

SERVICE MANUAL

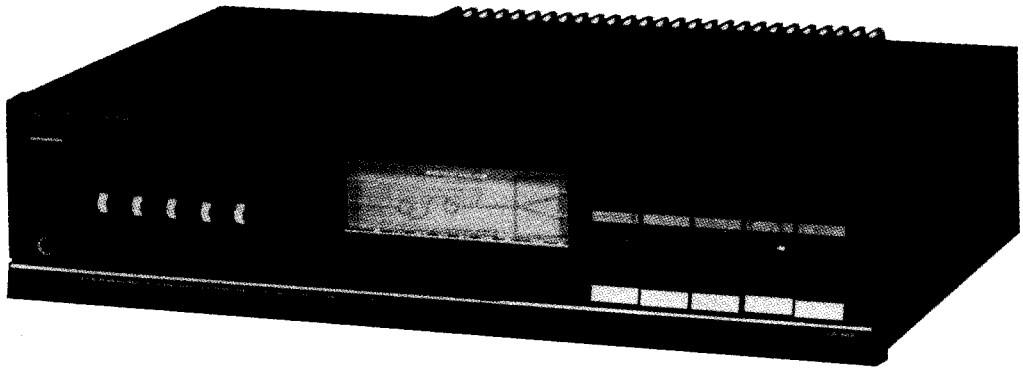


FISHER

INTEGRATED STEREO AMPLIFIER

CA-869

(EUROPE)



132 299 42

SPECIFICATIONS

POWER AMPLIFIER SECTION

Minimum RMS sine wave power per channel
within stated bandwidth at no more than stated
distortion and with 8-ohm load 100 Watts

Power Bandwidth 20 Hz – 20 kHz

Total Harmonic Distortion 0.09 %

I.M. Distortion 0.09 %

Speaker Damping > 20

PREAMPLIFIER SECTION

Frequency Response

Phono (RIAA) ±1 dB

Aux (20 Hz – 20 kHz) ±1 dB

Input Sensitivity and Impedance

Phono 2.5 mV/50 kΩ

Tape Monitor 150 mV/50 kΩ

Tuner/Video/CD 150 mV/50 kΩ

Phono Max. Input Capability 150 mV

Graphic Equalizer

63Hz ±10 dB

250Hz ±10 dB

1KHz ±10 dB

4KHz ±10 dB

16KHz ±10 dB

Loudness Contour (100 Hz/10 kHz) +8 dB/+4 dB

Hum & Noise (IHF Short Circuit, A Network)

Phono 65 dB

Tape Monitor 85 dB

Tuner/Video/CD 85 dB

GENERAL

Power Requirements (50 Hz) 110/220 VAC

Power Consumption 510 Watts

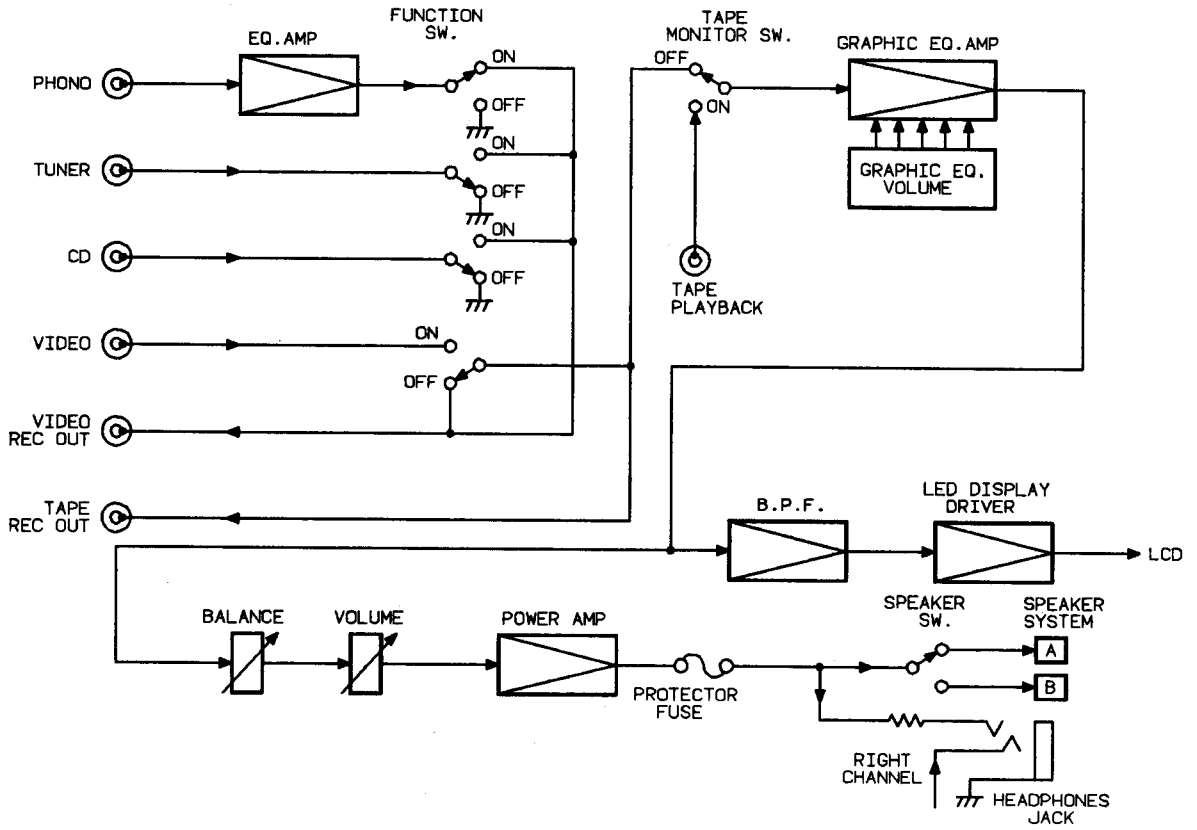
Dimensions (W x H x D) 440 x 108 x 315 mm

Weight (approx.) 8.0 kg

– Specifications and design are subject to change without notice. –

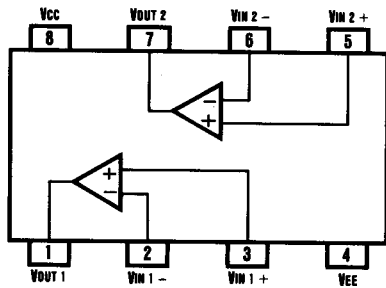
REFERENCE No. WM-19670

FUNCTIONAL BLOCK DIAGRAM

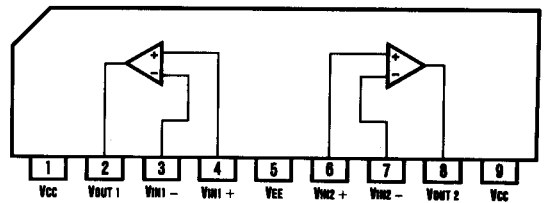


INTEGRATED CIRCUIT BLOCK DIAGRAM

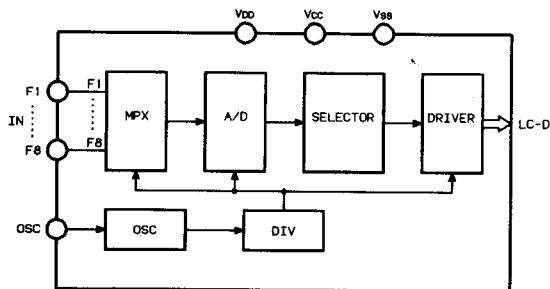
PHONO EQ. AMP IC LA 6458 DS



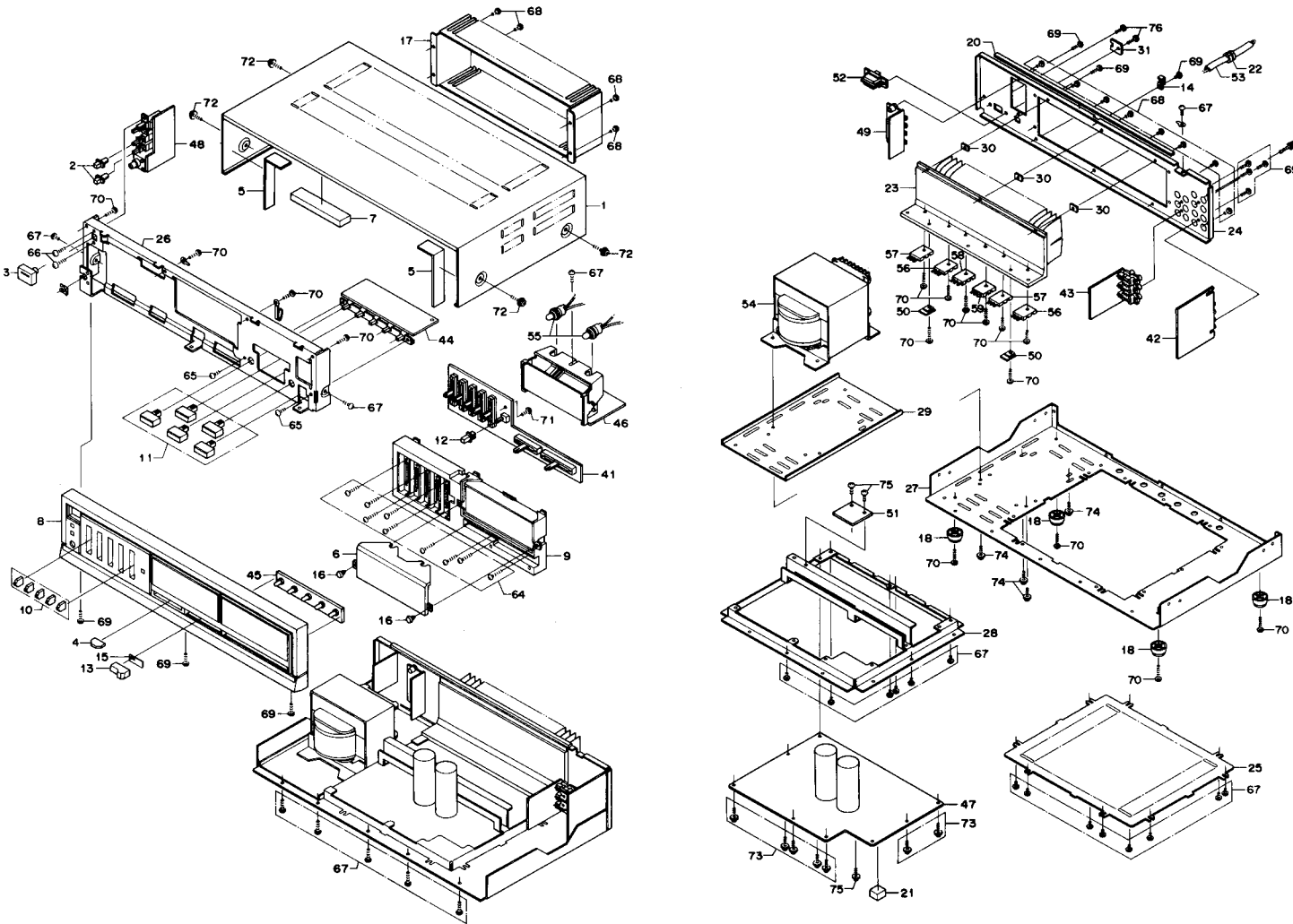
GRAPHIC EQ. AMP/B.P.F. IC LA 6458 SS



LCD DISPLAY DRIVER IC LC 7561



CABINET & CHASSIS EXPLODED VIEW



POWER AMPLIFIER ADJUSTMENT

BEFORE ADJUSTMENT

Unplug the AC power cord and set the front panel controls as follows:

- Power switch to OFF position.
- Set the SPEAKERS switch to the OFF position.
- Set the volume level to minimum level by Pressing the VOLUME DOWN button.
- IDLING CURRENT ADJUSTMENT VR501/VR502 (on the Main Amplifier P.C.Board) setting to mechanical center position.
- Connect the AC power cord and Power Switch to the ON position.

IDLING CURRENT ADJUSTMENT

This adjustment is very sensitive to changes in ambient temperature. Allow set to operate for 2 minutes before attempting this alignment.

LEFT AMPLIFIER

- 1) Connect the DC Voltmeter between Pins 19 and 21 on the Main Amplifier P.C.Board.
- 2) Adjust the VR501 for an indication of 9mV (7mV ~ 15mV) on the DC Voltmeter.

RIGHT AMPLIFIER

- 1) Connect the DC Voltmeter between Pins 20 and 22 on the Main Amplifier P.C.Board.
- 2) Adjust the VR502 for an indication of 9mV (7mV ~ 15mV) on the DC Voltmeter.

CABINET & CHASSIS PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
PACKAGE				25	141-2-1259-11200	Bottom Cover	1
	3-9415-10300	Bag Polyethylene	1	26	141-2-2149-31200	Panel Front	1
	131-6-3009-36090	Pad	1	27	141-2-3119-31600	Chassis	1
	131-6-3009-36420	Pad	1	28	141-2-3129-06600	Sub Chassis	1
	131-6-3069-16350	Patching Sheet	1	29	141-2-3159-05800	Metal Reinforce	1
	131-6-4559-11200	Serial No. Sheet	2	30	141-2-4359-41200	Plate Sever	3
	141-6-1189-28501	Box Corrugate-exp	1	31	131-2-7104-00500	Plate Pad Switch	1
	141-6-1469-11700	Pad (Front)	1				
	141-6-1469-11800	Pad (Rear)	1	41	141-0-1939-20570	Graphic EQ. P.C.B. Assy	1
	141-6-2519-22290	Sheet Polyethylene	1	42	141-0-1939-20581	Phono EQ. P.C.B. Assy	1
	131-6-3009-36700	Pad	2	43	141-0-1939-20591	Pin Jack P.C.B. Assy	1
				44	141-0-1939-20600	Function P.C.B. Assy	1
				45	141-0-1939-20610	LED Ind. P.C.B. Assy	1
				46	141-0-1939-20620	Spectrum Analyzer P.C.B. Assy	1
				47	141-0-1939-20631	Main Amp. P.C.B. Assy	1
				48	141-0-1939-20641	Power SW. P.C.B. Assy	1
				49	141-0-1939-20651	Speaker Terminal P.C.B. Assy	1
				50	141-0-1939-20680	Bias P.C.B. Assy	2
				51	141-0-1939-23290	Lamp P.C.B. Assy	1
				52	Δ 4-2312-01020	SW Slide (AC Selector) [S801]	1
				53	Δ 4-2432-00400	Power Cord	1
				54	Δ 4-2512-25021	Power Trans	1
				55	4-6129-70724	Lamp	2
				56	405 033 3309	TR 2SC3280-R [Q515, Q516]	1
				or	405 033 7208	TR 2SD1717-Q [Q515, Q516]	1
				57	405 031 2106	TR 2SA1301-R [Q517, Q518]	1
				or	405 031 8801	TR 2SB1162-Q [Q517, Q518]	1
				58	405 031 2205	TR 2SA1302-R [Q545]	1
				59	405 017 7903	TR 2SC3281-R [Q546]	1
				64	411 039 1102	SCR PAN 2X4	9
				65	411 002 8503	SCR PAN 3X6	2
				66	411 003 8908	SCR PAN+SW 3X6	2
				67	411 020 7700	SCR S-TPG BRZ 3X6	23
				68	411 099 9704	SCR S-TPG BRZ 3X6	12
				69	411 099 9803	SCR S-TPG BRZ 3X8	10
				70	411 020 5904	SCR S-TPG BRZ 3X10	16
				71	411 020 5706	SCR S-TPG BRZ 2.6X8	1
				72	141-2-4219-38400	+BTS-B 4X8 Sems BLK	4
				73	131-2-4201-25201	+BRTS-B Sems 3X8 Z	7
				74	141-2-4219-43300	+BTS-C M4X10 Sems	4
				75	411 020 8004	SCR S-TPG BRZ 3X8	3
				76	411 002 9104	SCR PAN 3X8	2
ACCESSORIES							
	131-6-2719-10401	Bag Fan	1				
	142-6-4119-33419	Explanatory Booklet	1				
CABINET							
	4-2379-21520	Terminal Lug	1				
	131-6-4559-11200	Serial No. Sheet	1				
	141-2-4729-04200	Lug	1				
	141-2-4729-07100	Wire Band	9				
1	131-2-1410-35400	Cover	1				
2	131-2-1601-69601	Knob (Speaker Selector)	2				
3	131-2-1601-93303	Knob (Power)	1				
4	131-2-1601-93400	Knob (Balance)	1				
5	131-2-3202-13400	Metal Reinforce	2				
6	131-2-3608-16409	Filter	1				
7	131-2-5205-33300	Cushion	1				
8	141-0-1129-25008	Cabinet Front Assy	1				
	141-2-1129-52001	Cabinet Front	1				
	141-2-1319-52300	Window	1				
	141-2-1449-61297	Plate Front	1				
	141-2-1449-65012	Plate Decorate	1				
	141-2-2449-58400	Shelter Slide Volume	1				
	131-2-6113-53300	Shelter	1				
9	141-0-3519-26800	Mount P.C.B. Assy	1				
	141-2-3519-84600	Mount P.C.B.	1				
	141-2-1449-65110	Screen LCD	1				
	141-2-3229-62500	Plate Shield	1				
	4-2359-79034	Connector 1P Assy	1				
10	141-2-1659-35900	Knob (Equalizer)	5				
11	141-2-1659-63400	Knob (Function)	5				
12	141-2-1659-63500	Knob (Loudness)	1				
13	141-2-1659-63601	Knob (Volume)	1				
14	141-2-3159-03300	Bracket Cover	1				
15	141-2-4469-55500	Cushion	1				
16	131-2-4221-00600	Rivet	2				
17	131-2-1410-34838	Cover Heat Sink	1				
18	131-2-1801-14100	Leg	4				
19	131-2-4201-17800	Screw Ground	1				
20	131-2-5205-15800	Cushion	1				
21	131-2-5205-35900	Cushion	1				
22	131-2-6111-14200	Bushing (4N-4)	1				
23	131-2-6201-38500	Heat Sink	1				
24	141-2-1219-40907	Panel Rear	1				

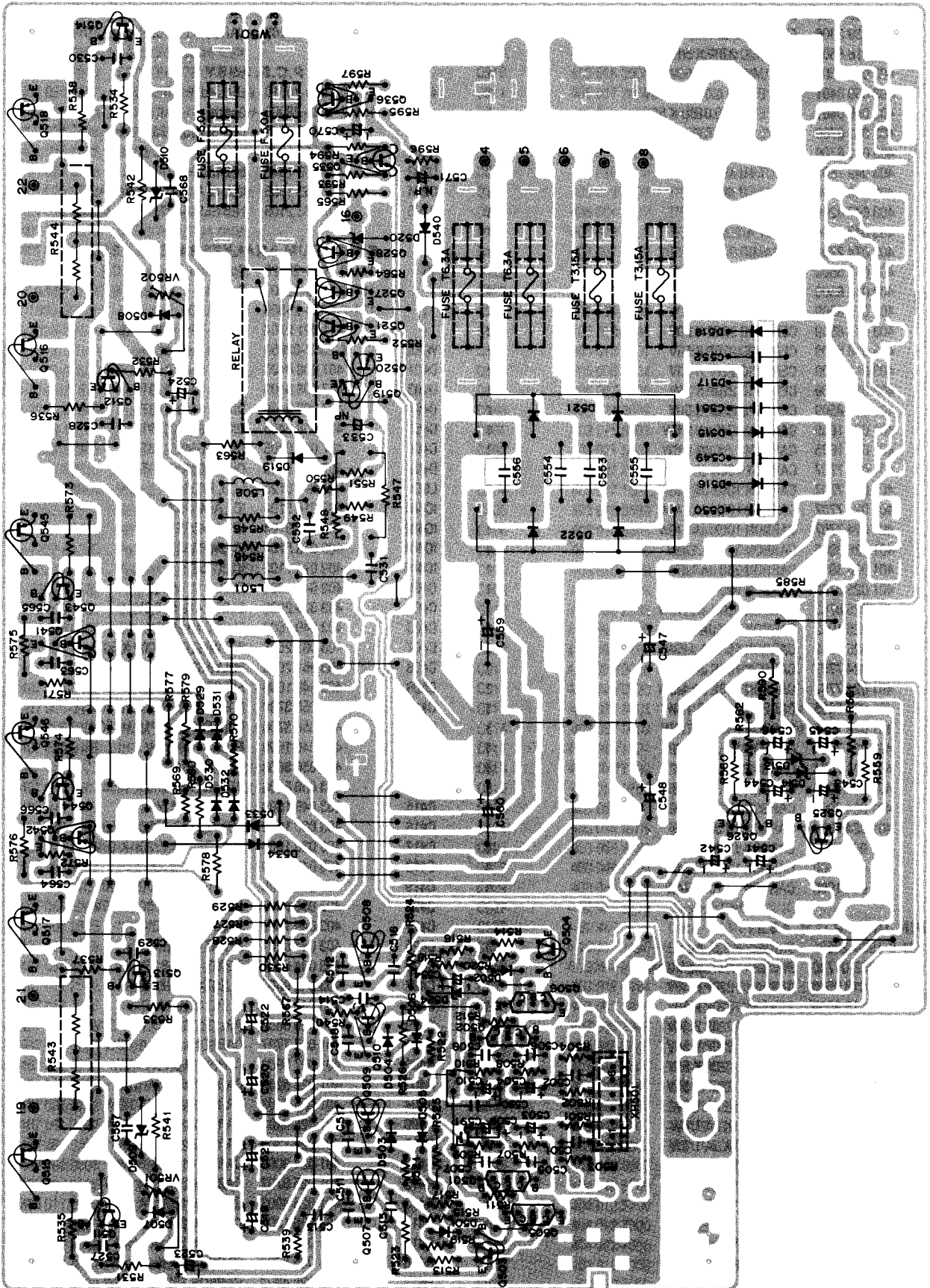
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

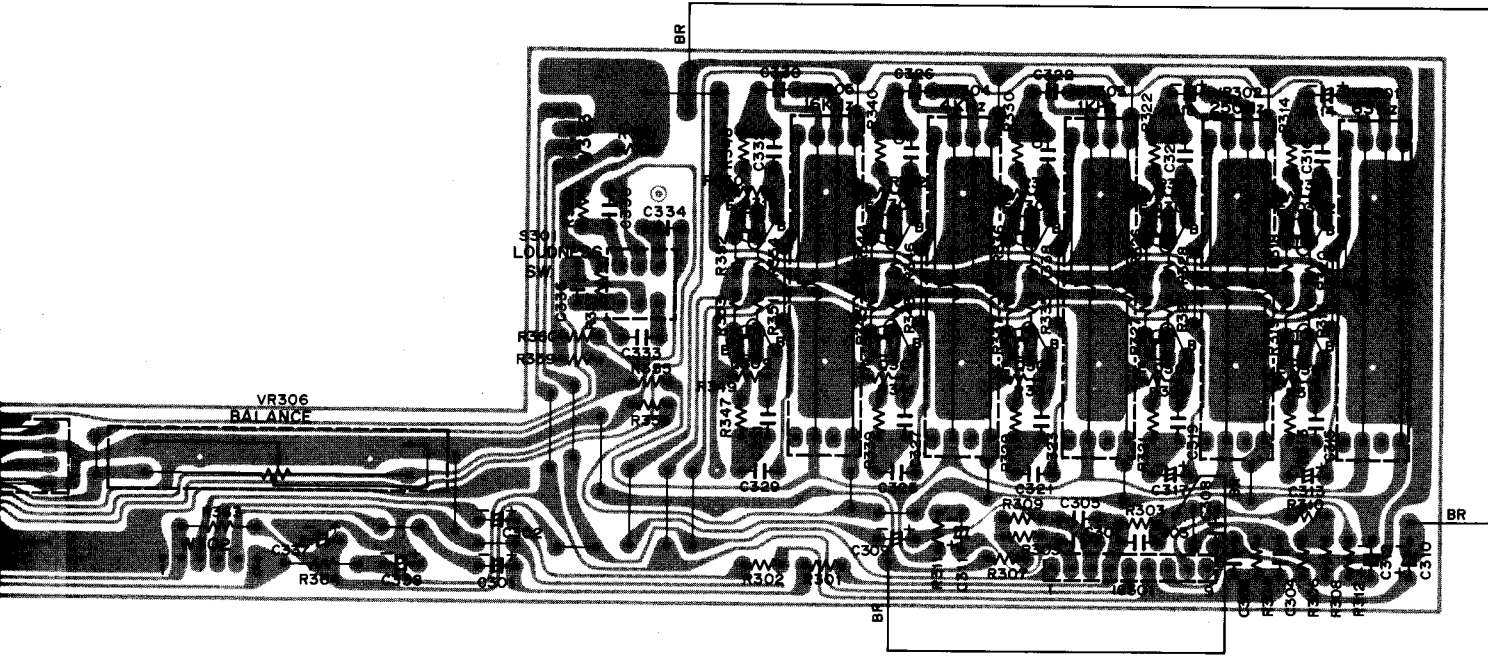
P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
GRAPHIC EQ. P.C.B. ASSY				R306	401 026 1000	CARBON 2.7K JA 1/6W	1
41	141-0-1939-20570	Graphic EQ. P.C.B. Assy	1	R307	401 026 1000	CARBON 2.7K JA 1/6W	1
W301	4-2352-02209	Connector 6P Assy	1	R308	401 026 1000	CARBON 2.7K JA 1/6W	1
W302	4-2352-02205	Connector 6P Assy	1	R309	401 026 1000	CARBON 2.7K JA 1/6W	1
S301	4-2319-77780	SW Push 1 Key (Loudness)	1	R310	401 026 4308	CARBON 3.3K JA 1/6W	1
VR301	4-2229-76930	Slide VR (SW-250kΩx2, 63Hz)	1	R311	401 026 9907	CARBON 4.7K JA 1/6W	1
VR302	4-2229-76930	Slide VR (SW-250kΩx2, 250Hz)	1	R312	401 026 9907	CARBON 4.7K JA 1/6W	1
VR303	4-2229-76930	Slide VR (SW-250kΩx2, 1kHz)	1	R313	401 027 5205	CARBON 680 JA 1/6W	1
VR304	4-2229-76930	Slide VR (SW-250kΩx2, 4kHz)	1	R314	401 027 5205	CARBON 680 JA 1/6W	1
VR305	4-2229-76930	Slide VR (SW-250kΩx2, 16kHz)	1	R315	401 025 8703	CARBON 220K JA 1/6W	1
VR306	4-2229-75980	Slide VR (W-200kΩ, Balance)	1	R316	401 025 8703	CARBON 220K JA 1/6W	1
VR307	4-2229-76220	Slide VR (A-100kΩx2, Volume)	1	R317	401 026 6609	CARBON 390 JA 1/6W	1
IC301	409 018 5104	IC LA6458SS	1	R318	401 027 2600	CARBON 5.6K JA 1/6W	1
Q301	405 019 1909	TR 2SC536-E-NP	1	R319	401 027 2600	CARBON 5.6K JA 1/6W	1
Q302	405 019 1909	TR 2SC536-E-NP	1	R320	401 026 6609	CARBON 390 JA 1/6W	1
Q303	405 019 1909	TR 2SC536-E-NP	1	R321	401 024 7004	CARBON 1K JA 1/6W	1
Q304	405 019 1909	TR 2SC536-E-NP	1	R322	401 024 7004	CARBON 1K JA 1/6W	1
Q305	405 019 1909	TR 2SC536-E-NP	1	R323	401 024 7707	CARBON 100K JA 1/6W	1
Q306	405 019 1909	TR 2SC536-E-NP	1	R324	401 024 7707	CARBON 100K JA 1/6W	1
Q307	405 019 1909	TR 2SC536-E-NP	1	R325	401 026 6609	CARBON 390 JA 1/6W	1
Q308	405 019 1909	TR 2SC536-E-NP	1	R326	401 027 2600	CARBON 5.6K JA 1/6W	1
Q309	405 019 1909	TR 2SC536-E-NP	1	R327	401 027 2600	CARBON 5.6K JA 1/6W	1
Q310	405 019 1909	TR 2SC536-E-NP	1	R328	401 026 6609	CARBON 390 JA 1/6W	1
C301	403 049 2002	ELECT 1U M 50V	1	R329	401 024 9305	CARBON 1.2K JA 1/6W	1
C302	403 049 2002	ELECT 1U M 50V	1	R330	401 024 9305	CARBON 1.2K JA 1/6W	1
C303	403 009 8105	CERAMIC 100P K 50V	1	R331	401 027 0309	CARBON 47K JA 1/6W	1
C304	403 009 8105	CERAMIC 100P K 50V	1	R332	401 027 0309	CARBON 47K JA 1/6W	1
C305	403 031 0306	CERAMIC 68P K 50V	1	R335	401 026 6609	CARBON 390 JA 1/6W	1
C306	403 031 0306	CERAMIC 68P K 50V	1	R336	401 027 2600	CARBON 5.6K JA 1/6W	1
C307	403 008 5204	CERAMIC 10P D 50V	1	R337	401 027 2600	CARBON 5.6K JA 1/6W	1
C308	403 008 5204	CERAMIC 10P D 50V	1	R338	401 026 6609	CARBON 390 JA 1/6W	1
C309	403 042 0807	ELECT 10U M 16V	1	R339	401 024 9305	CARBON 1.2K JA 1/6W	1
C310	403 042 0807	ELECT 10U M 16V	1	R340	401 024 9305	CARBON 1.2K JA 1/6W	1
C311	403 047 1809	ELECT 4.7U M 25V	1	R341	401 026 7408	CARBON 39K JA 1/6W	1
C312	403 047 1809	ELECT 4.7U M 25V	1	R342	401 026 7408	CARBON 39K JA 1/6W	1
C313	403 050 1209	ELECT 2.2U M 50V	1	R343	401 026 6609	CARBON 390 JA 1/6W	1
C314	403 050 1209	ELECT 2.2U M 50V	1	R344	401 027 2600	CARBON 5.6K JA 1/6W	1
C315	403 060 2807	POLYESTER 0.027U K 50V	1	R345	401 027 2600	CARBON 5.6K JA 1/6W	1
C316	403 060 2807	POLYESTER 0.027U K 50V	1	R346	401 026 6609	CARBON 390 JA 1/6W	1
C317	403 048 7602	ELECT 0.47U M 50V	1	R347	401 024 9305	CARBON 1.2K JA 1/6W	1
C318	403 048 7602	ELECT 0.47U M 50V	1	R348	401 024 9305	CARBON 1.2K JA 1/6W	1
C319	403 057 0908	POLYESTER 0.01U K 50V	1	R349	401 026 1307	CARBON 27K JA 1/6W	1
C320	403 057 0908	POLYESTER 0.01U K 50V	1	R350	401 026 1307	CARBON 27K JA 1/6W	1
C321	403 067 8406	MT-COMPO 0.082U J 50V	1	R351	401 026 6609	CARBON 390 JA 1/6W	1
C322	403 067 8406	MT-COMPO 0.082U J 50V	1	R352	401 027 2600	CARBON 5.6K JA 1/6W	1
C323	403 061 8709	POLYESTER 4700P K 50V	1	R353	401 027 2600	CARBON 5.6K JA 1/6W	1
C324	403 061 8709	POLYESTER 4700P K 50V	1	R354	401 026 6609	CARBON 390 JA 1/6W	1
C325	403 059 6601	POLYESTER 0.022U K 50V	1	R355	401 025 1605	CARBON 1.5K JA 1/6W	1
C326	403 059 6601	POLYESTER 0.022U K 50V	1	R356	401 025 1605	CARBON 1.5K JA 1/6W	1
C327	403 058 1607	POLYESTER 1500P K 50V	1	R357	401 026 9907	CARBON 4.7K JA 1/6W	1
C328	403 058 1607	POLYESTER 1500P K 50V	1	R358	401 026 9907	CARBON 4.7K JA 1/6W	1
C329	403 061 8709	POLYESTER 4700P K 50V	1	R359	401 024 7707	CARBON 100K JA 1/6W	1
C330	403 061 8709	POLYESTER 4700P K 50V	1	R360	401 024 7707	CARBON 100K JA 1/6W	1
C331	403 031 2805	CERAMIC 680P K 50V	1	R361	401 025 4200	CARBON 1.8K JA 1/6W	1
C332	403 031 2805	CERAMIC 680P K 50V	1	R363	401 019 9600	CARBON 47 JA 1/4W	1
C333	403 023 5807	CERAMIC 330P K 50V	1	R364	401 019 9600	CARBON 47 JA 1/4W	1
C334	403 023 5807	CERAMIC 330P K 50V	1	PHONO EQ. P.C.B. ASSY			
C335	403 067 7706	MT-COMPO 0.047U J 50V	1	42	141-0-1939-20581	Phono EQ. P.C.B. Assy	1
C336	403 067 7706	MT-COMPO 0.047U J 50V	1		4-2352-01700	Pin Jack 4P (PHOTO, TUNER) (CD, VIDEO/AUX)	2
C337	403 044 0706	ELECT 47U M 16V	1		4-2359-78835	Connector 1P Assy	1
C338	403 044 0706	ELECT 47U M 16V	1	IC101	409 018 4503	IC LA6458DS	1
R301	401 025 1605	CARBON 1.5K JA 1/6W	1	C101	403 023 5807	CERAMIC 330P K 50V	1
R302	401 025 1605	CARBON 1.5K JA 1/6W	1	C102	403 023 5807	CERAMIC 330P K 50V	1
R303	401 027 3003	CARBON 56K JA 1/6W	1	C103	403 047 1502	ELECT 4.7U M 25V	1
R304	401 027 3003	CARBON 56K JA 1/6W	1	C104	403 047 1502	ELECT 4.7U M 25V	1
R305	401 026 4308	CARBON 3.3K JA 1/6W	1				

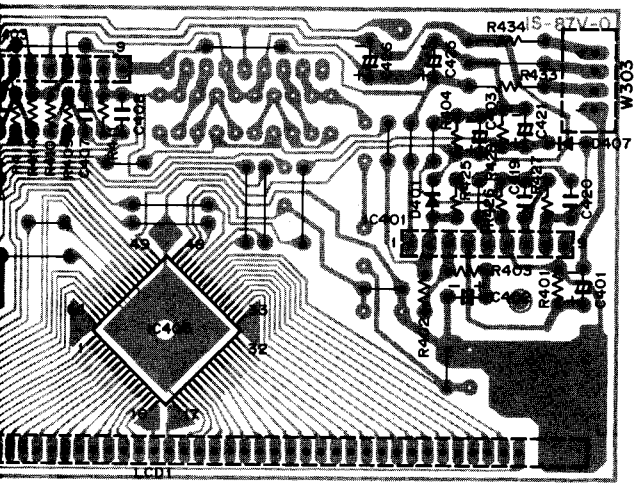
MAIN AMPLIFIER PRINTED CIRCUIT BOARD (BOTTOM VIEW)



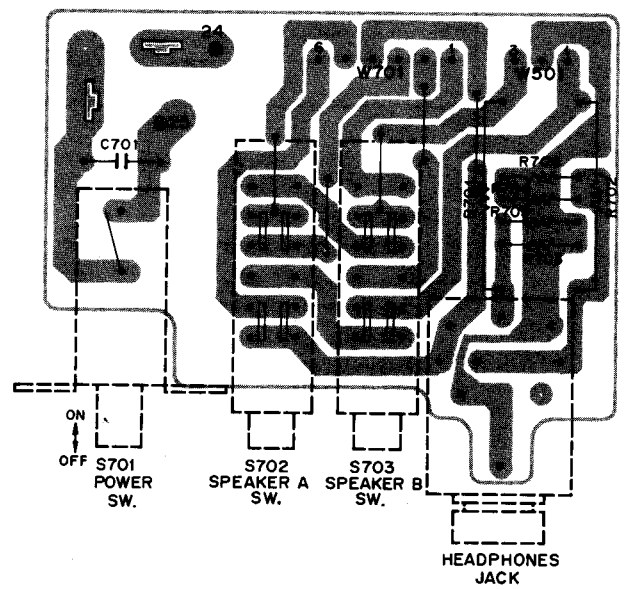
**GRAPHIC EQUALIZER PRINTED CIRCUIT BOARD
(BOTTOM VIEW)**



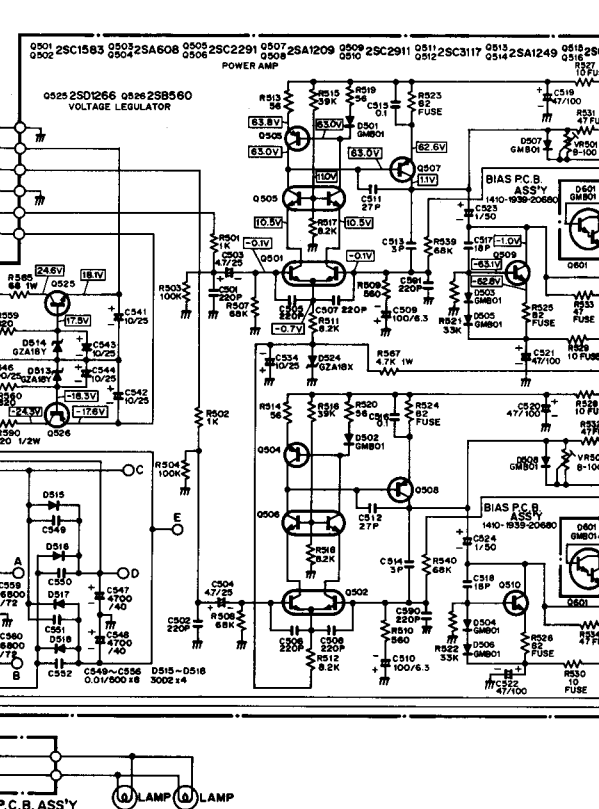
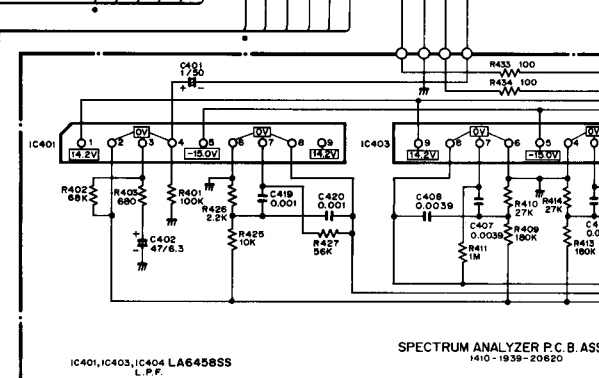
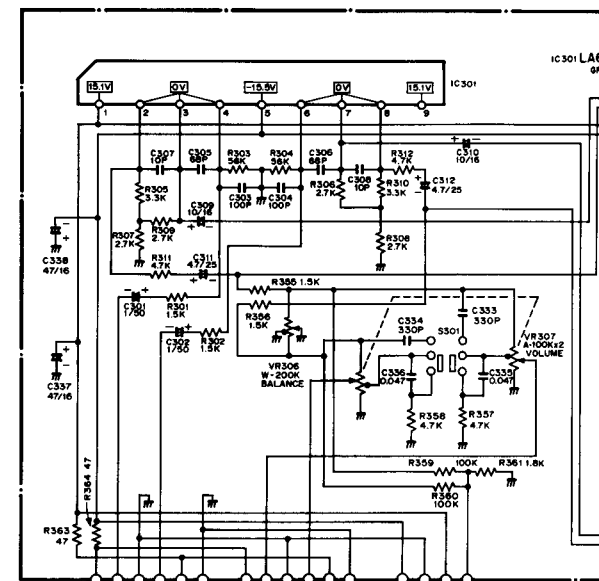
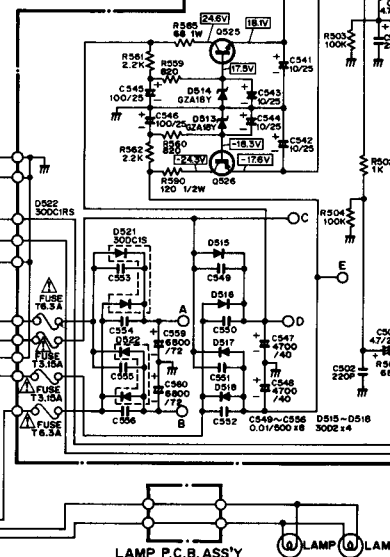
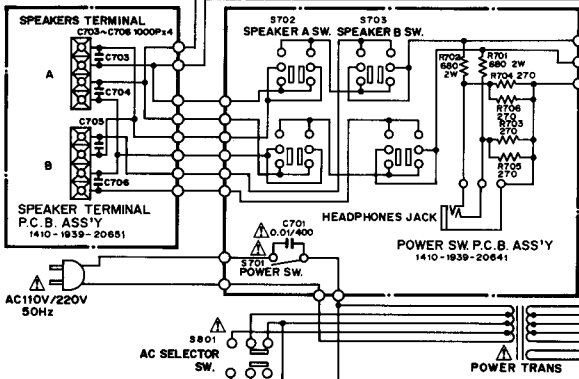
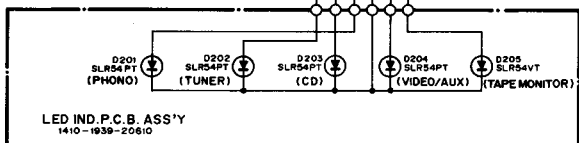
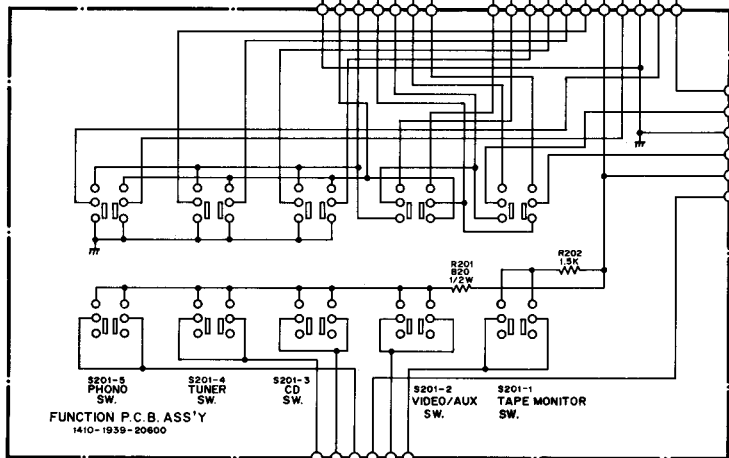
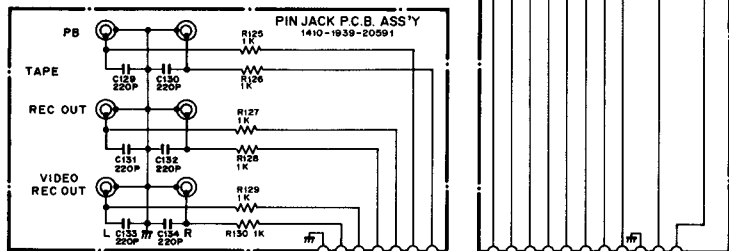
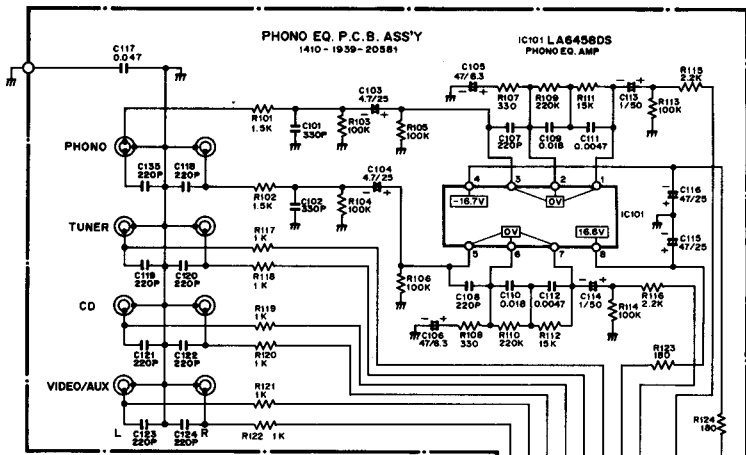
**DRUM ANALYZER P.C. BOARD
(BOTTOM VIEW)**



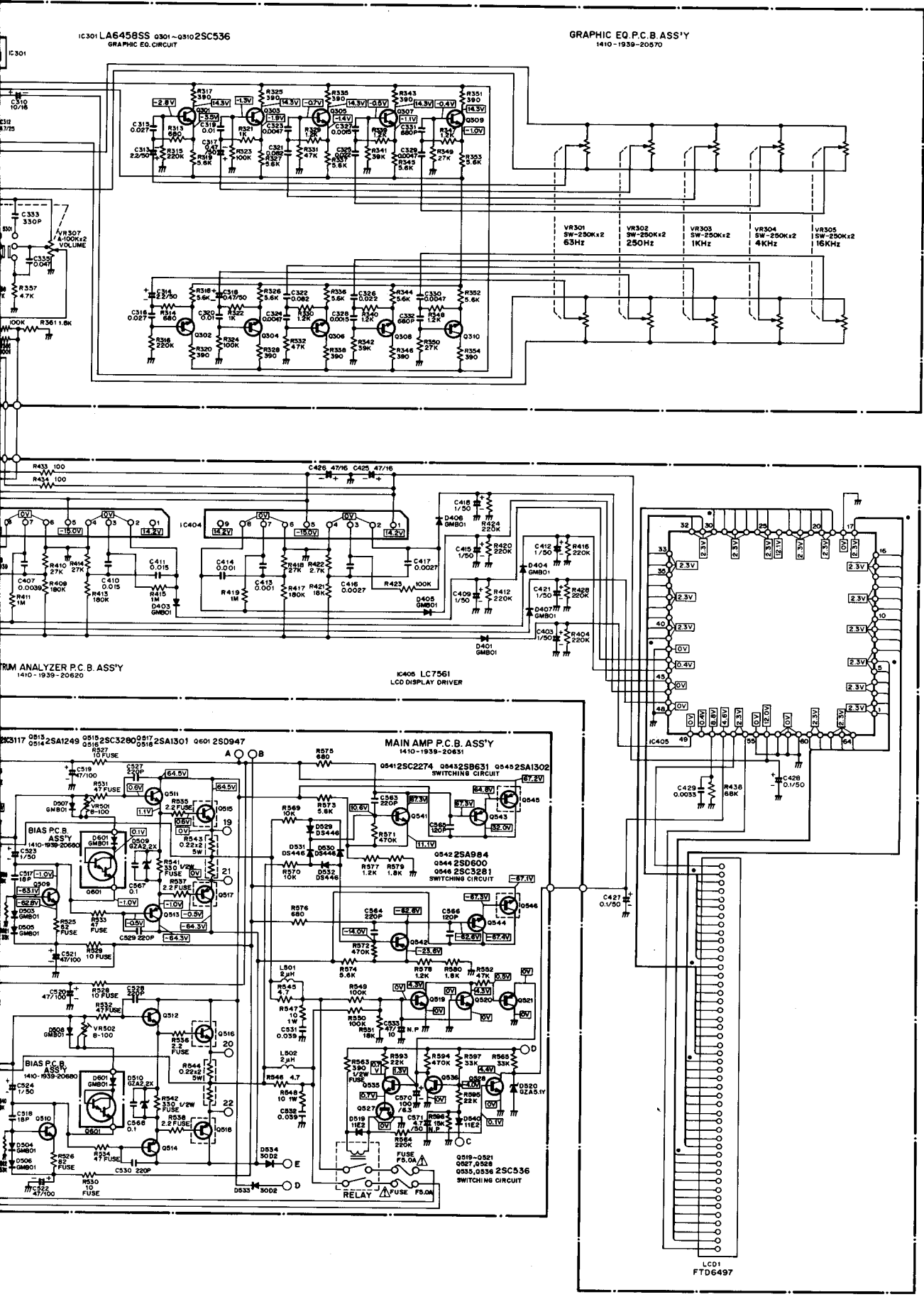
**POWER SWITCH P.C. BOARD
(BOTTOM VIEW)**



SCHEMATIC DIAGRAM



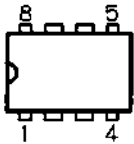
C DIAGRAM



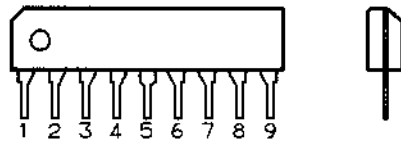
SEMICONDUCTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW	TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA 608 2SA 984 2SB 560 2SC 536 2SC 2274			2SA 1301 2SA 1302 2SC 3280 2SC 3281		
2SD 1266			2SC 2291		
2SA 1209 2SA 1249 2SB 631 2SC 2911 2SC 3117 2SD 600 2SD 947			2SC 1583		
TERMINAL NAME					
B → BASE C → COLLECTOR E → EMITTER					

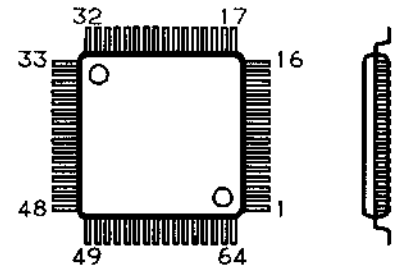
LA 6458 DS TOP VIEW



LA 6458 SS TOP/SIDE VIEW



LC 7561 TOP/SIDE VIEW



SWITCH POSITION TABLE

No.	Name	Position	No.	Name	Position
S201-1	TAPE MONITOR Switch	OFF	S301	LOUDNESS Switch	OFF
S201-2	VIDEO/AUX Switch	OFF	S701	POWER Switch	OFF
S201-3	COMPACT DISC Switch	OFF	S702	SPEAKER A Switch	OFF
S201-4	TUNER Switch	OFF	S703	SPEAKER B Switch	OFF
S201-5	PHONO Switch	OFF	S801	AC SELECTOR Switch	220V

NOTES:

1. All resistors values are indicated in "ohm" (K=10³, M=10⁶).
2. All capacitors values are indicated in "μF" (P=10⁻¹²).
3. All voltages indicated on the schematics are measured under the following conditions.
 - a. Use a V.T.V.M.

- b. All voltages ±10 % with respect to chassis ground
- c. No signals at input terminals
- d. AC input at 220 volts 50 Hz
4. This is a basic schematic diagram.

Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.



FISHER

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Sie sparen so wertvolle Zeit. Vielen Dank.