

SB-D30

SERVICE MANUAL

Ver 1.0 1999.07

US Model



SPECIFICATIONS

Inputs

- 3 lines
- OPTICAL IN rectangular-shaped jack × 2
- OPTICAL IN mini jack × 1

Outputs

- 2 lines (simultaneous)
- OPTICAL OUT rectangular-shaped jack × 1
- OPTICAL OUT mini jack × 1

Dimensions

Approx. 146 × 41 × 185 mm
(w/h/d)

Mass

Approx. 500g

Power

The SB-D30 DC IN 4.5 V jack uses the following voltages supplied from the AC power adaptor.
Power requirements 120V AC, 60Hz

Supplied accessories

- AC power adapter (1)
- Operating instructions (1)

Design and specifications are subject to change without notice.

OPTICAL DIGITAL SELECTOR



SONY®

SECTION 1 GENERAL

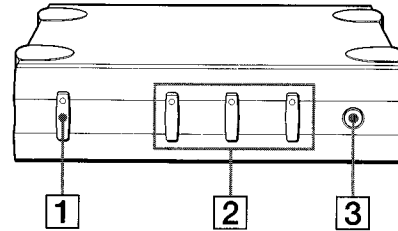
TABLE OF CONTENTS

Specifications	1
1. GENERAL	
Location and Function of Controls	2
2. DISASSEMBLY	
2-1. Cabinet (Lower)	3
2-2. Front panel	3
2-3. Main Board	4
3. DIAGRAMS	
3-1. Printed Wiring Boards	5
3-2. Schematic Diagram	7
4. EXPLODED VIEW	9
5. ELECTRICAL PARTS LIST	10

This section is extracted from instruction manual.

LOCATION AND FUNCTION OF CONTROLS

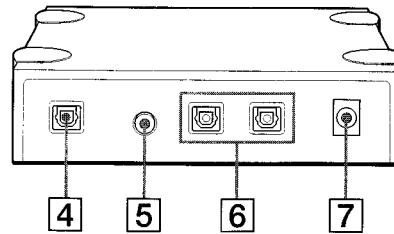
Front panel



Front panel

- 1 POWER switch
- 2 Selector switch
- 3 OPTICAL OUT (output) jack
(optical digital mini jack)

Rear panel



Rear panel

- 4 OPTICAL OUT (output) jack
(rectangular-shaped optical digital jack)
- 5 OPTICAL IN (input) jack
(optical digital mini jack)
- 6 OPTICAL IN (input) jack
(rectangular-shaped optical digital jack)
- 7 DC IN 4.5V jack

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Note

The optical digital input/output jacks are covered with protective caps.
Be sure to remove these caps before using the unit.

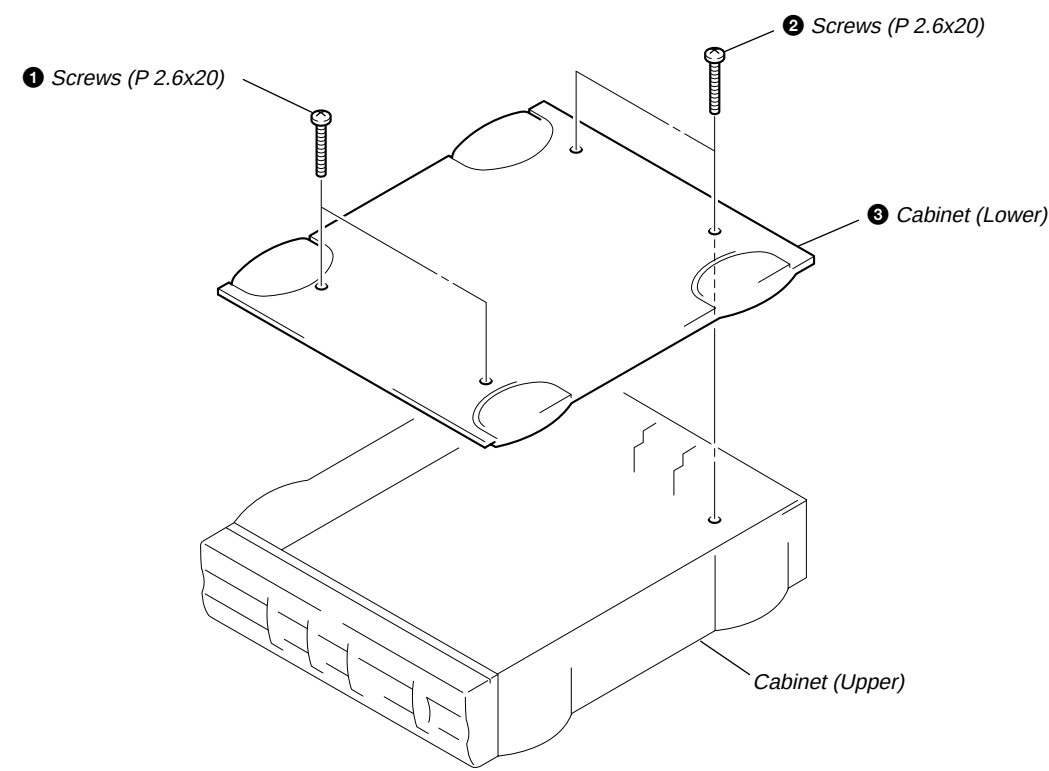
SECTION 2
DISASSEMBLY

● The equipment can be removed using the following procedure.

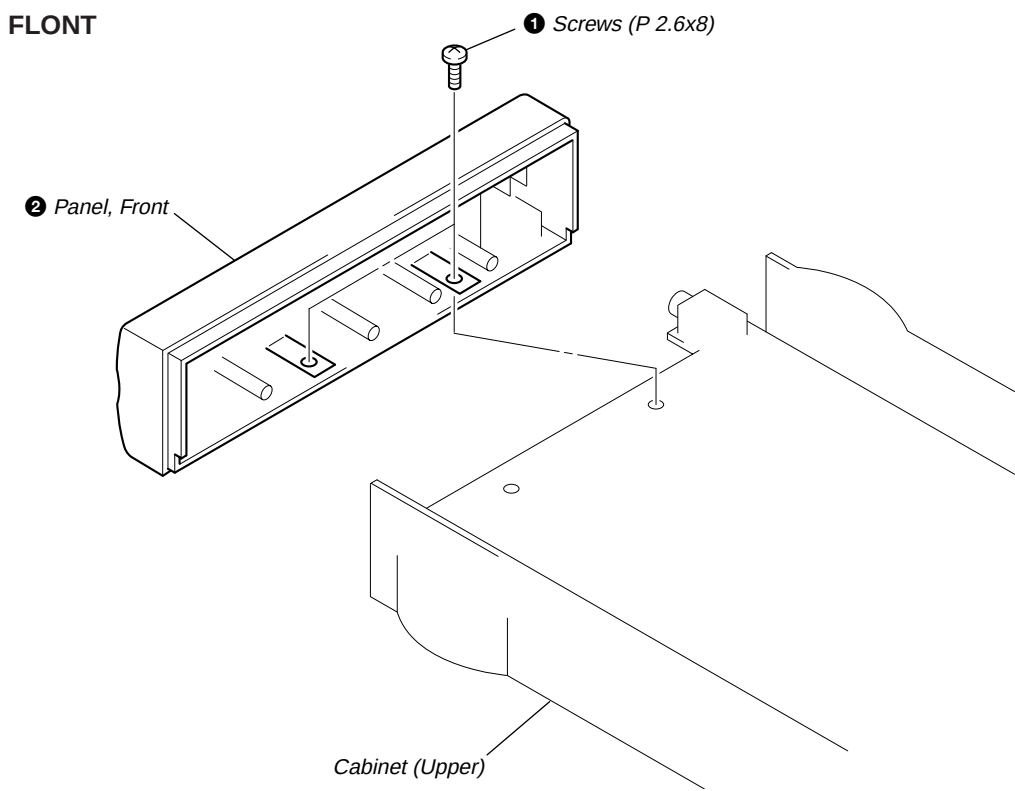
Set ➡ Cabinet (Lower) ➡ Panel, Front ➡ Main board

Note : Follow the disassembly procedure in the numerical order given.

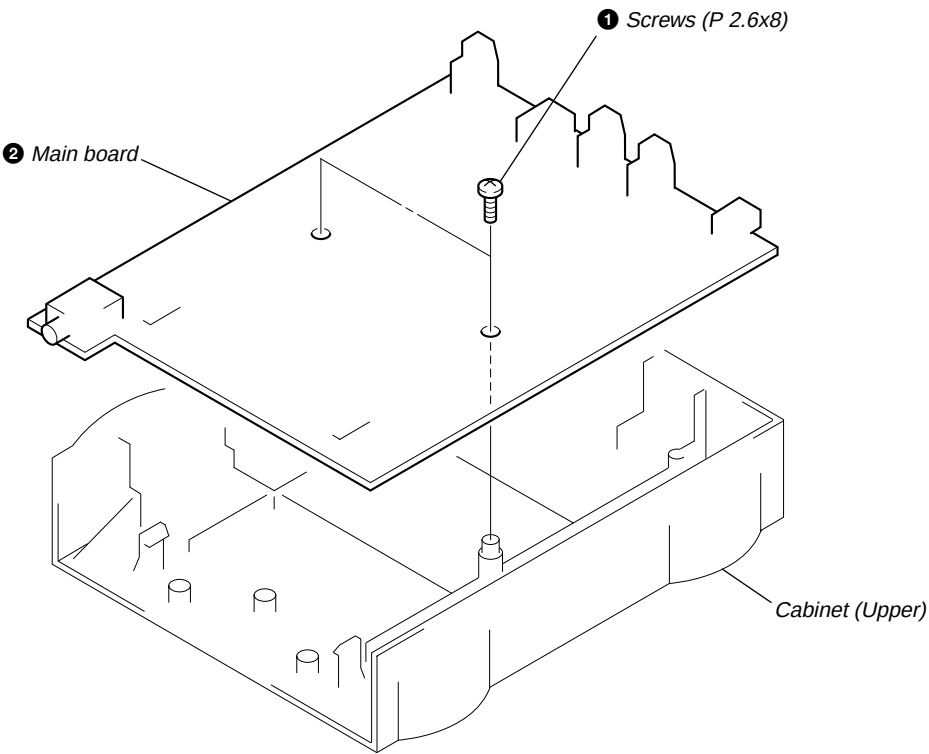
2-1. CABINET (LOWER)



2-2. PANEL, FLONT



2-3. MAIN BOARD

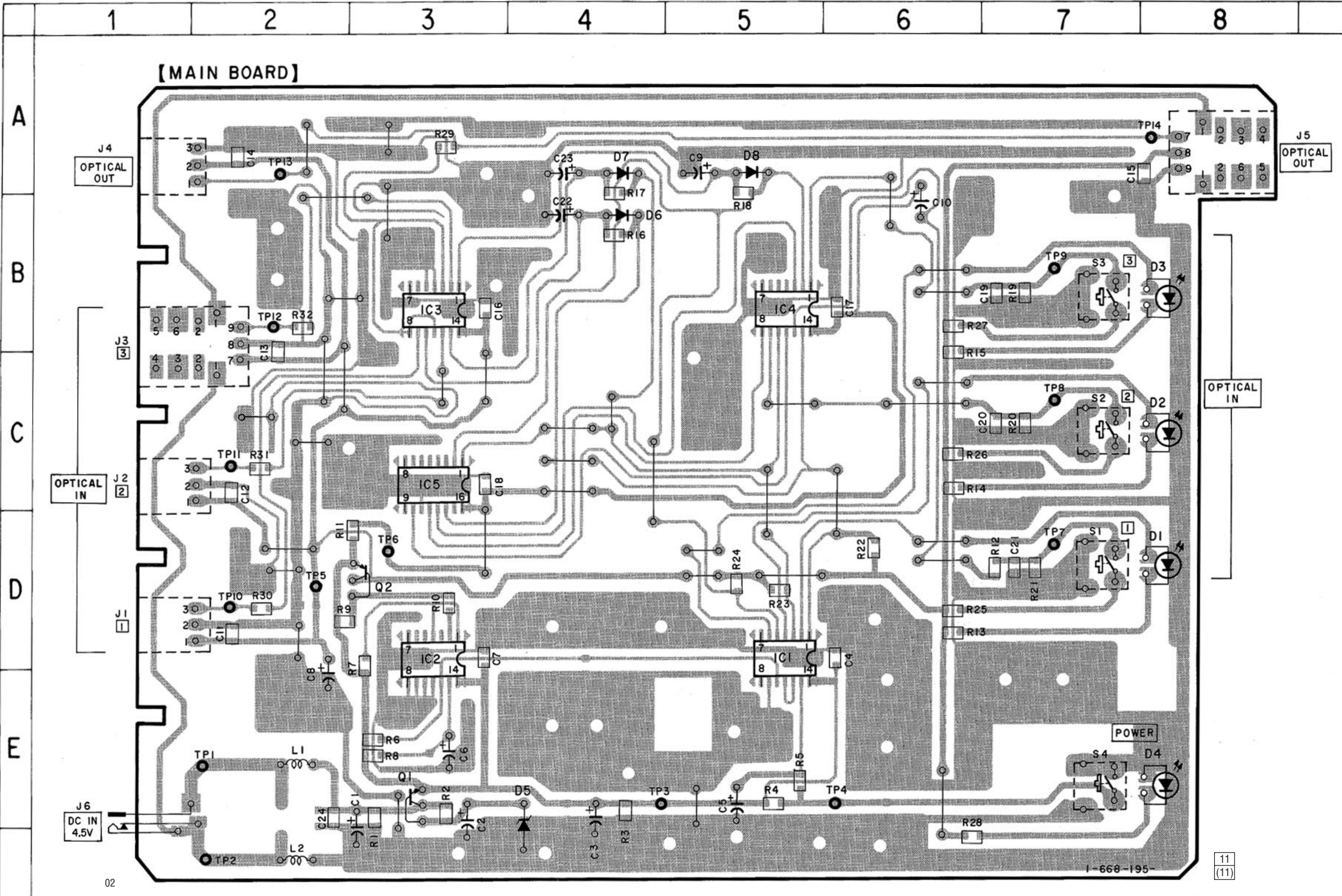


SECTION 3
DIAGRAMS

3-1. PRINTED WIRING BOARDS

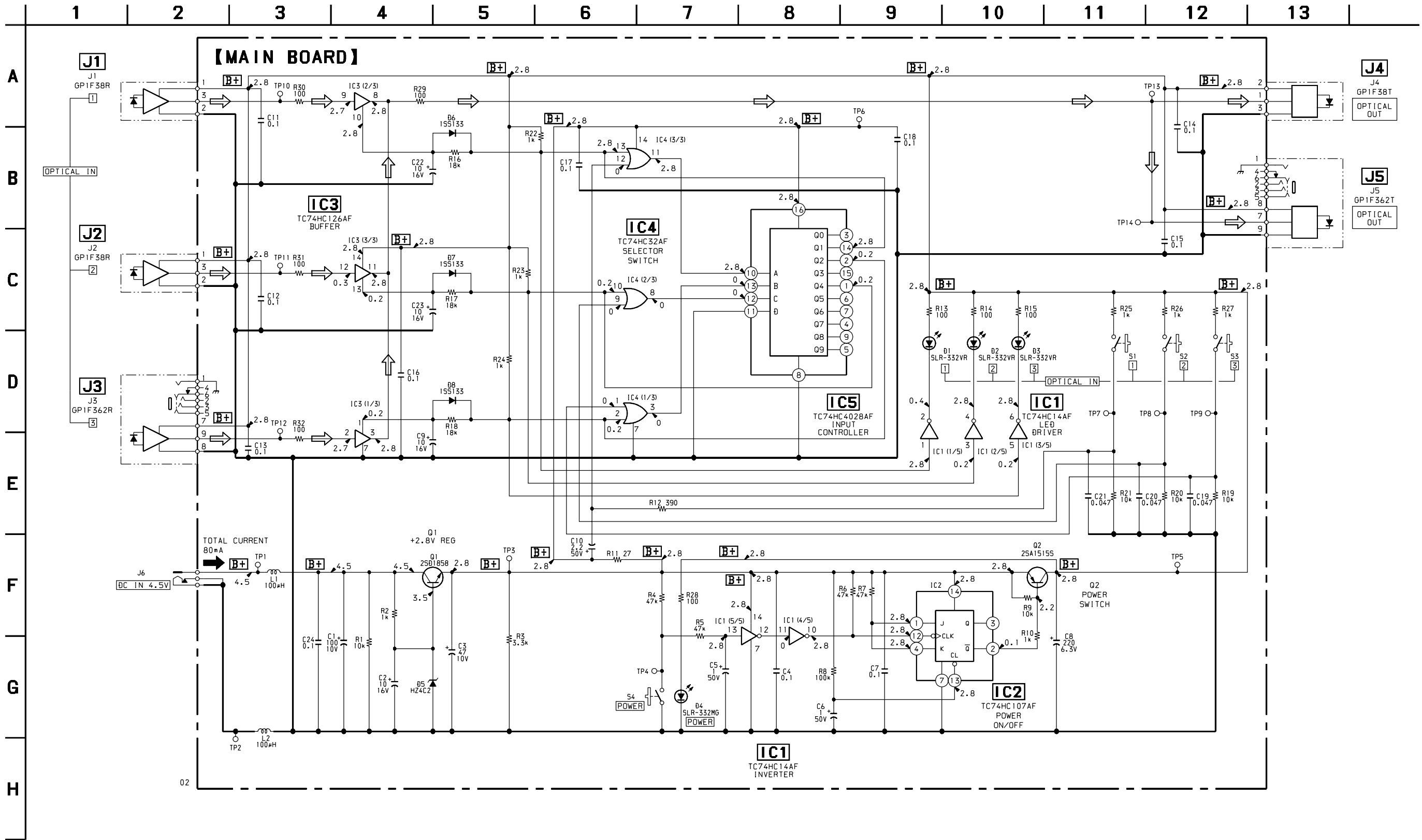
● Semiconductor
Location

Ref. No.	Location
D1	D-8
D2	C-8
D3	B-8
D4	E-8
D5	E-4
D6	B-4
D7	A-4
D8	A-5
IC1	D-5
IC2	D-3
IC3	B-3
IC4	B-5
IC5	C-3
J1	D-1
J2	C-1
J3	B-1
J4	A-1
J5	A-8
Q1	E-3
Q2	D-3



Note:
• — : parts extracted from the component side.
• : Pattern from the side which enables seeing.

3-2. SCHEMATIC DIAGRAM



Standard Value:

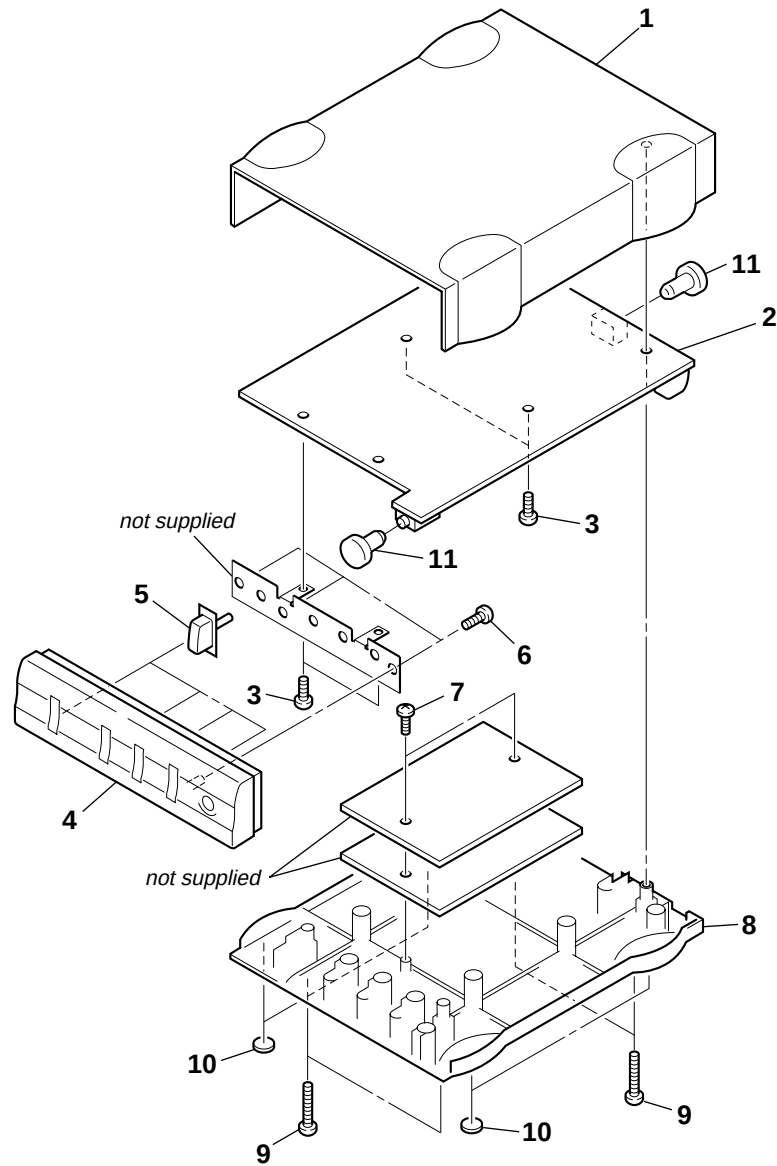
	TP10,11,12	TP13,14
High	more than 2.1V	more than 2.1V
Low	less than 0.4V	less than 0.8V

- Note:**
- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
 - [B+]: B+ Line.
 - Power voltage is dc 4.5V and fed with regulated dc power supply from external power voltage jack (J6).
 - Voltages are dc with respect to ground under no-signal conditions.
 - Voltages are taken with a VOM (Input impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
 - Signal path.
 - $\Rightarrow$: Digital

SECTION 4
EXPLODED VIEW

NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of this parts list.



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-996-451-01	CABINET (UPPER)		7	7-685-546-19	SCREW+BTP 3X8 TYPE2 N-S	
* 2	A-4542-487-A	MAIN BOARD, COMPLETE		8	4-996-452-01	CABINET (LOWER)	
3	7-685-902-21	SCREW+PTPWH 2.6X8 (TYPE2)		9	7-685-139-29	SCREW+P 2.6X20 TYPE2	
4	4-996-450-01	PANEL, FRONT		10	3-740-607-01	CUSHION	
5	X-4949-432-1	BUTTON ASSY (POWER, Selector 1, 2, 3)		11	4-997-539-01	CAP	
6	7-685-534-19	SCREW+BTP 2.6X8 TYPE2 N-S					

MAIN

SECTION 5
ELECTRICAL PARTS LIST

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE :Metal oxide-film resistor
F : nonflammable
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u : μ , for example :
uA.... : μ A...., uPA.... : μ PA....
uPB.... : μ PB...., uPC.... : μ PC....
uPD.... : μ PD....
- CAPACITORS
uF : μ F
- COILS
uH : μ H

The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4542-487-A	MAIN BOARD, COMPLETE *****		IC3	8-759-232-46	IC TC74HC126AF-TP1	
		< CAPACITOR >		IC4	8-759-925-85	IC TC74HC32AF-TP1	
				IC5	8-759-207-31	IC TC74HC4028AF	
C1	1-124-443-00	ELECT 100uF 20% 10V		J1	8-749-012-70	IC GP1F38R (OPTICAL IN 1)	
C2	1-124-907-11	ELECT 10uF 20% 50V		J2	8-749-012-70	IC GP1F38R (OPTICAL IN 2)	
C3	1-104-664-11	ELECT 47uF 20% 10V		J3	8-749-014-34	IC GP1F362R (OPTICAL IN 3)	
C4	1-163-038-91	CERAMIC CHIP 0.1uF 25V		J4	8-749-012-69	IC GP1F38T (OPTICAL OUT)	
C5	1-124-903-11	ELECT 1uF 20% 50V		J5	8-759-266-40	IC GP1F362T (OPTICAL OUT)	
						< JACK >	
C6	1-124-903-11	ELECT 1uF 20% 50V		J6	1-568-907-21	JACK,DC(POLARITY UNIFIED TYPE) (DC IN 4.5V)	
C7	1-163-038-91	CERAMIC CHIP 0.1uF 25V				< INDUCTOR >	
C8	1-104-666-11	ELECT 220uF 20% 6.3V		L1	1-408-421-00	MICRO INDUCTOR 100uH	
C9	1-124-907-11	ELECT 10uF 20% 50V		L2	1-408-421-00	MICRO INDUCTOR 100uH	
C10	1-126-961-11	ELECT 2.2uF 20% 50V				< TRANSISTOR >	
C11	1-163-038-91	CERAMIC CHIP 0.1uF 25V		Q1	8-729-931-14	TRANSISTOR 2SD1858-Q-TV2	
C12	1-163-038-91	CERAMIC CHIP 0.1uF 25V		Q2	8-729-030-51	TRANSISTOR 2SA1515S-R-TP	
C13	1-163-038-91	CERAMIC CHIP 0.1uF 25V				< RESISTOR >	
C14	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R1	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C15	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R2	1-216-049-91	RES,CHIP 1K 5% 1/10W	
C16	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R3	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C17	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R4	1-216-089-91	RES,CHIP 47K 5% 1/10W	
C18	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R5	1-216-089-91	RES,CHIP 47K 5% 1/10W	
C19	1-104-760-11	CERAMIC CHIP 0.047uF 10% 50V		R6	1-216-089-91	RES,CHIP 47K 5% 1/10W	
C20	1-104-760-11	CERAMIC CHIP 0.047uF 10% 50V		R7	1-216-089-91	RES,CHIP 47K 5% 1/10W	
C21	1-104-760-11	CERAMIC CHIP 0.047uF 10% 50V		R8	1-216-097-91	RES,CHIP 100K 5% 1/10W	
C22	1-124-907-11	ELECT 10uF 20% 50V		R9	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C23	1-124-907-11	ELECT 10uF 20% 50V		R10	1-216-049-91	RES,CHIP 1K 5% 1/10W	
C24	1-163-038-91	CERAMIC CHIP 0.1uF 25V					
		< DIODE >		R11	1-216-011-00	METAL CHIP 27 5% 1/10W	
D1	8-719-663-90	LED SLR-332VR (OPTICAL IN 1)		R12	1-216-039-00	METAL CHIP 390 5% 1/10W	
D2	8-719-663-90	LED SLR-332VR (OPTICAL IN 2)		R13	1-216-025-91	RES,CHIP 100 5% 1/10W	
D3	8-719-663-90	LED SLR-332VR (OPTICAL IN 3)		R14	1-216-025-91	RES,CHIP 100 5% 1/10W	
D4	8-719-060-68	LED SLR-332MG3F (POWER)		R15	1-216-025-91	RES,CHIP 100 5% 1/10W	
D5	8-719-942-42	DIODE HZ4C2T2					
D6	8-719-991-33	DIODE 1SS133T-77		R16	1-216-079-00	METAL CHIP 18K 5% 1/10W	
D7	8-719-991-33	DIODE 1SS133T-77		R17	1-216-079-00	METAL CHIP 18K 5% 1/10W	
D8	8-719-991-33	DIODE 1SS133T-77		R18	1-216-079-00	METAL CHIP 18K 5% 1/10W	
		< IC >		R19	1-216-073-00	METAL CHIP 10K 5% 1/10W	
IC1	8-759-232-16	IC TC74HC14AF-TP1		R20	1-216-073-00	METAL CHIP 10K 5% 1/10W	
IC2	8-759-240-41	IC TC74HC107AF(TP2)					

Ref. No.	Part No.	Description	Remark
R21	1-216-073-00	MET AL CHIP 10K 5%	1/10W
R22	1-216-049-91	RES,CHIP 1K 5%	1/10W
R23	1-216-049-91	RES,CHIP 1K 5%	1/10W
R24	1-216-049-91	RES,CHIP 1K 5%	1/10W
R25	1-216-049-91	RES,CHIP 1K 5%	1/10W
R26	1-216-049-91	RES,CHIP 1K 5%	1/10W
R27	1-216-049-91	RES,CHIP 1K 5%	1/10W
R28	1-216-025-91	RES,CHIP 100 5%	1/10W
R29	1-216-025-91	RES,CHIP 100 5%	1/10W
R30	1-216-025-91	RES,CHIP 100 5%	1/10W
R31	1-216-025-91	RES,CHIP 100 5%	1/10W
R32	1-216-025-91	RES,CHIP 100 5%	1/10W

<SWITCH>

S1	1-571-532-21	SWITCH, TACTIL (OPTICAL IN1)
S2	1-571-532-21	SWITCH, TACTIL (OPTICAL IN2)
S3	1-571-532-21	SWITCH, TACTIL (OPTICAL IN3)
S4	1-571-532-21	SWITCH, TACTIL (POWER)

ACCESSORIES & PACKING MATERIALS

△	1-467-009-21	ADAPTOR, AC (AC-E455)
	3-861-444-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)
	4-997-539-01	CAP

The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
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