



audio pro

SERVICE MANUAL

Stereo Integrated Amplifier

A.2

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SPECIFICATIONS

Rated Power into 8/4 ohms.....	30/30W
With both channels driven	
Rated T.H.D. 20Hz-20KHz.....	0.05%
1KHz clipping power into 8/4 ohms.....	36/36W

Input Sensitivity for 1W/Rated Power into 8 ohms:

High level inputs.....	23mV/150mV
Phono input MM.....	0.5mV/2.7mV
MC.....	0.05mV/0.27mV

Input impedance:

High level inputs.....	20K ohms
Phono input MM/MC.....	47K ohms/100pF

Frequency response:

Tone bypass 20Hz-20KHz.....	+/-0.5dB
Normal 20Hz-20KHz.....	+/-1.0dB
High level inputs -3dB.....	10Hz/60KHz

Signal to noise ratio (ref. 1W/8 ohms):

High level inputs "A" WTD.....	88dB
Phono inputs "A" WTD.....	80dB
Separation 20Hz-20KHz.....	>65dB

Tone control range:

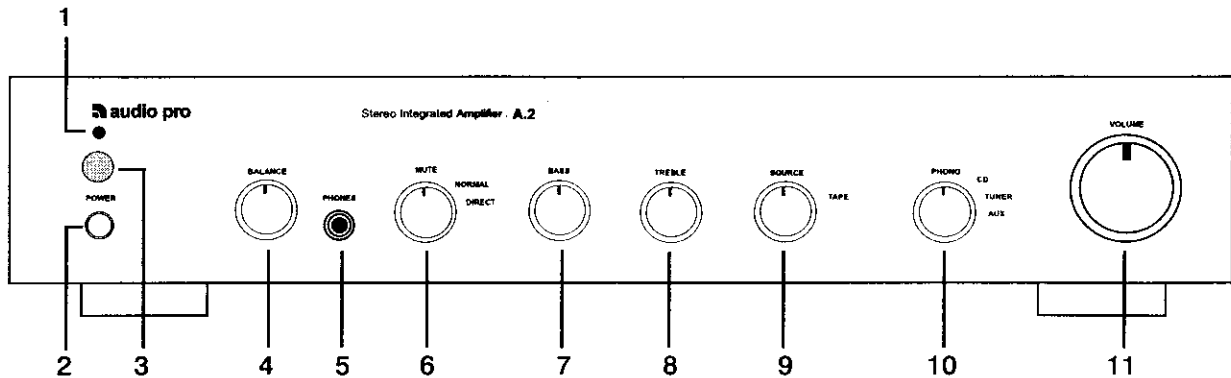
Bass at 100Hz.....	+/-10dB
Treble at 10KHz.....	-8/+11dB
Overall feedback.....	26/29dB

OTHER

Dimensions (WxHxD).....	430x82x288mm
Net weight.....	6Kg
Shipping weight (4 pieces).....	27.7Kg

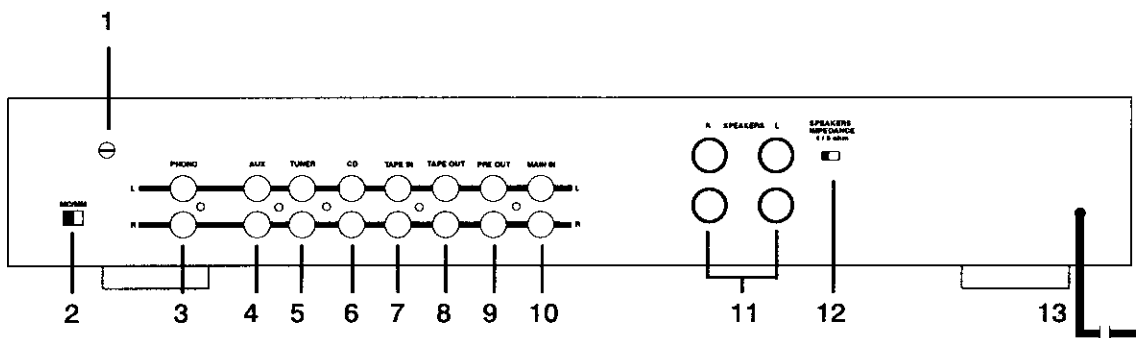
Panel controls and connections

Front panel



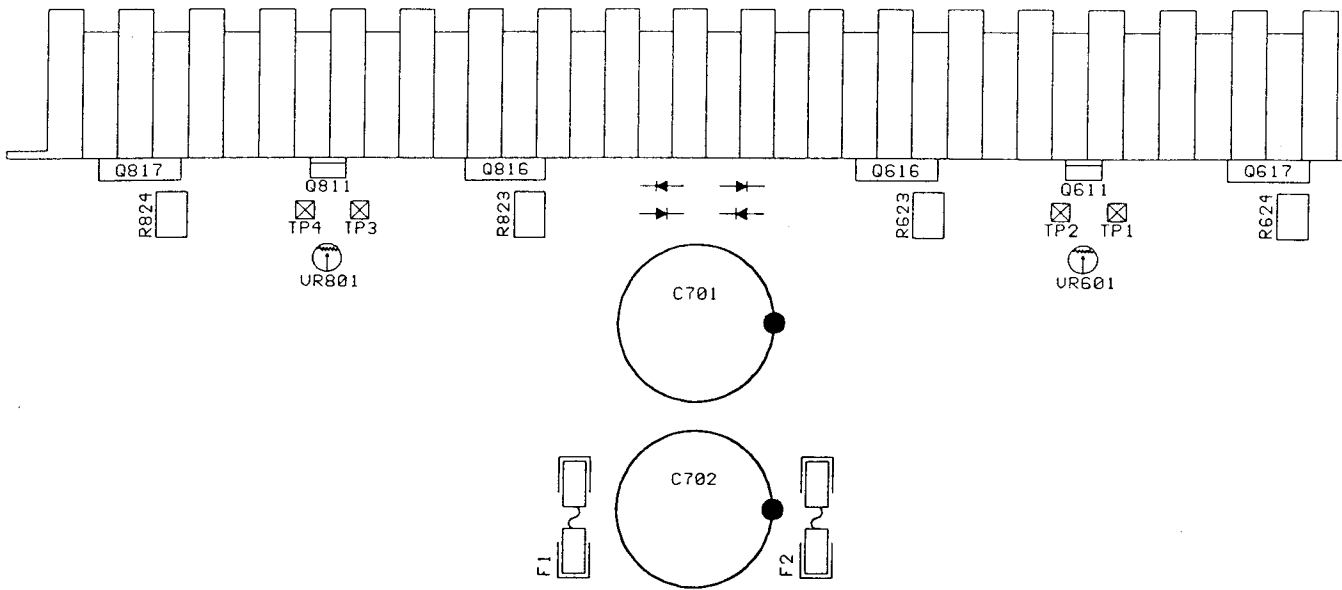
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|-------------------------------|----------------------------|
| 1. Power ON indikator (red). | 7. Bass control. |
| 2. Power switch. | 8. Treble control. |
| 3. Remote sensor. | 9. Tape monitor switch. |
| 4. Balance control. | 10. Input selector switch. |
| 5. Headphone jack. | 11. Volume control. |
| 6. Mute/Normal/Direct switch. | |

Rear panel



- | | |
|--|---|
| 1. Phono ground terminal. | 8. Tape output. |
| 2. Phono MM/MC input selection switch. | 9. Pre-out terminal. |
| 3. Phono input. | 10. Main-in terminal. |
| 4. Aux input. | 11. Left and right speaker terminals. |
| 5. Tuner input. | 12. Speaker impedance selection switch. |
| 6. CD input. | 13. Power cord (to 230V only) |
| 7. Tape input. | |

ALIGNMENT PROCEDURES



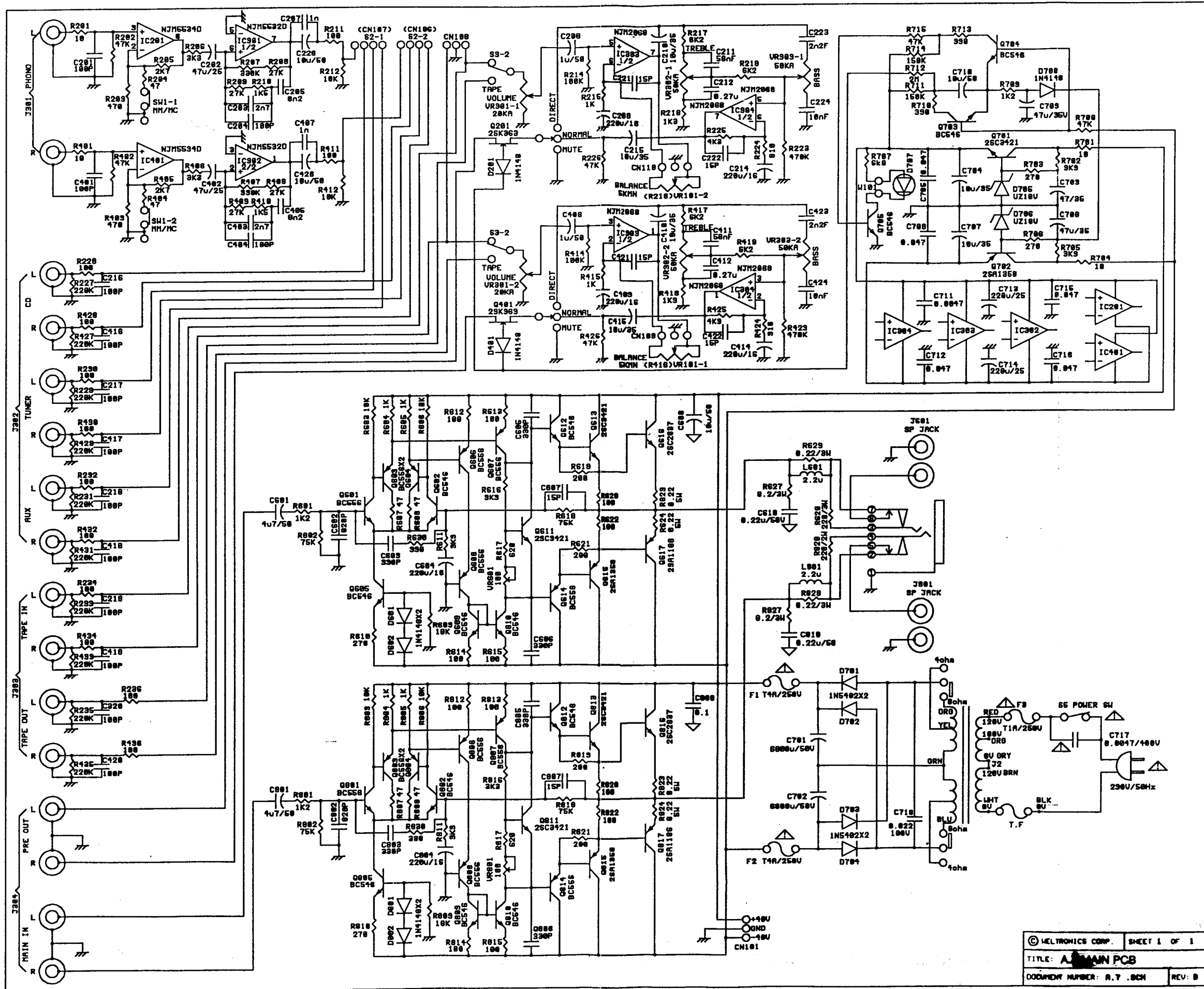
ALIGNMENT METHOD

IMPORTANT

Speaker impedance switch should be in 8ohm position and must be no load connected while adjusting idle current.

1. Connect DC millivoltmeter to TP1 and TP2 then adjust VR601 for 5mV.
2. Connect DC millivoltmeter to TP3 and TP4 then adjust VR801 for 5mV.
3. Leave power on for minimum 5 minutes.
4. Repeat step 1 and 2 then adjust with VR601, VR801 for 5mV reading on meter.
5. When the alignment is finished, check the screws of power transistor. If the screws are getting loose, then screw tightly again.

SCHEMATIC DIAGRAM (MAIN PCB)



© MELTRONICS CORP. SHEET 1 OF 1
 TITLE: MAIN PCB
 DOCUMENT NUMBER: A.7 .SCH REV: B

PARTS LIST

Audio Pro A.2 SERVICE PARTS LIST				
SYMBOL NO.	PARTS NO.	DESCRIPTION	SPECIFICATION	Q'TY
		PACKING ASS'Y		
	21-4113	OWNERS MANUAL	A.2	1
	RC-0016	REMOTE HANDSET		1
	37-C1.5V4	BATTERY	AAA" 1.5V (NO. 4)	2
	34-1060	POLYLONE		2
	CT-5305	INNER CARTON		1
		CHASSIS ASS'Y		
	11-1124B*A	TOP COVER		1
	11-5066*A	HEAT SINK		1
	11-6121-1	CONTROL PANEL		1
	11-6124	BOTTOM PLATE		1
	11-6125-3*A	RIGHT PANEL		1
	11-6126	LEFT PANEL		1
	11-8474	FRONT PANEL		1
	11-8477	REAR PANEL	230V	1
	11-4024	JUMPER U	FOR PRE OUT/MAIN IN	2
	11-2154	BRACKET	R PANEL FOR CTL PCB	2
	11-2143	BRACKET	HEATSINK FOR CTL PCB	1
	13-1044	IR LENS	#11	1
	13-8227B	POWER KNOB BUSHION		1
	12-2133N*A	BINDING POST RED		2
	12-2134N*A	BINDING POST BLK		2
	12-3152BK	POWER BUTTON BLACK		1
	12-3158	VOLUME KNOB (AL), 36MM		1
	12-3159	ROTARY KNOB (AL), 20MM	BALANCE/NORMAL/TONE/TAPE/INPUTS	6
	15-2037	GND BOLT	L531D018H01	1
	15-2073-1	GND NUT	L670D002H01	1
	15-2037-2	BOLT NUT M3.5	L670D004H01	1
	15-2307-3	STOP WASHER	10mm,40mm,1mm.	1
	15-2307-4	CONNECT WASHER	83.5mm,S1 50,1.5mm	1
	15-2307-5	GEAR WASHER		1
	28-1046-1B	FOOT		2
	28-1046-2B	FOOT		2
	28-2074	FOOT SPONGE		4
	29-2130	POWER X'FORMER PT-1210T	UL/CSA 115V/230V AC B/A	1
D707	30-1136		LED LAMP RED 3mm DIA.	1
	31-1213	POWER SW	SDDL1017U-EK 1N 540	1
	31-1243	SLIDE-SW	78-2285-N-5Z	1
	MD90-1181	MAIN PCB MODULE	WITH COMPONENTS	
PCB-1702	19-1181	MAIN PCB	94V-0 313x274mmx1.6t	1
R201,R401	16-1:4CA100J	RES.,CARBON FILM	10 +/-5% 1/4W	2
R202,R402	16-1:4CA473J	RES.,CARBON FILM	47K +/-5% 1/4W	2
R203,R403	16-1:4CA471J	RES.,CARBON FILM	470 +/-5% 1/4W	2
R204,R404	16-1:4CA470J	RES.,CARBON FILM	47 +/-5% 1/4W	2
R205,R405	16-1:4CA272J	RES.,CARBON FILM	2K7 +/-5% 1/4W	2
R206,R406	16-1:4CA332J	RES.,CARBON FILM	3K3 +/-5% 1/4W	2
R207,R407	16-1:4CA334G	RES.,CARBON FILM	330K +/-2% 1/4W	2
R208,R408	16-1:4CA273G	RES.,CARBON FILM	27K +/-2% 1/4W	2
R209,R409	16-1:4CA273G	RES.,CARBON FILM	27K +/-2% 1/4W	2
R210,R410	16-1:4CA152G	RES.,CARBON FILM	1K5 +/-2% 1/4W	2
R211,R411	16-1:4CA101J	RES.,CARBON FILM	100 +/-5% 1/4W	2
R212,R412	16-1:4CA823J	RES.,CARBON FILM	82K +/-5% 1/4W	2
R214,R414	16-1:4CA104J	RES.,CARBON FILM	100K +/-5% 1/4W	2
R215,R415	16-1:4CA102J	RES.,CARBON FILM	1K +/-5% 1/4W	2
R216,R416	16-1:4CA472J	RES.,CARBON FILM	4K7 +/-5% 1/4W	2
R217,R417	16-1:4CA622J	RES.,CARBON FILM	6K2 +/-5% 1/4W	2
R218,R418	16-1:4CA132J	RES.,CARBON FILM	1K3 +/-5% 1/4W	2
R219,R419	16-1:4CA622J	RES.,CARBON FILM	6K2 +/-5% 1/4W	2
R220,R420	16-1:4CA123J	RES.,CARBON FILM	12K +/-5% 1/4W	2
R221,R421	16-1:4CA301J	RES.,CARBON FILM	300 +/-5% 1/4W	2
R223,R423	16-1:4CA474J	RES.,CARBON FILM	470K +/-5% 1/4W	2
R224,R424	16-1:4CA911J	RES.,CARBON FILM	910 +/-5% 1/4W	2

PARTS LIST

Audio Pro A.2 SERVICE PARTS LIST				
SYMBOL NO.	PARTS NO.	DESCRIPTION	SPECIFICATION	QTY
R225,R425	16-1:4CA432J	RES.,CARBON FILM	4K3 +/-5% 1/4W	2
R226,R426	16-1:4CA473J	RES.,CARBON FILM	47K +/-5% 1/4W	2
R227,R427	16-1:4CA224J	RES.,CARBON FILM	220K +/-5% 1/4W	2
R228,R428	16-1:4CA101J	RES.,CARBON FILM	100 +/-5% 1/4W	2
R229,R429	16-1:4CA224J	RES.,CARBON FILM	220K +/-5% 1/4W	2
R230,R430	16-1:4CA101J	RES.,CARBON FILM	100 +/-5% 1/4W	2
R231,R431	16-1:4CA224J	RES.,CARBON FILM	220K +/-5% 1/4W	2
R232,R432	16-1:4CA101J	RES.,CARBON FILM	100 +/-5% 1/4W	2
R233,R433	16-1:4CA224J	RES.,CARBON FILM	220K +/-5% 1/4W	2
R234,R434	16-1:4CA101J	RES.,CARBON FILM	100 +/-5% 1/4W	2
R235,R435	16-1:4CA224J	RES.,CARBON FILM	220K +/-5% 1/4W	2
R236,R436	16-1:4CA101J	RES.,CARBON FILM	100 +/-5% 1/4W	2
R601,R801	16-1:4CA122J	RES.,CARBON FILM	1K2 +/-5% 1/4W	2
R602,R802	16-1:4CA753J	RES.,CARBON FILM	75K +/-5% 1/4W	2
R603,R803	16-1:4CA103J	RES.,CARBON FILM	10K +/-5% 1/4W	2
R604,R804	16-1:4CA102J	RES.,CARBON FILM	1K +/-5% 1/4W	2
R605,R805	16-1:4CA102J	RES.,CARBON FILM	1K +/-5% 1/4W	2
R606,R806	16-1:4CA103J	RES.,CARBON FILM	10K +/-5% 1/4W	2
R607,R807	16-1:4CA470J	RES.,CARBON FILM	47 +/-5% 1/4W	2
R608,R808	16-1:4CA470J	RES.,CARBON FILM	47 +/-5% 1/4W	2
R609,R809	16-1:4CA183J	RES.,CARBON FILM	18K +/-5% 1/4W	2
R610,R810	16-1:4CA271J	RES.,CARBON FILM	270 +/-5% 1/4W	2
R611,R811	16-1:4CA392J	RES.,CARBON FILM	3K9 +/-5% 1/4W	2
R612-615,R812-815	16-1:4CA101J	RES.,CARBON FILM	100 +/-5% 1/4W	8
R616,R816	16-1:4CA332J	RES.,CARBON FILM	3K3 +/-5% 1/4W	2
R617,R817	16-1:4CA621J	RES.,CARBON FILM	620 +/-5% 1/4W	2
R618,R818	16-1:4CA753J	RES.,CARBON FILM	75K +/-5% 1/4W	2
R619,R819	16-1:4CA201J	RES.,CARBON FILM	200 +/-5% 1/4W	2
R621,R821	16-1:4CA201J	RES.,CARBON FILM	200 +/-5% 1/4W	2
R622,R822	16-1:4AN101J	RES.METAL OXIDE	100 +/-5% 1/4W TAP.	2
R623,R823	16-5BR22J	CEMENT WIDE WOUNDRESISTOR	0.22 +/-5% 5W	2
R624,R824	16-5BR22J	CEMENT WIDE WOUNDRESISTOR	0.22 +/-5% 5W	2
R625,R825	16-3ANR22JW-M	RES.METAL OXIDE	0.22 +/-5% 3W	2
R626,R826	16-2AN221J-M	RES.METAL OXIDE	220 +/-5% 2W	2
R627,R827	16-3AN8R2J	RES.METAL OXIDE	8.2 +/-5% 3W	2
R630,R830	16-1:4CA391J	RES.,CARBON FILM	390 +/-5% 1/4W	2
R701	16-1:4AN100J	RES.METAL OXIDE	10 +/-5% 1/4W TAP.	1
R702	16-1:4CA392J	RES.,CARBON FILM	3K9 +/-5% 1/4W	1
R703	16-1:4CA271J	RES.,CARBON FILM	270 +/-5% 1/4W	1
R705	16-1:4CA392J	RES.,CARBON FILM	3K9 +/-5% 1/4W	1
R706	16-1:4CA271J	RES.,CARBON FILM	270 +/-5% 1/4W	1
R707	16-1:4CA682J	RES.,CARBON FILM	6K8 +/-5% 1/4W	1
R708	16-1:4CA473J	RES.,CARBON FILM	47K +/-5% 1/4W	1
R709	16-1:4CA122J	RES.,CARBON FILM	1K2 +/-5% 1/4W	1
R710	16-1:4CA391J	RES.,CARBON FILM	390 +/-5% 1/4W	1
R711	16-1:4CA154J	RES.,CARBON FILM	150K +/-5% 1/4W	1
R712	16-1:4CA205J	RES.,CARBON FILM	2M +/-5% 1/4W	1
R713	16-1:4CA391J	RES.,CARBON FILM	390 +/-5% 1/4W	1
R714	16-1:4CA154J	RES.,CARBON FILM	150K +/-5% 1/4W	1
R715	16-1:4CA473J	RES.,CARBON FILM	47K +/-5% 1/4W	1
C201,C401	17-5DR101J	CAP.,CERAMIC	100pF/50V +/-5% TAP.	2
C202,C402	17-3.5ER476M	CAP.,EL	47uF/35V +/-20% TAP.	2
C203,C403	17-5FR272J	CAP.,MYLAR	2700pF/50V +/-5% TAP.	2
C204,C404	17-5DR101J	CAP.,CERAMIC	100pF/50V +/-5% TAP.	2
C205,C405	17-5FR822J	CAP.,MYLAR	8200pF/50V +/-5% TAP.	2
C207,C407	17-5FR102J	CAP.,MYLAR	1000pF/50V +/-5% TAP.	2
C208,C408	17-5ER105M	CAP.,EL	1uF/50V +/-20%L.L.TAP.	2
C209,C409	17-1.6ER227M	CAP.,EL	220uF/16V +/-20% TAP.	2
C210,C410	17-3.5ER106M	CAP.,EL	10uF/35V +/-20% TAP.	2
C211,C411	17-5FR562J	CAP.,MYLAR	5600PF/50V +/-5% TAP.	2
C212,C412	17-6.3GR274J	CAP.,MYLAR	0.27uF/63V +/-5% TAP.	2
C213,C413	17-5FR102J	CAP.,MYLAR	1000pF/50V +/-5% TAP.	2

PARTS LIST

Audio Pro A.2 SERVICE PARTS LIST				
SYMBOL NO.	PARTS NO.	DESCRIPTION	SPECIFICATION	Q'TY
C214,C414	17-1.6ER227M	CAP.,EL	220uF/16V +/-20% TAP.	2
C215,C415	17-3.5ER106M	CAP.,EL	10uF/35V +/-20% TAP.	2
C216-220,C816-820	17-5DR101J	CAP.,CERAMIC	100pF/50V +/-5% TAP.	10
C221,C421	17-5DR150J	CAP.,CERAMIC	15pF/50V +/-5% TAP.	2
C222,C422	17-5DR150J	CAP.,CERAMIC	15pF/50V +/-5% TAP.	2
C226,C426	17-5ER106M	CAP.,EL	10uF/50V +/-20% TAP.	2
C601,C801	17-5ER475M	CAP.,EL	4.7uF/50V +/-20% TAP.	2
C602,C802	17-5DR821J	CAP.,CERAMIC	820pF/50V +/-5% TAP.	2
C603,C803	17-5DR331J	CAP.,CERAMIC	330pF/50V +/-5% TAP.	2
C604,C804	17-1.6ER227M	CAP.,EL	220uF/16V +/-20% TAP.	2
C605,C805	17-5DR331J	CAP.,CERAMIC	330pF/50V +/-5% TAP.	2
C606,C806	17-5DR331J	CAP.,CERAMIC	330pF/50V +/-5% TAP.	2
C607,C807	17-5DR150J-CH	CAP.,CERAMIC	15pF/50V +/-5% CH. TAP.	2
C608	17-5ER106M	CAP.,EL	10uF/50V +/-20% TAP.	1
C610,C810	17-6.3GR224J	CAP.,METAL	0.22uF/63V +/-5% TAP.	2
C701,702	17-5EG688M	CAP.,EL.25x50mm	6800uF/50V +/-20% P=10mm	2
C703	17-3.5ER476M	CAP.,EL	47uF/35V +/-20% TAP.	1
C704	17-3.5ER106M	CAP.,EL	10uF/35V +/-20% TAP.	1
C705	17-5DR473Z	CAP.,CERAMIC	0.047uF/50V +80-20% TAP.	1
C706	17-3.5ER476M	CAP.,EL	47uF/35V +/-20% TAP.	1
C707	17-3.5ER106M	CAP.,EL	10uF/35V +/-20%	1
C708	17-5DR473Z	CAP.,CERAMIC	0.047uF/50V +80-20% TAP.	1
C709	17-3.5ER476M	CAP.,EL	47uF/35V +/-20% TAP.	1
C710	17-5ER106M	CAP.,EL	10uF/50V +/-20% TAP.	1
C711,712	17-5DR473Z	CAP.,CERAMIC	0.047uF/50V +80-20% TAP.	2
C713,714	17-2.5ER227M	CAP.,EL	220uF/25V +/-20%	2
C715,716	17-5DR473Z	CAP.,CERAMIC	0.047uF/50V +80-20% TAP.	2
C717	17-40CR472M	AC.CAP.	4700pF/400V +/-20%	1
C718	17-10HF223K	CAP.,METAL POLYESTER	0.022uF/100V +/-10% P=10mm	1
C808	17-10DF104M	CAP.,CERAMIC	0.1uF/100V +/-20% TAP.	1
D201,D401	30-1N4148	DIODE	DIODE 1N4148 TAP.	2
D601,D801	30-1N4148	DIODE	DIODE 1N4148 TAP.	2
D602,D802	30-1N4148	DIODE	DIODE 1N4148 TAP.	2
D701-704	30-1N5402	DIODE REGULATOR	DIODE 1N5402 200V/3A TAP.	4
D708	30-1N4148	DIODE	DIODE 1N4148 TAP.	1
ZD705,706	30-1Z18VJ	DIODE ZENER	DIODE ZENER 18V 1/2W TAP.	2
Q201,Q401	30-2SK363GR	FET	2SK363GR TOSHIBA	2
Q601,Q801	30-546B	TRANSISTOR	BC546B PHILIPS	2
Q602,Q802	30-546B	TRANSISTOR	BC546B PHILIPS	2
Q603,Q803	30-556B	TRANSISTOR	BC556B PHILIPS	2
Q604,Q804	30-556B	TRANSISTOR	BC556B PHILIPS	2
Q605,Q805	30-546B	TRANSISTOR	BC546B PHILIPS	2
Q606-608,Q806-808	30-556B	TRANSISTOR	BC556B PHILIPS	6
Q609,Q809	30-546B	TRANSISTOR	BC546B PHILIPS	2
Q610,Q810	30-546B	TRANSISTOR	BC546B PHILIPS	2
Q611,Q811	30-2SC3421-Y	TRANSISTOR DRIVER	2SC3421-Y TOSHIBA	2
Q612,Q812	30-546B	TRANSISTOR	BC546B PHILIPS	2
Q613,Q813	30-2SC3421-Y	TRANSISTOR DRIVER	2SC3421-Y TOSHIBA	2
Q614,Q814	30-556B	TRANSISTOR	BC556B PHILIPS	2
Q615,Q815	30-2SA1358-Y	TRANSISTOR DRIVER	2SA1358-Y TOSHIBA	2
Q616,Q816	39-2SC2837	TRANSISTOR	2SC2837Y+MICA	2
Q617,Q817	30-2SA1186	TRANSISTOR POWER	2SA1186Y+MICA	2
Q701	30-2SC3421-Y	TRANSISTOR DRIVER	2SC3421-Y TOSHIBA	1
Q702	30-2SA1358-Y	TRANSISTOR DRIVER	2SA1358-Y TOSHIBA	1
Q703-705	30-546B	TRANSISTOR	BC546B PHILIPS	3
J301	12-2154	RCA JACK 2P	CPS-052 (PHONO)	1
J302	12-2158	RCA JACK 6P(2P GOLD)	CPS-056-2G (INPUTS)	1
J303,J304	12-2155	RCA JACK 4P	CPS-054 (TAPE/PRE-OUT/MAIN-IN)	2
J701	13-3047	HEAD PHONO JACK	JY-6306-02-070	1
VR601,VR801	29-4171-1	SEMI VR 5x5mm	PH0615C10100-EK	2
VR301	29-4212	VR/MOTOR	20KA*2	1
VR302,303	29-4193	TONE VR	RK163121A353-EK	2

PARTS LIST

Audio Pro A.2 SERVICE PARTS LIST				
SYMBOL NO.	PARTS NO.	DESCRIPTION	SPECIFICATION	QTY
IC201,IC401	30-JRC5534	IC. O.P.AMP.	IC. JRC5534	2
IC302	30-JRC5532	IC. O.P.AMP.	IC. JRC5532	1
IC303,304	30-NJM2068D	IC. O.P. AMP.	IC. NJM2068D	2
F1,F2	32S12504K0TS	TIME-LAG FUSE	5x20mm, T4A/250V.SEMKO	2
F3	32S12501K0TS	TIME-LAG FUSE	5x20mm, T1A/250V.SEMKO	1
L604,L801	29-1110	COIL	0.8mmx28 1/2T 2.2uH	2
S1	31-1212-1	PHONO SELECT SW	SLIDE-SW SSP-2209-MP-7S	1
S3	31-1241	TAPE/SOURCE SW	SRRZS42N27-EK	1
S4	31-1247	MUT/NOR/DIR SW	SRRZS43N24-EK	1
	MD90-1306	CONTROL PCB MODULE	WITH COMPONENTS	1
	19-1306	REMOTE CTL PCB	94V-0	1
C101,C102	17-1.6ER107M	CAP.EL	10uF/25V +/-20% TAP	2
C103,C104	17-5ER105M	CAP.EL	1uF/50V +/-20% TAP	2
C105,C106	17-5DR104J	CAP.CERAMIC	0.1uF/50V +/-5% TAP	2
C107	17-1.6ER107M	CAP.EL	10uF/25V +/-20% TAP	1
C108	17-1.6ER107M	CAP.EL	100uF/16V +/-20% TAP	1
C109	17-5ER105M	CAP.EL	1uF/50V +/-20% TAP	1
C110,C111	17-5DR101J	CAP.CERAMIC	100pF/50V +/-5% TAP	2
D101,D102	30-5DZ12V	DIODE ZENER	12V 5W	2
D103-105	30-1N4148	DIODE SWITCH	1N4148 TAP	3
Q101	30-2SC1815GR	TR NPN	2SC1815GR TOSHIBA	1
Q102	30-2SA1015GR	TR PNP	2SA1015GR TOSHIBA	1
Q103	30-2SC1815GR	TR NPN	2SC1815GR TOSHIBA	1
Q104-108	30-2SA1015GR	TR PNP	2SA1015GR TOSHIBA	5
Q109	30-2SA1015GR	TR PNP	2SA1015GR TOSHIBA	1
R101	16-1.6CA472J	RES.,CARBON FILM	4K7 1/6W +/-5% 52mm TAP	1
R102-105	16-1.6CA222J	RES.,CARBON FILM	2K2 1/6W +/-5% 52mm TAP	4
R106	16-1.6CA103J	RES.,CARBON FILM	10K 1/6W +/-5% 52mm TAP	1
R108	16-1.6CA123J	RES.,CARBON FILM	12K 1/4W +/-5% 52mm TAP	1
R109,R110	16-1.6CA104J	RES.,CARBON FILM	100K 1/6W +/-5% 52mm TAP	2
R111	16-1AN681J	RES.METAL OXIDE	680 +/-5% 1W	1
R112	16-1.4CA472J	RES.,CARBON FILM	4K7 1/4W +/-5% 52mm TAP	1
IR101	30-LTM9025-4	IR	LTM9025-4/SBX1610-52	1
VR102	29-4213	VR/MOTOR	10KB*2 (INPUTS)	1
VR103	29-4214	VR	5KMN*2 (BALANCE)	1
U101	30-LM78L06	REQUATOR	78L06	1
U102	30-LM79L06	REQUATOR	79L06	1
U103	30-PIC16C71-XT	IC	PIC 16C71	1
U104	30-CD74HC4052E	IC	74HC4025	1