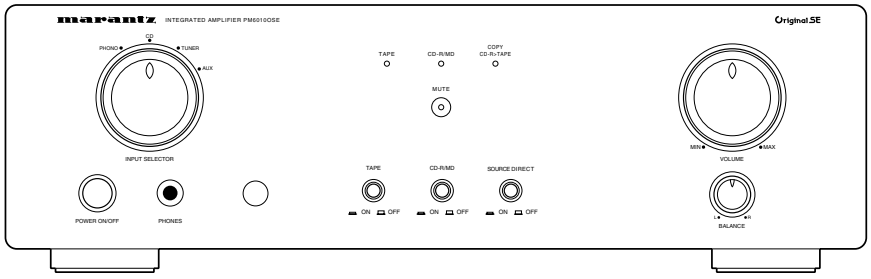
Service Manual

PM6010F /N1B, /N1G, /T1B

Integrated amplifier



PM6010OSE

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

marantz®

- PM6010OSE -

275W855010 MIT
3120 785 22009
First Issue 1999.08

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

EUROPE / TRADING

MARANTZ EUROPE B.V.
P.O.BOX 80002, BUILDING SFF2
5600 JB EINDHOVEN
THE NETHERLANDS
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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

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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

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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

MALAYSIA

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 inpedance ..... 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

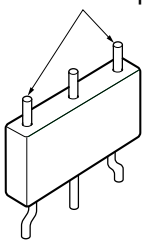
3. IDLING CURRENT ADJUSTMENT

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.

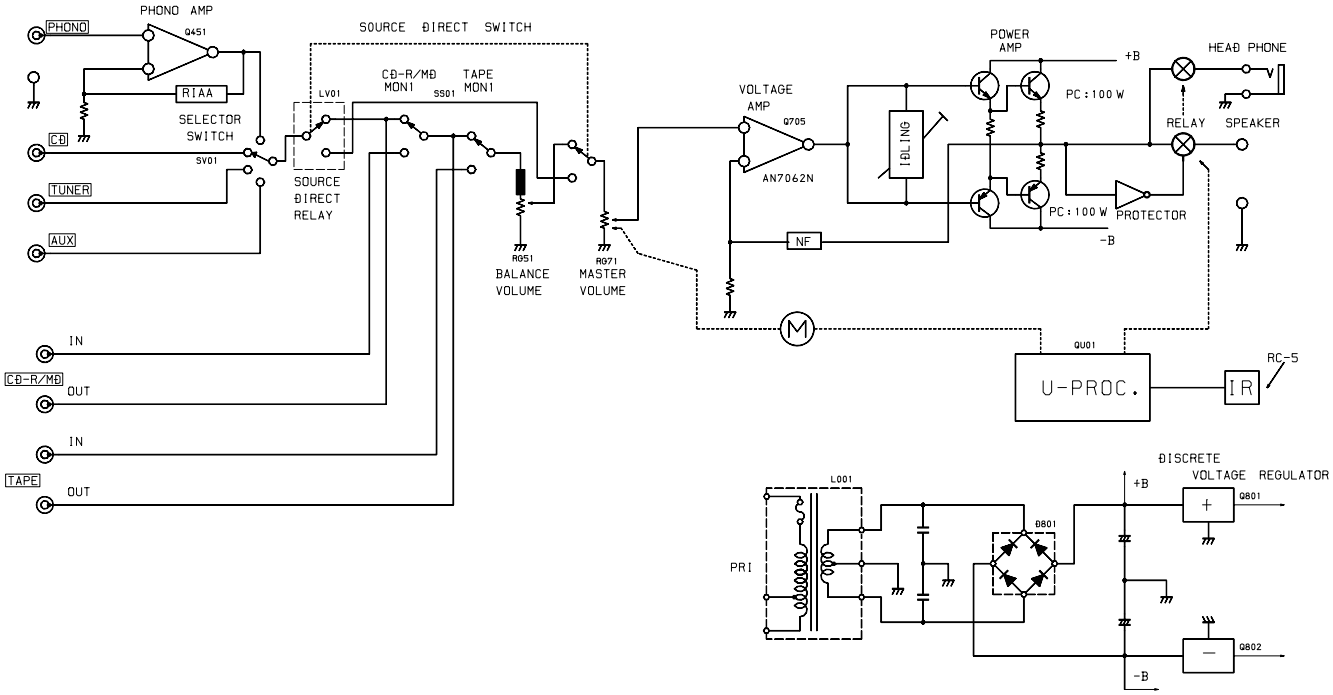
Elapsed time after Mains ON	Idling current setting value
30 sec. - 1 min.	3 ± 1 mV
1 min. - 2 min.	6 ± 1 mV
2 min. - 4 min.	8 ± 1 mV
More than 5 min.	10 ± 2 mV

Measurement point

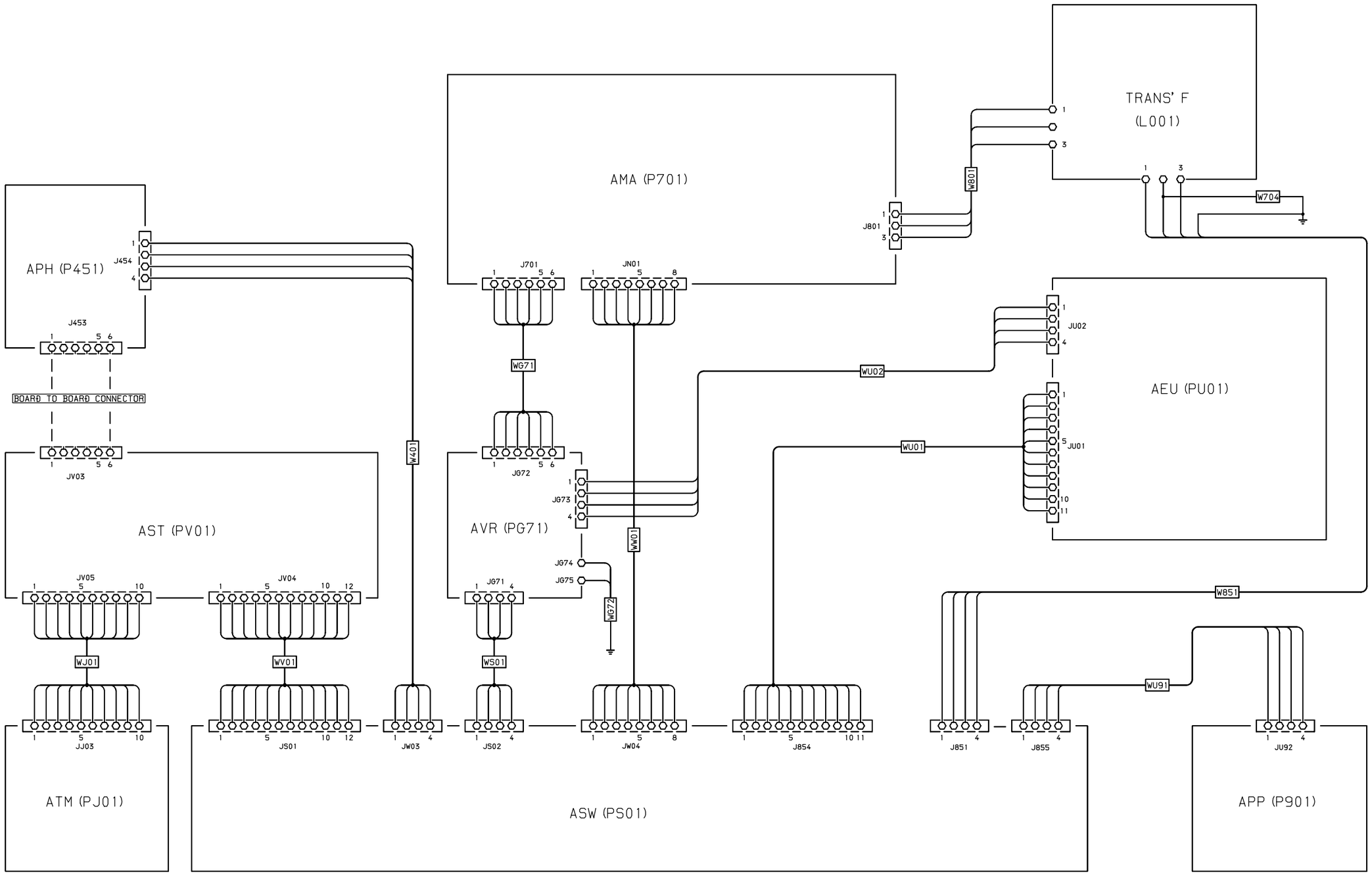


R767 / R768

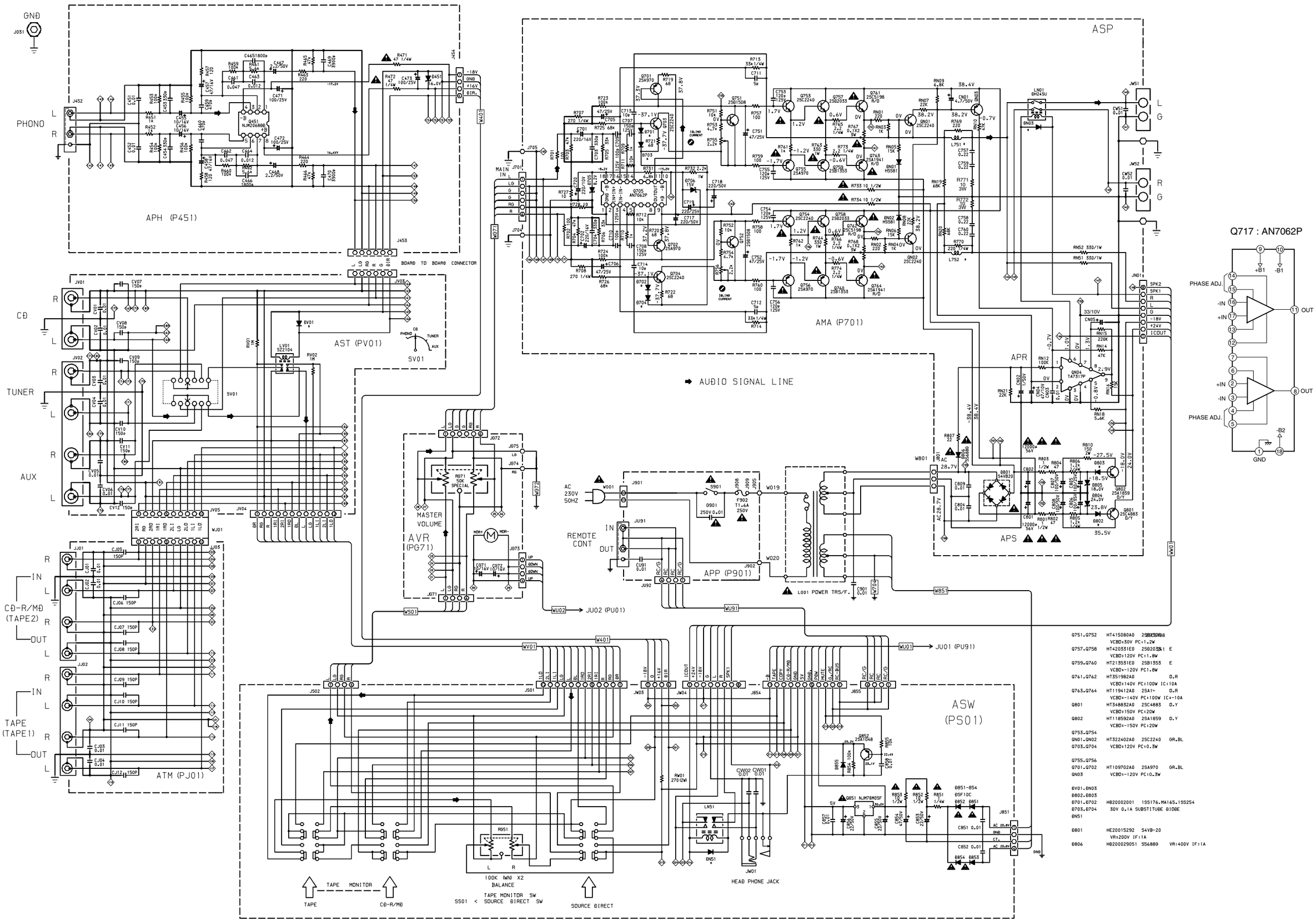
4. BLOCK DIAGRAM



5. WIRING DIAGRAM

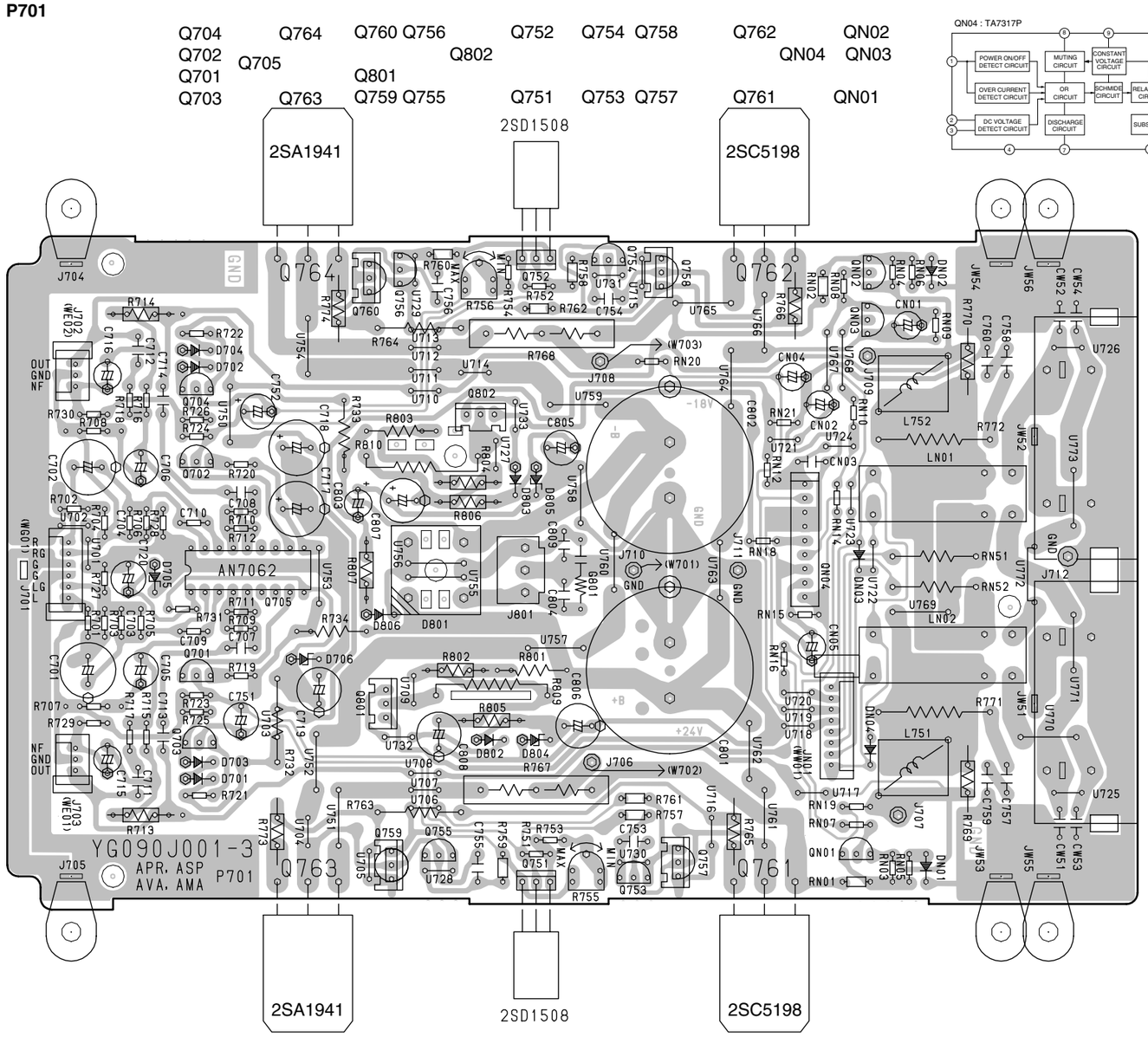


6. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern Side)

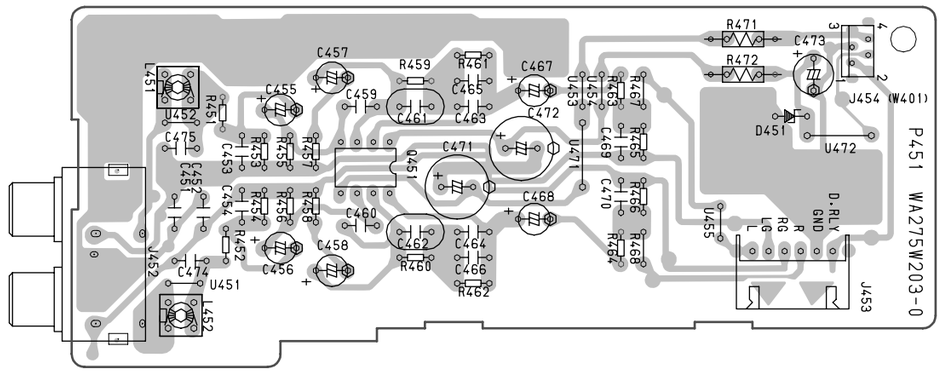


Q751.Q752	HT415080A0	2SB1508	
	VCBO:50V PC:1.2W		
Q757.Q758	HT420531E0	2SD2033	E
	VCBO:120V PC:1.8W		
Q759.Q760	HT213551E0	2SB1353	E
	VCBO:-120V PC1.8W		
Q761.Q762	HT351982A0		O.R
	VCBO:140V PC:100W IC:10A		
Q763.Q764	HT119412A0	2SA1~	O.R
	VCBO:-140V PC:100W IC:-10A		
Q801	HT348832A0	2SC4883	O.Y
	VCBO:150V PC:20W		
Q802	HT118592A0	2SA1859	O.Y
	VCBO:-150V PC:20W		
Q753.Q754			
GN01.GN02	HT322402A0	2SC2240	GR.BL
Q703.Q704	VCBO:120V PC:0.5W		
Q755.Q756			
Q701.Q702	HT109702A0	2SA970	GR.BL
GN03	VCBO:-120V PC:0.5W		
BV01.BN03			
B802.B803			
B701.B702	HB20002001	1SS176.MA165.1SS254	
B703.B704	30V 0.1A SUBSTITUBE DIODE		
BN51			
B801	HE20015292	S4VB-20	
	VR:200V IF:1A		
B806	HB20002951	S56880	VR:400V IF:1A

P701



P451



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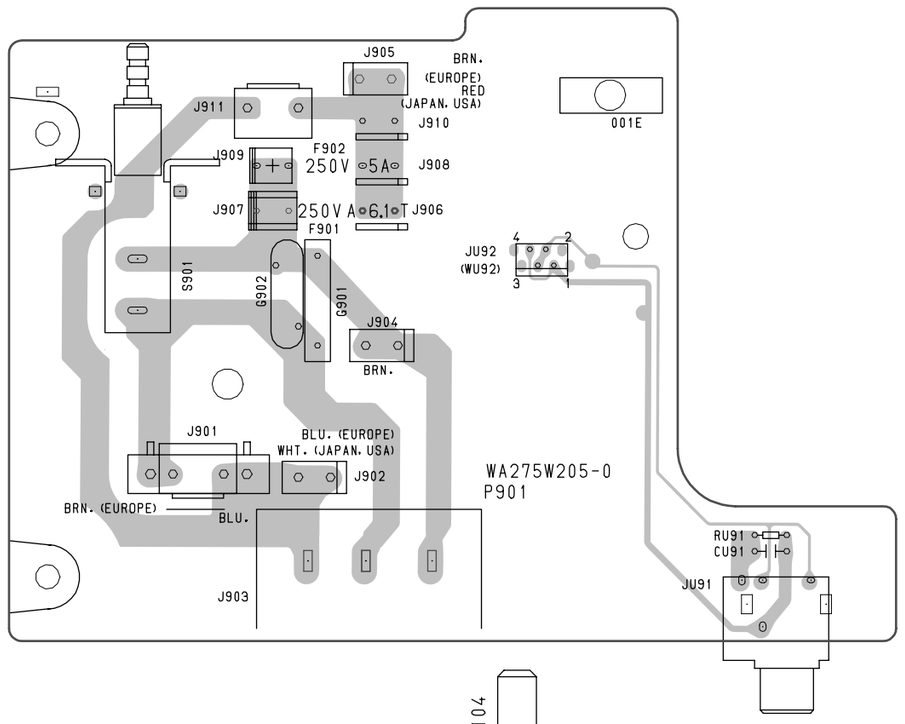
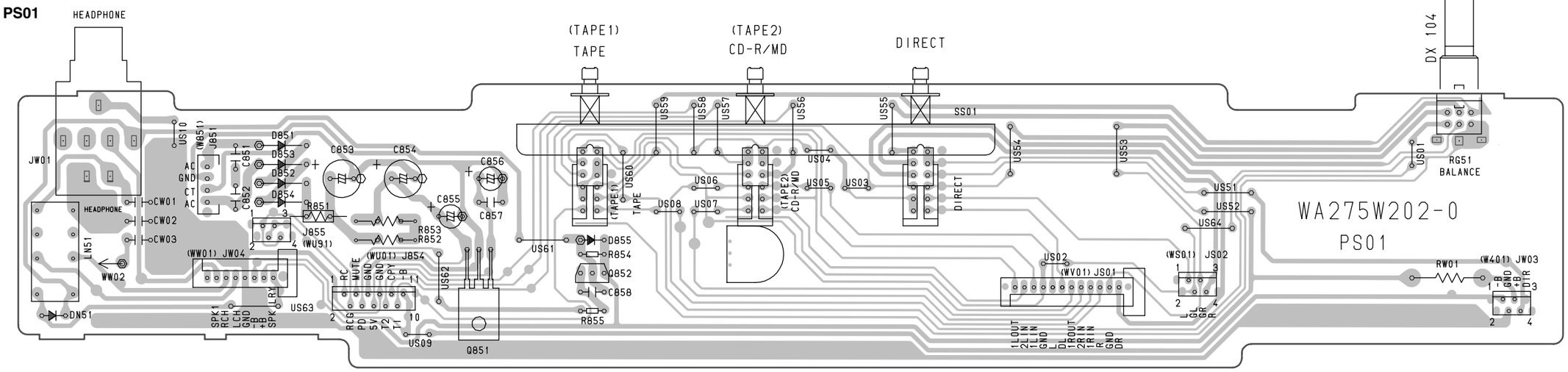
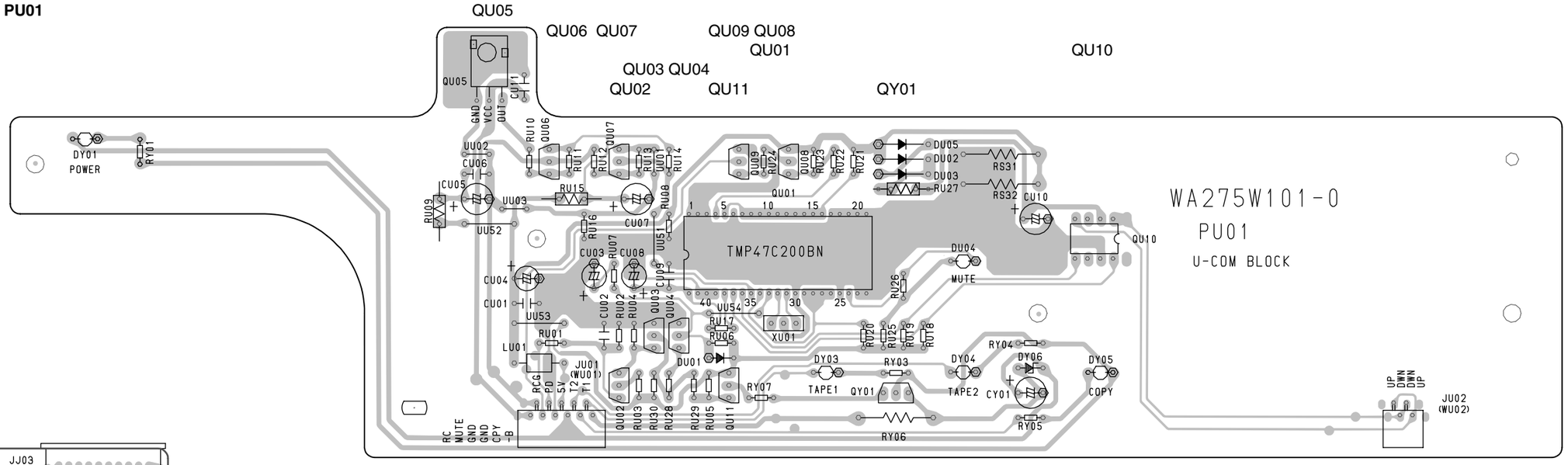


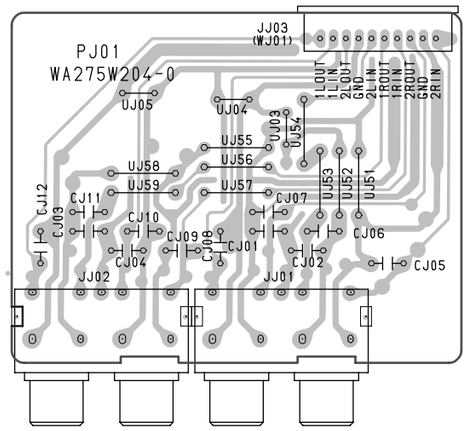
PS01



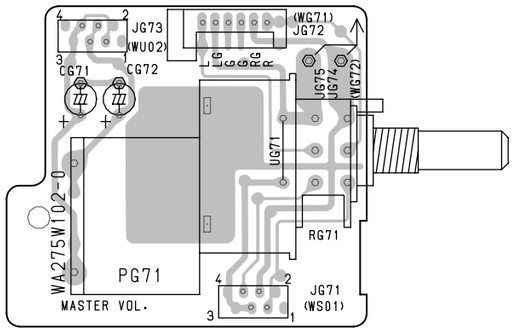
PU01



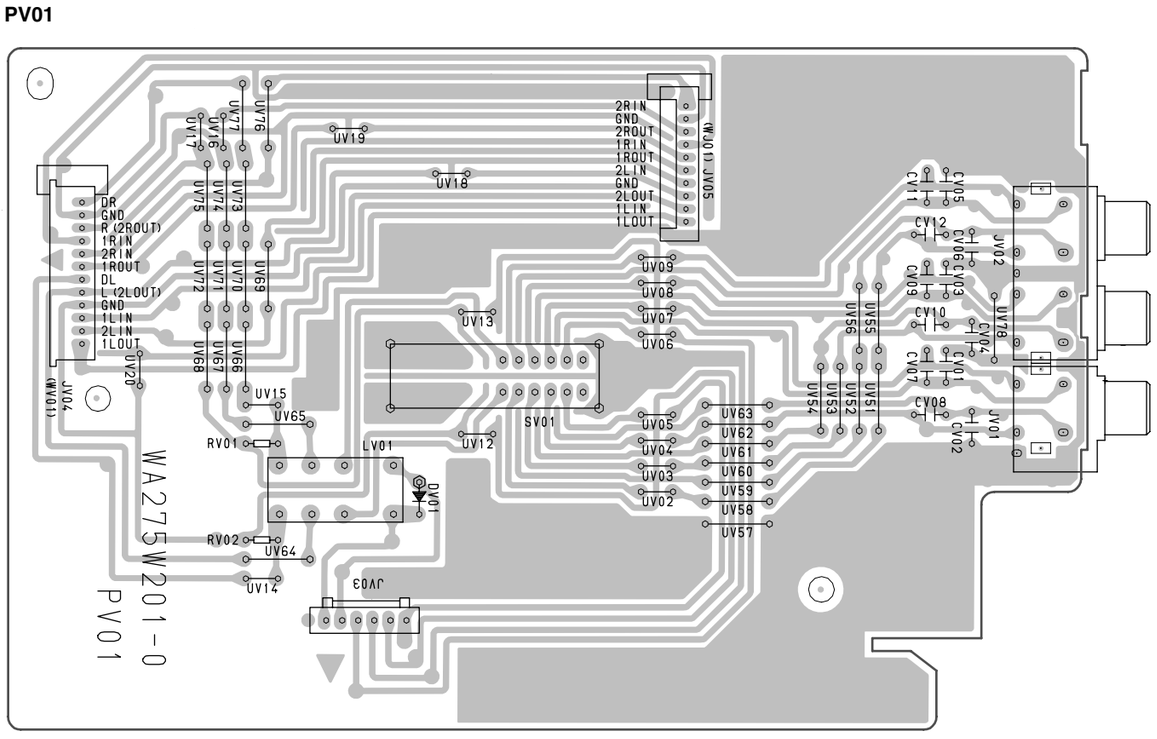
PJ01



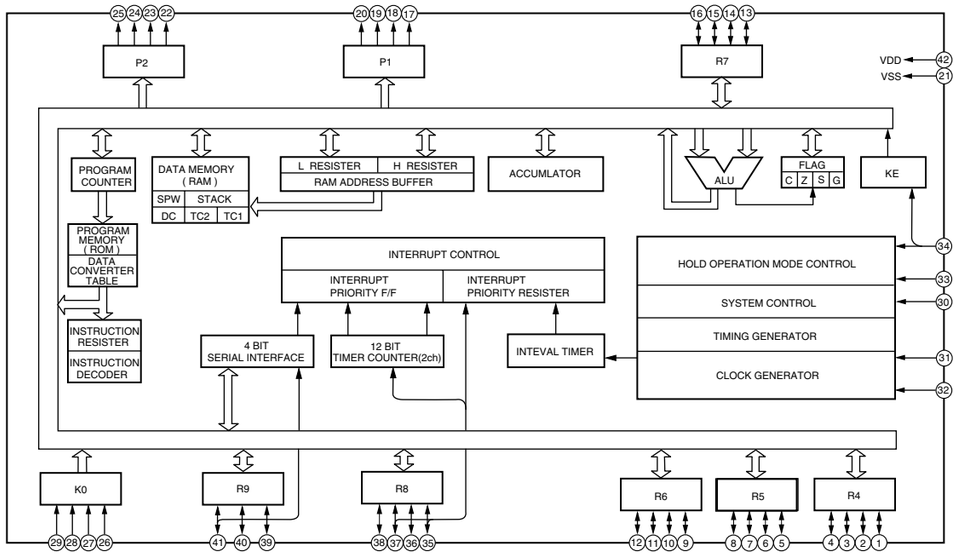
PG71



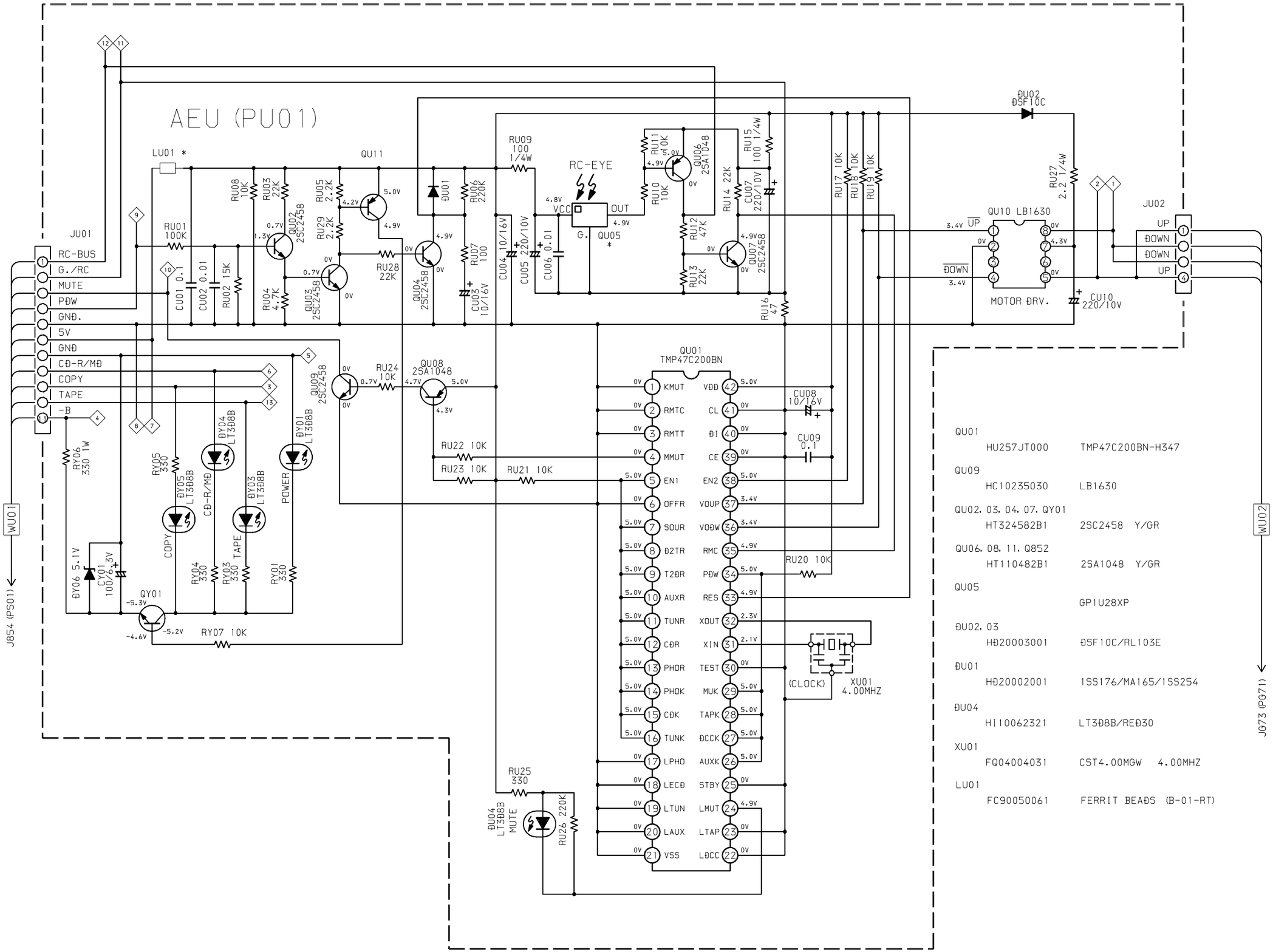
PV01



QU01 : TMP47C200BN

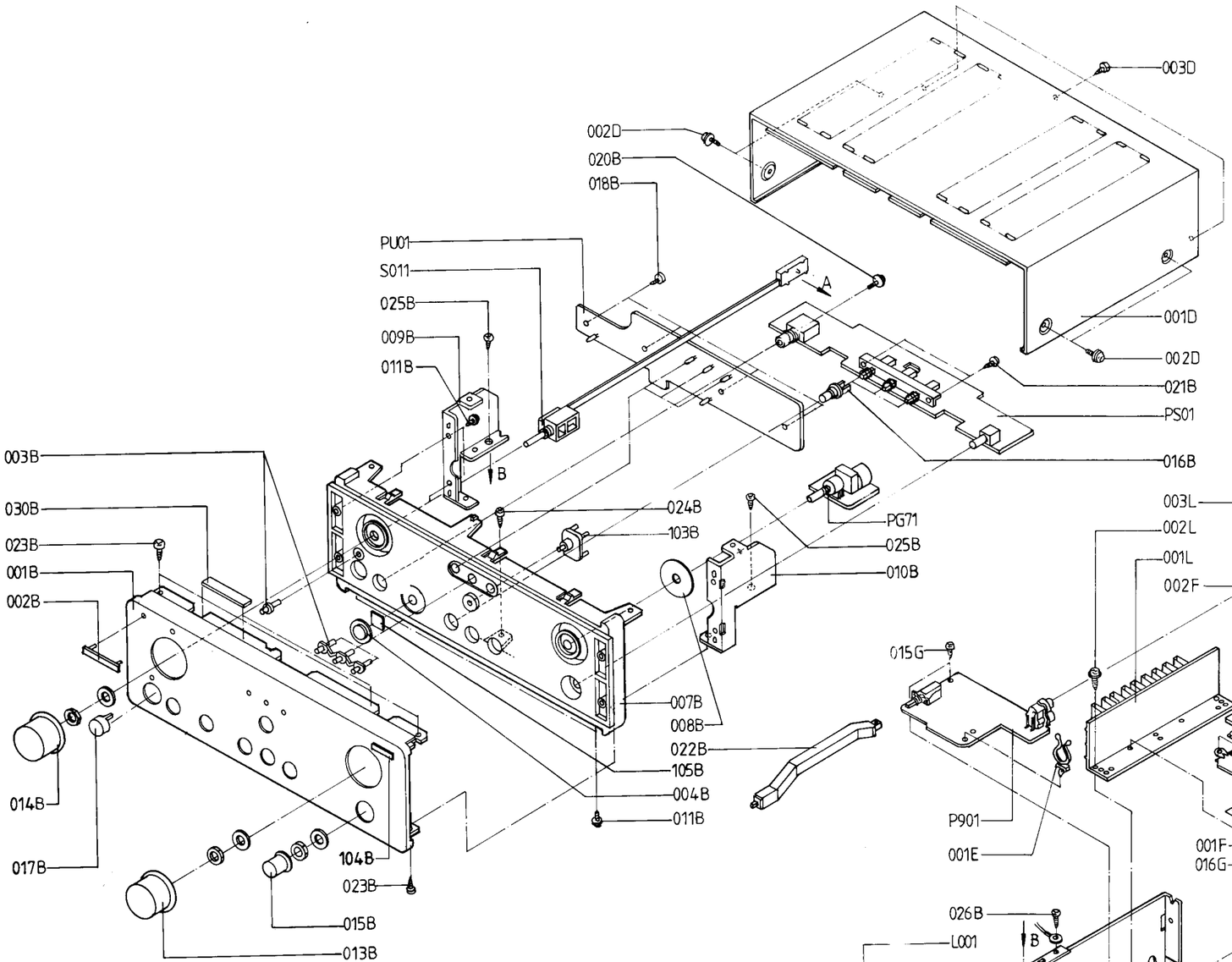


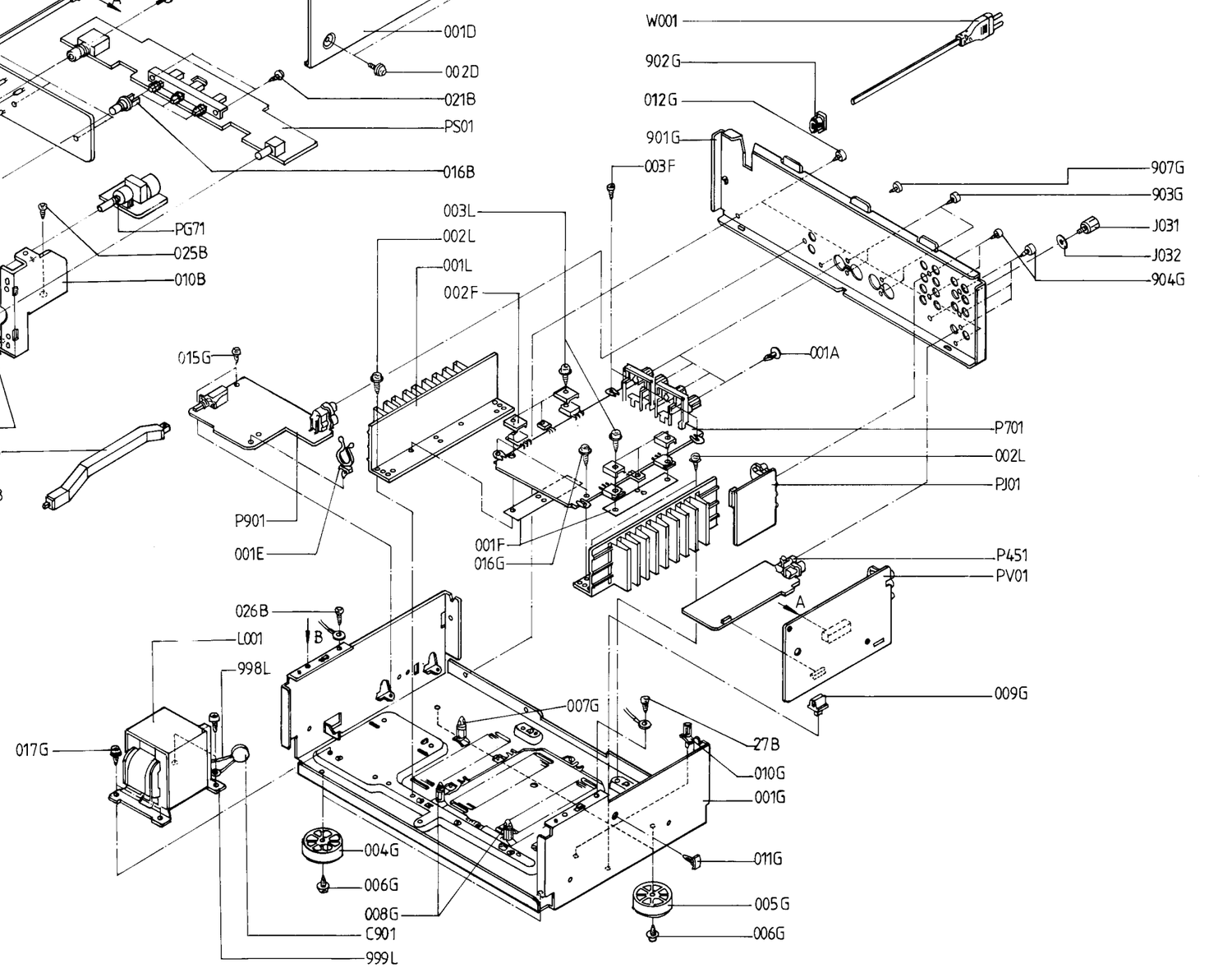
AEU (PU01)



QU01		
	HU257JT000	TMP47C200BN-H347
QU09		
	HC10235030	LB1630
QU02, 03, 04, 07, QY01		
	HT324582B1	2SC2458 Y/GR
QU06, 08, 11, Q852		
	HT110482B1	2SA1048 Y/GR
QU05		
		GP1U28XP
ÐU02, 03		
	HÐ20003001	ÐSF10C/RL103E
ÐU01		
	HÐ20002001	1SS176/MA165/1SS254
ÐU04		
	HI10062321	LT3Ð8B/REÐ30
XU01		
	FQ04004031	CST4.00MGW 4.00MHZ
LU01		
	FC90050061	FERRIT BEAÐS (B-01-RT)

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
② ③ Disc type
Temp.coeff.P350 ～N1000, 50V
③ —— Capacity value
② —— 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
④ 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
⑤ ⑥ One-way lead type, Tolerance ±20%
⑥ —— Working voltage
⑤ —— 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.	: TRAMSISTOR
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
			PG71-MASTER VOLUME CIRCUIT BOARD
CG71		5322 124 21731	10µF 20% 50V
CG72		5322 124 21731	10µF 20% 50V
RG71		4822 101 30885	50K MOTOR VARIABLE
			PJ01-TAPE IN OUT CIRCUIT BOARD
CJ01		4822 122 30043	10nF 80% 63V
CJ02		4822 122 30043	10nF 80% 63V
CJ03		4822 122 30043	10nF 80% 63V
CJ04		4822 122 30043	10nF 80% 63V
CJ05		4822 122 33642	150pF 5% NPO 50V
CJ06		4822 122 33642	150pF 5% NPO 50V
CJ07		4822 122 33642	150pF 5% NPO 50V
CJ08		4822 122 33642	150pF 5% NPO 50V
CJ09		4822 122 33642	150pF 5% NPO 50V
CJ10		4822 122 33642	150pF 5% NPO 50V
CJ11		4822 122 33642	150pF 5% NPO 50V
CJ12		4822 122 33642	150pF 5% NPO 50V
CU91		4822 122 40617	0.1µF 50V
JJ01		4822 267 31452	TERMINAL RCA 4P JACK
JJ02		4822 267 31452	TERMINAL RCA 4P JACK
			PS01-TAPE MONI. PHONE OUT SPK. SW. CIRCUIT BOARD
			PS01-CAPACITORS
C851		4822 122 30043	10nF 80% 63V
C852		4822 122 30043	10nF 80% 63V
C853		4822 124 12432	100µF 20% 50V
C854		4822 124 12432	100µF 20% 50V
C855		4822 124 90362	22µF 50V
C856		4822 124 90362	22µF 50V
C857		4822 122 30043	10nF 80% 63V
C858		4822 122 30043	10nF 80% 63V
CW01		4822 121 41857	10nF 5% 250V
CW02		4822 121 41857	10nF 5% 250V
			PS01-RESISTORS
⚠ R851		4822 117 10158	1R 5% 0.25W
R852		4822 116 60313	10R 0.5W
R853		4822 116 60313	10R 0.5W
R854		4822 050 11004	100K00 1% 0.4W
R855		4822 050 11003	10K00 1% 0.4W
RG51		4822 100 30138	100K x 2 VARIABLE
RW01		4822 116 60455	270R 5% 2W
			PS01-SEMICONDUCTORS
⚠ D851		4822 130 32508	DIODE DSF10C
⚠ D852		4822 130 32508	DIODE DSF10C
⚠ D853		4822 130 32508	DIODE DSF10C
⚠ D854		4822 130 32508	DIODE DSF10C
D855		3120 004 56210	DIODE 1SS131-77
DN51		3120 004 56210	DIODE 1SS131-77
⚠ Q851		4822 209 71903	IC NJM78M05A REGULATOR
Q852		4822 130 42372	TRS. 2SA1048Y
			PS01-MISCELLANEOUS
JW01	BLACK	4822 267 31479	SOCKET HEADPHONE
JW01	GOLD	8239 210 96380	SOCKET HEADPHONE
LN51		4822 280 20501	RELAY MR62-24SR
SS01		3120 208 40080	SWITCH PUSH

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION
			PU01-µ-COM. INDICATOR CIRCUIT BOARD
			PU01-CAPACITORS
CU01		4822 122 40617	0.1µF 50V
CU02		4822 122 30043	10nF 80% 63V
CU03		5322 124 21731	10µF 20% 50V
CU04		5322 124 21731	10µF 20% 50V
CU05		8239 210 94060	220µF 10V RA2 S10V220U PM20A
CU06		4822 122 30043	10nF 80% 63V
CU07		8239 210 94060	220µF 10V RA2 S10V220U PM20A
CU08		5322 124 21731	10µF 20% 50V
CU09		4822 122 40617	0.1µF 50V
CU10		8239 210 94060	220µF 10V RA2 S10V220U PM20A
CY01		2020 012 90353	100µF 6.3V S6.3V100U PM20T
			PU01-RESISTORS
RU01		4822 050 11004	100K00 1% 0.4W
RU02		4822 050 11503	15K00 1% 0.4W
RU03		4822 050 11503	15K00 1% 0.4W
RU04		4822 050 14702	4K70 1% 0.4W
RU05		4822 050 12202	2K20 1% 0.4W
RU06		4822 050 12204	220K00 1% 0.4W
RU07		4822 050 11001	100R00 1% 0.4W
RU08		4822 050 11003	10K00 1% 0.4W
RU09		4822 117 12425	100R 5% 0.25W
RU10		4822 050 11003	10K00 1% 0.4W
RU11		4822 050 11003	10K00 1% 0.4W
RU12		4822 050 14703	47K00 1% 0.4W
RU13		4822 050 11503	15K00 1% 0.4W
RU14		4822 050 11503	15K00 1% 0.4W
RU15		4822 117 12425	100R 5% 0.25W
RU16		4822 050 14709	47R00 1% 0.4W
RU17		4822 050 11003	10K00 1% 0.4W
RU18		4822 050 11003	10K00 1% 0.4W
RU19		4822 050 11003	10K00 1% 0.4W
RU20		4822 050 11003	10K00 1% 0.4W
RU21		4822 050 11003	10K00 1% 0.4W
RU22		4822 050 11003	10K00 1% 0.4W
RU23		4822 050 11003	10K00 1% 0.4W
RU24		4822 050 11003	10K00 1% 0.4W
RU25		4822 050 13301	330R00 1% 0.4W
RU26		4822 050 12204	220K00 1% 0.4W
RU27		4822 116 60309	2R2 0.25W
RU28		4822 050 11503	15K00 1% 0.4W
RU29		4822 050 12202	2K20 1% 0.4W
RY01		4822 050 13301	330R00 1% 0.4W
RY03		4822 050 13301	330R00 1% 0.4W
RY04		4822 050 13301	330R00 1% 0.4W
RY05		4822 050 13301	330R00 1% 0.4W
RY06		4822 116 60494	330R00 1W
RY07		4822 050 11003	10K00 1% 0.4W
			PU01-SEMICONDUCTORS
DU01		3120 004 56210	DIODE 1SS131-77
DU02		4822 130 32508	DIODE DSF10C
DU04		4822 130 80326	LED GL3HD8
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
QU09		4822 130 60904	TRS. 2SC2458Y
QU10		4822 209 73287	IC 4LB1630
QU11		4822 130 42372	TRS. 2SA1048Y
QY01		4822 130 60904	TRS. 2SC2458Y
			PU01-MISCELLANEOUS
LU01		4822 158 60605	FERRITE BEAD
XU01		4822 242 72527	CER. RESONATOR 4.00MHz
			CST4.00MGW-TF01
			PV01-TONE CONTROL
			CIRCUIT BOARD
			PV01-CAPACITORS
CV01		4822 122 30043	10nF 80% 63V
CV02		4822 122 30043	10nF 80% 63V
CV03		4822 122 30043	10nF 80% 63V
CV04		4822 122 30043	10nF 80% 63V
CV05		4822 122 30043	10nF 80% 63V
CV06		4822 122 30043	10nF 80% 63V
CV07		4822 122 33642	150pF 5% NPO 50V
CV08		4822 122 33642	150pF 5% NPO 50V
CV09		4822 122 33642	150pF 5% NPO 50V
CV10		4822 122 33642	150pF 5% NPO 50V
CV11		4822 122 33642	150pF 5% NPO 50V
CV12		4822 122 33642	150pF 5% NPO 50V
			PV01-RESISTORS
RV01		4822 050 11005	1M00 1% 0.4W
RV02		4822 050 11005	1M00 1% 0.4W
			PU01-SEMICONDUCTOR
DV01		3120 004 56210	DIODE 1SS131-77
			PV01-MISCELLANEOUS
JV01		4822 265 10311	TERMINAL RCA 2P JACK
JV02		4822 267 31452	TERMINAL RCA 4P JACK
LV01		4822 280 20501	RELAY MR62-24SR
SV01		4822 277 21412	SWITCH INPUT SELECTOR
			P451-PHONO AMP.
			CIRCUIT BOARD
			P451-CAPACITORS
C451		4822 122 30043	10nF 80% 63V
C452		4822 122 30043	10nF 80% 63V
C453		4822 126 12671	330pF 10% YB 50V
C454		4822 126 12671	330pF 10% YB 50V
C455		5322 124 21731	10µF 20% 50V
C456		5322 124 21731	10µF 20% 50V
C457		4822 124 41539	47µF 16V
C458		4822 124 41539	47µF 16V
C459		5322 122 32311	470pF 10% 100V
C460		5322 122 32311	470pF 10% 100V
C461		4822 121 43526	47nF 5% 250V
C462		4822 121 43526	47nF 5% 250V
C463		4822 121 51574	12nF 5% 50V
C464		4822 121 51574	12nF 5% 50V
C465		4822 121 43897	1nF 5% 400V
C466		4822 121 43897	1nF 5% 400V
C467		4822 124 40763	2.2µF 100 V
C468		4822 124 40763	2.2µF 100 V
C469		5322 121 42927	3.9nF 5% 250V
C470		5322 121 42927	3.9nF 5% 250V
C471		4822 124 22238	100µF 25V
C472		4822 124 22238	100µF 25V
C473		4822 124 40207	100µF 20% 25V
			P451-RESISTORS
R451		4822 050 11002	1K00 1% 0.4W
R452		4822 050 11002	1K00 1% 0.4W
R453		4822 050 11004	100K00 1% 0.4W
R454		4822 050 11004	100K00 1% 0.4W
R455		4822 050 11004	100K00 1% 0.4W
R456		4822 050 11004	100K00 1% 0.4W
R457		4822 050 11201	120R00 1% 0.4W
R458		4822 050 11201	120R00 1% 0.4W
R459		4822 050 11004	100K00 1% 0.4W
R460		4822 050 11004	100K00 1% 0.4W
R461		4822 050 15602	5K60 1% 0.4W
R462		4822 050 15602	5K60 1% 0.4W
R463		4822 050 12201	220R00 1% 0.4W
R464		4822 050 12201	220R00 1% 0.4W
R465		4822 050 14703	47K00 1% 0.4W
R466		4822 050 14703	47K00 1% 0.4W
R471		4822 111 90731	47E 2% 0.25W
R472		4822 052 10479	47R00 5% 0.33W
			P451-SEMICONDUCTORS
D451		8239 210 96350	ZENER DIODE MTZ J 16
Q451		4822 209 73064	IC NJM2068DD
			P451-MISCELLANEOU
J452		3120 200 20170	TERMINAL RCA 2P JACK
			P701-POWER AMP.
			CIRCUIT BOARD
			P701-CAPACITORS
C701		4822 124 12434	220µF 20% 16V
C702		4822 124 12434	220µF 20% 16V
C703		4822 126 11071	330pF
C704		4822 126 11071	330pF
C705		4822 124 12023	47µF 20% 25V
C706		4822 124 12023	47µF 20% 25V
C707		4822 126 11069	150pF
C708		4822 126 11069	150pF
C709		4822 126 10364	100pF 50V
C710		4822 126 10364	100pF 50V
C711		8220 200 82260	5pF POCAP TC04N-FE92 2H100D5P
C712		8220 200 82260	5pF POCAP TC04N-FE92 2H100D5P
C713		8220 200 82270	10pF TC04N-FE92 2H100DSP
C714		8220 200 82270	10pF TC04N-FE92 2H100DSP
C717		4822 124 90366	220µF 50V
C718		4822 124 90366	220µF 50V
C719		8239 210 95430	220µF 25V RA2 S25V220U PM20T
C720		8239 210 94060	220µF 10V RA2 S10V220U PM20A
C751		4822 124 12023	47µF 20% 25V
C752		4822 124 12023	47µF 20% 25V
C753		8239 210 95210	120pF PPCAP ECQ-P S100V120P
C754		8239 210 95210	120pF PPCAP ECQ-P S100V120P
C755		8239 210 95210	120pF PPCAP ECQ-P S100V120P
C756		8239 210 95210	120pF PPCAP ECQ-P S100V120P
C757		4822 121 42868	220nF 5% 50V
C758		4822 121 42868	220nF 5% 50V
C759		4822 121 42868	220nF 5% 50V
C760		4822 121 42868	220nF 5% 50V
C801		8220 200 82191	12000µF 56V S56V12000UPM20B
C802		8220 200 82191	12000µF 56V S56V12000UPM20B
C804		4822 122 30043	10nF 80% 63V
C805		4822 124 40207	100µF 20% 25V
C806		4822 124 12432	100µF 20% 50V
C807		4822 124 12432	100µF 20% 50V
C808		4822 124 12432	100µF 20% 50V
C809		4822 122 30043	10nF 80% 63V
CN01		4822 124 80067	4.7µF 20% 63V
CN02		4822 124 21913	1µF 20% 63V
CN03		2020 308 90066	10nF 50V AMZV 50V10N PM5A
CN04		4822 124 40433	47µF 20% 25V
CN05		8239 210 94110	33µF 10V RA2 S10V33U PM20A
CW51		4822 122 30043	10nF 80% 63V
CW52		4822 122 30043	10nF 80% 63V

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

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION
			P701-RESISTORS
R701		4822 050 11001	100R00 1% 0.4W
R702		4822 050 11001	100R00 1% 0.4W
R703		4822 050 14703	47K00 1% 0.4W
R704		4822 050 14703	47K00 1% 0.4W
R705		4822 050 13303	33K00 1% 0.4W
R706		4822 050 13303	33K00 1% 0.4W
R707		4822 050 12701	270R00 1% 0.4W
R708		4822 050 12701	270R00 1% 0.4W
R709		4822 050 11002	1K00 1% 0.4W
R710		4822 050 11002	1K00 1% 0.4W
R711		4822 050 11003	10K00 1% 0.4W
R712		4822 050 11003	10K00 1% 0.4W
R713		4822 050 23303	33K00 1% 0.6W
R714		4822 050 23303	33K00 1% 0.6W
R719		4822 050 26809	68R00 1% 0.6W
R720		4822 050 26809	68R00 1% 0.6W
R721		4822 050 26809	68R00 1% 0.6W
R722		4822 050 26809	68R00 1% 0.6W
R723		4822 050 11004	100K00 1% 0.4W
R724		4822 050 11004	100K00 1% 0.4W
R725		4822 050 16803	68K00 1% 0.4W
R726		4822 050 16803	68K00 1% 0.4W
R727		4822 050 11009	10R00 1% 0.4W
R728		4822 050 11009	10R00 1% 0.4W
R731		4822 050 16802	6K80 1% 0.4W
R732		4822 117 11859	2K2 5% 2W
R733		4822 116 60313	10R 0.5W
R734		4822 116 60313	10R 0.5W
R751		4822 050 11003	10K00 1% 0.4W
R752		4822 050 11003	10K00 1% 0.4W
R753		4822 050 14702	4K70 1% 0.4W
R754		4822 050 14702	4K70 1% 0.4W
R755		4822 101 11166	2K2
R756		4822 101 11166	2K2
R757		4822 052 10101	100R00 5% 0.33W
R758		4822 052 10101	100R00 5% 0.33W
R759		4822 052 10101	100R00 5% 0.33W
R760		4822 052 10101	100R00 5% 0.33W
R761		4822 052 10102	1K00 5% 0.33W
R762		4822 052 10102	1K00 5% 0.33W
R763		4822 116 60494	330R00 5% 1W
R764		4822 116 60494	330R00 5% 1W
R765		4822 116 83963	2R2 5% 0.25W
R766		4822 116 83963	2R2 5% 0.25W
R767		4822 111 91402	0R1 x 2 3W
R768		4822 111 91402	0R1 x 2 3W
R769		4822 117 10028	220R 5% 0.25W
R770		4822 117 10028	220R 5% 0.25W
R771		8239 210 95370	10R00 3W RST 10E 3W PM5
R772		8239 210 95370	10R00 3W RST 10E 3W PM5
R773		4822 116 83963	2R2 5% 0.25W
R774		4822 116 83963	2R2 5% 0.25W
R801		4822 116 60306	1R00 5% 0.5W RESISTOR
R802		4822 050 24709	47R00 1% 0.6W
R803		4822 116 60306	1R00 5% 0.5W RESISTOR
R804		4822 111 90731	47E 2% 0.25W
R805		4822 117 12426	1K2 0.25W
R806		4822 117 12426	1K2 0.25W
R807		4822 113 90119	22E 0.25W
R810		4822 117 11858	150R 5% 3W
RN01		4822 050 12201	220R00 1% 0.4W
RN02		4822 050 12201	220R00 1% 0.4W
RN03		4822 050 11002	1K00 1% 0.4W
RN04		4822 050 11002	1K00 1% 0.4W
RN05		4822 050 11503	15K00 1% 0.4W
RN06		4822 050 11503	15K00 1% 0.4W
RN07		4822 050 11503	15K00 1% 0.4W
RN08		4822 050 11503	15K00 1% 0.4W
RN09		4822 050 16802	6K80 1% 0.4W

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION
RN10		4822 050 14703	47K00 1% 0.4W
RN12		4822 050 11004	100K00 1% 0.4W
RN14		4822 050 14703	47K00 1% 0.4W
RN15		4822 050 12204	220K00 1% 0.4W
RN16		4822 050 11503	15K00 1% 0.4W
RN18		4822 050 15602	5K60 1% 0.4W
RN19		4822 050 16803	68K00 1% 0.4W
RN20		4822 050 16803	68K00 1% 0.4W
RN21		4822 050 11503	15K00 1% 0.4W
RN51		4822 053 10331	330R00 5% 1W
RN52		4822 053 10331	330R00 5% 1W
			P701-SEMICONDUCTORS
D701		3120 004 56210	DIODE 1SS131-77
D702		3120 004 56210	DIODE 1SS131-77
D703		3120 004 56210	DIODE 1SS131-77
D704		3120 004 56210	DIODE 1SS131-77
D705		4822 130 80273	DIODE MTZJ8.2C
D706		4822 130 80322	DIODE MTZJ16A
D801		4822 130 31007	DIODE S4VB20
D802		3120 004 56210	DIODE 1SS131-77
D803		3120 004 56210	DIODE 1SS131-77
D804		8239 210 96370	ZENER DIODE MTZ J 24
D805		8239 210 96360	ZENER DIODE MTZ J 18
D806		4822 130 80839	DIODES5688G
DN01		3120 004 56230	DIODE 1SS131-77
DN02		3120 004 56230	DIODE 1SS131-77
DN03		3120 004 56210	DIODE 1SS131-77
Q701		4822 130 42949	TRS. 2SA970GR
Q702		4822 130 42949	TRS. 2SA970GR
Q703		4822 130 43233	TRS. 2SC2240GR
Q704		4822 130 43233	TRS. 2SC2240GR
Q705		4822 209 83732	IC AN7062P
Q751		4822 130 60526	TRS. 2SD1508
Q752		4822 130 60526	TRS. 2SD1508
Q753		4822 130 43233	TRS. 2SC2240GR
Q754		4822 130 43233	TRS. 2SC2240GR
Q755		4822 130 42949	TRS. 2SA970GR
Q756		4822 130 42949	TRS. 2SA970GR
Q757		4822 130 62335	TRS. 2SD2033A
Q758		4822 130 62335	TRS. 2SD2033A
Q759		4822 130 62334	TRS. 2SB1353E
Q760		4822 130 62334	TRS. 2SB1353E
⚠ Q761		4822 130 10943	TRS. 2SC5198
⚠ Q762		4822 130 10943	TRS. 2SC5198
⚠ Q763		4822 130 10942	TRS. 2SA1941
⚠ Q764		4822 130 10942	TRS. 2SA1941
Q801		4822 130 63312	TRS. 2SC4883 O/Y
Q802		4822 130 63308	TRS. 2SA1859 O/Y
QN01		4822 130 43233	TRS. 2SC2240GR
QN02		4822 130 43233	TRS. 2SC2240GR
QN03		4822 130 42949	TRS. 2SA970GR
QN04		4822 209 83312	IC TA7317P
			P701-MISCELLANEOUS
JW51		4822 290 91363	TERMINAL SPEAKER
JW52		4822 290 91364	TERMINAL SPEAKER
L751		4822 157 63085	COIL
L752		4822 157 63085	COIL
LN01		4822 280 70354	RELAY VB-24MBU-510
			P901-POWER SWITCH FUSE CIRCUIT BOARD
G901		4822 121 43732	CAP. 0.01µF 20% 250V
⚠ F902		48822 533 30415	FUSE T1.6A 250V
JU91		4822 267 41009	TERMINAL RCA 2P JACK
S901		2422 128 02898	SWITCH PUSH 1P 5A/80A