

# 640C V2

Issue Date: 30<sup>th</sup> November 2005

Revised Date 1<sup>st</sup> Issue: 20<sup>th</sup> November 2006

---

## SERVICE MANUAL



---

### SPECIFICATIONS:

D/A Converter	Dual Wolfson WM8740 24-Bit/192kHz capable
Filter	4 Pole Dual Differential Double Virtual Earth balanced
Frequency Response (+/-0.1dB)	20Hz – 20kHz
THD @ 1Khz 0dBfs	<0.0010%
THD @ 1Khz -10dBfs	<0.0005%
THD @ 20Khz 0dBfs	<0.0070%
IMD (19/20 kHz) 0dBfs	<0.0008%
Linearity @ -90dBfs	+/- 0.5dB
Stop band rejection (>24 kHz)	> 90dB
S to N ration, A weighted	> 104dB
Total correlated jitter	< 160pS
Crosstalk @ 1kHz	<-100dB
Crosstalk @20kHz	<-99dB
Output impedance	<50 ohms
Dimensions (H x W x D)	70 x 430 x 310 mm
Weight	4.6kg (10.1lbs)

# **640C V2 SERVICE MANUAL – Revision 2**

## **TABLE OF CONTENTS**

Safety Precautions & Important Notes	3
Laser Safety Precautions	4
Exploded Diagram	5
Front Panel PCB Schematic (Issue 3)	6
Front Panel PCB Layout (Top Side)	7
Front Panel PCB Layout (Bottom Side)	8
Front Panel PCB Assembly BOM (Issue 2)	9
Front Panel PCB Assembly BOM (Issue 3)	10
Servo PCB Schematic	11
Servo PCB Layout (Top Side)	12
Servo PCB Layout (Bottom Side)	13
Servo PCB Assembly BOM	14-15
DAC Board PCB Schematic (Issue 6)	16
DAC Board PCB Schematic (Issue 7)	17
DAC Board (Supply) PCB Schematic (Issue 6)	18
DAC Board (Supply) PCB Schematic (Issue 7)	19
DAC Board PCB Layout (Top Side) (Issue 6)	20
DAC Board PCB Layout (Top Side) (Issue 7)	21
DAC Board PCB Layout (Bottom Side) (Issue 6)	22
DAC Board PCB Layout (Bottom Side) (Issue 7)	23
DAC PCB Assembly BOM (Issue 3)	24-25
DAC PCB Assembly BOM (Issue 6)	26-27
Mains PCB Schematic	28
Mains PCB Layout (Top Side)	29
Mains PCB Layout (Bottom Side)	30
Mains PCB Assembly BOM	31
Voltage Select Switch PCB Schematic	32
Voltage Select Switch PCB Layout (Top Side)	33
Voltage Select Switch PCB Layout (Bottom Side)	34
Voltage Selector PCB Assembly BOM	35
IC Pin Layout Details	36-44

## SAFETY PRECAUTIONS & IMPORTANT NOTES

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



2. The lighting flash with the arrowhead within an equilateral triangle is intended to alert the user or service agent 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 or service agent to the presence of important operating and maintenance (Servicing) instructions in the literature accompanying the appliance.

4. This product complies with EEC Low Voltage (73/23/EEC) and Electromagnetic Compatibility (89/336/EEC) Directives when used and serviced in accordance with this manual. For continued compliance all components 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.

### Notes on chip component replacement

Never reuse a component that has been removed from a PCB

Notice that the minus side of a tantalum capacitor may be damaged by heat

## COPYRIGHT NOTICE.

© 2006 Audio Partnership PLC. All rights reserved.

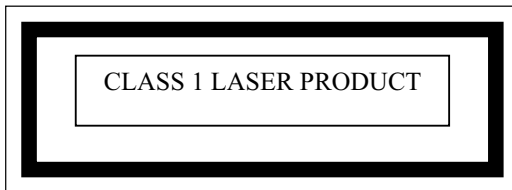
Cambridge Audio and Azur are registered trademarks for Audio Partnership PLC. This document may not be reproduced, distributed, transmitted, displayed, published, or broadcast without the express written prior permission of Audio Partnership PLC.

Alteration or removal of any trademark, copyright, or other notice from this content is prohibited.

Information provided in this document is provided solely for the use of official service agents in repairing and servicing Audio Partnership PLC products.

## LASER SAFETY PRECAUTIONS

**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 Azur approved parts only.

### NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

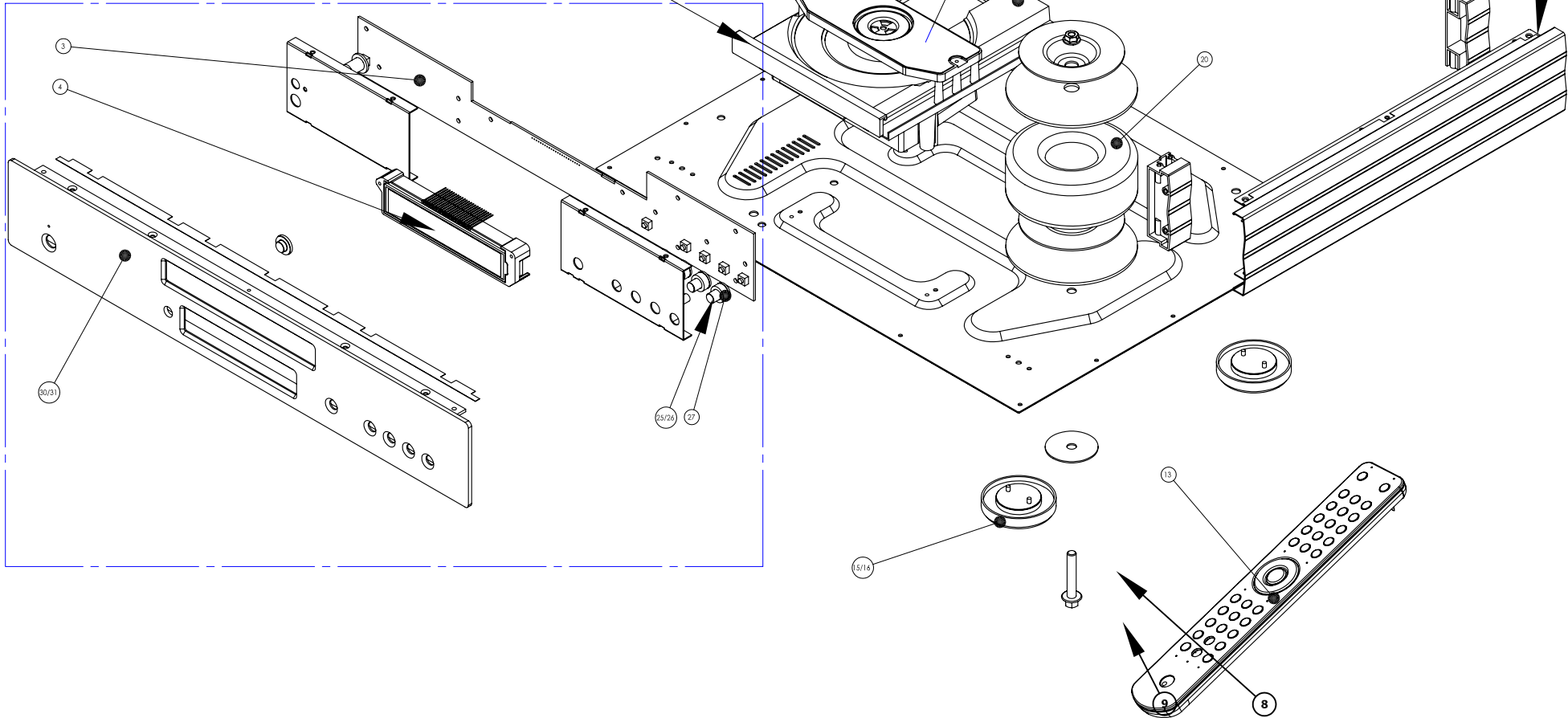
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

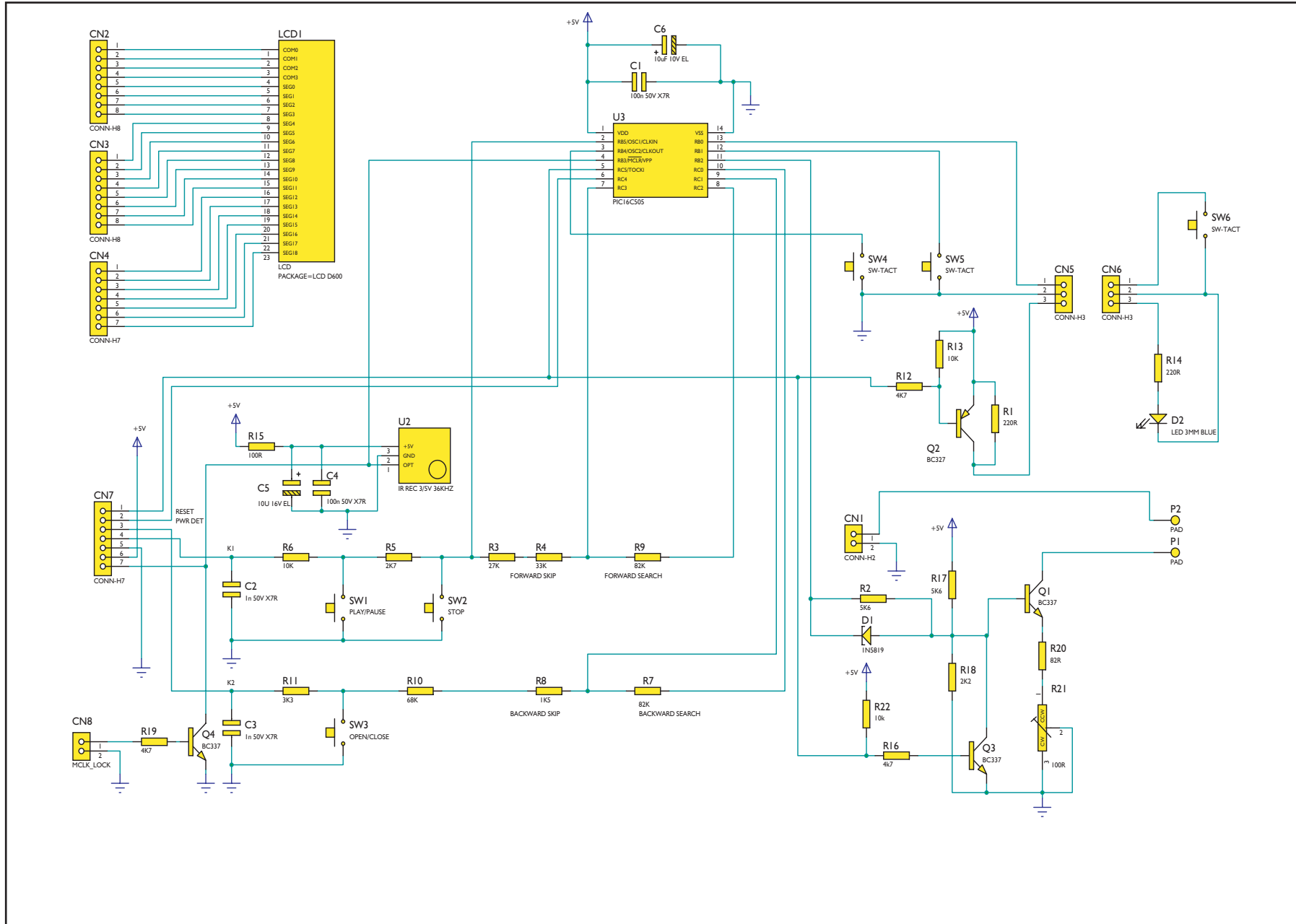
### NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30cm away from the objective lens.

Drawing ref	AP Part	Factory number	Description
1	Py231	6564-001020-301	AZUR-640C V2 BLACK FRONT PANEL ASSEMBLY REV A
2	Py232	6564-001010-301	AZUR-640C V2 SILVER FRONT PANEL ASSEMBLY REV A
3	Py235	9464-001002-041	Azur-640C & 540C V2 CONTROL PANEL PCB ASSY REV A
4	Py236	0110-066350E000	Azur-CD V2 LCD IS06635P09V0 HTN POSITIVE 23PIN
NOT SHOWN	Py306	6509-090095-000	Azur 640c backlight with wires
6	Py337	9464-001002-012	Azur-640C & 640C V2 MAIN BOARD ASSY REV B
7	Py338	9464-001002-071	AZUR-640C & 540C V2 POWER PCB ASSY REV A
8	Py339	9464-001002-561	AZUR-640C V2 DAC PCB ASSY REV A
9	Py349	9692-006002-201	MECHAN ASSY (PUB2TL-210) Y&S/SANKYO DA11V REV A
10	Py341	3009-110000-002	SANYO MECHANISM DA11V MPIN
NOT SHOWN	Py342	9764-120000-600	AZUR-640H RCA CABLE ASSY
NOT SHOWN	Py343	2502-209409E300	RCA CABLE 940MM ORANGE MALE-MALE 03-A-8834-00
13	Py344	9605-054010-001	AZUR-540V/C 640A/C V2.0 REMOTE CONTROL ASSY REV A
NOT SHOWN	Py345	6040-150002-000-01	BATTERY-DOOR FOR Azur RIC BLACK PAINTED
15	Py341	6050-150010-000A01	PLASTIC FOOT GREY PAINT SILVER
16	Py331	6050-150010-000	PLASTIC FOOT BLACK (AP120522)
NOT SHOWN	Py344	6009-170100-000	FOOT PAD FOR Azur-640A
18	Py310	6559-010207-000-02	Azur-640C SMALL SIDE PANEL SILVER PAINT
19	Py310	6559-010207-000-01	Azur-640C SMALL SIDE PANEL BLACK PAINT
20	Py308	3209-075511-000	Toroid transformer for V2 Azur CD players and retro-fit for V1 (see Bulletin)
NOT SHOWN	Py307	6559-010204-000-01	Azur 640C Top Panel Black
NOT SHOWN	Py308	6559-010204-000-02	Azur 640C Top Panel Silver
23		6554-001020-701	small support rear with two brass inserts
24		6554-001010-701	small support front with two brass inserts
25	Py719	6050-150012-000-01	7MM TAC SWITCH BUTTON (BLACK)
26	Py720	6050-150012-000A01	7MM TAC SWITCH BUTTON (SILVER)
27	Py704	6009-170104-000	CA NEW RANGE AMP 7MM TAC SWITCH CUSHION
28	Py568	6564-010006-000A01	Azur-640C SILVER CD DOOR W/SILKSCREEN PMS COOL GREY 7C
29	Py554	6564-010006-000-01	Azur-640C BLACK CD DOOR W/SILKSCREEN PMS COOL GREY 7C
30	Py576	6564-010001E001A02	Azur 640C V2 Front panel in SILVER with silk screening (metal only)
31	Py575	6564-010001E001-02	Azur 640C V2 Front panel in BLACK with silk screening (metal only)
NOT SHOWN	Py568	5109-640100-200	Azur 540/640C V2 multi-language owners manual



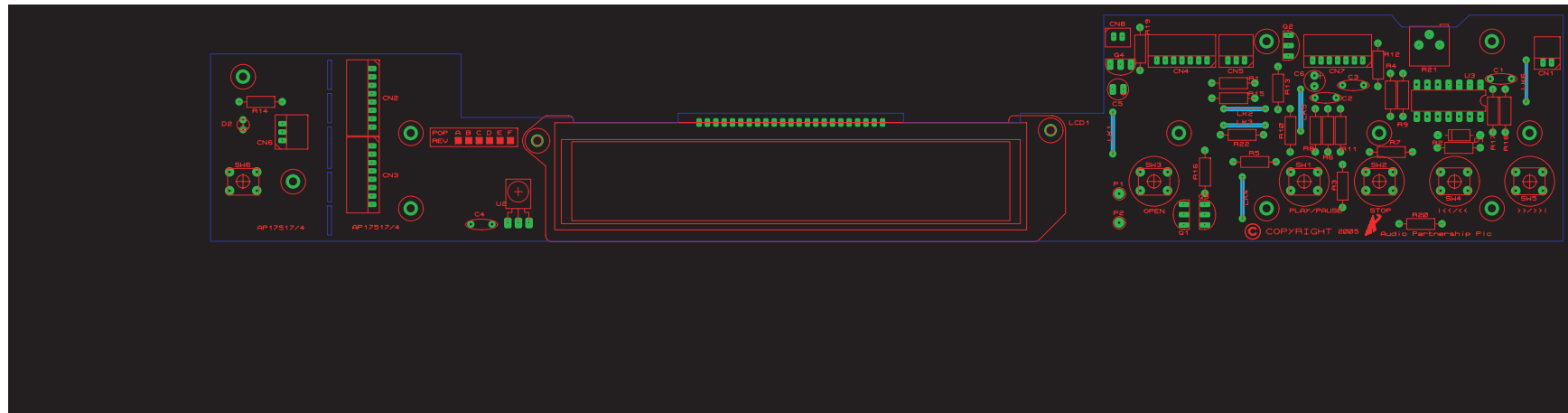
# Cambridge Audio Azur 640C V2 CD Player



To enhance viewing, please print to A3

## API75163 Front Panel PCB Schematic

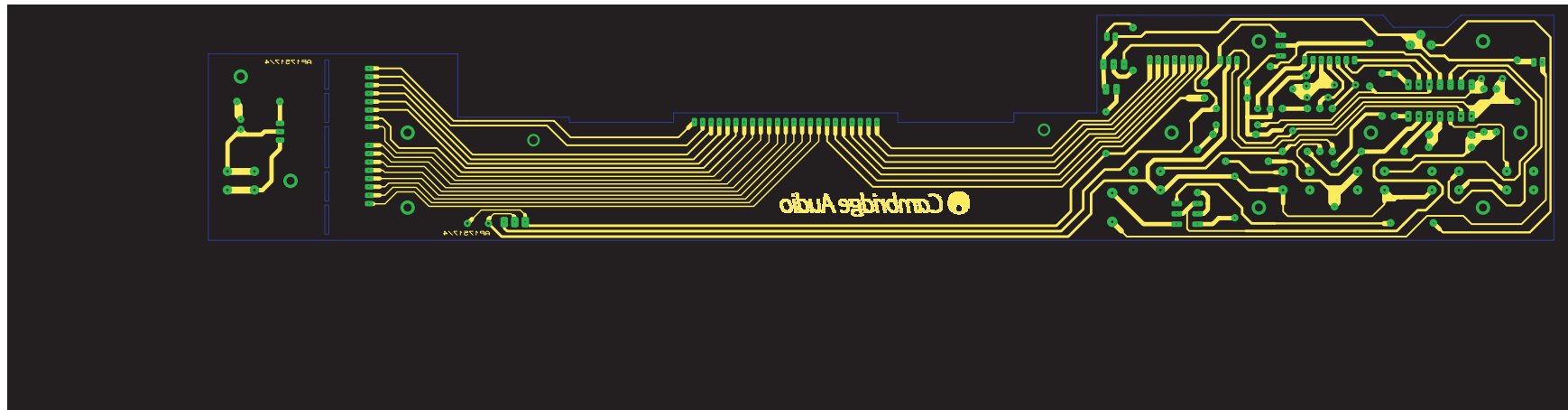
# Cambridge Audio Azur 640C V2 CD Player



To enhance viewing, please print to A3

### API75164 Front Panel PCB Layout (Top Side)

# Cambridge Audio Azur 640C V2 CD Player



To enhance viewing, please print to A3

**API75164 Front Panel PCB Layout (Bottom Side)**



**Cambridge Azur 640C V2 Front Panel PCB Assembly BOM**

**API7519/2**

AP PART NO	VALUE	DESCRIPTION	QTY	COMPONENT IDENT	FACTORY PART NO	NOTES
<b>RESISTORS</b>						
	82R	0.25W 1% Metal Film Resistor	1	R20	1011-002014-000	
	100R	0.25W 1% Metal Film Resistor	2	R15	1011-001014-000	
	220R	0.25W 1% Metal Film Resistor	2	R1, 14	1012-201014-000	
	1K5	0.25W 1% Metal Film Resistor	1	R8	1011-502014-000	
	2K2	0.25W 1% Metal Film Resistor	1	R18		
	2K7	0.25W 1% Metal Film Resistor	1	R5	1012-702014-000	
	3K3	0.25W 1% Metal Film Resistor	1	R11	1013-302014-000	
	4K7	0.25W 1% Metal Film Resistor	3	R12, 16, 19	1014-702014-000	
	5K6	0.25W 1% Metal Film Resistor	2	R2, 17		
	10K	0.25W 1% Metal Film Resistor	3	R6, 13, 22	1011-003014-000	
	27K	0.25W 1% Metal Film Resistor	1	R3	1012-703014-000	
	33K	0.25W 1% Metal Film Resistor	1	R4	1013-303014-000	
	68K	0.25W 1% Metal Film Resistor	1	R10	1016-803014-000	
	82K	0.25W 1% Metal Film Resistor	2	R7, 9	1018-203014-000	
	100R	Multi turn pot	1	R21		
<b>CAPACITORS</b>						
	1nF	Ceramic 50V 10% 5mm pitch	2	C2, 3	1100-102043-000	
	100n	Ceramic 50V X7R 10% 5mm pitch	2	C1, 4		
	10uF 25V	Radial Electrolytic, 20%,	1	C5, 6	1102-100024-000	
<b>TRANSISTORS</b>						
PY214	BC337-25	NPN small signal transistor TO-92	3	Q1, 3, 4	1300-337000-100	
PY219	BC327-25	PNP small signal transistor TO-92	1	Q2	1301-327000-100	
<b>SEMICONDUCTORS</b>						
PY054	TSOP1836SS3V	IR Receiver module (VISHAY)	1	U2	3001-183600-001	
	PIC16C505	Microchip 14 pin 8 Bit PIC	1	U3	4116-505054-200	Programmed with: API8402/I 640CV2 V1.0.hex
PD012	1N5819	Schottky diode	1	D1		
PY064	Blue LED	3mm Blue flat top LED	1	D2	3100-000030-003	
<b>MISCELLANEOUS</b>						
PY043	Tact switch	TACT SW 2P2T KPT-1105A (5MM)	6	SW1, 2, 3, 4, 5, 6	2400-020200-000	
PY936	API7522/I	Positive LCD for V2	1	LCD1	3110-066350E000	
PY806		LCD back light assembly	1		6600-990095-000	

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

\* PLEASE NOTE: All components that appear in **Red** or **Bold** are additional items to this Bom API7519/3 and will not appear on API7519/2.

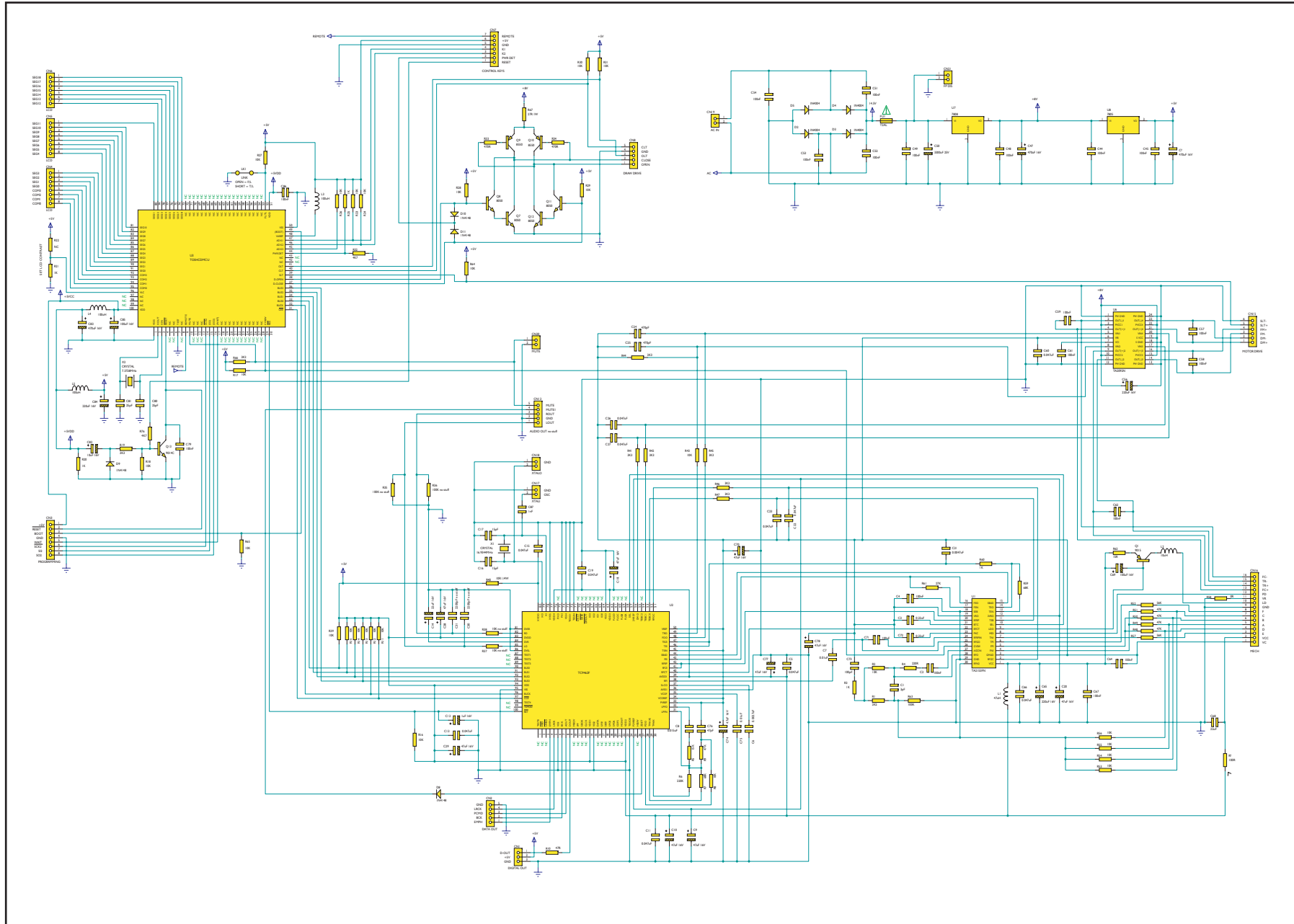
**Cambridge Azur 540C/640C V2 Front Panel PCB Assembly BOM - Revised**

**API7519/3**

AP Part No	Value	Description	Qty	Component Ident	Factory Part No	Notes
<b>Resistors</b>						
	82R	0.25W 1% Metal Film Resistor	1	R20	1011-002014-000	
	100R	0.25W 1% Metal Film Resistor	2	R15	1011-001014-000	
	220R	0.25W 1% Metal Film Resistor	2	R1, 14	1012-201014-000	
	1K5	0.25W 1% Metal Film Resistor	1	R8	1011-502014-000	
	2K2	0.25W 1% Metal Film Resistor	1	R18		
	2K7	0.25W 1% Metal Film Resistor	1	R5	1012-702014-000	
	3K3	0.25W 1% Metal Film Resistor	1	R11	1013-302014-000	
	4K7	0.25W 1% Metal Film Resistor	3	R12, 16, 19	1014-702014-000	
	5K6	0.25W 1% Metal Film Resistor	2	R2, 17		
	10K	0.25W 1% Metal Film Resistor	3	R6, 13, 22	1011-003014-000	
	27K	0.25W 1% Metal Film Resistor	1	R3	1012-703014-000	
	33K	0.25W 1% Metal Film Resistor	1	R4	1013-303014-000	
	68K	0.25W 1% Metal Film Resistor	1	R10	1016-803014-000	
	82K	0.25W 1% Metal Film Resistor	2	R7, 9	1018-203014-000	
	<b>200R</b>	BOCHEN 3296P side adjst MULTI turn pot	1	R21		<b>*Revised</b>
<b>Capacitors</b>						
	1nF	Ceramic 50V 10% 5mm pitch	2	C2, 3	1100-102043-000	
	100n	Ceramic 50V X7R 10% 5mm pitch	2	C1, 4		
	10uF 25V	Radial Electrolytic, 20%,	1	C5, 6	1102-100024-000	
<b>Transistors</b>						
PY214	BC337-25	NPN small signal transistor TO-92	3	Q1, 3, 4	1300-337000-100	
PY219	BC327-25	PNP small signal transistor TO-92	1	Q2	1301-327000-100	
<b>Semiconductors</b>						
PY054	TSOP1836SS 3V	IR Receiver module (VISHAY)	1	U2	3001-183600-001	
	PIC16C505	Microchip 14 pin 8 Bit PIC	1	U3	4116-505054-200	Programmed with: API8402/1 640CV2 V1.0.hex
PD012	1N5819	Schottky diode	1	D1		
PY064	Blue LED	3mm Blue flat top LED	1	D2	3100-000030-003	
<b>Miscellaneous</b>						
PY043	Tact switch	TACT SW 2P2T KPT-1105A (5MM)	6	SW1, 2, 3, 4, 5, 6	2400-020200-000	
PY936	API7522/1	Positive LCD for V2	1	LCD1		RCL IS06635P00V0
	API3344/*	LCD holder	1			
PY806		LCD back light assembly	1			

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

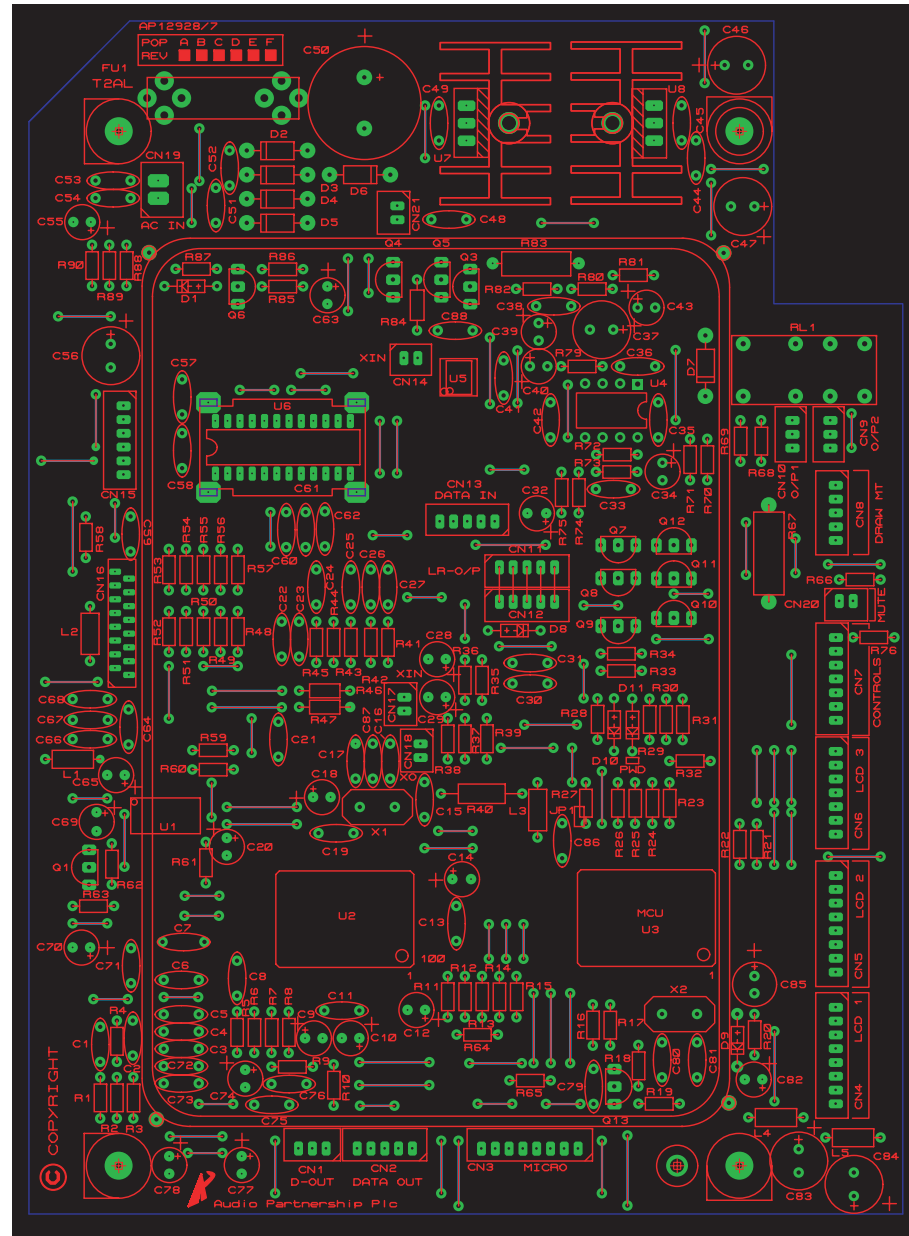
# Cambridge Audio Azur 640C V2 CD Player



To enhance viewing, please print to A3

**API8432I Servo PCB Schematic**

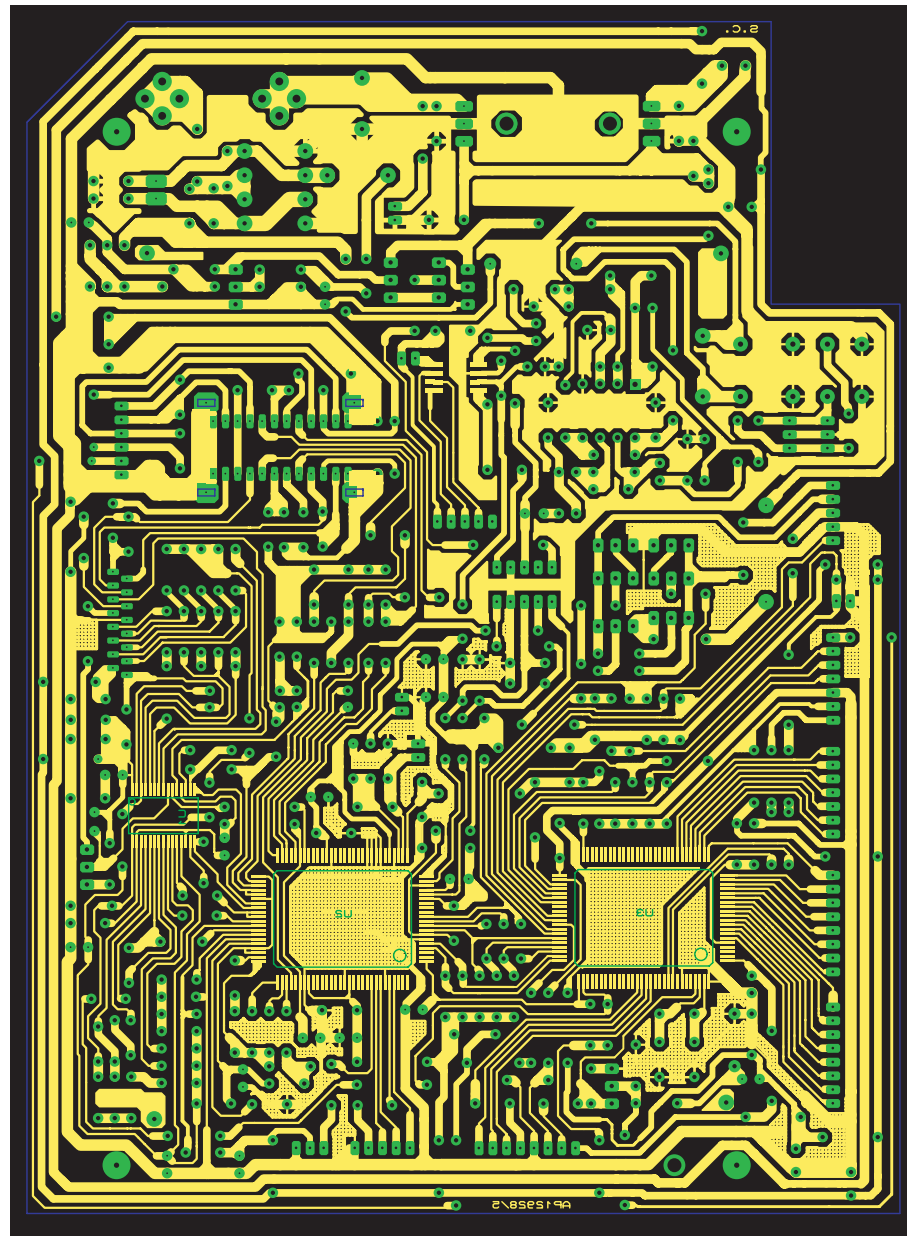
# Cambridge Audio Azur 640C V2 CD Player



To enhance viewing, please print to A3

**AP129277 Servo PCB Layout (Top Side)**

# Cambridge Audio Azur 640C V2 CD Player



To enhance viewing, please print to A3

**API29277 Servo PCB Layout (Bottom Side)**

**Cambridge Azur 640C V2 Servo PCB Assembly BOM**

**API8434/1**

AP PART NO	VALUE	DESCRIPTION	QTY	COMPONENT IDENT	FACTORY PART NO	NOTES
<b>RESISTORS</b>						
	10R	0.25 W Metal Film Resistor	1	R40	1011-000014-000	
	15R	0.125 W Metal Film Resistor	1	R62		
	27R	1 W Carbon Resistor	1	R67	1002-700310-000	mount off PCB by 5mm
	47R	0.125 W Metal Film Resistor	1	R10,	1014-700018-000	
	100R	0.125 W Metal Film Resistor	1	wirelink	1011-001016-000	wirelink is positioned between C68 and L2. This must be 100R resistor
	220R	0.125 W Metal Film Resistor	1	R4	1012-201018-000	
	470R	0.125 W Metal Film Resistor	2	R33, 34	1014-701016-000	
	1K	0.125 W Metal Film Resistor	5	R3, 20, 21, 25, 60	1011-002018-000	
	2K2	0.125 W Metal Film Resistor	2	R1, 66	1012-202016-000	
	3K3	0.125 W Metal Film Resistor	7	R19, 41, 42, 44, 45, 46, 47	1013-302018-000	
	4K7	0.125 W Metal Film Resistor	2	R32, 76	1014-702016-000	
	10K	0.125 W Metal Film Resistor	26	R2, 8, 11, 12, 13, 14, 15, 16, 17, 18, 23, 24, 26, 27, 28, 29, 30, 31, 39, 43, 53, 54, 55, 56, 64, 65	1011-003016-000	
	15K	0.125 W Metal Film Resistor	1	R5,	1011-503018-000	
	27K	0.125 W Metal Film Resistor	1	R61		
	47K	0.125 W Metal Film Resistor	5	R9, 48, 49, 50, 51	1014-703016-000	
	56K	0.125 W Metal Film Resistor	2	R52, 57		
	68K	0.125 W Metal Film Resistor	2	R7, 59	1016-803018-000	
	82K	0.125 W Metal Film Resistor	1	R59	1018-203018-000	
	100K	0.125 W Metal Film Resistor	1	R63	1011-004016-000	
	220K	0.125 W Metal Film Resistor	1	R6	1012-204016-000	
<b>CAPACITORS</b>						
	3pF	Ceramic COG 50V 5mm Pitch	1	C1		
	15pF	Ceramic COG 50V 5mm Pitch	2	C16, 17	1100-150043-000	
	25pF	Ceramic COG 50V 5mm Pitch	2	C80, 81	1100-250042-000	
	47pF	Ceramic COG 50V 5mm Pitch	1	C76	1100-470043-000	
	100pF	Ceramic COG 50V 5mm Pitch	1	C73		
	470pF	Ceramic 50V 5mm Pitch	2	C24, 25	1100-471043-000	
	1nF	Ceramic 50V 5mm Pitch	1	C87	1100-102043-000	
	10nF	Ceramic 50V 5mm Pitch	1	C75	1100-103043-000	
	10nF	Mylar 5mm Pitch	1	C7		
	15nF	Ceramic 50V 5mm Pitch	1	C8	1100-153043-000	
	47nF	Ceramic 50V 5mm Pitch	11	C5, 11, 13, 15, 19, 22, 23, 26, 27, 60, 66	1100-473044-000	
	100nF	Ceramic 50V 5mm Pitch	20	C2, 4, 44, 45, 48, 49, 51, 52, 53, 54, 57, 58, 59, 61, 62, 64, 67, 71, 79, 86	1106-104044-000	
	220nF	Ceramic 50V 5mm Pitch	2	C3, 72	1100-224044-000	
	2n7	Mylar 5mm Pitch	1	C6	1101-272063-000	
	4n7	Mylar 5mm Pitch	1	C21	1101-472062-000	
	1uF	16V Electrolytic	1	C12	1102-107044-000	
	10uF	16V Electrolytic	1	C82	1102-100024-000	
	22uF	16V Electrolytic	2	C14, 68	1102-220014-000	
	47uF	16V Electrolytic	10	C9, 10, 18, 20, 28, 29, 70, 74, 77, 78	1102-470014-000	
	100uF	16V Electrolytic	2	C69, 85	1102-101014-000	

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

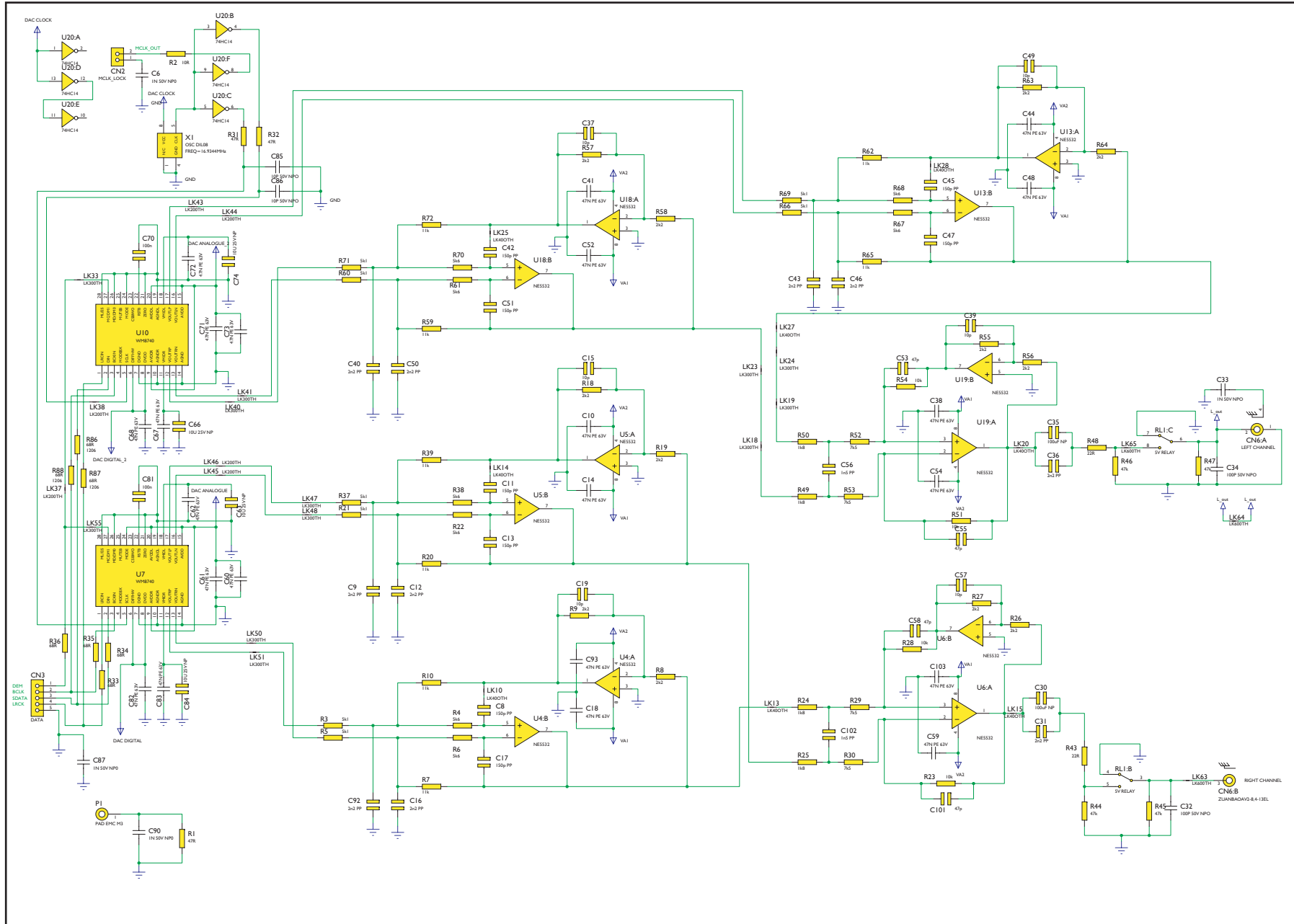
## Cambridge Azur 640C V2 Servo PCB Assembly BOM

API8434/I

AP PART NO	VALUE	DESCRIPTION	QTY	COMPONENT IDENT	FACTORY PART NO	NOTES
	220uF	16V Electrolytic	3	C56, 65, 84	1102-221014-000	
	470uF	16V Electrolytic	3	C46, 47, 83	1102-471014-000	
	3300uF	25V Electrolytic	1	C50	1102-332024-000	
	<b>SEMICONDUCTORS</b>					
PY474	TA2153FN	TOSHIBA RF Amplifier	1	U1	4121-530103-000	
PY475	TC9462FG	TOSHIBA Digital Servo-chip Processor	1	U2	4194-620123-000	100PINS QFP TOSHIBA
PY565	TOSHCDM CU	MCU TMP87EP26F-1J15 SOP TOSHIBH	1	U3	4187-260103-000	
PY473	TA2092N	TOSHIBA Power driver IC	1	U6	4120-920053-000	
PY316	7808	TO-220 +8V Regulator	1	U7	4178-080302-600	
PD035	7805	TO-220 +5V Regulator	1	U8	4178-050334-700	
PY014	C8050D	NPN Transistor TO92	4	Q7, 8, 11, 12	1300-805000-100	
PY558	9014C	NPN Transistor	1	Q13	1300-901400-100	
PY559	C8550	PNP Transistor	2	Q9, 10	1301-855000-100	
PY560	9015C	PNP Transistor	1	Q1	1301-901500-100	
PD009	1N4148	Signal Diode	3	D9, 10, 11	1401-141480-000	
PD008	1N4004	Rectifier Diode	4	D2, 3, 4, 5	1401-140040-000	
	<b>CRYSTALS</b>					
PY027	16.9344MHz	2 Pin 5mm Pitch	1	X1	1600-169343-000	
PY561	7.3728MHz	2 Pin 5mm Pitch	1	X2	1600-737282-990	
	<b>MISCELLANEOUS</b>					
	20mm	PCB Mount Fuse Holder	1	FU1	4031-050100-001	
	T2AL	2A delay 20mm Fuse 250V LBC (low breaking capacity)	1	FU1	4030-618002-001	
	10uH	Inductor 8mm Pitch	1	L2		
	47uH	Inductor 8mm Pitch	1	L1	1504-470300-100	
	100uH	Inductor 8mm Pitch	3	L3, 4, 5	1504-101300-100	

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

# Cambridge Audio Azur 640C V2 CD Player

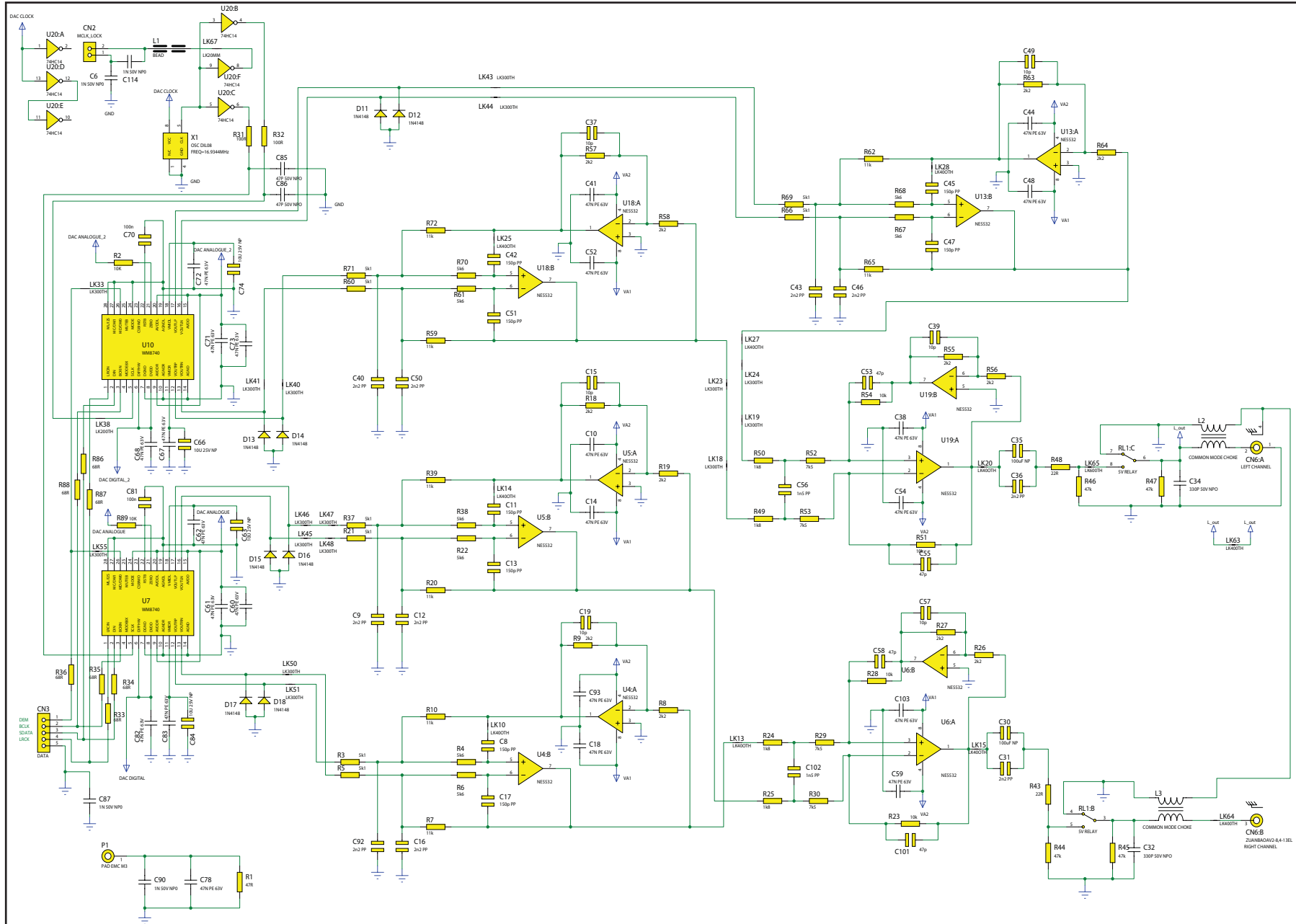


To enhance viewing, please print to A3

## API7613/6 DAC Board PCB Schematic



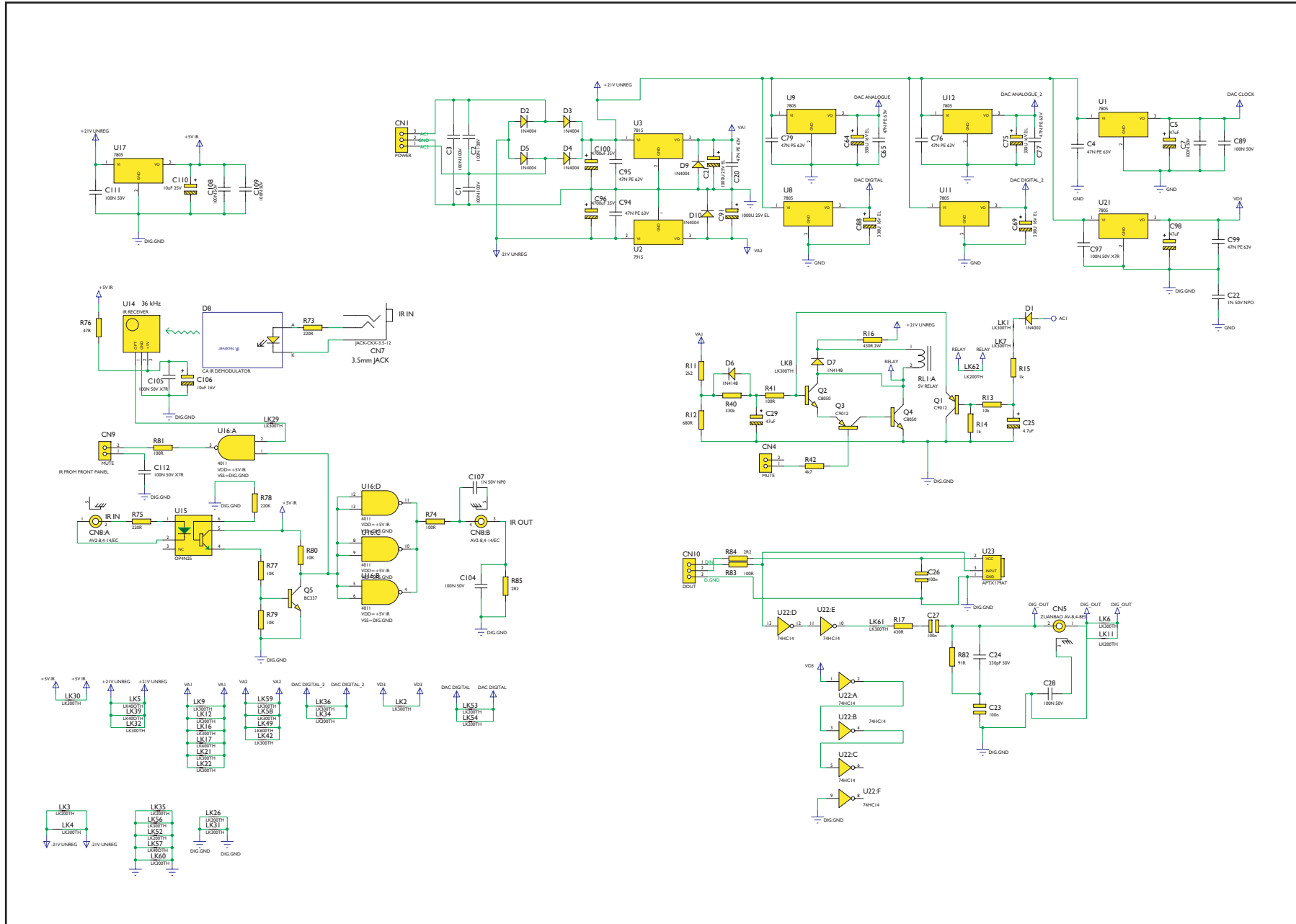
# Cambridge Audio Azur 640C V2.0 CD Player



To enhance viewing, please print to A3

## API7613/ (Revision 7) DAC PCB Schematic

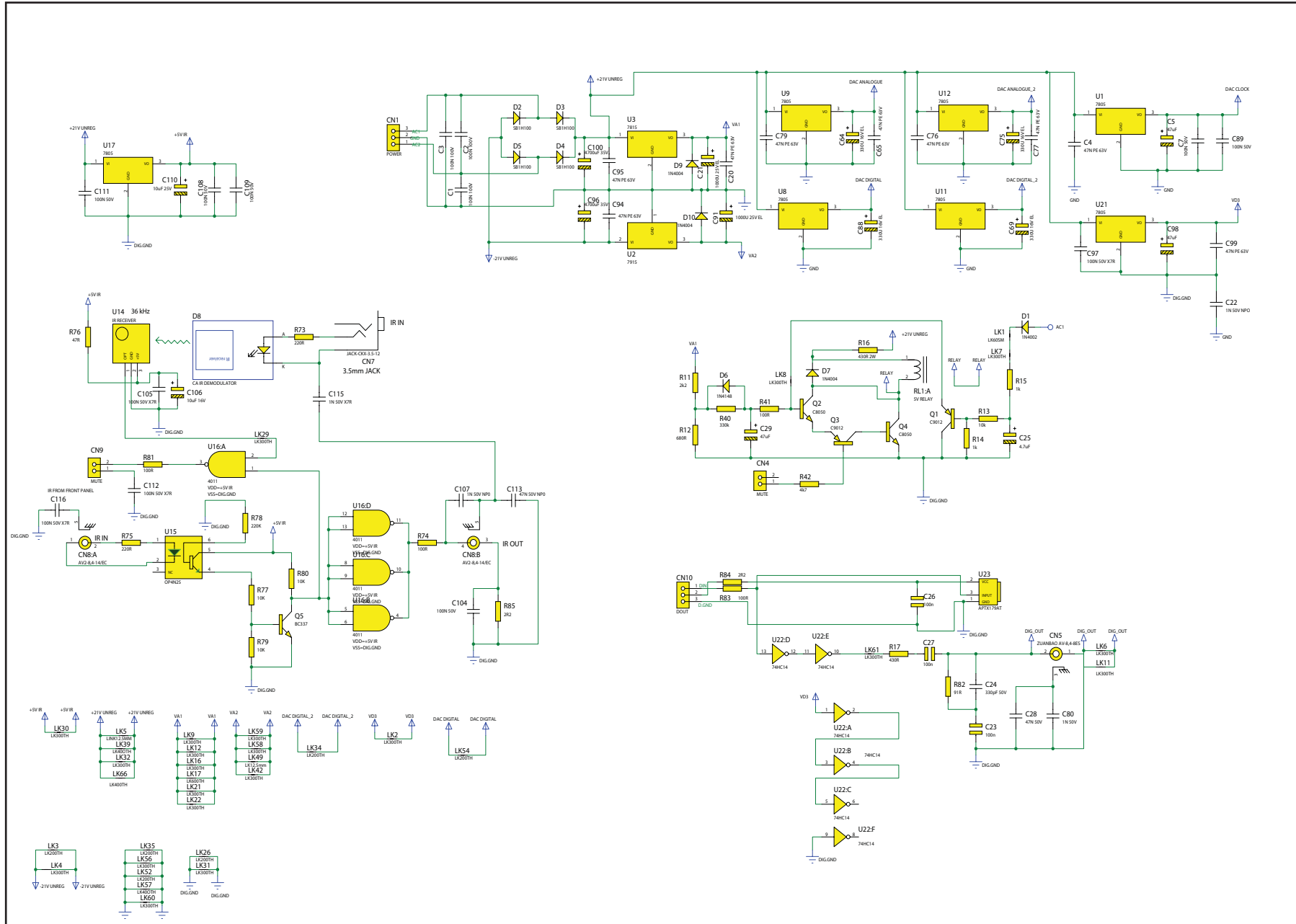
# Cambridge Audio Azur 640C V2 CD Player



To enhance viewing, please print to A3

## API7613/6 Supply / Control Bus / Digital / Relay PCB Schematic

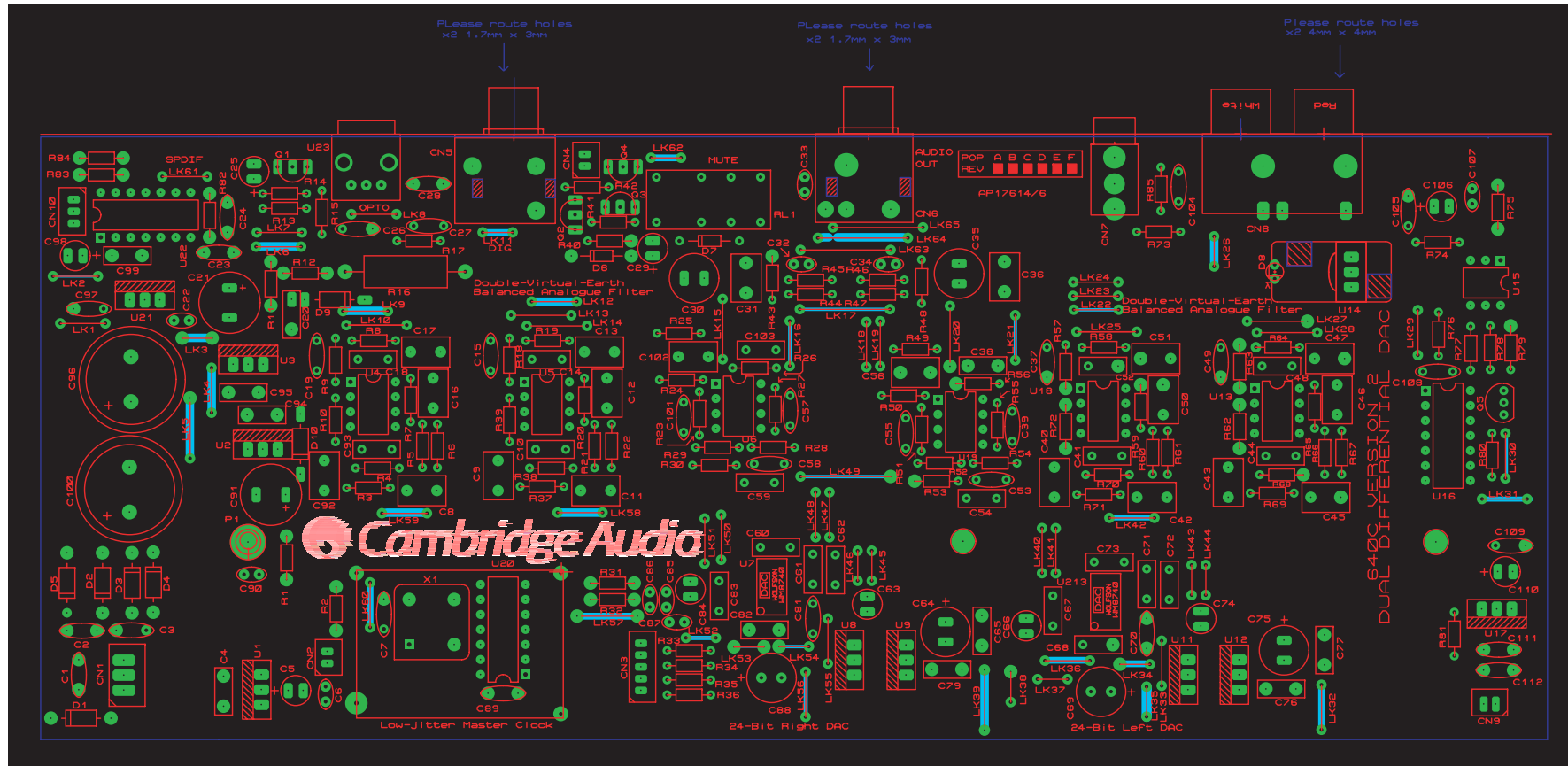
# Cambridge Audio Azur 640C V2.0 CD Player



To enhance viewing, please print to A3

**API7613/7 (Rev 7) Supply / Control Bus / Digital / Relay PCB Schematic**

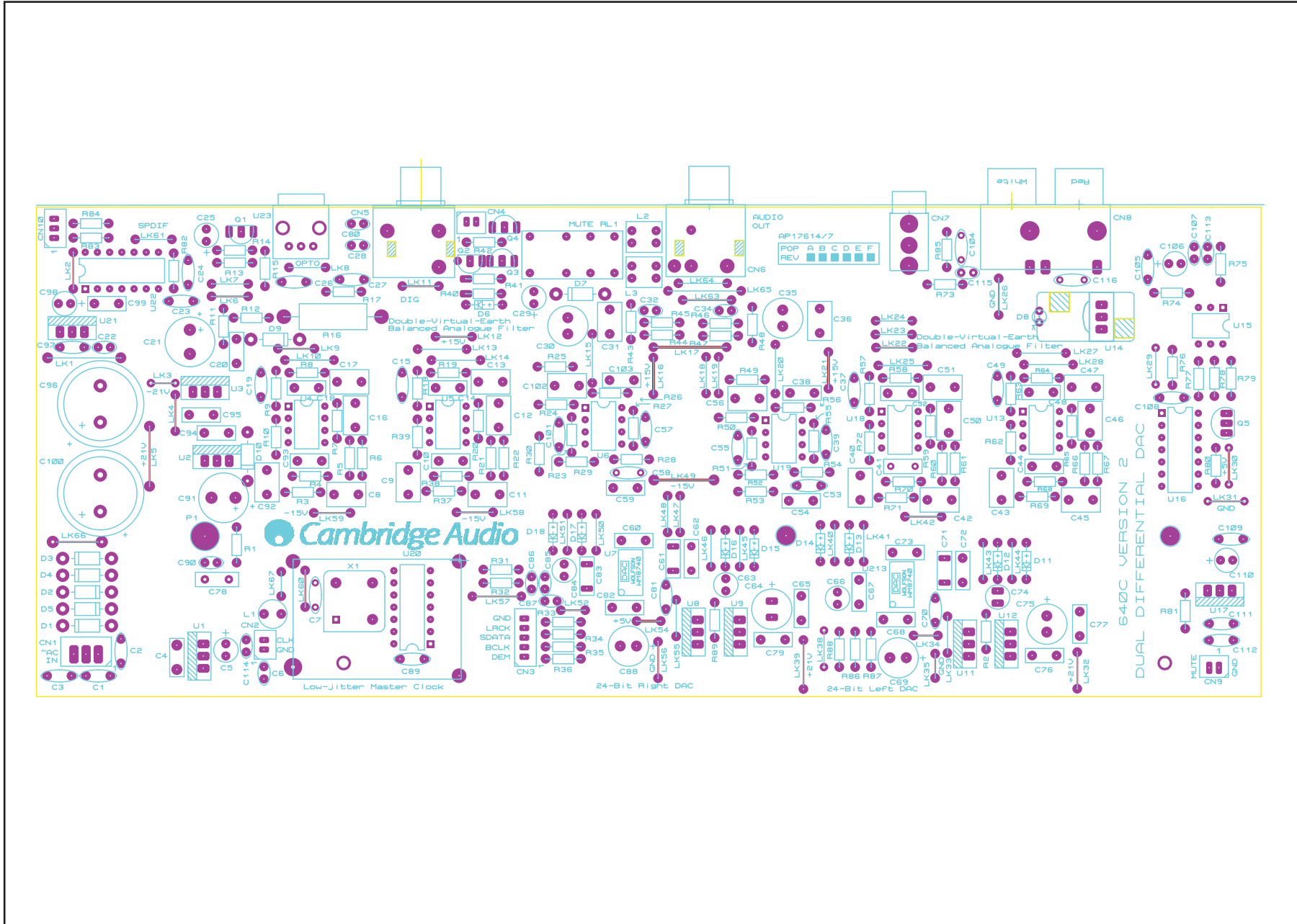
# Cambridge Audio Azur 640C V2 CD Player



To enhance viewing, please print to A3

### API7613/6 DAC Board PCB Layout (Top Side)

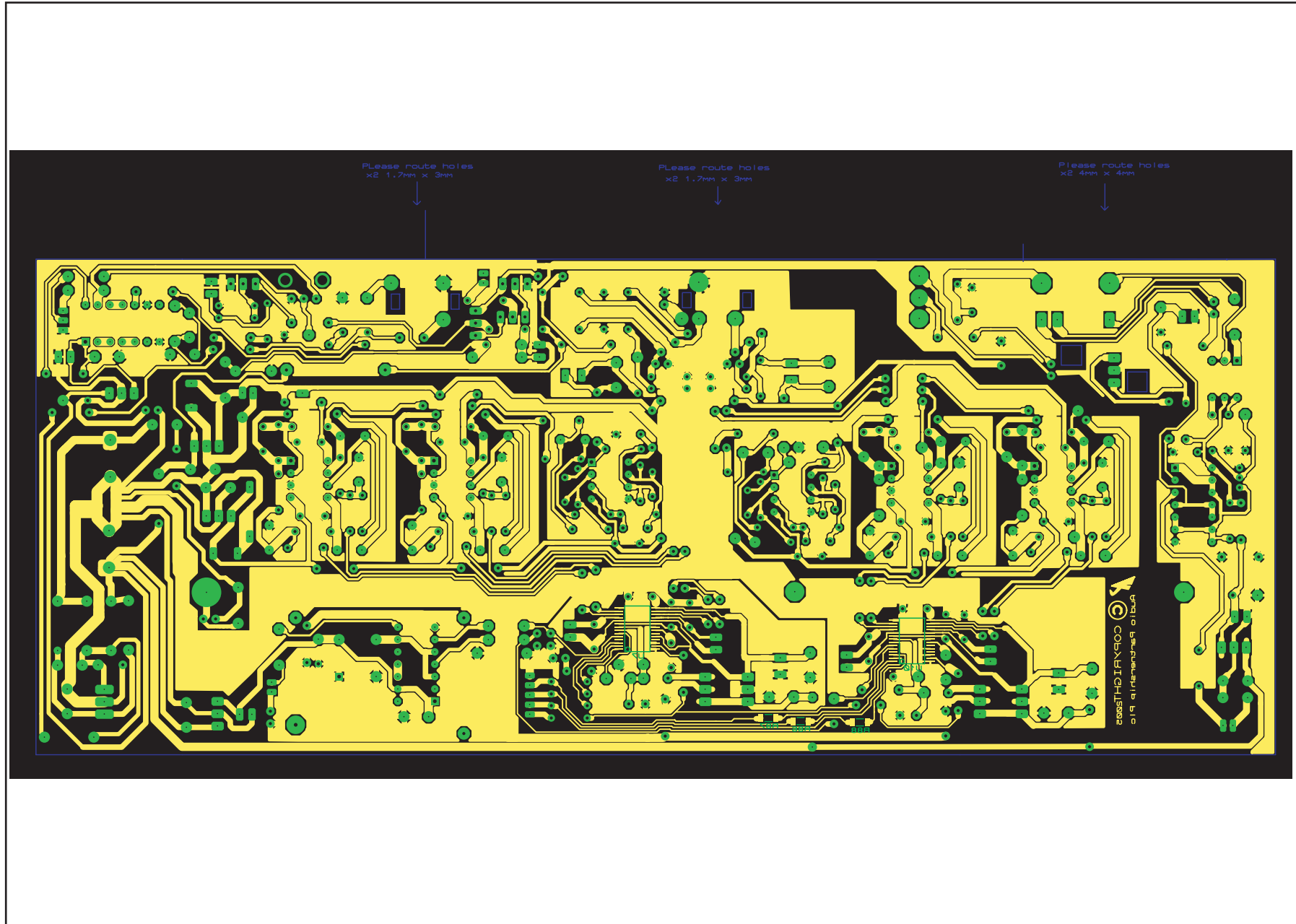
# Cambridge Audio Azur 640C V2.0 CD Player



To enhance viewing, please print to A3

## API7613/ (Revision 7) DAC PCB Board Layout (Top Side)

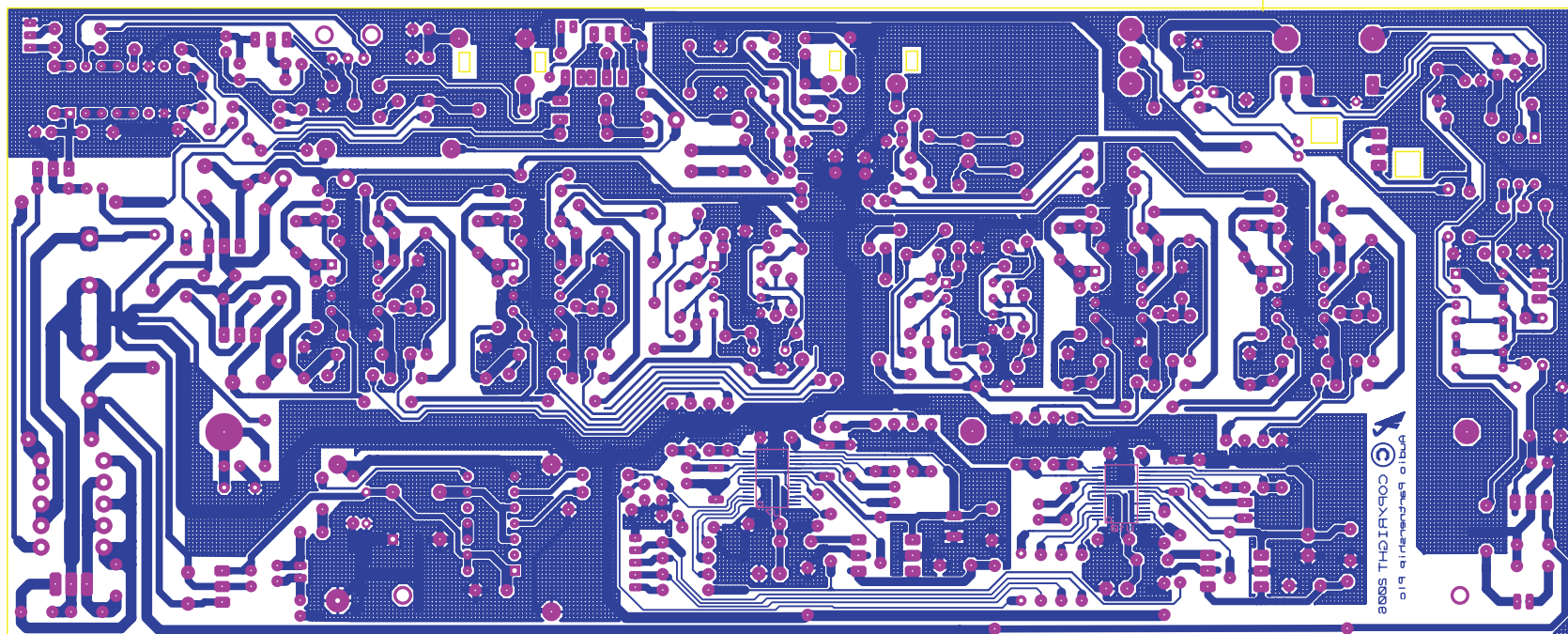
# Cambridge Audio Azur 640C V2 CD Player



To enhance viewing, please print to A3

## API7613/6 DAC Board PCB Layout (Bottom Side)

# Cambridge Audio Azur 640C V2.0 CD Player



To enhance viewing, please print to A3

**API7613/ (Revision 7) DAC PCB Board Layout (Bottom Side)**

## Cambridge Azur 640C V2 DAC PCB Assembly BOM

API7616/3

AP PART NO	VALUE	DESCRIPTION	QTY	COMPONENT IDENT	FACTORY PART NO	NOTES
<b>RESISTORS</b>						
2R2		Resistor 0.125W 1% metal film	2	R84, 85	1012-207018-000	
10R		Resistor 0.125W 1% metal film	1	R2		
22R		Resistor 0.125W 1% metal film	2	R43, 48	1012-200016-000	
47R		Resistor 0.125W 1% metal film	4	R1, 31, 32, 76		
68R		Resistor 0.125W 1% metal film	4	R33, 34, 35, 36		
68R		Resistor SMD 1206 1%	3	R86, 87, 88		Surface mount resistor
91R		Resistor 0.125W 1% metal film	1	R82	1019-100018-000	
100R		Resistor 0.125W 1% metal film	4	41, 74, 81, 83	1011-001016-000	
220R		Resistor 0.125W 1% metal film	2	R73, 75		
430R		Resistor 0.125W 1% metal film	1	R17	1014-301018-000	
680R		Resistor 0.125W 1% metal film	1	R12		
1K0		Resistor 0.125W 1% metal film	2	R14, 15	1011-002018-000	
1K8		Resistor 0.125W 1% metal film	4	R24, 25, 49, 50		
2K2		Resistor 0.125W 1% metal film	13	R8, 9, 11, 18, 19, 26, 27, 55, 56, 57, 58, 63, 64	1012-202016-000	
4K7		Resistor 0.125W 1% metal film	1	R42	1014-702016-000	
5K1		Resistor 0.125W 1% metal film	8	R3, 5, 21, 37, 60, 66, 69, 71		
5K6		Resistor 0.125W 1% metal film	8	R4, 6, 22, 38, 61, 67, 68, 70	1015-602016-000	
7K5		Resistor 0.125W 1% metal film	4	R29, 30, 52, 53		
10K		Resistor 0.125W 1% metal film	8	R13, 23, 28, 51, 54, 77, 79, 80	1011-003016-000	
11K		Resistor 0.125W 1% metal film	8	R7, 10, 20, 39, 59, 62, 65, 72		
47K		Resistor 0.125W 1% metal film	4	R44, 45, 46, 47	1014-703016-000	
220K		Resistor 0.125W 1% metal film	1	R78		
330K		Resistor 0.125W 1% metal film	1	R40		
430R		Resistor 2W 5% carbon film	1	R16	1011-001016-000	
<b>CAPACITORS</b>						
10pF		NPO/COG radial ceramic	6	C15, 19, 37, 39, 49, 57		5MM PITCH
10pF		NPO/COG radial ceramic	2	C85, 86		2.5MM PITCH
47pF		NPO/COG radial ceramic	4	C53, 55, 58, 101		5MM PITCH
100pF		NPO/COG radial ceramic	2	C32, 34		2.5MM PITCH
150pF		Polypropolene box 100V 5.08mm pitch	8	C8, 11, 13, 17, 42, 45, 47, 51		BOX - 7.2 X 4.5
330pF		NPO/COG radial ceramic	1	C24		5MM PITCH
1n		NPO/COG radial ceramic	6	C6, 22, 33, 87, 90, 107		2.5MM PITCH
1n5		Polypropolene box 100V 5.08mm pitch	2	C56, 102	1117-152052-900	BOX - 7.2 X 4.5
2n2		Polypropolene box 100V 5.08mm pitch	8	C9, 12, 16, 40, 43, 46, 50, 92	1114-222062-001	BOX - 7.2 X 4.5
10nF		Polypropolene box 63V 5.08mm pitch	2	C31, 36		BOX - 7.2 X 4.6
47n		Metallized polyester Cap 63V +-5%	31	C4, 10, 14, 18, 20, 38, 41, 44, 48, 52, 54, 59, 60, 61, 62, 65, 67, 68, 71, 72, 73, 76, 77, 79, 82, 83, 93, 94, 95, 99, 103		5MM PITCH BOX

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



**Cambridge Azur 640C V2 DAC PCB Assembly BOM**

**API7616/3**

AP PART NO	VALUE	DESCRIPTION	QTY	COMPONENT IDENT	FACTORY PART NO	NOTES
	100n	NPO/C0G radial ceramic	14	C7, 23, 26, 27, 28, 70, 81, 89, 97, 104, 105, 108, 109, 111, 112		5MM PITCH
	100n	NPO/C0G radial ceramic 100V	3	C1, 2, 3		5MM PITCH (Must be 100V)
	4.7uF	50V Radial Electrolytic Capacitor	1	C29	1102-477044-000	5.2MM DIAMETER
	10uF NP	25V Radial Non-polar Electrolytic	4	C63, 66, 74, 84	1105-100024-000	5.2MM DIAMETER
	10uF	16V Radial Electrolytic Capacitor	2	C106, 110		5.2MM DIAMETER
	47uF	25V Radial Electrolytic Capacitor	3	C5, 29, 98	1102-470024-000	5.2MM DIAMETER
	100uF NP	16V Radial Non-polar Electrolytic	2	C30, 35	1105-101024-000	8.4MM DIAMETER
	330uF	16V Radial Electrolytic Capacitor	4	C64, 69, 75, 88		8.4MM DIAMETER
	1000uF	25V Radial Electrolytic Capacitor 105 degree C	2	C21, 91		10.4MM DIAMETER
	4700uF	35V Radial Electrolytic Capacitor	2	C96, 100		D = 18MM, P = 8MM, H = 35MM
<b>SEMICONDUCTORS</b>						
PD008	1N4004	Standard rectifier diode	3	D1, 9, 10	1401-140040-000	
	SB1H100	schottky diode 1A 100V	4	D2, 3, 4, 5,		
PD009	1N4148	Standard signal diode	2	D6, 7	1401-141480-000	
PY962	MV50640	Fairchild 3mm DIA Red LED	1	D10		Fitted as part of assembly with API7339/3 No alternative to used
	C8050	Small signal transistor NPN, TO92	2	Q2, 4	1300-805000-100	
	C9012	Small signal transistor PNP, TO92	2	Q1, 3	1301-901200-100	
PY214	BC337	Small signal transistor NPN, TO92	1	Q5	1300-337000-100	
PD035	7805	5V, 1A regulator, TO220	7	U1, 8, 9, 11, 12, 17, 21	4178-050334-700	
PD037	7815	15V, 1A regulator, TO220	1	U3	4178-150301-800	
PD038	7915	-15V, 1A regulator, TO220	1	U2	4179-150302-600	
PY585	WM8740	24-bit Stereo DAC	2	U7, 10	4187-400990-000	Wolfson
PY108	NE5532	Audio Op-amp	6	U4, 5, 6, 13, 18, 19	4155-320052-900	texas instrument
PY343	74HC14	HCMOS DIL	2	U20, 22	4174-140052-900	texas instrument
PY363	APT-X179A	Opto TX	1	U23	4117-900990-000	
PY054	TSOP1836	IR Receiver	1	U14		
	CD4011BE	Texas Instruments Quad NAND gate IC	1	U16		Alternative is National semi CD4011BCN
PD025	OP4N25	Opto-isolator IC	1	U15		
<b>MISC</b>						
PY028	16.934MHz	XTAL Oscillator module, 4 pin	1	X1	1600-169343-602	Half size 50ppm
		Copper plated screening can & logo	1	Fit over clock circuit (over X1)	6540-010221-000	Copper plated
	API7339/3	IR Receiver housing	1	Fit over D8, 14		
PY584	Relay	5V SS-DPDT	1	RL1	4050-000005-002	DS2Y-S-DC5V
<b>CONNECTORS</b>						
		Single RCA connector, gold plated, BLACK INSERT	1	CN5		AV-8,4-8ES (COAX OUT)
		Dual RCA connector, gold plated, RED( bottom) & WHITE(top)	1	CN6		AV2-8,4-13EL (AUDIO LINE OUT)
		Dual RCA connector, gold plated, ORANGE insert	1	CN8		AV2-8,4-14EC
		3.5mm JACK	1	CN7		CKX-3.5-12

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

\* PLEASE NOTE: All components that appear in **Red** or **Bold** are additional items to this Bom AP17616/6 and will not appear on AP17616/3.

**Cambridge Azur 640C V2 DAC PCB Assembly BOM - Revised**

**AP17616/6**

AP Part No.	Value	Description/Type	Qty	Component Ident	Factory Part No	Notes
<b>Resistors</b>						
2R2		Resistor 0.125W 1% metal film	2	R84, R85	1012-207018-000	
22R		Resistor 0.125W 1% metal film	2	R43, R48	1012-200016-000	
47R		Resistor 0.125W 1% metal film	<b>2</b>	<b>R1, R76</b>		<b>*Revised</b>
68R		Resistor 0.125W 1% metal film	<b>7</b>	<b>R33, R34, R35, R36, R86, R87, R88</b>		<b>*Revised</b>
91R		Resistor 0.125W 1% metal film	1	R82	1019-100018-000	
100R		Resistor 0.125W 1% metal film	<b>6</b>	<b>R31, R32, R41, R74, R81, R83</b>	1011-001016-000	<b>*Revised</b>
220R		Resistor 0.125W 1% metal film	2	R73, R75		
430R		Resistor 0.125W 1% metal film	1	R17	1014-301018-000	
680R		Resistor 0.125W 1% metal film	1	R12		
1K0		Resistor 0.125W 1% metal film	2	R14, R15	1011-002018-000	
1K8		Resistor 0.125W 1% metal film	4	R24, 25, 49, 50		
2K2		Resistor 0.125W 1% metal film	13	R8, R9, R11, R18, R19, R26, R27, R55, R56, R57, R58, R63, R64	1012-202016-000	
4K7		Resistor 0.125W 1% metal film	1	R42	1014-702016-000	
5K1		Resistor 0.125W 1% metal film	8	R3, R5, R21, R37, R60, R66, R69, R71		
5K6		Resistor 0.125W 1% metal film	8	R4, R6, R22, R38, R61, R67, R68, R70	1015-602016-000	
7K5		Resistor 0.125W 1% metal film	4	R29, R30, R52, R53		
10K		Resistor 0.125W 1% metal film	<b>10</b>	<b>R2, R13, R23, R28, R51, R54, R77, R79, R80, R89</b>	1011-003016-000	<b>*Revised</b>
11K		Resistor 0.125W 1% metal film	8	R7, R10, R20, R39, R59, R62, R65, R72		
47K		Resistor 0.125W 1% metal film	4	R44, R45, R46, R47	1014-703016-000	
220K		Resistor 0.125W 1% metal film	1	R78		
330K		Resistor 0.125W 1% metal film	1	R40		
430R		Resistor 2W 5% carbon film	1	R16	1011-001016-000	
<b>Capacitors</b>						
10pF		NPO/C0G radial ceramic	6	C15, C19, C37, C39, C49, C57		5MM PITCH
<b>47pF</b>		<b>NPO/C0G radial ceramic - 2.5mm Pitch</b>	<b>2</b>	<b>C85, C86</b>		<b>*Revised</b>
47pF		NPO/C0G radial ceramic - 5mm Pitch	<b>5</b>	<b>C53, C55, C58, C101, C114</b>		<b>*Revised</b>
150pF		Polypropylene box 100V 5.08mm pitch	8	C8, C11, C13, C17, C42, C45, C47, C51		BOX - 7.2 X 4.5
330pF		NPO/C0G radial ceramic - 5mm Pitch	<b>3</b>	<b>C24, C32, C34</b>		<b>*Revised</b>
1n		NPO/C0G radial ceramic - 2.5mm Pitch	<b>7</b>	<b>C6, 22, C80, C87, C90, C107, C115</b>		<b>*Revised</b>
1n5		Polypropylene box 100V 5.08mm pitch	2	C56, C102	1117-152052-900	BOX - 7.2 X 4.5
2n2		Polypropylene box 100V 5.08mm pitch - Box 7.2 x 4.5	<b>10</b>	<b>C9, C12, C16, C31, C36, C40, C43, C46, C50, C92</b>	1114-222062-001	<b>*Revised</b>
<b>47n</b>		<b>NPO/C0G radial ceramic - 2.5mm Pitch</b>	<b>2</b>	<b>C28, C113</b>		<b>*Revised</b>
47n		Metallized polyester Cap 63V +-5% - 5mm Pitch	<b>32</b>	<b>C4, C10, C14, C18, C20, C38, C41, C44, C48, C52, C54, C59, C60, C61, C62, C65, C67, C68, C71, C72, C73, C76, C77, C78, C79, C82, C83, C93, C94, C95, C99, C103</b>		<b>*Revised</b>
100n		NPO/C0G radial ceramic - 5mm Pitch	<b>15</b>	<b>C7, C23, C26, C27, C70, C81, C89, C97, C104, C105, C108, C109, C111, C112, C116</b>		<b>*Revised</b>
100n		NPO/C0G radial ceramic 100V	3	C1, C2, C3		5MM PITCH (Must be 100V)
4.7uF		50V Radial Electrolytic Capacitor - 5.2mm Diameter	<b>1</b>	<b>C25</b>	1102-477044-000	<b>*Revised</b>
10uF NP		25V Radial Non-polar Electrolytic	4	C63, C66, C74, C84	1105-100024-000	5.2MM DIAMETER
10uF		<b>25V</b> Radial Electrolytic Capacitor - 5.2mm Diameter	2	C106, C110		<b>*Revised</b>
47uF		25V Radial Electrolytic Capacitor	3	C5, C29, C98	1102-470024-000	5.2MM DIAMETER
100uF NP		16V Radial Non-polar Electrolytic	2	C30, C35	1105-101024-000	8.4MM DIAMETER
330uF		16V Radial Electrolytic Capacitor	4	C64, C69, C75, C88		8.4MM DIAMETER
1000uF		25V Radial Electrolytic Capacitor 105 degree C	2	C21, C91		10.4MM DIAMETER
4700uF		35V Radial Electrolytic Capacitor	2	C96, C100		D = 18MM, P = 8MM, H = 35MM

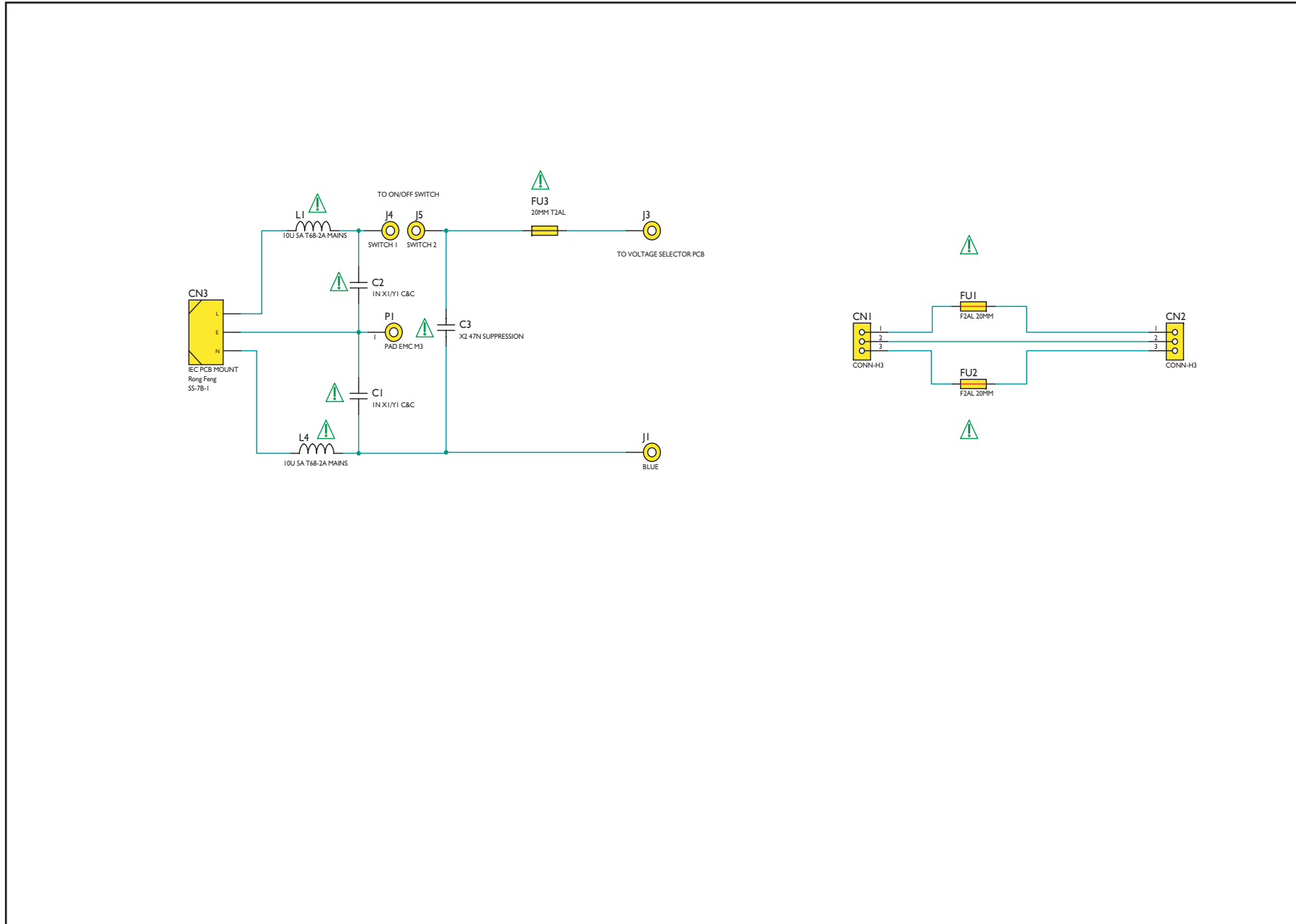
\* PLEASE NOTE: All components that appear in **Red** or **Bold** are additional items to this Bom AP17616/6 and will not appear on AP17616/3.

**Cambridge Azur 640C V2 DAC PCB Assembly BOM - Revised**

**API7616/6**

AP Part No.	Value	Description/Type	Qty	Component Ident	Factory Part No	Notes
<b>Semiconductors</b>						
PD008	1N4004	Standard rectifier diode	4	D1, <b>D7</b> , D9, D10	1401-140040-000	<b>*Revised</b>
	SB1H100	schottky diode 1A 100V	4	D2, D3, D4, D5,		
PD009	1N4148	Standard signal diode	9	D6, <b>D11, D12, D13, D14, D15, D16, D17, D18</b>	1401-141480-000	<b>*Revised</b>
PY962	MV50640	<b>3mm DIA Red LED (Fitted as part of assembly with API7339/3 - No Alternative used)</b>	1	<b>D8</b>		<b>*Revised</b>
	C8050	Small signal transistor NPN, TO92	2	Q2, Q4	1300-805000-100	
	C9012	Small signal transistor PNP, TO92	2	Q1, Q3	1301-901200-100	
PY214	BC337	Small signal transistor NPN, TO92	1	Q5	1300-337000-100	
PD035	7805	5V, 1A regulator, TO220	7	U1, U8, U9, U11, U12, U17, U21	4178-050334-700	
PD037	7815	15V, 1A regulator, TO220	1	U3	4178-150301-800	
PD038	7915	-15V, 1A regulator, TO220	1	U2	4179-150302-600	
PY585	WM8740	24-bit Stereo DAC	2	U7, U10	4187-400990-000	
PY108	NE5532	Audio Op-amp	6	U4, U5, U6, U13, U18, U19	4155-320052-900	
PY343	74HC14	HCMOS DIL	2	U20, U22	4174-140052-900	
PY363	APT-X179A	Opto TX	1	U23	4117-900990-000	
PY054	TSOP1836	IR Receiver	1	U14		
	CD4011BE	Texas Instruments Quad NAND gate IC	1	U16		Alternative is National semi CD4011BCN
PD025	OP4N25	Opto-isolator IC	1	U15		
<b>Misc</b>						
PY028	16.934MHz	XTAL Oscillator module, 4 pin	1	X1	1600-169343-602	Half size 50ppm
		Copper plated screening can & logo	1	Fit over clock circuit (over X1)	6540-010221-000	Copper plated
	<b>Ferrite Bead</b>	<b>2 Pin Ferrite bead WE-UKW, 25MHz@Z 145 ohms &amp; 100MHz@Z 230ohms</b>	1	<b>L1</b>	<b>742750421</b>	<b>*Revised</b>
	<b>Common mode choke</b>	<b>4 Pin CMC, 60uH, Z 1400 ohms</b>	2	<b>L2, L3</b>	<b>74279452</b>	<b>*Revised</b>
	API7339/3	IR Receiver housing	1	Fit over D8, U14		
PY584	Relay	5V SS-DPDT	1	RL1	4050-000005-002	DS2Y-S-DC5V
<b>Connectors</b>						
		Single RCA connector, gold plated, BLACK INSERT	1	CN5		AV-8,4-8ES (COAX OUT)
		Dual RCA connector, gold plated, RED (bottom) & WHITE(top)	1	CN6		AV2-8,4-13EL (AUDIO LINE OUT)
		Dual RCA connector, gold plated, ORANGE insert	1	CN8		AV2-8,4-14EC
		3.5mm JACK	1	CN7		CKX-3.5-12

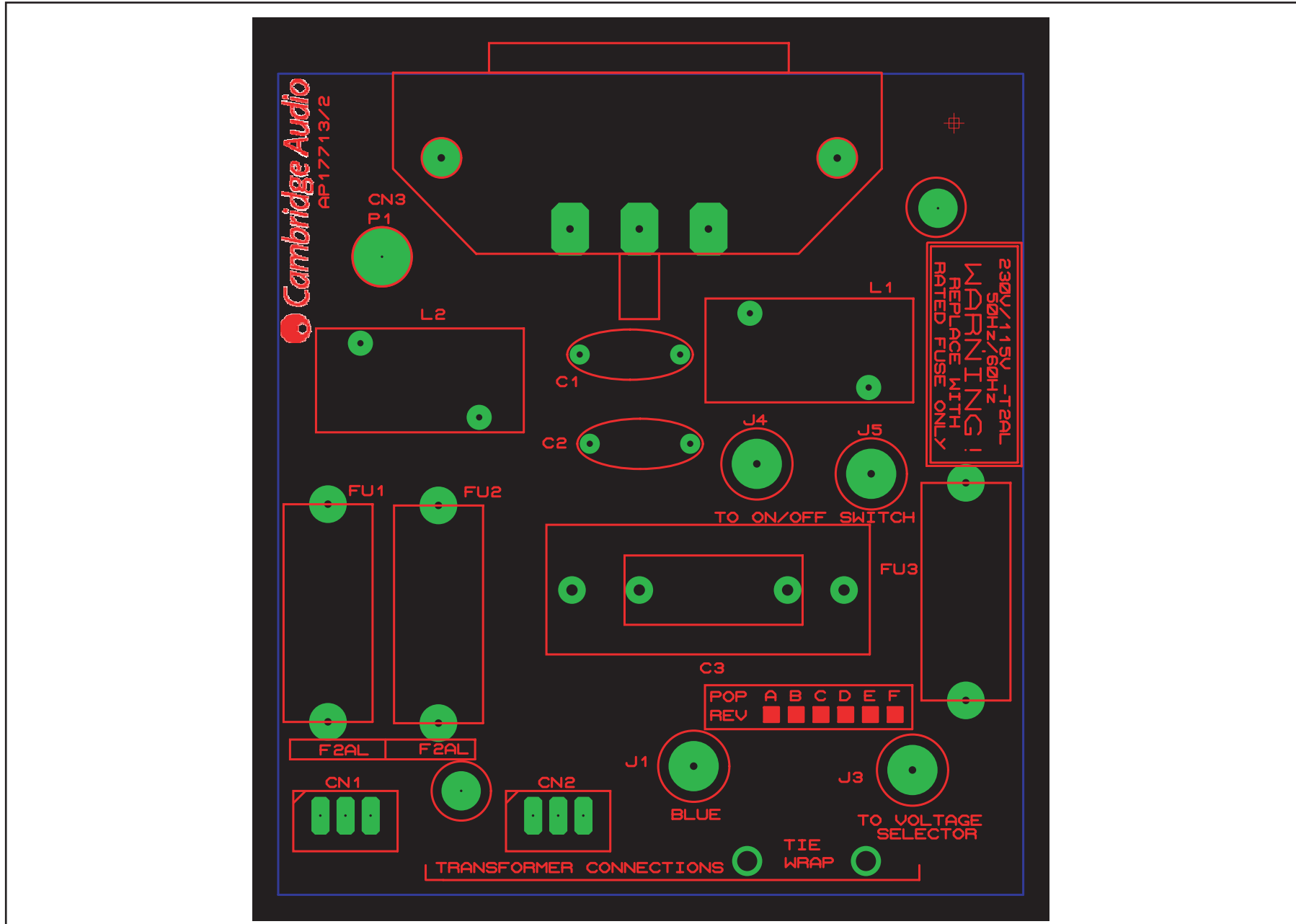
# Cambridge Audio Azur 640C V2 CD Player



To enhance viewing, please print to A3

**API77122 Mains PCB Schematic**

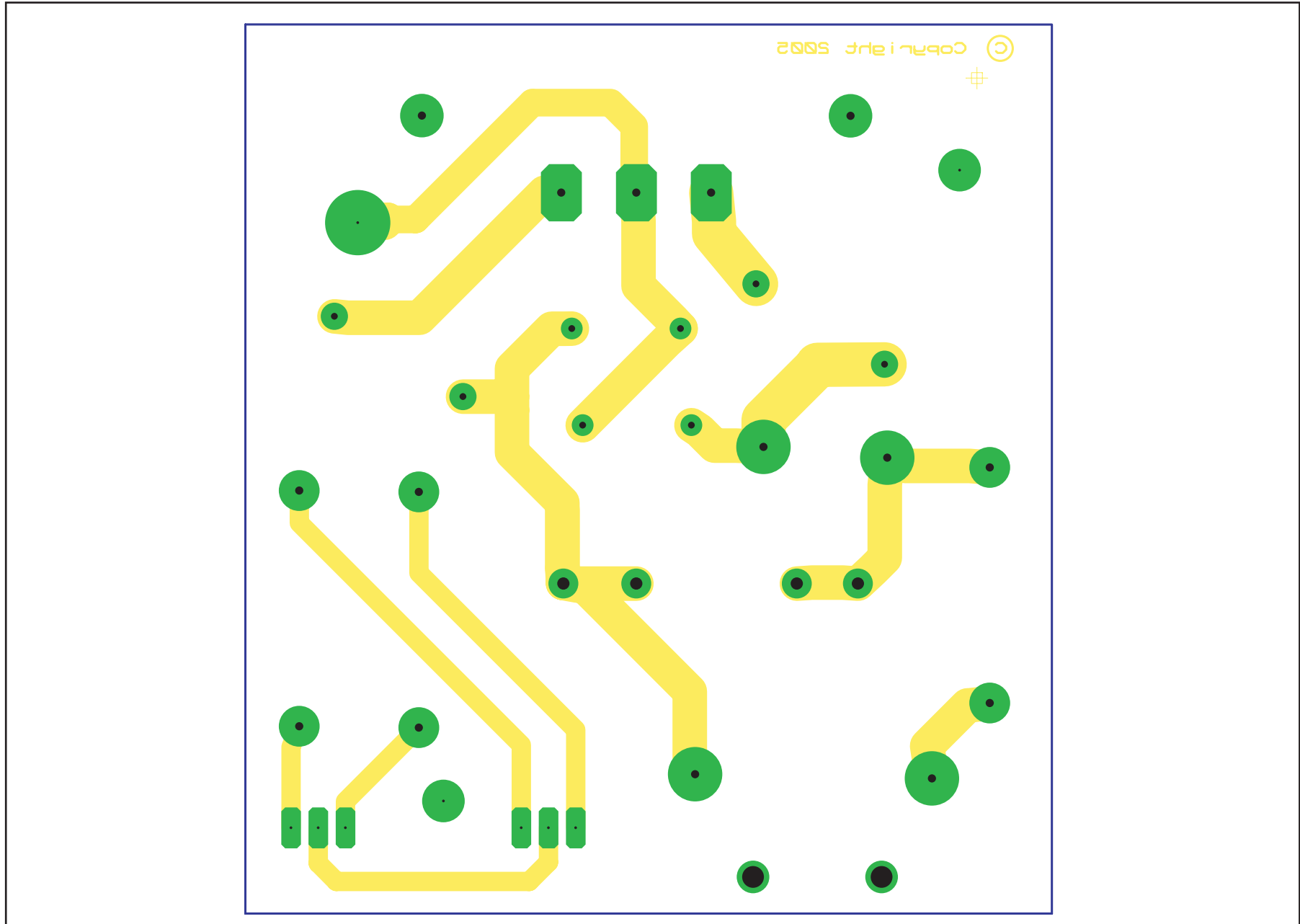
# Cambridge Audio Azur 640C V2 CD Player



To enhance viewing, please print to A3

## API77122 Mains PCB Layout (Top Side)

# Cambridge Audio Azur 640C V2 CD Player



To enhance viewing, please print to A3

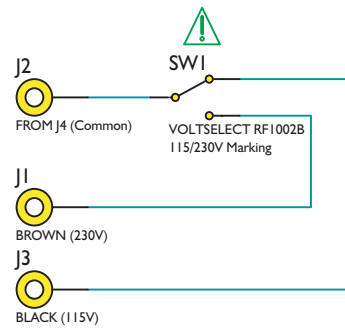
**API77122 Mains PCB Layout (Bottom Side)**

**Cambridge Audio 640C V2 Mains PCB Assembly BOM**
**API7715/1**

AP PART NO	VALUE	DESCRIPTION	QTY	COMPONENT IDENT	FACTORY PART NO	NOTES
	<b>CAPACITORS</b>					
	1n X1/Y1	10mm pitch POLYESTER CAPACITOR	2	C1, 2		
	47N X2	15mm pitch POLYESTER CAPACITOR	1	C3		15MM PITCH
	<b>CONNECTORS</b>					
PY226	IEC-SOCKET	3 WAY IEC CONNECTOR	1	CN3	2336-003910-002	
	B3B-XH-A	JST 3 WAY 2.54MM	2	CN1, 2	2300-003100-004	
	<b>MISCELLANEOUS</b>					
	API3570/1	10uH 5A mains inductor	2	L1, 2		
	F2AL	2A quick blow fuse 20mm LBC (low breaking capacity)	2	FU1, 2		
	T2AL	2A slow blow fuse 20mm LBC (low breaking capacity)	1	FU3	4030-618002-001	
		20MM FUSE HOLDER	3	FU1, 2, 3	4034-000030-000	
		FUSE COVER	3	FU1, 2, 3	4031-050100-001	

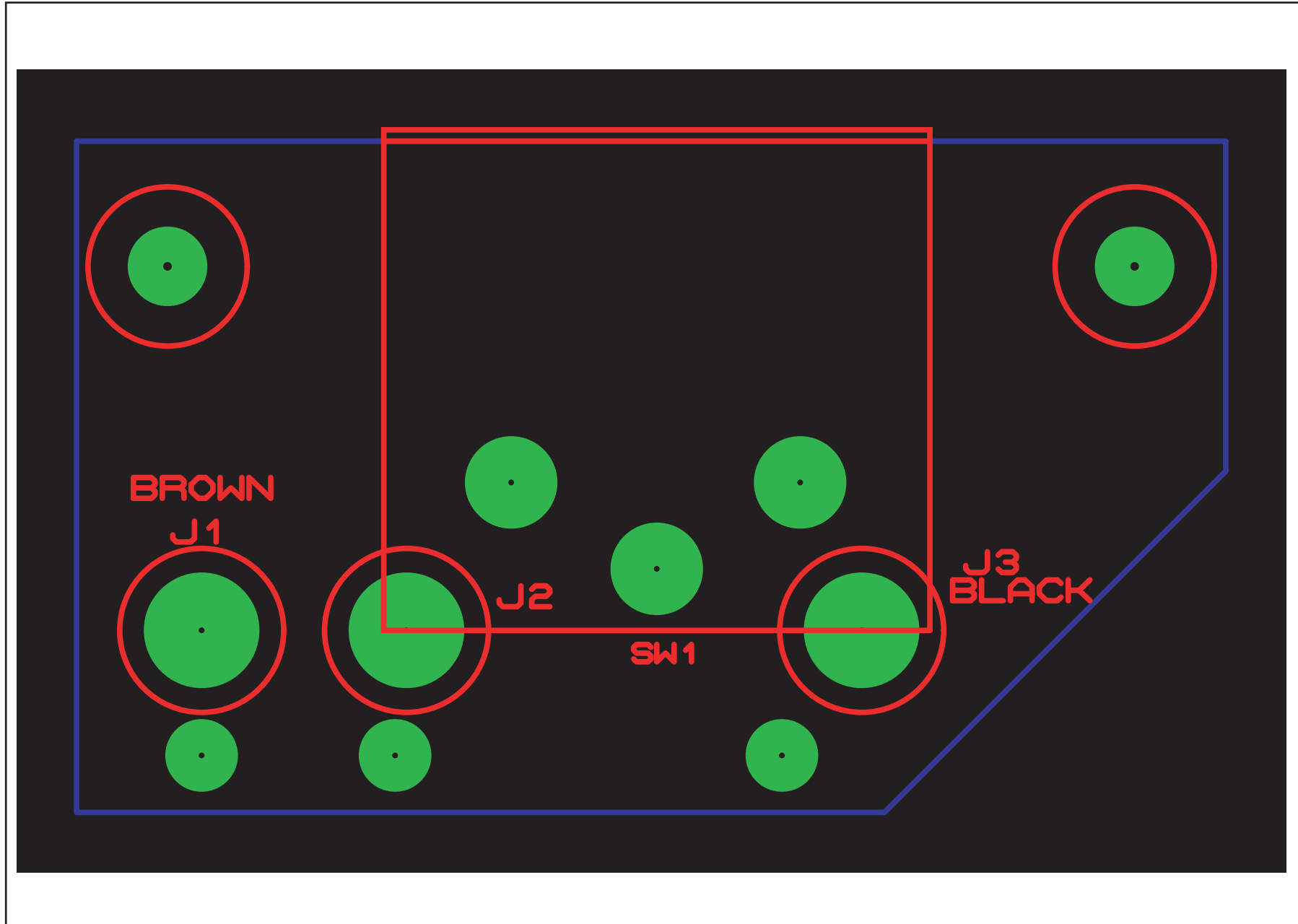
**Note: resistors, capacitors and other 'generic' electronic components are not usually stocked by the manufacturer. Please obtain these locally.**

# Cambridge Audio Azur 640C V2 CD Player





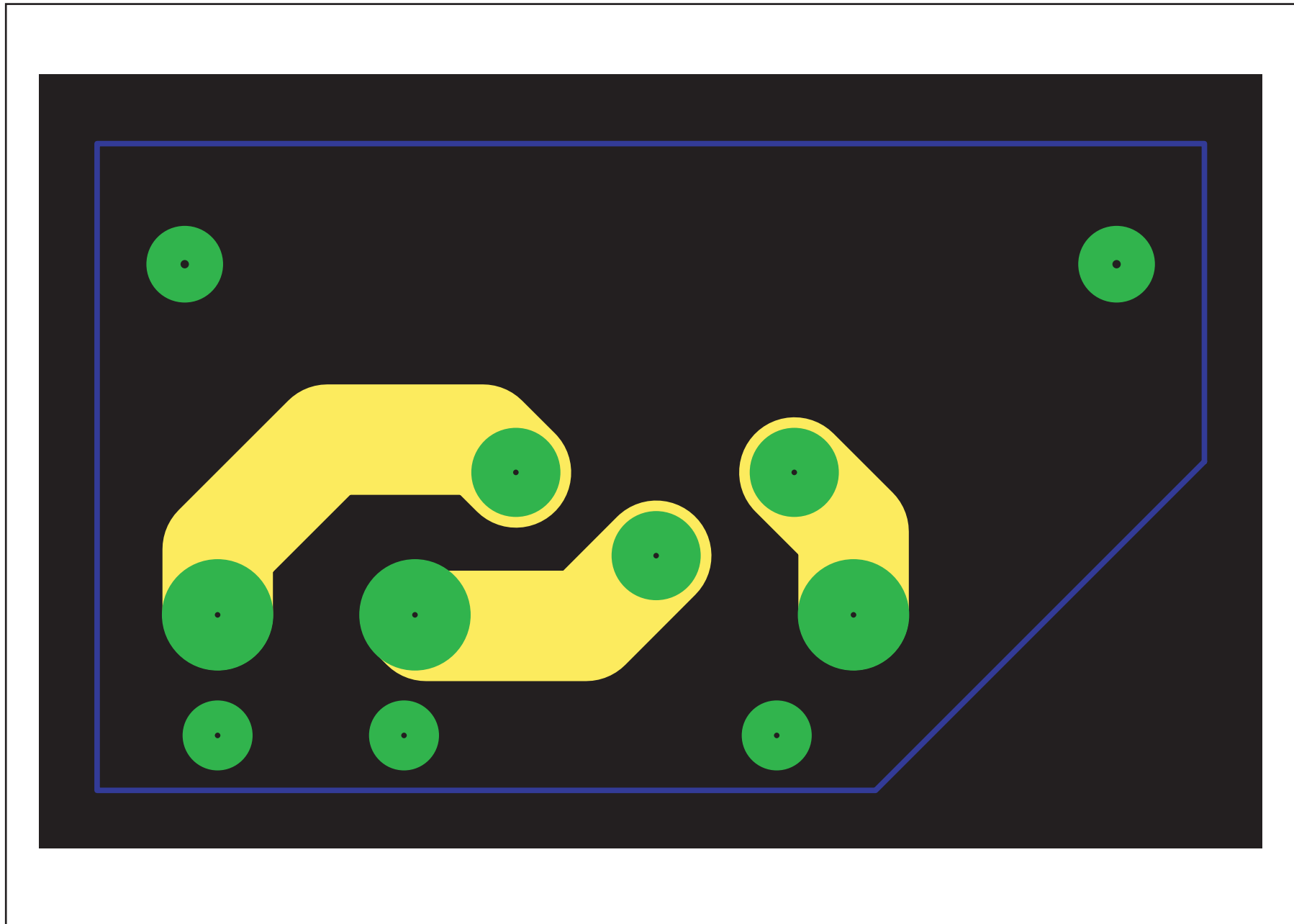
# Cambridge Audio Azur 640C V2 CD Player



To enhance viewing, please print to A3

**API79772 Voltage Select Switch PCB Layout (Top Side)**

# Cambridge Audio Azur 640C V2 CD Player



To enhance viewing, please print to A3

**API 179772 Voltage Select Switch PCB Layout (Bottom Side)**

**Cambridge Audio 640C V2 Voltage Selector PCB Assembly BOM****API7980/1**

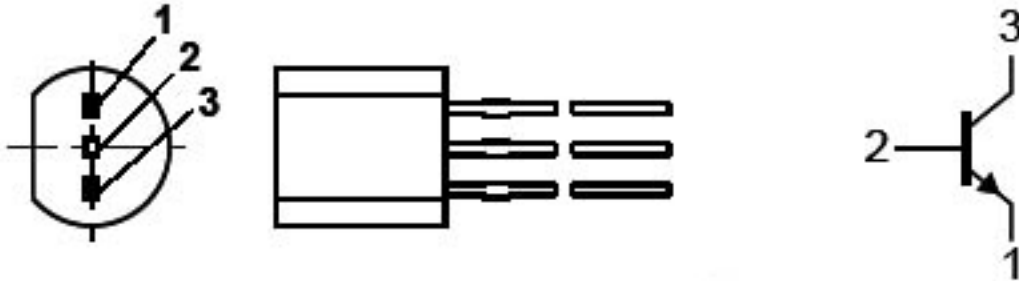
AP PART NO	VALUE	DESCRIPTION	QTY	COMPONENT IDENT	FACTORY PART NO	NOTES
	<b>CONNECTORS</b>					
I	RF1002B	Voltage Selector	I	SWI	2406-010200-000	

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

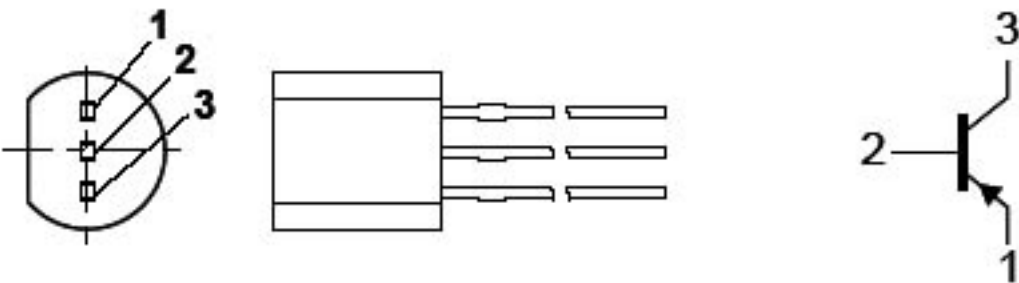
# Cambridge Audio Azur 640C V2 CD Player IC Pin Layout Details

## FRONT PANEL PCB

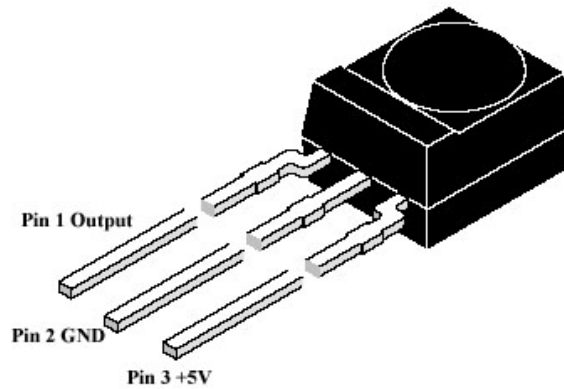
BC337 (Q1, Q3 & Q4)



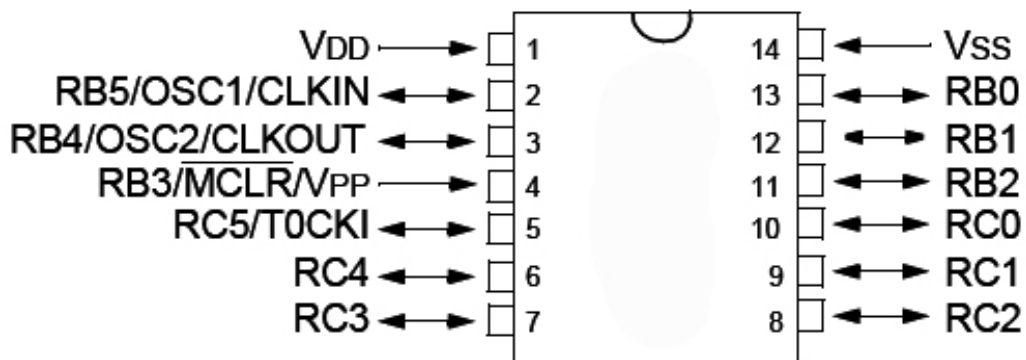
BC327 (Q2)



TSOP1836 (U2)

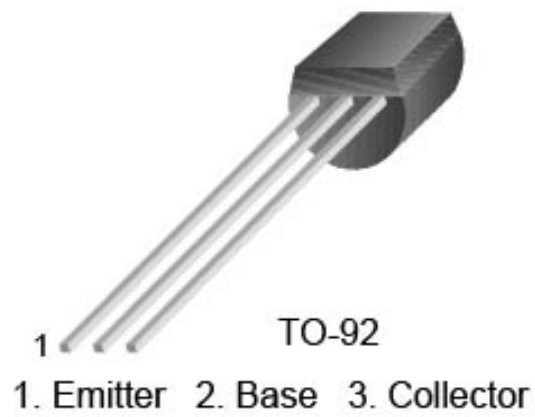


PIC16C505 (U3)



## DAC PCB

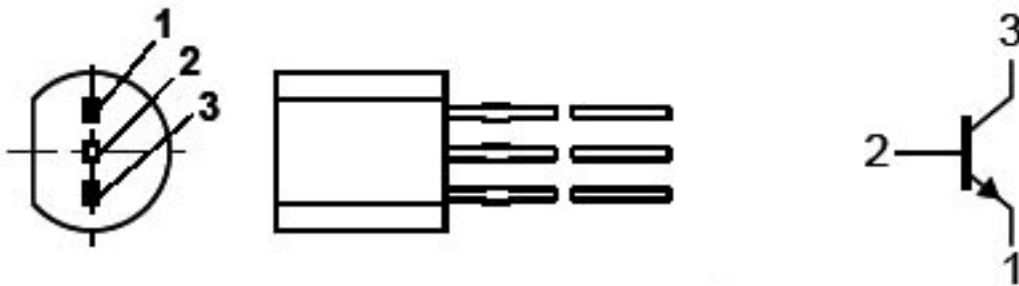
C8050 (Q2 & Q4)



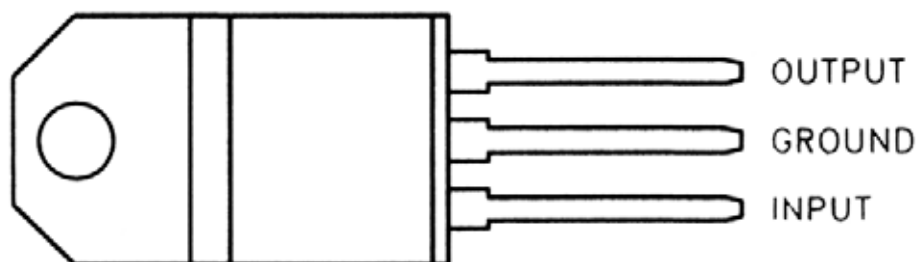
C9012 (Q1 & Q3)



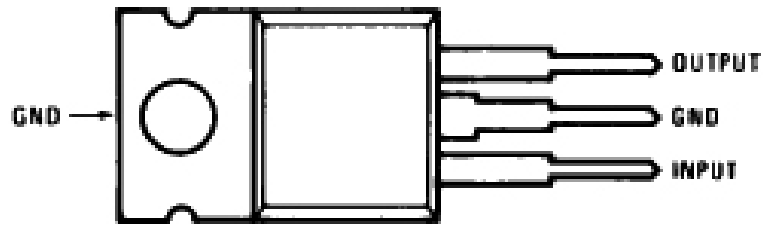
BC337 (Q5)



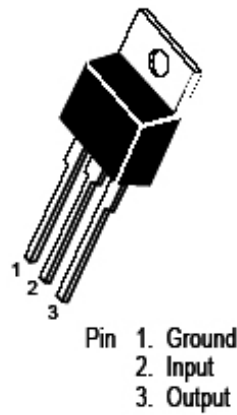
7805 (U1, U8, U9, U11, U12, U17 & U21)



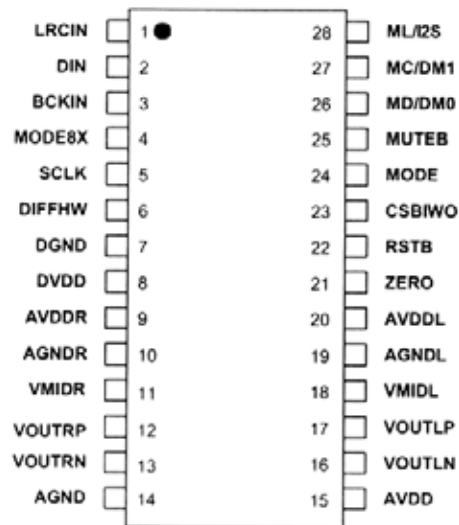
7815 (U3)



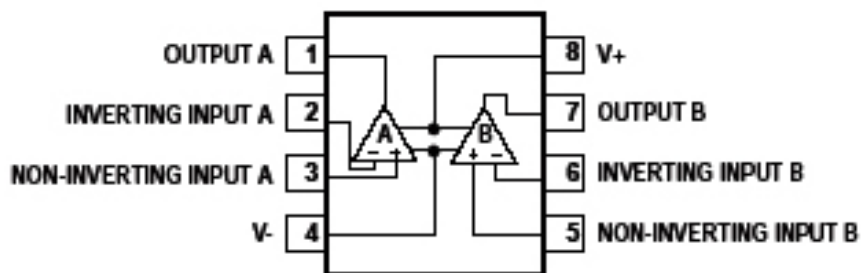
7915 (U2)



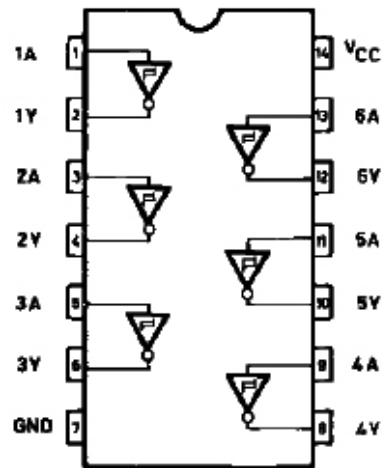
WM8740 (U7 & U10)



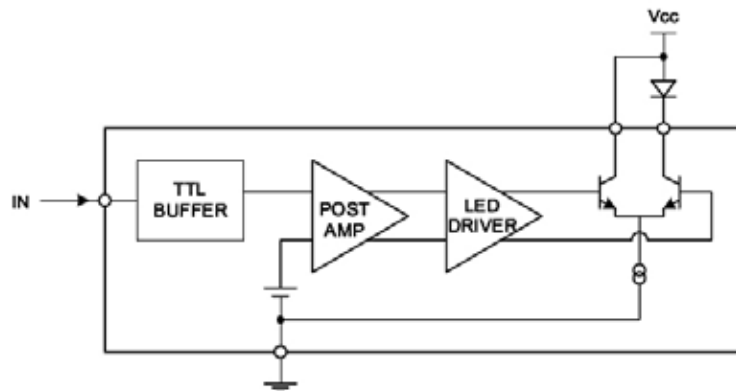
NE5532 (U4, U5, U6, U13, U18 & U19)



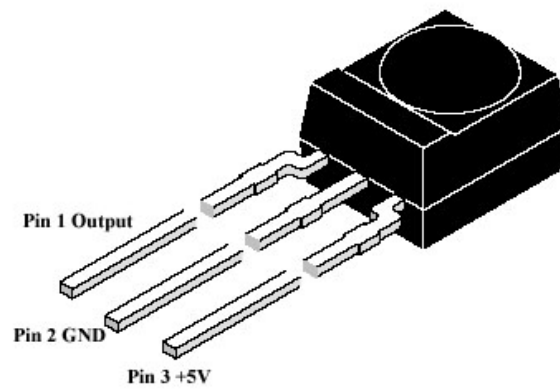
74HC14 (U20 & U22)



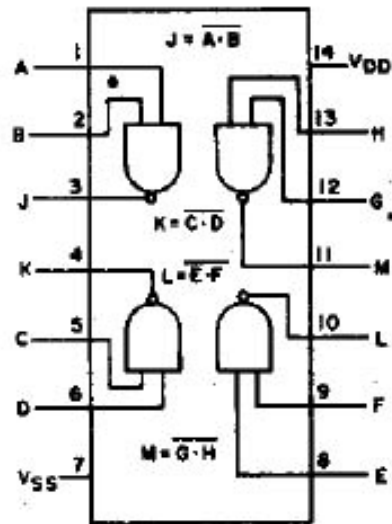
APT-X179 (U23)



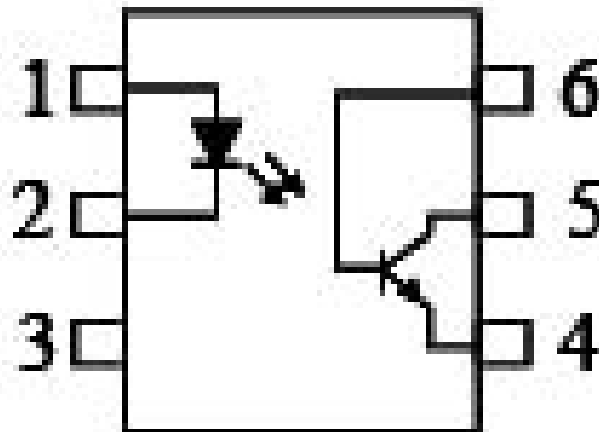
TSOP1836 (U14)



CD4011BE (U16)



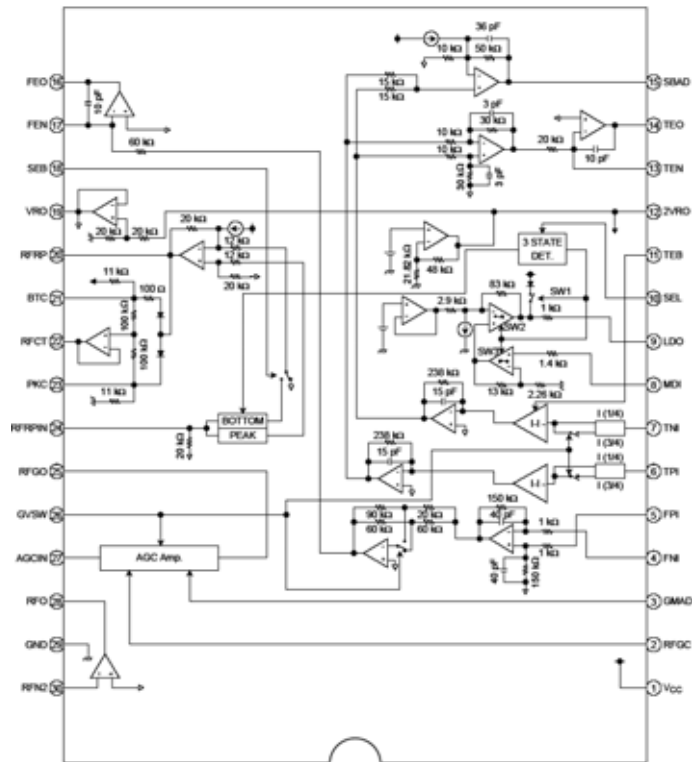
OP4N25 (U15)



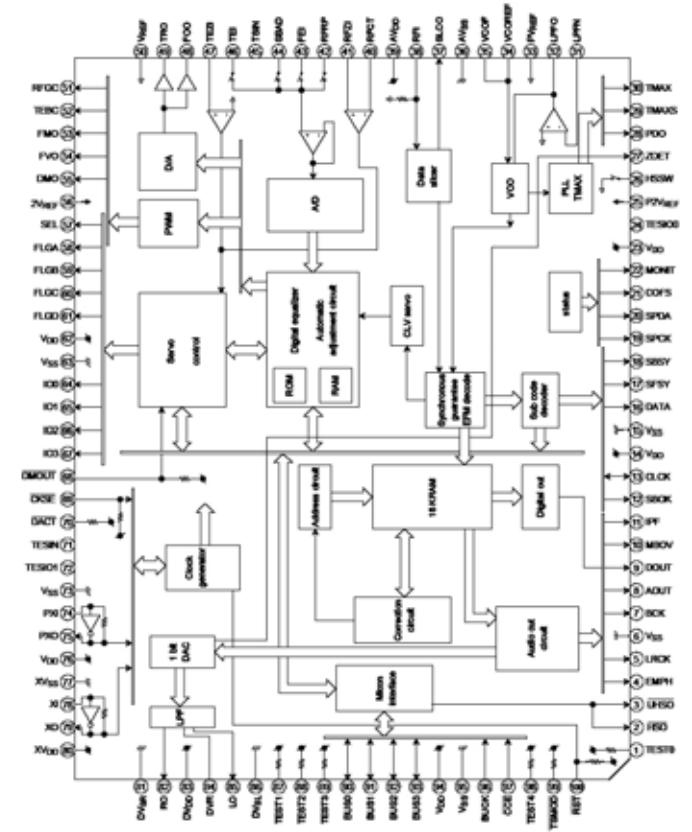


# SERVO PCB

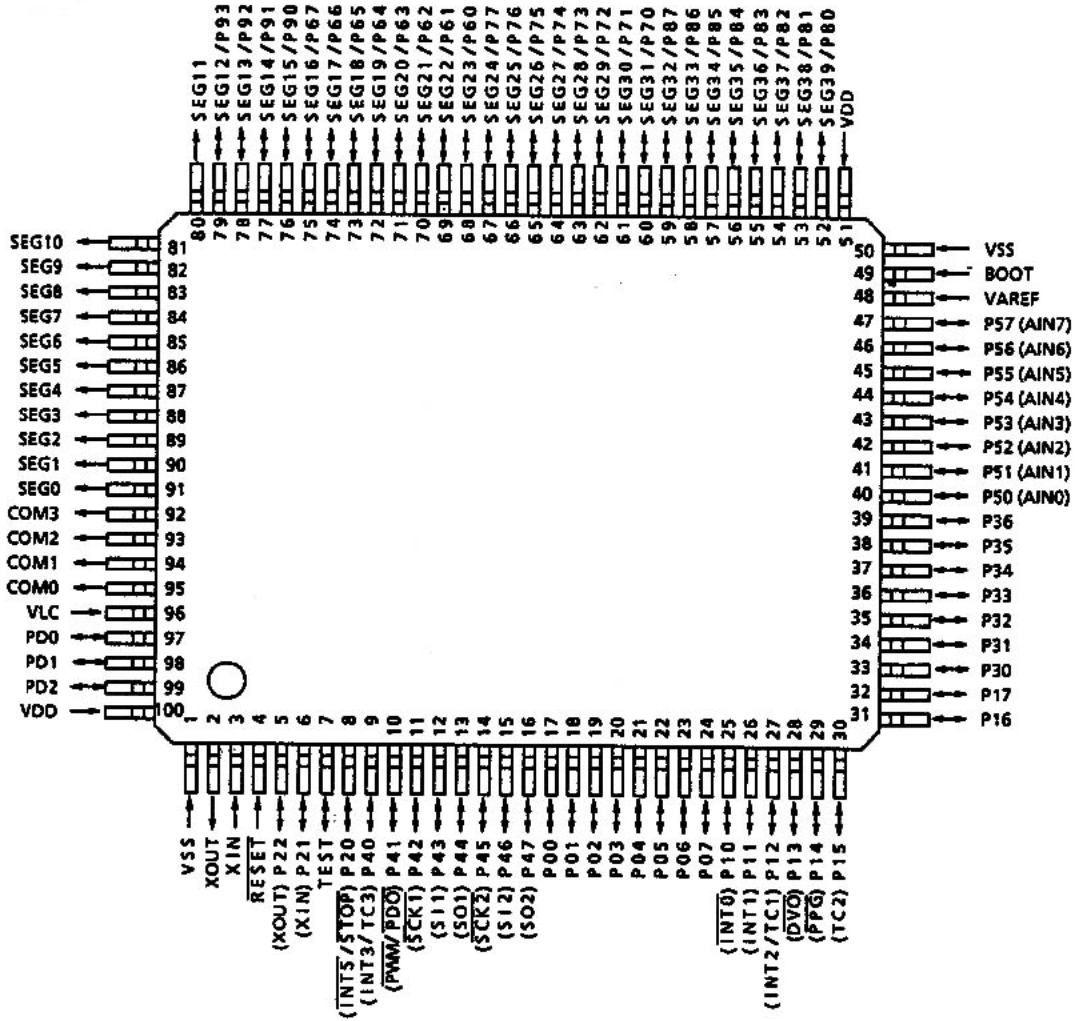
TA2I53FN (U1)



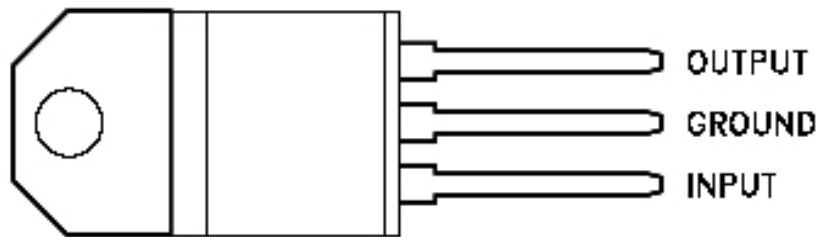
TC9462FG (U2)



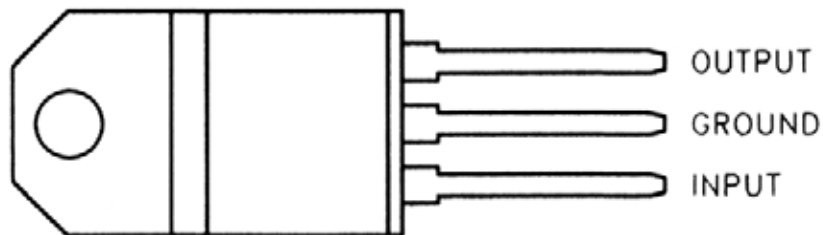
TMP87EP26F-IJ15 (U3)



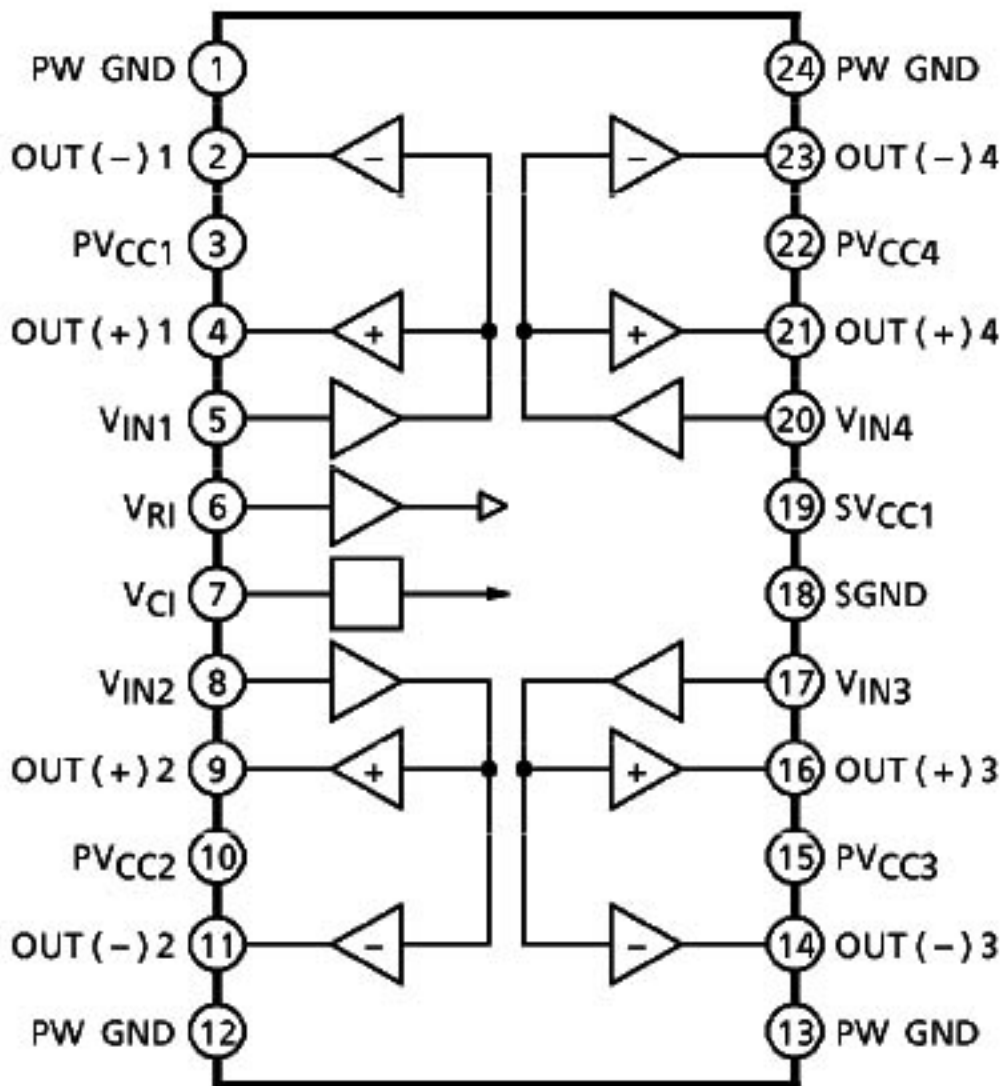
7808 (U7)



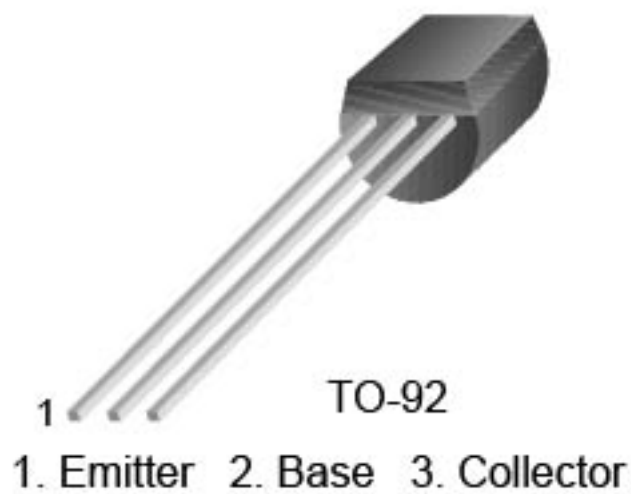
7805 (U8)



TA2092N (U6)



C8050D (Q7, Q8, Q11 & Q12)



9015C (Q1)

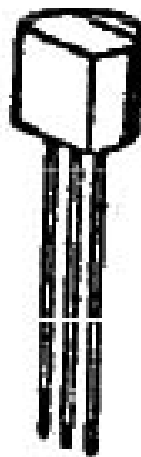


TO-92

1. Emitter 2. Base 3. Collector

C8550 (Q9 & Q10)

**TO-92A**



**EBC**