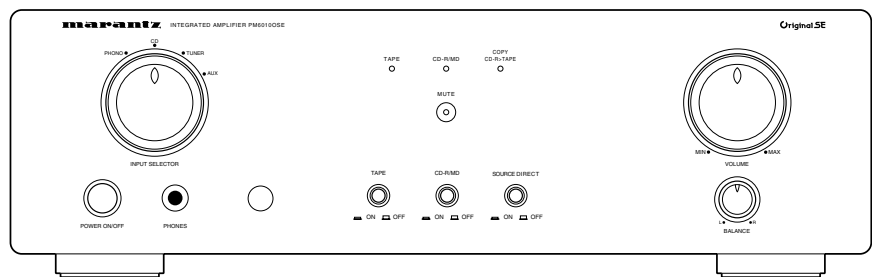


Service Manual

PM6010F /N1B, /N1G, /T1B

Integrated amplifier



PM60100SE

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Please use this service manual with referring to the user guide (D.F.U) without fail.

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- PM60100SE -

275W855010 MIT
3120 785 22009
First Issue 1999.08

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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

EUROPE / TRADING

MARANTZ EUROPE B.V.
P.O.BOX 80002, BUILDING SFF2
5600 JB EINDHOVEN
THE NETHERLANDS
PHONE : +31 - 40 - 2732241
FAX : +31 - 40 - 2735578

BRAZIL

MARANTZ BRAZIL
CAIXA POSTAL 21462
CEP 04698-970
SAO PAULO, SP, BRAZIL
PHONE : 0800 - 123123(Discagem Direta Gratuita)
FAX : +55 11 534. 8988

PROFESSIONAL AMERICAS

SUPERSCOPE TECHNOLOGIES, INC.
MARANTZ PROFESSIONAL PRODUCTS
2640 WHITE OAK CIRCLE, SUITE A
AURORA, ILLINOIS 60504 USA
PHONE : 630 - 820 - 4800
FAX : 630 - 820 - 8103

CANADA

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

AUSTRALIA

JAMO AUSTRALIA PTY LTD
1 EXPO COURT, P.O. BOX 350
MT. WAVERLEY VIC 3149
AUSTRALIA
PHONE : +61 - 3 - 9543 - 1522
FAX : +61 - 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 (S) PTE LTD
WO KEE HONG CENTRE
NO.23, LORONG 8, TOA PAYOH
SINGAPORE 319257
PHONE : +65 2544555
FAX : +65 2502213

TAIWAN

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

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WO KEE HONG ELECTRONICS SDN. BHD.
NO. 102 JALAN SS 21/35, DAMANSARA
UTAMA, 47400 PETALING JAYA
SELANGOR DARUL EHSAN, MALAYSIA
PHONE : +60 3 - 7184666
FAX : +60 3 - 7173828

JAPAN *Technical*

MARANTZ JAPAN, INC.
35- 1, 7- CHOME, SAGAMIONO
SAGAMIHARA - SHI, KANAGAWA
JAPAN 228-8505
PHONE : +81 42 748 1013
FAX : +81 42 748 9190

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

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

Power output

RMS 8 Ohms	50 W
DIN 8 Ohms	55 W

IHF dynamic power

8 Ohms	80 W
THD at 8 Ohms rated output	0.008 %
Intermodulation distortion	0.008 %
Damping factor	100

Magnetic cartridge input

Input sensitivity impedance	2.5 mV/47 kOhm
Accuracy of frequency response to IEC RIAA	0.5 dB
Signal to noise ratio (IHF A weighted)	87 dB

Tuner/CD/Aux/Tape inputs

Input sensitivity impedance	150 mV/33 kOhm
Signal to noise ratio (A weighted)	97 dB
Frequency response (-3 dB limits)	5 Hz -70 kHz
Channel separation (1 kHz/10 kHz)	85/65 dB

General

Power Requirements	230 V AC, 50 Hz
--------------------------	-----------------

Dimensions (MAX)

Width	440 mm
Height	138 mm
Depth	338 mm

Weight

Unit alone	6.7 kg
------------------	--------

Specifications subject to change without prior notice.

2. TEST EQUIPMENT REQUIRED FOR SERVICING

Item	Use
Distortion Analyzer	Distortion measurements
Audio Oscillator	Sinewave and squarewave signal source
AC VTVM	Voltage measurements (AC)
Oscilloscope	Waveform analysis and trouble shooting and ASO alignment
DC VTVM	Voltage measurements (DC)
AC Wattmeter	Monitors primary power to amplifier
Line Voltmeter	Monitors potential of primary power to amplifier
Variable Autotransformer	Adjusts level of primary power to amplifier
Circuit Tester	Trouble shooting
Shorting Plug	Shorts amplifier input to eliminate noise pickup

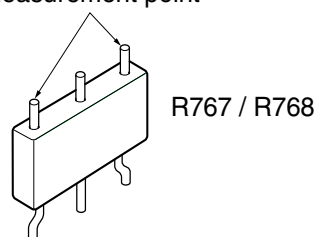
3. IDLING CURRENT ADJUSTMENT

1. Before switching the power ON, set the master volume control to the minimum position and the balance volume to the center positions. Also set semi-fixed resistors R755(L ch) and R756(R ch) on PCB P701 to the center positions.
2. Each of the cement resistors R767(L ch) and R768(R ch) on the PCB P701 is provided with three test points. Connect a digital voltmeter, set for the DC voltage input, to the test points at the two extremities of the three test points of R767 or R768.
3. After the setup above, switch the power ON, and adjust semi-fixed resistors R755(L ch) and R756(R ch) on PCB P701 according to the digital voltmeter reading. The target setting value is 10 mV(50 mA) for both the L ch and R ch.

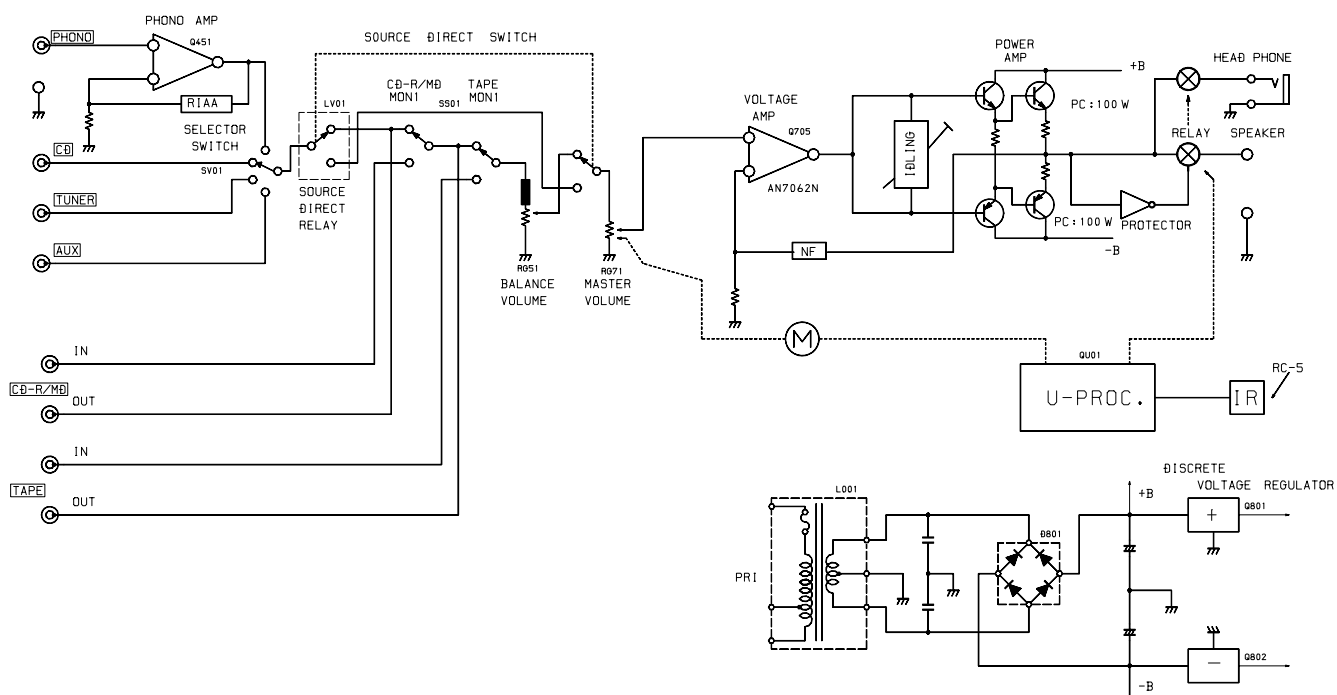
Please refer to the table below.

Elapsed time after Mains ON	Idling current setting value
30 sec. - 1 min.	3 ± 1 mV
1 min. - 2 min.	6 ± 1 mV
2 min. - 4 min.	8 ± 1 mV
More than 5 min.	10 ± 2 mV

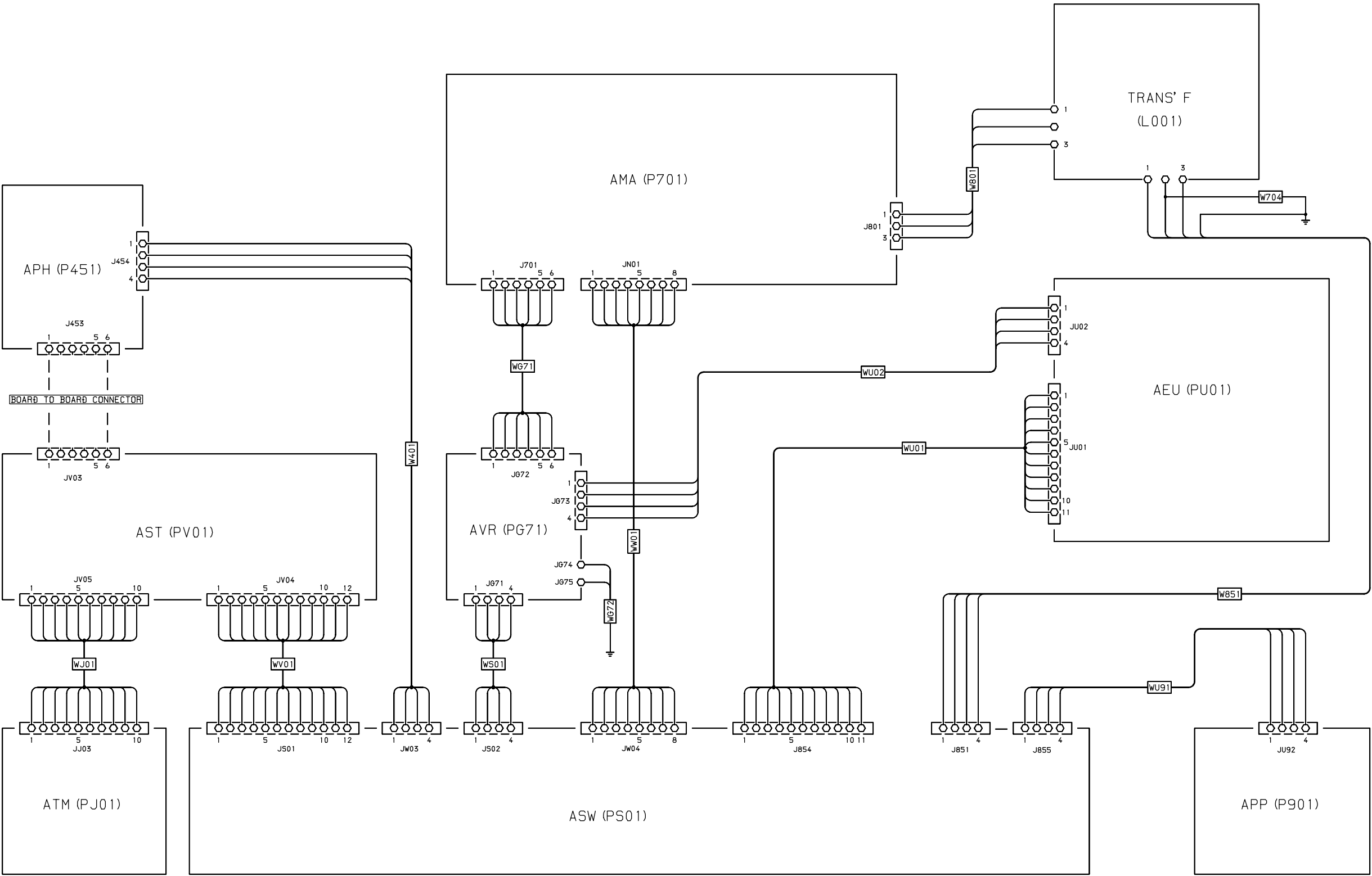
Measurement point



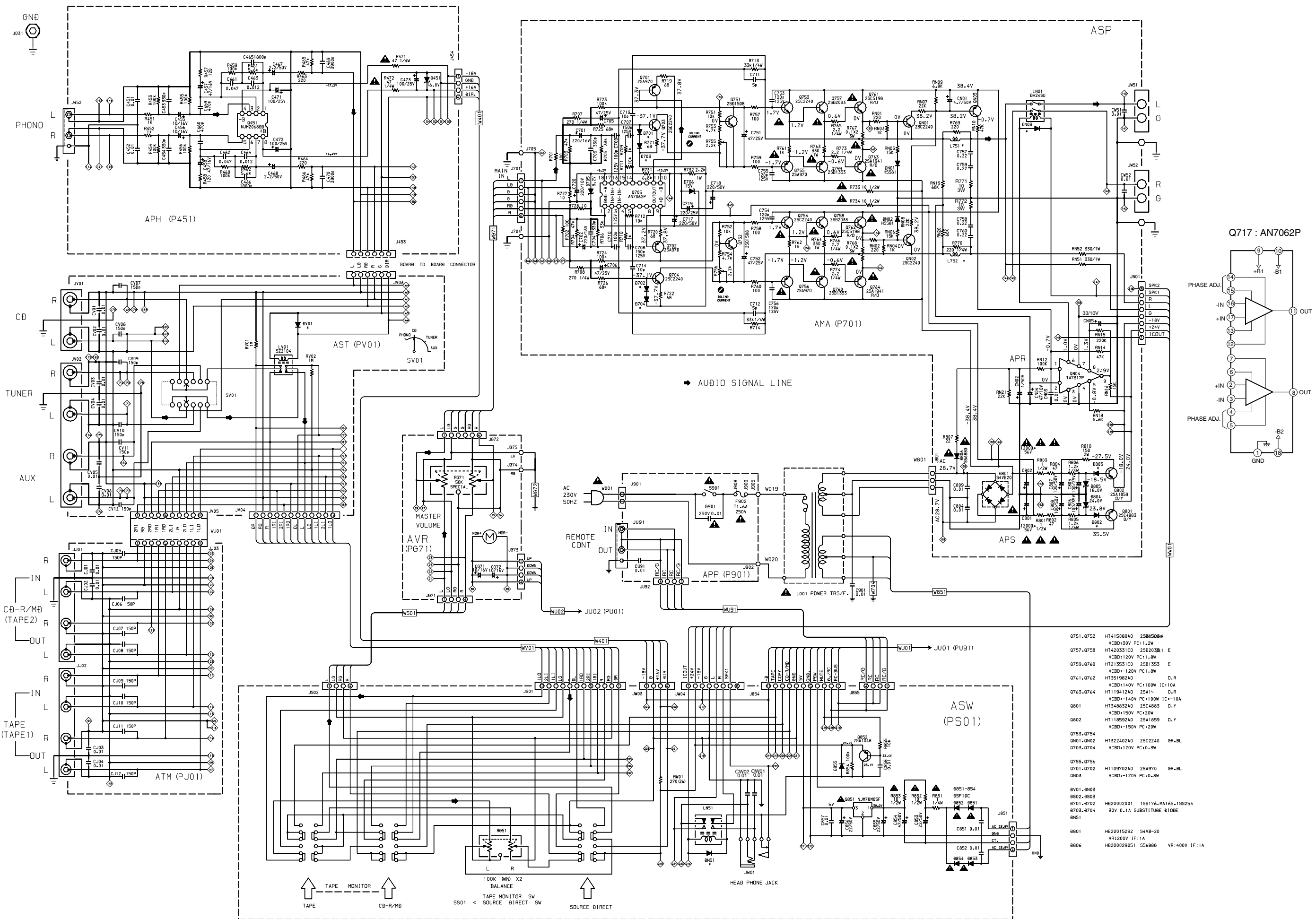
4. BLOCK DIAGRAM



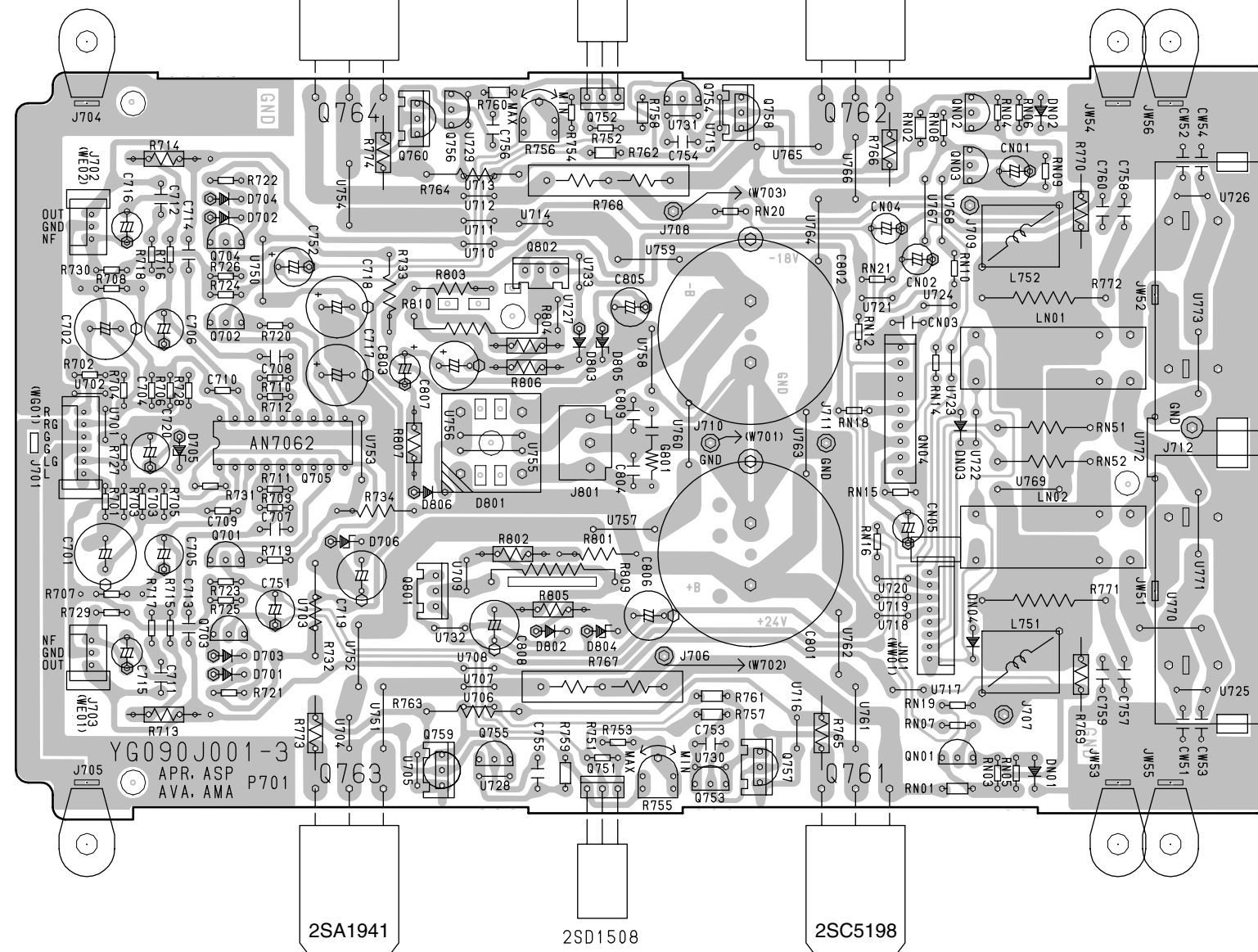
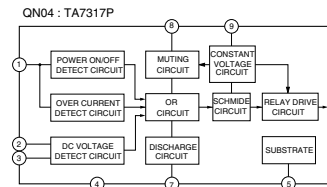
5. WIRING DIAGRAM



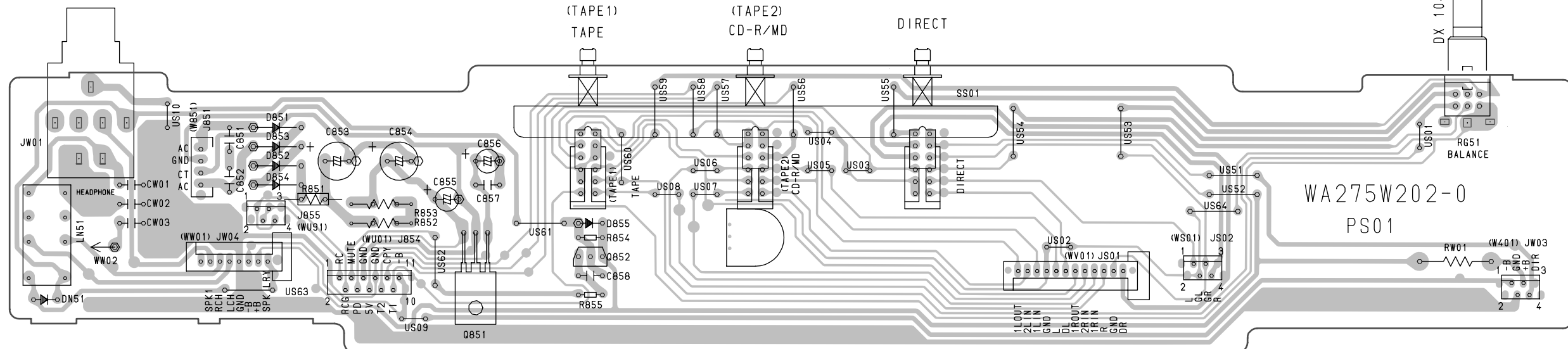
6. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern Side)



Q704	Q764	Q760	Q756	Q752	Q754	Q758	Q762	QN02
Q702	Q705		Q802				QN04	QN03
Q701			Q801					
Q703		Q763	Q759	Q755	Q751	Q753	Q757	Q761



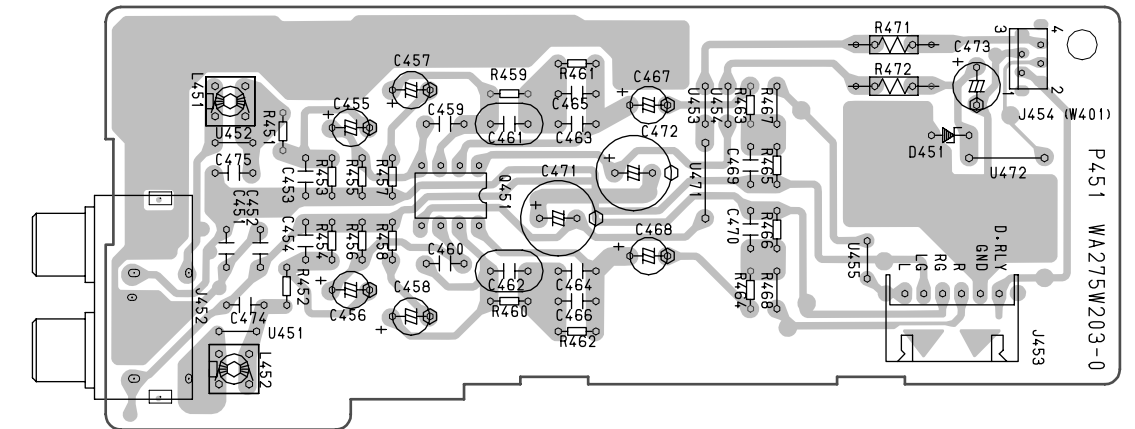
HEADPHONE



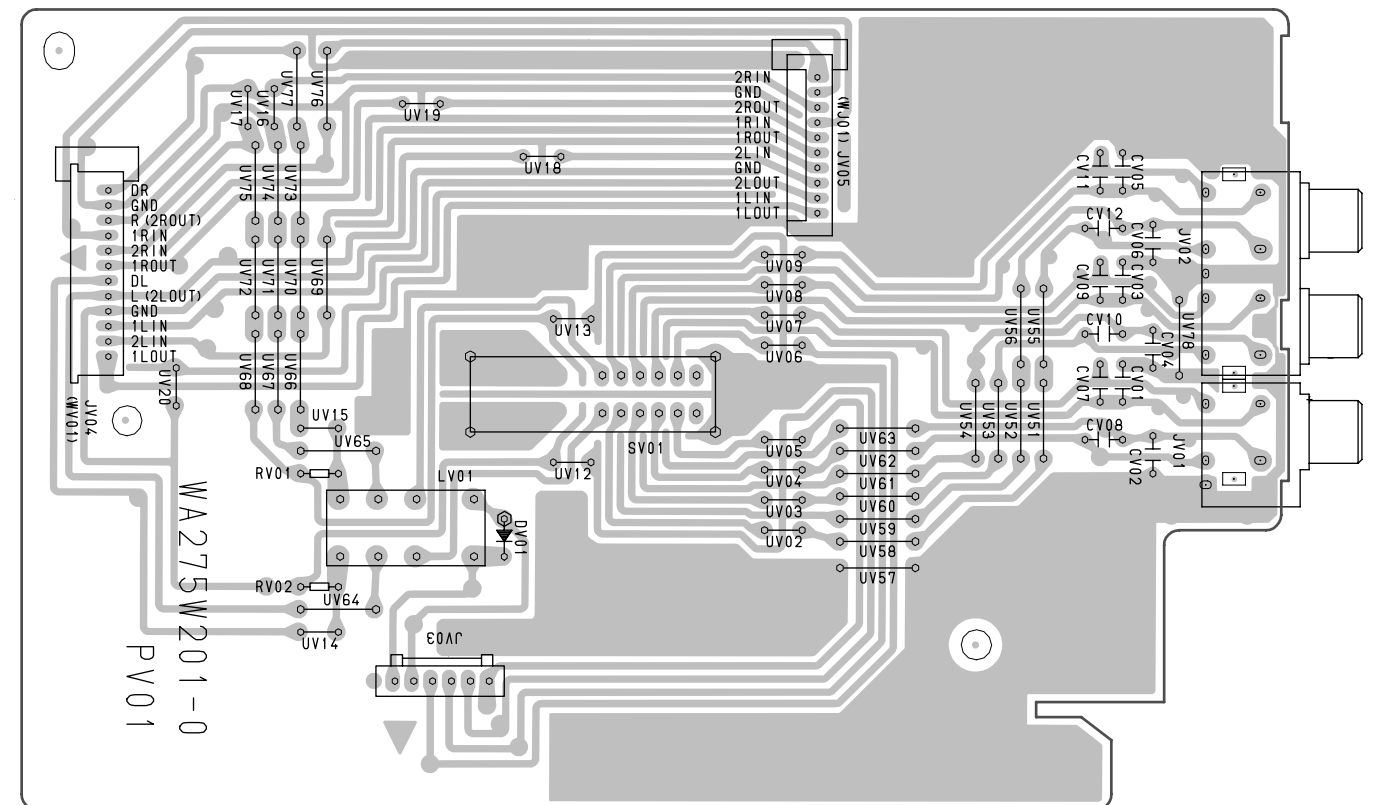
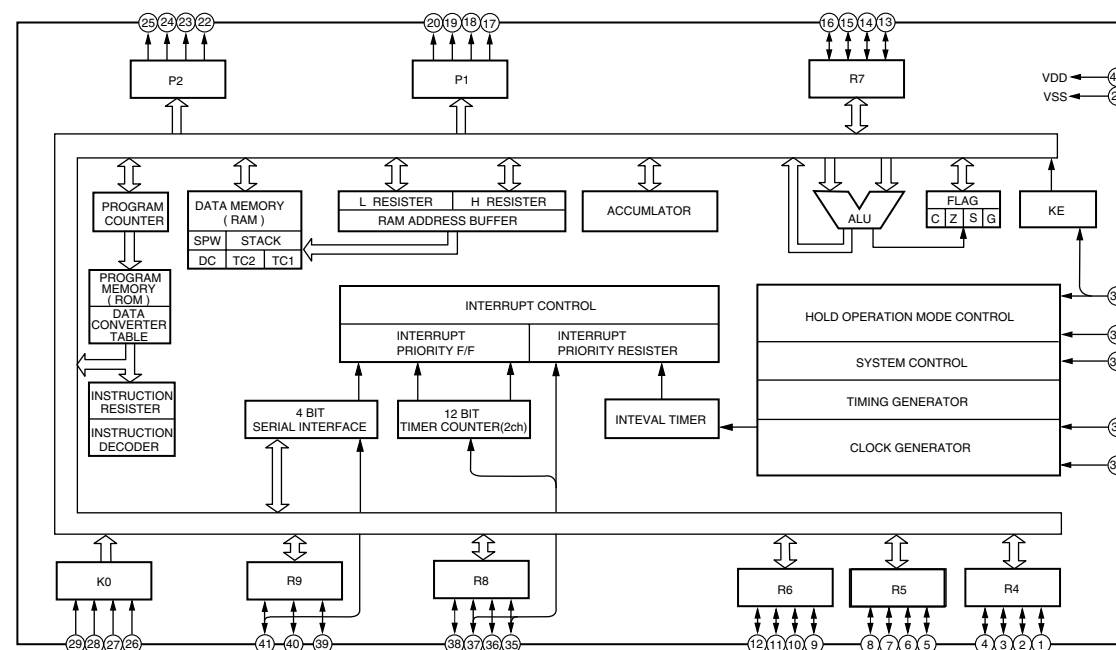
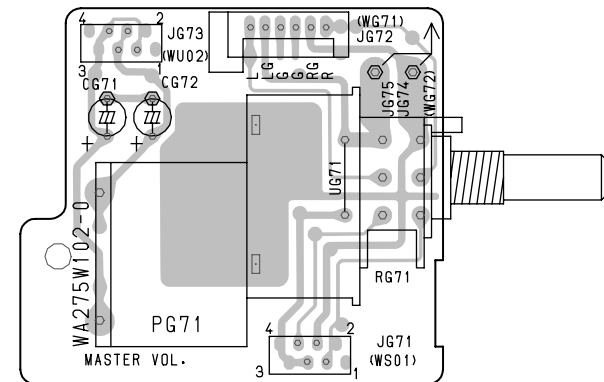
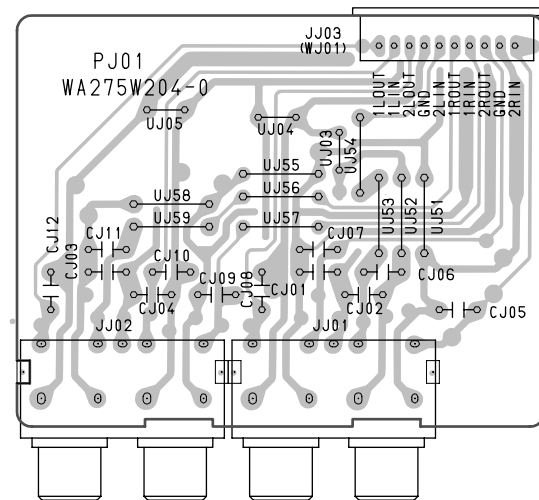
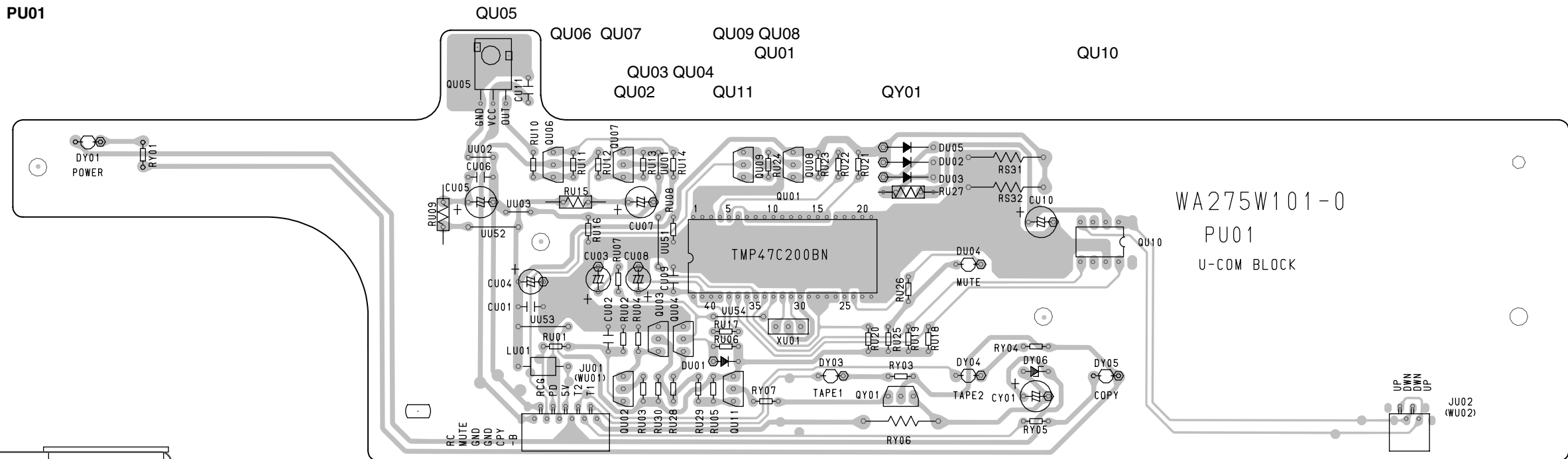
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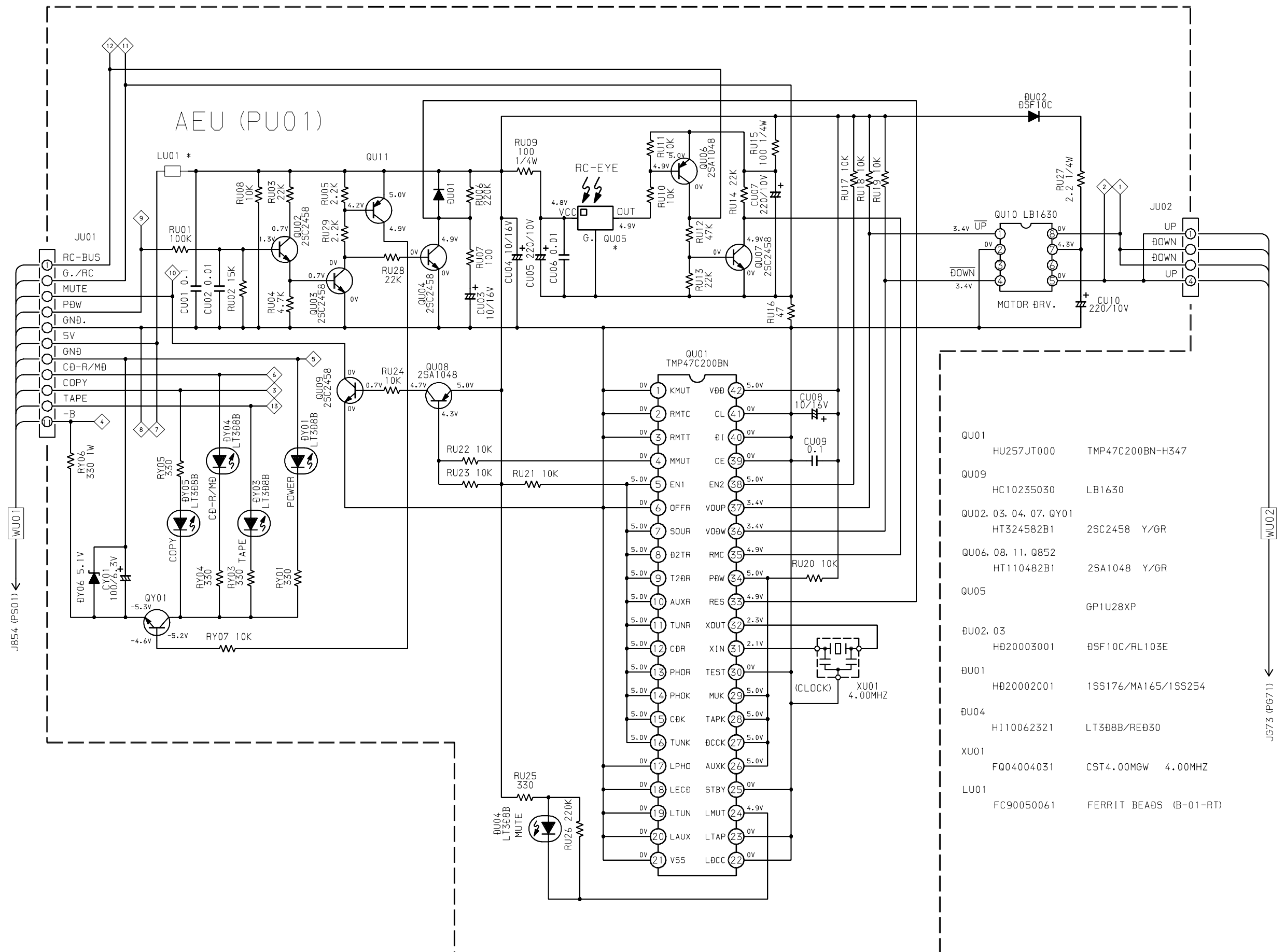
Q852

Q451

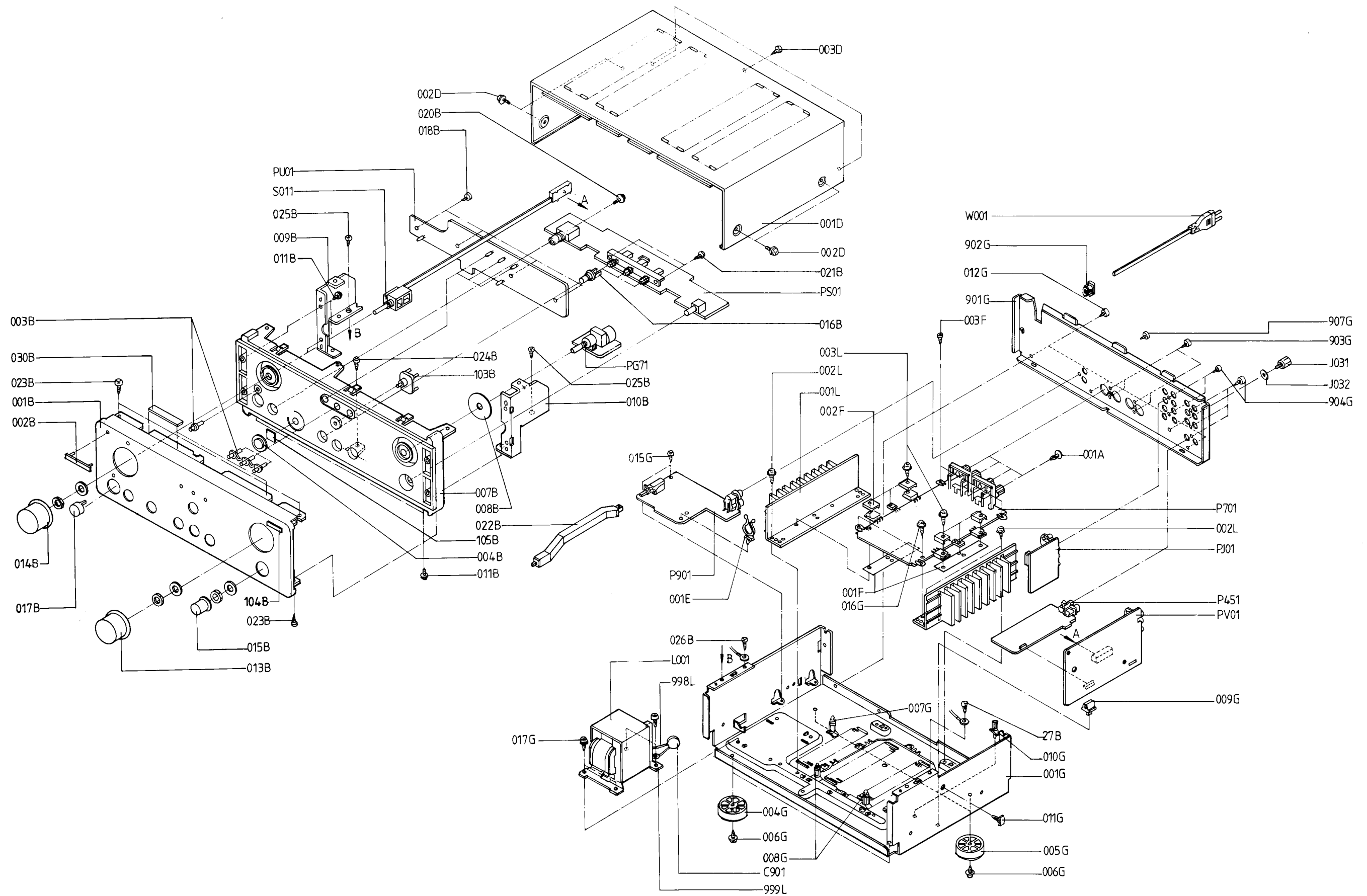


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7. EXPLODED VIEW AND PARTS LIST



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

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION
001B	BLACK	3120 201 60320	FRONT AL PANEL
001B	GOLD	3120 201 60330	FRONT AL PANEL
002B		4822 454 11825	BADGE
003B		3120 204 01820	LENS LED (POWER/FUNCTION)
004B	BLACK	3139 114 66790	WINDOW IR BL
004B	GOLD	3139 114 66800	WINDOW IR GL
007B	BLACK	3120 204 01760	FRONT MOULD CHASSIS BL
007B	GOLD	3120 204 01770	FRONT MOULD CHASSIS GL
013B	BLACK	3139 117 88030	KNOB VOL BL
013B	GOLD	3139 117 88090	KNOB VOL GL
014B	BLACK	3139 117 88030	KNOB VOL BL
014B	GOLD	3139 117 88090	KNOB VOL GL
015B	BLACK	3139 114 66750	KNOB ROTARY BL
015B	GOLD	3139 114 88590	KNOB ROTARY GL
016B	BLACK	3139 114 66770	BUTTON PUSH PUSH BL
016B	GOLD	3139 114 88600	BUTTON PUSH PUSH GL
017B	BLACK	4822 410 12499	BUTTON POWER
017B	GOLD	4822 410 12552	BUTTON POWER
022B		3139 114 66970	BRACKET LINK POWER
103B		3139 114 66900	LIGHT GUIDE MUTE
104B		4822 454 13476	BADGE OSE
004G		4822 462 42129	FOOT GL
005G		4822 462 42129	FOOT GL
C901		4822 122 30043	CAP. 10nF 80% 63V
J031		4822 502 13921	SCREW
L001		4822 146 21744	MAINS TRANSFORMER E176/45 IEC
S011		3120 208 40070	SEL FLEX WIRE SRBU04(415MM)
W001		4822 321 11139	MAINS CORD
W401		3139 110 34100	JUMPER LEAD FFC BD 04P 140
WS01		3139 110 33940	JUMPER LEAD FFC BD 04P 180
WU01		3139 110 33980	JUMPER LEAD FFC BD 11P 120
WU02		3139 110 33970	JUMPER LEAD FFC BD 04P 100
WU91		3139 110 33950	JUMPER LEAD FFC BD 04P 240
			PACKING
001T		3120 205 20380	USER GUIDE
Z001		3139 228 82240	REMOTE COMMANDER RC0465/02

8. 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 (RI05, 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 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 * 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 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.

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

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION
CG71		5322 124 21731	PG71-MASTER VOLUME CIRCUIT BOARD				PU01-μ-COM. INDICATOR CIRCUIT BOARD
CG72		5322 124 21731	10μF 20% 50V				PU01-CAPACITORS
RG71		4822 101 30885	10μF 20% 50V	CU01		4822 122 40617	0.1μF 50V
			50K MOTOR VARIABLE	CU02		4822 122 30043	10nF 80% 63V
			PJ01-TAPE IN OUT CIRCUIT BOARD	CU03		5322 124 21731	10μF 20% 50V
CJ01		4822 122 30043	10nF 80% 63V	CU04		5322 124 21731	10μF 20% 50V
CJ02		4822 122 30043	10nF 80% 63V	CU05		8239 210 94060	220μF 10V RA2 S10V220U PM20A
CJ03		4822 122 30043	10nF 80% 63V	CU06		4822 122 30043	10nF 80% 63V
CJ04		4822 122 30043	10nF 80% 63V	CU07		8239 210 94060	220μF 10V RA2 S10V220U PM20A
CJ05		4822 122 33642	150pF 5% NPO 50V	CU08		5322 124 21731	10μF 20% 50V
CJ06		4822 122 33642	150pF 5% NPO 50V	CU09		4822 122 40617	0.1μF 50V
CJ07		4822 122 33642	150pF 5% NPO 50V	CU10		8239 210 94060	220μF 10V RA2 S10V220U PM20A
CJ08		4822 122 33642	150pF 5% NPO 50V	CY01		2020 012 90353	100μF 6.3V S6.3V100U PM20T
CJ09		4822 122 33642	150pF 5% NPO 50V				PU01-RESISTORS
CJ10		4822 122 33642	150pF 5% NPO 50V	RU01		4822 050 11004	100K00 1% 0.4W
CJ11		4822 122 33642	150pF 5% NPO 50V	RU02		4822 050 11503	15K00 1% 0.4W
CJ12		4822 122 33642	150pF 5% NPO 50V	RU03		4822 050 11503	15K00 1% 0.4W
CU91		4822 122 40617	0.1μF 50V	RU04		4822 050 14702	4K70 1% 0.4W
JJ01		4822 267 31452	TERMINAL RCA 4P JACK	RU05		4822 050 12202	2K20 1% 0.4W
JJ02		4822 267 31452	TERMINAL RCA 4P JACK	RU06		4822 050 12204	220K00 1% 0.4W
			PS01-TAPE MONI. PHONE OUT SPK. SW. CIRCUIT BOARD	RU07		4822 050 11001	100R00 1% 0.4W
			PS01-CAPACITORS	RU08		4822 050 11003	10K00 1% 0.4W
C851		4822 122 30043	10nF 80% 63V	RU09		4822 117 12425	100R 5% 0.25W
C852		4822 122 30043	10nF 80% 63V	RU10		4822 050 11003	10K00 1% 0.4W
C853		4822 124 12432	100μF 20% 50V	RU11		4822 050 11003	10K00 1% 0.4W
C854		4822 124 12432	100μF 20% 50V	RU12		4822 050 14703	47K00 1% 0.4W
C855		4822 124 90362	22μF 50V	RU13		4822 050 11503	15K00 1% 0.4W
C856		4822 124 90362	22μF 50V	RU14		4822 050 11503	15K00 1% 0.4W
C857		4822 122 30043	10nF 80% 63V	RU15		4822 117 12425	100R 5% 0.25W
C858		4822 122 30043	10nF 80% 63V	RU16		4822 050 14709	47R00 1% 0.4W
CW01		4822 121 41857	10nF 5% 250V	RU17		4822 050 11003	10K00 1% 0.4W
CW02		4822 121 41857	10nF 5% 250V	RU18		4822 050 11003	10K00 1% 0.4W
			PS01-RESISTORS	RU19		4822 050 11003	10K00 1% 0.4W
▲ R851		4822 117 10158	1R 5% 0.25W	RU20		4822 050 11003	10K00 1% 0.4W
R852		4822 116 60313	10R 0.5W	RU21		4822 050 11003	10K00 1% 0.4W
R853		4822 116 60313	10R 0.5W	RU22		4822 050 11003	10K00 1% 0.4W
R854		4822 050 11004	100K00 1% 0.4W	RU23		4822 050 11003	10K00 1% 0.4W
R855		4822 050 11003	10K00 1% 0.4W	RU24		4822 050 11003	10K00 1% 0.4W
RG51		4822 100 30138	100K x 2 VARIABLE	RU25		4822 050 13301	330R00 1% 0.4W
RW01		4822 116 60455	270R 5% 2W	RU26		4822 050 12204	220K00 1% 0.4W
			PS01-SEMICONDUCTORS	RU27		4822 116 60309	2R2 0.25W
▲ D851		4822 130 32508	DIODE DSF10C	RU28		4822 050 11503	15K00 1% 0.4W
▲ D852		4822 130 32508	DIODE DSF10C	RU29		4822 050 12202	2K20 1% 0.4W
▲ D853		4822 130 32508	DIODE DSF10C	RY01		4822 050 13301	330R00 1% 0.4W
▲ D854		4822 130 32508	DIODE DSF10C	RY03		4822 050 13301	330R00 1% 0.4W
D855		3120 004 56210	DIODE 1SS131-77	RY04		4822 050 13301	330R00 1% 0.4W
DN51		3120 004 56210	DIODE 1SS131-77	RY05		4822 050 13301	330R00 1% 0.4W
▲ Q851		4822 209 71903	IC NJM78M05A REGULATOR	RY06		4822 116 60494	330R00 1W
Q852		4822 130 42372	TRS. 2SA1048Y	RY07		4822 050 11003	10K00 1% 0.4W
			PS01-MISCELLANEOUS				PU01-SEMICONDUCTORS
JW01	BLACK	4822 267 31479	SOCKET HEADPHONE	DU01		3120 004 56210	DIODE 1SS131-77
JW01	GOLD	8239 210 96380	SOCKET HEADPHONE	DU02		4822 130 32508	DIODE DSF10C
LN51		4822 280 20501	RELAY MR62-24SR	DU04		4822 130 80326	LED GL3HD8
SS01		3120 208 40080	SWITCH PUSH	DY01		4822 130 80326	LED GL3HD8
				DY03		4822 130 80326	LED GL3HD8
				DY04		4822 130 80326	LED GL3HD8
				DY05		4822 130 80326	LED GL3HD8
				DY06		4822 130 80317	ZENER DIODE MTZJ5.1B
				QU01		4822 209 90571	μ-COM. TMP47C200BN-H347
				QU02		4822 130 60904	TRS. 2SC2458Y
				QU03		4822 130 60904	TRS. 2SC2458Y
				QU04		4822 130 60904	TRS. 2SC2458Y
				QU05		4822 130 10165	IR RECEIVER GP1U28XP
				QU06		4822 130 42372	TRS. 2SA1048Y
				QU07		4822 130 60904	TRS. 2SC2458Y
				QU08		4822 130 42372	TRS. 2SA1048Y

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POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION
QU09		4822 130 60904	TRS. 2SC2458Y	R454		4822 050 11004	100K00 1% 0.4W
QU10		4822 209 73287	IC 4LB1630	R455		4822 050 11004	100K00 1% 0.4W
QU11		4822 130 42372	TRS. 2SA1048Y	R456		4822 050 11004	100K00 1% 0.4W
QY01		4822 130 60904	TRS. 2SC2458Y	R457		4822 050 11201	120R00 1% 0.4W
				R458		4822 050 11201	120R00 1% 0.4W
			PU01-MISCELLANEOUS	R459		4822 050 11004	100K00 1% 0.4W
LU01		4822 158 60605	FERRITE BEAD	R460		4822 050 11004	100K00 1% 0.4W
XU01		4822 242 72527	CER. RESONATOR 4.00MHZ CST4.00MGW-TF01	R461		4822 050 15602	5K60 1% 0.4W
				R462		4822 050 15602	5K60 1% 0.4W
			PV01-TONE CONTROL CIRCUIT BOARD	R463		4822 050 12201	220R00 1% 0.4W
			PV01-CAPACITORS	R464		4822 050 12201	220R00 1% 0.4W
CV01		4822 122 30043	10nF 80% 63V	R465		4822 050 14703	47K00 1% 0.4W
CV02		4822 122 30043	10nF 80% 63V	R466		4822 050 14703	47K00 1% 0.4W
CV03		4822 122 30043	10nF 80% 63V	R471		4822 111 90731	47E 2% 0.25W
CV04		4822 122 30043	10nF 80% 63V	R472		4822 052 10479	47R00 5% 0.33W
CV05		4822 122 30043	10nF 80% 63V				
CV06		4822 122 30043	10nF 80% 63V				P451-SEMICONDUCTORS
CV07		4822 122 33642	150pF 5% NPO 50V	D451		8239 210 96350	ZENER DIODE MTZ J 16
CV08		4822 122 33642	150pF 5% NPO 50V	Q451		4822 209 73064	IC NJM2068DD
CV09		4822 122 33642	150pF 5% NPO 50V				P451-MISCELLANEOU
CV10		4822 122 33642	150pF 5% NPO 50V	J452		3120 200 20170	TERMINAL RCA 2P JACK
CV11		4822 122 33642	150pF 5% NPO 50V				P701-POWER AMP. CIRCUIT BOARD
CV12		4822 122 33642	150pF 5% NPO 50V				P701-CAPACITORS
			PV01-RESISTORS	C701		4822 124 12434	220μF 20% 16V
RV01		4822 050 11005	1M00 1% 0.4W	C702		4822 124 12434	220μF 20% 16V
RV02		4822 050 11005	1M00 1% 0.4W	C703		4822 126 11071	330pF
				C704		4822 126 11071	330pF
			PU01-SEMICONDUCTOR	C705		4822 124 12023	47μF 20% 25V
DV01		3120 004 56210	DIODE 1SS131-77	C706		4822 124 12023	47μF 20% 25V
				C707		4822 126 11069	150pF
			PV01-MISCELLANEOUS	C708		4822 126 11069	150pF
JV01		4822 265 10311	TERMINAL RCA 2P JACK	C709		4822 126 10364	100pF 50V
JV02		4822 267 31452	TERMINAL RCA 4P JACK	C710		4822 126 10364	100pF 50V
LV01		4822 280 20501	RELAY MR62-24SR	C711		8220 200 82260	5pF POCAP TC04N-FE92 2H100D5P
SV01		4822 277 21412	SWITCH INPUT SELECTOR	C712		8220 200 82260	5pF POCAP TC04N-FE92 2H100D5P
				C713		8220 200 82270	10pF TC04N-FE92 2H100DSP
			P451-PHONO AMP. CIRCUIT BOARD	C714		8220 200 82270	10pF TC04N-FE92 2H100DSP
			P451-CAPACITORS	C717		4822 124 90366	220μF 50V
C451		4822 122 30043	10nF 80% 63V	C718		4822 124 90366	220μF 50V
C452		4822 122 30043	10nF 80% 63V	C719		8239 210 95430	220μF 25V RA2 S25V220U PM20T
C453		4822 126 12671	330pF 10% YB 50V	C720		8239 210 94060	220μF 10V RA2 S10V220U PM20A
C454		4822 126 12671	330pF 10% YB 50V	C751		4822 124 12023	47μF 20% 25V
C455		5322 124 21731	10μF 20% 50V	C752		4822 124 12023	47μF 20% 25V
C456		5322 124 21731	10μF 20% 50V	C753		8239 210 95210	120pF PPCAP ECQ-P S100V120P
C457		4822 124 41539	47μF 16V	C754		8239 210 95210	120pF PPCAP ECQ-P S100V120P
C458		4822 124 41539	47μF 16V	C755		8239 210 95210	120pF PPCAP ECQ-P S100V120P
C459		5322 122 32311	470pF 10% 100V	C756		8239 210 95210	120pF PPCAP ECQ-P S100V120P
C460		5322 122 32311	470pF 10% 100V	C757		4822 121 42868	220nF 5% 50V
C461		4822 121 43526	47nF 5% 250V	C758		4822 121 42868	220nF 5% 50V
C462		4822 121 43526	47nF 5% 250V	C759		4822 121 42868	220nF 5% 50V
C463		4822 121 51574	12nF 5% 50V	C760		4822 121 42868	220nF 5% 50V
C464		4822 121 51574	12nF 5% 50V	C801		8220 200 82191	12000μF 56V S56V12000UPM20B
C465		4822 121 43897	1nF 5% 400V	C802		8220 200 82191	12000μF 56V S56V12000UPM20B
C466		4822 121 43897	1nF 5% 400V	C804		4822 122 30043	10nF 80% 63V
C467		4822 124 40763	2.2μF 100 V	C805		4822 124 40207	100μF 20% 25V
C468		4822 124 40763	2.2μF 100 V	C806		4822 124 12432	100μF 20% 50V
C469		5322 121 42927	3.9nF 5% 250V	C807		4822 124 12432	100μF 20% 50V
C470		5322 121 42927	3.9nF 5% 250V	C808		4822 124 12432	100μF 20% 50V
C471		4822 124 22238	100μF 25V	C809		4822 122 30043	10nF 80% 63V
C472		4822 124 22238	100μF 25V	CN01		4822 124 80067	4.7μF 20% 63V
C473		4822 124 40207	100μF 20% 25V	CN02		4822 124 21913	1μF 20% 63V
				CN03		2020 308 90066	10nF 50V AMZV 50V10N PM5A
			P451-RESISTORS	CN04		4822 124 40433	47μF 20% 25V
R451		4822 050 11002	1K00 1% 0.4W	CN05		8239 210 94110	33μF 10V RA2 S10V33U PM20A
R452		4822 050 11002	1K00 1% 0.4W	CW51		4822 122 30043	10nF 80% 63V
R453		4822 050 11004	100K00 1% 0.4W	CW52		4822 122 30043	10nF 80% 63V

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R701		4822 050 11001	P701-RESISTORS	RN10		4822 050 14703	47K00 1% 0.4W
R702		4822 050 11001	100R00 1% 0.4W	RN12		4822 050 11004	100K00 1% 0.4W
R703		4822 050 14703	47K00 1% 0.4W	RN14		4822 050 14703	47K00 1% 0.4W
R704		4822 050 14703	47K00 1% 0.4W	RN15		4822 050 12204	220K00 1% 0.4W
R705		4822 050 13303	33K00 1% 0.4W	RN16		4822 050 11503	15K00 1% 0.4W
R706		4822 050 13303	33K00 1% 0.4W	RN18		4822 050 15602	5K60 1% 0.4W
R707		4822 050 12701	270R00 1% 0.4W	RN19		4822 050 16803	68K00 1% 0.4W
R708		4822 050 12701	270R00 1% 0.4W	RN20		4822 050 16803	68K00 1% 0.4W
R709		4822 050 11002	1K00 1% 0.4W	RN21		4822 050 11503	15K00 1% 0.4W
R710		4822 050 11002	1K00 1% 0.4W	RN51		4822 053 10331	330R00 5% 1W
R711		4822 050 11003	10K00 1% 0.4W	RN52		4822 053 10331	330R00 5% 1W
R712		4822 050 11003	10K00 1% 0.4W				P701-SEMICONDUCTORS
R713		4822 050 23303	33K00 1% 0.6W	D701		3120 004 56210	DIODE 1SS131-77
R714		4822 050 23303	33K00 1% 0.6W	D702		3120 004 56210	DIODE 1SS131-77
R719		4822 050 26809	68R00 1% 0.6W	D703		3120 004 56210	DIODE 1SS131-77
R720		4822 050 26809	68R00 1% 0.6W	D704		3120 004 56210	DIODE 1SS131-77
R721		4822 050 26809	68R00 1% 0.6W	D705		4822 130 80273	DIODE MTZJ8.2C
R722		4822 050 26809	68R00 1% 0.6W	D706		4822 130 80322	DIODE MTZJ16A
R723		4822 050 11004	100K00 1% 0.4W	D801		4822 130 31007	DIODE S4VB20
R724		4822 050 11004	100K00 1% 0.4W	D802		3120 004 56210	DIODE 1SS131-77
R725		4822 050 16803	68K00 1% 0.4W	D803		3120 004 56210	DIODE 1SS131-77
R726		4822 050 16803	68K00 1% 0.4W	D804		8239 210 96370	ZENER DIODE MTZ J 24
R727		4822 050 11009	10R00 1% 0.4W	D805		8239 210 96360	ZENER DIODE MTZ J 18
R728		4822 050 11009	10R00 1% 0.4W	D806		4822 130 80839	DIODES5688G
R731		4822 050 16802	6K80 1% 0.4W	DN01		3120 004 56230	DIODE 1SS131-77
R732		4822 117 11859	2K2 5% 2W	DN02		3120 004 56230	DIODE 1SS131-77
R733		4822 116 60313	10R 0.5W	DN03		3120 004 56210	DIODE 1SS131-77
R734		4822 116 60313	10R 0.5W				
R751		4822 050 11003	10K00 1% 0.4W	Q701		4822 130 42949	TRS. 2SA970GR
R752		4822 050 11003	10K00 1% 0.4W	Q702		4822 130 42949	TRS. 2SA970GR
R753		4822 050 14702	4K70 1% 0.4W	Q703		4822 130 43233	TRS. 2SC2240GR
R754		4822 050 14702	4K70 1% 0.4W	Q704		4822 130 43233	TRS. 2SC2240GR
R755		4822 101 11166	2K2	Q705		4822 209 83732	IC AN7062P
R756		4822 101 11166	2K2	Q751		4822 130 60526	TRS. 2SD1508
R757		4822 052 10101	100R00 5% 0.33W	Q752		4822 130 60526	TRS. 2SD1508
R758		4822 052 10101	100R00 5% 0.33W	Q753		4822 130 43233	TRS. 2SC2240GR
R759		4822 052 10101	100R00 5% 0.33W	Q754		4822 130 43233	TRS. 2SC2240GR
R760		4822 052 10101	100R00 5% 0.33W	Q755		4822 130 42949	TRS. 2SA970GR
R761		4822 052 10102	1K00 5% 0.33W	Q756		4822 130 42949	TRS. 2SA970GR
R762		4822 052 10102	1K00 5% 0.33W	Q757		4822 130 62335	TRS. 2SD2033A
R763		4822 116 60494	330R00 5% 1W	Q758		4822 130 62335	TRS. 2SD2033A
R764		4822 116 60494	330R00 5% 1W	Q759		4822 130 62334	TRS. 2SB1353E
R765		4822 116 83963	2R2 5% 0.25W	Q760		4822 130 62334	TRS. 2SB1353E
R766		4822 116 83963	2R2 5% 0.25W	▲ Q761		4822 130 10943	TRS. 2SC5198
R767		4822 111 91402	0R1 x 2 3W	▲ Q762		4822 130 10943	TRS. 2SC5198
R768		4822 111 91402	0R1 x 2 3W	▲ Q763		4822 130 10942	TRS. 2SA1941
R769		4822 117 10028	220R 5% 0.25W	▲ Q764		4822 130 10942	TRS. 2SA1941
R770		4822 117 10028	220R 5% 0.25W	Q801		4822 130 63312	TRS. 2SC4883 O/Y
R771		8239 210 95370	10R00 3W RST 10E 3W PM5	Q802		4822 130 63308	TRS. 2SA1859 O/Y
R772		8239 210 95370	10R00 3W RST 10E 3W PM5	QN01		4822 130 43233	TRS. 2SC2240GR
R773		4822 116 83963	2R2 5% 0.25W	QN02		4822 130 43233	TRS. 2SC2240GR
R774		4822 116 83963	2R2 5% 0.25W	QN03		4822 130 42949	TRS. 2SA970GR
R801		4822 116 60306	1R00 5% 0.5W RESISTOR	QN04		4822 209 83312	IC TA7317P
R802		4822 050 24709	47R00 1% 0.6W				P701-MISCELLANEOUS
R803		4822 116 60306	1R00 5% 0.5W RESISTOR	JW51		4822 290 91363	TERMINAL SPEAKER
R804		4822 111 90731	47E 2% 0.25W	JW52		4822 290 91364	TERMINAL SPEAKER
R805		4822 117 12426	1K2 0.25W	L751		4822 157 63085	COIL
R806		4822 117 12426	1K2 0.25W	L752		4822 157 63085	COIL
R807		4822 113 90119	22E 0.25W	LN01		4822 280 70354	RELAY VB-24MBU-510
R810		4822 117 11858	150R 5% 3W				P901-POWER SWITCH FUSE
RN01		4822 050 12201	220R00 1% 0.4W				CIRCUIT BOARD
RN02		4822 050 12201	220R00 1% 0.4W	G901		4822 121 43732	CAP. 0.01μF 20% 250V
RN03		4822 050 11002	1K00 1% 0.4W				
RN04		4822 050 11002	1K00 1% 0.4W	▲ F902		48822 533 30415	FUSE T1.6A 250V
RN05		4822 050 11503	15K00 1% 0.4W	JU91		4822 267 41009	TERMINAL RCA 2P JACK
RN06		4822 050 11503	15K00 1% 0.4W	S901		2422 128 02898	SWITCH PUSH 1P 5A/80A
RN07		4822 050 11503	15K00 1% 0.4W				
RN08		4822 050 11503	15K00 1% 0.4W				
RN09		4822 050 16802	6K80 1% 0.4W				