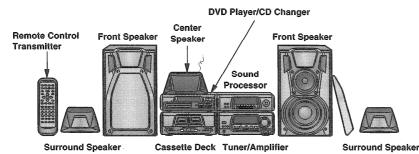
ervice Man

DOLBY SURROUND PRO·LOGIC

Sound Processor

Sound Processor SH-EH100



(S) Silver Type.

Area

(GK)..... China.

Because of unique interconnecting cables, when a component requires service, send or bring in the entire system.

System	SC-VC1000	SC-VC988
Sound Processor	SH-EH1000	SH-EH1000
Tuner/Amplifier	SA-EH1000	SA-EH602
DVD Player	SL-EH1000	
CD Changer		SL-EH602
Cassette Deck	RS-EH1000	RS-EH1000
Front Speakers*2	SB-VC1000	SB-VC1000
Center Speaker*2	SB-PC600X	SB-PC600X
Surround Speakers*2	SB-PS600X	SB-PS600X

Specifications

EQ/SFP Section

MANUAL GEQ Center frequency

Level control

EQ SPACE mode 3 modes

Acoustic Image Equalizer

Pre-amplifier Section

Input sensitivity/impedance

VCR VDP Output level

VCR REC OUT **VIDEO OUTPUT**

MONITOR OUT VCR REC OUT

100 Hz, 315 Hz, 1 kHz, 3.15 kHz, 10 kHz

± 3, 6, 9 dB

HALL, CLEAR, HEAVY

36 patterns

250 mV/15 kΩ

250 mV/15 $k\Omega$

250 mV/1.5 k Ω

1 Vp-p, 75 Ω 1 Vp-p, 75 Ω

DOLBY PRO LOGIC Section

PRO LOGIC mode **CENTER** mode **DELAY TIME**

SURROUND, 3 STEREO NORMAL, WIDE, PHANTOM 20 ms (Fixed)

Spectrum analyzer Section

Display mode

NORMAL, PEAKHOLD, AURORA

General

Power supply

DC $\pm 7.5/ + 13/ - 30 \text{ V}$ AC 5.5 V 50/60 Hz

5 W

Power consumption

Dimensions 287 (W) \times 89 (H) \times 273.5 (D) mm

Weight

Notes: Specifications are subject to change without notice. Weight and dimensions are approximate.

*1: Manufactured under license from Dolby Laboratories Licensing Corporation.

DOLBY, the double-D symbol $\ensuremath{\square} \ensuremath{\square}$ and "PRO LOGIC" are trademarks of Dolby Laboratories Licensing Corporation.

*2: Made in Singapore.

<u>∧</u>WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.



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Contents

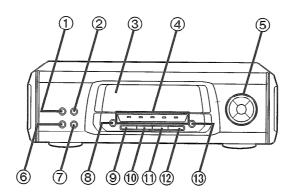
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NOTE:

Refer to the service manual for Model No. SA-EH1000 (ORDER No. AD9807143C3) for information on "Accessories", "Connections", "Installation", "Operations" and "Packaging".

■ Location of Controls



- 1 EQ SPACE on/flat button (EQ SPACE ON/FLAT)
- ② Display mode select/demonstration button (DISP MODE/—DEMO)
- 3 Display
- (4) DOLBY PRO LOGIC indicators (SURROUND, 3 STEREO, NORMAL, WIDE, PHANTOM)
- (5) Multi control buttons (MULTI CONTROL ◀, ▶, ▼, ▲)
- 6 Acoustic image EQ button (ACOUSTIC IMAGE EQ)
- (7) EQ SPACE preset/manual select button (PRESET/MANUAL)
- 8 SUPER SURROUND button and indicator (SUPER SURROUND)

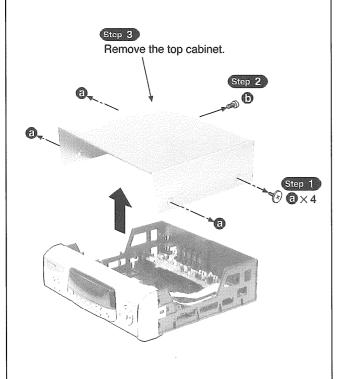
- DOLBY PRO LOGIC on/off button (DOLBY PRO LOGIC, OFF/ON)
- (MODE)

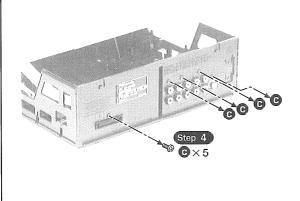
 DOLBY PRO LOGIC mode select button
- ① DOLBY PRO LOGIC test signal button (TEST)
- (2) DOLBY PRO LOGIC center mode select button (CENTER MODE)
- (3) SUPER WOOFER button and indicator (SUPER WOOFER)

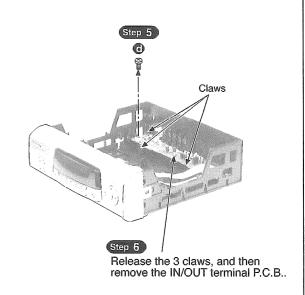
Operation Checks and Component Replacement Procedures

- NOTE 1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
 - 2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.

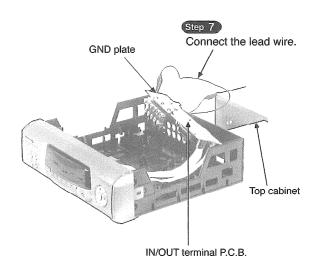
1. Checking for the IN/OUT terminal P.C.B.





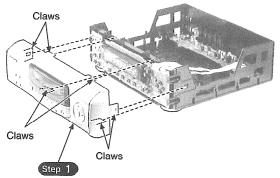


· Check the IN/OUT terminal P.C.B. as shown below.



2. Checking for the FL P.C.B.

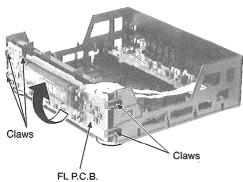
· Follow the Step 1 ~ Step 3 of the item 1 on page 3.



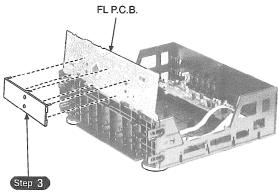
Release the 6 claws, and then remove the front panel ass'y.

Step 2

Release the 5 claws, and then remove the FL P.C.B..



· Check the FL P.C.B. as shown below.



Unsolder the shield plate terminals. (6 points)

■ To Supply Power Source

This unit SH-EH1000 is designed to operate on power supplied from the system connected. (For system connection, refer to Fig.1)

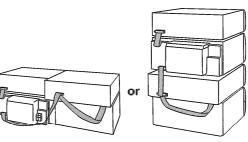
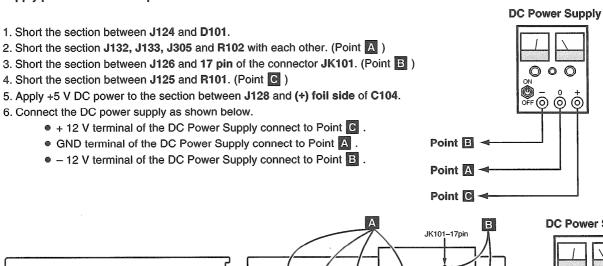
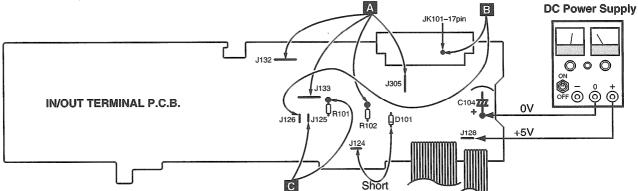


Fig. 1

When you have to test and service the unit SH-EH1000 alone, use the following method to supply power source and operate the unit:





■ To Check Signals

Input the audio signal and confirm it to be outputted from the terminal.

	INPUT	OUTPUT	AUDIO TV VIDEO MONITOR
L-ch	AUDIO	AUDIO	D
R-ch	IN VCR	OUT VCR	I RO O O O O O O O O O O O O O O O O O O

■ Schematic Diagram

	com n	P	ag	е
A	FL	CIRCUIT	7, 8	8
		OUT TERMINAL CIRCUIT		

• This schematic diagram may be modified at any time with the development of new technology.

Notes:

- S301: EQ SPACE on/flat switch (EQ SPACE ON/FLAT)
- S302: Acoustic image EQ switch (ACOUSTIC IMAGE EQ)
- S303: EQ SPACE preset/manual select switch (PRESET/MANUAL)
- \$304: Display mode select/demonstration switch (DISP MODE/-DEMO)
- \$305: DOLBY PRO LOGIC on/off switch (OFF/ON)
- \$306: DOLBY PRO LOGIC mode select switch (MODE)
- \$307: DOLBY PRO LOGIC test signal switch (TEST)
- \$308: DOLBY PRO LOGIC center mode select switch (CENTER MODE)
- \$309: Super surround switch (SUPER SURROUND)
- S310 ~ S313 : Multi control switch

(MULTI CONTROL , S310 : \P , S311 : \P , S312 : \P , S313 : \P)

- \$314: Super woofer switch (SUPER WOOFER)
- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken
 as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
- Voltage values and waveforms are measured as indicated in the schematic diagram when test points between AG and VG, and between DG and CTG, and between AG and DG are shorted.
- Important safety notice:

Components identified by \triangle mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Caution!

IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

Cover the parts boxes made of plastics with aluminum foil.

Ground the soldering iron.

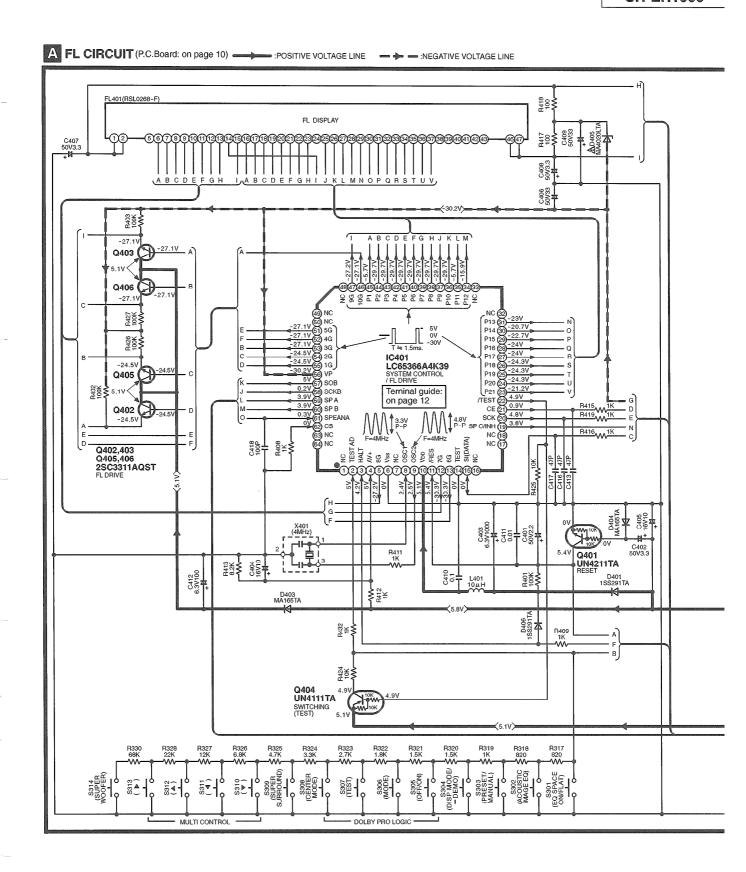
Put a conductive mat on the work table.

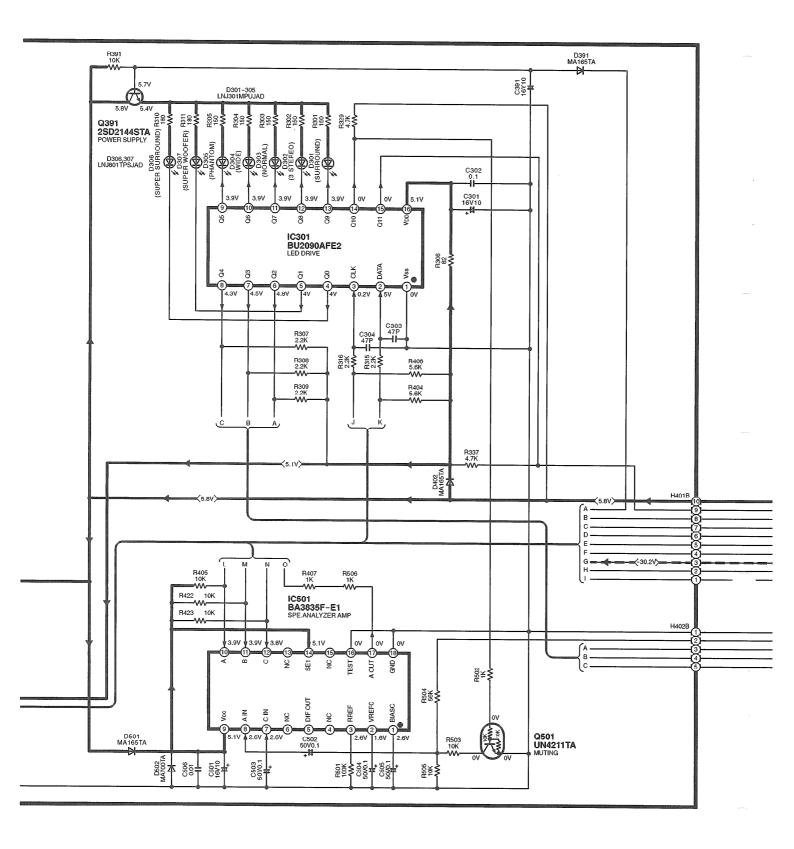
Do not touch the legs of IC or LSI with the fingers directly.

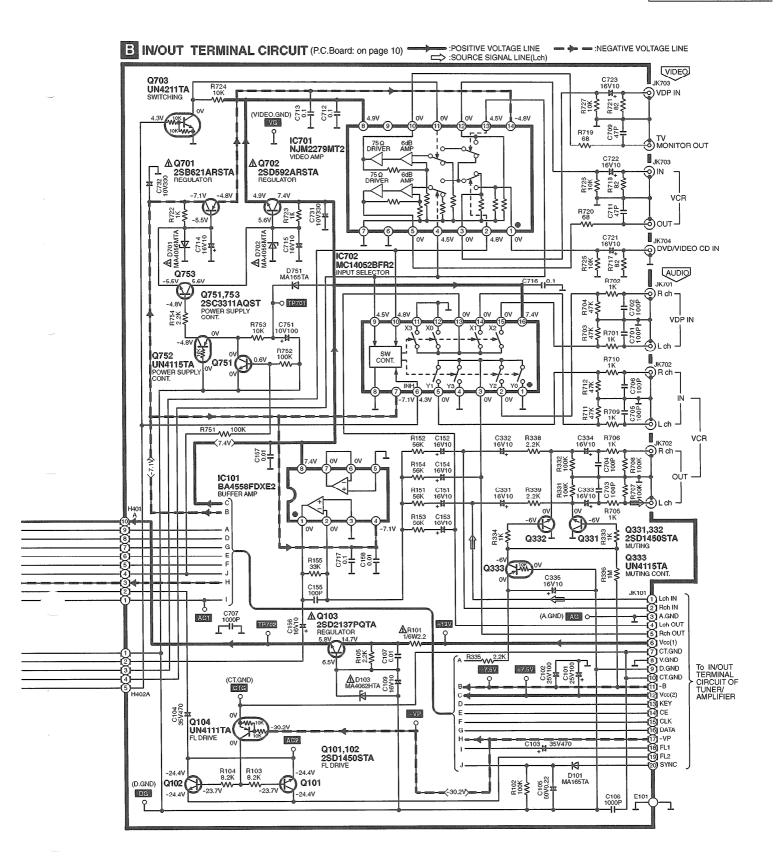
Voltage and signal line

: Positive voltage line
: Negative voltage line

: Source signal line (L-ch)

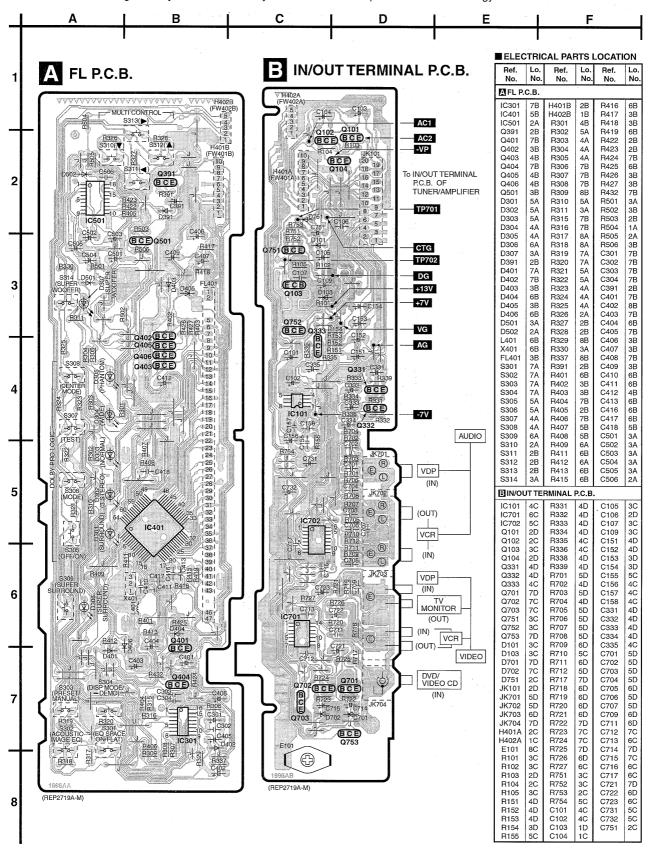




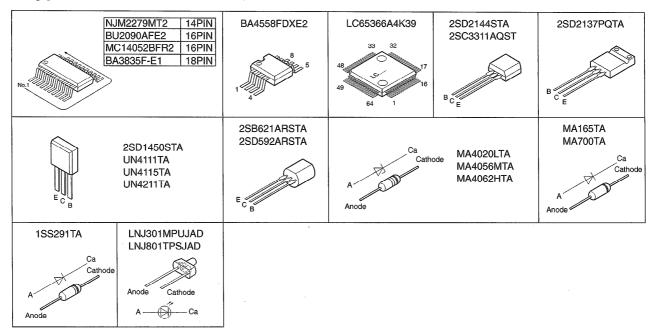


■ Printed Circuit Board Diagram

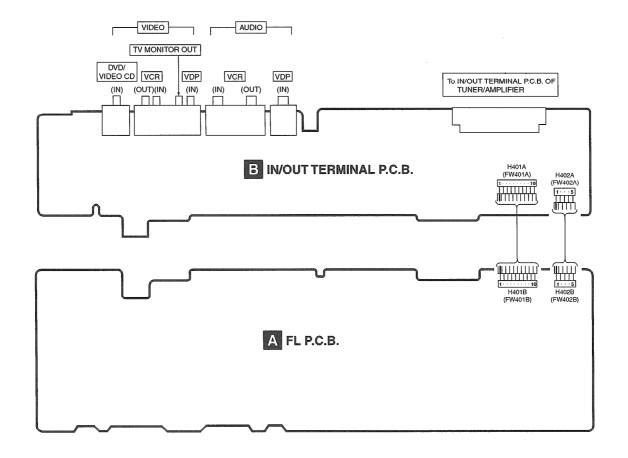
This circuit board diagram may be modified at any time with the development of new technology.



■ Type Illustration of IC's, Transistors and Diodes



■ Wiring Connection Diagram



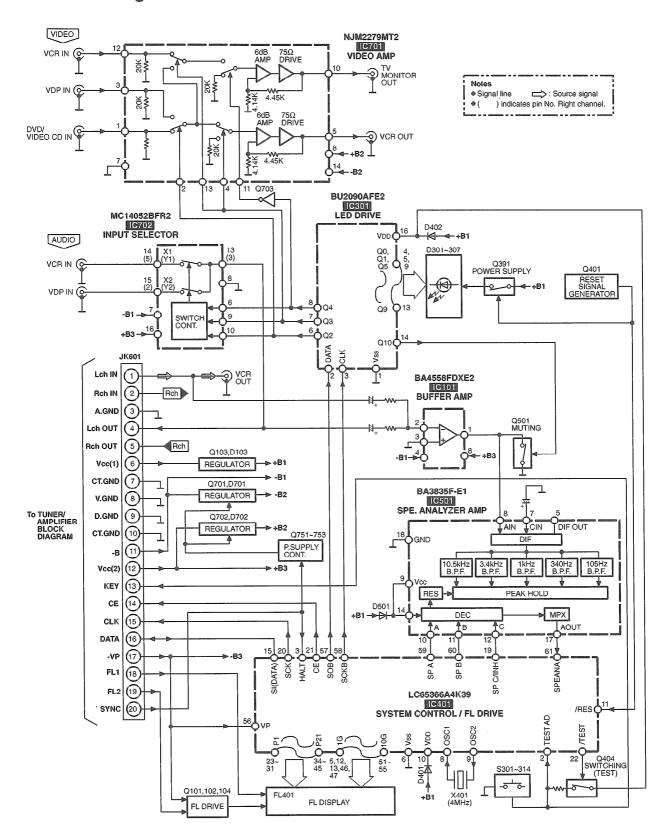
■ Terminal Function of IC's

● IC401 (LC65366A4K39) : System Control / FL Drive

Pin No.	Terminal Name	1/0	Function	
1	NC		No used, open	
2	TEST AD	I	TEST mode key signal input	
3	HALT	_	Power failure detect signal input	
4	AV+	ı	Power supply for analog circuit (+5 V)	
5	8G	0	Grid signal output	
6	Vss	-	GND terminal	
7	NC	_	No used, open	
8	OSC1	ı	Oscillator composted towning (4 MILL)	
9	OSC2	0	Oscillator connected terminal (4 MHz)	
10	V _{DD}	_	Power supply	
11	/RES	ı	Reset signal input	
12, 13	7G, 6G	0	Grid signal output	
14	TEST	-	No used, connected to VSS	
15	SI	1/0	Communication data signal input/output	
16~18	NC	_	No used, open	
19	SP C/INH	0	Select terminal for Spectrum analyzer IC output	
20	SCK	0	Serial communication signal output (Clock signal output)	

r	1			
Pin No.	Terminal Name	1/0	Function	
21	CE	0	Serial communication signal output (Chip enable signal output)	
22	/TEST	0	Test signal terminal	
23~31	P21~P13	0	Segment signal output	
32, 33	NC		No used, open	
34~45	P12~P1	0	Segment signal output	
46, 47	10G, 9G	0	Grid signal output	
48~50	NC		No used, open	
51~55	5G~1G	0	Grid signal output	
56	VP		Negative power supply	
57	SOB	0	Serial data signal output	
58	SCKB	0	Serial clock signal output	
59	SP A	0	Select terminal to spectrum analyzer IC	
60	SP B	0	output	
61	SPEANA	1	Analog signal input from spectrum analyzer IC	
62	cs	1	Chip select signal input terminal	
63, 64	NC	_	No used, open	

■ Block Diagram



■ Replacement Parts List

Notes: * Important safety notice:

Components identified by $\hat{\mathbb{L}}$ mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fireretardant (resistors), high-quality sound (capacitors), lownoise (resistors), etc. are used.

When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.

* All parts are supplied by MESA.

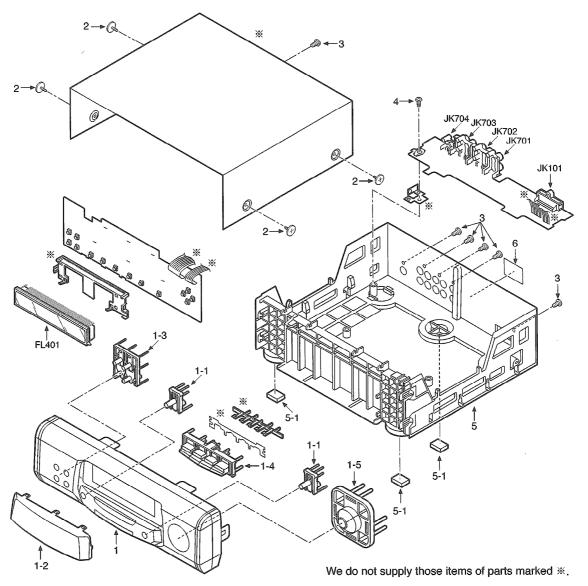
D-(N)	T 8			
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	RYP0733P-S	FRONT PANEL ASS'Y	1	
1-1	RGU1682-Q	BUTTON 1	2	
1-2	RKW0504-V	FL WINDOW	1	
1-3	RGU1509-S	BUTTON 2	1	
1-4	RGU1510A-S	BUTTON 3	1	
1-5	RGU1511-S	BUTTON 4	1	
2	RHD30007-K1	SCREW	4	
3	XTB3+8JFZ	SCREW	6	
4	XTBS3+8JFZ1	SCREW	1	
5	RYK0700M-K	CHASSIS	1	
5-1	RKA0089-K	RUBBER	3	
°	RGN1560-K	NAME PLATE	1	
C101,02	ECA1EM101	25V 100U	-	
C103,04	RCE1VM471BV	35V 470U	2	
C105	ECEA1HKAR22B	50V 0.22U	1	
C106	ECBT1H102KB5	50V 1000P	1	
C107	ECBT1E103ZF	25V 0.01U	1	
C109	RCE1CKA100BG	16V 10U	1	
C151-54	RCE1CKA100BG	16V 10U	4	
C155	ECBT1H101KB5	50V 100P	1	
C156	RCE1CKA100BG	16V 10U	1	
C157,58	ECBT1E103ZF	25V 0.01U	2	
C301	RCE1CKA100BG	16V 10U	1	
C302	ECBT1H104ZF5	50V 0.1U	1	
C303,04	ECBT1H470J5	50V 47P	2	
C331-35	RCE1CKA100BG	16V 10U	5	
C391 C401	RCE1CKA100BG	16V 10U	1	
C401	ECEA1HKS2R2 RCE1HKA3R3BG	50V 2.2U	1	
C402	RCE0JU102BV	50V 3.3U 6.3V 1000U	1	
C404,05	RCE1CKA100BG	16V 10U	2	
C406	ECEA1HKA330B	50V 33U	1	
C407,08	RCE1HKA3R3BG	50V 3.3U	2	
C409	ECEA1HKA330B	50V 33U	1	
C410	ECBT1H104ZF5	50V 0.1U	1	
C411	ECBT1E103ZF	25V 0.01U	1	
C412	ECEA0JKS101	6.3V 100U	1	
C413	ECBT1H470J5	50V 47P	1	
C416,17	ECBT1H470J5	50V 47P	2	
C418	ECBT1H101KB5	50V 100P	1	
C501	RCE1CKA100BG	16V 10U	1	
C502-05	ECEA1HKS0R1	50V 0.1U	4	
C506 C701-06	ECBT1E103ZF ECBT1H101KB5	25V 0.01U	1	
C701-06	ECBT1H101KB5	50V 100P 50V 1000P	6	
C707	ECBT1H102KB5	50V 1000P 50V 47P	1 1	
C711	ECBT1H470J5	50V 47P	1	
C712,13	ECBT1H104ZF5	50V 0.1U	2	
C714,15	RCE1CKA100BG	16V 10U	2	
C716,17	ECBT1H104ZF5	50V 0.1U	2	
C721-23	RCE1CKA100BG	16V 10U	3	
C731,32	ECA1AM331	10V 330U	2	
C751	RCE1AKA101BG	10V 100U	1	
D101	MA165	DIODE	1	
⚠ D103	MA4062-H	DIODE	1	
D301-05	LNJ301MPUJAD	LED	5	
D306,07	LNJ801TPSJAD	LED	2	
D391	MA165	DIODE	1	
D401	1SS291TA	DIODE	1	
D402-04 ⚠ D405	MA165	DIODE	3	
	MA4020LTA	DIODE	1	
D406	1SS291TA	DIODE	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
D501	MA165	DIODE	1	Hemano
D502	MA700TA	DIODE	1	
⚠ D701,02	MA4056MTA	DIODE	2	
D751	MA165	DIODE	1	
- 5.0.	INIXTIOO	BIOBE	<u> </u>	
E101	SNE1004-2	GND PLATE	Η,	
	SINE 1004-2	GND PLATE	1	
FI 404	501 0000 5			
FL401	RSL0268-F	FL	1	
IC101	BA4558FDXE2	IC	1	
IC301	BU2090AFE2	IC	1	
IC401	LC65366A4K39	IC	1	
IC501	BA3835F-E1	IC	1	
IC701	NJM2279MT2	IC	1	
IC702	MC14052BFR2	IC	1	
			<u> </u>	
JK101	RJT065K20	JACK	<u> </u>	
JK701	SJF3068-7N		1	
		JACK	1	
JK702	SJF3069N	JACK,LINE OUT/QUX IN JACK	1	
JK703	SJF3069-3N	JACK	1	
JK704	SJFD7-5	JACK,VCR1 IN TERMINAL	1	
L401	RLQA100JT-Y	COIL,CHOKE	1	
			T ·	
Q101,02	2SD1450R	TRANSISTOR	2	
△ Q103	2SD2137PQTA	TRANSISTOR	1	
Q104	UN4111	TRANSISTOR		
			1	
Q331,32	2SD1450R	TRANSISTOR	2	
Q333	UN4115	TRANSISTOR	1	
Q391	2SD2144S	TRANSISTOR	1	
Q401	UN4211	TRANSISTOR	1	
Q402,03	2SC3311AQST	TRANSISTOR	2	
Q404	UN4111	TRANSISTOR	1	
Q405,06	2SC3311AQST	TRANSISTOR	2	
Q501	UN4211	TRANSISTOR	1	
△ Q701	29B621A-R	TRANSISTOR		
⚠ Q702	2SD592ARSTA		1	
Q703	UN4211	TRANSISTOR	1	
		TRANSISTOR	1	
Q751	2SC3311AQST	TRANSISTOR	1	
Q752	UN4115	TRANSISTOR	1	
Q753	2SC3311AQST	TRANSISTOR	1	
⚠ R101	ERQ16NKW2R2E	1/6W 2.2	1	
R102	ERDS2FJ104	1/4W 100K	1	
R103,04	ERDS2FJ822	1/4W 8.2K	2	
R105	ERDS2FJ222	1/4W 2.2K	1	
R151-54	ERDS2FJ563	1/4W 56K	4	
R155	ERDS2FJ333	1/4W 33K	1	
R301-05	ERDS2FJ151	1/4W 150		
R306			5	
	ERDS2FJ820	1/4W 82	- 1	
R307-09	ERDS2FJ222	1/4W 2.2K	3	
R310,11	ERDS2FJ181	1/4W 180	2	_
R315,16	ERDS2FJ222	1/4W 2.2K	2	
R317,18	ERDS2FJ821	1/4W 820	2	
R319	ERDS2FJ102	1/4W 12K	1	
R320,21	ERDS2FJ152	1/4W 1.5K	2	
R322	ERDS2FJ182	1/4W 1.8K	1	
R323	ERDS2FJ272	1/4W 2.7K	1	
R324	ERDS2FJ332	1/4W 3.3K	1	
R325	ERDS2FJ472	1/4W 4.7K	1	
R326	ERDS2FJ472 ERDS2FJ682	1/4W 4.7K		
R327	ERDS2FJ682 ERDS2FJ123		1	
	ERDS2FJ123 ERDS2FJ223		1	
R328		1/4W 22K	1	
R329	ERDS2FJ472	1/4W 4.7K	1	
R330	ERDS2FJ683	1/4W 68K	1	
R331,32	ERDS2FJ104	1/4W 100K	2	
R333,34	ERDS2FJ102	1/4W 1K	2	
R335	ERDS2FJ222	1/4W 2.2K	1	
R336	ERDS2FJ105	1/4W 1M	1	
R337	ERDS2FJ472	1/4W 4.7K	1	
R338,39	ERDS2FJ222	1/4W 2.2K	2	
R391	ERDS2FJ103		_	
			1	
R401-03	ERDS2FJ104	1/4W 100K	3	
R404	ERDS2FJ562	1/4W 5.6K	1	
R405	ERDS2FJ103	1/4W 10K	1	
R406	ERDS2FJ562	1/4W 5.6K	1	
R407-09	ERDS2FJ102	1/4W 1K	3	
R411,12	ERDS2FJ102	1/4W 1K	2	
, . –			-	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R413	ERDS2FJ822	1/4W 8.2K	1	
R415,16	ERDS2FJ102	1/4W 1K	2	
R417,18	ERDS2FJ101	1/4W 100	2	
R419	ERDS2FJ102	1/4W 1K	1	
R422-25	ERDS2FJ103	1/4W 10K	4	
R426,27	ERDS2FJ104	1/4W 100K	2	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
R432	ERDS2FJ102	1/4W 1K	1	
R501	ERDS2FJ104	1/4W 100K	1	
R502	ERDS2FJ102	1/4W 1K	1	
R503	ERDS2FJ103	1/4W 10K	1	
R504	ERDS2FJ563	1/4W 56K	1	
R505	ERDS2FJ103	1/4W 10K	1	
R506	ERDS2FJ102	1/4W 1K	1	
R701,02	ERDS2FJ102	1/4W 1K	2	
R703,04	ERDS2FJ473	1/4W 47K	2	
R705,06	ERDS2FJ102	1/4W 1K	2	

Ref.No.	Part No.	Part Namé & Description	Pcs	Remarks
R707,08	ERDS2FJ104	1/4W 100K	2	
R709,10	ERDS2FJ102	1/4W 1K	2	
R711,12	ERDS2FJ473	1/4W 47K	2	
R717,18	ERDS2FJ820	1/4W 82	2	
R719,20	ERDS2FJ680	1/4W 68	2	
R721	ERDS2FJ820	1/4W 82	1	
R722,23	ERDS2FJ102	1/4W 1K	2	
R724-27	ERDS2FJ103	1/4W 10K	4	
R751,52	ERDS2FJ104	1/4W 100K	2	
R753	ERDS2FJ103	1/4W 10K	1	
R754	ERDS2FJ222	1/4W 2.2K	1	
S301-14	EVQPTD05Q	SW,PUSH	14	
X401	EF0EC4004T4	OSCILLATOR	1	

■ Cabinet Parts Location



Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	RYP0733P-S	FRONT PANEL ASS'Y	1	
1-1	RGU1682-Q	BUTTON 1	2	
1-2	RKW0504-V	FL WINDOW	1	
1-3	RGU1509-S	BUTTON 2	1	
1-4	RGU1510A-S	BUTTON 3	1	
1-5	RGU1511-S	BUTTON 4	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
			T = T	
2	RHD30007-K1	SCREW	4	
3	XTB3+8JFZ	SCREW	6	
4	XTBS3+8JFZ1	SCREW	1	
5	RYK0700M-K	CHASSIS	1	
5-1	RKA0089-K	RUBBER	3	
6	RGN1560-K	NAME PLATE	1	