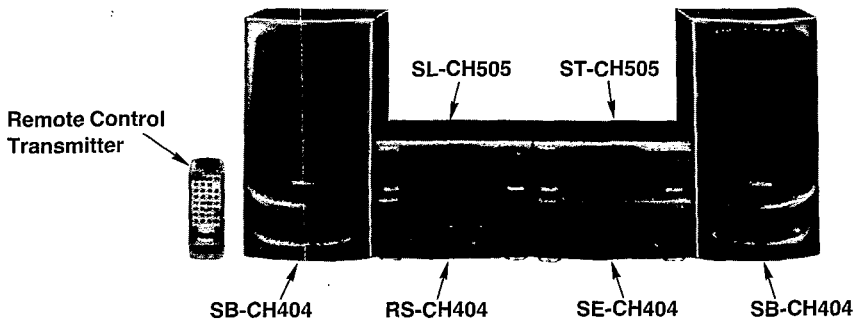
ORDER NO. AD9307219C8

Service Manual

Tuner/Sound Processor

Tuner

ST-CH505



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

Colour

(K) .... Black Type

Areas

Suffix for Model No.	Area	Colour
(E)	Europe	(K)
(EG)	Germany and Italy	
(GN)	Oceania	

System: SC-CH404

■ Specifications

■ Pre-amplifier section

Input sensitivity/impedance

PHONO for (E) (EG) areas	2.5 mV/47 kΩ
AUX for (GN) area	250 mV/15 kΩ
DCC	250 mV/15 kΩ
Output level	
DCC RECOUT	150 mV/1.5 kΩ
Frequency response	
PHONO for (E) (EG) areas	30 Hz–15 kHz/+1.5 to −2.0 dB
AUX for (GN) area	30 Hz–20 kHz
DCC	30 Hz–20 kHz

■ EQ, SFP section

Center frequency

80, 250, 1 k, 4 k, 12.5 k(Hz)

Fixed mode

SPACE	3 modes (DISCO, LIVE, HALL)
GEQ	5 modes (HEAVY, CLEAR, SOFT, CAR, HP ST)

■ FM tuner section

Frequency range	87.50–108.00 MHz (0.05 MHz steps)
Sensitivity	1.8 µV (IHF usable)
S/N 26 dB	1.5 µV (75Ω)
S/N	MONO 70 dB (75 dB, IHF)
Stereo separation 1 kHz	35 dB
Antenna terminal(s)	75Ω (unbalance)

■ AM tuner section

Frequency range	
MW	522–1611 kHz (9 kHz step) 530–1620 kHz (10 kHz step)
LW	144–288 kHz (9 kHz step)
Sensitivity (S/N 20 dB)	
MW	500 µV/m
LW	50 µV

■ Timer section

Clock	Quartz-lock type
Function	24-hour programmable; Play timer (1 time), Rec timer (1 time), Sleep (120 min, 1 min intervals)
Setting	1 minute–23 hours 59 minutes (1 min, intervals)

■ General

Dimensions (W×H×D)	270×89×274 mm
Weight	1.75 kg

Notes:

1. Weights and dimensions shown are approximate.
2. Design and specifications are subject to change without notice.

System	Tuner	Compact disc player	Amplifier	Cassette deck	Speakers
SC-CH404	**ST-CH505**	SL-CH505	SE-CH404	RS-CH404	SB-CH404 *1(E) (EG) areas *2(GN) area

*1Made in PAES
*2Made in NABEL

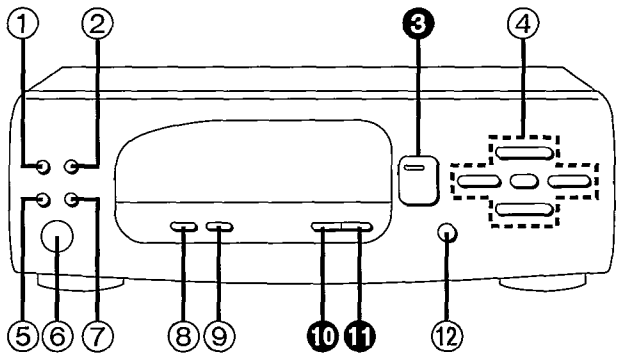
Technics

■ Contents

NOTE:
Refer to the service manual for Model No. SE-CH404 (Order No. AD9307218C8) for information on "ACCESSORIES", "STACKING THE COMPONENTS", "CONNECTIONS" and "PACKAGING".

■ Location of Controls

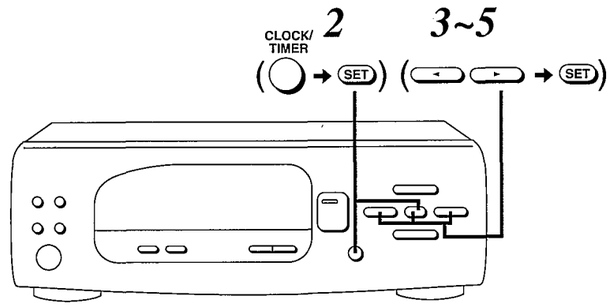
The functions indicated by the numbers with black background (for example ❸) can also be activated from the remote control.



No.	*Name*
①	**External source input select button (EXT)**
②	**Internal source input select button (INT)**
❸	**Tuner source/band select button and indicator (TUNER/BAND)**
④	**Multi-control buttons (MULTI CONTROL)**
⑤	**Record timer button (⏲ REC)**
⑥	**Remote control signal sensor (SENSOR)**

No.	*Name*
⑦	**Play timer button (⏲ PLAY)**
⑧	**V.bass button (V.BASS)**
⑨	**Voice mute button (KARAOKE)**
❿	**EQ/SPACE mode ON/FLAT button (ON/FLAT)**
⓫	**EQ/SPACE mode select button (MODE)**
⑫	**Clock/timer button (CLOCK/TIMER)**

■ Setting the Time



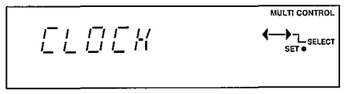
These instructions explain how to set the timer for 16:25 (4:25 p.m.) on Wednesday.

1 POWER STANDBY/ON

Switch on the power on the amplifier.

2 CLOCK/ TIMER

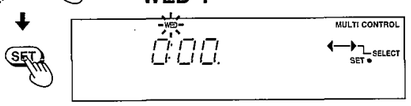
① **Press CLOCK/TIMER to select "CLOCK".**



within 7 seconds:

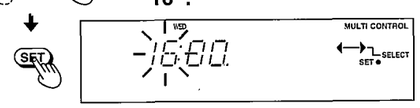
② **Press SET.**

3 ① **Press ◄ or ► to select "WED".**



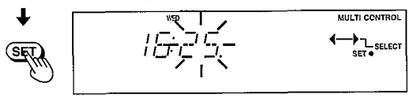
② **Press SET.**

4 ① **Press ◄ or ► to select "16".**



② **Press SET.**

5 ① **Press ◄ or ► to select "25".**



② **Press SET to finish setting the time.**

The display will return to the previous display after about 2 seconds.

When "E:" appears on the display:

It appears when you connect the power supply cord for the first time or if there has been a power failure.
If this happens, reset the time.

If the minutes setting has gone wrong:

1. Press CLOCK/TIMER.
2. Press SET 3 times.
3. Press one of SELECT to set the minute, and then press SET.

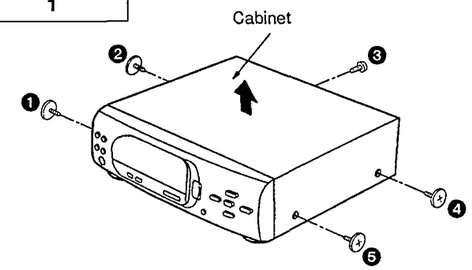
For your reference:

To display the clock again:
Press CLOCK/TIMER.
The clock display will appear for about 5 seconds.

■ Disassembly Instructions

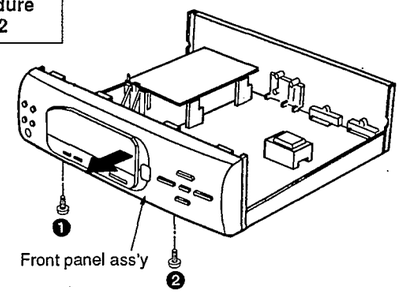
"ATTENTION SERVICER"
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1	Removal of the Cabinet
Procedure 1	



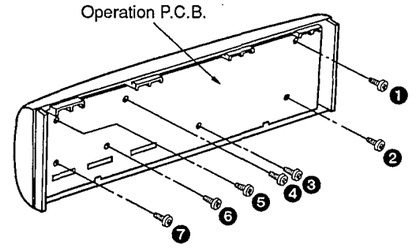
1. Remove the 5 screws (❶~❺).
2. Remove the cabinet in the direction of arrow.

Ref. No. 2	Removal of the Front Panel Ass'y
Procedure 1→2	



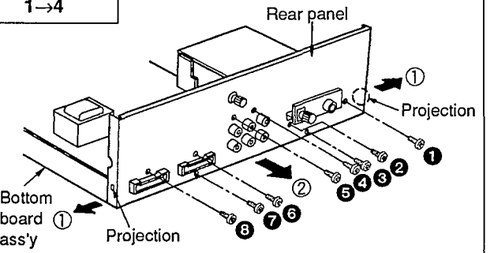
1. Remove the 2 screws (❶, ❷).
2. Remove the front panel ass'y in the direction of arrow.

Ref. No. 3	Removal of the Operation P.C.B.
Procedure 1→2→3	



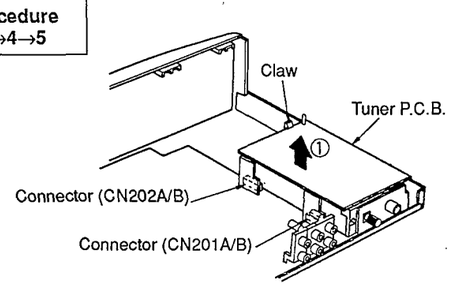
• Remove the 7 screws (❶~❼).

Ref. No. 4	Removal of the Rear Panel
Procedure 1→4	

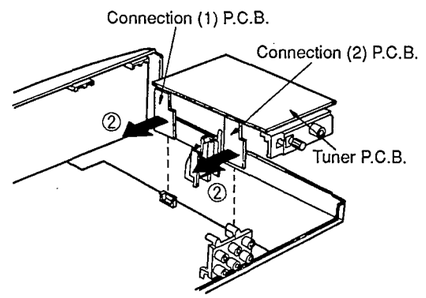


1. Remove the 8 screws (❶~❽).
2. Pull the rear panel in both directions of arrow ① to unlock it from the projection of the bottom board ass'y.
3. Remove the rear panel in the direction of arrow ②.

Ref. No. 5	Removal of the Connection (1) P.C.B., Connection (2) P.C.B. and Tuner P.C.B.
Procedure 1→4→5	



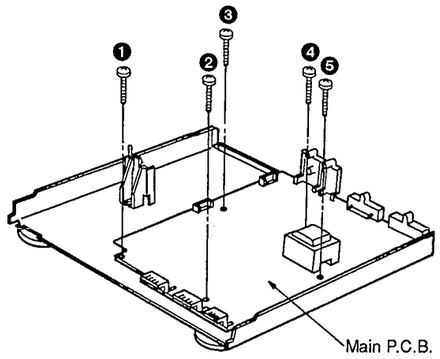
1. Release the 1 claw.
2. Lift up the tuner P.C.B. in the direction of arrow ①, and then remove the 2 connectors (CN201A/B, CN202A/B).



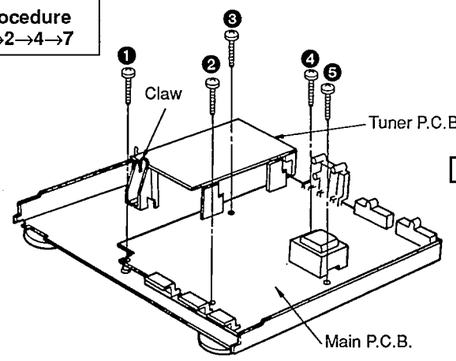
3. Remove the connection (1) P.C.B. and connection (2) P.C.B. in the direction of arrow ②.

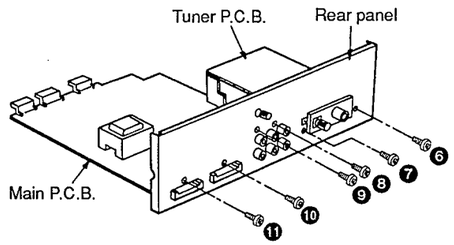
Ref. No. 6	Removal of the Main P.C.B.
Procedure 1→2→4→5→6	

• Remove the 5 screws (❶~❺).



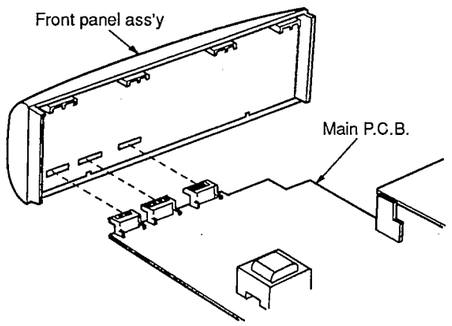
Ref. No. 7	How to check the Main P.C.B.
Procedure 1→2→4→7	

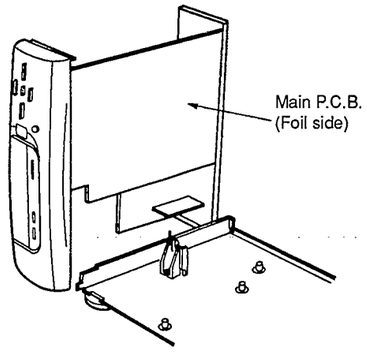




1. Remove the 5 screws (❶~❺).
2. Release the 1 claw.
3. Remove the main P.C.B. and tuner P.C.B.

4. Reinstall the rear panel to the main P.C.B. and tuner P.C.B. and then tighten 6 screws (❻~⓫).



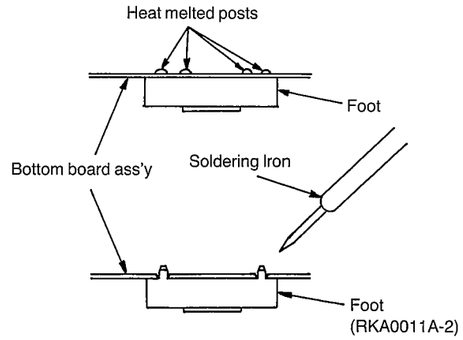


5. Reinstall the front panel ass'y to the main P.C.B.

6. Check the main P.C.B. (foil side) as shown above.

•Replacement of the Foot.

1. Remove the 4 heat melted posts on the bottom board ass'y with a pair of nippers or similar tool.
2. To replace the foot (RKA0011A-2) on the bottom board ass'y, melt the 4 posts with a soldering iron.



■ Power Supply with Tuner ST-CH505

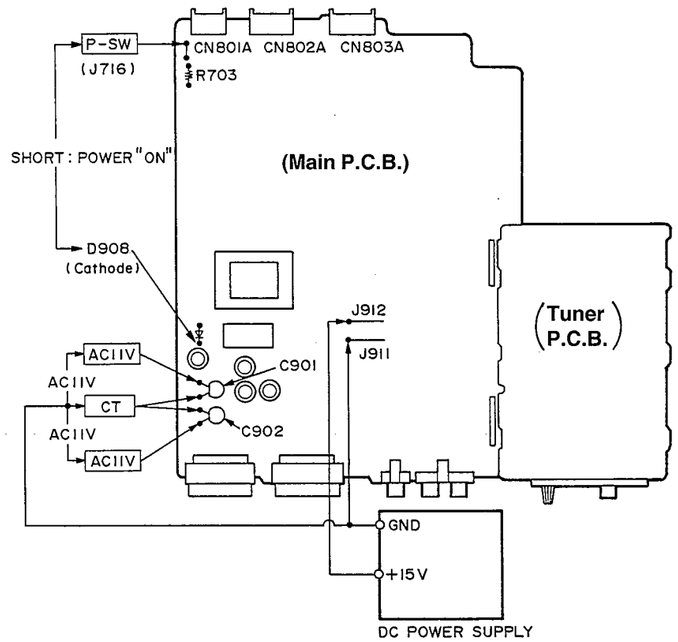
Power Supply to Main PCB

1. **Apply 11 V AC power between C901 and C902 using the service tool for AC power supply as shown below. (The unit comes to STAND BY Mode.)**
2. **Short the point [P-SW] to the cathode side of diode D908 as shown below. FL display tube lights and the unit comes to power ON mode.**

Power Supply to Tuner PCB

1. **Apply 15 V DC power to [J912] and [J911] using the service tool for DC power supply as shown below.**

Note: When applying DC power, connect between GND and [CT] using the tool.

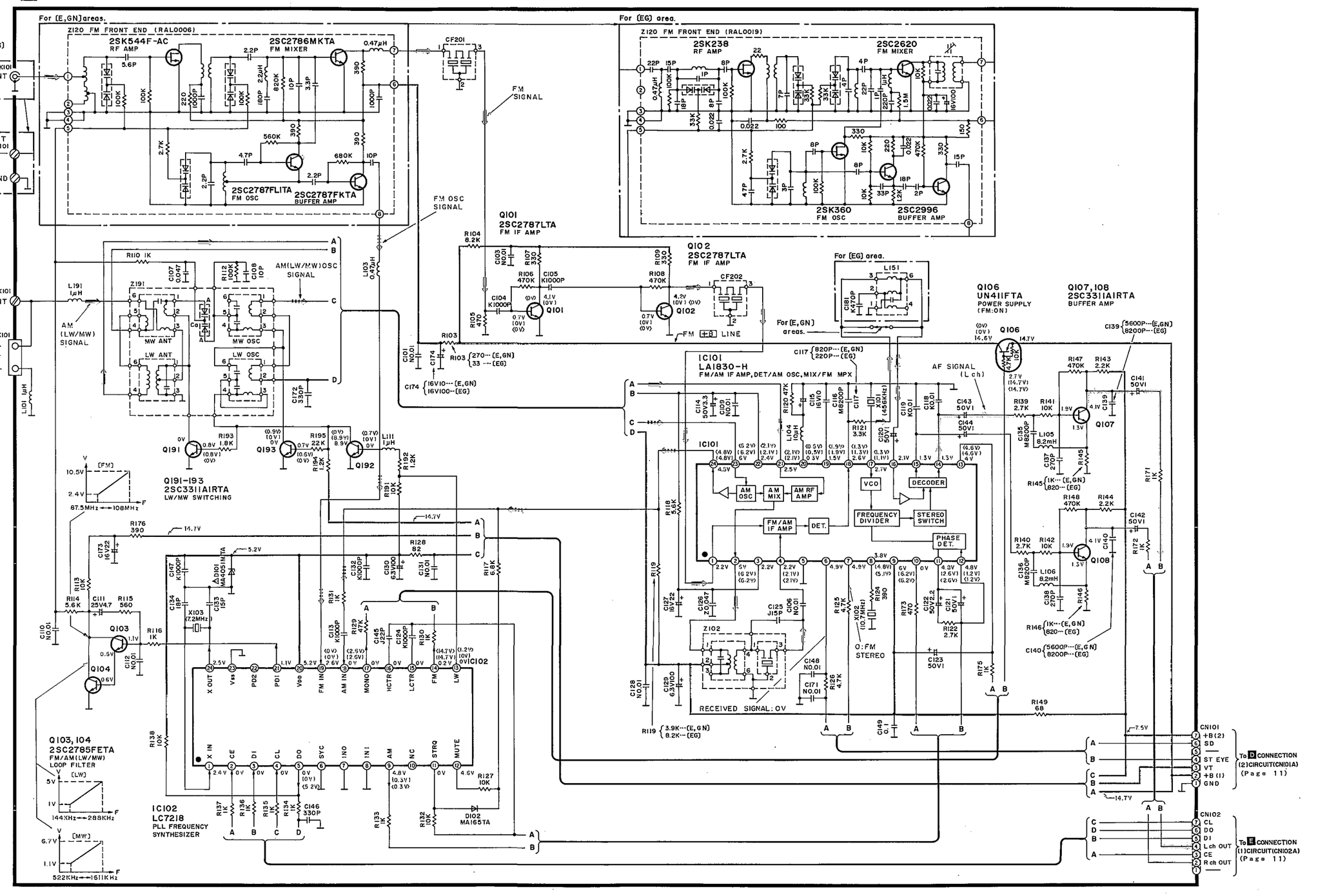


■ Schematic Diagram •Tuner circuit (Parts list on pages 23~27)

: AM (LW/MW) signal line : FM signal line : Positive voltage line
: AM (LW/MW) OSC signal line : FM OSC signal line : AF signal line

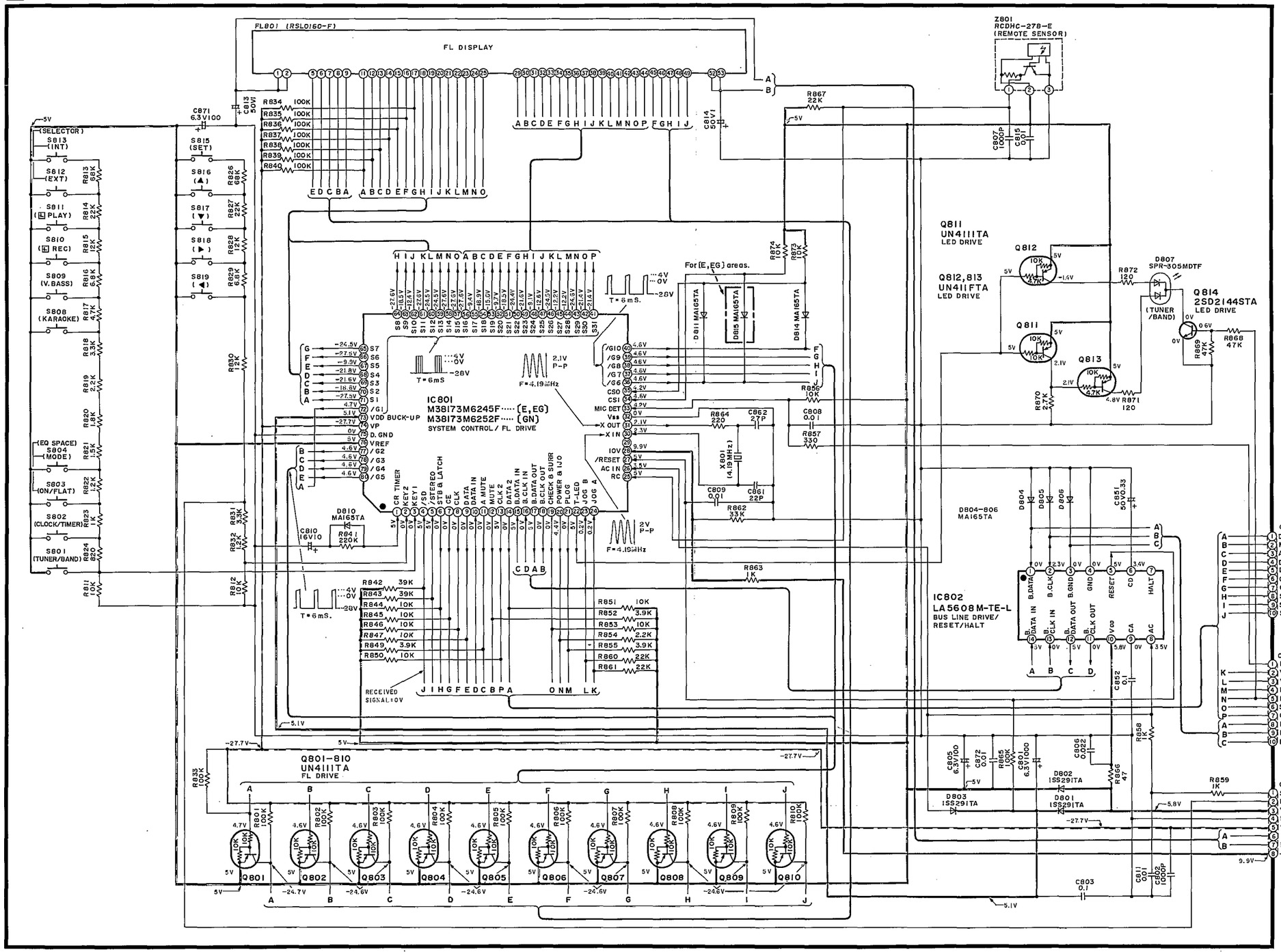
•Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard.
Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester. No mark: FM mode ( ): MW mode < >: LW mode

A TUNER CIRCUIT



■ Schematic Diagram •Operation circuit (Parts list on pages 23~27)

B OPERATION CIRCUIT



Schematic Diagram •Main, Connection (1)/(2) circuit (Parts list on pages 23~27)

——— : Positive voltage line ▨ : REC. OUT signal line ▨ : AF signal line
– – – : Negative voltage line ▨ : MIC signal line

C MAIN CIRCUIT (PHONO EQ AMP/INPUT SELECTOR/DIGITAL SOUND CONTROLLER/BUFFER AMP/MUTING/REGULATOR)

D CONNECTION(2) CIRCUIT

E CONNECTION(1) CIRCUIT

Notes:

- •S801 : Tuner source/band select switch (TUNER/BAND)
- •S802 : Clock/timer switch (CLOCK/TIMER)
- •S803 : EQ/SPACE mode ON/FLAT switch (ON/FLAT)
- •S804 : EQ/SPACE mode select switch (MODE)
- •S808 : Voice mute switch (KARACKE)
- •S809 : V. bass switch (V.BASS)
- •S810 : Record timer switch (⊡ REC)
- •S811 : Play timer switch (⊡ PLAY)
- •S812 : External source input select switch (EXT)
- •S813 : Internal source input select switch (INT)
- •S815 : Multi-control switch (SET)
- •S816 : Multi-control switch (▲)
- •S817 : Multi-control switch (▼)
- •S818 : Multi-control switch (▶)
- •S819 : Multi-control switch (◀)

•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.
No mark: FM mode ( ): MW mode < >: LW mode

•Important safety notice:
Components identified by ⚠ 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.

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

•The supply part number is described alone in the replacement parts list.

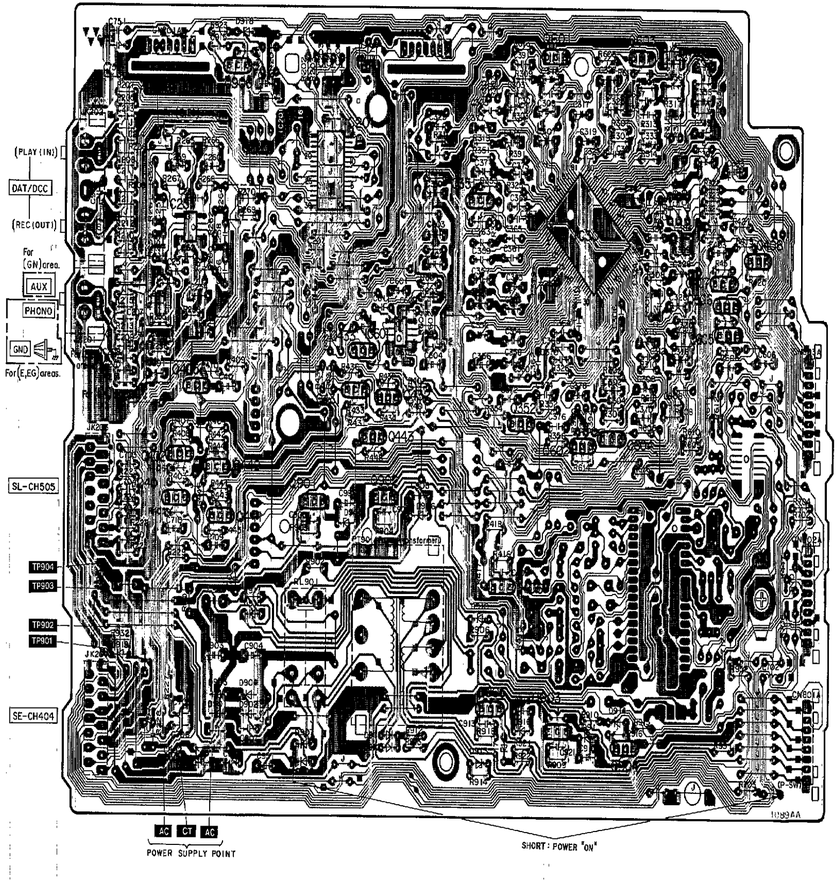
Ref. No.	Production Parts No.	Supply Parts No.
IC601	BA4558FT1	SVIBA4558F
Z801	RCDHC-278-E	RCDHC-278

ST-CH505 ST-CH505

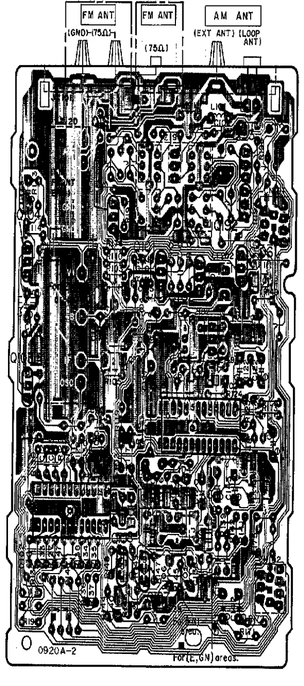
ST-CH505 ST-CH505

■ Printed Circuit Board Diagram (Parts list on pages 23~27)

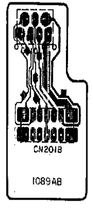
C MAIN P.C.B. (REP1663A-M···(E,EG) REP1663B-M···(GN))



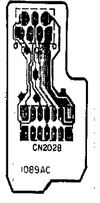
A TUNER P.C.B. (REP1452C-T···(EG) REP1452D-T···(E) REP1452E-T···(GN))



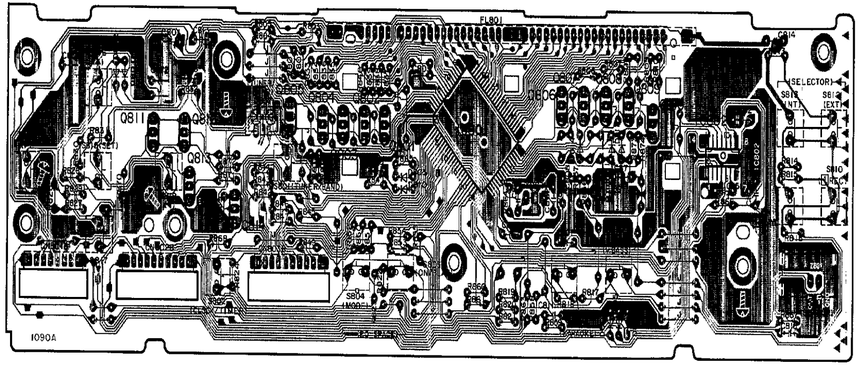
D CONNECTION (2) P.C.B. (REP1663A-M···(E,EG) REP1663B-M···(GN))



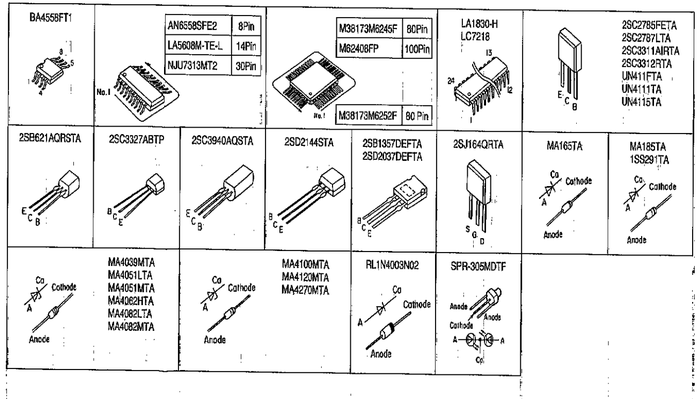
E CONNECTION (1) P.C.B. (REP1663A-M···(E,EG) REP1663B-M···(GN))



B OPERATION P.C.B. (REP1664A-S···(E,EG) REP1664F-S···(GN))

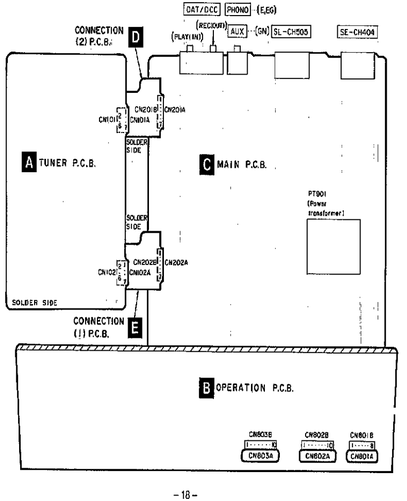


•Terminal guide of IC's, transistors and diodes



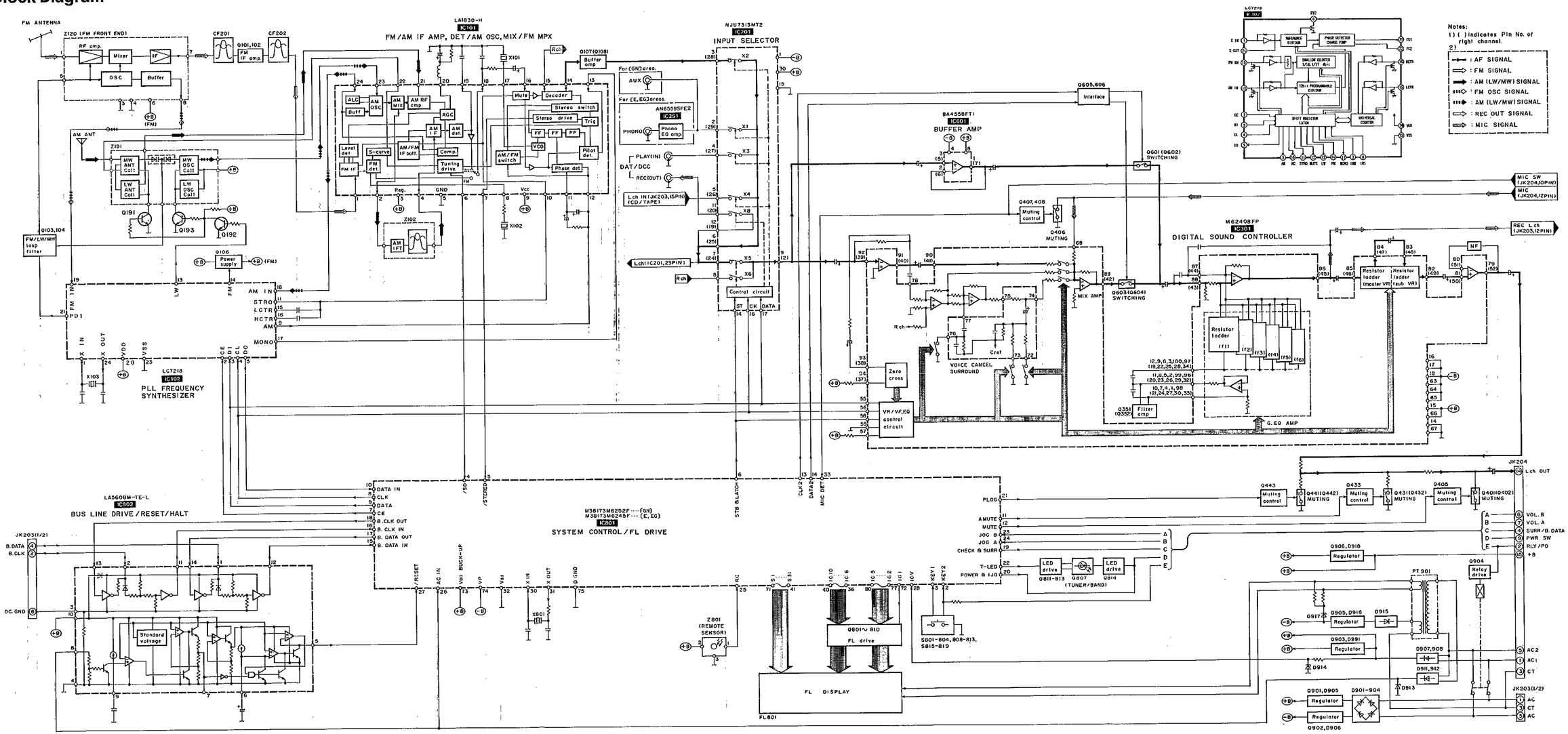
Note:
This printed circuit board diagram may be modified at any time with the development of new technology.

■ Wiring Connection Diagram



ST-CH505

■ Block Diagram



■ Functions of IC Terminals

•IC801 (M38173M6245F) for (E) (EG) areas/(M38173M6252F) for (GN) area

Pin No.	Terminal Name	I/O	Function
1	CR TIMER	O	Condensor/resistance oscillation terminal for an electronic failure detection
2	KEY2	I	Operation (MULTI CONTROL) key signal input
3	KEY1	I	Operation key signal input
4	/SD	I	SD signal input for tuner
5	/STEREO	I	STEREO signal input for tuner
6	STB&LATCH	O	Latch signal output to M62408 (IC301) and strobe signal output to NJU7313 (IC201)
7	CE	O	Chip enable signal output to LC7218 (IC102)
8	CLK	O	Clock signal output to M62408 (IC301)/ NJU7313 (IC201)/LC7218 (IC102)
9	DATA	O	Data signal output to M62408 (IC301)/ NJU7313(IC201)/LC7218 (IC102)
10	DATA IN	I	Data signal input from LC7218 (IC102)
11	A MUTE	O	Audio muting signal output (Volume of −10 dB and less: "H")
12	MUTE	O	Main muting signal output (Normally "L")
13	CLK2	O	Serial clock output for M62408 (IC301)
14	DATA2	O	Serial data output for M62408 (IC301)
15	B.DATA IN	I	Data input from bus
16	B.CLK IN	I	Clock input from bus
17	B.DATA OUT	O	Data output to bus (Normally "H")
18	B.CLK OUT	O	Clock output to bus (Normally "L")
19	CHECK & SURR	O	POWER ON mode: Output for SUR ON/ OFF (During POWER ON: "H") POWER OFF mode: Demultipler output for clock control
20	POWER & IJO	I/O	Power control output (During POWER ON: "H") Heat detection input (Unusual situation: "H")
21	PLOG	O	Audio muting 2 signal output (Volume of −70 dB and less: "H")
22	T-LED	O	Selector TUNER output (Output in level "H")
23	JOG B	I	Rotary encoder input for main volume
24	JOG A		

Pin No.	Terminal Name	I/O	Function
25	RC	I	Input for remote control
26	AC IN	I	AC power source input terminal for an electricity failure/clock
27	/RESET	I	Reset input terminal
28	10 V	I	Power source for pull up (+10 V)
29	—	—	——
30	XIN	I	Connected to a seramic oscillator for system clock X801 (4.194304 MHz)
31	XOUT	O	
32	Vss	—	Connected to GND
33	MIC DET	I	Input for MIC detection (Connection: "L")
34	CS1	I	Input for chip selection
35	CS0		
36 ≀ 40	/G6 ≀ /G10	O	Grid output for FL display tube
41 ≀ 56	S31 ≀ S16	O	Segment output for FL display tube (Tuner/Amplifier)
57 ≀ 71	S15 ≀ S1	O	Segment output for FL display tube (GEQ)
72	/G1	O	Grid output for FL display tube
73	Voo BUCK-UP	I	+5 V impression
74	VP	—	−VP impression for FL display tube
75	D-GND	—	Connected to GND
76	VREF	—	Standard voltage for A/D convertor (Connected to Vcc)
77 ≀ 80	/G2 ≀ /G5	O	Grid output for FL display tube

■ Replacement Parts List

Notes: *Important safety notice:
Components identified by ⚠ 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.
•The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
•The "(SF)" mark denotes the standard part.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC101	LA1830-H	I. C, FM/AM IF AMP. /AM OSC	
IC102	LC7218	I. C, PLL FREQ. SYNTHESIZER	
IC201	NJU7313MT2	I. C, INPUT SELECTOR	
IC251	AN6558SFE2	I. C, PHONO EQ AMP	(E) (EG)
IC301	M62408FP	I. C, DIGITAL SOUND CONT.	
IC601	SVIBA4558F	I. C, BUFFER AMP.	
IC801	M38173M6245F	I. C, SYSTEM CONT. /FL DRIVE	(E) (EG)
IC801	M38173M6252F	I. C, SYSTEM CONT. /FL DRIVE	(GN)
IC802	LA5608M-TE-L	I. C, BUS LINE/HALT/RESET	
		TRANSISTOR(S)	
Q101, 102	2SC2787L	TRANSISTOR	
Q103, 104	2SC2785FE	TRANSISTOR	
Q106	UN411FTA	TRANSISTOR	
Q107, 108	2SC3311A1RTA	TRANSISTOR	
Q191-193	2SC3311A1RTA	TRANSISTOR	
Q351, 352	2SC3312RTA	TRANSISTOR	
Q401, 402	2SC3327-A	TRANSISTOR	
Q405	UN4115	TRANSISTOR	
Q406	2SD2144S	TRANSISTOR	
Q407	UN4111	TRANSISTOR	
Q408	2SD2144S	TRANSISTOR	
Q431, 432	2SD2144S	TRANSISTOR	
Q433	UN4115	TRANSISTOR	
Q441, 442	2SD2144S	TRANSISTOR	
Q443	UN4115	TRANSISTOR	
Q601-604	2SJ164QRTA	TRANSISTOR	
Q605, 606	UN4115	TRANSISTOR	
Q801-811	UN4111	TRANSISTOR	
Q812, 813	UN411FTA	TRANSISTOR	
Q814	2SD2144S	TRANSISTOR	
Q901	2SD2037DEFTA	TRANSISTOR	⚠
Q902	2SB1357DEFTA	TRANSISTOR	⚠
Q903	2SD2037DEFTA	TRANSISTOR	⚠
Q904	2SD2144S	TRANSISTOR	
Q905	2SB621A-R	TRANSISTOR	⚠
Q906	2SC3940AQSTA	TRANSISTOR	⚠
		DIODE(S)	
D101	MA4051MTA	DIODE	⚠
D102	MA165	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
D801-803	1SS291TA	DIODE	
D804-806	MA165	DIODE	
D807	SPR-305MDTF	DIODE	
D810, 811	MA165	DIODE	
D814	MA165	DIODE	
D815	MA165	DIODE	(E) (EG)
D901-904	RL1N4003N02	DIODE	⚠
D905, 906	MA4082LTA	DIODE	⚠
D907, 908	RL1N4003N02	DIODE	⚠
D910	MA4120	DIODE	
D911, 912	MA185TA	DIODE	⚠
D913	MA4051-L	DIODE	⚠
D914	MA4100MTA	DIODE	
D915	RL1N4003N02	DIODE	⚠
D916	MA4270	DIODE	⚠
D917	MA4039MTA	DIODE	⚠
D918	MA4082MTA	DIODE	⚠
D919	MA165	DIODE	
D991	MA4062-H	DIODE	⚠
		COIL(S)	
L101	ELESN1R0MA	COIL	
L103	ELEXT847MA9	COIL	
L104	ELEXT100KA9	COIL	
L105, 106	RLQZB822KT-D	COIL	
L111	ELEXT1R0KA9	COIL	
L151	SLM1B10M-1M	COIL	(EG)
L191	ELESN1R0MA	COIL	
L702	ELEXT1R0KA9	COIL	
		FILTER(S)	
CF201, 202	RLFFETWND01M	CERAMIC FILTER	(E) (GN)
CF201, 202	RLFFETNGD01L	CERAMIC FILTER	(EG)
		DISPLAY	
FL801	RSL0160-F	FL DISPLAY	
		SWITCH(ES)	
S801	EVQ21405R	SW, TUNER/BAND	
S802	EVQ21405R	SW, CLOCK/TIMER	
S803	EVQ21405R	SW, ON/FLAT	
S804	EVQ21405R	SW, MODE	

Ref. No.	Part No.	Part Name & Description	Remarks
S808	EVQ21405R	SW, KARAOKE	
S809	EVQ21405R	SW, V. BASS	
S810	EVQ21405R	SW, TIMER REC	
S811	EVQ21405R	SW, TIMER PLAY	
S812	EVQ21405R	SW, SELECTOR (EXT)	
S813	EVQ21405R	SW, SELECTOR (INT)	
S815	EVQ21405R	SW, MULTI CONTROL (SET)	
S816	EVQ21405R	SW, MULTI CONTROL (UP)	
S817	EVQ21405R	SW, MULTI CONTROL (DOWN)	
S818	EVQ21405R	SW, MULTI CONTROL (RIGHT)	
S819	EVQ21405R	SW, MULTI CONTROL (LEFT)	
		CONNECTOR(S)	
CN101, 102	RJU063W07T	SOCKET (7P)	
CN101A	RJT063W07T	CONNECTOR (7P)	
CN102A	RJT063W07T	CONNECTOR (7P)	
CN201A	RJT057W007-1	CONNECTOR (7P)	
CN202A	RJT057W007-1	CONNECTOR (7P)	
CN801A	RJU003KD08M1	SOCKET (8P)	
CN802A	RJU003KD10M1	SOCKET (10P)	
CN803A	RJU003KD10M1	SOCKET (10P)	
CN201B	RJU057W007	SOCKET (7P)	
CN202B	RJU057W007	SOCKET (7P)	
CN801B	RJT003KD08-1	CONNECTOR (8P)	
CN802B	RJT003KD10-1	CONNECTOR (10P)	
CN803B	RJT003KD10-1	CONNECTOR (10P)	
		EARTH TERMINAL	
E901	SNE1004-1	GND PLATE	
		TRANSFORMER	
PT901	RTP114G004	POWER TRANSFORMER	⚠
		RELAY	
RL901	RSY0017M-0	RELAY	⚠
		JACK(S)	
JK101	RJH202M	ANTENNA TERMAINAL	(E) (EG)
JK101	RJH405-1M	ANTENNA TERMAINAL	(GN)
JK201	SJF3068N	PHONO(E) (EG) /AUX(GN)	
JK202	SJF3069-SN	DAT/DCC	
JK203	RJT065K15	CONNECTOR (15P) (BLACK TYPE)	
JK204	RJT065W15	CONNECTOR (15P) (WHITE TYPE)	
		COMPONENT COMBINATION(S)	
Z102	RL122006M-T	COMPONENT COMBINATION	

Ref. No.	Part No.	Part Name & Description	Remarks
Z120	RALD006	TUNER PACK (FM FRONT END)	(E) (GN)
Z120	RALD019	TUNER PACK (FM FRONT END)	(EG)
Z191	RLA6Z005M-T	COMPONENT COMBINATION	
Z801	RCDMC-278-E	REMOTE SENSOR	
		OSCILLATOR(S)	
X101	RSXZ456N07M	OSCILLATOR (456KHZ)	
X102	RLFDFTD03M1	OSCILLATOR (10. 7MHZ)	
X103	SVQ49U722-S	OSCILLATOR (7. 2MHZ)	
X801	RSXAM19S03	OSCILLATOR (4. 19MHZ)	

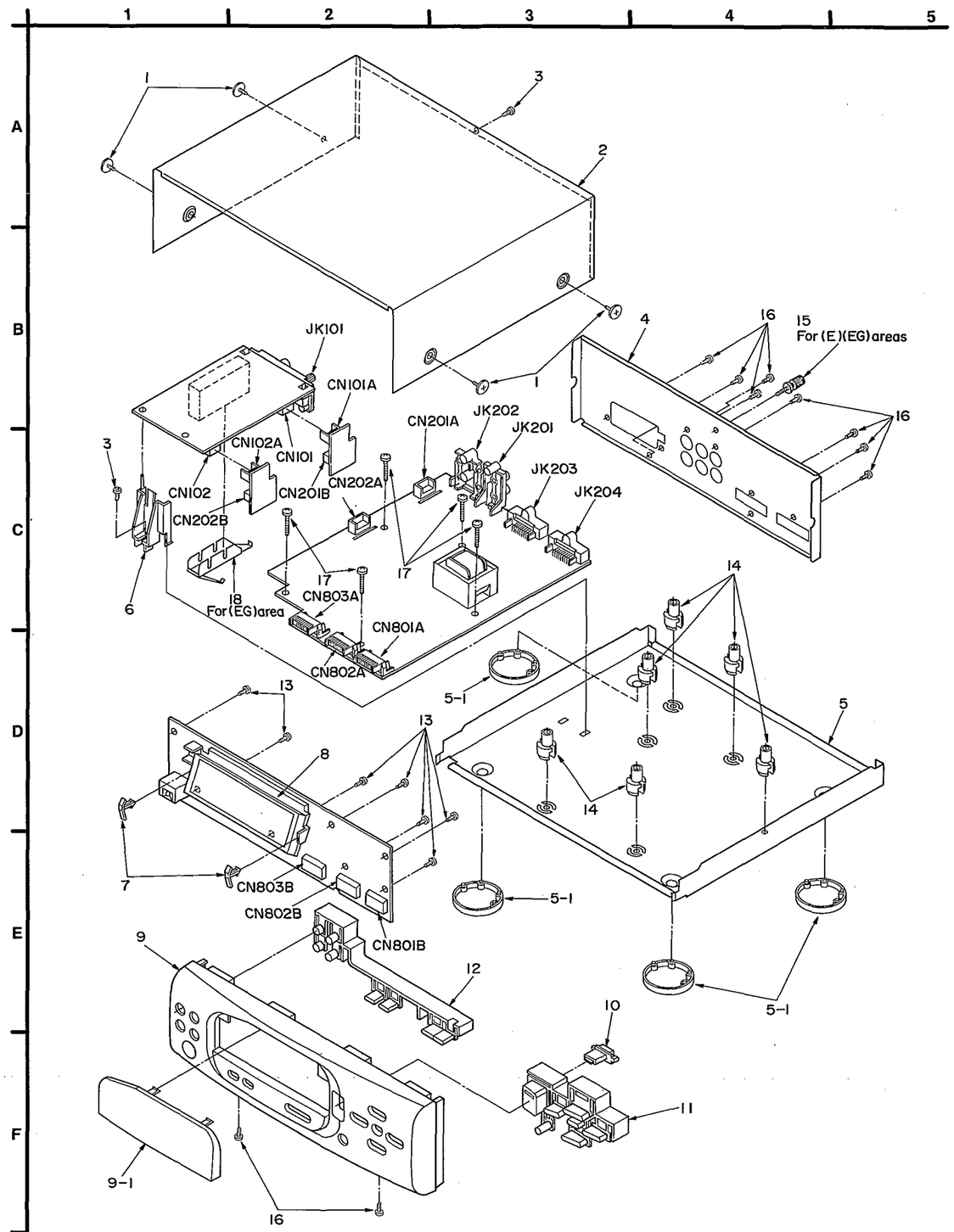
Notes : * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads(pF) F=Farads(F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R103	ERDS2TJ271	1/4W 270 (E) (GN)
R103	ERDS2TJ330	1/4W 33 (EG)
R104	ERDS2TJ822	1/4W 8.2K
R105	ERDS2TJ471	1/4W 470
R106	ERDS2TJ474	1/4W 470K
R107	ERDS2TJ331	1/4W 330
R108	ERDS2TJ474	1/4W 470K
R109	ERDS2TJ331	1/4W 330
R110	ERDS2TJ102	1/4W 1K
R112	ERDS2TJ104	1/4W 100K
R113	ERDS2TJ103	1/4W 10K
R114	ERDS2TJ562	1/4W 5.6K
R115	ERDS2TJ561	1/4W 560
R116	ERDS2TJ102	1/4W 1K
R117	ERDS2TJ682T	1/4W 6.8K
R118	ERDS2TJ562	1/4W 5.6K
R119	ERDS2TJ392T	1/4W 3.9K (E) (GN)
R119	ERDS2TJ822	1/4W 8.2K (EG)
R120	ERDS2TJ473	1/4W 47K
R121	ERDS2TJ332	1/4W 3.3K
R122	ERDS2TJ272T	1/4W 2.7K
R124	ERDS2TJ391	1/4W 390
R125, 126	ERDS2TJ472	1/4W 4.7K
R127	ERDS2TJ103	1/4W 10K
R128	ERDS2TJ820	1/4W 82
R129	ERDS2TJ473	1/4W 47K
R130, 131	ERDS2TJ102	1/4W 1K
R132	ERDS2TJ103	1/4W 10K
R133-137	ERDS2TJ102	1/4W 1K
R138	ERDS2TJ103	1/4W 10K
R139, 140	ERDS2TJ272T	1/4W 2.7K
R141, 142	ERDS2TJ103	1/4W 10K
R143, 144	ERDS2TJ222	1/4W 2.2K
R145, 146	ERDS2TJ102	1/4W 1K (E) (GN)
R145, 146	ERDS2TJ821	1/4W 820 (EG)
R147, 148	ERDS2TJ474	1/4W 470K
R149	ERDS2TJ680T	1/4W 68
R171, 172	ERDS2TJ102	1/4W 1K
R173	ERDS2TJ471	1/4W 470
R175	ERDS2TJ102	1/4W 1K
R176	ERDS2TJ391	1/4W 390
R191	ERDS2TJ103	1/4W 10K
R192	ERDS2TJ122	1/4W 1.2K
R193	ERDS2TJ182	1/4W 1.8K
R194	ERDS2TJ122	1/4W 1.2K
R195	ERDS2TJ223	1/4W 22K
R201-203	ERDS2TJ222	1/4W 2.2K
R205, 206	ERDS2TJ103	1/4W 10K
R207, 208	ERDS2TJ473	1/4W 47K
R209, 210	ERDS2TJ122	1/4W 1.2K
R211, 212	ERDS2TJ224T	1/4W 220K
R213, 214	ERDS2TJ102	1/4W 1K (E) (EG)
R213, 214	ERDS2TJ562	1/4W 5.6K (GN)
R215, 216	ERDS2TJ473	1/4W 47K (E) (EG)
R215, 216	ERDS2TJ103	1/4W 10K (GN)
R217, 218	ERDS2TJ104	1/4W 100K
R221-224	ERDS2TJ102	1/4W 1K
R227, 228	ERDS2TJ471	1/4W 470
R229	ERDS2TJ102	1/4W 1K
R255, 256	ERDS2TJ331	1/4W 330 (E) (EG)
R257, 258	ERDS2TJ221	1/4W 220 (E) (EG)
R259, 260	ERDS2TJ184T	1/4W 180K (E) (EG)
R261, 262	ERDS2TJ123	1/4W 12K (E) (EG)
R263, 264	ERDS2TJ680T	1/4W 68 (E) (EG)
R265, 266	ERDS2TJ104	1/4W 100K (E) (EG)
R267, 268	ERDS2TJ272T	1/4W 2.7K (E) (EG)
R269, 270	ERD25FJ470	1/4W 47 ⚠(E) (EG)
R301, 302	ERDS2TJ223	1/4W 22K
R303, 304	ERDS2TJ123	1/4W 12K
R305, 306	ERDS2TJ153	1/4W 15K
R307, 308	ERDS2TJ152	1/4W 1.5K
R309, 310	ERDS2TJ102	1/4W 1K
R311, 312	ERDS2TJ104	1/4W 100K
R313	ERDS2TJ824	1/4W 820K
R314	ERDS2TJ332	1/4W 3.3K
R315	ERDS2TJ822	1/4W 8.2K
R316	ERDS2TJ222	1/4W 2.2K
R317	ERDS2TJ183T	1/4W 18K
R318	ERDS2TJ103	1/4W 10K
R319, 320	ERDS2TJ105T	1/4W 1M
R321	ERDS2TJ561	1/4W 560
R322-324	ERDS2TJ222	1/4W 2.2K
R325, 326	ERDS2TJ332	1/4W 3.3K
R351, 352	ERDS2TJ152	1/4W 1.5K
R353, 354	ERDS2TJ823T	1/4W 82K
R355, 356	ERDS2TJ682T	1/4W 6.8K
R391, 392	ERDS2TJ224T	1/4W 220K
R393, 394	ERDS2TJ223	1/4W 22K
R399	ERDS2TJ272T	1/4W 2.7K
R401, 402	ERDS2TJ102	1/4W 1K
R403, 404	ERDS2TJ122	1/4W 1.2K
R405, 406	ERDS2TJ104	1/4W 100K
R407, 408	ERDS2TJ102	1/4W 1K
R409	ERDS2TJ105T	1/4W 1M
R410	ERDS2TJ472	1/4W 4.7K
R415-417	ERDS2TJ102	1/4W 1K
R418	ERDS2TJ334	1/4W 330K
R419	ERDS2TJ472	1/4W 4.7K
R420, 421	ERDS2TJ473	1/4W 47K
R431, 432	ERDS2TJ471	1/4W 470
R433, 434	ERDS2TJ104	1/4W 100K
R435, 436	ERDS2TJ102	1/4W 1K
R437	ERDS2TJ472	1/4W 4.7K
R438	ERDS2TJ105T	1/4W 1M
R441, 442	ERDS2EJ121	1/4W 120
R443, 444	ERDS2TJ104	1/4W 100K
R445, 446	ERDS2TJ102	1/4W 1K
R447	ERDS2TJ472	1/4W 4.7K
R448	ERDS2TJ105T	1/4W 1M
R451	ERDS2TJ103	1/4W 10K
R601, 602	ERDS2TJ223	1/4W 22K
R603, 604	ERDS2TJ273	1/4W 27K
R605, 606	ERDS2TJ152	1/4W 1.5K
R607, 608	ERDS2TJ392T	1/4W 3.9K
R609, 610	ERDS2TJ104	1/4W 100K
R611, 612	ERDS2TJ103	1/4W 10K
R613, 614	ERDS2TJ104	1/4W 100K
R615-618	ERDS2TJ105T	1/4W 1M
R701, 702	ERDS2TJ102	1/4W 1K
R703, 704	ERDS2TJ471	1/4W 470
R706	ERDS2TJ102	1/4W 1K
R801-810	ERDS2TJ104	1/4W 100K
R811, 812	ERDS2TJ103	1/4W 10K
R813	ERDS2TJ683	1/4W 68K
R814	ERDS2TJ223	1/4W 22K
R815	ERDS2TJ123	1/4W 12K
R816	ERDS2TJ682T	1/4W 6.8K
R817	ERDS2TJ472	1/4W 4.7K
R818	ERDS2TJ332	1/4W 3.3K
R819	ERDS2TJ222	1/4W 2.2K
R820	ERDS2TJ182	1/4W 1.8K
R821	ERDS2TJ152	1/4W 1.5K
R822	ERDS2TJ122	1/4W 1.2K
R823	ERDS2TJ102	1/4W 1K
R824	ERDS2TJ821	1/4W 820
R826	ERDS2TJ683	1/4W 68K
R827	ERDS2TJ223	1/4W 22K
R828	ERDS2TJ123	1/4W 12K
R829	ERDS2TJ682T	1/4W 6.8K
R830	ERDS2TJ123	1/4W 12K
R831	ERDS2TJ332	1/4W 3.3K
R832	ERDS2TJ122	1/4W 1.2K
R833-840	ERDS2TJ104	1/4W 100K
R841	ERDS2TJ224T	1/4W 220K
R842, 843	ERDS2TJ393	1/4W 39K
R844-847	ERDS2TJ103	1/4W 10K
R849	ERDS2TJ392T	1/4W 3.9K
R850, 851	ERDS2TJ103	1/4W 10K
R852	ERDS2TJ392T	1/4W 3.9K
R853	ERDS2TJ103	1/4W 10K
R854	ERDS2TJ222	1/4W 2.2K
R855	ERDS2TJ392T	1/4W 3.9K
R856	ERDS2TJ103	1/4W 10K
R857	ERDS2TJ331	1/4W 330
R858, 859	ERDS2TJ102	1/4W 1K
R860, 861	ERDS2TJ223	1/4W 22K
R862	ERDS2TJ333	1/4W 33K
R863	ERDS2TJ102	1/4W 1K
R864	ERDS2TJ221	1/4W 220
R865	ERDS2TJ104	1/4W 100K
R866	ERDS2TJ470	1/4W 47
R867	ERDS2TJ223	1/4W 22K
R868, 869	ERDS2TJ473	1/4W 47K
R870	ERDS2TJ272T	1/4W 2.7K
R871, 872	ERDS2TJ121T	1/4W 120
R873, 874	ERDS2TJ103	1/4W 10K
R901, 902	ERD2FCVJ4R7T	1/4W 4.7 ⚠
R903, 904	ERDS2TJ102	1/4W 1K
R906	ERG1SJ330E	1W 33
R909	ERDS2TJ332	1/4W 3.3K
R910	ERDS2TJ102	1/4W 1K
R912, 913	ERDS2TJ332	1/4W 3.3K
R914	ERDS2TJ103	1/4W 10K
R915, 916	ERDS2TJ393	1/4W 39K
R917	ERD2FCVJ4R7T	1/4W 4.7 ⚠
R918	ERDS2TJ102	1/4W 1K
R921, 922	ERDS2TJ151	1/4W 150
R923	ERDS2TJ152	1/4W 1.5K
R924	ERDS2TJ331	1/4W 330
R931	ERDS2TJ1R8T	1/4W 1.8
R932	ERDS2TJ101	1/4W 100
R951, 952	ERDS2TJ100	1/4W 10
		CAPACITORS
C101	ECBT1C103NS5	16V 0.01U
C103	ECBT1C103NS5	16V 0.01U
C104, 105	ECBT1H102KB5	50V 1000P
C106	ECBT1C103NS5	16V 0.01U
C107	ECBT1H473ZF5	50V 0.047U
C108	ECBT1H100JC5	50V 10P
C109, 110	ECBT1C103NS5	16V 0.01U
C111	ECEA1EKA4R7B	25V 4.7U
C112	ECBT1C103NS5	16V 0.01U
C113	ECBT1H102KB5	50V 1000P
C114	ECEA1HKA3R3B	50V 3.3U
C115	ECEA1CKA100B	16V 10U
C116	ECBT1C822MS5	16V 8200P
C117	ECQB1H821JF3	50V 820P (E) (GN)
C117	ECQP2A221JZT	100V 220P (EG)
C118, 119	ECFR1E103KR	25V 0.01U
C120, 121	ECEA1HKA010B	50V 1U
C122	ECEA1HKA2R2B	50V 2.2U
C123	ECEA1HKA010B	50V 1U
C124	ECBT1H102KB5	50V 1000P
C125	ECBT1H150JC5	50V 15P
C126	ECBT1H473ZF5	50V 0.047U
C127	ECEA1CKA220B	16V 22U
C128	ECBT1C103NS5	16V 0.01U
C129, 130	ECEA0JKA101B	6.3V 100U
C131	ECBT1C103NS5	16V 0.01U
C132	ECBT1H102KB5	50V 1000P
C133	ECBT1H150JC5	50V 15P
C134	ECBT1H180JC5	50V 18P
C135, 136	ECBT1C822MS5	16V 8200P
C137, 138	ECBT1H271KB5	50V 270P
C139, 140	ECFR1E562KR	25V 5600P (E) (GN)
C139, 140	ECFR1E822KR	25V 8200P (EG)
C141-144	ECEA1HKA010B	50V 1U
C145	ECBT1H220JC5	50V 22P
C146	ECBT1H331KB5	50V 330P
C147	ECBT1H102KB5	50V 1000P
C148	ECBT1C103NS5	16V 0.01U
C149	ECBT1H104ZF5	50V 0.1U
C171	ECBT1C103NS5	16V 0.01U
C172	ECBT1H331KB5	50V 330P
C173	ECEA1CKA220B	16V 22U
C174	ECEA1CKA100B	16V 10U (E) (GN)
C174	ECEA1CKA101B	16V 100U (EG)
C181	ECBT1H471KB5	50V 470P (EG)
C201, 202	ECBT1H104ZF5	50V 0.1U
C203-205	ECBT1H470J5	50V 47P
C207, 208	ECBT1H151KB5	50V 150P (E) (EG)
C209, 210	ECBT1H180J5	50V 18P (E) (EG)
C209, 210	ECBT1H101KB5	50V 100P (GN)
C211-214	ECBT1H101KB5	50V 100P
C251, 252	ECBT1H102KB5	50V 1000P (E) (EG)
C253, 254	ECEA1AKA330B	10V 33U (E) (EG)
C255, 256	ECBT0J223MS5	6.3V 0.022U (E) (EG)
C257, 258	ECBT1C682KR5	16V 6800P (E) (EG)
C259, 260	ECEA1CKA100B	16V 10U (E) (EG)
C261, 262	ECBT1E103ZF	25V 0.01U (E) (EG)
C301, 302	ECEA1CKA100B	16V 10U
C303, 304	ECBT1H820KB5	50V 82P
C305, 306	ECBT1H102KB5	50V 1000P
C307-310	ECEA1CKA100B	16V 10U
C311, 312	ECBT1H101KB5	50V 100P
C315-320	ECEA1CKA100B	16V 10U
C321, 322	ECBT1H271KB5	50V 270P
C323, 324	ECBT1H102KB5	50V 1000P
C325, 326	ECEA1AKA101B	10V 100U
C327-330	ECEA1CKA100B	16V 10U
C333	ECFR1E823KR	25V 0.082U
C334	ECFR1E472KR	25V 4700P
C335	ECEA1CKN100B	16V 10U
C336	ECBT0J223MS5	6.3V 0.022U
C337, 338	ECEA1AKA101B	10V 100U
C339	ECEA1EKA4R7B	25V 4.7U
C351, 352	ECEA1HKAR15B	50V 0.15U
C353, 354	ECFR1E823KR	25V 0.082U
C355, 356	ECEA1HKA0R1B	50V 0.1U
C357, 358	ECFR1C333KR	16V 0.033U
C359, 360	ECBT0J223MS5	6.3V 0.022U
C361-364	ECBT1C682KR5	16V 6800P
C365, 366	ECBT1C222KR5	16V 2200P
C367, 368	ECBT1C152KR5	16V 1500P
C369, 370	ECBA1H681KB5	50V 680P
C371, 372	ECQV1H474JM3	50V 0.47U
C373, 374	ECQV1H224JM3	50V 0.22U
C375, 376	ECQB1H123JF3	50V 0.012U
C377, 378	ECEA1HKA2R2B	50V 2.2U
C379-383	ECBT1E103ZF	25V 0.01U
C384	ECEA1CKA100B	16V 10U
C385	ECBT1E103ZF	25V 0.01U
C386, 387	ECBT1H470J5	50V 47P
C389	ECBT1H470J5	50V 47P
C391	ECFR1E473KR	25V 0.047U
C392, 393	ECEA1CKA100B	16V 10U
C401	ECEA1CKA220B	16V 22U
C402	ECBT1H102KB5	50V 1000P
C403	ECEA1EKA4R7B	25V 4.7U
C431	ECEA1EKA4R7B	25V 4.7U
C441	ECEA1EKA4R7B	25V 4.7U
C601, 602	ECEA1CKA100B	16V 10U
C603, 604	ECEA1EKA4R7B	25V 4.7U
C605, 606	ECEA1CKA100B	16V 10U
C607, 608	ECBT1C332KR5	16V 3300P
C609, 610	ECBT1E103ZF	25V 0.01U
C611, 612	ECBT1H101KB5	50V 100P
C701-707	ECBT1H101KB5	50V 100P
C708	ECBT1H102KB5	50V 1000P
C709, 710	ECEA1CKA100B	16V 10U
C712	ECBT1H102KB5	50V 1000P
C751, 752	ECBT1E103ZF	25V 0.01U
C753	ECBT1H102KB5	50V 1000P
C801	ECEA0JU102	6.3V 1000U
C802	ECBT1H102KB5	50V 1000P
C803	ECBT1H104ZF5	50V 0.1U
C805	ECEA0JKA101B	6.3V 100U
C806	ECBT1E223ZF	25V 0.022U

Ref. No.	Part No.	Values & Remarks
C807	ECBT1H102KB5	50V 1000P
C808, 809	ECBT1E103ZF	25V 0.01U
C810	ECEA1CKA100B	16V 10U
C811	ECBT1E103ZF	25V 0.01U
C813, 814	ECEA1HKA010B	50V 1U
C815	ECBT1E103ZF	25V 0.01U
C851	ECEA1HKAR33B	50V 0.33U
C852	ECQV1H104JM3	50V 0.1U
C861	ECBT1H220JC5	50V 22P
C862	ECBT1H270JU5	50V 27P
C871	ECEA0JKA101B	6.3V 100U
C872	ECBT1E103ZF	25V 0.01U
C901, 902	ECKT1H223ZF	50V 0.022U
C903, 904	ECA1EM471B	25V 470U ⚠
C905-907	ECBT1E103ZF	25V 0.01U
C908	ECEA1CKA100B	16V 10U
C909	ECBT1H104ZF5	50V 0.1U
C910	ECEA1CKA100B	16V 10U
C911	ECA1HM221B	50V 220U ⚠
C912	ECEA1HKA100B	50V 10U
C913	ECBT1E103ZF	25V 0.01U
C914	ECEA1AKA101B	10V 100U
C915	ECBT1E103ZF	25V 0.01U
C916	ECBT1H102KB5	50V 1000P
C921	ECBT1E103ZF	25V 0.01U
C951	ECA1EM471B	25V 470U ⚠
C952	ECBT1H104ZF5	50V 0.1U
C991, 992	ECEA1AKA470B	10V 47U (E) (EG)
C993	ECEA1CKA100B	16V 10U

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS	
1	RHD30007	SCREW	
2	RKM0203A-1K	CABINET	
3	XTB3+8JFZ	SCREW	
4	RGR0176A-A1	REAR PANEL	(E)
4	RGR0176A-G	REAR PANEL	(EG)
4	RGR0176A-D1	REAR PANEL	(GN)
5	RFKJSCH404EK	BOTTOM BOARD ASS'Y	
5-1	RKA0011A-2	FOOT	
6	RMN0231	HOLDER	
7	RMN0195-3	FL SPACER	
8	RMN0230	FL HOLDER	
9	RFKGTCH505EK	FRONT PANEL ASS'Y	
9-1	RKW0297-V	FL PANEL	
10	RGL0218-Q	PANEL LIGHT	
11	RGU0959-K	BUTTON, MULTI CONTROL etc.	
12	RGU0960-K	BUTTON, EQ SPACE etc.	
13	XTBS26+8J	SCREW	
14	SHE185-2	P.C.B. SPACER	
15	SNE2123	GND SCREW	(E) (EG)
16	XTBS3+8JFZ1	SCREW	
17	XTB3+16JFZ	SCREW	
18	RMC0229	SHIELD PLATE	(EG)

■ Cabinet Parts Location



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