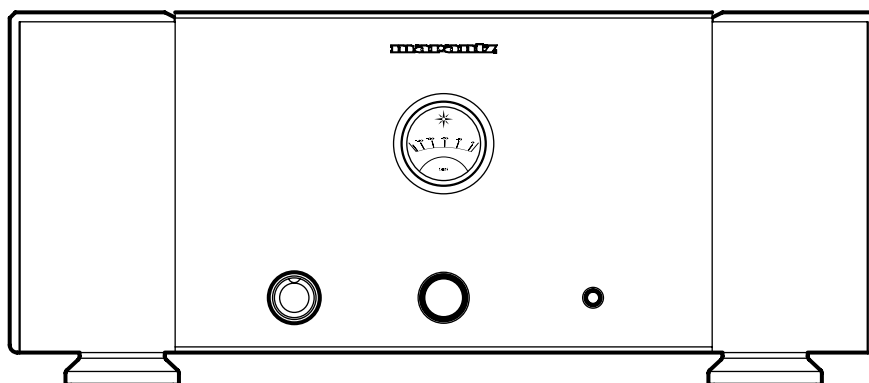


Service Manual

MA9S1 /F1N/N1G/U1G

Monaural Power Amplifier



MA-9S1

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Please use this service manual with referring to the user guide (D.F.U.) without fail.
修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

marantz®

MA-9S1

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS :

Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order :

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature : any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

USA

MARANTZ AMERICA, INC
1100 MAPLEWOOD DRIVE
ITASCA, IL. 60143
USA
PHONE : 630 - 741 - 0300
FAX : 630 - 741 - 0301

EUROPE / TRADING

MARANTZ EUROPE B.V.
P. O. BOX 8744, BUILDING SILVERPOINT
BEEMDSTRAAT 11, 5653 MA EINDHOVEN
THE NETHERLANDS
PHONE : +31 - 40 - 2507844
FAX : +31 - 40 - 2507860

CANADA

LENBROOK INDUSTRIES LIMITED
633 GRANITE COURT,
PICKERING, ONTARIO L1W 3K1
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PHONE : 905 - 831 - 6333
FAX : 905 - 831 - 6936

PROFESSIONAL AMERICAS

SUPERSCOPE TECHNOLOGIES, INC.
MARANTZ PROFESSIONAL PRODUCTS
2640 WHITE OAK CIRCLE, SUITE A
AURORA, ILLINOIS 60504 USA
PHONE : 630 - 820 - 4800
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PROFESSIONAL AUSTRALIA

TECHNICAL AUDIO GROUP PTY, LTD
43-53 Bridge Rd.,
STANMORE NSW 2048
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PHONE : +61 - (0)2 - 9519 - 0900
FAX : +61 - (0)2 - 9519 - 0600

PROFESSIONAL HONG KONG

Jolly ProAudio Broadcast Engineering Ltd.
UNIT 2, 10F, WAH HUNG CENTRE,
41 HUNG TO ROAD, KWUN TONG, KLN.,
HONG KONG
PHONE : 852 - 21913660
FAX : 852 - 21913990

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QualiFi Pty Ltd,
24 LIONEL ROAD,
MT. WAVERLEY VIC 3149
AUSTRALIA
PHONE : +61 - (0)3 - 9543 - 1522
FAX : +61 - (0)3 - 9543 - 3677

THAILAND

MRZ STANDARD CO., LTD
746 - 754 MAHACHAI ROAD.,
WANGBURAPAPIROM, PHRANAKORN,
BANGKOK, 10200 THAILAND
PHONE : +66 - 2 - 222 9181
FAX : +66 - 2 - 224 6795

SINGAPORE

WO KEE HONG DISTRIBUTION PTE LTD
130 JOO SENG ROAD
#03-02 OLIVINE BUILDING
SINGAPORE 368357
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FAX : +65 6858 6078

NEW ZEALAND

WILDASH AUDIO SYSTEMS NZ
14 MALVERN ROAD MT ALBERT
AUCKLAND NEW ZEALAND
PHONE : +64 - 9 - 8451958
FAX : +64 - 9 - 8463554

TAIWAN

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6 TH FL NO, 148 SUNG KIANG ROAD,
TAIPEI, 10429, TAIWAN R.O.C.
PHONE : +886 - 2 - 25221304
FAX : +886 - 2 - 25630415

MALAYSIA

WO KEE HONG ELECTRONICS SDN. BHD.
2ND FLOOR BANGUNAN INFINITE CENTRE
LOT 1, JALAN 13/6, 46200 PETALING JAYA
SELANGOR DARUL EHSAN, MALAYSIA
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本 社 〒228-8505
神奈川県相模原市相模大野7-35-1

KOREA

MK ENTERPRISES LTD.
ROOM 604/605, ELECTRO-OFFICETEL, 16-58,
3GA, HANGANG-RO, YONGSAN-KU, SEOUL
KOREA
PHONE : +822 - 3232 - 155
FAX : +822 - 3232 - 154

SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard No. 1492.

In case of difficulties, do not hesitate to contact the Technical
Department at above mentioned address.

1. TECHNICAL SPECIFICATIONS

仕 様

定格出力 (20Hz ~ 20kHz)	300 W (8 Ω 負荷)	Rated power output (20 Hz to 20 kHz)	300 W (8 Ω load)
	600 W (4 Ω 負荷)		600 W (4 Ω load)
全高調波歪率	0.01 %	Total harmonic distortion	0.01 %
	(20 Hz ~ 20 kHz、8 Ω 負荷)		(20 Hz to 20 kHz, 8 Ω load)
出力帯域幅	5 Hz ~ 55 kHz	Output bandwidth	5 Hz to 50 kHz
	(8 Ω 負荷、0.05 %)		(8 Ω load, 0.05 %)
周波数特性 (1 W、8 Ω 負荷)	3 Hz ~ 120 kHz	Frequency response	3 Hz to 120 kHz
	(+0 / -3 dB)		(+0 / -3 dB)
ダンピングファクター	200	Damping factor	200
	(20 Hz ~ 20 kHz、8 Ω 負荷)		(20 Hz to 20 kHz, 8 Ω load)
入力感度／入力インピーダンス	1.7 V / 20 k Ω (BALANCED)	Inout sensitivity / Inout impedance	1.7 V / 20 k Ω (BALANCED)
	1.7 V / 20 k Ω (UNBALANCED)		1.7 V / 20 k Ω (UNBALANCED)
S / N 比 (IHF - A ネットワーク)	120 dB (BALANCED)	S/N (IHF A network, input shorted)	120 dB (BALANCED)
	120 dB (UNBALANCED)		120 dB (UNBALANCED)
電圧増幅度	29 dB (BALANCED)	Level of voltage amplification	29 dB (BALANCED)
	29 dB (UNBALANCED)		29 dB (UNBALANCED)
アッテネーション	0, -3, -6, -9, -12, -∞ dB	Attenuation	0, -3, -6, -9, -12, ∞ dB
電源電圧	AC 100 V 50 / 60 Hz	Supply voltage [/F]	100 V AC, 50 / 60 Hz
消費電力	450 W (電気用品安全法)	[/N]	230 V AC, 50 Hz
	1200 W (4 Ω, 600 W 出力時)	[/U]	120 V AC, 60 Hz
最大外形寸法		Power consumption [/F]	450 W
幅	459 mm		1200 W (4 Ω, 600 W driven)
高さ	198 mm	[/N]	500 W
奥行き	451 mm		1200 W (4 Ω, 600 W driven)
質量	35.8 kg	[/U]	5.8 A
			13 A (4 Ω, 600 W driven)
		Dimensions	
		Width	459 mm
		Height	198 mm
		Depth	451 mm
		Weight	35.8 kg

2. CAUTION

注意 (当機は音質を考慮したレイアウトになっています。)

1. ネジやワッシャ類を取り外した場合、元の位置に取り付けてください。
2. ワイヤ類を取り外した場合の配線ルートは、元のルート通りに戻してください。
3. 当機を分解した状態で移動するときは、サイドパネル (001D, 002D) 及び ブラケット (915G) を持たないでください。

Caution : (The layout of this amplifier is well concerned for sound quality.)

1. When screws and washers are removed, those parts must be set to the same places.
2. When wires are removed, the wires must be installed in the same roots, same places.
3. Do not hold the side panel (001D, 002D) and the bracket (915G) to move the unit when the unit is disassembled.

3. ALIGNMENTS

調整手順

調整時は必ず電源電圧を定格電圧に合わせてください。

A. DC オフセット電圧調整

1. 電源を投入する前にリアパネルの ATTENUATOR スイッチ (S201) を $-\infty$ 、プリント基板 (P641) の半固定抵抗 R641 と R642 をそれぞれ反時計方向に絞った状態にしてください。
リアパネルの SPEAKERS-1 の "+" 端子と C001/C002 の GND 端子間および SPEAKERS-1 の "-" 端子と C001/C002 の GND 端子間にそれぞれデジタルボルトメータ-を接続します。
2. 上記設定後電源を投入しスピーカ-リレーが ON した直後、SPEAKERS-1 の "+" 端子と SPEAKERS-1 の "-" 端子をそれぞれ 0V $\pm$ 20mV に調整します。
このとき、"+" 端子のオフセット電圧と "-" 端子のオフセット電圧との差が $\pm$ 3mV 以内になるように調整します。
 - SPEAKERS-1 の "+" 端子と GND 間のオフセット電圧
プリント基板 (P501) 上の HDAM Q501 の銅ケ-スの調整穴に調整ドライバー-を挿入して半固定抵抗を調整します。
 - SPEAKERS-1 の "-" 端子と GND 間のオフセット電圧
プリント基板 (P501) 上の HDAM Q502 の銅ケ-スの調整穴に調整ドライバー-を挿入して半固定抵抗を調整します。

B. アイドリング電流調整

1. DC オフセット電圧調整終了後、プリント基板 (P641) 基板上の半固定抵抗 R641 と R642 でアイドリング電流を調整します。
テストポイントはプリント基板 (P611) 上の 3pin コネクタ- J639 と J641 を使用します。
2. デジタルボルトメータ-を J639 の 1 番端子と 3 番端子間、J641 の 1 番端子と 3 番端子間にそれぞれに接続します。J639 と J641 の 1 番端子を "+", 3 番端子を "-" に接続してください。
3. デジタルボルトメータ-の電圧値を監視しながらゆっくりと半固定抵抗を時計方向に回しアイドリング電流を調整します。
 - 半固定抵抗 R641 でのアイドリング調整
R641 はヒートシンク上部に配置しているパワ-トランジスタ-のアイドリング電流を調整します。
R641 を時計方向に回すと J639 に接続したデジタルボルトメータ-の電圧値が増加しアイドリング電流が増加します。
 - 半固定抵抗 R642 でのアイドリング調整
R642 はヒートシンク下部に配置しているパワ-トランジスタ-の電流を調整します。
R642 を時計方向に回すと J641 に接続したデジタルボルトメータ-の電圧値が増加しアイドリング電流が増加します。
4. アイドリング電流の設定値はそれぞれ 10mV(50mA) とします。
電源投入後 3 分で約 12mV(60mA) に達しその後徐々に減少し約 40 分で約 10mV(50mA) で安定します。

C. メータ-調整

1. 入力端子 UNBALANCED-1 に発振器を接続し、スピーカ-出力端子に AC ボルトメータ-を接続します。
ATTENUATOR は 0dB、スピーカ-出力は無負荷とします。
2. 電源を ON しスピーカ-出力電圧が 49.0V になるように発振器の出力レベルを調整 (周波数は 1kHz) してください。
3. スピーカ-出力電圧が 49.0V になったら、メータ-が 0dB を指すように P801 基板上の半固定抵抗 R917 を調整します。(出力電圧 49.0V は 8 Ω 時 300W、4 Ω 時 600W の電圧になります。)
4. この状態を 0dB として発振器の出力レベルを -10dB $\rightarrow$ -20dB $\rightarrow$ -30dB、 $\rightarrow$ -40dB と順に減衰させていくと、メータ-の針はスケ-ル板のそれぞれの表示値を示します。

METER	8 OHM LOAD	4 OHM LOAD
0 dB	300 W	600 W
-10 dB	30 W	60 W
-20 dB	3 W	6 W
-30 dB	0.3 W	0.6 W
-40 dB	0.03 W	0.06 W

Adjustment Procedure

Set the power voltage to rated voltage for this adjustment

DC Offset Voltage Adjustment

- Before turning on power, set the attenuator switch(S201) at $-\infty$, and turn the variable resistors R641 and R642 on the PCB(P641) counterclockwise to the end.
Insert digital voltage meters between the SPEAKERS-1 "+" terminal on the rear panel and the GND terminal of C001/C002, and between the SPEAKERS-1 "-" terminal on the rear panel and the GND terminal of C001/C002.
- After the all preparation in Step 1 is done, turn on power. Just after the speaker relays turning on, make the adjustment to set the offset voltages of the SPEAKERS-1 "+" terminal and the SPEAKERS-1 "-" terminal to $0V \pm 20mV$.
Also, the difference between the offset voltages of the SPEAKERS-1 "+" terminal and the SPEAKERS-1 "-" terminal must be within $\pm 3mV$.
 - Offset voltage between the SPEAKERS-1 "+" terminal and GND
Insert an adjustment screw driver to the adjustment hole on the copper cover of the HDAM Q501 on the PCB P501 and adjust.
 - Offset voltage between the SPEAKERS-1 "-" terminal and GND
Insert an adjustment screw driver to the adjustment hole on the copper cover of the HDAM Q502 on the PCB P501 and adjust.

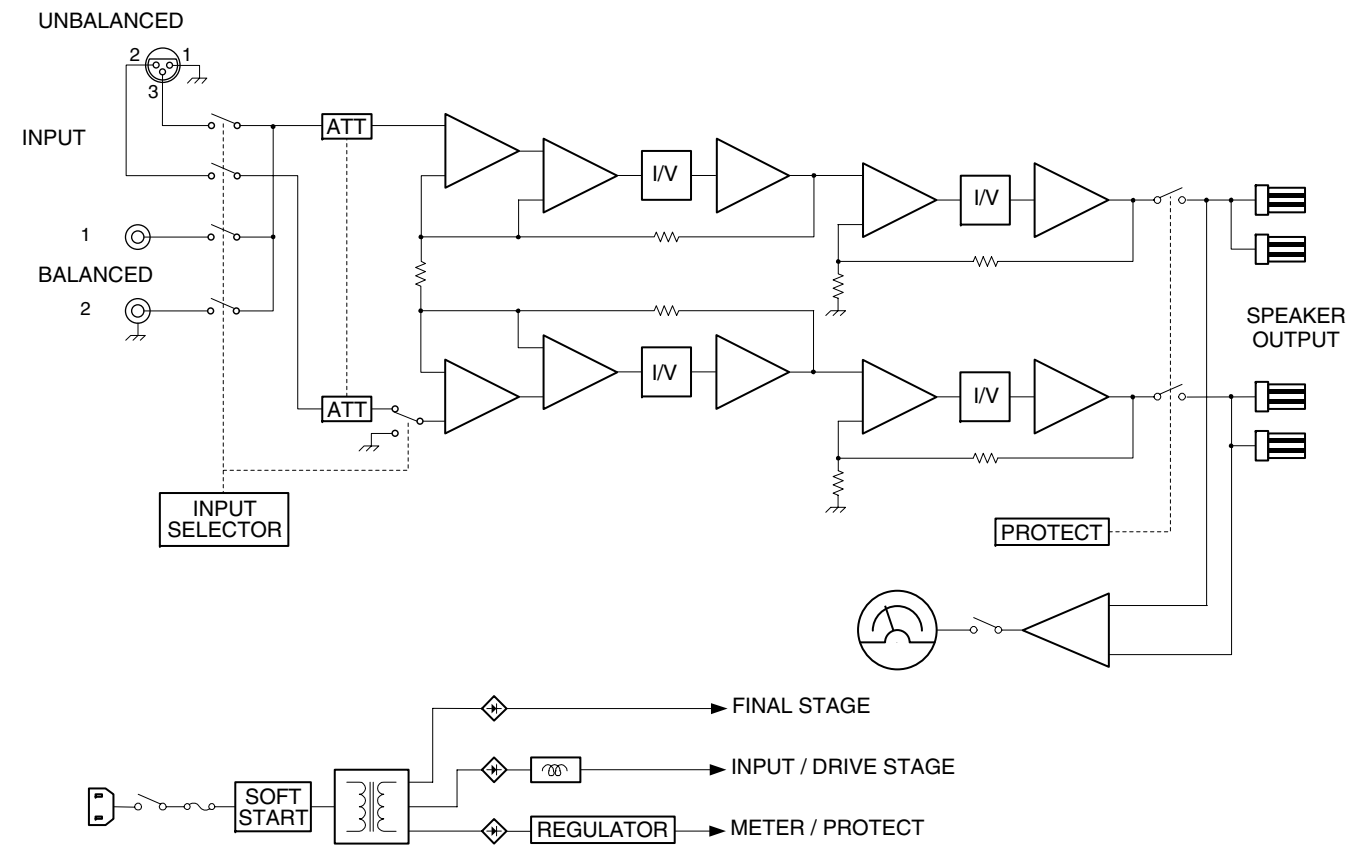
Idling Current Adjustment

- After DC Offset Voltage Adjustment is completed, adjust the idling current with the variable resistors R641 and R642 on the PCB(P641).
- Connect a digital voltage meter in between the 1 pin and the 3 pin of J639 and in between the 1 pin and the 3 pin of J641 each. Connect the 1 pin terminals of J639 and J641 to "+" and the 3 pin to "-".
- With seeing the digital voltage meter, turn the variable resistors clockwise slowly to adjust the idling current.
 - Idling current adjustment with R641
R641 is to adjust the idling current for the power transistor(s) on the upper side of the heat sink. Turn R641 clockwise to increase the idling current. The voltage measured by the digital voltage meter connected to J639 will increase.
 - Idling current adjustment with R642
R642 is to adjust the idling current for the power transistor(s) on the lower side of the heat sink. Turn R642 clockwise to increase the idling current. The voltage measured by the digital voltage meter connected to J641 will increase.
- The voltage of the idling current will be 10mV(50mA) for each.
The voltage reaches approx. 12mV(60mA) 3 minutes after turning on power then the voltage decreases slowly to approx. 10mV(50mA) about 40 minutes after and becomes stable.

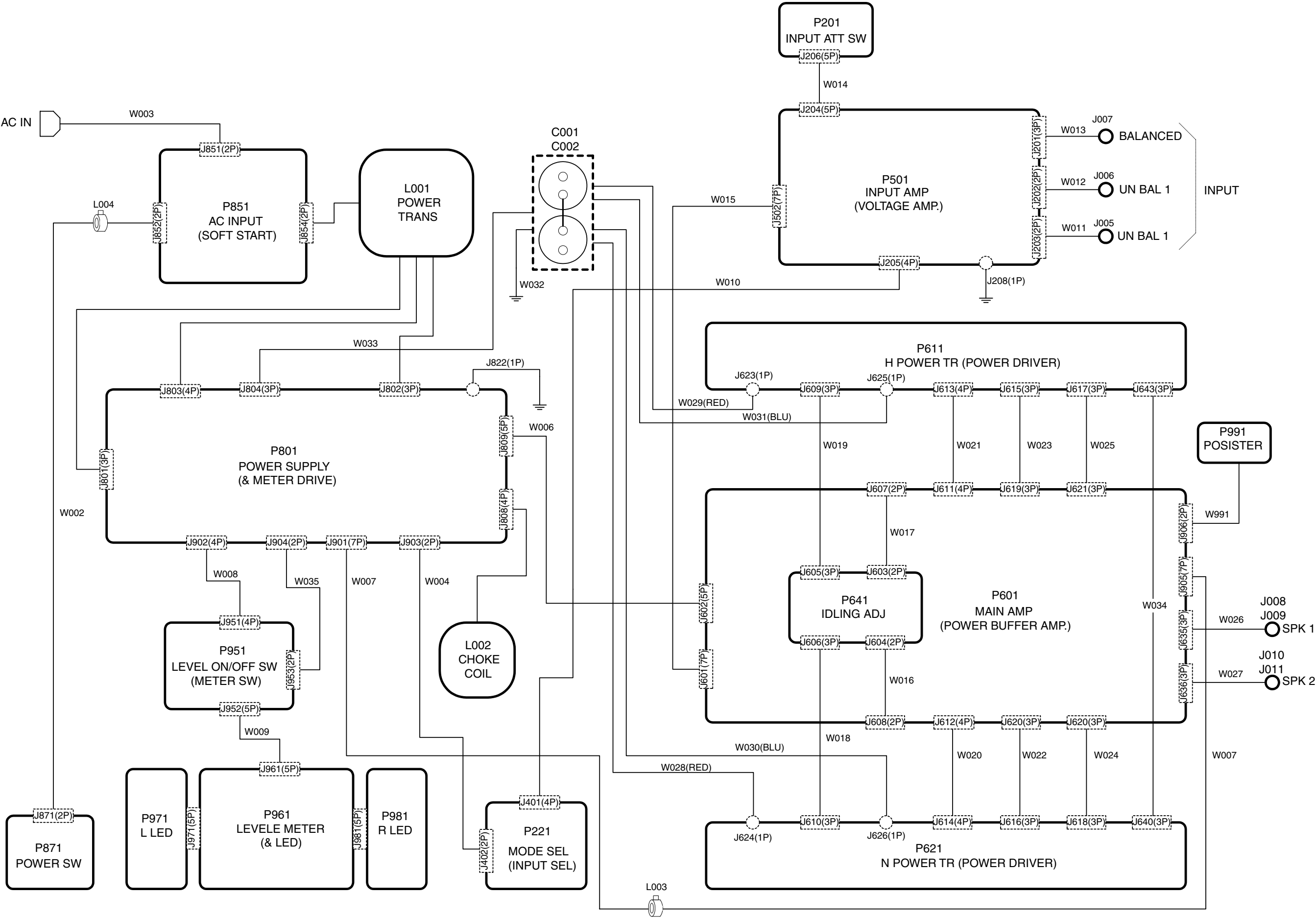
Meter Adjustment

- Connect an oscillator to the input terminal UNBALANCED-1 and connect an AC voltage meter to the speaker output terminals. ATTENUATOR is set to 0dB and no load is connected to the speaker output.
- Turn on power and adjust output power (output frequency 1kHz) of the oscillator to set the speaker output voltage to 49.0V.
- When the speaker output voltage becomes 49.0V, adjust the variable resistor R917 on the PCB P801 to set the meter 0dB. (Output voltage 49.0V means 300W for 8Ω, 600W for 4Ω.)
- Assuming this point as 0db, decrease the output power of the oscillator like $-10dB \rightarrow -20dB \rightarrow -30dB \rightarrow -40dB$, the meter will show the corresponding measurements.

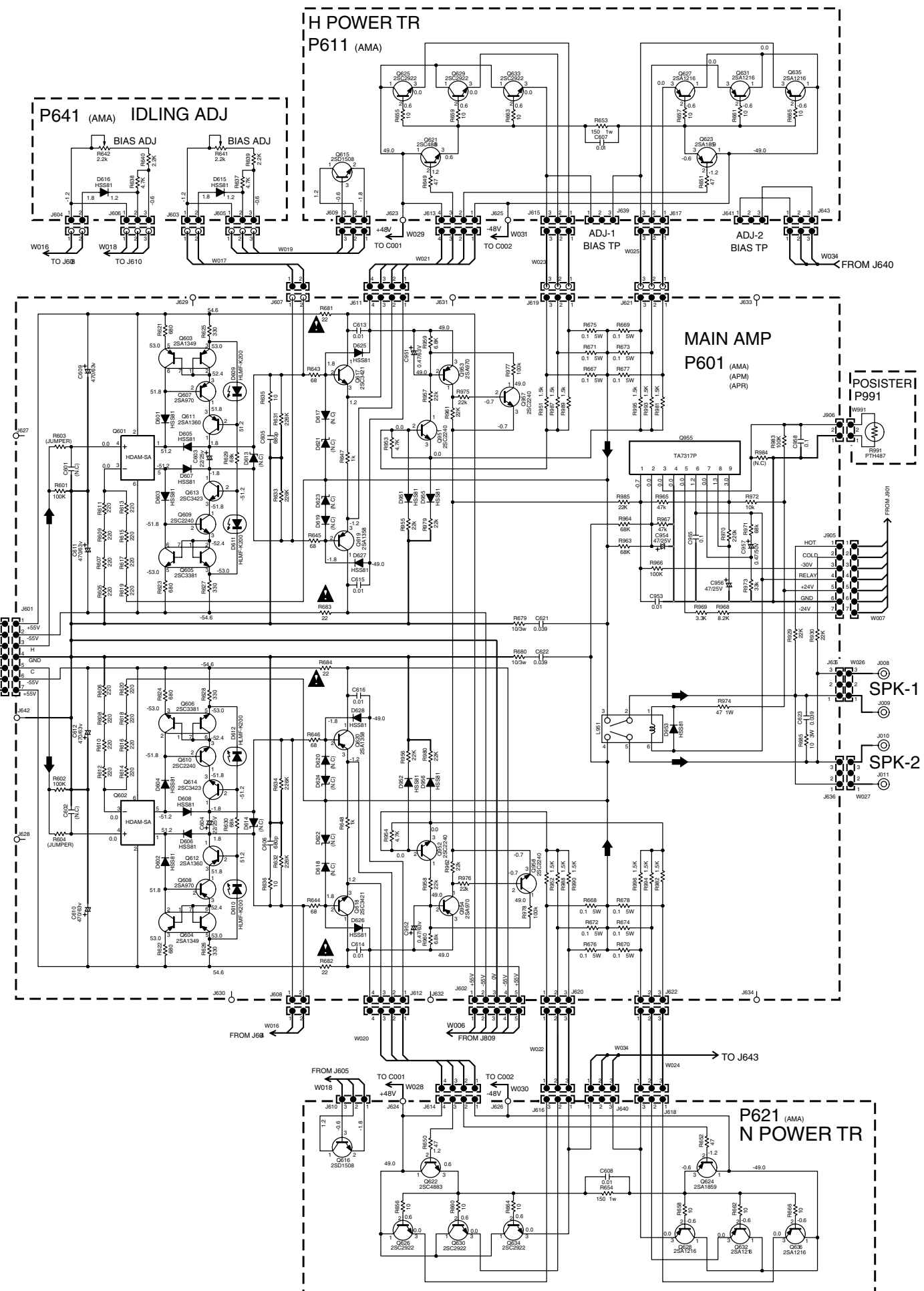
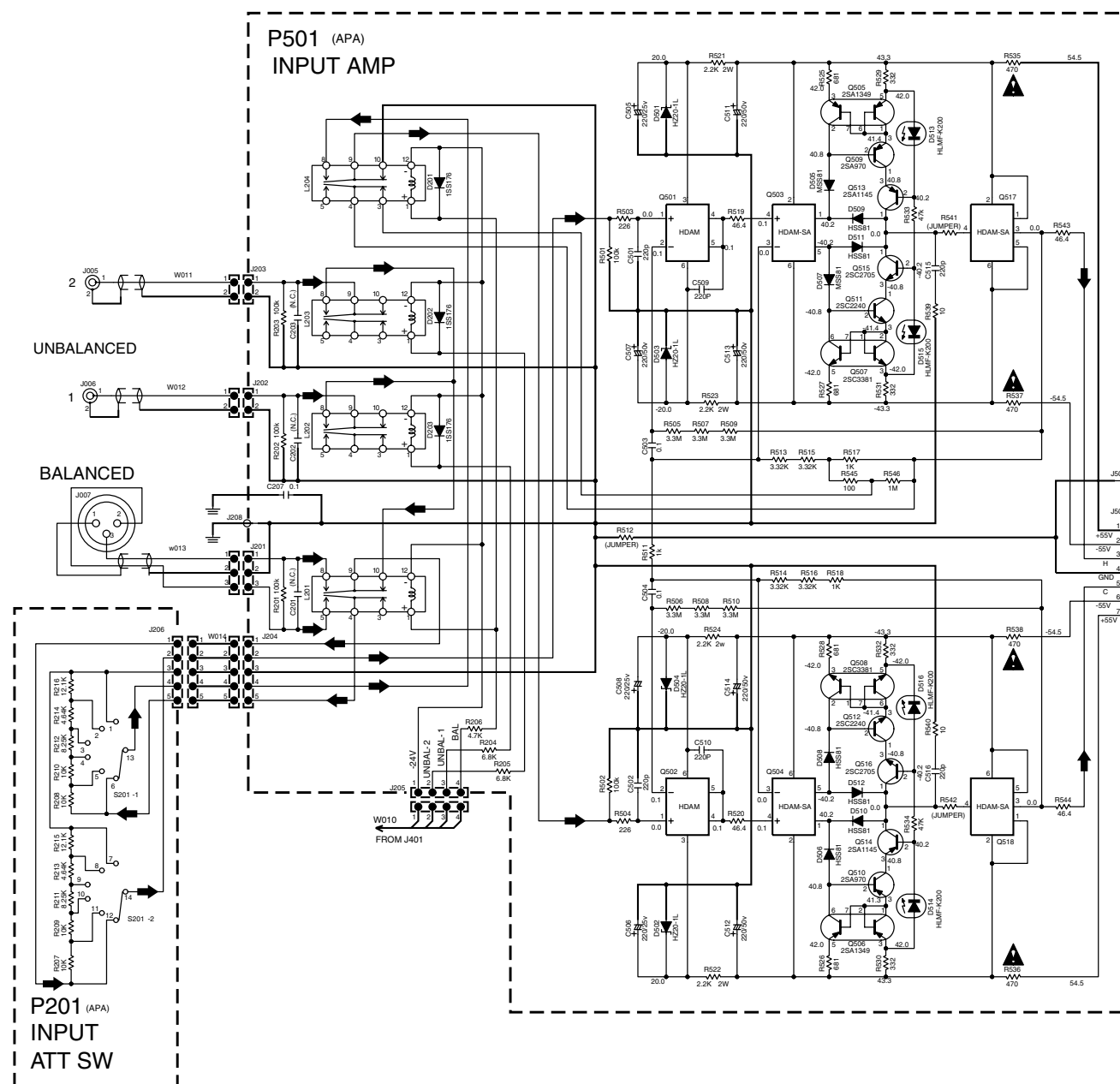
4. BLOCK DIAGRAM

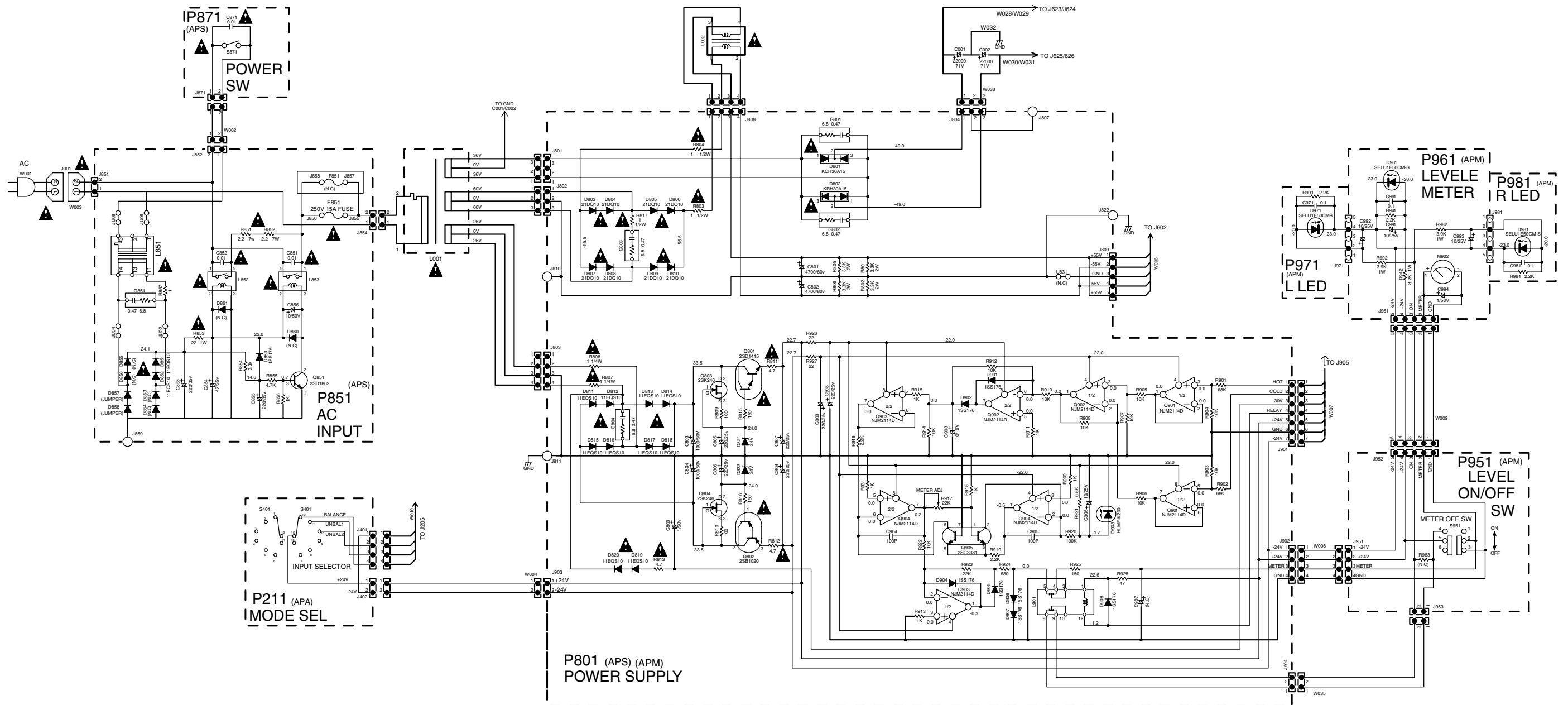


5. WIRING DIAGRAM

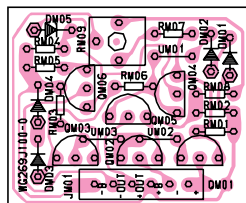


6. SCHEMATIC DIAGRAM

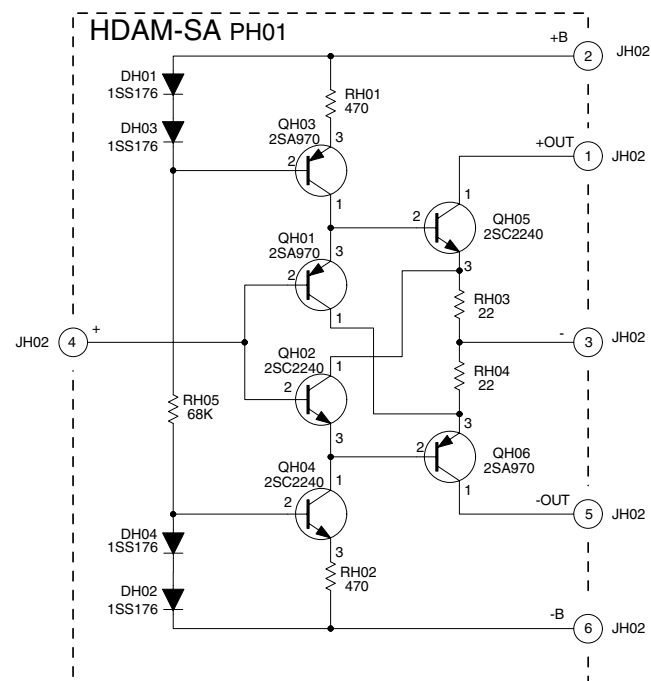
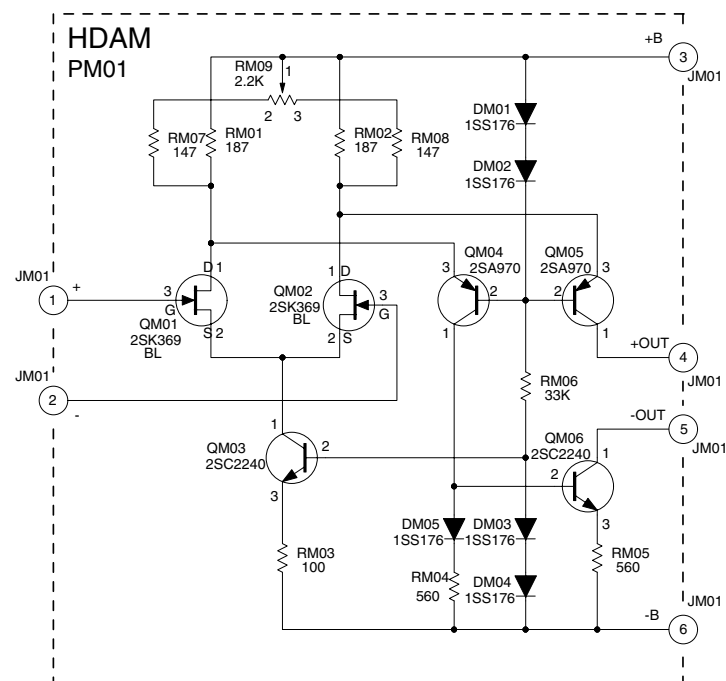
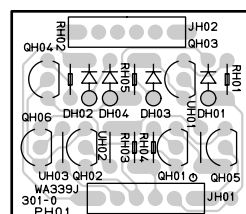




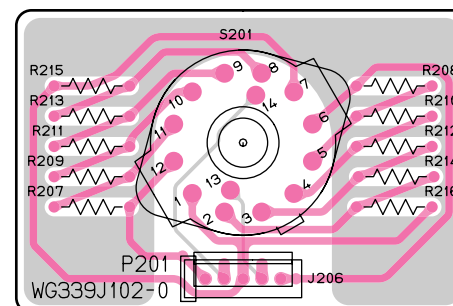
7. PARTS LOCATION

HDAM (PM01)

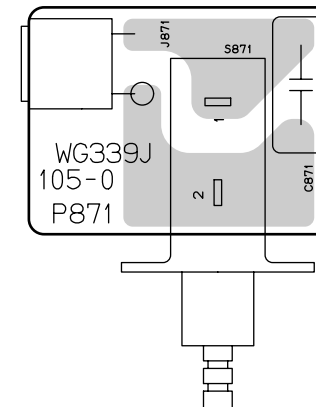
HDAM-SA (PH01)



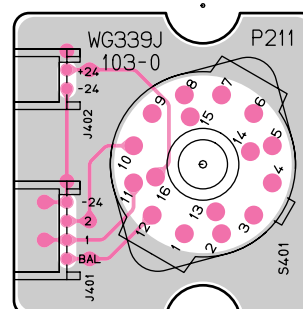
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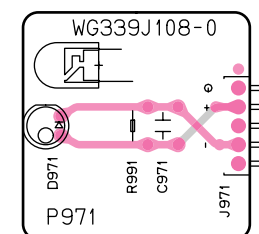
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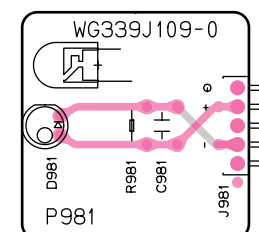
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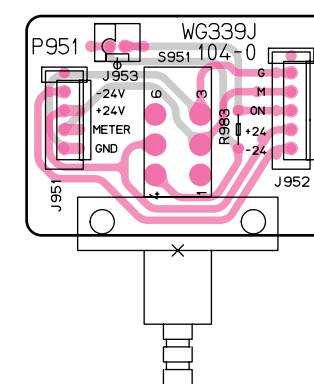
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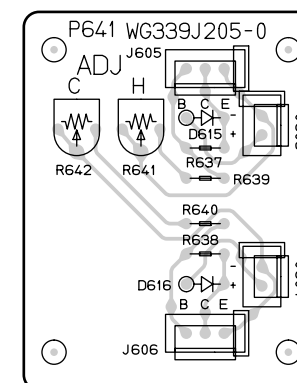
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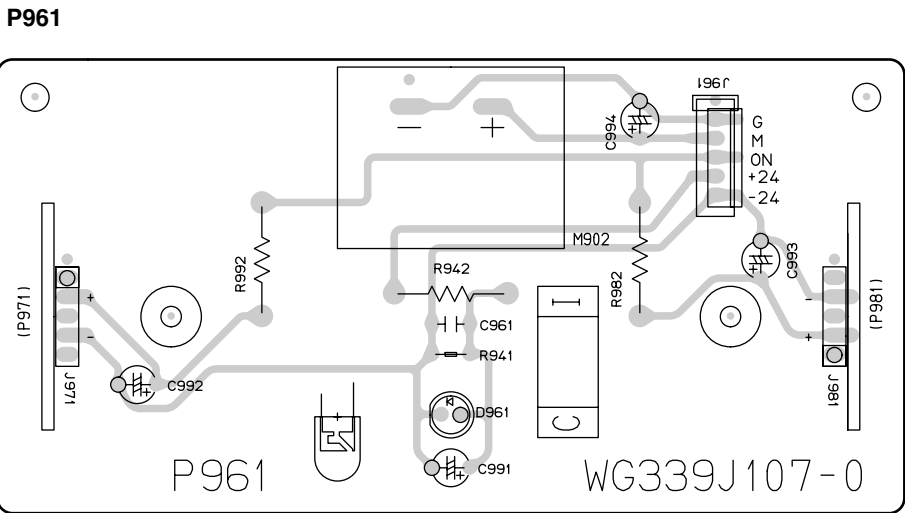
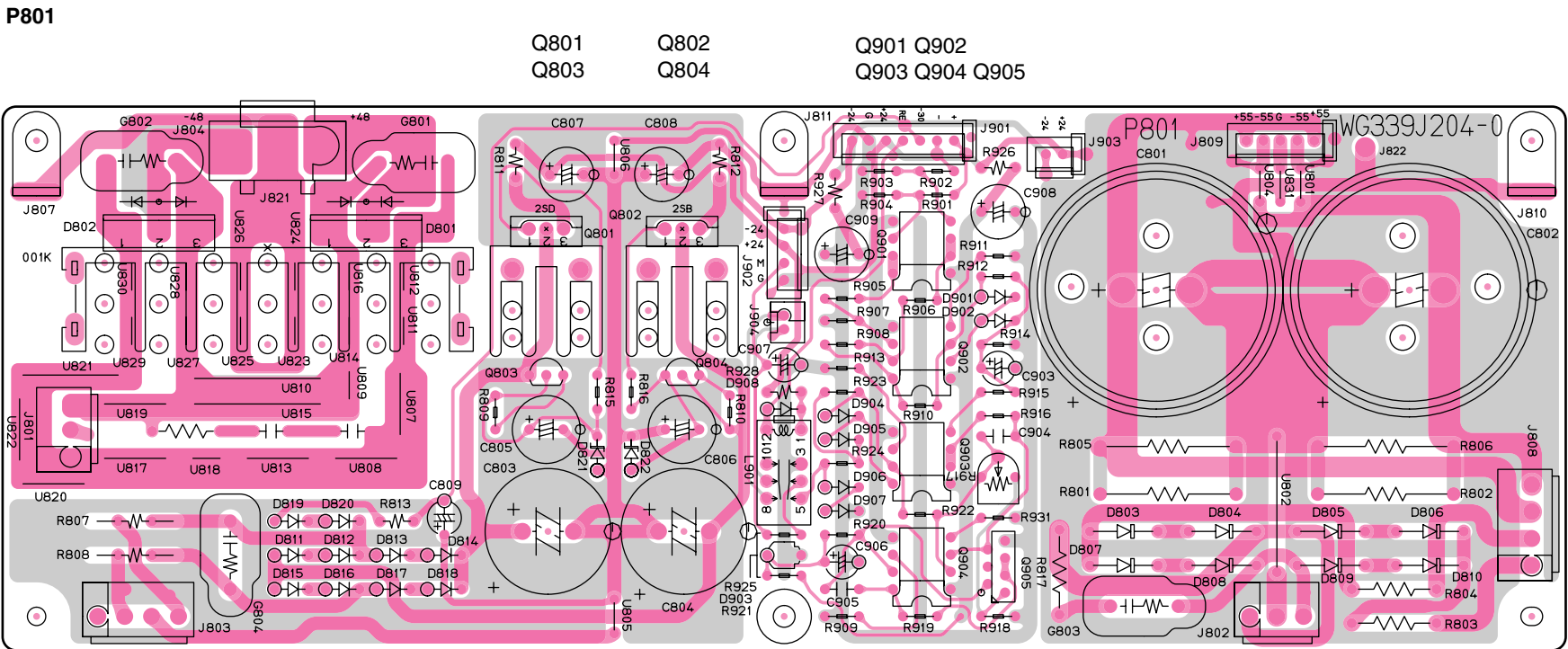
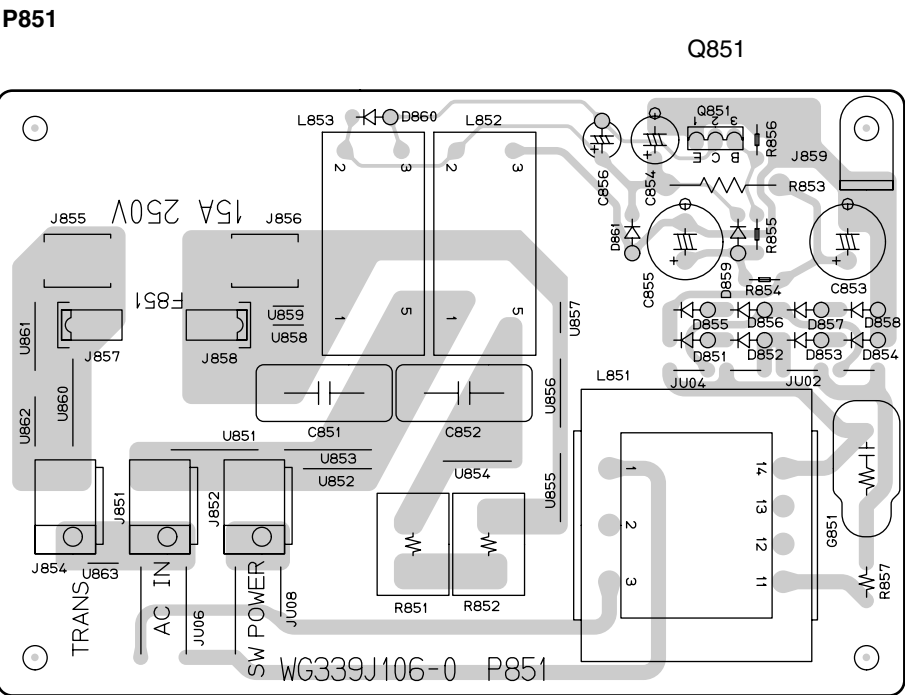
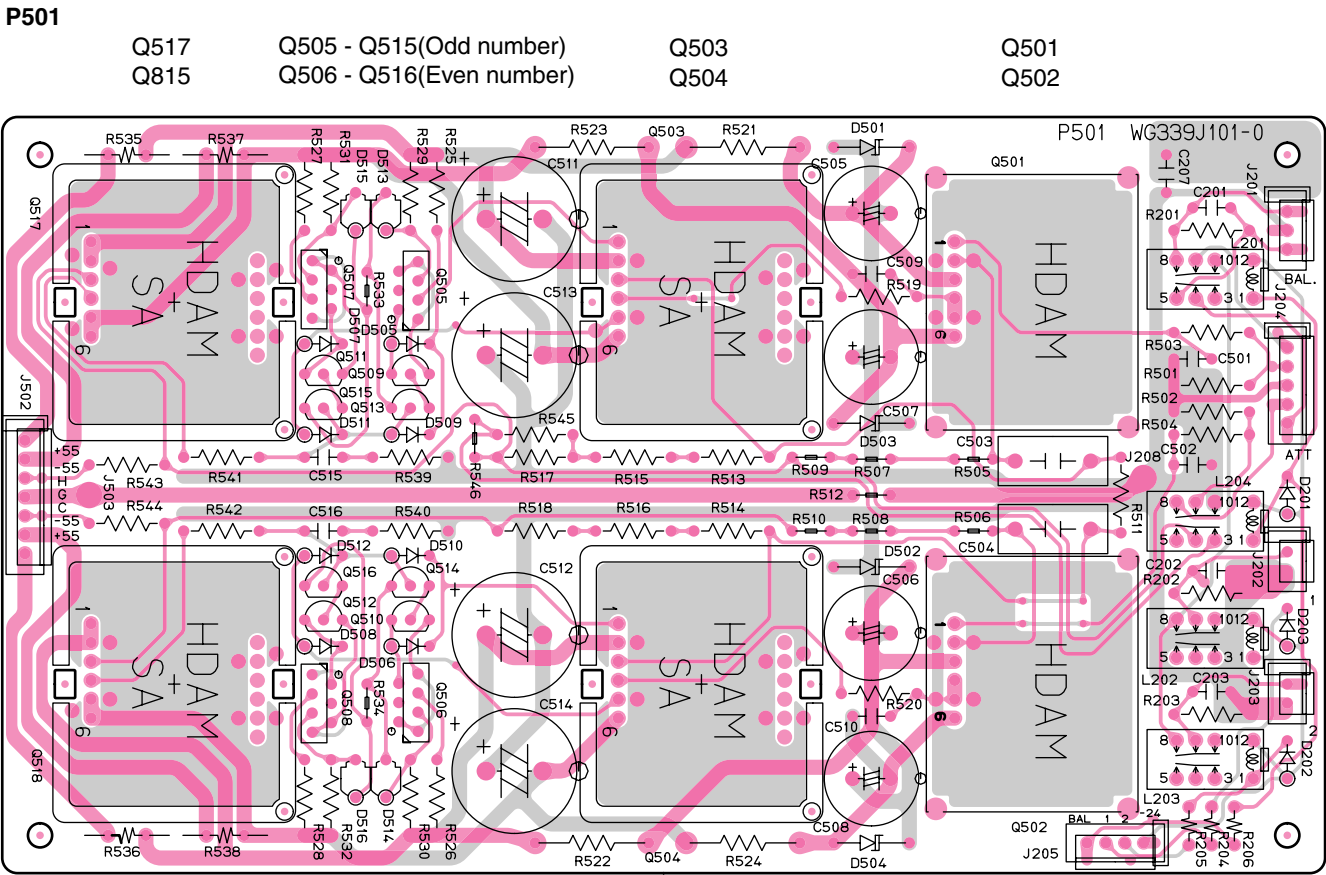


P951



P641

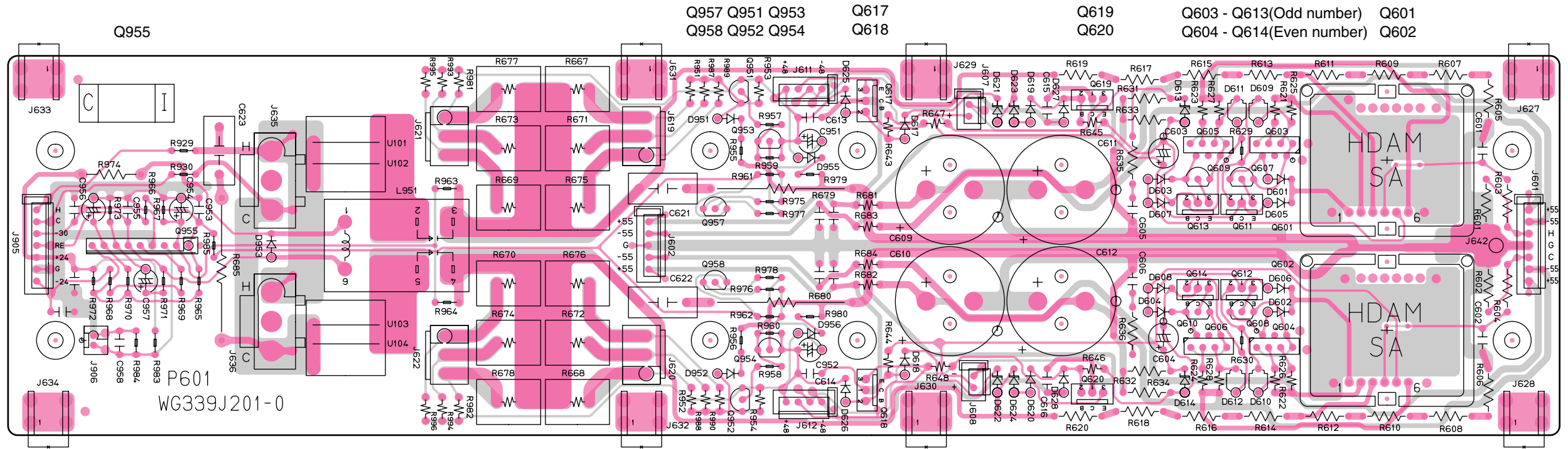




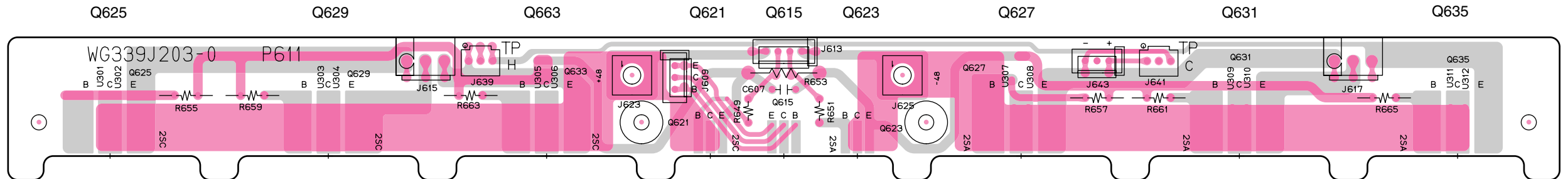
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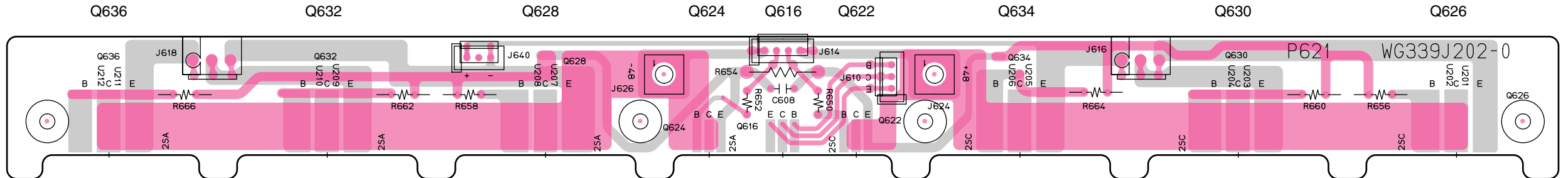
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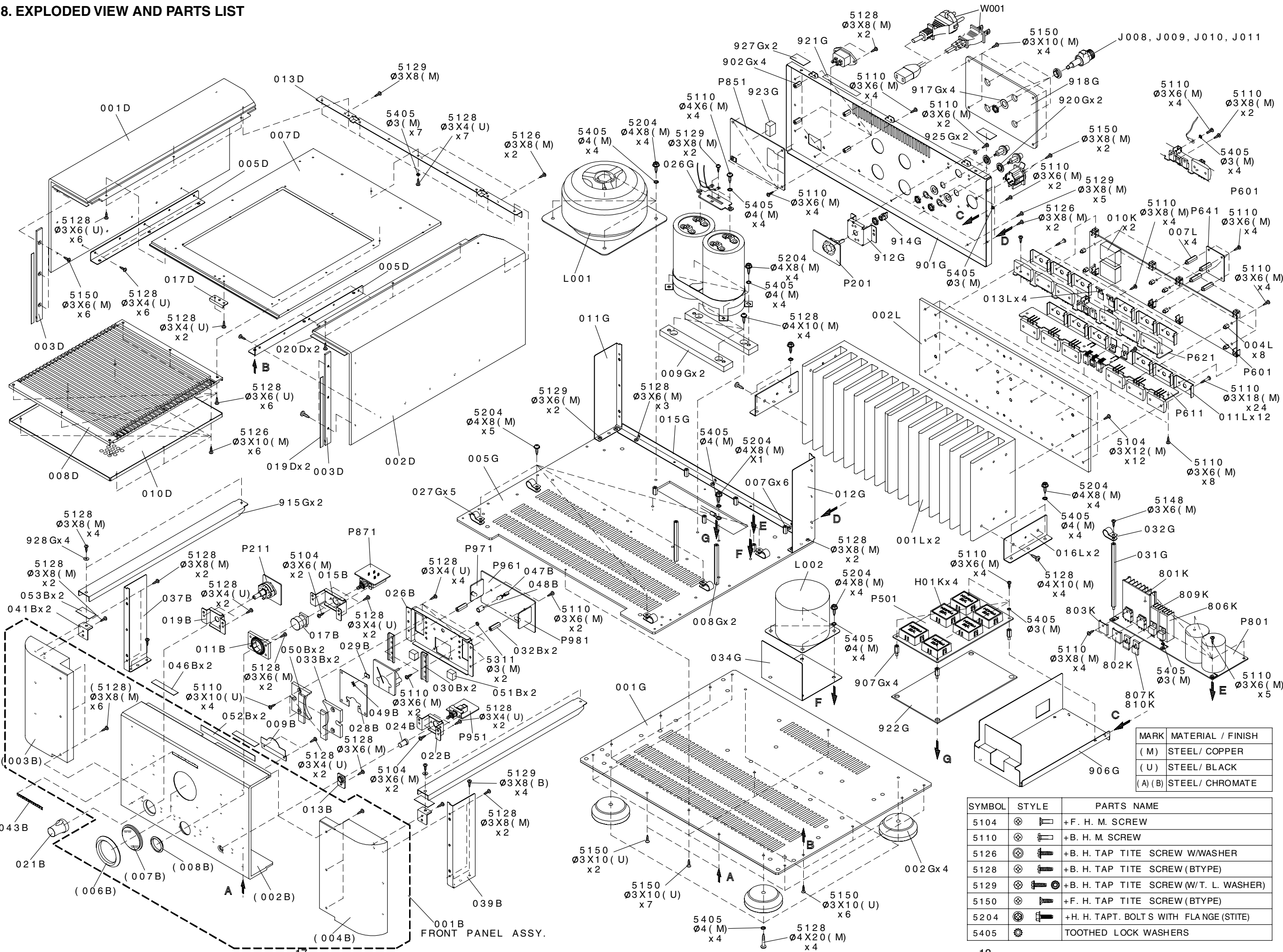
P611



P621



8. EXPLODED VIEW AND PARTS LIST



MARK	MATERIAL / FINISH
(M)	STEEL/ COPPER
(U)	STEEL/ BLACK
(A) (B)	STEEL/ CHROMATE

SYMBOL	STYLE	PARTS NAME
5104	⊗	+F. H. M. SCREW
5110	⊗	+B. H. M. SCREW
5126	⊗	+B. H. TAP TITE SCREW W/WASHER
5128	⊗	+B. H. TAP TITE SCREW (BTYPE)
5129	⊗	+B. H. TAP TITE SCREW (W/T. L. WASHER)
5150	⊗	+F. H. TAP TITE SCREW (BTYPE)
5204	⊗	+H. H. TAPT. BOLT S WITH FLANGE (STITE)
5405	⊗	TOOTHED LOCK WASHERS

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
001B		339J248510	FRONT PANEL ASSY	339J248510				PACKING	
002B		339J248110	FRONT PANEL	339J248110	001T	/F	nsp	USER GUIDE MA-9S1 Japan	339J851110
003B		339J063110	ESCUTCHEON LEFT	339J063110	001T	/N/U	339J851310	USER GUIDE MA-9S1	339J851310
004B		339J063120	ESCUTCHEON RIGHT	339J063120	▲ W001	/F	nsp	MAINS CORD FOR F OFC 2P	ZC01803130
006B		339J353110	RING FOR METER	339J353110	▲ W001	/N	ZC01803080	MAINS CORD 10A 250V 2P CLASS2	ZC01803080
007B		339J158010	WINDOW FOR METER	339J158010	▲ W001	/U	nsp	MAINS CORD 13A 125V UL/CSA	ZC01802100
008B		339J353120	RING FOR POWER SWITCH	339J353120					
009B		339J265010	INDICATOR FOR METER FRONT	339J265010					
011B		339J259010	BUSH FOR POWER SWITCH	339J259010					
013B		339J259020	BUSH FOR METER SWITCH	339J259020					
017B		339J270110	BUTTON FOR POWER SWITCH	339J270110					
021B		339J154110	KNOB FOR SELECTOR SWITCH	339J154110					
024B		339J270120	BUTTON FOR METER SWITCH	339J270120					
027B		53110303M0	HEXAGON NUT FOR METER	53110303M0					
028B		339J265020	INDICATOR FOR METER	339J265020					
029B		339J355020	LENS FOR STAR MARK	339J355020					
033B		339J355010	LENS FOR SIDE LIGHTING	339J355010					
043B		313J251110	BADGE MARANTZ BADGE (GOLD)	313J251110					
048B		340J152010	TUBE FOR LED(STAR MARK)	340J152010					
049B		339J251010	BADGE FOR STAR MARK	339J251010					
001D		339J249110	SIDE PANEL SIDE PANEL LEFT	339J249110					
002D		339J249120	SIDE PANEL SIDE PANEL RIGHT	339J249120					
007D		339J257110	LID TOP LID	339J257110					
008D		339J063130	ESCUTCHEON FOR TOP LID	339J063130					
010D		339J202010	NET FOR ESCUTCHEON	339J202010					
002G		163J057220	LEG CUPPER	163J057220					
026G		339J123010	CONTACTOR FOR CHEMICON	339J123010					
914G		426T154010	KNOB FOR ATT SWITCH	426T154010					
918G		339J053010	COVER FOR SPEAKER TERMINAL	339J053010					
920G		339J259030	BUSHING FOR CINCH TERMINAL	339J259030					
C001		OB22907110	ELECT. 22000µF 71V KG(M)	OB22907110					
C002		OB22907110	ELECT. 22000µF 71V KG(M)	OB22907110					
▲ J001		YJ04002550	JACK AC INLET TYPE HF-301	YJ04002550					
J005		YT02011300	TERMINAL EW-2560T-LH-B	YT02011300					
J006		YT02011300	TERMINAL EW-2560T-LH-B	YT02011300					
J007		YJ01004760	JACK NC3FDL-B-1	YJ01004760					
J008		YT01010360	TERMINAL WBT-0765 POLE RED	YT01010360					
J009		YT01010370	TERMINAL WBT-0765 POLE WHT	YT01010370					
J010		YT01010360	TERMINAL WBT-0765 POLE RED	YT01010360					
J011		YT01010370	TERMINAL WBT-0765 POLE WHT	YT01010370					
▲ L001	/F	nsp	MAINS TRANSF. SUPER LING	TS45001010					
▲ L001	/N	TS45001020	MAINS TRANSF.	TS45001020					
▲ L001	/U	nsp	MAINS TRANSF.	TS45001030					
L002		FN21010030	CHOKE COIL 0.18H	FN21010030					
L003		FC50160030	FERRITE CORE TFCK-16-8-13	FC50160030					
L004		FC50160030	FERRITE CORE TFCK-16-8-13	FC50160030					
L005		FC50160030	FERRITE CORE TFCK-16-8-13	FC50160030					
								NOT STANDARD SPEAR PARTS	
					001S		nsp	PACKING CASE	339J801010
					002S	/N/U	nsp	PACKING CASE	339J805010
								MASTER CARTON	
					003S		nsp	CUSHION F	339J809070
					004S		nsp	CUSHION R	339J809080

NOTE : *nsp* PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

9. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R***: 1) GD05 × × × 140, Carbon film fixed resistor, ±5% 1/4W

R***: 2) GD05 × × × 160, Carbon film fixed resistor, ±5% 1/6W

① — Resistance value

Examples ;

① Resistance value

0.1 Ω 001	10 Ω 100	1 kΩ 102	100 kΩ 104
0.5 Ω 005	18 Ω 180	2.7 kΩ 272	680 kΩ 684
1 Ω 010	100 Ω 101	10 kΩ 103	1 MΩ 105
6.8 Ω 068	390 Ω 391	22 kΩ 223	4.7 MΩ 475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

C***: CERAMIC CAP.

3) DD1 × × × × 370, Ceramic capacitor
 Disc type
 Temp.coeff.P350 ~ N1000, 50V
 ② — Capacity value
 ③ — Tolerance

Examples ;

② Tolerance (Capacity deviation)

±0.25 pF 0
 ±0.5 pF 1
 ±5% 5

* Tolerance of COMMON PARTS handled here are as follows :

0.5 pF ~ 5 pF ±0.25 pF
 6 pF ~ 10 pF ±0.5 pF
 12 pF ~ 560 pF ±5%

③ Capacity value

0.5 pF 005	3 pF 030	100 pF 101
1 pF 010	10 pF 100	220 pF 221
1.5 pF 015	47 pF 470	560 pF 561

C*** : CERAMIC CAP.

4) DK16 × × × 300, High dielectric constant ceramic capacitor
 Disc type
 Temp.chara. 2B4, 50V
 ④ — Capacity value

Examples ;

④ Capacity value

100 pF 101	1000 pF 102	10000 pF 103
470 pF 471	2200 pF 222	

C***: 5) ELECTROLY CAP. (), 6) FILM CAP. ()

5) EA × × × × × 10, Electrolytic capacitor
 One-way lead type, Tolerance ±20%
 ⑤ — Working voltage
 ⑥ — Capacity value

Examples ;

⑤ Capacity value

0.1 μF 104	4.7 μF 475	100 μF 107
0.33 μF 334	10 μF 106	330 μF 337
1 μF 105	22 μF 226	1100 μF 118
		2200 μF 228

⑥ Working voltage

6.3V 006	25V 025
10V 010	35V 035
16V 016	50V 050

6) DF15 × × × 350 — Plastic film capacitor
 DF15 × × × 310 — One-way type, Mylar ±5% 50V
 DF16 × × × 310 — Plastic film capacitor
 One-way type, Mylar ±10% 50V
 ⑦ — Capacity value

Examples ;

⑦ Capacity value

0.001 μF (1000 pF) 102	0.1 μF 104
0.0018 μF 182	0.56 μF 564
0.01 μF 103	1 μF 105
0.015 μF 153	

NOTE : 1) The above CODES (R***, R***, C***, C*** and C***) are omitted on the schematic diagram in some case.

2) On the occasion, be confirmed the common parts on the parts list.

3) Refer to "Common Parts List" for the other common parts (R105, DD4, DK4).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows;

1. KOA Corporation

Part No. (MJI)	Type No. (KOA)	Description
NH05 × × × 140	RF25S × × × × ΩJ	(±5% 1/4W)
NH05 × × × 120	RF50S × × × × ΩJ	(±5% 1/2W)
NH85 × × × 110	RF73B2A × × × × ΩJ	(±5% 1/10W)
NH95 × × × 140	RF73B2E × × × × ΩJ	(±5% 1/4W)

* Resistance value (0.1 Ω – 10 kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No. (MJI)	Type No. (MEC)	Description
NF05 × × × 140	ERD-2FCJ × × ×	(±5% 1/4W)
RF05 × × × 140		
NF02 × × × 140	ERD-2FCG × × ×	(±2% 1/4W)
RF02 × × × 140		

* Resistance value

Examples ;

* Resistance value

0.1 Ω 001	10 Ω 100	1 kΩ 102	100 kΩ 104
0.5 Ω 005	18 Ω 180	2.7 kΩ 272	680 kΩ 684
1 Ω 010	100 Ω 101	10 kΩ 103	1 MΩ 105
6.8 Ω 068	390 Ω 391	22 kΩ 223	4.7 MΩ 475

ABBREVIATION AND MARKS

ANT. : ANTENNA	BATT. : BATTERY
CAP. : CAPACITOR	CER. : CERAMIC
CONN. : CONNECTING	DIG. : DIGITAL
HP : HEADPHONE	MIC. : MICROPHONE
μ-PRO : MICROPROCESSOR	REC. : RECORDING
RES. : RESISTOR	SPK : SPEAKER
SW : SWITCH	TRANSF. : TRANSFORMER
TRIM. : TRIMMING	TRS. : TRANSISTOR
VAR. : VARIABLE	X'TAL : CRYSTAL

NOTE ON FUSE :

Regarding to all parts of parts code **FS20xxx2xx**, replace only with Wickmann-Werke GmbH, Type 372 non glass type fuse.

NOTE ON SAFETY :

Symbol  Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol  . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

 がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
R207 }		nsp	P201-INPUT ATT CIRCUIT BOARD 10kΩ ±1% 1/4W	GM11410020	R529 } R532 R535 } R538		nsp	332Ω ±1% 1/4W	GM11433200
R210							NF02471140	FUSE 470Ω G 1/4W	NF02471140
R211		nsp	8.25kΩ ±5% 1/4W	GM11482510	R539		nsp	10Ω ±1% 1/4W	GM114100G0
R212		nsp	8.25kΩ ±5% 1/4W	GM11482510	R540		nsp	10Ω ±1% 1/4W	GM114100G0
R213		nsp	4.64kΩ ±1% 1/4W	GM11446410	R541		nsp	JUMPER	nsp
R214		nsp	4.64kΩ ±1% 1/4W	GM11446410	R542		nsp	JUMPER	nsp
R215		nsp	12.1kΩ ±1% 1/4W	GM11412120	R543		nsp	46.4Ω ±1% 1/4W	GM114464G0
R216		nsp	12.1kΩ ±1% 1/4W	GM11412120	R544		nsp	46.4Ω ±1% 1/4W	GM114464G0
S201		SR02060190	ROTARY SWITCH SRRM264300	SR02060190	R545		nsp	100Ω ±1% 1/4W	GM11410000
			P211-MODE SEL CIRCUIT BOARD					P501-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : R533 R534 R546	
S401		SR04030460	ROTARY SWITCH SRRM435800	SR04030460				P501-SEMICONDUCTORS	
			P501-INPUT AMP CIRCUIT BOARD		D201 } D203		nsp	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000
			P501-CAPACITORS		D501 } D504		HD30020010	ZENER DIODE HZ20-1L (19V)	HD30020010
C207		nsp	CER. 0.1μF +80%-20% 50V DC	DD38104010	D505 } D512		nsp	DIODE HSS81TD 150V 150MA	HD20027010
C501		OF55221590	FILM 220pF 200V	OF55221590	D513 } D516		HI10005340	L.E.D. HLMF-K200 #2UL RED	HI10005340
C502		OF55221590	FILM 220pF 200V	OF55221590					
C503		OF55104580	FILM 0.1μF 100V	OF55104580	Q501		KH269J1010	UNIT HDAM (PM01-PCB ASSY)	KH269J1010
C504		OF55104580	FILM 0.1μF 100V	OF55104580	Q502		KH269J1010	UNIT HDAM (PM01-PCB ASSY)	KH269J1010
C505 }		nsp	ELECT. 220μF M 25V ARS	OA22702540	Q503		KH339J1010	UNIT HDAM-SA (PH01-PCB ASSY)	KH339J1010
C508					Q504		KH339J1010	UNIT HDAM-SA (PH01-PCB ASSY)	KH339J1010
C509		OF55221590	FILM 220pF ±5% 200V FAS	OF55221590	Q505		HT113492A0	TRS. 2SA1349 GR BL DUAL	HT113492A0
C510		OF55221590	FILM 220pF ±5% 200V FAS	OF55221590	Q506		HT113492A0	TRS. 2SA1349 GR BL DUAL	HT113492A0
C511 }		nsp	ELECT. 220μF 50V ARS	OA22705040	Q507		HT333812A0	TRS. 2SC3381 GR OR BL	HT333812A0
C514					Q508		HT333812A0	TRS. 2SC3381 GR OR BL	HT333812A0
C515		OF55221590	FILM 220pF ±5% 200V FAS	OF55221590	Q509		HT109702A0	TRS. 2SA970 GR OR BL	HT109702A0
C516		OF55221590	FILM 220pF ±5% 200V FAS	OF55221590	Q510		HT109702A0	TRS. 2SA970 GR OR BL	HT109702A0
			P501-RESISTORS		Q511		HT322402A0	TRS. 2SC2240 GR OR BL	HT322402A0
R201		nsp	100kΩ ±1% 1/4W	GM11410030	Q512		HT322402A0	TRS. 2SC2240 GR OR BL	HT322402A0
R202		nsp	100kΩ ±1% 1/4W	GM11410030	Q513		HT111452A0	TRS. 2SA1145 O OR Y	HT111452A0
R203		nsp	100kΩ ±1% 1/4W	GM11410030	Q514		HT111452A0	TRS. 2SA1145 O OR Y	HT111452A0
R204		nsp	6.8kΩ ±5% 1/6W	GG05682160	Q515		HT327052A0	TRS. 2SC2705 O OR Y	HT327052A0
R205		nsp	6.8kΩ ±5% 1/6W	GG05682160	Q516		HT327052A0	TRS. 2SC2705 O OR Y	HT327052A0
R206		nsp	4.7kΩ ±5% 1/6W	GG05472160	Q517		KH339J1010	UNIT HDAM-SA (PH01-PCB ASSY)	KH339J1010
R501		nsp	100kΩ ±1% 1/4W	GM11410030	Q518		KH339J1010	UNIT HDAM-SA (PH01-PCB ASSY)	KH339J1010
R502		nsp	100kΩ ±1% 1/4W	GM11410030				P501-MISCELLANEOUS	
R503		nsp	220Ω ±1% 1/4W	GM11422000	L201 } L204		LY20240470	RELAY ED2-24	LY20240470
R504		nsp	220Ω ±1% 1/4W	GM11422000				P601-MAIN AMP CIRCUIT BOARD	
R505 }		nsp	3.3MΩ ±5% 1/6W	GD05335160				P601-CAPACITORS	
R510					C603		nsp	ELECT. 22μF 25V ARA	OA22602550
R511		nsp	1kΩ ±1% 1/4W	GM11410010	C604		nsp	ELECT. 22μF 25V ARA	OA22602550
R512		nsp	JUMPER	nsp	C605		nsp	FILM 680pF ±5% 100V FNS	OF55681580
R513 }		nsp	3.32kΩ ±1% 1/4W	GM11433210	C606		nsp	FILM 680pF ±5% 100V FNS	OF55681580
R516									
R517		nsp	1kΩ ±1% 1/4W	GM11410010	C609 } C612		nsp	ELECT.470μF 80V GOLD TUNE	OA47708010
R518		nsp	1kΩ ±1% 1/4W	GM11410010	C613 } C616		OF55103580	FILM 0.01μF 100V	OF55103580
R519		nsp	46.4Ω ±1% 1/4W	GM114464G0					
R520		nsp	46.4Ω ±1% 1/4W	GM114464G0					
R521 }		nsp	2.2kΩ ±5% 1W	GA05222010					
R524									
R525 }		nsp	681Ω ±1% 1/4W	GM11468100					
R528									

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
C621		OF55393580	FILM 0.039µF 100V	OF55393580				P601-SEMICONDUCTORS	
C622		OF55393580	FILM 0.039µF 100V	OF55393580	D601				
C623		OF55393580	FILM 0.039µF 100V	OF55393580	}		nsp	DIODE HSS81TD 150V 150MA	HD20027010
C951		nsp	ELECT. 0.47µF M 50V RA-2	OA47405020	D608				
C952		nsp	ELECT. 0.47µF M 50V RA-2	OA47405020	D609		HI10005340	L.E.D. HLMF-K200 RED	HI10005340
C953		nsp	CER. 0.01µF +80%-20% 50V	DD38103010	D610		HI10005340	L.E.D. HLMF-K200 RED	HI10005340
C954		nsp	ELECT. 47µF M 25V RA-2	OA47602520	D611		HI10005340	L.E.D. HLMF-K200 RED	HI10005340
C955		nsp	CER. 0.1µF +80%-20% 50V DC	DD38104010	D612		HI10005340	L.E.D. HLMF-K200 RED	HI10005340
C956		nsp	ELECT. 47µF M 25V RA-2	OA47602520	D625				
C957		nsp	ELECT. 0.47µF M 50V RA-2	OA47405020	}		nsp	DIODE HSS81TD 150V 150MA	HD20027010
C958		nsp	CER. 0.1µF +80%-20% 50V DC	DD38104010	D628				
			P601-RESISTORS		D951		nsp	DIODE HSS81TD 150V 150MA	HD20027010
R601		nsp	100kΩ ±1% 1/4W	GM11410030	D952		nsp	DIODE HSS81TD 150V 150MA	HD20027010
R602		nsp	100kΩ ±1% 1/4W	GM11410030	D953		nsp	DIODE HSS81TD 150V 150MA	HD20027010
R603		nsp	JUMPER	nsp	D955		nsp	DIODE HSS81TD 150V 150MA	HD20027010
R604		nsp	JUMPER	nsp	D956		nsp	DIODE HSS81TD 150V 150MA	HD20027010
R605									
}					Q601		KH339J1010	UNIT HDAM-SA (PH01-PCB ASSY)	KH339J1010
R620		nsp	220Ω ±1% 1/4W	GM11422000	Q602		KH339J1010	UNIT HDAM-SA (PH01-PCB ASSY)	KH339J1010
R621					Q603		HT113492A0	TRS. 2SA1349 GR BL DUAL	HT113492A0
}					Q604		HT113492A0	TRS. 2SA1349 GR BL DUAL	HT113492A0
R624		nsp	680Ω ±5% 1/6W	GG05681160	Q605		HT333812A0	TRS. 2SC3381 GR OR BL	HT333812A0
R625					Q606		HT333812A0	TRS. 2SC3381 GR OR BL	HT333812A0
}					Q607		HT109702A0	TRS. 2SA970 GR OR BL	HT109702A0
R628		nsp	330Ω ±5% 1/6W	GG05331160	Q608		HT109702A0	TRS. 2SA970 GR OR BL	HT109702A0
R631					Q609		HT322402A0	TRS. 2SC2240 GR OR BL	HT322402A0
}					Q610		HT322402A0	TRS. 2SC2240 GR OR BL	HT322402A0
R634		nsp	226kΩ ±1% 1/4W	GM11422630	Q611		HT113602A0	TRS. 2SA1360 O OR Y	HT113602A0
R635		nsp	10Ω ±1% 1/4W	GM114100G0	Q612		HT113602A0	TRS. 2SA1360 O OR Y	HT113602A0
R636		nsp	10Ω ±1% 1/4W	GM114100G0	Q613		HT334232A0	TRS. 2SC3423 O OR Y	HT334232A0
R643		nsp	68Ω ±5% 1/6W	GG05680160	Q614		HT334232A0	TRS. 2SC3423 O OR Y	HT334232A0
R644		nsp	68Ω ±5% 1/6W	GG05680160	Q617		HT334212A0	TRS. 2SC3421 O Y	HT334212A0
R645		nsp	68Ω ±5% 1/6W	GG05680160				120V 1A PC=1.5W(10W)	
R646		nsp	68Ω ±5% 1/6W	GG05680160	Q618		HT334212A0	TRS. 2SC3421 O Y	HT334212A0
R647		nsp	1kΩ ±5% 1/6W	GG05102160				120V 1A PC=1.5W(10W)	
R648		nsp	1kΩ ±5% 1/6W	GG05102160	Q619		HT113582A0	TRS. 2SA1358 O Y	HT113582A0
▲ R667								120V 1A PC=1.5W(10W)	
}					Q620		HT113582A0	TRS. 2SA1358 O Y	HT113582A0
▲ R678		GW05001050	0.1Ω J 5W BWR5	GW05001050				120V 1A PC=1.5W(10W)	
R679		nsp	10Ω ±5% 3W	GA05100030	Q951		HT322402A0	TRS. 2SC2240 GR OR BL	HT322402A0
R680		nsp	10Ω ±5% 3W	GA05100030	Q952		HT322402A0	TRS. 2SC2240 GR OR BL	HT322402A0
R681		nsp	22Ω ±5% 1/6W	GG05220160	Q953		HT109702A0	TRS. 2SA970 GR OR BL	HT109702A0
R682		nsp	22Ω ±5% 1/6W	GG05220160	Q954		HT109702A0	TRS. 2SA970 GR OR BL	HT109702A0
R683		nsp	22Ω ±5% 1/6W	GG05220160	Q955		HC10042050	IC TA7317P	HC10042050
R684		nsp	22Ω ±5% 1/6W	GG05220160	Q957		HT322402A0	TRS. 2SC2240 GR OR BL	HT322402A0
R685		nsp	10Ω ±5% 3W	GA05100030	Q958		HT322402A0	TRS. 2SC2240 GR OR BL	HT322402A0
R951		nsp	1.5kΩ ±5% 1/6W	GG05152160				P601-MISCELLANEOU	
R952		nsp	1.5kΩ ±5% 1/6W	GG05152160	L951		LY20240430	RELAY JC2AD-DC24V (AR3422 M02)	LY20240430
R953		nsp	4.7kΩ ±5% 1/6W	GG05472160					
R954		nsp	4.7kΩ ±5% 1/6W	GG05472160					
R974		NK05470010	METAL 47Ω ±5% 1W	NK05470010				P611-H POWER TR	
R981		nsp	1.5kΩ ±5% 1/6W	GG05152160				CIRCUIT BOARD	
R982		nsp	1.5kΩ ±5% 1/6W	GG05152160				P611-CAPACITOR	
R987					C607		OF55103580	FILM 0.01µF 100V	OF55103580
}		nsp	1.5kΩ ±5% 1/6W	GG05152160					
R990								P611-RESISTORS	
R993					R649		nsp	47Ω ±5% 1/6W	GG05470160
}		nsp	1.5kΩ ±5% 1/6W	GG05152160	R651		nsp	47Ω ±5% 1/6W	GG05470160
R996					R653		nsp	150Ω ±5% 1W	GA05151010
					R655		nsp	10Ω ±5% 1/4W	GG05100140
					R657		nsp	10Ω ±5% 1/4W	GG05100140
					R659		nsp	10Ω ±5% 1/4W	GG05100140
					R661		nsp	10Ω ±5% 1/4W	GG05100140
					R663		nsp	10Ω ±5% 1/4W	GG05100140
					R665		nsp	10Ω ±5% 1/4W	GG05100140
			P601-RESISTORS (COMMON)						
			CARBON FILM FIXED RES.						
			±5% 1/6W : R629 R630 R637 R637						
			R638-R640 R809 R810 R815 R816						
			R854-R856 R901-R916 R918 R919						

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
Q615		HT415080A0	P611-SEMICONDUCTORS TRS. 2SD1508 DARLINGTON HFE>4000	HT415080A0	R801	nsp		P801-RESISTORS 3.3kΩ ±5% 2W	GA05332020
Q621		HT348832A0	TRS. 2SC4883 O OR Y	HT348832A0	R802	nsp		3.3kΩ ±5% 2W	GA05332020
Q623		HT118592A0	TRS. 2SA1859 O OR Y	HT118592A0	R803	nsp		1Ω ±5% 1/2W	GG05010120
Q625/		HK121619F0	TRS. PAIR KIT	HK121619F0	R804	nsp		1Ω ±5% 1/2W	GG05010120
Q627			2SA1216/2SC2922 O.OR Y PAIR		R805	nsp		3.3kΩ ±5% 2W	GA05332020
Q629/		HK121619F0	TRS. PAIR KIT	HK121619F0	R806	nsp		3.3kΩ ±5% 2W	GA05332020
Q631			2SA1216/2SC2922 O.OR Y PAIR		R807	nsp		1Ω ±5% 1/4W	GG05010140
Q633/		HK121619F0	TRS. PAIR KIT	HK121619F0	R808	nsp		1Ω ±5% 1/4W	GG05010140
Q635			2SA1216/2SC2922 O.OR Y PAIR		R811	nsp		4.7Ω ±5% 1/6W	GG05047160
					R812	nsp		4.7Ω ±5% 1/6W	GG05047160
					R813	nsp		4.7Ω ±5% 1/6W	GG05047160
					R817	nsp		1Ω ±5% 1/2W	GG05010120
			P621-N POWER TR		R917	RA02230780		TRIM. 22KΩRH0638CJ4R	RA02230780
			CIRCUIT BOARD		R926	nsp		22Ω ±5% 1/6W	GG05220160
			P621-CAPACITOR		R927	nsp		22Ω ±5% 1/6W	GG05220160
C608		OF55103580	FILM 0.01μF 100V	OF55103580	R928	nsp		47Ω ±5% 1/6W	GG05470160
R650		nsp	P621-RESISTORS 47Ω ±5% 1/6W	GG05470160				P801-RESISTORS (COMMON)	
R652		nsp	47Ω ±5% 1/6W	GG05470160				CARBON FILM FIXED RES.	
R654		nsp	150Ω ±5% 1W	GA05151010				±5% 1/6W : R924 R925 R930 R941	
R656		nsp	10Ω ±5% 1/4W	GG05100140				R955-R973 R975-R978	
R658		nsp	10Ω ±5% 1/4W	GG05100140					
R660		nsp	10Ω ±5% 1/4W	GG05100140				P801-SEMICONDUCTORS	
R662		nsp	10Ω ±5% 1/4W	GG05100140	D801	HE10007100		DIODE KCH30A15	HE10007100
R664		nsp	10Ω ±5% 1/4W	GG05100140	D802	HE10008100		DIODE KRH30A15	HE10008100
R666		nsp	10Ω ±5% 1/4W	GG05100140	D803				
					}	nsp		DIODE 21DQ10	HD20059100
					D810				
Q616		HT415080A0	P621-SEMICONDUCTORS TRS. 2SD1508 DARLINGTON HFE>4000	HT415080A0	⚠ D811				
					}				
Q622		HT348832A0	TRS. 2SC4883 O OR Y	HT348832A0	⚠ D820	HD20055100		DIODE SHOTTKY	HD20055100
Q624		HT118592A0	TRS. 2SA1859 O OR Y	HT118592A0				11EQS10 1A 100V	
Q626/		HK121619F0	TRS. PAIR KIT	HK121619F0	D821	HD32401000		ZENER DIODE 24V	HD32401000
Q628			2SA1216/2SC2922 O.OR Y PAIR		D822	HD32401000		ZENER DIODE 24V	HD32401000
Q630/		HK121619F0	TRS. PAIR KIT	HK121619F0	D901	nsp		DIODE 1SS176 MA165 1SS254	HD20002000
Q632			2SA1216/2SC2922 O.OR Y PAIR					30V 0.1A	
Q634/		HK121619F0	TRS. PAIR KIT	HK121619F0	D902	nsp		DIODE 1SS176 MA165 1SS254	HD20002000
Q636			2SA1216/2SC2922 O.OR Y PAIR					30V 0.1A	
					D903	HI10005340		L.E.D. HLMF-K200 #2UL RED	HI10005340
					D904				
			P641-IYDLING ADJ		}	nsp		DIODE 1SS176 MA165 1SS254	HD20002000
			CIRCUIT BOARD		D908			30V 0.1A	
D615		nsp	DIODE HSS81TD 150V 150MA	HD20027010					
D616		nsp	DIODE HSS81TD 150V 150MA	HD20027010	Q801	HT41415100		TRS. 2SD1415	HT41415100
R641		RA02220760	TRIM. VARIABLE 2.2kΩ VERT	RA02220760	Q802	HT21020100		TRS. 2SB1020	HT21020100
R642		RA02220760	TRIM. VARIABLE 2.2kΩ VERT	RA02220760	Q803	HF202461C0		F.E.T. 2SK246 GR	HF202461C0
					Q804	HF202461C0		F.E.T. 2SK246 GR	HF202461C0
					Q901				
			P641-RESISTORS (COMMON)		}	HC10111090		IC NJM2114D	HC10111090
			CARBON FILM FIXED RES.		Q904			DUAL LOW NOISE OP-AMP	
			±5% 1/6W : R920-R923		Q905	HT333812A0		TRS. 2SC3381 GR OR BL	HT333812A0
			P801-POWER SUPPLY					P801-MISCELLANEOUS	
			CIRCUIT BOARD						
			P801-CAPACITORS		G801				
C801		nsp	ELECT. 4700μF 80V GOLD TUNE	OA47808010	}	BF47400020		CAP.COMP.	BF47400020
C802		nsp	ELECT. 4700μF 80V GOLD TUNE	OA47808010	G804			0.47uF+6.8Ω RFD2B474K	
C803		nsp	ELECT. ELNA RA2 16X25	OA10805020	L901	LY20240470		RELAY ED2-24	LY20240470
C804		nsp	ELECT. ELNA RA2 16X25	OA10805020					
C805		nsp	ELECT. 220μF M 25V RA-2	OA22702520				P851-AC INPUT	
C806		nsp	ELECT. 220μF M 25V RA-2	OA22702520				CIRCUIT BOARD	
C807		nsp	ELECT. 220μF M 25V RA-2	OA22702520				P851-CAPACITORS	
C808		nsp	ELECT. 220μF M 25V RA-2	OA22702520	C851	nsp		FILM. 0.01μF M 250V AC	DF77103500
C809		nsp	ELECT. 1μF M 50V RA-2	OA10505020	C852	nsp		FILM. 0.01μF M 250V AC	DF77103500
C903		nsp	ELECT. 10μF M 25V RA-2	OA10602520	C853	nsp		ELECT. 220μF 35V M RA-2	OA22703520
C904		OF15101540	FILM 100pF J 100V APSV	OF15101540	C854	nsp		ELECT. 47μF M 35V RA-2	OA47603520
C905		OF15101540	FILM 100pF J 100V APSV	OF15101540	C855	nsp		ELECT. 220μF 35V M RA-2	OA22703520
C906		nsp	ELECT. 10μF M 25V RA-2	OA10602520	C856	nsp		ELECT. 10μF M 50V RA-2	OA10605020
C908		nsp	ELECT. 220μF M 25V RA-2	OA22702520				P851-RESISTORS	
C909		nsp	ELECT. 220μF M 25V RA-2	OA22702520	⚠ R851	NQ15022070		ROTOR 2.2Ω 7W W/TEMP.FUSE	NQ15022070

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