

Service Manual

74 PM14 /02B/02G

PM-14F N

Integrated amplifier

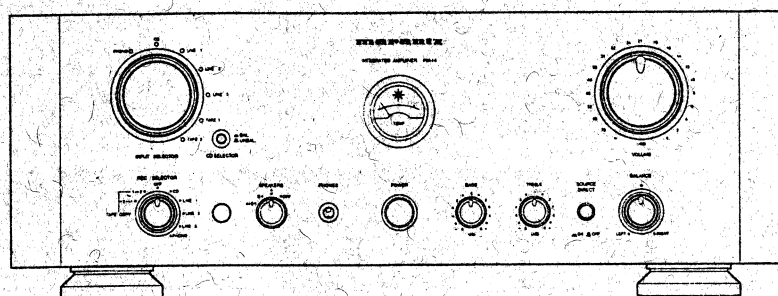


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Please use this service manual with refer
修理の際は、必ず取扱説明書を準備し操作方

user guide (D.F.U.) without fail.
の上作業を行ってください。

marantz®

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.
440 MEDINAH ROAD
ROSELLE, ILLINOIS 60172
USA
PHONE : 630 - 307 - 3100
FAX : 630 - 307 - 2687

CANADA

LENBROOK INDUSTRIES LIMITED
633 GRANITE COURT,
PICKERING, ONTARIO L1W 3K1
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PROFESSIONAL USA

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FAX : 630 - 820 - 8103

PROFESSIONAL CANADA

TC ELECTRONICS CANADA LTD.
540 FIRING AVE.
BAIE D'URFÉ, QUEBEC H9X 3T2
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FAX : 514 - 457 - 5524

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FAX : +31 - 2 - 323 - 2154

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THAILAND

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746 - 754 MAHACHAI RD.,
WANGBURAPAPIROM, PHRANAKORN,
BANGKOK, 10200 THAILAND
PHONE : +66 - 2 - 222 - 9181
FAX : +66 - 2 - 224 - 6795

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3F, BLOCK-B WO KEE HONG BLDG., 585-609
CASTLE PEAK RD., KWAI CHUNG, N.T.
HONG KONG
PHONE : +852 24942033
FAX : +852 24101656

AUSTRALIA / NEW ZEALAND

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52 CROWN STREET, RICHMOND 3121
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PHONE : +61 - 3 - 9429 - 2199
FAX : +61 - 3 - 9429 - 9309

TAIWAN

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6 TH FL NO. 148 SUNG KIANG ROAD,
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FAX : +886 (2) 5630415

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PHONE : +60 3 - 7184666
FAX : +60 3 - 7173828

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35-1, 7-CHOME, SAGAMIONO
SAGAMIHARA - SHI, KANAGAWA
JAPAN 228-8505
PHONE : +81 427 48 9379
FAX : +81 427 48 0689

日本 マランツ 株式会社

本 社 〒228-8505
神奈川県相模原市相模大野 7 - 35 - 1
営業本部 〒150-0022
東京都渋谷区恵比寿南 1 - 11 - 9

SINGAPORE

FORWARD MARKETING (S) PTE. LTD.
23, LORONG 8, TOA PAYOH,
SINGAPORE 319257.
PHONE : +65 2583640
FAX : +65 3564047

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.

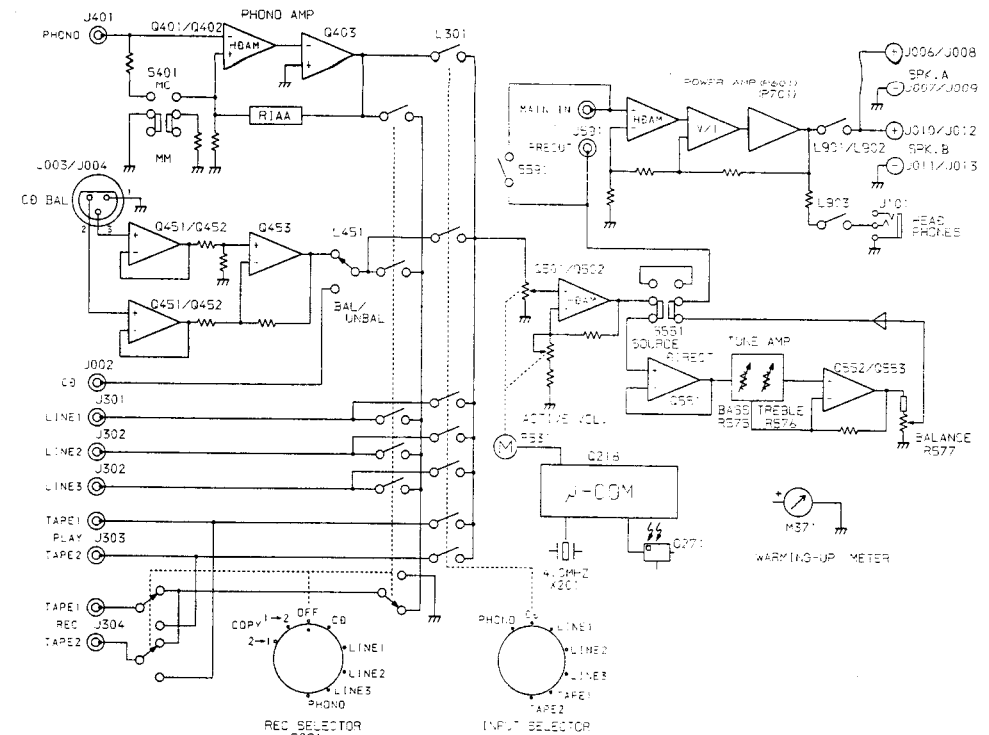
In case of difficulties, do not hesitate to contact the Technical
Department at above mentioned address.

1. TECHNICAL SPECIFICATIONS

Rated power output (20 Hz to 20 kHz, 2CH simultaneous drive)	100 W x 2 (8 Ω load)
	160 W x 2 (6 Ω load)
	200 W x 2 (4 Ω load)
Total harmonic distortion (20 Hz to 20 kHz, 2CH drive, 8 Ω load)	0.008 %
Cross-modulation distortion (SMPTE)	0.008 %
Output bandwidth (8 Ω load, 0.04 %)	10 Hz to 50 kHz
Frequency response (CD, SOURCE DIRECT)	5 Hz to 100 kHz, ± 0.1 dB
Damping factor (8 Ω load, 20 Hz to 10 kHz)	180
Input sensitivity/input impedance	
PHONE (MC)	250 μ V/100 Ω
PHONE (MM)	2.8 mV/47 k Ω
HIGH LEVEL	200 mV/10 k Ω
MAIN IN	2 V/100 k Ω
Output voltage/output impedance	
PRE OUT	2 V/900 Ω
Maximum allowable PHONE input (1 kHz)	
MC	12 mV
MM	130 mV
RIAA deviation (20 Hz to 20 kHz)	± 0.2 dB
S/N (1HF A network, input shorted)	
PHONE (MC)	76 dB
PHONE (MM)	90 dB
HIGH LEVEL	110 dB
Tone control	
BASS (100 Hz)	± 8 dB
TREBLE (10 kHz)	± 8 dB
Supply voltage	
/02 version	230 V AC, 50 Hz
F version	100 V AC, 50/60 Hz
Power consumption	300 W
Dimensions (Maximum)	
Width	458 mm
Height	166 mm
Depth	464 mm
Weight	23.0 kg
Accessories	
Remote control unit (RC-17PM)	x 1
Dimensions	
Width	44 mm
Height	239 mm
Depth	17.5 mm
Weight (without batteries)	189 g
SUM-4 (R6/ "AA" size) dry cell battery	x 2

Design and specifications are subject to change without notice.

2. BLOCK DIAGRAM



3. TEST EQUIPMENT REQUIRED FOR SERVICING

Item	Use
Distortion Analyzer 歪率計	Distortion measurements 歪の測定
Audio Oscillator 低周波発振器	Sinewave and squarewave signal source 正弦波及び矩形波の信号源
AC VTVM AC VTVM	Voltage measurements (AC) 交流電圧の測定
Oscilloscope オシロスコープ	Waveform analysis and trouble shooting and ASO alignment 波計分析、トラブルシューティング及びASOの調整
DC VTVM DC VTVM	Voltage measurements (DC) 直流電圧の測定
AC Wattmeter 交流ワットメーター	Monitors primary power to amplifier アンプの一次側消費電力のモニター
Line Voltmeter 電源電圧計	Monitors potential of primary power to amplifier アンプの一次側消費電圧のモニター
Variable Autotransformer スライダック	Adjust level of primary power to amplifier アンプの一次側電圧の調整
Circuit Tester テスター	Trouble shooting トラブルシューティング
Shorting Plug ショート用プラグ	Shorts amplifier input to eliminate noise pickup 雑音を拾わないようにアンプ入力を短絡する

4. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern Side)

P401

Q459

Q451

Q452

Q454

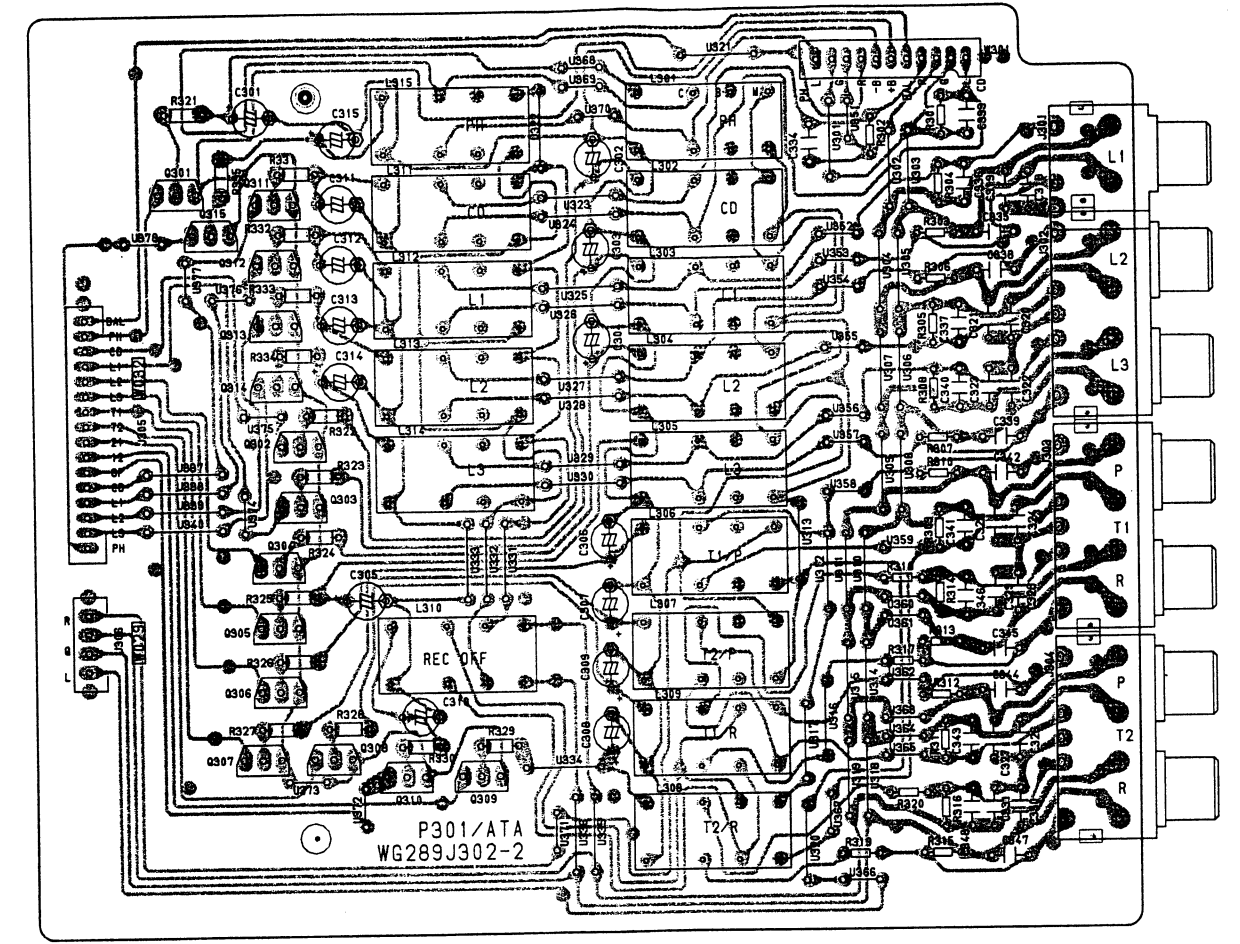
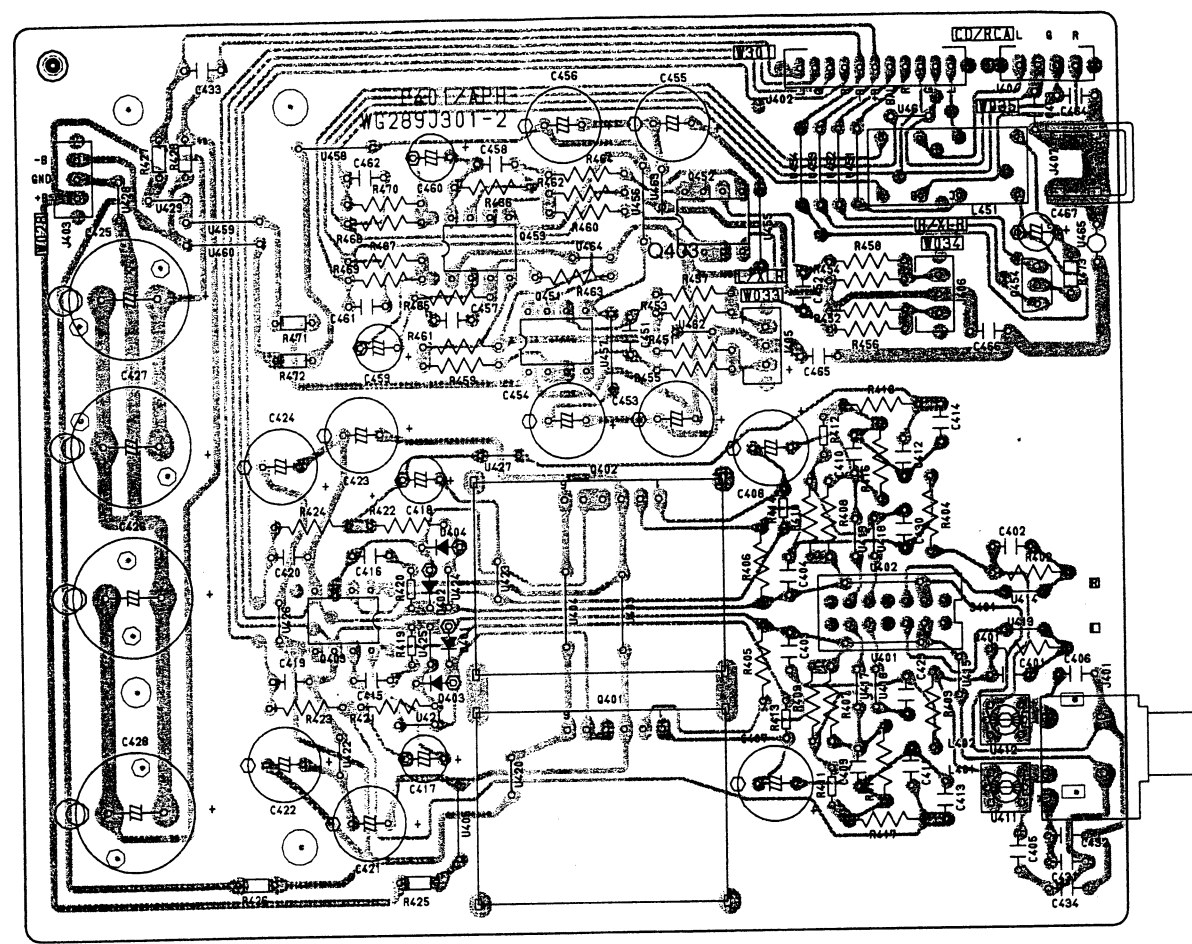
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Q301 Q311 - Q315
Q302 - Q308

Q310 Q311

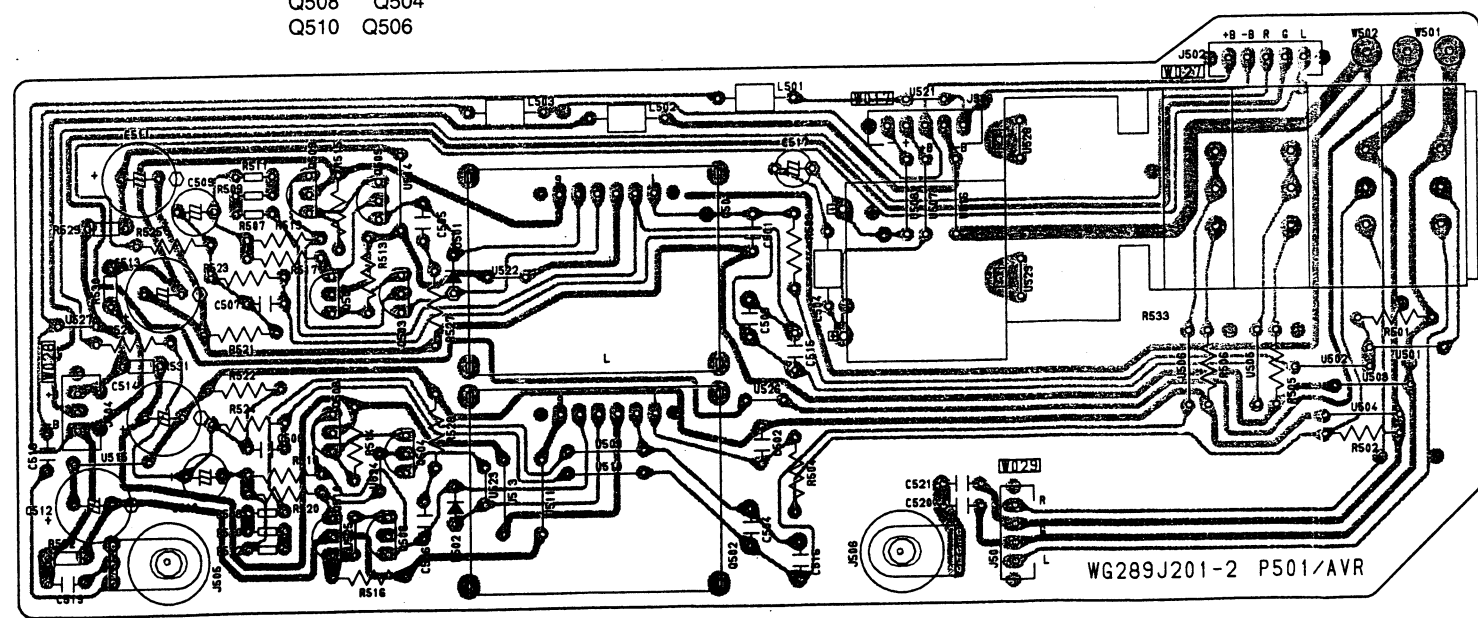
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Q402
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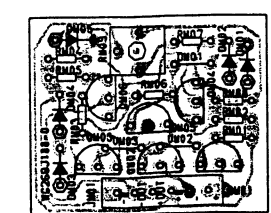


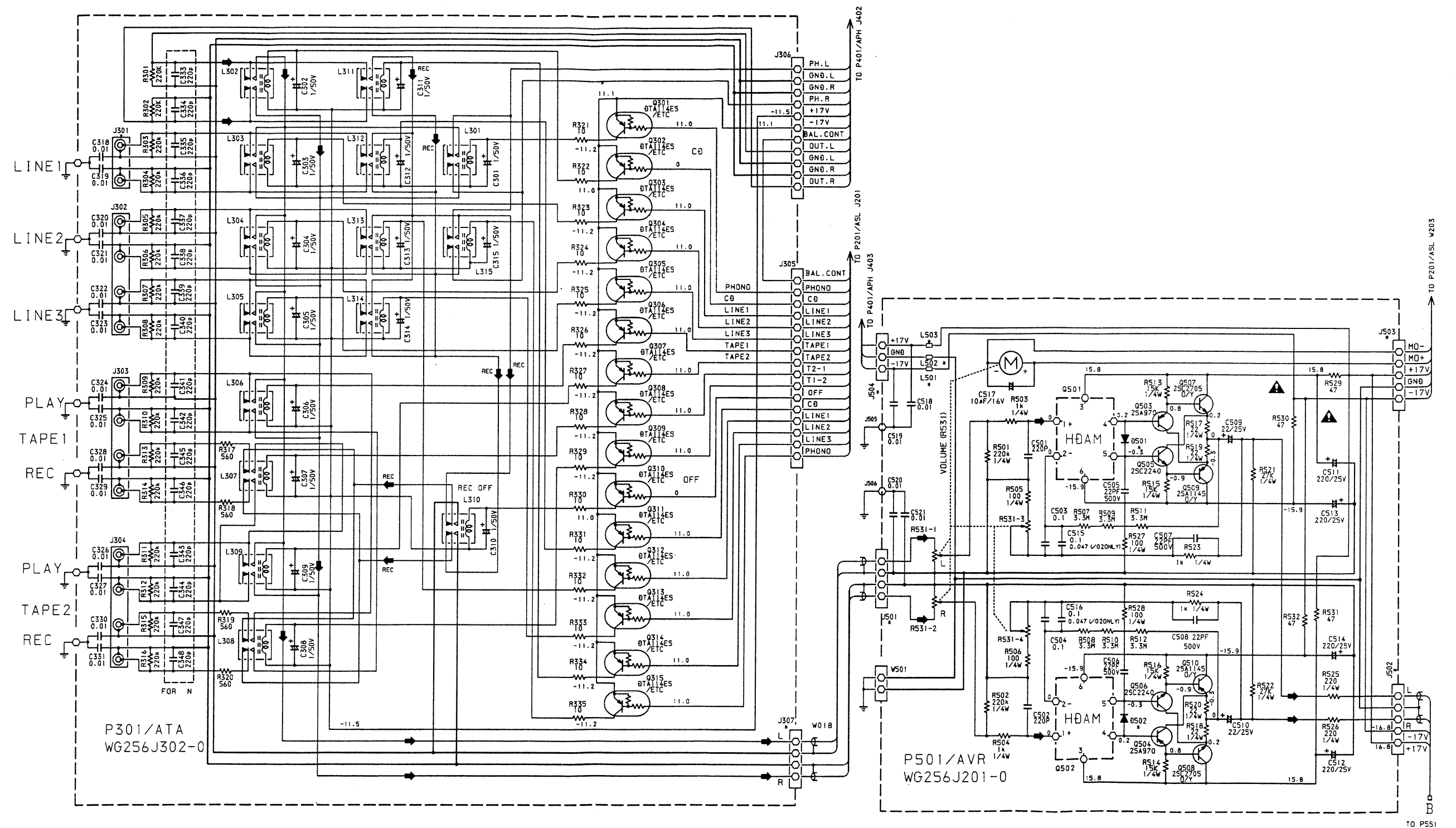
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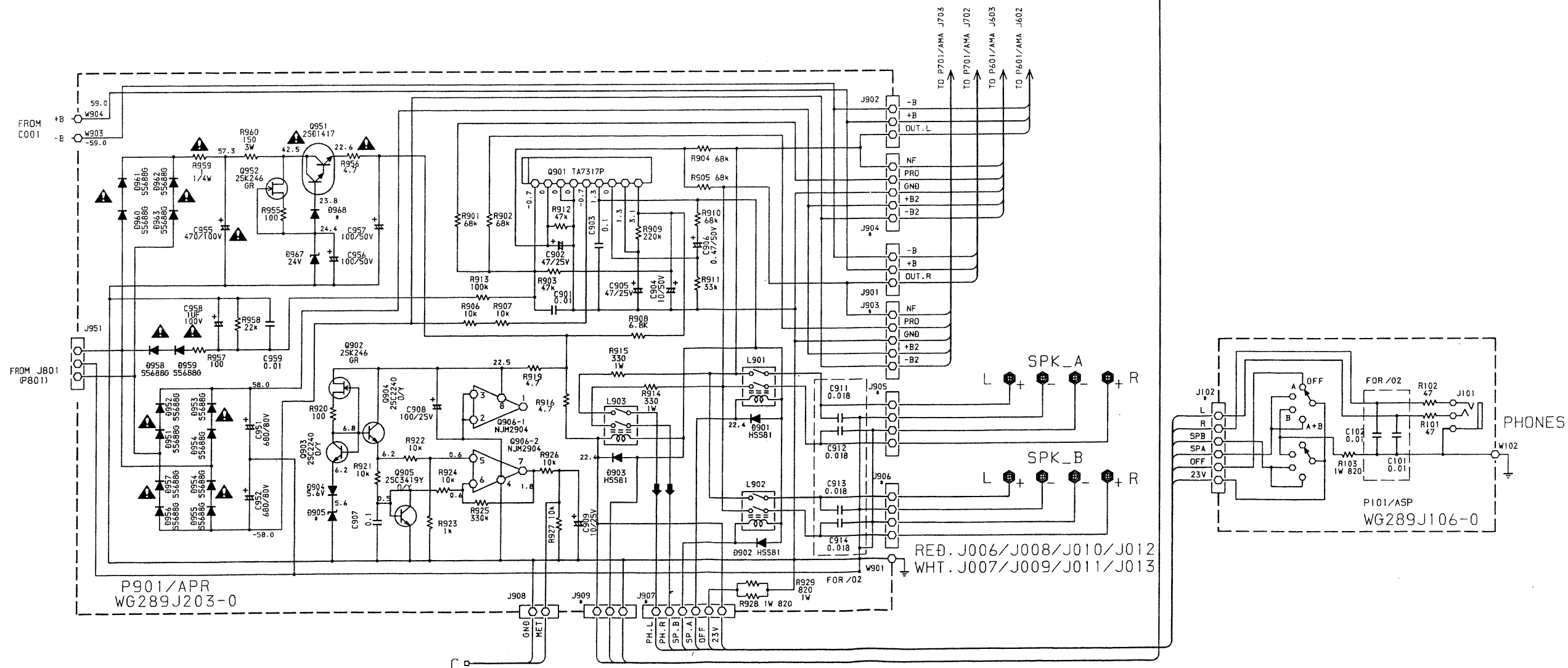
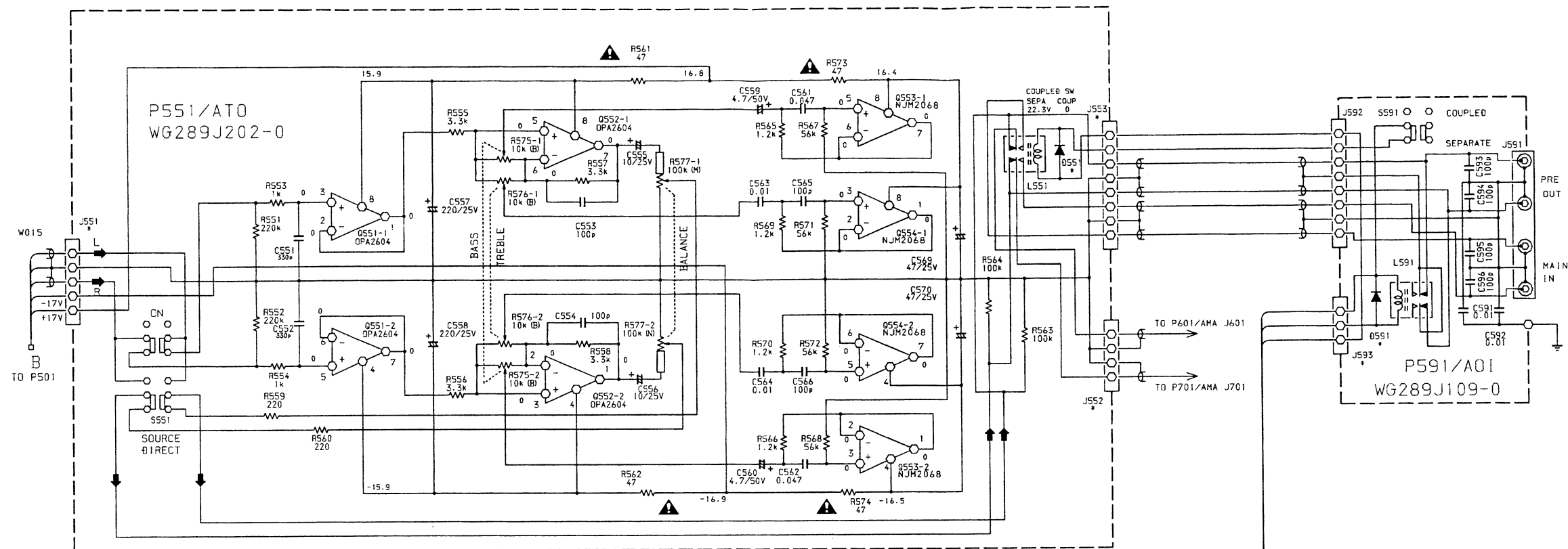
Q509 Q505
Q507 Q503
Q508 Q504
Q510 Q506



HDAM







P601

Q618

Q617

Q615

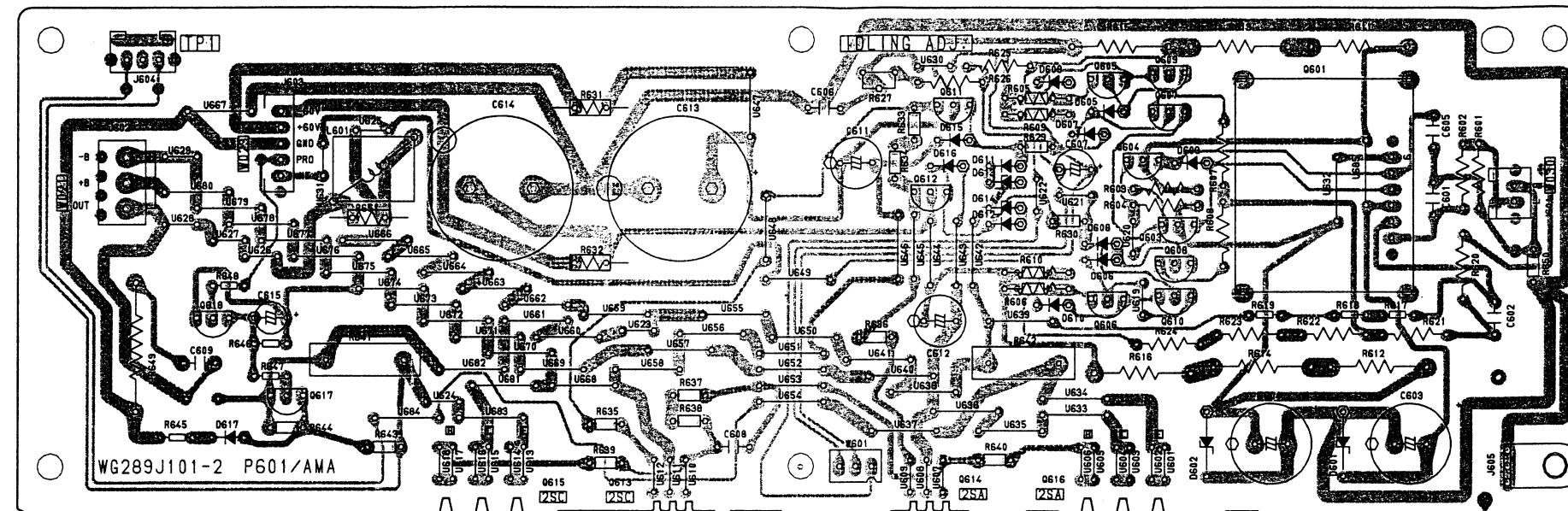
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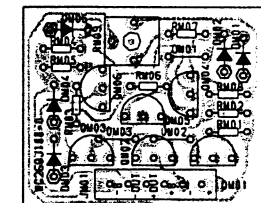
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Q607 Q603
Q606 Q608
Q616 Q610

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Q602



HDAM



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Q703 Q704
Q708 Q706
Q710 Q716

Q711
Q712

Q714

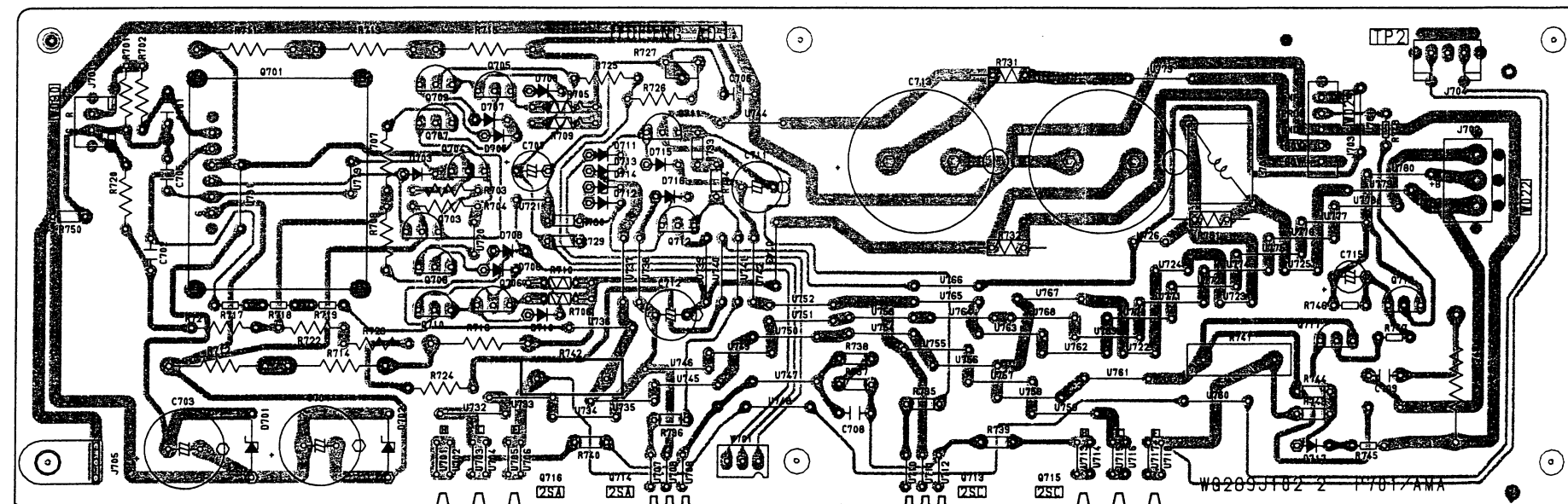
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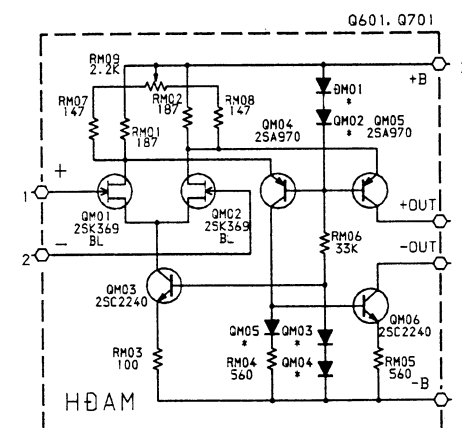
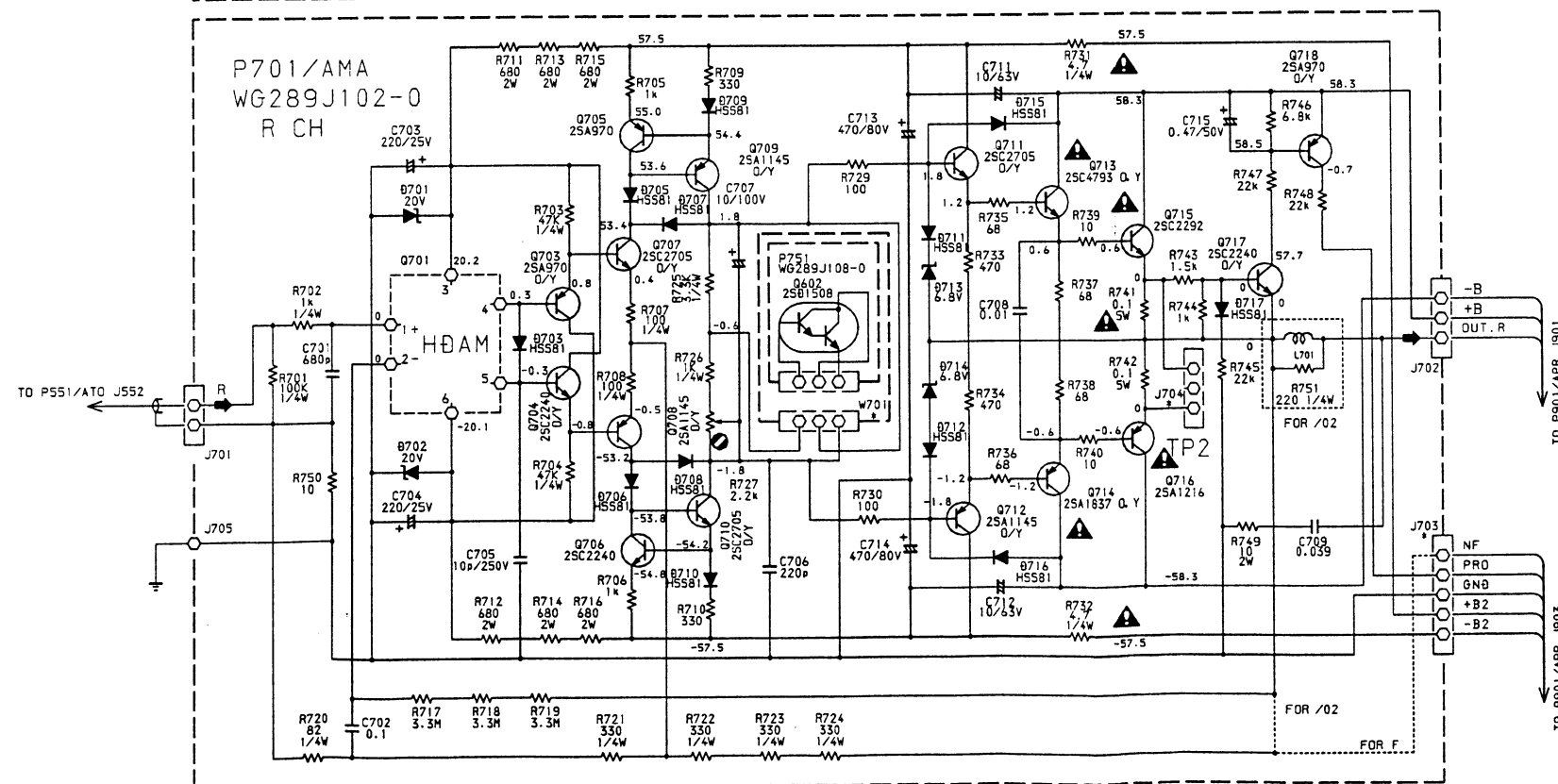
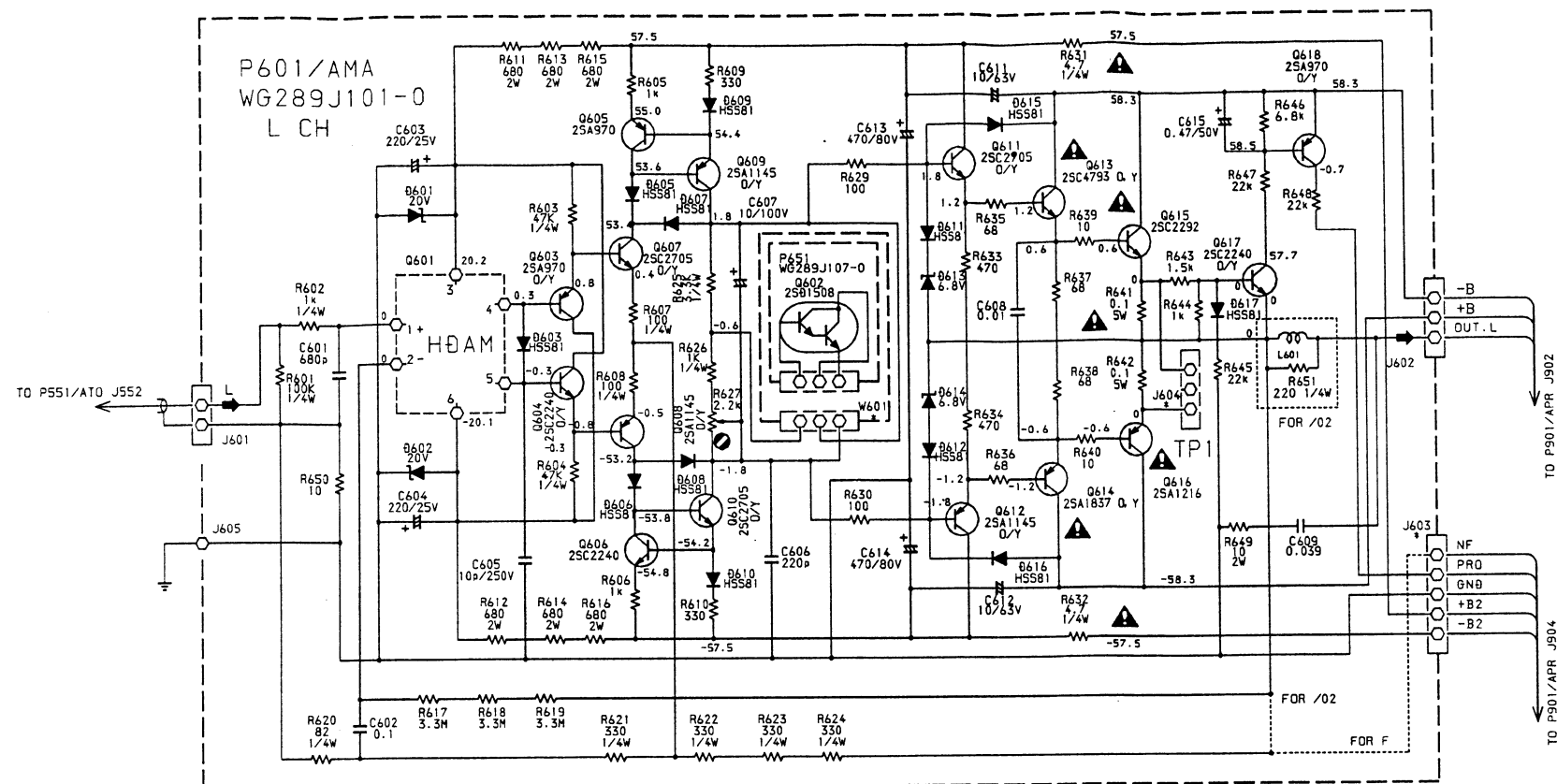
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Q702





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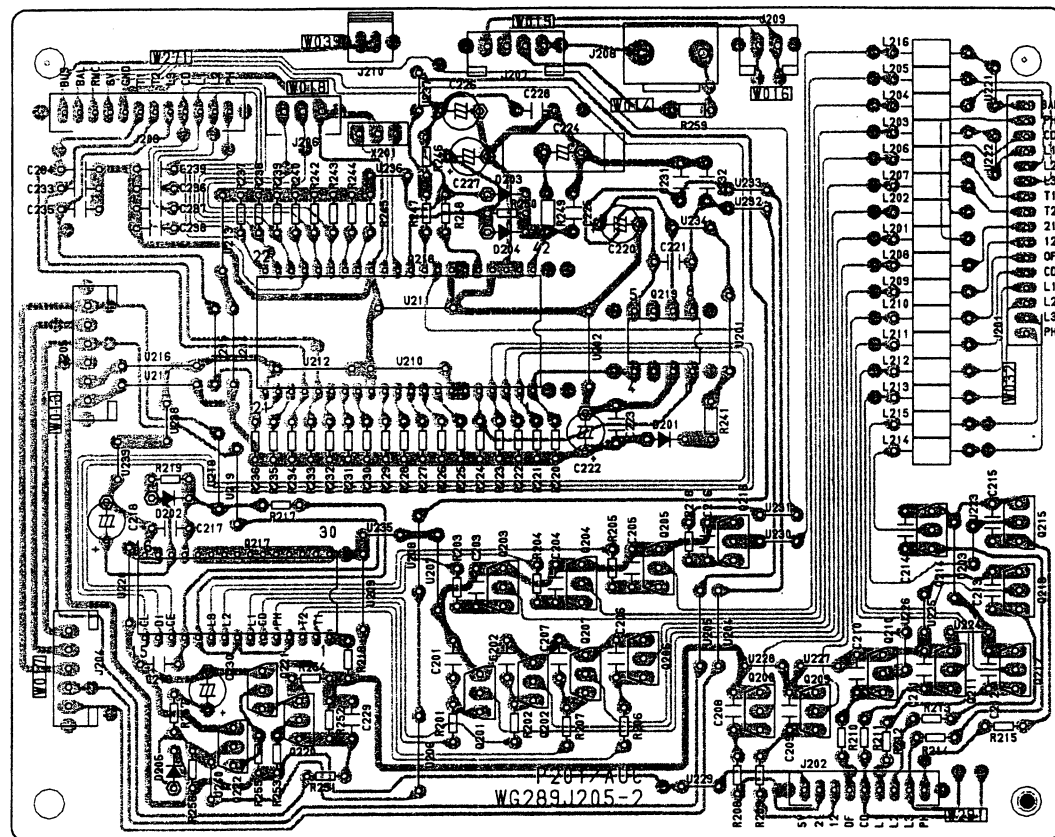
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Q213

Q221
Q221 Q220

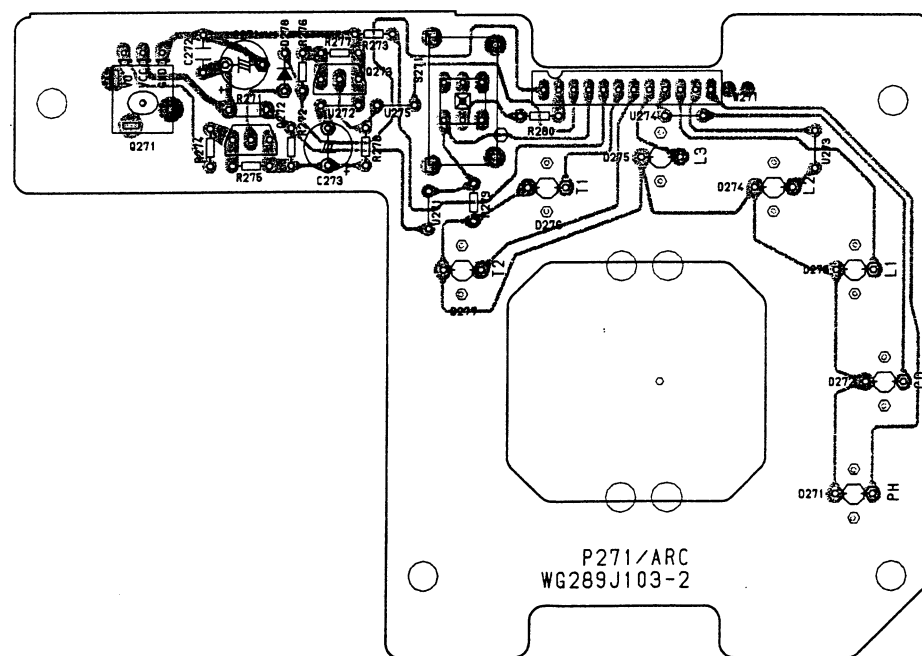
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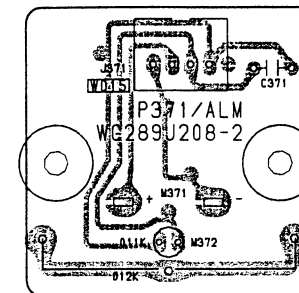
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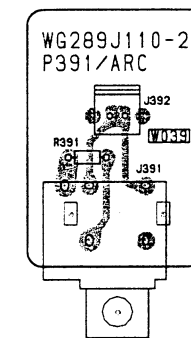
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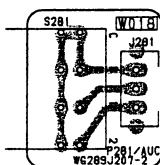
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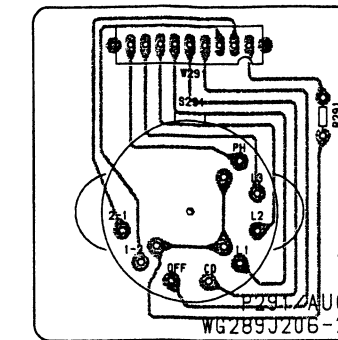
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P281

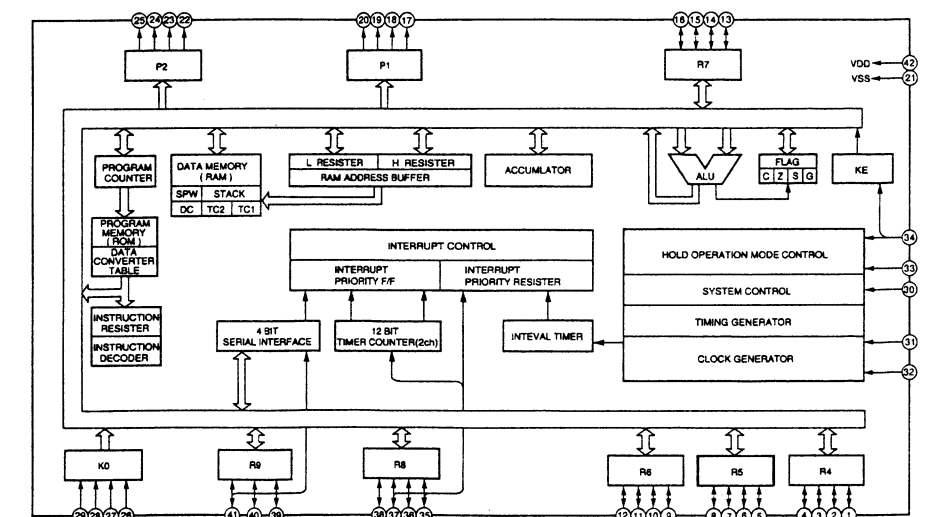


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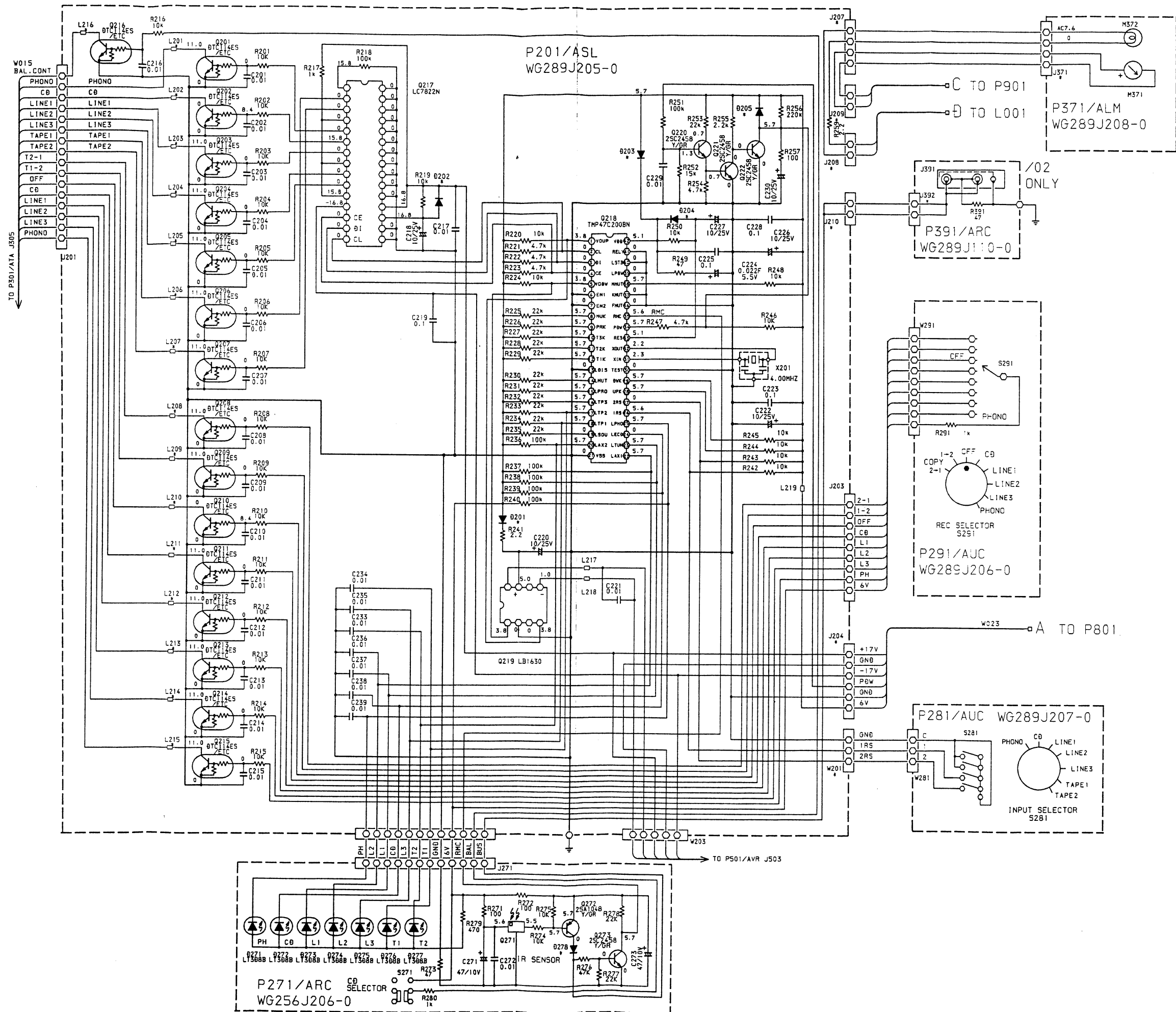
MICROPROCESSOR

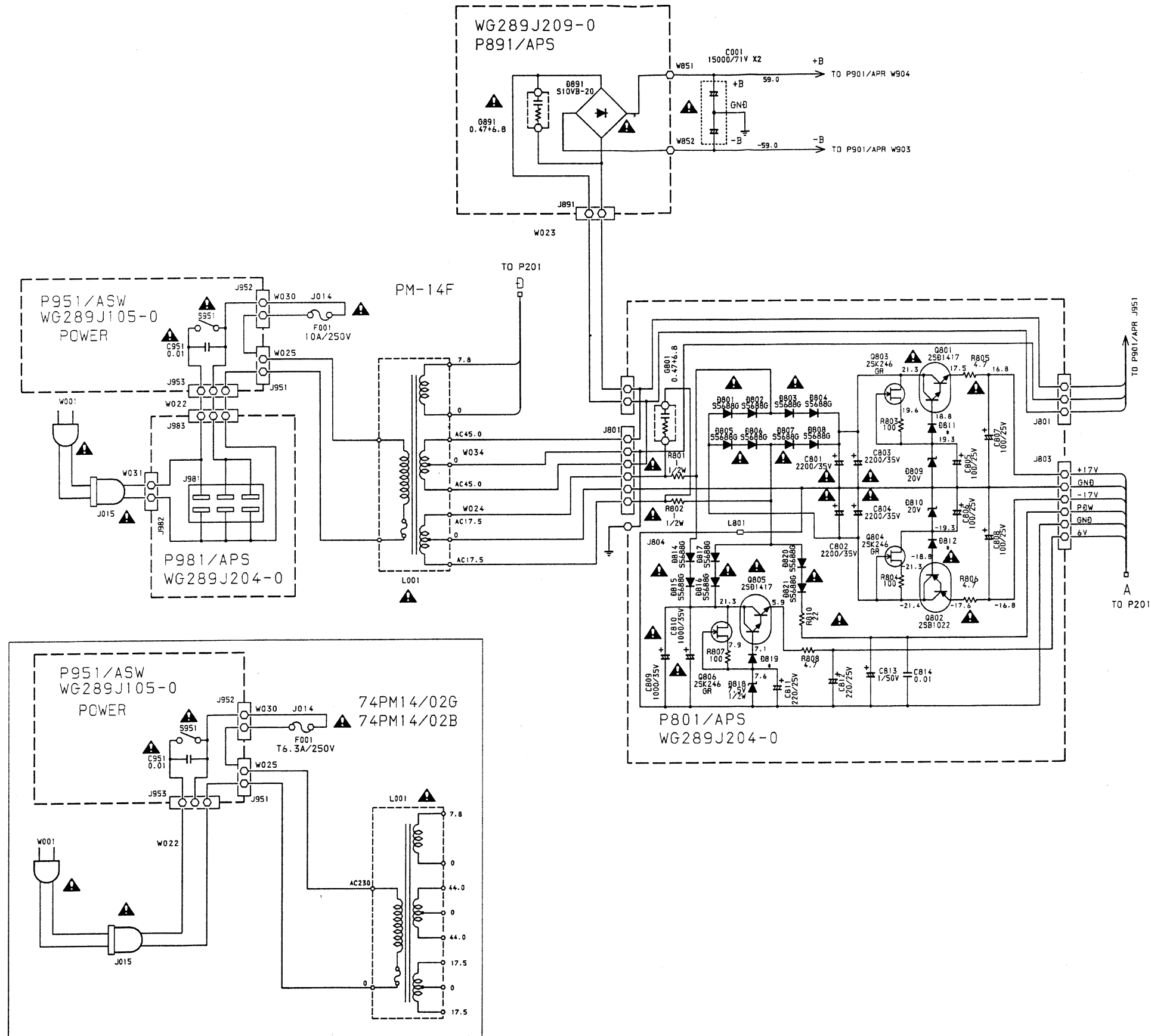
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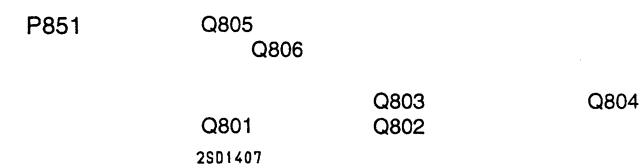
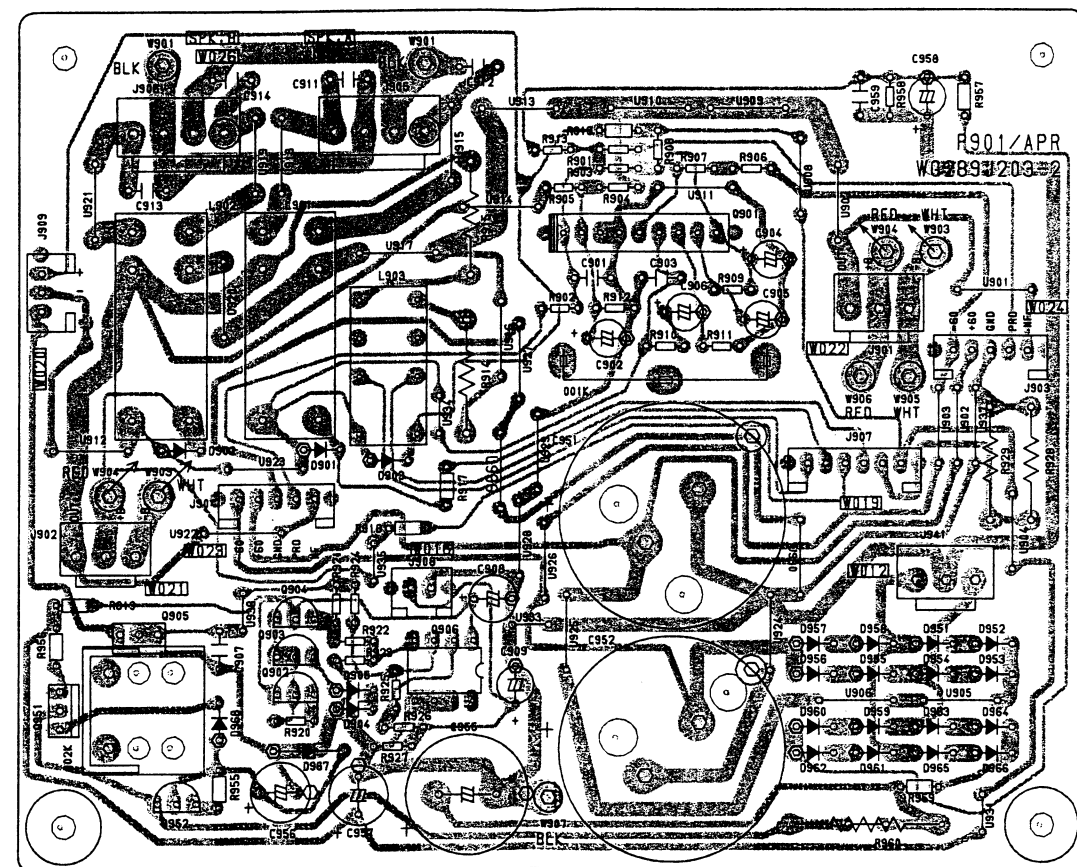
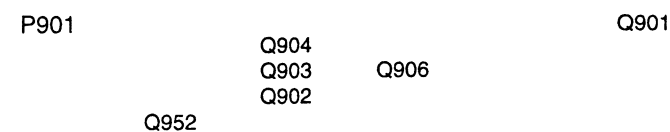
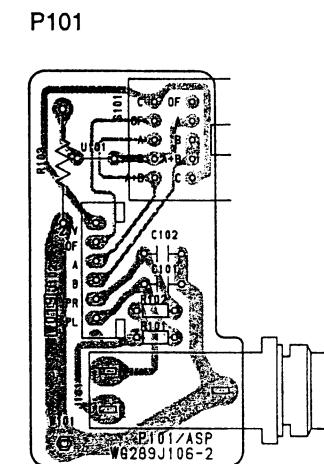
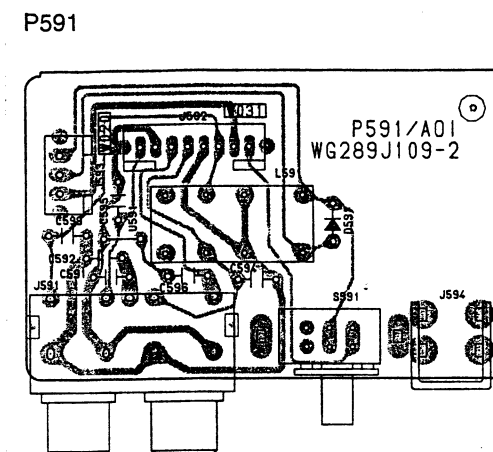
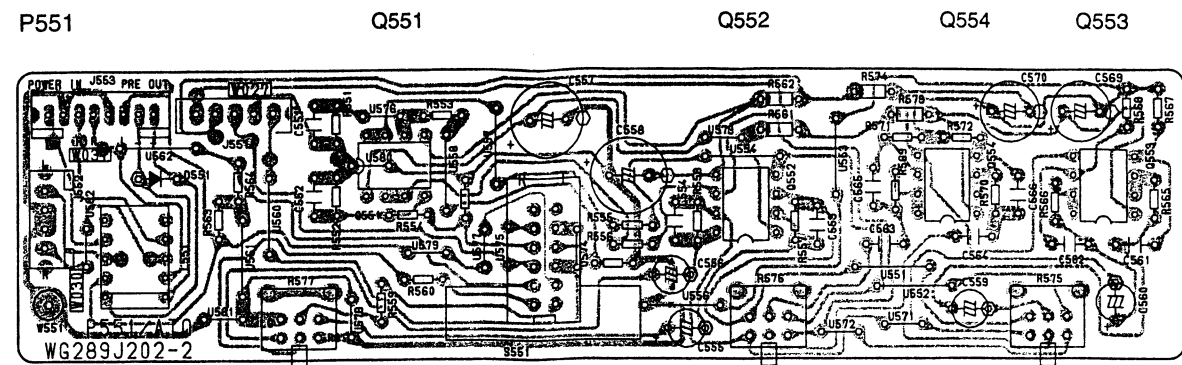


PIN NO.	PORT NAME		I/O	ACT	FUNCTION
1	R40	VOUP	O	L	VOLUME CONTROL (UP)
2	R41	CL	O	H	SERIAL OUTPUT (CLOCK)
3	R42	DI	O	H	SERIAL OUTPUT (DATA)
4	R43	CE	O	H	SERIAL OUTPUT (ENABLE)
5	R50	VODW	O	L	VOLUME CONTROL (DOWN)
6	R51	EN1	I	-	MODEL SELECT #1
7	R52	EN2	I	-	MODEL SELECT #2
8	R53	MUK	I	L	KEY INPUT MUTE
9	R60	PRK	I	-	KEY INPUT PROCESSOR
10	R61	T3K	I	L	KEY INPUT TAPE3
11	R62	T2K	I	L	KEY INPUT TAPE2
12	R63	T1K	I	L	KEY INPUT TAPE1
13	R70	LDIS	O	L	LED DISPLAY OTHER
14	R71	LMUT	O	L	LED DISPLAY MUTE
15	R72	LPRO	O	L	LED DISPLAY PROCESSOR
16	R73	LTP3	O	L	LED DISPLAY TAPE3
17	P10	LTP2	O	L	LED DISPLAY TAPE2
18	P11	LTP1	O	L	LED DISPLAY TAPE1
19	P12	LSOU	O	L	LED DISPLAY SOURCE
20	P13	LAX2	O	L	LED DISPLAY AUX2
21	Vss	Vss	-	-	GND.

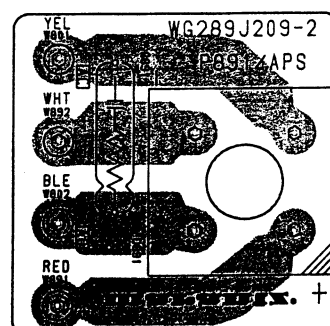
PIN NO.	PORT NAME		I/O	ACT	FUNCTION
22	P20	LAX1	O	L	LED DISPLAY AUX1
23	P21	LTUN	O	L	LED DISPLAY TUNER
24	P22	LECD	O	L	LED DISPLAY CD
25	P23	LPHO	O	L	LED DISPLAY PHONO
26	K00	1RS	I	L	ROTARY ENCODER BIT1
27	K01	2RS	I	L	ROTARY ENCODER BIT2
28	K02	UPK	I	L	SEQUENCE UP
29	K3	DWK	I	L	SEQUENCE DOWN
30	TEST	TEST	-	-	NOT USED (GND.)
31	XIN	XIN	-	-	CLOCK 4.00MHz
32	XOUT	XOUT	-	-	
33	RESET	RES	I	L	RESET
34	HOLD	PDW	I	L	POWER DOWN CHECK
35	R80	RMC	I	L	REMOTE CONTROL (RC-5)INPUT
36	R81	FMUT	O	L	KMUT + MMUT
37	R82	KMUT	O	L	FUNCTION MUTING
38	R83	MMUT	O	L	MANUAL MUTING
39	R90	LPOW	O	L	LED DISPLAY POWER
40	R91	LSTB	O	L	LED DISPLAY STANDBY
41	R92	RELY	O	H	STANDBY RELAY CONTROL
42	VDD	VDD	-	-	POWER SUPPLY +5.4V



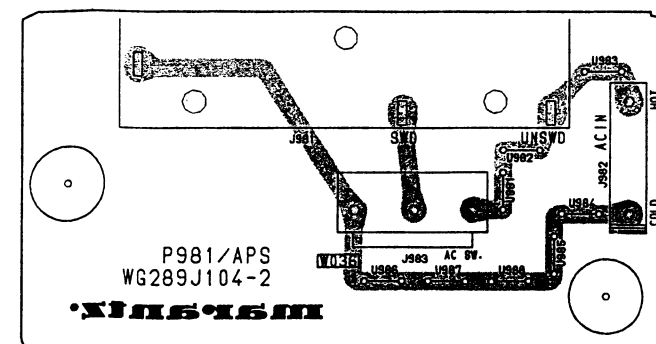




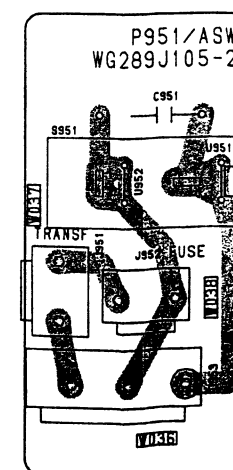
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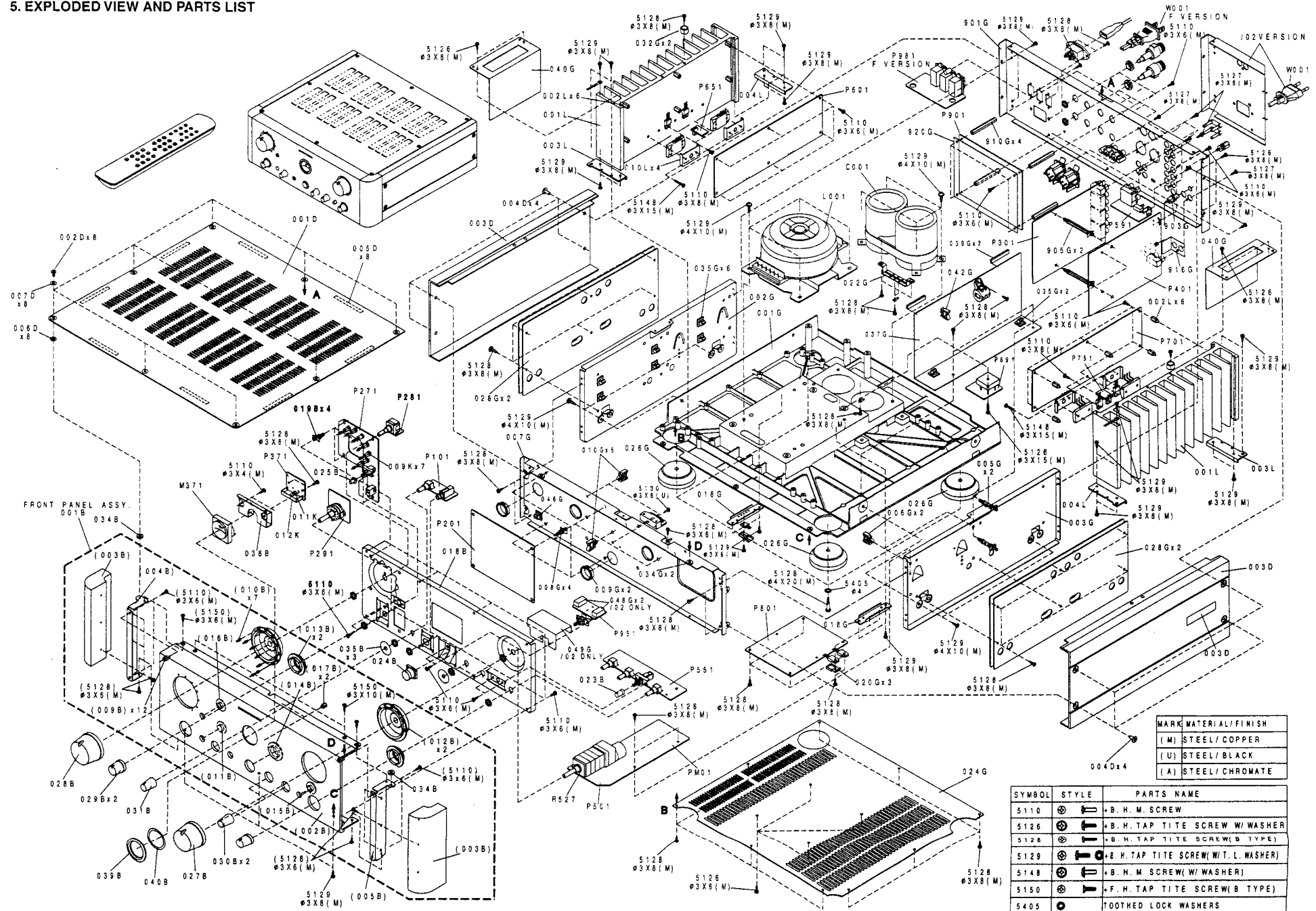
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P951



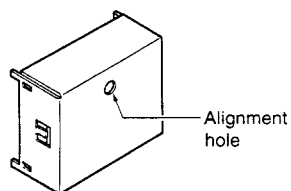
5. EXPLODED VIEW AND PARTS LIST



POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MUJ)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MUJ)
001B	FN		FRONT PANEL ASSY GOLD	289J248510	J009		4822 265 11425	TERMINAL,WBT SPK.WHT	YT01010370
001B	/02B		FRONT PANEL ASSY BLACK	289J248520	J010		4822 265 11424	TERMINAL,WBT SPK.RED	YT01010360
001B	/02G		FRONT PANEL ASSY GOLD	289J248530	J011		4822 265 11425	TERMINAL,WBT SPK.WHT	YT01010370
002B	FN		FRONT PANEL GOLD	289J248110	J012		4822 265 11424	TERMINAL,WBT SPK.RED	YT01010360
002B	/02B	4822 459 05106	FRONT PANEL BLACK	289J248020	J013		4822 265 11425	TERMINAL,WBT SPK.WHT	YT01010370
002B	/02G	4822 459 05107	FRONT PANEL GOLD	289J248120	▲ J014	F		JACK,FUSE HOLDER 31.8mm	YJ08000600
003B	FN,/02G	4822 426 10074	ESCUTCHEON GOLD	256J063010	▲ J014	/02	4822 267 31818	JACK,FUSE HOLDER 20mm	YJ08000610
003B	/02B	4822 426 10075	ESCUTCHEON BLACK	256J063110	▲ J015		4822 265 11399	JACK,2P AC INLET SOT-16C	YJ04002360
010B		4822 381 11893	LENS,INPUT../TAPE1/TAPE2	269J355010	▲ L001	F		MAINS TRANSFORMER	TS42002040
011B	FN,/02G	4822 381 12016	LENS,IR SENSOR GOLD	256J355030	▲ L001	/02	4822 146 11054	MAINS TRANSFORMER	TS42002050
011B	/02B	4822 381 12015	LENS,IR SENSOR BLACK	256J355040	L002		4822 526 10691	FERRITE CORE TFCK-16-8-13	FC50160030
012B	FN,/02G		BUSHING,VOL./INPUT SEL.GL	256J259210					
012B	/02B		BUSHING,VOL./INPUT SEL.BL	256J259110	R281		4822 052 10109	10Ω ±5% 1/4W	GG05100140
012B	FN,/02G		BUSHING,BAL./REC SEL. GL	256J259020					
013B	/02B		BUSHING,BAL./REC SEL. BL	256J259120	▲ W001	F	4822 321 11337	MAINS CORD,MITI	ZC01802080
014B	FN,/02G		BUSHING,FOR POWER GOLD	256J259030				DC-302-J 125V	
014B	/02B		BUSHING,FOR POWER BLACK	256J259130	▲ W001	/02	4822 321 11439	MAINS CORD 2P 10A 250V CLASS2	ZC01803080
015B	FN,/02G		BUSHING,SOURCE DIRECT	256J259040					
015B	/02B		BUSHING,SOURCE DIRECT	256J259140					
016B	FN,/02G		BUSHING,CD SELECTOR GL	289J259110	001T	F		PACKING	
016B	/02B		BUSHING,CD SELECTOR BL	289J259010	001T	/02	4822 736 16441	USER GUIDE	289J851110
								USER GUIDE	289J851310
023B	FN,/02G	4822 410 63898	BUTTON,SOURCE DIRECT GL	144J270010					
023B	/02B	4822 410 10227	BUTTON,SOURCE DIRECT BL	144J270110	T100		4822 219 10324	REMOTE COMMANDER RC-17PM	ZK269J0010
024B	FN,/02G	4822 410 11276	BUTTON,POWER GOLD	176J270150					
024B	/02B	4822 410 11275	BUTTON,POWER BLACK	176J270050					
025B	FN,/02G	4822 410 12027	BUTTON,CD SELECTOR GL	289J270110					
025B	/02B	4822 410 12026	BUTTON,CD SELECTOR BL	289J270010					
027B	FN,/02G	4822 410 12029	KNOB,MASTER VOLUME GL	289J154110					
027B	/02B	4822 410 12028	KNOB,MASTER VOLUME BL	289J154010					
028B	FN,/02G	4822 410 12032	KNOB,INPUT SELECTOR GL	289J154120					
028B	/02B	4822 410 12031	KNOB,INPUT SELECTOR BL	289J154020					
029B	FN,/02G	4822 410 12034	KNOB,BAL./REC.SEL GOLD	289J154130					
029B	/02B	4822 410 12033	KNOB,BAL./REC.SEL BLACK	289J154030					
030B	FN,/02G	4822 410 12036	KNOB,BASS/TREBLE GOLD	289J154140					
030B	/02B	4822 410 12035	KNOB,BASS/TREBLE BLACK	289J154040					
031B	FN,/02G	4822 410 12038	KNOB,SPEAKER GOLD	289J154150					
031B	/02B	4822 410 12037	KNOB,SPEAKER BLACK	289J154050					
039B	FN,/02G	4822 532 13059	ESCUTCHEON,METER GOLD	289J063110					
039B	/02B	4822 532 13058	ESCUTCHEON,METER BLACK	289J063010					
040B			STICKER,ADHESIVE FOR METER ESCUTCHEON	289J122010					
001D	FN,/02G	4822 442 01523	TOP LID GOLD	256J257020					
001D	/02B	4822 442 01522	TOP LID BLACK	256J257120					
002D	FN,/02G	4822 502 14425	SCREW FOR TOP LID GOLD	323S010020					
002D	/02B	4822 502 21693	SCREW FOR TOP LID BLACK	323S010030					
003D	FN,/02G	4822 426 10718	SIDE PANEL GOLD	256J249010					
003D	/02B	4822 426 10717	SIDE PANEL BLACK	256J249110					
004D	FN,/02G	4822 502 14613	SCREW,SIDE PANEL GOLD	258S010020					
004D	/02B	4822 502 14612	SCREW,SIDE PANEL BLACK	258S010010					
026G		4822 462 11116	LEG GOLD	163J057410					
903G		4822 410 12039	BUTTON,MM/MC SEL SW	058J270060					
▲ C001	F		ELECT,15000μF 71V	E115907110					
			ALB-H 63X80						
▲ C001	/02	4822 124 12279	ELECT,15000μF 71V	E115907120					
			ALB-H 63X100						
▲ F001	F		FUSE, 10A 250V MITI GRU	FS11000570					
▲ F001	/02	4822 070 36302	FUSE,T6.3A 250V BS LISTED	FS10630850					
J002		4822 290 81671	TERMINAL,2P RCA GLO T6021	YT02021240	001S	FN		NOT STANDARD SPARE PARTS	
J003			PLUG,XLM-3-31PCS	YP10003300	002S	F		PACKING CASE GOLD	289J801020
J004			PLUG,XLM-3-31PCS	YP10003300	B001	F		CUSHION L/R	256J809010
J006		4822 265 11424	TERMINAL,WBT SPK.RED	YT01010360				BATTERY,UM-4NPH 2S	ZF24302000
J007		4822 265 11425	TERMINAL,WBT SPK.WHT	YT01010370					
J008		4822 265 11424	TERMINAL,WBT SPK.RED	YT01010360					

6. DC OFFSET VOLTAGE ALIGNMENT

- Before switching the mains switch. Turn down the master volume to the minimum position and set the balance volume and tone volumes at the center positions. Set variable resistors R627(on the PCB P601:L ch) and R727(on the PCB P701:R ch) fully counterclockwise.
- Connect the digital voltage meter to the speaker terminal. And set the digital voltage meter for the DC position.
- Turn the mains switch ON. Put thin adjustment screw driver in to the hole of the HDAM (Q601:L ch / Q701:R ch) copper cover. Adjust variable resistors in the HDAM (Q601:L ch / Q701:R ch) value at 0mV $\pm$ 5mV with in 10 seconds after speaker relay turn ON.



7. IDLING CURRENT ALIGNMENT

REMARK

Before "Idling current alignment", "DC offset voltage alignment" have to be done!!

- Each of connectors J604(TP1) (on the PCB P601:Lch) and J704(TP2) (on the PCB P701:Rch) are provided with three test points. Connect the digital voltage meter, set for the DC voltage input, to the test points at the two extremities of three test points of J604(TP1) and J704(TP2).
- After the setup above, turn the mains switch ON and heat up the amplifier about 10 minutes.
- Adjust variable resistors R627(on the PCB P601:L ch) and R727(on the PCB P701:R ch) according to the digital volt meter reading. The target setting value is 12mV(60mA) for both L ch and R ch.

DC オフセット電圧調整

- 本体の電源スイッチを入れるまえに、ボリュームを最小に、バランス及びトーンコントロールをセンターに合わせます。P601基板上のR627(L ch)及びP701基板上のR727(R ch)の半固定抵抗を反時計回りにしぼりきります。
- 本体背面のスピーカー端子にデジタルボルトメータを接続します。(レンジはDCに設定する。)
- HDAM(Q601:L ch/Q701:R ch)のカバーにあいた穴に調整用ドライバーをさし込み、中の半固定抵抗を回せるようにします。電源スイッチをオンにし、スピーカリレーがオンになってから10秒以内に半固定抵抗を回しデジタルボルトメータの値が0mV $\pm$ 5mVになるように調整します。

アイドリング電流調整

【注意】

アイドリング電流の調整は必ずDCオフセット電圧の調整を終えてから行って下さい。

- P601基板上のコネクターJ604(TP1)及びP701基板上のコネクターJ704(TP2)の3本の調整用端子のうちの両端の2本にデジタルボルトメータを接続します。(レンジはDCに設定する。)
- 電源スイッチをオンにし、アイドリング電流が安定するまで、およそ10分間放置します。
- P601基板上の半固定抵抗R627(L ch)とP701基板上の半固定抵抗R727(R ch)を時計回りにまわしデジタルボルトメータの値が12mV $\pm$ 1mV(60mA)になるように調整します。

8. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R***: 1) GD05 $\times \times \times$ 140, Carbon film fixed resistor, $\pm 5\%$ 1/4W
R***: 2) GD05 $\times \times \times$ 160, Carbon film fixed resistor, $\pm 5\%$ 1/6W

① Resistance value

Examples :

① Resistance value

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

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

CAPACITORS

C***: CERAMIC CAP.

3) DD1 $\times \times \times \times$ 370,

Ceramic capacitor
Disc type
Temp.coef. P350 ~ N1000, 50V
Capacity value
Tolerance

Examples :

② Tolerance (Capacity deviation)

± 0.25 pF 0
 ± 0.5 pF 1
 $\pm 5\%$ 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 $\pm 5\%$

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 $\times \times \times$ 300,

High dielectric constant ceramic capacitor
Disc type
Temp.chara. 2B4, 50V
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 ($\frac{\square}{\square}$), 6) FILM CAP ($\frac{\square}{\square}$)

5) EA $\times \times \times \times \times$ 10, Electrolytic capacitor

One-way lead type, Tolerance $\pm 20\%$
Working voltage
Capacity value

Examples :

⑤ Capacity value

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

⑥ Working voltage

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

6) DF15 $\times \times \times$ 350 Plastic film capacitor

DF15 $\times \times \times$ 310 One-way type, Mylar $\pm 5\%$ 50V
DF16 $\times \times \times$ 310 Plastic film capacitor
One-way type, Mylar $\pm 10\%$ 50V
Capacity value

Examples :

⑦ Capacity value

0.001 μ F (1000 pF) 102 0.1 μ F 104
0.0018 μ F 182 0.56 μ F 564
0.01 μ F 103 1 μ F 105
0.015 μ F 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:

Part No. (MJL)	Type No. (KOA)	Description
NH05 $\times \times \times$ 140	RF25S $\times \times \times$ Ω J	($\pm 5\%$ 1/4W)
NH05 $\times \times \times$ 120	RF50S $\times \times \times$ Ω J	($\pm 5\%$ 1/2W)
NH85 $\times \times \times$ 110	RF73B2A $\times \times \times$ Ω J	($\pm 5\%$ 1/10W)
NH95 $\times \times \times$ 140	RF73B2E $\times \times \times$ Ω J	($\pm 5\%$ 1/4W)

* Resistance value Resistance value
(0.1 Ω - 10 k Ω)

2. Matsushita Electronic Components Co., Ltd

Part No. (MJL)	Type No. (MEC)	Description
NF05 $\times \times \times$ 140	ERD-2FCJ $\times \times \times$	($\pm 5\%$ 1/4W)
RF05 $\times \times \times$ 140		
NF02 $\times \times \times$ 140	ERD-2FCG $\times \times \times$	($\pm 2\%$ 1/4W)
RF02 $\times \times \times$ 140		

* Resistance value * Resistance value

Examples :

* Resistance value

0.1 Ω 001 10 Ω 100 1 k Ω 102 100 k Ω 104
0.5 Ω 005 18 Ω 180 2.7 k Ω 272 680 k Ω 684
1 Ω 010 100 Ω 101 10 k Ω 103 1 M Ω 105
6.8 Ω 068 390 Ω 391 22 k Ω 223 4.7 M Ω 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	XTAL. : CRYSTAL

NOTE ON SAFETY :

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

安全上の注意 :

$\triangle$ 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 PCS)	DESCRIPTION	PART NO. (MUJ)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MUJ)
			P101-SPK.SW. & HEAD PHONES CIRCUIT BOARD		X201		4822 242 72527	SERAMIC VIB.,CST4.00MGW CERALOCK	FQ04004030
C101	/02	4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010				P271-IR SENSOR & IND. CIRCUIT BOARD	
C102	/02	4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010				P271-CAPACITORS	
			P101-RESISTORS		C271		4822 124 23563	ELECT,47μF 10V	EG47601050
R101		4822 052 10479	47Ω ±5% 1/6W	GG05470160	C272		4822 126 12496	CER.,0.01μF +80% -20% 50V	DD38103010
R102		4822 052 10479	47Ω ±5% 1/6W	GG05470160	C273		4822 124 23563	ELECT,47μF 10V	EG47601050
R103		5322 116 55263	820Ω ±5% 1W	GA05821010				P271-RESISTOR	
			P101-MISCELLANEOUS		R271		4822 052 10101	100Ω ±5% 1/6W	GG05101160
J101	FN,02G	4822 267 31692	H.P. JACK HLJ0540-01-430	YJ01003880				P271-RESISTORS (COMMON)	
J101	/02B	4822 267 31692	H.P. JACK HLJ0540-01-410	YJ01003870				CARBON FILM FIXED RES.	
S101		4822 273 10337	ROTARY SW. S8BU14N-F2020	SR02040260				±5% 1/6W : R272-R280	
			P201-μ-COM CIRCUIT BOARD					P271-SEMICONDUCTORS	
			P201-CAPACITORS		D271		4822 130 80326	L.E.D.,LT3D8B RED 30	HI10062320
C201		4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010	D277				
C217					D278		4822 130 32362	DIODE,1SS176 MA165 1SS254 30V 0.1A	HD20002000
C218		4822 124 41534	ELECT.,10μF M 50V RA-2	OA10602520	Q271		4822 209 16735	PHOTO UNIT,PNA4655M000HB IR SENSOR	HW10006020
C219		4822 122 40617	CER.,0.1μF +80 -20% 50V	DD38104010	Q272		4822 130 60107	TRS.,25A1048 Y OR GR	HT11048280
C220		4822 124 41534	ELECT.,10μF M 25V RA-2	OA10602520	Q273		4822 130 60839	TRS.,25C2458 Y OR GR	HT32458280
C221		4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010				P271-MISCELLANEOUS	
C222		4822 124 41534	ELECT.,10μF M 25V RA-2	OA10602520	S271		4822 276 14018	PUSH SW.,SPEA12	SP02012270
C223		4822 122 40617	CER.,0.1μF +80 -20% 50V	DD38104010				P281-INPUT SELECTOR CIRCUIT BOARD	
C224		4822 124 90406	BIG ELECT.,FMOH223ZTP16 SUPER CAP.	EX22300530	S281		4822 273 10363	ROTARY SW. SRRSIC-F12-1 L30	SR01120090
C225		4822 122 40617	CER.,0.1μF +80 -20% 50V	DD38104010				P291-REC SELECTOR CIRCUIT BOARD	
C226		4822 124 41534	ELECT.,10μF M 25V RA-2	OA10602520	R291			P291-REC SELECTOR CIRCUIT BOARD	
C227		4822 124 41534	ELECT.,10μF M 25V RA-2	OA10602520	S291		4822 273 10303	ROTARY SW.,SRRM 1-8 L25	GD05102160
C228		4822 122 40617	CER.,0.1μF +80 -20% 50V	DD38104010				P301-INPUT RCA PINJACK CIRCUIT BOARD	
C229		4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010				P301-MISCELLANEOUS	
C230		4822 124 41534	ELECT.,10μF M 25V RA-2	OA10602520	C301		4822 124 41543	ELECT.,1μF M 50V RA-2	OA10505020
C231					C315				
C239		4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010	C318		4822 122 30043	CER.,0.01μF +80%-20% 50V	DK18103310
			P201-RESISTORS		C331				
R241		4822 052 10228	2.2Ω ±5% 1/6W	GG05022160	C333		4822 121 10792	FILM,220pF ±5% 100V	OF15221540
R249		4822 052 10479	47Ω ±5% 1/6W	GG05470160				P301-RESISTORS	
R259		4822 052 10228	2.2Ω ±5% 1/6W	GG05022160	R321		4822 052 10109	10K 10K	GG05100160
			P201-RESISTORS (COMMON)		R335				
			CARBON FILM FIXED RES.					P301-RESISTORS (COMMON)	
			±5% 1/6W : R201-R240					CARBON FILM FIXED RES.	
			R242-R248 R250-R257					±5% 1/6W : R301-R320	
			P201-SEMICONDUCTORS					P301-SEMICONDUCTORS	
D201					Q301		4822 130 61227	DIG.TRS.,DTA114ES UN4111 10k 10k	BA10001000
D205		4822 130 32362	DIODE,1SS176 MA165 1SS254 30V 0.1A	HD20002000	Q315				
Q201		4822 130 60588	DIG.TRS.,DTC114ES UN4211	BA20001000					
Q202									
Q216		4822 130 60588	DIG.TRS.,DTC114ES UN4211 10k 10k	BA20001000					
Q217		4822 209 32553	IC,LC78212	HC10309030					
Q218		4822 209 16894	MICROPROCESSOR, 42PIN TMP47C2008N-H384 4BIT 2K	HU289JT000					
Q219		4822 209 73287	IC,LA1630	HC10235030					
Q220		4822 130 60839	TRS.,25C2458 Y OR GR	HT32458280					
Q221		4822 130 60839	TRS.,25C2458 Y OR GR	HT32458280					
Q222		4822 130 60839	TRS.,25C2458 Y OR GR	HT32458280					
			P201-MISCELLANEOUS						
L201									
L216		4822 158 60605	FERRIT BEADS B-01-RT	FC90050060					

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MUJ)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MUJ)
J301		4822 290 81598	P301-MISCELLANEOUS TERMINAL,2P RCA YKC21-3255 GOLD	YT02021130	C465		4822 126 12496	CER.,0.01μF +80% -20% 50V	DD38103010
J302					C466		4822 126 12496	CER.,0.01μF +80% -20% 50V	DD38103010
J304		4822 290 81599	TERMINAL,4P RCA YKC21-3269 GOLD	YT02040970	C467		4822 124 41543	ELECT.,1μF M 50V RA-2	OA10505020
L301								P401-RESISTORS	
L315		4822 280 20501	RELAY,MR62-24SR 24V	LY20240410	R401		4822 111 20407	100.0Ω ±1% 1/4W ERDPS2F	NR01101140
					R402		4822 111 20407	100.0Ω ±1% 1/4W	NR01101140
					R403			33Ω ±1% 1/4W ERD	NR01330140
					R404			33Ω ±1% 1/4W ERD	NR01330140
					R405		4822 111 20428	47KΩ ±1% 1/4W ERD	NR01473140
					R406		4822 111 20428	47KΩ ±1% 1/4W ERD	NR01473140
C371		4822 126 12496	CER.,0.01μF +80% -20% 50V	DD38103010	R407			120Ω ±1% 1/4W ERD	NR01121140
					R408			120Ω ±1% 1/4W ERD	NR01121140
M371		4822 344 14034	D.C. METER, MG-28	IM11030030	R409		4822 111 20409	12Ω ±1% 1/4W ERD	NR01120140
M372		4822 134 40925	LAMP,8V 100mA BLUE	IN10080680	R410		4822 111 20409	12Ω ±1% 1/4W ERD	NR01120140
					R415		4822 111 20418	82KΩ ±1% 1/4W ERD	NR01823140
					R416		4822 111 20418	82KΩ ±1% 1/4W ERD	NR01823140
					R417		4822 111 20417	6.8KΩ ±1% 1/4W ERD	NR01682140
R391	/02	4822 052 10479	47Ω ±5% 1/6W	GG05470160	R418		4822 111 20417	6.8KΩ ±1% 1/4W ERD	NR01682140
					R421		4822 111 20415	27KΩ ±1% 1/4W ERD	NR01273140
J391	/02	4822 267 41009	TERMINAL,2P RCA	YT02022390	R422		4822 111 20415	27KΩ ±1% 1/4W ERD	NR01273140
					R423		4822 111 20416	330Ω ±1% 1/4W ERD	NR01331140
					R424		4822 111 20416	330Ω ±1% 1/4W ERD	NR01331140
					▲ R425		4822 052 10479	47Ω ±5% 1/6W	GG05470160
					▲ R426		4822 052 10479	47Ω ±5% 1/6W	GG05470160
					▲ R427		4822 052 10151	150Ω ±5% 1/6W	GG05151160
					▲ R428		4822 052 10151	150Ω ±5% 1/6W	GG05151160
C401		4822 121 10794	FILM,1000pF ±5% 100V	OF55102530	R451		4822 111 20419	10KΩ ±1% 1/4W ERD	NR01103140
C402		4822 121 10794	FILM,1000pF ±5% 100V	OF55102530					
C403		4822 121 10793	FILM,100pF ±5% 100V	OF55101530					
C404		4822 121 10793	FILM,100pF ±5% 100V	OF55101530	R454				
C405	/02	4822 121 10793	FILM,100pF ±5% 100V	OF55101530	R455				
C406	/02	4822 121 10793	FILM,100pF ±5% 100V	OF55101530			4822 111 20416	330Ω ±1% 1/4W ERD	NR01331140
C407		4822 124 22238	ELECT.,100μF 25V ARA	OA10702550					
C408		4822 124 22238	ELECT.,100μF 25V ARA	OA10702550	R458				
C409		4822 121 70324	FILM,0.039μF ±5% CQ2P2A	OF55393530	R459				
C410		4822 121 70324	FILM,0.039μF ±5% CQ2P2A	OF55393530			4822 111 20414	2.2KΩ ±1% 1/4W ERD	NR01222140
C411		4822 121 70321	FILM,10μF ±5% 100V	OF55103530	R466				
C412		4822 121 70321	FILM,0.01μF ±5% 100V	OF55103530	R467		4822 111 20415	27KΩ ±1% 1/4W ERD	NR01273140
C413		4822 121 10794	FILM,1000pF ±5% 100V	OF55102530	R468		4822 111 20415	27KΩ ±1% 1/4W ERD	NR01273140
C414		4822 121 10794	FILM,1000pF ±5% 100V	OF55102530	R469		4822 111 20413	220Ω ±1% 1/4W ERD	NR01221140
C415		4822 121 70323	FILM,3300pF ±5% 100V	OF55332530	R470		4822 111 20413	220Ω ±1% 1/4W ERD	NR01221140
C416		4822 121 70323	FILM,3300pF ±5% 100V	OF55332530	▲ R471		4822 052 10479	47Ω ±5% 1/6W	GG05470160
C417		4822 124 80578	ELECT.,22μF 25V ARA	OA22602550	▲ R472		4822 052 10479	47Ω ±5% 1/6W	GG05470160
C418		4822 124 80578	ELECT.,22μF 25V ARA	OA22602550	R473		4822 052 10109	10Ω ±5% 1/6W	GG05100160
C419		4822 121 70323	FILM,3300pF ±5% 100V	OF55332530				P401-RESISTORS (COMMON)	
C420		4822 121 70323	FILM,3300pF ±5% 100V	OF55332530				CARBON FILM FIXED RES.	
C421								±5% 1/6W :	
C424		4822 124 90051	ELECT.,220μF 25V ARA	OA22702550				R411-R414 R419 R420	
C425									
								P401-SEMICONDUCTORS	
C428		4822 121 10794	ELECT.,1000μF M 16V ARA	OA10801650					
C429	/02	4822 121 10794	FILM,100pF ±5% 100V	OF55101530	D401				
C430	/02	4822 121 10794	FILM,100pF ±5% 100V	OF55101530			4822 130 32362	DIODE,1SS176 MA165 1SS254 30V 0.1A	HD20002000
C431		4822 126 12496	CER.,0.01μF +80% -20% 50V	DD38103010	D404			UNIT & H-C,NEW HDAM	KH269J1010
C432		4822 126 12496	CER.,0.01μF +80% -20% 50V	DD38103010	Q401			UNIT & H-C,NEW HDAM	KH269J1010
C433		4822 124 12275	FILM,0.01μF ±5% 100V APSV	OF15103540	Q402		4822 209 31153	IC,NJM2114D	HC10111090
C434		4822 126 12496	CER.,0.01μF +80% -20% 50V	DD38103010	Q451		4822 209 16926	IC,OPA2604AP	HC10008610
C451		4822 121 10794	FILM,1000pF ±5% 100V	OF55102530	Q452		4822 209 16926	IC,OPA2604AP	HC10008610
C452		4822 121 10794	FILM,1000pF ±5% 100V	OF55102530	Q453		4822 209 16926	IC,OPA2604AP	HC10008610
C453					Q454		4822 130 61227	DIG.TRS.,DTA114ES UN4111 10k 10k	BA10001000
C456		4822 124 90051	ELECT.,220μF 25V ARA	OA22702550					
C457		4822 123 30089	MICA,22pF ±5% 500V FE	DF35220520	J401		4822 290 81598	TERMINAL,2P RCA	YT02021130
C458		4822 123 30089	MICA,22pF ±5% 500V FE	DF35220520					
C459		4822 124 80578	ELECT.,22μF 25V ARA	OA22602550					
C460		4822 124 80578	ELECT.,22μF 25V ARA	OA22602550	L401	/02	4822 158 60606	CHOKE COIL, 20μH 5R200PN	LC12030050
C461		4822 121 10794	FILM,1000pF ±5% 100V	OF55102530	L402	/02	4822 158 60606	CHOKE COIL, 20μH 5R200PN	LC12030050
C462		4822 121 10794	FILM,1000pF ±5% 100V	OF55102530	L451		4822 280 20501	RELAY,MR62-24SR 24V	LY20240410
C463		4822 126 12496	CER.,0.01μF +80% -20% 50V	DD38103010	S401		4822 276 13409	PUSH SW.,SPUP 9-4N-W2.0	SP04010660
C464		4822 126 12496	CER.,0.01μF +80% -20% 50V	DD38103010					

(VERS. VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, --:EUROPE)

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MUJ)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MUJ)
			P601-POWER AMP. L CIRCUIT BOARD		D605				
			P601-CAPACITORS		D612				
C601		4822 121 10797	FILM.680pF ±5% 100V	OF55681530	D613		4822 130 80837	DIODE.H5S81TD 150V 150mA	HD20027010
C602		4822 121 70322	FILM.0.1μF ±5% 100V	OF55104530					
C603		4822 124 22242	ELECT..470μF M 25V ARA	OA47702550	D614		4822 130 80318	ZENER DIODE 6.8V 0.4A Z5 6-Y	HD30681000
C604		4822 124 22242	ELECT..470μF M 25V ARA	OA47702550					
C605		4822 123 30088	MICA.10pF D 250VW	DF31100520	D615		4822 130 80837	ZENER DIODE 6.8V 0.4A Z5 6-Y	HD30681000
C606		4822 121 10797	FILM.680pF ±5% 100V	OF55681530					
C607		4822 124 23562	ELECT..10μF M 100V	OA10610020	D616		4822 130 80837	DIODE.H5S81TD 150V 150mA	HD20027010
C608		4822 121 10796	FILM.220pF ±5% 100V	OF55221530	D617		4822 130 80837	DIODE.H5S81TD 150V 150mA	HD20027010
C609		4822 121 70324	FILM.0.039μF ±5% 100V	OF55393530	Q601			UNIT & HIC NEW-NDAM	KH2691010
C611		4822 124 80542	ELECT.10μF M 63V RBPA	EQ10606390	Q603		4822 130 42949	TRS.2SA970 GR OR BL	HT109702A0
▲ C613		4822 124 12278	ELECT.470μF M 80V AUDIO	EB47708060	Q604		4822 130 42323	TRS.2SC2240 GR OR BL	HT322402A0
▲ C614		4822 124 12278	ELECT.470μF M 80V AUDIO	EB47708060	Q605		4822 130 42949	TRS.2SA970 GR OR BL	HT109702A0
C615		4822 124 22273	ELECT..0.47μF M 50V RA-2	OA47405020	Q606		4822 130 42323	TRS.2SC2240 GR OR BL	HT322402A0
					Q607		4822 130 42383	TRS.2SC2705 O OR Y	HT327052A0
					Q608		4822 130 42999	TRS.2SA1145 O OR Y	HT111452A0
					Q609		4822 130 42999	TRS.2SA1145 O OR Y	HT111452A0
R601		4822 111 20421	100KΩ ±1% 1/4W ERD	NR01104140	Q610		4822 130 42383	TRS.2SC2705 O OR Y	HT327052A0
R602		4822 111 20408	1KΩ ±1% 1/4W	NR01102140	Q611		4822 130 42383	TRS.2SC2705 O OR Y	HT327052A0
R603		4822 111 20428	47KΩ 1% 1/4W ERD	NR01473140	▲ Q612		4822 130 42999	TRS.2SA1145 O OR Y	HT111452A0
R604		4822 111 20428	47KΩ 1% 1/4W ERD	NR01473140	▲ Q613		4822 130 42999	TRS.2SC4793 O OR Y	HT347932A0
R605		4822 052 10102	1KΩ ±5% 1/6W	GG05102160	▲ Q614		4822 130 63634	TRS.2SA1837 O OR Y	HT118372A0
R606		4822 052 10102	1KΩ ±5% 1/6W	GG05102160	▲ Q615		4822 130 43303	TRS.2SC2922 Y OR P	HT329222B0
R607		4822 111 20407	100KΩ ±1% 1/4W ERD	NR01101140	▲ Q616		4822 130 43015	TRS.2SA1216 Y OR P	HT112162B0
R608		4822 111 20407	100KΩ ±1% 1/4W ERD	NR01101140	Q617		4822 130 43323	TRS.2SC2240 GR OR BL	HT322402A0
R609		4822 111 31001	330Ω ±5% 1/6W	GG05331160	Q618		4822 130 42949	TRS.2SA970 GR OR BL	HT109702A0
R610		4822 111 31001	330Ω ±5% 1/6W	GG05331160					
R611		5322 116 54398	METAL.680Ω ±5% 2W	NK05681020	L601	/02B	4822 157 63085	AIR COIL,SPK	ML08010010
R616					L601	/02G	4822 157 63085	AIR COIL,SPK	ML08010010
R617		4822 050 23308	3.3MΩ ±5% 1/6W	GD05335160					
R618		4822 050 23308	3.3MΩ ±5% 1/6W	GD05335160					
R619		4822 050 23308	3.3MΩ ±5% 1/6W	GD05335160					
R620			82Ω ±1% 1/4W	NR01820140					
R621		4822 111 20416	330Ω ±1% 1/4W ERD	NR01331140	Q602		4822 130 60526	TRS.2SD1508 DARLINGTON HFE>4000	HT415080A0
R624</									

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJJ)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJJ)
R717		4822 050 23308	3.3MΩ ±5% 1/6W	GD05335160				P751-IDLING SENSOR R	
R718		4822 050 23308	3.3MΩ ±5% 1/6W	GD05335160				CIRCUIT BOARD	
R719		4822 050 23308	3.3MΩ ±5% 1/6W	GD05335160	Q702		4822 130 60526	TRS. 2SD1508 DARLINGTON	HT415080A0
R720			82Ω ±1% 1/4W	NR01820140				HFE-4000	
R721								P801-POWER SUPPLY	
R724		4822 111 20416	330Ω ±1% 1/4W ERD	NR01331140				CIRCUIT BOARD	
R725								P801-CAPACITORS	
R726		4822 111 20408	3.3kΩ ±1% 1/4W ERD	NR01332140	▲ C801				
R727		4822 101 30707	1kΩ ±1% 1/4W ERD	NR01102140			4822 124 12277	ELECT. 2200μF M 35V	EB22803580
R729		4822 052 10101	100Ω ±5% 1/6W	GG05101160	▲ C804			FOR AUDIO	
R730		4822 052 10101	100Ω ±5% 1/6W	GG05101160	C805				
R731		4822 050 24708	4.7Ω ±5% 1/4W	GG05047140			4822 124 22238	ELECT. 100μF 25V ARA	OA10702550
R732		4822 050 24708	4.7Ω ±5% 1/4W	GG05047140	C808				
R733		4822 052 10471	470Ω ±5% 1/6W	GG05471160	C809		4822 124 90356	ELECT. 1000μF M 35V RA-2	OA10803520
R734		4822 052 10471	470Ω ±5% 1/6W	GG05471160	C810		4822 124 90356	ELECT. 1000μF M 35V RA-2	OA10803520
R735					C811		4822 124 90365	ELECT. 220μF M 25V RA-2	OA22702520
R738		4822 050 26809	68Ω ±5% 1/6W	GG05680160	C812		4822 124 90365	ELECT. 220μF M 25V RA-2	OA22702520
▲ R739		4822 052 10109	10Ω ±5% 1/6W	GG05100160	C813		4822 124 41543	ELECT. 1μF M 50V RA-2	OA10505020
▲ R740		4822 052 10109	10Ω ±5% 1/6W	GG05100160	C814		4822 121 42754	FILM 0.01μF ±5% 50V	OF15103010
▲ R741			0.1Ω ±10% 5W ERF5EK R5	GW10102050	C815		4822 122 30043	CER. 0.01μF ±80% ±20% 50V	OK18103310
▲ R742			0.1Ω ±10% 5W ERF5EK R5	GW10102050	▲ C816		4822 126 12453	CER. 0.01μF ±80% ±20% 500V	DK18103560
R743			1.5kΩ ±5% 1/6W	GG05152160				P801-RESISTORS	
▲ R744		4822 052 10102	1kΩ ±5% 1/6W	GG05102160	▲ R801		4822 050 21108	1Ω ±5% 1/2W	GG05010120
R749		4822 053 11109	10Ω ±5% 2W	GA05100020	▲ R802		4822 050 21108	1Ω ±5% 1/2W	GG05010120
R750		4822 052 10109	10Ω ±5% 1/6W	GG05100160	▲ R805		4822 052 10478	4.7Ω ±5% 1/6W	GG05047160
R751	/02	4822 116 83929	220Ω ±5% 1/4W	GG05221140	▲ R806		4822 052 10478	4.7Ω ±5% 1/6W	GG05047160
					▲ R808		4822 052 10478	4.7Ω ±5% 1/6W	GG05047160
					▲ R810		4822 052 10229	22Ω ±5% 1/6W	GG05220160
								P801-RESISTORS (COMMON)	
								CARBON FILM FIXED RES.	
								±5% 1/6W : R803 R804 R807	
								P801-SEMICONDUCTORS	
D701		4822 130 83385	ZENER DIODE, HZ20-1L	HD30020010	▲ D801		4822 130 80839	DIODE, S5688G VRM=400V	HD20029050
D702		4822 130 83385	ZENER DIODE, HZ20-1L	HD30020010				10=1A	
D703		4822 130 80837	DIODE, HSS81TD 150V 150mA	HD20027010	▲ D808		4822 130 83385	ZENER DIODE, HZ20-1L	HD30020010
D705					D809		4822 130 83385	ZENER DIODE, HZ20-1L	HD30020010
D712		4822 130 80837	DIODE, HSS81TD 150V 150mA	HD20027010	D810		4822 130 32362	DIODE, 1SS176 MA165 1SS254	HD20002000
D713		4822 130 80318	ZENER DIODE, 6.8V 04AZ5.6-Y	HD30681000	D811			30V 0.1A	
			RD5.6ES B2 MTJZ5.6B		▲ D812		4822 130 32362	DIODE, 1SS176 MA165 1SS254	HD20002000
D714		4822 130 80318	ZENER DIODE, 6.8V 04AZ5.6-Y	HD30681000				30V 0.1A	
			RD5.6ES B2 MTJZ5.6B		▲ D814		4822 130 80839	DIODE, S5688G VRM=400V	HD20029050
D715		4822 130 80837	DIODE, HSS81TD 150V 150mA	HD20027010				10=1A	
D716		4822 130 80837	DIODE, HSS81TD 150V 150mA	HD20027010	D817		4822 130 32191	ZENER DIODE, RD7.5E33 1/2W	HD30042060
D717		4822 130 80837	DIODE, HSS81TD 150V 150mA	HD20027010	D818		4822 130 32362	DIODE, 1SS176 MA165 1SS254	HD20002000
Q701			UNIT & H-IC, NEW HDAM	KH269J1010	D819			30V 0.1A	
Q703		4822 130 42949	TRS. 2SA970 GR OR BL	HT109702A0	▲ D820		4822 130 80839	DIODE, S5688G VRM=400V	HD20029050
Q704		4822 130 43233	TRS. 2SC2240 GR OR BL	HT322402A0	▲ D821		4822 130 80839	DIODE, S5688G VRM=400V	HD20029050
Q705		4822 130 42949	TRS. 2SA970 GR OR BL	HT109702A0				10=1A	
Q706		4822 130 43233	TRS. 2SC2240 GR OR BL	HT322402A0	▲ Q801		4822 130 63292	TRS. 2SD1417	HT41417100
Q707		4822 130 43283	TRS. 2SC2705 O OR Y	HT327052A0	▲ Q802		4822 130 63291	TRS. 2SB1022	HT21022100
Q708		4822 130 42999	TRS. 2SA1145 O OR Y	HT111452A0	Q803		4822 130 42835	F.E.T. 2SK246 GR	HF202461C0
Q709		4822 130 42999	TRS. 2SA1145 O OR Y	HT111452A0	Q804		4822 130 42835	F.E.T. 2SK246 GR	HF202461C0
Q710		4822 130 43283	TRS. 2SC2705 O OR Y	HT327052A0	▲ Q805		4822 130 63292	TRS. 2SD1417	HT41417100
Q711		4822 130 43283	TRS. 2SC2705 O OR Y	HT327052A0	Q806		4822 130 42835	F.E.T. 2SK246 GR	HF202461C0
Q712		4822 130 42999	TRS. 2SA1145 O OR Y	HT111452A0				P801-MISCELLANEOUS	
▲ Q713		4822 130 63634	TRS. 2SA1837 O OR Y	HT118372A0	▲ G801		4822 121 20263	NOISE KILLER 0.47μF ± 6.8Ω	BF47400010
▲ Q714		4822 130 63634	TRS. 2SA1837 O OR Y	HT118372A0				P891-RECTIFIER	
▲ Q715		4822 130 43015	TRS. 2SA1216 Y OR P	HT112162B0				CIRCUIT BOARD	
▲ Q716		4822 130 43015	TRS. 2SA1216 Y OR P	HT112162B0	▲ D891		4822 130 50315	DIODE, S10V5-20 10A 200V	HE20014290
Q717		4822 130 43233	TRS. 2SC2240 GR OR BL	HT322402A0	▲ G891		4822 121 20263	NOISE KILLER 0.47μF ± 6.8Ω	BF47400010
Q718		4822 130 42949	TRS. 2SA970 GR OR BL	HT109702A0					
								P701-MISCELLANEOUS	
L701	/02B	4822 157 63085	AIR COIL, SPK	ML08010010					
L701	/02G	4822 157 63085	AIR COIL, SPK	ML08010010					

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MUJ)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MUJ)
			P901-SPK. PROTECTOR		L903		4822 280 20501	RELAY,MR62-24SR 24V	LY20240410
			CIRCUIT BOARD					P951-POWER SW.	
			P901-CAPACITORS					CIRCUIT BOARD	
C901		4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010	▲ C951		4822 121 43732	FILM,0.01μF 250V AC	DF77103500
C902		4822 124 22698	ELECT.,47μF M 25V RA-2	OA47602520	▲ S951		4822 276 12647	PUSH SW.,ESB-99753V-4 TV-8	SP01011470
C903		4822 122 40617	CER.,0.1μF ±80 -20% 50V	DD38104010				P981-AC OUTLET	
C904		4822 124 22571	ELECT.,10μF M 50V RA-2	OA10605020				CIRCUIT BOARD [F VERSION]	
C905		4822 124 22698	ELECT.,47μF M 25V RA-2	OA47602520	▲ J981	FN	4822 265 31113	JACK,3P AC OUTLET	YJ04001950
C906		4822 124 22273	ELECT.,0.47μF M 50V RA-2	OA47405020					
C907		4822 122 40617	CER.,0.1μF ±80 -20% 50V	DD38104010					
C908		4822 124 41535	ELECT.,100μF M 25V RA-2	OA10702520					
C909		4822 124 41534	ELECT.,10μF M 25V RA-2	OA10602520					
C911									
{	/02	4822 121 10791	FILM,0.018μF ±5% 100V APSV	OF15183540					
C914									
▲ C951		4822 124 80955	ELECT.,680μF M 80V AUDIO	EB68708010					
▲ C952		4822 124 80955	ELECT.,680μF M 80V AUDIO	EB68708010					
▲ C955		4822 124 12275	ELECT.,470μF M 100V RA-2	OA47710020					
C956		4822 124 90355	ELECT.,100μF M 50V RA-2	OA10705020					
C957		4822 124 90355	ELECT.,100μF M 50V RA-2	OA10705020					
▲ C958		4822 124 11533	ELECT.,1μF M 100V RA-2	OA10510020					
C959		4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010					
			P901-RESISTORS						
			330Ω ±5% 1W	GA05331010					
R914		4822 053 10331	330Ω ±5% 1W	GA05331010					
R915		4822 053 10331							
R916									
{		4822 052 10478	4.7Ω ±5% 1/6W	GG05047160					
R919									
R928		5322 116 55263	820Ω ±5% 1W	GA05821010					
R929		5322 116 55263	820Ω ±5% 1W	GA05821010					
R955		4822 052 10101	100Ω ±5% 1/6W	GG05101160					
▲ R956		4822 052 10478	4.7Ω ±5% 1/6W	GG05047160					
▲ R957		4822 052 10101	100Ω ±5% 1/6W	GG05101160					
▲ R959		4822 117 10158	1Ω ±5% 1/4W	GG05010140					
R960		4822 117 11858	METAL,150Ω ±5% 3W	NK05151030					
			P901-RESISTORS (COMMON)						
			CARBON FILM FIXED RES.						
			±5% 1/6W :						
			R901-R913 R920-R927 R958						
			P901-SEMICONDUCTORS						
			DIODE,HSS81TD 150V 150mA	HD20027010					
D901		4822 130 80837	DIODE,HSS81TD 150V 150mA	HD20027010					
D902		4822 130 80837	DIODE,HSS81TD 150V 150mA	HD20027010					
D903		4822 130 80837	DIODE,HSS81TD 150V 150mA	HD20027010					
D904		4822 130 33948	ZENER DIODE,5.6V	HD30561000					
D905		4822 130 32362	DIODE,1SS176 MA165 1SS254	HD20002000					
			30V 0.1A						
▲ D951		4822 130 80839	DIODE,S5688G VRM=400V	HD20029050					
{			10=1A						
▲ D966		4822 130 33433	ZENER DIODE,RD24E B4 1/2W	HD30056060					
D967		4822 130 32362	DIODE,1SS176 MA165 1SS254	HD20002000					
D968			30V 0.1A						
Q901		4822 209 83312	IC,TA7317P	HC10042050					
Q902		4822 130 42835	F.E.T.,2SK246 GR	HF202461C0					
Q903		4822 130 43233	TRS.,2SC2240 GR OR BL	HT322402A0					
Q904		4822 130 43233	TRS.,2SC2240 GR OR BL	HT322402A0					
Q905		4822 130 60117	TRS.,2SC3419 Y 40V 0.8A	HT334191Y0					
			PC=1.2W 5W						
Q906		4822 209 83679	IC,NJM2904 DUAL OP-AMP	HC10030090					
▲ Q951		4822 130 63292	TRS.,2SD1417	HT41417100					
Q952		4822 130 42835	F.E.T.,2SK246 GR	HF202461C0					
			P901-MISCELLANEOUS						
L901		4822 280 70354	RELAY,VB 24MBU-510 5A	LY20240310					
			240VAC						
L902		4822 280 70354	RELAY,VB 24MBU-510 5A	LY20240310					
			240VAC						