KENWOOD

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VHF FM REPEATER

TKR-751

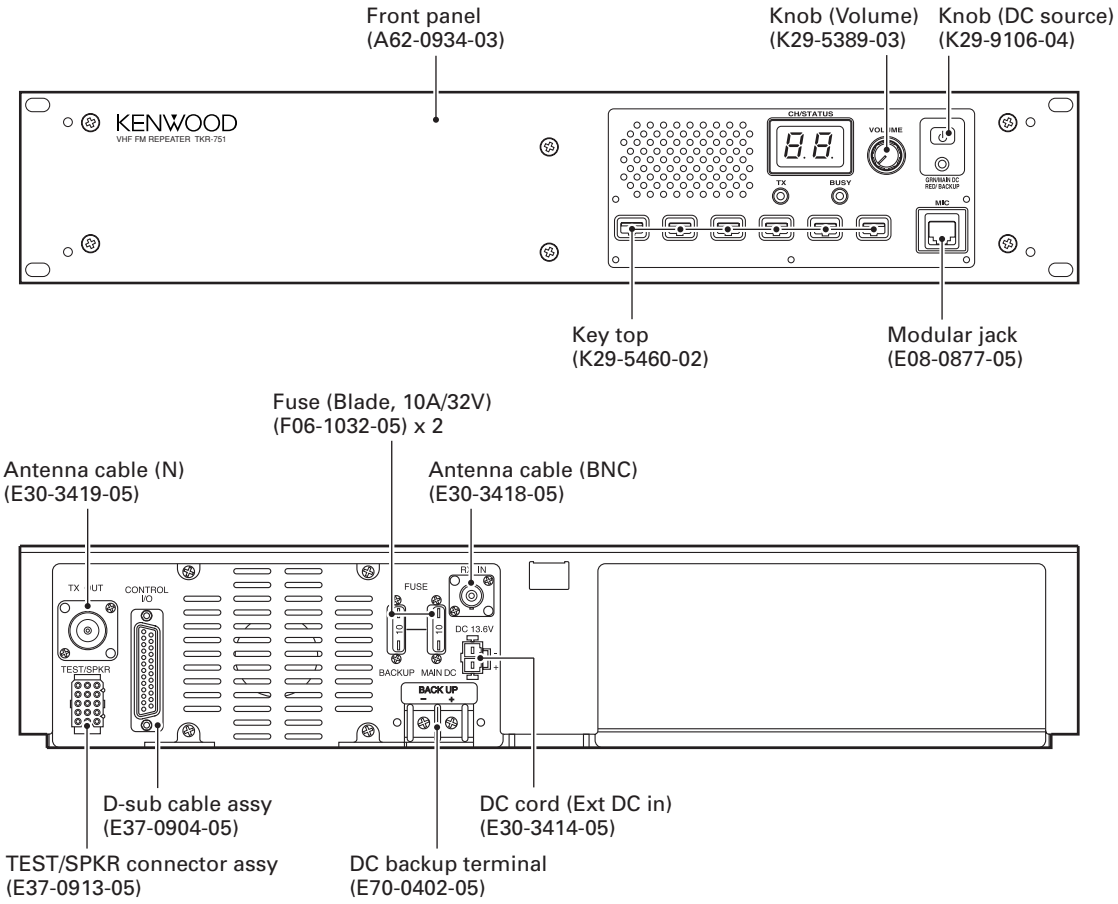
SERVICE MANUAL

SUPPLEMENT

KENWOOD

B51-8700-00 (N) 935

This supplement to the service manual is available for products with serial number 60700001 or later.
This service manual contains a parts list, schematic diagrams and PC board of a new final unit for the TKR-751.
Since the adjustment procedure is the same as before, refer to the service manual (B51-8683-00) the TKR-751 for items not provided in this service manual.



CONTENTS

MODIFICATION

3. Single Antenna

The TKR-751 can be used as a base station by sharing an external antenna connector for both transmitting and receiving data.

3-1. Modification

1. Change the installation position of C92 and C160 of the final unit using a soldering iron.

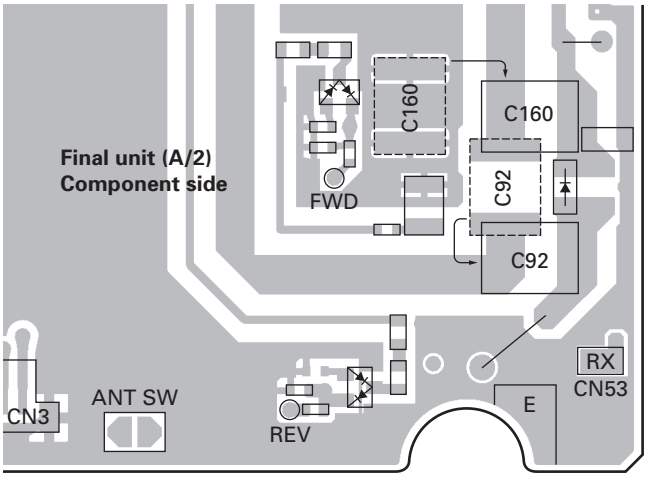


Fig. 3

2. Short-circuit the printed pattern of ANT SW near the CN3 connector by soldering.
3. Disconnect the pin connector from CN18 of the TX-RX unit.
   Remove the two screws used for securing the BNC connector on the back panel of the unit. Detach the antenna cable assy. (E30-3418-05)
4. Cut off the coaxial cable of the removed antenna cable assy on the BNC connector side.
   Strip off the insulation of the cut-off coaxial cable to prepare it to be soldered.

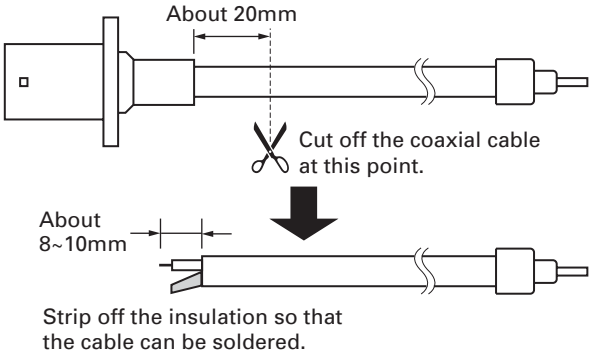


Fig. 4

3-2. Connection

1. Solder the prepared coaxial cable to the final unit.
2. Connect the pin connector of the coaxial cable to CN18 of the TX-RX unit.

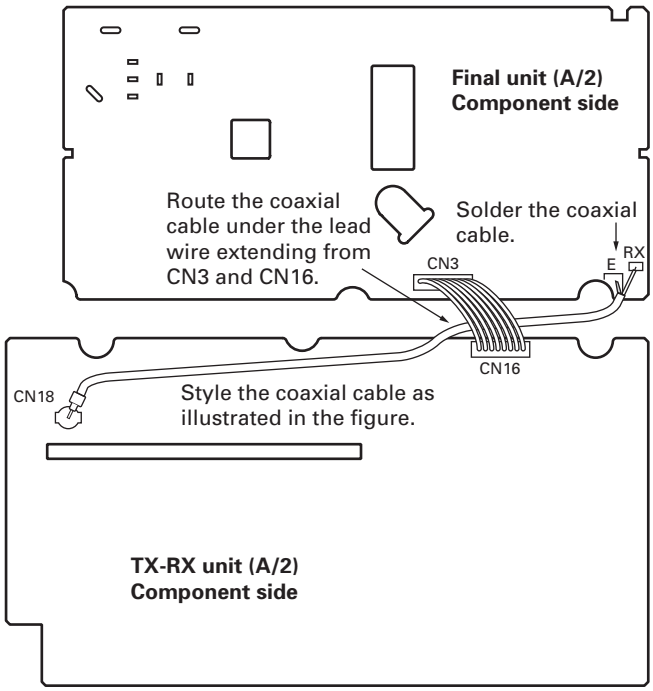


Fig. 5

3-3. Setting the FPU

Set the channel to be used as "Simplex" using the FPU.

PARTS LIST

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

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

TKR-751 (Y54-322X-XX)
FINAL UNIT (X45-3732-71)

Ref. No.	Address	New parts	Parts No.	Description	Destination
TKR-751					
51	1B		G02-0894-04	EARTH SPRING (FINAL FET)	
64	1B		J21-8467-04	MOUNTING HARDWARE (DRIVE FET)	
FINAL UNIT (X45-3732-71)					
C1,2			CK73GB1H102K	CHIP C 1000PF K	
C3			C90-2146-05	ELECTRO 100UF 25WV	
C7			CK73GB1H102K	CHIP C 1000PF K	
C9,10			CK73GB1H102K	CHIP C 1000PF K	
C11			CC73GCH1H470J	CHIP C 47PF J	
C12			CK73GB1H102K	CHIP C 1000PF K	
C13			CK73FB1E104K	CHIP C 0.10UF K	
C14,15			CK73GB1H102K	CHIP C 1000PF K	
C16			CK73FB1H102K	CHIP C 1000PF K	
C19			C93-0603-05	CHIP C 1000PF K	
C21			C93-0564-05	CHIP C 22PF J	
C22			C93-0568-05	CHIP C 47PF J	
C27			CK73FB1H102K	CHIP C 1000PF K	
C28			CK73GB1H102K	CHIP C 1000PF K	
C29			C93-0603-05	CHIP C 1000PF K	
C30			C93-0573-05	CHIP C 120PF J	
C31			C93-0569-05	CHIP C 56PF J	
C32			C93-0603-05	CHIP C 1000PF K	
C35			CK73GB1H102K	CHIP C 1000PF K	
C37			CK73FB1E474K	CHIP C 0.47UF K	
C39			CK73GB1H102K	CHIP C 1000PF K	
C42			CK73FB1H223K	CHIP C 0.022UF K	
C43,44			CK73GB1H102K	CHIP C 1000PF K	
C46			C93-0603-05	CHIP C 1000PF K	
C49			C93-0564-05	CHIP C 22PF J	
C53			CK73FB1H473K	CHIP C 0.047UF K	
C54			CM73F2H102J	CHIP C 1000PF J	
C55			CK73GB1H103K	CHIP C 0.010UF K	
C57			C90-2143-05	ELECTRO 47UF 25WV	
C60			CK73GB1H102K	CHIP C 1000PF K	
C64			CK73GB1H102K	CHIP C 1000PF K	
C68			CK73GB1H102K	CHIP C 1000PF K	
C69,70			C93-0559-05	CHIP C 9.0PF D	
C71			C93-0563-05	CHIP C 18PF J	
C72			C93-0564-05	CHIP C 22PF J	
C75			C93-0566-05	CHIP C 33PF J	
C77			C93-0564-05	CHIP C 22PF J	
C80-87			CK73GB1H102K	CHIP C 1000PF K	
C89			CC73GCH1H101J	CHIP C 100PF J	
C90			CK73GB1H102K	CHIP C 1000PF K	
C91			C92-0777-05	ELECTRO 1000UF 25WV	
C92			CM73F2H102J	CHIP C 1000PF J	
C96			CC73FCH1H180J	CHIP C 18PF J	
C98			CK73GB1H102K	CHIP C 1000PF K	
C99			C90-4016-05	ELECTRO 47UF 16WV	
C103			CC73GCH1H101J	CHIP C 100PF J	
C105			CC73GCH1H101J	CHIP C 100PF J	

Ref. No.	Address	New parts	Parts No.	Description	Destination
C106-109			CK73GB1H102K	CHIP C 1000PF K	
C110			C92-0628-05	CHIP-TAN 10UF 10WV	
C112			C93-0560-05	CHIP C 10PF D	
C117			CM73F2H221J	CHIP C 220PF J	
C118			CK73FB1E474K	CHIP C 0.47UF K	
C136,137			CK73GB1H102K	CHIP C 1000PF K	
C143			CC73FCH1H330J	CHIP C 33PF J	
C145			CC73GCH1H220J	CHIP C 22PF J	
C146			CC73GCH1H101J	CHIP C 100PF J	
C160			CM73F2H102J	CHIP C 1000PF J	
C161,162			CM73F2H270J	CHIP C 27PF J	
C163			C93-0569-05	CHIP C 56PF J	
C164			CM73F2H820J	CHIP C 82PF J	
C165			CK73FB1H102K	CHIP C 1000PF K	
C166			CC73GCH1H220J	CHIP C 22PF J	
C167			CC73GCH1H101J	CHIP C 100PF J	
C168-171			CC73GCH1H220J	CHIP C 22PF J	
C172			CC73GCH1H101J	CHIP C 100PF J	
C173			C93-0563-05	CHIP C 18PF J	
C174			CC73FCH1H270J	CHIP C 27PF J	
CN1			E04-0154-05	PIN SOCKET	
CN3			E40-5632-05	PIN ASSY	
CN4			E40-3246-05	PIN ASSY	
CN5			E40-5703-05	PIN ASSY	
CN6-8			E23-0462-05	TERMINAL	
F1			F53-0217-05	FUSE	
CN51,52			J13-0071-05	FUSE HOLDER	
L2			L40-4775-34	SMALL FIXED INDUCTOR (47NH)	
L3			L40-6875-34	SMALL FIXED INDUCTOR (68NH)	
L4,5			L34-4518-05	AIR-CORE COIL	
L6			L34-4520-05	AIR-CORE COIL	
L7			L34-4523-05	AIR-CORE COIL	
L8			L34-4518-05	AIR-CORE COIL	
L9-11			L34-4520-05	AIR-CORE COIL	
L12			L34-4523-05	AIR-CORE COIL	
L16			L40-1575-92	SMALL FIXED INDUCTOR (15NH)	
L17			L40-1875-92	SMALL FIXED INDUCTOR (18NH)	
L19			L34-4667-05	AIR-CORE COIL	
L20			L34-4744-05	AIR-CORE COIL	
R1			RK73FB2A100J	CHIP R 10 J 1/10W	
R6			RK73GB1J220J	CHIP R 22 J 1/16W	
R7			RK73GB1J822J	CHIP R 8.2K J 1/16W	
R8			RK73FB2A100J	CHIP R 10 J 1/10W	
R9			RK73FB2A560J	CHIP R 56 J 1/10W	
R10			RK73FB2A151J	CHIP R 150 J 1/10W	
R11			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R13			RK73GB1J471J	CHIP R 470 J 1/16W	
R14			R92-1253-05	CHIP R 82 J 1/2W	
R15			R92-1213-05	CHIP R 100 J 1/2W	
R16			R92-1253-05	CHIP R 82 J 1/2W	
R17			RK73FB2A154J	CHIP R 150K J 1/10W	
R18			RK73EB2B101J	CHIP R 100 J 1/8W	
R19			RK73FB2A104J	CHIP R 100K J 1/10W	
R20,21			R92-1252-05	CHIP R 0 OHM J 1/16W	

PARTS LIST

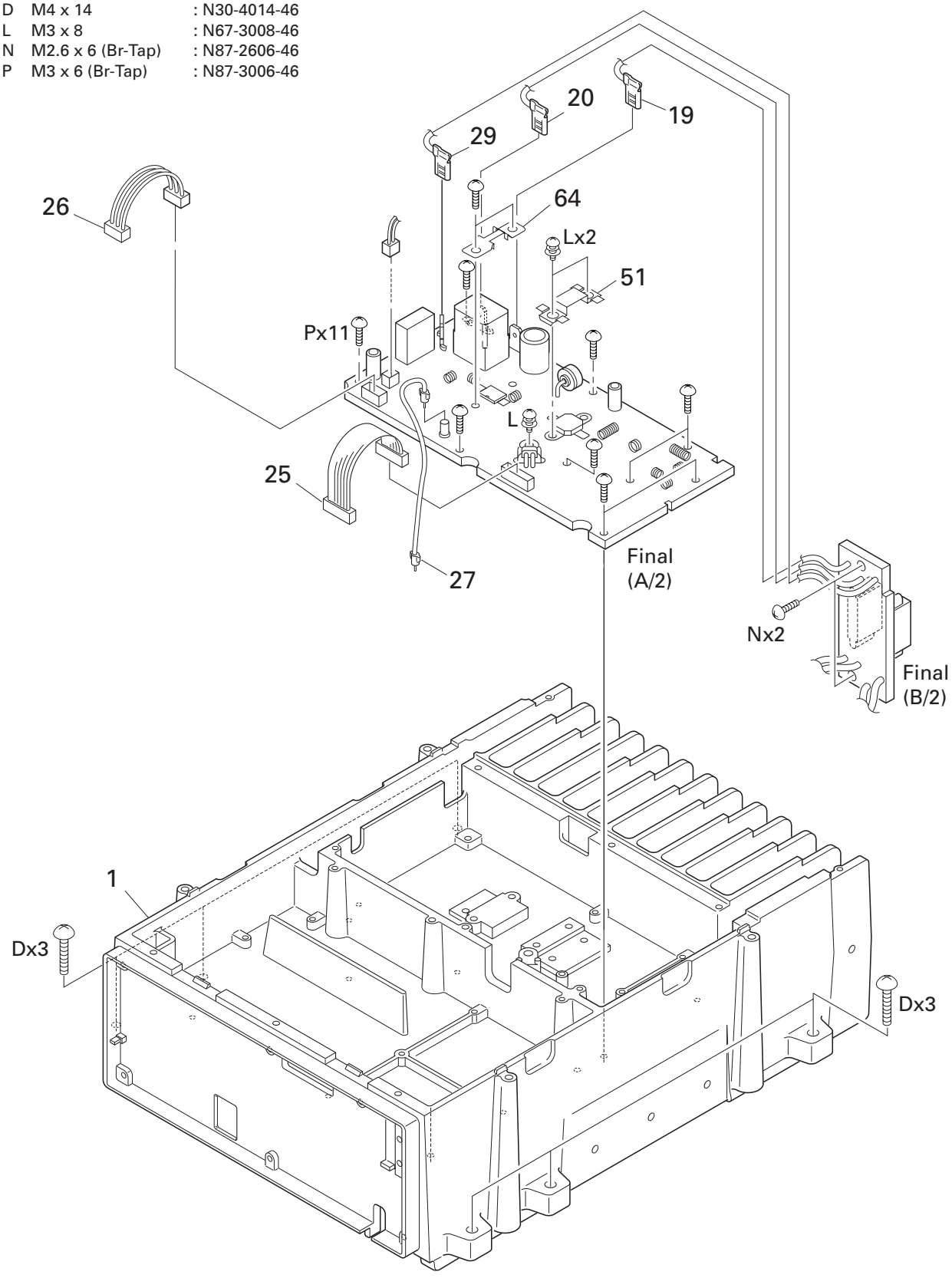
FINAL UNIT (X45-3732-71)

Ref. No.	Address	New parts	Parts No.	Description	Destination
R22			R92-2559-05	CHIP R 12 J 1/2W	
R23,24			RK73FB2A104J	CHIP R 100K J 1/10W	
R25			RK73GB1J473J	CHIP R 47K J 1/16W	
R26			RK73GB1J101J	CHIP R 100 J 1/16W	
R27			RK73GB1J471J	CHIP R 470 J 1/16W	
R28			RK73GB1J474J	CHIP R 470K J 1/16W	
R29			R92-1252-05	CHIP R 0 OHM J 1/16W	
R30			RK73GB1J683J	CHIP R 68K J 1/16W	
R31			RK73GB1J103J	CHIP R 10K J 1/16W	
R32			RK73GB1J104J	CHIP R 100K J 1/16W	
R34			R92-1252-05	CHIP R 0 OHM J 1/16W	
R35			RK73GB1J104J	CHIP R 100K J 1/16W	
R36			R92-1252-05	CHIP R 0 OHM J 1/16W	
R38			RK73GB1J333J	CHIP R 33K J 1/16W	
R40			R92-1204-05	CHIP R 100 J 1/4W	
R41			R92-1252-05	CHIP R 0 OHM J 1/16W	
R45			RK73GB1J101J	CHIP R 100 J 1/16W	
R48			RK73GB1J471J	CHIP R 470 J 1/16W	
R49			R92-1217-05	CHIP R 0 OHM	
R50			RK73EB2B222J	CHIP R 2.2K J 1/8W	
R52,53			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R55			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R56			R92-1317-05	CHIP R 18 J 1W	
R57			RK73GB1J224J	CHIP R 220K J 1/16W	
R60			R92-1252-05	CHIP R 0 OHM J 1/16W	
R61			R92-2687-05	RESISTOR 5.6 J 5.0W	
R62,63			R92-0670-05	CHIP R 0 OHM	
R64			R92-1252-05	CHIP R 0 OHM J 1/16W	
R70			R92-1205-05	CHIP R 120 J 1/4W	
R71			R92-0670-05	CHIP R 0 OHM	
R72			R92-1214-05	CHIP R 120 J 1/2W	
R73			R92-1252-05	CHIP R 0 OHM J 1/16W	
VR1			R12-6427-05	TRIMMING POT. (47K)	
K1			S76-0426-05	RELAY	
D1			1SS226	DIODE	
D2			02DZ6.2(Y)	ZENER DIODE	
D4,5			HSM88AS	DIODE	
D6			1SS355	DIODE	
D7			ZSA5A27	ZENER DIODE	
D8			RB051L-40	DIODE	
D9			MINISMDC050-02	VARISTOR	
D51,52			DSA3A1	DIODE	
D53			MA4PH633	DIODE	
D55,56			XB15A709	DIODE	
IC1			TA75W01FU	MOS-IC	
IC2			MAX6502UKP035	ANALOGUE IC	
IC3			NJM78L05UA	BI-POLAR IC	
Q2			2SC3356(R24)	TRANSISTOR	
Q3			2SC3357	TRANSISTOR	
Q4			PD55003S	DRIVE FET	
Q5			RD70HVF1-01	FINAL FET	
Q8			2SC4116(Y)	TRANSISTOR	
Q9			DTD123EK	DIGITAL TRANSISTOR	
TH1			PTH9M04BE471TS	THERMISTOR	

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

EXPLODED VIEW

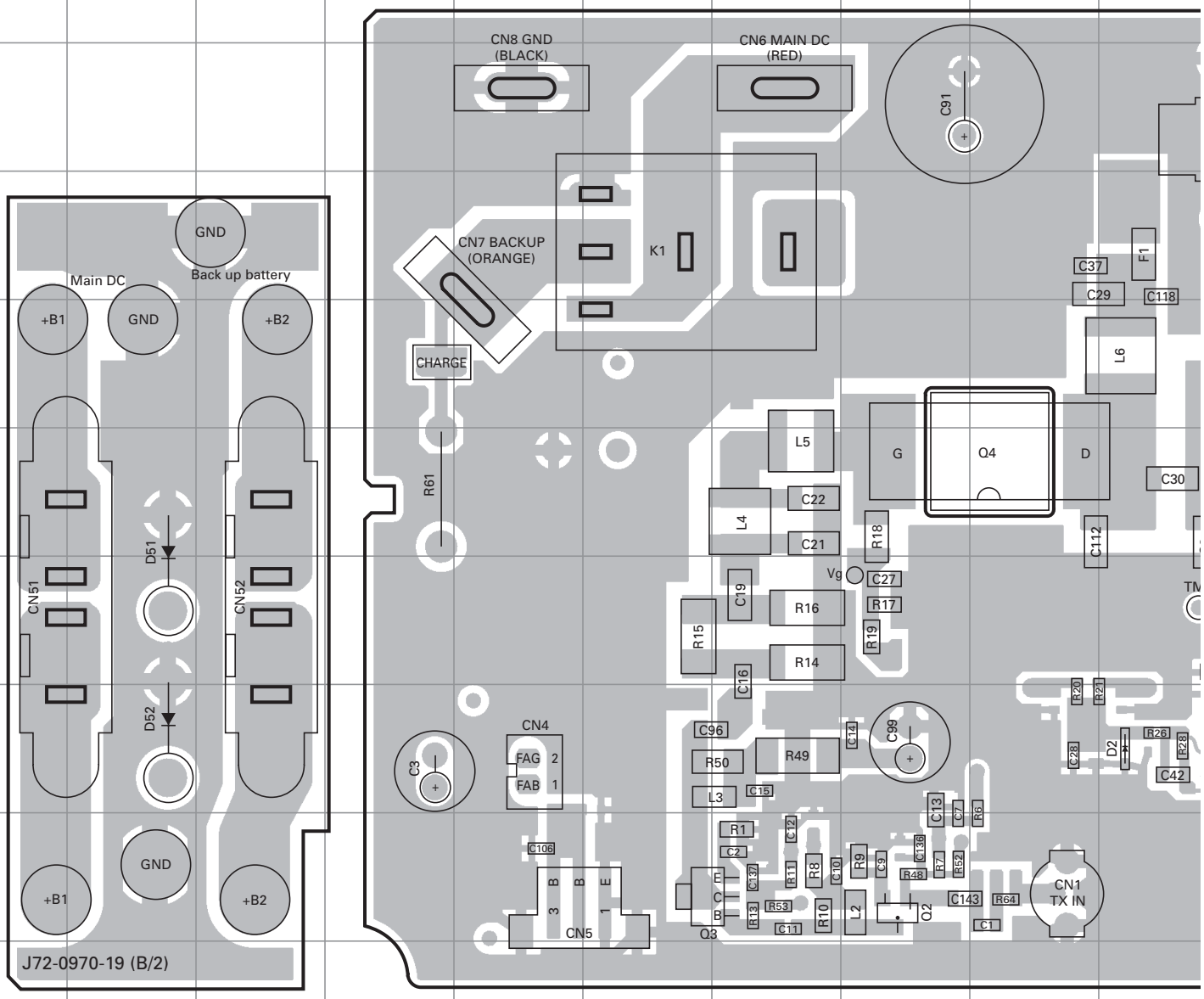
D	M4 x 14	: N30-4014-46
L	M3 x 8	: N67-3008-46
N	M2.6 x 6 (Br-Tap)	: N87-2606-46
P	M3 x 6 (Br-Tap)	: N87-3006-46



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

TKR-751 PC BOARD

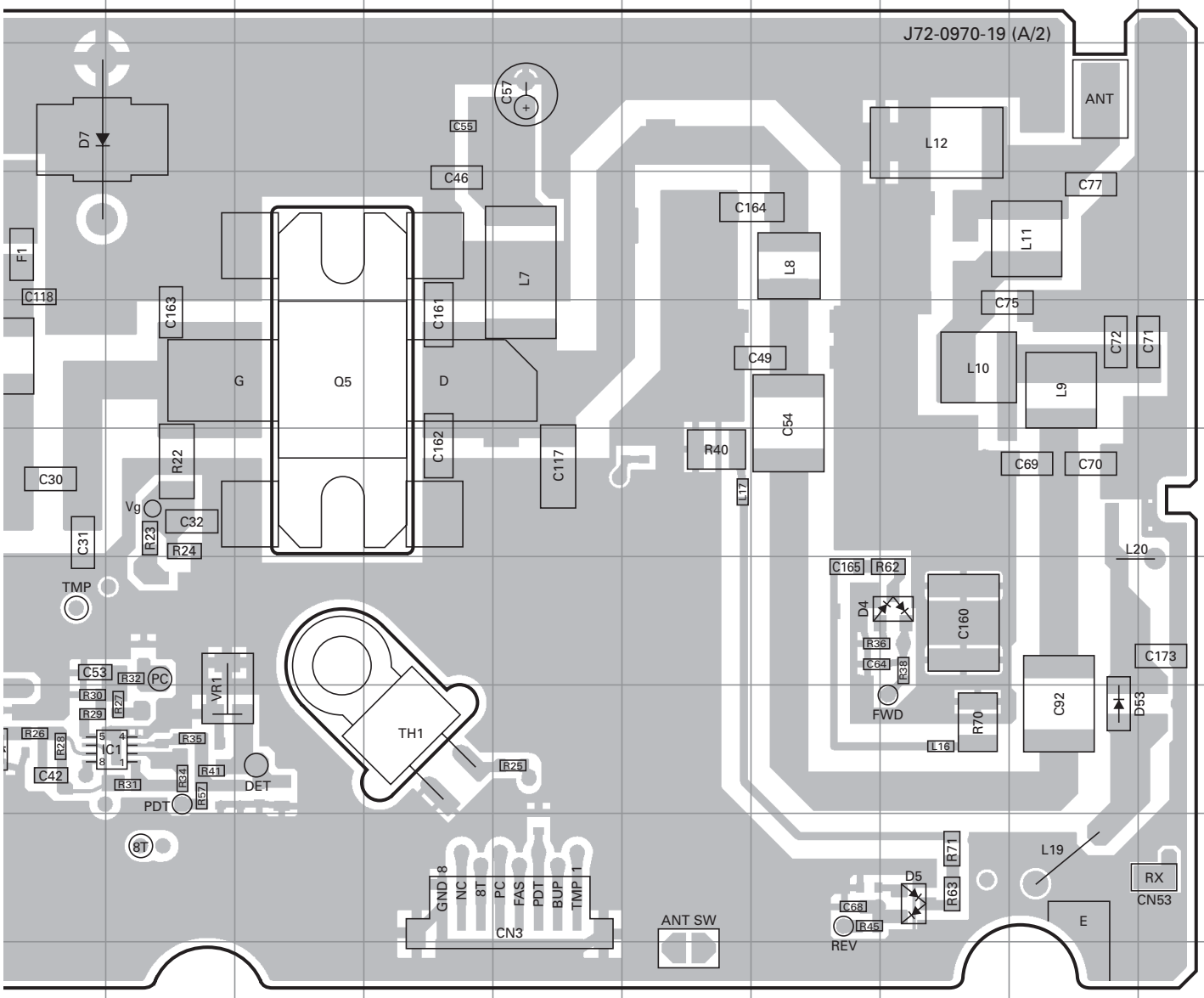
FINAL UNIT (X45-3732-71) Component side view (J72-0970-19)



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC1	8K	Q5	5L	D7	3J
Q2	9H	D2	8J	D51	7B
Q3	9F	D4	7Q	D52	8B
Q4	6I	D5	9Q	D53	8R

PC BOARD TKR-751

FINAL UNIT (X45-3732-71) Component side view (J72-0970-19)



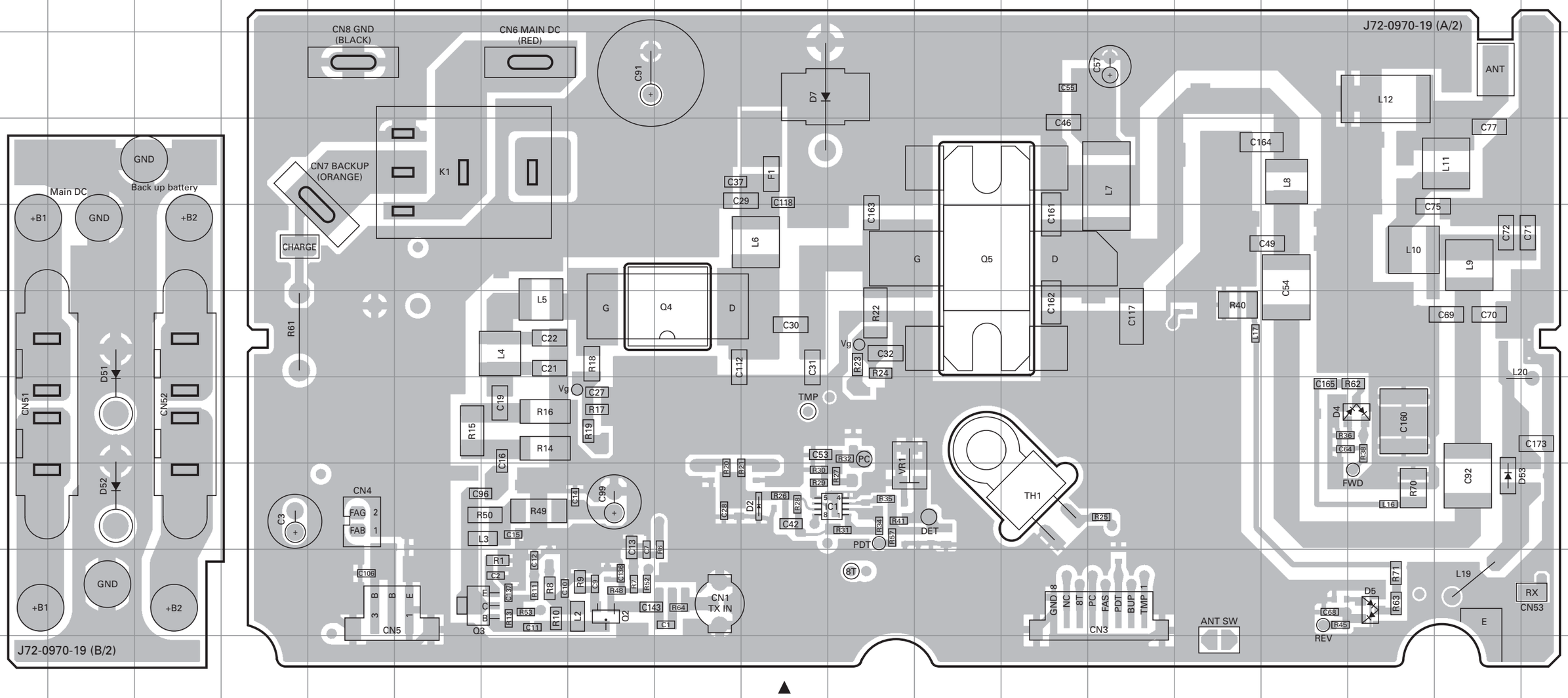
Component side
Layer 1
Layer 2
Layer 3
Layer 4
Foil side

TKR-751 PC BOARD

PC BOARD TKR-751

FINAL UNIT (X45-3732-71) Component side view (J72-0970-19)

FINAL UNIT (X45-3732-71) Component side view (J72-0970-19)

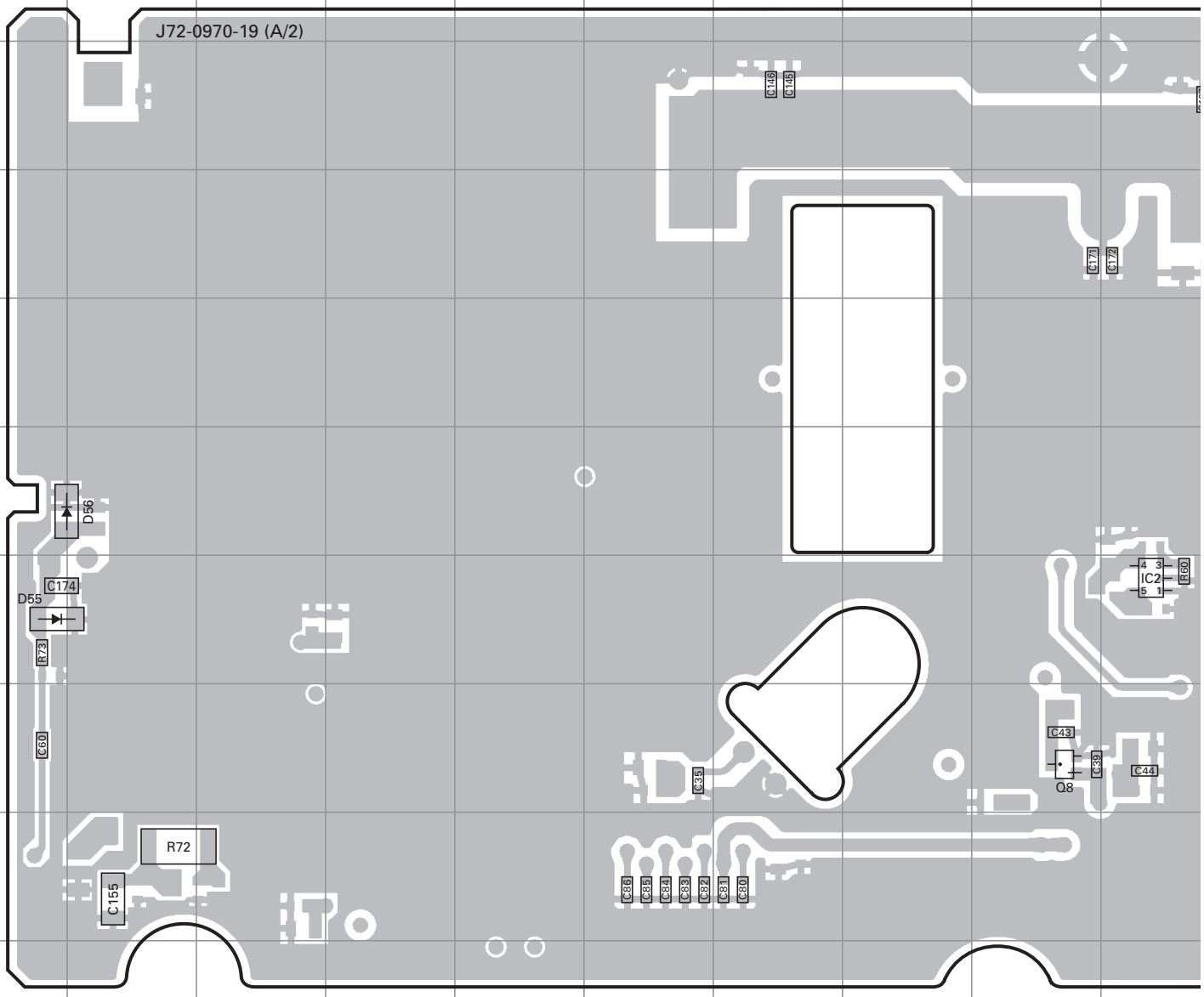


Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC1	8K	Q5	5L	D7	3J
Q2	9H	D2	8J	D51	7B
Q3	9F	D4	7Q	D52	8B
Q4	6I	D5	9Q	D53	8R

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

TKR-751 PC BOARD

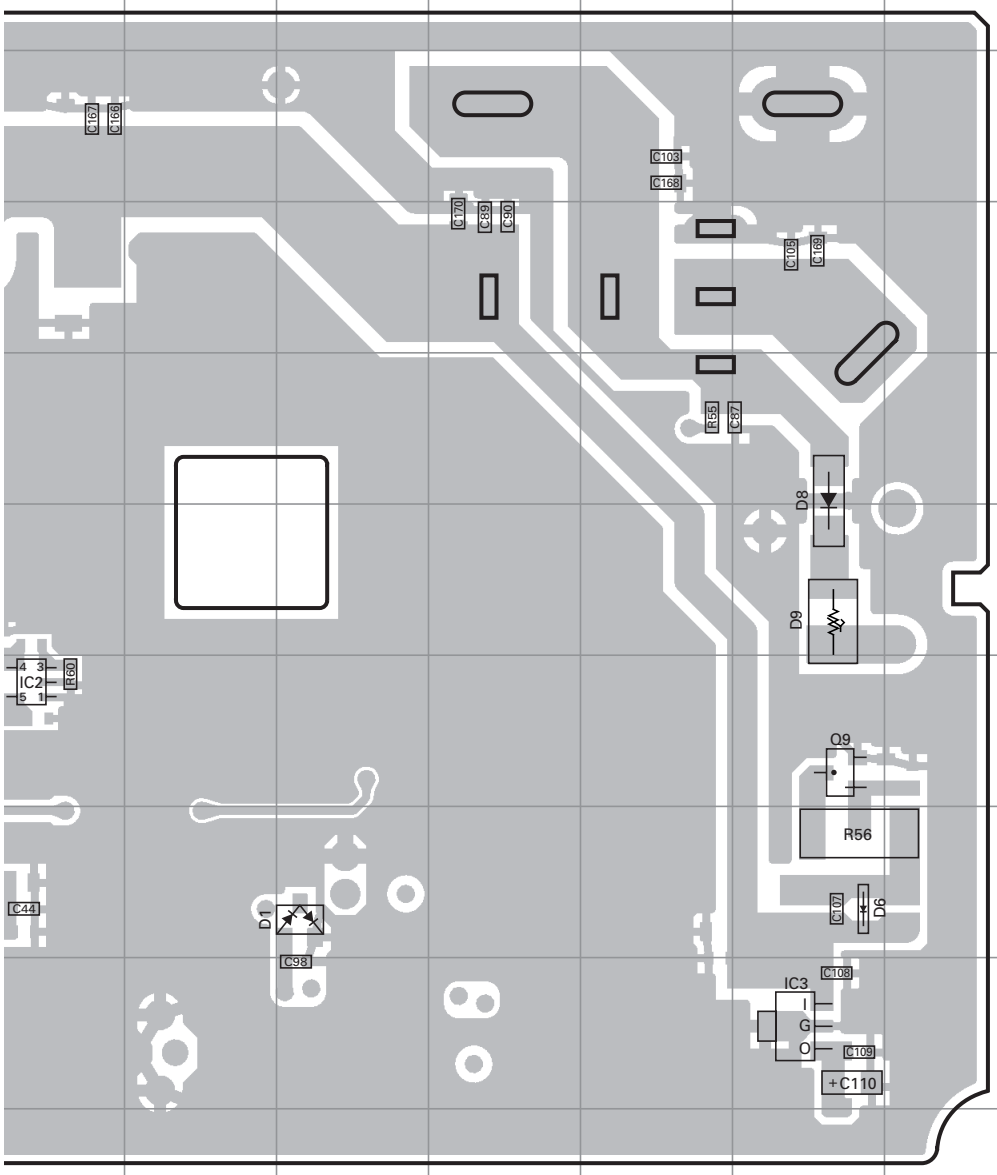
FINAL UNIT (X45-3732-71) Foil side view (J72-0970-19)

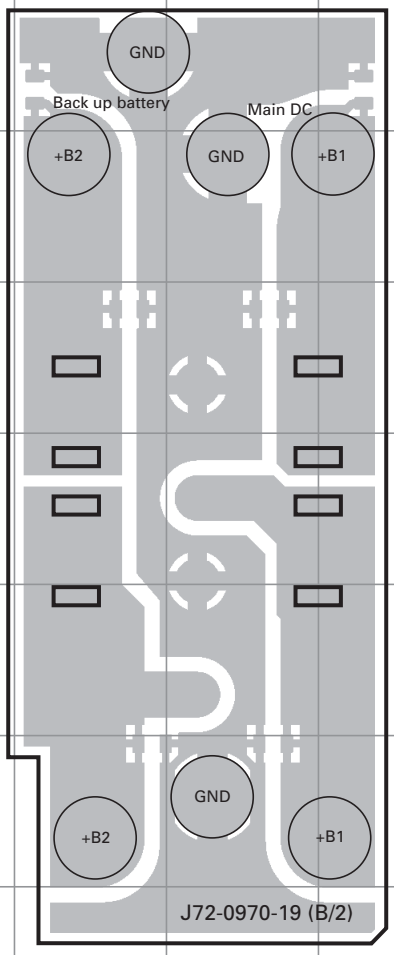


Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC2	7J	D1	8L	D55	7A
IC3	9O	D6	8O	D56	6B
Q8	8I	D8	5O		
Q9	7O	D9	6O		

PC BOARD TKR-751

FINAL UNIT (X45-3732-71) Foil side view (J72-0970-19)





Component side

Layer 1

Layer 2

Layer 3

Layer 4

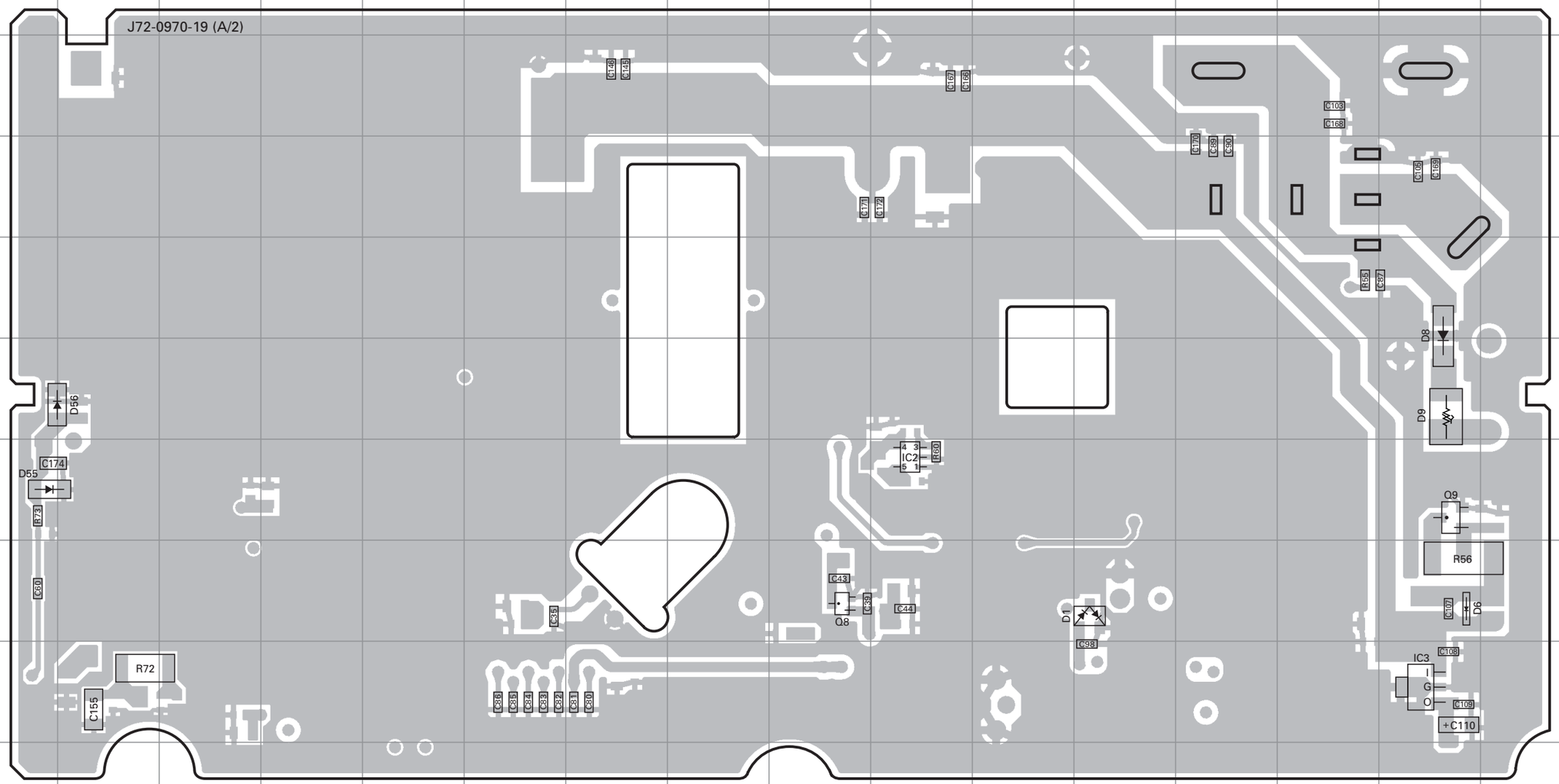
Foil side

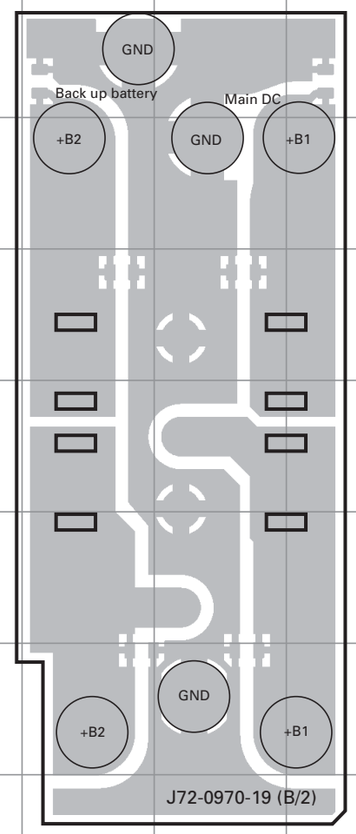
TKR-751 PC BOARD

PC BOARD TKR-751

FINAL UNIT (X45-3732-71) Foil side view (J72-0970-19)

FINAL UNIT (X45-3732-71) Foil side view (J72-0970-19)





Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC2	7J	D1	8L	D55	7A
IC3	9O	D6	8O	D56	6B
Q8	8I	D8	5O		
Q9	7O	D9	6O		

Component side

Layer 1

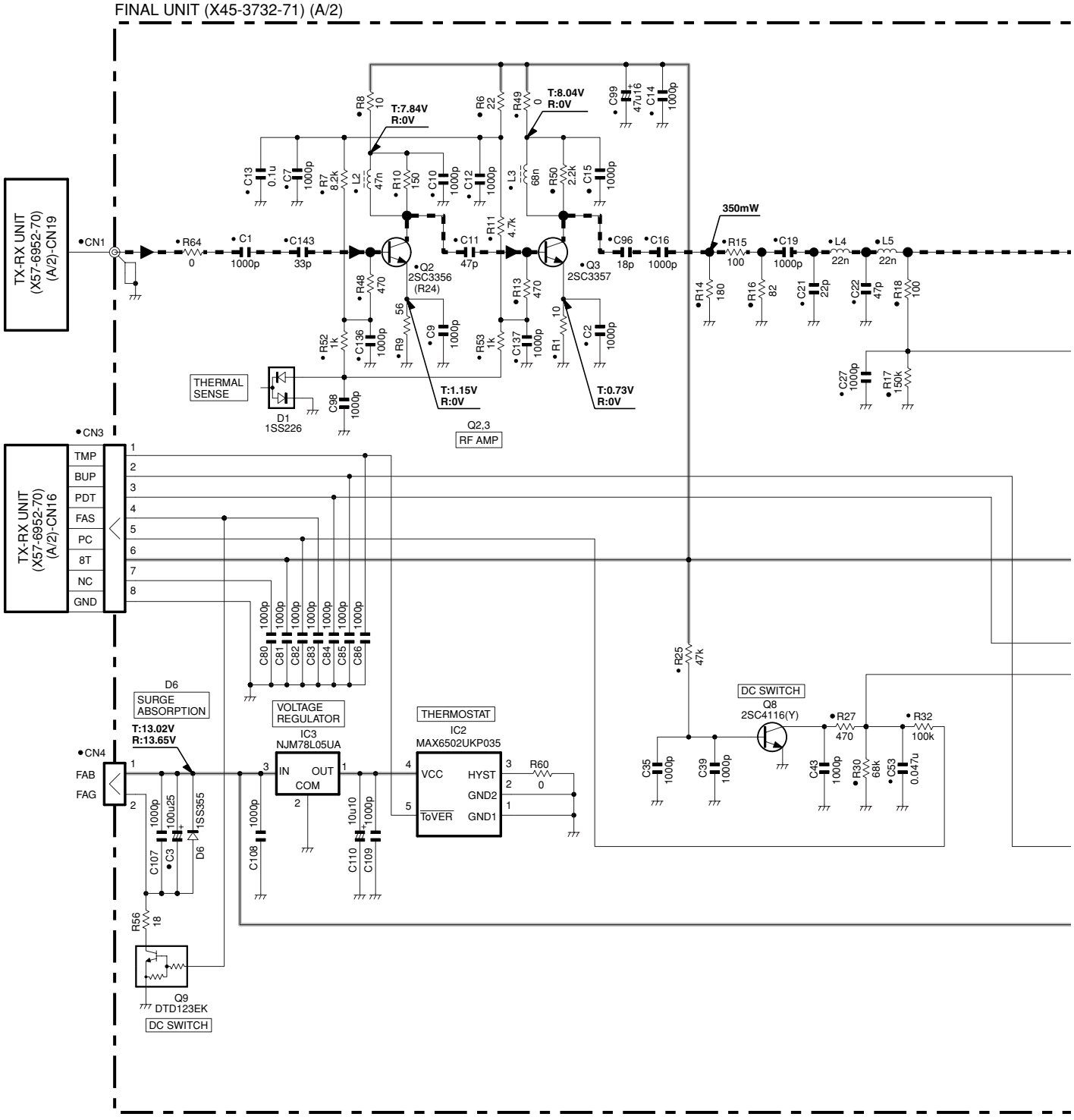
Layer 2

Layer 3

Layer 4

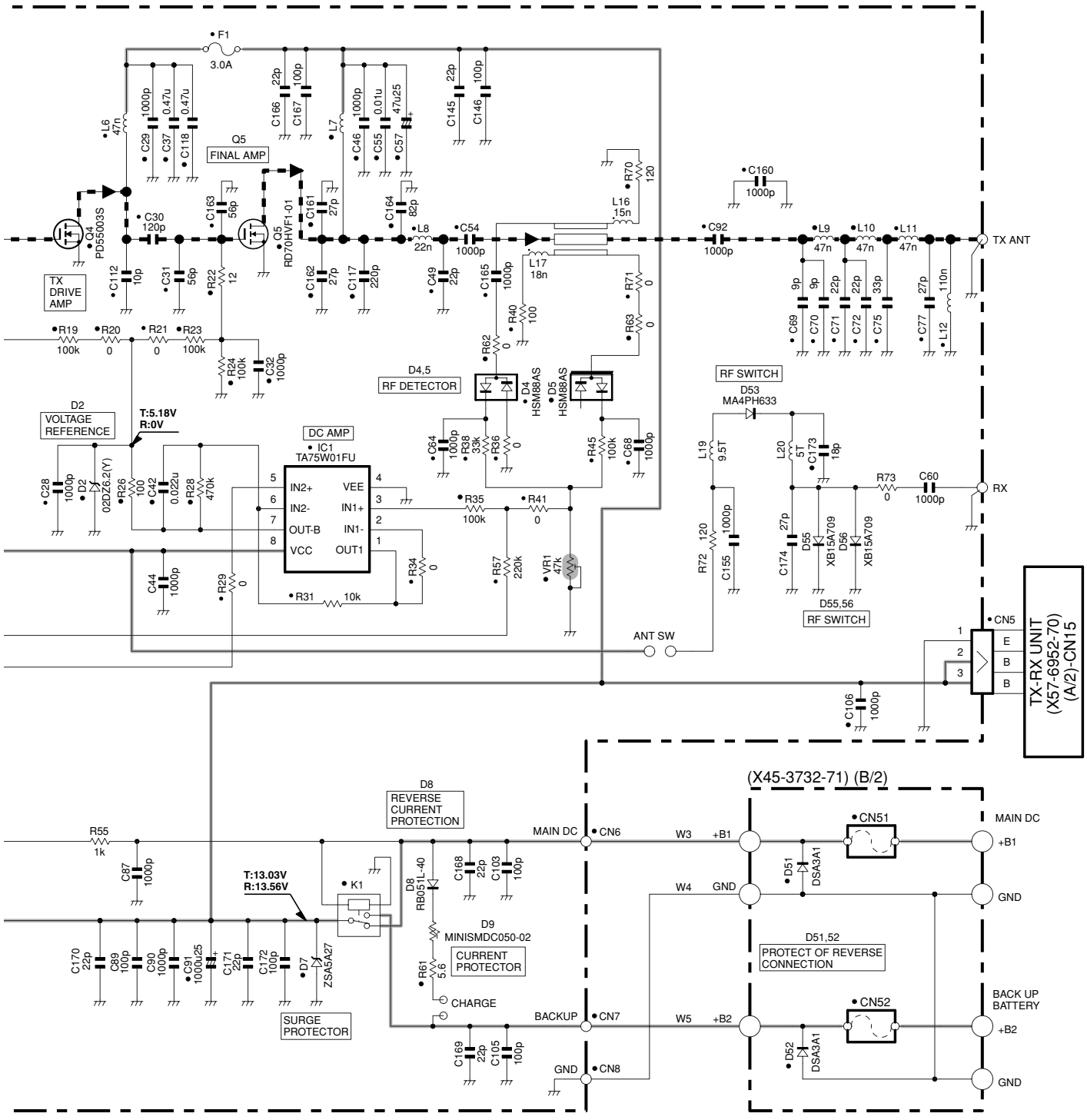
Foil side

TKR-751 SCHEMATIC DIAGRAM

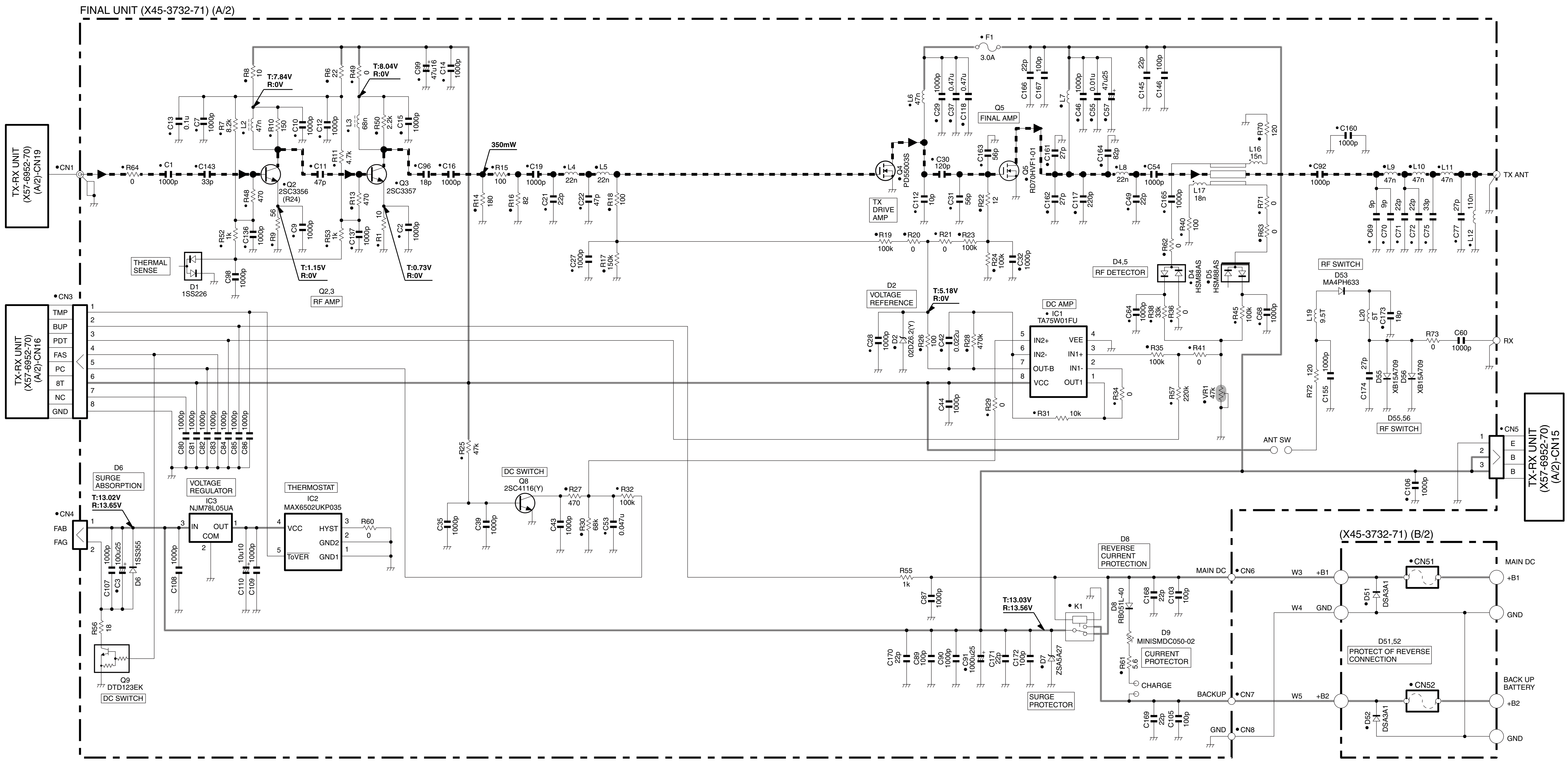


SCHEMATIC DIAGRAM TKR-751

FINAL UNIT (X45-3732-71) (A/2)



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


FINAL UNIT (X45-3732-71) (A/2)
TX-RX UNIT (X57-6952-70) (A/2)-CN19
TX-RX UNIT (X57-6952-70) (A/2)-CN16
TX-RX UNIT (X57-6952-70) (A/2)-CN15
(X45-3732-71) (B/2)
Q2,3 RF AMP
THERMAL SENSE
VOLTAGE REGULATOR
THERMOSTAT
SURGE ABSORPTION
DC SWITCH
TX DRIVE AMP
Q5 FINAL AMP
D4,5 RF DETECTOR
D2 VOLTAGE REFERENCE
DC AMP
RF SWITCH
D55,56 RF SWITCH
D8 REVERSE CURRENT PROTECTION
CURRENT PROTECTOR
SURGE PROTECTOR
D51,52 PROTECT OF REVERSE CONNECTION
TX ANT
RX
ANT SW
MAIN DC
BACKUP
BACK UP BATTERY
GND
350mW

TKR-751

KENWOOD CORPORATION
2967-3, Ishikawa-machi, Hachioji-shi, Tokyo, 192-8525 Japan

KENWOOD U.S.A. CORPORATION
P.O. BOX 22745, 2201 East Dominguez Street, Long Beach, CA 90801-5745, U.S.A.

KENWOOD ELECTRONICS CANADA INC.
6070 Kestrel Road, Mississauga, Ontario, Canada L5T 1S8

KENWOOD ELECTRONICS DEUTSCHLAND GMBH
Rembrücker Str. 15, 63150 Heusenstamm, Germany

KENWOOD ELECTRONICS BELGIUM N.V.
Leuvensesteenweg 248 J, 1800 Vilvoorde, Belgium

KENWOOD ELECTRONICS FRANCE S.A.
13, Boulevard Ney, 75018 Paris, France

KENWOOD ELECTRONICS U.K. LIMITED
KENWOOD House, Dwight Road, Watford, Herts., WD18 9EB United Kingdom

KENWOOD ELECTRONICS EUROPE B.V.
Amsterdamseweg 37, 1422 AC Uithoorn, The Netherlands

KENWOOD ELECTRONICS ITALIA S.p.A.
Via G. Sirtori, 7/9 20129 Milano, Italy

KENWOOD IBERICA S.A.
Bolivia, 239-08020 Barcelona, Spain

KENWOOD ELECTRONICS AUSTRALIA PTY. LTD.
(A.C.N. 001 499 074)
16 Giffnock Avenue, Centrecourt Estate, North Ryde, N.S.W. 2113 Australia

KENWOOD ELECTRONICS (HONG KONG) LTD.
Unit 3712-3724, Level 37, Tower one Metroplaza, 223 Hing Fong Road, Kwai Fong, N.T., Hong Kong

KENWOOD ELECTRONICS SINGAPORE PTE LTD.
1 Ang Mo Kio Street 63, Singapore 569110