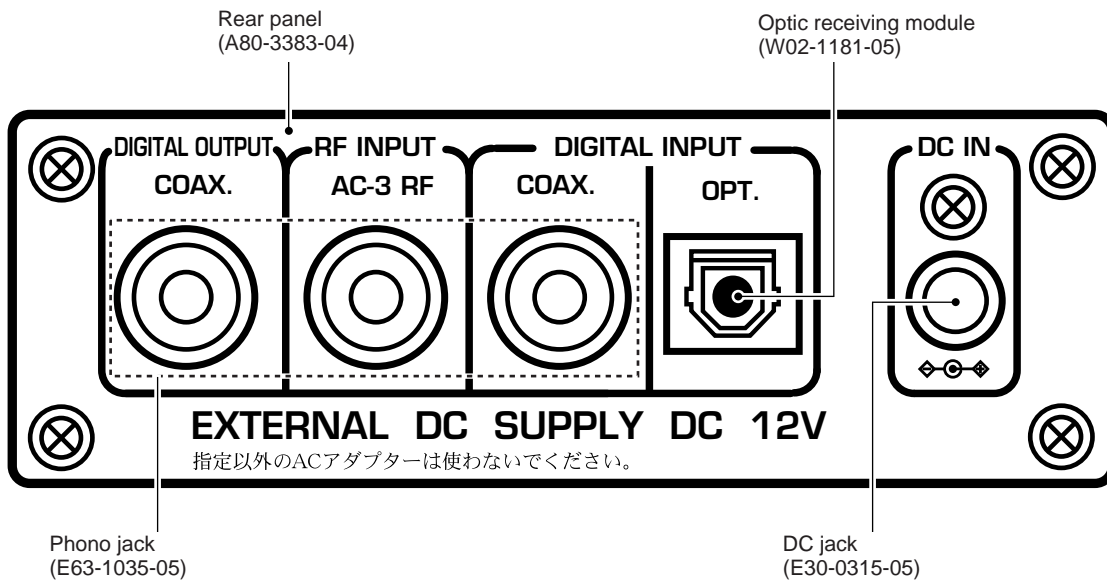
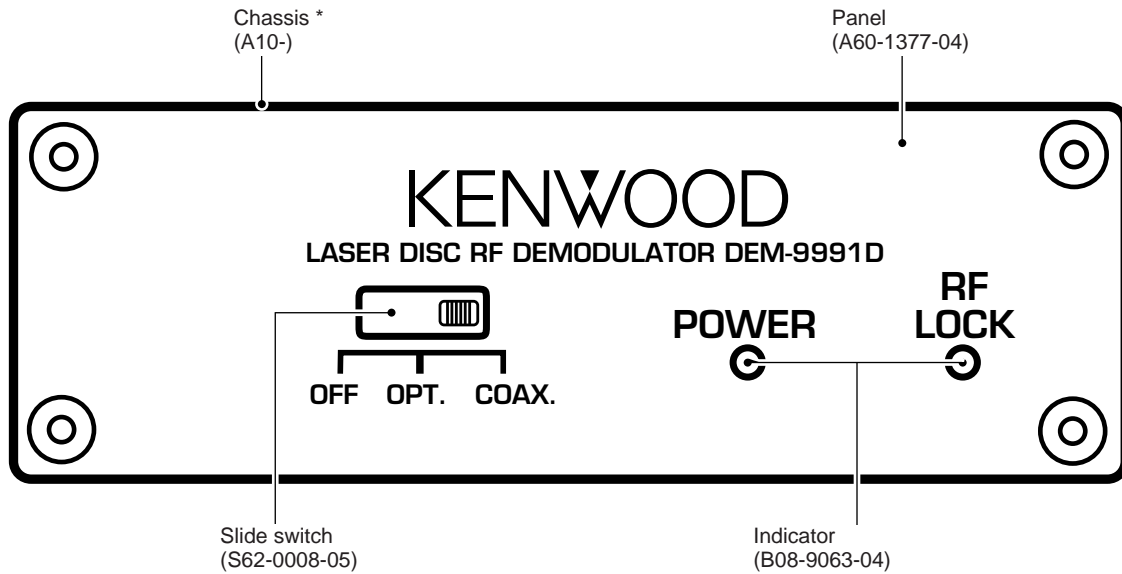


LASER DISC RF DEMODULATOR  
**DEM-9991D**  
SERVICE MANUAL

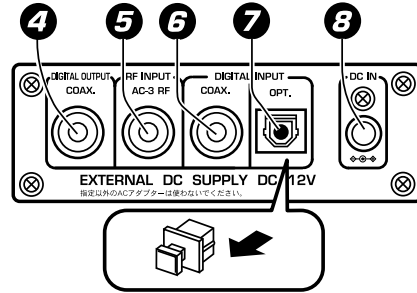
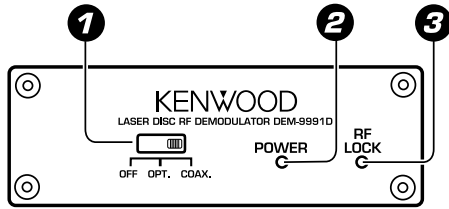
**KENWOOD**

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\* Refer to parts list on page 8.

## CONTROLS



### 日本語

#### ① POWERスイッチ

電源をオフ/オン (OPT./COAX. の位置) します。  
 ●OPT./COAX. スイッチをどちらにセレクトしていても、ドルビーデジタルRF入力があるときは、自動的にドルビーデジタルRF入力に切り替わります。

#### ② POWERインジケータ

電源 (①) がオンになると点灯 (赤色) します。

#### ③ RF LOCKインジケータ

ドルビーデジタル (AC-3) RF 信号がAC-3 RF INPUT 端子 (⑤) に入力されたときのみ点灯します。

#### ④ DIGITAL OUTPUT COAX. (coaxial) 端子

お手持ちのドルビーデジタル (AC-3) デコーダーまたはレシーバーのAC-3 DIGITAL IN端子をデジタルコルドで接続します。

●RF INPUT 端子 (AC-3 RF) とDIGITAL INPUT (OPT./COAX.) 端子から、同時に入力があるときはRF INPUT (AC-3 RF) が優先出力します。

#### ⑤ AC-3 RF INPUT 端子

ご使用のLDプレーヤーのAC-3RF OUTPUT 端子とを接続します。

#### ⑥ DIGITAL INPUT COAX. (coaxial) 端子

ご使用のLDプレーヤーのCOAXIAL OUTPUT 端子とを接続します。

#### ⑦ DIGITAL INPUT OPT. (optical) 端子

ご使用のLDプレーヤーのOPTICAL OUTPUT 端子とを接続します。ご使用のときは、キャップを外してください。

#### ⑧ DC IN (12V) 端子

付属のACアダプターにつないだインレット式電源コードを接続します。他のすべての接続を終えてから、電源コードを壁のコンセントに接続します。

デモジュレーターのACアダプターは、レシーバーやデモジュレーター、アンテナ等から遠ざけておいてください。

「Dolby」、「AC-3」はドルビーラボラトリーズの商標です。

### English

#### ① POWER switch

Press to turn the power on (OPT./COAX. position) or off.

• Regardless of the OPT./COAX. switch setting, the input is switched automatically to the Dolby Digital RF input when ever a Dolby Digital RF signal is input.

#### ② POWER indicator

Lights (red) when the power switch (①) is set to ON.

#### ③ RF LOCK indicator

Lights when a Dolby Digital (AC-3) RF signal is input to the AC-3 RF INPUT jack (⑤)

#### ④ DIGITAL OUTPUT COAX. (coaxial) jack

Connect this jack with the AC-3 DIGITAL IN jack of your Dolby Digital (AC-3) decoder or receiver.

• When there are simultaneous inputs from the RF INPUT (AC-3 RF) jack and DIGITAL INPUT (OPT./COAX.) jack, the RF INPUT (AC-3 RF) signal is output with priority.

#### ⑤ AC-3 RF INPUT jack

Connect this jack to the AC-3 RF OUTPUT jack on your LD player.

#### ⑥ DIGITAL INPUT COAX. (coaxial) jack

Connect with the COAXIAL OUTPUT jack of your LD player.

#### ⑦ DIGITAL INPUT OPT. (optical) jack

Connect with the OPTICAL OUTPUT jack of your LD player. BE sure to remove the cap before using this jack.

#### ⑧ DC IN (12V) jack

Connect the inlet type power cord from the provided AC adapter. Do not plug the power cord into the wall outlet until all other connections have completed.

Place the power supply away from the demodulator, receiver, and any antennas.

"Dolby" and "AC-3" are trademarks of Dolby Laboratories.

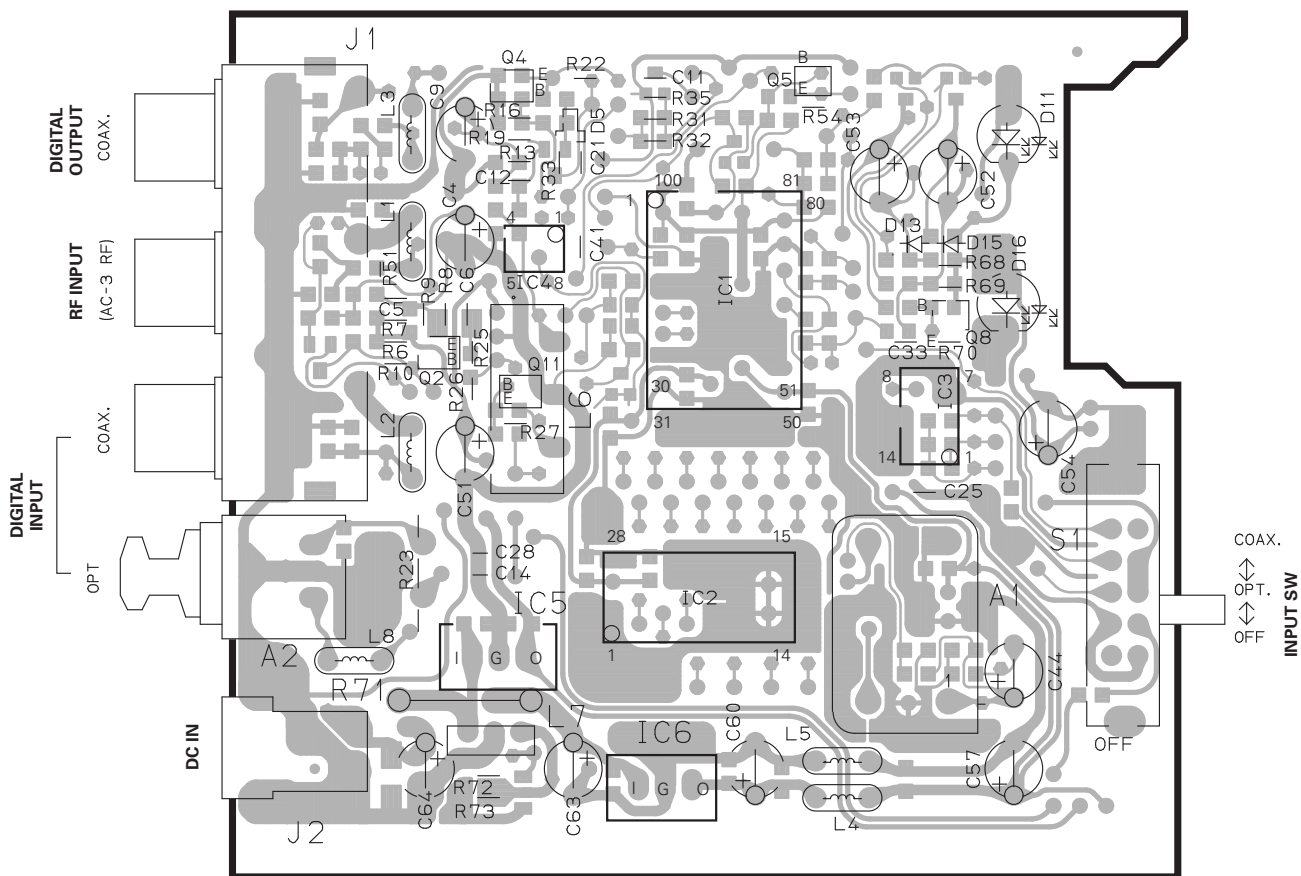
## Pin description

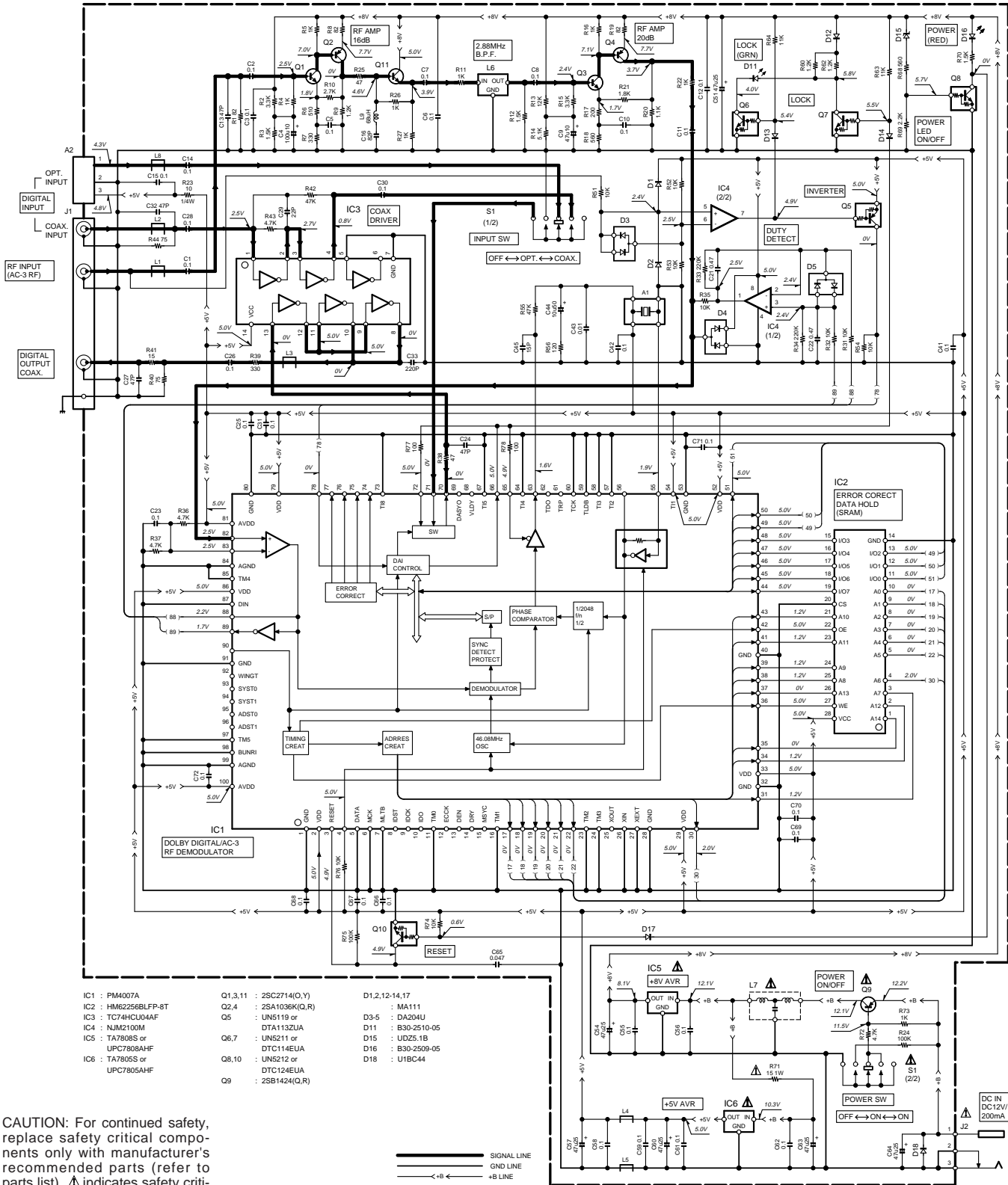
Port NO	Port Name	I/O	Descriptions
1	GND	–	GND (0V).
2	VDD	–	Power supply (+5V).
3	RESET	I	System reset. L = reset.
4	OSCON	I	Oscillation control. H = oscillation. L = standby.
5	DATA	I	Test port of IC.
6	MCK	I	Test port of IC.
7	MLTB	I	Test port of IC.
8	IDST	O	Output port of IC test.
9	IDCK	O	Output port of IC test.
10	IDO	O	Output port of IC test.
11	TMO	I	Test port of IC.
12	ECCK	O	Output port of IC test.
13	DEN	O	Output port of IC test.
14	DEY	O	Output port of IC test.
15	MSYC	O	Output port of IC test.
16	TM1	I	Test port of IC.
17	A0	O	Address 0 output of extra RAM (LSB).
18–22	A1–5	O	Address 1–5 outputs of extra RAM.
23, 24	TM2, 3	I	Test port of IC.
25	XOUT	O	Output port of IC test.
26, 27	XIN / XEXT	I	Test port of IC.
28	GND	–	GND (0V).
29	VDD	–	Power supply (+5V).
30, 31	A6, 7	O	Address 1–5 outputs of extra RAM.
32	GND	–	GND (0V).
33	VDD	–	Power supply (+5V).
34	A12	O	Address 12 outputs of extra RAM.
35	A14	O	Address 14 outputs of extra RAM (MSB).
36	WEB	O	Write enable signal of extra RAM. L = active.
37–39	A13 / 8, 9	O	Address 13, 8, 9 outputs of extra RAM.
40	GND	–	GND (0V).
41	A11	O	Address 11 outputs of extra RAM.
42	OEB	O	Output enable signal of extra RAM. L = active.
43	A10	O	Address 10 outputs of extra RAM.
44–51	DB7–0	I/O	Data port of extra RAM. Data bus7–0.
52	VDD	–	Power supply (+5V).
53	GND	–	GND (0V).
54	TI1	I	Test port of IC.
55	VIN	I	Vcxo input.
56	VOUT	O	Vcxo output.
57, 58	TI2, 3	I	Test port of IC.

Port NO	Port Name	I/O	Descriptions
59	TLDB	I	Test port of IC.
60	TCK	I	Test port of IC.
61	TRP	O	Output port of IC test.
62	TDO	O	Output port of IC test.
63	PDO	O	Phase comparator (3 states)
64	TI4	I	Test port of IC.
65	PDDIS	I	Output control of PDO. L = output.
66	MUTO	O	Muting output. H = mute. Also H = MUTI is "H" or out of synchronous of AC-3.
67	TI5	I	Test port of IC.
68	VLDY	O	Output port of IC test.
69	DASYO	O	Output port of IC test.
70	DAOUT	O	Digital out (serial data stream output)
71	DAIN	I	Extra input of digital.DASEL = "H" : signal though DAOUT.
72	DASEL	I	Choice of digital output
73	TI8	I	Test port of IC.
74	C2F1	O	Display of C2 error correction. Output of condition on error correction.
75	C2F0	O	Display of C2 error correction. Output of error count on C2.
76	C1F1	O	Display of C1 error correction. Output of error or non-error on C1.
77	C1F0	O	Display of C1 error correction. Output of error count on C1.
78	MUT1	I	Muting input. H = mute.
79	VDD	–	Power supply (+5V).
80	GND	–	GND (0V).
81	AVDD	–	Analog Comparator power supply (+5V)
82	CPIN	I	Analog comparator input. Negative port (invert).
83	CMIN	I	Analog comparator input. Positive port (non-invert:QOSK input).
84	AGND	–	Analog comparator GND.
85	TM4	I	Test port of IC.
86	VDD	–	Power supply (+5V).
87	DIN	I	Test port of IC.
88	DOUT	O	Analog comparator output.
89	DOUTB	O	Inverted analog comparator output.
90	C9M	O	9.216MHz output. 1/2 divided output of VIN (55P).
91	GND	–	GND (0V).
92	WINGT	O	Output port of IC test.
93, 94	SYST0, 1	O	Output port of IC test.
95, 96	ADST0, 1	O	Output port of IC test.
97	TMS	I	Test port of IC.
98	BUNRI	I	Test port of IC.
99	AGND	–	GND of 46.08MHz.
100	AVDD	–	Power supply of 46.08MHz (+5V).

# PC BOARD(Component side view)

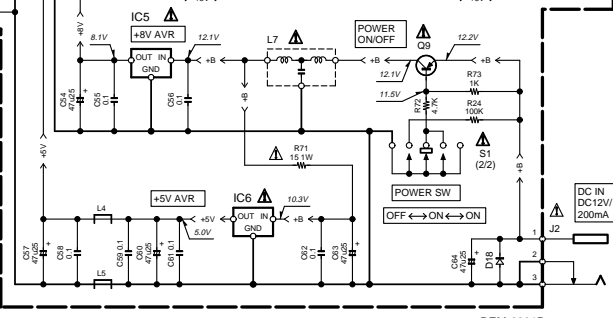
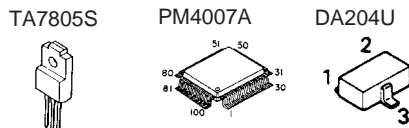
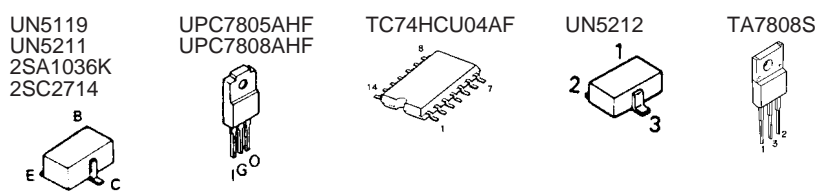
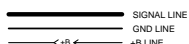
X88-1060-10 (J70-1182-01)





- |                     |                        |                   |
|---------------------|------------------------|-------------------|
| IC1 : PM4007A       | Q1,3,11 : 2SC2714(O,V) | D1,2,12-14,17     |
| IC2 : HM62256BFF-8T | Q2,4 : 2SA1036K(Q,R)   | IC1 : MA111       |
| IC3 : TC74HCU04AF   | Q5 : UN519 or          | D3-5 : DA204U     |
| IC4 : NJM2100M      | DTA1132UA              | D11 : B30-2510-05 |
| IC5 : TA7808S or    | C6,7 : UN5211 or       | D15 : UD25.1B     |
| UPC7808AHF          | DTC114EUA              | D16 : B30-2509-05 |
| IC6 : TA7805S or    | Q8,10 : UN5212 or      | D18 : U1BC44      |
| UPC7805AHF          | DTC124EUA              |                   |
|                     | Q9 : 2SB1424(Q,R)      |                   |

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  $\Delta$  indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.



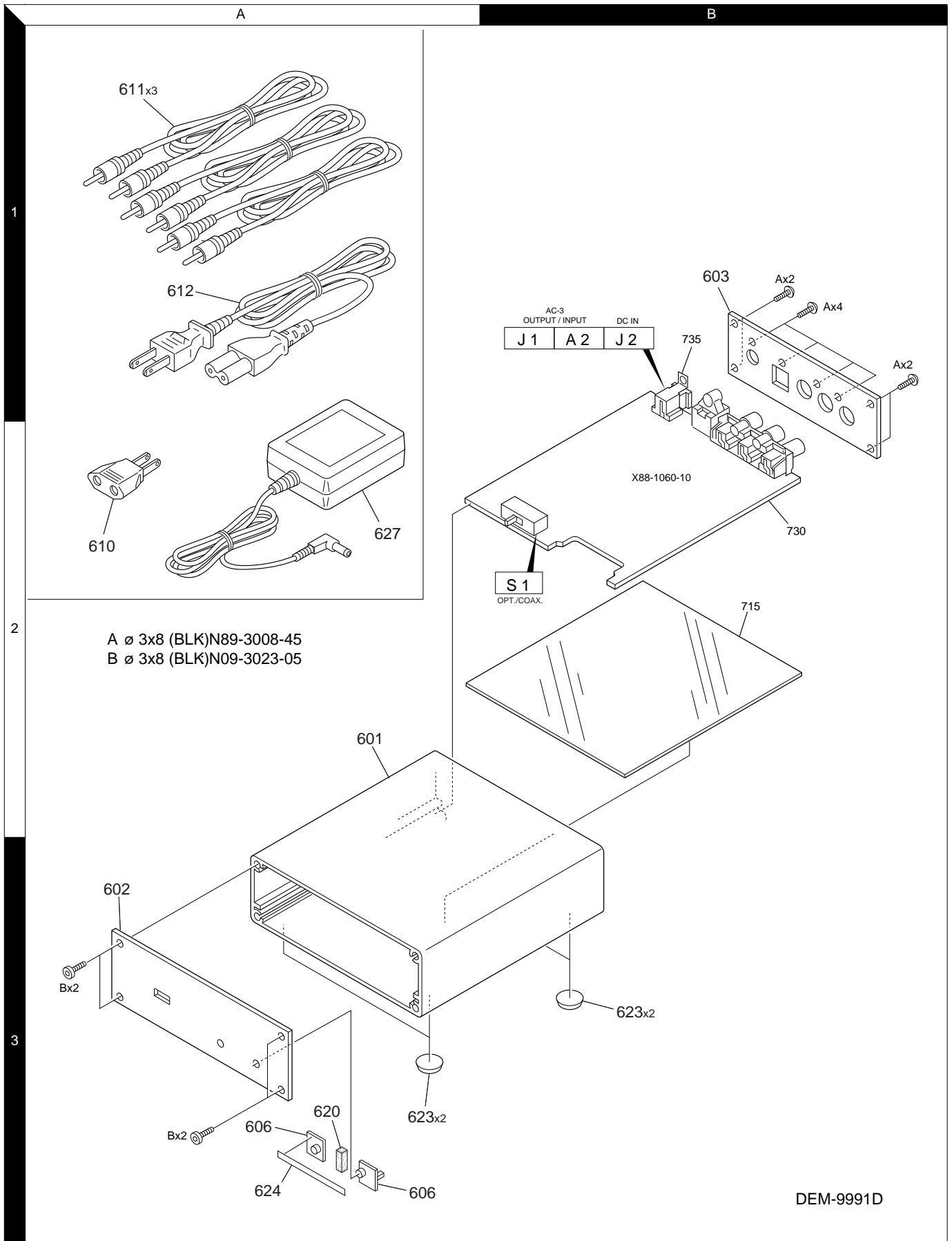
The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instruments used or on the product.

# DEM-9991D

## KENWOOD

# DEM-9991D

## EXPLODED VIEW



Parts with exploded numbers larger than 700 are not supplied.

\* New Parts  
 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.

1

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
<b>DEM-9991D</b>						
601	2A	*	A10-3420-04	CHASSIS	E	
601	2A	*	A10-3420-04	CHASSIS	KYMCXT	
601	2A	*	A10-3423-04	CHASSIS	J	
602	3A	*	A60-1377-04	PANEL		
603	1B	*	A80-3383-04	REAR PANEL		
606	3A		B08-9063-04	INDICATOR		
-			B46-0100-50	WARRANTY CARD	XTE	
-			B46-0191-03	WARRANTY CARD	J	
-			B46-0326-03	WARRANTY CARD	C	
-			B46-0328-03	WARRANTY CARD	KY	
-		*	B59-0050-00	SERVICE DIRECTORY	J	
-			B60-3758-00	INSTRUCTION MANUAL		
610	2A		E03-0115-05	AC PLUG ADAPTER	M	
611	1A		E30-2365-05	CORD WITH PLUG		
612	1A		E30-2779-05	AC POWER CORD (INLET)	ME	
612	1A		E30-2780-05	AC POWER CORD (INLET)	X	
612	1A		E30-2781-05	AC POWER CORD (INLET)	T	
612	1A	*	E30-2851-25	AC POWER CORD (INLET)	C	
612	1A		E30-2858-05	AC POWER CORD (INLET)	YJ	
612	1A		E30-2859-05	AC POWER CORD (INLET)	K	
620	3A		G11-1129-04	CUSHION		
-		*	H13-0295-14	CARTON BOARD		
-			H25-1608-04	PROTECTION BAG	J	
-		*	H50-2885-03	ITEM CARTON CASE	KYMXTE	
-			H50-2885-03	ITEM CARTON CASE	C	
-		*	H50-2886-03	ITEM CARTON CASE		
623	3A,3B		J02-1186-05	FOOT		
624	3A		J30-0467-04	SPACER		
627	2A		W08-0665-15	AC ADAPTER	J	
627	2A		W08-0665-15	AC ADAPTER	YMCXTE	
627	2A		W08-0666-05	AC ADAPTER	K	
<b>I/O (X88-1060-10)</b>						
D11			B30-2510-05	LED(GREEN)		
D16			B30-2509-05	LED(RED)		
C1 -3			CK73FB1E104K	CHIP C	0.10UF	K
C4			CE04KW1A101M	ELECTRO	100UF	10WV
C5 -8			CK73FB1E104K	CHIP C	0.10UF	K
C9			CE04KW1A470M	ELECTRO	47UF	10WV
C10 -12			CK73FB1E104K	CHIP C	0.10UF	K
C13			CC73FSL1H470J	CHIP C	47PF	J
C14 ,15			CK73FB1E104K	CHIP C	0.10UF	K
C16			CC73FSL1H820J	CHIP C	82PF	J
C21 ,22			CK73FF1C474Z	CHIP C	0.47UF	Z
C23			CK73FB1E104K	CHIP C	0.10UF	K
C24			CC73FSL1H470J	CHIP C	47PF	J
C25 ,26			CK73FB1E104K	CHIP C	0.10UF	K
C27			CC73FSL1H470J	CHIP C	47PF	J
C28			CK73FB1E104K	CHIP C	0.10UF	K
C29			CC73FSL1H220J	CHIP C	22PF	J

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 Y : PX(Far East, Hawaii)    T : Europe    E : Europe    G : Germany    V : China (Shanghai)  
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2

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Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
C30 ,31			CK73FB1E104K	CHIP C	0.10UF	K
C32			CC73FSL1H470J	CHIP C	47PF	J
C33			CC73FSL1H221J	CHIP C	220PF	J
C41 ,42			CK73FB1E104K	CHIP C	0.10UF	K
C43			CK73FB1H103K	CHIP C	0.010UF	K
C44			CE04KW1H100M	ELECTRO	10UF	50WV
C45			CC73FSL1H150J	CHIP C	15PF	J
C51			CE04KW1E470M	ELECTRO	47UF	25WV
C54			CE04KW1E470M	ELECTRO	47UF	25WV
C55 ,56			CK73FB1E104K	CHIP C	0.10UF	K
C57			CE04KW1E470M	ELECTRO	47UF	25WV
C58 ,59			CK73FB1E104K	CHIP C	0.10UF	K
C60			CE04KW1E470M	ELECTRO	47UF	25WV
C61 ,62			CK73FB1E104K	CHIP C	0.10UF	K
C63 ,64			CE04KW1E470M	ELECTRO	47UF	25WV
C65			CK73FB1H473K	CHIP C	0.047UF	K
C66 -72			CK73FB1E104K	CHIP C	0.10UF	K
J1		*	E63-1035-05	PHONO JACK		
J2			E03-0315-05	DC JACK		
L1 -5			L92-0044-05	FERRITE CORE		
L6			L79-1245-05	LC FILTER		
L7			L79-1246-05	LC FILTER		
L8			L92-0044-05	FERRITE CORE		
L9			L40-6801-31	SMALL FIXED INDUCTOR(68UH,K)		
R1			RK73FB2A820J	CHIP R	82	J 1/10W
R2			RK73FB2A332J	CHIP R	3.3K	J 1/10W
R3			RK73FB2A152J	CHIP R	1.5K	J 1/10W
R4 ,5			RK73FB2A102J	CHIP R	1.0K	J 1/10W
R6			RK73FB2A511J	CHIP R	510	J 1/10W
R7			RK73FB2A331J	CHIP R	330	J 1/10W
R8			RK73FB2A820J	CHIP R	82	J 1/10W
R9			RK73FB2A122J	CHIP R	1.2K	J 1/10W
R10			RK73FB2A272J	CHIP R	2.7K	J 1/10W
R11			RK73FB2A102J	CHIP R	1.0K	J 1/10W
R12			RK73FB2A152J	CHIP R	1.5K	J 1/10W
R13			RK73FB2A123J	CHIP R	12K	J 1/10W
R14			RK73FB2A512J	CHIP R	5.1K	J 1/10W
R15			RK73FB2A332J	CHIP R	3.3K	J 1/10W
R16			RK73FB2A102J	CHIP R	1.0K	J 1/10W
R17			RK73FB2A201J	CHIP R	200	J 1/10W
R18			RK73FB2A561J	CHIP R	560	J 1/10W
R19			RK73FB2A820J	CHIP R	82	J 1/10W
R20			RK73FB2A112J	CHIP R	1.1K	J 1/10W
R21			RK73FB2A182J	CHIP R	1.8K	J 1/10W
R22			RK73FB2A102J	CHIP R	1.0K	J 1/10W
R23			RD14NB2E100J	RD	10	J 1/4W
R24			RK73FB2A104J	CHIP R	100K	J 1/10W
R25			RK73FB2A470J	CHIP R	47	J 1/10W
R26 ,27			RK73FB2A102J	CHIP R	1.0K	J 1/10W
R31 ,32			RK73FB2A103J	CHIP R	10K	J 1/10W
R33 ,34			RK73FB2A224J	CHIP R	220K	J 1/10W
R35			RK73FB2A103J	CHIP R	10K	J 1/10W
R36 ,37			RK73FB2A472J	CHIP R	4.7K	J 1/10W
R38			RK73FB2A470J	CHIP R	47	J 1/10W

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3

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
R39			RK73FB2A331J	CHIP R 330 J 1/10W		
R40			RK73FB2A750J	CHIP R 75 J 1/10W		
R41			RK73FB2A150J	CHIP R 15 J 1/10W		
R42			RK73FB2A473J	CHIP R 47K J 1/10W		
R43			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R44			RK73FB2A750J	CHIP R 75 J 1/10W		
R51 -54			RK73FB2A103J	CHIP R 10K J 1/10W		
R55			RK73FB2A473J	CHIP R 47K J 1/10W		
R56			RK73FB2A121J	CHIP R 120 J 1/10W		
R60			RK73FB2A122J	CHIP R 1.2K J 1/10W		
R62			RK73FB2A122J	CHIP R 1.2K J 1/10W		
R63 ,64			RK73FB2A113J	CHIP R 11K J 1/10W		
R68			RK73FB2A561J	CHIP R 560 J 1/10W		
R69			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R70			RK73FB2A152J	CHIP R 1.5K J 1/10W		
R71			RS14KB3A150JFR	FL-PROOF RS 15 J 1W		
R72			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R73			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R74			RK73FB2A103J	CHIP R 10K J 1/10W		
R75			RK73FB2A104J	CHIP R 100K J 1/10W		
R76			RK73FB2A103J	CHIP R 10K J 1/10W		
R77 ,78			RK73FB2A101J	CHIP R 100 J 1/10W		
Δ S1			S62-0008-05	SLIDE SWITCH		
D1 ,2			MA111	DIODE		
D3 -5			DA204U	DIODE		
D12 -14			MA111	DIODE		
D15			UDZ5.1B	ZENER DIODE		
D17			MA111	DIODE		
D18			U1BC44	DIODE		
IC1			PM4007A	MOS-IC		
IC2			HM62256BLFP-8T	MEMORY IC		
IC3			TC74HCU04AF	IC(HEX INVERTER SMD)		
IC4			NJM2100M	IC(OP AMPLIFIER)		
Δ IC5			TA7808S	IC(REGULATOR)		
Δ IC5			UPC7808AHF	IC(VOLTAGE REGULATOR/ +8V)		
Δ IC6			TA7805S	IC(VOLTAGE REGULATOR/ +5V)		
Δ IC6			UPC7805AHF	ANALOGUE IC		
Q1			2SC2714(O,Y)	FET		
Q2			2SA1036K(Q,R)	TRANSISTOR		
Q3			2SC2714(O,Y)	FET		
Q4			2SA1036K(Q,R)	TRANSISTOR		
Q5			DTA113ZUA	DIGITAL TRANSISTOR		
Q5			UN5119	DIGITAL TRANSISTOR		
Q6 ,7			DTC114EUA	DIGITAL TRANSISTOR		
Q6 ,7		*	UN5211	DIGITAL TRANSISTOR		
Q8			DTC124EUA	DIGITAL TRANSISTOR		
Q8			UN5212	DIGITAL TRANSISTOR		
Δ Q9			2SB1424(Q,R)	TRANSISTOR		
Q10			DTC124EUA	DIGITAL TRANSISTOR		
Q10			UN5212	DIGITAL TRANSISTOR		
Q11			2SC2714(O,Y)	FET		
A1			W02-2609-05	OSCILLATING MODULE		
A2			W02-1181-05	OPTIC RECEIVING MODULE		

L : Scandinavia K : USA P : Canada R : Mexico C : China I : Malaysia  
 Y : PX(Far East, Hawaii) T : Europe E : Europe G : Germany V : China (Shanghai)  
 Y : AAFES(Europe) X : Australia Q : Russia H : Korea M : Other Areas Δ indicates safety critical components.

PARTS LIST

DEM-9991D



# DEM-9991D

## SPECIFICATIONS

### Input level

AC-3 RF .....50 mV p-p ~ 200 mV p-p  
PCM COAX.....0.5V p-p / 75 Ω  
PCM OPT.....-15dB m ~ -21dB m  
(Wavelength 660nm±144nm)

RF Frequency response.....2.88 MHz ~ ±144 kHz

### Output level / Impedance

Coaxial .....0.5 Vp-p / 75 Ω

Power Supply DC IN jack (12V, 200mA)

Dimensions .....W : 89mm (3-1/2")

H : 35mm (1-3/8")

D : 105mm (4-1/8")

Weight(Net).....200g (8oz.)

Accessories : Digital cord (3)

Powercord (1)

AC adaptor (1)

\*AC plug adaptor (1)

\*Use to adapt the plug on the power cord to the shape of the wall outlet. (Accessory only for regions where use is necessary.)



1. KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.
2. Sufficient performance may not be exhibited at extremely cold locations (where water freezes.).

### Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the General market(M) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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