cambridge audio

SERVICE MANUAL

A3i Integrated Amplifier

Cambridge Audio
Richer House
Hankey Place
London SE1 4BB
ENGLAND

SM 0001/1

SAFETY PRECAUTIONS & IMPORTANT NOTES

1. Check that the rear of the product indicates the correct supply voltage for your area.

2. The lightning flash with the arrowhead within an equilateral triangle is intended to alert the user to the presence of dangerous voltages within the product enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

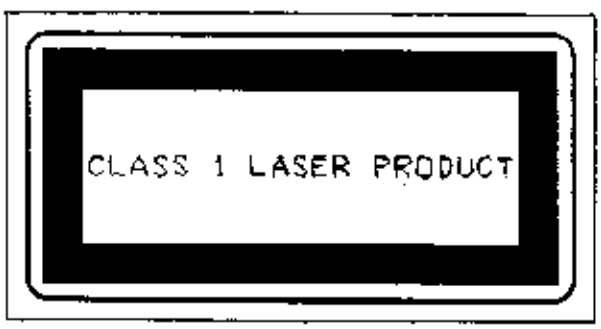
3. The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (Servicing) instructions in the literature accompanying the appliance.

4. This product complies with the EEC Low Voltage (73/23/EEC) and Electromagnetic Compatability (89/336/EEC) Directives. For continued compliance all componants marked safety and EMC critical must only be replaced by Cambridge Audio approved parts.

5. Any unauthorised design alterations or additions will void the manufacturer's warranty; furthermore the manufacturer cannot accept responsibility for personal injury or property damage resulting therefrom.

6. When servicing, care should be taken to observe the original routing and dressing of the leads and it should be confirmed that they have been returned to normal after re-assembly.

7. **CAUTION** : These labels may be attached to the unit on the rear and inside to inform that it contains a laser component. Use of controls or adjustments, or performance of procedures other than those specified within the service or instruction manual may result in hazardous radiation exposure.



WARNING!

1. Service should only be performed by qualified personnel.
2. This equipment has been designed and manufactured to meet international safety standards, it is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Any repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety and EMC critical components are replaced with Cambridge Audio approved parts only.

Cambridge Audio
A3i Integrated Amplifier

SPECIFICATIONS

INPUT SENSITIVITY:	
Phono:	1.75mV
CD:	400mV
Aux/Tuner/Tape:	200mV
INPUT IMPEDANCE:	47kΩ
SPEAKER IMPEDANCE:	4-16Ω
POWER OUTPUT:	50 watts rms into 8Ω
FREQUENCY RESPONSE:	2Hz to 50kHz (-3dB points)
CHANNEL SEPARATION:	At 1kHz better than 75dB
DISTORTION:	Less than 0.05%@ 1 Watt
SIGNAL: NOISE(A WEIGHTED):	90dB with 'CD direct' 80dB via tone controls
DIMENSIONS (MM):	90(h) x 430(w) x 300(d)
VOLTAGE AC:	As specified on rear panel
POWER CONSUMPTION:	As specified on rear panel

Cambridge Audio's policy is one of continuous improvement. It is possible therefore, that specifications and designs may change without prior notice.

PARTS LIST

1. **Parts marked on the parts list in the critical column have critical characteristics and must only be replaced by those components specified in the parts list.**

2. Certain parts are not always in stock and will possibly take a long period to supply, or in some cases Cambridge Audio reserves the right to refuse supply of the part.

3. Use of parts obtained from a third party for servicing requirements may invalidate the manufacturer's warranty.

For parts list see A3 pages attached.

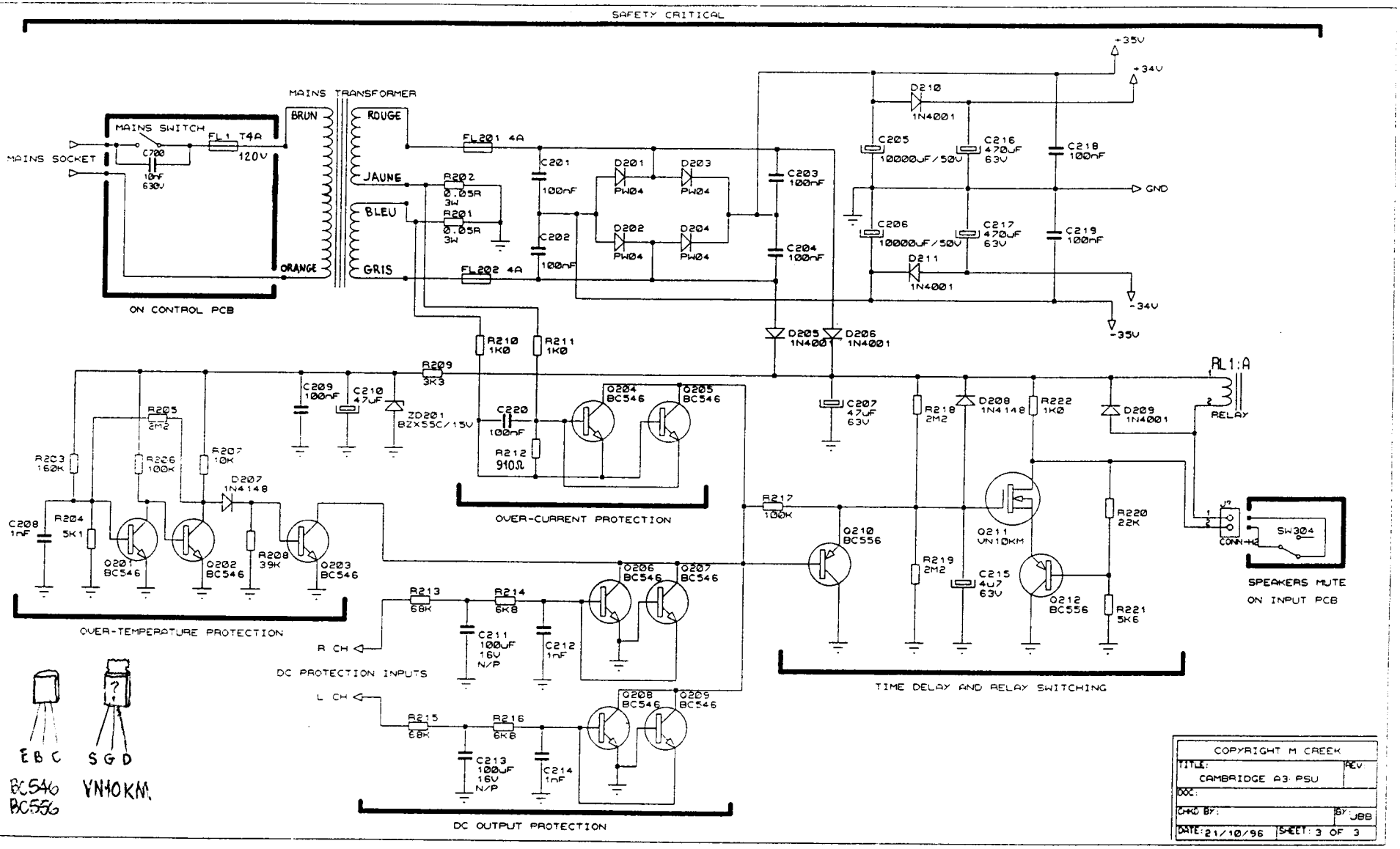
ITEM NO	PART NO	ITEM DESCRIPTION	QTY	DESIGNATOR	CRITICAL
1	9815-005000-002	A3 AMPLIFIER (UK) REV B	1		
2	9400-315000-042	A3 TONE BOARD ASSY REV B	1	HKENED960568	
3	1011-001014-000	METAL FILM RESISTOR 100 OHM 1/4W +-1%	2	R511,R611	
4	1011-004014-000	METAL FILM RESISTOR 100K OHM 1/4W +-1%	4	R505,R509,R605,R609	
5	1011-803014-000	METAL FILM RESISTOR 18K OHM 1/4W +-1%	4	R506,R508,R606,R608	
6	1012-202014-000	METAL FILM RESISTOR 2.2K OHM 1/4W +-1%	4	R512,R515,R514 R612	
7	1012-401014-000	METAL FILM RESISTOR 240 OHM 1/4W +-1%	1	R503	
8	1013-000014-000	METAL FILM RESISTOR 30 OHM 1/4W +-1%	2	R501,R502	
9	1014-702014-000	METAL FILM RESISTOR 4.7K OHM 1/4W +-1%	1	R504	
10	1016-802014-000	METAL FILM RESISTOR 6.8K OHM 1/4W +-1%	2	R507,R607	
11	1019-104014-000	METAL FILM RESISTOR 910K OHM 1/4W +-1%	2	R510,R610	
12	1061-004518-150	VR 100K +-20% B TYPE FOR A2/A3 TONE	2	RV3,RV4	
13	1062-003511-160	VR 20K OHM +-20% MN CURSE FOR A2/A3 BALANCE	1	RV1	
14	1065-003511-160	VAR. RESISTOR 50K+50K LOG 16x18mm	1	RV2	
15	1100-105104-000	CERAMIC CAP. 0.01uF/400VAC +-20%	1	C700. HKENED960567	CR
16	1100-221043-000	CERAMIC CAP. 220pF/50V +- 10%	2	C508,C608	
17	1100-470043-000	CERAMIC CAP. 47PF/50V +-10%	2	C504,C604	
18	1102-100044-000	ELECT. CAP. 10UF/50V +-20%	3	C501,C502,C503	
19	1103-157042-500	POLYESTER CAP. 1n5/+-5% 3 DIP CASE	2	C505,C605	
20	1103-680042-500	POLYESTER CAP. 68nF/+-5% 3 DIP CASE	4	C506,C507,C606,C607	
21	1106-104053-000	MONO CAP. 100nF/63V +-10%	3	C509,C510,C511	
22	1402-088151-000	ZENER DIODE BZX55C 15 15V 1/2W	2	ZD501,ZD502	
23	2500-006100-000	STRAIGHT CONN WAFER 6PINS 2.5MM (22175B 06)	2	CN2B,CN4E	
24	2356-003910-000	IEC POWER SOCKET (WELL DONE) GOLD PLATED	1	HKENED960620	
25	2401-010100-001	POWER SW 1P1T 250V/5A/TV5 (KNE-K14S2)	1	SW502. HKENED960568	CR
26	2409-450000-300	ROTARY SWITCH 4P3T TMEC RS003-A043MGN-15K3Q	1	SW501. HKENED960568	CR
27	2511-060952-241	6PIN 95MM 2CONN SHIELD CABLE A1CBD12	2	CN1B,CN2B. HKENED960568	
28	3100-000530-001	LED BLUE COLOR 3MM	1	HKENED960634	
29	4050-000543-120	FUSE T-2A 5X20MM BSI	1	HKENED960568	
30	4051-050100-001	FUSE HOLDER 5X20MM PCB MOUNT WITH PLASTIC BASE	2	FL1. HKENED960568	CR
31	4054-000030-000	FUSE COVER FOR 5X20MM HOLDER BASE	2	HKENED960568	CR
32	4151-700510-000	I.C. LM317LZ TO-92	1	VR501	CR
33	4171-200050-100	I.C. AD712 8PIN	1	IC501	
34	4850-000040-001	A3 CONTROL PCB REV A	1	A2/A3 CONTROL	
35	6600-042504-000	EYELET 2.5X4MM	5	HKENED960650	CR
36	9107-000040-000	HEAT SHRINK TUBE 4MM	2	HKENED960620	
37	9400-315000-072	A3 POWER AMP ASSY (UK) REV B	1	HKENED960568	
38	1001-000510-000	CARBON FILM RESISTOR 10 OHM 1W +-5%	2	R109,R9	
39	1001-002520-000	CARBON FILM RESISTOR 1K 2W +-5%	1	R222	
40	1001-201512-000	CARBON FILM RESISTOR 120 OHM 1/2W +-5%	2	R121,R21. HKENED960634	
41	1011-001014-000	METAL FILM RESISTOR 100 OHM 1/4W +-1%	4	R104,R105,R4,R5	
42	1011-002014-000	METAL FILM RESISTOR 1K OHM 1/4W +-1%	4	R106,R210,R211,R6	
43	1011-002014-000	METAL FILM RESISTOR 1K OHM 1/4W +-1%	2	R114,R14	
44	1011-003014-000	METAL FILM RESISTOR 10K OHM 1/4W +-1%	3	R103,R207,R3	
45	1011-004014-000	METAL FILM RESISTOR 100K OHM 1/4W +-1%	4	R1,R101,R206,R217	
46	1011-201014-000	METAL FILM RESISTOR 120 OHM 1/4W +-1%	2	R117,R17	
47	1011-502014-000	METAL FILM RESISTOR 1.5K OHM 1/4W +-1%	2	R120,R20	
48	1011-604014-000	METAL FILM RESISTOR 160K OHM 1/4W +-1%	1	R203	
49	1012-002014-000	METAL FILM RESISTOR 2K OHM 1/4W +-1%	2	R10,R110	
50	1012-202014-000	METAL FILM RESISTOR 2.2K OHM 1/4W +-1%	3	R8/108/613. HKENED960634	
51	1012-203014-000	METAL FILM RESISTOR 22K OHM 1/4W +-1%	1	R220	
52	1012-205514-000	METAL FILM RESISTOR 2.2M 1/4W +-5%	3	R205,R218,R219	
53	1013-002014-000	METAL FILM RESISTOR 3K OHM 1/4W +-1%	1	R212	
54	1013-302014-000	METAL FILM RESISTOR 5.5K OHM 1/4W +-1%	5	R116,R118,R16,R18,R209	
55	1013-903014-000	METAL FILM RESISTOR 39K OHM 1/4W +-1%	3	R107,R208,R7	
56	1014-303014-000	METAL FILM RESISTOR 43K OHM 1/4W +-1%	2	R11,R111	
57	1014-701014-000	METAL FILM RESISTOR 470 OHM 1/4W +-1%	4	R113,R119,R15,R19	
58	1014-702014-000	METAL FILM RESISTOR 4.7K OHM 1/4W +-1%	1	R204. HKENED960634	
59	1014-703014-000	METAL FILM RESISTOR 47K OHM 1/4W +-1%	2	R102,R2	
60	1015-102014-000	METAL FILM RESISTOR 5.1K OHM 1/4W +-1%	1	R204	
61	1015-602014-000	METAL FILM RESISTOR 5.6K OHM 1/4W +-1%	1	R221	

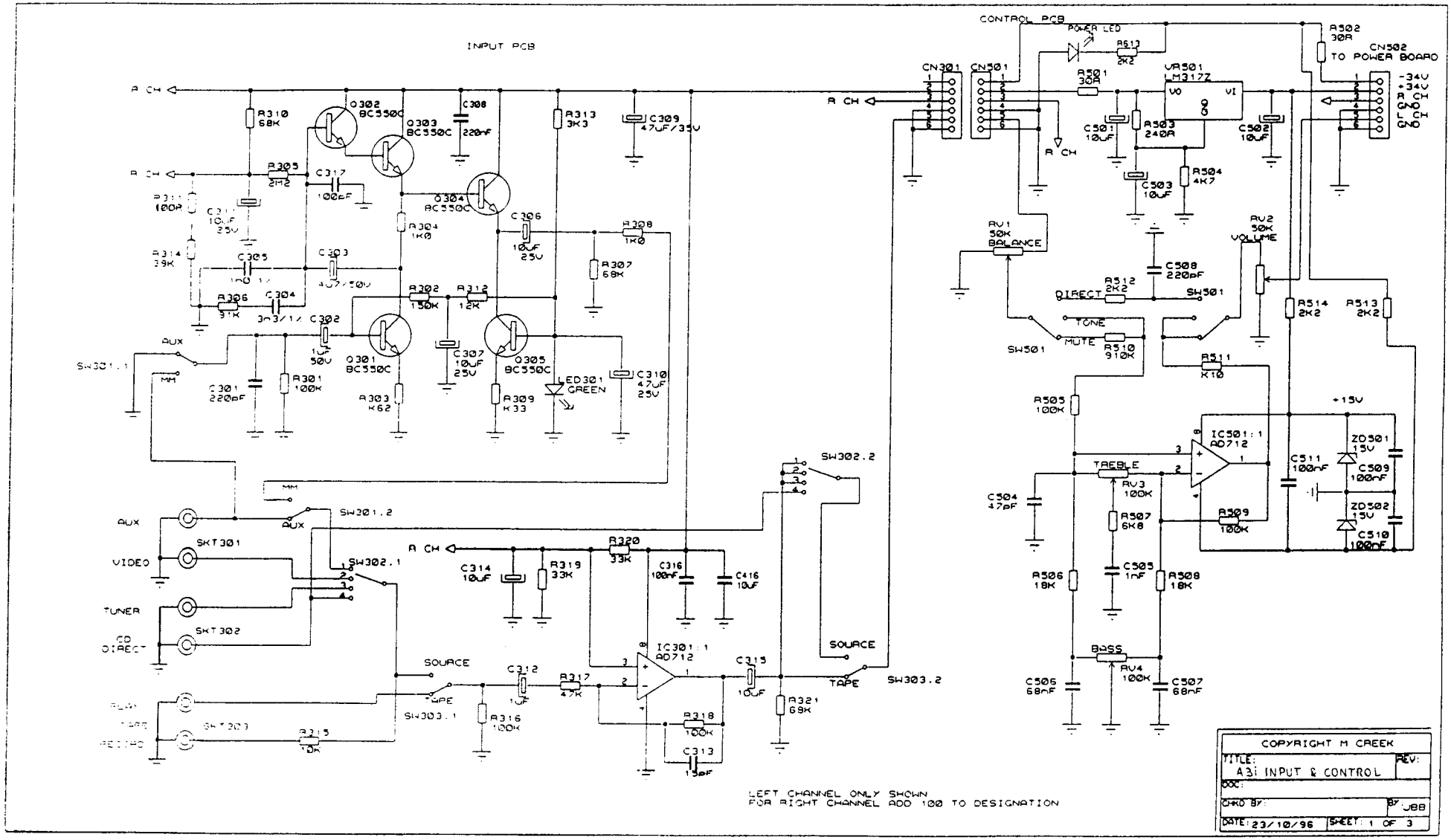
	1014-303014-000	METAL FILM RESISTOR 30K OHM 1/4W +-1%	3	R107,R208,R7	
56	1014-303014-000	METAL FILM RESISTOR 43K OHM 1/4W +-1%	2	R11,R111	
57	1014-701014-000	METAL FILM RESISTOR 470 OHM 1/4W +-1%	4	R113,R119,R15,R19	
58	1014-702014-000	METAL FILM RESISTOR 4.7K OHM 1/4W +-1%	1	R504. HKENED960634	
59	1014-703014-000	METAL FILM RESISTOR 47K OHM 1/4W +-1%	2	R102,R2	
60	1015-102014-000	METAL FILM RESISTOR 5.1K OHM 1/4W +-1%	1	R204	
61	1015-602014-000	METAL FILM RESISTOR 3.6K OHM 1/4W +-1%	1	R221	
62	1015-603014-000	METAL FILM RESISTOR 36K OHM 1/4W +-1%	2	R115,R15	
63	1016-200014-000	METAL FILM RESISTOR 62 OHM 1/4W +-1%	2	R112,R12	
64	1016-802014-000	METAL FILM RESISTOR 6.8K OHM 1/4W +-1%	2	R214,R216	
65	1016-803014-000	METAL FILM RESISTOR 68K OHM 1/4W +-1%	2	R213,R215	
66	1054-701514-000	SEMI-FIXED RESISTOR 470 OHM +-20% T.ADJ. 10X5 LEAD	2	P1,P101	
67	1072-208330-000	WIREWOUND RESISTOR 0.22 OHM 3W +-5%	4	R122,R123,R22,R23	
68	1075-008430-000	WIREWOUND RESISTOR 0.05 OHM 3W +-10%	2	R201,R202	
69	1100-102043-000	CERAMIC CAP. 1000PF/50V +-10%	3	C208,C212,C214	
70	1100-121043-000	CERAMIC CAP. 120pF/50V +- 10%	2	C2,C102	
71	1100-221043-000	CERAMIC CAP. 220pF/50V +- 10%	2	C5,C103	
72	1100-680043-000	CERAMIC CAP. 68pF/50V +-10%	4	C114,C14,C13,C113	
73	1100-827043-000	CERAMIC CAP. 8.2pF/50V +-10%	2	C7,C107	
74	1102-103044-000	ELECT. CAP. 10000uF/50V +-20%	2	C205,C206	
75	1102-470024-000	ELECT. CAP. 47UF/25V +-20%	1	C210	
76	1102-470054-000	ELECT CAP. 47UF/63V +-20%	1	C207	
77	1102-471044-000	ELECT. CAP. 470uF/50V +-20%	2	C216,C217	
78	1103-101053-500	POLYESTER CAP. 100nF/63V +-10%	11	C103,C104,C106,C11,C110,	
79	1103-101093-500	POLYESTER CAP. 100nF/250V +-10%	12	C109,C112,C113,C12,C13,	
80	1103-221073-500	POLYESTOR CAP. 220nF/160V +-10%	2	C117,C17	
81	1105-101014-000	ELECT. CAP. 100uF/16V +-20% (NON-POLAR)	2	C211,C213	
82	1106-104044-000	MONO CAP. 0.1UF/50V +-20%	1	HKENED960568	
83	1107-100054-000	LOW ESR CAP. 10UF/63V +-20%	2	C1,C101. HKENED960620	
84	1107-101054-000	LOW ESR CAP. 100UF/35V +-20%	2	C8,C108. HKENED960620	
85	1107-477044-000	LOW ESR CAP. 4u7/50V LL20%	1	C215	
86	1300-001390-814	TRANSISTOR NPN POWER BD139	2	Q11,Q111	
87	1300-005460-121	TRANSISTOR NPN BC546C	13	Q3,Q4,Q105,Q104,Q201,	
88	1300-005500-121	TRANSISTOR NPN BC550C	6	Q1,Q101,Q2,Q102/501/401. HKENED960634	
89	1300-006390-121	TRANSISTOR NPN BC639	2	Q10,Q110	
90	1300-229220-900	TRANSISTOR NPN 2SC2922 SANKEN FLAT	2	Q15,Q115	
91	1301-001400-814	TRANSISTOR PNP BD140 TO-126	2	Q12,Q112	
92	1301-005560-121	TRANSISTOR PNP BC556B	8	Q103,Q106,Q109,Q210,	
93	1301-005460-121	TRANSISTOR PNP BC546		Q113,Q116	
94	1301-212160-900	TRANSISTOR PNP 2SA1216 SANKEN FLAT	2	Q14,Q114	
95	1303-100001-000	TRANSISTOR VN10LM OR KM TO25 MOSFET	1	Q211	
96	1303-350609-900	TRANSISTOR MOSFET ZVP3306 E-LINE	2	Q107,Q7	
97	1401-140040-000	DIODE RECTIFIER 1N4004	9	D2,D5,D102,D103,D203,	
98	1401-141480-000	DIODE 1N4148	4	D1,D101,D207,D208	
99	1401-640000-000	DIODE GA05 6A 400V (6A4) R6	4	D201,D202,D205,D204	
100	1402-088151-000	ZENER DIODE BZX55C13 15V 1/2W	5	ZD1,ZD101,ZD201	
101	2300-006100-001	STRAIGHT CONN WAFER 6PINS 2.5MMP (2517SB-06)	2	CN1,CN2	
102	2353-008911-300	SPEAKER 8 POLE 4MM BLIND	1	SKT1,SKT101. HKENED960560	
103	2600-103203-600	320MM JUMPER WIRE AWG#24 UL1007 BLUE	1	HKENED960568	
104	2600-103203-800	320MM JUMPER WIRE AWG#24 UL1007 WHITE	1	HKENED960568	
105	2600-104503-500	450MM JUMPER WIRE AWG#24 GREEN	2	HKENED960568	
106	2605-101501-500	150MM GND WIRE 1 RING (M4) AWG#20 UL1015 GREEN	1	HKENED960568	
107	2605-101801-000	180MM GND WIRE 1 RING (M4) AWG#20 UL1015 BLACK	1	HKENED960634	
108	2610-218309-005	1850MM AC POWER CORD BSI 13A FUSED W/3A FUSE BLK	1	HKENED960654	CR
109	2614-100909-000	90mm INSULATED WIRE AWG#22	1	LK34	
110	2614-101109-000	110mm INSULATED WIRE AWG#22	1	LK35	
111	3100-000000-005	LED RED COLOR ROUND HEAD 3MM DIA.	4	LED1,LED101,LED2,LED102	
112	5200-000010-001	TRANSFORMER R-CORD 230V OR 115V (A3) old A2	1		CR
113	6600-120040-000	SCREW NUT M4X7X8	4	HKENED960630	
114	7004-010010-022	SCREW M4X10 M/C P/H	4	HKENED960630	
115	7104-308304-082	EX-TOOTHED LOCK WASHER M4	4	HKENED960630	

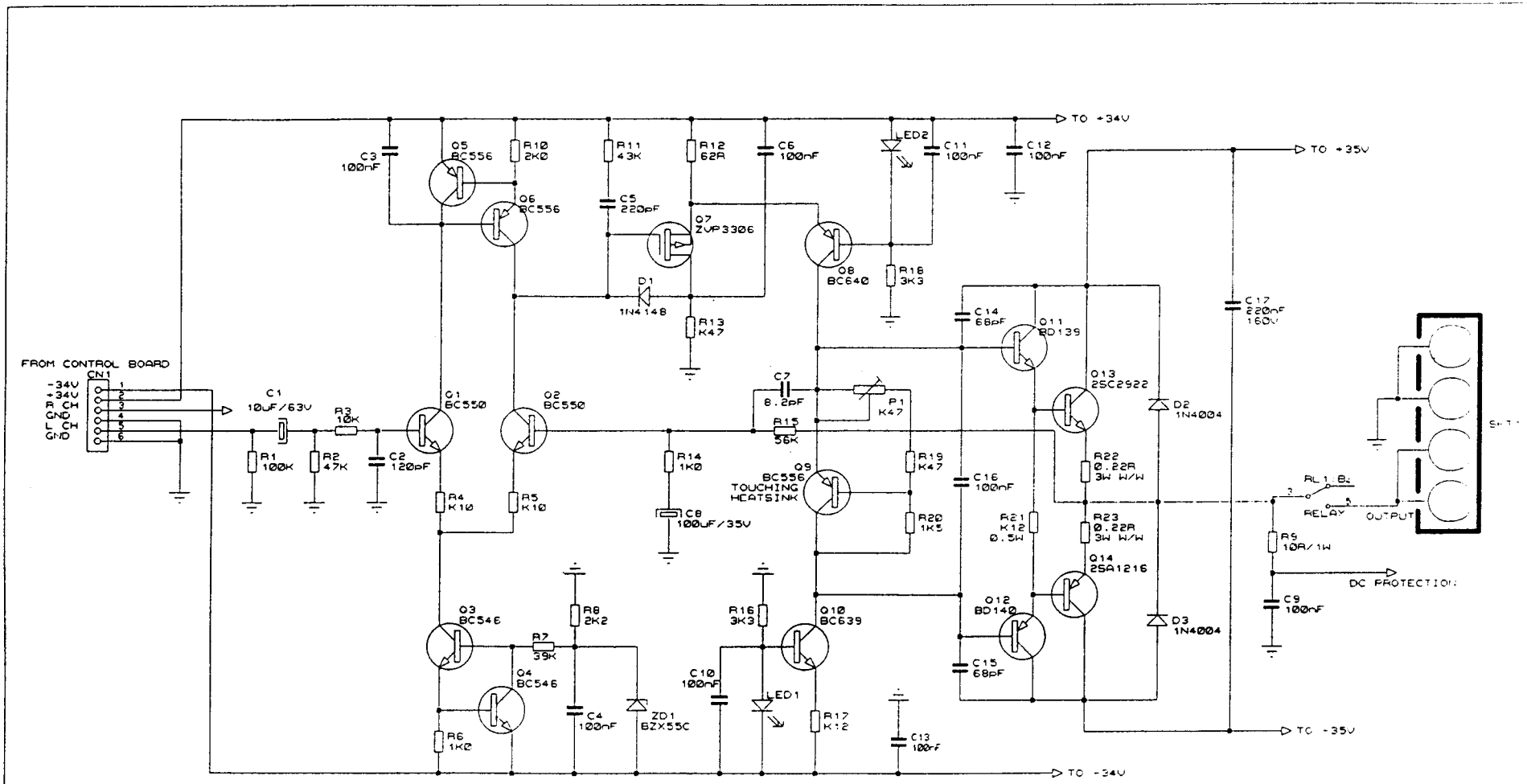
ITEM NO	PART NO	ITEM DESCRIPTION	QTY	DESIGNATOR	CRITICAL
116	4030-000343-125	FUSE T-4A 5X20MM BSI	2	FL201,FL202	CR
117	4031-050100-001	FUSE HOLDER 5X20MM PCB MOUNT WITH PLASTIC BASE	2	FL201,FL202	CR
118	4050-102400-000	RELAY 10A 24V 2POLE CHANGEOVER	1	RL1	
119	4830-000070-001	A3 POWER PCB REV A	1		
120	9400-315000-122	A3 OTHER UNIT REV B	1	HKENED960568	
121	9100-604000-000	SOLDER BAR RG, H60A, 60/40 0.5KG/BAR	0.05		
122	9101-604012-000	SOLDER WIRE (Dia 1.2) 60/40 1.0KG/ROLL	0.045		
123	9102-450000-000	THINNER 450F	0.05		
124	9103-900000-000	FLUX A90	0.016		
125	9104-153100-000	BLACK GLUE	0.003		
126	9109-000000-000	PACKING TAPE (PP) W64MMX45M/RL CLEAR	1.3		
127	9110-003750-000	CABLE TIE NYLON 3X75MM BLACK COLOR	2	HKENED960630	
128	9111-000010-000	COPPER WIRE DIA. 1.0 (ROLL TYPE)	0.008	HKENED960524	
129	9400-315000-572	A3 INPUT BOARD PCB A REV B	1	HKENED960568	
130	1011-002014-000	METAL FILM RESISTOR 1K OHM 1/4W +-1%	4	R304,R308,R404,R408	
131	1011-003014-000	METAL FILM RESISTOR 10K OHM 1/4W +-1%	2	R315,R415	
132	1011-004014-000	METAL FILM RESISTOR 100K OHM 1/4W +-1%	7	R301,R311,R316,R318	
133	1011-203014-000	METAL FILM RESISTOR 12K OHM 1/4W +-1%	1	R312	
134	1011-502014-000	METAL FILM RESISTOR 1.5K OHM 1/4W +-1%	1	ðÛÆŠCN301Ûsñuó◊. HKENED960568	
135	1011-504014-000	METAL FILM RESISTOR 150K OHM 1/4W +-1%	2	R302,R402	
136	1012-200314-000	METAL FILM RESISTOR 22 OHM 1/4W +-5%	1	R0	
137	1012-205014-000	METAL FILM RESISTOR 2.2M 1/4W +-1%	2	R305,R405	
138	1013-301014-000	METAL FILM RESISTOR 330 OHM 1/4W +-1%	2	R309,R409	
139	1013-302014-000	METAL FILM RESISTOR 3.3K OHM 1/4W +-1%	1	R313	
140	1013-303014-000	METAL FILM RESISTOR 33K OHM 1/4W +-1%	2	R319,R320	
141	1013-903014-000	METAL FILM RESISTOR 39K OHM 1/4W +-1%	1	R314	
142	1014-703014-000	METAL FILM RESISTOR 47K OHM 1/4W +-1%	2	R317,R417	
143	1016-201014-000	METAL FILM RESISTOR 620 OHM 1/4W +-1%	2	R303,R403	
144	1016-803014-000	METAL FILM RESISTOR 68K OHM 1/4W +-1%	5	R307,R310,R321,R407,R421	
145	1019-103014-000	METAL FILM RESISTOR 91K OHM 1/4W +-1%	2	R306,R406	
146	1100-104043-000	CERAMIC CAP. 0.1uF/50V +- 10%	2	C0,C316	
147	1100-150043-000	CERAMIC CAP. 15PF +-10%	2	C313,C413	
148	1100-221043-000	CERAMIC CAP. 220pF/50V +- 10%	2	C301,C401	
149	1102-100054-000	ELECT. CAP. 10uF/63V +-20%	8	C306,C307,C311,C314,	
150	1102-107054-000	ELECT. CAP. 1uF/63V +-20%	4	C302,C312,C402,C412	
151	1102-470044-000	ELECT. CAP. 47UF/50V +-20%	2	C309,C310	
152	1102-477054-000	ELECT. CAP. 4.7uF/63V +-20%	2	C303,C403	
153	1103-221053-000	POLYESTER CAP. 220nF/63V +-10%	1	C308	
154	1109-101042-100	POLYSTYRENE CAP. 100pF/50V +-5%	2	C317,C417	
155	1109-102040-101	POLYSTYRENE CAP. 1000PF/50V +-1% 5MM RADAXIAL	2	C305,C405	
156	1109-332040-101	POLYSTYRENE CAP. 3300PF/50V +-1% 5MM RAD AXIAL	2	C304,C404	
157	1300-005500-121	TRANSISTOR NPN BC550C	10	Q302,Q303,Q304,Q305,	
158	1300-250890-100	TRANSISTOR NPN 2N5089 TO-92	0	Q301,Q401, Use 1300-005500-121 instead	
159	2300-006100-001	STRAIGHT CONN WAFER 6PINS 2.5MMP (2317SB-06)	1	CN301. HKENED960568	
160	2330-006911-021	RCA JACK 4P GOLD PLATED	8	SKT301,SKT302,SKT303	
161	2402-020200-000	PUSH SWITCH 2P2T WPA EF-6AL	1	SW304	
162	2402-060200-000	PUSH SWITCH 6P2T WPA EF-18DL HSIN CHUANG	1	SW301	
163	2409-420000-300	ROTARY SWITCH 4P2T TMEC RS003-A042MGN-15K3Q	1	SW305. HKENED960568	
164	2409-440000-300	ROTARY SWITCH 4P4T TMEC RS003-A044MGN-15K3Q	1	SW302. HKENED960568	
165	2605-100901-500	90MM GND WIRE 1 RING (M4) AWG#20 UL1015 GREEN	1	LK19	
166	3100-000030-001	LED GREEN COLOR ROUND HEAD 3MM	1	LED301	
167	4171-200050-100	I.C. AD712 8PIN	1	IC301	
168	4830-000570-001	A3 INPUT PCB REV A	1		
169	6020-800112-000	YN208 SHIELD WIRE BUSHING (10MM)	1	HKENED960568	
170	9600-315000-002	A3 MECHAN ASSY (UK) REV B	1	HKENED960581	
171	6010-150110-000	A1MK2 SELECTOR KNOB (CAMA156D/A)	3	HKENED960630	
172	6010-150111-000	A1MK2 KNOB INSERT (CAMA158D/C)	7		
173	6010-150112-000	A1MK2 VOLUME KNOB (CAMA162D/C)	1		
174	6010-150113-000	A1MK2 POWER BAR (CAMA172D/A)	1		
175	6010-150117-000	A1MK2 SELECTOR KNOB WITH 18 KNURL (CAMA186D/A)	3	HKENED960630	
176	6040-010103-000	CD4 POWER KNOB	2	HKENED960630	

ITEM NO	PART NO	ITEM DESCRIPTION	QTY	DESIGNATOR	CRITICAL
116	4030-000343-125	FUSE T-4A 5X20MM BSI	2	FL201,FL202	CR
117	4031-050100-001	FUSE HOLDER 5X20MM PCB MOUNT WITH PLASTIC BASE	2	FL201,FL202	CR
118	4050-102400-000	RELAY 10A 24V 2POLE CHANGEOVER	1	RL1	
119	4830-000070-001	A3 POWER PCB REV A	1		
120	9400-315000-122	A3 OTHER UNIT REV B	1	HKENED960568	
121	9100-604000-000	SOLDER BAR RG, H60A, 60/40 0.5KG/BAR	0.05		
122	9101-604012-000	SOLDER WIRE (Dia 1.2) 60/40 1.0KG/ROLL	0.045		
123	9102-450000-000	THINNER 450F	0.05		
124	9105-900000-000	FLUX A90	0.016		
125	9104-153100-000	BLACK GLUE	0.003		
126	9109-000000-000	PACKING TAPE (PP) W64MMX45M/RL CLEAR	1.3		
127	9110-003750-000	CABLE TIE NYLON 3X75MM BLACK COLOR	2	HKENED960630	
128	9111-000010-000	COPPER WIRE DIA. 1.0 (ROLL TYPE)	0.008	HKENED960524	
129	9400-315000-572	A3 INPUT BOARD PCB A REV B	1	HKENED960568	
130	1011-002014-000	METAL FILM RESISTOR 1K OHM 1/4W +-1%	4	R304,R308,R404,R408	
131	1011-003014-000	METAL FILM RESISTOR 10K OHM 1/4W +-1%	2	R315,R415	
132	1011-004014-000	METAL FILM RESISTOR 100K OHM 1/4W +-1%	7	R301,R311,R316,R318	
133	1011-203014-000	METAL FILM RESISTOR 12K OHM 1/4W +-1%	1	R312	
134	1011-502014-000	METAL FILM RESISTOR 1.5K OHM 1/4W +-1%	1	ðÛÆŠCN301Ûsñuó0. HKENED960568	
135	1011-504014-000	METAL FILM RESISTOR 150K OHM 1/4W +-1%	2	R302,R402	
136	1012-200514-000	METAL FILM RESISTOR 22 OHM 1/4W +-5%	1	R0	
137	1012-205014-000	METAL FILM RESISTOR 2.2M 1/4W +-1%	2	R305,R405	
138	1013-301014-000	METAL FILM RESISTOR 330 OHM 1/4W +-1%	2	R309,R409	
139	1013-302014-000	METAL FILM RESISTOR 3.3K OHM 1/4W +-1%	1	R313	
140	1013-303014-000	METAL FILM RESISTOR 33K OHM 1/4W +-1%	2	R319,R320	
141	1013-903014-000	METAL FILM RESISTOR 39K OHM 1/4W +-1%	1	R314	
142	1014-703014-000	METAL FILM RESISTOR 47K OHM 1/4W +-1%	2	R317,R417	
143	1016-201014-000	METAL FILM RESISTOR 620 OHM 1/4W +-1%	2	R303,R403	
144	1016-803014-000	METAL FILM RESISTOR 68K OHM 1/4W +-1%	5	R307,R310,R321,R407,R421	
145	1019-103014-000	METAL FILM RESISTOR 91K OHM 1/4W +-1%	2	R306,R406	
146	1100-104043-000	CERAMIC CAP. 0.1uF/50V +- 10%	2	C0,C316	
147	1100-150043-000	CERAMIC CAP. 15PF +-10%	2	C315,C415	
148	1100-221043-000	CERAMIC CAP. 220pF/50V +- 10%	2	C301,C401	
149	1102-100054-000	ELECT. CAP. 10uF/63V +-20%	8	C306,C307,C311,C314,	
150	1102-107054-000	ELECT. CAP. 1uF/63V +-20%	4	C302,C312,C402,C412	
151	1102-470044-000	ELECT. CAP. 47UF/50V +-20%	2	C309,C310	
152	1102-477054-000	ELECT. CAP. 4.7uF/63V +-20%	2	C303,C403	
153	1103-221053-000	POLYESTER CAP. 220nF/63V +-10%	1	C308	
154	1109-101042-100	POLYSTYRENE CAP. 100pF/50V +-5%	2	C317,C417	
155	1109-102040-101	POLYSTYRENE CAP. 1000PF/50V +-1% 5MM RADAXIAL	2	C305,C405	
156	1109-332040-101	POLYSTYRENE CAP. 3300PF/50V +-1% 5MM RAD AXIAL	2	C304,C404	
157	1300-005500-121	TRANSISTOR NPN BC550C	10	Q302,Q303,Q304,Q305,	
158	1300-250890-100	TRANSISTOR NPN 2N5089 TO-92	0	Q301,Q401, Use 1300-005500-121 instead	
159	2300-006100-001	STRAIGHT CONN WAFER 6PINS 2.5MMP (2317SR-06)	1	CN301. HKENED960568	
160	2330-006911-021	RCA JACK 4P GOLD PLATED	3	SKT301,SKT302,SKT303	
161	2402-020200-000	PUSH SWITCH 2P2T WPA EF-6AL	1	SW304	
162	2402-060200-000	PUSH SWITCH 6P2T WPA EF-18DL HSIN CHUANG	1	SW301	
163	2409-420000-300	ROTARY SWITCH 4P2T TMEC RS003-A042MGN-15K3Q	1	SW303. HKENED960568	
164	2409-440000-300	ROTARY SWITCH 4P4T TMEC RS003-A044MGN-15K3Q	1	SW302. HKENED960568	
165	2605-100901-500	90MM GND WIRE 1 RING (M4) AWG#20 UL1015 GREEN	1	LK19	
166	3100-000030-001	LED GREEN COLOR ROUND HEAD 3MM	1	LED301	
167	4171-200050-100	I.C. AD712 8PIN	1	IC301	
168	4830-000570-001	A3 INPUT PCB REV A	1		
169	6020-800112-000	YN208 SHIELD WIRE BUSHING (10MM)	1	HKENED960568	
170	9600-315000-002	A3 MECHAN ASSY (UK) REV B	1	HKENED960581	
171	6010-150110-000	A1MK2 SELECTOR KNOB (CAMA156D/A)	3	HKENED960630	
172	6010-150111-000	A1MK2 KNOB INSERT (CAMA158D/C)	7		
173	6010-150112-000	A1MK2 VOLUME KNOB (CAMA162D/C)	1		
174	6010-150113-000	A1MK2 POWER BAR (CAMA172D/A)	1		
175	6010-150117-000	A1MK2 SELECTOR KNOB WITH 18 KNURL (CAMA186D/A)	3	HKENED960630	
176	6040-010103-000	CD4 POWER KNOB	2	HKENED960630	

170	9600-315000-002	A3 MECHAN ASSY (UK) REV B	1	HKENED960581
171	6010-150110-000	A1MK2 SELECTOR KNOB (CAMA153D/A)	8	HKENED960630
172	6010-150111-000	A1MK2 KNOB INSERT (CAMA158D/C)	7	
173	6010-150112-000	A1MK2 VOLUME KNOB (CAMA162D/C)	1	
174	6010-150113-000	A1MK2 POWER BAR (CAMA172D/A)	1	
175	6010-150117-000	A1MK2 SELECTOR KNOB WITH 18 KNURL (CAMA186D/A)	5	HKENED960630
176	6040-010103-000	CD4 POWER KNOB	2	HKENED960630
177	6040-010104-000	CD4 PLASTIC STAND (FOOT)	4	
178	6040-010106-000	CD4 POWER KNOB BUSHING	2	
179	6040-011601-000	CD4 CUSHION A (BLACK) DIA. 10X3MM W/D	2	
180	6040-011603-000	CD4 CUSHION B (BLACK) 20X5X3MM W/D	2	
181	6040-011604-000	CD4 LEG PAD (BLACK) 29.5X10X3MM W/D	4	
182	6090-050112-000	CD90 PCB MOUNT (STAND OFF)	5	
183	6510-150202-000	A1 TOP COVER CAMA107D	1	
184	6510-150219-000	A1MK2 SUB PANEL (CAMA165D/C)	1	
185	6510-150222-000	A1MK2 A1/2/3 BASE (CAMA164D/D)	1	
186	6510-150223-000	A1MK2 HEAT SINK & BOARD BRACKET (CAMA170D/A)	2	
187	6520-150002-000-XXXX	A2 FRONT PANEL (CAMA150D) (PRINTED)	1	
188	6520-150002-000	A2 FRONT PANEL (CAMA150D)	1	
189	6520-150003-001-XXXX	A2 REAR PANEL (PRINTED)	1	HKENED960630
190	6520-150003-001	A2 REAR PANEL (CAMA159D/B)	1	HKENED960625
191	6600-120040-000	SCREW NUT M4X7X3	1	EARTH CONNECTION X1. HKENED960644
192	6600-180001-000	AC CORD STOPPER FOR UL (HALO 5P-4) BUSHING	1	HKENED960630 CR
193	7002-620002-112	SCREW M2.6X20 P.T.P. B/H	5	PLASTIC STAND OFF TO PCB X5. HKENED960644
194	7003-004001-111	SCREW M3X4 S TYPE B/H BLK	4	HEAT SINK LEGS TO BASE X4. HKENED960644
195	7003-006001-111	SCREW M3X6 S.T.P. B/H (BLACK)	20	TOP COVER TO REAR PANEL X2/REAR PANEL TO BASE X7/HEAT SINK &
196	7003-006001-131	SCREW M3X6 S.T.P. PW/H (BLK)	8	HEAT SINK & BOARD BRACKET TO BASE X4/TOP COVER TO BASE (L &
197	7003-006010-101	SCREW M3X6 K/H (BLK)	12	SUB PANEL TO BASE X4/FRONT PANEL TO SUB PANEL X2/SELECTOR
198	7003-008001-111	SCREW M3X8 S.T.P. B/H BLK	2	HEAT SINK & BOARD BRACKET TO HEAT SINK BASE X2. HKENED960644
199	7003-008002-111	SCREW M3X8 P.T.P. B/H (BLACK)	9	SPEAKER TERMINAL TO REAR PANEL XG/RCA TERMINAL TO REAR PANEL
200	7003-012001-111	SCREW M3X12 S.T.P B/H, BLK.	8	TRANSISTOR TO HEAT SINK BASE X8. HKENED960644
201	7003-012010-002	SCREW M3X12 M/C PLASTIC KNOB/H W/EXT TOOTH WSHR ZN	1	AT REAR PANEL GROUND POSITION 1. HKENED960644
202	7004-010010-022	SCREW M4X10 M.C. P/H	1	EARTH CONNECTION X1. HKENED960644
203	7103-206504-082	EX-TOOTHED LOCK WASHER M3	1	AT INPUT PCB EARTH WIRE TO HEAT SINK BRACKET SCREW X1.
204	7104-308504-082	EX-TOOTHED LOCK WASHER M4	1	EARTH CONNECTION X1. HKENED960644
205	8500-115020-300	A3 HEAT SINK ASSY	1	
206	6510-150225-000	A1MK2 HEAT SINK PLATE (CAMA182X)	12	
207	6510-150226-000	A1MK2 HEAT SINK LEG (CAMA181D/B)	2	
208	6510-150229-000	A3 HEAT SINK BASE (CAMA1800D/X2)	1	6510-150224-000 REPLACE
209	7003-008001-111	SCREW M3X8 S.T.P. B/H BLK	4	HKENED960630
210	9700-315000-002	A3 PACKING ASSY (UK) REV B	1	HKENED960591
211	5000-101500-100	A1 POLYFOAM-PACKAGING	2	
212	5013-400000-200	CARTON BOX CD4 W/HANDLE	1	
213	5100-100000-100	IM CAMBRIDGE AUDIO A1/A2/A3 V/E WHT/BLUE	1	
214	5103-101500-001	WARRANTY CERTIFICATE CAMBRIDGE AUDIO 205X210 V/E	1	
215	5110-031500-100	A3 LABEL (MODEL NO) FOR BOX	1	
216	5110-100000-900	ISO 9002 LABEL	1	
217	5110-300000-100	CARTON BOX LABEL FOR A3 (UK) (EU) (EBS) V/E	1	HKENED960644
218	5113-000000-000	SERIAL NUMBER LABEL, BLANK (6.5X35.5MM)	3	
219	5117-101500-100	CAMBRIDGE AUDIO GUARANTEE CARD ENVELOPE-BLUE	1	
220	5200-173260-040	POLYBAG 173X260X4C MM	1	
221	5200-515470-045	POLYBAG 51.5X47X4C CM	1	HKENED960630
222	5206-500160-050	E.P.E. SHEET P-EP500160-05	1	


SAFETY CRITICAL
MAINS TRANSFORMER
MAINS SWITCH
MAINS SOCKET
FL1 T4A
120V
C700
10nF
630V
BRUN
ROUGE
JAUNE
BLEU
ORANGE
GRIS
ON CONTROL PCB
FL201 4A
FL202 4A
R202
0.05R
3W
R201
0.05R
3W
C201
100nF
C202
100nF
D201
PW04
D202
PW04
D203
PW04
D204
PW04
C203
100nF
C204
100nF
+35V
+34V
D210
1N4001
C205
10000uF/50V
C216
470uF
63V
C218
100nF
GND
C206
10000uF/50V
C217
470uF
63V
C219
100nF
D211
1N4001
-34V
-35V
D205
1N4001
D206
1N4001
R210
1K0
R211
1K0
R209
3K3
C209
100nF
C210
47uF
ZD201
BZX55C/15V
C220
100nF
R212
910Ω
Q204
BC546
Q205
BC546
OVER-CURRENT PROTECTION
C207
47uF
63V
R218
2M2
D208
1N4148
R222
1K0
D209
1N4001
RL1:A
RELAY
R205
2M2
R203
160K
R206
100K
R207
10K
D207
1N4148
C208
1nF
R204
5K1
Q201
BC546
Q202
BC546
R208
39K
Q203
BC546
OVER-TEMPERATURE PROTECTION
R217
100K
Q210
BC556
Q211
VN10KM
R220
22K
R219
2M2
C215
4u7
63V
Q212
BC556
R221
5K6
J2
CONN-H2
SW304
SPEAKERS MUTE
ON INPUT PCB
R213
68K
R214
6K8
C211
100uF
16V
N/P
C212
1nF
Q206
BC546
Q207
BC546
R CH
DC PROTECTION INPUTS
L CH
R215
68K
R216
6K8
C213
100uF
16V
N/P
C214
1nF
Q208
BC546
Q209
BC546
DC OUTPUT PROTECTION
TIME DELAY AND RELAY SWITCHING
E B C
S G D
BC546
BC556
VN10KM
COPYRIGHT M CREEK
TITLE:
CAMBRIDGE A3 PSU
REV
DOC:
CHKD BY:
BY JBB
DATE: 21/10/96
SHEET: 3 OF 3


INPUT PCB
CONTROL PCB
POWER LED
CN302
TO POWER BOARD
-34V
+34V
R CH
L CH
GND
GND
R310 68K
Q302 BC550C
Q303 BC550C
C308 220nF
R313 3K3
C309 47uF/35V
R305 2M2
C317 100pF
R311 100R
C311 10uF 35V
R314 39K
C305 1nF 1%
C303 47uF/50V
R306 91K
C304 3n3/1% C302 1uF 50V
Q304 BC550C
R304 1K0
C306 10uF 25V
R308 1K0
R307 68K
R302 150K
R312 12K
C307 10uF 25V
Q301 BC550C
Q305 BC550C
LED301 GREEN
C310 47uF 25V
R303 K62
R309 K33
AUX
SW301.1
C301 220pF
R301 100K
SW301.2
SW302.2
SW302.1
SW303.2
SW303.1
SKT301
SKT302
SKT303
VIDEO
TUNER
CD DIRECT
TAPE
REC/PB
R315 10K
R316 100K
C312 1uF
R317 47K
R320 33K
C314 10uF
R319 33K
C316 100nF
C416 10uF
IC301:1 AD712
C313 15pF
C315 10uF
R321 68K
R318 100K
SOURCE
R CH
L CH
CN301
CN501
R501 30R
VR501 LM317Z
VO
VI
C501 10uF
R503 240R
C503 10uF
R504 4K7
C502 10uF
RV1 50K BALANCE
RV2 50K VOLUME
C508 220pF
R512 2K2
DIRECT
SW501
TONE
MUTE
R510 910K
R514 2K2
R513 2K2
R511 K10
R505 100K
+15V
IC501:1 AD712
TREBLE
RV3 100K
C504 47pF
R507 6K8
R509 100K
C511 100nF
ZD501 15V
C509 100nF
ZD502 15V
C510 100nF
R506 18K
C505 1nF
R508 18K
BASS
RV4 100K
C506 68nF
C507 68nF
LEFT CHANNEL ONLY SHOWN
FOR RIGHT CHANNEL ADD 100 TO DESIGNATION
COPYRIGHT M CREEK
TITLE: A3i INPUT & CONTROL
REV:
DOC:
CHKD BY:
BY: JBB
DATE: 23/10/96
SHEET: 1 OF 3



LEFT CHANNEL ONLY SHOWN

FOR RIGHT CHANNEL ADD 100 TO DESIGNATION

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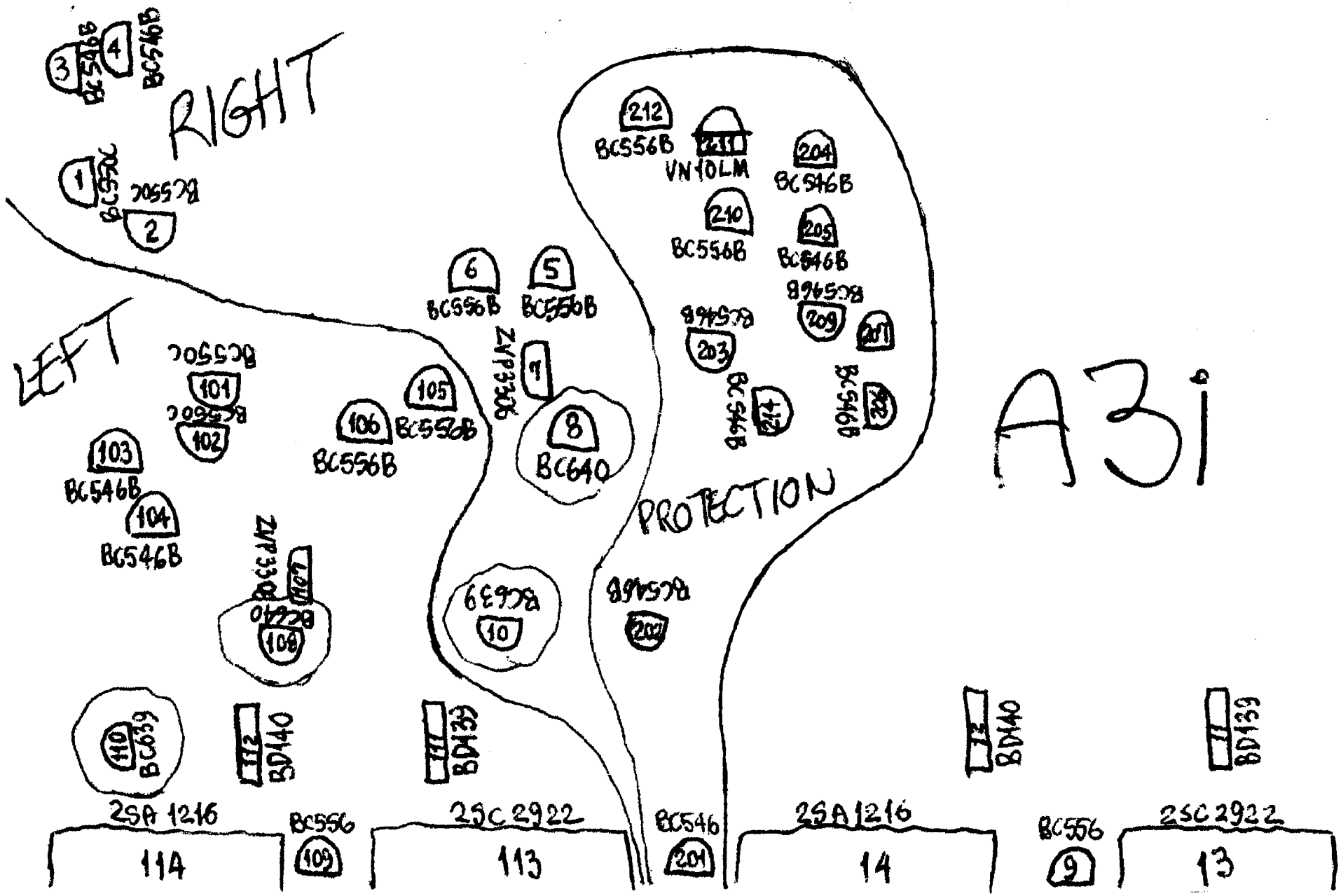
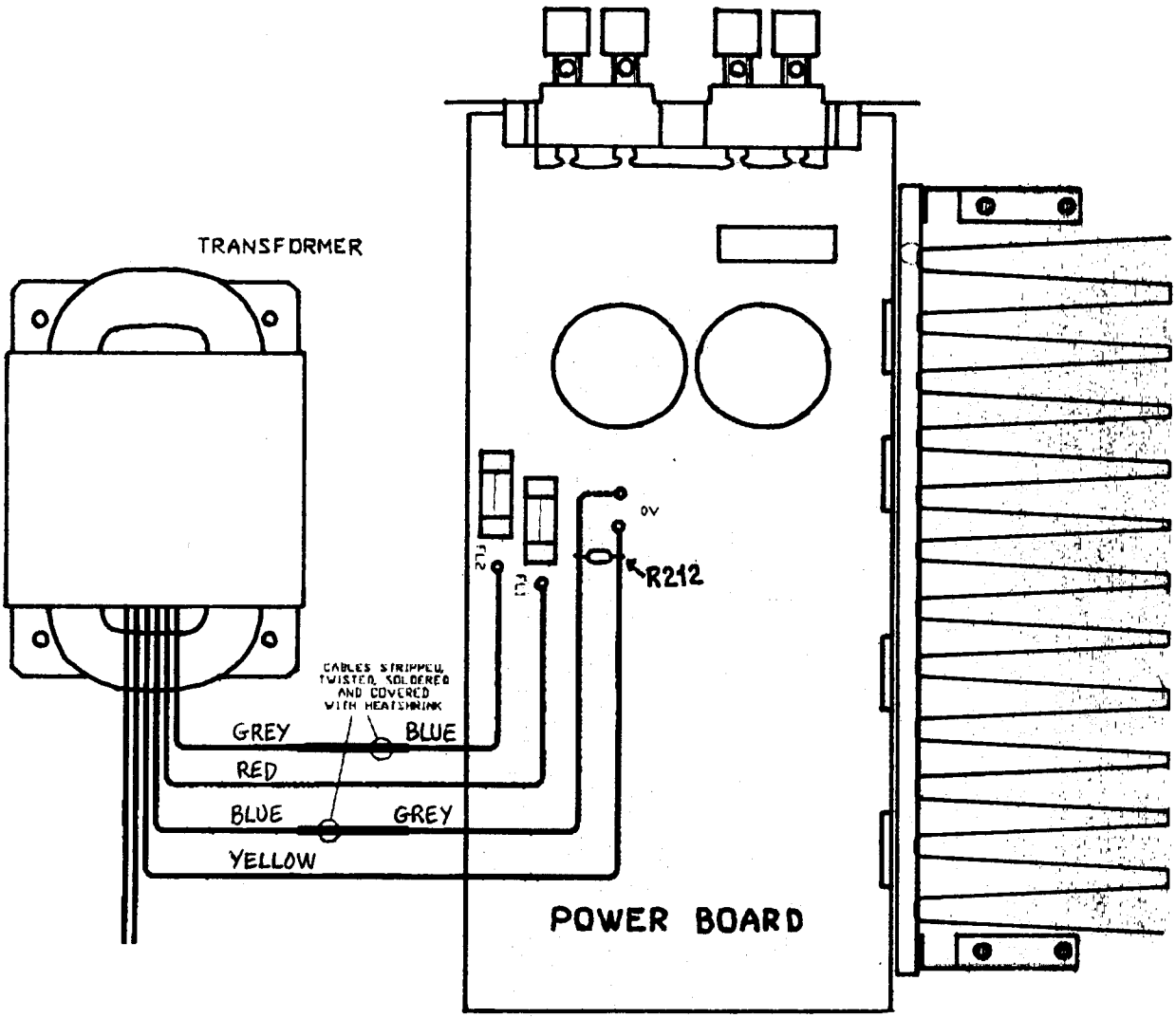
TITLE	
CAMBRIDGE AUDIO POWER AMP	
DWG	
CHKD BY	BY JEE
DATE 23/10/96	SHEET 2 OF 2


A3i
RIGHT
LEFT
PROTECTION
BC556B
BC546B
BC640
ZVP3306
VN10LM
2SA1216
2SC2922
BD140
BD139
BC639
BC556
BC546
114
113
14
13

A3i transformer Hum Modification
16/1/97

PROBLEM : R-Core transformer has excessive hum levels, even when the unit is idling. The hum is airbourne and not transmitted through the casework.

SOLUTION : The phase of one of the secondary windings of the transformer needs to be reversed by following this procedure :-



1. Ensuring the unit is unplugged, remove the lid and locate the blue and grey cables connecting the R-Core transformer to the power amp board. (See Fig. 1).

2. Cut the blue and grey cables somewhere in the centre.

3. Strip back the insulation of both ends of the blue and grey cables by 10mm.

4. Place two 30mm tubes of heatshrink (Around 4mm diameter unshrunk will be suitable) on to the cables.

5. Twist the exposed conductors of the blue cable from the transformer with those of the grey cable from the board and solder.
6. Repeat with the grey cable from the transformer and the blue cable from the board.

7. Insulate soldered joints with heatshrink.

8. Redress cables neatly and test unit.

To: Daniel Jacques
Fax: 001 514 493 4547

Plurison
C.C. Ghislane Dalcourt

Date: 24.1.97

Reference: Mod to A3i

You are right that connecting the transformer in the correct phase does have an impact on the protection circuit. When the transformer was incorrectly connected the protection circuit was not operating the way we designed it.

We designed the muting relay to cut out when the current drawn from the power supply exceeded 4.5 - 5.0 Amps and we also built in a time delay so the unit could handle musical peaks above this level. Under bench conditions when driving a dummy load with a sine wave you will be able to make the relay cut out due to the high continuous current the unit is drawing but under music conditions we believe you will find the unit is fine.

If you wish to modify the unit to provide a higher current before limiting it is in order to change the resistor R212 from 3k0 to 910Ω which is most easily achieved by soldering a 1k3 piggy back across the 3k0

The service manual is being prepared and in the meantime please find attached the circuit diagram.

If you have any further queries please let me know, I look forward to hearing from you again soon.

Kind regards

Mike

the **audio** partnership

Richard Stockley
Product development director

Audio Partnership Plc
Richer House, Hankey Place, London, SE1 4BB England

Tel +44 171 357 8989
Fax +44 171 357 9222

To: **Yanion**
Attention: **Jason Chee** **cc James Johnson-Flint, John Westlake**
Date : **29 April, 1997**
Subject: **A3i Production**

Dear Jason

Product - A3i Power Board

Problem - Over current/short circuit protection cuts in too early when driving low impedance speakers.

Solution - Change resistor R212 to 910R 1/4 watt metal film resistor.

Apply to - All future production and any boards that are not fitted to units

Effects of change - Output power increases to >90 watts into 4R load when driven with a 1kHz sine wave (both channels driven)

Serial numbers - Inform AP, London of serial number when change is actioned.

Best regards

Richard

plurison

FAX

Date : February 11 1998	From / De : Michel Charest
To/ À :	Attention : Service department
Référence : Cambridge A3i Service Informations	

Some A3i exhibit a thermal runaway problem that usually happens only on one channel. When the problem happens one of the four led goes off and the amp goes into protection mode by powering the relay. As an indication, just before the relay protects, a loud thump is heard. If the unit is left on for too long after that it will get hot as hell and eventually burn the output transistors.
To cure the problem you have to replace the four green led by any T-1¾ green led you can find as long as they are all the same.
Make sure that the output transistors are all well tightened to the heat sink. for the screws behind the relay and capacitors, use a "vise grip".

Michel Charest

PLURISON, 7964 Alfred, Anjou, Québec, H1J 1J1
Tel. 514-493-9352 Fax : 514-493-4547

Audio Partnership Plc

Neil Firth
Electronic Design Engineer

Direct Line: + 44 (0) 171 551 5411
Main Tel: + 44 (0) 171 940 2200
Office Fax: + 44 (0) 171 940 2233
E-mail: richap@netcomuk.co.uk

To : **Fabio** **Date :** -

Fax : **-** **No of Pages :** 1

Re : **A3I** **CC :** -

Dear Fabio,

Here are the modifications to be applied to A3is that have failed output stages **ONLY**.

1. Replace output stage. ← EVEN IF OUTPUT STAGE HAS NOT BLOWN IT WILL BE WORTH RAISING THE LEDS.
2. Replace all LEDs (LED1/LED2/LED101/LED102) keeping them at least 10mm from the PCB. This can be done using spacers, or any small piece of insulating tubing. (At present, we cannot supply the spacer as we are waiting for delivery ourselves). ← IF THEY HAVE BLOWN.
3. It is recommended that if no tubing is used, that the LED legs are protected by heatshrink to prevent shorting, against other components **AND** themselves. If this happens, the output stage will blow again.

Please inform me of any new developments with this issue.

Best wishes,

Neil Firth,
Electronic Design Engineer.

FROM : AUDIO PARTNERSHIP PLC H.K. PHONE NO. : 0852 2405 0631 Feb. 19 1998 08:25PM P3