

Service Service Service



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Service Manual

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1. Technical Specifications, Connections, and Chassis Overview

Index of this chapter:

- 1.1 Technical Specifications
- 1.2 Connection Overview
- 1.3 Chassis Overview

Notes:

- Figures can deviate due to the different set executions.
- Specifications are indicative (subject to change).

1.1 Technical Specifications

1.1.1 Vision

Display type	: LCD
Screen size	: 32" (82 cm), 16:9
	: 42" (107 cm), 16:9
Display area (HxV in mm)	: 697.6 x 392.2
Number of Pixels (HxV)	: 1366 x 768
Pitch (HxV in mm)	: 0.510 x 0.510
Color pixel arrangement	: RGB vertical stripe
Display operating mode	: Normally black
Color depth	: 16.7M colors (8-bit)
Brightness (cd/m ²)	: 500
	(center 1 pts, typ.)
Viewing angle (CR>10)	: R/L 178, U/D 178
Surface treatment	: Hard coating (3H)
Electrical interface	: LVDS
Response Time (ms)	: Trg: 8, Tfg: 10
	(Gray to Gray: 8)
Contrast ratio	: 1000:1 (typ.)
Backlight	: 16 EEFL
Support Video Formats	: 720x400@70Hz
	: 640x480@60Hz
	: 640x480@67Hz
	: 640x480@72Hz
	: 640x480@75Hz
	: 800x600@56Hz
	: 800x600@60Hz
	: 800x600@72Hz

1.1.2 Sound

Sound systems	: PAL
	: NTSC
	: SECAM
Maximum power (W)	: 2x10

1.1.3 Miscellaneous

Power supply	
AC-input (V _{ac})	: 90 ~ 264
Power consumption (W)	: 200 max
	(with Smart Card)
Power indicator	: LED (On: Blue, Sleep mode: Amber)
Auto power saving (W)	: < 18 with Smrt Crd,
	< 3.5 without Smrt Crd
Horizontal scan	
Horizontal	: 30 ~ 63 kHz
Vertical	: 56 ~ 76 Hz
Ambient conditions:	
-Temperature	: 0 ~ 40 °C
- Humidity	: 20 to 70%
Dimensions (WxHxD in mm)	: 760x450x48
Weight (kg)	: 6.15 (Typ)

1.2 Connection Overview

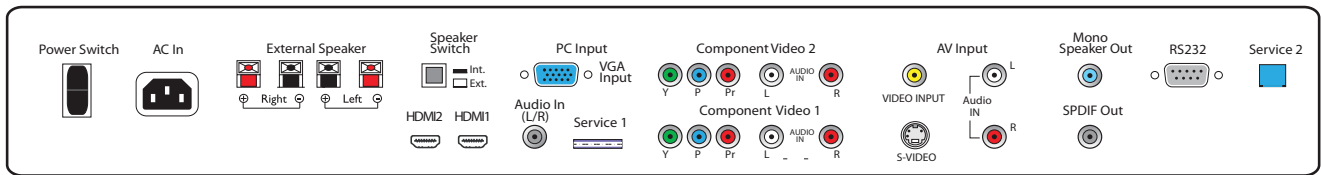
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Figure 1-1 Rear I/O connections

Note: The following connector colour abbreviations are used (acc. to DIN/IEC 757): Bk= Black, Bu= Blue, Gn= Green, Gy= Grey, Rd= Red, Wh= White, and Ye= Yellow.

1.2.1 Rear Connections

HDMI1 & 2: Digital Video, Digital Audio - In



Figure 1-2 HDMI (type A) connector

1	- D2+	Data channel	⊕
2	- Shield	Gnd	⊥
3	- D2-	Data channel	⊕
4	- D1+	Data channel	⊕
5	- Shield	Gnd	⊥
6	- D1-	Data channel	⊕
7	- D0+	Data channel	⊕
8	- Shield	Gnd	⊥
9	- D0-	Data channel	⊕
10	- CLK+	Data channel	⊕
11	- Shield	Gnd	⊥
12	- CLK-	Data channel	⊕
13	- n.c.		
14	- n.c.		
15	- DDC_SCL	DDC clock	⊕
16	- DDC_SDA	DDC data	⊕
17	- Ground	Gnd	⊥
18	- +5V		⊕
19	- HPD	Hot Plug Detect	⊕
20	- Ground	Gnd	⊥

VGA: Video RGB - In

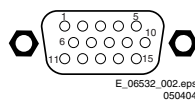


Figure 1-3 VGA Connector

1	- Video Red	0.7 V _{PP} / 75 ohm	⊕
2	- Video Green	0.7 V _{PP} / 75 ohm	⊕
3	- Video Blue	0.7 V _{PP} / 75 ohm	⊕
4	- n.c.		
5	- Ground	Gnd	⊥
6	- Ground Red	Gnd	⊥
7	- Ground Green	Gnd	⊥
8	- Ground Blue	Gnd	⊥
9	- +5V _{dc}	+5 V	⊕
10	- Ground Sync	Gnd	⊥
11	- n.c.		
12	- DDC_SDA	DDC data	⊕
13	- H-sync	0 - 5 V	⊕
14	- V-sync	0 - 5 V	⊕
15	- DDC_SCL	DDC clock	⊕

Service Connector UART (caution: non-standard pinning!)

1	- UART_RX	Receive	⊕
2	- Ground	Gnd	⊥
3	- UART_TX	Transmit	⊕

Comp. Video 1 & 2: Cinch: Video YPbPr - In, Audio - In

Gn	- Video Y	1 V _{PP} / 75 ohm	⊕
Bu	- Video Pb	0.7 V _{PP} / 75 ohm	⊕
Rd	- Video Pr	0.7 V _{PP} / 75 ohm	⊕
Wh	- Audio L	0.5 V _{RMS} / 10 kohm	⊕
Rd	- Audio R	0.5 V _{RMS} / 10 kohm	⊕

AV Input: Cinch: Video CVBS - In, Audio - In

Rd	- Audio R	0.5 V _{RMS} / 10 kohm	⊕
Wh	- Audio L	0.5 V _{RMS} / 10 kohm	⊕
Ye	- Video CVBS	1 V _{PP} / 75 ohm	⊕

AV Input: S-Video (Hosiden): Video Y/C - In

1	- Ground Y	Gnd	⊥
2	- Ground C	Gnd	⊥
3	- Video Y	1 V _{PP} / 75 ohm	⊕
4	- Video C	0.3 V _{PP} / 75 ohm	⊕

Cinch: Mono Speaker- Out

Bu	- Audio - Mono	0.5 V _{RMS} / 10 kohm	⊕
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Cinch: S/PDIF - Out

Bk	- Coaxial	0.4 - 0.6V _{PP} / 75 ohm	⊕
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RS232: Sub_D

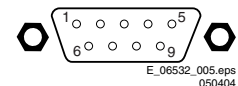


Figure 1-4 Sub_D Connector

1	- n.c.		
2	- M-RXD	Receive	
3	- M-TXD.	Transmit	
4	- n.c.		
5	- Ground	Gnd	⊥
6	- n.c.		
7	- n.c.		
8	- n.c.		
9	- n.c.		

1.3 Chassis Overview

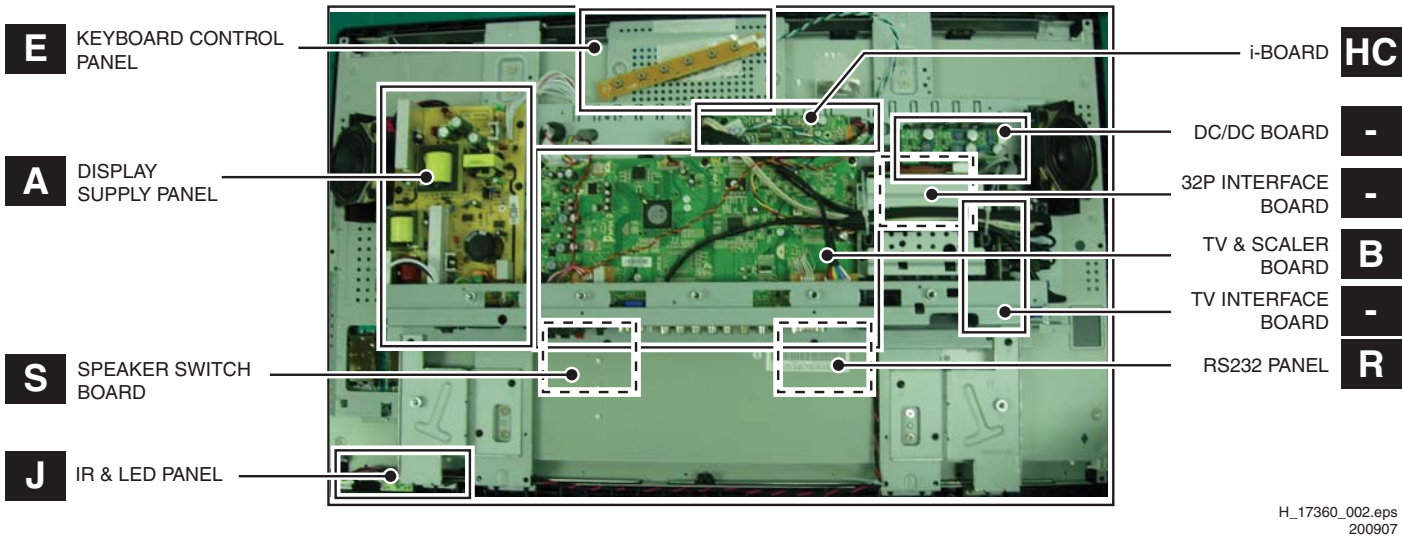


Figure 1-5 Chassis Overview

2. Safety Instructions, Warnings, and Notes

Index of this chapter:

- 2.1 Safety Instructions
- 2.2 Warnings
- 2.3 Notes

2.1 Safety Instructions

Safety regulations require the following **during** a repair:

- Connect the set to the Mains/AC Power via an isolation transformer (> 800 VA).
- Replace safety components, indicated by the symbol , only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that **after** a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the Mains/AC Power lead for external damage.
- Check the strain relief of the Mains/AC Power cord for proper function.
- Check the electrical DC resistance between the Mains/AC Power plug and the secondary side (only for sets that have a Mains/AC Power isolated power supply):
 1. Unplug the Mains/AC Power cord and connect a wire between the two pins of the Mains/AC Power plug.
 2. Set the Mains/AC Power switch to the "on" position (keep the Mains/AC Power cord unplugged!).
 3. Measure the resistance value between the pins of the Mains/AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 Mohm and 12 Mohm.
 4. Switch "off" the set, and remove the wire between the two pins of the Mains/AC Power plug.
- Check the cabinet for defects, to prevent touching of any inner parts by the customer.

2.2 Warnings

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD ) . Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential. Available ESD protection equipment:
 - Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
 - Wristband tester 4822 344 13999.
- Be careful during measurements in the high voltage section.
- Never replace modules or other components while the unit is switched "on".
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.3 Notes

2.3.1 General

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground ($\perp$), or hot ground ($\rightarrow$), depending on the tested area of circuitry. The voltages and waveforms shown in the diagrams are indicative. Measure them in the

Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz for PAL, or 61.25 MHz for NTSC (channel 3).

- Where necessary, measure the waveforms and voltages with () and without () aerial signal. Measure the voltages in the power supply section both in normal operation () and in stand-by () . These values are indicated by means of the appropriate symbols.
- Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic" and the "double-D symbol", are trademarks of Dolby Laboratories.

2.3.2 Schematic Notes

- All resistor values are in ohms, and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 kohm).
- Resistor values with no multiplier may be indicated with either an "E" or an "R" (e.g. 220E or 220R indicates 220 ohm).
- All capacitor values are given in micro-farads ($\mu = \times 10^{-6}$), nano-farads ($n = \times 10^{-9}$), or pico-farads ($p = \times 10^{-12}$).
- Capacitor values may also use the value multiplier as the decimal point indication (e.g. 2p2 indicates 2.2 pF).
- An "asterisk" (*) indicates component usage varies. Refer to the diversity tables for the correct values.
- The correct component values are listed in the Spare Parts List. Therefore, always check this list when there is any doubt.

2.3.3 BGA (Ball Grid Array) ICs

Introduction

For more information on how to handle BGA devices, visit this URL: www.atyourservice.ce.philips.com (needs subscription, not available for all regions). After login, select "Magazine", then go to "Repair downloads". Here you will find Information on how to deal with BGA-ICs.

BGA Temperature Profiles

For BGA-ICs, you **must** use the correct temperature-profile, which is coupled to the 12NC. For an overview of these profiles, visit the website www.atyourservice.ce.philips.com (needs subscription, but is not available for all regions). You will find this and more technical information within the "Magazine", chapter "Repair downloads". For additional questions please contact your local repair help desk.

2.3.4 Lead-free Soldering

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free soldering tin Philips SAC305 with order code 0622 149 00106. If lead-free solder paste is required, please contact the manufacturer of your soldering equipment. In general, use of solder paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free soldering tin. The solder tool must be able:
 - To reach a solder-tip temperature of at least 400°C.
 - To stabilize the adjusted temperature at the solder-tip.
 - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature of around 360°C - 380°C is reached and stabilized at the solder joint. Heating time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C, otherwise wear-out of tips will increase drastically and flux-fluid will be destroyed.

To avoid wear-out of tips, switch "off" unused equipment or reduce heat.

- Mix of lead-free soldering tin/parts with leaded soldering tin/parts is possible but PHILIPS recommends strongly **to avoid** mixed regimes. If this cannot be avoided, carefully clear the solder-joint from old tin and re-solder with new tin.

2.3.5 Alternative BOM identification

The **third digit** in the serial number (example: AG2B0335000001) indicates the number of the alternative B.O.M. (Bill Of Materials) that has been used for producing the specific TV set. In general, it is possible that the same TV model on the market is produced with e.g. two different types of displays, coming from two different suppliers. This will then result in sets which have the same CTN (Commercial Type Number; e.g. 28PW9515/12) but which have a different B.O.M. number.

By looking at the third digit of the serial number, one can identify which B.O.M. is used for the TV set he is working with. If the third digit of the serial number contains the number "1" (example: AG1B0335000001), then the TV set has been manufactured according to B.O.M. number 1. If the third digit is a "2" (example: AG2B0335000001), then the set has been produced according to B.O.M. no. 2. ***This is important for ordering the correct spare parts!***

For the third digit, the numbers 1...9 and the characters A...Z can be used, so in total: 9 plus 26 = 35 different B.O.M.s can be indicated by the third digit of the serial number.

Identification: The bottom line of a type plate gives a 14-digit serial number. Digits 1 and 2 refer to the production centre (e.g. AG is Bruges), digit 3 refers to the B.O.M. code, digit 4 refers to the Service version change code, digits 5 and 6 refer to the production year, and digits 7 and 8 refer to production week (in

example below it is 2006 week 17). The 6 last digits contain the serial number.



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Figure 2-1 Serial number (example)

2.3.6 Board Level Repair (BLR) or Component Level Repair (CLR)

If a board is defective, consult your repair procedure to decide if the board has to be exchanged or if it should be repaired on component level.

If your repair procedure says the board should be exchanged completely, do not solder on the defective board. Otherwise, it cannot be returned to the O.E.M. supplier for back charging!

2.3.7 Practical Service Precautions

- **It makes sense to avoid exposure to electrical shock.** While some sources are expected to have a possible dangerous impact, others of quite high potential are of limited current and are sometimes held in less regard.
- **Always respect voltages.** While some may not be dangerous in themselves, they can cause unexpected reactions that are best avoided. Before reaching into a powered TV set, it is best to test the high voltage insulation. It is easy to do, and is a good service precaution.

3. Directions for Use

You can download this information from the following websites:

<http://www.philips.com/support>

<http://www.p4c.philips.com>

4. Mechanical Instructions

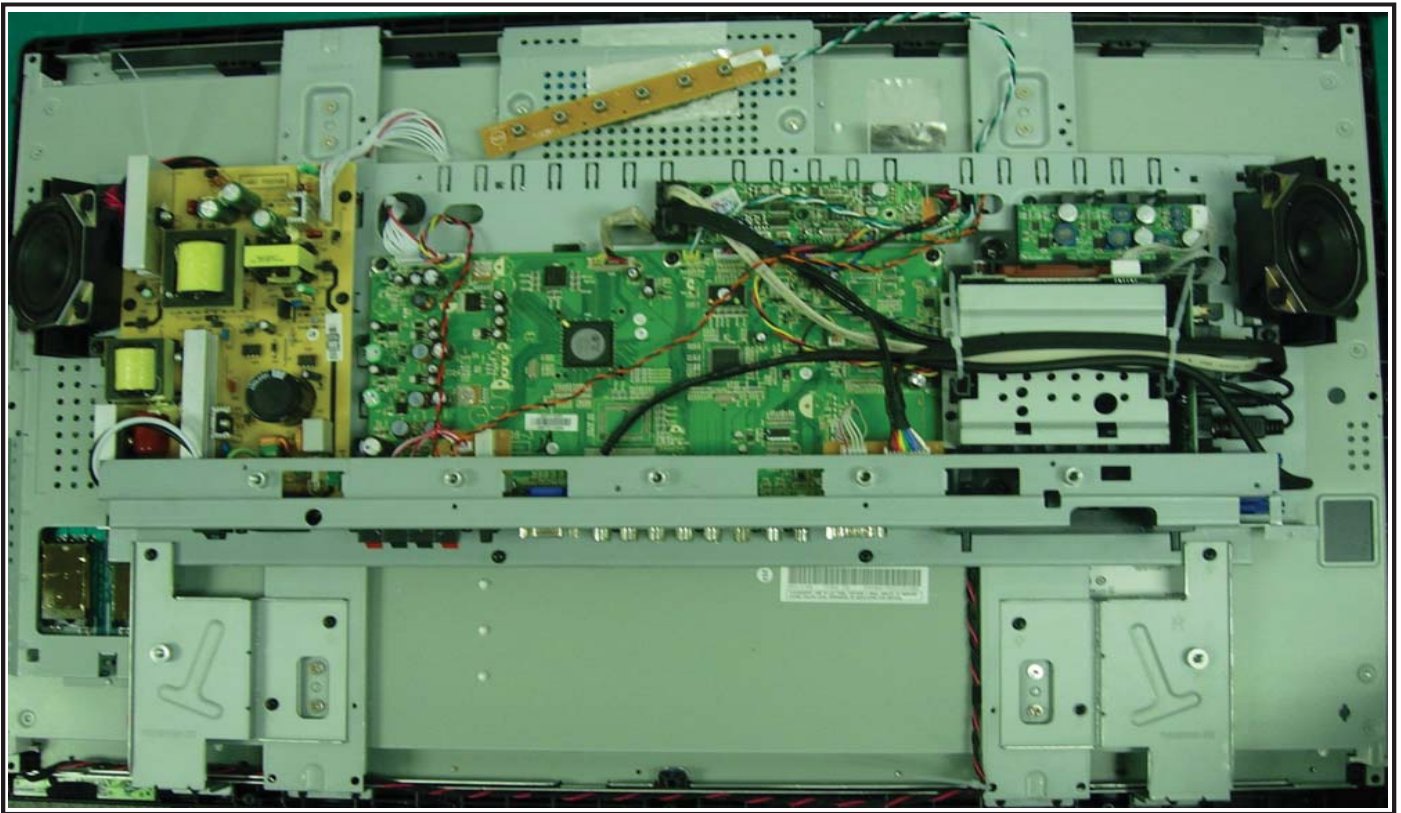
Index of this chapter:

- 4.1 Cable Dressing
- 4.2 Service Positions
- 4.3 Assy/Panel Removal
- 4.4 Set Re-assembly

Notes:

- Figures below can deviate slightly from the actual situation, due to the different set executions.
- Follow the disassemble instructions in described order. They apply to the 32" model, but the described method is comparable for the other screen sizes.

4.1 Cable Dressing



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Figure 4-1 Cable dressing (32" model)

4.2 Service Positions

For easy servicing of this set, there are a few possibilities created:

- The buffers from the packaging.
- The original aluminium stands.
- Foam bars (created for Service).

4.2.1 Foam Bars

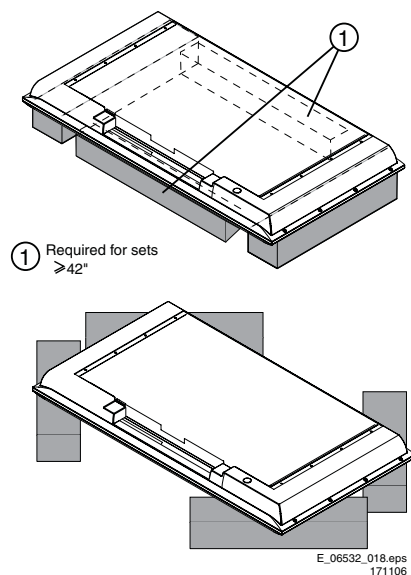


Figure 4-2 Foam bars

The foam bars (order code 3122 785 90580 for two pieces) can be used for all types and sizes of Flat TVs. See figure "Foam bars" for details. Sets with a display of 42" and larger, require **four** foam bars [1]. Ensure that the foam bars are always supporting the cabinet and **never** only the display.

Caution: Failure to follow these guidelines can seriously damage the display!

By laying the TV face down on the (ESD protective) foam bars, a stable situation is created to perform measurements and alignments. By placing a mirror under the TV, you can monitor the screen.

4.3 Assy/Panel Removal

4.3.1 Rear Cover

Warning: Disconnect the mains power cord before you remove the rear cover.

1. Place the TV set upside down on a table top, using the foam bars (see part "Service Position").
2. Remove the screws that secure the rear cover and the stand (if mounted). The screws are located at the top, bottom, left and right sides.
3. Lift the rear cover from the cabinet. Make sure that wires and flat foils are not damaged during cover removal.

4.3.2 Keyboard Control Board

1. Refer to next figure.
 2. Unplug connector [1].
 3. Release clips [2] and remove the board.
- When defective, replace the whole unit

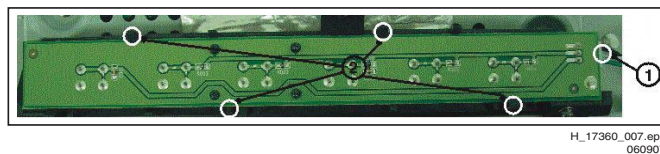


Figure 4-3 Keyboard control board

4.3.3 IR Board

1. Refer to next figure.
 2. Unplug the connector [1].
 3. Remove the screws [2] and remove the IR board.
- When defective, replace the whole unit.

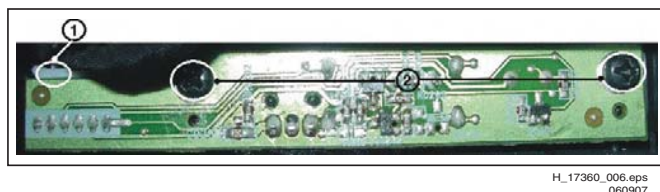


Figure 4-4 IR board

4.3.4 Speakers

1. Refer to next two figures.
2. Unplug the connectors [1].
3. Remove the screws [2].

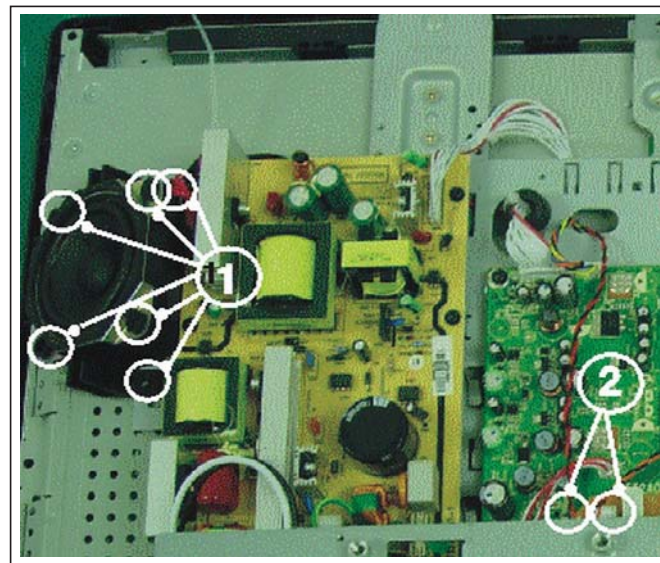


Figure 4-5 Speaker-1

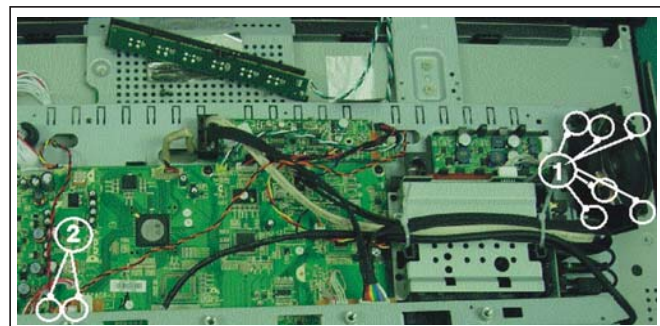
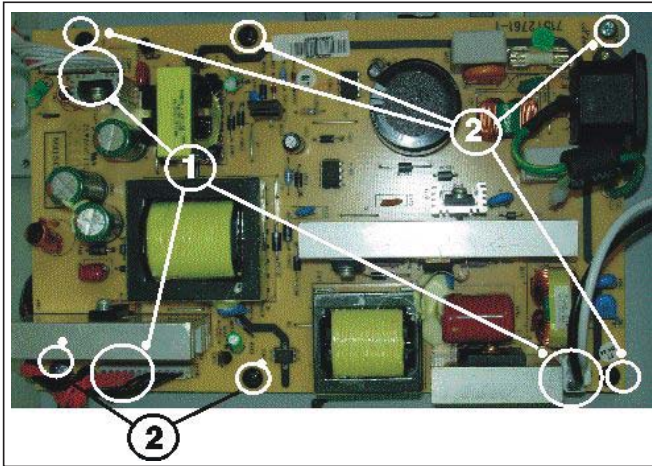


Figure 4-6 Speaker-2

4.3.5 Power Supply Board

1. Refer to next figure.
2. Unplug all the connectors [1].
3. Remove the fixation screws [2]
4. Remove the board.



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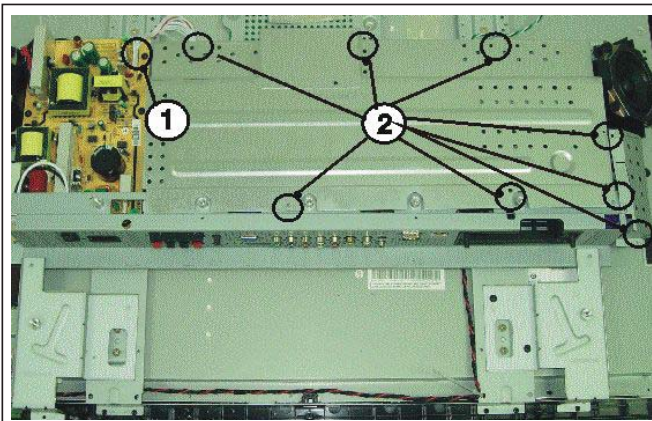
Figure 4-7 Power supply board

4.3.6 Scaler Board (SB)

Caution: it is absolutely mandatory to remount all different screws at their original position during re-assembly. Failure to do so may result in damaging the SB.

Removing the SB Top Shielding

1. See the figure "SB top shielding".
2. Disconnect the main power supply cable on the main supply lanel [1].
3. Remove the tapping screws [2].
4. After the screws is removed, the top shielding can be removed.

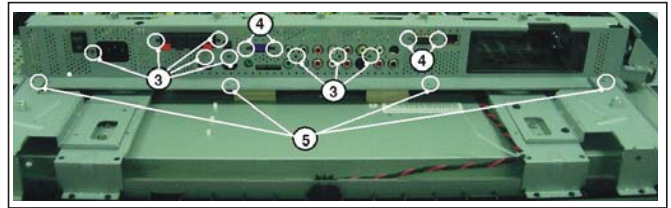


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Figure 4-8 SB Top shielding

Removing the SB Bottom Shielding

1. See the figure "SB bottom shielding".
2. Remove the tapping T10 screws [5].
3. Remove the parker screws [3].
4. Remove the six corner screws [4].
5. After the screws are removed, the bottom shielding can be removed.

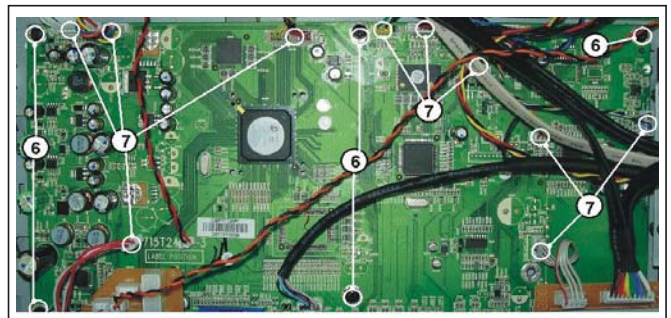


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Figure 4-9 SB bottom shielding

Removing the SB

1. See the figure "SB removal".
2. Unplug all of the cables [7].
3. Removed the parker screws [6].



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Figure 4-10 SB removal

4.4 Set Re-assembly

To re-assemble the whole set, execute all processes in reverse order.

Notes:

- While re-assembling, make sure that all cables are placed and connected in their original position. See figure "Cable dressing".
- Pay special attention not to damage the EMC foams at the SB shields. Make sure, that EMC foams are put correctly on their places.

5. Service Modes, Error Codes, and Fault Finding

Index of this chapter:

- 5.1 Test Points
- 5.2 Service Mode
- 5.3 Error Codes
- 5.4 Software Upgrading

5.1 Test Points

This chassis is NOT equipped with test points in the service printing. These test points are NOT specifically mentioned in the service manual.

5.2 Service Mode

5.2.1 Factory Mode or Service Alignment Mode (SAM)

How to Enter

To enter the Factory mode, use one of the following methods:

- Hold the "VOLUME+" and "VOLUME-" buttons, and power "on" while there is a video signal in.
- Press on the remote control the code "062596", directly followed by the "MENU" key.

Caution: These fuctions are available for Development and Service personnel **only**, NOT for end customers.

After entering the Factory mode, the following screen is visible, the values can be adjusted according to the requested (see Chapter 8).

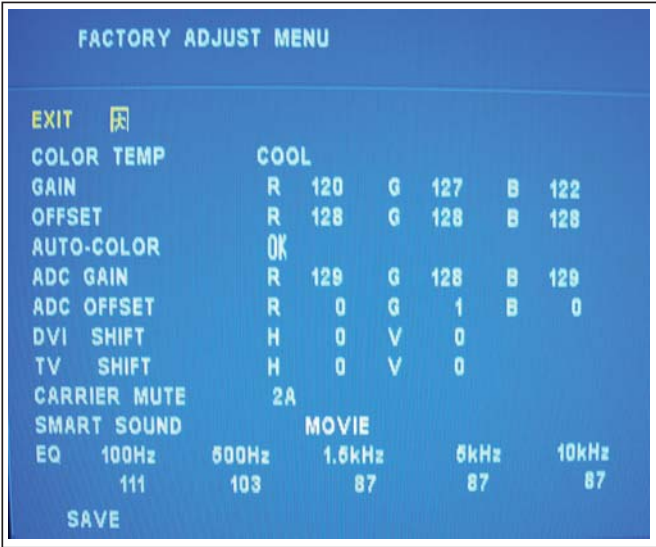


Figure 5-1 Factory mode menu

How to EXIT

Choose "EXIT", then press the "OK" button on the remote control.

5.2.2 Customer Service Mode (CSM)

Purpose

When a customer is having problems with his TV-set, he can call his dealer or the Customer Helpdesk. The service technician can then ask the customer to activate the CSM, in order to identify the status of the set. Now, the service technician can judge the severity of the complaint. In many cases, he can advise the customer how to solve the problem or he can decide if it is necessary to visit the customer.

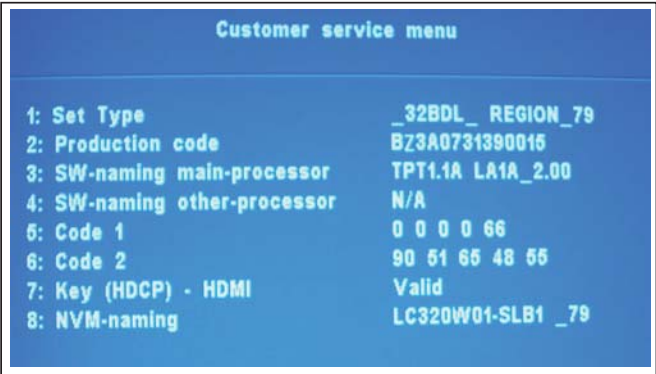
How to Activate CSM

Key in the code "123654" via the standard RC transmitter.

How to Navigate

By mean of the "CURSOR-DOWN/UP" knob on the RC-transmitter on the screen.

Contents of CSM



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Figure 5-2 CSM Menu

Menu Explanation

- Set Type.** Type number and region.
- Production code.** Product serial no.
- SW naming main-processor.** Software cluster and version is displayed.
- SW naming other-processor.** Not applicable.
- Code 1.** Error buffer contents.
- Code 2.** Error buffer contents.
- Key (HDCP) - HDMI:** Indicates if the keys are valid.
- NVM-naming:** Indicates the used LCD panel type and region (NVM content and main SW depend on the used LCD panel).

How to exit

Press "MENU" on the RC-transmitter.

5.2.3 Hotel Mode

Before the service modes can be activated, the set needs to be switched into normal consumer mode (MTV-mode) first. Use an iTV setup remote control (type: RC2573/01, 12NC: 3139 228 88782) and key in the code "024995" directly followed by the "M" (Menu) key. The test messages "TV is Now In MTV Mode" and "Please Do A Cold Start!" appears on the screen. Disconnect the set for a few seconds from the mains supply, and reconnect the set to the mains supply again. After switching "on", the set is in normal consumer mode (MTV-Mode).

After repair, place the set back into Hotel mode (iTV-Mode) again. Enter the same code on the remote control as described above. The text messages "TV Is Now In iTV Mode" and "Please Do A Cold Star!" appears. Disconnect the set for a few seconds from the mains supply, and reconnect the set to the mains supply again. After switching "on", the set is in normal consumer mode (MTV-Mode).

5.3 Error Codes

The error code buffer contains all errors detected since the last time the buffer was erased. The buffer is written from left to right. When an error occurs that is not yet in the error code

buffer, it is displayed at the left side and all other errors shift one position to the right.

Basically there are five kind of errors:

Error Code	Event
01	Audio Decoder error
02	IIC bus error
03	Tuner error
04	NVRAM error
05	Scaler Chip error

5.4 Software Upgrading

5.4.1 ComPair

Introduction

ComPair (Computer Aided Repair) is a Service tool for Philips Consumer Electronics products. and offers the following:

1. ComPair features TV software upgrade possibilities.
2. ComPair helps you to quickly get an understanding on how to repair the chassis in a short and effective way (this feature is not supported in this chassis).
3. ComPair allows very detailed diagnostics and is therefore capable of accurately indicating problem areas. You do not have to know anything about I2C or UART commands yourself, because ComPair takes care of this (this feature is not supported in this chassis).
4. ComPair speeds up the repair time since it can automatically communicate with the chassis (when the uP is working) and all repair information is directly available (this feature is not supported in this chassis).

Specifications

ComPair consists of a Windows based fault finding program and an interface box between PC and the (defective) product. The (new) ComPair II interface box is connected **to the PC** via an USB cable. For the TV chassis, the ComPair interface box and the TV communicate via a bi-directional cable via the service connector(s).

How to Connect

This is described in the ComPair chassis fault finding database.

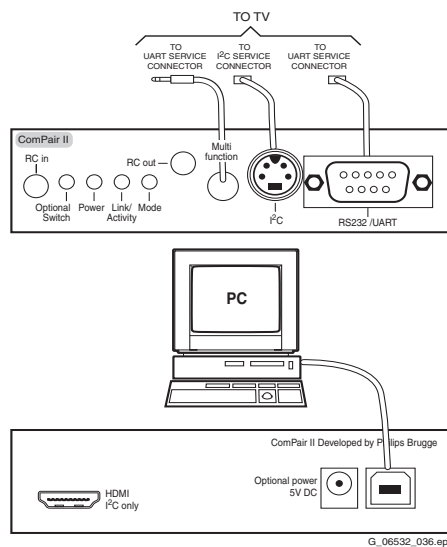


Figure 5-3 ComPair II interface connection

Caution: It is compulsory to connect the TV to the PC as shown in the picture above (with the ComPair interface in between), as the ComPair interface acts as a level shifter. If one connects the TV directly to the PC (via UART), ICs will be blown!

How to Order

ComPair II order codes:

- ComPair II interface: 3122 785 91020.
- ComPair32 CD (update): 3122 785 60160.
- ComPair UART interface cable: 3122 785 90630.

Important: The two outer pins of the white connector must be exchanged. This is explained in detail in ComPair.

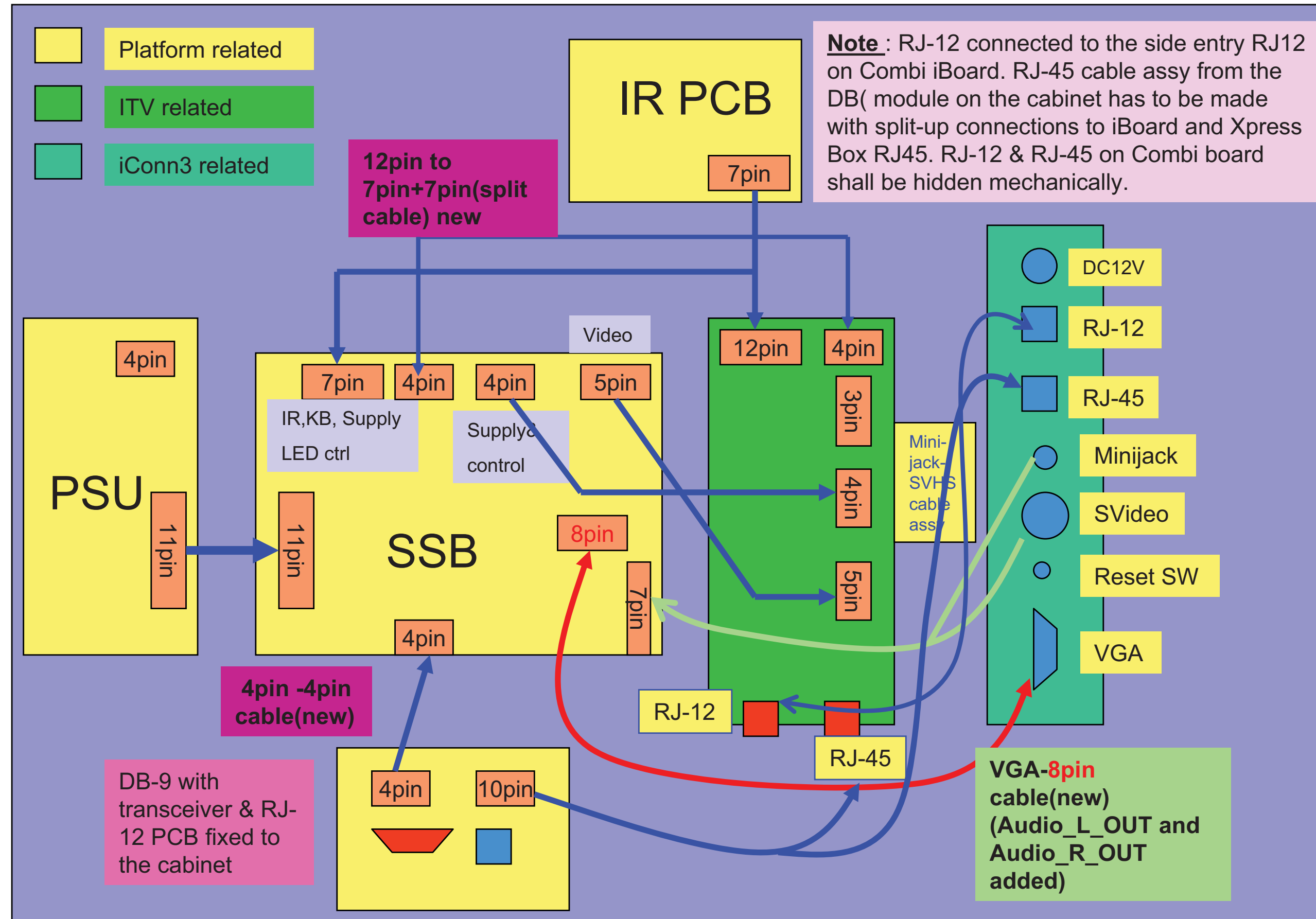
Note: If you encounter any problems, contact your local support desk.

Personal Notes:

6. Block Diagrams, Test Point Overviews, and Waveforms

Wiring Diagram

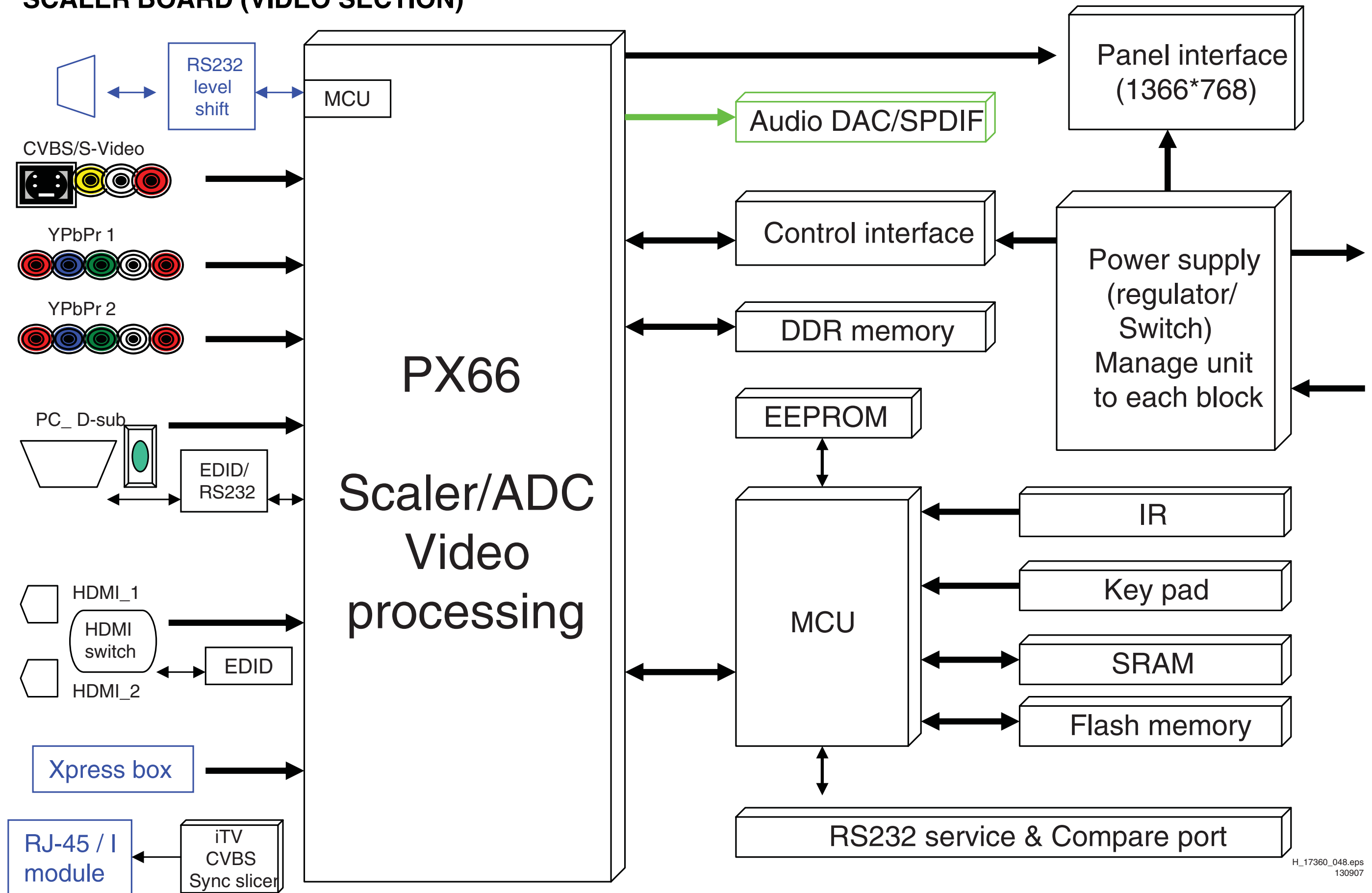
WIRING DIAGRAM



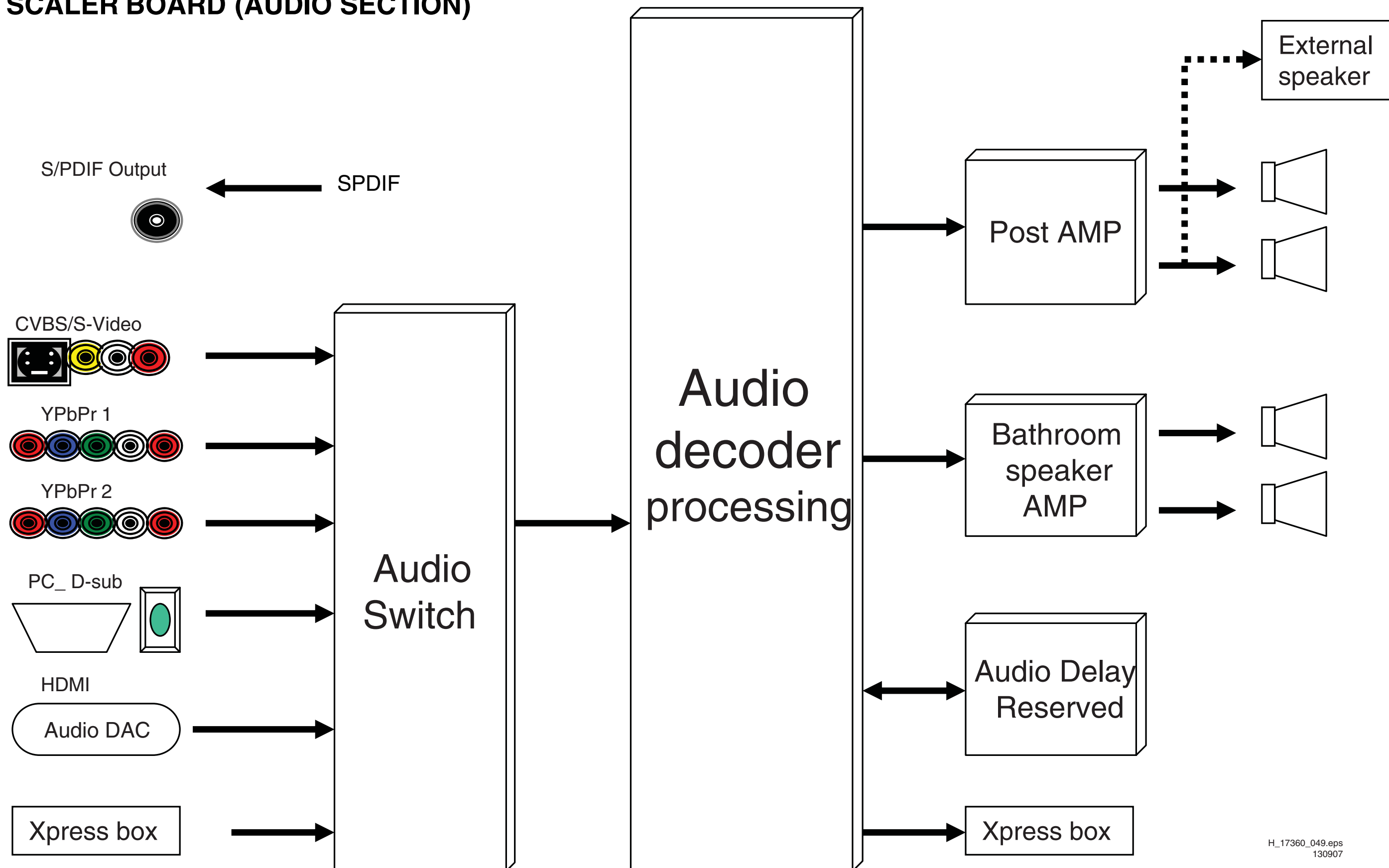
[illegible]

Block Diagram Video

SCALER BOARD (VIDEO SECTION)

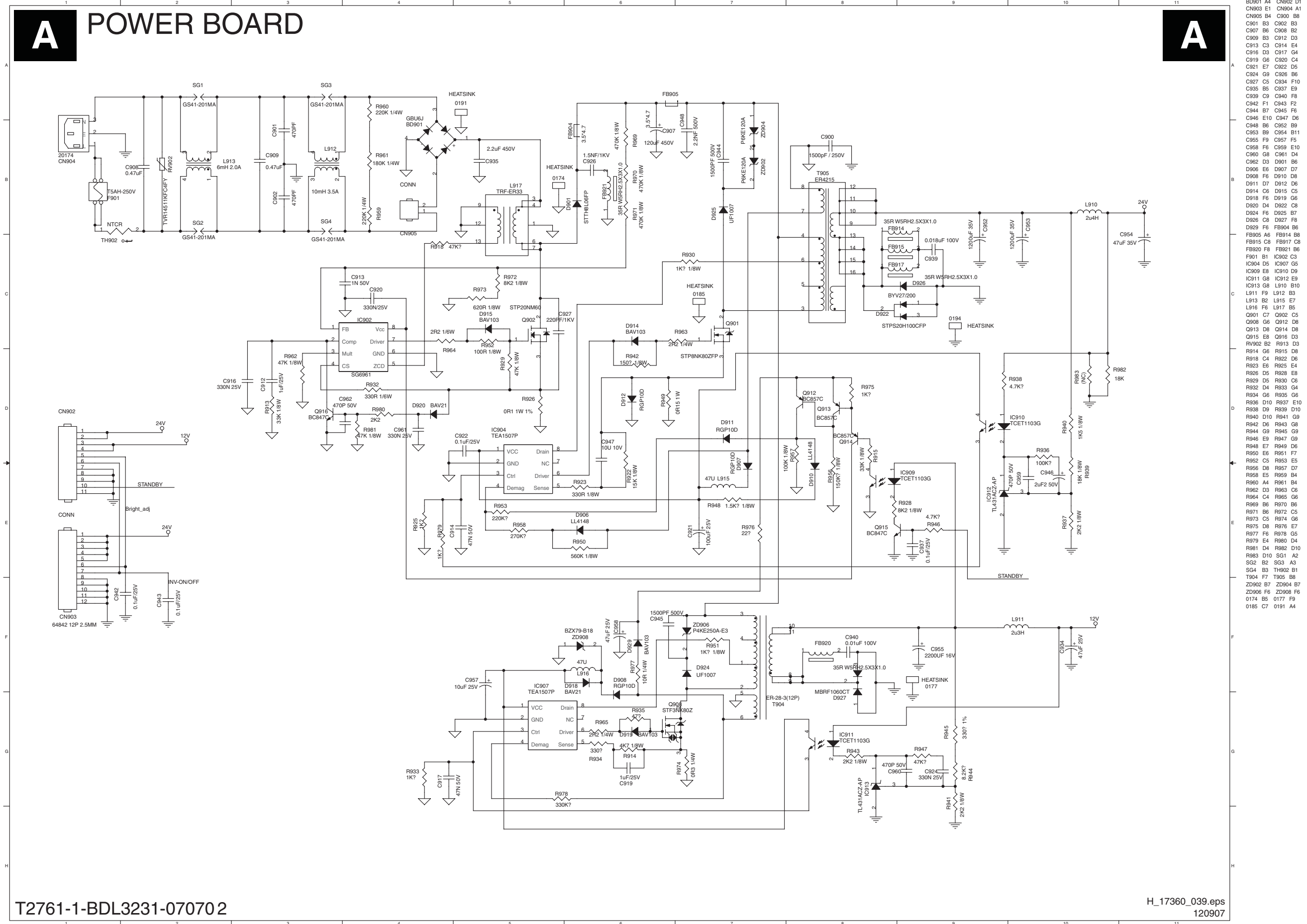


Block Diagram Audio SCALER BOARD (AUDIO SECTION)

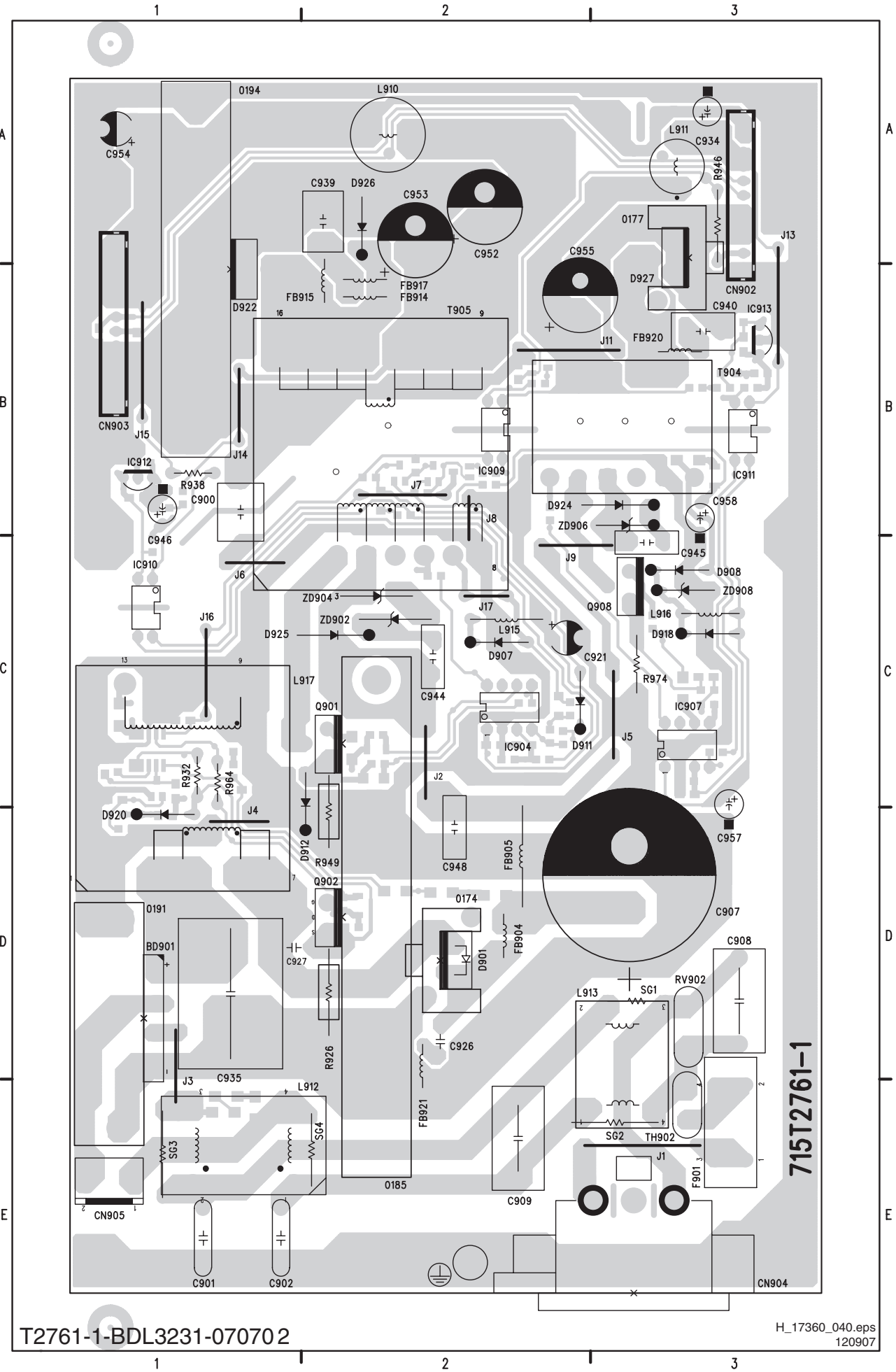


7. Circuit Diagrams and PWB Layouts

Display Supply Panel



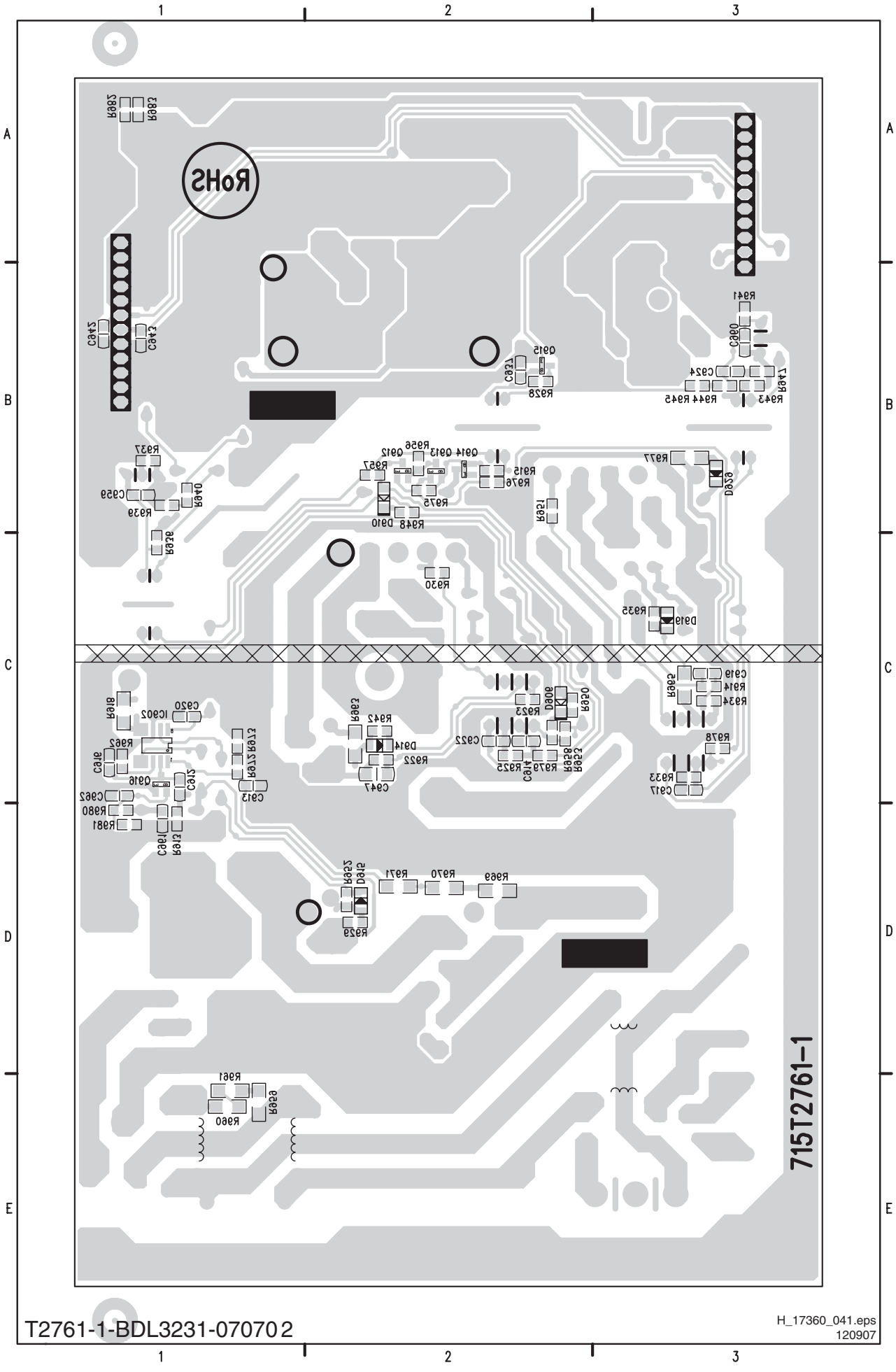
Layout Display Supply Panel (Top Side)



T2761-1-BDL3231-070702

H_17360_040.eps
120907

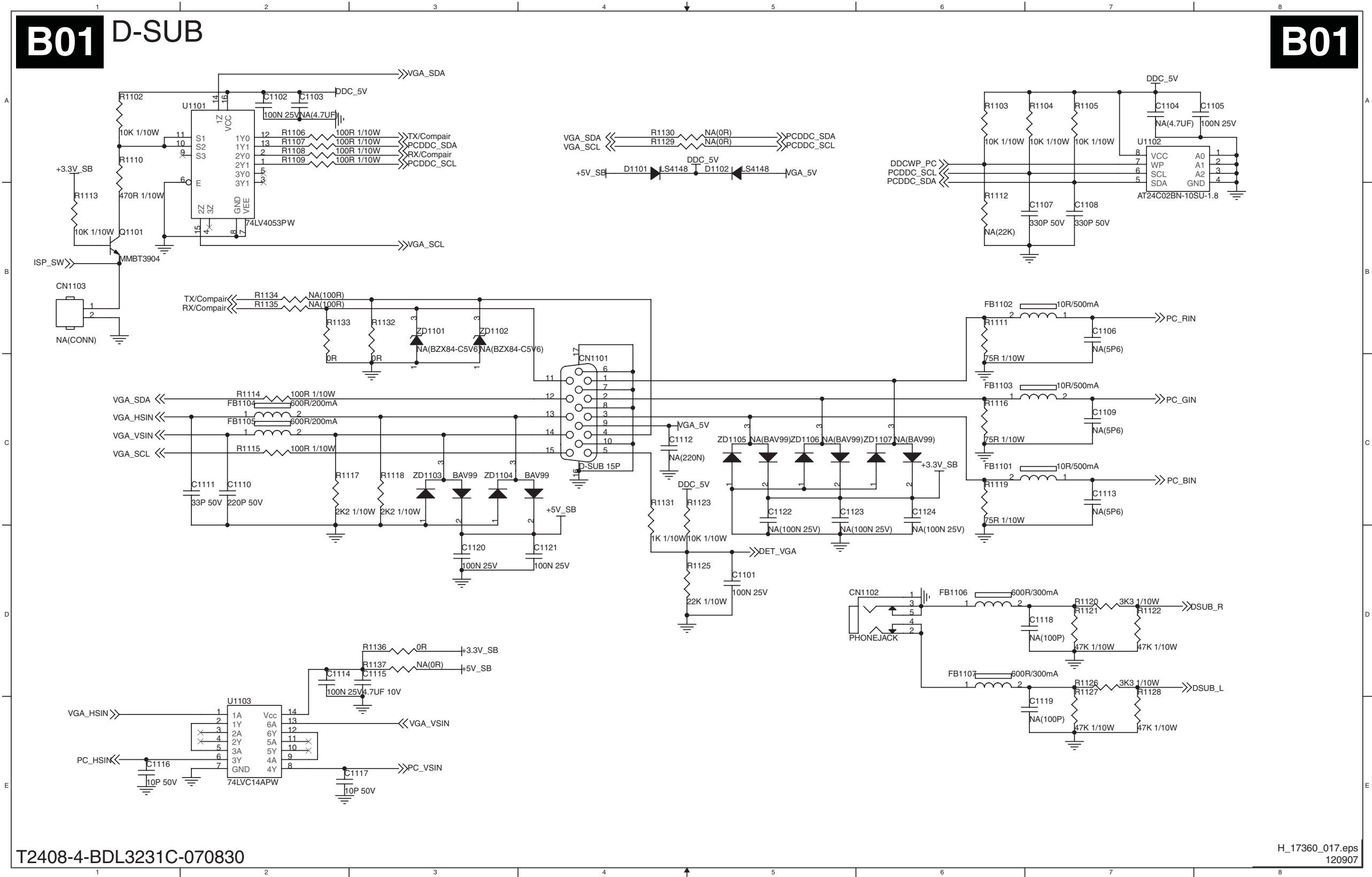
Layout Display Supply Panel (Bottom Side)



T2761-1-BDL3231-070702

H_17360_041.eps
120907

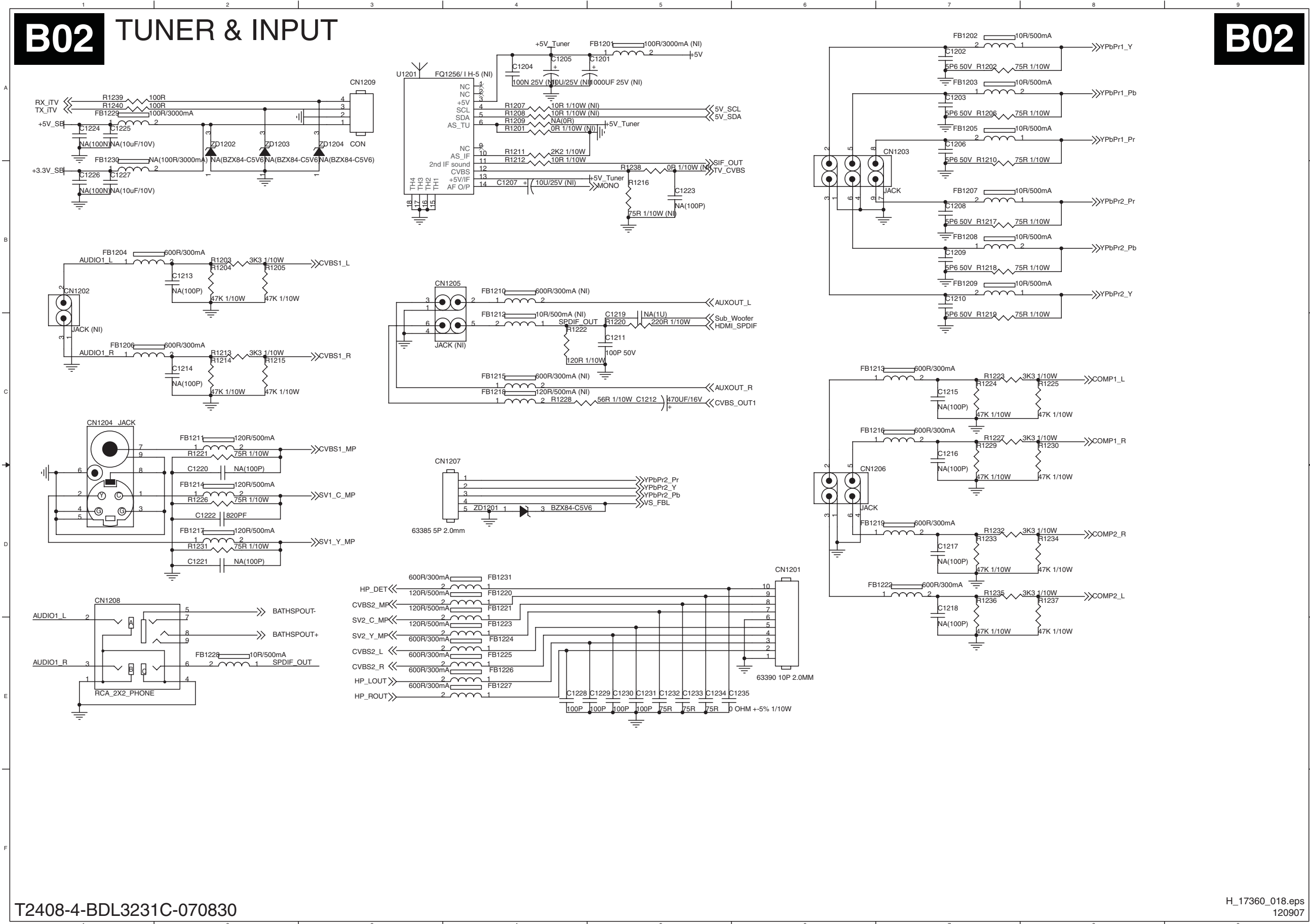
TV & Scaler Board: D-Sub



TV & Scaler Board: Tuner & Input

B02 TUNER & INPUT

B02



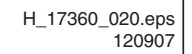
- CN1201 D6
- CN1203 A6
- CN1205 B3
- CN1207 C3
- CN1209 A3
- C1201 A4
- C1202 A7
- C1204 A4
- C1206 A7
- C1208 B7
- C1210 B7
- C1212 C5
- C1214 C2
- C1216 C7
- C1218 D7
- C1220 C2
- C1222 D2
- C1224 A1
- C1226 B1
- C1228 E4
- C1230 E5
- C1232 E5
- C1234 E5
- FB1201 A5
- FB1203 A7
- FB1205 A7
- FB1207 B7
- FB1209 B7
- FB1211 C2
- FB1213 C6
- FB1215 C4
- FB1217 D2
- FB1219 D6
- FB1221 D4
- FB1223 D4
- FB1225 E4
- FB1227 E4
- FB1229 A1
- FB1231 D4
- R1201 A4
- R1202 A7
- R1204 B2
- R1206 A7
- R1208 A4
- R1210 A7
- R1212 A4
- R1214 C2
- R1216 B5
- R1218 B7
- R1220 C5
- R1222 C4
- R1224 C4
- R1226 D2
- R1228 C4
- R1230 C7
- R1232 D7
- R1234 D7
- R1236 D7
- R1238 B5
- R1240 A1
- ZD1201 D4
- ZD1203 A2
- ZD1205 B1
- CN1204 C1
- CN1206 D6
- CN1208 D1
- C1203 A7
- C1205 A4
- C1207 B4
- C1209 B7
- C1211 C5
- C1213 B2
- C1215 C7
- C1217 D7
- C1219 B5
- C1221 D2
- C1223 B5
- C1225 A1
- C1227 B1
- C1229 E4
- C1231 E5
- C1233 E5
- C1235 E5
- FB1202 A7
- FB1204 B1
- FB1206 C1
- FB1208 B7
- FB1210 B4
- FB1212 B4
- FB1214 D2
- FB1216 C6
- FB1218 C4
- FB1220 D4
- FB1222 D7
- FB1224 E4
- FB1226 E4
- FB1228 E2
- FB1230 A1
- R1203 B2
- R1205 B2
- R1207 A4
- R1209 A4
- R1211 A4
- R1213 C2
- R1215 C2
- R1217 B7
- R1219 B7
- R1221 C2
- R1223 C7
- R1225 C7
- R1227 C7
- R1229 C7
- R1231 D2
- R1233 D7
- R1235 D7
- R1237 D7
- R1239 A1
- U1201 A3
- ZD1202 A2
- ZD1204 A3

B03 CPU



CN4101 C7
C4101 B7
C4102 A7
C4103 A7
C4104 D7
C4105 D7
C4106 D7
C4107 D6
C4108 D7
C4111 E3
C4112 E3
R4101 A7
R4102 A2
R4103 A2
R4104 A2
R4105 A2
R4106 B1
R4107 B1
R4108 B5
R4109 B5
R4110 A7
R4111 B5
R4112 B1
R4113 C1
R4114 C1
R4115 C5
R4116 C1
R4117 C5
R4118 C1
R4119 C5
R4120 C5
R4121 C5
R4122 C5
R4123 C5
R4124 C1
R4125 C5
R4126 C5
R4127 D5
R4128 D5
R4129 D5
R4130 D5
R4131 D5
R4132 D1
R4133 D5
R4134 D1
R4135 D5
R4136 D1
R4137 D5
R4138 D1
R4139 D5
R4140 D1
R4141 D5
R4142 D3
R4143 D1
R4144 E1
R4145 D5
R4146 D5
R4147 A2
R4153 A6
R4154 D5
R4155 D5
R4156 E5
R4157 D2
R4158 E2
U4101 A7
U4102 A2
U4103 B7
X4101 D3

B04 SVP LX66-1

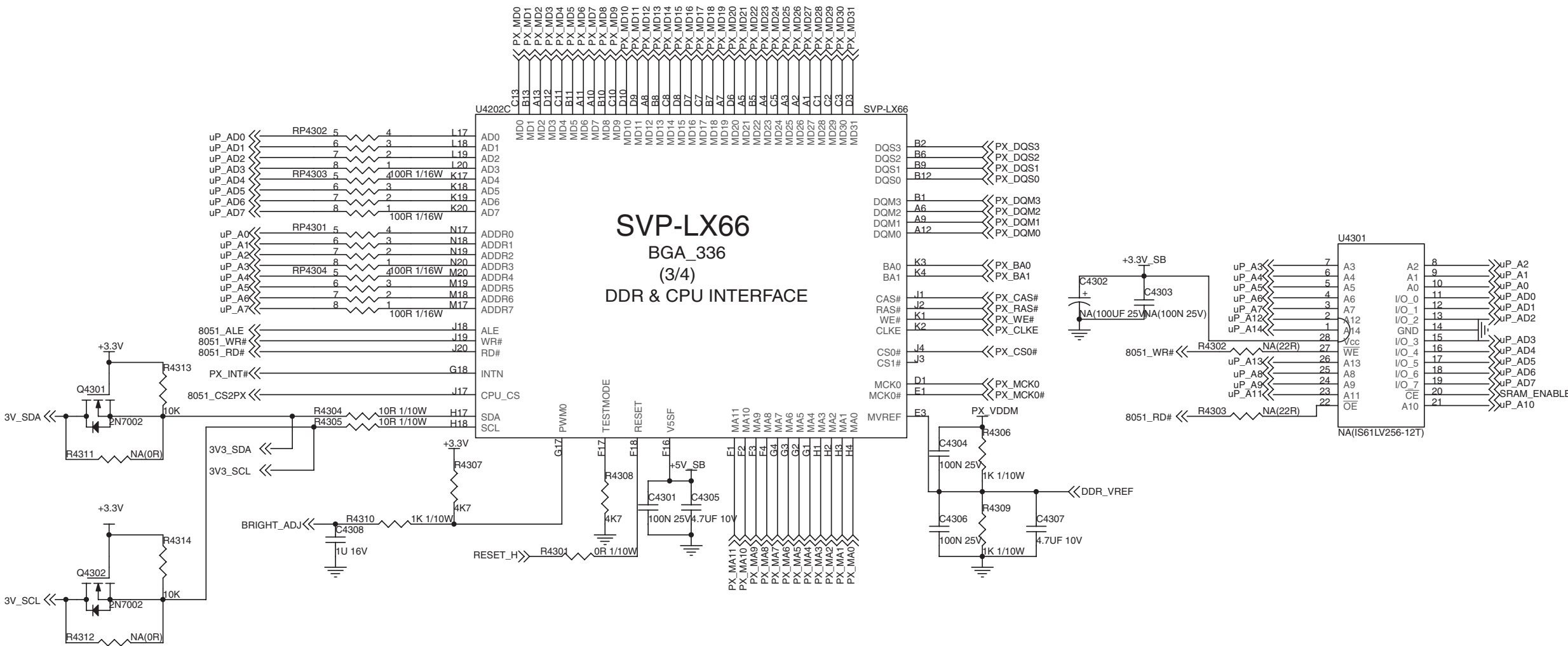


TV & Scaler Board: SVP LX66-2

B05

SVP LX66-2

B05



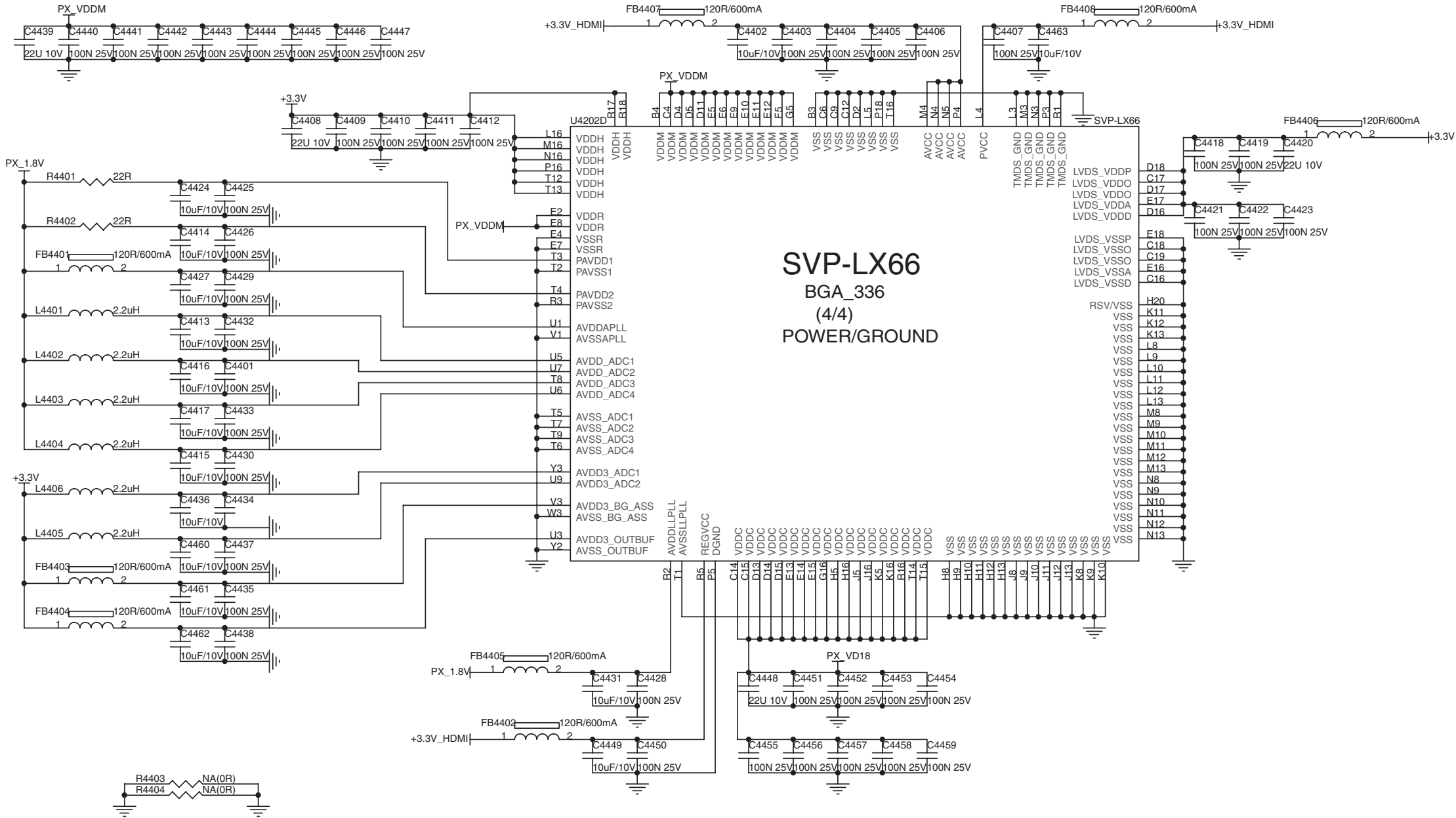
C4301 D4 C4302 C6
C4303 C6 C4304 C5
C4305 D4 C4306 D5
C4307 D6 C4308 D2
Q4301 C1 Q4302 D1
RP4301 B2 RP4302 C2
RP4303 B2 RP4304 C2
R4301 D3 R4302 C7
R4303 C7 R4304 C2
R4305 C2 R4306 C5
R4307 D3 R4308 D4
R4309 D5 R4310 D3
R4311 C1 R4312 D1
R4313 C1 R4314 D1
U4202C B3 U4301 B7

TV & Scaler Board: SVP LX66-3

B06

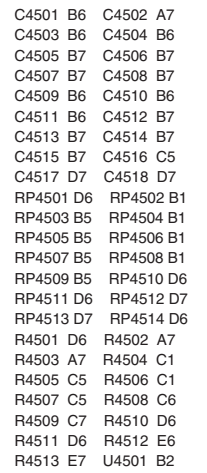
SVP LX66-3

B06



- C4401 C2 C4402 A5
- C4403 A5 C4404 A5
- C4405 A5 C4406 A6
- C4407 A6 C4408 A3
- C4409 A3 C4410 A3
- C4411 A3 C4412 A4
- C4413 B2 C4414 B2
- C4415 C2 C4416 C2
- C4417 C2 C4418 B7
- C4419 B7 C4420 B7
- C4421 B7 C4422 B7
- C4423 B7 C4424 B2
- C4425 B2 C4426 B2
- C4427 B2 C4428 D4
- C4429 B7 C4430 C2
- C4431 D4 C4432 B2
- C4433 C2 C4434 C2
- C4435 D2 C4436 C2
- C4437 C2 C4438 D2
- C4439 A1 C4440 A2
- C4441 A2 C4442 A2
- C4443 A2 C4444 A3
- C4445 A3 C4446 A3
- C4447 A3 C4448 D5
- C4449 D4 C4450 D5
- C4451 D5 C4452 D5
- C4453 D6 C4454 D6
- C4455 D5 C4456 D5
- C4457 D5 C4458 D6
- C4459 D6 C4460 C2
- C4461 D2 C4462 D2
- C4463 A6 FB4401 B2
- FB4402 D4 FB4403 C2
- FB4404 D2 FB4405 D4
- FB4406 A8 FB4407 A5
- FB4408 A7 L4401 B2
- L4402 B2 L4403 C2
- L4404 C2 L4405 C2
- L4406 C2 R4401 B2
- R4402 B2 R4403 D2
- R4404 D2 U4202D A4

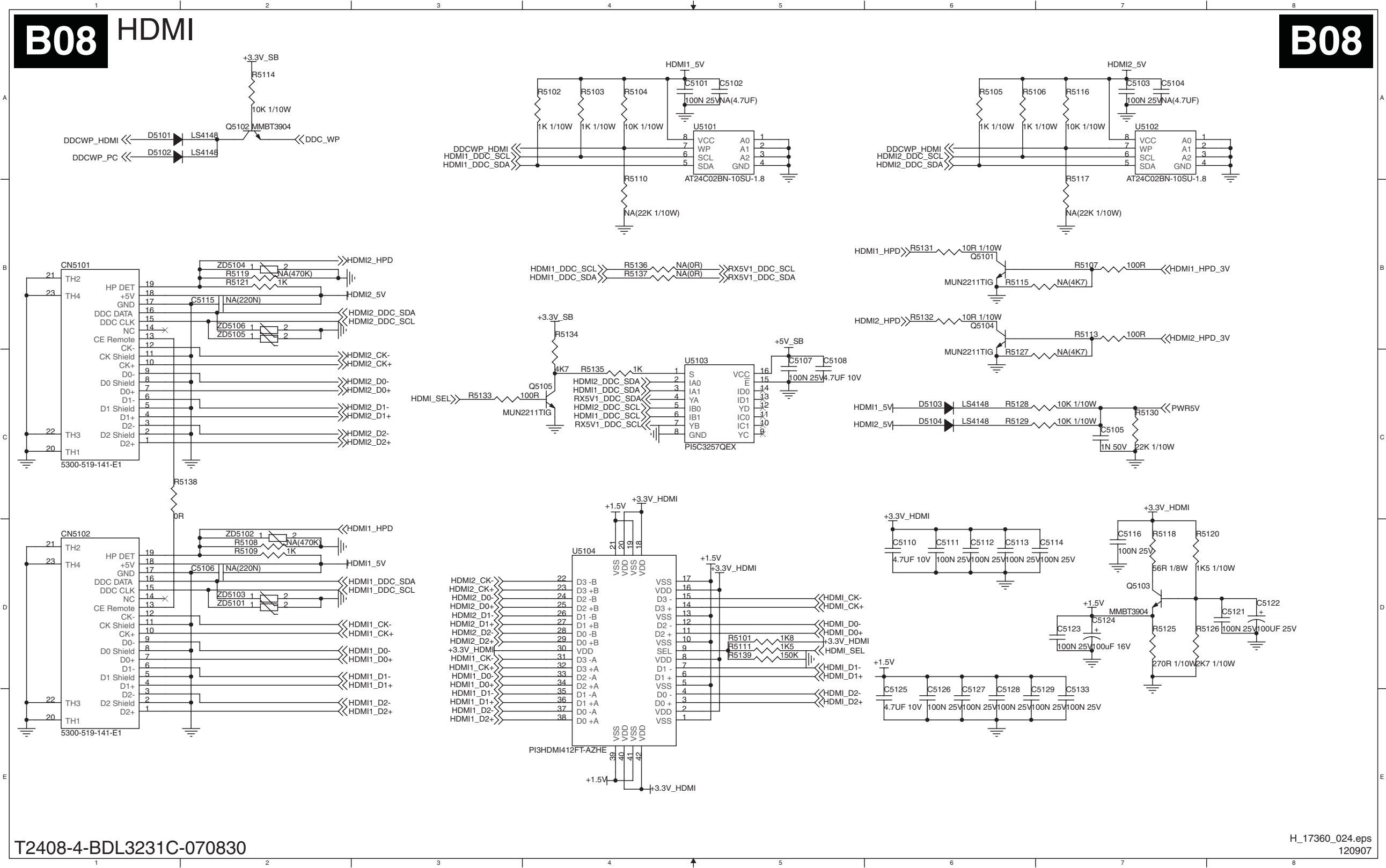
B07 DDRRAM & FLASH



TV & Scaler Board: HDMI

B08 HDMI

B08



CN5101 B1	CN5102 D1
C5101 A4	C5102 A5
C5103 A7	C5104 A7
C5105 C7	C5106 D2
C5107 C5	C5108 C5
C5110 D6	C5111 D6
C5112 D6	C5113 D6
C5114 D6	C5115 B2
C5116 D7	C5121 D7
C5122 D8	C5123 D7
C5124 D7	C5125 D6
C5126 D6	C5127 D6
C5128 D6	C5129 D6
C5133 D7	D5101 A1
D5102 A1	D5103 C6
D5104 C6	D5101 B6
Q5102 A2	Q5103 D7
Q5104 B6	Q5105 C4
R5101 D5	R5102 A4
R5103 A4	R5104 A4
R5105 A6	R5106 A6
R5107 B7	R5108 D2
R5109 D2	R5110 B4
R5111 D5	R5113 B7
R5114 A2	R5115 B6
R5116 A7	R5117 B7
R5118 D7	R5119 B2
R5120 D7	R5121 B2
R5125 D7	R5126 D7
R5127 B6	R5128 C6
R5129 C6	R5130 C7
R5131 B6	R5132 B6
R5133 C3	R5134 B4
R5135 C4	R5136 B4
R5137 B4	R5138 C1
R5139 D5	U5101 A4
U5102 A7	U5103 C4
U5104 D4	ZD5101 D2
ZD5102 D2	ZD5103 D2
ZD5104 B2	ZD5105 B2

T2408-4-BDL3231C-070830

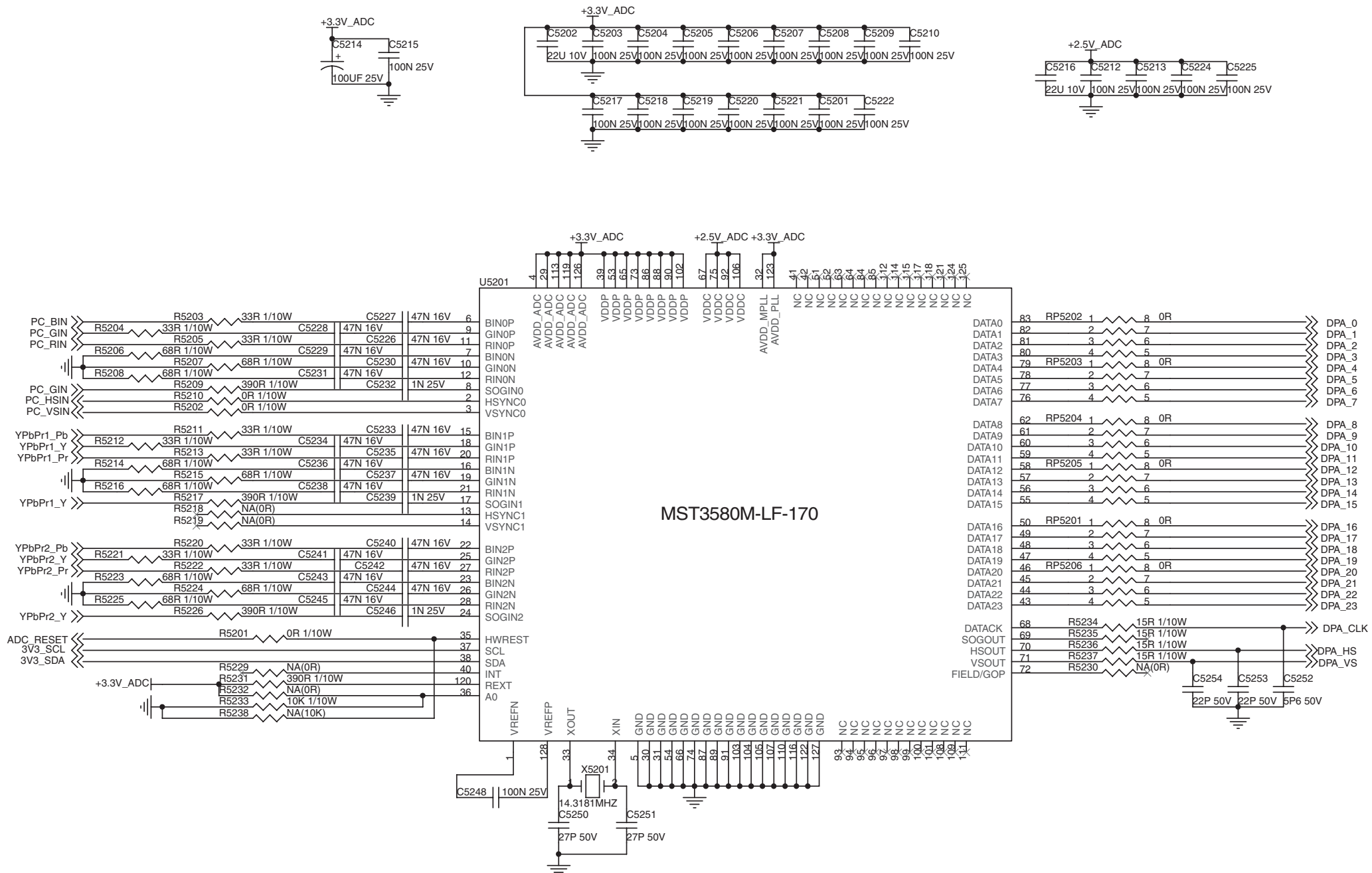
H_17360_024.eps
120907

TV & Scaler Board: MST ADC

B09

MST ADC

B09

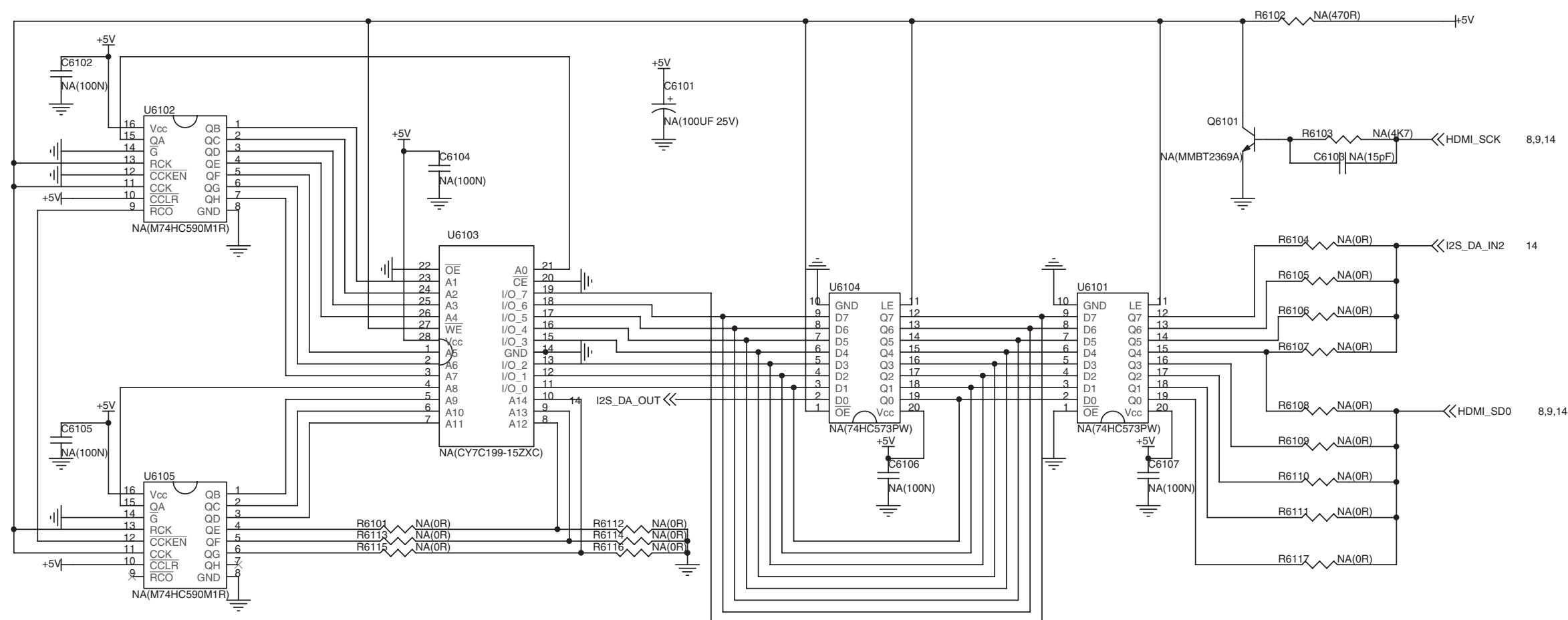


C5201	A5	C5202	A4
C5203	A4	C5204	A4
C5205	A4	C5206	A4
C5207	A5	C5208	A5
C5209	A5	C5210	A5
C5212	A6	C5213	A6
C5214	A3	C5215	A3
C5216	A6	C5217	A4
C5218	A4	C5219	A4
C5220	A4	C5221	A5
C5222	A5	C5224	A7
C5225	A7	C5226	B3
C5227	B3	C5228	B3
C5229	B3	C5230	C3
C5231	C3	C5232	C3
C5233	C3	C5234	C3
C5235	C3	C5236	C3
C5237	C3	C5238	C3
C5239	C3	C5240	C3
C5241	C3	C5242	C3
C5243	C3	C5244	D3
C5245	D3	C5246	D3
C5248	D3	C5250	E4
C5251	E4	C5252	D7
C5253	D7	C5254	D7
RP5201	C6	RP5202	B6
RP5203	C6	RP5204	C6
RP5205	C6	RP5206	C6
R5201	D2	R5202	C2
R5203	B2	R5204	B2
R5205	B2	R5206	B2
R5207	C2	R5208	C2
R5209	C2	R5210	C2
R5211	C2	R5212	C2
R5213	C2	R5214	C2
R5215	C2	R5216	C2
R5217	C2	R5218	C2
R5219	C2	R5220	C2
R5221	C2	R5222	C2
R5223	C2	R5224	D2
R5225	D2	R5226	D2
R5229	D2	R5230	D6
R5231	D2	R5232	D2
R5233	D2	R5234	D6
R5235	D6	R5236	D6
R5237	D6	R5238	D2
U5201	B3	X5201	D4

TV & Scaler Board: Sound Delay

B10 SOUND DELAY**B10**

C6101 B4
C6102 B1
C6103 B7
C6104 B3
C6105 C1
C6106 D5
C6107 D6
Q6101 B6
R6101 D2
R6102 B6
R6103 B7
R6104 C7
R6105 C7
R6106 C7
R6107 C7
R6108 C7
R6109 C7
R6110 D7
R6111 D7
R6112 D4
R6113 D2
R6114 D4
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U6101 C6
U6102 B1
U6103 C3
U6104 C4
U6105 D1

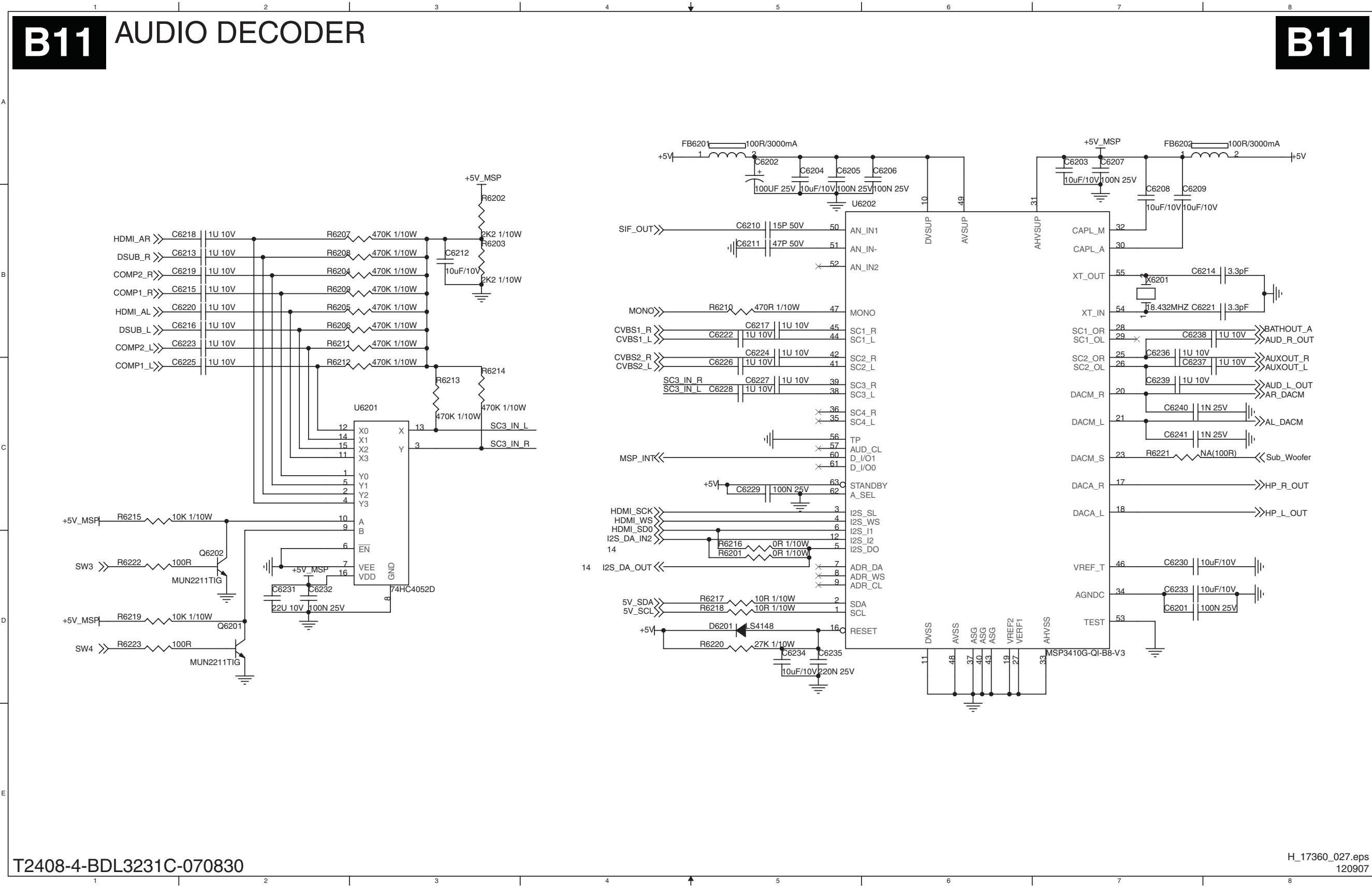


TV & Scaler Board: Audio Decoder

B11

AUDIO DECODER

B11



- C6201 D7
- C6202 A5
- C6203 A7
- C6204 A5
- C6205 A5
- C6206 A5
- C6207 A7
- C6208 B7
- C6209 B7
- C6210 B5
- C6211 B5
- C6212 B3
- C6213 B2
- C6214 B8
- C6215 B2
- C6216 B2
- C6217 B5
- C6218 B2
- C6219 B2
- C6220 B2
- C6221 B8
- C6222 B5
- C6223 B2
- C6224 B5
- C6225 B2
- C6226 B5
- C6227 C5
- C6228 C5
- C6229 C5
- C6230 D7
- C6231 D2
- C6232 D2
- C6233 D7
- C6234 D5
- C6235 D5
- C6236 B7
- C6237 B7
- C6238 B7
- C6239 C7
- C6240 C7
- C6241 C7
- D6201 D5
- FB6201 A5
- FB6202 A7
- Q6201 D2
- Q6202 D2
- R6201 D5
- R6202 B3
- R6203 B3
- R6204 B2
- R6205 B2
- R6206 B2
- R6207 B2
- R6208 B2
- R6209 B2
- R6210 B5
- R6211 B2
- R6212 B2
- R6213 C3
- R6214 C3
- R6215 C1
- R6216 C5
- R6217 D5
- R6218 D5
- R6219 D1
- R6220 D5
- R6221 C7
- R6222 D1
- R6223 D1
- U6201 C3
- U6202 B5
- X6201 B7

B12 AUDIO AMPLIFIER



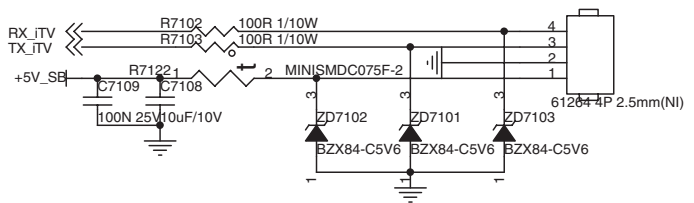
	CN6301 D2	CN6302 D1
	CN6303 D3	C6301 A5
	C6302 A6	C6303 A6
	C6304 B1	C6305 B2
	C6306 A7	C6307 A6
	C6308 A7	C6309 B2
	C6310 B6	C6311 B7
	C6312 B5	C6313 B3
	C6314 B8	C6315 B5
	C6317 B3	C6318 B1
	C6320 B1	C6321 B5
	C6322 B5	C6323 B1
	C6324 A7	C6326 C2
	C6327 C2	C6328 C3
	C6329 B5	C6330 C5
	C6331 C7	C6332 C7
	C6333 C3	C6334 C7
	C6337 D5	C6338 D6
	C6339 D7	C6340 D5
	C6341 D6	C6342 D7
	C6343 D6	C6344 E6
	C6345 E7	C6346 D2
	C6347 D4	C6348 D4
	C6349 D2	C6350 E3
	C6351 E2	C6352 E3
	C6353 A4	C6354 B4
	C6355 A4	D6301 A4
	D6302 A4	FB6301 D7
	FB6302 A6	FB6303 A7
	FB6304 D6	FB6305 A4
	FB6306 A3	FB6307 A3
	FB6308 D3	L6301 D7
	L6302 A6	L6303 A7
	L6304 D6	R6301 C5
	R6302 B3	R6303 B2
	R6304 B2	R6305 B1
	R6306 B1	R6307 B5
	R6308 B5	R6309 B5
	R6310 C2	R6311 C3
	R6312 C5	R6313 C2
	R6314 C4	R6315 C4
	R6316 C5	R6317 C4
	R6318 C5	R6320 D3
	R6321 D3	R6322 A6
	R6323 D3	R6324 E3
	R6325 E3	U6301 B6
	U6324 B2	U6302B C2

TV & Scaler Board: iTV & ComPair & I2C

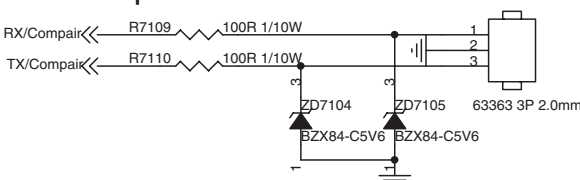
B13 iTV & COMPAIR & 12C

B13

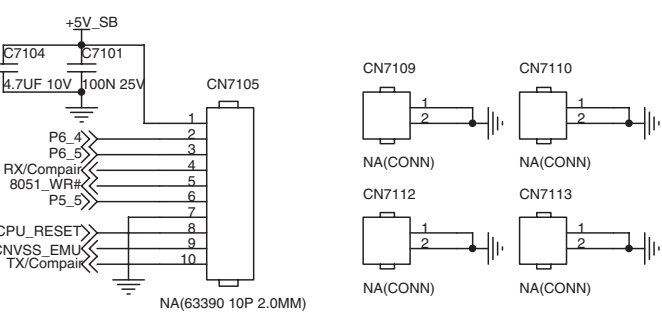
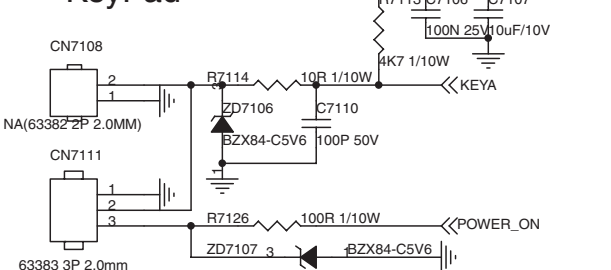
PORT for Level 1



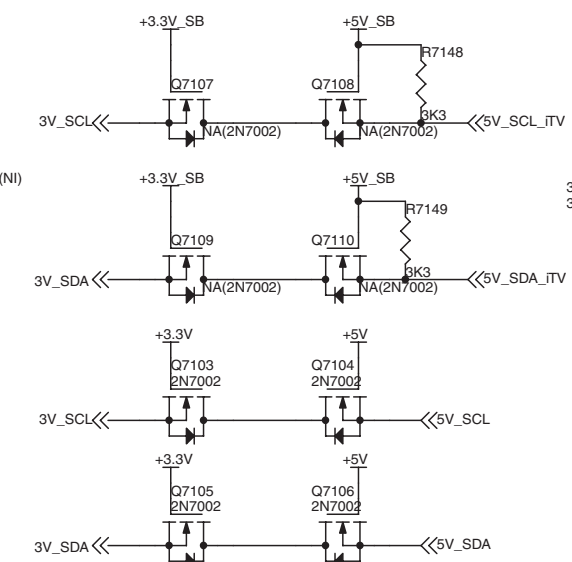
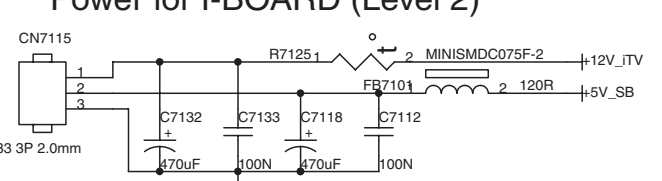
For Compair I/F



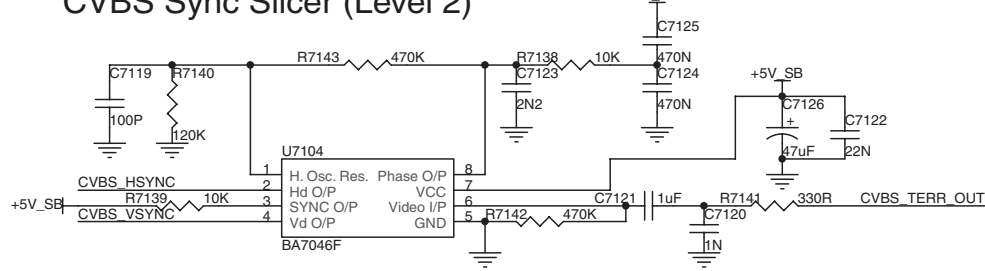
KeyPad



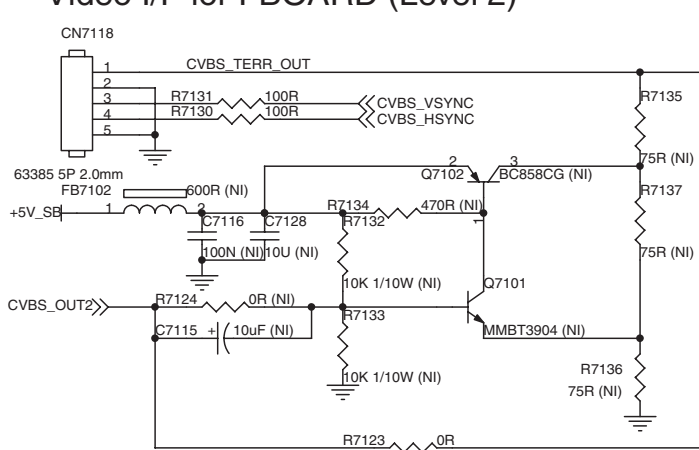
Power for I-BOARD (Level 2)



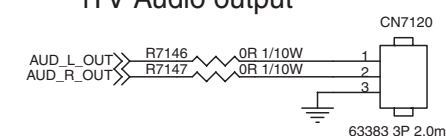
CVBS Sync Slicer (Level 2)



Video I/F for I-BOARD (Level 2)

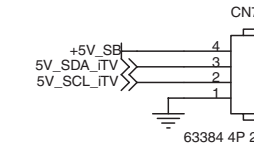


iTV Audio output

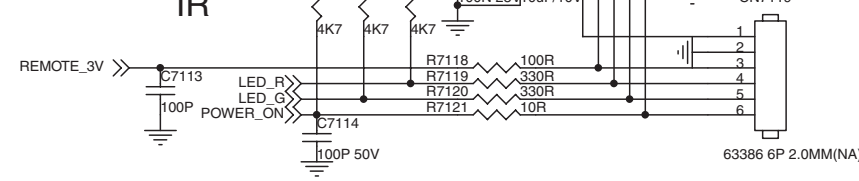


Control I/F (Level 2)

2nd Control I/F



IR

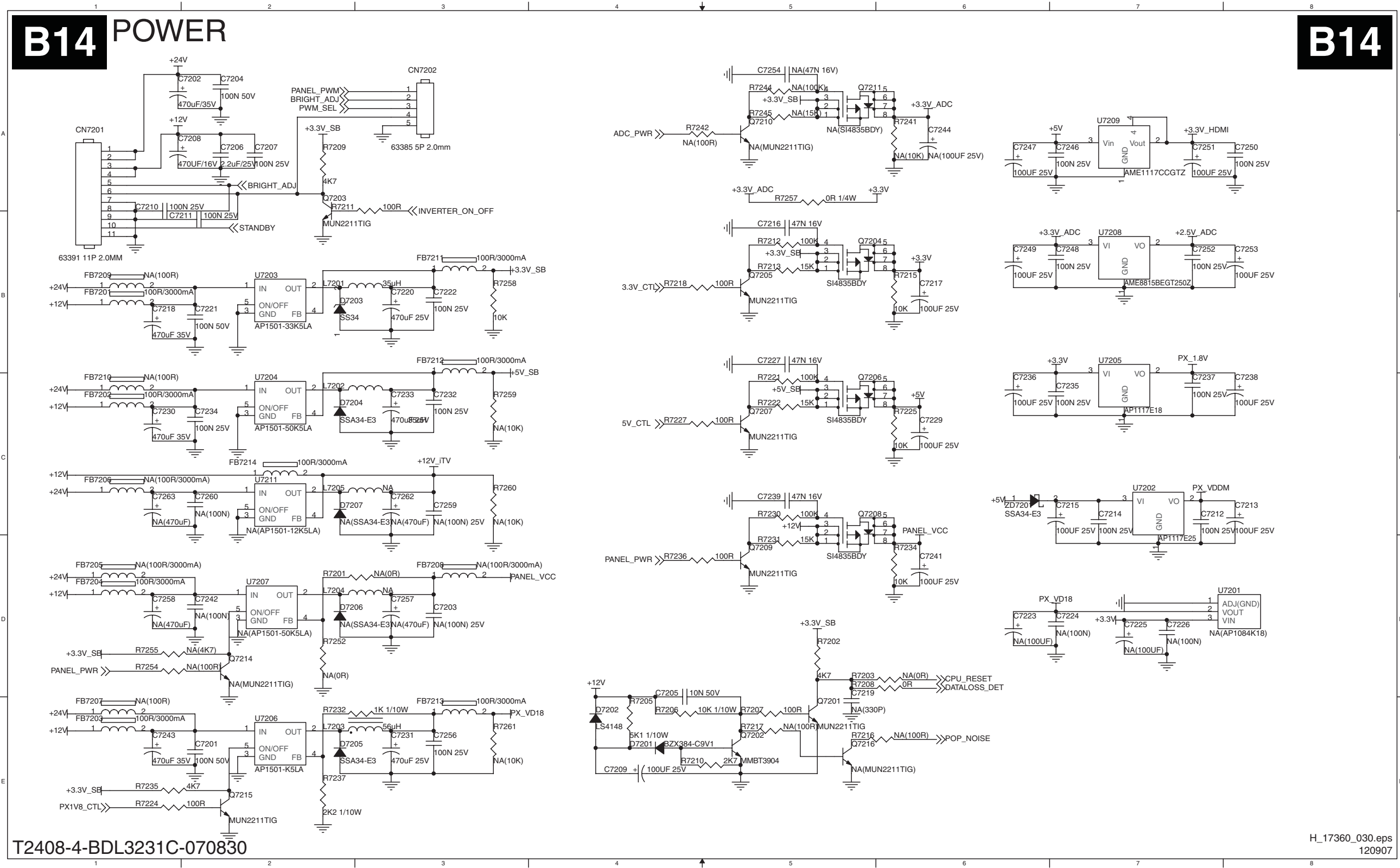


CN7101 A3	CN7102 A7
CN7103 B7	CN7104 B2
CN7105 D1	CN7107 B6
CN7108 C1	CN7109 D2
CN7110 D2	CN7111 C1
CN7112 D2	CN7113 D2
CN7114 C7	CN7115 E1
CN7116 B7	CN7118 D3
CN7119 D7	CN7120 B6
C7101 D1	C7102 A5
C7103 A6	C7104 D1
C7106 B2	C7107 B2
C7108 A1	C7109 A1
C7110 C2	C7111 D6
C7112 E2	C7113 D6
C7114 D6	C7115 E3
C7116 D3	C7118 E2
C7119 C3	C7120 C5
C7121 C5	C7122 C5
C7123 C4	C7124 C5
C7125 C5	C7126 C5
C7127 D7	C7128 D4
C7129 C6	C7130 D7
C7131 D7	C7132 E1
C7133 E1	F87101 E2
F87102 D3	Q7101 E4
Q7102 D4	Q7103 B3
Q7104 B4	Q7105 B3
Q7106 B4	Q7107 A3
Q7108 A4	Q7109 A3
Q7110 A4	R7101 B5
R7102 A1	R7103 A1
R7104 A5	R7105 A5
R7106 A6	R7107 A6
R7108 A6	R7109 B1
R7110 B1	R7111 B6
R7112 B5	R7113 B2
R7114 C1	R7115 D6
R7116 D6	R7117 D6
R7118 D7	R7119 D7
R7120 D7	R7121 D7
R7122 A1	R7123 E4
R7124 E3	R7125 E2
R7126 C1	R7128 C7
R7130 D4	R7131 D4
R7132 D4	R7133 E4
R7134 D4	R7135 D5
R7136 E5	R7137 D5
R7138 C4	R7139 C3
R7140 C3	R7141 C5
R7142 C4	R7143 C4
R7146 B6	R7147 C6
R7148 A4	R7149 A4
TH7101 C6	U7102 A5
U7104 C4	ZD7101 A2
ZD7102 A2	ZD7103 A2
ZD7104 B2	ZD7105 B2
ZD7106 C1	ZD7107 C2

TV & Scaler Board: Power

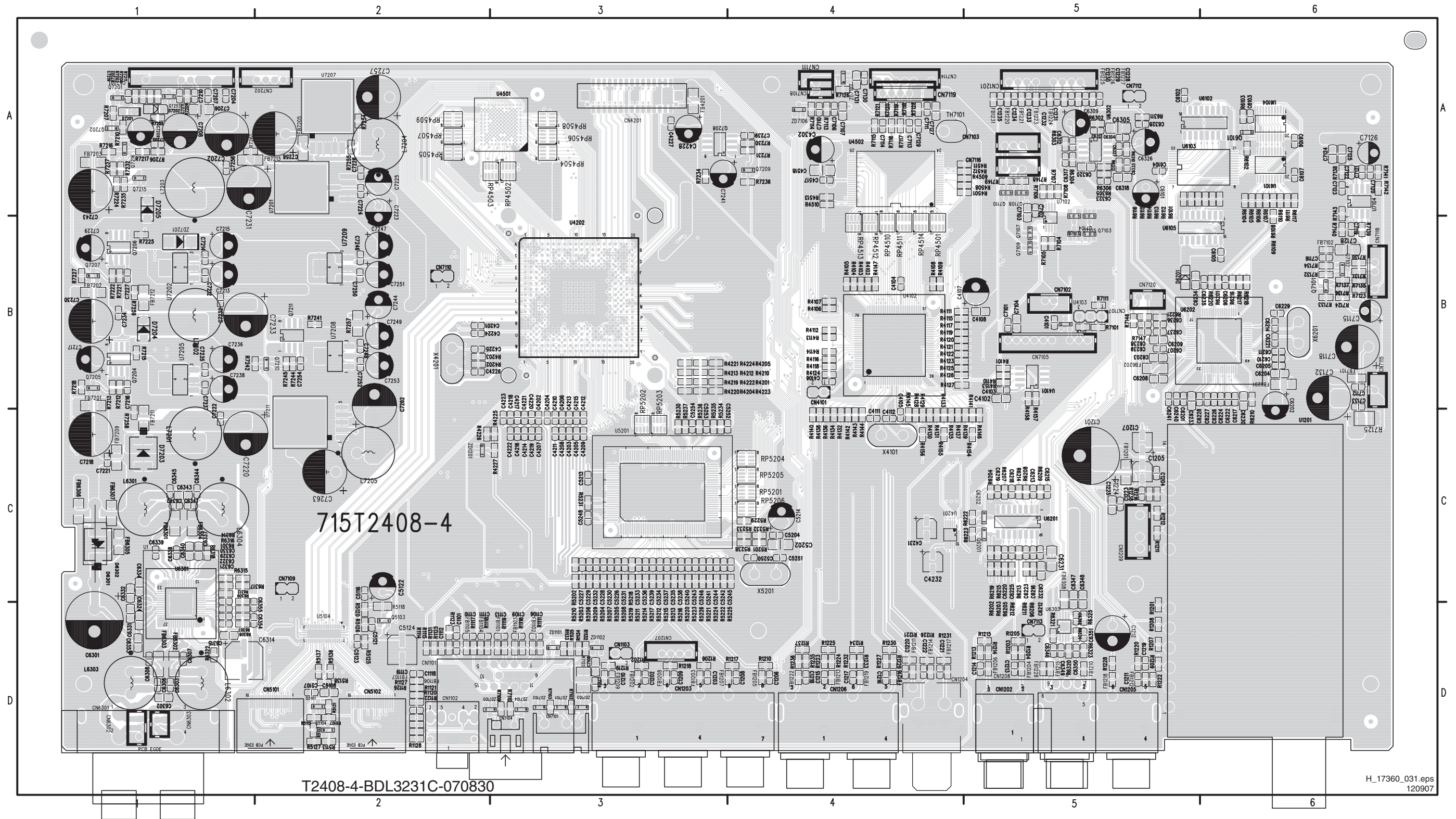
B14 POWER

B14

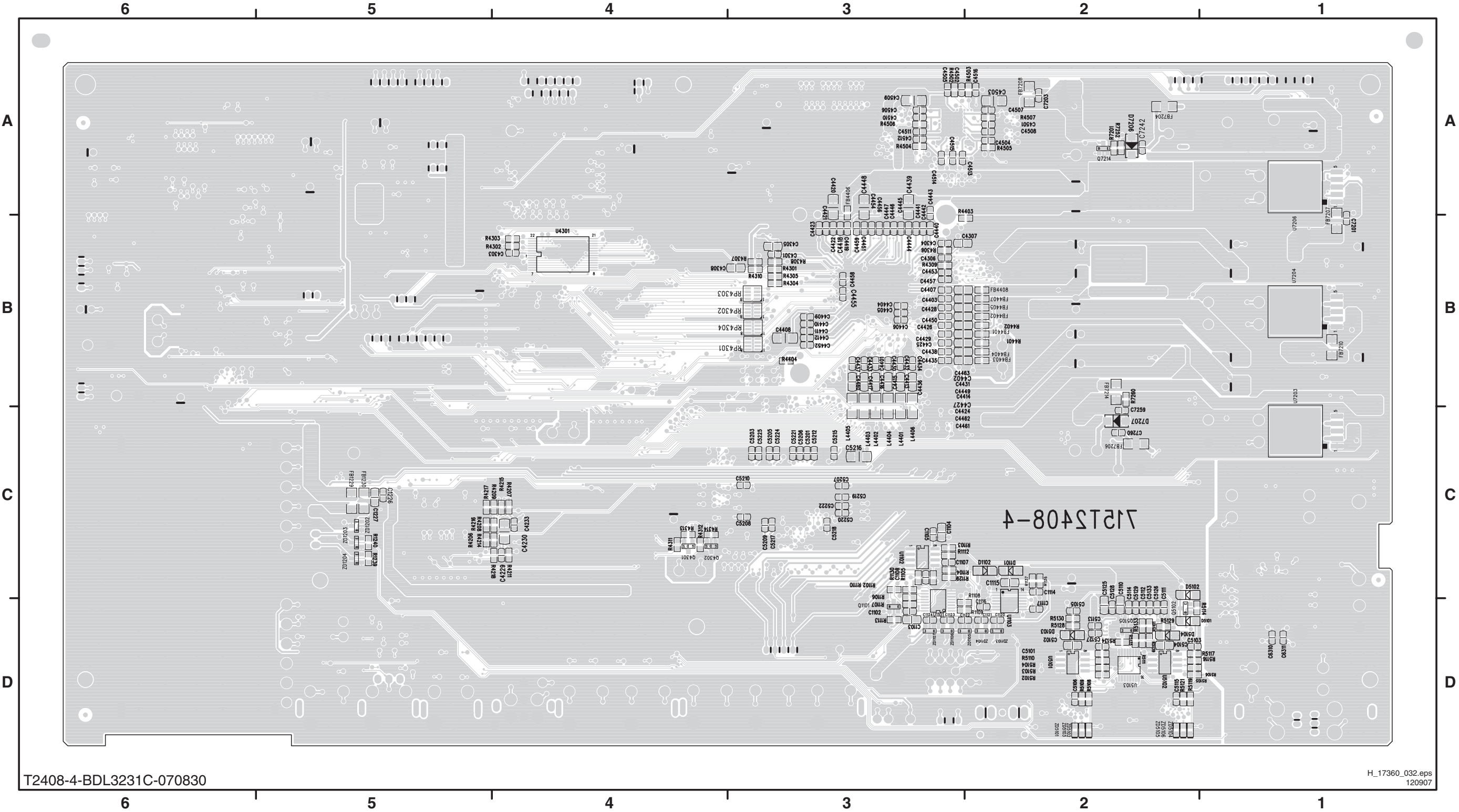


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- C7205 D4
- C7207 A2
- C7209 E4
- C7211 A2
- C7213 C7
- C7215 C6
- C7217 B6
- C7219 D5
- C7221 B2
- C7223 D6
- C7225 D7
- C7227 B5
- C7230 C1
- C7232 C3
- C7234 C2
- C7236 C6
- C7238 C7
- C7241 D6
- C7243 E1
- C7246 A6
- C7248 B6
- C7250 A7
- C7252 B7
- C7254 A5
- C7257 D3
- C7259 C3
- C7262 C3
- D7201 E4
- D7203 B2
- D7205 E2
- D7207 C2
- FB7202 C1
- FB7204 D1
- FB7206 C1
- FB7208 D3
- FB7210 B1
- FB7212 B3
- FB7214 C2
- L7202 C2
- L7204 D2
- Q7201 D5
- Q7203 A2
- Q7205 B5
- Q7207 C5
- Q7209 D5
- Q7211 A5
- Q7215 E2
- R7201 D2
- R7203 D5
- R7206 D4
- R7208 D5
- R7210 E4
- R7212 B5
- R7215 B5
- R7217 E5
- R7221 B5
- R7224 E1
- R7227 C4
- R7231 C5
- R7234 D5
- R7236 D4
- R7241 A5
- R7244 A5
- R7252 D2
- R7255 D1
- R7258 B3
- R7260 C3
- U7201 D7
- U7203 B2
- U7205 B7
- U7207 D2
- U7209 A7
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- C7202 A1
- C7204 A2
- C7206 A2
- C7208 A1
- C7210 A1
- C7212 C7
- C7214 C7
- C7216 B5
- C7218 B1
- C7220 B3
- C7222 B3
- C7224 D6
- C7226 D7
- C7228 C6
- C7231 E3
- C7233 C3
- C7235 C6
- C7237 C7
- C7239 C5
- C7242 D2
- C7244 A6
- C7247 A6
- C7249 B6
- C7251 A7
- C7253 B7
- C7256 E3
- C7258 D1
- C7260 C2
- C7263 C1
- D7202 D4
- D7204 C2
- D7206 D2
- FB7201 B1
- FB7203 E1
- FB7205 D1
- FB7207 D1
- FB7209 B1
- FB7211 B3
- FB7213 D3
- L7201 B2
- L7203 E2
- L7205 C2
- Q7202 E5
- Q7204 B5
- Q7206 B5
- Q7208 C5
- Q7210 A5
- Q7212 D2
- Q7214 E5
- Q7216 E5
- R7202 D5
- R7204 D5
- R7207 D5
- R7209 A2
- R7211 A2
- R7213 B5
- R7216 E5
- R7218 B4
- R7222 C5
- R7225 C5
- R7230 C5
- R7232 D2
- R7235 E1
- R7237 E2
- R7242 A4
- R7245 A5
- R7254 D1
- R7257 A5
- R7259 C3
- R7261 E3
- U7202 C7
- U7204 C2
- U7206 E2
- U7208 B7
- U7211 C2

Layout TV & Scaler Board (Top Side)



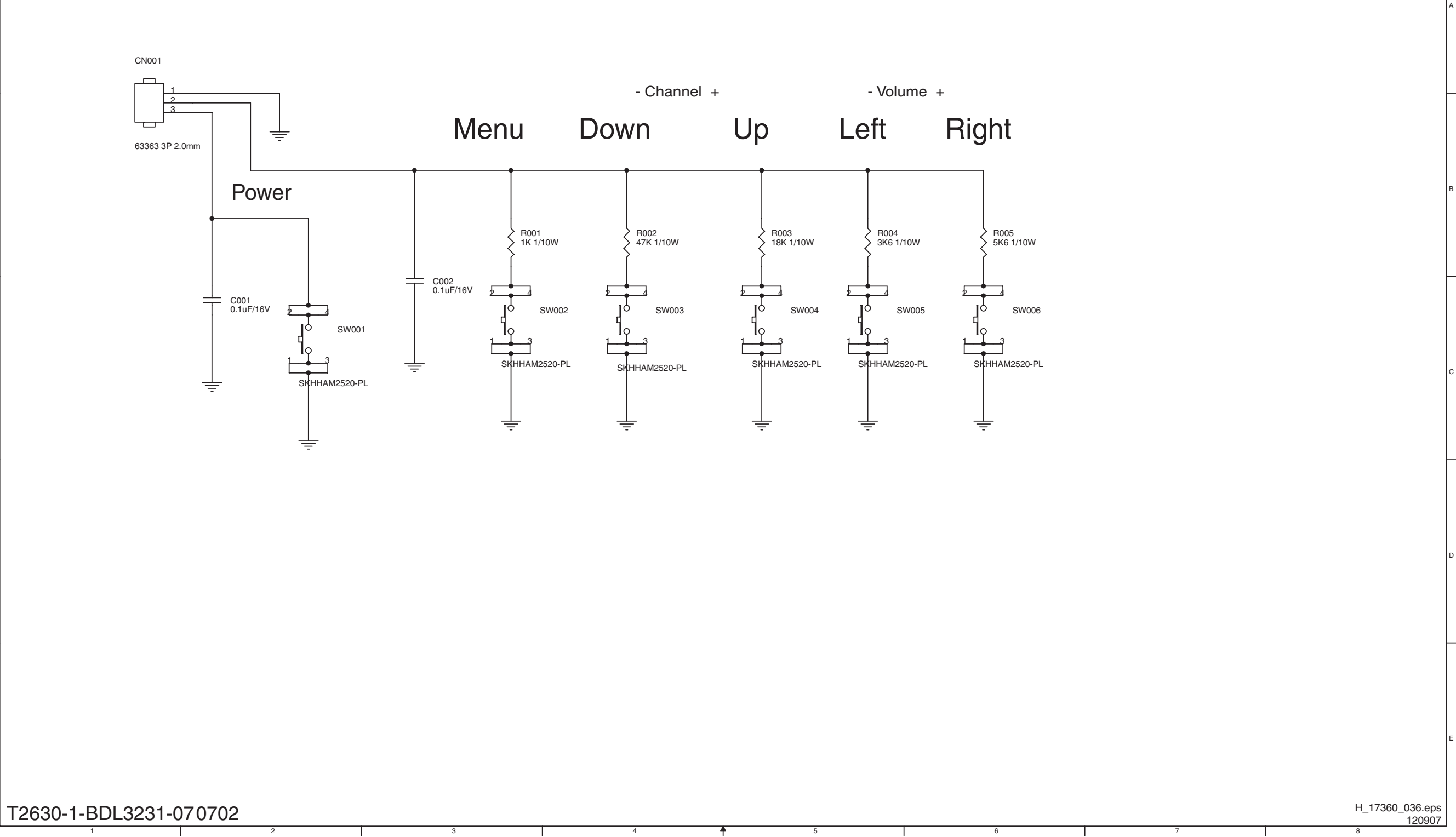
Layout TV & Scaler Board (Bottom Side)



Keyboard & Control Panel

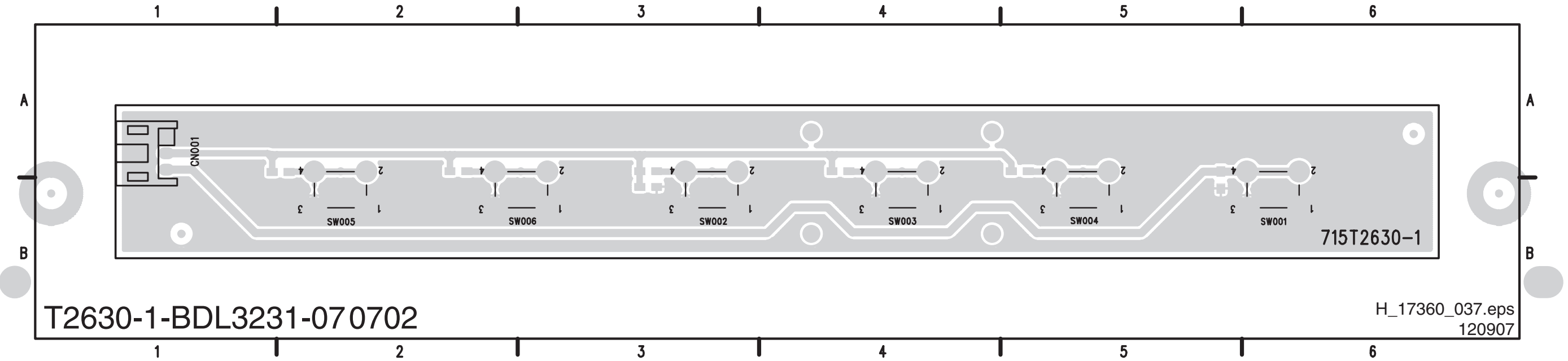


KEYBOARD CONTROL PANEL

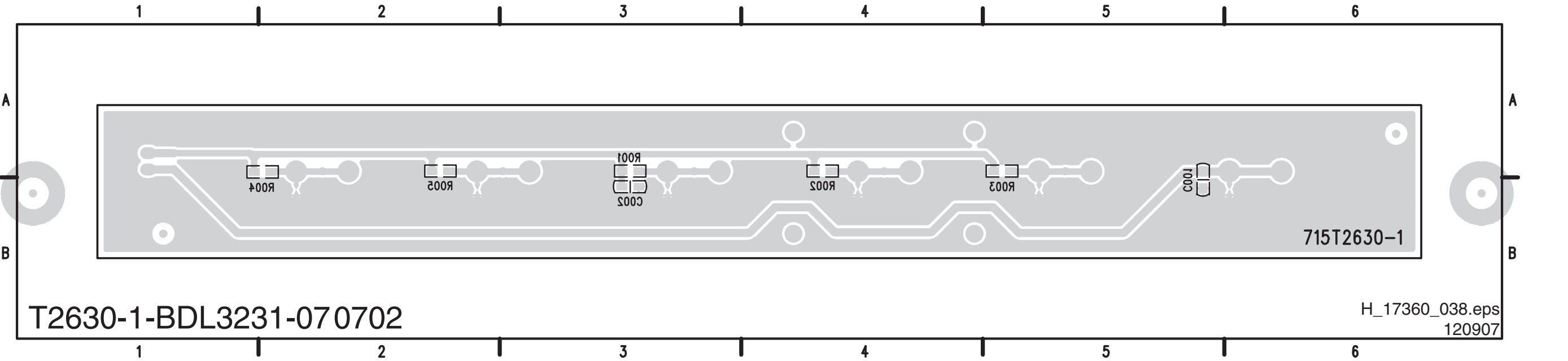


- CN001 A1
- C001 C2
- C002 B3
- R001 B3
- R002 B4
- R003 B5
- R004 B5
- R005 B6
- SW001 C2
- SW002 C3
- SW003 C4
- SW004 C5
- SW005 C5
- SW006 C6

Layout Keyboard & Control Panel (Top Side)



Layout Keyboard & Control Panel (Bottom Side)



i-Board

HC i-BOARD

HC

Notice:
J4 connector
Even nos. to SSB
Odd nos. to IRLLED

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90400-00138-31 Rev. 3.2

SN	11001	292	631C
DA	18302	292	631C
NA	16302	292	631C

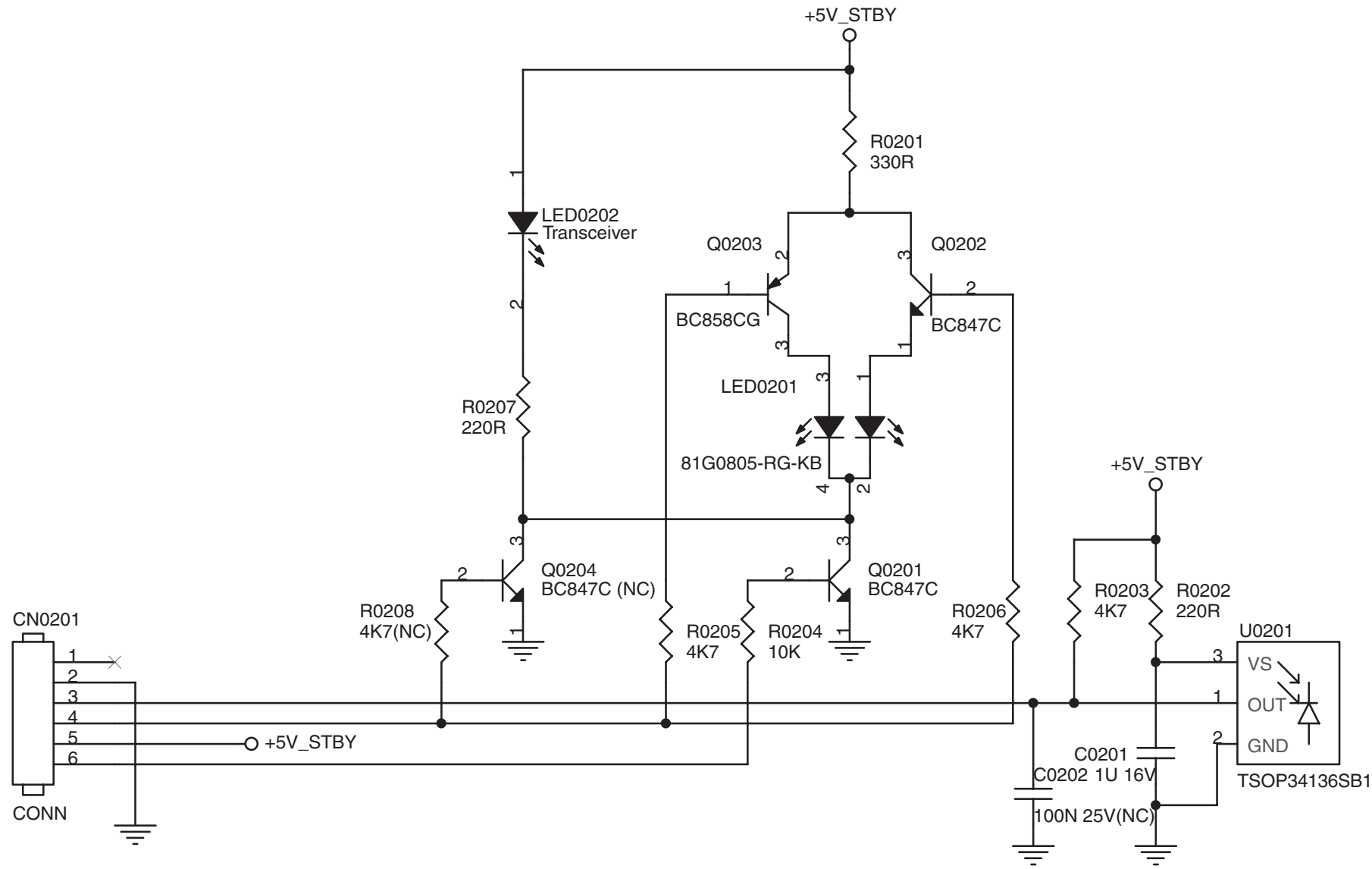
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IR & LED Panel

J

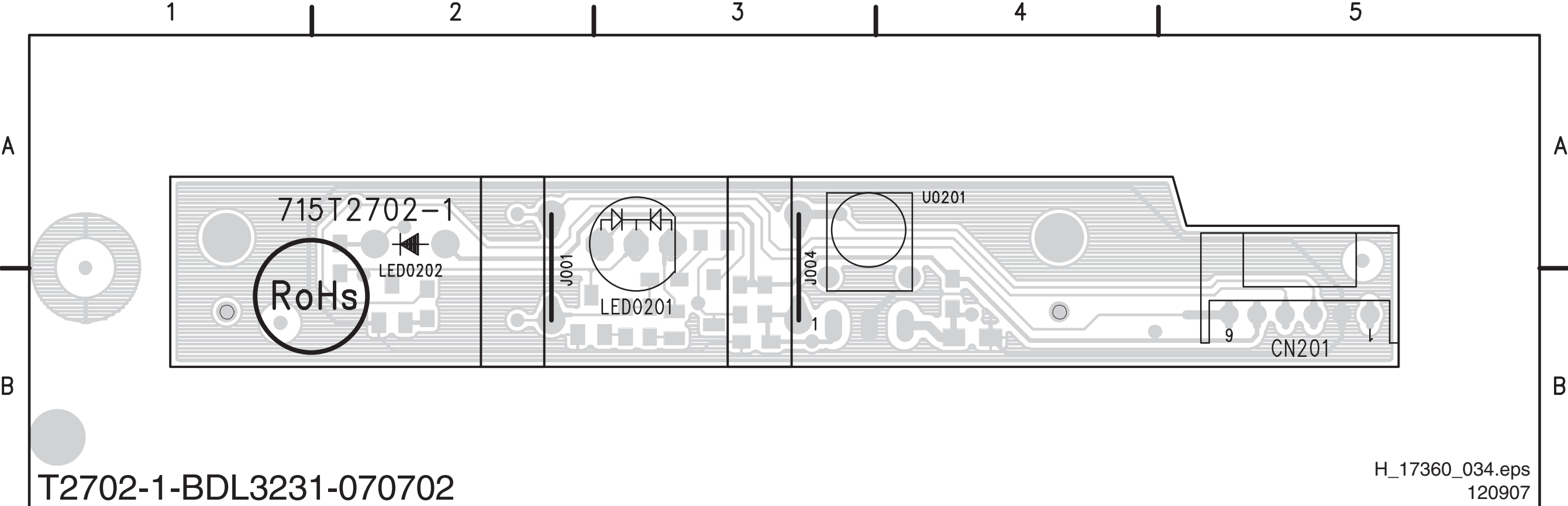
IR & LED PANEL

J

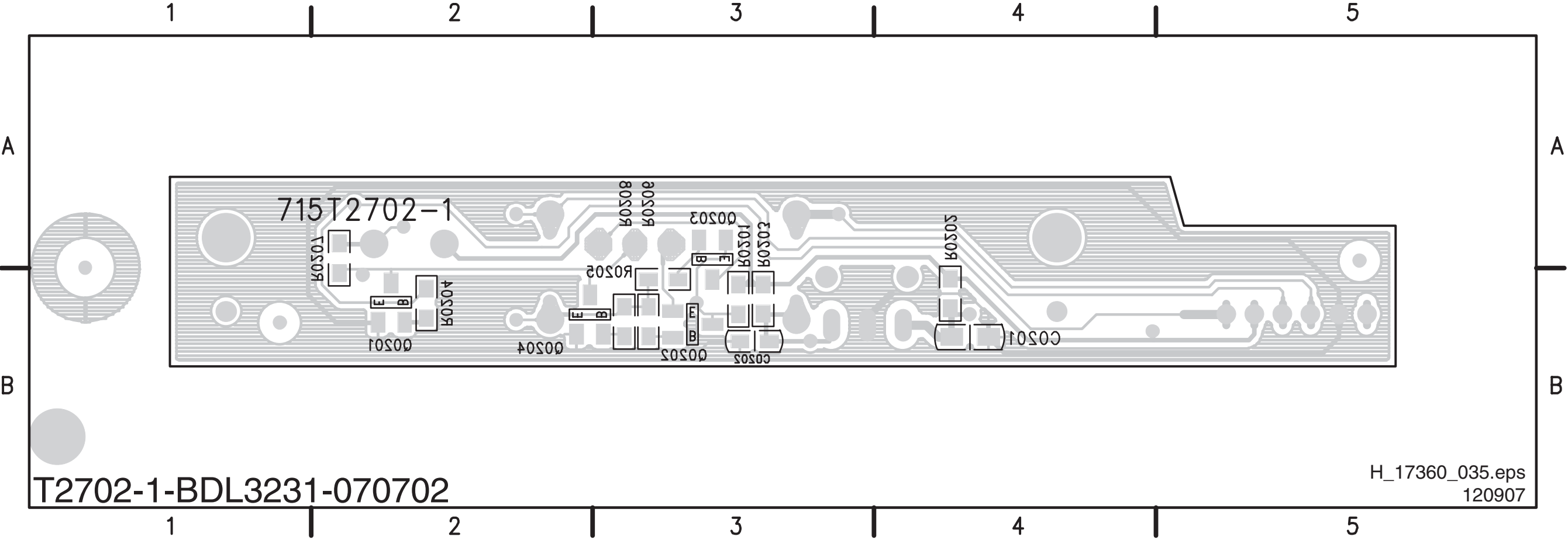


- CN0201 C1
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- C0202 C4
- ED0201 B3
- ED0202 A3
- Q0201 B3
- Q0202 B4
- Q0203 B3
- Q0204 B3
- R0201 A3
- R0202 C4
- R0203 C4
- R0204 C3
- R0205 C3
- R0206 C4
- R0207 B3
- R0208 C2
- U0201 C5

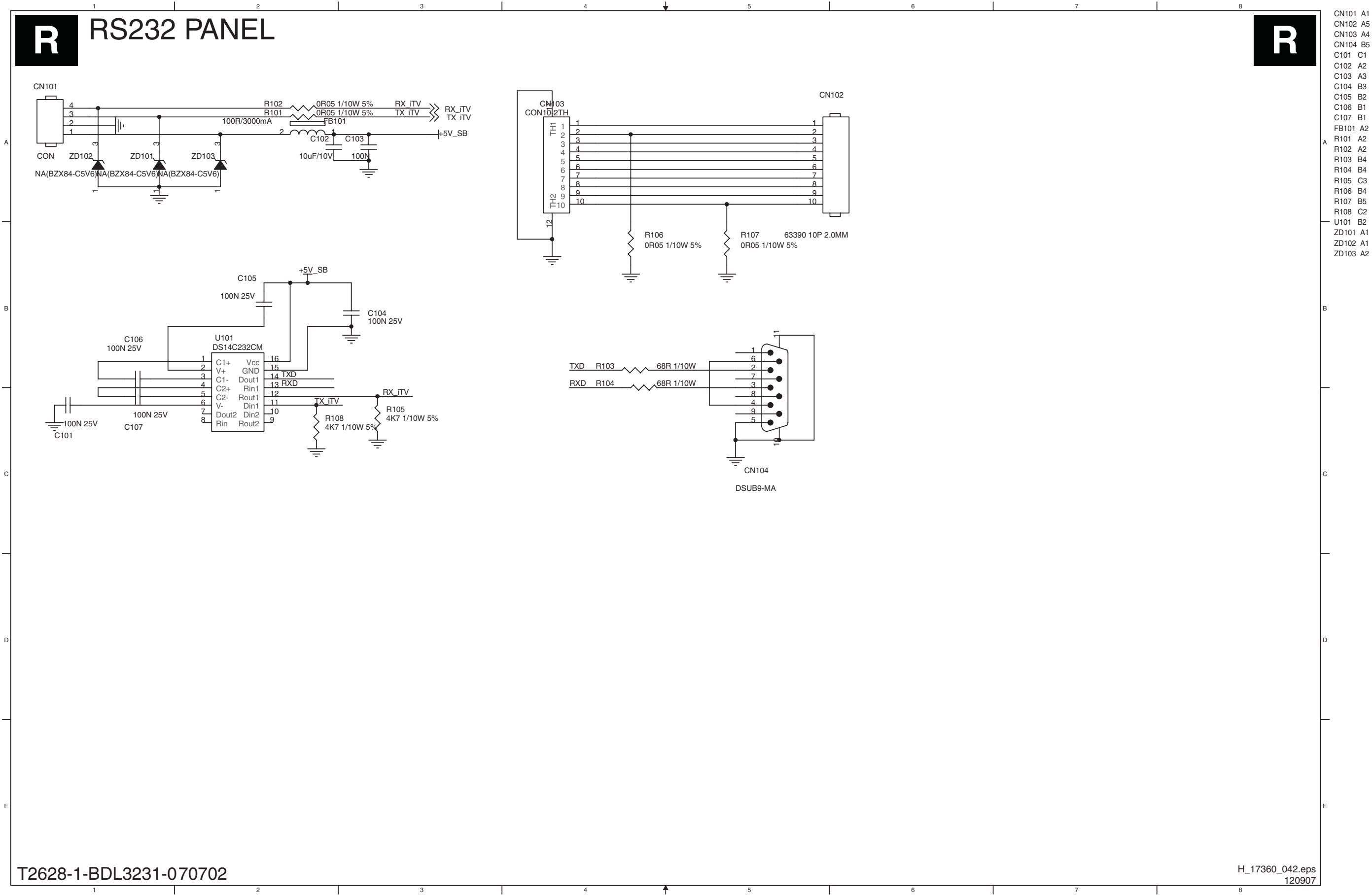
Layout IR & LED Panel (Top Side)



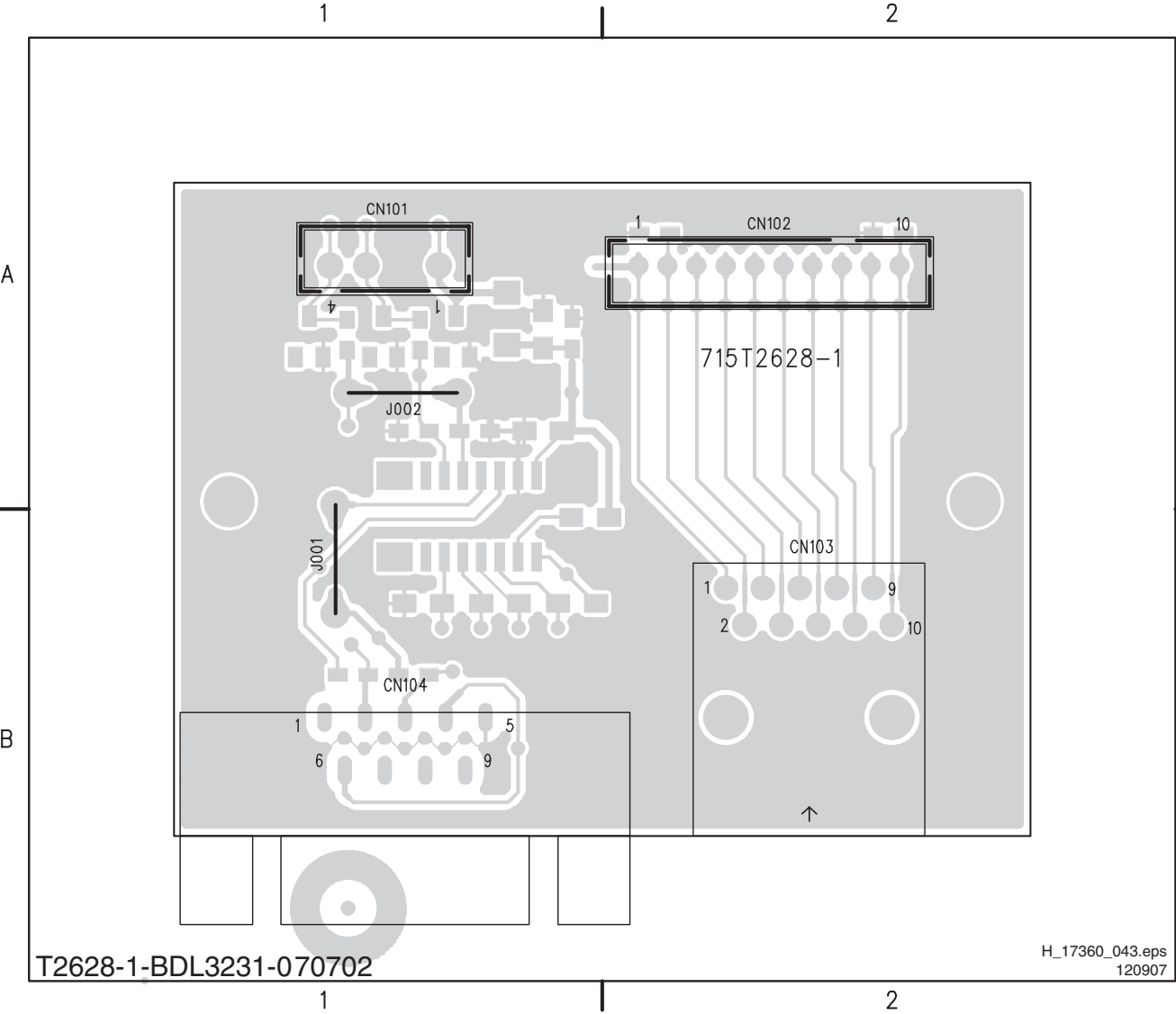
Layout IR & LED Panel (Bottom Side)



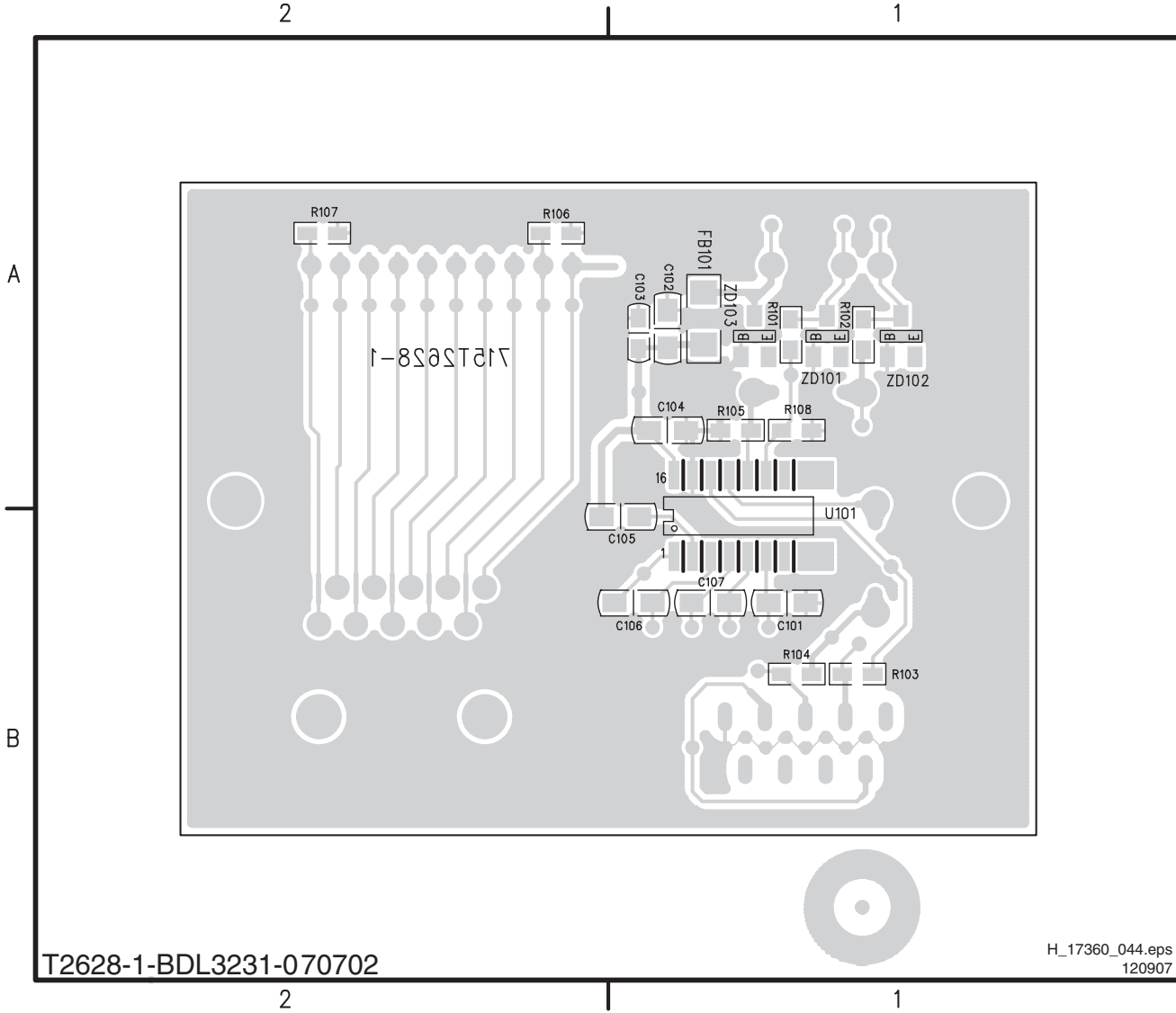
RS232 Panel



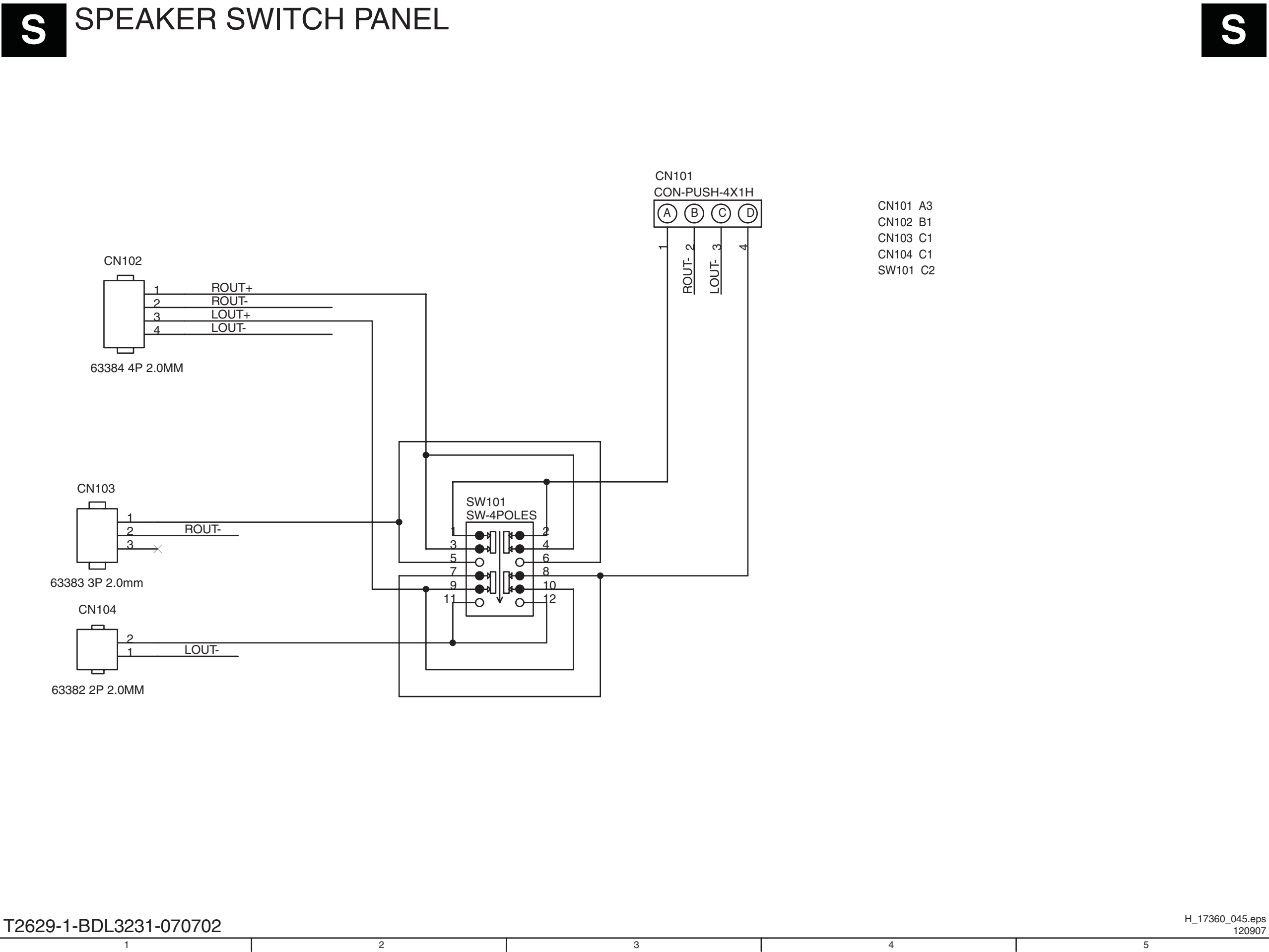
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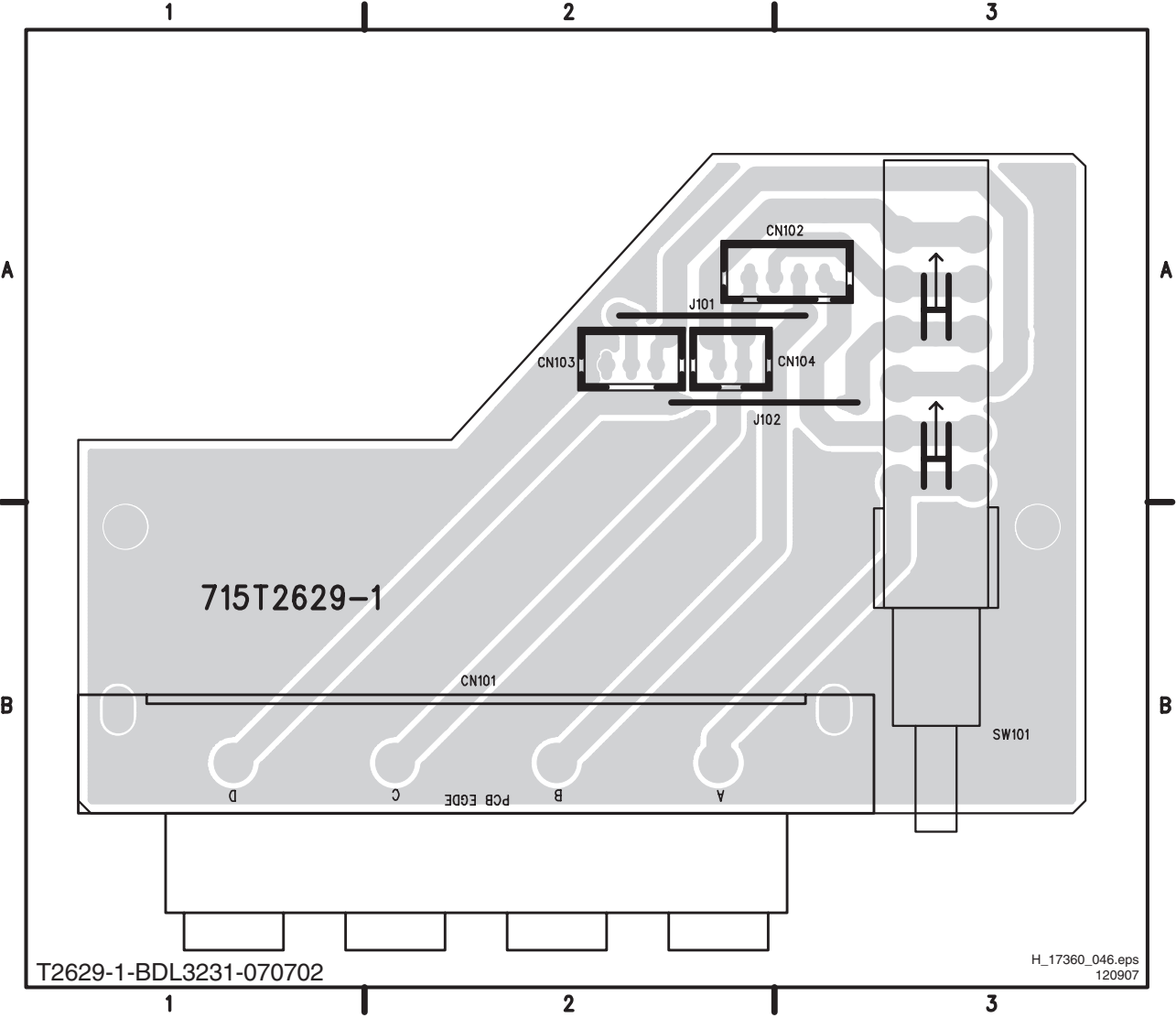
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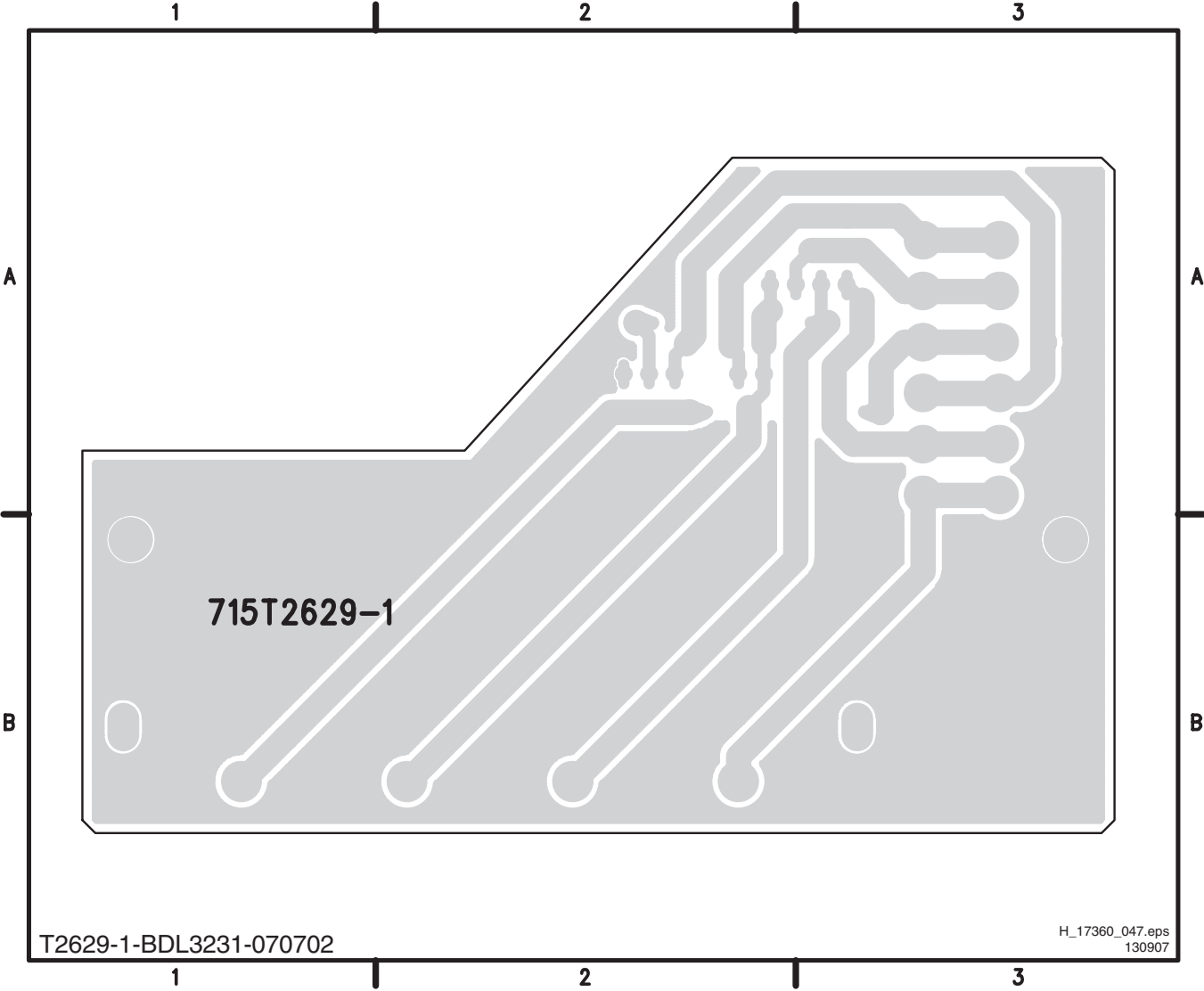
Speaker Switch Panel



Layout Speaker Switch Panel (Top Side)

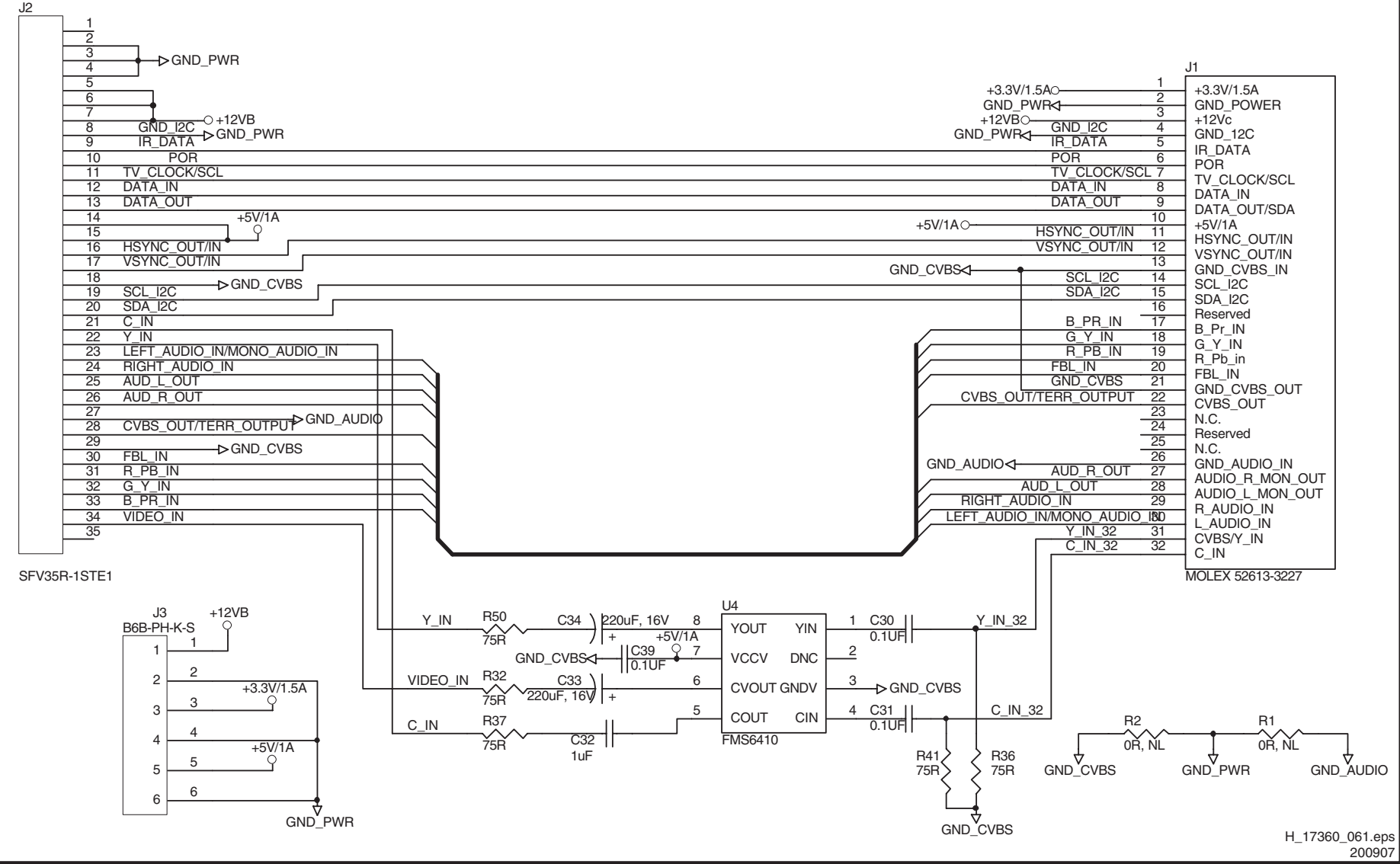


Layout Speaker Switch Panel (Bottom Side)

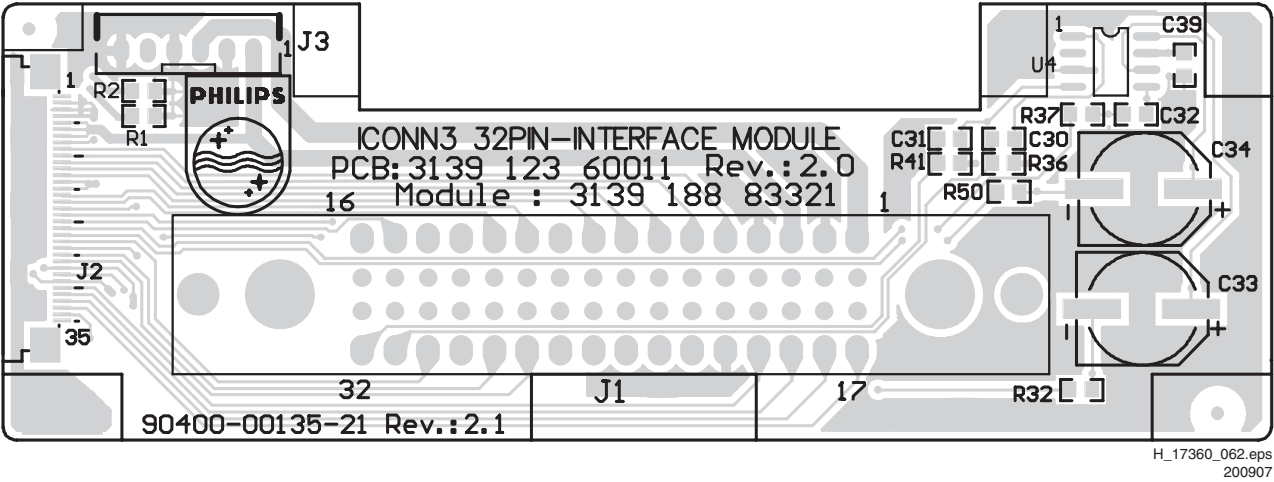


32p Interface Board

32P INTERFACE BOARD

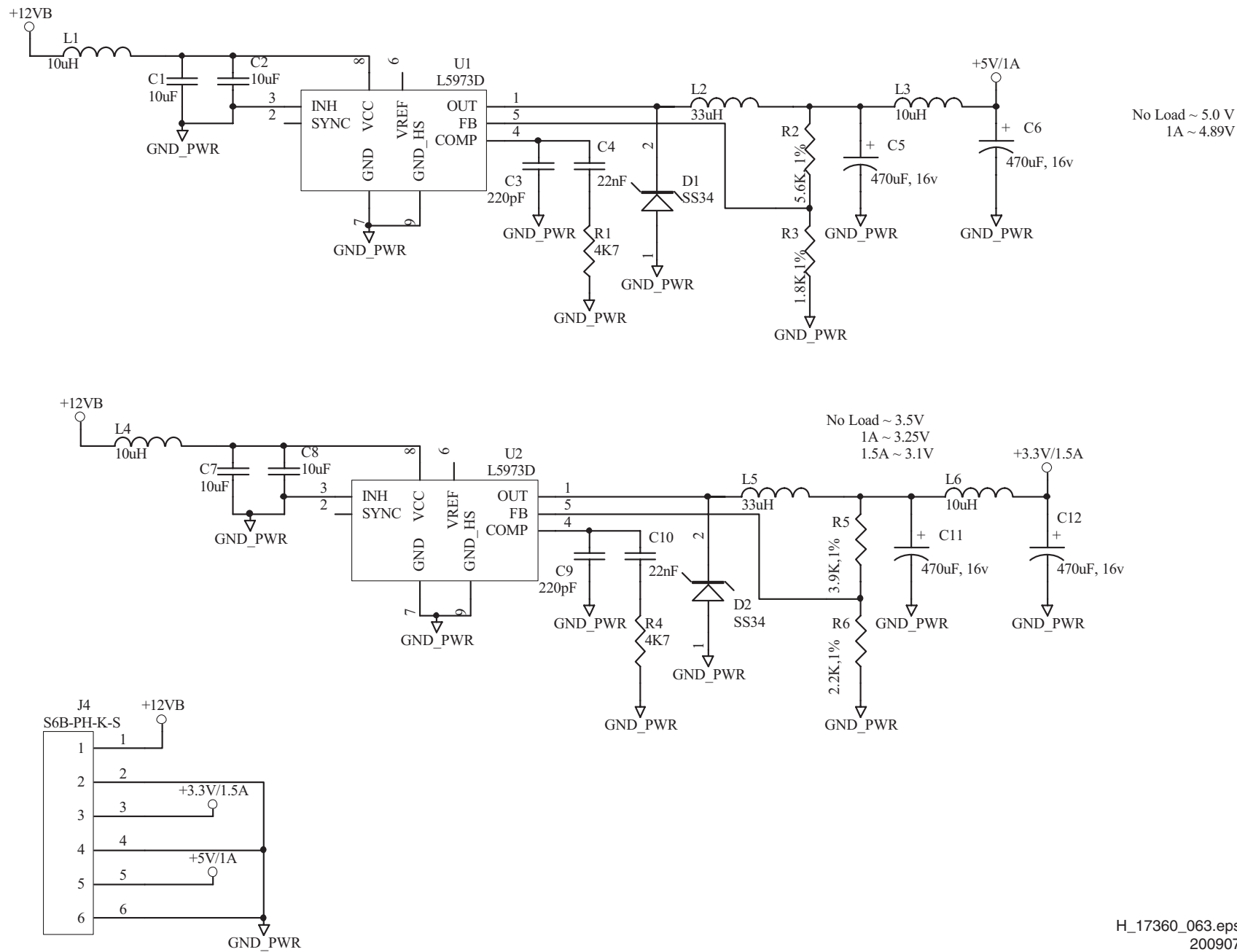


Layout 32p Interface Board (Top Side)



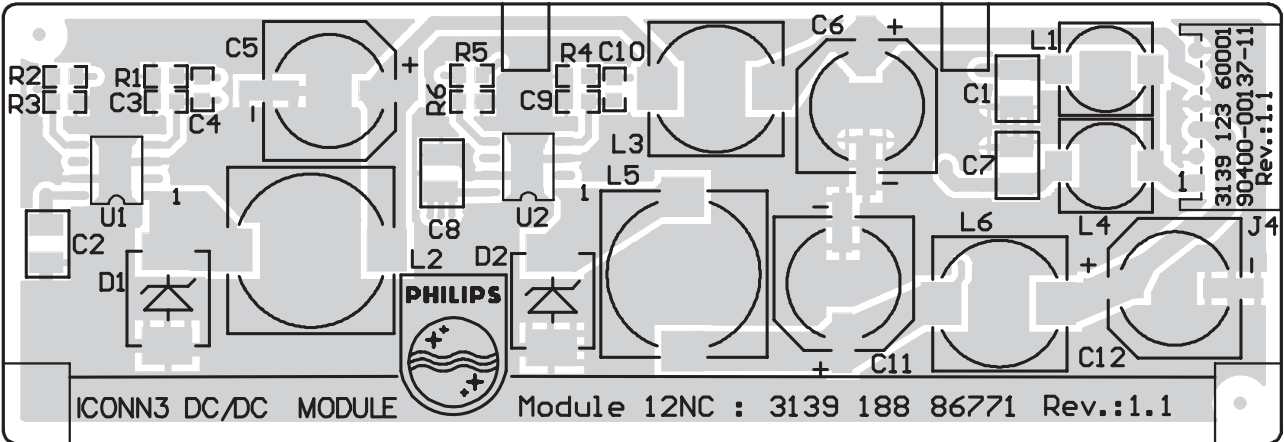
DC DC Panel

DC DC PANEL



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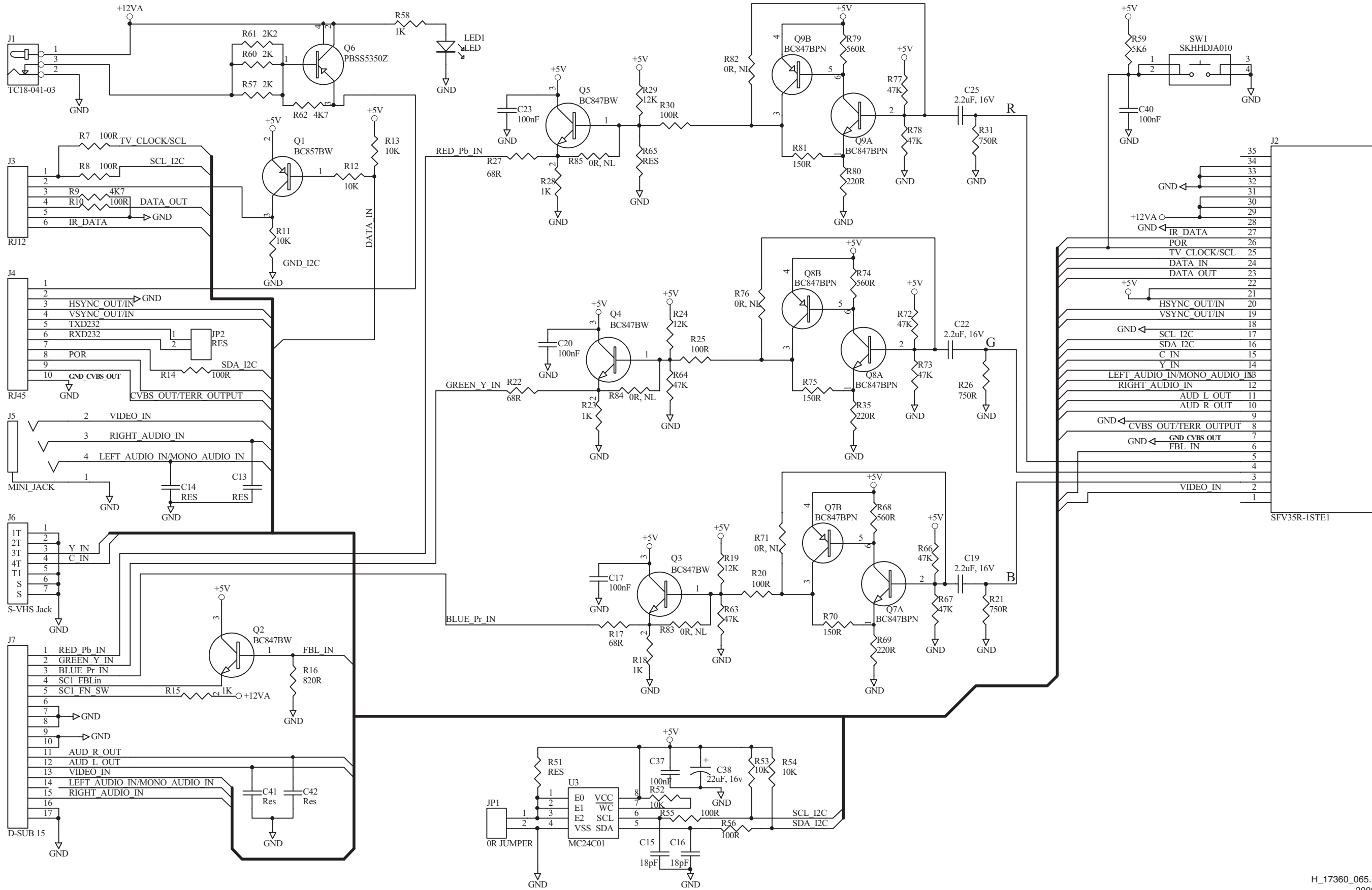
Layout DC DC Panel (Top Side)



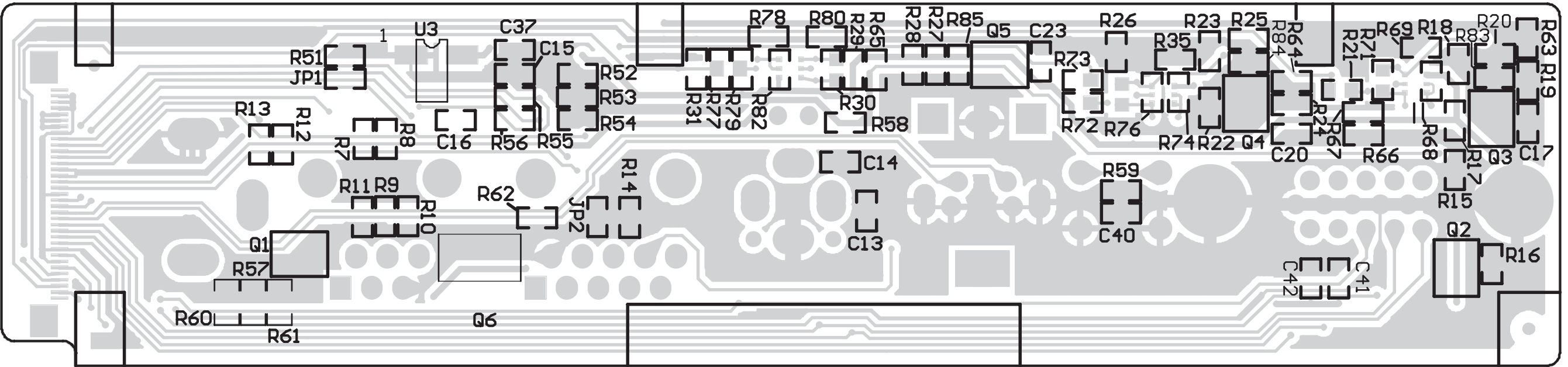
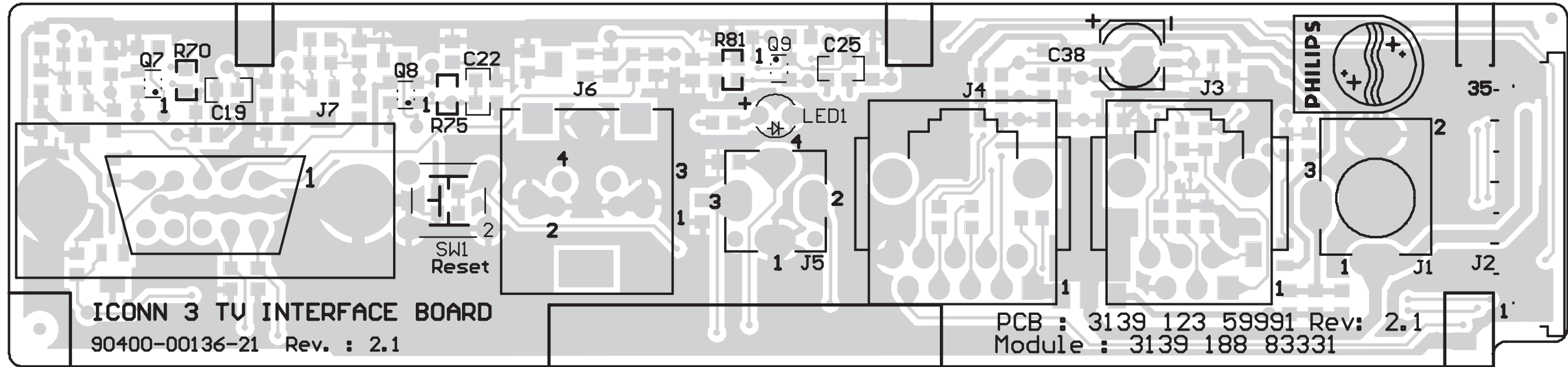
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TV Interface Panel

TV INTERFACE BOARD



Layout TV Interface Panel



8. Alignments

Index of this chapter:

8.4 Electrical Alignments

8.5 Serial Number Definition

Note:

The Service Modes are described in chapter 5. Menu navigation is done with the CURSOR UP, DOWN, LEFT or RIGHT keys of the remote control transmitter.

8.1 General Alignment Conditions

Perform all electrical adjustments under the following conditions:

- Power supply voltage (depends on region):
 - AP-NTSC: 120 V_{AC} or 230 V_{AC} / 50 Hz (± 10%).
 - AP-PAL-multi: 120 - 230 V_{AC} / 50 Hz (± 10%).
 - EU: 230 V_{AC} / 50 Hz (± 10%).
 - LATAM-NTSC: 120 - 230 V_{AC} / 50 Hz (± 10%).
 - US: 120 V_{AC} / 60 Hz (± 10%).
 - Connect the set to the mains via an isolation transformer with low internal resistance.
 - Allow the set to warm up for approximately 15 minutes.
 - Measure voltages and waveforms in relation to correct ground (e.g. measure audio signals in relation to AUDIO_GND).
- Caution:** It is not allowed to use heatsinks as ground.
- Test probe: Ri > 10 Mohm, Ci < 20 pF.
 - Use an isolated trimmer/screwdriver to perform alignments.

8.2 Hardware Alignments

There are no hardware alignments foreseen for this chassis.

8.3 Software Alignments

With the software alignments of the Service Alignment Mode (SAM) the Tuner and RGB settings can be aligned.

To store the data: Use the RC button "Menu" to switch to the main menu and next, switch to "Stand-by" mode.

8.3.1 RGB Alignment

Before alignment, choose "TV MENU" -> "Picture" and set:

- "Brightness" to "50".
- "Colour" to "50".
- "Contrast" to "100".

White Tone Alignment:

- Activate SAM.
- Select "RGB Align." -> "White Tone" and choose a colour temperature.
- Use a 100% white screen as input signal and set the following values:
 - All "White point" values initial to "256".
 - All "BlackL Offset" values to "0".

In case you have a colour analyser:

- Measure with a calibrated (phosphor- independent) colour analyser (e.g. Minolta CA-210) in the centre of the screen. Consequently, the measurement needs to be done in a dark environment.
- Adjust the correct x,y coordinates (while holding one of the White point registers R, G or B on "256") by means of decreasing the value of one or two other white points to the correct x,y coordinates (see table "White D alignment values"). Tolerance: dx: ± 0.004, dy: ± 0.004.

- Repeat this step for the other colour Temperatures that need to be aligned.
- When finished return to the SAM root menu and press STANDBY on the RC to store the aligned values to the NVM.

Table 8-1 White D alignment values

Value	Cool (11000 K)	Normal (9000 K)	Warm (6500 K)
x	0.278	0.289	0.314
y	0.278	0.291	0.319

If you do **not** have a colour analyser, you can use the default values. This is the next best solution. The default values are average values coming from production (statistics).

- Set the RED, GREEN and BLUE default values per temperature according to the values in the "Tint settings" table.
- When finished return to the SAM root menu and press STANDBY on the RC to store the aligned values to the NVM.

Table 8-2 Tint settings

Colour Temp.	R	G	B
Cool	243	256	249
Normal	251	256	220
Warm	256	241	189

Black Level Offset Alignment

- Activate SAM.
- Select "RGB Align." -> "BlackL Offset" and choose a colour.
- Set all "BlackL Offset" values to "0".
- When finished return to the SAM root menu and press STANDBY on the RC to store the aligned values to the NVM.

Note: For models with "Pixel Plus", the "Black Offset" (black level offset) should NOT be changed in SAM. These offset values of RGB should be set to "0", and should **NOT** be adjusted. Any adjustment of these values will affect the low light white balance.

ADC YPbPr Gray Scale Alignment

When the grey scale is not correct, use this alignment:

- Activate SAM.
- Select "NVM Editor".
- Enter address " 26(dec)" (ADR).
- Set value (VAL) to "197(dec) ± 25".
- Store (STORE) the value.

8.4 Electrical Alignments

8.4.1 PC Mode Adjustment

White balance adjustment

General set-up:

Equipment Requirements: Color analyser.

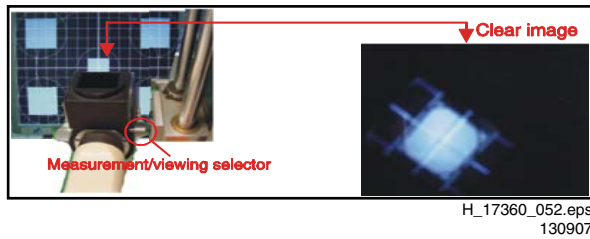


Figure 8-1 Color analyzer

Access to factory mode (RS232) in auto-alignment system. The communication protocol switches to RS232.

Input requirements:

Input Signal Type : PC signal

At factory mode apply 1024X768 /60Hz with TVBAR100 pattern and set Brightness and contrast to be 50%. Activate AUTO-COLOR function for auto ADC offset and gain setup.

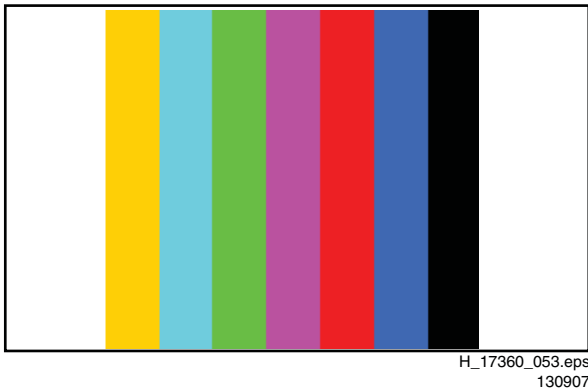


Figure 8-2 TVBAR100

Color Temp Alignment

Apply a 1024*768 / 60Hz signal with white pattern, set brightness control at 100%, and contrast control at 50%. Adjust the R, G, B Sub-Gain, for the screen center, the 1931 CIE chromaticity (x, y) co-ordinates shall be:

Table 8-3 Reading with Minolta CA-210

	Normal	Cool	Warm
CCT	9300K	11500K	6500K
x	0.283 ± 0.015	0.273 ± 0.015	0.314 ± 0.015
y	0.297 ± 0.015	0.280 ± 0.015	0.324 ± 0.015

If you have not CA-210, the following R,G and B values are for your reference.

Table 8-4 Reference value of R, G, and B

	Normal (9300K)	Cool (11500K)	Warm (6500K)
R	127	120	127
G	125	127	125
B	99	122	99

Luminance > 400 cd/m2 in the center of the screen when both contrast and brightness are 100%.

This group setting about colour temperature is also applied in HDMI 1/HDMI 2/CVI 1/CVI 2/AV/SideAV/PC. It means that

HDMI 1/HDMI 2/CVI 1/CVI 2/AV/SideAV/PC use the same setting.

Display quality adjustment

Use timing mode as described in 2.2, and uses the POPO (Pixel On Pixel Off) pattern to adjust the clock until no stripe and adjust the phase until clear picture. (AUTO ADJUST hot key: press VOLUME n and VOLUME + keys together for 1 second). Check all six preset modes.

Check the analogue interface cable.

Check the color poor and noise condition of 64 gray scale pattern.

8.4.2 Comp Mode Adjustment

White-D adjustment

General set-up:

Equipment : Quantum Data Pattern Generator 801GD or 802G or 802R;

Apply 1080i/50Hz and the pattern TVBAR100 is shown in figure 1.

Alignment method:

Initial Set-up : Set Smart picture as "Personal" (Brightness=50, Color=50, Contrast=50);

Access to factory OSD first, then to enable AUTO-COLOR to get Comp ADC OFFSET and Comp ADC GAIN. Check 64 gray scales can be distinguishable.

Color Temp Alignments : Check chromaticity (x, y) co-ordinates specification as in Table 6. Luminance> 400 cd/m2 in the center of the screen in RICH mode.

8.5 Serial Number Definition

BOM Code:

Table 8-5 Panel type

PANEL SUPPLIER	Code
AU	1
CPT	2
LPL(LG)	3
QDI	4
CMO	5
HSD	6
SVA	7

9. Circuit Descriptions, Abbreviation List, and IC Data Sheets

Index of this chapter:

- 9.1 Introduction
- 9.2 Block Diagram
- 9.3 Abbreviation List
- 9.4 IC Data Sheets

Notes:

- Only **new** circuits (circuits that are not published recently) are described.
- Figures can deviate slightly from the actual situation, due to different set executions.

9.1 Introduction

This monitor uses a 1366x768 WXGA panel. It supports PC analogue and DVI (HDMI port) digital inputs up to 1360x768 60Hz mode, and Y/C and CVBS. Also YPbPr signal inputs from SDTV to HDTV (480i, 480p, 720p, 1080i and 576i, 576p, 720p, 1080i) digital port for HDMI (480iW, 576iW, 480p, 576p, 480pW, 576pW, 720p50/60Hz, 1080i 50/60Hz).

This F3 platform (development name) uses a Trident SVP-PX66 Scaler IC, which has an embedded ADC for HDTV/ Analog D-sub input up to 108 MHz/10bit, a digital port for CVBS and Y/C input, a TXT decoder, and a built-in dual 8/10-bit LVDS transmitter. uses Trident SVP-PX66 as scaler engine, which has embedded Analog D-SUB, digital HDMI receiver, scaling input signal to panel OSD mapping and simple 3D de-interlacer. The extra DDR is to accomplish video frame rate

conversion and to provide OSD and de-interlacer with enough memory.

The video processing and some audio functions is done on the Scaler board.

The CPU (M30620SPGP) provides control signals such as backlight control, RC (remote control), detect keypad input, IIC I/O communication, TV tuning control, sound control, and power control.

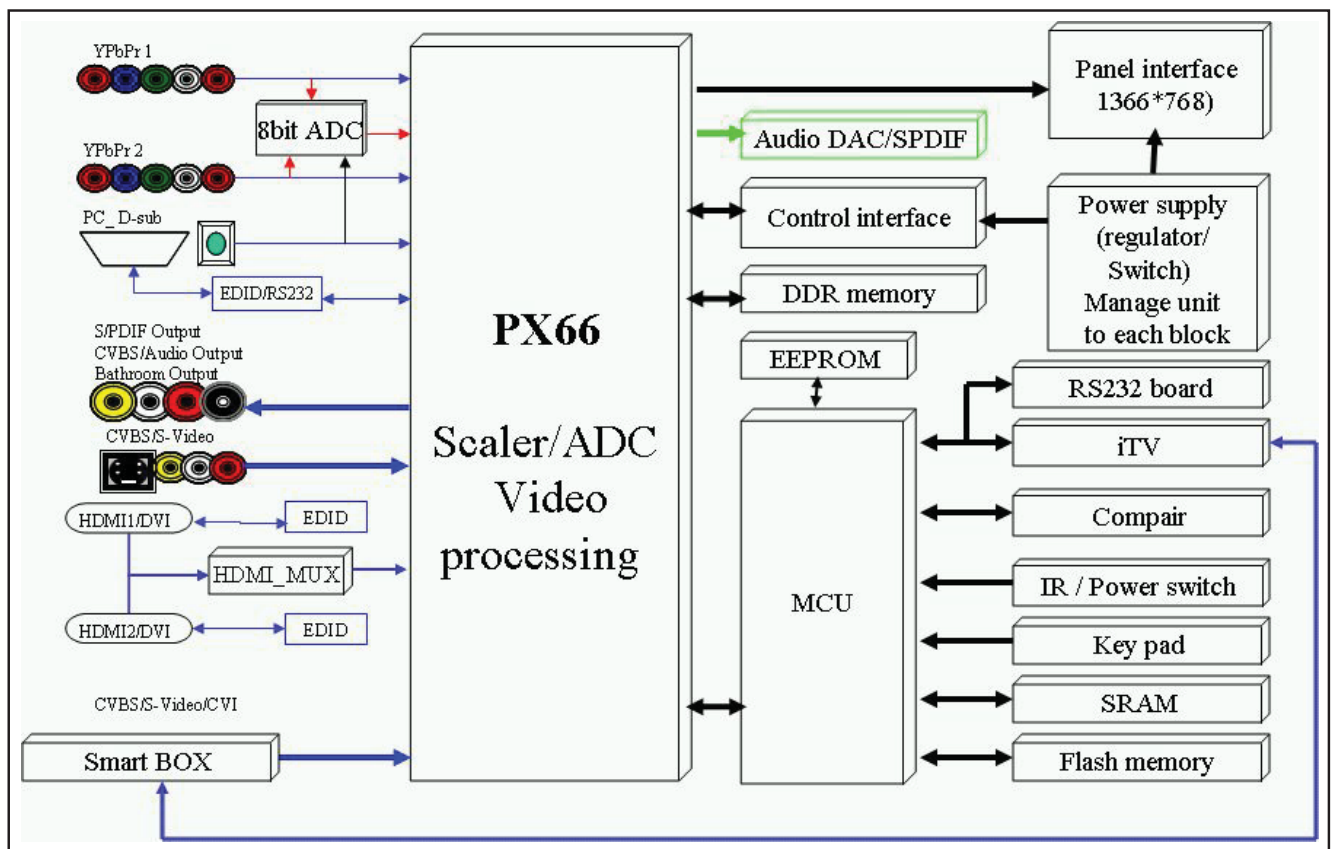
The embedded video decoder is used to execute all video signals processing except for HDTV. The HDTV streams go through an embedded ADC converter. 3D comb and 3D de-interlacer are included in the Scaler. The Scaler can decode CC, TXT, and V-chip data to display.

One audio decoder MSP34XXG is used for TV sound processing, and output goes via the TPA3100D2PHPR D-class amplifier on the Scaler board.

The iTV board (i-Board) is a buy-in product, so it is a black-box for Service. When defective, replace the whole unit. It is for iTV "level two" system usage. The iTV "level two" is the system for a Hotel center controller to control the monitor and take the service for the customer. It is a two-way communication between Hotel center controller and customer. Beside that, the most important point is that all of the monitor display and work action is controlled by iTV. The iTV board can update SW version or communicate with the center controller by RS232 board (RS232 and RJ45 interface).

Smart Box is the interface for a PHILIPS Smart Card (NEXT card, DVB-T card, etc.). It is an option item for the customer. This Smart Box is controlled by the iTV board and sends the signal from the Smart Card to the Scaler for display.

9.2 Block Diagram



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Figure 9-1 Scaler board (video section) block diagram

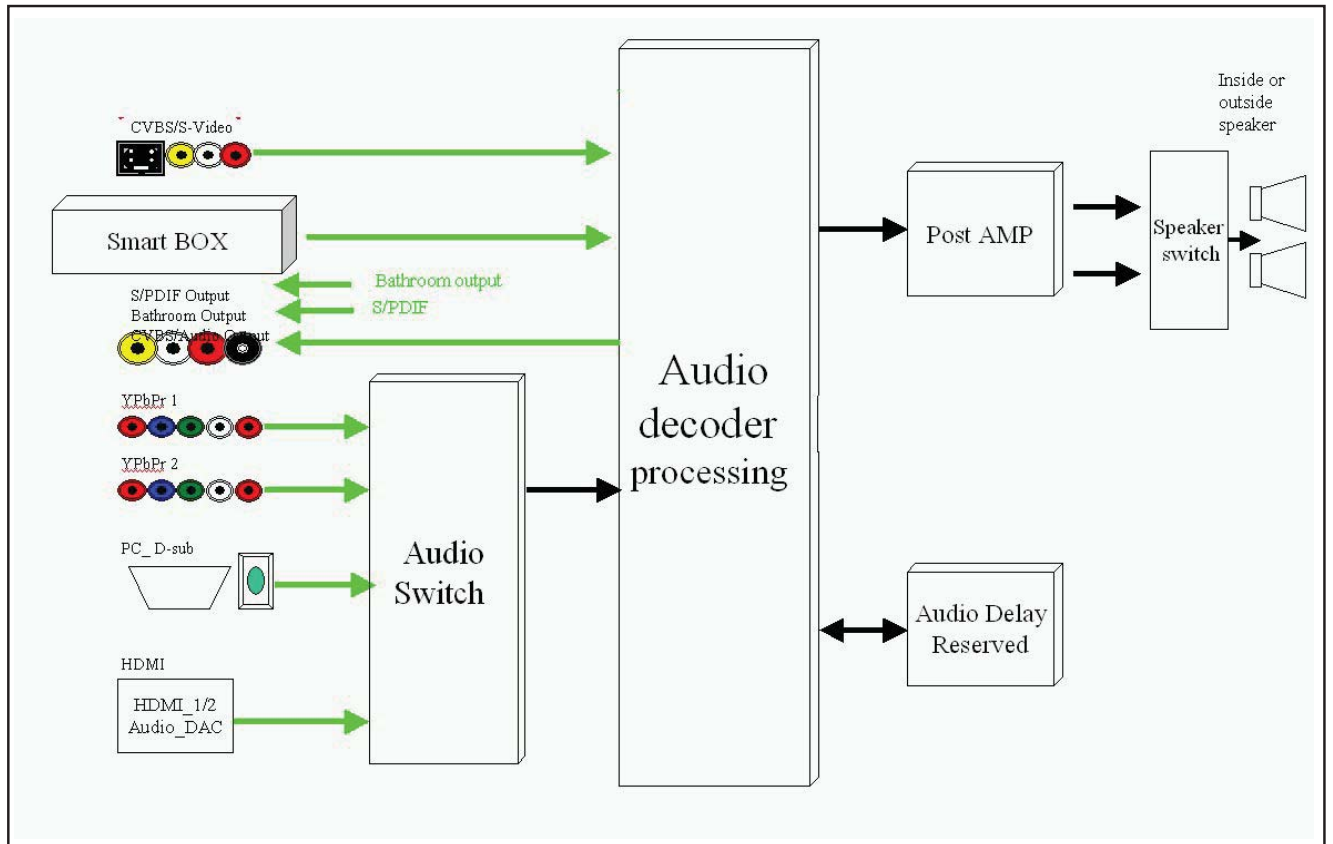
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Figure 9-2 Scaler board (audio section) block diagram

9.3 Abbreviation List

1080i	1080 visible lines, interlaced	FBL-SC2-IN	Fast blanking signal for SCART2 in
1080p	1080 visible lines, progressive scan	FBL-TXT	Fast Blanking Teletext
2CS	2 Carrier Sound	FLASH	FLASH memory
2DNR	Spatial (2D) Noise Reduction	FM	Field Memory / Frequency Modulation
3DNR	Temporal (3D) Noise Reduction	FMR	FM Radio
480i	480 visible lines, interlaced	FRC	Frame Rate Converter
480p	480 visible lines, progressive scan	FRONT-C	Front input chrominance (SVHS)
AARA	Automatic Aspect Ratio Adaptation: algorithm that adapts aspect ratio to remove horizontal black bars; keeping up the original aspect ratio	FRONT-DETECT	Front input detection
ACI	Automatic Channel Installation: algorithm that installs TV channels directly from a cable network by means of a predefined TXT page	FRONT-Y_CVBS	Front input luminance or CVBS (SVHS)
ADC	Analogue to Digital Converter	FTV	Flat TeleVision
AFC	Automatic Frequency Control: control signal used to tune to the correct frequency	G-SC1-IN	Green SCART1 in
AGC	Automatic Gain Control: algorithm that controls the video input of the feature box	G-SC2-IN	Green SCART2 in
AM	Amplitude Modulation	G-TXT	Green teletext
AUO	Acer Unipack Optonics	H	H_sync to the module
AP	Asia Pacific	HD	High Definition: 720p, 1080i, 1080p
AR	Aspect Ratio: 4 by 3 or 16 by 9	HDMI	High Definition Multimedia Interface, digital audio and video interface
ASD	Automatic Standard Detection	HP	Head Phone
AV	Audio Video	I	Monochrome TV system. Sound carrier distance is 6.0 MHz
B-SC1-IN	Blue SCART1 in	I2C	Integrated IC bus
B-SC2-IN	Blue SCART2 in	I2S	Integrated IC Sound bus
B-TXT	Blue teletext	IC	Integrated Circuit
B/G	Monochrome TV system. Sound carrier distance is 5.5 MHz	IF	Intermediate Frequency
BTSC	Broadcast Television System Committee	Interlaced	Scan mode where two fields are used to form one frame. Each field contains half the number of the total amount of lines. The fields are written in "pairs", causing line flicker.
C-FRONT	Chrominance front input	IR	Infra Red
CBA	Circuit Board Assembly (or PWB)	IRQ	Interrupt ReQuest
CL	Constant Level: audio output to connect with an external amplifier	Last Status	The settings last chosen by the customer and read and stored in RAM or in the NVM. They are called at start-up of the set to configure it according to the customers wishes
CLUT	Colour Look Up Table	LATAM	LATIn America
ComPair	Computer aided rePair	LC04	Philips chassis name for LCD TV 2004 project
CSM	Customer Service Mode	LCD	Liquid Crystal Display
CVBS	Composite Video Blanking and Synchronisation	LED	Light Emitting Diode
CVBS-EXT	CVBS signal from external source (VCR, VCD, etc.)	L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I
CVBS-INT	CVBS signal from Tuner	LPL	LG Philips LCD
CVBS-MON	CVBS monitor signal	LS	Loud Speaker
CVBS-TER-OUT	CVBS terrestrial out	LVDS	Low Voltage Differential Signalling, data transmission system for high speed and low EMI communication.
DAC	Digital to Analogue Converter	M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz
DBE	Dynamic Bass Enhancement: extra low frequency amplification	MOSFET	Metal Oxide Semiconductor Field Effect Transistor
DFU	Directions For Use: owner's manual	MPEG	Motion Pictures Experts Group
DNR	Dynamic Noise Reduction	MSP	Multi-standard Sound Processor: ITT sound decoder
DRAM	Dynamic RAM	MUTE	MUTE Line
DSP	Digital Signal Processing	NAFTA	North American Free Trade Association: Trade agreement between Canada, USA and Mexico
DST	Dealer Service Tool: special (European) remote control designed for service technicians	NC	Not Connected
DTS	Digital Theatre Sound	NICAM	Near Instantaneous Compounded Audio Multiplexing. This is a digital sound system, used mainly in Europe.
DVD	Digital Versatile Disc	NTSC	National Television Standard Committee. Colour system used mainly in North America and Japan. Colour carrier NTSC M/N = 3.579545 MHz, NTSC 4.43 = 4.433619 MHz (this is a VCR norm, it is not transmitted off-air)
DVI	Digital Visual Interface	NVM	Non Volatile Memory: IC containing TV related data (for example, options)
DW	Double Window	O/C	Open Circuit
ED	Enhanced Definition: 480p, 576p		
EEPROM	Electrically Erasable and Programmable Read Only Memory		
EU	EUrope		
EXT	EXTERNAL (source), entering the set by SCART or by cinches (jacks)		
FBL	Fast Blanking: DC signal accompanying RGB signals		
FBL-SC1-IN	Fast blanking signal for SCART1 in		

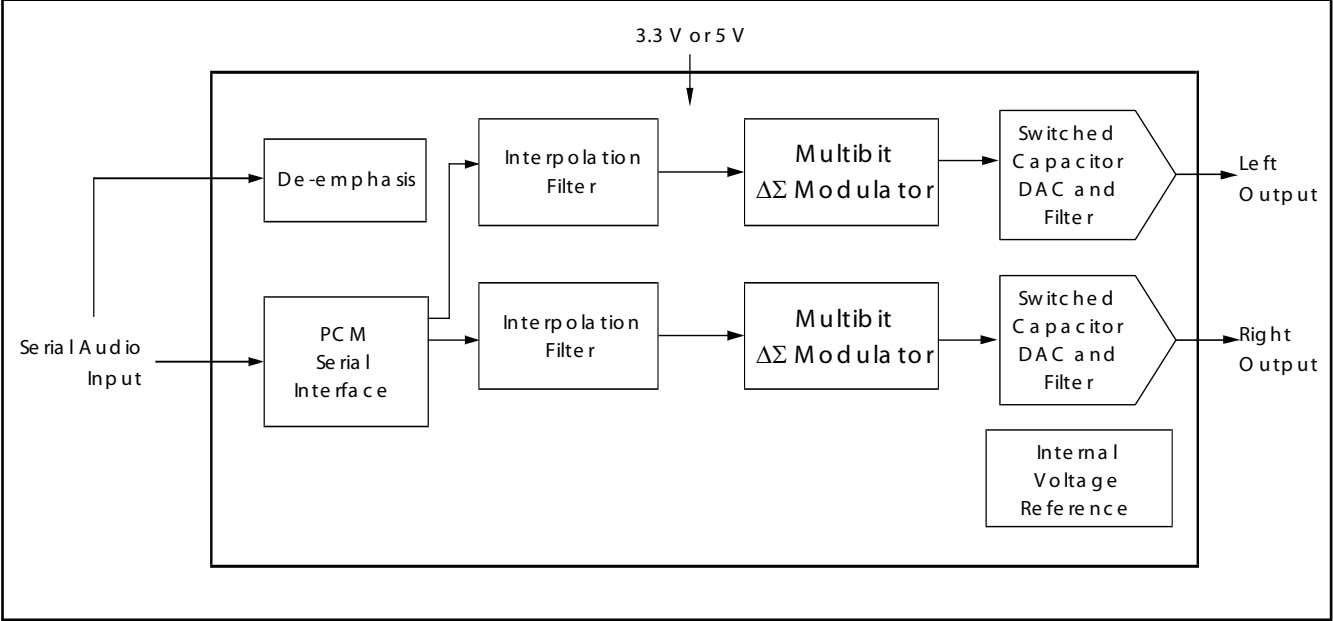
ON/OFF LED	On/Off control signal for the LED	VCR	Video Cassette Recorder
OSD	On Screen Display	VGA	Video Graphics Array
PAL	Phase Alternating Line. Colour system used mainly in Western Europe (colour carrier = 4.433619 MHz) and South America (colour carrier PAL M = 3.575612 MHz and PAL N = 3.582056 MHz)	WD	Watch Dog
		WYSIWYR	What You See Is What You Record: record selection that follows main picture and sound
PC	Personal Computer	XTAL	Quartz crystal
PCB	Printed Circuit Board (or PWB)	YPbPr	Component video (Y= Luminance, Pb/Pr= Colour difference signals B-Y and R-Y, other amplitudes w.r.t. to YUV)
PDP	Plasma Display Panel	Y/C	Video related signals: Y consists of luminance signal, blanking level and sync; C consists of colour signal.
PIG	Picture In Graphic		Luminance-signal
PIP	Picture In Picture	Y-OUT	Baseband component video (Y= Luminance, U/V= Colour difference signals)
PLL	Phase Locked Loop. Used, for example, in FST tuning systems. The customer can directly provide the desired frequency	YUV	
Progressive Scan	Scan mode where all scan lines are displayed in one frame at the same time, creating a double vertical resolution.		
PWB	Printed Wiring Board (or PCB)		
RAM	Random Access Memory		
RC	Remote Control transmitter		
RC5 (6)	Remote Control system 5 (6), the signal from the remote control receiver		
RGB	Red, Green, and Blue. The primary colour signals for TV. By mixing levels of R, G, and B, all colours (Y/C) are reproduced.		
RGBHV	Red, Green, Blue, Horizontal sync, and Vertical sync		
ROM	Read Only Memory		
SAM	Service Alignment Mode		
SC	SandCastle: two-level pulse derived from sync signals		
SC1-OUT	SCART output of the MSP audio IC		
SC2-B-IN	SCART2 Blue in		
SC2-C-IN	SCART2 chrominance in		
SC2-OUT	SCART output of the MSP audio IC		
S/C	Short Circuit		
SCL	Clock signal on I2C bus		
SD	Standard Definition: 480i, 576i		
SDA	Data signal on I2C bus		
SDI	Samsung Display Industry		
SDM	Service Default Mode		
SDRAM	Synchronous DRAM		
SECAM	SEquence Couleur Avec Memoire. Colour system used mainly in France and Eastern Europe. Colour carriers = 4.406250 MHz and 4.250000 MHz		
SIF	Sound Intermediate Frequency		
SMPS	Switch Mode Power Supply		
SND	SouND		
SNDL-SC1-IN	Sound left SCART1 in		
SNDL-SC1-OUT	Sound left SCART1 out		
SNDL-SC2-IN	Sound left SCART2 in		
SNDL-SC2-OUT	Sound left SCART2 out		
SNDR-SC1-IN	Sound right SCART1 in		
SNDR-SC1-OUT	Sound right SCART1 out		
SNDR-SC2-IN	Sound right SCART2 in		
SNDR-SC2-OUT	Sound right SCART2 out		
SNDS-VL-OUT	Surround sound left variable level out		
SNDS-VR-OUT	Surround sound right variable level out		
SOPS	Self Oscillating Power Supply		
S/PDIF	Sony Philips Digital InterFace		
SRAM	Static RAM		
STBY	Stand-by		
SVHS	Super Video Home System		
SW	Sub Woofer / SoftWare		
THD	Total Harmonic Distortion		
TXT	TeleteXT		
uP	Microprocessor		
VL	Variable Level out: processed audio output toward external amplifier		

9.4 IC Data Sheets

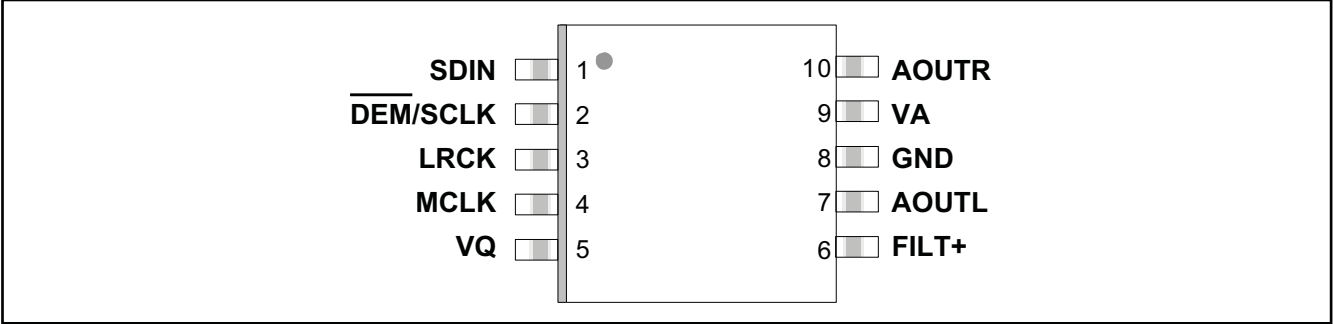
This section shows the internal block diagrams and pin layouts of ICs that are drawn as "black boxes" in the electrical diagrams (with the exception of "memory" and "logic" ICs).

9.4.1 Diagram B1A, CS4344/5/6/8

Block Diagram



Pin Configuration

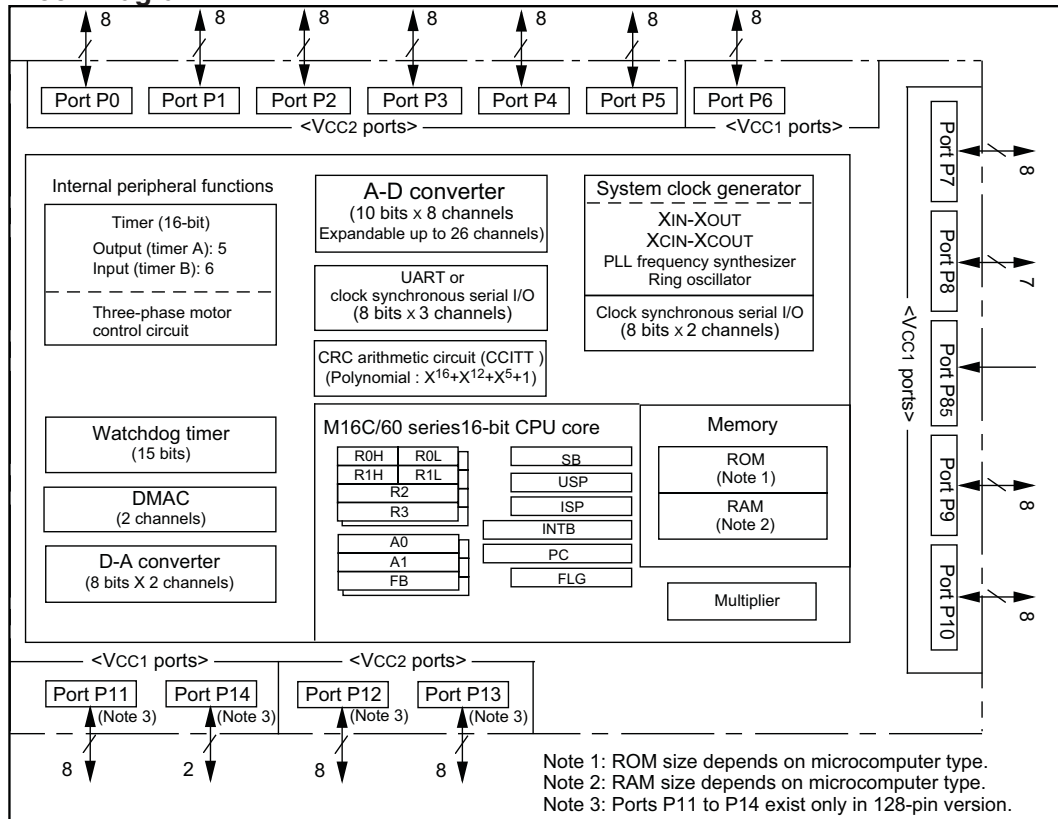


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Figure 9-3 Internal block diagram and pin configuration

9.4.2 Diagram B2A, M16C/62P

Block Diagram



Pin Configuration

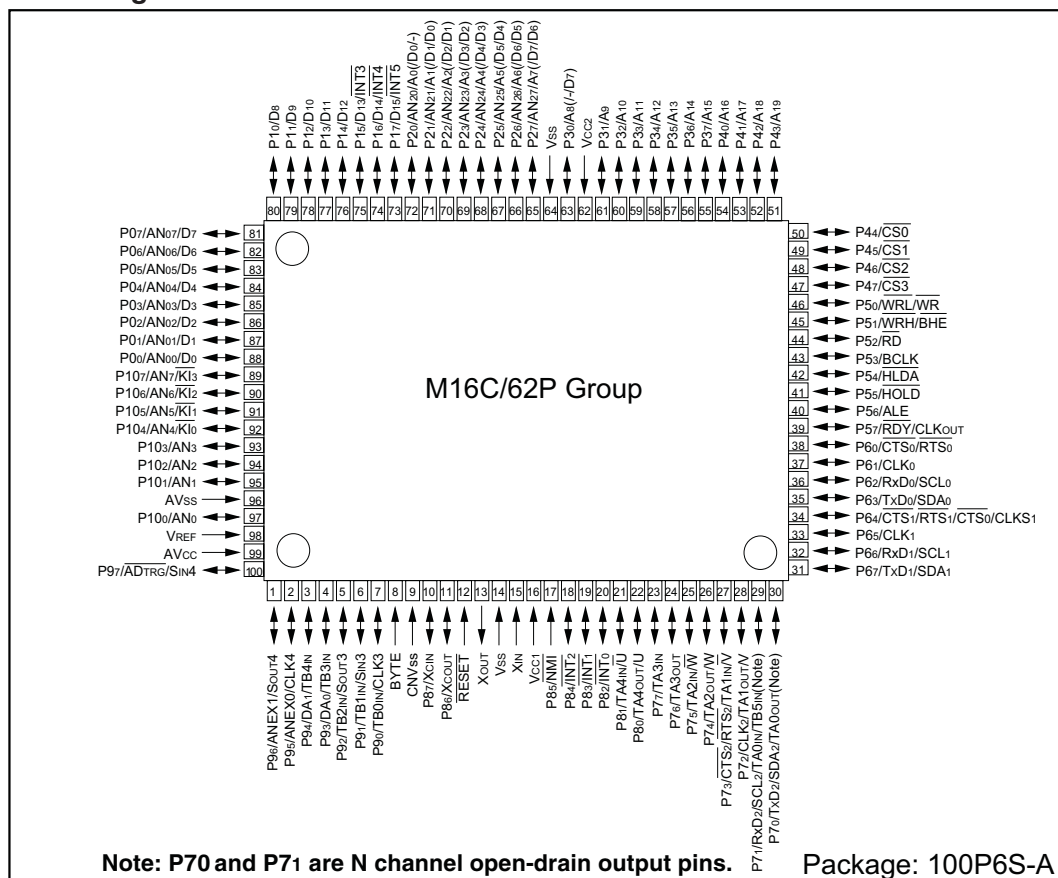
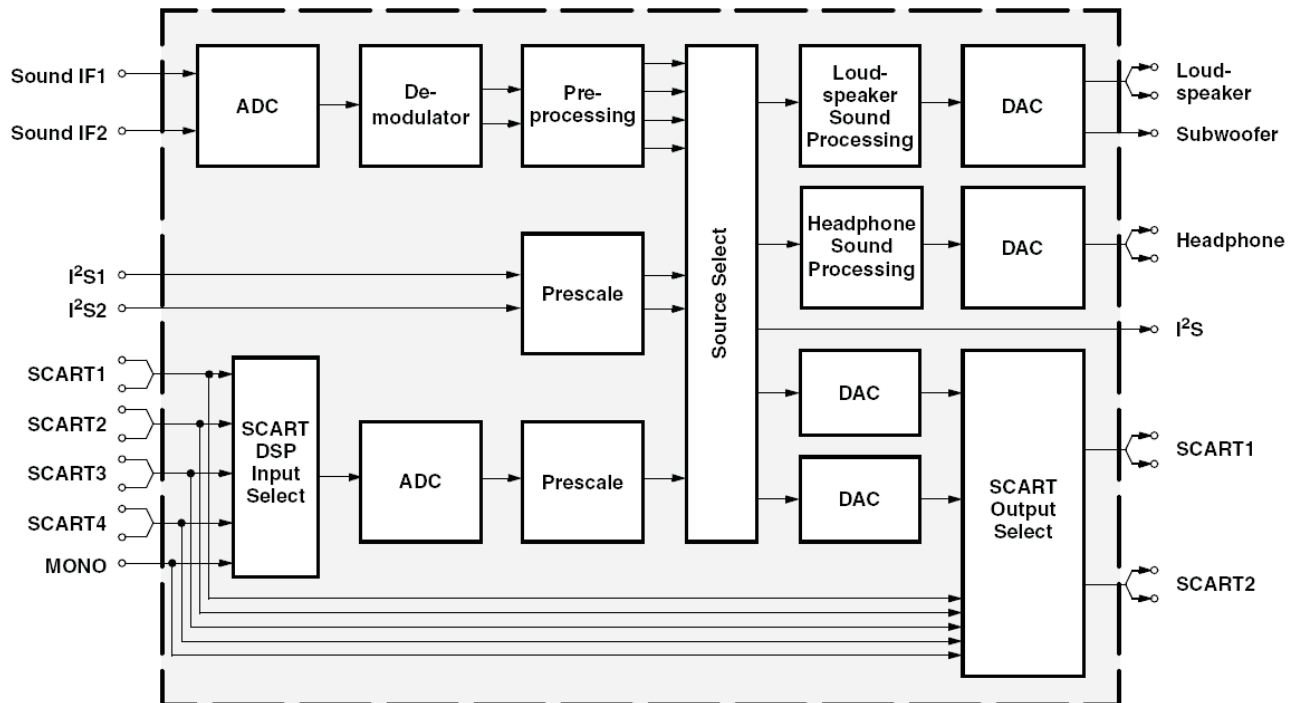


Figure 9-4 Internal block diagram and pin configuration

9.4.3 Diagram B3A, MSP 34x0G

Block Diagram



Pin Configuration

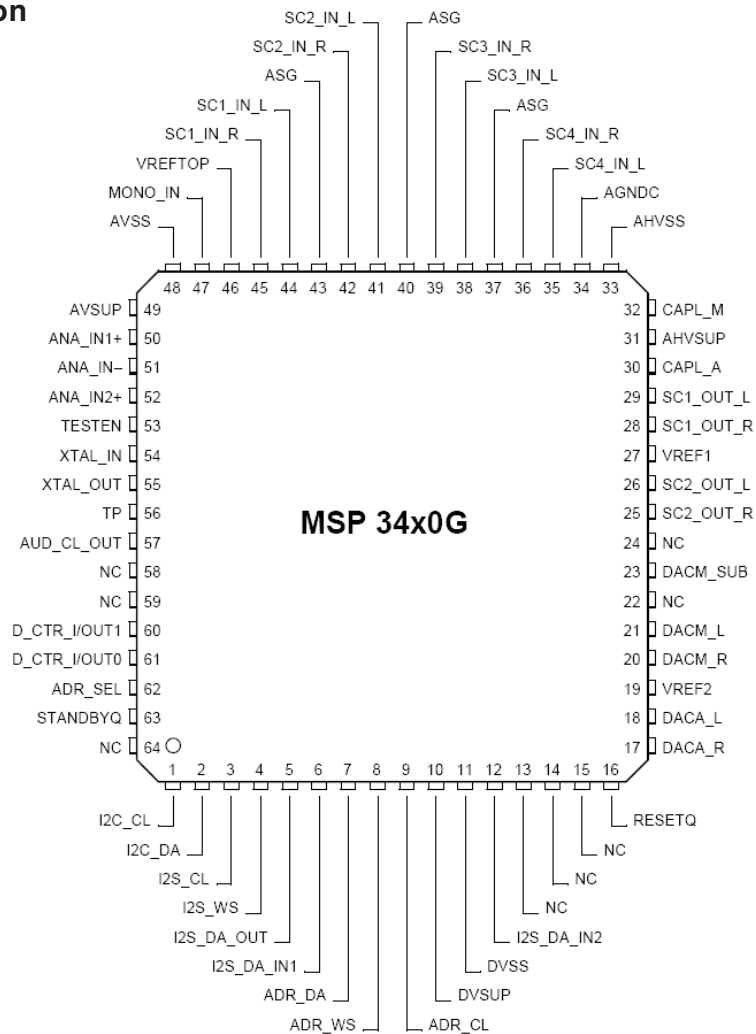
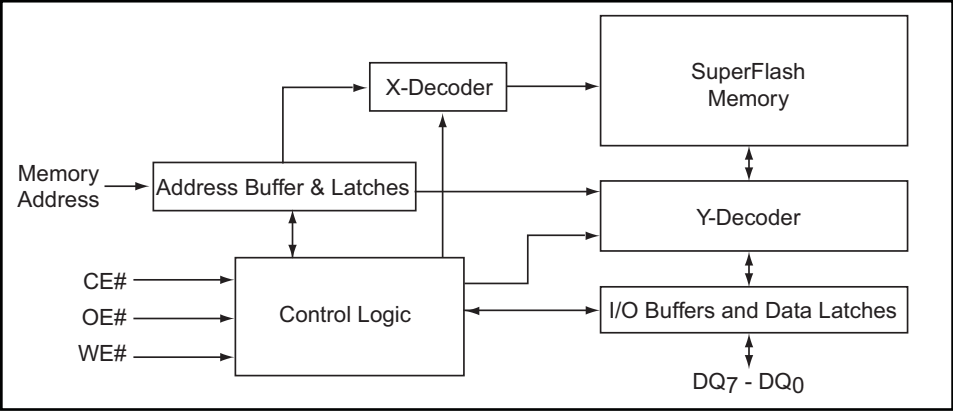


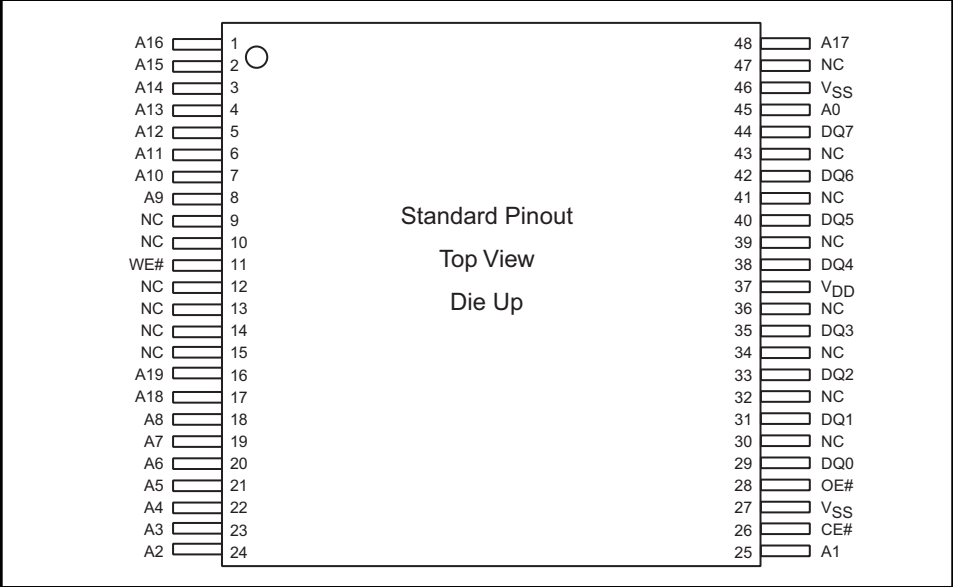
Figure 9-5 Internal block diagram and pin configuration

9.4.4 Diagram B4A, SSTP39VF088

Block Diagram



Pin Configuration

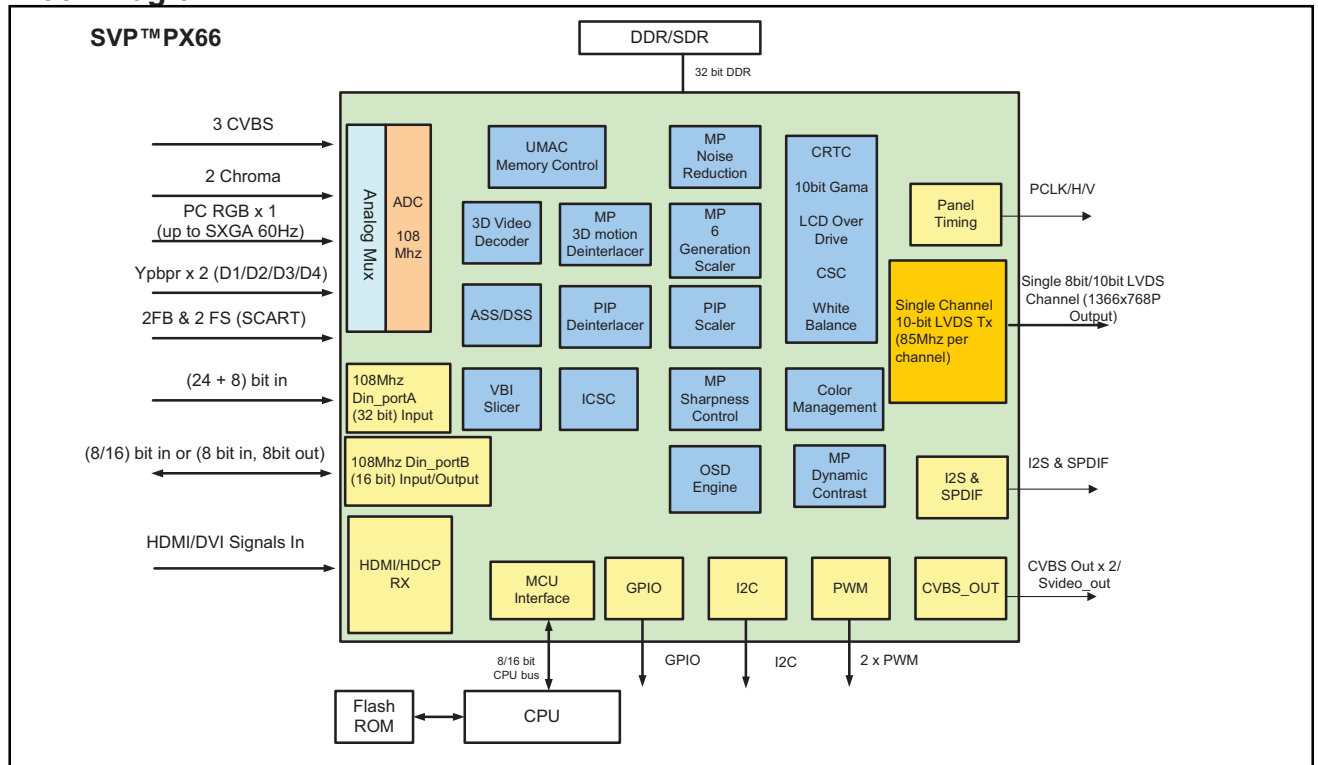


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Figure 9-6 Internal block diagram and pin configuration

9.4.5 Diagram B5A, SVP_PX66LX66

Block Diagram



Pin Configuration

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
A	MD27	MD26	MD25	MD23	MD21	DQM2	MD19	MD12	DQM1	MD7	MD6	DQM0	MD2	TA1P	TB1P	TC1P	TCLK1P	TD1P	TE1P	Rev'd	A
B	DQM3	DQS3	VSS	VDDM	MD22	DQS2	MD18	MD13	DQS1	MD8	MD5	DQS0	MD1	TA1M	TB1M	TC1M	TCLK1M	TD1M	TE1M	Rev'd	B
C	MD28	MD29	MD30	VDDM	MD24	VSS	MD17	MD14	VSS	MD9	MD4	VSS	MD0	VDDC	VDDC	LVDS_VSSD	LVDS_VDDO	LVDS_VSSO	LVDS_VSSO	Rev'd	C
D	MCK0	VSS	MD31	VDDM	VDDM	MD20	MD16	MD15	MD11	MD10	VDDM	MD3	VDDC	VDDC	VDDC	LVDS_VSSD	LVDS_VDDO	LVDS_VSSD	LVDS_VSSD	Rsv'd	D
E	MCK0#	VDDR	MVREF	VSSR	VDDM	VDDM	VSSR	VDDR	VDDM	VDDM	VDDM	VDDM	VDDC	VDDC	VDDC	LVDS_VSSA	LVDS_VDDA	LVDS_VSSP	LVDS_VSSP	Rsv'd	E
F	MA11	MA10	MA9	MA8	VDDM											VSSF	TESTMODE	RESET	Rsv'd	Rsv'd	F
G	MA4	MA5	MA6	MA7	VDDM											VDDC	PWM0	INTN	Rsv'd	Rsv'd	G
H	MA3	MA2	MA1	MA0	VDDC											VDDC	SDA	SCL	Rsv'd	Rsv'd	H
J	CAS#	RAS#	CS1#	CS0#	VDDC											VDDC	CPU_CS	ALE	WR#	RD#	J
K	WE#	CLKE	BA0	BA1	VDDC											VDDC	AD4	AD5	AD6	AD7	K
L	RXC+	RXC-	TMDS_GND	PVCC	VSS											VDDH	AD0	AD1	AD2	AD3	L
M	RX0+	RX0-	TMDS_GND	AVCC	ANTSTO											VDDH	ADDR7	ADDR6	ADDR5	ADDR4	M
N	RX1+	RX1-	TMDS_GND	AVCC	AVCC											VDDH	ADDR0	ADDR1	ADDR2	ADDR3	N
P	RX2+	RX2-	TMDS_GND	AVCC	DGND											VDDH	VS	VSS	HS	Rsv'd	P
R	TMDS_GND	AVDDL	PLL	PAVSS2	PLF2	REGVCC										VDDC	Rsv'd	Rsv'd	DPB_9	DPB_8	R
T	AVSSLL	PAVSS1	PAVDD1	PAVDD2	AVSS_ADC1	AVSS_AD_C4	AVSS_AD_C2	AVDD_AD_C3	AVSS_AD_C3	PWR5V	DSCL	VDDH	VDDH	VDDC	VDDC	VSS	DPB_10	DPB_11	DPB_CLK	DPB_12	T
U	AVDDAP	MLF1	AVDD3_OUTBUF	FB2	AVDD_ADC1	AVDD_AD_C4	AVDD_AD_C2	PC_R	AVDD3_ADC2	AIN_VS	DSDA	WS	DPA_22	DPA_15	DPA_14	DPA_8	DPA_7	DPB_15	DPB_14	DPB_13	U
V	AVSSAP	CVBS_OUT2	AVDD3_BG_ASS	FS1	VREFN_1	Y_G1	VREFN_2	PR_R3	C	AIN_HS	SCDT	SD0	DPA_21	DPA_16	DPA_13	DPA_9	DPA_6	DPA_1	DPB_HS	DPB_VS	V
W	XTALI	CVBS_OUT1	AVSS_BG_ASS	FS2	VREFP_1	Y_G2	VREFP_2	PR_R2	PB_B1	PC_B	AUDIOCLK	SPDIF	DPA_20	DPA_17	DPA_12	DPA_10	DPA_5	DPA_2	DPA_0	DPB_DE	W
Y	XTALO	AVSS_OUTBUF	AVDD3_ADC1	CVBS1	FB1	Y_G3	PC_G	PR_R1	PB_B2	PB_B3	SCK	DPA_23	DPA_19	DPA_18	DPA_CLK	DPA_11	DPA_4	DPA_3	DPA_HS	DPA_VS	Y
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

Figure 9-7 Internal block diagram and pin configuration

10. Spare Parts List

Set Level per Model Number (CTN)

BDL3231C/00

1050	9965 100 05963	LC320W01-SLB1
1053	9965 100 07441	Scaler Pcb Assy [B]
1054	9965 100 07537	PSU assy [A]
1056	9965 100 07445	IR & LED assy [J]
1057	9965 100 07447	Keyboard & Cntrl assy [E]
1058	9965 100 07525	iBoard assy [HC]
1100	9965 100 07526	Interface Board assy [R]
1101	9965 100 07527	DC-DC Board
1102	9965 100 07528	32 Pin Interface Board
1104	9965 100 07529	Interface of iBoard Assy
1105	9965 100 07533	Speaker Switch Assy [S]
1106	9965 100 07509	Cable-3p 120mm
1174	9965 100 07505	D-SUB Cable 1500mm
1175	9965 100 07506	DVI-HDMI Cable
1185	9965 100 07500	Speaker 8Ω 10W
1186	9965 100 07501	Speaker 8Ω 10W
8350	9965 100 07518	Cable 14p-5+12p
8351	9965 100 07510	Cable 3p-3p 430mm
8352	9965 100 07517	Cable 2p-6+7p
8353	9965 100 07504	Cable RJ48-RJ48
8354	9965 100 07516	Cable 11p-11p 210mm
8355	9965 100 07511	Cable 3p-3p+3p 200mm
8356	9965 100 07513	Cable 4p-4p 70mm
8357	9965 100 07514	Cable 5p-5p 130mm
8358	9965 100 07503	Cable DC3.5 (m)
8359	9965 100 07502	Cable HDB15p (m)
8360	9965 100 07542	Cable RJ12 assy
8361	9965 100 07508	Cable 4p-4p 70mm
8362	9965 100 07512	Cable 4p-3p+2p 80mm
8363	9965 100 07515	Cable 6p-6p 80mm
8364	9965 100 07507	FFC Cable 35p 80mm
8803	9965 100 07519	Cable 30p-15*2p 120mm

BDL4231C/00

1050	9965 100 07853	LC420WX7-SLB1
1053	9965 100 07863	Scaler Pcb Assy [B]
1054	9965 100 07861	PSU assy [A]
1056	9965 100 07445	IR & LED assy [J]
1057	9965 100 07447	Keyboard & Cntrl assy [E]
1058	9965 100 07525	iBoard assy [HC]
1080	9965 100 07850	Speaker Assy L
1081	9965 100 07851	Speaker Assy R
1100	9965 100 07526	Interface Board assy [R]
1101	9965 100 07527	DC-DC Board
1102	9965 100 07528	32 Pin Interface Board
1104	9965 100 07529	Interface of iBoard Assy
1105	9965 100 07533	Speaker Switch Assy [S]
1174	9965 100 07505	D-SUB Cable 1500mm
1175	9965 100 07506	DVI-HDMI Cable
8350	9965 100 07846	Cable 12p+5p-14p
8351	9965 100 07510	Cable 3p-3p 430mm
8352	9965 100 07845	Cable 2p-6+7p
8353	9965 100 07504	Cable RJ48-RJ48
8354	9965 100 07516	Cable 11p-11p 210mm
8355	9965 100 07511	Cable 3p-3p+3p 200mm
8356	9965 100 07842	Cable 4p-4p 230mm
8357	9965 100 07843	Cable 5p-5p 220mm
8358	9965 100 07503	Cable DC3.5 (m)
8359	9965 100 07502	Cable HDB15p (m)
8360	9965 100 07542	Cable RJ12 assy
8361	9965 100 07508	Cable 4p-4p 70mm
8362	9965 100 07512	Cable 4p-3p+2p 80mm
8363	9965 100 07515	Cable 6p-6p 80mm
8364	9965 100 07507	FFC Cable 35p 80mm
8400	9965 100 07844	Cable 12p-12p 870mm
8803	9965 100 07847	Cable 30p-15*2p 150mm
SZ002	9965 100 07852	Carton assy

TV & Scaler Board [B]

Various

1256	9965 100 07443	EEPROM ASSY- U4101
1256	9965 100 07864	
1257	9965 100 07444	FLASH ASSY - U4502
1257	9965 100 07865	
FB1101	9965 000 45218	Bead 10Ω/500mA
FB1102	9965 000 45218	Bead 10Ω/500mA
FB1103	9965 000 45218	Bead 10Ω/500mA
FB1104	9965 000 43997	Bead 600Ω/500mA
FB1104	9965 100 02513	Bead 600Ω/200mA

FB1105	9965 000 43997	Bead 600Ω/500mA
FB1105	9965 100 02513	Bead 600Ω/200mA
FB1106	9965 000 45219	Bead 600Ω/300mA
FB1107	9965 000 45219	Bead 600Ω/300mA
FB1202	9965 000 45218	Bead 10Ω/500mA
FB1203	9965 000 45218	Bead 10Ω/500mA
FB1204	9965 000 45219	Bead 600Ω/300mA
FB1205	9965 000 45218	Bead 10Ω/500mA
FB1206	9965 000 45219	Bead 600Ω/300mA
FB1207	9965 000 45218	Bead 10Ω/500mA
FB1208	9965 000 45218	Bead 10Ω/500mA
FB1209	9965 000 45218	Bead 10Ω/500mA
FB1211	9965 100 03317	Bead 120Ω/500mA
FB1213	9965 000 45219	Bead 600Ω/300mA
FB1214	9965 100 03317	Bead 120Ω/500mA
FB1216	9965 000 45219	Bead 600Ω/300mA
FB1217	9965 100 03317	Bead 120Ω/500mA
FB1219	9965 000 45219	Bead 600Ω/300mA
FB1220	9965 100 03317	Bead 120Ω/500mA
FB1221	9965 100 03317	Bead 120Ω/500mA
FB1222	9965 000 45219	Bead 600Ω/300mA
FB1223	9965 100 03317	Bead 120Ω/500mA
FB1224	9965 000 45219	Bead 600Ω/300mA
FB1225	9965 000 45219	Bead 600Ω/300mA
FB1226	9965 000 45219	Bead 600Ω/300mA
FB1227	9965 000 45219	Bead 600Ω/300mA
FB1228	9965 000 45218	Bead 10Ω/500mA
FB1231	9965 000 45219	Bead 600Ω/300mA
FB4201	9965 100 02512	Bead 100Ω 3A
FB4401	9965 000 45221	Bead 120Ω/600mA
FB4402	9965 000 45221	Bead 120Ω/600mA
FB4403	9965 000 45221	Bead 120Ω/600mA
FB4404	9965 000 45221	Bead 120Ω/600mA
FB4405	9965 000 45221	Bead 120Ω/600mA
FB4406	9965 000 45221	Bead 120Ω/600mA
FB4407	9965 000 45221	Bead 120Ω/600mA
FB4408	9965 000 45221	Bead 120Ω/600mA
FB6201	9965 100 02512	Bead 100Ω 3A
FB6202	9965 100 02512	Bead 100Ω 3A
FB6301	9965 100 02512	Bead 100Ω 3A
FB6302	9965 100 02512	Bead 100Ω 3A
FB6303	9965 100 02512	Bead 100Ω 3A
FB6304	9965 100 02512	Bead 100Ω 3A
FB6307	9965 100 02512	Bead 100Ω 3A
FB6308	9965 100 02776	Bead 120Ω 3A
FB7101	9965 100 02776	Bead 120Ω 3A
FB7201	9965 100 02512	Bead 100Ω 3A
FB7202	9965 100 02512	Bead 100Ω 3A
FB7206	9965 100 02512	Bead 100Ω 3A
FB7211	9965 100 02512	Bead 100Ω 3A
FB7212	9965 100 02512	Bead 100Ω 3A
FB7214	9965 100 02512	Bead 100Ω 3A
X4101	9965 000 45243	Crystal 10Mhz 30pF
X4101	9965 100 04059	Crystal 10Mhz 30pF
X4101	9965 100 04060	Crystal 10Mhz 30pF
X4201	9965 100 02530	Crystal 28.322Mhz 14pF
X4201	9965 100 04057	Crystal 28.322Mhz 14pF
X4201	9965 100 04058	Crystal 28.322Mhz 14pF
X6201	9965 100 05957	Crystal 28.432Mhz 12pF
X6201	9965 100 05958	Crystal 28.432Mhz 12pF
ZD1201	9965 000 44282	BZX84-C5V6
ZD5101	9965 000 45246	PESD0603-140
ZD5102	9965 000 45246	PESD0603-140
ZD5103	9965 000 45246	PESD0603-140
ZD5104	9965 000 45246	PESD0603-140
ZD5105	9965 000 45246	PESD0603-140
ZD5106	9965 000 45246	PESD0603-140
ZD7101	9965 000 44282	BZX84-C5V6
ZD7101	9965 100 02526	BZX84-C5V6
ZD7102	9965 000 44282	BZX84-C5V6
ZD7102	9965 100 02526	BZX84-C5V6
ZD7103	9965 000 44282	BZX84-C5V6
ZD7103	9965 100 02526	BZX84-C5V6
ZD7104	9965 000 44282	BZX84-C5V6
ZD7104	9965 100 02526	BZX84-C5V6
ZD7105	9965 000 44282	BZX84-C5V6
ZD7105	9965 100 02526	BZX84-C5V6
ZD7106	9965 000 44282	BZX84-C5V6
ZD7106	9965 100 02526	BZX84-C5V6
ZD7107	9965 000 44282	BZX84-C5V6
ZD7107	9965 100 02526	BZX84-C5V6
ZD7201	9965 000 37793	S1D-E3 VISHAY

—II—

C1101	9965 000 43488	100nF 25V 0603
C1102	9965 000 43488	100nF 25V 0603
C1103	9965 000 45199	4.7μF 10% 10V
C1105	9965 000 43488	100nF 25V 0603

C1107	9965 000 42231	330pF 50V NPO 0603
C1108	9965 000 42231	330pF 50V NPO 0603
C1110	9965 000 42401	220pF NPO 50V 5% 0603
C1111	9965 000 42230	33pF 50V 0603
C1112	9965 100 02500	220nF 10% 10V
C1114	9965 000 43488	100nF 25V 0603
C1115	9965 000 45199	4.7μF 10% 10V
C1116	9965 000 43978	10pF 5% 50V 0603
C1117	9965 000 43978	10pF 5% 50V 0603
C1202	9965 000 43984	5.6pF 50V 0603
C1203	9965 000 43984	5.6pF 50V 0603
C1206	9965 000 43984	5.6pF 50V 0603
C1208	9965 000 43984	5.6pF 50V 0603
C1209	9965 000 43984	5.6pF 50V 0603
C1210	9965 000 43984	5.6pF 50V 0603
C1222	9965 100 04130	820pF 25V
C1228	9965 000 42259	100pF 50V 0603
C1229	9965 000 42259	100pF 50V 0603
C1230	9965 000 42259	100pF 50V 0603
C1231	9965 000 42259	100pF 50V 0603
C1232	9965 000 42230	33pF 50V 0603
C1233	9965 000 42230	33pF 50V 0603
C1234	9965 000 42230	33pF 50V 0603
C1235	9965 000 42212	0Ω 5% 1/10W
C4101	9965 000 43488	100nF 25V 0603
C4102	9965 000 45199	4.7μF 10% 10V
C4103	9965 000 43488	100nF 25V 0603
C4104	9965 000 43488	100nF 25V 0603
C4105	9965 000 43488	100nF 25V 0603
C4106	9965 000 43488	100nF 25V 0603
C4107	9965 000 45203	100μF 25V
C4107	9965 100 04042	100μF 25V
C4108	9965 000 45199	4.7μF 10% 10V
C4111	9965 100 04995	12pF 5% 50V
C4112	9965 100 04995	12pF 5% 50V
C4201	9965 000 42701	2700pF 50V
C4202	9965 000 43488	100nF 25V 0603
C4203	9965 000 43488	100nF 25V 0603
C4204	9965 000 43488	100nF 25V 0603
C4205	9965 000 43488	100nF 25V 0603
C4206	9965 000 43488	100nF 25V 0603
C4207	9965 000 43488	100nF 25V 0603
C4208	9965 000 43488	100nF 25V 0603
C4209	9965 000 43488	100nF 25V 0603
C4210	9965 000 43488	100nF 25V 0603
C4211	9965 000 43488	100nF 25V 0603
C4212	9965 000 43488	100nF 25V 0603
C4213	9965 000 43488	100nF 25V 0603
C4214	9965 000 43488	100nF 25V 0603
C4215	9965 000 43488	100nF 25V 0603
C4216	9965 000 43488	100nF 25V 0603
C4217	9965 000 43488	100nF 25V 0603
C4218	9965 000 43488	100nF 25V 0603
C4219	9965 000 43488	100nF 25V 0603
C4220	9965 000 43488	100nF 25V 0603
C4221	9965 000 43488	100nF 25V 0603
C4222	9965 000 43488	100nF 25V 0603
C4223	9965 000 43488	100nF 25V 0603
C4224	9965 000 42701	2700pF 50V
C4225	9965 000 42680	18pF 50V NPO 5% 0603
C4226	9965 000 42680	18pF 50V NPO 5% 0603
C4227	9965 000 43488	100nF 25V 0603
C4228	9965 000 45203	100μF 25V
C4228	9965 100 04042	100μF 25V
C4229	9965 000 43488	100nF 25V 0603
C4230	9965 000 44025	22μF 20% 1206
C4231	9965 000 42706	3.3μF 50V
C4231	9965 100 02504	3.3μF 50V
C4232	9965 000 45201	10μF 25V
C4233	9965 000 43488	100nF 25V 0603
C4301	9965 000 43488	100nF 25V 0603
C4304	9965 000 43488	100nF 25V 0603
C4305	9965 000 45199	4.7μF 10% 10V
C4306	9965 000 43488	100nF 25V 0603
C4307	9965 000 45199	4.7μF 10% 10V
C4308	9965 000 42264	1μF 16V 0805
C4401	9965 000 43488	100nF 25V 0603
C4402	9965 000 45205	10μF 10V 0805
C4403	9965 000 43488	100nF 25V

C4414	9965 000 45205	10µF 10V 0805	C6201	9965 000 43488	100nF 25V 0603	C6353	9965 100 04695	330nF 10% 50V 0805
C4415	9965 000 45205	10µF 10V 0805	C6202	9965 000 45203	100µF 25V	C7106	9965 000 43488	100nF 25V 0603
C4416	9965 000 45205	10µF 10V 0805	C6202	9965 100 04042	100µF 25V	C7107	9965 000 45205	10µF 10V 0805
C4417	9965 000 45205	10µF 10V 0805	C6203	9965 000 45205	10µF 10V 0805	C7108	9965 000 45205	10µF 10V 0805
C4418	9965 000 43488	100nF 25V 0603	C6204	9965 000 45205	10µF 10V 0805	C7109	9965 000 43488	100nF 25V 0603
C4419	9965 000 43488	100nF 25V 0603	C6205	9965 000 43488	100nF 25V 0603	C7110	9965 000 42259	100pF 50V 0603
C4420	9965 000 44025	22µF 20% 1206	C6206	9965 000 43488	100nF 25V 0603	C7111	9965 000 43488	100nF 25V 0603
C4421	9965 000 43488	100nF 25V 0603	C6207	9965 000 43488	100nF 25V 0603	C7112	9965 000 42262	100nF 50V Y5V 0603
C4422	9965 000 43488	100nF 25V 0603	C6208	9965 000 45205	10µF 10V 0805	C7113	9965 000 42230	33pF 50V 0603
C4423	9965 000 43488	100nF 25V 0603	C6209	9965 000 45205	10µF 10V 0805	C7114	9965 000 42230	33pF 50V 0603
C4424	9965 000 45205	10µF 10V 0805	C6210	9965 000 42678	15pF -5% 50V 0603	C7118	9965 000 42604	470µF 25V
C4425	9965 000 43488	100nF 25V 0603	C6211	9965 000 42690	47pF 50V NPO 5% 0603	C7118	9965 000 42605	470µF 25V EB 10X13mm
C4426	9965 000 43488	100nF 25V 0603	C6212	9965 000 45205	10µF 10V 0805	C7119	9965 000 42259	100pF 50V 0603
C4427	9965 000 45205	10µF 10V 0805	C6213	9965 000 42400	1µF 10V Y5V 20% 0603	C7120	9965 000 43977	1nF 5% 25V 0603
C4428	9965 000 43488	100nF 25V 0603	C6214	9965 000 42230	33pF 50V 0603	C7121	9965 000 42400	1µF 10V Y5V 20% 0603
C4429	9965 000 43488	100nF 25V 0603	C6215	9965 000 42400	1µF 10V Y5V 20% 0603	C7122	9965 100 06761	22nF 20% 50V 0603
C4430	9965 000 43488	100nF 25V 0603	C6216	9965 000 42400	1µF 10V Y5V 20% 0603	C7123	9965 100 06760	2.2nF 10% 50V
C4431	9965 000 45205	10µF 10V 0805	C6217	9965 000 42400	1µF 10V Y5V 20% 0603	C7124	9965 100 04369	470nF 10% 16V
C4432	9965 000 43488	100nF 25V 0603	C6218	9965 000 42400	1µF 10V Y5V 20% 0603	C7125	9965 000 42369	470nF 10% 16V
C4433	9965 000 43488	100nF 25V 0603	C6219	9965 000 42400	1µF 10V Y5V 20% 0603	C7126	9965 100 06753	47µF 25V
C4434	9965 000 43488	100nF 25V 0603	C6220	9965 000 42400	1µF 10V Y5V 20% 0603	C7126	9965 100 06754	47µF 25V
C4435	9965 000 43488	100nF 25V 0603	C6221	9965 000 42230	33pF 50V 0603	C7126	9965 100 06755	47µF 25V
C4436	9965 000 45205	10µF 10V 0805	C6222	9965 000 42400	1µF 10V Y5V 20% 0603	C7127	9965 000 45205	10µF 10V 0805
C4437	9965 000 43488	100nF 25V 0603	C6223	9965 000 42400	1µF 10V Y5V 20% 0603	C7129	9965 000 42230	33pF 50V 0603
C4438	9965 000 43488	100nF 25V 0603	C6224	9965 000 42400	1µF 10V Y5V 20% 0603	C7132	9965 000 42604	470µF 25V
C4439	9965 000 44025	22µF 20% 1206	C6225	9965 000 42400	1µF 10V Y5V 20% 0603	C7132	9965 000 42605	470µF 25V EB 10X13mm
C4440	9965 000 43488	100nF 25V 0603	C6226	9965 000 42400	1µF 10V Y5V 20% 0603	C7133	9965 000 42262	100nF 50V Y5V 0603
C4441	9965 000 43488	100nF 25V 0603	C6227	9965 000 42400	1µF 10V Y5V 20% 0603	C7202	9965 000 45212	470µF 35V
C4442	9965 000 43488	100nF 25V 0603	C6228	9965 000 42400	1µF 10V Y5V 20% 0603	C7204	9965 100 02503	0.1µF 50V
C4443	9965 000 43488	100nF 25V 0603	C6229	9965 000 43488	100nF 25V 0603	C7205	9965 000 42260	10nF 50V X7R 0603
C4444	9965 000 43488	100nF 25V 0603	C6230	9965 000 45205	10µF 10V 0805	C7206	9965 000 45213	2.2µF 5V 1206
C4445	9965 000 43488	100nF 25V 0603	C6231	9965 000 44025	22µF 20% 1206	C7206	9965 100 04818	2.2µF 10% 25V
C4446	9965 000 43488	100nF 25V 0603	C6232	9965 000 43488	100nF 25V 0603	C7206	9965 100 04819	2.2µF 10% 25V
C4447	9965 000 43488	100nF 25V 0603	C6233	9965 000 45205	10µF 10V 0805	C7207	9965 000 43488	100nF 25V 0603
C4448	9965 000 44025	22µF 20% 1206	C6234	9965 000 45205	10µF 10V 0805	C7208	9965 000 37774	470µF 16V
C4449	9965 000 45205	10µF 10V 0805	C6235	9965 000 42686	220nF 10% 25V	C7209	9965 000 45203	100µF 25V
C4450	9965 000 43488	100nF 25V 0603	C6236	9965 000 42400	1µF 10V Y5V 20% 0603	C7209	9965 100 04042	100µF 25V
C4451	9965 000 43488	100nF 25V 0603	C6237	9965 000 42400	1µF 10V Y5V 20% 0603	C7210	9965 000 43488	100nF 25V 0603
C4452	9965 000 43488	100nF 25V 0603	C6238	9965 000 42400	1µF 10V Y5V 20% 0603	C7211	9965 000 43488	100nF 25V 0603
C4453	9965 000 43488	100nF 25V 0603	C6239	9965 000 42400	1µF 10V Y5V 20% 0603	C7212	9965 000 43488	100nF 25V 0603
C4454	9965 000 43488	100nF 25V 0603	C6240	9965 000 43977	1nF 5% 25V 0603	C7213	9965 000 45203	100µF 25V
C4455	9965 000 43488	100nF 25V 0603	C6241	9965 000 43977	1nF 5% 25V 0603	C7213	9965 100 04042	100µF 25V
C4456	9965 000 43488	100nF 25V 0603	C6301	9965 000 43835	1000µF 35V	C7214	9965 000 43488	100µF 25V 0603
C4457	9965 000 43488	100nF 25V 0603	C6301	9965 000 45208	1000µF 35V	C7215	9965 000 45203	100µF 25V
C4458	9965 000 43488	100nF 25V 0603	C6302	9965 100 04040	470nF 10% 25V	C7215	9965 100 04042	100µF 25V
C4459	9965 000 43488	100nF 25V 0603	C6303	9965 000 43488	100nF 25V 0603	C7216	9965 000 42232	47nF 16V X7R 0603
C4460	9965 000 45205	10µF 10V 0805	C6304	9965 000 43488	100nF 25V 0603	C7217	9965 000 45203	100µF 25V
C4461	9965 000 45205	10µF 10V 0805	C6305	9965 000 44025	22µF 20% 1206	C7217	9965 100 04042	100µF 25V
C4462	9965 000 45205	10µF 10V 0805	C6306	9965 000 43488	100nF 25V 0603	C7218	9965 000 43913	470µF 35V
C4463	9965 000 45205	10µF 10V 0805	C6307	9965 000 42259	100pF 50V 0603	C7218	9965 000 43914	470µF 35V
C4501	9965 000 43488	100nF 25V 0603	C6308	9965 000 42259	100pF 50V 0603	C7220	9965 000 42604	470µF 25V
C4502	9965 000 42260	10nF 50V X7R 0603	C6309	9965 000 45203	100µF 25V	C7220	9965 000 42605	470µF 25V EB 10X13mm
C4503	9965 000 44025	22µF 20% 1206	C6309	9965 100 04042	100µF 25V	C7221	9965 000 42262	100nF 50V Y5V 0603
C4504	9965 000 43488	100nF 25V 0603	C6310	9965 000 42686	220nF 10% 25V	C7222	9965 000 43488	100nF 25V 0603
C4505	9965 000 43488	100nF 25V 0603	C6311	9965 000 42686	220nF 10% 25V	C7223	9965 000 45203	100µF 25V
C4506	9965 000 43488	100nF 25V 0603	C6312	9965 000 42259	100pF 50V 0603	C7223	9965 100 04042	100µF 25V
C4507	9965 000 43488	100nF 25V 0603	C6313	9965 000 42260	10nF 50V X7R 0603	C7224	9965 000 43488	100nF 25V 0603
C4508	9965 000 43488	100nF 25V 0603	C6314	9965 000 45210	47µF 35V	C7225	9965 000 45203	100µF 25V
C4509	9965 000 44025	22µF 20% 1206	C6315	9965 000 42684	22nF -10% 50V	C7225	9965 100 04042	100µF 25V
C4510	9965 000 43488	100nF 25V 0603	C6315	9965 000 43407	100nF 10% 50V 0805	C7226	9965 000 43488	100nF 25V 0603
C4511	9965 000 43488	100nF 25V 0603	C6317	9965 100 02499	1µF 16V 0603	C7227	9965 000 42232	47nF 16V X7R 0603
C4512	9965 000 43488	100nF 25V 0603	C6318	9965 000 45205	10µF 10V 0805	C7229	9965 000 45203	100µF 25V
C4513	9965 000 43488	100nF 25V 0603	C6320	9965 000 45205	10µF 10V 0805	C7229	9965 100 04042	100µF 25V
C4514	9965 000 43488	100nF 25V 0603	C6321	9965 000 42400	1µF 10V Y5V 20% 0603	C7230	9965 000 43913	470µF 35V
C4515	9965 000 43488	100nF 25V 0603	C6322	9965 100 07442	1µF 10V 0603	C7230	9965 000 43914	470µF 35V
C4516	9965 000 43488	100nF 25V 0603	C6323	9965 000 43488	100nF 25V 0603	C7232	9965 000 43488	100nF 25V 0603
C4517	9965 000 43488	100nF 25V 0603	C6324	9965 000 42684	22nF -10% 50V	C7233	9965 000 42604	470µF 25V
C4518	9965 000 44025	22µF 20% 1206	C6324	9965 000 43407	100nF 10% 50V 0805	C7233	9965 000 42605	470µF 25V EB 10X13mm
C5101	9965 000 43488	100nF 25V 0603	C6326	9965 000 45203	100µF 25V	C7234	9965 000 43488	100nF 25V 0603
C5103	9965 000 43488	100nF 25V 0603	C6326	9965 100 04042	100µF 25V	C7235	9965 000 43488	100nF 25V 0603
C5105	9965 000 42672	1nF 10% 50V 0603	C6327	9965 000 42259	100pF 50V 0603	C7236	9965 000 45203	100µF 25V
C5107	9965 000 43488	100nF 25V 0603	C6328	9965 000 42260	10nF 50V X7R 0603	C7236	9965 100 04042	100µF 25V
C5108	9965 000 45199	4.7µF 10% 10V	C6329	9965 100 07442	1µF 10V 0603	C7237	9965 000 43488	100nF 25V 0603
C5110	9965 000 45199	4.7µF 10% 10V	C6330	9965 100 07442	1µF 10V 0603	C7238	9965 000 45203	100µF 25V
C5111	9965 000 43488	100nF 25V 0603	C6331	9965 000 42696	1µF 10% 25V 0805	C7238	9965 100 04042	100µF 25V
C5112	9965 000 43488	100nF 25V 0603	C6332	9965 000 42696	1µF 10% 25V 0805	C7239	9965 000 42232	47nF 16V X7R 0603
C5113	9965 000 43488	100nF 25V 0603	C6333	9965 100 02499	1µF 16V 0603	C7241	9965 000 45203	100µF 25V
C5114	9965 000 43488	100nF 25V 0603	C6334	9965 000 42684	22nF -10% 50V	C7241	9965 100 04042	100µF 25V
C5116	9965 000 43488	100nF 25V 0603	C6334	9965 000 43407	100nF 10% 50V 0805	C7246	9965 000 43488	100nF 25V 0603
C5121	9965 000 43488	100nF 25V 0603	C6337	9965 000 42696	1µF 10% 25V 0805	C7247	9965 000 45203	100µF 25V
C5122	9965 000 45203	100µF 25V	C6338	9965 000 42686	220nF 10% 25V	C7247	9965 100 04042	100µF 25V
C5122	9965 100 04042	100µF 25V	C6339	9965 000 42686	220nF 10% 25V	C7250	9965 000 43488	100nF 25V 0603
C5123	9965 000 43488	100nF 25V 0603	C6340	9965 000 42696	1µF 10% 25V 0805	C7251	9965 000 45203	100µF 25V
C5124	9965 000 45207	100µF 25V	C6341	9965 000 42259	100pF 50V 0603	C7251	9965 100 04042	100µF 25V
C5124	9965 100 04044	100µF 10% 16V	C6342	9965 000 42259	100pF 50V 0603	CN1101		

CN5101	9965 100 02523	Socket HDMI H 19p	R4156	9965 000 42213	100Ω 5% 1/10W	R6310	9965 000 42220	22kΩ 5% 1/10W
CN5102	9965 100 02523	Socket HDMI H 19p	R4202	9965 000 42222	33Ω 5% 1/10W	R6311	9965 000 42214	10kΩ 5% 1/10W
CN7104	9965 100 04710	Connector 3p	R4208	9965 000 42225	4.7kΩ 5% 1/10W	R6312	9965 000 42669	6.8kΩ 5% 1/10W
CN7201	9965 100 03429	Connector	R4211	9965 000 42224	470Ω 5% 1/10W	R6313	9965 000 42220	22kΩ 5% 1/10W
-WW-			R4214	9965 000 42225	4.7kΩ 5% 1/10W	R6314	9965 000 42225	4.7kΩ 5% 1/10W
R1102	9965 000 42214	10kΩ 5% 1/10W	R4215	9965 000 42225	4.7kΩ 5% 1/10W	R6315	9965 000 42212	0Ω 5% 1/10W
R1103	9965 000 42214	10kΩ 5% 1/10W	R4217	9965 000 42225	4.7kΩ 5% 1/10W	R6316	9965 000 42225	4.7kΩ 5% 1/10W
R1104	9965 000 42214	10kΩ 5% 1/10W	R4218	9965 000 42224	470Ω 5% 1/10W	R6318	9965 000 42215	100kΩ 5% 1/10W
R1105	9965 000 42214	10kΩ 5% 1/10W	R4225	9965 000 42213	100Ω 5% 1/10W	R6320	9965 000 42395	10kΩ 1% 1/10W
R1106	9965 000 42213	100Ω 5% 1/10W	R4226	9965 000 42219	2.2kΩ 5% 1/10W	R6321	9965 000 42213	100Ω 5% 1/10W
R1107	9965 000 42213	100Ω 5% 1/10W	R4227	9965 000 42224	470Ω 5% 1/10W	R6322	9965 000 42213	100Ω 5% 1/10W
R1108	9965 000 42213	100Ω 5% 1/10W	R4301	9965 000 42212	0Ω 5% 1/10W	R6323	9965 000 42257	75kΩ 1% 1/10W
R1109	9965 000 42213	100Ω 5% 1/10W	R4304	9965 000 42656	10Ω 5% 1/10W	R6324	9965 000 42395	10kΩ 5% 1/10W
R1110	9965 000 42224	470Ω 5% 1/10W	R4305	9965 000 42656	10Ω 5% 1/10W	R6325	9965 000 42257	75kΩ 1% 1/10W
R1111	9965 000 43336	75Ω 5% 1/10W	R4306	9965 000 43955	1kΩ 1% 1/10W	R7101	9965 000 42212	0Ω 5% 1/10W
R1113	9965 000 42214	10kΩ 5% 1/10W	R4307	9965 000 42277	47kΩ 5% 1/10W	R7102	9965 000 42213	100Ω 5% 1/10W
R1114	9965 000 42213	100Ω 5% 1/10W	R4308	9965 000 42225	4.7kΩ 5% 1/10W	R7103	9965 000 42213	100Ω 5% 1/10W
R1115	9965 000 42213	100Ω 5% 1/10W	R4309	9965 000 43955	1kΩ 1% 1/10W	R7104	9965 000 42225	4.7kΩ 5% 1/10W
R1116	9965 000 43336	75Ω 5% 1/10W	R4310	9965 000 43955	1kΩ 1% 1/10W	R7105	9965 000 42225	4.7kΩ 5% 1/10W
R1117	9965 000 42219	2.2kΩ 5% 1/10W	R4313	9965 000 42214	10kΩ 5% 1/10W	R7106	9965 000 42214	10kΩ 5% 1/10W
R1118	9965 000 42219	2.2kΩ 5% 1/10W	R4314	9965 000 42214	10kΩ 5% 1/10W	R7107	9965 000 42214	10kΩ 5% 1/10W
R1119	9965 000 43336	75Ω 5% 1/10W	R4401	9965 000 42217	22Ω 5% 1/10W	R7109	9965 000 42213	100Ω 5% 1/10W
R1120	9965 000 43487	3.3kΩ 5% 1/10W	R4402	9965 000 42217	22Ω 5% 1/10W	R7110	9965 000 42213	100Ω 5% 1/10W
R1121	9965 000 42277	47kΩ 5% 1/10W	R4501	9965 000 42212	0Ω 5% 1/10W	R7111	9965 000 42225	4.7kΩ 5% 1/10W
R1122	9965 000 42277	47kΩ 5% 1/10W	R4502	9965 000 42666	51Ω 5% 1/10W	R7112	9965 000 42225	4.7kΩ 5% 1/10W
R1123	9965 000 42214	10kΩ 5% 1/10W	R4503	9965 000 42666	51Ω 5% 1/10W	R7113	9965 000 42225	4.7kΩ 5% 1/10W
R1125	9965 000 42220	22kΩ 5% 1/10W	R4504	9965 000 42659	15Ω 5% 0.1%	R7114	9965 000 42656	10Ω 5% 1/10W
R1126	9965 000 43487	3.3kΩ 5% 1/10W	R4505	9965 000 42659	15Ω 5% 0.1%	R7115	9965 000 42225	4.7kΩ 5% 1/10W
R1127	9965 000 42277	47kΩ 5% 1/10W	R4506	9965 000 42659	15Ω 5% 0.1%	R7116	9965 000 42225	4.7kΩ 5% 1/10W
R1128	9965 000 42277	47kΩ 5% 1/10W	R4507	9965 000 42659	15Ω 5% 0.1%	R7117	9965 000 42225	4.7kΩ 5% 1/10W
R1131	9965 000 40053	1KΩ 1/10W 5%	R4508	9965 000 42212	0Ω 5% 1/10W	R7118	9965 000 42213	100Ω 5% 1/10W
R1132	9965 000 42212	0Ω 5% 1/10W	R4509	9965 000 42212	0Ω 5% 1/10W	R7119	9965 000 42213	100Ω 5% 1/10W
R1133	9965 000 42212	0Ω 5% 1/10W	R4510	9965 000 42212	0Ω 5% 1/10W	R7120	9965 000 42213	100Ω 5% 1/10W
R1202	9965 000 43336	75Ω 5% 1/10W	R4511	9965 000 42212	0Ω 5% 1/10W	R7121	9965 000 42213	100Ω 5% 1/10W
R1203	9965 000 43487	3.3kΩ 5% 1/10W	R4512	9965 000 42212	0Ω 5% 1/10W	R7122	9965 100 02440	PTC KMC5S075R001
R1204	9965 000 42277	47kΩ 5% 1/10W	R4513	9965 000 42212	0Ω 5% 1/10W	R7122	9965 100 04456	PTC 0.45Ω 13.2V
R1205	9965 000 42277	47kΩ 5% 1/10W	R5101	9965 000 44044	1.8kΩ 5% 1/10W	R7123	9965 000 42212	0Ω 5% 1/10W
R1206	9965 000 43336	75Ω 5% 1/10W	R5102	9965 000 42214	10kΩ 5% 1/10W	R7125	9965 100 02440	PTC KMC5S075R001
R1210	9965 000 43336	75Ω 5% 1/10W	R5103	9965 000 42214	10kΩ 5% 1/10W	R7125	9965 100 04456	PTC 0.45Ω 13.2V
R1213	9965 000 43487	3.3kΩ 5% 1/10W	R5104	9965 000 42214	10kΩ 5% 1/10W	R7126	9965 000 42656	10Ω 5% 1/10W
R1214	9965 000 42277	47kΩ 5% 1/10W	R5105	9965 000 42214	10kΩ 5% 1/10W	R7128	9965 000 42213	100Ω 5% 1/10W
R1215	9965 000 42277	47kΩ 5% 1/10W	R5106	9965 000 42214	10kΩ 5% 1/10W	R7130	9965 000 42213	100Ω 5% 1/10W
R1217	9965 000 43336	75Ω 5% 1/10W	R5107	9965 000 42213	100Ω 5% 1/10W	R7131	9965 000 42213	100Ω 5% 1/10W
R1218	9965 000 43336	75Ω 5% 1/10W	R5109	9965 000 43955	1kΩ 1% 1/10W	R7139	9965 000 42214	10kΩ 5% 1/10W
R1219	9965 000 43336	75Ω 5% 1/10W	R5111	9965 000 43958	1.5kΩ 5% 1/10W	R7140	9965 000 42396	120kΩ 1% 0603
R1220	9965 000 42218	220Ω 5% 1/10W	R5113	9965 000 42213	100Ω 5% 1/10W	R7141	9965 000 42662	330Ω 5% 1/10W
R1221	9965 000 43336	75Ω 5% 1/10W	R5114	9965 000 42214	10kΩ 5% 1/10W	R7142	9965 000 42665	470kΩ 5% 0.1W
R1222	9965 000 42657	120Ω 5% 0.1W	R5116	9965 000 42214	10kΩ 5% 1/10W	R7143	9965 000 42665	470kΩ 5% 0.1W
R1223	9965 000 43487	3.3kΩ 5% 1/10W	R5118	9965 000 43975	560Ω 1% 1/8W	R7148	9965 000 42214	10kΩ 5% 1/10W
R1224	9965 000 42277	47kΩ 5% 1/10W	R5120	9965 000 45225	1.5kΩ 1% 0.1W	R7149	9965 000 42214	10kΩ 5% 1/10W
R1225	9965 000 42277	47kΩ 5% 1/10W	R5121	9965 000 43955	1kΩ 1% 1/10W	R7202	9965 000 42225	4.7kΩ 5% 1/10W
R1226	9965 000 43336	75Ω 5% 1/10W	R5125	9965 000 45226	270Ω 5% 0.1W	R7205	9965 000 42255	5.1Ω 5% 0.1W
R1227	9965 000 43487	3.3kΩ 5% 1/10W	R5126	9965 000 44831	3.3kΩ 1% 0.1W	R7206	9965 000 42214	10kΩ 5% 1/10W
R1229	9965 000 42277	47kΩ 5% 1/10W	R5128	9965 000 42214	10kΩ 5% 1/10W	R7207	9965 000 42213	100Ω 5% 1/10W
R1230	9965 000 42277	47kΩ 5% 1/10W	R5129	9965 000 42214	10kΩ 5% 1/10W	R7208	9965 000 42212	0Ω 5% 1/10W
R1231	9965 000 43336	75Ω 5% 1/10W	R5130	9965 000 42220	22kΩ 5% 1/10W	R7209	9965 000 42225	4.7kΩ 5% 1/10W
R1232	9965 000 43487	3.3kΩ 5% 1/10W	R5131	9965 000 42213	100Ω 5% 1/10W	R7210	9965 000 45228	2.7kΩ 5% 0.1W
R1233	9965 000 42277	47kΩ 5% 1/10W	R5132	9965 000 42213	100Ω 5% 1/10W	R7211	9965 000 42213	100Ω 5% 1/10W
R1234	9965 000 42277	47kΩ 5% 1/10W	R5133	9965 000 42213	100Ω 5% 1/10W	R7212	9965 000 42215	100kΩ 5% 1/10W
R1235	9965 000 43487	3.3kΩ 5% 1/10W	R5134	9965 000 42225	4.7kΩ 5% 1/10W	R7213	9965 000 42397	15kΩ 5% 1/10W
R1236	9965 000 42277	47kΩ 5% 1/10W	R5135	9965 000 43955	1kΩ 1% 1/10W	R7215	9965 000 42214	10kΩ 5% 1/10W
R1237	9965 000 42277	47kΩ 5% 1/10W	R5138	9965 000 42212	0Ω 5% 1/10W	R7218	9965 000 42213	100Ω 5% 1/10W
R1239	9965 000 42213	100Ω 5% 1/10W	R5139	9965 000 45206	150kΩ 5% 0.1W	R7221	9965 000 42215	100kΩ 5% 1/10W
R1240	9965 000 42213	100Ω 5% 1/10W	R6201	9965 000 42212	0Ω 5% 1/10W	R7222	9965 000 42397	15kΩ 5% 1/10W
R4101	9965 000 42212	0Ω 5% 1/10W	R6202	9965 000 42219	2.2kΩ 5% 1/10W	R7225	9965 000 42214	10kΩ 5% 1/10W
R4110	9965 000 42212	0Ω 5% 1/10W	R6203	9965 000 42219	2.2kΩ 5% 1/10W	R7227	9965 000 42213	100Ω 5% 1/10W
R4111	9965 000 42225	4.7kΩ 5% 1/10W	R6204	9965 000 42665	470kΩ 5% 0.1W	R7230	9965 000 42215	100kΩ 5% 1/10W
R4112	9965 000 42225	4.7kΩ 5% 1/10W	R6205	9965 000 42665	470kΩ 5% 0.1W	R7231	9965 000 42397	15kΩ 5% 1/10W
R4115	9965 000 42225	4.7kΩ 5% 1/10W	R6206	9965 000 42665	470kΩ 5% 0.1W	R7234	9965 000 42214	10kΩ 5% 1/10W
R4117	9965 000 42225	4.7kΩ 5% 1/10W	R6207	9965 000 42665	470kΩ 5% 0.1W	R7236	9965 000 42213	100Ω 5% 1/10W
R4118	9965 000 42225	4.7kΩ 5% 1/10W	R6208	9965 000 42665	470kΩ 5% 0.1W	R7258	9965 000 42214	10kΩ 5% 1/10W
R4119	9965 000 42225	4.7kΩ 5% 1/10W	R6209	9965 000 42665	470kΩ 5% 0.1W	R7259	9965 000 42214	10kΩ 5% 1/10W
R4120	9965 000 42225	4.7kΩ 5% 1/10W	R6210	9965 000 42224	470Ω 5% 1/10W	RP4301	9965 000 42654	4*100Ω 5%
R4121	9965 000 42225	4.7kΩ 5% 1/10W	R6211	9965 000 42665	470kΩ 5% 0.1W	RP4302	9965 000 42654	4*100Ω 5%
R4122	9965 000 42225	4.7kΩ 5% 1/10W	R6212	9965 000 42665	470kΩ 5% 0.1W	RP4303	9965 000 42654	4*100Ω 5%
R4123	9965 000 42225	4.7kΩ 5% 1/10W	R6213	9965 000 42665	470kΩ 5% 0.1W	RP4304	9965 000 42654	4*100Ω 5%
R4125	9965 000 42225	4.7kΩ 5% 1/10W	R6214	9965 000 42665	470kΩ 5% 0.1W	RP4501	9965 000 42653	4*0Ω 5%
R4126	9965 000 42225	4.7kΩ 5% 1/10W	R6215	9965 000 42214	10kΩ 5% 1/10W	RP4502	9965 000 42655	4*15Ω 5% 1/16W
R4127	9965 000 42225	4.7kΩ 5% 1/10W	R6216	9965 000 42212	0Ω 5% 1/10W	RP4503	9965 000 42655	4*15Ω 5% 1/16W
R4130	9965 000 42225	4.7kΩ 5% 1/10W	R6217	9965 000 42656	10Ω 5% 1/10W	RP4504	9965 000 42655	4*15Ω 5% 1/16W
R4135	9965 000 42225	4.7kΩ 5% 1/10W	R6218	9965 000 42656	10Ω 5% 1/10W	RP4505	9965 000 42655	4*15Ω 5% 1/16W
R4137	9965 000 42225	4.7kΩ 5% 1/10W	R6219	9965 000 42214	10kΩ 5% 1/10W	RP4506	9965 000 42655	4*15Ω 5% 1/16W
R4139	9965 000 42225	4.7kΩ 5% 1/10W	R6220	9965 000 42221	27kΩ 5% 1/10W	RP4507	9965 000 42655	4*15Ω 5% 1/16W
R4140	9965 000 42225	4.7kΩ 5% 1/10W	R6222	9965 000 42213	100Ω 5% 1/10W	RP4508	9965 000 42655	4*15Ω 5% 1/16W
R4141	9965 000 42225	4.7kΩ 5% 1/10W	R6223	9965 000 42213	100Ω 5% 1/10W	RP4509	9965 000 42655	4*15Ω 5% 1/16W
R4142	9965 000 42225	4.7kΩ 5% 1/10W	R6					

			
L4401	9965 100 02515	2.2uH 10% 1206	
L4401	9965 100 04047	2.2uH 10% 1206	
L4402	9965 100 02515	2.2uH 10% 1206	
L4402	9965 100 04047	2.2uH 10% 1206	
L4403	9965 100 02515	2.2uH 10% 1206	
L4403	9965 100 04047	2.2uH 10% 1206	
L4404	9965 100 02515	2.2uH 10% 1206	
L4404	9965 100 04047	2.2uH 10% 1206	
L4405	9965 100 02515	2.2uH 10% 1206	
L4405	9965 100 04047	2.2uH 10% 1206	
L4406	9965 100 02515	2.2uH 10% 1206	
L4406	9965 100 04047	2.2uH 10% 1206	
L6301	9965 000 42610	Choke Coil	
L6301	9965 000 43841	Choke 35μH 10% 82MΩ	
L6302	9965 000 42610	Choke Coil	
L6302	9965 000 43841	Choke 35μH 10% 82MΩ	
L6303	9965 000 42610	Choke Coil	
L6303	9965 000 43841	Choke 35μH 10% 82MΩ	
L6304	9965 000 42610	Choke Coil	
L6304	9965 000 43841	Choke 35μH 10% 82MΩ	
L7201	9965 000 42610	Choke Coil	
L7201	9965 000 43841	Choke 35μH 10% 82MΩ	
L7202	9965 000 42610	Choke Coil	
L7202	9965 000 43841	Choke 35μH 10% 82MΩ	
L7203	9965 000 45223	Choke 56uH 10%	
L7203	9965 100 04782	Coil 56uH 10% 92MΩ	
			
D1101	9965 000 45215	LS4148	
D1101	9965 100 03321	LL4148-GSO8	
D1101	9965 100 03327	BAS32L	
D1102	9965 000 45215	LS4148	
D1102	9965 100 03321	LL4148-GSO8	
D1102	9965 100 03327	BAS32L	
D5101	9965 000 45215	LS4148	
D5101	9965 100 03321	LL4148-GSO8	
D5101	9965 100 03327	BAS32L	
D5102	9965 000 45215	LS4148	
D5102	9965 100 03321	LL4148-GSO8	
D5102	9965 100 03327	BAS32L	
D5103	9965 000 45215	LS4148	
D5103	9965 100 03321	LL4148-GSO8	
D5103	9965 100 03327	BAS32L	
D5104	9965 000 45215	LS4148	
D5104	9965 100 03321	LL4148-GSO8	
D5104	9965 100 03327	BAS32L	
D6201	9965 000 45215	LS4148	
D6201	9965 100 03321	LL4148-GSO8	
D6201	9965 100 03327	BAS32L	
D7201	9965 000 45216	BZX384-C9V1	
D7201	9965 100 04131	PDZ9.1B	
D7202	9965 000 45215	LS4148	
D7202	9965 100 03321	LL4148-GSO8	
D7202	9965 100 03327	BAS32L	
D7203	9965 000 45217	SS34	
D7204	9965 000 37806	SMD	



Q1101	9965 000 40045	MMBT3904	
Q4301	9965 000 36033	RK7002	
Q4301	9965 000 42651	2N7002 SOT-23	
Q4301	9965 000 42652	2N7002E	
Q4302	9965 000 36033	RK7002	
Q4302	9965 000 42651	2N7002 SOT-23	
Q4302	9965 000 42652	2N7002E	
Q5101	9965 000 37397	MUN2211J	
Q5101	9965 000 42211	PDTC114EK SC-59	
Q5102	9965 000 40045	MMBT3904	
Q5103	9965 000 40045	MMBT3904	
Q5104	9965 000 37397	MUN2211J	
Q5104	9965 000 42211	PDTC114EK SC-59	
Q5105	9965 000 37397	MUN2211J	
Q5105	9965 000 42211	PDTC114EK SC-59	
Q6201	9965 000 37397	MUN2211J	
Q6201	9965 000 42211	PDTC114EK SC-59	
Q6202	9965 000 37397	MUN2211J	
Q6202	9965 000 42211	PDTC114EK SC-59	
Q7103	9965 000 36033	RK7002	
Q7103	9965 000 42651	2N7002 SOT-23	
Q7103	9965 000 42652	2N7002E	
Q7104	9965 000 36033	RK7002	
Q7104	9965 000 42651	2N7002 SOT-23	
Q7104	9965 000 42652	2N7002E	
Q7105	9965 000 36033	RK7002	
Q7105	9965 000 42651	2N7002 SOT-23	
Q7105	9965 000 42652	2N7002E	
Q7106	9965 000 36033	RK7002	

Q7106	9965 000 42651	2N7002 SOT-23	
Q7106	9965 000 42652	2N7002E	
Q7107	9965 000 36033	RK7002	
Q7107	9965 000 42651	2N7002 SOT-23	
Q7107	9965 000 42652	2N7002E	
Q7108	9965 000 36033	RK7002	
Q7108	9965 000 42651	2N7002 SOT-23	
Q7108	9965 000 42652	2N7002E	
Q7109	9965 000 36033	RK7002	
Q7109	9965 000 42651	2N7002 SOT-23	
Q7109	9965 000 42652	2N7002E	
Q7110	9965 000 36033	RK7002	
Q7110	9965 000 42651	2N7002 SOT-23	
Q7110	9965 000 42652	2N7002E	
Q7201	9965 000 37397	MUN2211J	
Q7201	9965 000 42211	PDTC114EK SC-59	
Q7202	9965 000 40045	MMBT3904	
Q7203	9965 000 37397	MUN2211J	
Q7203	9965 000 42211	PDTC114EK SC-59	
Q7204	9965 000 45224	SI4835BDY	
Q7205	9965 000 37397	MUN2211J	
Q7205	9965 000 42211	PDTC114EK SC-59	
Q7206	9965 000 45224	SI4835BDY	
Q7207	9965 000 37397	MUN2211J	
Q7207	9965 000 42211	PDTC114EK SC-59	
Q7208	9965 000 45224	SI4835BDY	
Q7209	9965 000 37397	MUN2211J	
Q7209	9965 000 42211	PDTC114EK SC-59	
U1101	9965 000 42645	74LV4053PW TSSOP16	
U1102	9965 000 35965	M24C02-WMN6TP	
U1102	9965 000 42647	AT24C02BN-10SU-1.8	
U1103	9965 000 42633	74LVC14APM	
U4102	9965 000 42646	M30300SAGP	
U4103	9965 000 42640	AP1701FWL	
U4103	9965 000 42641	AME1117BCGTZ	
U4201	9965 100 02477	CS4344-CZZ	
U4202	9965 000 42634	SVP-PX66 BGA336	
U4501	9965 000 42632	K4D26328G-VC36	
U4501	9965 000 42638	HY5DU283222BFF-33	
U5101	9965 000 35965	M24C02-WMN6TP	
U5101	9965 000 42647	AT24C02BN-10SU-1.8	
U5102	9965 000 35965	M24C02-WMN6TP	
U5102	9965 000 42647	AT24C02BN-10SU-1.8	
U5103	9965 000 45232	PI5C3257QEX	
U5104	9965 000 45233	PI3HDMI412FT-AZHE	
U6201	9965 000 42637	74HC4052D PHILIPS	
U6202	9965 100 04463	MSP3450G-QI-B8-V3	
U6301	9965 100 02476	TPA3100D2PHPR	
U6302	9965 000 42631	TDA1308T/N2	
U6303	9965 100 06758	TPA6201A1DGNR	
U7104	9965 100 06759	IC BA7046F SOP8	
U7201	9965 000 42628	AME1084ECDTZ	
U7202	9965 000 42627	AME1117BCGTZ	
U7202	9965 000 45236	AP1117E25LA	
U7202	9965 100 04454	LD1117S25TR	
U7203	9965 000 45238	AP1117E25LA	
U7204	9965 000 44277	AIC1596-50PM5	
U7204	9965 000 45239	AP1501-50K5LA	
U7205	9965 000 42208	AME1117ECGTZ	
U7205	9965 000 42626	LD1117AS18TR	
U7205	9965 000 45240	AP1117E18LA	
U7209	9965 000 42209	AME1117CCGTZ	
U7209	9965 000 42624	LD1117S33 SOT-223	
U7209	9965 000 45242	AP1117E33LA	

IR & LED Panel [J]

			
C0201	9965 000 43985	1μF 20% 16V	
			
R0201	9965 000 42224	470Ω 5% 1/10W	
R0201	9965 100 07446	470Ω 5% 1/10W	
R0202	9965 000 42218	220Ω 5% 1/10W	
R0203	9965 000 42225	4.7kΩ 5% 1/10W	
R0204	9965 000 42214	10kΩ 5% 1/10W	
R0205	9965 000 42225	4.7kΩ 5% 1/10W	
R0206	9965 000 42225	4.7kΩ 5% 1/10W	
R0207	9965 000 42218	220Ω 5% 1/10W	
			
LED0201	9965 000 42729	L-3WSYKPBW	
LED0202	9965 100 06766	LED TRA L-174A2F3BT	
			
Q0201	9965 000 42649	BC847C	

Q0201	9965 100 02479	BC847C	
Q0202	9965 000 42649	BC847C	
Q0202	9965 100 02479	BC847C	
Q0203	9965 000 37785	BC857CG	
Q0203	9965 000 40046	BC857 SOT23	
Q0203	9965 100 02431	BC858CG 100mA/30V	
U0201	9965 000 42727	TSOP34136SB1	

Keyboard & Control Panel [E]

Various			
SW001	9965 100 02882	Tact Switch	
SW002	9965 100 02882	Tact Switch	
SW003	9965 100 02882	Tact Switch	
SW004	9965 100 02882	Tact Switch	
SW005	9965 100 02882	Tact Switch	
SW006	9965 100 02882	Tact Switch	
			
C001	9965 000 42228	100nF 16V X7R 0603	
C002	9965 100 02502	0.1μF 16V	
CN001	9965 100 04710	Connector 3p	
			
R001	9965 000 40053	1KΩ 1/10W 5%	
R002	9965 000 42277	47kΩ 5% 1/10W	
R003	9965 000 42253	18kΩ 5% 0.1W	
R004	9965 000 42734	3.6kΩ 5% 1/10W	
R005	9965 000 43490	5.6kΩ 5% 0.1W	

Interface Panel RS232 [R]

Various			
FB101	9965 100 02512	Bead 100Ω 3A	
			
C101	9965 000 42696	1μF 10% 25V 0805	
C102	9965 000 45205	10μF 10V 0805	
C103	9965 000 43488	100nF 25V 0603	
C104	9965 000 42696	1μF 10% 25V 0805	
C105	9965 000 42696	1μF 10% 25V 0805	
C106	9965 000 42696	1μF 10% 25V 0805	
C107	9965 000 42696	1μF 10% 25V 0805	
CN103	9965 100 07531	RJ45 Connector	
CN104	9965 100 07530	D-SUB Conn 9p m	
			
R101	9965 000 42212	0Ω 5% 1/10W	
R102	9965 000 42212	0Ω 5% 1/10W	
R103	9965 000 42226	68Ω 5% 1/10W	
R104	9965 000 42226	68Ω 5% 1/10W	
R106	9965 000 42212	0Ω 5% 1/10W	
R107	9965 000 42212	0Ω 5% 1/10W	
U101	9965 100 07532	ST202ECDR	

Speaker Switch Panel [S]

Various			
0375	9965 100 07536	Push switch Cap	
SW101	9965 100 07534	Push switch SPUN	
			
CN101	9965 100 07535	Push Terminal R/b/b/r	

Power Supply Unit [A]

Various			
F901	9965 100 02521	Fuse 5A 250V	
F901	9965 100 07543	Fuse 5A 250V	
FB903	9965 000 43424	Bead coil	
FB903	9965 100 07438	Bead coil	
FB903	9965 100 07439	Bead coil	
FB904	9965 000 43424	Bead coil	
FB904	9965 100 07438	Bead coil	
FB904	9965 100 07439	Bead coil	
FB905	9965 000 43424	Bead coil	

FB905	9965 100 07438	Bead coil
FB905	9965 100 07439	Bead coil
FB914	9965 000 40066	Ferr. core BF30TA-2
FB914	9965 100 02511	Ferr. core 35Ω
FB915	9965 000 40066	Ferr. core BF30TA-2
FB915	9965 100 02511	Ferr. core 35Ω
FB917	9965 000 40066	Ferr. core BF30TA-2
FB917	9965 100 02511	Ferr. core 35Ω
FB918	9965 000 40066	Ferr. core BF30TA-2
FB918	9965 100 02511	Ferr. core 35Ω
FB919	9965 000 40066	Ferr. core BF30TA-2
FB919	9965 100 02511	Ferr. core 35Ω
FB920	9965 000 40066	Ferr. core BF30TA-2
FB920	9965 100 02511	Ferr. core 35Ω
FB921	9965 000 40066	Ferr. core BF30TA-2
FB921	9965 100 02511	Ferr. core 35Ω
FB922	9965 000 43357	Ferrite Bead
FB922	9965 000 43839	Ferrite Bead
FB923	9965 000 43357	Ferrite Bead
FB923	9965 000 43839	Ferrite Bead
FB924	9965 000 43357	Ferrite Bead
FB924	9965 000 43839	Ferrite Bead
FB925	9965 000 43357	Ferrite Bead
FB925	9965 000 43839	Ferrite Bead
SG1	9965 000 43423	GS41-201MA
SG2	9965 000 43423	GS41-201MA
SG3	9965 000 43423	GS41-201MA
SG4	9965 000 43423	GS41-201MA
ZD902	9965 000 43426	Trans Suppr 120V 5W
ZD902	9965 000 43434	P6KE120A DO-15
ZD902	9965 100 04753	P6KE120A
ZD904	9965 000 43426	Trans Suppr 120V 5W
ZD904	9965 000 43434	P6KE120A DO-15
ZD904	9965 100 04753	P6KE120A
ZD906	9965 000 44652	P4KE250A
ZD906	9965 100 04754	P4KE250A
ZD906	9965 100 04755	P6KE250A
ZD906	9965 100 04756	P4KE250A
ZD908	9965 000 43427	BZX79-B18 A
ZD908	9965 000 43430	BZX55-B18 A

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C900	9965 000 43353	Safety Y-CAP 1.5nF
C900	9965 000 44612	1500pF 250V
C901	9965 000 43824	470pF 10% 250VAC
C902	9965 000 43824	470pF 10% 250VAC
C907	9965 000 43354	220μF 450V
C907	9965 000 43829	120μF 450V
C907	9965 000 43832	120μF 450V
C907	9965 100 02508	220μF 450V
C907	9965 100 02509	220μF 450V
C907	9965 100 06387	220μF 450V
C908	9965 000 43347	0.68μF 275V
C908	9965 000 43821	0.47μF 275VAC
C908	9965 000 43838	MPX-474K27B15L3
C909	9965 000 43347	0.68μF 275V
C909	9965 000 43821	0.47μF 275VAC
C909	9965 000 43838	MPX-474K27B15L3
C912	9965 000 36073	1μF 25V 0805
C912	9965 000 42696	1μF 10% 25V 0805
C913	9965 000 44615	1nF 10% 50V 0805
C914	9965 000 36045	0.047μF -10% 50V
C914	9965 100 03562	47nF 10% 50V 0805
C916	9965 000 36074	0.33μF 10% 25V 0805
C916	9965 000 43410	330nF 25V 0805
C917	9965 000 36045	0.047μF -10% 50V
C917	9965 100 03562	47nF 10% 50V 0805
C919	9965 000 36073	1μF 25V 0805
C919	9965 000 42696	1μF 10% 25V 0805
C920	9965 000 36074	0.33μF 10% 25V 0805
C920	9965 000 43410	330nF 25V 0805
C921	9965 000 43460	100μF -20% 25V
C922	9965 000 36040	0.1μF 10% 25V
C922	9965 000 43406	100nF 10% 25V 0805
C924	9965 000 36074	0.33μF 10% 25V 0805
C924	9965 000 43410	330nF 25V 0805
C926	9965 000 43457	1500pF 1kV
C927	9965 100 07440	220pF 1kV
C934	9965 100 02505	47μF 25V
C935	9965 000 43348	63G214J225GMC
C935	9965 000 43822	2.2μF 5% 450V
C937	9965 000 36040	0.1μF 10% 25V
C937	9965 000 43406	100nF 10% 25V 0805
C938	9965 000 44617	1μF 5% 450V
C938	9965 000 44618	1μF 5% 450V
C939	9965 000 45252	0.01μF 2% 100V
C939	9965 100 02495	0.01μF 5% 100V
C939	9965 100 03380	0.018μF 5% 100V
C939	9965 100 03381	0.018μF 5% 100V
C940	9965 000 45252	0.01μF 2% 100V
C940	9965 100 02495	0.01μF 5% 100V
C942	9965 000 43406	100nF 10% 25V 0805

C943	9965 000 36040	0.1μF 10% 25V
C943	9965 000 43406	100nF 10% 25V 0805
C944	9965 000 44620	200pF 10% 500V
C944	9965 100 03584	1500pF 10% 500V
C945	9965 000 43458	1.5nF 10% 500V
C945	9965 100 03584	1500pF 10% 500V
C946	9965 000 43459	2.2μF 50V
C946	9965 100 02510	2.2μF 50V
C947	9965 000 42233	10μF 20% 10V 1206
C947	9965 000 43462	6.8μF 50V
C948	9965 000 44620	200pF 10% 500V
C951	9965 000 43355	1500μF 35V
C951	9965 100 04045	1500μF 35V
C952	9965 000 43355	1500μF 35V
C952	9965 100 04045	1500μF 35V
C952	9965 100 07538	1200μF 35V
C953	9965 000 43355	1500μF 35V
C953	9965 100 04045	1500μF 35V
C953	9965 100 07538	1200μF 35V
C954	9965 000 43461	47μF 35V
C954	9965 100 02507	47μF 35V
C955	9965 000 44623	2200μF 16V
C956	9965 100 02498	22nF 5% 100V
C956	9965 100 03341	0.022μF 5% 100V
C957	9965 100 02506	10μF +/-20% 25V
C958	9965 100 02505	47μF 25V
C959	9965 000 43411	470pF 5% 50V
C960	9965 000 43411	470pF 5% 50V
C961	9965 000 36074	0.33μF 10% 25V 0805
C961	9965 000 43410	330nF 25V 0805
C962	9965 000 43411	470pF 5% 50V
CN903	9965 000 43344	Connector 12p m
CN904	9965 100 07544	AC SOCKET 20164
CN905	9965 000 43344	Connector 12p m

-W-

R913	9965 000 43395	33kΩ 5% 1/8W
R914	9965 000 43876	4.7kΩ 5% 1/8W
R915	9965 000 43395	33kΩ 5% 1/8W
R918	9965 000 39756	47kΩ 5% 1/8W
R918	9965 100 07437	68kΩ 5% 1/4W
R922	9965 000 43384	12kΩ -5% 1/8W
R922	9965 100 05837	15kΩ 5% 1/8W
R923	9965 000 43393	330Ω 5% 1/8W
R924	9965 000 44638	0.12Ω 1% 1W
R925	9965 000 36963	1kΩ -5% 0.1W
R925	9965 000 43380	1kΩ 1/10W
R926	9965 000 43420	0.1Ω 1% 1W
R926	9965 000 44638	0.12Ω 1% 1W
R927	9965 000 44639	180Ω 5% 2W
R928	9965 000 44642	8.2kΩ 1% 1/10W
R928	9965 100 06534	8.2kΩ 5% 1/8W
R929	9965 000 42735	47kΩ 5% 1/8W
R930	9965 000 36963	1kΩ 5% 0.1W
R930	9965 000 43380	1kΩ 1/10W
R932	9965 100 02482	330Ω 5% 1/6W
R933	9965 000 36963	1kΩ 5% 0.1W
R933	9965 000 43380	1kΩ 1/10W
R934	9965 000 43393	330Ω 5% 1/8W
R935	9965 000 43874	47Ω 5% 1/8W
R936	9965 000 36965	100kΩ -5% 0.1W
R936	9965 000 39749	100kΩ 0805
R937	9965 000 43389	2.2kΩ 1% 1/8W
R938	9965 000 42731	4.7kΩ 5% 1/6W
R938	9965 000 43876	4.7kΩ 5% 1/8W
R939	9965 000 43387	18kΩ 1% 1/6W
R940	9965 000 44641	1.5kΩ 1% 1/8W
R941	9965 000 43389	2.2kΩ 1% 1/8W
R942	9965 000 43391	33Ω 5% 1/8W
R942	9965 000 43867	150Ω 5% 1/8W
R943	9965 000 43389	2.2kΩ 1% 1/8W
R943	9965 000 43872	2.2kΩ 5% 1/8W
R944	9965 000 44642	8.2kΩ 1% 1/10W
R945	9965 000 44643	330Ω 1% 1/8W
R946	9965 000 42731	4.7kΩ 5% 1/6W
R946	9965 000 43876	4.7kΩ 5% 1/8W
R947	9965 000 39756	47kΩ 5% 1/8W
R947	9965 000 42735	47kΩ 5% 1/8W
R948	9965 000 36970	1.5kΩ 5% 0.1W
R948	9965 000 43385	1.5kΩ 5% 1/8W
R949	9965 000 43420	0.1Ω 1% 1W
R949	9965 000 43902	0.15Ω 1% 1W
R950	9965 000 43399	560kΩ 5%/8W
R951	9965 000 36963	1kΩ 5% 0.1W
R951	9965 000 43380	1kΩ 1/10W
R952	9965 000 43379	100Ω 5% 1/8W
R953	9965 100 04363	220kΩ 5% 1/8W
R956	9965 000 43386	150kΩ 5% 1/8W
R956	9965 000 44644	150kΩ 1% 1/8W
R957	9965 000 39749	100kΩ 0805
R958	9965 000 43396	330kΩ 5% 1/8W
R958	9965 100 07436	270kΩ 5% 1/8W

R959	9965 100 02488	220kΩ +/-5% 0.25W
R960	9965 100 02488	220kΩ +/-5% 0.25W
R961	9965 100 02487	180kΩ +/-5% 0.25W
R962	9965 000 42735	47kΩ 5% 1/8W
R963	9965 000 43418	2.2Ω 5% 1/6W
R963	9965 000 44647	2.2Ω 5% 1/4W
R964	9965 000 43418	2.2Ω -5% 1/6W
R965	9965 000 44647	2.2Ω 5% 1/4W
R969	9965 000 44648	470kΩ 1% 0.25W
R970	9965 000 44648	470kΩ 1% 0.25W
R971	9965 000 44648	470kΩ 1% 0.25W
R972	9965 000 44642	8.2kΩ 1% 1/10W
R973	9965 000 43400	620Ω 1% 1/8W
R974	9965 100 02481	0.3Ω 1% 0.25W
R975	9965 000 43380	1kΩ 1/10W
R976	9965 000 43388	22Ω 1/10W
R977	9965 000 43976	10Ω 5% 1/4W
R978	9965 000 43396	330kΩ 5% 1/8W
R979	9965 000 36963	1kΩ -5% 0.1W
R979	9965 000 43380	1kΩ 1/10W
R980	9965 000 43389	2.2kΩ 1% 1/8W
R980	9965 000 43872	2.2kΩ 5% 1/8W
R981	9965 000 42735	47kΩ 5% 1/8W
R982	9965 100 05837	15kΩ 5% 1/8W
R983	9965 100 05837	15kΩ 5% 1/8W
RV902	9965 100 02714	TVR14511KFC4FY

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L910	9965 000 44634	Coil 2.4μH 20% 4.5MΩ
L910	9965 100 04990	Coil 2.4uH 20% 4.5mΩ
L911	9965 000 44635	Coil 2.3uH 20% 7.2MΩ
L911	9965 100 04989	Coil 2.3μH 20% 7.2MΩ
L912	9965 000 43362	Line Filter 8mH 4.0A
L912	9965 000 43849	Line Filter 11mH 3.5A
L912	9965 000 43850	Line Filter 11mH 3.5A
L913	9965 000 43362	Line Filter 8mH 4.0A
L913	9965 000 43847	Line Filter 6mH 1.8A
L913	9965 000 43848	Line Filter 6mH 2.0A
L913	9965 100 07539	Coil 6mH 1.8A
L914	9965 000 43358	Filter 300μH 0R085
L914	9965 100 07862	Coil 300μH 85MΩ
L915	9965 000 43425	Coil 47uH 10%
L916	9965 000 43425	Coil 47uH 10%
L917	9965 100 07541	XFMR HJC-S7069
T904	9965 100 02520	PFMR HJC-S6191
T904	9965 100 04441	PPH6012AL
T904	9965 100 04752	XFMR 4.5mH
T905	9965 100 04048	PT-007241-5
T905	9965 100 07540	XFMR HJC-S7068
TH902	9965 000 43454	NTC 0.75Ω 15%

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D901	9965 000 43371	STTH8L06FP
D906	9965 100 03321	LL4148-GSO8
D906	9965 100 03327	BAS32L
D907	9965 000 40067	RGP10-DO-204AL
D907	9965 000 43435	BYT42D
D907	9965 000 43436	RGP10D
D908	9965 000 40067	RGP10-DO-204AL
D908	9965 000 43435	BYT42D
D908	9965 000 43436	RGP10D
D910	9965 100 03321	LL4148-GSO8
D910	9965 100 03327	BAS32L
D911	9965 000 40067	RGP10-DO-204AL
D911	9965 000 43435	BYT42D
D911	9965 000 43436	RGP10D
D912	9965 000 40067	RGP10-DO-204AL
D912	9965 000 43435	BYT42D
D912	9965 000 43436	RGP10D
D914	9965 100 02829	BAV103
D914	9965 100 02830	BAV103
D915	9965 100 02829	BAV103
D915	9965 100 02830	BAV103
D918	9965 100 02529	BAV21
D919	9965 100 02829	BAV103
D919	9965 100 02830	BAV103
D920	9965 100 02529	BAV21
D922	9965 000 43373	STPS40H100CW
D922	9965 000 45028	STPS20H100CFP
D922	9965 000 45029	SP20100R
D924	9965 000 43437	UF1007 1A 1000V
D924	9965 000 43438	STTH110
D925	9965 000 43437	UF1007 1A 1000V
D925	9965 000 43438	STTH110
D926	9965 000 43439	DIODE
D926	9965 000 43440	SBYV27-200-E3
D927	9965 000 43372	STPS10H100CFP
D927	9965 100 02528	MBRF1060CT
D929	9965 100 02829	BAV103
D929	9965 100 02830	BAV103



IC902	9965 000 44633	SG6961
IC904	9965 000 36353	TEA1507P
IC904	9965 000 43345	TEA1507P/N1
IC907	9965 000 36353	TEA1507P
IC907	9965 000 43345	TEA1507P/N1
IC909	9965 000 40055	PC123 Y82FZ0F
IC909	9965 000 40056	TCET1103G
IC910	9965 000 40055	PC123 Y82FZ0F
IC910	9965 000 40056	TCET1103G
IC911	9965 000 40055	PC123 Y82FZ0F
IC911	9965 000 40056	TCET1103G
IC912	9965 000 43441	IC TL431ACZ S (ST00) A
IC913	9965 000 43441	IC TL431ACZ S (ST00) A
Q901	9965 000 36959	STP8NK80ZFP
Q901	9965 000 43368	STW18NK80Z
Q902	9965 000 43369	Transistor 26A 600V
Q902	9965 000 43862	Mosfet_20A/600V
Q902	9965 000 43863	Mosfet_20A/600V
Q902	9965 000 44610	2SK3681-01
Q912	9965 000 37785	BC857CG
Q912	9965 000 40046	BC857 SOT23
Q913	9965 000 37785	BC857CG
Q913	9965 000 40046	BC857 SOT23
Q914	9965 000 37785	BC857CG
Q914	9965 000 40046	BC857 SOT23
Q915	9965 000 42648	BC847C
Q915	9965 000 42649	BC847C
Q915	9965 100 02479	BC847C
Q916	9965 000 42648	BC847C
Q916	9965 000 42649	BC847C
Q916	9965 100 02479	BC847C
BD901	9965 000 43370	GBU8J
BD901	9965 000 43858	Bridge 6A/600V
BD901	9965 000 44288	GBU606
BD901	9965 000 44609	GBU805
BD901	9965 100 03552	GBU605
BD901	9965 100 04061	GBU806

11. Revision List

- Manual xxxx xxx xxxx.0
- First release.