PROFESSIONAL AUDIO CD RECORDER

CDR1000

SERVICE MANUAL

CONTENTS

PA 011479
19991025-188000

YAMAHA
HAMAMATSU, JAPAN
1.52K-599 Printed in Japan '99.12

IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING : Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT : This presentation or sale of this manual to any individual or firm does not constitute authorization certification, recognition of any applicable technical capabilities, or establish a principal-agent relationship of any form.

The data provided is belived to be accurate and applicable to the unit(s) indicated on the cover. The research engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING : Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground bus in the unit (heavy gauge black wires connect to this bus.)

IMPORTANT : Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (Where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

■ WARNING

Components having special characteristics are marked ⚠ and must be replaced with parts having specification equal to those originally installed.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

When checking the laser diode emission, keep your eyes more than 30 cm away from the objective lens.

WARNING: LASER SAFETY

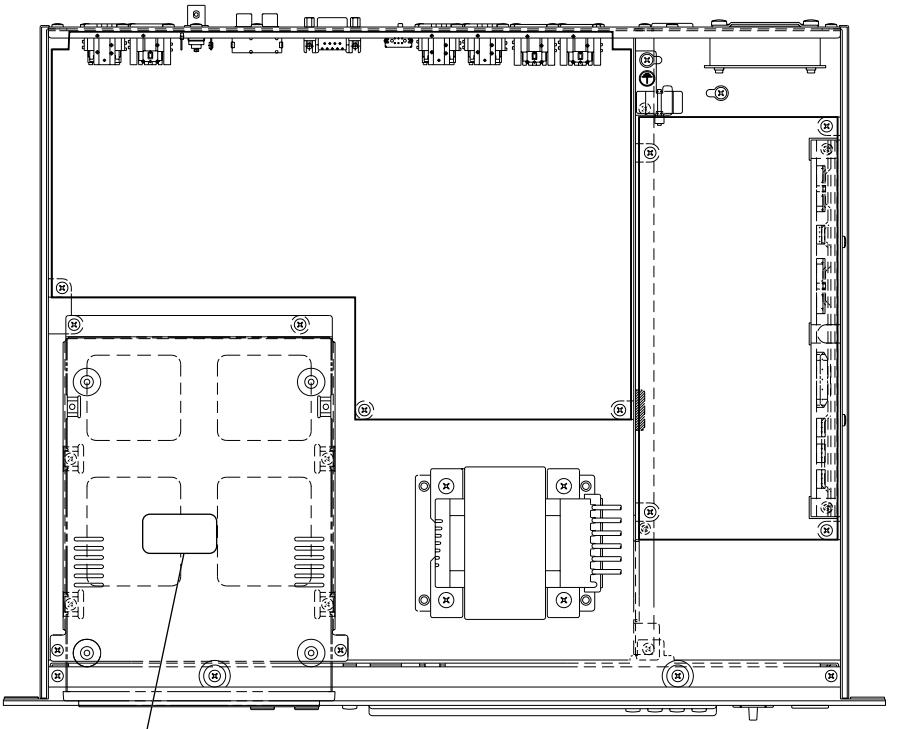
This product contains a laser beam component. This component may emit invisible, as well as visible radiation, which may cause eye damage. To protect your eyes and skin from laser radiation, the following precaution must be used during servicing of the unit.

1) When testing and / or repairing any component within the product, keep your eyes and skin more than 30cm away from the laser pick-up unit at all time. Do not stare the laser beam at any time.

2) Do not attempt readjustment,disassemble and repair of the laser pick-up, unless noted elsewhere in this manual.

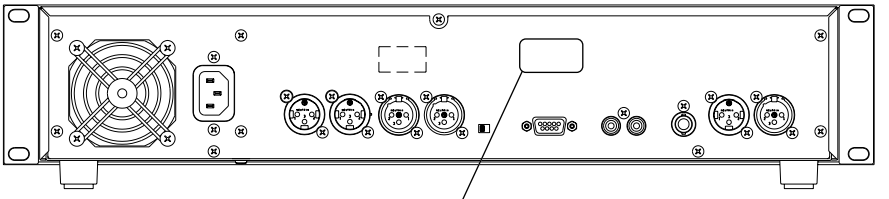
3) CAUTION - Use of controls or readjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Laser Diode Properties
* Material : GaAlAs
* Wavelength : 783–789 nm
* Emission Duration : Continuous
* Laser Output Power : Less than 44.6 μW
  (Note) Laser output is measured at a distance of 20cm from the object lens on the optical pick-up head.



CAUTION : INVISIBLE LASER RADIATION WHEN OPEN.
AVOID EXPOSURE TO BEAM.
VARNING : OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPEND. STRÅLEN ÄR FARLIG.
VARO! : NÄKYMÄTÖNTÄ AVATTAESSA OLET ALTTIINA LESERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING : OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN.
VORSICHT! : UNSICHTBARE LESERSTRAHLUNG WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.

- This label is located on the interior.
- Varningsanvisning för laserstrålning. Placerad i apparaten.



CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

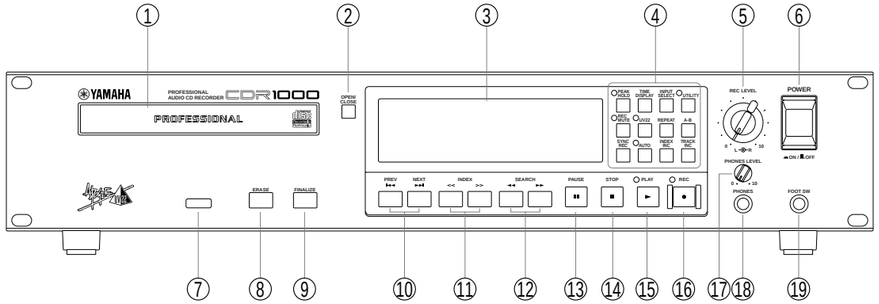
This label is located on the exterior.
On USA or Canadian models do not have this label.
Klassmärkning för Finland.

■ SPECIFICATIONS

Recording media		CD-R, CD-RW
Playback media		CD, CD-R, CD-RW
Sampling rate		44.1 kHz
Recording resolution		16-bit linear
Converters	A/D	20-bit 64-times oversampling
	D/A	20-bit 128-times oversampling
Frequency response		20 Hz–20 kHz
Track		Up to 99 tracks
Index		Up to 99 indexes
SRC (Sampling Rate Converter)		30 kHz to 50 kHz
UV22		16-bit encoding
S/N		97 dB
Input delay		0–4,950 ms
Fade in/out time		0–10 second
Synchronized recording		CD, MD, DAT
Repeat playback		One track, All track, A–B
Locate		PREV, NEXT, INDEX, SEARCH, direct select
Display	**Type**	VFD (Vacuum Fluorescent Display)
	Characters	12-character line
	Time counter	Minutes and seconds
	Display mode	Elapse, Remain, Total
	Track counter	0–99
	Index counter	0–99
	Level meters	16 segment with CLIP indicator x2
Power requirements		U.S.A. & Canada 120 V AC, 60 Hz Europe 230 V AC, 50 Hz
Power consumption		33 W
Dimensions (W× H ×D)		480 × 101 × 389 mm (18.9 x 4 x 15.3 inches)
Weight		8 kg (17.6 lbs)
Free-air operating temperature range		5˚ C to 35˚ C (41˚ F to 95˚ F)
Relative humidity		10%–95%
Accessories		Power cord, remote controller, batteries (size AA, R6, UM-3 x2), transportation pad, Owner's Manual
Options		Yamaha FC5 footswitch

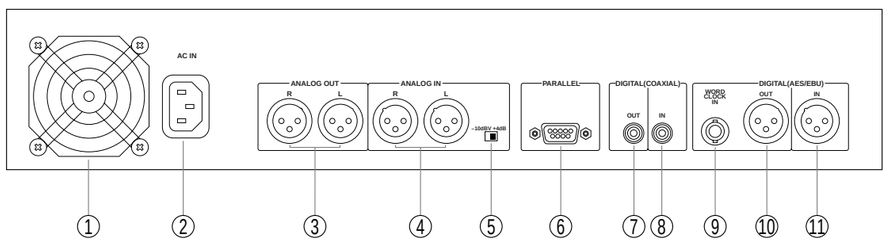
■ PANEL LAYOUT

• Front panel



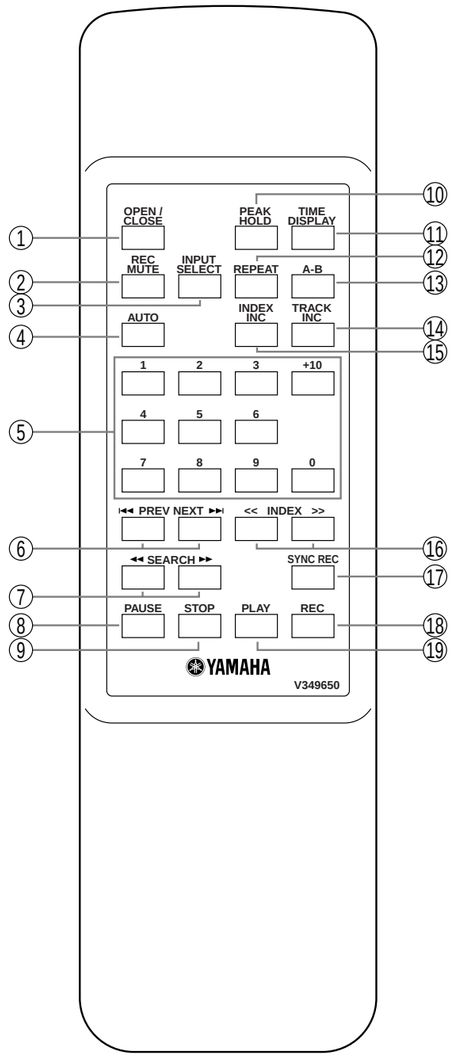
① Disc tray
② OPEN/CLOSE button
③ Display
④ Functions buttons
⑤ REC LEVEL control
⑥ POWER switch
⑦ Remote controller sensor
⑧ ERASE button
⑨ FINALIZE button
⑩ PREV & NEXT buttons
⑪ INDEX buttons
⑫ SEARCH buttons
⑬ PAUSE button
⑭ STOP button
⑮ PLAY button & indicator
⑯ REC button & indicator
⑰ PHONES LEVEL control
⑱ PHONES jack
⑲ FOOT SW jack

• Rear panel



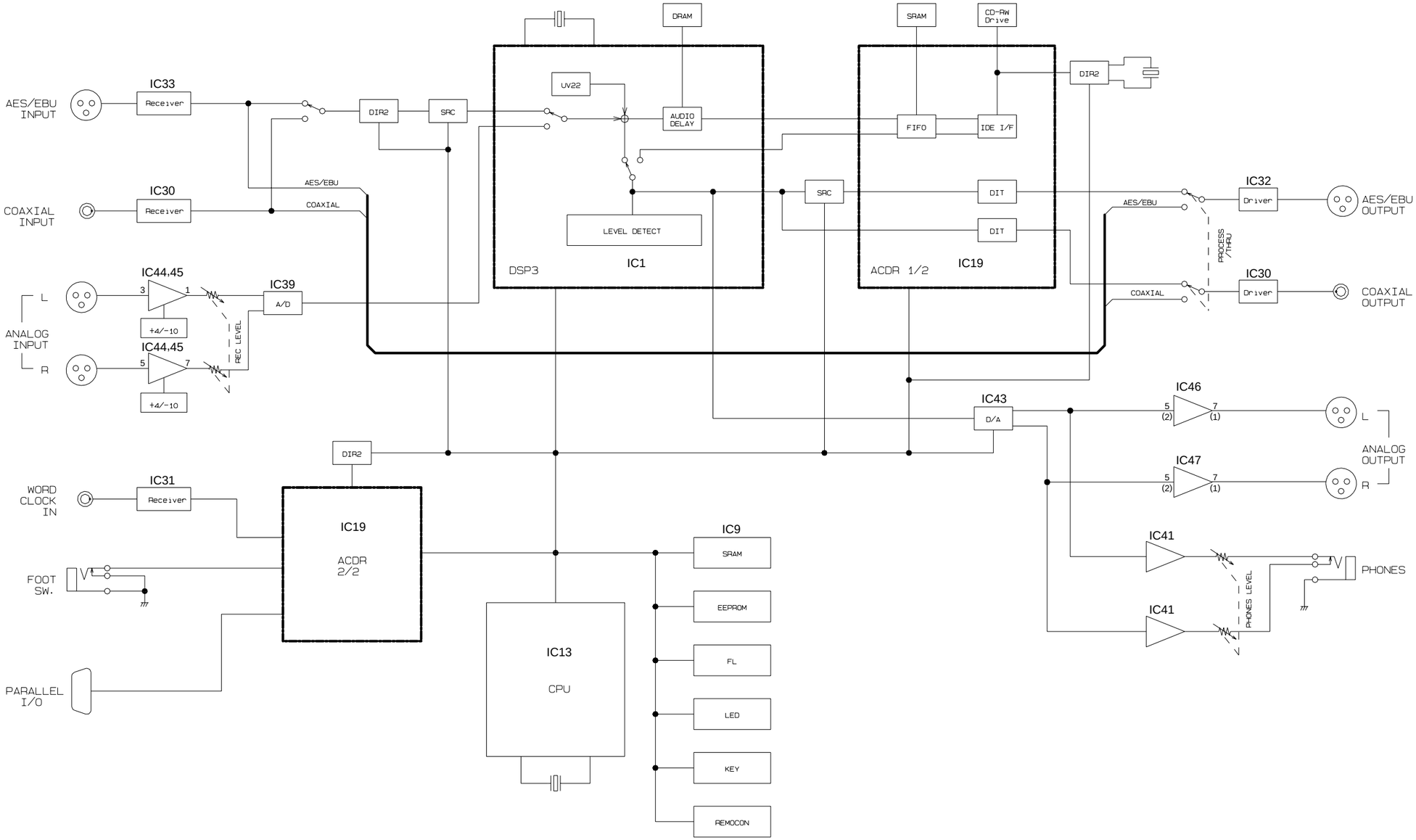
① Cooling fan
② AC IN connector
③ ANALOG OUT connectors
④ ANALOG IN connectors
⑤ ANALOG IN level switch
⑥ PARALLEL port
⑦ DIGITAL COAXIAL OUT connector
⑧ DIGITAL COAXIAL IN connector
⑨ WORD CLOCK IN connector
⑩ DIGITAL AES/EBU OUT connector
⑪ DIGITAL AES/EBU IN connector

• Remote Controller



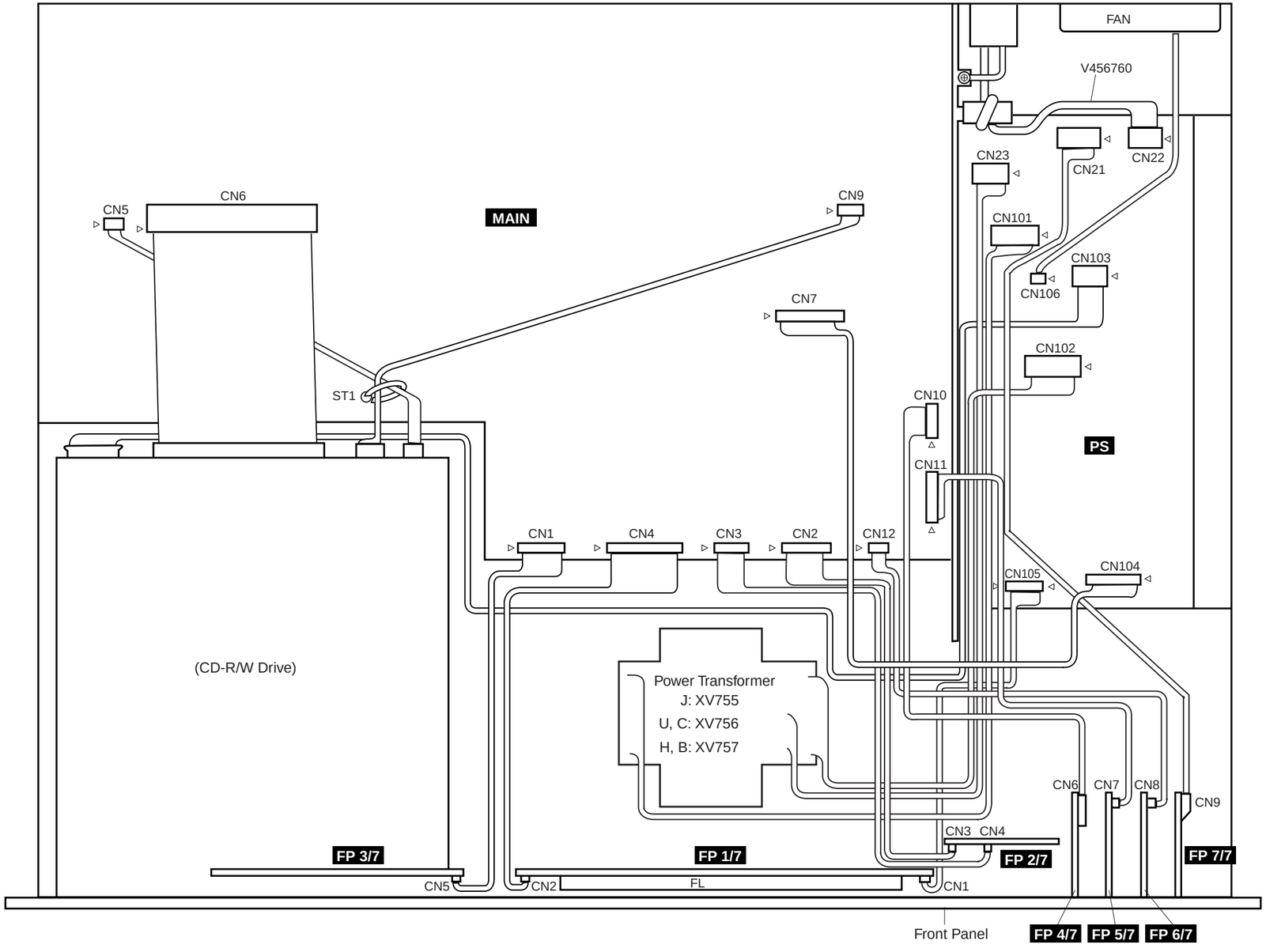
① OPEN/CLOSE button
② REC MUTE button
③ INPUT SELECT button
④ AUTO button
⑤ Number keypad
⑥ PREV & NEXT buttons
⑦ SEARCH buttons
⑧ PAUSE button
⑨ STOP button
⑩ PEAK HOLD button
⑪ TIME DISPLAY button
⑫ REPEAT button
⑬ A-B button
⑭ TRACK INC button
⑮ INDEX INC button
⑯ INDEX buttons
⑰ SYNC REC button
⑱ REC button
⑲ PLAY button

■ BLOCK DIAGRAM



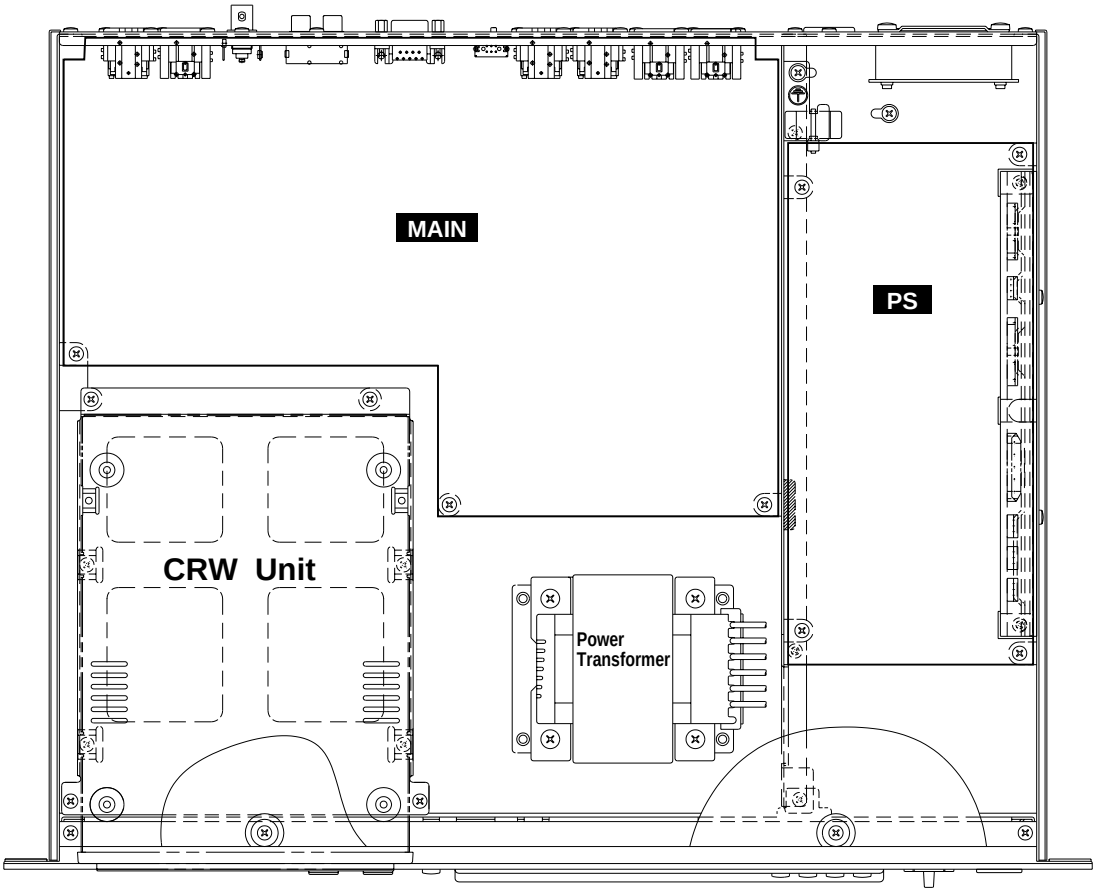
KEC-92378

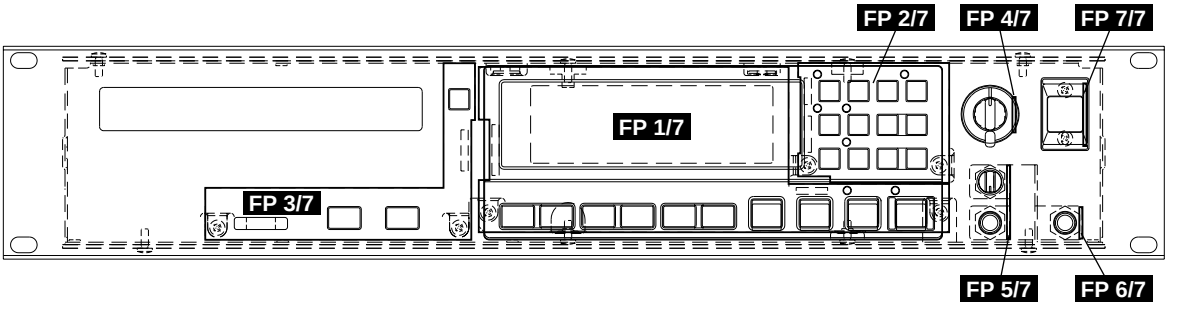
WIRING



Destination		Connector Assembly	Pin/Lenght	Parts List No.
MAIN-CN1	FP3/7-CN5	C & C	8P/L200	FRONT 250
MAIN-CN2	FP2/7-CN3	C & C	7P/L250	FRONT 260
MAIN-CN3	FP2/7-CN4	C & C	5P/L250	FRONT 270
MAIN-CN4	FP1/7-CN2	B & C	10P/L200	FP CN2
MAIN-CN11	FP5/7-CN7	C & C	8P/L250	OVERALL 410
MAIN-CN12	FP6/7-CN8	C & C	3P/L250	OVERALL 420
MAIN-CN7	PS-CN104	C & C	9P/L350	OVERALL 440
FP1/7-CN1	PS-CN105	C & C	6P/L160	OVERALL 450
FP7/7-CN9	PS-CN21	PSW	2P/L340	OVERALL 350
FP4/7-CN6	MAIN-CN10	VR	6P/L220	OVERALL 360
PS-CN103	CD-R/W Drive	CDRW	4P/L600	OVERALL 370
MAIN-CN5	CD-R/W Drive	DO	2P/L180	OVERALL 390
MAIN-CN9	CD-R/W Drive	AO	4P/L230	OVERALL 380
MAIN-CN6	CD-R/W Drive	MAIN to CDR	40P/L120	OVERALL 400

■ CIRCUIT BOARD LAYOUT





DISASSEMBLY PROCEDURE

1. Top Cover

Remove the seven (7) screws marked [320] and remove the top cover by sliding it rearward.

[320]:Bind Head Tapping Screw-B A3.0x8 MFZN2BL+BindB Tight (VP157000)

2. Circuit Boards and Units

After removing the top cover, remove the following screw. Each circuit board and unit can then be removed. (Fig.1)

Circuit Board		Ref. No.	Parts No.	Description	Q'ty
MAIN		**130**	EP600190	Bind Head Tapping Screw-B 3.0 X 8 MFZN2BL	3
	Rear Panel	**100**	EP630220	Bind Head Tapping Screw-P 3.0 X MFZN2BL	12
		110	VT362500	Jack Socket 17L-003A3	2
		120	VP156600	Bind Head Screw A3.0 X 6 MFZN2BL	1
PS		**150**	EP600190	Bind Head Tapping Screw-B 3.0 X 8 MFZN2BL	4
		160	VP157000	Bind Head Tapping Screw-B A3.0 X 8 MFZN2BL	2
AC-IN		**190**	EP630220	Bind Head Tapping Screw-P 3.0 X 8 MFZN2BL	2
Fun		**530**	VR116500	Pan Head Screw SP4.0 X 25 MFZN2BL	4
Trans.		**280**	VC688800	Bind Head Tapping Screw-B A4.0 X 8 MFZN2BL	4
CRW Unit		**260**	VP157000	Bind Head Tapping Screw-B A3.0 X 8 MFZN2BL	4
Front Panel Assembly		**300**	VP157000	Bind Head Tapping Screw-B A3.0 X 8 MFZN2BL	9

3. Circuit Board in Front Panel Assembly

3-1 Remove the top cover.(See procedure 1.)

3-2 After removing the front panel assembly, remove the following screw. Each circuit board in the front panel assembly can then be removed. (Fig. 2)

Circuit Board	Ref. No.	Parts No.	Description	Q'ty
Front Panel	160	VP157000	Bind Head Tapping Screw-B A3.0 X 8 MFZN2BL	4
	190	VF888400	Knob	1
	200	VF888500	Knob	1
FP3/7	90	EP600190	Bind Head Tapping Screw-B 3.0 X 8 MFZN2BL	2
FP4/7	40	V2431400	Hexagonal Nut 9.0	1
FP5-7	60	V2431400	Hexagonal Nut 9.0	2
FP6/7	50	V2431400	Hexagonal Nut 9.0	1
FP7/7	30	VP156600	Bind Head Screw A3.0 X 6 MFZN2BL	2
Window	120	EP600190	Bind Head Tapping Screw-B 3.0 X 8 MFZN2BL	4
FP1/7	80	EP600190	Bind Head Tapping Screw-B 3.0 X 8 MFZN2BL	2
FP2/7	70	EP600190	Bind Head Tapping Screw-B 3.0 X 8 MFZN2BL	2

4. CRW Unit

4-1. Remove the four (4) screws marked [250], and the angle can be removed.

4-2. Remove the two (2) screws marked [A] and push in the four (4) hooks on both side.
Then the cover can be removed.

4-3. Remove the front panel marked [220a] of the unit and then the tray marked [220b].
Push up the stopper located on the left side of the tray a little, and the tray can be removed.

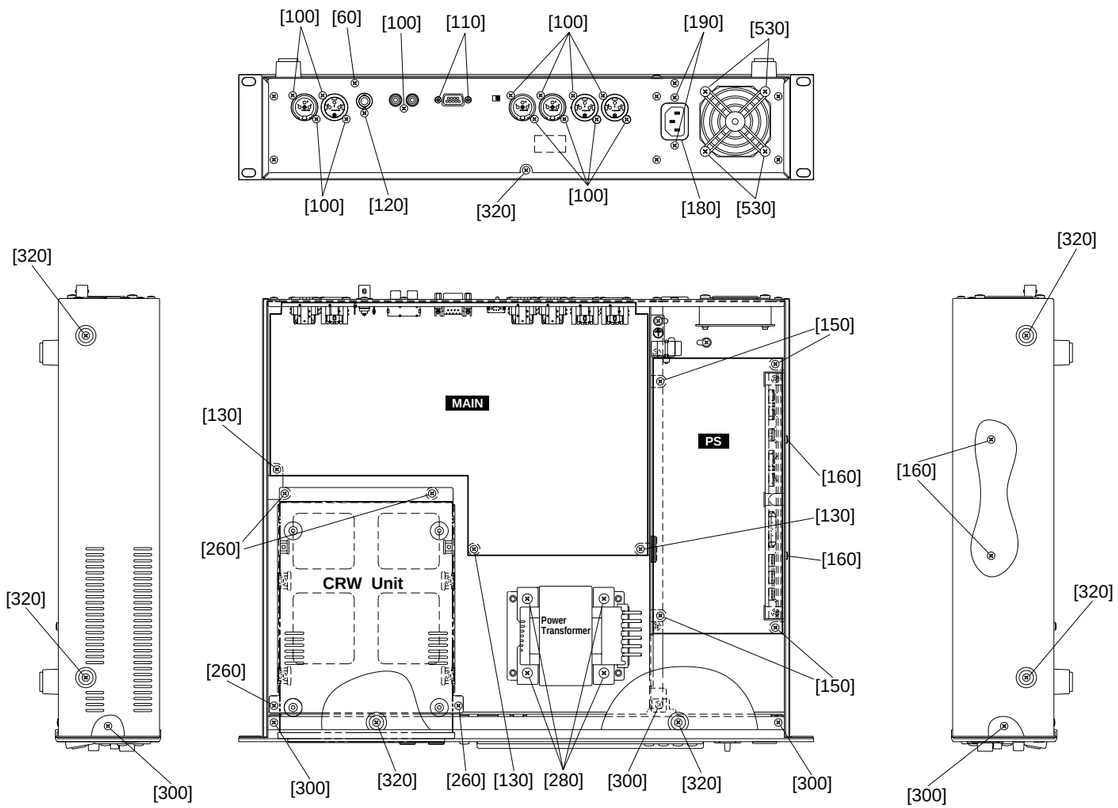
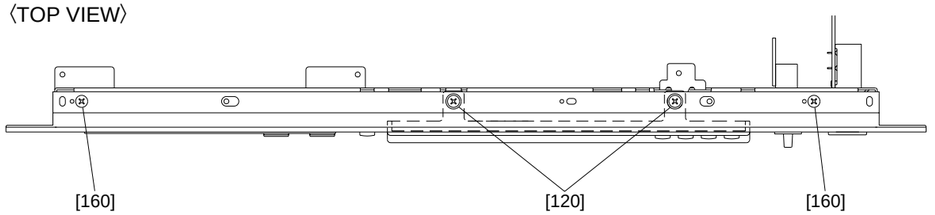
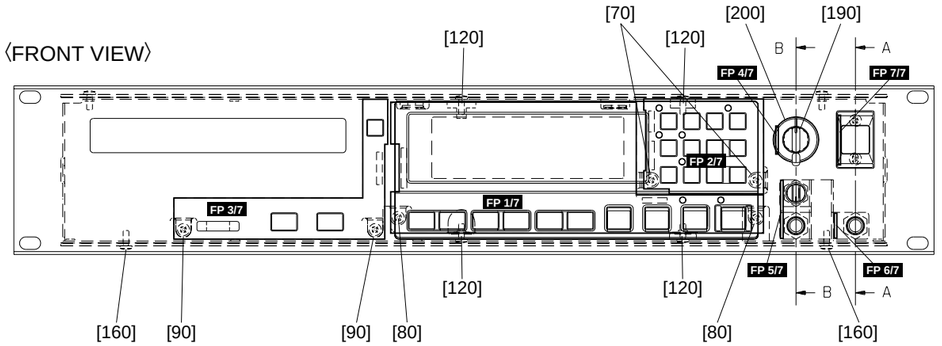


Fig.1

〈TOP VIEW〉



〈FRONT VIEW〉



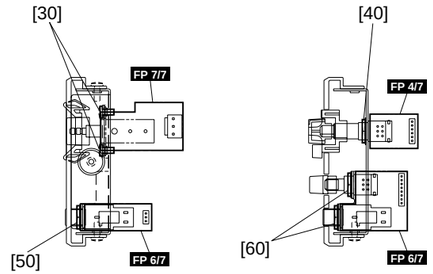


Fig.2

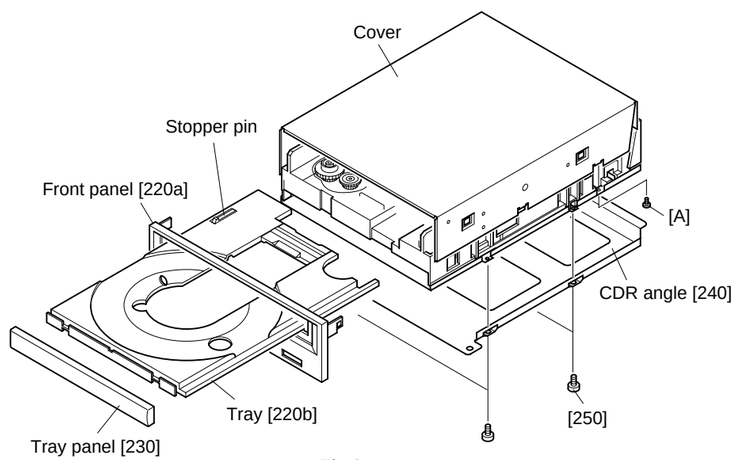


Fig.3

■ LSI PIN DESCRIPTION

● YSS228E-F (XQ962D00) DSP3 (Digital Signal Processor) IC1

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	VSS		Ground	81	VSS	I/O	Ground
2	XI	I	System master clock input (60 M or30 MHz)	82	DB13	I/O	
3	XO		System master clock input (60 M or30 MHz)	83	DB14	I/O	
4	VDD		Power supply	84	DB15	I/O	
5	/SYNCI	I	System synch. input	85	DB16	I/O	
6	/SYNCO	O	System synch. output	86	DB17	I/O	
7	CKI	I	System clock input (30 MHz)	87	DB18	I/O	
8	CKO	O	System clock output (30 MHz)	88	DB19	I/O	
9	CKSL	I	System master clock select (0:60 M,1:30 MHz)	89	DB20	I/O	
10	VSS		Ground	90	DB21	I/O	
11	MCKS	I	Master clock for serial I/O(128 xFs)	91	DB22	I/O	Parallel data bus
12	/SSYNC	I	Synch. signal for serial I/O	92	DB23	I/O	
13	/IC	I	Initial clear	93	DB24	I/O	
14	/TEST	I	Test mode setting	94	DB25	I/O	
15	BTYP	I	CPU data bus 8/16 bit select(0:8,1:16)	95	DB26	I/O	
16	/IRQ	O	Interrupt request	96	DB27	I/O	
17	TRIG	I/O	Trigger signal	97	DB28	I/O	
18	VDD		Power supply	98	DB29	I/O	
19	VSS		Ground	99	DB30	I/O	
20	/CS	I	Chip select	100	DB31	I/O	
21	/DS	I	Data strobe	101	TIMO/DBOE	I/O	Timing signal/Parallel data bus control
22	R/W	I	Read/Write select	102	VSS		Ground
23	CA7	I		103	VDD		Power supply
24	CA6	I		104	DA00	I/O	
25	CA5	I		105	DA01	I/O	
26	CA4	I	CPU address bus	106	DA02	I/O	
27	CA3	I		107	DA03	I/O	
28	CA2	I		108	DA04	I/O	
29	CA1	I		109	DA05	I/O	
30	CA0/CD15	I/O	CPU address/data bus	110	DA06	I/O	
31	CD14	I/O		111	DA07	I/O	External memory data bus
32	CD13	I/O		112	DA08	I/O	
33	CD12	I/O		113	DA09	I/O	
34	CD11	I/O		114	DA10	I/O	
35	CD10	I/O	CPU data bus	115	DA11	I/O	
36	CD09	I/O		116	DA12	I/O	
37	CD08	I/O		117	DA13	I/O	
38	CD07	I/O		118	DA14	I/O	
39	CD06	I/O		119	DA15	I/O	
40	VSS		Ground	120	VSS		Ground
41	VDD		Power supply	121	VDD		Power supply
42	CD05	I/O		122	DA16	I/O	
43	CD04	I/O		123	DA17	I/O	
44	CD03	I/O		124	DA18	I/O	
45	CD02	I/O	CPU data bus	125	DA19	I/O	
46	CD01	I/O		126	DA20	I/O	
47	CD00	I/O		127	DA21	I/O	
48	/DTACK	O	DTACK signal output	128	DA22	I/O	
49	SI0	I		129	DA23	I/O	
50	SI1	I		130	DA24	I/O	External memory data bus
51	SI2	I		131	DA25	I/O	
52	SI3	I		132	DA26	I/O	
53	SI4	I	Serial data input	133	DA27	I/O	
54	SI5	I		134	DA28	I/O	
55	SI6	I		135	DA29	I/O	
56	SI7	I		136	DA30	I/O	
57	VSS		Ground	137	DA31	I/O	
58	VDD		Power supply	138	VDD		Power supply
59	SO0	O		139	VSS		Ground
60	SO1	O		140	A00	O	
61	SO2	O		141	A01	O	
62	SO3	O		142	A02	O	
63	SO4	O	Serial data output	143	A03	O	
64	SO5	O		144	A04	O	
65	SO6	O		145	A05	O	
66	SO7	O		146	A06	O	
67	DB00	I/O		147	A07	O	External memory address bus
68	DB01	I/O		148	A08	O	
69	DB02	I/O		149	A09	O	
70	DB03	I/O		150	A10	O	
71	DB04	I/O		151	A11	O	
72	DB05	I/O		152	A12	O	
73	DB06	I/O	Parallel data bus	153	A13	O	
74	DB07	I/O		154	A14	O	
75	DB08	I/O		155	A15/RAS	O	External memory address bus/Row address strobe
76	DB09	I/O		156	A16/CAS	O	External memory address bus/Column address strobe
77	DB10	I/O		157	A17/CE	O	External memory address bus/Chip enable
78	DB11	I/O		158	/WE	O	External memory write enable
79	DB12	I/O		159	/OE	O	External memory output enable
80	VDD		Power supply	160	VDD		Power supply

● AK4520A-VF-E2 (XT802A00) DAC&ADC

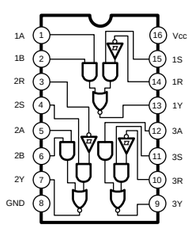
PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	VREFH	I	Positive Voltage Reference Input, VA	15	MCLK	I	Master Clock Input
2	VREFL	I	Negative Voltage Reference Input, AGND	16	DEM0	I	De-emphasis Frequency Select
3	AINR+	I	Rch Analog Positive Input	17	DEM1	I	De-emphasis Frequency Select
4	AINR-	I	Rch Analog Negative Input	18	TST3	I/O	
5	AINL+	I	Lch Analog Positive Input	19	TST2	I/O	Test Pins (Pull Down Pins)
6	AINL-	I	Lch Analog Negative Input	20	TST1	I	
7	VA	-	Analog Power Supply	21	VD	-	Digital Power Supply
8	AGND	-	Analog Ground	22	DGND	-	Digital Ground
9	DIF0	I	Audio Data Interface Format	23	/PWDA	I	DAC Power-Down Mode
10	DIF1	I	Audio Data Interface Format	24	/PWAD	I	ADC Power-Down Mode
11	LRCK	I	Input/Output Channel Clock	25	CMODE	I	Master Clock Select ("H":384fs,"L":256fs)
12	SCLK	I	Audio Serial Data Clock	26	AOUTL	O	Lch Analog Output
13	SDTI	I	Audio Serial Data Input	27	AOUTR	O	Rch Analog Output
14	SDTO	O	Audio Serial Data Output	28	VCOM	O	Common Voltage Output, VA/2

● YM3436 (XG948A00) DIR2 (Digital Format Interface)

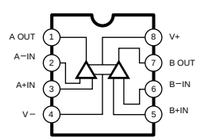
PIN No.	NAME	I/O	FUNCTION	PIN No.	NAME	I/O	FUNCTION
1	DAUX	I	Auxiliary input for audio data	23	RSTN	I	System reset input
2	HDLT	O	Asynchronous buffer operation flag	24	Vdda		VCO section power (+5V)
3	DOUT	O	Audio data output	25	CTLN	I	VCO control input N
4	VFL	O	Parity flag output	26	PCO	O	PLL phase comparison output
5	OPT	O	Fs × 1 Synchronous output signal for DAC	27	(NC)		
6	SYNC	O	Fs × 1 Synchronous output signal for DSP	28	CTLP	I	VCO control input P
7	MCC	O	Fs × 64 Bit clock output	29	Vssa		VCO section power (GND)
8	WC	O	Fs × 1 Word clock output	30	TSTN	I	Test terminal. Open for normal use
9	MCB	O	Fs × 128 Bit clock output	31	KM2	I	Clock mode switching input 2
10	MCA	O	Fs × 256 Bit clock output	32	KMO	I	Clock mode switching input 0
11	SKSY	I	Clock Synchronous control input	33	FS1	O	Channel status sampling frequency display output 1
12	XI	I	Crystal oscillator connection or external clock input	34	FS0	O	Channel status sampling frequency display output 0
13	XO	O	Crystal oscillator connector	35	CSM	I	Channel status output method selection
14	P256	O	VCO oscillating clock connection	36	EXTW	I	External synchronous auxiliary input word clock
15	LOCK	O	PLL lock flag	37	DDIN	I	EIAJ (AES/EBU) data input
16	Vss		Logic section power	38	LR	O	PLL word clock output
17	TC	O	PLL time constant switching output	39	Vdd		Logic section power (+5V)
18	DIM1	I	Data input mode selection	40	ERR	O	Data error flag output
19	DIM0	I	Data input mode selection	41	EMP	O	Channel status emphasis control code output
20	DOM1	I	Data output mode selection	42	CD0	O	3-wire type microcomputer interface data output
21	DOM0	I	Data output mode selection	43	CCK	I	3-wire type microcomputer interface clock input
22	KM1	I	Clock mode switching input 1	44	CLD	I	3-wire type microcomputer interface load input

■ IC BLOCK DIAGRAM

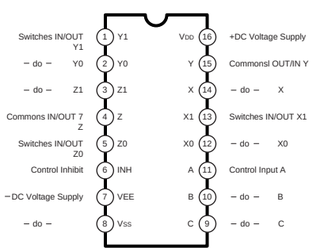
● **SN75124NS** (XN976A00)
IC31
LINE RECEIVER



● **NJM5532M** (XC011A00)
IC46, IC47
OP AMP



● **TC4053BF** (XB738A00)
IC43
MULTIPLEXER



● HD64F3039F18 (XW700A00) CPU

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	TIOCA3	I/O		41	A18/P52	O	Address bus
2	TIOCB3	I/O		42	A19/P53	O	
3	TIOCA4	I/O	Input capture/output compare	43	P60//WAIT	I	Wait
4	TIOCB4	I/O		44	MD0	I	Mode control
5	TOCXA4	I/O		45	MD1	I	
6	TOCXB4	I/O		46	ϕ	O	System clock
7	MD2	I	Mode control	47	/STBY	I	Standby
8	/ADTRG/TP15/PB7		AD conversion external trigger input	48	/RES	I	Reset
9	TXD0/P90	O	Transmit data	49	NMI		Non-maskable interrupt
10	RXD0/P92	I	Receive data	50	VSS		Ground
11	/IRQ4/SCK0/P94	I	Interrupt request	51	EXTAL	I	Crystal oscillator
12	VSS	-	Ground	52	XTAL	I	
13	D0/P30	I/O		53	VCC		Power supply
14	D1/P31	I/O		54	P63/AS	O	Address strobe
15	D2/P32	I/O		55	P64/RD	O	Read
16	D3/P33	I/O	Data bus	56	P65/WR	O	Write
17	D4/P34	I/O		57	/RESO/FWE	I/O	Reset output/write enable signal
18	D5/P35	I/O		58	AVSS	-	Ground
19	D6/P36	I/O		59	P70/AN0	I	
20	D7/P37	I/O		60	P71/AN1	I	
21	VCC	-	Power supply	61	P72/AN2	I	
22	A0/P10	O		62	P73/AN3	I	Analog input
23	A1/P11	O		63	P74/AN4	I	
24	A2/P12	O		64	P75/AN5	I	
25	A3/P13	O	Address bus	65	P76/AN6	I	
26	A4/P14	O		66	P77/AN7	I	
27	A5/P15	O		67	AVCC	-	Power supply
28	A6/P16	O		68	P80//IRQ0	I	Interrupt request
29	A7/P17	O		69	P81//IRQ1	I	
30	VSS	-	Ground	70	P91/TXD1	O	Transmit data
31	A8/P20	O		71	P93/RXD1	I	Receive data
32	A9/P21	O		72	P95/SCK1/IRQ5	I	Interrupt request
33	A10/P22	O		73	PA0/TP0/TCLKA	I	
34	A11/P23	O		74	PA1/TP1/TCLKB	I	Clock input
35	A12/P24	O	Address bus	75	PA2/TP2/TIOCA0/TCLKC	I	
36	A13/P25	O		76	PA3/TP3/TIOCB0/TCLKD	I	
37	A14/P26	O		77	A23	O	
38	A15/P27	O		78	A22	O	Address bus
39	A16/P50	O		79	A21	O	
40	A17/P51	O		80	A20	O	

● SM5844AF (XW097A00) Sample Converter

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	DI	I	Input data	23	OW20N	I	Output format setting*1
2	DI	I		24	OW20N	I	
3	BCKI	I	Input side bit clock	25	IISN	I	IIS output mode select
4	BCKI	I		26	IISN	I	H: normal L: IILS
5	LRCI	I	Input side word clock	27	STATE	O	Output which shows internal operation
6	ICLK	I	Input side system clock input	28	TST1N	I	Diza ON/OFF select
7	ICKSL	I	Input side system clock select	29	TST2N	I	Test
8	IFM1	I	Input format setting	30	RSTN	I	Reset
9	IFM1	I		31	RSTN	I	
10	IFM2	I		32	VSS	-	Ground
11	IFM2	I		33	VSS	-	
12	VDD	-	Power supply	34	SLAVE	I	Mode select of BCKO and LRCO
13	VDD	-		35	SLAVE	I	H: input L: output
14	DMUTE	I	Mute	36	THRUN	I	Slue mode setting of DOUT
15	DMUTE	I		37	THRUN	I	
16	MCOM	I	17 to 20 pin control select	38	OCKSL	I	Output side system clock select
17	MDT/FSI1	I	MCDM H: data input L: de-emphasis clock select	39	OCLK	I	Output side system clock input
18	MCK/FSI2	I	MCDM H: Bit clock of data input L: de-emphasis clock select	40	LRCO	I/O	Output side word clock input/output
19	MLEN/DEEM	I	MCDM H: data word latch clock	41	BCKO	I/O	Output side Bit clock input/output
20	MLEN/DEEM	I	L: de-emphasis on/off control	42	BCKO	I/O	
21	OW18N	I	Output format setting*1	43	DOUT	O	Data Out
22	OW18N	I		44	DOUT	O	

IMP1	IMP2	Word length	Data sequence	Data position
L	L	16 Bit	MBS first	Stuffs back
L	H	20 Bit	MSB first	Stuffs back
H	L	20 Bit	MSB first	Stuffs ahead
H	H	20 Bit	LSB first	Stuffs back

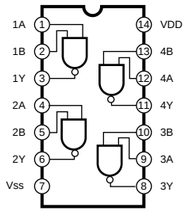
*1 IISN: H

Output format		OW20N	OW18N
16 bit	Stuffs back	H	H
18 bit		H	L
20 bit		L	H
	Stuffs ahead	L	L

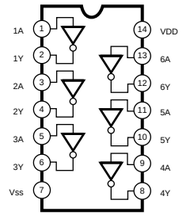
IISN: L

Output format		OW20N	OW18N
16 bit	IIS MODE Stuffs ahead	H	H
18 bit		H	L
20 bit		L	H
		L	L

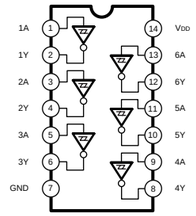
● **HD74HC00FPEL** (XP250A00)
IC29, IC50, IC66
NAND



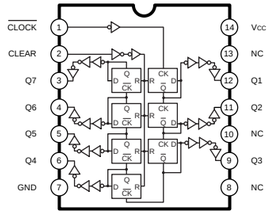
● **TC74HC04AF** (XS993A00)
● **TC74HCU04AF-TP1**(XD660A00)
IC6, IC52, IC65
Hex Inverter



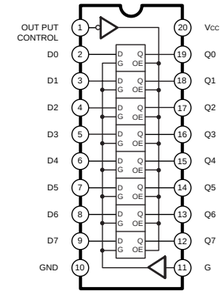
● **TC74HC14AF-TP1**(XD657A00)
IC4, IC7, IC24
Hex Inverter



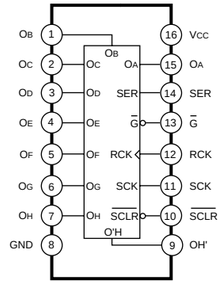
● **TC74HC4024AF**(XT546A00)
IC25
COUNTER



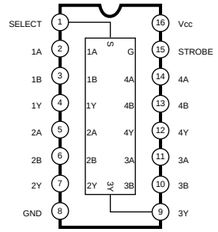
● **TC74HC573AF**(XH224A00)
IC2
T-LATCCHES



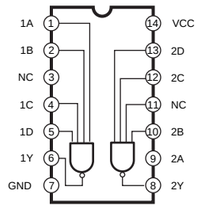
● **SN74HC595NSR**(XW108A00)
IC11, IC58, IC59, IC60
SHIFT REGIST



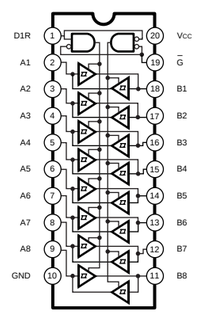
● **SN74HC157NSR**(XW110A00)
IC16, IC34
Quad 2 to 1 Multiplexer



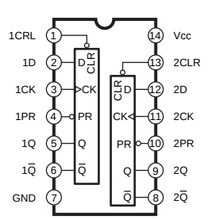
● **TC74HC20AF**(XW092A00)
IC5, IC8, IC63
NAND



● **TC74HC245AF**(XS720A00)
IC14, IC15
Octal 3-State Bus Transceiver

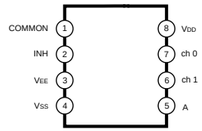


● **TC74HC74AF**(XP003A00)
IC54, IC57, IC64, IC67
Dual D-Type Flip-Flop

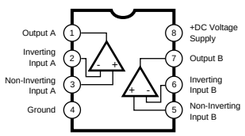


INPUTS				OUTPUTS	
PR	CLR	CLK	D	Q	Q
L	H	X	X	H	L
H	L	X	X	L	H
L	L	X	X	H	H
H	H	↑	H	H	L
H	H	↑	L	L	H
H	H	L	X	Q_0	$\overline{Q}_0$

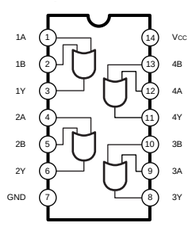
● **TC4W53FU** (XR769A00)
2-Channel
IC53
Multiplexer/Demultiplexer



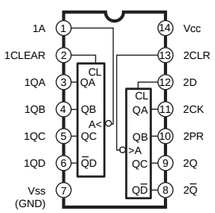
● **NJM4556AMT1** (XQ138A00)
● **NJM2068MD-T1** (XJ553A00)
IC40, IC41, IC42, IC44, IC45
Dual Operation Amplifier



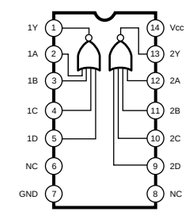
● **TC74HC32AF**(XN241A00)
IC10, IC23, IC51, IC55
Quad 2 Input OR



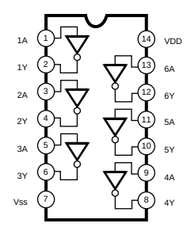
● **TC74HC393AF-TP1**(XE052A00)
IC56
BINARY COUNTER



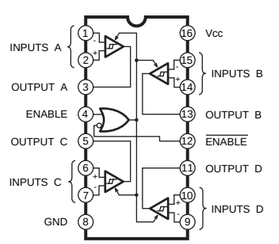
● **TC74HC4002AF**(XW138A00)
IC61, IC62
NOR



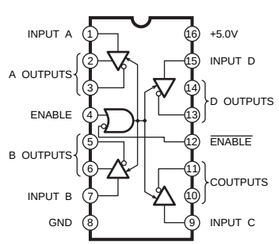
● **HD74LS06FPEL**(XH610A00)
IC37
Hex Inverter



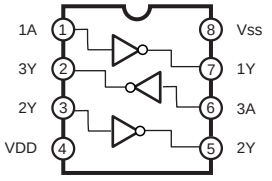
● **DS26C32ATMX**(XU815A00)
IC33
LINE RECEIVER



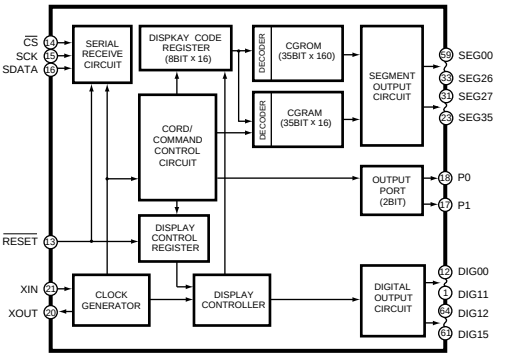
● **AM26LS31M** (XN919A00)
IC32
LINE DRIVER



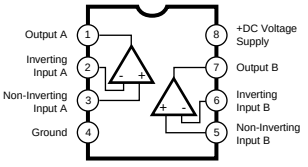
● **TC7W04FU**(XQ805A00)
INVERTER



● **M66004FP** (XT828A00)
FL DRIVER

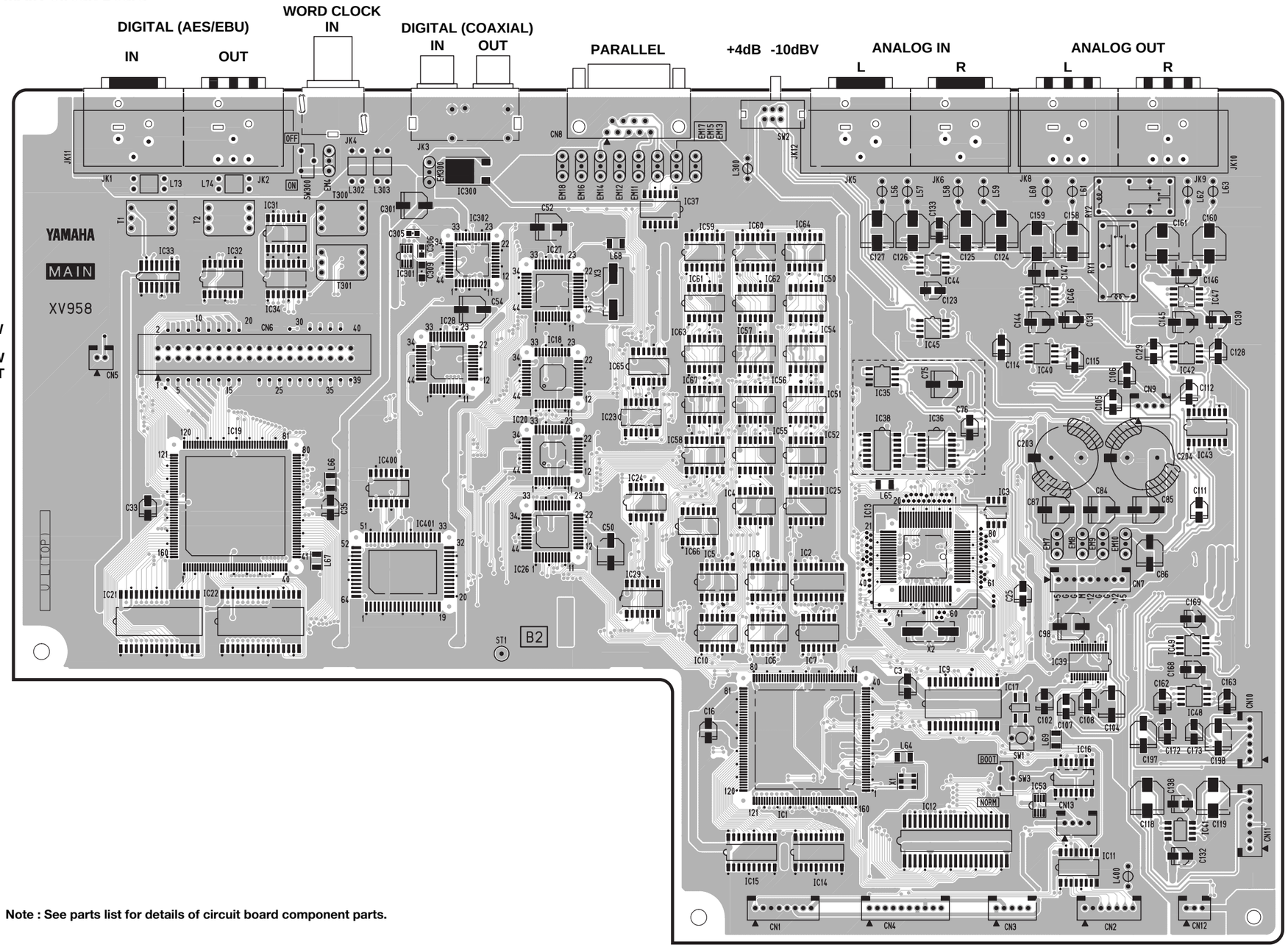


● **NJM2115M-T1**(XS511A00)
OP AMP



■ CIRCUIT BOARDS

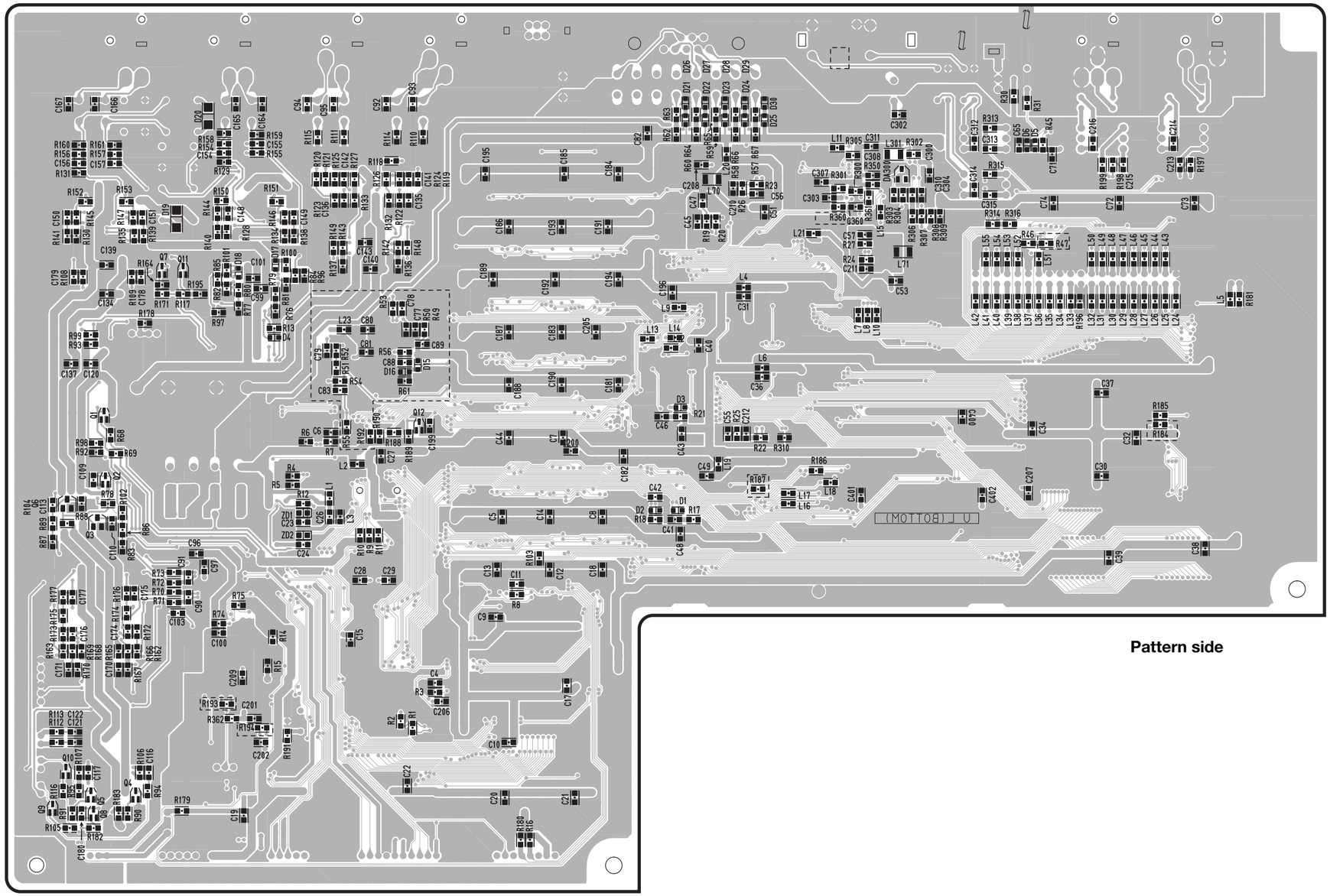
• MAIN Circuit Board



Component side

Note : See parts list for details of circuit board component parts.

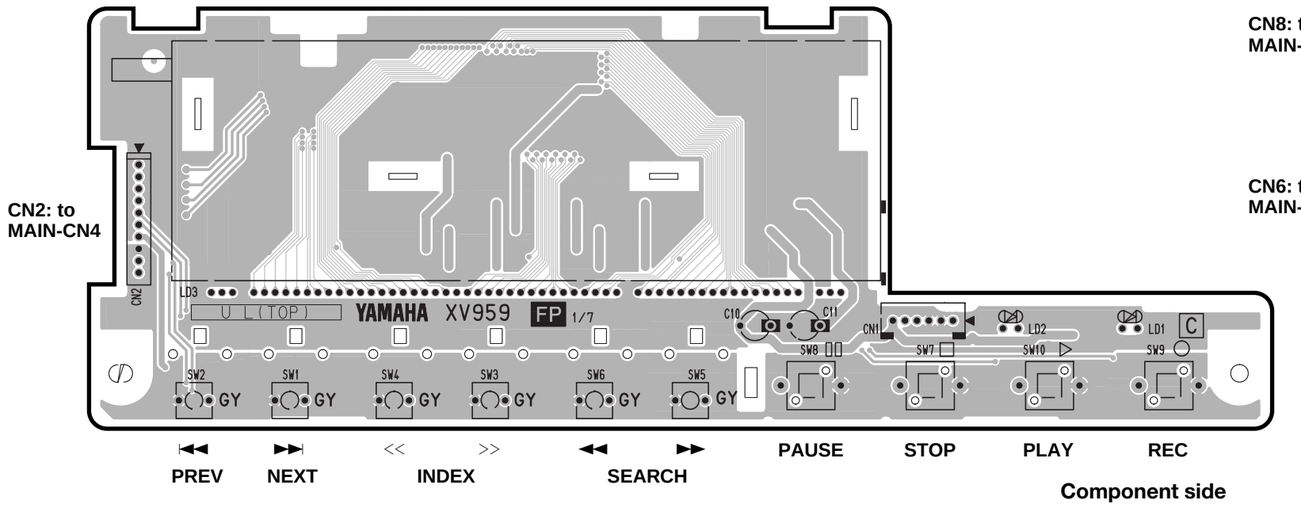
MAIN: 3NA-V354050 /2



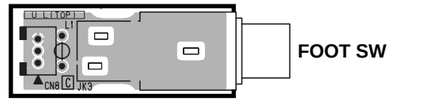
Pattern side

• FP Circuit Board

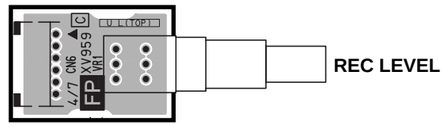
FP 1/7



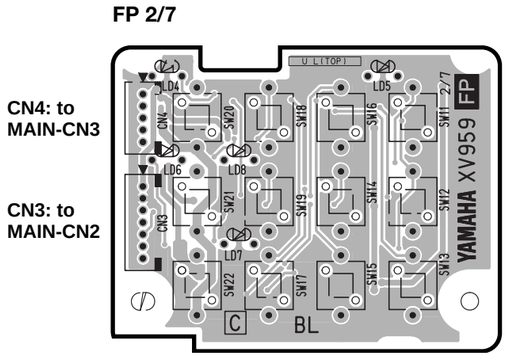
FP 6/7



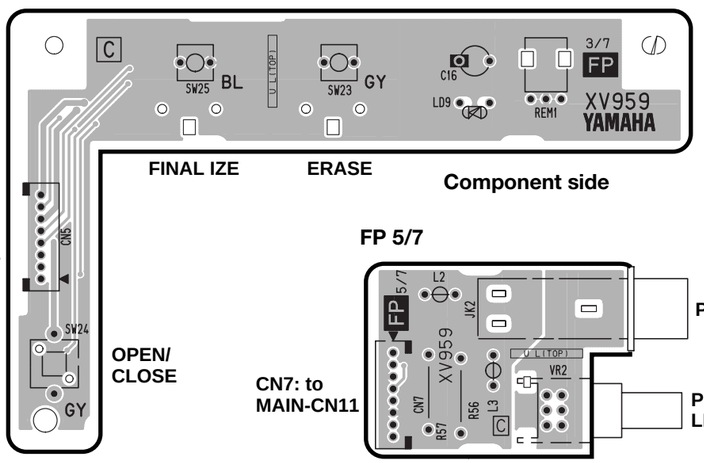
FP 4/7



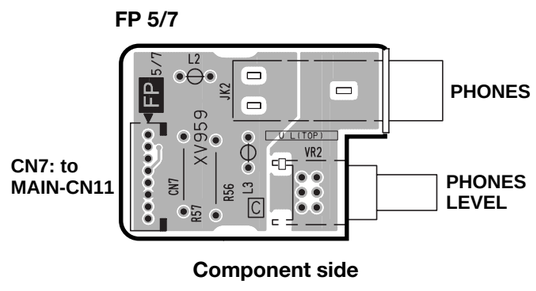
FP 2/7



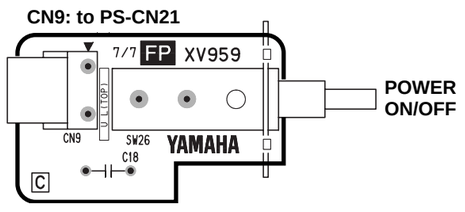
FP 3/7



FP 5/7



FP 7/7

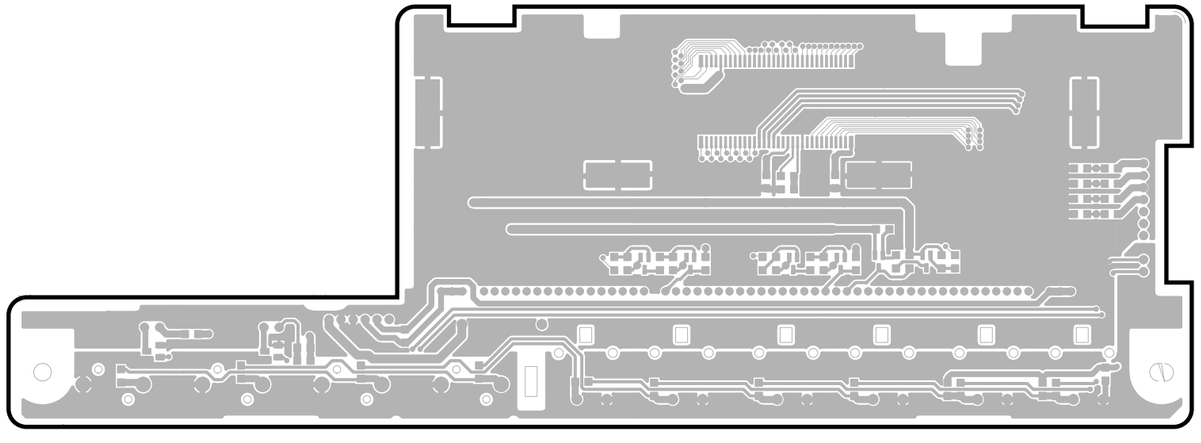


SWITCH TABLE

SW20 PEAK HOLD	SW18 TIME DISPLAY	SW16 INPUT SELECT	SW11 UTILITY
SW21 REC MUTE	SW19 UV22	SW14 REPEAT	SW12 A-B
SW22 SYNC REC	SW17 AUTO	SW15 INDEX INC	SW13 TRACK INC

• **FP Circuit Board**

FP 1/7

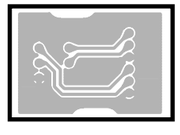


Pattern side

FP 6/7

Pattern side

FP 4/7

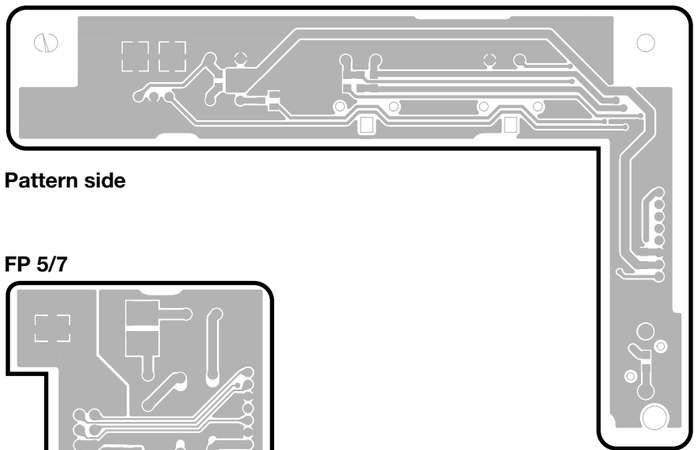


Pattern side

FP 2/7

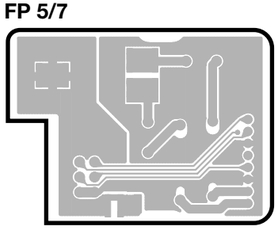
Pattern side

FP 3/7



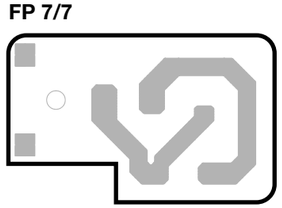
Pattern side

FP 5/7



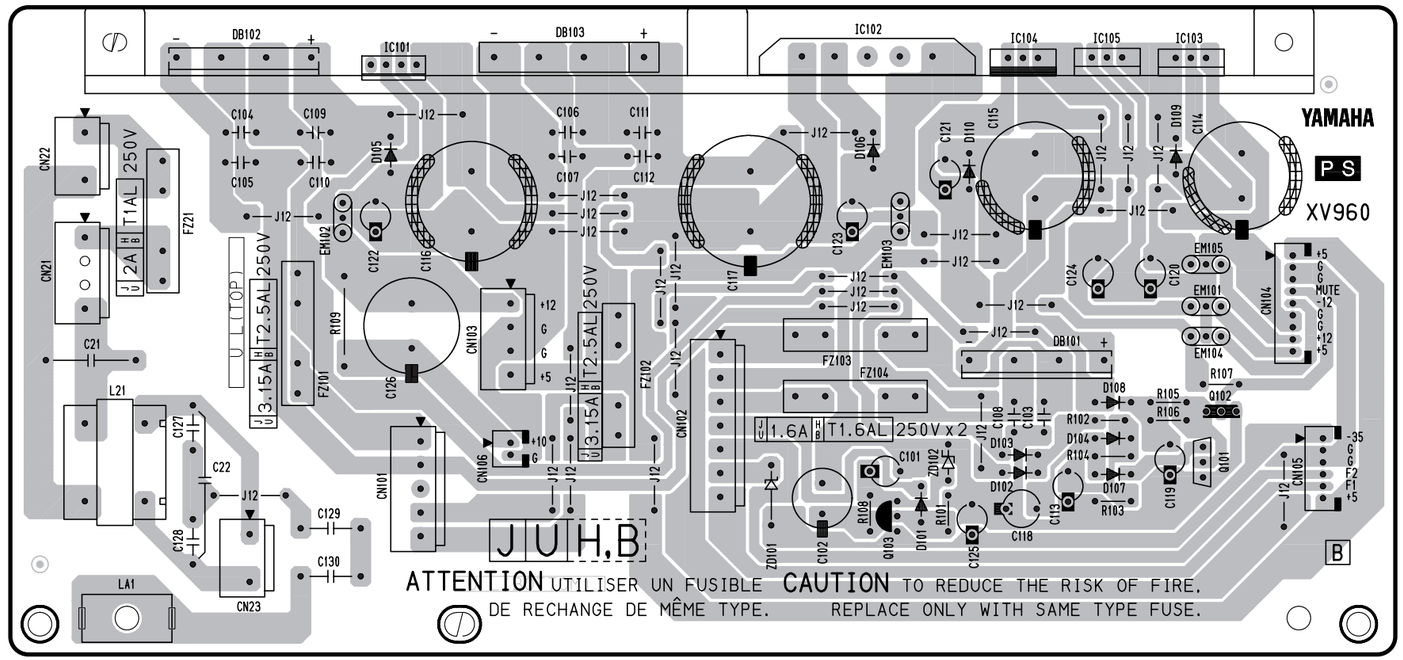
Pattern side

FP 7/7



Pattern side

• **PS Circuit Board**



	J,U			H,B		
FZ21	KB00357	2A	250V	KB00304	T1AL	250V
FZ101	KB00360	3.15A	250V	KB00308	T2.5AL	250V
FZ102	KB00360	3.15A	250V	KB00308	T2.5AL	250V
FZ103	KB00356	1.6A	250V	KB00306	T1.6AL	250V
FZ104	KB00356	1.6A	250V	KB00306	T1.6AL	250V

PS: 3NA-V354060 ⚠2

TEST PROGRAM

1. Unless otherwise specified, use the following volume and switch settings.

REC LEVEL: Max.
PHONES LEVEL: Max.
GAIN SW: +4dB

Connect the following load resistance to each output terminal.

ANALOG OUT (L, R): 600 ohm
PHONES OUT: 40 ohm

Measuring instruments
Low frequency oscillator, AC voltmeter, Distortion meter, Oscilloscope, CD filter,
FOOT SW, A/D converter unit, D/A converter unit
N.B.: Unless otherwise specified, use 44.1 kHz sampling frequency for the A/D and D/A converter units.

Disk in use

Any music CD
Test CD: ALMEDIO TCD-78
CDRW: TDK CD-RW XA74

2. How to enter the Test Program

While pressing the [UTILITY] and [SYNC REC] buttons, turn on the power switch.
The display will appear as shown below.

DIAG VER0.16

When the display changes as shown below, the test mode will be set.

D0: DIAG IN

3. Proceeding through the Test Program

To select the test program number, use the [NEXT] and [PREV] buttons.
To start the test, press the [STOP] button.

There are 12 TEST programs, as listed below.

Test No.	Description
D1	Fluorescent Display, LED
D2	Key Switch
D3	Remote Control
D4	PARALLEL I/O
D5	EEPROM Initialize
D6	ANALOG Input
D7	COAXIAL Input
D8	AES/EBU Input
D9	WORD CLOCK
D10	AES/EBU THRU
D11	DSP, DRAM
D12	SEARCH

D1 Fluorescent Display and LED

Selecting this program will cause the fluorescent display and LED to light up.
Check that the fluorescent display and all LEDs light up.

D2 Key Switch
Connect the FOOT SW to the FOOT SW jack and select this test program.
The display will appear as shown below.

D2: FOOT SW

Turn on the FOOT SW. If the check result is OK, move to the next switch check. The switches are tested in the following order.

FOOT SW -> OPEN/CLOSE -> ERASE -> FINALIZE -> PEAK HOLD -> TIME DISPLAY -> INPUT SELECT-> UTILITY -> REC MUTE -> UV22 -> REPEAT -> A-B -> SYNC REC -> AUTO -> INDEX INC ->TRACK INC -> PREV -> NEXT -> INDEX<< ->INDEX>> -> SEARCH<< -> SEARCH>> ->PAUSE ->STOP-> PLAY ->REC

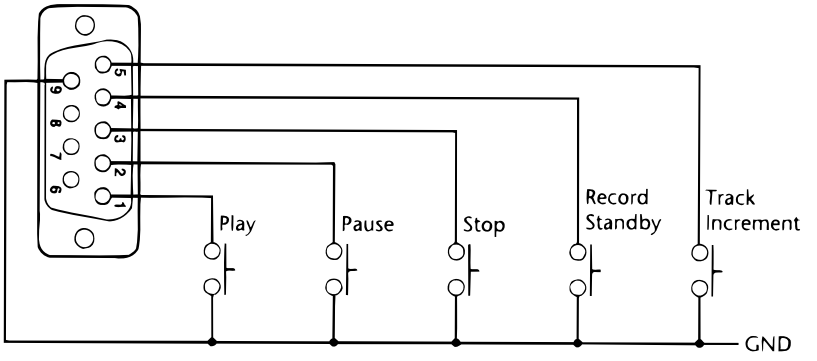
D3 Remote Control
When this program is selected, the display will appear as shown below.

D3: OPEN/C

Press the OPEN/CLOSE button on the remote control unit. When the check result is OK,
the display will appear as shown below.

D3: RM END

D4 Parallel I/O
Short the terminal as shown below and check that the main unit operates properly as commanded.



D5 EEPROM Initialize
Execute testing, and the EEPROM will be initialized.

D6 ANALOG Input
Input a 1 kHz, -10 dBm signal into the ANALOG IN L and R, check that the output level at ANALOG OUT L and R is 0 dBm ± 1 dB.
Also, check that a full-scale, -18.5 dBm ± 1 dB signal is output from COAXIAL OUT and AES/EBS OUT.
Set the GAIN switch to -10 dBV, check that the output level at ANALOG OUT L and R is +11.8 dBm ± 1 dB.

D7 COAXIAL Input
Input a 1 kHz, full-scale signal into the COAXIAL IN, check that the output level at ANALOG OUT L and R is +18.5 dBm ± 1 dB.
Also, check that a 1 kHz, full-scale signal is output from COAXIAL OUT, AES/EBS OUT.

D8 AES/EBU Input
Input a 1 kHz, full-scale signal into the AES/EBS IN, check that the output level at ANALOG OUT, L and R is +18.5 dBm ± 1 dB.
Also, check that a 1 kHz, full-scale signal is output from COAXIAL OUT, AES/EBS OUT.

D9 WORD CLOCK
Input a 1 kHz, full-scale signal into the AES/EBS IN, and a 44.1 kHz word clock intothe WORD CLOCK terminal, check that a 1 kHz, full-scale signal is output from AES/EBS OUT.

D10 AES/EBU THRU
Input a 1 kHz, full-scale signal into AES/EBS IN, check that a 1 kHz, full-scale signal is output from AES/EBS OUT.

D11 DSP and DRAM
Input a 1 kHz, full-scale signal into AES/EBS IN, check that a signal is output from AES/EBS OUT about 2 seconds later.

D12 SEARCH
Load a music CD into the drive unit.
Check that the sound of the CD being fast forwarded is output from ANALOG OUT L and R and that the meter responds correctly.
After the above check, press the [NEXT] key; the display will appear as shown below and testing will end.

DIAG END

Exit the TEST mode
Turn off the power switch then turn on again.
Pressing the SW1 on the MAIN circuit board will set to regular mode.

■ INSPECTION

✻ Load a test CD (ALMEDIO TCD-784) into the drive unit.

1. Playback Level & Frequency Response
Playback the second trac (1 kHz), the third trac (20 Hz) and the sixth trac (20 kHz) on the test CD, and check that the output level at ANALOG OUT L and R is within the range of +18.5 dBm +1/-2 dB. Also check that a 1 kHz, full-scale signal is output from COAXIAL OUT, AES/EBS OUT respectively.

2. Playback Distortion Factor
Playback the second trac (1 kHz) on the test CD, and check that the distortion factor measured at ANALOG OUT L and R is less than 0.03%.

3. Playback Residual Noise
Play back the seventh trac (no sound) on the test CD, and check that the residual noise measured at ANALOG OUT L and R is less than -77 dBm.

4. Emphasis
Using the output level obtained at ANALOG OUT L and R when the second trac (1 kHz EMP:OFF) on the test CD is played back at 0 dB, check that the level obtained when the twelfth trac (5 kHz EMP:ON) is played back is -4.53 dB ± 1 dB.

✻ Load a CD-RW disk (TDK CD-RW XA74) into the drive unit to inspect the following items.

5. Recording Playback Level & Frequency Response
Select ANALOG from the INPUT SELECT switch and press the REC key. (REC stand-by state)Input the signals of the frequencies and levels in the following table into ANALOG IN and check that the output of the specified level is obtained at ANALOG OUT L and R as well as COAXIAL OUT, AES/EBS OUT.

INPUT		ANALOG OUT OUT L,R	COAXIAL OUT AES/EBS OUT
FREQ	LEVEL		
20 Hz	0 dBm	+10 dBm +1/-2dB	FULL-SCALE,-8.5 +/- 1dB
1 kHz	↓	↓	↓
1 kHz	↓	↓	↓

6. Recording Playback Distortion Factor

Select ANALOG from the INPUT SELECT switch and press the REC key (REC stand-by state).
Input a 1 kHz, +8 dB signal into ANALOG IN L and R and check that the distortion factor at ANALOG OUT L and R is less than 0.03%.

7. Recording Playback Residual Noise

Select ANALOG from the INPUT SELECT switch and press the REC key (REC stand-by state).
Connect a 150 ohm resistor to the 2-3 pins of ANALOG IN L and R and check that the residual noise at ANALOG OUT L and R is less than -73 dBm.

8. Headphone Output Level, Distortion Factor

Select ANALOG from the INPUT SELECT switch and press the REC key (REC stand-by state).
Input a 1 kHz, 0 dB signal into ANALOG IN L and R and check that the output level at PHONES OUT, L and R is +3 dBm ± 2 dB.
Also, vary the input level of ANALOG IN L and R so as to obtain the +8 dBm ± 1 dB (100W output power) at PHONES OUT L and R and check that the distortion factor is less than 5%.

9. Digital Input Level

Select COAXIAL from the INPUT SELECT switch and press the REC key (REC stand-by state).
Input a 1 kHz, full-scale signal into COAXIAL IN and check that +18.5 dBm ± 1 dB signal is output from ANALOG OUT L and R.
Also, input a 1 kHz, full-scale signal into AES/EBS IN and check that a +18.5 dBm ± 1 dB signal is output from ANALOG OUT L and R.

10. Recording check

Select ANALOG from the INPUT SELECT switch.
Press the AUTO button, and then press the REC button (AUTO REC START mode).
Input 1 kHz, 0 dBm signals into the ANALOG IN L and R to record them on the CD-RW disk.
Playback the recorded signals to check that the recording has been made properly.

■ ERROR MESSAGES

If the CDR1000 displays an error message, follow the instructions below.

Error Number	Remarks
062900	✻1
062800	
020401	
023A02	
023A03	
052000	
052400	
020408	
030C0A	
052100	
0409XX	Change media or failure✻2
056400	✻1
056401	
053008	Change media
053100	Change media
023005	Change media (PMA error)
057301	Change media (PMA FULL)
037300	Change media (TNO FULL)
031100	Change media
037303	✻1
2XXXXX	✻2
300001	
400001	
500051	
500053	
500054	
500055	
500056	

1. If the error cannot be fixed by opening or closing the disc tray, and the error remains even after powering off and on, change the CDR unit.

2. If the error remains even after powering off and on, repare the Circuit board.

PROFESSIONAL AUDIO CD RECORDER

CDR1000

PARTS LIST

CONTENTS

Notes : DESTINATION ABBREVIATIONS

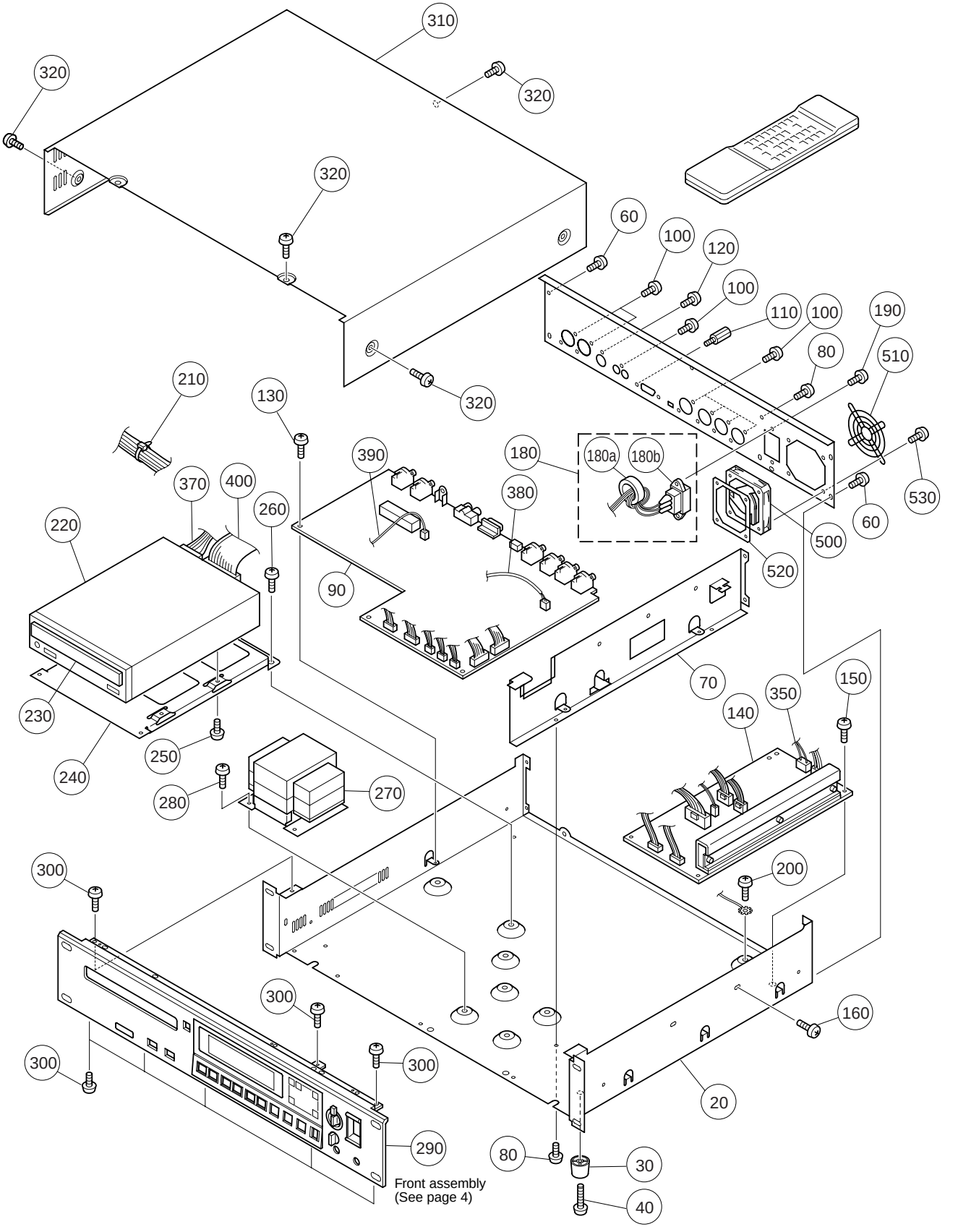
A : Australian model	M : South African model
B : British model	O : Chinese model
C : Canadian model	Q : South-east Asia model
D : German model	T : Taiwan model
E : European model	U : U.S.A. model
F : French model	V : General export model (110V)
H : North European model	W: General export model (220)
I : Indonesian model	N,X : General export model
J : Japanese model	Y : Export model

■ WARNING

Components having special characteristics are marked ⚠ and must be replaced with parts having specification equal to those originally installed.

- The numbers “QTY” show quantities for each unit.
- The parts with “--” in “PART NO.” are not available as spare parts.
- This mark “ } ” in the REMARKS column means these parts are interchangeable.
- The second letter of the shaded ( ) part number is O, not zero.
- The second letter of the shaded ( ) part number is I, not one.

OVERALL ASSEMBLY



	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
		--	OVERALL ASSEMBLY			CDR1000 J,U,V,H,W,B		
*		--	Overall Assembly			J (V4570900)		
*		--	Overall Assembly			U,V (V4571000)		
*		--	Overall Assembly			H,W (V4571100)		
*		--	Overall Assembly			B (V4571200)		
	3	--	Earth Film			(V521920)	2	
*	10	**V4056900**	Rear Panel	J		J		
*	10	**V4057000**	Rear Panel	U C		U,C		
*	10	**V4057100**	Rear Panel	H B		H,W,B		
	20	--	Bottom Cover			(V405770)		
	30	**CB651110**	Foot	TL-014			4	02
	40	**EP600380**	Bind Head Tapping Screw-B	3.0X16 MFZN2BL			4	01
	60	**VP157000**	Bind Head Tapping Screw-B	A3.0X8 MFZN2BL			6	01
	70	--	Stay			(V405760)		
	80	**VP157000**	Bind Head Tapping Screw-B	A3.0X8 MFZN2BL			4	01
*	90	**V3540500**	Circuit Board	MAIN				
	100	**EP630190**	Bind Head Tapping Screw-B	3.0X8 MFZN2BL			13	01
	110	**VT362500**	Jack Socket	17L-003A3			2	01
	120	**VP156600**	Bind Head Screw	A3.0X6 MFZN2BL				01
	130	**EP600230**	Bind Head Tapping Screw-B	3.0X6 MFZN2BL			3	01
*	140	**V5076400**	Circuit Board	PS J		J		
*	140	**V3540600**	Circuit Board	PS U		U,V		
*	140	**V3540700**	Circuit Board	PS H,B		H,W,B		
	150	**EP600190**	Bind Head Tapping Screw-B	3.0X8 MFZN2BL			4	01
	160	**VP157000**	Bind Head Tapping Screw-B	A3.0X8 MFZN2BL			2	01
	180	--	AC-INLET Assembly	ACIN 250L		(V456760)		
	180a	**VC362700**	Ferrite Core	FR25/15/12-1400L				04
	180b	**VL785200**	AC-IN Connector	AC-P01CR02				03
	190	**VC161100**	Bind Head Tapping Screw-P	3.0X12 MFZN2BL			2	01
	200	**EG340360**	Bind Head Screw	4.0X8 MFZN2BL				01
	210	**CB069250**	Cord Holder	BK-1				01
*	220	**V4580100**	CRW Unit	ACRW100				
*	220a	**V2427600**	Front Panel	ABS				
*	220b	**V3725000**	Tray	PPE X251V BLC1x133				
*	230	**V4572500**	Tray Panel					
	240	--	CDR Angle			(V405980)		
	250	**VP156600**	Bind Head Screw	A3.0X6 MFZN2BL			4	01
	260	**VP157900**	Bind Head Tapping Screw-B	A3.0X6 MFZN2BL			4	01
	270	**XV755A00**	Power Transformer			J		
	270	**XV756A00**	Power Transformer	UL CSA		U,V		
	270	**XV757A00**	Power Transformer	CEE		H,W,B		
	280	**VC688800**	Bind Head Tapping Screw-B	A4.0X8 MFZN2BL			4	01
	285	--	Spacer			(V413330)	2	
	290	--	Front Panel Assembly			(V457240)		
	300	**VP157000**	Bind Head Tapping Screw-B	A3.0X8 MFZN2BL			8	01
	305	**EP600190**	Bind Head Tapping Screw-B	3.0X8 MFZN2BL			2	01
*	310	**V4742200**	Top Cover					
	320	**VP157000**	Bind Head Tapping Screw-B	A3.0X8 MFZN2BL			7	01
	350	--	Wiring Assembly	PSW 340L		(V456770)		
	360	--	Witing Assembly	VR 6P-6P220L		(V456800)		
	370	--	Witing Assembly	CDRW		(V456810)		
	380	--	Witing Assembly	AO 230L		(V456820)		
	390	--	Witing Assembly	DO 180L		(V456830)		
	400	--	Witing Assembly	MAIN TO CDR		(V456840)		
	410	--	Connector Assembly	8 250mm C&C		(VR79090)		
	420	--	Connector Assembly	3 250mm C&C		(VR78240)		
	440	--	Connector Assembly	9 350mm C&C		(VR79280)		
	450	--	Connector Assembly	6 160mm C&C		(VR78720)		
	490	**CB069250**	Cord Holder	BK-1			2	01
*	500	**V4755300**	Fan	MMS-06E12DL				08
	510	--	Finger Guard	FG-06ULB		(V506250)		
	520	**VM964700**	Holder, Fan					09
	530	**VR116500**	Pan Head Screw	SP 4.0X25 MFZN2BL			4	01
			Accessoreis					
		--	Battery	SUM-3N(4S)NE.AB		(VH21490)		
		VN391100	AC Cord	DC-015-J01		J		06
		VB927800	AC Cord	CSA		U,V		08
		VB928000	AC Cord	VDE		H,W		08
		VP204400	AC Cord	BS		B		10
*		**V3496500**	Remort Controller	RC				

*: New Parts

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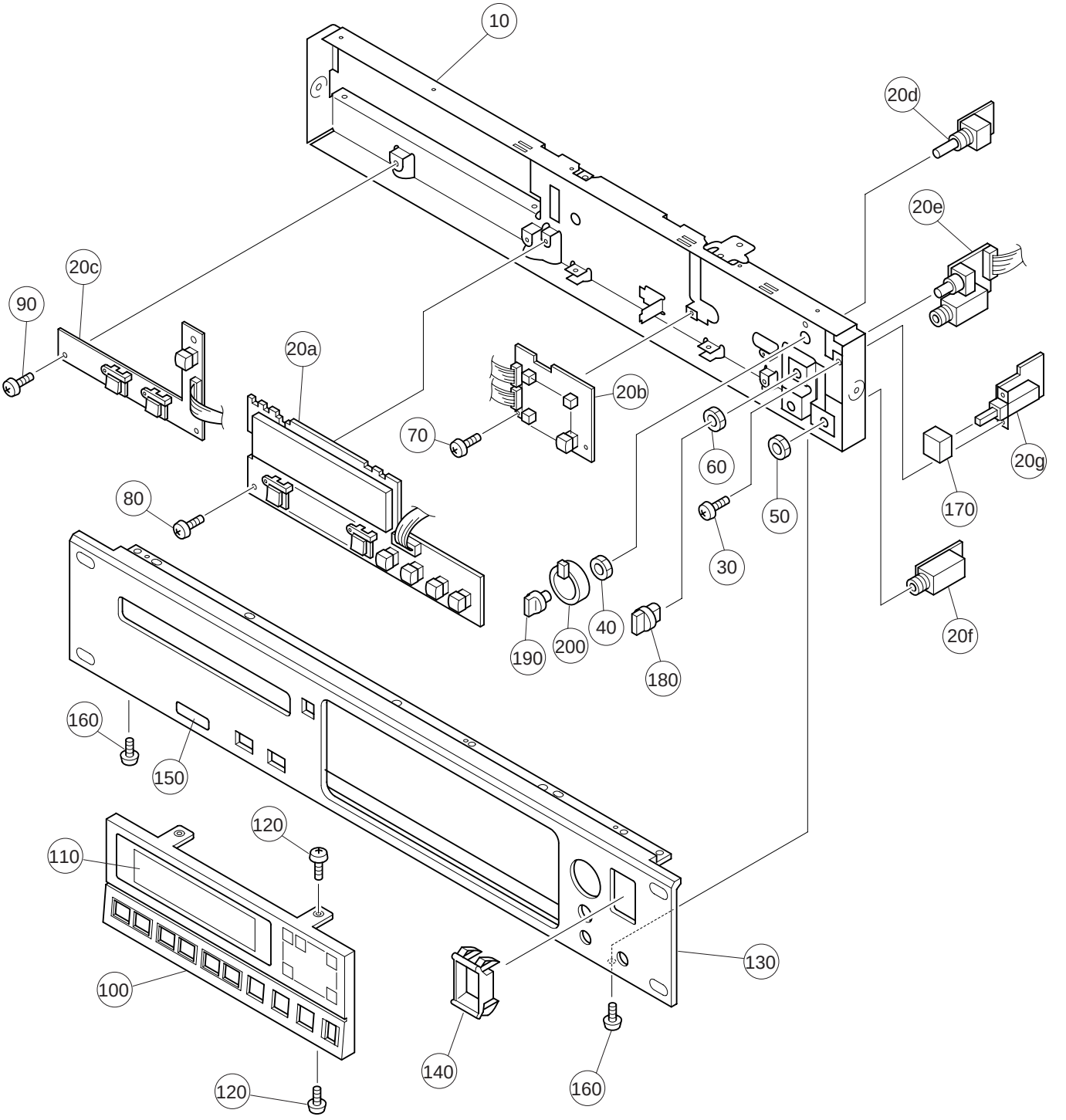
FRONT ASSEMBLY



	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			FRONT ASSEMBLY			CDR1000		
			Front Assembly			(V457240)		
	10	--	Sub Chassis			(V405790)		
*	20a	**AAX08680**	Circuit Board	FP 1/7				
*	20b	**AAX08690**	Circuit Board	FP 2/7				
*	20c	**AAX08700**	Circuit Board	FP 3/7				
*	20d	**AAX08710**	Circuit Board	FP 4/7				
*	20e	**AAX08720**	Circuit Board	FP 5/7				
*	20f	**AAX08730**	Circuit Board	FP 6/7				
*	20g	**AAX08740**	Circuit Board	FP 7/7				
	30	**VP156600**	Bind Head Screw	A3.0X6 MFZN2BL			2	01
	40	**V2431400**	Hexagonal Nut	9.0				01
	50	**V2431400**	Hexagonal Nut	9.0				01
	60	**V2431400**	Hexagonal Nut	9.0			2	01
	70	**EP600190**	Bind Head Tapping Screw-B	3.0X8 MFZN2BL			2	01
	80	**EP600190**	Bind Head Tapping Screw-B	3.0X8 MFZN2BL			3	01
	90	**EP600190**	Bind Head Tapping Screw-B	3.0X8 MFZN2BL			2	01
*	100	**V4058500**	Sub Panel					
*	110	**V4058900**	Window					
	120	**EP600190**	Bind Head Tapping Screw-B	3.0X8 MFZN2BL			4	01
*	130	**V4059500**	Front Panel					
	140	**VL813000**	Escutcheon, Power Switch					03
	150	--	Filter			(V405910)		
	160	**VP157000**	Bind Head Tapping Screw-B	A3.0X8 MFZN2BL			4	01
	170	**VL812900**	Power Switch Knob			POWER ON/OFF		03
	180	**VA029300**	Knob			PHONES LEVEL		02
	190	**VF888400**	Knob	IN		REC LEVEL L		02
	200	**VF888500**	Knob	OUT		REC LEVEL R		02
	250	--	Connector Assembly	8 200mm C&C 2mm		(VR79080)		
	260	--	Connector Assembly	7 250mm C&C 2mm		(VR78920)		
	270	--	Connector Assembly	5 250mm C&C 2mm		(VR78580)		

*: New Parts

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■ ELECTRICAL PARTS

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			ELECTRICAL PARTS					
*		**V3540500**	Circuit Board	MAIN		(XV958B0)		
*		**AAX08680**	Circuit Board	FP 1/7		(XV959C0)		
*		**AAX08690**	Circuit Board	FP 2/7		(XV959C0)		
*		**AAX08700**	Circuit Board	FP 3/7		(XV959C0)		
*		**AAX08710**	Circuit Board	FP 4/7		(XV959C0)		
*		**AAX08720**	Circuit Board	FP 5/7		(XV959C0)		
*		**AAX08730**	Circuit Board	FP 6/7		(XV959C0)		
*		**AAX08740**	Circuit Board	FP 7/7		(XV959C0)		
*		**V5076400**	Circuit Board	PS		J (XV960B0)		
*		**V3540600**	Circuit Board	PS		U,V (XV960B0)		
*		**V3540700**	Circuit Board	PS		H,W,B (XV960B0)		
*		**AAX08680**	Circuit Board	FP 1/7		(XV959C0)		
*		**AAX08690**	Circuit Board	FP 2/7		(XV959C0)		
*		**AAX08700**	Circuit Board	FP 3/7		(XV959C0)		
*		**AAX08710**	Circuit Board	FP 4/7		(XV959C0)		
*		**AAX08720**	Circuit Board	FP 5/7		(XV959C0)		
*		**AAX08730**	Circuit Board	FP 6/7		(XV959C0)		
*		**AAX08740**	Circuit Board	FP 7/7		(XV959C0)		
*		--	FL Holder			(V405990)		
		VT810300	Push Button			FINALIZE		03
		VT839000	Push Button			PREV,NEXT,INDEX(<<,>>), SEARCH(<<,>>),ERASE	7	03
		V3117400	Button			OPEN/CLOSE		02
		V3259500	Button			PEAK HOLD,TIME DISPLAY, INPUT SELECT,UTILITY, REC MUTE,UV22,REPEAT,A-B, SYNC REC,AUTO,INDEX INC, TRACK INC	12	02
*		**V4060100**	Button	REC				
*		**V4060300**	Button	PLAY				
*		**V4060400**	Button	STOP				
*		**V4060500**	Button	PAUSE				
		--	LED Spacer	BL		(V511560)		
	CN1	**VB390200**	Connector Base Post	PH- 6P TE				01
	CN2	--	Connector Assembly	10 200mm B&C 2mm		(VY91980)		
	CN3	**VB390300**	Connector Base Post	PH- 7P TE				01
	CN4	**VB390100**	Connector Base Post	PH- 5P TE				01
	CN5	**VB390400**	Connector Base Post	PH- 8P TE				01
	CN6	**VB858500**	Connector Base Post	PH- 6P SE				01
	CN7	**VB390400**	Connector Base Post	PH- 8P TE				01
	CN8	**VB389900**	Connector Base Post	PH- 3P TE				01
	CN9	--	Base Post Connector	VA- 2P SE		(V459160)		
	IC1	**XT828A00**	IC	M66004FP		FL DRIVER		07
	J1	**RD250000**	Carbon Resistor(chip)	0.0 0.0J				01
	J2	**UB445100**	Monolithic Ceramic Cap.	F0.1 16V Z				01
	J4	**UB445100**	Monolithic Celamic Cap.	F0.1 16V Z				01
	JK2	**LB302070**	Phone Jack	STEREO HLJ0544		PHONES LEVEL		03
	JK3	**LB301800**	Phone Jack	MONO HLJ0544		FOOT SW		03
	L1	**VB835000**	Coil	FL5R200QNT				01
	-3	**VB835000**	Coil	FL5R200QNT				01
	LD1	**VT942200**	LED	SLZ-135B RE		REC		01
*	LD2	**V5295900**	LED	SLZ-235B GR		PLAY		01
*	LD3	**V3744000**	Fluorescent Display	CM1800D				
	LD4	**V4845500**	LED	SLZ-435B-08-T1(YE)		PEAK HOLD,UTILITY,		01
	-8	**V4845500**	LED	SLZ-435B-08-T1(YE)		REC MUTE,UV22,AUTO		01
	Q1	**VV655400**	Digital Transistor	DTC114EKA TP				01
	Q2	**VV655400**	Digital Transistor	DTC114EKA TP				01
	Q3	**VQ986700**	Transistor	2SC4081T106				01
	Q4	**VR936300**	Transistor	2SA1576AT106				01
	Q5	**VQ986700**	Transistor	2SC4081T106				01
	Q6	**VR936300**	Transistor	2SA1576AT106				01
	Q7	**VQ986700**	Transistor	2SC4081T106				01
	Q8	**VR936300**	Transistor	2SA1576AT106				01
	Q9	**VV655400**	Digital Transistor	DTC114EKA TP				01
	-13	**VV655400**	Digital Transistor	DTC114EKA TP				01
*	REM1	**V4579700**	Remote Signal Sensor	NJL62H380A				
	SW1	**VT513600**	Light Touch Switch	EVQ 22C 05B		PREV,NEXT,INDEX(<<,>>),		01
	-6	**VT513600**	Light Touch Switch	EVQ 22C 05B		SEARCH(<<,>>)		01

*: New Parts

RANK: Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	SW7	**V3123600**	Push Switch	SKECAF		PAUSE,STOP,PLAY,REC,		02
	-22	**V3123600**	Push Switch	SKECAF		PEAK HOLD,TIME DISPLAY,		02
						INPUT SELECT,UTILITY,		
						REC MUTE,UV22,REPEAT,A-B,		
						SYNC REC,AUTO,INDEX INC,		
						TRACK INC		
	SW23	**VT513600**	Light Touch Switch	EVQ 22C 05B		ERASE		01
	SW24	**V3123600**	Push Switch	SKECAF		FINALIZE		02
	SW25	**VT513600**	Light Touch Switch	EVQ 22C 05B		OPEN/CLOSE		01
	SW26	**V3127000**	Push Switch	ESB92S23B J.U.C.S		POWER ON/OFF		02
*	VR1	**V4441400**	Rotary Pot.	A 10.0K RK09722		REC LEVEL		
	VR2	**V3123000**	Rotary Variable Resistor	RK09L12B0 A10K X 2		PHONE LEVEL		03
		UB044100	Monolithic Ceramic Cap.	F 0.01 50V Z		C:9		01
		UB445100	Monolithic Ceramic Cap.	F 0.1 16V Z		C:1,2,8,12-15,17		01
		UB051470	Monolithic Ceramic Cap.	SL 47P 50V J		C:3-5		01
		UB052100	Monolithic Ceramic Cap.	SL 100P 50V J		C:6,7		01
		UM388100	Electrolytic Cap.-KS	100.00 6.3V		C:10,16		01
		UM417100	Electrolytic Cap.-KS	10.00 50V				01
		VY675000	Capacitor	0.01 250V J.U.C.S		C:18		01
		UB446100	Ceramic Capacitor-F (chip)	F 1.0 16V Z		C:19		01
		RD256100	Carbon Resistor (chip)	1.0K 0.1 J		R:2,4,22,27,33,36-38,59		01
		RD256270	Carbon Resistor (chip)	2.7K 0.1 J		R:5,6,42-44,60		01
		RD256390	Carbon Resistor (chip)	3.9K 0.1 J		R:7,8,45-47		01
		RD256470	Carbon Resistor (chip)	4.7K 0.1 J		R:21,26,32		01
		RD256820	Carbon Resistor (chip)	8.2K 0.1 J		R:9,10,53-55		01
		RD257100	Carbon Resistor (chip)	10.0K 0.1 J		R:1,3,16,39-41,58		01
		RD257220	Carbon Resistor (chip)	22.0K 0.1 J		R:11,12,23,28,34		01
		RD257270	Carbon Resistor (chip)	27.0K 0.1 J		R:29		01
		RD257470	Carbon Resistor (chip)	47.0K 0.1 J		R:24,30,35		01
		RD255100	Carbon Resistor (chip)	100.0 0.1 J		R:62		01
		RD258100	Carbon Resistor (chip)	100.0K 0.1 J		R:20,25,31		01
		VC731800	Metal Oxide Film Resistor	150.0 1W J		R:56,57	01	
		RD255390	Carbon Resistor (chip)	390.0 0.1 J		R:48-52		01
		RD255470	Carbon Resistor (chip)	470.0 0.1 J		R:13,17-19		01
		RD255560	Carbon Resistor (chip)	560.0 0.1 J		R:14,15		01
*		**V3540500**	Circuit Board	MAIN		(XV958B00)		
	CN1	**VB390400**	Connector Base Post	8P TE				01
	CN2	**VB390300**	Connector Base Post	7P TE				01
	CN3	**VB390100**	Connector Base Post	5P TE				01
	CN4	**VB390600**	Connector Base Post	10P TE				01
	CN5	**VB389800**	Connector Base Post	2P TE				01
	CN6	**VK270300**	Strate Header	HIF3FC40PA-2.54DSA				05
	CN7	**VB390500**	Connector Base Post	9P TE				03
	CN8	**V3584100**	Connector	9P SE				03
	CN9	**VB390000**	Connector Base Post	4P TE				01
	CN10	**VB390200**	Connector Base Post	6P TE				01
	CN11	**VB390400**	Connector Base Post	8P TE				01
	CN12	**VB389900**	Connector Base Post	3P TE				01
	CN13	**VB390000**	Connector Base Post	4P TE				01
	D1	**VT332900**	Diode	1SS355 TE-17				01
	D2	**VT332900**	Diode	1SS355 TE-17				
	D3	**VT332900**	Diode	1SS355 TE-17				
	D4	**VT332900**	Diode	1SS355 TE-17				
	D5	**VT332900**	Diode	1SS355 TE-17				
	D6	**VT332900**	Diode	1SS355 TE-17				
	D17	**VT332900**	Diode	1SS355 TE-17				
	D18	**VT332900**	Diode	1SS355 TE-17				
	D19	**VT532500**	Diode	1SR154-400				01
	D20	**VT532500**	Diode	1SR154-400				01
	DA300	**VU384000**	Diode	HVM17				
	EM4	**FZ006920**	LC Filter	LS MT B271KB				01
	EM7	**FZ006970**	LC Filter	LS MT Y223NB				02
	-10	**FZ006970**	LC Filter	LS MT Y223NB				02
	EM11	**FZ006920**	LC Filter	LS MT B271KB				01
	-18	**FZ006920**	LC Filter	LS MT B271KB				01
	EM300	**FZ006970**	EMI Filter	Y223NB				
	IC1	**XQ962D00**	IC	YSS228E-F		DSP3		20
	IC2	**XH224A00**	IC	TC74HC573AF		T-LATCCHES		04
	IC3	**XT160A00**	IC	93LC56T-I/SN		EEPROM 2K		03

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	IC4	**XD657A00**	IC	TC74HC14AF-TP1		INVERTER		02
*	IC5	**XW092A00**	IC	TC74HC20AF		NAND		
	IC6	**XP250A00**	IC	HD74HC00FPEL		NAND		01
	IC7	**XD657A00**	IC	TC74HC14AF-TP1		INVERTER		02
*	IC8	**XW092A00**	IC	TC74HC20AF		NAND		
	IC9	**XT090A00**	IC	SRM2B256SLMX70		SRAM 256K		07
	IC10	**XN241A00**	IC	TC74HC32AF		OR		01
*	IC11	**XW108A00**	IC	SN74HC595NSR		SHIFT REGISTER		
	IC12	**XV145A00**	IC	KM416C1200CJ-6		DRAM 16M		12
*	IC13	**XW700A00**	IC	CPU		CPU		
	IC14	**XS720A00**	IC	TC74HC245AF		TRANSCEIVER		03
	IC15	**XS720A00**	IC	TC74HC245AF		TRANSCEIVER		03
*	IC16	**XW110A00**	IC	SN74HC157NSR		DATA SELECTOR		
	IC17	**XP226A00**	IC	IC-PST591DMT		RESET		03
*	IC18	**XW097A00**	IC	SM5844AF		SAMPLE CONVERTER		
*	IC19	**XV903A00**	IC	FH1B31-70A		ACDR		
*	IC20	**XW097A00**	IC	SM5844AF		SAMPLE CONVERTER		
	IC21	**XS681A00**	IC	M5M51008BFP-70LLT		SRAM 1M		11
	IC22	**XS681A00**	IC	M5M51008BFP-70LLT		SRAM 1M		11
	IC23	**XN241A00**	IC	TC74HC32AF		OR		01
	IC24	**XD657A00**	IC	TC74HC14AF-TP1		INVERTER		02
*	IC25	**XT546A00**	IC	TC74HC4024AF		COUNTER		
	IC26	**XG948E00**	IC	YM3436DK		DIR2		11
	-28	**XG948E00**	IC	YM3436DK		DIR2		11
	IC29	**XP250A00**	IC	HD74HC00FPEL		NAND		01
	IC31	**XV930A00**	IC	SN75124NSR		LINE RECEIVER		05
	IC32	**XU996A00**	IC	AM26LS31MCNSR		LINE DRIVER		05
	IC33	**XU815A00**	IC	DS26C32ATMX		LINE RECEIVER		06
*	IC34	**XW110A00**	IC	SN74HC157NSR		DATA SELECTOR		
	IC37	**XH610A00**	IC	HD74LS06FPEL		INVERTER		02
	IC39	**XT802A00**	IC	AK4520A-VF-E2		ADC & DAC		07
	IC40	**XJ553A00**	IC	NJM2068MD-T1		OP AMP		02
	IC41	**XQ138A00**	IC	NJM4556AMT1		OP AMP		03
	IC42	**XJ553A00**	IC	NJM2068MD-T1		OP AMP		02
	IC43	**XB738A00**	IC	TC4053BF		MULTIPLEXER		02
	IC44	**XJ553A00**	IC	NJM2068MD-T1		OP AMP		02
	IC45	**XJ553A00**	IC	NJM2068MD-T1		OP AMP		02
*	IC46	**XC011A00**	IC	NJM5532M		OP AMP		
*	IC47	**XC011A00**	IC	NJM5532M		OP AMP		
	IC48	**XS511A00**	IC	NJM2115M-T1		OP AMP		02
	IC49	**XS511A00**	IC	NJM2115M-T1		OP AMP		02
	IC50	**XP250A00**	IC	HD74HC00FPEL		NAND		01
	IC51	**XN241A00**	IC	TC74HC32AF		OR		01
	IC52	**XS993A00**	IC	TC74HC04AF		INVERTER		01
	IC53	**XR769A00**	IC	TC4W53FU		MULTIPLEXER		02
	IC54	**XP003A00**	IC	TC74HC74AF		D-FF		01
	IC55	**XN241A00**	IC	TC74HC32AF		OR		01
	IC56	**XE052A00**	IC	TC74HC393AF-TP1		BINARY COUNTER		03
	IC57	**XP003A00**	IC	TC74HC74AF		D-FF		01
*	IC58	**XW108A00**	IC	SN74HC595NSR		SHIFT REGISTER		
*	-60	**XW108A00**	IC	SN74HC595NSR		SHIFT REGISTER		
*	IC61	**XW138A00**	IC	TC74HC4002AF		NOR		
*	IC62	**XW138A00**	IC	TC74HC4002AF		NOR		
*	IC63	**XW092A00**	IC	TC74HC20AF		NAND		
	IC64	**XP003A00**	IC	TC74HC74AF		D-FF		01
	IC65	**XD660A00**	IC	TC74HCU04AF-TP1		INVERTER		01
	IC66	**XP250A00**	IC	HD74HC00FPEL		NAND		01
	IC67	**XP003A00**	IC	TC74HC74AF		D-FF		01
	IC300	**XS534A00**	IC	NJM78M05DLA		REGULATOR		
	IC301	**XQ805A00**	IC	TC7WU04FU				
	IC302	**XY116A00**	IC	FPGA PLL		FPGA PLL		
	IC400	**XW110A00**	IC	SN74HC595NSR		SHIFT REGISTER		
	IC401	**XH494A00**	IC	YM6067		PSC4		10
	JK1	**VS133800**	XLM Connector	NC3FAH1-0		DIGITAL IN		04
	JK2	**VS133700**	XLM Connector	NC3MAH		DIGITAL(AES/EBU) OUT		04
	JK3	**V5345400**	Pin Jack			DIGITAL(COAXIAL)(IN,OUT)		04
	JK4	**VI552200**	BNC Connector	YKS11-0		WORD CLOCK IN		05
	JK5	**VS133800**	XLM Connector	NC3FAH1-0		ANALOG IN L		04
	JK6	**VS133800**	XLM Connector	NC3FAH1-0		ANALOG IN R		04
	JK8	**VS133700**	XLM Connector	NC3MAH		ANALOG OUT L		04

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	JK9	**VS133700**	XLM Connector	NC3MAH		ANALOG OUT R		04
	JK10	**VT696400**	Holder, Cannon Connector					04
	L1	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	-4	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	L5	**VS740100**	Chip Inductance	BLM21B751S				03
	L6	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	L7	**VS740100**	Chip Inductance	BLM21B751S				03
	-18	**VS740100**	Chip Inductance	BLM21B751S				03
	L19	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	-21	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	L24	**VS740100**	Chip Inductance	BLM21B751S				03
	-55	**VS740100**	Chip Inductance	BLM21B751S				03
	L56	**VB835000**	Coil	FL5R200QNT				01
	-63	**VB835000**	Coil	FL5R200QNT				01
	L64	**VU374100**	Chip Inductance	ELJFA100 KF2				01
	-71	**VU374100**	Chip Inductance	ELJFA100 KF2				01
	L73	**VP246300**	Noise Filter	ZJY51R5-2P				04
	L74	**VP246300**	Noise Filter	ZJY51R5-2P				04
	L300	**VB835000**	Coil	20U				
	L301	**VU374000**	Inductor (chip)	ELJFA2R2-KF2				
	L302	**VP246300**	Noise Filter	ZJY51R5-2P				
	L303	**VP246300**	Noise Filter	ZJY51R5-2P				
	L400	**VB835000**	Coil	FL5R200QNT				01
	L401	**VB835000**	Coil	FL5R200QNT				01
	Q1	**VQ986700**	Transistor	2SC4081T106				01
	Q2	**VR936300**	Transistor	2SA1576AT106				01
	Q3	**VV655400**	Digital Transistor	DTC114EKA TP				01
*	Q4	**V2993500**	Transistor	2SD1979 S,T				
*	Q5	**V2993500**	Transistor	2SD1979 S,T				
	Q6	**VV655400**	Digital Transistor	DTC114EKA TP				01
	Q7	**VQ986700**	Transistor	2SC4081T106				01
	Q8	**VR936300**	Transistor	2SA1576AT106				01
*	Q9	**V2993500**	Transistor	2SD1979 S,T				
*	Q10	**V2993500**	Transistor	2SD1979 S,T				
	Q11	**VQ986700**	Transistor	2SC4081T106				01
	Q12	**VQ986700**	Transistor	2SC4081T106				01
		UB012470	Monolithic Ceramic Cap.	B470P 50V K		C:92-95,110,113,164-167		
		UB013100	Monolithic Ceramic Cap.	B 1000P 50V K		C:23,24,199,200,206,208		01
		UB013150	Monolithic Ceramic Cap.	B 1500P 50V K		C:90,91		01
		UB013220	Monolithic Ceramic Cap.	B 2200P 50V K		C:207,209		01
		UB013470	Monolithic Ceramic Cap.	B 4700P 50V K		C:55		01
		UB045100	Monolithic Ceramic Cap.	F 0.1 50V Z		C:140,180		01
		UB051100	Monolithic Ceramic Cap.	SL 10P 50V D		C:116,117		01
		UB051220	Monolithic Ceramic Cap.	SL 22P 50V J		C:45,47		01
		UB051330	Monolithic Ceramic Cap.	SL 33P 50V J		C:65,121,122,148-151,		01
						154-157,178,179		01
		UB051680	Monolithic Ceramic Cap.	SL 68P 50V J		C:135,136,141,142		01
		UB052100	Monolithic Ceramic Cap.	SL 100P 50V J		C:11,174-177,210-212		01
		UB214470	Monolithic Ceramic Cap.	B 0.047 25V K		C:41,42,46,56,57		01
		UB445100	Monolithic Ceramic Cap.	F 0.1 16V Z		C:5-8,12-14,18-21,26,32,		
						34,40,43,44,48,49,51,		
						53,71-74,82,96,97,		
						99-101,103,109,120,134,		
						137,139,143,170,171,		
						181-196,201,202,205,		
						213-216,300,302,303,307,		
						308,310-315,400-402,450		
		UB446100	Ceramic Capacitor-F (chip)	F 1.0 16V Z		C:4,9,10,15,17,22,27,30,		01
						31,36-39		
		UF017220	Electrolytic Cap. (chip)	22 6.3V		C:3,16,33,35,162,163,172		01
						173		01
		UF037470	Electrolytic Cap. (chip)	47 16V		C:50,52,54,84-87,104,301		01
		UF037100	Electrolytic Cap. (chip)	10 16V		C:25,102,105-108,111,112,		01
						123,128-133,138,168,169		
		UF037220	Electrolytic Cap. (chip)	22 16V		C:144-147		01
		UF066330	Electrolytic Cap. (chip)	3.3 50V		C:114,115		01
		UF138220	Electrolytic Cap. (chip)	220 16V UUR1C2		C:118,119,158-161		01
		UF167470	Electrolytic Cap. (chip)	47 50V		C:124-127		01
		VJ899000	Monolithic Ceramic Cap.	CH 5P 50V C		C:29		01
		VJ899300	Monolithic Ceramic Cap.	CH 8P 50V D		C:28		01

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	VJ900500	Monolithic Ceramic Cap.	27P		C:304		
	VR326600	Mylar Cap. (chip)	0.022		C:309		
	VR329100	Mylar Cap. (chip)	0.001		C:305,306		
	VT896800	Electrolytic Cap.	2200 35.0V		C:203,204		04
	VY671200	Electrolytic Cap.(chip)	47.00 16V		C:98,197,198		
	RD250000	Carbon Resistor (chip)	0.0 0.0 J		R:46,178,181,185,186,310, 363		01
	RD256100	Carbon Resistor (chip)	1.0K 0.1 J		R:8,12,13,63-67,86,89, 100,101,300,301,305, 350,360,361		01
	RD256180	Carbon Resistor (chip)	1.8K 0.1 J		R:136,137		01
	RD256220	Carbon Resistor (chip)	2.2K 0.1 J		R:189		01
	RD256330	Carbon Resistor (chip)	3.3K 0.1 J		R:22-24		01
	RD256470	Carbon Resistor (chip)	4.7K 0.1 J		R:69,165,167,168,170, 174-177		01
	RD256510	Carbon Resistor (chip)	5.1K 0.1 J		R:142,143		01
	RD256680	Carbon Resistor (chip)	6.8K 0.1 J		R:172,173		01
	RD256750	Carbon Resistor (chip)	7.5K 0.1 J		R:122-125		01
	RD254390	Carbon Resistor (chip)	39		R:314		
	RD254430	Carbon Resistor (chip)	43		R:315		
	RD259100	Carbon Resistor (chip)	1.0M 0.1 J		R:1,17,18,20,21,302		01
	RD254100	Carbon Resistor (chip)	10.0 0.1 J		R:74,198,199		01
	RD257100	Carbon Resistor (chip)	10.0K 0.1 J		R:3-7,9-11,14,15,45,57-60 62,68,75,78,88,90,91,98 99,102-105,116,117,129		01
					131,134,135,138-141, 158-164,171,179,180,182 183,188,195,196,362		
	RD257160	Carbon Resistor (chip)	16.0K 0.1 J		R:114,115		01
	RD257200	Carbon Resistor (chip)	20.0K 0.1 J		R:110,111,118-121		01
	RD257220	Carbon Resistor (chip)	22.0K 0.1 J		R:81,82,144-147		01
	RD255220	Carbon Resistor (chip)	220		R:316		
	RD257240	Carbon Resistor (chip)	24.0K 0.1 J		R:154-157		01
	RD257270	Carbon Resistor (chip)	27.0K 0.1 J		R:112,113		01
	RD254330	Carbon Resistor (chip)	33.0 0.1 J		R:166,169		01
	RD254470	Carbon Resistor (chip)	47.0 0.1 J		R:31		01
	RD257470	Carbon Resistor (chip)	47.0K 0.1 J		R:84,85,132,133,190,191		01
	RD257560	Carbon Resistor (chip)	56.0K 0.1 J		R:94,95		01
	RD257680	Carbon Resistor (chip)	68.0K 0.1 J		R:96,97		01
	RD254750	Carbon Resistor (chip)	75.0 0.1 J		R:30,150-153,313		01
	RD255100	Carbon Resistor (chip)	100.0 0.1 J		R:2,25,79,80,126,127,148, 149		01 01
	RD258100	Carbon Resistor (chip)	100.0K 0.1 J		R:76,77,83,87,92,93,106, 107		01 01
	RD255110	Carbon Resistor (chip)	110.0 0.1 J		R:197		01
	RD255330	Carbon Resistor (chip)	330.0 0.1 J		R:70-73		01
	RD255470	Carbon Resistor (chip)	470.0 0.1 J		R:26,27		01
	RD258470	Carbon Resistor (chip)	470.0K 0.1 J		R:16		01
	RD255560	Carbon Resistor (chip)	560.0 0.1 J		R:19		01
	RD255680	Carbon Resistor (chip)	680.0 0.1 J		R:128,130		01
	RD257330	Carbon Resistor (chip)	33.0K 0.1J		R:108,109		01
	VI196100	Oxide Film Resistor(chip)	3.3K		R:303		
	VI200000	Oxide Film Resistor(chip)	100K		R:308,309		
	VI197800	Oxide Film Resistor(chip)	15K		R:306,307		
	VI198600	Oxide Film Resistor(chip)	33K		R:304		
RY1	**KC001900**	Relay	DC RY12W				07
RY2	**KC001900**	Relay	DC RY12W				07
ST1	**VB966900**	Style Pin	IMSA-6024				01
SW1	**VT513600**	Light Touch Switch	EVQ 22C 05B		repair use		01
SW2	**VP799800**	Slide Switch	SSSF12341A		-10dBV/4dB		02
SW3	**VP804700**	Slide Switch	SSSS2-12-01		BOOT/NORM		01
SW300	**VP804700**	Slide Switch	SSSS2-12-01		WORD CLOCK IN(ON/OFF)		
T1	**VP246100**	Palus Transformer	P17H				07
T2	**VP246100**	Palus Transformer	P17H				07
T300	**VP246100**	Palus Transformer	P17HTS20-1AA				
T301	**VP246100**	Palus Transformer	P17HTS20-1AA				
* X1	**V3743900**	Ceramic Resonator	30.00M CSTCV30MX				
X2	**VP864900**	Quartz Crystal Unit	16M SMD-49				04
X3	**VP864800**	Quartz Crystal Unit	11.2896M SMD-49				04
ZD1	**VU171900**	Zener Diode	UDZS5.1BTE-17 5.1V				01

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	ZD2	**VU171900**	Zener Diode	UDZS5.1BTE-17 5.1V				01
*		**V5076400**	Circuit Board	PS		J (XV960B00)		
*		**V3540600**	Circuit Board	PS		U,V (XV960B00)		
*		**V3540700**	Circuit Board	PS		H,W,B (XV960B00)		
		VA078900	Jumper Wire	0.55				
		EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL				01
		VQ074600	Bind Head Tapping Screw-B	3.0X12 MFZN2Y				01
*		**--**	Transistor Holder			(V459140)		
*		**--**	Insulation Plate			(V405960)		
*		**V4572600**	Insulation Sheet					
	CN21	**LB932040**	Base Post Connector	4P TE				01
	CN22	**VG879900**	Base Post Connector	2P TE				01
	CN23	**VG879900**	Base Post Connector	2P TE				01
	CN101	**LB932050**	Base Post Connector	5P TE				01
	CN102	**LB932070**	Base Post Connector	7P TE				01
	CN103	**LB932040**	Base Post Connector	4P TE				01
	CN104	**VB390500**	Connector Base Post	9P TE				03
	CN105	**VB390200**	Connector Base Post	6P TE				01
	CN106	**VB389800**	Connector Base Post	2P TE				01
	D101	**VU652800**	Diode	1SR139-400 T-31				01
	D102	**VB941200**	Diode	1SS133,1SS176				01
	-104	**VB941200**	Diode	1SS133,1SS176				01
	D105	**VU652800**	Diode	1SR139-400 T-31				01
	D106	**VU652800**	Diode	1SR139-400 T-31				01
	D107	**VB941200**	Diode	1SS133,1SS176				01
	-110	**VB941200**	Diode	1SS133,1SS176				01
	DB101	**VT359600**	Diode Stack	D3SBA20 4.0A 200V				03
	DB102	**VT359600**	Diode Stack	D3SBA20 4.0A 200V				03
	DB103	**VL834300**	Diode Stack	RBV-602 LF-B 6.0A				03
	EM101	**FZ006970**	LC Filter	LS MT Y223NB				02
	-105	**FZ006970**	LC Filter	LS MT Y223NB				02
	FZ21	**KB003570**	Fuse	2.00A JU		J,U,V		01
	FZ21	**VP206500**	Fuse Holder	EYF-52BC				01
	FZ21	**KB003040**	Fuse	1.00A S		H,W,B		01
	FZ101	**KB003600**	Fuse	3.15A JU		J,U,V		01
	FZ101	**KB003080**	Fuse	2.50A S		H,W,B		01
	FZ101	**VP206500**	Fuse Holder	EYF-52BC				01
	FZ102	**KB003600**	Fuse	3.15A JU		J,U,V		01
	FZ102	**KB003080**	Fuse	2.50A S		H,W,B		01
	FZ102	**VP206500**	Fuse Holder	EYF-52BC				01
	FZ103	**KB003560**	Fuse	1.60A JU		J,U,V		01
	FZ103	**VP206500**	Fuse Holder	EYF-52BC				01
	FZ103	**KB003060**	Fuse	1.60A S		H,W,B		01
	FZ104	**KB003560**	Fuse	1.60A JU		J,U,V		01
	FZ104	**VP206500**	Fuse Holder	EYF-52BC				01
	FZ104	**KB003060**	Fuse	1.60A S		H,W,B		01
*	IC101	**XW098A00**	IC	PQ12RF2		REGULATOR +12V		
	IC102	**XM482A00**	IC	STR9005		REGULATOR +5V		07
	IC103	**XJ608A00**	IC	NJM7812FA		REGULATOR +12V		02
	IC104	**XC721A00**	IC	NJM7912FA		REGULATOR -12V		02
	IC105	**XJ604A00**	IC	NJM78M05FA		REGULATOR +5V		02
	L21	**VZ677000**	Line Filter	PLH11A1811R2P01B1		J,U,V		03
	LA1	**BB069510**	Angle	A-8				
	Q101	**IC174070**	Transistor	2SC1740S R,S				01
	Q102	**VD678500**	Digital Transistor	DTA114ES				01
	Q103	**VZ580200**	Transistor	2SA1533				01
	ZD101	**V2909500**	Zener Diode	MA2056-A 5.6V				01
	ZD102	**VQ558900**	Zener Diode	MTZJ36C 36.0V				01
		UR867100	Electrolytic Cap.	10.00 50.0V		C:101,125		01
		UR868220	Electrolytic Cap.	220.00 50.0V		C:102		
		FG644100	Ceramic Capacitor-F	0.01 50V Z		C:103-112		01
		UR866470	Electrolytic Cap.	4.7 50.0V		C:113		01
		UR749680	Electrolytic Cap.	6800 25.0V		C:114,115		03
		VR261400	Electrolytic Cap.	10000 25.0V		C:116		05
*		**V3124800**	Electrolytic Cap.	22000 16.0V		C:117		
		UR828220	Electrolytic Cap.	220.00 10.0V		C:118		01
		UR857470	Electrolytic Cap.	47.00 35.0V		C:119		01
		UR838100	Electrolytic Cap.	100.00 16.0V		C:120-124		01
		UR839470	Electrolytic Cap.	4700 16.0V		C:126		03

*: New Parts

RANK: Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
		VR796000	Capacitor	0.1 250VAC		C:21		03
		V5090300	Capacitor	2200P 250V		C:127,128 U,H,B,W,V		
		FI383470	Capacitor	4700P 400V		C:129,130 U,H,B,W,V		
		FR203100	Capacitor	0.1U JUCS		C;22 J		
		HV754680	Flame Proof C. Resistor	68.0 1/4 J		R:102		01
		VC757500	Metal Oxide Film Resistor	33.0 2W J		R:109		01
		HF756100	Carbon Resistor	1.0K 1/4 J		R:108		01
		HF756330	Carbon Resistor	3.3K 1/4 J		R:105,106		01
		HF757330	Carbon Resistor	33.0K 1/4 J		R:101		01
		HF757470	Carbon Resistor	47.0K 1/4 J		R:104		01
		HF758100	Carbon Resistor	100.0K 1/4 J		R:107		01
		HF755680	Carbon Resistor	680.0 1/4 J		R:103		01
		VN391100	AC Cord	DC-015-J01		J		06
		VB927800	AC Cord	CSA		U,V		08
		VB928000	AC Cord	VDE		H,W		08
		VP204400	AC Cord	BS		B		10
*		**V3496500**	Remote Controller	RC				
*		**XV755A00**	Power Transformer			J		
*		**XV756A00**	Power Transformer	UL CSA		U,V		
*		**XV757A00**	Power Transformer	CEE		H,W,B		
		VC362700	Ferrite Core	FR25/15/12-1400L				04
		VL785200	AC-IN Connector	AC-P01CR02				03
*		**V4580100**	CRW Unit	ACRW100				
*		**V4755300**	Fan	MMS-06E12DL				

*: New Parts

RANK: Japan only

■CDR1000 CIRCUIT DIAGRAM 1/3 (MAIN1/3)

CDR1000

LINE NAME	DESTINATION
ADD_BUS	to MAIN2/3
DATA_BUS	to MAIN3/3 H1
DAI	to MAIN2/3 C11
DSP3_CTRL	to MAIN2/3 O2
H8_CTRL	to MAIN3/3 A1 to MAIN2/3 O2
DIR	to MAIN2/3 L2

to MAIN2/3 D7
DSUB
FE_CTRL
FE_DATABUS_B
to MAIN2/3 F5
to CDRW DRIVE
IC19
ACDR
IC24 TC74HC14AF
IC29 HD74HC00FPEL
INVERTER
NAND
REGULATOR
IC300 NJM78M05OLA
IC301 TC7WU04FU
IC302 EPM7032S
FPGA PLL
IC65 TC74HCU04AF
IC26 DIR2
IC27 DIR2
to MAIN1/3 L8
to MAIN2/3 L2
SRAM 1M
IC21 M5M51008BFP-70LLT
IC22 M5M51008BFP-70LLT
to MAIN2/3
ADD_BUS
DATA_BUS
DAI
DSP3_CTRL
H8_CTRL
DIR
IC18 SM5844AF
IC20 SM5844AF
SAMPLE CONVERTER
SAMPLE CONVERTER
OR
IC23 TC74HC32AF
B virsion
IC1 YSS228E-F
DSP3
DRAM 16M
IC12 KM416C1200CJ-6T
TRANCEIVER
IC14 TC74HC245AF
TRANCEIVER
IC15 TC74HC245AF
IC13 HD64F3039F18
CPU
IC401 YM6067
D virsion
DSP3_MCKS
DIR22_SYNC1
DSP3_SI1
/RESET
SRC1_THRU
DIR21_F128
to MAIN1/3 D9
DIR21_SYNC
to MAIN1/3 C9
SRC1_DO
LR_CLK2
COUNTER
IC25 TC74HC4024AF
IC400 TC74HC157AF
KEC-92379 4
to MAIN2/3 I6
to MAIN2/3 J6
SHIFT RESISTER
IC11 SN74HC595NSR
DSP3-CTRL
R/W
/RD
/DS
/WR
DATA BUS
ADD_BUS
H8_CTRL
EEPROM 2K
IC3 93LC56T-I/SN
T-LATCCHES
IC2 TC74HC573AF
IC4 TC74HC14AF
INVERTER
IC5 TC74HC20AF
NAND
IC6 TC74HC00AF
IC7 TC74HC14AF
INVERTER
IC9
SRAM 256K
IC10 TC74HC32AF
OR
IC8 TC74HC20AF
NAND
IC67 TC74HC74AF
/FE_CS8
/DSP_CS0
/SRAM_CS
/DAI_CS
DIF_MUTE
DIT_MUTE
SPD_MUTE
IC13 HD64F3039F18
CPU
DATA SELECTOR
IC16 SN74HC157NSR
MULTIPLEXER
IC53 TC4W53FU
RESET
IC17 IC-PST591DMT
SW1 EQV-22C-05B
to FP3/7-CN5
to FP2/7-CN3
to FP2/7-CN4
to FP1/7-CN2
to FP6/7-CN8
TO 232C
CN1
CN2
CN3
CN4
CN12
CN11
KEC-92379 4

CDR1000

■CDR1000 CIRCUIT DIAGRAM 2/3 (MAIN2/3)

CDR1000

AES/EBU INPUT
JK1 NC3FAH1-0
L73 ZJY51R5-2P
C214 (±) 0.1u
T1 P17HTS20-1AA
C213 (±) 0.1u
R198 1/10W 10
AGND
LINE RECEIVER
C73 (±) 0.1u
VCC
IC33 DS26C32ATMX
DGND

AES/EBU OUTPUT
JK2 NC3MAH
GND-S
L74 ZJY51R5-2P
C216 (±) 0.1u
T2 P17HTS20-1AA
C215 (±) 0.1u
R199 1/10W 10
LINE DRIVER
C72 (±) 0.1u
IC32 AM26LS31M

COAXIAL INPUT
COAXIAL OUTPUT
JK3 YKC21-4201
L302 ZJY51R5-2P
C312 (±) 0.1u
T300 P17HTS20-1AA
C313 (±) 0.1u
R313 1/10W 220
L303 ZJY51R5-2P
C314 (±) 0.1u
T301 P17HTS20-1AA
C315 (±) 0.1u
R314 1/10W 39
R316 1/10W 220

DATA SELECTOR
C74 (±) 0.1u
IC34 SN74HC157NSR
R45 0

INVERTER
IC37 HD74LS06FPEL
C82 (±) 0.1u
DSUB_STOPOUT
DSUB_PAUSEOUT
DSUB_PLAYOUT
DSUB_TRCINCIN
DSUB_RECSTBIN
DSUB_STOPIN
DSUB_PAUSEIN
DSUB_PLAYIN
R63 1K
R64 1K
R65 1K
R66 1K
R67 1K

DOIN
R186 0
DIR21_DD0
DIFI
WCIN
SPDI
SPD
DIF
to MAIN1/3 F2
DAI
to MAIN1/3 F1
H8_CTRL
CASCADE
to MAIN1/3 B2
DSUB

P_MUTE
CN7
+5D
DGND
DGND
P_MUTE
-12A
AGND
AGND
+12A
+5A
to PS-CN104
EM7 LS-MT-Y223NB
EM8 LS-MT-Y223NB
EM9 LS-MT-Y223NB
EM10 LS-MT-Y223NB
VCC_12V
VCCANA
+12A
C94 47/16
C95 47/16
C96 47/16
C97 2200/35

EM11 LS-MT-B271KB
EM12 LS-MT-B271KB
EM13 LS-MT-B271KB
EM14 LS-MT-B271KB
EM15 LS-MT-B271KB
EM16 LS-MT-B271KB
EM17 LS-MT-B271KB
EM18 LS-MT-B271KB
CN8 17LE-13090-27 FT2
FT1
PARALLEL I/O

to MAIN1/3 B2
FE_CTRL
FE_DATABUS_B
CN6 HIF3FC40PA-2.54DSA
FE_HRST
FE_DD7
FE_DD6
FE_DD5
FE_DD4
FE_DD3
FE_DD2
FE_DD1
FE_DD0
FE_HDMARQ
/FE_HIOW
/FE_HIOR
FE_IORDY
/FE_HDACK
FE_HINTRQ
FE_HA1
FE_HA0
/FE_HCS0
FE_DASP
FE_DD8
FE_DD9
FE_DD10
FE_DD11
FE_DD12
FE_DD13
FE_DD14
FE_DD15
FE_CSEL
FE_IOCS16
FE_PDIAG
FE_HA2
/FE_HCS1
R196 10K

WC IN
JK4 YKS11-0011
EM4 LS-MT-B271KB
SW300 SSS2-12-01
ON
OFF
R31 47
R30 2.2
C65 33P
D5 1SS154
LINE RECEIVER
C71 (±) 0.1u
IC31 SN75124NS
R45 150

ANALOG INPUT L
ANALOG INPUT R
JK5 NC3FAH1-0
JK6 NC3FAH1-0
L57 FL5R200QNT 20u
L56 FL5R200QNT 20u
L59 FL5R200QNT 20u
L58 FL5R200QNT 20u
C92 (±) 470P
C93 (±) 470P
C94 (±) 470P
C95 (±) 470P

to CDRW DRIVE
CN9
CDRW-L
AGND
AGND
CDRW-R
R178 1/10W 0
DRIVE_L
DRIVE_R
OP AMP
IC40 NJM2068MD
R79 100
R80 100
R84 47K
R85 47K
R81 20K
R82 20K
C114 3300P
C115 3300P
R96 68K
R97 68K
D17
D18
R100 1K
R101 1K
to MAIN1/3 M7
METER_L
METER_R
C105 10/16
C106 10/16
R76 100K
R77 100K
C101 (±) 0.1u
C99 (±) 0.1u
VCC-12V

OP AMP
IC44 NJM2068MD
IC45 NJM2068MD
R110 20K
R114 16K
R118 20K
R119 20K
R122 7.5K
R123 7.5K
R111 20K
R115 16K
R120 20K
R121 20K
C123 10/16
C133 10/16
C140 (±) 0.1u
C143 (±) 0.1u
C124 47/50
C125 47/50
C126 47/50
C127 47/50
C135 (±) 68P
C136 68P
R124 7.5K
R125 7.5K
C141 (±) 68P
C142 (±) 68P
R126 100
R127 100
R142 5.1K
R143 5.1K
R136 1.8K
R137 1.8K
R132 47K
R133 47K
R148 100
R149 100
SW2 SSSF12341A
+4 — 10

ADLM
ADRM
CN10
to FP4/7 -CN6
ADLC
ADRC

OP AMP
IC48 NJM2115M
IC49 NJM2115M
R162 10K
R163 10K
R165 4.7K
R166 33
R167 4.7K
R168 4.7K
R169 33
R170 4.7K
R172 6.8K
R173 6.8K
R174 4.7K
R175 4.7K
R176 4.7K
R177 4.7K
C162 22/6.3
C163 22/6.3
C168 10/16
C169 10/16
C170 (±) 0.1u
C171 (±) 0.1u
C172 22/6.3
C173 22/6.3
C174 100P
C175 100P
C176 100P
C177 100P
C197 47/16
C198 47/16

to MAIN1/3 B11
/ANA2_MUTE
/ANA1_MUTE
to MAIN1/3 F2
DIR
H8-CTRL
/RESET
OR
IC10 TC74HC32AF
P_MUTE
Q1 2SC4081
R68 10K
R69 4.7K

ADC & DAC
IC39 AK4520A
VREFH
VREFL
AINR+
AINR-
AINL+
AINL-
VA
AGND
DIFO
DIFI
LRCK
SCLK
SDTI
SDTO
VCOM
AOUTR
AOUTL
CMODE
PWAD
PWDA
DGND
VD
TST1
TST2
TST3
DEM1
DEM0
MCLK
DIR22_WC1
DIR22_F641
DSP3_SO0
DSP3_SI0
DIR22_F2561
DSP3_CTRL
L69 EL-FA100 10u
C209 (±) 2200P
C97 (±) 0.1u
C96 (±) 0.1u
C98 47/16
C104 47/16
C100 (±) 0.1u
C102 10/16
C103 0.1u
R74 10
C90 (±) 1500P
C91 (±) 1500P
R70 330
R71 330
R72 330
R73 330

MULTIPLEXER
IC43 TC4053BF
C107 10/16
C108 10/16
C110 (±) 470P
C111 10/16
C112 10/16
C113 (±) 47P
R83 100K
R92 100K
R93 100K
R87 100K
R89 1K
R98 10K
R99 10K
R102 10K
R103 10K
R104 10K
Q3 DTC114EKA
Q6 DTC114EKA
DRIVE_L
DRIVE_R
H8_CTRL
/SEARCH
to MAIN1/3 F2

OP AMP
IC42 NJM2068MD
C131 10/16
C129 10/16
C178 (±) 33P
C139 0.1u
C134 (±) 0.1u
C137 (±) 0.1u
C130 10/16
C138 10/16
R109 33K
R108 33K
C179 (±) 33P
VCCANA
C120 (±) 0.1u
Q2 2SA1576
R78 10K
C109 (±) 0.1u
R88 10K
R86 1K
R106 10K
C116 (±) 10P
R112 27K
C121 (±) 33P
R105 10K
C118 220/16
R94 56K
R95 56K
R107 100K
C117 (±) 10P
R113 27K
C122 (±) 33P
R119 10K
C119 220/16
Q4 2SD1979
Q5 2SD1979
Q9 2SD1979
Q10 2SD1979
HPLC
HPRC
HPLO
HPRO
HPL_M
HPRM

OP AMP
IC46 NJM5532M
IC47 NJM5532M
R128 680
R140 10K
R134 10K
R144 22K
R148 33P
R150 220/16
R154 24K
R154 33P
R156 24K
R155 33P
R159 220/16
R129 10K
R138 10K
R146 22K
R149 33P
R151 75
R159 10K
R130 680
R141 10K
R135 10K
R145 22K
R150 33P
R152 75
R160 10K
R131 10K
R139 10K
R147 22K
R151 33P
R153 220/16
R161 10K
C144 22/16
C147 22/16
C145 22/16
C146 22/16
D19 1SR154
D20 1SR154
RY1 RY12W
RY2 RY12W
Q7 2SC4081
Q11 2SC4081
R171 10K
R164 10K
R117 10K
R195 10K
JK8 NC3MAH
JK9 NC3MAH
L60 FL5R200QNT 20u
L61 FL5R200QNT 20u
L62 FL5R200QNT 20u
L63 FL5R200QNT 20u
C164 (±) 470P
C165 (±) 470P
C166 (±) 470P
C167 (±) 470P
ANALOG OUTPUT L
ANALOG OUTPUT R

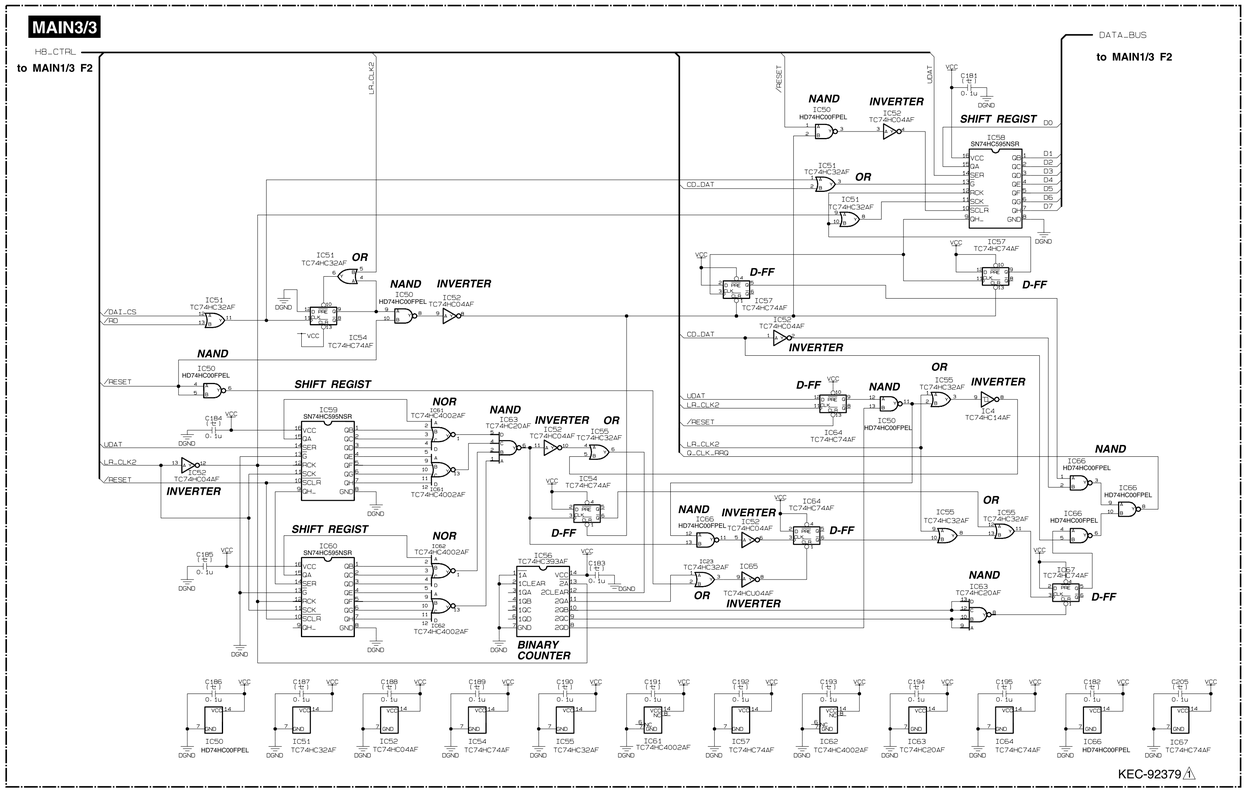
to FP5/7-CN7
CN11
HB_CTRL
/DE_EMPH
to MAIN1/3 F2
Q8 2SA1576
R182 10K
R183 10K
C180 (±) 0.1u
R75 10K

KEC-92379 4

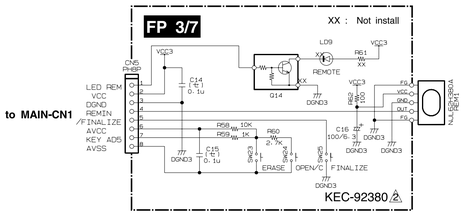
CDR1000

■CDR1000 CIRCUIT DIAGRAM 3/3 (MAIN3/3, FP-1/3, 2/3, 3/3, PS)

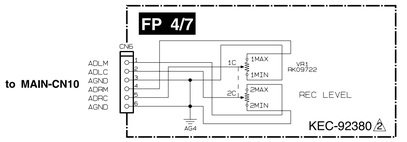
MAIN3/3



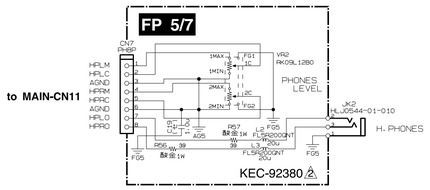
FP 3/7



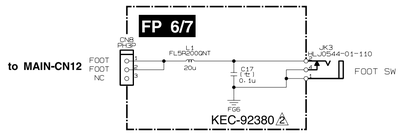
FP 4/7



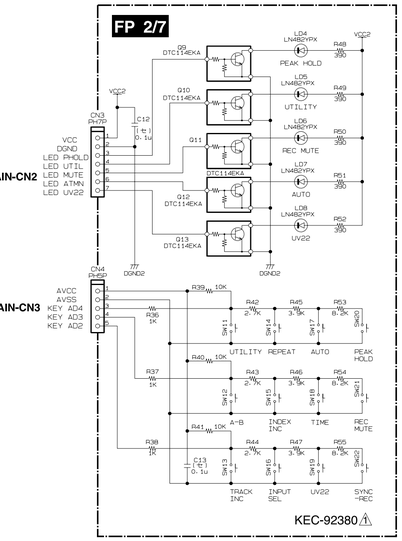
FP 5/7



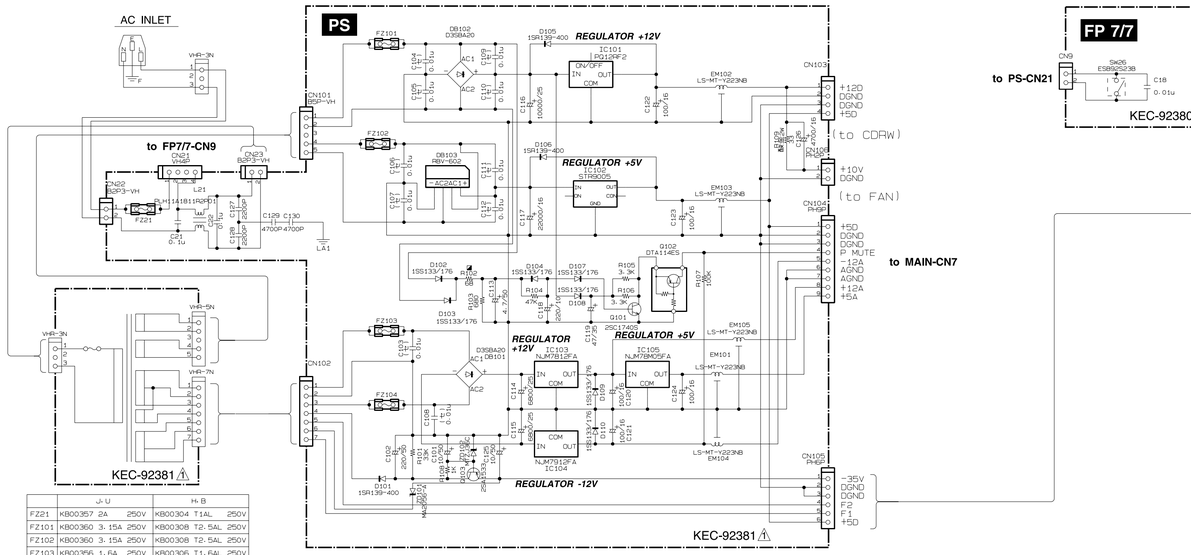
FP 6/7



FP 2/7

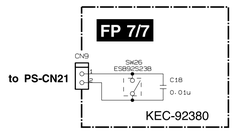


PS

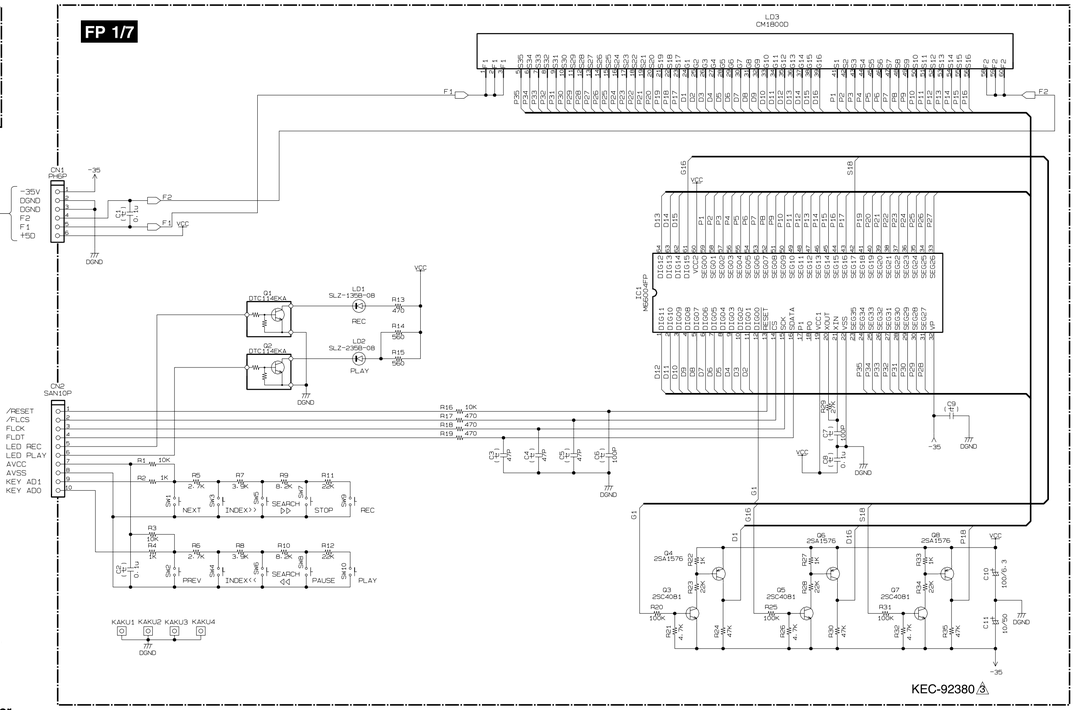


	⚠ U	⚠ B
FZ21	KB00357 2A 250V	KB00304 T1AL 250V
FZ101	KB00360 3.15A 250V	KB00308 T2.5AL 250V
FZ102	KB00360 3.15A 250V	KB00308 T2.5AL 250V
FZ103	KB00356 1.6A 250V	KB00306 T1.6AL 250V
FZ104	KB00356 1.6A 250V	KB00306 T1.6AL 250V

FP 7/7



FP 1/7



	C22	C127	C128	C129	C130	LA1
J	○	×	×	×	×	×
U.H.B	×	○	○	○	○	○

×: not install ○: install

- ●PQ12RF2 (XW098A00) REGULATOR +12V — 1: V IN 2: V OUT 3: GND 4: OUTPUT
- ●STR9005 (XM482A00) REGULATOR +5V — 1: Vo OUT 2: Vo CONT 3: Vo ON - OFF 4: V IN 5: GND
- ●NJM7812FA (XJ608A00) REGULATOR +12V — 1: INPUT 2: GND 3: OUTPUT
- ●NJM7912FA (XC721A00) REGULATOR -12V — 1: OUT 2: IN 3: COMMON
- ●NJM78M05FA (XJ604A00) REGULATOR +5V — 1: INPUT 2: GND 3: OUTPUT
- ●NJM78M05DLA (XS534A00) REGULATOR +5V — 1: INPUT 2: GND 3: OUTPUT

Note : See parts list for details of circuit board component parts.

(七) : Ceramic Capacitor
酸金 : Metal Oxide Film Resistor