

Service Manual

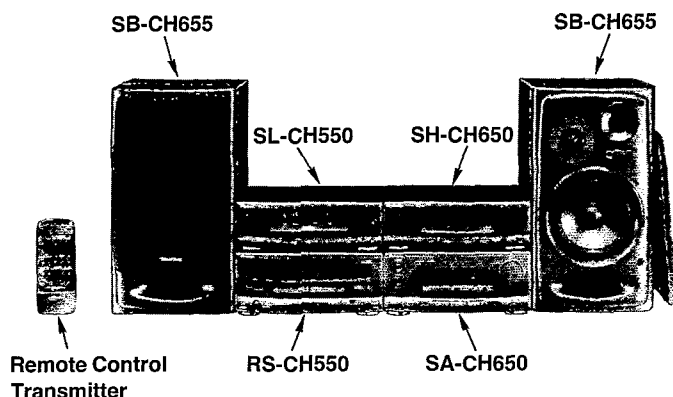
Sound Processor

SH-CH650

Sound Processor

Colour

(K) Black Type



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

Areas

Suffix for Model No.	Area	Colour
(E)	Europe and Oceania	(K)
(GC)	Asia, Latin America, Middle Near East and Africa	

System: SC-CH650

SPECIFICATIONS

(DIN 45 500)

PRE AMP. SECTION

Input sensitivity and impedance

For (E) area

PHONO	2.5 mV/47 k Ω
DAT	250 mV/15 k Ω
MIC	0.6 mV/12 k Ω

For (GC) area

DAT, AUX	250 mV/15 k Ω
MIC	0.6 mV/12 k Ω

Output level

DAT REC OUT (ANALOG)	150 mV/1.5 k Ω
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EQUALIZER, SOUND FIELD PROCESSOR SECTION

Equalizer

Center frequency 63, 160, 400, 1 k, 2.5 k, 6.3 k, 12.5 k(Hz)

Fixed mode

SPACE (3 modes)	HALL, LIVE, DISCO
GEQ (3 modes)	HEAVY, CLEAR, SOFT
CAR/H.P (2 modes)	CARST, HP ST

Frequency response

For (E) area

TUNER, CD, TAPE, DAT	15 Hz–20 kHz
PHONO (RIAA STANDARD CURVE)	30 Hz–15 kHz/+1.5, –2.0 dB

For (GC) area

TUNER, CD, TAPE, DAT, AUX	15 Hz–20 kHz
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GENERAL

Dimensions (W×H×D)

270×89.5×271 mm

Weight

1.7 kg

Notes:

- Specifications are subject to change without notice.
- Weight and dimensions are approximate.
- Total harmonic distortion is measured by the digital spectrum analyzer.

System	Sound processor	Tuner amplifier	Compact disc player	Cassette deck	Speakers
SC-CH650	SH-CH650	SA-CH650	SL-CH550	RS-CH550	*SB-CH655

*(E) area...Made in PAES.

Technics

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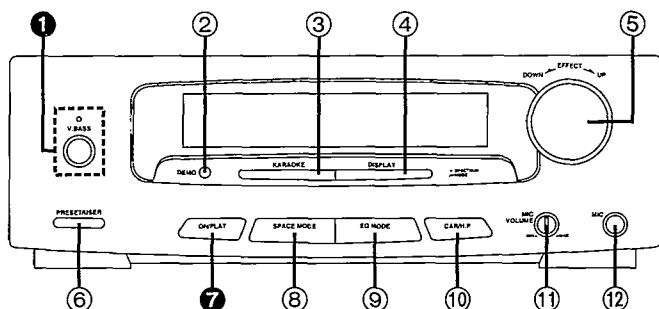
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NOTES:

Refer to the service manual for Model No. SA-CH650, Order No. AD9211362C2 for information on ACCESSORIES, STACKING THE COMPONENTS, CONNECTIONS and PACKAGING.

■ LOCATION OF CONTROLS



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

❶ V. Bass button and indicator (V. BASS)

Press to boost the dynamic low-frequency ranges.

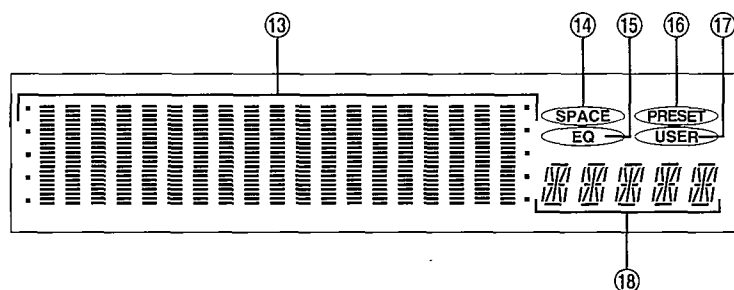
❷ Demonstration button (DEMO)

Use for reference of the adjustments of equalization curves and SPACE mode sounds. The pre-programmed equalization curves and SPACE mode sounds will be heard sequentially for adjustment example.

❸ Voice mute button (KARAOKE)

Press to perform "KARAOKE" (microphone mixing with an accompaniment).

• Display section



❸ Multi level display

Shows the equalization/spectrum analysis level.

❹ Display mode select button (DISPLAY, -SPECTRUM, -MODE)

Use to select one of 5 spectrum modes.

Press and hold to extinguish the equalization curve.

❺ Sound effect adjustment control (EFFECT)

Use to adjust the level of SPACE mode sounds (simulated listening environments), and equalizer level.

❻ Preset/User mode button (PRESET/USER)

Press to select either PRESET mode or USER mode.

❼ Equalizer/SPACE mode ON/FLAT button (ON/FLAT)

Press to switch the equalizer or SPACE mode on or flat.

❽ SPACE mode button (SPACE MODE)

Press to select the SPACE mode.

❾ Equalizer mode button (EQ MODE)

Press to select the equalizer mode.

❿ CAR/H.P mode button (CAR/H.P)

Press to select the equalizer mode especially programmed for the car audio or headphones stereo use.

⓫ Microphone volume control (MIC VOLUME)

Use to adjust the microphone volume level.

⓬ Microphone jack (MIC) (Ø6, 12 kΩ)

Plug microphone cord into this jack.

⓭ SPACE mode indicator (SPACE)

Lights when you select the SPACE mode (DISCO, LIVE, HALL).

⓮ Equalizer mode indicator (EQ)

Lights when you select the equalizer mode (HEAVY, CLEAR, SOFT).

⓯ Preset mode indicator (PRESET)

Lights when you select the preset mode.

⓰ USER mode indicator (USER)

Lights when you adjust the level of SPACE mode or equalizer level.

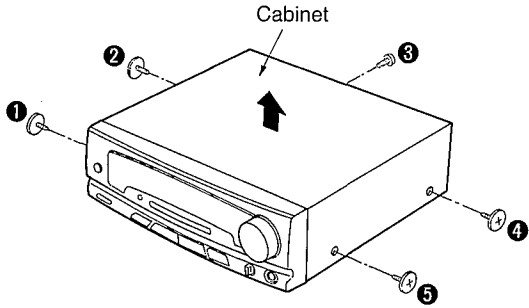
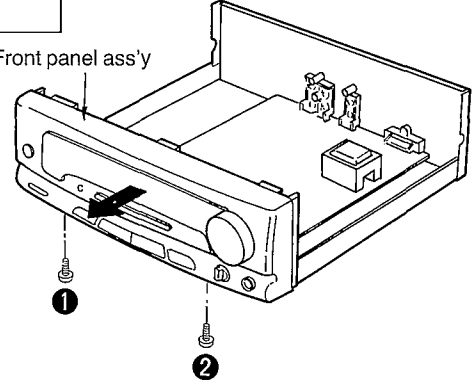
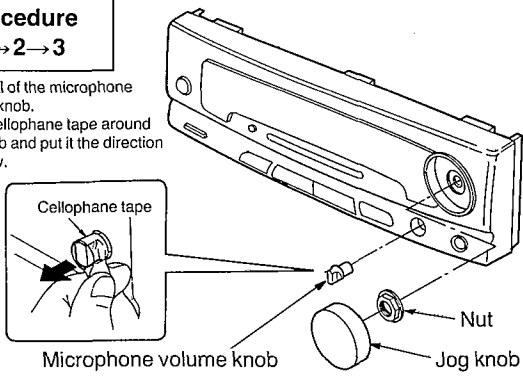
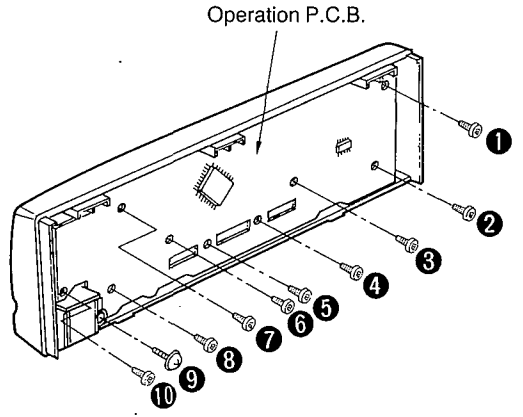
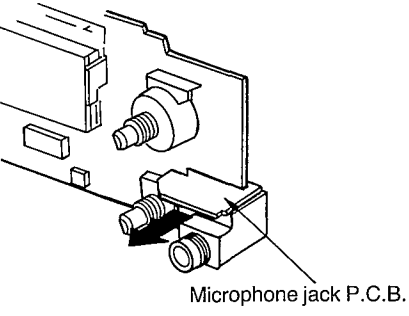
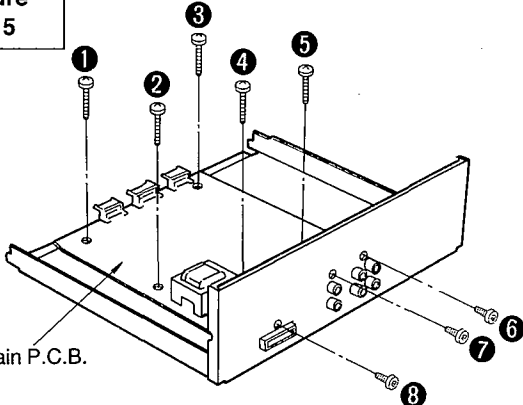
⓱ Sound mode display

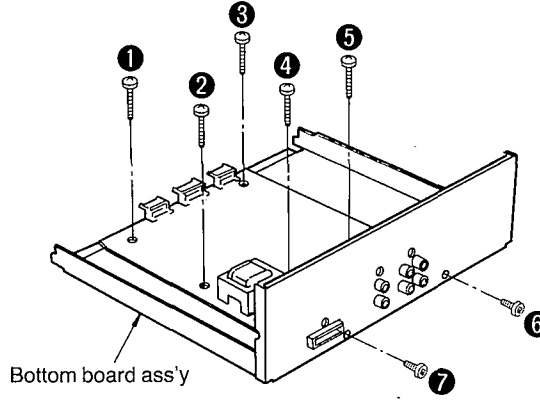
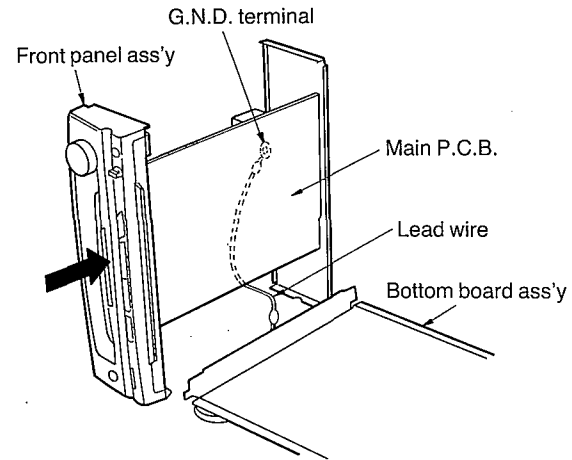
Shows the selected mode of equalization curve or SPACE mode sound.

DISASSEMBLY INSTRUCTIONS

"ATTENTION SERVICER"

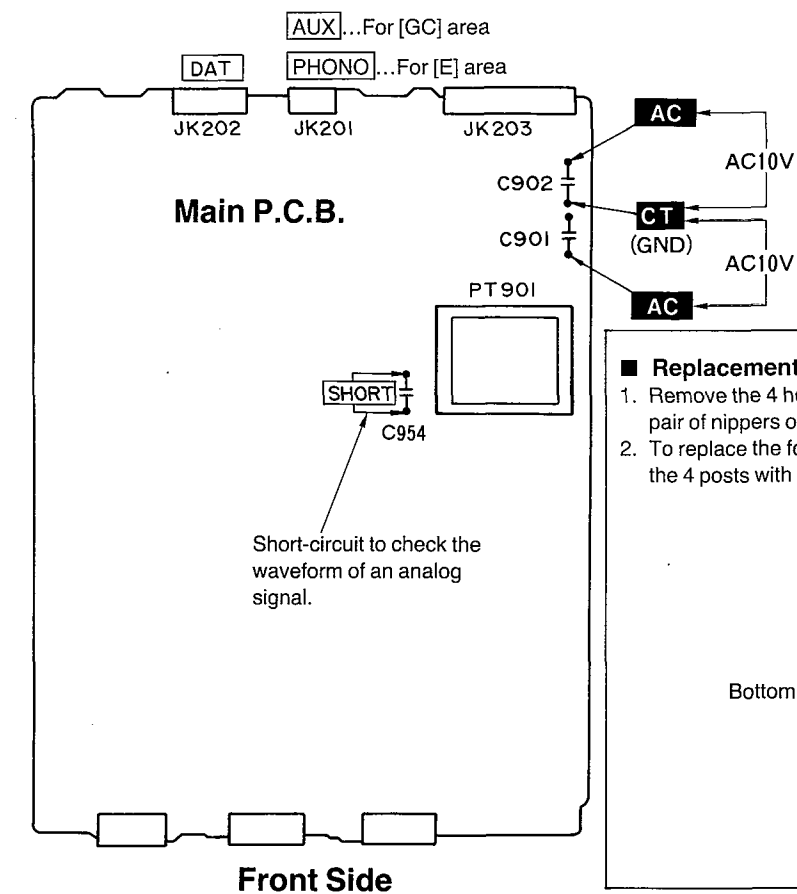
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1	Removal of the Cabinet	Ref. No. 2	Removal of the Front Panel Ass'y
Procedure 1	 1. Remove the 5 screws (1~5). 2. Remove the cabinet in the direction of arrow.	 1. Remove the 2 screws (1, 2). 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	 *Removal of the microphone volume knob. •Wind cellophane tape around the knob and put it the direction of arrow. 1. Pull out the microphone volume knob. 2. Pull out the jog knob. 3. Remove the nut.	 4. Remove the 10 screws (1~10).	
Ref. No. 4	Removal of the Microphone Jack P.C.B.	Ref. No. 5	Removal of the Main P.C.B.
Procedure 1→2→3→4	 •Remove the microphone jack P.C.B. in the direction of arrow.	 •Remove the 8 screws (1~8).	

Ref. No. 6	How to check the Main P.C.B.
Procedure 1→2→6	•When checking the soldered surfaces of main P.C.B. and replacing the parts, do as shown below.  1. Remove the 7 screws (1~7). 2. Remove the bottom board ass'y.  3. Reinstall the front panel ass'y to the main P.C.B. 4. Connect the G.N.D. terminal to the bottom board ass'y using the lead wire.

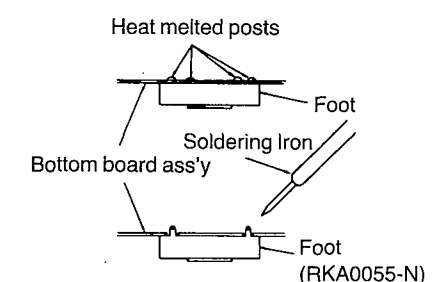
■ This unit (SH-CH650) is actuated by power supply from the tuner amplifier SA-CH650.
If you wish to actuate this unit without using the tuner amplifier SA-CH650 for checking or repairing, follow the below procedures.

1. Short-circuit the terminal of the capacitor (C954).
2. Apply AC 10 V between **AC** (C901) - **CT** (C901, C902) - **AC** (C902).



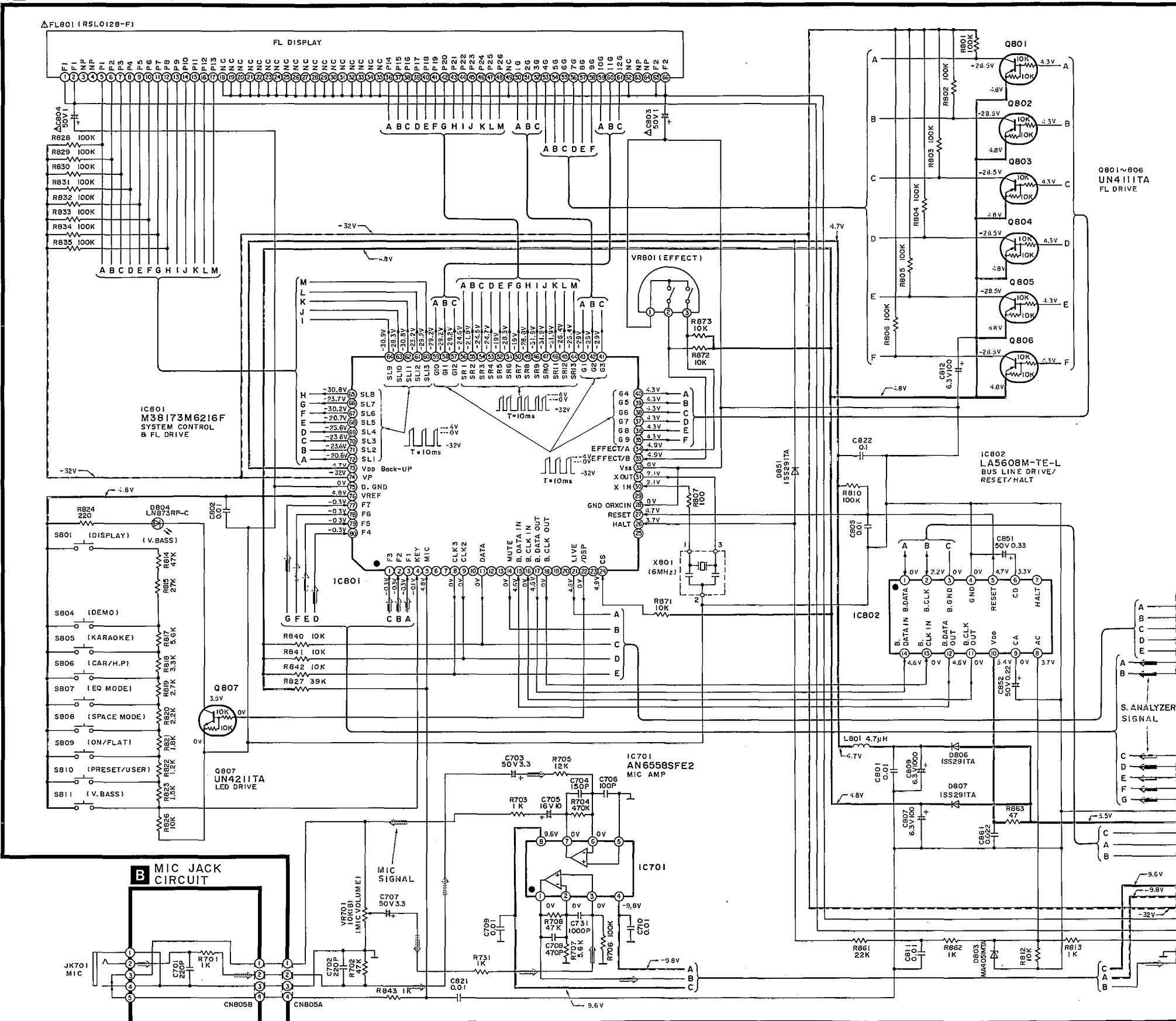
■ Replacement of the Foot

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 (RKA0055-N) on the bottom board ass'y, melt the 4 posts with a soldering iron.



SCHEMATIC DIAGRAM • OPERATION/MIC JACK CIRCUIT (Parts list on pages 18, 19, 21, 22.)

A OPERATION CIRCUIT



Notes:

- S801 : Display mode select switch (DISPLAY, -SPECTRUM, -MODE)
- S804 : Demonstration switch (DEMO)
- S805 : Voice mute switch (KARAOKE)
- S806 : CAR/H.P mode switch (CAR/H.P)
- S807 : Equalizer mode switch (EQ MODE)
- S808 : Space mode switch (SPACE MODE)
- S809 : Equalizer/Space mode ON/FLAT switch (ON/FLAT)
- S810 : Preset/User mode switch (PRESET/USER)
- S811 : V. Bass switch (V. Bass)

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.

Important safety notice:

Components identified by Δ 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 manufacture's specified parts shown in the parts list.

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

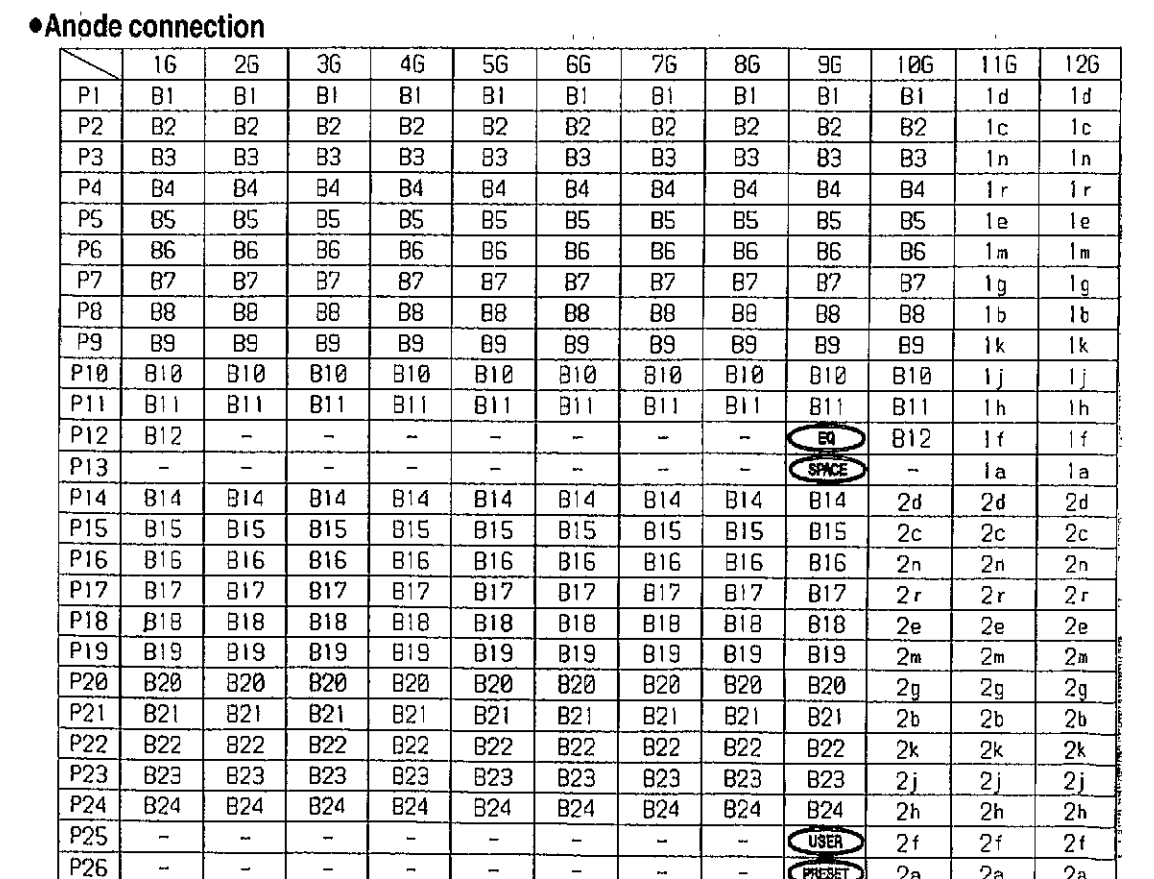
Caution!

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.

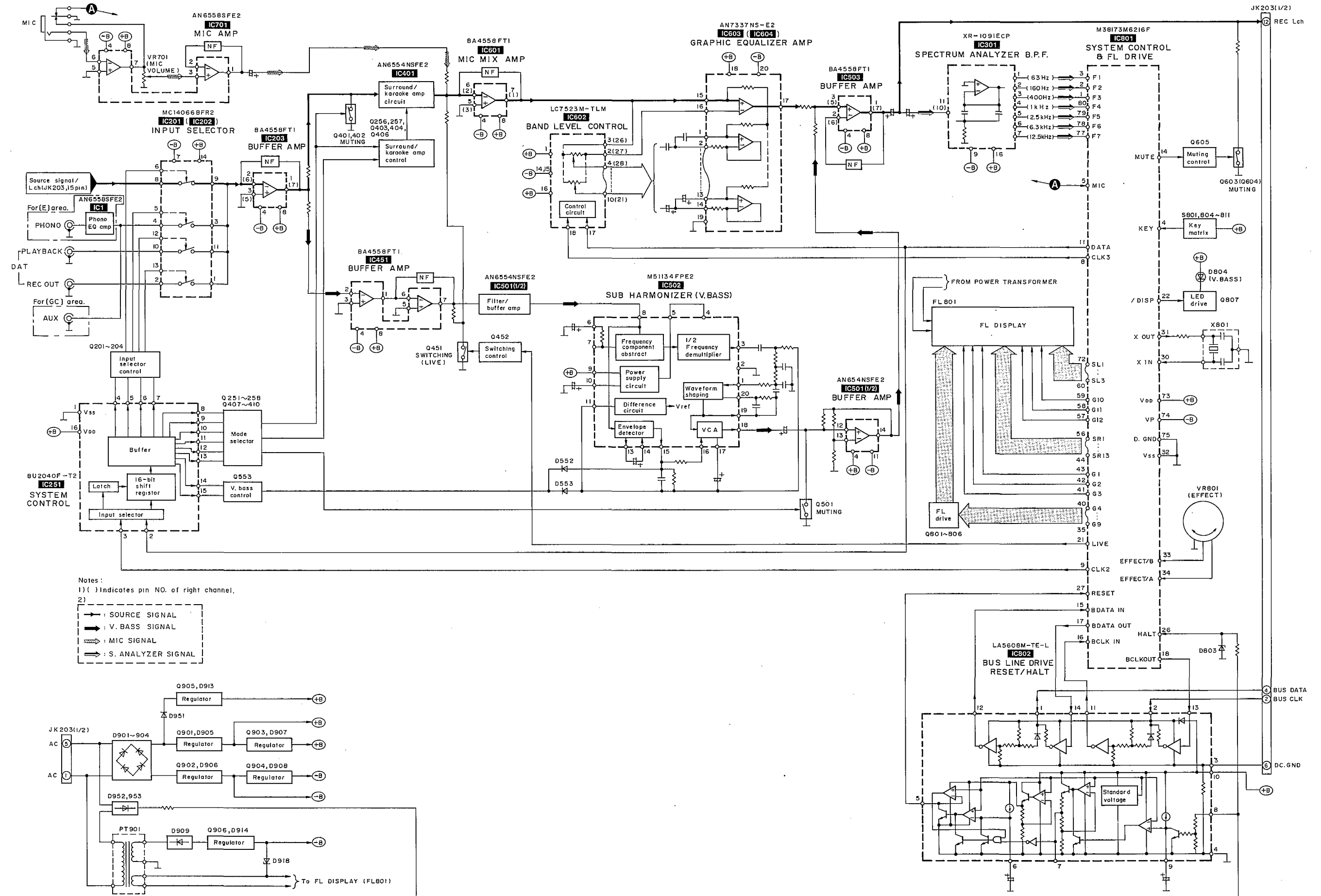
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Ref. No.	Production Parts No.	Supply Parts No.
IC203 IC451 IC503 IC601	BA4558FT1	SVIBA4558F

■ DESCRIPTION OF FL PANEL (FL801: RSL0128-F)



BLOCK DIAGRAM



FUNCTION OF IC TERMINALS

●IC801 (M38173M6216F)

Pin No.	Signal Name	I/O	Description
1 └ 3	F3 └ F1	I	Spectrum analyzer input
4	KEY	I	Key input
5	MIC	I	MIC connection detection input (MIC IN="L")
6	—	—	Strobing input for TC916 4N (normally at "L") (No use)
7	—	—	No use (normally at "L") (No use)
8	CLK3	O	Clock output for M50253, switching output video (normally at "L")
9	CLK2	O	Clock output for LC7523 (normally at "L")
10	—	—	Clock output for TC9164 (normally at "L") (No use)
11	DATA	O	Data output for TC9164, BU2040, AND LC7523
12 13	—	—	No use (normally at "L")
14	MUTE	O	Muting signal output (normally at "L")
15	B.DATA IN	I	Bus data input
16	B.CLK IN	I	Bus clock input
17	B.DATA OUT	O	Bus data output (normally at "L")
18	B.CLK OUT	O	Bus clock output (normally at "L")
19 20	— —	— —	Video switching output (No use)
21	LIVE	O	At "L" when SPACE control mode is LIVE
22	/DSP	O	At "H" during BASS SYNTHESIZER ON
23	—	—	No use (normally at "L")
24	CS	—	Chip selection (No use) H: with JOG L: without JOG

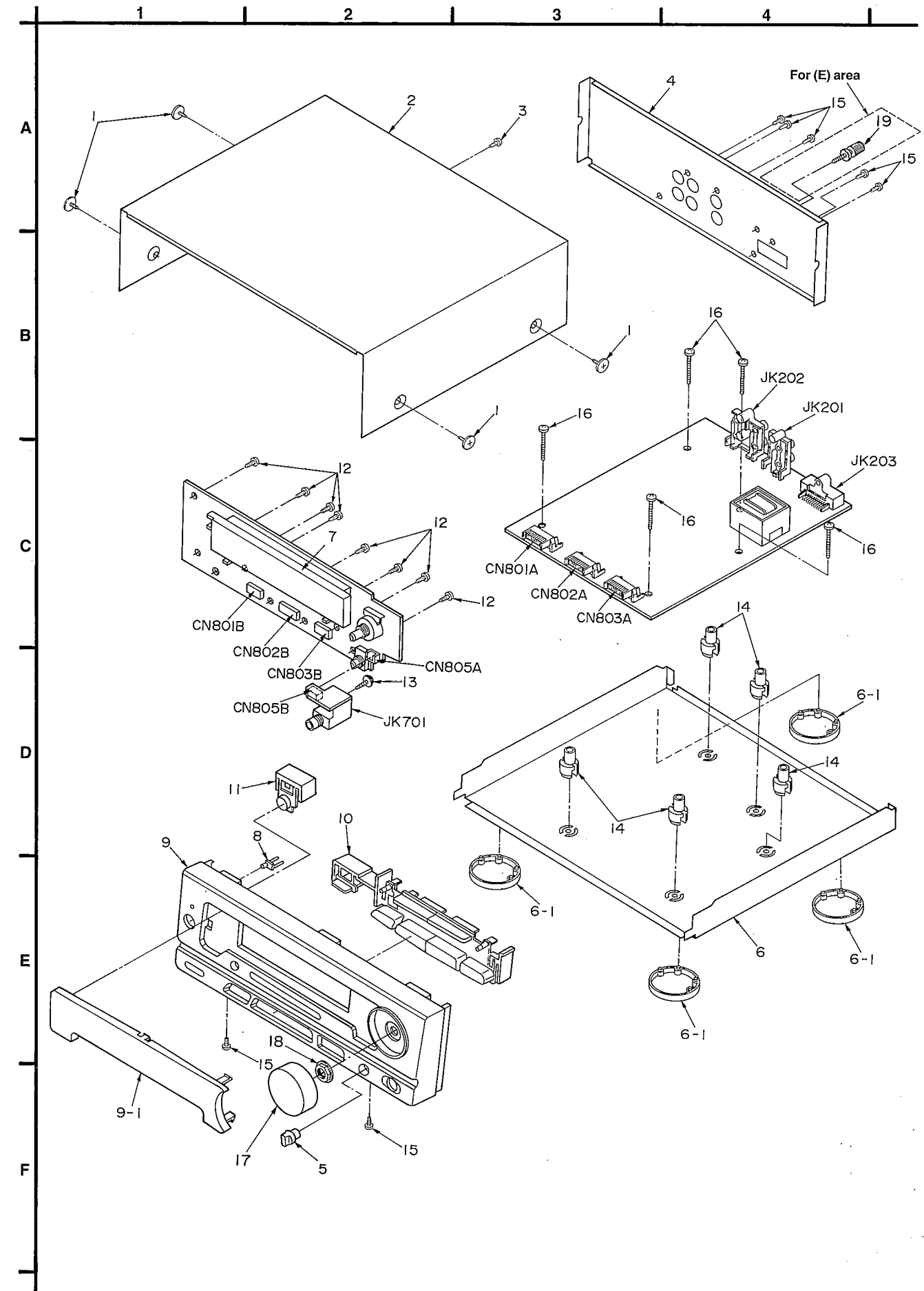
Pin No.	Signal Name	I/O	Description
25	—	—	No use (normally at "L")
26	HALT	I	Power failure detection input (AC 50 Hz or 60 Hz)
27	RESET	I	RESET input
28	GND OR XCIN	I	Pulls up to +10 V
29	—	—	No use (free terminal)
30	XIN	I	Ceramic oscillator connection for system clock generation (6 MHz)
31	XOUT	O	
32	V _{ss}	—	GND connection
33	EEFFECT/B	I	JOG input
34	EEFFECT/A	I	
35 └ 40	G9 └ G4	O	Grid output for fluorescent character display tube
41 └ 43	G3 └ G1	O	Grid output for fluorescent character display tube
44 └ 56	SR13 └ SR1	O	Segment output for fluorescent character display tube
57 └ 59	G12 └ G10	O	Grid output for fluorescent character display tube
60 └ 72	SL13 └ SL1	O	Segment output for fluorescent character display tube
73	V _{DD} Back-up	—	+5 V connection
74	VP	—	VP connection for fluorescent character display tube
75	D.GND	—	GND connection
76	VREF	—	Reference voltage for A/D converter (connected to V _{CC})
77 └ 80	F7 └ F4	I	Spectrum analyzer input

REPLACEMENT PARTS LIST

Notes: *Important safety notice:
Components identified by Δ 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.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)		D401-404	MA165	DIODE	
				D552-554	MA165	DIODE	
				D602	MA165	DIODE	
IC1	AN6558SFE2	I. C, PHONO EQ. AMP.	(E)	D803	MA4051MTA	DIODE	
IC201, 202	MC14066BFR2	I. C, INPUT SELECTOR		D804	LN873RP-C	DIODE (L. E. D.)	
IC203	SVIBA4558F	I. C, BUFFER AMP.		D806, 807	1SS291TA	DIODE	
IC251	BU2040F-T2	I. C, SYSTEM CONTROL		D851	1SS291TA	DIODE	
IC301	XR-1091ECP	I. C, SPECTRUM ANALYZER		D901-904	1SR35200TB	DIODE	Δ
IC401	AN6554NSFE2	I. C, SURROUND AMP.		D905, 906	MA4100MTA	DIODE	
IC451	SVIBA4558F	I. C, BUFFER AMP.		D907, 908	MA4068L	DIODE	
IC501	AN6554NSFE2	I. C, FILTER/BUFFER AMP.		D909	1SR35200TB	DIODE	Δ
IC502	M51134FPE2	I. C, SUB HARMONIZER		D913	MA4062-H	DIODE	
IC503	SVIBA4558F	I. C, BUFFER AMP.		D914	MA4300M	DIODE	
IC601	SVIBA4558F	I. C, MIC MIX AMP.		D918	MA4051MTA	DIODE	Δ
IC602	LC7523M-TLM	I. C, BAND LEVEL CONTROL		D951	1SR35200TB	DIODE	Δ
IC603, 604	AN7337NS-E2	I. C, GRAPHIC EQUALIZER AMP.		D952, 953	MA185TA	DIODE	
IC701	AN6558SFE2	I. C, MIC AMP.				VARIABLE RESISTOR(S)	
IC801	M38173M6216F	I. C, FL. DRIVE/SYSTEM CONT.		VR701	EVJ02BF01B14	V. R, MIC VOLUME	
IC802	LA5608M-TE-L	I. C, BUS LINE DRIVE/RESET		VR801	EVQNPWF1512B	V. R, JOG CONTROL	
		TRANSISTOR(S)				COMPONENT COMBINATION(S)	
Q201-204	UN4111	TRANSISTOR					
Q251-255	UN4111	TRANSISTOR					
Q256	2SD2144S	TRANSISTOR		Z601, 602	EXBF7E224JYV	COMPONENT COMBINATION	
Q257, 258	UN4111	TRANSISTOR				COIL(S)	
Q401, 402	2SD2144S	TRANSISTOR		L101, 102	ELEXT101KA9	COIL	
Q403, 404	2SJ164PQRTA	TRANSISTOR		L301-303	ELEPK4R7KA	COIL	
Q406, 407	2SD2144S	TRANSISTOR		L801	ELEXT4R7KA9	COIL	
Q408-410	UN4211	TRANSISTOR				OSCILLATOR(S)	
Q451	2SD2144S	TRANSISTOR					
Q452	UN4111	TRANSISTOR		X801	RSXY6M00M01T	OSCILLATOR (6MHz)	
Q501	2SD2144S	TRANSISTOR				DISPLAY(S)	
Q553	UN4211	TRANSISTOR					
Q603, 604	2SC3327-A	TRANSISTOR		FL801	RL0128-F	FL. DISPLAY	Δ
Q605	UN4111	TRANSISTOR				SWITCH(ES)	
Q801-806	UN4111	TRANSISTOR					
Q807	UN4211	TRANSISTOR		S801	EVQ21405R	SW, DISPLAY	
Q901	2SD2037DEFTA	TRANSISTOR		S804	EVQ21405R	SW, DEMO	
Q902	2SB1357DEFTA	TRANSISTOR		S805	EVQ21405R	SW, KARAOKE	
Q903	2SC3311A-Q	TRANSISTOR		S806	EVQ21405R	SW, CAR/H. P.	
Q904	2SA1309A-R	TRANSISTOR		S807	EVQ21405R	SW, EQ. MODE	
Q905	2SD2037DEFTA	TRANSISTOR					
Q906	2SA1309A-R	TRANSISTOR					
		DIODE(S)					

■ CABINET PARTS LOCATION

[illegible][illegible]

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	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R435	ERDS2TJ103	1/4W 10K	R627	ERDS2TJ472	1/4W 4.7K
			R436, 437	ERDS2TJ105T	1/4W 1M	R631, 632	ERDS2TJ123	1/4W 12K
			R438	ERDS2TJ102	1/4W 1K	R633, 634	ERDS2TJ223	1/4W 22K
R5, 6	ERDS2TJ331	1/4W 330 (E)	R451, 452	ERDS2TJ223	1/4W 22K	R635, 636	ERDS2TJ224T	1/4W 220K
R7, 8	ERDS2TJ181T	1/4W 180 (E)	R453	ERDS2TJ123	1/4W 12K	R637, 638	ERDS2TJ223	1/4W 22K
R9	ERDS2TJ184T	1/4W 180K (E)	R454, 455	ERDS2TJ223	1/4W 22K	R691, 692	ERDS2TJ102	1/4W 1K
R10	ERDS2TJ184T	1/4W 180K (E)	R456	ERDS2TJ332	1/4W 3.3K	R693, 694	ERDS2TJ472	1/4W 4.7K
R11, 12	ERDS2TJ123	1/4W 12K (E)	R457	ERDS2TJ271	1/4W 270	R701	ERDS2TJ102	1/4W 1K
R13, 14	ERDS2TJ680T	1/4W 68 (E)	R458, 459	ERDS2TJ223	1/4W 22K	R702	ERDS2TJ473	1/4W 47K
R15, 16	ERDS2TJ562	1/4W 5.6K (E)	R461	ERDS2TJ102	1/4W 1K	R703	ERDS2TJ102	1/4W 1K
R17, 18	ERDS2TJ272T	1/4W 2.7K (E)	R462	ERDS2TJ105T	1/4W 1M	R704	ERDS2TJ474	1/4W 470K
R201, 202	ERDS2TJ102	1/4W 1K (E)	R463	ERDS2TJ392T	1/4W 3.9K	R705	ERDS2TJ123	1/4W 12K
R201, 202	ERDS2TJ123	1/4W 12K (GC)	R498	ERDS2TJ103	1/4W 10K	R706	ERDS2TJ104	1/4W 100K
R203, 204	ERDS2TJ473	1/4W 47K	R499	ERDS2TJ105T	1/4W 1M	R707	ERDS2TJ562	1/4W 5.6K
R205, 206	ERDS2TJ123	1/4W 12K	R501	ERDS2TJ223	1/4W 22K	R708	ERDS2TJ473	1/4W 47K
R207, 208	ERDS2TJ473	1/4W 47K	R502	ERDS2TJ471	1/4W 470	R731	ERDS2TJ102	1/4W 1K
R209, 210	ERDS2TJ122	1/4W 1.2K	R503, 504	ERDAS3G753T	1/4W 75K	R801-806	ERDS2TJ104	1/4W 100K
R211, 212	ERDS2TJ224T	1/4W 220K	R505, 506	ERDAS3G563T	1/4W 56K	R807	ERDS2TJ101	1/4W 100
R213-216	ERDS2TJ223	1/4W 22K	R507	ERDAS3G122	1/4W 1.2K	R810	ERDS2TJ104	1/4W 100K
R221-224	ERDS2TJ333	1/4W 33K	R508	ERDAS3G124T	1/4W 120K	R812	ERDS2TJ103	1/4W 10K
R225, 226	ERDS2TJ102	1/4W 1K	R509	ERDS2TJ222	1/4W 2.2K	R813	ERDS2TJ102	1/4W 1K
R251, 252	ERDS2TJ222	1/4W 2.2K	R510-512	ERDS2TJ224T	1/4W 220K	R814	ERDS2TJ473	1/4W 47K
R253	ERDS2TJ272T	1/4W 2.7K	R513	ERDS2TJ824	1/4W 820K	R815	ERDS2TJ273	1/4W 27K
R291-293	ERDS2TJ333	1/4W 33K	R514	ERDS2TJ683	1/4W 68K	R817	ERDS2TJ562	1/4W 5.6K
R294	ERDS2TJ104	1/4W 100K	R515, 516	ERDS2TJ332	1/4W 3.3K	R818	ERDS2TJ332	1/4W 3.3K
R301, 302	ERDS2TJ683	1/4W 68K	R517, 518	ERDS2TJ224T	1/4W 220K	R819	ERDS2TJ272T	1/4W 2.7K
R303, 304	ERDS2TJ103	1/4W 10K	R519-528	ERDS2TJ103	1/4W 10K	R820	ERDS2TJ222	1/4W 2.2K
R305	ERDS2TJ101	1/4W 100	R529	ERDS2TJ104	1/4W 100K	R821	ERDS2TJ182	1/4W 1.8K
R306	ERDS2TJ222	1/4W 2.2K	R530	ERDS2TJ224T	1/4W 220K	R822	ERDS2TJ122	1/4W 1.2K
R307	ERDS2TJ152	1/4W 1.5K	R531	ERDAS3G332T	1/4W 3.3K	R823	ERDS2TJ152	1/4W 1.5K
R308, 309	ERDS2TJ101	1/4W 100	R532	ERDS2TJ101	1/4W 100	R824	ERDS2TJ221	1/4W 220
R311-317	ERDS2TJ122	1/4W 1.2K	R541	ERDAS3G753T	1/4W 75K	R826	ERDS2TJ103	1/4W 10K
R318	ERDS2TJ104	1/4W 100K	R542	ERDAS3G102T	1/4W 1K	R827	ERDS2TJ393	1/4W 39K
R401, 402	ERDS2TJ152	1/4W 1.5K	R560	ERDS2TJ563	1/4W 56K	R828-835	ERDS2TJ104	1/4W 100K
R403, 404	ERDS2TJ683	1/4W 68K	R561	ERDS2TJ473	1/4W 47K	R840-842	ERDS2TJ103	1/4W 10K
R405, 406	ERDS2TJ682T	1/4W 6.8K	R563	ERDS2TJ823T	1/4W 82K	R843	ERDS2TJ102	1/4W 1K
R407, 408	ERDS2TJ273	1/4W 27K	R564	ERDS2TJ102	1/4W 1K	R861	ERDS2TJ223	1/4W 22K
R409, 410	ERDS2TJ103	1/4W 10K	R565	ERDS2TJ105T	1/4W 1M	R862	ERDS2TJ223	1/4W 22K
R411, 412	ERDS2TJ393	1/4W 39K	R567, 568	ERDS2TJ472	1/4W 4.7K	R863	ERDS2TJ470	1/4W 47
R413-416	ERDS2TJ103	1/4W 10K	R601, 602	ERDS2TJ563	1/4W 56K	R871-873	ERDS2TJ103	1/4W 10K
R417, 418	ERDS2TJ223	1/4W 22K	R605, 606	ERDS2TJ224T	1/4W 220K	R901, 902	ERD2FCVJ4R7T	1/4W 4.7 Δ
R421-423	ERDS2TJ223	1/4W 22K	R607, 608	ERDS2TJ153	1/4W 15K	R903	ERD25FJ2R2	1/4W 2.2 Δ
R424	ERDS2TJ332	1/4W 3.3K	R609, 610	ERDS2TJ103	1/4W 10K	R904	ERDS2TJ102	1/4W 1K
R425	ERDS2TJ152	1/4W 1.5K	R611, 612	ERDS2TJ102	1/4W 1K	R905, 906	ERDS2TJ100	1/4W 10
R426	ERDS2TJ221	1/4W 220	R613, 614	ERDS2TJ104	1/4W 100K	R907, 908	ERDS2TJ102	1/4W 1K
R427	ERDS2TJ821	1/4W 820	R617, 618	ERDS2TJ102	1/4W 1K	R910	ERDS2TJ102	1/4W 1K
R428	ERDS2TJ222	1/4W 2.2K	R619, 620	ERDS2TJ393	1/4W 39K	R911	ERD2FCVJ4R7T	1/4W 4.7 Δ
R429, 430	ERDS2TJ102	1/4W 1K	R624	ERDS2TJ334	1/4W 330K	R912	ERDS2TJ101	1/4W 100
R431	ERDS2TJ105T	1/4W 1M	R625, 626	ERDS2TJ102	1/4W 1K	R915	ERDS2TJ332	1/4W 3.3K

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R916, 917	ERDS2TJ820	1/4W 82 Δ	C514	ECFR1E563KR	25V 0.056U	C811	ECBT1E103ZF	25V 0.01U
R951	ERDS2TJ562	1/4W 5.6K	C515	ECBT1H100J5	50V 10P	C812	ECEA0JKS101B	6.3V 100U
R952, 953	ERDS2TJ100	1/4W 10	C516	ECEA1HKA2R2B	50V 2.2U	C821	ECBT1E103ZF	25V 0.01U
R954, 955	ERDS2TJ2R2T	1/4W 2.2 Δ	C517	ECEA1HK010B	50V 1U Δ	C822	ECBT1H104ZF5	50V 0.1U
R971	ERDS2TJ102	1/4W 1K	C518	ECEA1CKA100B	16V 10U	C851	ECEA1HKAR33B	50V 0.33U
		CAPACITORS	C519	ECEA1CKA470B	16V 47U	C852	ECEA1HKAR22B	50V 0.22U
			C520	ECEA1CKA100B	16V 10U	C861	ECBTOJ223MS5	6.3V 0.022U
			C521, 522	ECFR1E273KR	25V 0.027U	C901, 902	ECKT1H223ZF	50V 0.022U Δ
C1, 2	ECBT1H102KB5	50V 1000P (E)	C523, 524	ECBT1H221KB5	50V 220P	C903, 904	ECA1EM471B	25V 470U
C3, 4	ECEA1AKA330B	10V 33U (E)	C525, 526	ECEA1HKA3R3B	50V 3.3U	C905, 906	ECBT1E103ZF	25V 0.01U
C5, 6	ECBTOJ223MS5	6.3V 0.022U (E)	C530	ECBTOJ223MS5	6.3V 0.022U	C907, 908	ECEA1CKA100B	16V 10U
C7, 8	ECBT1C682KR5	16V 6800P (E)	C533, 534	ECEA1CKA100B	16V 10U	C909, 910	ECEA1CKA470B	16V 47U
C9	ECEA1CKA100B	16V 10U (E)	C535, 536	ECBT1H102KB5	50V 1000P	C911, 912	ECBT1E103ZF	25V 0.01U
C10	ECEA1CKA100B	16V 10U (E)	C555-559	ECBT1E103ZF	25V 0.01U	C913, 914	ECEA1CKA100B	16V 10U
C11, 12	ECBT1E103ZF	25V 0.01U (E)	C601, 602	ECBT1H560J5	50V 56P	C915	ECBT1E103ZF	25V 0.01U
C101, 102	ECBT1H180J5	50V 18P	C603-606	ECBT1E103ZF	25V 0.01U	C916	ECEA1HKA100B	50V 10U
C103-106	ECBT1H101KB5	50V 100P	C607, 608	ECBT1H121KB5	50V 120P	C918	ECA1HM221B	50V 220U
C107, 108	ECBT1H151KB5	50V 150P (E)	C609, 610	ECBT1H101KB5	50V 100P	C921	ECBT1E103ZF	25V 0.01U
C109-112	ECBT1H101KB5	50V 100P	C611, 612	ECQV1H474JM3	50V 0.47U	C922	ECEA1CKA100B	16V 10U
C201, 202	ECEA1HKA3R3B	50V 3.3U	C613, 614	ECQV1H564JM3	50V 0.56U	C951	ECA1EM471B	25V 470U
C203, 204	ECBT1H102KB5	50V 1000P	C615, 616	ECFR1E683KR	25V 0.068U	C952-955	ECKR1H103ZF5	50V 0.01U
C205, 206	ECBT1H560J5	50V 56P	C617, 618	ECEA1HKAR47B	50V 0.47U			
C207, 208	ECBT1E103ZF	25V 0.01U	C619, 620	ECBA1H681KB5	50V 680P			
C209, 210	ECBT1H104ZF5	50V 0.1U	C621, 622	ECBT1C472KR5	16V 4700P			
C251, 252	ECBT1H470J5	50V 47P	C623, 624	ECBT1C222KR5	16V 2200P			
C253	ECBT1E103ZF	25V 0.01U	C625, 626	ECBT1C103KS5	16V 0.01U			
C291-294	ECEA1CKA100B	16V 10U	C627, 628	ECBT1C562KR5	16V 5600P			
C301, 302	ECEA1HKA3R3B	50V 3.3U	C629, 630	ECFR1E273KR	25V 0.027U			
C303, 304	ECBT1H101KB5	50V 100P	C631, 632	ECFR1E153KR	25V 0.015U			
C305	ECEA1CKA100B	16V 10U	C633, 634	ECFR1E683KR	25V 0.068U			
C306	ECBT1H102KB5	50V 1000P	C635, 636	ECFR1E333KR	25V 0.033U			
C307, 308	ECEA1AKA330B	10V 33U	C637, 638	ECEA1HKAR15B	50V 0.15U			
C309-311	ECBT1H102KB5	50V 1000P	C641, 642	ECEA1HKA3R3B	50V 3.3U			
C401	ECFR1E473KR	25V 0.047U	C647	ECEA1HKA3R3B	50V 3.3U			
C402	ECEA1CKA100B	16V 10U	C648, 649	ECBT1E103ZF	25V 0.01U			
C403	ECFR1E823KR	25V 0.082U	C651, 652	ECEA1HKA3R3B	50V 3.3U			
C404	ECFR1E123KR	25V 0.012U	C653	ECEA1HKA4R7B	50V 4.7U			
C405	ECBTOJ223MS5	6.3V 0.022U	C655-657	ECBT1E103ZF	25V 0.01U			
C406, 407	ECBT1E103ZF	25V 0.01U	C701, 702	ECBT1H221KB5	50V 220P			
C451	ECBT1H102KB5	50V 1000P	C703	ECEA1HKA3R3B	50V 3.3U			
C452	ECEA1HKA3R3B	50V 3.3U	C704	ECBT1H151KB5	50V 150P			
C453, 454	ECBT1E103ZF	25V 0.01U	C705	ECEA1CKA100B	16V 10U			
C501, 502	ECQB1H393JF3	50V 0.039U	C706	ECBT1H101KB5	50V 100P			
C503	ECQV1H274JM3	50V 0.27U	C707	ECEA1HKA3R3B	50V 3.3U			
C504	ECQB1H272JF3	50V 2700P	C708	ECBT1H471KB5	50V 470P			
C505, 506	ECQV1H224JM3	50V 0.22U	C709, 710	ECBT1E103ZF	25V 0.01U			
C507	ECEA1CKA100B	16V 10U	C731	ECBT1H102KB5	50V 1000P			
C508	ECEA1HKAR33B	50V 0.33U	C801, 802	ECBT1E103ZF	25V 0.01U			
C509	ECEA1CKA470B	16V 47U	C803, 804	ECEA1HKS010	50V 1U Δ			
C510	ECEA1HKA4R7B	50V 4.7U	C805	ECBT1E103ZF	25V 0.01U			
C511, 512	ECQV1H124JM3	50V 0.12U	C807	ECEA0JKS101B	6.3V 100U			
C513	ECBT1C332KR5	16V 3300P	C809	ECEA0JU102	6.3V 1000U			