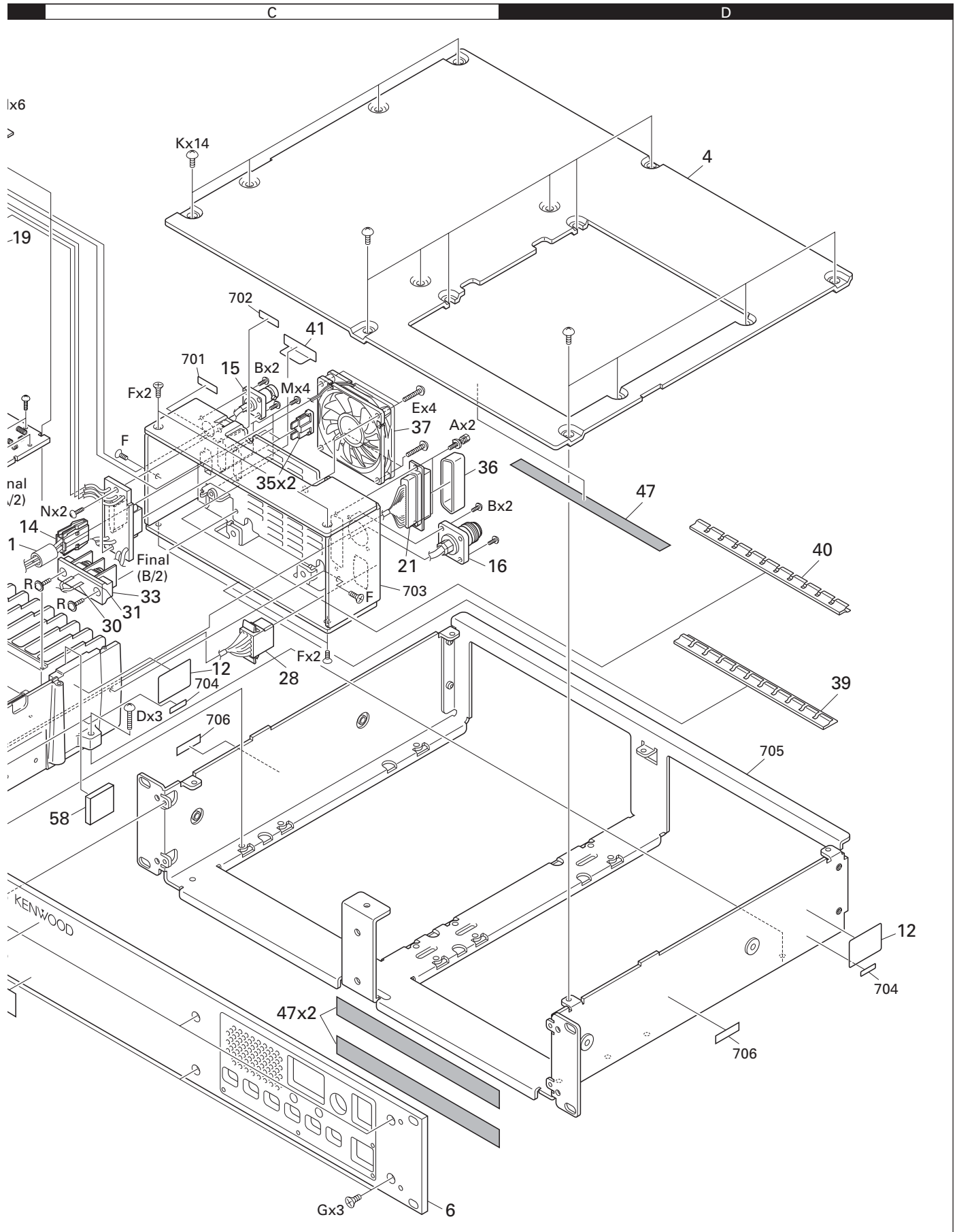


## EXPLODED VIEW

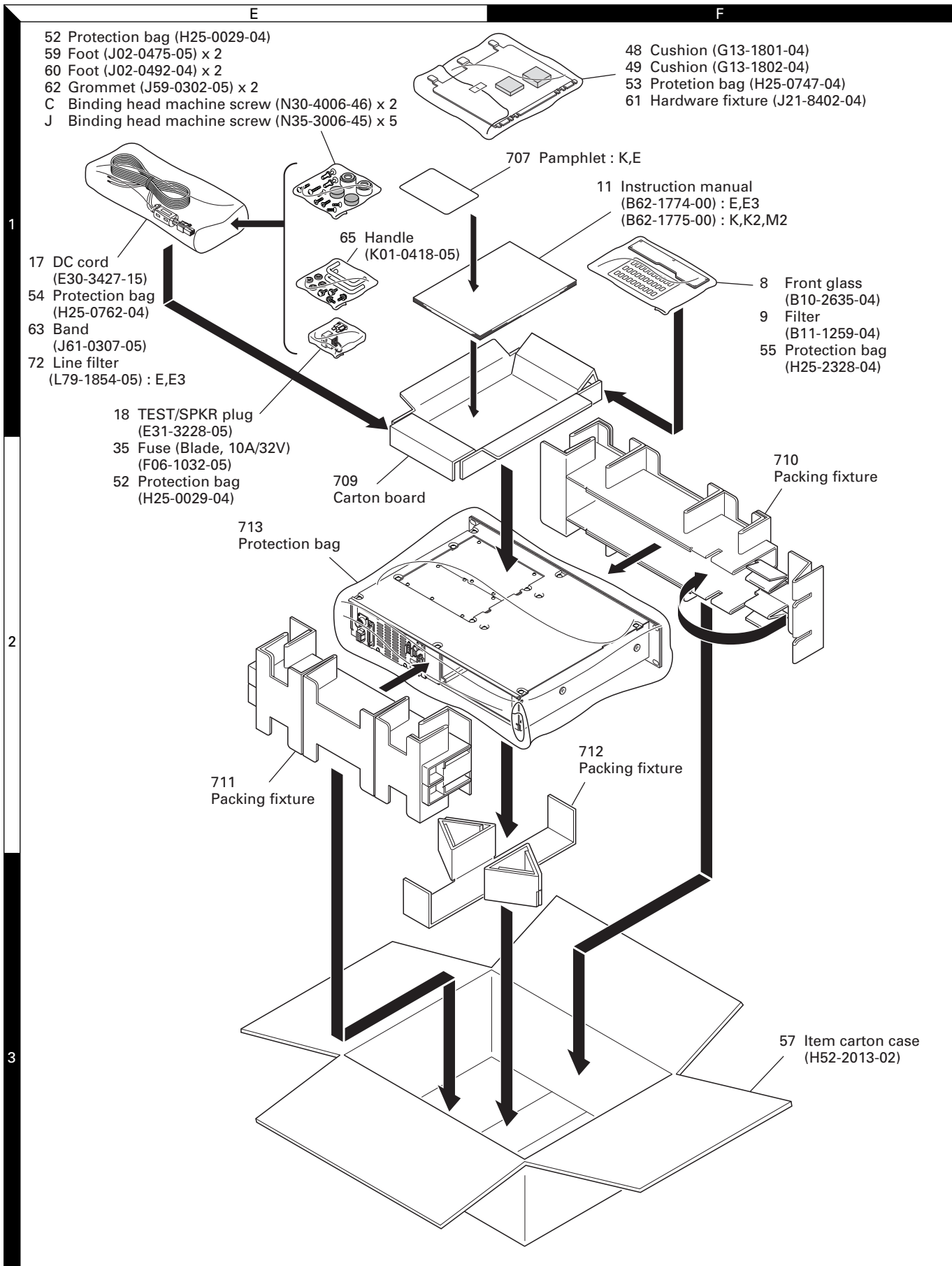
A	:	N09-2292-05
B	M2.6 x 6	: N30-2606-46
C	M4 x 6	: N30-4006-46
D	M4 x 14	: N30-4014-46
E	M4 x 20 BLK	: N30-4020-45
F	M3 x 6 (F)	: N32-3006-46
G	M4 x 8 (F) BLK	: N32-4008-45
H	M3 x 6 (OC) BLK	: N33-3006-45
J	M3 x 6 (Bi) BLK	: N35-3006-45
K	M4 x 6 (Bi) BLK	: N35-4006-45
L	M3 x 8	: N67-3008-46
M	M2.6 x 8 BLK	: N80-2608-45
N	M2.6 x 6 (Br-Tap)	: N87-2606-46
O	M3 x 5 (Br-Tap) BLK	: N87-3005-45
P	M3 x 6 (Br-Tap)	: N87-3006-46
R	M3 x 14 (TP)	: N90-3014-46



## EXPLODED VIEW



## PACKING



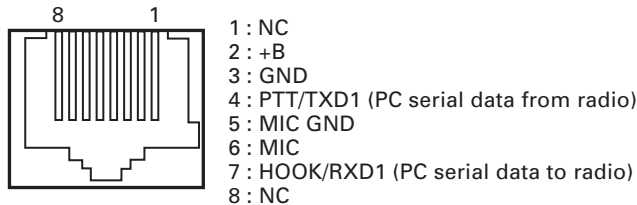
## ADJUSTMENT

### Test Equipment Required for Alignment

Test Equipment	Major Specifications	
1. Standard Signal Generator (SSG)	Frequency Range Modulation Output	400 to 512MHz Frequency modulation and external modulation 0.1μV to greater than 1mV
2. Power Meter	Input Impedance Operation Frequency Measurement Capability	50Ω 400 to 512MHz or more Vicinity of 30W
3. Deviation Meter	Frequency Range	400 to 512MHz
4. Digital Volt Meter (DVM)	Measuring Range Accuracy	1 to 20V DC High input impedance for minimum circuit loading
5. Oscilloscope		DC through 30MHz
6. High Sensitivity Frequency Counter	Frequency Range Frequency Stability	10Hz to 600MHz 0.2ppm or less
7. Ammeter		10A or more
8. AF Volt Meter (AF VTVM)	Frequency Range Voltage Range	50Hz to 10kHz 3mV to 3V
9. Audio Generator (AG)	Frequency Range Output	50Hz to 5kHz 0 to 1V
10. Distortion Meter	Capability Input Level	3% or less at 1kHz 50mV to 10Vrms
11. Voltmeter	Measuring Range Input Impedance	10 to 1.5V DC or less 50kΩ/V or greater
12. 4Ω Dummy Load		Approx. 4Ω, 5W

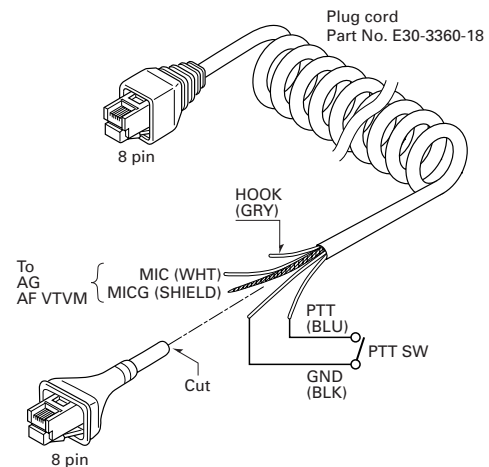
### The following parts are required for adjustment

- Test cable for local microphone



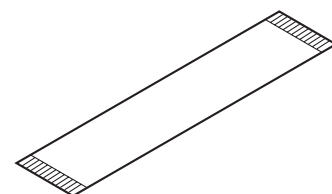
**MIC connector (Front panel view)**

- The following test cables are recommended.



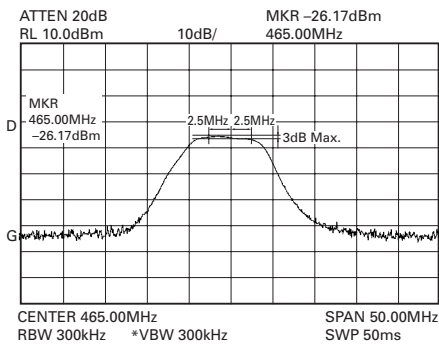
**Test cable for microphone input**

To connect the TX-RX unit A/2 (CN14) to the TX-RX unit B/2 (CN602) while in servicing, you can use the 36-pin flat cable, E37-0979-05, which is available from the KENWOOD parts center.



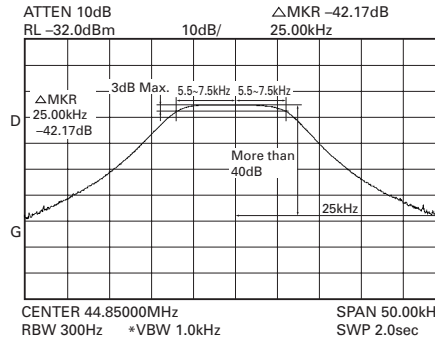
**Flat cable (36-pin) about 256mm**

## ADJUSTMENT



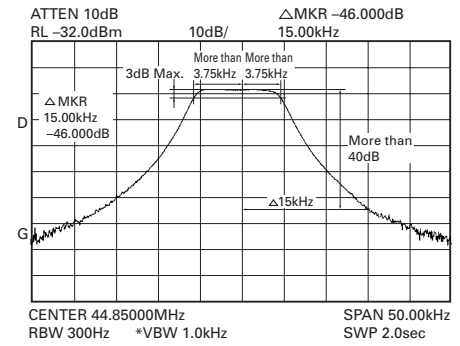
BPF center frequency (Factory-default)  
K : 465MHz, K2,M2 : 496MHz, E : 455MHz,  
E3 : 415MHz

Fig. 1



MCF : Wide

Fig. 2



MCF : Narrow

Fig. 3

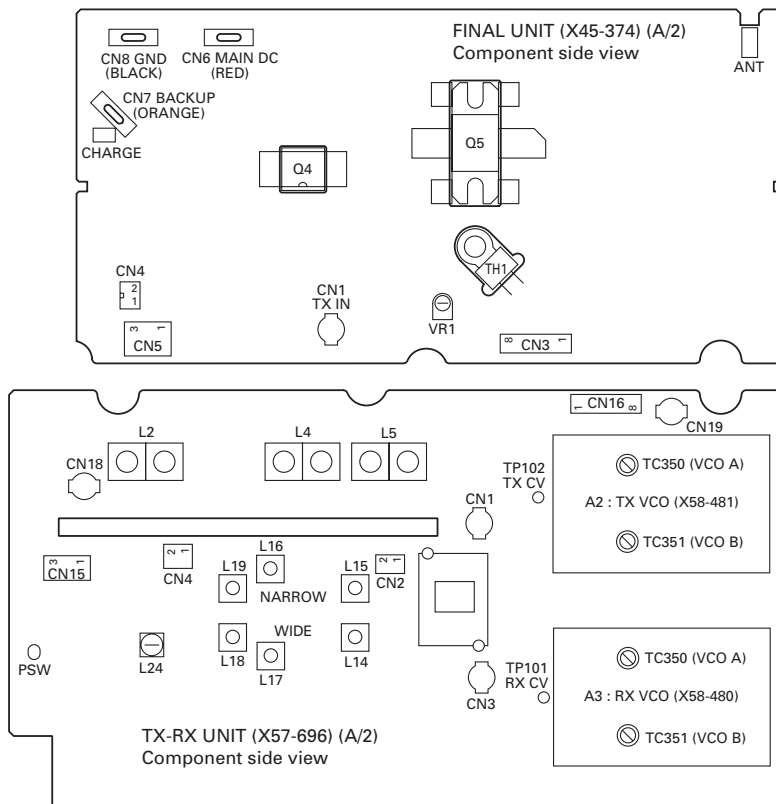
### Test Channel (Default)

No.	K		K2,M2		E		E3	
	RX	TX	RX	TX	RX	TX	RX	TX
1	450.10	450.00	480.10	480.00	440.10	440.00	400.10	400.00
2	465.10	465.00	496.10	496.00	455.10	455.00	415.10	415.00
3	479.90	480.00	511.90	512.00	469.90	470.00	429.90	430.00
4	455.10	455.00	485.10	485.00	445.10	445.00	405.10	405.00
5	460.10	460.00	490.10	490.00	450.10	450.00	410.10	410.00
6	470.10	470.00	500.10	500.00	460.10	460.00	420.10	420.00
7	475.10	475.00	505.10	505.00	465.10	465.00	425.10	425.00
8	462.60	462.50	493.60	493.50	452.60	452.50	412.60	412.50
9	467.60	467.50	498.60	498.50	457.60	457.50	417.60	417.50
10	440.10	440.00	499.90	500.00	459.90	460.00	419.90	420.00
11	459.90	460.00	519.90	520.00	479.90	480.00	439.90	440.00

### Test Signaling

No.	Decode tone	Encode tone
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 250.3Hz	QT 250.3Hz
7	DQT 023N	DQT D023N
8	DQT 754I	DQT D754I
9	None	CW ID Encode [ID=VVV]
10	None	Single Tone [1000Hz]
11	DTMF 159D	DTMF 159D
12	None	DTMF Tone 9
13	None	Courtesy Tone
14	None	Battery Warning Tone
15	None	Battery Operation Tone
16	5-Tone [12345] (CCIR)	5-Tone [12345] (CCIR)

### Adjustment Points



## ADJUSTMENT

### Fine-Tuning the TKR-851

“ADJUSTMENT” items described in the Service Manual for the TKR-851 give the factory-default adjustment procedure covering all adjustment items.

However, it is not necessary to adjust all the items when adjusting the power, deviation, receiver sensitivity, etc at the frequency of the channel to be used by the TKR-851.

### Adjustment procedure at the frequency of the channel to be used

1. Program a channel frequency using the FPU (KPG-91D).
2. From the FPU menu, select in the order of “EDIT”, “Test Frequency” and “CH paste” to rewrite the test frequency from the factory-default to the one to be used for the channel.  
Erase all channel frequencies rewritten through this operation and press the ENTER key to retrieve the factory-default test frequency.

Refer to the explanation given under HELP for the FPU (KPG-91D) for details.

3. Check whether the frequency rewritten under the “Test mode” of the FPU (KPG-91D) is correct, then select the item to be adjusted from the FPU (KPG-91D) menu and adjust the set value for the item to an optimum value with the “TEST” tag.

#### Note :

**After adjustment of the “Max. Deviation”, be sure to check the “DQT balance”.**

**Performs adjustment of “5-tone signaling” at E,E3 and M2 markets.**

**Performs the adjust of “Wide 4k” only the product of the E market code, does not do the product of the E3 market code.**

### Alignment

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Setting	1) Connect the unit to a suitable DC power supply.							
2. Write test frequency	1) Turn the DC source switch on after connecting a PC and FPU cable to the radio. → “E1” appears on LED display 2) Write the test and shipping frequency to the radio. → Green (BUSY) LED lights up 3) End of test frequency writing.							
3. Setting	1) Connect the unit to a suitable DC power supply. 2) Turn the power switch on after connecting a PC and FPU cable to the radio. 3) Start up the program for the adjustment.							
4. RX PLL lock voltage	1) RX VCO A high CH : 11 <b>K</b> CH : 10 <b>K2,M2,E,E3</b>	DVM	TX-RX (A/2)	RX-CV	RX VCO (A3)	TC350	1.50V	±0.1V
	2) RX VCO A low CH : 10 <b>K</b> CH : 1 <b>K2,M2,E,E3</b>						Check	8V or less
	3) RX VCO B high CH : 3 <b>K,K2</b> CH : 11 <b>M2,E,E3</b>				RX VCO (A3)	TC351	1.50V	±0.1V
	4) RX VCO B low CH : 5 <b>K</b> CH : 6 <b>K2,M2,E,E3</b>						Check	8V or less
5. TX PLL lock voltage	1) TX VCO high CH : 3			TX-CV	TX VCO (A2)	TC350 <b>K,K2,M2,E</b> TC351 <b>E3</b>	1.50V	±0.1V
	2) TX VCO low CH : 1							Check
6. RX frequency	1) Connect the frequency counter to CN3, then measure the frequency CH : 2	f. counter		CN3			PC adj. Test CH-44.85MHz	50Hz or less

**Note :** RX frequency means the local frequency of the RX VCO. So its frequency is wanted frequency minus the IF frequency.

## ADJUSTMENT

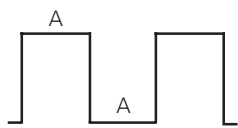
Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
7. Setting	1) Remove 8 pin cable and the coaxial cable from CN16, and CN19 on TX-RX side.							
8. TX frequency	1) Connect the frequency counter to CN19, then measure the frequency CH : 2	f. counter	TX-RX (A/2)	CN19			PC adj.	50Hz or less
9. Setting	1) Insert 8 pin cable and the coaxial cable to CN16, and CN19 on TX-RX side.							
10. Maximum power limiting	1) Measure the RF power at TX ANT. High CH	Power meter	Rear	TX ANT	Final	VR1	Adjust the RF power to 26.5W.	±0.5W
11. TX RF high power	1) Measure the RF power at TX ANT. Low CH 2) Center CH 3) High CH						PC adj. 25W (Factory-default)	±0.5W
12. TX RF low power	1) Measure the power level at TX ANT. Low CH 2) Center CH 3) High CH						PC adj. 1W (Factory-default)	±0.05W
13. BPF	1) Connect the TG to RX ANT, then connect CN1 to the spectrum analyzer input. Spectrum analyzer setting Span : 50MHz Scale : 10dB to 5dB div Tracking generator setting Output : -30dBm	Tracking generator  Spectrum analyzer	Rear  TX-RX (A/2)	RX ANT  CN1	TX-RX (A/2)	L2 L4 L5	Center the frequency you are using, then adjust it to look like the wave Fig. 1. (Page 38)	
14. MCF (Wide)	1) Connect the TG to CN2, then connect CN4 to the spectrum analyzer input. CH : 2 (Wide) Spectrum analyzer setting Span : 50kHz to 25kHz Scale : 10dB to 2dB div Center freq' : 44.850MHz Tracking generator setting Output : -30dBm			CN2 CN4		L14 L17 L18	Adjust it to look like the wave Fig. 2. (Page 38)	
(Narrow)	2) CH : 2 (Narrow)			L15 L16 L19		Adjust it to look like the wave Fig. 3. (Page 38)		
15. Discriminator	1) Connect the SSG to RX ANT. CH : 2 (Wide) SSG output : -53dBm/501μV SSG MOD : 1kHz SSG DEV : 3kHz AF : 2V/4Ω			SSG  AF VM Distortion meter		Rear	RX ANT  TEST/SPKR jack SPO (pin 12)	
16. Threshold squelch (Wide)	1) Connect SSG to RX ANT. CH : 2 (Wide) SSG output : 4dB below to 12dB SINAD level SSG MOD : 1kHz SSG DEV : 3kHz AF : 2V/4Ω	SSG  Audio analyzer VTVM Oscilloscope	Rear	RX ANT			PC adj. Adjust to point of closing squelch	
	2) SSG : OFF						Check	Squelch must be closed.



## ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
(Wide 4kHz)	3) CH : 2 (Wide 4kHz) SSG output : 4dB below to 12dB SINAD level SSG MOD : 1kHz SSG DEV : 2.4kHz AF : 2V/4Ω	SSG  Audio analyzer VTVM Oscilloscope	Rear	RX ANT			PC adj. Adjust to point of closing squelch	
	TEST/SPKR jack SPO (pin 12)							
	4) SSG : OFF			Check				
(Narrow)	5) CH : 2 (Narrow) SSG output : 4dB below to 12dB SINAD level SSG MOD : 1kHz SSG DEV : 1.5kHz AF : 2V/4Ω						PC adj. Adjust to point of closing squelch	
	6) SSG : OFF							
17. Tight squelch (Wide)	1) Connect SSG to RX ANT. CH : 2 (Wide) SSG output : 7dB over to 12dB SINAD level SSG MOD : 1kHz SSG DEV : 3kHz AF : 2V/4Ω	SSG  Audio analyzer VTVM Oscilloscope	Rear	RX ANT			PC adj. Adjust to point of opening squelch	
	TEST/SPKR jack SPO (pin 12)							
	(Wide 4kHz) 2) CH : 2 (Wide 4kHz) SSG output : 7dB over to 12dB SINAD level SSG MOD : 1kHz SSG DEV : 2.4kHz AF : 2V/4Ω			PC adj. Adjust to point of opening squelch				
(Narrow)	3) CH : 2 (Narrow) SSG output : 7dB over to 12dB SINAD level SSG MOD : 1kHz SSG DEV : 1.5kHz AF : 2V/4Ω						PC adj. Adjust to point of opening squelch	
18. RD outut level (Wide)	1) Connect SSG to RX ANT. CH : 2 (Wide) SSG output : -53dBm/501μV SSG MOD : 1kHz SSG DEV : 3.0kHz	SSG  DVM	Rear	RX ANT			PC adj. 80mV	±5mV
	CONTROL I/O jack RD (pin 10) 4.7kΩ load							
	(Wide 4kHz) 2) CH : 2 (Wide 4kHz) SSG output : -53dBm/501μV SSG MOD : 1kHz SSG DEV : 2.4kHz							
(Narrow)	3) CH : 2 (Narrow) SSG output : -53dBm/501μV SSG MOD : 1kHz SSG DEV : 1.5kHz							
19. RA outut level (Wide)	1) Connect SSG to RX ANT. CH : 2 (Wide) SSG output : -53dBm/501μV SSG MOD : 1kHz SSG DEV : 3.0kHz	SSG  DVM	Rear	RX ANT			PC adj. 400mV	±20mV
				CONTROL I/O jack RA (pin 11) 4.7kΩ load				

## ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
(Wide 4kHz)	2) CH : 2 (Wide 4kHz) SSG output : -53dBm/501μV SSG MOD : 1kHz SSG DEV : 2.4kHz	SSG  DVM	Rear	RX ANT			PC adj. 400mV	±20mV
(Narrow)	3) CH : 2 (Narrow) SSG output : -53dBm/501μV SSG MOD : 1kHz SSG DEV : 1.5kHz			CONTROL I/O jack RA (pin 11) 4.7kΩ load				
20. Maximum deviation (Wide)	1) Connect AG to the MIC terminal. Low CH (TX VCO low) Center CH (VCO center) High CH (TX VCO high) Deviation meter filter HPF : OFF LPF : 15kHz De-emphasis : OFF AG : 1kHz/50mV (Terminal load) Transmission	MOD ANA or Deviation meter Oscilloscope	Rear	TX OUT			PC adj. 4.1kHz	±0.1kHz
		AG AF VTVM	Front	MIC				
(Wide 4kHz)	2) Low CH (TX VCO low) Center CH (VCO center) High CH (TX VCO high) Transmission						PC adj. 3.4kHz	±0.1kHz
(Narrow)	3) Low CH (TX VCO low) Center CH (VCO center) High CH (TX VCO high) Transmission						PC adj. 2.05kHz	±0.1kHz
<b>Note :</b> After adjustment of the "Max. Deviation", be sure to check the "DQT balance".								
21. DQT balance (Wide)	1) CH : 2 Deviation meter filter HPF : OFF LPF : 3kHz De-emphasis : OFF Transmission	MOD ANA or Deviation meter Oscilloscope	Rear	TX OUT			PC adj. Make the de-modulated waves into square waves.	Oscilloscope DC range flat "A" part  
(Wide 4kHz)	2) CH : 2 Transmission							
(Narrow)	3) CH : 2 Transmission							
22. QT deviation (Wide)	1) CH : 2 Deviation meter filter HPF : OFF LPF : 3kHz De-emphasis : OFF Detector : p-p/2 Transmission	MOD ANA or Deviation meter Oscilloscope	Rear	TX ANT			PC adj. 0.75kHz	±0.05kHz
(Wide 4kHz)	2) CH : 2 Transmission						PC adj. 0.60kHz	±0.05kHz
(Narrow)	3) CH : 2 Transmission						PC adj. 0.35kHz	±0.05kHz

## ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks	
		Test-equipment	Unit	Terminal	Unit	Parts	Method		
23. DQT deviation (Wide)	1) CH : 2 Deviation meter filter HPF : OFF LPF : 3kHz De-emphasis : OFF Detector : Peak hold Transmission	MOD ANA or Deviation meter Oscilloscope	Rear	TX ANT			PC adj. 0.75kHz	±0.05kHz	
	(Wide 4kHz)						2) CH : 2 Transmission	PC adj. 0.60kHz	±0.05kHz
	(Narrow)						3) CH : 2 Transmission	PC adj. 0.35kHz	±0.05kHz
24. CW ID deviation (Wide)	1) CH2 Deviation meter filter HPF : OFF LPF : 15kHz De-emphasis : OFF Transmission						PC adj. 2kHz	±0.1kHz	
	(Wide 4kHz)						2) CH : 2 Transmission	PC adj. 1.6kHz	±0.1kHz
	(Narrow)						3) CH : 2 Transmission	PC adj. 1kHz	±0.05kHz
25. Test tone deviation (Wide)	1) CH : 2 Deviation meter filter HPF : OFF LPF : 15kHz De-emphasis : OFF Transmission						PC adj. 3kHz	±0.1kHz	
	(Wide 4kHz)						2) CH : 2 Transmission	PC adj. 2.4kHz	±0.1kHz
	(Narrow)						3) CH : 2 Transmission	PC adj. 1.5kHz	±0.05kHz
26. TA (TX audio input) deviation (Wide)	1) Insert AG output into the control I/O TA terminal (pin 9). CH : 2 Deviation meter filter HPF : OFF LPF : 15kHz De-emphasis : OFF AG freq' : 1kHz (Sine wave) AG level : 280mV Transmission	MOD ANA or Deviation meter Oscilloscope  AG AF VTVM	Rear	TX ANT  CONTROL I/O jack TA (pin 9)			PC adj. 3.0kHz	±0.1kHz	
	(Wide 4kHz)						2) CH : 2 Transmission	PC adj. 2.4kHz	±0.1kHz
	(Narrow)						3) CH : 2 Transmission	PC adj. 1.5kHz	±0.05kHz
27. TD deviation (Wide)	1) Insert AG output into the control I/O TD terminal (pin 8). CH : 2 Deviation meter filter HPF : OFF LPF : 3kHz De-emphasis : OFF AG freq' : 100Hz (Sine wave) AG level : 0.5Vp-p (177mVrms) Transmission	MOD ANA or Deviation meter Oscilloscope  AG AF VTVM	Rear	TX ANT  CONTROL I/O jack TD (pin 8)			PC adj. 0.75kHz	±0.1kHz	
	(Wide 4kHz)						2) CH : 2 Transmission	PC adj. 0.60kHz	±0.05kHz
	(Narrow)						3) CH : 2 Transmission	PC adj. 0.35kHz	±0.05kHz

## ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks			
		Test-equipment	Unit	Terminal	Unit	Parts	Method				
28. DTMF deviation (Wide)	1) CH : 2 Deviation meter filter HPF : OFF LPF : 15kHz De-emphasis : OFF Transmission	MOD ANA or Deviation meter Oscilloscope	Rear	TX ANT			PC adj. 3.0kHz	±0.1kHz			
	(Wide 4kHz)								2) CH : 2 Transmission	PC adj. 2.4kHz	±0.1kHz
	(Narrow)								3) CH : 2 Transmission	PC adj. 1.5kHz	±0.05kHz
29. Courtesy tone deviation (Wide)	1) CH : 2 Deviation meter filter HPF : OFF LPF : 15kHz De-emphasis : OFF Transmission						PC adj. 1.0kHz	±0.05kHz			
	(Wide 4kHz)								2) CH : 2 Transmission	PC adj. 0.8kHz	±0.05kHz
	(Narrow)								3) CH : 2 Transmission	PC adj. 0.5kHz	±0.05kHz
30. Battery warning tone deviation (Wide)	1) CH : 2 Deviation meter filter HPF : OFF LPF : 15kHz De-emphasis : OFF Transmission						PC adj. 3.0kHz	±0.1kHz			
	(Wide 4kHz)								2) CH : 2 Transmission	PC adj. 2.4kHz	±0.1kHz
	(Narrow)								3) CH : 2 Transmission	PC adj. 1.5kHz	±0.05kHz
31. Battery operation tone deviation (Wide)	1) CH : 2 Deviation meter filter HPF : OFF LPF : 15kHz De-emphasis : OFF Transmission						PC adj. 1.0kHz	±0.05kHz			
	(Wide 4kHz)								2) CH : 2 Transmission	PC adj. 0.8kHz	±0.05kHz
	(Narrow)								3) CH : 2 Transmission	PC adj. 0.5kHz	±0.05kHz
32. 5-tone deviation (E type only) (Wide)	1) CH : 2 Deviation meter filter HPF : OFF LPF : 15kHz De-emphasis : OFF Transmission						PC adj. 3.0kHz	±0.1kHz			
	(Wide 4kHz)								2) CH : 2 Transmission	PC adj. 2.4kHz	±0.1kHz
	(Narrow)								3) CH : 2 Transmission	PC adj. 1.5kHz	±0.05kHz

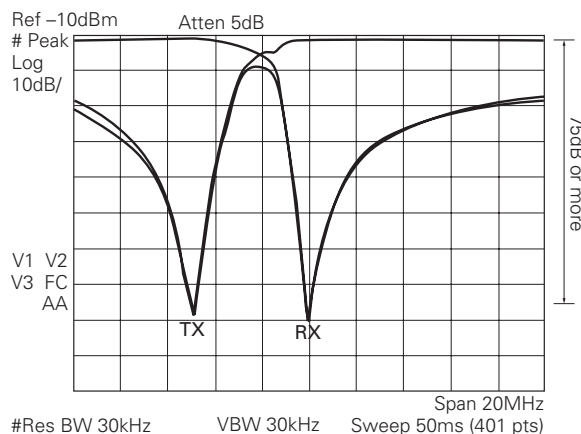
## ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
33. Repeat gain level (Wide)	1) CH : 2 SSG output : -53dBm SSG MOD : 1kHz SSG DEV : 1kHz Deviation meter filter HPF : OFF LPF : 15kHz De-emphasis : OFF Transmission	SSG  MOD ANA or Deviation meter Oscilloscope	Rear	RX ANT			PC adj. 1kHz	±0.1kHz
(Wide 4kHz)	2) CH : 2 Transmission			TX ANT				
(Narrow)	3) CH : 2 Transmission							
When "RF Power Down Detect" is programmed in the AUXO function, threshold of transmission output is set with the following nemu.								
34. Power down detect (High)	1) CH : 2 (High power)	Power meter	Rear	TX ANT			PC adj. 10.0W (Factory-default)	
(Low)	2) CH : 2 (Low power)						PC adj. 0.4W (Factory-default)	

### Confirmation and Alignment of Set-up to Prevent Receiver Desensitization

#### 1. Confirmation of Duplexer alignment

The duplexer allows the Repeater to simultaneously transmit and receive. To accomplish this, in the programmed receive frequency, the transmit frequency must be notched or suppressed by 75dB or more. Additionally, on the programmed transmit frequency, the receive frequency must be notched or suppressed by 75dB or more. The following figures are examples of Duplexer alignment using a spectrum analyzer.

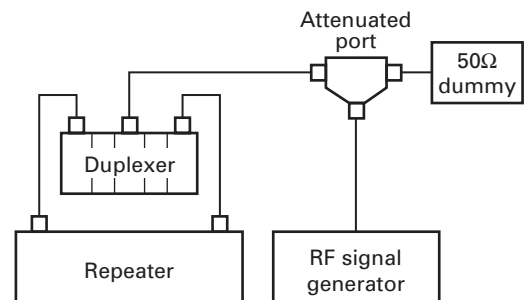


#### 2. Confirmation of Repeater Desensitization

The following figure is a Test set-up for Repeater Desensitization.

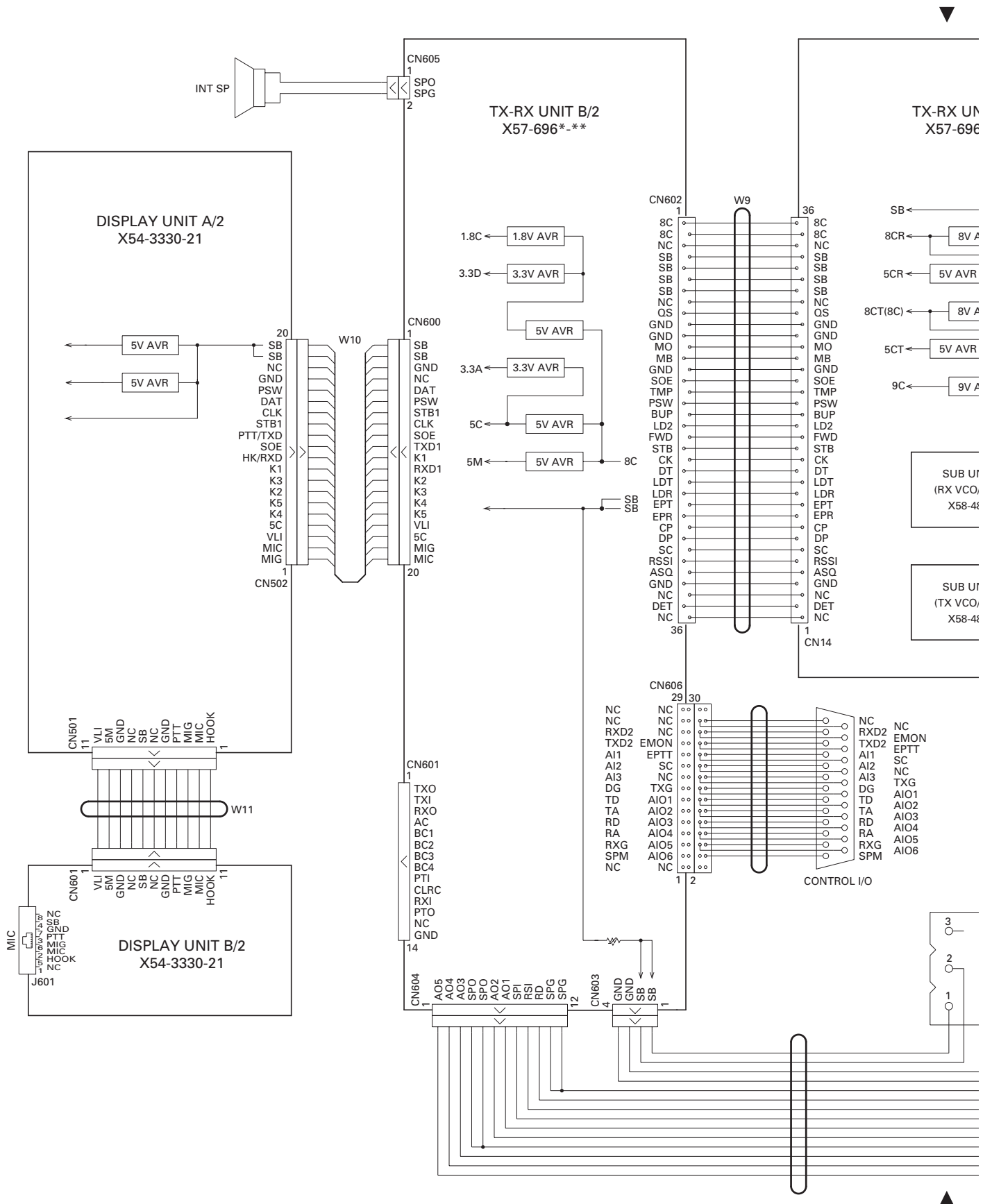
After this Test set-up is completed, confirm the Repeater Desensitization as mentioned below.

- 1) Disable the repeater mode.
- 2) Adjust the level of the RF generator until 12dB SINAD is reached.
- 3) Increase the output of the RF generator by 1dB. (This increases the SINAD.)
- 4) Enable the repeater mode.
- 5) Read the SINAD level. It should not drop below 12dB SINAD. If the SINAD is less than 12dB, check the tightness of the connectors and the tuning of duplexer.

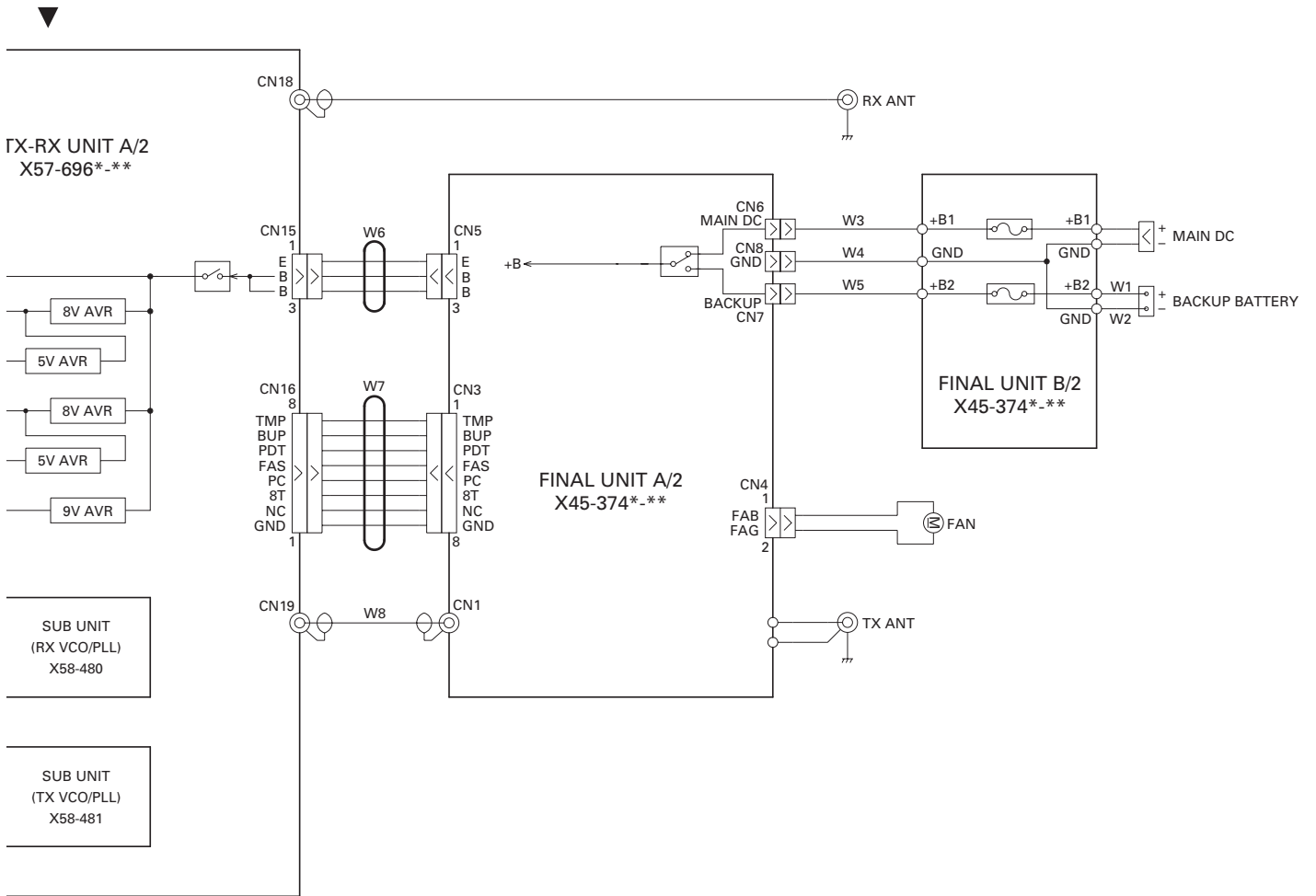


# TKR-851

## INTERCONNECTION DIAGRAM

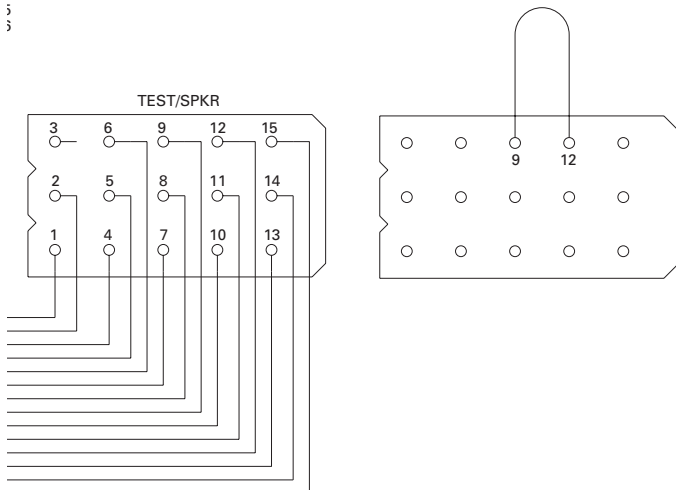


## INTERCONNECTION DIAGRAM

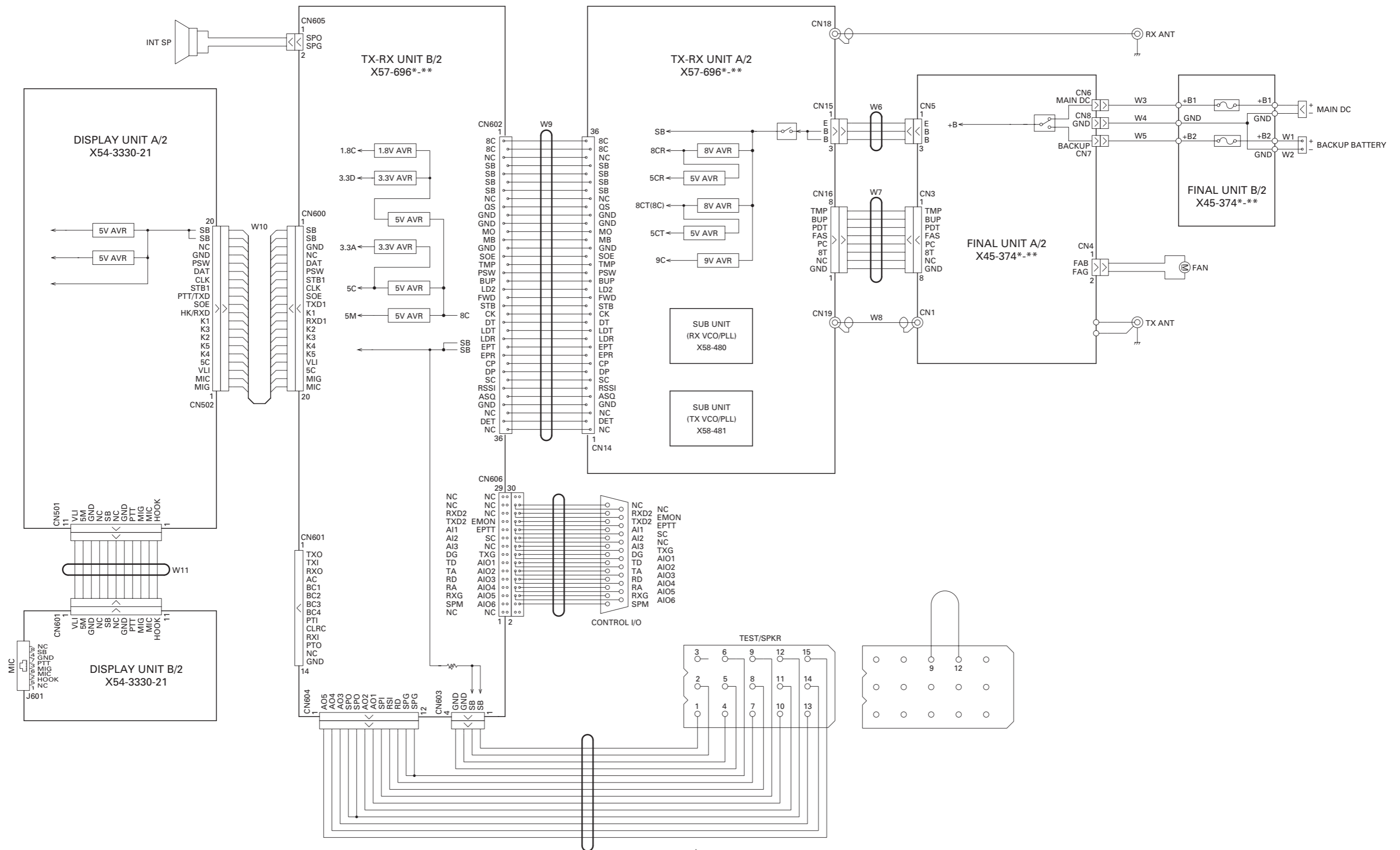


IN  
Γ

- 1
- 2
- 3
- 4
- 5
- 5

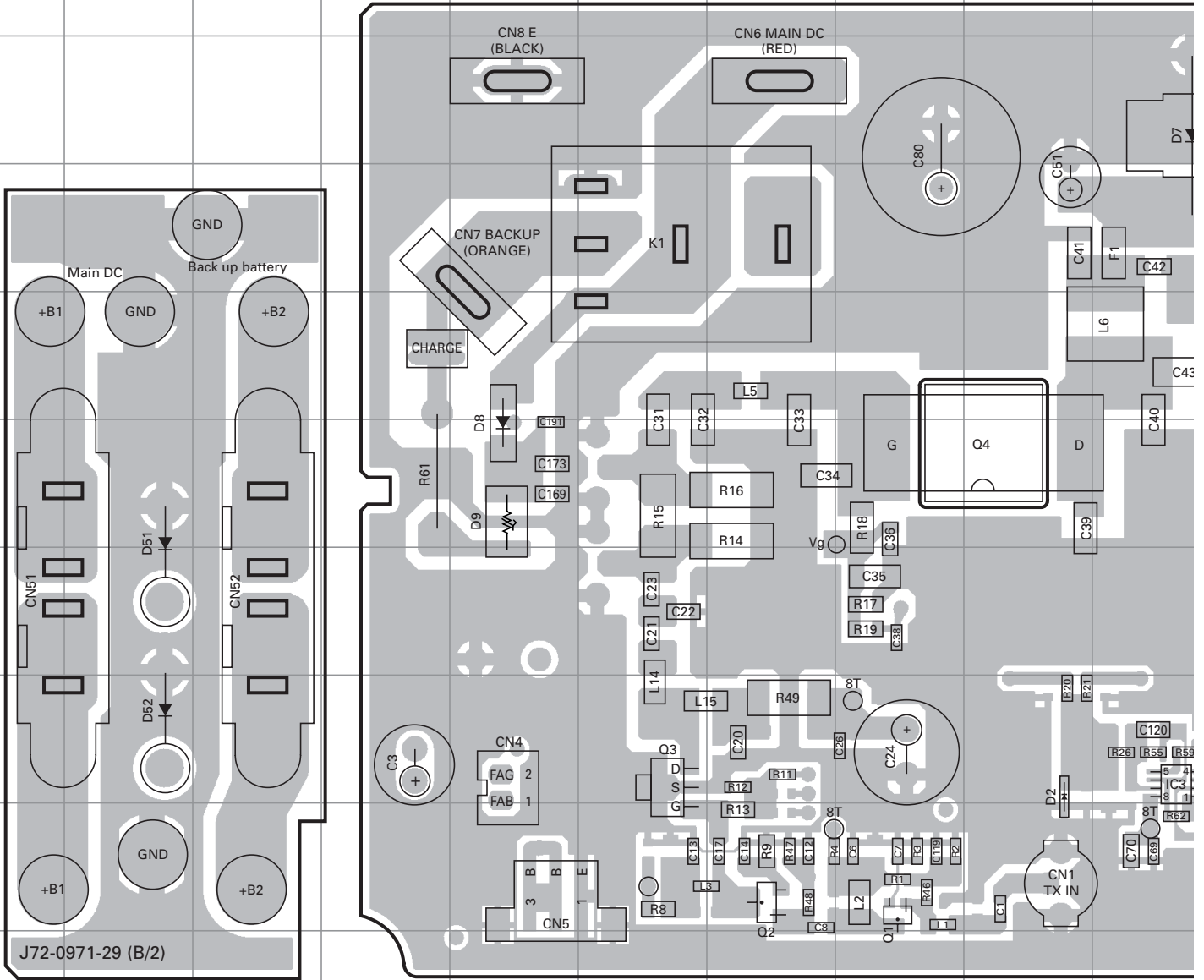






# TKR-851 PC BOARD

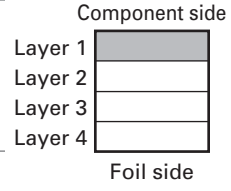
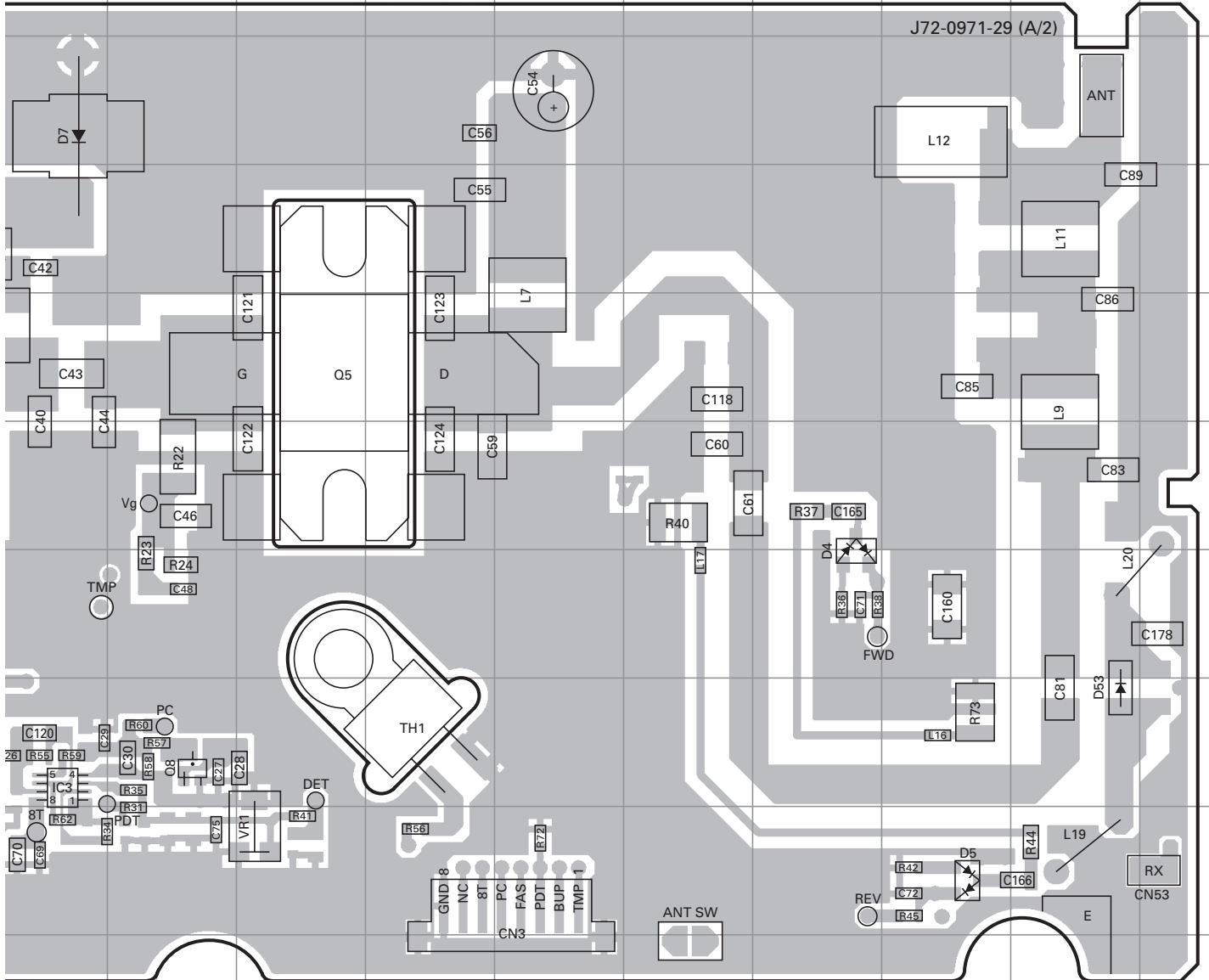
FINAL UNIT (X45-374X-XX) 0-13 : K2,M2 2-71 : K,E 2-72 : E3  
 Component side view (J72-0971-29)



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC3	8J	Q4	6I	D4	7P	D9	6E
Q1	9H	Q5	5L	D5	9Q	D51	7B
Q2	9G	Q8	8K	D7	3J	D52	8B
Q3	8F	D2	8I	D8	6E	D53	8R

# PC BOARD TKR-851

FINAL UNIT (X45-374X-XX) 0-13 : K2,M2 2-71 : K,E 2-72 : E3  
 Component side view (J72-0971-29)

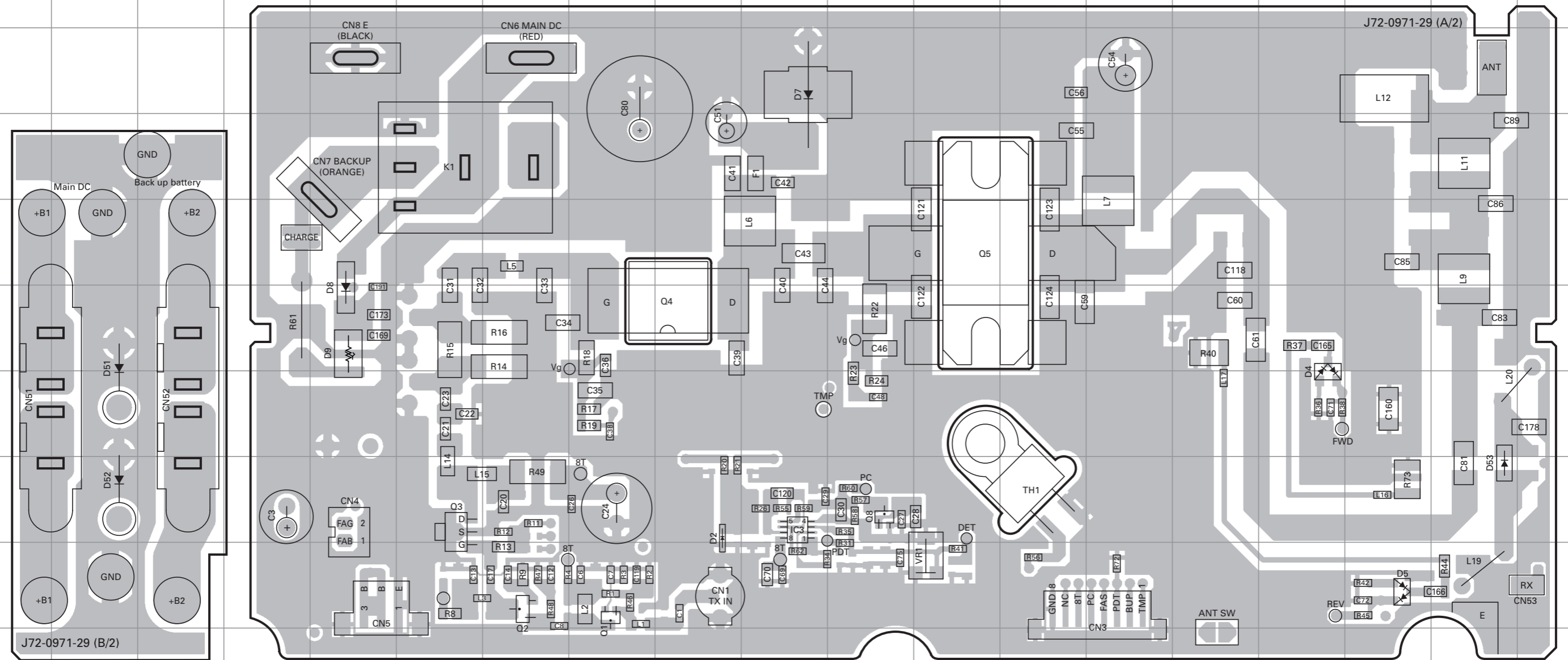


# TKR-851 PC BOARD

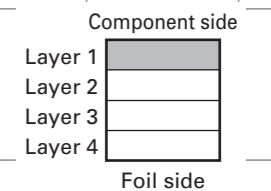
# PC BOARD TKR-851

FINAL UNIT (X45-374X-XX) 0-13 : K2,M2 2-71 : K,E 2-72 : E3  
Component side view (J72-0971-29)

FINAL UNIT (X45-374X-XX) 0-13 : K2,M2 2-71 : K,E 2-72 : E3  
Component side view (J72-0971-29)

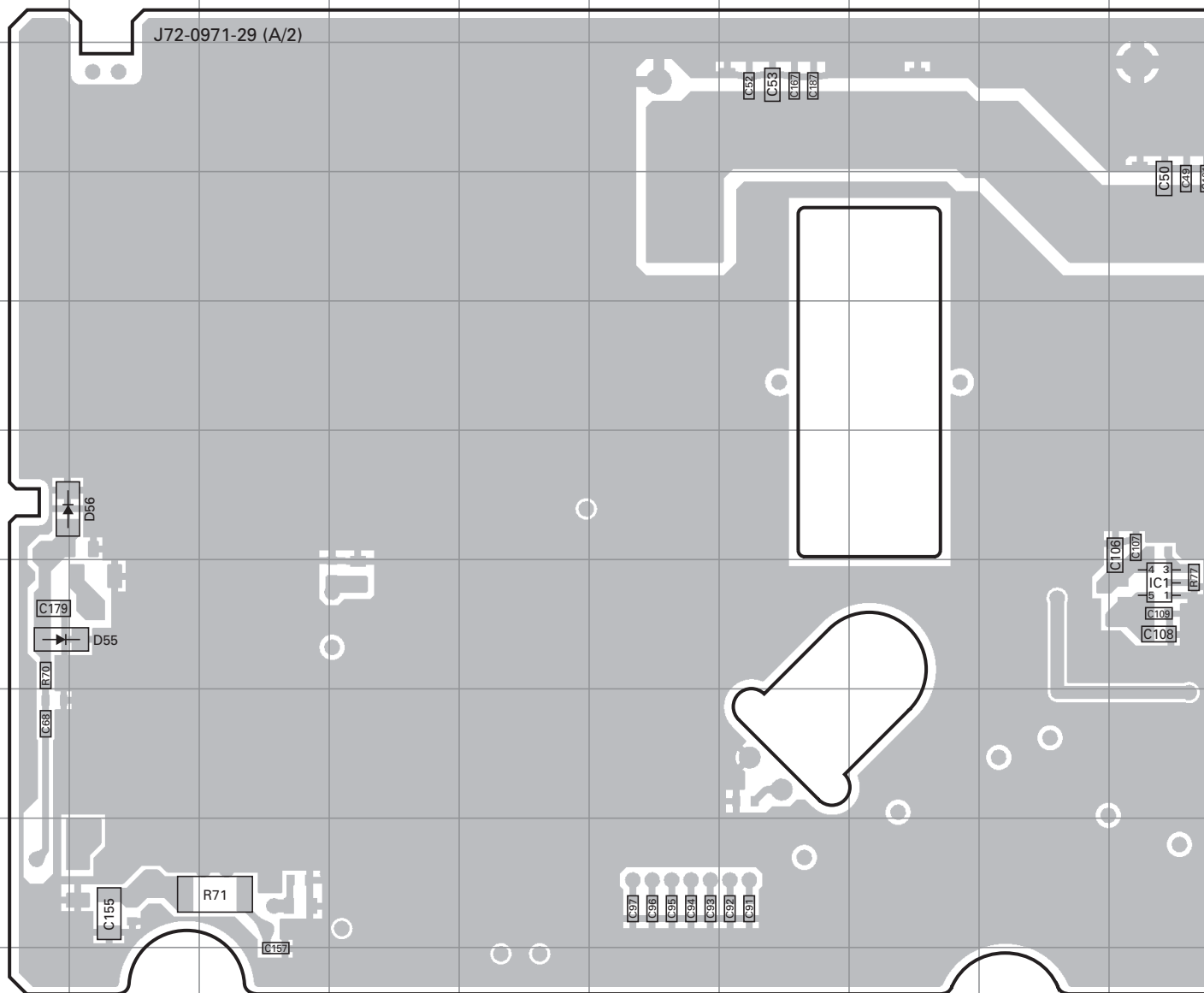


Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC3	8J	Q4	6I	D4	7P	D9	6E
Q1	9H	Q5	5L	D5	9Q	D51	7B
Q2	9G	Q8	8K	D7	3J	D52	8B
Q3	8F	D2	8I	D8	6E	D53	8R



# TKR-851 PC BOARD

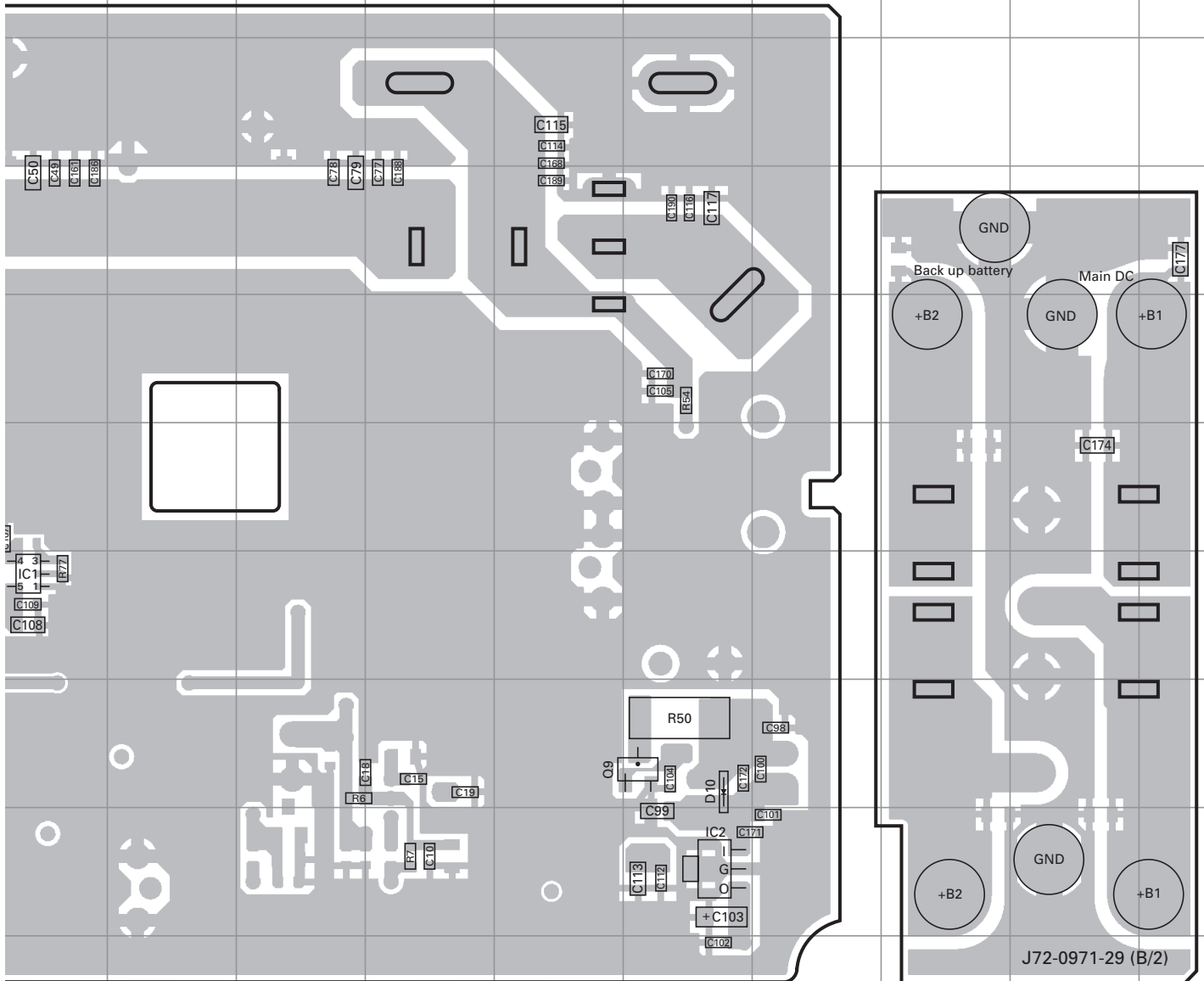
FINAL UNIT (X45-374X-XX) 0-13 : K2,M2 2-71 : K,E 2-72 : E3  
 Foil side view (J72-0971-29)



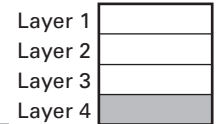
Ref. No.	Address	Ref. No.	Address
IC1	7J	D55	6A
IC2	9O	D56	7A
Q9	8O		
D10	8O		

# PC BOARD TKR-851

FINAL UNIT (X45-374X-XX) 0-13 : K2,M2 2-71 : K,E 2-72 : E3  
 Foil side view (J72-0971-29)



Component side



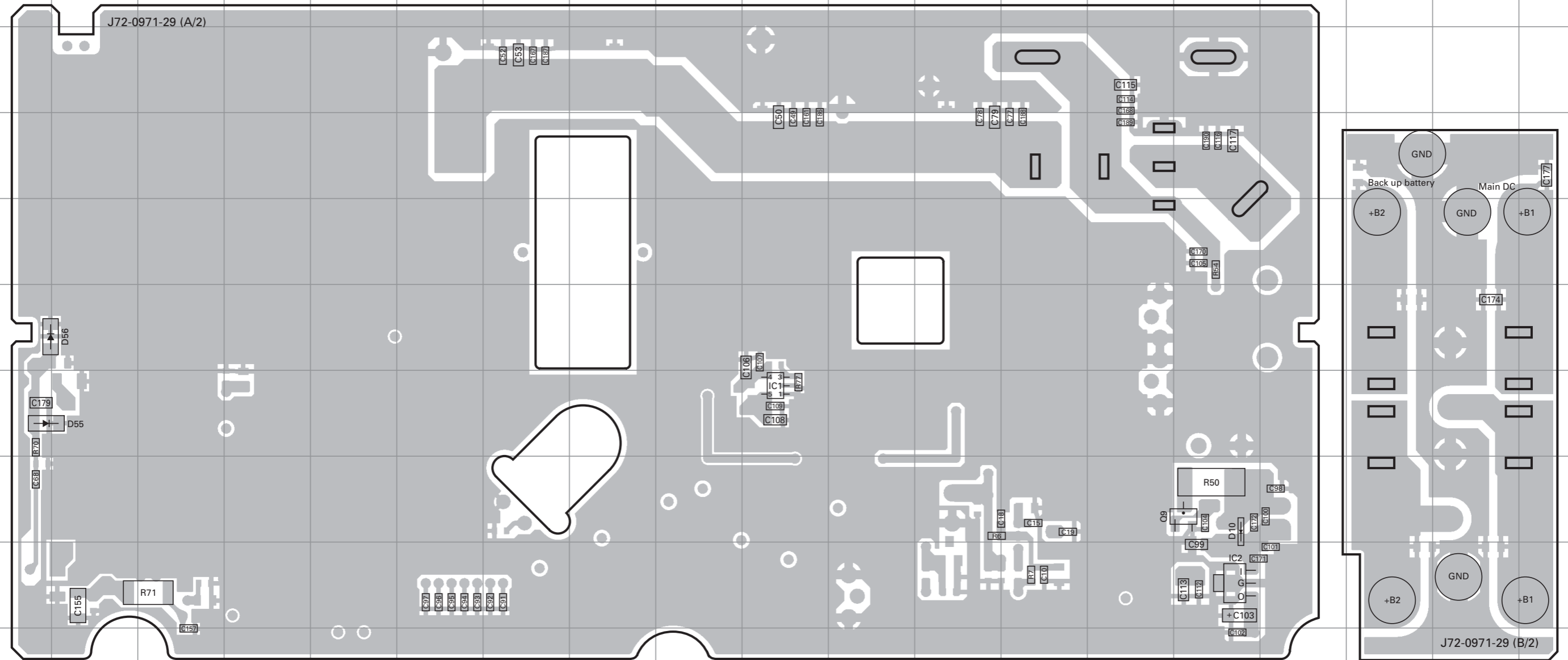
Foil side

# TKR-851 PC BOARD

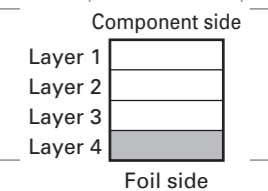
# PC BOARD TKR-851

FINAL UNIT (X45-374X-XX) 0-13 : K2,M2 2-71 : K,E 2-72 : E3  
 Foil side view (J72-0971-29)

FINAL UNIT (X45-374X-XX) 0-13 : K2,M2 2-71 : K,E 2-72 : E3  
 Foil side view (J72-0971-29)

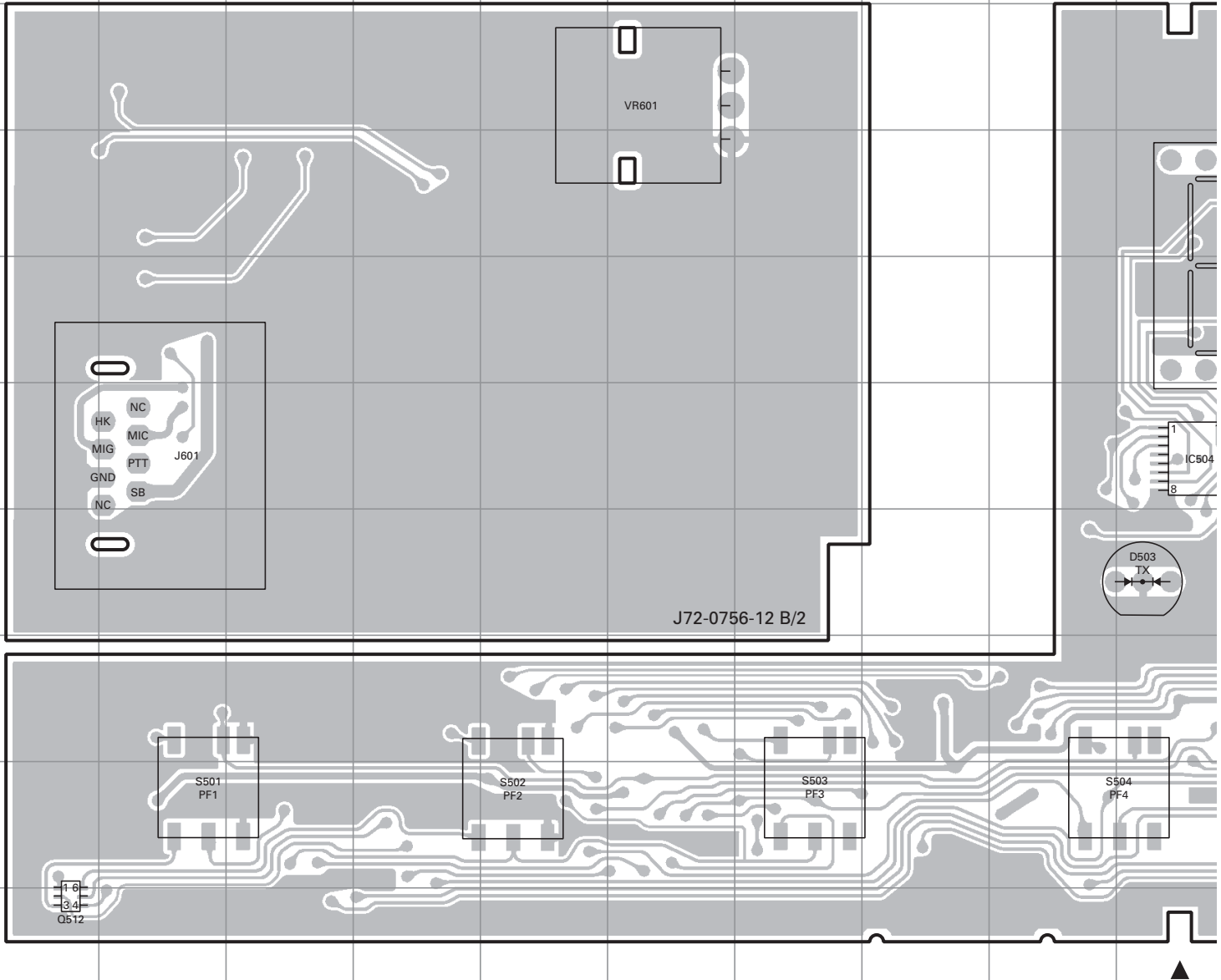


Ref. No.	Address	Ref. No.	Address
IC1	7J	D55	6A
IC2	9O	D56	7A
Q9	8O		
D10	8O		



# TKR-851 PC BOARD

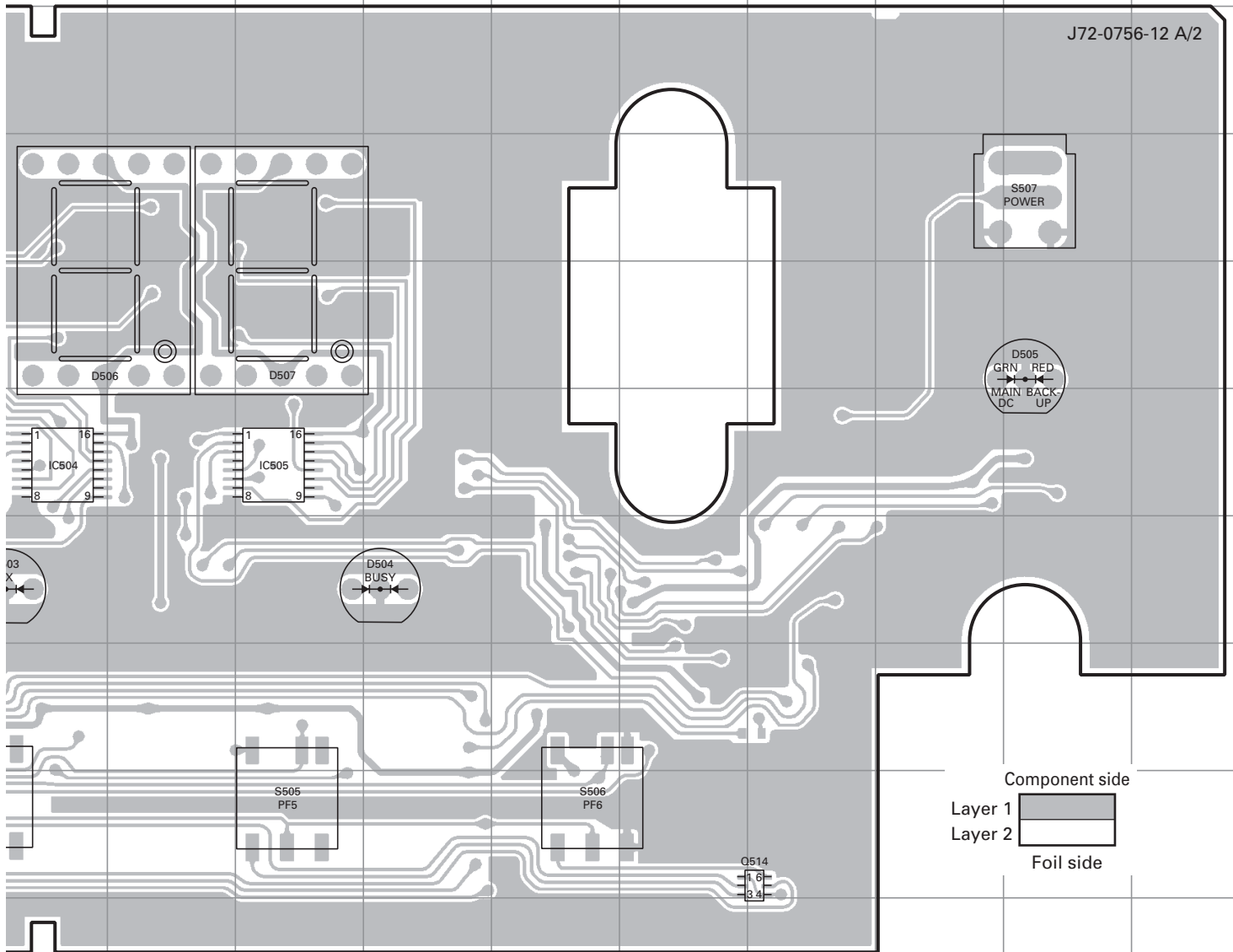
## DISPLAY UNIT (X54-3330-21) Component side view (J72-0756-12)





# PC BOARD TKR-851

## DISPLAY UNIT (X54-3330-21) Component side view (J72-0756-12)



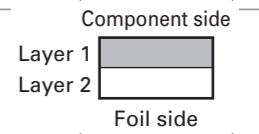
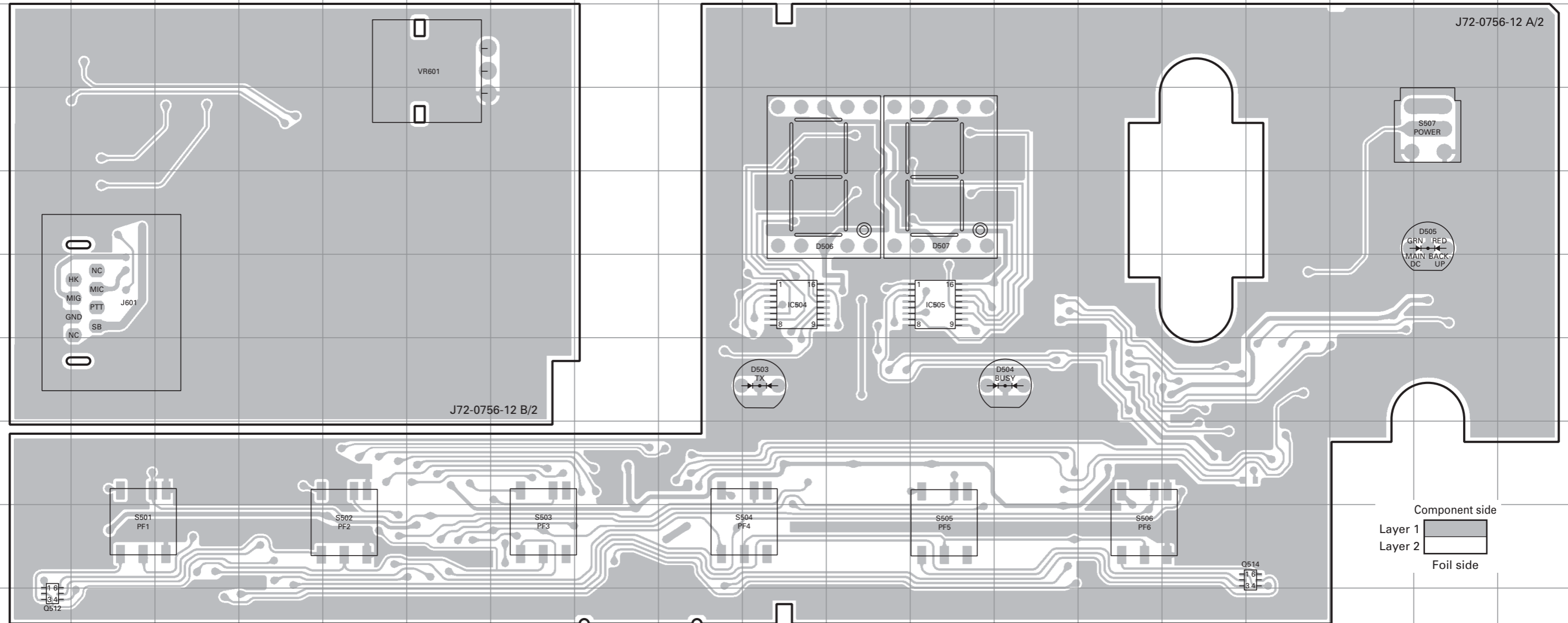
Ref. No.	Address
IC504	6J
IC505	6L
Q512	10A
Q514	9P
D503	7J
D504	7M
D505	5R
D506	5J
D507	5L

# TKR-851 PC BOARD

# PC BOARD TKR-851

DISPLAY UNIT (X54-3330-21) Component side view (J72-0756-12)

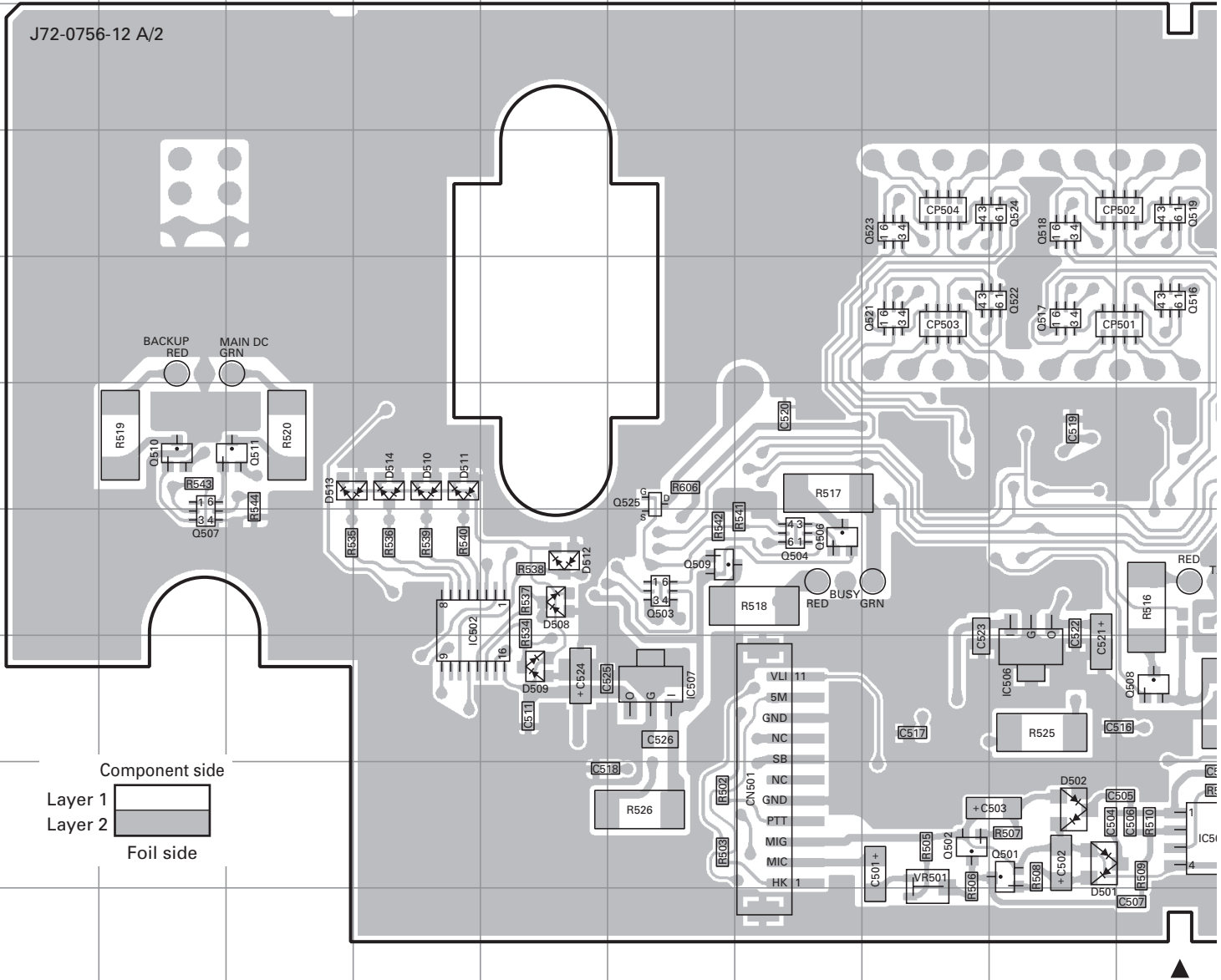
DISPLAY UNIT (X54-3330-21) Component side view (J72-0756-12)



Ref. No.	Address
IC504	6J
IC505	6L
Q512	10A
Q514	9P
D503	7J
D504	7M
D505	5R
D506	5J
D507	5L

# TKR-851 PC BOARD

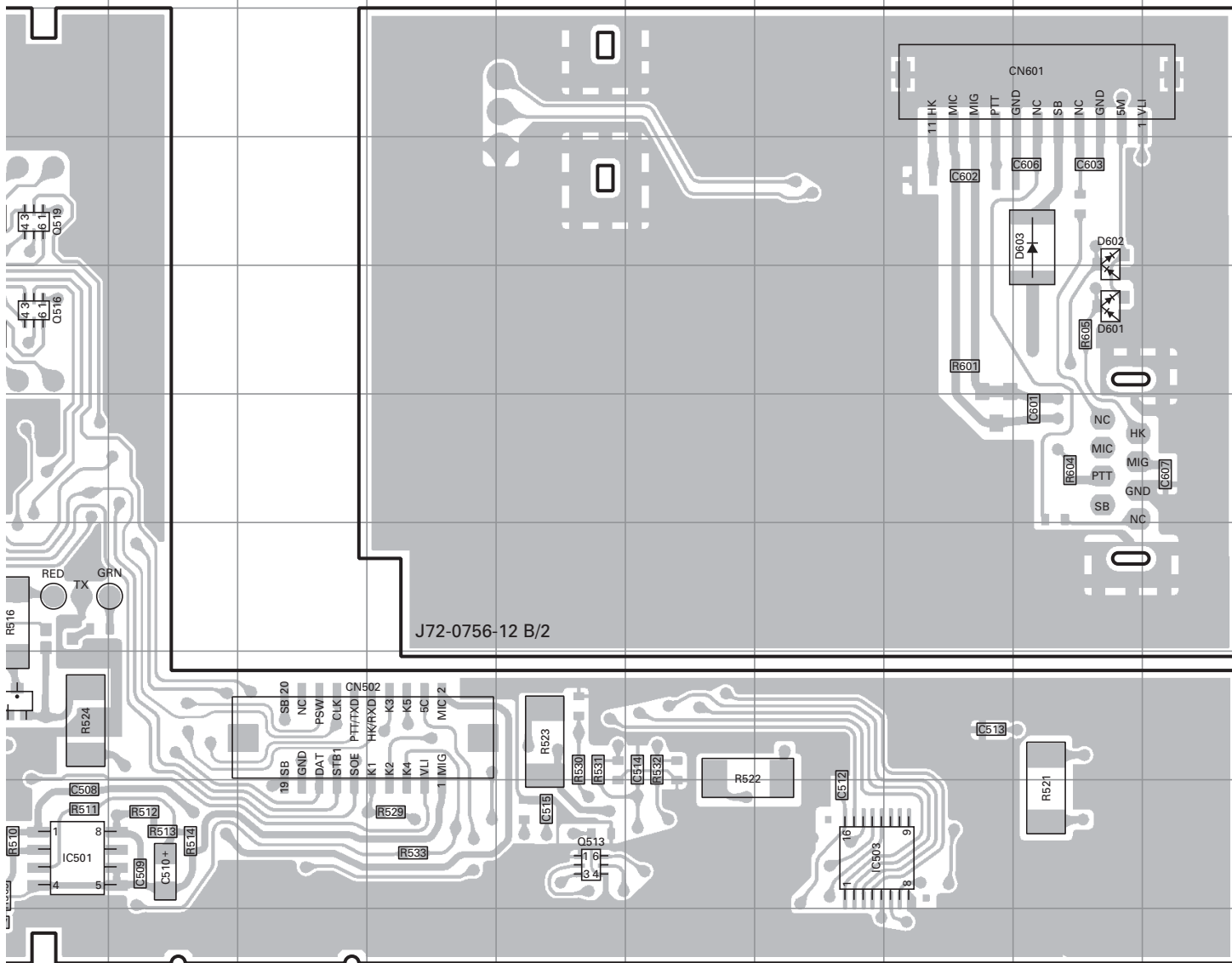
## DISPLAY UNIT (X54-3330-21) Foil side view (J72-0756-12)



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC501	9J	Q507	7B	Q521	5H	D511	6D
IC502	7D	Q508	8J	Q522	5I	D512	7E
IC503	9P	Q509	7F	Q523	4H	D513	6C
IC506	8I	Q510	6B	Q524	4I	D514	6D
IC507	8F	Q511	6C	Q525	6F	D601	5R
Q501	9I	Q513	9N	D501	9I	D602	4R
Q502	9H	Q516	5J	D502	9I	D603	4R
Q503	7F	Q517	5I	D508	7E		
Q504	7G	Q518	4I	D509	8E		
Q506	7G	Q519	4J	D510	6D		

# PC BOARD TKR-851

## DISPLAY UNIT (X54-3330-21) Foil side view (J72-0756-12)

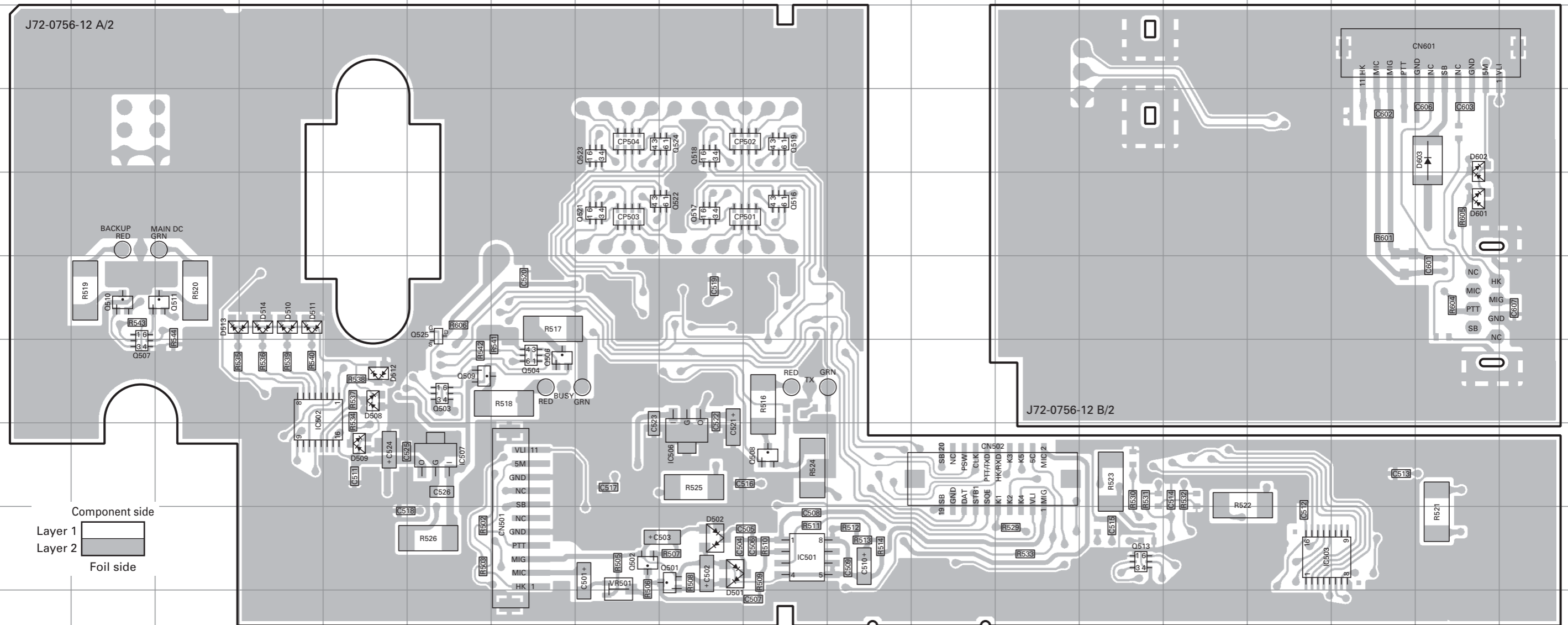


# TKR-851 PC BOARD

# PC BOARD TKR-851

DISPLAY UNIT (X54-3330-21) Foil side view (J72-0756-12)

DISPLAY UNIT (X54-3330-21) Foil side view (J72-0756-12)



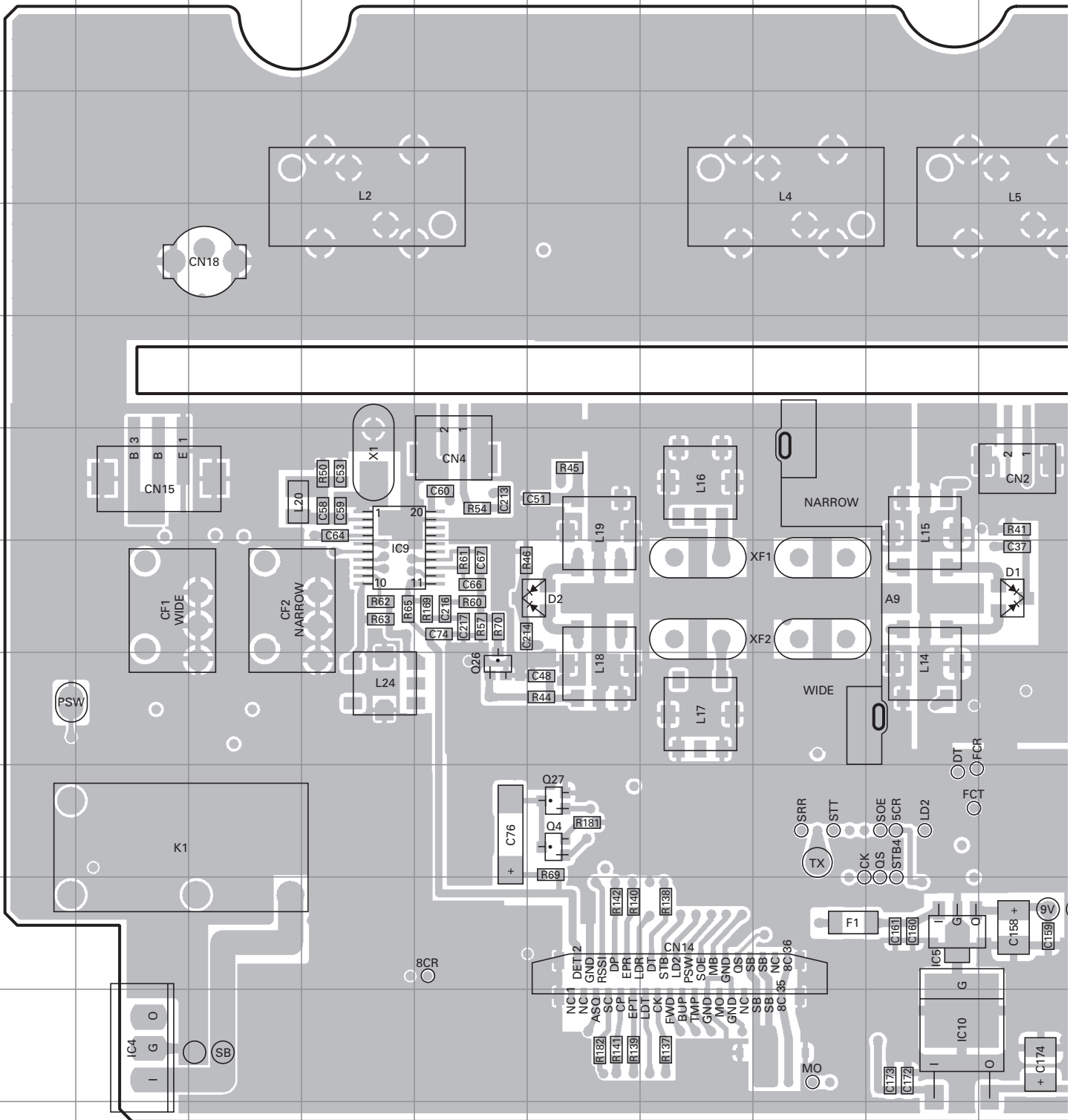
Component side  
 Layer 1  
 Layer 2  
 Foil side

Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC501	9J	Q507	7B	Q521	5H	D511	6D
IC502	7D	Q508	8J	Q522	5I	D512	7E
IC503	9P	Q509	7F	Q523	4H	D513	6C
IC506	8I	Q510	6B	Q524	4I	D514	6D
IC507	8F	Q511	6C	Q525	6F	D601	5R
Q501	9I	Q513	9N	D501	9I	D602	4R
Q502	9H	Q516	5J	D502	9I	D603	4R
Q503	7F	Q517	5I	D508	7E		
Q504	7G	Q518	4I	D509	8E		
Q506	7G	Q519	4J	D510	6D		

# TKR-851 PC BOARD

TX-RX UNIT (X57-696X-XX) (A/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3

Component side view (J72-0924-19 A/2)

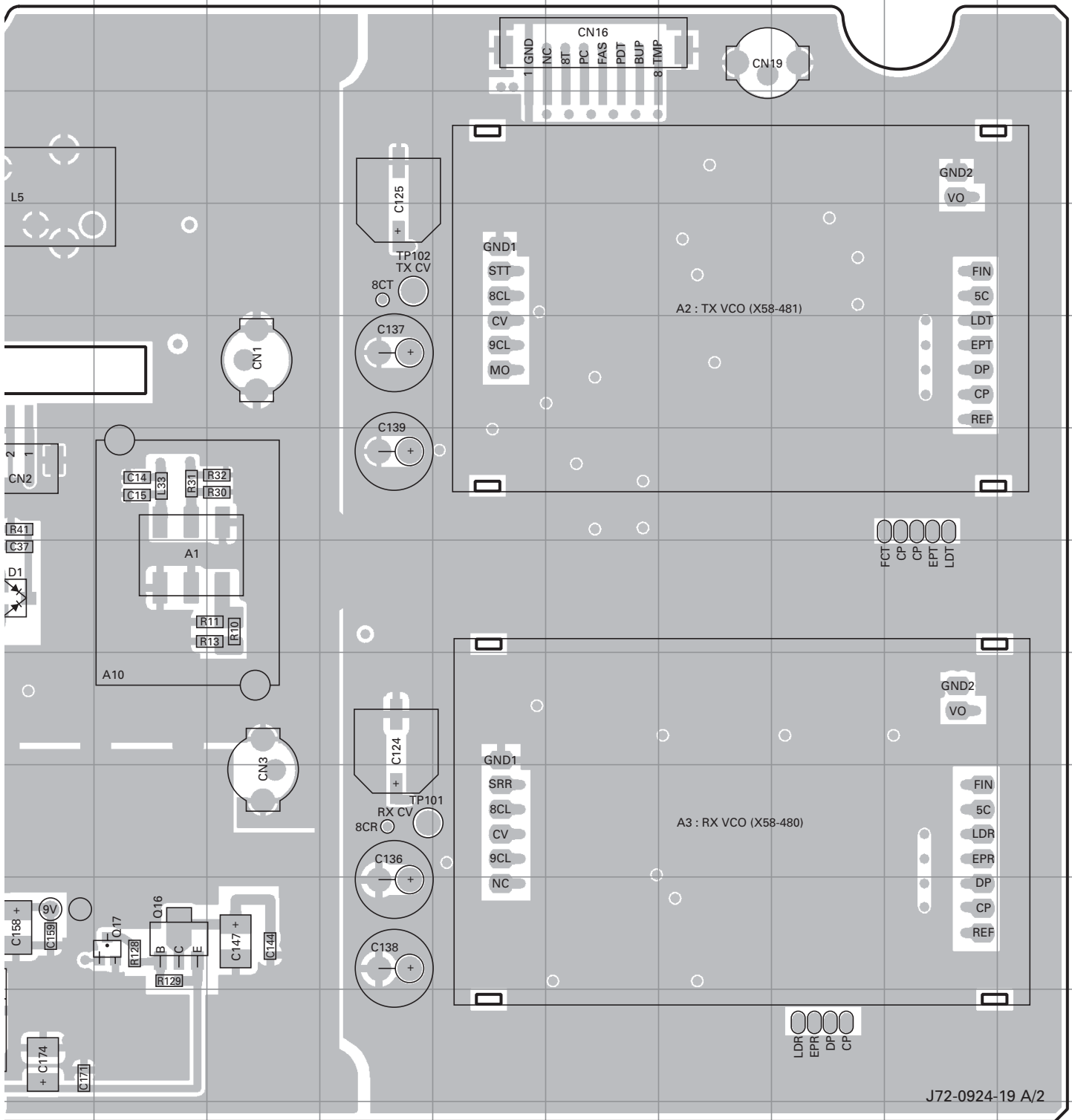


Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC4	11B	Q4	9F	Q27	9F
IC5	10I	Q16	10K	D1	7J
IC9	7D	Q17	10K	D2	7F
IC10	11I	Q26	8E		

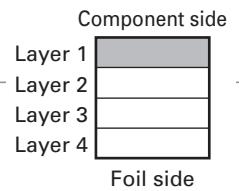
# PC BOARD TKR-851

TX-RX UNIT (X57-696X-XX) (A/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3

Component side view (J72-0924-19 A/2)



J72-0924-19 A/2

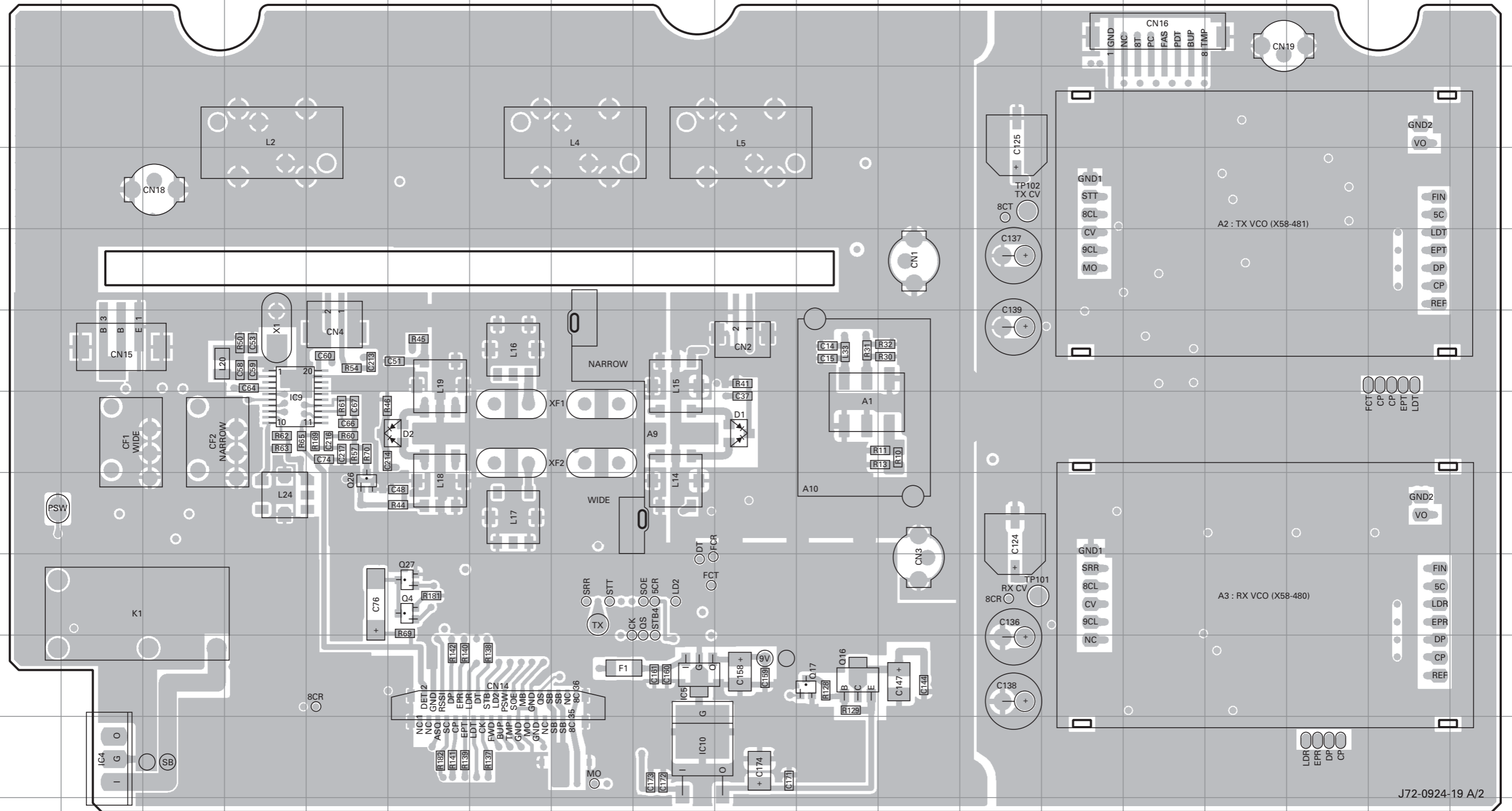


# TKR-851 PC BOARD

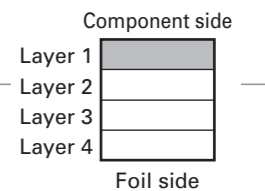
TX-RX UNIT (X57-696X-XX) (A/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3  
Component side view (J72-0924-19 A/2)

# PC BOARD TKR-851

TX-RX UNIT (X57-696X-XX) (A/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3  
Component side view (J72-0924-19 A/2)



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC4	11B	Q4	9F	Q27	9F
IC5	10I	Q16	10K	D1	7J
IC9	7D	Q17	10K	D2	7F
IC10	11I	Q26	8E		



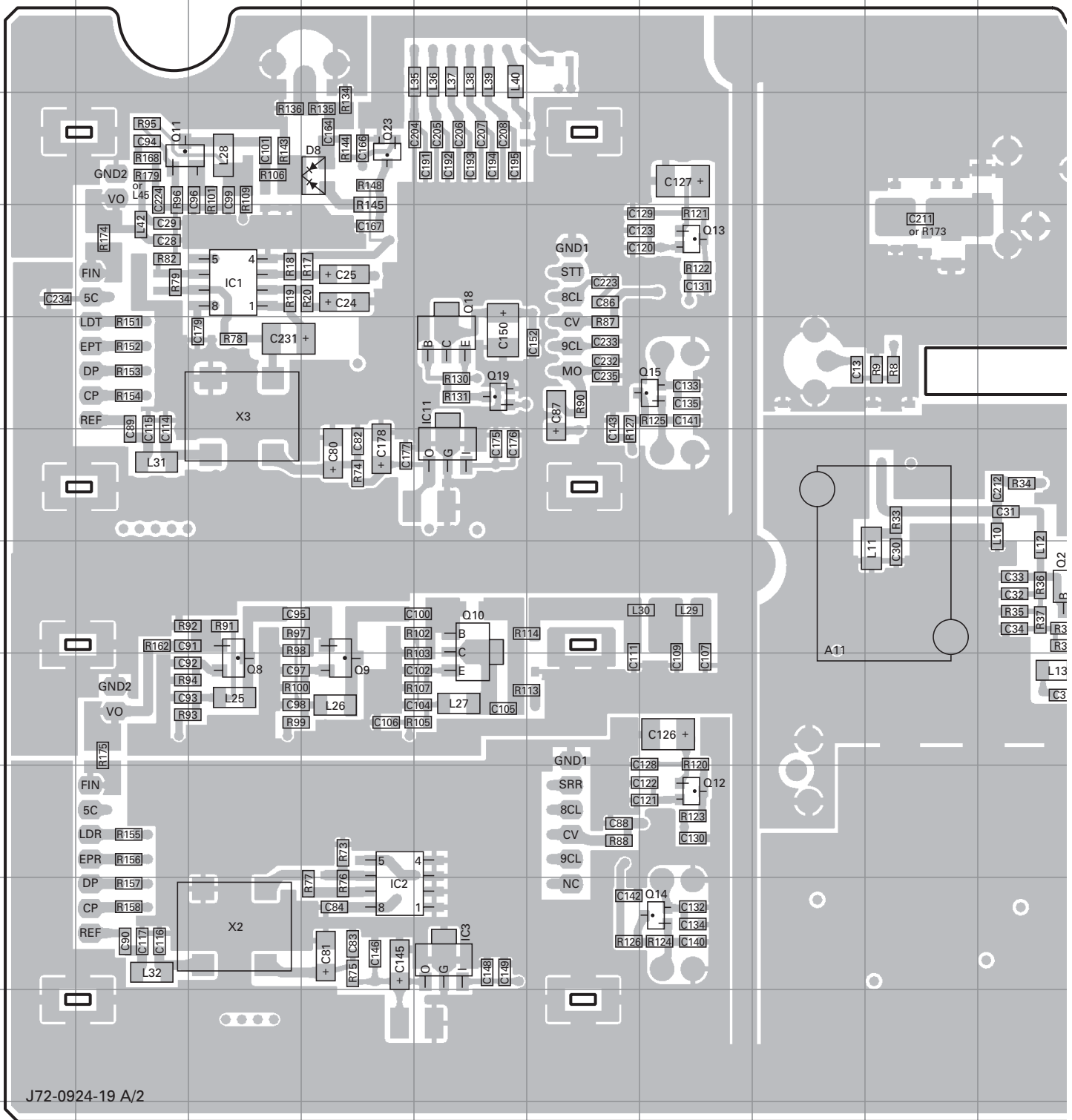
J72-0924-19 A/2



# TKR-851 PC BOARD

TX-RX UNIT (X57-696X-XX) (A/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3

Foil side view (J72-0924-19 A/2)



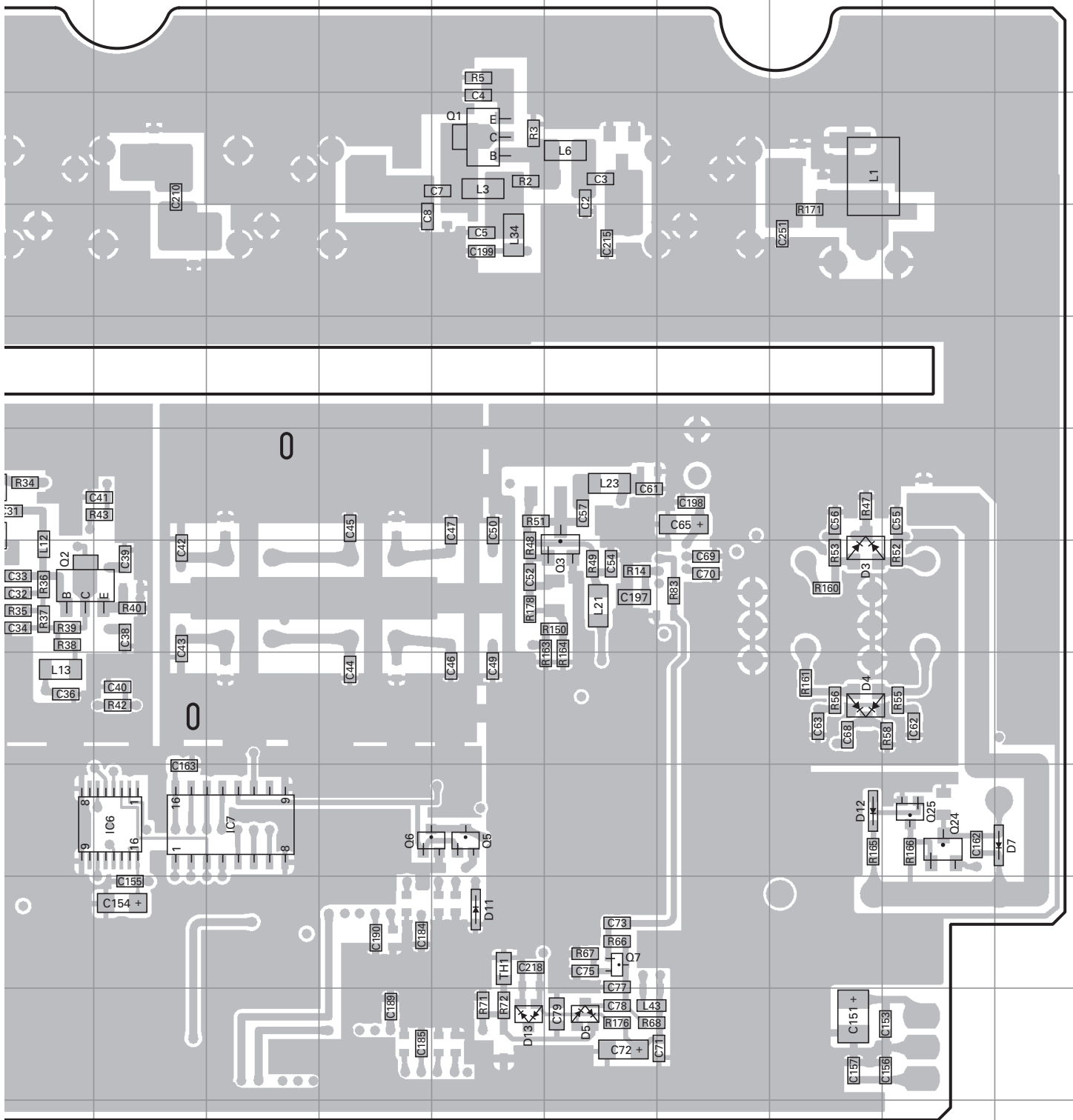
J72-0924-19 A/2

Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC1	4C	Q1	3N	Q8	8C	Q14	10G	Q25	9R	D11	10N
IC2	10D	Q2	7J	Q9	8D	Q15	5G	D3	7Q	D12	9Q
IC3	10E	Q3	7O	Q10	7E	Q18	5E	D4	8Q	D13	11N
IC6	9K	Q5	9N	Q11	3B	Q19	5E	D5	11O		
IC7	9L	Q6	9M	Q12	9G	Q23	3D	D7	9S		
IC11	6E	Q7	10O	Q13	4G	Q24	9R	D8	3D		

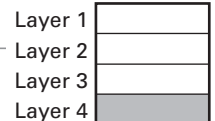
# PC BOARD TKR-851

TX-RX UNIT (X57-696X-XX) (A/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3

Foil side view (J72-0924-19 A/2)



Component side



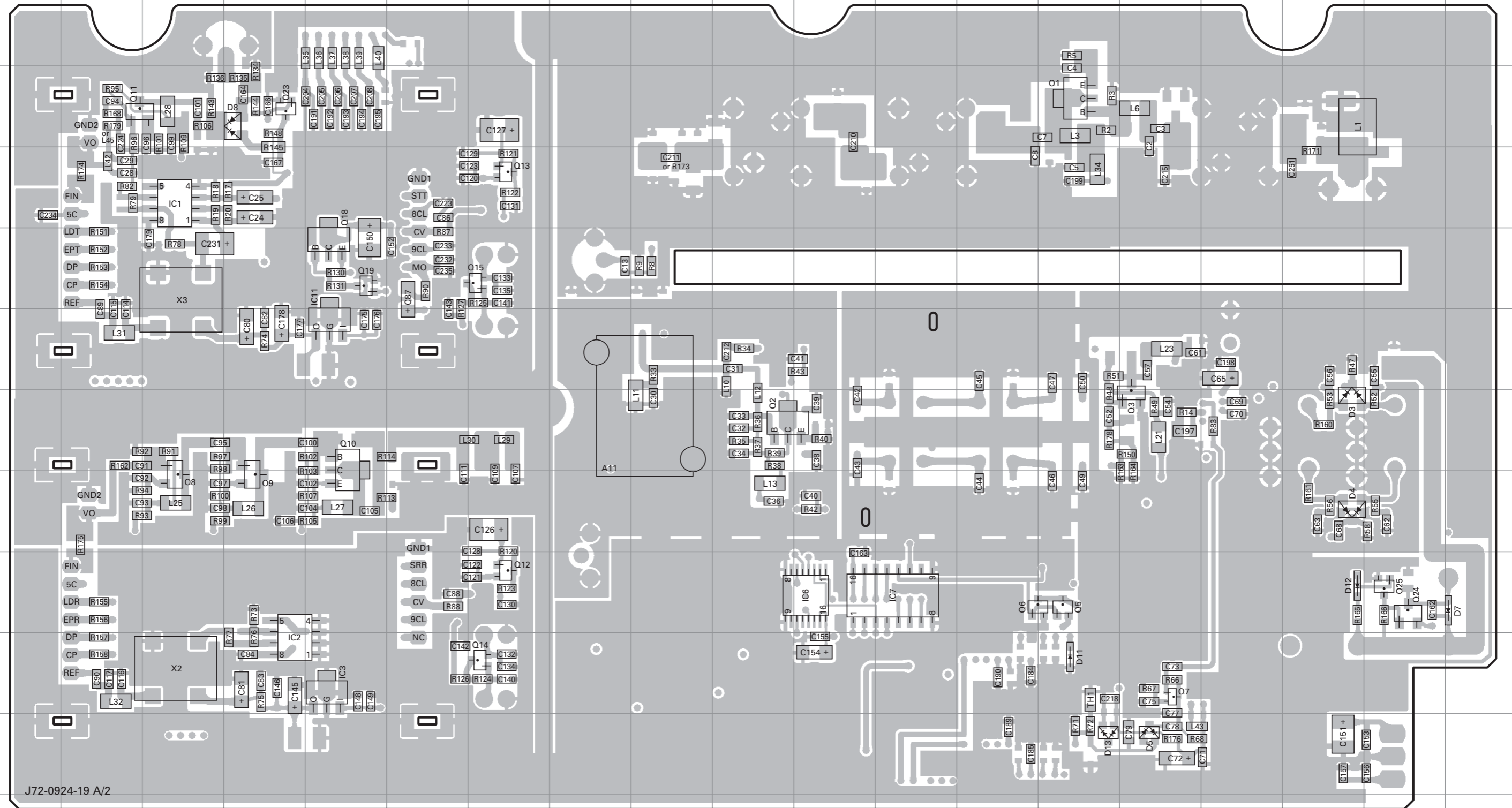
Foil side

# TKR-851 PC BOARD

TX-RX UNIT (X57-696X-XX) (A/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3  
Foil side view (J72-0924-19 A/2)

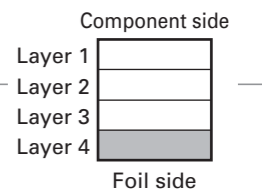
# PC BOARD TKR-851

TX-RX UNIT (X57-696X-XX) (A/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3  
Foil side view (J72-0924-19 A/2)



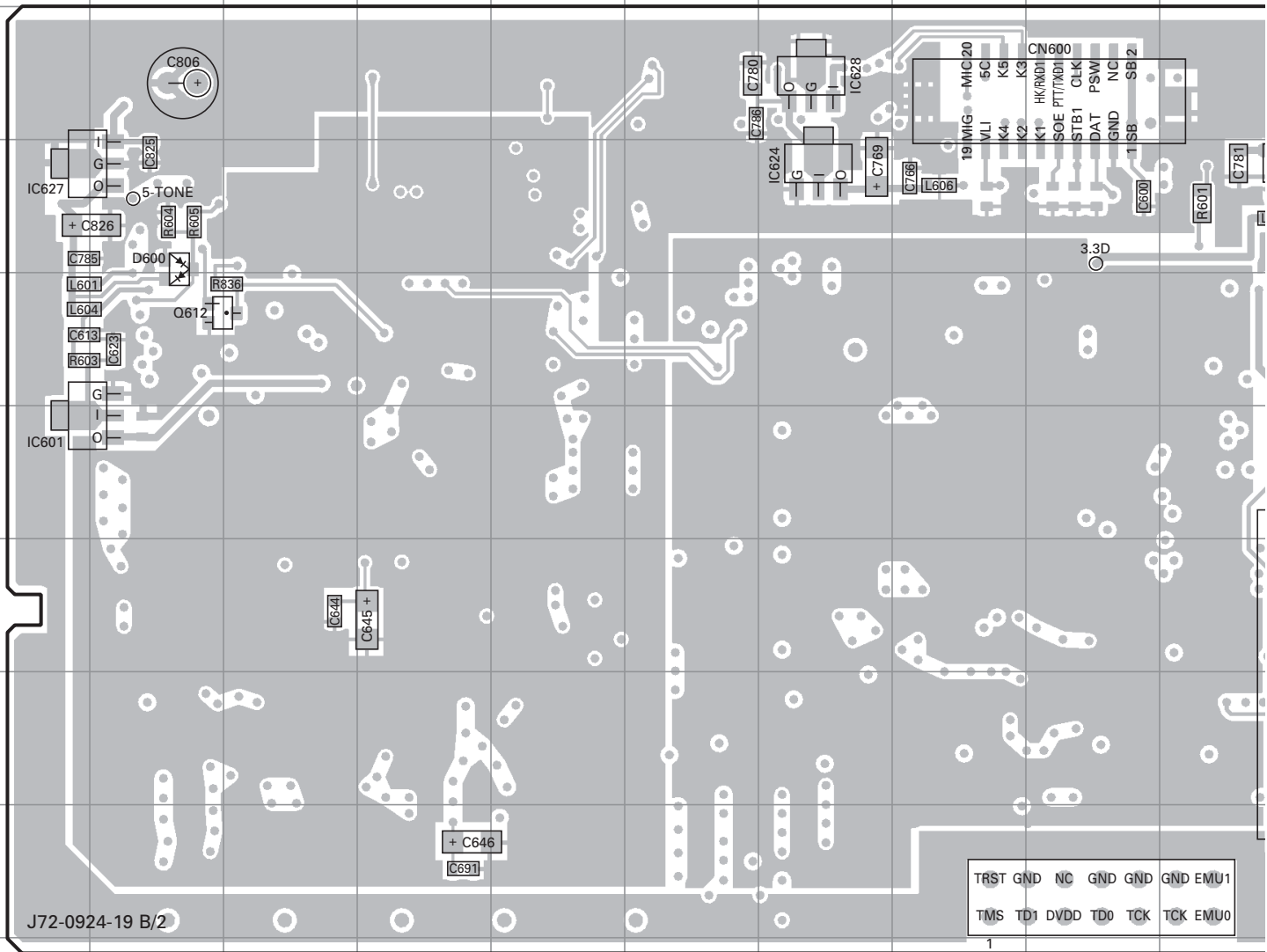
J72-0924-19 A/2

Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC1	4C	Q1	3N	Q8	8C	Q14	10G	Q25	9R	D11	10N
IC2	10D	Q2	7J	Q9	8D	Q15	5G	D3	7Q	D12	9Q
IC3	10E	Q3	7O	Q10	7E	Q18	5E	D4	8Q	D13	11N
IC6	9K	Q5	9N	Q11	3B	Q19	5E	D5	11O		
IC7	9L	Q6	9M	Q12	9G	Q23	3D	D7	9S		
IC11	6E	Q7	10O	Q13	4G	Q24	9R	D8	3D		



# TKR-851 PC BOARD

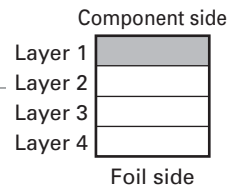
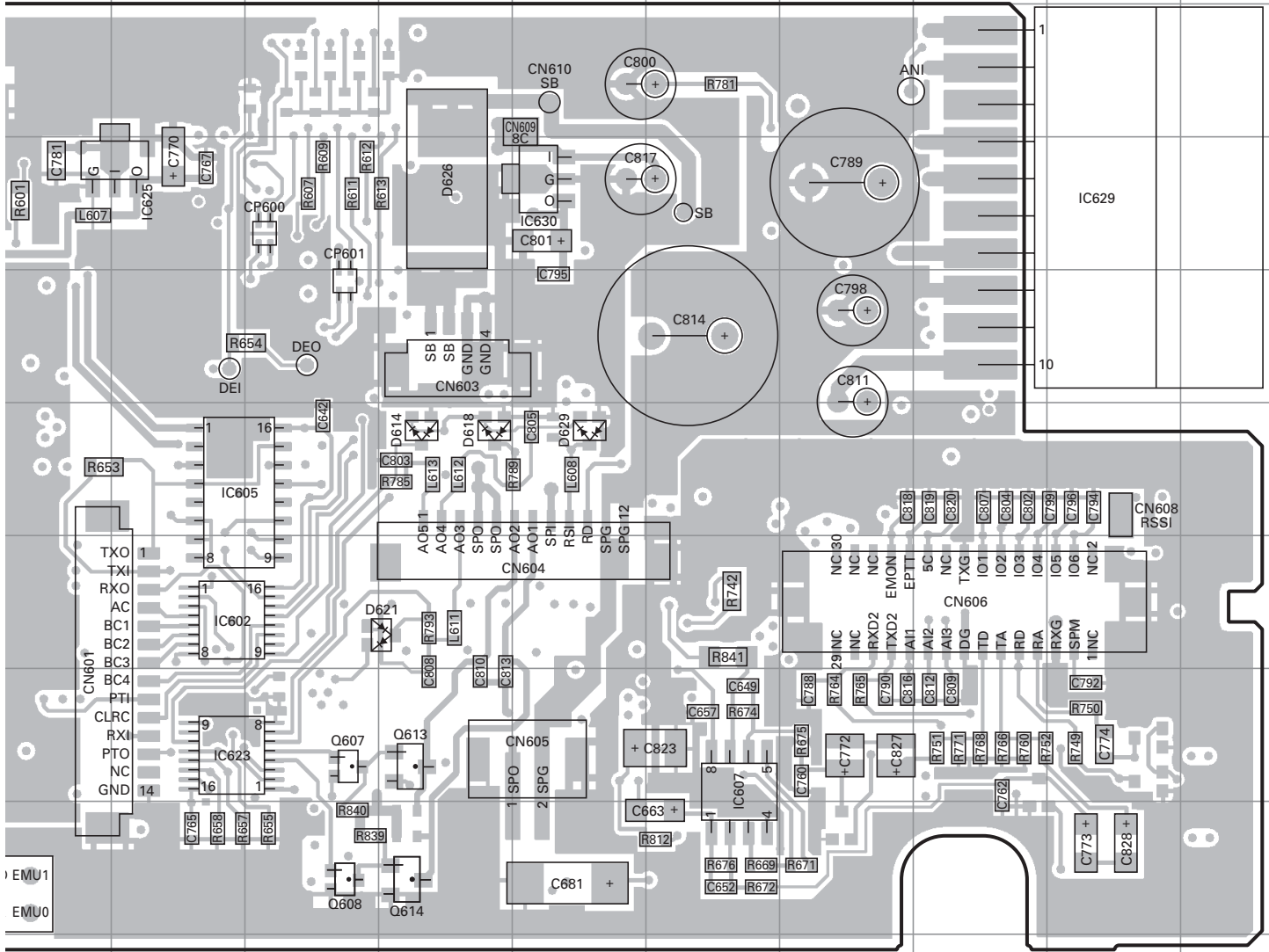
TX-RX UNIT (X57-696X-XX) (B/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3  
 Component side view (J72-0924-19 B/2)



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC601	6A	IC628	3G	D600	4B
IC602	7K	IC629	4R	D614	6M
IC605	6K	IC630	4N	D618	6M
IC607	8O	Q607	8L	D621	7M
IC623	8K	Q608	9L	D626	4M
IC624	4G	Q612	5B	D629	6N
IC625	4K	Q613	8M		
IC627	4A	Q614	9M		

# PC BOARD TKR-851

TX-RX UNIT (X57-696X-XX) (B/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3  
 Component side view (J72-0924-19 B/2)

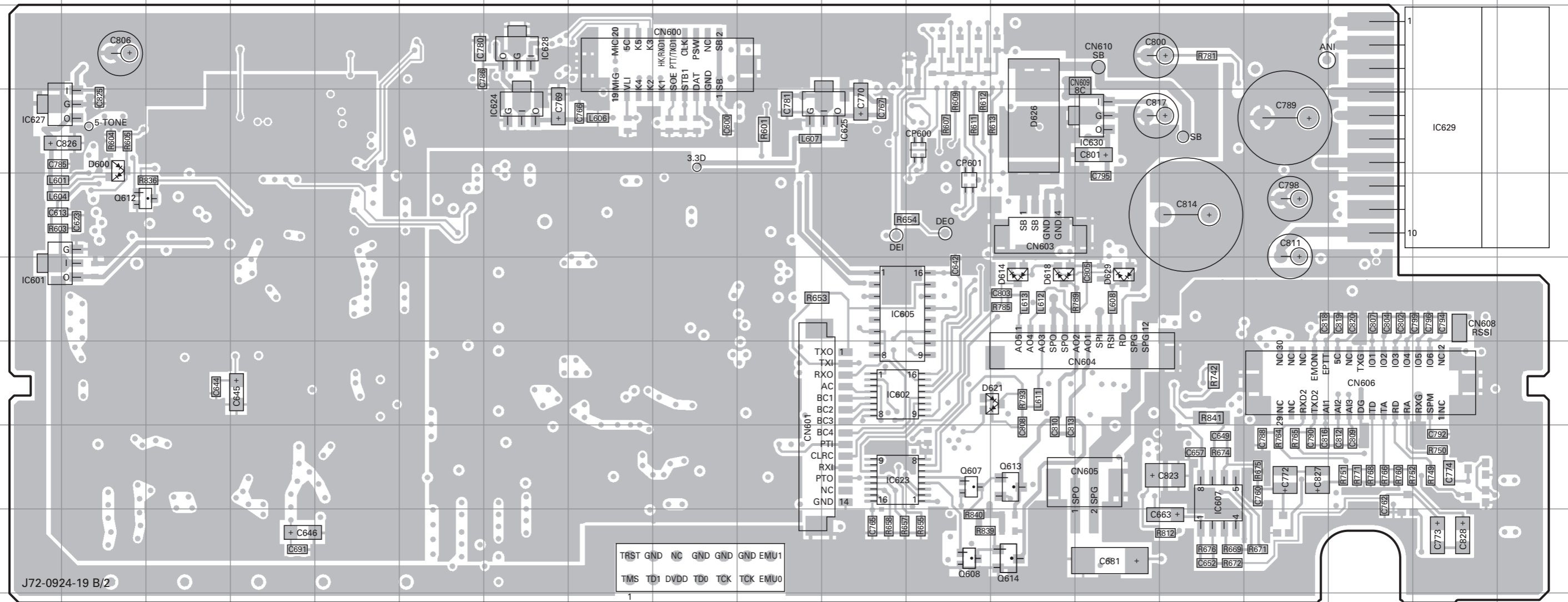


# TKR-851 PC BOARD

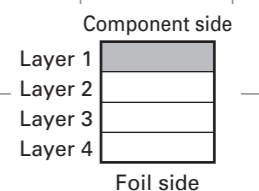
# PC BOARD TKR-851

TX-RX UNIT (X57-696X-XX) (B/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3  
Component side view (J72-0924-19 B/2)

TX-RX UNIT (X57-696X-XX) (B/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3  
Component side view (J72-0924-19 B/2)

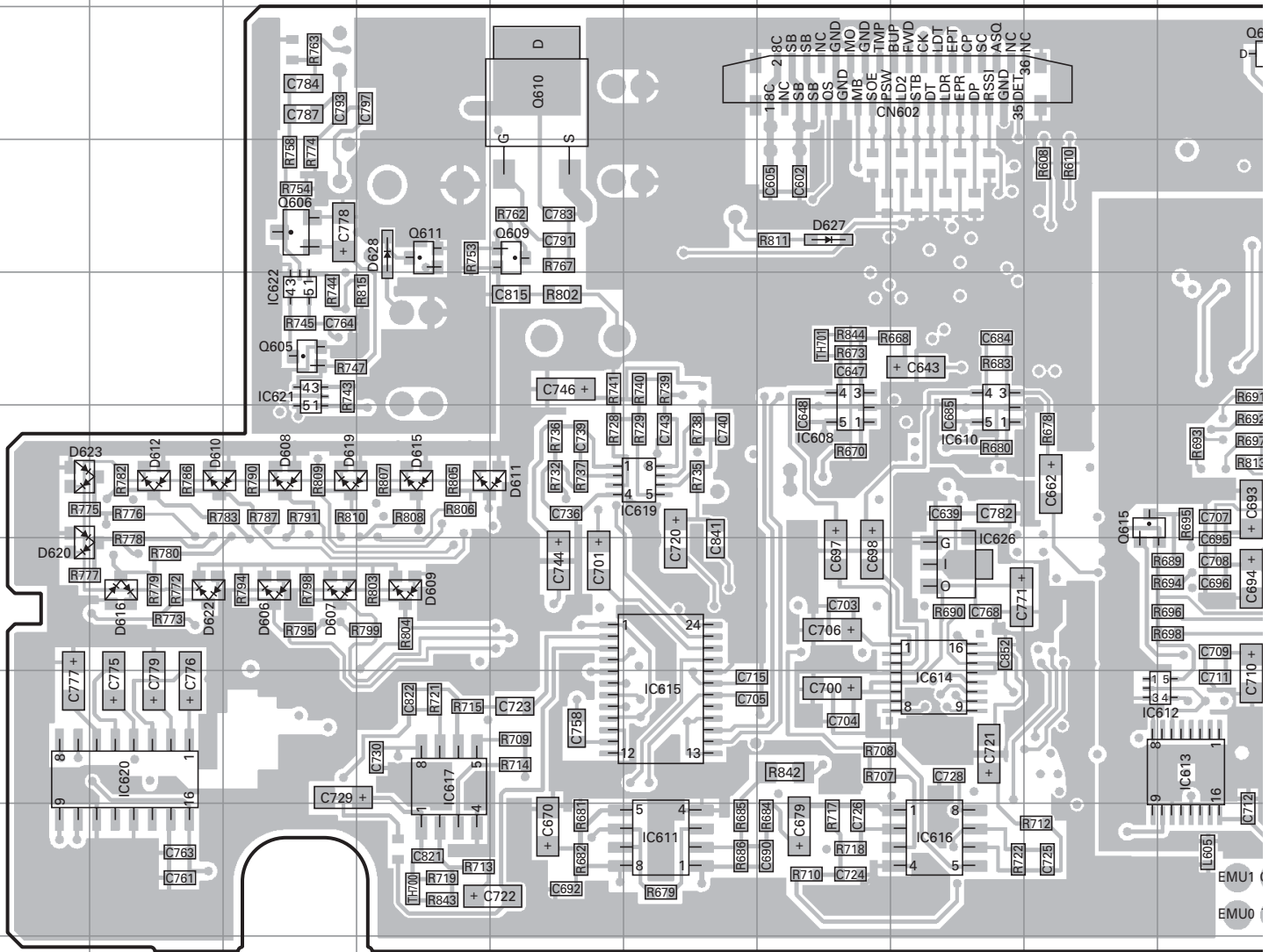


Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC601	6A	IC628	3G	D600	4B
IC602	7K	IC629	4R	D614	6M
IC605	6K	IC630	4N	D618	6M
IC607	8O	Q607	8L	D621	7M
IC623	8K	Q608	9L	D626	4M
IC624	4G	Q612	5B	D629	6N
IC625	4K	Q613	8M		
IC627	4A	Q614	9M		



# TKR-851 PC BOARD

TX-RX UNIT (X57-696X-XX) (B/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3  
 Foil side view (J72-0924-19 B/2)

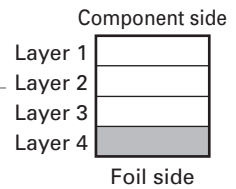
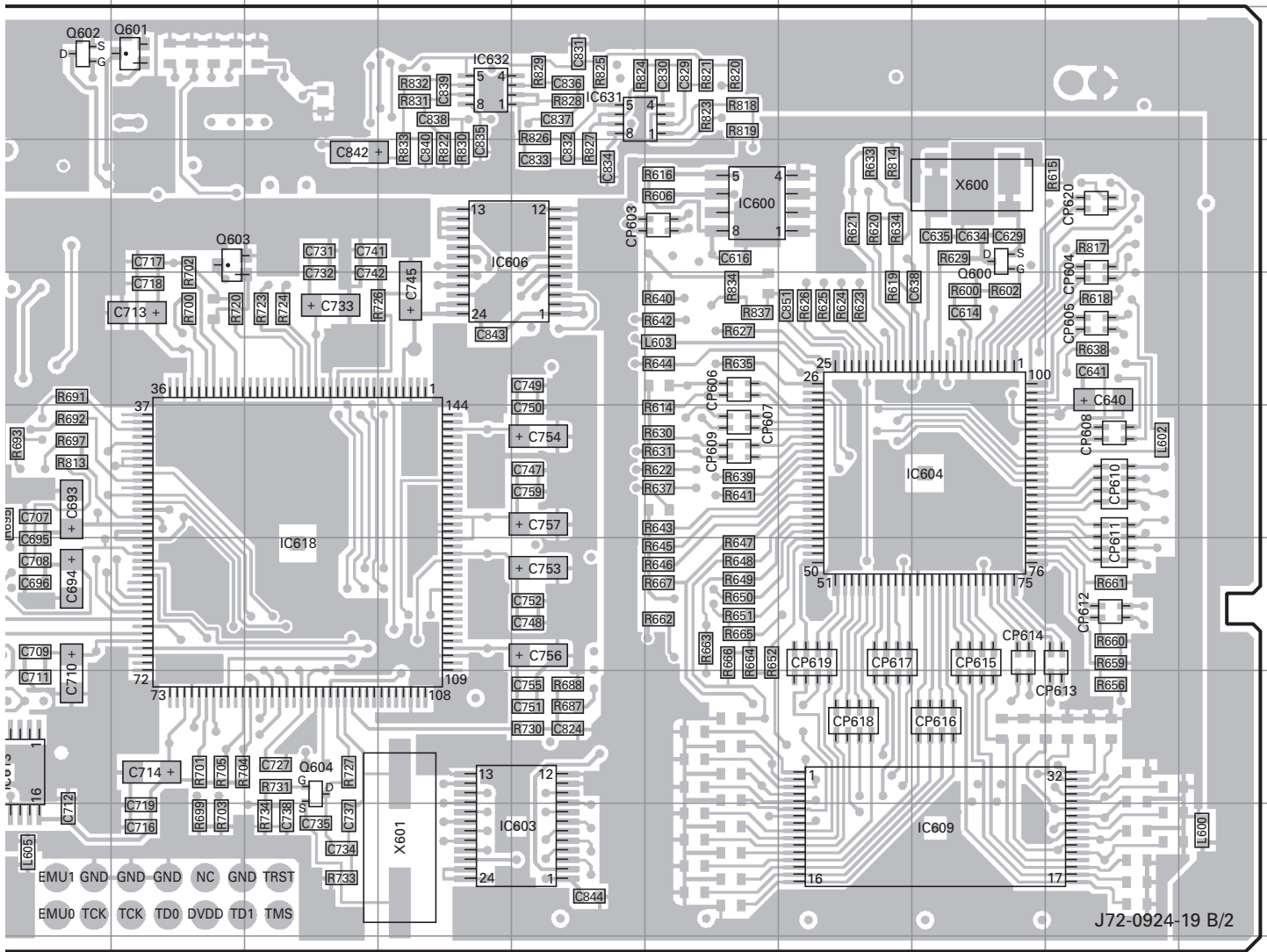


Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC600	4O	IC612	8J	IC620	8B	Q602	3J	Q615	6I	D615	6D
IC603	9N	IC613	8J	IC621	5C	Q603	4K	D606	7C	D616	7B
IC604	6Q	IC614	8H	IC622	5C	Q604	8L	D607	7C	D619	6C
IC606	4M	IC615	8F	IC626	7H	Q605	5C	D608	6C	D620	7A
IC608	6G	IC616	9H	IC631	3N	Q606	4C	D609	7D	D622	7B
IC609	9Q	IC617	8D	IC632	3M	Q609	4E	D610	6B	D623	6A
IC610	6H	IC618	7L	Q600	4Q	Q610	3E	D611	6E	D627	4G
IC611	9F	IC619	6F	Q601	3K	Q611	4D	D612	6B	D628	4D



# PC BOARD TKR-851

TX-RX UNIT (X57-696X-XX) (B/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3  
Foil side view (J72-0924-19 B/2)



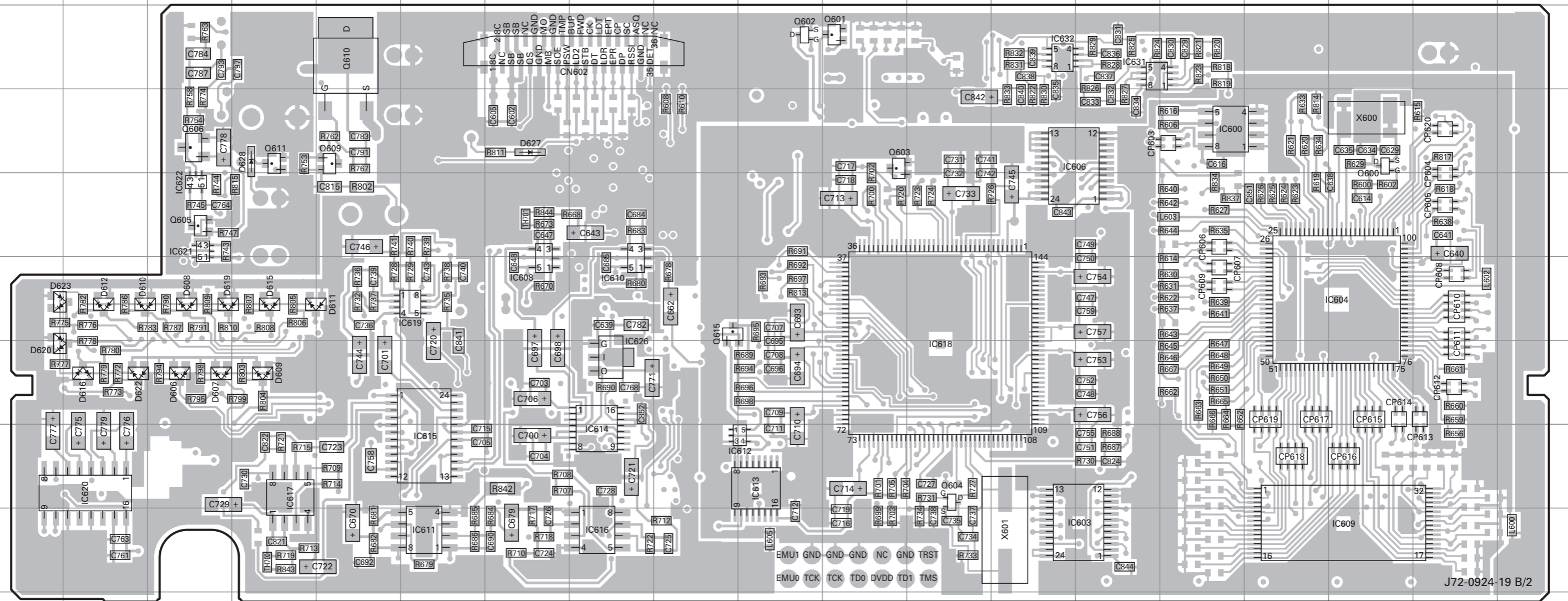


# TKR-851 PC BOARD

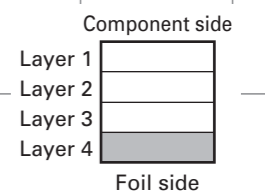
# PC BOARD TKR-851

TX-RX UNIT (X57-696X-XX) (B/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3  
Foil side view (J72-0924-19 B/2)

TX-RX UNIT (X57-696X-XX) (B/2) 0-11 : K 0-12 : K2,M2 2-70 : E 2-71 : E3  
Foil side view (J72-0924-19 B/2)



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC600	4Q	IC612	8J	IC620	8B	Q602	3J	Q615	6I	D615	6D
IC603	9N	IC613	8J	IC621	5C	Q603	4K	D606	7C	D616	7B
IC604	6Q	IC614	8H	IC622	5C	Q604	8L	D607	7C	D619	6C
IC606	4M	IC615	8F	IC626	7H	Q605	5C	D608	6C	D620	7A
IC608	6G	IC616	9H	IC631	3N	Q606	4C	D609	7D	D622	7B
IC609	9Q	IC617	8D	IC632	3M	Q609	4E	D610	6B	D623	6A
IC610	6H	IC618	7L	Q600	4Q	Q610	3E	D611	6E	D627	4G
IC611	9F	IC619	6F	Q601	3K	Q611	4D	D612	6B	D628	4D

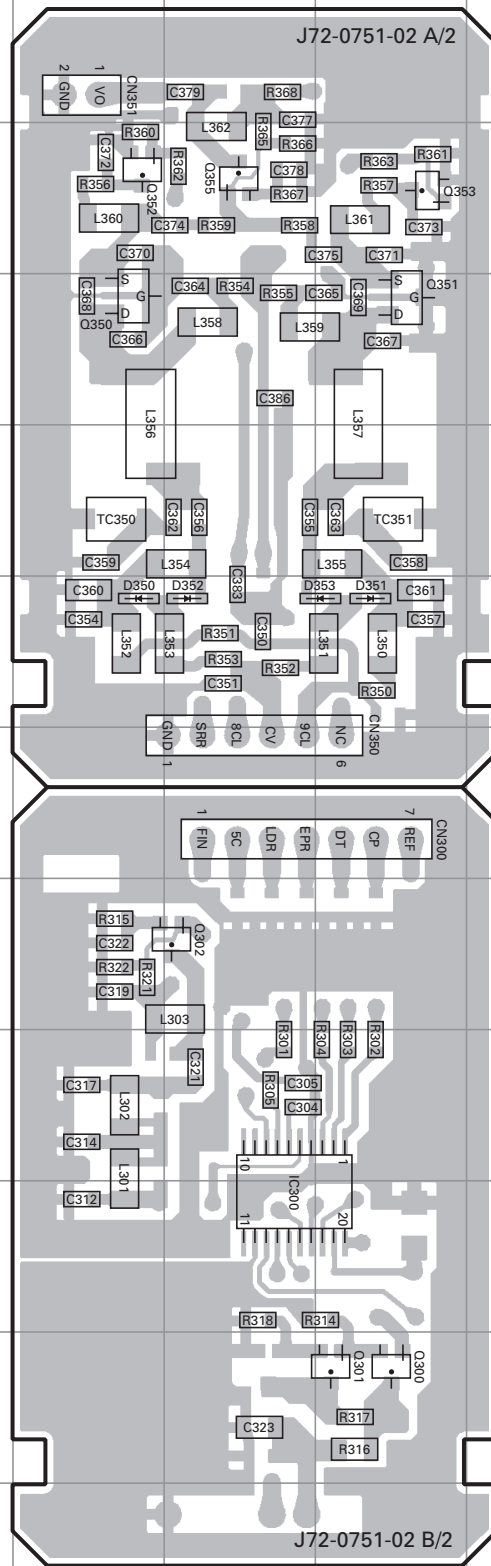
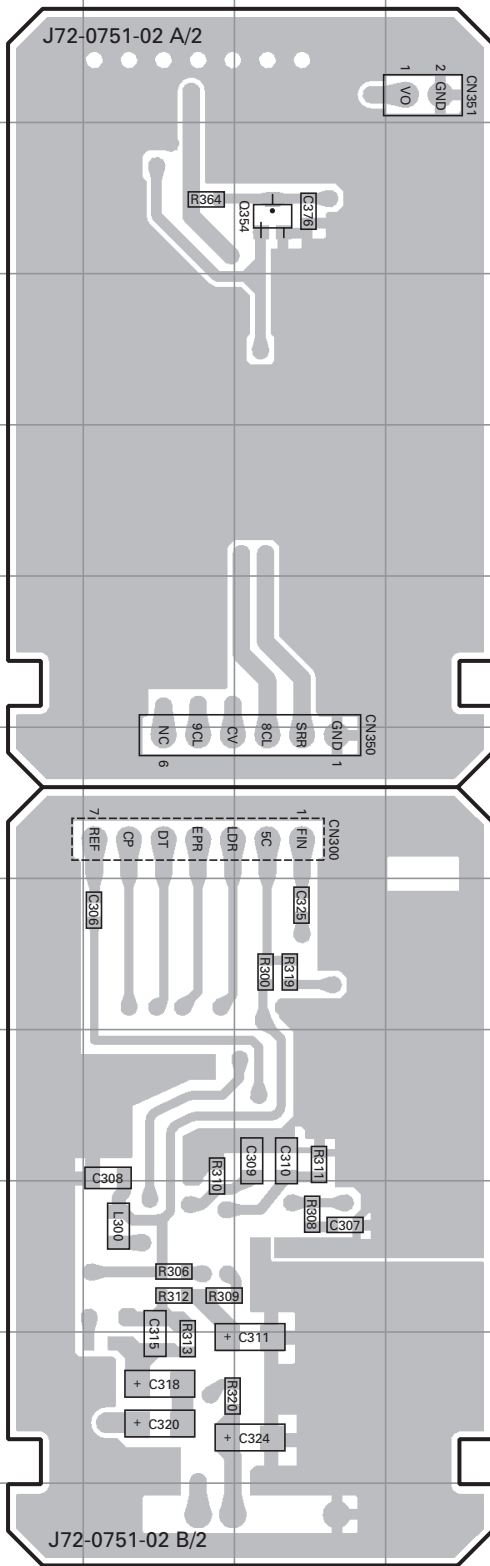


# TKR-851 PC BOARD

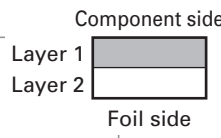
RX VCO UNIT (X58-480X-XX) 0-10 : K,E 0-11 : K2,M2 0-12 : E3 (J72-0751-02)

Component side view

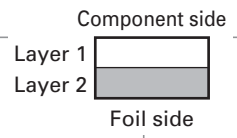
Foil side view



Ref. No.	Address
Q354	3C



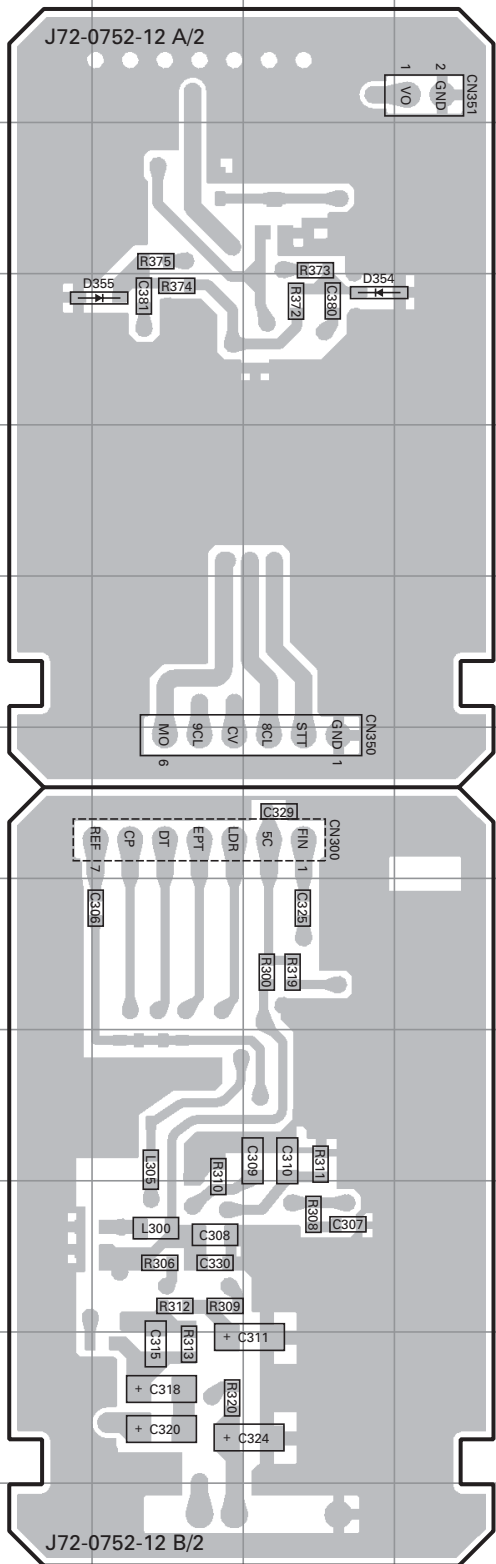
Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC300	10G	Q351	4H	D351	6H
Q300	11H	Q352	3F	D352	6G
Q301	11H	Q353	3H	D353	6H
Q302	8G	Q355	3G		
Q350	4F	D350	6F		



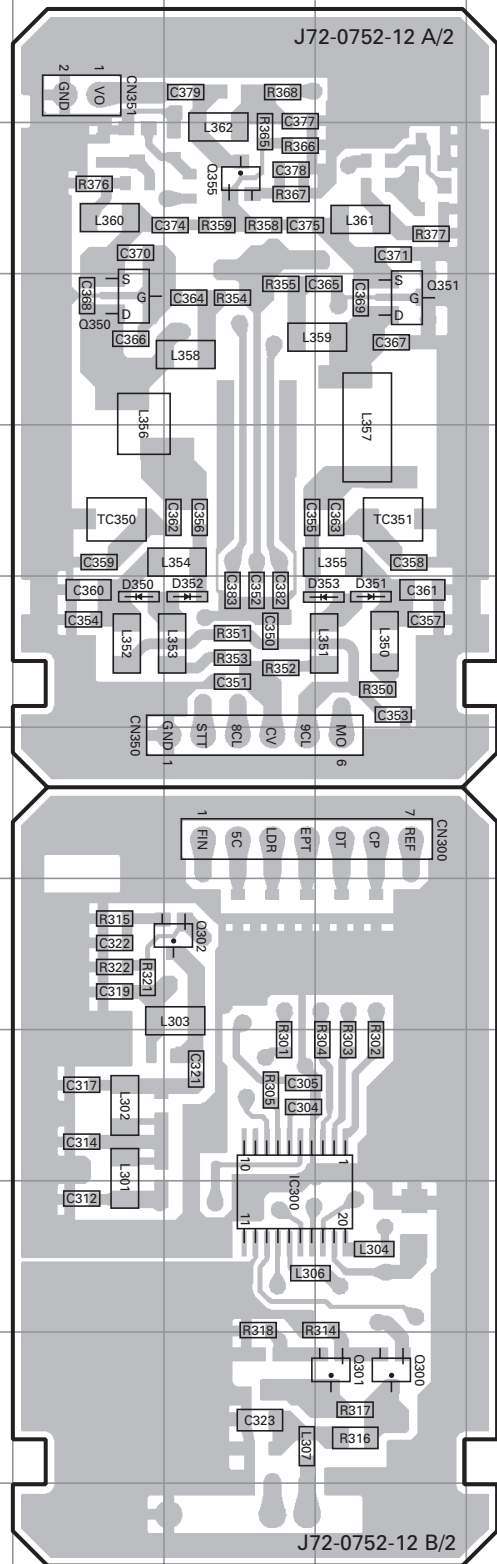
# PC BOARD TKR-851

TX VCO UNIT (X58-481X-XX) 0-10 : K,E 0-11 : K2,M2 0-12 : E3 (J72-0752-12)

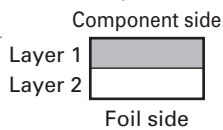
Component side view



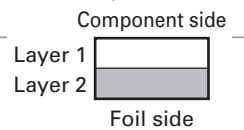
Foil side view



Ref. No.	Address
D354	4C
D355	4B

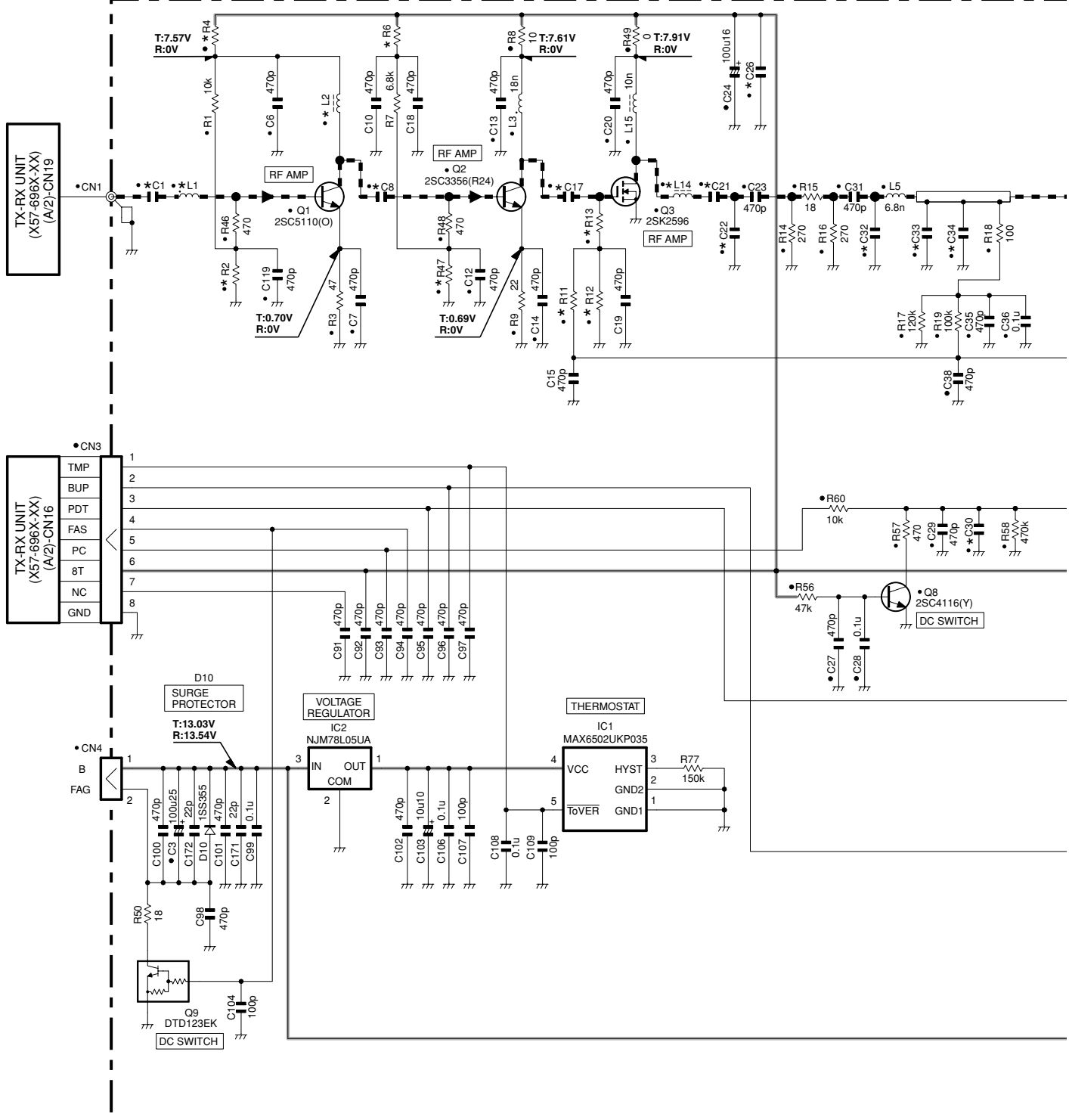


Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC300	10G	Q350	4F	D351	6H
Q300	11H	Q351	4H	D352	6G
Q301	11H	Q355	3G	D353	6H
Q302	8G	D350	6F		



# TKR-851 SCHEMATIC DIAGRAM

## FINAL UNIT (X45-374X-XX) (A/2)

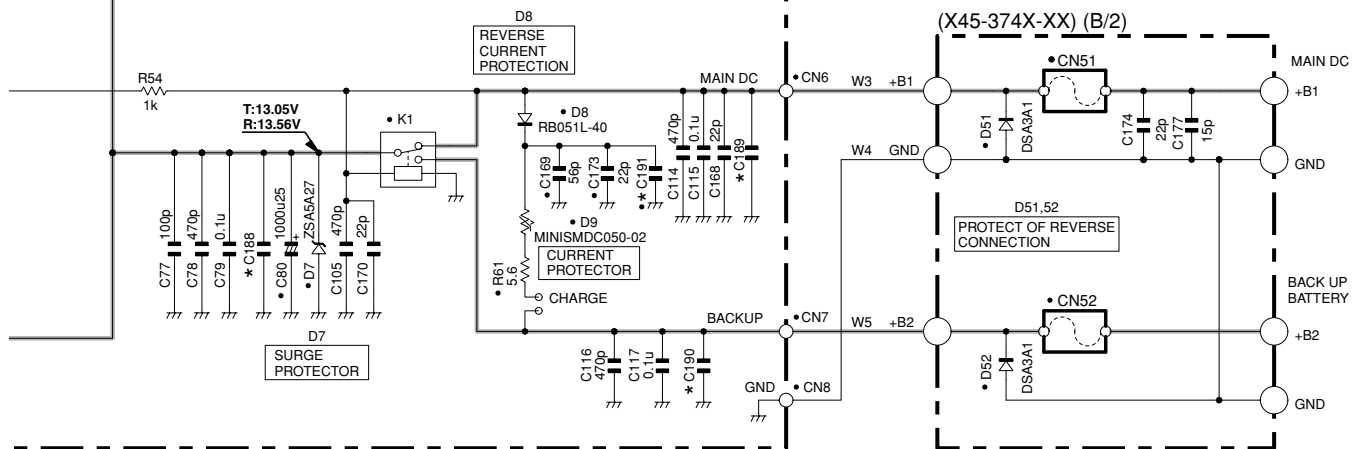
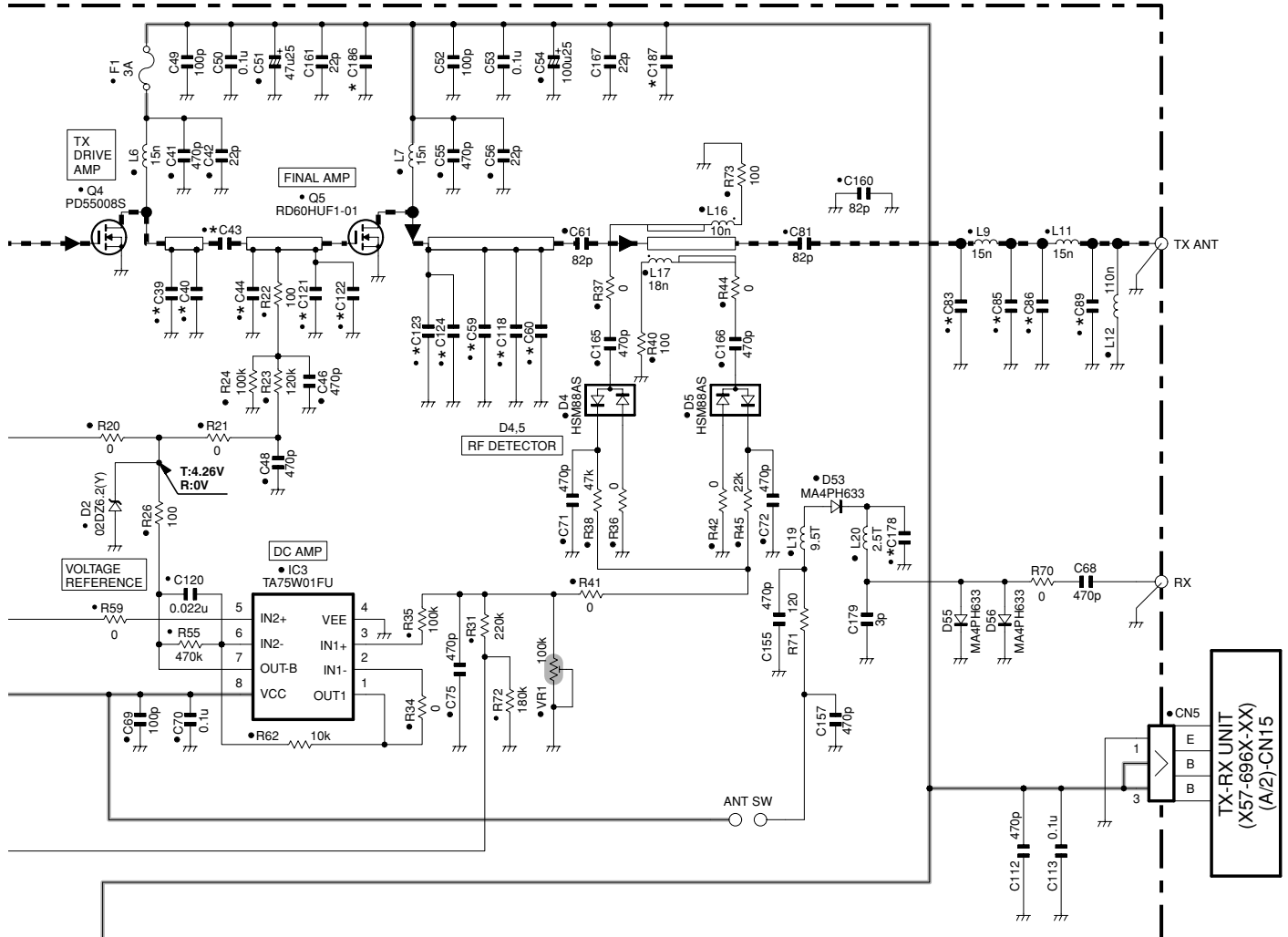


X45-374X-XX	L1	L2	L14	R2	R4	R6	R11	R12	R13	R47	C1	C8	C17	C21	C22	C26	C30	C32	C33	C34	
2-71	K,E	10n	10n	15n	2.2k	22	47	100k	18k	47	2.2k	470p	8p	5p	12p	6p	470p	0.22u	8p	27p	27p
0-13	K2,M2	10n	18n	10n	4.7k	10	10	100k	18k	47	3.3k	10p	3p	5p	10p	9p	470p	0.22u	9p	27p	27p
2-72	E3	3.9n	27n	10n	2.2k	22	47	33k	15k	22	3.3k	10p	10p	7p	22p	12p	100p	0.47u	8p	39p	39p

# SCHEMATIC DIAGRAM TKR-851

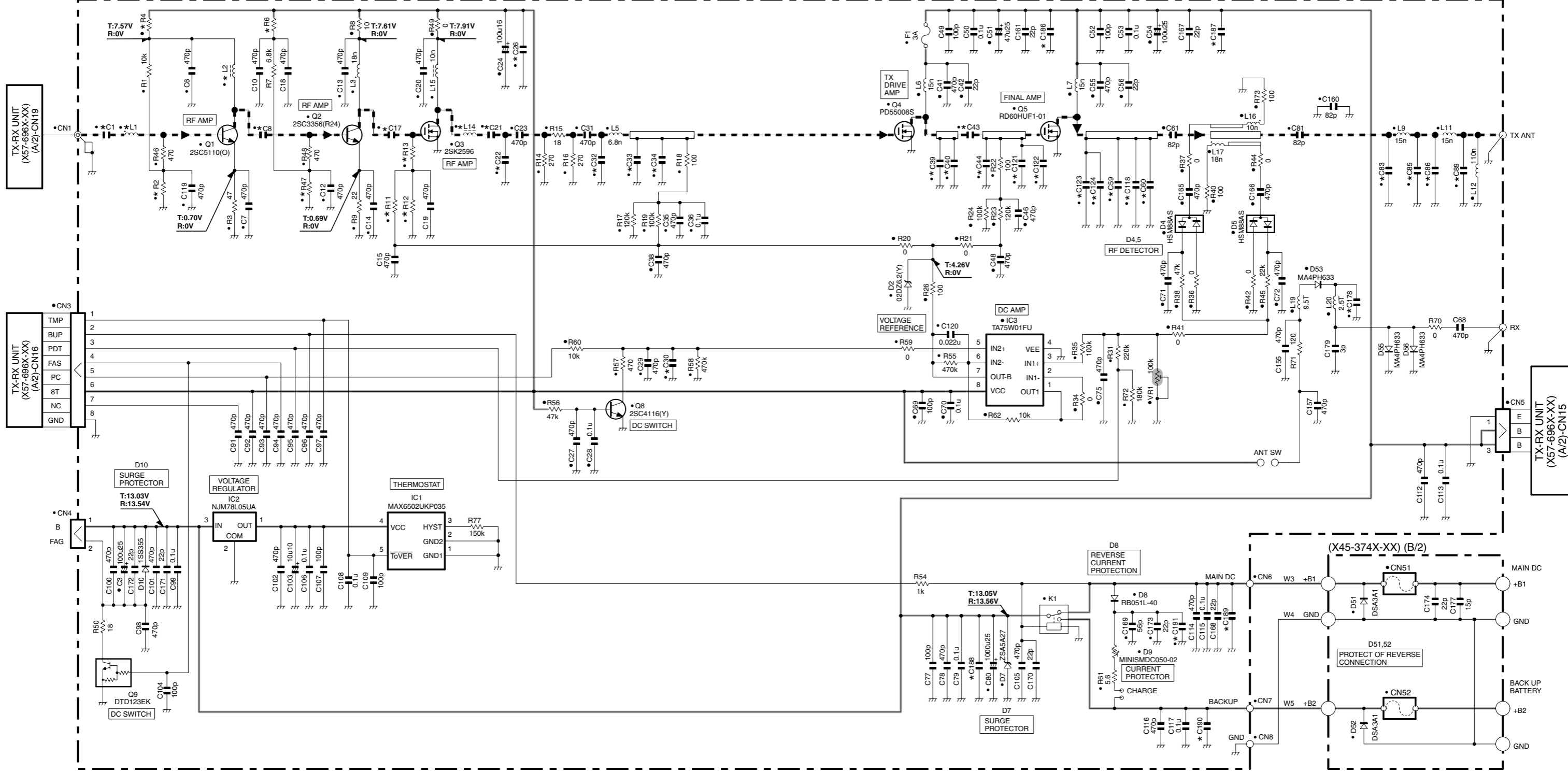
Note : The components marked with a dot (•) are parts of layer 1.

## FINAL UNIT (X45-374X-XX) (A/2)



X45-374X-XX	C39	C40	C43	C44	C59	C60	C83	C85	C86	C89	C118	C121	C122	C123	C124	C178	C186	C187	C188	C189	C190	C191
2-71	K,E	12p	22p	22p	6p	15p	NO	6p	NO	10p	5p	8p	15p	15p	22p	22p	3p	NO	NO	NO	NO	NO
0-13	K2,M2	8p	27p	18p	NO	15p	6p	5p	NO	8p	5p	NO	18p	18p	22p	18p	3p	NO	NO	NO	NO	NO
2-72	E3	12p	NO	22p	10p	27p	15p	7p	12p	NO	6p	NO	18p	18p	27p	4p	82p	82p	82p	82p	82p	82p

FINAL UNIT  
(X45-374X-XX) (A/2)



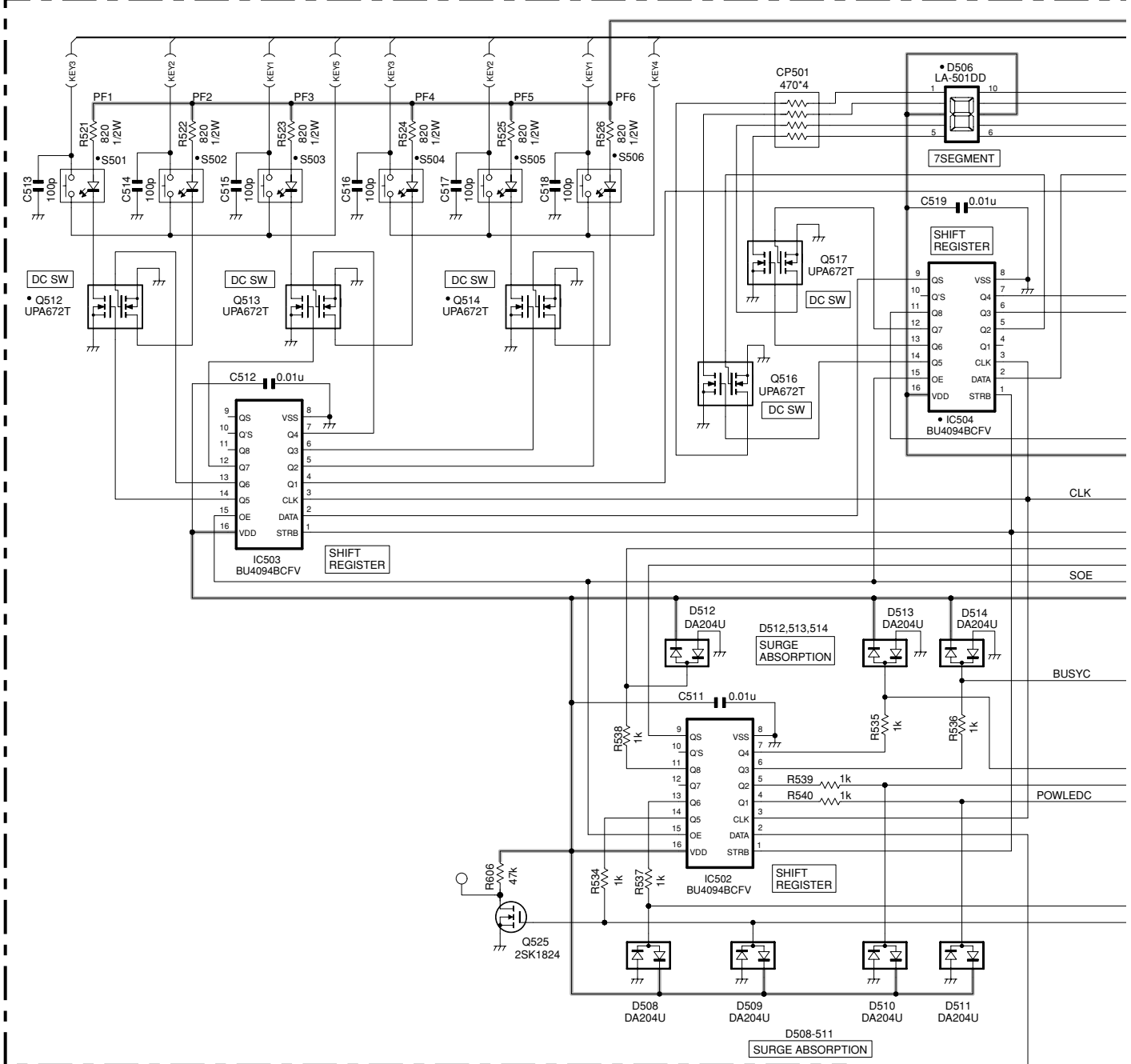
X45-374X-XX	L1	L2	L14	R2	R4	R6	R11	R12	R13	R47	C1	C8	C17	C21	C22	C26	C30	C32	C33	C34
2-71	K,E	10n	15n	2.2k	22	47	100k	18k	47	2.2k	470p	8p	5p	12p	6p	470p	0.22u	8p	27p	27p
0-13	K2,M2	10n	18n	10n	4.7k	10	100k	18k	47	3.3k	10p	3p	5p	10p	9p	470p	0.22u	9p	27p	27p
2-72	E3	3.9n	27n	10n	2.2k	22	47	33k	15k	22	3.3k	10p	10p	7p	22p	12p	100p	0.47u	8p	39p

X45-374X-XX	C39	C40	C43	C44	C59	C60	C83	C85	C86	C89	C118	C121	C122	C123	C124	C178	C186	C187	C188	C189	C190	C191
2-71	K,E	12p	22p	22p	6p	15p	NO	6p	NO	10p	5p	8p	15p	22p	22p	3p	NO	NO	NO	NO	NO	NO
0-13	K2,M2	8p	27p	18p	NO	15p	6p	5p	NO	8p	5p	NO	18p	18p	22p	18p	3p	NO	NO	NO	NO	NO
2-72	E3	12p	NO	22p	10p	27p	15p	7p	12p	NO	6p	NO	18p	18p	27p	27p	4p	82p	82p	82p	82p	82p

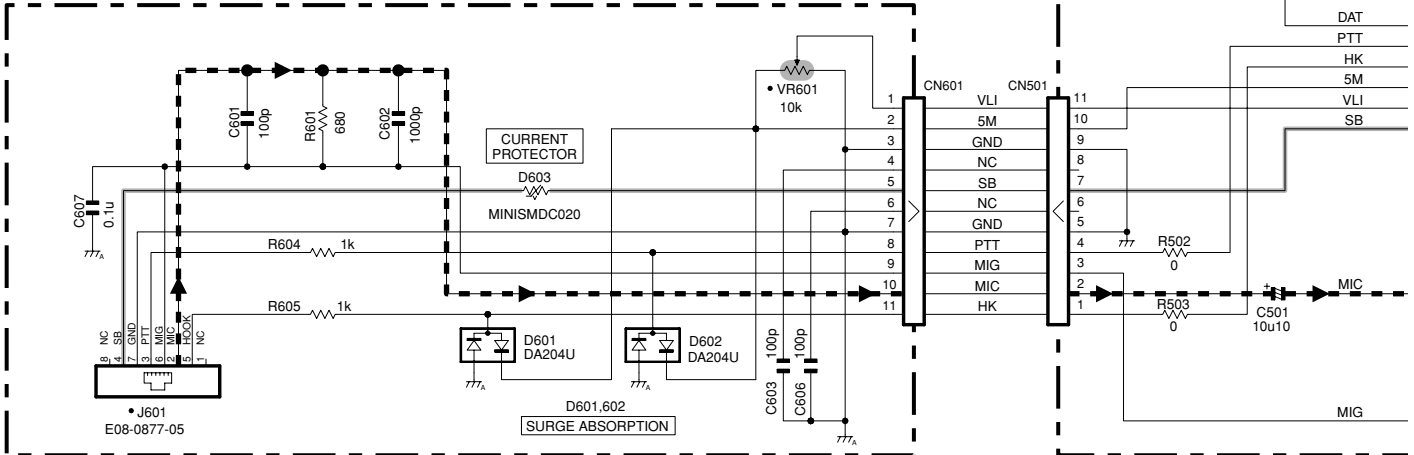
# TKR-851 SCHEMATIC DIAGRAM

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

## DISPLAY UNIT (X54-3330-21) (A/2)

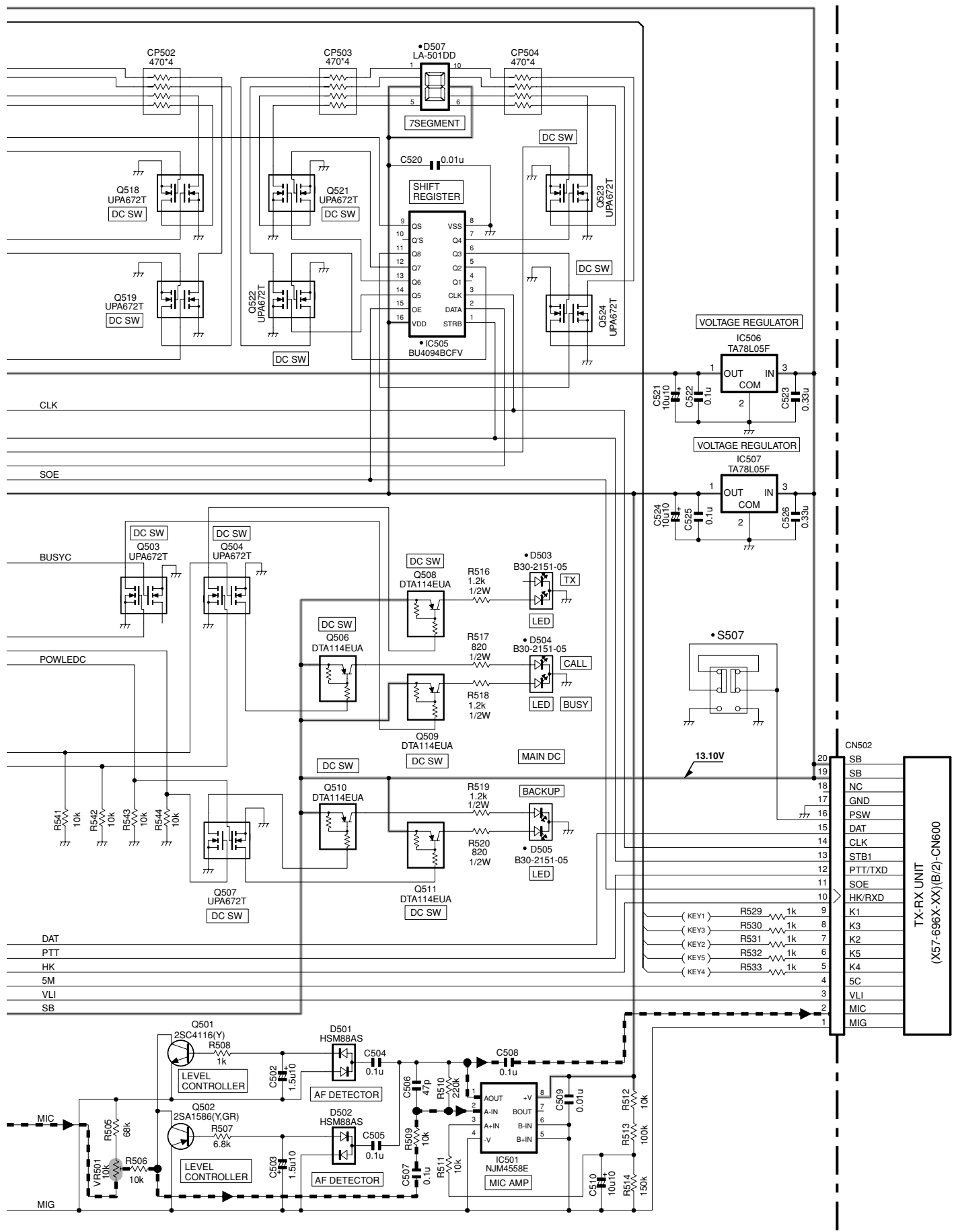


## DISPLAY UNIT (X54-3330-21) (B/2)



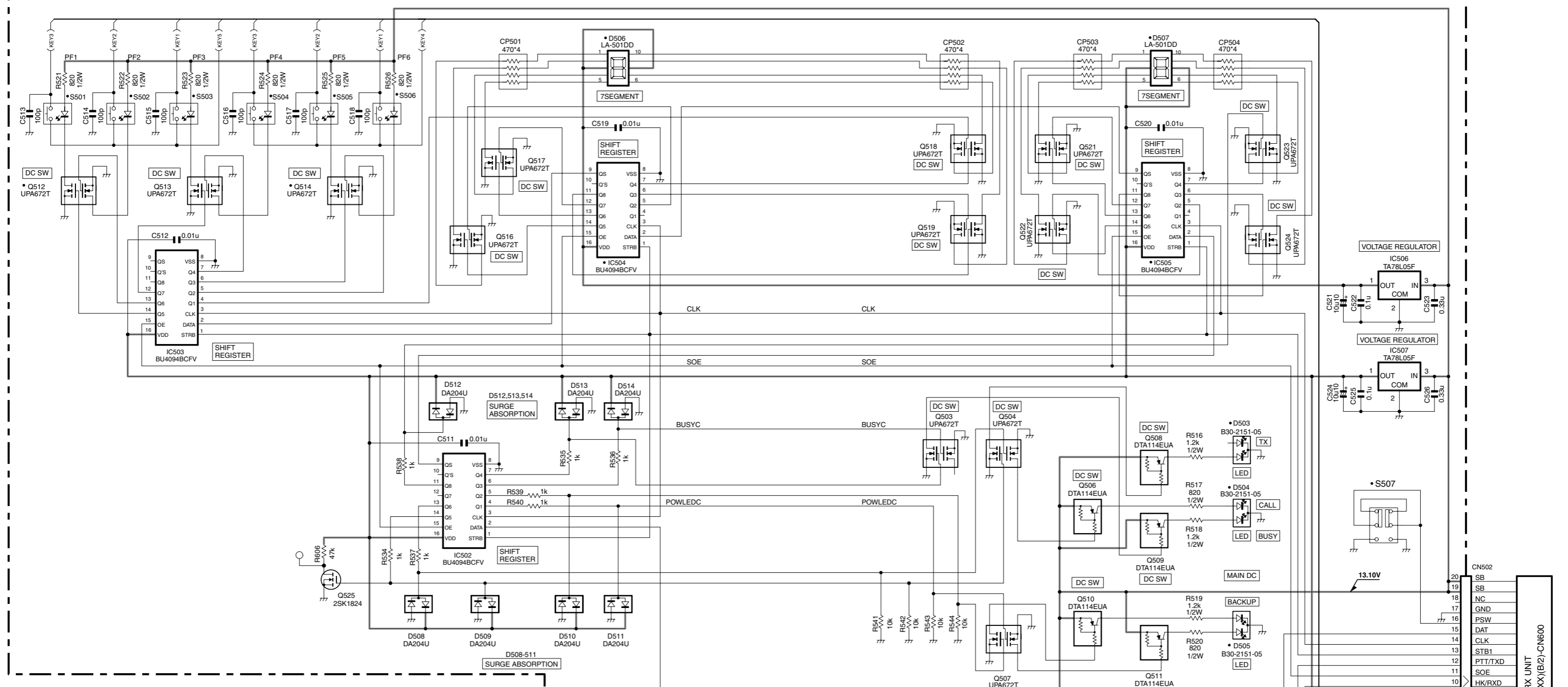
# SCHEMATIC DIAGRAM TKR-851

DISPLAY UNIT (X54-3330-21) (A/2)

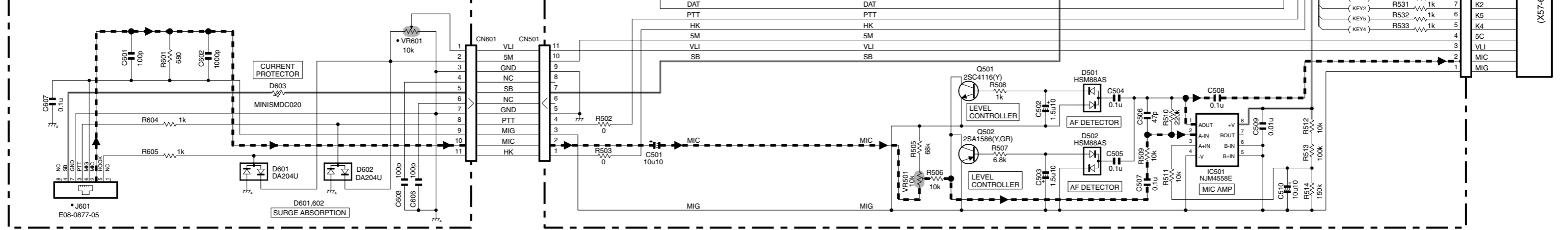




DISPLAY UNIT (X54-3330-21) (A/2)



DISPLAY UNIT (X54-3330-21) (B/2)

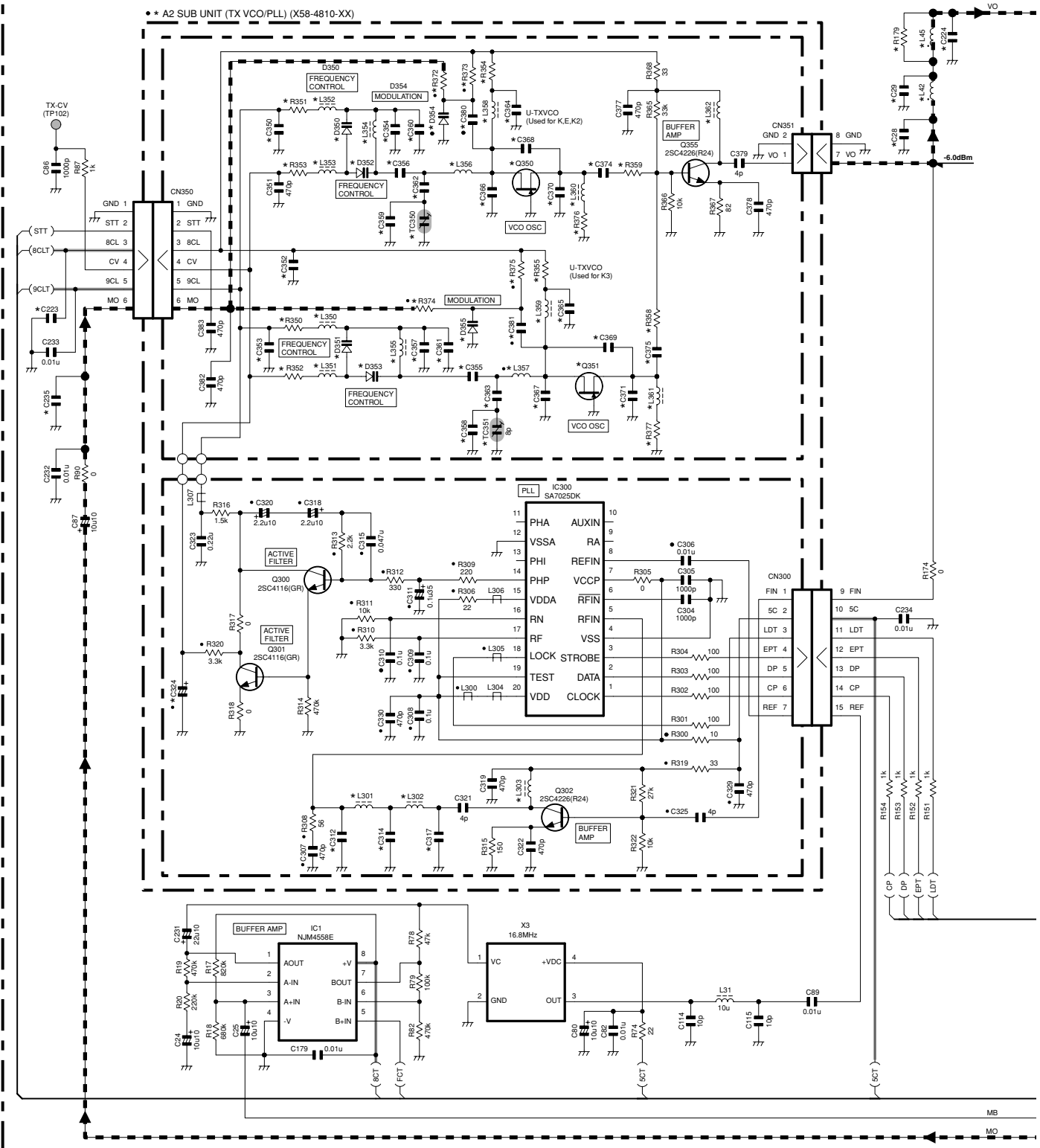


TX-RX UNIT (X57-696X-XX)(B/2)-CN600

20	CN502
19	SB
18	NC
17	GND
16	PSW
15	DAT
14	CLK
13	STB1
12	PTT/TXD
11	SOE
10	HK/RXD
9	K1
8	K3
7	K2
6	K5
5	K4
4	5C
3	VLI
2	MIC
1	MIG

# TKR-851 SCHEMATIC DIAGRAM

TX-RX UNIT (X57-696X-XX) (A/2)



A2 SUB UNIT (TX VCO/PLL)

X58-4810-XX	C312	C314	C317	C324	C350	C352	C353	C354	C355	C356	C357	C358	C359	C360	C361	C362	C363	C364	C365	C366	C367	C368	C369	C370	C371	C374	C375	C380	C381	
-10	K.E	6p	12p	6p	0.22u/35V	470p	100p	NO	470p	NO	8p	NO	1.5p	0.1u	NO	12p	NO	470p	NO	7p	NO	7p	NO	7p	NO	0.5p	NO	0.5p	NO	
-11	K2.M2	5p	10p	5p	0.22u/35V	470p	NO	NO	470p	NO	7p	NO	NO	1.5p	0.1u	NO	12p	NO	470p	NO	7p	NO	7p	NO	7p	NO	0.5p	NO	0.5p	NO
-12	E3	7p	12p	7p	0.33u/35V	NO	100p	470p	NO	10p	NO	470p	3p	NO	NO	0.1u	NO	18p	NO	470p	NO	7p	NO	8p	NO	8p	NO	0.5p	NO	0.5p

A2 SUB UNIT (TX VCO/PLL)

X58-4810-XX	D350	D351	D352	D353	D354	D355	L301	L302	L303	L350	L351	L352	L353	L354	L355	L356	L357	L358	L359	L360	L361	L362	TC350	TC351	
-10	K.E	1SV282	NO	1SV282	NO	1SV214	NO	15n	15n	22n	NO	NO	1u	1u	1u	NO	L34-4645-05	NO	1u	1u	1u	33n	C05-0396-05	NO	
-11	K2.M2	1SV282	NO	1SV282	NO	1SV214	NO	15n	15n	22n	NO	NO	1u	1u	1u	NO	L34-4605-05	NO	1u	NO	1u	NO	22n	C05-0396-05	NO
-12	E3	NO	1SV282	NO	1SV282	NO	1SV214	18n	18n	27n	1u	1u	NO	NO	1u	NO	L34-4607-05	NO	1.5u	NO	1.5u	33n	NO	C05-0396-05	

A2 SUB UNIT (TX VCO/PLL)

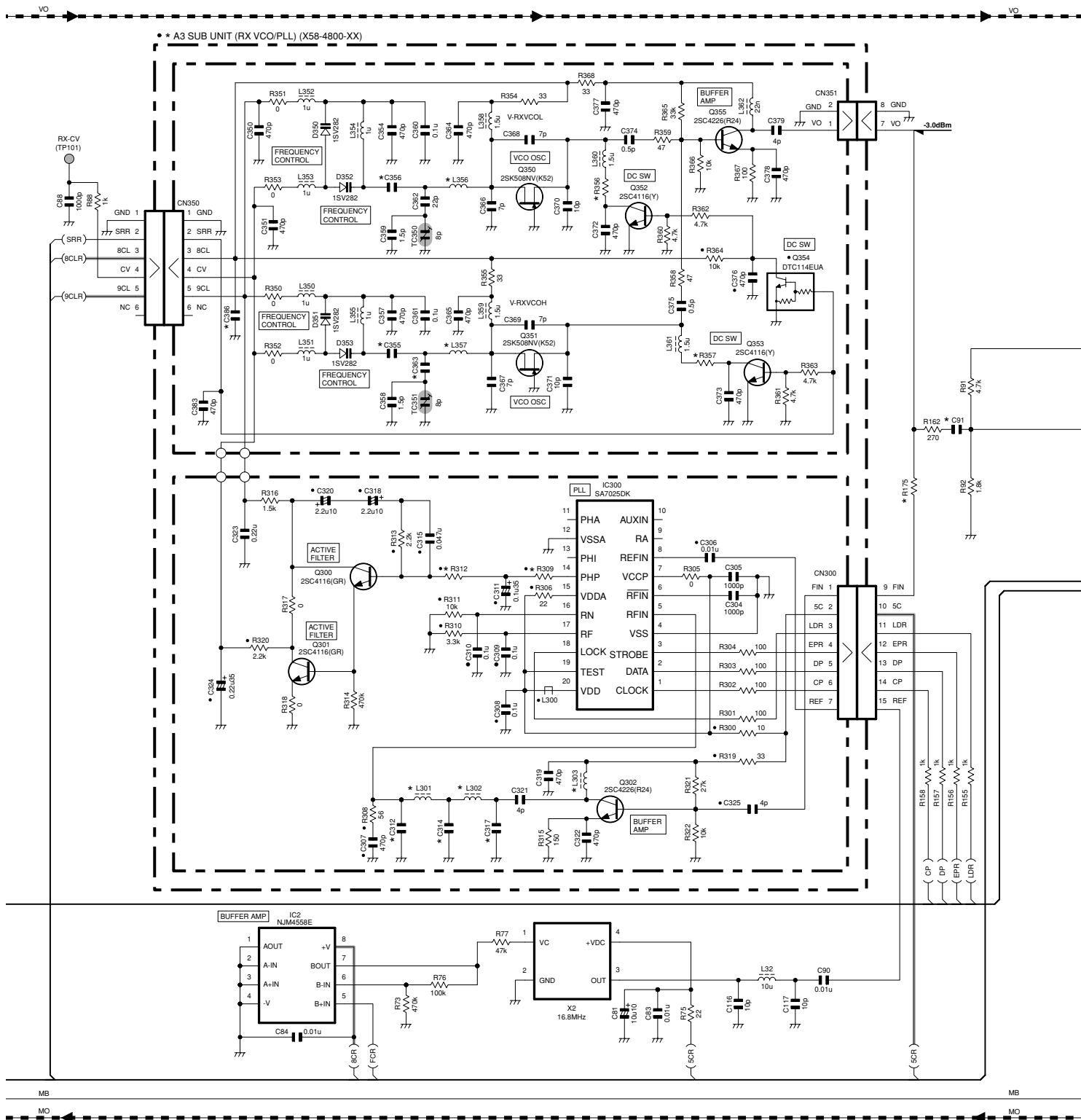
X58-4810-XX	R350	R351	R352	R353	R354	R355	R356	R359	R372	R373	R374	R375	R376	R377	Q350	Q351
-10	K.E	NO	0	NO	0	33	NO	NO	47	100k	100k	NO	NO	180	2SK508NV(K52)	NO
-11	K2.M2	NO	0	NO	0	33	NO	NO	47	100k	100k	NO	NO	150	2SK508NV(K52)	NO
-12	E3	0	NO	0	NO	33	47	NO	NO	100k	100k	NO	180	NO	2SK508NV(K52)	NO

TX-RX UNIT

X57-696X-XX	A2	C28	C29	C223	C224	C235	L42	L45	R179	
0-11,2,70	K.E	X58-4810-10	2P	2P	100P	NO	NO	6.8n	NO	0
0-12	K2.M2	X58-4810-11	2P	2P	NO	NO	NO	6.8n	NO	0
2-71	E3	X58-4810-12	8P	11P	NO	3p	100p	18n	18n	NO

# SCHEMATIC DIAGRAM TKR-851

TX-RX UNIT (X57-696X-XX) (A/2)



A3 SUB UNIT (RX VCO/PLL)

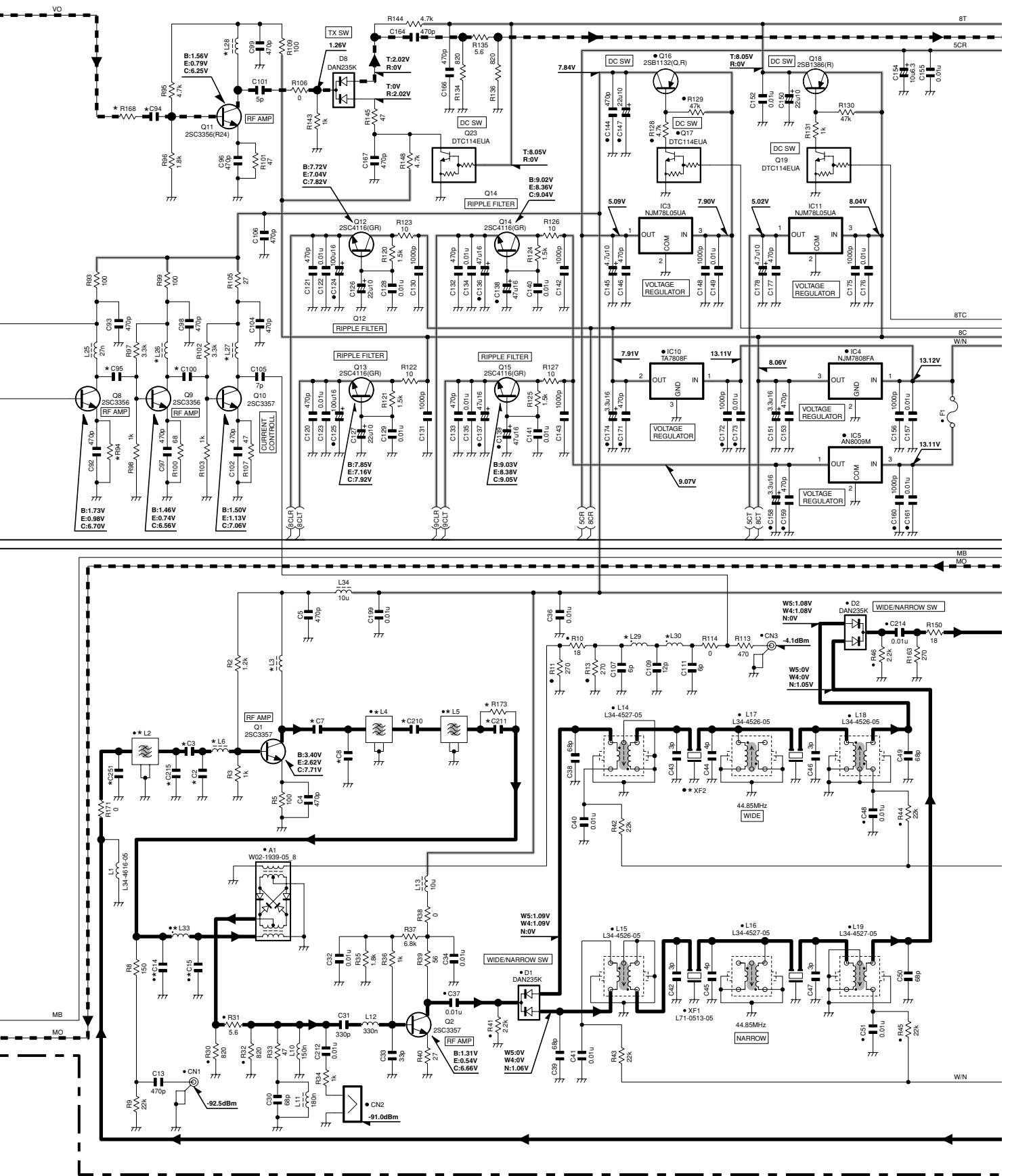
	C312	C314	C317	C355	C356	C363	C386	L301	L302	L303	L356	L357	R309	R312	R356	R357	
-10	K.E	7p	12p	7p	5p	6p	15p	100p	18n	18n	22n	L34-4608-05	L34-4608-05	330	330	220	180
-11	K2.M2	6p	15p	6p	5p	6p	18p	22p	15n	15n	18n	L34-4607-05	L34-4607-05	390	390	180	150
-12	E3	8p	18p	8p	6p	7p	15p	100p	18n	18n	27n	L34-4609-05	L34-4609-05	330	330	220	180

TX-RX UNIT

X57-696X-XX	A3	C91	R175	
0-11,2-70	K.E	X58-4800-10	4P	0
0-12	K2.M2	X58-4800-11	4P	0
2-71	E3	X58-4800-12	5P	390

# TKR-851 SCHEMATIC DIAGRAM

TX-RX UNIT (X57-696X-XX) (A/2)

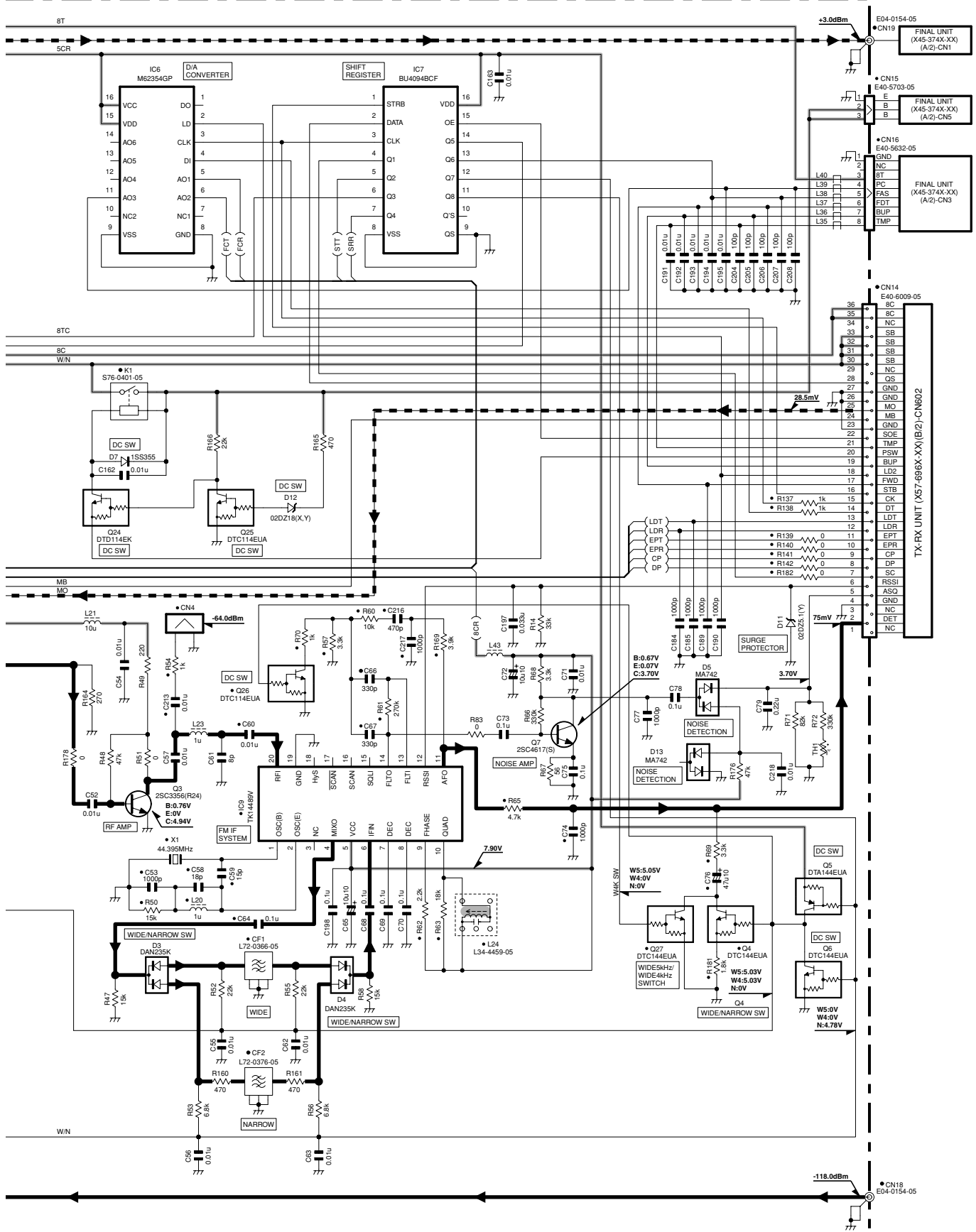


TX-RX UNIT

X57-696X-XX	C2	C3	C7	C8	C14	C15	C94	C95	C100	C210	C211	C215	C251	L2	L3	L4	L5	L6	L26	L27	L28	L29	L30	L33	R94	R168	R173	XF2	
2-70	E	NO	12P	12P	0.5P	6P	6P	3P	4P	5P	8P	12P	NO	NO	L79-1849-05	18n	L79-1849-05	L79-1849-05	18n	15n	22n	18n	18n	18n	15n	100	0	NO	L71-0627-05
0-11	K	NO	10P	12P	0.5P	6P	6P	3P	4P	5P	8P	12P	NO	NO	L79-1849-05	18n	L79-1849-05	L79-1849-05	18n	15n	22n	18n	18n	18n	15n	100	0	NO	L71-0512-05
0-12	K2,M2	NO	10P	7P	1P	8P	6P	3P	6P	5P	6P	NO	5P	2P	L79-1852-05	15n	L79-1852-05	L79-1852-05	18n	15n	18n	18n	18n	18n	82	0	NO	L71-0512-05	
2-71	E3	1P	10P	8P	1P	7P	7P	4P	4P	6P	10P	NO	NO	3P	L79-1853-05	15n	L79-1853-05	L79-1853-05	22n	22n	22n	22n	22n	22n	100	270	0	L71-0627-05	

# SCHEMATIC DIAGRAM TKR-851

TX-RX UNIT (X57-696X-XX) (A/2)



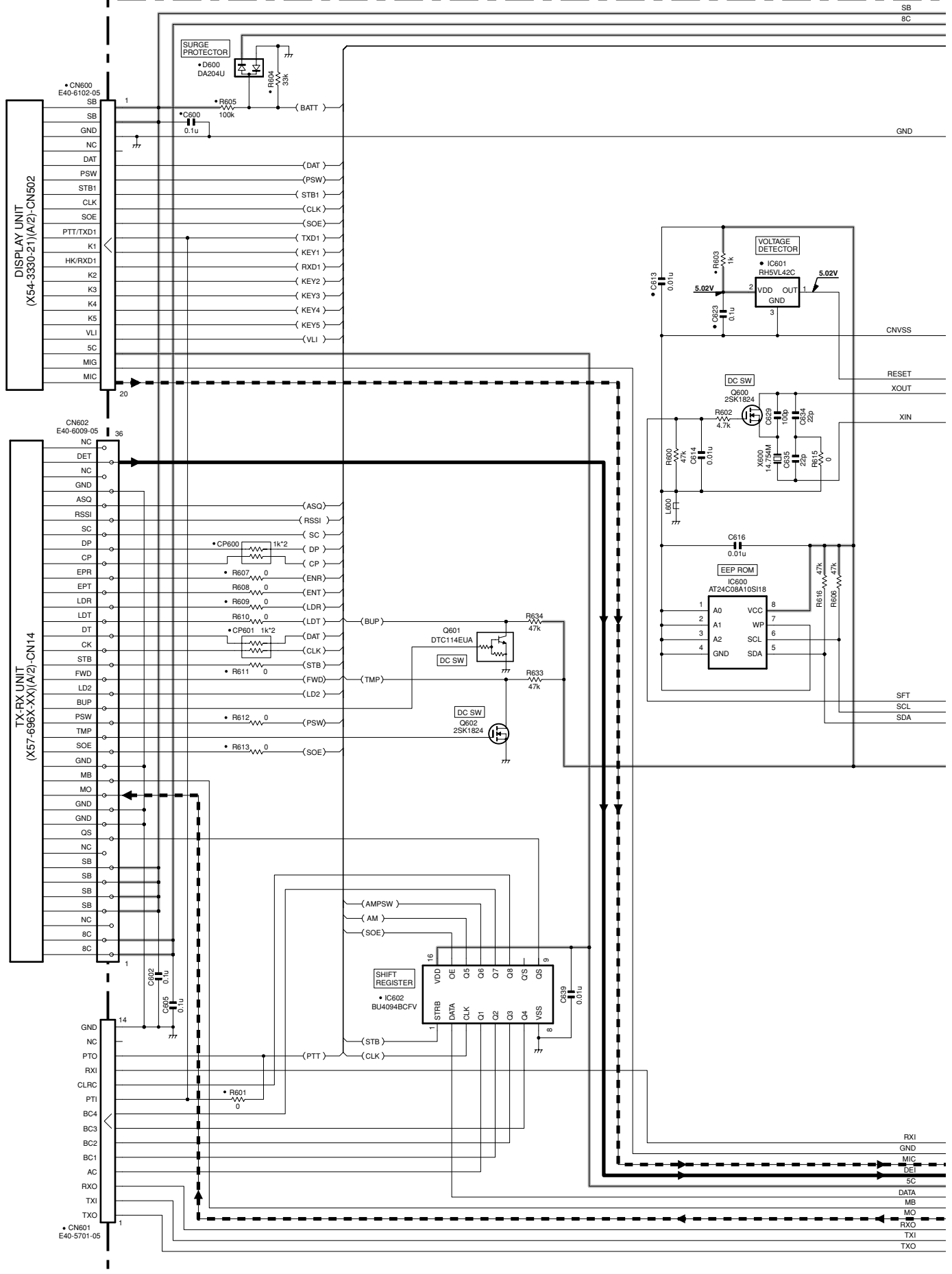
Note : The components marked with a dot (•) are parts of layer 1.



# TKR-851 SCHEMATIC DIAGRAM

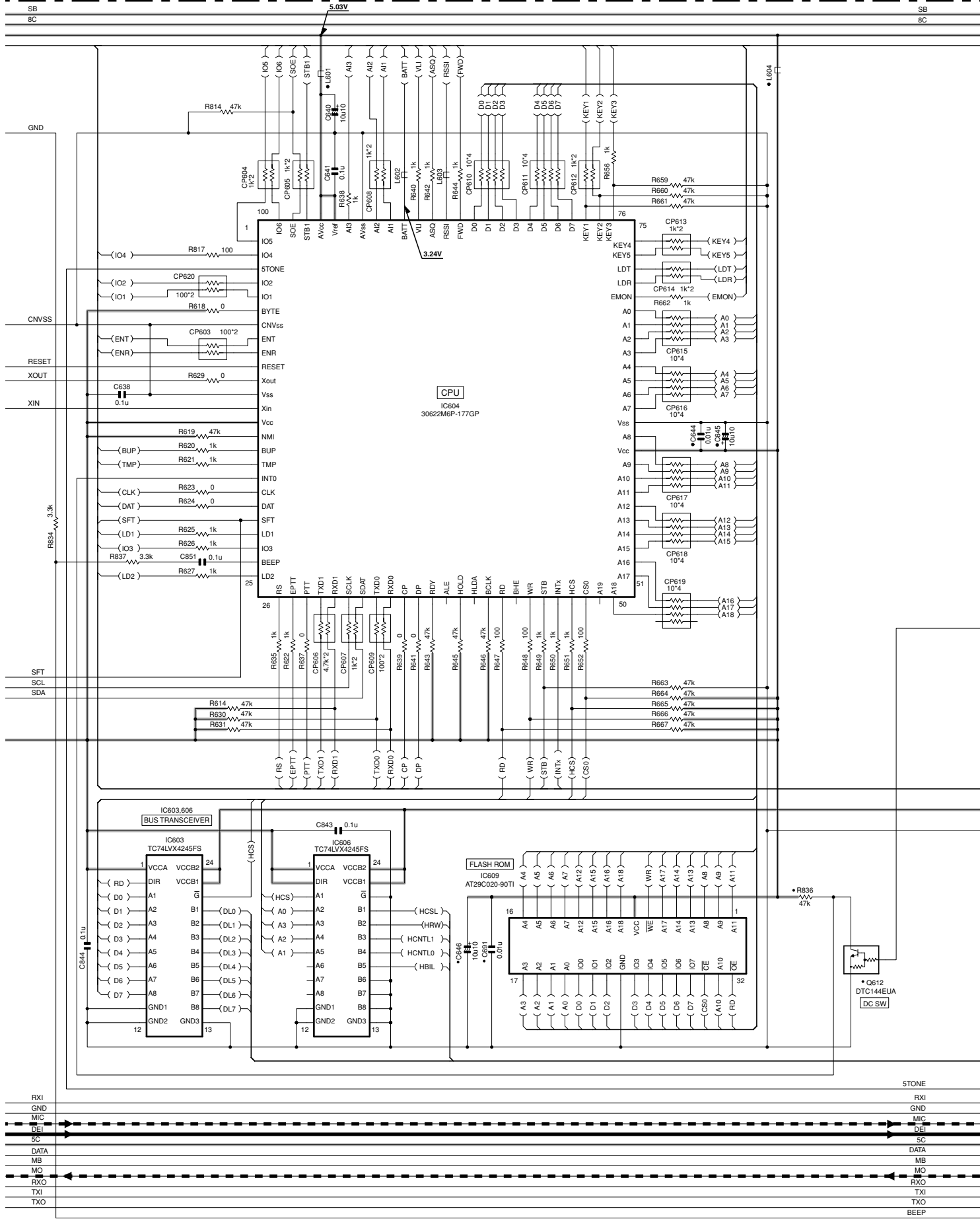
Note : The components marked with a dot (•) are parts of layer 1.

TX-RX UNIT (X57-696X-XX) (B/2)



# SCHEMATIC DIAGRAM TKR-851

TX-RX UNIT (X57-696X-XX) (B/2)

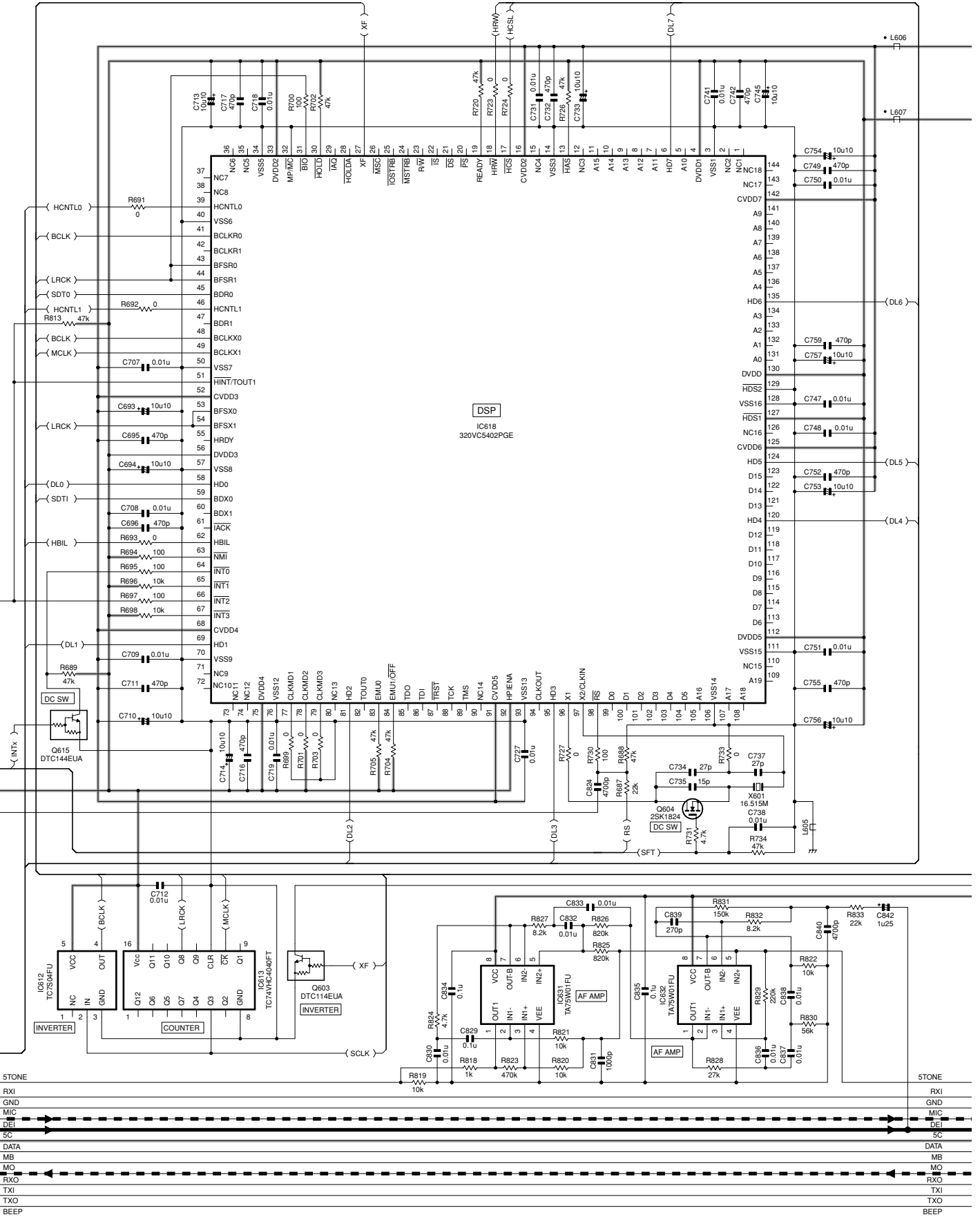




# TKR-851 SCHEMATIC DIAGRAM

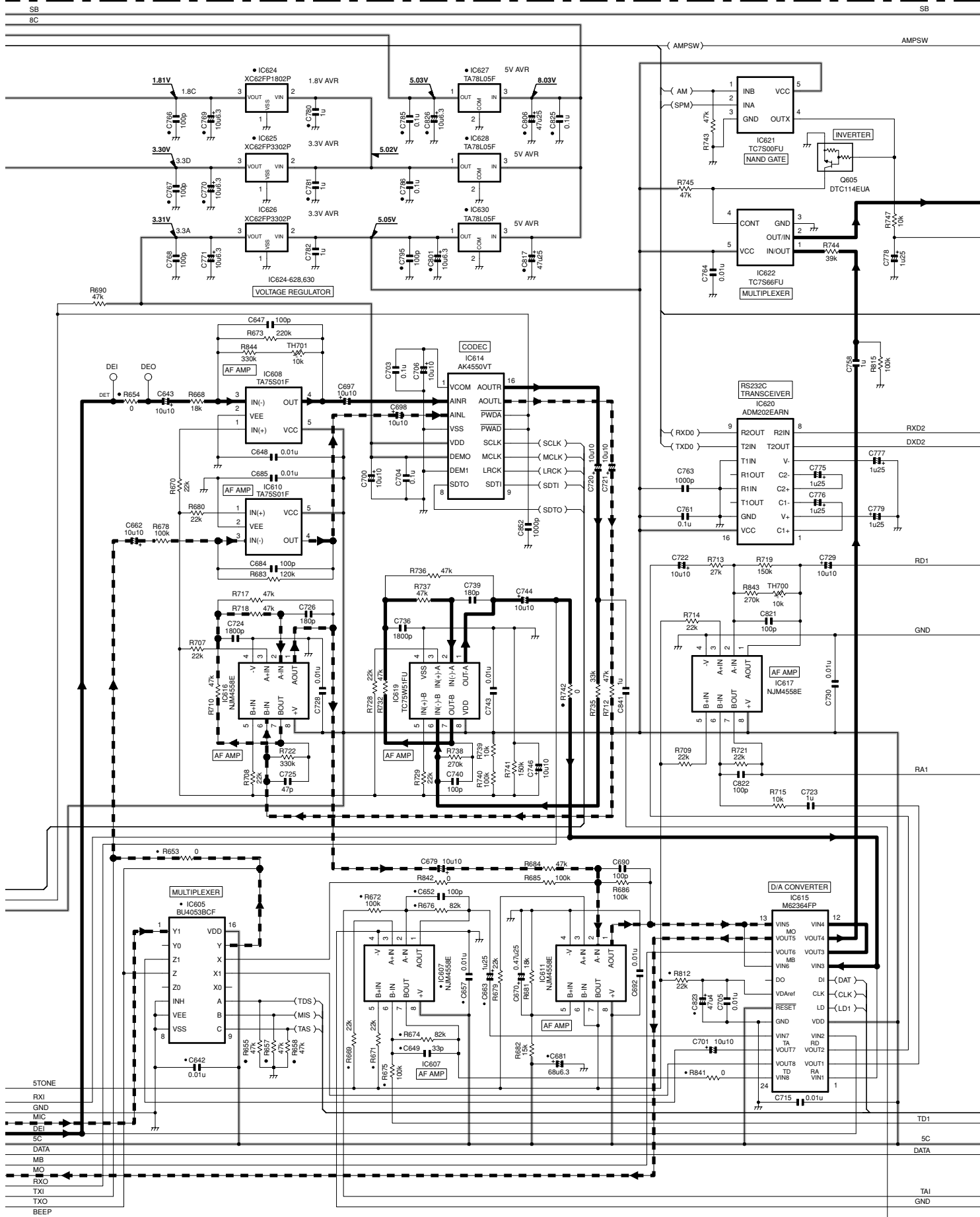
TX-RX UNIT (X57-696X-XX) (B/2)

SB SB  
8C 8C



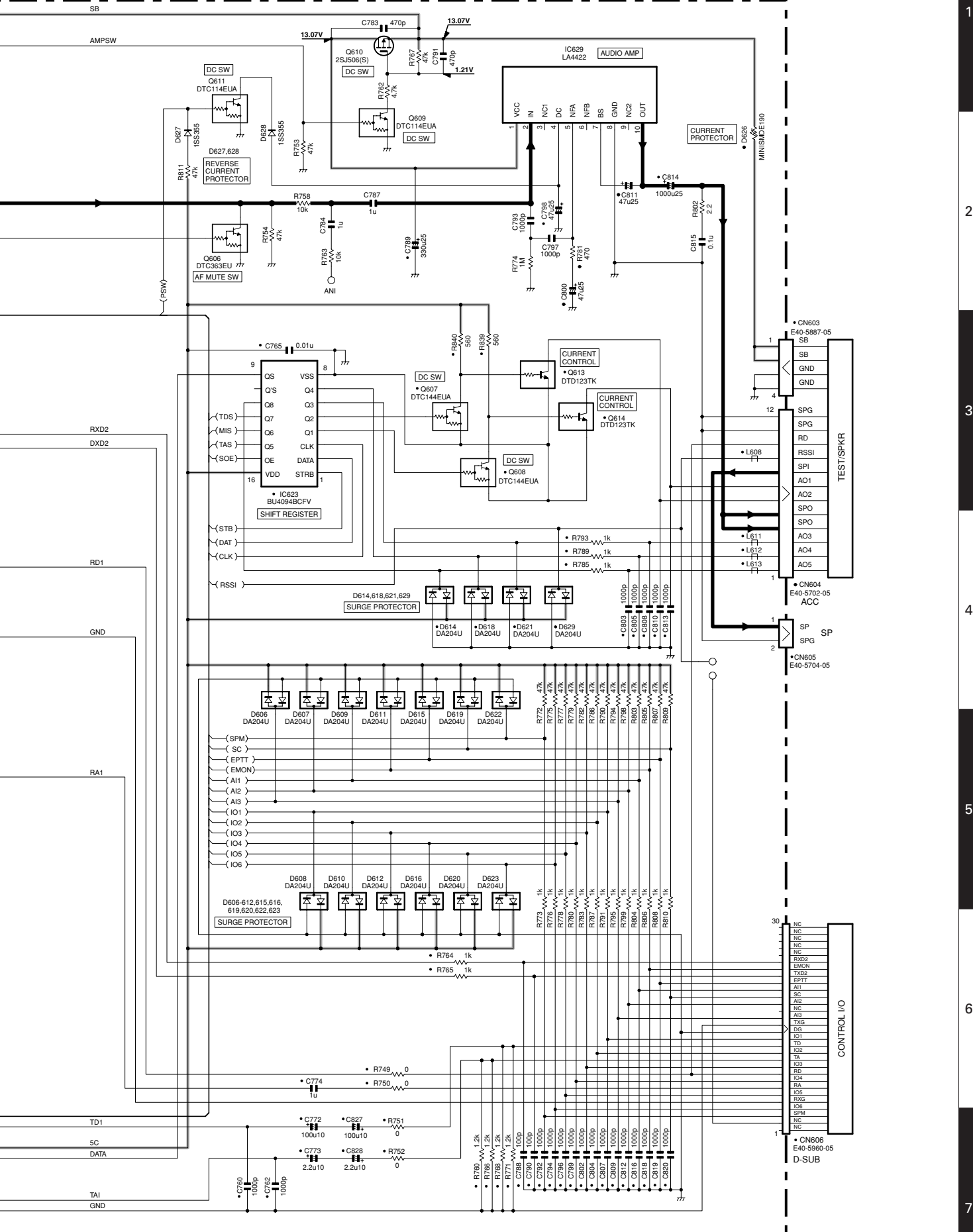
# SCHEMATIC DIAGRAM TKR-851

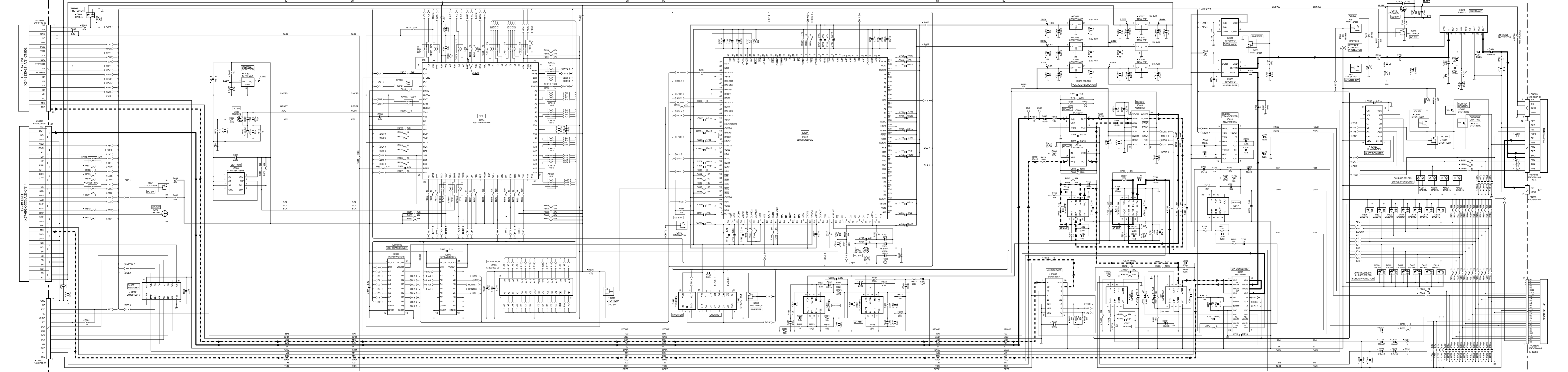
TX-RX UNIT (X57-696X-XX) (B/2)



# TKR-851 SCHEMATIC DIAGRAM

TX-RX UNIT (X57-696X-XX) (B/2)

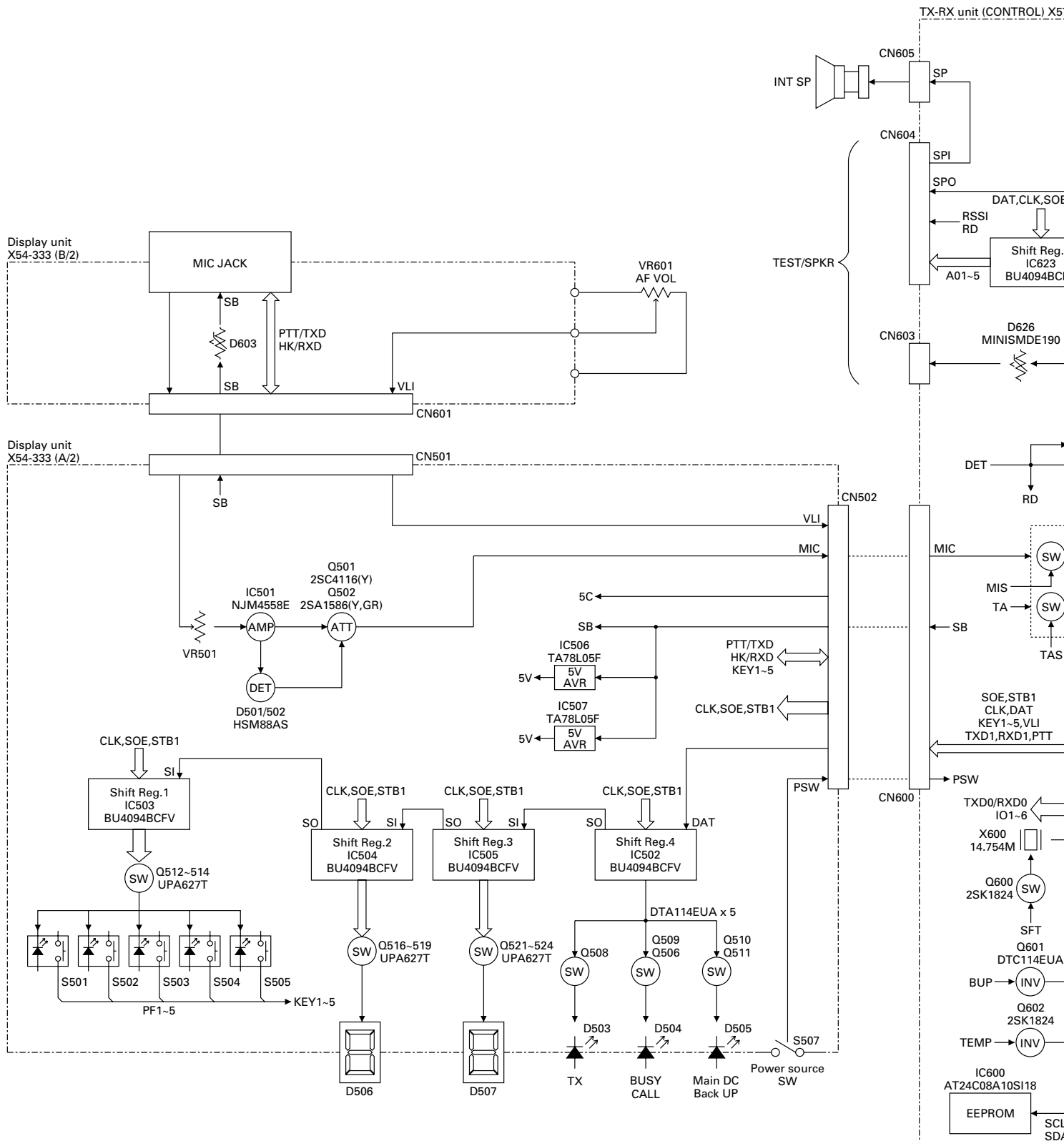




TEST SPKR

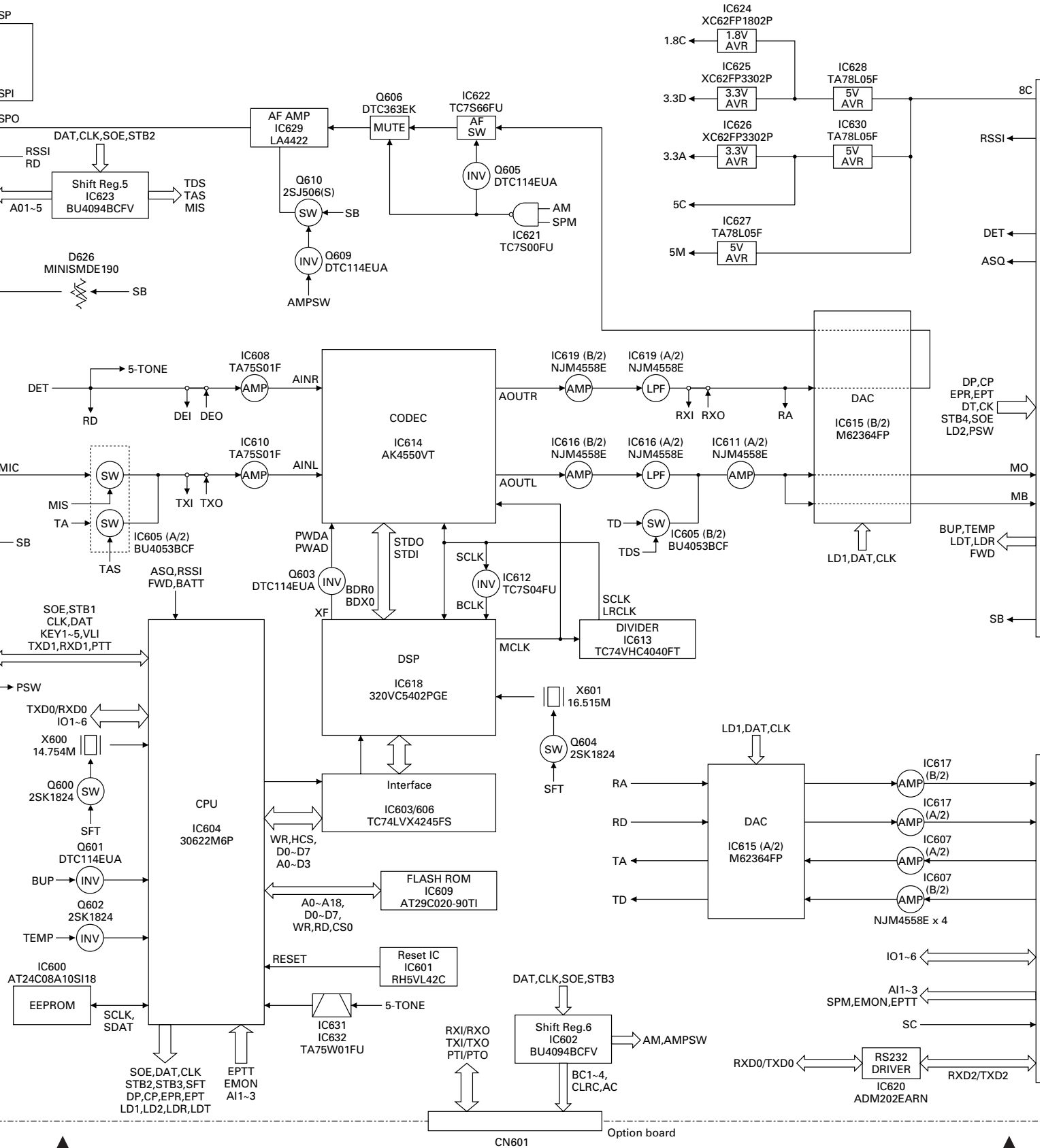
CONTROL IO

## BLOCK DIAGRAM

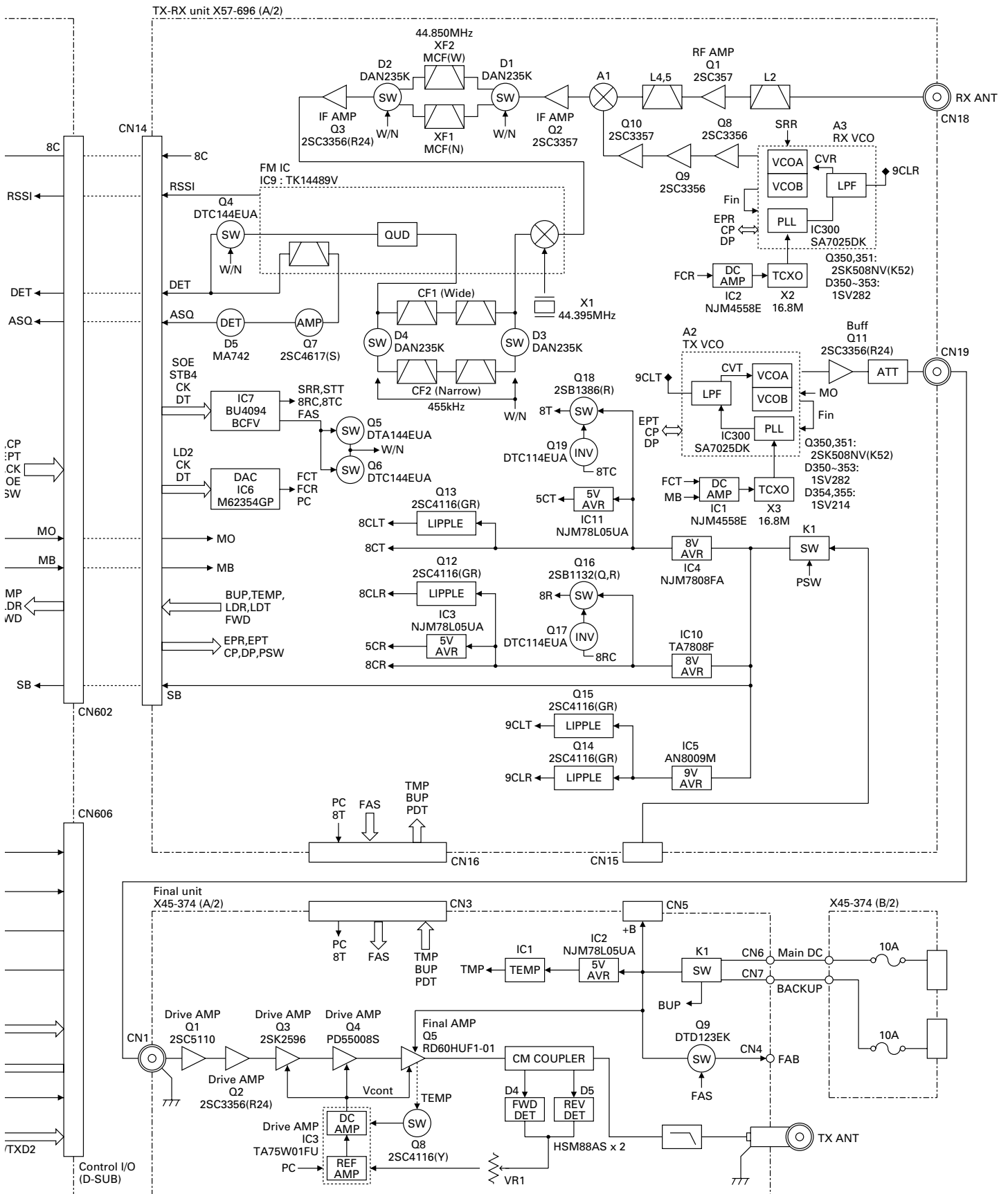


## BLOCK DIAGRAM

TX unit (CONTROL) X57-696 (B/2)



## BLOCK DIAGRAM



# TKR-851

## SPECIFICATIONS (K,K2,M2 TYPE)

### GENERAL

Frequency Range .....	450 to 480MHz (K)	480 to 512MHz (K2,M2)
Number of Channels .....	16 channel	
Channel Spacing .....	Wide : 25kHz	Narrow : 12.5kHz (PLL channel stepping 5kHz/6.25kHz)
Operating Voltage .....	13.6V DC±15% (10.8~15.6V)	
Current Drain		
Standby .....	0.8A	
Standby w/power save .....	0.3A (Operating mode DC-IN : Backup, FAN : Temp, SAVE : ON, DISP : OFF)	
Receive .....	1.2A	
Transmit/Receive .....	Less than 8A	
Duty Cycle		
Receive .....	100%	
Transmit .....	100% (1~25W)	
Frequency Stability .....	Less than ±0.00015% -30°C to +60°C (-22°F to +140°F)	
Antenna Impedance .....	50Ω	
Operating Temperature Range .....	-30°C to +60°C (-22°F to +140°F)	
Dimensions .....	483 (19) W x 88 (3-1/2) H x 340 (13-1/3) D mm (inch)	
Weight .....	9.7kg (21.4 lbs.)	

### RECEIVER (Measured by TIA/EIA-603)

Sensitivity		
12dB SINAD .....	0.35μV (-116dBm)	
20dB Quieting .....	0.45μV (-114dBm)	
Selectivity .....	Wide : 83dB (±25kHz)	Narrow : 75dB (12.5kHz)
Intermodulation .....	Wide : 78dB (±25kHz/±50kHz)	Narrow : 75dB (±12.5kHz/±25kHz)
Hum and Noise .....	Wide : 50dB	Narrow : 45dB
Spurious & Image Rejection .....	90dB	
Audio Output (Ext. Speaker) .....	4W at 4Ω less than 5% distortion	
Audio Distortion (Ext. Speaker) .....	Less than 2.5% at 1000Hz	
Band Spread .....	5MHz	

### TRANSMITTER (Measured by TIA/EIA-603)

RF Power Output .....	25W adjustable to 1W (100% duty @1~25W)	
Type of Emission .....	Wide : 16K0F3E	Narrow : 11K0F3E
Spurious Response .....	Harmonics : 80dB	Others : 75dB
FM Hum and Noise .....	Wide : 50dB	Narrow : 45dB
Audio Distortion .....	Less than 3% at 1000Hz	
Microphone Impedance .....	600Ω	
Band Spread .....	30MHz	



# SPECIFICATIONS (E,E3 TYPE)

## GENERAL

Frequency Range .....	440 to 470MHz (E)	400 to 430MHz (E3)
Number of Channels .....	16 channel	
Channel Spacing .....	Wide 5kHz : 25kHz	*Wide 4kHz : 20kHz    Narrow : 12.5kHz (PLL channel stepping 5kHz/6.25kHz)
Operating Voltage .....	13.2V DC	
Current Drain		
Standby .....	0.8A	
Standby w/power save .....	0.3A (Operating mode DC-IN : Backup, FAN : Temp, SAVE : ON, DISP : OFF)	
Receive .....	1.2A	
Transmit/Receive .....	Less than 8A	
Duty Cycle .....	Receive : 100%	Transmit : 100% (1~25W)
Frequency Stability .....	Less than $\pm 0.00015\%$ $-30^{\circ}\text{C}$ to $+60^{\circ}\text{C}$	
Antenna Impedance .....	50 $\Omega$	
Operating Temperature Range .....	$-30^{\circ}\text{C}$ to $+60^{\circ}\text{C}$	
Dimensions .....	483 W x 88 H x 340 D mm	
Weight .....	9.7kg	

## RECEIVER (Measured by EN 300 086)

Sensitivity .....	0.45 $\mu\text{V}$		
Adjucent Channel Selectivity .....	83dB ( $\pm 25\text{kHz}$ )	*80dB ( $\pm 20\text{kHz}$ )	75dB ( $\pm 12.5\text{kHz}$ )
Intermodulation .....	72dB		
Spurious & Image Rejection .....	90dB		
Audio Output (Ext. Speaker) .....	4W at 4 $\Omega$ less than 5% distortion		
Audio Distortion (Ext. Speaker) .....	Less than 2.5% at 1000Hz		
Band Spread .....	5MHz		

## TRANSMITTER (Measured by EN 300 086)

RF Power Output .....	25W adjustable to 1W (100% duty @1~25W)		
Type of Emission .....	16K0F3E, *14K0F3E, 8K50F3E, 14K0F2D, *12K0F2D, 7K50F2D		
Modulation Limiting .....	$\pm 5\text{kHz}$ at $\pm 25\text{kHz}$	* $\pm 4\text{kHz}$ at $\pm 20\text{kHz}$	$\pm 2.5\text{kHz}$ at $\pm 12.5\text{kHz}$
Spurious Emission .....	$-36\text{dBm} \leq 1\text{GHz}$	$-30\text{dBm} > 1\text{GHz}$	
FM Noise (EIA) .....	25kHz : 50dB	*20kHz : 48dB	12.5kHz : 45dB
Modulation Distortion .....	Less than 3% at 1000Hz		
Microphone Impedance .....	600 $\Omega$		
Band Spread .....	30MHz		

**Note :** " \* " mark does not apply E3 market.

# TKR-851

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