Issue date: October 2012

Cambridge Audio

Service Manual

851A

Specifications

Azur 851A Integrated Class XD amplifier

Power Output:	120W RMS into 8 Ohms 200W RMS into 4 Ohms
THD (unweighted):	< 0.001% 1 kHz at 80% of rated power < 0.01% 20 Hz - 20 kHz at 80% of rated power
Audio Inputs:	2 sets of balanced XLR, 8 further RCA inputs
Audio Outputs:	Preamp output, Record output
Frequency Response:	10 Hz - 50 kHz +/- 1 dB
Signal to Noise Ratio:	> 93 dB (ref 1W/8 Ohm)
Input Impedance:	Inputs 1 and 2 (balanced) 20 kOhm Inputs 1-7 unbalanced 20 kOhm Rec Input 20 kOhm
Power amp damping factor:	> 110 at 1 kHz
Max power consumption	800W
Quiescent power consumption:	Active (no signal) 70W
Standby Power Consumption:	Standby <0.5W
Bass/Treble controls:	Shelving type Max bass boost/cut +/- 10 dB at 10 Hz Max treble boost/cut +/- 7.5 dB at 20 kHz
Dimensions (H x W x D):	115 x 430 x 385mm (4.5 x 16.9 x 15.2”)
Weight	15.0kg (33lbs)

Cambridge Audio

Contents

Introduction

Thank you for purchasing the Azur 851A Class XD Integrated Amplifier. The 8 series range is fundamental to our commitment to the continual development of the Azur range. We hope that you will appreciate the results and enjoy many years of listening pleasure from it. Like all Cambridge Audio products, the 851A adheres to our three core principles – stunning performance, ease of use and incredible value.

The 851A features our unique proprietary amplifier topology; Class XD™, designed to eliminate crossover distortion at low signal levels.

By actively displacing the crossover point this technology creates a region of pure Class-A operation where the crossover zone would otherwise be before moving into an enhanced form of Class B at higher levels. It should not be confused with Class AB, which gives a small area of Class A, but at the cost of higher distortion as soon as the signal level moves outside the AB area. Class XD circuitry not only removes crossover distortion from the zero-crossing point but also reduces distortion in the other parts of the amplifier's output range.

This 851A features our latest development of Class XD with many tweaks and enhancements from our on-going research resulting in our best sounding implementation to date.

A white paper on this patent pending technology is available on our website: www.cambridge-audio.com

Please note that because of the Class XD technology the 851A runs slightly warmer than a conventional Class B/AB amplifier and the ventilation slots on the top of the unit must not be obstructed.

A new balanced volume topology has been implemented for this model, controllable in 1 dB steps over most of the range, giving very fine control, an accurate logarithmic law and superbly accurate channel balance.

Input switching is by high quality gold contact relays.

The 851A features separate transformer secondaries for left and right channels, twin rectifiers and separate PSU's for dual mono operation of the left and right power amplifiers. A separate transformer supplies the preamp making the 851A effectively a Pre and Power amp combination in one box.

Balanced as well as unbalanced inputs are featured for Sources 1 and 2 giving optimal performance with equipment such as the matching 851C Upsampling CD player which features balanced outputs.

The casework combines massive structural rigidity with careful damping and control of acoustic resonance. An Azur Navigator remote control is also provided, giving full remote control of your amplifier in an attractive and easy to use handset.

Control Bus Input/Output, IR Emitter Input and RS232 control are featured making it easy to integrate the 851A into a Custom Installation system if desired.

Your amplifier can only be as good as the system it is connected to. Please do not compromise on your source equipment, speakers or cabling.

Naturally we particularly recommend models from the Cambridge Audio Azur range. These have been designed to the same exacting standards as this amplifier. Your dealer can also supply excellent quality Cambridge Audio interconnects to ensure your system realises its full potential.

Thank you for taking the time to read this manual; we do recommend you keep it for future reference.

Matthew Bramble,
Cambridge Audio Technical Director
and the 8-Series design team

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 from 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 other 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 with only 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 having been 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.

– Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

The unit is of Class 1 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. We recommend that you do not place the unit in an enclosed space; if you wish to place the unit on a shelf, use the top shelf to allow maximum ventilation. 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, tablecloths, 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), Electromagnetic Compatibility (2004/108/EC) and Environmentally-friendly design of Energy-related Products (2009/125/EC) 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.

Gost-R Mark

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.

Ventilation

IMPORTANT – The unit will become hot when in use. Do not stack multiple units on top of each other. Do not place in an enclosed area such as a bookcase or in a cabinet without sufficient ventilation.

Ensure that small objects do not fall through any ventilation grille. If this happens, switch off immediately, disconnect from the mains supply and contact your dealer for advice.

Positioning

Choose the installation location carefully. Avoid placing it in direct sunlight or close to a source of heat. No naked flame sources, such as lighted candles, should be placed on the unit. Also avoid locations subject to vibration and excessive dust, cold or moisture. The unit can be used in a moderate climate.

This unit must be installed on a sturdy, level surface. Do not place in a sealed area such as a bookcase or in a cabinet. Do not place the unit on an unstable surface or shelf. The unit may fall, causing serious injury to a child or adult as well as serious damage to the product. Do not place other equipment on top of the unit.

Due to stray magnetic fields, turntables or CRT TVs should not be located nearby due to possible interference.

Electronic audio components have a running in period of around a week (if used several hours per day). This will allow the new components to settle down and the sonic properties will improve over this time.

Power sources

The unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power-supply to your home, consult your product dealer or local power company.

This unit can be left in Standby mode when not in use and will draw <0.5W in this state. To turn the unit off, switch off at the rear panel. If you do not intend to use this unit for a long period of time, unplug it from the mains socket.

Overloading

Do not overload wall outlets or extension cords as this can result in a risk of fire or electric shock. Overloaded AC outlets, extension cords, frayed power cords, damaged or cracked wire insulation and broken plugs are dangerous. They may result in a shock or fire hazard.

Be sure to insert each power cord securely. To prevent hum and noise, do not bundle the interconnect leads with the power cord or speaker leads.

Cleaning

To clean the unit, wipe its case with a dry, lint-free cloth. Do not use any cleaning fluids containing alcohol, ammonia or abrasives. Do not spray an aerosol at or near the unit.

Battery disposal

Batteries may contain substances harmful to the environment. Please dispose of any discharged batteries with due consideration and in accordance with local environmental/electronic recycling guidelines.

Loudspeakers

Before making any connections to loudspeakers, make sure all power is turned off and only use suitable interconnects.

Servicing

These units are not user serviceable. Never attempt to repair, disassemble or reconstruct the unit if there seems to be a problem. A serious electric shock could result if this precautionary measure is ignored. In the event of a problem or failure, please contact your dealer.

Limited warranty

Cambridge Audio warrants this product to be free from defects in materials and workmanship (subject to the terms set forth below). Cambridge Audio will repair or replace (at Cambridge Audio's option) this product or any defective parts in this product. Warranty periods may vary from country to country. If in doubt consult your dealer and ensure that you retain proof of purchase.

To obtain warranty service, please contact the Cambridge Audio authorised dealer from which you purchased this product. If your dealer is not equipped to perform the repair of your Cambridge Audio product, it can be returned by your dealer to Cambridge Audio or an authorised Cambridge Audio service agent. You will need to ship this product in either its original packaging or packaging affording an equal degree of protection.

Proof of purchase in the form of a bill of sale or receipted invoice, which is evidence that this product is within the warranty period, must be presented to obtain warranty service.

This Warranty is invalid if (a) the factory-applied serial number has been altered or removed from this product or (b) this product was not purchased from a Cambridge Audio authorised dealer. You may call Cambridge Audio or your local country Cambridge Audio distributor to confirm that you have an unaltered serial number and/or you made a purchase from a Cambridge Audio authorised dealer.

This Warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of, or to any part of, the product. This Warranty does not cover damage due to improper operation, maintenance or installation, or attempted repair by anyone other than Cambridge Audio or a Cambridge Audio dealer, or authorised service agent which is authorised to do Cambridge Audio warranty work. Any unauthorised repairs will void this Warranty. This Warranty does not cover products sold AS IS or WITH ALL FAULTS.

REPAIRS OR REPLACEMENTS AS PROVIDED UNDER THIS WARRANTY ARE THE EXCLUSIVE REMEDY OF THE CONSUMER. CAMBRIDGE AUDIO SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY IN THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY LAW, THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES WHATSOEVER INCLUDING, BUT NOT LIMITED TO, THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PRACTICAL PURPOSE.

Some countries and US states do not allow the exclusion or limitation of incidental or consequential damages or implied warranties so the above exclusions may not apply to you. This Warranty gives you specific legal rights, and you may have other statutory rights, which vary from state to state or country to country.

For any service, in or out of warranty, please contact your dealer.

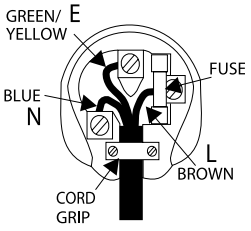
Plug Fitting Instructions (UK only)

The cord supplied with this appliance is factory-fitted with a UK mains plug fitted with a 5-amp fuse inside. If it is necessary to change the fuse, it is important that a 5-amp fuse is used. If the plug needs to be changed because it is not suitable for your socket, or becomes damaged, it should be cut off and an appropriate plug fitted following the wiring instructions below. The plug must then be disposed of safely, as insertion into a mains socket is likely to cause an electrical hazard. Should it be necessary to fit a 3-pin BS mains plug to the power cord, the wires should be fitted as shown in this diagram. The colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug. Connect them as follows:

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter 'N' or coloured BLACK.

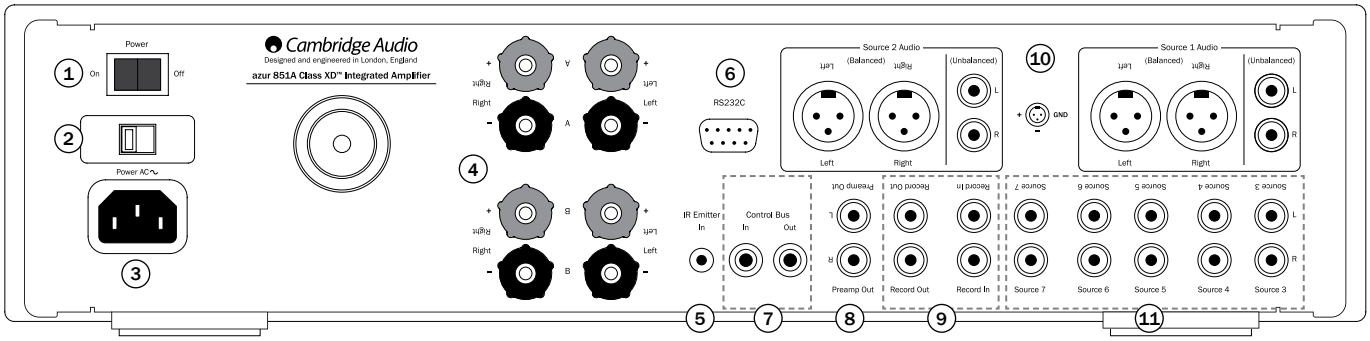
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter 'L' or coloured RED.

The wire which is coloured GREEN/YELLOW must be connected to the terminal which is marked with the letter 'E' or coloured GREEN.



If a standard 13-amp (BS 1363) plug is used, a 5-amp fuse must be fitted or, if any other type of plug is used, a 5-amp fuse must be fitted, either in the plug or adaptor, or on the distribution board.

Rear panel connections



① Power On/Off

Switches the unit on and off.

② Mains Voltage Selector Switch (CU version only)

Switches the 851A mains voltage between 100V and 115V.

Note: Intended for use by a professional installer or Cambridge Audio retailer only.

③ AC power socket

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

④ Loudspeaker terminals

Two sets of loudspeaker terminals are available, A (main loudspeaker terminals) and B (secondary loudspeaker terminals). Both sets of speakers can be turned on and off independently. 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.

Care should be taken to ensure no stray strands of wire short the speaker outputs together. Please ensure that the loudspeaker terminals have been tightened completely to provide a good electrical connection. It is possible for the sound quality to be affected if the screw terminals are loose.

Note: When using two pairs of speakers, use speakers with a minimum nominal impedance of 16 ohms.

⑤ IR (Infrared) Emitter In

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

⑥ RS232C

The RS232C port allows external serial control of the 851A for custom install use. A full command set is available on the Cambridge Audio website at www.cambridge-audio.com. This port can also be used by Cambridge Audio service personnel for software updates.

⑦ Control Bus

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

Out - Loop out for control bus commands to another unit. Also allows the 851A to control some Cambridge Audio units.

⑧ Preamp Out

Connect these sockets to the inputs on an external power amplifier(s) or active subwoofers etc.

⑨ Rec In

Connect to a tape deck or to the analogue output sockets on a MiniDisc, portable digital music player or CD recorder using an interconnect cable from the recorder's Line Out sockets to the amplifier's Rec In sockets.

The Rec input circuit of the 851A is a "monitor" type, different from the other 7 inputs. For the 7 normal inputs, the source selected for listening will be sent out of the Rec Out for recording. The source currently being listened to and (optionally) recorded is then shown on the front panel display.

However, when Rec In is selected a solid circle will appear beside REC IN indicating that the Rec input is now being listened to with a different source being sent out of the Rec Out for recording. The recording source is also shown by a solid circle by the selected input and can be changed by pressing the other source buttons.

To switch Rec input off, simply press the 'Rec In' select button again, toggling this function off.

This feature is most useful when using 3-head analogue cassette decks which allow the signal being recorded to be played back live off tape (via a 3rd head) whilst it is simultaneously recorded. It is then possible by toggling the Rec input on and off to compare directly in real time the original and recorded signal so that adjustments to the recording parameters of the tape machine can be made (consult the manual of your 3-head analogue cassette deck for full details).

Rec Out

For connection to the line level inputs of Tape Recorders or other analogue recording apparatus.

⑩ Source 1 & 2 Audio inputs

These inputs feature either unbalanced (phono/RCA) or balanced (XLR) connections. 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 (inphase); Pin 3 - Cold (phase-inverted).

Note: Repeatedly pressing the Source 1 or Source 2 buttons on the front of the unit will toggle these inputs between 'Balanced' and 'Unbalanced' source inputs.

⑪ Sources 3-7

These inputs are suitable for any 'line level' source equipment such as CD players, DAB or FM/AM tuners etc.

Note: These inputs are for analogue audio signals only. They should not be connected to the digital output of a CD player or any other digital device.

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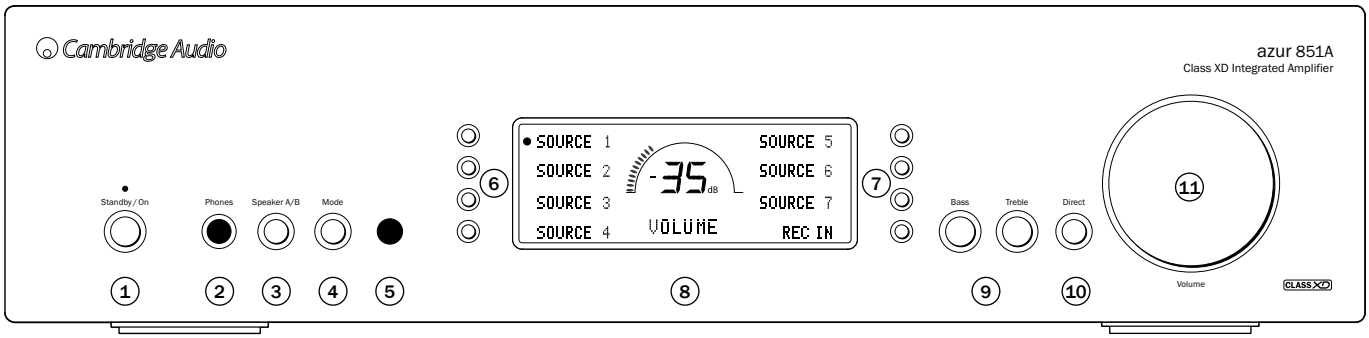
Front panel controls



① Standby/On

Switches the unit between Standby mode (indicated by dim power LED) and On (indicated by bright power LED). Standby is a low power mode where the power consumption is less than 0.5 Watts. The unit can be left in Standby mode when not in use.

Note: As default the 851A ramps the volume up or down when switched on and when going into Standby mode. This feature can be turned off if desired; please refer to the 'Amplifier setup' section of this manual for more information.

② Phones

Allows for the connection of stereo headphones with a ¼" Jack plug. Headphones with an impedance of between 32 and 600 ohms are recommended. When the headphones are connected, the loudspeaker relays are released switching off the output to the loudspeakers (speakers A and B).

③ Speaker A/B

Press to scroll through the speaker sets connected to the loudspeaker terminals on the back panel (speaker sets A, B or A and B). This can be used for listening to an extra set of loudspeakers in another room.

Please note that care should be taken when choosing speakers if two loudspeakers are going to be used on each channel. If the combined resistance measured on the loudspeaker terminals is too low the amplifier may not switch out of Standby mode until a suitable load resistance is detected. For more information refer to the CAP5 section of this manual.

Note: When using two pairs of speakers, use speakers with a minimum nominal impedance of 16 ohms.

④ Mode

Press to switch between Volume and Balance modes. Press and hold to enter the 851A System Configure menu.

⑤ Infrared sensor

Receives IR commands from the supplied Azur remote control. A clear unobstructed line of sight between the remote control and the sensor is required.

⑥ & ⑦ Source select buttons

Push the appropriate input selection button to select the source component that you wish to listen to (highlighted by a solid circle on the display). The signal selected is also fed to the Rec Out sockets so that it may be recorded. The input should not be changed whilst recording (but the recorded signal can be checked using the Rec input).

Note: Repeatedly pressing the Source 1 or Source 2 buttons will toggle these inputs between 'Balanced' and 'Unbalanced' source input.

⑧ Display

LCD used to control the 851A. Please refer to the 'Operating instructions' and 'Amplifier setup' section of this manual for more information.

⑨ Bass and Treble

Press to release and rotate to allow subtle adjustments to the tonal balance of the sound.

⑩ Direct

This control gives the audio signal a more direct path to the power amplifier stage of your amplifier, bypassing the tone control circuits for the purest possible sound quality.

The Bass/Treble icon (𝄢 𝄞) appears in the display when the bass and treble circuit is active (in circuit) and is not present when they are bypassed.

Note: Direct can be set on or off individually for each input. This setting is recalled each time a source is selected.

⑪ Volume

Use to increase/decrease the level of the sound from the outputs of the amplifier. This control affects the level of the loudspeaker output, the pre-amp output and the headphone output. It does not affect the Tape Out connections.

The Volume control is also used in navigating the 851A System Configure menus on the front panel display.

Please refer to the 'Operating instructions' section of this manual for more information on some functions of these buttons.

Remote control

The 851A is supplied with an Azur Navigator remote control handset that duplicates the front panel control functions and is also able to control Azur CD players and in particular the matching 851C. The supplied AAA batteries must be fitted before the remore control can be used.

The Azur handset buttons function as described in the following paragraphs.

Standby/On
Switches the 851A (and 851C) between On and Standby mode.

Volume Up/Down
Volume adjustment.

Source
Press to cycle through the 851A inputs.

Display
Alters the brightness of the 851A/C display backlights. There are two brightness levels and an option to switch-off the backlight.

Mode
Press to toggle between amplifier volume and balance control using the volume up and down buttons. Press and hold to enter the 851A System Configure menu.

Speakers A/B
Press to switch between the twin speaker outputs.

Mute
Press to mute the speaker outputs.

Sources
Used to select the source inputs.

The following buttons are used to control Cambridge Audio Azur range CD players such as the matching 851C.

Open/Close
Opens and closes the CD drawer.

Numerics
Enable direct CD track selection. Press the number of the desired track to begin playback from the beginning. To select a track number greater than ten, press the -/-- button followed by the track number.

Play / Stop / Pause
Press the relevant button to play, stop or pause a CD.

Note: Depending on the audio software installed on the host personal computer, the Play and Pause buttons may also be able to control USB audio file playback.

Skip
Right Skip (⏭) – Press once to skip forward by one track on the CD. Press and hold to skip forwards through tracks.

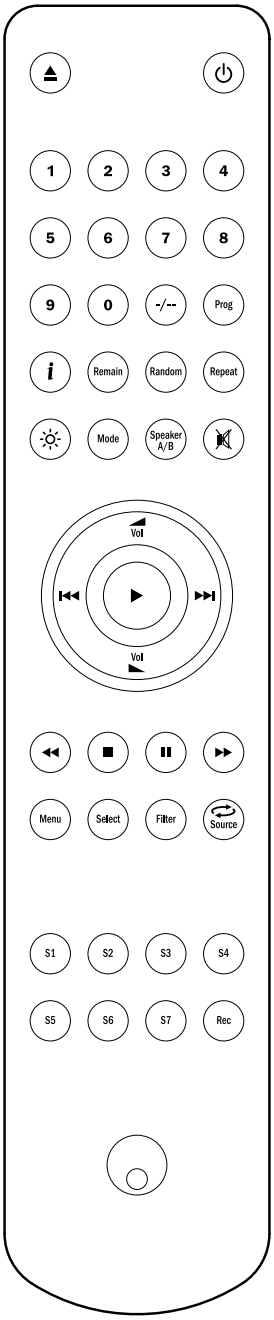
Left Skip (⏮) – Press once to skip backward by one track on the CD. Press and hold to skip backwards through tracks.

Note: Depending on the audio software installed on the host personal computer, the Skip buttons may also be able to control USB audio playback.

Scan Right
Press and hold to search while a CD is playing to search forwards.

Scan Left
Press and hold to search while a CD is playing to search backwards.

Menu
Press to enter 851C setup mode. Setup mode allows various 851C operating parameters to be configured. Refer to section 'Operating instructions' of the 851C manual for more information.



Select
Press to toggle through the five 851C input options. Refer to 'Operating instructions' section of the 851C manual for more information.

Program, Remain, Repeat, Random
Refer to Operating instructions' section of the 851C manual for more information.

Filter
Press to toggle through the three 851C digital filter options.

Information
Press to display any additional 851C input signal information available.

Apple device compatibility

The Azur 851A/C Navigator remote control can control the basic functions of Apple devices such as Apple TV and Apple's iPod/iPhone/iPad range when docked in a Cambridge Audio or Apple dock.

Press and hold the source button that corresponds to the input that the Apple product is connected to whilst also pressing one of the buttons below.

The functions are slightly different depending on the Apple product.

Select

Play/pause

Stop or Menu

Press briefly to skip or navigate left or right. Press and hold to scan forwards or backwards.

Used to control volume and/or navigate menus.

Used to navigate menus.

In addition, the Azur remote can be paired with up to six specific Apple devices using any of the six source buttons. This can be useful if you have more than one Apple product.

<u>For more information on pairing refer to your Apple device's instruction manual.</u>

Pairing – To pair with an Apple device, press and hold the required source button along with the ⏭ button for six seconds. Some devices like Apple TV have visual indication once pairing is achieved.

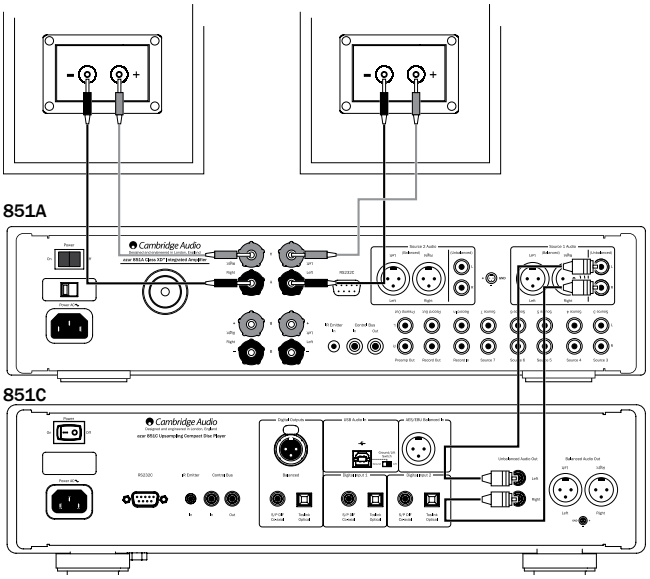
Un-pairing – To un-pair an Apple device, press and hold any of the source buttons along with the ⏮ button for six seconds.

Connections

When designing our amplifiers we include features that allow you to connect your system in various ways. The inclusion of features such as Pre-Out and Speaker B connections mean that you can flexibly configure your system depending on your requirements.

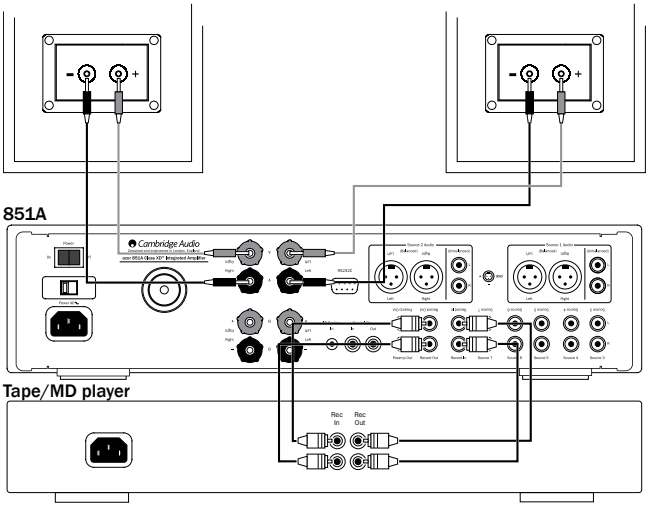
Basic connections

The diagram below shows the basic connection of your amplifier to a CD player using Input 1 (Unbalanced) and a pair of loudspeakers.



Tape/Recording connections

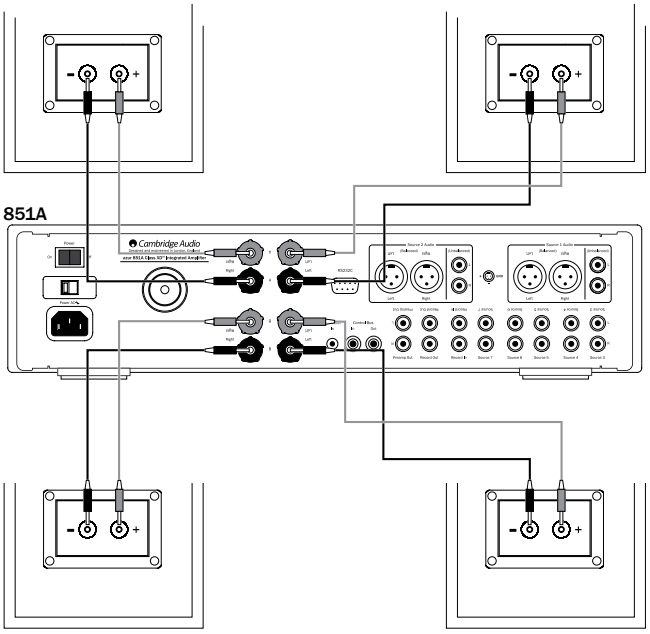
The diagram below shows how to connect the amplifier to a tape recorder or other source with a record and monitor connection.



Speaker B connections

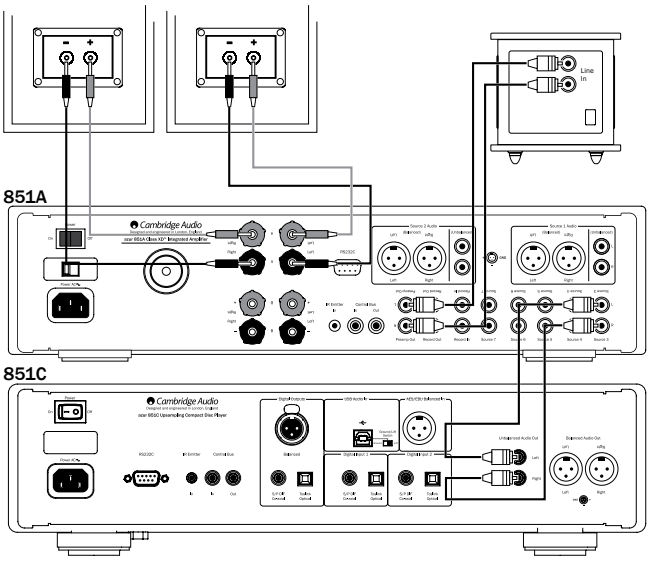
The Speaker B connections on the back of the amplifier allow for a second set of speakers to be used (i.e. speakers located in another room). The Speaker A/B button on the front panel allows this second set of speakers to be switched on and off.

Note: When using two pairs of speakers, use speakers with a minimum nominal impedance of 16 ohms.



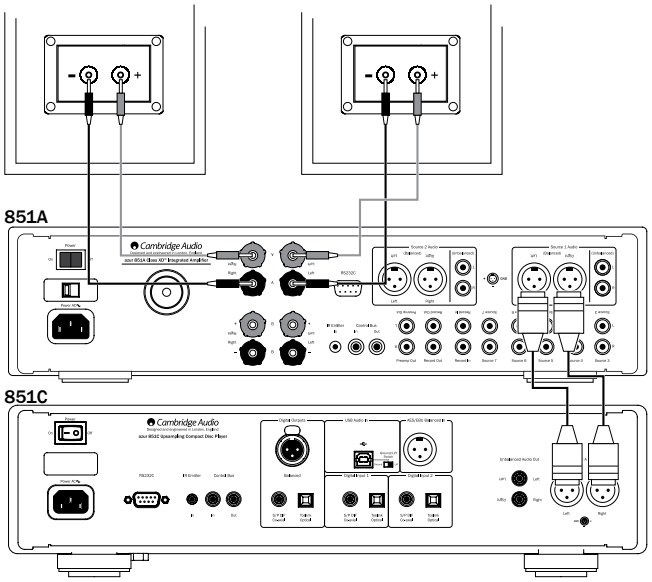
Preamp Out connections

The Preamp Out sockets are for connecting to the input sockets of a power amplifier or active subwoofer. The diagram below shows how to connect the amplifier to an active subwoofer via the Line In inputs on the subwoofer.



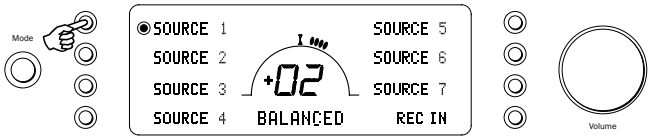
Balanced audio connections (Source 1 and 2)

The diagram below shows how to connect the 851A to the Azur 851C Upsampling CD player/DAC using the Balanced Audio inputs via three-pin XLR connectors. The 851A can also be connected to non-Cambridge Audio sources with balanced outputs.



Balanced connections in an audio system are designed to reject electrical noise, from power wiring etc, and also the effects of noise currents flowing through ground connections. The basic principle of balanced interconnection is to get the signal you want by subtraction, using a three-wire connection. One signal wire (the hot or in-phase) carries the normal signal, while other (the cold or phase-inverted) carries an inverted version. The balanced input senses the difference between the two lines to give the wanted signal. Any noise voltages that appear identically on both lines (these are called common-mode signals) are cancelled by the subtraction. An additional advantage is that the connection effectively carries twice the signal level and so improves the signal-to-noise ratio.

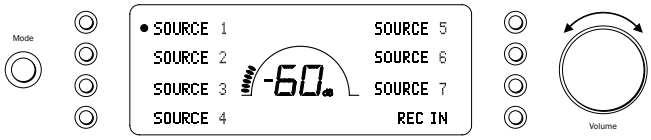
The 851A and 851C are designed to work at their highest performance when a balanced interconnect is used.



Note: To select the balanced input on either Source 1 or 2, repeatedly pressing the Source 1 or Source 2 button on the front to toggle these inputs between 'Balanced' and 'Unbalanced' source input.

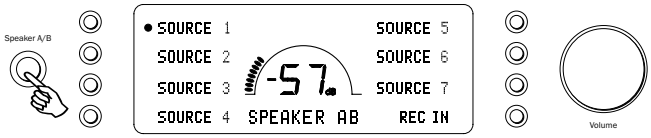
Operating instructions

Volume



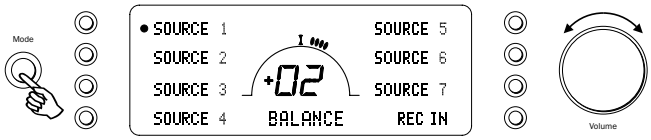
Adjust the volume control knob on the front panel (or using the remote control). The display will show the change in volume in decibels (dB). 'OdB' indicates maximum volume while lower volume settings progress into the negative range. This can also be changed to volume units (0-96) in the System Configure menu.

Speaker A/B



Press the Speaker A/B button to scroll through the speaker sets connected via the rear panel: speakers A, B or A and B.

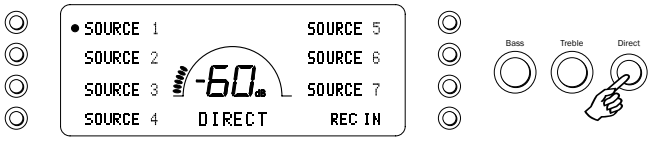
Balance



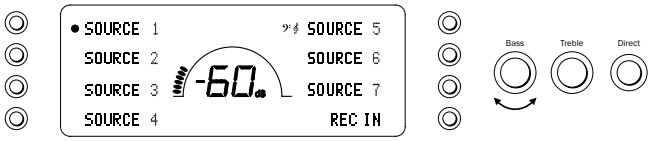
Press the Mode button to enter Balance mode. BALANCE will appear on the display and can be adjusted using the volume control. Press the Mode button again to return to Volume mode or wait 5 seconds for the 851A to automatically exit Balance mode.

Bass and Treble

These controls allow subtle adjustments to the tonal balance of the sound. Modify the sound through your loudspeakers and the Pre-Out sockets only; they do not affect the signals sent through the Tape Out connections. With a well produced CD and a good system the tone controls are unnecessary and can be bypassed by pressing the Direct button:



This completely removes them from the signal path for maximum fidelity. If the musical recording is of poor quality or other factors are affecting the sound quality, if desired you can adjust the tone controls to compensate. To use the tone controls press the Direct button so that the Bass/Treble icon (𝄢 𝄞) lights in the display indicating that they are active and direct mode is Off. Now press the Bass or Treble controls themselves to release them and allow adjustment; push them back in when finished:



The 851A stores whether direct mode is on or off for each input individually, for example it is possible to have the tone controls automatically active for the Tuner source but not the CD source.

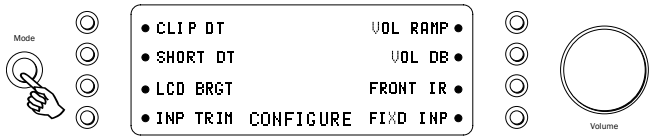
Amplifier setup

The 851A features many advanced settings that allow it's use to be customised to user preference. The inputs can be named to reflect the actual source units you have, each input can be trimmed so that each sounds the same in terms of loudness when you switch between them and other options.

Changing input names / source naming

Press and hold the relevant input select button for four seconds to change its name. For example, if Input 1 is a CD player, name it "CD" etc. Letters are selected by turning the volume control to scroll through the available characters. Press LEFT or RIGHT to select which character you wish to edit. Press EXT CHAR to access an extended character set. Press OK to confirm and exit the input name change menu.

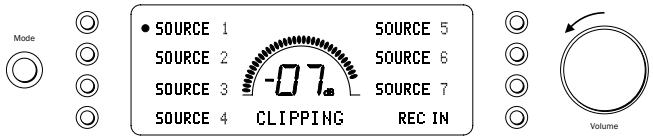
System Configure menu



Press and hold the Mode button to access the System Configure menu. The menu options are Clip detector, LCD brightness, Speaker short detector, Input gain trim, Volume ramp, Volume display, Front IR and Fixed input gain.

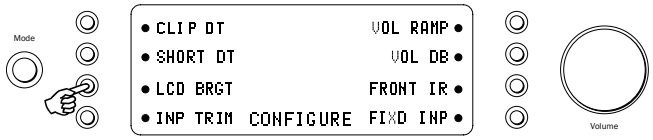
To exit the System Configure menu and its sub-menus, press the Mode button again.

Clip detector / Speaker short detector



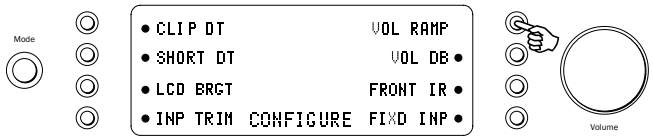
Refer to the 'CAP5' section of this manual for more information on the Clip and Short detection features of the 851A, as both can be enabled (default) or disabled.

LCD brightness



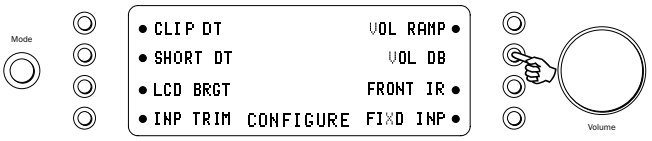
In the System Configure menu press the LCD input select button to scroll through bright/dim/off settings for the front panel display. Press the Mode button to exit.

Volume ramp



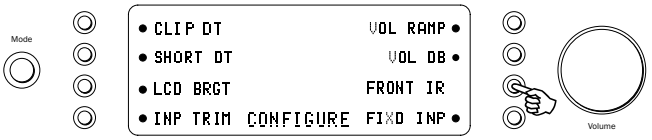
The 851A automatically ramps the volume down when going into Standby mode and up when coming out of Standby mode. To turn this feature off, press the VOL RAMP input select button in the System Configure menu and set to off. Press the Mode button to exit.

Volume display



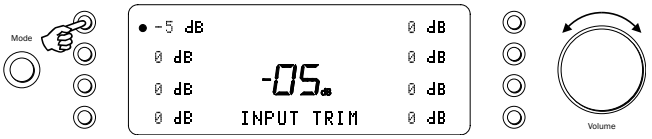
To change the volume display from decibels (-95 to 0dB) to arbitrary volume units (0 to 96 units) select VOL DB in the System Configure menu. Press the input select button to turn off the volume in decibels. Press the Mode button to exit.

Front IR



Used in conjunction with Custom Installation (C.I.) systems or IR repeater systems, it may be desirable to disable the front panel IR by setting FRONT IR to off (press the input select button to turn off). Press the Mode button to exit.

Input gain trim



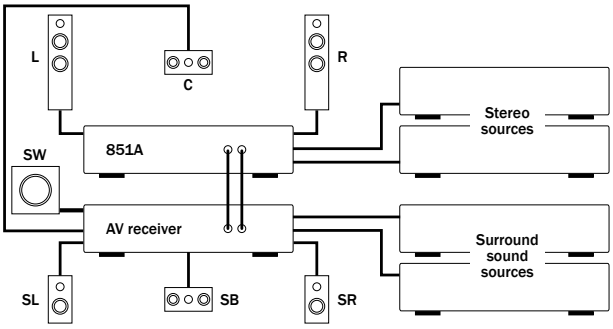
The relative levels of the inputs can be adjusted by gain trim. This allows each to be adjusted so that each sounds the same in terms of average loudness when you switch between them. Pick the loudest sounding source and trim its level until it matches the average perceived level of the others. Repeat this process if other sources also stand out as louder than the average.

To set the input gain trim for each source, select INP TRIM in the System Configure menu. Select the input required and use the volume control to set the gain between 0 and -12 dB (the available range is restricted if the volume is set very low). Press the Mode button to exit.

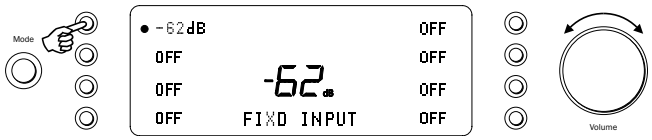
Fixed level inputs

Any input of the 851A is able to be set for fixed gain. Whenever this input is selected the gain will automatically go to this value and will not be adjustable by the volume control. This feature allows the 851A to be effectively used as a stereo power amplifier (for that selected input only). For example, as well as operating as a pure stereo amplifier, the 851A can provide the amplification for the front left and right channels of a surround sound setup with an AV receiver providing amplification for the other channels and controlling the overall system volume.

When listening in stereo use the 851A and connected stereo sources as normal for best possible sound quality. For surround sound, select the fixed level input you have chosen on the 851A and now use the AV receiver to control the volume, select connected surround sound sources etc. You may wish to re-name the fixed level input as “A/V mode” or similar on the 851A. Make connections as below, the left and right preamp outputs of the AV receiver connect to the fixed gain input chosen on the 851A. As the gain can be fixed to any value it is easy to match the level of the 851A to that of the other AV channels.



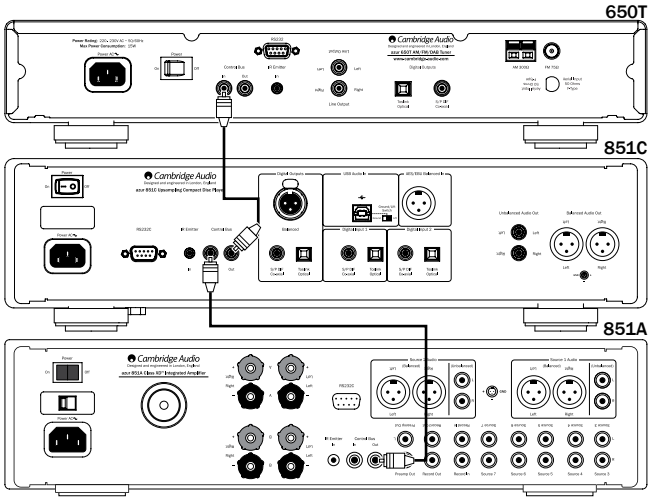
To set a fixed volume for a source, select FIXED INP in the System Configure menu:



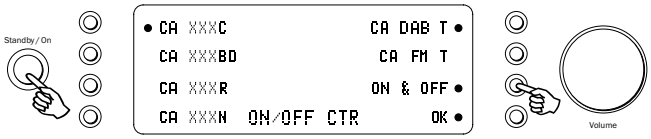
Select the input required and set the fixed gain using the volume control (the OFF setting does not disable the input but leaves the input gain subject to the volume control which is the default setting). When a source has a fixed input, the balance is always set to neutral. Press the Mode button to exit.

On/Off control menu

When going in/out of Standby mode the 851A can automatically turn on and off other connected Cambridge Audio Azur models that have control bus sockets. For this feature to work the units must be connected together (see diagram) by RCA/phono leads. The sockets are colourcoded orange on the rear panels of compatible Azur models. Loop out from the 851A Control Bus Out to the Control Bus In on another Azur model (e.g. 851C). Continue the chain to other Azur models if required.



Now while the 851A is on press and hold the Standby/On button until ON/OFF CTR appears on the display:



Select the connected Azur models by pressing the appropriate input select button. For example, CA XXXC for an Azur CD player (851C), CA XXXBD for an Azur Blu-ray player, CA DAB T for an Azur DAB tuner etc.

Press ON & OFF to scroll through the options of ON (turns all Azur units on only), OFF (turns all Azur units into Standby only) or ON & OFF (turns all Azur units on and into Standby mode).

Press OK to confirm and exit.

Cambridge Audio

CAP5 - Fiveway protection system

Cambridge Audio has developed a proprietary protection system to ensure reliability and a long life for its amplifiers and the speakers they are connected to. Note: Due to the required sensitivity of the CAP5 system, it is possible that mains power disturbances can falsely trigger CAP5 in extreme situations. This protection system comprises of five main protection methods:

1. DC detection

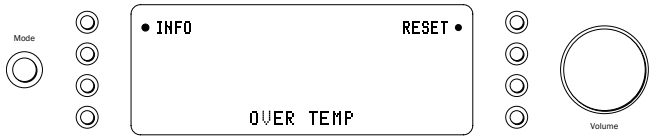
Indication - Unit has switched off during operation, display flashes “DC ERROR”. Press the INFO input select button for a brief on-screen description and remedy, or read below for more information.

Description - CAP5 offers loudspeaker protection if the output of the amplifier goes to a high constant voltage (DC) because of some internal fault. This is a rare fault although detecting it could just save those expensive loudspeakers.

Remedy - Due to the necessary sensitivity of the DC protection circuit, extremely hard clipping of the amplifier may cause DC protection to be triggered. If this fault occurs press the RESET input select button, then press the Standby/On button to power up again and check operation with a reduced volume level. If the DC fault occurs again please contact your dealer for service.

2. Over temperature detection

Indication - Unit has switched off during operation, display flashes “OVER TEMP”. Press the INFO input select button for a brief on-screen description and remedy, or read below for more information.



Description - Over temperature is caused by a combination of high listening levels and low impedance speakers. CAP5 includes temperature detection which constantly monitors the heat generated by the output transistors. If the monitored temperature reaches a high level (suitably within the limits of the output devices) the amplifier will automatically switch into a fault mode. The unit should ideally be left for 15 minutes in this state to cool down adequately. If the unit has not fully cooled down then the temperature may reach the limit soon after the amplifier is powered up. If the loudspeaker impedance is low the temperature of the amplifier may rise faster as the amplifier is working harder. If the amplifier is mounted in a cabinet or the ventilation slots are obstructed the over temperature detection may activate/reactivate after a short listening time.

Remedy - User related fault. The internal temperature of the output transistors has reached the over temperature limit. Press the RESET input select button and leave the unit for 15 minutes to cool down before pressing the Standby button to resume normal operation.

3. Overvoltage/overcurrent detection

Description - CAP5 offers V/I (voltage/current) protection by constantly monitoring the output transistors to keep them working inside their Safe Operating Area (SOA). The SOA is a set of limits given by the output transistor manufacturer to ensure reliability. The V/I protection has been incorporated within the amplifier circuitry to provide a fast response to temporary overload conditions. When the V/I protection is triggered the unit will continue to operate but distortion may be heard as the unit protects the output transistors.

Remedy - Reduce the volume. If distortion is still present, check the speaker connections and ratings.

4. Short circuit detection

Indication - Unit has not come out of Standby, display flashes “SPKR SHORT”. Press the INFO input select button for a brief on-screen description and remedy, or read below for more information.

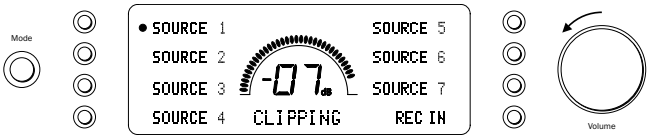
Description - During power up from Standby CAP5 performs a check on the loudspeaker terminals to see if a short across the terminals has been accidentally introduced (display flashes “SPKR CHECK”). If the resistance measured across the loudspeaker terminals is too low the unit will stay in Standby mode until the fault has been removed and Power up is re-attempted (display flashes “SPKR SHORT”).

Remedy - User related fault. There may be a short circuit between the loudspeaker terminals. Press the RESET input select button and check all loudspeaker connections before attempting to switch the unit out of Standby (display will flash “SPKR CHECK” then “SPKR OK” when short circuit fixed).

It is possible to disable the short circuit detection feature by pressing the SHORT DT button to off when in the 851A System Configure menu, but it is not recommended. This would only be required if the loudspeakers have very low DC resistance.

5. Intelligent clipping detection

Indication - Volume is reduced automatically, “CLIPPING” appears on the front panel display.



Description - CAP5 has the ability to detect when the amplifier starts to clip or overdrive at its output, which can damage loudspeakers, and degrade the sound. Clipping distortion is caused at high volume levels when the output signal attempts to go outside the maximum voltage that the amplifier can provide, causing the tops of the signal to flatten off. When CAP5 detects clipping the volume will be automatically reduced down until CAP5 detects an undistorted output.

It is possible to disable the clipping detection feature by pressing the CLIP DT button to off when in the 851A System Configure menu.

Note: Disabling the clipping detection is not advised as this feature has been added deliberately to protect the amplifier and loudspeakers.

Custom installation (C.I.) use

The 851A features a Control Bus input/output that allow un-modulated remote control commands (positive logic, TTL level) to be received electrically by the unit and looped to another unit if desired. These control commands are typically generated by custom installation (multi-room) systems or remote IR receiver systems. The Control Bus sockets are colour-coded orange.

An IR Emitter Input is also provided that allows modulated IR remote control commands to be received electrically by the unit. Commands on this input operate the unit only and are not looped out demodulated on the Control Bus Output.

An RS232C port is also featured which allows the 851A to be controlled by C.I. systems.

In addition the units feature 'direct' IR/Control codes as well as toggle codes for some of their features to simplify programming custom installation systems. Special direct On/Off and Mute commands can be accessed on the supplied remote control for teaching into C.I. systems as follows:

1. Press and hold the Standby/On button. The remote first generates it's standby (toggle) command. Keep the button held down, after 12 seconds an amplifier "On" command will be generated. If the button is kept held down for a further 12 seconds, an amplifier player "Off" command is generated.

2. Press and hold the Mute button. The remote first generates it's mute (toggle) command. Keep the button held down, after 12 seconds a "Mute on" command will be generated. If the button is kept held down for a further 12 seconds, a "Mute off" command is generated.

A full code table and RS232 protocol for this product is available on the Cambridge Audio website: www.cambridge-audio.com

Technical specifications

Power Output	120W RMS into 8 Ohms
THD (unweighted)	< 0.001% 1 kHz at 80% of rated power
	< 0.01% 20 Hz - 20 kHz at 80% of rated power
Frequency Response	10 Hz - 50 kHz +/- 1 dB
S/N ratio (ref 1W/8 Ohm)	> 93 dB
Input impedances	Input 1 and 2 (balanced) 20 kOhm Inputs 1-7 unbalanced 20 kOhm Rec Input 20 kOhm
Power Amp damping factor	> 110 at 1 kHz
Max power consumption	800W
Minimum power consumption	Active (no signal) 70W Standby <0.5W
Bass & Treble controls	Shelving type Max bass boost/cut +/- 10 dB at 10 Hz Max treble boost/cut +/- 7.5 dB at 20 kHz
Dimensions (H x W x D)	115 x 430 x 385mm (4.5 x 16.9 x 15.2")
Weight	15.0kg (33Lbs)

Troubleshooting

There is no power

Ensure the AC power cord is connected securely.

Ensure the plug is fully inserted into the wall socket and is switched on.

Check fuse in the mains plug or adaptor.

There is no sound

Make sure the unit is not in Standby mode.

Check that source component is properly connected.

Check that REC IN is not switched on (unless record input is required).

Check that your speakers are properly connected.

If using Speaker B terminals check they are switched on.

Make sure unit is not in mute mode.

There is no sound on one channel

Ensure that balance control is in the correct position.

Check speaker connections.

Check interconnects.

There is a loud buzz or hum

Check turntable or tone arm for ground and connection lead fault.

Ensure no interconnects are loose or defective.

Ensure that your tape deck/turntable is not too close to the amplifier.

Unable to make or play tape recordings

Check that Record In and Record Out have been connected correctly.

There is weak bass or diffused stereo imaging

Ensure that speakers are not wired out of phase.

Message on display flashing

See section on CAP5 protection system.

The remote handset will not function

Check that the batteries have not expired.

Ensure that nothing is blocking the remote sensor.

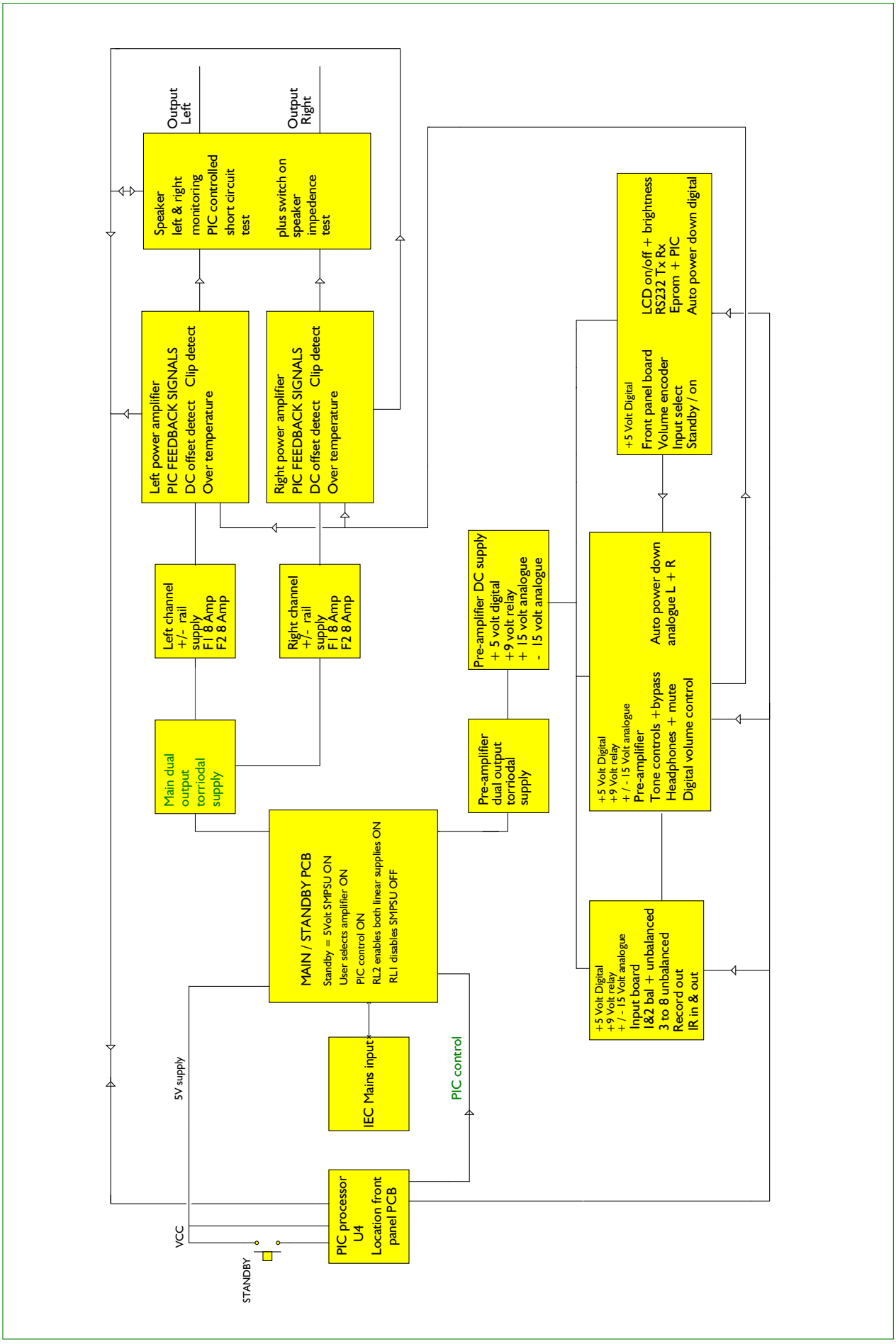
For more frequently asked questions (FAQ's), technical advice and information on getting the most out of your 851A, please visit the Support section on Cambridge Audio's website:

www.cambridgeaudio.com/support.php

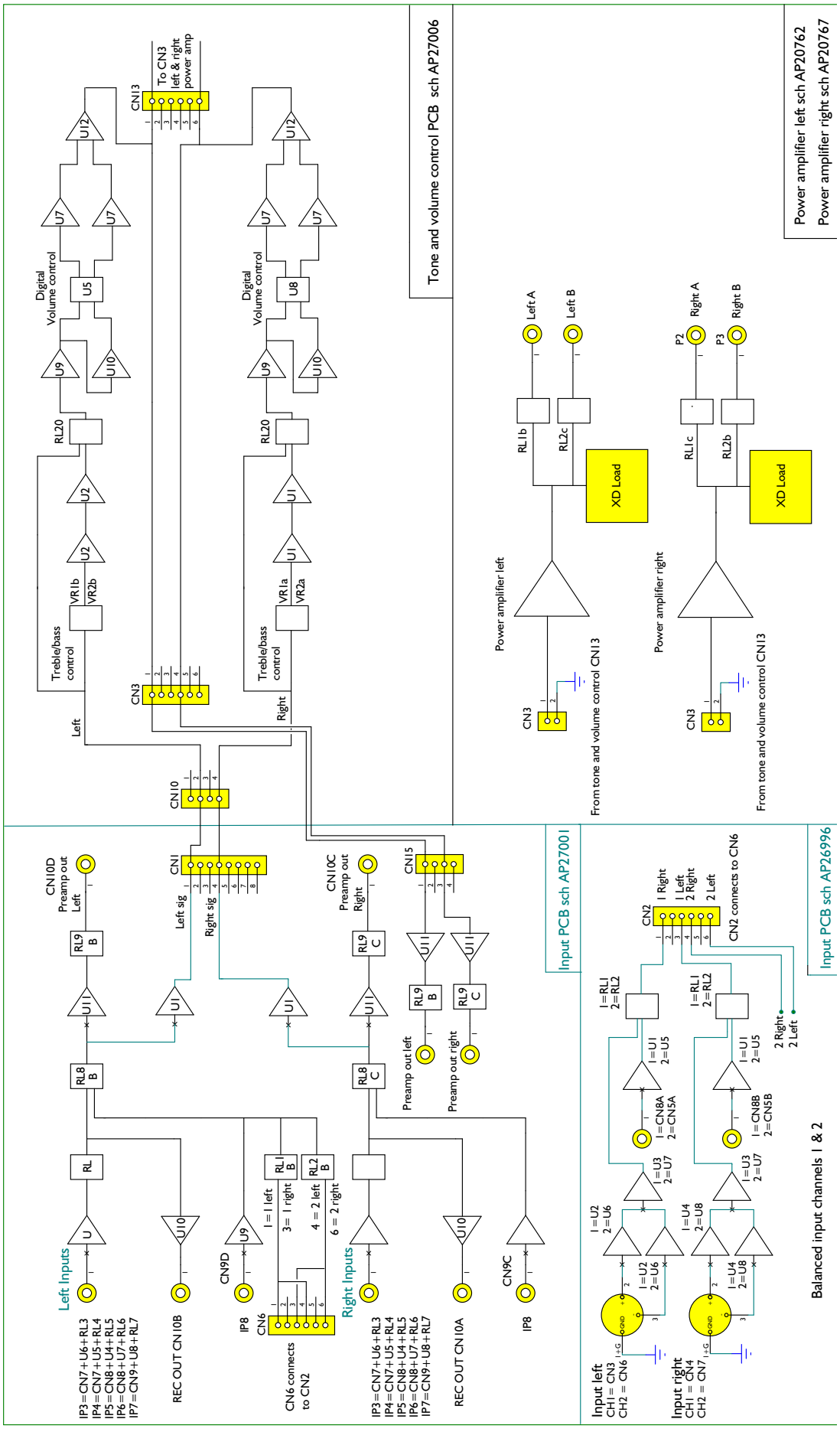
For all servicing, in or out of warranty, please contact your dealer.

Cambridge Audio

851A Block Diagram power and logic



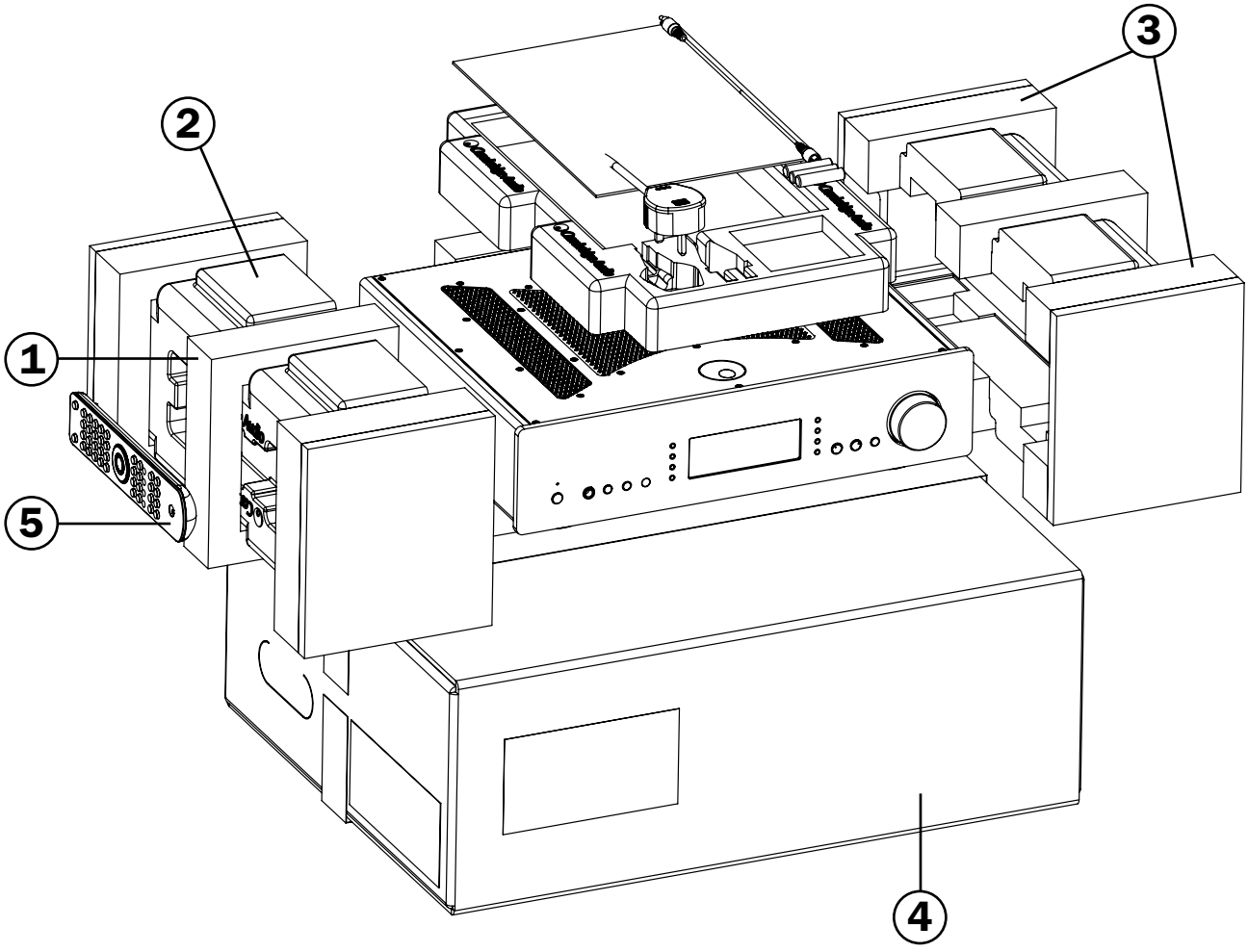
851A Block Diagram power and logic



Cambridge Audio

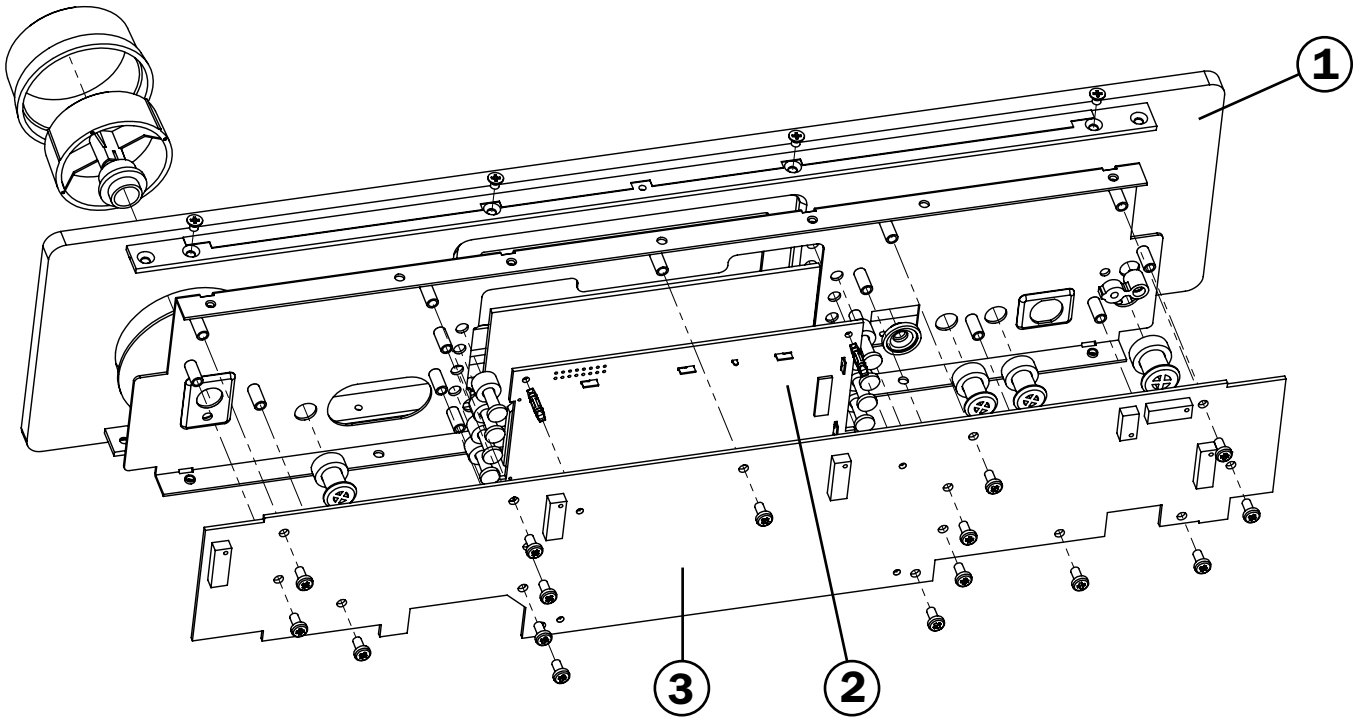
851A Packaging exploded diagram

Drawing ref	Service Part number	Factory ref	Description	Qty
1	PY1373	5000-741500E200	AZUR 840A PACKING FOAM centre SUPPORT (AP16856*)	2 pcs
2	PY1374	5000-741500E301	AZUR 840A PACKING POLY END CAP (AP168472)	2 pcs
3	PY1375	5000-741500E100	AZUR 840A PACKING FOAM ENDCAP SUPPORT (AP16855*)	4 pcs
4	PF515		851A/C CARTON BOX	1 pcs
5	PF494		851A/C REMOTE CONTROL	1 pcs



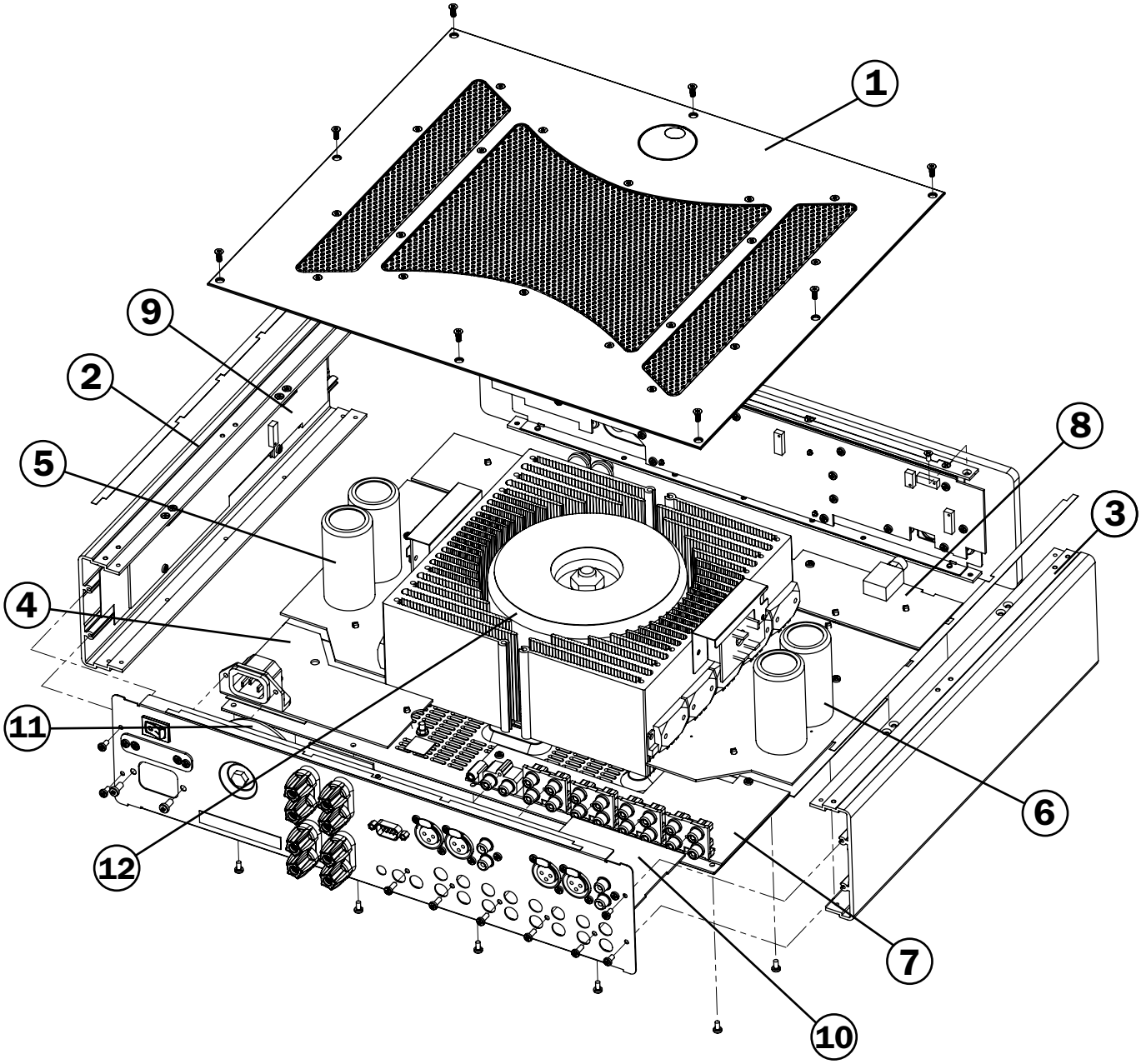
851A Front Panel Assembly exploded diagram

Drawing ref	Service Part number	Factory ref	Description
1	PZ717		851A Front Panel Black AP26969
1	PZ718		851A Front Panel Silver AP26969
2	PZ657	ACM2604A-NLW-FTW-03	851A LCD Module
3	PF518	0096-1010-0001	851A Front Panel PCB assy



Cambridge Audio

851A Main Assembly exploded diagram

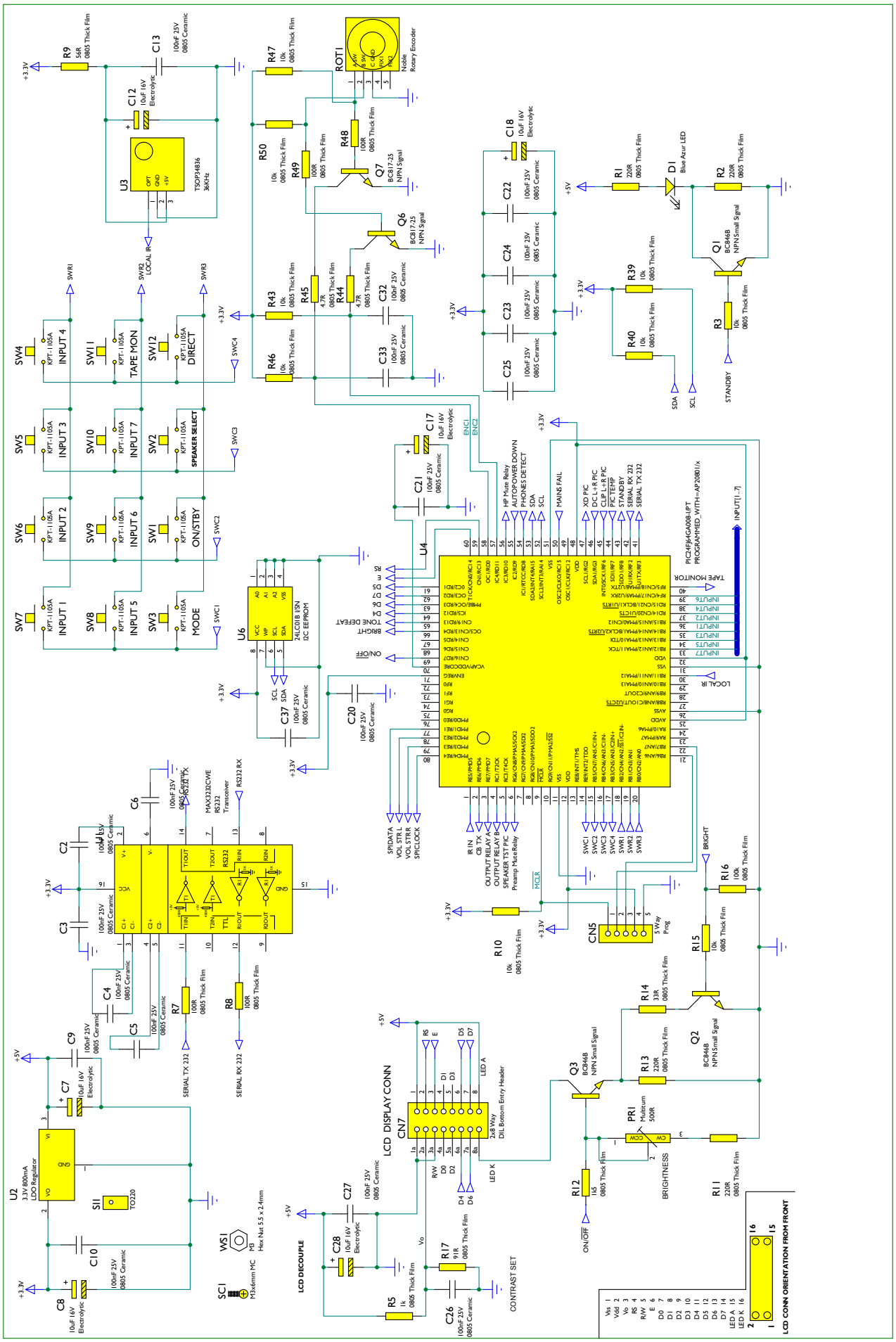


851A Main Assembly exploded diagram

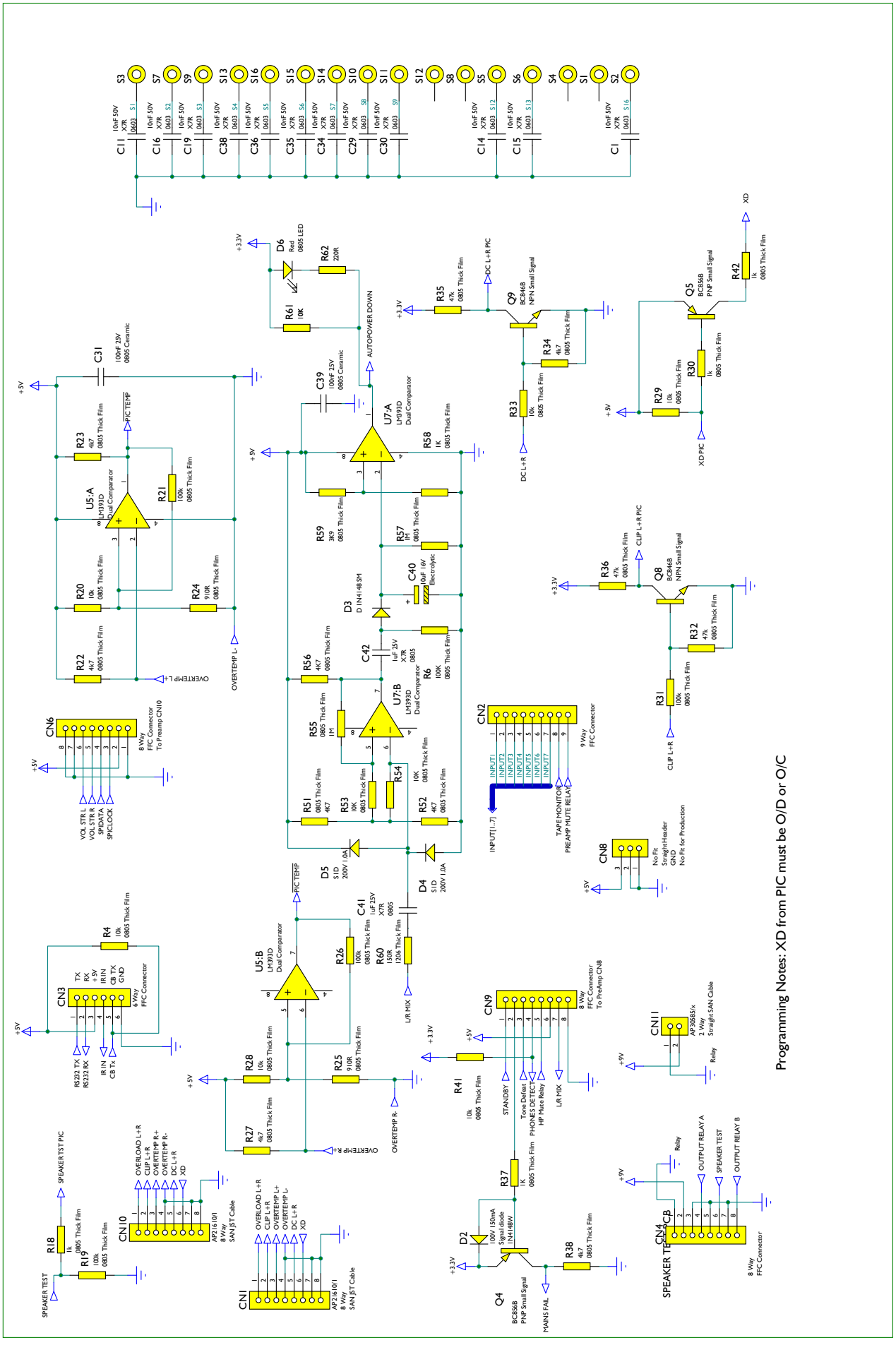
Drawing ref	Service Part number	Factory ref	Description
1	PZ723		851A Top Panel Black AP26958
1	PZ724		851A Top Panel Silver AP26958
2	PZ721		851A Side Panel Right Black AP26973
2	PZ722		851A Side Panel Right Silver AP26973
3	PZ719		851A Side Panel Left Black AP26957
3	PZ720		851A Side Panel Left Silver AP26957
4	PF524	0096-1650-0001	851A SMPS PCB assy
5	PF676	0096-1300-2000	840A v2 Right power amp + rect PCB with heatsink (75mm high heatsink)
6	PF677	0096-1300-1000	840A v2 Left power amp + rect PCB with heatsink (75mm high heatsink)
7	PF520	0096-1800-0000	851A Input PCB assy
8	PF522	0096-1360-0001	851A Pre-amp PCB assy
9	PF523	0096-1070-0000	851A Power Supply PCB
10	PF521	0096-1790-0000	851A Input 1 and 2 PCB assy
11	PZ650	TI-113624	851A 110V/115V Standby Toroid Transformer AP207952
11	PZ652	TI-113622	851A 230V Standby Toroid Transformer AP207932
12	PZ651	TI-113512	851A 230V Main Toroid Transformer AP207922
12	PZ649	TI-113514	851A 110V/115V Main Toroid Transformer AP207942

Cambridge Audio

851A Front Panel PCB Schematic



851A Front Panel PCB Schematic



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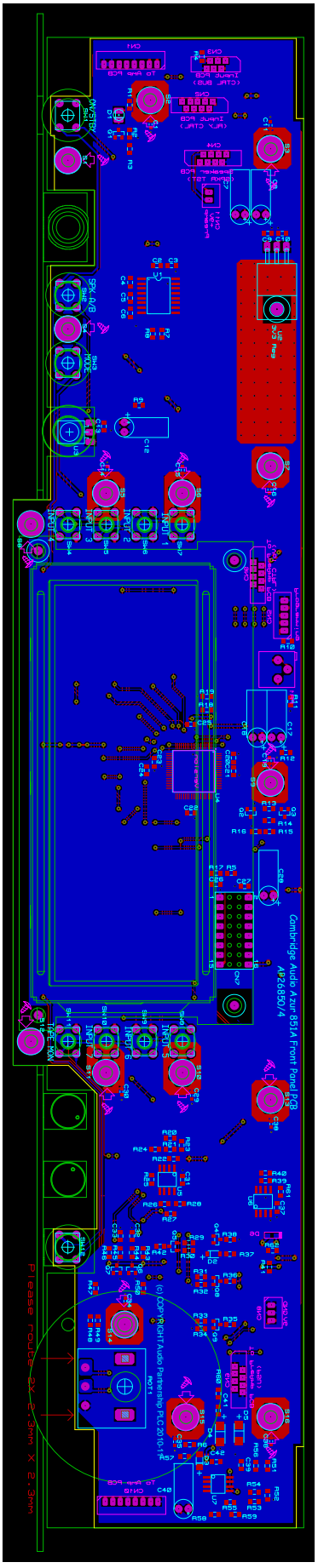
851A Front Panel Gerber



851A Front Panel PCB Assembly BOM

	Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	Package Info	Factory Reference	Service Part Number
	RESISTORS								
1	4.7R	0805 Thick Film	2	R44, R45		1%	0805		
2	33R	0805 Thick Film	1	R14		1%	0805		
3	56R	0805 Thick Film	1	R9		1%	0805		
4	91R	0805 Thick Film	1	R17		1%	0805		
5	100R	0805 Thick Film	4	R7, R8, R48, R49		1%	0805		
6	220R	0805 Thick Film	4	R1, R2, R11, R13		1%	0805		
7	910R	0805 Thick Film	2	R24, R25		1%	0805		
8	1k	0805 Thick Film	5	R5, R18, R30, R37, R42		1%	0805		
9	1k5	0805 Thick Film	1	R12		1%	0805		
10	4k7	0805 Thick Film	5	R22, R23, R27, R34, R38		1%	0805		
11	10k	0805 Thick Film	15	R3, R4, R10, R15, R20, R28, R29, R33, R39-R41, R43, R46, R47, R50		1%	0805		
12	47k	0805 Thick Film	3	R32, R35, R36		1%	0805		
13	100k	0805 Thick Film	5	R16, R19, R21, R26, R31		1%	0805		
	RESISTORS VARIABLE								
14	500R	Multiturn	1	PR1	3296P	10%	Horiz Side Adjust		
	CAPACITORS								
15	10nF 50V	X7R	12	C1, C11, C14-C16, C19, C29, C30, C34-C36, C38		10%	0603		
16	100nF 25V	0805 Ceramic	20	C2-C6, C9, C10, C13, C20-C27, C31-C33, C37		10%	0805		
17	10uF 16V	Electrolytic	6	C7, C8, C12, C17, C18, C28		20%	5.2mm Diameter	1102-100014-000	
	CONNECTORS								
18	8 Way	SAN JST Cable	2	CN1, CN10	AP21610/1		2mm Pitch		
19	9 Way	FFC Connector	1	CN2	D100-SSV-9		Standard		
20	6 Way	FFC Connector	1	CN3	D100-SSV-06		Standard		
21	8 Way	FFC Connector	3	CN4, CN6, CN9	D100-SSV-08		Standard	2301-008501E001	
22	5 Way	Straight Header	1	CN5	B5B-PH-KS		2mm Pitch	2300-005000-000	
23	2x8 Way	DIL Bottom Entry Header	1	CN7			2.5mm Pitch	2350-016300-001	
24	No Fit		1	CN8					
25	2 Way	Straight SAN Cable	1	CN11	AP30585/x		2mm Pitch		
	DIODES								
26	Blue Azur LED	3mm	1	D1	HFB963M-130			3100-000030-003	
27	100V 150mA	Signal diode	1	D2	1N4148W		SOD123		

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

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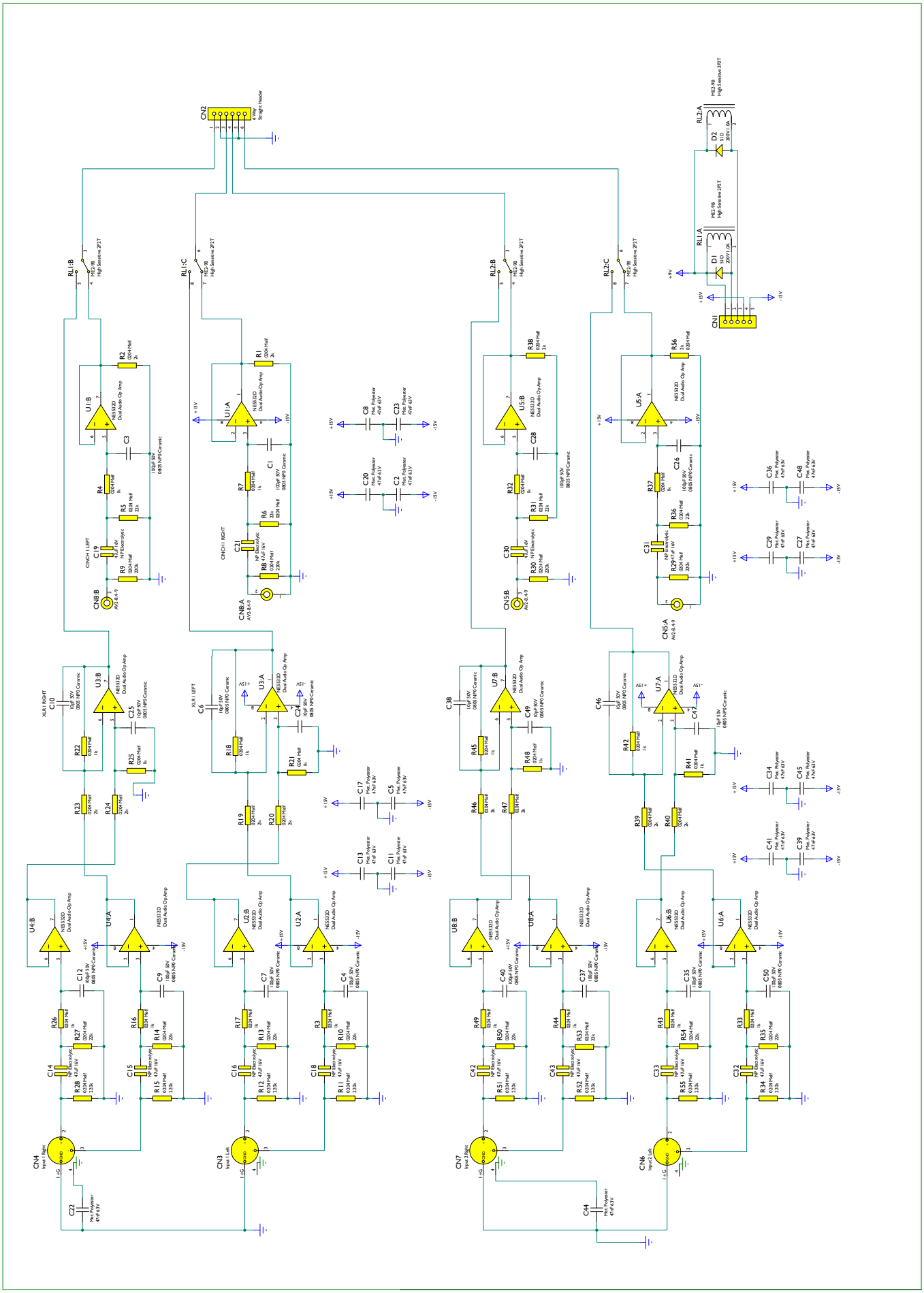
851A Front Panel PCB Assembly BOM

	INTEGRATED CIRCUITS								
28	RS232	Transceiver	1	U1	MAX3232CWE		SO16		PY1397
29	3.3V 800mA	LDO Regulator	1	U2	LM1117T 3.3		TO220		PY986
30	36KHz	IR Receiver	1	U3	TSOP34836		Through Hole	3001-348360-000	PY755
31	16 Bit Micro	64k/8k RAM	1	U4	PIC24FJ64GA008-I/PT		SQFP12x12		Program with software: Please add version label PF 525!
32		Dual Comparator	1	U5	LM393D		SO8		PF425
33	1k	I2C EEPROM	1	U6	24LC01B I/SN		SO8		PZ095
	SWITCHES								
34		Tactile	12	SW1-SW12	KPT-1105A		Through Hole	2400-020200-000	PY043
	TRANSISTORS								
35	65V 100mA	NPN Small Signal	5	Q1-Q3, Q8, Q9	BC846B		SOT23		PY1624
36	-65V 100mA	PNP Small Signal	2	Q4, Q5	BC856B		SOT23	1301-856000-500	
37	45V 500mA	NPN Signal	2	Q6, Q7	BC817-25		SOT23	1300-817000-500	PY1625
	MISCELLANEOUS								
38		Rotary Encoder	1	ROT1	REB161(9X7) PVB20FHINB 1-2-24			2409-010200E001	PY1138
39	M3x6mm MC	P/H Black Screw	1	SC1					
40	TO220	Silicon Pad	1	SI1					Fix Regulators to Heatsink
41	M3	Hex Nut 5.5 x 2.4mm	1	WS1				6600-120030E001	For fixing U2 to PCB

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

851A Inputs 1 and 2 PCB Schematic



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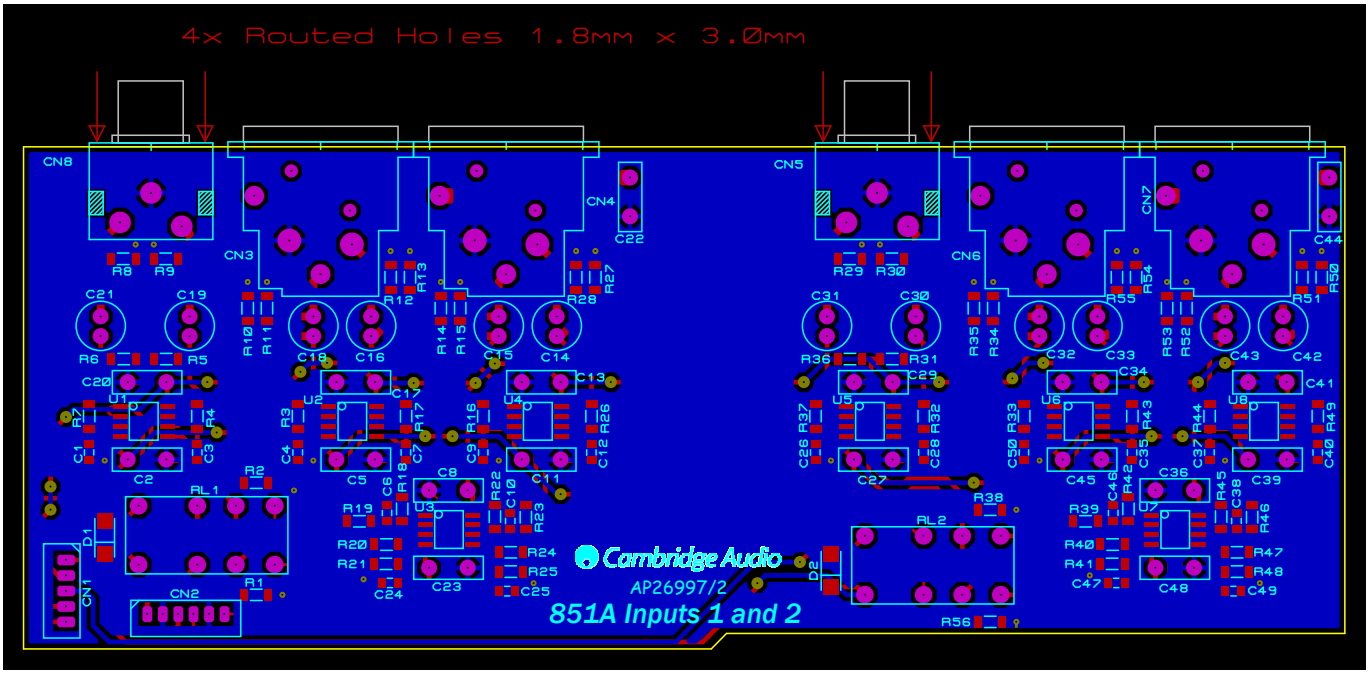
851A Inputs 1 and 2 Gerber



851A Inputs 1 and 2 PCB Assembly BOM

	Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	Factory Reference	Service Part Number
	RESISTORS								
1	1k	0204 Melf	20	R3, R4, R7, R16-R18, R21, R22, R25, R26, R32, R33, R37, R41-R45, R48, R49		1%	204		
2	2k	0204 Melf	12	R1, R2, R19, R20, R23, R24, R38-R40, R46, R47, R56		1%	204		
3	22k	0204 Melf	12	R5, R6, R10, R13, R14, R27, R31, R35, R36, R50, R53, R54		1%	204		
4	220k	0204 Melf	12	R8, R9, R11, R12, R15, R28-R30, R34, R51, R52, R55		1%	204		
	CAPACITORS								
5	10pF 50V	0805 NP0 Ceramic	8	C6, C10, C24, C25, C38, C46, C47, C49		5%	0805		
6	100pF 50V	0805 NP0 Ceramic	12	C1, C3, C4, C7, C9, C12, C26, C28, C35, C37, C40, C50		5%	0805		
7	47nF 63V	Met. Polyester	18	C2, C5, C8, C11, C13, C17, C20, C22, C23, C27, C29, C34, C36, C39, C41, C44, C45, C48		10%	5mm Pitch Box	1117-473053-000	
8	47uF 16V	NP Electrolytic	12	C14-C16, C18, C19, C21, C30-C33, C42, C43		20%	6mm Dia	1105-470014-000	
	CONNECTORS								
9	5 Way	Straight Header	1	CN1	B5B-PH-KS		2mm Pitch	2300-005000-000	
10	6 Way	Straight Header	1	CN2	B6B-PH-KS		2mm Pitch	2300-006000-000	
11		Female XLR with Latch	4	CN3, CN4, CN6, CN7	5033T		Through Hole		PY1641
12	2 Way	Gold Plated Phono	2	CN5, CN8	AV2-8.4-9		Red-Bottom, White-Top	2330-003911E034	
	DIODES								
13	200V 1.0A	SM Rectifier	2	D1, D2	S1D		D0214		PY1502
	INTEGRATED CIRCUITS								
14		Dual Audio Op Amp	8	U1-U8	NE5532D		SOIC08		PY1162
	RELAY								
15	9V Coil, 2A Contacts	High Sensitive 2P2T	2	RL1, RL2	ME2-9B		Through Hole		PY1402

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

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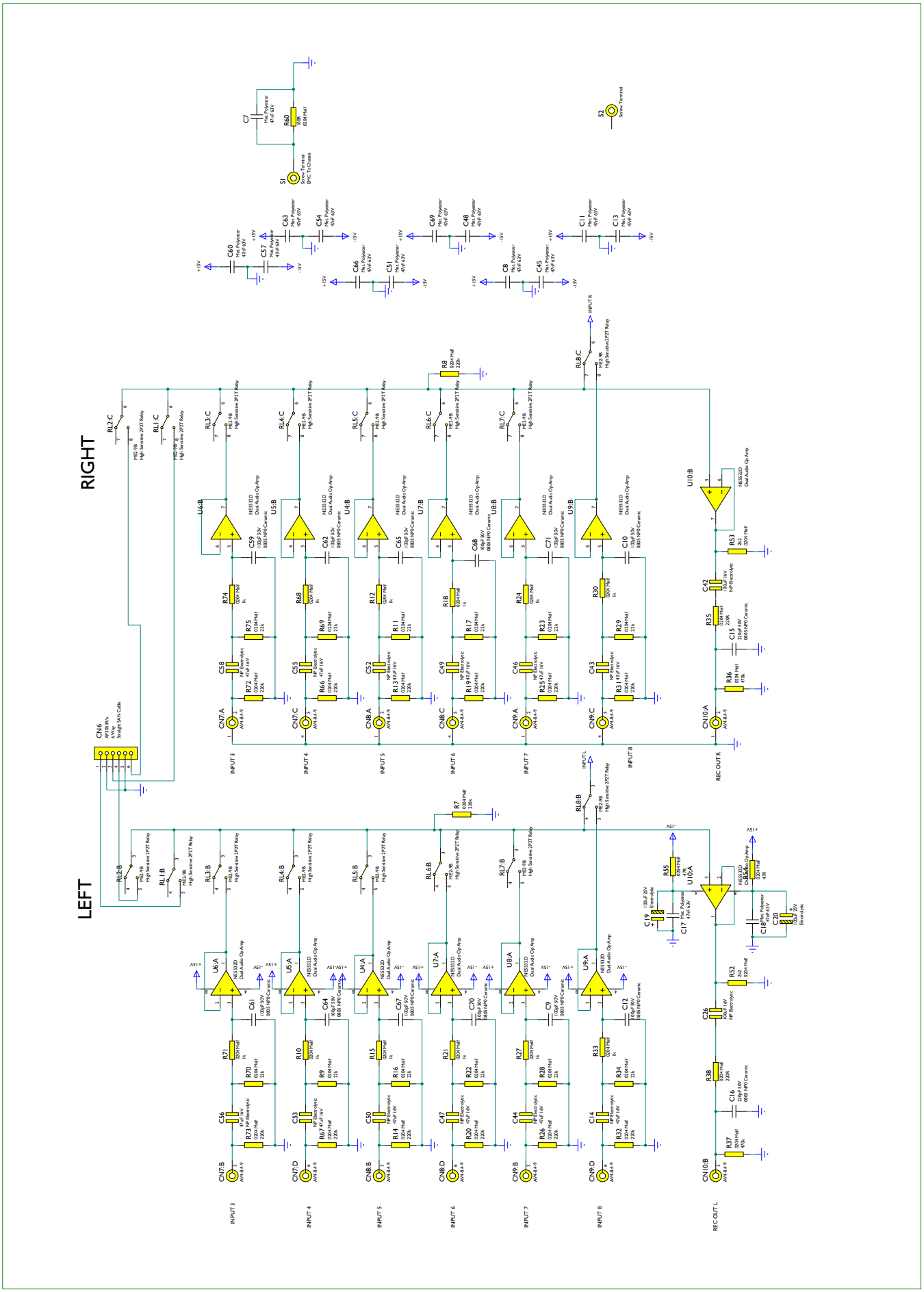
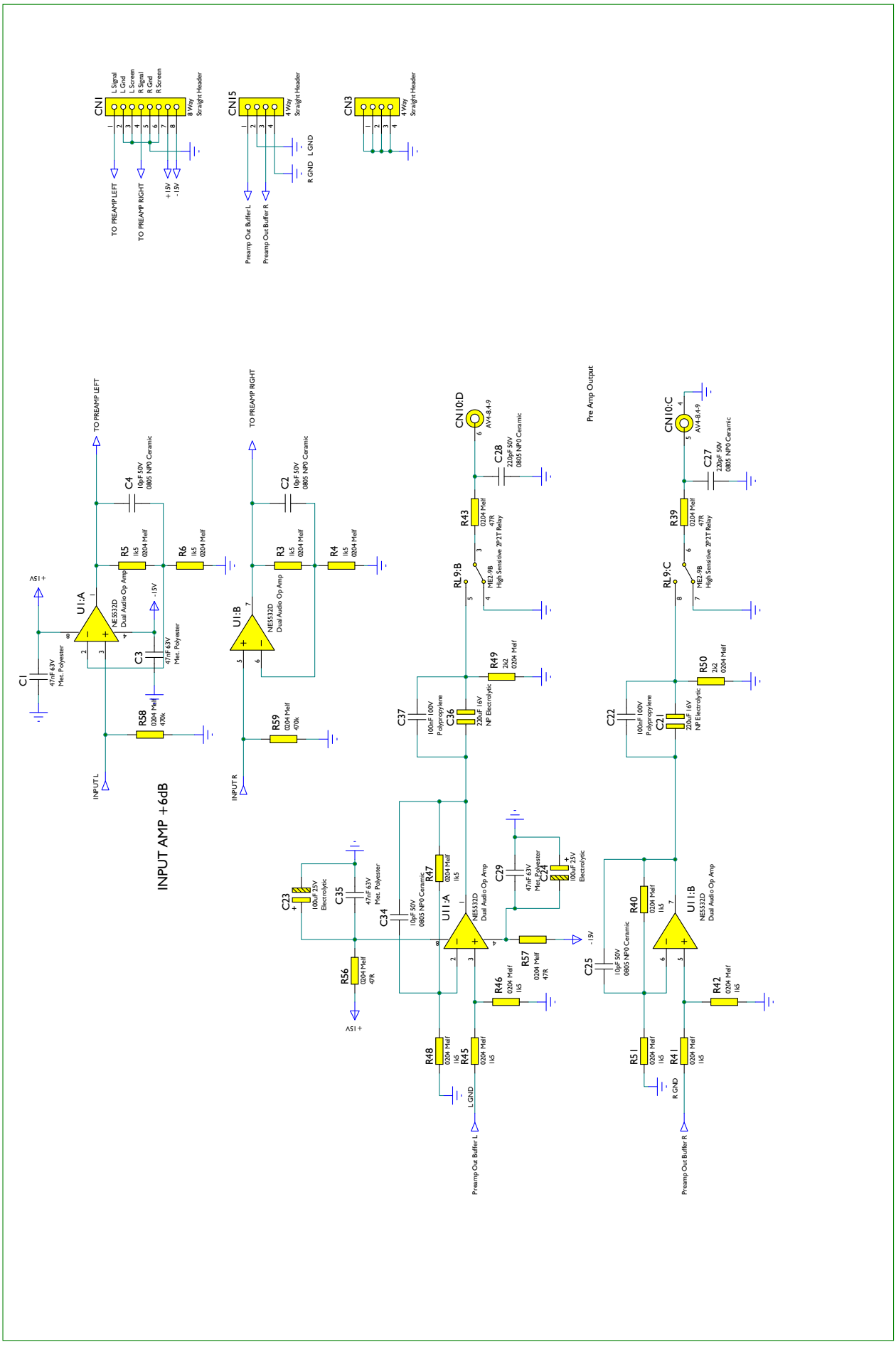
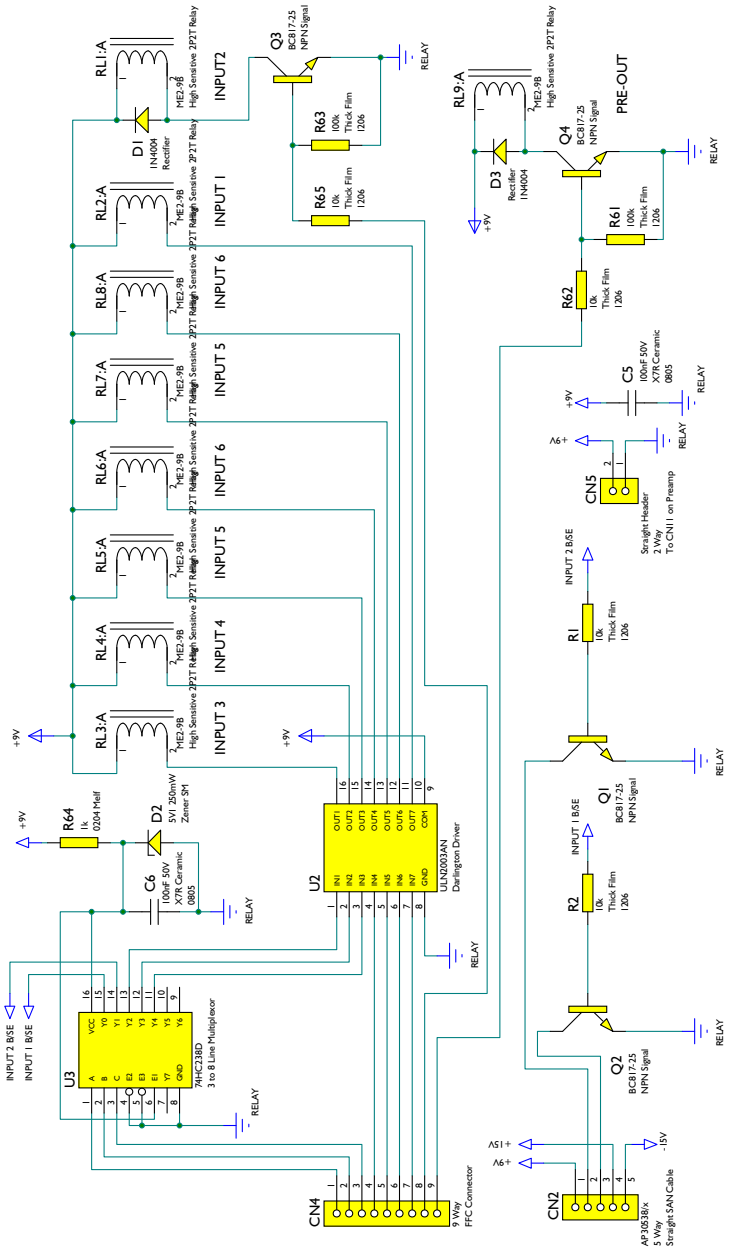
851A Input PCB Schematic



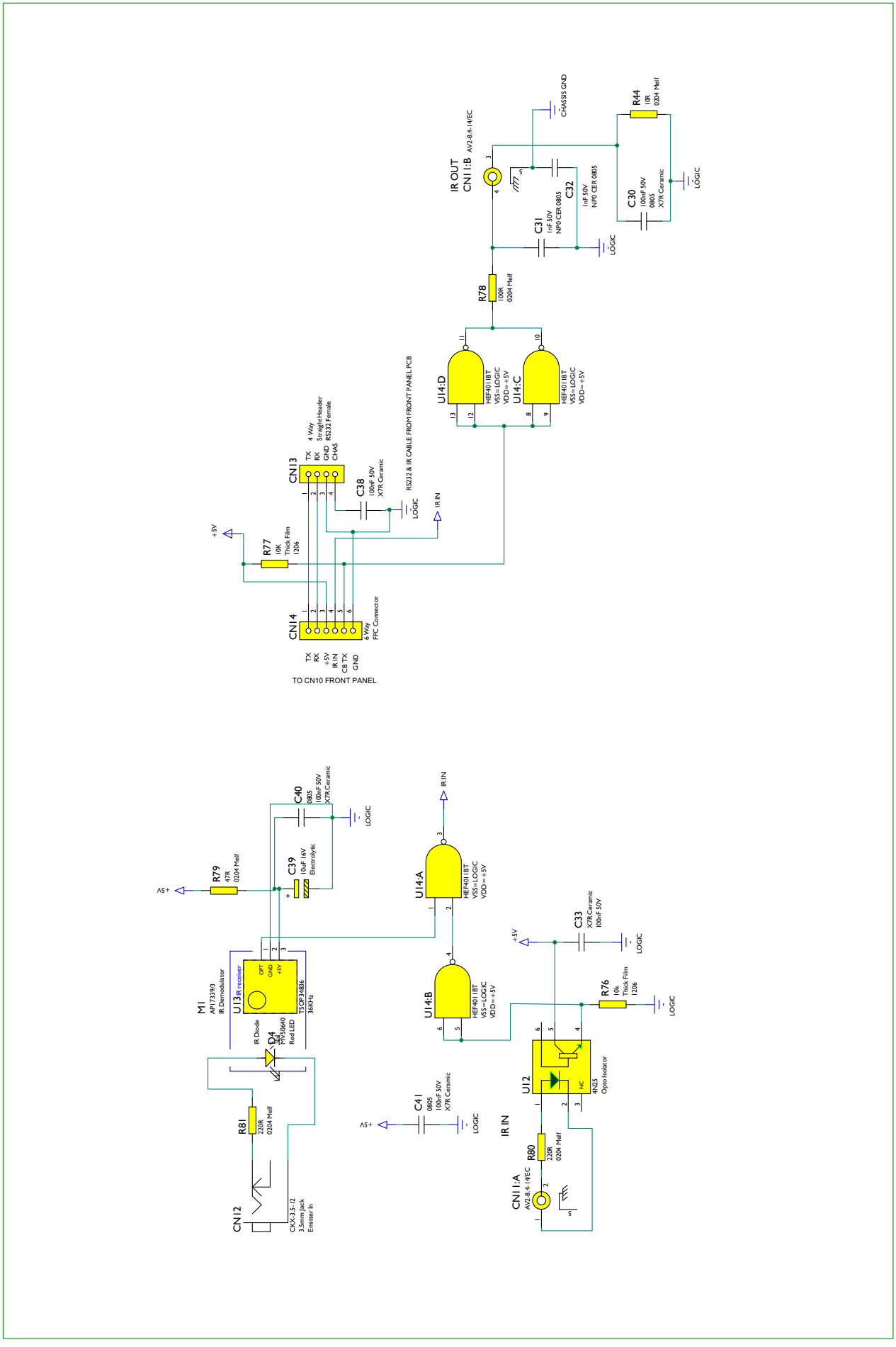
851A Input PCB Schematic



851A Input PCB Schematic



851A Input PCB Schematic



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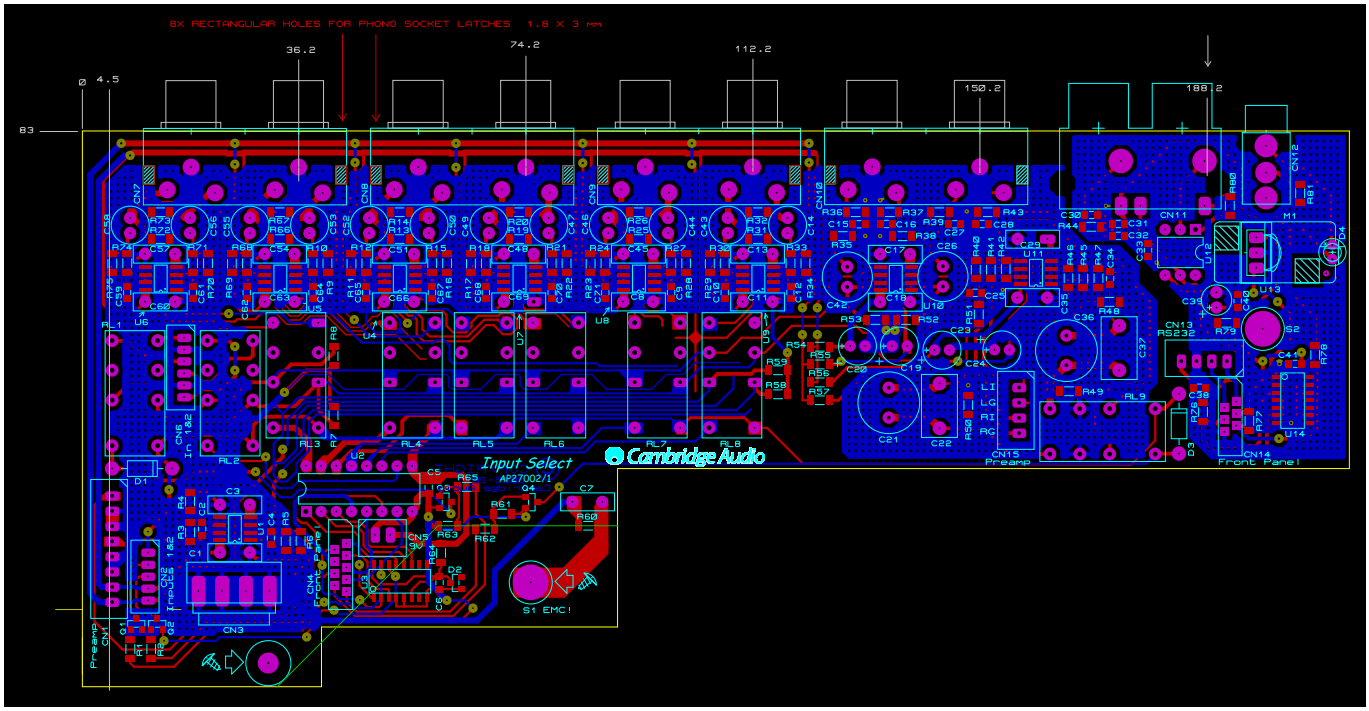
851A Input PCB Gerber



851A Input PCB Assembly BOM

	Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	Factory Reference	Service Part Number
	RESISTORS								
1	10R	0204 Melf	1	R44		1%	204		
2	47R	0204 Melf	7	R39, R43, R54-R57, R79		1%	204		
3	100R	0204 Melf	2	R60, R78		1%	204		
4	220R	0204 Melf	4	R35, R38, R80, R81		1%	204		
5	1k	0204 Melf	13	R10, R12, R15, R18, R21, R24, R27, R30, R33, R64, R68, R71, R74		1%	204		
6	1k5	0204 Melf	12	R3-R6, R40-R42, R45-R48, R51		1%	204		
7	2k2	0204 Melf	4	R49, R50, R52, R53		1%	204		
8	10k	Thick Film	6	R1, R2, R62, R65, R76, R77		1%	1206		
9	22k	0204 Melf	12	R9, R11, R16, R17, R22, R23, R28, R29, R34, R69, R70, R75		1%	204		
10	100k	Thick Film	2	R61, R63		1%	1206		
11	220k	0204 Melf	14	R7, R8, R13, R14, R19, R20, R25, R26, R31, R32, R66, R67, R72, R73		1%	204		
12	470k	0204 Melf	4	R36, R37, R58, R59		1%	204		
	CAPACITORS								
13	10pF 50V	0805 NP0 Ceramic	4	C2, C4, C25, C34		5%	0805		
14	100pF 50V	0805 NP0 Ceramic	12	C9, C10, C12, C59, C61, C62, C64, C65, C67, C68, C70, C71		5%	0805		
15	220pF 50V	0805 NP0 Ceramic	4	C15, C16, C27, C28		5%	0805		
16	1nF 50V	NP0 CER 0805	2	C31, C32		5%	0805		
17	47nF 63V	Met. Polyester	19	C1, C3, C7, C8, C11, C13, C17, C18, C29, C35, C45, C48, C51, C54, C57, C60, C63, C66, C69		10%	5mm Pitch Box	1117-473053-000	
18	100nF 50V	X7R Ceramic	7	C5, C6, C30, C33, C38, C40, C41		10%	0805		
19	100nF 100V	Polypropylene	2	C22, C37	CMPA104K100RB075	10%	7.5mm Pitch Box		
20	10uF 16V	Electrolytic	1	C39		20%	5.2mm Diameter	1102-100014-000	

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

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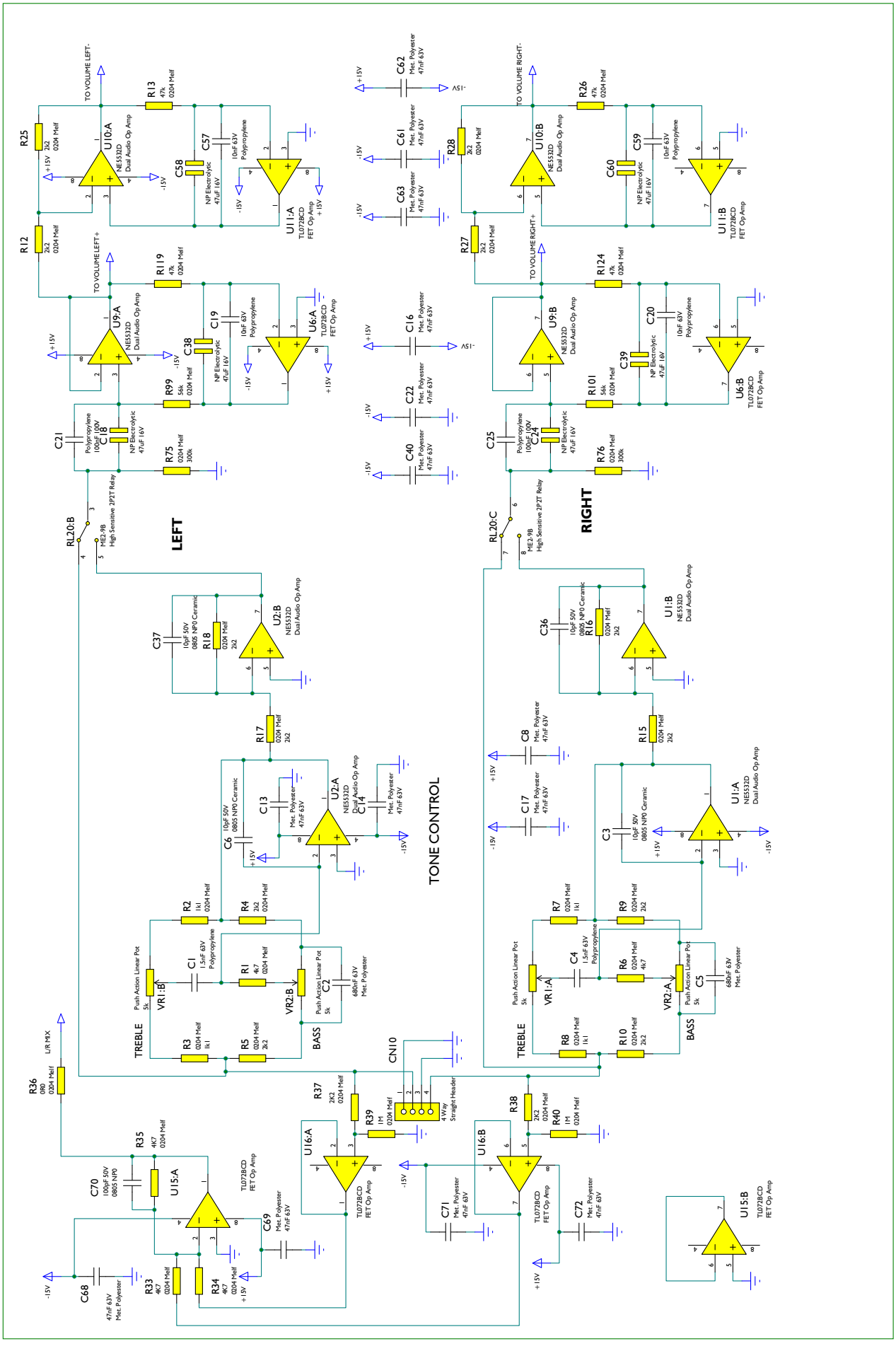
851A Input PCB Assembly BOM

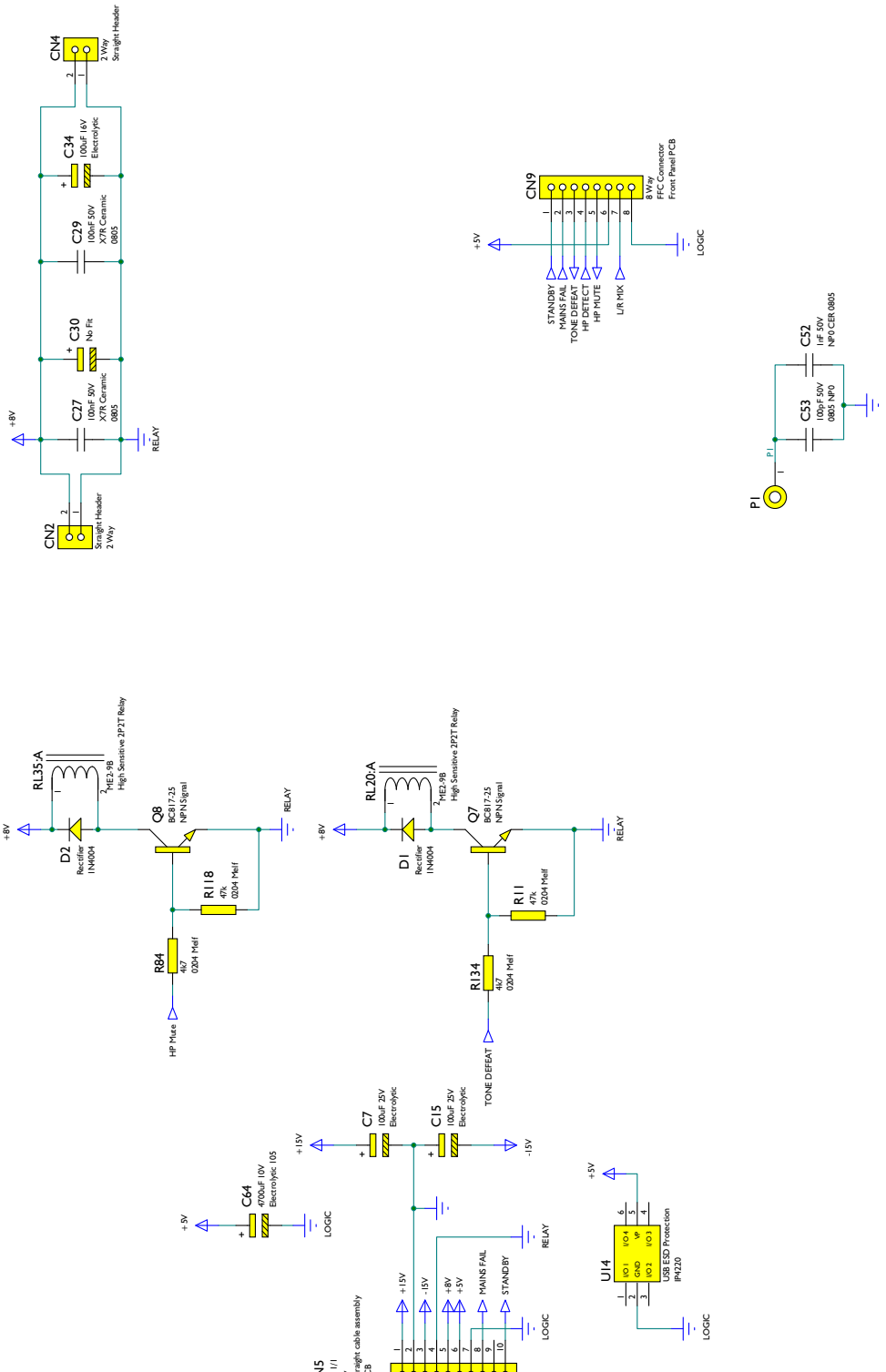
21	47uF 16V	NP Electrolytic	12	C14, C43, C44, C46, C47, C49, C50, C52, C53, C55, C56, C58		20%	6mm Dia	1105-470014-000	
22	100uF 25V	Electrolytic	4	C19, C20, C23, C24		20%	6mm Dia	1102-101024-000	
23	100uF 16V	NP Electrolytic	2	C26, C42		20%	8mm Dia	1105-101014-000	
24	220uF 16V	NP Electrolytic	2	C21, C36		20%	10mm Dia		
	CONNECTORS								
25	8 Way	Straight Header	1	CN1	B8B-XH-A		2.5mm Pitch	2300-008100E002	
26	5 Way	Straight SAN Cable	1	CN2	AP30538/x		2mm Pitch		
27	4 Way	Straight Header	1	CN3	B4P-VH				
28	9 Way	FFC Connector	1	CN4	D100-SSV-9		Standard		
29	2 Way	Straight Header	1	CN5	B2B-XH-A		2.5mm Pitch	2300-002100-003	
30	6 Way	Straight SAN Cable	1	CN6	AP30539/x		2mm Pitch		
31	4 Way	Gold Plated Phono	4	CN7-CN10	AV4-8.4-9		Red-Bottom, White-Top	2330-006900E001	
32		Horizontal Gold Plated RCA	1	CN11	AV2-8.4-14/EC		Through Hole	2330-004911E004	Orange Inserts with EMC
33		3.5mm Jack	1	CN12	CKX-3.5-12		Through Hole	2320-003911E007	
34	4 Way	Straight Header	2	CN13, CN15	B4B-XH-A		2.5mm Pitch	2300-004100-004	
35	6 Way	FFC Connector	1	CN14	D100-SSV-06		Standard		
	DIODES								
36	400V 1A	Rectifier	2	D1, D3	1N4004		DO41	1401-140040-000	
37	5V1 250mW	Zener SM	1	D2	BZX84C5V1		SOT23		
38		Red LED	1	D4	MV50640		3mm Dia	3100-506400-000	PY962
	INTEGRATED CIRCUITS								
39		Dual Audio Op Amp	9	U1, U4-U11	NE5532D		SOIC08		PY1162
40	7 Way	Darlington Driver	1	U2	ULN2003AN		DIL16	4120-030052E900	PY1158
41		3 to 8 Line Multiplexor	1	U3	74HC238D		SO16	4174-238102-600	
42		Opto Isolator	1	U12	4N25		DIL06	4142-500050-001	PY1144
43	36KHz	IR Receiver	1	U13	TSOP34836		Through Hole	3001-348360-000	
44	Quad 2 Input	NAND Gate	1	U14	HEF4011BT		SMD SO14	4140-110102E100	PMA109
	MODULES								
45		IR Demodulator	1	M1	AP17339/3		Plastic Part	6074-150001-000	
	RELAY								
46	9V Coil, 2A Contacts	High Sensitive 2P2T Relay	9	RL1-RL9	ME2-9B		Through Hole		PY1402
	TRANSISTORS								
47	45V 500mA	NPN Signal	4	Q1-Q4	BC817-25		SOT23	1300-817000-500	PY1847

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

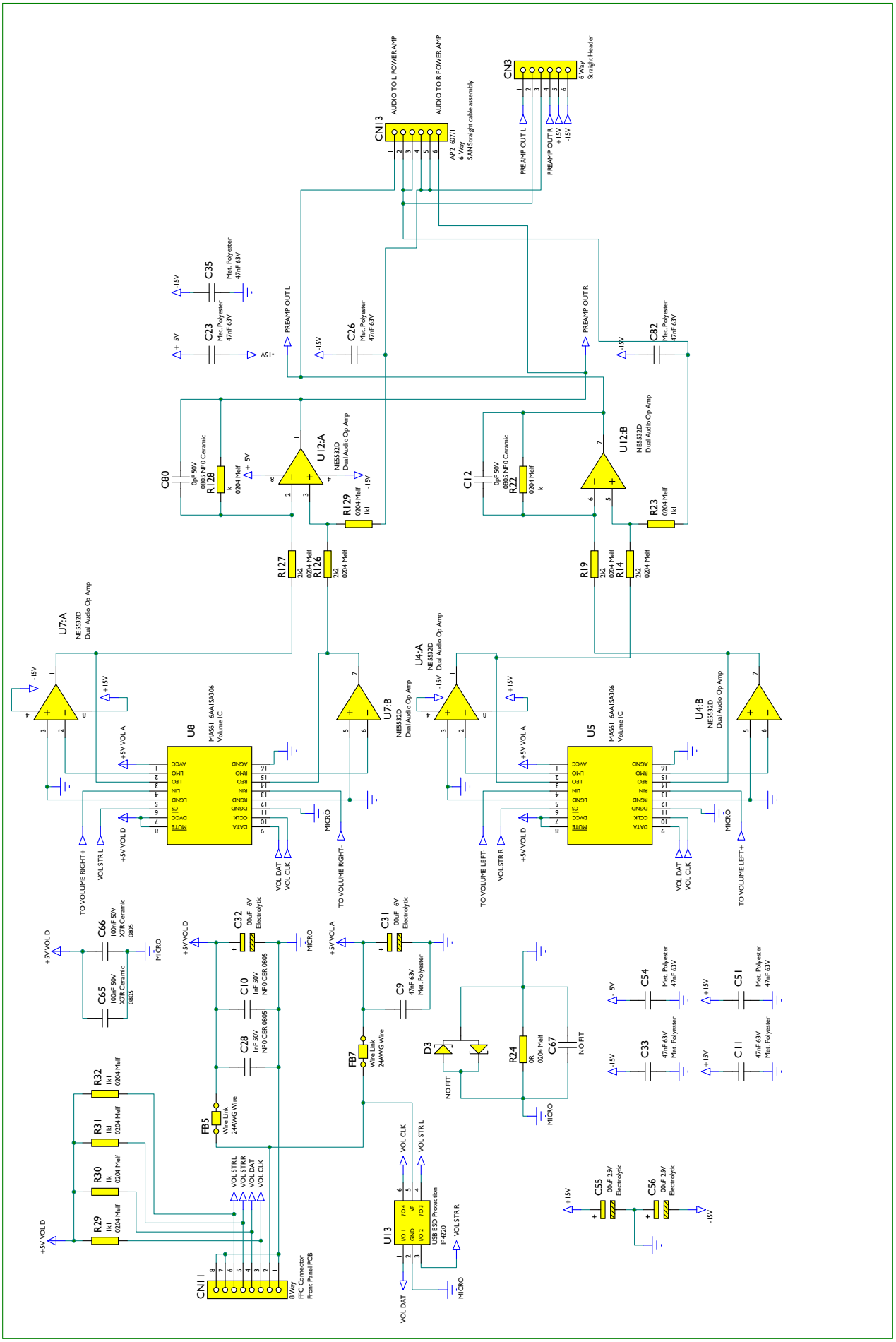
851A Pre-amp PCB Schematic



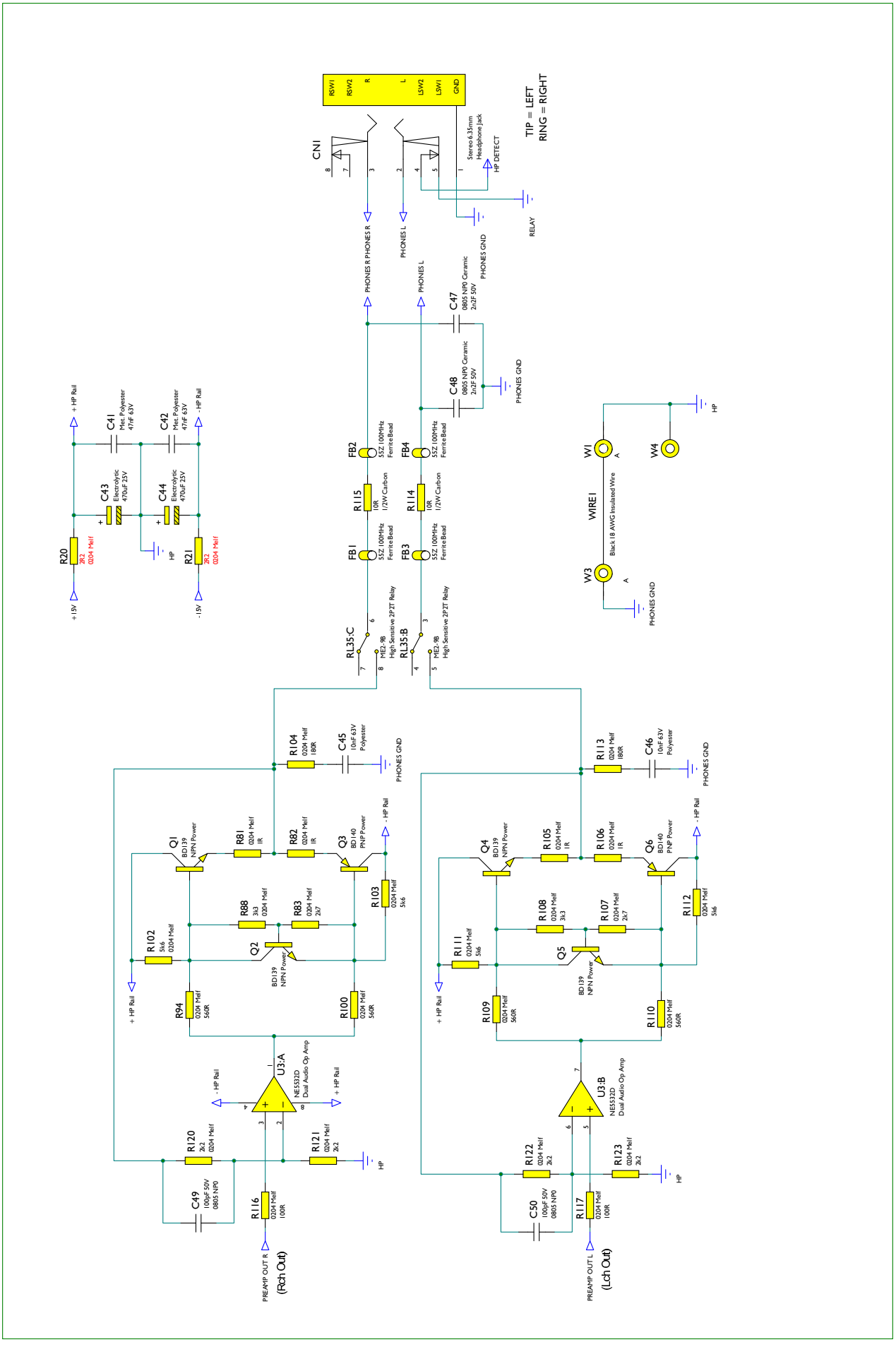
851A Pre-amp PCB Schematic



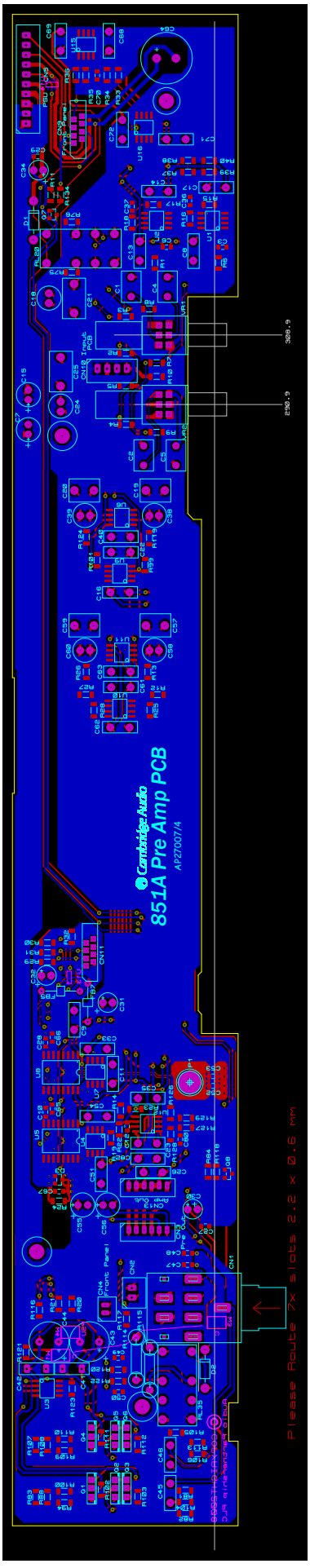
851A Pre-amp PCB Schematic



851A Pre-amp PCB Schematic



851A Pre-amp PCB Gerber



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851A Pre-amp PCB Assembly BOM

	Value	Description/ Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	Factory Reference	Service Part Number
	RESISTORS								
1	0R	0204 Melf	1	R24		1%	204		
2	1R	0204 Melf	4	R81, R82, R105, R106		1%	204		
3	2R2	0204 Melf	2	R20, R21	MMA02040C2208FB300	1%	204		
4	10R	1/2W Carbon	2	R114, R115		10%	12mm Pitch		Ferrite bead on both leads
5	100R	0204 Melf	2	R116, R117		1%	204		
6	180R	0204 Melf	2	R104, R113		1%	204		
7	560R	0204 Melf	4	R94, R100, R109, R110		1%	204		
8	1k1	0204 Melf	12	R2, R3, R7, R8, R22, R23, R29-R32, R128, R129		1%	204		
9	2k2	0204 Melf	20	R4, R5, R9, R10, R12, R14-R19, R25, R27, R28, R120-R123, R126, R127		1%	204		
10	2k7	0204 Melf	2	R83, R107		1%	204		
11	3k3	0204 Melf	2	R88, R108		1%	204		
12	4k7	0204 Melf	4	R1, R6, R84, R134		1%	204		
13	5k6	0204 Melf	4	R102, R103, R111, R112		1%	204		
14	47k	0204 Melf	6	R11, R13, R26, R118, R119, R124		1%	204		
15	56k	0204 Melf	2	R99, R101		1%	204		
16	300k	0204 Melf	2	R75, R76		1%	204		
	RESISTORS VARIABLE								
17	5k	Push Action Linear Pot	2	VR1, VR2	RD902PF-20B6-30F-B5K-0C		9mm Body	1065-002500E120	
	CAPACITORS								
18	No Fit		1	C30					
19	NO FIT		1	C67					
20	10pF 50V	0805 NP0 Ceramic	6	C3, C6, C12, C36, C37, C80		5%	0805		
21	100pF 50V	0805 NP0	3	C49, C50, C53		5%	0805		
22	1nF 50V	NP0 CER 0805	2	C10, C28		5%	0805		
23	1nF 50V	NP0 CER 0805	1	C52		5%	0805		
24	1.5nF 63V	Polypropylene	2	C1, C4		5%	5mm Pitch Box	1114-152052E000	
25	2n2F 50V	0805 NP0 Ceramic	2	C47, C48		5%	0805		
26	10nF 63V	Polypropylene	4	C19, C20, C57, C59		5%	5mm Pitch Box		
27	10nF 63V	Polyester	2	C45, C46		10%	5mm Pitch Box	1117-103053E000	
28	47nF 63V	Met. Polyester	21	C8, C9, C11, C13, C14, C16, C17, C22, C23, C26, C33, C35, C40-C42, C51, C54, C61-C63, C82		10%	5mm Pitch Box	1117-473053E000	
29	100nF 100V	Polypropylene	2	C21, C25	CMPA104K100RB075	10%	7.5mm Pitch Box		

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

851A Pre-amp PCB Assembly BOM

30	100nF 50V	X7R Ceramic	4	C27, C29, C65, C66		10%	0805		
31	680nF 63V	Met. Polyester	2	C2, C5		10%	5mm Pitch Box	1117-684053E000	
32	47uF 16V	NP Electrolytic	6	C18, C24, C38, C39, C58, C60		20%	6mm Dia	1105-470014-000	
33	100uF 25V	Electrolytic	4	C7, C15, C55, C56		20%	6mm Dia	1102-101024-000	
34	100uF 16V	Electrolytic	3	C31, C32, C34		20%	5.2mm Dia	1102-101014-000	
35	470uF 25V	Electrolytic	2	C43, C44		20%	10mm Dia		
36	4700uF 10V	Electrolytic 105	1	C64		20%	13mm Dia		
	CONNECTORS								
37	Stereo 6.35mm	Headphone Jack	1	CN1	CK-6.35-04A		7 Pin	2320-009111E000	PZ684
38	2 Way	Straight Header	1	CN2	B2B-XH-A		2.5mm Pitch	2300-002100-003	
39	6 Way	Straight Header	1	CN3	B6B-PH-KS		2mm Pitch	2300-006000-000	
40	2 Way	Straight Header	1	CN4	B2B-PH-KS		2mm Pitch	2300-002000-001	
41	10 Way	SCN Straight cable assembly	1	CN5	AP21611/1		2.5mm Pitch		
42	8 Way	FFC Connector	2	CN9, CN11	D100-SSV-08		Standard	2301-008501E001	
43	4 Way	Straight Header	1	CN10	B4B-XH-A		2.5mm Pitch	2300-004100-004	
44	6 Way	SAN Straight cable assembly	1	CN13	AP21607/1		2mm Pitch		

	DIODES								
45	400V 1A	Rectifier	2	D1, D2	1N4004		DO41	1401-140040-000	
46	30V 0.2A	Dual Schottky SM	1	D3	BAT54S		SOT23		

	INDUCTORS								
47	55Z 100MHz	Ferrite Bead	4	FB1-FB4	742 70010		FERRITE BEAD		
48	Wire Link	24AWG Wire	2	FB5, FB7			10mm Pitch		Do Not Fit Ferrite - reliability

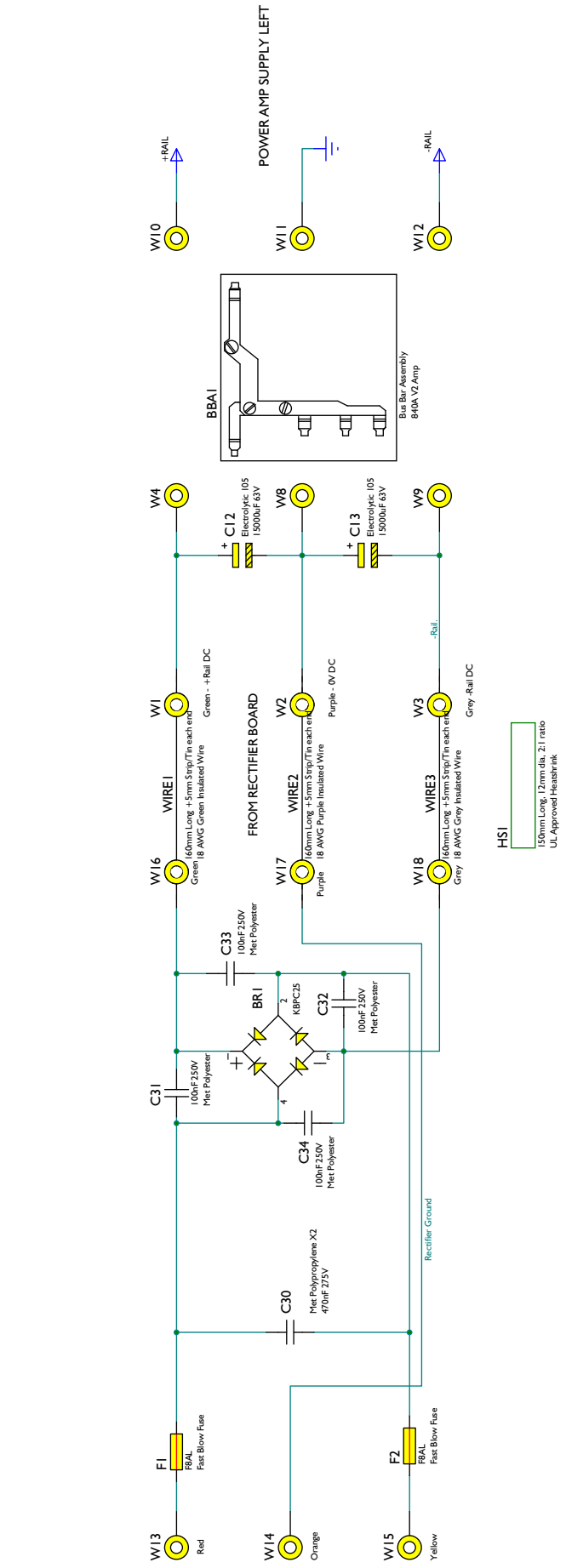
	INTEGRATED CIRCUITS								
49		Dual Audio Op Amp	8	U1-U4, U7, U9, U10, U12	NE5532D		SOIC08		PY1162
50	2 Channel	Volume IC	2	U5, U8	MAS6116AA1SA306		SO16 0.3inch		PF533
51	Dual Low Noise	FET Op Amp	2	U6, U11	TL072BCD		S08		
52	IP4220	USB ESD Protection	2	U13, U14	IP4220CZ6		SOT457		PMA118

	RELAY								
53	9V Coil, 2A Contacts	High Sensitive 2P2T Relay	1	RL20	ME2-9B		Through Hole		PY1402
54	9V Coil, 2A Contacts	High Sensitive 2P2T Relay	1	RL35	ME2-9B		Through Hole		PY1402
	TRANSISTORS								
55	80V 1.5A	NPN Power	4	Q1, Q2, Q4, Q5	BD139		TO126	1300-139000E800	PY208
56	-80V 1.5A	PNP Power	2	Q3, Q6	BD140		TO126	1301-140000E800	PY1235
57	45V 500mA	NPN Signal	2	Q7, Q8	BC817-25		SOT23	1300-817000-500	PY1847

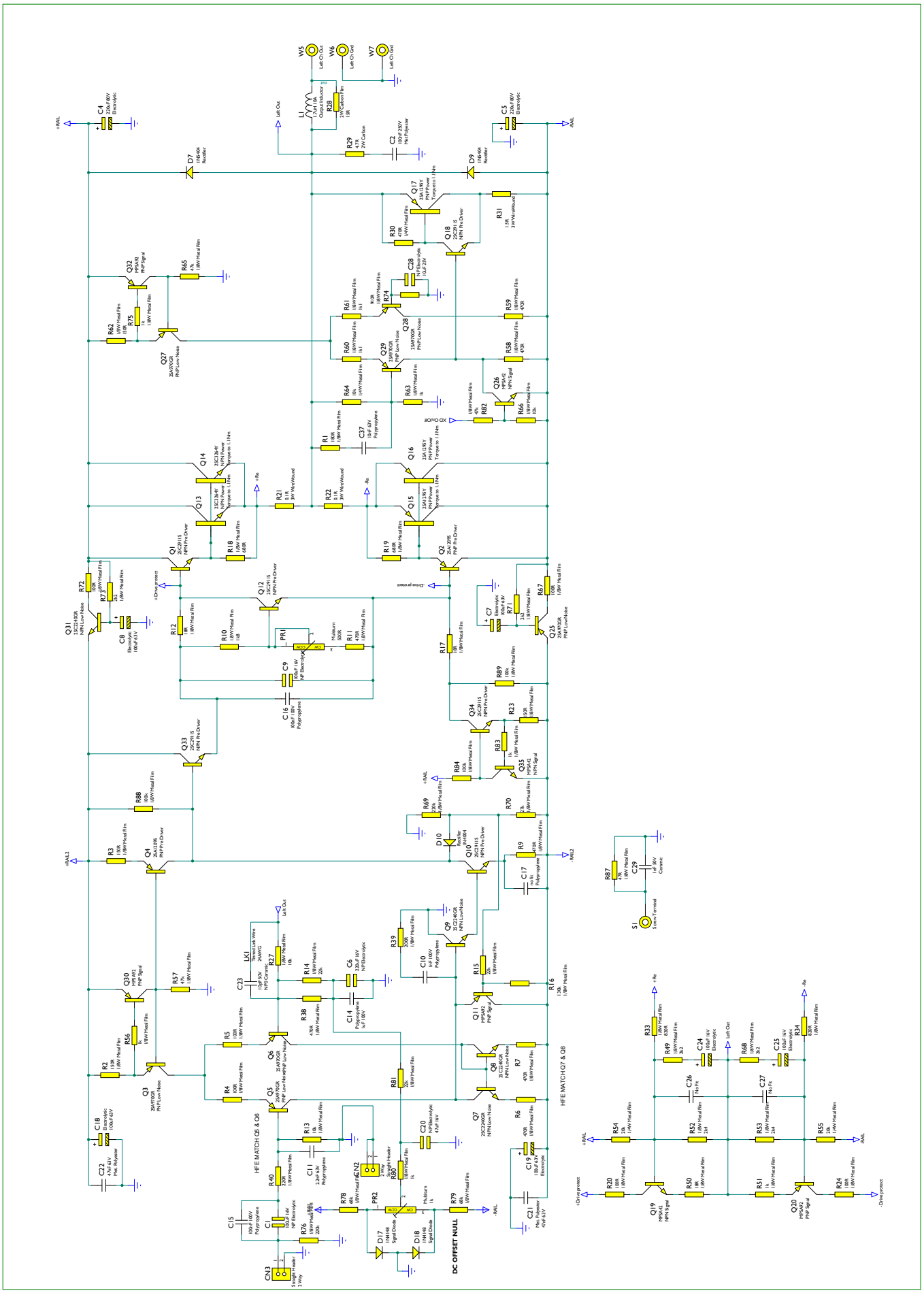
Note: Resistors, capacitors and other generic components are not usually stocked by the manufacturer. Please obtain these locally.

Cambridge Audio

851A Left Power Amp PCB Schematic

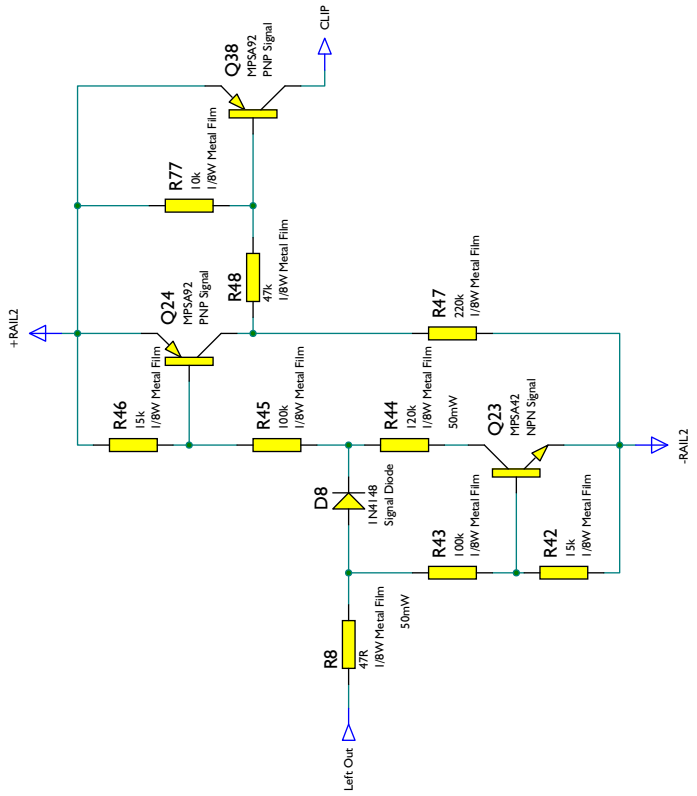


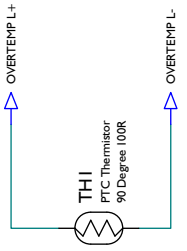
851A Left Power Amp PCB Schematic

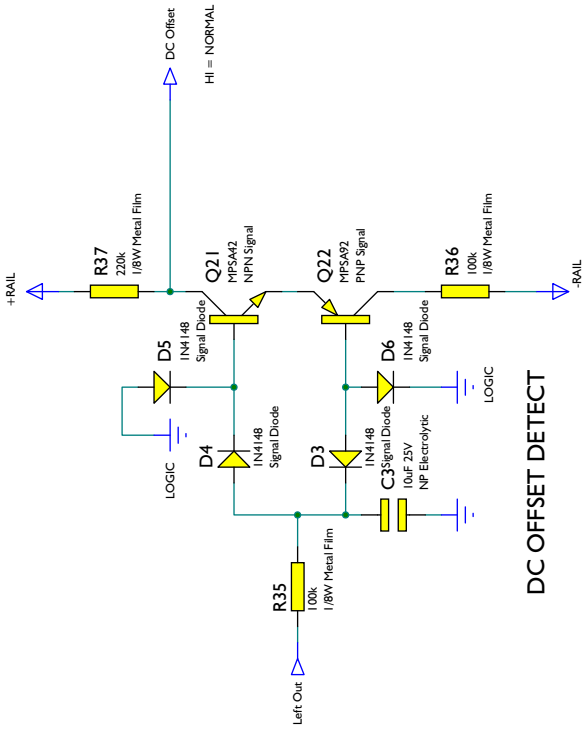


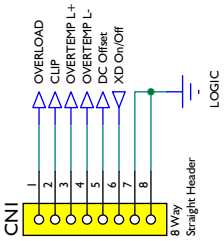
Cambridge Audio

851A Left Power Amp PCB Schematic

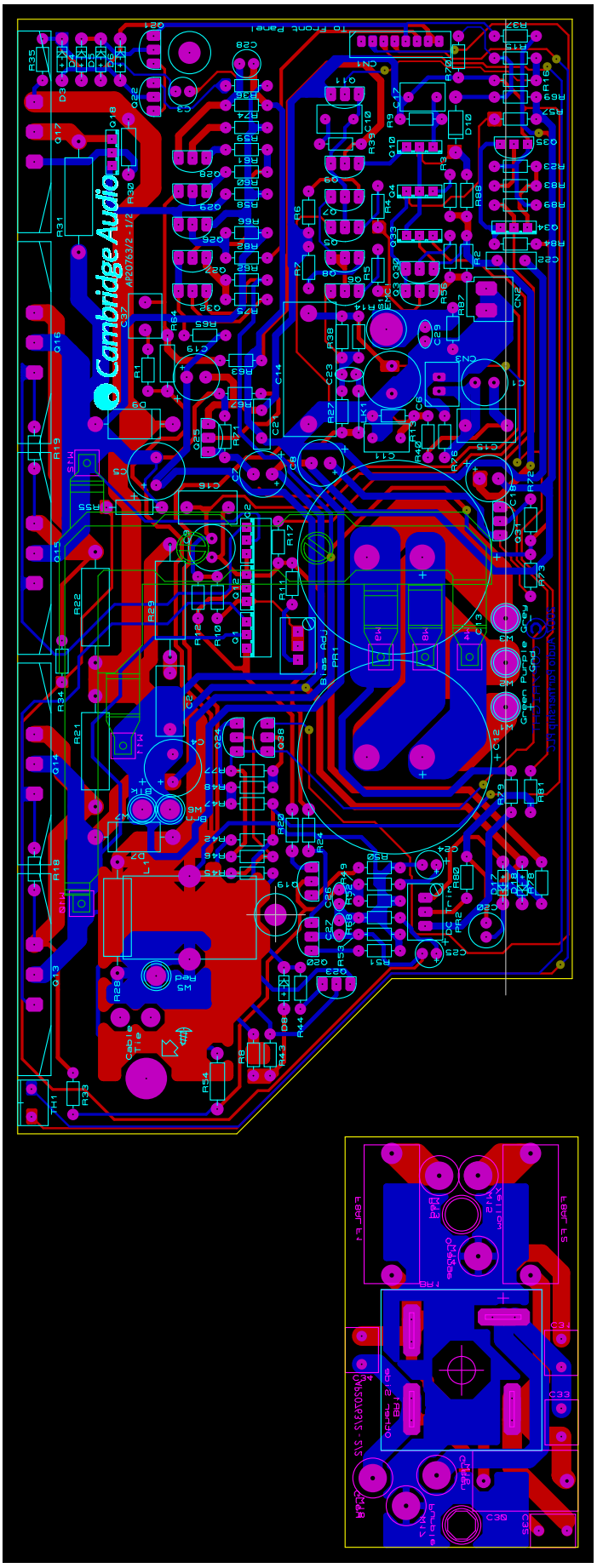








851A Left Power Amp Gerber



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851A Left Power Amp Assembly BOM

	Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	Package Info	Factory Reference	Service Part Number
	RESISTORS								
1	0.1R	3W WireWound	2	R21, R22		5%	20mm Pitch	1071-008030E000	Mount approx 10mm from PCB
2	1.5R	3W WireWound	1	R31		5%	20mm Pitch	1071-507030E000	Mount approx 10mm from PCB
3	4.7R	2W Carbon	1	R29		10%	20mm Pitch		
4	15R	2W Carbon Film	1	R28		5%	Through Hole		
5	18R	1/8W Metal Film	3	R12, R17, R50		1%	7.5mm Pitch		
6	47R	1/8W Metal Film	2	R8, R87		1%	7.5mm Pitch		
7	100R	1/8W Metal Film	6	R4, R5, R20, R24, R67, R72		1%	7.5mm Pitch		
8	150R	1/8W Metal Film	4	R2, R3, R23, R62		1%	7.5mm Pitch		
9	180R	1/8W Metal Film	1	R1		1%	7.5mm Pitch		
10	200R	1/8W Metal Film	1	R39		1%	7.5mm Pitch		
11	220R	1/8W Metal Film	1	R40		1%	7.5mm Pitch		
12	470R	1/8W Metal Film	7	R6, R7, R9, R11, R38, R58, R59		1%	7.5mm Pitch		
13	470R	1/4W Metal Film	1	R30		1%	10mm Pitch		
14	680R	1/8W Metal Film	2	R18, R19		1%	7.5mm Pitch		
15	820R	1/8W Metal Film	2	R33, R34		1%	7.5mm Pitch		
16	910R	1/8W Metal Film	1	R74		1%	7.5mm Pitch		
17	1k	1/8W Metal Film	6	R51, R56, R63, R75, R80, R83		1%	7.5mm Pitch		
18	1k1	1/8W Metal Film	2	R60, R61		1%	7.5mm Pitch		
19	1k8	1/8W Metal Film	1	R10		1%	7.5mm Pitch		
20	2k2	1/8W Metal Film	4	R49, R68, R71, R73		1%	7.5mm Pitch		
21	2k4	1/8W Metal Film	2	R52, R53		1%	7.5mm Pitch		
22	10k	1/8W Metal Film	4	R13, R27, R66, R77		1%	7.5mm Pitch		
23	10k	1/4W Metal Film	1	R64		1%	10mm Pitch		
24	15k	1/8W Metal Film	2	R42, R46		1%	7.5mm Pitch		
25	20k	1/4W Metal Film	2	R54, R55		1%	10mm Pitch		
26	22k	1/8W Metal Film	3	R14, R15, R81		1%	7.5mm Pitch		
27	27k	1/8W Metal Film	1	R70		1%	7.5mm Pitch		
28	47k	1/8W Metal Film	4	R48, R57, R65, R82		1%	7.5mm Pitch		
29	68k	1/8W Metal Film	2	R78, R79		1%	7.5mm Pitch		
30	100k	1/8W Metal Film	7	R35, R36, R43, R45, R84, R88, R89		1%	7.5mm Pitch		

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

851A Left Power Amp Assembly BOM

31	120k	1/8W Metal Film	1	R44		1%	7.5mm Pitch		
32	130k	1/8W Metal Film	1	R16		1%	7.5mm Pitch		
33	220k	1/8W Metal Film	4	R37, R47, R69, R76		1%	7.5mm Pitch		

RESISTORS VARIABLE

34	500R	Multiturn	1	PR1		30%	Top Adjust		
35	1k	Multiturn	1	PR2	WI3296N0X0X-WA2-010	30%	Top Adjust	1061-002612E010	

CAPACITORS

36	no fit		1	C17					
37	No Fit		2	C26, C27					
38	10pF 50V	NP0 Ceramic	1	C23		5%	2.5mm Pitch	1181-100042-000	
39	1nF 100V	Polypropylene	1	C10	FKPZD011001D00HSSD	3%	5mm Pitch Box		
40	1nF 50V	Ceramic	1	C29		10%	2.5mm Pitch	1100-102043-000	
41	2.2nF 63V	Polypropylene	1	C11		5%	5mm Pitch Box	1114-102052E000	
42	10nF 63V	Polypropylene	1	C37		5%	5mm Pitch Box		
43	47nF 63V	Met. Polyester	2	C21, C22		10%	5mm Pitch Box	1117-473053-000	
44	100nF 250V	Met Polyester	1	C2		10%	10mm Pitch Box	1117-104093E501	
45	100nF 100V	Polypropylene	2	C15, C16	CMPA104K100RB075	10%	7.5mm Pitch Box	1114-104063E000	
46	100nF 250V	Met Polyester	4	C31-C34	CMEB104M250Rxxxx	20%	5mm Pitch Box		
47	470nF 275V	Met Polypropylene X2	1	C30	CMKS474M275Rxxxx	20%	15mm Pitch Box		
48	1uF 100V	Polypropylene	1	C14	CMPA105K100RB200	10%	20mm Pitch Box		
49	10uF 25V	NP Electrolytic	2	C3, C28		20%	5mm Dia	1105-100024-000	
50	47uF 16V	NP Electrolytic	1	C20		20%	6mm Dia	1105-470014-000	
51	100uF 16V	NP Electrolytic	2	C1, C9		20%	8mm Dia	1105-101014-000	
52	100uF 63V	Electrolytic	4	C7, C8, C18, C19		20%	8mm Dia	1102-101054-000	
53	100uF 16V	Electrolytic	2	C24, C25		20%	5.2mm Dia	1102-101014-000	
54	220uF 80V	Electrolytic	2	C4, C5		20%	10mm Dia		
55	220uF 16V	NP Electrolytic	1	C6		20%	10mm Dia		
56	15000uF 63V	Electrolytic 105	2	C12, C13		20%	10mm Snap In	1102-153054E000	White with AP Sleeve

CONNECTORS

57	8 Way	Straight Header	1	CN1	B8B-PH-KS		2mm Pitch	2300-008000-000	
58	2 Way	Straight Header	1	CN2	B2P-VH		3.96mm Pitch		
59	2 Way	Straight Header	1	CN3	B2B-XH-A		2.5mm Pitch	2300-002100-003	

DIODES

60	400V 25A	Bridge Rectifier	1	BR1	KBPC25		Spade Terminal		Fif flush to PCB
61	75V 150mA	Signal Diode	7	D3-D6, D8, D17, D18	1N4148		D035	1401-141480-000	

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

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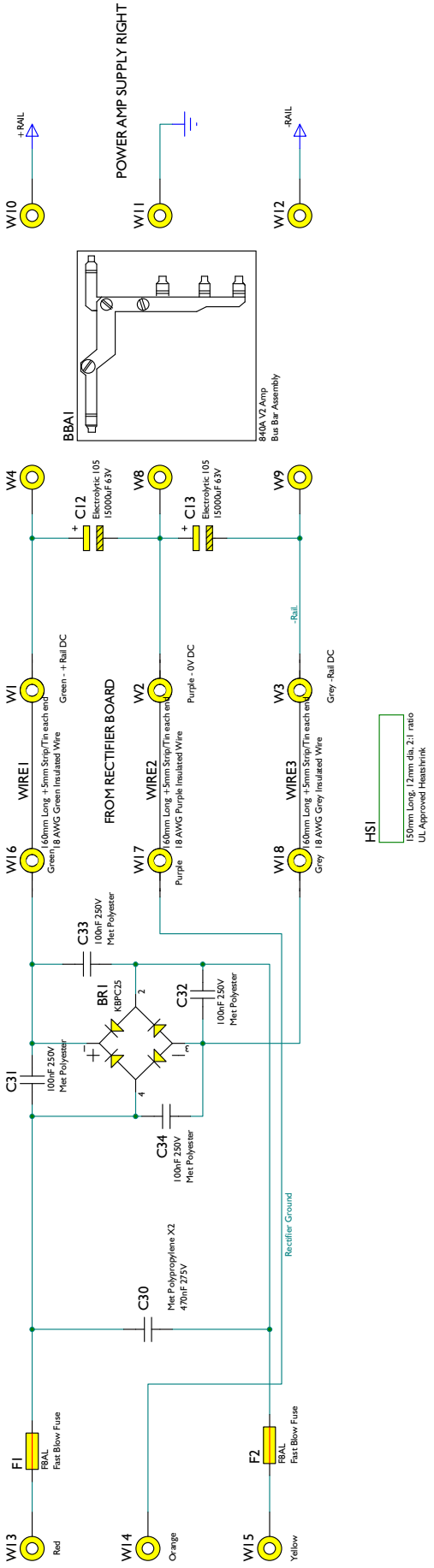
851A Left Power Amp Assembly BOM

63	400V 1A	Rectifier	1	D10	1N4004		DO41	1401-140040-000	PY319
	FUSES								
64	F8AL	Fast Blow Fuse	2	F1, F2			20mm		
65		Fuse Holder Base	2	F1, F2	PTF78 (or equivalent)	20mm Pitch	4031-780000E000	(alt. Camden YN:4031-140000E000)	
66		Fuse Holder Cover	2	F1, F2	PTF78 (or equivalent)	20mm Pitch	4034-780000E000	(alt. Camden YN:4034-140000E000)	
	INDUCTORS								
67	1.7uH 10A	Output Inductor	1	L1	0.8-1950100-150		15mm Pitch	3201-195101E500	19.5DX10TX1.5d
	TRANSISTORS								
68	160V 140mA	NPN Pre Driver	2	Q1, Q12	2SC2911S		TO126		PY1407
69	-160V -140mA	PNP Pre Driver	1	Q2	2SA1209S		TO126		PY1408
70	-120V -100mA	PNP Low Noise	7	Q3, Q5, Q6, Q25, Q27-Q29	2SA970GR		TO92	1301-970000-100	PF147
71	-160V -140mA	PNP Pre Driver	1	Q4	2SA1209S		TO126		PY1408
72	120V 100mA	NPN Low Noise	4	Q7-Q9, Q31	2SC2240GR		TO92	1300-224000E100	PF196
73	160V 140mA	NPN Pre Driver	4	Q10, Q18, Q33, Q34	2SC2911S		TO126		PY1407
74	-300V -500mA	PNP Signal	7	Q11, Q20, Q22, Q24, Q30, Q32, Q38	MPSA92		TO92	1301-920000-100	PY220
75	230V 17A	NPN Power	2	Q13, Q14	2SC3264Y		MT200	1300-232649E900	PY1147
76	230V 17A	PNP Power	3	Q15-Q17	2SA1295Y		MT200	1301-212959E900	PY1149
77	300V 500mA	NPN Signal	5	Q19, Q21, Q23, Q26, Q35	MPSA42		TO92	1300-420000-100	PY537

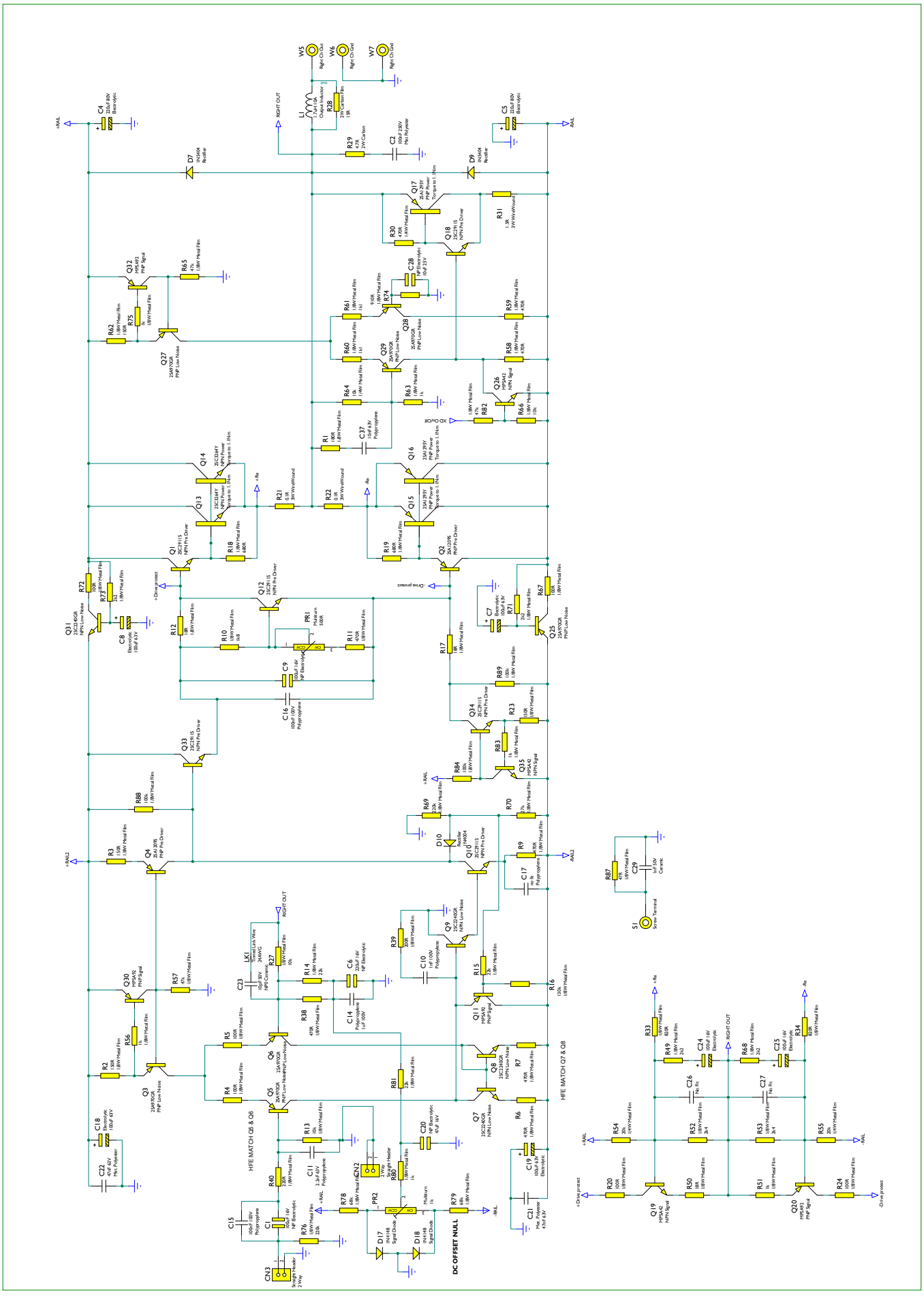
Note: Resistors, capacitors and other generic components are not usually stocked by the manufacturer. Please obtain these locally.

851A Right Power Amp PCB Schematic

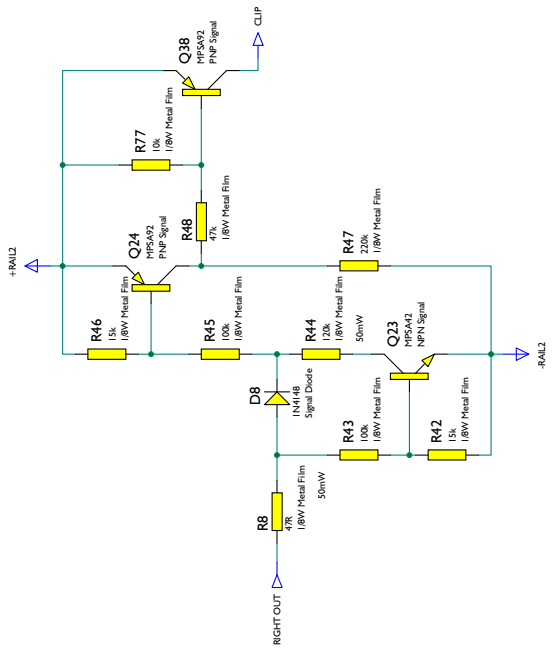


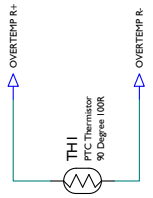
Cambridge Audio

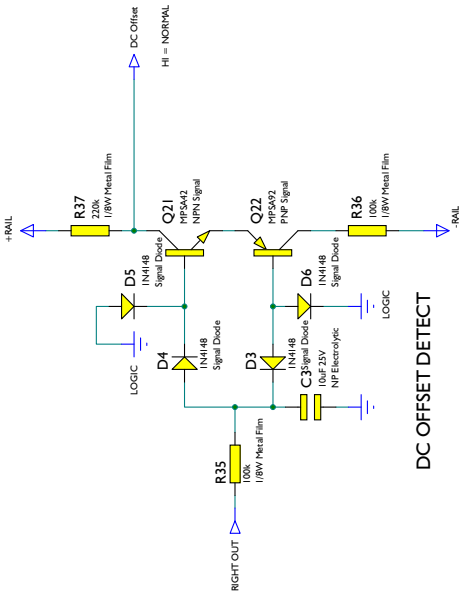
851A Right Power Amp PCB Schematic

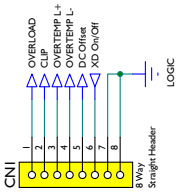


851A Right Power Amp PCB Schematic









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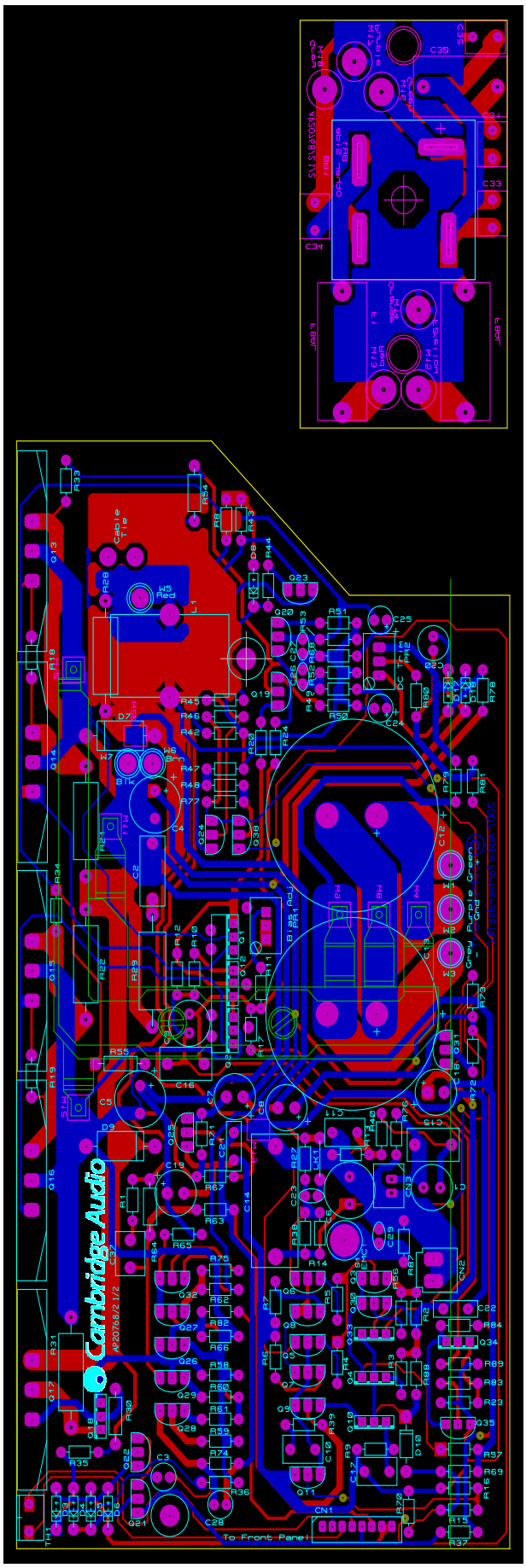
851A Right Power Amp Gerber



851A Right Power Amp PCB Assembly BOM

	Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	Factory Reference	Service Part Number
	RESISTORS								
1	0.1R	3W WireWound	2	R21, R22		5%	20mm Pitch	1071-008030E000	Mount approx 10mm from PCB
2	1.5R	3W WireWound	1	R31		5%	20mm Pitch	1071-507030E000	Mount approx 10mm from PCB
3	4.7R	2W Carbon	1	R29		10%	20mm Pitch		
4	15R	2W Carbon Film	1	R28		5%	Through Hole		
5	18R	1/8W Metal Film	3	R12, R17, R50		1%	7.5mm Pitch		
6	47R	1/8W Metal Film	2	R8, R87		1%	7.5mm Pitch		
7	100R	1/8W Metal Film	6	R4, R5, R20, R24, R67, R72		1%	7.5mm Pitch		
8	150R	1/8W Metal Film	4	R2, R3, R23, R62		1%	7.5mm Pitch		
9	180R	1/8W Metal Film	1	R1		1%	7.5mm Pitch		
10	200R	1/8W Metal Film	1	R39		1%	7.5mm Pitch		
11	220R	1/8W Metal Film	1	R40		1%	7.5mm Pitch		
12	470R	1/8W Metal Film	7	R6, R7, R9, R11, R38, R58, R59		1%	7.5mm Pitch		
13	470R	1/4W Metal Film	1	R30		1%	10mm Pitch		
14	680R	1/8W Metal Film	2	R18, R19		1%	7.5mm Pitch		
15	820R	1/8W Metal Film	2	R33, R34		1%	7.5mm Pitch		
16	910R	1/8W Metal Film	1	R74		1%	7.5mm Pitch		
17	1k	1/8W Metal Film	6	R51, R56, R63, R75, R80, R83		1%	7.5mm Pitch		
18	1k1	1/8W Metal Film	2	R60, R61		1%	7.5mm Pitch		
19	1k8	1/8W Metal Film	1	R10		1%	7.5mm Pitch		
20	2k2	1/8W Metal Film	4	R49, R68, R71, R73		1%	7.5mm Pitch		
21	2k4	1/8W Metal Film	2	R52, R53		1%	7.5mm Pitch		
22	10k	1/8W Metal Film	4	R13, R27, R66, R77		1%	7.5mm Pitch		
23	10k	1/4W Metal Film	1	R64		1%	10mm Pitch		
24	15k	1/8W Metal Film	2	R42, R46		1%	7.5mm Pitch		
25	20k	1/4W Metal Film	2	R54, R55		1%	10mm Pitch		
26	22k	1/8W Metal Film	3	R14, R15, R81		1%	7.5mm Pitch		
27	27k	1/8W Metal Film	1	R70		1%	7.5mm Pitch		
28	47k	1/8W Metal Film	4	R48, R57, R65, R82		1%	7.5mm Pitch		
29	68k	1/8W Metal Film	2	R78, R79		1%	7.5mm Pitch		
30	100k	1/8W Metal Film	7	R35, R36, R43, R45, R84, R88, R89		1%	7.5mm Pitch		
32	130k	1/8W Metal Film	1	R16		1%	7.5mm Pitch		
33	220k	1/8W Metal Film	4	R37, R47, R69, R76		1%	7.5mm Pitch		

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

851A Right Power Amp PCB Assembly BOM

31	120k	1/8W Metal Film	1	R44		1%	7.5mm Pitch		
32	130k	1/8W Metal Film	1	R16		1%	7.5mm Pitch		
33	220k	1/8W Metal Film	4	R37, R47, R69, R76		1%	7.5mm Pitch		

RESISTORS VARIABLE

34	500R	Multiturn	1	PR1		30%	Top Adjust		
35	1k	Multiturn	1	PR2	WI3296NOXOX-WA2-010	30%	Top Adjust	1061-002612E010	
	CAPACITORS								
36	no fit		1	C17					
37	No Fit		2	C26, C27					
38	10pF 50V	NP0 Ceramic	1	C23		5%	2.5mm Pitch	1181-100042-000	
39	1nF 100V	Polypropylene	1	C10	FKPZD011001D00HSSD	3%	5mm Pitch Box		
40	1nF 50V	Ceramic	1	C29		10%	2.5mm Pitch	1100-102043-000	
41	2.2nF 63V	Polypropylene	1	C11		5%	5mm Pitch Box	1114-102052E000	
42	10nF 63V	Polypropylene	1	C37		5%	5mm Pitch Box		
43	47nF 63V	Met. Polyester	2	C21, C22		10%	5mm Pitch Box	1117-473053-000	
44	100nF 250V	Met Polyester	1	C2		10%	10mm Pitch Box	1117-104093E501	
45	100nF 100V	Polypropylene	2	C15, C16	CMPA104K100RB075	10%	7.5mm Pitch Box	1114-104063E000	
46	100nF 250V	Met Polyester	4	C31-C34	CMEB104M250Rxxxx	20%	5mm Pitch Box		
47	470nF 275V	Met Polypropylene X2	1	C30	CMKS474M275Rxxxx	20%	15mm Pitch Box		
48	1uF 100V	Polypropylene	1	C14	CMPA105K100RB200	10%	20mm Pitch Box		
49	10uF 25V	NP Electrolytic	2	C3, C28		20%	5mm Dia	1105-100024-000	
50	47uF 16V	NP Electrolytic	1	C20		20%	6mm Dia	1105-470014-000	
51	100uF 16V	NP Electrolytic	2	C1, C9		20%	8mm Dia	1105-101014-000	
52	100uF 63V	Electrolytic	4	C7, C8, C18, C19		20%	8mm Dia	1102-101054-000	
53	100uF 16V	Electrolytic	2	C24, C25		20%	5.2mm Dia	1102-101014-000	
54	220uF 80V	Electrolytic	2	C4, C5		20%	10mm Dia		
55	220uF 16V	NP Electrolytic	1	C6		20%	10mm Dia		
56	15000uF 63V	Electrolytic 105	2	C12, C13		20%	10mm Snap In	1102-153054E000	White with AP Sleeve
57	8 Way	Straight Header	1	CN1	B8B-PH-KS		2mm Pitch	2300-008000-000	
58	2 Way	Straight Header	1	CN2	B2P-VH		3.96mm Pitch		
59	2 Way	Straight Header	1	CN3	B2B-XH-A		2.5mm Pitch	2300-002100-003	

DIODES

60	400V 25A	Bridge Rectifier	1	BR1	KBPC25		Spade Terminal		Fif flush to PCB
61	75V 150mA	Signal Diode	7	D3-D6, D8, D17, D18	1N4148		D035	1401-141480-000	
62	400V 3A	Rectifier	2	D7, D9	1N5404		D027		PD011
63	400V 1A	Rectifier	1	D10	1N4004		D041	1401-140040-000	PY319

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

851A Right Power Amp PCB Assembly BOM

FUSES

64	F8AL	Fast Blow Fuse	2	F1, F2			20mm		
65		Fuse Holder Base	2	F1, F2	PTF78 (or equivalent)	20mm Pitch	4031-780000E000	(alt. Camden YN:4031-140000E000)	
66		Fuse Holder Cover	2	F1, F2	PTF78 (or equivalent)	20mm Pitch	4034-780000E000	(alt. Camden YN:4034-140000E000)	

INDUCTORS

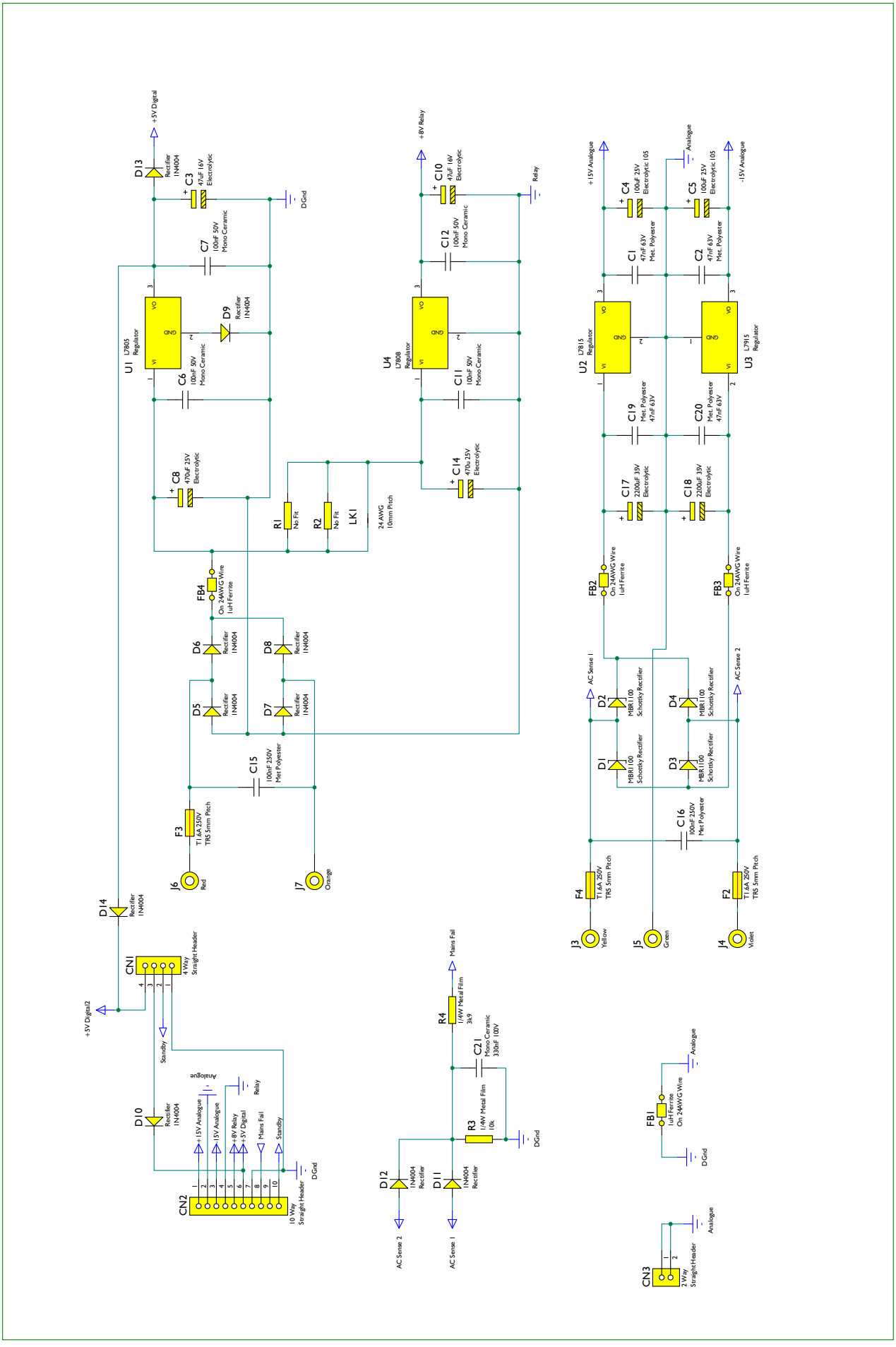
67	1.7uH 10A	Output Inductor	1	L1	0.8-1950100-150		15mm Pitch	3201-195101E500	19.5DX10TX1.5d

TRANSISTORS

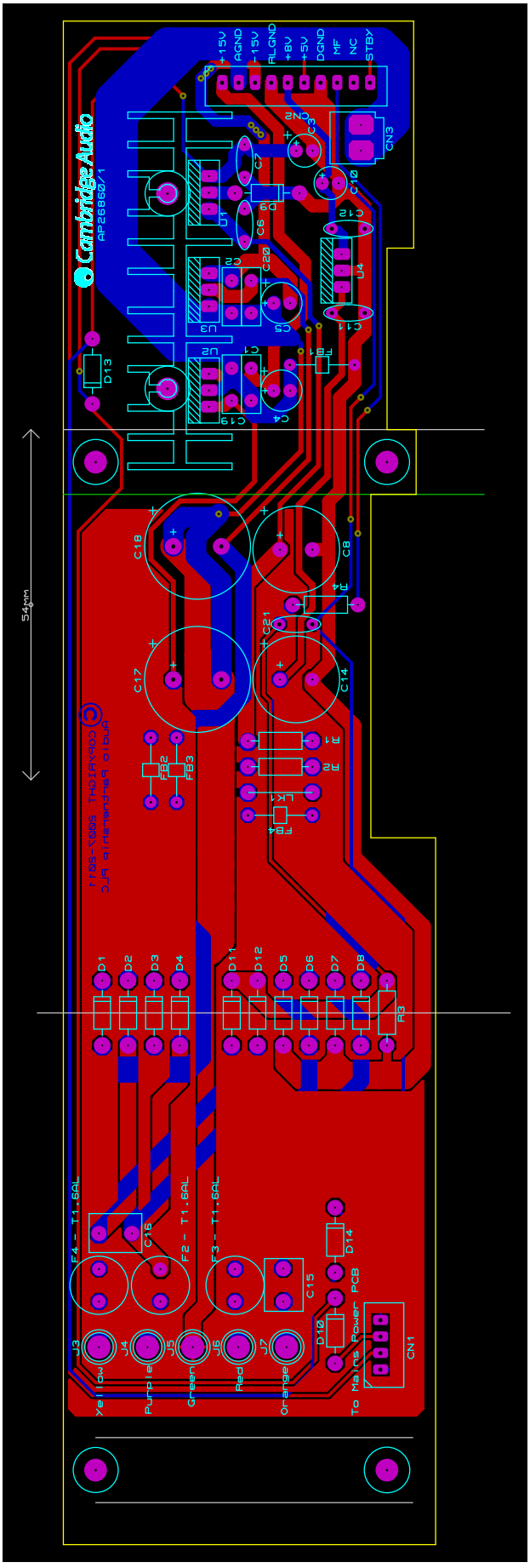
68	160V 140mA	NPN Pre Driver	2	Q1, Q12	2SC2911S		TO126		PY1407
69	-160V -140mA	PNP Pre Driver	1	Q2	2SA1209S		TO126		PY1408
70	-120V -100mA	PNP Low Noise	5	Q3, Q25, Q27-Q29	2SA970GR		TO92	1301-970000-100	PF147
71	-160V -140mA	PNP Pre Driver	1	Q4	2SA1209S		TO126		PY1408
72	-120V -100mA	PNP Low Noise	2	Q5, Q6	2SA970GR	Match HFE to within 5% for Q5 and Q6	TO92	1301-970000-100	PF147
73	120V 100mA	NPN Low Noise	2	Q7, Q8	2SC2240GR	Match HFE to within 5% for Q7 and Q8	TO92	1300-224000E100	PF196
74	120V 100mA	NPN Low Noise	2	Q9, Q31	2SC2240GR		TO92	1300-224000E100	PF196
75	160V 140mA	NPN Pre Driver	4	Q10, Q18, Q33, Q34	2SC2911S		TO126		PY1407
76	-300V -500mA	PNP Signal	7	Q11, Q20, Q22, Q24, Q30, Q32, Q38	MPSA92		TO92	1301-920000-100	PY220
77	230V 17A	NPN Power	2	Q13, Q14	2SC3264Y		MT200	1300-232649E900	PY1147
78	230V 17A	PNP Power	3	Q15-Q17	2SA1295Y		MT200	1301-212959E900	PY1149
79	300V 500mA	NPN Signal	5	Q19, Q21, Q23, Q26, Q35	MPSA42		TO92	1300-420000-100	PY537

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

851A Power Supply PCB Schematic



851A Power Supply Gerber



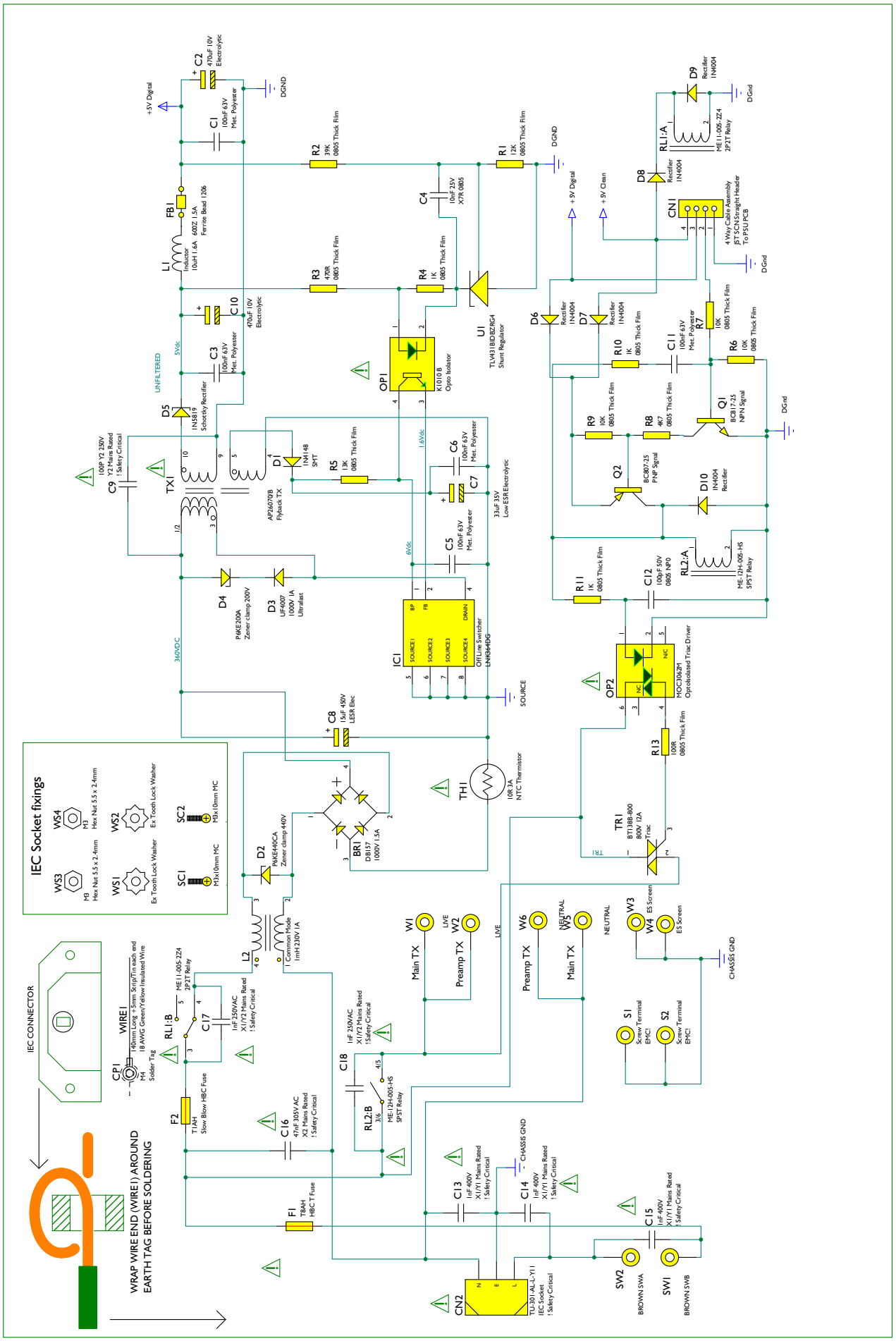
Cambridge Audio

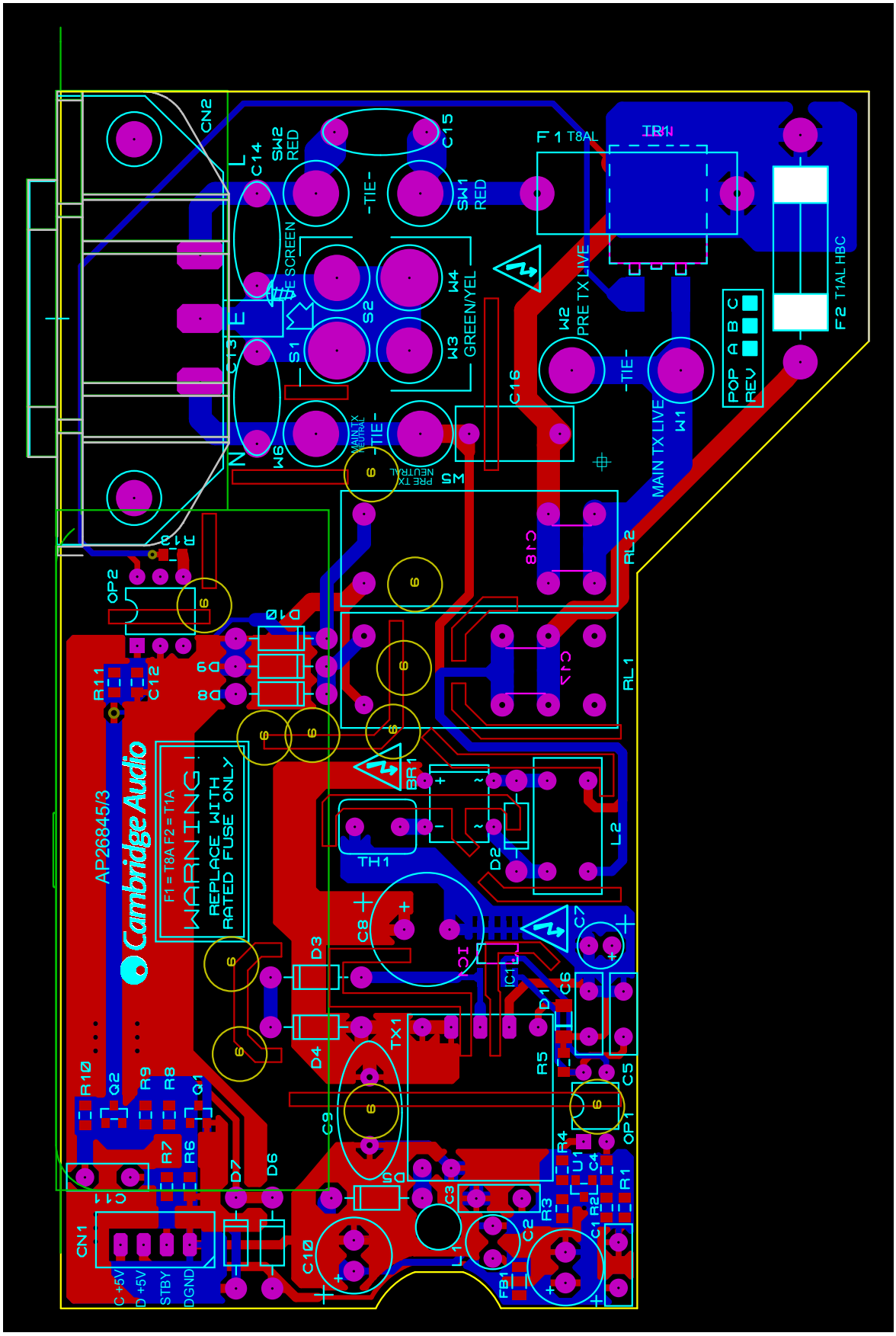
851A Power Supply PCB Assembly BOM

	Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	Factory Reference	Service Part Number
	RESISTORS								
1	No Fit		2	R1, R2					
2	3k9	1/4W Metal Film	1	R4		1%	10mm Pitch		
3	10k	1/4W Metal Film	1	R3		1%	10mm Pitch		
	CAPACITORS								
4	47nF 63V	Met. Polyester	4	C1, C2, C19, C20		10%	5mm Pitch Box	1117-473053-000	
5	100nF 50V	Mono Ceramic	4	C6, C7, C11, C12		10%	5mm Pitch	1100-104043-000	
6	100nF 250V	Met Polyester	2	C15, C16	CMEB104M250Rxxxx	20%	5mm Pitch Box		
7	330nF 100V	Mono Ceramic	1	C21		10%	5mm Pitch	1106-334063E000	
8	47uF 16V	Electrolytic	2	C3, C10		20%	5mm Dia	1102-470014-000	
9	100uF 25V	Electrolytic 105	2	C4, C5		20%	6mm Dia	1102-101024E002	
10	470uF 25V	Electrolytic	1	C8		20%	13mm Dia		
11	470u 25V	Electrolytic	1	C14		20%	13mm Dia		
12	2200uF 35V	Electrolytic	2	C17, C18		20%	16mm Dia	1102-222034-000	
	CONNECTORS								
13	4 Way	Straight Header	1	CN1	B4B-XH-A		2.5mm Pitch	2300-004100-004	
14	10 Way	Straight Header	1	CN2	B10B-XH-A		2.5mm Pitch	2300-005100-004	
15	2 Way	Straight Header	1	CN3	B2P-VH		3.96mm Pitch		
	DIODES								
16	100V 1A	Schottky Rectifier	4	D1-D4	MBR1100		D041	1401-110000E002	
17	400V 1A	Rectifier	10	D5-D14	1N4004		D041	1401-140040-000	
	FUSES								
18	T1.6A 250V	TR5 Sub mini fuse	3	F2-F4	5RT-016HA/B		TR5 5mm Pitch		
	INDUCTORS								
19	1uH Ferrite	On 24AWG Wire	4	FB1-FB4	FB-35608		10mm Pitch	1503-000000-100	
	INTEGRATED CIRCUITS								
20	+5V	Regulator	1	U1	L7805		T0220	4178-050334E700	
21	+15V	Regulator	1	U2	L7815		T0220	4178-150302E600	
22	-15V	Regulator	1	U3	L7915		T0220	4179-150302E600	
23	8V 1A	Regulator	1	U4	L7808		T0220		

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

851A SMPS Mains PCB Schematic




CN2
SW2 RED
C14
C15
SW1 RED
F 1 T8AL
IR1
-TIE-
SCREEN
S1
S2
W4
W3 GREEN/YEL
W2 PRE TX LIVE
C13
C16
POP A B C
REV
F2 T1AL HBC
W6
W5 PRE TX NEUTRAL
W1 MAIN TX LIVE
C18
RL2
RL1
OP2
R11
C12
D10
D9
D8
C17
BR1
TH1
D2
L2
AP26845/3
Cambridge Audio
WARNING !
REPLACE WITH
RATED FUSE ONLY
F1 = T8A F2 = T1A
C8
C7
C11
IC1
D3
D1
C6
TX1
D4
R5
C5
R10
Q2
R9
R8
Q1
R7
R6
D7
D6
C9
D5
R4
U1
OP1
C4
C3
R3
C2
R2
C1
R1
CN1
C11
C10
L1
FB1
C +5V
D +5V
STBY
DGND

851A SMPS Mains PCB Assembly BOM

	Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	Factory Reference	Service Part Number
	RESISTORS								
1	100R	0805 Thick Film	1	R13		1%	0805		
2	470R	0805 Thick Film	1	R3		1%	0805		
3	1K	0805 Thick Film	3	R4, R10, R11		1%	0805		
4	4K7	0805 Thick Film	1	R8		1%	0805		
5	10K	0805 Thick Film	3	R6, R7, R9		1%	0805		
6	12K	0805 Thick Film	1	R1		1%	0805		
7	13K	0805 Thick Film	1	R5		1%	0805		
8	39K	0805 Thick Film	1	R2		1%	0805		
	CAPACITORS								
9	100P Y2 250V	Y2 Mains Rated	1	C9		20%			Safety Critical
10	100pF 50V	0805 NP0	1	C12		5%	0805		
11	1nF 400V	X1/Y1 Mains Rated	3	C13-C15	CCDE102MBV09	20%	9.5mm Pitch	1119-102104-000	Safety Critical
12	1nF 250VAC	X1/Y2 Mains Rated	2	C17, C18	GA355DR7GC102KY02L	10%	X7R SMD Capacitor		Safety Critical
13	10nF 25V	X7R 0805	1	C4		10%	0805	1117-104053E000	
14	47nF 305V AC	X2 Mains Rated	1	C16	C42Q2473M4SC000	20%	10mm Pitch		Safety Critical
15	100nF 63V	Met. Polyester	5	C1, C3, C5, C6, C11		10%	5mm Pitch Box	1117-104053E000	
16	15uF 450V	LESR Elec	1	C8	EEUEE2W150	20%	12.5mm Dia		High Reliability
17	33uF 35V	Low ESR Electrolytic	1	C7	LX	20%	5mm Dia		
18	470uF 10V	Electrolytic	2	C2, C10		20%	8mm Dia		
	CONNECTORS								
19	4 Way Cable Assembly	JST SCN Straight Header	1	CN1	AP30540/1		2.5mm Pitch		
20	3 Pin	IEC Socket	1	CN2	TU-301-AL-L-Y11		PCB Mount		
	DIODES								
21	1000V 1.5A		1	BR1	DB157		DIL		
22	1N4148	SMT	1	D1			SOD80		
23	440V TVS/ Zener	Zener clamp 440V	1	D2	P6KE440CA		DO41		
24	1000V 1A	Ultrafast	1	D3	UF4007		DO41		
25	200V TVS/ Zener	Zener clamp 200V	1	D4	P6KE200A		DO41		
26	40V 1A	Schottky Rectifier	1	D5	1N5819		DO41		
27	400V 1A	Rectifier	5	D6-D10	1N4004		DO41	1401-140040-000	
	FUSES								
28	T8AH	HBC T Fuse	1	F1			20mm		Safety Critical. Add label to PCB as detailed in ECN2171FX116
	INDUCTORS								
29	600Z 1.5A	Ferrite Bead 1206	1	FB1	BLM31PG601SH1L		1206		
30	10uH 1.6A	Inductor	1	L1	PK0608-100K-UL-050		6mm Dia		
31	1mH 230V 1A	Common Mode	1	L2	7.45E+8		15x7.5mm		
32	10 Pin	Flyback TX	1	TX1	AP26070/B		EE16 10 Pin		Safety Critical PZ387

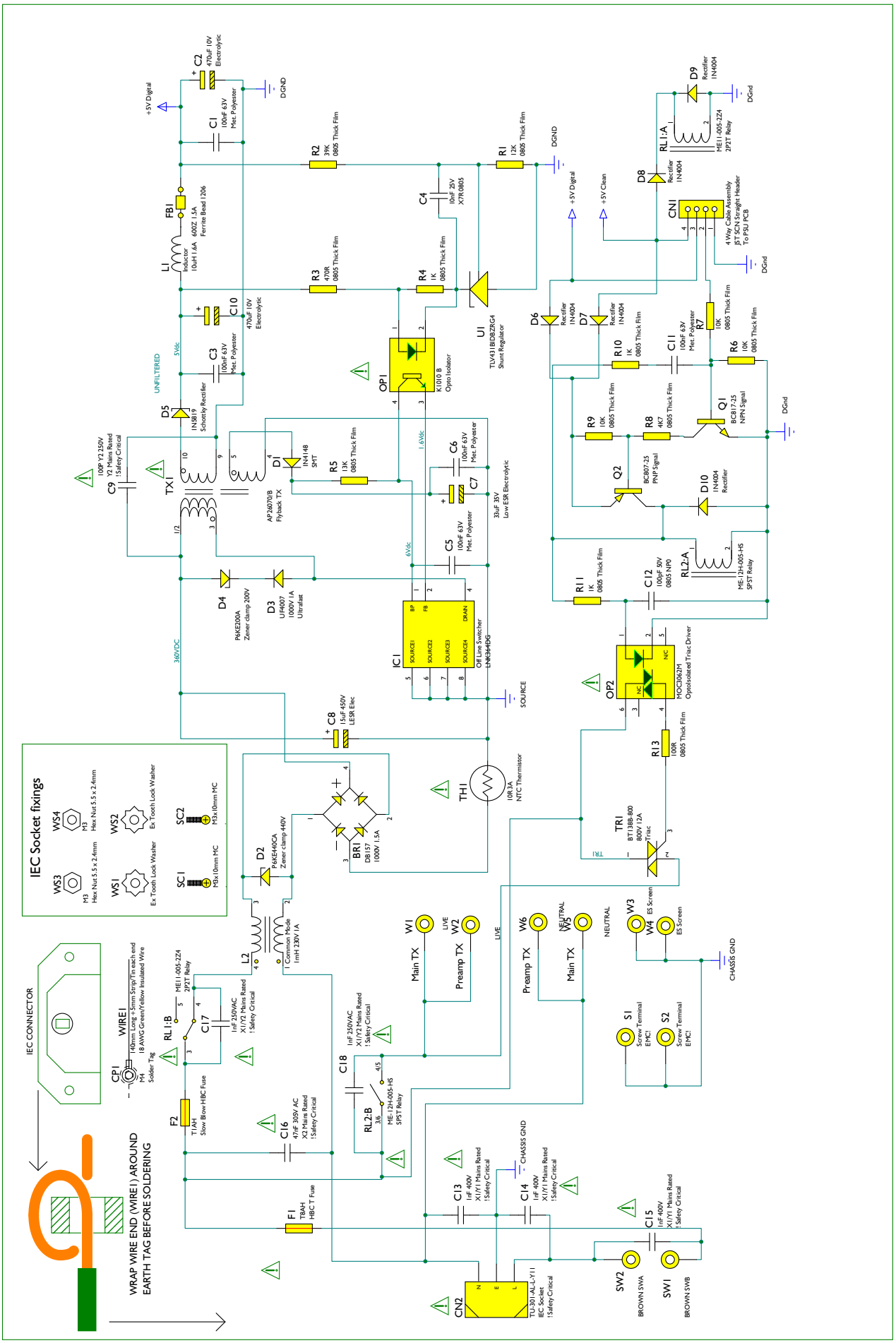
Note: Resistors, capacitors and other generic components are not usually stocked by the manufacturer. Please obtain these locally.

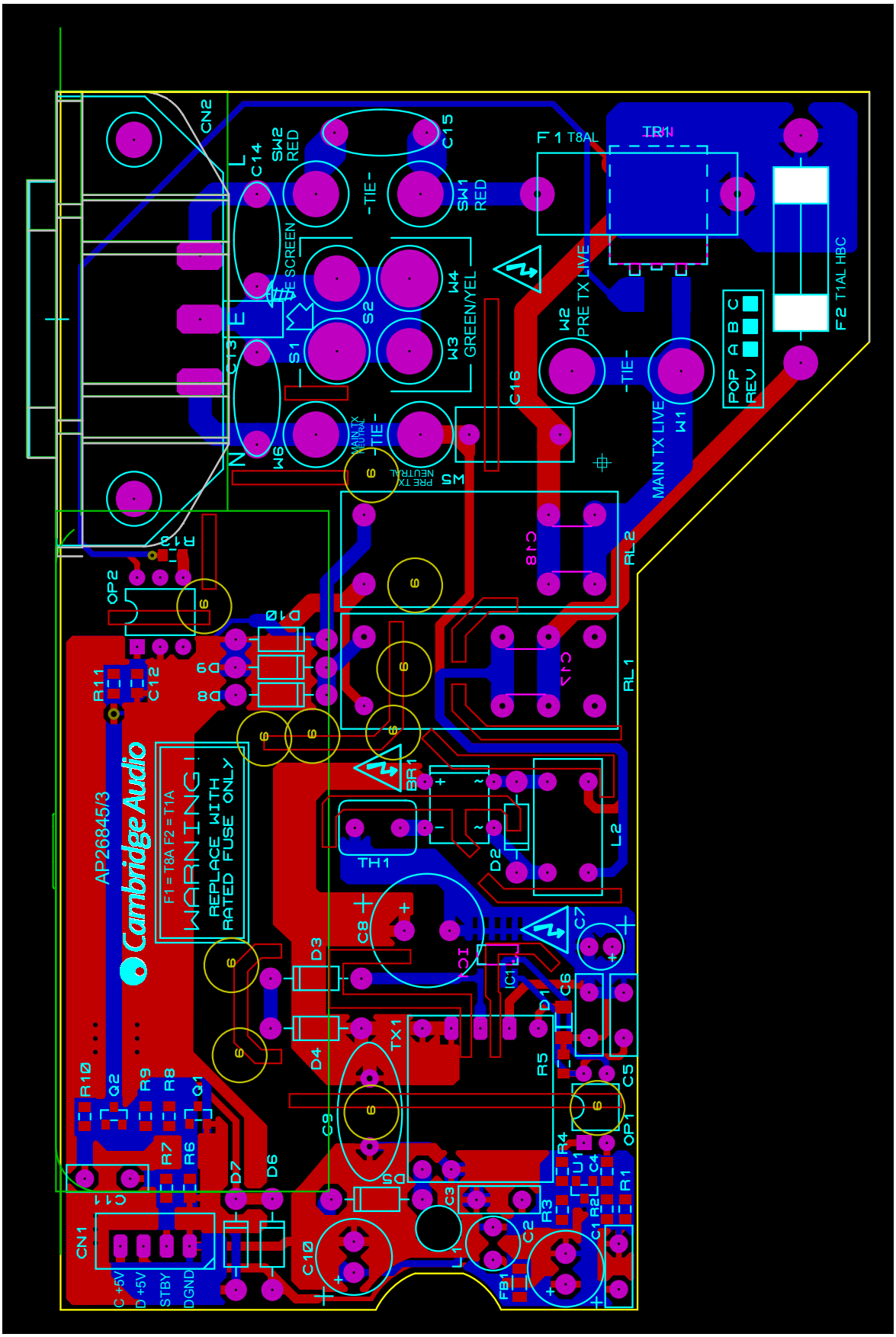
851A SMPS Mains PCB Assembly BOM

	INTEGRATED CIRCUITS								
33	Ind Temp	Shunt Regulator	1	U1	TLV431BIDBZRG4	0.50%	SOT23-3		
	RELAY								
34	5V 8A	2P2T Relay	1	RL1	ME11-005-2Z4				PY1607
35	5V 16A	SPST Relay	1	RL2	ME-12H-005-HS		Through Hole		Safety Critical
	SWITCHES								
36		Pressed Eyelet	2	SW1, SW2			2.3 x 4.0mm	6600-042304-000	
	TRANSISTORS								
37	45V 500mA	NPN Signal	1	Q1	BC817-25		SOT23	1300-817000-500	PY1847
38	45V 500mA	PNP Signal	1	Q2	BC807-25		SOT23	1301-807000-500	PY1848

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

851A SMPS Mains PCB Schematic for 115V Version Only




AP26845/3
Cambridge Audio
WARNING !
REPLACE WITH
RATED FUSE ONLY
F1 = T8A F2 = T1A
F 1 T8AL
F2 T1AL HBC
MAIN TX LIVE
PRE TX LIVE
PRE TX NEUTRAL
MAIN TX NEUTRAL
LIVE SCREEN
SW1 RED
SW2 RED
W3 GREEN/YEL
POP A B C
REV
CN1
CN2
OP1
OP2
TH1
TX1
BR1
RL1
RL2
C +5V
D +5V
STBY
DGND

851A SMPS Mains PCB Assembly BOM - Interim Build For CU Version Only

	Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	Factory Reference	Service Part Number
	RESISTORS								
1	100R	1/4W Metal Film	1	R12		1%	10mm Pitch		
2	470R	0805 Thick Film	1	R3		1%	0805		
3	1K	0805 Thick Film	3	R4, R10, R11		1%	0805		
4	4K7	0805 Thick Film	1	R8		1%	0805		
5	10K	0805 Thick Film	3	R6, R7, R9		1%	0805		
6	12K	0805 Thick Film	1	R1		1%	0805		
7	13K	0805 Thick Film	1	R5		1%	0805		
8	39K	0805 Thick Film	1	R2		1%	0805		
	CAPACITORS								
9	100P Y2 250V	Y2 Mains Rated	1	C9		20%			Safety Critical
10	100pF 50V	0805 NP0	1	C12		5%	0805		
11	1nF 400V	X1/Y1 Mains Rated	3	C13-C15	CCDE102MBV09	20%	9.5mm Pitch	1119-102104-000	Safety Critical
12	1nF 250VAC	X1/Y2 Mains Rated	2	C17, C18	GA355DR7GC102KY02L	10%	X7R SMD Capacitor		Safety Critical
13	10nF 25V	X7R 0805	1	C4		10%	0805	1117-104053E000	
14	47nF 305V AC	X2 Mains Rated	1	C16	C42Q2473M4SC000	20%	10mm Pitch		Safety Critical
15	100nF 63V	Met. Polyester	5	C1, C3, C5, C6, C11		10%	5mm Pitch Box	1117-104053E000	
16	15uF 450V	LESR Elec	1	C8	EEUEE2W150	20%	12.5mm Dia		High Reliability
17	33uF 35V	Low ESR Electrolytic	1	C7	LX	20%	5mm Dia		
18	470uF 10V	Electrolytic	2	C2, C10		20%	8mm Dia		
	CONNECTORS								
19	4 Way Cable Assembly	JST SCN Straight Header	1	CN1	AP30540/1		2.5mm Pitch		
20	3 Pin	IEC Socket	1	CN2	TU-301-AL-L-Y11		PCB Mount		
	DIODES								
21	1000V 1.5A		1	BR1	DB157		DIL		
22	1N4148	SMT	1	D1			SOD80		
23	440V TVS/ Zener	Zener clamp 440V	1	D2	P6KE440CA		DO41		
24	1000V 1A	Ultrafast	1	D3	UF4007		DO41		
25	200V TVS/ Zener	Zener clamp 200V	1	D4	P6KE200A		DO41		
26	40V 1A	Schottky Rectifier	1	D5	1N5819		DO41		
27	400V 1A	Rectifier	5	D6-D10	1N4004		DO41	1401-140040-000	
	FUSES								
28	T8AH	HBC T Fuse	1	F1			20mm		Safety Critical. Add label to PCB as detailed in ECN2171FX116
	INDUCTORS								
29	600Z 1.5A	Ferrite Bead 1206	1	FB1	BLM31PG601SH1L		1206		
30	10uH 1.6A	Inductor	1	L1	PK0608-100K-UL-050		6mm Dia		
31	1mH 230V 1A	Common Mode	1	L2	7.45E+8		15x7.5mm		
32	10 Pin	Flyback TX	1	TX1	AP26070/B		EE16 10 Pin		Safety Critical PZ387

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

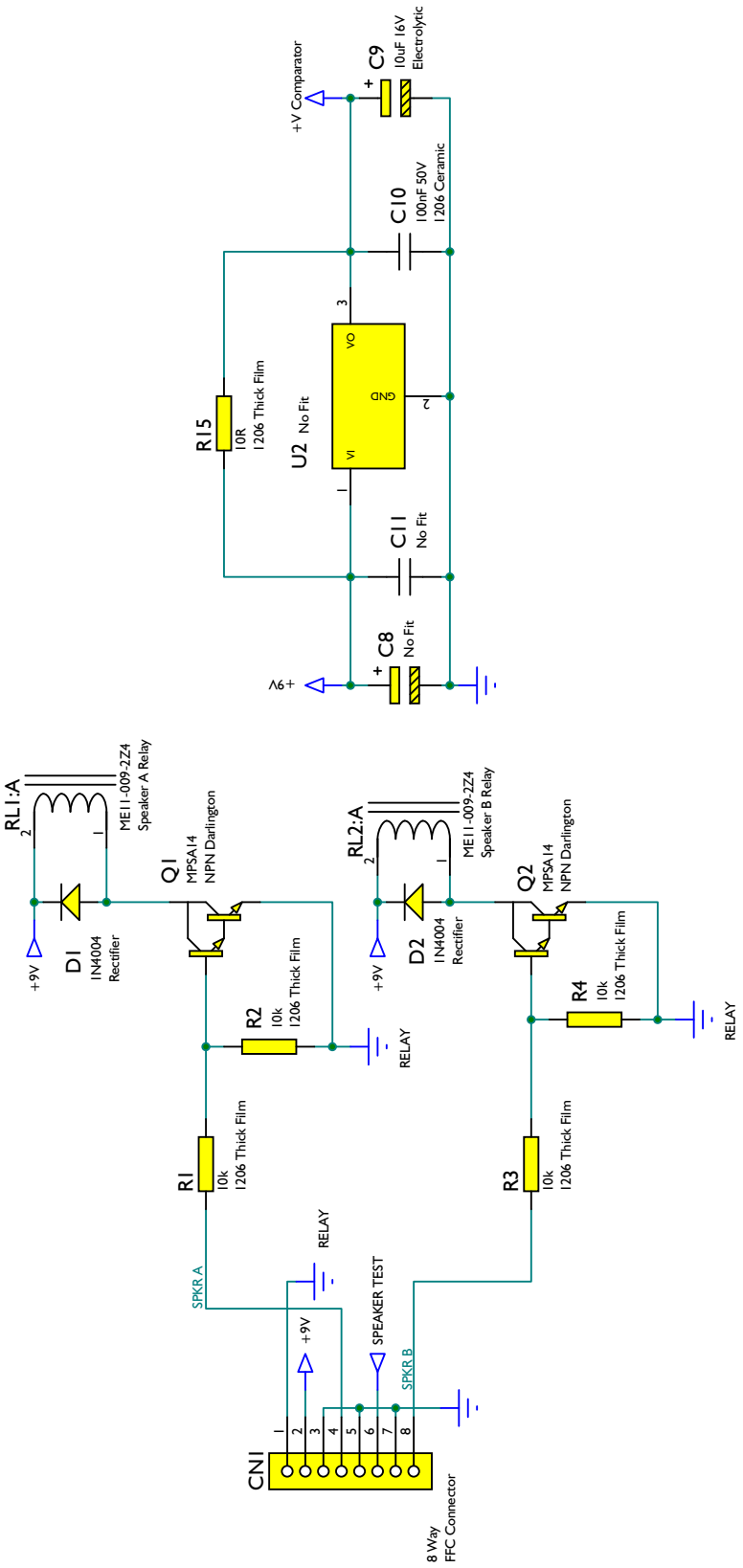
Cambridge Audio

851A SMPS Mains PCB Assembly BOM - Interim Build For CU Version Only

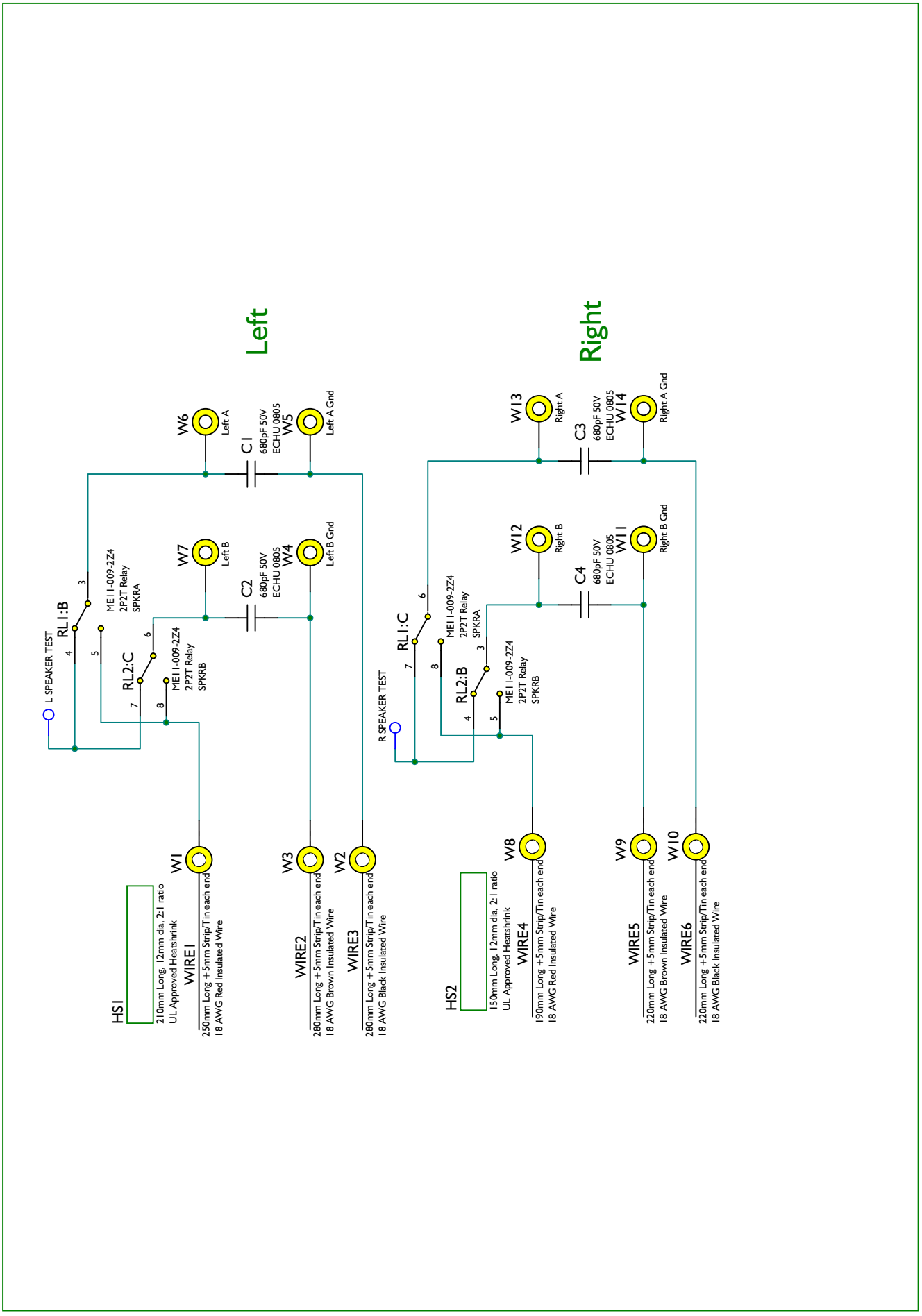
	INTEGRATED CIRCUITS								
33	Ind Temp	Shunt Regulator	1	U1	TLV431BIDBZRG4	0.50%	SOT23-3		
	RELAY								
34	5V 8A	2P2T Relay	1	RL1	ME11-005-2Z4				PY1607
35	5V 16A	SPST Relay	1	RL2	ME-12H-005-HS		Through Hole		Safety Critical
	SWITCHES								
36		Pressed Eyelet	2	SW1, SW2			2.3 x 4.0mm	6600-042304-000	
	TRANSISTORS								
37	45V 500mA	NPN Signal	1	Q1	BC817-25		SOT23	1300-817000-500	PY1847
38	45V 500mA	PNP Signal	1	Q2	BC807-25		SOT23	1301-807000-500	PY1848

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

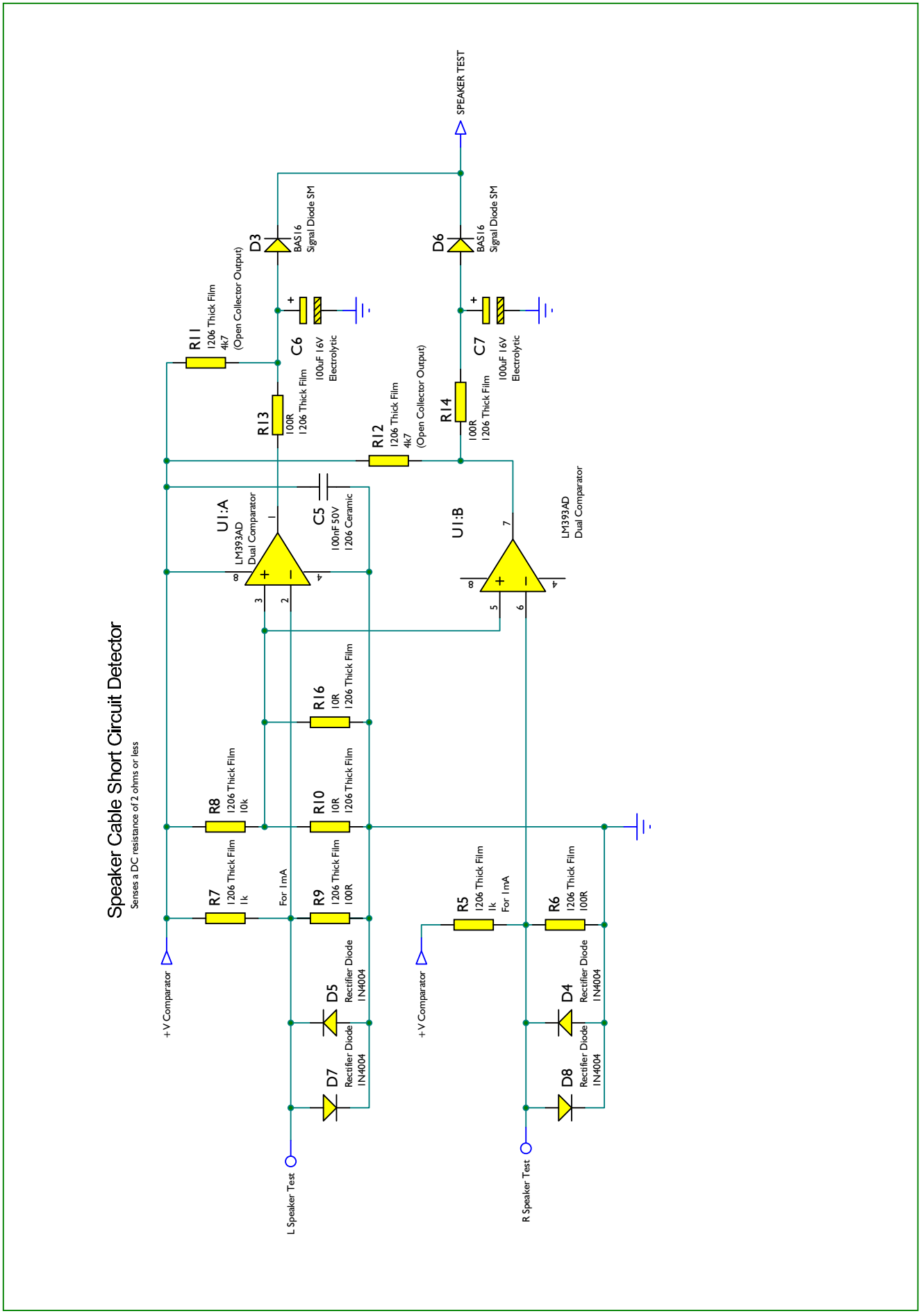
851A Speaker PCB Schematic



851A Speaker PCB Schematic

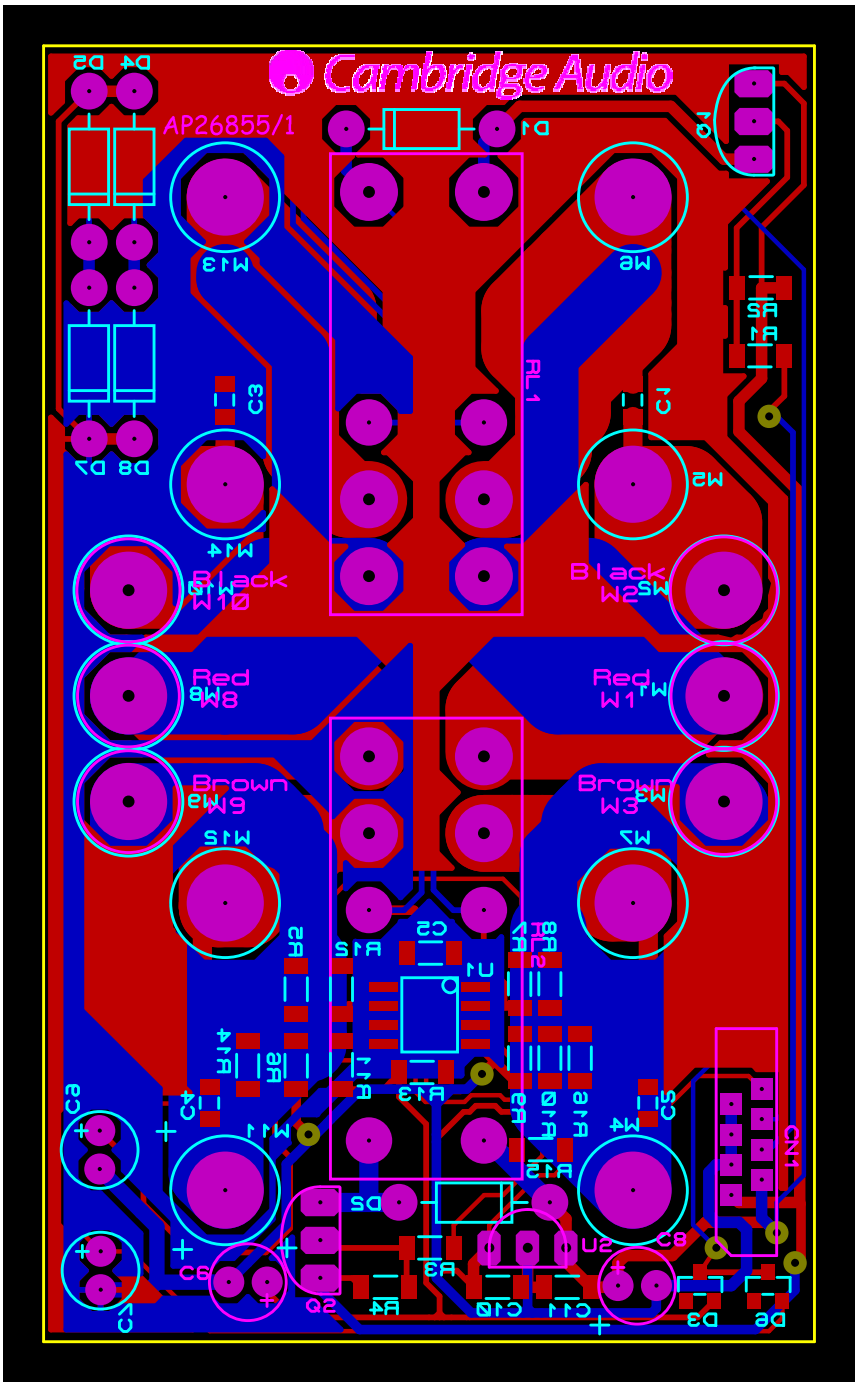


851A Speaker PCB Schematic



Cambridge Audio

851A Speaker Gerber



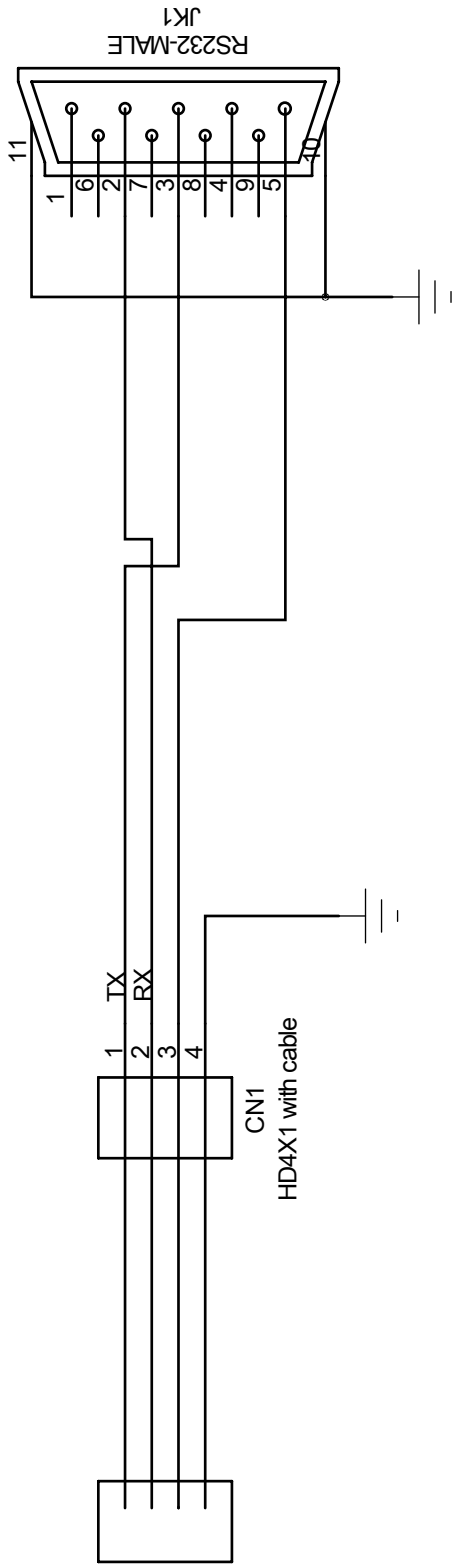
851A Speaker PCB Assembly BOM

	Value	Description/Type	SCP	Qty	Component Ident	ManPN	Tolerance	PackageInfo	Factory Reference	Service Part Number
	RESISTORS									
1	No Fit			1	R15					
2	10R	1206 Thick Film		2	R10, R16		1%	1206		
3	100R	1206 Thick Film		4	R6, R9, R13, R14		1%	1206		
4	1k	1206 Thick Film		2	R5, R7		1%	1206		
5	4k7	1206 Thick Film		2	R11, R12		1%	1206		
6	10k	1206 Thick Film		5	R1-R4, R8		1%	1206		
	CAPACITORS									
7	680pF 50V	ECHU 0805		4	C1-C4	ECHU1H681JX5		805		
8	100nF 50V	1206 Ceramic		3	C5, C10, C11		10%	1206	1189-104042-400	
9	10uF 16V	Electrolytic		1	C9		20%	5.2mm Diameter	1102-100014-000	
10	47uF 25V	Electrolytic		1	C8		20%	5mm Dia	1102-470024-000	
11	100uF 16V	Electrolytic		2	C6, C7		20%	5.2mm Dia	1102-101014-000	
	CONNECTORS									
12	8 Way	FFC Connector		1	CN1	D100-SSV-08		Standard	2301-008501E001	
	DIODES									
13	400V 1A	Rectifier		2	D1, D2	1N4004		DO41	1401-140040-000	
14	75V 300mA	Signal Diode SM		2	D3, D6	BAS16		SOT23	1400-160001-400	
15	400V 1A	Rectifier Diode		4	D4, D5, D7, D8	1N4004			1401-140040-000	PY319
	INTEGRATED CIRCUITS									
16		Dual Comparator		1	U1	LM393AD		SO8		PY1405
17	5V Regulator	Regulator		1	U2	78L05		TO92		
	RELAY									
18	9V 8A	2P2T Relay		2	RL1, RL2	ME11-009-2Z4				PY1164
	TRANSISTORS									
19	30V 500mA	NPN Darlington		2	Q1, Q2	MPSA14		TO92	1300-140000-100	PY1211

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

Cambridge Audio

851A RS32 Board Schematic



Service Mode

The 851A has a Service Menu, just like the predecessor models 840A v1 and v2

To access the service menu:

Hold in the Mode button when mains power is switched on.

These are the menu options:

• DC DT	COUNTERS •
• TEMP DT	LCD TEST •
• OVER DT	RESET •
• XD ON	V1.7 •

SERVICE

These options should be used with CAUTION, as damage to the circuits may be caused if a fault is present and the protection is disabled !!

DC offset detect on/off
Over temperature shutdown on/off
Overload (short) detect on/off
XD system on/off

COUNTERS (event counter see below)
LCD TEST - press to light all LCD segments
RESET - to clear all counters
V1.7 - shows current software version

(Press Mode button to return to volume display or go to counters)

The counter page keeps a total of the number of times these events have occurred. This can help determine the nature and frequency of any reported fault.

• 00000 CL	00000 TM •
• 00000 DC	00000 SH •
• 00000 ON	

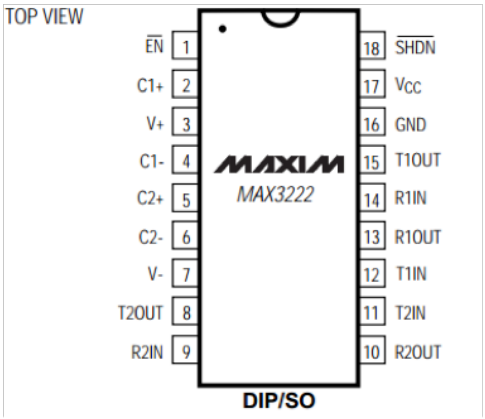
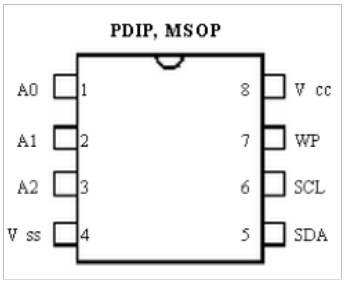
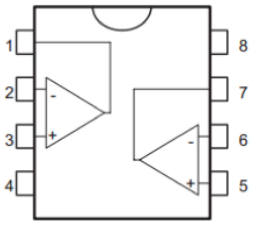
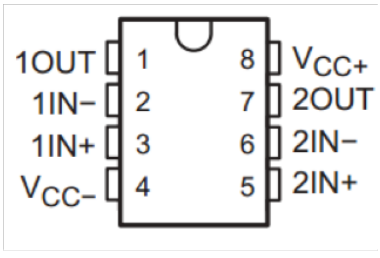
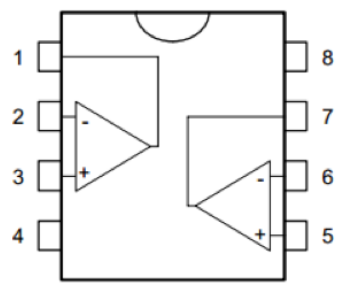
COUNTERS

CL : Clipping,
DC: DC offset,
ON: Hours of use,
TM: Overload shutdown,
SH: Speaker short

Press Mode button to return to service menu

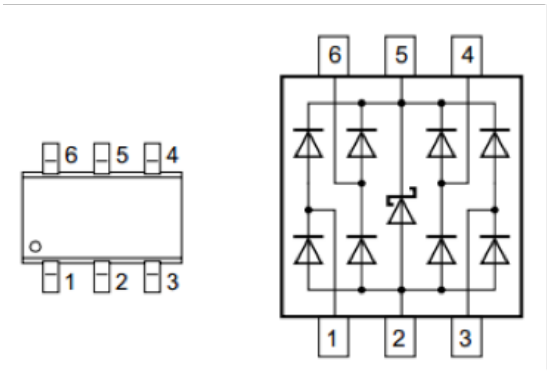
Cambridge Audio

IC Pin Layout Details

MAX3232CWE	
24LC01B I/SN	
LM393D	 1 - Output 1 2 - Inverting input 1 3 - Non-inverting input 1 4 - V_{CC}^- 5 - Non-inverting input 2 6 - Inverting input 2 7 - Output 2 8 - V_{CC}^+
NE5532D	
TL072BCD	 1 - Offset null 1 2 - Inverting input 1 3 - Non-inverting input 1 4 - V_{CC}^- 5 - Non-inverting input 2 6 -Inverting input 2 7 - Output 2 8 - V_{CC}^+

IC Pin Layout Details

IP4220



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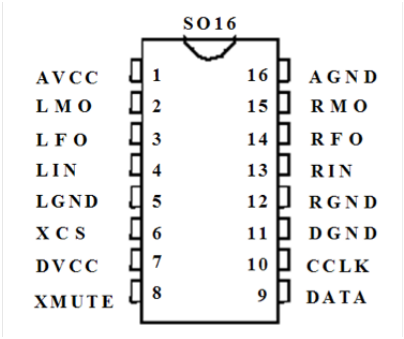
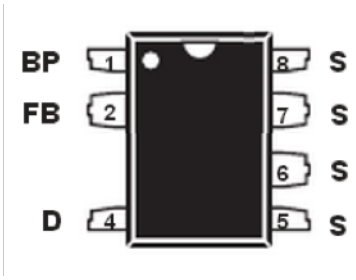


LNK364DG



U4: PIC24FJ64GA008-I/PT (PROGRAMMED_WITH=AP20801/x)