

NAD SERVICE MANUAL

IMPORTANT NOTICE:

THIS MANUAL SUPPLEMENTS THE NAD 2200 SERVICE MANUAL AND SHOULD BE USED FOR UNITS WITH SERIAL NOS. 6010010 ONWARD.

2200PE

POWER AMPLIFIER

ALIGNMENT PROCEDURES

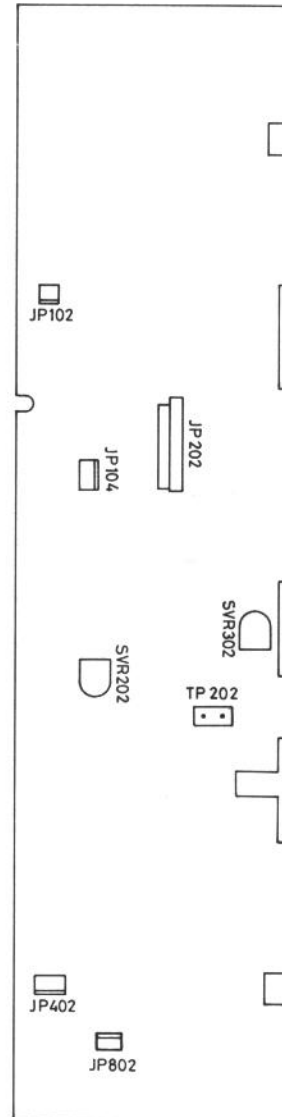
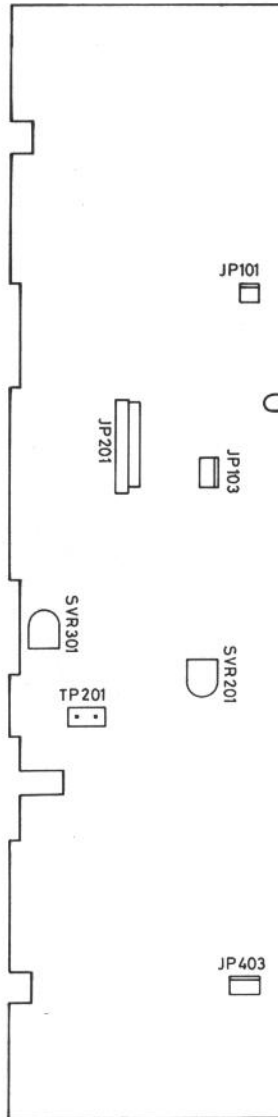
Condition

Preheat more than 15 minutes
 Speaker load 8 ohms (dummy or speaker)
 Input No signal

Step	Output Indication Connection	Adjustment	Adjust for
CENTER DC VOLTAGE			
1	DC digital voltmeter Speaker terminals	SVR201 (L ch) SVR202 (R ch)	0±5 mV
IDLING			
2	DC digital voltmeter TP201/TP202 (L/R)	SVR301 (L ch) SVR302 (R ch)	7.5±0.5mV

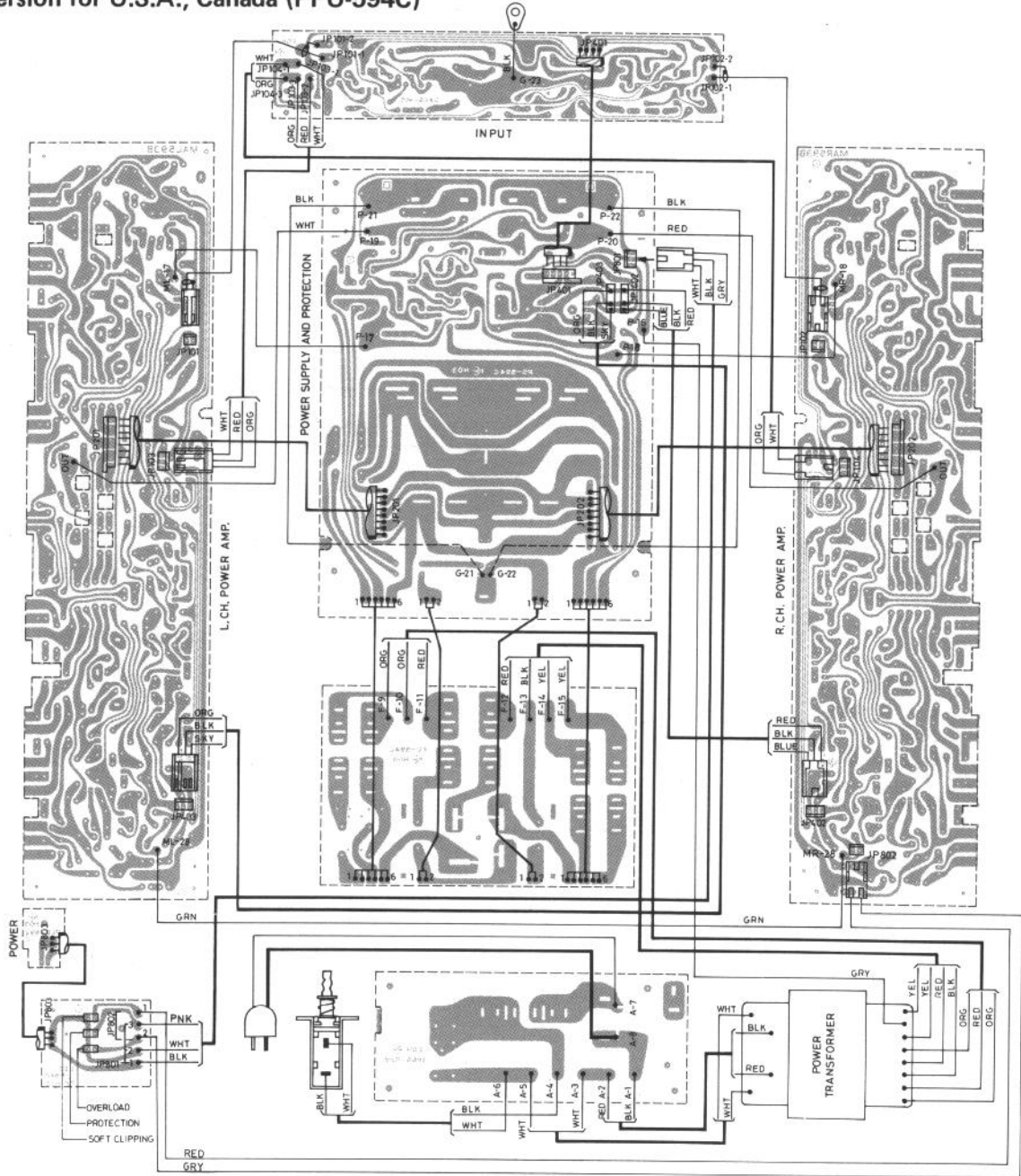
MAL-P.C. Board

MAR-P.C. Board



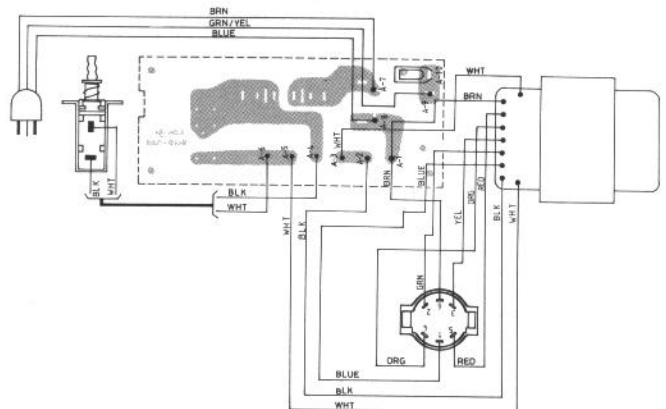
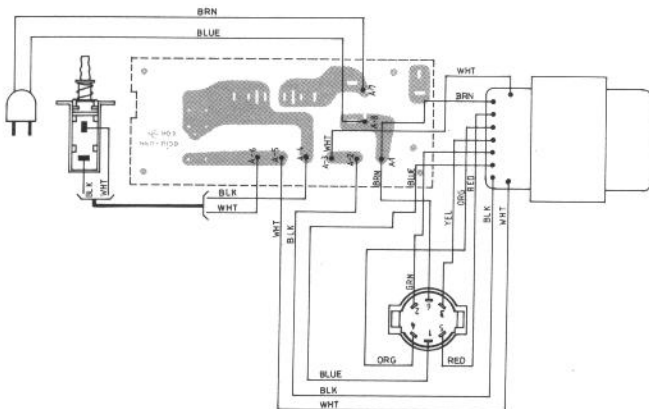
WIRING DIAGRAM (Component side)

A, A₁ -Version for U.S.A., Canada (PFU-594C)

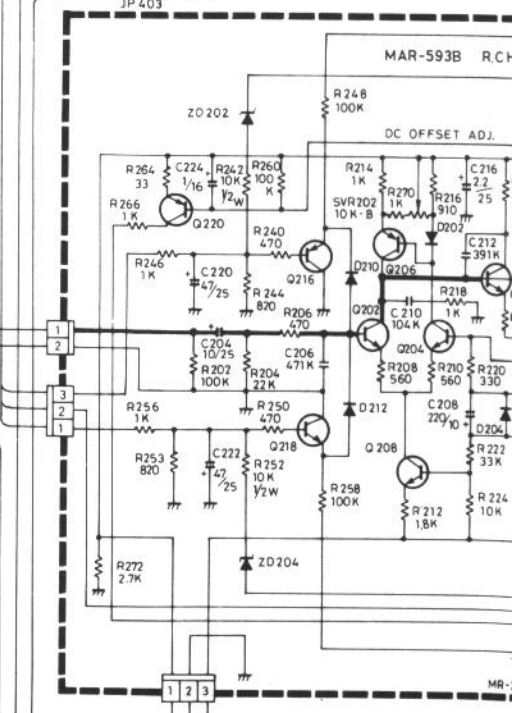
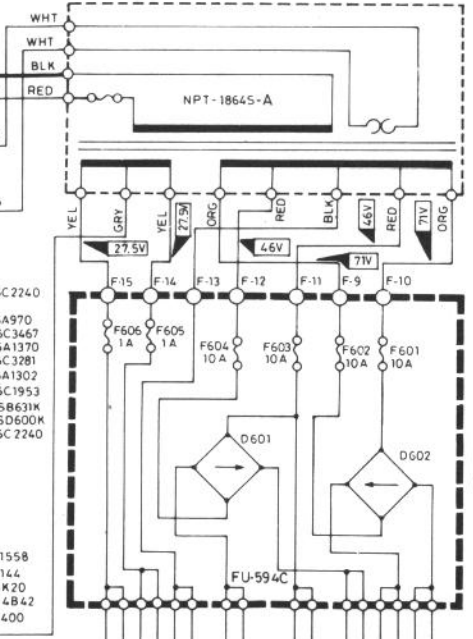
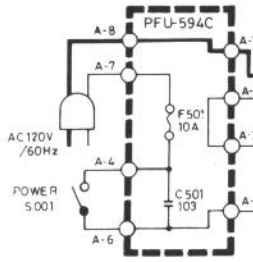
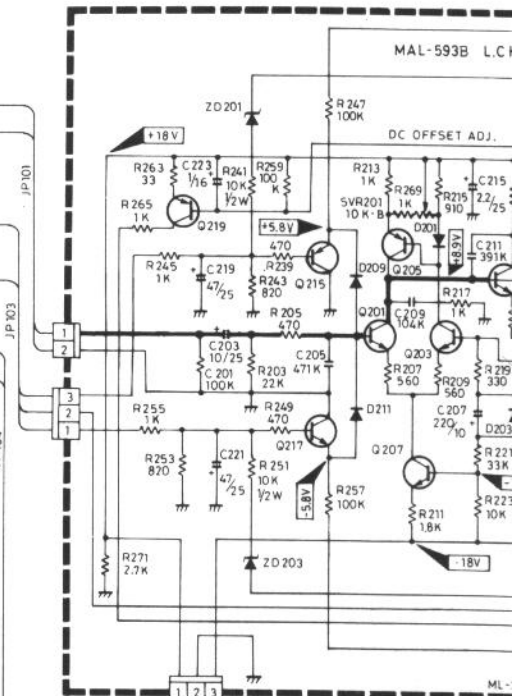
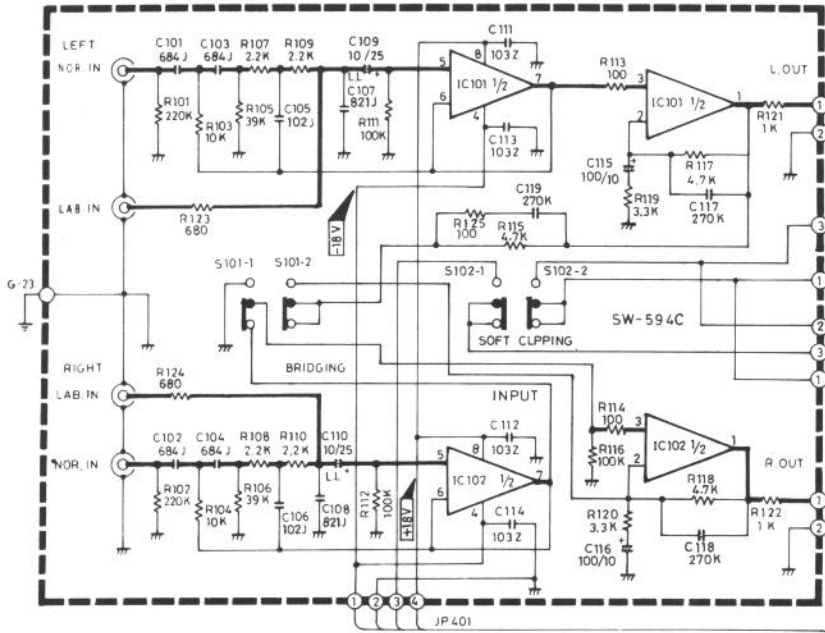


B, C, C₁, -Version for U.K., Scandinavia, W.Germany (PFU-610B)

B₁ -Version for Australia/N.Z. (PFU-610B)



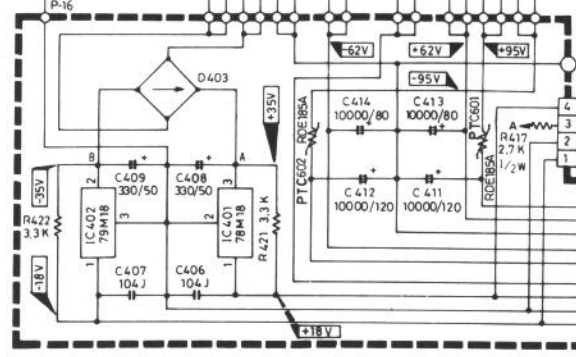
SCHEMATIC DIAGRAM



TRANSISTORS
 Q 201~204, Q 207~214, Q 217, Q 218, Q 321, Q 372 --- 25C 2240
 Q 205, Q 206, Q 215, Q 216, Q 219, Q 220, Q 223, Q 224, Q 337, Q 338, Q 373, Q 374 --- 25A 970
 Q 303~306, Q 335, Q 336 --- 25C 3467
 Q 301, Q 302, Q 307, Q 308 --- 25A 1370
 Q 309, Q 310, Q 313, Q 314, Q 317, Q 318, Q 331, Q 332 --- 25C 3281
 Q 311, Q 312, Q 315, Q 316, Q 319, Q 320, Q 329, Q 330 --- 25A 1302
 Q 333, Q 334 --- 25C 1953
 Q 325, Q 326 --- 25B 631X
 Q 327, Q 328 --- 25D 600K
 Q 401~403 --- 25C 2240

IC
 IC 101, IC 102 --- NJM 204 LDD
 IC 401 --- NJM 78M18A
 IC 402 --- NJM 79M18A
 IC 403 --- 1A 7317P

DIODES
 D 201~212, D 301~316, D 319, D 320, D 323~328 --- 1S 1558
 D 317, D 318, D 321, D 322, D 401 --- 1S 144
 D 329~332 --- 56K 20
 D 403 --- 1B 4842
 D 402 --- 1N 400
 D 601 --- MB 252
 D 602 --- BR 64
 ZD 301~304 --- RD 13E B1
 ZD 305~308 --- RD 75E B2
 ZD 201~204 --- RD 24E B2
 LO 701 (POWER) --- SLP 255B
 LO 801 (OVERLOAD) --- SLP 155B
 LO 802 (PROTECTION) --- SLP 155B
 LO 803 (SOFT CLIP) --- SLP 455B



CAUTION: THOSE FUSES WITH SYMBOL MARKS and ARE FAST-BLOW TYPE. REPLACE WITH SAME TYPE 10A 250V (OR 1A 250V) FUSE.
ATTENTION: LES FUSIBLES MARQUES ET SONT DE TYPE A
 FUSION RAPIDE. UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE DE 10A 250V (OU 1A 250V).

ELECTRICAL PARTS LIST

Capacitors

Ref. No.	Part No.	Description
C101~104	ECQV1H684JZ	Film 50V 0.68μF ±5%
C105, 106	MY-50VU222J	Film 50V 2200pF ±5%
C107, 108	MY-50VU102J	Film 50V 1000pF ±5%
C109, 110	LL-25TW100M	Low-leak Elect. 25V 10μF ±20%
C111~114	HE70SJYF103Z	Ceramic 50V 0.01pF
C115, 116	NS-10TW101M	Elect. 10V 100μF ±20%
C201, 202	HE60SJS181K	Ceramic 50V 180pF ±10%
C203, 204	LL-25TW100M	Low-leak Elect. 25V 10μF ±20%
C205, 206	HE90SJS1471K	Ceramic 50V 470pF ±10%
C207, 208	NS-10TW221M	Elect. 10V 220μF ±20%
C209, 210	ECQV1H104JZ	Film 50V 0.1μF ±5%
C211, 212	HE90SJS1391K	Ceramic 50V 390pF ±10%
C213, 214	NS-16TW101M	Elect. 16V 100μF ±20%
C215~218	NS-50TW2R2M	Elect. 50V 2.2μF ±20%
C219~222	NS-25TW470M	Elect. 25V 47μF ±20%
C223, 224	NS-50TW1R0M	Elect. 50V 1μF ±20%
C301~304	NS100TW4R7M	Elect. 100V 4.7μF ±20%
C305, 306	HM60SJS220K	Ceramic 500V 22pF ±10%
C307~310	HE40SJYD102M	Ceramic 50V 1000pF ±20%
C311, 312	NS-16TW100M	Elect. 16V 10μF ±20%
C313, 314	NS-50TWR10M	Elect. 50V 0.1μF ±20%
C315~318	HE80SJS1331K	Ceramic 50V 330pF ±10%
C319~322	HE60SJS151K	Ceramic 50V 150pF ±10%
C323, 324	MY100VS473K	Film 100V 0.047μF ±10%
C325~328	MY100VS682K	Film 100V 6800pF ±10%
C329, 330	MY-50VU104J	Film 50V 0.1μF ±5%
C401, 402	NS-10TW470M	Elect. 10V 47μF ±20%
C403	NS-10TW220M	Elect. 10V 22μF ±20%
C404	NS-50TWR47M	Elect. 50V 0.47μF ±20%
C405	MY-50VU102K	Film 50V 1000pF ±10%
C406, 407	ECQV1H104JZ	Film 50V 0.1μF ±5%
C408, 409	NS-50TW331M	Elect. 50V 330μF ±20%
C410	NS100TWR47M	Elect. 100V 0.47μF ±20%
C411, 412	BC0A103M180EE3	Elect. 120V 10000μF ±20%
C413, 414	BC80103MC80EE4	Elect. 80V 10000μF ±20%
C415, 416	MY100VS104K	Film 100V 0.1μF ±10%
C417	HM15SJYD103M	Ceramic 500V 0.01μF ±20%
C501	ECQU1A103MH	Film 125V 0.01μF ±20% [A]
C501	ECQU2A103MF	Film 250V 0.01μF ±20% [B, B ₁ , C]
C502	ECQU2A103MF	Film 250V 0.01μF ±20% [B, B ₁ , C]

Resistors

Ref. No.	Part No.	Description
R101, 102	KA25ST224J	Carbon 1/4W 220KΩ ±5%
R103, 104	KA25ST103J	Carbon 1/4W 10KΩ ±5%
R105, 106	KA25ST393J	Carbon 1/4W 39KΩ ±5%
R107~110	KA25ST222J	Carbon 1/4W 2.2KΩ ±5%
R111, 112	KA25ST104J	Carbon 1/4W 100KΩ ±5%
R113	KA25ST101J	Carbon 1/4W 100Ω ±5%
R114, 115	KA25ST104J	Carbon 1/4W 100KΩ ±5%
R116	KA25ST152J	Carbon 1/4W 1.5KΩ ±5%
R117	KA25ST472J	Carbon 1/4W 4.7KΩ ±5%
R118	KA25ST563J	Carbon 1/4W 56KΩ ±5%
R119	KA25ST332J	Carbon 1/4W 3.3KΩ ±5%
R120	KA25ST392J	Carbon 1/4W 3.9KΩ ±5%
R121~124	KA25ST102J	Carbon 1/4W 1KΩ ±5%
R201, 202	KA25ST104J	Carbon 1/4W 100KΩ ±5%
R203, 204	KA25ST223J	Carbon 1/4W 22KΩ ±5%

Ref. No.	Part No.	Description
R205, 206	KA25ST471J	Carbon 1/4W 470Ω ±5%
R207~210	KA25ST561J	Carbon 1/4W 560Ω ±5%
R211, 212	KA25ST182J	Carbon 1/4W 1.8KΩ ±5%
R213, 214	KA25ST102J	Carbon 1/4W 1KΩ ±5%
R215, 216	KA25ST911J	Carbon 1/4W 910Ω ±5%
R217, 218	KA25ST102J	Carbon 1/4W 1KΩ ±5%
R219, 220	KA25ST331J	Carbon 1/4W 330Ω ±5%
R221, 222	KA25ST333J	Carbon 1/4W 33KΩ ±5%
R223, 224	KA25ST103J	Carbon 1/4W 10KΩ ±5%
R225, 226	SA-1WT562J-LP	Metal Oxide 1W 5.6KΩ ±5%
R227, 228	KA25ST102J	Carbon 1/4W 1KΩ ±5%
R229~232	KA25ST221J	Carbon 1/4W 220Ω ±5%
R233, 234	KA25ST682J	Carbon 1/4W 6.8KΩ ±5%
R235~238	KA25ST472J	Carbon 1/4W 4.7KΩ ±5%
R237, 240	KA25ST471J	Carbon 1/4W 470Ω ±5%
R241, 242	FR50ST103J-LP	Flame Proof 1/2W 10KΩ ±5%
R243, 244	KA25ST821J	Carbon 1/4W 820Ω ±5%
R245, 246	KA25ST102J	Carbon 1/4W 1KΩ ±5%
R247, 248	KA25ST104J	Carbon 1/4W 100KΩ ±5%
R249, 250	KA25ST471J	Carbon 1/4W 470Ω ±5%
R252, 252	FR50ST103J-LP	Flame Proof 1/2W 10KΩ ±5%
R253, 254	KA25ST821J	Carbon 1/4W 820Ω ±5%
R255, 256	KA25ST102J	Carbon 1/4W 1KΩ ±5%
R257~260	KA25ST104J	Carbon 1/4W 100KΩ ±5%
R261, 262	KA25ST223J	Carbon 1/4W 22KΩ ±5%
R263, 264	FR25ST330J-LP	Flame Proof 1/4W 33Ω ±5%
R265~270	KA25ST102J	Carbon 1/4W 1KΩ ±5%
R271, 272	KA25ST272J	Carbon 1/4W 2.7KΩ ±5%
R301, 302	FR25ST331J-LP	Flame Proof 1/4W 330Ω ±5%
R303, 304	FR25ST470J-LP	Flame Proof 1/4W 47Ω ±5%
R305, 306	FR25ST151J-LP	Flame Proof 1/4W 150Ω ±5%
R307~310	KA25ST272J	Carbon 1/4W 2.7KΩ ±5%
R311, 312	KA25ST333J	Carbon 1/4W 33KΩ ±5%
R313, 314	KA25ST103J	Carbon 1/4W 10KΩ ±5%
R315, 316	KA25ST333J	Carbon 1/4W 33KΩ ±5%
R317, 318	KA25ST184J	Carbon 1/4W 180KΩ ±5%
R319, 320	KA25ST333J	Carbon 1/4W 33KΩ ±5%
R321, 322	KA25ST561J	Carbon 1/4W 560Ω ±5%
R323, 324	KA25ST333J	Carbon 1/4W 33KΩ ±5%
R325~328	KA25ST102J	Carbon 1/4W 1KΩ ±5%
R329, 330	FR25ST680J-LP	Flame Proof 1/4W 68Ω ±5%
R331, 332	FR25ST471J-LP	Flame Proof 1/4W 470Ω ±5%
R333, 334	FR25ST680J-LP	Flame Proof 1/4W 68Ω ±5%
R335~338	SA-2WT123J-LP	Metal Oxide 2W 12KΩ ±5%
R339, 340	SA-2WT682J-LP	Metal Oxide 2W 6.8KΩ ±5%
R341, 342	KA25ST153J	Carbon 1/4W 15KΩ ±5%
R343, 344	SA-2WT682J-LP	Metal Oxide 2W 6.8KΩ ±5%
R345, 346	KA25ST153J	Carbon 1/4W 15KΩ ±5%
R347, 348	KA25ST123J	Carbon 1/4W 12KΩ ±5%
R349, 350	KA25ST272J	Carbon 1/4W 2.7KΩ ±5%
R351, 352	KA25ST102J	Carbon 1/4W 1KΩ ±5%
R353, 354	FR25ST471J-LP	Flame Proof 1/4W 470Ω ±5%
R355, 356	FR25ST101J-LP	Flame Proof 1/4W 100Ω ±5%
R357, 358	KA25ST102J	Carbon 1/4W 1KΩ ±5%
R359, 360	FR25ST471J-LP	Flame Proof 1/4W 470Ω ±5%
R361, 362	FR25ST101J-LP	Flame Proof 1/4W 100Ω ±5%
R363, 364	FR50ST331J-LP	Flame Proof 1/2W 330Ω ±5%
R365~368	MPC722R22KX2LF	Cement 5W 0.22Ω (x2)
R369~372	SA-2WT4R7J-LP	Metal Oxide 2W 4.7Ω ±5%
R373~376	FR25ST471J-LP	Flame Proof 1/4W 470Ω ±5%
R377, 378	FR25ST470J-LP	Flame Proof 1/4W 47Ω ±5%
R379, 380	FR25ST470J	Flame Proof 1/4W 47Ω ±5%
R401~404	KA25ST563J	Carbon 1/4W 56KΩ ±5%
R405	KA25ST224J	Carbon 1/4W 220KΩ ±5%
R406	KA25ST473J	Carbon 1/4W 47KΩ ±5%
R407	KA25ST563J	Carbon 1/4W 56KΩ ±5%
R408	KA25ST333J	Carbon 1/4W 33KΩ ±5%
R409~412	KA25ST223J	Carbon 1/4W 22KΩ ±5%
R413	SA-2WT471J-LP	Metal Oxide 2W 470Ω ±5%
R414	KA25ST823J	Carbon 1/4W 82KΩ ±5%
R415	KA25ST473J	Carbon 1/4W 47KΩ ±5%

Miscellaneous

Ref. No.	Part No.	Description
R416	SA-1WT392J-LP	Metal Oxide 1W 3.9KΩ ±5%
R417	KA50XT272J	Carbon 1/2W 2.7KΩ ±5%
R418	KA25ST154J	Carbon 1/4W 150KΩ ±5%
R419	KA25ST223J	Carbon 1/4W 22KΩ ±5%
R420	KA50XT272J	Carbon 1/2W 2.7KΩ ±5%
R421, 422	KA25ST332J	Carbon 1/2W 3.3KΩ ±5%
SVR201, 202	SVR-08T3B103	Semi-variable 10KΩ (B)
SVR301, 302	SVR-08T3B102	Semi-variable 1KΩ (B)

Semiconductors

Ref. No.	Part No.	Description
D201~212	1S1588	Diode
D301~316	1S1588	Diode
D317, 318	1SS144	Diode
D319, 320	1S1588	Diode
D321, 322	1SS144	Diode
D323~328	1S1588	Diode
D329~332	S6K20	Diode Rectifier
D401	1SS144	Diode
D402	1N4003	Diode Rectifier
D403	1B4B42	Diode Bridge rectifier
D601	BR-25P	Diode Bridge rectifier
D602	BR-64-LF	Diode Bridge rectifier
Q201~204	2SC2240-BL	Transistor
Q205, 206	2SA970-BL	Transistor
Q207~214	2SC2240-BL	Transistor
Q215, 216	2SA970-BL	Transistor
Q217, 218	2SC2240-BL	Transistor
Q219, 220	2SA970-BL	Transistor
Q301, 302	2SA1370-E, F	Transistor
Q303~306	2SC3467-E, F	Transistor
Q307, 308	2SA1370-E, F	Transistor
Q309, 310	2SC3281-R, O	Transistor
Q311, 312	2SA1302-R, O	Transistor
Q313, 314	2SC3281-R, O	Transistor
Q315, 316	2SA1302-R, O	Transistor
Q317, 318	2SC3281-R, O	Transistor
Q319, 320	2SA1302-R, O	Transistor
Q321, 322	2SC2240-BL	Transistor
Q323, 324	2SA970-BL	Transistor
Q325, 326	2SB631K-E, F	Transistor
Q327, 328	2SD600K-E, F	Transistor
Q329, 330	2SA1302-R, O	Transistor
Q331, 332	2SC3281-R, O	Transistor
Q333, 334	2SC1953-R, S	Transistor
Q335, 336	2SC3467-E, F	Transistor
Q337, 338	2SA970-BL	Transistor
Q401~403	2SC2240-GR, BL	Transistor
IC101, 102	NJM2043DD	IC Dual low-noise preamplifier
IC401	NJM78M18A	IC Positive voltage regulator
IC402	NJM79M18A	IC Negative voltage regulator
IC403	TA7317P	IC Protection circuit
LD701	SLP255B	LED Green
LD801, 802	SLP155B	LED Red
LD803	SLP455B	LED Amber
ZD201~204	RD24E-B2	Zener Diode 1/2W 24V
ZD301~304	RD10E-B3	Zener Diode 1/2W 10V
ZD305~308	RD7.5E-B2	Zener Diode 1/2W 7.5V

Ref. No.	Part No.	Description
F501	FU-621034T-C	Fuse 250V 10A [A]
F501	FU-525029T	Fuse 250V 5A [B, B ₁ , C]
F601~604	FU-621034T-C	Fuse 250V 10A [A]
F601, 602	FU-526329T	Fuse 250V 6.3A [B, B ₁ , C]
F603, 604	FU-521039T	Fuse 250V 10A [B, B ₁ , C]
F605, 606	FU-621024T	Fuse 250V 1A [A]
F605, 606	FU-521029T	Fuse 250V 1A [B, B ₁ , C]
L301, 302	104001	Air-core Coil
S101, 102	SSB022	Slide Switch
JP101, 102	MC02-371 171825-2	Micro Socket Ass'y Micro Plug
JP103	MC03-377 171825-3	Micro Socket Ass'y Micro Plug
JP104	MC03-378 171825-3	Micro Socket Ass'y Micro Plug
JP201, 202	W-D0608	Connector
JP401	W-D0604	Connector
JP402	MC03-372 171825-3	Micro Socket Ass'y Micro Plug
JP403	MC03-373 171825-3	Micro Socket Ass'y Micro Plug
JP801	MC03-376 171825-3	Micro Socket Ass'y Micro Plug
JP802	MC02-370 171825-2	Micro Socket Ass'y Micro Plug
RL401, 402	RXS-2405U	Relay
TP201, 202	WD-2	Terminal Pin
TS301, 302	UI2-10005-240A	Thermal Relay
PTC601, 602	RDE185A	PTC Device
	YKC21-0069	Jack, RCA 2p
	YKD31-0212	Socket 4p (S.P)
	FU-594	Printed Circuit Board
	LED-594	Printed Circuit Board
	MAL-593	Printed Circuit Board
	MAR-593	Printed Circuit Board
	PFU-594	Printed Circuit Board
	PLD-594	Printed Circuit Board
	PS-594	Printed Circuit Board
	SW-594	Printed Circuit Board