

TA-F222ES

SERVICE MANUAL

US Model
 AEP Model
 UK Model
 E Model



SPECIFICATIONS

AUDIO POWER SPECIFICATIONS

US model

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 8-ohm loads, both channels driven, from 20 - 20,000 Hz; rated 80 watts per channel minimum RMS power, with no more than 0.006% total harmonic distortion from 250 milliwatts to rated output.

Harmonic distortion

Less than 0.005 % at 10 watts (6 ohms)
 Less than 0.004 % at 10 watts (8 ohms)

Intermodulation (IM) distortion

(60 Hz : 7 kHz = 4 : 1) Less than 0.006 % at rated output (6 ohms)
 Less than 0.006 % at rated output (8 ohms)

— Continued on page 2 —

OTHER SPECIFICATIONS

Amplifier section

Continuous RMS power output

(both channels driven simultaneously)

AEP, UK, E model

At 20 Hz - 20 kHz

80 + 80 watts (0.006% THD, 8 ohms)

At 1 kHz

100 + 100 watts (0.006% THD, 6 ohms)

US model

At 20 Hz - 20 kHz

80 + 80 watts (0.006% THD, 8 ohms)


Power bandwidth (IHF)

10 Hz - 80 kHz

Dynamic headroom

1.2 dB ('78 IHF)

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

INTEGRATED STEREO AMPLIFIER
SONY[®]

AUD



Slew rate 125 V/ μ sec.
 250 V/ μ sec. (inside)

Dynamic range TUNER, CD, TAPE 1,2, VIDEO 1,2 : 120dB

Channel separation
 (at 1 kHz) PHONO MC : 80 dB
 MM : 95 dB
 TUNER, CD, TAPE 1,2, VIDEO 1,2 : 100dB

Frequency response
 PHONO : RIAA equalization curve ± 0.2 dB
 TUNER
 CD
 TAPE 1,2
 VIDEO 1,2
 (audio) } 5 Hz - 200 kHz $^{+0}_{-3}$ dB

Residual noise Less than 25 μ V (8 ohms, network A)

Damping factor 125 (8 ohms, 1 kHz)

Inputs

	Setting of the CARTRIDGE load selector	Sensitivity	Impedance	Maximum input capability (1 kHz)	S/N (weighting network, input level)
PHONO	MM	2.5 mV	50 kilohms	150 mV	87 dB 83 dB* (A, 2.5 mV)
	MC	0.17 mV	100 ohms	9 mV	68 dB 71 dB* (A, 170 μ V)
TUNER, CD, TAPE 1,2, VIDEO 1,2 (audio)		150 mV	50 kilohms		97 dB 102 dB* (A, 150 mV)

* '78 IHF

Outputs

VIDEO 1,2
 Voltage 1 Vp-p
 Impedance 75 ohms

REC OUT 1
 Voltage 150 mV
 Impedance 1 kilohms

SPEAKER A, B
 Accepts speakers of 6 - 16 ohms.

HEADPHONES
 Accepts low and high impedance headphones.

VIDEO 1 OUT (audio) 150 mV 1 kilohms

VIDEO 1 OUT 1 Vp-p 75 ohms

Tone controls BASS
 ± 8 dB at 60 Hz (turnover freq. 300 Hz)
 TREBLE
 ± 6 dB at 10 kHz (turnover freq. 5 kHz)

Bass boost +5 dB at 50 Hz

Subsonic filter 6 dB/octave attenuation below 15 Hz

General System

Integrated stereo amplifier
 Power amplifier section
 Legato linear, pure-complementary,
 Darlington OCL SEPP amplifier
 Preamp section
 Equalizer section : Low-noise
 equalizer amp (MC or
 MM cartridge load selectable)
 Audio Current Transfer section : Bridge-
 balance type voltage-to-current converter
 with dc servo amp

Power requirements

AEP model: 220 V ac, 50/60 Hz
 UK model: 240 V ac, 50 Hz
 US model: 120 V ac, 60 Hz
 E model: 120, 220, or 240 V ac adjustable,
 50/60 Hz

Power consumption

AEP, UK, E model: 200 W
 US model: 250 W

AC outlets

AEP, UK model: 1 switched, 100 watts max.
 US model: 2 switched, total 100 watts max.
 2 unswitched, total 100 watts max.
 E model: 1 switched, 100 watts max.
 1 unswitched 100 watts max.

Dimensions

Approx. 430 x 130 x 375 mm (w/h/d)
 (17 x 5 $\frac{1}{8}$ x 14 $\frac{7}{8}$ inches)

Weight

including projecting parts and controls
 AEP, UK, E model:
 Approx. 11.5 kg (25 lbs 6 oz) net
 Approx. 13 kg (28 lbs 11 oz) in shipping carton
 US model:
 Approx. 12.1 kg (26 lbs 11 oz) net
 Approx. 13.6 kg (30 lbs) in shipping carton

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

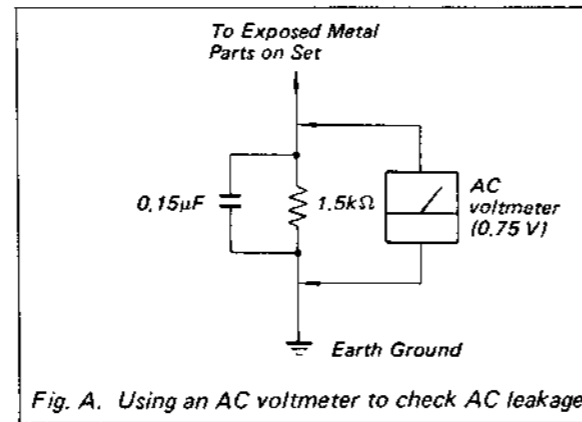
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

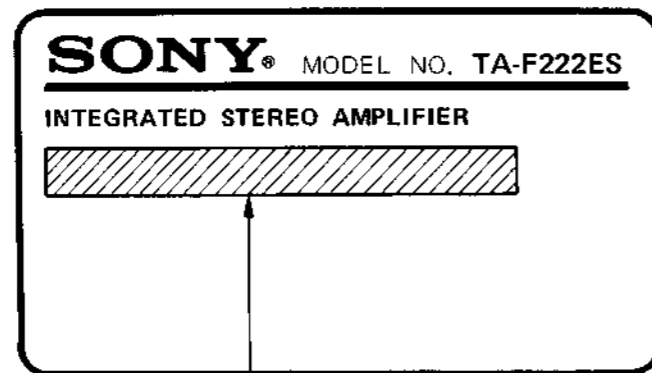
1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

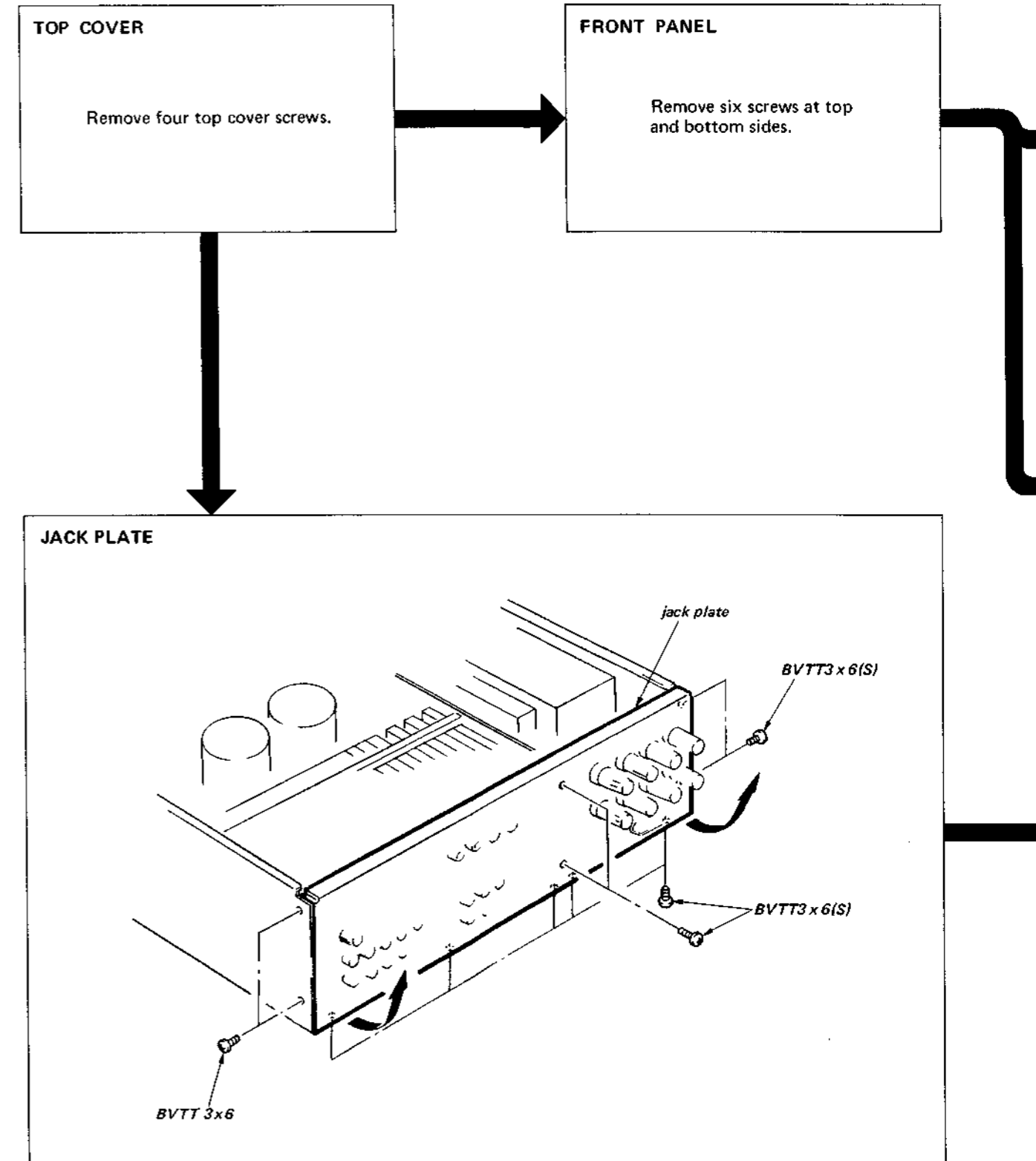


MODEL IDENTIFICATION

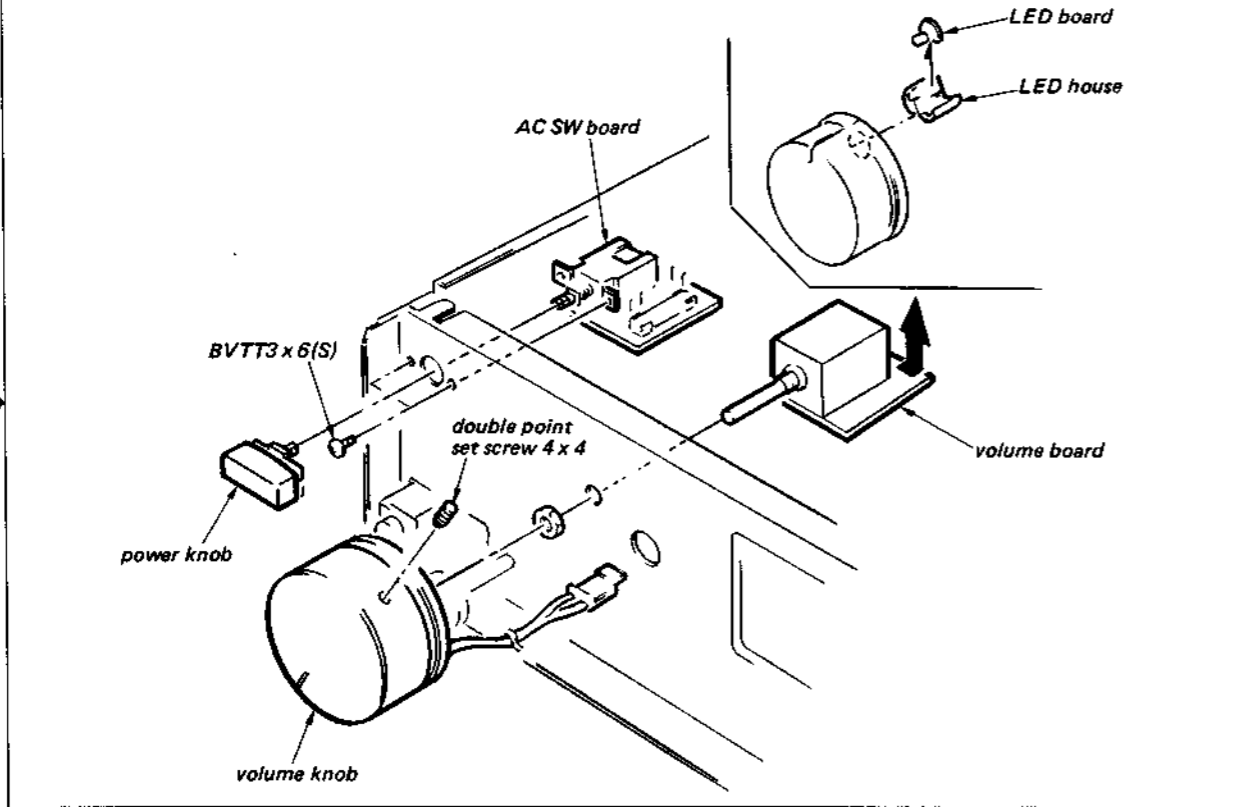
—Specification Label—



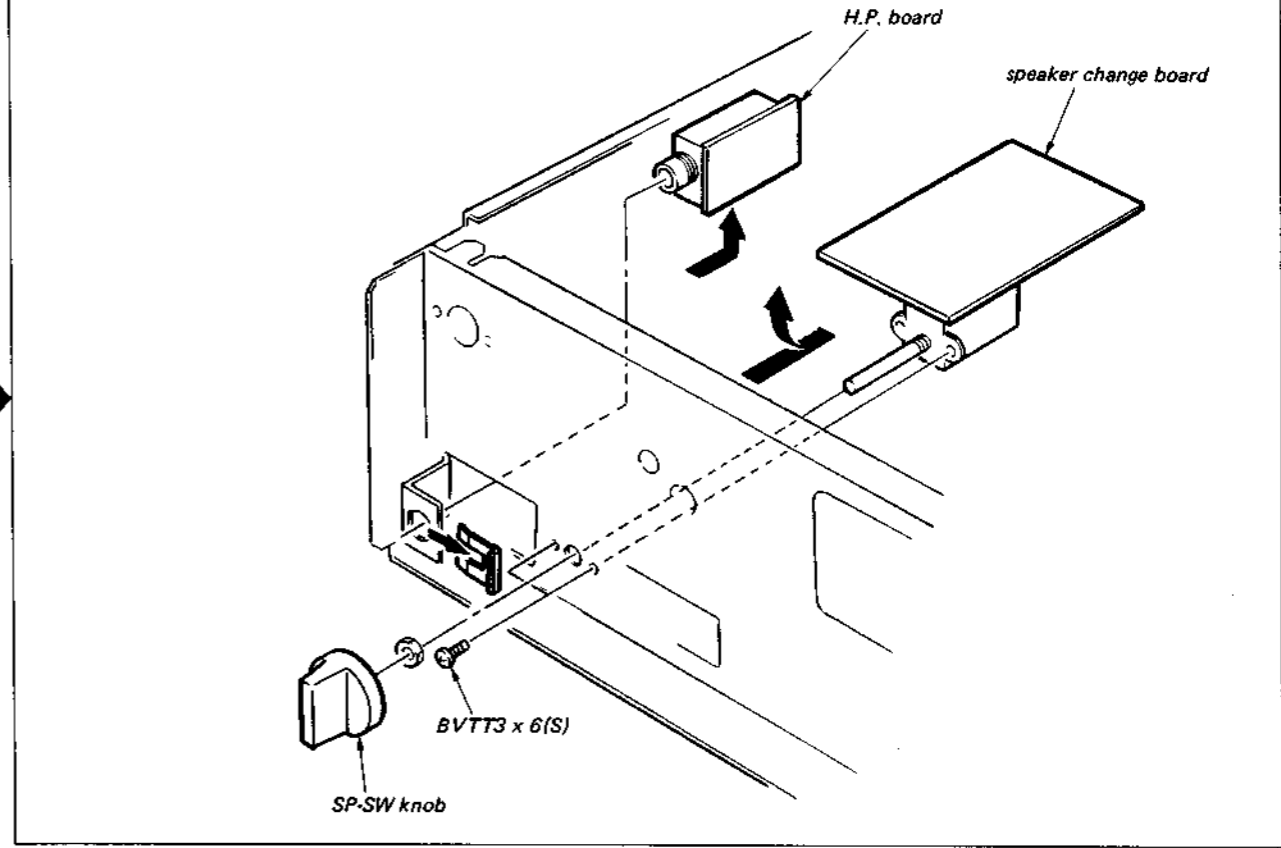
US Model: AC: 120 V ~ 60 Hz	200 W
AEP Model: AC: 220 V ~ 50/60 Hz	200 W
UK Model: AC: 240 V ~ 50/60 Hz	200 W
E Model: AC: 120/220/240 V ~ 50/60 Hz	200 W
G·AEP Model: AC: 220 V ~ 50/60 Hz	200 W



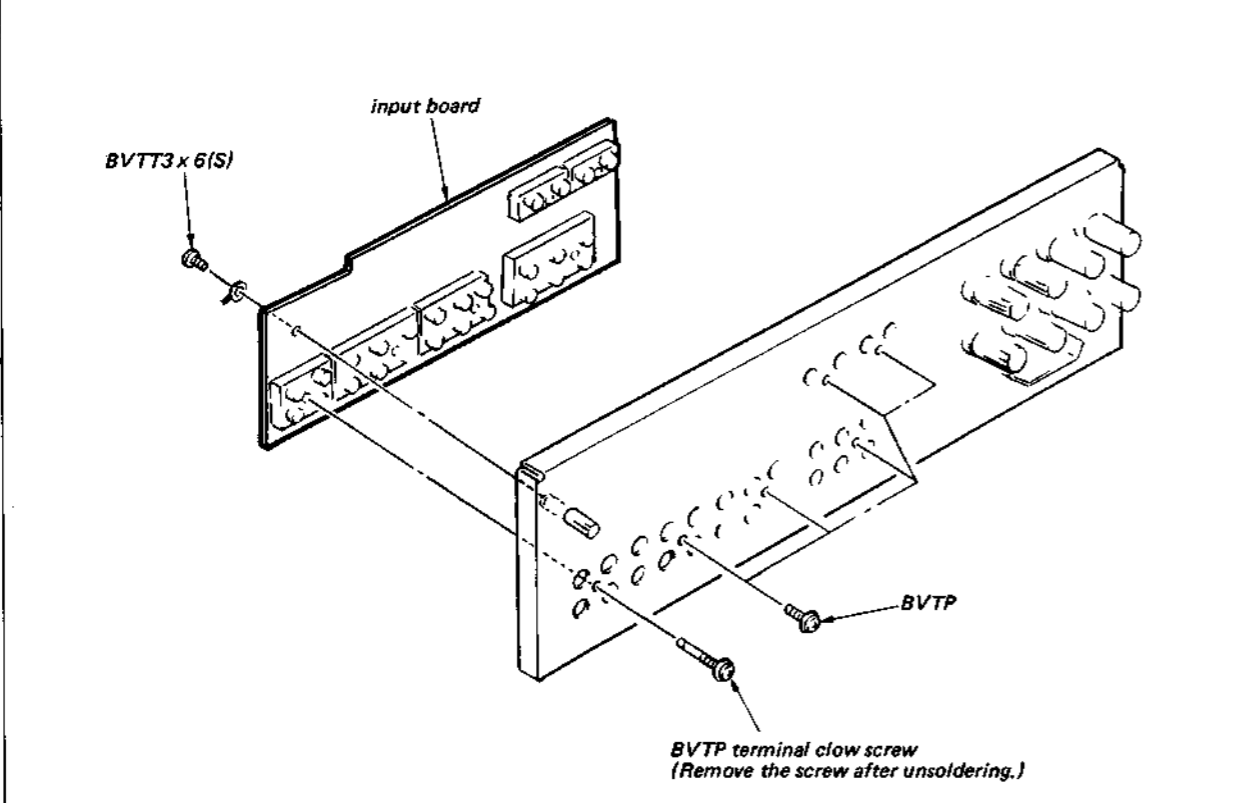
AC SW BOARD/VOLUME BOARD/LED BOARD



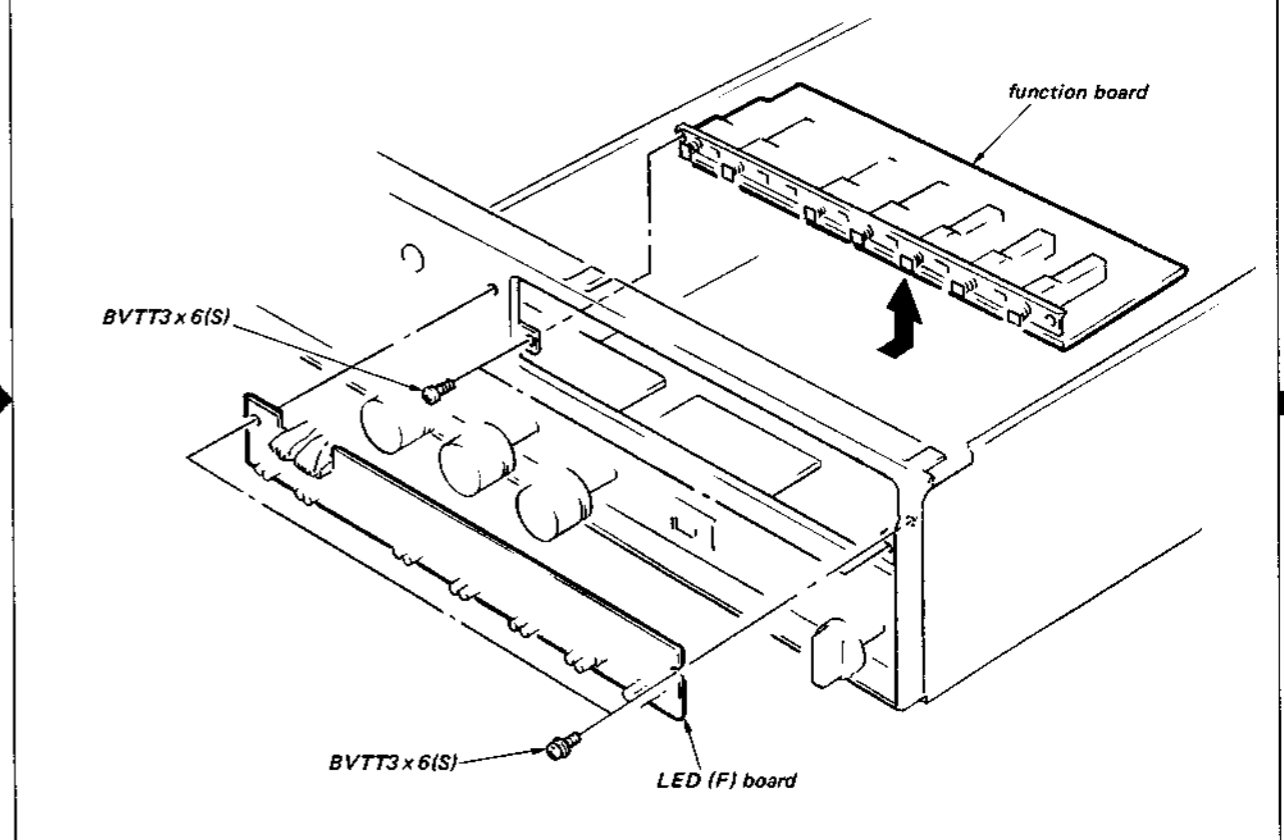
H.P. BOARD/SPEAKER CHANGE BOARD



INPUT BOARD

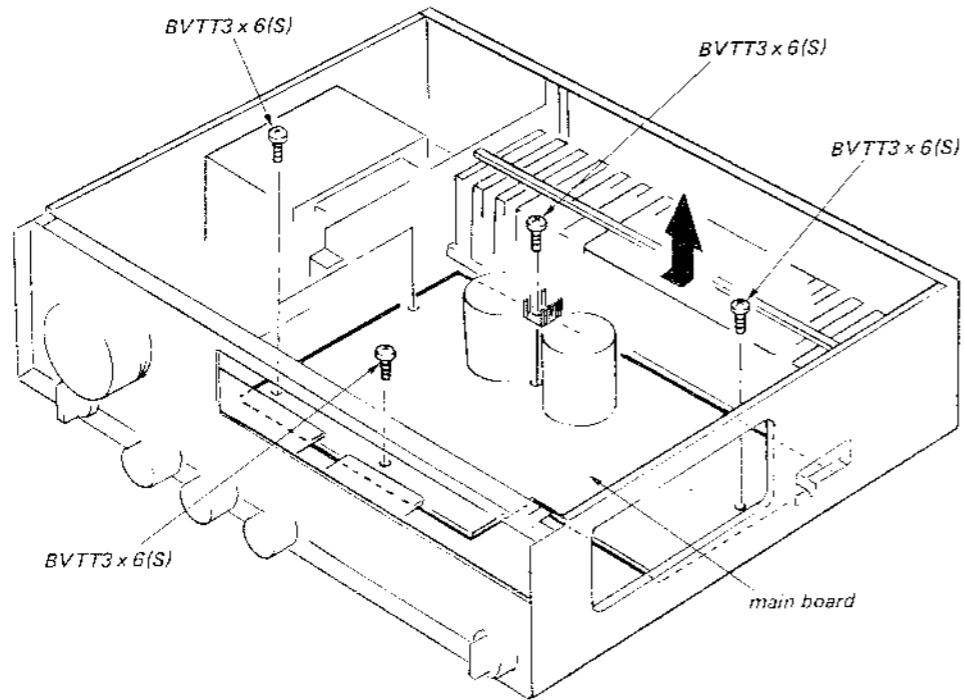


FUNCTION BOARD/LED (F) BOARD

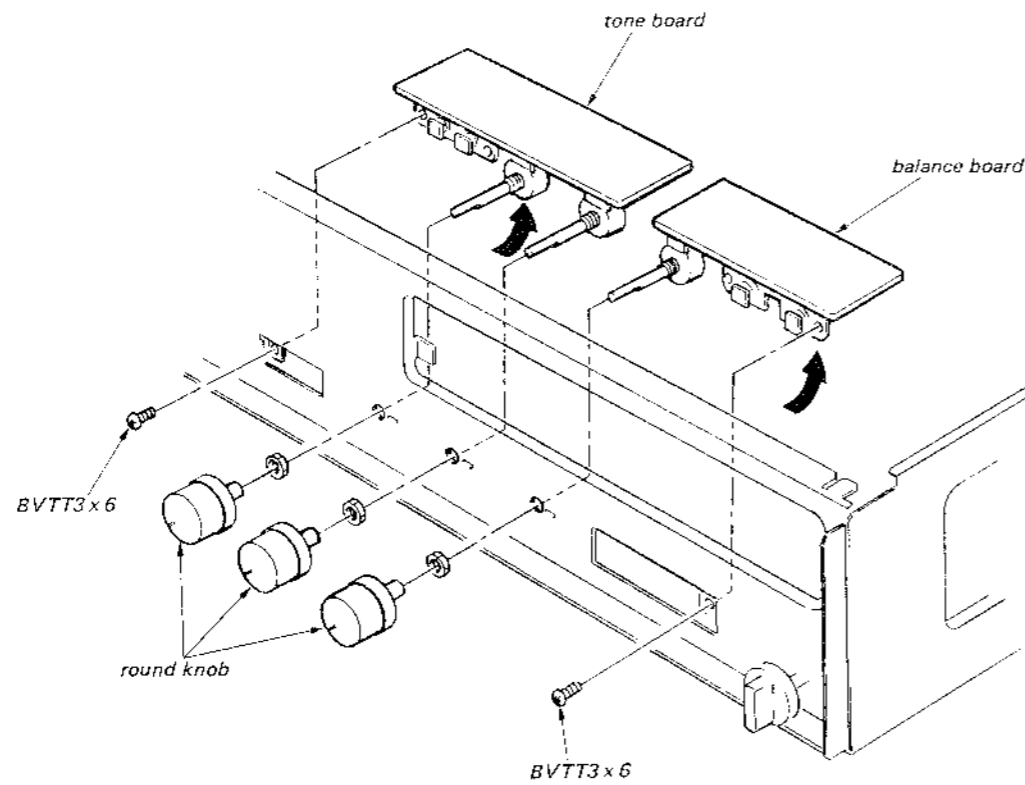


SECTION 2
ADJUSTMENTS

MAIN BOARD



TONE BOARD/BALANCE BOARD



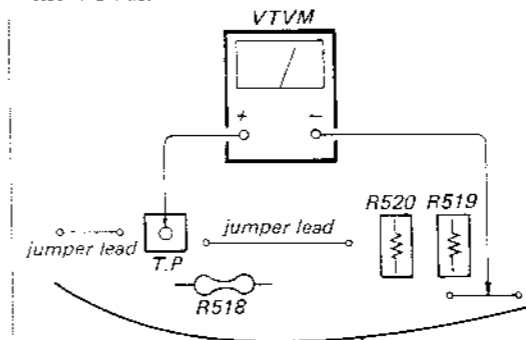
Note:

1. When repairing or replacing the power transistors, be sure to replace the resistors (R526-531 or R576-581) in power section and make the DC BIAS adjustment.
2. Set the VOLUME switch to MIN before the POWER switch is turned on. Turn RT501 and RT551 counterclockwise.
3. Wait for about 5 minutes to warm up the set after the power switch is turned on and make the DC BIAS adjustment.

DC BIAS ADJUSTMENT (with no signal input)

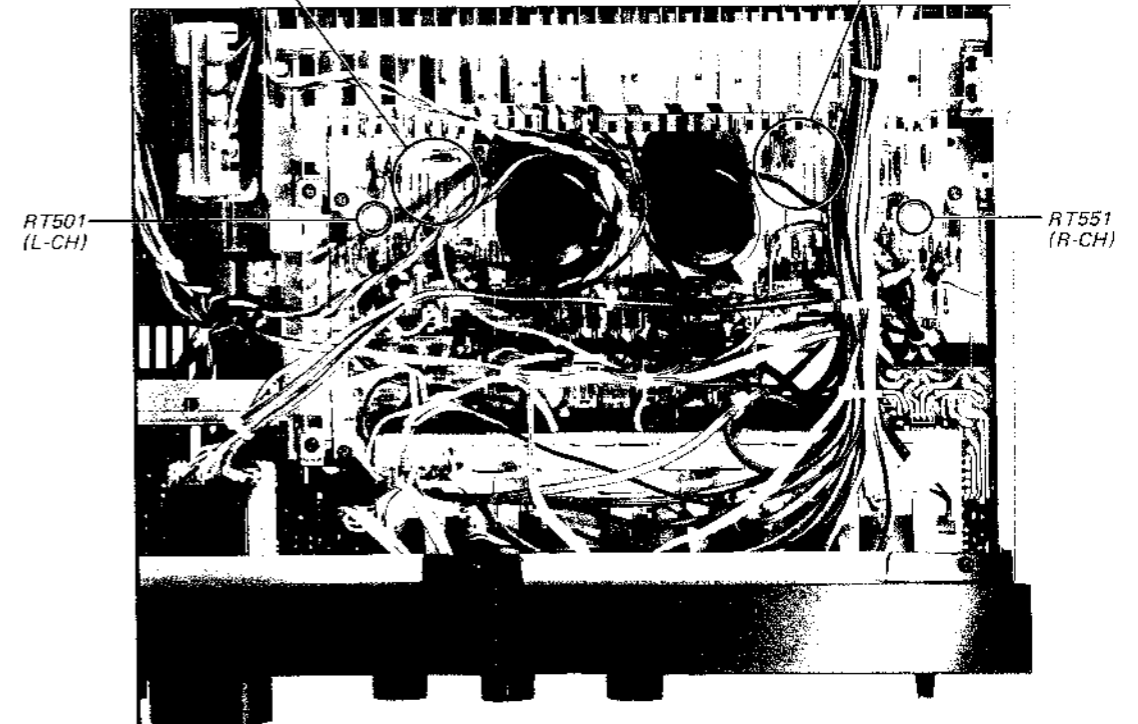
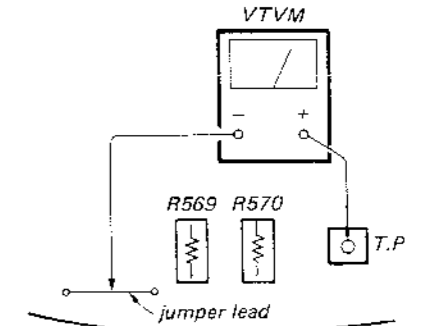
-L-CH-

Adjust RT501 for 6mV reading on the VTVM.



-R-CH-

Adjust RT551 for 6mV reading on the VTVM.




SECTION 3
EXPLODED VIEW AND PARTS LIST

NOTE:

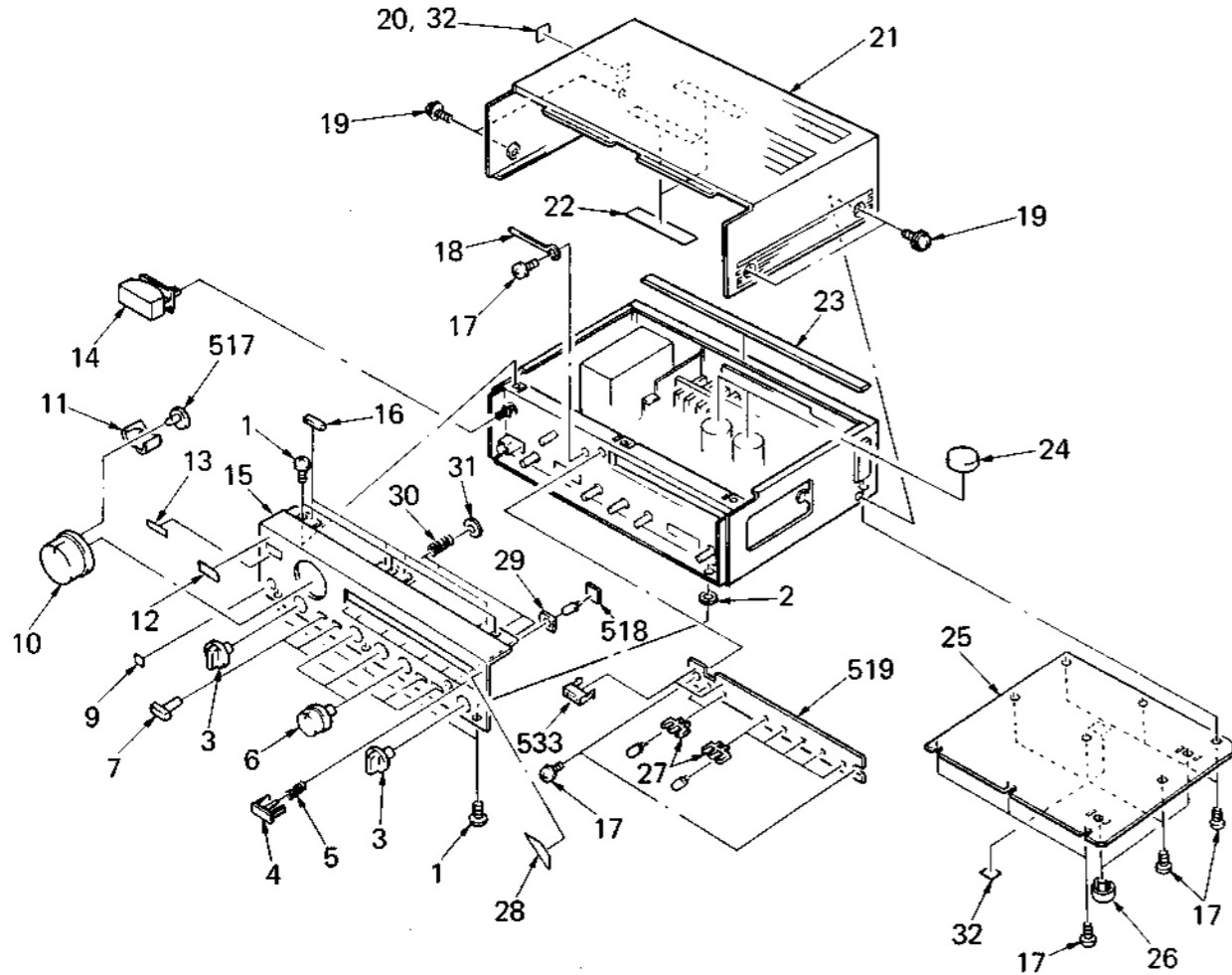
The mechanical parts with no reference number in the exploded views are not supplied.

Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The construction parts of an assembled part are indicated with a collation number in the remark column.

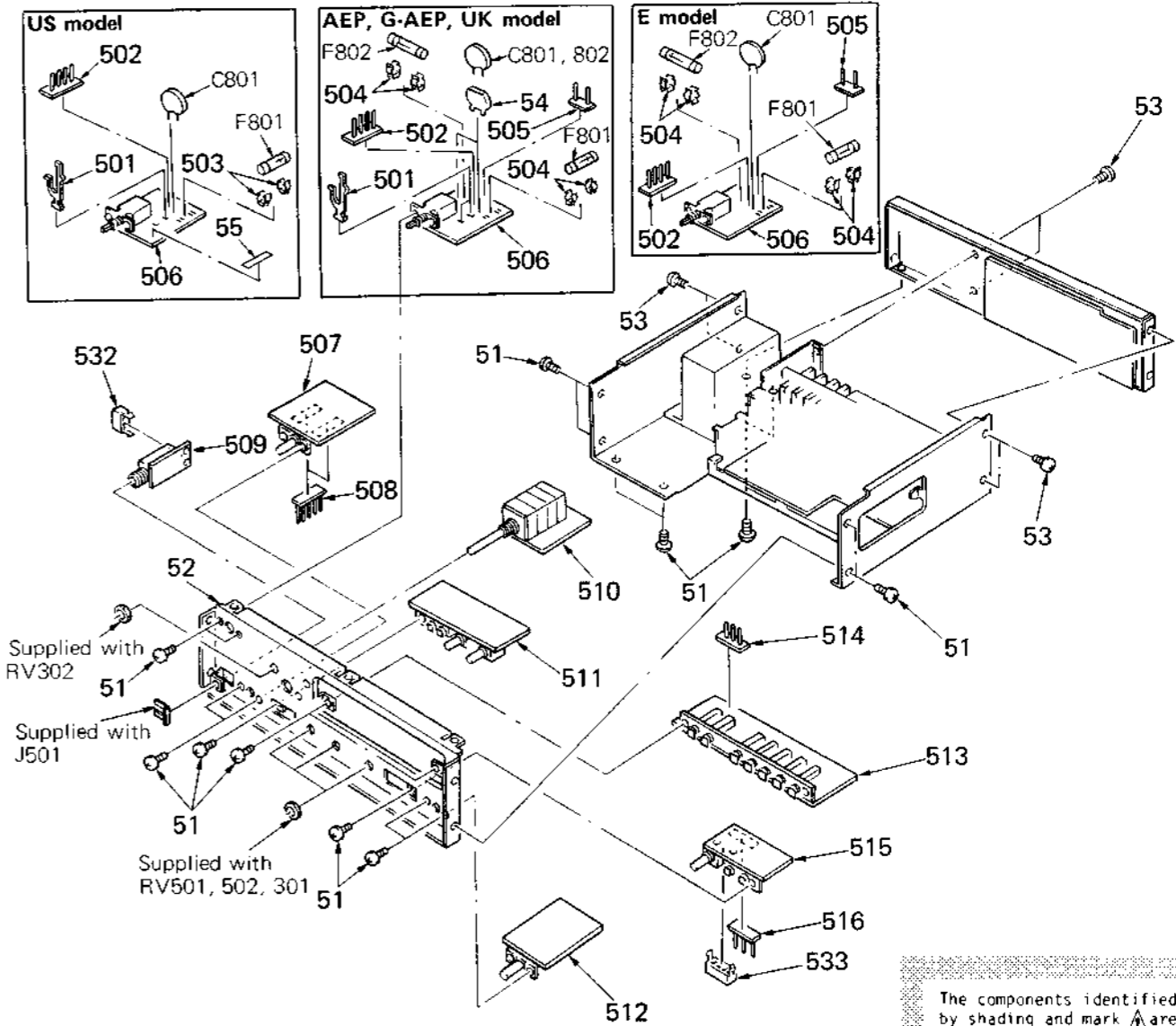
The components identified by shading and mark  are critical for safety. Replace only with part number specified.


(1).



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	7-685-751-09	SCREW +BVTT 3X6 (S)		20	3-703-079-21	(UK)...LABEL, CAUTION (BACK)	
2	4-402-063-11	SHEET, INSULATING		21	4-885-927-21	CASE	
3	4-908-838-01	KNOB, SQUARE		22	*4-885-983-11	SHEET	
4	4-908-836-01	KNOB, PUSH		23	*4-848-642-00	CUSHION, VIBRATION	
5	2-267-020-00	SPRING, COMPRESSION		24	*4-908-834-01	CUSHION	
6	4-908-839-01	KNOB, ROUND		25	*4-885-922-02	PLATE, BOTTOM	
7	4-885-956-01	KNOB, PUSH		26	X-4864-303-0	FOOT ASSY	
9	3-703-710-41	STICKER, SONY SYMBOL (12)		27	*4-905-210-01	HOLDER, LED	
10	X-4885-908-1	KNOB (NA-50) ASSY, R		28	4-889-813-21	STICKER (C)	
11	*4-901-919-00	HOUSE, LED LAMP		29	*4-908-835-01	BRACKET, LED	
12	*3-701-690-00	(UK)...LABEL (MADE IN JAPAN)		30	4-866-652-00	SPRING, COMPRESSION	
13	3-304-974-01	EMBLEM, SONY		31	4-862-338-00	RING, STOPPER	
14	X-4885-901-0	KNOB ASSY, POWER		32	*3-703-680-00	(US)...LABEL, CAUTION, SUB, NEW UL	
15	X-4885-915-1	PANEL ASSY		517	*1-616-514-11	PC BOARD, PROTECT LED	
16	9-911-845-XX	CUSHION, COUNTER		518	*1-616-519-11	PC BOARD, GEQ LED	
17	7-685-871-01	SCREW +BVTT 3X6 (S)		519	*1-616-518-11	PC BOARD, FUNCTION LED	
18	*3-701-822-00	HOLDER, WIRE		533	*1-562-249-00	SOCKET, CONNECTOR 4P	
19	4-889-321-11	SCREW					

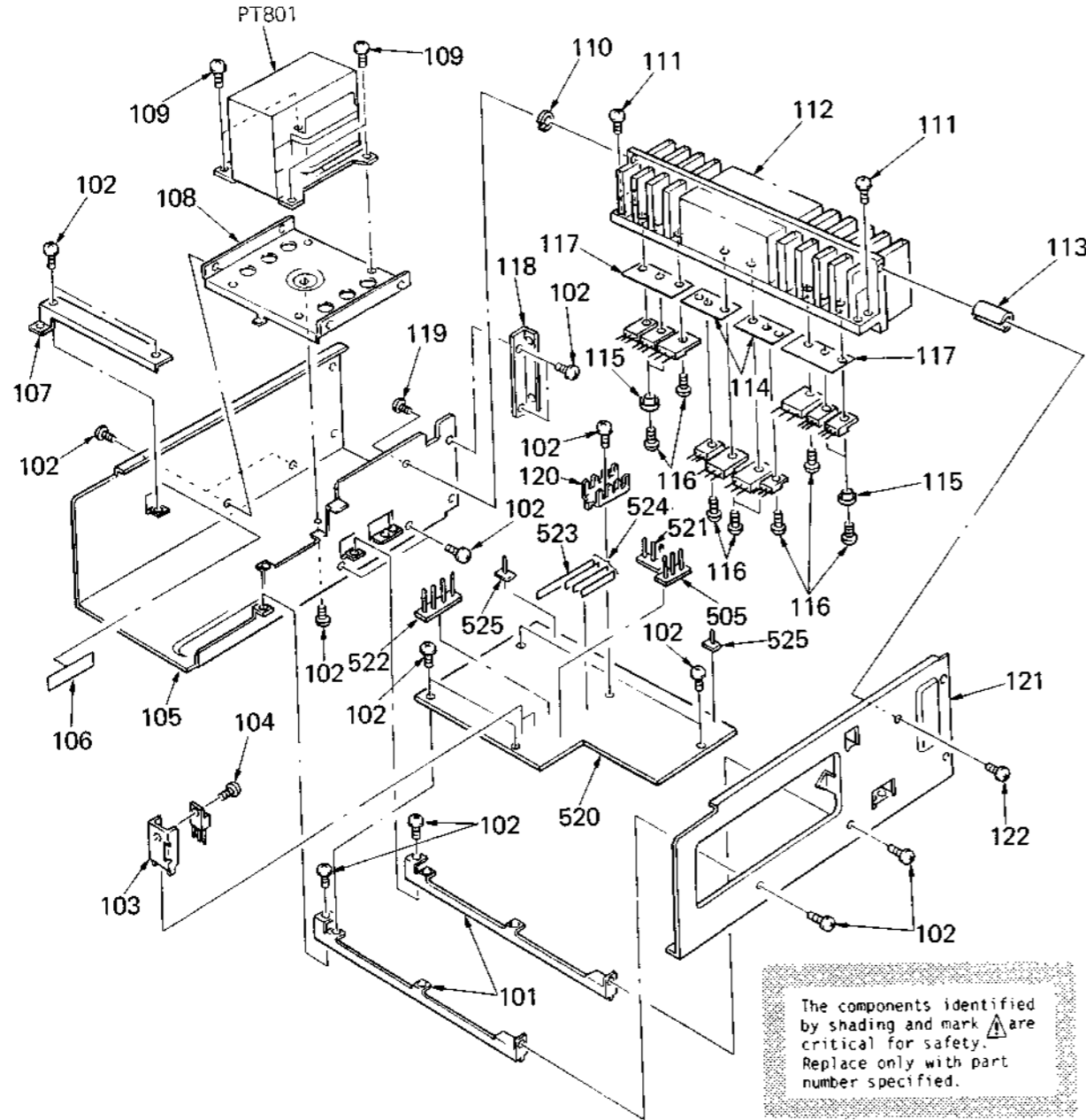
(2).



The components identified by shading and mark  are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	7-685-871-01	SCREW +BVTT 3X6 (S)		509	*1-616-517-11	PC BOARD, H.P.	
52	*4-908-840-01	CHASSIS, SUB		510	*1-616-515-11	PC BOARD, VR	
53	7-685-751-09	SCREW +BVTT 3X6 (S)		511	*1-616-516-12	PC BOARD, TONE	
54	4-875-455-01	(AEP,G-AEP,UK)...COVER (DIA.20), CAPACITOR		512	*1-616-511-11	PC BOARD, EQ	
55	3-701-946-21	(US)...LABEL, FUSE		513	*1-616-512-12	PC BOARD, FUNCTION	
501	1-535-416-00	(US,AEP,G-AEP,UK)...TERMINAL		514	*1-508-810-00	14MM BASE POST	
502	*1-535-141-00	BASE POST 22MM (10MM PITCH) 4P		515	*1-616-513-11	PC BOARD, BALANCE	
503	1-533-185-11	(US)...HOLDER, FUSE		516	*1-535-116-00	TERMINAL	
504	1-533-183-11	(AEP,G-AEP,UK,E)...HOLDER, FUSE		532	*1-562-327-00	SOCKET, CONNECTOR 3P	
505	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P		533	*1-562-249-00	SOCKET, CONNECTOR 4P	
506	*1-616-509-11	PC BOARD, AC-SW		F801	*1-532-272-XX	(US)...FUSE 5.0A	
507	*1-616-506-11	PC BOARD, SP CHANGE		F801	*1-532-286-00	(AEP,G-AEP,UK,E)...FUSE 2.5A TIME-LAG	
508	*1-535-118-00	TERMINAL		F802	*1-532-286-00	(AEP,G-AEP,UK,E)...FUSE 2.5A TIME-LAG	

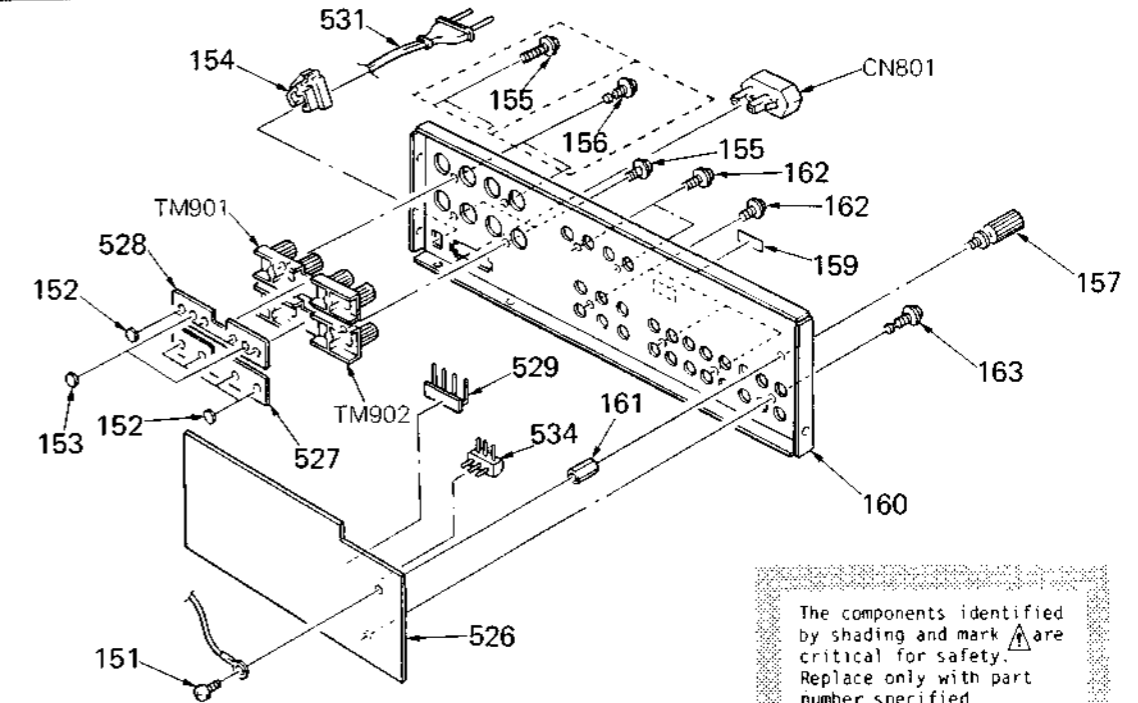
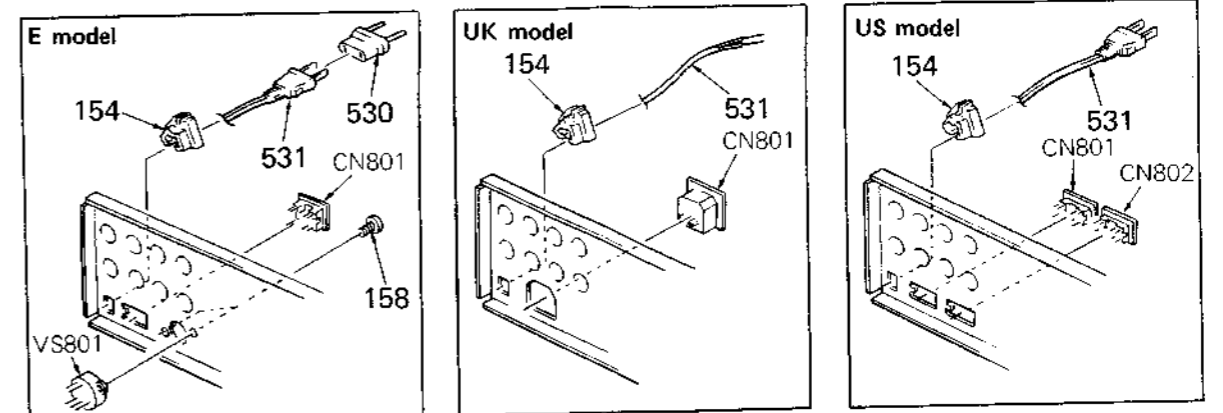
(3).



The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
101	*4-889-824-00	CHANNEL		119	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
102	7-685-871-01	SCREW +BVTT 3X6 (S)		120	*4-880-404-01	(AEP,G-AEP,UK,E).....PLATE, GROUND	
103	*3-309-144-01	HEAT SINK			*4-880-404-11	(US).....PLATE, GROUND, CONCENTRATION	
104	2-259-121-11	SCREW, TR		121	*4-889-826-00	PLATE, SIDE, RIGHT	
105	*4-889-829-00	PLATE, SIDE, LEFT		122	7-685-649-19	SCREW +BVTP 3X14 TYPE2 N-S	
106	*3-703-044-26	(US).....LABEL, CAUTION		505	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P	
107	*4-885-980-01	REINFORCEMENT		520	*A-4388-480-A	(US).....MOUNTED PCB, MAIN	
108	*4-885-916-00	BRACKET, TRANSFORMER			*A-4388-481-A	(AEP,UK,E).....MOUNTED PCB, MAIN	
109	7-685-881-01	SCREW +BVTT 4X8 (S)			*A-4388-482-A	(G-AEP).....MOUNTED PCB, MAIN	
110	4-908-811-01	SPACER		521	*1-535-115-00	TERMINAL	
111	7-685-876-01	SCREW +BVTT 3X16 (S)		522	*1-535-117-00	TERMINAL	
112	*4-885-998-11	HEAT SINK		523	*1-560-242-11	BUS BAR 3P	
113	4-908-809-01	SPACER		524	*1-560-242-61	BUS BAR 2P	
114	*4-885-995-01	SHEET, INSULATING		525	*1-535-114-00	TERMINAL	
115	2-371-561-00	BUSHING (P), INSULATING		PT801	1-448-173-11	(US).....TRANSFORMER, POWER	
116	2-259-121-21	SCREW, TR		PT801	1-448-264-11	(UK).....TRANSFORMER, POWER	
117	*4-908-815-01	SHEET, INSULATING		PT801	1-448-265-11	(E).....TRANSFORMER, POWER	
118	*4-889-819-00	BRACKET		PT801	1-448-266-11	(AEP,G-AEP).....TRANSFORMER, POWER	

(4).



The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
151	7-685-871-01	SCREW +BVTT 3X6 (S)		163	4-887-711-21	SCREW, TERMINAL, CLAW, +BVTP	
152	*4-843-416-11	(G-AEP)...PLATE, FIXED, CAP		526	*1-616-505-12	PC BOARD, INPUT	
153	*4-908-843-01	(G-AEP)...PLATE		527	*1-616-507-11	(G-AEP)...PC BOARD, SP-B	
154	3-703-244-00	(US,AEP,G-AEP,UK)....BUSHING (2104), CORD		528	*1-616-508-11	(G-AEP)...PC BOARD, SP-A	
	3-703-571-00	(E).....BUSHING (S)(4516), CORD		529	*1-508-831-12	H TYPE BASE POST	
155	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		530	Δ 1-526-565-00	(E)....AC PLUG ADAPTOR	
156	3-703-473-00	(G-AEP)...SCREW, TERMINAL		531	Δ 1-551-884-00	(UK).....CORD, POWER	
157	X-4854-207-0	TERMINAL ASSY, GROUND			Δ 1-555-795-00	(AEP,G-AEP)....CORD, POWER	
158	7-685-751-09	SCREW +BVTT 3X6 (S)			Δ 1-556-091-00	(E).....CORD, POWER	
159	*4-908-827-01	(US).....LABEL, MODEL NUMBER (U2)			Δ 1-557-577-11	(US).....CORD, POWER	
	*4-908-828-01	(E).....LABEL, MODEL NUMBER (E2/3)		534	*1-508-878-00	BASE POST	
	*4-908-829-01	(AEP).....LABEL, MODEL NUMBER (AE1)		CN801	Δ 1-526-695-00	(E).....OUTLET, AC (2 GANG)	
	*4-908-830-01	(G-AEP)...LABEL, MODEL NUMBER (AE4)		CN801	Δ 1-526-751-00	(UK).....OUTLET, AC	
	*4-908-831-01	(UK).....LABEL, MODEL NUMBER (UK1)		CN801	Δ 1-526-794-11	(AEP,G-AEP)...OUTLET, AC	
160	*4-908-842-11	(US).....PLATE, JACK		CN801	Δ 1-526-883-00	(US).....OUTLET, AC	
	*4-908-842-21	(AEP,G-AEP)...PLATE, JACK		CN802	Δ 1-526-883-00	(US).....OUTLET, AC	
	*4-908-842-31	(UK).....PLATE, JACK		TM901	1-536-767-00	TERMINAL BOARD, SPEAKER	
	*4-908-842-41	(E).....PLATE, JACK		TM902	1-536-767-00	TERMINAL BOARD, SPEAKER	
161	*2-280-622-41	SUPPORT (M3), HEXAGON		VS801	Δ 1-526-576-31	(E)...SELECTOR, POWER VOLTAGE	
162	3-701-589-21	SCREW, SELF-TAPPING					

SECTION 4 ELECTRICAL PARTS LIST

NOTE:

Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS: MF:µF, PF:µµF.

RESISTORS: All resistors are in ohms. F : nonflammable

COILS: MMR : mH, UH : µH

SEMICONDUCTORS: In each case, U : u, for example: UA.... : µA...., UPA.... : µPA...., UPC.... : µPC, UPD.... : µPD....

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Table with 3 columns: Ref.No., Part No., Description. Lists various electrical components like resistors, capacitors, and connectors.

ELECTRICAL PARTS

Table with 3 columns: Ref.No., Part No., Description. Lists various electrical components like resistors, capacitors, and connectors.

ELECTRICAL PARTS

Table with 3 columns: Ref.No., Part No., Description. Lists various electrical components like resistors, capacitors, and connectors.

ELECTRICAL PARTS

Table with 3 columns: Ref.No., Part No., Description. Lists various electrical components like resistors, capacitors, and connectors.

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

TA-F222ES TA-F222ES

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R421	1-247-721-11	CARBON	4.7K	5%	1/4W	
R501	1-247-700-11	CARBON	100	5%	1/4W	
R502	1-246-545-00	CARBON	1M	5%	1/4W	
R503	△.1-212-889-91	FUSIBLE	220	5%	1/4W	F
R504	△.1-212-889-91	FUSIBLE	220	5%	1/4W	F
R505	1-247-708-11	CARBON	470	5%	1/4W	
R506	1-247-274-00	CARBON	27K	5%	1/2W	
R507	△.1-247-131-00	CARBON	1K	5%	1/4W	F
R508	△.1-212-883-00	FUSIBLE	120	5%	1/4W	F
R509	△.1-213-160-11	METAL OXIDE	27K	5%	1W	F
R510	1-247-721-11	CARBON	4.7K	5%	1/4W	
R511	△.1-217-399-00	FUSIBLE	100	5%	1/4W	F
R512	1-247-717-11	CARBON	2.2K	5%	1/4W	
R513	1-247-125-00	CARBON	560	5%	1/4W	
R514	△.1-217-391-00	FUSIBLE	22	5%	1/4W	F
R515	△.1-217-391-00	FUSIBLE	22	5%	1/4W	F
R516	△.1-212-984-00	FUSIBLE	120	5%	1/2W	F
R517	△.1-217-430-00	FUSIBLE	4.7	5%	1/2W	F
R518	△.1-217-430-00	FUSIBLE	4.7	5%	1/2W	F
R519	1-217-657-11	RES, METAL PLATE 0.1				
R520	1-217-657-11	RES, METAL PLATE 0.1				
R521	1-244-945-00	CARBON	1M	5%	1/3W	
R522	1-247-717-11	CARBON	2.2K	5%	1/4W	
R523	1-247-167-00	CARBON	33K	5%	1/4W	
R524	1-247-135-00	CARBON	1.5K	5%	1/4W	
R525	1-247-145-00	CARBON	3.9K	5%	1/4W	
R526	1-247-704-11	CARBON	220	5%	1/4W	
R527	1-247-149-00	CARBON	5.6K	5%	1/4W	
R528	1-247-127-00	CARBON	680	5%	1/4W	
R529	1-247-153-00	CARBON	8.2K	5%	1/4W	
R530	1-246-545-00	CARBON	1M	5%	1/4W	
R531	△.1-217-434-00	FUSIBLE	10	5%	1/2W	F
R532	1-247-192-00	CARBON	10	5%	1/2W	
R533	△.1-206-656-00	METAL OXIDE	470	5%	2W	F
R534	△.1-217-391-00	(US)...FUSIBLE	22	5%	1/4W	F
R551	1-247-700-11	CARBON	100	5%	1/4W	
R552	1-246-545-00	CARBON	1M	5%	1/4W	
R553	△.1-212-889-91	FUSIBLE	220	5%	1/4W	F
R554	△.1-212-889-91	FUSIBLE	220	5%	1/4W	F
R555	1-247-708-11	CARBON	470	5%	1/4W	
R556	1-247-274-00	CARBON	27K	5%	1/2W	
R557	△.1-247-131-00	CARBON	1K	5%	1/4W	F
R558	△.1-212-883-00	FUSIBLE	120	5%	1/4W	F
R559	△.1-213-160-11	METAL OXIDE	27K	5%	1W	F
R560	1-247-721-11	CARBON	4.7K	5%	1/4W	
R561	△.1-217-399-00	FUSIBLE	100	5%	1/4W	F
R562	1-247-717-11	CARBON	2.2K	5%	1/4W	
R563	1-247-125-00	CARBON	560	5%	1/4W	
R564	△.1-217-391-00	FUSIBLE	22	5%	1/4W	F
R565	△.1-217-391-00	FUSIBLE	22	5%	1/4W	F
R566	△.1-212-984-00	FUSIBLE	120	5%	1/2W	F
R567	△.1-217-430-00	FUSIBLE	4.7	5%	1/2W	F
R568	△.1-217-430-00	FUSIBLE	4.7	5%	1/2W	F
R569	1-217-657-11	RES, METAL PLATE 0.1				
R570	1-217-657-11	RES, METAL PLATE 0.1				
R571	1-244-945-00	CARBON	1M	5%	1/3W	
R572	1-247-717-11	CARBON	2.2K	5%	1/4W	

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R573	1-247-167-00	CARBON	33K	5%	1/4W	
R574	1-247-135-00	CARBON	1.5K	5%	1/4W	
R575	1-247-145-00	CARBON	3.9K	5%	1/4W	
R576	1-247-704-11	CARBON	220	5%	1/4W	
R577	1-247-149-00	CARBON	5.6K	5%	1/4W	
R578	1-247-127-00	CARBON	680	5%	1/4W	
R579	1-247-153-00	CARBON	8.2K	5%	1/4W	
R580	1-246-545-00	CARBON	1M	5%	1/4W	
R581	△.1-217-434-00	FUSIBLE	10	5%	1/2W	F
R582	1-247-192-00	CARBON	10	5%	1/2W	
R583	△.1-206-656-00	METAL OXIDE	470	5%	2W	F
R584	△.1-217-391-00	(US)...FUSIBLE	22	5%	1/4W	F
R601	1-247-270-00	CARBON	18K	5%	1/2W	
R602	1-247-264-00	CARBON	10K	5%	1/2W	
R603	1-247-175-00	CARBON	68K	5%	1/4W	
R604	1-247-218-00	CARBON	120	5%	1/2W	
R605	1-247-216-00	CARBON	100	5%	1/2W	
R606	1-247-725-11	CARBON	10K	5%	1/4W	
R607	△.1-247-141-00	CARBON	2.7K	5%	1/4W	F
R608	1-247-163-00	CARBON	22K	5%	1/4W	
R609	1-246-529-00	CARBON	220K	5%	1/4W	
R610	1-246-533-00	CARBON	330K	5%	1/4W	
R657	△.1-247-141-00	CARBON	2.7K	5%	1/4W	F
R658	1-247-163-00	CARBON	22K	5%	1/4W	
R660	1-246-533-00	CARBON	330K	5%	1/4W	
R701	△.1-206-701-00	METAL OXIDE	100	5%	3W	F
R702	△.1-206-652-11	METAL OXIDE	330	5%	2W	F
R703	1-247-713-11	CARBON	1K	5%	1/4W	
R704	1-247-713-11	CARBON	1K	5%	1/4W	
R705	1-247-721-11	CARBON	4.7K	5%	1/4W	
R706	1-214-751-00	METAL	8.2K	1%	1/4W	
R707	1-214-748-00	METAL	6.2K	1%	1/4W	
R708	1-214-757-00	METAL	15K	1%	1/4W	
R709	1-214-757-00	METAL	15K	1%	1/4W	
R710	1-246-527-00	CARBON	180K	5%	1/4W	
R711	1-247-713-11	CARBON	1K	5%	1/4W	
R712	△.1-206-717-00	METAL OXIDE	470	5%	3W	F
R713	△.1-206-664-00	METAL OXIDE	1K	5%	2W	F
R714	△.1-206-664-11	METAL OXIDE	1K	5%	2W	F
R715	1-247-700-11	CARBON	100	5%	1/4W	
R716	1-247-749-11	CARBON	560	5%	1/2W	
R717	1-247-704-11	CARBON	220	5%	1/4W	
R718	1-247-749-11	CARBON	560	5%	1/2W	
R751	△.1-206-701-00	METAL OXIDE	100	5%	3W	F
R901	1-247-119-00	(G-AEP)...RES, CARBON	330	5%	1/4W	
R902	1-247-119-00	(G-AEP)...RES, CARBON	330	5%	1/4W	
R903	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R904	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R905	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R906	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R907	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R908	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R909	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R941	△.1-217-434-00	(G-AEP)...RES, FUSE	10	5%	1/2W	F
R942	△.1-217-434-00	(G-AEP)...RES, FUSE	10	5%	1/2W	F
R943	1-247-704-11	(G-AEP)...RES, CARBON	220	5%	1/4W	
R951	1-247-119-00	(G-AEP)...RES, CARBON	330	5%	1/4W	

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R952	1-247-119-00	(G-AEP)...RES, CARBON	330	5%	1/4W	
R953	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R954	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R955	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R956	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R957	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R958	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R959	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R991	△.1-217-434-00	(G-AEP)...RES, FUSE	10	5%	1/2W	F
R992	△.1-217-434-00	(G-AEP)...RES, FUSE	10	5%	1/2W	F
R993	1-247-704-11	(G-AEP)...RES, CARBON	220	5%	1/4W	
RT501	1-224-248-XX	RES, ADJ, SOLID 470				
RT551	1-224-248-XX	RES, ADJ, SOLID 470				
RV301	1-230-926-11	RES, VAR, CARBON 100K/100K (WITH RV351) (BALANCE)				
RV302	1-230-657-11	RES, VAR, CARBON 10K/10K (WITH RV352) (ATTENUATOR)				
RV501	1-230-925-11	RES, VAR, CARBON 37K/37K (WITH RV551) (TREBLE)				
RV502	1-230-924-11	RES, VAR, CARBON 24K/24K (WITH RV552) (BASS)				
RY501	1-515-356-00	RELAY				
S201	1-570-365-11	SWITCH, ROTARY SLIDE (CARTRIDGE)				
S301	1-570-075-11	SWITCH, PUSH (7 KEY)(FUNCTION)				
S302	1-570-367-11	SWITCH, PUSH (2 KEY)(WITH S303)(EQ/SUB)				
S501	1-570-079-11	SWITCH, PUSH (2 KEY)(WITH S502) (TONE/BASS)				
S503	1-570-366-11	SWITCH, ROTARY SLIDE (SPEAKER)				
S801	△.1-552-246-00	(US).....SWITCH, PUSH (POWER)				
S801	△.1-554-880-11	(AEP,G-AEP,UK,E)...SWITCH, PUSH (POWER)				
TM901	1-536-767-00	TERMINAL BOARD, SPEAKER				
TM902	1-536-767-00	TERMINAL BOARD, SPEAKER				
VS801	△.1-526-576-31	(E)...SELECTOR, POWER VOLTAGE				

ACCESSORY & PACKING MATERIAL

Part No.	Description
2-297-403-00	SHEET (LARGE), PROTECTION
3-701-630-00	BAG, POLYETHYLENE
3-760-648-11	MANUAL, INSTRUCTION
4-885-949-01	CUSHION (FRONT), UPPER
4-885-950-01	CUSHION (REAR), UPPER
4-885-951-01	CUSHION (FRONT), LOWER
4-885-952-01	CUSHION (REAR), LOWER
4-908-833-01	INDIVIDUAL CARTON

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

SONY

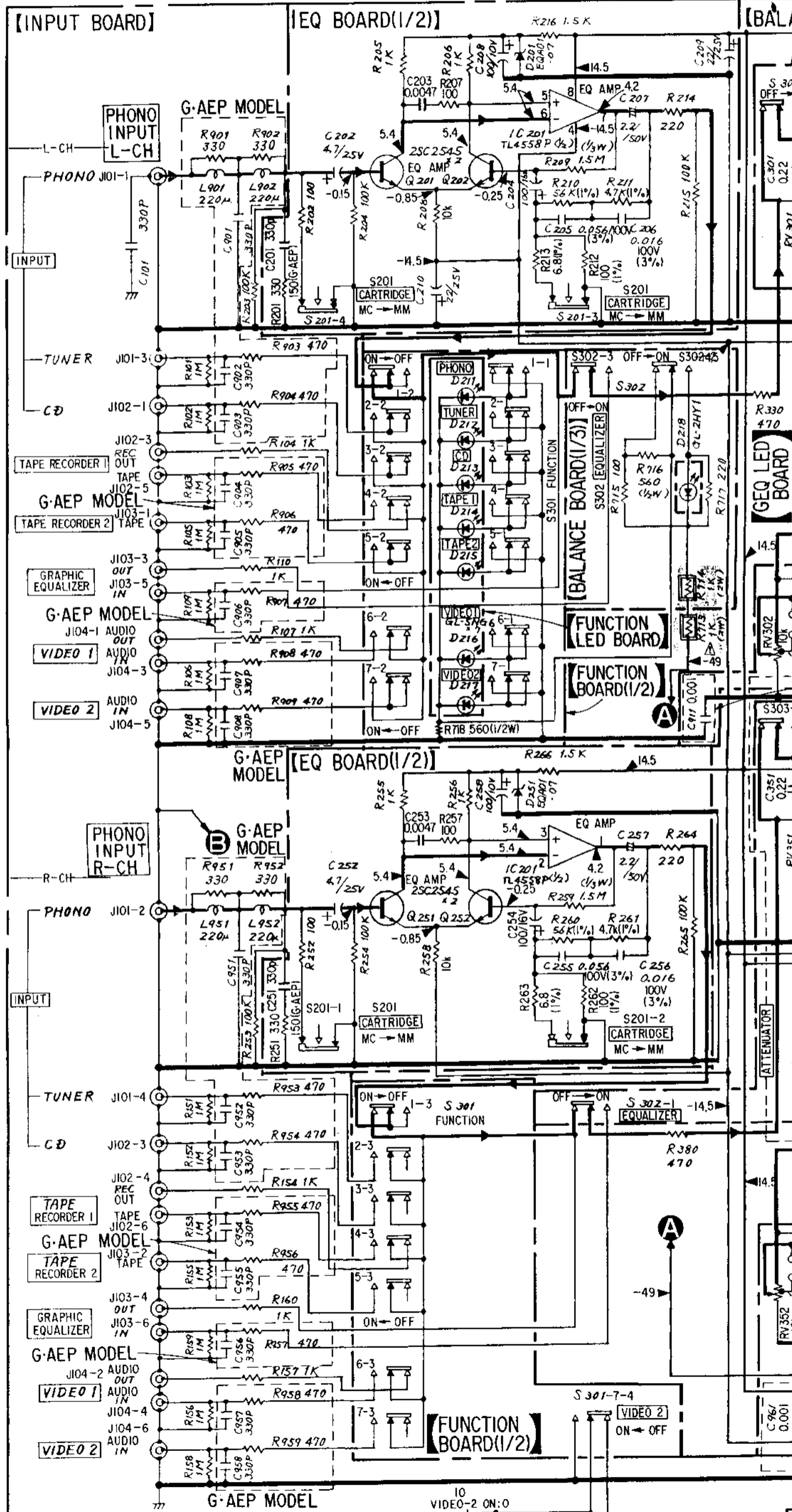
INTEGRATED STEREO AMPLIFIER

TA-F222ES (US, AEP, UK, E model)

SCHEMATIC DIAGRAM

PRELIMINARY

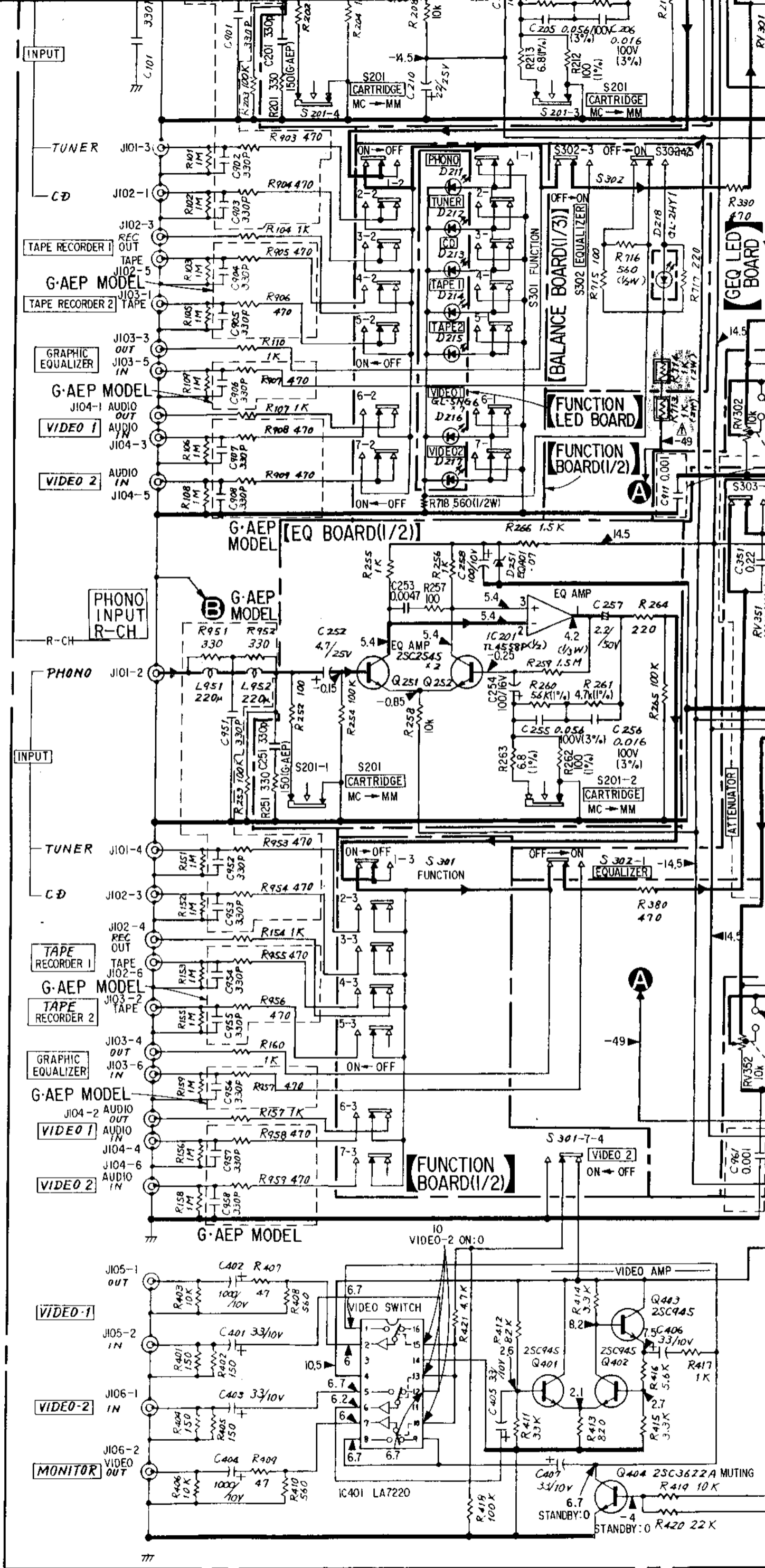
Note: The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.



- Note:
- All capacitors are in μF unless otherwise noted. pF: μF
 - 50WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
 - \rightarrow : signal path.
 - : nonflammable resistor.
 - : fusible resistor.
 - $\text{B}+$: B+ bus.

A
B
C
D
E
F
G
H

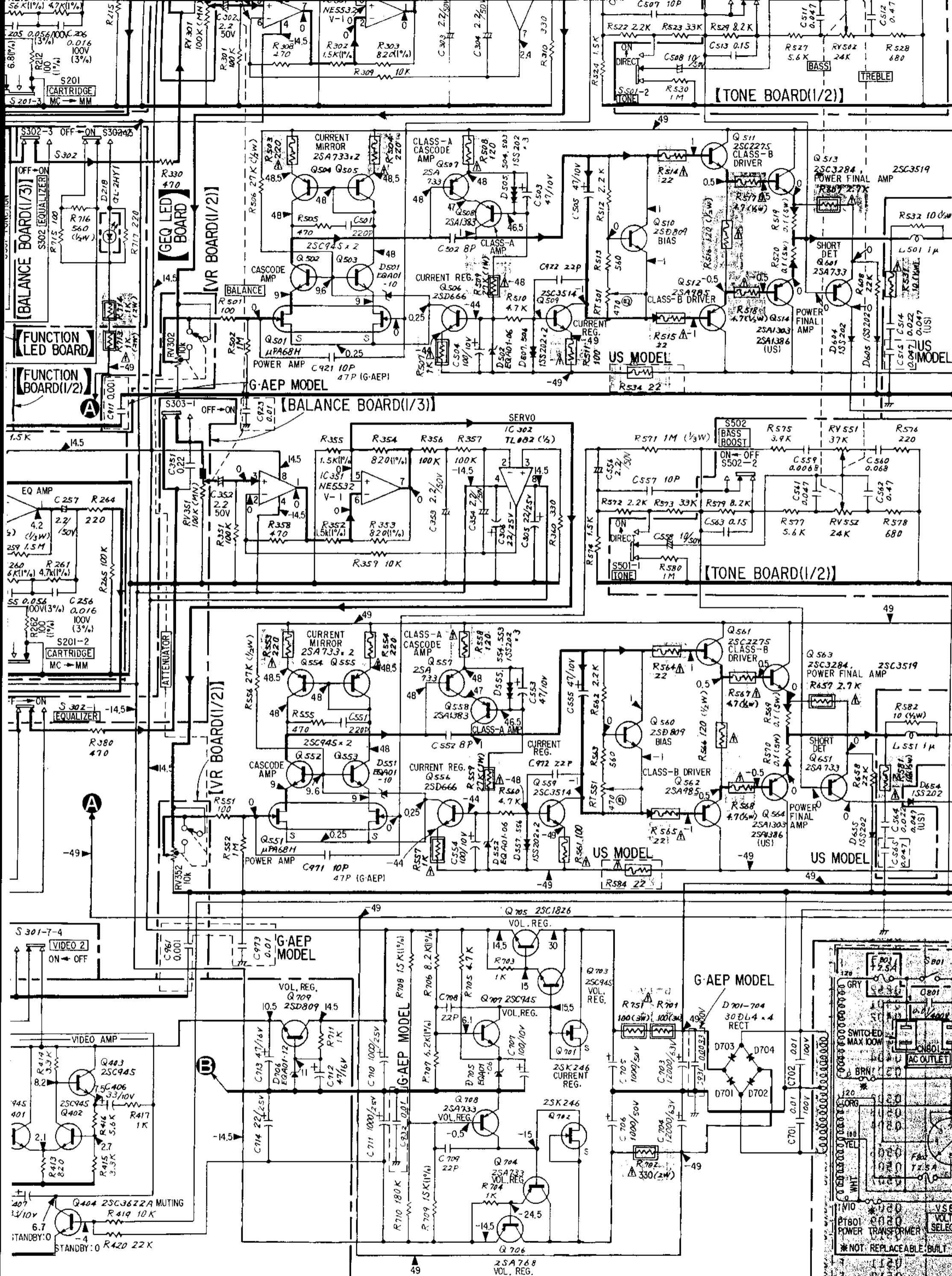
C
D
E
F
G
H
I
J



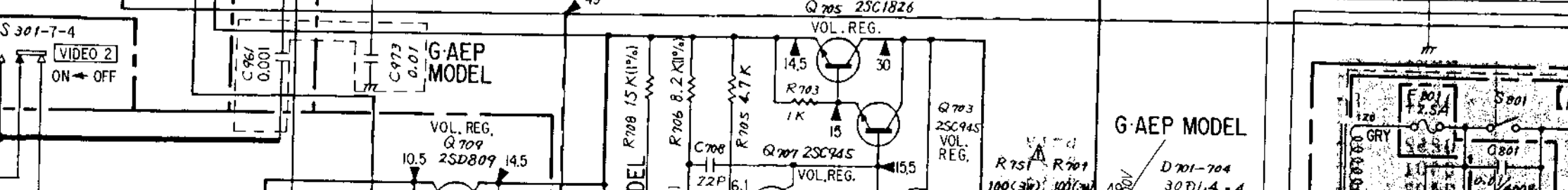
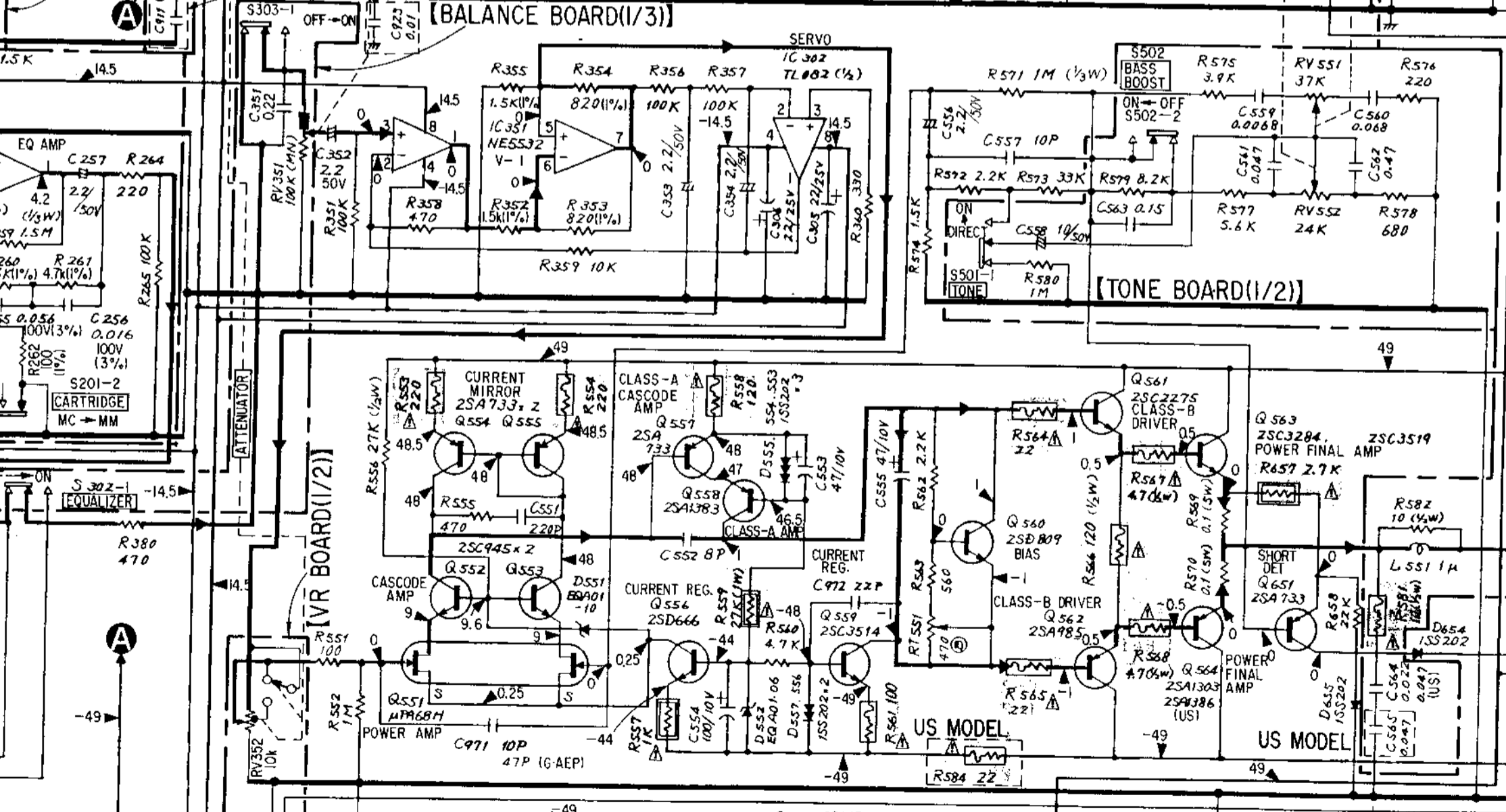
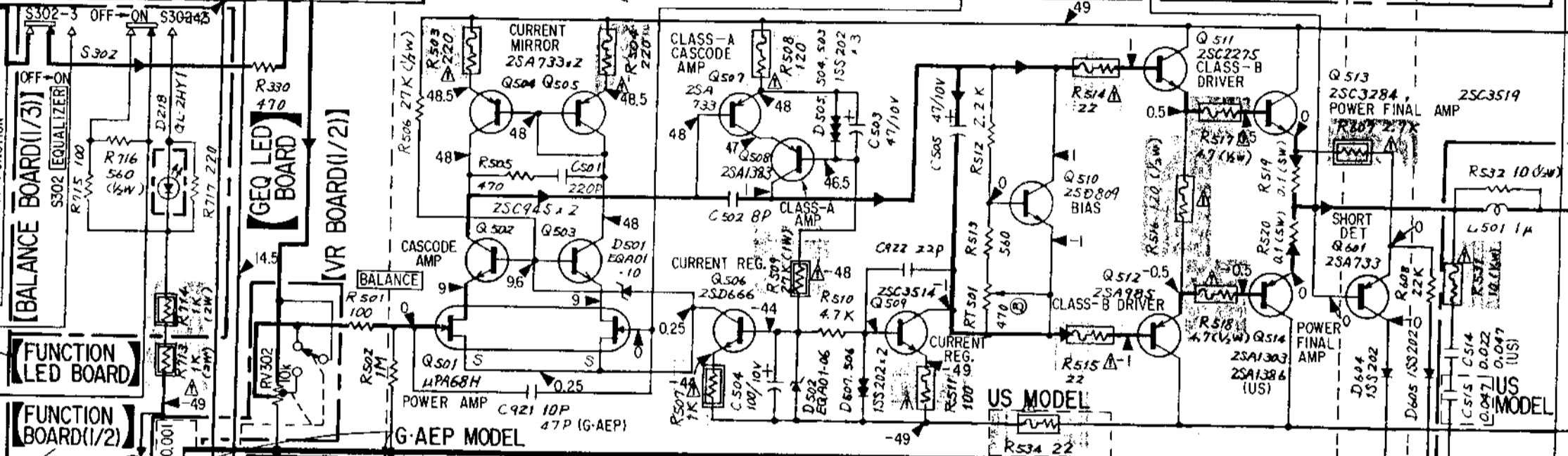
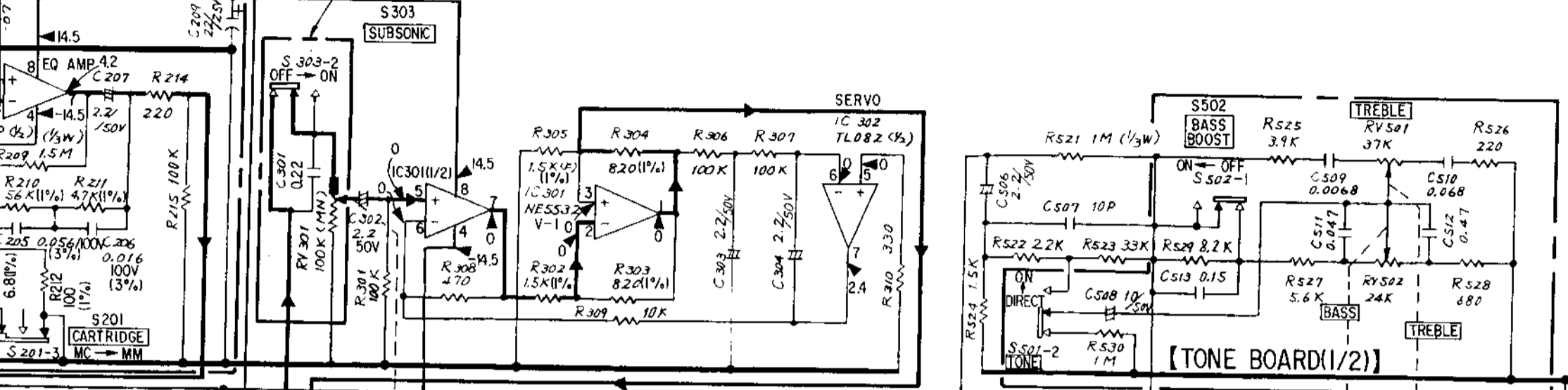
Note:

- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- \rightarrow : signal path.
- \square : nonflammable resistor.
- \square : fusible resistor.
- --- : B+ bus.
- --- : B- bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50 $\text{k}\Omega/\text{V}$).
- Voltage variations may be noted due to normal production tolerances.

1 2 3 4 5 6



[BALANCE BOARD (1/3)] [MAIN BOARD] [TONE BOARD (1/2)]



A

B

C

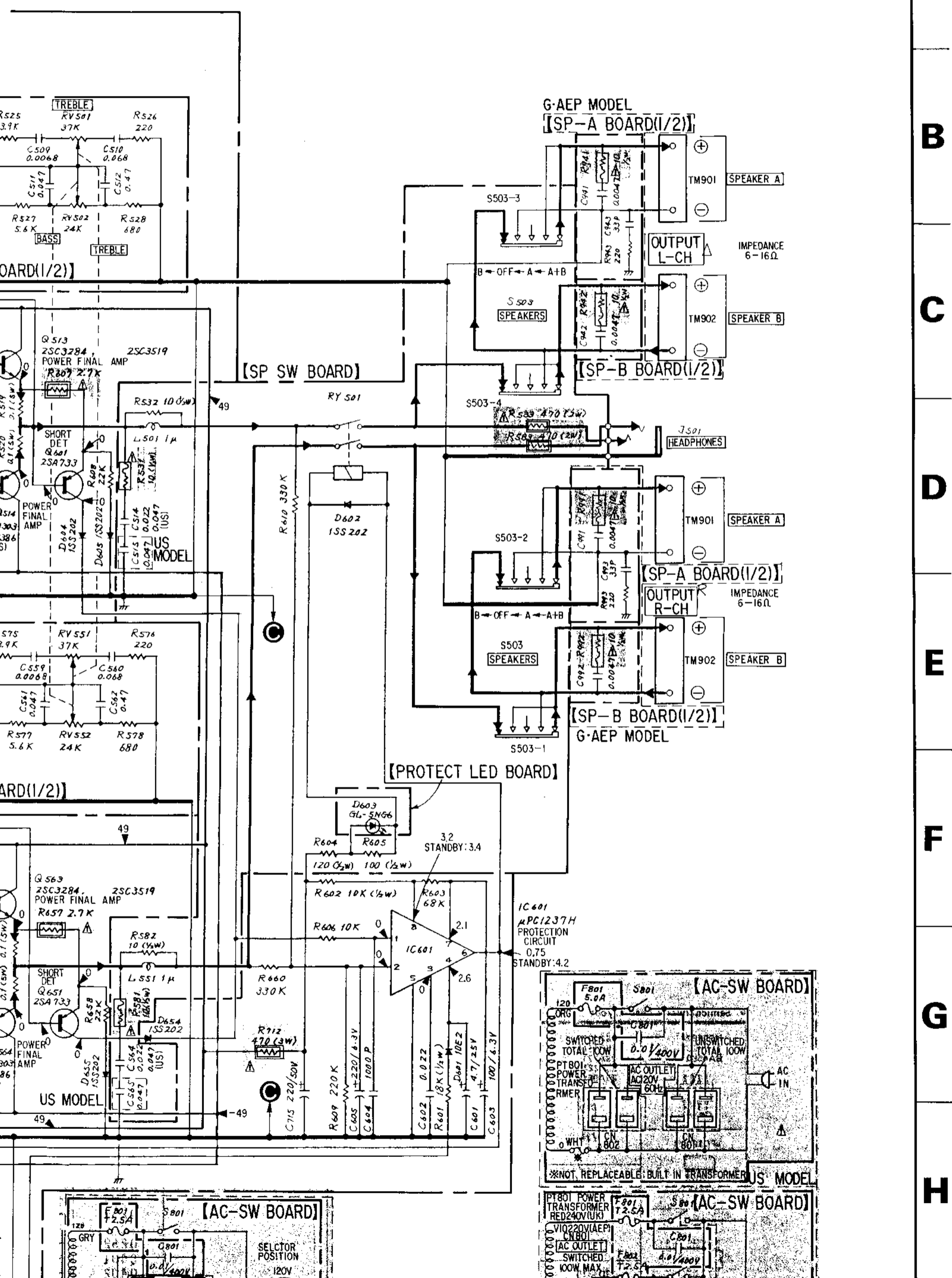
D

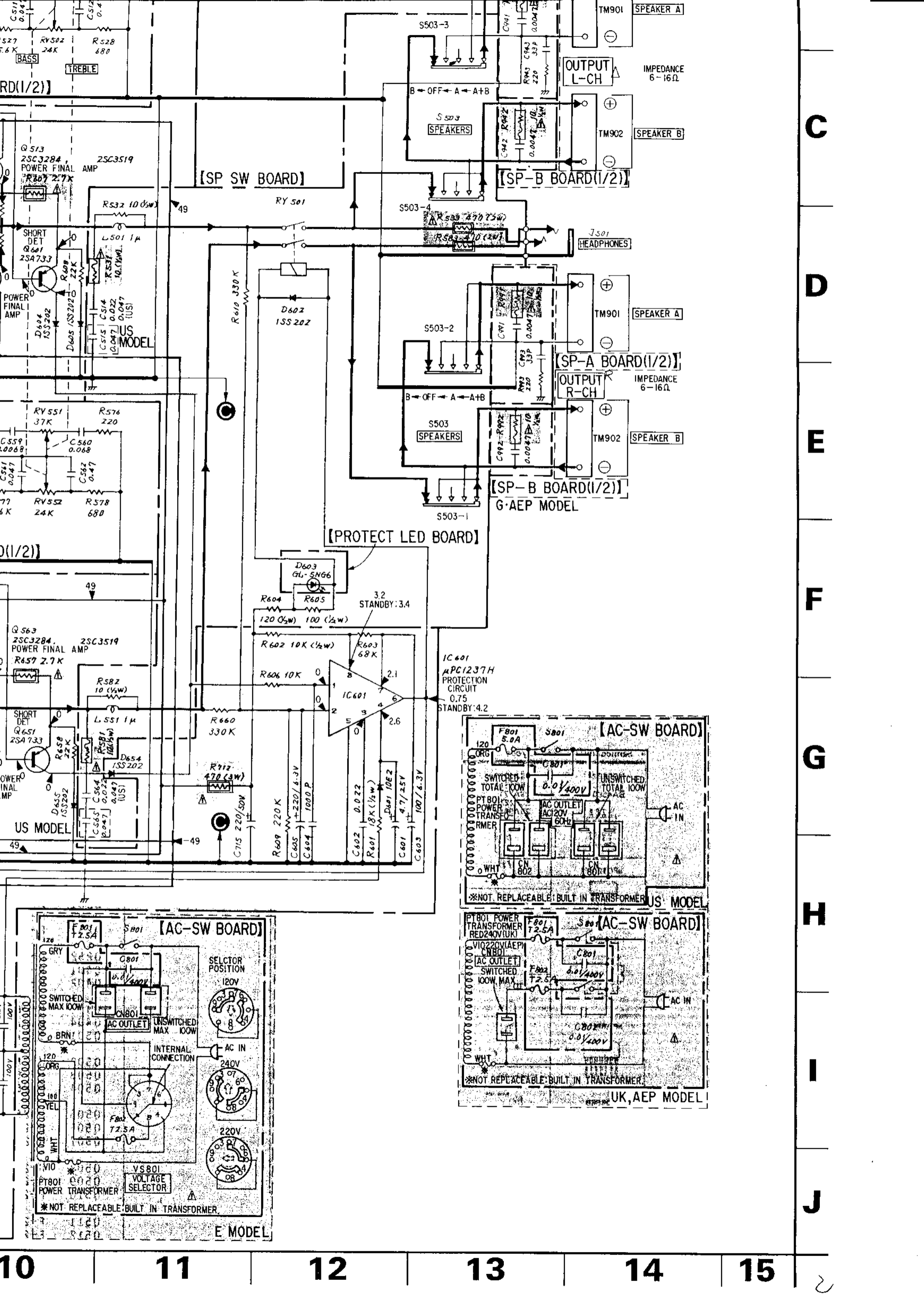
E

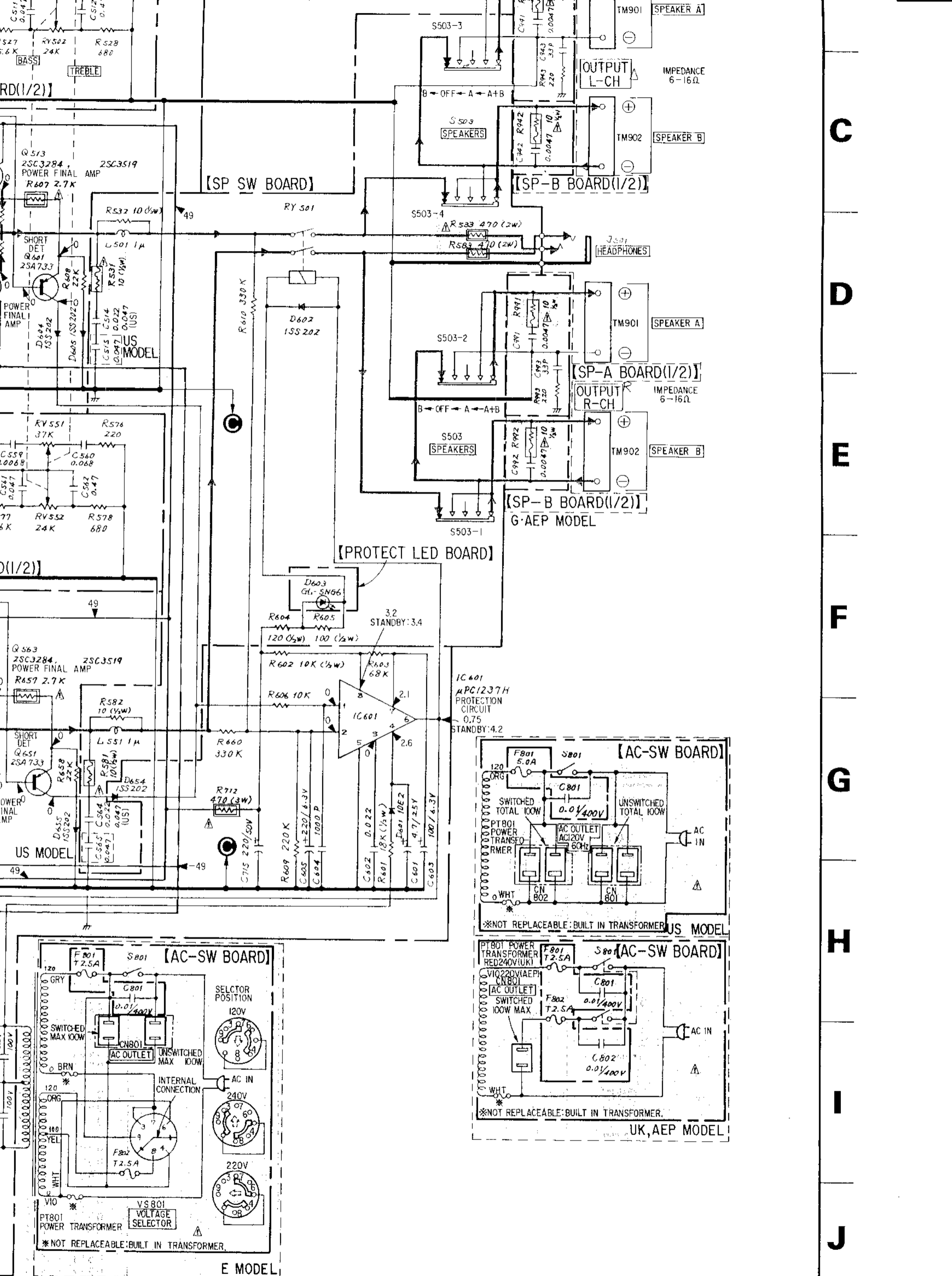
F

G

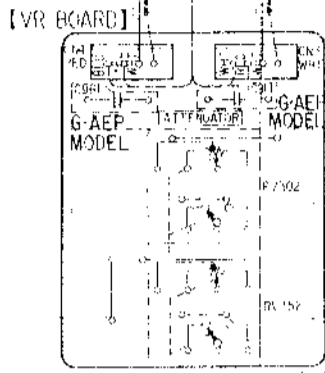
H



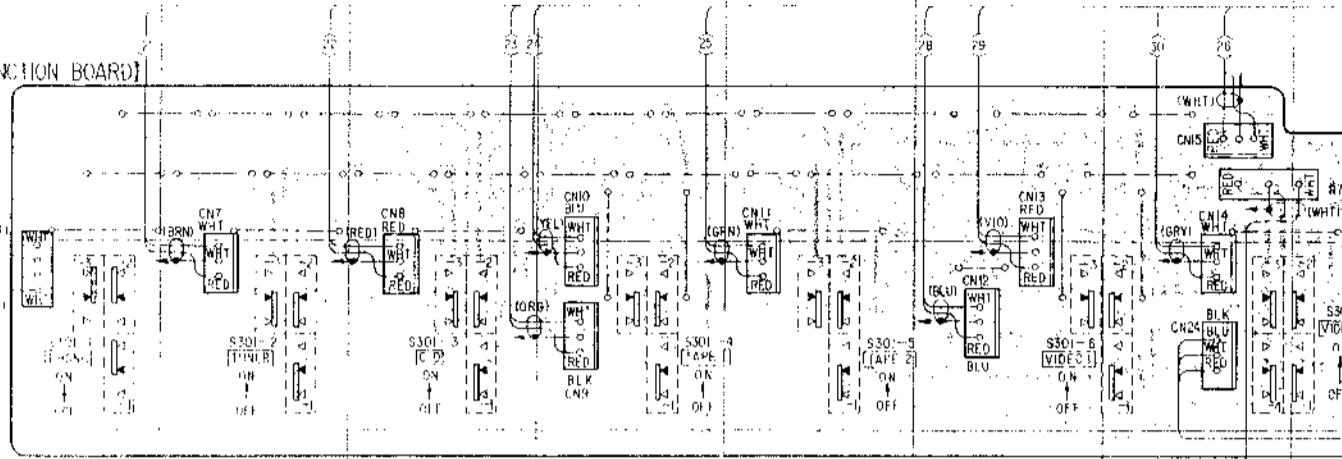




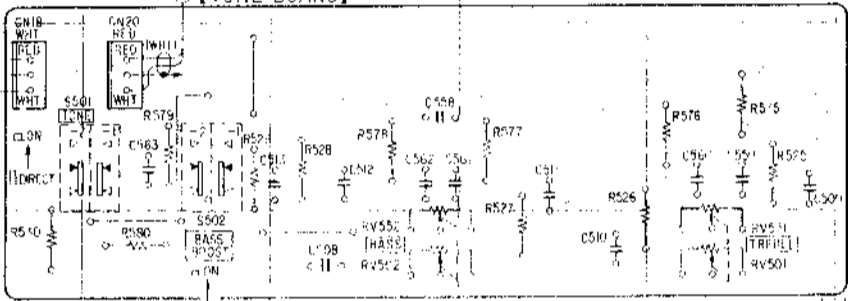
C
D
E
F
G
H
I
J



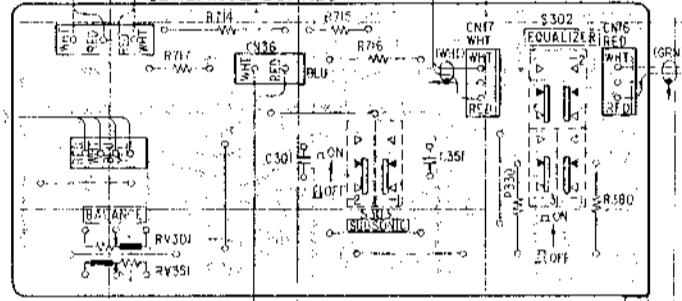
[FUNCTION BOARD]



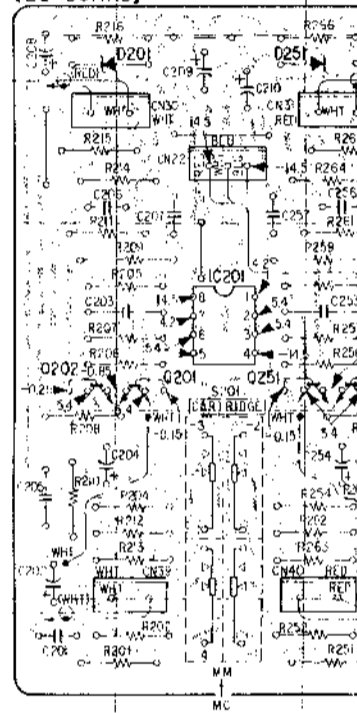
[TONE BOARD]



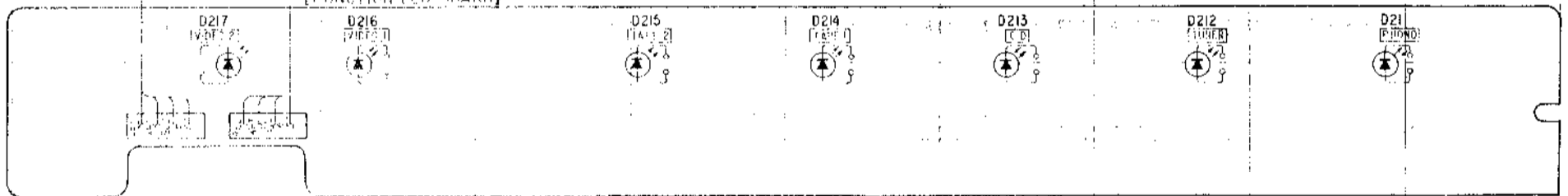
[BALANCE BOARD]



[EQ BOARD]



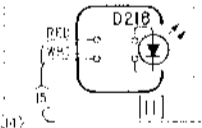
[FUNCTION LED BOARD]



[PROTECT LED BOARD]



[GEQ LED BOARD]

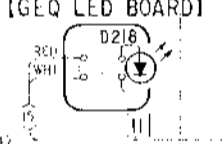
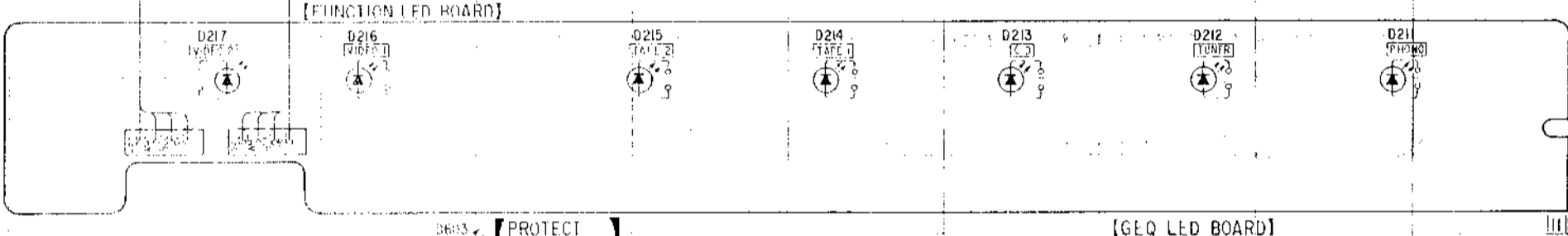
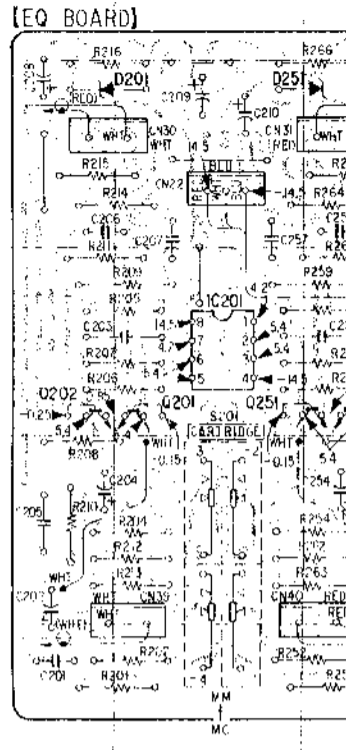
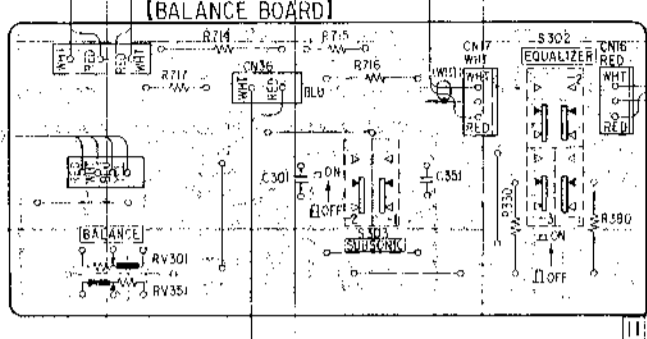
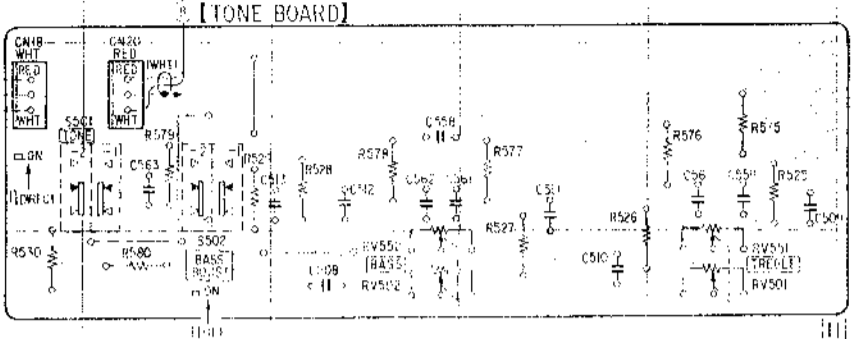


• Semiconductor Lead Layout

NE5532P TLO82CP BA4560 	2SA1383 2SC3514 2SA771 2SC2275 2SA985P 	2SC3284 2SA1303 2SC3519Y 2SA1386Y 	GL-2HY1
μPC1237H 	2SK246 GR2 	2SC2603F 	30DL4 EQA01-12R RD10EB2 EQA01-06R2 10E-2 RD6.8EB3
LA7220 	2SD1310 	2SA1027R 	

• SEMICONDUCTOR LOCATION

Ref.No.	Location	Ref
IC201	F-11	Q
IC301	J-28	Q
IC302	I-28	Q
IC351	J-27	Q
IC401	B-24	Q
IC601	I-23	Q
Q201	F-11	Q
Q202	F-10	Q
Q251	F-11	Q
Q252	F-12	Q
Q401	B-25	Q
Q402	B-25	Q

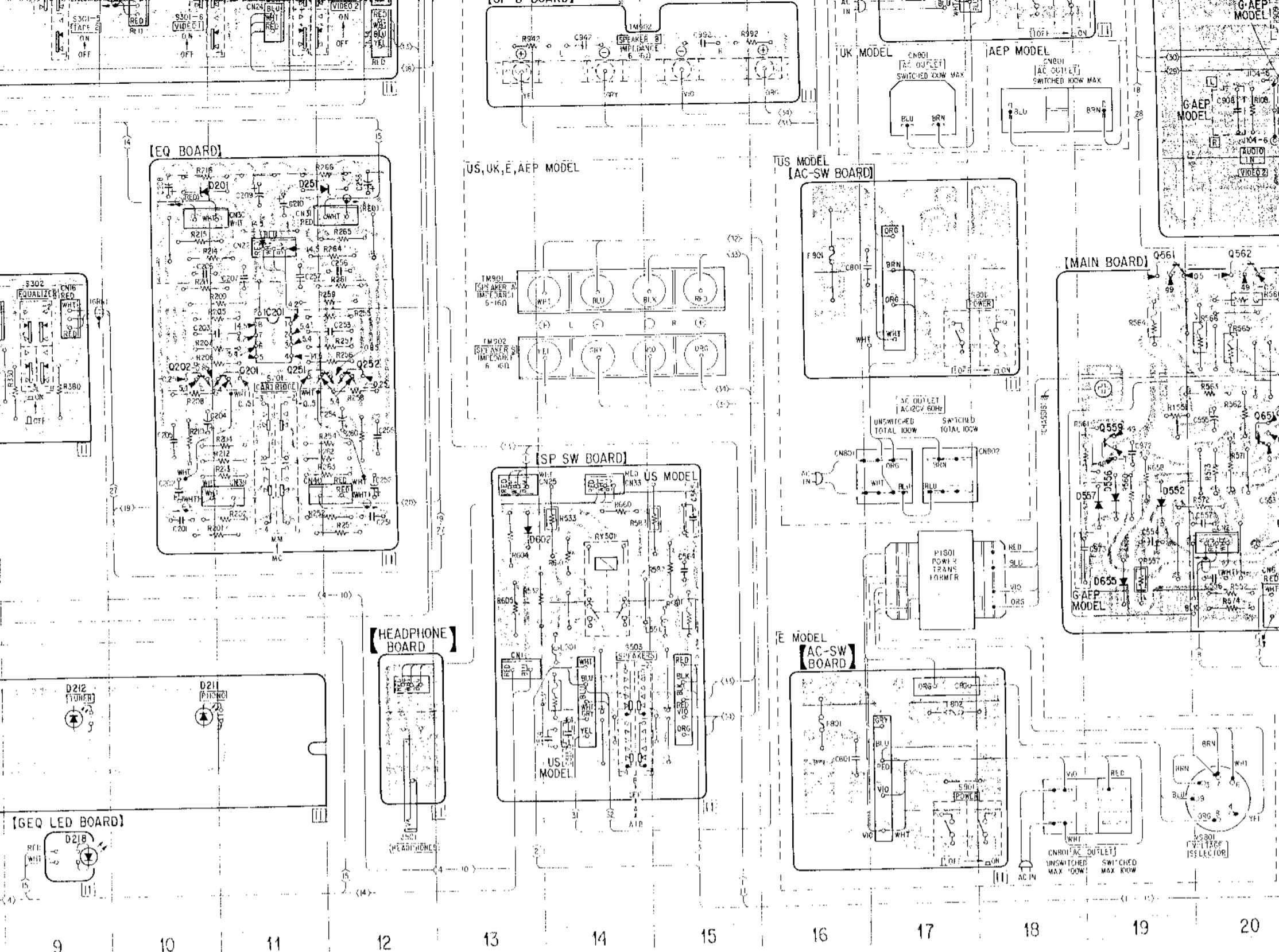


• Semiconductor Lead Layout

NE5532P TL082CP BA4560	2SA1383 2SC3514 2SA771 2SC2275 2SA985P	2SC3284 2SA1303 2SC3519Y 2SA1386Y	GL-2HY1
μPC1237H	2SK246-GR2	2SC2603F	30DL4 EQA01-12R RD10ER2 EQA01-06R2 10E-2 RD6.8EB3
LA7220	2SD1310	2SA1027R	1SS202-1
μPA6BH-K	2SD809	GL-5NG6	
2SD666R 2SC3622A I 2SC2545F 2SC1364			

• SEMICONDUCTOR LOCATION

Ref.No.	Location	Ref
IC201	F-11	Q
IC301	J-28	Q
IC302	I-28	Q
IC351	J-27	Q
IC401	B-24	Q
IC601	I-23	Q
Q201	F-11	Q
Q202	F-10	Q
Q251	F-11	Q
Q252	F-12	Q
Q401	B-25	Q
Q402	B-25	Q
Q403	B-26	Q
Q404	B-27	Q
Q501	I-27	Q
Q502	H-26	Q
Q503	H-26	Q
Q504	H-26	Q
Q505	H-26	Q
Q506	H-26	Q
Q507	H-27	Q
Q508	H-27	Q
Q509	G-29	Q
Q510	F-25	Q
Q511	F-28	Q
Q512	F-28	Q
Q513	F-25	Q



• SEMICONDUCTOR LOCATION

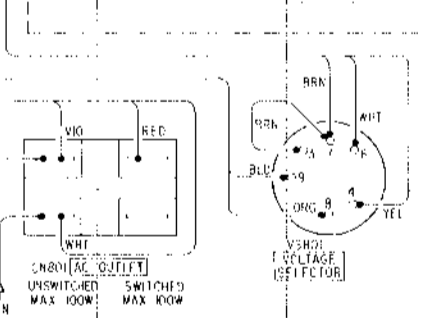
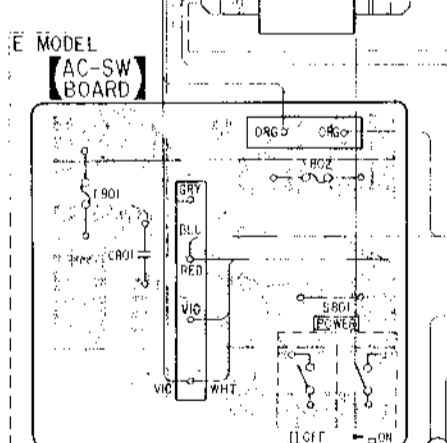
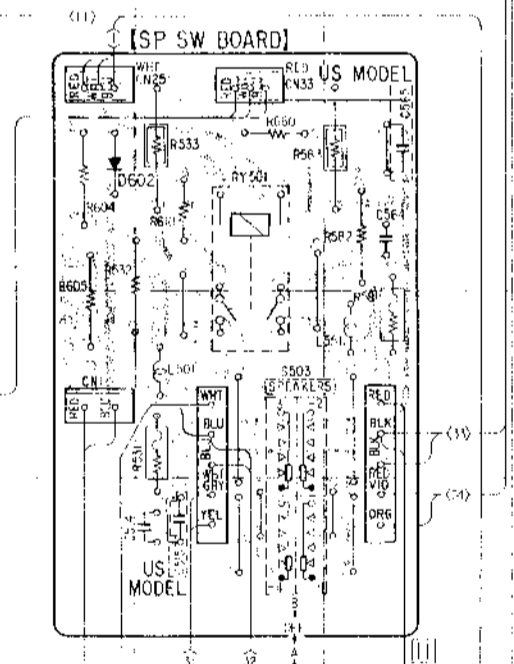
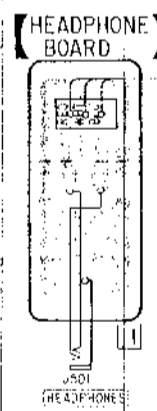
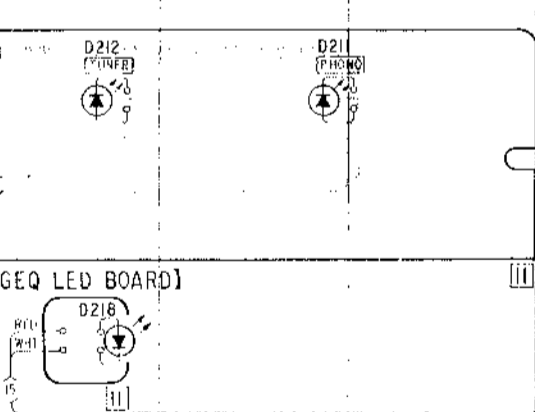
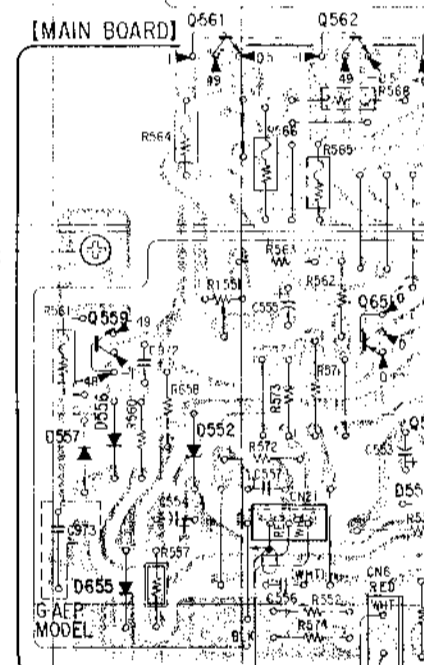
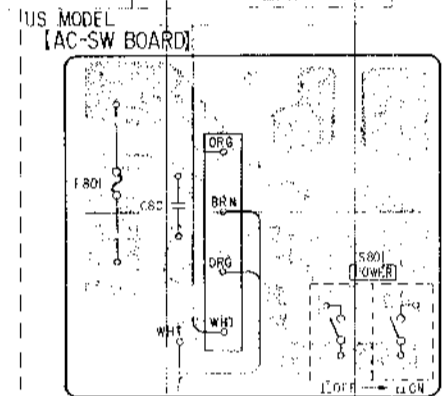
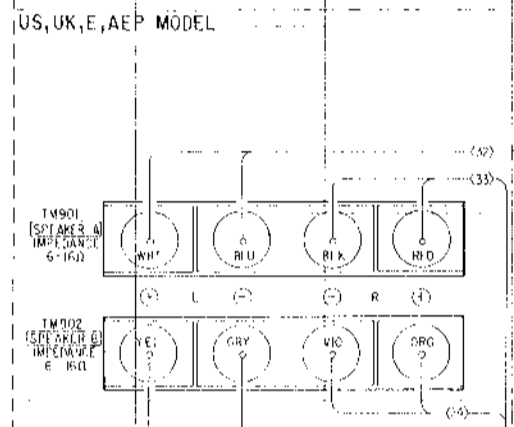
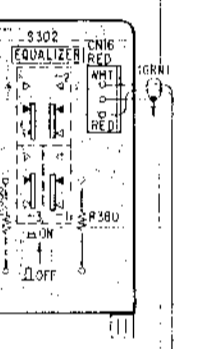
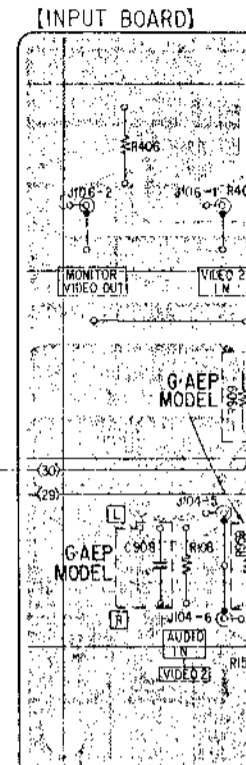
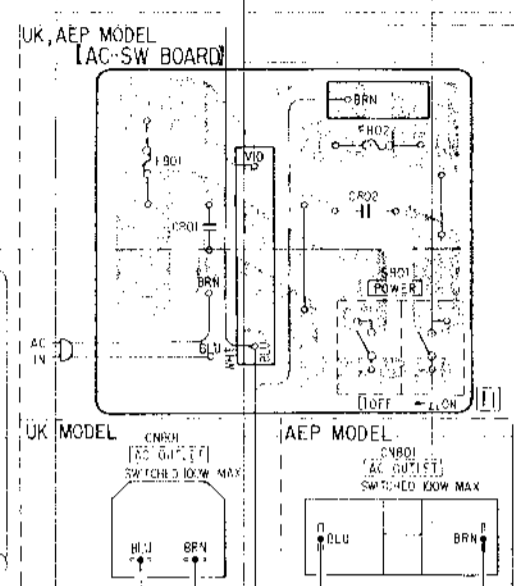
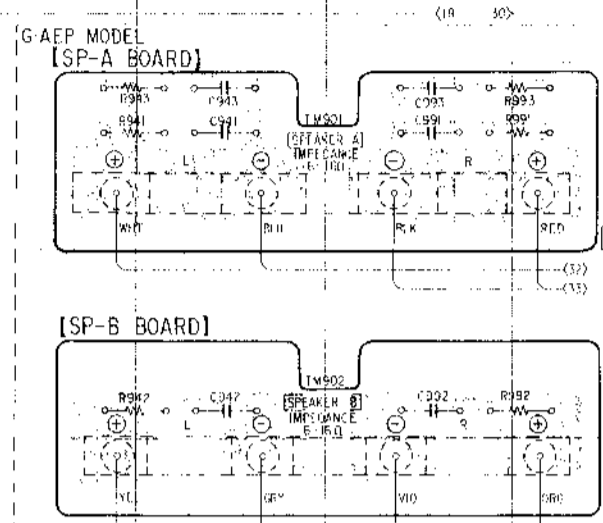
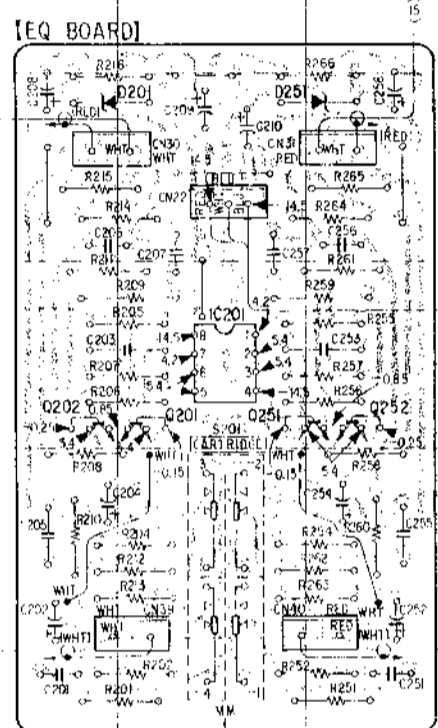
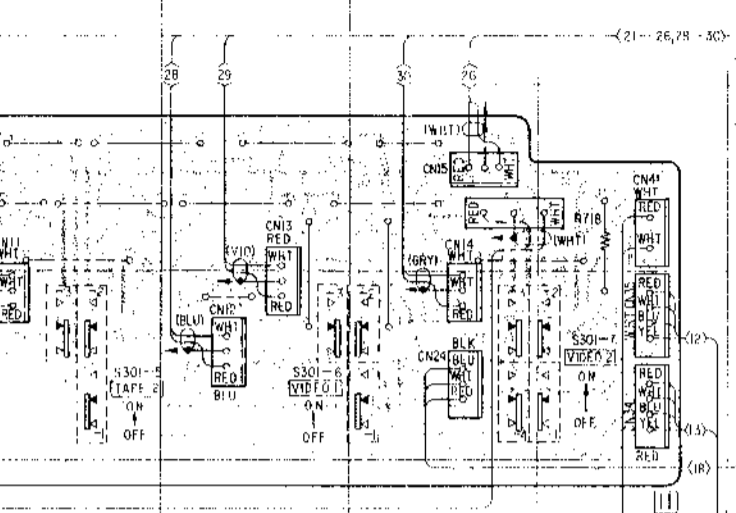
Ref.No.	Location	Ref.No.	Location
IC201	F-11	Q514	F-27
IC301	J-28	Q551	I-21
IC302	I-28	Q552	H-22
IC351	J-27	Q553	H-22
IC401	B-24	Q554	H-22
IC601	I-23	Q555	H-22
Q201	F-11	Q556	H-21
Q202	F-10	Q557	H-21
Q251	F-11	Q558	H-21
Q252	F-12	Q559	G-19
Q401	B-25	Q560	F-22
Q402	B-25	Q561	F-19
Q403	B-26	Q562	F-20
Q404	B-27	Q563	F-23
Q501	I-27	Q564	F-21
Q502	H-26	Q601	G-27
Q503	H-26	Q651	G-20
Q504	H-26	Q701	J-23
Q505	H-26	Q702	J-23
Q506	H-26	Q703	J-23
Q507	H-27	Q704	J-23
Q508	H-27	Q705	J-24
Q509	G-29	Q706	J-24
Q510	F-25	Q707	J-24
Q511	F-28	Q708	J-24
Q512	F-28	Q709	B-28
Q513	F-25		

Note:

• Color code of sleeving over the end of the jacket.



• ○ : parts extracted from the component side.
 • ● : parts extracted from the conductor side.

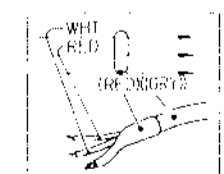


• SEMICONDUCTOR LOCATION

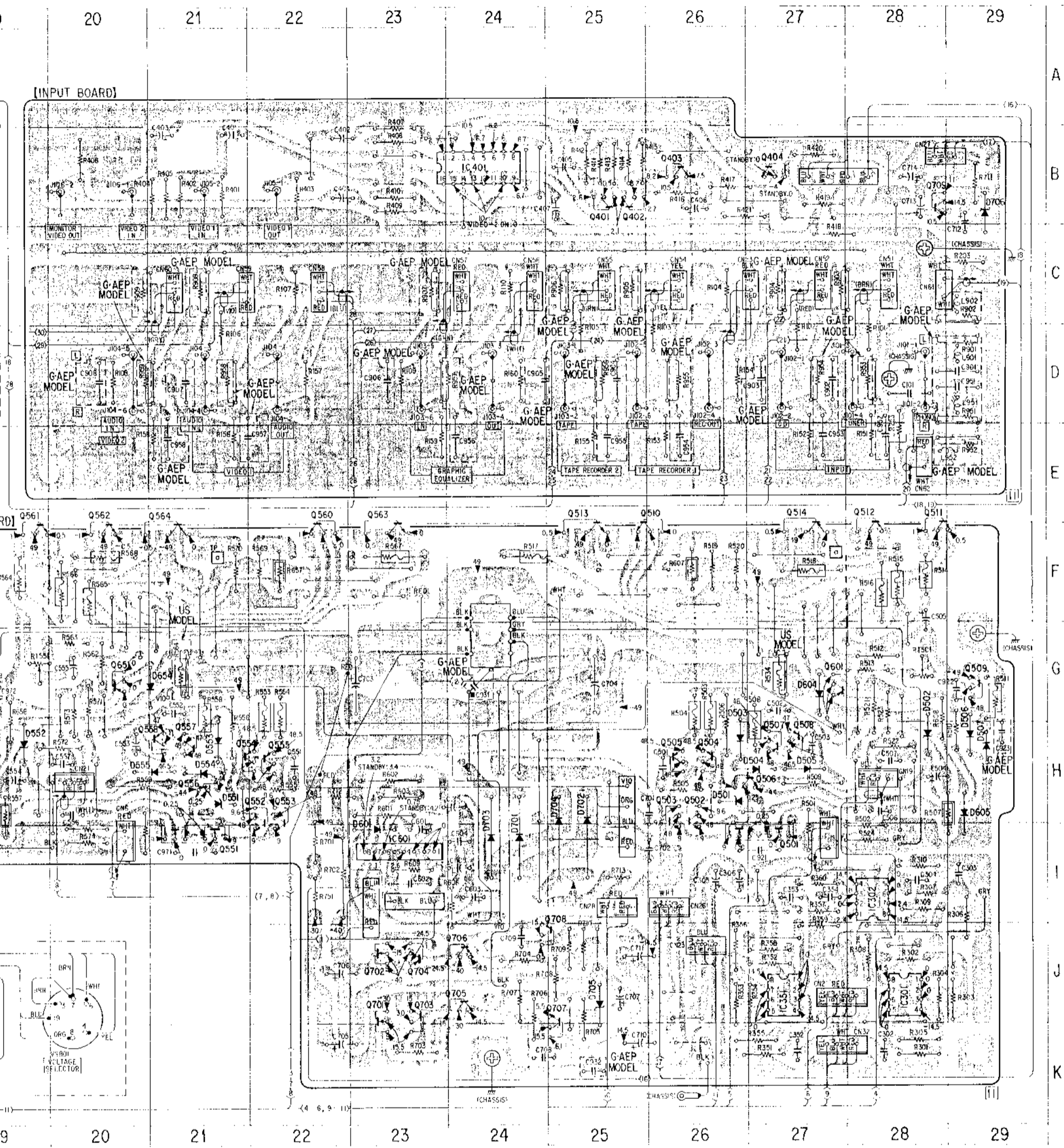
Ref.No.	Location	Ref.No.	Location
IC201	F-11	Q514	F-27
IC301	J-28	Q551	I-21
IC302	I-28	Q552	H-22
IC351	J-27	Q553	H-22
IC401	B-24	Q554	H-22
IC601	J-23	Q555	H-22
Q201	F-11	Q556	H-21
Q202	F-10	Q557	H-21
Q251	F-11	Q558	H-21
Q252	F-12	Q559	G-19
Q401	B-25	Q560	F-22
Q402	B-25	Q561	F-19

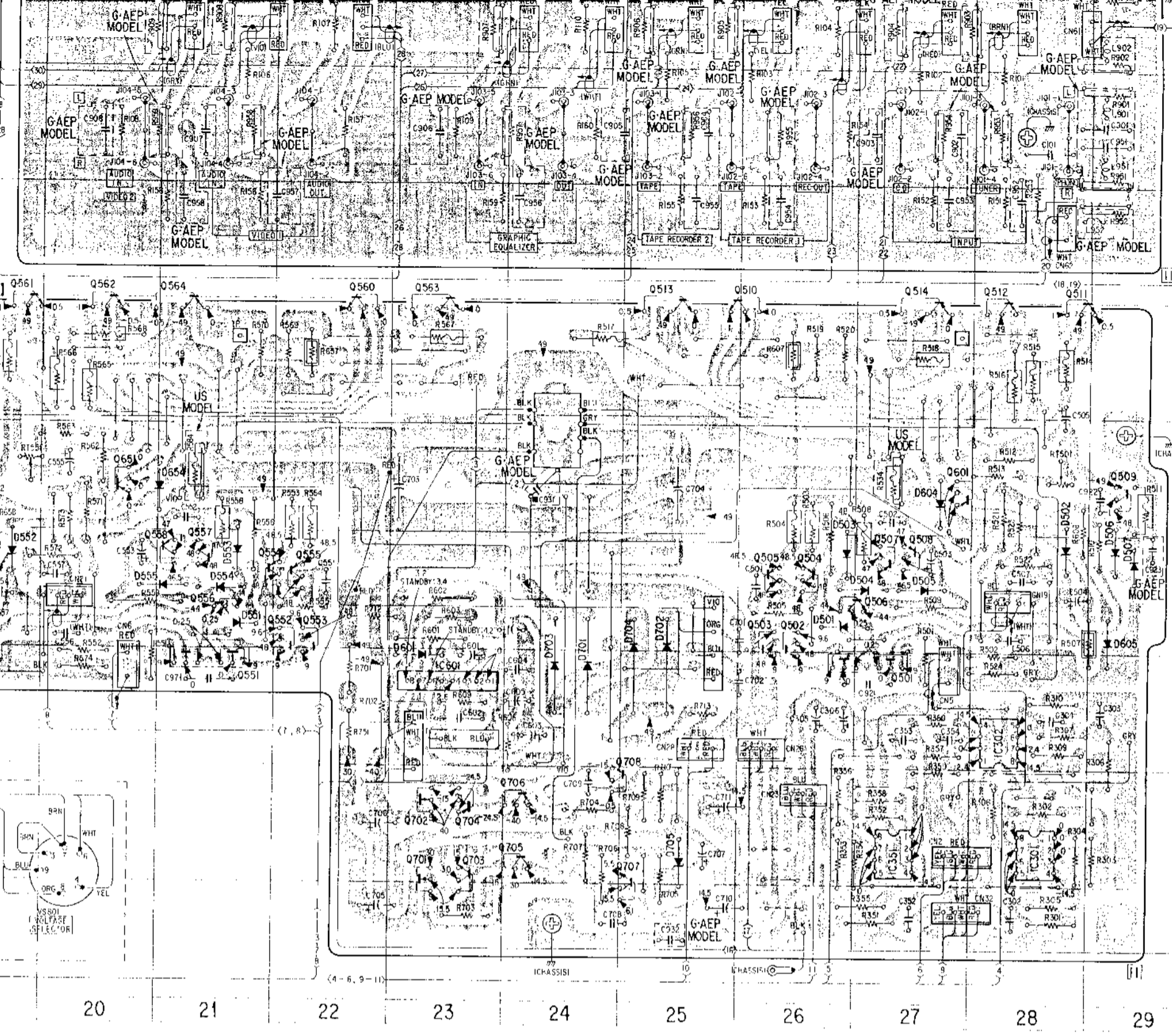
Note:

- Color code of sleeving over the end of the jacket.



- — : parts extracted from the component side.
- — : parts extracted from the conductor side.






C
D
E
F
G
H
I
J
K

20 21 22 23 24 25 26 27 28 29

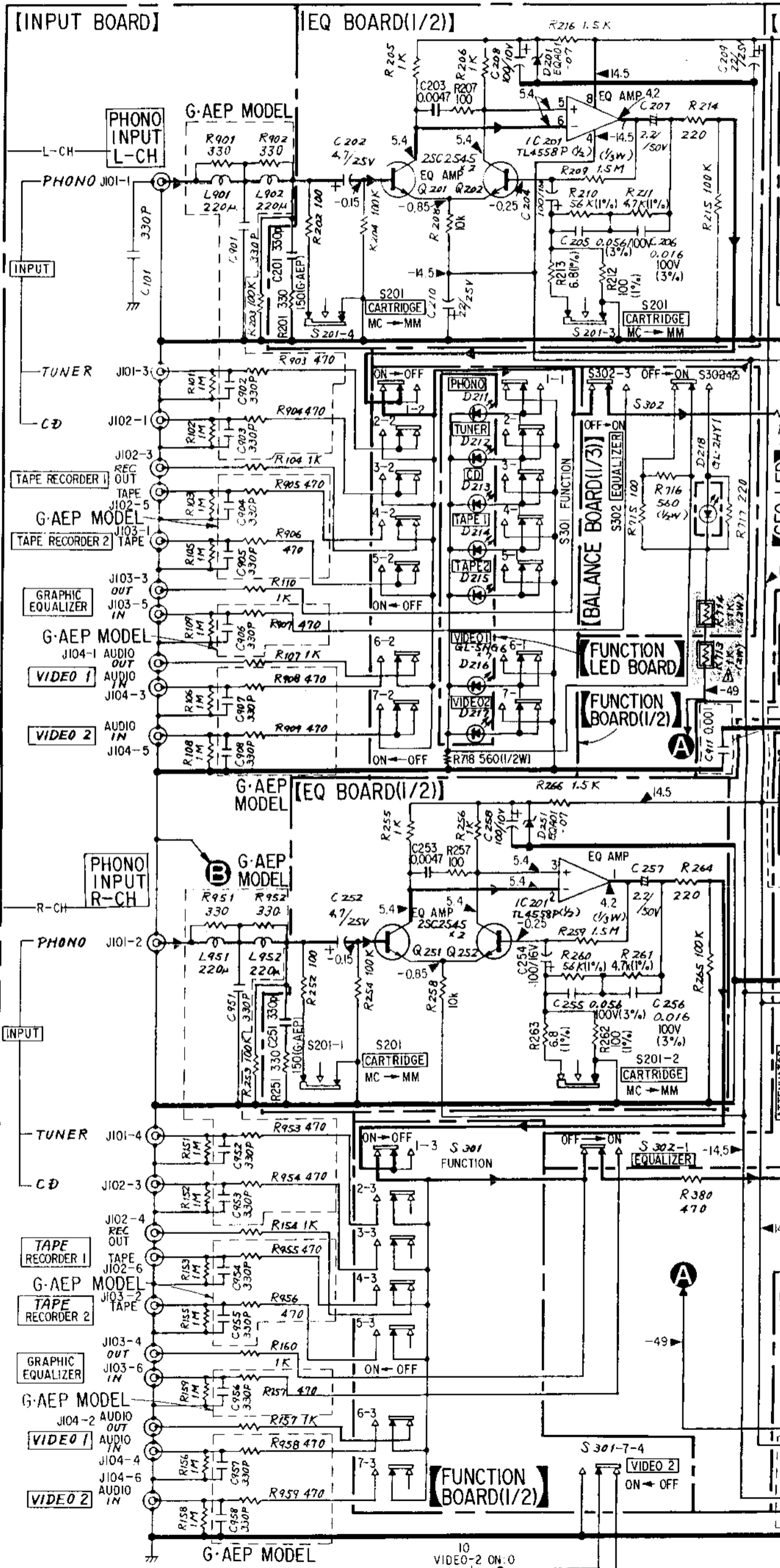
4

SONY® INTEGRATED STEREO AMPLIFIER TA-F222ES


US Model
AEP Model
UK Model
E Model

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

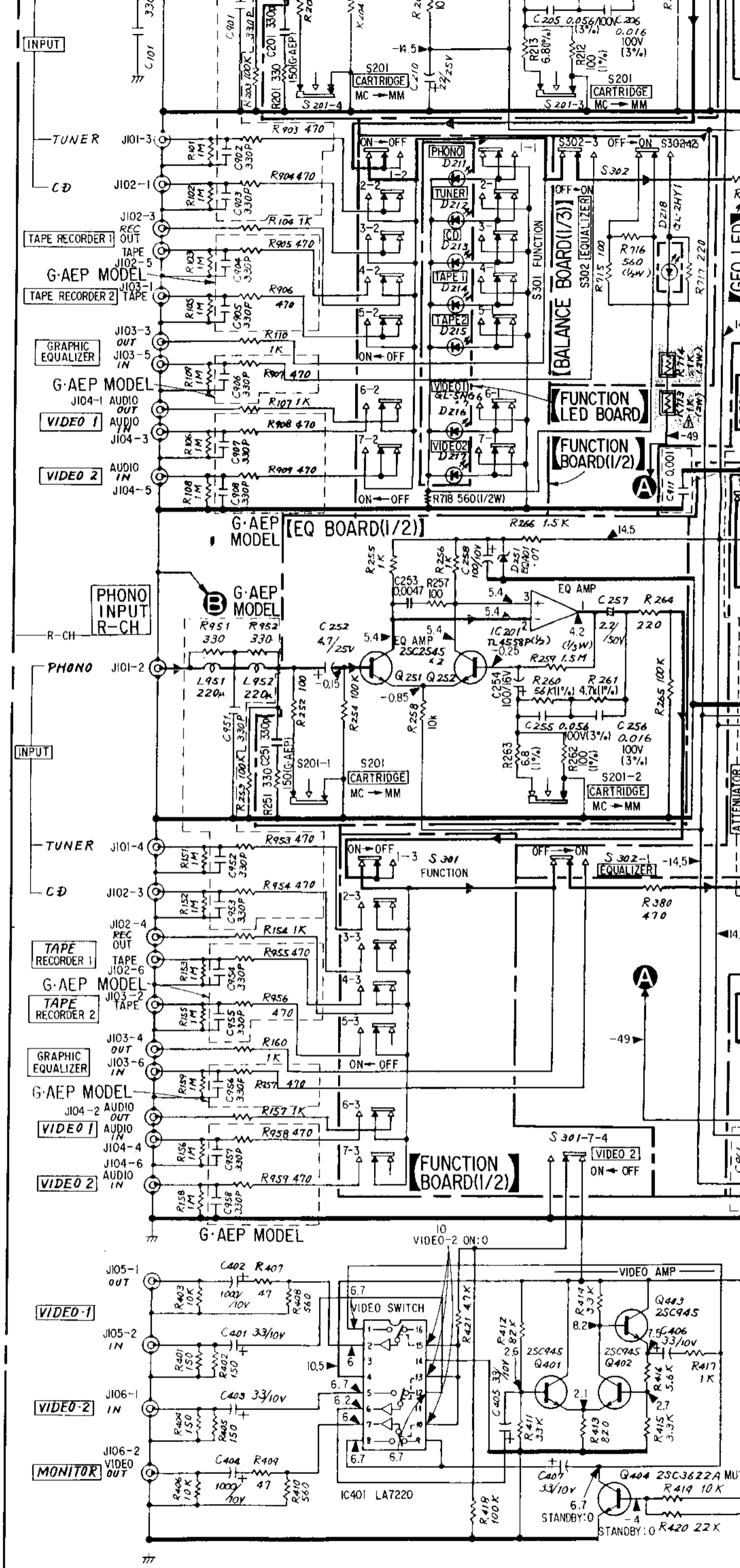
SCHEMATIC DIAGRAM



Note:

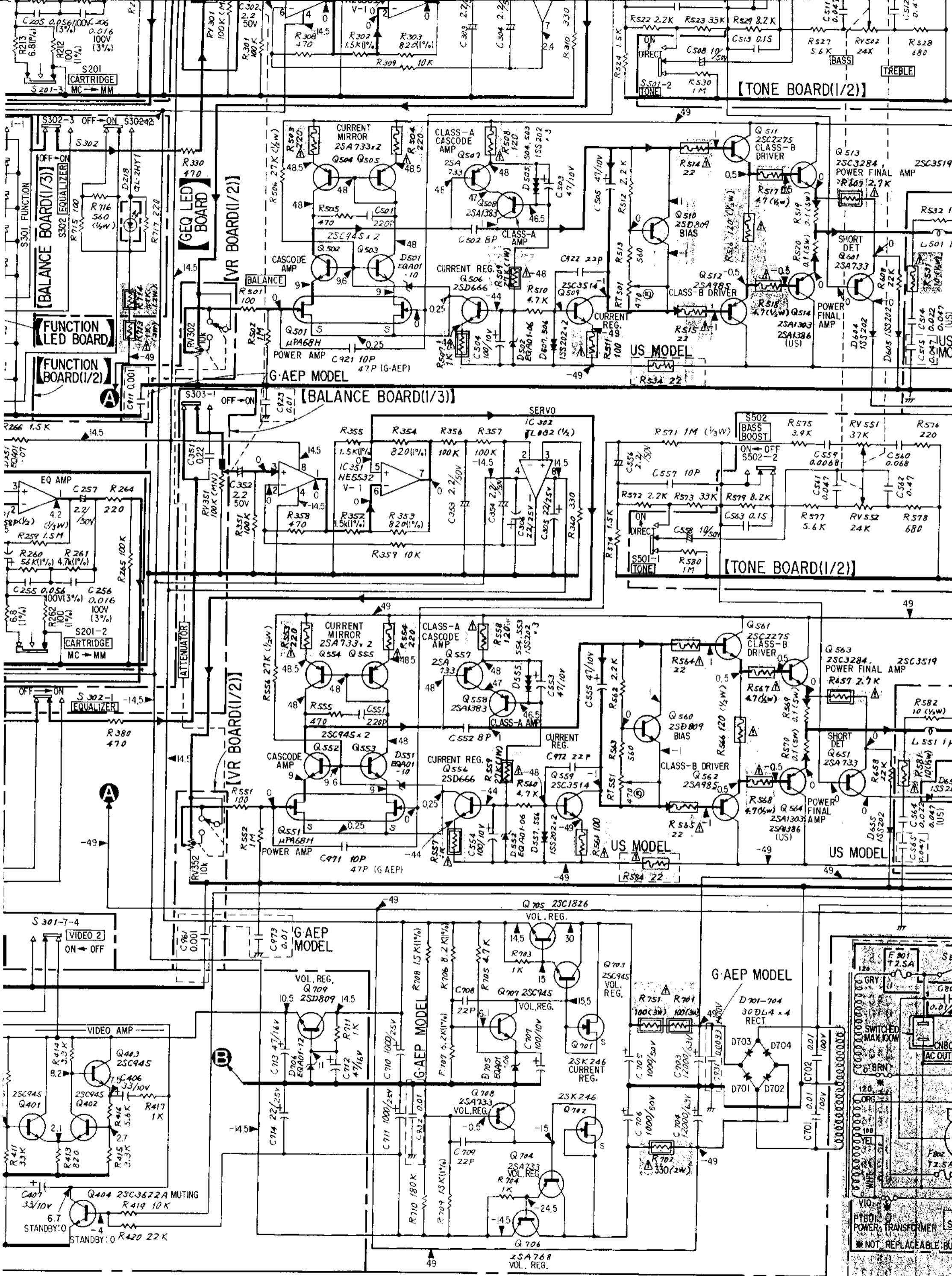
- All capacitors are in μF unless otherwise noted. pF: $\mu\text{M}\text{F}$. 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
-  : signal path.

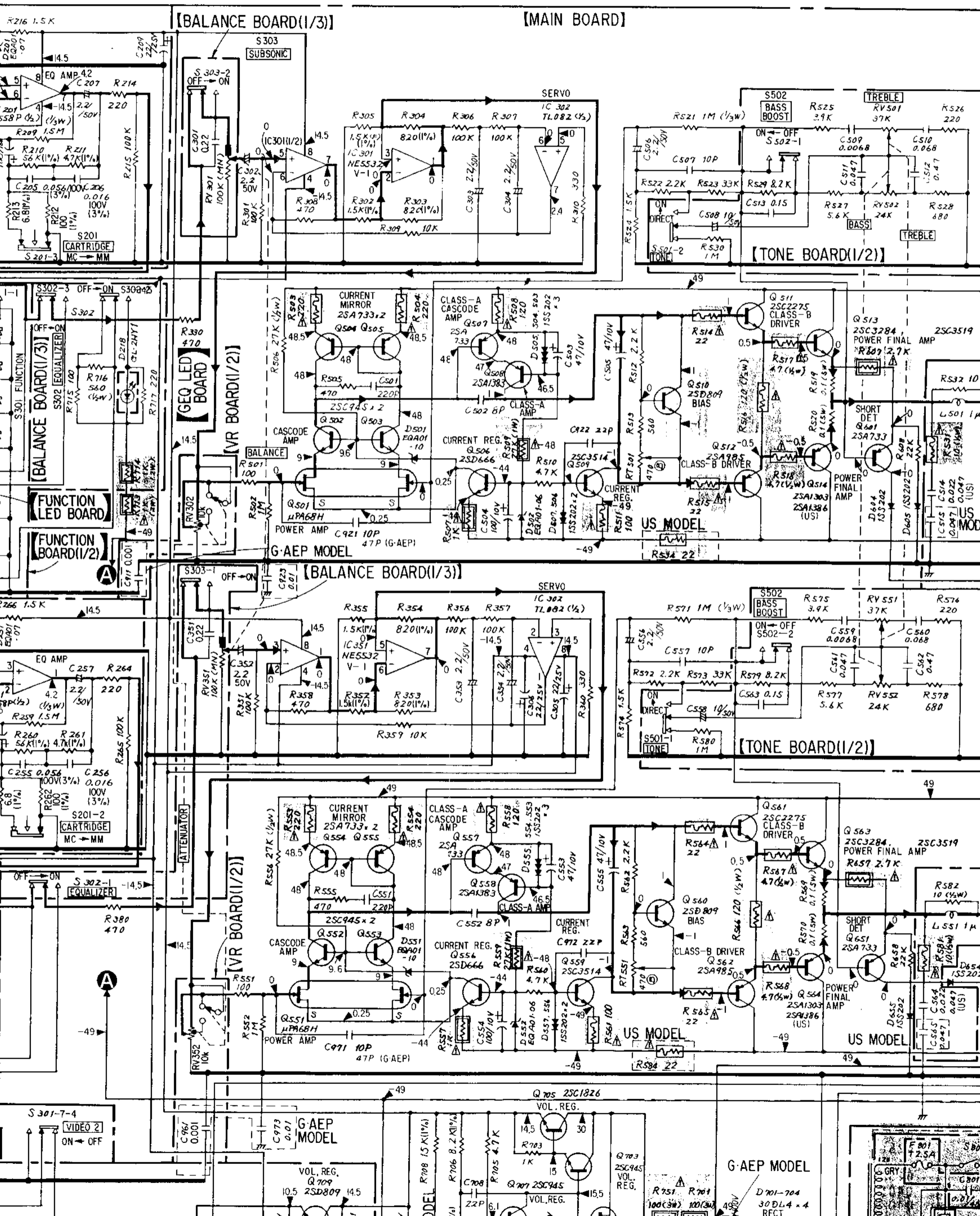
C
D
E
F
G
H
I
J



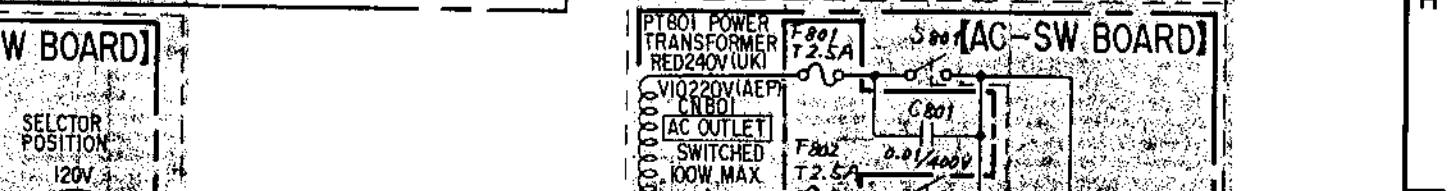
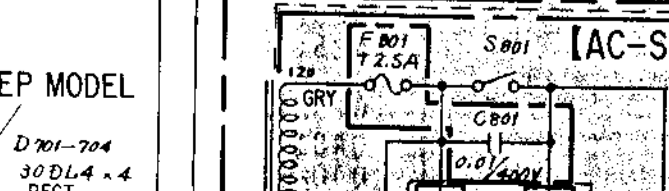
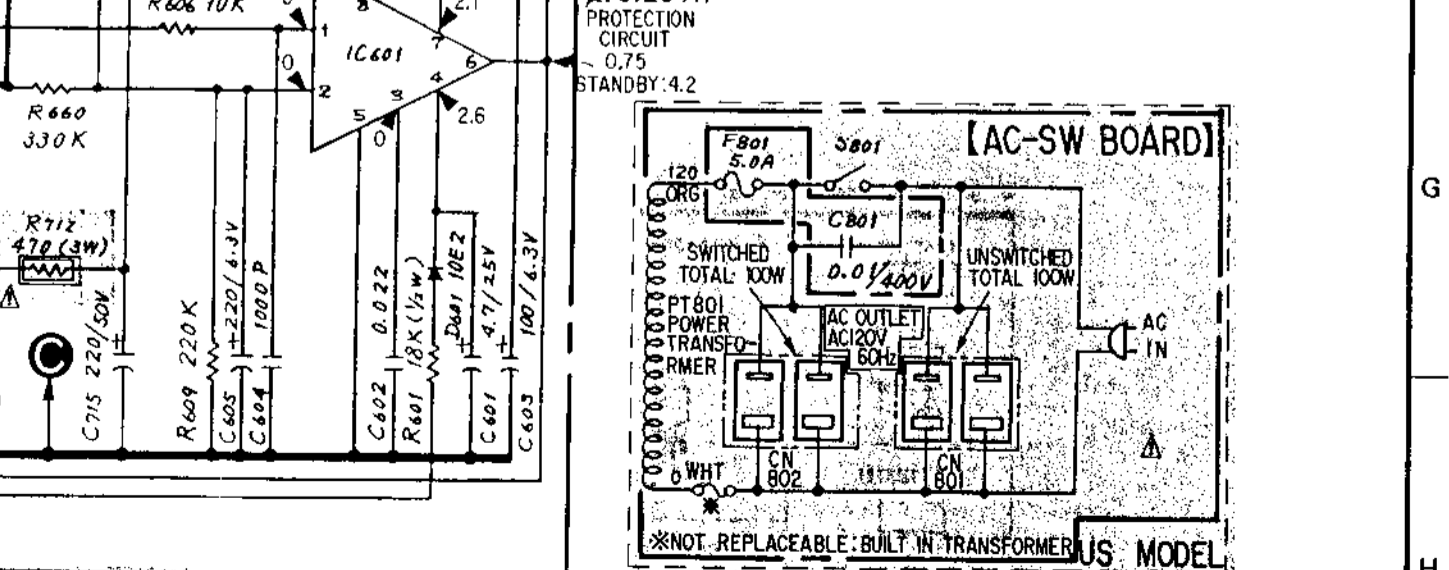
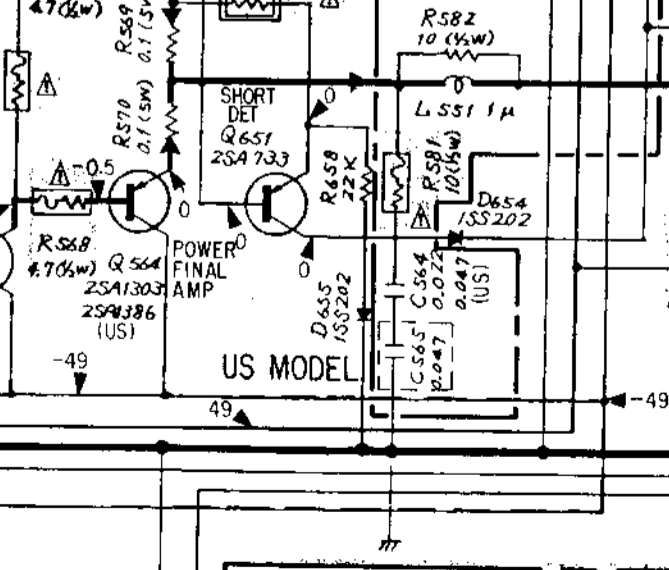
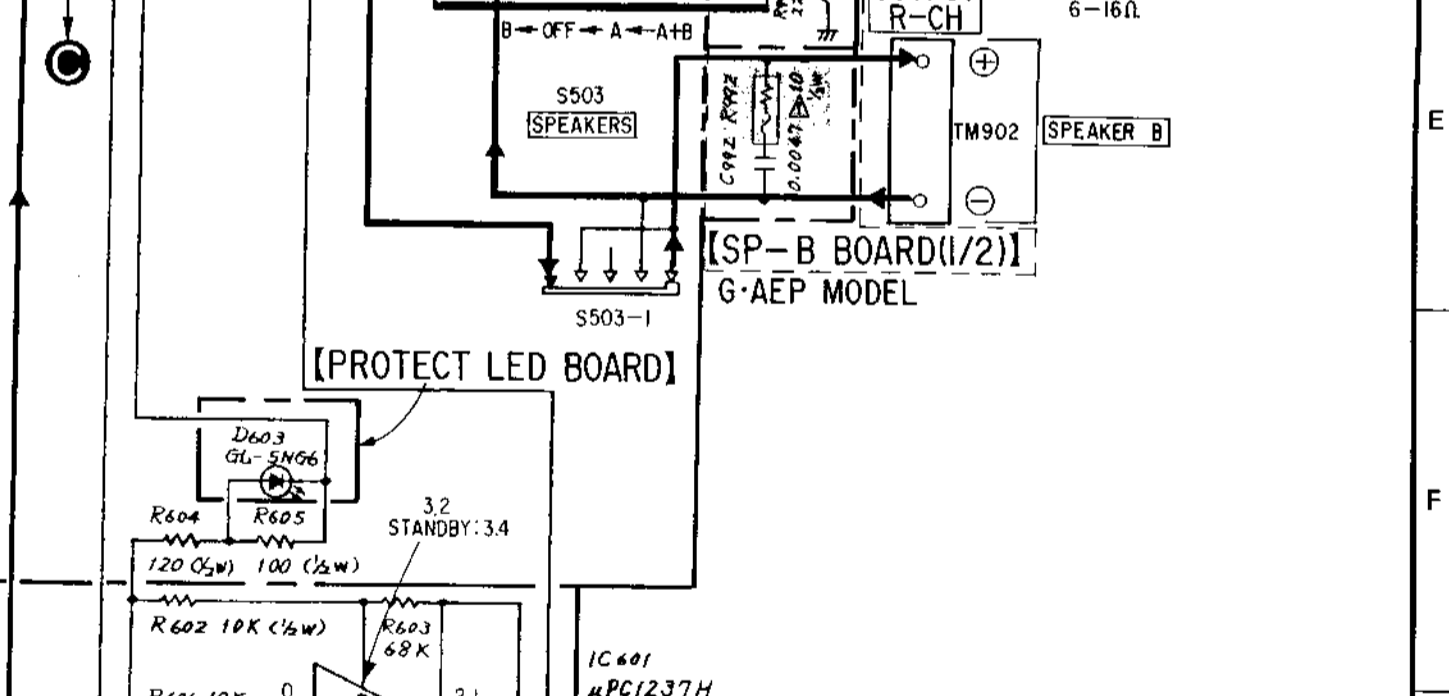
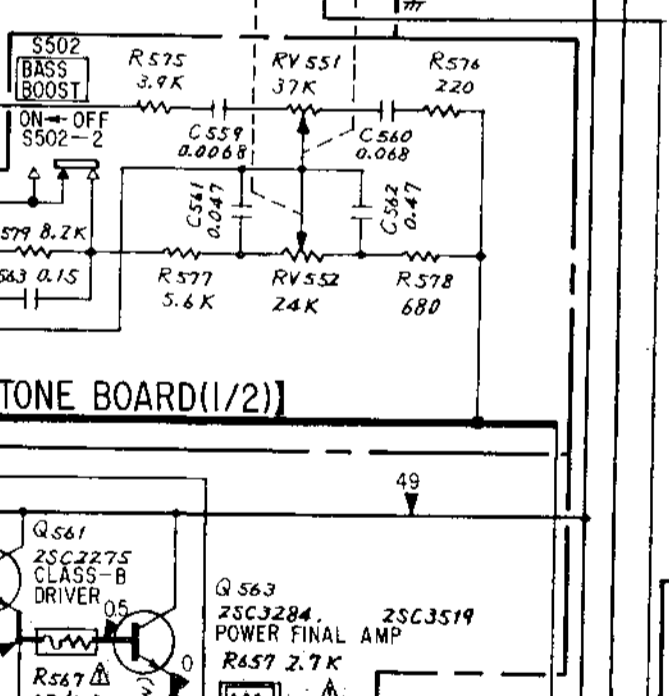
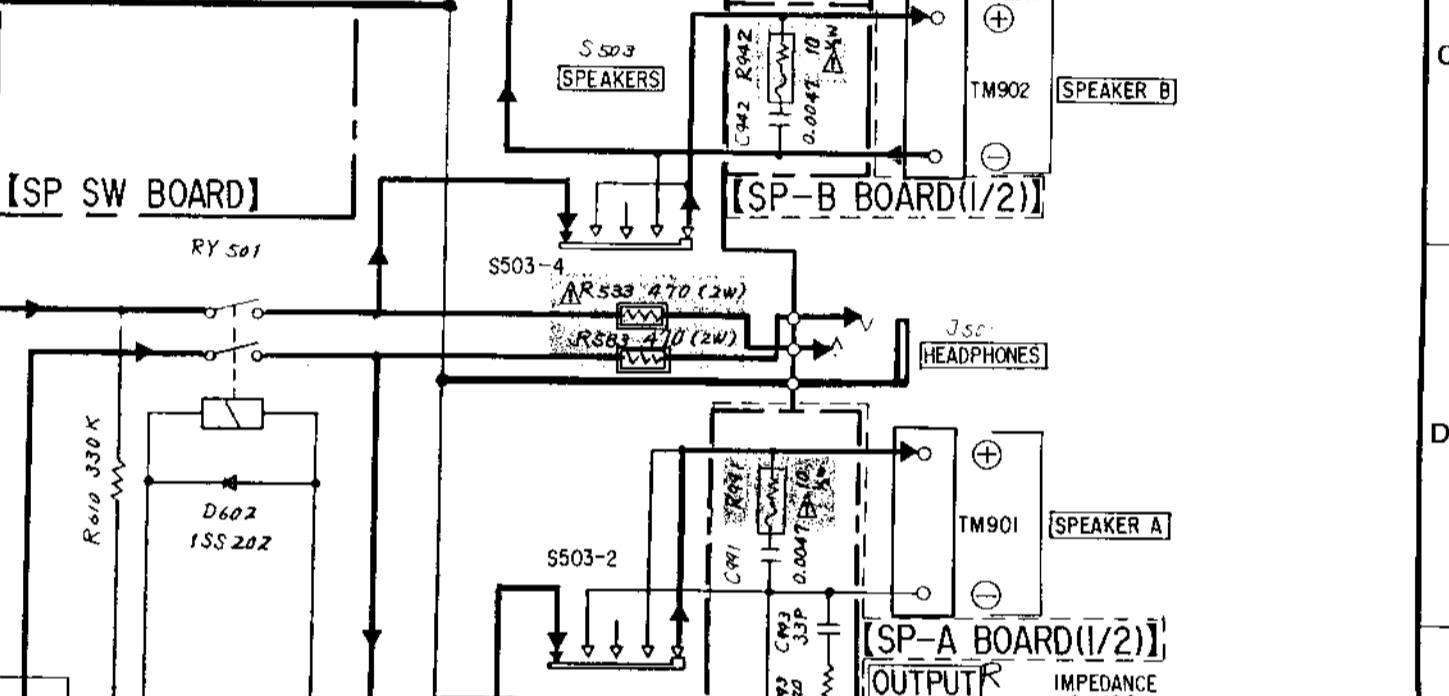
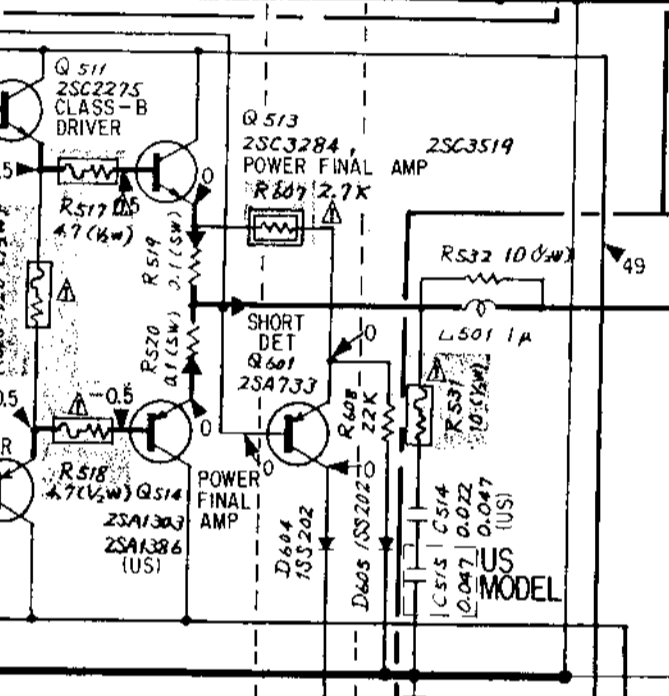
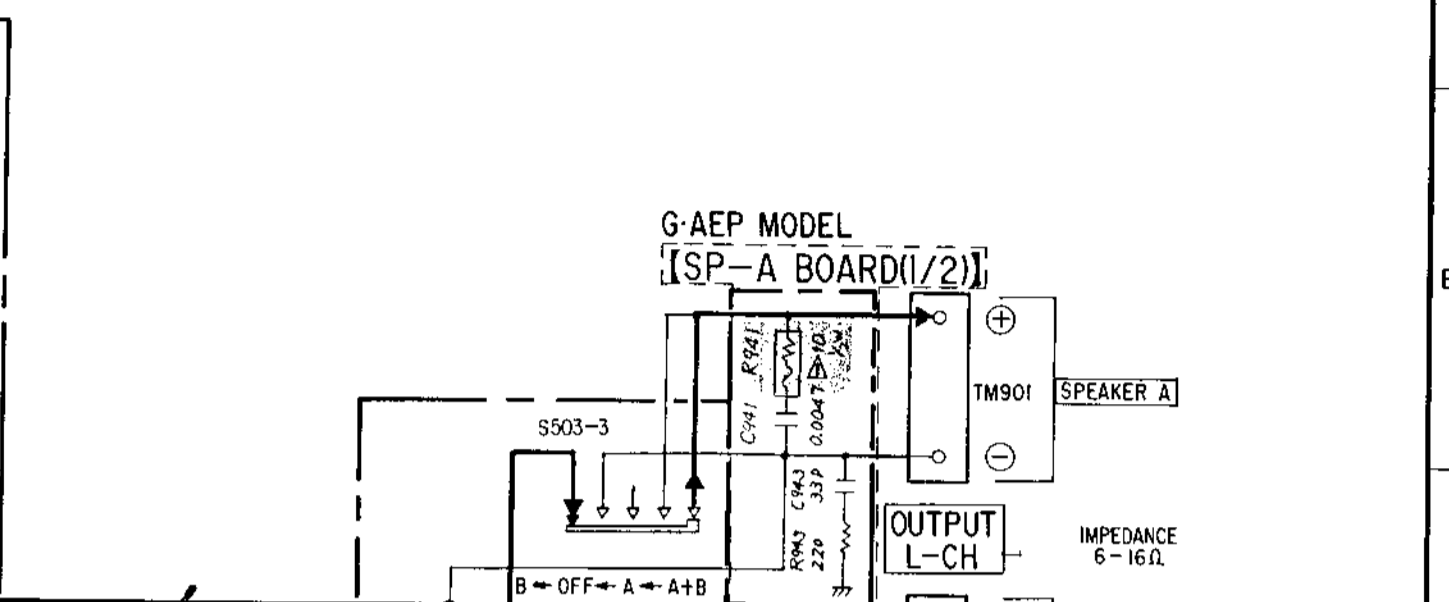
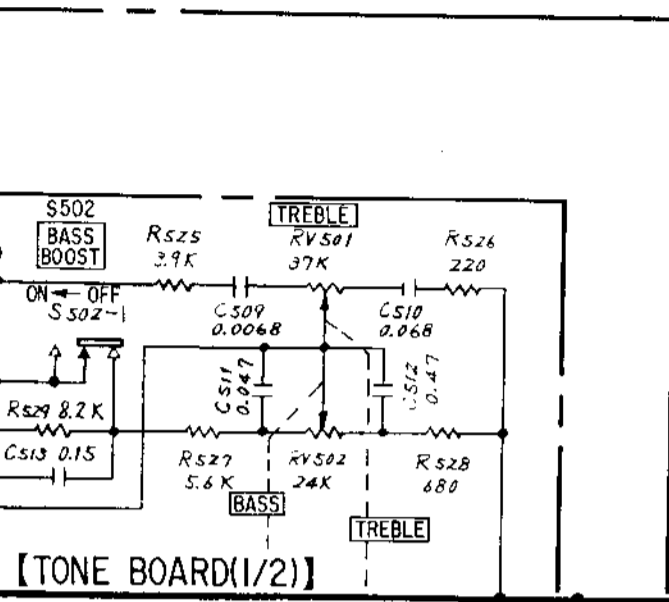
Note:

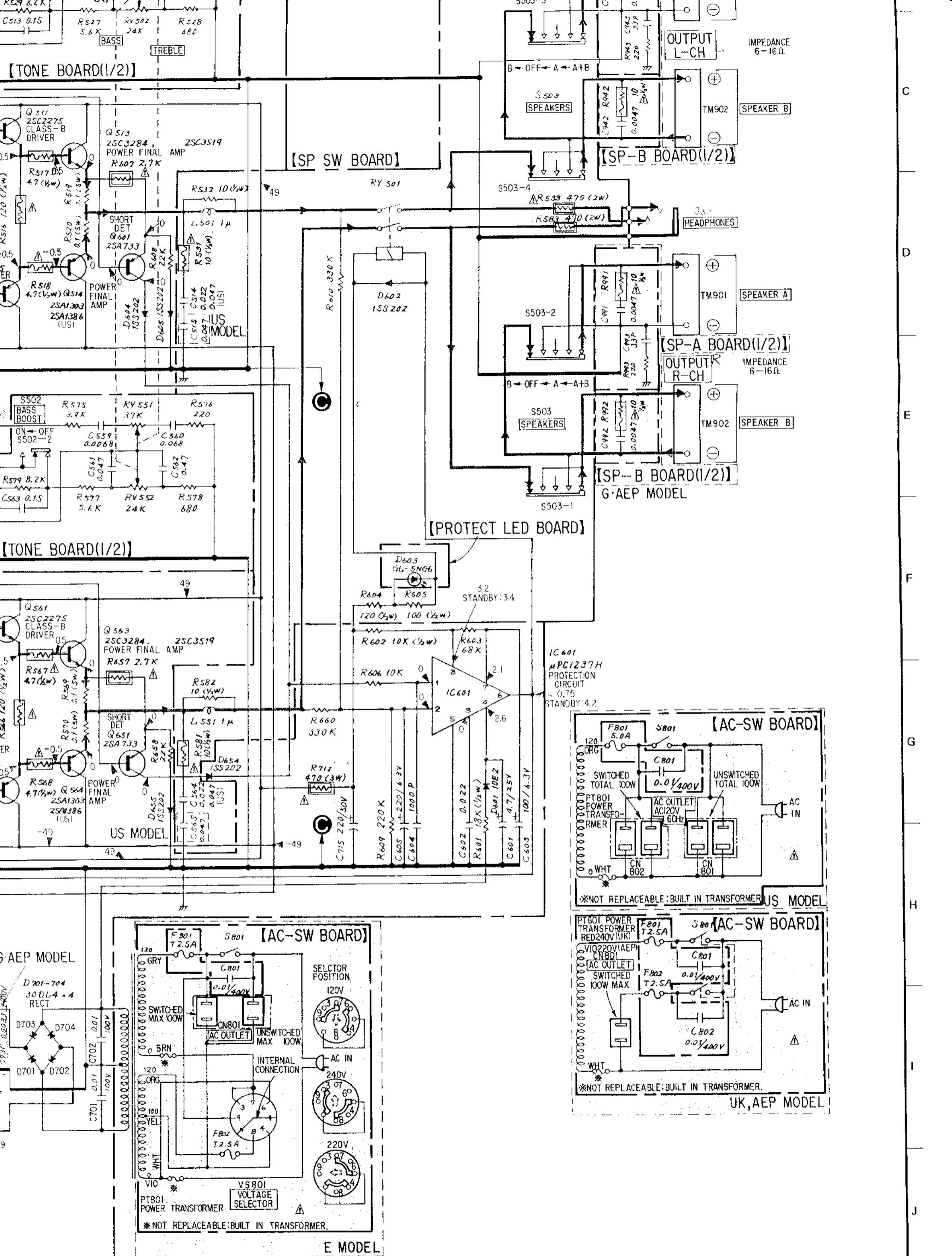
- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified
- \rightarrow : signal path.
- \square : nonflammable resistor.
- \square : fusible resistor.
- \square : B+ bus.
- \square : B- bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (50 k Ω /V)
- Voltage variations may be noted due to normal production tolerances.

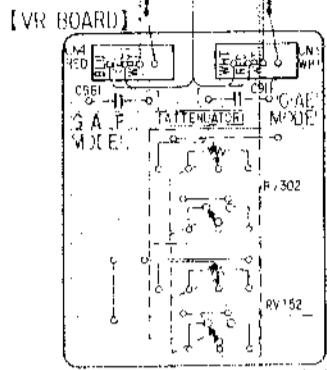




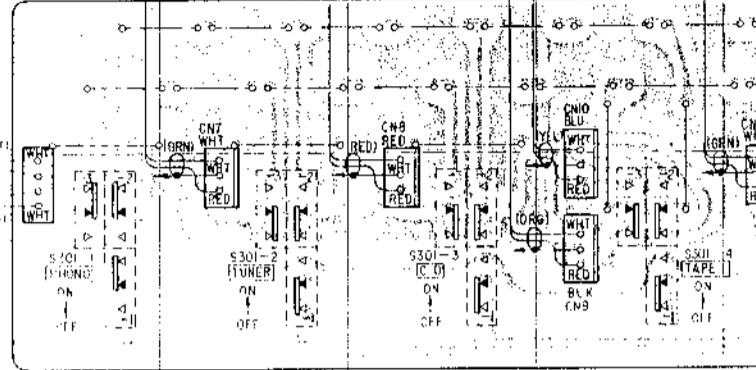
A
B
C
D
E
F
G
H



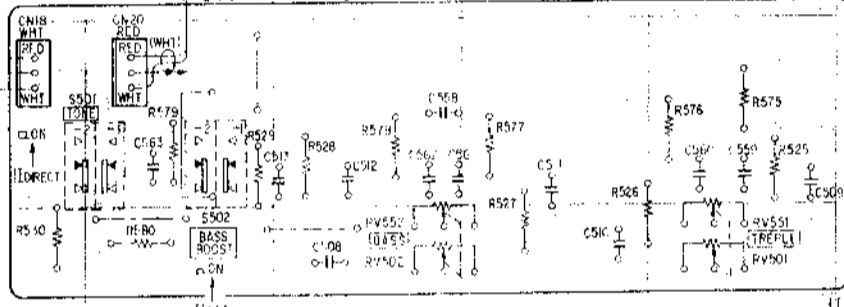




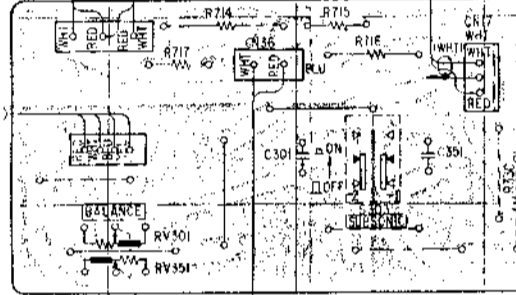
[FUNCTION BOARD]



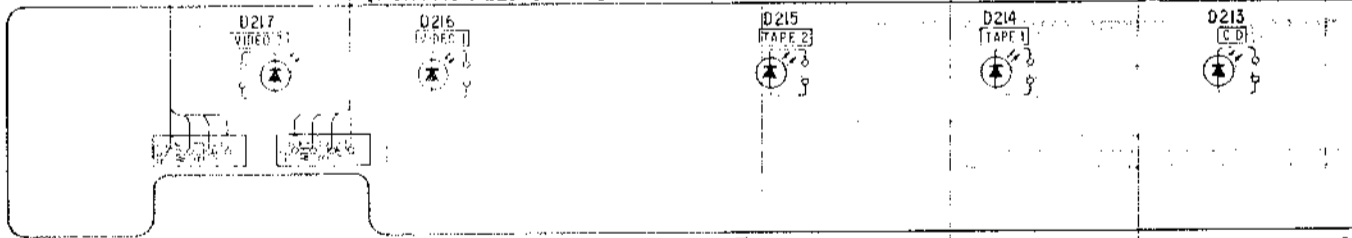
[TONE BOARD]



[BALANCE BOARD]



[FUNCTION LED BOARD]

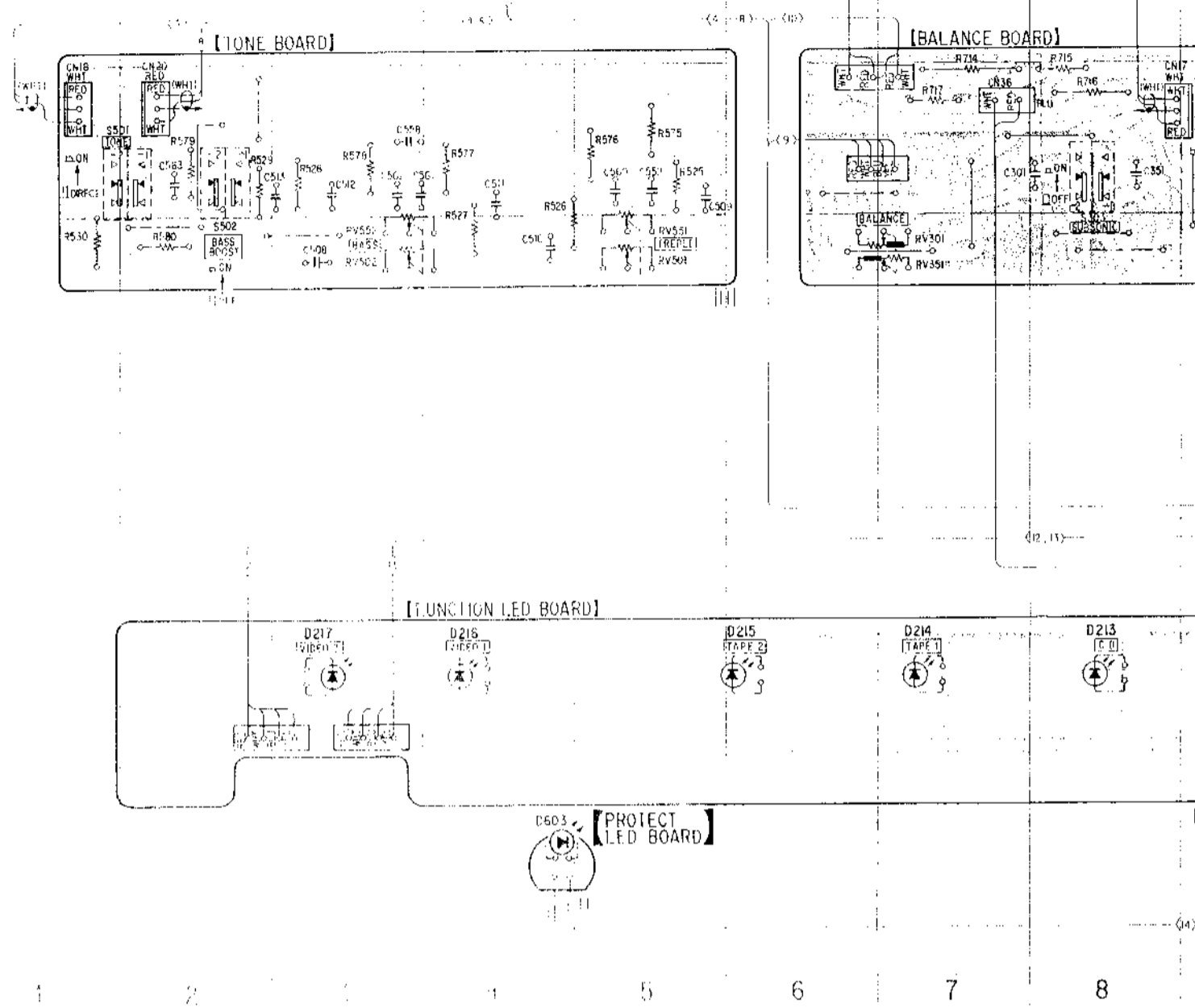


[PROTECT LED BOARD]



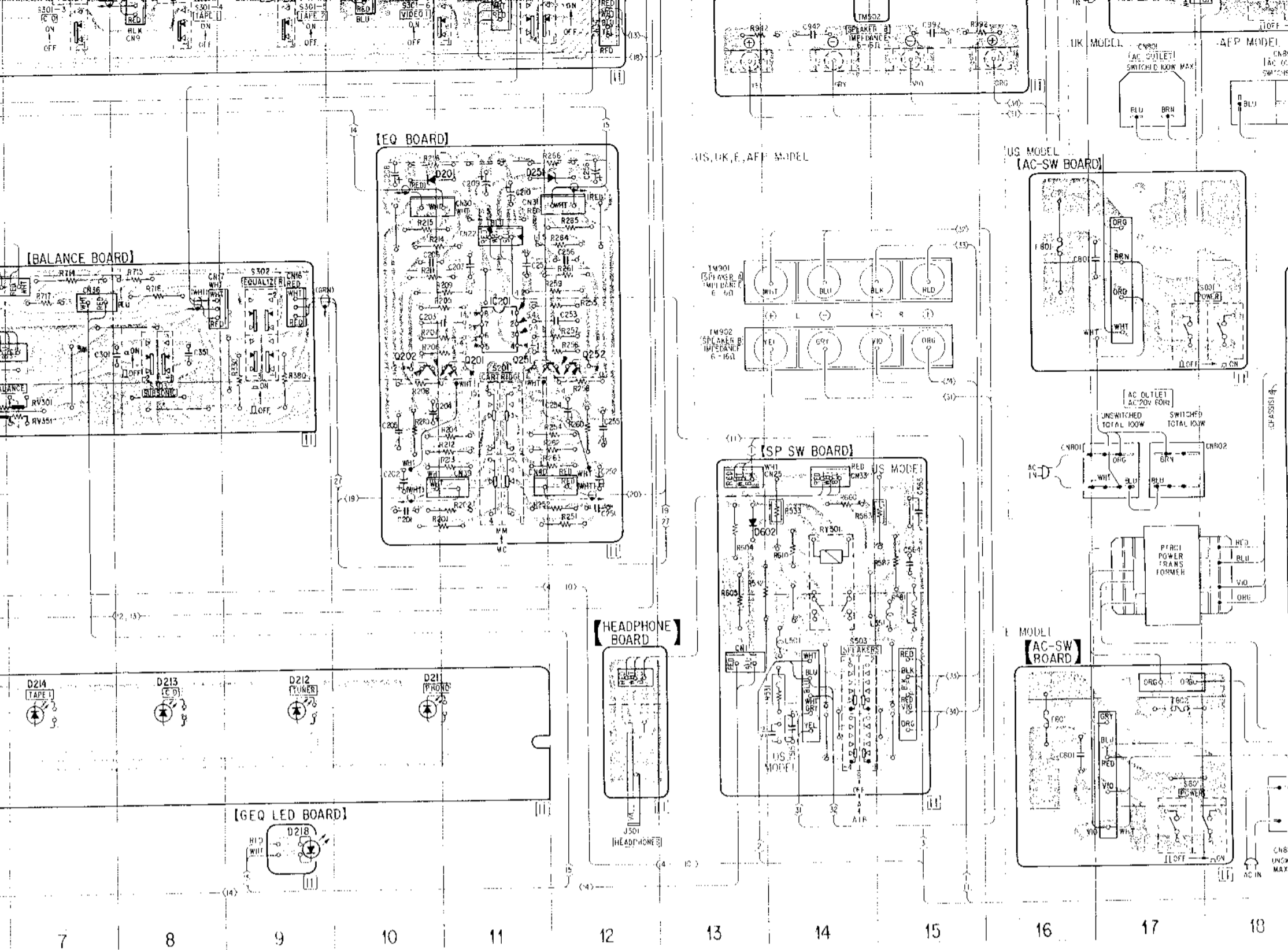
• Semiconductor Lead Layout

NE5532P TL082CP BA4560	2SA1383 2SC3514 2SA771 2SC2275 2SA985P	2SC3284 2SA1303 2SC3519Y 2SA1386Y	GL-2HY1
PC1237H	2SK246-GR2	2SC2603F	30DL4 EQA01-12R RD10EB2 EQA01-06R2 10E-2 RD6.8EB3
1A7220	2SD1310	2SA1027R	anode cathode



• Semiconductor Lead Layout

NE5532P TL082CP BA4560 	2SA1383 2SC3514 2SA771 2SC2275 2SA985P 	2SC3284 2SA1303 2SC3519Y 2SA1386Y 	GL-2HY1
μPC1237H 	ZSK246-GR2 	2SC2603F 	30DL4 EQA01-12R RD10EB2 EQA01-06R2 10E-2 RD6.8EB3 <i>cathode</i>
LA7220 	2SD1310 	2SA1027R 	<i>anode</i>
μPA68H-K 	2SD809 	GL-5NG6 <i>long</i> <i>short</i> <i>anode</i> <i>cathode</i> 	1SS202-1 <i>cathode</i> <i>anode</i>
2SD686B 2SC3627A-I 2SC2545E 2SC1364 			

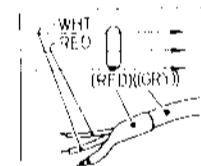


● SEMICONDUCTOR LOCATION

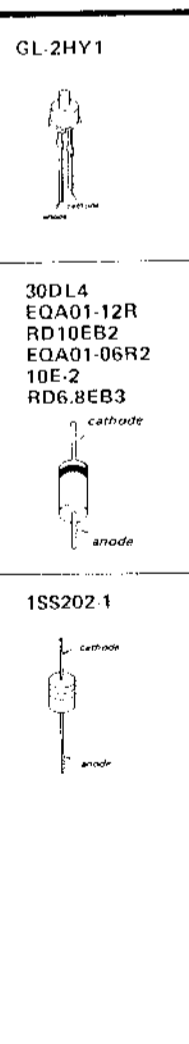
Ref.No.	Location	Ref.No.	Location
IC201	F-11	Q514	F-27
IC301	J-28	Q551	I-21
IC302	I-28	Q552	H-22
IC351	J-27	Q553	H-22
IC401	B-24	Q554	H-22
IC601	I-23	Q555	H-22
Q201	F-11	Q556	H-21
Q202	F-10	Q557	H-21
Q251	F-11	Q558	H-21
Q252	F-12	Q559	G-19
Q401	B-25	Q560	F-22
Q402	B-25	Q561	F-19
Q403	B-26	Q562	F-20
Q404	B-27	Q563	F-23
Q501	I-27	Q564	F-21
Q502	H-26	Q601	G-27
Q503	H-26	Q651	G-20
Q504	H-26	Q701	J-23
Q505	H-26	Q702	J-23
Q506	H-26	Q703	J-23
Q507	H-27	Q704	J-23
Q508	H-27	Q705	J-24
Q509	G-29	Q706	J-24
Q510	F-25	Q707	J-24
Q511	F-28	Q708	J-24
Q512	F-28	Q709	B-28
Q513	F-25		

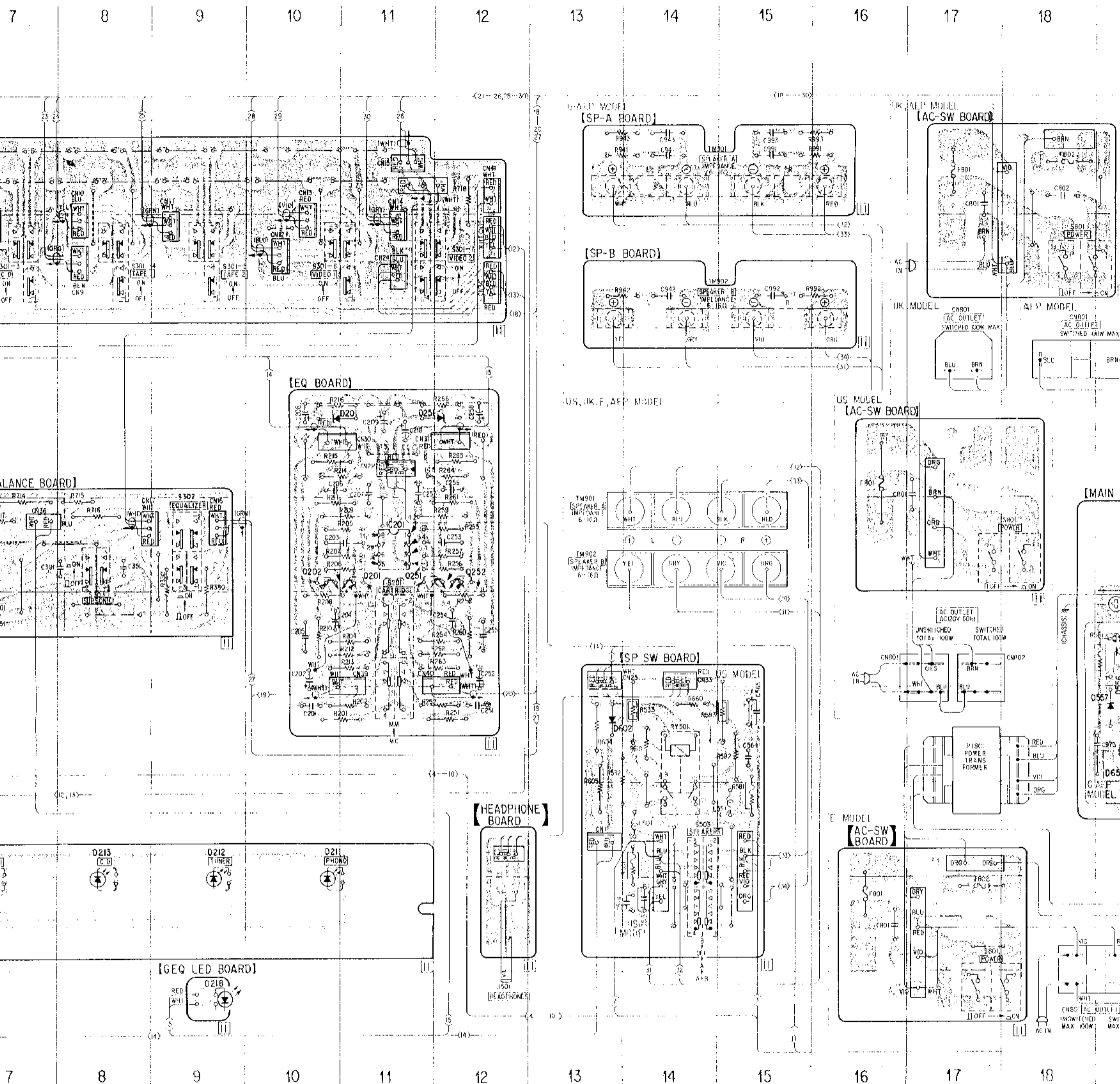
Note:

- Color code of sleeving over the end of



- — : parts extracted from the comp
- — : parts extracted from the cond



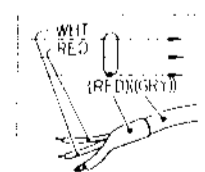


• SEMICONDUCTOR LOCATION

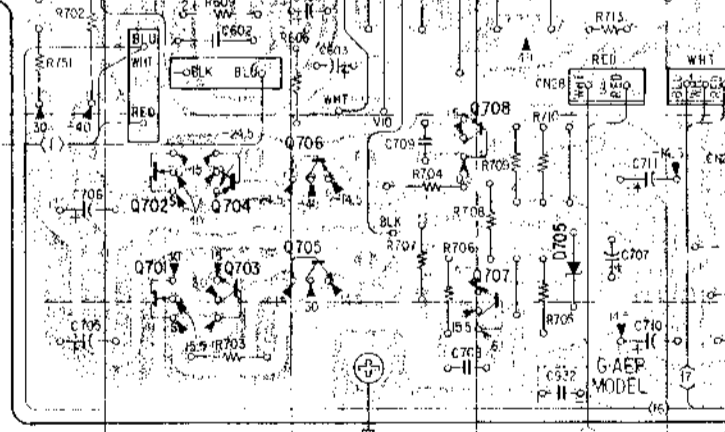
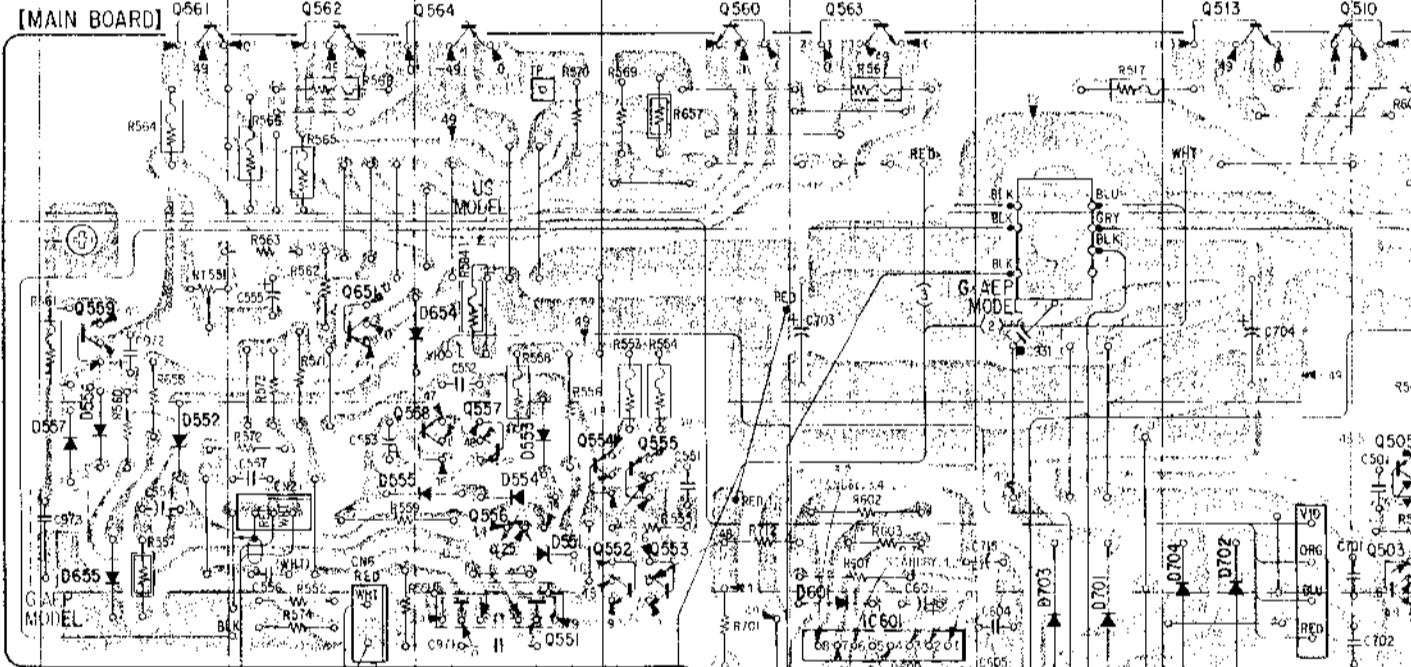
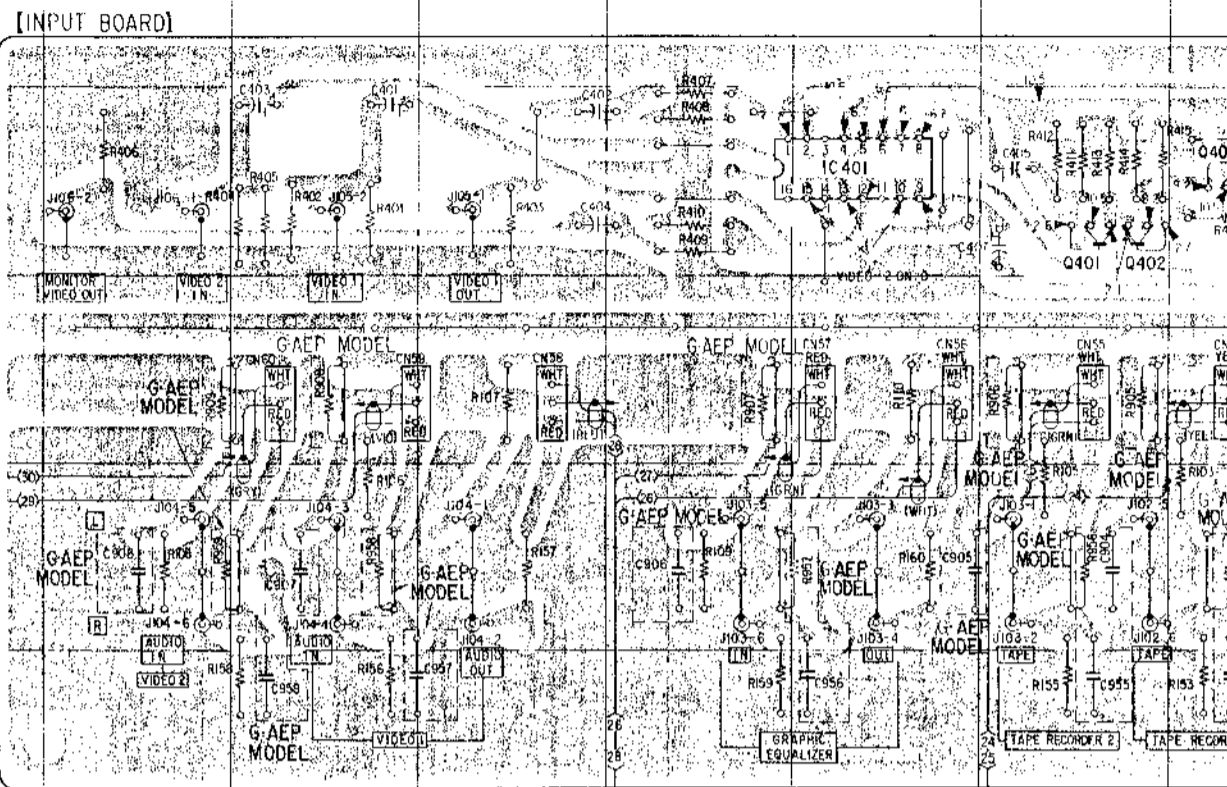
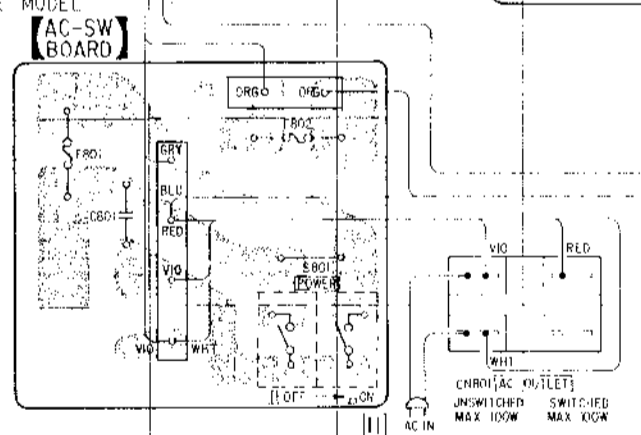
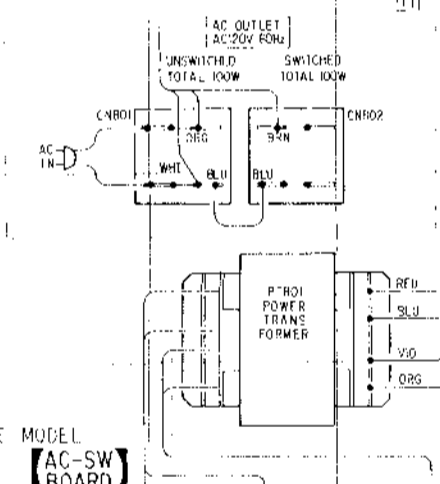
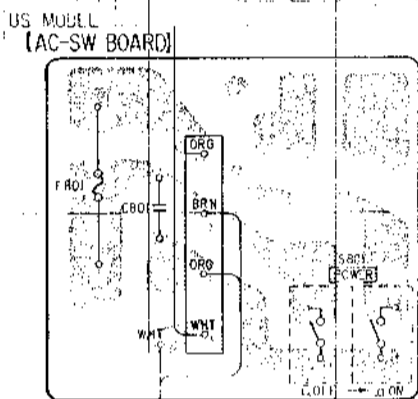
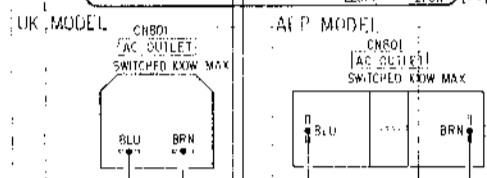
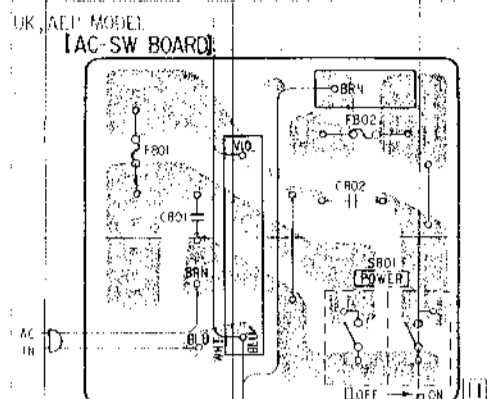
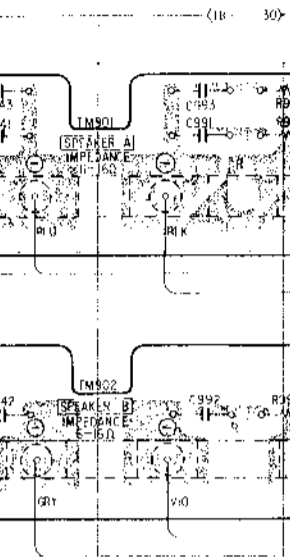
Ref.No.	Location	Ref.No.	Location
IC201	F-11	Q514	F-27
IC301	J-28	Q551	I-21
IC302	I-28	Q552	H-22
IC351	J-27	Q553	H-22
IC401	B-24	Q554	H-22
IC601	I-23	Q555	H-22
Q201	F-11	Q556	H-21
Q202	F-10	Q557	H-21
Q251	F-11	Q558	H-21
Q252	F-12	Q559	G-19
Q401	B-25	Q560	F-22
Q402	B-25	Q561	F-19

Note:

- Color code of sleeving over the end of the jacket.

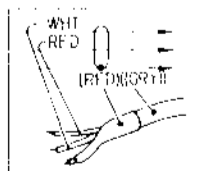


- ○ --- : parts extracted from the component side
- ● --- : parts extracted from the conductor side.

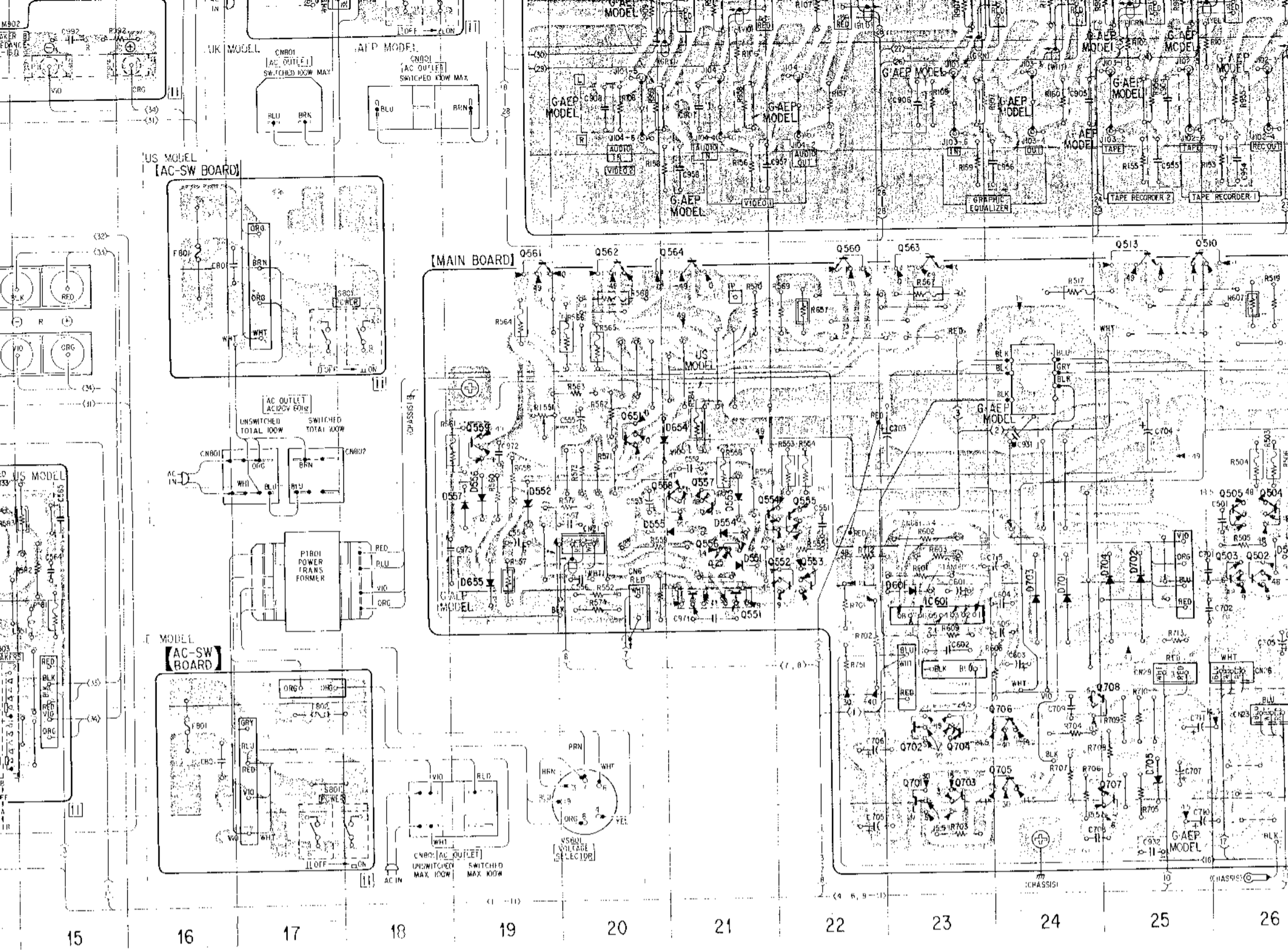


Note:

- Color code of sleeving over the end of the jacket.

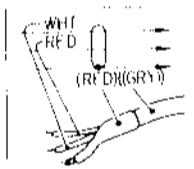


- — : parts extracted from the component side.
- — : parts extracted from the conductor side.

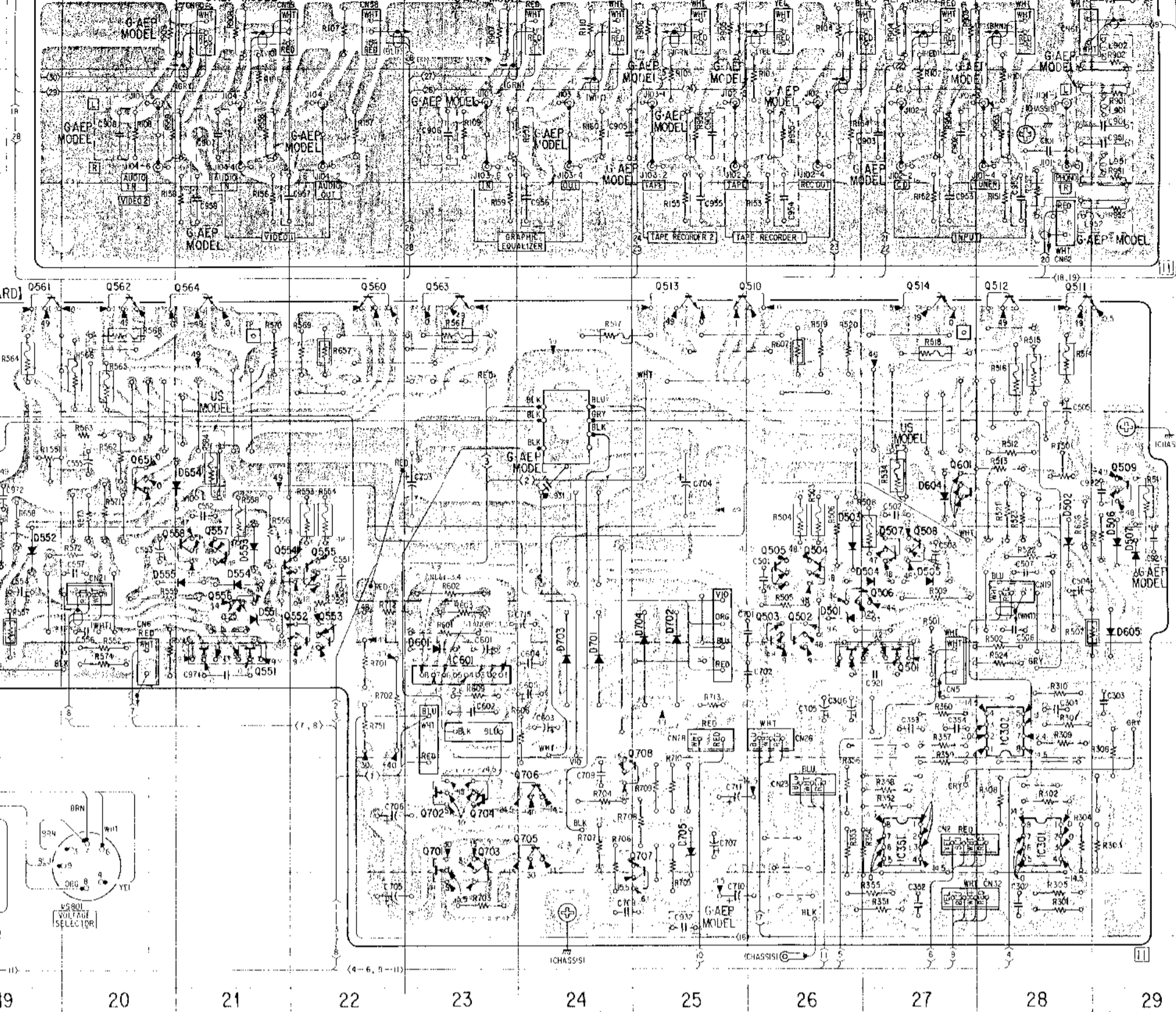


Note:

- Color code of sleeving over the end of the jacket.



- — : parts extracted from the component side.
- — : parts extracted from the conductor side.

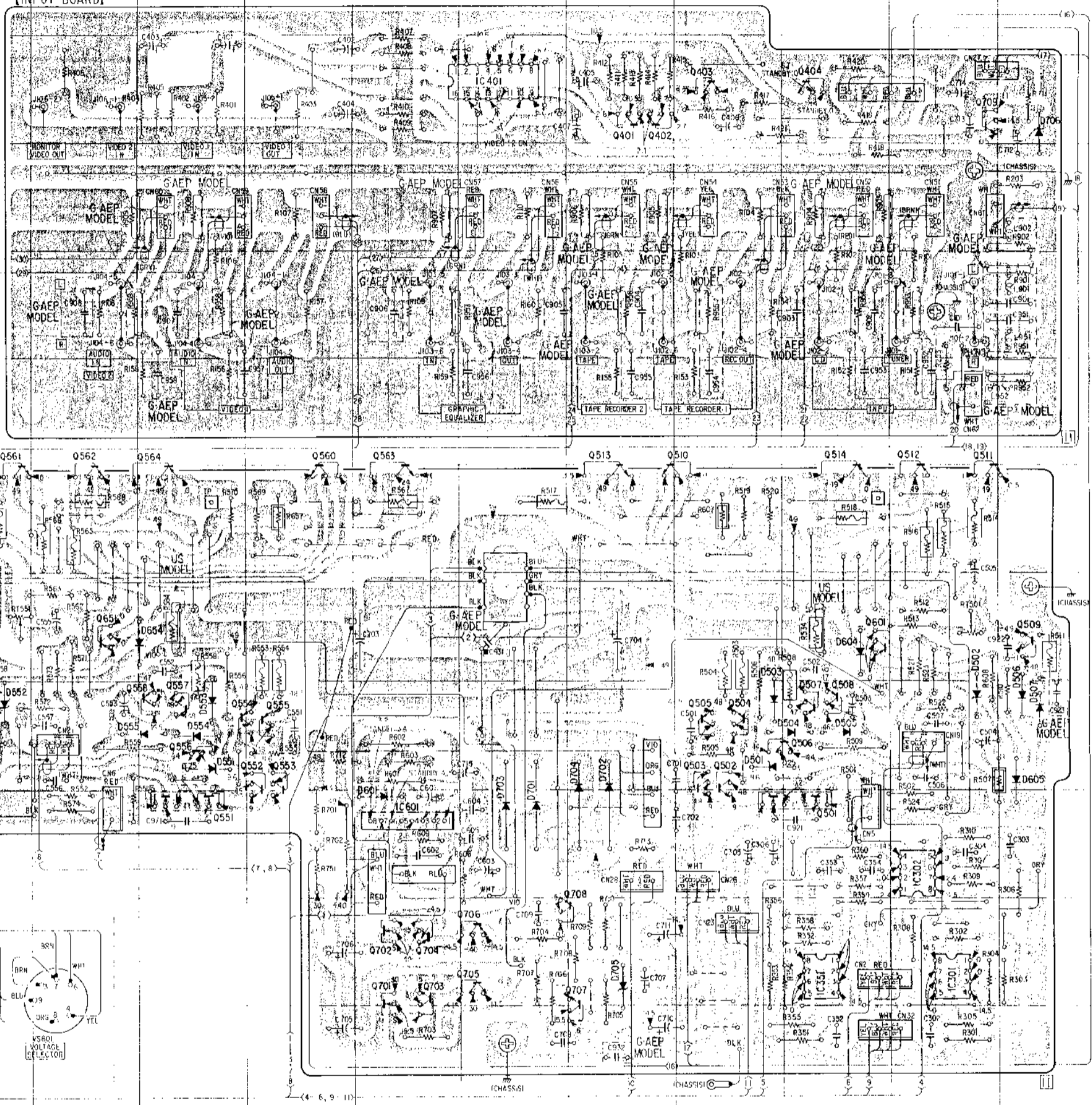


Handwritten mark

20 21 22 23 24 25 26 27 28 29

A
B
C
D
E
F
G
H
J
K

[INPUT BOARD]

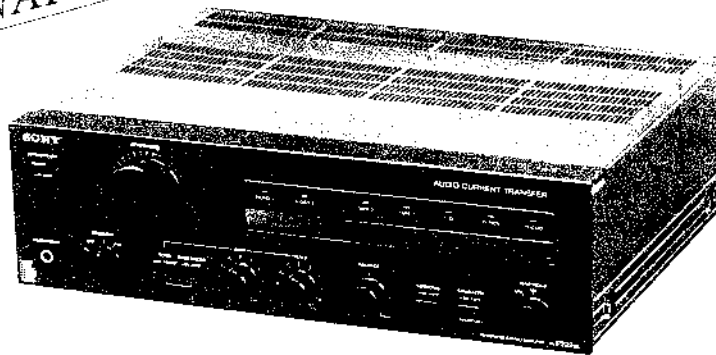


20 21 22 23 24 25 26 27 28 29

SERVICE MANUAL

US Model
AEP Model
UK Model
E Model

PRELIMINARY



SPECIFICATIONS

AUDIO POWER SPECIFICATIONS

US model

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 8-ohm loads, both channels driven, from 20 - 20,000 Hz; rated 80 watts per channel minimum RMS power, with no more than 0.006% total harmonic distortion from 250 milliwatts to rated output.

Harmonic distortion

Less than 0.005 % at 10 watts (6 ohms)
Less than 0.004 % at 10 watts (8 ohms)

Intermodulation (IM) distortion

(60 Hz - 7 kHz = 4 : 1) Less than 0.006 % at rated output (6 ohms)
Less than 0.006 % at rated output (8 ohms)

-- Continued on page 2 --

OTHER SPECIFICATIONS

Amplifier section

Continuous RMS power output

(both channels driven simultaneously)

AEP, UK, E model

At 20 Hz - 20 kHz

80 + 80 watts (0.006% THD, 8 ohms)

At 1 kHz

100 + 100 watts (0.006% THD, 6 ohms)

US model

At 20 Hz - 20 kHz

80 + 80 watts (0.006% THD, 8 ohms)


Power bandwidth (IHF)

10 Hz - 80 kHz

Dynamic headroom

1.2 dB (78 IHF)

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.



INTEGRATED STEREO AMPLIFIER

SONY



TA-F222ES

Slew rate 125 V/μ sec.
250 V/μ sec. (inside)

Dynamic range TUNER, CD, TAPE 1,2, VIDEO 1,2: 120dB

Channel separation (at 1 kHz) PHONO MC: 80 dB
MM: 95 dB
TUNER, CD, TAPE 1,2, VIDEO 1,2: 100dB

Frequency response PHONO: RIAA equalization curve ±0.2 dB
TUNER
CD
TAPE 1,2
VIDEO 1,2 (audio) } 5 Hz - 200 kHz $^{+0}_{-3}$ dB

Residual noise Less than 25 μV (8 ohms, network A)

Damping factor 125 (8 ohms, 1 kHz)

Inputs

	Setting of the CARTRIDGE load selector	Sensitivity	Impedance	Maximum input capability (1 kHz)	S/N (weighting network, input level)
PHONO	MM	2.5 mV	50 kilohms	150 mV	87 dB 83 dB* (A, 2.5 mV)
	MC	0.17 mV	100 ohms	9 mV	68 dB 71 dB* (A, 170 μV)
TUNER, CD, TAPE 1,2, VIDEO 1,2 (audio)		150 mV	50 kilohms		97 dB 102 dB* (A, 150 mV)

* 78 IHF

Outputs

VIDEO 1,2
Voltage 1 Vp-p
Impedance 75 ohms

REC OUT 1
Voltage 150 mV
Impedance 1 kilohms

SPEAKER A, B
Accepts speakers of 6 - 16 ohms.

HEADPHONES
Accepts low and high impedance headphones.

VIDEO 1 OUT (audio) 150 mV 1 kilohms

VIDEO 1 OUT 1 Vp-p 75 ohms

Tone controls BASS
±8 dB at 60 Hz (turnover freq. 300 Hz)

TREBLE
±6 dB at 10 kHz (turnover freq. 5 kHz)

Bass boost +5 dB at 50 Hz

Subsonic filter 6 dB/octave attenuation below 15 Hz

General System Integrated stereo amplifier

Power amplifier section Legato linear, pure-complementary, Darlington OCL SEPP amplifier

Preamplifier section Equalizer section: Low-noise equalizer amp (MC or MM cartridge load selectable)

Audio Current Transfer section: Bridge-balance type voltage-to-current converter with dc servo amp

Power requirements AEP model: 220 V ac, 50/60 Hz
UK model: 240 V ac, 50 Hz
US model: 120 V ac, 60 Hz
E model: 120, 220, or 240 V ac adjustable, 50/60 Hz

Power consumption AEP, UK, E model: 200W
US model: 250W

AC outlets AEP, UK model: 1 switched, 100 watts max.
US model: 2 switched, total 100 watts max.
2 unswitched, total 100 watts max.
E model: 1 switched, 100 watts max.
1 unswitched 100 watts max.

Dimensions Approx. 430 x 130 x 375 mm (w/h/d)
(17 x 5 1/8 x 14 7/8 inches)

Weight including projecting parts and controls
AEP, UK, E model:
Approx. 11.5 kg (25 lbs 6 oz) net
Approx. 13 kg (28 lbs 11 oz) in shipping carton
US model:
Approx. 12.1 kg (26 lbs 11 oz) net
Approx. 13.6 kg (30 lbs) in shipping carton


EXPLODED VIEWS AND PARTS LIST

NOTE:

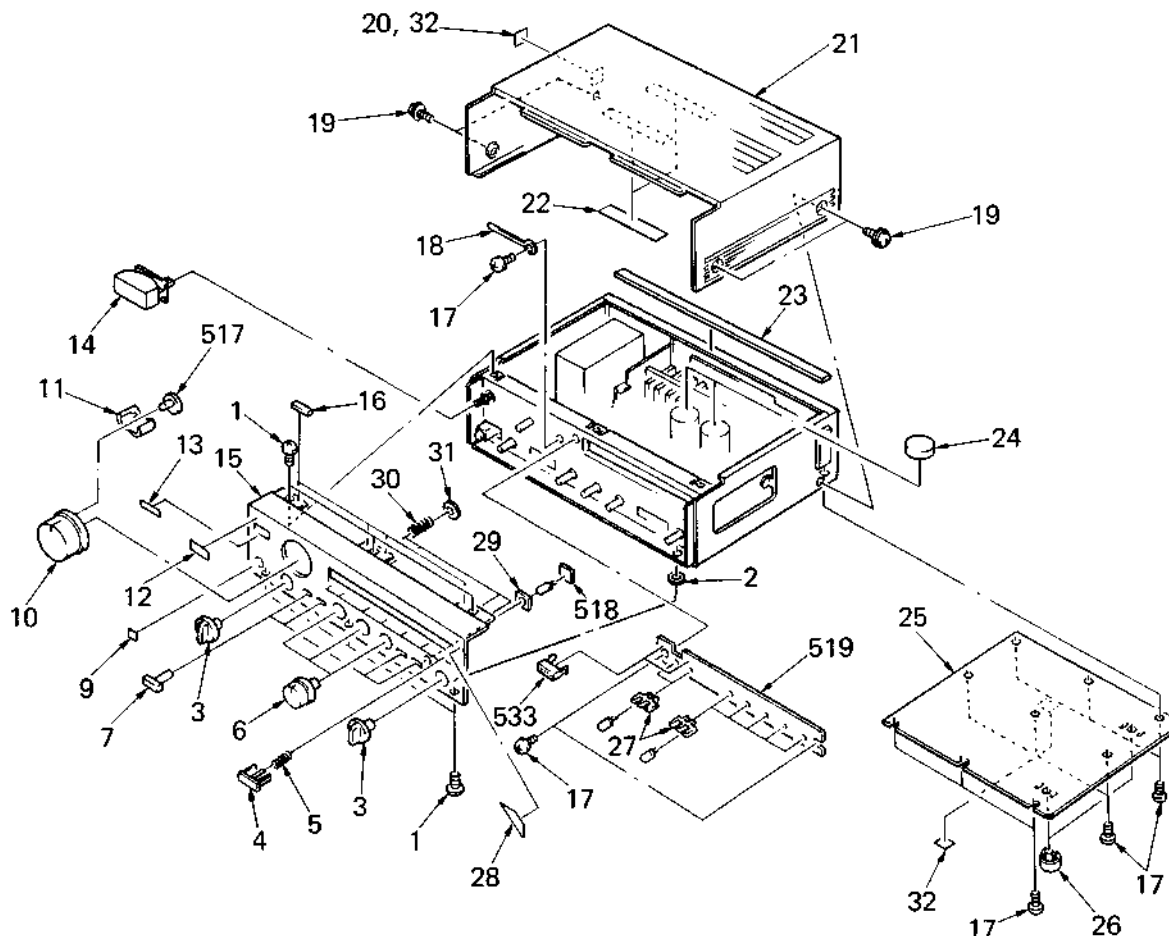
The mechanical parts with no reference number in the exploded views are not supplied.

Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

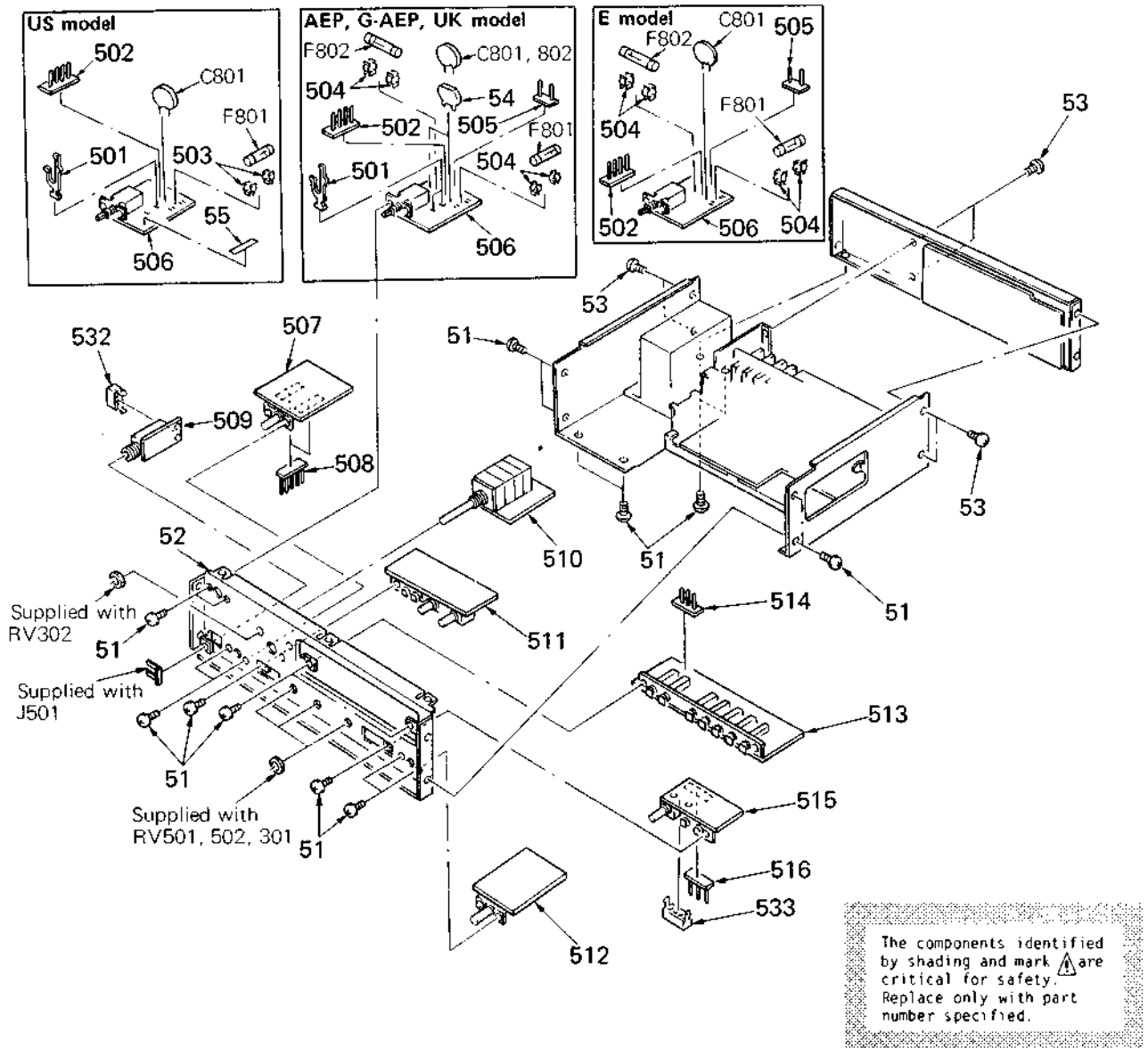
(1).



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	7-685-751-09	SCREW +BVTT 3X6 (S)		20	3-703-079-21	(UK)...LABEL, CAUTION (BACK)	
2	4-402-063-11	SHEET, INSULATING		21	4-885-927-21	CASE	
3	4-908-838-01	KNOB, SQUARE		22	*4-885-983-11	SHEET	
4	4-908-836-01	KNOB, PUSH		23	*4-848-642-00	CUSHION, VIBRATION	
5	2-267-020-00	SPRING, COMPRESSION		24	*4-908-834-01	CUSHION	
6	4-908-839-01	KNOB, ROUND		25	*4-885-922-02	PLATE, BOTTOM	
7	4-885-956-01	KNOB, PUSH		26	X-4864-303-0	FOOT ASSY	
9	3-703-710-41	STICKER, SONY SYMBOL (12)		27	*4-905-210-01	HOLDER, LED	
10	X-4885-908-1	KNOB (NA-50) ASSY, R		28	4-889-813-21	STICKER (C)	
11	*4-901-919-00	HOUSE, LED LAMP		29	*4-908-835-01	BRACKET, LED	
12	*3-701-690-00	(UK)...LABEL (MADE IN JAPAN)		30	4-866-652-00	SPRING, COMPRESSION	
13	3-304-974-01	EMBLEM, SONY		31	4-862-338-00	RING, STOPPER	
14	X-4885-901-0	KNOB ASSY, POWER		32	*3-703-680-00	(US)...LABEL, CAUTION, SUB, NEW UL	
15	X-4885-915-1	PANEL ASSY		517	*1-616-514-11	PC BOARD, PROTECT LED	
16	9-911-845-XX	CUSHION, COUNTER		518	*1-616-519-11	PC BOARD, GEO LED	
17	7-685-871-01	SCREW +BVTT 3X6 (S)		519	*1-616-518-11	PC BOARD, FUNCTION LED	
18	*3-701-822-00	HOLDER, WIRE		533	*1-562-249-00	SOCKET, CONNECTOR 4P	
19	4-889-321-11	SCREW					

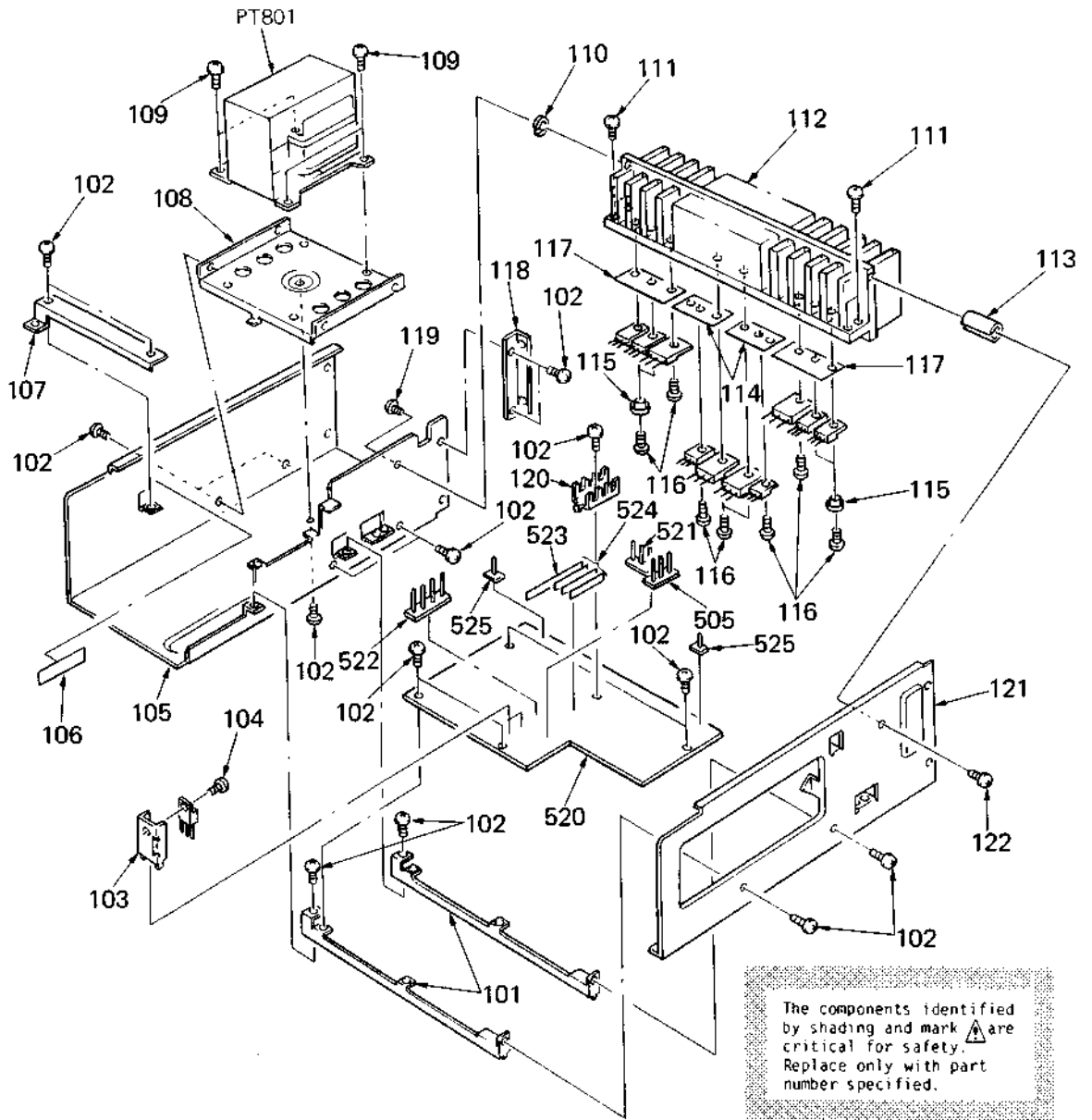
TA-F222ES

(2).



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	7-685-871-01	SCREW +BVTT 3X6 (S)		509	*1-616-517-11	PC BOARD, H.P.	
52	*4-908-840-01	CHASSIS, SUB		510	*1-616-515-11	PC BOARD, VR	
53	7-685-751-09	SCREW +BVTT 3X6 (S)		511	*1-616-516-12	PC BOARD, TONE	
54	4-875-455-01	(AEP,G-AEP,UK)...COVER (DIA.20), CAPACITOR		512	*1-616-511-11	PC BOARD, EQ	
55	3-701-946-21	(US)...LABEL, FUSE		513	*1-616-512-12	PC BOARD, FUNCTION	
501	1-535-416-00	(US,AEP,G-AEP,UK)...TERMINAL		514	*1-508-810-00	14MM BASE POST	
502	*1-535-141-00	BASE POST 22MM (10MM PITCH) 4P		515	*1-616-513-11	PC BOARD, BALANCE	
503	1-533-185-11	(US).....HOLDER, FUSE		516	*1-535-116-00	TERMINAL	
504	1-533-183-11	(AEP,G-AEP,UK,E)...HOLDER, FUSE		532	*1-562-327-00	SOCKET, CONNECTOR 3P	
505	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P		533	*1-562-249-00	SOCKET, CONNECTOR 4P	
506	*1-616-509-11	PC BOARD, AC-SW		F801	⚠.1-532-272-XX	(US)...FUSE 5.0A	
507	*1-616-506-11	PC BOARD, SP CHANGE		F801	⚠.1-532-286-00	(AEP,G-AEP,UK,E)...FUSE 2.5A TIME-LAG	
508	*1-535-118-00	TERMINAL		F802	⚠.1-532-286-00	(AEP,G-AEP,UK,E)...FUSE 2.5A TIME-LAG	

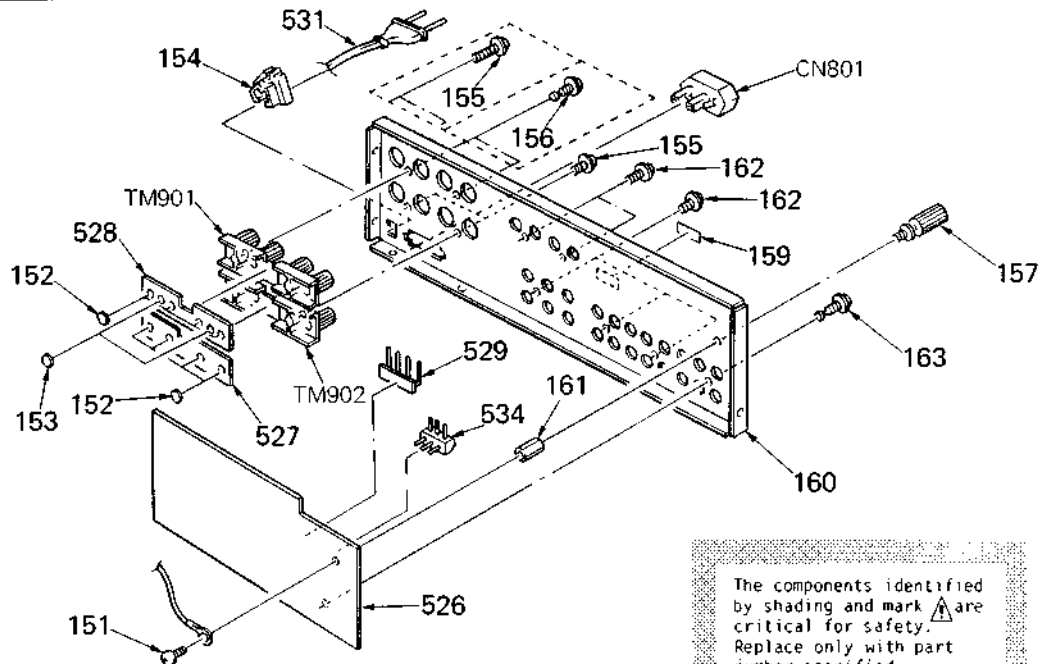
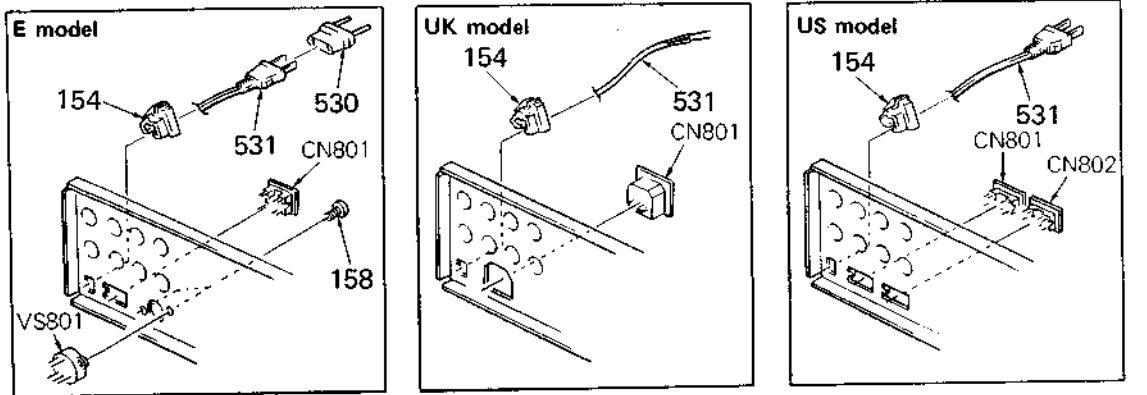
(3).









No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
101	*4-889-824-00	CHANNEL		119	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
102	7-685-871-01	SCREW +BVTT 3X6 (S)		120	*4-880-404-01	(AEP,G-AEP,UK,E).....PLATE, GROUND	
103	*3-309-144-01	HEAT SINK			*4-880-404-11	(US)....PLATE, GROUND, CONCENTRATION	
104	2-259-121-11	SCREW, TR		121	*4-889-826-00	PLATE, SIDE, RIGHT	
105	*4-889-829-00	PLATE, SIDE, LEFT		122	7-685-649-19	SCREW +BVTP 3X14 TYPE2 N-S	
106	*3-703-044-26	(US)....LABEL, CAUTION		505	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P	
107	*4-885-980-01	REINFORCEMENT		520	*A-4388-480-A	(US).....MOUNTED PCB, MAIN	
108	*4-885-916-00	BRACKET, TRANSFORMER			*A-4388-481-A	(AEP,UK,E)...MOUNTED PCB, MAIN	
109	7-685-881-01	SCREW +BVTT 4X8 (S)			*A-4388-482-A	(G-AEP).....MOUNTED PCB, MAIN	
110	4-908-811-01	SPACER		521	*1-535-115-00	TERMINAL	
111	7-685-876-01	SCREW +BVTT 3X16 (S)		522	*1-535-117-00	TERMINAL	
112	*4-885-998-11	HEAT SINK		523	*1-560-242-11	BUS BAR 3P	
113	4-908-809-01	SPACER		524	*1-560-242-61	BUS BAR 2P	
114	*4-885-995-01	SHEET, INSULATING		525	*1-535-114-00	TERMINAL	
115	2-371-561-00	BUSHING (P), INSULATING		PT801A	1-448-173-11	(US).....TRANSFORMER, POWER	
116	2-259-121-21	SCREW, TR		PT801A	1-448-264-11	(UK).....TRANSFORMER, POWER	
117	*4-908-815-01	SHEET, INSULATING		PT801A	1-448-265-11	(E).....TRANSFORMER, POWER	
118	*4-889-819-00	BRACKET		PT801A	1-448-266-11	(AEP,G-AEP)...TRANSFORMER, POWER	

TA-F222ES

(4).



The components identified by shading and mark  are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
151	7-685-871-01	SCREW +BVTT 3X6 (S)		163	4-887-711-21	SCREW, TERMINAL, CLAW, +BVTP	
152	*4-843-416-11	(G-AEP)...PLATE, FIXED, CAP		526	*1-616-505-12	PC BOARD, INPUT	
153	*4-908-843-01	(G-AEP)...PLATE		527	*1-616-507-11	(G-AEP)...PC BOARD, SP-B	
154	3-703-244-00	(US, AEP, G-AEP, UK)...BUSHING (2104), CORD		528	*1-616-508-11	(G-AEP)...PC BOARD, SP-A	
	3-703-571-00	(E)...BUSHING (S)(4516), CORD		529	*1-508-831-12	H TYPE BASE POST	
155	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		530	 1-526-565-00	(E)...AC PLUG ADAPTOR	
156	3-703-473-00	(G-AEP)...SCREW, TERMINAL		531	 1-551-884-00	(UK)...CORD, POWER	
157	X-4854-207-0	TERMINAL ASSY, GROUND			 1-556-795-00	(AEP, G-AEP)...CORD, POWER	
158	7-685-751-09	SCREW +BVTT 3X6 (S)			 1-556-091-00	(E)...CORD, POWER	
159	*4-908-827-01	(US)...LABEL, MODEL NUMBER (U2)			 1-557-577-11	(US)...CORD, POWER	
	*4-908-828-01	(E)...LABEL, MODEL NUMBER (E2/3)		534	*1-508-878-00	BASE POST	
	*4-908-829-01	(AEP)...LABEL, MODEL NUMBER (AE1)		CN801A	1-526-695-00	(E)...OUTLET, AC (2 GANG)	
	*4-908-830-01	(G-AEP)...LABEL, MODEL NUMBER (AE4)		CN801A	1-526-751-00	(UK)...OUTLET, AC	
	*4-908-831-01	(UK)...LABEL, MODEL NUMBER (UK1)		CN801A	1-526-794-11	(AEP, G-AEP)...OUTLET, AC	
160	*4-908-842-11	(US)...PLATE, JACK		CN801A	1-526-883-00	(US)...OUTLET, AC	
	*4-908-842-21	(AEP, G-AEP)...PLATE, JACK		CN802A	1-526-883-00	(US)...OUTLET, AC	
	*4-908-842-31	(UK)...PLATE, JACK		TM901	1-536-767-00	TERMINAL BOARD, SPEAKER	
	*4-908-842-41	(E)...PLATE, JACK		TM902	1-536-767-00	TERMINAL BOARD, SPEAKER	
161	*2-280-622-41	SUPPORT (M3), HEXAGON		VS801A	1-526-576-31	(E)...SELECTOR, POWER VOLTAGE	
162	3-701-589-21	SCREW, SELF-TAPPING					

ELECTRICAL PARTS LIST

NOTE:

Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF:μF, PF:μuF.

RESISTORS

All resistors are in ohms.
F : nonflammable

COILS

MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : u, for example:

UA....: μA..., UPA....: μPA..., UPC....: μPC,

UPD....: μPD...

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
501	1-535-416-00	(US,AEP,G-AEP,UK)...TERMINAL
502	*1-535-141-00	BASE POST 22MM (10MM PITCH) 4P
503	1-533-185-11	(US).....HOLDER, FUSE
504	1-533-183-11	(AEP,G-AEP,UK,E)...HOLDER, FUSE
505	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P
506	*1-616-509-11	PC BOARD, AC-SW
507	*1-616-506-11	PC BOARD, SP CHANGE
508	*1-535-118-00	TERMINAL
509	*1-616-517-11	PC BOARD, H.P.
510	*1-616-515-11	PC BOARD, VR
511	*1-616-516-12	PC BOARD, TONE
512	*1-616-511-11	PC BOARD, EQ
513	*1-616-512-12	PC BOARD, FUNCTION
514	*1-508-810-00	14MM BASE POST
515	*1-616-513-11	PC BOARD, BALANCE
516	*1-535-116-00	TERMINAL
517	*1-616-514-11	PC BOARD, PROTECT LED
518	*1-616-519-11	PC BOARD, GEQ LED
519	*1-616-518-11	PC BOARD, FUNCTION LED
520	*A-4388-480-A	(US).....MOUNTED PCB, MAIN
	*A-4388-481-A	(AEP,UK,E)...MOUNTED PCB, MAIN
	*A-4388-482-A	(G-AEP).....MOUNTED PCB, MAIN
521	*1-535-115-00	TERMINAL
522	*1-535-117-00	TERMINAL
523	*1-560-242-11	BUS BAR 3P
524	*1-560-242-61	BUS BAR 2P
525	*1-535-114-00	TERMINAL
526	*1-616-505-12	PC BOARD, INPUT
527	*1-616-507-11	(G-AEP)...PC BOARD, SP-B
528	*1-616-508-11	(G-AEP)...PC BOARD, SP-A
529	*1-508-831-12	H TYPE BASE POST
530	Δ 1-526-565-00	(E)....AC PLUG ADAPTOR
531	Δ 1-551-884-00	(UK).....CORD, POWER
	Δ 1-555-795-00	(AEP,G-AEP)...CORD, POWER
	Δ 1-556-091-00	(E).....CORD, POWER
	Δ 1-557-577-11	(US).....CORD, POWER
532	*1-562-327-00	SOCKET, CONNECTOR 3P
533	*1-562-249-00	SOCKET, CONNECTOR 4P
534	*1-508-878-00	BASE POST
C101	1-161-317-00	CERAMIC 330PF 10% 50V
C201	1-102-112-00	CERAMIC 330PF 10% 50V
C202	1-123-369-00	ELECT 4.7MF 20% 25V
C203	1-161-383-00	CERAMIC 0.0047MF 10% 50V
C204	1-123-333-00	ELECT 100MF 20% 16V
C205	1-130-341-00	FILM 0.056MF 3% 100V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C206	1-130-971-00	FILM 0.016MF 3% 100V
C207	1-124-183-00	ELECT 2.2MF 20% 50V
C208	1-123-307-00	ELECT 100MF 20% 10V
C209	1-123-330-00	ELECT 22MF 20% 25V
C210	1-123-330-00	ELECT 22MF 20% 25V
C251	1-102-112-00	CERAMIC 330PF 10% 50V
C252	1-123-369-00	ELECT 4.7MF 20% 25V
C253	1-161-383-00	CERAMIC 0.0047MF 10% 50V
C254	1-123-333-00	ELECT 100MF 20% 16V
C255	1-130-341-00	FILM 0.056MF 3% 100V
C256	1-130-971-00	FILM 0.016MF 3% 100V
C257	1-124-183-00	ELECT 2.2MF 20% 50V
C258	1-123-307-00	ELECT 100MF 20% 10V
C301	1-136-169-00	FILM 0.22MF 5% 50V
C302	1-124-183-00	ELECT 2.2MF 20% 50V
C303	1-124-183-00	ELECT 2.2MF 20% 50V
C304	1-124-183-00	ELECT 2.2MF 20% 50V
C305	1-123-330-00	ELECT 22MF 20% 25V
C306	1-123-330-00	ELECT 22MF 20% 25V
C351	1-136-169-00	FILM 0.22MF 5% 50V
C352	1-124-183-00	ELECT 2.2MF 20% 50V
C353	1-124-183-00	ELECT 2.2MF 20% 50V
C354	1-124-183-00	ELECT 2.2MF 20% 50V
C401	1-123-645-00	ELECT 33MF 20% 10V
C402	1-123-311-00	ELECT 1000MF 20% 10V
C403	1-123-645-00	ELECT 33MF 20% 10V
C404	1-123-311-00	ELECT 1000MF 20% 10V
C405	1-123-645-00	ELECT 33MF 20% 10V
C406	1-123-645-00	ELECT 33MF 20% 10V
C407	1-123-645-00	ELECT 33MF 20% 10V
C501	1-102-110-00	CERAMIC 220PF 10% 50V
C502	1-102-945-00	CERAMIC 8PF 1PF 50V
C503	1-123-306-00	ELECT 47MF 20% 10V
C504	1-123-307-00	ELECT 100MF 20% 10V
C505	1-123-306-00	ELECT 47MF 20% 10V
C506	1-124-183-00	ELECT 2.2MF 20% 50V
C507	1-102-947-00	CERAMIC 10PF 5% 50V
C508	1-124-186-00	ELECT 10MF 20% 50V
C509	1-102-127-21	CERAMIC 0.0068MF 10% 50V
C510	1-161-061-91	CERAMIC 0.068MF 10% 50V
C511	1-161-059-00	CERAMIC 0.047MF 10% 50V
C512	1-136-173-00	FILM 0.47MF 5% 50V
C513	1-136-167-00	FILM 0.15MF 5% 50V
C514	1-161-161-00	(US)....CERAMIC 0.047MF 10% 50V
C514	1-161-055-00	(UK,AEP,G-AEP,E) ...CAP, CERAMIC 0.022MF 10% 50V

TA-F222ES

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
C515	1-161-161-00	CERAMIC	0.047MF	10%	50V	
C551	1-102-110-00	CERAMIC	220PF	10%	50V	
C552	1-102-945-00	CERAMIC	8PF	1PF	50V	
C553	1-123-306-00	ELECT	47MF	20%	10V	
C554	1-123-307-00	ELECT	100MF	20%	10V	
C555	1-123-306-00	ELECT	47MF	20%	10V	
C556	1-124-183-00	ELECT	2.2MF	20%	50V	
C557	1-102-947-00	CERAMIC	10PF	5%	50V	
C558	1-124-186-00	ELECT	10MF	20%	50V	
C559	1-102-127-21	CERAMIC	0.0068MF	10%	50V	
C560	1-161-061-91	CERAMIC	0.068MF	10%	50V	
C561	1-161-059-00	CERAMIC	0.047MF	10%	50V	
C562	1-136-173-00	FILM	0.47MF	5%	50V	
C563	1-136-167-00	FILM	0.15MF	5%	50V	
C564	1-161-161-00	(US)...CERAMIC	0.047MF	10%	50V	
C564	1-161-055-00	(UK,AEP,G-AEP,E)CAP, CERAMIC	0.022MF	10%	50V	
C565	1-161-161-00	CERAMIC	0.047MF	10%	50V	
C601	1-123-369-00	ELECT	4.7MF	20%	25V	
C602	1-161-494-00	CERAMIC	0.022MF	30%	25V	
C603	1-123-307-00	ELECT	100MF	20%	6.3V	
C604	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C605	1-123-308-00	ELECT	220MF	20%	6.3V	
C701	1-129-701-00	FILM	0.01MF	5%	100V	
C702	1-129-701-00	FILM	0.01MF	5%	100V	
C703	1-125-405-11	CAP, ELECT	12000MF		63V	
C704	1-125-405-11	CAP, ELECT	12000MF		63V	
C705	1-123-364-00	ELECT	1000MF	20%	50V	
C706	1-123-364-00	ELECT	1000MF	20%	50V	
C707	1-123-307-00	ELECT	100MF	20%	10V	
C708	1-102-959-00	CERAMIC	22PF	5%	50V	
C709	1-102-959-00	CERAMIC	22PF	5%	50V	
C710	1-123-337-00	ELECT	1000MF	20%	25V	
C711	1-123-337-00	ELECT	1000MF	20%	25V	
C712	1-123-821-00	ELECT	47MF	20%	16V	
C713	1-123-821-00	ELECT	47MF	20%	16V	
C714	1-123-818-00	ELECT	22MF	20%	25V	
C715	1-123-361-00	ELECT	220MF	20%	50V	
C801	1-161-744-00	CERAMIC	0.01MF		400V	
C802	1-161-744-00	(AEP,G-AEP,UK)...CERAMIC	0.03MF		400V	
C901	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C902	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C903	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C904	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C905	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C906	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C907	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C908	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C921	1-161-279-00	(US,AEP,UK,E)...CERAMIC	10PF	5%	50V	
C922	1-102-959-00	CERAMIC	22PF	5%	50V	
C971	1-161-279-00	(US,AEP,UK,E)...CERAMIC	10PF	5%	50V	
C972	1-102-959-00	CERAMIC	22PF	5%	50V	
C911	1-161-323-00	(G-AEP)...CAP, CERAMIC	0.001MF	10%	50V	
C921	1-161-267-00	(G-AEP)...CAP, CERAMIC	47PF	5%	50V	
C923	1-161-330-00	(G-AEP)...CAP, CERAMIC	0.01MF	30%	25V	
C931	1-129-794-00	(G-AEP)...CAP, PP FILM	0.0033MF	5%	100V	
C932	1-161-330-00	(G-AEP)...CAP, CERAMIC	0.01MF	30%	25V	

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
C941	1-161-383-00	(G-AEP)...CAP, CERAMIC	0.0047MF	10%	50V	
C942	1-161-383-00	(G-AEP)...CAP, CERAMIC	0.0047MF	10%	50V	
C943	1-161-285-00	(G-AEP)...CAP, CERAMIC	33PF	5%	50V	
C951	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C952	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C953	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C954	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C955	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C956	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C957	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C958	1-161-317-00	(G-AEP)...CAP, CERAMIC	330PF	10%	50V	
C961	1-161-323-00	(G-AEP)...CAP, CERAMIC	0.001MF	10%	50V	
C971	1-161-267-00	(G-AEP)...CAP, CERAMIC	47PF	5%	50V	
C973	1-161-330-00	(G-AEP)...CAP, CERAMIC	0.01MF	30%	25V	
C991	1-161-383-00	(G-AEP)...CAP, CERAMIC	0.0047MF	10%	50V	
C992	1-161-383-00	(G-AEP)...CAP, CERAMIC	0.0047MF	10%	50V	
C993	1-161-285-00	(G-AEP)...CAP, CERAMIC	33PF	5%	50V	
CN801A	1-526-695-00	(E).....OUTLET, AC				
CN801A	1-526-751-00	(UK).....OUTLET, AC				
CN801A	1-526-794-11	(AEP,G-AEP).....OUTLET, AC				
CN801A	1-526-883-00	(US).....OUTLET, AC				
CN802A	1-526-883-00	(US).....OUTLET, AC				
CNP1	*1-560-061-00	PIN, CONNECTOR	3P			
CNP2	*1-560-062-00	PIN, CONNECTOR	4P			
CNP3	*1-560-062-00	PIN, CONNECTOR	4P			
CNP4	*1-560-062-00	PIN, CONNECTOR	4P			
CNP5	*1-560-062-00	PIN, CONNECTOR	4P			
CNP6	*1-560-061-00	PIN, CONNECTOR	3P			
CNP7	*1-560-061-00	PIN, CONNECTOR	3P			
CNP8	*1-560-061-00	PIN, CONNECTOR	3P			
CNP9	*1-560-061-00	PIN, CONNECTOR	3P			
CNP10	*1-560-061-00	PIN, CONNECTOR	3P			
CNP11	*1-560-061-00	PIN, CONNECTOR	3P			
CNP12	*1-560-061-00	PIN, CONNECTOR	3P			
CNP13	*1-560-061-00	PIN, CONNECTOR	3P			
CNP14	*1-560-061-00	PIN, CONNECTOR	3P			
CNP15	*1-560-061-00	PIN, CONNECTOR	3P			
CNP16	*1-560-061-00	PIN, CONNECTOR	3P			
CNP17	*1-560-061-00	PIN, CONNECTOR	3P			
CNP18	*1-560-061-00	PIN, CONNECTOR	3P			
CNP19	*1-560-061-00	PIN, CONNECTOR	3P			
CNP20	*1-560-061-00	PIN, CONNECTOR	3P			
CNP21	*1-560-061-00	PIN, CONNECTOR	3P			
CNP22	*1-560-061-00	PIN, CONNECTOR	3P			
CNP23	*1-560-061-00	PIN, CONNECTOR	3P			
CNP24	*1-560-061-00	PIN, CONNECTOR	3P			
CNP25	*1-560-061-00	PIN, CONNECTOR	3P			
CNP26	*1-560-061-00	PIN, CONNECTOR	3P			
CNP28	*1-560-061-00	PIN, CONNECTOR	3P			
CNP30	*1-560-061-00	PIN, CONNECTOR	3P			
CNP31	*1-560-061-00	PIN, CONNECTOR	3P			
CNP32	*1-560-062-00	PIN, CONNECTOR	4P			
CNP33	*1-560-061-00	PIN, CONNECTOR	3P			
CNP34	*1-560-062-00	PIN, CONNECTOR	4P			
CNP35	*1-560-062-00	PIN, CONNECTOR	4P			
CNP36	*1-560-061-00	PIN, CONNECTOR	3P			

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
CNP39	*1-560-061-00	PIN, CONNECTOR 3P
CNP40	*1-560-061-00	PIN, CONNECTOR 3P
CNP41	*1-560-061-00	PIN, CONNECTOR 3P
CNP51	*1-564-506-11	PLUG, CONNECTOR 3P
CNP52	*1-564-506-11	PLUG, CONNECTOR 3P
CNP53	*1-564-506-11	PLUG, CONNECTOR 3P
CNP54	*1-564-506-11	PLUG, CONNECTOR 3P
CNP55	*1-564-506-11	PLUG, CONNECTOR 3P
CNP56	*1-564-506-11	PLUG, CONNECTOR 3P
CNP57	*1-564-506-11	PLUG, CONNECTOR 3P
CNP58	*1-564-506-11	PLUG, CONNECTOR 3P
CNP59	*1-564-506-11	PLUG, CONNECTOR 3P
CNP60	*1-564-506-11	PLUG, CONNECTOR 3P
CNP61	*1-564-506-11	PLUG, CONNECTOR 3P
CNP62	*1-564-506-11	PLUG, CONNECTOR 3P
D201	8-719-100-42	DIODE RD6.8E-B3
D211	8-719-905-06	DIODE GL-5NG6
D212	8-719-905-06	DIODE GL-5NG6
D213	8-719-905-06	DIODE GL-5NG6
D214	8-719-905-06	DIODE GL-5NG6
D215	8-719-905-06	DIODE GL-5NG6
D216	8-719-905-06	DIODE GL-5NG6
D217	8-719-905-06	DIODE GL-5NG6
D218	8-719-900-21	DIODE GL-2HY1
D251	8-719-100-42	DIODE RD6.8E-B3
D501	8-719-100-57	DIODE RD10E-B2
D502	8-719-902-97	DIODE EQA01-06R2
D503	8-719-107-94	DIODE 1SS202-1
D504	8-719-107-94	DIODE 1SS202-1
D505	8-719-107-94	DIODE 1SS202-1
D506	8-719-107-94	DIODE 1SS202-1
D507	8-719-107-94	DIODE 1SS202-1
D551	8-719-100-57	DIODE RD10E-B2
D552	8-719-902-97	DIODE EQA01-06R2
D553	8-719-107-94	DIODE 1SS202-1
D554	8-719-107-94	DIODE 1SS202-1
D555	8-719-107-94	DIODE 1SS202-1
D556	8-719-107-94	DIODE 1SS202-1
D557	8-719-107-94	DIODE 1SS202-1
D601	8-719-200-02	DIODE 10E-2
D602	8-719-107-94	DIODE 1SS202-1
D603	8-719-905-06	DIODE GL-5NG6
D604	8-719-107-94	DIODE 1SS202-1
D605	8-719-107-94	DIODE 1SS202-1
D654	8-719-107-94	DIODE 1SS202-1
D655	8-719-107-94	DIODE 1SS202-1
D701	8-719-230-24	DIODE 300L4
D702	8-719-230-24	DIODE 300L4
D703	8-719-230-24	DIODE 300L4
D704	8-719-230-24	DIODE 300L4
D705	8-719-902-97	DIODE EQA01-06R2
D706	8-719-935-12	DIODE EQA01-12R
F801	1-532-272-XX	(US).....FUSE 5.0A
F801	1-532-286-00	(AEP,G-AEP,UK,E).....FUSE 2.5A TIME-LAG
F802	1-532-286-00	(AEP,G-AEP,UK,E).....FUSE 2.5A TIME-LAG
IC201	8-759-923-90	IC BA4560
IC301	8-759-900-72	IC NE5532P
IC302	8-759-990-82	IC TL082CP

ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC351	8-759-900-72	IC NE5532P
IC401	8-759-801-61	IC LA7220
IC601	8-759-101-23	IC UPC1237H
J101	1-507-910-11	JACK, PIN 4P
J102	1-507-914-21	JACK, PIN 6P
J103	1-507-914-21	JACK, PIN 6P
J104	1-507-914-21	JACK, PIN 6P
J105	1-562-916-11	JACK, PIN 2P
J106	1-562-916-11	JACK, PIN 2P
J501	1-507-669-00	JACK (HEADPHONE)
L501	*1-422-031-00	COIL, AIRCORE
L551	*1-422-031-00	COIL, AIRCORE
L901	1-413-101-00	(G-AEP)...COIL, INPUT 220UH
L902	1-413-101-00	(G-AEP)...COIL, INPUT 220UH
L951	1-413-101-00	(G-AEP)...COIL, INPUT 220UH
L952	1-413-101-00	(G-AEP)...COIL, INPUT 220UH
PT801	1-448-173-11	(US).....TRANSFORMER, POWER
PT801	1-448-264-11	(UK).....TRANSFORMER, POWER
PT801	1-448-265-11	(E).....TRANSFORMER, POWER
PT801	1-448-266-11	(AEP,G-AEP)...TRANSFORMER, POWER
Q201	8-729-354-52	TRANSISTOR 2SC2545-E
Q202	8-729-354-52	TRANSISTOR 2SC2545-E
Q251	8-729-354-52	TRANSISTOR 2SC2545-E
Q252	8-729-354-52	TRANSISTOR 2SC2545-E
Q401	8-729-606-33	TRANSISTOR 2SC2603F
Q402	8-729-606-33	TRANSISTOR 2SC2603F
Q403	8-729-606-33	TRANSISTOR 2SC2603F
Q404	8-729-107-98	TRANSISTOR 2SC3622A-L
Q501	8-759-103-64	TRANSISTOR UPA68H-K
Q502	8-729-663-47	TRANSISTOR 2SC1364
Q503	8-729-663-47	TRANSISTOR 2SC1364
Q504	8-729-612-77	TRANSISTOR 2SA1027R
Q505	8-729-612-77	TRANSISTOR 2SA1027R
Q506	8-729-366-61	TRANSISTOR 2SD666-B
Q507	8-729-612-77	TRANSISTOR 2SA1027R
Q508	8-729-104-91	TRANSISTOR 2SA1383
Q509	8-729-104-18	TRANSISTOR 2SC3514
Q510	8-729-180-93	TRANSISTOR 2SD809
Q511	8-729-107-53	TRANSISTOR 2SC2275A
Q512	8-729-118-53	TRANSISTOR 2SA985P
Q513	8-729-301-82	(US).....TRANSISTOR 2SC3519Y
Q513	8-729-302-83	(AEP,G-AEP,UK,E).....TRANSISTOR 2SC3284
Q514	8-729-301-86	(US).....TRANSISTOR 2SA1386Y
Q514	8-729-302-80	(AEP,G-AEP,UK,E).....TRANSISTOR 2SA1303
Q551	8-759-103-64	TRANSISTOR UPA68H-K
Q552	8-729-663-47	TRANSISTOR 2SC1364
Q553	8-729-663-47	TRANSISTOR 2SC1364
Q554	8-729-612-77	TRANSISTOR 2SA1027R
Q555	8-729-612-77	TRANSISTOR 2SA1027R
Q556	8-729-366-61	TRANSISTOR 2SD666-B
Q557	8-729-612-77	TRANSISTOR 2SA1027R
Q558	8-729-104-91	TRANSISTOR 2SA1383
Q559	8-729-104-18	TRANSISTOR 2SC3514
Q560	8-729-180-93	TRANSISTOR 2SD809
Q561	8-729-107-53	TRANSISTOR 2SC2275A
Q562	8-729-118-53	TRANSISTOR 2SA985P

The components identified by shading and mark **▲** are critical for safety. Replace only with part number specified.

TA-F222ES

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
Q563	8-729-301-82	(US).....TRANSISTOR	25C3519Y			
Q563	8-729-302-83	(AEP,G-AEP,UK,E)...TRANSISTOR	25C3284			
Q564	8-729-301-86	(US).....TRANSISTOR	2SA1386Y			
Q564	8-729-302-80	(AEP,G-AEP,UK,E)...TRANSISTOR	2SA1303			
Q601	8-729-612-77	TRANSISTOR	2SA1027R			
Q651	8-729-612-77	TRANSISTOR	2SA1027R			
Q701	8-729-201-56	TRANSISTOR	2SK246-GR2			
Q702	8-729-201-56	TRANSISTOR	2SK246-GR2			
Q703	8-729-606-33	TRANSISTOR	2SC2603F			
Q704	8-729-612-77	TRANSISTOR	2SA1027R			
Q705	8-729-103-33	TRANSISTOR	2SD1310			
Q706	8-729-377-12	TRANSISTOR	2SA771			
Q707	8-729-606-33	TRANSISTOR	2SC2603F			
Q708	8-729-612-77	TRANSISTOR	2SA1027R			
Q709	8-729-180-93	TRANSISTOR	2SD809			
R101	1-246-545-00	CARBON	1M	5%	1/4W	
R102	1-246-545-00	CARBON	1M	5%	1/4W	
R103	1-246-545-00	CARBON	1M	5%	1/4W	
R104	1-247-713-11	CARBON	1K	5%	1/4W	
R105	1-246-545-00	CARBON	1M	5%	1/4W	
R106	1-246-545-00	CARBON	1M	5%	1/4W	
R107	1-247-713-11	CARBON	1K	5%	1/4W	
R108	1-246-545-00	CARBON	1M	5%	1/4W	
R109	1-246-545-00	CARBON	1M	5%	1/4W	
R110	1-247-713-11	CARBON	1K	5%	1/4W	
R151	1-246-545-00	CARBON	1M	5%	1/4W	
R152	1-246-545-00	CARBON	1M	5%	1/4W	
R153	1-246-545-00	CARBON	1M	5%	1/4W	
R154	1-247-713-11	CARBON	1K	5%	1/4W	
R155	1-246-545-00	CARBON	1M	5%	1/4W	
R156	1-246-545-00	CARBON	1M	5%	1/4W	
R157	1-247-713-11	CARBON	1K	5%	1/4W	
R158	1-246-545-00	CARBON	1M	5%	1/4W	
R159	1-246-545-00	CARBON	1M	5%	1/4W	
R160	1-247-713-11	(US,AEP,UK,E)...CARBON	1K	5%	1/4W	
R201	1-247-119-00	(US,AEP,UK,E)...CARBON	330	5%	1/4W	
R201	1-247-702-11	(G-AEP)...RES, CARBON	150	5%	1/4W	
R202	1-247-700-11	CARBON	100	5%	1/4W	
R203	1-249-469-11	CARBON	100K	5%	1/4W	
R204	1-249-469-11	CARBON	100K	5%	1/4W	
R205	1-247-713-11	CARBON	1K	5%	1/4W	
R206	1-247-713-11	CARBON	1K	5%	1/4W	
R207	1-247-700-11	CARBON	100	5%	1/4W	
R208	1-247-725-11	CARBON	10K	5%	1/4W	
R209	1-249-286-11	CARBON	1.5M	5%	1/3W	
R210	1-214-771-00	METAL	56K	1%	1/4W	
R211	1-214-745-00	METAL	4.7K	1%	1/4W	
R212	1-214-705-00	METAL	100	1%	1/4W	
R213	1-214-677-00	METAL	6.8	1%	1/4W	
R214	1-247-704-11	CARBON	220	5%	1/4W	
R215	1-249-469-11	CARBON	100K	5%	1/4W	
R216	1-247-135-00	CARBON	1.5K	5%	1/4W	
R251	1-247-119-00	(US,AEP,UK,E)...CARBON	330	5%	1/4W	
R251	1-247-702-11	(G-AEP)...RES, CARBON	150	5%	1/4W	

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R252	1-247-700-11	CARBON	100	5%	1/4W	
R253	1-249-469-11	CARBON	100K	5%	1/4W	
R254	1-249-469-11	CARBON	100K	5%	1/4W	
R255	1-247-713-11	CARBON	1K	5%	1/4W	
R256	1-247-713-11	CARBON	1K	5%	1/4W	
R257	1-247-700-11	CARBON	100	5%	1/4W	
R258	1-247-725-11	CARBON	10K	5%	1/4W	
R259	1-249-286-11	CARBON	1.5M	5%	1/3W	
R260	1-214-771-00	METAL	56K	1%	1/4W	
R261	1-214-745-00	METAL	4.7K	1%	1/4W	
R262	1-214-705-00	METAL	100	1%	1/4W	
R263	1-214-677-00	METAL	6.8	1%	1/4W	
R264	1-247-704-11	CARBON	220	5%	1/4W	
R265	1-249-469-11	CARBON	100K	5%	1/4W	
R266	1-247-135-00	CARBON	1.5K	5%	1/4W	
R301	1-249-469-11	CARBON	100K	5%	1/4W	
R302	1-214-733-00	METAL	1.5K	1%	1/4W	
R303	1-214-727-00	METAL	820	1%	1/4W	
R304	1-214-727-00	METAL	820	1%	1/4W	
R305	1-214-733-00	METAL	1.5K	1%	1/4W	
R306	1-249-469-11	CARBON	100K	5%	1/4W	
R307	1-249-469-11	CARBON	100K	5%	1/4W	
R308	1-247-708-11	CARBON	470	5%	1/4W	
R309	1-247-725-11	CARBON	10K	5%	1/4W	
R310	1-247-119-00	CARBON	330	5%	1/4W	
R330	1-247-708-11	CARBON	470	5%	1/4W	
R351	1-249-469-11	CARBON	100K	5%	1/4W	
R352	1-214-733-00	METAL	1.5K	1%	1/4W	
R353	1-214-727-00	METAL	820	1%	1/4W	
R354	1-214-727-00	METAL	820	1%	1/4W	
R355	1-214-733-00	METAL	1.5K	1%	1/4W	
R356	1-249-469-11	CARBON	100K	5%	1/4W	
R357	1-249-469-11	CARBON	100K	5%	1/4W	
R358	1-247-708-11	CARBON	470	5%	1/4W	
R359	1-247-725-11	CARBON	10K	5%	1/4W	
R360	1-247-119-00	CARBON	330	5%	1/4W	
R380	1-247-708-11	CARBON	470	5%	1/4W	
R401	1-247-702-11	CARBON	150	5%	1/4W	
R402	1-247-702-11	CARBON	150	5%	1/4W	
R403	1-247-725-11	CARBON	10K	5%	1/4W	
R404	1-247-702-11	CARBON	150	5%	1/4W	
R405	1-247-702-11	CARBON	150	5%	1/4W	
R406	1-247-725-11	CARBON	10K	5%	1/4W	
R407	1-247-696-11	CARBON	47	5%	1/4W	
R408	1-247-125-00	CARBON	560	5%	1/4W	
R409	1-247-696-11	CARBON	47	5%	1/4W	
R410	1-247-125-00	CARBON	560	5%	1/4W	
R411	1-247-167-00	CARBON	33K	5%	1/4W	
R412	1-247-177-00	CARBON	82K	5%	1/4W	
R413	1-247-129-00	CARBON	820	5%	1/4W	
R414	1-247-143-00	CARBON	3.3K	5%	1/4W	
R415	1-247-143-00	CARBON	3.3K	5%	1/4W	
R416	1-247-149-00	CARBON	5.6K	5%	1/4W	
R417	1-247-713-11	CARBON	1K	5%	1/4W	
R418	1-249-469-11	CARBON	100K	5%	1/4W	
R419	1-247-725-11	CARBON	10K	5%	1/4W	
R420	1-247-163-00	CARBON	22K	5%	1/4W	

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R421	1-247-721-11	CARBON	4.7K	5%	1/4W	
R501	1-247-700-11	CARBON	100	5%	1/4W	
R502	1-246-545-00	CARBON	1M	5%	1/4W	
R503	△.1-212-889-91	FUSIBLE	220	5%	1/4W	F
R504	△.1-212-889-91	FUSIBLE	220	5%	1/4W	F
R505	1-247-708-11	CARBON	470	5%	1/4W	
R506	1-247-274-00	CARBON	27K	5%	1/2W	
R507	△.1-247-131-00	CARBON	1K	5%	1/4W	F
R508	△.1-212-883-00	FUSIBLE	120	5%	1/4W	F
R509	△.1-213-160-11	METAL OXIDE	27K	5%	1W	F
R510	1-247-721-11	CARBON	4.7K	5%	1/4W	
R511	△.1-217-399-00	FUSIBLE	100	5%	1/4W	F
R512	1-247-717-11	CARBON	2.2K	5%	1/4W	
R513	1-247-125-00	CARBON	560	5%	1/4W	
R514	△.1-217-391-00	FUSIBLE	22	5%	1/4W	F
R515	△.1-217-391-00	FUSIBLE	22	5%	1/4W	F
R516	△.1-212-984-00	FUSIBLE	120	5%	1/2W	F
R517	△.1-217-430-00	FUSIBLE	4.7	5%	1/2W	F
R518	△.1-217-430-00	FUSIBLE	4.7	5%	1/2W	F
R519	1-217-657-11	RES, METAL PLATE 0.1				
R520	1-217-657-11	RES, METAL PLATE 0.1				
R521	1-244-945-00	CARBON	1M	5%	1/3W	
R522	1-247-717-11	CARBON	2.2K	5%	1/4W	
R523	1-247-167-00	CARBON	33K	5%	1/4W	
R524	1-247-135-00	CARBON	1.5K	5%	1/4W	
R525	1-247-145-00	CARBON	3.9K	5%	1/4W	
R526	1-247-704-11	CARBON	220	5%	1/4W	
R527	1-247-149-00	CARBON	5.6K	5%	1/4W	
R528	1-247-127-00	CARBON	680	5%	1/4W	
R529	1-247-153-00	CARBON	8.2K	5%	1/4W	
R530	1-246-545-00	CARBON	1M	5%	1/4W	
R531	△.1-217-434-00	FUSIBLE	10	5%	1/2W	F
R532	1-247-192-00	CARBON	10	5%	1/2W	
R533	△.1-206-656-00	METAL OXIDE	470	5%	2W	F
R534	△.1-217-391-00	(US)...FUSIBLE	22	5%	1/4W	F
R551	1-247-700-11	CARBON	100	5%	1/4W	
R552	1-246-545-00	CARBON	1M	5%	1/4W	
R553	△.1-212-889-91	FUSIBLE	220	5%	1/4W	F
R554	△.1-212-889-91	FUSIBLE	220	5%	1/4W	F
R555	1-247-708-11	CARBON	470	5%	1/4W	
R556	1-247-274-00	CARBON	27K	5%	1/2W	
R557	△.1-247-131-00	CARBON	1K	5%	1/4W	F
R558	△.1-212-883-00	FUSIBLE	120	5%	1/4W	F
R559	△.1-213-160-11	METAL OXIDE	27K	5%	1W	F
R560	1-247-721-11	CARBON	4.7K	5%	1/4W	
R561	△.1-217-399-00	FUSIBLE	100	5%	1/4W	F
R562	1-247-717-11	CARBON	2.2K	5%	1/4W	
R563	1-247-125-00	CARBON	560	5%	1/4W	
R564	△.1-217-391-00	FUSIBLE	22	5%	1/4W	F
R565	△.1-217-391-00	FUSIBLE	22	5%	1/4W	F
R566	△.1-212-984-00	FUSIBLE	120	5%	1/2W	F
R567	△.1-217-430-00	FUSIBLE	4.7	5%	1/2W	F
R568	△.1-217-430-00	FUSIBLE	4.7	5%	1/2W	F
R569	1-217-657-11	RES, METAL PLATE 0.1				
R570	1-217-657-11	RES, METAL PLATE 0.1				
R571	1-244-945-00	CARBON	1M	5%	1/3W	
R572	1-247-717-11	CARBON	2.2K	5%	1/4W	

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R573	1-247-167-00	CARBON	33K	5%	1/4W	
R574	1-247-135-00	CARBON	1.5K	5%	1/4W	
R575	1-247-145-00	CARBON	3.9K	5%	1/4W	
R576	1-247-704-11	CARBON	220	5%	1/4W	
R577	1-247-149-00	CARBON	5.6K	5%	1/4W	
R578	1-247-127-00	CARBON	680	5%	1/4W	
R579	1-247-153-00	CARBON	8.2K	5%	1/4W	
R580	1-246-545-00	CARBON	1M	5%	1/4W	
R581	△.1-217-434-00	FUSIBLE	10	5%	1/2W	F
R582	1-247-192-00	CARBON	10	5%	1/2W	
R583	△.1-206-656-00	METAL OXIDE	470	5%	2W	F
R584	△.1-217-391-00	(US)...FUSIBLE	22	5%	1/4W	F
R601	1-247-270-00	CARBON	18K	5%	1/2W	
R602	1-247-264-00	CARBON	10K	5%	1/2W	
R603	1-247-175-00	CARBON	68K	5%	1/4W	
R604	1-247-218-00	CARBON	120	5%	1/2W	
R605	1-247-216-00	CARBON	100	5%	1/2W	
R606	1-247-725-11	CARBON	10K	5%	1/4W	
R607	△.1-247-141-00	CARBON	2.7K	5%	1/4W	F
R608	1-247-163-00	CARBON	22K	5%	1/4W	
R609	1-246-529-00	CARBON	220K	5%	1/4W	
R610	1-246-533-00	CARBON	330K	5%	1/4W	
R657	△.1-247-141-00	CARBON	2.7K	5%	1/4W	F
R658	1-247-163-00	CARBON	22K	5%	1/4W	
R660	1-246-533-00	CARBON	330K	5%	1/4W	
R701	△.1-206-701-00	METAL OXIDE	100	5%	3W	F
R702	△.1-206-652-11	METAL OXIDE	330	5%	2W	F
R703	1-247-713-11	CARBON	1K	5%	1/4W	
R704	1-247-713-11	CARBON	1K	5%	1/4W	
R705	1-247-721-11	CARBON	4.7K	5%	1/4W	
R706	1-214-751-00	METAL	8.2K	1%	1/4W	
R707	1-214-748-00	METAL	6.2K	1%	1/4W	
R708	1-214-757-00	METAL	15K	1%	1/4W	
R709	1-214-757-00	METAL	15K	1%	1/4W	
R710	1-246-527-00	CARBON	180K	5%	1/4W	
R711	1-247-713-11	CARBON	1K	5%	1/4W	
R712	△.1-206-717-00	METAL OXIDE	470	5%	3W	F
R713	△.1-206-664-00	METAL OXIDE	1K	5%	2W	F
R714	△.1-206-664-11	METAL OXIDE	1K	5%	2W	F
R715	1-247-700-11	CARBON	100	5%	1/4W	
R716	1-247-749-11	CARBON	560	5%	1/2W	
R717	1-247-704-11	CARBON	220	5%	1/4W	
R718	1-247-749-11	CARBON	560	5%	1/2W	
R751	△.1-206-701-00	METAL OXIDE	100	5%	3W	F
R901	1-247-119-00	(G-AEP)...RES, CARBON	330	5%	1/4W	
R902	1-247-119-00	(G-AEP)...RES, CARBON	330	5%	1/4W	
R903	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R904	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R905	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R906	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R907	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R908	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R909	1-247-708-00	(G-AEP)...RES, CARBON	470	5%	1/4W	
R941	△.1-217-434-00	(G-AEP)...RES, FUSE	10	5%	1/2W	F
R942	△.1-217-434-00	(G-AEP)...RES, FUSE	10	5%	1/2W	F
R943	1-247-704-11	(G-AEP)...RES, CARBON	220	5%	1/4W	
R951	1-247-119-00	(G-AEP)...RES, CARBON	330	5%	1/4W	

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

TA-F22ES

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R952	1-247-119-00	(G-AEP)...RES, CARBON 330 5% 1/4W
R953	1-247-708-00	(G-AEP)...RES, CARBON 470 5% 1/4W
R954	1-247-708-00	(G-AEP)...RES, CARBON 470 5% 1/4W
R955	1-247-708-00	(G-AEP)...RES, CARBON 470 5% 1/4W
R956	1-247-708-00	(G-AEP)...RES, CARBON 470 5% 1/4W
R957	1-247-708-00	(G-AEP)...RES, CARBON 470 5% 1/4W
R958	1-247-708-00	(G-AEP)...RES, CARBON 470 5% 1/4W
R959	1-247-708-00	(G-AEP)...RES, CARBON 470 5% 1/4W
R991	△ 1-217-434-00	(G-AEP)...RES, FUSE 10 5% 1/2W
R992	△ 1-217-434-00	(G-AEP)...RES, FUSE 10 5% 1/2W
R993	1-247-704-11	(G-AEP)...RES, CARBON 220 5% 1/4W
RT501	1-224-248-XX	RES, ADJ, SOLID 470
RT551	1-224-248-XX	RES, ADJ, SOLID 470
RV301	1-230-926-11	RES, VAR, CARBON 100K/100K (WITH RV351) (BALANCE)
RV302	1-230-657-11	RES, VAR, CARBON 10K/10K (WITH RV352) (ATTENUATOR)
RV501	1-230-925-11	RES, VAR, CARBON 37K/37K (WITH RV551) (TREBLE)
RV502	1-230-924-11	RES, VAR, CARBON 24K/24K (WITH RV552) (BASS)
RY501	1-515-356-00	RELAY
S201	1-570-365-11	SWITCH, ROTARY SLIDE (CARTRIDGE)
S301	1-570-075-11	SWITCH, PUSH (7 KEY)(FUNCTION)
S302	1-570-367-11	SWITCH, PUSH (2 KEY)(WITH S303)(EQ/SUB)
S501	1-570-079-11	SWITCH, PUSH (2 KEY)(WITH S502) (TONE/BASS)
S503	1-570-366-11	SWITCH, ROTARY SLIDE (SPEAKER)
S801	△ 1-552-246-00	(US)...SWITCH, PUSH (POWER)
S801	△ 1-554-880-11	(AEP,G-AEP,UK,E)...SWITCH, PUSH (POWER)
TM901	1-536-767-00	TERMINAL BOARD, SPEAKER
TM902	1-536-767-00	TERMINAL BOARD, SPEAKER
VS801	△ 1-526-576-31	(E)...SELECTOR, POWER VOLTAGE

ACCESSORY & PACKING MATERIAL

Part No.	Description
2-297-403-00	SHEET (LARGE), PROTECTION
3-701-630-00	BAG, POLYETHYLENE
3-760-648-11	MANUAL, INSTRUCTION
4-885-949-01	CUSHION (FRONT), UPPER
4-885-950-01	CUSHION (REAR), UPPER
4-885-951-01	CUSHION (FRONT), LOWER
4-885-952-01	CUSHION (REAR), LOWER
4-908-833-01	INDIVIDUAL CARTON

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.