

SERVICE MANUAL



SPECIFICATIONS:

Azur 650R 7.1 HDMI 1.3 AVR

HDMI Switching	1.3c, 3 inputs 1 output
Analogue video up-conversion	transcode any analogue format upwards to the other analogue formats and to HDMI
HDTV capable via component video or HDMI /DVI	
Decoding formats:	LPCM, Dolby Digital / Dolby Digital EX, DTS / DTS ES Matrix/Discrete, PLII/PLIIX, DTS Neo:6, Dolby True HD, Dolby Digital Plus, DTS-HD Master Audio, DTS-HD High Resolution Audio, Multi-channel PCM. All in 5.1/6.1 or 7.1 variants
32-bit DSPs, 24/192 capable DACS	
Post processed Dolby / DTS modes (convert 5.1 to 7.1)	Post process 5.1 or 6.1 formats with PLIIX or Neo:6 to 7.1
On-Screen Display (OSD)	Available via composite video, S-video, component video and HDMI
Separate stereo DAC	for left/right from surround channel codec
Audio Inputs:	8 line analogue, tuner (FM/AM), 7.1 analogue input, 5 digital coaxial, 6 digital optical
Video Inputs:	5 composite, 5 s-video, 3 component video, 3 HDMI
Audio Outputs:	7 amplified speaker outputs, 7.1 preamp outputs
Video Outputs:	1 composite, 1 s-video, 1 component video, 1 HDMI
Recording Audio outputs:	2 line level analogue, 2 digital coaxial, 2 digital optical
Recording Video Outputs:	1 composite, 1 s-video
Other Connections	1 1/4" / 6.35mm headphone output, Control bus input/output, 1 IR emitter In, 1 RS232C, 1 IEC type mains inlet

Incognito Ready™	2 Incognito keypad outputs (2nd/3rd Zone), 3 IR emitter outputs, 2 composite video outputs (2nd/3rd Zone), 1 external power supply input 24VDC
Audio split mode	Watch and listen to different sources
Bi-amp mode	Bi-amplify front left/right speakers when in a 5.1 set-up
Full function aluminium face Azur Navigator remote	
Audio:	
Power Output:	7 x 100 watts rms per channel, 8 ohms (all 7 channels driven) 2 x 120 watts rms per channel, 8 ohms (two channels driven)
THD:	<0.006% @1kHz
Crosstalk:	<-60dB @ 1kHz
Frequency Response:	10Hz -20kHz - 1dB
Signal to Noise Ratio:	>90dB 'A' weighted
Audio input impedance/sensitivity	47kOhms/175mV or greater
Digital input impedance:	75ohms (coaxial/SPDIF)
Tone Controls:	Bass +/-10dB @ 100Hz Treble +/-10dB @ 10Hz
Tuner:	FM mode / RDS 87.5-108MHz, 75 ohm coaxial aerial AM mode 522-1629Hz, 300 ohm loop aerial
General	
Quiescent power consumption:	<70w
Max. Power Consumption:	1400w
Dimensions (H x W x D):	150 (inc feet) x 430 x 420 (inc volume knob and speaker terminals) mm (5.9 x 16.9 x 16.5 inches)
Weight:	15kg (33lbs)


TABLE OF CONTENTS

Specifications	1 - 2
Table of Contents	3 - 4
Safety Instructions	5 - 6
Front Panel Controls	7
Rear Panel Connections	8
Remote Control	9
Block Diagram	10
ABUS PCB	11
AMP PCB	12
AV3 PCB	13
Connect 1 PCB	14
Connect 2 and Video PCB	15 - 16
Decoder PCB	17 - 18
Decoder Shield PCB	19
Fuse, Speaker and RS232 PCB	20
Optical and Coax PCB	21
PAMP 1&2 PCB	22
Display Volume and Phones PCB	23
HDMI PCB	24 - 25
ABUS Schematic	26
AMP Schematic	27 - 30
Connect 1 Schematic	31
Video PCB Schematic	32 - 36
Decoder Schematic	37 - 41
Fuse, Speaker and RS232 Schematic	42
Coax Schematic	43
Optical Schematic	44

PAMP 1 Schematic	45
PAMP 2 Schematic	46
Display Schematic	47
HDMI Schematic	48 - 54
Service Parts List	55 - 57
Exploded Diagram	58
Parts Table	59 – 76
IC Details	77 - 91

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

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



The symbol on this product indicates that it is of CLASS II (double insulated) construction.



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-using Products (2005/32/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.



Ross Test Stamp

This product meets Russian electronic safety approvals.

FCC regulations

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



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

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

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

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. Any space open at the back (such as a dedicated equipment rack) is fine, however. 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 has been designed to be left in Standby mode when not in use as this will increase the life of the amplifier (this is true with all electronic equipment). 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.

IMPORTANT

If the unit is run at a very high level, a sensor will detect a temperature rise and show "PROTECTION OVERLOAD" on the display. The unit will then go into Standby mode. It cannot be switched on again until the temperature has fallen to a more normal level.

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 purchased 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.

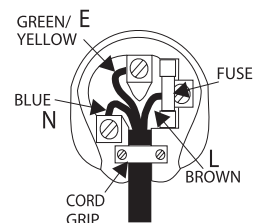
Plug Fitting Instructions (UK Only)

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 one 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.

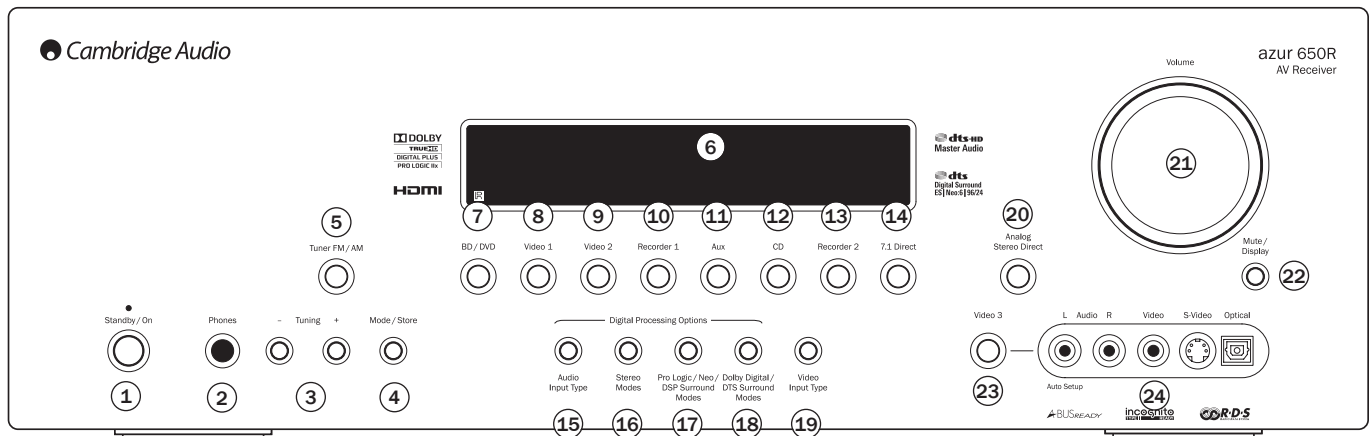
The wire which is coloured GREEN/YELLOW must be connected to the terminal which is marked with the letter 'E' or coloured GREEN.



If your model does not have an earth wire, then disregard this instruction.

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.

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. The unit may be left in Standby mode when not in use.

2 Phones

Allows for the connection of stereo headphones with a 6.35mm/1/4" Jack plug. Headphones with an impedance of between 32 and 600 ohms are recommended.

Note: Plugging in headphones will automatically mute the main and pre-amp outputs and select a 2-channel stereo down-mix to be created for headphone use.

3 Tuning +/-

Used to tune FM frequencies and skip presets in Tuner mode.

4 Mode/Store

Press to cycle between Tuner modes and for storing presets (refer to the 'Operating Instructions' of this manual for more information).

5 Tuner FM/AM

Press to select the tuner for output through the 650R. Once in Tuner mode also use this button to switch between FM and AM modes.

6 Display

Displays the status of the unit. The IR receiver is also mounted behind this window. A clear unobstructed line of sight between the remote control and the sensor is required.

7 BD/DVD

Press to select the source equipment connected to the BD/DVD input.

8 Video 1

Press to select the source equipment connected to the Video 1 input.

9 Video 2

Press to select the source equipment connected to the Video 2 input.

10 Recorder 1

Press to select the recording device connected to the Recorder 1 input.

11 Aux

Press to select the source equipment connected to the Aux input.

12 CD

Press to select the source equipment connected to the CD input.

13 Recorder 2

Press to select the recording device connected to the Recorder 2 input.

14 7.1 Direct

Press to select a 7.1, 6.1 or 5.1 source (DVD-A or SACD player etc) connected to the 7.1 Direct In sockets.

Note: The 650R remembers the audio and video input type and processing mode for each individual source input. These are recalled each time a source is selected.

15 Audio input type

Press this button to select between analogue, digital (optical/coaxial) or HDMI input types as the source of the audio for the currently selected source input.

The choices available depend on the connections that source support on the rear panel and whether a HDMI input has been assigned to that source.

16 Stereo modes

Press to listen to a source in either digitally processed stereo or stereo and sub modes.

17 Pro Logic/Neo/DSP surround modes

Press to select between various Pro Logic II/Ix, DTS Neo:6 effects for matrix encoded analogue or digital material or for post-processing DD/DTS material (**Note:** The 650R is unable to auto-detect this kind of source material as it does not include embedded encoding type flags so manual selection is required). Also selects various DSP created surround sound modes for unencoded stereo sources.

18 Dolby Digital/DTS surround modes

Press to select Dolby Digital or DTS surround modes (with suitably encoded digital source material). These modes can only be decoded from digital audio sources (via Coaxial, Optical or HDMI inputs).

19 Video input type

Press to select the video input type (Composite, S-Video, Component Video or HDMI) you wish to use as the source of video for the current source input.

Note: The choices available depend on the connections that source supports on the rear panel and whether a HDMI input has been assigned to that source. The 650R cannot simultaneously receive HDMI audio and analogue video from the same source.

For any HDMI audio sources selecting analogue video will then cause the unit to switch to analogue audio as well. Digital audio via SPDIF/Toslink can then also be selected via the Audio Input Type button but not HDMI audio. Returning to HDMI video will allow selection of HDMI audio (or analogue or digital audio) again. All normal sources with HDMI audio output will have HDMI video output.

20 Analogue Stereo Direct

Press to listen directly to the analogue inputs for the current source with no analogue to digital or DSP processing for highest possible stereo sound quality.

21 Volume

Use to increase/decrease the level of the sound from the outputs of the 650R.

22 Mute/Display

Press to mute the sound from the main and pre-amp outputs of the 650R. Press again to cancel mute.

Note: Selecting a new source always cancels mute.

Press and hold to re-display the current decoding mode.

23 Video 3 source button

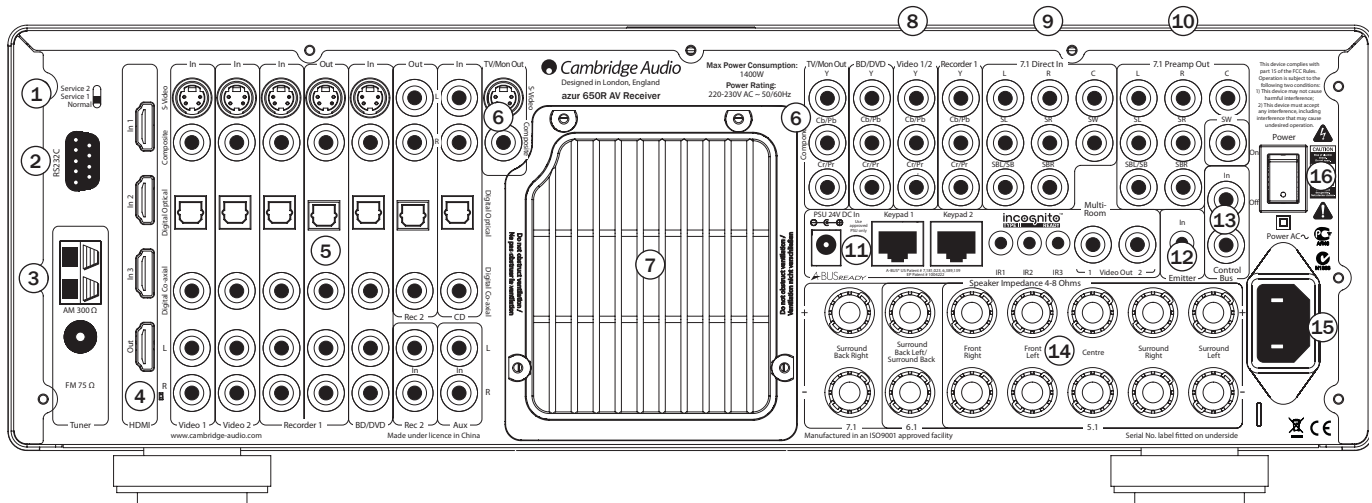
Press to select a video camera recorder/video games console connected to the Video 3 input sockets.

24 Video 3 input sockets

Connect a video camera recorder/video games console to the 650R. Audio/Video and digital optical inputs are provided.

Note: The L audio input is also used for the supplied auto setup microphone. Refer to the 'Auto setup' section of this manual for more information.

Rear panel connections



① Service/Normal

For dealer use only - Switches the 650R between normal (default) mode and two Service modes. Do **not** change the mode to service or make RS232 connections to it in service mode as damage may result!

② RS232C

Used for control of the 650R in Custom Install situations. A full protocol is available for the 650R on our website.

③ FM/AM antenna

All tuner antenna connections are made here. Refer to the 'Antenna Connections' section of this manual for more information.

④ HDMI

Inputs and output to a suitable TV/Monitor. The HDMI inputs can be assigned in the OSD to the BD/DVD, Video 1, Video 2 or Rec 1 sources, see later section.

⑤ Video 1/2, Recorder 1/2, BD/DVD, Aux

Please refer to the connection diagrams later in this manual for more information on these inputs and outputs.

⑥ TV/Mon outputs

S-Video - Connect to your television via S-Video cable.

Composite - Connect to your television via 75 ohm RCA phono cable.

Component - Connect to the Cr/Pr, Cb/Pb, & Y terminals of a television set.

⑦ Heat tunnel vent grille

Allows cooling of internal circuitry via the 640R's proprietary X-TRACT heat tunnel. **DO NOT OBSTRUCT!**

⑧ Component Video inputs (BD/DVD, Video 1/2, Recorder 1)

Connect the Component Video outputs from the source equipment.

The Video 1/2 input can be used for either source simply by selecting HDMI for either source using the Video Input Type button or doing the same thing via the Video Input Type menu in the OSD.

Note: The preferred connection method for video inputs or outputs is always Composite Video, then S-Video, then Component Video, then HDMI in ascending order of quality (HDMI being the highest quality). HDMI and Component Video sources often also support Progressive Scan which gives better picture quality if supported by both your BD/DVD player and TV.

⑨ 7.1 Direct In

Connect to the output terminals of a DVD-A, SACD player or other 5.1/6.1/7.1 analogue source.

⑩ 7.1 Preamp Out

Connect to the 5.1/6.1/7.1 channel input terminals of another amplifier system, separate power amps, subwoofer or active loudspeakers.

⑪ A-BUS™ Ready/Incognito Ready™ multi-room outputs

PSU In - Connect an Incognito P55 to supply power to the connected multi-room keypads/speakers.

Keypad 1/2 - Connect one or two Incognito A-BUS KP10 keypads (or other A-BUS compatible keypads) or AS10 Active Ceiling Speakers using CAT5/5e cable, allowing 2nd/3rd zone multi-room capability.

IR - Three IR emitter outputs for remote control of source equipment.

Video Out 1/2 - Provides video feeds to the 2nd/3rd zone.

Please refer to the 'Multi-Room' section of this manual for more information on connections and setup.

⑫ Emitter In

Allows modulated IR commands from multi-room systems or IR repeater systems to be received by the 650R. Commands received here are not looped out of the Control Bus. Refer to the 'Custom Installation' section for more information.

⑬ 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.

⑭ Speaker terminals

Connect to loudspeakers with an impedance of between 4-8 ohms. 7.1, 6.1, 5.1 or less connections can be made.

⑮ Mains power lead

Once you have completed all connections, plug the AC power lead into an appropriate mains socket. The AV receiver is now ready for use.

⑯ Power On/Off

Switches the unit on and off.

Remote control

The 650R is supplied with an Azur Navigator remote control. Insert the supplied AAA batteries to use. For full details of the various adjustment functions available from the remote, refer to the later sections of this manual.

Standby/On

Switches the unit between Standby mode and On.

Analogue Direct

Directly selects a stereo analogue input for the current source with no A/D conversion or DSP processing.

Stereo Modes

Selects Stereo or Stereo + Sub modes for Analogue or Digital sources (digitally processed).

PLIIx/Neo/DSP

Selects from various matrix encoded surround processing modes for analogue or digital sources (digitally processed).

DD/DTS Modes

Selects digital surround processing modes for Digital/HDMI sources only.

Dynamic

Press repeatedly to reach the desired dynamic compression range (Dolby Digital or DTS modes only).

Sub On/Off

The Sub On/Off button performs temporary muting of the Subwoofer without affecting the bass management or speaker settings. Pressing the Sub On/Off button again or selecting another decode mode cancels Sub Mute.

To make permanent settings to the speaker options including the Subwoofer, use the 'Speaker Config Menu' in the On Screen Display (OSD).

Also, hold down and then press the volume up and down buttons to adjust the overall sub level if desired.

PTY (Program Type Search)

Press to search by program type when in Tuner mode. Refer to the 'Operating instructions' section of this manual for more information.

APS (Auto Program Search)

Hold down for 4 seconds to allocate and memorise radio stations automatically.

Display

Press to view the current source material and decoding mode. Press again whilst the current decoding mode is scrolling (as long as mute is not on) to display the incoming sample rate. When listening to FM with RDS, press to cycle round various RDS information modes.

Stereo Mono

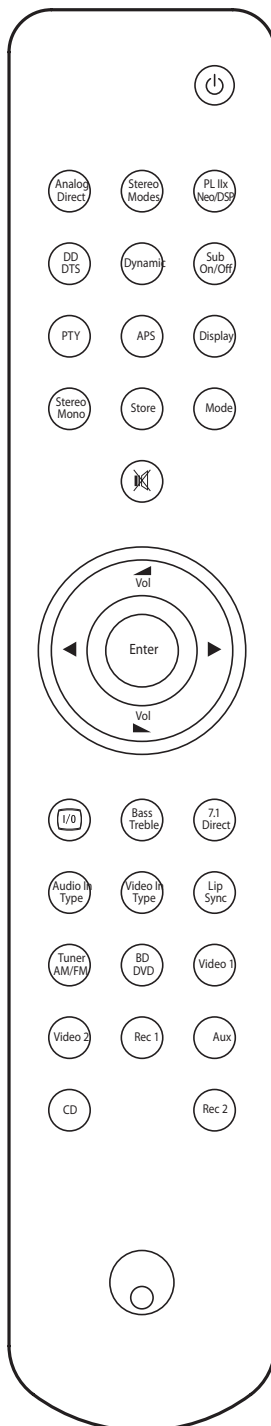
When listening to FM, press to alternate between stereo and mono modes.

Store

Press to store the current frequency when in Tuner mode.

Mode

Press to select Auto/Manual or Preset tuning when in Tuner mode.



Mute

Mutes the audio on the AV Receiver. Press again to cancel mute.

Volume

Increase or decrease the volume of the AV receiver output. Also used as up/down in the OSD setup menus.

Tune / Left & Right

Press the right arrow to increase tuner frequency/change preset. Press the left arrow to decrease tuner frequency/change preset. Also used to scroll left/right in the OSD setup menus.

Enter

Used in the OSD setup menus.

On-Screen Display (OSD)

Press to turn on and off the on-screen setup menus for display on your monitor/screen.

Bass/Treble

Press for bass/treble adjustment, using the Volume up/down buttons. **Note:** Bass/Treble is bypassed in analogue stereo direct and 7.1 direct modes.

7.1 Direct

Selects the 5.1/6.1/7.1 direct input.

Audio In Type

Switches the audio between the types available for the current source. Depending on the source selected and whether you have assigned an HDMI input to it, Analogue, Digital and HDMI can be available.

Video In Type

Switches the video between the types available for the current source. Depending on the source selected and whether you have assigned an HDMI input to it, Composite, S-Video, Component and HDMI types can be available.

Note: The 650R cannot simultaneously receive HDMI audio and analogue video from the same source.

For any HDMI audio sources selecting analogue video will then cause the unit to switch to analogue audio as well. Digital audio via SPDIF/Toslink can then also be selected via the Audio Input Type button but not HDMI audio. Returning to HDMI video will allow selection of HDMI audio (or indeed analogue or digital audio) again.

Lip sync

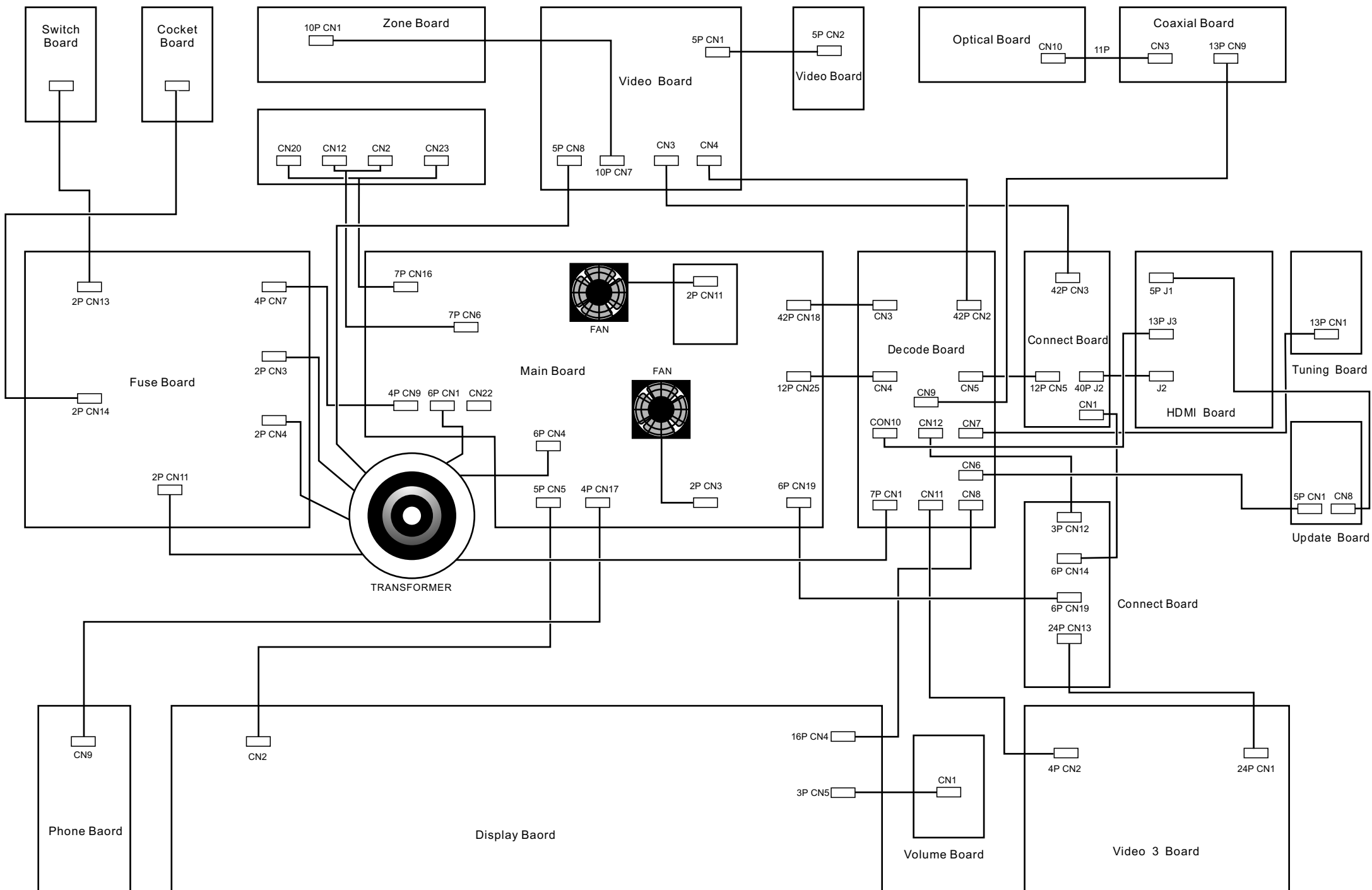
Press to activate and adjust the lip sync delay function if the audio and video appear out of sync. While the Lip sync delay status is shown on the units display, use the Vol and Vol buttons to adjust the delay time. Adjusting the value to zero causes lip sync delay to be turned off. See later section in this manual.

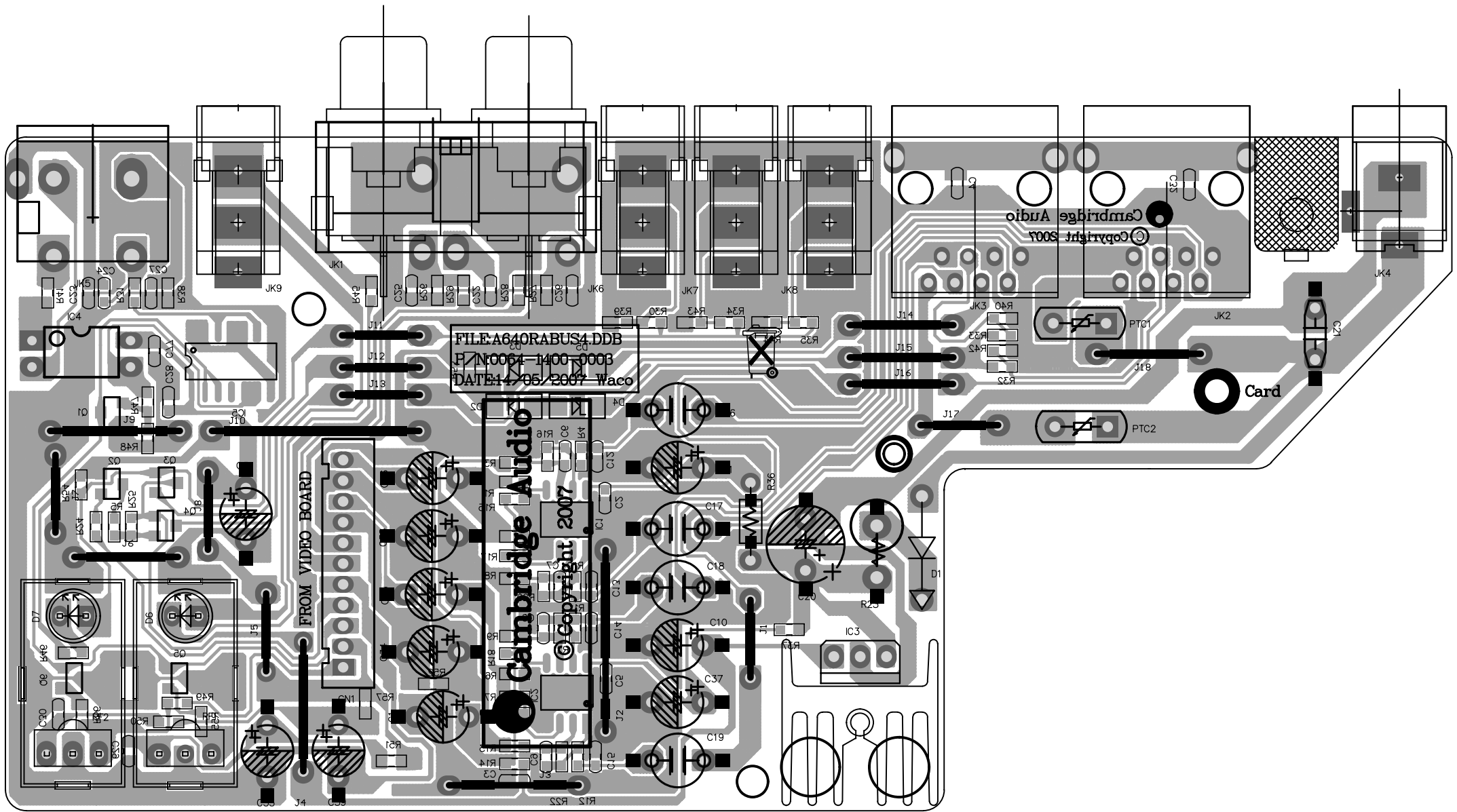
Tuner AM/FM, BD/DVD, Video 1, Video 2, Rec 1, Aux, CD, Rec 2

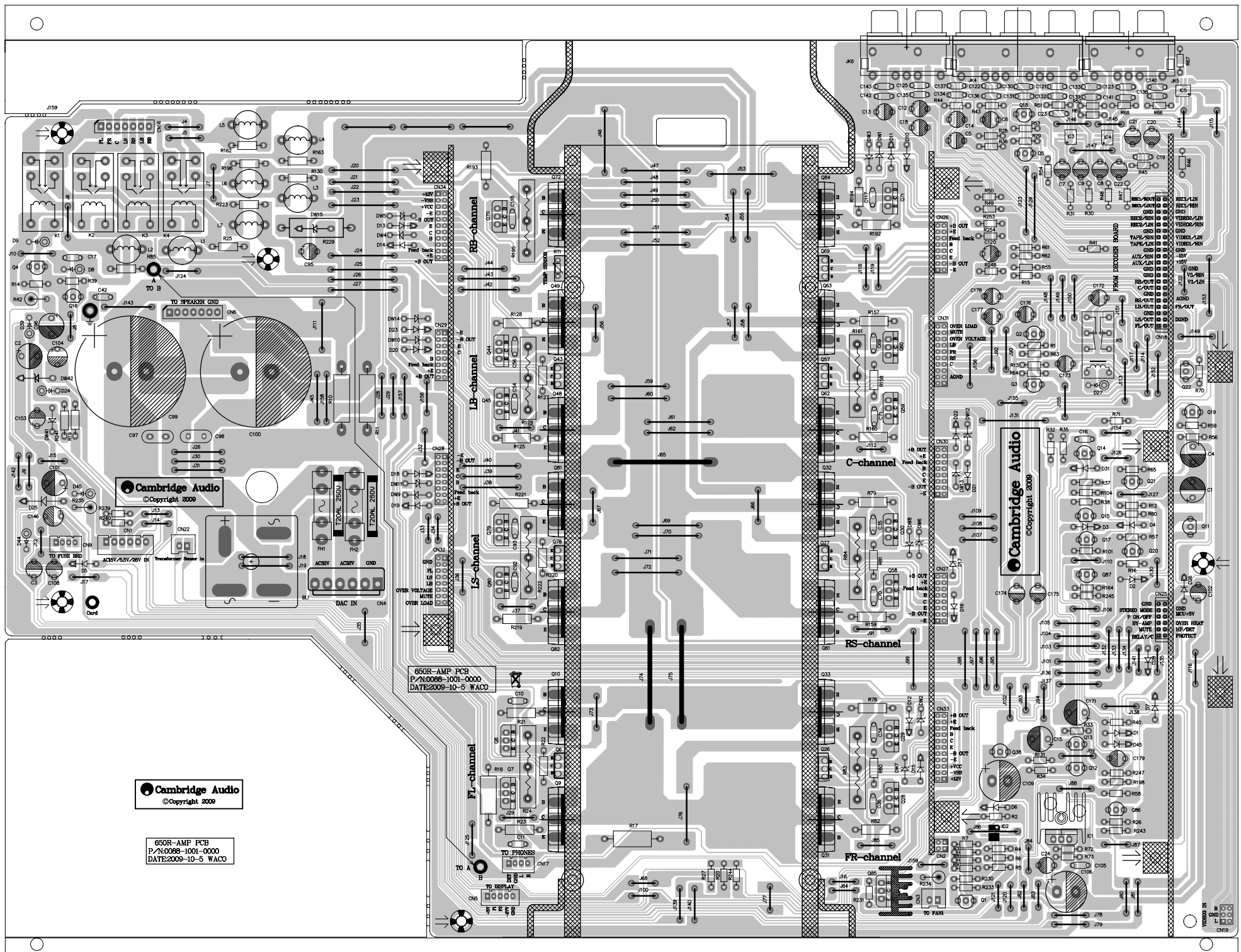
Press the corresponding button to change the input source. Pressing the Tuner AM/FM button a second time toggles between AM and FM modes.

The above button descriptions are naturally brief. Please refer to the 'Operating Instructions' section of this manual for more information on the relevant functions implemented.

Block Diagram







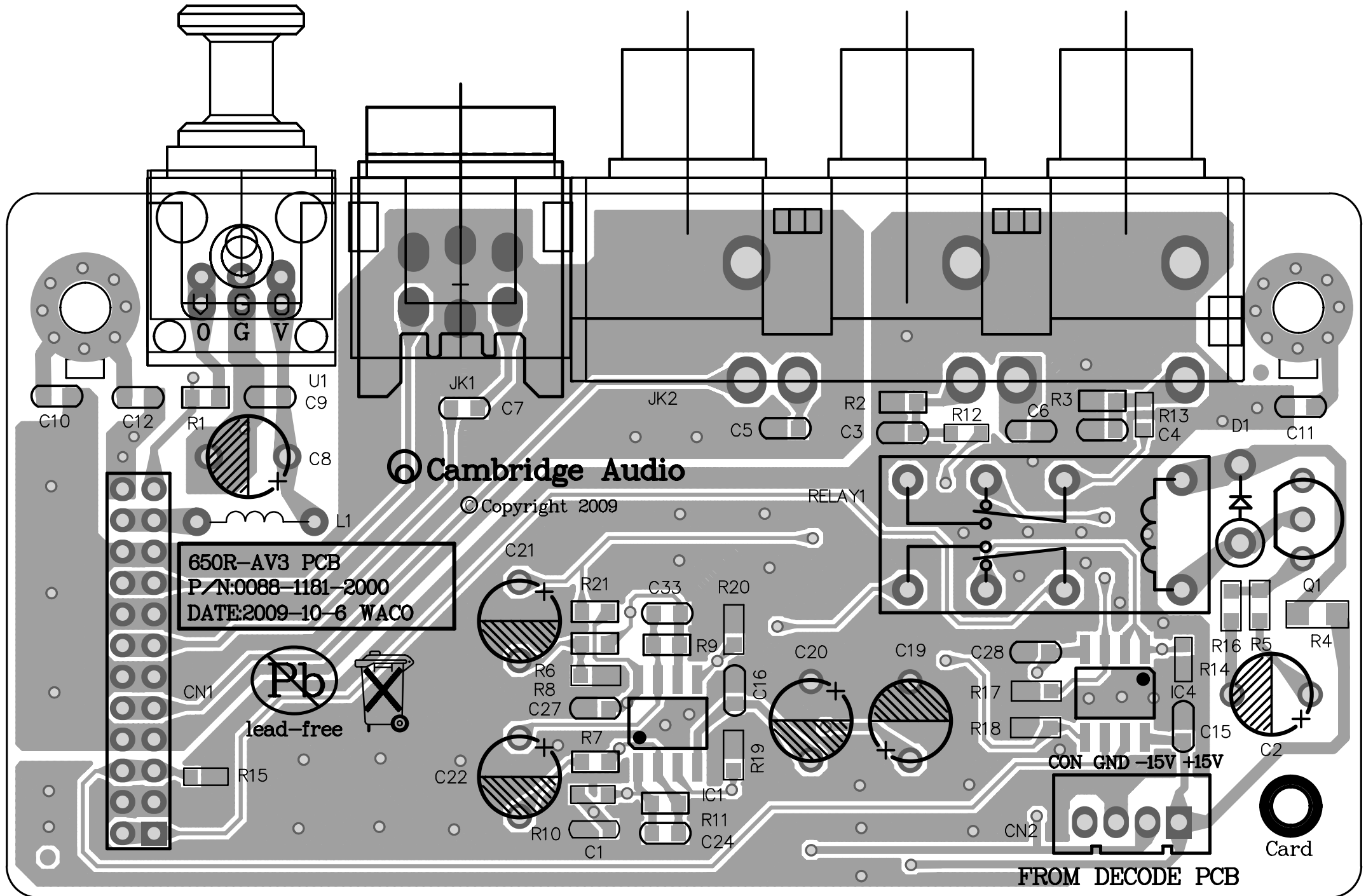
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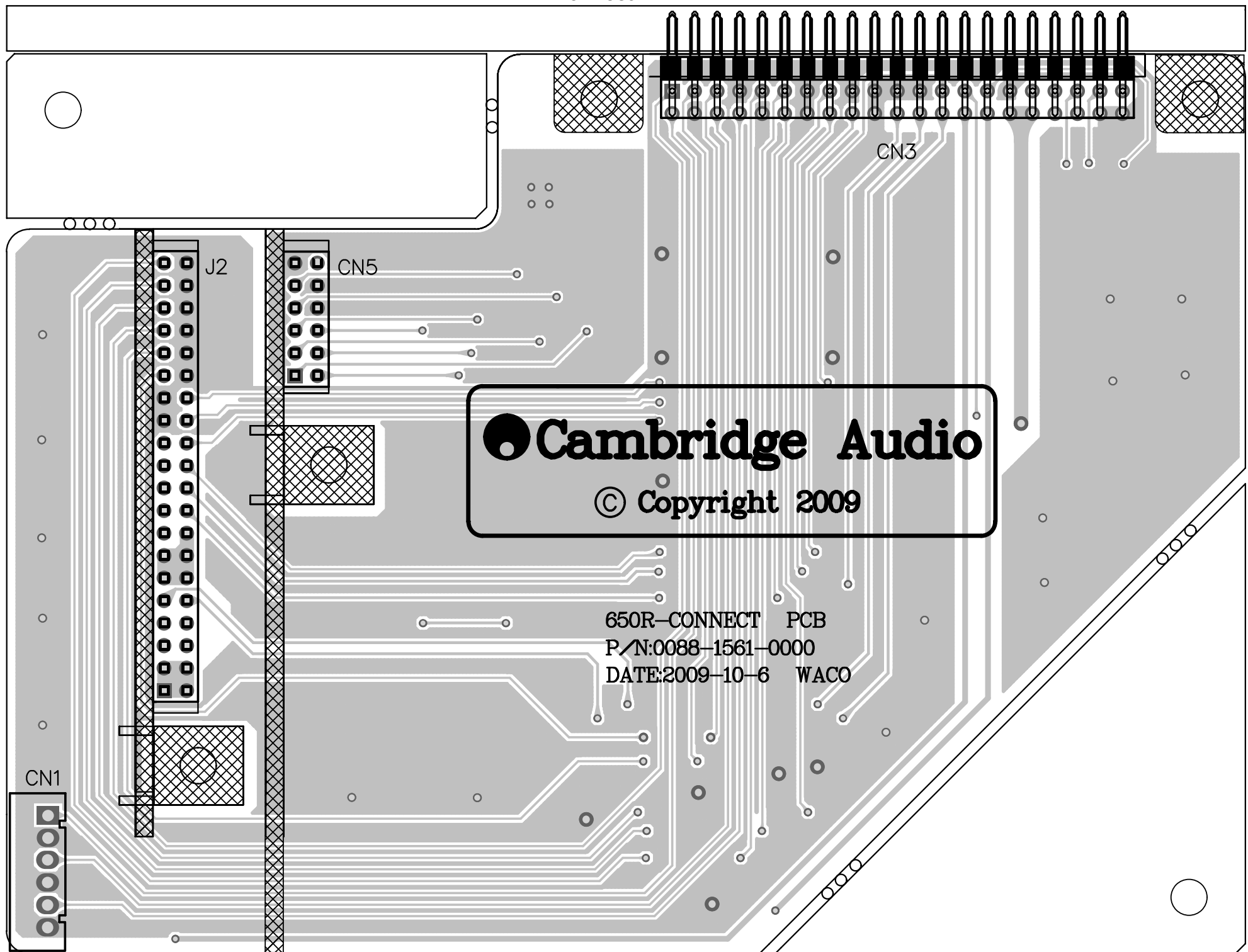
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650R-AMP PCB
P/N: A0068-1001-0000
DATE: 2009-10-5 WACC

650R-AMP PCB
P/N: A0068-1001-0000
DATE: 2009-10-5 WACC

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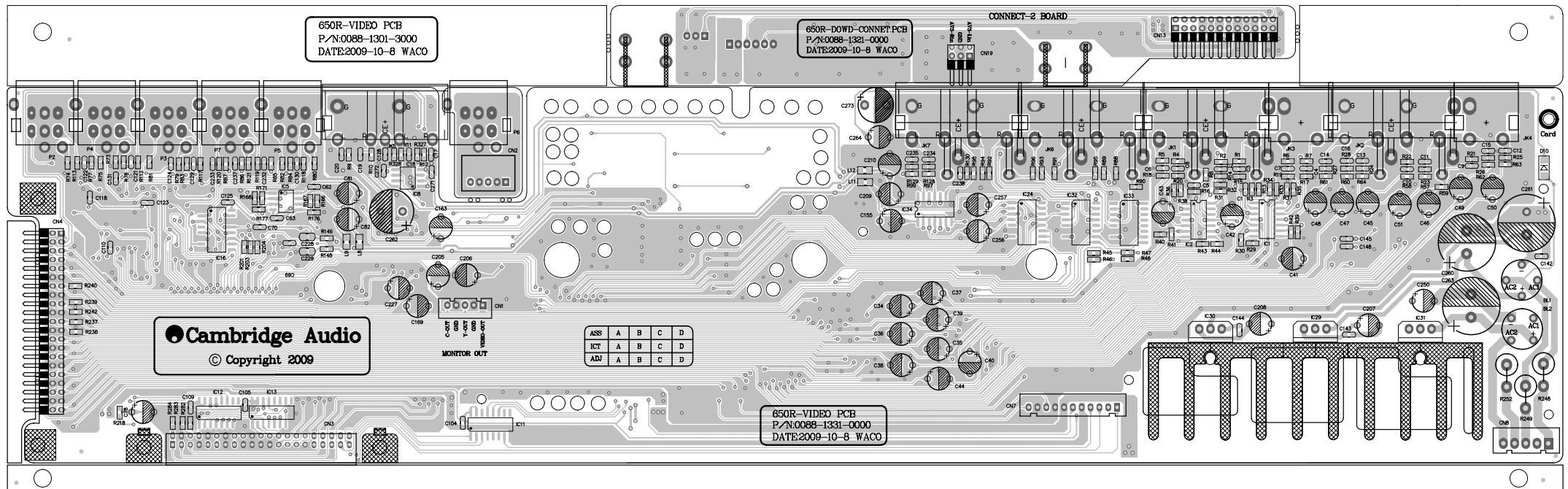


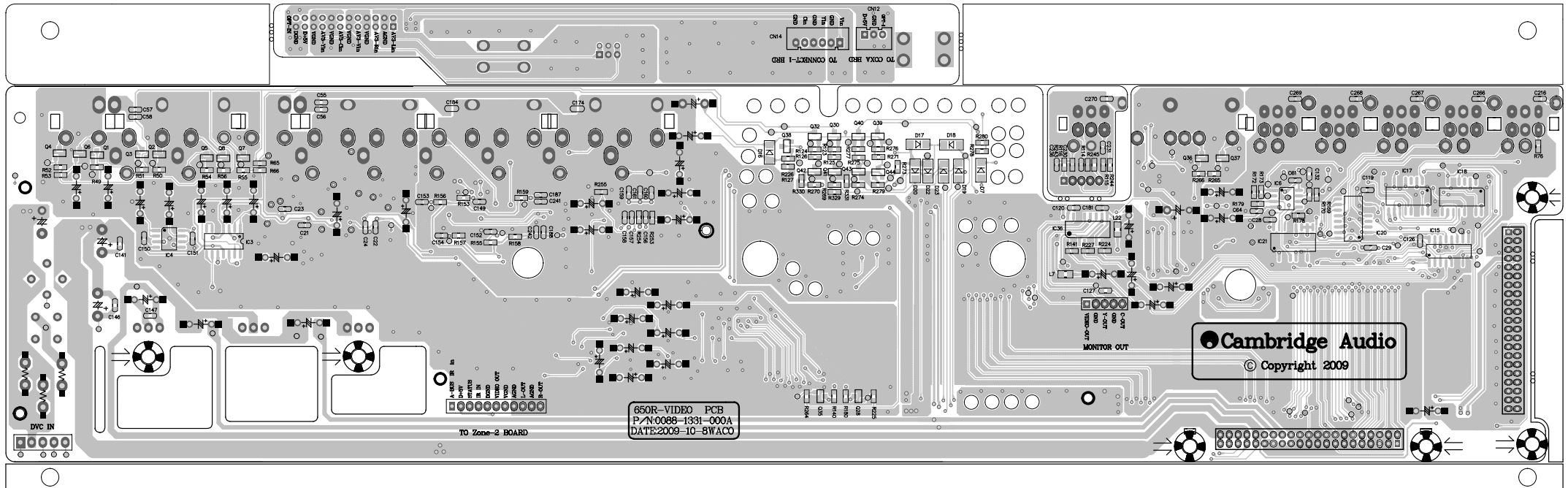


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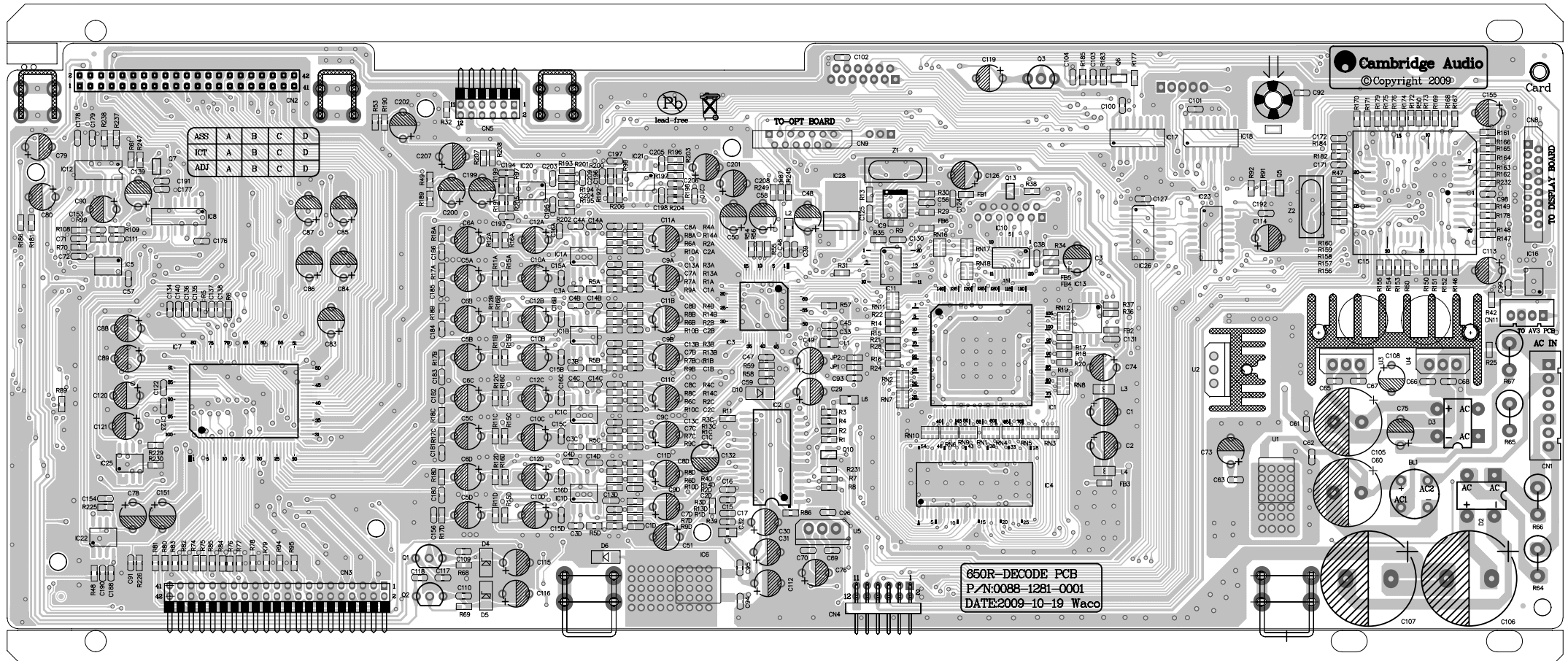
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650R-CONNECT PCB
P/N:0088-1561-0000
DATE:2009-10-6 WACO

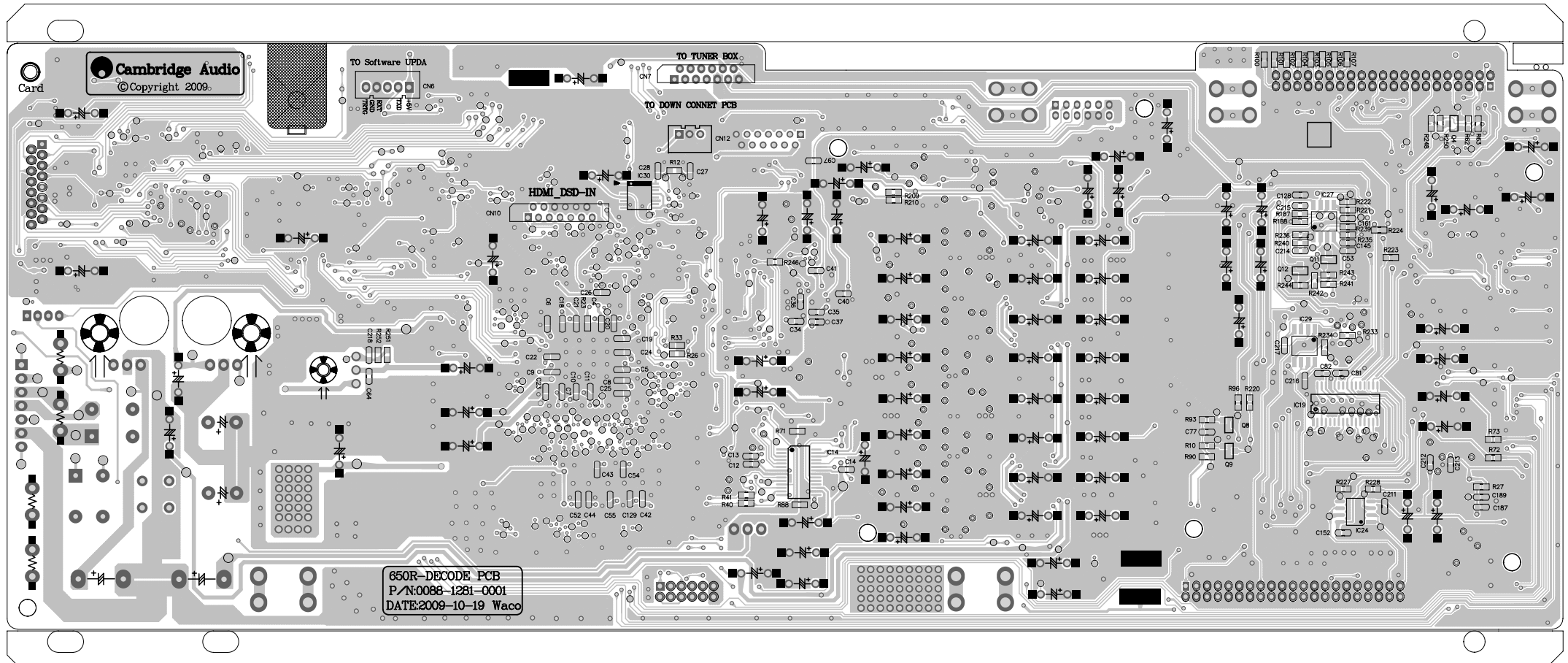


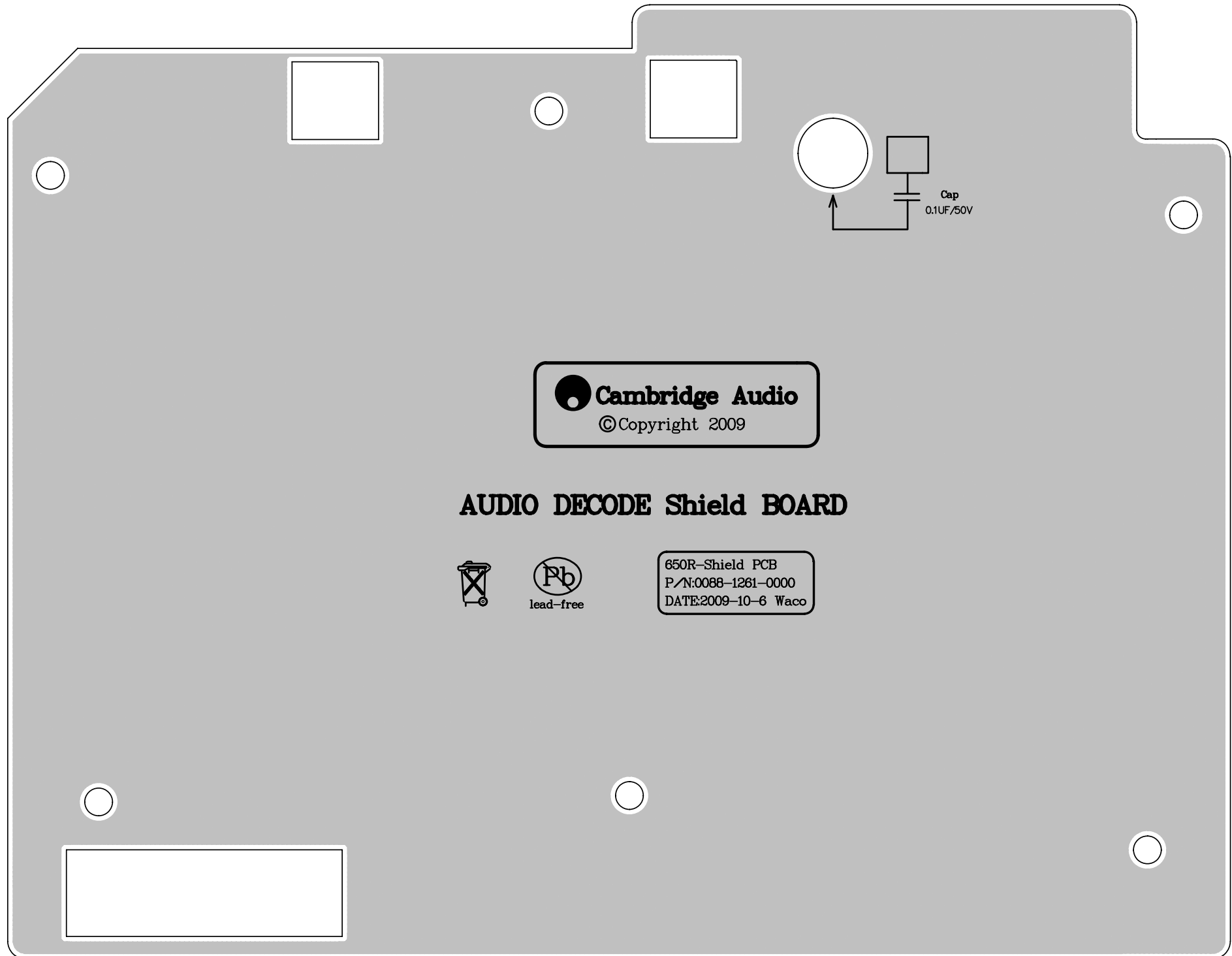


Decoder PCB



Decoder PCB





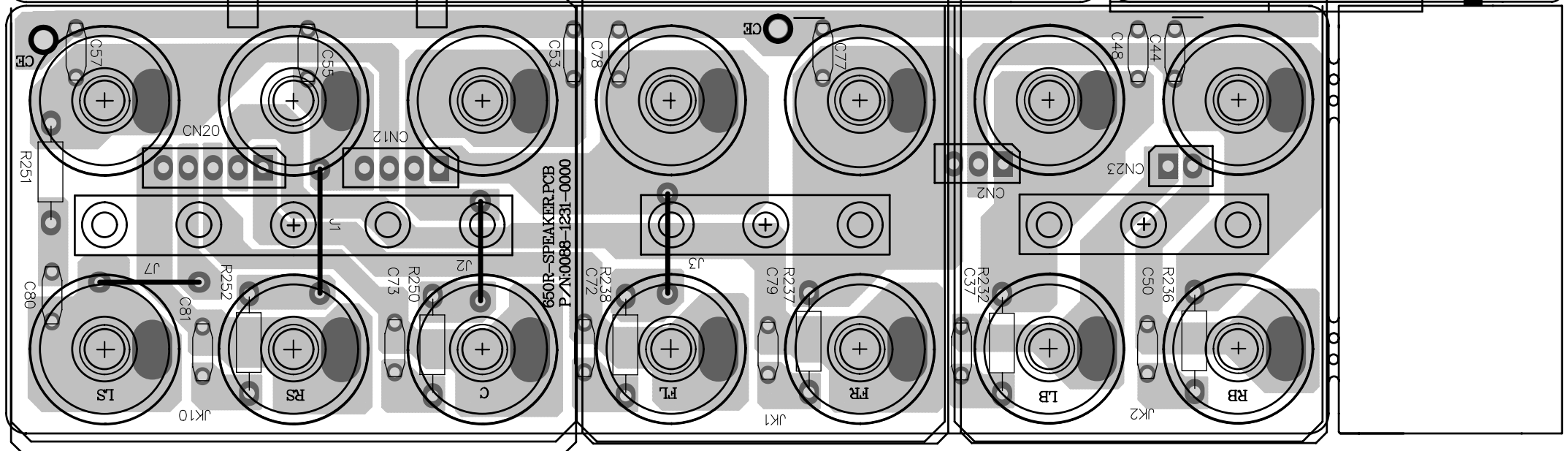
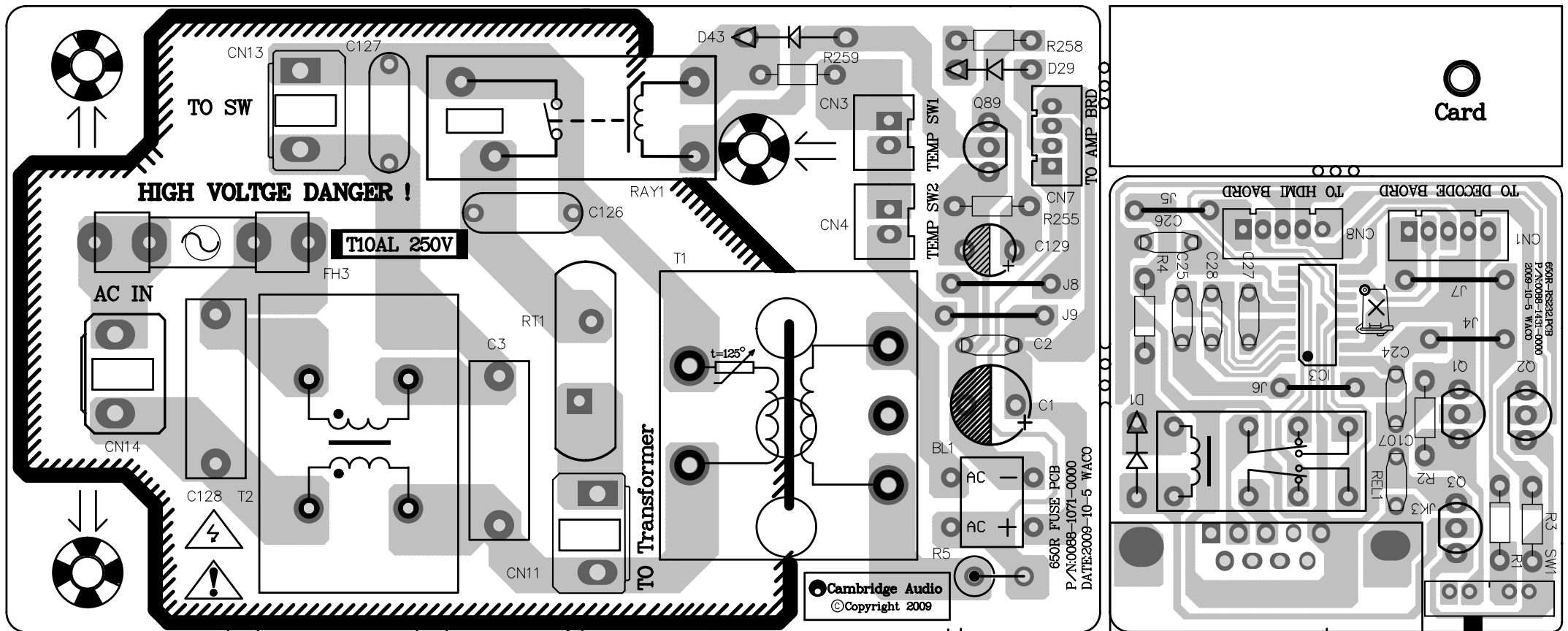
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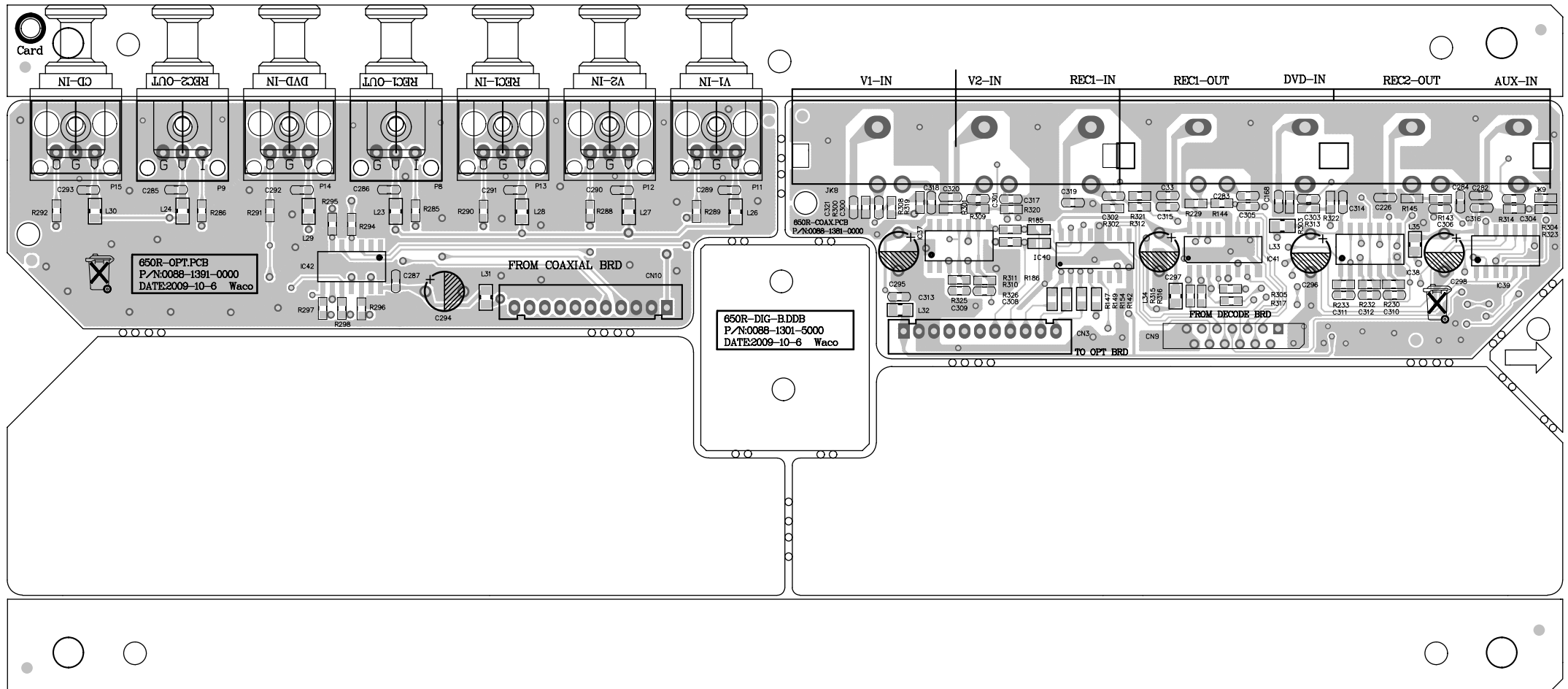
AUDIO DECODE Shield BOARD



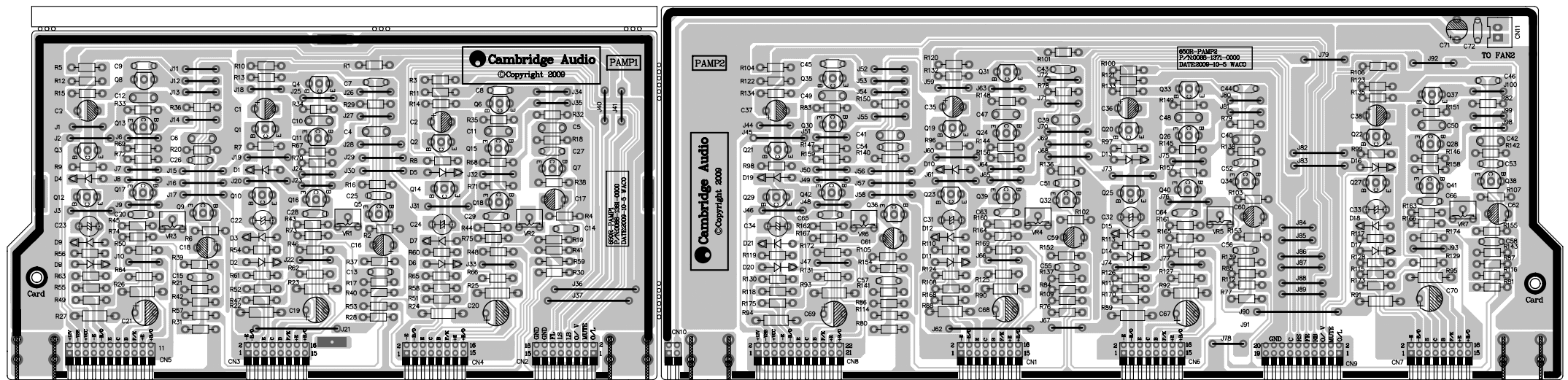
lead-free

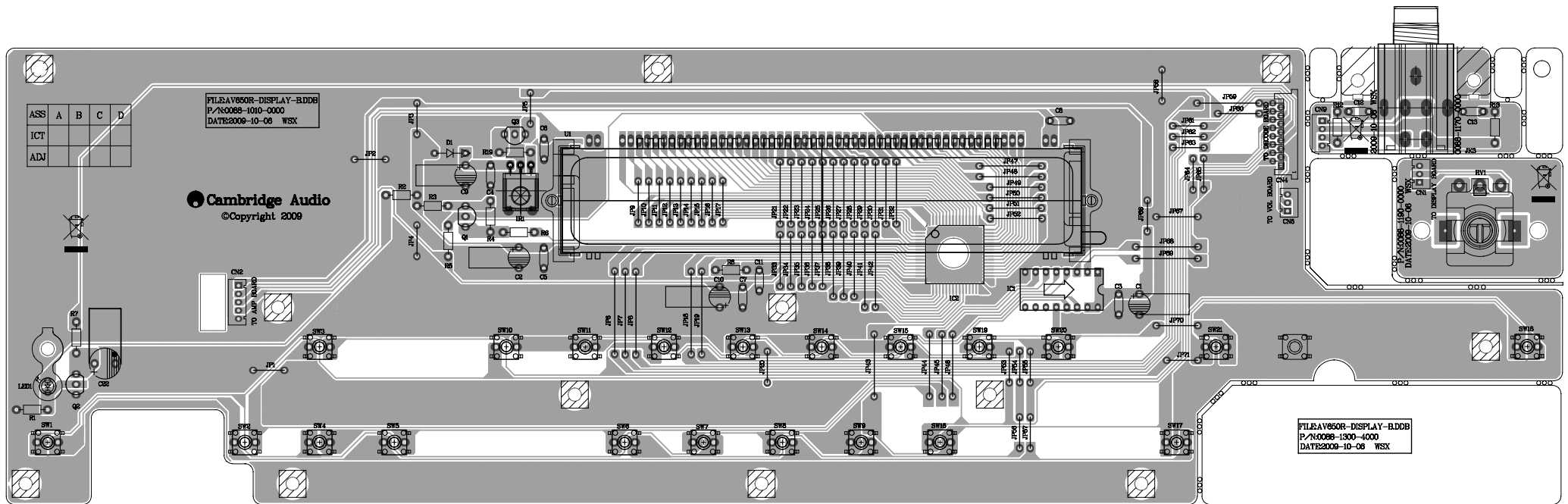
650R-Shield PCB
P/N:0088-1261-0000
DATE:2009-10-6 Waco



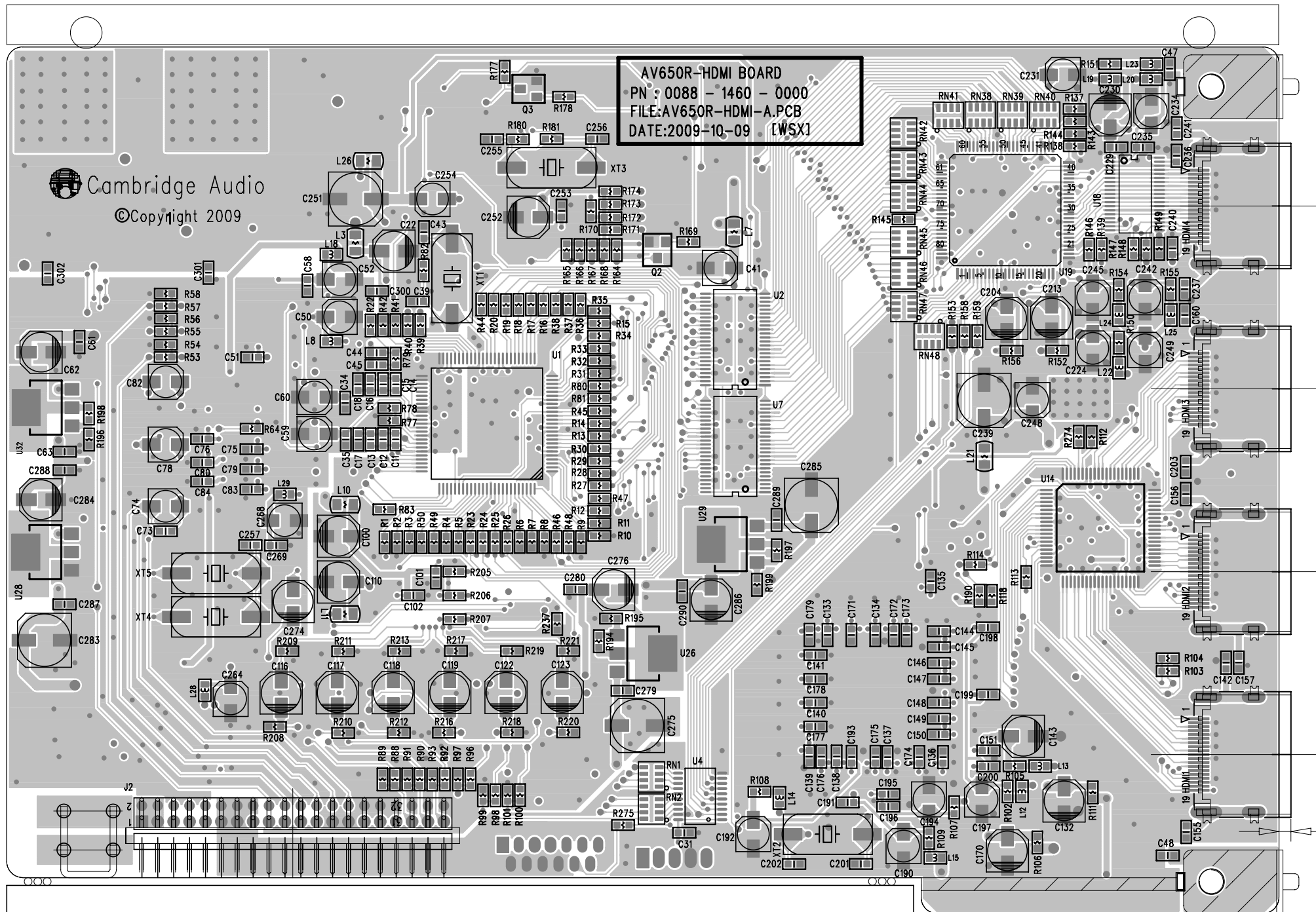


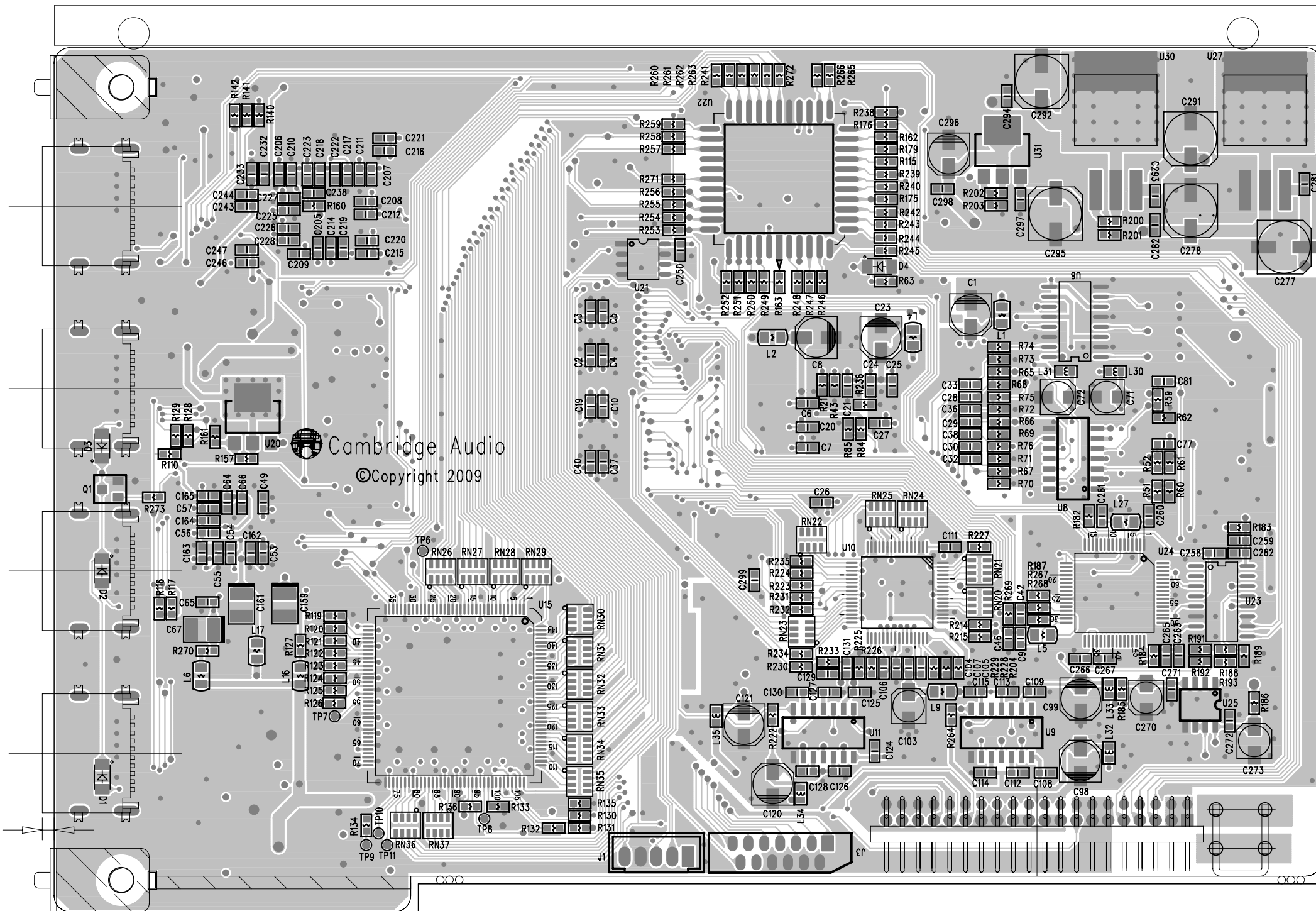
PAMP 1&2 PCB





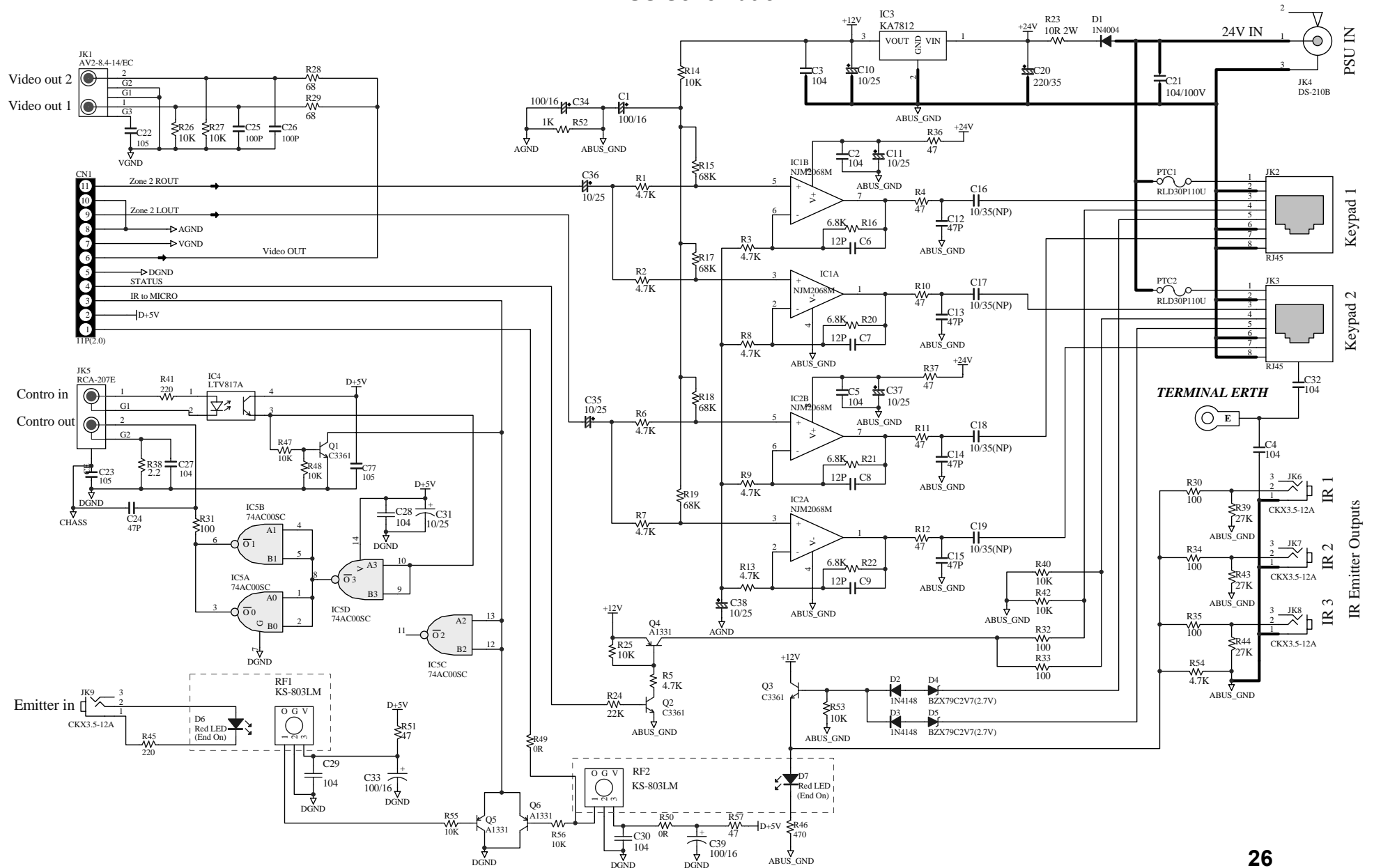
HDMI PCB



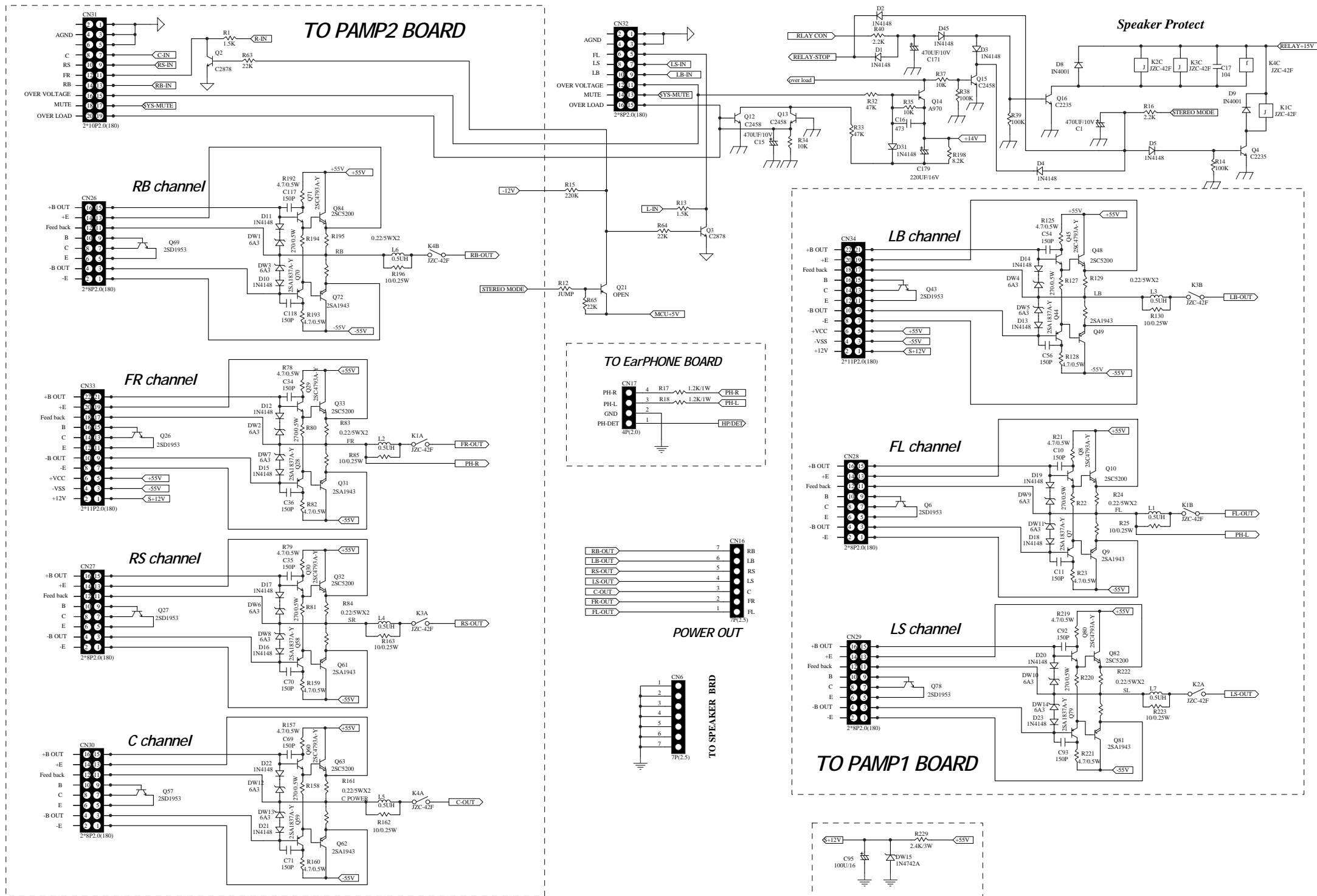


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ABUS Schematic

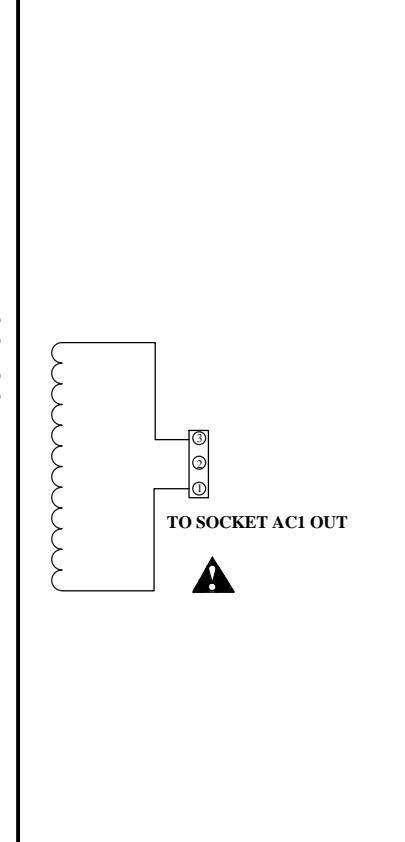
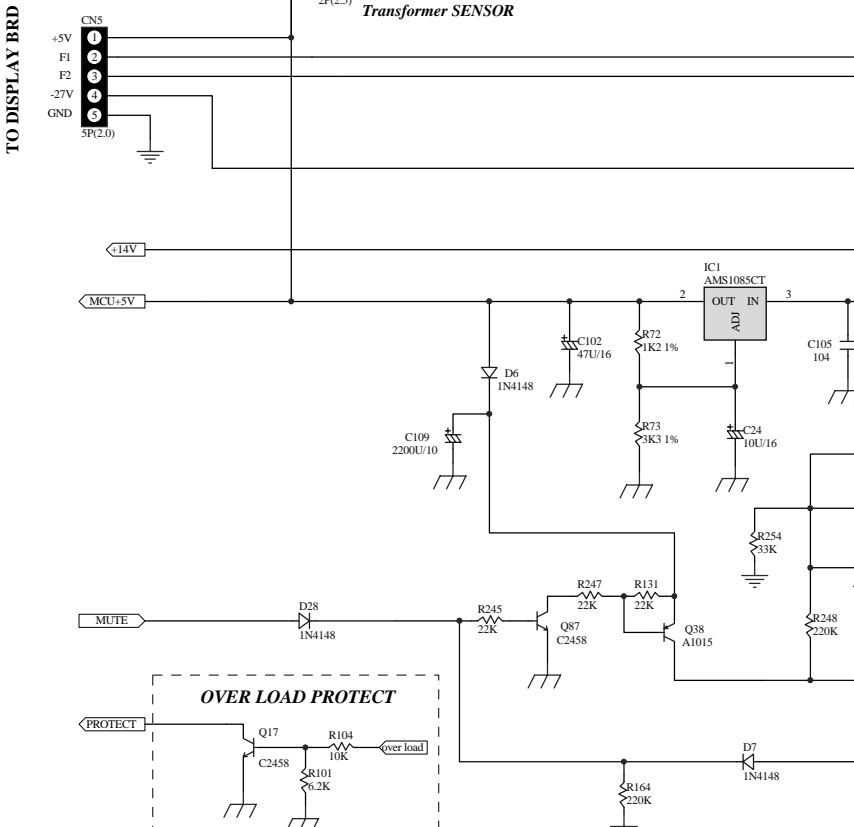
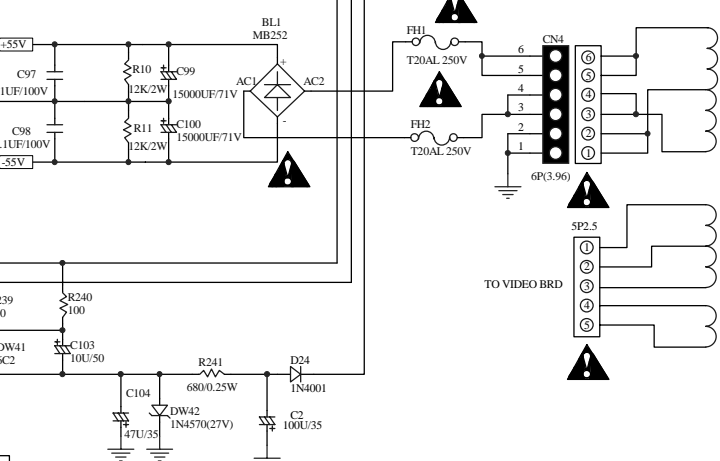
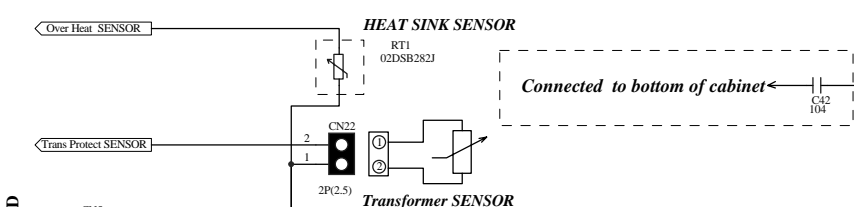
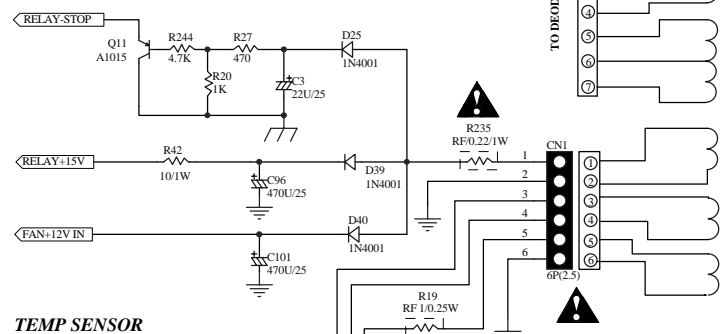
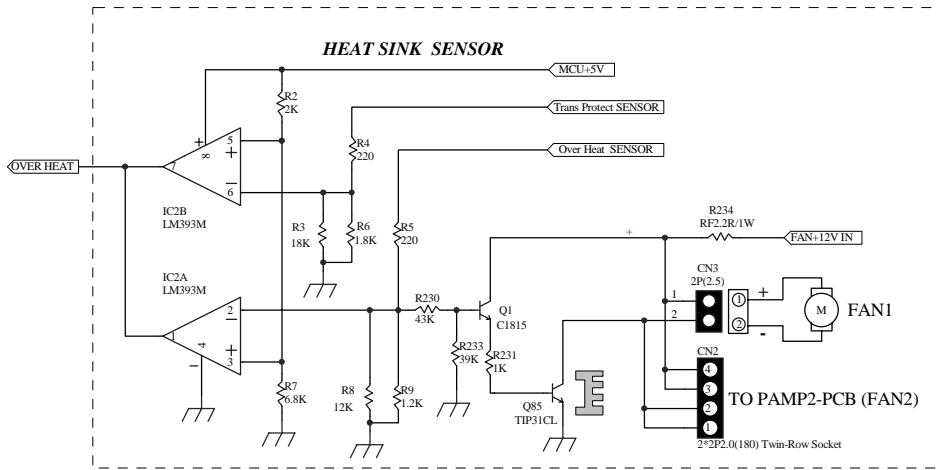


AMP Schematic

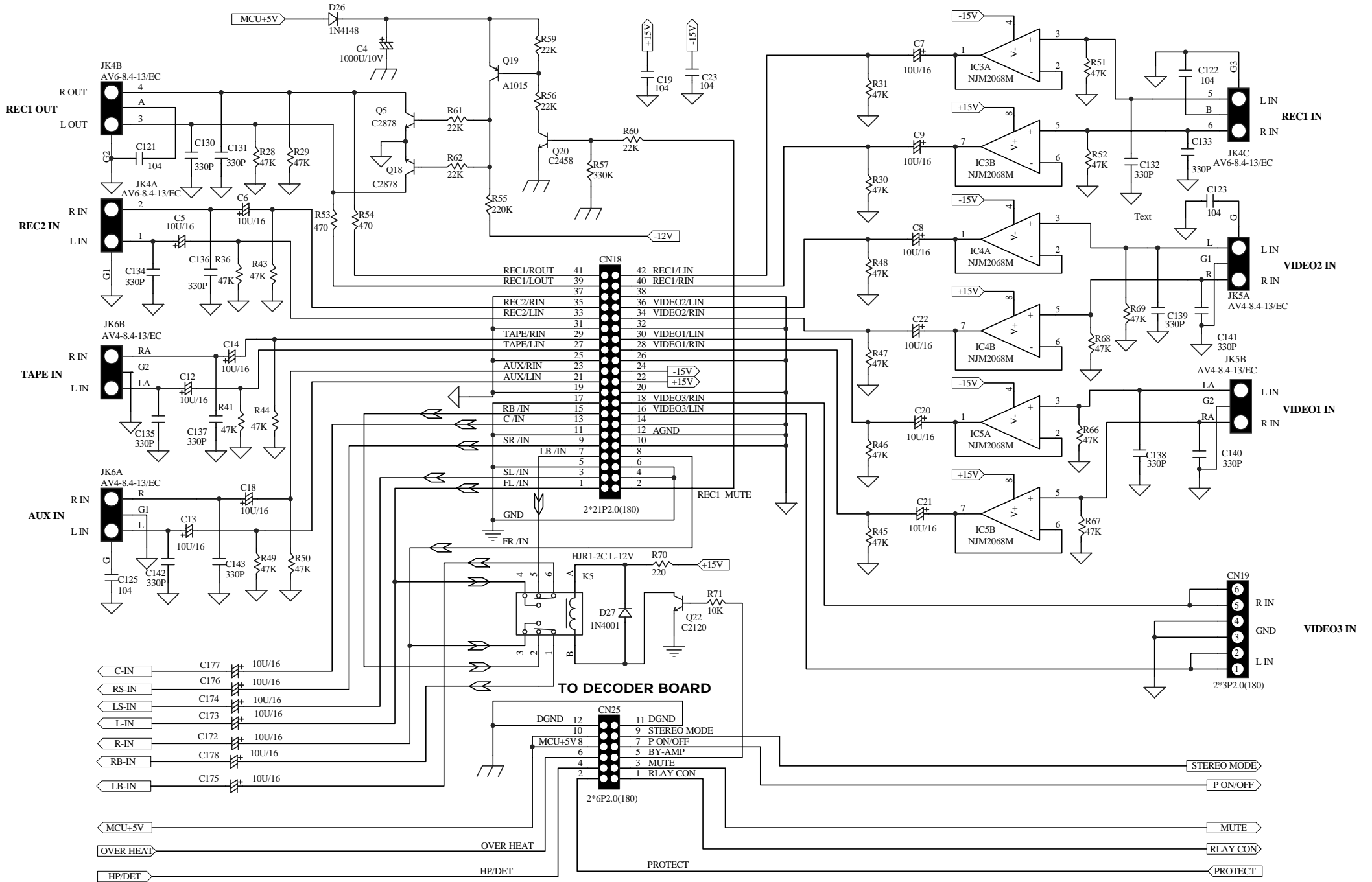


AMP Schematic

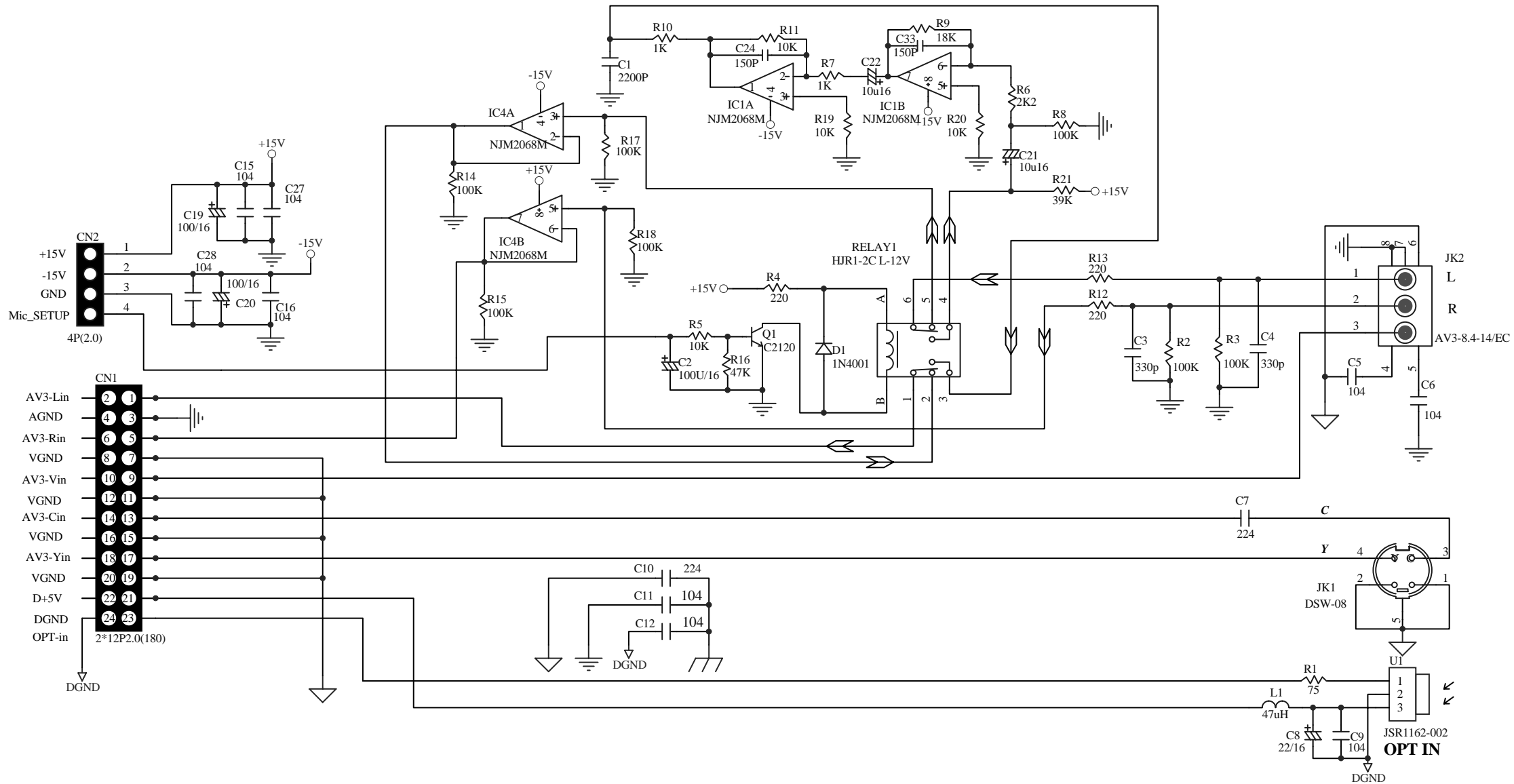
⚠️ INDICATES SAFETY CRITICAL COMPONENTS.
TO REDUCE THE RISK OF ELECTRIC SHOCK LEAKAGE
CURRENT OR RESISTANCE MEASUREMENTS SHALL BE
CARRIED OUT (EXPOSED PARTS ARE ACCEPTABLY
INSULATED FROM THE SUPPLY CIRCUIT) BEFORE
THE APPLIANCE RETURNED TO THE CUSTOMER.



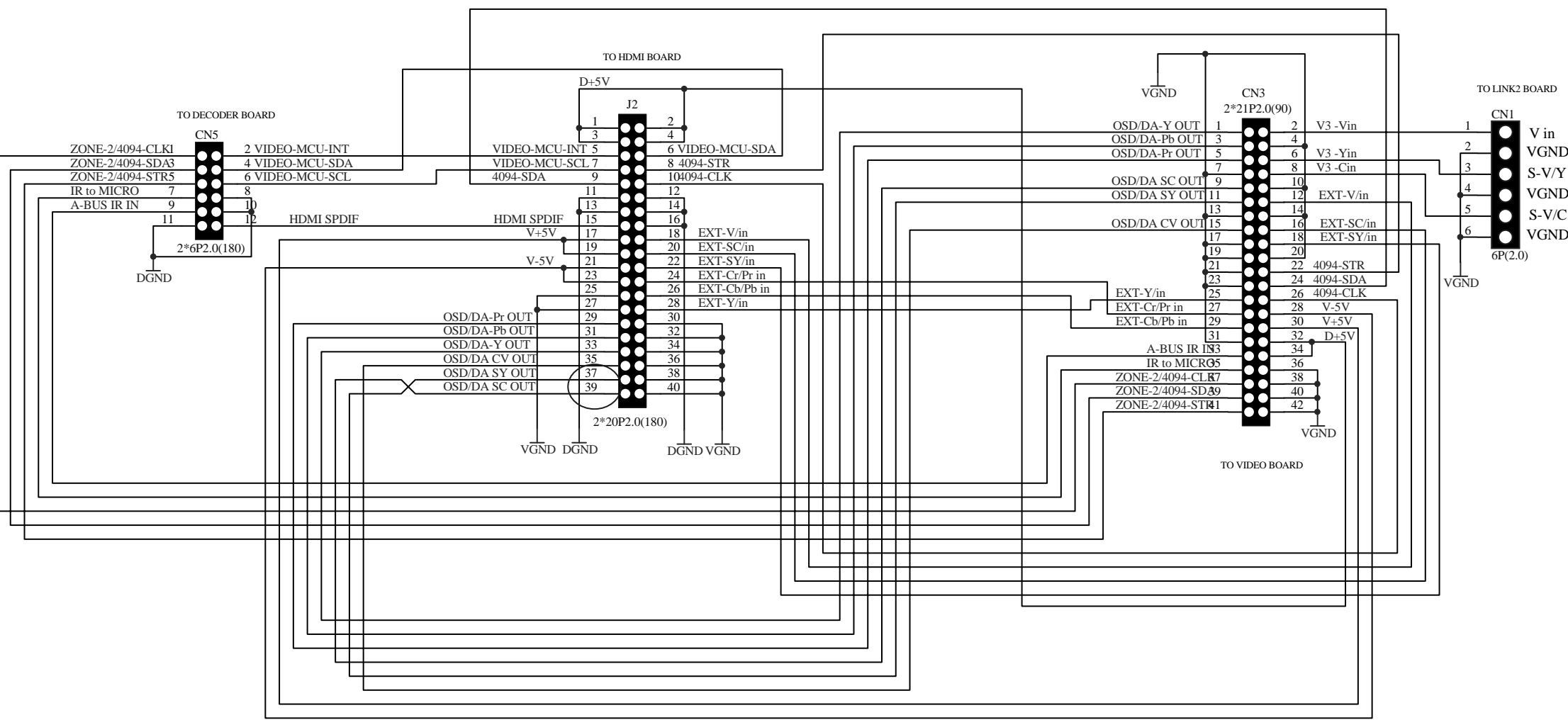
AMP Schematic



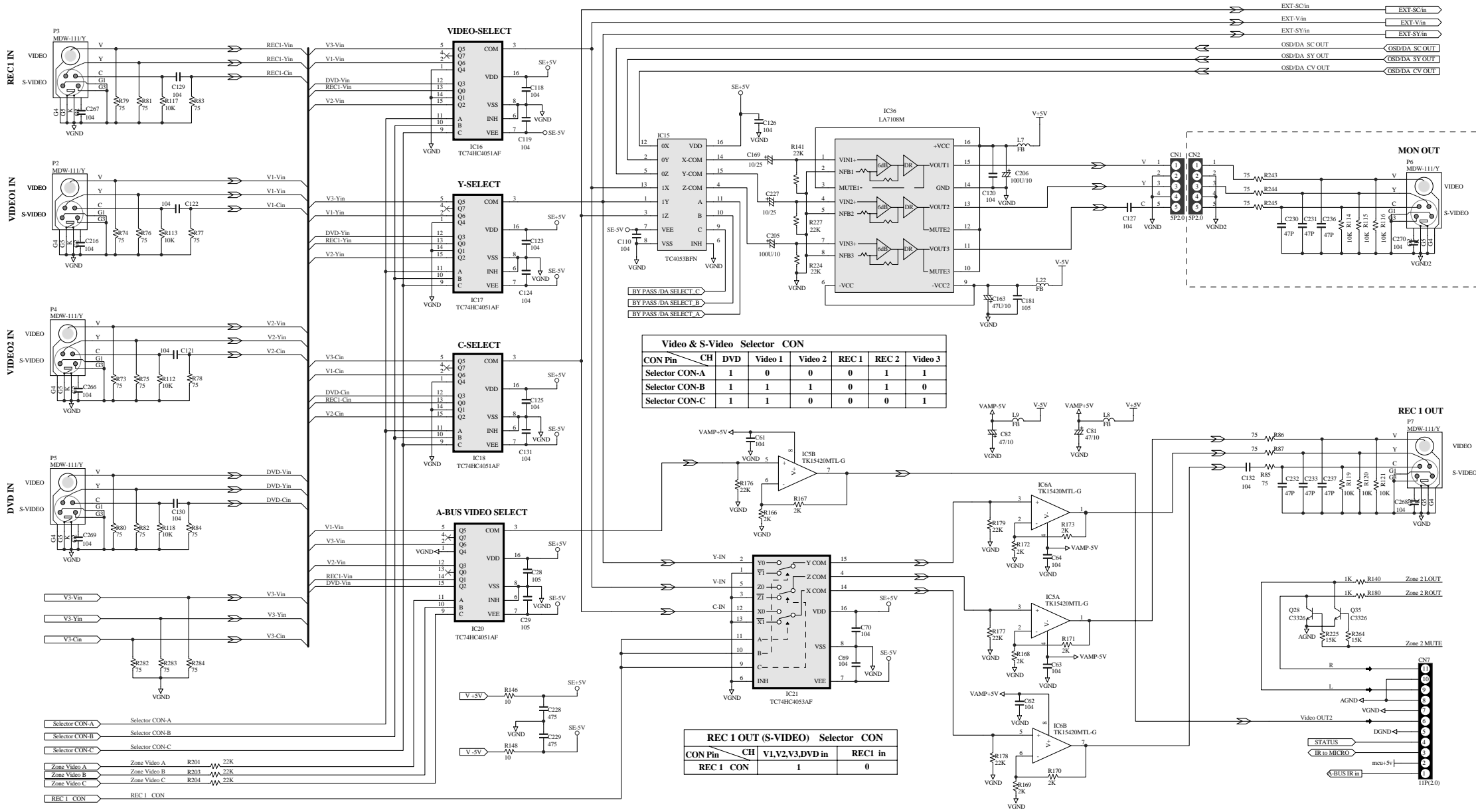
AMP Schematic



Connect 1 Schematic



Video PCB Schematic



Video & S-Video Selector CON

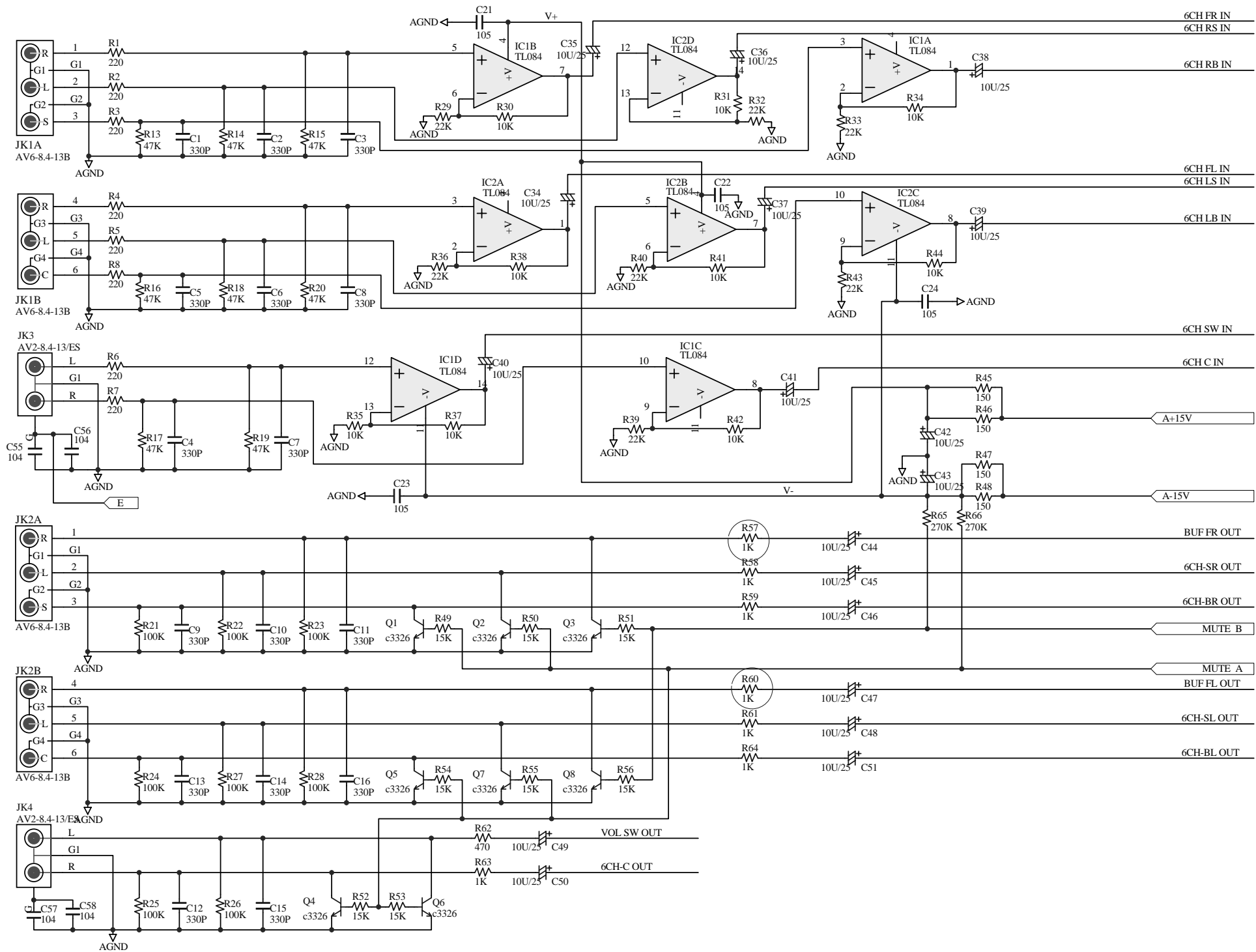
CON Pin	CH	DVD	Video 1	Video 2	REC 1	REC 2	Video 3
Selector CON-A	1	0	0	0	0	1	1
Selector CON-B	1	1	1	0	0	1	0
Selector CON-C	1	1	0	0	0	0	1

REC 1 OUT (S-VIDEO) Selector CON

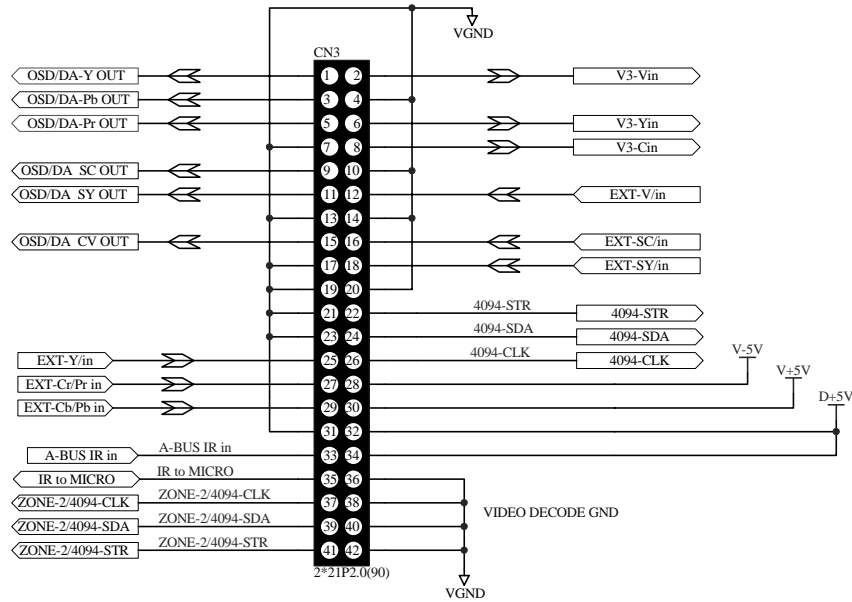
CON Pin	CH	V1,V2,V3,DVD in	REC 1 in
REC 1 CON	1	1	0

- Selector CON-A Selector CON-A R201 22K
- Selector CON-B Selector CON-B R203 22K
- Selector CON-C Selector CON-C R204 22K
- Zone Video A Zone Video A R201 22K
- Zone Video B Zone Video B R203 22K
- Zone Video C Zone Video C R204 22K
- REC 1 CON REC 1 CON

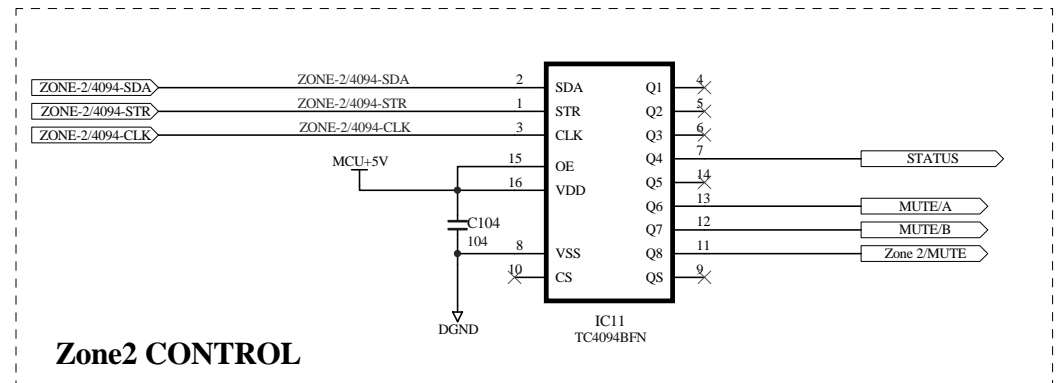
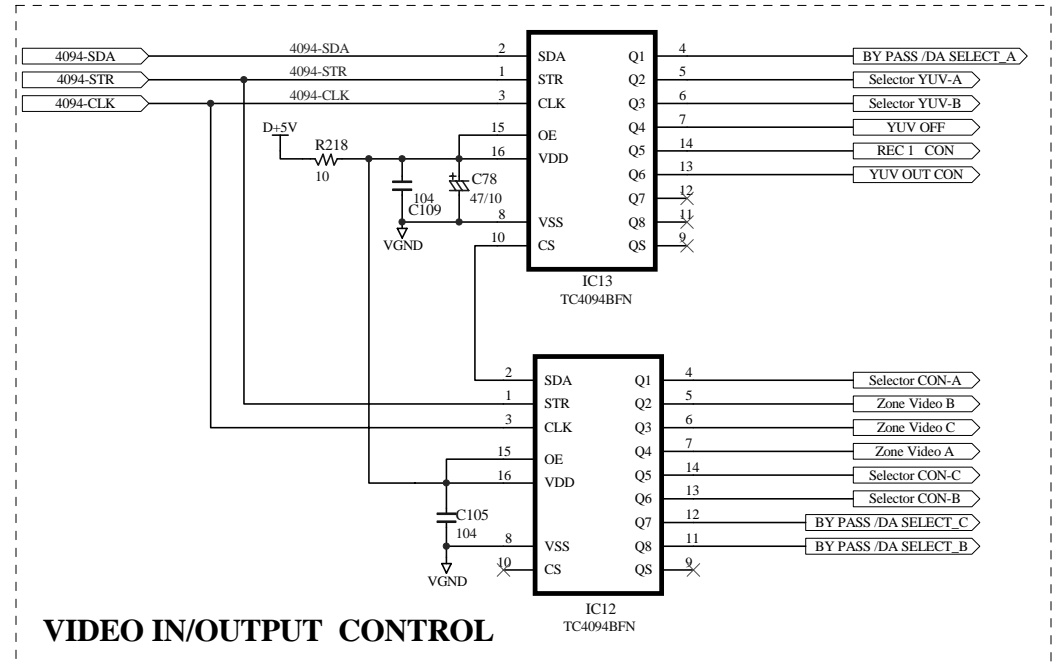
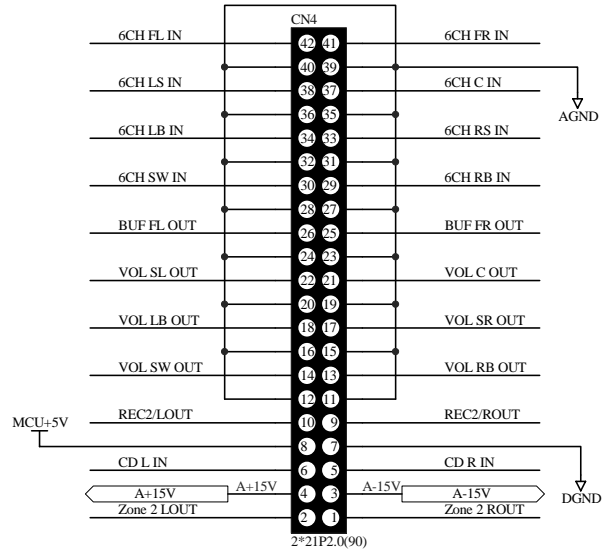
Video PCB Schematic



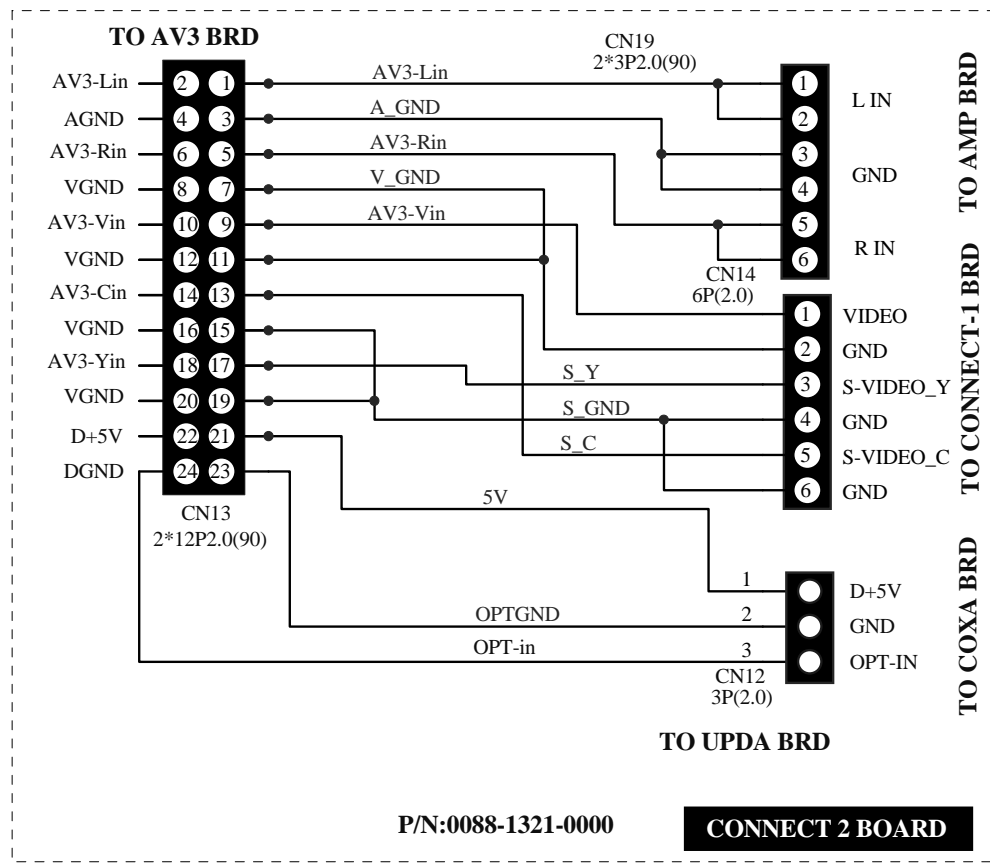
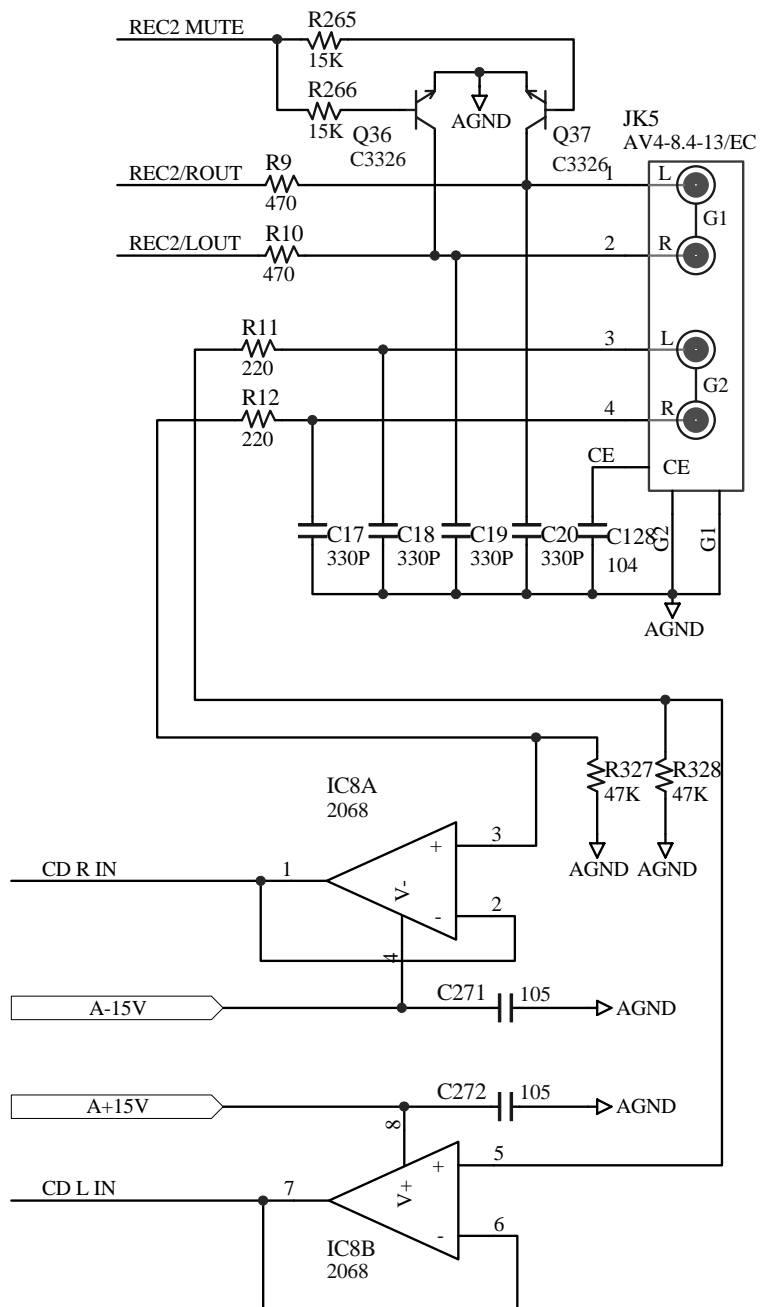
TO CONNECT BOARD



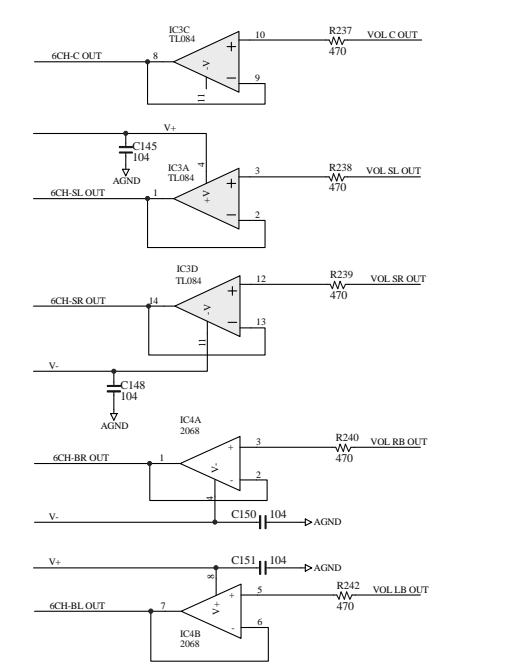
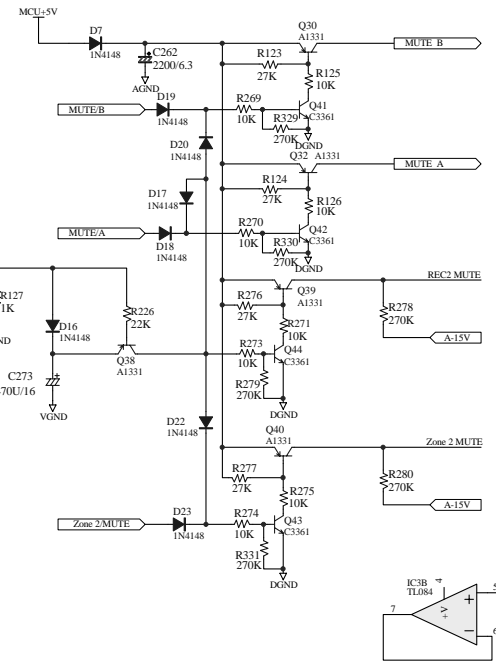
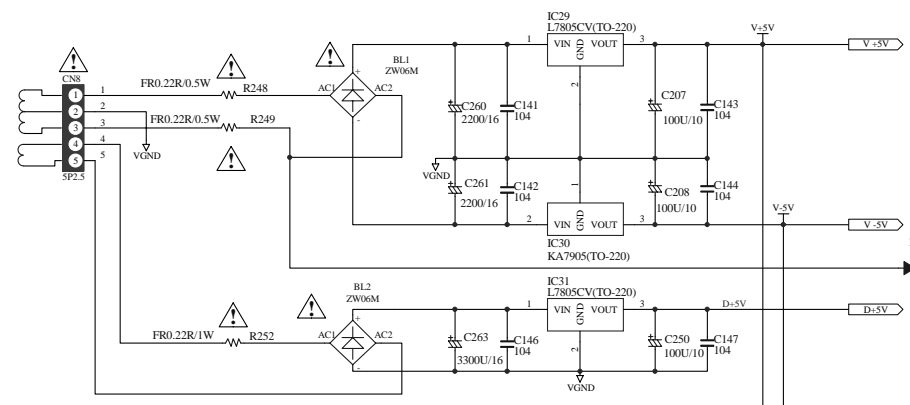
TO AUDIO DECODE



Video PCB Schematic



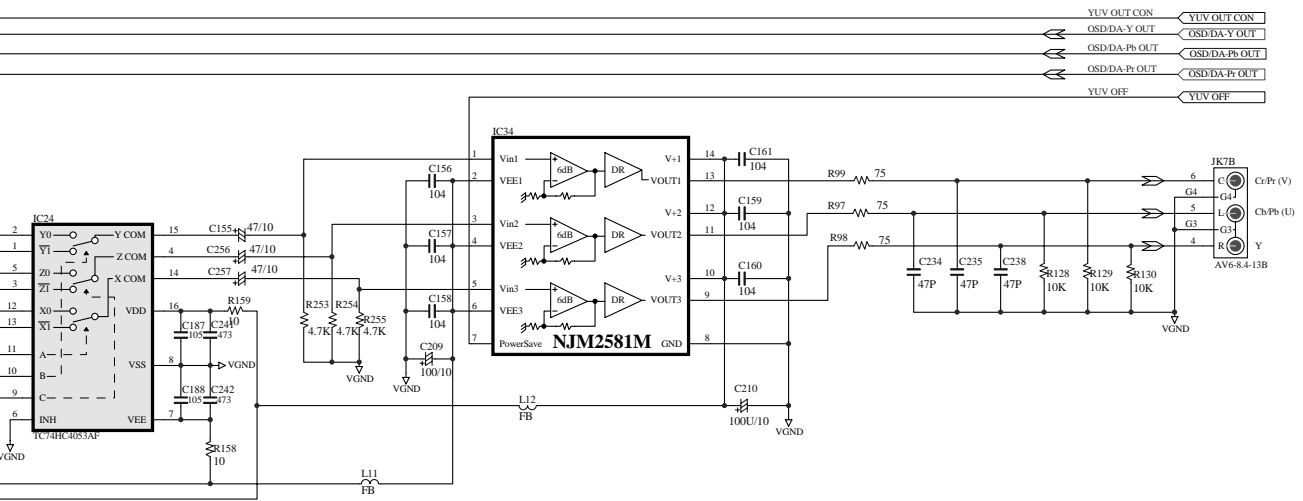
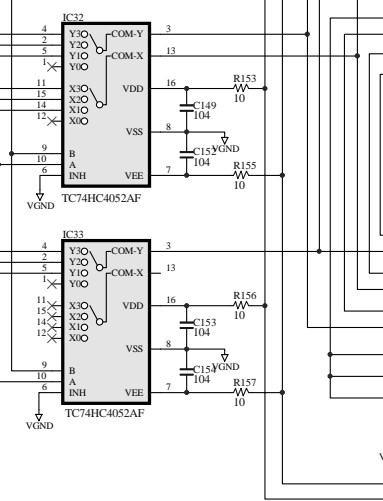
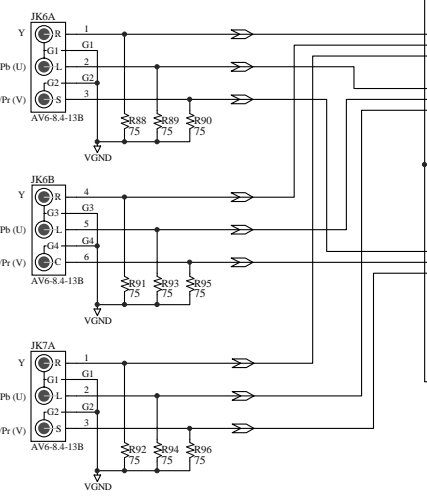
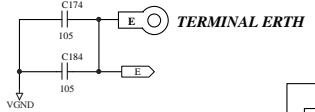
Video PCB Schematic



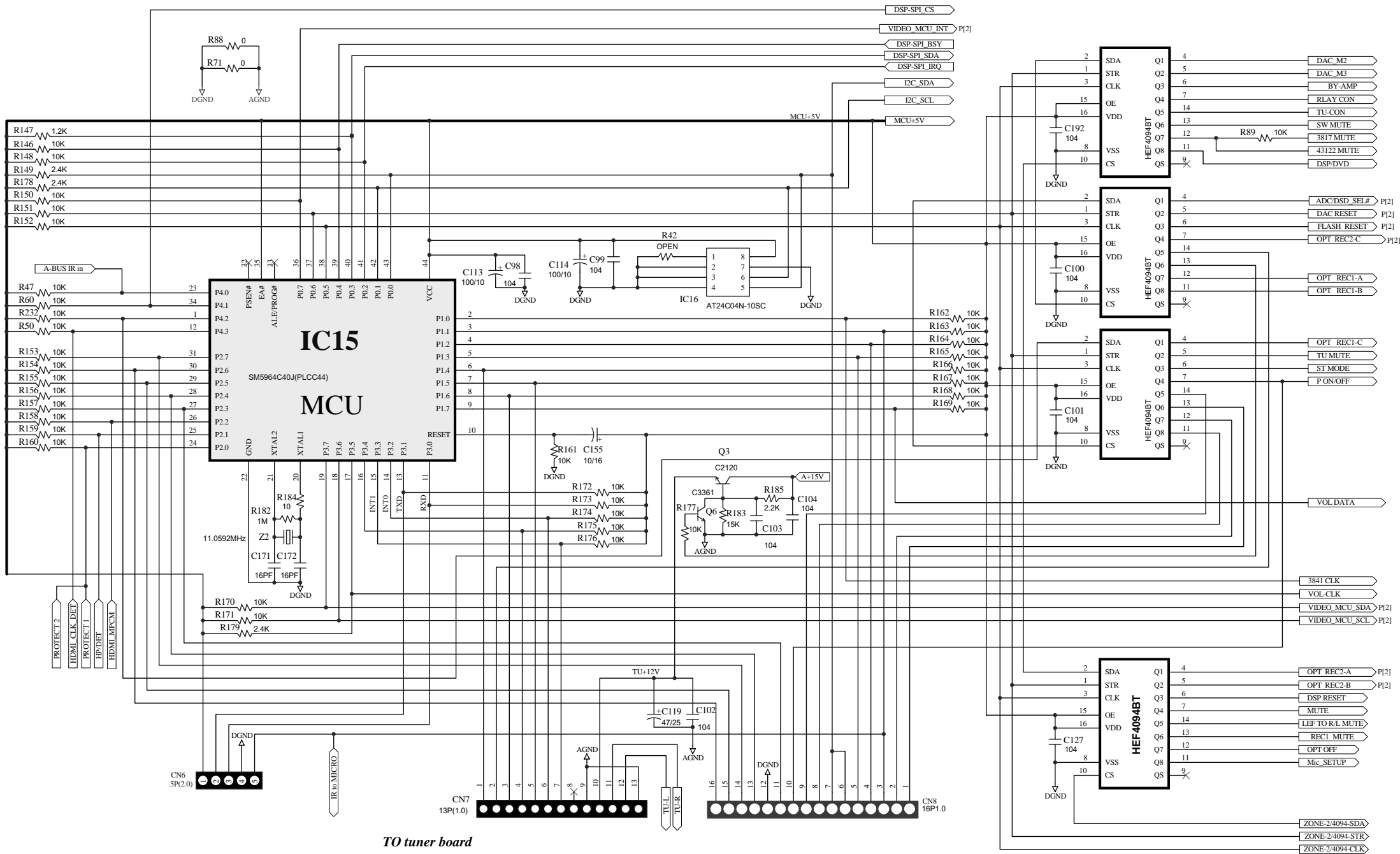
Video & S-Video Selector CON							
CON Pin	CH	DVD	Video 1	Video 2	REC 1	REC 2	Video 3
Selector CON-A	1	0	0	0	0	0	0
Selector CON-B	1	0	0	0	0	0	0
Selector CON-C	1	0	0	0	0	0	0

YUV Selector CON				
CON Pin	CH	DVD	Video 1	REC
Selector YUV-A	1	0	0	0
Selector YUV-B	1	0	0	0

S-VIDEO OUT Selector CON				
CON Pin	CH	BYPASS	OSD	Y/C
S-Video CON-B	1	0	0	0
S-Video CON-B	1	0	0	0



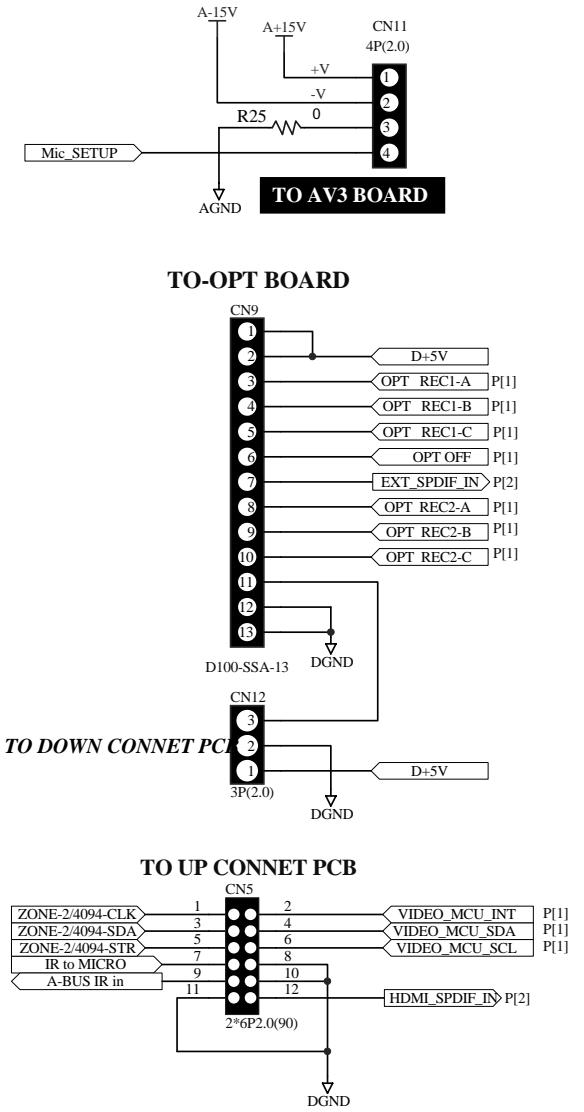
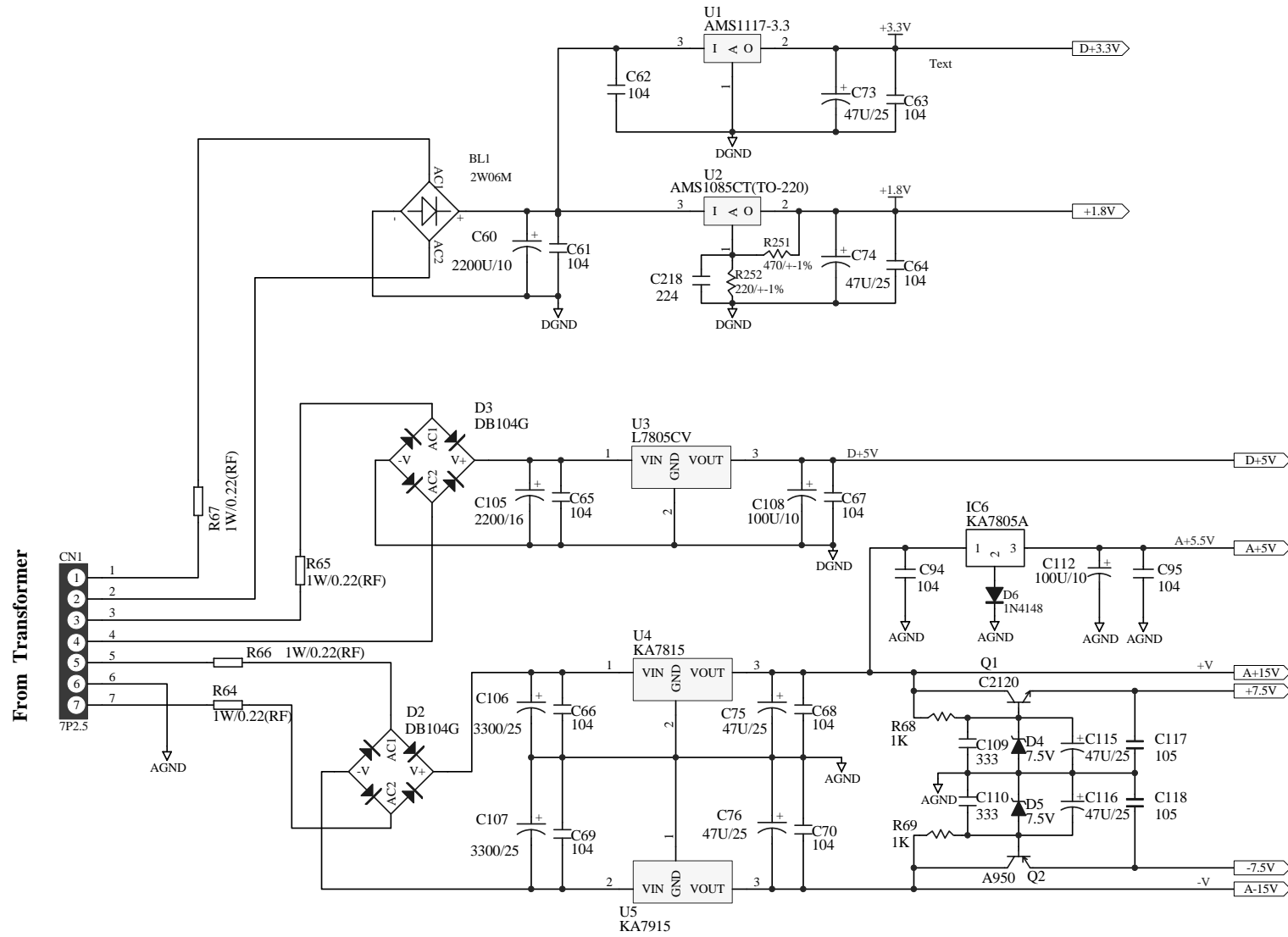
Decoder Schematic

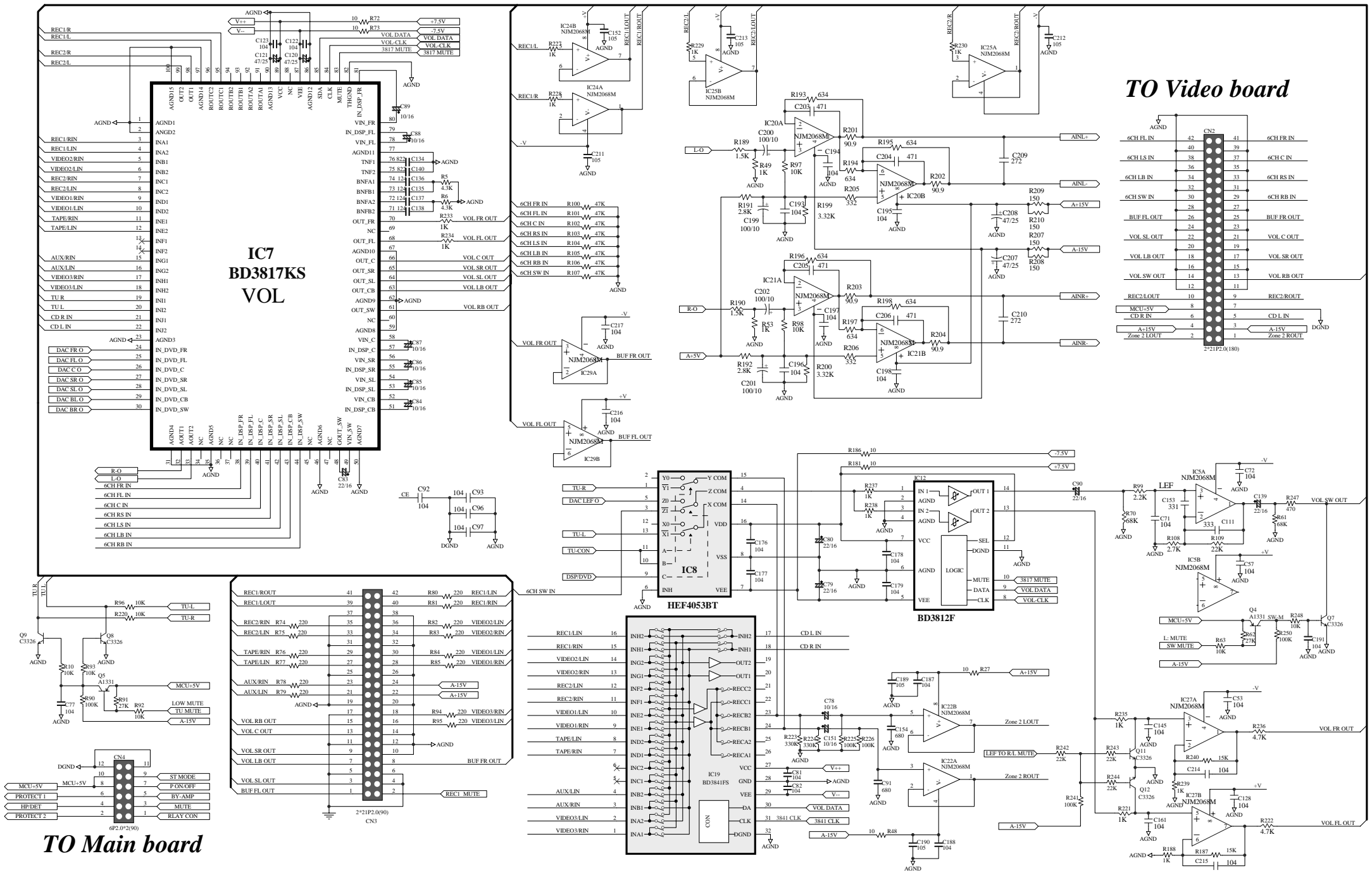


TO tuner board

TO display board

Decoder Schematic

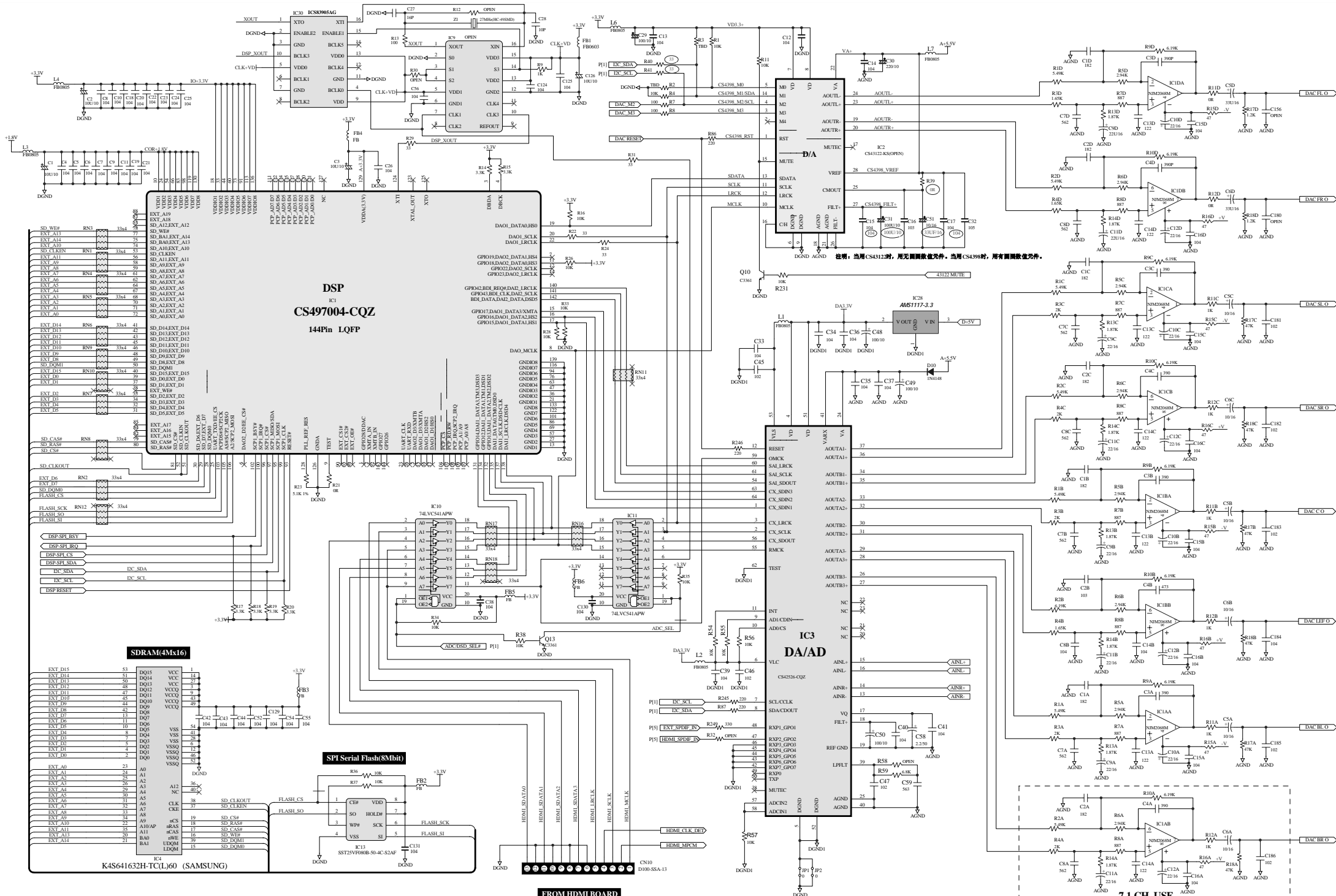




TO Video board

TO Main board

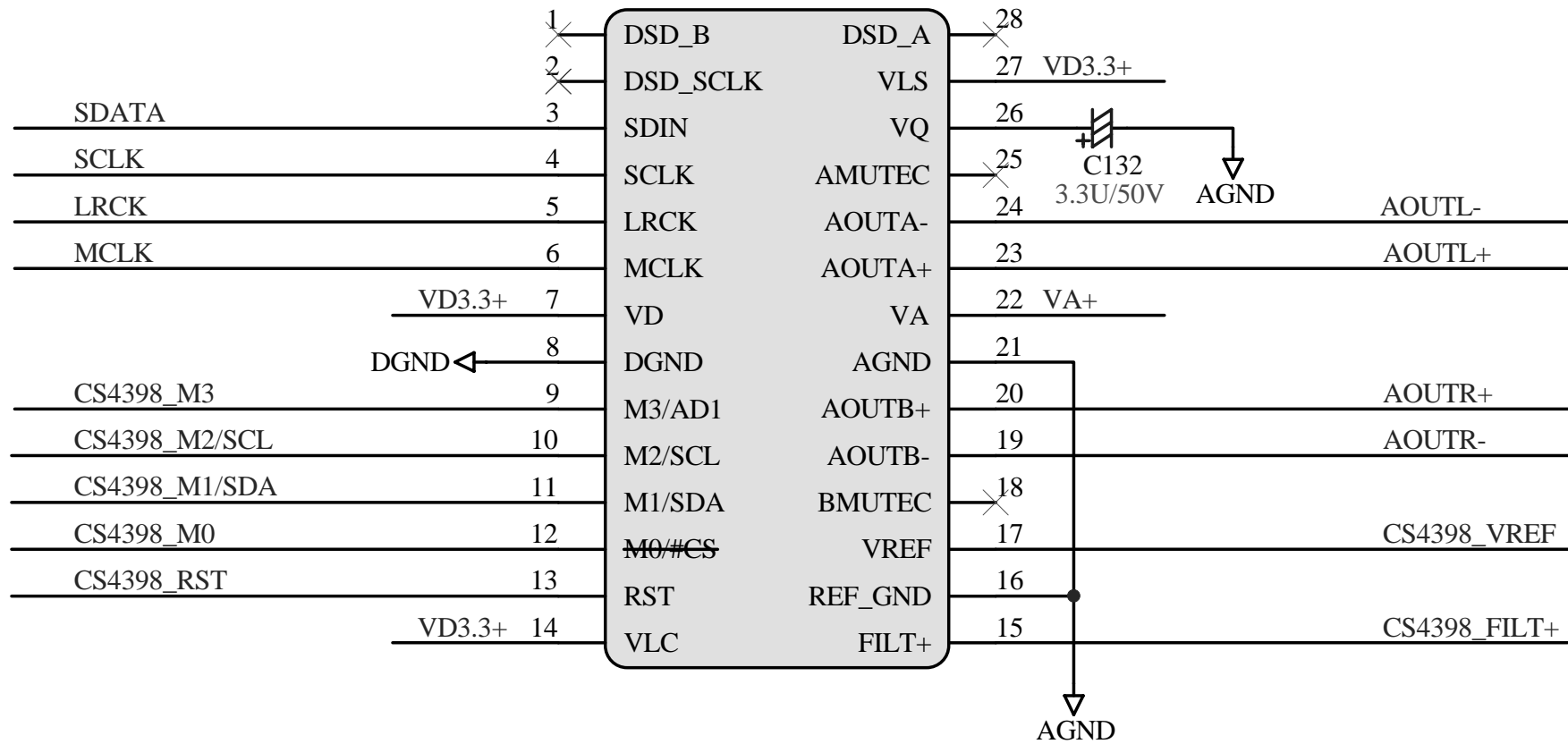
Decoder Schematic



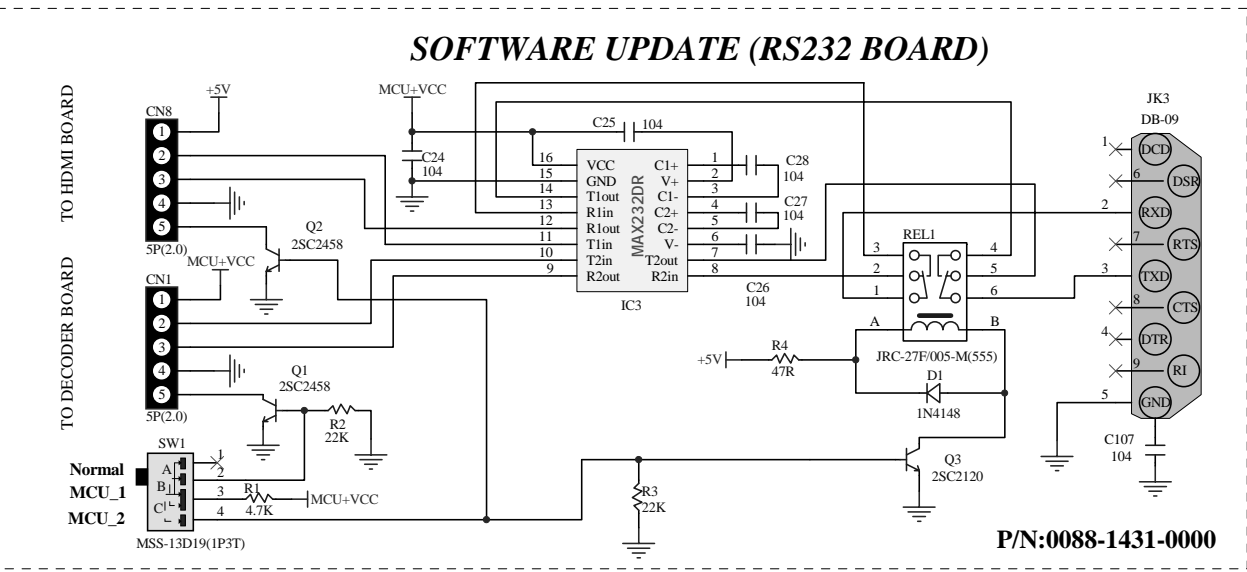
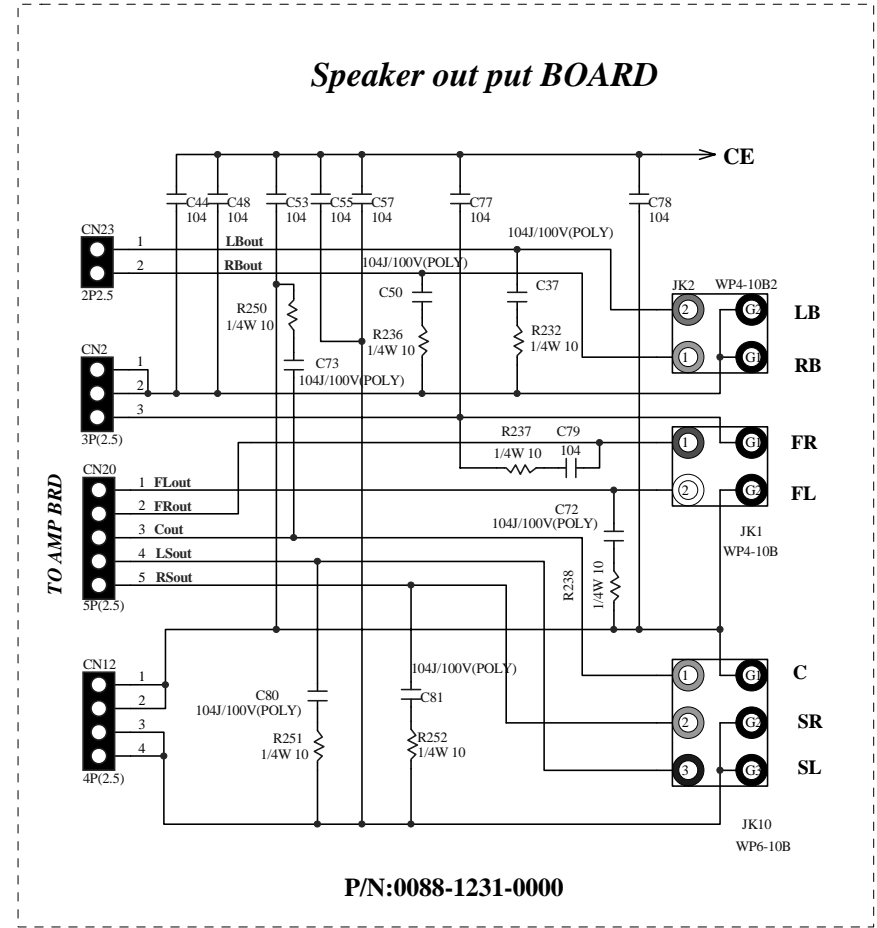
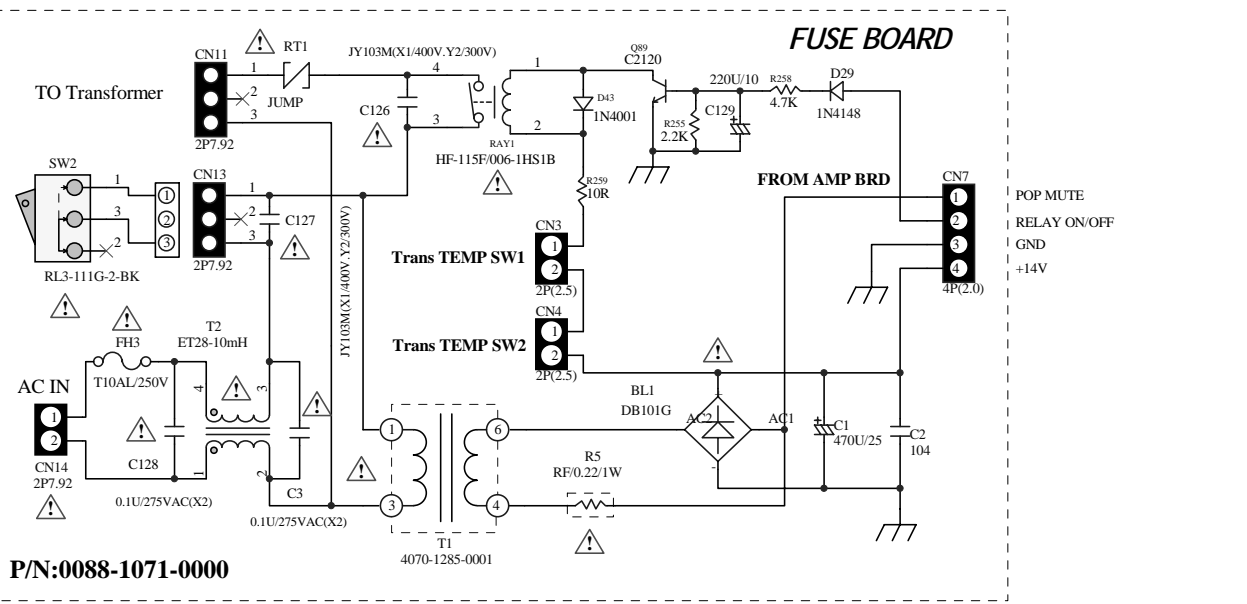
Decoder Schematic

IC14

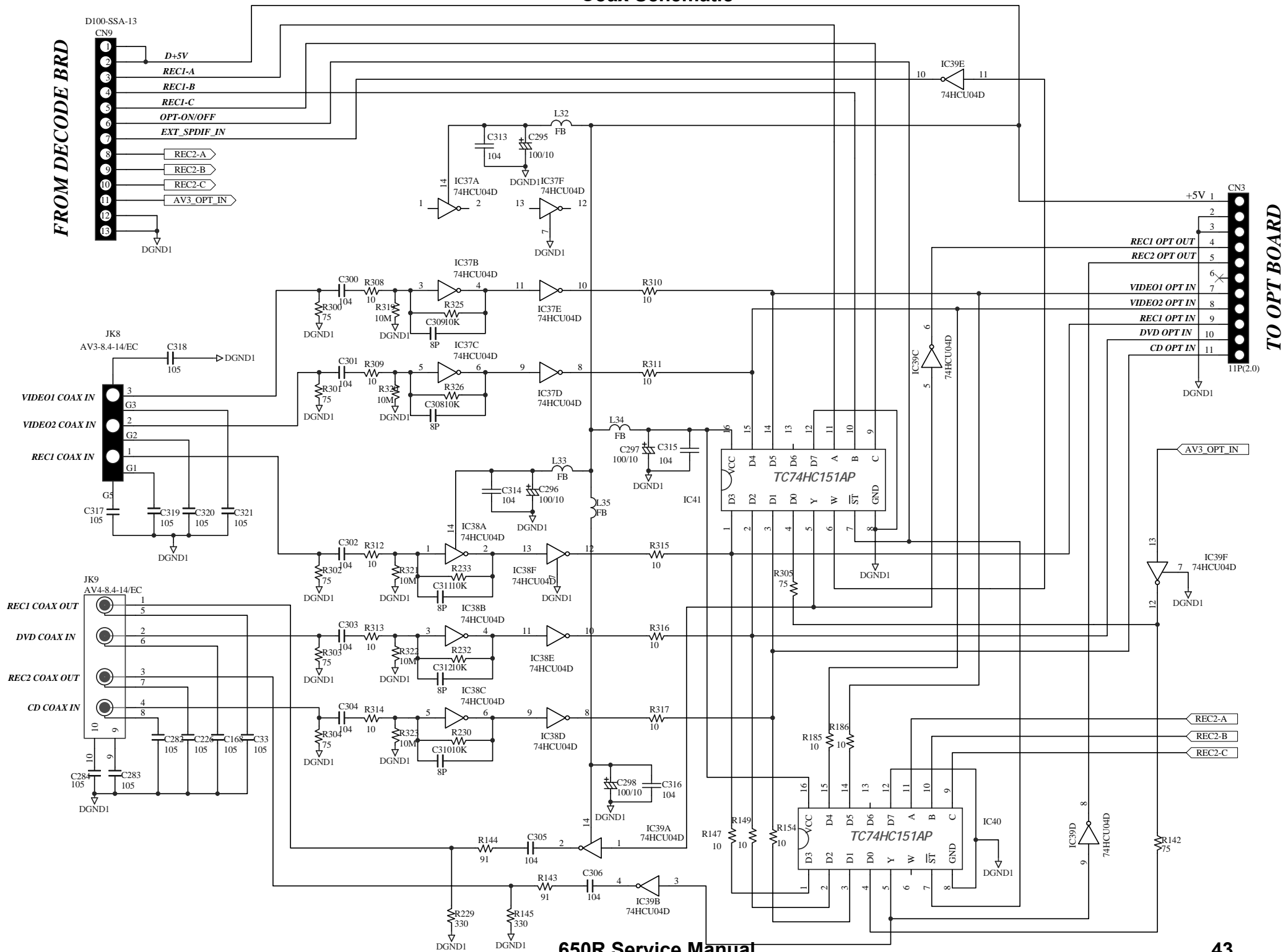
CS4398-CZZ



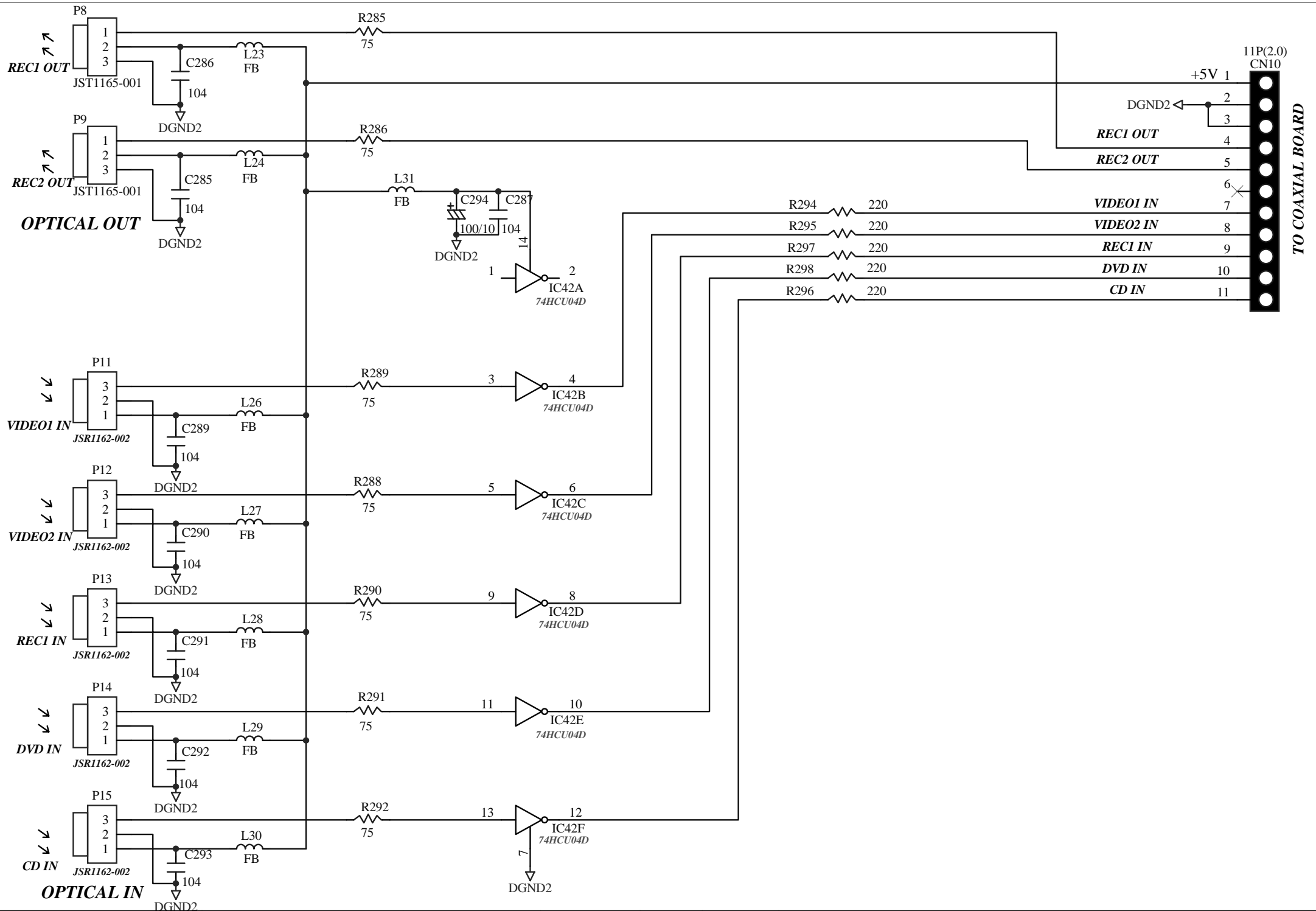
Fuse, Speaker and RS232 Schematic



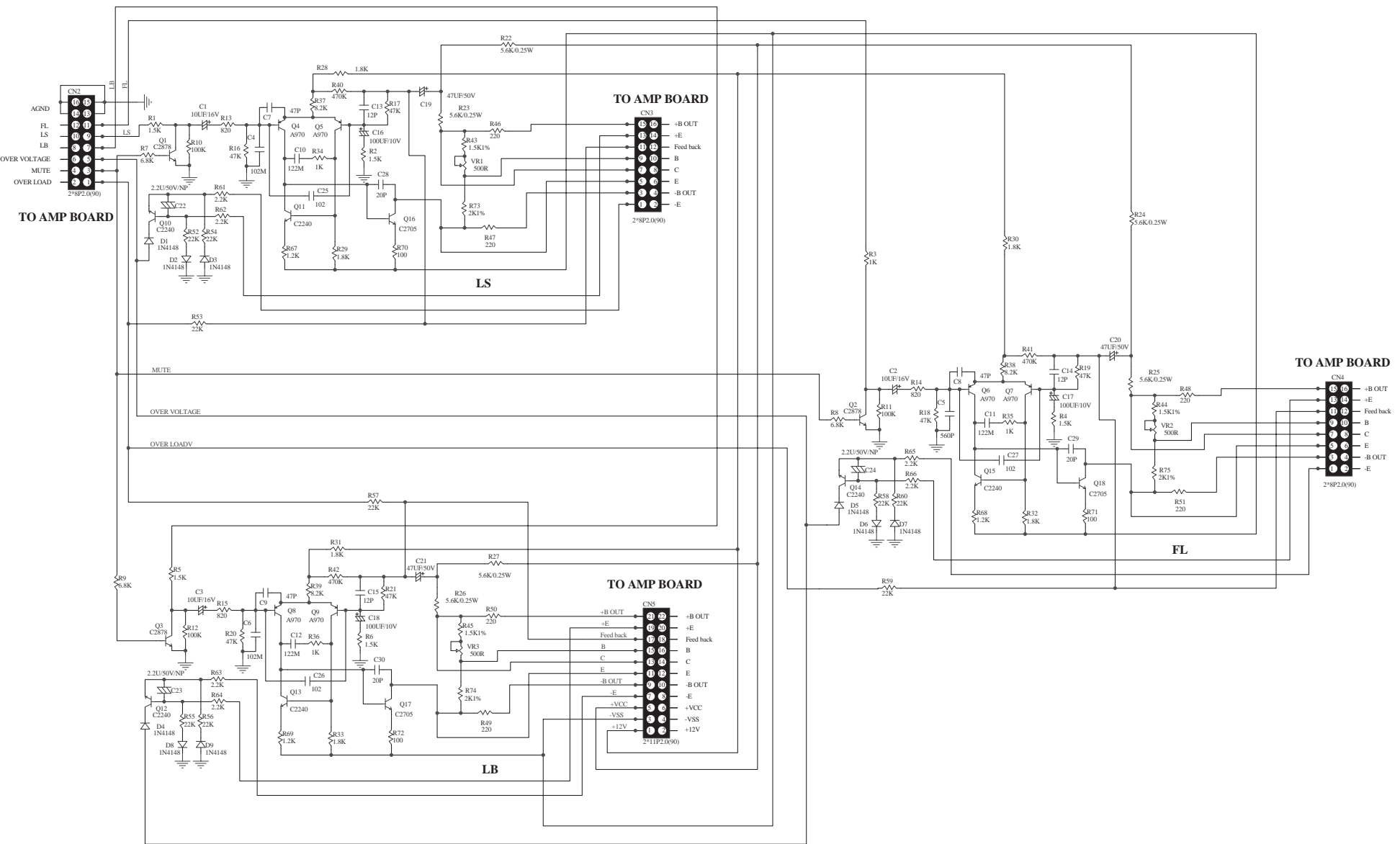
Coax Schematic



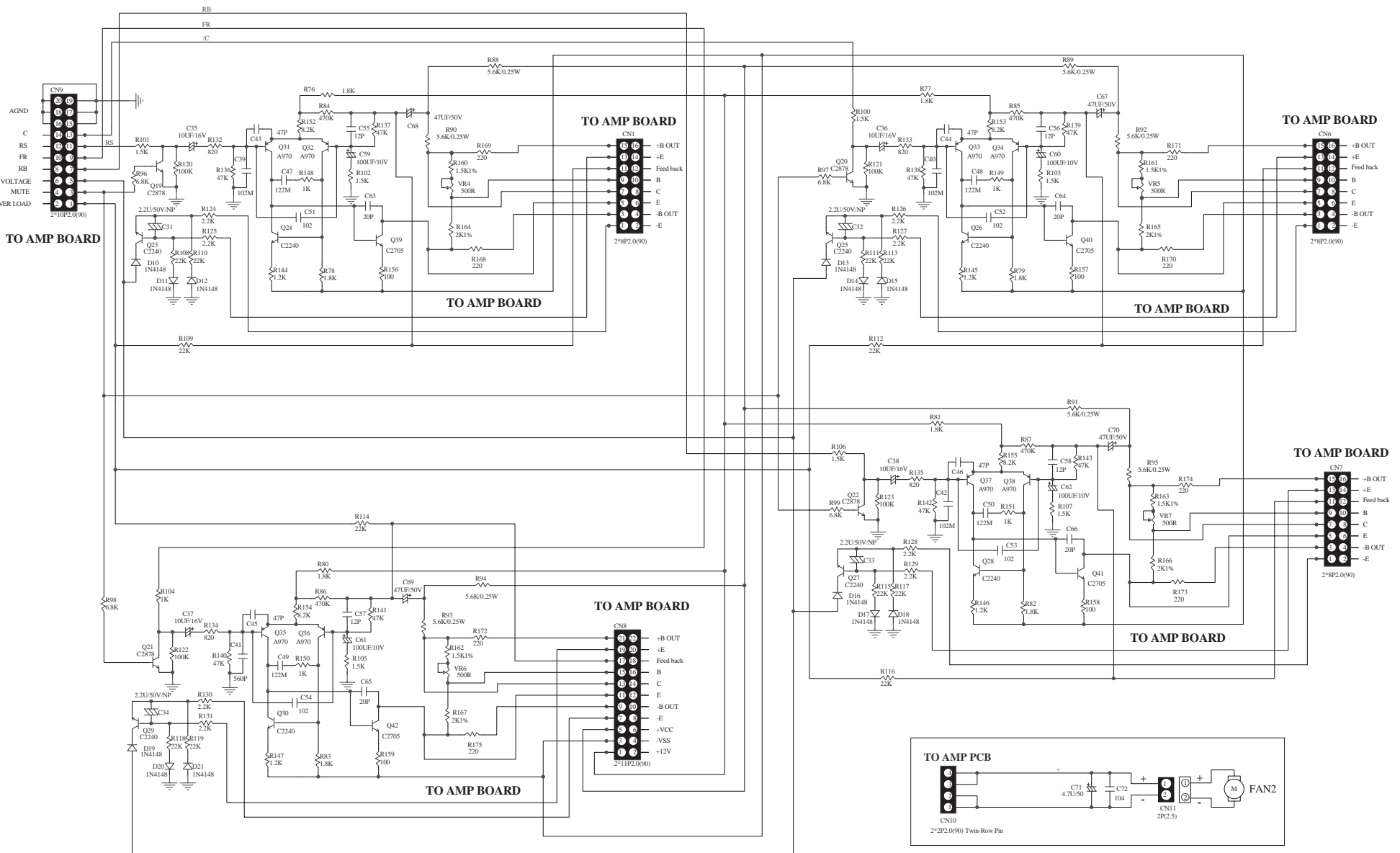
Optical Schematic



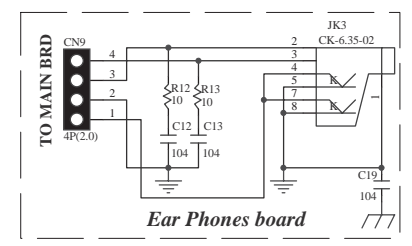
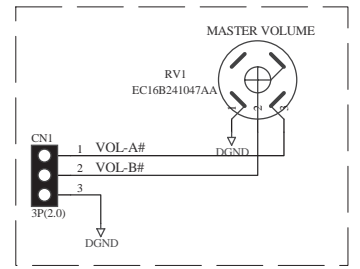
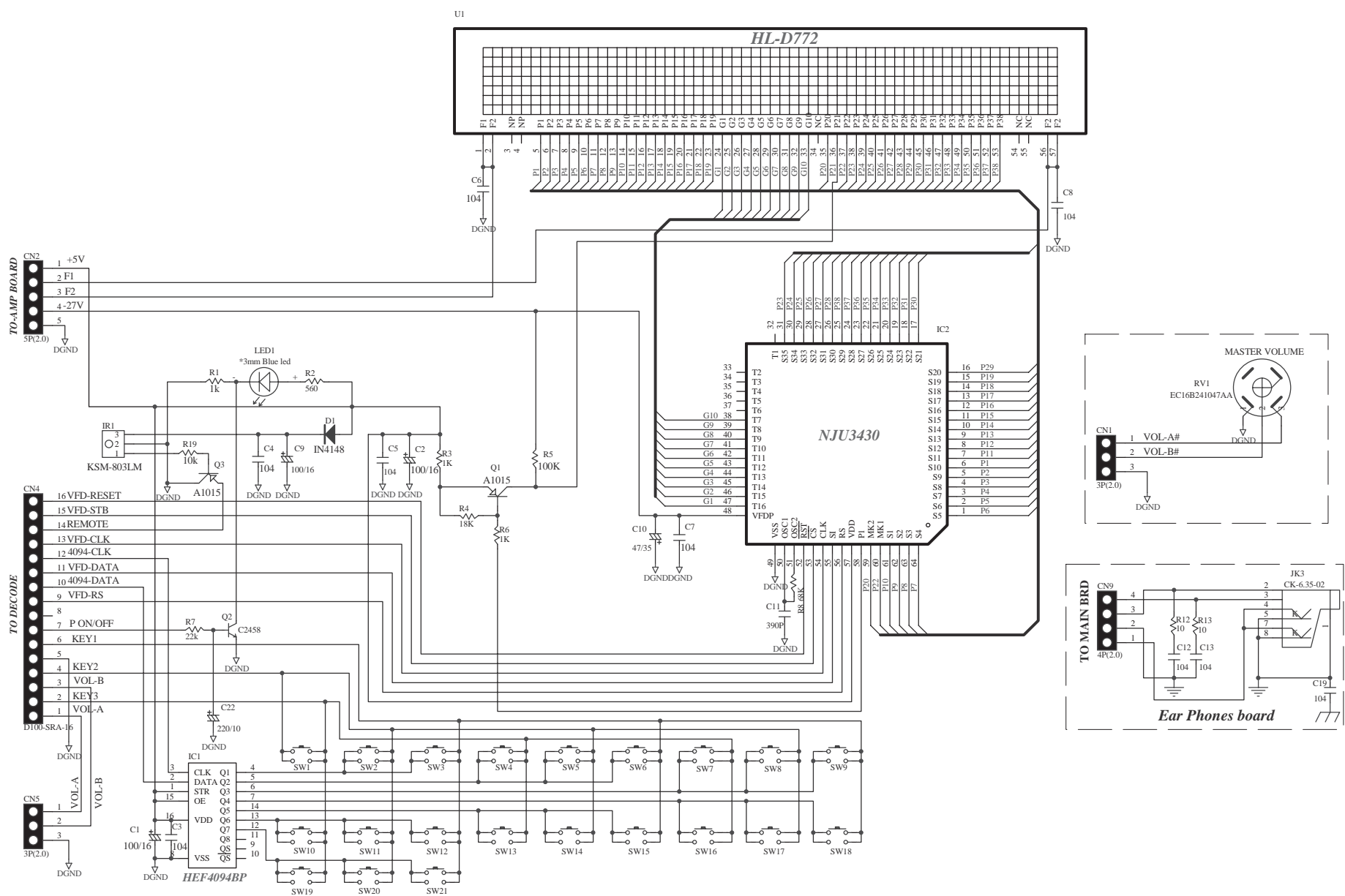
PAMP1 Schematic



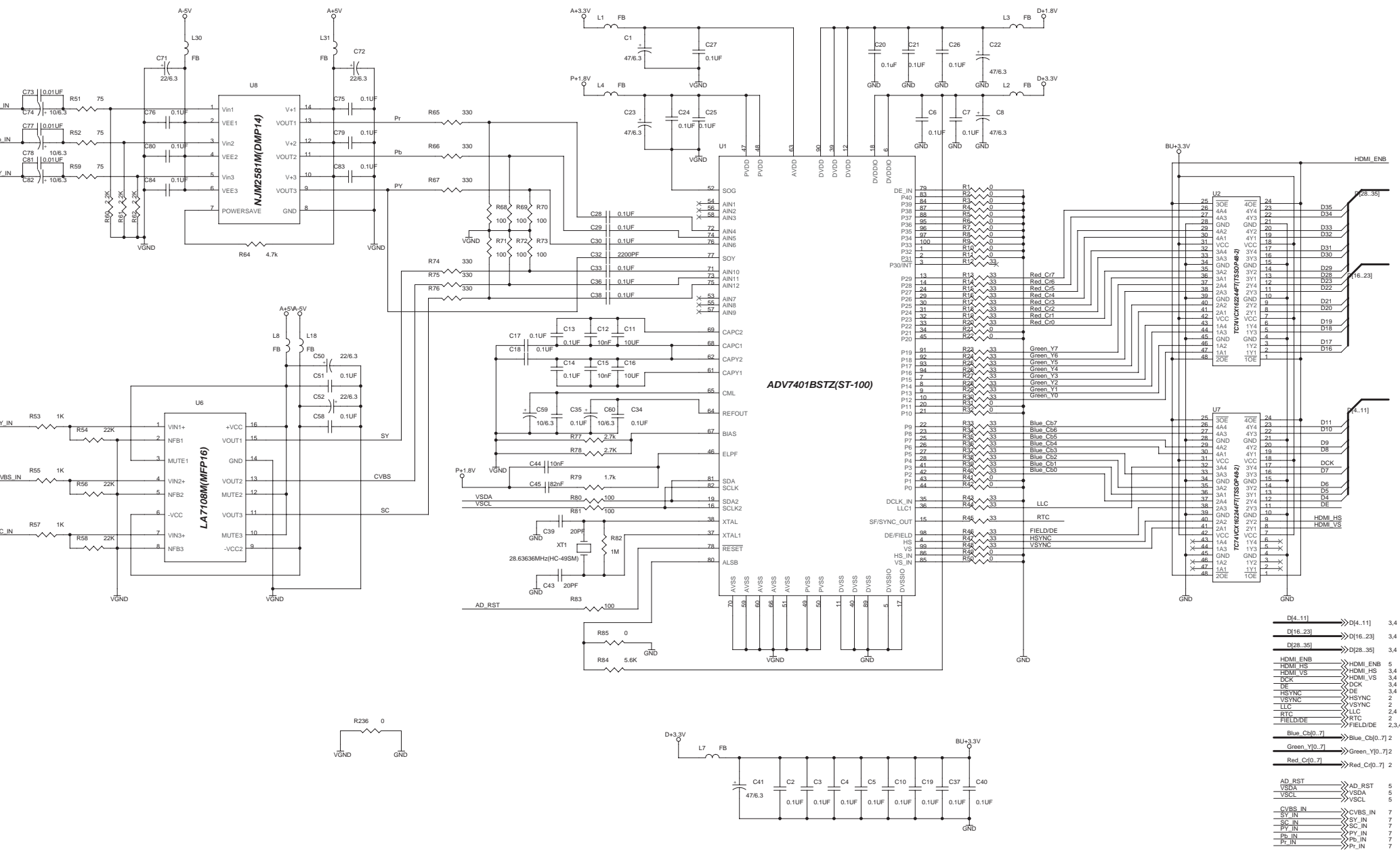
PAMP 2 Schematic



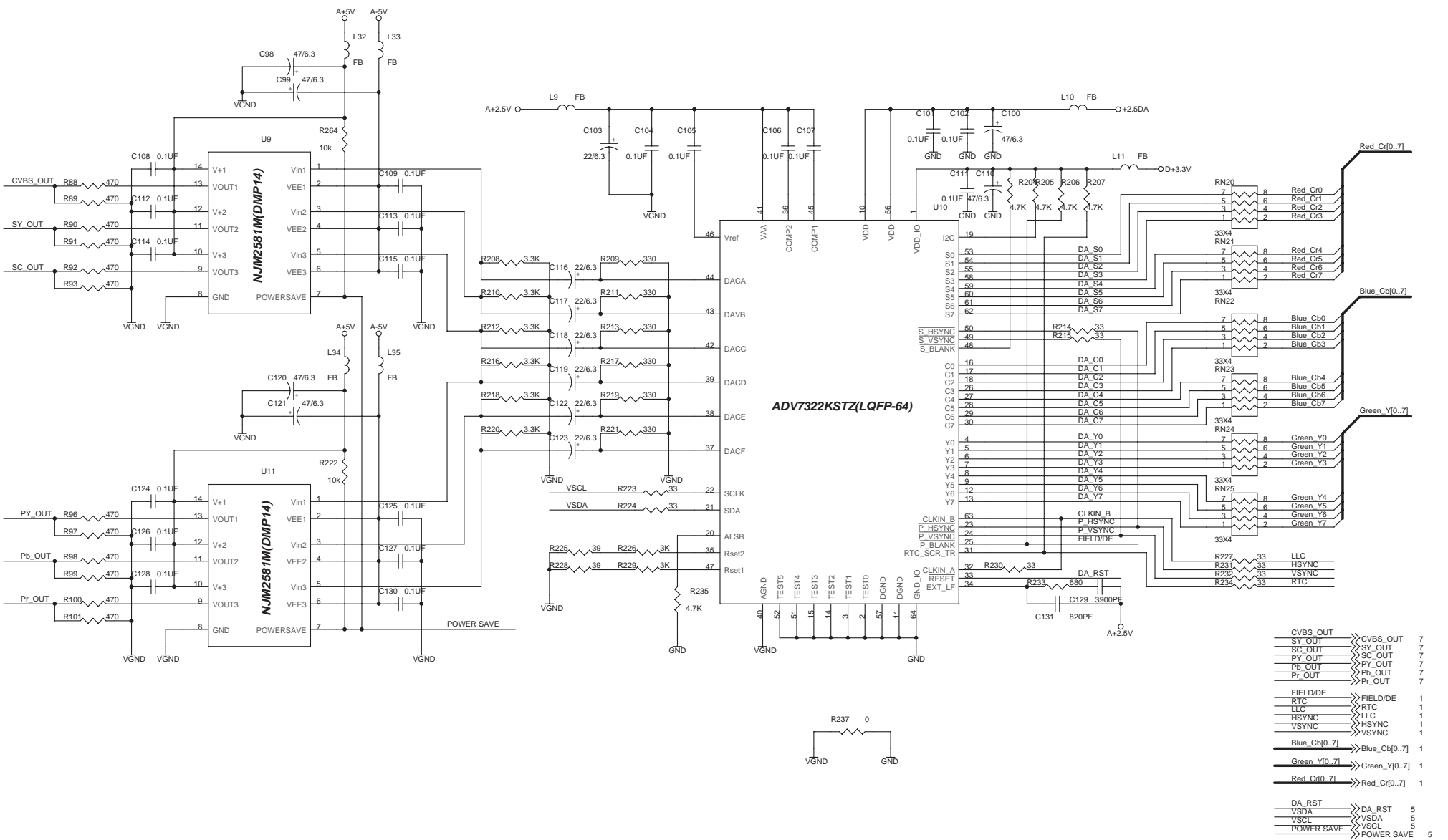
Display Schematic



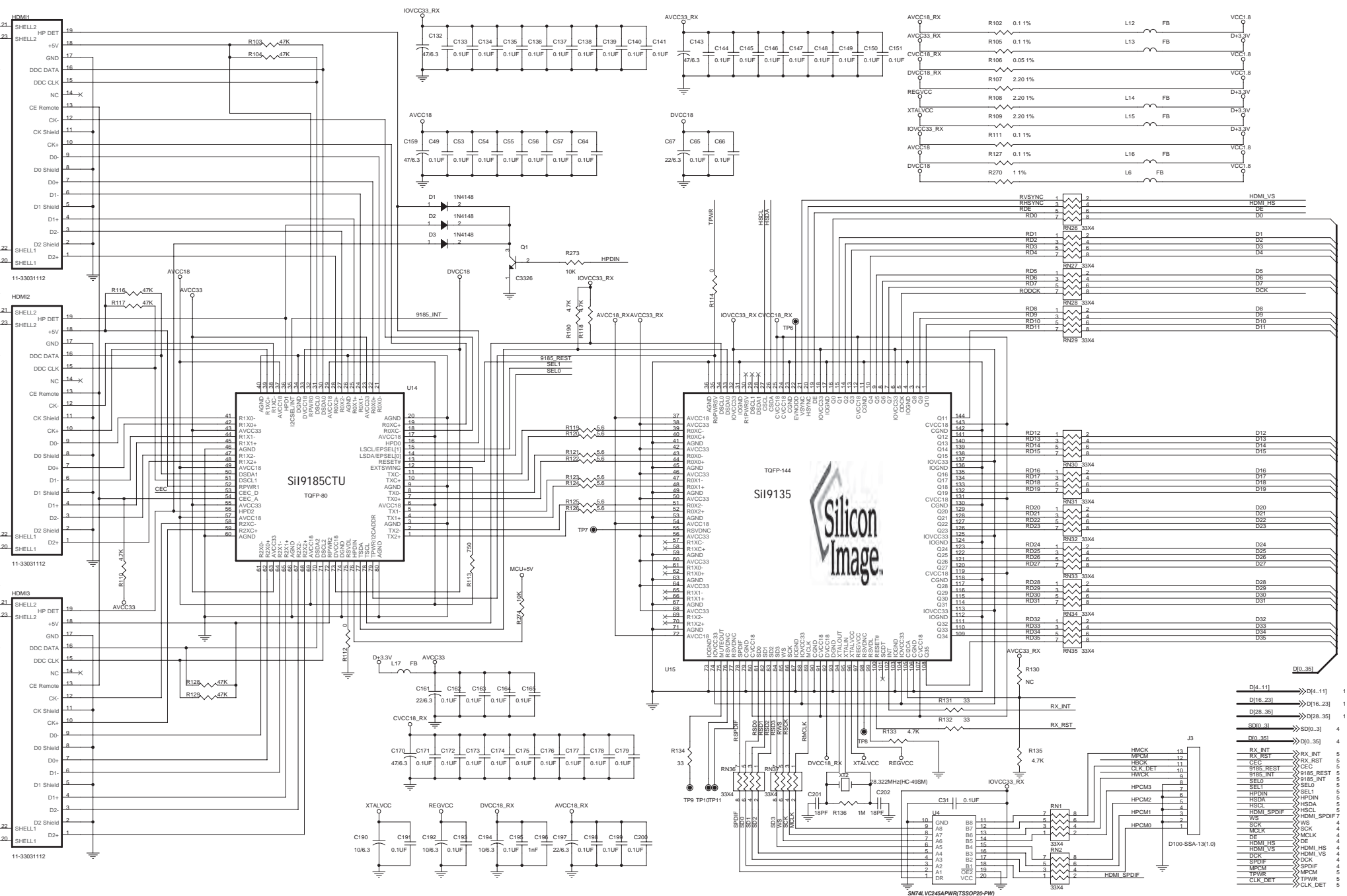
HDMI Schematic



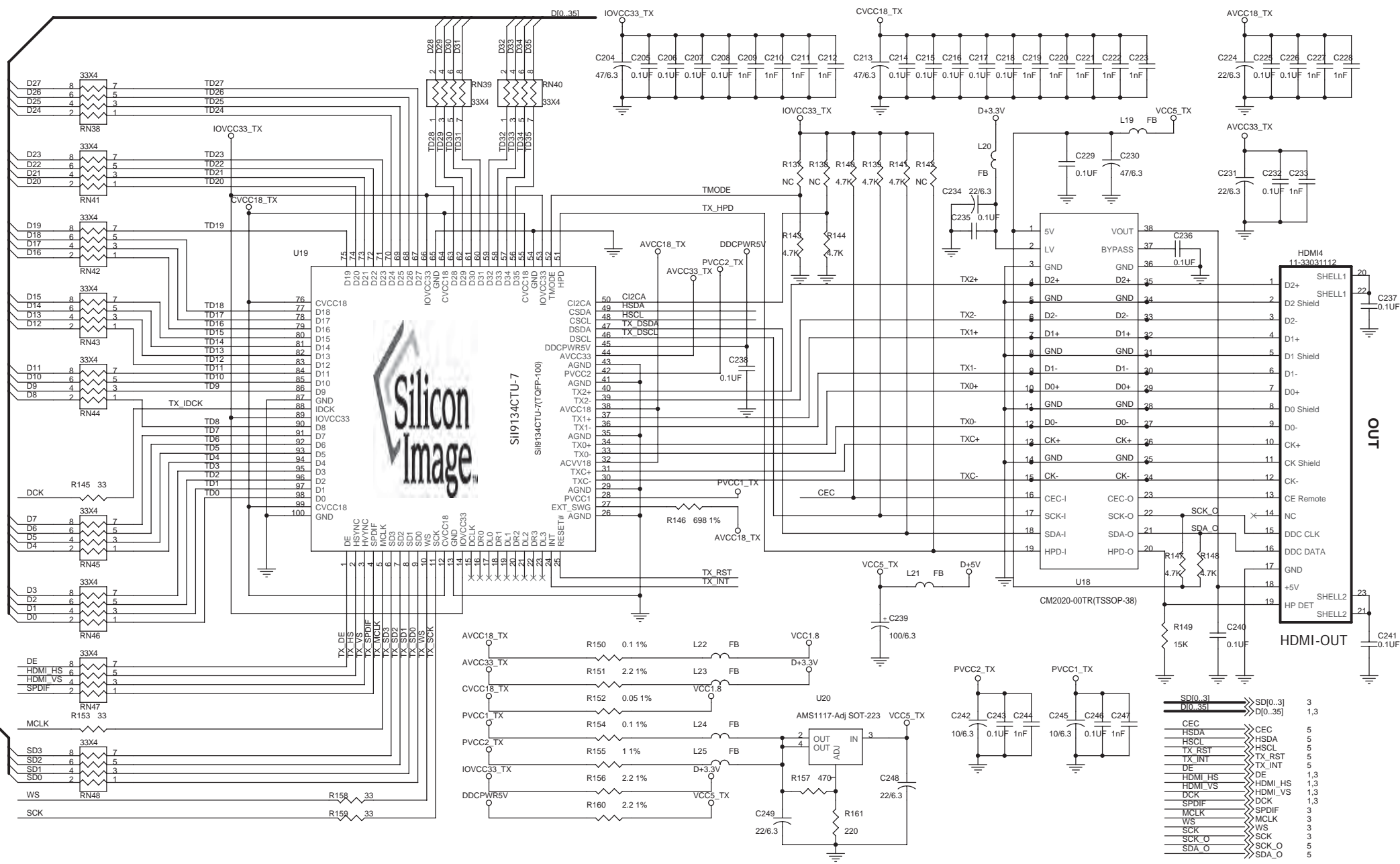
HDMI Schematic



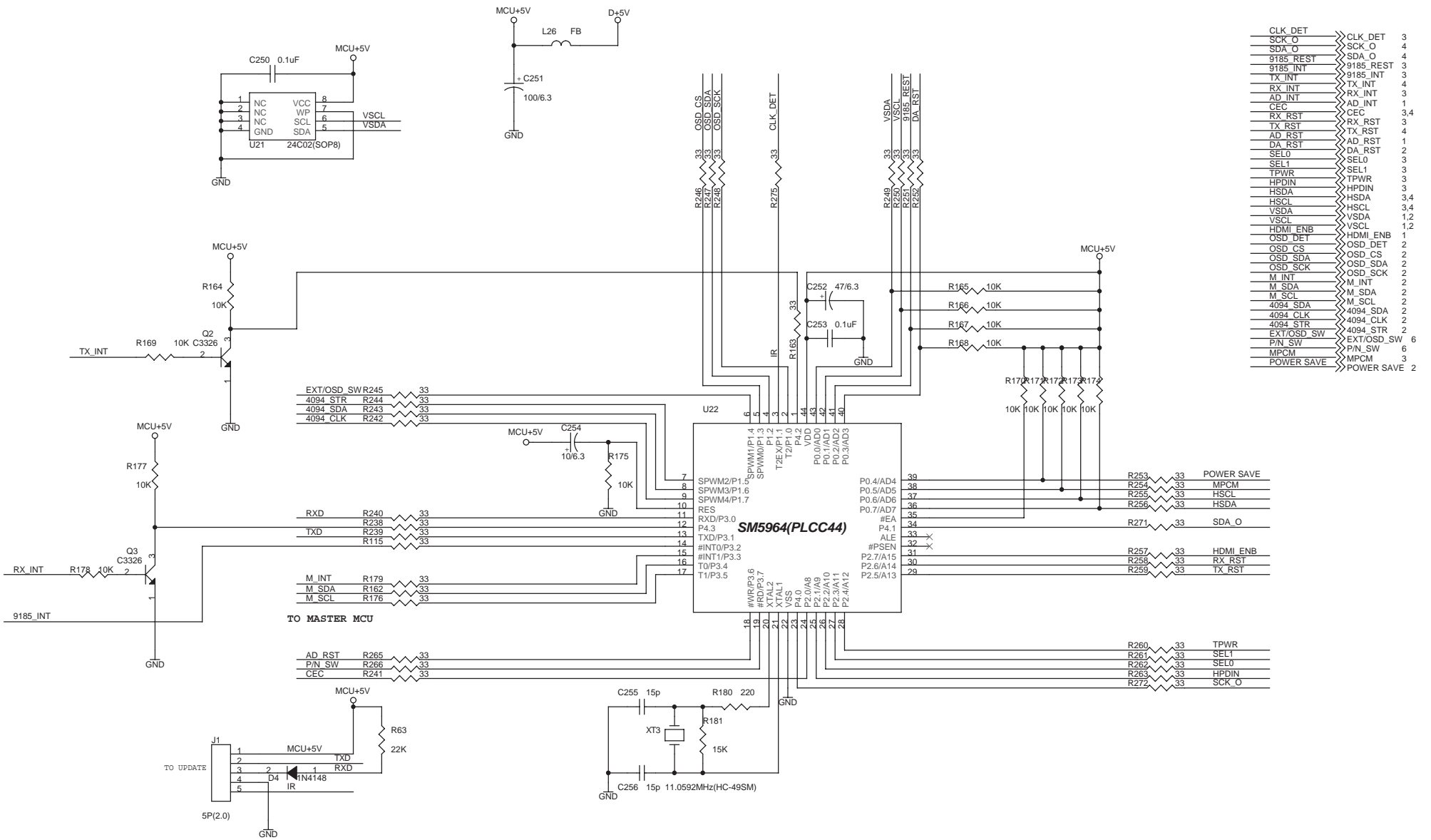
HDMI Schematic



HDMI Schematic

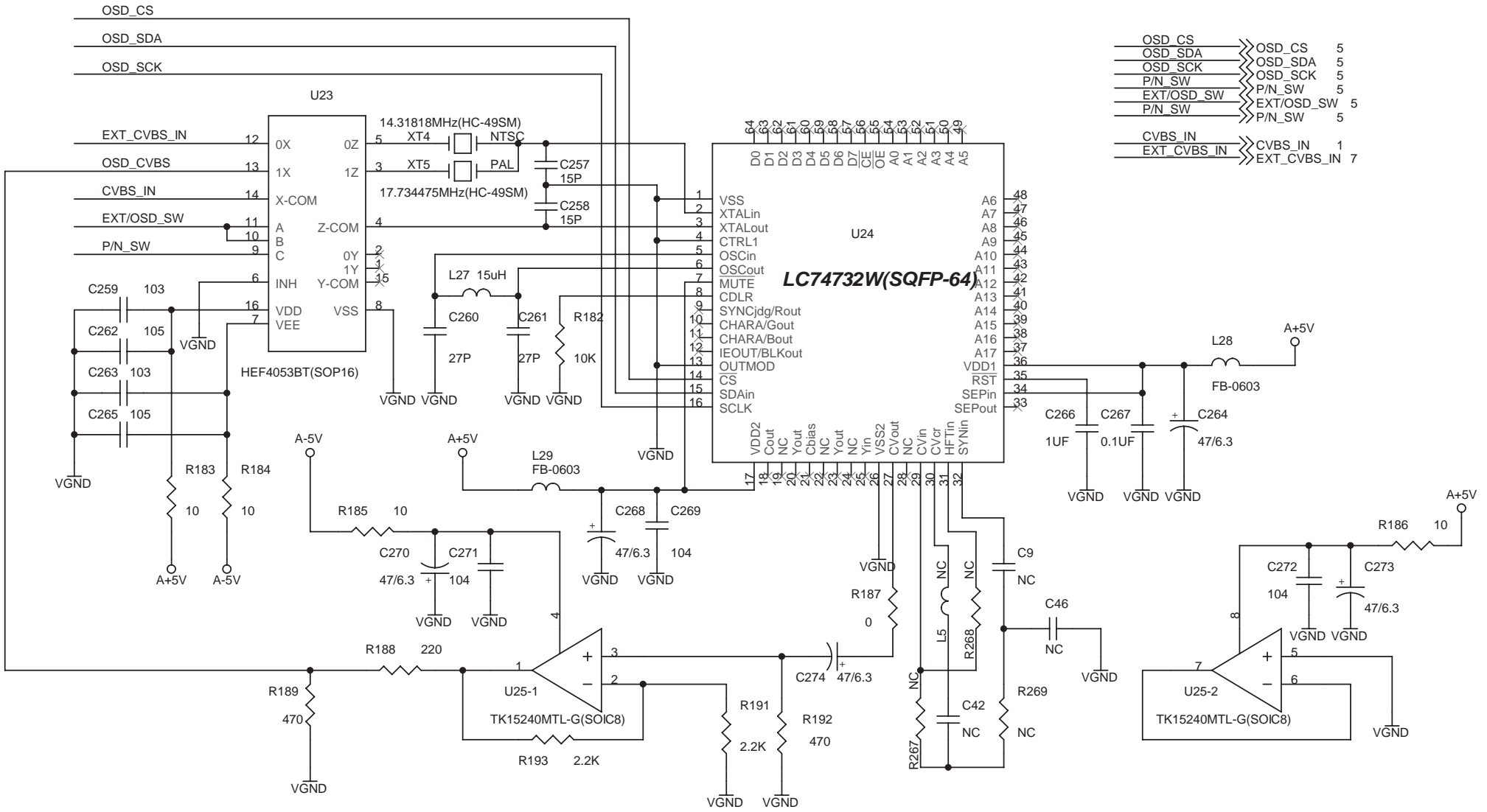


HDMI Schematic



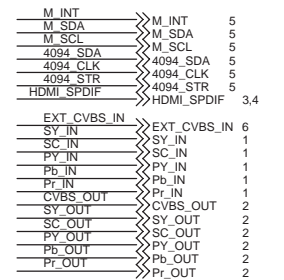
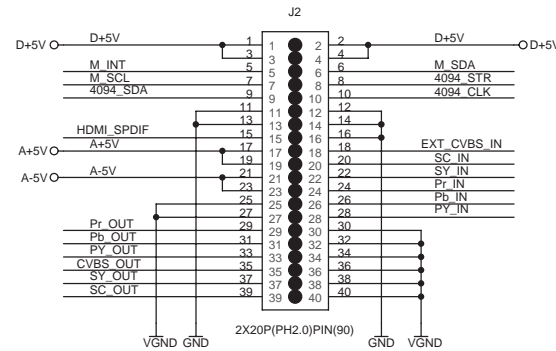
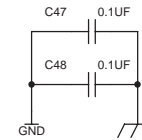
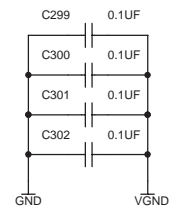
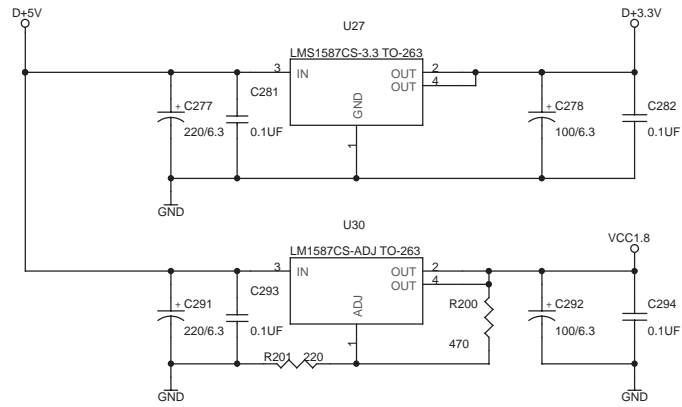
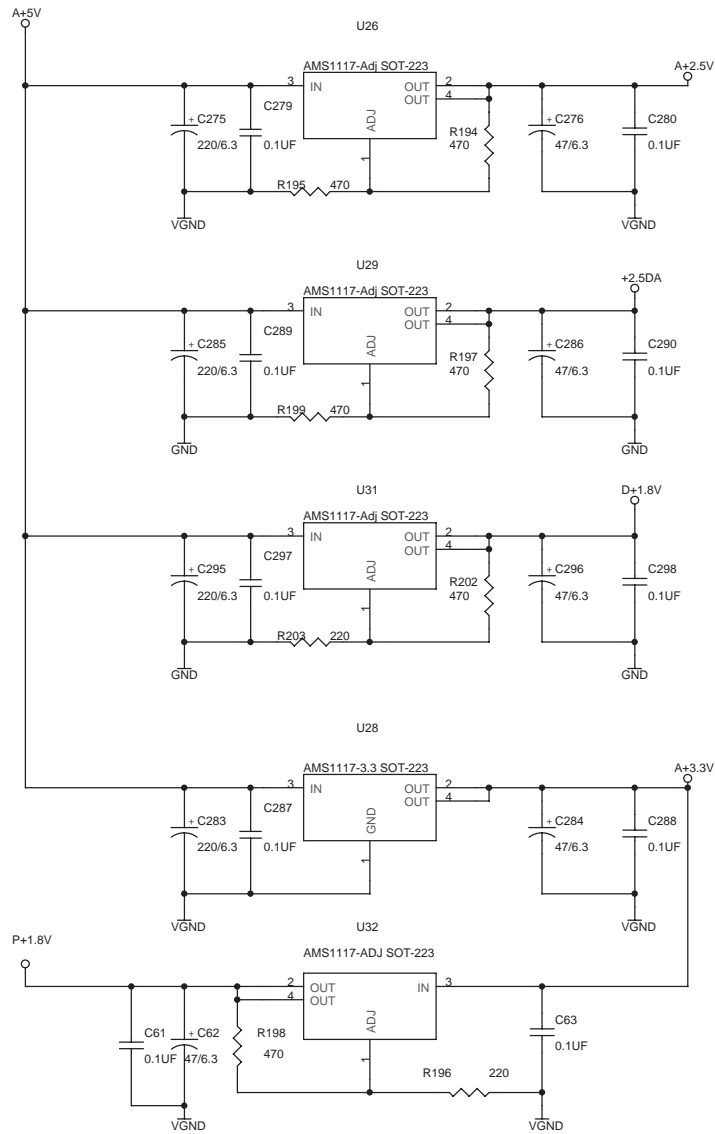
CLK_DET	CLK_DET	3
SCK_O	SCK_O	4
SDA_O	SDA_O	4
9185_REST	9185_REST	3
9185_INT	9185_INT	3
RX_INT	RX_INT	4
AD_INT	AD_INT	3
CEC	CEC	3,4
RX_RST	RX_RST	3
TX_RST	TX_RST	4
AD_RST	AD_RST	1
DA_RST	DA_RST	3
SELO	SELO	3
SEL1	SEL1	3
TPWR	TPWR	3
HPDIN	HPDIN	3
HSDA	HSDA	3,4
VSCL	VSCL	1,2
VSDA	VSDA	1,2
HDMI_ENB	HDMI_ENB	1
OSD_DET	OSD_DET	2
OSD_CS	OSD_CS	2
OSD_SDA	OSD_SDA	2
OSD_SCK	OSD_SCK	2
M_INT	M_INT	2
M_SDA	M_SDA	2
M_SCL	M_SCL	2
4094_SDA	4094_SDA	2
4094_CLK	4094_CLK	2
4094_STR	4094_STR	2
EXT/OSD_SW	EXT/OSD_SW	6
P/N_SW	P/N_SW	6
MPCM	MPCM	3
POWER_SAVE	POWER_SAVE	2

HDMI Schematic



OSD_CS	OSD_CS	5
OSD_SDA	OSD_SDA	5
OSD_SCK	OSD_SCK	5
P/N_SW	P/N_SW	5
EXT/OSD_SW	EXT/OSD_SW	5
P/N_SW	P/N_SW	5
CVBS_IN	CVBS_IN	1
EXT_CVBS_IN	EXT_CVBS_IN	7

HDMI Schematic



Service Parts List

			Assembly parts:
AP part	exploded diagram	Factory part	Description
PF239	14	0088 1190 0000	VOLUME PCB 1
PF233	23	0088 1010 0000	DISPLAY PCB
PF228	44	0088 1001 0000	AMP PCB 1
PF240	45	0088 1281 0001	DECODE PCB 1
PF230	46	0088 1371 0000	PAMP2 PCB 1
PF229	47	0088 1361 0000	PAMP1 PCB 1
PF241	48	0088 1561 0000	CONNECT PCB 1
PF232	51	0088 1331 0000	VIDEO PCB 1
PF196	53	0064 1400 0003	A-BUS PCB 1 (Same as 640R)
PF242	54	0088 1391 0000	OPT. PCB 1
PF243	55	0088 1381 0000	COAX PCB 1
PF231	56	0088 1460 0000	HDMI PCB 1
PF053	57	9800 0003 0001	TUNER BOX 1 EU (same as 640R/540R)
PF054	57	9800 0003 0101	TUNER BOX 1 CU (same as 640R/540R)
PF244	58	0088 1431 0000	RS232 PCB
PF236	78	6141 110D 0000	TOP COVER (silver)
PF237			TOP COVER (black)
PF234			650R front (metalwork) panel silver color
PF235			650R front (metalwork) panel black color
PY1546	not shown	9802 065000E001	650R remote control

AP part		Factory part	Abus PCB components:
PF245		1007 4000 1928	74AC00SC NAND gates IC5
PF246		1019 7812 0800	KA7812 TO-220 IC3
PF247		1022 8170 7012	LTV817A TO-220 IC4
PF037		1031 2068 0100	NJM2068M SOP8 IC1 IC2
PF279		1111 3310 4100	2SA1331 SC-59 Q4 Q5 Q6
PF281		1133 3610 6100	2SC3361 SC-59 Q1 Q2 Q3

AP part		Factory part	Amp PCB components
PF248		1001 1085 0800	AMS1085CT REGULATOR IC1
PF249		1000 3930 4313	LM393M IC2
PF250		1031 2068 1300	NJM2068M IC3 IC4 IC5
PF147		1110 9700 0162	2SA970 Q14
PF251		1111 0150 0172	2SA1015 TO-92 Q11 Q19 Q38
PF106		1111 8370 0000	2SA1837A-Y Q7 Q28 Q44 Q58 Q59 Q70 Q79
PF105		1111 9430 0150	2SA1943 Q9 Q31 Q49 Q61 Q62 Q72 Q81
PF252		1131 8150 0172	2SC1815 TO-92 Q1
PF253		1132 1200 0162	2SC2120 TO-92 Q22
PF254		1132 2350 0162	2SC2235 TO-92MOD Q4 Q16
PF255		1132 4580 0172	2SC2458 TO-92 Q12 Q13 Q15 Q17 Q20 Q87
PF287		1132 8780 0112	2SC2878 TO-92 Q2 Q3 Q5 Q18 Q86
PF107		1134 7930 0000	2SC4793A-Y Q8 Q29 Q30 Q45 Q60 Q71 Q80
PD149		1 135 2000 0150	2SC5200 Q10 Q32 Q33 Q48 Q63 Q82 Q84
PF256		1141 9530 0400	2SD1953 Q6 Q26 Q27 Q43 Q57 Q69 Q78
PF257		4712 2000 1207	HJR1-2C L-12V RELAY K5
PF026		4712 0000 4203	JZC-42F RELAY K3 K4 K1 K2
PF110		1360 7025 2000	1 MB252 BRIDGE RECTIFIER BL1
PF258	27	4009 1015 0004	Main power Transformer 230V 50Hz
PF259	27	4009 1011 0000	Main power Transformer 120V 60Hz
PF260		4070 1285 0001	1 Standby Transformer 230V 50Hz
PF261		4070 1281 0001	Standby Transformer 120V 60Hz

AP part		Factory part	AV3 PCB components
PF250		1031 2068 1300	NJM2068M IC1 IC4
PF253		1132 1200 0162	2SC2120 TO-92 Q1
PF262		2950 0002 0000	DSW-08 S-VIDEO JACK JK1
PF263		4712 2000 1207	HJR1-2C L-12V RELAY RELAY1

Service Parts List

PF220		1341 1621 0100	JSR1162-002 OPTIC RECEIVING U1
PF264		2910 3071 2142	AV3-8.4-14/EC RCA Pin JACK JK2

AP part		Factory part	Coaxial PCB components
PF074		1049 1004 1200	74HCU04D IC37 IC38 IC39
PF265		1074 1510 6220	TC74HC151AP IC40 IC41

AP part		Factory part	Decode PCB components:
PF266		1074 5410 4915	74LVC541APW IC10 IC11
PF248		1001 1085 0800	AMS1085CT(TO-220) U2
PZ276		1001 1117 2700	AMS1117-3.3 IC28 U1
PF266		1002 4040 0692	AT24C04N-10SC IC16
PF175		1003 8120 5122	BD3812F IC12
PF173		1003 8170 5122	BD3817KS IC7
PF174		1003 8410 5122	BD3841FS IC19
PF171		1042 5260 0934	CS42526-CQZ IC3
PF268		1004 3980 1015	CS4398-CZZ IC14
PF269		1049 7000 1000	CS497004-CQZ IC1
PF301		1049 4053 1200	HEF4053BT IC8
PF084		1004 0940 4920	HEF4094BT IC17 IC18 IC23 IC26
PF270		1083 9052 0615	ICS83905AG IC30
PF271		1046 4160 5240	K4S641632H-TC(L)60 (SAMSUNG) IC4
PF272		1007 8050 3127	KA7805A IC6
PF273		1019 7815 0800	KA7815 U4
PF274		1019 7915 0800	KA7915 U5
PF206		1007 8050 7207	L7805CV U3
PF250		1031 2068 1300	NJM2068M IC1A IC1B IC1C IC1D IC5 IC20 IC21 IC22 IC24 IC25 IC27 IC29
PF275		1005 9640 8132	SM5964C40J(PLCC44) IC15 (programmed for EU)
PF276		1005 9640 8132	SM5964C40J(PLCC44) IC15 (programmed for CU)
PF277		1025 0800 7338	SST25VF080B-50-4C-S2AF SST IC13
PF278		1110 9500 0162	2SA950 Q2
PF279		1111 3310 4100	2SA1331 Q4 Q5
PF253		1132 1200 0162	2SC2120 Q1 Q3
PF280		1133 3260 1000	2SC3326 Q7 Q8 Q9 Q11 Q12
PF281		1133 3610 6100	2SC3361 Q6 Q10 Q13

AP part		Factory part	Fuse PCB components
PF282		1361 3011 0100	DB101G BRIDGE RECTIFIER BL1
PF283		4706 3001 1506	HF-115F/006-1HS1B Relay RAY1
PF284		4202 1025 0000	RL3-111G-2-BK Power Switch SW2

AP part			Optical PCB components
PF285		1049 1004 1200	74HCU04D IC42
PF220		1341 1621 0100	JSR1162-002 OPTIC RECEIVING P11 P12 P13 P14 P15
PF286		1341 1651 0100	JST1165-001 Optic Transmit P8 P9

AP part		Factory part	PAMP 1 and PAMP 2 components
PF147		1110 9700 0162	2SA970BL TO-92 Q4 Q5 Q6 Q7 Q8 Q9
PF146		1132 2400 0182	2SC2240BL TO-92 Q10 Q11 Q12 Q13 Q14 Q15
PF041		1132 7050 0162	2SC2705Y TO-92MOD Q16 Q17 Q18
PF287		1132 8780 0112	2SC2878B TO-92 Q1 Q2 Q3

AP part			RS232 PCB components
PF224		1000 2320 3613	MAX232DR SOIC16 TI IC3
PF288		4712 2027 0006	JRC-27F/005-M(555) RELAY REL1
PF289		4311 0000 2611	MSS-13D19(1P3T) SW1

AP part		Factory part	Video PCB components
PF290		1019 7905 0800	KA7905(TO-220) IC30
PF206		1007 8050 7207	L7805CV(TO-220) IC29 IC31

Service Parts List

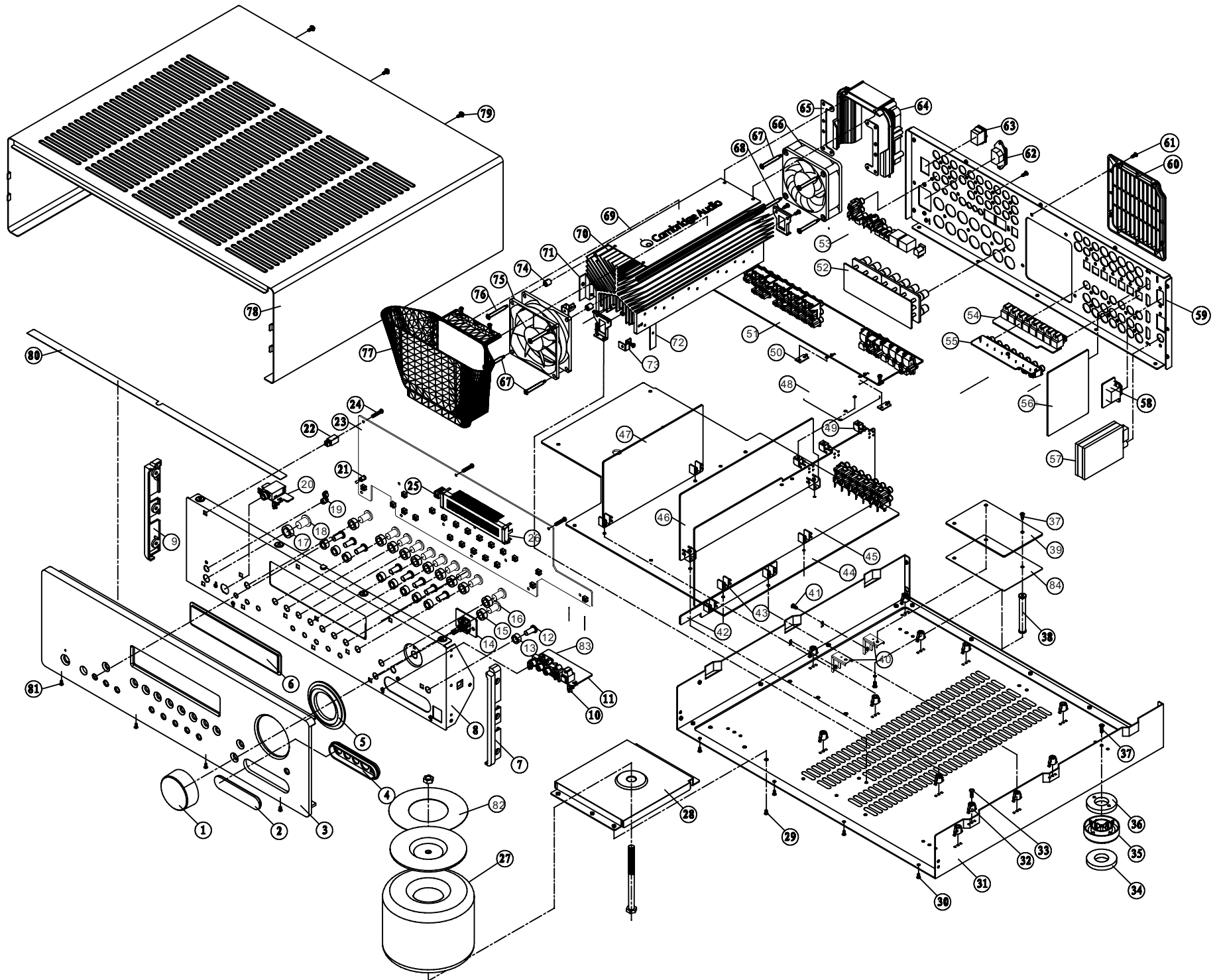
PF083		1007 1080 5313	LA7108M IC36
PF250		1031 2068 1300	NJM2068M IC4 IC8
PF076		1031 2581 1300	NJM2581M IC34
PF085		1004 0510 6220	TC74HC4051AF IC16 IC17 IC18 IC20
PF291		1004 0520 6220	TC74HC4052AF IC32 IC33
PF086		1004 0530 6220	TC74HC4053AF IC21 IC24
PF292		1004 0530 6220	TC4053BFN IC15
PF293		1004 0940 6220	TC4094BFN IC11 IC12 IC13
PF294		1015 4200 9613	TK15420MTL-G IC5 IC6
PF295		1054 0084 1200	TL084 IC1 IC2 IC3
PF279		1111 3310 4100	2SA1331 SC-59 Q30 Q32 Q38 Q39 Q40
PF280		1133 3260 1000	2SC3326 SC-59 Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q28 Q35 Q36 Q37
PF281		1133 3610 6100	2SC3361 SC-59 Q41 Q42 Q43 Q44

AP part		Factory part	Display PCB components
PF049		1004 0940 4901	HEF4094BP(SOP16) IC1
PF218		1003 4300 3122	NJU3430(QFP64) IC2
PF296		4502 1003 6100	TS-36Y-BLM-B-RS SW1,SW2,SW3,SW4,SW5,SW6,SW7,SW8

AP part		Factory part	HDMI PCB components
PZ271		1006 2402 2000	24C02(SOP8) U21
PF297		1007 3220 2634	ADV7322KSTZ(LQFP-64) U10
PF298		1007 4010 0482	ADV7401BSTZ(ST-100) U1
PF299		1009 1640 9818	AMS1117-ADJ SOT-223 U20,U26,U29,U31,U32
PZ276		1001 1117 2700	AMS1117-3.3 SOT-223 U28
PF300		1002 0201 0215	CM2020-00TR(TSSOP-38) U18
PF301		1049 4053 1200	HEF4053BT(SOP16) U23
PF083		1007 1080 5313	LA7108M(MFP16) U6
PF302		1074 1620 6215	TC74VCX162244FT(TSSOP48-2) U7,U2
PF197		1074 7320 5345	LC74732W(SQFP-64) U24
PF303		1015 8730 5246	LMS1587CS-3.3 TO-263 U27
PF304		1001 5870 5246	LM1587CS-ADJ TO-263 U30
PF076		1031 2581 1300	NJM2581M(DMP14) U8,U9,U11
PF305		1009 1851 0326	SiI9185CTU U14
PF306		1009 1341 0326	SiI9134CTU-7(TQFP-100) U19
PF307		1009 1351 0326	SiI9135CTU-7 U15
PF308		1005 9640 8132	SM5964(PLCC44) U22 Programmed for EU
PF309		1005 9640 8132	SM5964(PLCC44) U22 Programmed for CU
PF310		1074 2450 4315	SN74LVC245APWR(TSSOP20-PW) U4
PF311		1015 4200 9613	TK15240MTL-G(SOIC8) U25

AP part		Factory part	Volume PCB components
PF064		4401 2421 0470	RV1 EC16B241047AA encoder pot

Exploded Diagram



Parts Table

Sel.	Part NO.	Description	Qty.	Remark
1	6541 1100 0000	AL Volumn Konb	1	
2	7941 1050 0000	AV3 cover	1	
3	6041 1100 0000	AL PANEL	1	
4	7941 1010 0000	DECORATION	1	
5	7931 1180 0000	Volume knob decorating ring	1	
6	7441 111A 0000	DISPLAY LENS	1	
7	7541 111A 0000	Panel Right Bracket	1	
8	5341 120B 0000	SUBPANEL	1	
9	7541 110A 0000	Panel Left Bracket	1	
10	5300 0060 0000	L.BRACKET(H)	4	
11	0088 1181 2000	AV3 PCB	1	
12	7341 1010 0000	5.5MM TAC SWITCH BUTTON	9	
13	7641 1030 0000	5.5MM TAC SWITCH BUTTON CUSHION	9	
14	0088 1190 0000	VOLUME PCB	1	
15	7331 1020 0000	7MM TAC SWITCH BUTTON	11	
16	7641 1020 0000	7MM TAC SWITCH BUTTON CUSHION	11	
17	7631 1010 0000	MR CONTROL BOX BUTTON CUSHION	1	
18	7331 1010 0000	MR CONTROL BOX BUTTON	1	
19	7431 1030 0000	AMP LIGHT GUIDE	1	
20	0088 1170 0000	PHONE PCB	1	
21	7940 1160 0000	LED HOLDER 4.5x6H	1	
22	7941 1021 0000	PCB COLUMN(L=10)	12	
23	0088 1010 0000	DISPLAY PCB	1	
24	5014 2616 0040	SCREW PB2.6X16	12	
25	5326 5010 0000	SENSOR BRACKET	1	
26	5337 1011 0000	DISPLAY BRACKET	2	
27	4009 1015 0004	MAIN TRANSFORMER	1	
28	5341 1210 0000	TRANSFORMER BRACKET	1	
29	5011 3508 0010	SCREW BTB 3.5x8.0	6	
30	5011 3008 0010	SCREW BTB3.0X8	16	
31	6241 110C 0000	BOTTOM COVER	1	
32	7941 1030 0000	PCB COLUMN(H=8)	12	
33	5011 3012 0010	BTB3.0X12	12	
34	7941 1110 0000	FOOT PAD	4	
35	7941 1100 0000	FOOT	4	
36	7941 1120 0000	FOOT VIBRATION PAD	4	
37	5013 3010 0010	SCREW PA3.0X10	48	
38	8730 5000 0000	Plastic column KDDT-382 H=50mm	1	
39	0088 1071 0000	FUSE PCB	1	
40	5304 6131 0000	MAIN PCB BRACKET	2	
41	5011 3006 0010	SCREW BTB3.0X6	41	
42	0088 1321 0000	CONNECT 2 PCB	1	
43	5341 1050 0000	U-PCB BRACKET(B)	8	

Parts Table

44	0088 1001 0000	AMP PCB	1	
45	0088 1281 0001	DECODE PCB	1	
46	0088 1371 0000	PAMP2 PCB	1	
47	0088 1361 0000	PAMP1 PCB	1	
48	0088 1561 0000	CONNECT PCB	1	
49	5341 1150 0000	U-PCB BRACKET(C)	4	
50	5341 1160 0000	CONNECT BRACKET	2	
51	0088 1331 0000	VIDEO PCB	1	
52	0088 1231 0000	SPEAKER PCB	1	
53	0064 1400 0003	A-BUS PCB	1	
54	0088 1391 0000	OPT. PCB	1	
55	0088 1381 0000	COAX PCB	1	
56	0088 1460 0000	HDMI PCB	1	
57	9800 0003 0001	TUNER BOX	1	
58	0088 1431 0000	RS232 PCB	1	
59	6341 110B 0000	BANK COVER	1	
60	7541 1050 0000	Plastic grill	1	
61	5011 3008 0010	SCREW BTB3.0X8	16	
62	2810 0304 4012	AC SOCKE	1	
63	4202 1025 0000	POWER SWITCH	1	
64	7541 104B 0000	WIND TUNEL REAR	1	
65	5341 1170 0000	FAN BRACKET	2	
66	9101 2517 3271	FAN	1	
67	5015 3024 0040	BOLT L=24	6	
68	5333 1041 0000	HEATSINK BRACKET	2	
69	5941 1010 0000	WIND TUNEL TOP PANEL	1	
70	5141 1011 0071	MAIN HEATSINK	1	
71	5341 1030 0000	WIND TUNEL LEFT BRACK	1	
72	5341 1040 0000	WIND TUNEL RIGHT BRACK	1	
73	5331 1070 0071	FAN BRACKET	2	
74	5931 1020 0000	HEATSINK COLUMN	2	
75	9105 2518 7241	FAN	1	
76	5015 3032 0040	BOLT L=32	2	
77	7541 1033 0000	WIND TUNEL FRONT	1	
78	6141 110D 0000	TOP COVER	1	
79	5011 3008 0042	WASHER SCREW BTB3.0X8	15	
80	7731 1110 0000		1	
81	5011 3008 0030	SCREW BTB3x8	4	
82	7731 1010 0100	TRANSFORMER PVC $\Phi 90 \times \Phi 45 \times 0.5$	1	
83	5341 1130 0000	COMPONENT PRESS	1	
84	7741 1100 0000	POWER PCB PVC		
85	0088 1261 0000	DECODE SHIELD PCB		

Parts Table

A-BUS_PCB PART LIST
P/N:0064-1400-0003

Used Part Type	Designator Description	Part number
1	74AC00SC NAND gates	IC5 1007 4000 1928
1	KA7812 TO-220	IC3 1019 7812 0800
1	LTV817A TO-220	IC4 1022 8170 7012
2	NJM2068M SOP8	IC1 IC2 1031 2068 0100
3	2SA1331 SC-59	Q4 Q5 Q6 1111 3310 4100
3	2SC3361 SC-59	Q1 Q2 Q3 1133 3610 6100
1	1N4004 Diode	D1 1360 7400 4004
2	1N4148 SMD Diode	D2 D3 1310 4414 8000
2	BZX79C2V7(2.7V) Zener Diodes	D4 D5 1300 2700 0000
2	SIR-563ST3F Infrared light emitting diode	D6 D7 1330 0563 0000
1	AV2-8.4-14/EC RCA Pin JACK	JK1 2910 2321 1135
4	CKX3.5-12A 3.5mm DC JACK	JK6 JK7 JK8 JK9 2801 1335 1203
1	DS-210B 6mm DC JACK	JK4 2808 2321 0000
1	RCA-207E RCA Pin JACK	JK5 2980 0513 5201
2	RJ45 MODULAR JACK	JK2 JK3 2807 0345 0000
2	RLD30P110U RESETTABLE FUSES	PTC1 PTC2 1611 7110 0001
2	KS-803LM Remote Sensor	RF1 RF2 1304 0008 0301
1	11P PLUG TO HOUSING 2468#26x11C 2.0 L=120mm	CN1 3311 0504 0123
1	10Ω/ 2W	R23 2401 0621 0015
1	47Ω/ 1/8W±5%	R36 2401 0224 7011
2	0Ω ±5%---0603	R49 R50 2401 1220 0003
1	2.2Ω±5%---0603	R38 2401 1222 2903
7	47Ω±5%---0603	R4 R10 R11 R12 R37 R51 R57 2401 1224 7003
2	68Ω±5%---0603	R28 R29 2401 1226 8003
6	100Ω±5%---0603	R30 R31 R32 R33 R34 R35 2401 1221 0103
2	220Ω±5%---0603	R41 R45 2401 1222 2103
1	470Ω±5%---0603	R46 2401 1224 7103
1	1K ±5%---0603	R52 2401 1221 0203
10	4K7±5%---0603	R1 R2 R3 R5 R6 R7 R8 R9 R13 R54 2401 1224 7203
4	6K8±5%---0603	R16 R20 R21 R22 2401 1226 8203
11	10K±5%---0603	R14 R25 R26 R27 R40 R42 R47 R48 R53 R55 R56 2401 1221 0303
1	22K±5%---0603	R24 2401 1222 2303
3	27K±5%---0603	R39 R43 R44 2401 1222 7303
4	68K±5%---0603	R15 R17 R18 R19 2401 1226 8303
4	12PF/50V ±5%---0603	C6 C7 C8 C9 2103 5120 0130
5	47PF/50V ±5%---0603	C12 C13 C14 C15 C24 2103 5470 0130
2	100PF/50V ±5%---0603	C25 C26 2103 5101 0130
9	0.1UF/50V ±5%---0603	C2 C3 C4 C5 C27 C28 C29 C30 C32 2156 1040 0130
3	1UF/50V ±5%---0603	C22 C23 C77 2115 6105 0130
4	100UF/16V---E.CAP	C1 C33 C34 C39 2311 0310 1015
7	10U/25V---E.CAP	C10 C11 C31 C35 C36 C37 C38 2310 0411 1105
4	10U/35V(NP)---E.CAP	C16 C17 C18 C19 2310 0510 1019
1	220UF/35V-----E.CAP	C20 2321 0510 1015
1	0.1UF/50V	C21 2115 6104 0123

AMP_PCB.Bom
P/N:0088-1001-0000

Used Part Type	Designator Description	Part number
1	AMS1085CT REGULATOR	IC1 1001 1085 0800
1	LM393M	IC2 1000 3930 4313
3	NJM2068M	IC3 IC4 IC5 1031 2068 1300

Parts Table

1	2SA970	Q14	1110 9700 0162
2	2SA1015 TO-92	Q11 Q19 Q38	1111 0150 0172
7	2SA1837A-Y	Q7 Q28 Q44 Q58 Q59 Q70 Q79	1111 8370 0000
7	2SA1943	Q9 Q31 Q49 Q61 Q62 Q72 Q81	1111 9430 0150
1	2SC1815 TO-92	Q1	1131 8150 0172
1	2SC2120 TO-92	Q22	1132 1200 0162
2	2SC2235 TO-92MOD	Q4 Q16	1132 2350 0162
6	2SC2458 TO-92	Q12 Q13 Q15 Q17 Q20 Q87	1132 4580 0172
5	2SC2878 TO-92	Q2 Q3 Q5 Q18 Q86	1132 8780 0112
7	2SC4793A-Y	Q8 Q29 Q30 Q45 Q60 Q71 Q80	1134 7930 0000
7	2SC5200	Q10 Q32 Q33 Q48 Q63 Q82 Q84	1135 2000 0150
7	2SD1953	Q6 Q26 Q27 Q43 Q57 Q69 Q78	1141 9530 0400
1	TIP31CL	Q85	1110 0310 6000
1	1N4001	D25	1360 1400 1000
7	1N4001	D24 D27 D39 D40 D44 D8 D9	1360 1400 1005
25	1N4148	D1 D2 D3 D4 D5 D6 D7 D10 D11 D12 D13 D14 D15 D16 D17 D18 D19 D20 D21 D22 D23 D26 D28 D31 D45	1310 1414 8000
1	1N4570(27V) Zener Diodes	DW42	1302 7003 0200
1	1N4742A(12V) Zener Diodes	DW15	1360 5474 2002
14	6A3(5.6V) Zener Diodes	DW1 DW2 DW3 DW4 DW5 DW6 DW7 DW8 DW9 DW10 DW11 DW12 DW13 DW14	1300 5552 0000
1	6C2(4.2V) Zener Diodes	DW41	1302 0632 1200
1	HJR1-2C L-12V RELAY	K5	4712 2000 1207
4	JZC-42F RELAY	K3 K4 K1 K2	4712 0000 4203
1	MB252 BRIDGE RECTIFIER	BL1	1360 7025 2000
2	AV4-8.4-13/EC RCA Pin JACK	JK5 JK6	2910 4011 0505
1	AV6-8.4-13/EC RCA Pin JACK	JK4	2910 6011 2025
1	02DSB282J Resistance SENSOR	RT1	1609 0002 8225
1	A9225 M12S DC12V 0.24A L=120mm 2P2.5 SOCKET		9105 2518 7241
1	A7025L12S(0.15A) L=150mm 2P2.5 SOCKET		9101 2517 3271
7	0.5UH	L1 L2 L3 L4 L5 L6 L7	1881 6050 0000
2	T20AL 250V	FH1 FH2	1601 6200 0001
4	FUSE HOLDER		1600 0001 0000
1	VED : L = 1.8m BK VDE H05 W-F 2X1.0 CO-006/CO-013		3701 1046 0122
1	(BS) :L = 1.8m BK VDE H45 W-F 2X1.0 CO-401/CO-013		3701 1046 0123
1	Main power Transformer 230V 50Hz		4009 1015 0004
	Main power Transformer 120V 60Hz		4009 1011 0000
1	Standby Transformer 230V 50Hz		4070 1285 0001
	Standby Transformer 120V 60Hz		4070 1281 0001
1	2*2P2.0(180) Twin-Row Socket	CN2	3107 0402 6002
1	2*3P2.0(180) Twin-Row Socket	CN19	3107 0403 6602
1	2*6P2.0(180) Twin-Row Socket	CN25	3100 0906 6062
6	2*8P2.0(180) Twin-Row Socket	CN26 CN27 CN28 CN29 CN30 CN32	3107 0408 6662
1	2*10P2.0(180) Twin-Row Socket	CN31	3100 0412 6000
2	2*11P2.0(180) Twin-Row Socket	CN33 CN34	3113 0411 6662
1	2*21P2.0(180) Twin-Row Socket	CN18	3100 0921 6062
2	4P2.0mm SOCKET	CN9 CN17	3100 4040 0200
1	5P2.0mm SOCKET	CN5	3100 4050 0200
2	2P2.5mm SOCKET	CN3 CN22	3100 5020 0200
1	6P2.5mm SOCKET	CN1	3100 5060 0200
1	6P3.96mm SOCKET	CN4	3101 0606 0050
7	0.22Ω/5W Cement Resistance	R24 R83 R84 R129 R161 R195 R222	2405 1022 2800
1	2.4K/3W	R229	2414 0722 4213
2	12K±5% 2W	R10 R11	2401 0752 2313
1	0.22Ω±5% 1W FUSE Resistance	R235	2406 0522 2812
1	2.2Ω±5% 1W FUSE Resistance	R234	2410 0522 2912
1	10Ω±5% 1W	R42	2401 0521 0012

Parts Table

2	1.2K±5% 1W		R17 R18	2401 0521 2211
14	4.7Ω/0.5W		R21 R23 R78 R79 R82 R125 R128 R157R159 R160 R192 R193 R219 R221	2401 0424 7911
1	1Ω±5% 1/4W	FUSE Resistance	R19	2401 0321 0911
7	10Ω±5% 1/4W		R25 R85 R130 R162 R163 R196 R223	2401 0321 0011
1	680Ω±5% 1/4W		R241	2401 0326 8111
1	1K2 ±1% 1/8W		R72	2402 0211 2211
1	3K3±1% 1/8W		R73	2402 0213 3211
2	100Ω±5% 1/8W		R239 R240	2401 0221 0111
3	220Ω±5% 1/8W		R4 R5 R70	2401 0222 2111
7	270Ω±5% 1/2W		R22 R80 R81 R127 R158 R194 R220	2401 0422 7111
3	470Ω±5% 1/8W		R27 R53 R54	2401 0224 7111
2	1K±5% 1/8W		R20 R231	2401 0221 0211
1	1.2K±5% 1/8W		R9	2401 0221 2211
2	1.5K±5% 1/8W		R1 R13	2401 0221 5211
2	1.8K±5% 1/8W		R6 R26	2401 0221 8211
1	2K±5% 1/8W		R2	2401 0222 0211
2	2.2K±5% 1/8W		R16 R40	2401 0222 2211
2	4.7K±5% 1/8W		R243 R244	2401 0224 7211
1	6.2K±5% 1/8W		R101	2401 0226 2211
1	6.8K±5% 1/8W		R7	2401 0226 8211
1	8.2K±5% 1/8W		R198	2401 0228 2211
5	10K±5% 1/8W		R34 R35 R37 R71 R104	2401 0221 0311
1	12K±5% 1/8W		R8	2401 0221 2311
1	18K±5% 1/8W		R3	2401 0221 8311
12	22K±5% 1/8W		R56 R58 R59 R60 R61 R62 R63 R64 R65 R131 R245 R247	2401 0222 2311
1	33K ±5% 1/8W		R254	2401 0223 3311
1	39K±5% 1/8W		R233	2401 0223 9311
1	43K±5% 1/8W		R230	2401 0224 3311
22	47K±5% 1/8W		R28 R29 R30 R31 R32 R33 R36 R41 R43 R44 R45 R46 R47 R48 R49 R50 R51 R52 R66 R67 R68 R69	2401 0224 7311
4	100K±5% 1/8W		R14 R38 R39 R253	2401 0221 0411
4	220K±5% 1/8W		R15 R55 R164 R248	2401 0222 2411
1	330K ±5% 1/8W		R57	2401 0223 3411
2	0.1UF/100V		C97 C98	2217 3104 0243
14	150PF/50V	C.CAP	C10 C11 C34 C35 C36 C54 C56 C69 C70 C71 C92 C93 C117 C118	2115 6151 0123
14	330PF/50V	C.CAP	C130 C131 C132 C133 C134 C135 C136 C137 C138 C139 C140 C141 C142 C143	2115 6331 0123
9	0.1UF/50V	C.CAP	C17 C19 C23 C42 C105 C121 C122 C123 C125	2115 6104 0123
1	0.047UF/50V	C.CAP	C16	2115 6472 0123
3	470UF/10V	E.CAP	C1 C15 C171	2341 0210 3025
1	1000UF/10V	E.CAP	C4	2312 2101 1000
1	2200UF/10V	E.CAP	C109	2322 2101 1000
20	10UF/16V	E.CAP	C5 C6 C7 C8 C9 C12 C13 C14 C18 C20 C21 C22 C24 C172 C173 C174 C175 C176 C177 C178	2310 0310 1015
1	47UF/16V	E.CAP	C102	2340 0310 1015
1	100UF/16V	E.CAP	C95	2311 0310 1015
1	220UF/16V	E.CAP	C179	2321 0310 1015
1	2.2UF/25V	E.CAP	C108	2329 0410 1015
1	22UF/25V	E.CAP	C3	2320 0410 1015
1	47UF/25V	E.CAP	C120	2340 0410 1015

Parts Table

1	100UF/25V E.CAP	C146	2311 0410 1015
2	470UF/25V E.CAP	C96 C101	2341 4104 3000
1	2200U/25V E.CAP	C106	2322 4105 5000
1	47UF/35V E.CAP	C104	2340 0510 1015
1	100UF/35V E.CAP	C2	2311 0510 3015
1	10UF/50V E.CAP	C103	2310 0610 1015
2	15000UF/71V E.CAP	C99 C100	2353 1211 0113

AV3_PCB PART LIST

P/N:0088-1181-2000

Used Part Type	Designator Description	Part number
=====	,=====	;=====
2 NJM2068M	IC1 IC4	1031 2068 1300
1 2SC2120 TO-92	Q1	1132 1200 0162
1 1N4001 Diode	D1	1360 1400 1000
1 47uH	L1	1840 4722 0001
1 DSW-08 S-VIDEO JACK	JK1	2950 0002 0000
1 HJR1-2C L-12V RELAY	RELAY1	4712 2000 1207
1 JSR1162-002 OPTIC RECEIVING	U1	1341 1621 0100
1 AV3-8.4-14/EC RCA Pin JACK	JK2	2910 3071 2142
1 2*12P2.0 Twin-Row Socket(180)	CN1	3107 0412 6662
1 4P PLUG TO HOUSING 2468#26x4C 2.0 L=100mm	CN2	3304 0504 0103
1 75±5%---0603	R1	2401 1227 5003
2 220Ω±5%---0603	R12 R13	2401 1222 2103
2 1K ±5%---0603	R7 R10	2401 1221 0203
1 2K2 ±5%---0603	R6	2401 1222 2203
4 10K±5%---0603	R5 R11 R19 R20	2401 1221 0303
1 18K±5%---0603	R9	2401 1221 8303
1 39K±5%---0603	R21	2401 1223 9303
1 47K±5%---0603	R16	2401 1224 7303
7 100K±5%---0603	R2 R3 R8 R14 R15 R17 R18	2401 1221 0403
1 220Ω±5%---0805	R4	2401 1222 2104
2 150PF/50V±5%---0603	C24 C33	2103 5151 0130
2 330pF/50V±5%---0603	C3 C4	2103 5331 0130
1 2200PF/50V±5%---0603	C1	2103 5222 0130
9 0.1UF/50V±5%---0603	C5 C6 C9 C11 C12 C15 C16 C27 C28	2156 1040 0130
2 0.22UF/50V±5%---0603	C7 C10	2115 6224 0130
2 10uF16V-----E.CAP	C21 C22	2310 0310 1015
1 22UF/16V-----E.CAP	C8	2320 0310 1015
3 100UF/16V-----E.CAP	C2 C19 C20	2311 0310 1015

COAXIAL-PCB.Bom

P/N:0088-1381-0000

Used Part Type	Designator Description	Part number
=====	=====	;=====
3 74HCU04D	IC37 IC38 IC39	1049 1004 1200
2 TC74HC151AP	IC40 IC41	1074 1510 6220
1 AV3-8.4-14/EC RCA Pin JACK	JK8	2910 3091 0205
1 AV4-8.4-14/EC RCA Pin JACK	JK9	2910 4091 2025
1 D100-SSA-13 (13P1.0mm SOCKET)	CN9	3104 0113 0050
4 FB0805 EMI 600Ω@100MHz	L32 L33 L34 L35	1852 0120 9100
1 11P PLUG TO PLUG 2468#26x11C 2.0L=80mm	CN3	3311 0250 8200
1 13P FLEXIBLE CABLE 1.0 TYPE A L=200mm		3833 1301 2011
15 10Ω±5% 0603	R308 R309 R310 R311 R312 R313 R314 R315 R316 R317 R147 R149 R154 R185 R186	2401 1221 0003
7 75Ω±5% 0603	R300 R301 R302 R303 R304 R305 R142	2401 1227 5003
2 91Ω±5% 0603	R143 R144	2401 1229 1003

Parts Table

2	330Ω±5% 0603	R145 R229	2401 1223 3103
5	10K±5% 0603	R230 R232 R233 R325 R326	2401 1221 0303
5	10M±5% 0603	R319 R320 R321 R322 R323	2401 1221 0603
5	8PF/50V±5% 0603 C.CAP	C308 C309 C310 C311 C312	2103 5080 0130
11	0.1UF/50V±5% 0603 C.CAP	C300 C301 C302 C303 C304 C305 C306 C313 C314 C315 C316	2156 1040 0130
11	1UF/50V±5% 0603 C.CAP	C33 C168 C226 C282 C283 C284 C317 C318 C319 C320 C321	2115 6105 0130
4	100UF/10V E.CAP	C295 C296 C297 C298	2311 0220 2138

CONNECT 1-PCB.Bom
P/N:0088-1561-0000

Used Part Type	Designator Description	Part number
=====	=====	=====
1 2*6P2.0(180) Twin-Row SOCKET	CN5	3100 0906 6062
1 2*20P2.0(180) Twin-Row SOCKET	J2	3100 0920 6062
1 2*21P2.0(90) Twin-Row Pin	CN3	3100 0921 4062
1 6P2.0mm SOCKET	CN1	3100 4060 0200

Connect 2-PCB.Bom
P/N:0088-1321-0000

Used Part Type	Designator Description	Part number
=====	=====	=====
1 2*3P2.0(90)	CN19	3107 1003 4602
1 2*12P2.0(90)	CN13	3107 0412 4672
1 3P PLUG TO HOUSING 2468#26x3C 2.0 L=110mm	CN12	3303 0504 1105
1 6P PLUG TO HOUSING W/UL1354#28x3C SHIELD 2.0 L=140mm	CN14	3606 4041 4115

DECODER-PCB.Bom
P/N:0088-1281-0001

Used Part Type	Designator Description	Part number
=====	=====	=====
1 Shield BOARD		0088-1261-0000
2 74LVC541APW	IC10 IC11	1074 5410 4915
1 AMS1085CT(TO-220)	U2	1001 1085 0800
2 AMS1117-3.3	IC28 U1	1001 1117 2700
1 AT24C04N-10SC	IC16	1002 4040 0692
1 BD3812F	IC12	1003 8120 5122
1 BD3817KS	IC7	1003 8170 5122
1 BD3841FS	IC19	1003 8410 5122
1 CS42526-CQZ	IC3	1042 5260 0934
1 CS4398-CZZ	IC14	1004 3980 1015
1 CS497004-CQZ	IC1	1049 7000 1000
1 HEF4053BT	IC8	1049 4053 1200
4 HEF4094BT	IC17 IC18 IC23 IC26	1004 0940 4920
1 ICS83905AG	IC30	1083 9052 0615
1 K4S641632H-TC(L)60 (SAMSUNG)	IC4	1046 4160 5240
1 KA7805A	IC6	1007 8050 3127
1 KA7815	U4	1019 7815 0800
1 KA7915	U5	1019 7915 0800
1 L7805CV	U3	1007 8050 7207
12 NJM2068M	IC1A IC1B IC1C IC1D IC5 IC20 IC21 IC22 IC24 IC25 IC27 IC29	1031 2068 1300
1 SM5964C40J(PLCC44)	IC15	1005 9640 8132
1 SST25VF080B-50-4C-S2AF SST	IC13	1025 0800 7338
1 2SA950	Q2	1110 9500 0162
2 2SA1331	Q4 Q5	1111 3310 4100
2 2SC2120	Q1 Q3	1132 1200 0162
5 2SC3326	Q7 Q8 Q9 Q11 Q12	1133 3260 1000

Parts Table

3	2SC3361	Q6 Q10 Q13	1133 3610 6100
2	7.5V Zener Diodes	D4 D5	1330 0132 0100
2	1N4148	D6 D10	1310 4414 8000
1	D100-SSA-13 (13P1.0mm SOCKET)	CN9 CN10	3104 0113 0050
1	2W06M BRIDGE RECTIFIER	BL1	1361 3000 0061
2	DB104G	D2 D3	1361 3010 4000
6	FB0805 EMI 100MHz@ 600R	L1 L2 L6 L7 L3 L4	1852 0120 9100
6	FB0603 EMI 100MHz@ 600R	FB2 FB3 FB4 FB5 FB6 FB1	1852 0120 9200
1	11.0592MHz (HC-49SMD) CRYSTAL	Z2	2705 1105 9046
1	27MHz(HC-49SMD) CRYSTAL	Z1	2705 0002 7046
1	2*6P2.0(90) Twin-Row Pin	CN5	3100 0906 4062
1	2*21P2.0(90) Twin-Row Pin	CN3	3100 0921 4062
1	2*21P2.0(180) Twin-Row SOCKET	CN2	3100 0921 6062
1	13P1.0mm SOCKET	CN7	3833 1301 2011
1	16P1.0mm SOCKET	CN8	3833 1601 1011
1	3P2.0mm SOCKET	CN12	3100 4030 0200
1	4P2.0mm SOCKET	CN11	3100 4040 0200
1	5P2.0mm SOCKET	CN6	3100 4050 0200
1	2*6P2.0(90) Twin-Row Pin	CN4	3100 0906 4062
1	7P2.5mm SOCKET	CN1	3100 5070 0200
15	33Ωx4 ±5% 0603 Chip Resistance	RN1 RN2 RN3 RN4 RN5 RN6 RN7 RN8 RN9 RN10 RN11 RN12 RN16 RN17 RN18	2411 1223 3003
4	0.22Ω/1W±5% FUSE Resistance	R64 R65 R66 R67	2406 0522 2812
4	90.9Ω±1% 0603	R201 R202 R203 R204	2403 1290 9903
1	220Ω±1% 0603	R252	2403 1222 1003
2	332Ω±1% 0603	R205 R206	2403 1233 2003
1	470Ω±1% 0603	R251	2403 1247 1003
6	634Ω±1% 0603	R193 R194 R195 R196 R197 R198	2403 1263 4003
8	887Ω±1% 0603	R7A R7B R7C R7D R8A R8B R8C R8D	2403 1288 7003
3	1.65K±1% 0603	R3D R4B R4D	2403 1216 5203
8	1.87K ±1% 0603	R13A R13B R13C R13D R14A R14B R14C R14D	2403 1218 7203
8	2.94K±1% 0603	R5A R5B R5C R5D R6A R6B R6C R6D	2403 1229 4203
2	3.32K±1% 0603	R199 R200	2403 1233 4203
1	5.1K±1% 0603	R23	2403 1215 1203
7	5.49K±1% 0603	R1A R1B R1C R1D R2A R2C R2D	2403 1254 9203
9	6.19K±1% 0603	R2B R9A R9B R9C R9D R10A R10B R10C R10D	2403 1261 9203
9	0Ω±5% 0603	JP1 JP2 R21 R71 R88 R25 R39 R11D R12D	2401 1220 0003
7	10Ω±5% 0603	R27 R48 R72 R73 R181 R184 R186	2401 1221 0003
6	33Ω±5% 0603	R40 R41 R22 R24 R29 R31	2401 1223 3003
8	47Ω±5% 0603	R15A R15B R15C R15D R16A R16B R16C R16D	2401 1224 7003
3	100Ω±5% 0603	R7 R8 R13	2401 1221 0103
4	150Ω±5% 0603	R207 R208 R209 R210	2401 1221 5103
18	220Ω±5% 0603	R74 R75 R76 R77 R78 R79 R80 R81 R82 R83 R84 R85 R86 R87 R94 R95 R245 R246	2401 1222 2103
1	330Ω±5% 0603	R249	2401 1223 3103
1	470Ω±5% 0603	R247	2401 1224 7103
23	1K ±5% 0603	R11A R11B R11C R12A R12B R12C R49 R53 R68 R69 R188 R221 R227 R228 R229 R230 R233 R234 R235 R237 R238 R239 R9	2401 1221 0203
3	1.2K±5% 0603	R17D R18D R147	2401 1221 2203
2	1.5K ±5% 0603	R189 R190	2401 1221 5203
5	2K±5% 0603	R3A R3B R3C R4A R4C	2401 1222 0203
2	2.2K±5% 0603	R99 R185	2401 1222 2203

Parts Table

3	2.4K±5% 0603	R149 R178 R179	2401 1222 4203
1	2.7K±5% 0603	R108	2401 1222 7203
2	2.8K±5% 0603	R191 R192	2401 1222 8203
6	3.3K±5% 0603	R14 R15 R17 R18 R19 R20	2401 1223 3203
2	4.3K±5% 0603	R5 R6	2401 1224 3203
2	4.7K±5% 0603	R222 R236	2401 1224 7203
1	6.8K±5% 0603	R59	2401 1226 8203
61	10K±5% 0603	R1 R4 R10 R11 R38 R47 R50 R54 R55 R56 R57 R60 R63 R89 R92 R93 R96 R97 R98 R146 R148 R150 R151 R152 R153 R154 R155 R156 R157 R158 R159 R160 R161 R162 R163 R164 R165 R166 R167 R168 R169 R170 R171 R172 R173 R174 R175 R176 R177 R220 R231 R232 R248 R16 R26 R28 R33 R34 R35 R36 R37	2401 1221 0303
3	15K±5% 0603	R183 R187 R240	2401 1221 5303
4	22K±5% 0603	R109 R242 R243 R244	2401 1222 2303
2	27K±5% 0603	R62 R91	2401 1222 7303
14	47K±5% 0603	R17A R17B R17C R18A R18B R18C R100 R101 R102 R103 R104 R105 R106 R107	2401 1224 7303
2	68K±5% 0603	R61 R70	2401 1226 8303
5	100K±5% 0603	R90 R225 R226 R241 R250	2401 1221 0403
2	330K±5% 0603	R223 R224	2401 1223 3403
1	1M ±5% 0603	R182	2401 1221 0503
1	3.3U/50V	C132	2115 6334 0130
1	10PF/50V 0603 C.CAP	C28	2103 5100 0130
3	16PF/50V 0603 C.CAP	C171 C172 C27	2103 5160 0130
1	330PF/50V 0603 C.CAP	C153	2103 5331 0130
7	390PF/50V 0603 C.CAP	C3A C3B C3C C4A C4C C3D C4D	2103 5391 0130
4	470PF/50V 0603 C.CAP	C203 C204 C205 C206	2103 5471 0130
2	680PF/50V 0603 C.CAP	C91 C154	2103 5681 0130
8	1000PF/50V 0603 C.CAP	C45 C46 C47 C181 C182 C183 C185 C186	2103 5102 0130
7	1200PF/50V 0603 C.CAP	C13A C13B C13C C14A C14C C13D C14D	2103 5122 0130
7	1800PF/50V 0603 C.CAP	C1A C1B C1C C2A C2C C1D C2D	2103 5182 0130
2	2700PF/50V 0603 C.CAP	C209 C210	2103 5272 0130
7	5600PF/50V 0603 C.CAP	C7A C7B C7C C7D C8A C8C C8D	2103 5562 0130
2	8200PF/50V 0603 C.CAP	C134 C140	2103 5822 0130
2	0.01UF/50V 0603 C.CAP	C2B C16	2115 6103 0130
108	0.1UF/50V 0603 C.CAP	C8B C12 C13 C14 C14B C15 C15A C15B C15C C15D C16A C16B C16C C16D C17 C33 C34 C35 C36 C37 C39 C40 C41 C53 C57 C61 C62 C63 C64 C65 C66 C67 C68 C69 C70 C71 C72 C77 C81 C82 C92 C93 C94 C95 C96 C97 C98 C99 C100 C101 C102 C103 C104 C122 C123 C127 C128 C145 C161 C176 C177 C178 C179 C184 C187 C188 C191 C192 C193 C194 C195 C196 C197 C198 C214 C215 C4 C5 C6 C7 C8 C9 C10 C11 C18 C19 C20 C21 C22 C23 C24 C25 C26 C38 C42 C43 C44 C52 C54 C55 C56 C124 C125 C129 C130 C131 C216 C217	2156 1040 0130
4	0.12UF/50V 0603 C.CAP	C135 C136 C137 C138	2115 6124 0130
1	0.24UF/50V 0603 C.CAP	C218	2115 6244 0130
3	0.033UF/50V 0603 C.CAP	C109 C110 C111	2103 5333 0130
1	0.047UF/50V 0603 C.CAP	C4B	2115 6473 0130
1	0.056UF/50V 0603 C.CAP	C59	2103 5563 0130
9	1UF/50V 0603 C.CAP	C32 C117 C118 C152 C189 C190 C211 C212 C213	2115 6105 0130

Parts Table

4	10UF/10V E.CAP	C1 C2 C3 C126	2310 0210 1015
10	100UF/10V E.CAP	C29 C48 C31 C108 C112 C49 C50 C113 C114 C199 C200 C201 C202	2311 0210 1015
1	220UF/10V E.CAP	C30	2321 0210 1015
1	2200UF/10V E.CAP	C60	2322 2101 1000
16	10UF/16V E.CAP	C5A C5B C5C C6A C6B C6C C51 C78 C84 C85 C86 C87 C88 C89 C151 C155	2310 0310 1015
21	22UF/16V E.CAP	C9A C9B C9C C10A C10B C10C C10D C11A C11B C11C C12A C12B C12C C12D C79 C80 C83 C90 C139 C9D C11D	2320 0310 1015
2	33UF/16V E.CAP	C5D C6D	2330 0310 1015
1	2200UF/16V E.CAP	C105	2322 3105 3000
6	47UF/25V E.CAP	C73 C74 C119 C120 C121 C207	2340 0410 1015
2	3300UF/25V E.CAP	C106 C107	2332 4106 6000
1	2.2UF/50V E.CAP	C58	2329 0610 1015

FUSE-PCB.BOM

P/N:0088-1071-0000

Used Part Type	Designator Description	Part number
=====	=====	=====
1 2SC2120 TO-92	Q89	1132 1200 0162
1 1N4001	D43	1360 1400 1005
1 1N4148	D29	1360 7400 4004
1 Standby Transformer (EI-28) 230V	T1	4070-1285-0001
Standby Transformer (EI-28) 120V		4070 1281 0001
1 DB101G BRIDGE RECTIFIER	BL1	1361 3011 0100
1 ET28-10mH (SG08210(B)) Inductor Filter	T2	1891 0700 0001
1 HF-115F/006-1HS1B Relay	RAY1	4706 3001 1506
1 RL3-111G-2-BK Power Switch	SW2	4202 1025 0000
1 T10AL/250V	FH3	1610 5010 0200
2 FUSE HOLDER		1600 0001 0000
1 FUSE COVER		1689 0001 0000
2 2P2.5mm SOCKET	CN3 CN4	3100 5020 0200
3 2P7.92mm SOCKET	CN11 CN13 CN14	3101 6030 0200
1 2P PLUG 1672#18 70215 L=220mm VH7.92 UL		3502 3100 2272
1 4P PLUG TO HOUSING 2468#26x4C 2.0 L=160mm	CN7	3304 0504 0163
1 0.22Ω±5% 1W FUSE Resistance	R5	2406 0522 2812
1 10Ω±5% 1/8W	R259	2401 0221 0011
1 2.2K±5% 1/8W	R255	2401 0222 2211
1 4.7K±5% 1/8W	R258	2401 0224 7211
2 JY103M(X1/400V.Y2/300V)	C126 C127	2210 3104 6000
2 0.1U/275VAC(X2)	C3 C128	2210 3104 0600
1 0.1uF/50V C.CAP	C2	2115 6104 0123
1 220UF/10V E.CAP	C129	2321 0210 1015
1 470UF/25V E.CAP	C1	2341 4104 3000

OPTICAL-PCB.BOM

P/N:0088-1391-0000

Used Part Type	Designator Description	Part number
=====	=====	=====
1 74HCU04D	IC42	1049 1004 1200
8 FB0805 EMI 600Ω@100MHz	L23 L24 L26 L27 L28 L29 L30 L31	1852 0120 9100
5 JSR1162-002 OPTIC RECEIVING	P11 P12 P13 P14 P15	1341 1621 0100
2 JST1165-001 Optic Transmit	P8 P9	1341 1651 0100
1 11P2.0mm SOCKET	CN10	3100 4110 0200
7 75Ω±5% 0603	R285 R286 R288 R289 R290 R291 R292	2401 1227 5003
5 220Ω±5% 0603	R294 R295 R296 R297 R298	2401 1222 2103
8 0.1UF/50V±5% 0603 C.CAP	C285 C286 C287 C289 C290 C291	2156 1040 0130

Parts Table

		C292 C293 C294	2311 0220 2138
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PAMP1-PCB.BOM
P/N:0088-1361-0000

	Used Part Type	Designator Description	Part number
=====		=====	,=====
6	2SA970BL TO-92	Q4 Q5 Q6 Q7 Q8 Q9	1110 9700 0162
6	2SC2240BL TO-92	Q10 Q11 Q12 Q13 Q14 Q15	1132 2400 0182
3	2SC2705Y TO-92MOD	Q16 Q17 Q18	1132 7050 0162
3	2SC2878B TO-92	Q1 Q2 Q3	1132 8780 0112
9	1N4148	D1 D2 D3 D4 D5 D6 D7 D8 D9	1310 1414 8000
3	2*8P2.0(90) Twin-Row Pin	CN2 CN3 CN4	3107 0408 4672
1	2*11P2.0(90) Twin-Row Pin	CN5	3107 0411 4672
3	500Ω Potentiometers (Panasonic)	VR1 VR2 VR3	3107 0411 4672
6	5.6K±5% 1/4W	R22 R23 R24 R25 R26 R27	2401 0325 6211
3	1.5K±1% 1/8W	R43 R44 R45	2402 0211 5211
3	2K±1% 1/8W	R73 R74 R75	2402 0212 0211
3	100Ω±5% 1/8W	R70 R71 R72	2401 0221 0111
6	220Ω±5% 1/8W	R46 R47 R48 R49 R50 R51	2401 0222 2111
3	820Ω±5% 1/8W	R13 R14 R15	2401 0228 2111
4	1K±5% 1/8W	R3 R34 R35 R36	2401 0221 0211
3	1.2K±5% 1/8W	R67 R68 R69	2401 0221 2211
5	1.5K±5% 1/8W	R1 R2 R4 R5 R6	2401 0221 5211
6	1.8K±5% 1/8W	R28 R29 R30 R31 R32 R33	2401 0221 8211
6	2.2K±5% 1/8W	R61 R62 R63 R64 R65 R66	2401 1222 2203
3	6.8K±5% 1/8W	R7 R8 R9	2401 1226 8203
3	8.2K±5% 1/8W	R37 R38 R39	2401 1228 2203
9	22K±5% 1/8W	R52 R53 R54 R55 R56 R57 R58 R59 R60	2401 1222 2303
6	47K±5% 1/8W	R16 R17 R18 R19 R20 R21	2401 1224 7303
3	100K±5% 1/8W	R10 R11 R12	2401 1221 0403
3	470K±5% 1/8W	R40 R41 R42	2401 1224 7403
2	1000PF/100V±5% MYLAR CAP	C4 C6	2217 3102 0243
3	1200PF/100V±5% MYLAR CAP	C10 C11 C12	2217 3122 0243
3	12PF/50V C.CAP	C13 C14 C15	2115 6120 0123
3	20PF/50V C.CAP	C28 C29 C30	2115 6200 0123
3	47PF/50V C.CAP	C7 C8 C9	2115 6470 0123
1	560PF/50V C.CAP	C5	2115 6561 0123
3	1000pF/50V C.CAP	C25 C26 C27	2115 6102 0123
3	100UF/10V E.CAP	C16 C17 C18	2311 0220 2138
3	10UF/16V E.CAP	C1 C2 C3	2310 0310 1015
3	2.2UF/50V/NP E.CAP	C22 C23 C24	2329 0610 1016
3	47UF/50V E.CAP	C19 C20 C21	2340 0610 2015

PAMP2-PCB.BOM
P/N:0088-1371-0000

	Used Part Type	Designator Description	Part number
=====		=====	,=====
8	2SA970BL TO-92	Q31 Q32 Q33 Q34 Q35 Q36 Q37 Q38	1110 9700 0162
8	2SC2240BL TO-92	Q23 Q24 Q25 Q26 Q27 Q28 Q29 Q30	1132 2400 0182
4	2SC2705Y TO-92MOD	Q39 Q40 Q41 Q42	1132 7050 0162
4	2SC2878B TO-92	Q19 Q20 Q21 Q22	1132 8780 0112
12	1N4148	D10 D11 D12 D13 D14 D15 D16 D17 D18 D19 D20 D21	1310 1414 8000
1	2*2P2.0(90) Twin-Row Pin	CN10	3100 0902 4062
3	2*8P2.0(90) Twin-Row Pin	CN1 CN6 CN7	3107 0408 4672
1	2*10P2.0(90) Twin-Row Pin	CN9	3100 0910 4062

Parts Table

1	2*11P2.0(90) Twin-Row Pin	CN8	3107 0411 4672
1	2P2.5mm SOCKET	CN11	3100 5020 0200
4	500Ω Potentiometers (Panasonic)	VR4 VR5 VR6 VR7	3107 0411 4672
4	1.5K±1% 1/8W	R160 R161 R162 R163	2402 0211 5211
4	2K±1% 1/8W	R164 R165 R166 R167	2402 0212 0211
4	100Ω±5% 1/8W	R156 R157 R158 R159	2401 1221 0103
8	220Ω±5% 1/8W	R168 R169 R170 R171 R172 R173 R174 R175	2401 1222 2103
4	820Ω±5% 1/8W	R132 R133 R134 R135	2401 1228 2103
5	1K±5% 1/8W	R104 R148 R149 R150 R151	2401 1221 0203
4	1.2K±5% 1/8W	R144 R145 R146 R147	2401 1221 2203
7	1.5K±5% 1/8W	R100 R101 R102 R103 R105 R106 R107	2401 1221 5203
8	1.8K±5% 1/8W	R76 R77 R78 R79 R80 R81 R82 R83	2401 1221 8203
8	2.2K±5% 1/8W	R124 R125 R126 R127 R128 R129 R130 R131	2401 1222 2203
8	5.6K±5% 1/4W	R88 R89 R90 R91 R92 R93 R94 R95	2401 1225 6203
4	6.8K±5% 1/8W	R96 R97 R98 R99	2401 1226 8203
4	8.2K±5% 1/8W	R152 R153 R154 R155	2401 1228 2203
12	22K±5% 1/8W	R108 R109 R110 R111 R112 R113 R114 R115 R116 R117 R118 R119	2401 1222 2303
8	47K±5% 1/8W	R136 R137 R138 R139 R140 R141 R142 R143	2401 1224 7303
4	100K±5% 1/8W	R120 R121 R122 R123	2401 1221 0403
4	470K±5% 1/8W	R84 R85 R86 R87	2401 1224 7403
3	1000PF/100V±5% MYLAR CAP	C39 C40 C42	2217 3102 0243
4	1200PF/100V±5% MYLAR CAP	C47 C48 C49 C50	2217 3122 0243
4	12PF/50V C.CAP	C55 C56 C57 C58	2115 6120 0123
4	20PF/50V C.CAP	C63 C64 C65 C66	2115 6200 0123
4	47PF/50V C.CAP	C43 C44 C45 C46	2115 6470 0123
1	560PF/50V C.CAP	C41	2115 6561 0123
4	1000PF/50V C.CAP	C51 C52 C53 C54	2115 6102 0123
1	0.1UF/50V C.CAP	C72	2115 6104 0123
4	100UF/10V E.CAP	C59 C60 C61 C62	2311 0220 2138
4	10UF/16V E.CAP	C35 C36 C37 C38	2310 0310 1015
4	2.2UF/50V/NP E.CAP	C31 C32 C33 C34	2329 0610 1016
1	4.7UF/50V E.CAP	C71	2349 0610 1015
4	47UF/50V E.CAP	C67 C68 C69 C70	2340 0610 2015

RS232-PCB.BOM

P/N:0088-1431-0000

Used Part Type	Designator Description	Part number
=====	=====	=====
1 MAX232DR SOIC16 TI	IC3	1000 2320 3613
1 2SC2120 TO-92	Q3	1132 1200 0162
2 2SC2458 TO-92	Q1 Q2	1132 4580 0172
1 1N4148	D1	1310 4414 8000
1 DB-09 RS232 SOCKET	JK3	3106 1009 0084
1 JRC-27F/005-M(555) RELAY	REL1	4712 2027 0006
1 MSS-13D19(1P3T)	SW1	4311 0000 2611
1 5P PLUG TO HOUSING 2468#26x5C 2.0 L=180mm	CN8	3305 0505 0185
1 5P PLUG TO HOUSING 2468#26x5C 2.0 L=220mm	CN1	3305 0505 0225
1 47Ω±5% 1/8W	R4	2401 0224 7011
1 4.7K±5% 1/8W	R1	2401 0224 7211
2 22K±5% 1/8W	R2 R3	2401 0222 2311
6 0.1UF/50V C.CAP	C24 C25 C26 C27 C28 C107	2115 6104 0123

Speaker-PCB.BOM

P/N:0088-1231-0000

Parts Table

Used Part Type	Designator Description	Part number
2 WP4-10B	JK1 JK2	2920 4200 0103
1 WP6-10B	JK10	2920 6310 0103
1 7P HOUSING TO 4P HOUSING & 3P HOUSING 1007#20x7C 2.5 L=150mm	CN2 CN12	3863 0515 1347
1 7P HOUSING TO 5P HOUSING & 2P HOUSING 1007#20x7C 2.5 L=150mm	CN20 CN23	3863 0515 1257
7 10Ω±5% 1/4W	R232 R236 R237 R238 R250 R251 R252	2401 0321 0011
8 0.1UF/50V C.CAP	C44 C48 C53 C55 C57 C77 C78 C79	2115 6104 0123
6 0.1UF/100V±5% Metallized polyester film capacitor	C37 C50 C72 C73 C80 C81	2217 3104 0243

VIDEO-PCB.Bom
P/N:0088-1331-0000

Used Part Type	Designator Description	Part number
1 KA7905(TO-220)	IC30	1019 7905 0800
2 L7805CV(TO-220)	IC29 IC31	1007 8050 7207
1 LA7108M	IC36	1007 1080 5313
2 NJM2068M	IC4 IC8	1031 2068 1300
1 NJM2581M	IC34	1031 2581 1300
4 TC74HC4051AF	IC16 IC17 IC18 IC20	1004 0510 6220
2 TC74HC4052AF	IC32 IC33	1004 0520 6220
2 TC74HC4053AF	IC21 IC24	1004 0530 6220
1 TC4053BFN	IC15	1004 0530 6220
3 TC4094BFN	IC11 IC12 IC13	1004 0940 6220
2 TK15420MTL-G	IC5 IC6	1015 4200 9613
3 TL084	IC1 IC2 IC3	1054 0084 1200
5 2SA1331 SC-59	Q30 Q32 Q38 Q39 Q40	1111 3310 4100
12 2SC3326 SC-59	Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q28 Q35 Q36 Q37	1133 3260 1000
4 2SC3361 SC-59	Q41 Q42 Q43 Q44	1133 3610 6100
9 1N4148	D7 D10 D16 D17 D18 D19 D20 D22 D23	1310 1414 8000
6 FB0805 EMI 600Ω@100MHz	L7 L8 L9 L11 L12 L22	1852 0120 9100
2 2W06M BRIDGE RECTIFIER	BL1 BL2	1361 3000 0061
6 MDW-111/Y S-VIEO JACK	P2 P3 P4 P5 P6 P7	2970 0001 1105
2 AV2-8.4-13/ES RCA Pin JACK	JK3 JK4	2910 2452 2015
1 AV4-8.4-13/EC RCA Pin JACK	JK5	2910 4011 0505
4 AV6-8.4-13B RCA Pin JACK	JK1 JK2 JK6 JK7	2910 6463 4015
1 2*21P2.0(90) Twin-Row Pin	CN4	3100 0921 4062
1 2*21P2.0(90) Twin-Row Pin	CN3	3108 0421 7612
1 5P2.0mm SOCKET	CN1	3100 4050 0200
1 5P2.5mm SOCKET	CN8	3100 5050 0200
1 11P2.0mm SOCKET	CN7	3100 4110 0200
1 5P PLUG TO HOUSING 2468#26x5C 2.0 L=80mm	CN2	3305 0505 0085
2 0.22Ω±5% 0.5W FUSE Resistance	R248 R249	2406 0422 2815
1 0.22Ω±5% 1W FUSE Resistance	R252	2406 0522 2812
9 10Ω±5% 0603	R146 R148 R153 R155 R156 R157 R158 R159 R218	2401 1221 0003
33 75Ω±5% 0603	R73 R74 R75 R76 R77 R78 R79 R80 R81 R82 R83 R84 R85 R86 R87 R88 R89 R90 R91 R92 R93 R94 R95 R96 R97 R98 R99 R243 R244 R245 R282 R283 R284	2401 1227 5003
4 150Ω±5% 0603	R45 R46 R47 R48	2401 1221 5103
10 220Ω±5% 0603	R1 R2 R3 R4 R5 R6 R7 R8 R11 R12	2401 1222 2103
8 470Ω±5% 0603	R9 R10 R62 R237 R238 R239 R240 R242	2401 1224 7103
10 1K±5% 0603	R57 R58 R59 R60 R61 R63 R64 R127 R140 R180	2401 1221 0203
8 2K±5% 0603	R166 R167 R168 R169 R170 R171	2401 1222 0203

Parts Table

3	4.7K±5% 0603	R172 R173	
30	10K±5% 0603	R253 R254 R255	2401 1224 7203
		R30 R31 R34 R35 R37 R38 R41 R42	2401 1221 0303
		R44 R112 R113 R114 R115 R116 R117	
		R118 R119 R120 R121 R125 R126 R128	
		R129 R130 R269 R270 R271 R273	
		R274 R275	
12	15K±5% 0603	R49 R50 R51 R52 R53 R54 R55 R56	2401 1221 5303
		R225 R264 R265 R266	
18	22K±5% 0603	R29 R32 R33 R36 R39 R40 R43 R141	2401 1222 2303
		R176 R177 R178 R179 R201 R203 R204	
		R224 R226 R227	
4	27K±5% 0603	R123 R124 R276 R277	2401 1222 7303
10	47K±5% 0603	R13 R14 R15 R16 R17 R18 R19 R20	2401 1224 7303
		R327 R328	
8	100K±5% 0603	R21 R22 R23 R24 R25 R26 R27 R28	2401 1221 0403
8	270K±5% 0603	R65 R66 R278 R279 R280 R329 R330	2401 1222 7403
		R331	
9	47PF/50V 0603 C.CAP	C230 C231 C232 C233 C234 C235	2103 5470 0130
		C236 C237 C238	
2	0.047UF/50V 0603 C.CAP	C241 C242	2115 6473 0130
55	0.1UF/50V 0603 C.CAP	C55 C56 C57 C58 C61 C62 C63 C64 C69	2156 1040 0130
		C70 C104 C105 C109 C110 C118 C119	
		C120 C121 C122 C123 C124 C125 C126	
		C127 C128 C129 C130 C131 C132 C141	
		C142 C143 C144 C145 C146 C147 C148	
		C149 C150 C151 C152 C153 C154 C156	
		C157 C158 C159 C160 C161 C216 C266	
		C267 C268 C269 C270	
13	1UF/50V 0603 C.CAP	C21 C22 C23 C24 C28 C29 C181 C187	2115 6105 0130
		C188 C271 C272 C174 C184	
2	4.7UF/50V 0805 C.CAP	C228 C229	2103 5475 0140
20	330PF/50V 0603 C.CAP	C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11	2115 6331 0123
		C12 C13 C14 C15 C16 C17 C18 C19 C20	
7	47UF/10V E.CAP	C78 C81 C82 C155 C256 C257,C163	2340 0210 0015
6	100UF/10V E.CAP	C205 C206 C209 C207 C208 C210	2311 0210 1015
1	100UF/16V E.CAP	C264	2311 0310 1015
1	470UF/16V E.CAP	C273	2311 0347 1015
2	2200UF/16V E.CAP	C260 C261	2322 3105 3000
1	3300UF/16V E.CAP	C263	2332 3106 5000
20	10UF/25V E.CAP	C34 C35 C169 C227 C36 C37 C38 C39	2310 0411 1105
		C40 C41 C42 C43 C44 C45 C46 C47	
		C48 C49 C50 C51	
1	2200UF/6.3V E.CAP	C262	2322 0110 4010

DISPLAY PCB P/N:0088-1010-0000

Used	Part Type	Designator	Description
=====	=====	=====	=====
1	HEF4094BP(SOP16)	IC1	1004 0940 4901
1	NJU3430(QFP64)	IC2	1003 4300 3122
2	2SA1015(TO-92)	Q1,Q3	1111 0150 0172
1	2SC2548(TO-92)	Q2	1132 4580 0172
1	1N4148	D1	1310 1414 8000
1	HL-D772	VDF1	1500 0772 0102
1	KSM-803LM	IR1	1360 7080 3000
21	TS-36Y-BLM-B-RS	SW1,SW2,SW3,SW4,SW5,SW6,SW7,SW8	4502 1003 6100
		,SW9,SW10,SW11,SW12,SW13,SW14,SW15	

Parts Table

		SW16,SW17,SW18,SW19,SW20,SW21	
1	3mm ROUND(BLUE)204UBC	LED1	1401 0603 0001
1	D100-SRA-16	CN4	3104 0116 1050
1	3P(2.0)	CN5	3100 4030 0200
1	5P(2.0)	CN2	3100 4050 0200
1	560Ω1/8W±5%	R2	2401 0225 6111
3	1KΩ1/8W±5%	R1,R3,R6	2401 0221 0211
1	10KΩ1/8W±5%	R19	2401 0221 0311
1	18KΩ1/8W±5%	R4	2401 0221 8311
1	22KΩ1/8W±5%	R7	2401 0222 2311
1	68KΩ1/8W±5%	R8	2401 0226 8311
1	100KΩ1/8W±5%	R5	2401 0221 0411
1	390PF/50V±10%	C11	2115 6391 0123
6	0.1uF/50V±10%	C3,C4,C5,C6,C7,C8	2115 6104 0123
1	220uF/10V±20% E.CAP	C22	2321 0210 1015
3	100uF/16V±20% E.CAP	C1,C2,C9	2311 0310 1015
1	47uF/35V±20% E.CAP	C10	2340 0510 1015

HDMI PCB P/N:0088-1460-0000

Used	Part Type	Designator	Description
====	=====		=====
1	24C02(SOP8)	U21	1006 2402 2000
1	ADV7322KSTZ(LQFP-64)	U10	1007 3220 2634
1	ADV7401BSTZ(ST-100)	U1	1007 4010 0482
5	AMS1117-ADJ SOT-223	U20,U26,U29,U31,U32	1009 1640 9818
1	AMS1117-3.3 SOT-223	U28	1001 1117 2700
1	CM2020-00TR(TSSOP-38)	U18	1002 0201 0215
1	HEF4053BT(SOP16)	U23	1049 4053 1200
1	LA7108M(MFP16)	U6	1007 1080 5313
2	TC74VCX162244FT(TSSOP48-2)	U7,U2	1074 1620 6215
1	LC74732W(SQFP-64)	U24	1074 7320 5345
1	LMS1587CS-3.3 TO-263	U27	1015 8730 5246
1	LM1587CS-ADJ TO-263	U30	1001 5870 5246
3	NJM2581M(DMP14)	U8,U9,U11	1031 2581 1300
1	SiI9185CTU	U14	1009 1851 0326
1	SiI9134CTU-7(TQFP-100)	U19	1009 1341 0326
1	SiI9135CTU-7	U15	1009 1351 0326
1	SM5964(PLCC44)	U22	1005 9640 8132
1	SN74LVC245APWR(TSSOP20-PW)	U4	1074 2450 4315
1	TK15240MTL-G(SOIC8)	U25	1015 4200 9613
4	1N4148	D1,D2,D3,D4	1310 4414 8000
3	2SC3326(SC-59)	Q1,Q2,Q3	1133 3260 1000
15	FB-0805	L1,L2,L3,L4,L6,L7,L9,10,L11,L16,L17 L21,L26,L27	1852 0120 9100
20	FB-0603	L8,L12,L13,L14,L15,L18,L19,L20,L22 L23,L24,L25,L28,L29,L30,L31,L32 L33,L34,L35	
1	15uH-0805	L27	1852 0120 9200
1	11.0592MHz(HC-49SM)	XT3	2705 1105 9046
1	14.31818MHz(HC-49SM)	XT4	2705 3131 8046
1	17.734475MHz(HC-49SM)	XT5	2705 1773 4046
1	28.322MHz(HC-49SM)	XT2	2705 2832 2046
1	28.63636MHz(HC-49SM)	XT1	2705 2863 6346
4	11-33031112	HDMI1,HDMI2,HDMI3,HDMI4	2809 4411 3312
1	5P(2.0)	J1	3100 4050 0200
1	2X20P(PH2.0)PIN(90)	J2	3100 0920 4062

Parts Table

1	D100-SSA-13(1.0)	J3	3104 0113 0050
31	33X4	RN1,RN2,RN20,RN21,RN22,RN23,RN24 RN25,RN26,RN27,RN28,RN29,RN30,RN31 RN32,RN33,RN34,RN35,RN36,RN37,RN38 RN39,RN40,RN41,RN42,RN43,RN44,RN45 RN46,RN47,RN48	2411 1223 3003
2	0.05Ω±1% 0603	R152,R106	2403 1211 5803
6	0.1Ω±1% 0603	R102,R105,R111,R127,R150,R154	2403 1211 0903
2	1Ω±1% 0603	R155,R270	2403 1211 0003
6	2.20Ω±1% 0603	R107,R108,R109,R151,R156,R160	2403 1212 2303
1	698Ω±1% 0603	R146	2403 1269 8003
25	0Ω±5% 0603	R1,R2,R3,R4,R5,R6,R7,R8,R9,R10,R11 R21,R22,R31,R32,R41,R42,R49,R50,R85 R112,R114,R187,R236,R237	2401 1220 0003
8	5.6Ω±5% 0603	R119,R120,R121,R122,R123,R124,R125 R126	2401 1225 6903
4	10Ω±5% 0603	R183,R184,R185,R186	2401 1221 0003
83	33Ω±5% 0603	R12,R13,R14,R15,R16,R17,R18,R19,R20 R23,R24,R25,R26,R27,R28,R29,R30,R33 R34,R35,R36,R37,R38,R39,R40,R43,R44 R45,R46,R47,R48,R115,R131,R132,R134 R145,R153,R158,R159,R162,R163,R176 R179,R214,R215,R223,R224,R227,R230 R231,R232,R234,R238,R239,R240,R241 R242,R243,R244,R245,R246,R247,R248 R249,R250,R251,R252,R253,R254,R255 R256,R257,R258,R259,R260,R261,R262 R263,R265,R266,R271,R272,R275	2401 1223 3003
2	39Ω±5% 0603	R225,R228	2401 1223 9003
3	75Ω±5% 0603	R51,R52,R59	2401 1227 5003
9	100Ω±5% 0603	R68,R69,R70,R71,R72,R73,R80,R81,R83	2401 1221 0103
6	220Ω±5% 0603	R161,R180,R188,R196,R201,R203	2401 1222 2103
12	330Ω±5% 0603	R65,R66,R67,R74,R75,R76,R209,R211 R213,R217,R219,R221	2401 1223 3103
22	470Ω±5% 0603	R88,R89,R90,R91,R92,R93,R96,R97,R98 R99,R100,R101,R157,R189,R192,R194 R195,R197,R198,R199,R200,R202	2401 1224 7103
1	680Ω±5% 0603	R233	2401 1226 8103
1	750Ω±5% 0603	R113	2401 1227 5103
3	1KΩ±5% 0603	R53,R55,R57	2401 1221 0203
1	1.7KΩ±5% 0603	R79	2401 1221 7203
5	2.2KΩ±5% 0603	R60,R61,R62,R191,R193	2401 1222 2203
2	2.7KΩ±5% 0603	R77,R78	2401 1222 7203
2	3KΩ±5% 0603	R226,R229	2401 1223 0203
6	3.3KΩ±5% 0603	R208,R210,R212,R216,R218,	2401 1223 3203
18	4.7KΩ±5% 0603	R64,R110,R118,R133,R135,R139,R140 R141,R143,R144,R147,R148,R190,R204 R205,R206,R207,R235	2401 1224 7203
1	5.6KΩ±5% 0603	R84	2401 1225 6203
19	10KΩ±5% 0603	R164,R165,R166,R167,R168,R169,R170 R171,R172,R173,R174,R175,R177,R178 R182,R222,R264,R273,R274	2401 1221 0303
2	15KΩ±5% 0603	R181,R149	2401 1221 5303
4	22KΩ±5% 0603	R54,R56,R58,R63	2401 1222 2303

Parts Table

6	47K Ω \pm 5% 0603	R103,R104,R116,R117,R128,R129	2401 1224 7303
2	1M Ω \pm 5% 0603	R136,R82	2401 1221 0503
4	15PF/50V \pm 5% 0603	C255,C256,C257,C258	2103 5150 0130
2	18PF/50V \pm 5% 0603	C202,C201	2103 5180 0130
2	20PF/50V \pm 5% 0603	C39,C43	2103 5200 0130
2	27PF/50V \pm 5% 0603	C260,C261	2103 5270 0130
1	820PF/50V \pm 5% 0603	C131	2103 5821 0130
15	1NF/50V \pm 5% 0603	C196,C209,C210,C211,C212,C219,C220 C221,C222,C223,C227,C228,C233,C244 C247	2103 5102 0130
1	2200PF/50V \pm 5% 0603	C32	2103 5222 0130
1	3900PF/50V \pm 5% 0603	C129	2103 5392 0130
1	82NF/50V \pm 5% 0603	C45	2103 5823 0130
8	0.01UF/50V \pm 5% 0603	C12,C15,C44,C73,C77,C81,C259,C263	2115 6103 0130
154	0.1UF/50V \pm 5% 0603	C2,C3,C4,C5,C6,C7,C10,C13,C14,C17 C18,C19,C20,C21,C24,C25,C26,C27,C28 C29,C30,C31,C33,C34,C35,C36,C37,C38 C40,C47,C48,C49,C51,C53,C54,C55,C56 C57,C58,C61,C63,C64,C65,C66,C75,C76 C79,C80,C83,C84,C101,C102,C104,C105 C106,C107,C108,C109,C111,C112,C113 C114,C115,C124,C125,C126,C127,C128 C130,C133,C134,C135,C136,C137,C138 C139,C140,C141,C142,C144,C145,C146 C147,C148,C149,C150,C151,C155,C156 C157,C160,C162,C163,C164,C165,C171 C172,C173,C174,C175,C176,C177,C178 C179,C191,C193,C195,C198,C199,C200 C203,C205,C206,C207,C208,C214,C215 C216,C217,C218,C225,C226,C229,C232 C235,C236,C237,C238,C240,C241,C243 C246,C250,C253,C267,C269,C271,C272 C279,C280,C281,C282,C287,C288,C289 C290,C293,C294,C297,C298,C299,C300 C301,C302	2156 1040 0130
3	1UF/50V \pm 5% 0603	C262,C265,C266	2115 6105 0130
2	10UF/50V \pm 5% 0603	C11,C16	2115 5106 0135
11	10uF/6.3V \pm 20% SMD E.CAP	C59,C60,C74,C78,C82,C190,C192,C194 C242,C245,C254	2310 0110 1018
17	22uF/6.3V \pm 20% SMD E.CAP	C50,C52,C71,C72,C103,C116,C117,C118 C119,C122,C123,C197,C224,C231,C234 C248,C249	2320 0121 1138
28	47uF/6.3V \pm 20% SMD E.CAP	C1,C8,C22,C23,C41,C62,C98,C99,C100 C110,C120,C121,C132,C143,C170,C204 C213,C230,C252,C264,C268,C270,C273 C274,C276,C284,C286,C296	2340 0111 1138
4	100uF/6.3V \pm 20% SMD E.CAP	C239,C251,C278,C292	2311 0110 2138
6	220uF/6.3V \pm 20% SMD E.CAP	C275,C277,C283,C285,C291,C295	2321 0110 2138
2	22uF/6.3V \pm 20% CA45SMD E.CAP	C67,C161	2311 0110 2138
1	47uF/6.3V \pm 20% CA45SMD E.CAP	C159	2320 0120 1138

PHONEY PCB P/N:0088-1170-0000

Used Part Type

==== =====

Designator Description

=====

1	4P(2.0)	CN9	3100 4040 0200
1	CK-6.35-02	JK3	2802 1463 5020
2	10 Ω /8W \pm 5%	R12,R13	2401 0221 0011

Parts Table

1	0.1uF/50V±5% 0603	C19	2156 1040 0130
2	0.1uF/50V±10%	C12,C13	2115 6104 0123

VOL PCB P/N:0088-1190-0000

Used Part Type

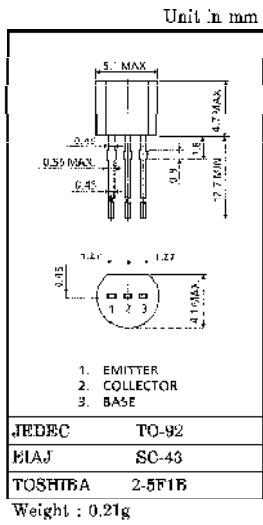
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Designator Description

=====

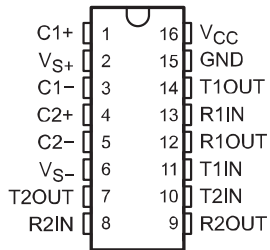
		RV1	4401 2421 0470
1	EC16B241047AA	CN1	3100 4030 0200
1	3P(2.0)		

2SA970



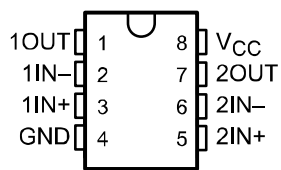
MAX232

MAX232 . . . D, DW, N, OR NS PACKAGE
 MAX2321 . . . D, DW, OR N PACKAGE
 (TOP VIEW)

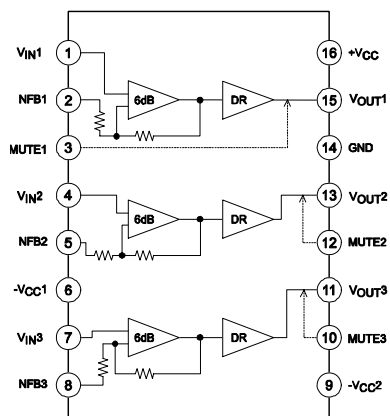


LM393

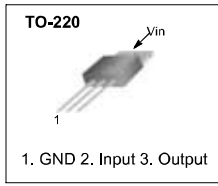
D, JG, P, OR PW PACKAGE
 (TOP VIEW)



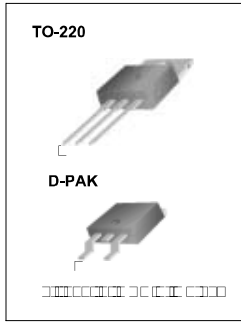
LA7108M



KA79XX/KA79XXA



KA78XX/KA78XXA

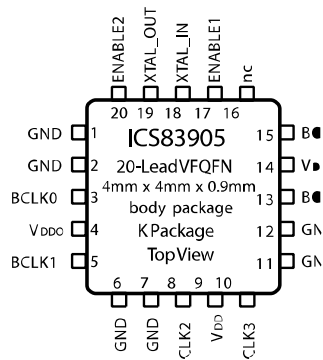


ICS83905

XTAL_OUT	1	16	XTAL_IN
ENABLE 2	2	15	ENABLE 1
GND	3	14	BCLK5
BCLK0	4	13	V _{DD0}
V _{DD0}	5	12	BCLK4
BCLK1	6	11	GND
GND	7	10	BCLK3
BCLK2	8	9	V _{DD}

ICS83905
 16-Lead SOIC
 3.9mm x 9.9mm x 1.38mm body packa
 M Package
 TopView

ICS83905
 16-Lead TSSOP
 4.4mm x 3.0mm x 0.92mm body packa
 G Package
 TopView



HEF4094B

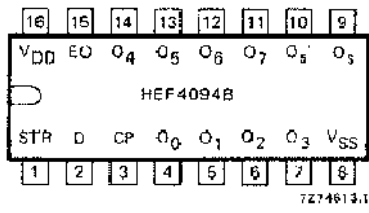
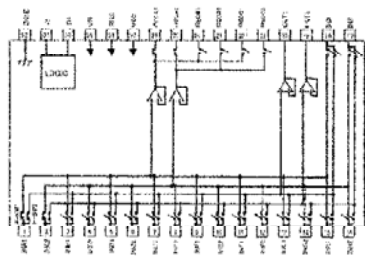


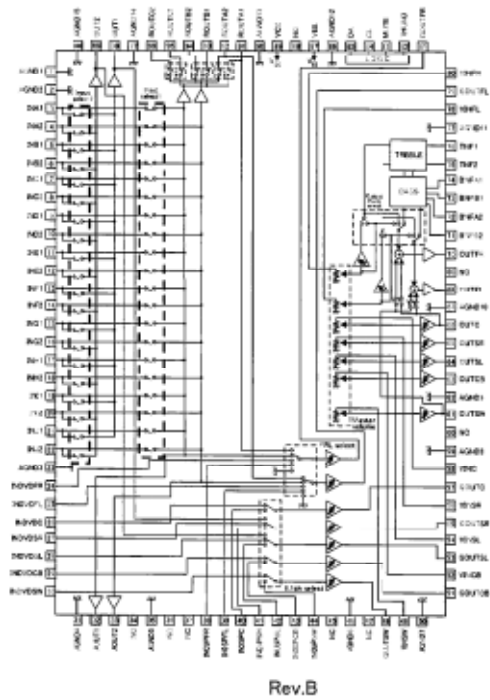
Fig.2 Pinning diagram.

BD3841FS



* F-001: INPUT FUNCTION1
F-002: INPUT FUNCTION2

BD3817KS



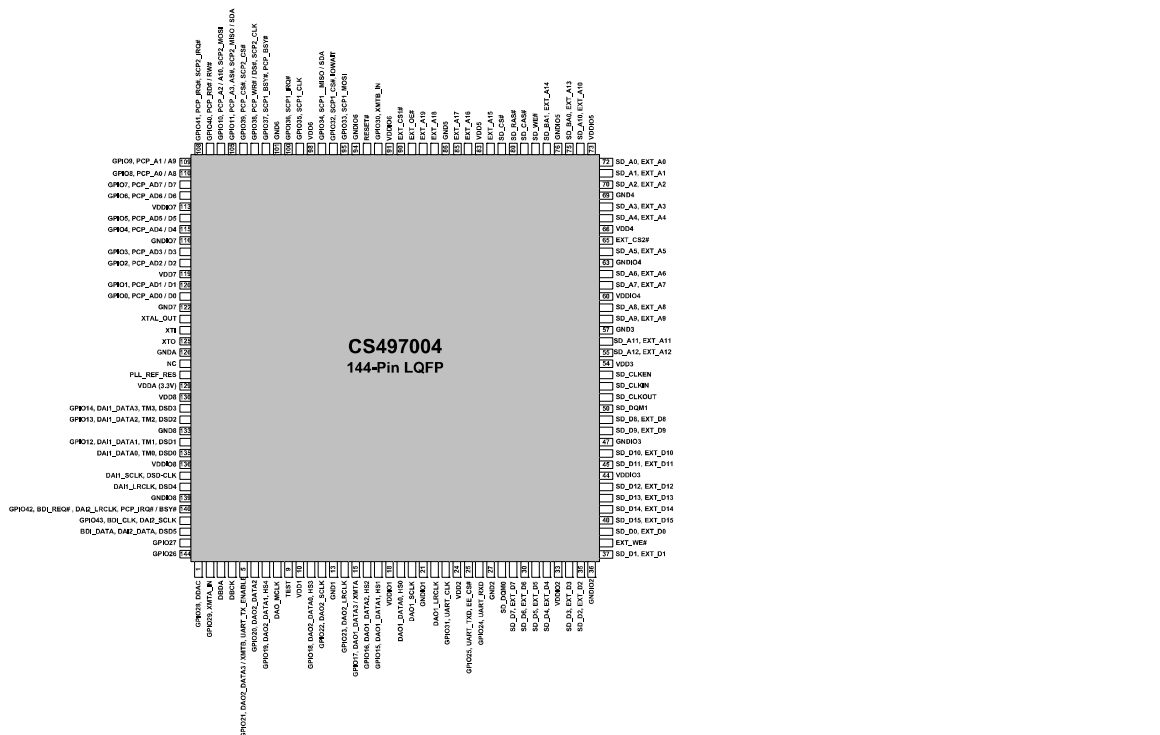
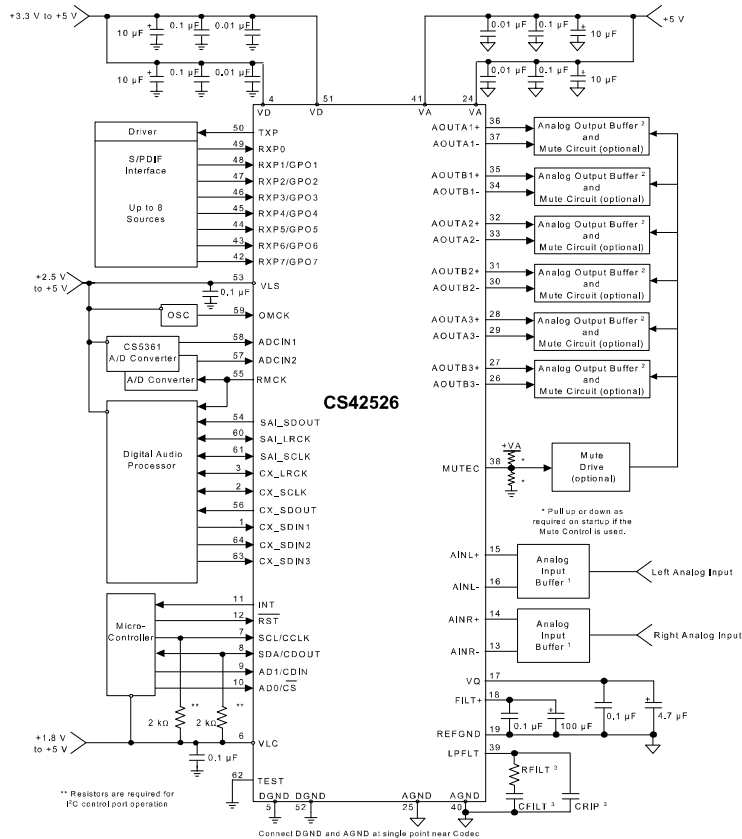


Figure 21. 144-Pin LQFP Pin-Out Diagram

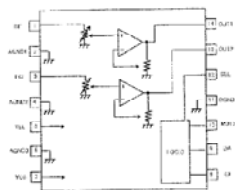
CS42526



1. See the ADC Input Filter section in the Appendix.
 2. See the DAC Output Filter section in the Appendix.
 3. See the PLL Filter section in the Appendix.

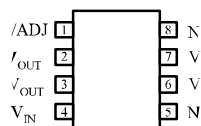
Figure 5. Typical Connection Diagram

BD3812F



AMS1117

8L SOIC Top View



AMS1085

TO-220 FRONT VIEW



74HCU04

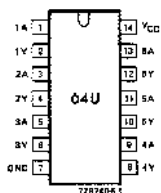
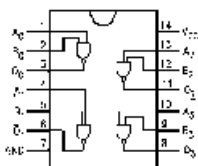
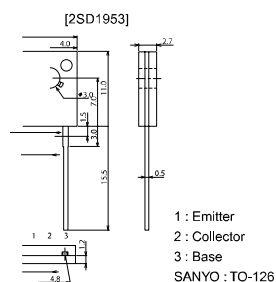


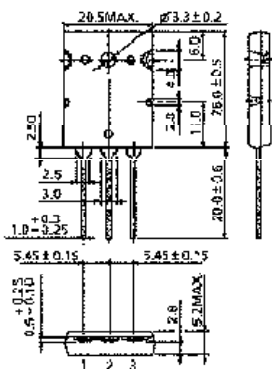
Fig.1 Pin configuration.

74AC00SC

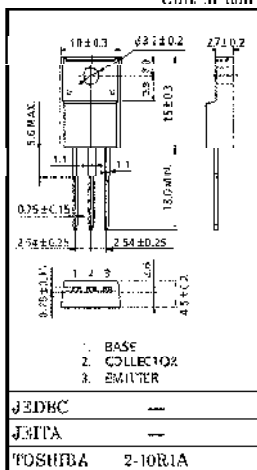


2SD1953





Unit in mm

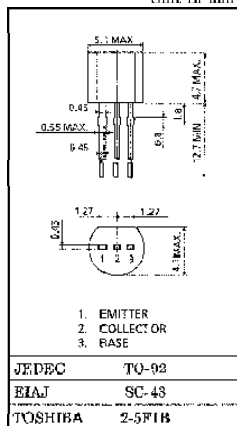


- 1. BASE
- 2. COLLECTOR
- 3. EMITTER

JEDEC	—
J-ITA	—
TOSHIBA	2-10R1A

Weight : 1.7g (Typ)

Unit in mm

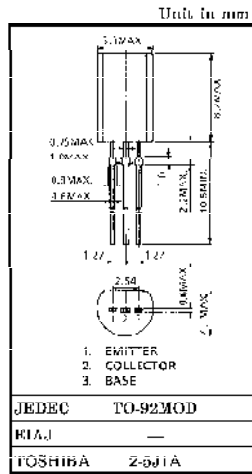


- 1. EMITTER
- 2. COLLECTOR
- 3. BASE

JEDEC	TO-92
EIAJ	SC-43
TOSHIBA	2-5F1B

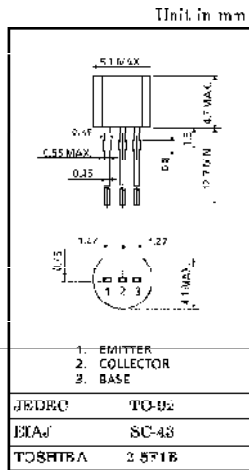
Weight : 0.21g

2SC2705



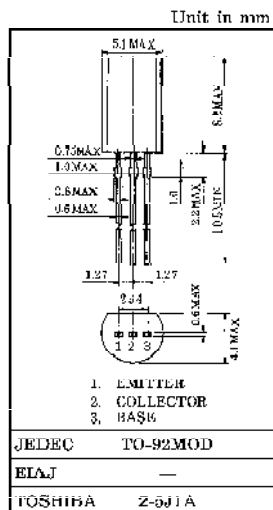
Weight : 0.36g

2SC2240



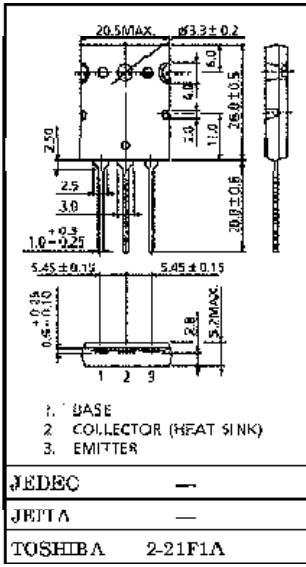
Weight : 0.21g

2SC2235

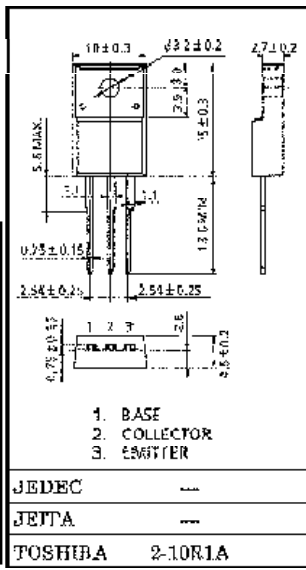


Weight : 0.36g

Unit in mm

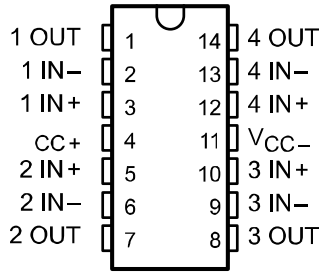


Unit in mm

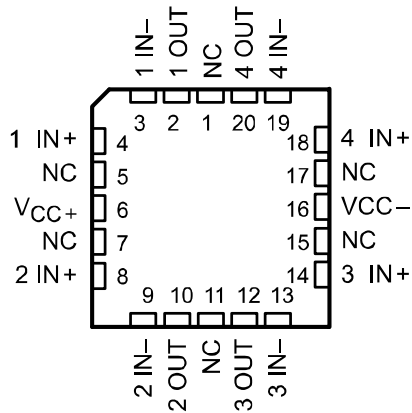


Weight : 1.7g (Typ.)

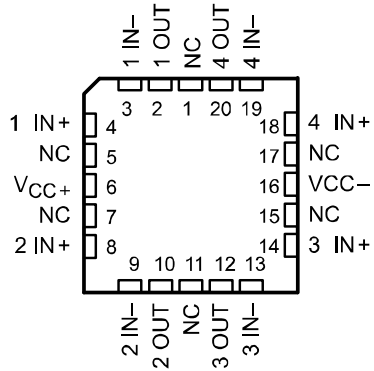
TL084, TL084A, TL084B
D, J, N, OR PW PACKAGE
(TOP VIEW)



TL084M . . . FK PACKAGE
(TOP VIEW)

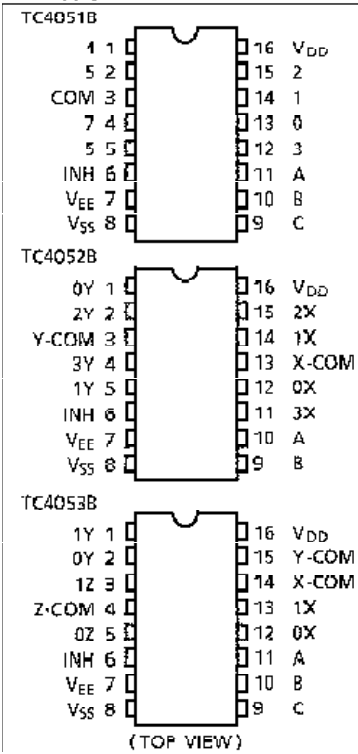


TL084M . . . FK PACKAGE
(TOP VIEW)

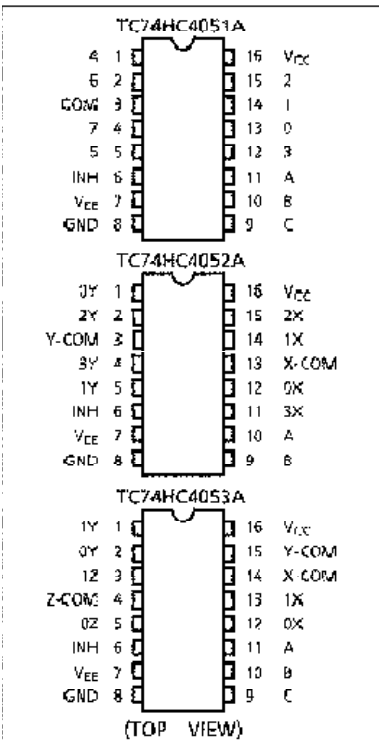


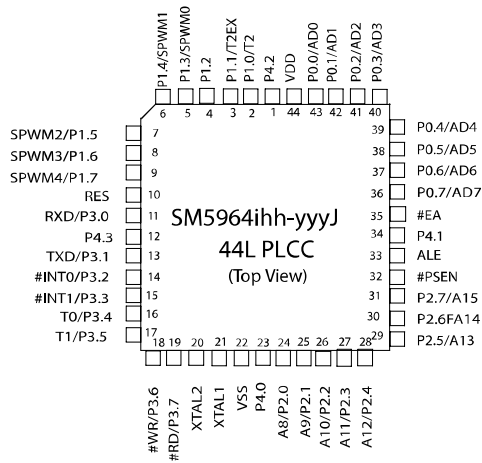
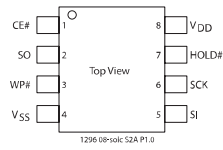
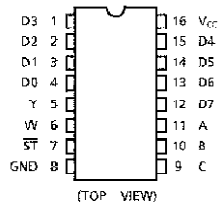
TC4053BFN

PIN ASSIGNMENT



PIN ASSIGNMENT

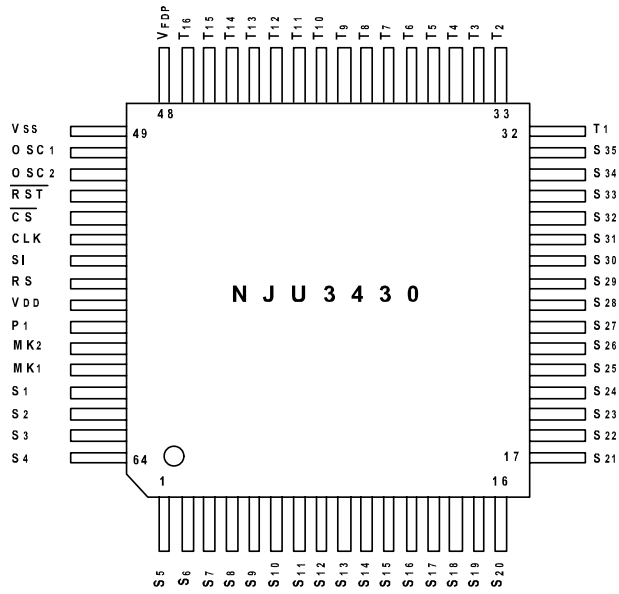




NJM2068



NJU3430



ADV7322

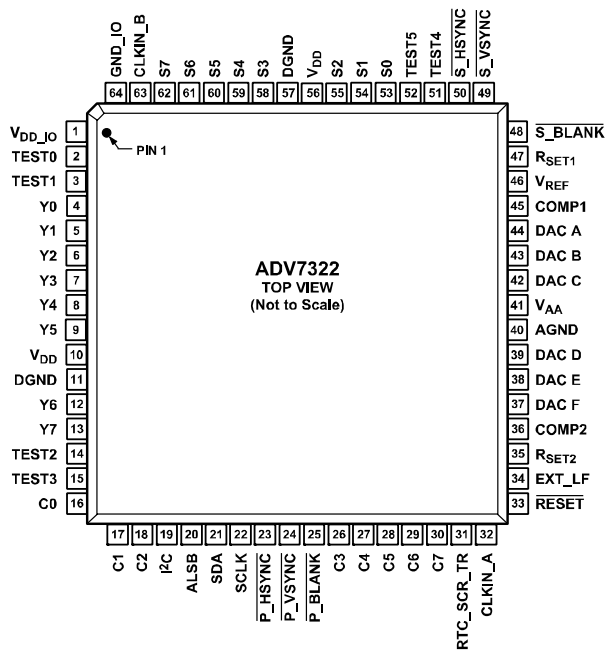


Figure 19. Pin Configuration

Sil 9134

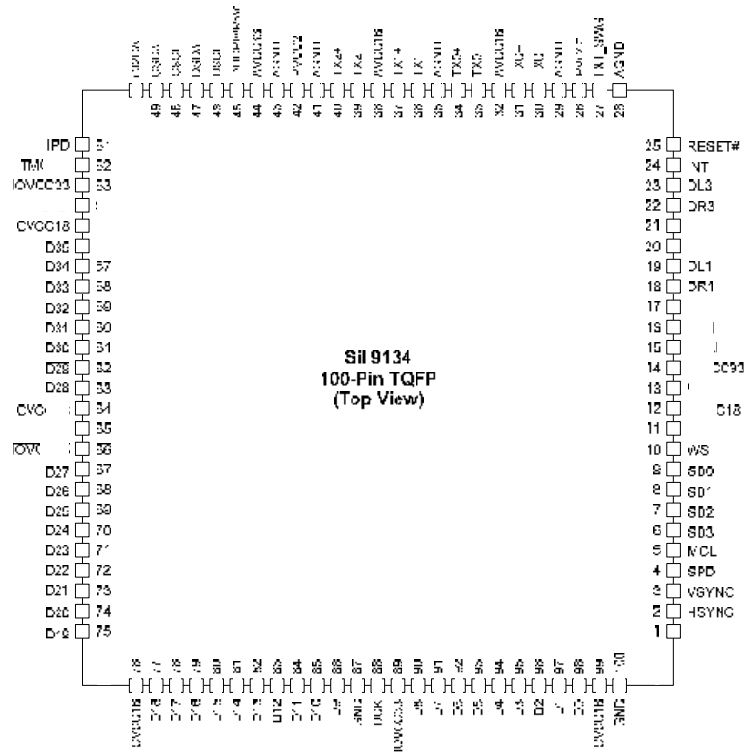


Figure 1. 100-Pin TQFP Pinout Diagram

Sil 9135

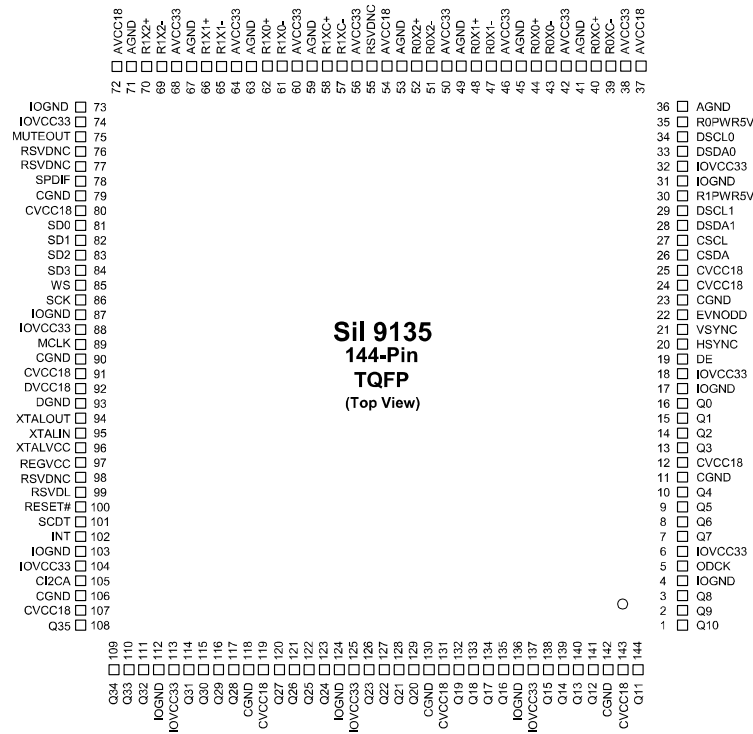
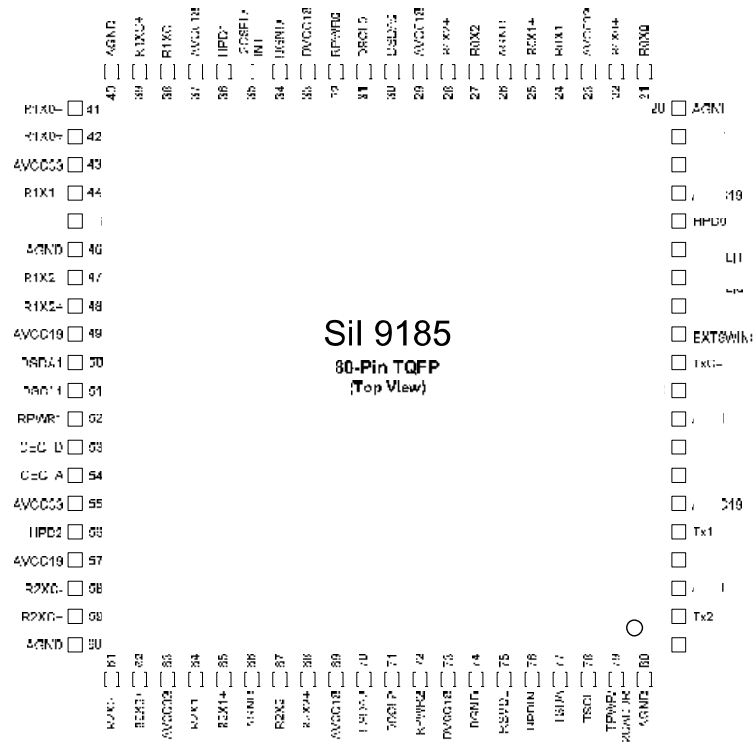


Figure 1. Pin Diagram

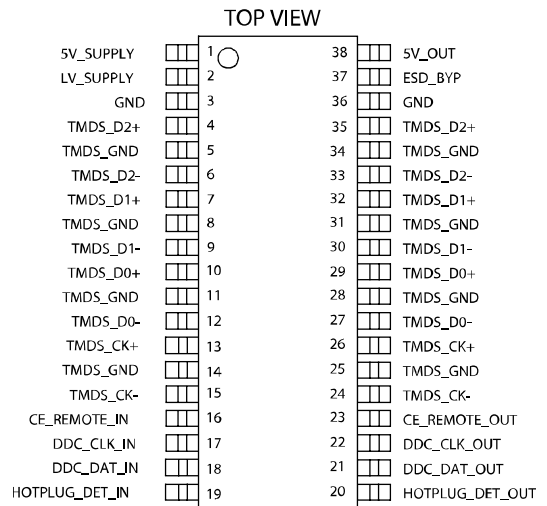
Sil 9185



Sil 9185
80-Pin TQFP
(Top View)

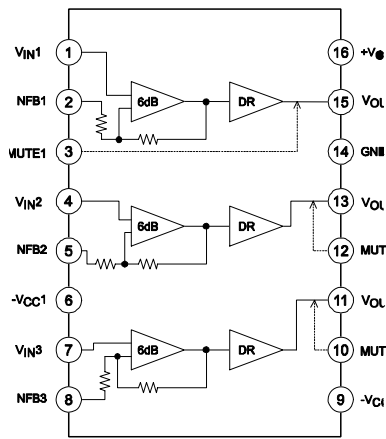
Figure 1. Pin Mapping

CM2020

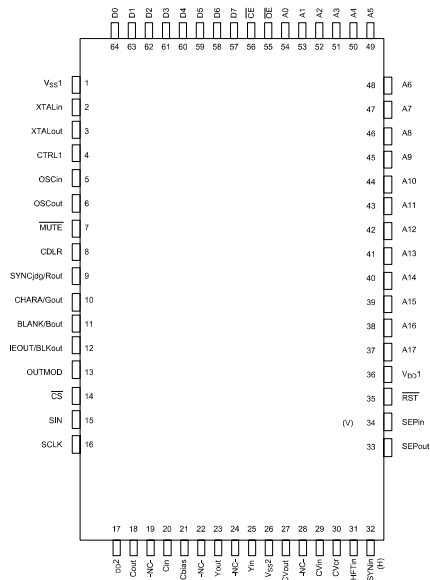


38-PIN TSSOP PACKAGE

LA7108M

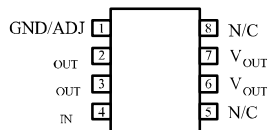


LC74732W



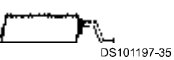
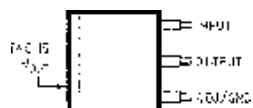
AMS1117

8L SOIC Top View



LMS1585A/LMS1587

TO-263



Top View