

840W Power Amp.

Issue Date: November 2008

SERVICE MANUAL – AP23914/1



Specifications:

Power Output – Stereo / Mono

200W per channel 8 Ohms
350W per channel 4 Ohms

Power Output – Bridged Mono

500W 8 Ohms
800W 4 Ohms

THD (unweighted)

< 0.001% 1kHz
< 0.005% 20Hz – 20kHz

Frequency Response

5Hz – 80kHz – 1dB

S/N ration (ref 1W/8 Ohm)

> 90 dB (unweighted)

Sensitivity

Stereo or Mono =
(for 200W 8 Ohms) 1.5V rms unbalanced
1.5 + 1.5V rms balanced

Bridged Mono =
0.775V rms unbalanced
0.775V + 0.775V rms balanced

Input Impedances

Balanced input 38 kOhm
Unbalanced input 68 kOhm

Damping factor

> 125 at 1 kHz

Trigger In

5 – 12V AC or DC

Trigger Out

12V DC @ 100mA

Power consumption

Maximum 2400W
Active (no signal) < 180W
Standby < 5W

Dimensions (H x W x D)

148 x 430 x 365mm
(5.8 x 16.9 x 14.4")

Weight

19.6kg (33lbs)

CAMBRIDGE AUDIO AZUR 840W POWER AMP SERVICE MANUAL

TABLE OF CONTENTS

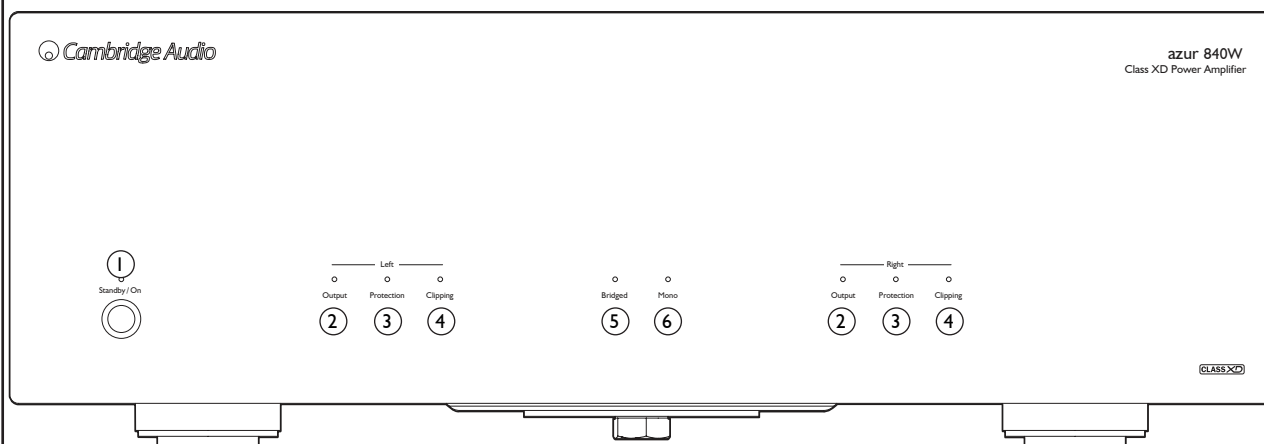
Specifications	1
Table of Contents	2 - 3
Front Panel Details	4
Rear Panel Connections	5
Safety Instructions	6
Service Adjustment Procedure	7
Exploded Drawing	8
Exploded Drawing Parts List	9
Power PCB Schematic	10
Power PCB Schematic (Revision 1)	11
Power PCB Layout	12
Power PCB Layout (Revision 1)	13
Power Board Bill of Materials	14
Power Board Bill of Materials (Updated Revision)	15
Input PCB (Mains Circuitry) Schematic	16
Input PCB (Mains Circuitry) Schematic (Revision 1)	17
Input PCB (Audio Right) Schematic	18
Input PCB (Audio Right) Schematic (Revision 1)	19
Input PCB (Microcontroller) Schematic	20
Input PCB (Microcontroller) Schematic (Revision 1)	22
Input PCB (Audio Left) Schematic	22
Input PCB (Audio Left) Schematic (Revision 1)	23
Input PCB Layout	24
Input PCB Layout (Revision 1)	25

TABLE OF CONTENTS Cont

Input PCB Board Bill of Materials_____	26 - 27
Power Amp Schematic_____	28
Power Amp Power Supplies Schematic_____	29
Power Amp PCB Layout_____	30
Power Amp Module Bill of Materials_____	31 - 32
Control Bus PCB Layout_____	33
Control Bus PCB Schematic_____	34
Control Bus Bill of Materials_____	35
Control Bus Bill of Materials (Updated Revision)_____	36
Mode Switch PCB Schematic_____	37
Mode Switch PCB Layout_____	38
Mode Switch PCB Layout (Revision I)_____	39
Mode Switch Bill of Materials _____	40
Mode Switch Bill of Materials (Updated Revision)_____	41
On/Standby Switch Schematic_____	42
On/Standby Switch PCB Layout_____	43
On/Standby Switch Bill of Materials_____	44

Cambridge Audio Azur 840W Power Amplifier

Front panel controls



① Standby/On

Switches the unit between Standby mode (indicated by dim power LED) and On (indicated by bright power LED). Standby mode is a low power mode where the power consumption is less than 10 Watts. The unit should be left in Standby mode when not in use.

When the 840W is switched out of Standby mode it will automatically check for faults and allow the power amplifier stages to stabilise before un-muting the speaker outputs.

Note: The protection LEDs will flash whilst this check is being done.

② Output

Indicates that the Left or Right output is active. The LED (light-emitting diode) is on for an active output, off for inactive (i.e. muted).

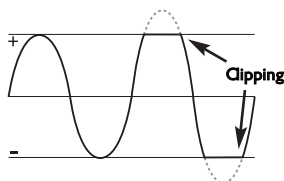
③ Protection

If this LED is constantly on the 840W has detected a fault on either the Left or Right channel and is protecting itself.

④ Clipping

This LED indicates that the 840W has detected that either the Left or Right channel is being overdriven or clipped.

Clipping distortion is caused at high volume levels when the output signal attempts to go outside the maximum voltage that the connected pre-amplifier can provide, causing the tops of the signal to flatten off.



When the 840W detects clipping this LED will briefly flash. If the clipping reaches a dangerous amount that could damage the amplifier or attached speakers the unit will then go into protection.

⑤ Bridged

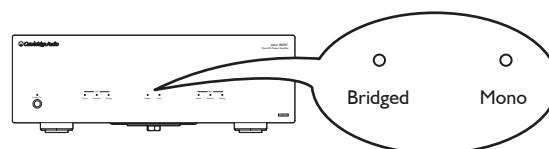
This LED indicates that the 840W is being used in Bridged mode. (The Mono LED will also be illuminated.)

⑥ Mono

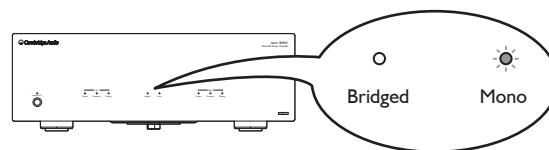
This LED indicates that the 840W is being used in a Mono mode.

LED indicators

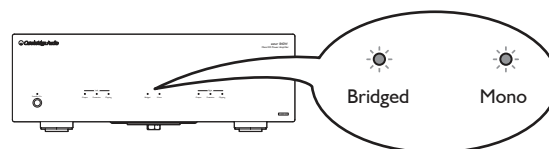
Stereo output:



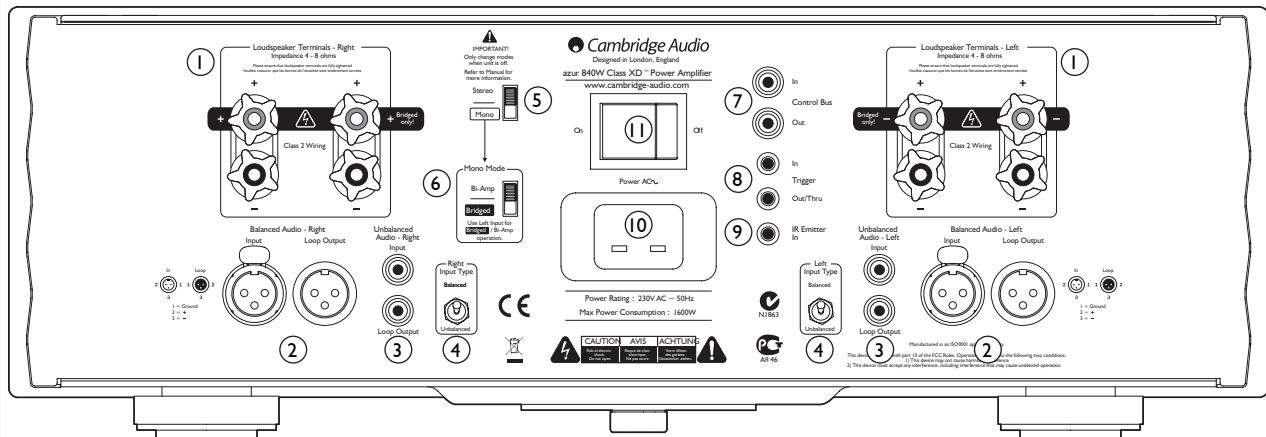
Mono output:



Bridged Mono output:



Cambridge Audio Azur 840W Power Amplifier



① Loudspeaker terminals

For normal wiring, connect the wires from your left channel loudspeaker to the LEFT + & - terminals, and the wires from the right channel loudspeaker to the RIGHT + & - terminals. In each case, the red terminal is the positive output and the black terminal is the negative output.

Other dual mono schemes are also possible if two 840Ws are used. Refer to later sections of this manual for more information.

Use speakers with a nominal impedance of between 4-8 ohms. Care should be taken to ensure no stray strands of wire short the loudspeaker outputs together. Please ensure that the loudspeaker terminals have been tightened completely to provide a good electrical connection. It is also possible for the sound quality to be affected if the screw terminals are loose.

Audio input types

The 840W features either unbalanced (phono/RCA) or balanced (XLR) input connections. Either type may be used but not both at the same time. The balanced connection is the higher quality option and can reject noise and interference in the cable when used with other equipment that supports this function. An XLR connector is wired Pin 1 - Ground; Pin 2 - Hot (in-phase); Pin 3 - Cold (phase-inverted).

Use the Left and Right Input Type switch (Item 4) to select the connection type you wish to use. When using either the balanced or unbalanced input, make sure that no cables or equipment are connected to the unused input, as this may degrade operation. The unused input does not need to be terminated and this should not be done.

② Balanced Audio

For connection to the balanced XLR outputs of suitable pre-amplifiers that have this kind of output (such as our own 840E model). The pre-amplifier used should be capable of providing at least 1V rms of output per phase (i.e. at both of + and - terminals of the XLR, more is also fine). Nearly all modern pre-amplifiers fulfill this requirement.

③ Unbalanced Audio

For connection to the normal (single ended) RCA/Phono outputs of a suitable pre-amplifier (such as our own 840E model). The pre-amplifier used should be capable of providing at least 1V rms of output (more is fine). Nearly all modern pre-amplifiers fulfil this requirement.

④ Input Type switch

Use to select a balanced or unbalanced connection type for the input.

⑤ Stereo/Mono mode switch

Switches the 840W between 'normal' Stereo operation (where one 840W is used for a pair of speakers) and Mono operation (where two 840Ws are used one for each speaker). Refer to later sections of this manual for more information.

⑥ Mono mode switch

When Mono mode has been selected, switches the 840W between Bi-Amped Mono and Bridged Mono. Refer to later sections of this manual for more information.

⑦ Control Bus

In - Allows un-modulated commands from multi-room systems or other components to be received by the unit.

Out - Loop out for Control Bus commands to another unit.

The 840W can also be switched between On and Standby mode by connecting the Control Bus output of an 840E pre-amplifier to the Control Bus input of the 840W. Refer to the 'Power syncing' section of this manual for more information.

⑧ Trigger In, Out/Thru

For Custom Install use, the 840W can be turned on and off (i.e. brought in and out of Standby mode) by the presence of 5-12V DC at the Trigger input. A trigger input will also produce an internally generated 12V DC trigger output at the Output/Thru connection. Turning the 840W on from the front panel also produces a 12V DC trigger output at the Output/Thru connection. This can be used to turn on/Standby other connected power amplifiers or other equipment if desired. Refer to the 'Power syncing' section of this manual for more information.

⑨ IR (Infra-Red) Emitter In

Allows modulated IR commands from multi-room systems or IR repeater systems to be received by the unit. Commands received here are not looped out of the Control Bus. Refer to the 'Custom installation' section for more information.

⑩ AC power socket

Once you have completed all connections to the unit, plug the AC power cable into an appropriate mains socket then switch on. Your unit is now ready for use.

⑪ Power On/Off

Switches the unit on and off. If the 840W is not going to be used for long periods of time it should be turned off using this switch.

Cambridge Audio Azur 840W Power Amplifier

Important safety instructions

For your own safety please read the following important safety instructions carefully before attempting to connect this unit to the mains power supply. They will also enable you to get the best performance and prolong the life of the unit:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. 
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as the power-supply cord or plug being damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING - To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.

The unit is of Class I construction and must be connected to a mains socket outlet with a protective earthing connection.

The unit must be installed in a manner that makes disconnection of the mains plug from the mains socket outlet (or appliance connector from the rear of the unit) possible. Where the mains plug is used as the disconnect device, the disconnect device shall remain readily operable. Only use the mains cord supplied with this unit.

Please ensure there is ample ventilation (at least 10cm clearance all round). Do not put any objects on top of this unit. Do not situate it on a rug or other soft surface and do not obstruct any air inlets or outlet grilles. Do not cover the ventilation grilles with items such as newspapers, table-cloths, curtains etc.

This unit must not be used near water or exposed to dripping or splashing water or other liquids. No objects filled with liquid, such as vases, shall be placed on the unit.



The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of un-insulated 'dangerous voltage' within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the service literature relevant to this appliance.

WEEE symbol



The crossed-out wheeled bin is the European Union symbol for indicating separate collection for electrical and electronic equipment. This product contains electrical and electronic equipment which should be reused, recycled or recovered and should not be disposed of with unsorted regular waste. Please return the unit or contact the authorised dealer from whom you purchased this product for more information.

CE mark



This product complies with European Low Voltage (2006/95/EC) and Electromagnetic Compatibility (89/336/EEC) Directives when used and installed according to this instruction manual. For continued compliance only Cambridge Audio accessories should be used with this product and servicing must be referred to qualified service personnel.



C-Tick mark

This product meets the Australian Communications Authority's Radio communications and EMC requirements.



Ross Test Stamp

This product meets Russian electronic safety approvals.

FCC regulations

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER AUTHORITY TO OPERATE THE EQUIPMENT.



This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

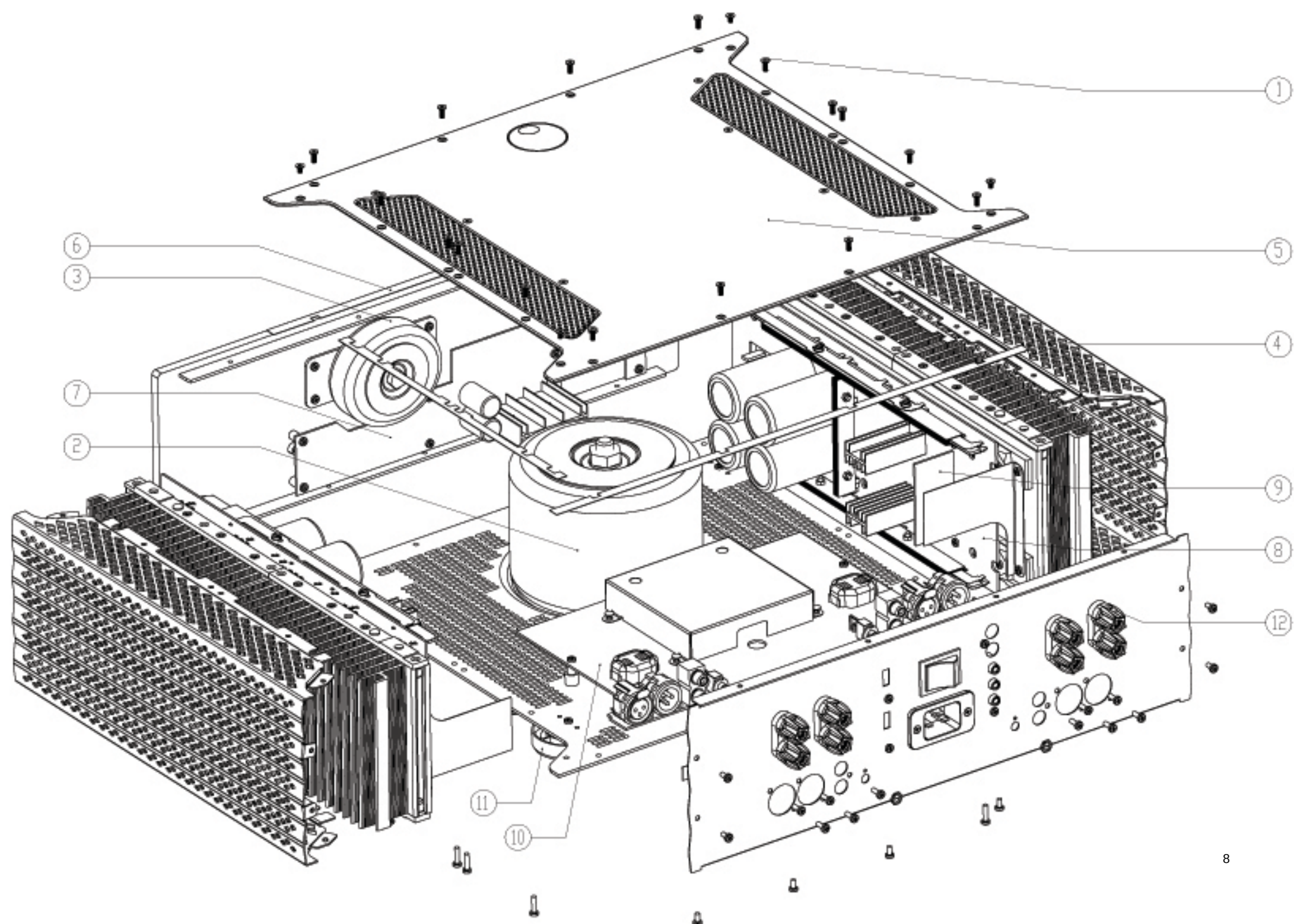
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Service Adjustment Procedure

The Bias should be 14mV when the 840W is up to temperature, this is measured across each emitter resistor individually (R21/R22), as there is a single adjustment for both get as close as possible. Because of the very large mass of metal in the main heatsink, the power amplifier module takes a long time to reach thermal equilibrium. This table gives a guide to how the DC Bias voltage, as measured at CN1, varies over time when the bias is set correctly. Thus if the bias is being set 9 minutes after turning the module on, (9 minutes is the average duration of this test procedure) setting the bias to 15mV will result in the correct value of 14 mV being reached during long-term operation.

Time in minutes	Temp (°C) Main heat sink	Temp (°C) Driver Heat sink 1	Temp (°C) Driver Heat sink 2	V Bias (mV +/-1mV)
0	26.0	25.6	25.6	40
1	27.8	31.0	30.8	25
5	31.0	37.8	38.0	17
9	32.4	40.8	41.6	15
13	33.0	41.4	42.4	14
17	33.8	42.4	42.4	14



Cambridge Audio Azur 840W Power Amp

Drawing ref	AP part number	Factory code	Description
1	PY1228	7003-008010E002	Screw M3*8 M/C 1/K TORX RECESS ZINC-PT
1	PY1229	7003-008010E001	Screw M3*8 M/C 1/K TORX RECESS BLACK-PT
2	PY1378	3200-073542E000	Azur 840W 230V MAIN TRANSFORMER TI-073520
2	PY1379	3200-073542E000	840W 115V MAIN TRANSFORMER TI-073542
3	PY1460	3200-074050E000	Azur 840W 230V STB TRANSFORMER T074050
3	PY1461	3200-077810E000	840W 115V STB TRANSFORMER T07781
4	PY1464	6584-150006E000-01	Azur 840W MESH SIDE PANEL BLACK PAINTED
4	PY1462	6584-150006E000-02	Azur 840W MESH SIDE PANEL SILVER PAINTED
5	PY1465	6584-150009E000-01	Azur 840W TOP PANEL BLACK PAINTED
5	PY1463	6584-150009E000-02	Azur 840W TOP PANEL SILVER PAINTED
6	PY1466	6584-150027E000-01	Azur 840W FRONT PANEL-B ARTWORK (metalwork only)
6	PY1467	6584-150027E000A01	Azur 840W FRONT PANEL-S ARTWORK (metalwork only)
	PY1468	8584-035000E301	Azur 840W BLACK FRONT PANEL ASSY REV A
	PY1469	8584-035010E301	Azur 840W SILVER FRONT PANEL ASSY REV A
7	PY1470	9484-035000E071	Azur-840W POWER PCBA REV A
7	PY1520	9484-035000E072	Azur-840W POWER PCBA * Surface Mount version
8	PY1471	9484-035000E091	Azur-840W MAIN AMP PCB ASSY REV A
9	PY1472	9484-035001E091	Azur-840W SUB MAIN AMP PCB ASSY REV A
10	PY1473	9484-035000E341	Azur-840W INPUT PCBA 230V REV A
10	PY1522	9484-035001E342	* Revised Input PCBA 115 V
10	PY1523	9484-035000E342	* Revised Input PCBA 230 V
11	PY1122	6074-150004E000	Azur 840A plastic foot black
11	PY1124	6074-150004E000A01	Azur 840A plastic foot silver
	PY1262	6600-070166E000	Azur 840A foot pad
12	PY1118	2331-004909E301	Speaker binding post (set)
	PY1521	9484-035000E112	Azur 840W Control Bus PCBA
	PY1524	9484-035001E172	Azur 840W mode switch PCBA

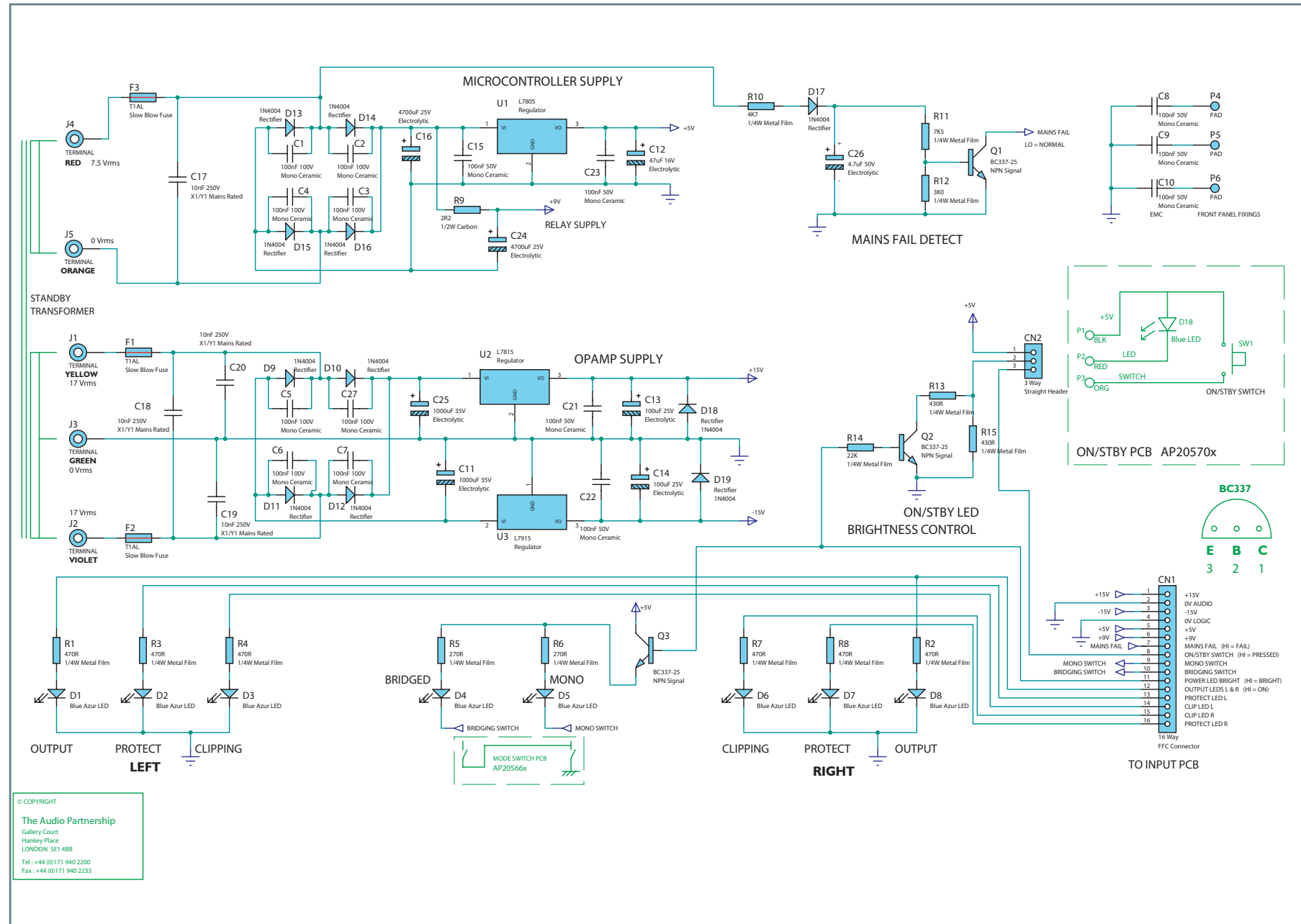
* Note that production after the first lot use revised PCB layout and
Production after 0810 are the new build

Service extension leads:

PY1389	2501-037001E230	Input PCB to power amp 700mm screened extension cable (links input PCB CN6 (L) or CN13 (R) to power amp CN7)
PY1390	2503-104506E690	Input PCB to power amp 450mm screened 10 way FFC (links input PCB CN3 (L) or CN18 (R) to power amp CN8)

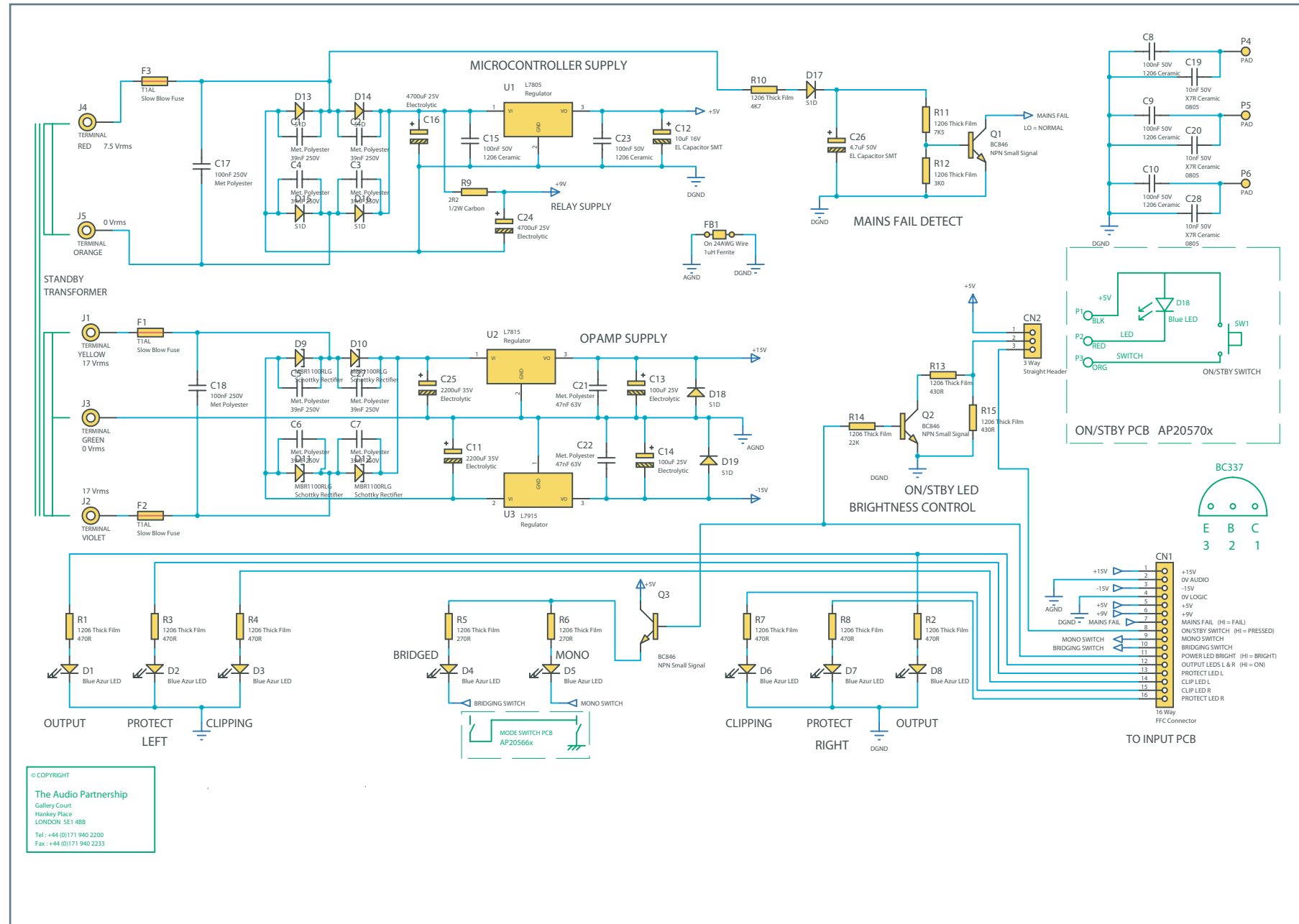
Exploded Drawing Parts List

Cambridge Audio Azur 840W Power Amplifier



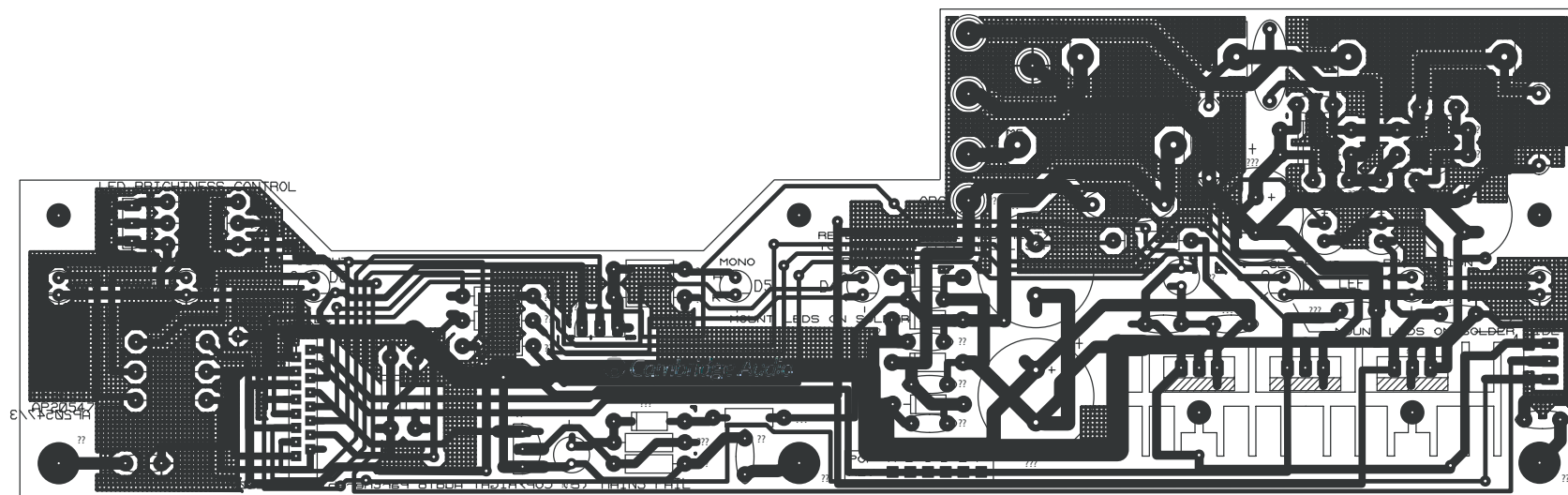
Power Circuit Board Schematic

Cambridge Audio Azur 840W Power Amplifier

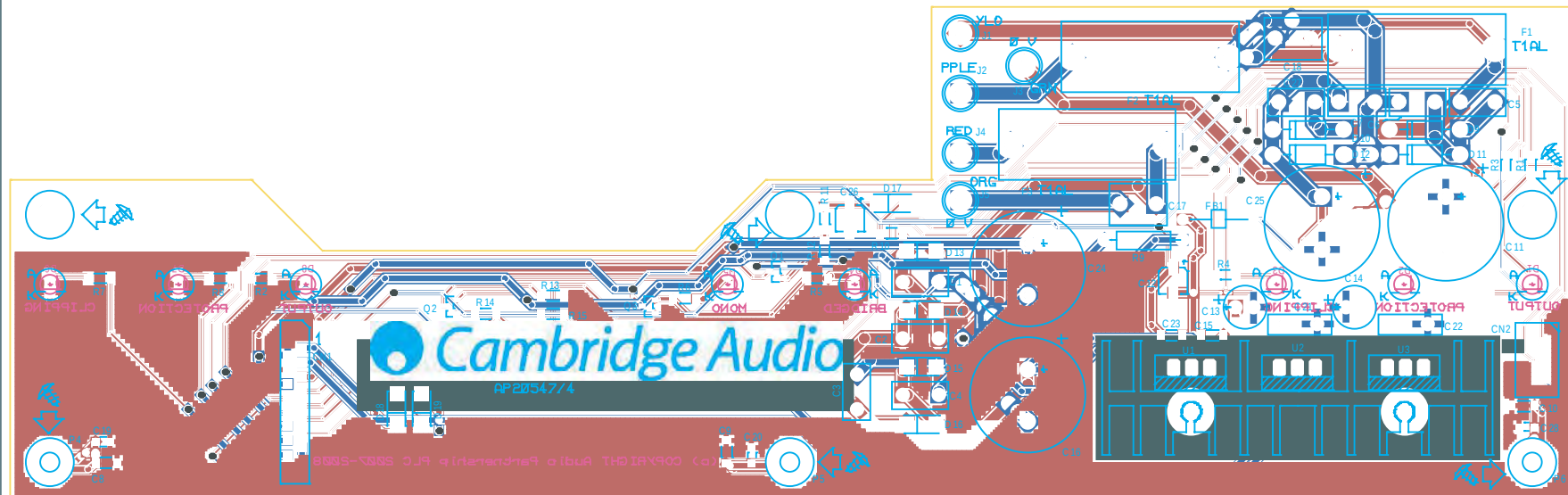


Power Circuit Board Schematic (Revision I)

Cambridge Audio Azur 840W Power Amp



Cambridge Audio Azur 840W Power Amplifier



Power Circuit Board PCB Layout (Revision I)

Cambridge Audio Azur 840W Power PCB (AP20549/4)

	Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	Factory P/N	NOTES
RESISTORS									
1	2R2	1/2W Carbon	1	R9		10%	12mm Pitch		
2	270R	1/4W Metal Film	2	R5, R6		1%	10mm Pitch		
3	430R	1/4W Metal Film	2	R13, R15		1%	10mm Pitch		
4	470R	1/4W Metal Film	6	R1-R4, R7, R8		1%	10mm Pitch		
5	3K0	1/4W Metal Film	1	R12		1%	10mm Pitch		
6	4K7	1/4W Metal Film	1	R10		1%	10mm Pitch		
7	7K5	1/4W Metal Film	1	R11		1%	10mm Pitch		
8	22K	1/4W Metal Film	1	R14		1%	10mm Pitch		
CAPACITORS									
9	10nF 250V	X1/Y1 Mains Rated	4	C17-C20		20%		1110-103094-001	
10	100nF 100V100nF 100V	Mono Ceramic	8	C1-C7, C27		10%	5mm Pitch	1106-104064-001	
11	100nF 50V	Mono Ceramic	7	C8-C10, C15, C21-C23		10%	5mm Pitch	1100-104043-000	
12	4.7uF 50V	Electrolytic	1	C26		20%		1102-477044-000	5mm Dia
13	47uF 16V	Electrolytic	1	C12		20%	5mm Dia	1102-470014-000	
14	100uF 25V	Electrolytic	2	C13, C14		20%	6mm Dia	1102-101024-000	
15	1000uF 35V	Electrolytic	2	C11, C25		20%		1102-102034-000	
16	4700uF 25V	Electrolytic	2	C16, C24		20%	16mm Dia	1102-472024-001	
CONNECTORS									
17	16 Way	FFC Connector	1	CN1	D100-SSV-16		Through Hole	2301-016501E001	
18	3 Way	Straight Header	1	CN2	B3B-XH-A		2.5mm Pitch	2300-003100-004	
DIODES									
19	Blue Azur LED	3mm	8	D1-D8	HFB963M-130			3100-000030-003	8mm spacing LED base to PCB
20	400V 1A	Rectifier	11	D9-D19	1N4004		DO41	1401-140040-000	
FUSES									
21	T1AL	Slow Blow Fuse	3	F1-F3			20mm		
22		Fuse Holder Base	3	F1-F3	PTF78 (or equivalent)	20mm Pitch	4031-780000E000		
23		Fuse Holder Cover	3	F1-F3	PTF78 (or equivalent)	20mm Pitch	4034-780000E000		
INTEGRATED CIRCUITS									
24	+5V	Regulator	1	U1	L7805		TO220	4178-050334E700	
25	+15V	Regulator	1	U2	L7815		TO220	4178-150302E600	
26	-15V	Regulator	1	U3	L7915		TO220	4179-150302E600	
TRANSISTORS									
27	45V 300mA	NPN Signal	3	Q1-Q3	BC337-25		TO92	1300-337000-100	

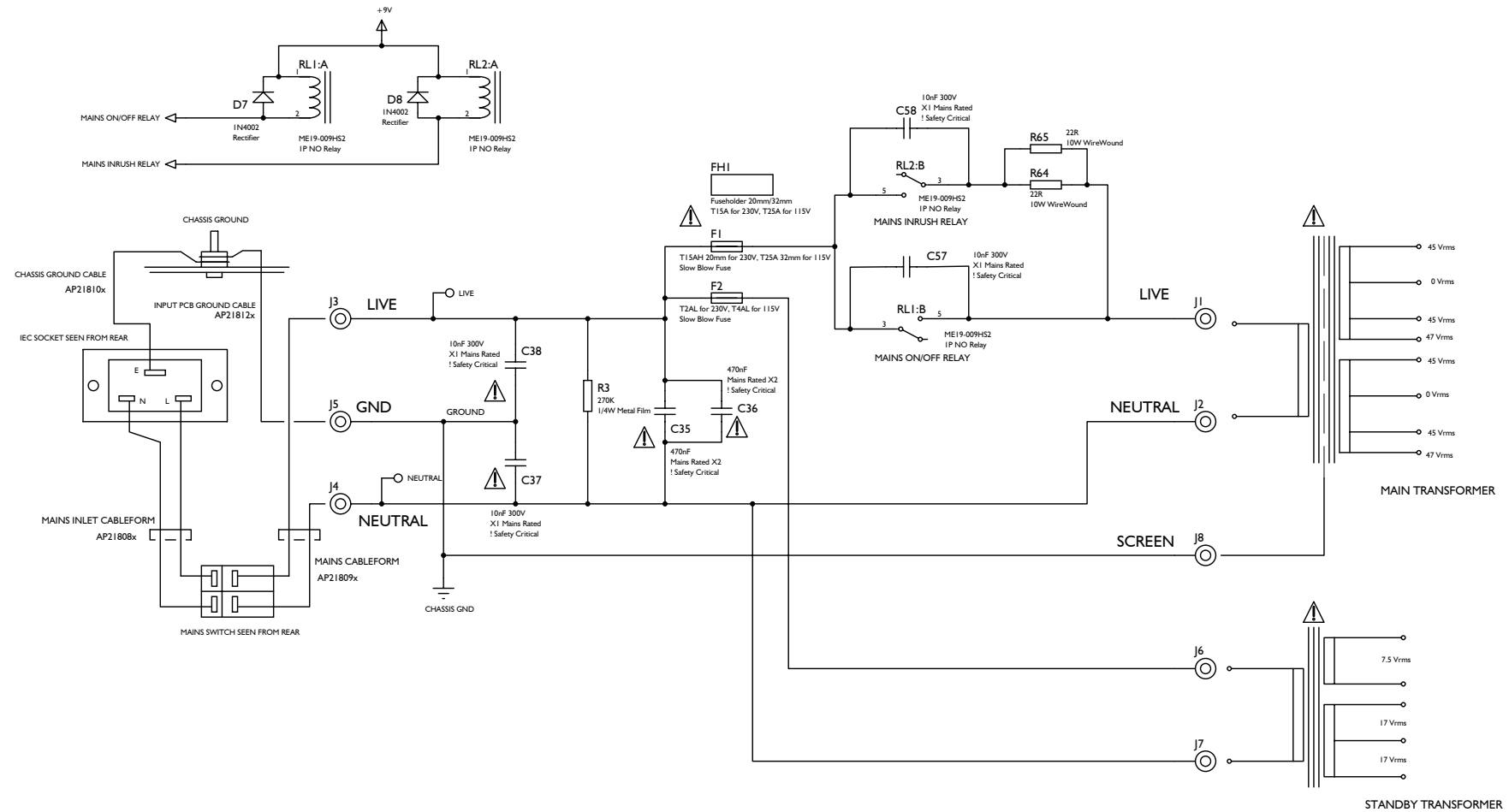
Note: resistors, capacitors and other 'generic' components are not usually stocked by the manufacturer. Please obtain these locally.

Cambridge Audio Azur 840W Power PCB BOM- (AP20549/5)

Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	Factory P/N	NOTES
RESISTORS								
1	2R2	1/2W Carbon	1	R9		10%	12mm Pitch	
2	270R	1206 Thick Film	2	R5, R6		1%	1206	
3	430R	1206 Thick Film	2	R13, R15		1%	1206	
4	470R	1206 Thick Film	6	R1-R4, R7, R8		1%	1206	
5	3K0	1206 Thick Film	1	R12		1%	1206	
6	4K7	1206 Thick Film	1	R10		1%	1206	
7	7K5	1206 Thick Film	1	R11		1%	1206	
8	22K	1206 Thick Film	1	R14		1%	1206	
CAPACITORS								
9	10nF 50V	X7R Ceramic	3	C19, C20, C28		10%	805	
10	39nF 250V	Met. Polyester	8	C1-C7, C27	CMEA393K250Rxxxx	10%	5mm Pitch Box	
11	47nF 63V	Met. Polyester	2	C21, C22		10%	5mm Pitch Box	1117-473053E000
12	100nF 50V	1206 Ceramic	5	C8-C10, C15, C23		10%	1206	1189-104042-400
13	100nF 250V	Met Polyester	2	C17, C18	CMEB104M250Rxxxx	20%	5mm Pitch Box	
14	4.7uF 50V	EL Capacitor SMT	1	C26		10%	SMT Electrolytic 4mm dia	
15	10uF 16V	EL Capacitor SMT	1	C12		10%	SMT Electrolytic 4mm dia	
16	100uF 25V	Electrolytic	2	C13, C14		20%	6mm Dia	1102-101024-000
17	2200uF 35V	Electrolytic	2	C11, C25		20%	16mm Dia	1102-222034-000
18	4700uF 25V	Electrolytic	2	C16, C24		20%	16mm Dia	1102-472024-001
CONNECTORS								
19	16 Way	FFC Connector	1	CN1	D100-SSV-16		Through Hole	2301-016501E001
20	3 Way	Straight Header	1	CN2	B3B-XH-A		2.5mm Pitch	2300-003100-004
DIODES								
21	Blue Azur LED	3mm	8	D1-D8	HFB963M-130			3100-000030-003
22	100V 1A	Schottky Rectifier	4	D9-D12	MBR1100RLG		DO41	1401-110000E002
23	200V	1.0A SM Rectifier	7	D13-D19	S1D			
FUSES								
24	T1AL	Slow Blow Fuse	3	F1-F3			20mm	
25		Fuse Holder Base	3	F1-F3	PTF78 (or equivalent)	20mm Pitch	4031-780000E000	(alt. Camden YN:4031-140000E000)
26		Fuse Holder Cover	3	F1-F3	PTF78 (or equivalent)	20mm Pitch	4034-780000E000	(alt. Camden YN:4034-140000E000)
INDUCTORS								
27	1uH Ferrite	On 24AWG Wire	1	FB1	FB-35608		10mm Pitch	1503-000000-100
INTEGRATED CIRCUITS								
28	+5V	Regulator	1	U1	L7805		TO220	4178-050334E700
29	+15V	Regulator	1	U2	L7815		TO220	4178-150302E600
30	-15V	Regulator	1	U3	L7915		TO220	4179-150302E600
TRANSISTORS								
31	65V 100mA	NPN Small Signal	3	Q1-Q3	BC846		SOT23	1300-846000-500

Note: resistors, capacitors and other 'generic' components are not usually stocked by the manufacturer. Please obtain these locally.

Cambridge Audio Azur 840W Power Amplifier



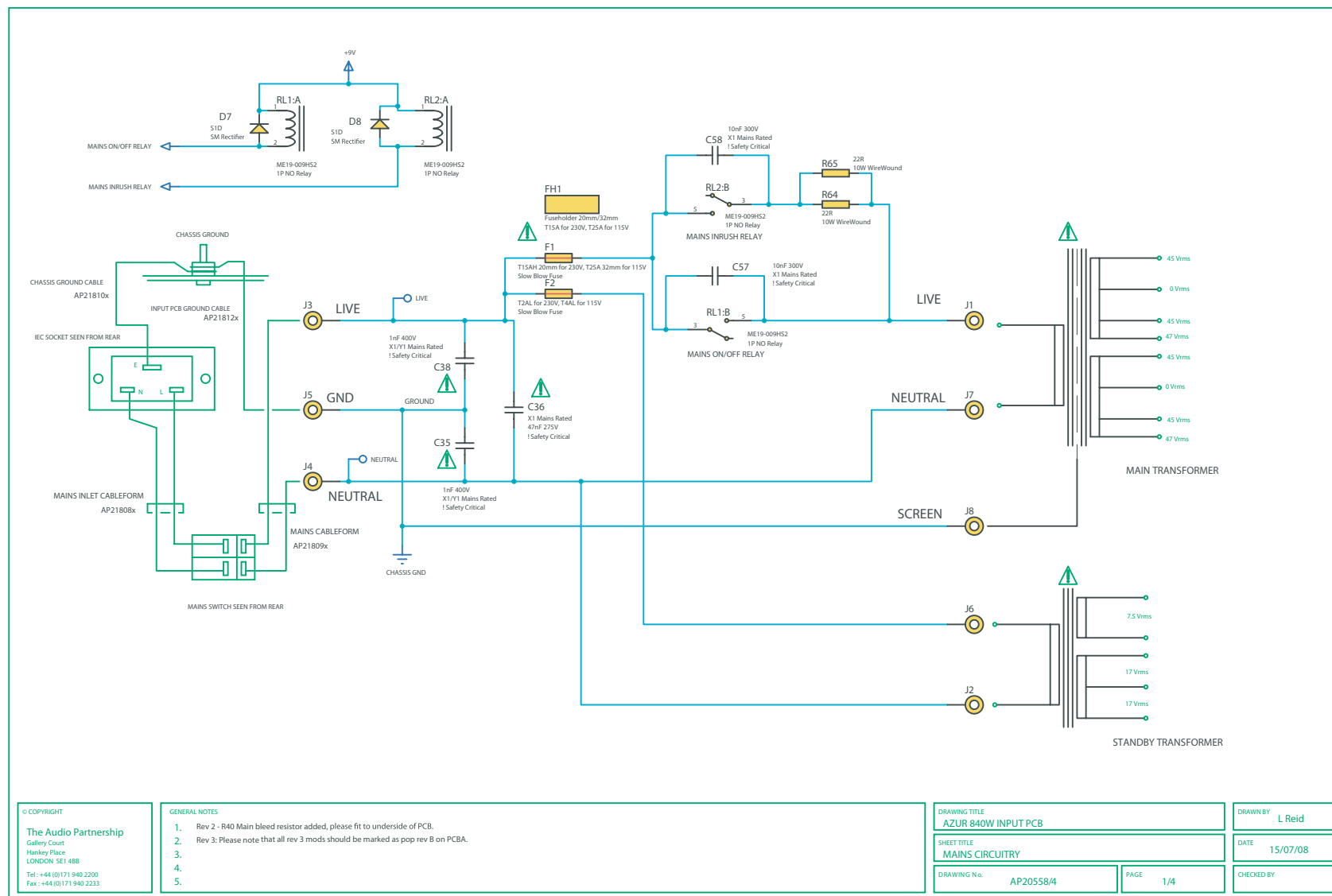
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The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

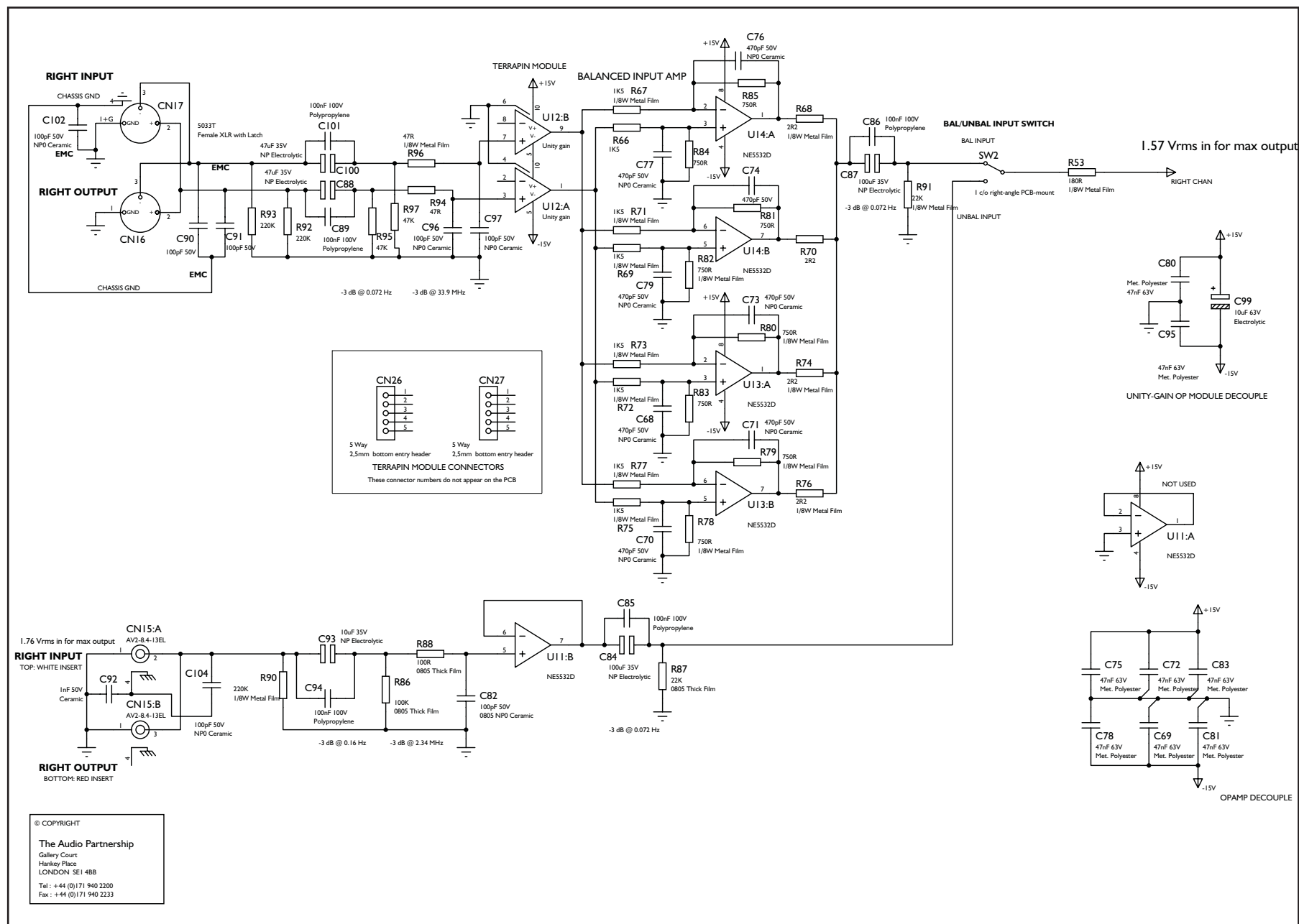
Input PCB Circuit Board (Mains Circuitry) Schematic

Cambridge Audio Azur 840W Power Amplifier



Input PCB Circuit Board (Mains Circuitry) Schematic (Revision I)

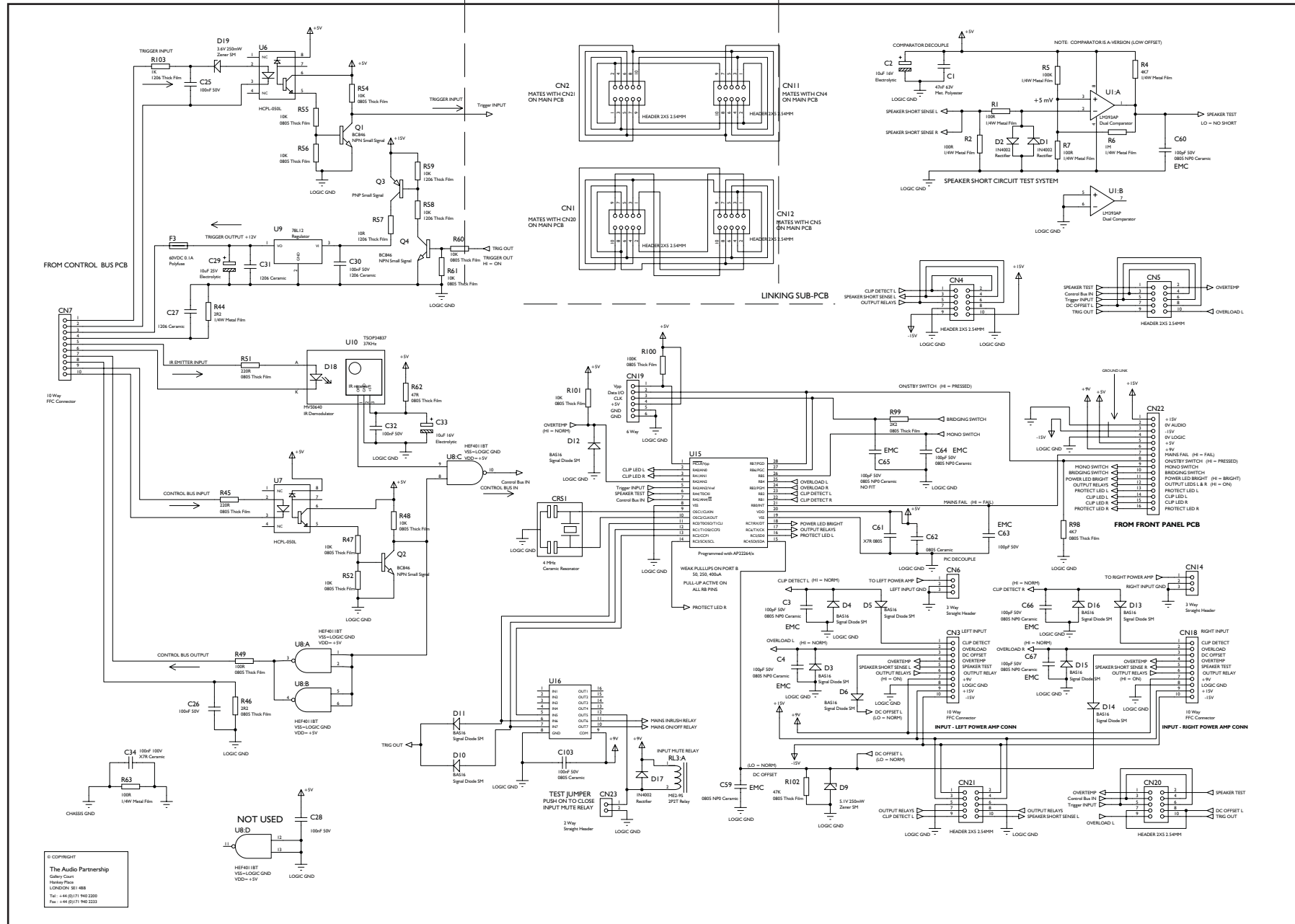
Cambridge Audio Azur 840W Power Amplifier



Input PCB Circuit Board (Audio Right) Schematic (Revision I)

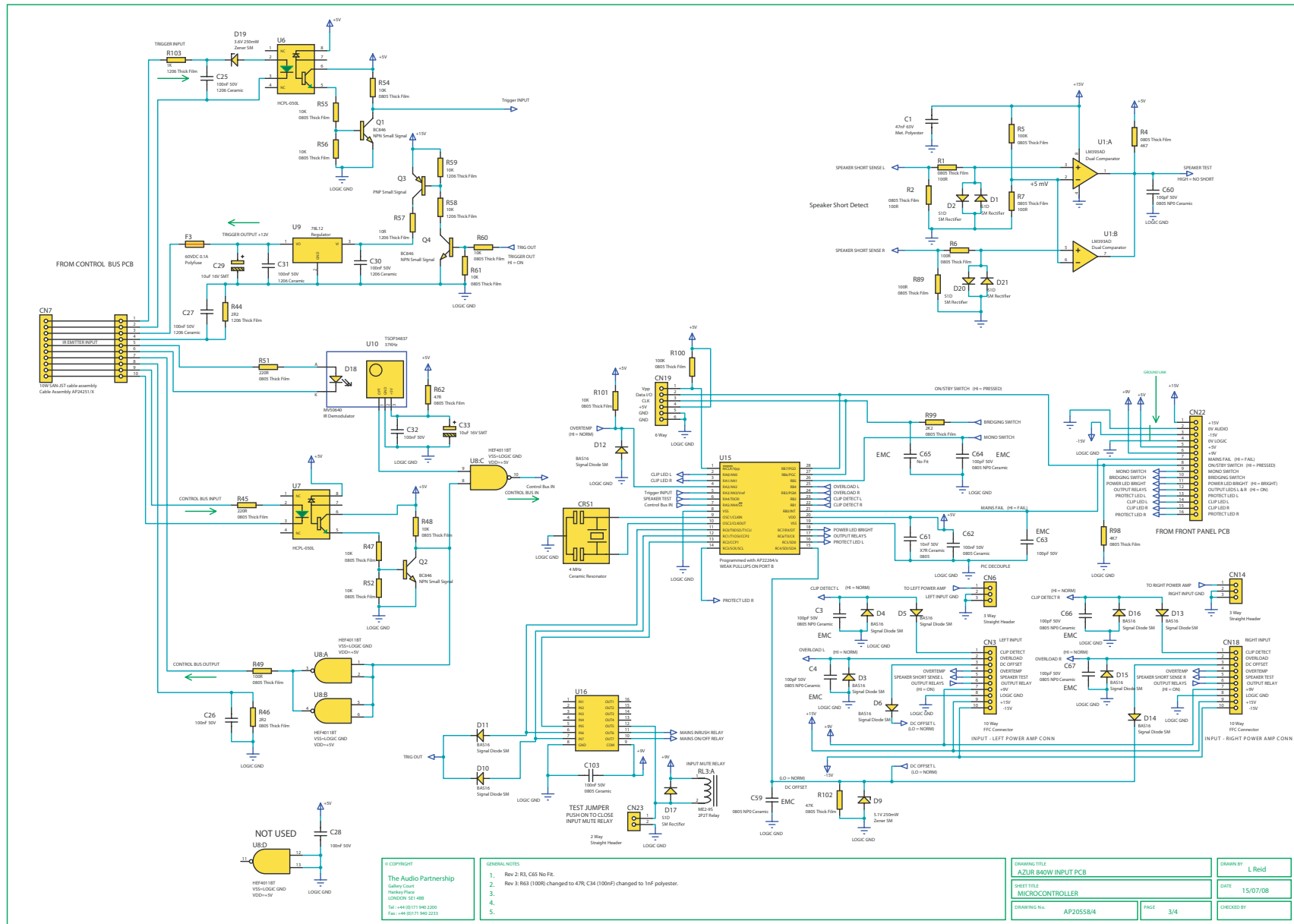


Cambridge Audio Azur 840W Power Amplifier



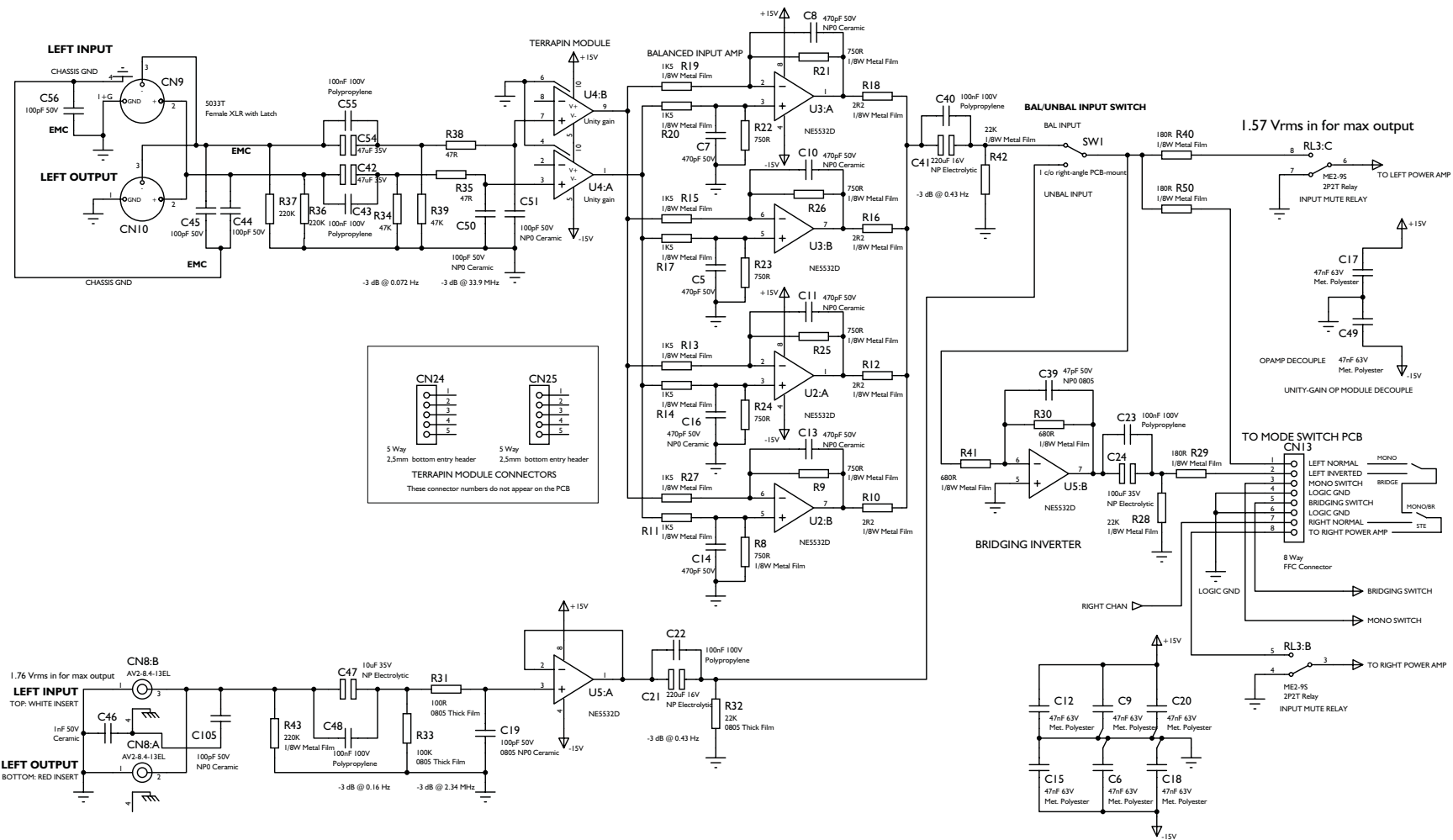
Input Circuit Board - Microcontroller

Cambridge Audio Azur 840W Power Amplifier



Input PCB Circuit Board (Microcontroller) Schematic (Revision I)

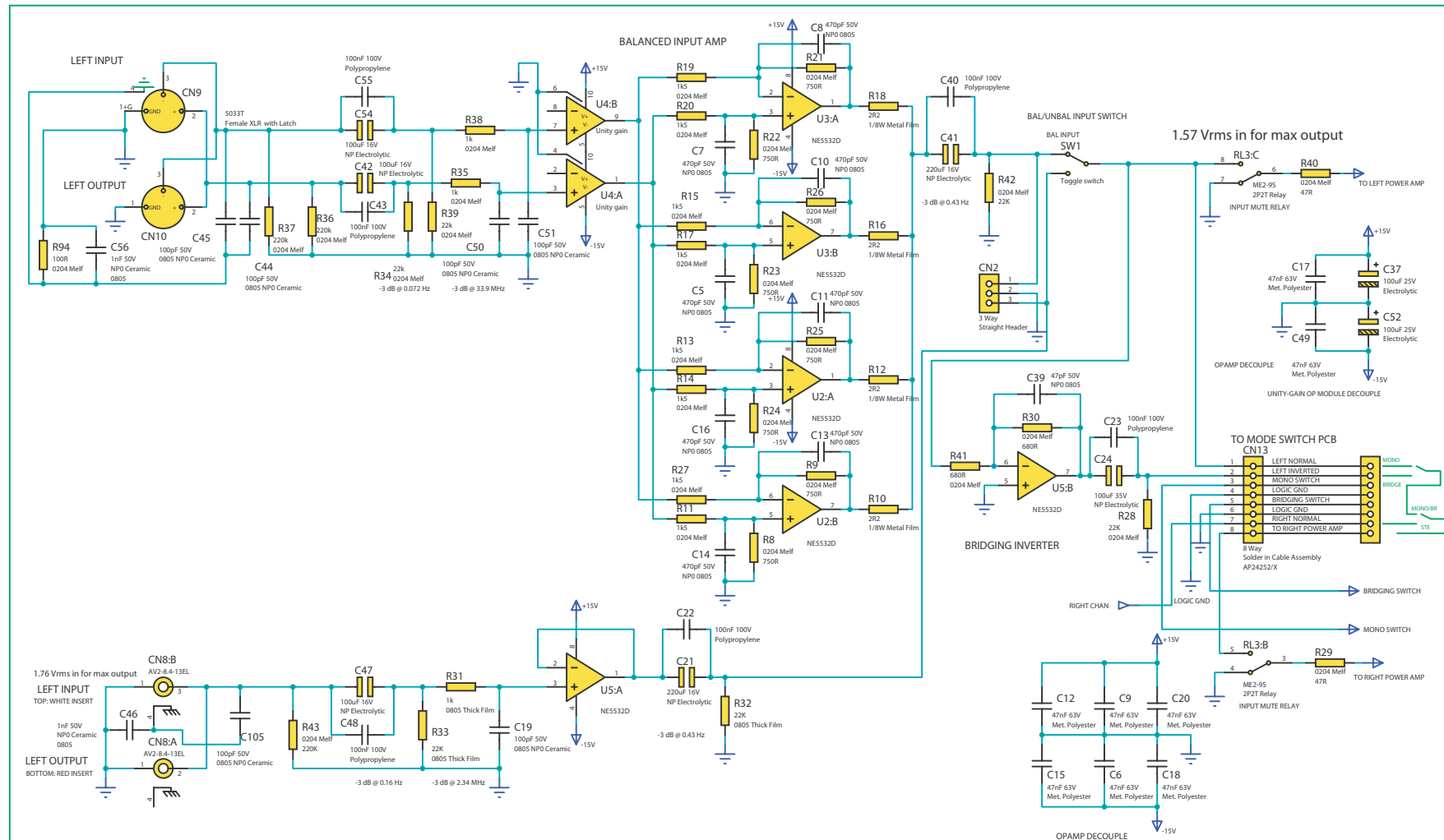
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GENERAL NOTES

1. Rev 3: LK2 changed to 47R/18W; C42, C47 and C54 changed to 100uF 16V NP
- 2.
- 3.
- 4.
- 5.

DRAWING TITLE

AZUR 840W INPUT PCB

SHEET TITLE

AUDIO LEFT

DRAWING No.

AP20558/4

PAGE

4/4

DRAWN BY

L Reid

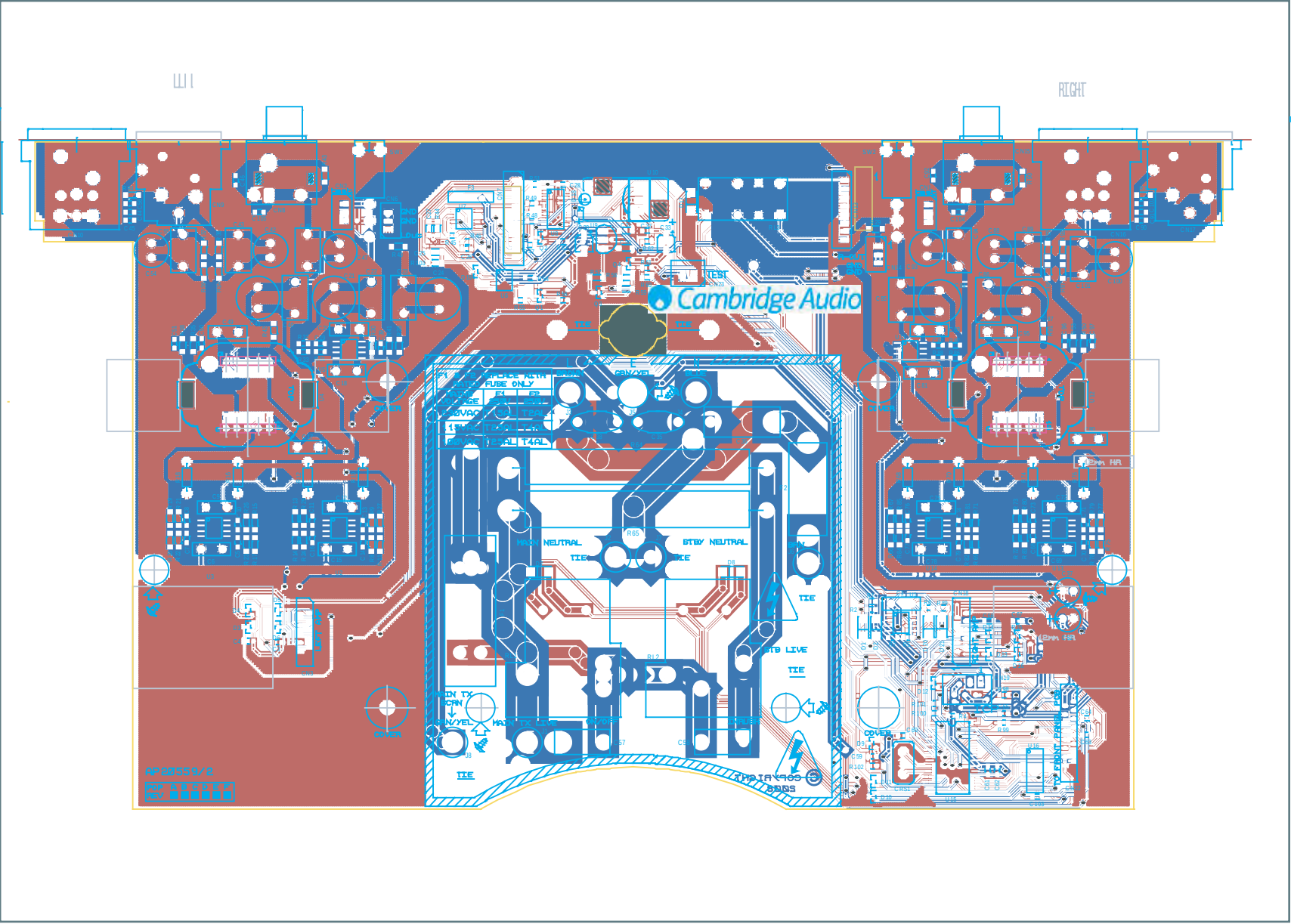
DATE

15/07/08

CHECKED BY

Input PCB Circuit Board (Audio Left) Schematic (Revision I)

Cambridge Audio Azur 840W Power Amplifier



Input PCB Layout (Revision I)

Cambridge Audio Azur 840W Input PCB (AP20561/8)

Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	NOTES
RESISTORS							
1	2R2	1/8W Metal Film	8	R10, R12, R16, R18, R68, R70, R74, R76	1%	7.5mm Pitch	
2	2R2	1206 Thick Film	1	R44	1%	1206	
3	2R2	0805 Thick Film	1	R46	1%	805	
4	10R	1206 Thick Film	1	R57	1%	1206	
5	22R	10W WireWound	2	R64, R65	5%	60mm Pitch	Space body 4mm from PCB
6	47R	0204 Melf	1	R29	1%	204	
7	47R	0204 Melf	1	R40	1%	204	
8	47R	0805 Thick Film	1	R62	1%	805	
9	47R	1/4W Metal Film	1	R63	1%	10mm Pitch	
10	100R	1/4W Metal Film	3	R1, R2, R7	1%	10mm Pitch	
11	100R	0805 Thick Film	1	R49	1%	805	
12	220R	0805 Thick Film	2	R45, R51	1%	805	
13	680R	0204 Melf	1	R30	1%	204	
14	680R	0204 Melf	1	R41	1%	204	
15	750R	0204 Melf	8	R8, R9, R21-R26	1%	204	
16	750R	1/8W Metal Film	8	R78-R85	1%	7.5mm Pitch	
17	1k	0805 Thick Film	2	R31, R88	1%	805	
18	1k	0204 Melf	2	R35, R38	1%	204	
19	1k	1/8W Metal Film	2	R94, R96	1%	7.5mm Pitch	
20	1K	1206 Thick Film	1	R103	1%	1206	
21	1k5	0204 Melf	8	R11, R13-R15, R17, R19, R20, R27	1%	204	
22	1K5	1/8W Metal Film	8	R66, R67, R69, R71-R73, R75, R77	1%	10mm Pitch	
23	2K2	0805 Thick Film	1	R99	1%	805	
24	4K7	1/4W Metal Film	1	R4	1%	10mm Pitch	
25	4K7	0805 Thick Film	1	R98	1%	805	
26	10K	0805 Thick Film	9	R47, R48, R52, R54-R56, R60, R61, R101	1%	805	
27	10K	1206 Thick Film	2	R58, R59	1%	1206	
28	12K	0805 Thick Film	1	R33	1%	805	
29	22K	0204 Melf	1	R28	1%	204	
30	22K	0805 Thick Film	2	R32, R87	1%	805	
31	22K	1/8W Metal Film	4	R34, R39, R95, R97	1%	7.5mm Pitch	
32	22K	1/8W Metal Film	2	R42, R91	1%	7.5mm Pitch	
33	22K	0805 Thick Film	1	R86	1%	805	
34	47K	0805 Thick Film	1	R102	1%	805	
35	100K	1/4W Metal Film	1	R5	1%	10mm Pitch	
36	100K	0805 Thick Film	1	R100	1%	805	
37	220K	1/8W Metal Film	6	R36, R37, R43, R90, R92, R93	1%	7.5mm Pitch	
38	270k	1/4W Metal Film	1	R3	1%	10mm Pitch	
39	1M	1/4W Metal Film	1	R6	1%	10mm Pitch	
CAPACITORS							
40	No Fit		2	C52, C98			
41	No Fit		1	C53			
42	No Fit		1	C65			
43	47pF 50V	NP0 0805	1	C39	5%	805	
44	100pF 50V	0805 NP0 Ceramic	15	C3, C4, C19, C44, C45, C50, C51, C59, C60, C63, C64, C66, C67, C82, C105	5%	805	
45	100pF 50V	NP0 Ceramic	3	C90, C91, C104	5%	2.5mm Pitch	
46	100pF 50V	NP0 Ceramic	2	C96, C97	5%	5mm Pitch	
47	470pF 50V	NP0 0805	8	C5, C7, C8, C10, C11, C13, C14, C16	5%	805	
48	470pF 50V	NP0 Ceramic	8	C68, C70, C71, C73, C74, C76, C77, C79	5%	5mm Pitch	
49	1nF 63V	Met. Polyester	1	C34	10%	5mm Pitch Box	
50	1nF 50V	NP0 Ceramic	1	C46	5%	805	
51	1nF 50V	Ceramic	1	C92	10%	2.5mm Pitch	
52	10nF 300V	X1 Mains Rated	4	C37, C38, C57, C58	10%	10mm Pitch Box	
53	10nF 50V	X7R 0805	1	C61	10%	805	
54	47nF 63V	Met. Polyester	17	C1, C6, C9, C12, C15, C17, C18, C20, C49, C69, C72, C75, C78, C80, C81, C83, C95	10%	5mm Pitch Box	
55	100nF 100V	Polypropylene	11	C22, C23, C40, C43, C48, C55, C85, C86, C89, C94, C101	10%	7.5mm Pitch Box	

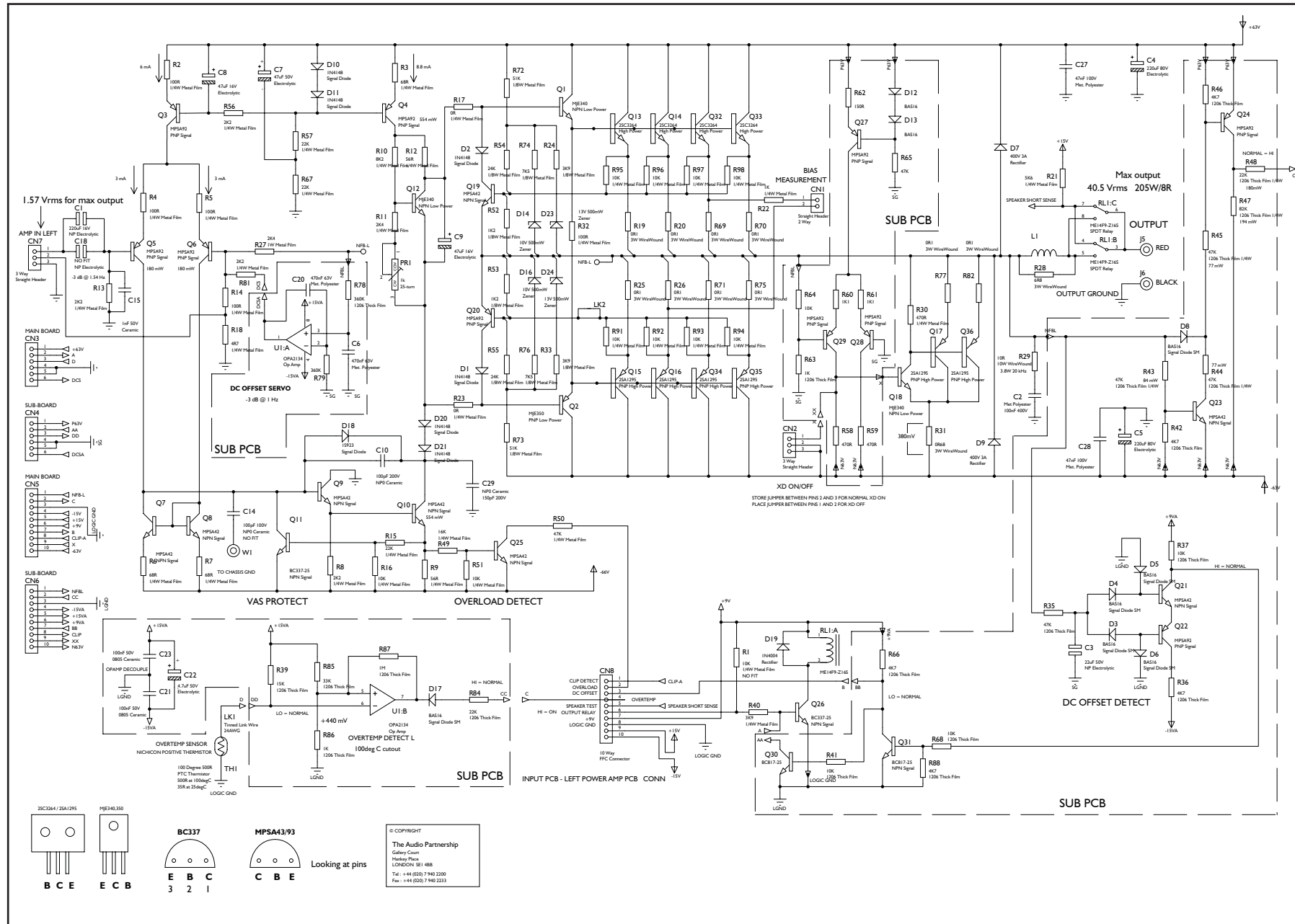
Note: resistors, capacitors and other 'generic' components are not usually stocked by the manufacturer. Please obtain these locally.

Cambridge Audio Azur 840W Input PCB (AP20561/8)

56	100nF 50V	1206 Ceramic	1	C25		10%	1206	
57	100nF 50V	0805 Ceramic	7	C26, C28, C32, C56, C62, C102, C103		10%	805	
58	100nF 50V	1206 Ceramic	3	C27, C30, C31		10%	1206	
59	470nF	Mains Rated X2	1	C35			27.5mm Pitch Box	Safety critical
60	470nF	Mains Rated X2	1	C36			22.5mm Pitch Box	
61	10uF 16V	Electrolytic	2	C2, C33		20%	5.2mm Diameter	
62	10uF 25V	Electrolytic	1	C29		20%	5mm Dia	
63	10uF 63V	Electrolytic	1	C99		20%	5mm Dia	
64	100uF 35V	NP Electrolytic	3	C24, C84, C87		20%	10mm Dia	
65	100uF 16V	NP Electrolytic	6	C42, C47, C54, C88, C93, C100		20%	8mm Dia	
66	220uF 16V	NP Electrolytic	2	C21, C41		20%	10mm Dia. Same dims as C84,C87	
CONNECTORS								
67	HEADER 2X5 2.54MM	Dual row header, 2 plastics	8	CN1, CN2, CN4, CN5, CN11, CN12, CN20, CN21	201S-DL-2x5p (F)			Gold-plated
68	10 Way	FFC Connector	2	CN3, CN18	D100-SSV-10		Standard	
69	3 Way	Straight Header	2	CN6, CN14	B3B-PH-KS		2mm Pitch	
70	Cable Assembly AP24251/X	10W SAN-JST cable assembly	1	CN7				
71		Vertical Gold Plated Phono	2	CN8, CN15	AV2-8.4-13EL		Through Hole	W/R Inserts
72		Female XLR with Latch	2	CN9, CN17	5033T		Through Hole	
73		Male XLR Socket	2	CN10, CN16	5032A			
74	8 Way	Solder in Cable Assembly	1	CN13	AP24252/X			
75	6 Way	IDC Programming Header	1	CN19	90325-0006		Through Hole	
76	16-way	Straight header	1	CN22	B16B-XH-A			
77	2 Way	Straight Header	1	CN23	B2B-XH-A		2.5mm Pitch	
DIODES								
78	50V 1A	Rectifier	5	D1, D2, D7, D8, D17	1N4002		DO41	
79	75V 300mA	Signal Diode SM	11	D3-D6, D10-D16	BAS16		SOT23	
80	5.1V 250mW	Zener SM	1	D9	BZX84C5V1		SOT23	
81		IR Demodulator	1	D18	MV50640			
82	3.6V 250mW	Zener SM	1	D19	BZX84C3V6		SOT23	
FUSES								
83	T15AH 20mm for 230V, T25A 32mm for 115V	Slow Blow Fuse	1	F1	OGD		6.3x32mm	
84	T2AL for 230V, T4AL for 115V	Slow Blow Fuse	1	F2			20mm	
85		Fuse Holder Base	1	F2	PTF78 (or equivalent)	20mm Pitch	4031-780000E000	
86		Fuse Holder Cover	1	F2	PTF78 (or equivalent)	20mm Pitch	4034-780000E000	
87	60VDC 0.1A	Polyfuse	1	F3				
INTEGRATED CIRCUITS								
88	Low Offset	Dual Comparator	1	U1	LM393AP		DIL08	PY1152
89		Dual Audio Op Amp	6	U2, U3, U5, U11, U13, U14	NE5532D		SOIC08	PY1162
90	Unity gain	UNITY GAIN MODULE	2	U4, U12	AP22639/x			Terrapin module
91	HCPL-050L	Optoisolator	2	U6, U7	HCPL-050L			
92	Quad 2 Input	NAND Gate	1	U8	HEF4011BT		SMD SO14	CD4011BCM Fairchild / MC14011BD ON
93	12V 100mA	Regulator	1	U9	78L12		TO92	
94	37KHz	IR Receiver	1	U10	TSOP34837		Through Hole	
95	20 MHz	PIC16F72-I/SO	1	U15			SO28X	Program with software: AP22264/3 Please add version label!
96	7 Way	Darlington Driver	1	U16	ULN2003AD		SO16	
RELAY								
97	9V - 30A Contacts	1P NO Relay	2	RL1, RL2	ME19-009HS2		Through Hole	PY1476
98	9V Coil, 2A Contacts	2P2T Relay	1	RL3	ME2-9S		Through Hole	PY242
SWITCHES								
99	1 c/o right-angle PCB-mount	Toggle switch	2	SW1, SW2	1MS1 T2 B3 M7 R E S			PY1475
TRANSISTORS								
100	65V 100mA	NPN Small Signal	3	Q1, Q2, Q4	BC846		SOT23	
101	20V 1A	PNP Small Signal	1	Q3	PBSS5120T		SOT23	
MISCELLANEOUS								
102	4 MHz	Ceramic Resonator	1	CRS1			3 Pin	
103	T15A for 230V, T25A for 115V	Fuseholder 20mm/32mm	1	FH1	OGD			For 20mm & 32mm fuses

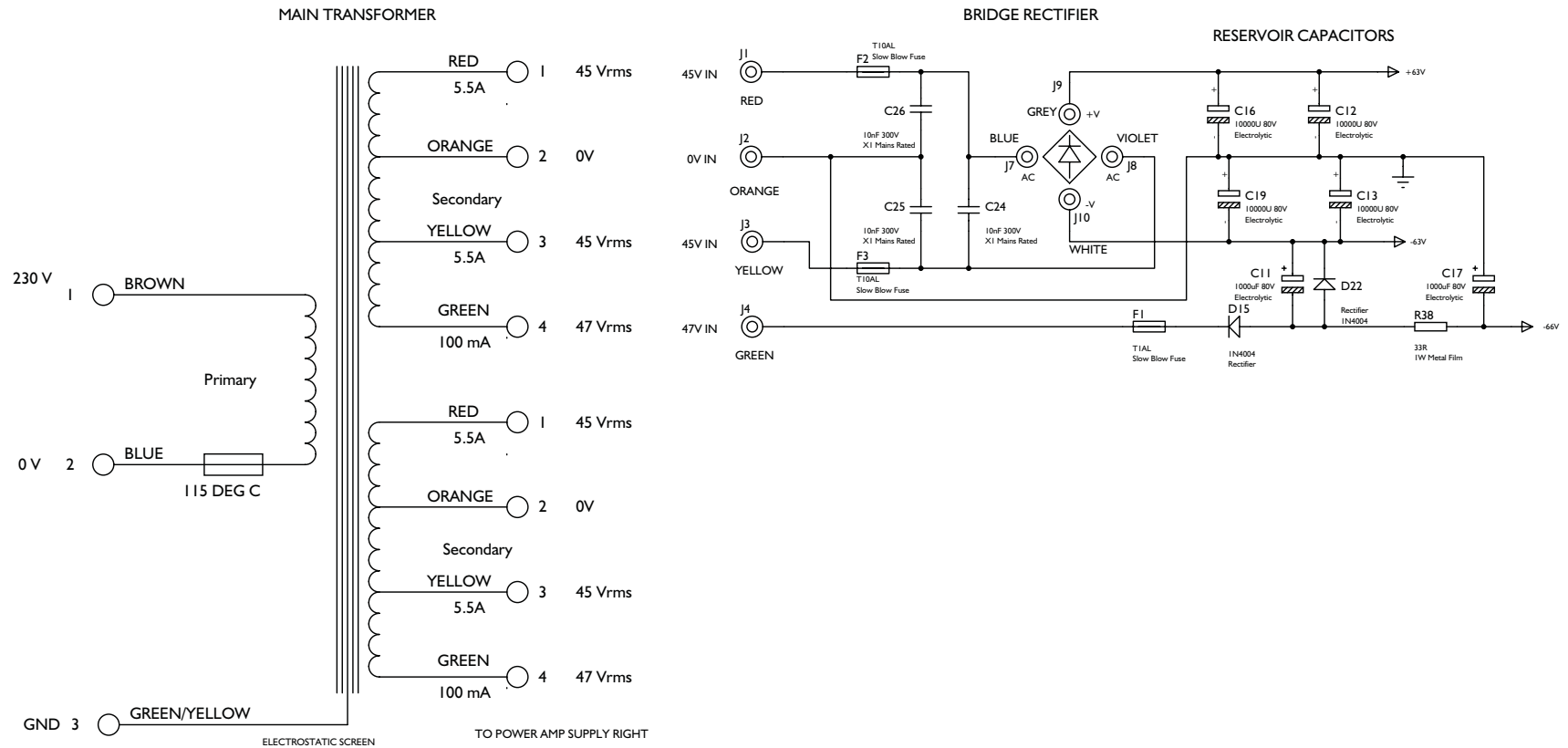
Note: resistors, capacitors and other 'generic' components are not usually stocked by the manufacturer. Please obtain these locally.

Cambridge Audio Azur 840W Power Amplifier



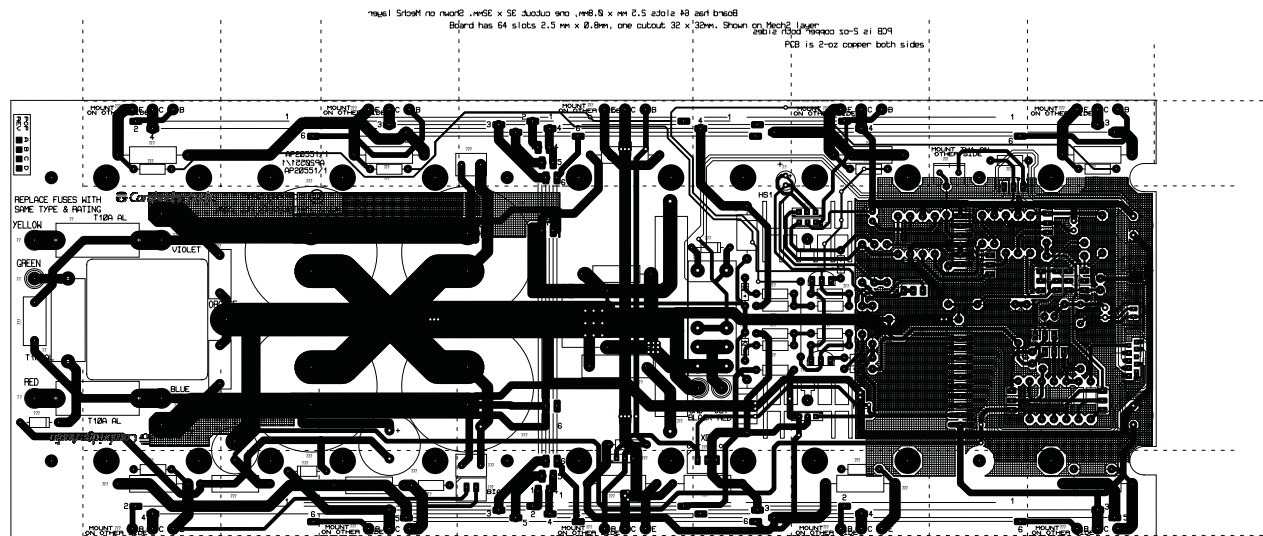
Power Amplifier Schematic

Cambridge Audio Azur 840W Power Amplifier



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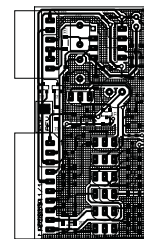
Cambridge Audio Azur 840W Power Amp



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MECH INSTRUCTIONS FROM 7777777777
P5 DONE ATTEND TO POS OF C3 ON SUB-BOARD - IT CLASHES WITH MAIN BOARD OK
P5 DONE
P4 DONE SORT OUT COPPER FLOODES
P3 DONE Rotate coil and move Zobel OK
P2 DONE Add C3B on silk to divert a power Gs OK
P1 DONE Add header for bias measurement OK
v bus fix screws. 5.4mm dia. head is 2mm. lines up with zobel r pads NOTED FOR RET R POSITIONS

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Cambridge Audio Azur 840W Power Amp Module (AP20553/9)

Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	Factory P/N	NOTES
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RESISTORS

1	No Fit		1	R1			
2	0R68	3W WireWound	1	R31	5%	1074-707330E000	Space body 3mm from PCB. Do not sleeve legs.
3	0R1	3W WireWound	10	R19, R20, R25, R26, R69-R71, R75, R77, R82	5%	1074-707330E000	Space body 3mm from PCB
4	4R7	1/4W Metal Film	1	R18	1%		
5	6R8	3W WireWound	1	R28	5%		Space body 3mm from PCB
6	10R	10W WireWound	1	R29	5%		Space body 3mm from PCB
7	33R	1W Metal Film	1	R38	1%		Space body 2mm from PCB
8	56R	1/4W Metal Film	1	R12	1%		
9	68R	1/4W Metal Film	2	R6, R7	1%		
10	82R	1/4W Metal Film	1	R9	1%		
11	100R	1/4W Metal Film	8	R2-R5, R14, R17, R23, R32	1%		
12	150R	1206 Thick Film	1	R62	1%		
13	470R	1/4W Metal Film	1	R30	1%		
14	470R	1206 Thick Film	2	R58, R59	1%		
15	1K	1/4W Metal Film	1	R22	1%		
16	1K	1206 Thick Film	2	R63, R86	1%		
17	1K1	1206 Thick Film	2	R60, R61	1%		
18	1K2	1/8W Metal Film	2	R52, R53	1%		
19	2K2	1/4W Metal Film	4	R8, R13, R56, R81	1%		
20	2K4	1/4W Metal Film	1	R11	1%		
21	2K4	1W Metal Film	1	R27	1%		
22	3K9	1/8W Metal Film	2	R24, R33	1%		
23	3K9	1/4W Metal Film	1	R40	1%		
24	4K7	1206 Thick Film	5	R36, R42, R46, R66, R88	1%		
25	5K1	1/4W Metal Film	1	R51	1%		
26	5K6	1/4W Metal Film	1	R21	1%		
27	7K5	1/8W Metal Film	2	R74, R76	1%		
28	8K2	1/4W Metal Film	1	R10	1%		
29	10K	1/4W Metal Film	9	R16, R91-R98	1%		
30	10K	1206 Thick Film	4	R37, R41, R64, R68	1%		
31	15K	1206 Thick Film	1	R39	1%		
32	16K	1/4W Metal Film	1	R49	1%		
33	22K	1/4W Metal Film	3	R15, R57, R67	1%		
34	22K	1206 Thick Film 1/4W	2	R48, R84	1%		
35	24K	1/8W Metal Film	2	R54, R55	1%		
36	33K	1206 Thick Film	1	R85	1%		
37	47K	1206 Thick Film 1/4W	5	R35, R43-R45, R65	1%		
38	47K	1/4W Metal Film	1	R50	1%		
39	51K	1/8W Metal Film	2	R72, R73	1%		
40	82K	1206 Thick Film 1/4W	1	R47	1%		
41	360K	1206 Thick Film	2	R78, R79	1%		
42	1M	1206 Thick Film	1	R87	1%		

RESISTORS VARIABLE

43	1k	25-turn	1	PR1	3296W-1-102	10%	
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CAPACITORS

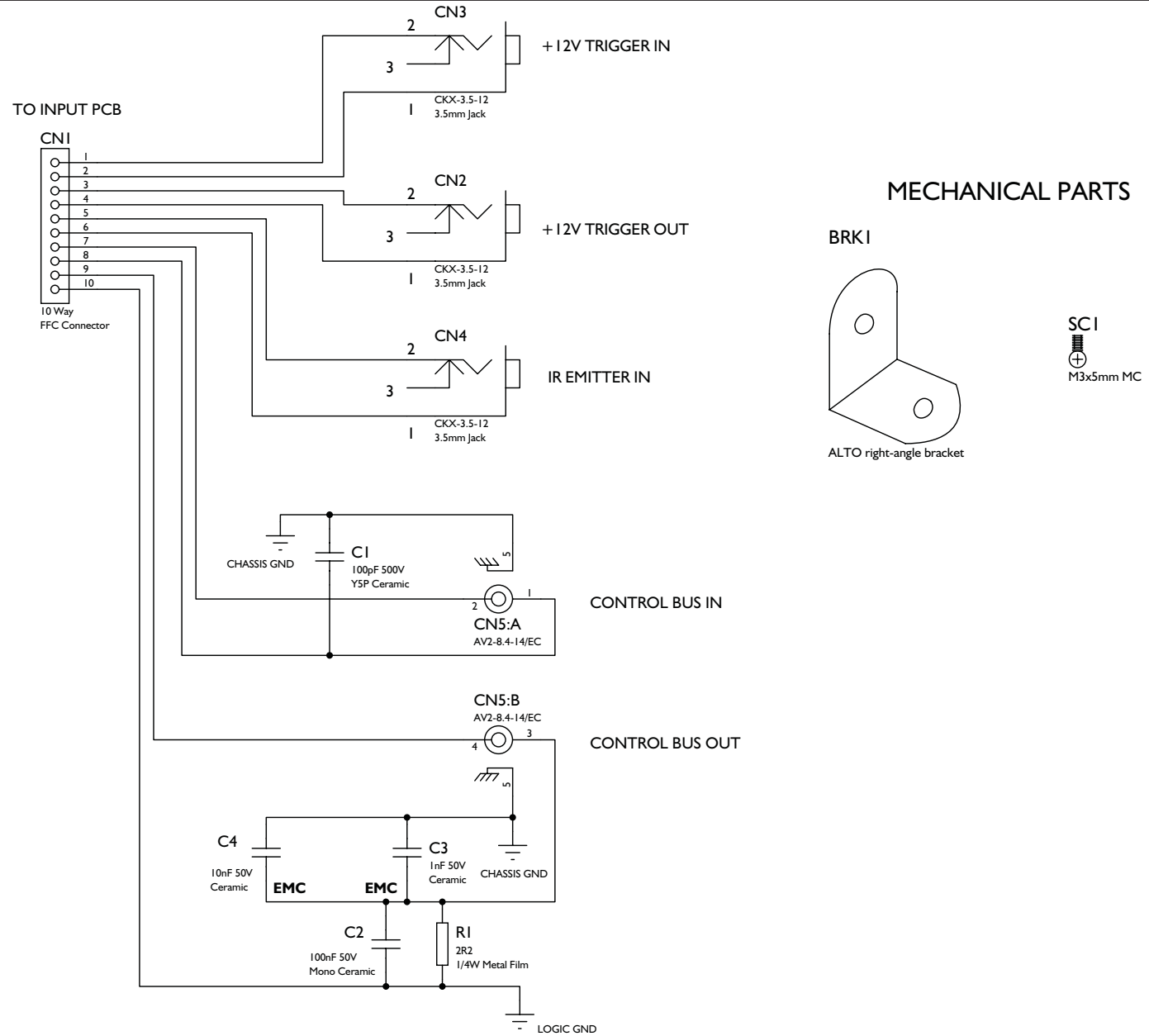
44	No Fit		1	C14			
45	No Fit		1	C18			
46	100pF 200V	NP0 Ceramic	1	C10	CRNPOJ101JB03	5%	
47	330pF 200V	NP0 Ceramic	1	C29		5%	
48	1nF 50V	Ceramic	1	C15		10%	1100-102043-000
49	10nF 300V	X1 Mains Rated	3	C24-C26		10%	1110-103183E500
50	47nF 100V	Met. Polyester	2	C27, C28	CMEA473K100Rxxxx	10%	
51	100nF 400V	Met Polyester	1	C2			1117-104103-001
52	100nF 50V	0805 Ceramic	2	C21, C23		10%	1100-104043-400
53	470nF 63V	Met. Polyester	2	C6, C20		10%	
54	4.7uF 50V	Electrolytic	1	C22		20%	1102-477044-000 5mm Dia
55	10,000uF 80V	Electrolytic	4	C12, C13, C16, C19	LLS1K103MELC	20%	With CA sleeve to AP21988/x. Glue to PCB
56	22uF 50V	NP Electrolytic	1	C3		20%	
57	47uF 50V	Electrolytic	1	C7		20%	1102-470044-000
58	47uF 16V	Electrolytic	2	C8, C9		20%	1102-470014-000
59	220uF 16V	NP Electrolytic	1	C1		20%	
60	220uF 80V	Electrolytic	2	C4, C5		20%	

Note: resistors, capacitors and other 'generic' components are not usually stocked by the manufacturer. Please obtain these locally.

61	1000uF 80V	Electrolytic	2	C11, C17		20%		
CONNECTORS								
62	2 Way	Straight Header	1	CN1	B2B-XH-A		2300-002100-003	
63	3 Way	Straight Header	2	CN2, CN7	B3B-XH-A		2300-003100-004	
64	6 Way 90 Deg	Pin Header	1	CN3	201R-1X6P		2370-006110E000	
65	10 Way 90 Deg	Pin Header	1	CN5	201R-1X10P		2370-010110E000	
66	10 Way	FFC Connector	1	CN8	D100-SSV-10		2301-010501E001	
DIODES								
67	75V 150mA	Signal Diode	6	D1, D2, D10, D11, D20, D21	1N4148		1401-141480-000	
68	75V 300mA	Signal Diode SM	8	D3-D6, D8, D12, D13, D17	BAS16		1400-160001-400	
69	400V 3A	Rectifier	2	D7, D9	1N5404			
70	10V 500mW	Zener	2	D14, D16	BZX79C10			
71	400V 1A	Rectifier	3	D15, D19, D22	1N4004		1401-140040-000	
72	No Fit		1	D18				
73	13V 500mW	Zener	2	D23, D24	BZX79C13			
FUSES								
74	T1AL	Slow Blow Fuse	1	F1				
75		Fuse Holder Base	1	F1	PTF78 (or equivalent)	20mm Pitch		
76		Fuse Holder Cover	1	F1	PTF78 (or equivalent)	20mm Pitch		
77	T10AL	Slow Blow Fuse	2	F2, F3				
78		Fuse Holder Base	2	F2, F3	PTF78 (or equivalent)	20mm Pitch		
79		Fuse Holder Cover	2	F2, F3	PTF78 (or equivalent)	20mm Pitch		
INDUCTORS								
80	1.7uH	10 turns 1.5mm cu wire, diam 20mm	1	L1	08-1950100-150			
INTEGRATED CIRCUITS								
81		Op Amp	1	U1	OPA2134			PY989
RELAY								
82	30V 16A	SPDT Relay	1	RL1	ME14F9-Z16S			PY1474
TRANSISTORS								
83	300V 500mA	NPN Low Power	3	Q1, Q12, Q18	MJE340		1300-340000-200	PY1148
84	300V 500mA	PNP Low Power	1	Q2	MJE350		1301-350000-200	PY1150
85	-300V -500mA	PNP Signal	10	Q3-Q6, Q20, Q22, Q24, Q27, Q29	MPSA92		1301-920000-100	PY220
86	300V 500mA	NPN Signal	8	Q7-Q10, Q19, Q21, Q23, Q25	MPSA42		1300-420000-100	PY537
87	45V 300mA	NPN Signal	2	Q11, Q26	BC337-25		1300-337000-100	PY214
88	230V 17A	NPN Power	4	Q13, Q14, Q32, Q33	2SC3264Y		1300-232649E900	Torque to 1.1Nm (PY1147)
89	230V 17A	PNP Power	6	Q15-Q17, Q34-Q36	2SA1295Y		1301-212959E900	Torque to 1.1Nm (PY1149)
90	No Fit		1	Q30				
91	45V 500mA	NPN Signal	1	Q31	BC817-25		1300-817000-500	
MISCELLANEOUS								
92	See AP22469/x Assy 2	Busbar assy type 2	1	BBA1				0.5mm thick copper
93	See AP21165/x, assy 1	Busbar assy type 1	1	BBA2				0.5mm thick copper
94	See AP22470/x	Busbar assy type 3	1	BBA3				0.5mm copper
95		840A output cable	1	CA1	AP22670/x			Twisted cable. Push thru holes then solder on top
96	Grey	840W rectifier cable 18 AWG 55mm	1	CA2				J9 to rectifier +
97	White	840W rectifier cable 18 AWG 55mm	1	CA3				J10 to rectifier V-
98	Purple	840W rectifier cable 18 AWG 55mm	1	CA4				J8 to rectifier AC
99	Blue	840W rectifier cable 18 AWG 55mm	1	CA5				J7 to rectifier AC
100	50mm Height	TO220 Heatsink	2	HS1, HS2	AP17429/x		6574-150007E000	
101	24AWG	Tinned Link Wire	1	LK1				
102		Tinned Link Wire	1	LK2				
103	39 x 24 mm	MT200 mica washer	10	M11-M110			xxxx-xxxxxx	Use thermal compound
104	M3x8mm STP	P/H Black Screw	4	SC1-SC4				
105	TO220	Silicon Pad	1	SI1			4081-150001E003	Between Q2 and Heatsink
106	TO220	Silicon Pad	1	SI2			4081-150001E003	Between Q1 and Heatsink
107	TO220	Silicon Pad	1	SI3			4081-150001E003	Goes between Q1 and Q12
108	100 Degree 500R	PTC Thermistor	1	TH1	ZPP221A501E		1062-210900E990	
109	M3	Nylon Washer	2	WS1, WS2				

Note: resistors, capacitors and other 'generic' components are not usually stocked by the manufacturer. Please obtain these locally.

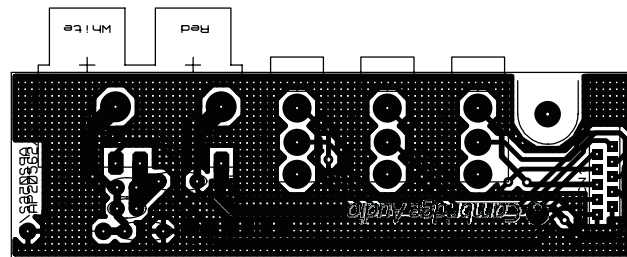
Cambridge Audio Azur 840W Power Amplifier



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Control Bus PCB Schematic

Cambridge Audio Azur 840W Control Bus PCB (AP20565/3)

Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	Factory P/N	NOTES
RESISTORS								
1	2R2	1/4W Metal Film	1	R1		1%	10mm Pitch	
CAPACITORS								
2	100pF 500V	YSP Ceramic	1	C1		10%	5mm Pitch	
3	1nF 50V	Ceramic	1	C3		10%	2.5mm Pitch	1100-102043-000
4	10nF 50V	Ceramic	1	C4		10%	2.5mm Pitch	1100-103043-000
5	100nF 50V	Mono Ceramic	1	C2		10%	5mm Pitch	1100-104043-000
CONNECTORS								
6	10 Way	FFC Connector	1	CN1	D100-SSV-10		Standard	2301-010501E001
7		3.5mm Jack	3	CN2-CN4	CKX-3.5-12		Through Hole	2320-003911E007
8		Horizontal Gold Plated RCA	1	CN5	AV2-8.4-14/EC		Through Hole	2330-004911E004 Orange Inserts with EMC

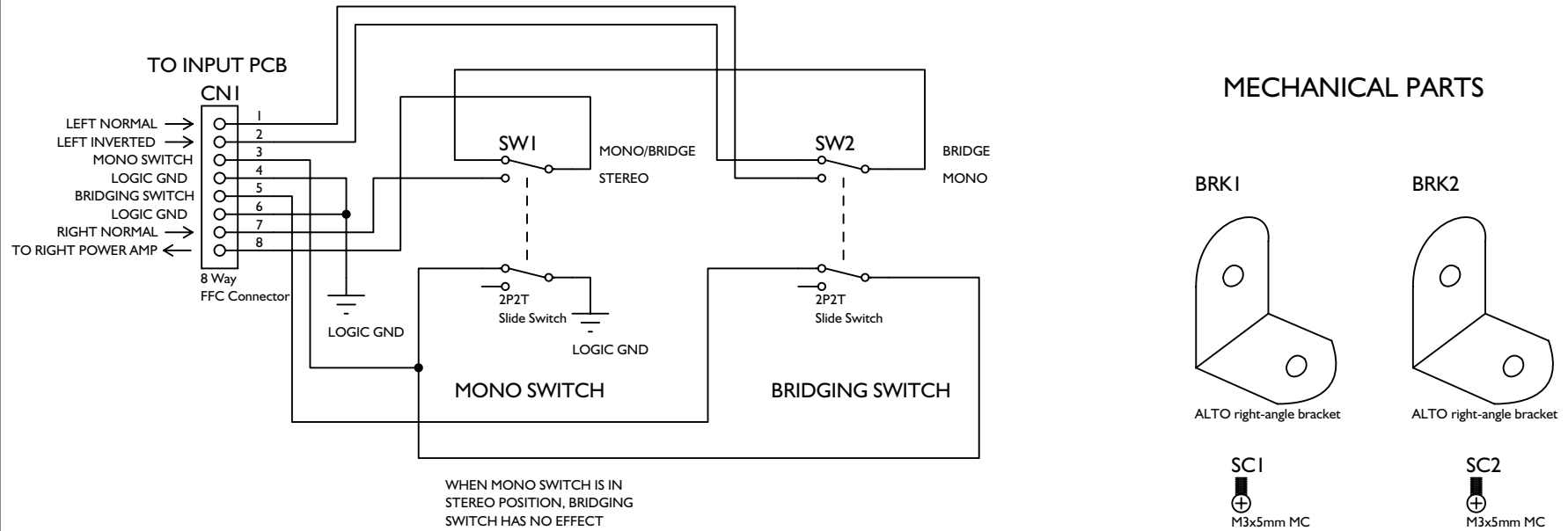
Note: resistors, capacitors and other 'generic' components are not usually stocked by the manufacturer. Please obtain these locally.

Cambridge Audio Azur 840W Control Bus PCB BOM - (AP20565/4)

Value	Description/Type	Qty	Component Ident	Manufacturer	ManPN	Tolerance	PackageInfo	Yanion P/N	NOTES
RESISTORS									
1	2R2	1/4W Metal Film	1	R1		1%	10mm Pitch		
CAPACITORS									
2	100pF 50V	NP0 Ceramic	1	C1		5%	5mm Pitch		
3	1nF 50V	Ceramic	1	C3		10%	2.5mm Pitch	1100-102043-000	
4	10nF 50V	Ceramic	1	C4		10%	2.5mm Pitch	1100-103043-000	
5	100nF 50V	Mono Ceramic	1	C2		10%	5mm Pitch	1100-104043-000	
CONNECTORS									
6	10 Way	Straight Header	1	CN1	JST	B10B-PH-KS	2mm Pitch		
7		3.5mm Jack	3	CN2-CN4	ZuanBao	CKX-3.5-12	Through Hole	2320-003911E007	
8		Horizontal Gold Plated RCA	1	CN5	ZuanBAo	AV2-8.4-14/EC	Through Hole	2330-004911E004	Orange Inserts with EMC

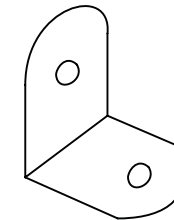
Note: resistors, ecapacitors and other 'generic' electronic components are not usually stocked by the manufacturer. Please obtain these locally.

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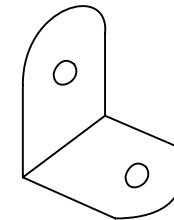
MECHANICAL PARTS

BRK1



ALTO right-angle bracket

BRK2



ALTO right-angle bracket

SCI



M3x5mm MC

SC2



M3x5mm MC

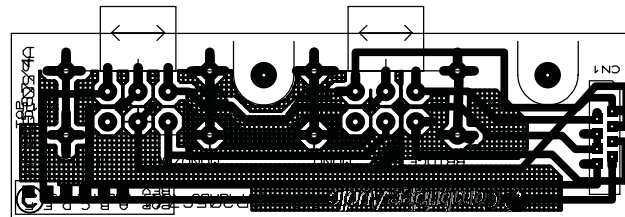
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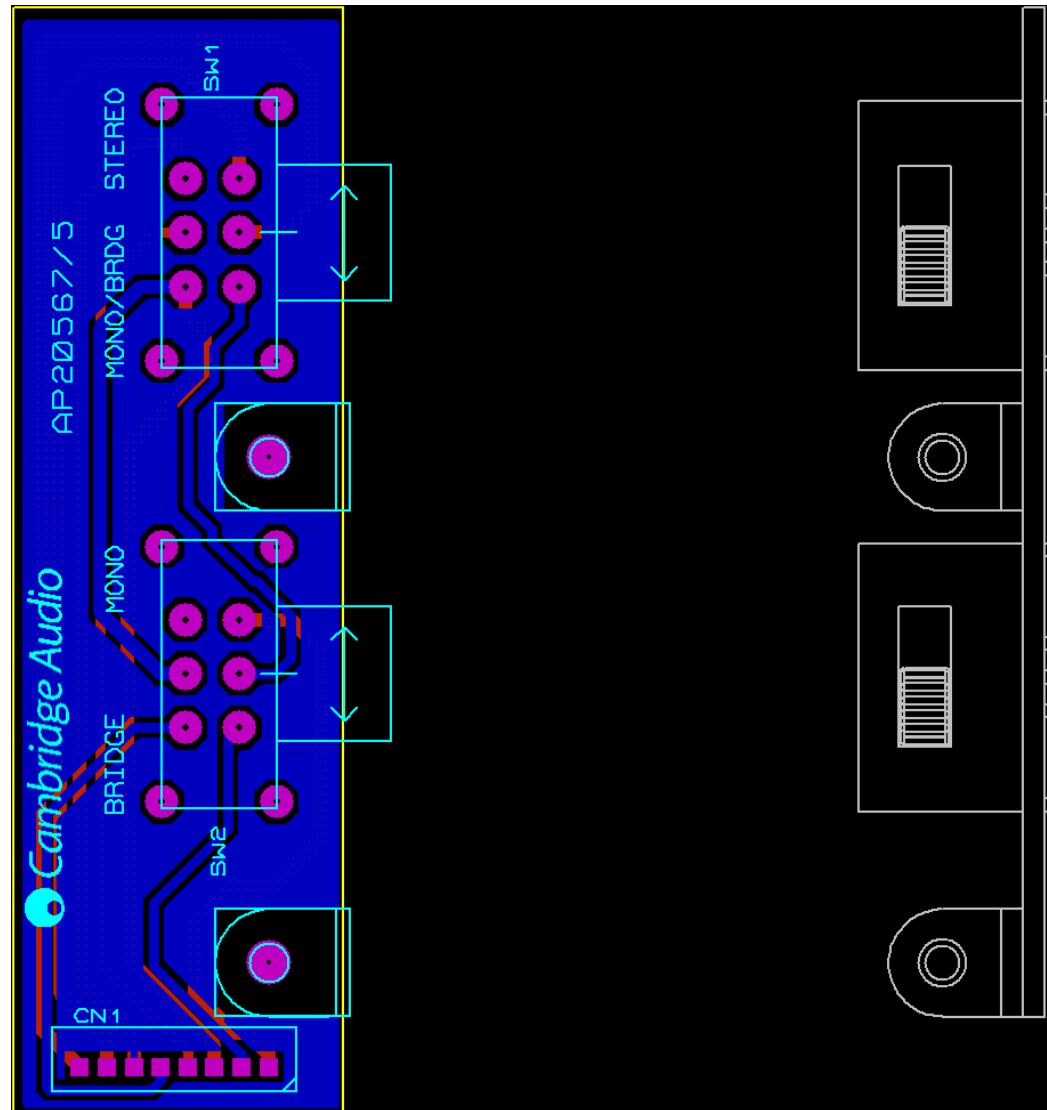
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Mode Switch PCB Layout

Cambridge Audio Azur 840W Power Amplifier



Mode Switch PCB Layout (Revision 1)

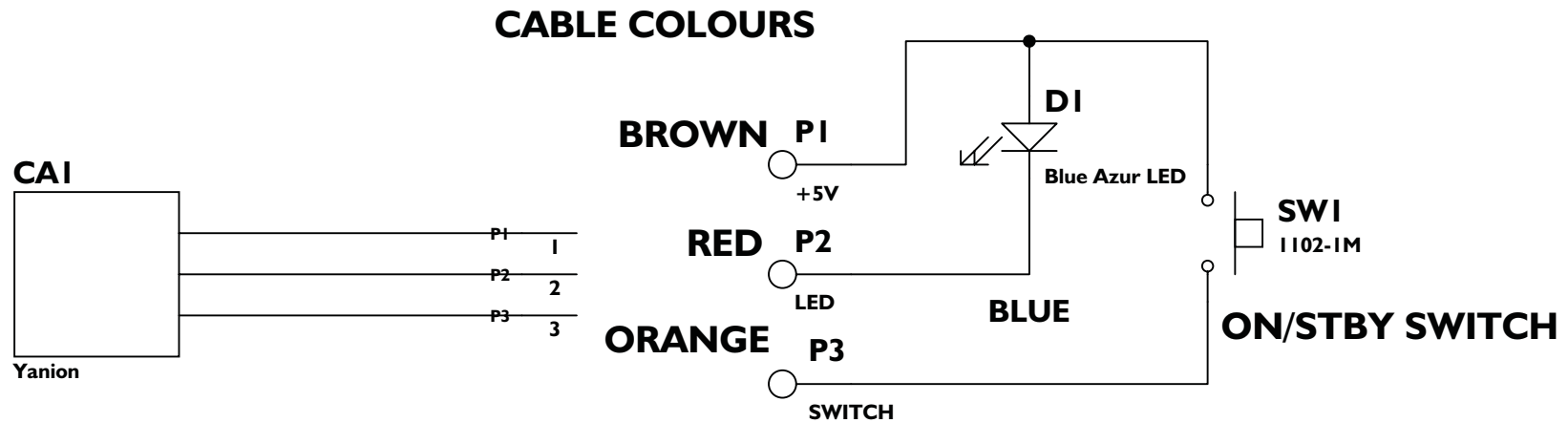
Cambridge Audio Azur 840W Mode Switch PCB (AP20569/3)

Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	Factory P/N	NOTES
CONNECTORS								
1	8 Way	FFC Connector	1	CN1	D100-SSV-08	Standard	2301-008501E001	
SWITCHES								
2	2P2T	Slide Switch	2	SW1, SW2	SS004-P022BY-PF8	PCB Mount	2403-020200E014	PY1477

Cambridge Audio Azur 840W Mode Switch PCB BOM - (AP20569/4)

Value	Description/Type	Qty	Component Ident	Manufacturer	ManPN	Tolerance	PackageInfo	Yanion P/N	NOTES
CONNECTORS									
1	8 Way	Straight Header	1	CN1	JST	B8B-PH-KS		2mm Pitch	2300-008000-000
SWITCHES									
2	2P2T	Slide Switch	2	SW1, SW2	Well Long	SS004-P022BY-PF8		PCB Mount	2403-020200E014

Cambridge Audio Azur 840W Power Amplifier



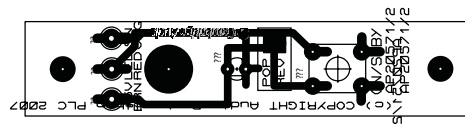
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Cambridge Audio Azur 840W Power Amp



On Standby Switch PCB Layout

Cambridge Audio Azur 840W On Standby Switch PCB (AP20573/4)

Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	NOTES
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DIODES

1	Blue Azur LED	3mm	1	D1	HFB963M-130		Leads must have no ears 4mm spacing LED base to PCB
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SWITCHES

2		Tactile	1	SW1	1102-1M		Through Hole 4.3mm Height Tact Switch
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MISCELLANEOUS

3		3-way JST cable	1	CA1	AP218071		
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Note: resistors, capacitors and other 'generic' components are not usually stocked by the manufacture. Please obtain these locally.