

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 Connections
- 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 : 37" (94 cm), 16:9 : 42" (107 cm), 16:9 : 47" (120 cm), 16:9
Resolution (H × V pixels)	: 1920 × 1080 : 1366 × 768
Min. light output (cd/m ²)	: 500
Min. contrast ratio	: 55000:1 (32PFL9603D/10) : 33000:1 (32PFL7623D/10) : 30000:1 (37", 42" and 47")
Max. response time (ms)	: 2, 3, 5, 6 (depending on display)
Viewing angle (H × V degrees)	: 176 × 176
Tuning system	: PLL
TV Colour systems	: PAL B/G, D/K, I : SECAM B/G, D/K, L/L' : DVB-T COFDM 2K/8K, MPEG4 (optional)
Video playback	: NTSC : PAL : SECAM
Tuner bands	: UHF, VHF, S, Hyper
Supported video formats	
- 60 Hz	: 480i
- 60 Hz	: 480p
- 50 Hz	: 576i
- 50 Hz	: 576p
- 50/60 Hz	: 720p
- 50/60 Hz	: 1080i
- 24/25/30/50/60 Hz	: 1080p
Supported computer formats:	
- 60 Hz	: 640 × 480
- 60 Hz	: 800 × 600
- 60 Hz	: 1024 × 768
- 60 Hz	: 1280 × 768
- 60 Hz	: 1360 × 768
- 60 Hz	: 1920 × 1080i
- 60 Hz	: 1920 × 1080p
Presets/channels	: 100/125 presets
Tuner bands	: VHF : UHF : S-band : Hyper-band

1.1.2 Sound

Sound systems	: FM-stereo B/G : NICAM B/G, D/K, I, L : AV Stereo : Virtual Dolby Digital : BBE
Maximum power (W _{RMS})	: 2 × 15

1.1.3 Multimedia

Supported formats	: Slideshow.alb files : MPEG1 : MPEG2 : MP3 : JPEG
USB input	: USB1.1 (12 Mbps) : USB2.0 (480 Mbps)
Network	: DLNA PC Network link

1.1.4 Miscellaneous

Power supply:	
- Mains voltage (V _{AC})	: 220 - 240 ±10%
- Mains frequency (Hz)	: 50 / 60
Ambient conditions:	
- Temperature range (°C)	: +5 to +35 : 90% R.H.
Power consumption (values are indicative)	
- Normal operation (W)	: ≈139/140 (32") : ≈186 (37") : ≈110/248 (42") : ≈155/305 (47")
- Standby (W)	: < 0.15
Dimensions (W × H × D in mm)	: 828 × 543 × 109 (32") : 953 × 604 × 101 (37") : 1054 × 658 × 100 (42") : 1170 × 736 × 125 (47")
Weight (kg)	: 16.3 (32") : 19.2 (37") : 22.7 (42") : 35.0 (47")

1.2 Connections

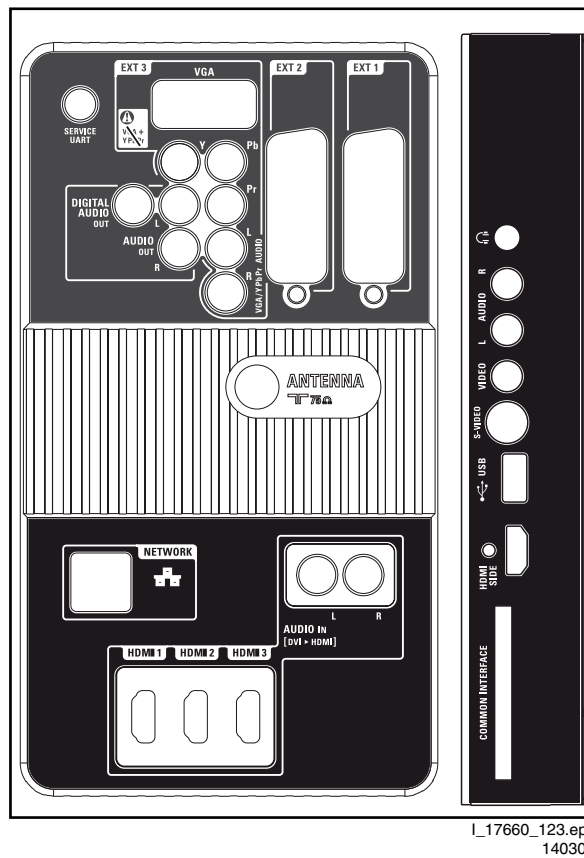


Figure 1-1 Connection overview

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, Ye= Yellow.

1.2.1 Side Connections

Headphone (Output)

Bk - Headphone 32 - 600 ohm / 10 mW

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

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

USB2.0

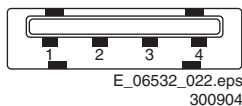


Figure 1-2 USB (type A)

1 - +5V

2 - Data (-)

3 - Data (+)

4 - Ground Gnd

HDMI: Digital Video, Digital Audio - In

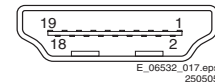


Figure 1-3 HDMI (type A) connector

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	

Common Interface

68p - See diagram B07A

1.2.2 Rear Connections

Service Connector (UART)

1 - Ground	Gnd	⏚
2 - UART_TX	Transmit	⊕→
3 - UART_RX	Receive	⊖←

EXT 3 VGA: Video RGB - In

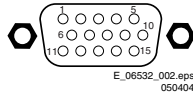


Figure 1-4 VGA Connector

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	⊕→

EXT3: Cinch: S/PDIF - Out

Bk - Coaxial	0.4 - 0.6V _{PP} / 75 ohm	⊕→
--------------	-----------------------------------	----

EXT3: Cinch: Video YPbPr - 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	⊕→

EXT3: Cinch: Audio - Out

Rd - Audio - R	0.5 V _{RMS} / 10 kohm	⊕→
Wh - Audio - L	0.5 V _{RMS} / 10 kohm	⊕→

EXT3: Cinch: Audio - In

Rd - Audio - R	0.5 V _{RMS} / 10 kohm	⊕→
Wh - Audio - L	0.5 V _{RMS} / 10 kohm	⊕→

EXT1: Video RGB/CVBS - In, Audio - In

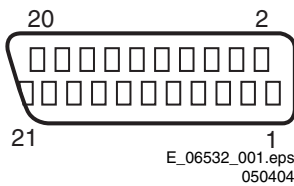


Figure 1-5 SCART connector

1 - n.c.		
2 - Audio R	0.5 V _{RMS} / 10 kohm	⊕→
3 - n.c.		
4 - Ground Audio	Gnd	⏚
5 - Ground Blue	Gnd	⏚
6 - Audio L	0.5 V _{RMS} / 10 kohm	⊕→
7 - Video Blue	0.7 V _{PP} / 75 ohm	⊕→
8 - Function Select	0 - 2 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	⊕→
9 - Ground Green	Gnd	⏚
10 - n.c.		
11 - Video Green	0.7 V _{PP} / 75 ohm	⊕→

12 - n.c.		
13 - Ground Red	Gnd	⏚
14 - Ground Data	Gnd	⏚
15 - Video Red	0.7 V _{PP} / 75 ohm	⊕→
16 - Status/FBL	0 - 0.4 V: INT 1 - 3 V: EXT / 75 ohm	⊕→
17 - Ground Video	Gnd	⏚
18 - Ground FBL	Gnd	⏚
19 - n.c.		
20 - Video CVBS	1 V _{PP} / 75 ohm	⊕→
21 - Shield	Gnd	⏚

EXT2: Video RGB/YC - In, CVBS - In/Out, Audio - In/Out

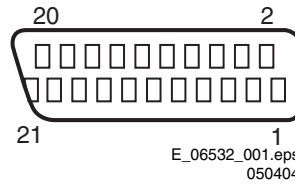


Figure 1-6 SCART connector

1 - Audio R	0.5 V _{RMS} / 1 kohm	⊕→
2 - Audio R	0.5 V _{RMS} / 10 kohm	⊕→
3 - Audio L	0.5 V _{RMS} / 1 kohm	⊕→
4 - Ground Audio	Gnd	⏚
5 - Ground Blue	Gnd	⏚
6 - Audio L	0.5 V _{RMS} / 10 kohm	⊕→
7 - Video Blue/C-out	0.7 V _{PP} / 75 ohm	⊕→
8 - Function Select	0 - 2 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	⊕→
9 - Ground Green	Gnd	⏚
10 - Easylink P50	0 - 5 V / 4.7 kohm	⊕→
11 - Video Green	0.7 V _{PP} / 75 ohm	⊕→
12 - n.c.		
13 - Ground Red	Gnd	⏚
14 - Ground P50	Gnd	⏚
15 - Video Red/C	0.7 V _{PP} / 75 ohm	⊕→
16 - Status/FBL	0 - 0.4 V: INT 1 - 3 V: EXT / 75 ohm	⊕→
17 - Ground Video	Gnd	⏚
18 - Ground FBL	Gnd	⏚
19 - Video CVBS	1 V _{PP} / 75 ohm	⊕→
20 - Video CVBS/Y	1 V _{PP} / 75 ohm	⊕→
21 - Shield	Gnd	⏚

Aerial - In

- - IEC-type (EU)	Coax, 75 ohm	⏚
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RJ45: Ethernet (if present)

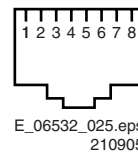


Figure 1-7 Ethernet connector

1 - TD+	Transmit signal	⊕→
2 - TD-	Transmit signal	⊕→
3 - RD+	Receive signal	⊕→
4 - n.c.		
5 - n.c.		
6 - RD-	Receive signal	⊕→
7 - n.c.		
8 - n.c.		

HDMI 1, 2 & 3 Digital Video, Digital Audio - In

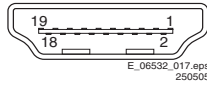


Figure 1-8 HDMI (type A) connector

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	⊕

Cinch: Audio - In

Rd - Audio - R	0.5 V _{RMS} / 10 kohm	⊕
Wh - Audio - L	0.5 V _{RMS} / 10 kohm	⊕

1.3 Chassis Overview

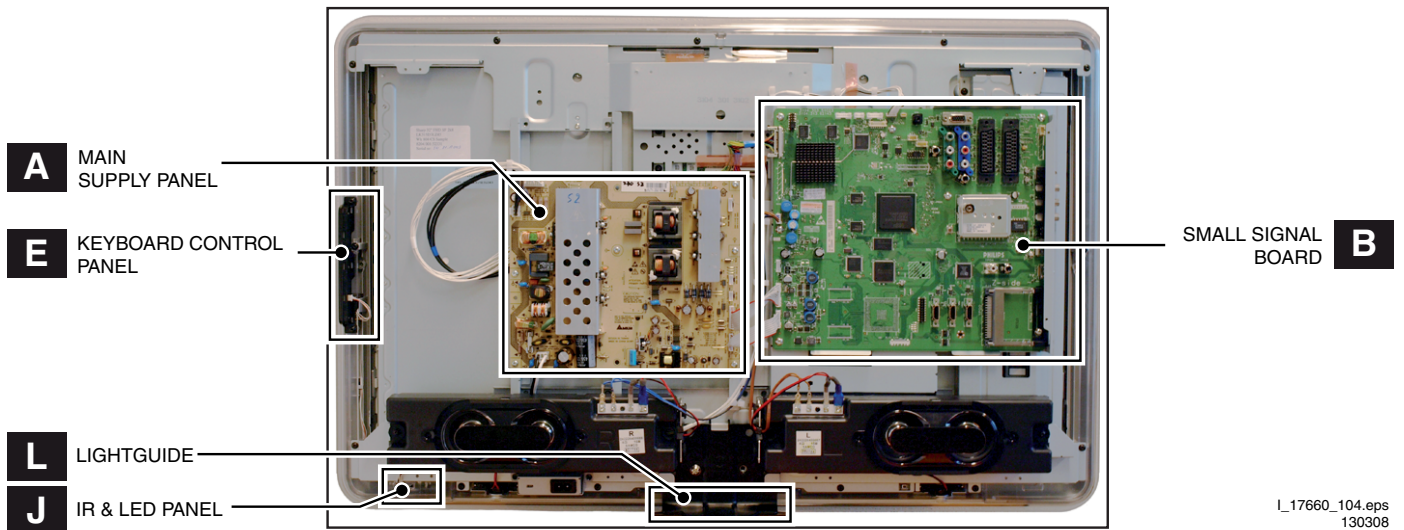


Figure 1-9 PWB/CBA locations 9-series

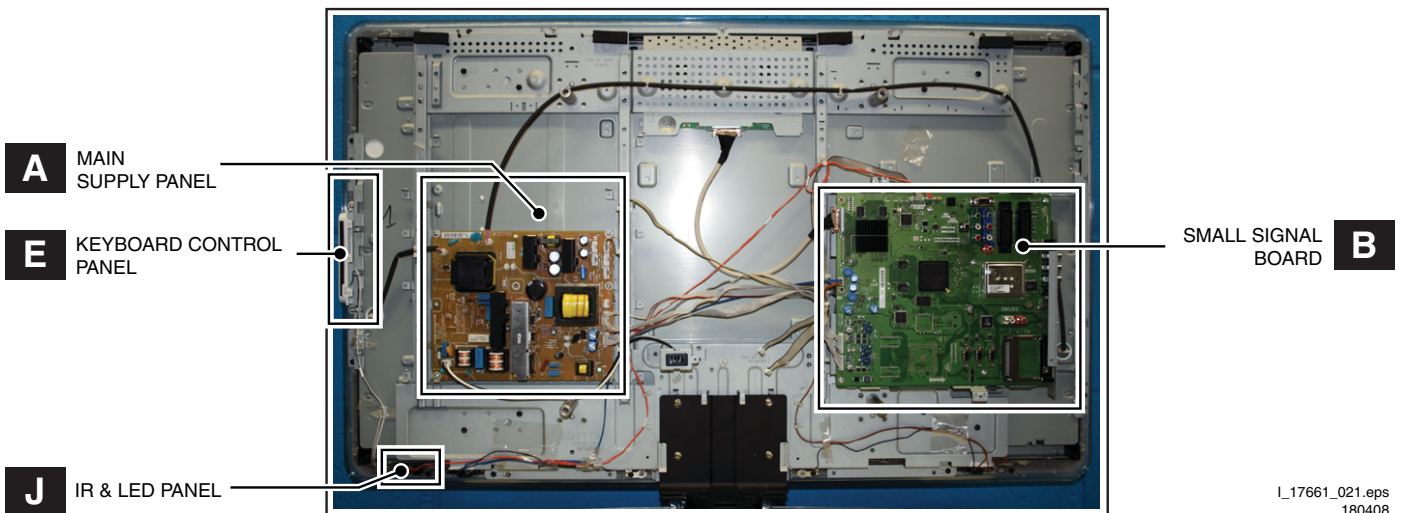


Figure 1-10 PWB/CBA locations 7-series

L_17660_104.eps
130308

L_17661_021.eps
180408

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.
- 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 (\downarrow), 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 (\perp) and without (\downarrow) aerial signal. Measure the voltages in the power supply section both in normal operation (\textcircled{I}) and in stand-by (\textcircled{II}). These values are indicated by means of the appropriate symbols.
- Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic", "Virtual Dolby Digital" 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.

3. Directions for Use

You can download this information from the following websites:

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

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



E_06532_024.eps
260308

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.

4. Mechanical Instructions

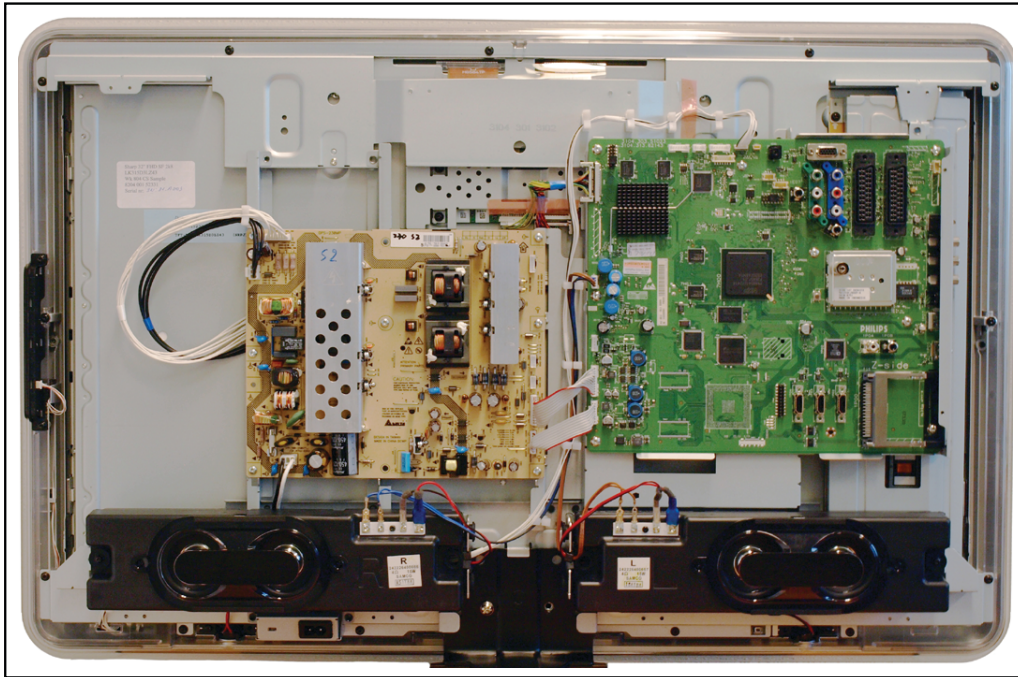
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- 4.1 Cable Dressing
- 4.2 Service Positions
- 4.3 Assy/Panel Removal VE8 Styling
- 4.4 Assy/Panel Removal ME8+ Styling
- 4.5 Set Re-assembly.

Notes:

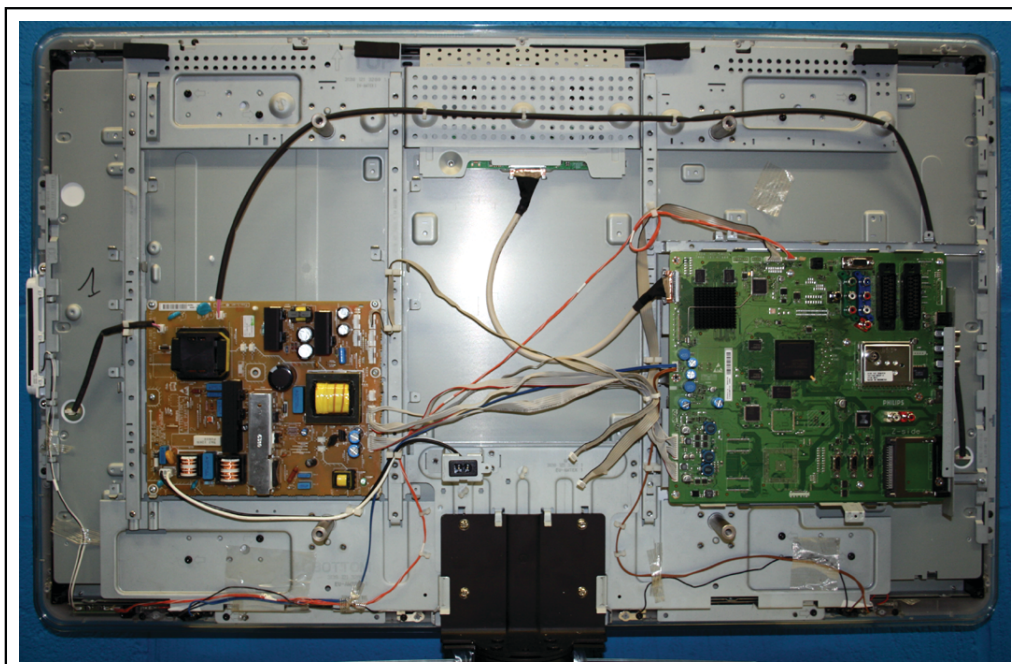
- Figures below can deviate slightly from the actual situation, due to the different set executions.

4.1 Cable Dressing



L_17660_105.eps
130308

Figure 4-1 Cable dressing 9-series



L_17661_022.eps
180408

Figure 4-2 Cable dressing 7-series

4.2 Service Positions

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

- The buffers from the packaging (see figure “Rear cover”).
- Foam bars (created for Service).

4.2.1 Foam Bars

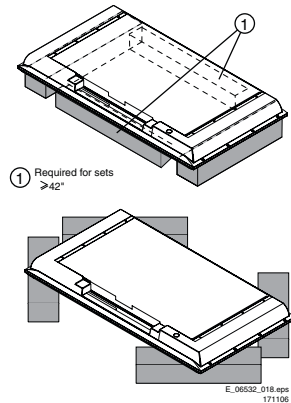


Figure 4-3 Foam bars

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, the screen can be monitored.

4.3 Assy/Panel Removal VE8 Styling

4.3.1 Rear Cover

Warning: Disconnect the mains power cord before removing the rear cover.

Note: It is necessary to release the fixation screws from the stand before removing the rear cover.

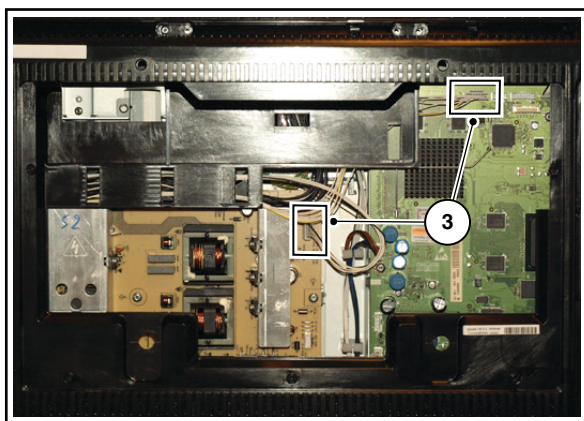
Refer to next figures for details.

1. Remove the mushrooms [1].
2. Remove the fixation screws [2] from the hatch and lift the hatch from the rear cover.
3. Unplug the connectors [3].
4. Remove the fixation screws from the stand. Please note that the set is now mechanically not secured and may be unstable.
5. Remove the fixation screws [5] that secure the rear cover.
6. Lift the rear cover from the TV. Make sure that wires and flat foils are not damaged while lifting the rear cover from the set.



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Figure 4-4 Rear Cover



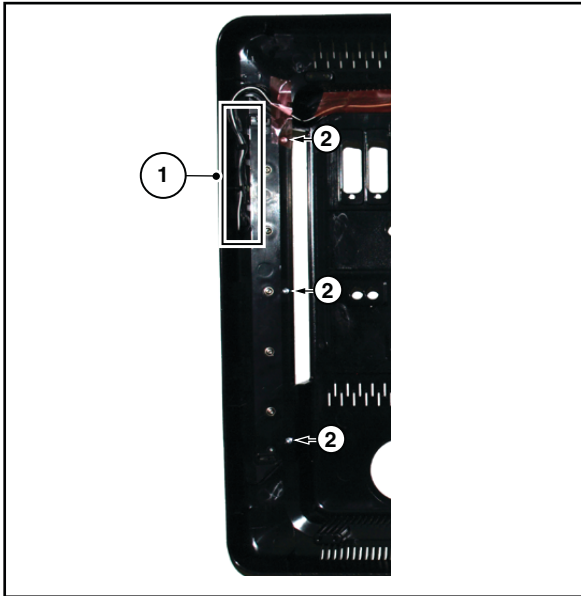
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Figure 4-5 Hatch

4.3.2 Ambilight

Refer to next figure for details.

1. Release the wire from the wire guides [1].
 2. Remove the fixation screws [2].
 3. Remove the cover screws [3] and take out the whole unit.
- When defective, replace the whole unit.



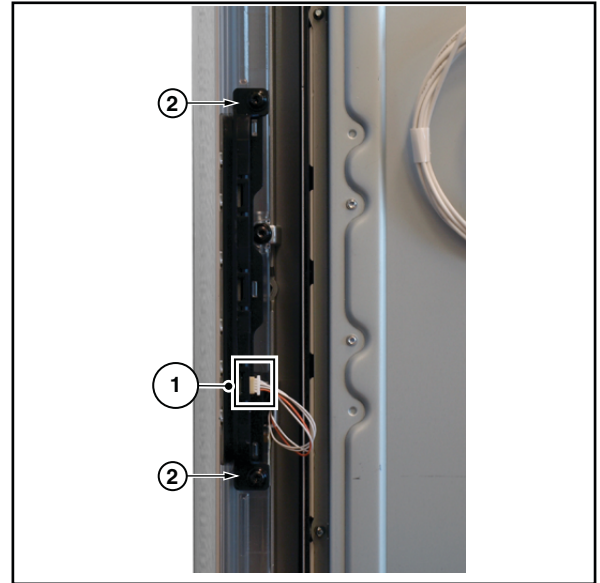
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Figure 4-6 Ambilight inside cover

4.3.3 Key Board

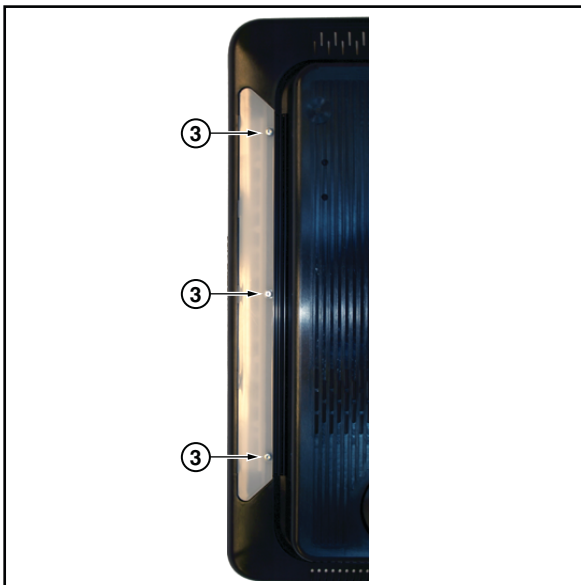
Refer to next figure for details.

1. Unplug the key board connector [1] from the IR & LED board.
 2. Remove the screws [2].
 3. Lift the unit and take it out of the set.
- When defective, replace the whole unit.



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Figure 4-8 Key Board



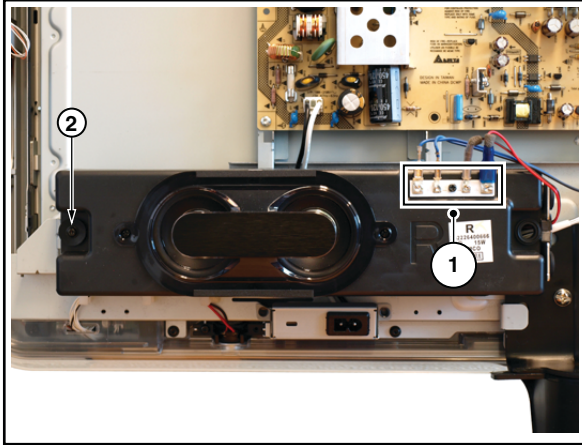
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Figure 4-7 Ambilight outside cover

4.3.4 Bass-midrange Speakers

Refer to next figure for details.

1. Release the speaker connectors [1] from unit.
2. Remove the screw [1] and lift the whole unit from the set. Take the speakers out together with their casing. When defective, replace the whole unit.



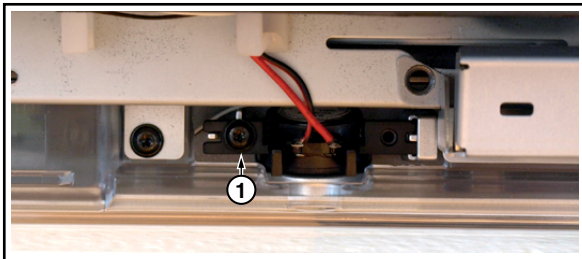
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Figure 4-9 Bass-midrange Speaker

4.3.5 Tweeters

Refer to next figure for details.

1. Remove the bass-midrange speaker as described earlier.
2. Remove the screw [1] and lift the whole unit from the set. When defective, replace the whole unit.



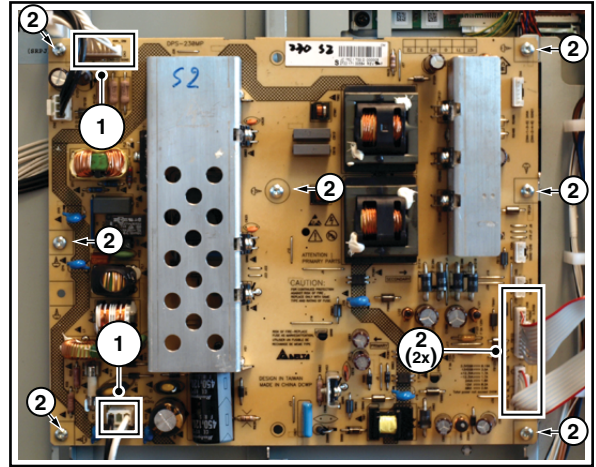
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Figure 4-10 Tweeters

4.3.6 Display Supply Panel

Refer to next figure for details.

1. Unplug the connectors [1].
2. Remove the fixation screws [2].
3. Take the board out.



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Figure 4-11 Display Supply Panel

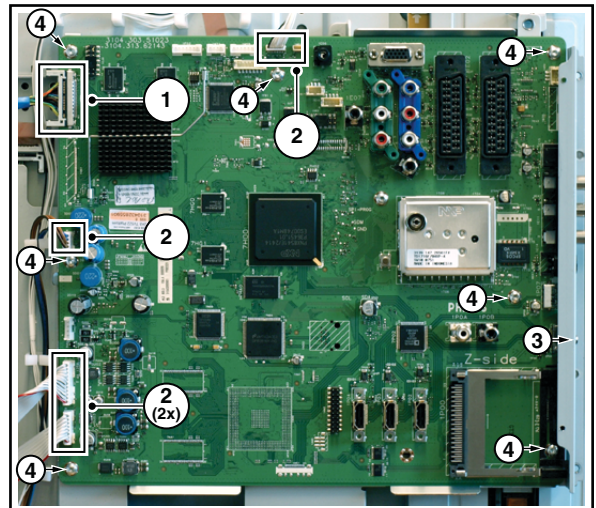
4.3.7 Small Signal Board (SSB)

Refer to next figure for details.

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

Refer to next figures or details.

1. Unplug the LVDS connector [1].
Caution: be careful, as this is a very fragile connector!
2. Unplug the connectors [2].
3. Remove the screw [3] from the side I/O cover.
4. Remove the fixation screws [4].
5. The SSB can now be taken out of the set.



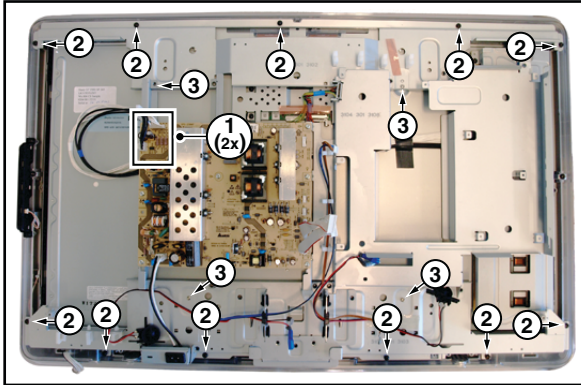
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Figure 4-12 Small Signal Board

4.3.8 LCD Panel

Refer to next figure for details.

1. Remove the SSB as described earlier.
 2. Remove the Bass-midrange speakers as described earlier.
 3. Remove the Tweeters as described earlier.
 4. Unplug the connectors [1].
 5. Remove the fixation screws [2].
 6. Remove the fixation screws [3].
 7. Lift out the sub frame.
 8. The LCD panel can now be lifted from the front cabinet.
- When defective, replace the whole unit.



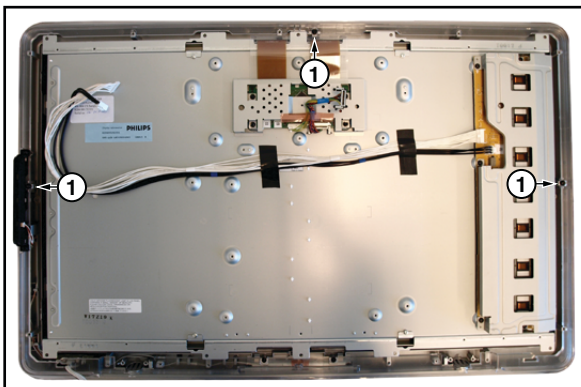
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Figure 4-13 LCD Panel

4.3.9 Rim

Refer to next figure for details.

1. Do all steps as described in the removal of the LCD panel except the last step.
2. Remove the screws [1].



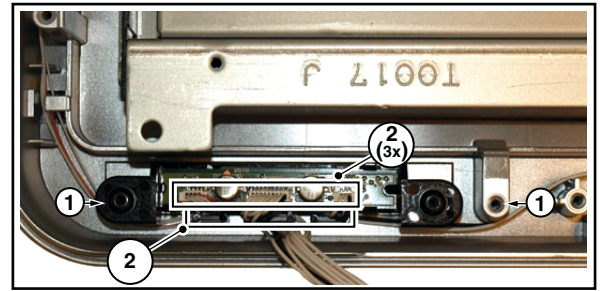
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Figure 4-14 Rim

4.3.10 IR & LED Board

Refer to next figure for details.

1. Do all steps as described in the removal of the Rim.
 2. Remove screws [1] and lift the IR & LED Board from the front cover.
 3. Lift the board and take it out of the set.
 4. Release the cables from the cable clamps.
 5. Unplug the connectors [3].
- When defective, replace the whole unit.



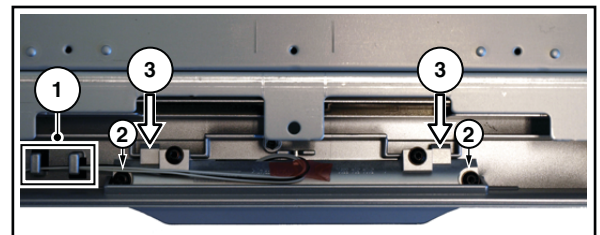
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Figure 4-15 IR & LED Board

4.3.11 Lightguide

Refer to next figure for details.

1. Do all steps as described in the removal of the Rim.
 2. Release the cables from the cable clamps [1].
 3. Remove screws [2] and lift the lightguide from the front cover.
 4. Release the board by pushing up the clamps in the direction of the arrows.
 5. Remove the unit from the front cover.
- When defective, replace the whole unit.



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Figure 4-16 IR & LED Board

4.4 Assy/Panel Removal ME8+ Styling

Refer to the Q528.2E LA Service Manual.

4.5 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 on the SSB shields. Ensure that EMC foams are mounted correctly.

5. Service Modes, Error Codes, and Fault Finding

Index of this chapter:

- 5.1 Test Points
- 5.2 Service Modes
- 5.3 Stepwise Start-up
- 5.4 Service Tools
- 5.5 Error Codes
- 5.6 The Blinking LED Procedure
- 5.7 Protections
- 5.8 Fault Finding and Repair Tips
- 5.9 Software Upgrading

5.1 Test Points

As most signals are digital, it will be difficult to measure waveforms with a standard oscilloscope. However, several key ICs are capable of generating test patterns, which can be controlled via ComPair. In this way it is possible to determine which part is defective.

Perform measurements under the following conditions:

- Service Default Mode.
- Video: Colour bar signal.
- Audio: 3 kHz left, 1 kHz right.

5.2 Service Modes

Service Default mode (SDM) and Service Alignment Mode (SAM) offers several features for the service technician, while the Customer Service Mode (CSM) is used for communication between the call centre and the customer.

This chassis also offers the option of using ComPair, a hardware interface between a computer and the TV chassis. It offers the abilities of structured troubleshooting, error code reading, and software version read-out for all chassis. (see also section "5.4.1 ComPair").

5.2.1 Service Default Mode (SDM)

Purpose

- To create a pre-defined setting, to get the same measurement results as given in this manual.
- To override SW protections detected by stand-by processor and make the TV start up to the step just before protection (a sort of automatic stepwise start up). See section "5.3 Stepwise Start-up".
- To start the blinking LED procedure where only layer 2 errors are displayed. (see also section "5.5 Error Codes")

Specifications

Table 5-1 SDM default settings

Region	Freq. (MHz)	Default system
Europe, AP(PAL/Multi)	475.25	PAL B/G
Europe, AP DVB-T	546.00 PID Video: 0B 06 PID PCR: 0B 06 PID Audio: 0B 07	DVB-T

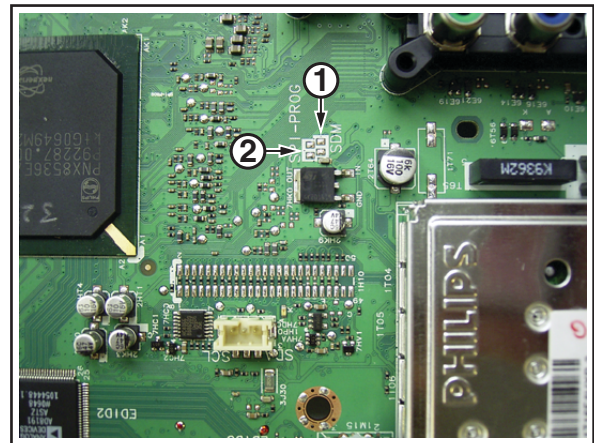
- All picture settings at 50% (brightness, colour, contrast).
- All sound settings at 50%, except volume at 25%.
- All service-unfriendly modes (if present) are disabled, like:
 - (Sleep) timer.
 - Child/parental lock.
 - Picture mute (blue mute or black mute).
 - Automatic volume levelling (AVL).

- Skip/blank of non-favourite pre-sets.

How to Activate SDM

For this chassis there are two kinds of SDM: an **analog SDM** and a **digital SDM**. Tuning will happen according table "SDM Default Settings".

- **Analog SDM:** use the standard RC-transmitter and key in the code "062596", directly followed by the "MENU" button. **Note:** It is possible that, together with the SDM, the main menu will appear. To switch it "off", push the "MENU" button again.
- **Digital SDM:** use the standard RC-transmitter and key in the code "062593", directly followed by the "MENU" button. **Note:** It is possible that, together with the SDM, the main menu will appear. To switch it "off", push the "MENU" button again.
- **Analog SDM** can also be activated by shorting for a moment the two solder pads (see figure "Service mode pads") on the SSB, with the indication "SDM".



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Figure 5-1 Service mode pads

After activating this mode, "SDM" will appear in the upper right corner of the screen (when a picture is available).

How to Navigate

When the "MENU" button is pressed on the RC transmitter, the set will toggle between the SDM and the normal user menu (with the SDM mode still active in the background).

How to Exit SDM

Use one of the following methods:

- Switch the set to STAND-BY via the RC-transmitter.
- Via a standard customer RC-transmitter: key in "00"-sequence.

5.2.2 Service Alignment Mode (SAM)

Purpose

- To perform (software) alignments.
- To change option settings.
- To easily identify the used software version.
- To view operation hours.
- To display (or clear) the error code buffer.

How to Activate SAM

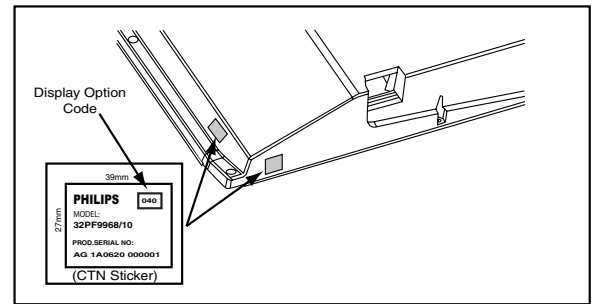
Via a standard RC transmitter: key in the code "062596" directly followed by the "INFO" button. After activating SAM with this method a service warning will appear on the screen, continue by pressing the red button on the RC.

Contents of SAM:• **Hardware Info.**

- **A. SW Version.** Displays the software version of the main software (**example:** Q591E-1.2.3.4 = AAAAB_X.Y.W.Z).
 - **AAAA=** the chassis name.
 - **B=** the region: A= AP, E= EU, L= LatAm, U = US. For AP sets it is possible that the Europe software version is used.
 - **X.Y.W.Z=** the software version, where X is the main version number (different numbers are not compatible with one another) and Y.W.Z is the sub version number (a higher number is always compatible with a lower number).
- **B. SBY PROC Version.** Displays the software version of the stand-by processor.
- **C. Production Code.** Displays the production code of the TV, this is the serial number as printed on the back of the TV set. Note that if an NVM is replaced or is initialized after corruption, this production code has to be re-written to NVM. ComPair will foresee in a possibility to do this.
- **Operation Hours.** Displays the accumulated total of operation hours (not the stand-by hours). Every time the TV is switched “on/off”, 0.5 hours is added to this number.
- **Errors** (followed by maximum 10 errors). The most recent error is displayed at the upper left (for an error explanation see section “5.5 Error Codes”).
- **Reset Error Buffer.** When “cursor right” (or the “OK button”) is pressed and then the “OK” button is pressed, the error buffer is reset.
- **Alignments.** This will activate the “ALIGNMENTS” sub-menu.
- **Dealer Options.** Extra features for the dealers.
- **Options.** Extra features for Service. For more info regarding option codes, see chapter 8 “Alignments”. Note that if the option code numbers are changed, these have to be confirmed with pressing the “OK” button before the options are stored. Otherwise changes will be lost.
- **Initialize NVM.** The moment the processor recognizes a corrupted NVM, the “initialize NVM” line will be highlighted. Now, two things can be done (dependent of the service instructions at that moment):
 - Save the content of the NVM via ComPair for development analysis, **before** initializing. This will give the Service department an extra possibility for diagnosis (e.g. when Development asks for this).
 - Initialize the NVM.

Note: When the NVM is corrupted, or replaced, there is a high possibility that no picture appears because the display code is not correct. So, before initializing the NVM via the SAM, a picture is necessary and therefore the correct display option has to be entered. Refer to chapter 8 “Alignments” for details. To adapt this option, it’s advised to use ComPair (the correct HEX values for the options can be found in chapter 8 “Alignments”) or a method via a standard RC (described below).

Changing the display option via a standard RC: Key in the code “062598” directly followed by the “MENU” button and “XXX” (where XXX is the 3 digit decimal display code as mentioned in table “Option code overview” in chapter 8 “Alignments”). Make sure to key in all three digits, also the leading zero’s. If the above action is successful, the front LED will go out as an indication that the RC sequence was correct. After the display option is changed in the NVM, the TV will go to the Stand-by mode. If the NVM was corrupted or empty before this action, it will be initialized first (loaded with default values). This initializing can take up to 20 seconds.

E_06532_038.eps
240108**Figure 5-2 Location of Display Option Code sticker**

- **Store - go right.** All options and alignments are stored when pressing “cursor right” (or the “OK” button) and then the “OK”-button.
- **SW Maintenance.**
 - **SW Events.** Not useful for Service purposes. In case of specific software problems, the development department can ask for this info.
 - **HW Events.** Not useful for Service purposes. In case of specific software problems, the development department can ask for this info.
- **Test settings.** For development purposes only.
- **Upload to USB.** To upload several settings from the TV to an USB stick, which is connected to the SSB. The items are “Channel list”, “Personal settings”, “Option codes”, “Display-related alignments” and “History list”. First a directory “repair” has to be created in the root of the USB stick. To upload the settings select each item separately, press “cursor right” (or the “OK button”), confirm with “OK” and wait until “Done” appears. In case the download to the USB stick was not successful “Failure” will appear. In this case, check if the USB stick is connected properly and if the directory “repair” is present in the root of the USB stick. Now the settings are stored onto the USB stick and can be used to download onto another TV or other SSB. Uploading is of course only possible if the software is running and if a picture is available. This method is created to be able to save the customer’s TV settings and to store them into another SSB.
- **Download to USB.** To download several settings from the USB stick to the TV. Same way of working as with uploading. To make sure that the download of the channel list from USB to the TV is executed properly, it is necessary to restart the TV and tune to a valid preset if necessary. **Note:** The “History list item” can not be downloaded from USB to the TV. This is a “read-only” item. In case of specific problems, the development department can ask for this info.
- **Development file versions.** Not useful for Service purposes, this information is only used by the development department.

How to Navigate

- In SAM, the menu items can be selected with the “CURSOR UP/DOWN” key (or the scroll wheel) on the RC-transmitter. The selected item will be highlighted. When not all menu items fit on the screen, move the “CURSOR UP/DOWN” key to display the next/previous menu items.
- With the “CURSOR LEFT/RIGHT” keys (or the scroll wheel), it is possible to:
 - (De) activate the selected menu item.
 - (De) activate the selected sub menu.
- With the “OK” key, it is possible to activate the selected action.

How to Exit SAM

Use one of the following methods:

- Press the “MENU” button on the RC-transmitter.

- Switch the set to STAND-BY via the RC-transmitter.

5.2.3 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. The CSM is a read only mode; therefore, modifications in this mode are not possible.

When in this chassis CSM is activated, a testpattern will be displayed during 5 seconds (1 second Blue, 1 second Green and 1 second Red, then again 1 second Blue and 1 second Green). This test pattern is generated by the PNX5100. So if this test pattern is shown, it could be determined that the back end video chain (PNX5100, LVDS, and display) of the SSB is working.

To determine if the MPEG4-circuit is working (in case of an MPEG4-set), push the "MUTE" button during CSM to display another test pattern. This is a forced input selection to make sure the test pattern is visible. If this test pattern is not shown, it is possible that the settings are not correct (for instance in SAM the MPEG4-option is "NOT PRESENT"). The display of this test pattern is a toggle function, pressing the "MUTE" key again removes this test pattern.

When CSM is activated and there is a USB stick connected to the TV, the software will dump the complete CSM content to the USB stick. The file (Csm.txt) will be saved in the root of the USB stick. This info can be handy if no information is displayed.

Also when CSM is activated, the layer 1 error is displayed via blinking LED. Only the latest error is displayed. (see also section "5.5 Error Codes").

How to Activate CSM

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

Note: Activation of the CSM is only possible if there is no (user) menu on the screen!

How to Navigate

By means of the "CURSOR-DOWN/UP" knob (or the scroll wheel) on the RC-transmitter, can be navigated through the menus.

Contents of CSM

The contents are reduced to 3 pages: General, Software versions and Quality items. The group names itself are not shown anywhere in the CSM menu.

General

- **Set Type.** This information is very helpful for a helpdesk/workshop as reference for further diagnosis. In this way, it is not necessary for the customer to look at the rear of the TV-set. Note that if an NVM is replaced or is initialized after corruption, this set type has to be re-written to NVM. ComPair will foresee in a possibility to do this.
- **Production Code.** Displays the production code (the serial number) of the TV. Note that if an NVM is replaced or is initialized after corruption, this production code has to be re-written to NVM. ComPair will foresee a in possibility to do this.
- **Installed date.** Indicates the date of the first installation of the TV. This date is acquired via time extraction.
- **Options 1.** Gives the option codes of option group 1 as set in SAM (Service Alignment Mode).
- **Options 2.** Gives the option codes of option group 2 as set in SAM (Service Alignment Mode).

- **12NC SSB.** Gives an identification of the SSB as stored in NVM. Note that if an NVM is replaced or is initialized after corruption, this identification number has to be re-written to NVM. ComPair will foresee in a possibility to do this. This identification number is the 12nc number of the SSB.
- **12NC display.** Shows the 12NC of the display
- **12NC supply.** Shows the 12NC of the supply.
- **12NC "bolt-on".** Shows the 12NC of the "BOLT-ON"-module.

Software versions

- **Current main SW.** Displays the built-in main software version. In case of field problems related to software, software can be upgraded. As this software is consumer upgradeable, it will also be published on the Internet. Example: Q591E_1.2.3.4
- **Standby SW.** Displays the built-in stand-by processor software version. Upgrading this software will be possible via ComPair or via USB (see chapter Software upgrade). Example: STDBY_3.0.1.2.
- **MOP ambient light SW.** Displays the MOP ambient light EPLD SW.
- **MPEG4 software.** Displays the MPEG4 software (optional for sets with MPEG4).
- **PNX5100 boot NVM.** Displays the SW-version that is used in the PNX5100 boot NVM.

Quality items

- **Signal quality.** Poor / average /good
- **Child lock.** Not active / active. This is a combined item for locks. If any lock (Preset lock, child lock, lock after or parental lock) is active, the item shall show "active".
- **Table channel changed.** This item is for development purpose, it will be defined later.
- **Key missing.** This is a combined item for keys. The keys have a separate bit and the sum is displayed in decimal value.
 - HDMI key valid = 001
 - MAC key valid = 010
 Important remark here : due to a software bug, the MAC key is missing and not valid when "2" is displayed in CSM. So, if for instance the HDMI and MAC keys are both valid, the decimal value in CSM "1" is displayed and not "3".
 - BDS key valid = 100
 If 3 keys are valid the value: "5" is displayed(should be "7" but due to the software bug).
- **CI slot present.** If the common interface module is detected the result will be "YES", else "NO".
- **HDMI input format.** The detected input format of the HDMI.
- **HDMI audio input stream.** The HDMI audio input stream is displayed: present / not present.
- **HDMI video input stream.** The HDMI video input stream is displayed: present / not present.

How to Exit CSM

Press "MENU" on the RC-transmitter.

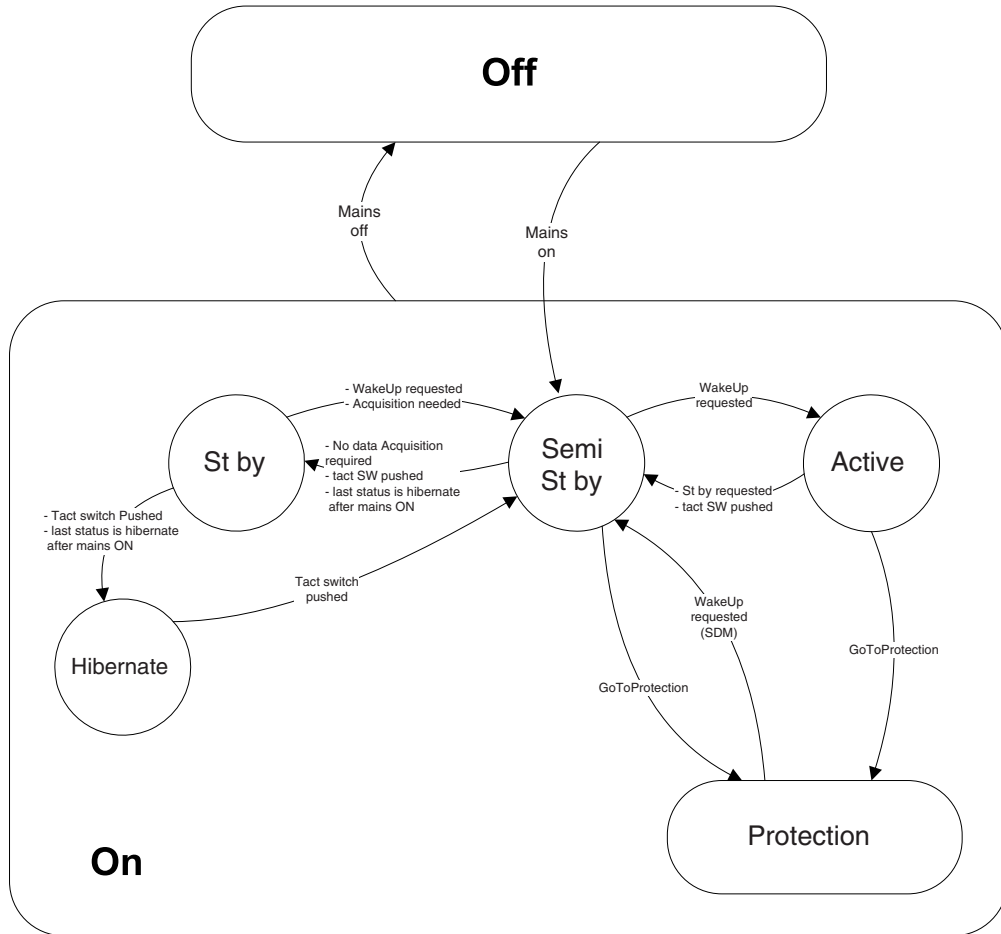
5.3 Stepwise Start-up

When the TV is in a protection state due to an error detected by stand-by software (error blinking is displayed) **and** SDM is activated via shortcutting the pins on the SSB, the TV starts up until it reaches the situation just before protection. So, this is a kind of automatic stepwise start-up. In combination with the start-up diagrams below, you can see which supplies are present at a certain moment. Important to know is, that if e.g. the 3V3 detection fails and thus error layer 2 = 18 is blinking while the TV is restarted via SDM, the Stand-by Processor will enable the 3V3, but the TV set will not go to protection now. The TV will stay in this situation until it is reset (Mains/AC Power supply interrupted). **Caution:** in case the start up in this

mode with a faulty FET 7U08 is done, you can destroy all IC's supplied by the +3V3, due to overvoltage (12V on 3V3-line). It is recommended to measure first the FET 7U08 or others FET's on shortcircuit before activating SDM via the service pads.

The abbreviations "SP" and "MP" in the figures stand for:

- SP: protection or error detected by the **Stand-by Processor**.
- MP: protection or error detected by the **MIPS Main Processor**.



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Figure 5-3 Transition diagram

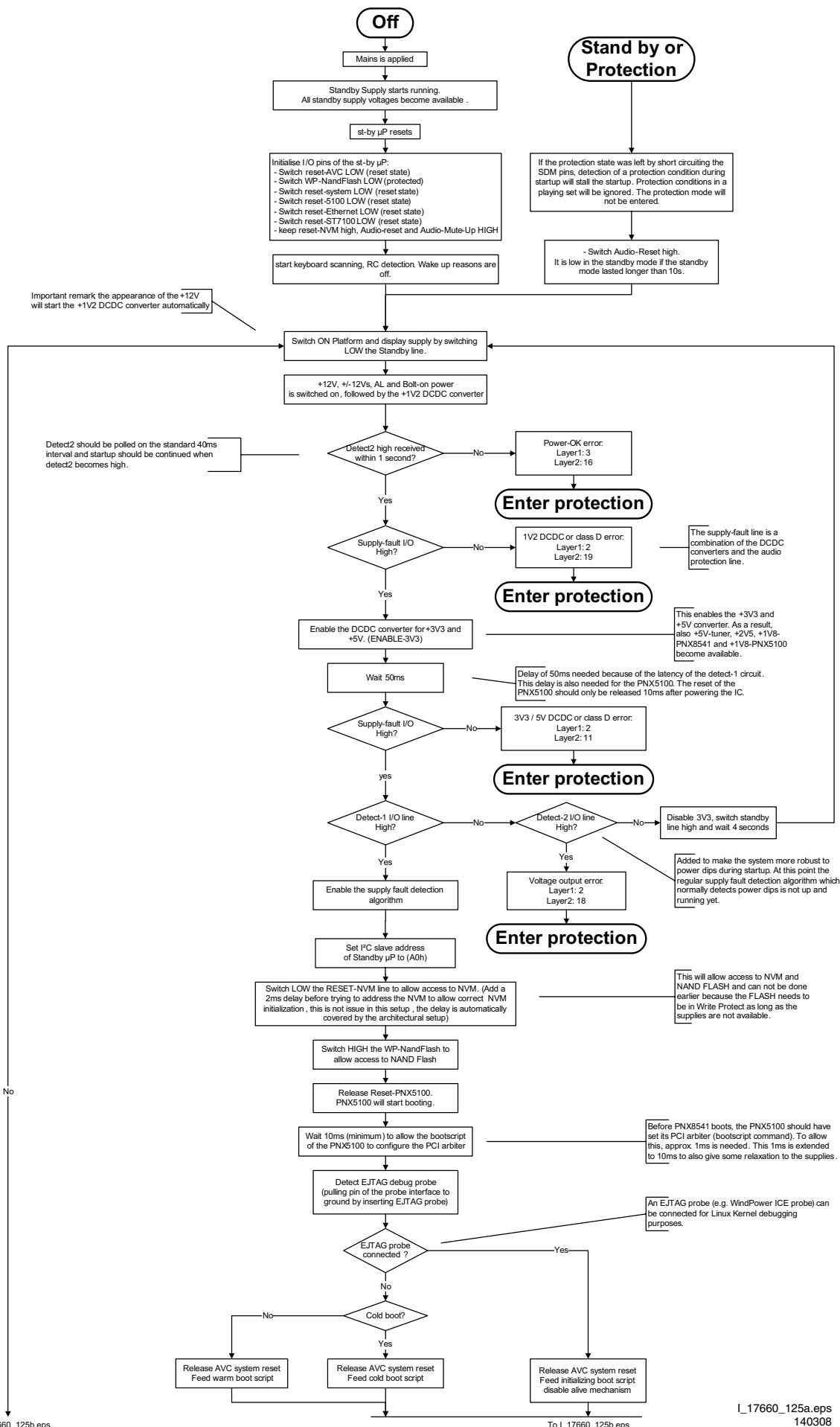


Figure 5-4 "Off" to "Semi Stand-by" flowchart (part 1)

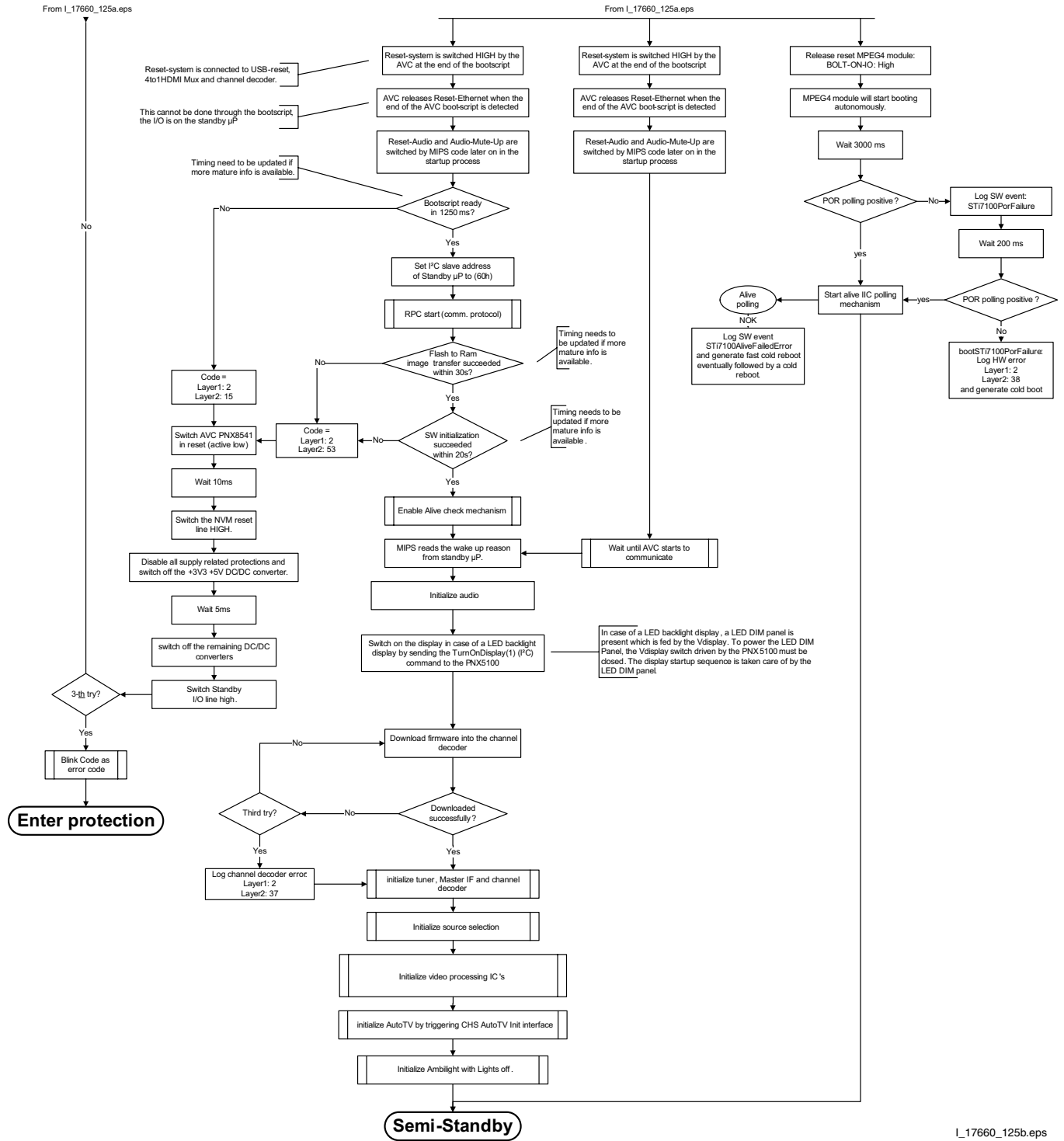


Figure 5-5 “Off” to “Semi Stand-by” flowchart (part 2)

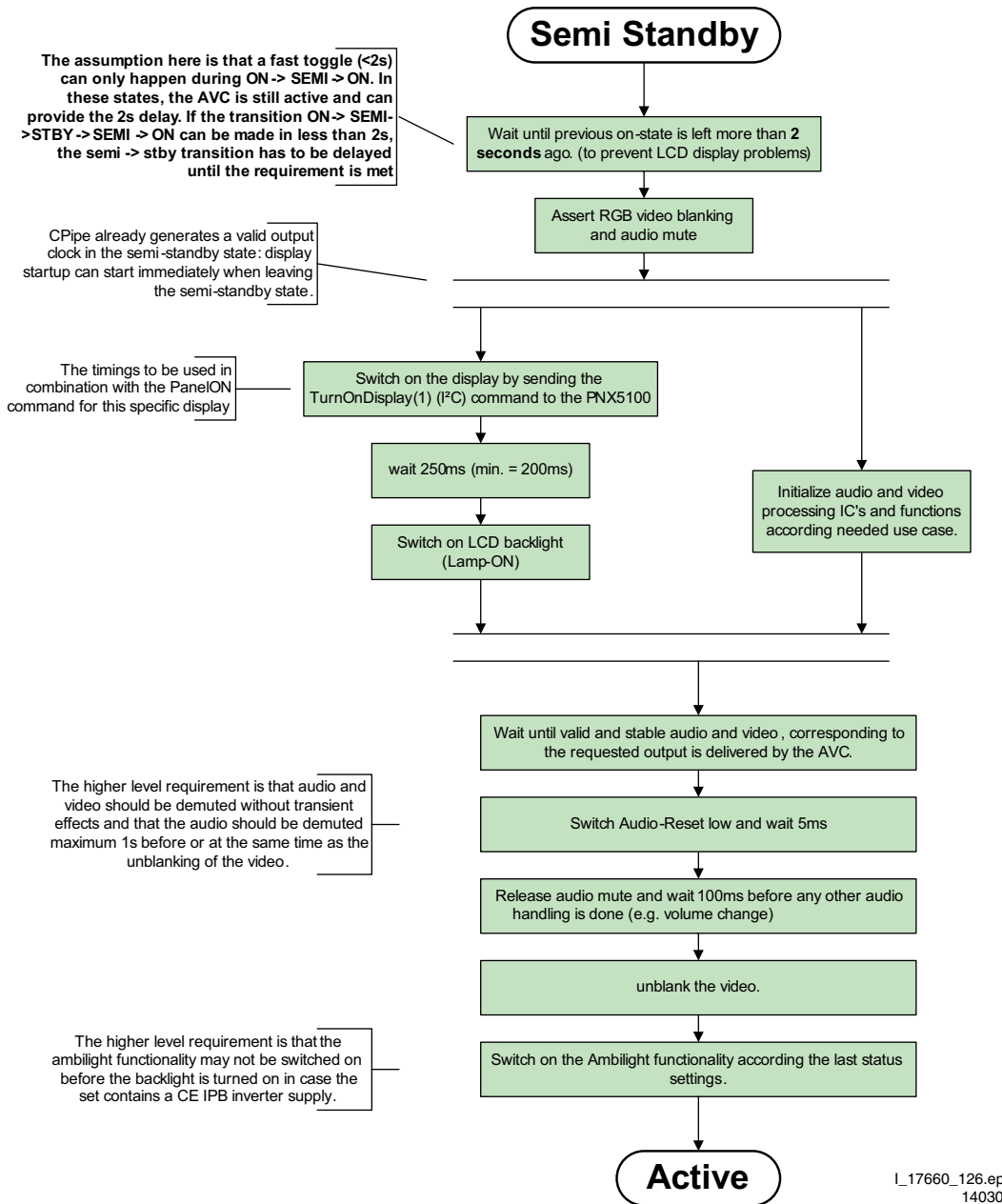
Constraints taken into account:

- Display may only be started when valid LVDS output clock can be delivered by the AVC .
- Between 5 and 50 ms after power is supplied, display should receive valid lvds clock .
- minimum wait time to switch on the lamp after power up is 200ms.

action holder: AVC

action holder: St-by

autonomous action



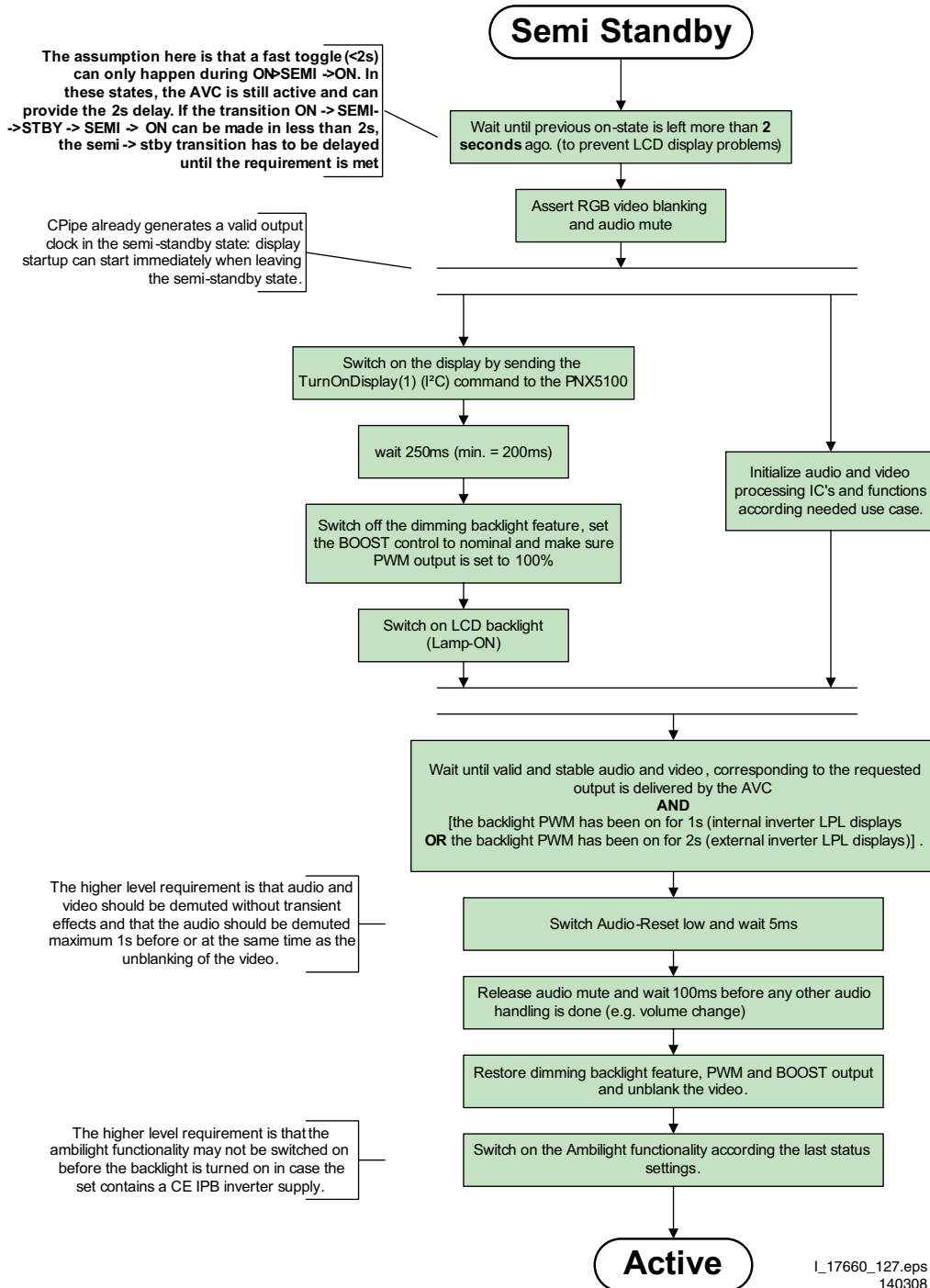
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Figure 5-6 “Semi Stand-by” to “Active” flowchart

Constraints taken into account:

- Display may only be started when valid LVDS output clock can be delivered by the AVC.
- Between 5 and 50 ms after power is supplied, display should receive valid lvds clock .
- minimum wait time to switch on the lamp after power up is 200ms.
- To have a reliable operation of the backlight, the backlight should be driven with a PWM duty cycle of 100% during the first second. Only after this first one or two seconds, the PWM may be set to the required output level (Note that the PWM output should be present before the backlight is switched on). To minimize the artefacts, the picture should only be unblanked after these first seconds.

- action holder: AVC
- action holder: St-by
- autonomous action



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Figure 5-7 “Semi Stand-by” to “Active” flowchart LCD with preheat

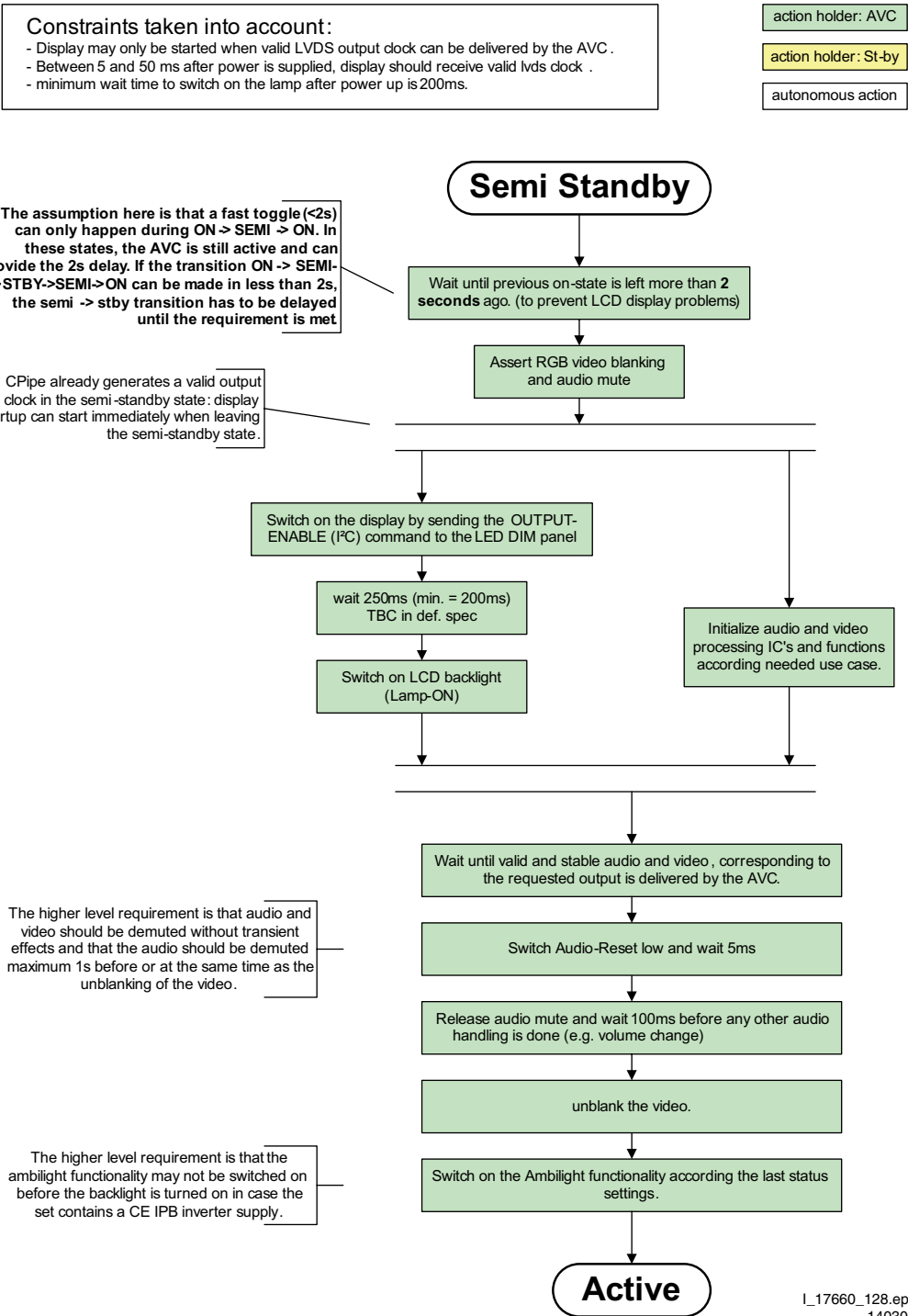


Figure 5-8 “Semi Stand-by” to “Active” flowchart (LED backlight)

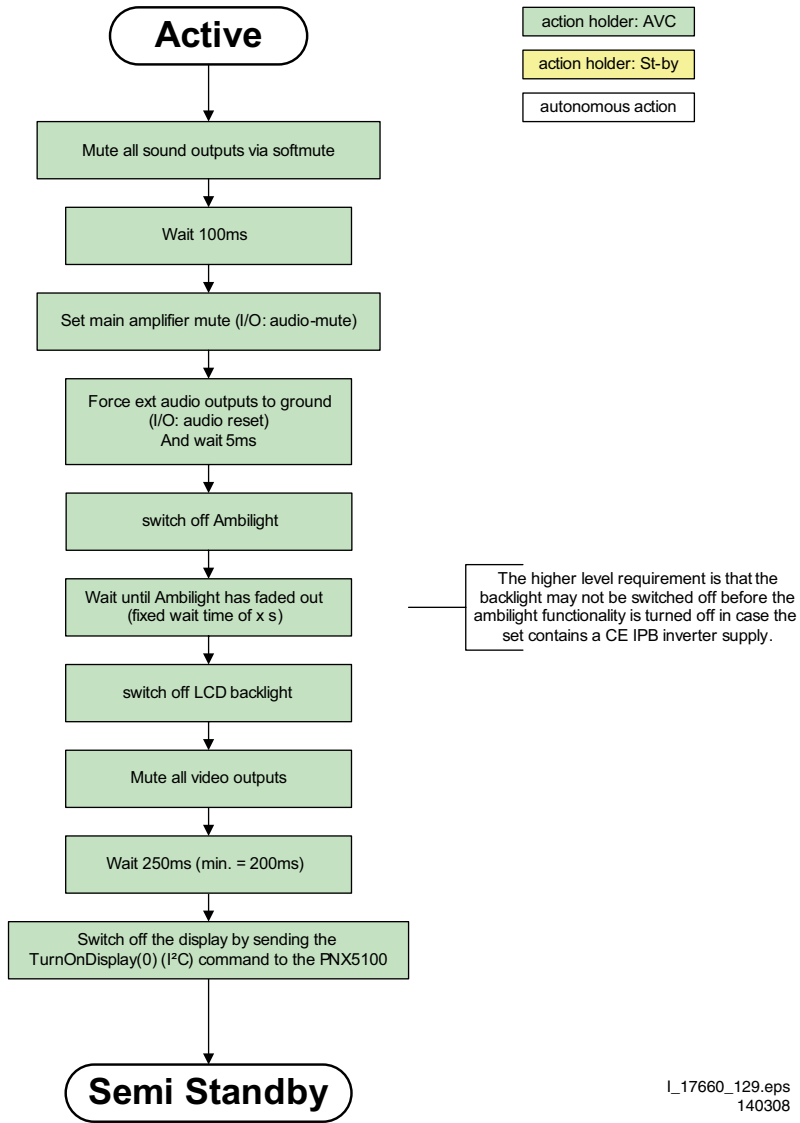


Figure 5-9 “Active” to “Semi Stand-by” flowchart (LCD non DFI)

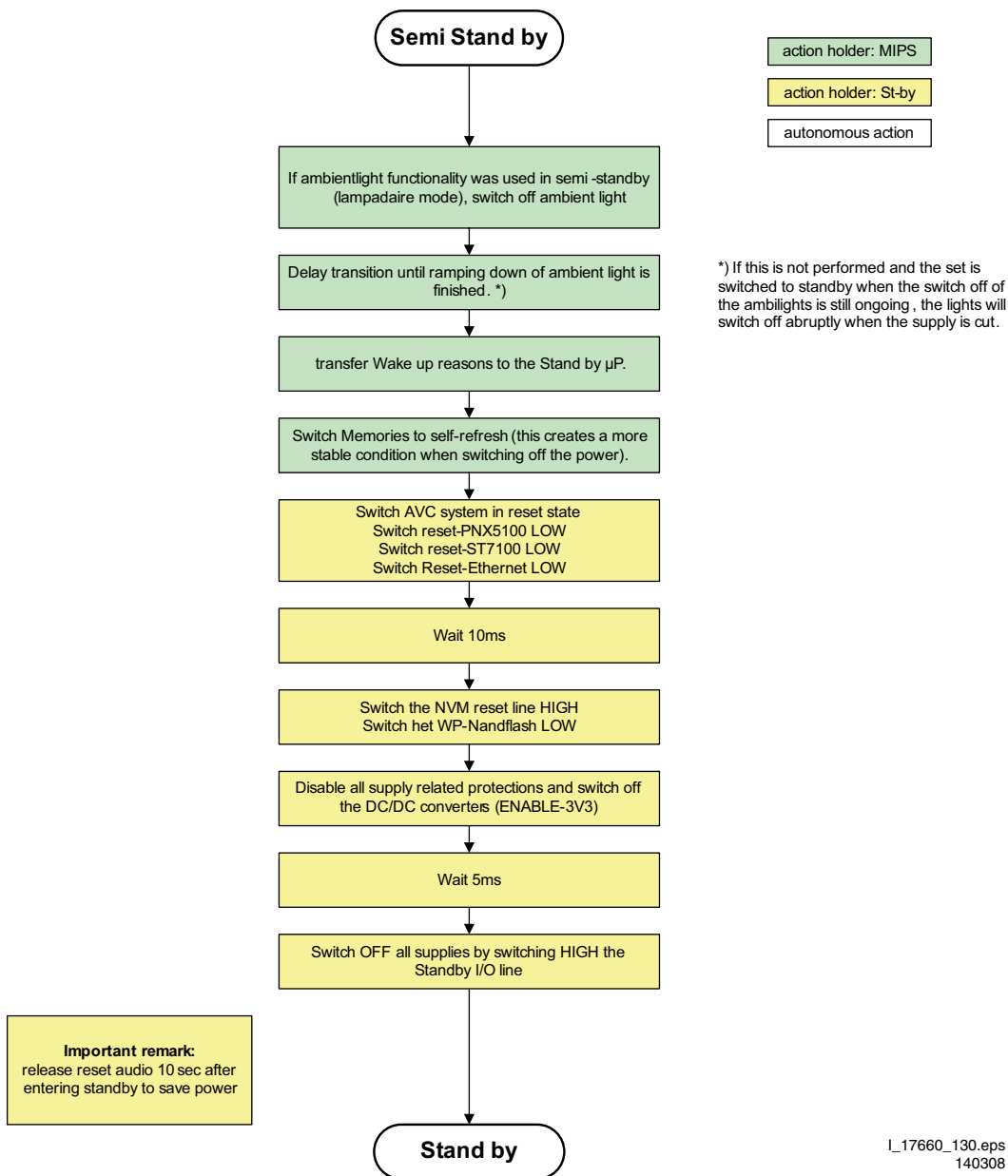


Figure 5-10 “Semi Stand-by” to “Stand-by” flowchart

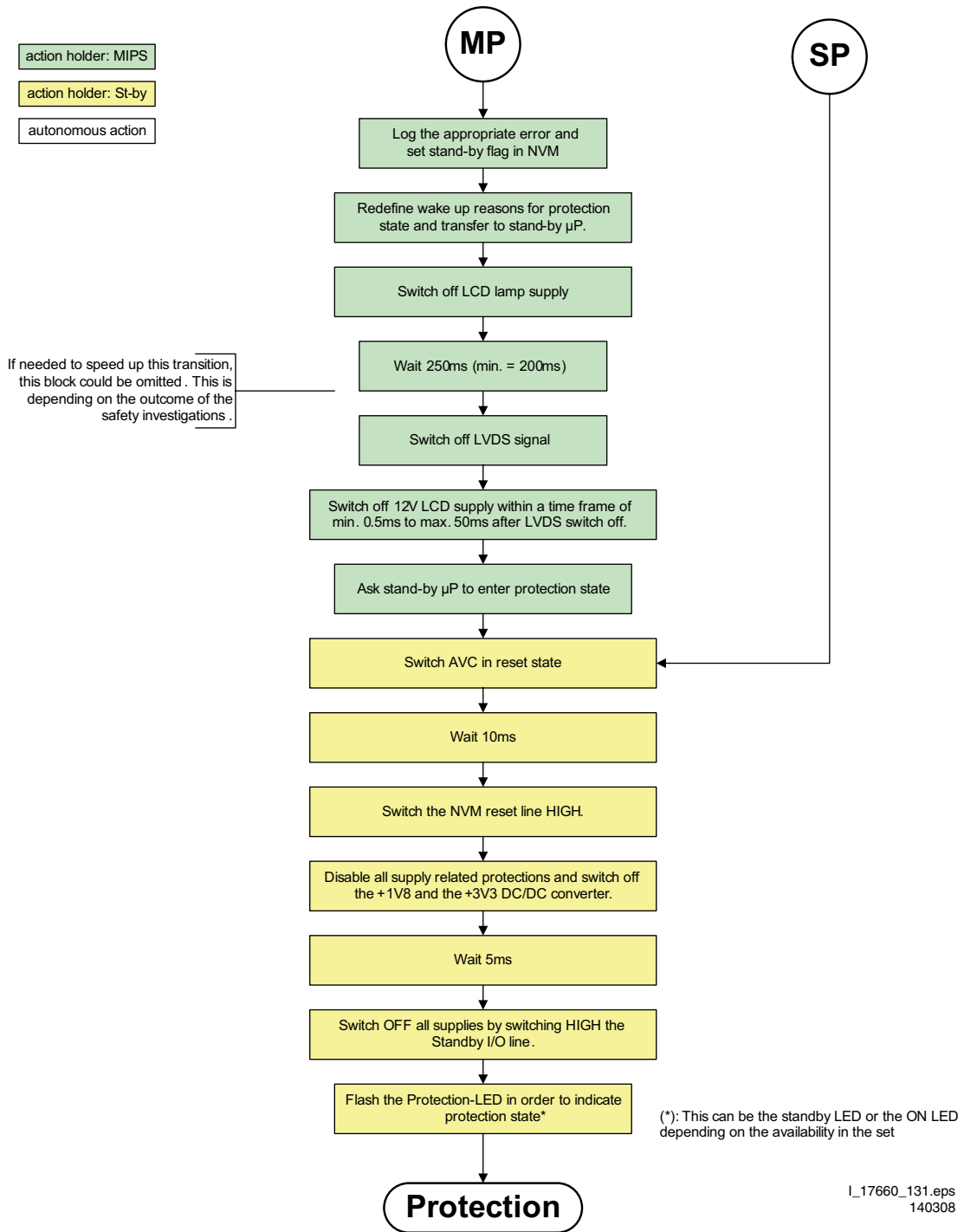


Figure 5-11 “To Protection State” flowchart

5.4 Service Tools

5.4.1 ComPair

Introduction

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

1. ComPair helps to quickly get an understanding on how to repair the chassis in a short and effective way.
2. ComPair allows very detailed diagnostics and is therefore capable of accurately indicating problem areas. No knowledge on I²C or UART commands is necessary, because ComPair takes care of this.

3. 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.
4. ComPair features TV software up possibilities.

Specifications

ComPair consists of a Windows based fault finding program and an interface box between PC and the (defective) product. The 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).

The ComPair fault finding program is able to determine the problem of the defective television, by a combination of automatic diagnostics and an interactive question/answer procedure.

How to Connect

This is described in the chassis fault finding database in ComPair.

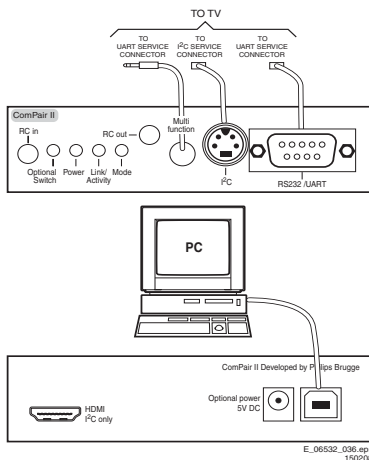


Figure 5-12 ComPair II interface connection

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.
- Software is available via internet:
<http://www.atyourservice.ce.philips.com>
- ComPair UART interface cable for Q52x.x.
(using 3.5 mm Mini Jack connector): 3104 311 12742.

Note: While encountering problems, contact the local support desk.

5.4.2 Memory and Audio Test

With this tool you can test the memory of the PNX8541, as well as if the PNX5100 is enabled and audio-testing.

What is needed?

- An USB-stick.
- “TESTSCRIPT Q529” (3104 337 05021). Downloadable from the Philips Service website from the section “Software for Service only”.
- A ComPair/service cable (3104 311 12742)

Procedure

Create a directory “JETTFILES” under the root of the USB-stick

- Place “MemoryTestPNX8635.bin” and “autojett.bin” (available in “TESTSCRIPT Q529”) under the directory “JETTFILES”
- Install the computer program “BOARDTESTLOGGER” (available in “TESTSCRIPT Q529”) on the PC
- Connect a “ComPair/service”-cable from the service-connector in the set to the COM1-port of the PC
- Start-up the program “BOARDTESTLOGGER” and select “COM1”
- Put the USB stick into the TV and startup the TV while pressing the “+”-button on a Philips DVD RC6 remote control (it’s also possible to use a TV remote in “DVD”-mode)
- On the PC the memory test is shown now. This is also visible on the TV screen.
- In “BOARDTESTLOGGER” an option “Send extra UART command” can be found where you can select “AUD1”.

This command generates hear test tones of 200, 400, 1000, 2000, 3000, 5000, 8000 and 12500Hz.

5.4.3 LVDS Tool

Support of this LVDS Tool has been discontinued.

5.5 Error Codes**5.5.1 Introduction**

The error code buffer contains all detected errors since the last time the buffer was erased. The buffer is written from left to right, new errors are logged at the left side, and all other errors shift one position to the right.

When an error occurs, it is added to the list of errors, provided the list is not full. When an error occurs and the error buffer is full, then the new error is not added, and the error buffer stays intact (history is maintained).

To prevent that an occasional error stays in the list forever, the error is removed from the list after more than 50 hrs. of operation.

When multiple errors occur (errors occurred within a short time span), there is a high probability that there is some relation between them.

New in this chassis is the way errors can be displayed:

- There is a simple blinking LED procedure for board level repair (home repair) so called LAYER 1 errors next to the existing errors which are LAYER 2 errors.(see table 5-2 error code overview).
 - LAYER 1 errors are one digit errors.
 - LAYER 2 errors are 2 digit errors.
- In protection mode.
 - From consumer mode: **LAYER 1**.
 - From SDM mode: **LAYER 2**.
- **Fatal errors, if I2C bus is blocked and the set reboots, CSM and SAM are not selectable.**
 - From consumer mode: **LAYER 1**.
 - From SDM mode: **LAYER 2**.

Important remark:
For all errors detected by MIPS which are fatal => rebooting of the TV set (reboot starts after LAYER error 1 blinking), one should short the solder paths at start-up from the power OFF state by mains interruption and not via the power button to trigger the SDM via the hardware pins.
- In CSM mode
 - When entering CSM: error **LAYER 1** will be displayed by blinking LED. Only the latest error is shown.
- In SDM mode
 - When SDM is entered via Remote Control code or the hardware pins, **LAYER 2** is displayed via blinking LED.
- In the ON state
 - In “Display error mode”, set with the RC commands “mute_06250X_OK” **LAYER 2** errors are displayed via blinking LED.
- Error display on screen.
 - In CSM no error codes are displayed on screen.
 - In SAM the complete error list is shown.

Basically there are three kinds of errors:

- **Errors detected by the Stand-by software which lead to protection.** These errors will always lead to protection and an automatic start of the blinking LED LAYER error 1. (see section “5.6 The Blinking LED Procedure”).
- **Errors detected by the Stand-by software which not lead to protection.** In this case the front LED should blink the involved error. See also section “5.5 Error Codes, 5.5.4 Error Buffer, Extra Info”. Note that it can take up several minutes before the TV starts blinking the error (e.g. LAYER error 1 = 2, LAYER error 2 = 15 or 53).

- **Errors detected by main software (MIPS).** In this case the error will be logged into the error buffer and can be read out via ComPair, via blinking LED method LAYER error 1-2, or in case picture is visible, via SAM.

5.5.2 How to Read the Error Buffer

Use one of the following methods:

- On screen via the SAM (only when a picture is visible).
E.g.:
 - **00 00 00 00 00:** No errors detected
 - **23 00 00 00 00:** Error code 23 is the last and only detected error.
 - **37 23 00 00 00:** Error code 23 was first detected and error code 37 is the last detected error.
 - Note that no protection errors can be logged in the error buffer.
- Via the blinking LED procedure. See section 5.5.3 How to Clear the Error Buffer.
- Via ComPair.

5.5.3 How to Clear the Error Buffer

Use one of the following methods:

- By activation of the “RESET ERROR BUFFER” command in the SAM menu.
- With a normal RC, key in sequence “MUTE” followed by “062599” and “OK”.
- If the content of the error buffer has not changed for 50+ hours, it resets automatically.

5.5.4 Error Buffer

In case of non-intermittent faults, clear the error buffer before starting to repair (**before** clearing the buffer, write down the content, as this history can give significant information). This to ensure that old error codes are no longer present.

If possible, check the entire contents of the error buffer. In some situations, an error code is only the result of another error code and not the actual cause (e.g. a fault in the protection detection circuitry can also lead to a protection).

There are several mechanisms of error detection:

- Via error bits in the status registers of ICs.
- Via polling on I/O pins going to the stand-by processor.
- Via sensing of analog values on the stand-by processor or the PNX8541.
- Via a “not acknowledge” of an I²C communication.

Take notice that some errors need several minutes before they start blinking or before they will be logged. So in case of problems wait 2 minutes from start-up onwards, and then check if the front LED is blinking or if an error is logged.

Table 5-2 Error code overview

Description	Layer 1	Layer 2	Monitored by	Error/Prot	Error Buffer/ Blinking LED	Device	Defective Board
I ² C3	2	13	MIPS	E	BL / EB	SCL/D-SSB	SSB
I ² C4	5	14	MIPS	E	BL / EB	SCL/D-DISP	Display (LED back light only)
PNX doesn't boot (HW cause)	2	15	Stby μP	E	BL	PNX8541 I ² C blocked	SSB
12V	3	16	Stby μP	P	BL	/	Supply
1V2, 3V3, 5V to low	2	18	Stby μP	P	BL	/	SSB
1V2 or Class D	2	19	Stby μP	P	BL	/	SSB
3V3/5V DCDC to high	2	11	Stby μP	P	BL	/	SSB
PNX 5100	2	21	MIPS	E	EB	PNX5100	SSB
HDMI mux	2	23	MIPS	E	EB	AD8197A	SSB
I ² C switch	2	24	MIPS	E	EB	PCA9540	SSB
Master IF	2	26	MIPS	E	EB	TDA9898	SSB
FPGA Ambilight	2	28	MIPS	E	EB	/	SSB
Tuner	2	34	MIPS	E	EB	UV1783S/TD1716	SSB
Channel Decoder DVB-T	2	37	MIPS	E	EB	TDA10048	SSB
ST7100	2	38	MIPS	E	EB	ST7100	SSB
MHP	6	39	MIPS	E	EB	/	MHP module
Fan I2C expander	7	41	MIPS	E	EB	PCA9533	FAN module
T° sensor	7	42	MIPS	E	EB	LM 75	T° sensor
FAN 1	7	43	MIPS	E	EB		FAN
FAN 2	7	44	MIPS	E	EB		FAN
main NVM	2	/	MIPS	E	X	STM24C128	SSB
Channel decoder DVB-C	2	48	MIPS	E	EB	TDA 10023	SSB
PNX doesn't boot (SW cause)	2	53	Stby μP	E	BL	PNX8541	SSB
Display (only LED back light)	5	64	MIPS	E	BL / EB		Display

Extra Info

- **Rebooting.** When a TV is constantly rebooting due to internal problems, most of the time no errors will be logged or blinked. This rebooting can be recognized via a ComPair interface and Hyperterminal (for Hyperterminal settings, see section "5.8 Fault Finding and Repair Tips, 5.8.6 Logging"). It's shown that the loggings which are generated by the main software keep continuing. In this case diagnose has to be done via ComPair.
- **Error 11 (3V3/5V too high).** This protection can occur during start up (LAYER error 1 = 2). Be careful to overrule this protection via SDM for the reason supply related devices can be possibly destroyed here.
- **Error 13 (I²C bus 3 blocked).** At the time of release of this manual, this error was not working as expected. Current situation: when this error occurs, the TV will constantly reboot due to the blocked bus. The best way for further diagnosis here, is to use ComPair.
- **Error 15 (PNX8541 doesn't boot).** Indicates that the main processor was not able to read his bootscript. This error will point to a hardware problem around the PNX8541 (supplies not OK, PNX 8541 completely dead, I²C link between PNX and Stand-by Processor broken, etc...). When error 15 occurs it is also possible that I²C2 bus is blocked (NVM). I²C2 can be indicated in the schematics as follows: SCL-UP-MIPS, SDA-UP-MIPS, SCL-2 or SDA-2. Other root causes for this error can be due to hardware problems with : NVM PNX5100, PNX5100 itself, DDR's.
- **Error 16 (12V).** This voltage is made in the power supply and results in protection (LAYER error 1 = 3) in case of absence. When SDM is activated we see blinking LED LAYER error 2 = 16.
- **Error 18 (1V2-3V3-5V too low).** All these supplies are generated by the DC/DC supply on the SSB. If one of these supplies is too low, protection occurs and blinking LED LAYER error 1 = 2 will be displayed automatically. In SDM this gives LAYER error 2 = 18.
- **Error 19 (1V2 or class D).** This is a combination of two detections:
 - If one of the 1V2 supplies is too high or too low in the start up procedure the supply fault becomes low.
 - If a DC voltage occurs on the output of the Class D amplifier the supply fault becomes low. Be careful to overrule this protection via SDM, check audio part first before apply. **In case one of the speakers is not connected, the protection can also be triggered.**
- **Error 21 (PNX 5100).** At the time of release of this manual, this error was not working as expected. Current situation: when this error occurs, the TV will constantly reboot. This rebooting can be recognized via a ComPair interface and Hyperterminal (for Hyperterminal settings, see section "5.8 Fault Finding and Repair Tips, 5.8.6 Logging"). It is shown that the loggings which are generated by the main software keep continuing. The best way for further diagnosis here, is to use ComPair.
- **Error 21 (PNX 5100).** At the time of release of this manual, this error was not working as expected. Current situation: when there is no I²C communication towards the PNX5100 after startup (power off by disconnection of the mains cord), LAYER error 2 will blink continuously via the blinking LED procedure in SDM. (startup the TV with the solder paths short to activate SDM).
- **Error 23 (HDMI).** When there is no I²C communication towards the HDMI mux after start up, LAYER error 2 = 23 will be logged and displayed via the blinking LED procedure if SDM is switched on.
- **Error 26 (Master IF).** When there is no I²C communication towards the Master IF after start up, LAYER error 2 = 26 will be logged and displayed via the blinking LED procedure when SDM is switched on.
- **Error 28 (FPGA ambilight).** When there is no I²C communication towards the FPGA ambilight after start up, LAYER error 2 = 28 will be logged and displayed via the blinking LED procedure if SDM is switched on. Note that it can take up several minutes before the TV starts blinking LAYER error 1 = 2 in CSM or in SDM, LAYER error 2 = 28.
- **Error 34 (Tuner).** When there is no I²C communication towards the tuner after start up, LAYER error 2 = 34 will be

logged and displayed via the blinking LED procedure when SDM is switched on.

- **Error 37 (Channel decoder DVBT).** When there is no I²C communication towards the DVBT channel decoder after start up, LAYER error 2 = 37 will be logged and displayed via the blinking LED procedure if SDM is switched on.
- **Error 38 (STI7100).** When there is no I²C communication towards the STI7100 after startup (power off by disconnection of the mains cord), LAYER error 2 = 38 will be logged and displayed via the blinking LED procedure in SDM (startup the TV with the solder paths short to activate SDM). Remark : if the error occurs during the ON state, the TV will constantly reboot and no LED blinking will be displayed. This rebooting can be recognized via a ComPair interface and Hyperterminal (for Hyperterminal settings, see section "5.8 Fault Finding and Repair Tips, 5.8.6 Logging"). It is shown that the loggings which are generated by the main software keep continuing. Check in the logging for keywords like e.g. "Device error 38".
- **Main NVM.** When there is no I²C communication towards the main NVM, LAYER error 1 = 2 will be displayed via the blinking LED procedure. In SDM, LAYER error 2 can be 19. Check the logging for keywords like "I²C bus blocked".
- **Error 48 (Channel decoder DVBC).** When there is no I²C communication towards the DVBC channel decoder after start up, LAYER error 2 = 48 will be logged and displayed via the blinking LED procedure while SDM is active.
- **Error 53.** This error will indicate that the PNX8541 has read his bootscript (when this would have failed, error 15 would blink) but initialization was never completed because of hardware problems (NAND flash, ...) or software initialization problems. Possible cause could be that there is no valid software loaded (try to upgrade to the latest main software version). Note that it can take up to 2 minutes before the TV starts blinking LAYER error 1 = 2 or in SDM, LAYER error 2 = 53.

5.6 The Blinking LED Procedure

5.6.1 Introduction

The blinking LED procedure can be split up into two situations:

- Blinking LED procedure LAYER error 1. In this case the error is automatically blinked when the TV is put in CSM. This will be only one digit error, namely the one that is referring to the defective board (see table "Table 5-2 Error code overview") which causes the failure of the TV. This approach will especially be used for home repair and call centres. The aim here is to have service diagnosis from a distance.
- Blinking LED procedure LAYER error 2. Via this procedure, the contents of the error buffer can be made visible via the front LED. In this case the error contains 2 digits (see table "Table 5-2 Error code overview") and will be displayed when SDM (hardware pins) is activated. This is especially useful for fault finding and gives more details regarding the failure of the defective board.

Important remark:

For all errors detected by MIPS which are fatal => rebooting of the TV set (reboot starts after LAYER error 1 blinking), one should short the solder paths at start-up from the power OFF state by mains interruption and not via the power button to trigger the SDM via the hardware pins.

When one of the blinking LED procedures is activated, the front LED will show (blink) the contents of the error-buffer. Error codes greater than 10 are shown as follows:

1. "n" long blinks (where "n" = 1 to 9) indicating decimal digit
2. A pause of 1.5 s
3. "n" short blinks (where "n" = 1 to 9)
4. A pause of approximately 3 s,

5. When all the error codes are displayed, the sequence finishes with a LED blink of 3 s

6. The sequence starts again.

Example: Error 12 8 6 0 0.

After activation of the SDM, the front LED will show:

1. One long blink of 750 ms (which is an indication of the decimal digit) followed by a pause of 1.5 s
2. Two short blinks of 250 ms followed by a pause of 3 s
3. Eight short blinks followed by a pause of 3 s
4. Six short blinks followed by a pause of 3 s
5. One long blink of 3 s to finish the sequence
6. The sequence starts again.

5.6.2 How to Activate

Use one of the following methods:

- **Activate the CSM.** The blinking front LED will show only the latest layer error 1, this works in "normal operation" mode or automatically when the error/protection is monitored by the standby processor. At the time of this release, this layer error 1 blinking was not working as expected.
In case no picture is shown and there is no LED blinking, n read the logging to detect whether "error devices" are mentioned. (see section "5.8 Fault Finding and Repair Tips, 5.8.6 Logging").
- **Activate the SDM.** The blinking front LED will show the entire contents of the layer error 2 buffer, this works in "normal operation" mode or when SDM (via hardware pins) is activated when the tv set is in protection.
Important remark:
For all errors detected by MIPS which are fatal => rebooting of the TV set (reboot starts after LAYER error 1 blinking), one should short the solder paths at start-up from the power OFF state by mains interruption and not via the power button to trigger the SDM via the hardware pins.
- **Transmit the commands "MUTE" - "062500" - "OK" with a normal RC.** The complete error buffer is shown. Take notice that it takes some seconds before the blinking LED starts.
- **Transmit the commands "MUTE" - "06250x" - "OK" with a normal RC** (where "x" is a number between 1 and 5). When x = 1 the last detected error is shown, x = 2 the second last error, etc.... Take notice that it takes some seconds before the blinking LED starts.

5.7 Protections

5.7.1 Software Protections

Most of the protections and errors use either the stand-by microprocessor or the MIPS controller as detection device. Since in these cases, checking of observers, polling of ADCs, and filtering of input values are all heavily software based, these protections are referred to as software protections. There are several types of software related protections, solving a variety of fault conditions:

- **Protections related to supplies:** check of the 12V, +5V, +3V3 and 1V2.
- **Protections related to breakdown of the safety check mechanism.** E.g. since the protection detections are done by means of software, failing of the software will have to initiate a protection mode since safety cannot be guaranteed any more.

Remark on the Supply Errors

The detection of a supply dip or supply loss during the normal playing of the set does not lead to a protection, but to a cold reboot of the set. If the supply is still missing after the reboot, the TV will go to protection.

Protections during Start-up

During TV start-up, some voltages and IC observers are actively monitored to be able to optimise the start-up speed, and to assure good operation of all components. If these monitors do not respond in a defined way, this indicates a malfunction of the system and leads to a protection. As the observers are only used during start-up, they are described in the start-up flow in detail (see section "5.3 Stepwise Start-up").

5.7.2 Hardware Protections

The only real hardware protection in this chassis appears in case of an audio problem e.g. DC voltage on the speakers. The audio protection circuit pulls the "supply-fault" low and the tv set will blink LAYER error 1 = 2 or in SDM, LAYER error 2 = 19. Be very careful to overrule this protection via SDM (not to cause damage to the Class D audio amplifier). Check audio part first before activating via SDM. **In case one of the speakers is not connected, the protection can also be triggered.**

Repair Tips

- It is also possible that the set has an audio DC protection because of an interruption in one or both speakers (the DC voltage that is still on the circuit cannot disappear through the speakers). **Caution:** (Dis)connecting the speakers during the ON state of the TV can damage the audio amplifier.

5.7.3 Important remark regarding the blinking LED indication

As for the blinking LED indication, the blinking led of error layer 1 displaying can be switched off by pushing the power button on the keyboard.

This condition is not valid after the set was unpowered (via mains interruption). The blinking LED starts again and can only be switched off by unplugging the mains connection.

This can be explained by the fact that the MIPS can not load the keyboard functionality from software during the start-up and doesn't recognizes the keyboard commands at this time.

5.8 Fault Finding and Repair Tips

Read also section "5.5 Error Codes, 5.5.4 Error Buffer, Extra Info".

Caution: For the whole platform the speaker connections are grounded on -12 V level. During service measurements with earth grounded equipment like e.g. scope, great risk of using the speaker terminal connections for earth ground is currently present. One will short circuit the -12 V to earth ground in that way and will causes damage of the supply/audio part!

5.8.1 Ambilight

Due to degeneration process of the AmbiLights, there can be a difference in the colour and/or light output of the spare ambilight module in comparison with the originals ones contained in the TV set. Via ComPair the light output can be adjusted.

5.8.2 Audio Amplifier

The Class D-IC 7D10 has a powerpad for cooling. When the IC is replaced it must be ensured that the powerpad is very well pushed to the PCB while the solder is still liquid. This is needed to insure that the cooling is guaranteed, otherwise the Class D-IC could break down in short time.

5.8.3 CSM

When CSM is activated and there is a USB stick connected to the TV, the software will dump the complete CSM content to the

USB stick. The file (Csm.txt) will be saved in the root of the USB stick. If this mechanism works it can be concluded that a large part of the operating system is already working (MIPS, USB...)

5.8.4 DC/DC Converter

Introduction

The onboard supply consists of 5 DC/DC converters and 7 linear stabilizers. The DC/DC converters have all +12V input voltage and deliver:

- +1V2-PNX8541 supply voltage, stabilized close to PNX8541 chip.
- +1V2-PNX5100 supply voltage, stabilized close to PNX5100 chip.
- +3V3 (overall 3.3 V for onboard IC's).
- +5V for USB and Conditional Access Interface and +5V5-TUN tuner stabilizer.
- +33VTUN for analog only tuners (**AP diversity**).

The linear stabilizers are providing:

- +1V supply voltage (out of +1V2-PNX8541), stabilized close to ST7101 chip (**MPEG4 diversity**).
- +1V8-PNX5100.
- +1V8-PNX8541 (**reserved** because +1V8-PNX5100 used also for DDR2 interface of PNX8541 via 5FB0).
- +2V5 (**MPEG4 diversity**).
- +1V2-STANDBY (out of +3V3-STANDBY).
- +5V-TUN (out of +5V5-TUN).
- +3V3-STANDBY (out of +12V, **reserved**).

+3V3-STANDY and +1V2-STANDBY are permanent voltages. Supply voltages +1V2-PNX8541, +1V2-PNX5100 and +1V are started immediately when +12V incoming voltage is available (+12V is enabled by STANDBY signal, active low). Supply voltages +3V3, 2V5, +1V8-PNX5100, +1V8-PNX8541, +5V and +5V-TUN are switched-on directly by signal ENABLE-3V3 (active low) when +12V and previous mentioned voltages are all available.

Debugging

The best way to find a failure in the DC/DC converters is to check their starting-up sequence at power-on via the mains cord, presuming that the standby microprocessor and the external supply are operational. Take STANDBY signal high-to-low transition as reference.

When +12V rises above 10V then +1V2-PNX8541, +1V2-PNX5100 and +1V are started immediately. Then, after ENABLE-3V3 goes low, all the other supply voltages should rise within 10 ms. Boost voltages should be OK when +1V2-PNX8541, +1V2-PNX5100 are available (FU07 and FU8A, around 19V).

SUPPLY-FAULT signal should be high when all supply voltages are started-up.

Tips

- Usually, when supply voltage is short-circuited to GND, the corresponding DC/DC converter is making audible noise.
- The drop voltage across resistors 3U70 and 3U3T is 100 mV to 2000 mV.
- Defective (in short-circuit) power MOS-FET's lead usually to their controller IC broken; if one or more high-side MOS-FET's (7U05, 7U08, 7U0D-1 or 7U0H-1) is broken then the platform can be heavily damaged if started in SDM-mode (SUPPLY-FAULT signal is then ignored, while higher than normal supplies will be generated).
- The +33VTUN generator circuit (7U0P + 7U0Q + surrounding components) has low output current capability. In case of too low or no output voltage check transistor 7U0P (gate voltage pulses of about 10 V amplitude and drain voltage pulses of about 35 V amplitude) and the load (not more than 4.5 mA).

- High output ripple voltage of DC/DC converters can be caused by defective (cracked or bad soldered) ceramic capacitors in the feedback (DC or AC) input or output filtering.

5.8.5 Exit “Factory Mode”

When an “F” is displayed in the screen's right corner, this means that the set is in “Factory” mode, and it normally happens after a new SSB has been mounted.

To exit this mode, push the “VOLUME minus” button on the TV's keyboard control for 5 seconds and restart the set.

5.8.6 Logging

When something is wrong with the TV set (f.i. the set is rebooting) you can check for more information via the logging in Hyperterminal. The Hyperterminal is available in every Windows application via Programs, Accessories, Communications, Hyperterminal. Connect a “ComPair UART”-cable (3104 311 12742) from the service connector in the TV set to the “COM1”-port of the PC. After start-up of the Hyperterminal, fill in a name (f.i. “logging”) in the “Connection Description” box, then apply the following settings:

1. COM1
2. Bits per second = 38400
3. Data bits = 8
4. Parity = none
5. Stop bits = 1
6. Flow control = none

During the start-up of the TV set, the logging will be displayed. This is also the case during rebooting of the TV set (the same logging appears time after time). Also available in the logging is the “Display Option Code” (useful when there is no picture), look for item “DisplayRawNumber” in the beginning of the logging. Tip: when there is no picture available during rebooting you are able to check for “error devices” in the logging (LAYER 2 error) which can be very helpful to determine the failure cause of the reboot. For protection state, there is no logging.

5.8.7 Loudspeakers

Make sure that the volume is set to minimum during disconnecting the speakers in the ON-state of the TV. The audio amplifier can be damaged by disconnecting the speakers during ON-state of the set! Sometimes the set can go into protection, but that is not always the case. **Caution:** On a ME8-styling set (74xx or 76xx-range) with removed back cover the loudspeakers are automatically disconnected!

5.8.8 IPB

In case of no picture when CSM-test pattern from PNX5100 is displayed and backlight doesn't light up, It's recommended first to check the inverter on the IPB + wiring before replacing the hole display!

5.8.9 Sanken display supply

The 52” sets in this chassis come with a Sanken buy-in supply. When the primary circuit of the platform supply fails, there is a high possibility that the main fuse of the Sanken display supply will break. In this case the Sanken supply must not be replaced completely, just replace the Sanken main value fuse and repair the platform supply. For safety reasons, make sure to use the correct fuse type.

5.8.10 Tuner

Attention: In case the tuner is replaced, always check the tuner options!

5.8.11 UI over PCI bus

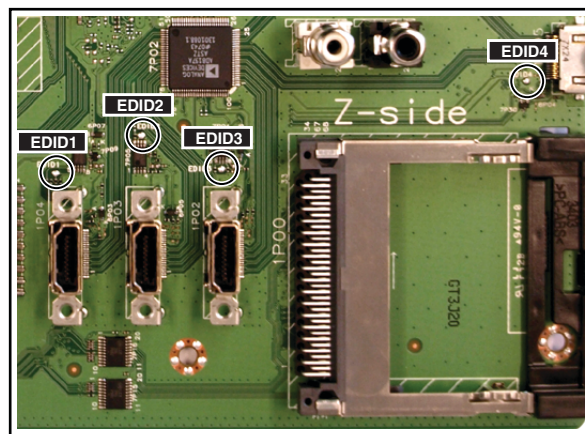
The UI is not integrated in the RGB signal but is sent from PNX8541 to PNX5100 via the PCI bus. TXT and MHEG are integrated in the RGB signal. So when TXT signal is available but no UI, check the PCI bus.

5.8.12 Display option code

Attention: In case the SSB is replaced, always check the display option code in SAM, even when picture is available. Performance with the incorrect display option code can lead to unwanted side-effects for certain conditions.

5.8.13 Upgrade EDID NVM

To upgrade the EDID NVM pin 7 of the EDID NVM has to be short circuited to ground. Therefore some test points are foreseen (figure “EDID-NVM pins”). See ComPair for further instructions.



L_17660_119.eps
140308

Figure 5-13 EDID-NVM pins

5.8.14 SSB Replacement

Follow the instructions in the flowchart in case you have to exchange the SSB. See figure "SSB replacement flowchart".

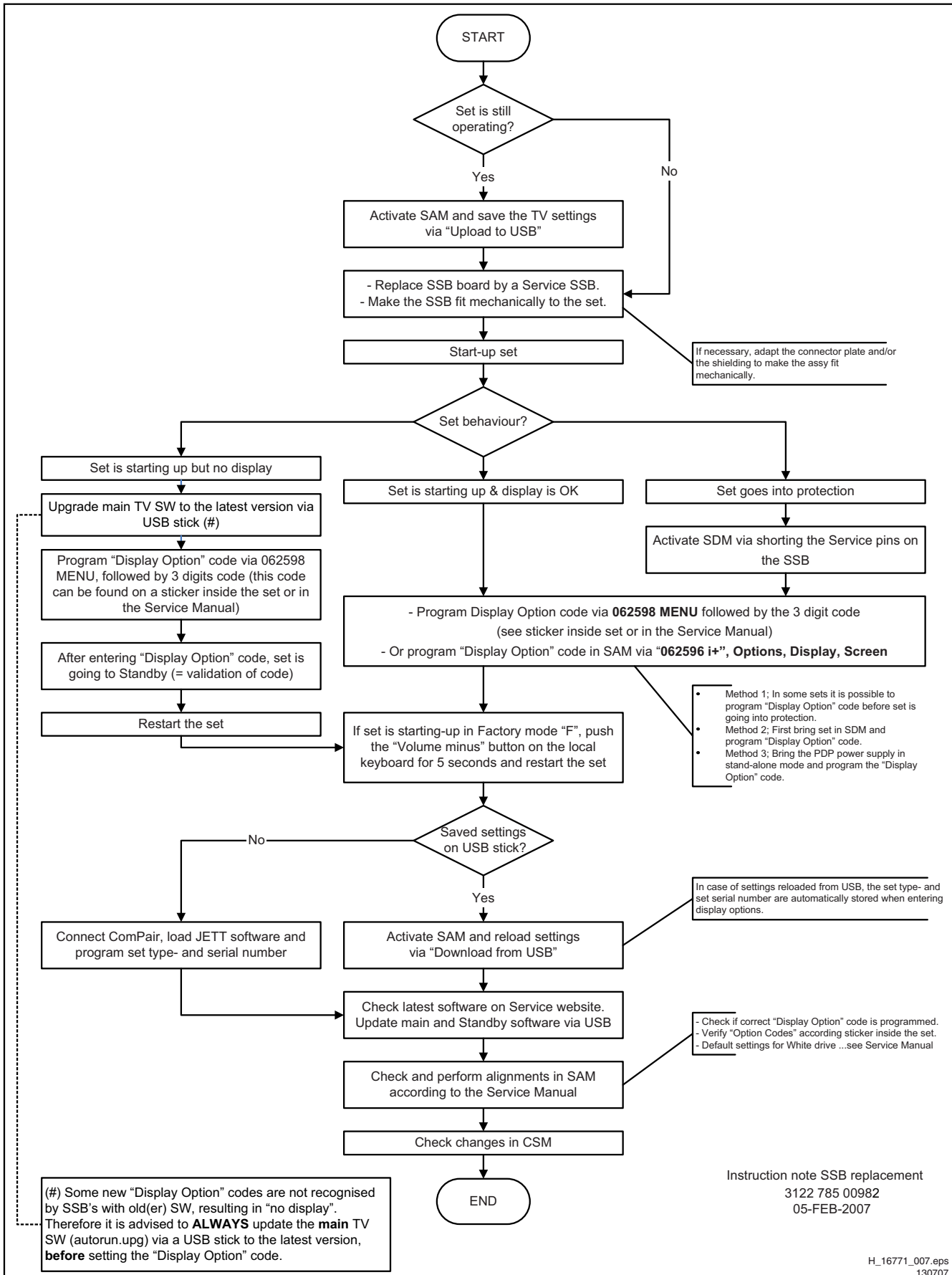


Figure 5-14 SSB replacement flowchart

5.9 Software Upgrading

5.9.1 Introduction

The set software and security keys are stored in a NAND-Flash, which is connected to the PNX8541 via the PCI bus.

It is possible **for the user** to upgrade the **main** software via the USB port. This allows replacement of a software image in a stand alone set, without the need of an E-JTAG debugger. A description on how to upgrade the main software can be found in the DFU.

Important: When the NAND-Flash must be replaced, a new SSB must be ordered, due to the presence of the security keys! (copy protection keys, MAC address, ...). It is however also possible to replace the NAND-Flash with a good one from a scrap-board.

Perform the following actions after SSB replacement:

1. Set the correct option codes (see sticker inside the TV).
2. Update the TV software (see the DFU for instructions).
3. Perform the alignments as described in chapter 8 (section "Reset of Repaired SSB").
4. Check in CSM if the HDMI keys are valid.

For the correct order number of a new SSB, always refer to the Spare Parts list!

5.9.2 Main Software Upgrade

- The "UpgradeAll.upg" file is only used in the factory.
- The "FlashUtils.upg" file is only used by service centra which are allowed to do component level repair on the SSB.

Automatic Software Upgrade

In "normal" conditions, so when there is no major problem with the TV, the main software and the default software upgrade application can be upgraded with the "AUTORUN.UPG" (FUS part of the one-zip file: e.g. 3104 337 04731 _FUS_Q591E_1.25.5.0_commercial.zip). This can also be done by the consumers themselves, but they will have to get their software from the commercial Philips website or via the Software Update Assistant in the user menu (see DFU). The "autorun.upg" file must be placed in the root of the USB stick.

How to upgrade:

1. Copy "AUTORUN.UPG" to the root of the USB stick.
2. Insert USB stick in the set while the set is in ON MODE. The set will restart and the upgrading will start automatically. As soon as the programming is finished, a message is shown to remove the USB stick and restart the set.

Manual Software Upgrade

In case that the software upgrade application does not start automatically, it can also be started manually.

How to start the software upgrade application manually:

1. Disconnect the TV from the Mains/AC Power.
2. Press the "OK" button on a Philips TV remote control or a Philips DVD RC-6 remote control (it is also possible to use a TV remote in "DVD" mode). Keep the "OK" button pressed while reconnecting the TV to the Mains/AC Power.
3. The software upgrade application will start.

Attention!

In case the download application has been started **manually**, the "autorun.upg" will maybe not be recognized.

What to do in this case:

1. Create a directory "UPGRADES" on the USB stick.
2. Rename the "autorun.upg" to something else, e.g. to "software.upg". Do not use long or complicated names, keep it simple. Make sure that "AUTORUN.UPG" is no longer present in the root of the USB stick.
3. Copy the renamed "upg" file into this directory.

4. Insert USB stick into the TV.
5. The renamed "upg" file will be visible and selectable in the upgrade application.

Back-up Software Upgrade Application

If the default software upgrade application does not start (could be due to a corrupted boot 2 sector) via the above described method, try activating the "back-up software upgrade application".

How to start the "back-up software upgrade application" manually:

1. Disconnect the TV from the Mains/AC Power.
2. Press the "INFO"-button on a Philips remote control or "CURSOR DOWN" button on a Philips DVD RC-6 remote control (it is also possible to use a TV remote in "DVD" mode). Keep the "INFO"-button (or "cursor down" button) pressed while reconnecting the TV to the Mains/AC Power.
3. The software upgrade application will start.

5.9.3 Stand-by Software Upgrade via USB

In this chassis it is possible to upgrade the Stand-by software via a USB stick. The method is similar to upgrading the main software via USB.

Use the following steps:

1. Create a directory "UPGRADES" on the USB stick.
2. Copy the Stand-by software (part of the one-zip file, e.g. StandbySW_CFT55_35.0.0.0.upg) into this directory.
3. Insert the USB stick into the TV.
4. Start the download application manually (see section "Manual Software Upgrade").
5. Select the appropriate file and press the "red" button to upgrade.

5.9.4 Content and Usage of the One-Zip Software File

Below the content of the One-Zip file is explained, and instructions on how and when to use it.

- **1.1 Ambilight_PRFAM_x.x.x.x.zip.** Not to be used by Service technicians.
- **1.2 bootProm_PNX5100_Q591X_x.x.x.x.zip.** A programmed device can be ordered via the regional Service organization.
- **1.3 Cabinet_ACOUS_x.x.x.x.zip.** Not to be used by Service technicians.
- **1.4 Ceisp2padII_P2PAD_x.x.x.x.zip.** Not to be used by Service technicians. For ComPair development only.
- **1.5 DDC_Q591X_x.x.x.x.zip.** Contains the content of the VGA NVM. See ComPair for further instruction.
- **1.6 Display_DISPT_x.x.x.x.zip.** Not to be used by Service technicians.
- **1.7 EDID_Q591X_x.x.x.x.zip.** Contains the EDID content of the different EDID NVM's. See ComPair for further instructions.

For sets with four HDMI connectors.

- For **HDMI 1** NVM, use "**port 1*.bin"
- For **HDMI 2** NVM, use "**port 2*.bin"
- For **HDMI 3** NVM, use "**port 3*.bin"
- For **HDMI 4** NVM, use "**port 4*.bin"
- **1.8 EJTAGDownload_Q591X_x.x.x.x.zip.** Only used by service centra which are allowed to do component level repair.
- **1.9 Factory_Q591X_x.x.x.x_commercial.zip.** Only for production purposes, not to be used by Service technicians.
- **2.0 FlashUtils_Q591X_x.x.x.x_commercial.zip.** Not to be used by Service technicians.
- **2.1 LightGuide_TV522_x.x.x.x.zip.** Not to be used by Service Technicians.
- **2.2 FUS_Q591X_x.x.x.x_commercial.zip.** Contains the "autorun.upg" which is needed to upgrade the TV main software and the software download application.

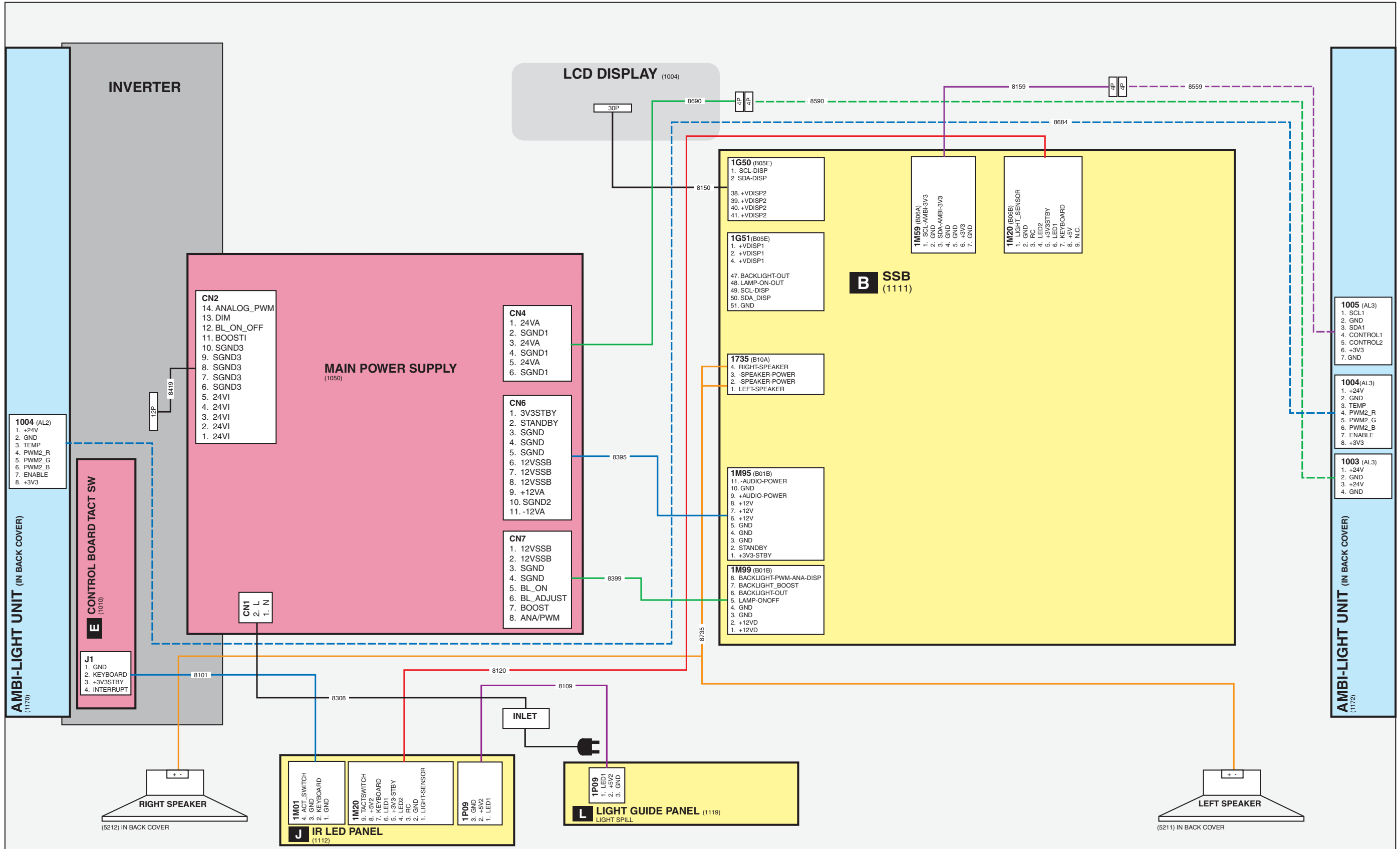
- **2.3 MOP_RXSXX_x.x.x.x.zip.** A separate MOP Ambient Light FPGA SW. This SW is not part of the FUS autorun.upg! A programmed MOP device can also be ordered via the regional Service organization.
- **2.4 OAD_Q591X_x.x.x.x.zip.** Not to be used by Service Technicians.
- **2.45OpenSourceFile_Q591X_x.x.x.x.zip.** Not to be used by Service technicians.
- **2.6 PQPrivate_U5228_x.x.x.x.zip.** Not to be used by Service technicians.
- **2.7 PQPublic_U5228_x.x.x.x.zip.** Not to be used by Service technicians.
- **2.8 ProcessNVM_Q591X_x.x.x.x.zip.** Default NVM content. Must be programmed via ComPair.
- **2.9 StandbySW_CFTxx_x.x.x.x_commercial.zip.** Contains the Stand-by software in “upg” and “hex” format.
 - The “StandbySW_xxxx_prod.upg” file can be used to upgrade the Stand-by software via USB.
 - The “StandbySW_xxxx.hex” file can be used to upgrade the Stand-by software via ComPair.
 - The files “StandbySW_xxxx_exhex.hex” and “StandbySW_xxxx_dev.upg” may not be used by Service technicians (only for development purposes).
- **3.0 stmp4_xxxx.xxx.xxx.zip.** This is a separate MPEG4 SW (is also part of the FUS autorun.upg). Not to be used by Service Technicians.
- **3.1 UpgradeAll_Q591X_x.x.x.x_commercial.zip.** Only for production purposes, not to be used by Service technicians.

Caution: Never try to use this file, because it will overwrite the HDCP keys !!!
- **3.2 UpgradeExe_Q591X_x.x.x.x.zip.** Not to be used by Service Technicians.

6. Block Diagrams, Test Point Overview, and Waveforms

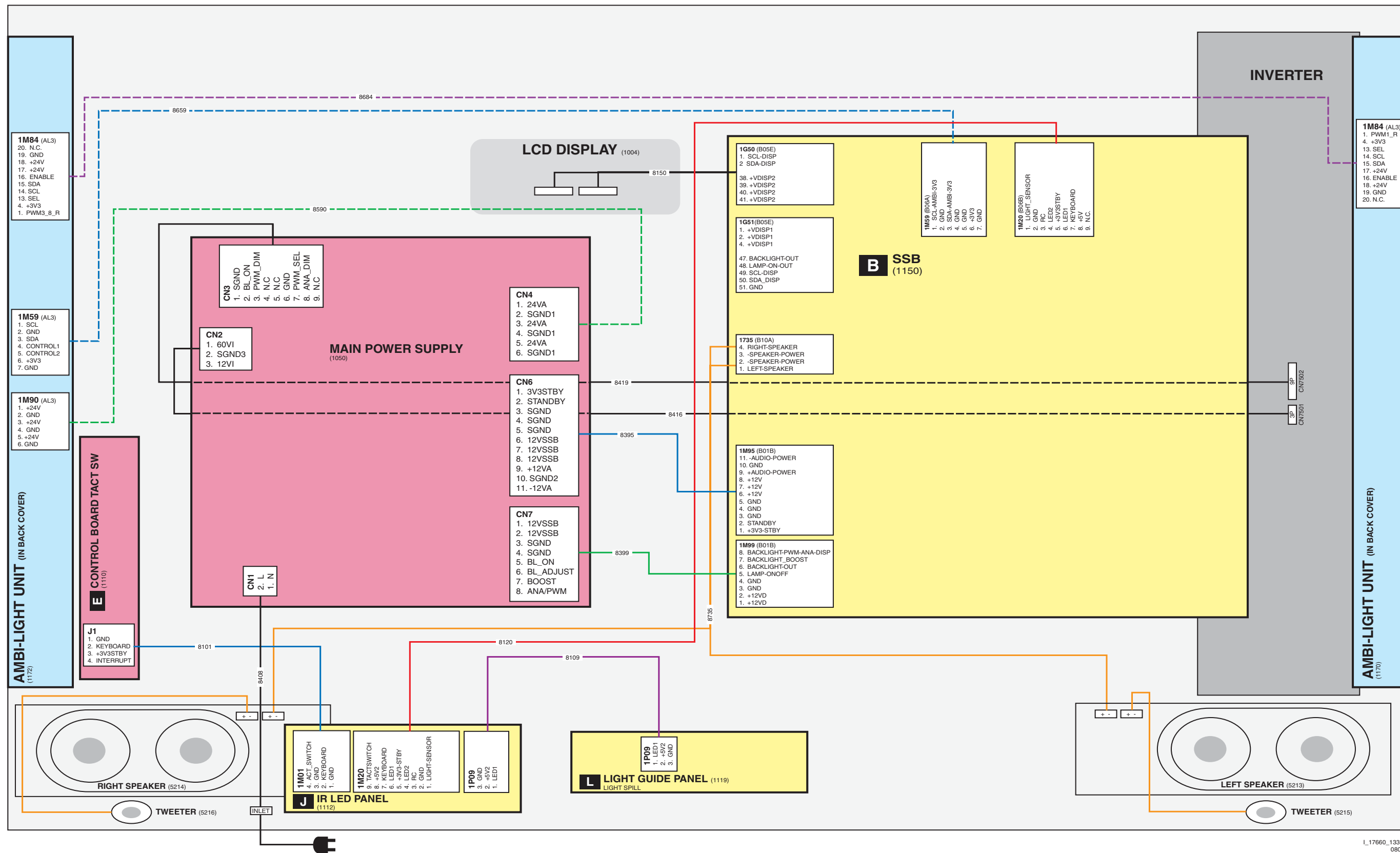
Wiring Diagram 32'' (ME8)

WIRING DIAGRAM 32'' (STYLING ME8)



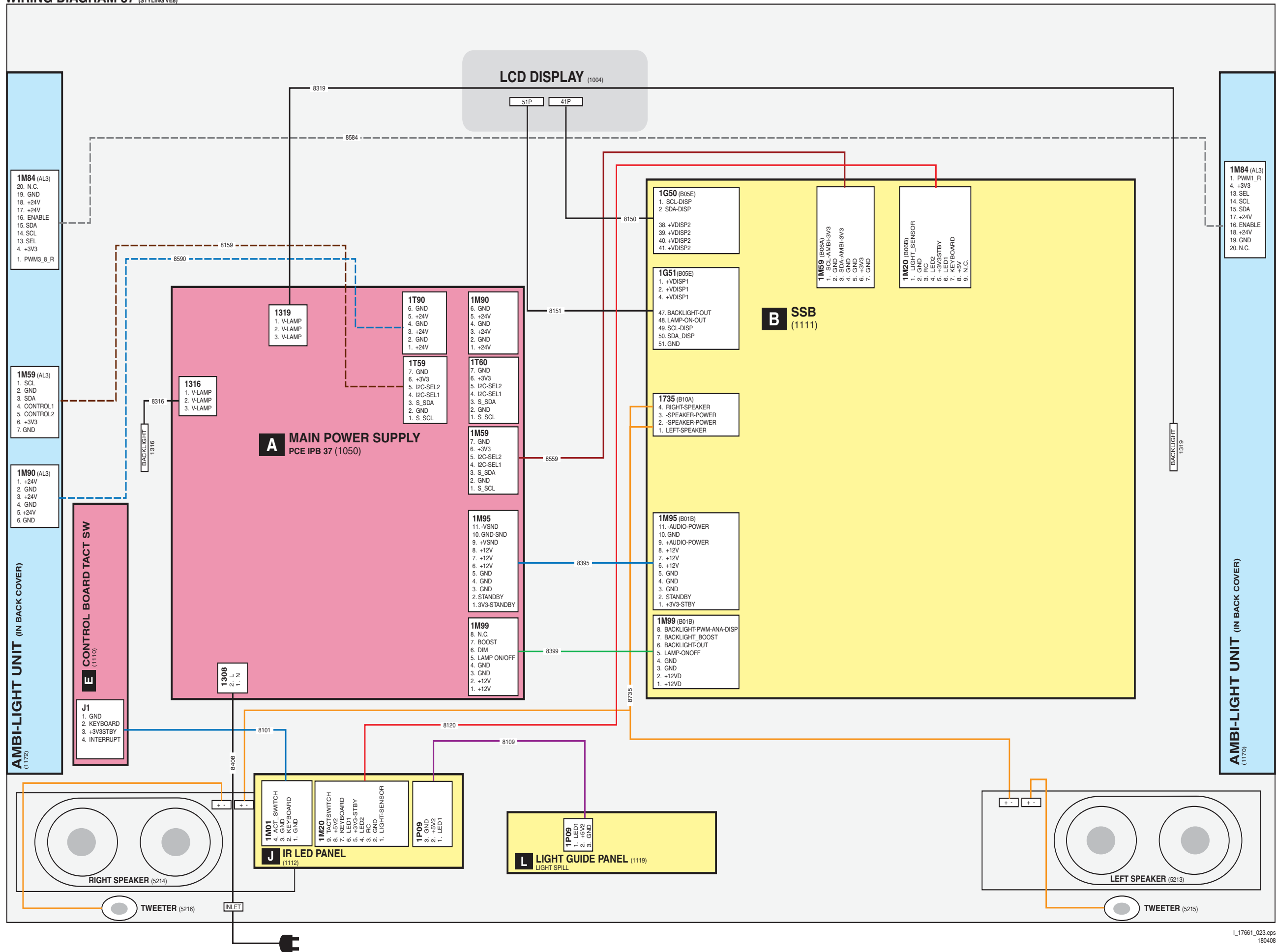
Wiring Diagram 32" (VE8)

WIRING DIAGRAM 32" (STYLING VE8)



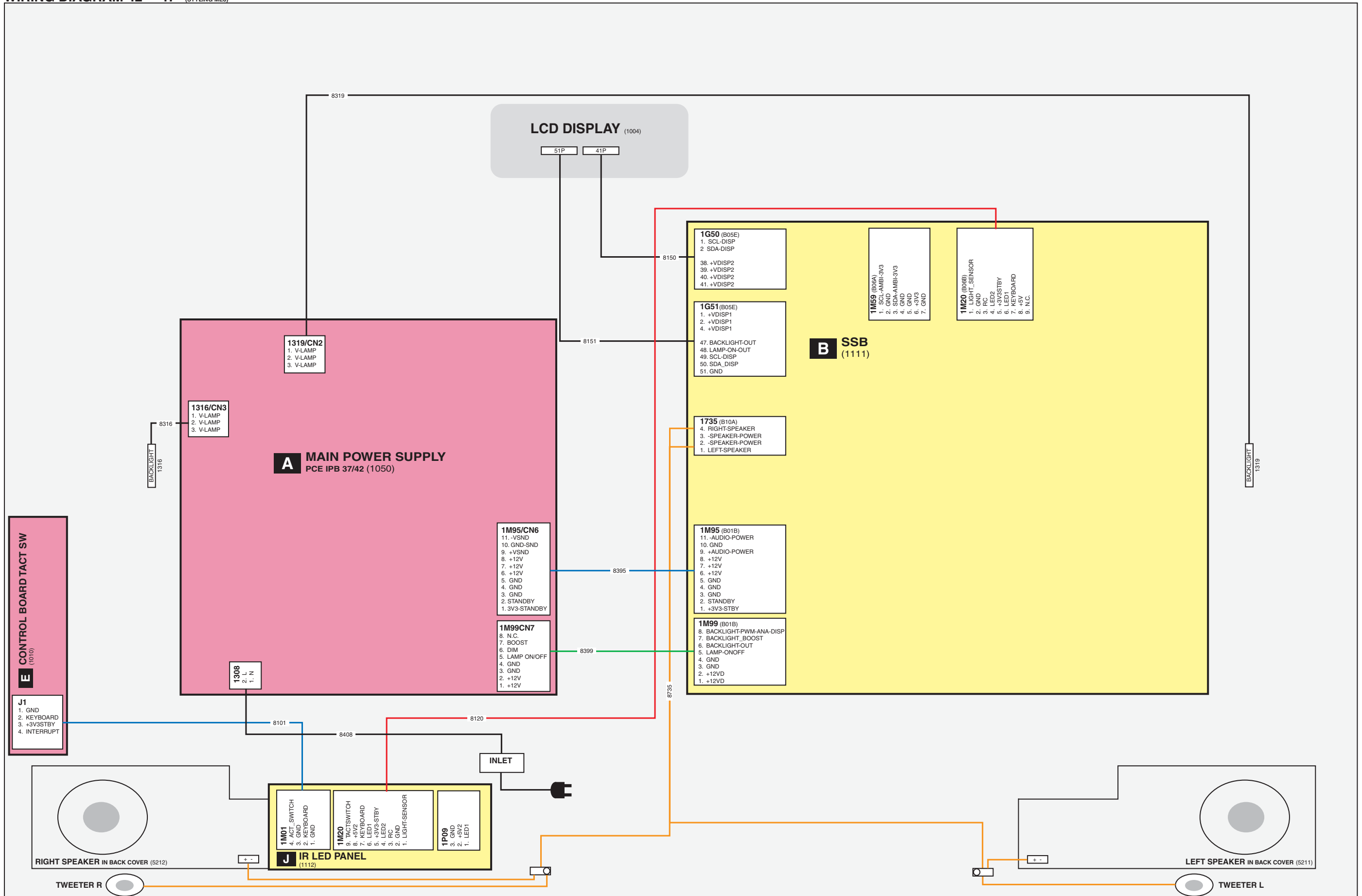
Wiring Diagram 37" (ME8)

WIRING DIAGRAM 37 (STYLING VE8)



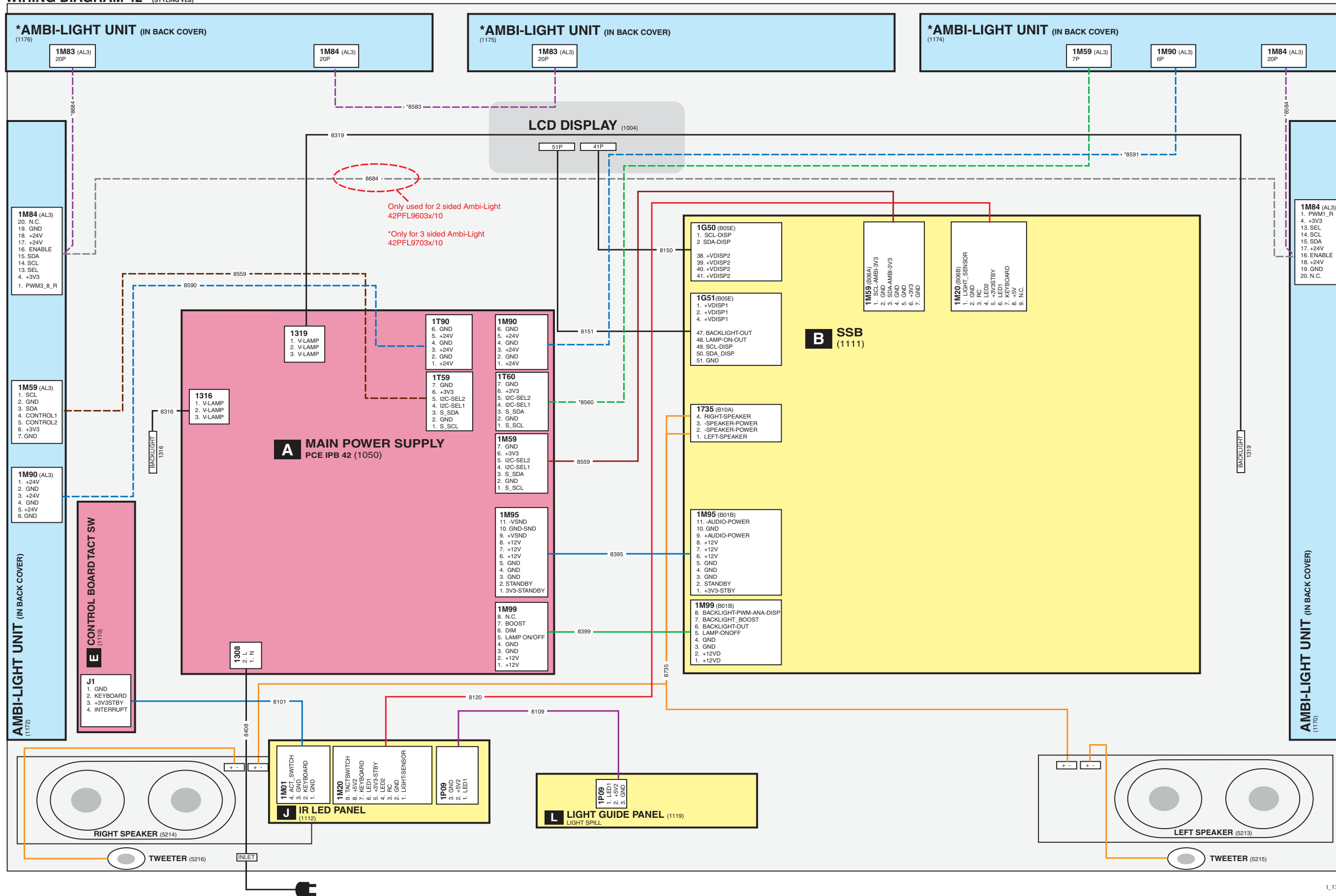
Wiring Diagram 42" + 47" (ME8)

WIRING DIAGRAM 42" - 47" (STYLING ME8)



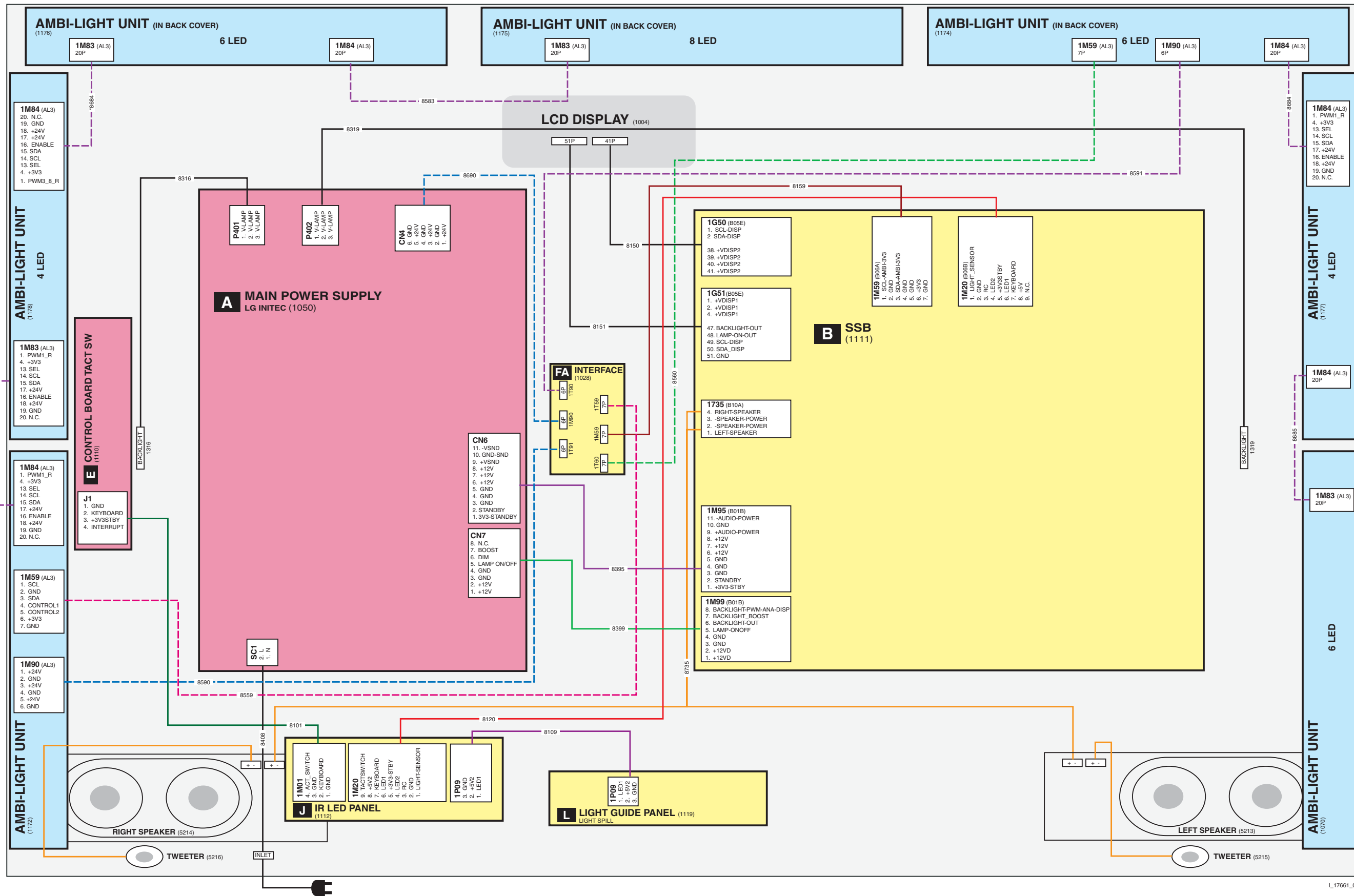
Wiring Diagram 42" (VE8)

WIRING DIAGRAM 42" (STYLING VE8)



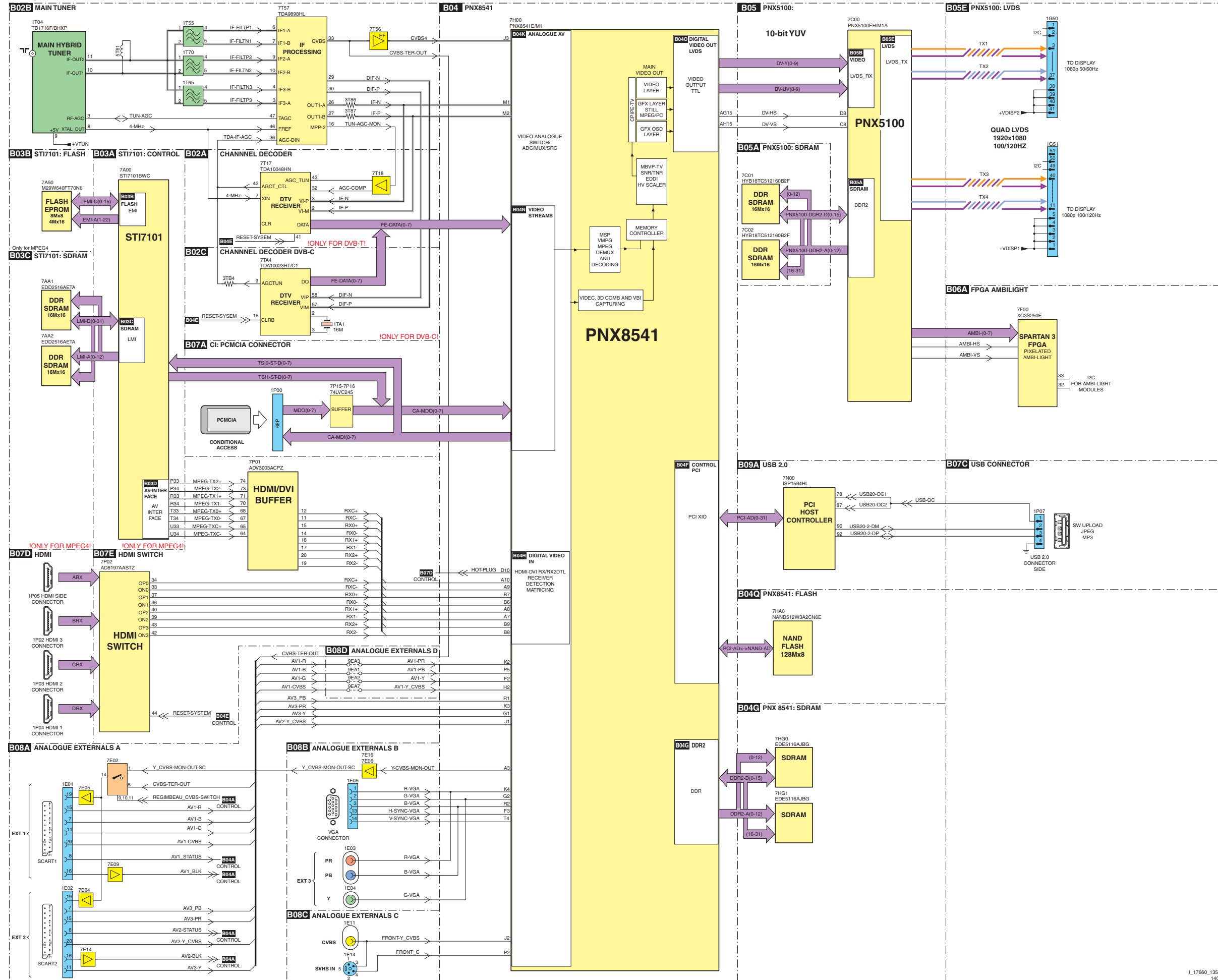
Wiring Diagram 47" (VE8)

WIRING DIAGRAM 47" (STYLING VE8)



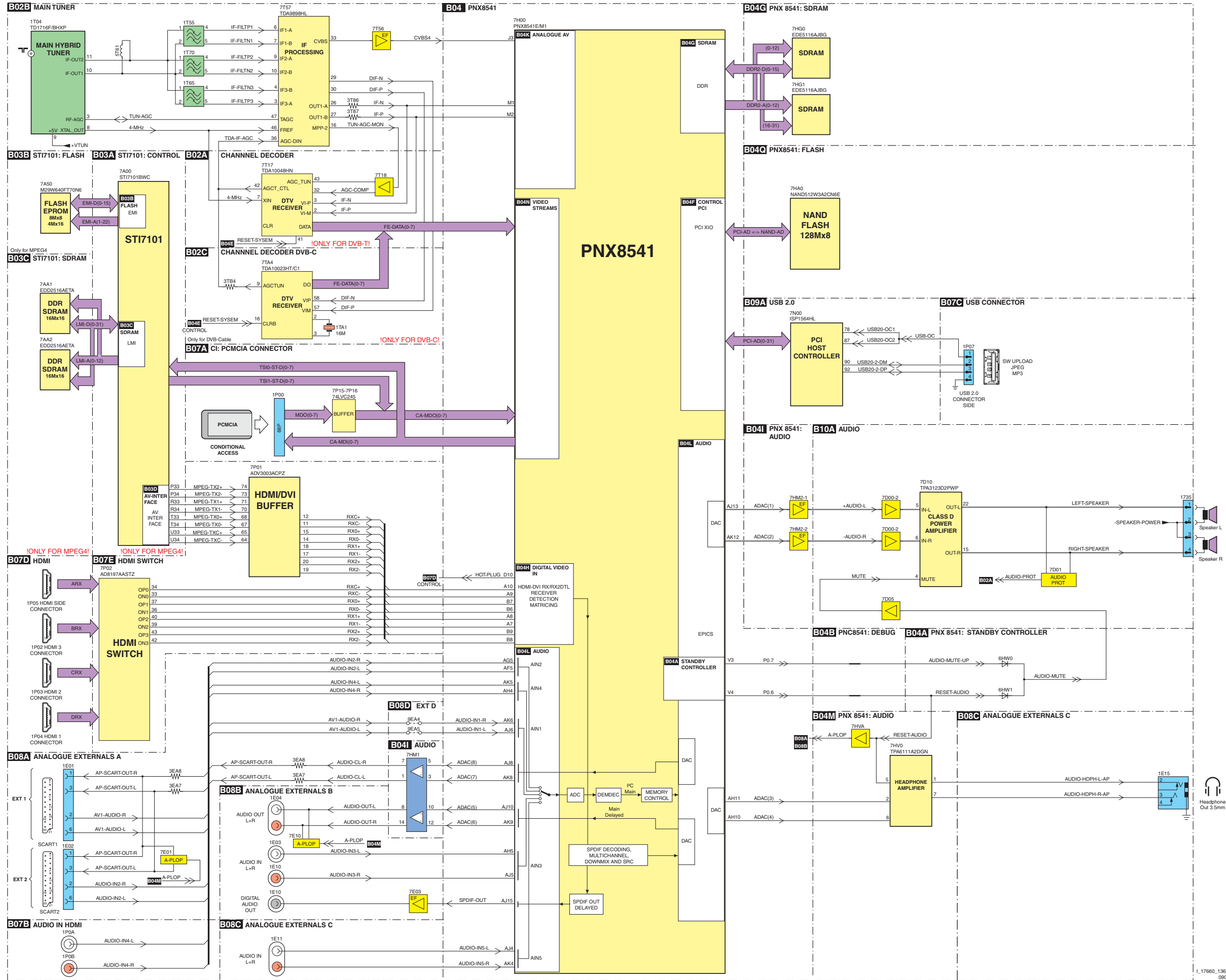
Block Diagram Video

VIDEO



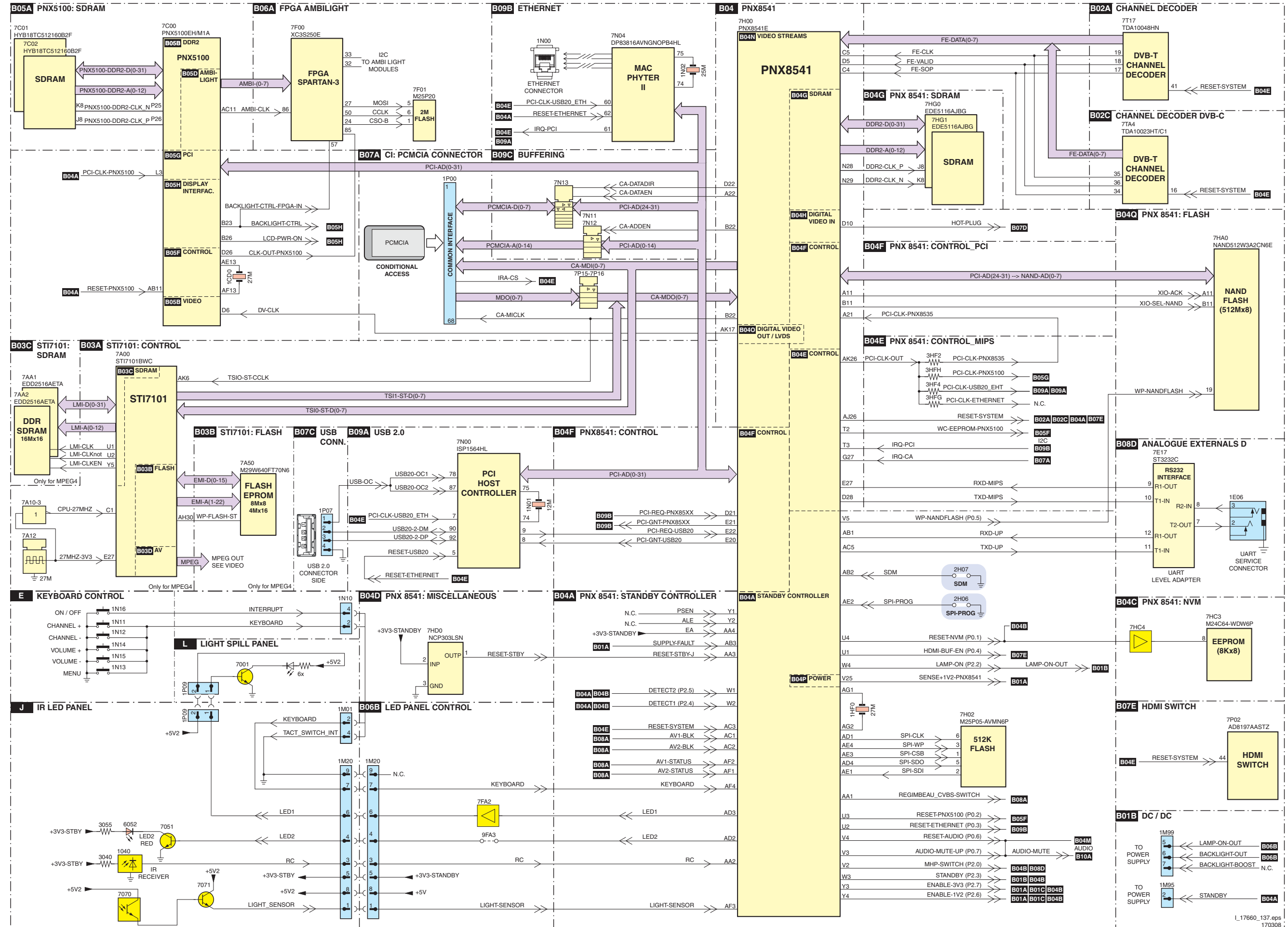
Block Diagram Audio

AUDIO



Block Diagram Control & Clock Signals

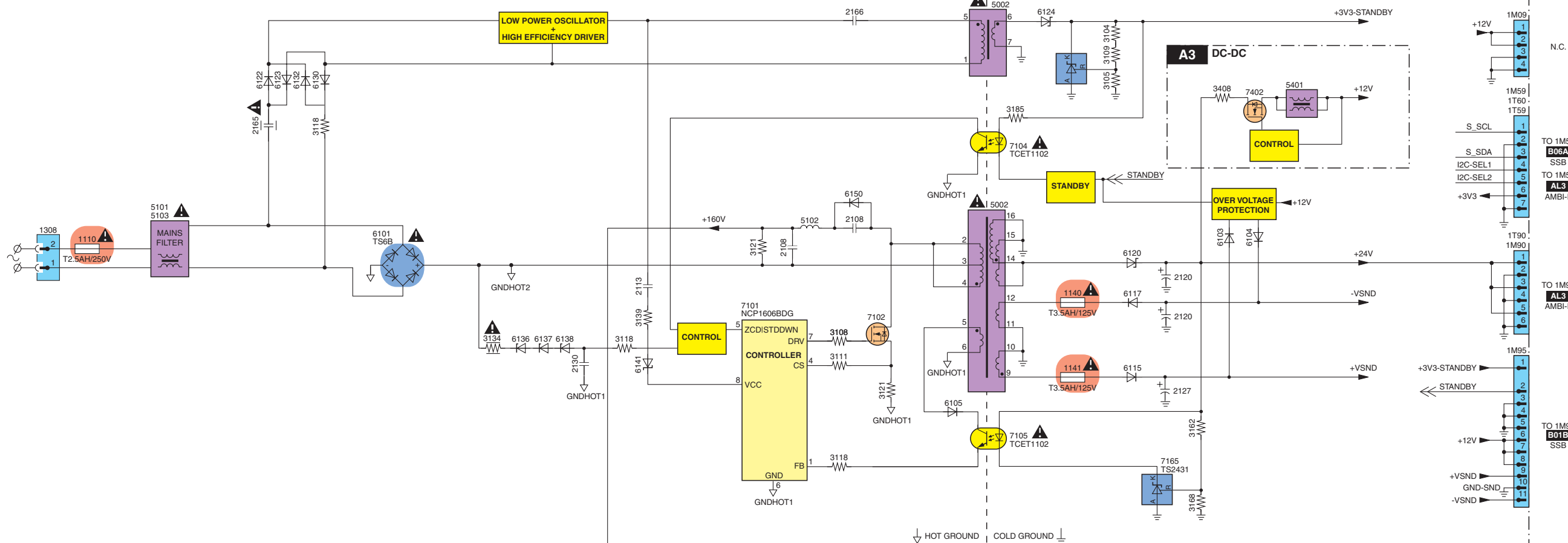
CONTROL + CLOCK SIGNALS



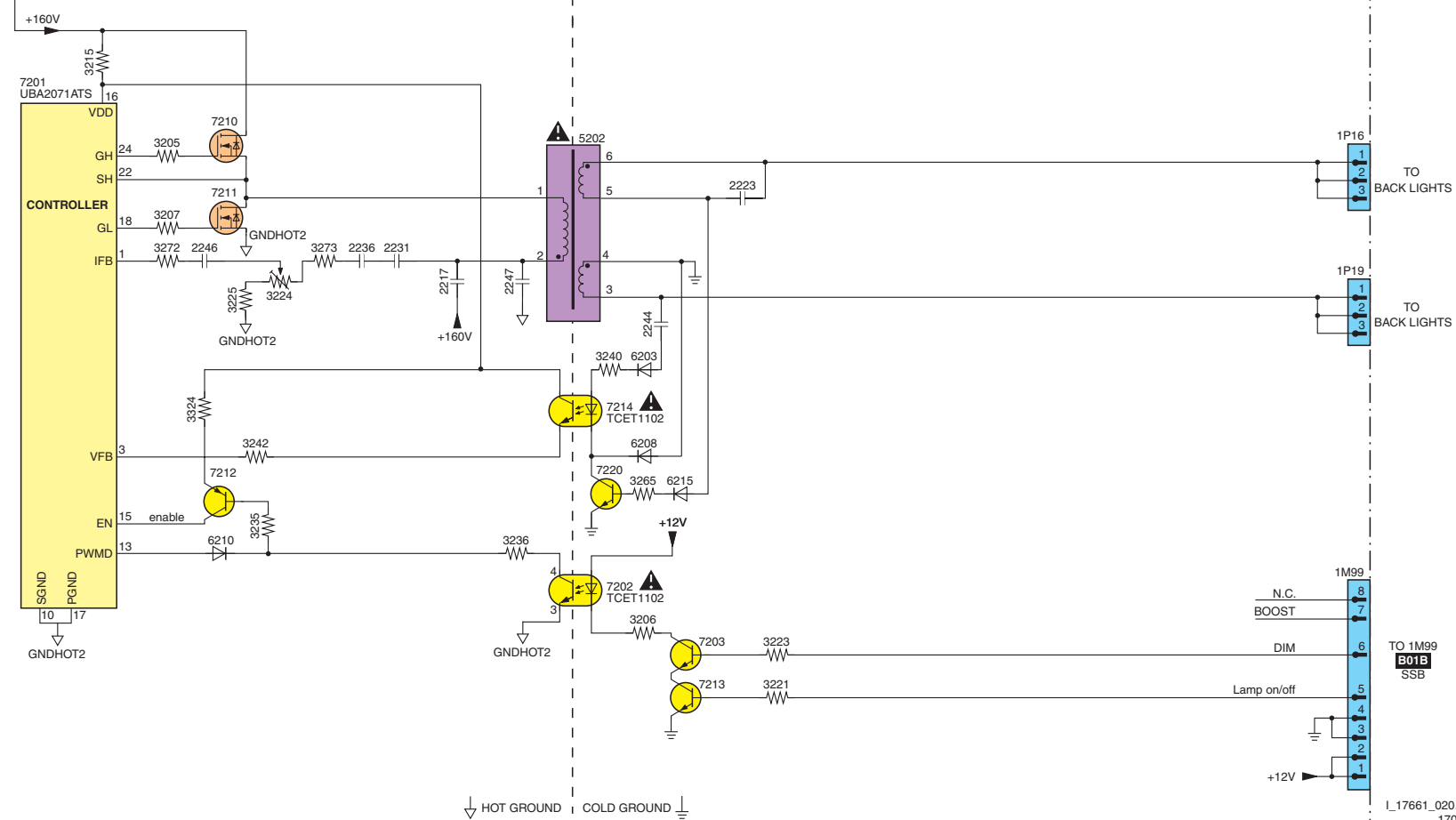
Block Diagram Main Display Supply (42")

MAIN DISPLAY SUPPLY

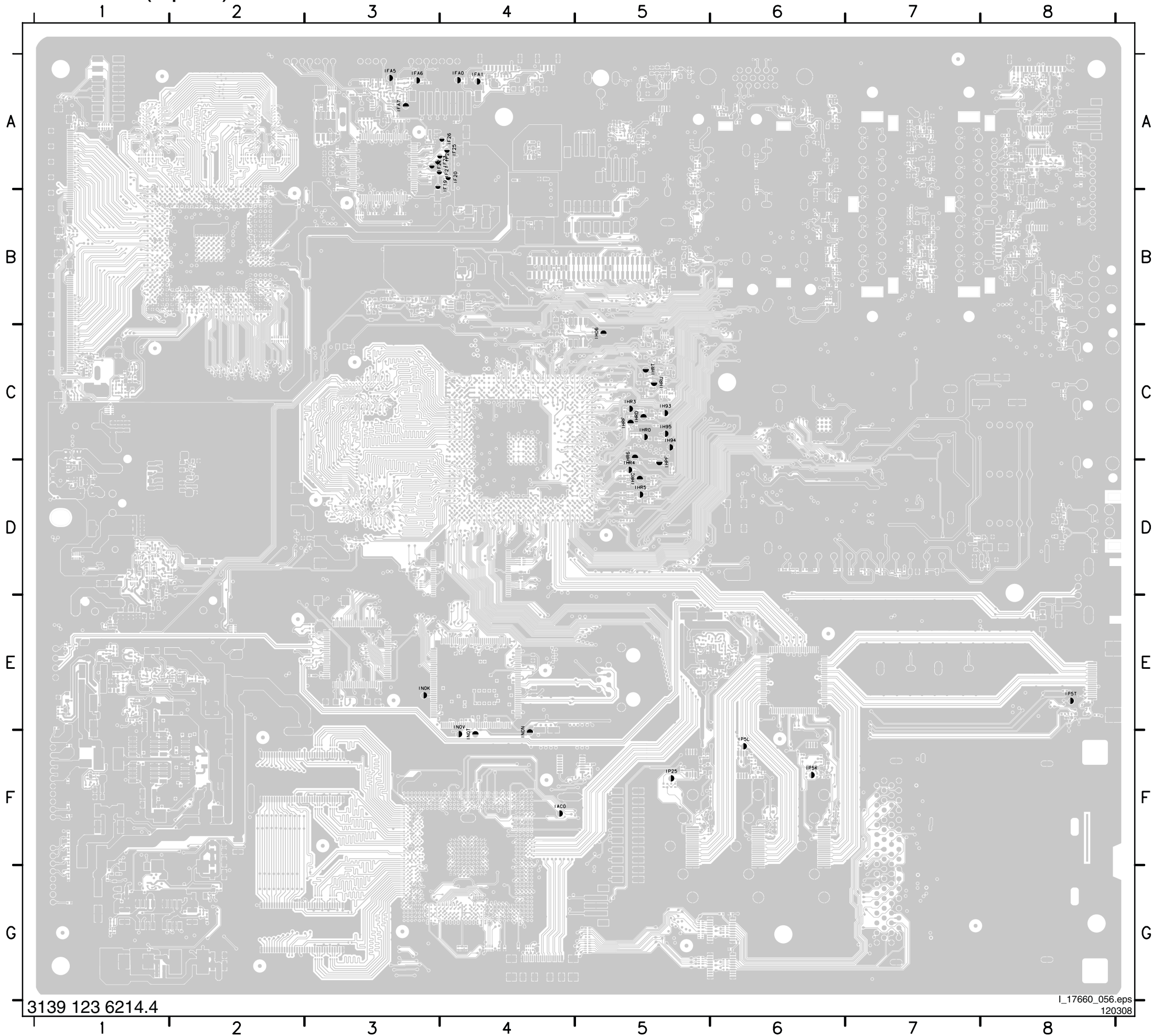
A1 STANDBY, MAINS FILTER, PFC+ AUX



A2 HIGH VOLTAGE INVERTOT

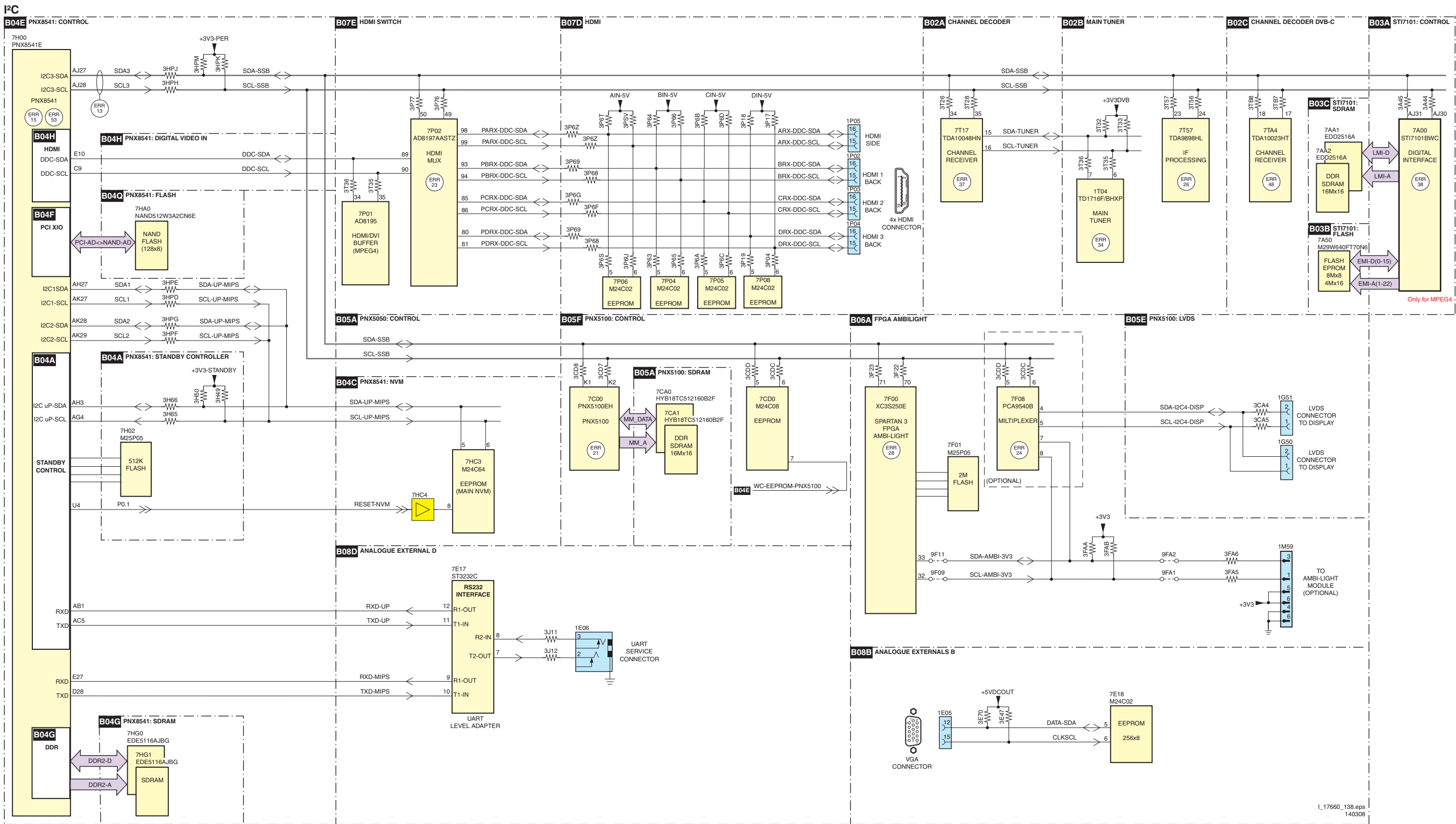


SSB: Test Points (Top Side)



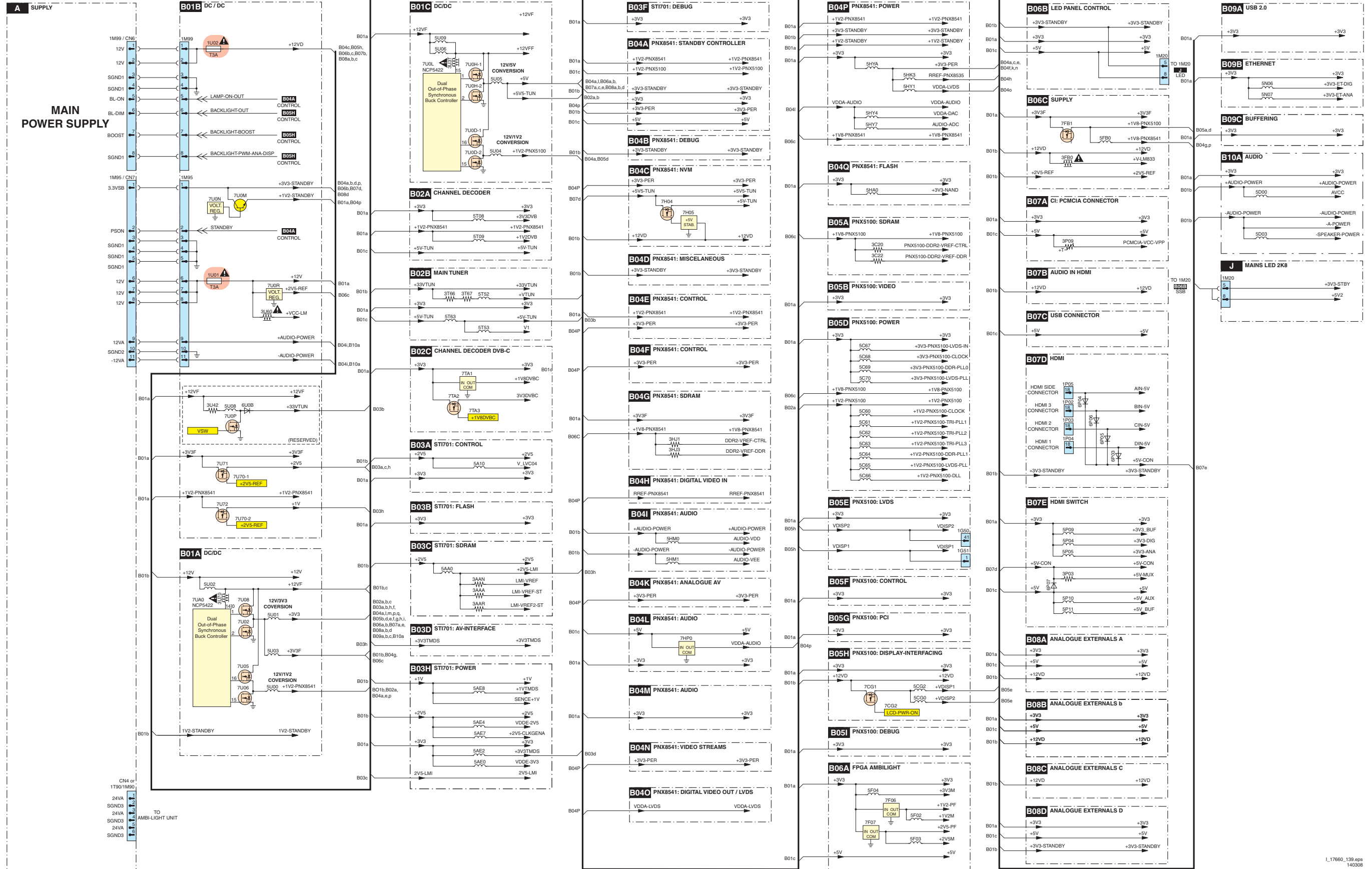
- I436 A4
- I641 A4
- I642 A4
- I643 A3
- I644 A3
- I645 A3
- I646 A3
- I647 F4
- I648 C5
- I649 C5
- I651 A3
- I659 C5
- I660 C5
- I661 C5
- I662 C5
- I663 C5
- I664 D5
- I665 A4
- IACO F4
- IACO F4
- IF19 A4
- IF20 A4
- IF20 A4
- IF21 A4
- IF22 A3
- IF23 A4
- IF24 A4
- IF25 A4
- IF26 A4
- IF26 A4
- IFA0 A4
- IFA0 A4
- IFA1 A4
- IFA5 A3
- IFA5 A3
- IFA6 A3
- IFA7 A3
- IFA7 A3
- IH06 C5
- IH06 C5
- IH93 C5
- IH94 C5
- IH95 C5
- IH95 C5
- IH95 C5
- IHPF D5
- IHPF D5
- IHR0 C5
- IHR3 C5
- IHR3 C5
- IHR3 C5
- IHR4 D5
- IHR4 D5
- IHR5 D5
- IHR5 D5
- IHR6 C5
- IHR6 C5
- IHR6 C5
- IHR6 C5
- IHR6 C5
- IHRD C5
- IHRD C5
- IHRF C5
- IHRT C5
- IHRU C5
- INOK E3
- INOK E3
- INON F4
- INON F4
- INON F4
- INOT F4
- INOV E4
- INOV F4
- IP25 F5
- IP25 F5
- IP5K F6
- IP5K F6
- IP5L F6
- IP5L F6
- IP5T E8
- IP5T E8

I2C IC Overview



Supply Lines Overview

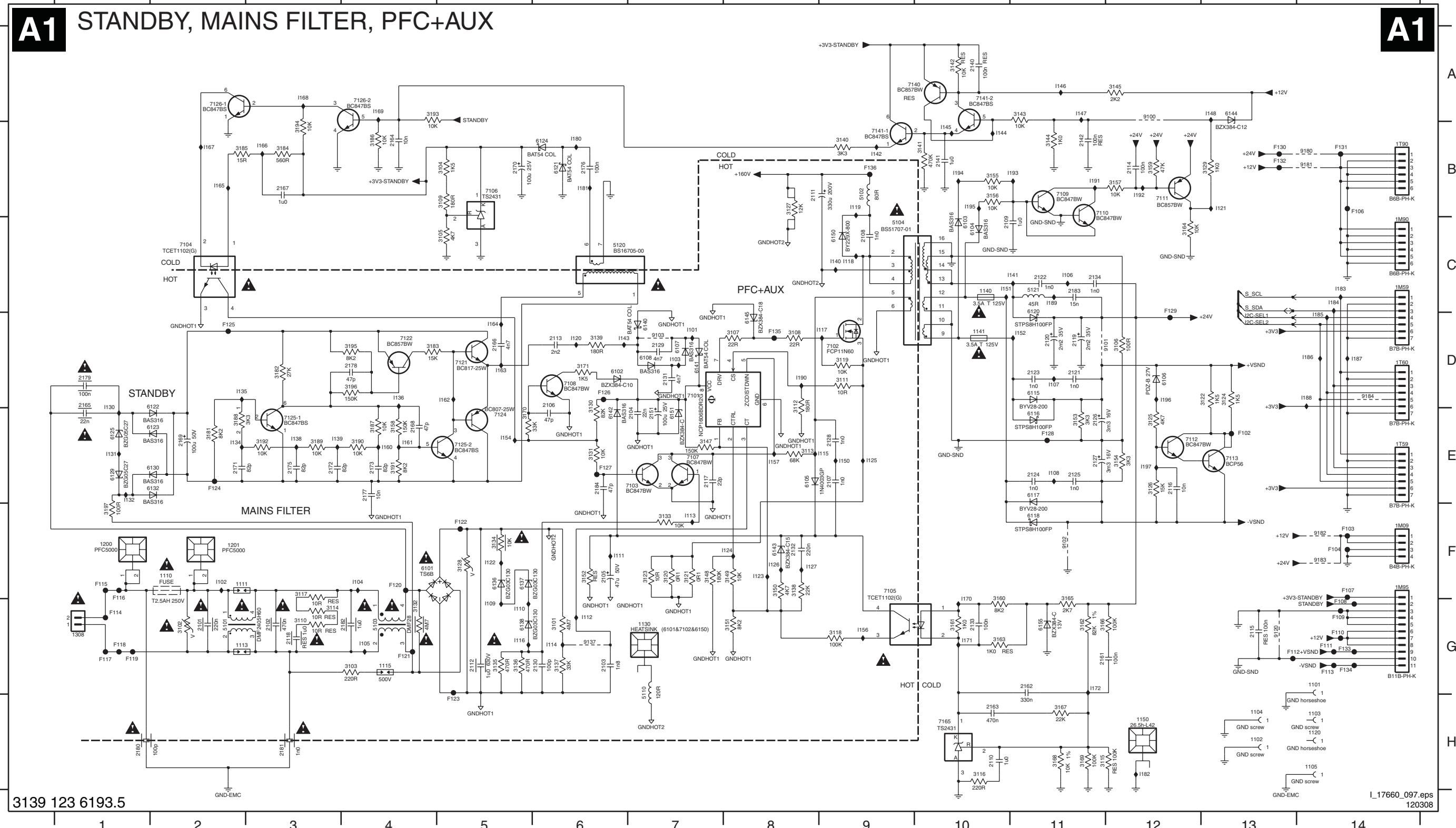
SUPPLY LINES OVERVIEW



7. Circuit Diagrams and PWB Layouts

Main Power Supply IPB 42: Stby, MF

1101 G14	1200 F1	2104 E7	2117 E7	2130 G6	2165 D1	2179 D1	3108 D8	3121 F7	3134 F5	3148 F7	3161 G10	3183 D4	3196 D4	6105 E8	6125 E1	6150 C9	7111 B12	7165 H10	F103 F14	F117 G1	F130 B13	I107 D11	I120 D6	I136 D4	I151 C10	I168 A3	I188 D14
1102 H13	1201 F2	2105 F6	2118 G3	2131 D7	2166 D5	2180 H1	3109 B5	3122 D13	3135 G5	3149 F8	3162 G11	3184 B3	3197 F1	6106 D12	6129 E1	6151 E7	7112 E12	7166 H11	F104 F14	F118 G1	F131 B14	I108 E11	I121 B13	I138 E3	I152 D11	I169 A4	I189 C11
1103 H14	1202 G1	2106 D6	2119 D11	2132 F8	2167 B3	2181 H3	3110 G3	3123 F7	3136 G5	3150 F8	3163 G10	3185 B2	3198 G2	6107 D7	6130 E2	6155 C11	7113 E13	7167 H12	F106 B14	F119 G1	F132 B13	I109 G5	I122 F5	I139 E3	I154 E5	I170 F10	I190 D8
1104 H13	1M09 F14	2107 E9	2120 D11	2133 G10	2168 E4	2182 G4	3111 D9	3124 D13	3137 G6	3151 G8	3164 G12	3186 B4	3199 B9	6108 D7	6132 E2	6157 D7	7114 D5	7168 H11	F107 F14	F120 F4	F133 G14	I110 G5	I123 F8	I140 C9	I156 G9	I171 G10	I191 B11
1105 H14	1M59 C14	2108 C9	2121 D11	2134 C11	2169 E2	2183 C11	3112 D8	3125 E12	3138 F8	3152 F6	3165 G11	3187 E4	3199 B9	6109 G4	6133 F5	6158 D7	7115 D6	7169 H12	F108 G14	F121 G4	F134 G14	I111 F6	I124 F8	I141 C11	I157 E8	I172 G11	I192 B12
1111 F2	1M90 C14	2109 C10	2122 C11	2140 A10	2170 B5	2184 E6	3113 E8	3126 E12	3139 D6	3153 E11	3166 G11	3188 E2	3199 B9	6110 G9	6134 F5	6159 D8	7116 D7	7170 H13	F109 G14	F122 F5	F135 D8	I112 G6	I125 E9	I142 B9	I160 E4	I180 B6	I193 B11
1113 G2	1M95 F14	2110 H10	2123 D11	2141 B10	2171 E2	2185 G2	3114 G3	3127 B8	3140 B9	3154 E12	3167 H11	3189 E3	3199 B9	6111 G7	6135 G5	6160 D12	7117 E12	7171 H14	F110 G14	F123 H5	F136 B9	I113 F7	I126 F8	I143 D6	I161 E4	I181 B6	I194 B10
1115 G4	1T59 E14	2111 B8	2124 E11	2142 B11	2172 E3	2186 G2	3115 H11	3128 F5	3141 B10	3155 B10	3168 H11	3190 E4	3199 B9	6112 C11	6136 G5	6161 D7	7118 E12	7172 H14	F111 G14	F124 E2	I101 D7	I114 G6	I127 F8	I144 B10	I162 D5	I182 H12	I195 B10
1120 H14	1T60 D14	2112 G5	2125 E11	2151 E7	2173 E4	2187 G3	3116 H10	3129 B13	3142 A10	3156 B10	3169 H11	3191 E4	3199 B9	6113 D11	6137 F5	6162 D7	7119 E12	7173 H14	F112 G13	F125 D2	I102 F2	I115 E9	I130 D1	I145 B10	I163 D5	I183 C14	I196 D12
1130 G7	1T90 B14	2113 D6	2126 E11	2161 G11	2175 E3	2189 G2	3117 F3	3130 D6	3143 A11	3157 B12	3170 E5	3192 G3	3199 B9	6114 D7	6138 G5	6163 E2	7120 E12	7174 H14	F113 G14	F126 D6	I103 D7	I116 G5	I131 E1	I146 A11	I164 D5	I184 C14	I197 E12
1140 C10	2101 G2	2114 B12	2127 E11	2162 G11	2176 B6	2190 G2	3118 G9	3131 E6	3144 B11	3158 E4	3171 D6	3193 A4	3199 B9	6115 D7	6139 A4	6164 F8	7121 E12	7175 H14	F114 G1	F127 E6	I104 F4	I117 D9	I132 E1	I147 A11	I165 B2	I185 D14	I198 D12
1141 D10	2102 G3	2115 G13	2128 E9	2163 H10	2177 E4	2191 G2	3119 D9	3132 G4	3145 A12	3159 B12	3181 E2	3194 B3	3199 B9	6116 G10	6140 A13	6165 D8	7122 E12	7176 H14	F115 F1	F128 E11	I105 G4	I118 C9	I134 E2	I148 A13	I166 B3	I186 D14	I199 E12
1150 H12	2103 G6	2116 E12	2129 D7	2164 B4	2178 D4	2192 D8	3120 F7	3133 F7	3147 E7	3160 G10	3182 D3	3195 D4	3199 B9	6117 B11	6141 D13	6166 D8	7123 E12	7177 H14	F116 G1	F129 D12	I106 C11	I119 B9	I135 D2	I149 A13	I167 B2	I187 D14	I200 E12

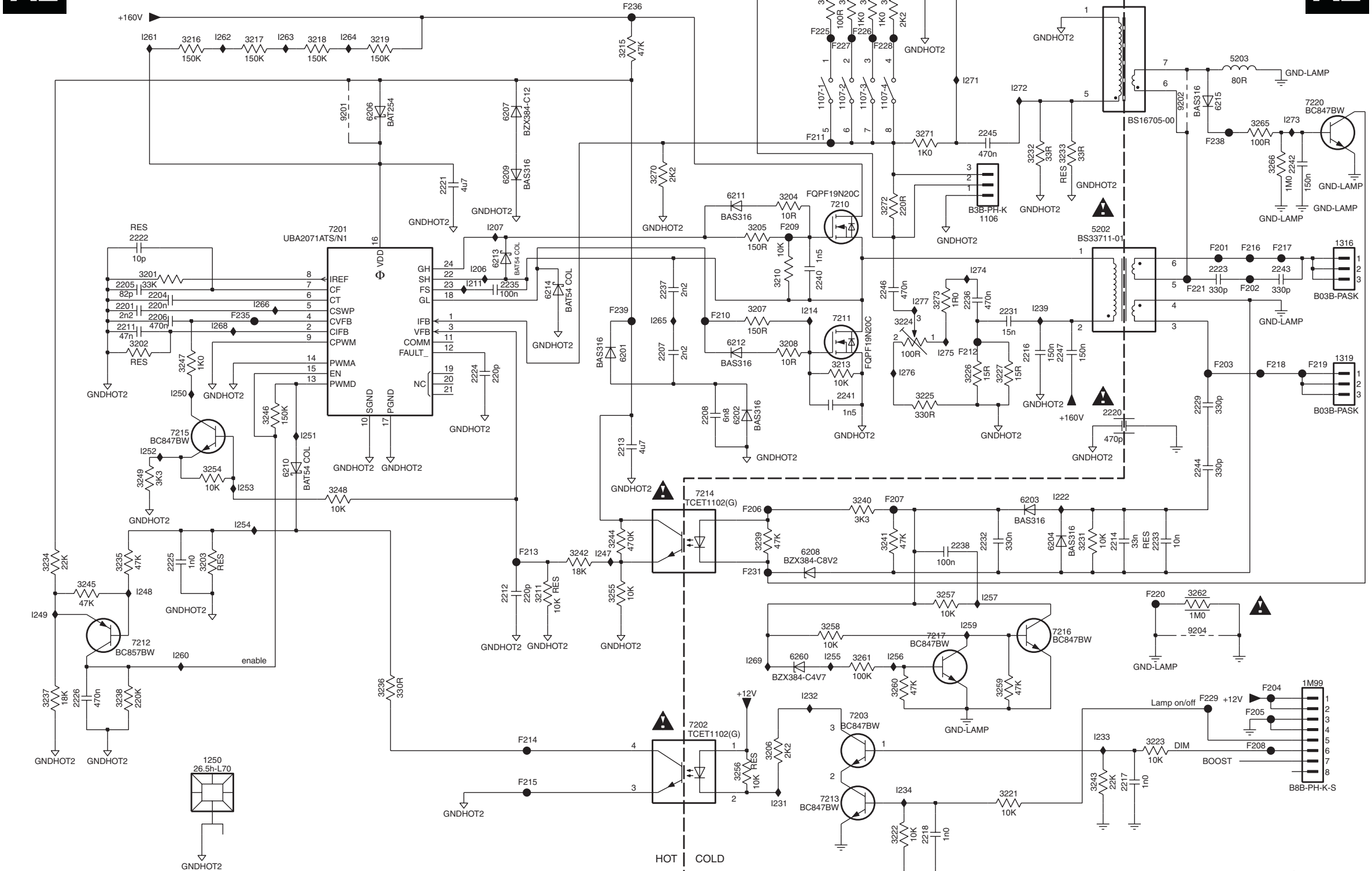


3139 123 6193.5

I_17660_097.eps 120308

Main Power Supply IPB 42: HV Inverter

A2 HIGH VOLTAGE INVERTER



1106 B7	3246 C2	F235 C2
1107-1 A6	3247 C2	F236 A5
1107-2 A6	3248 D3	F238 B9
1107-3 A6	3249 D1	F239 C5
1107-4 A6	3250 A6	I206 B4
1250 F2	3251 A6	I207 B4
1316 B9	3252 A6	I211 C4
1319 C9	3253 A6	I214 C6
1M99 E9	3254 D2	I222 D8
2201 C1	3255 E5	I231 F6
2204 C1	3256 F5	I232 E6
2205 C1	3257 E7	I233 F8
2206 C1	3258 E6	I234 F6
2207 C5	3259 E7	I239 C7
2208 C5	3260 E6	I247 D4
2211 C1	3261 E6	I248 E1
2212 E4	3262 E8	I249 E1
2213 D5	3265 A9	I250 C2
2214 D8	3266 B9	I251 D2
2216 C7	3270 B5	I252 D1
2218 F7	3271 B7	I253 D2
2219 C8	3272 B6	I254 D2
2220 C7	3273 C7	I255 E6
2221 B3	5201 A8	I256 E6
2222 B1	5202 B8	I257 E7
2223 B9	5203 A9	I259 E7
2224 C4	6201 C5	I260 E2
2225 D2	6202 C5	I261 A1
2226 E1	6203 D7	I262 A2
2229 C9	6204 D8	I263 A2
2231 C7	6206 A3	I264 A3
2232 D7	6207 A4	I265 C5
2233 D8	6208 D6	I266 C2
2235 C4	6209 B4	I268 C2
2236 C7	6210 D2	I269 E5
2237 C5	6211 B5	I271 A7
2238 D7	6212 C5	I272 A7
2240 C6	6213 B4	I273 A9
2241 C6	6214 C4	I274 B7
2242 B9	6215 A9	I275 C7
2243 B9	6260 E6	I276 C7
2244 D9	7201 B3	I277 C7
2245 B7	7202 F5	
2246 C6	7203 E6	
2247 C8	7210 B6	
3201 B1	7211 C6	
3202 C1	7212 E1	
3203 D2	7213 F6	
3204 B6	7214 D5	
3205 B5	7215 D2	
3206 F6	7216 E7	
3207 C5	7217 E7	
3208 C6	7220 A9	
3210 B6	9201 A3	
3211 E4	9202 A8	
3213 C6	9204 E8	
3215 A5	F201 B9	
3216 A2	F202 C9	
3217 A2	F203 C9	
3218 A2	F204 E9	
3219 A3	F205 E9	
3221 F7	F206 D5	
3222 F6	F207 D6	
3223 F8	F208 F9	
3224 C6	F209 B6	
3225 C7	F210 C5	
3226 C7	F211 B6	
3227 C7	F212 C7	
3231 D8	F213 D4	
3232 B7	F214 F4	
3233 B8	F215 F4	
3234 D1	F216 B9	
3235 D1	F217 B9	
3236 E3	F218 C9	
3237 E1	F219 C9	
3238 E1	F220 E8	
3239 D6	F221 C8	
3240 D6	F225 A6	
3241 D6	F226 A6	
3242 D4	F227 A6	
3243 F8	F228 A6	
3244 D5	F229 E9	
3245 E1	F231 E5	

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Main Power Supply IPB 42: DC / DC

A3 DC-DC

A3

A

B

C

D

E

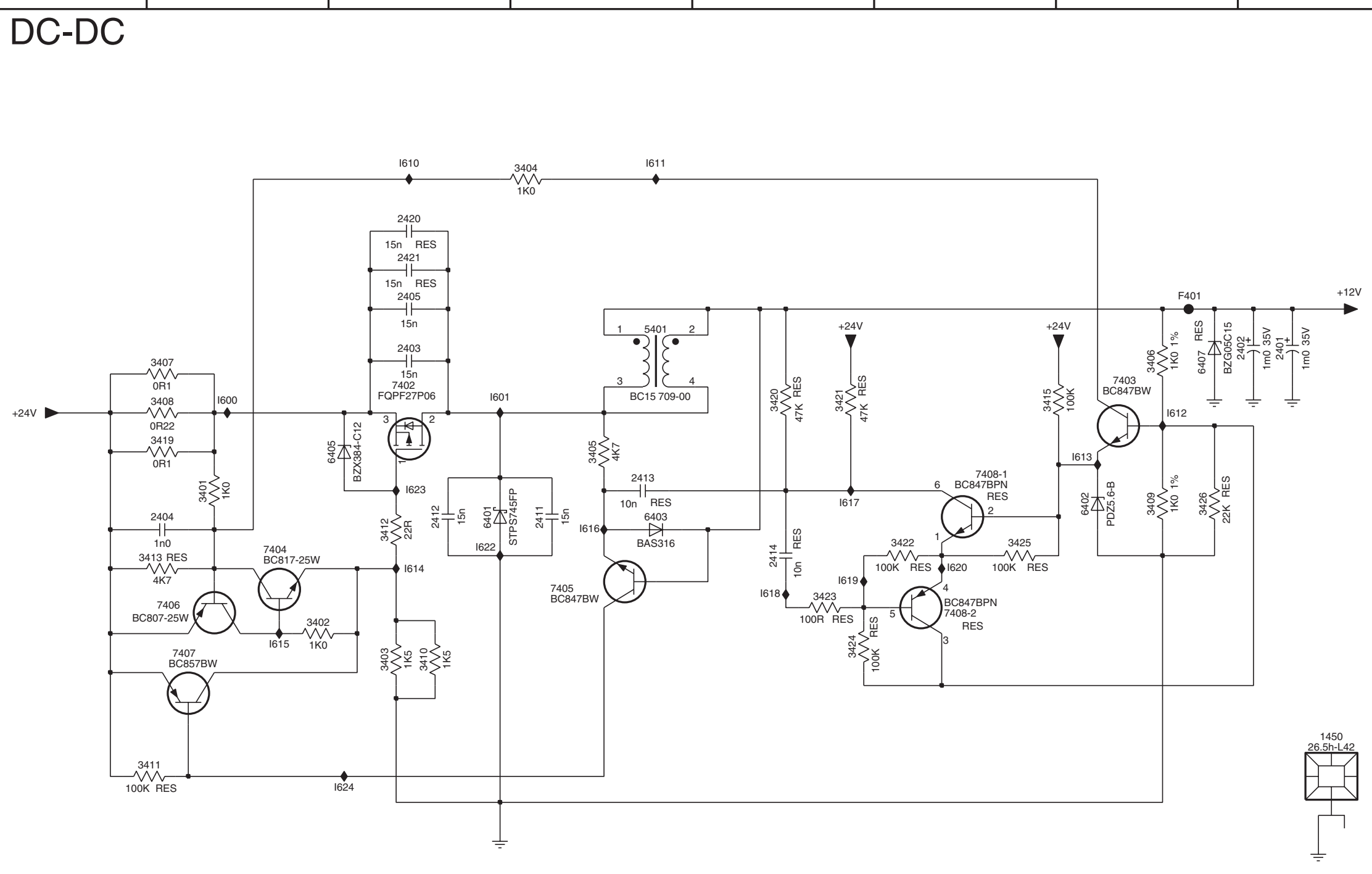
A

B

C

D

E

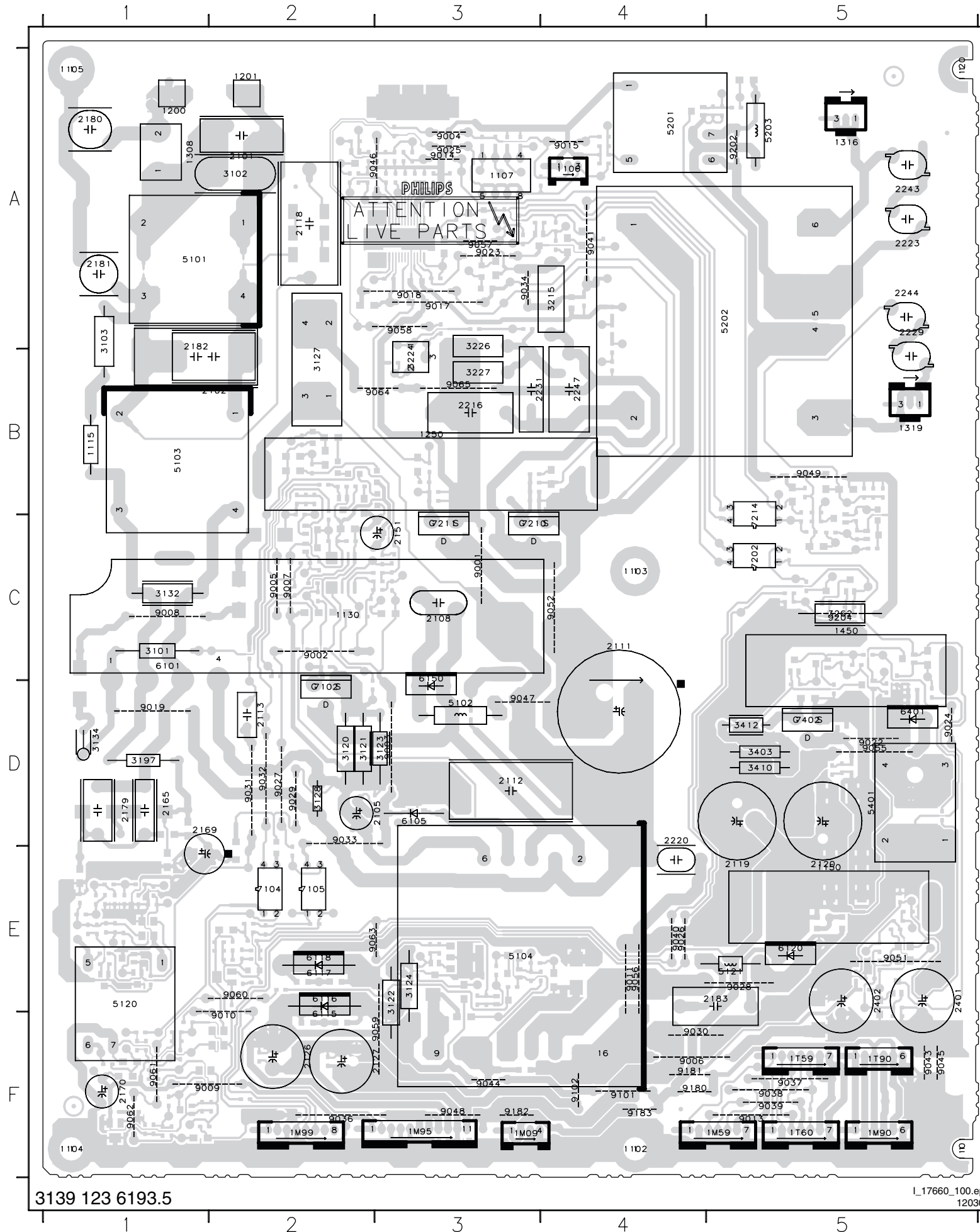


- 1450 D8
- 2401 B8
- 2402 B8
- 2403 B3
- 2404 C2
- 2405 B3
- 2411 C4
- 2412 C3
- 2413 C4
- 2414 C5
- 2420 B3
- 2421 B3
- 3401 C2
- 3402 D2
- 3403 D3
- 3404 A4
- 3405 C4
- 3406 B7
- 3407 B2
- 3408 C2
- 3409 C7
- 3410 D3
- 3411 E2
- 3412 C3
- 3413 C2
- 3415 B6
- 3419 C2
- 3420 B5
- 3421 B5
- 3422 C6
- 3423 D5
- 3424 D5
- 3425 C6
- 3426 C7
- 5401 B4
- 6401 C3
- 6402 C7
- 6403 C4
- 6405 C3
- 6407 B7
- 7402 B3
- 7403 B7
- 7404 C2
- 7405 D4
- 7406 D2
- 7407 D2
- 7408-1 C6
- 7408-2 D6
- F401 B7
- I600 B2
- I601 B3
- I610 A3
- I611 A4
- I612 C7
- I613 C7
- I614 C3
- I615 D2
- I616 C4
- I617 C5
- I618 D5
- I619 C5
- I620 C6
- I622 C3
- I623 C3
- I624 E3

3139 123 6193.5

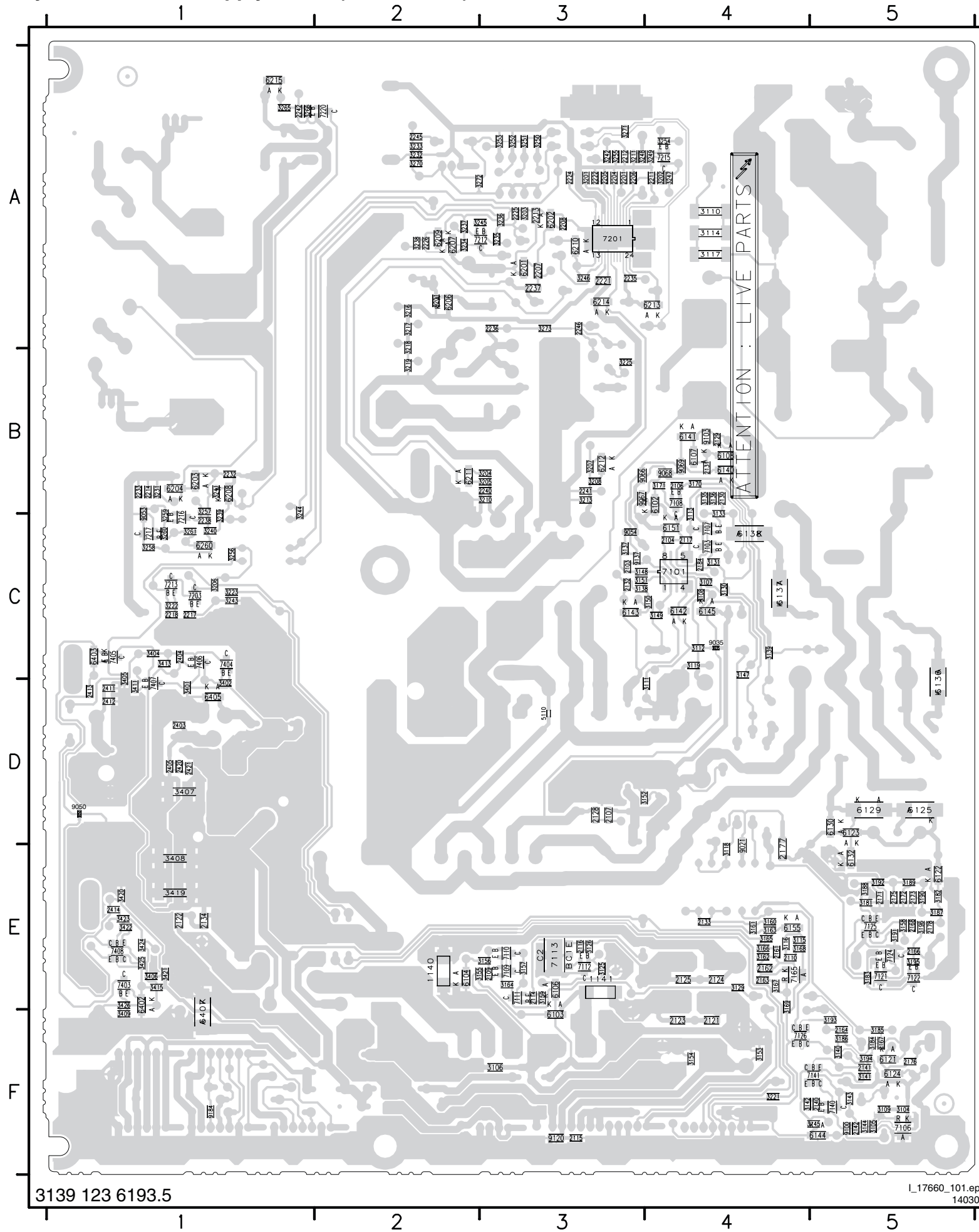
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Layout Main Power Supply IPB 42 (Top Side)



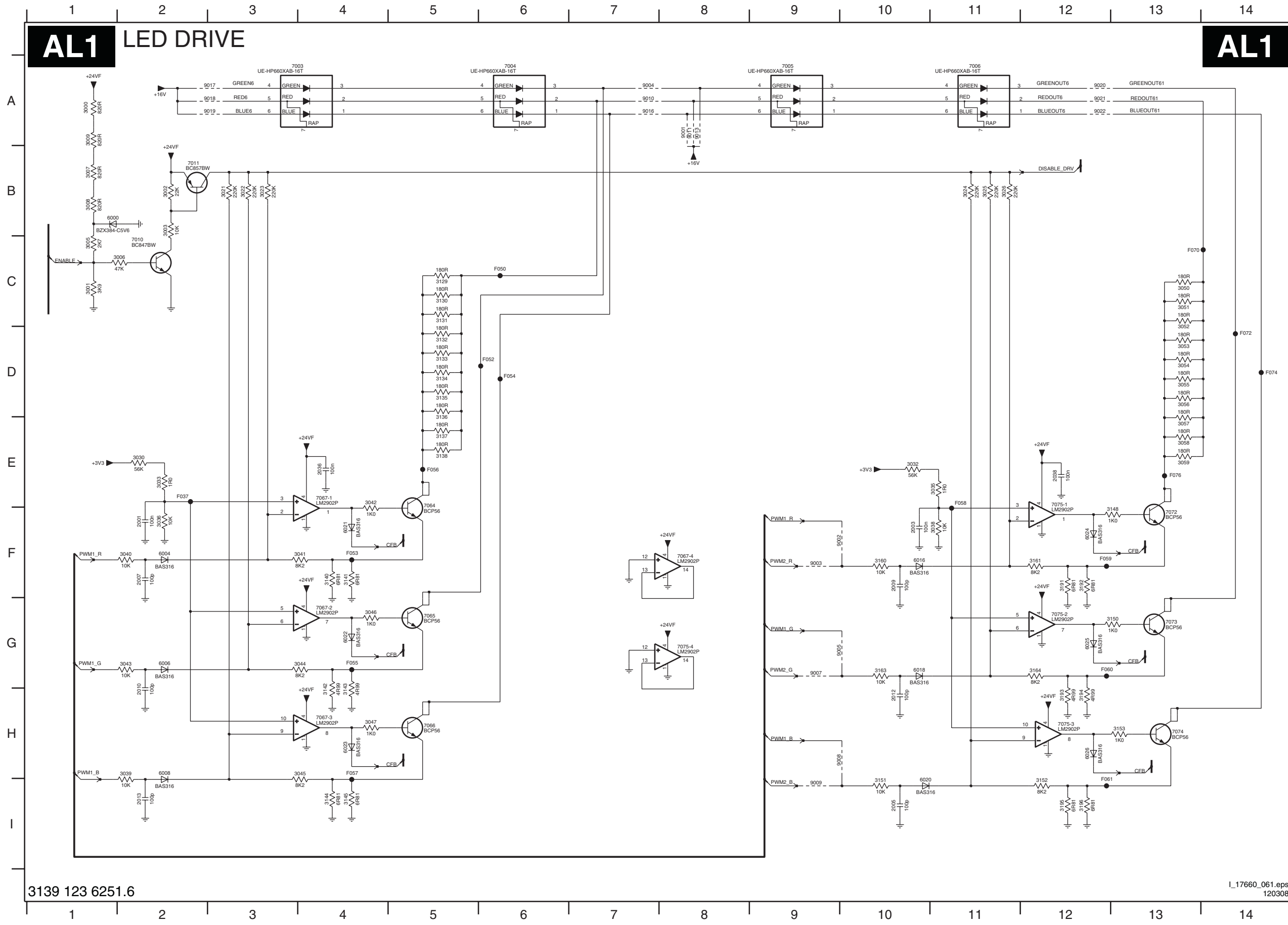
1101	F5	3262	C5	9051	E5
1102	F4	3403	D5	9052	C4
1103	C4	3410	D5	9055	D5
1104	F1	3412	D5	9056	E4
1105	A1	5101	A1	9057	A3
1106	A4	5102	D3	9058	A3
1107	A3	5103	C2	9059	F2
1115	B1	5104	E3	9060	E2
1120	A5	5120	F1	9061	F1
1130	C2	5121	E5	9062	F1
1150	E5	5201	A5	9063	E2
1200	A1	5202	A5	9064	B3
1201	A2	5203	A5	9065	B3
1250	B3	5401	D5	9101	F4
1308	A1	6101	D2	9102	F4
1316	A5	6105	D3	9180	F4
1319	B5	6115	F2	9181	F4
1450	C5	6116	F2	9182	F3
1M09	F4	6117	E2	9183	F4
1M59	F5	6118	E2	9202	A5
1M90	F5	6120	E5	9204	C5
1M95	F3	6150	D3		
1M99	F2	6401	D5		
1T59	F5	7102	D2		
1T60	F5	7104	E2		
1T90	F5	7105	E2		
2101	A2	7202	C5		
2102	B1	7210	C4		
2105	D3	7211	C3		
2108	C3	7214	B5		
2111	C4	7402	D5		
2112	D3	9001	C3		
2113	D2	9002	C2		
2118	A2	9003	D3		
2119	D5	9004	A3		
2120	D5	9005	C2		
2126	F2	9006	F5		
2127	F3	9007	C2		
2151	C3	9008	C1		
2169	D1	9010	F2		
2170	F1	9011	E4		
2179	E1	9013	F5		
2180	A1	9014	A3		
2181	A1	9015	A4		
2182	B1	9017	A3		
2183	E5	9018	A3		
2216	B3	9019	D1		
2220	E4	9022	D5		
2223	A5	9023	A3		
2229	A5	9024	D5		
2231	A3	9025	A3		
2243	A5	9026	E4		
2244	A5	9027	D2		
2401	E5	9029	D2		
2402	E5	9030	F4		
3101	C1	9031	D2		
3102	A1	9032	D2		
3103	B1	9033	E2		
3120	D2	9034	A3		
3121	D2	9036	F2		
3122	F3	9037	F5		
3123	D3	9038	F5		
3124	E3	9039	F5		
3127	B2	9040	E4		
3128	D2	9041	A4		
3132	C1	9043	F5		
3134	D1	9044	F3		
3197	D1	9045	F5		
3215	A4	9046	A3		
3224	A3	9047	D3		
3226	A3	9048	F3		
3227	B3	9049	B5		

Layout Main Power Supply IPB 42 (Bottom Side)



1140	E2	2412	D1	3192	E5	3421	E1	7216	C1
1141	F3	2413	D1	3193	F5	3422	E1	7217	C1
2103	C3	2414	E1	3194	F5	3423	E1	7220	A2
2104	C4	2420	D1	3195	E5	3424	E1	7403	E1
2106	B4	2421	D1	3196	E5	3425	E1	7404	C1
2107	D3	3104	F5	3201	A3	3426	E1	7405	C1
2109	E3	3105	F5	3202	A4	5110	D3	7406	C1
2110	E4	3106	F3	3203	A3	6102	B4	7407	D1
2114	E3	3107	C4	3204	B3	6103	F3	7408	E1
2115	F3	3108	C4	3205	B3	6104	E2	9021	E4
2116	E3	3109	F5	3206	C1	6106	E3	9035	C4
2117	C4	3110	A4	3207	B3	6107	B4	9050	D1
2121	F4	3111	D4	3208	B3	6108	B4	9053	C1
2122	E1	3112	C4	3210	B3	6121	F5	9054	C3
2123	F4	3113	C4	3211	A3	6122	E5	9066	B3
2124	E4	3114	A4	3213	B3	6123	D5	9067	B3
2125	E4	3115	E4	3216	A2	6124	F5	9068	B4
2128	D3	3116	E4	3217	A2	6125	D5	9069	B4
2129	B4	3117	A4	3218	A2	6129	D5	9100	F5
2130	B4	3118	E4	3219	B2	6130	D5	9103	B4
2131	B4	3119	C4	3221	F4	6132	E5	9120	F3
2132	C3	3125	E3	3222	C1	6136	D5	9137	C3
2133	E4	3126	E3	3223	C1	6137	C4	9184	F1
2134	E1	3129	E4	3225	B3	6138	C4	9201	A2
2140	F5	3130	C4	3231	B1	6140	B4		
2141	F5	3131	C4	3232	A2	6141	B4		
2142	F5	3133	C4	3233	A2	6142	C4		
2161	E4	3135	B4	3234	A2	6143	C3		
2162	E4	3136	B4	3235	A3	6144	F4		
2163	E4	3137	C3	3236	A3	6145	C4		
2164	F5	3138	C3	3237	A2	6151	C4		
2166	E5	3139	C4	3238	A2	6155	E4		
2167	F5	3140	F5	3239	C1	6201	A3		
2168	E5	3141	F5	3240	C1	6202	A3		
2171	E5	3142	F4	3241	B1	6203	B1		
2172	E5	3143	F5	3242	A3	6204	B1		
2173	E5	3144	F5	3243	C1	6206	A2		
2175	E5	3145	F5	3244	B1	6207	A2		
2176	F5	3147	C4	3245	A3	6208	B1		
2177	D4	3148	C3	3246	A3	6209	A2		
2178	E5	3149	C4	3247	A4	6210	A3		
2184	C4	3150	C4	3248	A3	6211	B3		
2201	A3	3151	C3	3249	A4	6212	B3		
2204	A3	3152	D3	3250	A3	6213	A4		
2205	A3	3153	F4	3251	A3	6214	A3		
2206	A3	3154	F4	3252	A3	6215	A1		
2207	A3	3155	E2	3253	A3	6260	C1		
2208	A3	3156	E3	3254	A4	6402	E1		
2211	A4	3157	E3	3255	A3	6403	C1		
2212	A3	3158	E5	3256	C1	6405	D1		
2213	A3	3159	E3	3257	B1	6407	F1		
2214	B1	3160	E4	3258	C1	7101	C3		
2217	C1	3161	E4	3259	C1	7103	C4		
2218	C1	3162	E4	3260	C1	7106	F5		
2221	A3	3163	E4	3261	C1	7107	C4		
2222	A3	3164	E3	3265	A1	7108	B4		
2224	A3	3165	E4	3266	A1	7109	E3		
2225	A3	3166	E4	3270	A2	7110	E3		
2226	A2	3167	E4	3271	A3	7111	E3		
2232	B1	3168	E4	3272	A2	7112	E3		
2233	B1	3169	E4	3273	A3	7113	E3		
2235	A3	3170	B4	3401	D1	7121	E5		
2236	A3	3171	B4	3402	D1	7122	E5		
2237	A3	3181	E5	3404	C1	7124	E5		
2238	C1	3182	E5	3405	D1	7125	E5		
2240	B3	3183	E5	3406	E1	7126	F4		
2241	B3	3184	F5	3407	D1	7140	F5		
2242	A1	3185	F5	3408	E1	7141	F5		
2245	A2	3186	F5	3409	F1	7165	E5		
2246	A3	3187	E5	3411	D1	7201	A4		
2403	D1	3188	E5	3413	C1	7203	C1		
2404	C1	3189	E5	3415	E1	7212	A3		
2405	D1	3190	E5	3419	E1	7213	C1		
2411	D1	3191	E5	3420	E1	7215	A4		

4 LED Back UPEC Panel: LED Drive

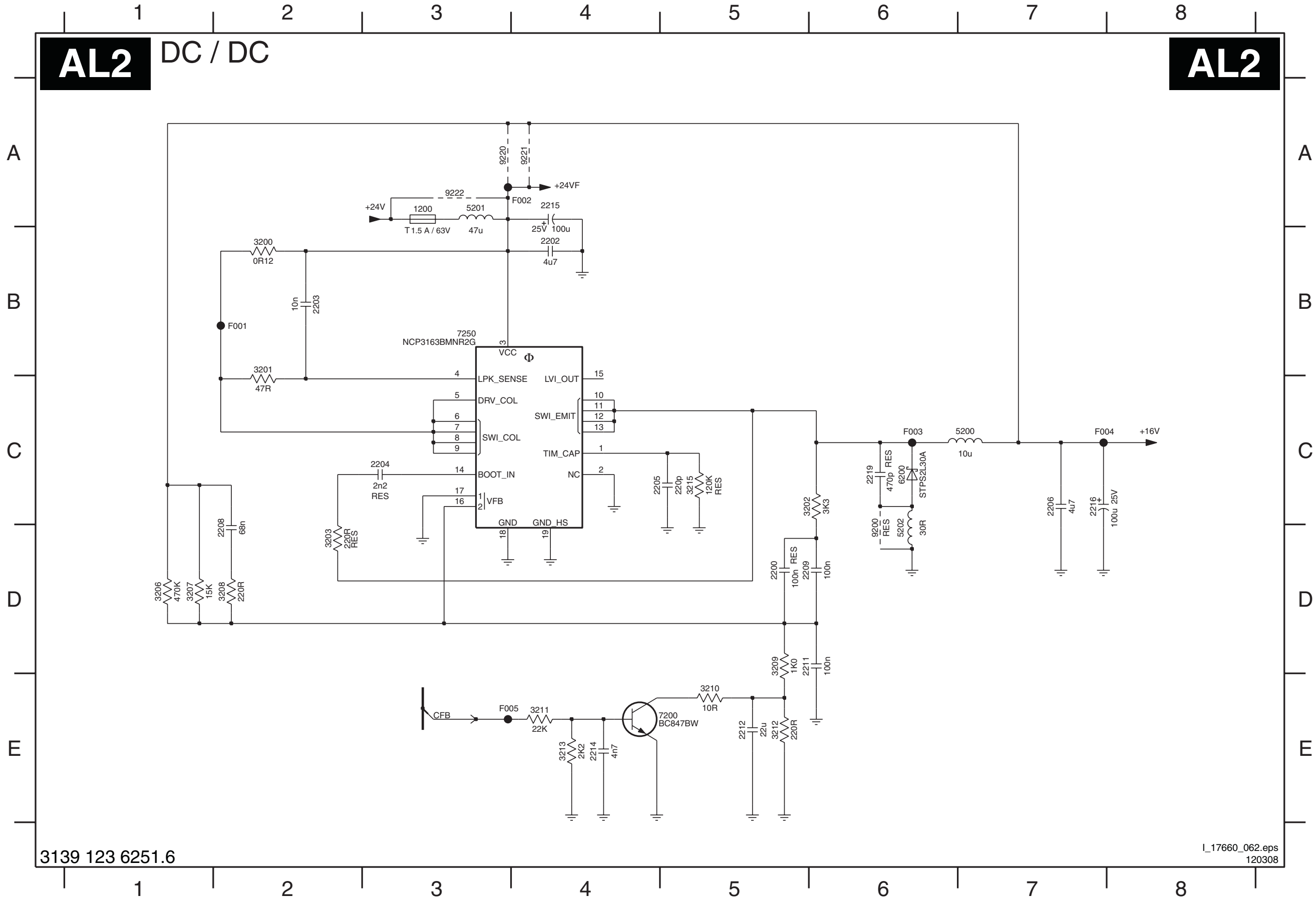


2001 F2	9003 F9
2003 F10	9004 A7
2005 I10	9005 G10
2007 F2	9007 G9
2009 F10	9008 H10
2010 H2	9009 I9
2012 H10	9010 A7
2013 I2	9011 A8
2036 E4	9013 A8
2038 E12	9016 A7
3000 A1	9017 A3
3001 C1	9018 A3
3002 B2	9019 A3
3003 B2	9020 A12
3005 C1	9021 A12
3006 C2	9022 A12
3007 B1	F037 E2
3008 B1	F050 C6
3009 A1	F052 D6
3021 B3	F053 F4
3022 B3	F054 D6
3023 B3	F055 G4
3024 B11	F056 E5
3025 B11	F057 H4
3026 B11	F058 E11
3030 E2	F059 F12
3032 E10	F060 G12
3033 E2	F061 I12
3035 E11	F070 C13
3036 F2	F072 D14
3038 F11	F074 D14
3039 H2	F076 E13
3040 F2	
3041 F4	
3042 E4	
3043 G2	
3044 G4	
3045 H4	
3046 G4	
3047 H4	
3050 C13	
3051 C13	
3052 C13	
3053 D13	
3054 D13	
3055 D13	
3056 D13	
3057 E13	
3058 E13	
3059 E13	
3129 C5	
3130 C5	
3131 C5	
3132 D5	
3133 D5	
3134 D5	
3135 D5	
3136 D5	
3137 E5	
3138 E5	
3140 F4	
3141 F4	
3142 H4	
3143 H4	
3144 I4	
3145 I4	
3148 F13	
3150 G13	
3151 I10	
3152 I12	
3153 H13	
3160 F10	
3161 F12	
3163 G10	
3164 G12	
3191 F12	
3192 F12	
3193 H12	
3194 H12	
3195 I12	
3196 I12	
6000 B1	
6004 F2	
6006 G2	
6008 H2	
6016 F10	
6018 G10	
6020 I10	
6021 F4	
6022 G4	
6023 H4	
6024 F12	
6025 G12	
6026 H12	
7003 A4	
7004 A6	
7005 A9	
7006 A11	
7010 C2	
7011 B2	
7064 F5	
7065 G5	
7066 H5	
7067-1 E4	
7067-2 G4	
7067-3 H4	
7067-4 F8	
7072 F13	
7073 G13	
7074 H13	
7075-1 E12	
7075-2 G12	
7075-3 H12	
7075-4 G8	
9001 A8	
9002 F10	

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4 LED Back UPEC Panel: DC / DC



- 1200 A3
- 2200 D5
- 2202 B4
- 2203 B2
- 2204 C3
- 2205 C4
- 2206 C7
- 2208 D2
- 2209 D5
- 2211 D5
- 2212 E5
- 2214 E4
- 2215 A4
- 2216 C7
- 2219 C6
- 3200 B2
- 3201 B2
- 3202 C6
- 3203 D2
- 3206 D1
- 3207 D1
- 3208 D2
- 3209 D5
- 3210 E5
- 3211 E4
- 3212 E5
- 3213 E4
- 3215 C5
- 5200 C7
- 5201 A3
- 5202 D6
- 6200 C6
- 7200 E4
- 7250 B3
- 9200 D6
- 9220 A3
- 9221 A4
- 9222 A3
- F001 B2
- F002 A4
- F003 C6
- F004 C7
- F005 E3

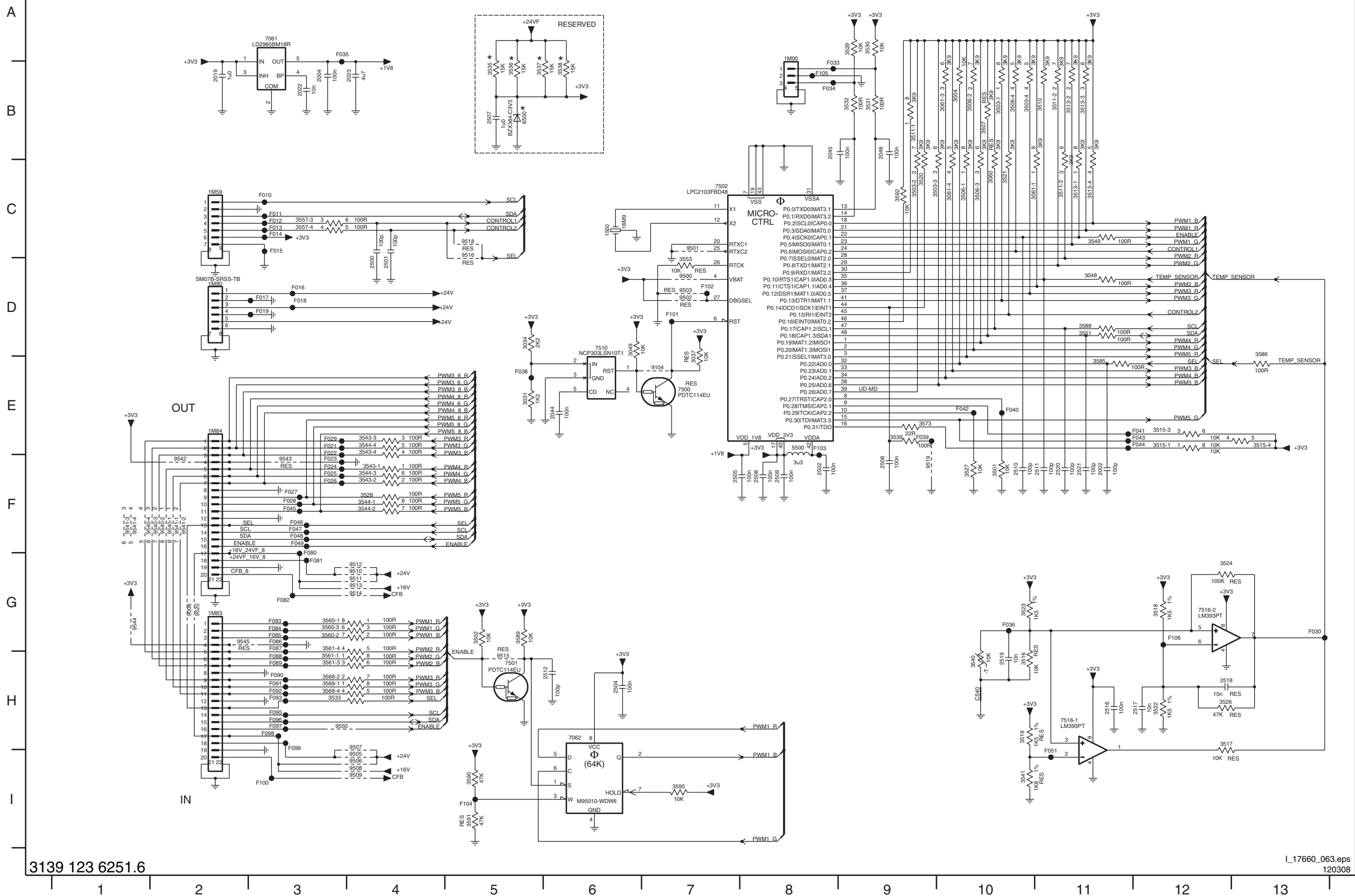
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4 LED Back UPEC Panel: uC Block

AL3 MICROCONTROLLER BLOCK

AL3



- 1500 C6
- 1M00 A8
- 1M59 C2
- 1M83 G2
- 1M84 E2
- 1M90 D2
- 2002 F11
- 2004 B3
- 2019 B2
- 2022 B3
- 2023 B4
- 2044 E6
- 2045 B8
- 2046 B9
- 2500 D4
- 2501 D4
- 2502 F8
- 2504 H6
- 2505 F7
- 2506 F9
- 2507 B5
- 2508 F8
- 2509 F8
- 2510 F10
- 2511 F11
- 2512 H6
- 2516 H11
- 2517 H12
- 2518 H12
- 2519 H10
- 2520 F11
- 2521 F11
- 3004 B10
- 3031 E5
- 3034 D5
- 3037 E7
- 3048 D11
- 3049 D6
- 3060 C10
- 3061-1 C11
- 3061-3 B10
- 3061-4 C10
- 3501 F10
- 3502 G5
- 3503-1 B10
- 3503-2 C9
- 3503-3 C10
- 3503-4 B10
- 3506-1 C10
- 3506-2 B10
- 3506-3 B10
- 3506-4 B10
- 3507 B10
- 3510 B11
- 3511-1 B9
- 3511-2 B11
- 3511-3 C11
- 3513-1 C11
- 3513-2 B11
- 3513-3 B11
- 3513-4 C11
- 3515-1 E12
- 3515-3 E12
- 3515-4 E13
- 3516 H10
- 3517 H12
- 3518 G12
- 3519 H10
- 3520 C9
- 3521 C10
- 3522 H12
- 3523 G10
- 3524 G12
- 3526 H12
- 3527 F10
- 3528 F4
- 3529 A9
- 3530 A9
- 3531 B9
- 3532 B9
- 3533 H3
- 3535 B5
- 3536 B5
- 3537 B5
- 3538 B6
- 3539 E9
- 3540 H10
- 3541 H10
- 3543-1 F4
- 3543-2 F4
- 3543-3 E4
- 3544-1 F4
- 3544-2 F4
- 3544-3 F4
- 3544-4 E4
- 3549 C11
- 3551 D11
- 3553 D7
- 3557-3 C3
- 3557-4 C3
- 3560-1 G3
- 3560-2 G3
- 3560-3 G3
- 3561-1 H3
- 3561-3 H3
- 3568-1 H3
- 3568-2 H3
- 3568-4 H3
- 3573 E9
- 3585 E11
- 3586 D13
- 3588 D11
- 3589 G5
- 3590 I5
- 3591 I5
- 3592 C7
- 3595 I7
- 5500 E8
- 6500 B5
- 7061 A3
- 7062 H6
- 7500 E7
- 7501 H5
- 7502 C7
- 7510 D6
- 7516-1 H11
- 7516-2 G12
- 9104 E7
- 9500 D7
- 9501 C7
- 9502 D7
- 9503 D7
- 9505 I4
- 9506 I4
- 9507 H4
- 9508 I4
- 9509 I4
- 9510 G4
- 9511 G4
- 9512 G4
- 9513 G4
- 9514 G4
- 9515 H5
- 9516 C5
- 9518 C5
- 9519 F9
- 9520 G2
- 9540-1 F2
- 9540-2 F2
- 9540-3 F2
- 9540-4 F1
- 9541-1 F2
- 9541-2 F2
- 9541-3 F1
- 9541-4 F1
- 9542 F2
- 9543 F3
- 9544 G1
- 9545 G2
- 9550 H3
- C540 H10
- F010 C3
- F011 C3
- F012 C3
- F013 C3
- F014 C3
- F015 C3
- F016 D3
- F017 D3
- F018 D3
- F019 D3
- F021 E3
- F022 F3
- F023 F3
- F024 F3
- F025 F3
- F026 F3
- F027 F3
- F028 F3
- F029 E3
- F030 G13
- F033 B8
- F034 B8
- F035 A3
- F036 G10
- F038 E5
- F039 E9
- F040 E10
- F041 E12
- F042 E10
- F043 E12
- F044 E12
- F045 F3
- F046 F3
- F047 F3
- F048 F3
- F049 F3
- F051 H11
- F080 G3
- F081 G3
- F082 G3
- F083 G3
- F084 G3
- F085 G3
- F086 G3
- F087 G3
- F088 H3
- F089 H3
- F090 H3
- F091 H3
- F092 H3
- F093 H3
- F095 H3
- F096 H3
- F097 H3
- F098 H3
- F099 I3
- F100 I3
- F101 D7
- F102 D7
- F103 E8
- F104 I5
- F105 B8
- F106 G12
- 3588 D11

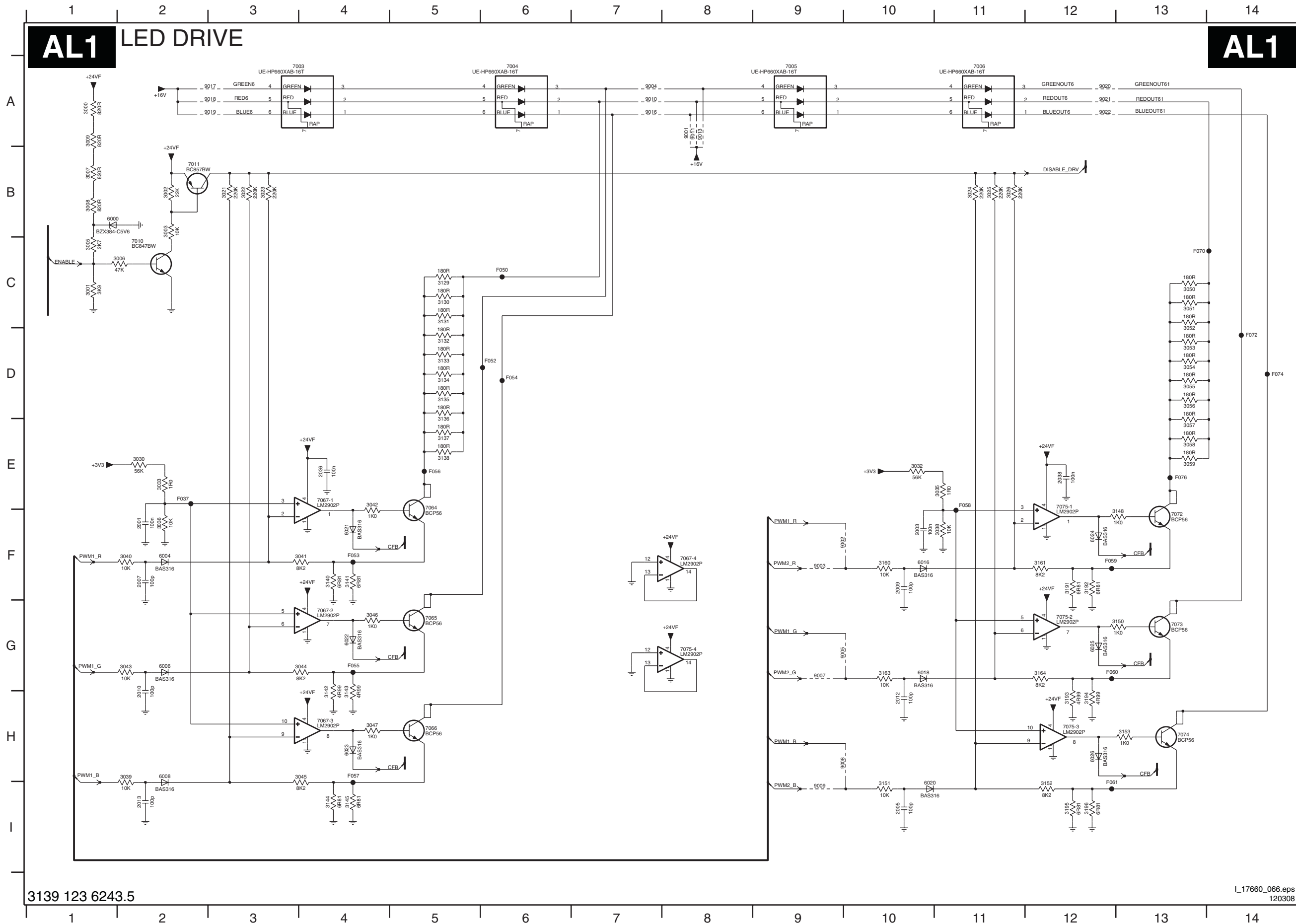
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6 LED Back UPEC Panel: LED Drive

AL1 LED DRIVE

AL1

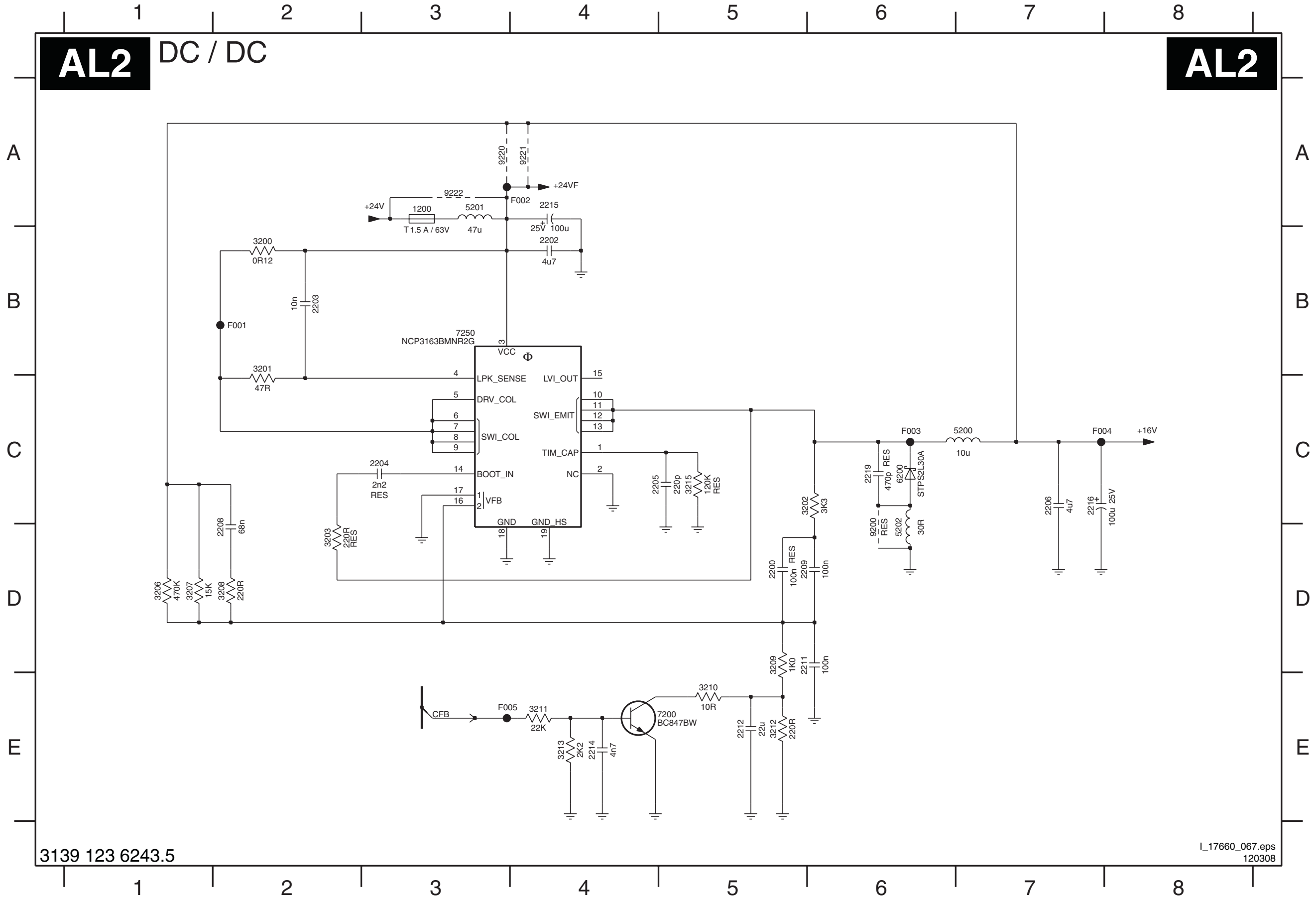


- 2001 F2
- 2003 F10
- 2005 H10
- 2007 F2
- 2009 F10
- 2010 H2
- 2012 H10
- 2013 I2
- 2036 E4
- 2038 E12
- 3000 A1
- 3001 C1
- 3002 B2
- 3003 B2
- 3005 C1
- 3006 C2
- 3007 B1
- 3008 B1
- 3009 A1
- 3021 B3
- 3022 B3
- 3023 B3
- 3024 B11
- 3025 B11
- 3026 B11
- 3030 E2
- 3032 E10
- 3033 E2
- 3035 E11
- 3036 F2
- 3038 F11
- 3039 H2
- 3040 F2
- 3041 F4
- 3042 E4
- 3043 G2
- 3044 G4
- 3045 H4
- 3046 G4
- 3047 H4
- 3050 C13
- 3051 C13
- 3052 C13
- 3053 D13
- 3054 D13
- 3055 D13
- 3056 D13
- 3057 E13
- 3058 E13
- 3059 E13
- 3129 C5
- 3130 C5
- 3131 C5
- 3132 D5
- 3133 D5
- 3134 D5
- 3135 D5
- 3136 D5
- 3137 E5
- 3138 E5
- 3140 F4
- 3141 F4
- 3142 H4
- 3143 H4
- 3144 I4
- 3145 I4
- 3148 F13
- 3150 G13
- 3151 I10
- 3152 H12
- 3153 H13
- 3160 F10
- 3161 F12
- 3163 G10
- 3164 G12
- 3191 F12
- 3192 F12
- 3193 H12
- 3194 H12
- 3195 H12
- 3196 H12
- 6000 B1
- 6004 F2
- 6006 G2
- 6008 H2
- 6016 F10
- 6018 G10
- 6020 H10
- 6021 F4
- 6022 G4
- 6023 H4
- 6024 F12
- 6025 G12
- 6026 H12
- 7003 A4
- 7004 A6
- 7005 A9
- 7006 A11
- 7010 C2
- 7011 B2
- 7064 F5
- 7065 G5
- 7066 H5
- 7067-1 E4
- 7067-2 G4
- 7067-3 H4
- 7067-4 F8
- 7072 F13
- 7073 G13
- 7074 H13
- 7075-1 E12
- 7075-2 G12
- 7075-3 H12
- 7075-4 G8
- 9001 A8
- 9002 F10
- 9003 F9
- 9004 A7
- 9005 G10
- 9007 G9
- 9009 I9
- 9010 H7
- 9011 A8
- 9013 A8
- 9016 A7
- 9017 A3
- 9018 A3
- 9019 A3
- 9020 A12
- 9021 A12
- 9022 A12
- F037 E2
- F050 C6
- F052 D6
- F053 F4
- F054 D6
- F056 E5
- F057 H4
- F058 E11
- F059 F12
- F060 G12
- F061 H2
- F070 C13
- F072 D14
- F074 D14
- F076 E13

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6 LED Back UPEC Panel: DC / DC



- 1200 A3
- 2200 D5
- 2202 B4
- 2203 B2
- 2204 C3
- 2205 C4
- 2206 C7
- 2208 D2
- 2209 D5
- 2211 D5
- 2212 E5
- 2214 E4
- 2215 A4
- 2216 C7
- 2219 C6
- 3200 B2
- 3201 B2
- 3202 C6
- 3203 D2
- 3206 D1
- 3207 D1
- 3208 D2
- 3209 D5
- 3210 E5
- 3211 E4
- 3212 E5
- 3213 E4
- 3215 C5
- 5200 C7
- 5201 A3
- 5202 D6
- 6200 C6
- 7200 E4
- 7250 B3
- 9200 D6
- 9220 A3
- 9221 A4
- 9222 A3
- F001 B2
- F002 A4
- F003 C6
- F004 C7
- F005 E3

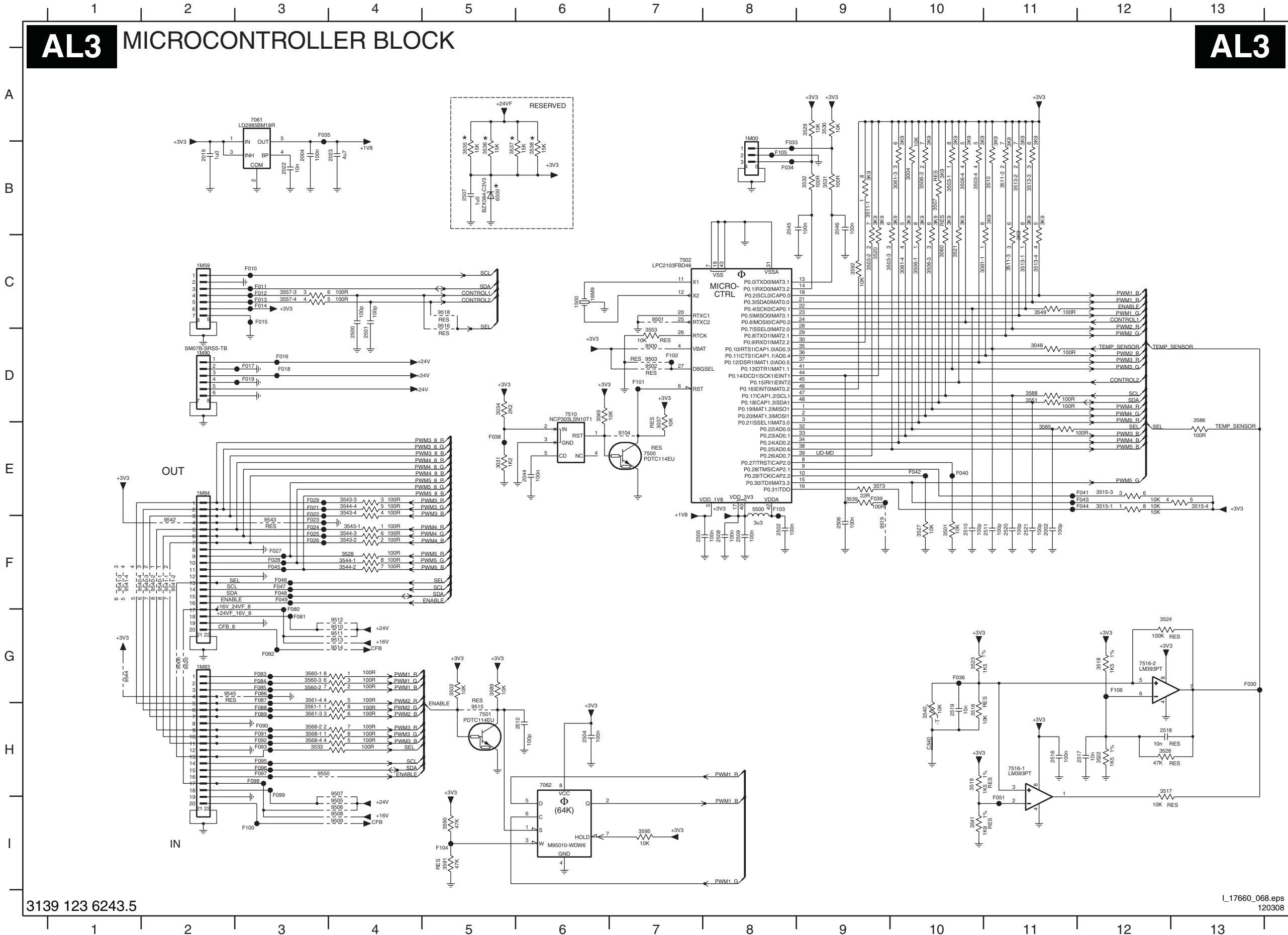
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6 LED Back UPEC Panel: uC Block

AL3 MICROCONTROLLER BLOCK

AL3



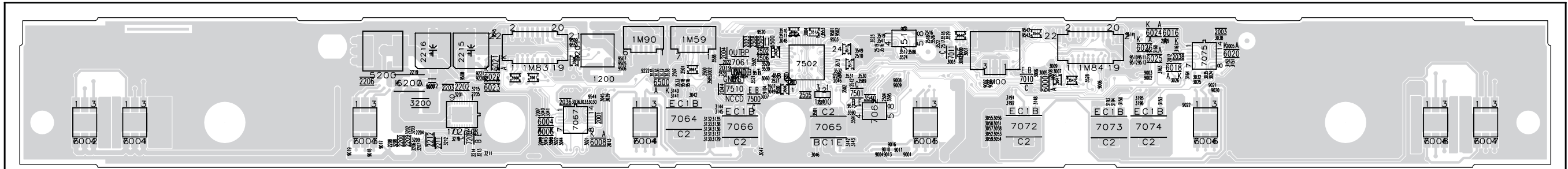
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- 1M59 C2
- 1M83 G2
- 1M84 E2
- 1M90 D2
- 2002 F11
- 2004 B3
- 2019 B2
- 2022 B3
- 2023 B4
- 2044 E6
- 2045 B8
- 2046 B9
- 2500 D4
- 2501 D4
- 2502 F8
- 2504 H6
- 2505 F7
- 2506 F9
- 2507 B5
- 2508 F8
- 2509 F8
- 2510 F10
- 2511 F11
- 2512 H6
- 2516 H11
- 2517 H12
- 2518 H12
- 2519 H10
- 2520 F11
- 2521 F11
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- 3031 E5
- 3034 D5
- 3037 E7
- 3048 D11
- 3049 D6
- 3060 C10
- 3061-1 C11
- 3061-3 B10
- 3061-4 C10
- 3501 F10
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- 3506-1 C10
- 3506-2 B10
- 3506-3 C10
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- 3507 B10
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- 3511-2 B11
- 3511-3 C11
- 3513-1 C11
- 3513-2 B11
- 3513-3 B11
- 3513-4 C11
- 3515-1 E12
- 3515-2 E12
- 3515-4 E13
- 3516 H10
- 3517 H12
- 3518 G12
- 3519 H10
- 3520 C9
- 3521 C10
- 3522 H12
- 3523 G10
- 3524 G12
- 3526 H12
- 3527 F10
- 3528 F4
- 3529 A9
- 3530 A9
- 3531 B9
- 3532 B9
- 3533 H3
- 3535 B5
- 3536 B5
- 3537 B5
- 3538 B6
- 3539 E9
- 3540 H10
- 3541 H10
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- 3543-3 E4
- 3543-4 E4
- 3544-1 F4
- 3544-2 F4
- 3544-3 F4
- 3544-4 E4
- 3549 H3
- 3551 D11
- 3553 D7
- 3557-3 C3
- 3557-4 C3
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- 3560-2 G3
- 3560-3 G3
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- 3561-3 H3
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- 3568-1 H3
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- 3568-4 H3
- 3573 E9
- 3585 E11
- 3586 D13
- 3588 D11
- 3589 G5
- 3590 I5
- 3591 I5
- 3592 C9
- 3595 I7
- 5500 E8
- 6500 B5
- 7061 A3
- 7062 H6
- 7500 E7
- 7501 H5
- 7502 C7
- 7510 D6
- 7516-1 H11
- 7516-2 G12
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- 9104 E7
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- 9501 C7
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- 9505 F8
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- 9511 G4
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- 9515 H5
- 9516 C5
- 9518 C5
- 9519 F9
- 9520 G2
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- 9541-3 F1
- 9541-4 F1
- 9542 F2
- 9543 F3
- 9544 G1
- 9545 G2
- 9550 H3
- C540 H10
- F010 C3
- F012 C3
- F013 C3
- F014 C3
- F015 C3
- F016 D3
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- F018 D3
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- F021 E3
- F022 F3
- F023 F3
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- F025 F3
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- F027 F3
- F028 F3
- F029 E3
- F030 G13
- F033 B8
- F034 B8
- F035 A3
- F036 G10
- F038 E5
- F039 E9
- F040 E10
- F041 E10
- F042 E10
- F043 E12
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- F045 F3
- F046 F3
- F047 F3
- F049 F3
- F051 H11
- F080 G3
- F081 G3
- F082 G3
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- F084 G3
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- F087 G3
- F088 H3
- F089 H3
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- F100 I3
- F101 D7
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- F104 I5
- F105 B8
- F106 G12

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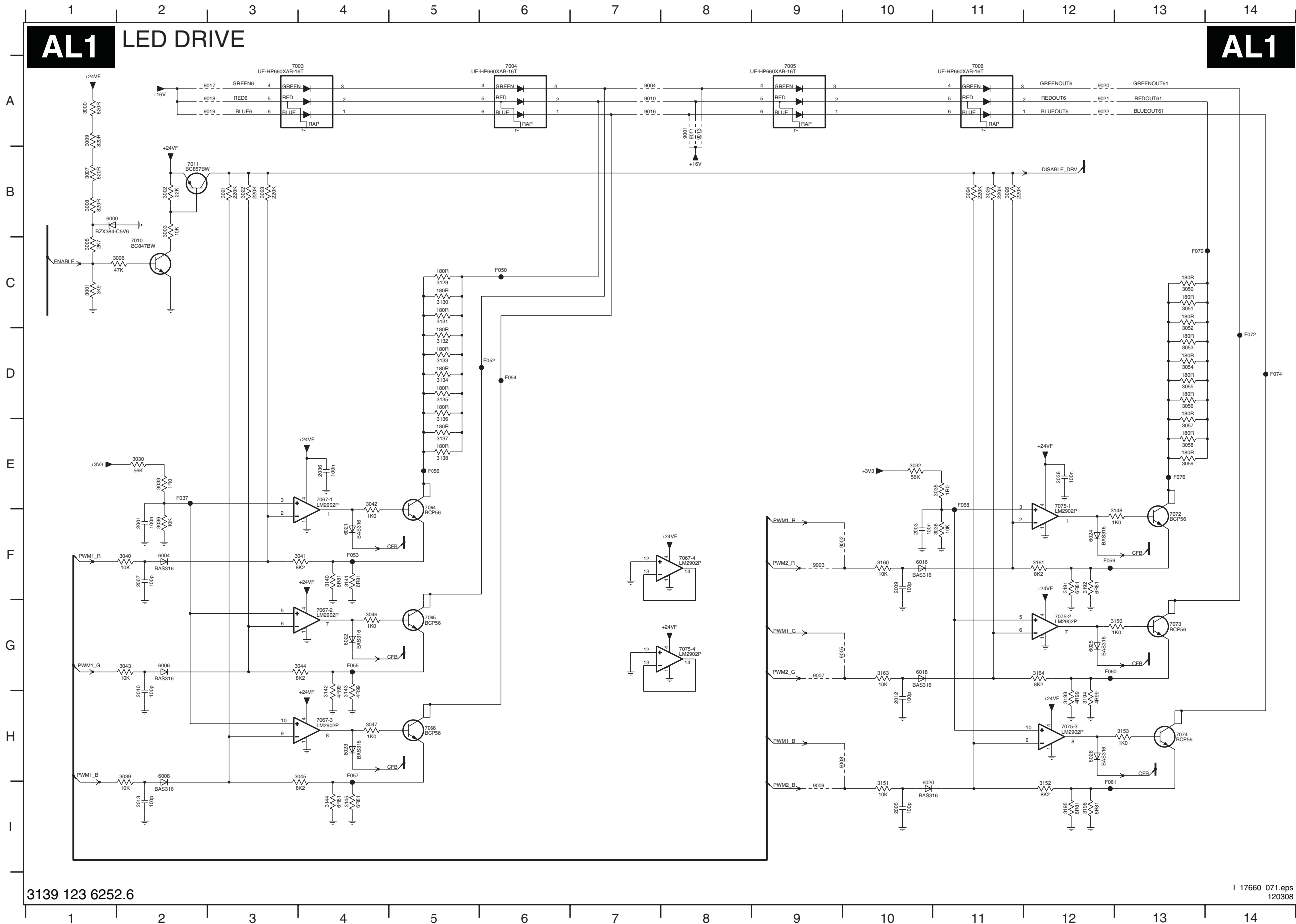
Layout 6 LED Back UPEC Panel (Top Side)

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1500	--	2007	--	2045	--	2212	--	2507	--	2521	--	3021	--	3035	--	3046	--	3057	--	3135	--	3150	--	3194	--	3210	--	3511	--	3524	--	3537	--	3560	--	3595	--	6020	--	7003	--	7065	--	7502	--	9009	--	9104	--	9507	--	9519	--
1M00	--	2009	--	2046	--	2214	--	2508	--	3000	--	3022	--	3036	--	3047	--	3058	--	3136	--	3151	--	3195	--	3211	--	3513	--	3526	--	3538	--	3561	--	5200	--	6021	--	7004	--	7066	--	7510	--	9010	--	9200	--	9508	--	9520	--
1M59	--	2010	--	2200	--	2215	--	2509	--	3001	--	3023	--	3037	--	3048	--	3059	--	3137	--	3152	--	3196	--	3212	--	3515	--	3527	--	3539	--	3568	--	5201	--	6022	--	7005	--	7067	--	7516	--	9011	--	9220	--	9509	--	9540	--
1M83	--	2012	--	2202	--	2216	--	2510	--	3002	--	3024	--	3038	--	3049	--	3060	--	3138	--	3153	--	3200	--	3213	--	3516	--	3528	--	3540	--	3573	--	5202	--	6023	--	7006	--	7072	--	9001	--	9013	--	9221	--	9510	--	9541	--
1M84	--	2013	--	2203	--	2219	--	2511	--	3003	--	3025	--	3039	--	3050	--	3061	--	3140	--	3160	--	3201	--	3215	--	3517	--	3529	--	3541	--	3585	--	5500	--	6024	--	7007	--	7073	--	9002	--	9016	--	9222	--	9511	--	9542	--
1M90	--	2019	--	2204	--	2500	--	2512	--	3004	--	3026	--	3040	--	3051	--	3129	--	3141	--	3161	--	3202	--	3501	--	3518	--	3530	--	3543	--	3586	--	6000	--	6025	--	7008	--	7074	--	9003	--	9017	--	9500	--	9512	--	9543	--
2001	--	2022	--	2205	--	2501	--	2516	--	3005	--	3030	--	3041	--	3052	--	3130	--	3142	--	3163	--	3203	--	3502	--	3519	--	3531	--	3544	--	3588	--	6004	--	6026	--	7010	--	7075	--	9004	--	9018	--	9501	--	9513	--	9544	--
2002	--	2023	--	2206	--	2502	--	2517	--	3006	--	3031	--	3042	--	3053	--	3131	--	3143	--	3164	--	3206	--	3503	--	3520	--	3532	--	3549	--	3589	--	6006	--	6200	--	7011	--	7200	--	9005	--	9019	--	9502	--	9514	--	9545	--
2003	--	2036	--	2208	--	2504	--	2518	--	3007	--	3032	--	3043	--	3054	--	3132	--	3144	--	3191	--	3207	--	3506	--	3521	--	3533	--	3551	--	3590	--	6008	--	6500	--	7061	--	7250	--	9006	--	9020	--	9503	--	9515	--	9550	--
2004	--	2038	--	2209	--	2505	--	2519	--	3008	--	3033	--	3044	--	3055	--	3133	--	3145	--	3192	--	3208	--	3507	--	3522	--	3535	--	3553	--	3591	--	6016	--	7001	--	7062	--	7500	--	9007	--	9021	--	9505	--	9516	--		--



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8 LED Back UPEC Panel: LED Drive

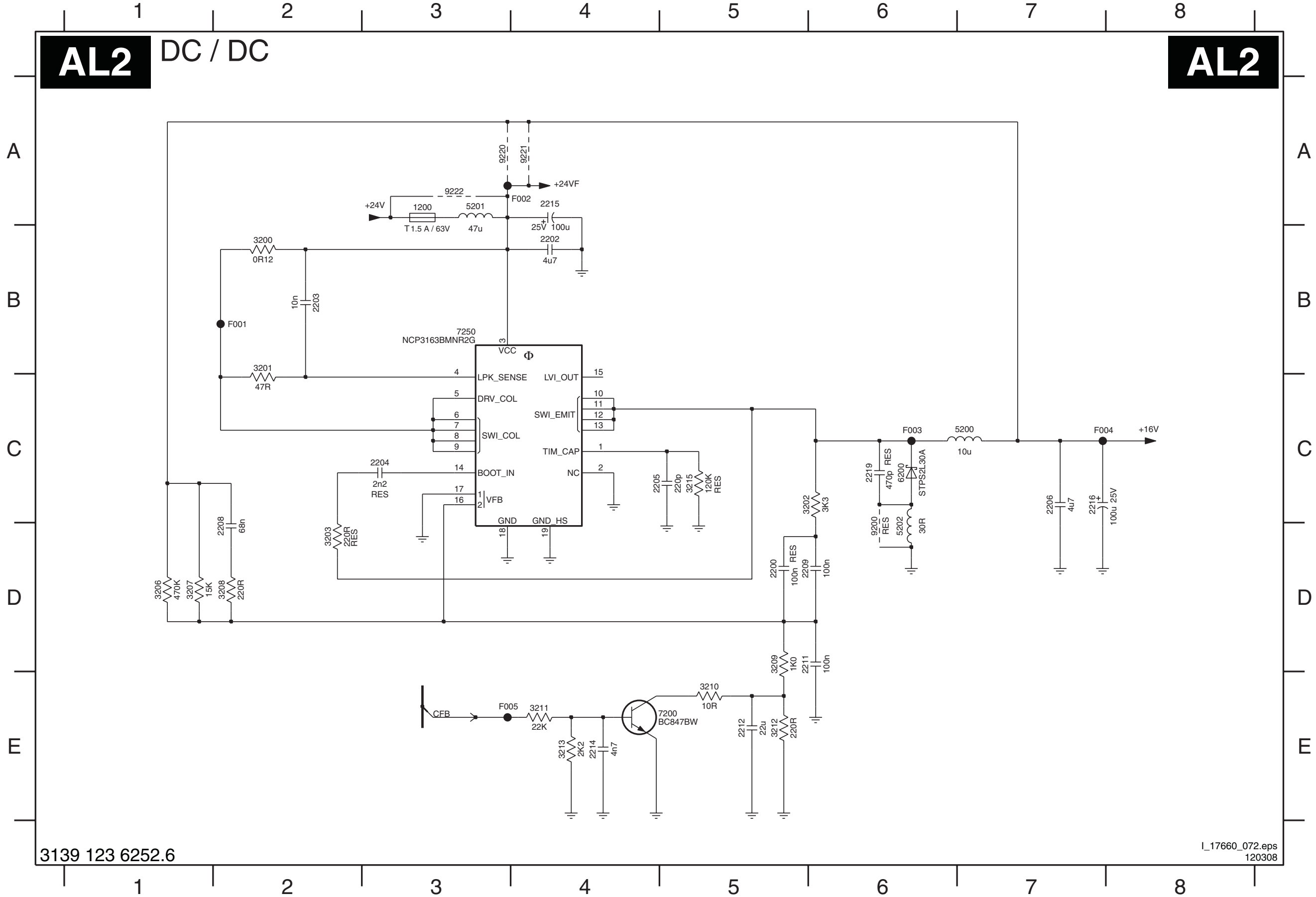


- 2001 F2
- 2003 F10
- 2005 I10
- 2007 F2
- 2009 F10
- 2010 H2
- 2012 H10
- 2013 I2
- 2036 E4
- 2038 E12
- 3000 A1
- 3001 C1
- 3002 B2
- 3003 B2
- 3005 C1
- 3006 C2
- 3007 B1
- 3008 B1
- 3009 A1
- 3021 B3
- 3022 B3
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- 3030 E2
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- 3033 E2
- 3035 E11
- 3036 F2
- 3038 F11
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- 3040 F2
- 3041 F4
- 3042 E4
- 3043 G2
- 3044 G4
- 3045 H4
- 3046 G4
- 3047 H4
- 3050 C13
- 3051 C13
- 3052 C13
- 3053 D13
- 3054 D13
- 3055 D13
- 3056 D13
- 3057 E13
- 3058 E13
- 3059 E13
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- 3130 C5
- 3131 C5
- 3132 D5
- 3133 D5
- 3134 D5
- 3135 D5
- 3136 D5
- 3137 E5
- 3138 E5
- 3140 F4
- 3141 F4
- 3142 H4
- 3143 H4
- 3144 I4
- 3145 I4
- 3148 F13
- 3150 G13
- 3151 I10
- 3152 I12
- 3153 H13
- 3160 F10
- 3161 F12
- 3163 G10
- 3164 G12
- 3191 F12
- 3192 F12
- 3193 H12
- 3194 H12
- 3195 I12
- 3196 I12
- 6000 B1
- 6004 F2
- 6006 G2
- 6008 H2
- 6016 F10
- 6018 G10
- 6020 I10
- 6021 F4
- 6022 G4
- 6023 H4
- 6024 F12
- 6025 G12
- 6026 H12
- 7003 A4
- 7004 A6
- 7005 A9
- 7006 A11
- 7010 C2
- 7011 B2
- 7064 F5
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- 7066 H5
- 7067-1 E4
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- 7067-3 H4
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- 7074 H13
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- 7075-3 H12
- 7075-4 G8
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- 9003 F9
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- 9007 G9
- 9008 H10
- 9009 I9
- 9010 A7
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- 9013 A8
- 9016 A7
- 9017 A3
- 9018 A3
- 9019 A3
- 9020 A12
- 9021 A12
- 9022 A12
- F037 E2
- F050 C6
- F052 D6
- F053 F4
- F054 D6
- F055 G4
- F056 E5
- F057 H4
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- F074 D14
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8 LED Back UPEC Panel: DC / DC

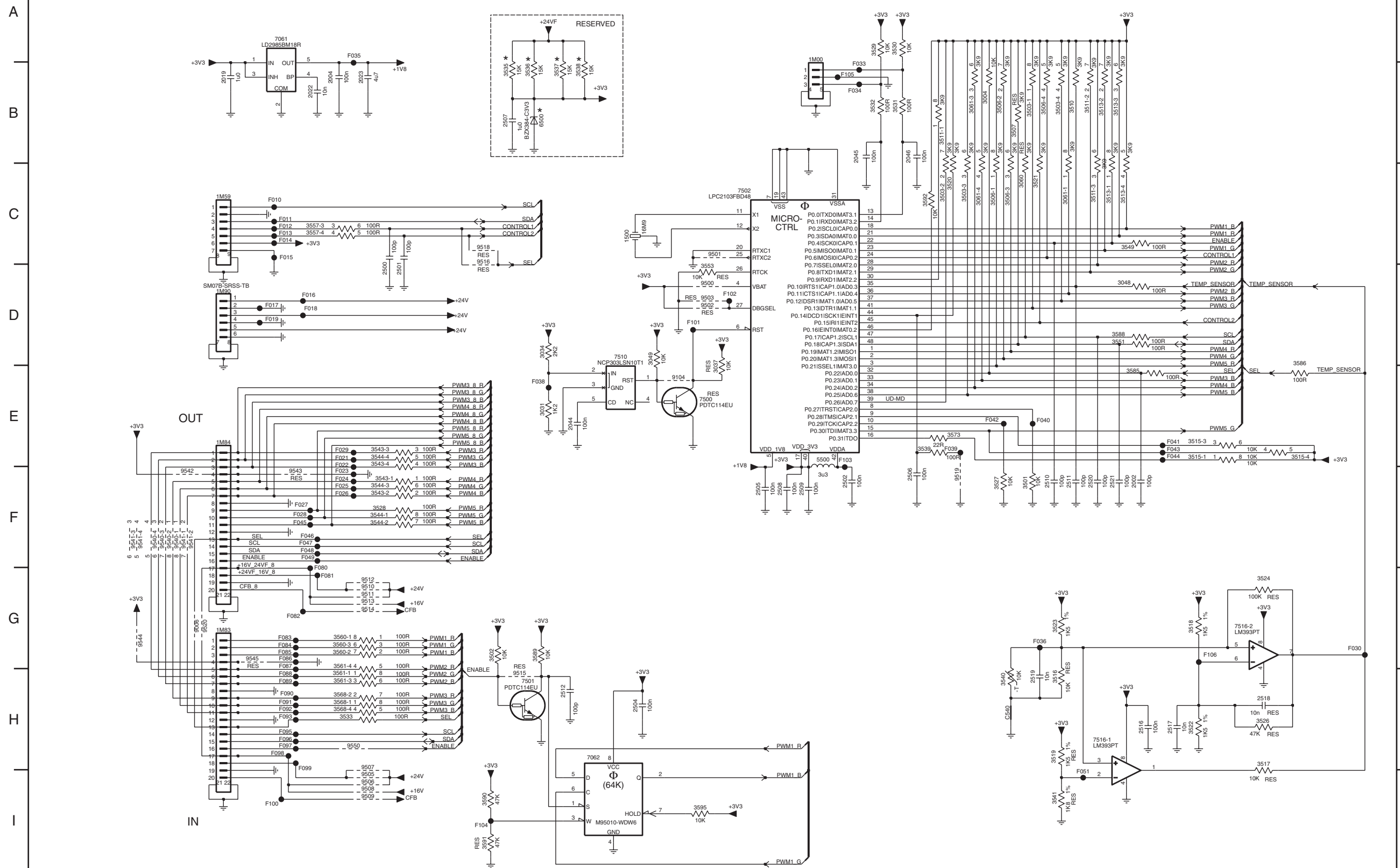


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- 2202 B4
- 2203 B2
- 2204 C3
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- 2206 C7
- 2208 D2
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- 2211 D5
- 2212 E5
- 2214 E4
- 2215 A4
- 2216 C7
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- 3215 C5
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- 7200 E4
- 7250 B3
- 9200 D6
- 9220 A3
- 9221 A4
- 9222 A3
- F001 B2
- F002 A4
- F003 C6
- F004 C7
- F005 E3

8 LED Back UPEC Panel: uC Block

AL3 MICROCONTROLLER BLOCK

AL3

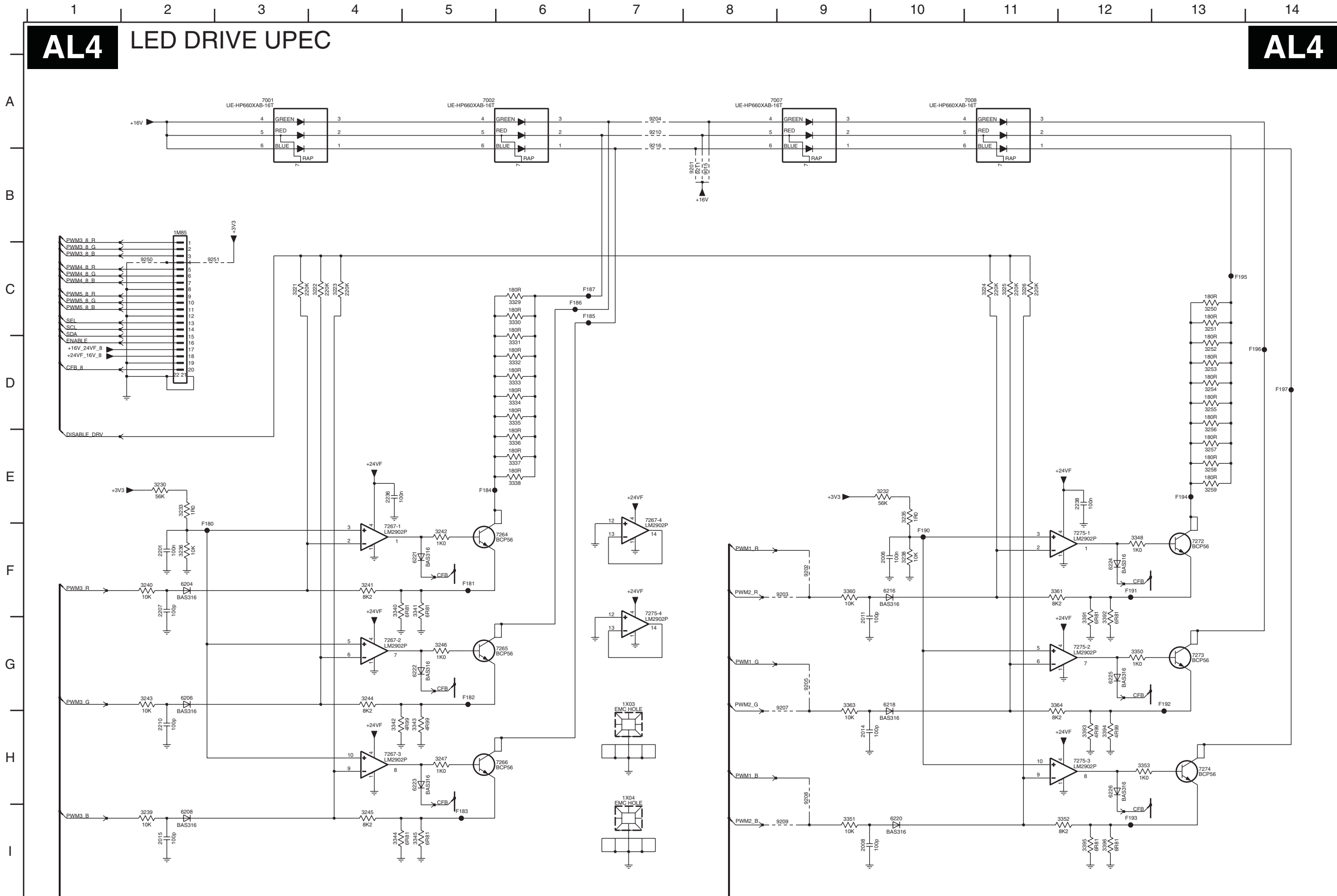


- 1500 C6
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- 1M59 C2
- 1M83 G2
- 1M84 E2
- 1M90 D2
- 2002 F11
- 2004 B3
- 2019 B2
- 2022 B3
- 2023 B4
- 2044 E6
- 2045 B8
- 2046 B9
- 2500 D4
- 2501 D4
- 2502 F8
- 2504 H6
- 2505 F7
- 2506 F9
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- 2516 H11
- 2517 H12
- 2518 H12
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- 3004 B10
- 3031 E5
- 3034 D5
- 3037 E7
- 3048 D11
- 3049 D6
- 3060 C10
- 3061-1 C11
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- 3544-1 F4
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- 3544-3 F4
- 3544-4 E4
- 3549 C11
- 3551 D11
- 3553 D7
- 3557-3 C3
- 3557-4 C3
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- F101 D7
- F102 D7
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- F106 G12
- 3588 D11

8 LED Back UPEC Panel: LED Drive

AL4 LED DRIVE UPEC

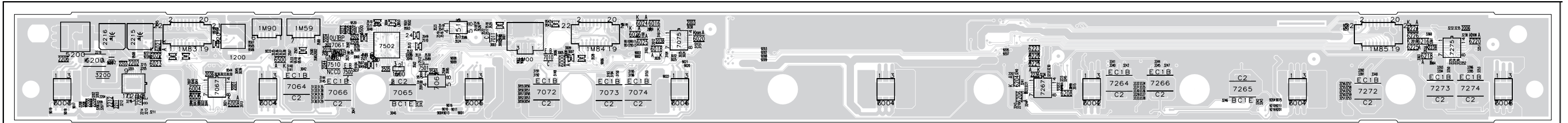
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- 2207 F2
- 2210 H2
- 2236 E4
- 2238 E12
- 3221 C3
- 3222 C4
- 3223 C4
- 3224 C11
- 3225 C11
- 3226 C11
- 3230 E2
- 3232 E10
- 3233 E2
- 3235 E10
- 3236 F2
- 3238 F10
- 3239 I2
- 3240 F2
- 3241 F4
- 3242 F5
- 3243 G2
- 3244 G4
- 3245 I4
- 3246 G5
- 3247 H5
- 3250 C13
- 3251 C13
- 3252 D13
- 3253 D13
- 3254 D13
- 3255 D13
- 3256 D13
- 3257 E13
- 3258 E13
- 3259 E13
- 3329 C6
- 3330 C6
- 3331 D6
- 3332 D6
- 3333 D6
- 3334 D6
- 3335 D6
- 3336 D6
- 3337 E6
- 3338 E6
- 3340 F4
- 3341 F5
- 3342 H4
- 3343 H5
- 3344 I4
- 3345 I5
- 3348 F12
- 3350 G12
- 3351 I9
- 3352 I12
- 3353 H12
- 3360 F9
- 3361 F11
- 3363 G9
- 3364 G11
- 3391 G12
- 3392 G12
- 3393 H12
- 3394 H12
- 3395 I12
- 3396 I12
- 6204 F2
- 6206 G2
- 6208 I2
- 6215 F10
- 6218 G10
- 6220 I10
- 6221 F5
- 6222 G5
- 6223 H5
- 6224 F12
- 6225 G12
- 6226 H12
- 7001 A3
- 7002 A5
- 7007 A9
- 7008 A11
- 7264 F6
- 7265 G6
- 7266 H6
- 7267-1 F4
- 7267-2 G4
- 7267-3 H4
- 7267-4 E7
- 7272 F13
- 7273 G13
- 7274 H13
- 7275-1 F12
- 7275-2 G12
- 7275-3 H12
- 7275-4 F7
- 9015 B8
- 9016 B8
- 9020 F9
- 9021 F9
- 9022 F9
- 9023 F9
- 9024 A7
- 9025 G9
- 9027 G9
- 9208 H9
- 9209 I9
- 9210 A7
- 9211 B8
- 9216 A7
- 9250 C2
- 9251 C2
- F180 F2
- F181 F5
- F182 G5
- F183 I5
- F184 E5
- F185 C6
- F186 C6
- F187 C6
- F188 F10
- F189 F12
- F190 F12
- F191 F12
- F192 G13
- F193 I12
- F194 E13
- F195 C13
- F196 D14
- F197 D14

Layout 8 LED Back UPEC Panel (Top Side)

1200	2008	2046	2215	2511	3007	3036	3051	3133	3152	3203	3226	3247	3333	3352	3506	3526	3543	3591	6022	6224	7062	7272	9007	9200	9250	9514
1500	2009	2200	2216	2512	3008	3037	3052	3134	3153	3206	3230	3250	3334	3353	3507	3527	3544	3592	6023	6225	7064	7273	9008	9201	9251	9515
1M00	2010	2201	2219	2516	3009	3038	3053	3135	3160	3207	3232	3251	3335	3360	3510	3528	3549	3595	6024	6226	7065	7274	9009	9202	9500	9516
1M59	2011	2202	2236	2517	3021	3039	3054	3136	3161	3208	3233	3252	3336	3361	3511	3529	3551	3520	6025	6500	7066	7275	9010	9203	9501	9518
1M83	2012	2203	2238	2518	3022	3040	3055	3137	3163	3209	3235	3253	3337	3363	3513	3530	3553	5201	6026	7001	7067	7500	9011	9204	9502	9519
1M84	2013	2204	2500	2519	3023	3041	3056	3138	3164	3210	3236	3254	3338	3364	3515	3531	3557	5202	6200	7002	7072	7501	9013	9205	9503	9520
1M85	2014	2205	2501	2520	3024	3042	3057	3140	3191	3211	3238	3255	3340	3391	3516	3532	3560	5500	6204	7003	7073	7502	9015	9207	9505	9540
1M90	2015	2206	2502	2521	3025	3043	3058	3141	3192	3212	3239	3256	3341	3392	3517	3533	3561	6000	6206	7004	7074	7510	9016	9208	9506	9541
2001	2019	2207	2504	3000	3026	3044	3059	3142	3193	3213	3240	3257	3342	3393	3518	3535	3568	6004	6208	7005	7075	7516	9017	9209	9507	9542
2002	2022	2208	2505	3001	3030	3045	3060	3143	3194	3215	3241	3258	3343	3394	3519	3536	3573	6006	6216	7006	7200	9001	9018	9210	9508	9543
2003	2023	2209	2506	3002	3031	3046	3061	3144	3195	3221	3242	3259	3344	3395	3520	3537	3585	6008	6218	7007	7250	9002	9019	9211	9509	9544
2004	2036	2210	2507	3003	3032	3047	3129	3145	3196	3222	3243	3329	3345	3396	3521	3538	3586	6016	6220	7008	7264	9003	9020	9216	9510	9545
2005	2038	2211	2508	3004	3033	3048	3130	3148	3200	3223	3244	3330	3348	3501	3522	3539	3588	6018	6221	7010	7265	9004	9021	9220	9511	9550
2006	2044	2212	2509	3005	3034	3049	3131	3150	3201	3224	3245	3331	3350	3502	3523	3540	3589	6020	6222	7011	7266	9005	9022	9221	9512	
2007	2045	2214	2510	3006	3035	3050	3132	3151	3202	3225	3246	3332	3351	3503	3524	3541	3590	6021	6223	7061	7267	9006	9104	9222	9513	



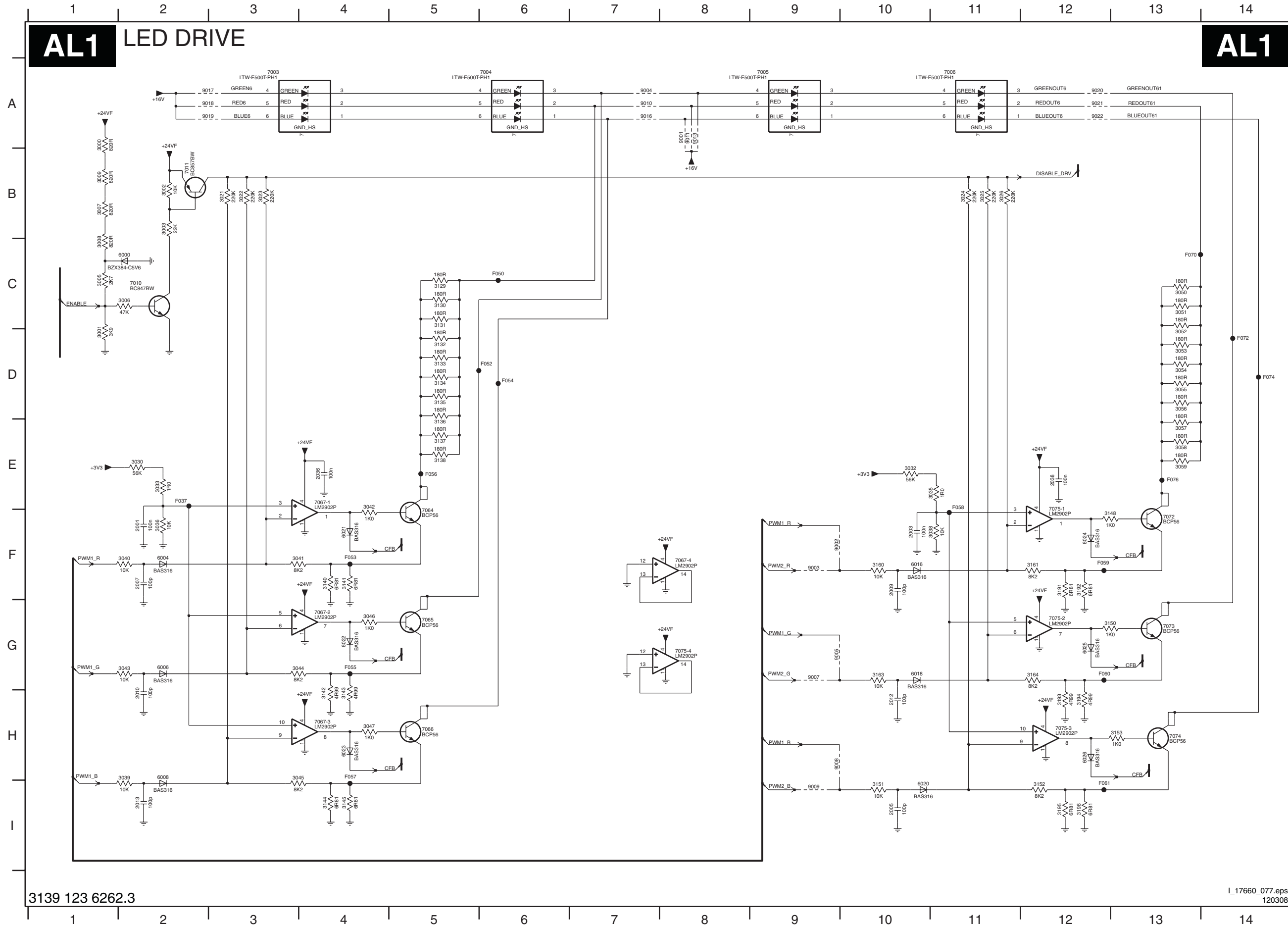
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4 LED Lite-On Panel: LED Drive

AL1 LED DRIVE

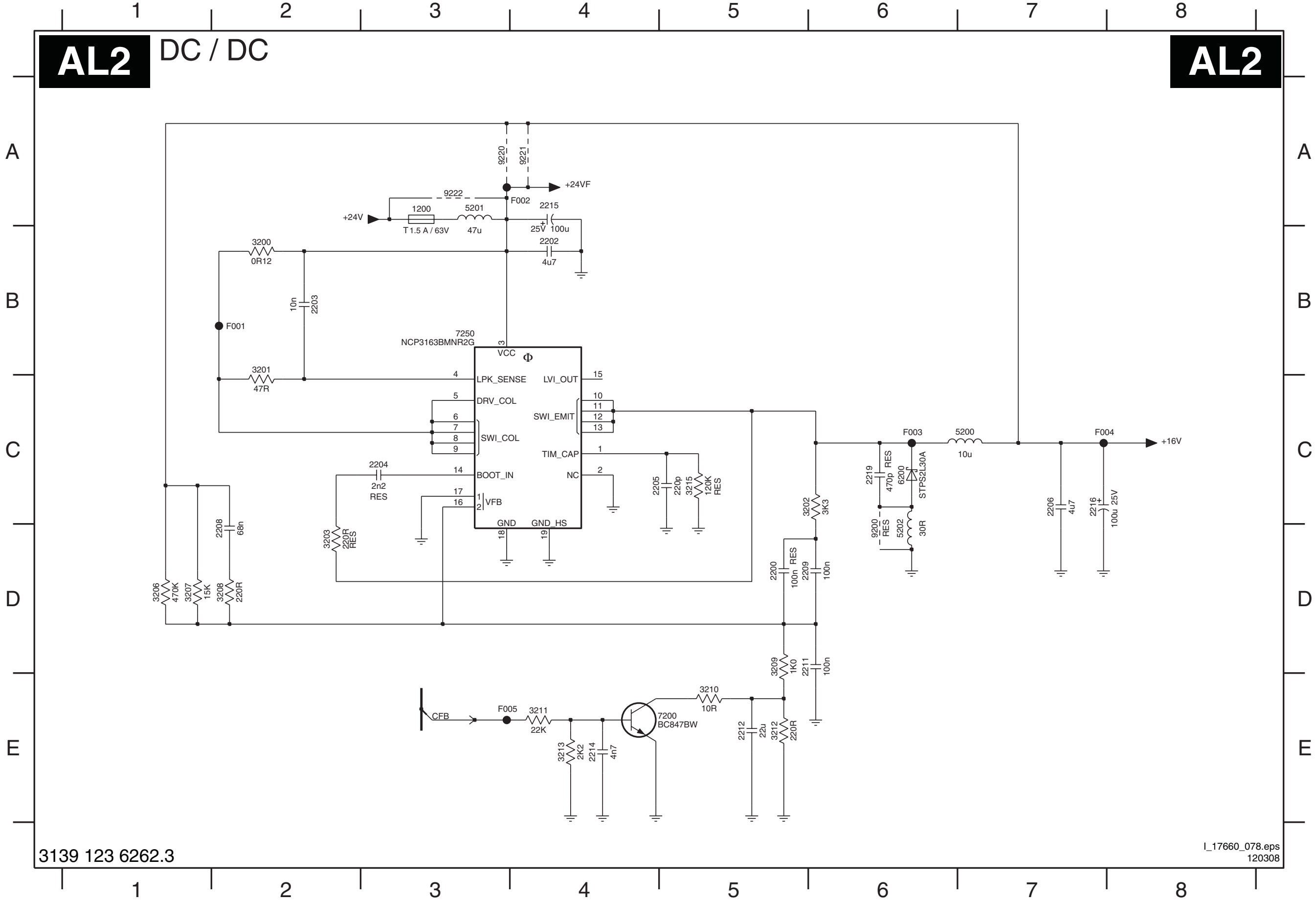
AL1



- 2001 F2
- 2003 F10
- 2005 I10
- 2007 F2
- 2009 F10
- 2010 H2
- 2012 H10
- 2013 I2
- 2036 E4
- 2038 E12
- 3000 A1
- 3001 D1
- 3002 B2
- 3003 B2
- 3005 C1
- 3006 C2
- 3007 B1
- 3008 C1
- 3009 B1
- 3021 B3
- 3022 B3
- 3023 B3
- 3024 B11
- 3025 B11
- 3030 E2
- 3032 E10
- 3033 E2
- 3035 E11
- 3038 F2
- 3038 F11
- 3039 H2
- 3040 F2
- 3041 F3
- 3042 E4
- 3043 G2
- 3044 G3
- 3045 H3
- 3046 G4
- 3047 H4
- 3050 C13
- 3051 C13
- 3052 D13
- 3053 D13
- 3054 D13
- 3055 D13
- 3056 D13
- 3057 E13
- 3058 E13
- 3059 E13
- 3129 C5
- 3130 C5
- 3131 C5
- 3132 D5
- 3133 D5
- 3134 D5
- 3135 D5
- 3136 E5
- 3137 E5
- 3138 E5
- 3140 F4
- 3141 I2
- 3142 H4
- 3143 H4
- 3144 I4
- 3145 I4
- 3148 F12
- 3150 G12
- 3151 I10
- 3152 I12
- 3153 H13
- 3160 F10
- 3161 F12
- 3163 G10
- 3164 G12
- 3191 F12
- 3192 F12
- 3194 H12
- 3195 I12
- 3196 I12
- 6000 C2
- 6004 F2
- 6006 G2
- 6008 H2
- 6016 F10
- 6018 G10
- 6020 I10
- 6021 F4
- 6022 G4
- 6023 H4
- 6024 F12
- 6025 G12
- 6026 H12
- 7003 A3
- 7004 A6
- 7005 A9
- 7006 A11
- 7010 C2
- 7011 B2
- 7064 F5
- 7065 G5
- 7065 H5
- 7067-1 E4
- 7067-2 G4
- 7067-3 H4
- 7067-4 F8
- 7072 F13
- 7073 G13
- 7074 H13
- 7075-1 F12
- 7075-2 G12
- 7075-3 H12
- 7075-4 G8
- 9001 A8
- 9002 F9
- 9003 F9
- 9004 A7
- 9005 G9
- 9007 G9
- 9008 H9
- 9009 I9
- 9010 A7
- 9011 A8
- 9011 A8
- 9013 A7
- 9016 A7
- 9017 A2
- 9018 A2
- 9019 A2
- 9020 A12
- 9021 A12
- 9022 A12
- F037 E2
- F050 C6
- F052 D6
- F053 F4
- F054 D6
- F055 G4
- F056 E5
- F057 H4
- F058 E11
- F059 F12
- F060 G12
- F061 I12
- F070 C13
- F072 D14
- F074 D14
- F076 E13

4 LED Lite-On Panel: DC / DC

AL2 DC / DC AL2

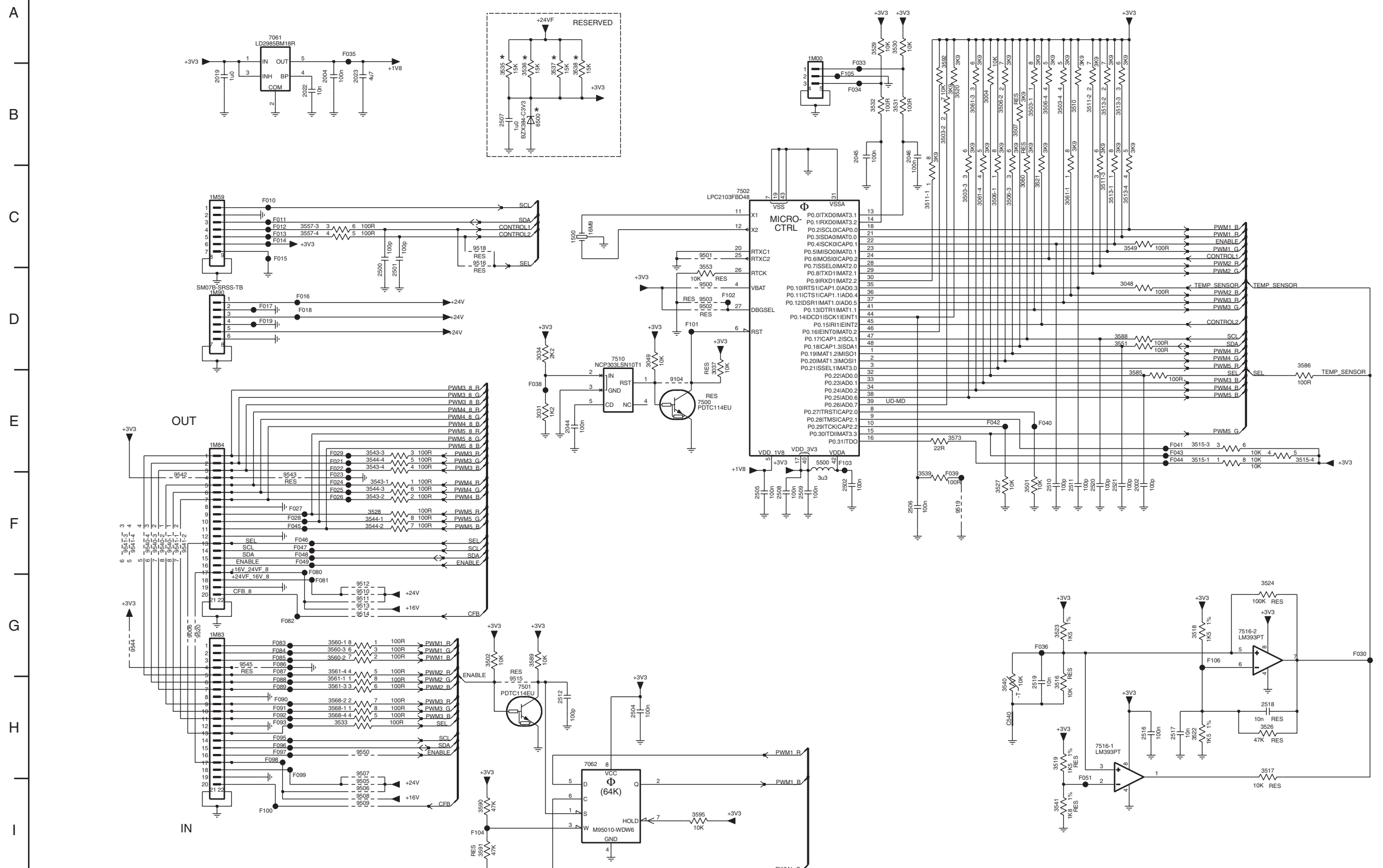


- 1200 A3
- 2202 B4
- 2203 B2
- 2204 C3
- 2205 C4
- 2206 C7
- 2208 D2
- 2209 D5
- 2211 D5
- 2212 E5
- 2214 E4
- 2215 A4
- 2216 C7
- 2219 C6
- 3200 B2
- 3201 B2
- 3202 C6
- 3203 D2
- 3206 D1
- 3207 D1
- 3208 D2
- 3209 D5
- 3210 E5
- 3211 E4
- 3212 E5
- 3213 E4
- 3215 C5
- 5200 C7
- 5201 A3
- 5202 D6
- 6200 C6
- 7200 E4
- 7250 B3
- 9200 D6
- 9220 A3
- 9221 A4
- 9222 A3
- F001 B2
- F002 A4
- F003 C6
- F004 C7
- F005 E3

4 LED Lite-On Panel: uC Block

AL3 MICROCONTROLLER BLOCK

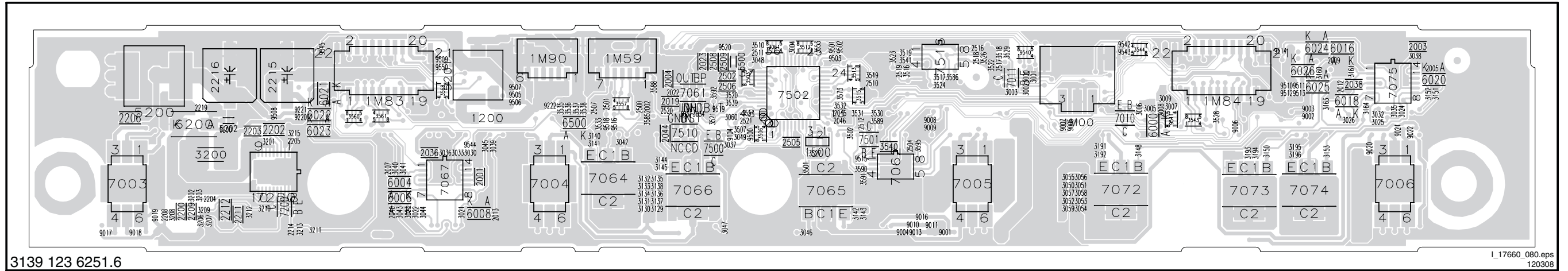
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1500 C6	3589 G5
1M00 A8	3590 I5
1M59 C2	3591 I5
1M83 G2	3592 A9
1M84 E2	3595 I7
1M90 D2	5500 E8
2002 F11	6500 B5
2004 B3	7061 A3
2019 B2	7062 H6
2022 B3	7500 E7
2023 B3	7501 H5
2044 E6	7502 C7
2045 B8	7510 D6
2046 B9	7516-1 H11
2500 D4	7516-2 G12
2501 D4	9006 G2
2502 F8	9104 E7
2504 H6	9500 D7
2505 F7	9501 C7
2506 F9	9502 D7
2507 B5	9503 D7
2508 F8	9505 I4
2509 F8	9506 I4
2510 F10	9507 H4
2511 F10	9508 I4
2512 H5	9509 I4
2516 H11	9510 G4
2517 H11	9511 G4
2518 H12	9512 G4
2519 H10	9513 G4
2520 F11	9514 G4
2521 F11	9515 H5
3004 B10	9516 C5
3031 E5	9518 C5
3034 D5	9519 F9
3037 D7	9520 G2
3048 D11	9540-1 F2
3049 D6	9540-2 F2
3060 C10	9540-3 F1
3061-1 C10	9540-4 C10
3061-3 B10	9541-1 F2
3061-4 C10	9541-2 F2
3501 F10	9541-3 F1
3502 G5	9541-4 F1
3503-1 B10	9542 F2
3503-2 B9	9543 F3
3503-3 C9	9544 G1
3503-4 B10	9545 G2
3506-1 C10	9550 H4
3506-2 B10	C540 H10
3506-3 C10	F010 C3
3506-4 B10	F011 C3
3507 B10	F012 C3
3510 B11	F013 C3
3511-1 C9	F014 C3
3511-2 B11	F015 C3
3511-3 C11	F016 D3
3513-1 C11	F017 D3
3513-2 B11	F018 D3
3513-3 B11	F019 D3
3513-4 C11	F021 E3
3515-1 E12	F022 E3
3515-3 E12	F023 F3
3515-4 E13	F024 F3
3516 H10	F025 F3
3517 H12	F026 F3
3518 G12	F027 F3
3519 H10	F028 F3
3520 B9	F029 E3
3521 C10	F030 G13
3522 H12	F033 B8
3523 G10	F034 B8
3524 G12	F035 A3
3526 H12	F036 G10
3527 F10	F038 E5
3528 F4	F039 F9
3529 A9	F040 E10
3530 A9	F041 E10
3531 B9	F042 E10
3532 B9	F043 E10
3533 H3	F044 E12
3535 B5	F045 F3
3536 B5	F046 F3
3537 B5	F047 F3
3538 B6	F048 F3
3539 F9	F049 F3
3540 H10	F051 H11
3541 I10	F080 F3
3543-1 F4	F081 G3
3543-2 F4	F082 G3
3543-3 E4	F083 G3
3543-4 E4	F084 G3
3544-1 F4	F085 G3
3544-2 F4	F086 G3
3544-3 F4	F087 G3
3544-4 E4	F088 H3
3549 C11	F089 H3
3551 D11	F090 H3
3553 D7	F091 H3
3557-3 C3	F092 H3
3557-4 C3	F093 H3
3560-1 G3	F095 H3
3560-2 G3	F096 H3
3560-3 G3	F097 H3
3561-1 H3	F098 H3
3561-3 H3	F099 H3
3561-4 G3	F100 I3
3568-1 H3	F101 D7
3568-2 H3	F102 D7
3568-4 H3	F103 E8
3573 E9	F104 I5
3585 E11	F105 B8
3586 D13	F106 G12
3588 D11	

Layout 4 LED Lite-On Panel: (Top Side)

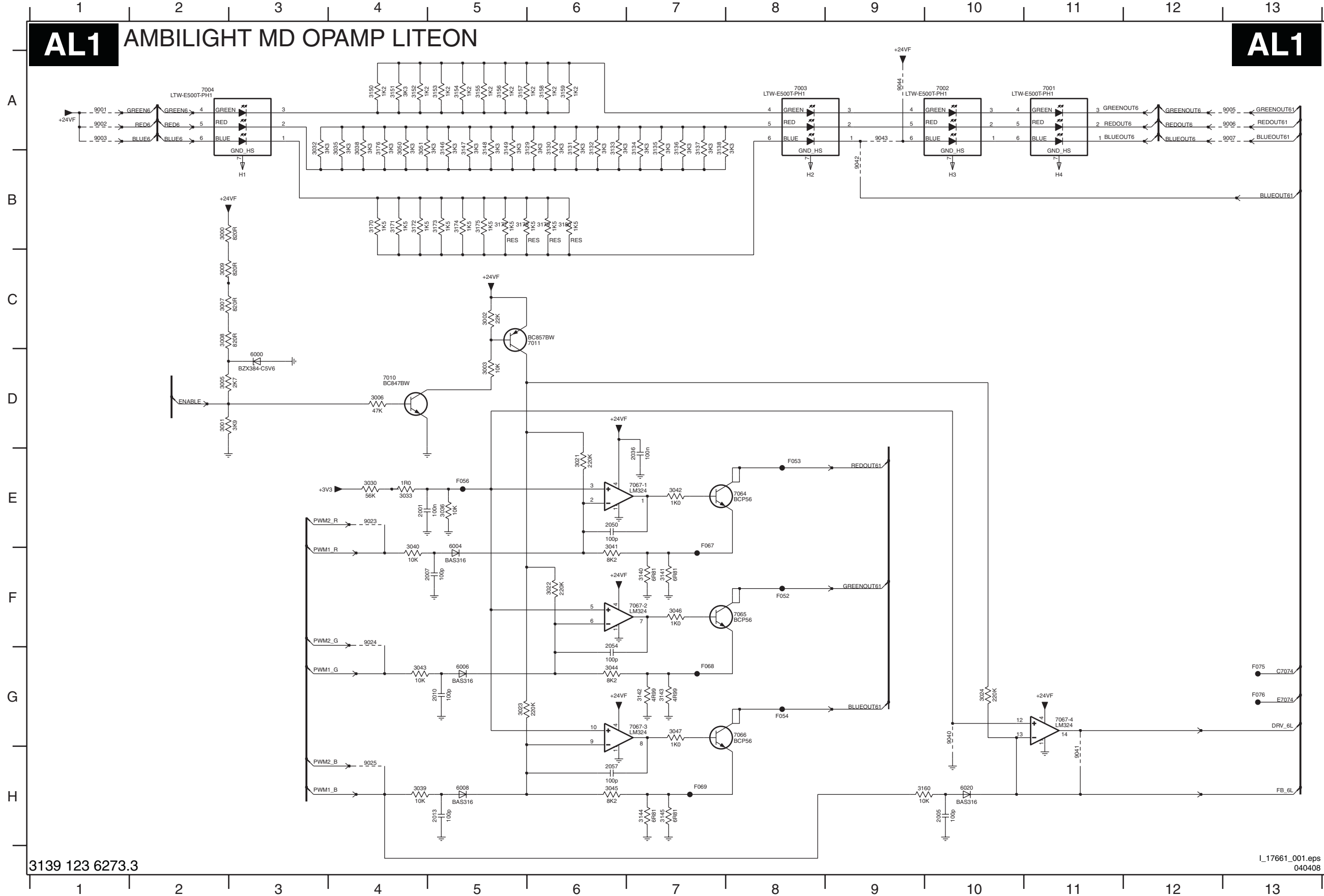
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1500	--	2007	--	2045	--	2212	--	2507	--	2521	--	3021	--	3035	--	3046	--	3057	--	3135	--	3150	--	3194	--	3210	--	3511	--	3524	--	3537	--	3560	--	3595	--	6020	--	7005	--	7073	--	9002	--	9016	--	9222	--	9511	--	9542	--
1M00	--	2009	--	2046	--	2214	--	2508	--	3000	--	3022	--	3036	--	3047	--	3058	--	3136	--	3151	--	3195	--	3211	--	3513	--	3526	--	3538	--	3561	--	5200	--	6021	--	7006	--	7074	--	9003	--	9017	--	9500	--	9512	--	9543	--
1M59	--	2010	--	2200	--	2215	--	2509	--	3001	--	3023	--	3037	--	3048	--	3059	--	3137	--	3152	--	3196	--	3212	--	3515	--	3527	--	3539	--	3568	--	5201	--	6022	--	7010	--	7075	--	9004	--	9018	--	9501	--	9513	--	9544	--
1M83	--	2012	--	2202	--	2216	--	2510	--	3002	--	3024	--	3038	--	3049	--	3060	--	3138	--	3153	--	3200	--	3213	--	3516	--	3528	--	3540	--	3573	--	5202	--	6023	--	7011	--	7200	--	9005	--	9019	--	9502	--	9514	--	9545	--
1M84	--	2013	--	2203	--	2219	--	2511	--	3003	--	3025	--	3039	--	3050	--	3061	--	3140	--	3160	--	3201	--	3215	--	3517	--	3529	--	3541	--	3585	--	5500	--	6024	--	7061	--	7250	--	9006	--	9020	--	9503	--	9515	--	9550	--
1M90	--	2019	--	2204	--	2500	--	2512	--	3004	--	3026	--	3040	--	3051	--	3129	--	3141	--	3161	--	3202	--	3215	--	3518	--	3530	--	3543	--	3586	--	6000	--	6025	--	7062	--	7500	--	9007	--	9021	--	9505	--	9516	--		--
2001	--	2022	--	2205	--	2501	--	2516	--	3005	--	3030	--	3041	--	3052	--	3130	--	3142	--	3163	--	3203	--	3502	--	3519	--	3531	--	3544	--	3588	--	6004	--	6026	--	7064	--	7501	--	9008	--	9022	--	9506	--	9518	--		--
2002	--	2023	--	2206	--	2502	--	2517	--	3006	--	3031	--	3042	--	3053	--	3131	--	3143	--	3164	--	3206	--	3503	--	3520	--	3532	--	3549	--	3589	--	6006	--	6200	--	7065	--	7502	--	9009	--	9104	--	9507	--	9519	--		--
2003	--	2036	--	2208	--	2504	--	2518	--	3007	--	3032	--	3043	--	3054	--	3132	--	3144	--	3191	--	3207	--	3506	--	3521	--	3533	--	3551	--	3590	--	6008	--	6008	--	7066	--	7510	--	9010	--	9200	--	9508	--	9520	--		--
2004	--	2038	--	2209	--	2505	--	2519	--	3008	--	3033	--	3044	--	3055	--	3133	--	3145	--	3192	--	3208	--	3507	--	3522	--	3535	--	3553	--	3591	--	6016	--	7003	--	7067	--	7516	--	9011	--	9220	--	9509	--	9540	--		--



4 LED MD OPAMP Lite-on (32")

AL1 AMBILIGHT MD OPAMP LITEON

AL1



- 2001 E4
- 2005 H10
- 2007 F5
- 2010 G5
- 2013 H5
- 2036 E7
- 2054 G6
- 2057 H6
- 3000 B2
- 3001 D2
- 3002 C5
- 3003 D5
- 3005 D2
- 3006 D4
- 3007 C2
- 3008 C2
- 3009 C2
- 3021 E6
- 3022 F6
- 3023 G5
- 3024 G10
- 3030 E4
- 3032 A3
- 3033 E4
- 3035 A4
- 3036 E5
- 3038 A4
- 3039 H4
- 3040 F4
- 3041 F6
- 3042 E7
- 3043 G4
- 3044 G6
- 3045 H6
- 3046 F7
- 3047 G7
- 3050 A4
- 3051 A4
- 3129 A6
- 3130 A6
- 3131 A6
- 3132 A6
- 3133 A6
- 3134 A7
- 3135 A7
- 3136 A7
- 3137 A7
- 3138 A7
- 3140 F7
- 3141 F7
- 3142 G7
- 3143 G7
- 3144 H7
- 3145 H7
- 3146 A5
- 3147 A5
- 3148 A5
- 3149 A5
- 3150 A4
- 3151 A4
- 3152 A4
- 3153 A5
- 3154 A5
- 3155 A5
- 3156 A5
- 3157 A5
- 3158 A6
- 3159 A6
- 3160 H9
- 3170 B4
- 3171 B4
- 3172 B4
- 3173 B5
- 3174 B5
- 3175 B5
- 3176 A4
- 3177 B5
- 3178 B5
- 3179 B6
- 3180 B6
- 6000 D3
- 6004 F5
- 6006 G5
- 6008 H5
- 6020 H10
- 7001 A11
- 7002 A10
- 7003 A8
- 7004 A2
- 7010 D4
- 7011 C6
- 7064 E8
- 7065 F8
- 7066 G8
- 7067-1 E7
- 7067-2 F7
- 7067-3 G7
- 7067-4 G11
- 9001 A1
- 9002 A1
- 9003 A1
- 9005 A13
- 9006 A13
- 9007 A13
- 9023 E4
- 9024 F4
- 9025 H4
- 9041 H11
- 9042 B9
- 9043 A9
- 9044 A9
- F052 F8
- F053 E8
- F054 G8
- F056 E5
- F067 E7
- F068 G7
- F069 H7
- F075 G13
- F076 G13

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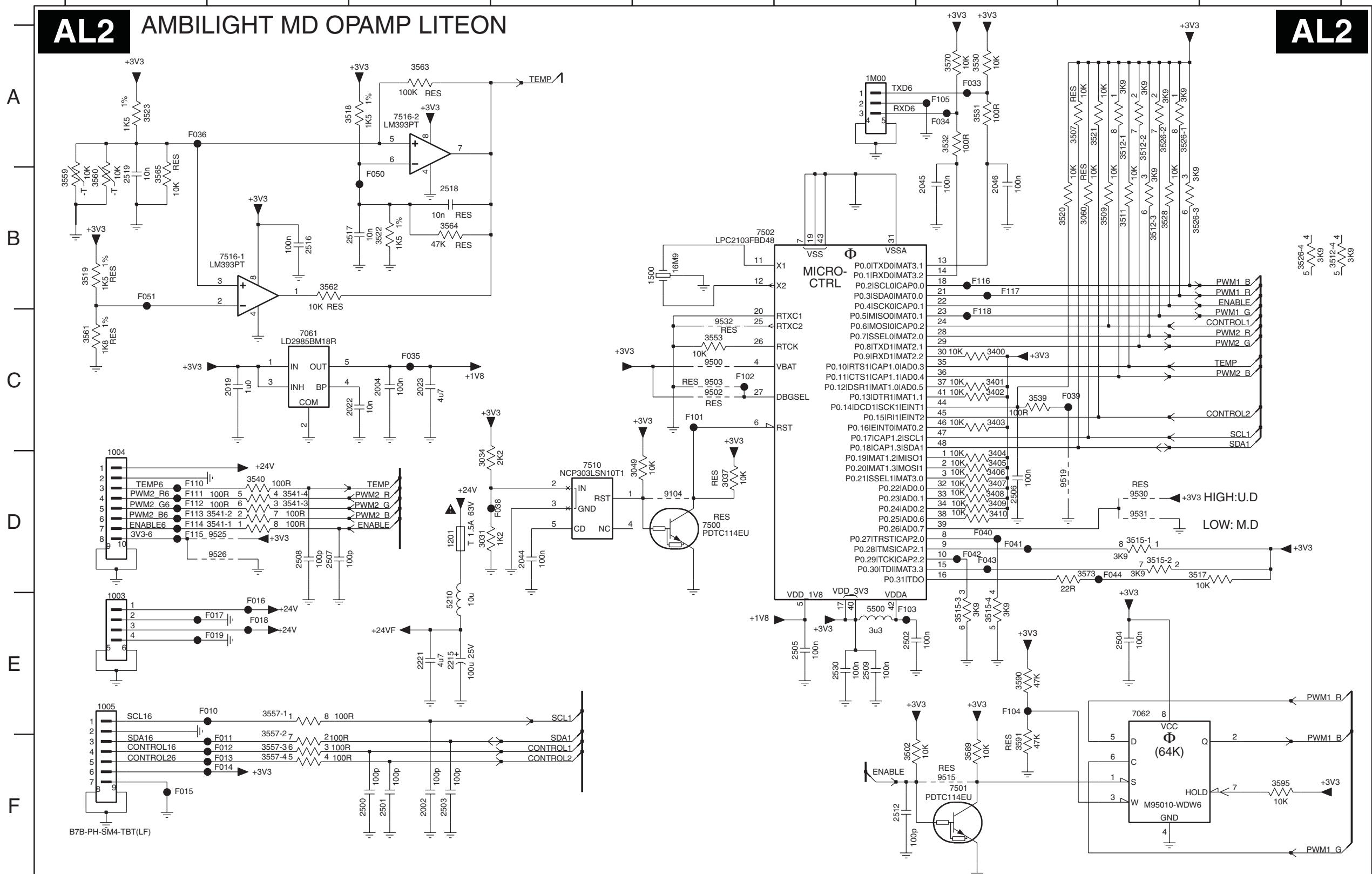
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4 LED MD OPAMP Lite-on (32")

AL2

AMBILIGHT MD OPAMP LITEON

AL2



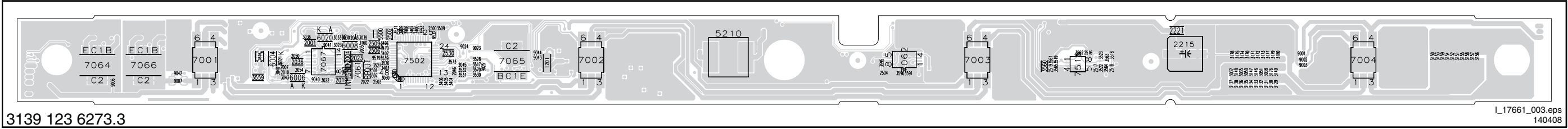
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1004 D1	3557-2 F2
1005 E1	3557-3 F2
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1500 B5	3559 B1
1M00 A6	3560 B1
2002 F3	3561 C1
2004 C3	3562 B2
2019 C2	3563 A3
2022 C3	3564 B3
2023 C3	3565 B1
2044 D4	3570 A7
2045 B7	3573 D8
2046 B7	3589 F7
2215 E3	3590 E7
2221 E3	3591 F7
2500 F3	3595 F9
2501 F3	5210 E3
2502 E6	5500 E6
2503 F3	7061 C2
2504 E8	7062 E8
2505 E6	7500 D5
2506 D7	7501 F7
2507 D2	7502 B6
2508 D2	7510 D4
2509 E6	7516-1 B2
2512 F6	7516-2 A3
2516 B2	9104 D5
2517 B3	9500 C5
2518 B3	9502 C5
2519 B1	9503 C5
2530 E6	9515 F7
3031 D3	9519 D8
3034 D3	9525 D2
3037 D5	9526 D2
3049 D5	9530 D8
3060 B8	9531 D8
3400 C7	9532 C5
3401 C7	F101 E2
3402 C7	F101 F2
3403 C7	F102 F2
3404 D7	F103 F2
3405 D7	F104 F2
3406 D7	F105 F1
3407 D7	F106 E2
3408 D7	F107 E2
3409 D7	F108 E2
3410 D7	F109 E2
3502 F6	F033 A7
3507 A8	F034 A7
3509 B8	F035 C3
3511 B8	F036 A1
3512-1 A8	F038 D4
3512-2 A8	F039 C8
3512-3 B8	F040 D7
3512-4 B9	F041 D7
3515-1 D8	F042 D7
3515-2 D8	F043 D7
3515-3 E7	F044 D8
3515-4 E7	F050 B3
3517 D8	F051 B1
3518 A3	F101 C5
3519 B1	F102 C5
3520 B8	F103 E6
3521 A8	F104 E7
3522 B3	F105 A7
3523 A1	F110 D1
3526-1 A8	F111 D1
3526-2 A8	F112 D1
3526-3 B8	F113 D1
3526-4 B9	F114 D1
3528 B8	F115 D1
3530 A7	F116 B7
3531 A7	F117 B7
3532 A7	F118 C7
3539 C7	
3540 D2	
3541-1 D2	
3541-2 D2	
3541-3 D2	
3541-4 D2	
3553 C5	

3139 123 6273.3

I_17661_002.eps
040408

Layout 4 LED MD OPAMP Lite-on (32") (Top Side)

1201	--	2013	--	2046	--	2500	--	2509	--	3021	--	3035	--	3050	--	3132	--	3138	--	3151	--	3157	--	3172	--	3178	--	3403	--	3409	--	3518	--	3526	--	3553	--	3564	--	3595	--	6020	--	7062	--	7516	--	9023	--	9043	--
2001	--	2019	--	2050	--	2501	--	2516	--	3022	--	3036	--	3051	--	3133	--	3146	--	3152	--	3158	--	3173	--	3179	--	3404	--	3410	--	3519	--	3528	--	3559	--	3565	--	5210	--	7001	--	7064	--	9001	--	9024	--	9044	--
2004	--	2022	--	2054	--	2502	--	2517	--	3023	--	3038	--	3060	--	3134	--	3147	--	3153	--	3159	--	3174	--	3180	--	3405	--	3507	--	3520	--	3530	--	3560	--	3570	--	5500	--	7002	--	7065	--	9002	--	9025	--	9519	--
2005	--	2023	--	2057	--	2503	--	2518	--	3030	--	3039	--	3129	--	3135	--	3148	--	3154	--	3160	--	3175	--	3400	--	3406	--	3509	--	3521	--	3531	--	3561	--	3573	--	6004	--	7003	--	7066	--	9003	--	9040	--	9532	--
2007	--	2036	--	2215	--	2504	--	2519	--	3032	--	3040	--	3130	--	3136	--	3149	--	3155	--	3170	--	3176	--	3401	--	3407	--	3511	--	3522	--	3532	--	3562	--	3590	--	6006	--	7004	--	7067	--	9006	--	9041	--		--
2010	--	2045	--	2221	--	2506	--	2530	--	3033	--	3043	--	3131	--	3137	--	3150	--	3156	--	3171	--	3177	--	3402	--	3408	--	3517	--	3523	--	3539	--	3563	--	3591	--	6008	--	7061	--	7502	--	9007	--	9042	--		--

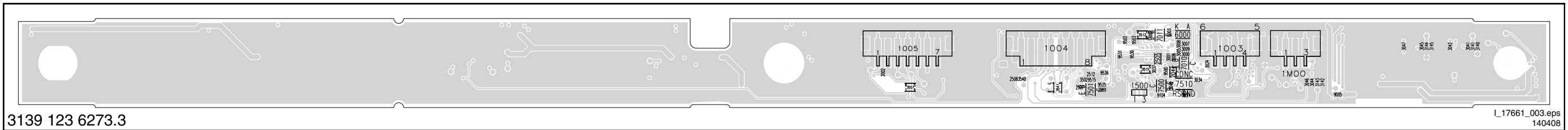


3139 123 6273.3

L_17661_003.eps
140408

Layout 4 LED MD OPAMP Lite-on (32") (Top Side)

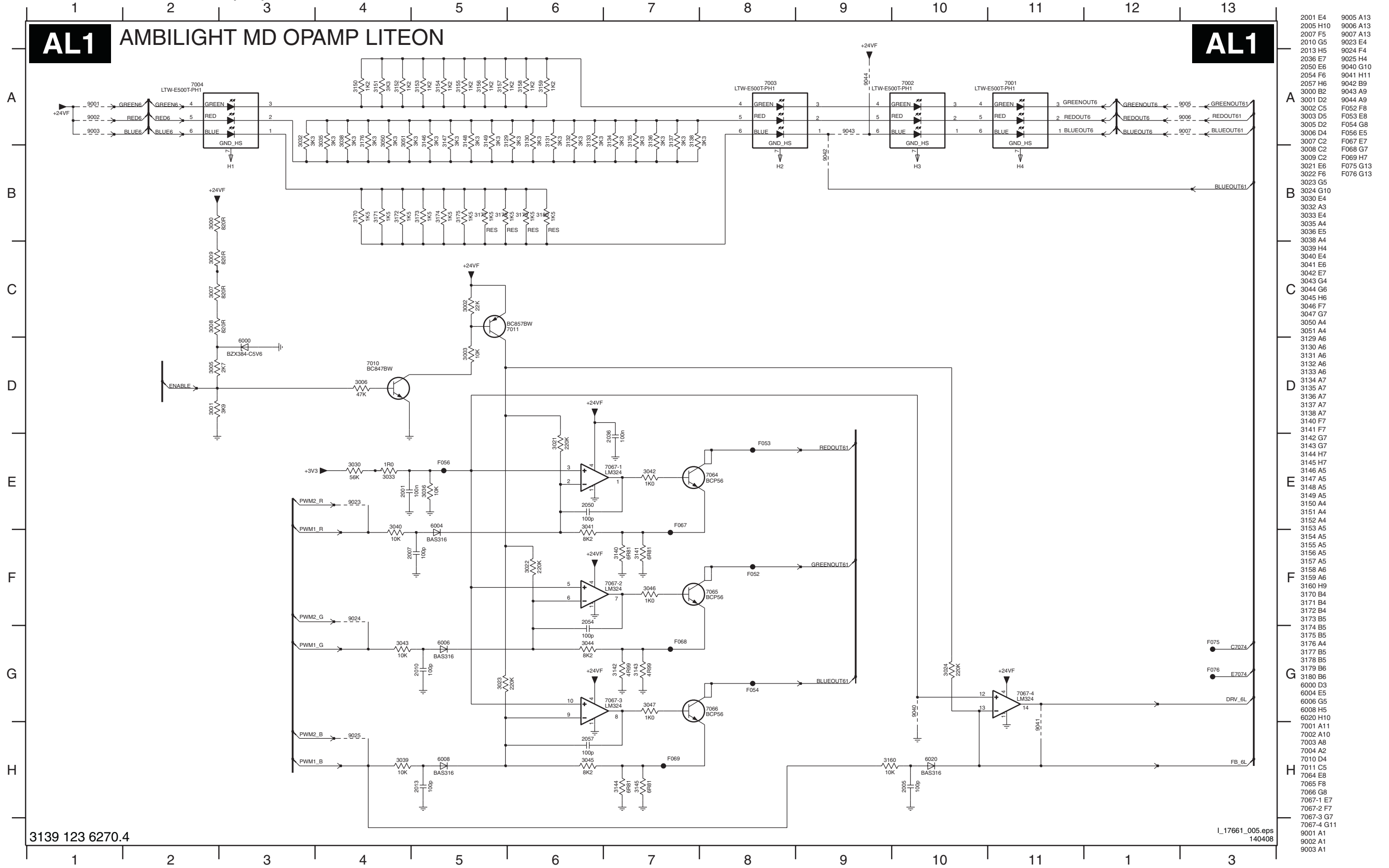
1003	--	1500	--	2044	--	2508	--	3001	--	3005	--	3008	--	3031	--	3041	--	3045	--	3049	--	3142	--	3145	--	3515	--	3557	--	7010	--	7501	--	9104	--	9503	--	9526	--						
1004	--	1M00	--	2505	--	2512	--	3002	--	3006	--	3009	--	3034	--	3042	--	3046	--	3049	--	3140	--	3143	--	3502	--	3540	--	3589	--	7011	--	7510	--	9500	--	9515	--	9530	--				
1005	--	2002	--	2507	--	3000	--	3003	--	3007	--	3024	--	3037	--	3044	--	3047	--	3141	--	3144	--	3512	--	3541	--	6000	--	7500	--	9005	--	9502	--	9525	--	9531	--		--		--		--



3139 123 6273.3

L_17661_003.eps
140408

4 LED MD OPAMP Lite-on (42")



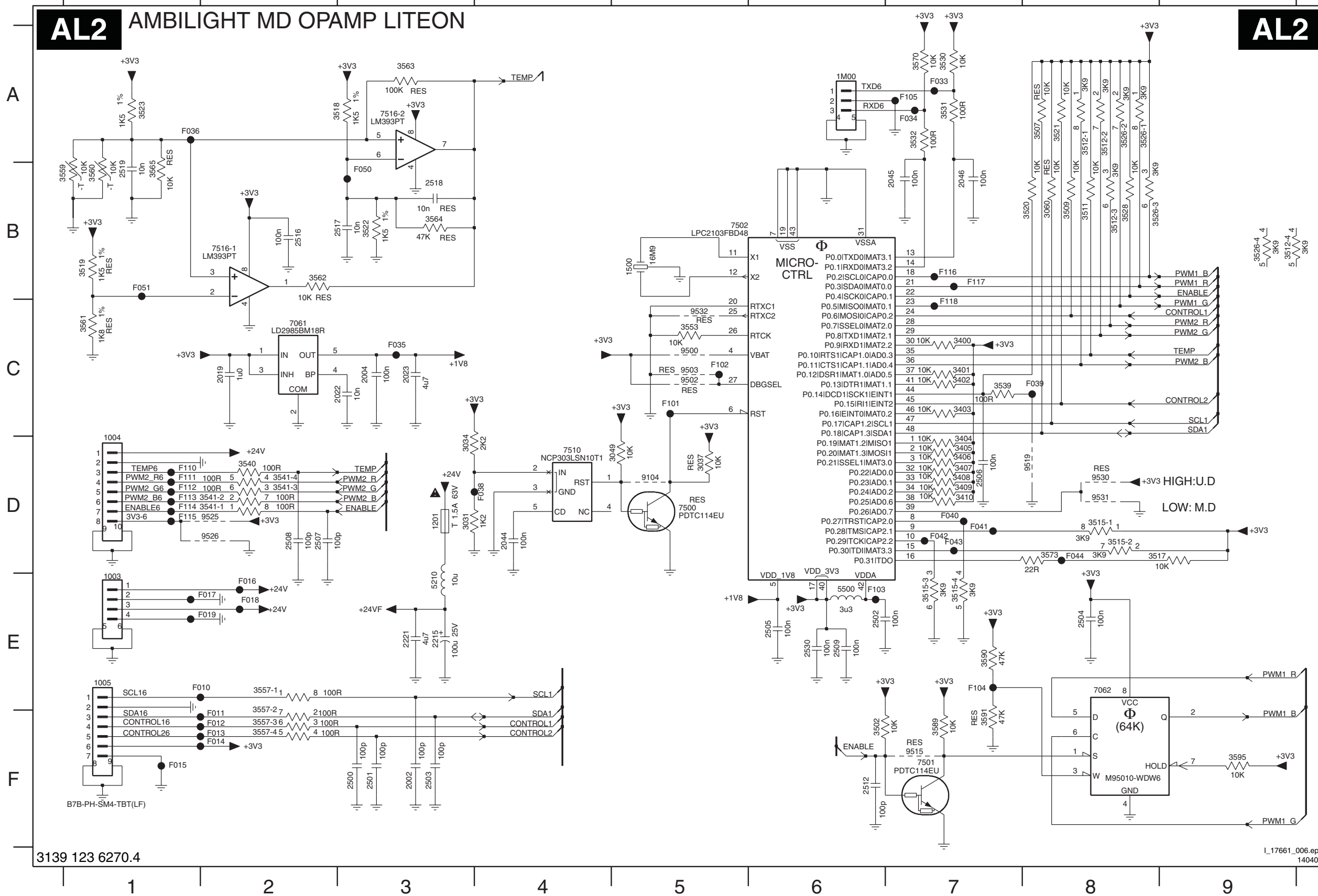
3139 123 6270.4

L_17661_005.eps
140408

4 LED MD OPAMP Lite-on (42")

AL2 AMBILIGHT MD OPAMP LITEON

AL2



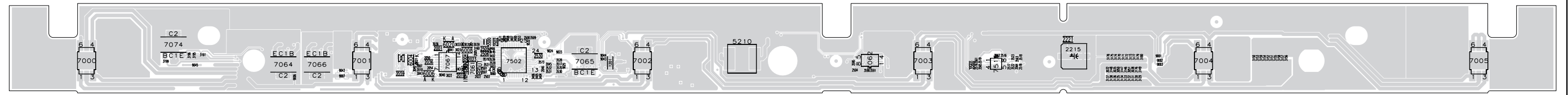
1003 E1	3557-1 E2
1004 D1	3557-2 F2
1005 E1	3557-3 F2
1201 D3	3557-4 F2
1500 B5	3559 B1
1M00 A6	3560 B1
2002 F3	3561 C1
2004 C3	3562 B2
2019 C2	3563 A3
2022 C3	3564 B3
2023 C3	3565 B1
2044 D4	3570 A7
2045 B7	3573 D8
2046 B7	3589 F7
2215 E3	3590 E7
2221 E3	3591 F7
2500 F3	3595 F9
2510 F3	5210 E3
2502 E6	5500 E6
2503 F3	7061 C2
2504 E8	7062 E8
2505 E6	7500 D5
2506 D7	7501 F7
2507 D2	7502 B5
2508 D2	7510 D4
2509 E6	7516-1 B2
2512 F6	7516-2 A3
2516 D5	9104 D5
2517 B3	9500 C5
2518 B3	9502 C5
2519 B1	9503 C5
2530 E6	9515 F7
3031 D3	9519 D8
3034 D3	9525 D2
3037 D5	9526 D2
3049 D5	9530 D8
3060 B8	9531 D8
3400 C7	9532 C5
3401 C7	F010 E2
3402 C7	F011 F2
3403 C7	F012 F2
3404 D7	F013 F2
3405 D7	F014 F2
3406 D7	F015 F1
3407 D7	F016 E2
3408 D7	F017 E2
3409 D7	F018 E2
3410 D7	F019 E2
3502 F6	F033 A7
3507 A8	F034 A7
3509 B8	F035 C3
3511 B8	F036 A1
3512-1 A8	F038 D4
3512-2 A8	F039 C8
3512-3 B8	F040 D7
3512-4 B9	F041 D7
3515-1 D8	F042 D7
3515-2 D8	F043 D7
3515-3 E7	F044 D8
3515-4 E7	F050 B3
3517 D8	F051 B1
3518 A3	F101 C5
3519 B1	F102 C5
3520 B8	F103 E6
3521 A8	F104 E7
3522 B3	F105 A7
3523 A1	F110 D1
3526-1 A8	F111 D1
3526-2 A8	F112 D1
3526-3 B8	F113 D1
3526-4 B9	F114 D1
3528 B8	F115 D1
3530 A7	F116 B7
3531 A7	F117 B7
3532 A7	F118 C7
3539 C7	
3540 D2	
3541-1 D2	
3541-2 D2	
3541-3 D2	
3541-4 D2	
3553 C5	

3139 123 6270.4

L_17661_006.eps 140408

Layout 4 LED MD OPAMP Lite-on (42") (Top Side)

1201	2013	2046	2500	2509	3021	3035	3050	3132	3138	3151	3157	3171	3177	3199	3405	3507	3520	3530	3560	3570	5500	7001	7062	7502	9007	9042
2001	2019	2050	2501	2516	3022	3036	3051	3133	3146	3152	3158	3172	3178	3400	3406	3509	3521	3531	3561	3573	6004	7002	7064	7516	9023	9043
2004	2022	2054	2502	2517	3023	3038	3060	3134	3147	3153	3159	3173	3179	3401	3407	3511	3522	3532	3562	3590	6006	7003	7065	9001	9024	9044
2005	2023	2057	2503	2518	3030	3039	3129	3135	3148	3154	3160	3174	3180	3402	3408	3517	3523	3539	3563	3591	6008	7004	7066	9002	9025	9045
2007	2036	2215	2504	2519	3032	3040	3130	3136	3149	3155	3161	3175	3195	3403	3409	3518	3526	3553	3564	3595	6020	7005	7067	9003	9040	9519
2010	2045	2221	2506	2530	3033	3043	3131	3137	3150	3156	3170	3176	3196	3404	3410	3519	3528	3559	3565	5210	7000	7061	7074	9006	9041	9532

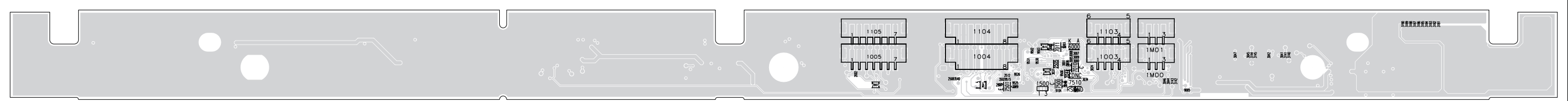


3139 123 6270.4

L_17661_007.eps
140408

Layout 4 LED MD OPAMP Lite-on (42") (Top Side)

1003	1104	1M01	2507	3001	3006	3024	3041	3046	3141	3145	3184	3188	3512	3557	7011	9005	9503	9530
1004	1105	2002	2508	3002	3007	3031	3042	3047	3142	3181	3185	3189	3515	3589	7500	9104	9515	9531
1005	1500	2044	2512	3003	3008	3034	3044	3049	3143	3182	3186	3190	3540	6000	7501	9500	9525	
1103	1M00	2505	3000	3005	3009	3037	3045	3140	3144	3183	3187	3502	3541	7010	7510	9502	9526	



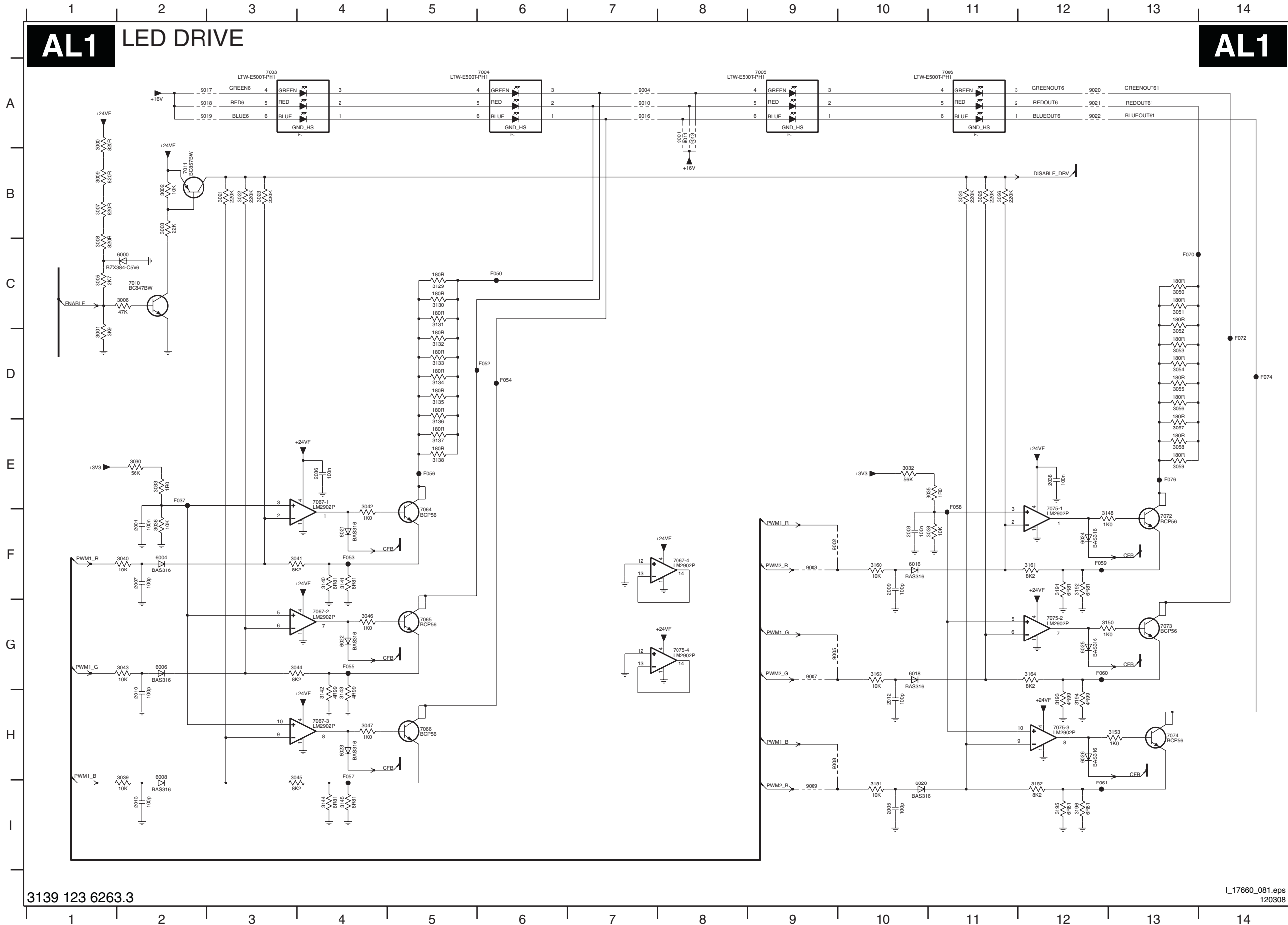
3139 123 6270.4

L_17661_008.eps
140408

6 LED Lite-On Panel: LED Drive

AL1 LED DRIVE

AL1

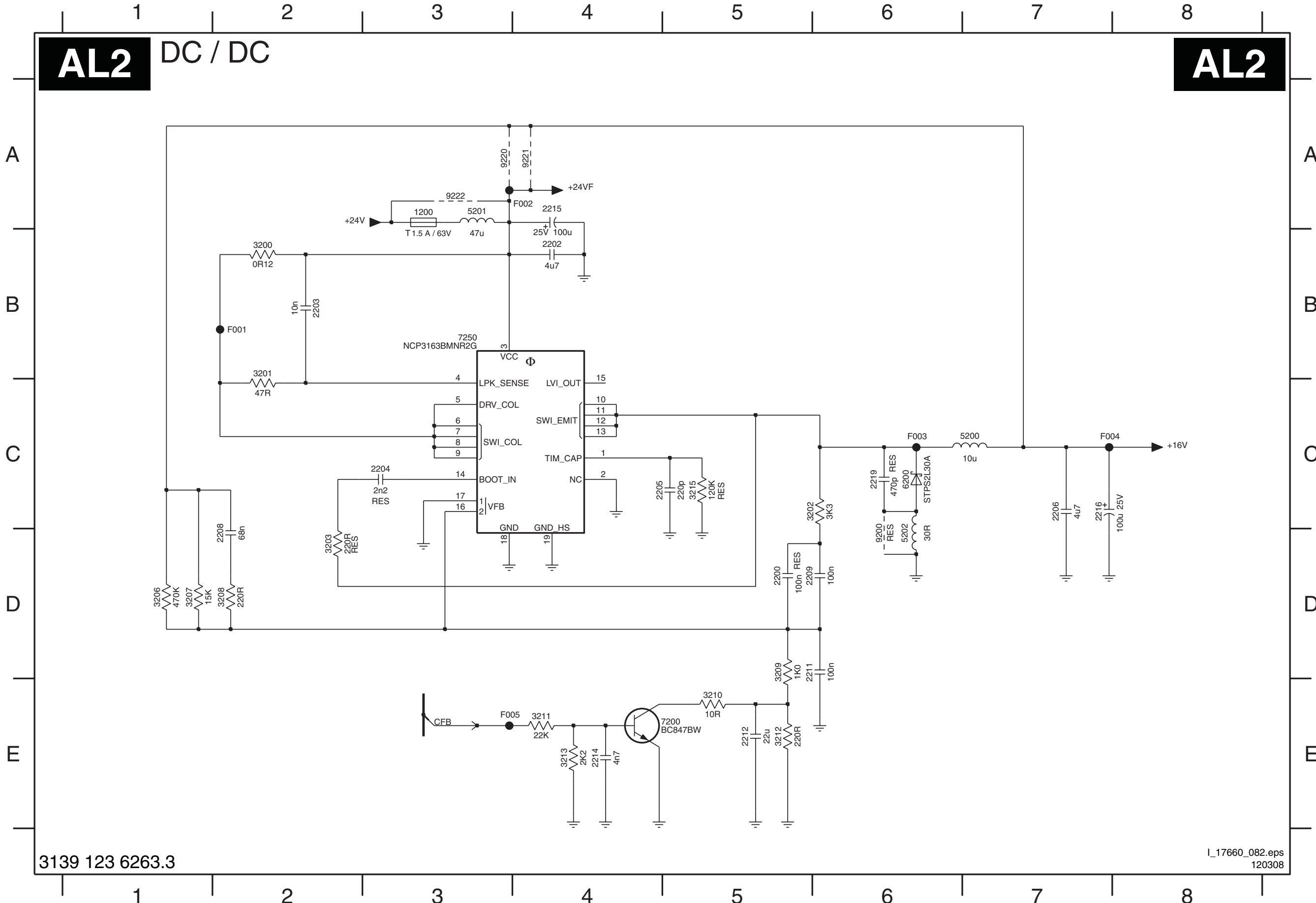


- 2001 F2
- 2003 F10
- 2005 I10
- 2007 F2
- 2009 F10
- 2010 H2
- 2012 H10
- 2013 I2
- 2036 E4
- 2038 E12
- 3000 A1
- 3001 D1
- 3002 B2
- 3003 B2
- 3005 C1
- 3006 C2
- 3007 B1
- 3008 C1
- 3009 B1
- 3021 B3
- 3022 B3
- 3023 B3
- 3024 B11
- 3025 B11
- 3026 B11
- 3030 E2
- 3032 E10
- 3033 E2
- 3035 E11
- 3036 F2
- 3038 F11
- 3039 H2
- 3040 F2
- 3041 F3
- 3042 E4
- 3043 G2
- 3044 G3
- 3045 H3
- 3046 G4
- 3047 H4
- 3050 C13
- 3051 C13
- 3052 D13
- 3053 D13
- 3054 D13
- 3055 D13
- 3056 D13
- 3057 E13
- 3058 E13
- 3059 E13
- 3129 C5
- 3130 C5
- 3131 C5
- 3132 D5
- 3133 D5
- 3134 D5
- 3135 D5
- 3136 E5
- 3137 E5
- 3138 E5
- 3140 F4
- 3141 F4
- 3142 H4
- 3143 H4
- 3144 I4
- 3145 I4
- 3148 F12
- 3150 G12
- 3151 I10
- 3152 I12
- 3153 H13
- 3160 F10
- 3161 F12
- 3163 G10
- 3164 G12
- 3191 F12
- 3192 F12
- 3193 H12
- 3194 H12
- 3195 I12
- 3196 I12
- 6000 C2
- 6004 F2
- 6006 G2
- 6008 H2
- 6016 F10
- 6018 G10
- 6020 I10
- 6021 F4
- 6022 G4
- 6023 H4
- 6024 F12
- 6025 G12
- 6026 H12
- 7003 A3
- 7004 A6
- 7005 A9
- 7006 A11
- 7010 C2
- 7011 B2
- 7064 F5
- 7065 G5
- 7066 H5
- 7067-1 E4
- 7067-2 G4
- 7067-3 H4
- 7067-4 F8
- 7072 F13
- 7073 G13
- 7074 H13
- 7075-1 F12
- 7075-2 G12
- 7075-3 H12
- 7075-4 G8
- 9001 A8
- 9002 F9
- 9003 F9
- 9004 A7
- 9005 G9
- 9007 G9
- 9008 H9
- 9009 I9
- 9010 A7
- 9011 A8
- 9013 A8
- 9016 A7
- 9017 A2
- 9018 A2
- 9019 A2
- 9020 A12
- 9021 A12
- 9022 A12
- F037 E2
- F050 C6
- F052 D6
- F053 F4
- F054 D6
- F055 G4
- F056 E5
- F057 H4
- F058 E11
- F059 F12
- F060 G12
- F061 I12
- F070 C13
- F072 D14
- F074 D14
- F076 E13

6 LED Lite-On Panel: DC / DC

AL2 DC / DC

AL2

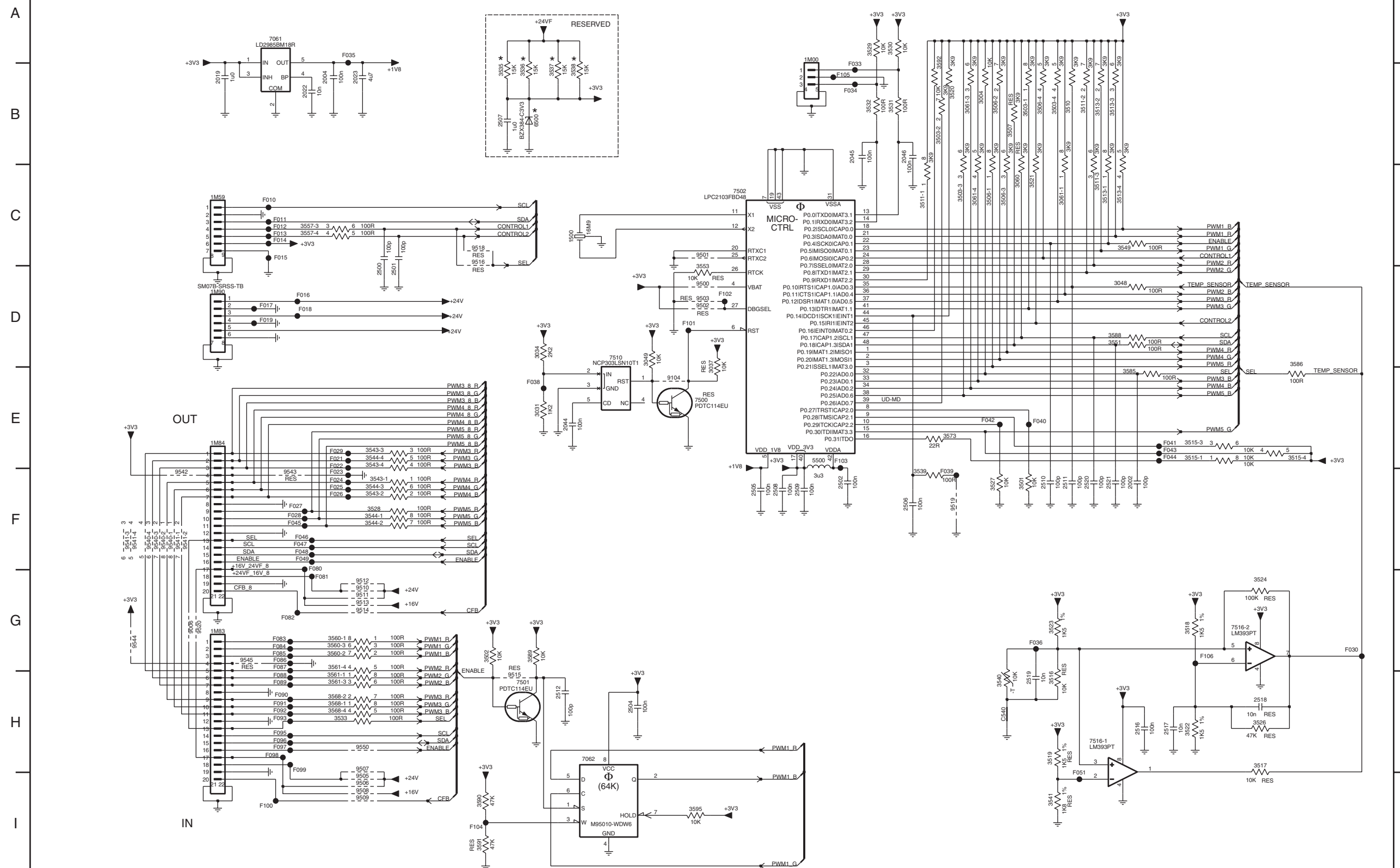


- 1200 A3
- 2200 D5
- 2202 B4
- 2203 B2
- 2204 C3
- 2205 C4
- 2206 C7
- 2208 D2
- 2209 D5
- 2211 D5
- 2212 E5
- 2214 E4
- 2215 A4
- 2216 C7
- 2219 C6
- 3200 B2
- 3201 B2
- 3202 C6
- 3203 D2
- 3206 D1
- 3207 D1
- 3208 D2
- 3209 D5
- 3210 E5
- 3211 E4
- 3212 E5
- 3213 E4
- 3215 C5
- 5200 C7
- 5201 A3
- 5202 D6
- 6200 C6
- 7200 E4
- 7250 B3
- 9200 D6
- 9220 A3
- 9221 A4
- 9222 A3
- F001 B2
- F002 A4
- F003 C6
- F004 C7
- F005 E3

6 LED Lite-On Panel: uC Block

AL3 MICROCONTROLLER BLOCK

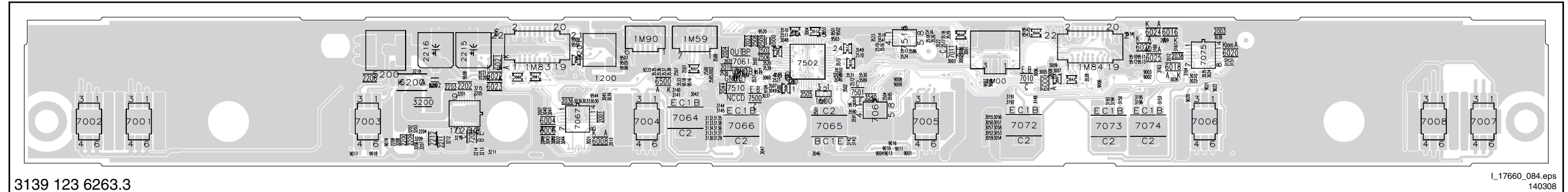
AL3



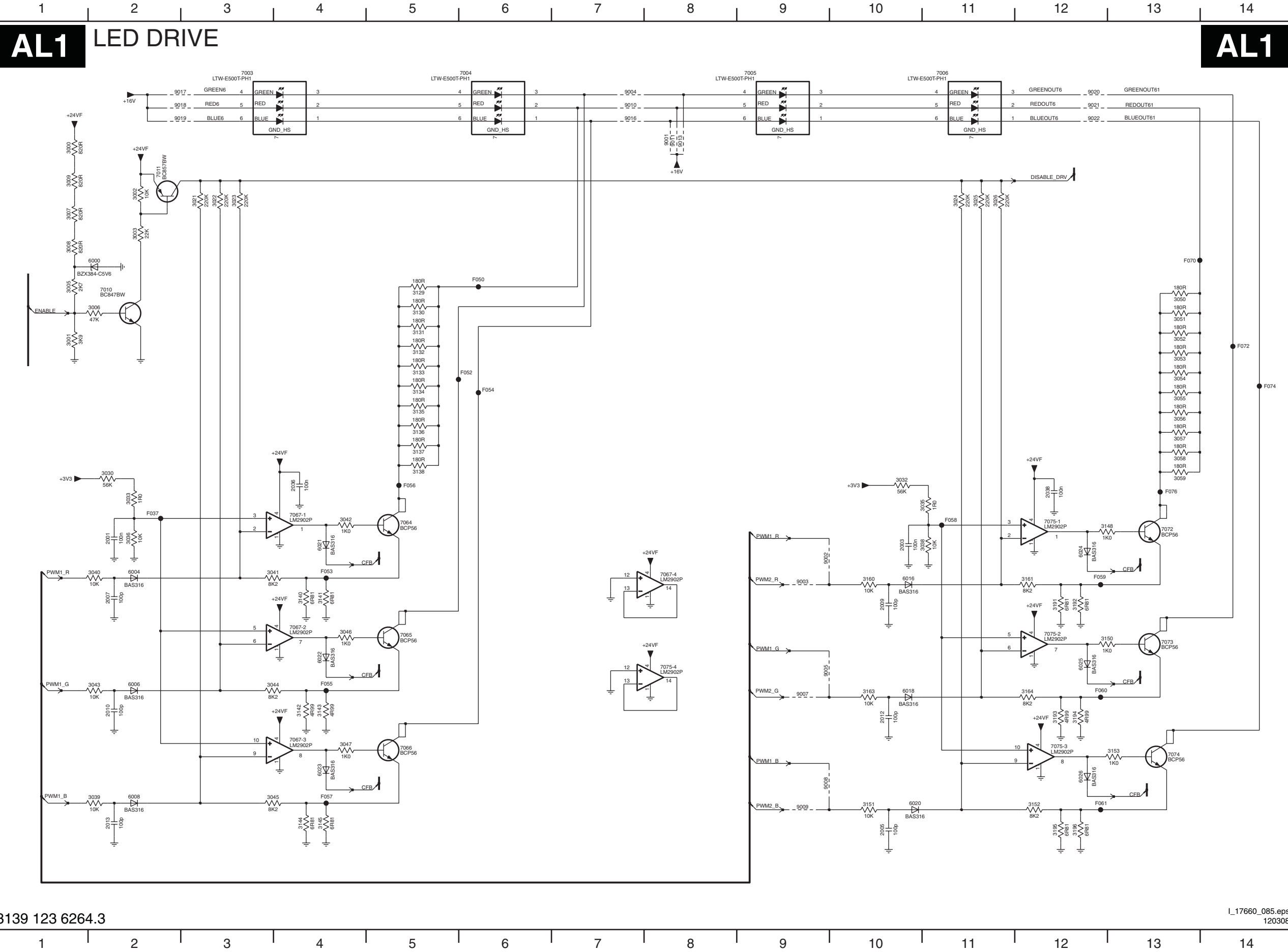
1500 C6	3589 G5
1M00 A8	3590 I5
1M59 C2	3591 I5
1M83 G2	3592 A9
1M84 E2	3593 C9
1M90 D2	3595 I7
2002 F11	5500 E8
2004 B3	6500 B5
2019 B2	7061 A3
2022 B3	7062 H6
2023 B4	7500 E7
2044 E6	7501 H5
2045 B8	7502 C7
2046 B9	7510 D6
2500 D4	7516-1 H11
2501 D4	7516-2 G12
2502 F8	9006 G2
2504 H6	9104 E7
2505 F7	9500 D7
2506 F9	9501 C7
2507 B5	9502 D7
2508 F8	9505 I4
2510 F10	9506 I4
2511 F11	9507 H4
2512 H6	9508 I4
2516 H11	9509 I4
2517 H12	9510 G4
2518 H12	9511 G4
2519 H10	9512 G4
2520 F11	9513 G4
2521 F11	9514 G4
3004 B10	9515 H5
3031 E5	9516 C5
3034 D5	9518 C5
3037 D7	9519 F9
3048 D11	9520 G2
3049 D6	9540-1 F2
3060 C10	9540-2 F2
3061-1 C10	9540-3 F1
3061-3 B10	9540-4 F1
3061-4 C10	9541-1 F2
3501 F10	9541-2 F2
3502 G5	9541-3 F1
3503-1 B10	9541-4 F1
3503-2 B9	9542 F2
3503-3 C9	9543 F3
3503-4 B10	9544 G1
3506-1 C10	9545 G2
3506-2 B10	9550 H4
3506-3 C10	C540 H10
3506-4 B10	F010 C3
3507 B10	F011 C3
3510 B11	F012 C3
3511-1 B11	F013 C3
3511-2 C11	F014 C3
3513-1 C11	F015 C3
3513-2 B11	F016 D3
3513-3 B11	F017 D3
3513-4 C11	F018 D3
3515-1 E12	F019 D3
3515-2 E12	F021 E3
3515-4 E13	F022 E3
3516 H10	F023 F3
3517 H12	F024 F3
3518 G12	F025 F3
3519 H10	F026 F3
3520 B9	F027 F3
3521 C10	F028 F3
3522 H12	F029 E3
3523 G10	F030 G13
3524 G12	F033 B8
3529 H12	F034 B8
3527 F10	F035 A5
3528 F4	F036 G10
3529 A9	F038 E5
3530 A9	F039 F9
3531 B9	F040 E10
3532 B9	F041 E12
3533 H3	F042 E10
3535 B5	F043 E12
3536 B5	F044 E12
3537 B5	F045 F3
3538 B6	F046 F3
3539 F9	F047 F3
3540 H10	F048 F3
3541 I10	F049 F3
3543-1 F4	F051 H11
3543-2 F4	F080 G3
3543-3 C11	F081 G3
3543-4 E4	F082 G3
3544-1 F4	F083 G3
3544-2 F4	F084 G3
3544-3 F4	F085 G3
3544-4 E4	F086 G3
3549 C11	F087 G3
3551 D11	F088 H3
3553 D7	F089 H3
3557-3 C3	F090 H3
3557-4 C3	F091 H3
3560-1 G3	F092 H3
3560-2 G3	F093 H3
3560-3 G3	F095 H3
3561-1 H3	F096 H3
3561-3 H3	F097 H3
3561-4 G3	F098 H3
3568-1 H3	F099 H3
3568-2 H3	F100 I3
3568-4 H3	F101 D7
3573 E9	F102 D7
3585 E11	F103 E8
3586 D13	F104 I5
3588 D11	F105 B8
	F106 G12

Layout 6 LED Lite-On Panel: (Top Side)

1200	--	2005	--	2044	--	2211	--	2506	--	2520	--	3009	--	3034	--	3045	--	3056	--	3134	--	3148	--	3193	--	3209	--	3510	--	3523	--	3536	--	3557	--	3592	--	6018	--	7002	--	7064	--	7501	--	9008	--	9022	--	9506	--	9518	--
1500	--	2007	--	2045	--	2212	--	2507	--	2521	--	3021	--	3035	--	3046	--	3057	--	3135	--	3150	--	3194	--	3210	--	3511	--	3524	--	3537	--	3560	--	3595	--	6020	--	7003	--	7065	--	7502	--	9009	--	9104	--	9507	--	9519	--
1M00	--	2009	--	2046	--	2214	--	2508	--	3000	--	3022	--	3036	--	3047	--	3058	--	3136	--	3151	--	3195	--	3211	--	3513	--	3526	--	3538	--	3561	--	5200	--	6021	--	7004	--	7066	--	7510	--	9010	--	9200	--	9508	--	9520	--
1M59	--	2010	--	2200	--	2215	--	2509	--	3001	--	3023	--	3037	--	3048	--	3059	--	3137	--	3152	--	3196	--	3212	--	3515	--	3527	--	3539	--	3568	--	5201	--	6022	--	7005	--	7067	--	7516	--	9011	--	9220	--	9509	--	9540	--
1M83	--	2012	--	2202	--	2216	--	2510	--	3002	--	3024	--	3038	--	3049	--	3060	--	3138	--	3153	--	3200	--	3213	--	3516	--	3528	--	3540	--	3573	--	5202	--	6023	--	7006	--	7072	--	9001	--	9013	--	9221	--	9510	--	9541	--
1M84	--	2013	--	2203	--	2219	--	2511	--	3003	--	3025	--	3039	--	3050	--	3061	--	3140	--	3160	--	3201	--	3215	--	3517	--	3529	--	3541	--	3585	--	5500	--	6024	--	7007	--	7073	--	9002	--	9016	--	9222	--	9511	--	9542	--
1M90	--	2019	--	2204	--	2500	--	2512	--	3004	--	3026	--	3040	--	3051	--	3129	--	3141	--	3161	--	3202	--	3501	--	3518	--	3530	--	3543	--	3586	--	6000	--	6025	--	7008	--	7074	--	9003	--	9017	--	9500	--	9512	--	9543	--
2001	--	2022	--	2205	--	2501	--	2516	--	3005	--	3030	--	3041	--	3052	--	3130	--	3142	--	3163	--	3203	--	3502	--	3519	--	3531	--	3544	--	3588	--	6004	--	6026	--	7010	--	7075	--	9004	--	9018	--	9501	--	9513	--	9544	--
2002	--	2023	--	2206	--	2502	--	2517	--	3006	--	3031	--	3042	--	3053	--	3131	--	3143	--	3164	--	3206	--	3503	--	3520	--	3532	--	3549	--	3589	--	6006	--	6200	--	7011	--	7200	--	9005	--	9019	--	9502	--	9514	--	9545	--
2003	--	2036	--	2208	--	2504	--	2518	--	3007	--	3032	--	3043	--	3054	--	3132	--	3144	--	3191	--	3207	--	3506	--	3521	--	3533	--	3551	--	3590	--	6008	--	6500	--	7061	--	7250	--	9006	--	9020	--	9503	--	9515	--	9550	--
2004	--	2038	--	2209	--	2505	--	2519	--	3008	--	3033	--	3044	--	3055	--	3133	--	3145	--	3192	--	3208	--	3507	--	3522	--	3535	--	3553	--	3591	--	6016	--	7001	--	7062	--	7500	--	9007	--	9021	--	9505	--	9516	--		

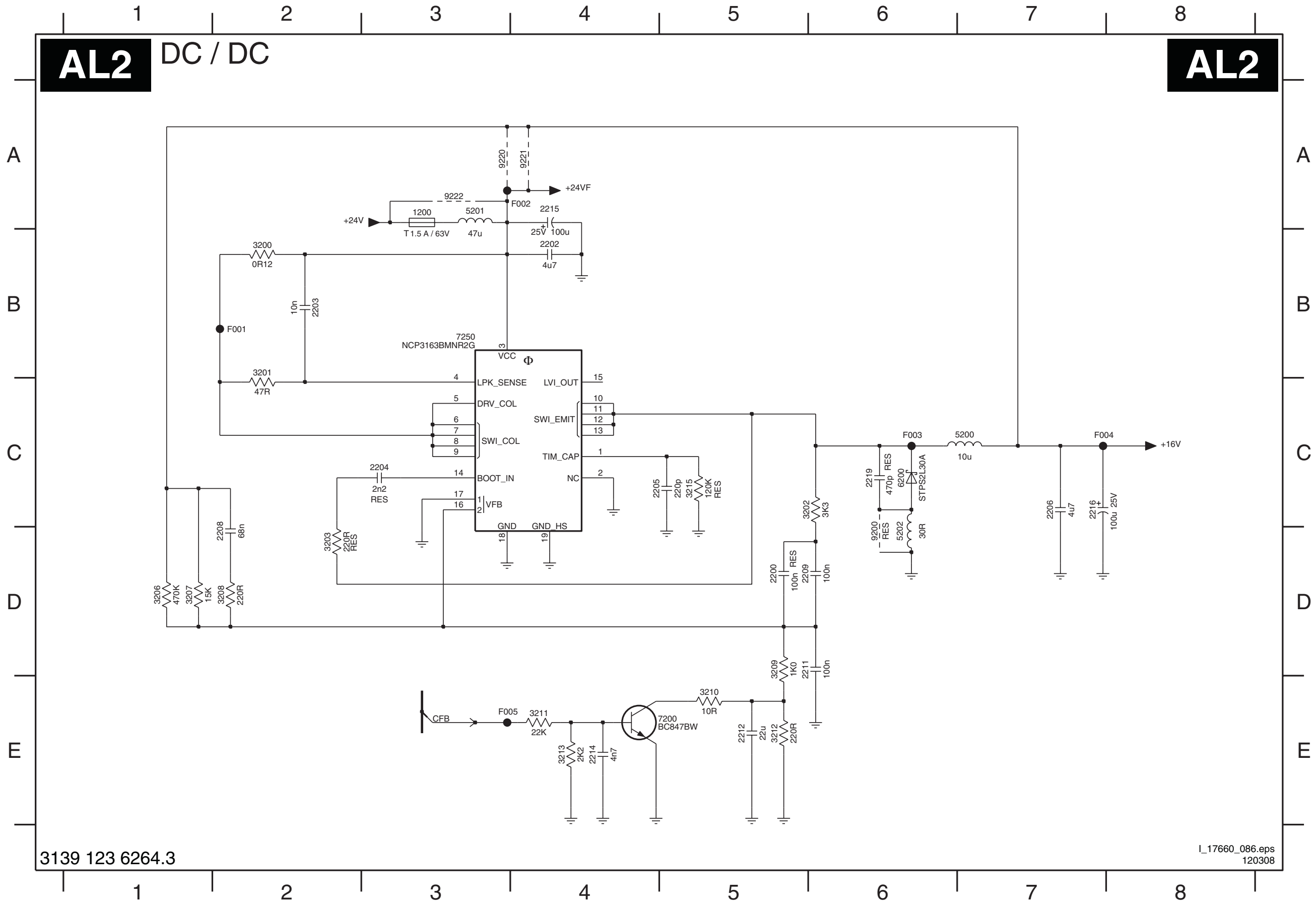


8 LED Lite-On Panel: LED Drive



- 2001 F2
- 2003 F10
- 2005 I10
- 2007 F2
- 2009 F10
- 2010 H2
- 2012 H10
- 2013 I2
- 2036 E4
- 2038 E12
- 3000 A1
- 3001 D1
- 3002 B2
- 3003 B2
- 3005 C1
- 3006 C2
- 3007 B1
- 3008 C1
- 3009 B1
- 3021 B3
- 3022 B3
- 3023 B3
- 3024 B11
- 3025 B11
- 3026 B11
- 3030 E2
- 3032 E10
- 3033 E2
- 3035 E11
- 3036 F2
- 3038 F11
- 3039 H2
- 3040 F2
- 3041 F2
- 3042 E4
- 3043 G2
- 3044 G3
- 3045 H3
- 3046 G4
- 3047 H4
- 3050 C13
- 3051 C13
- 3052 D13
- 3053 D13
- 3054 D13
- 3055 D13
- 3056 D13
- 3057 E13
- 3058 E13
- 3059 E13
- 3129 C5
- 3130 C5
- 3131 C5
- 3132 D5
- 3133 D5
- 3134 D5
- 3135 D5
- 3136 E5
- 3137 E5
- 3138 E5
- 3140 F4
- 3141 F4
- 3142 H4
- 3143 H4
- 3144 I4
- 3145 I4
- 3148 F12
- 3150 G12
- 3151 I10
- 3152 I12
- 3153 H13
- 3160 F10
- 3161 F12
- 3163 G10
- 3164 G12
- 3191 F12
- 3192 F12
- 3193 H12
- 3194 H12
- 3195 I12
- 3196 I12
- 6000 C2
- 6004 F2
- 6006 G2
- 6008 H2
- 6016 F10
- 6018 G10
- 6020 I10
- 6021 F4
- 6022 G4
- 6023 H4
- 6024 F12
- 6025 G12
- 6026 H12
- 7003 A3
- 7004 A6
- 7005 A9
- 7006 A11
- 7010 C2
- 7011 B2
- 7064 F5
- 7065 G5
- 7066 H5
- 7067-1 E4
- 7067-2 G4
- 7067-3 H4
- 7067-4 F8
- 7072 F13
- 7073 G13
- 7074 H13
- 7075-1 F12
- 7075-2 G12
- 7075-3 H12
- 7075-4 G8
- 9001 A8
- 9002 F9
- 9003 F9
- 9004 A7
- 9005 G9
- 9007 G9
- 9008 H9
- 9009 I9
- 9010 A7
- 9011 A8
- 9013 A8
- 9016 A7
- 9017 A2
- 9018 A2
- 9019 A2
- 9020 A12
- 9021 A12
- 9022 A12
- F037 E2
- F050 C6
- F052 D6
- F053 F4
- F054 D6
- F055 G4
- F056 E5
- F057 H4
- F058 E11
- F059 F12
- F060 G12
- F061 I12
- F070 C13
- F072 D14
- F074 D14
- F076 E13

8 LED Lite-On Panel: DC / DC

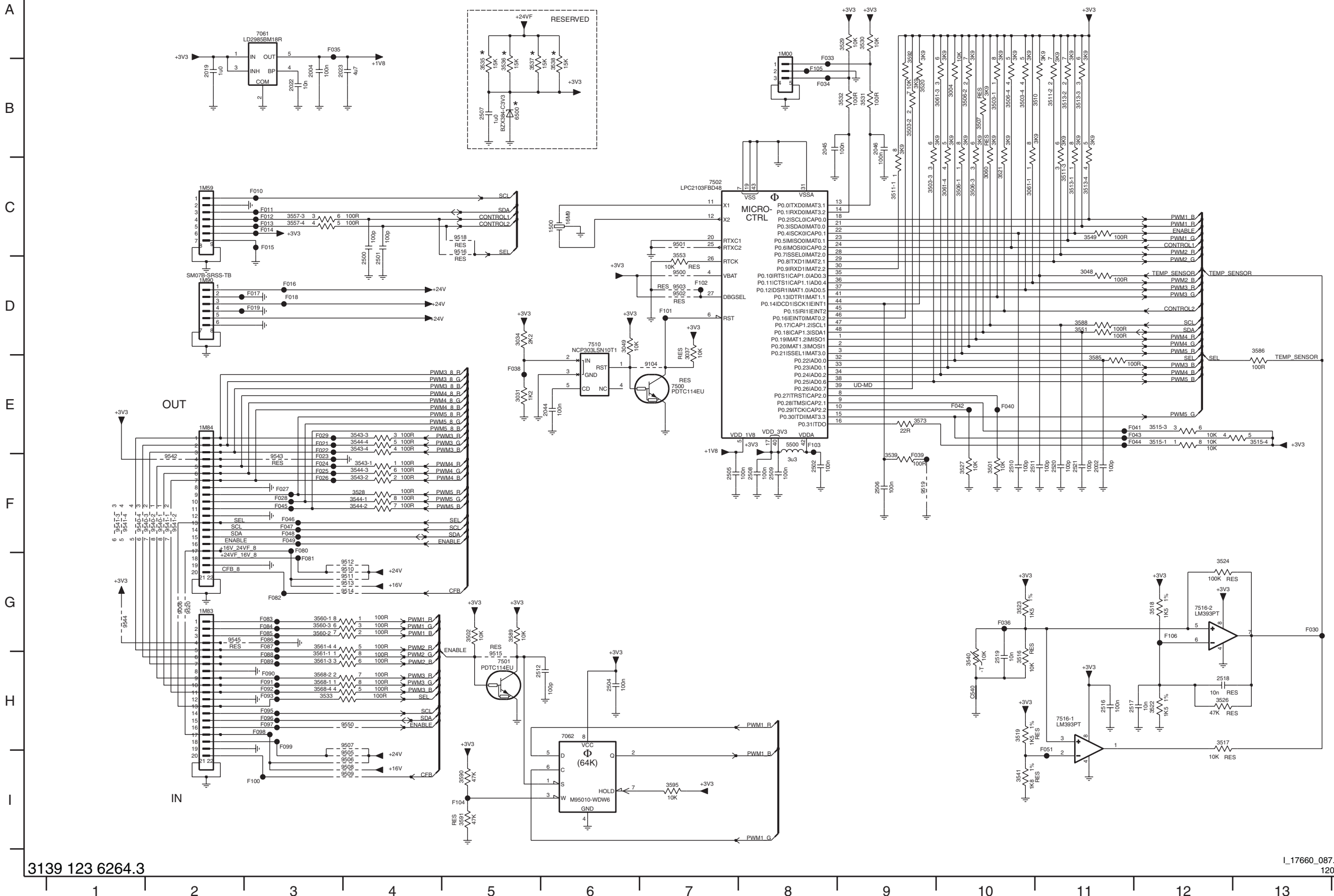


- 1200 A3
- 2200 D5
- 2202 B4
- 2203 B2
- 2204 C3
- 2205 C4
- 2206 C7
- 2208 D2
- 2209 D5
- 2211 D5
- 2212 E5
- 2214 E4
- 2215 A4
- 2216 C7
- 2219 C6
- 3200 B2
- 3201 B2
- 3202 C6
- 3203 D2
- 3206 D1
- 3207 D1
- 3208 D2
- 3209 D5
- 3210 E5
- 3211 E4
- 3212 E5
- 3213 E4
- 3215 C5
- 5200 C7
- 5201 A3
- 5202 D6
- 6200 C6
- 7200 E4
- 7250 B3
- 9200 D6
- 9220 A3
- 9221 A4
- 9222 A3
- F001 B2
- F002 A4
- F003 C6
- F004 C7
- F005 E3

8 LED Lite-On Panel: uC Block

AL3 MICROCONTROLLER BLOCK

AL3

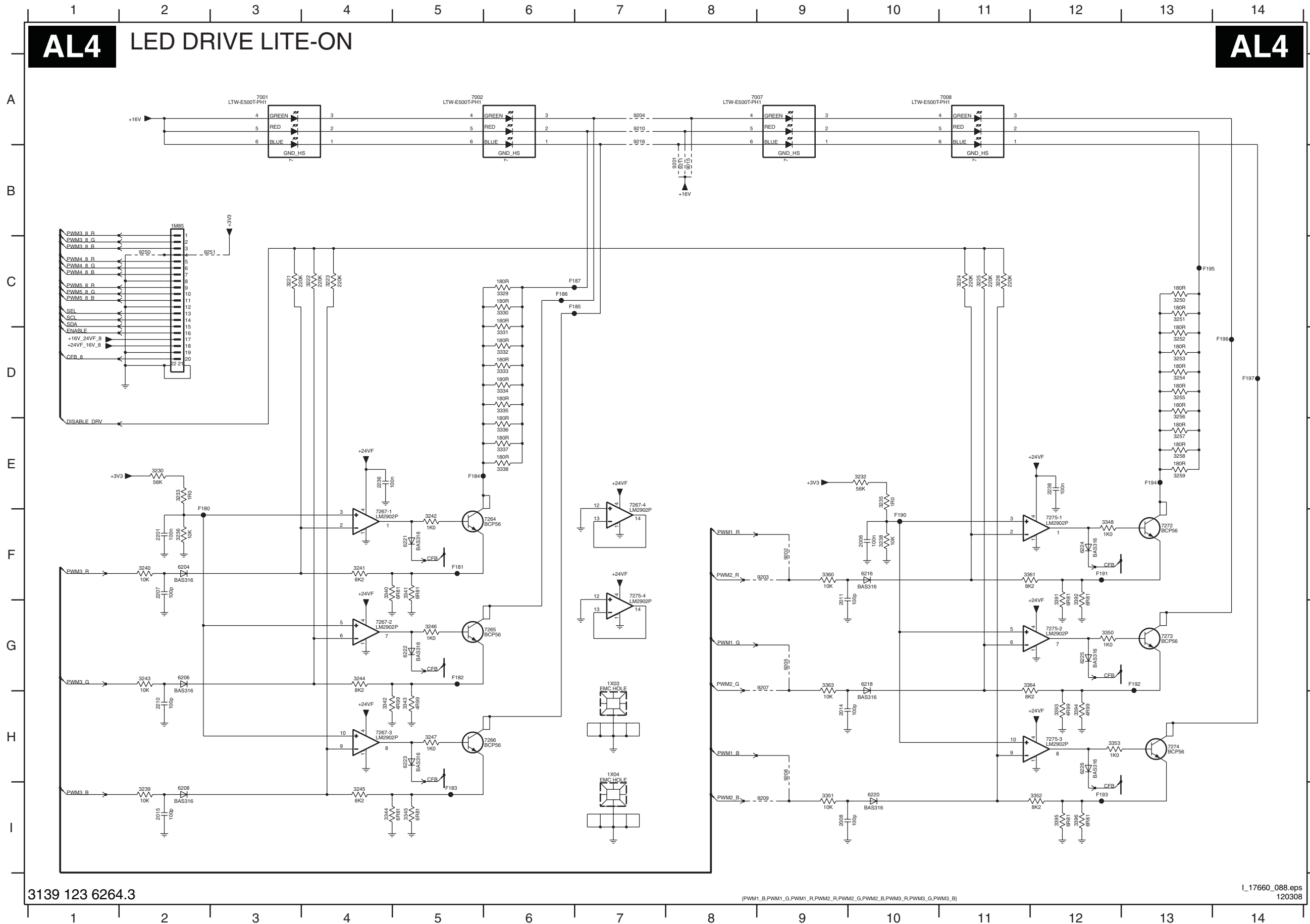


1500 C6	3589 G5
1M00 A8	3590 I5
1M59 C2	3591 I5
1M83 G2	3592 A9
1M84 E2	3595 I7
1M90 D2	5500 E8
2002 F11	6500 B5
2004 B3	7061 A3
2019 B2	7062 H6
2022 B3	7500 E7
2023 B3	7501 H5
2044 E6	7502 C7
2045 B8	7510 D6
2046 B9	7516-1 H11
2500 D4	7516-2 G12
2501 D4	9006 G2
2502 F8	9104 E7
2504 H6	9500 C3
2505 F7	9501 C7
2506 F9	9502 D7
2507 B5	9503 D7
2508 F8	9505 I4
2509 F8	9506 I4
2510 F10	9507 H4
2511 F10	9508 I4
2512 H5	9509 I4
2516 H11	9510 G4
2517 H11	9511 G4
2518 H12	9512 G4
2519 H10	9513 G4
2520 F11	9514 G4
2521 F11	9515 H5
3004 B10	9516 C5
3031 E5	9518 C5
3034 D5	9519 F9
3037 D7	9520 G2
3048 D11	9540-1 F2
3049 D6	9540-2 F2
3060 C10	9540-3 F1
3061-1 C10	9540-4 F1
3061-3 B10	9541-1 F2
3061-4 C10	9541-2 F2
3501 F10	9541-3 F1
3502 G5	9541-4 F1
3503-1 B10	9542 F2
3503-2 B9	9543 F3
3503-3 C9	9544 G1
3503-4 B10	9545 G2
3506-1 C10	9550 H4
3506-2 B10	C540 H10
3506-3 C10	F010 C3
3506-4 B10	F011 C3
3507 B10	F012 C3
3510 B11	F013 C3
3511-1 C9	F014 C3
3511-2 B11	F015 C3
3511-3 C11	F016 D3
3513-1 C11	F017 D3
3513-2 B11	F018 D3
3513-3 B11	F019 D3
3513-4 C11	F021 E3
3515-1 E12	F022 E3
3515-3 E12	F023 F3
3515-4 E13	F024 F3
3516 H10	F025 F3
3517 H12	F026 F3
3518 G12	F027 F3
3519 H10	F028 F3
3520 B9	F029 E3
3521 C10	F030 G13
3522 H12	F033 B8
3523 G10	F034 B8
3524 G12	F035 A3
3526 H12	F036 G10
3527 F10	F038 E5
3528 F4	F039 F9
3529 A9	F040 E10
3530 A9	F041 E12
3531 B9	F042 E10
3532 B9	F043 E12
3533 H3	F044 E12
3535 B5	F045 F3
3536 B5	F046 F3
3537 B5	F047 F3
3538 B6	F048 F3
3539 F9	F049 F3
3540 H10	F051 H11
3541 I10	F080 F3
3543-1 F4	F081 G3
3543-2 F4	F082 G3
3543-3 E4	F083 G3
3543-4 E4	F084 G3
3544-1 F4	F085 G3
3544-2 F4	F086 G3
3544-3 F4	F087 G3
3544-4 E4	F088 H3
3549 C11	F089 H3
3551 D11	F090 H3
3553 D7	F091 H3
3557-3 C3	F092 H3
3557-4 C3	F093 H3
3560-1 G3	F095 H3
3560-2 G3	F096 H3
3560-3 G3	F097 H3
3561-1 H3	F098 H3
3561-3 H3	F099 H3
3561-4 G3	F100 I3
3568-1 H3	F101 D7
3568-2 H3	F102 D7
3568-4 H3	F103 E8
3573 E9	F104 I5
3585 E11	F105 B8
3588 D13	F106 G12

8 LED Lite-On Panel: LED Drive

AL4 LED DRIVE LITE-ON

AL4



- 1M85 B2
- 1X03 G7
- 1X04 H7
- 2006 F10
- 2008 I9
- 2011 F9
- 2014 H9
- 2015 I2
- 2201 F2
- 2207 F2
- 2210 H2
- 2236 E4
- 2238 E12
- 3221 C3
- 3222 C4
- 3223 C4
- 3224 C11
- 3225 C11
- 3226 C11
- 3230 E2
- 3232 E10
- 3233 E2
- 3235 E10
- 3236 F2
- 3238 F10
- 3239 I2
- 3240 F2
- 3241 F4
- 3242 F5
- 3243 G2
- 3244 G4
- 3245 I4
- 3246 G5
- 3247 H5
- 3250 C13
- 3251 C13
- 3252 D13
- 3253 D13
- 3254 D13
- 3255 D13
- 3256 D13
- 3257 E13
- 3258 E13
- 3259 E13
- 3329 C6
- 3330 C6
- 3331 D6
- 3332 D6
- 3333 D6
- 3334 D6
- 3335 D6
- 3336 E6
- 3337 E6
- 3338 E6
- 3340 F4
- 3341 F5
- 3342 H4
- 3343 H5
- 3344 I4
- 3345 I5
- 3348 F12
- 3350 G12
- 3351 I9
- 3352 I12
- 3353 H12
- 3360 F9
- 3361 F11
- 3363 G9
- 3364 G11
- 3391 F12
- 3392 F12
- 3393 H12
- 3394 H12
- 3395 I12
- 3396 I12
- 6204 F2
- 6206 G2
- 6208 I2
- 6216 F10
- 6218 G10
- 6220 I10
- 6221 F5
- 6222 G5
- 6223 H5
- 6224 F12
- 6225 G12
- 6226 H12
- 7001 A3
- 7002 A5
- 7007 A9
- 7008 A11
- 7254 F6
- 7265 G6
- 7266 H6
- 7267-1 F4
- 7267-2 G4
- 7267-3 H4
- 7267-4 E7
- 7272 F13
- 7273 G13
- 7274 H13
- 7275-1 F12
- 7275-2 G12
- 7275-3 H12
- 7275-4 F7
- 9015 B8
- 9016 B8
- 9017 B8
- 9018 B8
- 9019 B8
- 9020 B8
- 9021 B8
- 9022 F9
- 9023 F9
- 9024 A7
- 9025 G9
- 9207 G9
- 9208 H9
- 9209 I9
- 9210 A7
- 9211 B8
- 9216 A7
- 9250 C2
- 9251 C2
- F180 C7
- F181 F5
- F182 G5
- F183 I5
- F184 E5
- F185 C7
- F186 C6
- F187 C7
- F190 F10
- F191 F12
- F192 G13
- F193 I12
- F194 E13
- F195 C13
- F196 D14
- F197 D14

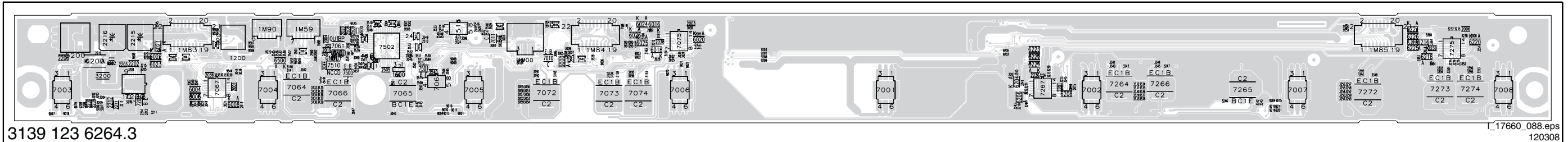
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(PWM1_B,PWM1_G,PWM1_R,PWM2_R,PWM2_G,PWM2_B,PWM3_R,PWM3_G,PWM3_B)

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Layout 8 LED Lite-On Panel (Top Side)

1200	---	2008	---	2046	---	2215	---	2511	---	3007	---	3036	---	3051	---	3133	---	3152	---	3203	---	3226	---	3247	---	3333	---	3352	---	3506	---	3526	---	3543	---	3591	---	6022	---	6224	---	7062	---	7272	---	9007	---	9200	---	9250	---	9514	---
1500	---	2009	---	2200	---	2216	---	2512	---	3008	---	3037	---	3052	---	3134	---	3153	---	3206	---	3230	---	3250	---	3334	---	3353	---	3507	---	3527	---	3544	---	3592	---	6023	---	6225	---	7064	---	7273	---	9008	---	9201	---	9251	---	9515	---
1M00	---	2010	---	2201	---	2219	---	2516	---	3009	---	3038	---	3053	---	3135	---	3160	---	3207	---	3232	---	3251	---	3335	---	3360	---	3510	---	3528	---	3549	---	3595	---	6024	---	6226	---	7065	---	7274	---	9009	---	9202	---	9500	---	9516	---
1M59	---	2011	---	2202	---	2236	---	2517	---	3021	---	3039	---	3054	---	3136	---	3161	---	3208	---	3233	---	3252	---	3336	---	3361	---	3511	---	3529	---	3551	---	5200	---	6025	---	6500	---	7066	---	7275	---	9010	---	9203	---	9501	---	9518	---
1M83	---	2012	---	2203	---	2238	---	2518	---	3022	---	3040	---	3055	---	3137	---	3163	---	3209	---	3235	---	3253	---	3337	---	3363	---	3513	---	3530	---	3553	---	5201	---	6026	---	7001	---	7067	---	7500	---	9011	---	9204	---	9502	---	9519	---
1M84	---	2013	---	2204	---	2500	---	2519	---	3023	---	3041	---	3056	---	3138	---	3164	---	3210	---	3236	---	3254	---	3338	---	3364	---	3515	---	3531	---	3557	---	5202	---	6200	---	7002	---	7072	---	7501	---	9013	---	9205	---	9503	---	9520	---
1M85	---	2014	---	2205	---	2501	---	2520	---	3024	---	3042	---	3057	---	3140	---	3191	---	3211	---	3238	---	3255	---	3340	---	3391	---	3516	---	3532	---	3560	---	5500	---	6204	---	7003	---	7073	---	7502	---	9015	---	9207	---	9505	---	9540	---
1M90	---	2015	---	2206	---	2502	---	2521	---	3025	---	3043	---	3058	---	3141	---	3192	---	3212	---	3239	---	3256	---	3341	---	3392	---	3517	---	3533	---	3561	---	6000	---	6206	---	7004	---	7074	---	7510	---	9016	---	9208	---	9506	---	9541	---
2001	---	2019	---	2207	---	2504	---	3000	---	3026	---	3044	---	3059	---	3142	---	3193	---	3213	---	3240	---	3257	---	3342	---	3393	---	3518	---	3535	---	3568	---	6004	---	6208	---	7005	---	7075	---	7516	---	9017	---	9209	---	9507	---	9542	---
2002	---	2022	---	2208	---	2505	---	3001	---	3030	---	3045	---	3060	---	3143	---	3194	---	3215	---	3241	---	3258	---	3343	---	3394	---	3519	---	3536	---	3573	---	6006	---	6216	---	7006	---	7200	---	9001	---	9018	---	9210	---	9508	---	9543	---
2003	---	2023	---	2209	---	2506	---	3002	---	3031	---	3046	---	3061	---	3144	---	3195	---	3221	---	3242	---	3259	---	3344	---	3395	---	3520	---	3537	---	3585	---	6008	---	6218	---	7007	---	7250	---	9002	---	9019	---	9211	---	9509	---	9544	---
2004	---	2036	---	2210	---	2507	---	3003	---	3032	---	3047	---	3129	---	3145	---	3196	---	3222	---	3243	---	3329	---	3345	---	3396	---	3521	---	3538	---	3586	---	6016	---	6220	---	7008	---	7264	---	9003	---	9020	---	9216	---	9510	---	9545	---
2005	---	2038	---	2211	---	2508	---	3004	---	3033	---	3048	---	3130	---	3148	---	3200	---	3223	---	3244	---	3330	---	3348	---	3501	---	3522	---	3539	---	3588	---	6018	---	6221	---	7010	---	7265	---	9004	---	9021	---	9220	---	9511	---	9550	---
2006	---	2044	---	2212	---	2509	---	3005	---	3034	---	3049	---	3131	---	3150	---	3201	---	3224	---	3245	---	3331	---	3350	---	3502	---	3523	---	3540	---	3589	---	6020	---	6222	---	7011	---	7266	---	9005	---	9022	---	9221	---	9512	---	---	---
2007	---	2045	---	2214	---	2510	---	3006	---	3035	---	3050	---	3132	---	3151	---	3202	---	3225	---	3246	---	3332	---	3351	---	3503	---	3524	---	3541	---	3590	---	6021	---	6223	---	7061	---	7267	---	9006	---	9104	---	9222	---	9513	---	---	---



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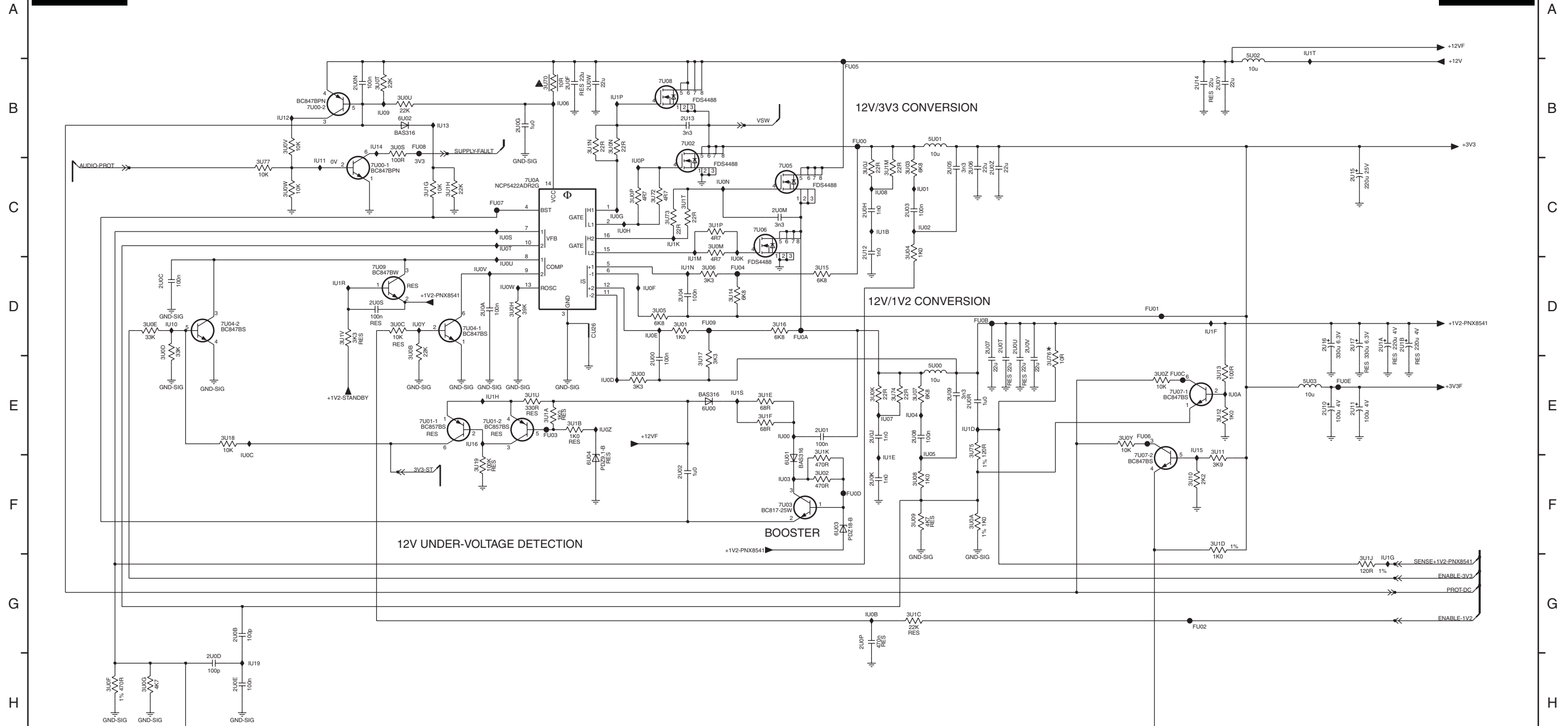
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SSB: DC / DC

2U00 E7	2U07 D10	2U0E H2	2U0N B4	2U0W B6	2U14 B12	3U01 D7	3U08 F9	3U0F H1	3U0P C6	3U0Z E12	3U16 D8	3U1D F12	3U1M C9	3U72 C7	5U01 B10	6U04 F6	7U04-1 D5	7U09 D4	FU04 D8	FU0B D10	IU03 F8	IU0A E13	IU0H C6	IU0V D5	IU13 B5	IU1E F9	IU1P B6
2U01 E8	2U08 E9	2U0F B6	2U0P G9	2U0Y B12	2U15 C14	3U02 F8	3U09 F9	3U0G H2	3U0S B4	3U10 F12	3U17 E7	3U1E E8	3U1N B6	3U73 C7	5U02 A13	7U00-1 C4	7U04-2 D2	7U0A C6	FU05 B9	FU0C E12	IU04 E9	IU0B G9	IU0K D8	IU0W D5	IU14 B4	IU1F D12	IU1R D4
2U02 F7	2U09 E10	2U0G B5	2U0R E10	2U0Z C10	2U16 D13	3U03 C9	3U0A F10	3U0H D5	3U0T B4	3U11 E12	3U18 E2	3U1F E9	3U1P C7	3U74 E9	5U03 E13	7U00-2 B3	7U05 C8	7U0A C6	FU06 E12	FU0D F9	IU05 E9	IU0C F3	IU0N C7	IU0Y D4	IU15 E12	IU1G G14	IU1S E8
2U03 C9	2U0A D5	2U0H C9	2U0S D4	2U10 E13	2U17 D14	3U04 C9	3U0B D4	3U0J C5	3U0U B4	3U12 E12	3U19 F5	3U1G C4	3U1T C7	3U75 E10	6U00 E7	7U01-1 E5	7U06 C8	7U0A C6	FU07 C5	FU0E E14	IU06 B6	IU0D E6	IU0O C7	IU0Z E6	IU16 E5	IU1H E5	IU1T A13
2U04 D7	2U0B G2	2U0J E9	2U0T D10	2U11 E14	2U1A D14	3U05 D7	3U0C D4	3U0K E9	3U0V B3	3U13 E12	3U1A E6	3U1H C5	3U1U E5	3U76 E11	6U01 F8	7U01-2 E5	7U07-1 E12	FU01 D12	FU08 B4	IU08 B4	IU07 E9	IU0E D7	IU0S C5	IU10 D2	IU19 H3	IU1K C7	IU1M D7
2U05 C10	2U0C D2	2U0K F9	2U0U D10	2U12 C9	2U1B D14	3U06 D7	3U0D D2	3U0M C7	3U0W C3	3U14 D7	3U1B E6	3U1J G14	3U1V D4	3U77 C3	6U02 B4	7U02 B7	7U07-2 F12	FU02 G12	FU09 D7	IU01 C9	IU08 C9	IU0F D7	IU0T C5	IU11 C3	IU18 C9	IU1M D7	IU1N D7
2U06 C10	2U0D H2	2U0M C8	2U0V D10	2U13 B7	3U00 E7	3U07 E9	3U0E D2	3U0N B6	3U0Y E11	3U15 D8	3U1C G9	3U1K E8	3U70 B6	5U00 E10	6U03 F9	7U03 F8	7U08 B7	FU03 E6	FU0A D8	IU09 B4	IU0G C6	IU0U D5	IU12 B3	IU1D E10	IU1N D7		

B01A DC / DC

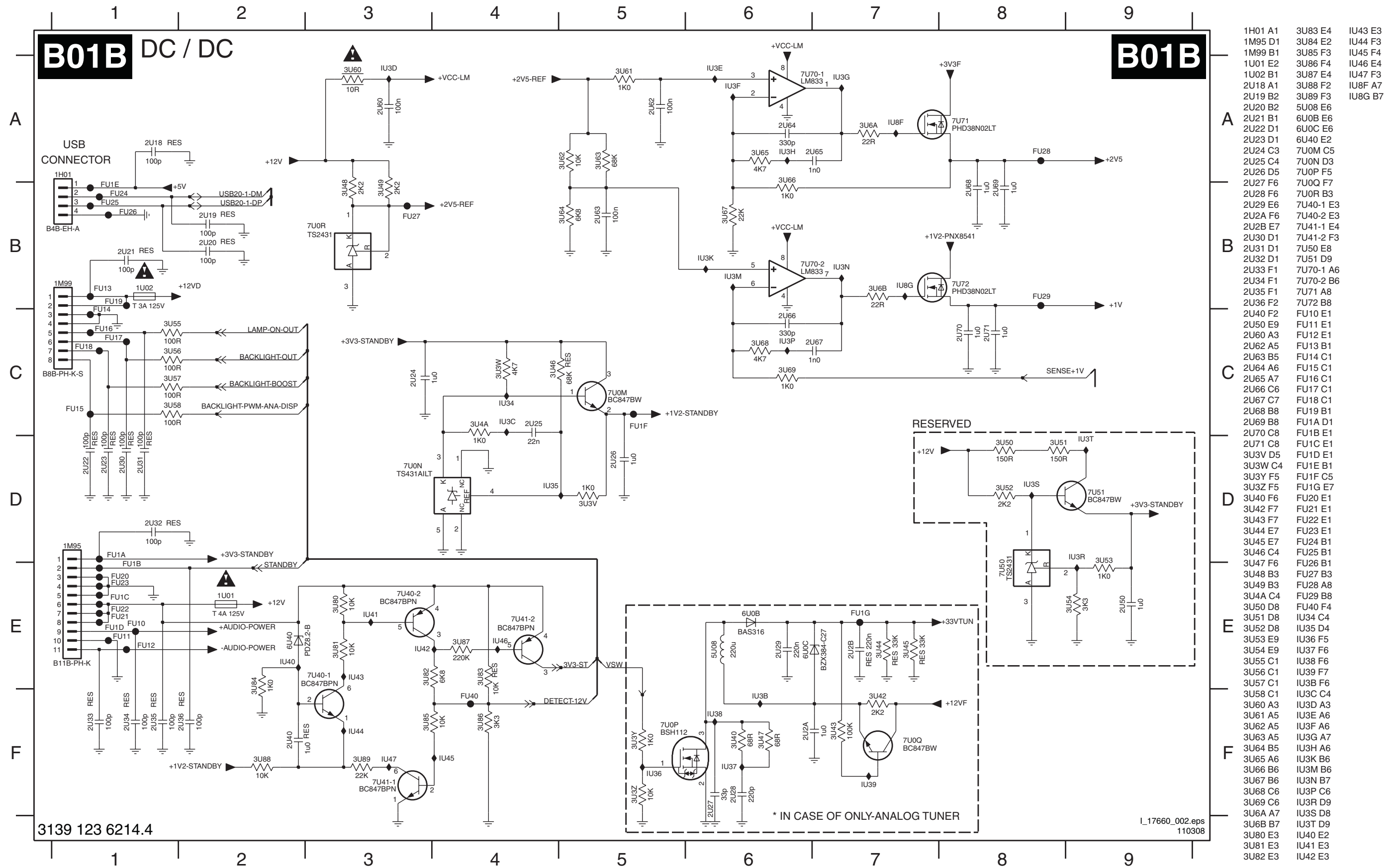
B01A



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SSB: DC / DC



- 1H01 A1
- 1M95 D1
- 1M99 B1
- 1U01 E2
- 1U02 B1
- 2U18 A1
- 2U19 B2
- 2U20 B2
- 2U21 B1
- 2U22 D1
- 2U23 D1
- 2U24 C3
- 2U25 C4
- 2U26 D5
- 2U27 F6
- 2U28 F6
- 2U29 E6
- 2U2A F6
- 2U2B E7
- 2U30 D1
- 2U31 D1
- 2U32 D1
- 2U33 F1
- 2U34 F1
- 2U35 F1
- 2U36 F2
- 2U40 F2
- 2U50 E9
- 2U60 A3
- 2U62 A5
- 2U63 B5
- 2U64 A6
- 2U65 A7
- 2U66 C6
- 2U67 C7
- 2U68 B8
- 2U69 B8
- 2U70 C8
- 2U71 C8
- 3U3V D5
- 3U3W C4
- 3U3Y F5
- 3U3Z F5
- 3U40 F6
- 3U42 F7
- 3U43 F7
- 3U44 E7
- 3U45 E7
- 3U46 C4
- 3U47 F6
- 3U48 B3
- 3U49 B3
- 3U4A C4
- 3U50 D8
- 3U51 D8
- 3U52 D8
- 3U53 E9
- 3U54 E9
- 3U55 C1
- 3U56 C1
- 3U57 C1
- 3U58 C1
- 3U60 A3
- 3U61 A5
- 3U62 A5
- 3U63 A5
- 3U64 B5
- 3U65 A6
- 3U66 B6
- 3U67 B6
- 3U68 C6
- 3U69 C6
- 3U6A A7
- 3U6B B7
- 3U80 E3
- 3U81 E3
- 3U82 E3
- 3U83 E4
- 3U84 E2
- 3U85 F3
- 3U86 F4
- 3U87 E4
- 3U88 F2
- 3U89 F3
- 5U08 E6
- 6U0B E6
- 6U0C E6
- 6U40 E2
- 7U0M C5
- 7U0N D3
- 7U0P F5
- 7U0Q F7
- 7U0R B3
- 7U40-1 E3
- 7U40-2 E3
- 7U41-1 E4
- 7U41-2 F3
- 7U50 E8
- 7U51 D9
- 7U70-1 A6
- 7U70-2 B6
- 7U71 A8
- 7U72 B8
- FU10 E1
- FU11 E1
- FU12 E1
- FU13 B1
- FU14 C1
- FU15 C1
- FU16 C1
- FU17 C1
- FU18 C1
- FU19 B1
- FU1A D1
- FU1B E1
- FU1C E1
- FU1D E1
- FU1E B1
- FU1F C5
- FU1G E7
- FU20 E1
- FU21 E1
- FU22 E1
- FU23 E1
- FU24 B1
- FU25 B1
- FU26 B1
- FU27 B3
- FU28 A8
- FU29 B8
- FU40 F4
- FU41 C4
- IU35 D4
- IU36 F5
- IU37 F6
- IU38 F6
- IU39 F7
- IU3B F6
- IU3C C4
- IU3D A3
- IU3E A6
- IU3F B6
- IU3M B6
- IU3N B7
- IU3P C6
- IU3R D9
- IU3T D8
- IU42 E3
- IU43 F3
- IU44 E4
- IU45 F3
- IU46 E4
- IU47 F3
- IU48 A7
- IU49 F3
- IU50 B7
- IU51 D9
- IU53 D4
- IU54 E7
- IU55 C1
- IU56 F5
- IU57 F6
- IU58 F6
- IU59 F7
- IU60 C4
- IU61 A5
- IU62 A5
- IU63 A5
- IU64 A6
- IU65 A6
- IU66 B6
- IU67 B6
- IU68 C6
- IU69 C6
- IU70 A7
- IU71 A8
- IU72 B8
- IU73 F6
- IU74 C4
- IU75 D4
- IU76 F6
- IU77 F6
- IU78 A7
- IU79 B7
- IU80 E3
- IU81 E3
- IU82 E3
- IU83 E3
- IU84 E2
- IU85 F3
- IU86 E4
- IU87 F3
- IU88 A7
- IU89 B7
- IU93 E3
- IU94 F3
- IU95 F3
- IU96 E4
- IU97 F3
- IU98 A7
- IU99 B7

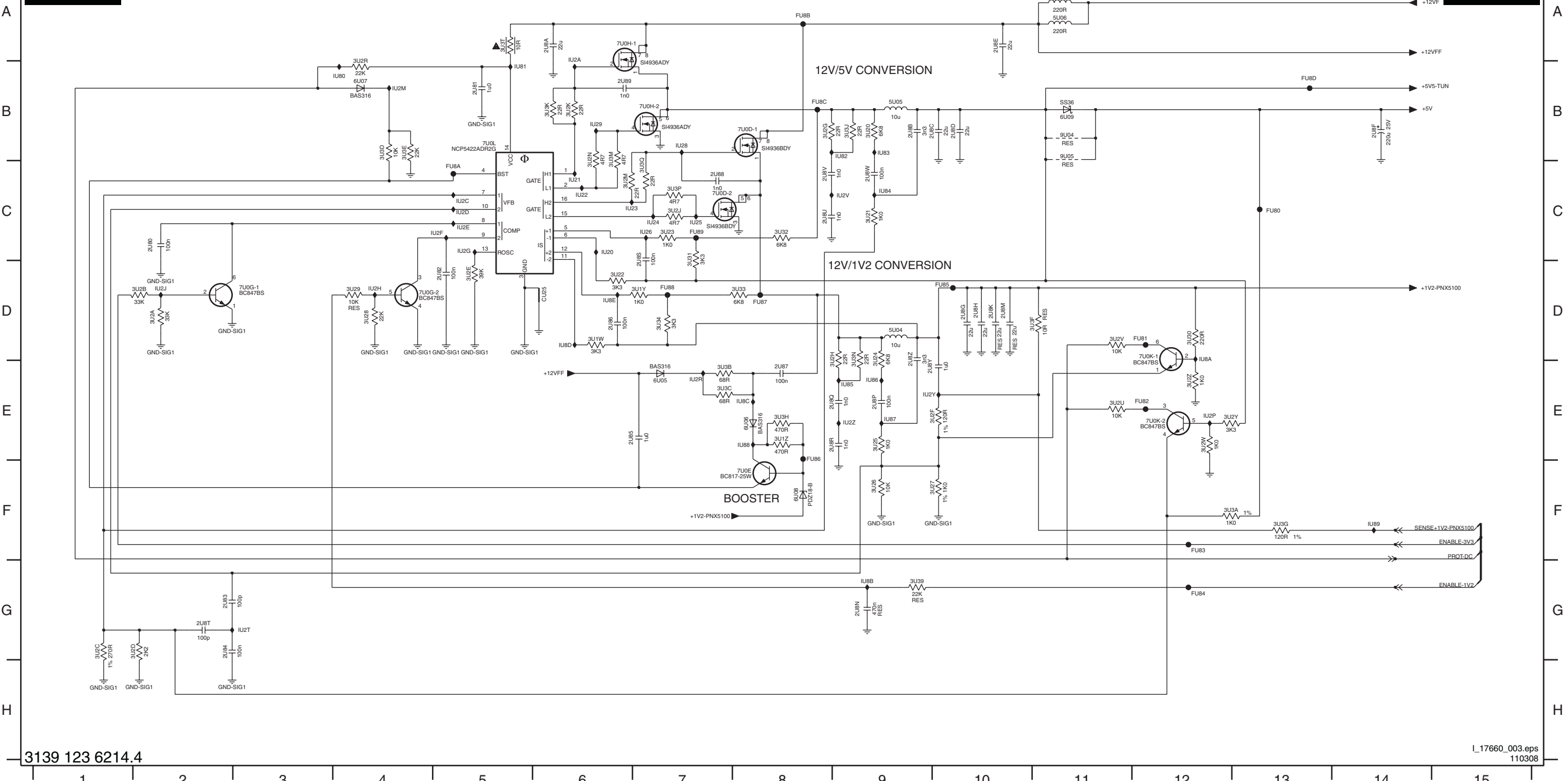
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SSB: DC / DC

2U80 C2	2U86 D6	2U8C B10	2U8K D10	2U8S C7	2U8Z D9	3U22 D6	3U28 D4	3U2E D5	3U2M C6	3U2Y E12	3U34 D7	3U3E B4	3U3M B6	5U05 B9	6U08 F8	7U0G-2 D4	9U04 B11	FU83 F12	FU89 C7	IU21 C6	IU28 B7	IU2F C5	IU2R E7	IU81 B5	IU87 E9	IU8D D6
2U81 B5	2U87 E8	2U8D B10	2U8M D10	2U8T G2	3U1W D6	3U23 C7	3U29 D4	3U2F E10	3U2N B6	3U2Z E12	3U39 G9	3U3F D11	3U3N D9	5U06 A11	6U09 B11	7U0H-1 A6	9U05 B11	FU84 G12	FU8A C5	IU22 C6	IU29 B6	IU2G C5	IU2T G3	IU82 B9	IU88 E8	IU8E D6
2U82 D5	2U88 C7	2U8E A10	2U8N G9	2U8U C8	3U1Y D7	3U24 D9	3U2A D2	3U2G B8	3U2R B4	3U30 D12	3U3A F12	3U3G F13	3U3P C7	5U09 A11	7U0D-1 B8	7U0H-2 B7	CU25 B6	FU85 D10	FU8B A8	IU23 C6	IU2A A6	IU2H D4	IU2V C9	IU83 B9	IU89 F14	
2U83 G2	2U89 B6	2U8F B14	2U8P E9	2U8V C8	3U1Z E8	3U25 E9	3U2B D2	3U2H D9	3U2U E11	3U31 C7	3U3B E7	3U3H E8	3U3Q C7	6U05 E7	7U0D-2 C7	7U0K-1 D12	FU80 C13	FU8E E8	FU8C B8	IU24 C7	IU2C C5	IU2J D2	IU2Y E9	IU84 C9	IU8A D12	
2U84 G2	2U8A A6	2U8G D10	2U8Q E9	2U8W C9	3U20 B9	3U26 F9	3U2C G1	3U2J C7	3U2V D11	3U32 C8	3U3C E7	3U3J B9	3U3T A5	6U06 E8	7U0E F8	7U0K-2 E12	FU81 D12	FU87 D8	FU8D B13	IU25 C7	IU2D C5	IU2M B4	IU2Z E9	IU85 E9	IU8B G9	
2U85 E6	2U8B B9	2U8H D10	2U8R E9	2U8Y E9	3U21 C9	3U27 F10	3U2D G2	3U2K B6	3U2W E12	3U33 D8	3U3D B4	3U3K B6	5U04 D9	6U07 B4	7U0G-1 D2	7U0L B5	FU82 E12	FU88 D7	IU20 C6	IU2E C5	IU2P E12	IU80 B4	IU86 E9	IU8C E8		

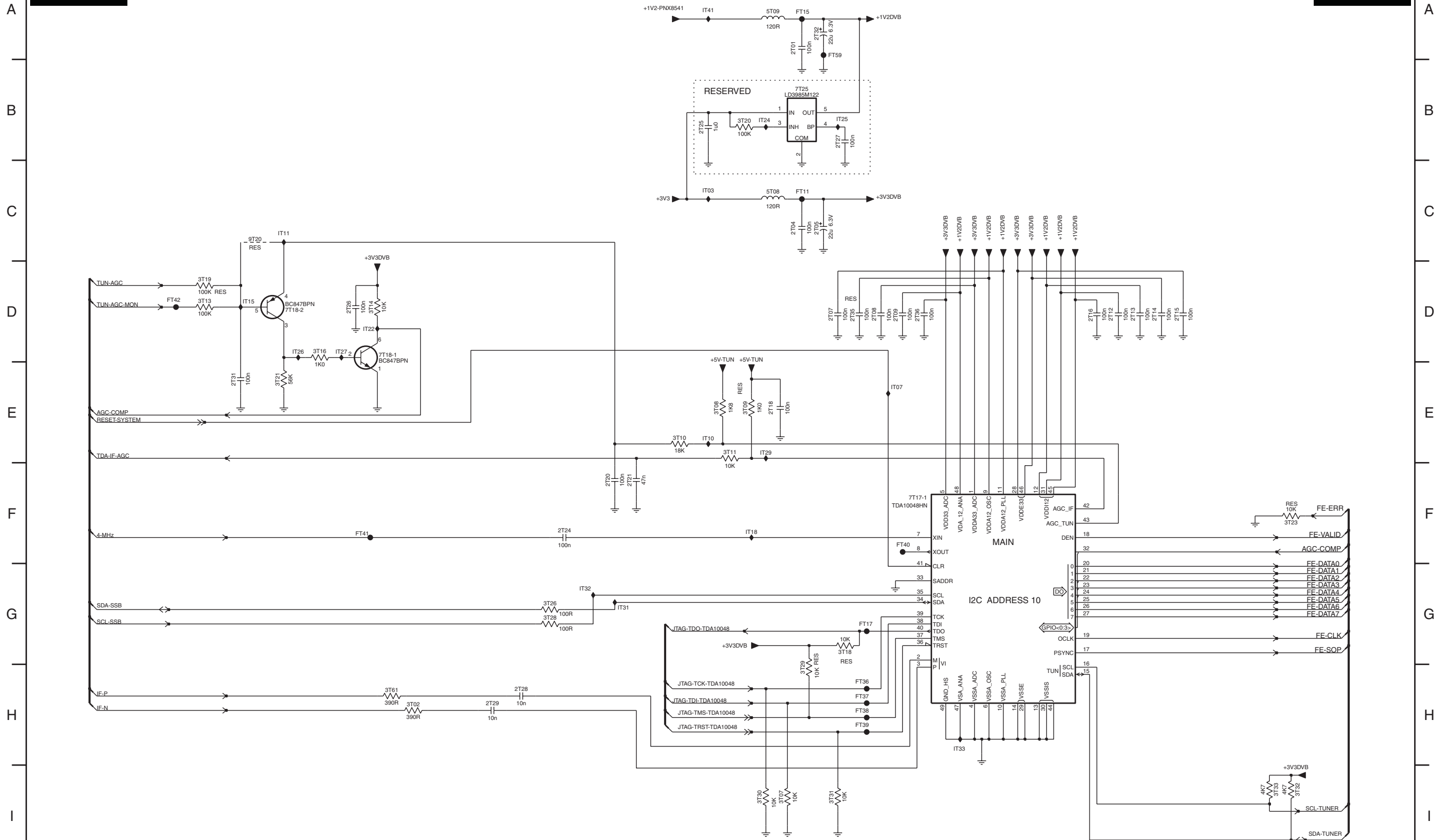
B01C DC / DC **B01C**



SSB: Channel Decoder

B02A CHANNEL DECODER

B02A



- 2T01 A8
- 2T04 C8
- 2T05 C8
- 2T07 D8
- 2T08 D9
- 2T09 D9
- 2T12 D11
- 2T13 D11
- 2T14 D11
- 2T15 D12
- 2T16 D11
- 2T18 E7
- 2T20 F6
- 2T21 F6
- 2T24 F5
- 2T25 B7
- 2T26 D3
- 2T27 B8
- 2T28 H4
- 2T29 H5
- 2T31 E2
- 2T32 A8
- 2T35 D8
- 2T36 D9
- 3T02 H4
- 3T07 H8
- 3T08 E7
- 3T09 E7
- 3T10 E7
- 3T11 E7
- 3T13 D2
- 3T14 D4
- 3T16 D3
- 3T18 G8
- 3T19 D2
- 3T20 B7
- 3T21 E3
- 3T23 F3
- 3T26 G5
- 3T28 G5
- 3T29 H8
- 3T30 H7
- 3T31 I8
- 3T32 I3
- 3T33 I2
- 3T61 H4
- 5T08 C8
- 5T09 A8
- 7T17-1 F9
- 7T18-1 D4
- 7T18-2 D3
- 7T25 B8
- 9T20 C2
- FT11 C8
- FT15 A8
- FT17 G8
- FT36 H8
- FT37 H8
- FT38 H8
- FT39 H8
- FT40 F9
- FT41 F3
- FT42 D2
- FT59 A8
- IT03 C7
- IT07 E9
- IT10 E7
- IT11 C3
- IT15 D2
- IT18 F7
- IT22 D4
- IT24 B7
- IT25 B8
- IT26 D3
- IT27 D3
- IT29 E7
- IT31 G6
- IT32 G6
- IT33 H9
- IT41 A7

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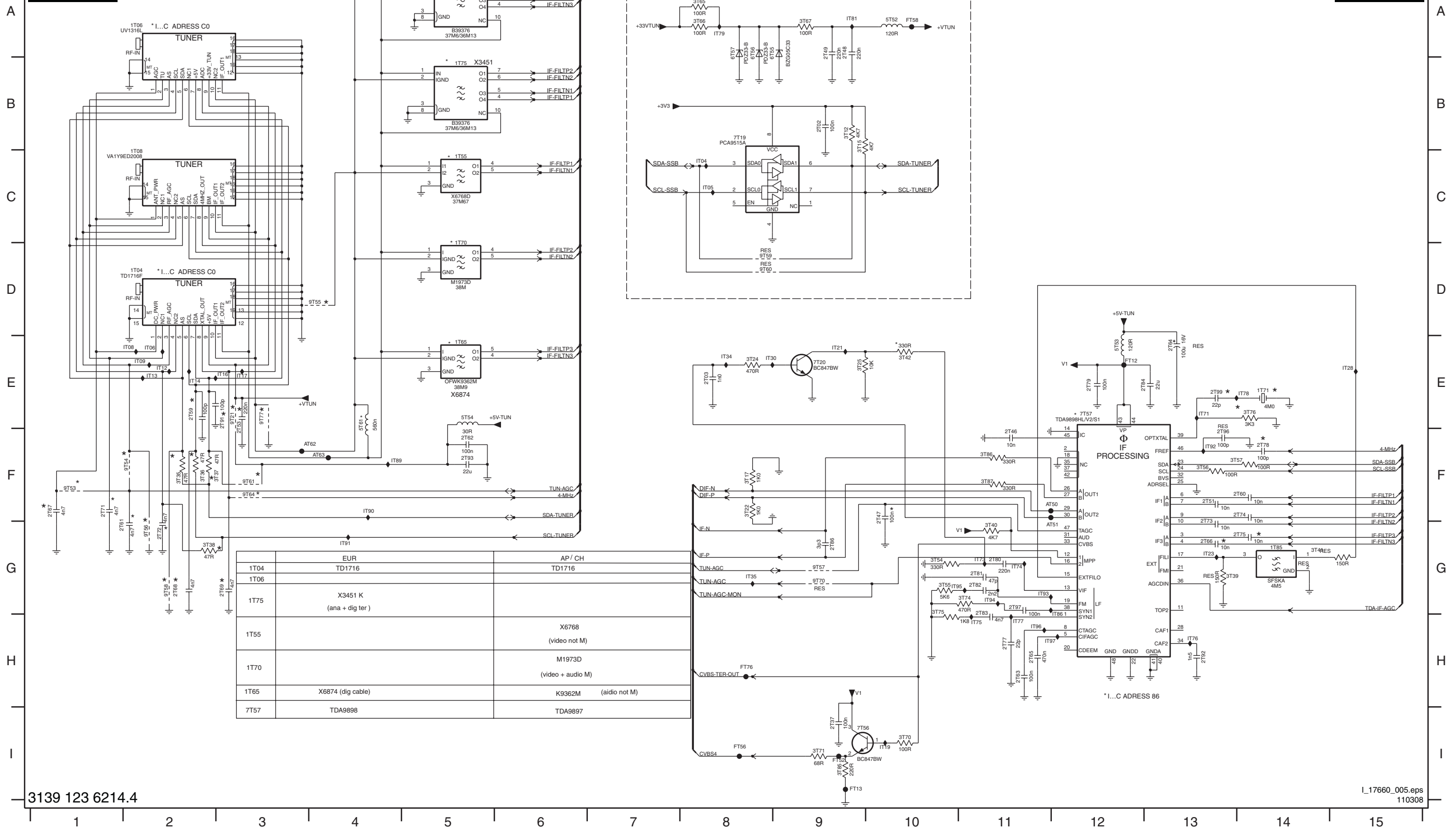
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SSB: Main Tuner

1T04 D2	1T65 E5	2T02 B9	2T48 A9	2T60 F14	2T65 H11	2T71 F1	2T77 H11	2T82 G11	2T92 H13	3T12 B9	3T25 E9	3T39 G13	3T55 G10	3T67 A9	3T76 E14	5T53 E12	6T57 A8	9T21 E3	9T57 G9	9T64 F3	AT62 F4	FT56 I8	IT05 C8	IT13 E2	IT21 E9	IT35 G8	IT76 H13	IT86 G12	IT93 G11
1T06 A2	1T70 D5	2T03 E8	2T49 A9	2T61 G2	2T66 G13	2T72 G2	2T78 F14	2T83 H11	2T93 F5	3T15 B9	3T36 F2	3T40 G11	3T56 F13	3T70 I10	3T85 I9	5T54 E5	7T19 B8	9T53 F1	9T58 G2	9T70 G9	AT63 F4	FT57 G14	IT06 E2	IT14 E2	IT23 G13	IT71 E13	IT77 H11	IT89 F4	IT94 G11
1T08 C2	1T71 E14	2T37 I9	2T51 F13	2T62 F5	2T67 F1	2T73 G13	2T79 E12	2T84 E13	2T96 F13	3T17 F8	3T38 F2	3T41 G14	3T57 F13	3T71 I9	3T86 F1	5T55 E4	7T20 E9	9T54 F2	9T59 D8	9T77 E3	FT58 A10	IT08 E2	IT16 E3	IT25 E15	IT73 G11	IT78 E14	IT90 F4	IT95 G10	
1T55 C5	1T75 B5	2T46 F11	2T53 E3	2T63 H11	2T68 G2	2T74 F14	2T80 G11	2T86 G9	2T97 G11	3T22 F8	3T37 F3	3T42 E10	3T65 A8	3T74 G11	3T87 F11	6T55 A9	7T25 I10	9T55 D4	9T60 D8	AT50 F12	FT13 I9	FT76 H8	IT09 E2	IT17 E3	IT30 E8	IT74 G11	IT79 A8	IT91 G4	IT96 H11
1T60 A5	1T85 G14	2T47 F10	2T59 E2	2T64 E13	2T69 G3	2T75 G14	2T81 G11	2T91 E3	2T99 E13	3T24 E8	3T38 G2	3T54 G10	3T66 A8	3T75 G10	5T52 A10	6T56 A8	7T57 E12	9T56 G2	9T61 F3	AT51 G12	FT52 I9	IT04 C8	IT12 E2	IT19 I10	IT34 E8	IT75 H11	IT81 A9	IT92 F13	IT97 H11

B02B MAIN TUNER

B02B



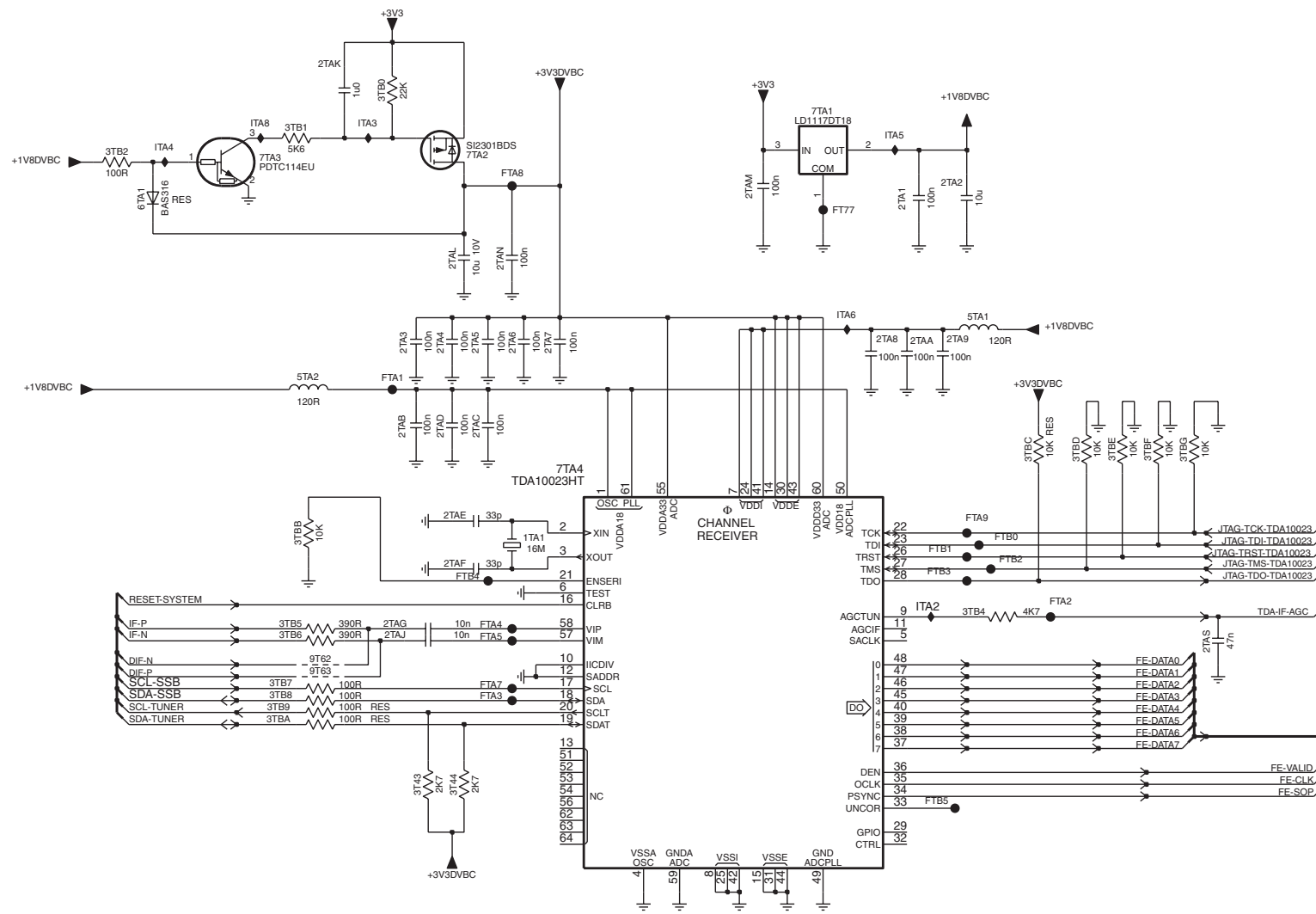
IC	EUR	AP / CH
1T04	TD1716	TD1716
1T06	TD1716	TD1716
1T75	X3451 K (ana + dig ter)	X6768 (video not M)
1T55	X6768 (video not M)	M1973D (video + audio M)
1T70	M1973D (video + audio M)	K9362M (audio not M)
1T65	X6874 (dig cable)	K9362M (audio not M)
7T57	TDA9898	TDA9897

SSB: Channel Decoder DVB-C

B02C

CHANNEL DECODER DVB-C

B02C



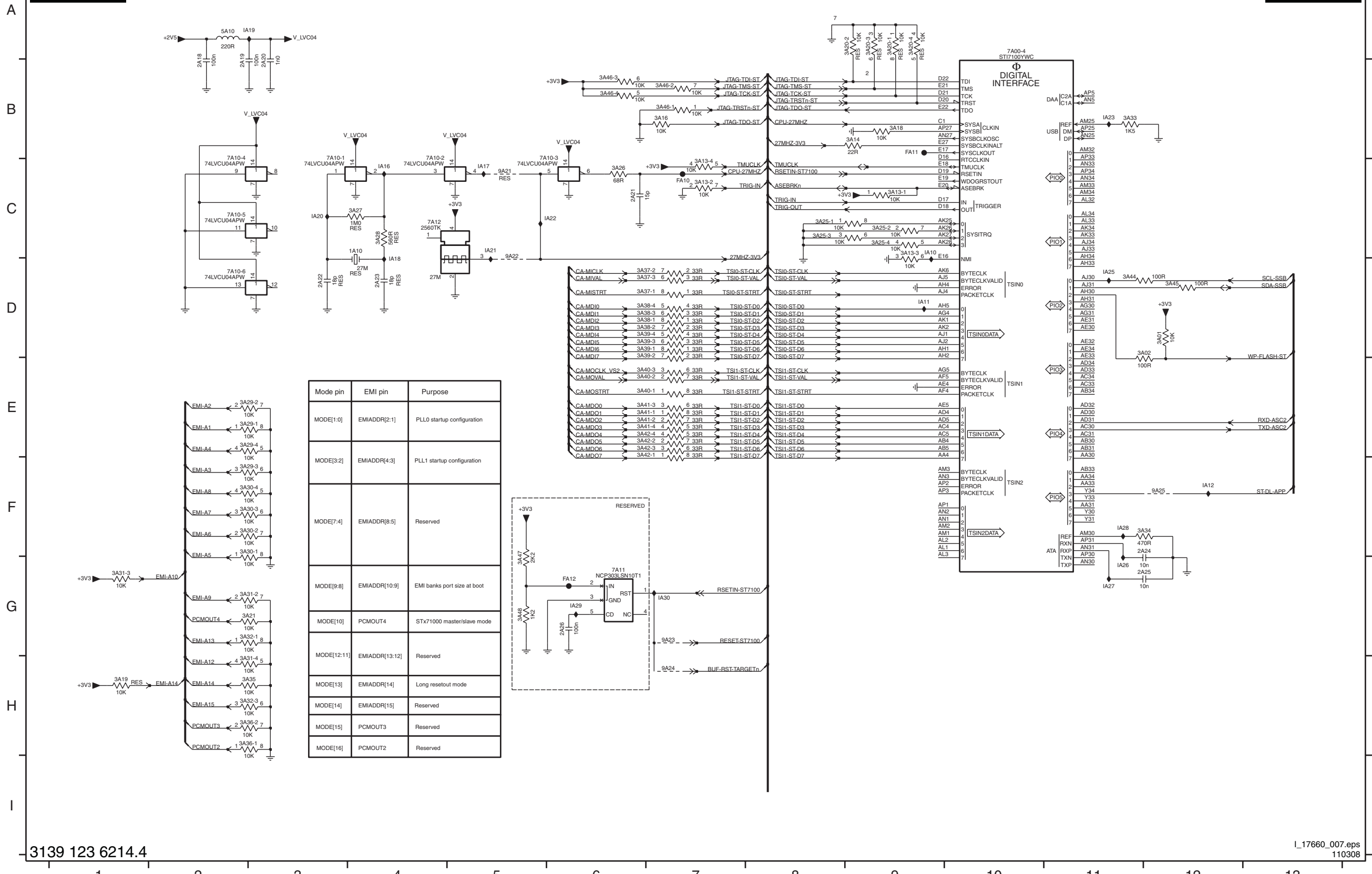
- 1TA1 E6
- 2TA2 C9
- 2TA3 D5
- 2TA4 D6
- 2TA5 D6
- 2TA6 D6
- 2TA7 D6
- 2TA8 D8
- 2TA9 D9
- 2TAA D9
- 2TAB D5
- 2TAC D6
- 2TAD D6
- 2TAE E6
- 2TAF E6
- 2TAG F5
- 2TAJ F5
- 2TAK B5
- 2TAL C6
- 2TAM C7
- 2TAN C6
- 2TAS F10
- 3T43 F6
- 3TA4 F6
- 3TB0 B5
- 3TB1 C5
- 3TB2 C4
- 3TB4 E9
- 3TB5 F5
- 3TB6 F5
- 3TB7 F5
- 3TB8 F5
- 3TB9 F5
- 3TBA F5
- 3TBB E5
- 3TBC D9
- 3TBD D9
- 3TBE D10
- 3TBF D10
- 3TBG D10
- 5TA1 D9
- 5TA2 D5
- 6TA1 C4
- 7TA1 B8
- 7TA2 C6
- 7TA3 C5
- 7TA4 E6
- 9T62 F5
- 9T63 F5
- FTA1 D5
- FTA2 E9
- FTA3 F6
- FTA4 F6
- FTA5 F6
- FTA6 F6
- FTA7 F6
- FTA8 C6
- FTA9 E9
- FTB0 E9
- FTB1 E9
- FTB2 E9
- FTB3 E9
- FTB4 E6
- FTB5 G9
- ITA2 E9
- ITA3 C5
- ITA4 C4
- ITA5 C8
- ITA6 D8
- ITA8 C5

SSB: STI7100: Control

B03A

STI7100: CONTROL

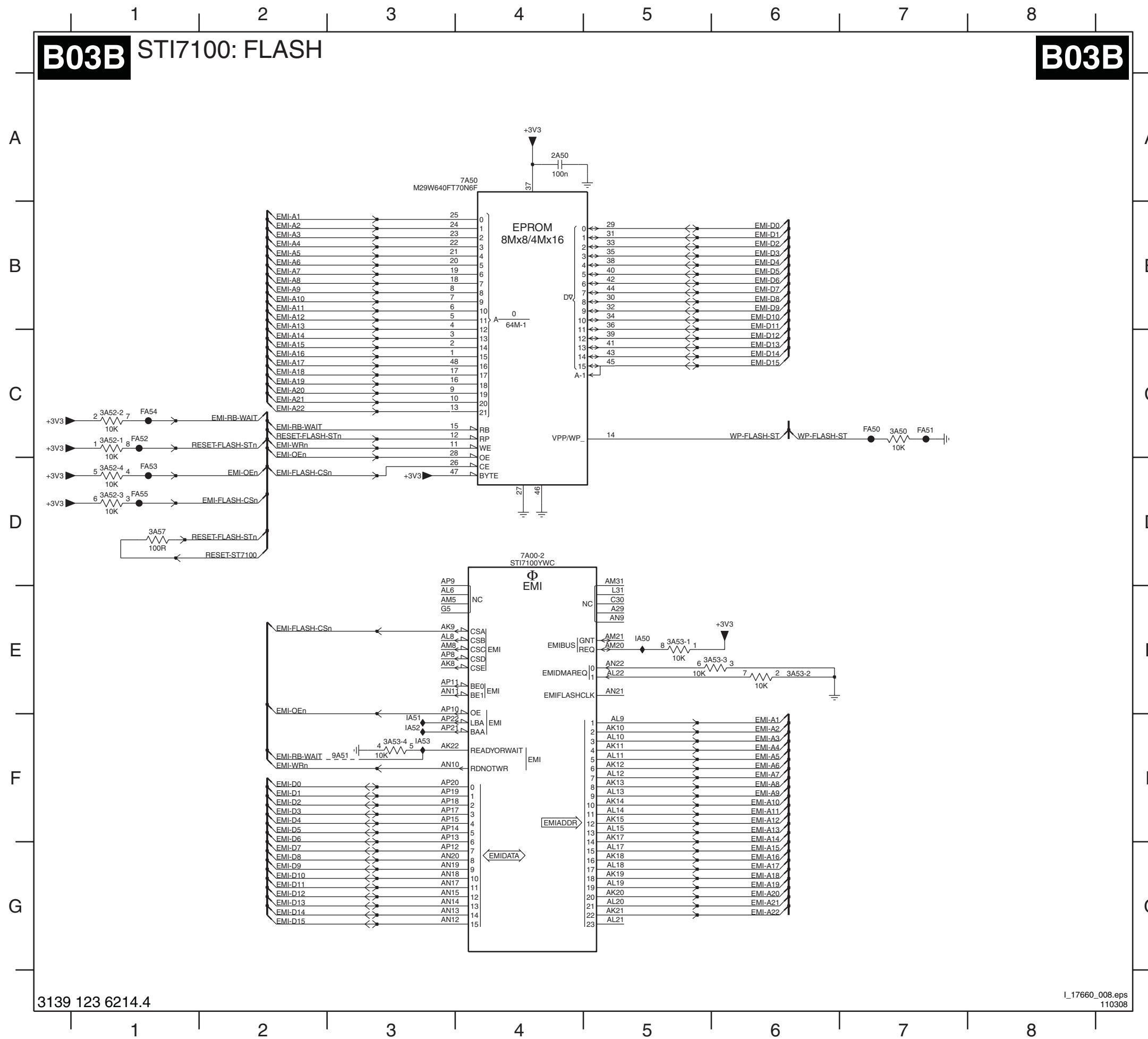
B03A



Mode pin	EMI pin	Purpose
MODE[1:0]	EMIADDR[2:1]	PLL0 startup configuration
MODE[3:2]	EMIADDR[4:3]	PLL1 startup configuration
MODE[7:4]	EMIADDR[8:5]	Reserved
MODE[9:8]	EMIADDR[10:9]	EMI banks port size at boot
MODE[10]	PCMOUT4	STx71000 master/slave mode
MODE[12:11]	EMIADDR[13:12]	Reserved
MODE[13]	EMIADDR[14]	Long resetout mode
MODE[14]	EMIADDR[15]	Reserved
MODE[15]	PCMOUT3	Reserved
MODE[16]	PCMOUT2	Reserved

- 1A10 C4
- 2A18 B2
- 2A19 B2
- 2A20 B3
- 2A21 C6
- 2A22 D3
- 2A23 D4
- 2A24 F12
- 2A25 G12
- 2A26 G6
- 3A01 D12
- 3A13-2 C7
- 3A13-3 C9
- 3A13-4 C7
- 3A14 B9
- 3A16 B7
- 3A18 B9
- 3A19 H1
- 3A20-1 A9
- 3A20-2 A9
- 3A20-3 A9
- 3A20-4 A9
- 3A21 G3
- 3A25-1 C8
- 3A25-2 C9
- 3A25-3 C8
- 3A25-4 C9
- 3A26 C6
- 3A27 C4
- 3A28 C4
- 3A29-1 E3
- 3A29-2 E3
- 3A29-3 F3
- 3A29-4 E3
- 3A30-1 F3
- 3A30-2 F3
- 3A30-3 F3
- 3A30-4 F3
- 3A31-2 G3
- 3A31-3 G1
- 3A31-4 H3
- 3A32-1 G3
- 3A32-3 H3
- 3A33 B11
- 3A34 F12
- 3A35 H3
- 3A36-1 H3
- 3A36-2 H3
- 3A37-1 D7
- 3A37-2 D7
- 3A37-3 D7
- 3A38-1 D7
- 3A38-2 D7
- 3A38-3 D7
- 3A38-4 D7
- 3A39-1 D7
- 3A39-2 D7
- 3A39-3 D7
- 3A39-4 D7
- 3A40-1 E7
- 3A40-2 E7
- 3A40-3 E7
- 3A41-1 E7
- 3A41-2 E7
- 3A41-3 E7
- 3A41-4 E7
- 3A42-1 E7
- 3A42-2 E7
- 3A42-3 E7
- 3A42-4 E7
- 3A44 D11
- 3A45 D12
- 3A46-1 B7
- 3A46-2 B7
- 3A46-3 B6
- 3A46-4 B6
- 3A47 G5
- 3A48 G5
- 5A10 A2
- 7A00-4 A10
- 7A10-1 C3
- 7A10-2 C4
- 7A10-3 C6
- 7A10-4 C2
- 7A10-5 C2
- 7A10-6 D2
- 7A11 G6
- 7A12 C4
- 9A21 C5
- 9A22 C5
- 9A23 G7
- 9A24 H7
- 9A25 F12
- FA10 C7
- FA11 B9
- FA12 G6
- IA10 C9
- IA11 D9
- IA12 F12
- IA16 C4
- IA17 C5
- IA18 D4
- IA19 A3
- IA20 C3
- IA21 C5
- IA22 C6
- IA23 B11
- IA25 D11
- IA26 G11
- IA27 G11
- IA28 F11
- IA29 G6
- IA30 G7

SSB: STi7100: Flash



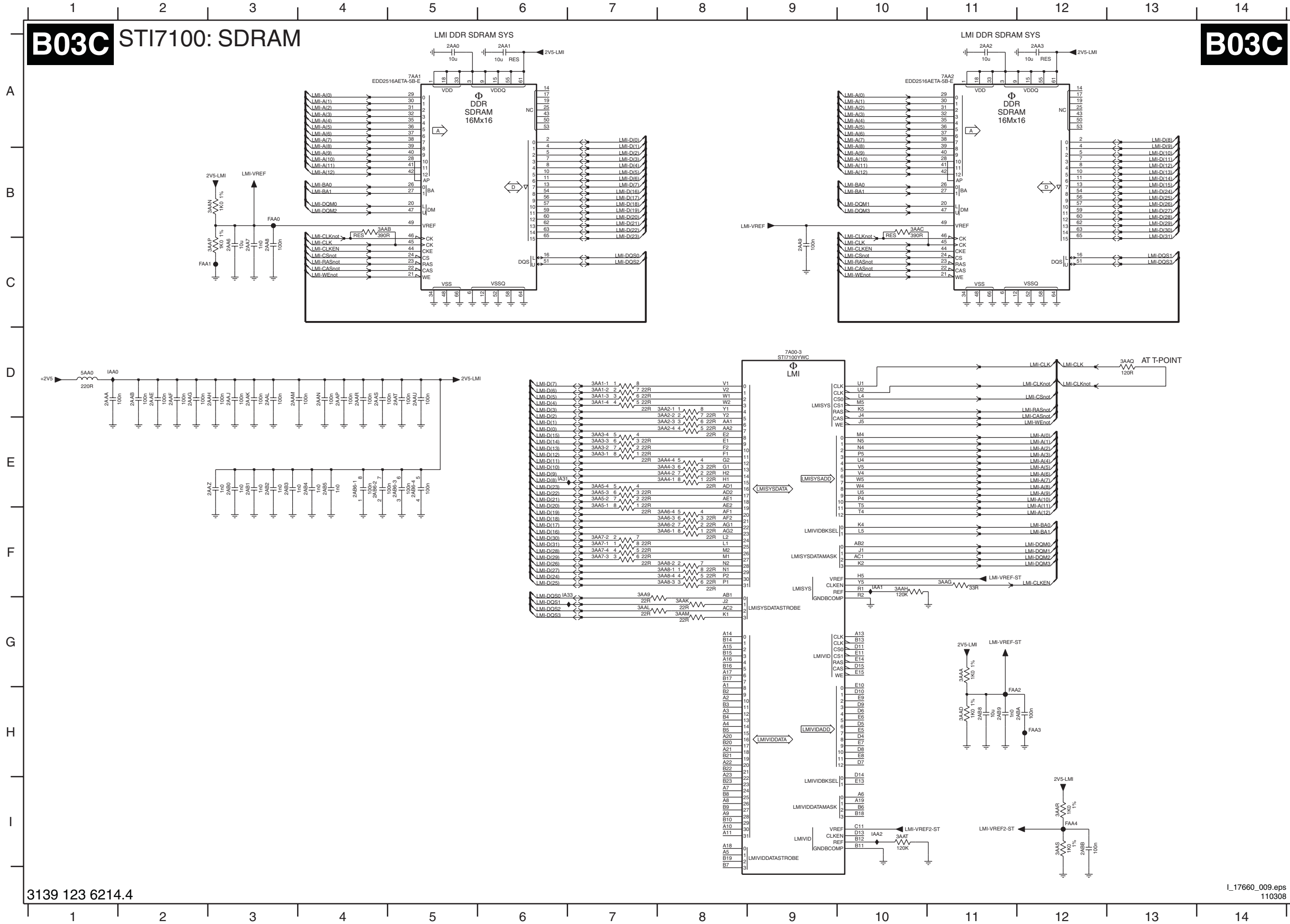
- 2A50 A4
- 3A50 C7
- 3A52-1 C1
- 3A52-2 C1
- 3A52-3 D1
- 3A52-4 D1
- 3A53-1 E5
- 3A53-2 E6
- 3A53-3 E6
- 3A53-4 F3
- 3A57 D1
- 7A00-2 D4
- 7A50 A4
- 9A51 F3
- FA50 C7
- FA51 C7
- FA52 C1
- FA53 D1
- FA54 C1
- FA55 D1
- IA50 E5
- IA51 F3
- IA52 F3
- IA53 F3

SSB: STI7100: SDRAM

B03C

STI7100: SDRAM

B03C



- 2AA0 A5
- 2AA1 A6
- 2AA2 A11
- 2AA3 A12
- 2AA6 C3
- 2AA7 C3
- 2AA8 C3
- 2AA9 C9
- 2AAA D1
- 2AAB D2
- 2AAE D2
- 2AAF D2
- 2AAG D2
- 2AAH D3
- 2AAJ D3
- 2AAK D3
- 2AAL D3
- 2AAM D3
- 2AAN D4
- 2AAP D4
- 2AAR D4
- 2AAS D4
- 2AAT D5
- 2AAU D5
- 2AAZ E3
- 2AB0 E3
- 2AB1 E3
- 2AB2 E3
- 2AB3 E3
- 2AB4 E4
- 2AB5 E4
- 2AB6-2 E4
- 2AB6-3 E5
- 2AB6-4 E5
- 2AB8 H11
- 2AB9 H11
- 2ABA H12
- 2ABB H12
- 3AA1-1 D7
- 3AA1-2 D7
- 3AA1-3 D7
- 3AA1-4 D7
- 3AA2-1 D8
- 3AA2-2 D8
- 3AA2-3 E8
- 3AA2-4 E8
- 3AA3-1 E7
- 3AA3-2 E7
- 3AA3-3 E7
- 3AA3-4 E7
- 3AA4-1 E8
- 3AA4-2 E8
- 3AA4-3 E8
- 3AA4-4 E8
- 3AA5-1 E7
- 3AA5-2 E7
- 3AA5-3 E7
- 3AA5-4 E7
- 3AA6-1 F8
- 3AA6-2 F8
- 3AA6-3 F8
- 3AA6-4 F8
- 3AA7-1 F7
- 3AA7-2 F7
- 3AA7-3 F7
- 3AA7-4 F7
- 3AA8-1 F8
- 3AA8-2 F8
- 3AA8-3 F8
- 3AA8-4 F8
- 3AA9 F7
- 3AAA G11
- 3AAB B4
- 3AAC B10
- 3AAD H11
- 3AAG F11
- 3AAH F10
- 3AAK G8
- 3AAL G7
- 3AAM G8
- 3AAN B3
- 3AAP C3
- 3AAQ D13
- 3AAR H12
- 3AAS H12
- 3AAT H10
- 3AA0 D1
- 7A00-3 D9
- 7A01 A5
- 7A02 A11
- FAA0 B3
- FAA1 C2
- FAA2 H11
- FAA3 H12
- FAA4 H12
- IA31 E6
- IA33 F6
- IAA0 D1
- IAA1 F10
- IAA2 H10

SSB: STI7100: AV-Interface

B03D STI7100: AV-INTERFACE

B03D

A

B

C

D

E

A

B

C

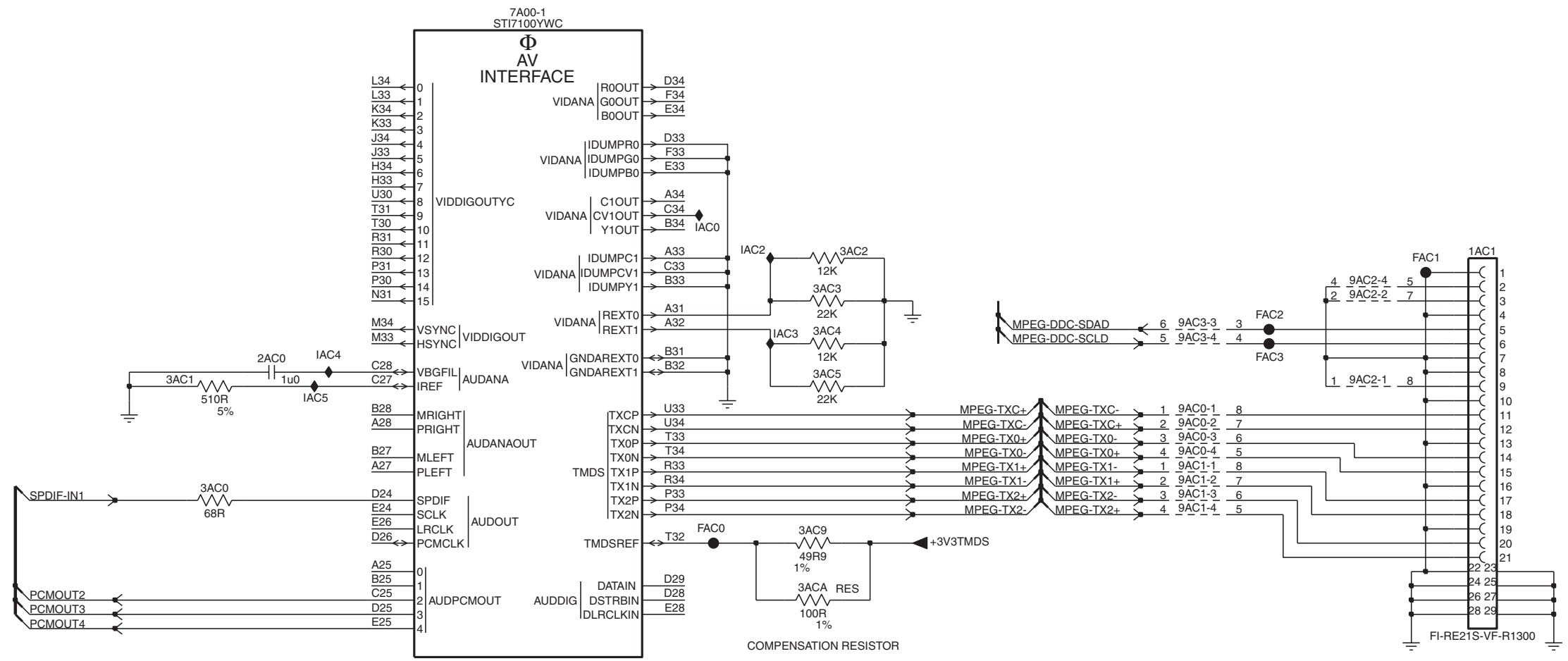
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E

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

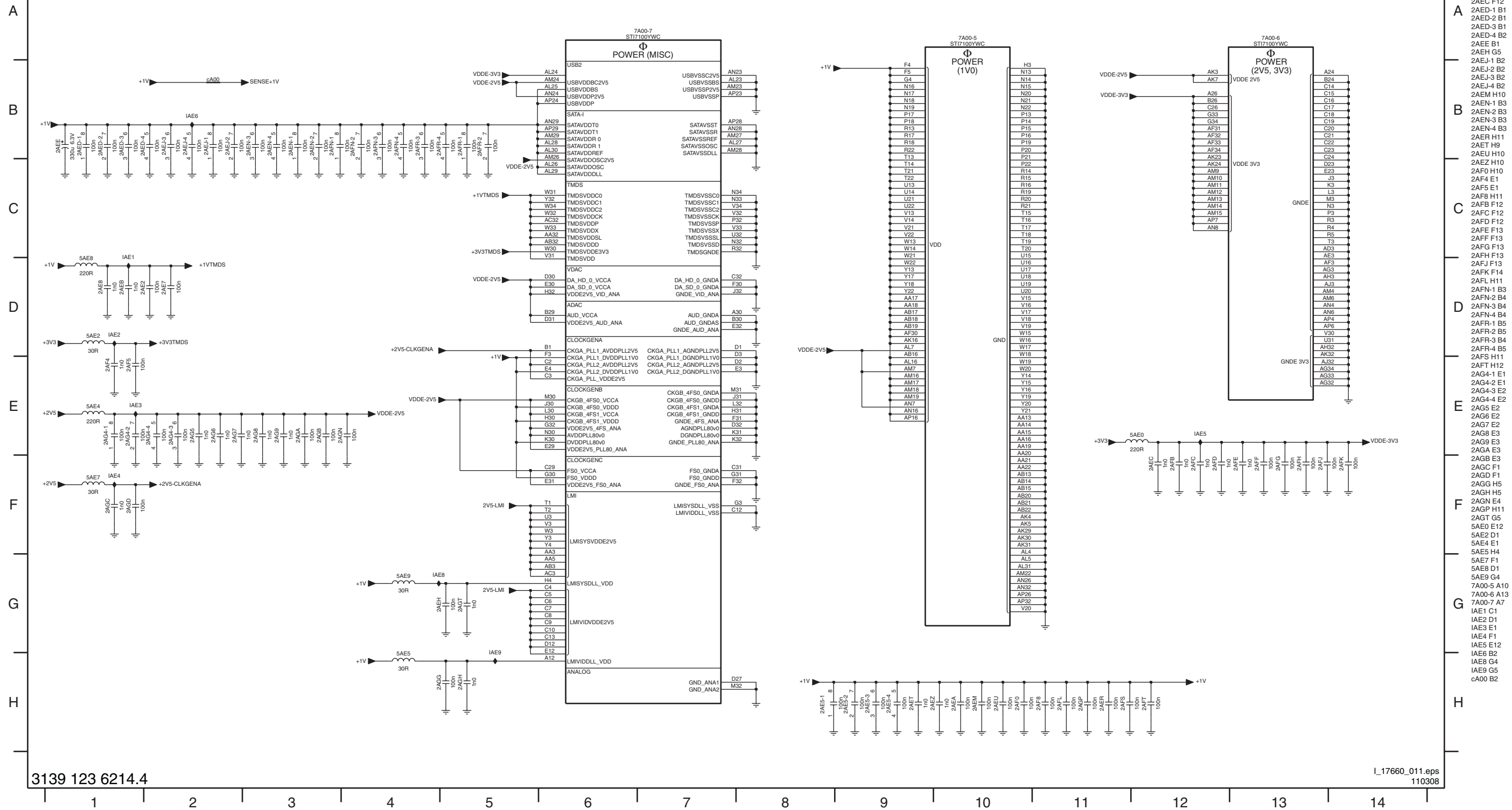
- 1AC1 C8
- 2AC0 C2
- 3AC0 D2
- 3AC1 C1
- 3AC2 C5
- 3AC3 C5
- 3AC4 C5
- 3AC5 C5
- 3AC9 D5
- 3ACA D5
- 7A00-1 A3
- 9AC0-1 C7
- 9AC0-2 C7
- 9AC0-3 D7
- 9AC0-4 D7
- 9AC1-1 D7
- 9AC1-2 D7
- 9AC1-3 D7
- 9AC1-4 D7
- 9AC2-1 C7
- 9AC2-2 C7
- 9AC2-4 C7
- 9AC3-3 C7
- 9AC3-4 C7
- FAC0 D4
- FAC1 C8
- FAC2 C7
- FAC3 C7
- IAC0 B4
- IAC2 C4
- IAC3 C5
- IAC4 C2
- IAC5 C2



SSB: STI7100: Power

B03E STI7100: POWER

B03E



- 2AE2 D2
- 2AE5-1 H8
- 2AE5-2 H9
- 2AE5-3 H9
- 2AE5-4 H9
- 2AE7 D2
- 2AE8 D1
- 2AEA H10
- 2AEB D1
- 2AEC F12
- 2AED-1 B1
- 2AED-2 B1
- 2AED-3 B1
- 2AED-4 B2
- 2AEE B1
- 2AEH G5
- 2AEJ-1 B2
- 2AEJ-2 B2
- 2AEJ-3 B2
- 2AEJ-4 B2
- 2AEM H10
- 2AEN-1 B3
- 2AEN-2 B3
- 2AEN-3 B3
- 2AEN-4 B3
- 2AER H11
- 2AET H9
- 2AEU H10
- 2AEZ H10
- 2AF0 H10
- 2AF1 E1
- 2AF2 E1
- 2AF8 H11
- 2AF9 F12
- 2AFC F12
- 2AFD F12
- 2AFE F13
- 2AFF F13
- 2AFG F13
- 2AFH F13
- 2AFJ F13
- 2AFK F14
- 2AFL H11
- 2AFN-1 B3
- 2AFN-2 B4
- 2AFN-3 B4
- 2AFN-4 B4
- 2AFR-1 B5
- 2AFR-2 B5
- 2AFR-3 B4
- 2AFR-4 B5
- 2AFS H11
- 2AFT H12
- 2AG4-1 E1
- 2AG4-2 E1
- 2AG4-3 E2
- 2AG4-4 E2
- 2AG5 E2
- 2AG6 E2
- 2AG7 E2
- 2AG8 E3
- 2AG9 E3
- 2AGB E3
- 2AGC F1
- 2AGD F1
- 2AGG H5
- 2AGH H5
- 2AGN E4
- 2AGP H11
- 2AGT G5
- 5AE0 E12
- 5AE2 D1
- 5AE4 E1
- 5AE5 H4
- 5AE7 F1
- 5AE8 D1
- 5AE9 G4
- 7A00-5 A10
- 7A00-6 A13
- 7A00-7 A7
- IAE1 C1
- IAE2 D1
- IAE3 E1
- IAE4 F1
- IAE5 E12
- IAE6 B2
- IAE8 G4
- IAE9 G5
- cA00 B2

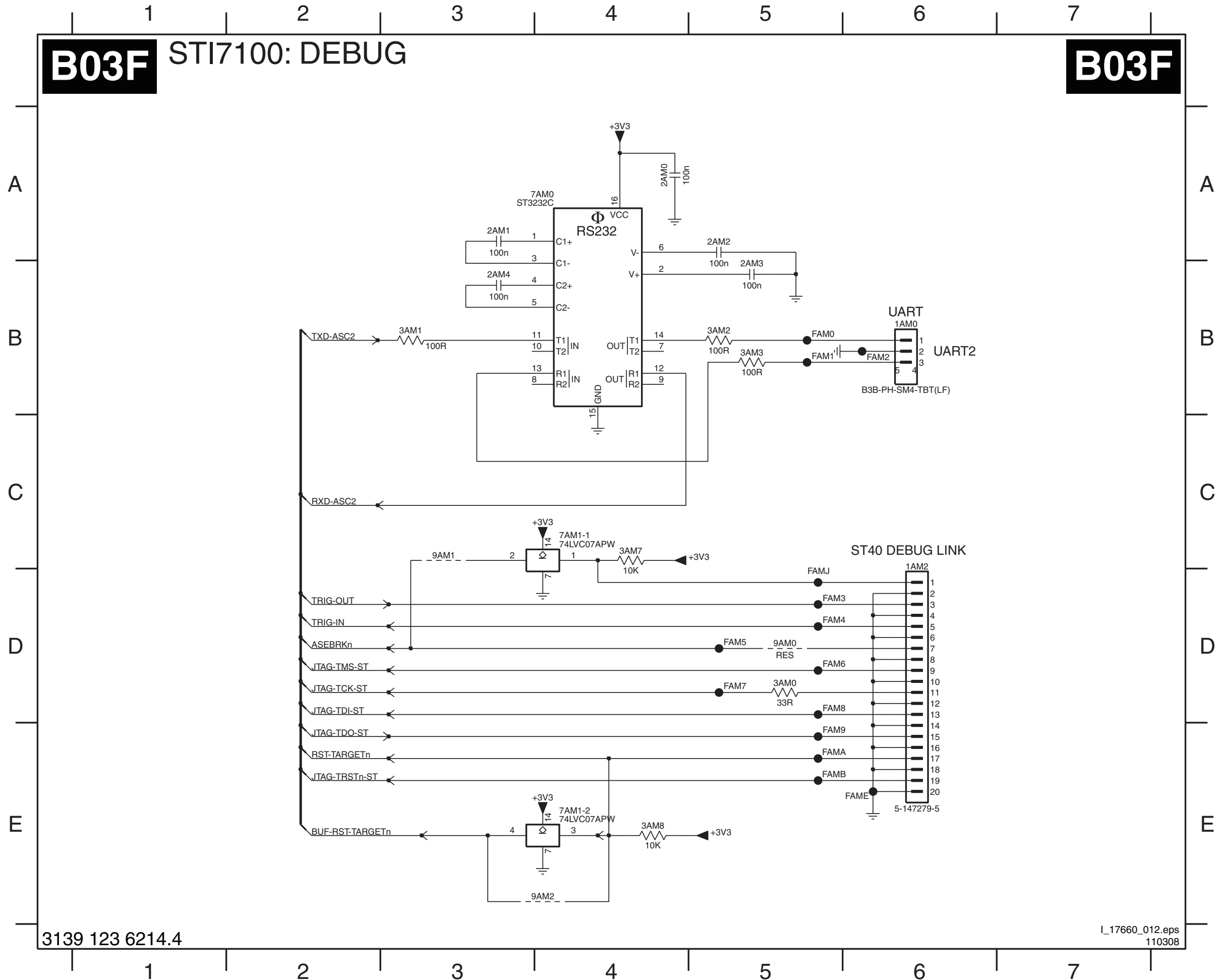
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L_17660_011.eps
110308

SSB: STi7100: Debug

B03F STI7100: DEBUG

B03F



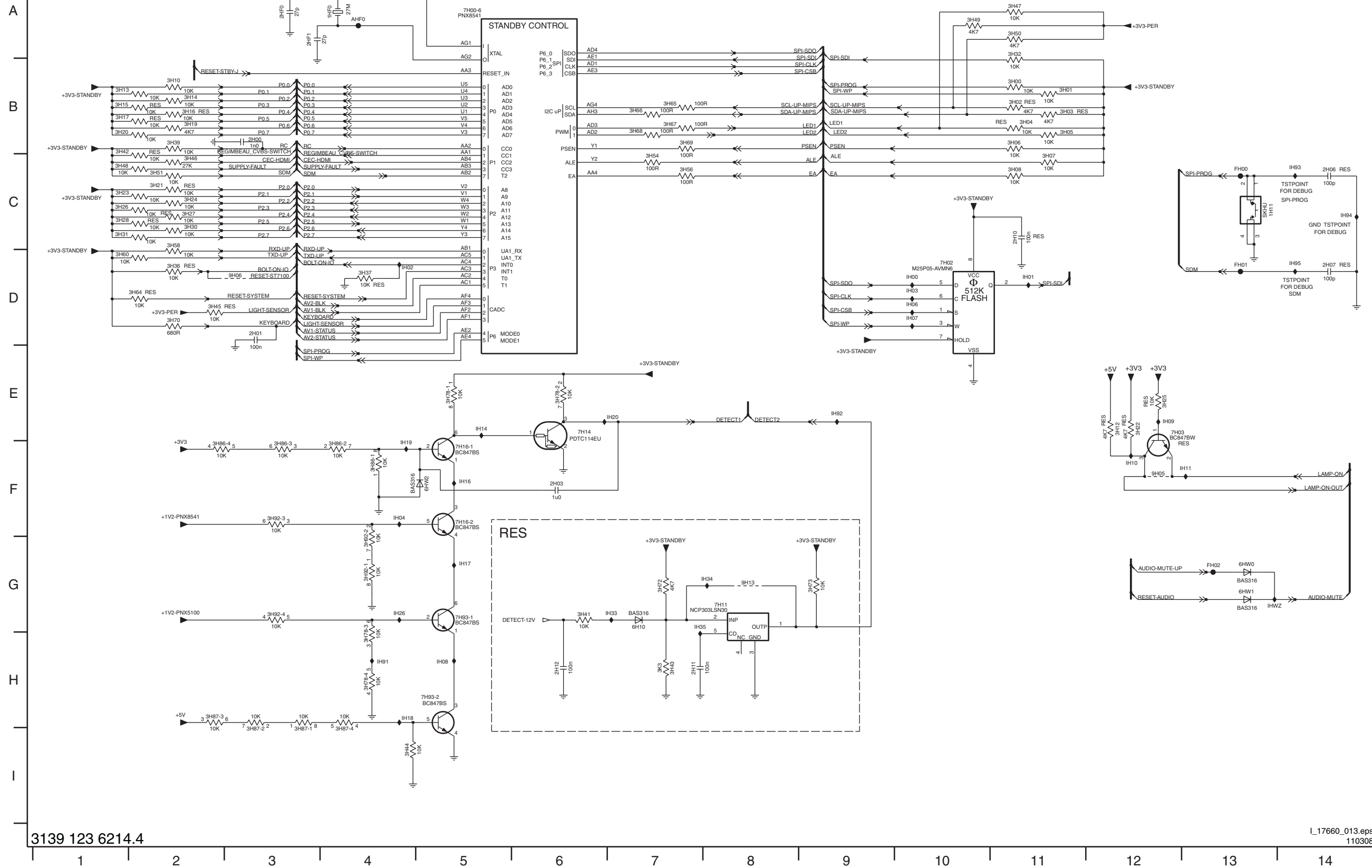
- 1AM0 B6
- 1AM2 D6
- 2AM0 A4
- 2AM1 A3
- 2AM2 A5
- 2AM3 B5
- 2AM4 B3
- 3AM0 D5
- 3AM1 B3
- 3AM2 B5
- 3AM3 B5
- 3AM7 C4
- 3AM8 E4
- 7AM0 A4
- 7AM1-1 C4
- 7AM1-2 E4
- 9AM0 D5
- 9AM1 C3
- 9AM2 E4
- FAM0 B5
- FAM1 B5
- FAM2 B6
- FAM3 D5
- FAM4 D5
- FAM5 D5
- FAM6 D5
- FAM7 D5
- FAM8 D5
- FAM9 E5
- FAMA E5
- FAMB E5
- FAME E6
- FAMJ D5

SSB: PNX8541: Standby Controller

B04A

PNX 8541: STANDBY CONTROLLER

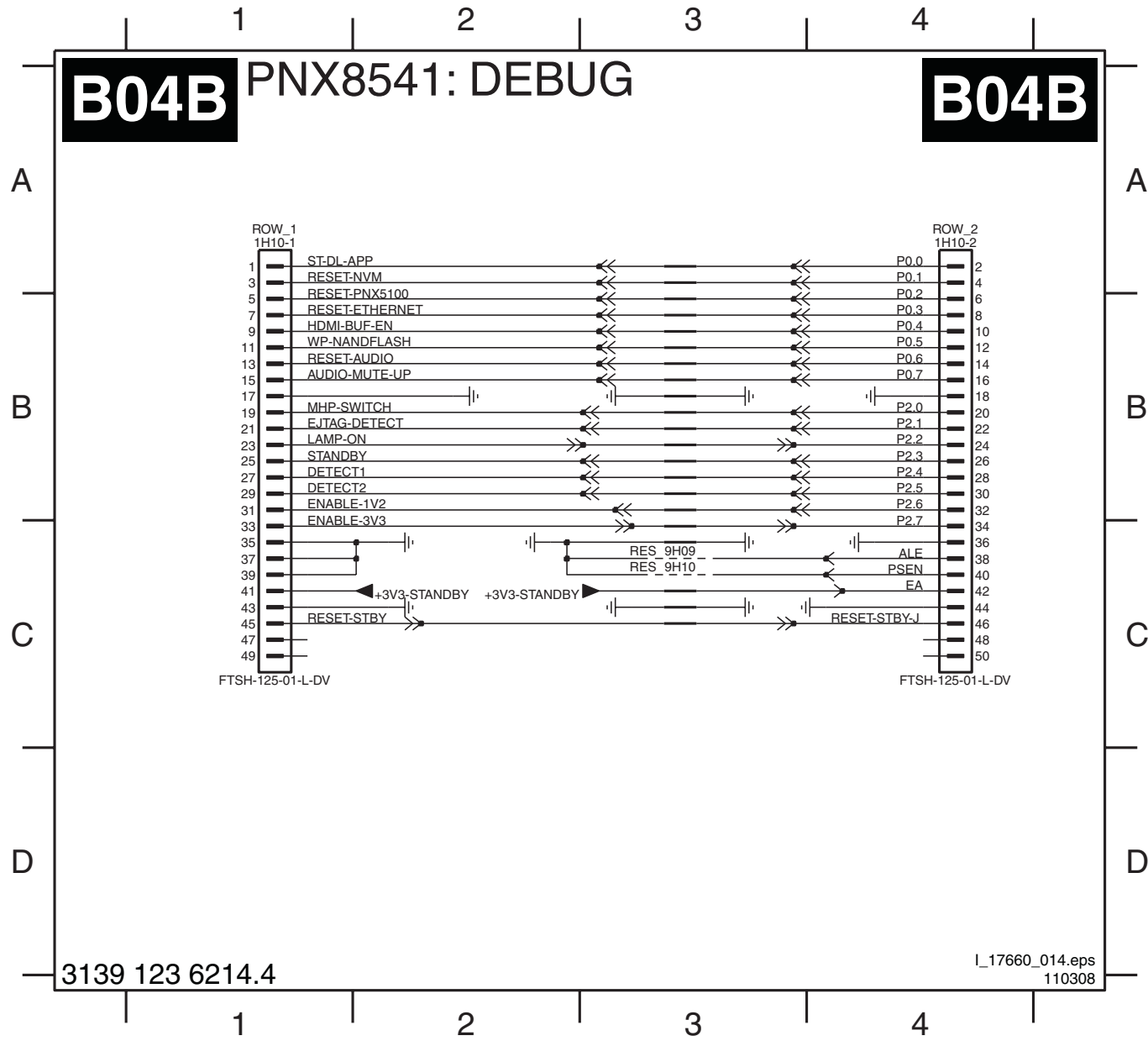
B04A



- IH11 C13
- IH10 F12
- IHF0 A4
- IH11 F13
- 2H00 B3
- IH14 E5
- 2H01 D3
- IH16 F5
- 2H03 F6
- IH17 G5
- 2H06 C14
- IH18 H4
- 2H07 D14
- IH19 F4
- 2H10 C11
- IH20 E7
- 2H11 H7
- IH26 G4
- 2H12 H6
- IH33 G7
- 2HF0 A3
- IH34 G8
- 2HF1 A3
- IH35 G7
- 3H00 B11
- IH91 H4
- 3H01 B11
- IH92 E9
- 3H02 B11
- IH93 C14
- 3H03 B11
- IH94 C14
- 3H04 B11
- IH95 D14
- 3H05 B11
- IHWZ G13
- 3H06 B11
- 3H07 C11
- 3H08 C11
- 3H10 B2
- 3H12 E12
- 3H13 B1
- 3H14 B2
- 3H15 B1
- 3H16 B2
- 3H17 B1
- 3H19 B2
- 3H20 B1
- 3H21 C2
- 3H22 E12
- 3H23 C1
- 3H24 C2
- 3H25 E12
- 3H26 C1
- 3H27 C2
- 3H28 C1
- 3H30 C2
- 3H31 C1
- 3H32 A11
- 3H36 D2
- 3H37 D4
- 3H39 B2
- 3H41 G6
- 3H42 B1
- 3H43 H7
- 3H44 I4
- 3H45 D2
- 3H46 C2
- 3H47 A11
- 3H48 C1
- 3H49 A10
- 3H50 A11
- 3H51 C2
- 3H54 C7
- 3H56 C7
- 3H58 C2
- 3H60 D1
- 3H64 D2
- 3H65 B7
- 3H66 B7
- 3H67 B7
- 3H68 B7
- 3H69 B7
- 3H70 D2
- 3H72 G7
- 3H73 G9
- 3H78-1 E5
- 3H78-2 E6
- 3H78-3 H4
- 3H78-4 H4
- 3H86-1 F4
- 3H86-2 F4
- 3H86-3 F3
- 3H86-4 F2
- 3H87-1 H3
- 3H87-2 H3
- 3H87-3 H2
- 3H87-4 H4
- 3H92-1 G4
- 3H92-2 G4
- 3H92-3 F3
- 3H92-4 G3
- 6H10 G7
- 6HW0 G13
- 6HW1 G13
- 6HW2 F5
- 7H00-6 A5
- 7H02 D10
- 7H03 E13
- 7H11 G8
- 7H14 E6
- 7H16-1 F5
- 7H16-2 F5
- 7H93-1 G5
- 7H93-2 H5
- 9H05 F12
- 9H06 D3
- 9H13 G8
- AHF0 A4
- FH00 C13
- FH01 D13
- FH02 G13
- IH00 D10
- IH01 D11
- IH02 D4
- IH03 D10
- IH04 F4
- IH06 D10
- IH07 D10
- IH08 H5
- IH09 E12

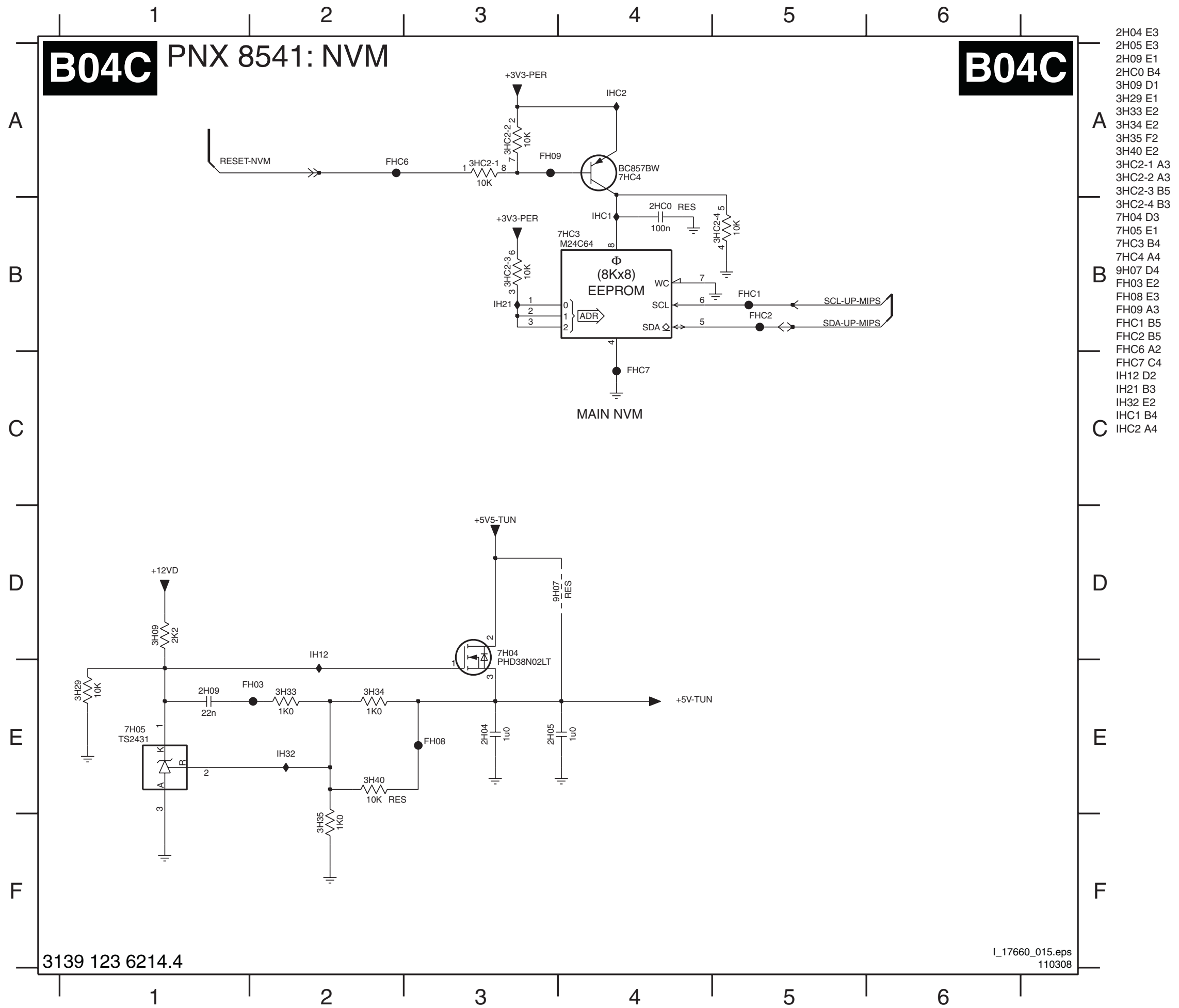
SSB: PNx8541: Debug

1H10-1 A1 1H10-2 A4 9H09 C3 9H10 C3



Personal Notes:

SSB: PNX8541: NVM



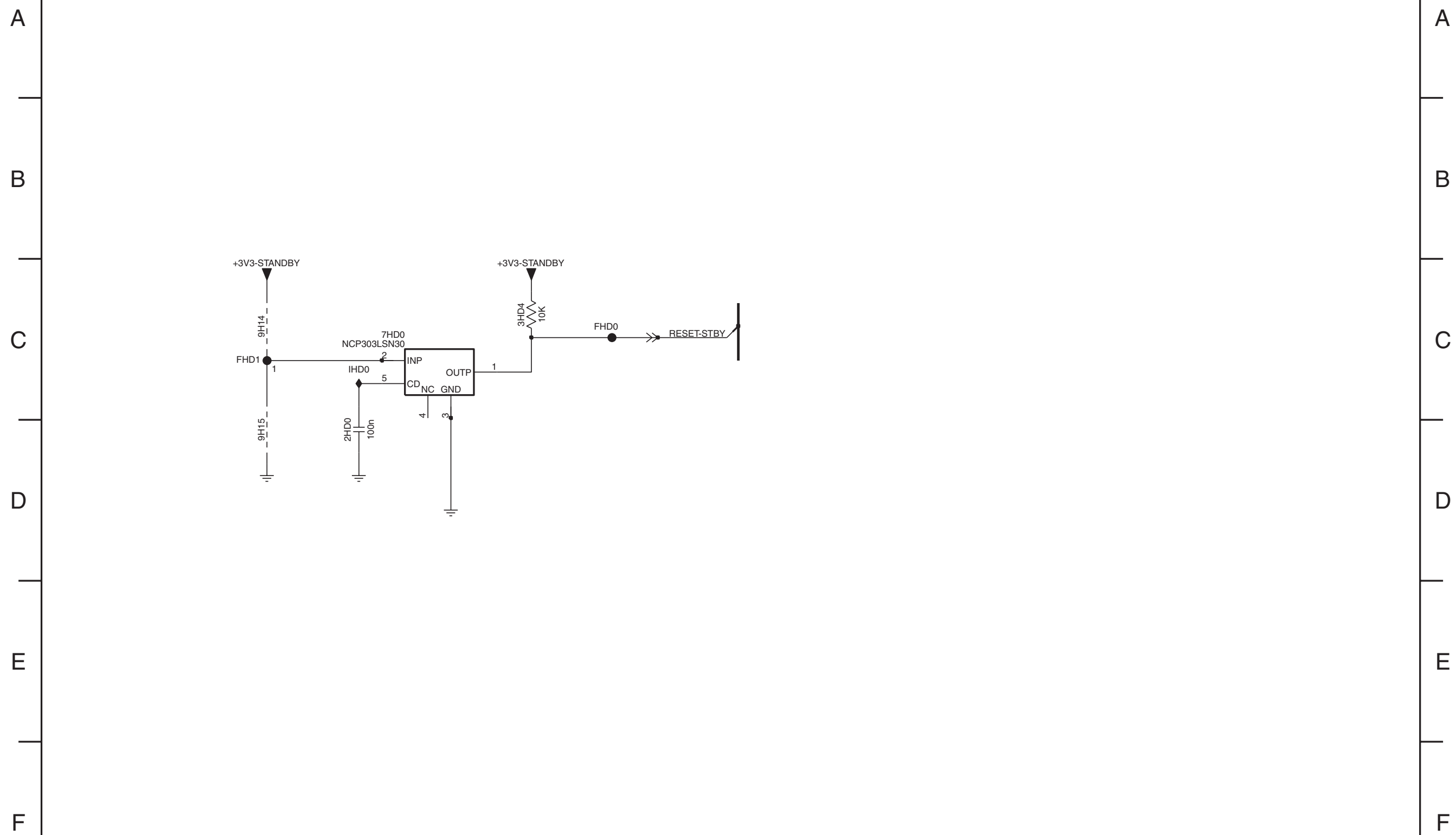
- 2H04 E3
- 2H05 E3
- 2H09 E1
- 2HC0 B4
- 3H09 D1
- 3H29 E1
- 3H33 E2
- 3H34 E2
- 3H35 F2
- 3H40 E2
- 3HC2-1 A3
- 3HC2-2 A3
- 3HC2-3 B5
- 3HC2-4 B3
- 7H04 D3
- 7H05 E1
- 7HC3 B4
- 7HC4 A4
- 9H07 D4
- FH03 E2
- FH08 E3
- FH09 A3
- FHC1 B5
- FHC2 B5
- FHC6 A2
- FHC7 C4
- IH12 D2
- IH21 B3
- IH32 E2
- IHC1 B4
- IHC2 A4

SSB: PNX8541: Misc.

B04D PNX 8541: MISCELLANEOUS

B04D

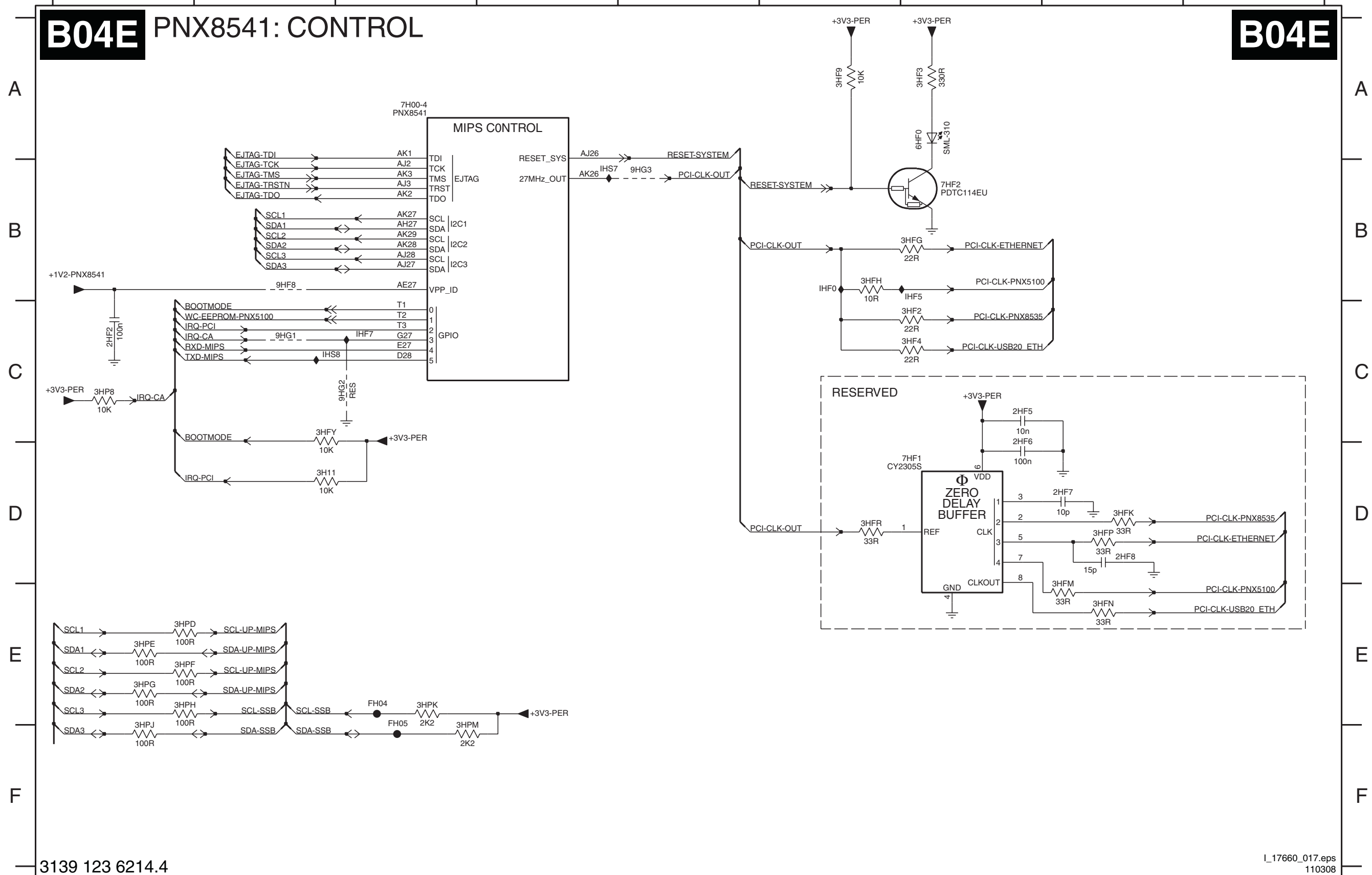
- 2HD0 D2
- 3HD4 C3
- 7HD0 C2
- 9H14 C2
- 9H15 D2
- FHD0 C4
- FHD1 C2
- IHD0 C2



SSB: PNX8541: Control

B04E PNX8541: CONTROL

B04E



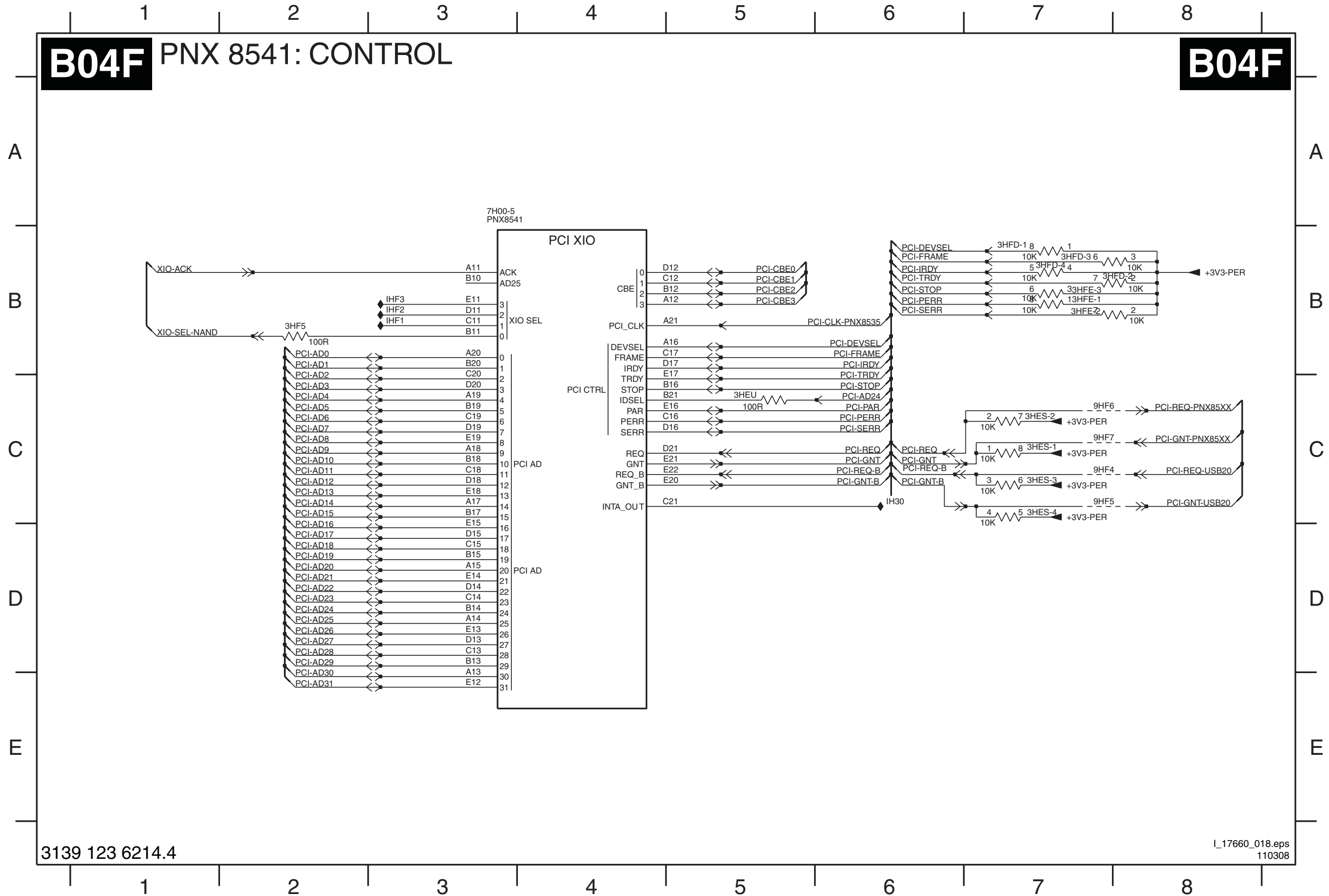
- 2HF2 C1
- 2HF5 C7
- 2HF6 D7
- 2HF7 D8
- 2HF8 D8
- 3H11 D2
- 3HF0 B5
- 3HF2 C7
- 3HF3 A7
- 3HF4 C7
- 3HF9 A6
- 3HFG B7
- 3HFH B6
- 3HFK D8
- 3HFM E8
- 3HFN E8
- 3HFP D8
- 3HFR D6
- 3HFX C2
- 3HP8 C1
- 3HPD E1
- 3HPE E1
- 3HPF E1
- 3HPG E1
- 3HPH E1
- 3HPJ F1
- 3HPK E3
- 3HPM F3
- 6HF0 A7
- 7H00-4 A3
- 7HF1 D7
- 7HF2 B7
- 9HF8 B2
- 9HG1 C2
- 9HG2 C3
- FH04 E3
- FH05 F3
- IHF0 B6
- IHF5 B7
- IHF7 C3
- IHS7 B4
- IHS8 C2

SSB: PNX8541: Control

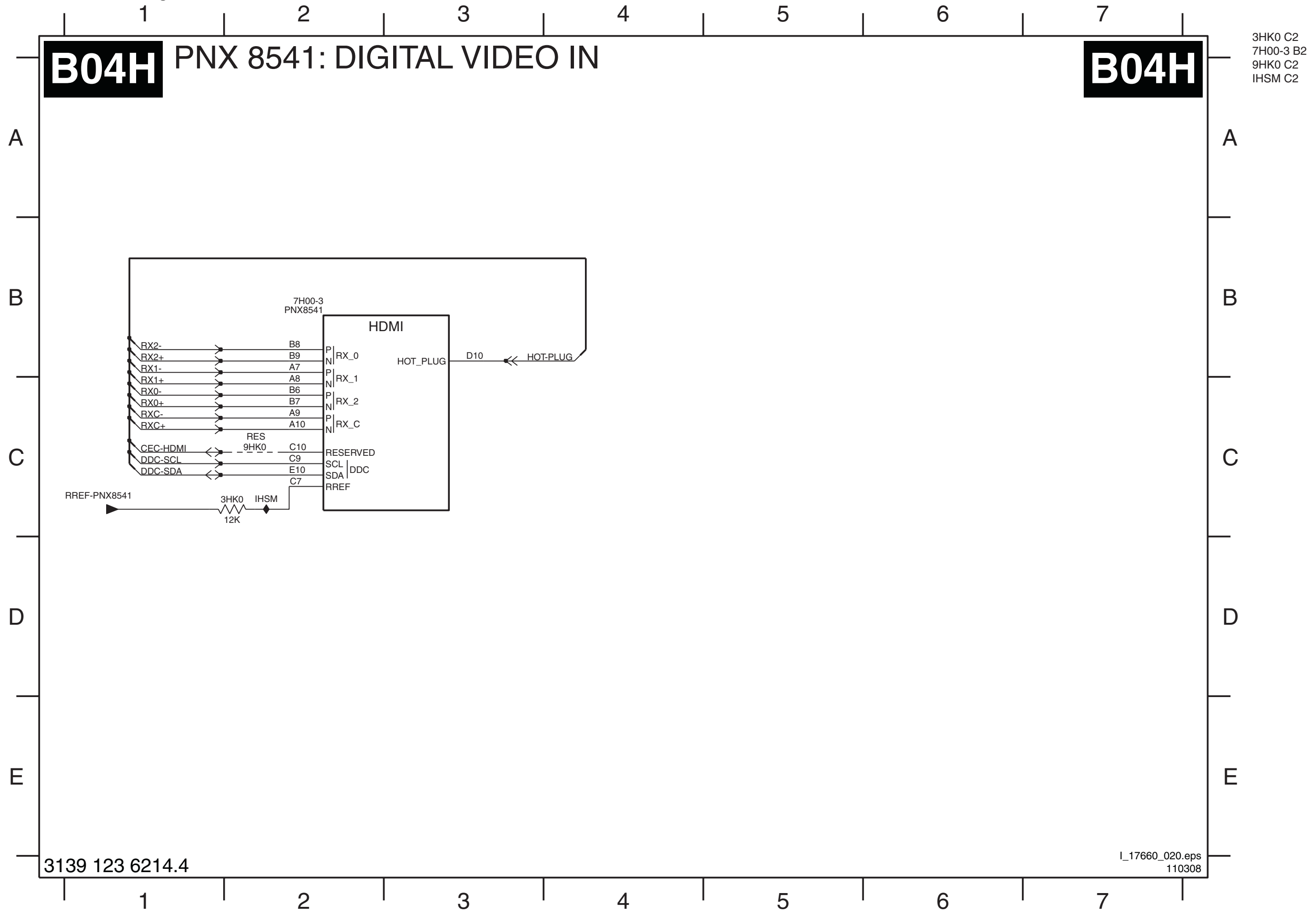
B04F

PNX 8541: CONTROL

B04F



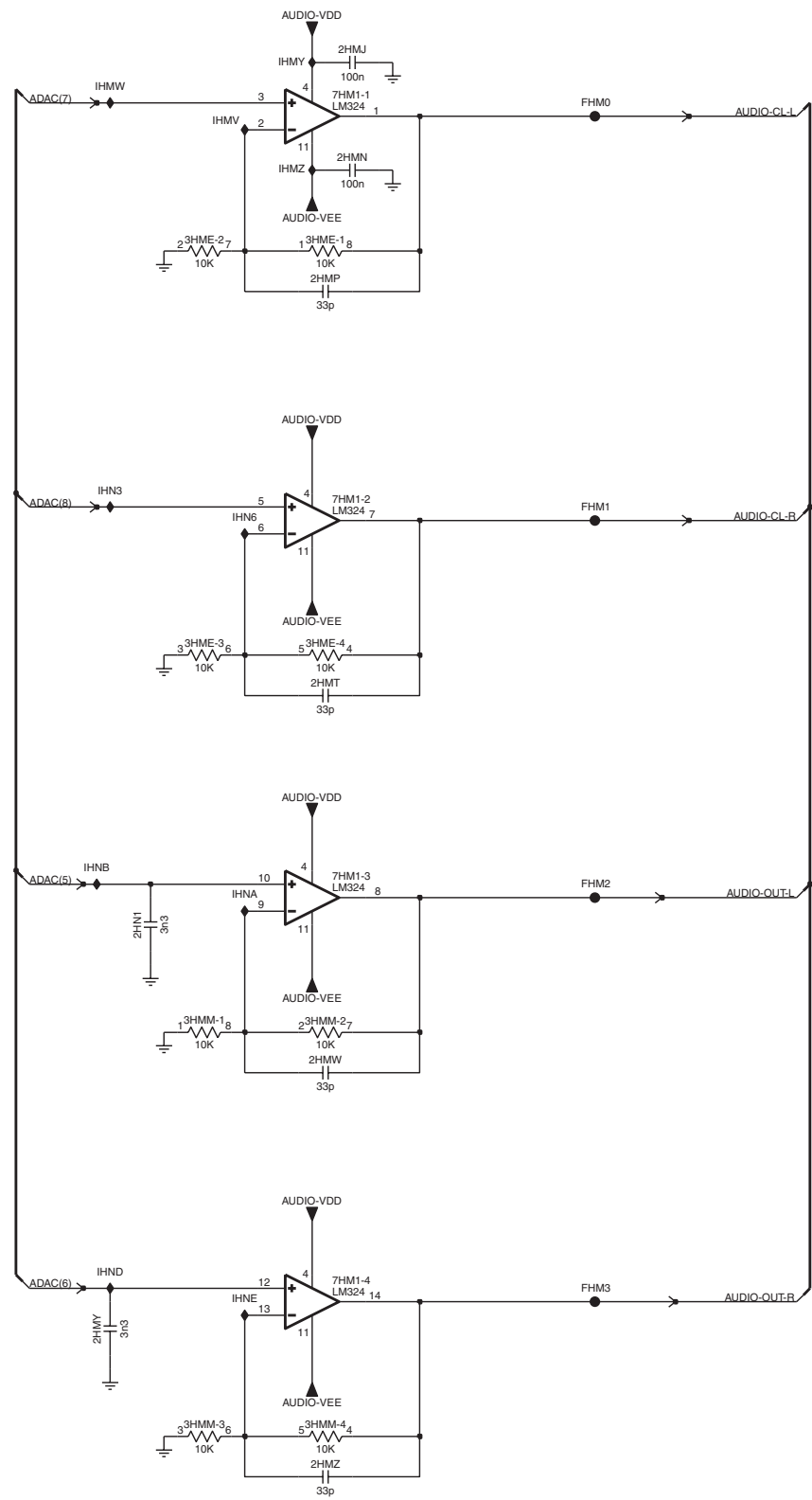
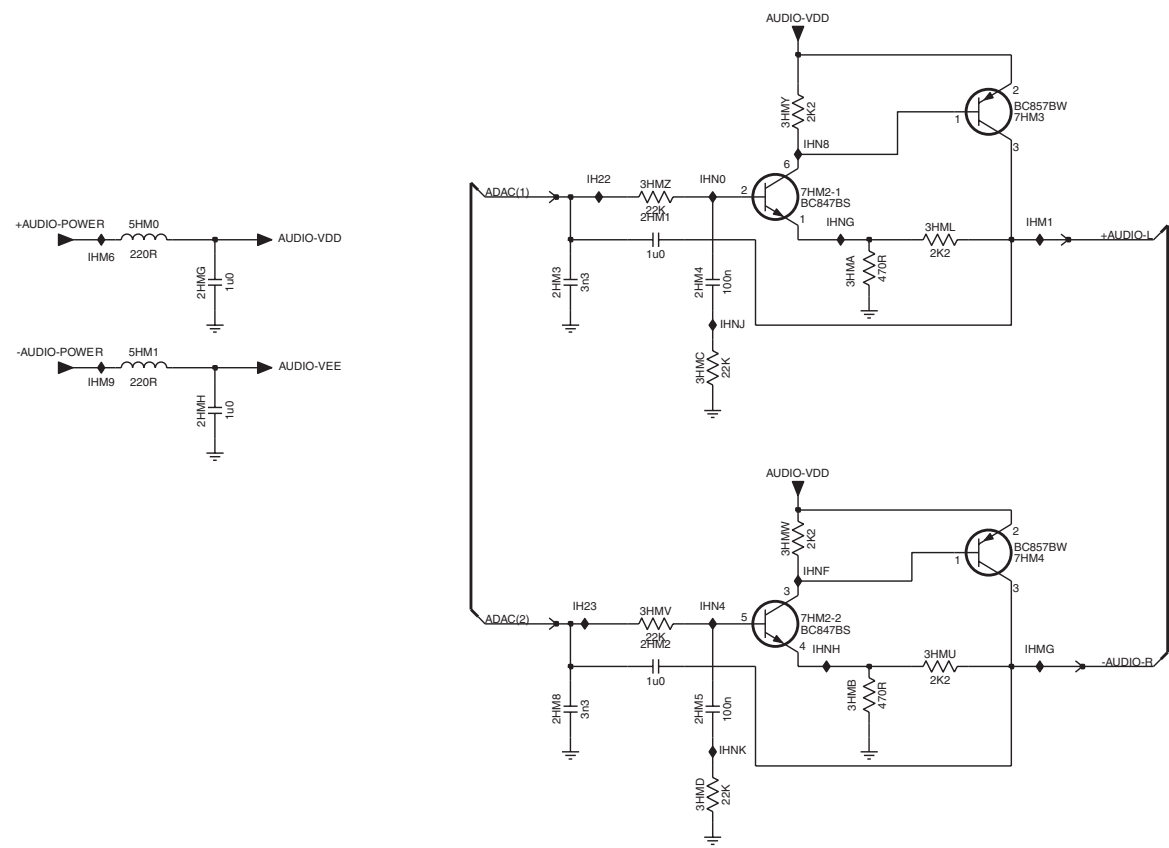
SSB: PNX8541: Digital Video In



SSB: PNx8541: Audio

B041 PNx 8541: AUDIO

B041

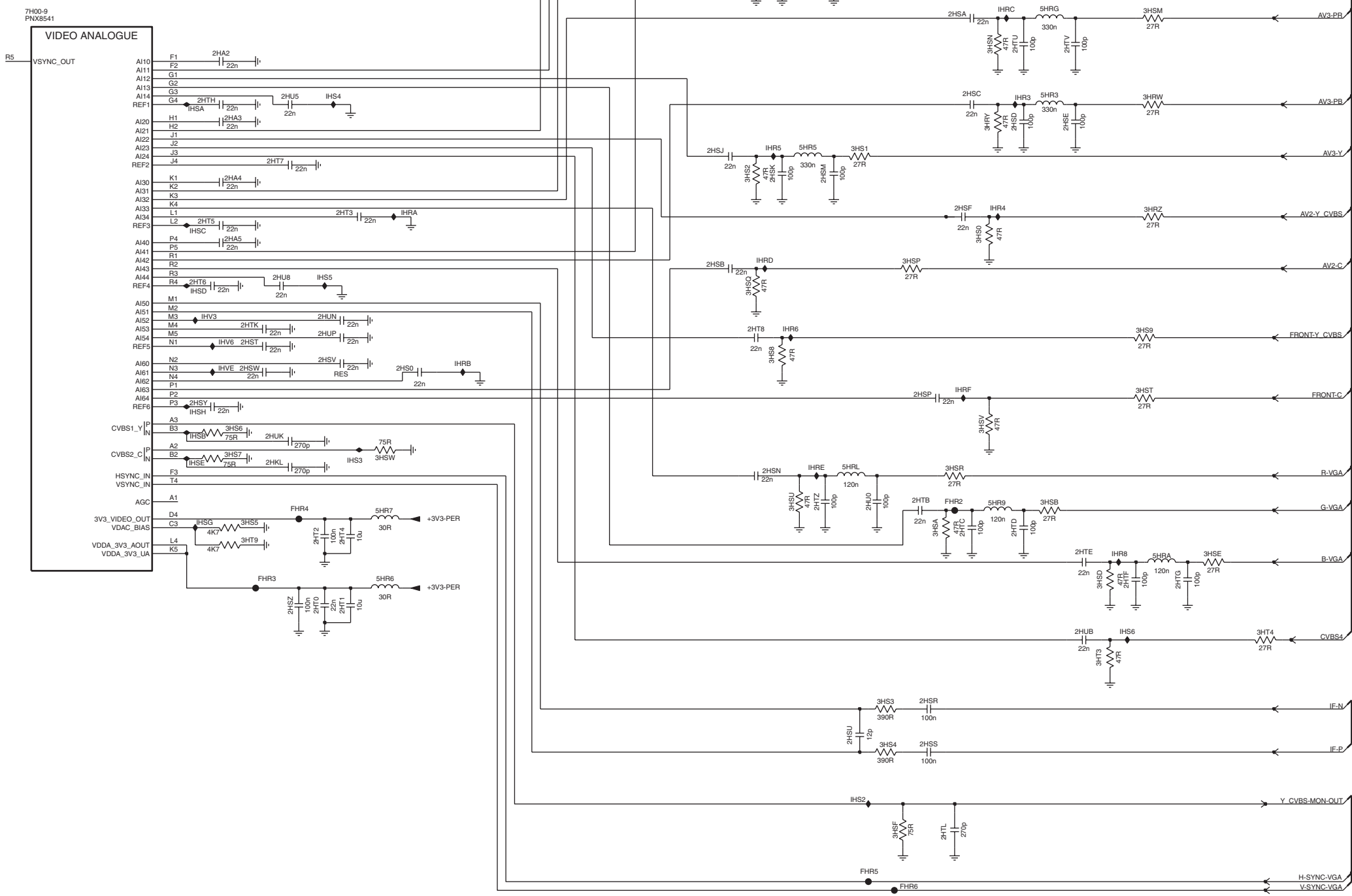


- 2HM1 D4
- 2HM2 F4
- 2HM3 D4
- 2HM4 D5
- 2HM5 F5
- 2HM8 F4
- 2HMG D2
- 2HMH D2
- 2HMJ A10
- 2HMN B10
- 2HMP C9
- 2HMT E9
- 2HMW G9
- 2HMY H8
- 2HMZ I9
- 2HN1 F9
- 3HMA D5
- 3HMB F5
- 3HMC D5
- 3HMD F5
- 3HME-1 B9
- 3HME-2 B9
- 3HME-3 E9
- 3HME-4 E9
- 3HML D6
- 3HMM-1 G9
- 3HMM-2 G9
- 3HMM-3 I9
- 3HMM-4 I9
- 3HMU F6
- 3HMY E4
- 3HMV E5
- 3HMY C5
- 3HMZ C4
- 5HM0 D2
- 5HM1 D2
- 7HM1-1 B10
- 7HM1-2 D10
- 7HM1-3 F10
- 7HM1-4 H10
- 7HM2-1 C5
- 7HM2-2 F5
- 7HM3 C6
- 7HM4 E6
- FHM0 B11
- FHM1 D11
- FHM2 F11
- FHM3 H11
- IH22 C4
- IH23 E4
- IHM1 C6
- IHM6 D1
- IHM9 D1
- IHMG F6
- IHMV B9
- IHMW B8
- IHMY A9
- IHMZ B9
- IHN0 C5
- IHN3 D8
- IHN4 E5
- IHN6 D9
- IHN8 C5
- IHNA F9
- IHNB F8
- IHND H8
- IHNE H9
- IHNF E5
- IHNG C5
- IHNH F5
- IHNJ D5
- IHNK F5

SSB: PNX8541: Analogue AV

B04K PNX 8541: ANALOGUE AV

B04K



- 2HA2 C3
- 2HA3 C3
- 2HA4 D3
- 2HA5 D3
- 2HKL F3
- 2HRZ A7
- 2HS0 E4
- 2HS1 B7
- 2HS2 B7
- 2HS3 B8
- 2HS4 A9
- 2HS7 A7
- 2HS8 B7
- 2HS9 B8
- 2HSA B9
- 2HSB E7
- 2HSC C9
- 2HSD C9
- 2HSE C10
- 2HSF D9
- 2HSJ D7
- 2HSK D7
- 2HSM D8
- 2HSN F7
- 2HSP F8
- 2HSR H8
- 2HSS I8
- 2HST E3
- 2HSU H8
- 2HSV E3
- 2HSW E3
- 2HSY F2
- 2HSZ G3
- 2HT0 G3
- 2HT1 G4
- 2HT2 G3
- 2HT3 D3
- 2HT4 G4
- 2HT5 E2
- 2HT6 E2
- 2HT7 D3
- 2HT8 E7
- 2HTB G8
- 2HTC G9
- 2HTD G9
- 2HTE G10
- 2HTF G10
- 2HTG G11
- 2HTH C2
- 2HTK E3
- 2HTL I9
- 2HTP A7
- 2HTR A8
- 2HTU C9
- 2HTV C10
- 2HTZ F8
- 2HU0 F8
- 2HUS C3
- 2HUB E3
- 2HUN H10
- 2HUK F3
- 2HUN E3
- 2HUP E3
- 2HUR B7
- 2HVR B8
- 2HRT A9
- 2HRU A8
- 2HRV B7
- 2HRW C10
- 2HRY C9
- 2HRZ D10
- 2HS0 D9
- 2HS1 D8
- 2HS2 D7
- 2HS3 H8
- 2HS4 I8
- 2HS5 G3
- 2HS6 F3
- 2HS7 F3
- 2HS8 E7
- 2HS9 E10
- 2HSA G8
- 2HSB G9
- 2HSD G10
- 2HSE G11
- 2HSF I8
- 2HSJ A8
- 2HSK A7
- 2HSM B10
- 2HSN C9
- 2HSP E8
- 2HSQ E7
- 2HSR F9
- 2HST F10
- 2HSU F7
- 2HSV F4
- 2HT3 H10
- 2HT4 H11
- 2HT9 G3
- 2HR2 B7
- 2HR3 A7
- 2HR4 A7
- 5HR3 C9
- 5HR5 D7
- 5HR6 G4
- 5HR7 G4
- 5HRA G10
- 5HRC A7
- 5HRG B9
- 5HRL F8
- 7H00-9 B1
- FHR1 A7
- FHR2 F9
- FHR3 G3
- FHR4 G3
- FHR5 I8
- FHR6 I8
- IHPF A7
- IHR0 B7
- IHR1 A9
- IHR3 C9
- IHR4 D9
- IHR5 D7
- IHR6 E7
- IHR8 G10
- IHR9 D3
- IHRB E5
- IIRC B9
- IIRD D7
- IHRE F8
- IHRF F9
- IHS2 I8
- IHS3 F4
- IHS4 C4
- IHS5 E3
- IHS6 H10
- IHSA C2
- IHSB F2
- IHSC D2
- IHSD E2
- IHSE F2
- IHSF G2
- IHSI B8
- IHSH F2
- IHV3 E3
- IHV6 E3
- IHVE E3

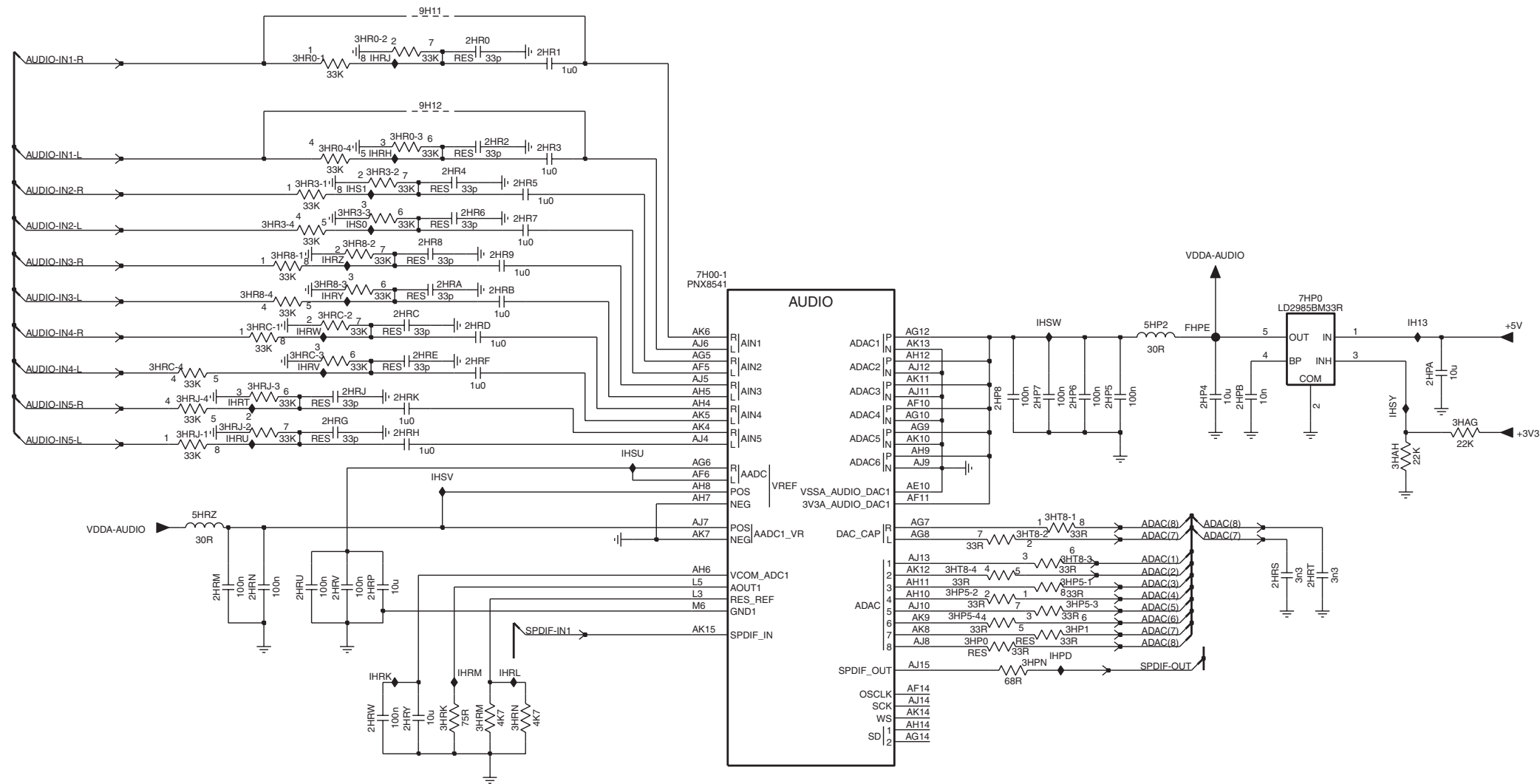
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SSB: PNx8541: Audio

B04L PNx 8541: AUDIO

B04L



- 2HP4 E9
- 2HP5 E8
- 2HP6 E8
- 2HP7 E8
- 2HP8 E7
- 2HPA E10
- 2HPB E9
- 2HR0 C4
- 2HR1 C5
- 2HR2 C4
- 2HR3 C5
- 2HR4 C4
- 2HR5 C5
- 2HR6 D4
- 2HR7 D5
- 2HR8 D4
- 2HR9 D4
- 2HRA D4
- 2HRB D4
- 2HRC D4
- 2HRD D4
- 2HRE D4
- 2HRF D4
- 2HRG E3
- 2HRH E4
- 2HRJ E4
- 2HRK E4
- 2HRM F3
- 2HRN F3
- 2HRP F4
- 2HRS F9
- 2HRT F9
- 2HRU F3
- 2HRV F3
- 2HRW G4
- 2HRY G4
- 3HAG E10
- 3HAH E10
- 3HP0 F7
- 3HP1 F8
- 3HP5-1 F8
- 3HP5-2 F7
- 3HP5-3 F8
- 3HP5-4 F7
- 3HPN F8
- 3HR0-1 C3
- 3HR0-2 C4
- 3HR0-3 C4
- 3HR0-4 C3
- 3HR3-1 C3
- 3HR3-2 C4
- 3HR3-3 D4
- 3HR3-4 D3
- 3HR8-1 D3
- 3HR8-2 D4
- 3HR8-3 D3
- 3HR8-4 D3
- 3HRC-1 D3
- 3HRC-2 D3
- 3HRC-3 D3
- 3HRC-4 E2
- 3HRJ-1 E3
- 3HRJ-2 E3
- 3HRJ-3 E3
- 3HRJ-4 E3
- 3HRK G4
- 3HRM G4
- 3HRN G5
- 3HT8-1 E8
- 3HT8-2 F8
- 3HT8-3 F7
- 3HT8-4 F8
- 5HRZ E3
- 7H00-1 D6
- 7HP0 D9
- 9H11 B4
- 9H12 C4
- FHPE D9
- IH13 D10
- IHPD F8
- IHRH C4
- IHRJ C4
- IHRK F4
- IHRL F4
- IHRM F4
- IHRT E3
- IHRU E3
- IHRV D3
- IHRW D3
- IHRY D3
- IHRZ D3
- IHS0 D4
- IHS1 C4
- IHSU E5
- IHSV E4
- IHSW D8
- IHSY E10

SSB: PNX8541: Audio

B04M PNX 8541: AUDIO

B04M

A

B

C

D

E

A

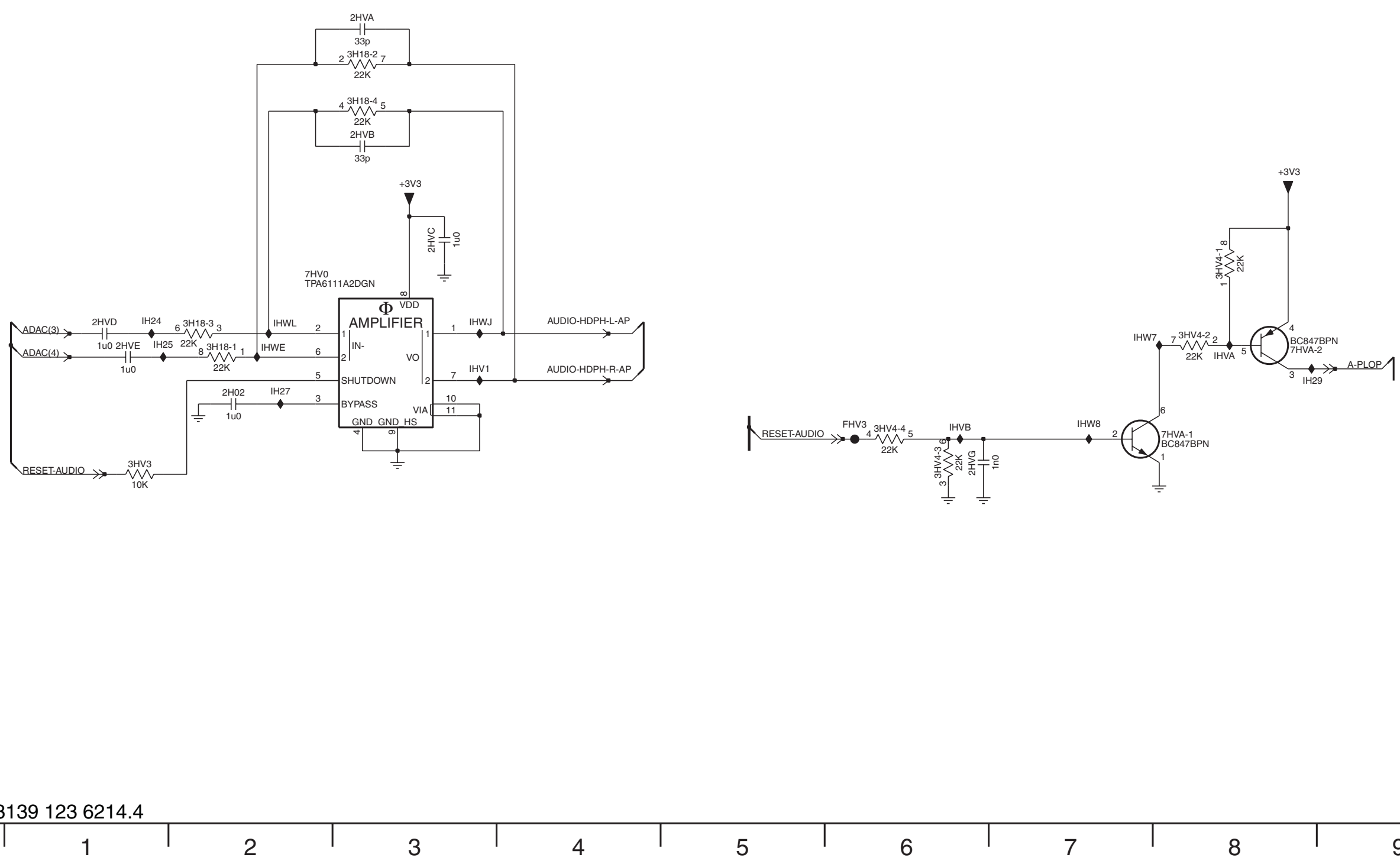
B

C

D

E

- 2H02 C2
- 2HVA A3
- 2HVB B3
- 2HVC B3
- 2HVD C1
- 2HVE C1
- 2HVG D6
- 3H18-1 C2
- 3H18-2 A3
- 3H18-3 C2
- 3H18-4 B3
- 3HV3 D1
- 3HV4-1 C8
- 3HV4-2 C8
- 3HV4-3 D6
- 3HV4-4 D6
- 7HV0 C2
- 7HVA-1 D8
- 7HVA-2 C8
- FHV3 D6
- IH24 C1
- IH25 C1
- IH27 C2
- IH29 C8
- IHV1 C3
- IHVA C8
- IHVB D6
- IHW7 C7
- IHW8 C7
- IHWE C2
- IHWJ C3
- IHWL C2



SSB: PNX8541: Video Streams

B04N PNX 8541: VIDEO STREAMS

B04N

A

B

C

D

E

A

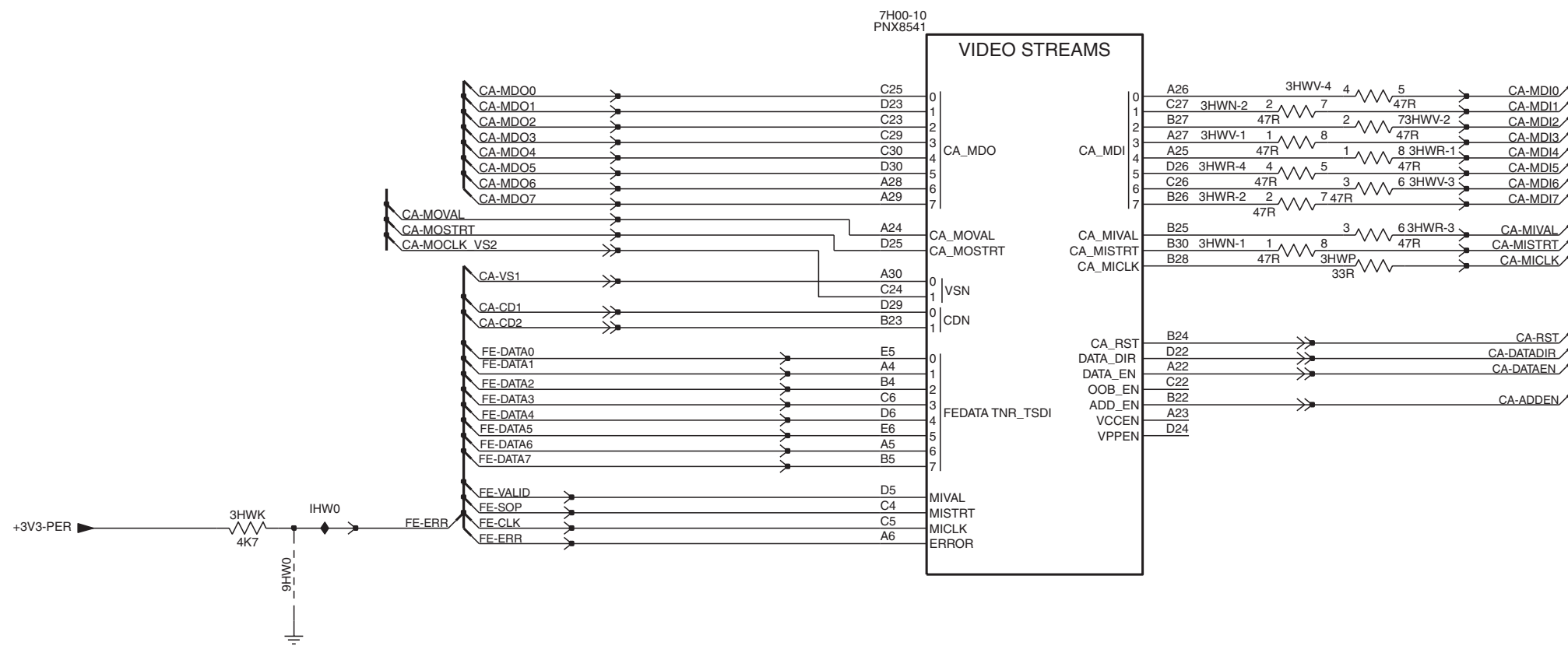
B

C

D

E

- 3HWK D2
- 3HWN-1 C6
- 3HWN-2 B6
- 3HWP C7
- 3HWR-1 B7
- 3HWR-2 B6
- 3HWR-3 B7
- 3HWR-4 B6
- 3HVV-1 B6
- 3HVV-2 B7
- 3HVV-3 B7
- 3HVV-4 B7
- 7H00-10 A5
- 9HW0 D2
- IHW0 D2



SSB: PNX8541: Digital Video Out / LVDS

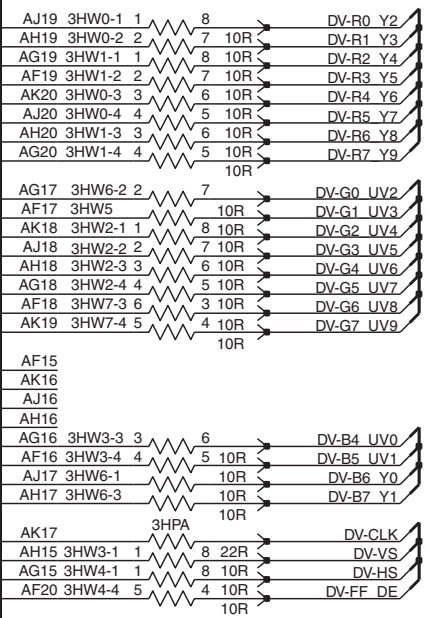
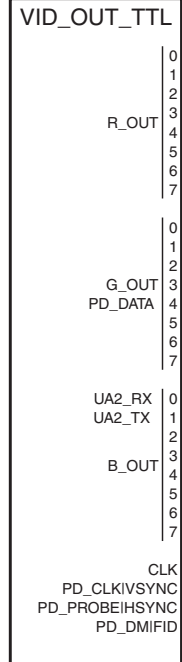
B040 PNX8541: DIGITAL VIDEO OUT / LVDS

B040

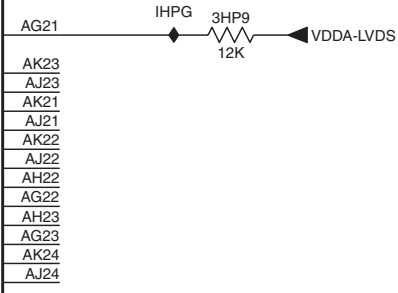
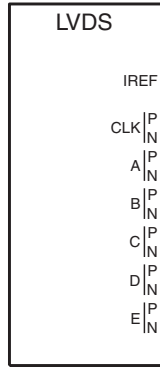
A
B
C
D
E
F

A
B
C
D
E
F

7H00-8
PNX8541



7H00-7
PNX8541



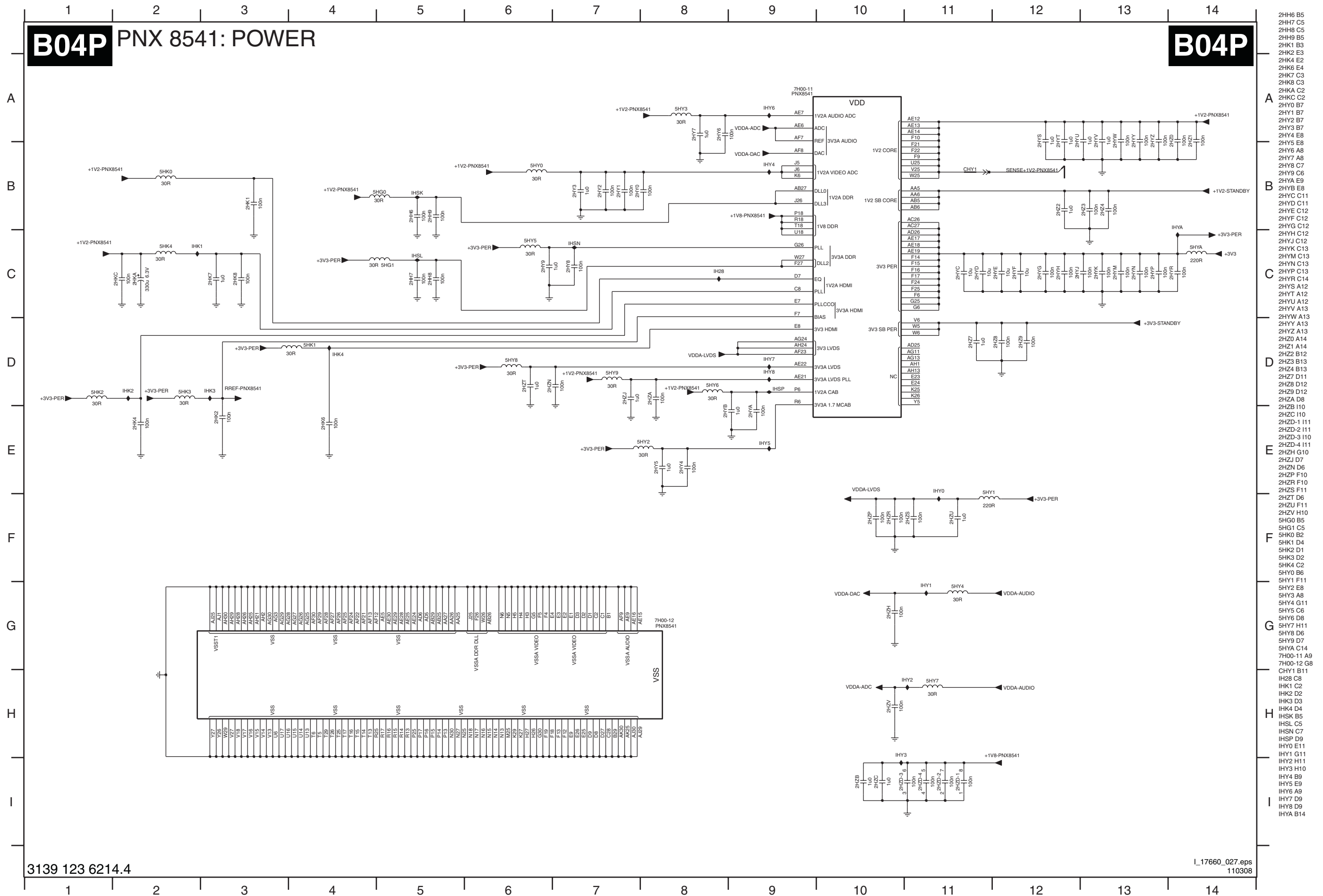
- 3HP9 B5
- 3HPA D2
- 3HW0-1 B2
- 3HW0-2 B2
- 3HW0-3 B2
- 3HW0-4 B2
- 3HW1-1 B2
- 3HW1-2 B2
- 3HW1-3 B2
- 3HW1-4 B2
- 3HW2-1 B2
- 3HW2-2 B2
- 3HW2-3 C2
- 3HW2-4 C2
- 3HW3-1 D2
- 3HW3-3 C2
- 3HW3-4 C2
- 3HW4-1 D2
- 3HW4-4 D2
- 3HW5 B2
- 3HW6-1 C2
- 3HW6-2 B2
- 3HW6-3 C2
- 3HW7-3 C2
- 3HW7-4 C2
- 7H00-7 B4
- 7H00-8 A1
- IHPG B5

1 2 3 4 5 6 7 8 9

SSB: PNX8541: Power

B04P PNX 8541: POWER

B04P



- 2HH6 B5
- 2HH7 C5
- 2HH8 C5
- 2HH9 B5
- 2HK1 B3
- 2HK2 E3
- 2HK4 E2
- 2HK5 E4
- 2HK7 C3
- 2HK8 C3
- 2HKA C2
- 2HKC C2
- 2HY0 B7
- 2HY1 B7
- 2HY2 B7
- 2HY3 B7
- 2HY4 E8
- 2HY5 E8
- 2HY6 A8
- 2HY7 A8
- 2HY8 C7
- 2HY9 C6
- 2HYA E9
- 2HYB E8
- 2HYC C11
- 2HYD C11
- 2HYE C12
- 2HYF C12
- 2HYG C12
- 2HYH C12
- 2HYJ C12
- 2HYK C13
- 2HYM C13
- 2HYN C13
- 2HYO C13
- 2HYT A12
- 2HYU A12
- 2HYV A13
- 2HYW A13
- 2HYX A13
- 2HYZ A13
- 2HZ0 A14
- 2HZ1 A14
- 2HZ2 B12
- 2HZ3 B13
- 2HZ4 B13
- 2HZ7 D11
- 2HZ8 D12
- 2HZ9 D12
- 2HZA D8
- 2HZA B10
- 2HZB I10
- 2HZC I10
- 2HZD-1 I11
- 2HZD-2 I11
- 2HZD-3 I10
- 2HZD-4 I11
- 2HZH G10
- 2HZJ D7
- 2HZN D6
- 2HZP F10
- 2HZR F10
- 2HZS F11
- 2HZT D6
- 2HZU F11
- 2HZV H10
- 5HG0 B5
- 5HG1 C5
- 5HKO B2
- 5HK1 D4
- 5HK2 D1
- 5HK3 D2
- 5HK4 C2
- 5HY0 B6
- 5HY1 F11
- 5HY2 E8
- 5HY3 A8
- 5HY4 G11
- 5HY5 C6
- 5HY6 D8
- 5HY7 H11
- 5HY8 D6
- 5HY9 D7
- 5HYA C14
- 7H00-11 A9
- 7H00-12 G8
- CHY1 B11
- IHZ8 C8
- IHK1 C2
- IHK2 D2
- IHK3 D3
- IHK4 D4
- IHSK B5
- IHSL C5
- IHSN C7
- IHSP D9
- IHY0 E11
- IHY1 G11
- IHY2 H11
- IHY3 H10
- IHY4 B9
- IHY5 E9
- IHY6 A9
- IHY7 D9
- IHY8 D9
- IHYA B14

SSB: PNX8541: Flash

B04Q

PNX 8541: FLASH

B04Q

A

B

C

D

E

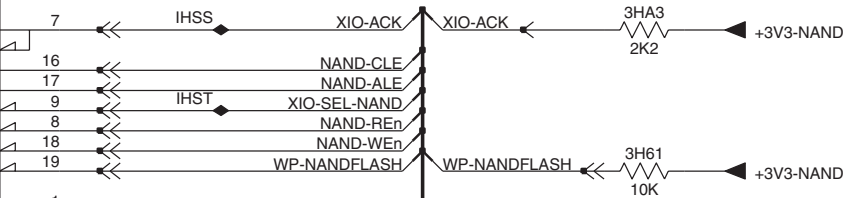
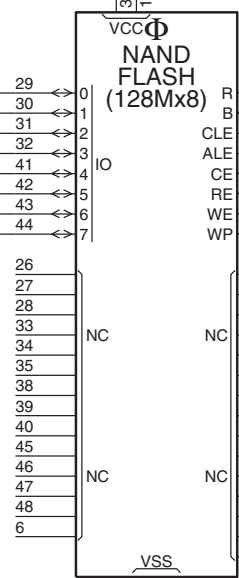
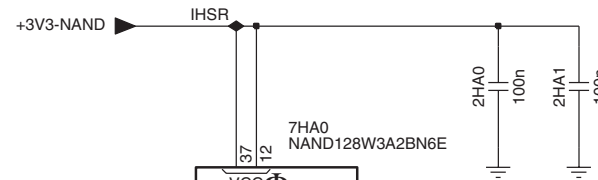
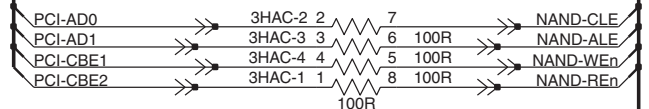
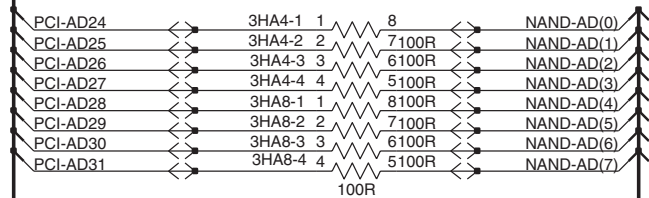
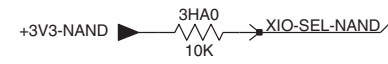
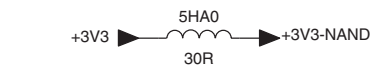
A

B

C

D

E



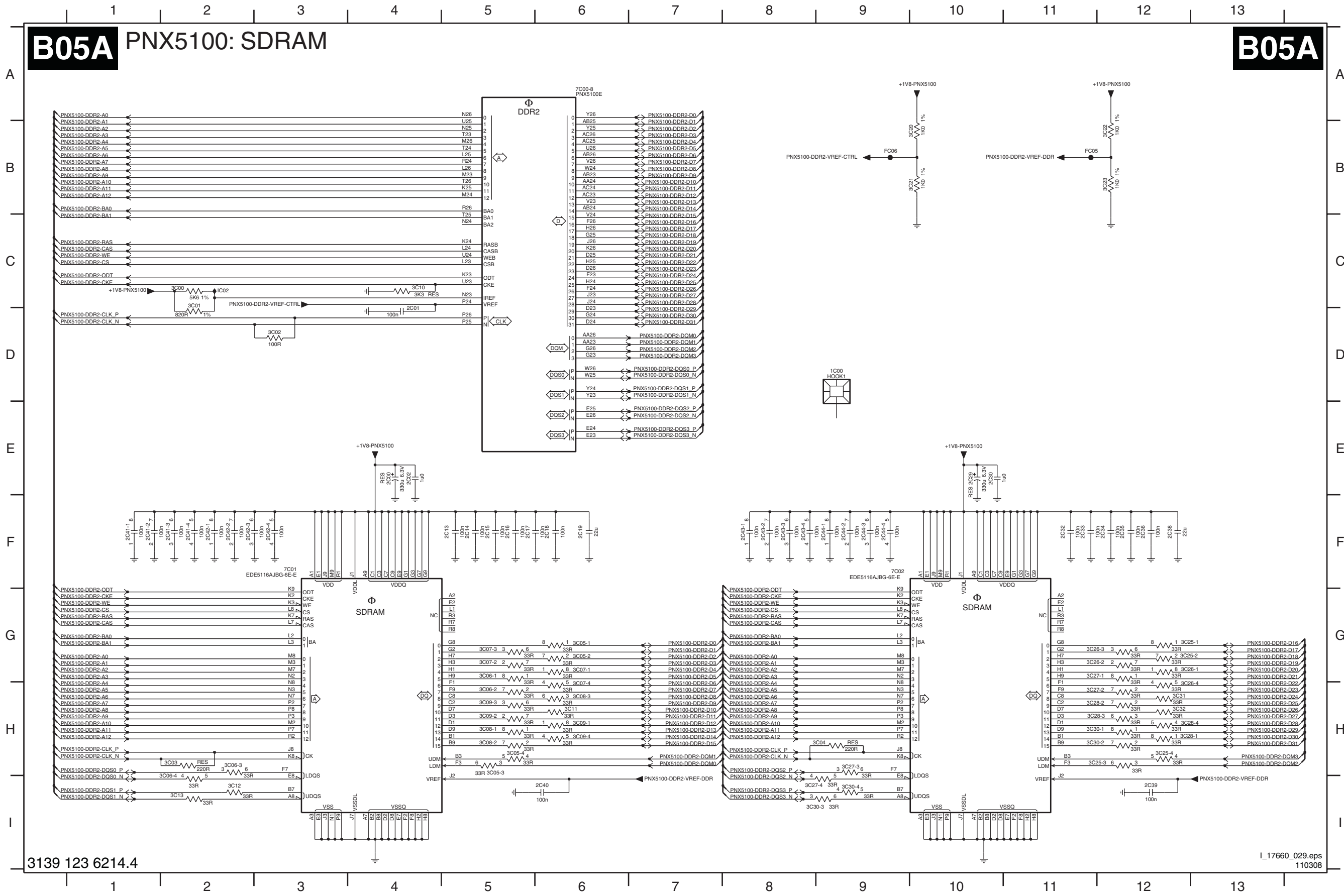
- 2HA0 B6
- 2HA1 B6
- 3H61 C8
- 3HA0 B1
- 3HA3 B8
- 3HA4-1 B3
- 3HA4-2 B3
- 3HA4-3 B3
- 3HA4-4 B3
- 3HA8-1 B3
- 3HA8-2 B3
- 3HA8-3 C3
- 3HA8-4 C3
- 3HAC-1 D3
- 3HAC-2 D3
- 3HAC-3 D3
- 3HAC-4 D3
- 5HA0 A1
- 7HA0 B5
- IHSR A5
- IHSS B6
- IHST B6

SSB: PNX5100: SDRAM

B05A

PNX5100: SDRAM

B05A



- 1C00 D9
- 2C00 E4
- 2C01 D4
- 2C02 E4
- 2C13 F5
- 2C14 F5
- 2C15 F5
- 2C16 F5
- 2C17 F5
- 2C18 F6
- 2C19 F6
- 2C29 E10
- 2C30 E10
- 2C33 F11
- 2C34 F12
- 2C35 F12
- 2C36 F12
- 2C38 F12
- 2C39 I12
- 2C40 I6
- 2C41-1 F1
- 2C41-2 F1
- 2C41-3 F2
- 2C41-4 F2
- 2C42-1 F2
- 2C42-2 F2
- 2C42-3 F2
- 2C42-4 F3
- 2C43-1 F8
- 2C43-2 F8
- 2C43-3 F8
- 2C43-4 F8
- 2C44-1 F9
- 2C44-2 F9
- 2C44-3 F9
- 2C44-4 F9
- 3C00 C2
- 3C01 C2
- 3C02 D3
- 3C03 H2
- 3C04 H9
- 3C05-1 G6
- 3C05-2 G6
- 3C05-3 H5
- 3C05-4 H5
- 3C06-1 G5
- 3C06-2 H5
- 3C06-3 H2
- 3C06-4 I2
- 3C07-1 G6
- 3C07-2 G5
- 3C07-3 G5
- 3C07-4 H6
- 3C08-1 H5
- 3C08-2 H5
- 3C08-3 H6
- 3C09-1 H6
- 3C09-2 H5
- 3C09-3 H5
- 3C09-4 H6
- 3C10 C4
- 3C11 H6
- 3C12 I2
- 3C13 I2
- 3C14 I2
- 3C20 B10
- 3C21 B10
- 3C22 B12
- 3C23 B12
- 3C25-1 G12
- 3C25-2 G12
- 3C25-3 H12
- 3C25-4 H12
- 3C26-1 G12
- 3C26-2 G11
- 3C26-3 G11
- 3C26-4 H12
- 3C27-1 G11
- 3C27-2 H11
- 3C27-3 H9
- 3C27-4 I8
- 3C28-1 H12
- 3C28-2 H11
- 3C28-3 H11
- 3C28-4 H12
- 3C30-1 H11
- 3C30-2 H11
- 3C30-3 I8
- 3C30-4 I9
- 3C31 H12
- 3C32 H12
- 7C00-8 A6
- 7C01 F3
- 7C02 F9
- F006 B11
- F008 B9
- IC02 C2

3139 123 6214.4

L_17660_029.eps
110308

SSB: PNX5100: Video

B05B

PNX5100: VIDEO

B05B

3C50 B5
3C51 B5
7C00-5 B2
7C00-9 B6
IC54 B5

A

B

C

D

E

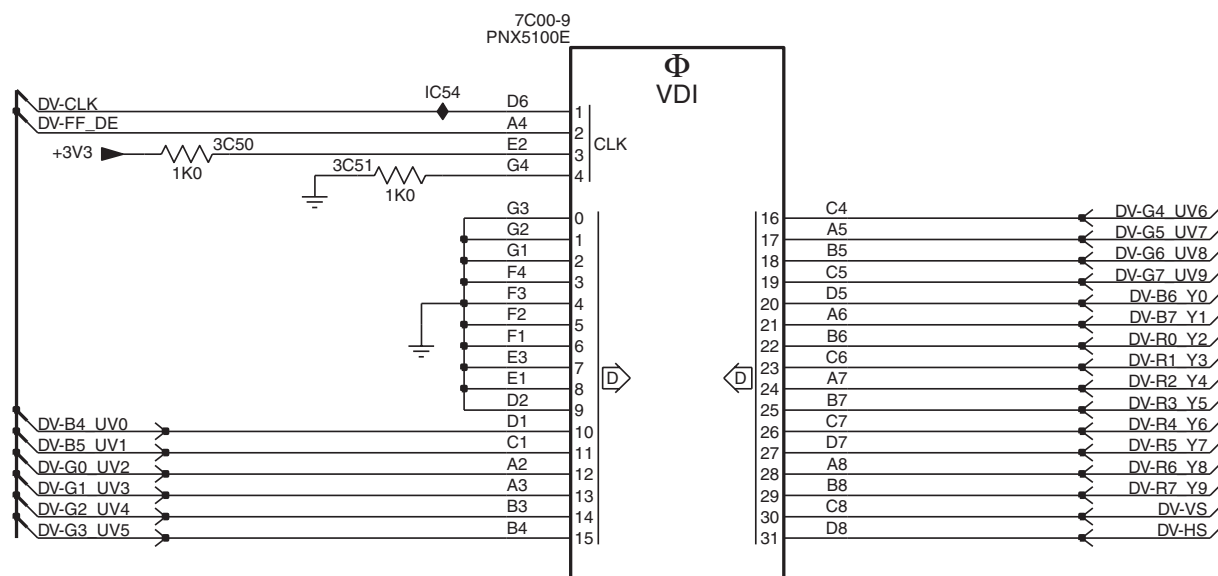
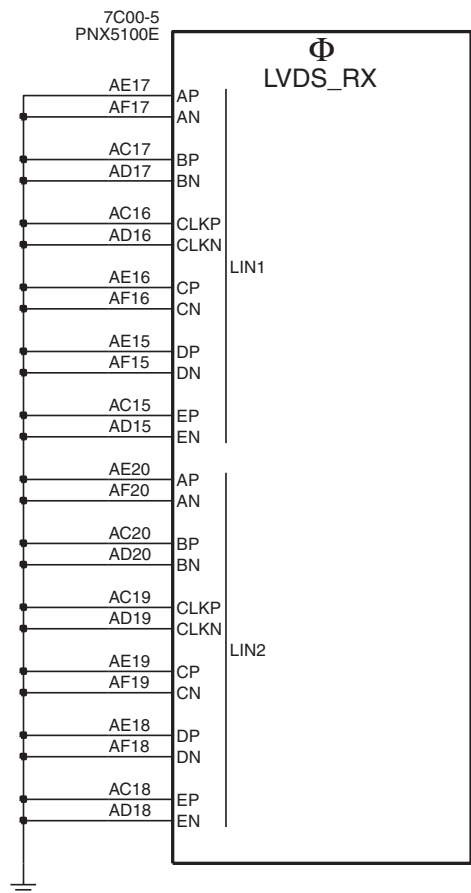
A

B

C

D

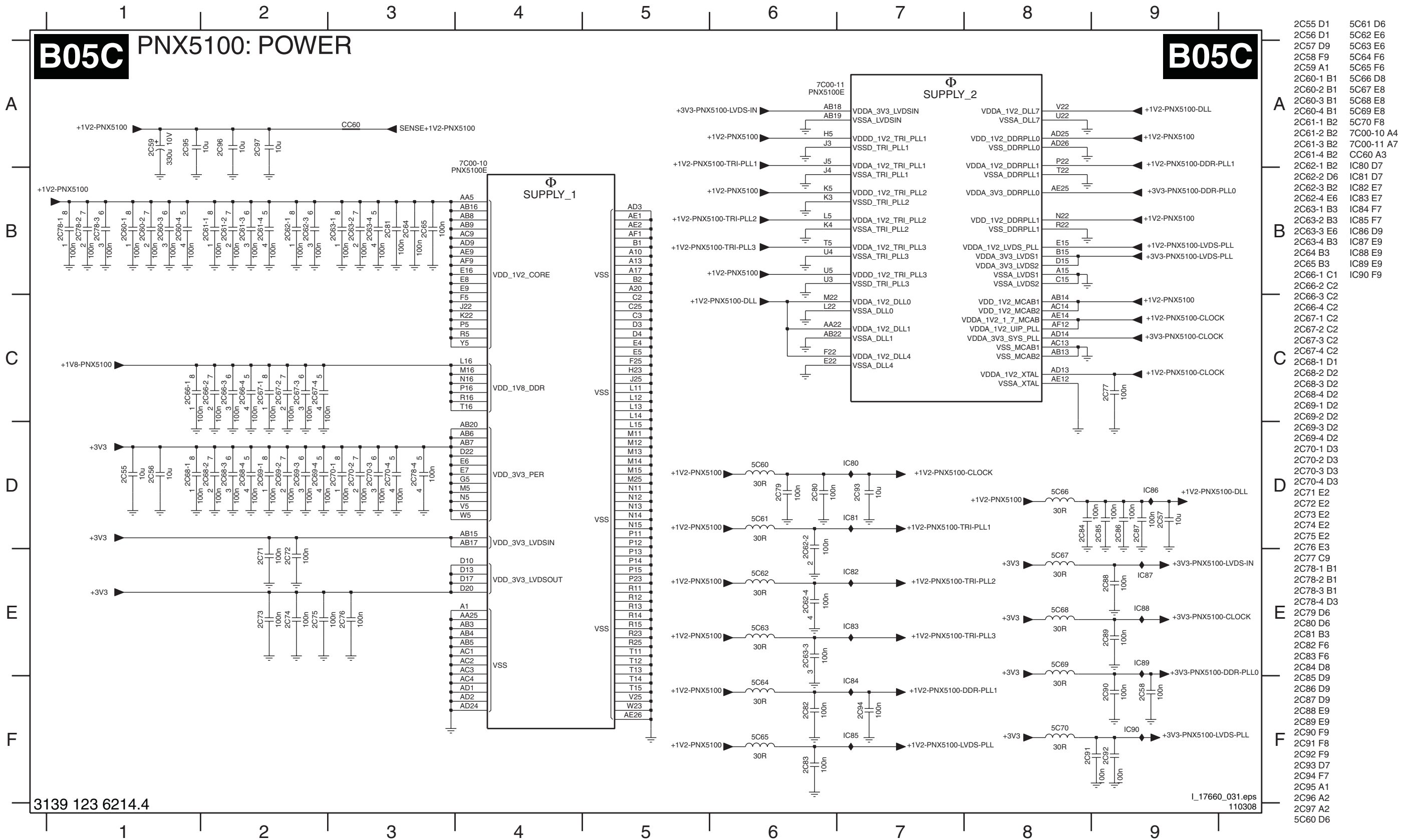
E



SSB: PNX5100: Power

B05C PNX5100: POWER

B05C



3139 123 6214.4

L_17660_031.eps
110308

- 2C55 D1
- 2C56 D1
- 2C57 D9
- 2C58 F9
- 2C59 A1
- 2C60-1 B1
- 2C60-2 B1
- 2C60-3 B1
- 2C60-4 B1
- 2C61-1 B2
- 2C61-2 B2
- 2C61-3 B2
- 2C61-4 B2
- 2C62-1 B2
- 2C62-2 D6
- 2C62-3 B2
- 2C62-4 E2
- 2C63-1 B3
- 2C63-2 B3
- 2C63-3 E6
- 2C63-4 B3
- 2C64 B3
- 2C65 B3
- 2C66-1 C1
- 2C66-2 C2
- 2C66-3 C2
- 2C66-4 C2
- 2C67-1 C2
- 2C67-2 C2
- 2C67-3 C2
- 2C67-4 C2
- 2C68-1 D1
- 2C68-2 D2
- 2C68-3 D2
- 2C68-4 D2
- 2C69-1 D2
- 2C69-2 D2
- 2C69-3 D2
- 2C69-4 D2
- 2C70-1 D3
- 2C70-2 D3
- 2C70-3 D3
- 2C70-4 D3
- 2C71 E2
- 2C72 E2
- 2C73 E2
- 2C74 E2
- 2C75 E2
- 2C76 E3
- 2C77 C9
- 2C78-1 B1
- 2C78-2 B1
- 2C78-3 B1
- 2C78-4 D3
- 2C79 D6
- 2C80 D6
- 2C81 B3
- 2C82 F6
- 2C83 F6
- 2C84 D8
- 2C85 D9
- 2C86 D9
- 2C87 D9
- 2C88 E9
- 2C89 E9
- 2C90 F9
- 2C91 F8
- 2C92 F9
- 2C93 D7
- 2C94 F7
- 2C95 A1
- 2C96 A2
- 2C97 A2
- 5C60 D6
- 5C61 D6
- 5C62 E6
- 5C63 E6
- 5C64 F6
- 5C65 F6
- 5C66 D8
- 5C67 E8
- 5C68 E8
- 5C69 E8
- 5C70 F8
- 7C00-10 A4
- 7C00-11 A7
- CC60 A3
- IC80 D7
- IC81 D7
- IC82 E7
- IC83 E7
- IC84 F7
- IC85 F7
- IC86 D9
- IC87 E9
- IC88 E9
- IC89 E9
- IC90 F9

SSB: PNX5100: AmbiLight

B05D

PNX5100: AMBILIGHT

B05D

- 3C95-1 B5
- 3C95-2 B4
- 3C95-3 B5
- 3C96-1 B4
- 3C96-2 B4
- 3C96-3 B5
- 3C96-4 B4
- 3C97 B5
- 3C98-2 C4
- 3C98-3 C5
- 3C98-4 C4
- 7C00-7 B3

A

A

B

B

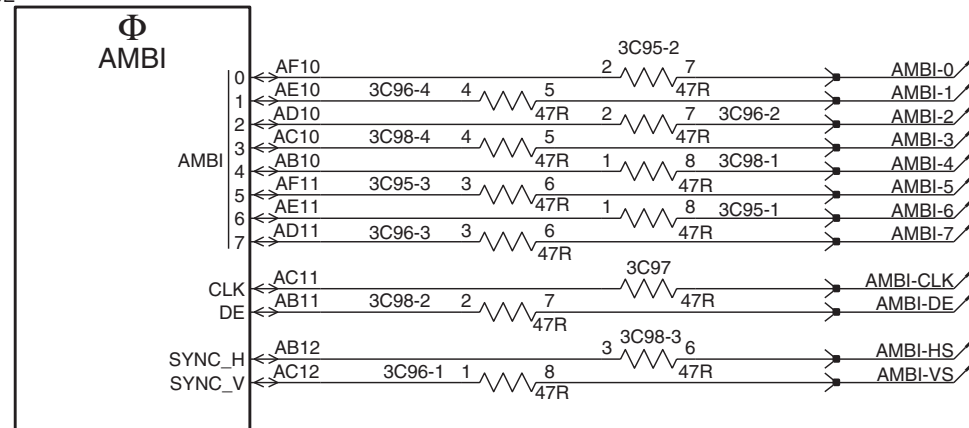
C

C

D

D

7C00-7
PNX5100E



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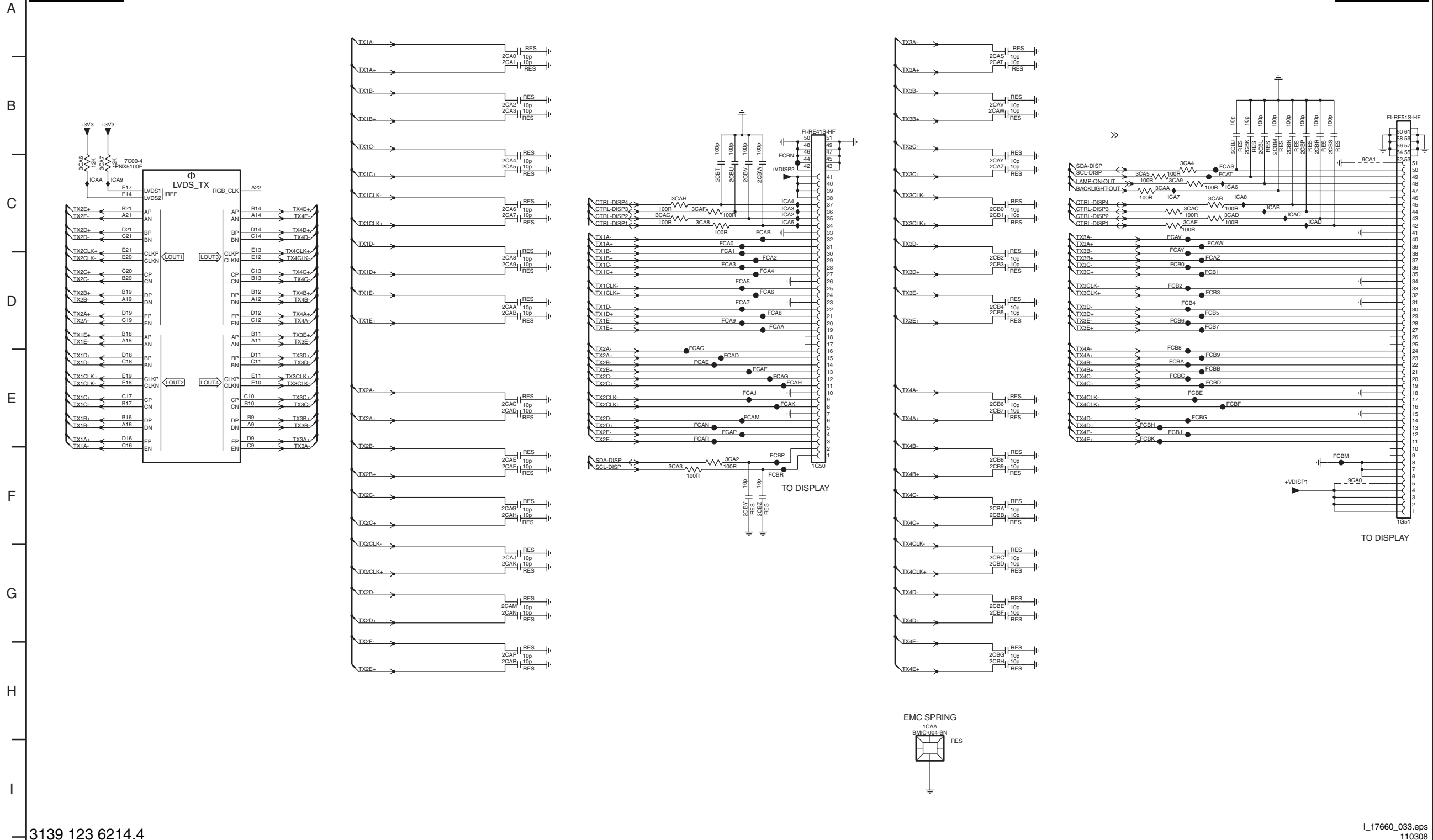
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SSB: PNX5100: LVDS

B05E

PNX5100: LVDS

B05E

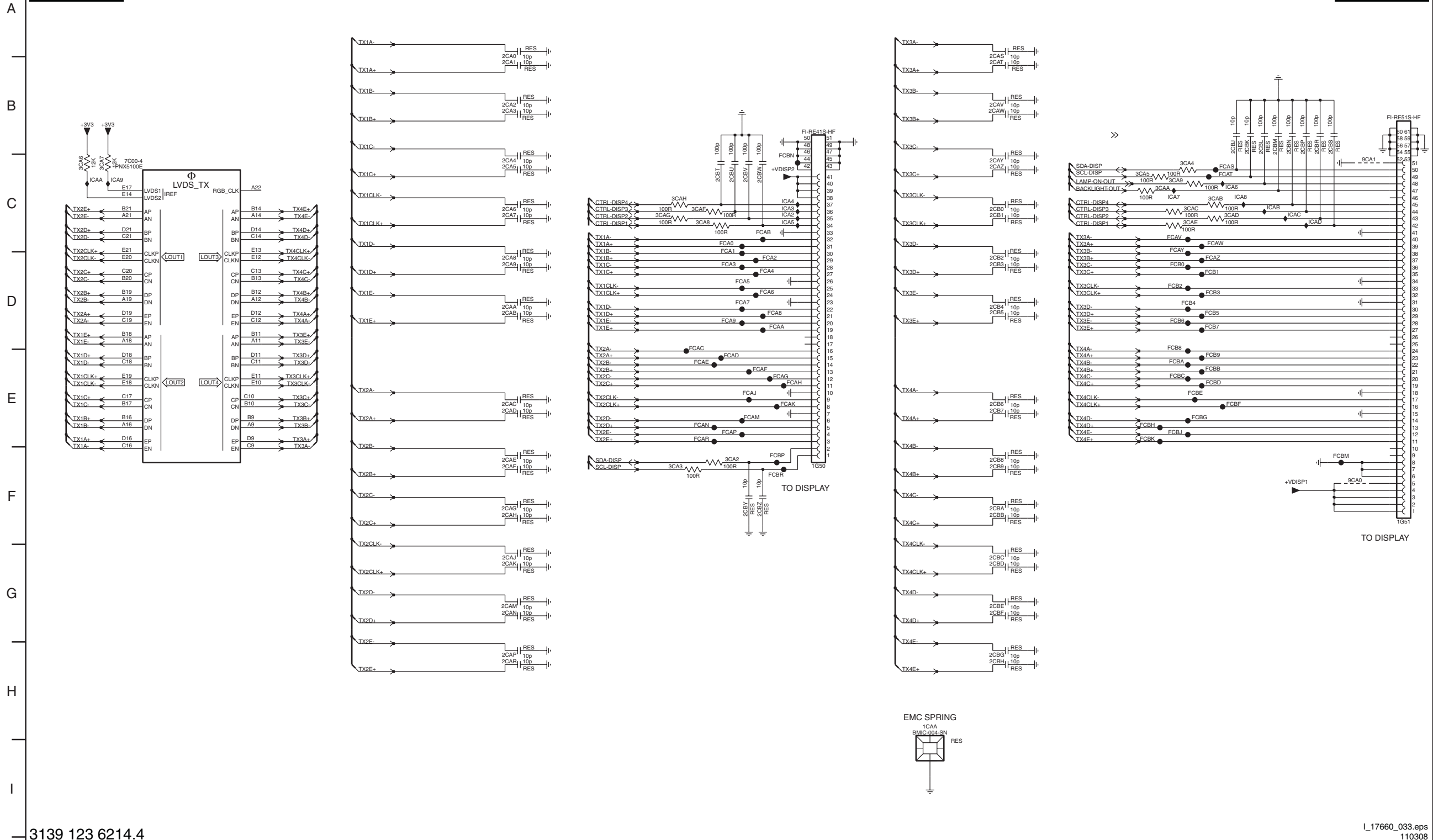


- 1CAA H10
- 1G50 F8
- 1G51 F14
- 2CA0 B5
- 2CA1 B5
- 2CA2 B5
- 2CA3 B5
- 2CA4 C5
- 2CA5 C5
- 2CA6 C5
- 2CA7 C5
- 2CA8 D5
- 2CA9 D5
- 2CAA D5
- 2CAB D5
- 2CAC E5
- 2CAD E5
- 2CAE F5
- 2CAF F5
- 2CAG F5
- 2CAH F5
- 2CAJ G5
- 2CAK G5
- 2CAN G5
- 2CAP H5
- 2CAR H5
- 2CAS B10
- 2CAV B10
- 2CAW B10
- 2CAY C10
- 2CAZ C10
- 2CB0 C10
- 2CB1 D10
- 2CB2 D10
- 2CB3 D10
- 2CB4 D10
- 2CB5 D10
- 2CB6 E10
- 2CB7 E10
- 2CB8 F10
- 2CB9 F10
- 2CBA F10
- 2CBB F10
- 2CBC G10
- 2CBD G10
- 2CBE G10
- 2CBF G10
- 2CBG H10
- 2CBH H10
- 2CBJ B13
- 2CBK B13
- 2CBL B13
- 2CBM B13
- 2CBN B13
- 2CBP B13
- 2CBR B14
- 2CBS B14
- 2CBU C8
- 2CBV C8
- 2CBW C8
- 2CBY F8
- 2CBZ F8
- 3CA2 B8
- 3CA3 F7
- 3CA4 C12
- 3CA5 C12
- 3CA6 C1
- 3CA7 C1
- 3CA8 C7
- 3CA9 C12
- 3CAA C12
- 3CAB C12
- 3CAC C12
- 3CAD C13
- 3CAE C12
- 3CAF C7
- 3CAG C7
- 3CAH C7
- 7C00-4 C1
- 9CA0 F14
- 9CA1 C14
- FCA0 C7
- FCA1 D7
- FCA2 D8
- FCA3 D7
- FCA4 D8
- FCA5 D8
- FCA6 D8
- FCA7 D8
- FCA8 D8
- FCA9 D7
- FCA A8
- FCA B8
- FCA C8
- FCA D8
- FCA E8
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- FCA P10
- FCA Q10
- FCA R10
- FCA S10
- FCA T10
- FCA U10
- FCA V10
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- FCA Z10

SSB: PNX5100: LVDS

B05E PNX5100: LVDS

B05E



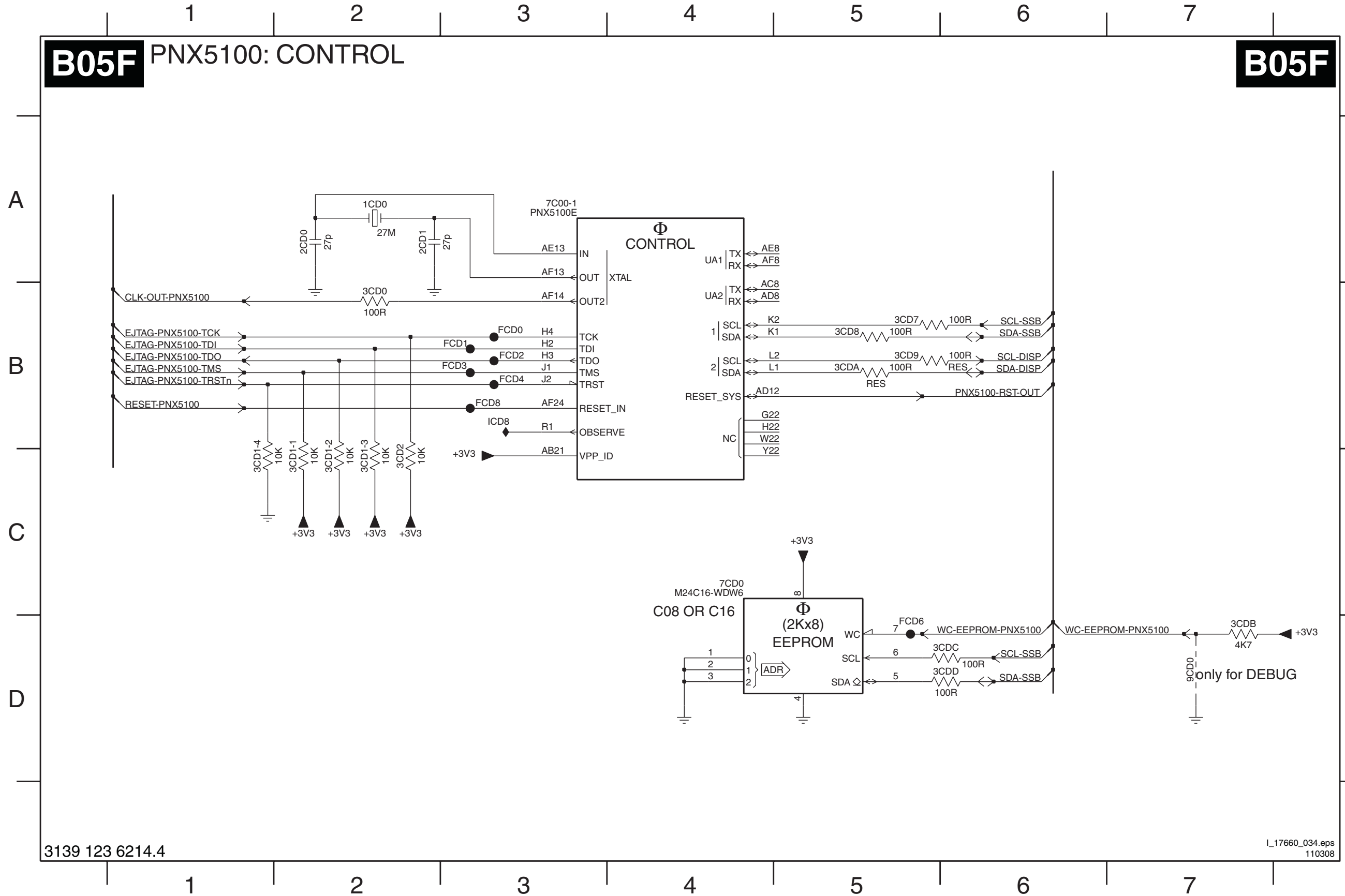
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- 1G51 F14
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- 2CA1 B5
- 2CA2 B5
- 2CA3 B5
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- 2CA5 C5
- 2CA6 C5
- 2CA7 C5
- 2CA8 D5
- 2CA9 D5
- 2CAA D5
- 2CAB D5
- 2CAC E5
- 2CAD E5
- 2CAE F5
- 2CAF F5
- 2CAG F5
- 2CAH F5
- 2CAJ G5
- 2CAK G5
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- 2CBC G10
- 2CBD G10
- 2CBE G10
- 2CBF G10
- 2CBG H10
- 2CBH H10
- 2CBJ B13
- 2CBK B13
- 2CBL B13
- 2CBM B13
- 2CBN B13
- 2CBP B13
- 2CBR B14
- 2CBS B14
- 2CBU C8
- 2CBV C8
- 2CBW C8
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- 2CBZ F8
- 3CA2 B8
- 3CA3 F7
- 3CA4 C12
- 3CA5 C12
- 3CA6 C1
- 3CA7 C1
- 3CA8 C7
- 3CA9 C12
- 3CAA C12
- 3CAB C12
- 3CAC C12
- 3CAD C13
- 3CAE C12
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- 3CAG C7
- 3CAH C7
- 7C00-4 C1
- 9CA0 F14
- 9CA1 C14
- FCA0 C7
- FCA1 D7
- FCA2 D8
- FCA3 D7
- FCA4 D8
- FCA5 D8
- FCA6 D8
- FCA7 D8
- FCA8 D8
- FCA9 D7
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- FCA B8
- FCA C8
- FCA D8
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- FCA J9
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- FCA H10
- FCA I10
- FCA J10
- FCA K10
- FCA L10
- FCA M10
- FCA N10
- FCA O10
- FCA P10
- FCA Q10
- FCA R10
- FCA S10
- FCA T10
- FCA U10
- FCA V10
- FCA W10
- FCA X10
- FCA Y10
- FCA Z10

SSB: PNX5100: Control

B05F

PNX5100: CONTROL

B05F

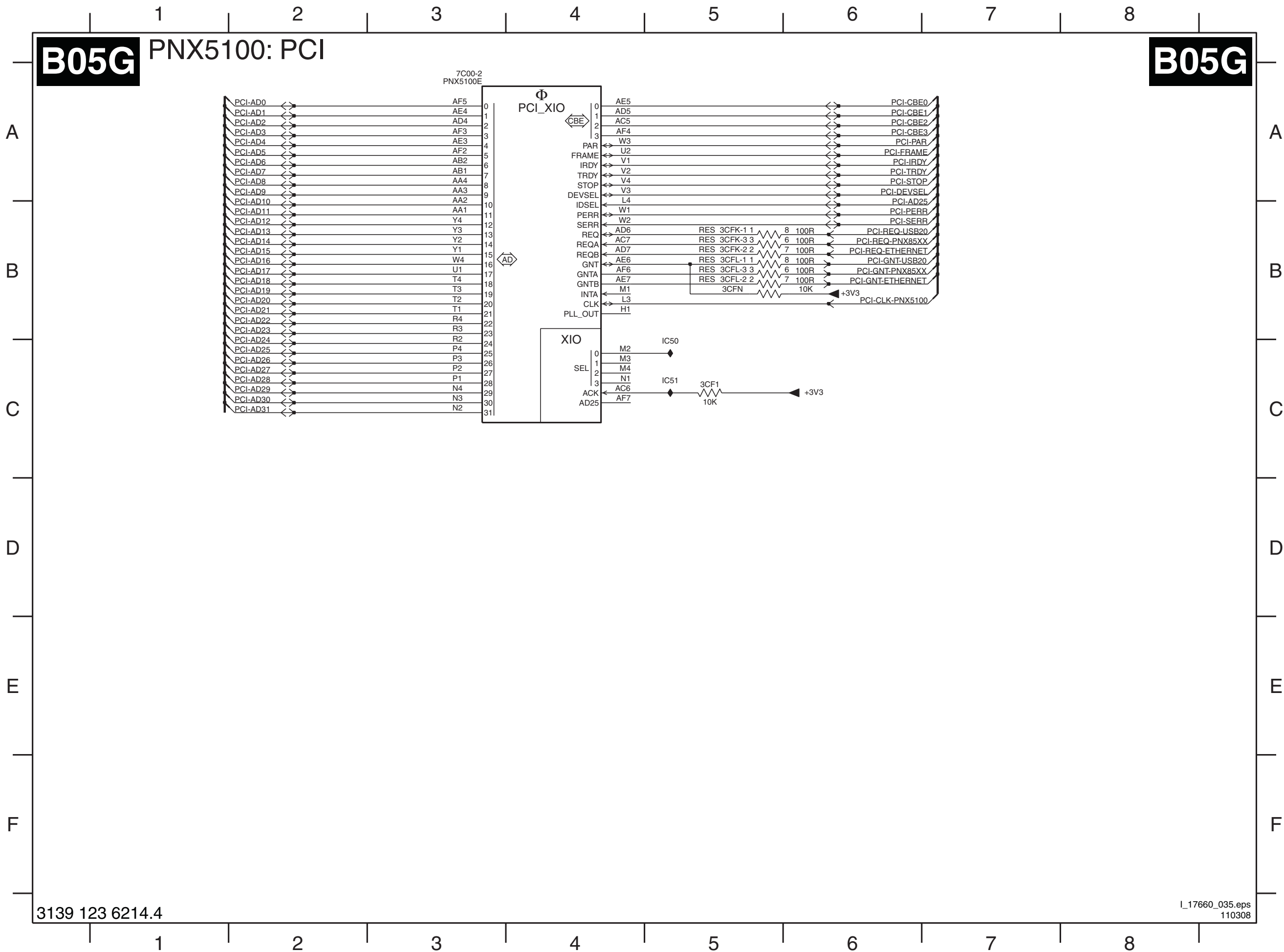


- 1CD0 A2
- 2CD0 A2
- 2CD1 A2
- 3CD0 B2
- 3CD1-1 C2
- 3CD1-2 C2
- 3CD1-3 C2
- 3CD1-4 C1
- 3CD2 C2
- 3CD7 B5
- 3CD8 B5
- 3CD9 B5
- 3CDA B5
- 3CDB D7
- 3CDC D6
- 3CDD D6
- 7C00-1 A3
- 7CD0 C4
- 9CD0 D7
- FCD0 B3
- FCD1 B3
- FCD2 B3
- FCD3 B3
- FCD4 B3
- FCD6 D5
- FCD8 B3
- ICD8 B3

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SSB: PNX5100: PCI

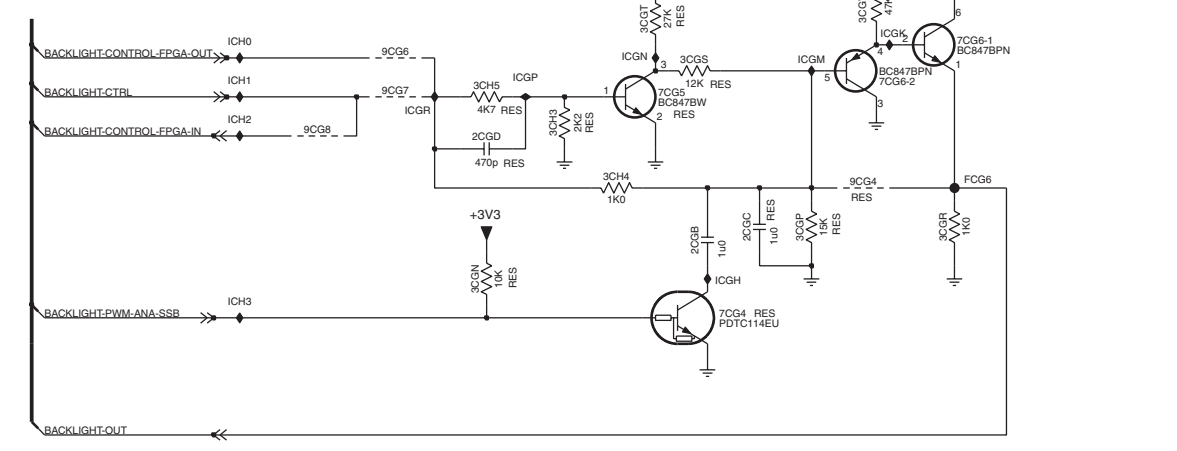
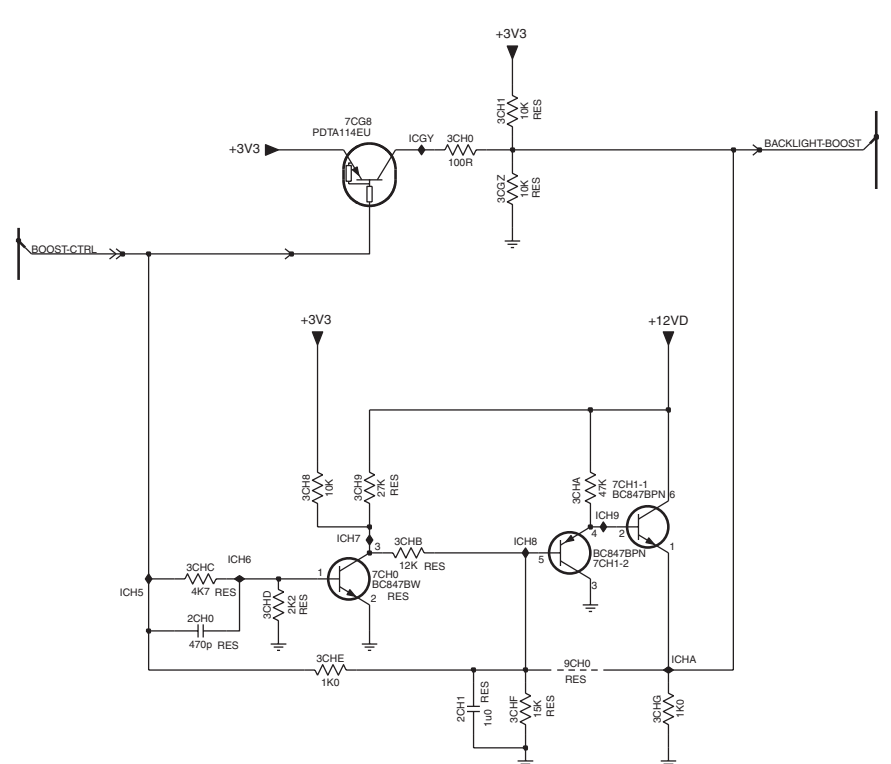
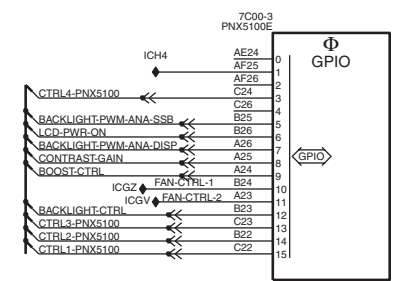
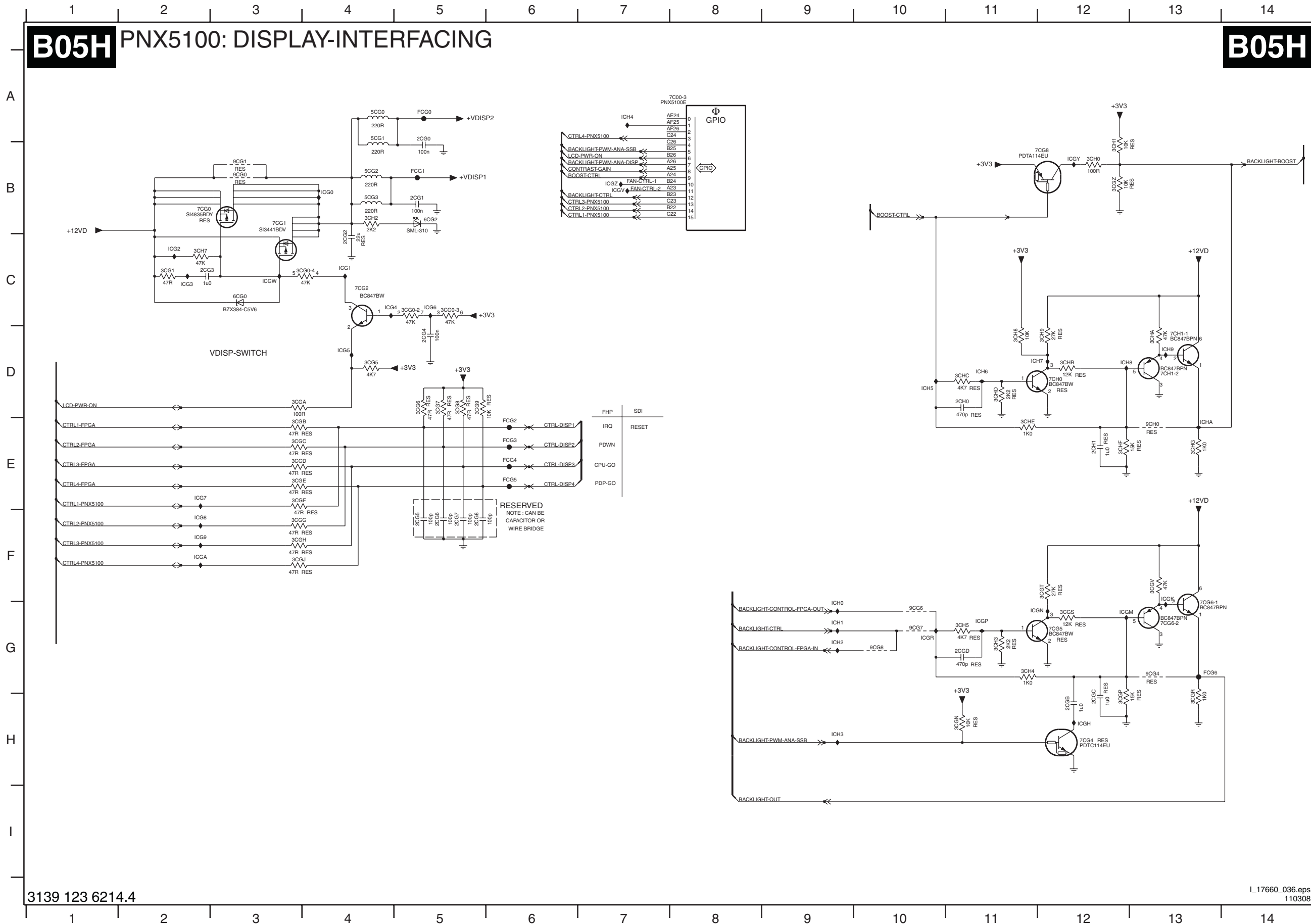


SSB: PNX5100: Display Interfacing

B05H

PNX5100: DISPLAY-INTERFACING

B05H

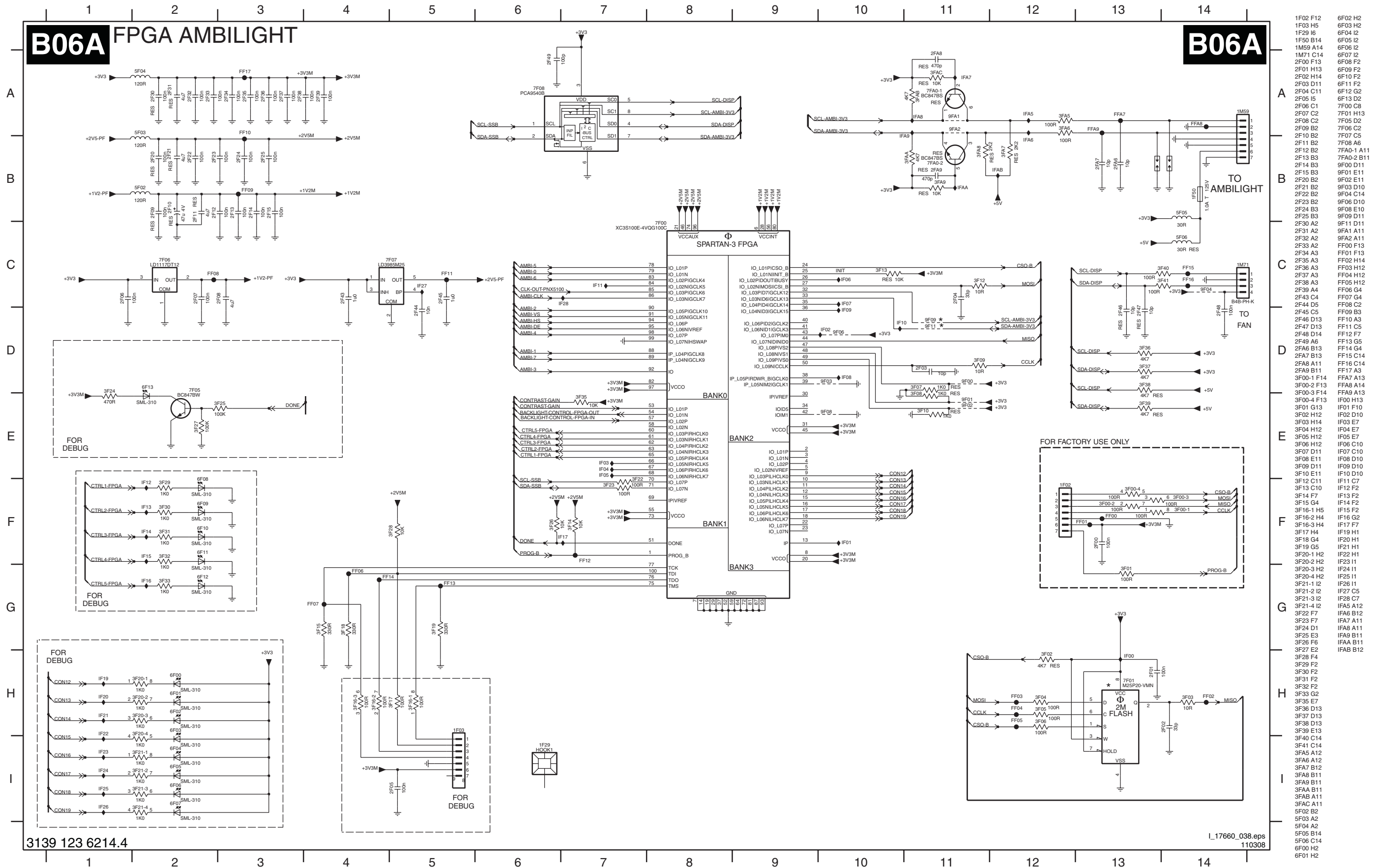


- 2CG0 A5
- 2CG1 B5
- 2CG2 C4
- 2CG3 C2
- 2CG4 D5
- 2CG5 F5
- 2CG6 F5
- 2CG7 F5
- 2CG8 F5
- 2CG9 H12
- 2CGC H12
- 2CGD G11
- 2CH0 D11
- 2CH1 E12
- 3CG0-2 C5
- 3CG0-3 C5
- 3CG0-4 C4
- 3CG1 C2
- 3CG5 D4
- 3CG6 D5
- 3CG7 D5
- 3CG8 D5
- 3CG9 D5
- 3CGA D3
- 3CGB E3
- 3CGC E3
- 3CGD E3
- 3CGE E3
- 3CGF E3
- 3CGG F3
- 3CGH F3
- 3CGJ F3
- 3CGN H11
- 3CGP H12
- 3CGR H13
- 3CGS G12
- 3CGT F12
- 3CGV F13
- 3CGZ B12
- 3CH0 B12
- 3CH1 B12
- 3CH2 B4
- 3CH3 G11
- 3CH4 G11
- 3CH5 G11
- 3CH7 C2
- 3CH8 D11
- 3CH9 D12
- 3CHA D13
- 3CHB D12
- 3CHC D11
- 3CHD D11
- 3CHE E11
- 3CHF E12
- 3CHG E13
- 5CG0 A4
- 5CG1 A4
- 5CG2 B4
- 5CG3 B4
- 6CG0 C3
- 6CG2 B5
- 7C00-3 A8
- 7C00 B2
- 7C01 B3
- 7C02 C4
- 7C04 H12
- 7C05 G12
- 7C06-1 G13
- 7C06-2 G13
- 7C08 B12
- 7CH0 D12
- 7CH1-1 D13
- 7CH1-2 D13
- 9CG0 B3
- 9CG1 B3
- 9CG4 G13
- 9CG6 G10
- 9CG7 G10
- 9CG8 G10
- 9CH0 E13
- FCG0 A5
- FCG1 B5
- FCG2 E6
- FCG3 E6
- FCG4 E6
- FCG5 E6
- FCG6 G13
- ICG0 B4
- ICG1 C4
- ICG2 C2
- ICG3 C2
- ICG4 C4
- ICG5 D4
- ICG6 C5
- ICG7 E2
- ICG8 F2
- ICG9 F2
- ICGA F2
- ICGH H12
- ICGK F13
- ICGM G12
- ICGN G11
- ICGP G11
- ICGR G10
- ICGV B7
- ICGW C3
- ICGY B12
- ICGZ B7
- ICH0 G9
- ICH1 G9
- ICH2 G9
- ICH3 H9
- ICH4 A7
- ICH5 D10
- ICH6 D11
- ICH7 D11
- ICH8 D12
- ICH9 D13
- ICHA E13

SSB: PNX5100: FPGA AmbiLight

B06A FPGA AMBILIGHT

B06A



- 1F02 F12
- 1F03 H5
- 1F29 I6
- 1F50 B14
- 1M59 A14
- 1M71 C14
- 2F00 F13
- 2F01 H13
- 2F02 H14
- 2F03 D11
- 2F04 C11
- 2F05 I5
- 2F06 C1
- 2F07 C2
- 2F08 C2
- 2F09 B2
- 2F10 B2
- 2F11 B2
- 2F12 B2
- 2F13 B3
- 2F14 B3
- 2F15 B3
- 2F20 B2
- 2F21 B2
- 2F22 D10
- 2F23 B2
- 2F24 B3
- 2F25 B3
- 2F30 A2
- 2F31 A2
- 2F32 A2
- 2F33 A2
- 2F34 A3
- 2F35 A3
- 2F36 A3
- 2F37 A3
- 2F38 A3
- 2F39 A4
- 2F43 C4
- 2F44 D5
- 2F45 C5
- 2F46 D13
- 2F47 D13
- 2F48 D14
- 2F49 A6
- 2FA8 B13
- 2FA9 B11
- 3F00-1 F14
- 3F00-2 F13
- 3F00-3 F14
- 3F00-4 F13
- 3F01 F13
- 3F02 H12
- 3F03 H14
- 3F04 H12
- 3F05 H12
- 3F06 H12
- 3F07 D11
- 3F08 E11
- 3F09 D11
- 3F10 E11
- 3F12 C11
- 3F13 C10
- 3F14 F7
- 3F15 G4
- 3F16-1 H5
- 3F16-2 H4
- 3F16-3 H4
- 3F17 H4
- 3F18 G4
- 3F19 G5
- 3F20-1 H2
- 3F20-2 H2
- 3F20-3 H2
- 3F20-4 H2
- 3F21-1 I2
- 3F21-2 I2
- 3F21-3 I2
- 3F21-4 I2
- 3F22 F7
- 3F23 F7
- 3F24 D1
- 3F25 E3
- 3F26 F6
- 3F27 E2
- 3F28 F4
- 3F29 F2
- 3F30 F2
- 3F31 F2
- 3F32 F2
- 3F33 G2
- 3F35 E7
- 3F36 D13
- 3F37 D13
- 3F38 D13
- 3F39 E13
- 3F40 C14
- 3F41 C14
- 3FA5 A12
- 3FA6 A12
- 3FA7 B12
- 3FA8 B11
- 3FA9 B11
- 3FAA B11
- 3FAB A11
- 3FAC A11
- 5F02 B2
- 5F03 A2
- 5F04 A2
- 5F05 B14
- 5F06 C14
- 6F00 H2
- 6F01 H2
- 6F02 H2
- 6F03 H2
- 6F04 I2
- 6F05 I2
- 6F06 I2
- 6F07 I2
- 6F08 F2
- 6F09 F2
- 6F10 F2
- 6F11 F2
- 6F12 G2
- 6F13 D2
- 7F00 C8
- 7F01 H13
- 7F05 D2
- 7F06 C2
- 7F07 C5
- 7F08 A6
- 7FA0-1 A11
- 9F00 D11
- 9F01 E11
- 9F02 E11
- 9F03 D10
- 9F04 C14
- 9F06 D10
- 9F08 E10
- 9F09 D11
- 9F11 D11
- 9FA1 A11
- 9FA2 A11
- FF00 F13
- FF01 F13
- FF02 H14
- FF03 H12
- FF04 H12
- FF05 H12
- FF06 G4
- FF07 G4
- FF08 B3
- FF09 B3
- FF10 A3
- FF11 C5
- FF12 F7
- FF13 G5
- FF14 G4
- FF15 C14
- FF16 C14
- FF17 A3
- FFA7 A13
- FFA8 A14
- FFA9 A13
- IF00 H13
- IF01 F10
- IF02 D10
- IF03 E7
- IF04 E7
- IF05 E7
- IF06 C10
- IF07 C10
- IF08 D10
- IF09 D10
- IF10 D10
- IF11 C7
- IF12 F2
- IF13 F7
- IF14 F2
- IF15 F2
- IF16 G2
- IF17 F7
- IF19 H1
- IF20 H1
- IF21 H1
- IF22 H1
- IF23 H1
- IF24 H1
- IF25 H1
- IF26 H1
- IF27 C5
- IF28 C7
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- IFA7 A11
- IFA8 A11
- IFA9 B11
- IFAA B11
- IFAB B12

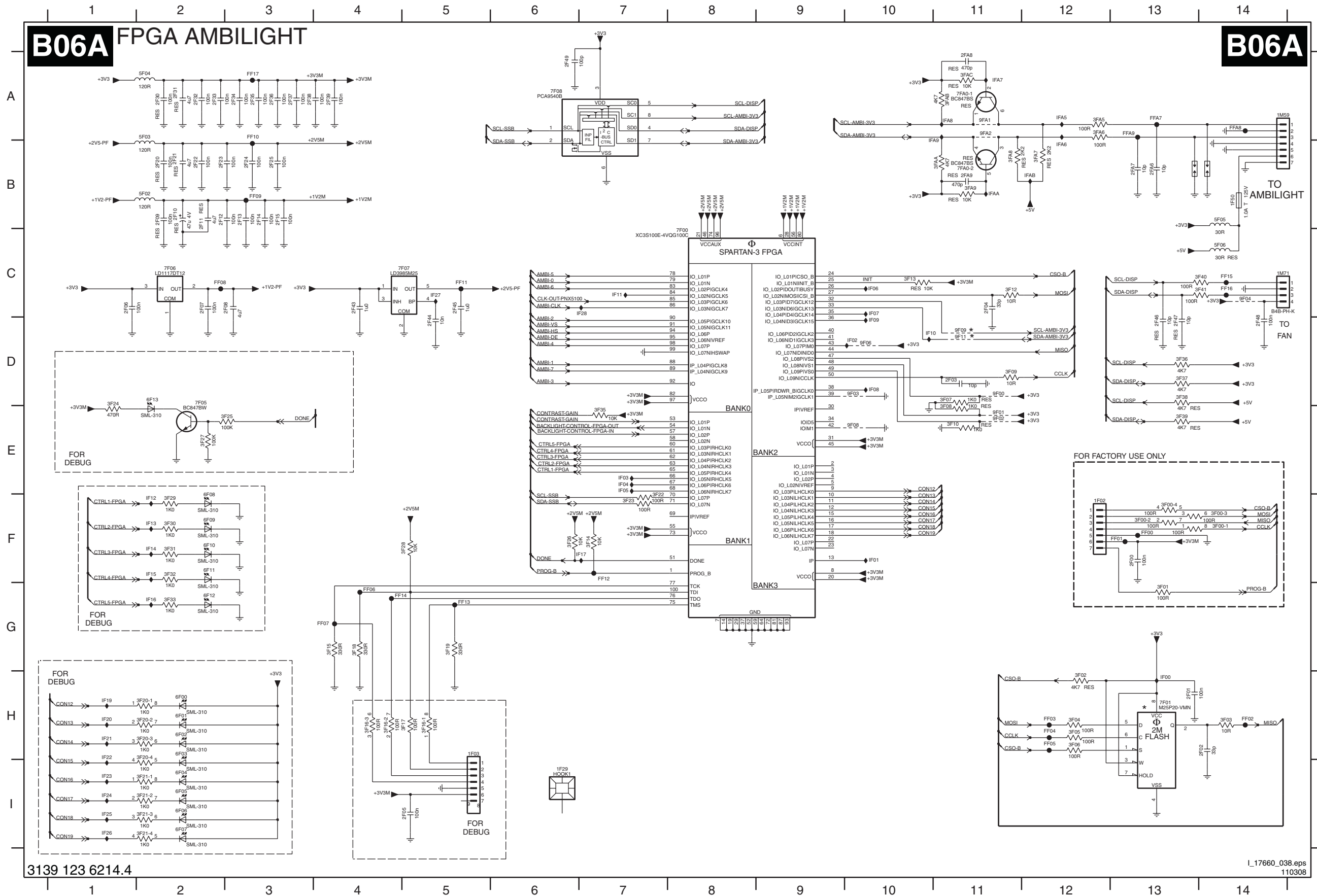
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SSB: PNX5100: FPGA AmbiLight

B06A FPGA AMBILIGHT

B06A



- 1F02 F12
- 1F03 H5
- 1F29 I6
- 1F50 B14
- 1M59 A14
- 1M71 C14
- 2F00 F13
- 2F01 H13
- 2F02 H14
- 2F03 D11
- 2F04 C11
- 2F05 I5
- 2F06 C1
- 2F07 C2
- 2F08 C2
- 2F09 B2
- 2F10 B2
- 2F11 B2
- 2F12 B2
- 2F13 B3
- 2F14 B3
- 2F15 B3
- 2F20 B2
- 2F21 B2
- 2F22 D10
- 2F23 B2
- 2F24 B3
- 2F25 B3
- 2F30 A2
- 2F31 A2
- 2F32 A2
- 2F33 A2
- 2F34 A3
- 2F35 A3
- 2F36 A3
- 2F37 A3
- 2F38 A3
- 2F39 A4
- 2F43 C4
- 2F44 D5
- 2F45 C5
- 2F46 D13
- 2F47 D13
- 2F48 D14
- 2F49 A6
- 2FA8 B13
- 2FA9 B11
- 3F00-1 F14
- 3F00-2 F13
- 3F00-3 F14
- 3F00-4 F13
- 3F01 F13
- 3F02 H12
- 3F03 H14
- 3F04 H12
- 3F05 H12
- 3F06 H12
- 3F07 D11
- 3F08 E11
- 3F09 D11
- 3F10 E11
- 3F12 C11
- 3F13 C10
- 3F14 F7
- 3F15 G4
- 3F16-1 H5
- 3F16-2 H4
- 3F16-3 H4
- 3F17 H4
- 3F18 G4
- 3F19 G5
- 3F20-1 H2
- 3F20-2 H2
- 3F20-3 H2
- 3F20-4 H2
- 3F21-1 I2
- 3F21-2 I2
- 3F21-3 I2
- 3F21-4 I2
- 3F22 F7
- 3F23 F7
- 3F24 D1
- 3F25 E3
- 3F26 F6
- 3F27 E2
- 3F28 F4
- 3F29 F2
- 3F30 F2
- 3F31 F2
- 3F32 F2
- 3F33 G2
- 3F35 E7
- 3F36 D13
- 3F37 D13
- 3F38 D13
- 3F39 E13
- 3F40 C14
- 3F41 C14
- 3FA5 A12
- 3FA6 A12
- 3FA7 B12
- 3FA8 B11
- 3FA9 B11
- 3FAA B11
- 3FAB A11
- 3FAC A11
- 5F02 B2
- 5F03 A2
- 5F04 A2
- 5F05 B14
- 5F06 C14
- 6F00 H2
- 6F01 H2
- 6F02 H2
- 6F03 H2
- 6F04 I2
- 6F05 I2
- 6F06 I2
- 6F07 I2
- 6F08 F2
- 6F09 F2
- 6F10 F2
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- 6F12 G2
- 6F13 D2
- 6F14 D2
- 6F15 D2
- 6F16 G2
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- 6F18 G2
- 6F19 G2
- 6F20 G2
- 6F21 G2
- 6F22 G2
- 6F23 G2
- 6F24 G2
- 6F25 G2
- 6F26 G2
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- 6F29 G2
- 6F30 G2
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- 6F62 G2
- 6F63 G2
- 6F64 G2
- 6F65 G2
- 6F66 G2
- 6F67 G2
- 6F68 G2
- 6F69 G2
- 6F70 G2
- 6F71 G2
- 6F72 G2
- 6F73 G2
- 6F74 G2
- 6F75 G2
- 6F76 G2
- 6F77 G2
- 6F78 G2
- 6F79 G2
- 6F80 G2
- 6F81 G2
- 6F82 G2
- 6F83 G2
- 6F84 G2
- 6F85 G2
- 6F86 G2
- 6F87 G2
- 6F88 G2
- 6F89 G2
- 6F90 G2
- 6F91 G2
- 6F92 G2
- 6F93 G2
- 6F94 G2
- 6F95 G2
- 6F96 G2
- 6F97 G2
- 6F98 G2
- 6F99 G2
- 6F100 G2

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SSB: PNX5100: Supply

B06C SUPPLY

B06C

A

B

C

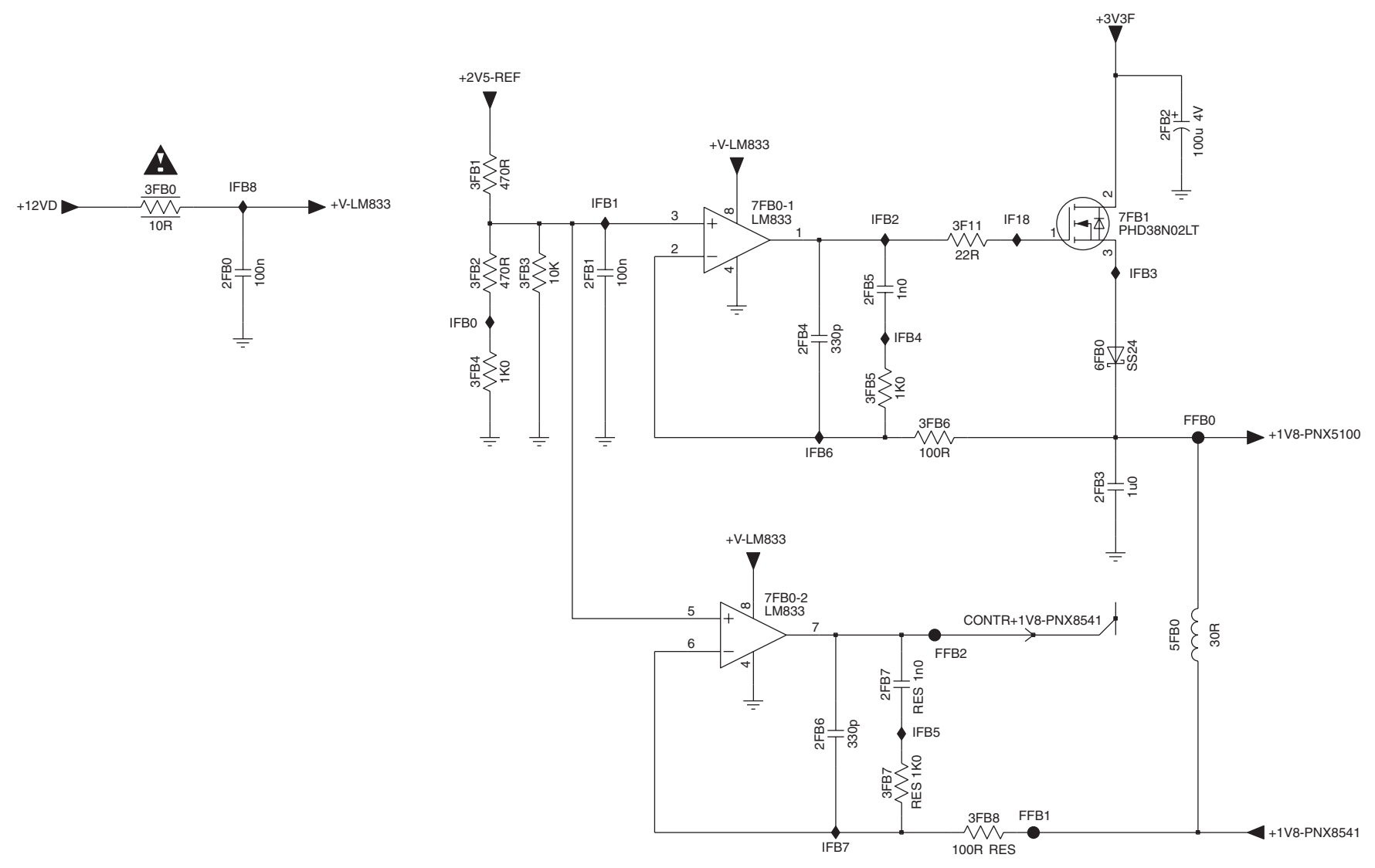
D

A

B

C

D



- 2FB0 B2
- 2FB1 B4
- 2FB2 A6
- 2FB3 C6
- 2FB4 B5
- 2FB5 B5
- 2FB6 D5
- 2FB7 D5
- 3F11 B6
- 3FB0 B2
- 3FB1 A3
- 3FB2 B3
- 3FB3 B4
- 3FB4 B3
- 3FB5 B5
- 3FB6 C5
- 3FB7 D5
- 3FB8 D6
- 5FB0 C6
- 6FB0 B6
- 7FB0-1 B5
- 7FB0-2 C5
- 7FB1 B6
- FFB0 C7
- FFB1 D6
- FFB2 D6
- IF18 B6
- IFB0 B3
- IFB1 B4
- IFB2 B5
- IFB3 B6
- IFB4 B5
- IFB5 D5
- IFB6 C5
- IFB7 D5
- IFB8 A2

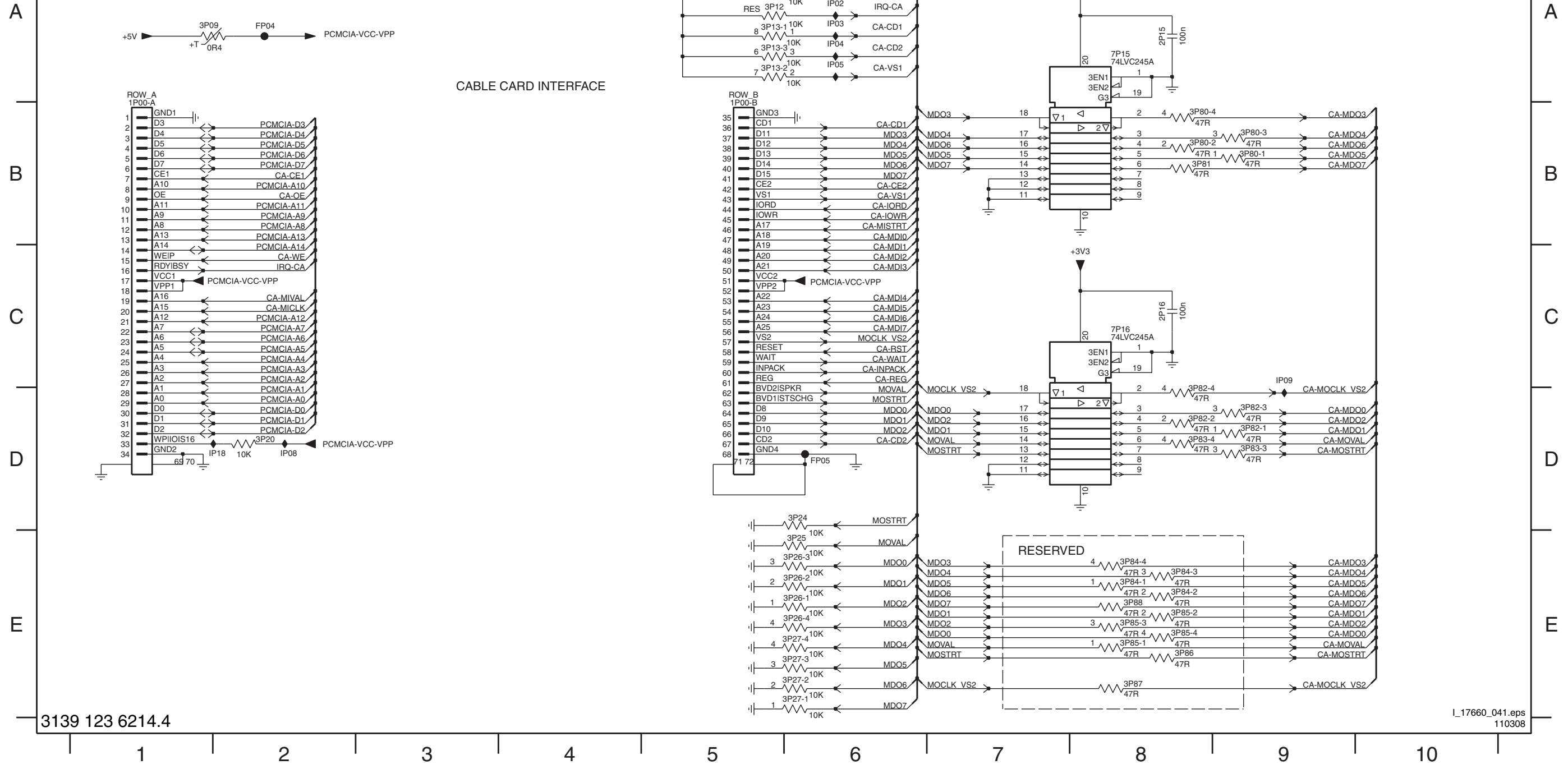
SSB: CI: PCMCIA Connector

1P00-A B1	2P16 C8	3P10-2 A5	3P13-2 A5	3P20 D2	3P26-1 E6	3P26-4 E6	3P27-3 E6	3P80-2 B9	3P81 B8	3P82-3 D9	3P83-4 D8	3P84-3 E8	3P85-2 E8	3P86 E8	7P15 A8	FP05 D6	IP02 A6	IP05 A6	IP18 D2
1P00-B B5	3P09 A2	3P12 A5	3P13-3 A5	3P24 D6	3P26-2 E6	3P27-1 E6	3P27-4 E6	3P80-3 B9	3P82-1 D9	3P82-4 D8	3P84-1 E8	3P84-4 E8	3P85-3 E8	3P87 E8	7P16 C8	IP00 A6	IP03 A6	IP08 D2	
2P15 A8	3P10-1 A5	3P13-1 A5	3P13-4 A5	3P25 E6	3P26-3 E6	3P27-2 E6	3P80-1 B8	3P80-4 B8	3P82-2 D8	3P83-3 D9	3P84-2 E8	3P85-1 E8	3P85-4 E8	3P88 E8	FP04 A2	IP01 A6	IP04 A6	IP09 C9	

B07A

CI: PCMCIA CONNECTOR

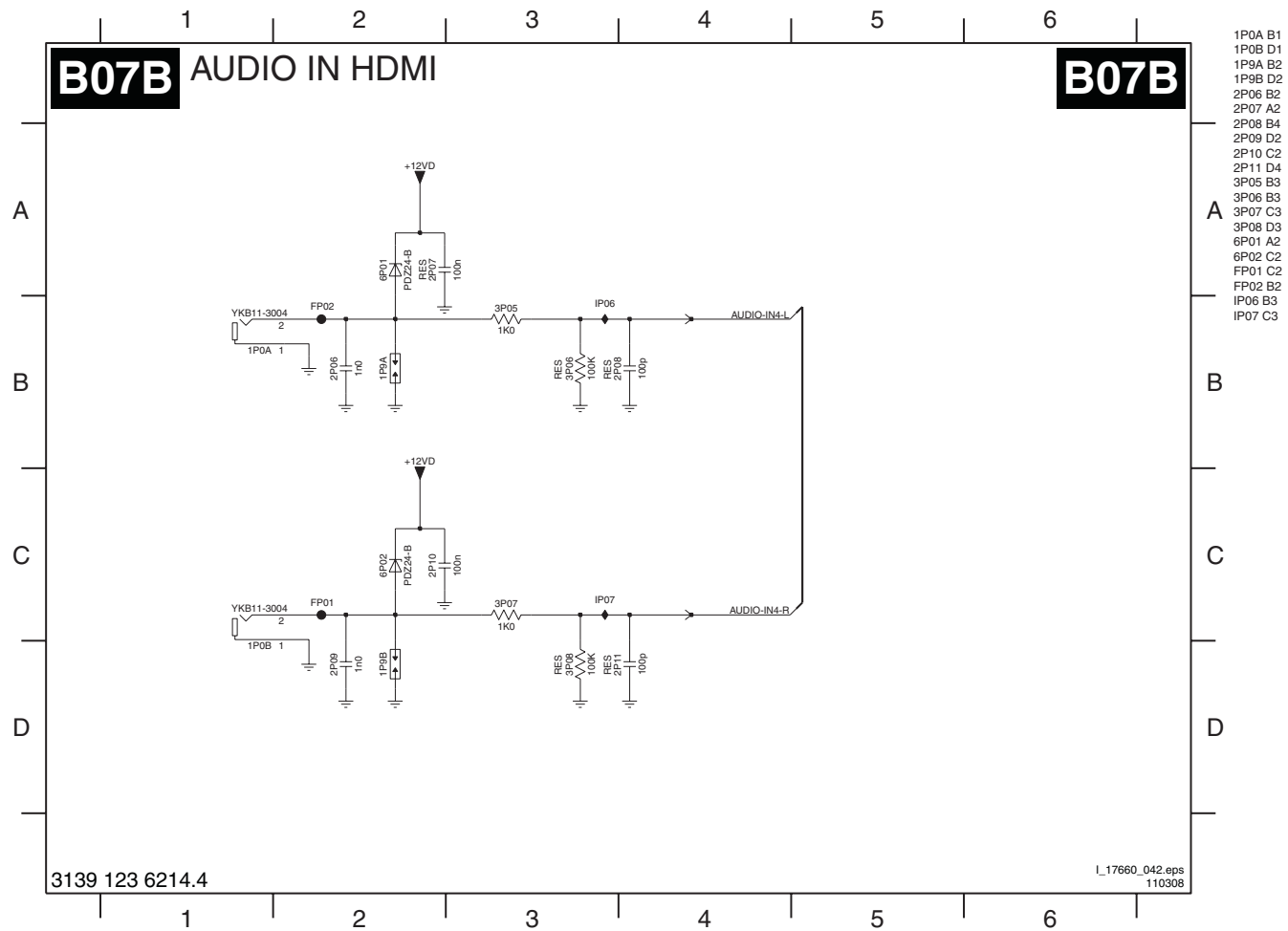
B07A



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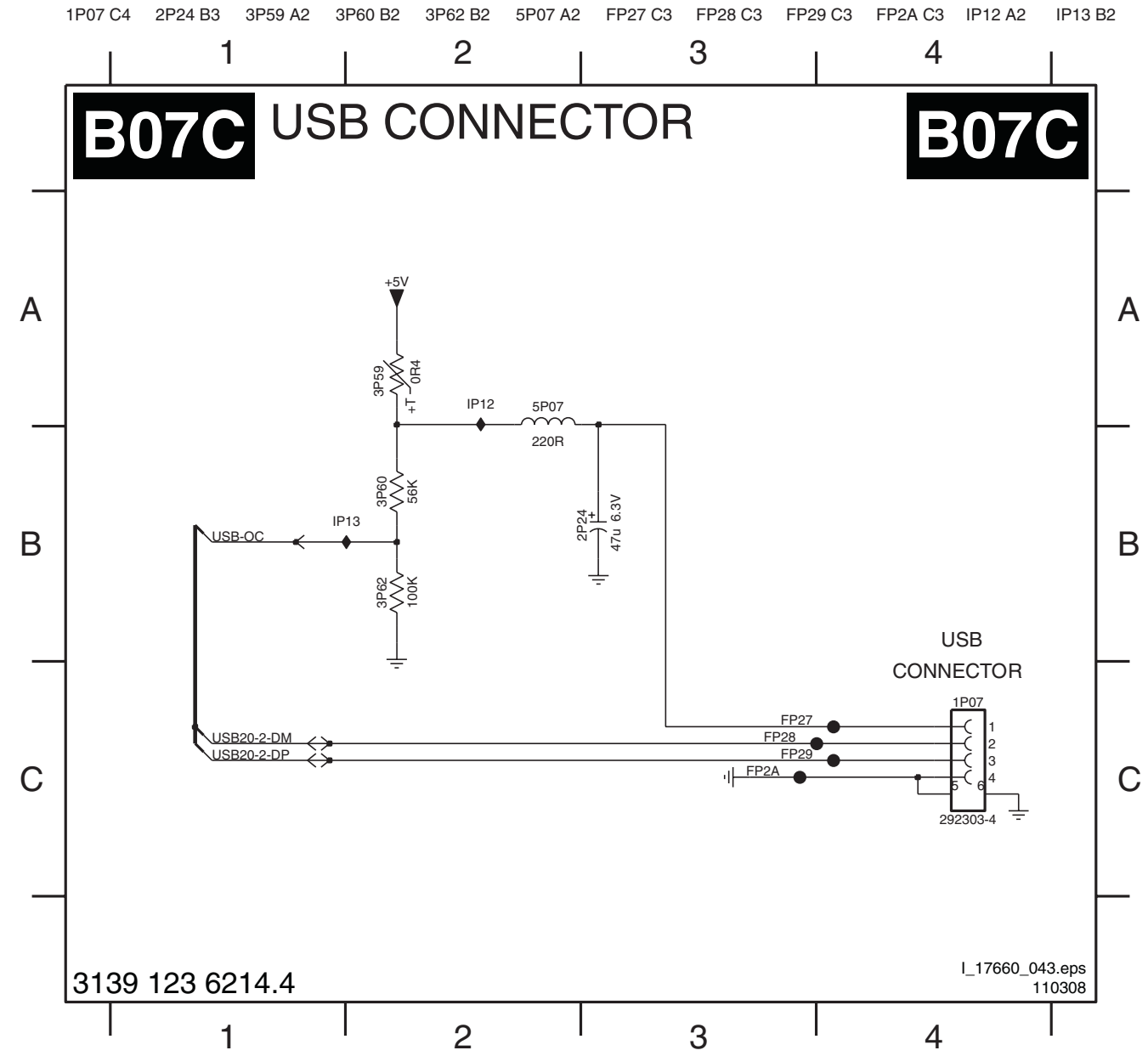
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SSB: Audio-In HDMI



- 1P0A B1
- 1P0B D1
- 1P9A B2
- 1P9B D2
- 2P06 B2
- 2P07 A2
- 2P08 B4
- 2P09 D2
- 2P10 C2
- 2P11 D4
- 3P05 B3
- 3P06 B3
- 3P07 C3
- 3P08 D3
- 6P01 A2
- 6P02 C2
- FP01 C2
- FP02 B2
- IP06 B3
- IP07 C3

SSB: USB Connector

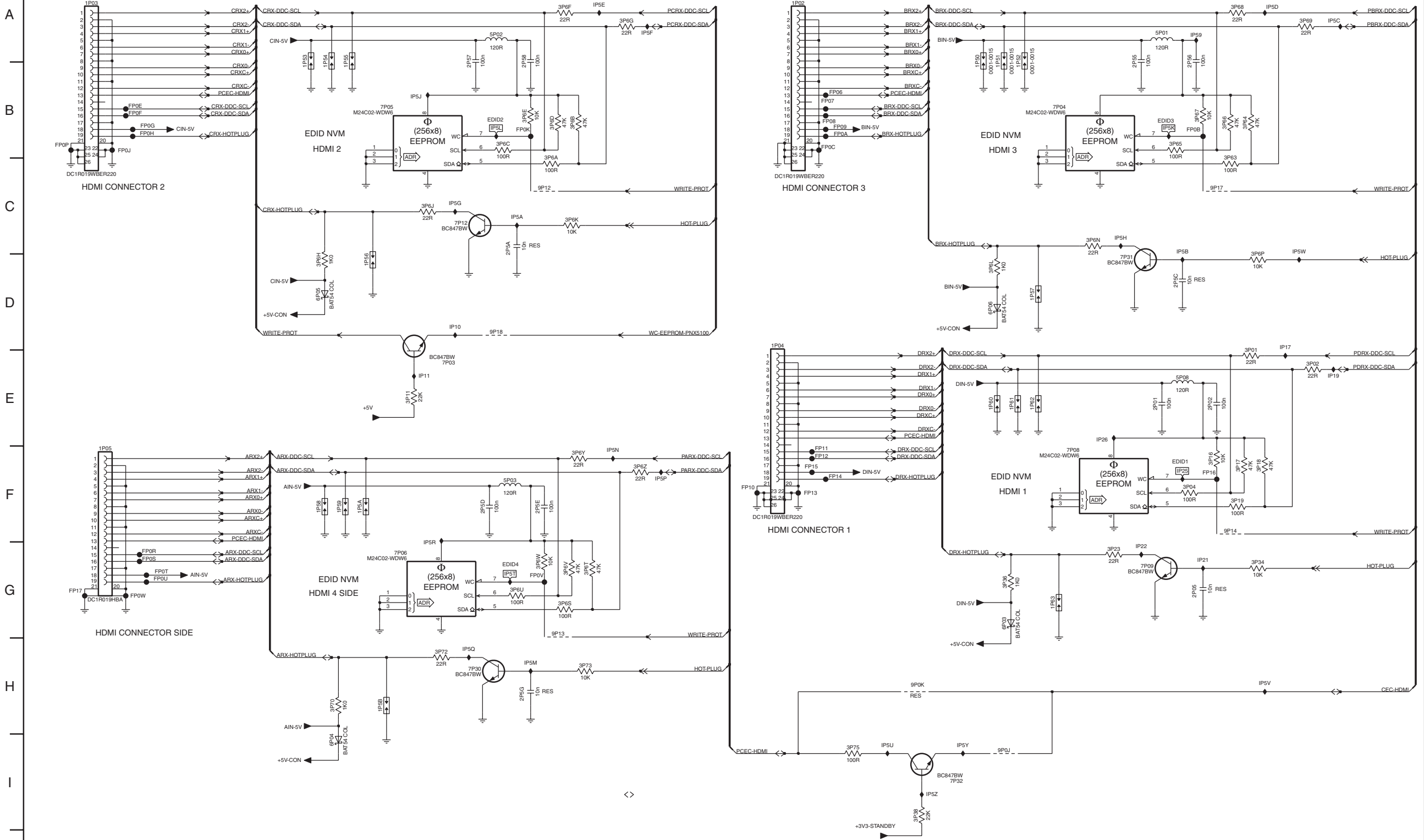


- 1P07 C4
- 2P24 B3
- 3P59 A2
- 3P60 B2
- 3P62 B2
- 5P07 A2
- FP27 C3
- FP28 C3
- FP29 C3
- FP2A C3
- IP12 A2
- IP13 B2

SSB: HDMI

B07D HDMI

B07D



- 1P02 A8 FPOU G2
- 1P03 A1 FPOV G6
- 1P04 D8 FPOW G1
- 1P05 F1 FP10 F8
- 1P50 A10 FP11 F9
- 1P51 A10 FP12 F9
- 1P52 A11 FP13 F8
- 1P53 A3 FP14 F9
- 1P54 A3 FP15 F8
- 1P55 A4 FP16 F13
- 1P56 D4 FP17 G1
- 1P57 D11 IP10 D5
- 1P58 F3 IP11 E4
- 1P59 F4 IP17 D13
- 1P5A F4 IP19 E14
- 1P5B H4 IP21 G12
- 1P60 E10 IP22 G12
- 1P61 E11 IP25 F12
- 1P62 E11 IP26 E11
- 1P63 G11 IP59 A12
- 2P01 E12 IP5A C5
- 2P02 E13 IP5B C12
- 2P05 G12 IP5C A14
- 2P55 A12 IP5E A13
- 2P56 A12 IP5E A6
- 2P57 A5 IP5F A7
- 2P58 A5 IP5G C5
- 2P5A C5 IP5H C12
- 2P5C D12 IP5J B4
- 2P5D F5 IP5K B12
- 2P5E F6 IP5L B5
- 2P5G H5 IP5M H5
- 3P01 E13 IP5N F6
- 3P02 E14 IP5P F7
- 3P04 F12 IP5Q H5
- 3P11 E4 IP5R G4
- 3P18 F13 IP5T G5
- 3P17 F13 IP5U I9
- 3P18 F13 IP5V H13
- 3P19 F13 IP5W C13
- 3P23 G12 IP5Y I10
- 3P34 G13 IP5Z I10
- 3P36 G10
- 3P38 I10
- 3P63 C13
- 3P64 B13
- 3P65 B12
- 3P66 B13
- 3P67 B12
- 3P68 A13
- 3P69 A14
- 3P6A C6
- 3P6B B6
- 3P6C B5
- 3P6D B6
- 3P6E B5
- 3P6F A6
- 3P6G A6
- 3P6H D3
- 3P6J C4
- 3P6K C6
- 3P6L D10
- 3P6N C11
- 3P6P D13
- 3P6S G6
- 3P6T G5
- 3P6U G5
- 3P6V G6
- 3P6W G6
- 3P6Y F6
- 3P6Z F7
- 3P70 H3
- 3P72 H5
- 3P73 H6
- 3P75 I9
- 5P01 A12
- 5P02 A5
- 5P03 F5
- 5P08 E12
- 6P03 G10
- 6P05 D3
- 6P06 D10
- 7P03 E5
- 7P04 B11
- 7P05 B4
- 7P06 S4
- 7P08 F11
- 7P09 G12
- 7P12 C5
- 7P30 H5
- 7P31 D12
- 7P32 I10
- 9P0J I10
- 9P0K H10
- 9P12 C6
- 9P13 G6
- 9P14 F13
- 9P17 C13
- 9P18 D5
- FP06 B9
- FP07 B9
- FP08 B9
- FP09 B9
- FP0A B9
- FP0B B12
- FP0C B9
- FP0E B1
- FP0F B1
- FP0G B1
- FP0H B1
- FP0J B1
- FP0K B5
- FP0P B1
- FP0R G2
- FP0S G2
- FP0T G2

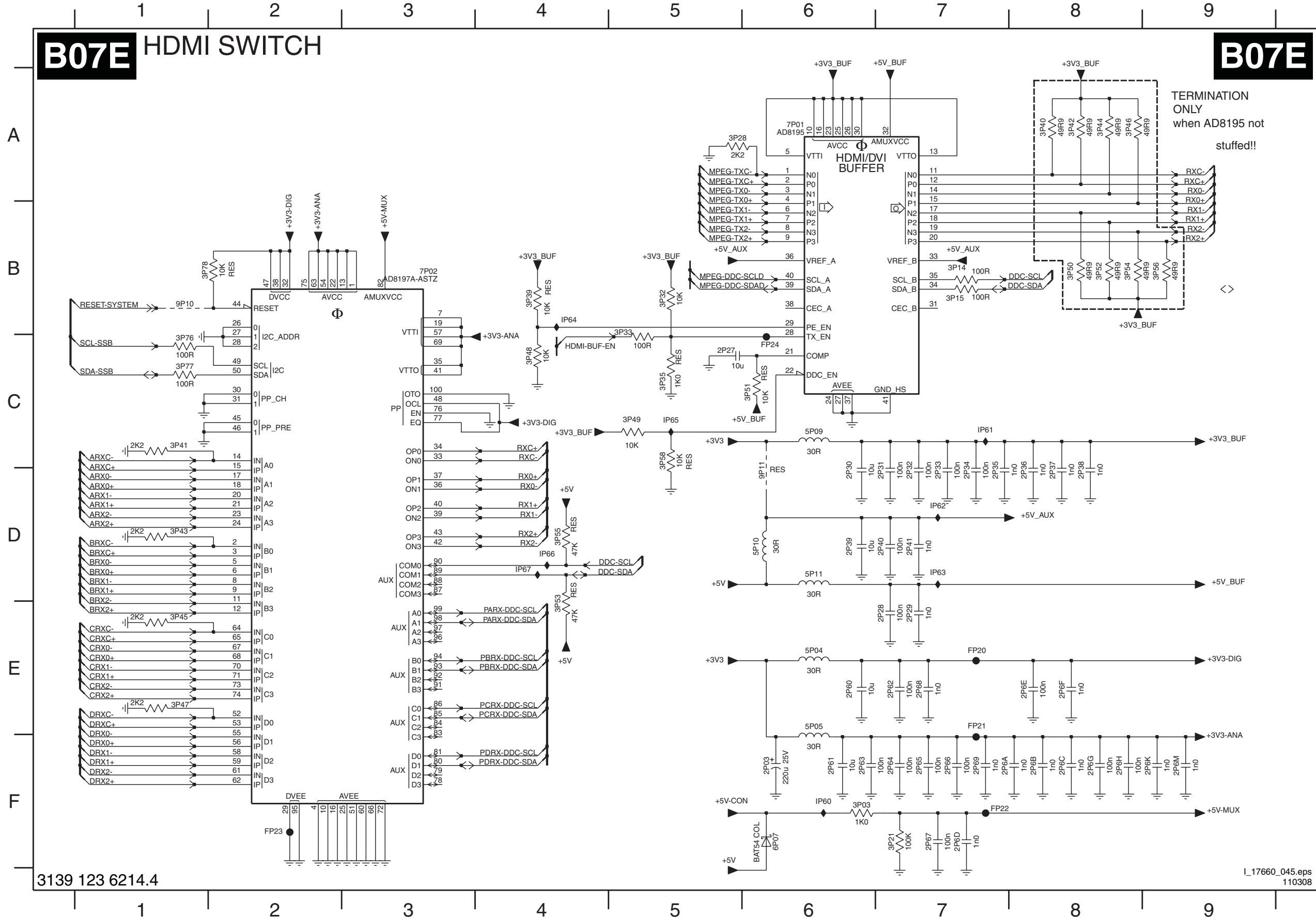
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SSB: HDMI Switch

B07E HDMI SWITCH

B07E



- 2P03 F6
- 2P27 C5
- 2P28 E7
- 2P29 E7
- 2P30 D6
- 2P31 D7
- 2P32 D7
- 2P33 D7
- 2P34 D7
- 2P35 D7
- 2P36 D8
- 2P37 D8
- 2P38 D8
- 2P39 D6
- 2P40 D7
- 2P41 D7
- 2P60 E6
- 2P61 F6
- 2P62 E7
- 2P63 F6
- 2P64 F7
- 2P65 F7
- 2P66 F7
- 2P67 F7
- 2P68 E7
- 2P69 F7
- 2P6A F7
- 2P6B F8
- 2P6C F8
- 2P6D F7
- 2P6E E8
- 2P6F E8
- 2P6G F8
- 2P6H F8
- 2P6K F9
- 2P6M F9
- 3P03 F6
- 3P14 B7
- 3P15 B7
- 3P21 F7
- 3P28 A5
- 3P32 B5
- 3P33 B5
- 3P35 C5
- 3P39 B4
- 3P40 A8
- 3P41 C1
- 3P42 A8
- 3P43 D1
- 3P44 A8
- 3P45 E1
- 3P46 A8
- 3P47 E1
- 3P48 C4
- 3P49 C5
- 3P50 B8
- 3P51 C6
- 3P52 B8
- 3P53 E4
- 3P54 B8
- 3P55 D4
- 3P56 B9
- 3P58 C5
- 3P76 C1
- 3P77 C1
- 3P78 B1
- 5P04 E6
- 5P05 E6
- 5P09 C6
- 5P10 D6
- 5P11 D6
- 6P07 F6
- 7P01 A6
- 7P02 B3
- 9P10 B1
- 9P11 D6
- FP20 E7
- FP21 E7
- FP22 F7
- FP23 F2
- FP60 F6
- IP61 C7
- IP62 D7
- IP63 D7
- IP64 B4
- IP65 C5
- IP66 D4
- IP67 D4

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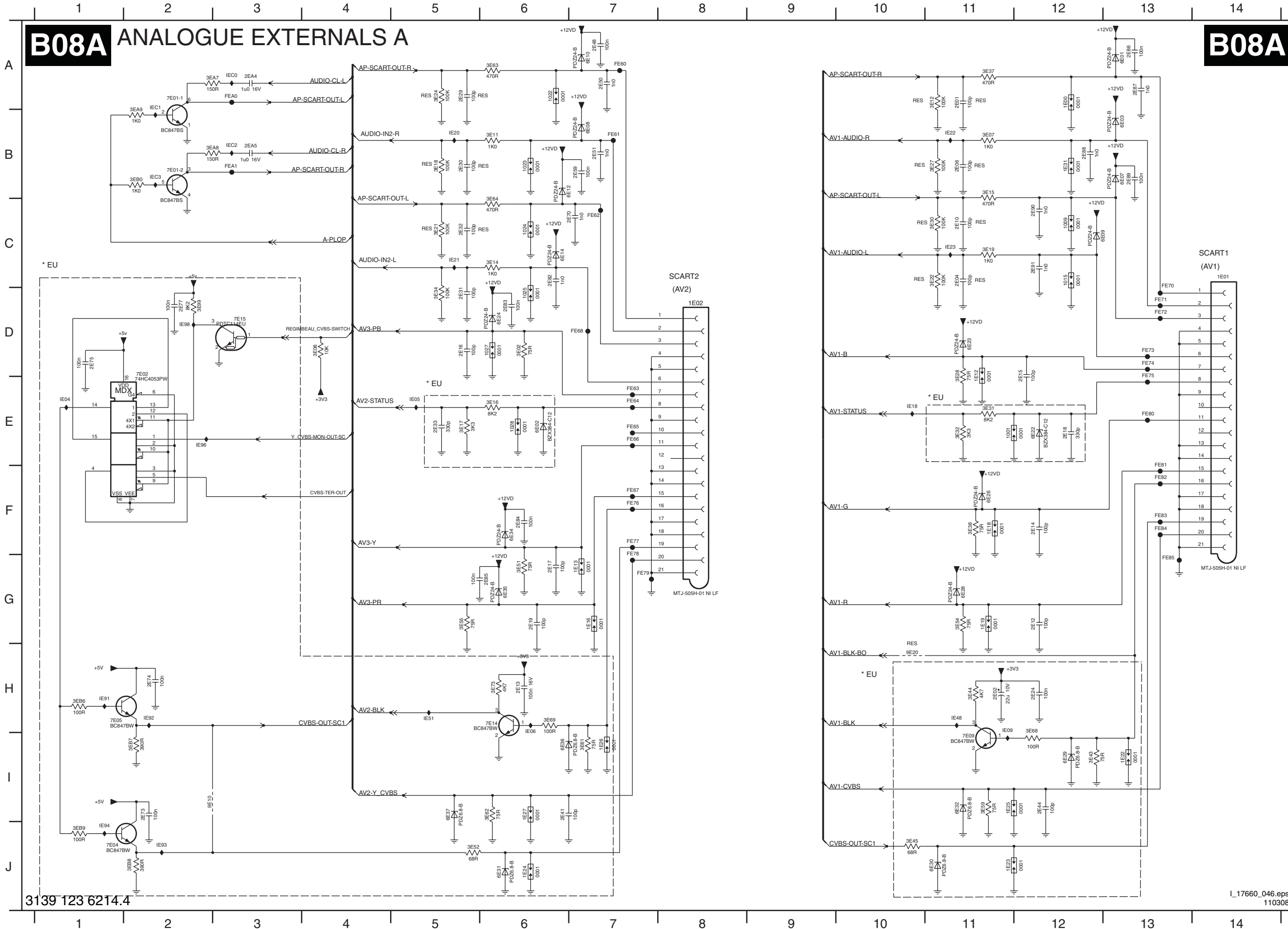
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SSB: Analogue Externals A

B08A

ANALOGUE EXTERNALS A

B08A



1001 E11	6E12 B6
1009 C12	6E14 C6
1015 C12	6E22 E12
1022 A6	6E23 D11
1023 B6	6E24 D6
1024 C6	6E26 F11
1025 D6	6E28 G11
1027 D6	6E29 I12
1028 E6	6E30 J11
1E00 A12	6E31 J6
1E01 C14	6E32 H11
1E02 D8	6E34 F6
1E12 D11	6E35 G6
1E13 G7	6E36 I6
1E16 G7	6E37 I5
1E18 F11	7E01-1 A2
1E19 G11	7E01-2 B2
1E22 H3	7E02 D2
1E23 J11	7E04 J1
1E24 J6	7E05 H1
1E25 H11	7E09 H11
1E26 I7	7E14 H6
1E27 I6	7E15 D3
1E31 B12	9E10 I2
2E01 A11	9E20 H10
2E02 H11	FE60 A7
2E04 C11	FE61 B7
2E06 B11	FE62 C7
2E10 C11	FE63 E7
2E12 G12	FE64 E7
2E13 H6	FE65 E7
2E14 F12	FE69 E7
2E15 D12	FE67 F7
2E16 D5	FE68 D7
2E17 G6	FE70 C13
2E18 E12	FE71 D13
2E19 G6	FE72 D13
2E24 H12	FE73 D13
2E29 A5	FE74 D13
2E30 B5	FE75 E13
2E31 D5	FE76 F7
2E32 C5	FE77 F7
2E33 E5	FE78 G7
2E41 I6	FE79 G7
2E44 I12	FE80 E13
2E48 A7	FE81 F13
2E50 A7	FE82 F13
2E51 B7	FE83 F13
2E59 B7	FE84 F13
2E70 C7	FE85 G13
2E73 I2	FEA0 A3
2E74 H2	FEA1 B3
2E75 D1	FE04 E1
2E77 D2	IE05 E5
2E82 C6	IE06 H6
2E83 D6	IE09 H11
2E84 F6	IE18 E10
2E85 G6	IE20 B5
2E86 A13	IE21 C5
2E87 A13	IE22 B11
2E88 B12	IE23 C11
2E89 B13	IE48 H11
2E90 C12	IE51 H5
2E91 C12	IE91 H1
2E44 A3	IE92 H2
2E45 B3	IE93 J2
3E02 D6	IE94 J1
3E06 D4	IE96 E2
3E07 B11	IE98 D2
3E11 B6	IEC0 A3
3E12 A11	IEC1 A2
3E14 C6	IEC2 B3
3E15 B11	IEC3 B2
3E16 E6	
3E17 E5	
3E18 B5	
3E19 C11	
3E21 C5	
3E22 C11	
3E24 A5	
3E27 B11	
3E28 D11	
3E30 C11	
3E31 E11	
3E32 E12	
3E34 D5	
3E37 A11	
3E38 F11	
3E43 I12	
3E44 H11	
3E45 J10	
3E51 G6	
3E52 J5	
3E54 G11	
3E55 C5	
3E59 I11	
3E61 I7	
3E62 I6	
3E63 A6	
3E64 C6	
3E68 H12	
3E69 H6	
3E73 H6	
3E99 D2	
3E47 A2	
3E48 B2	
3E49 B2	
3E80 B2	
3E86 H1	
3E87 I2	
3E88 J2	
3E89 J1	
6E01 A13	
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6E03 B13	
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6E08 B7	
6E09 C12	
6E10 A7	

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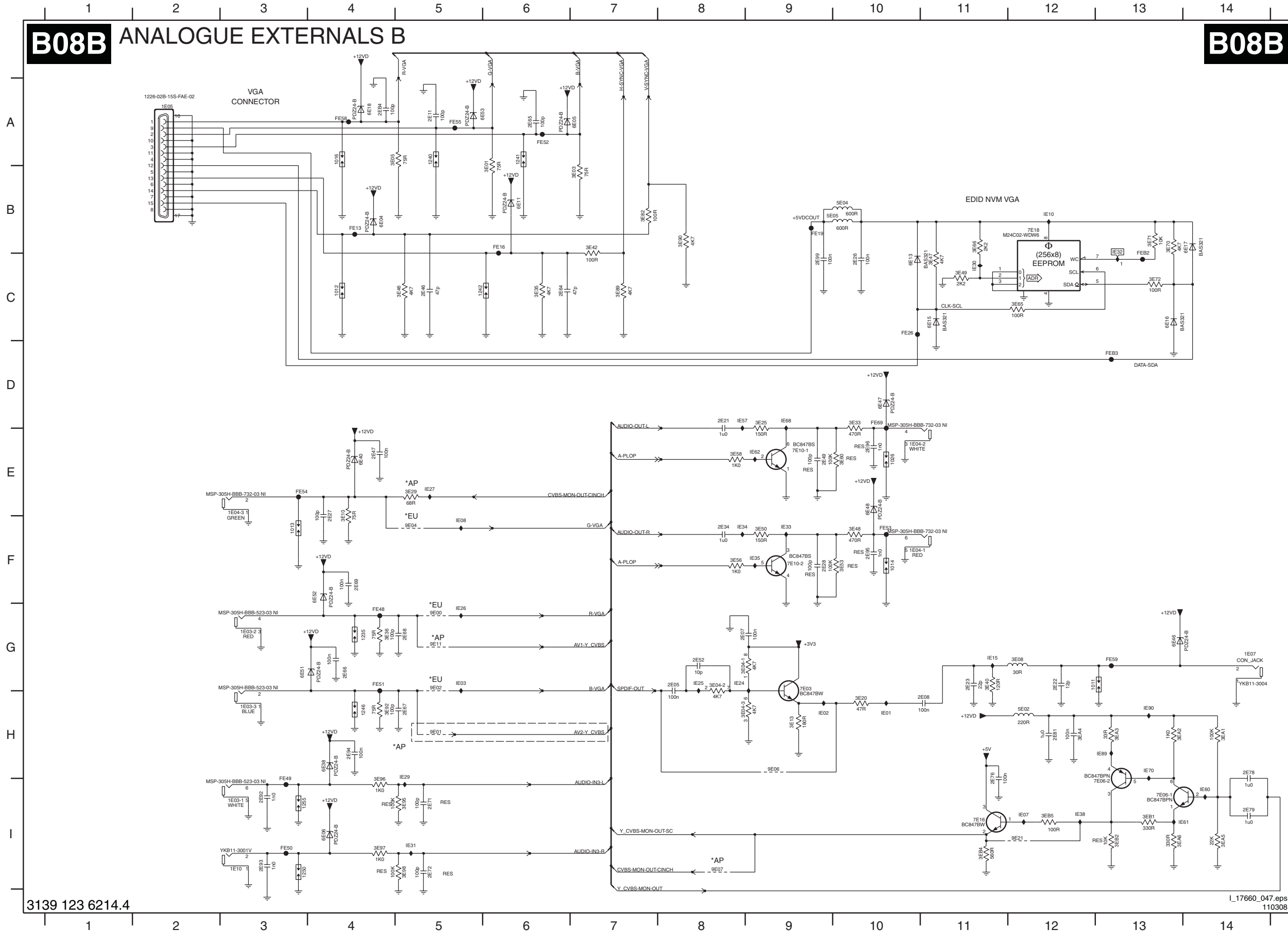
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SSB: Analogue Externals B

B08B

ANALOGUE EXTERNALS B

B08B



- 1011 G12
- 1012 C4
- 1013 F3
- 1014 F10
- 1016 A4
- 1026 E10
- 1235 G4
- 1240 A5
- 1241 A6
- 1242 C5
- 1246 H4
- 1250 I3
- 1255 I3
- 1E03-1 I3
- 1E03-2 G3
- 1E03-3 H3
- 1E04-1 F10
- 1E04-2 E10
- 1E04-3 E3
- 1E05 A2
- 1E07 G14
- 1E10 I3
- 2E05 G8
- 2E07 G8
- 2E08 H11
- 2E11 A5
- 2E21 D8
- 2E22 G12
- 2E23 G11
- 2E26 C10
- 2E27 E4
- 2E28 F9
- 2E34 F8
- 2E46 C5
- 2E47 E4
- 2E49 E9
- 2E52 G8
- 2E64 C6
- 2E65 A6
- 2E66 G4
- 2E67 H5
- 2E68 G5
- 2E69 F4
- 2E71 I5
- 2E72 I5
- 2E76 H11
- 2E78 H14
- 2E79 I14
- 2E81 H12
- 2E92 I3
- 2E93 I3
- 2E94 H4
- 2E95 F10
- 2E96 E10
- 2E99 C9
- 2EB4 A4
- 3E01 B6
- 3E03 B7
- 3E04-1 G8
- 3E04-2 G8
- 3E04-3 H8
- 3E05 A4
- 3E08 G12
- 3E10 E4
- 3E13 H9
- 3E20 H10
- 3E25 D9
- 3E29 E5
- 3E33 D10
- 3E35 C6
- 3E36 G4
- 3E40 G11
- 3E42 B7
- 3E46 C5
- 3E47 C11
- 3E48 F10
- 3E49 C11
- 3E50 F9
- 3E53 F10
- 3E56 F8
- 3E58 E8
- 3E60 E10
- 3E65 C12
- 3E66 B11
- 3E70 B13
- 3E71 B13
- 3E72 C13
- 3E82 B7
- 3E89 C7
- 3E90 H8
- 3E92 H4
- 3E95 I5
- 3E96 I4
- 3E97 I4
- 3E98 I5
- 3EA1 H14
- 3EA2 H13
- 3EA3 H13
- 3EA4 H12
- 3EA5 I14
- 3EA6 I13
- 3EB1 I13
- 3EB2 I13
- 3EB4 I11
- 3EB5 I12
- 5E02 H12
- 5E04 B10
- 5E05 B9
- 6E04 B4
- 6E05 A7
- 6E06 I4
- 6E11 B6
- 6E13 C10
- 6E15 C11
- 6E16 C13
- 6E17 B14
- 6E18 A4
- 6E38 H4
- 6E40 E4
- 6E46 G13
- 6E47 D10
- 6E48 E10
- 6E51 G3
- 6E52 F4
- 6E53 A6
- 7E03 G9
- 7E06-1 I13
- 7E06-2 I13
- 7E10-1 E9
- 7E10-2 F9
- 7E16 I11
- 7E18 B12
- 9E00 G5
- 9E01 H5
- 9E02 G5
- 9E04 F5
- 9E06 H9
- 9E07 I8
- 9E11 G5
- 9E21 H2
- FE13 B4
- FE18 B6
- FE19 B9
- FE26 C10
- FE48 G4
- FE49 I3
- FE50 I3
- FE51 G4
- FE52 A6
- FE53 F10
- FE54 E3
- FE55 A5
- FE58 A4
- FE59 G13
- FE69 D10
- FE82 C13
- FE83 D13
- IE01 H10
- IE02 H9
- IE03 G5
- IE07 I12
- IE08 F5
- IE10 B12
- IE15 G11
- IE24 G8
- IE25 G8
- IE26 G5
- IE27 E5
- IE29 H5
- IE30 C11
- IE31 I5
- IE32 B13
- IE33 F9
- IE34 F8
- IE35 F9
- IE38 I12
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- IE60 I14
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- IE62 E9
- IE68 D9
- IE70 H13
- IE89 H13
- IE90 H13

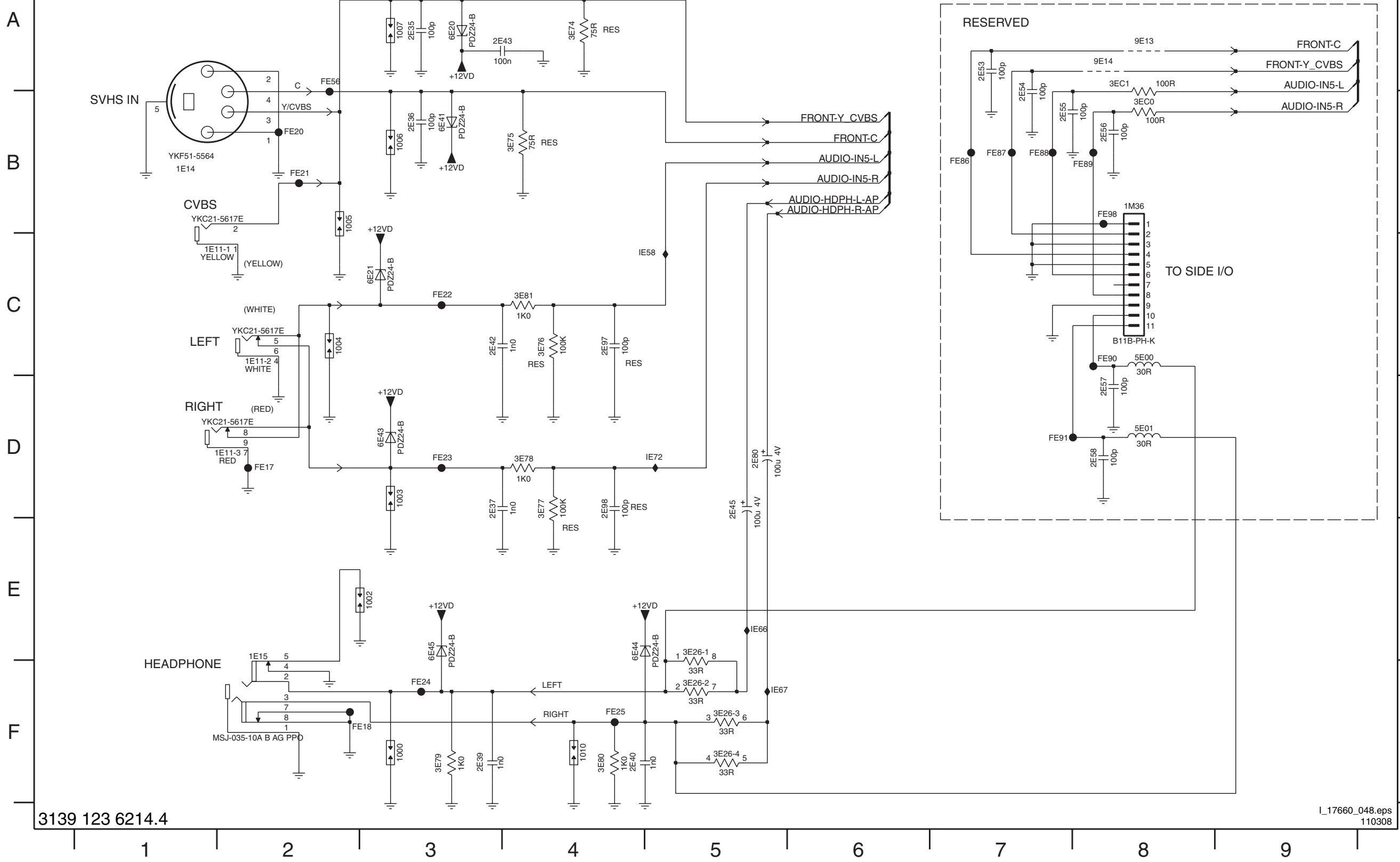
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SSB: Analogue Externals C

B08C ANALOGUE EXTERNALS C

B08C



- 1000 F3
- 1002 E3
- 1003 D3
- 1004 C2
- 1005 B2
- 1006 B3
- 1007 A3
- 1010 F4
- 1E11-1 C2
- 1E11-2 C2
- 1E11-3 D2
- 1E14 B1
- 1E15 E2
- 1M36 B8
- 2E35 A3
- 2E36 B3
- 2E37 D3
- 2E39 F3
- 2E40 F4
- 2E42 C3
- 2E43 A4
- 2E45 D5
- 2E53 A7
- 2E54 B7
- 2E55 B7
- 2E56 B8
- 2E57 D8
- 2E58 D8
- 2E80 D5
- 2E97 C4
- 2E98 D4
- 3E26-1 E5
- 3E26-2 F5
- 3E26-3 F5
- 3E26-4 F5
- 3E74 A4
- 3E75 B4
- 3E76 C4
- 3E77 D4
- 3E78 D4
- 3E79 F3
- 3E80 F4
- 3E81 C4
- 3EC0 B8
- 3EC1 A8
- 5E00 C8
- 5E01 D8
- 6E20 A3
- 6E21 C3
- 6E41 B3
- 6E43 D3
- 6E44 E4
- 6E45 E3
- 9E13 A8
- 9E14 A8
- FE17 D2
- FE18 F3
- FE20 B2
- FE21 B2
- FE22 C3
- FE23 D3
- FE24 F3
- FE25 F4
- FE56 A2
- FE86 B7
- FE87 B7
- FE88 B7
- FE89 B8
- FE90 C8
- FE91 D7
- FE98 B8
- IE58 C5
- IE66 E5
- IE67 F5
- IE72 D5

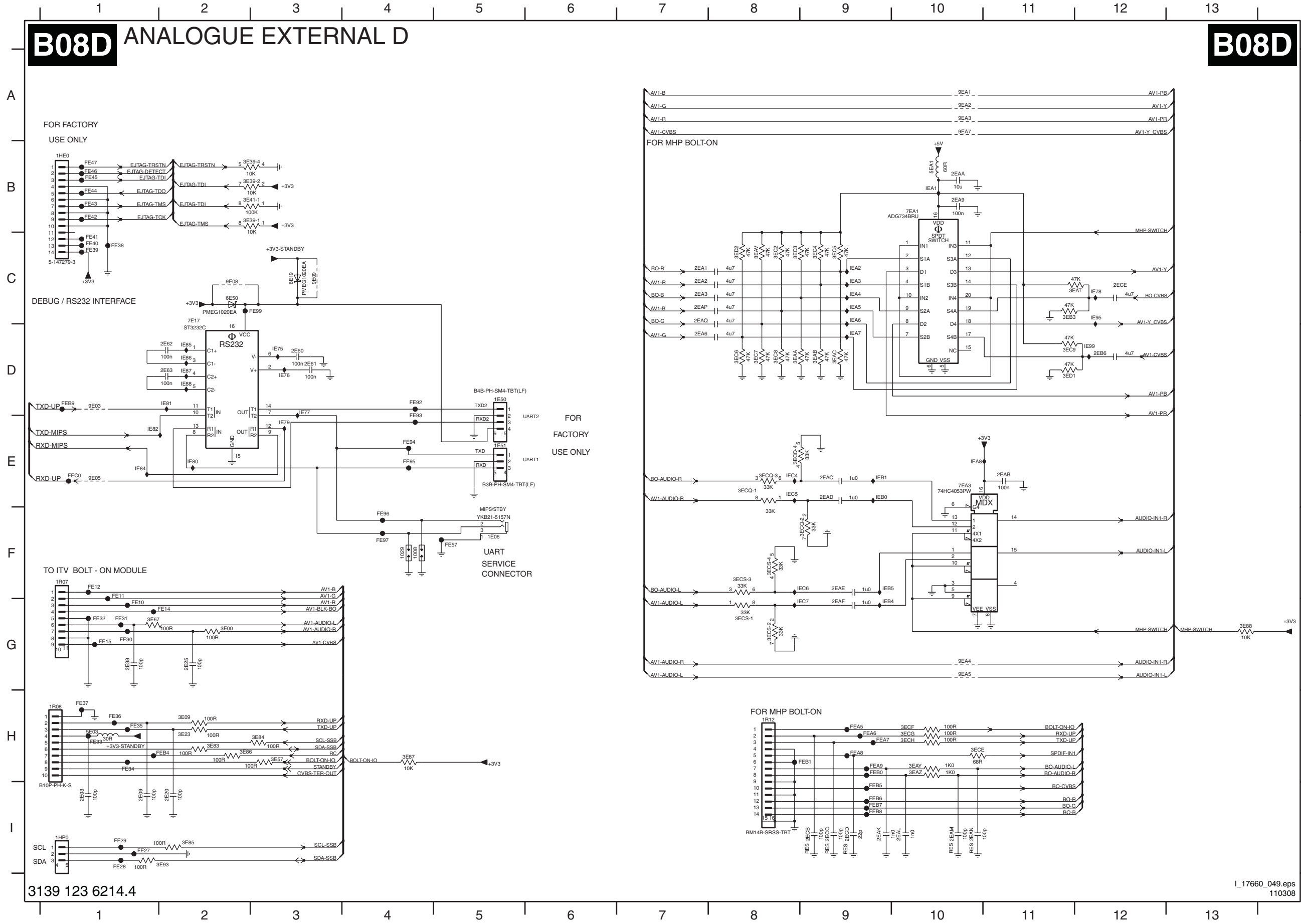
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SSB: Analogue Externals D

B08D ANALOGUE EXTERNAL D

B08D

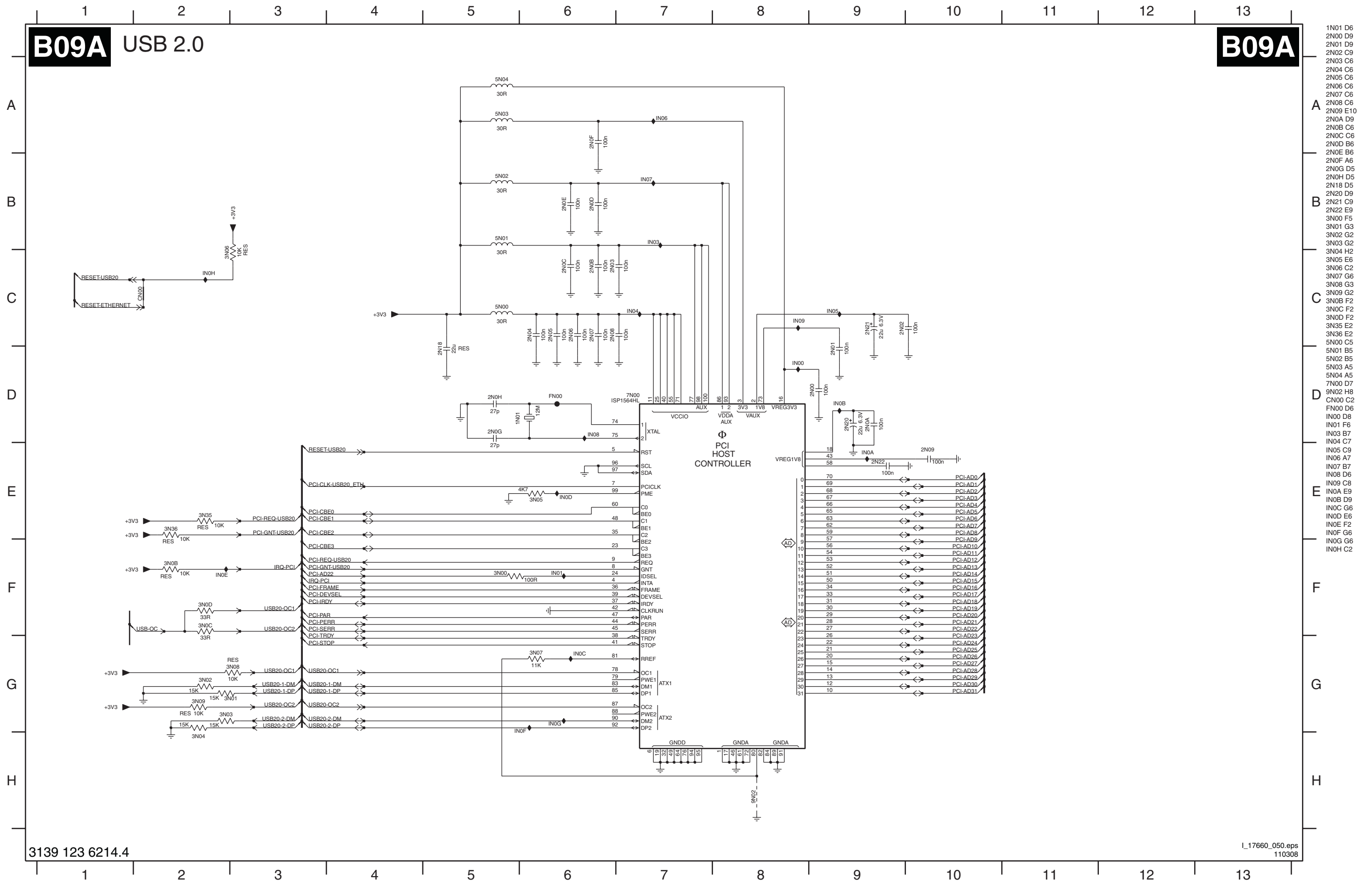


- 1008 F4
- 1029 F4
- 1E06 F5
- 1E50 D5
- 1E51 E5
- 1HE0 B1
- 1HP0 I1
- 1R07 F1
- 1R08 H1
- 1R12 H8
- 2E03 I1
- 2E09 I1
- 2E20 I2
- 2E25 G2
- 2E38 G1
- 2E60 D3
- 2E61 D3
- 2E62 D2
- 2E63 D2
- 2EA1 C7
- 2EA2 C7
- 2EA3 C7
- 2EA6 D7
- 2EA9 B10
- 2EA B10
- 2EAC E9
- 2EAD E9
- 2EA F9
- 2EAF G9
- 2EAK I9
- 2EAL I10
- 2EAM I10
- 2EAN H10
- 2EAP C7
- 2EQ C7
- 2EB6 D12
- 2ECB I9
- 2ECC I9
- 2ECD I9
- 2ECE C12
- 3E00 G2
- 3E09 H2
- 3E23 H2
- 3E39-1 B3
- 3E39-2 B3
- 3E39-4 B3
- 3E41-1 B3
- 3E57 H3
- 3E67 G1
- 3E83 H2
- 3E84 H3
- 3E85 I2
- 3E86 H2
- 3E87 H4
- 3E88 G13
- 3E93 I2
- 3E94 D8
- 3EAB D9
- 3EAC D9
- 3EAT C12
- 3EAV C8
- 3EAY H10
- 3EB3 C11
- 3EC2 C8
- 3EC3 C8
- 3EC4 C9
- 3EC5 C9
- 3EC6 D8
- 3EC7 D8
- 3EC8 D8
- 3EC9 D11
- 3ECE H10
- 3ECF H10
- 3ECG H10
- 3ECH H10
- 3ECQ-1 E8
- 3ECQ-2 F9
- 3ECQ-3 E8
- 3ECQ-4 E8
- 3ECS-1 G8
- 3ECS-2 G8
- 3ECS-3 F8
- 3ECS-4 F8
- 3ED1 D11
- 3ED2 C8
- 5E03 H1
- 5EA1 B10
- 6E19 C3
- 6E50 C2
- 7E17 C2
- 7EA1 B10
- 7EA3 E10
- 9E03 D1
- 9E05 E1
- 9E08 C2
- 9E09 C3
- 9EA1 A10
- 9EA2 A10
- 9EA3 A10
- 9EA4 G10
- 9EA5 G10
- 9EA7 A10
- FE10 G1
- FE11 F1
- FE12 F1
- FE14 G2
- FE15 G1
- FE27 I1
- FE28 I1
- FE29 I1
- FE30 G1
- FE31 G1

SSB: USB 2.0

B09A USB 2.0

B09A

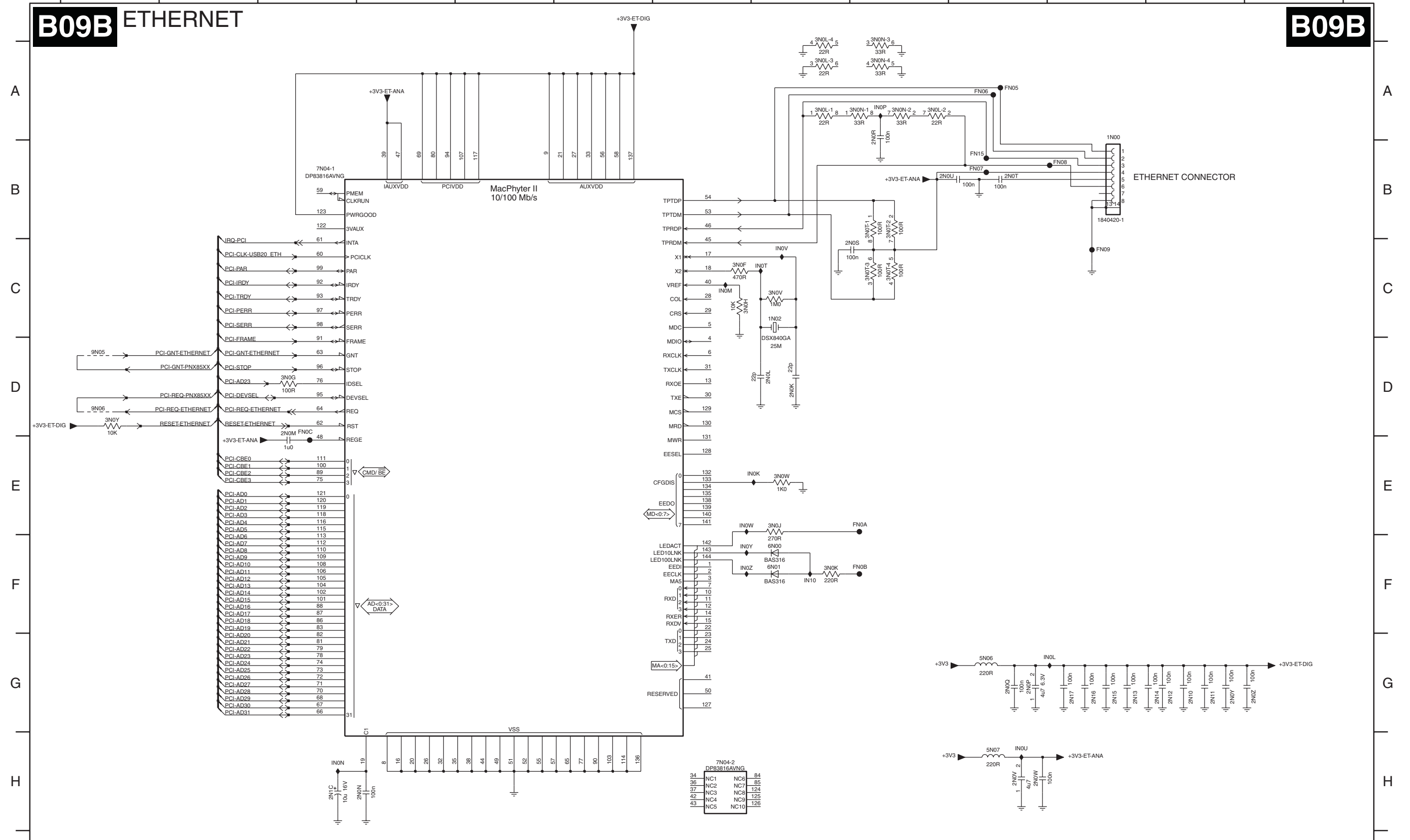


SSB: Ethernet

- 1N00 A11 2N0L D8 2N0P G10 2N0S C9 2N0V H10 2N0Z G13 2N12 G12 2N15 G11 2N1C H3 3N0H C7 3N0L A8 3N0L A9 3N0N A9 3N0T B9 3N0V C8 5N06 G10 6N01 F8 9N05 D1 FN06 A10 FN09 C11 FN0C D3 IN0L G11 IN0P A9 IN0V C8 IN0Z F7
- 1N02 C8 2N0M D3 2N0Q G10 2N0T B9 2N0W H10 2N10 G12 2N13 G11 2N16 G11 3N0F C7 3N0J E8 3N0L A8 3N0N A9 3N0N A9 3N0T B9 3N0T C9 3N0W E8 5N07 H10 6N00 F8 7N04-1 B3 7N04-2 H7 9N06 D1 FN07 B10 FN0A E9 FN0B F9 FN15 B10 FN15 B10 FN0C D3 IN0M C7 IN0N H3 IN0T C8 IN0U H10 IN0W E7 IN0Y F7

B09B ETHERNET

B09B



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SSB: Buffering

B09C BUFFERING

B09C

A

B

C

D

E

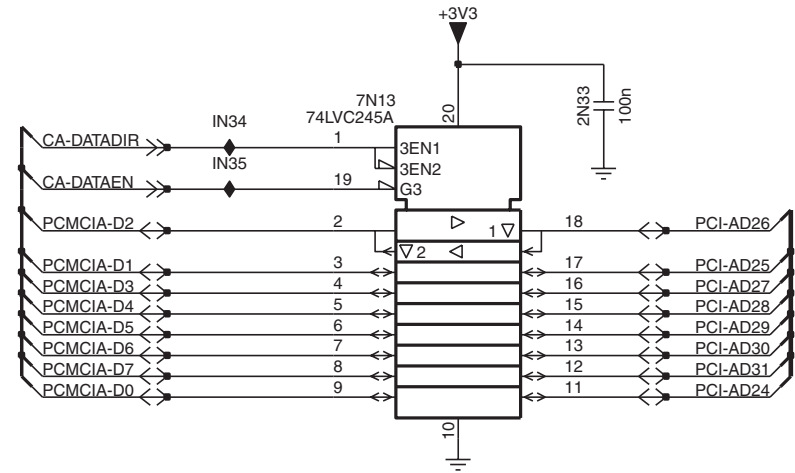
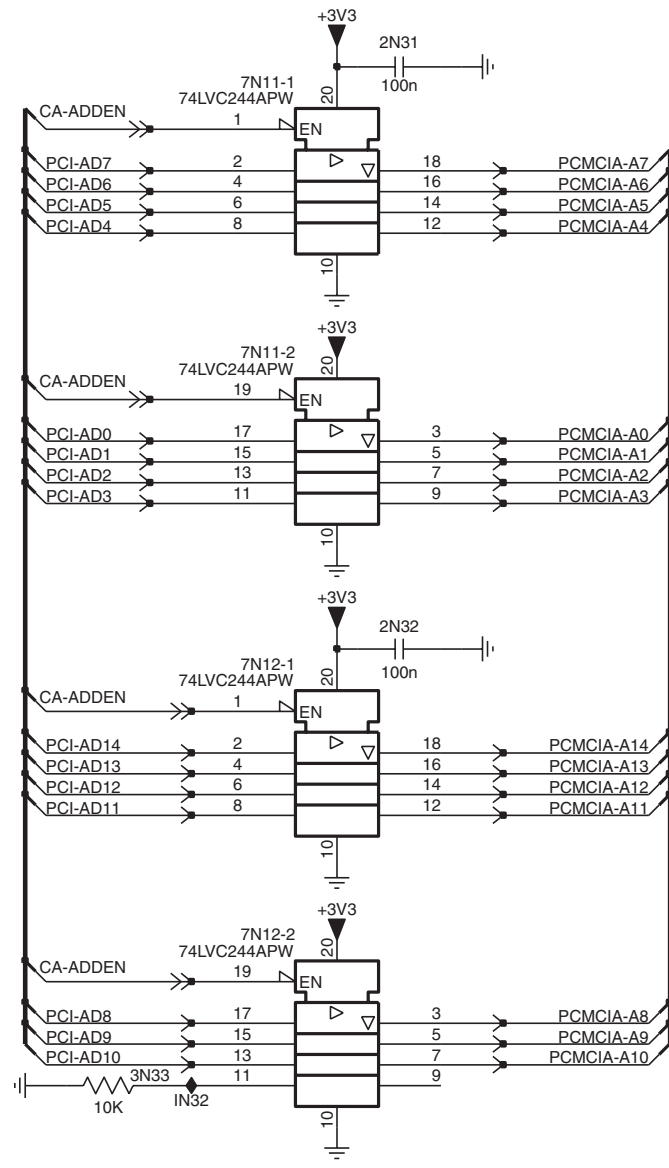
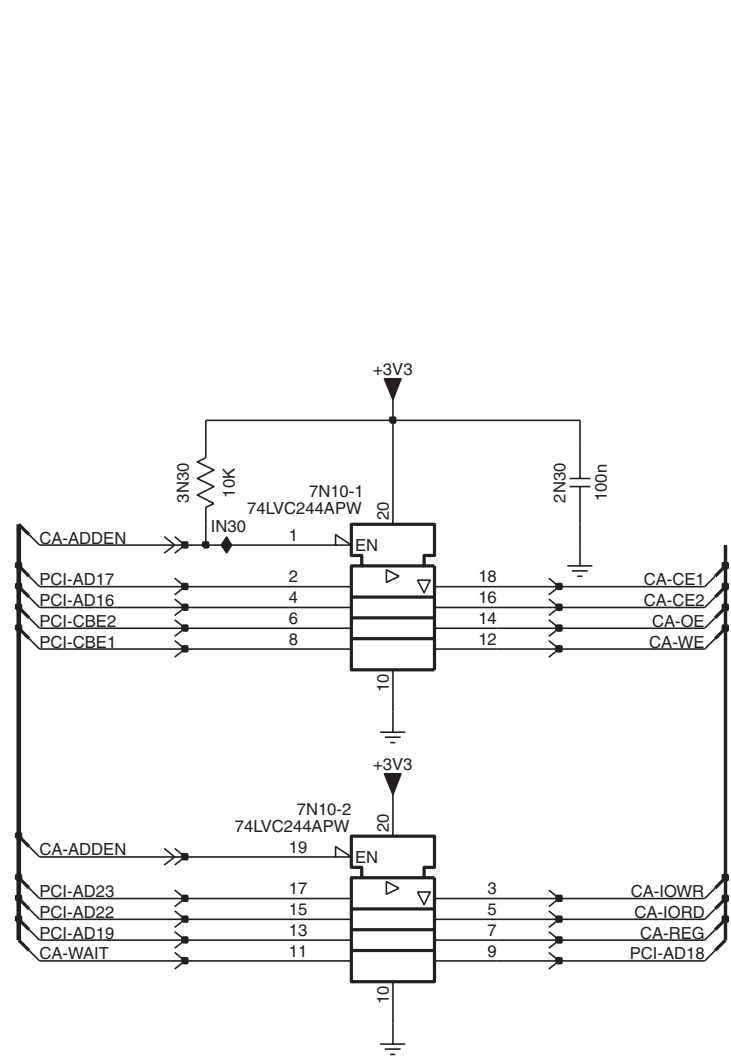
A

B

C

D

E

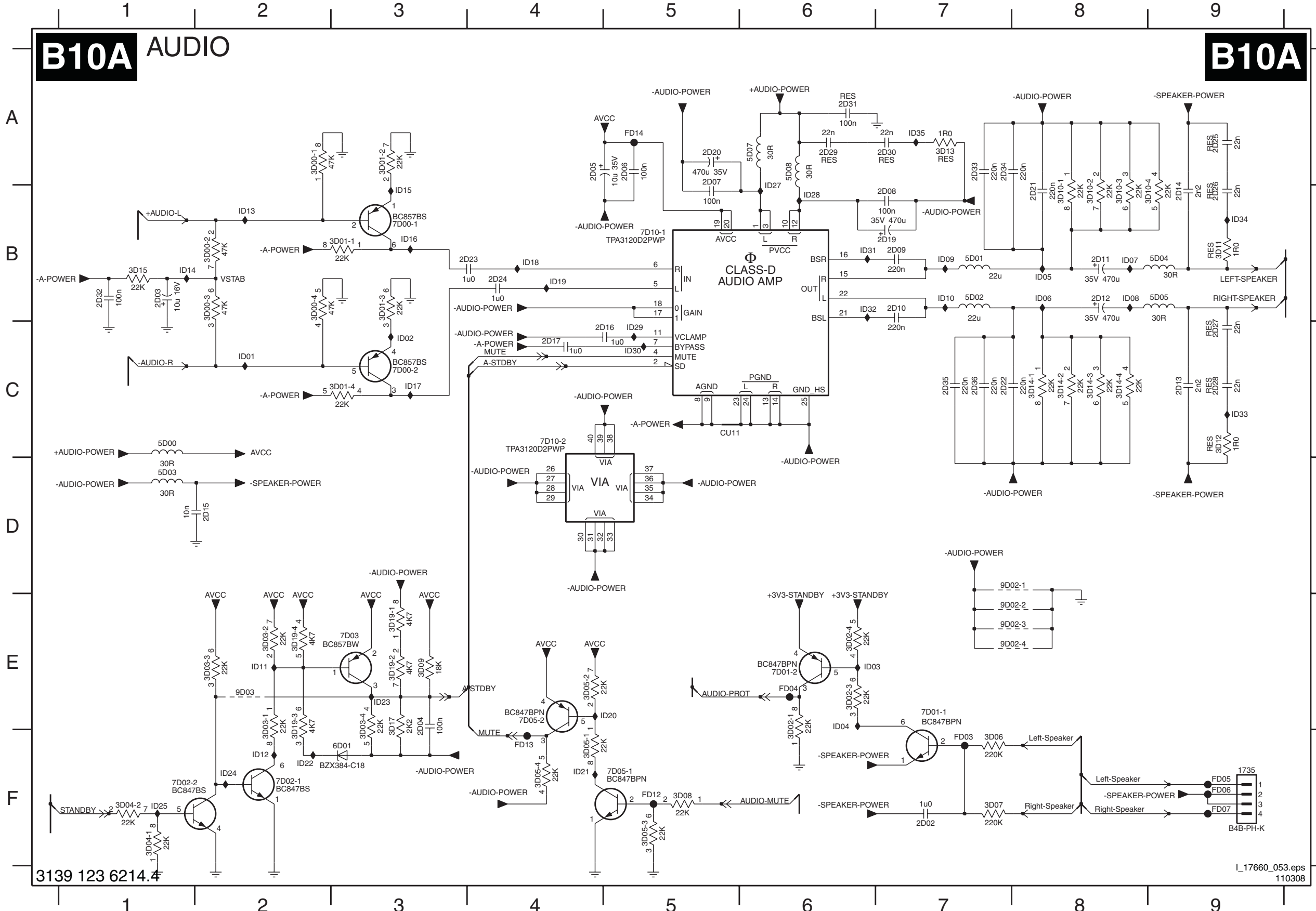


- 2N30 B3
- 2N31 A5
- 2N32 C5
- 2N33 A8
- 3N30 B1
- 3N33 D4
- 7N10-1 B2
- 7N10-2 C2
- 7N11-1 A4
- 7N11-2 B4
- 7N12-1 C4
- 7N12-2 D4
- 7N13 A7
- IN30 B1
- IN32 D4
- IN34 A7
- IN35 A7

SSB: Audio

B10A AUDIO

B10A

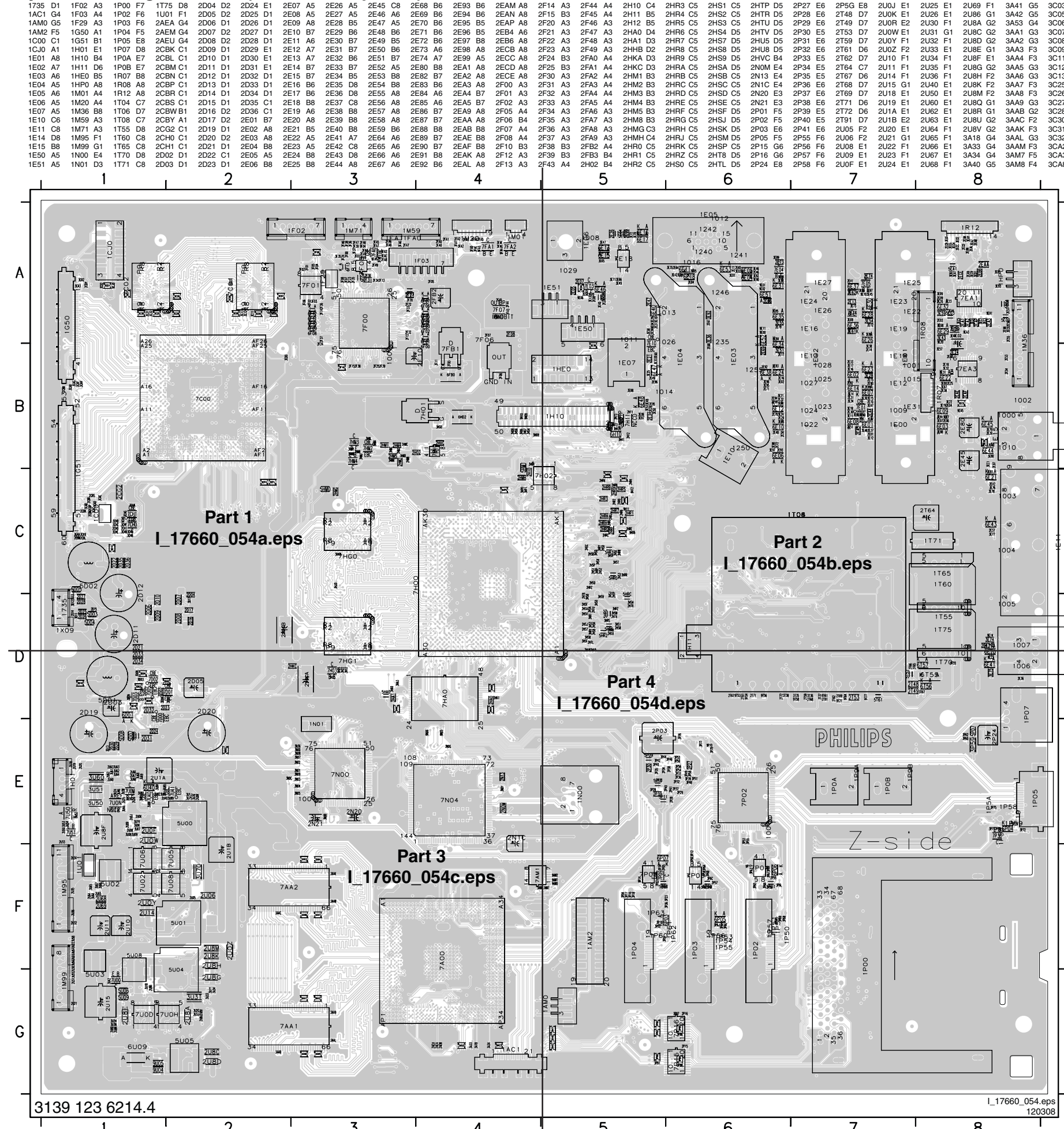


- 1735 F9
- 2D02 F7
- 2D03 B1
- 2D04 E3
- 2D05 A4
- 2D06 A5
- 2D07 A5
- 2D08 B7
- 2D09 B7
- 2D10 B7
- 2D11 B8
- 2D12 B8
- 2D13 C9
- 2D14 B9
- 2D15 D2
- 2D16 C5
- 2D17 C4
- 2D19 B7
- 2D20 A5
- 2D21 B8
- 2D22 C7
- 2D23 B4
- 2D24 B4
- 2D25 A9
- 2D26 B9
- 2D27 C9
- 2D28 C9
- 2D29 A6
- 2D30 A7
- 2D31 A6
- 2D32 B1
- 2D33 A7
- 2D34 A7
- 2D35 C7
- 2D36 C7
- 3D00-1 A2
- 3D00-2 B2
- 3D00-3 B2
- 3D00-4 B2
- 3D01-1 B3
- 3D01-2 A3
- 3D01-3 B3
- 3D01-4 C3
- 3D02-1 E6
- 3D02-3 E6
- 3D02-4 E6
- 3D03-1 E2
- 3D03-2 E2
- 3D03-3 E2
- 3D03-4 E3
- 3D04-1 F1
- 3D04-2 F1
- 3D05-1 F4
- 3D05-2 E4
- 3D05-3 F5
- 3D05-4 F4
- 3D06 F7
- 3D07 F7
- 3D08 F5
- 3D09 E3
- 3D10-1 B8
- 3D10-2 B8
- 3D10-3 B8
- 3D10-4 B8
- 3D11 B9
- 3D12 C9
- 3D13 A7
- 3D14-1 C8
- 3D14-2 C8
- 3D14-3 C8
- 3D14-4 C8
- 3D15 B1
- 3D17 E3
- 3D19-1 E3
- 3D19-2 E3
- 3D19-3 E2
- 5D00 C1
- 5D01 B7
- 5D02 B7
- 5D03 D1
- 5D04 B9
- 5D05 B9
- 5D07 A6
- 5D08 A6
- 6D01 F3
- 7D00-1 B3
- 7D00-2 C3
- 7D01-1 E7
- 7D01-2 E6
- 7D02-1 F2
- 7D02-2 F1
- 7D03 E3
- 7D05-1 F5
- 7D05-2 E4
- 7D10-1 B5
- 7D10-2 C4
- 9D02-1 D8
- 9D02-2 E8
- 9D02-3 E8
- 9D02-4 E8
- 9D03 E2
- CU11 C5
- FD03 F7
- FD04 E6
- FD05 F9
- FD06 F9
- FD07 F9
- FD12 F5
- FD13 F4
- FD14 A5
- ID01 C2
- ID02 C3
- ID03 E6
- ID04 E6
- ID05 B8
- ID06 B8
- ID07 B8
- ID08 B8
- ID09 B7
- ID10 B7
- ID11 E2
- ID12 F2
- ID13 B2
- ID14 B1
- ID15 B3
- ID16 B3
- ID17 C3
- ID18 B4
- ID19 B4
- ID20 E5
- ID21 F4
- ID22 F2
- ID23 E3
- ID24 F2
- ID25 F1
- ID27 B6
- ID28 B6
- ID29 C5
- ID30 C5
- ID31 B6
- ID32 C9
- ID33 C9
- ID34 B9
- ID35 A7

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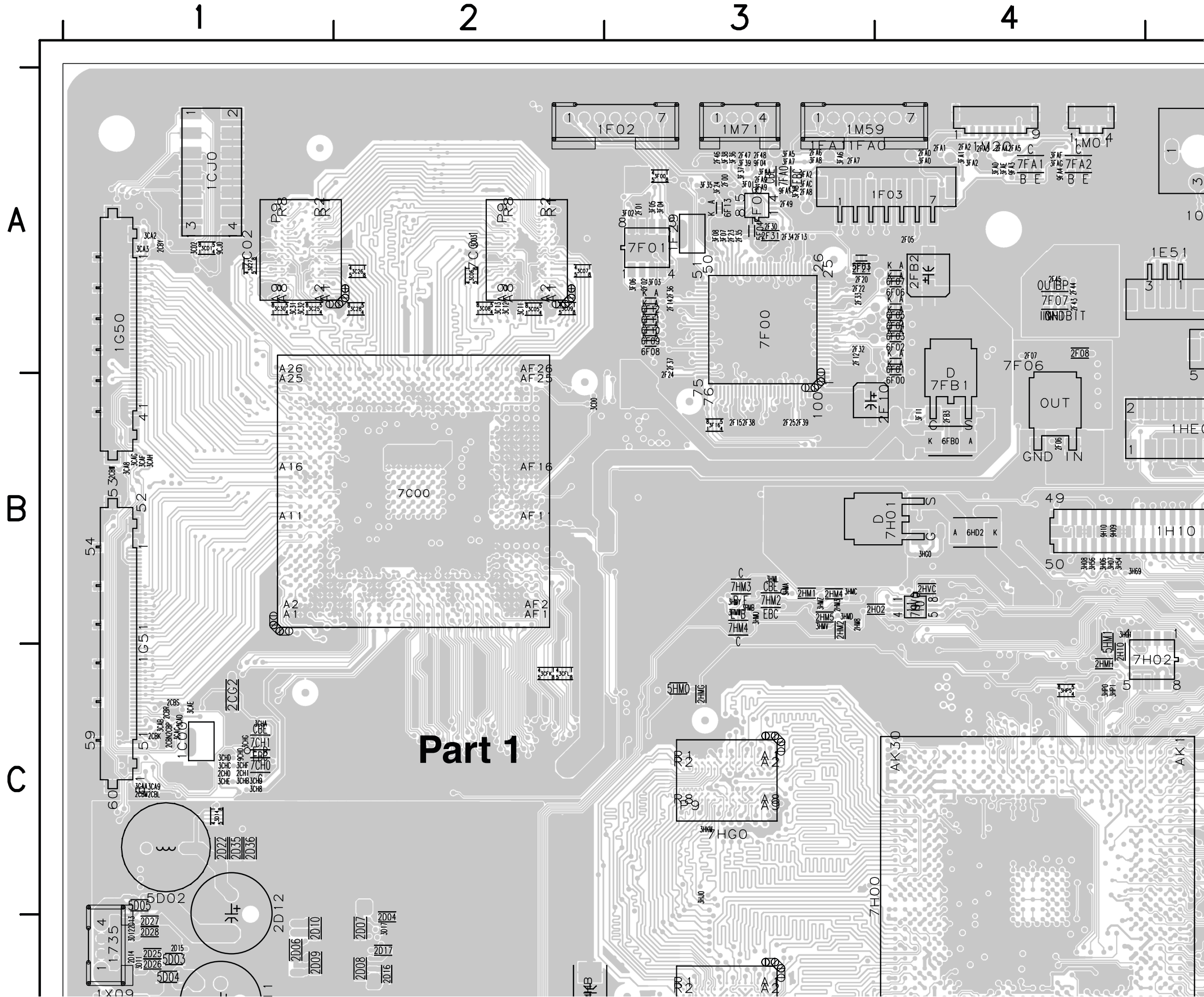
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Layout Small Signal Board (Overview Top Side)

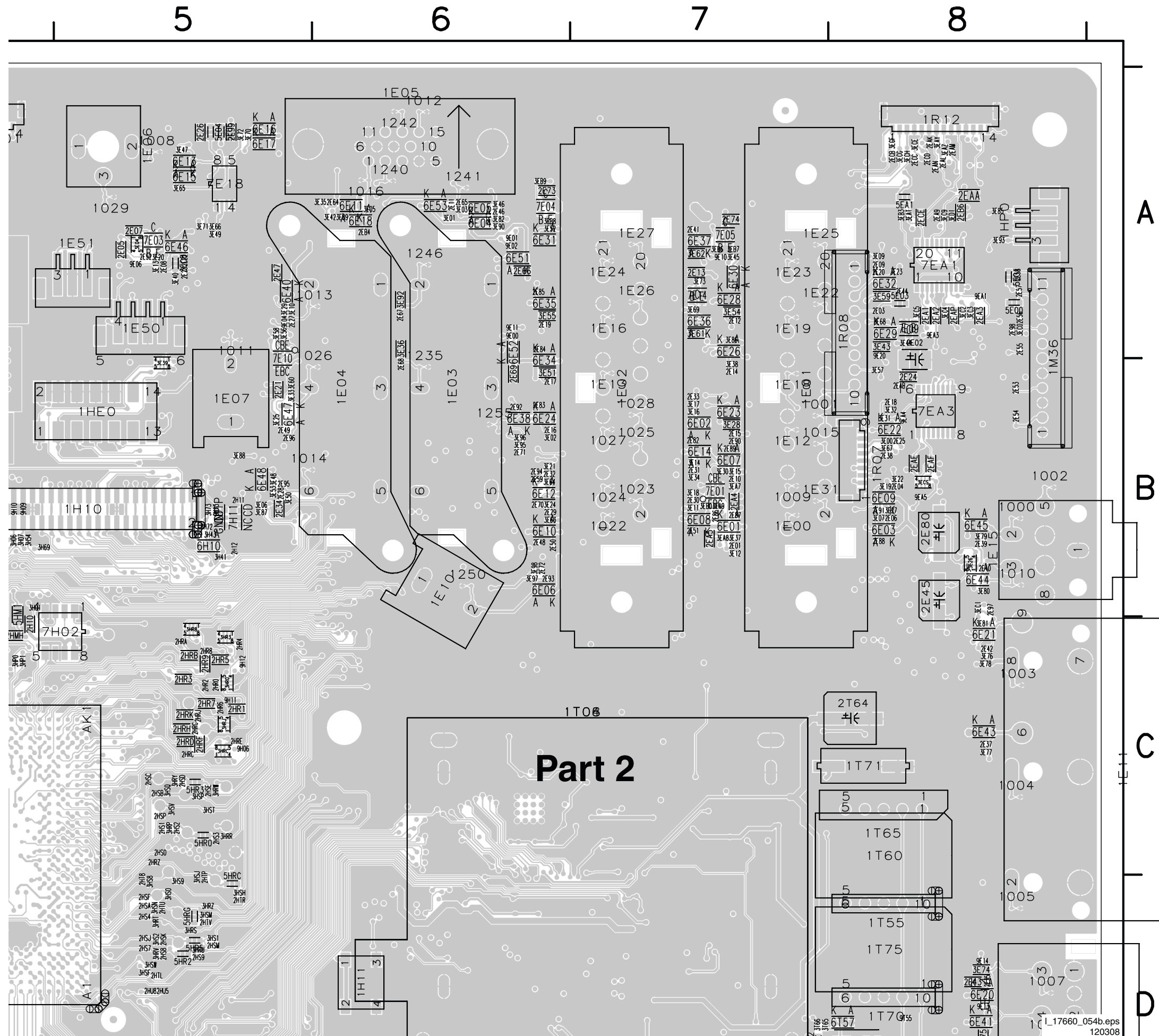


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Layout Small Signal Board (Part 1 Top Side)

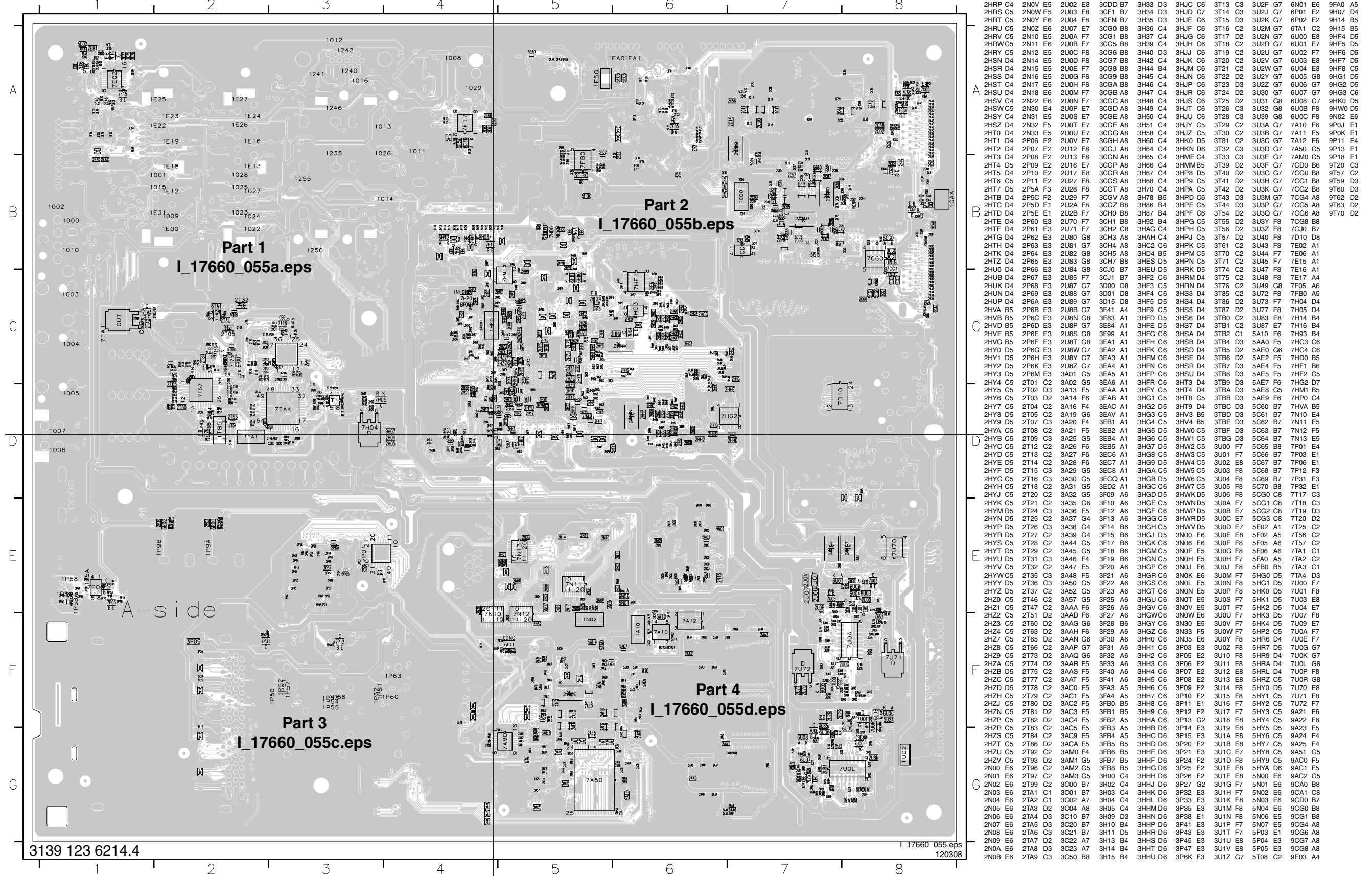


Layout Small Signal Board (Part 2 Top Side)



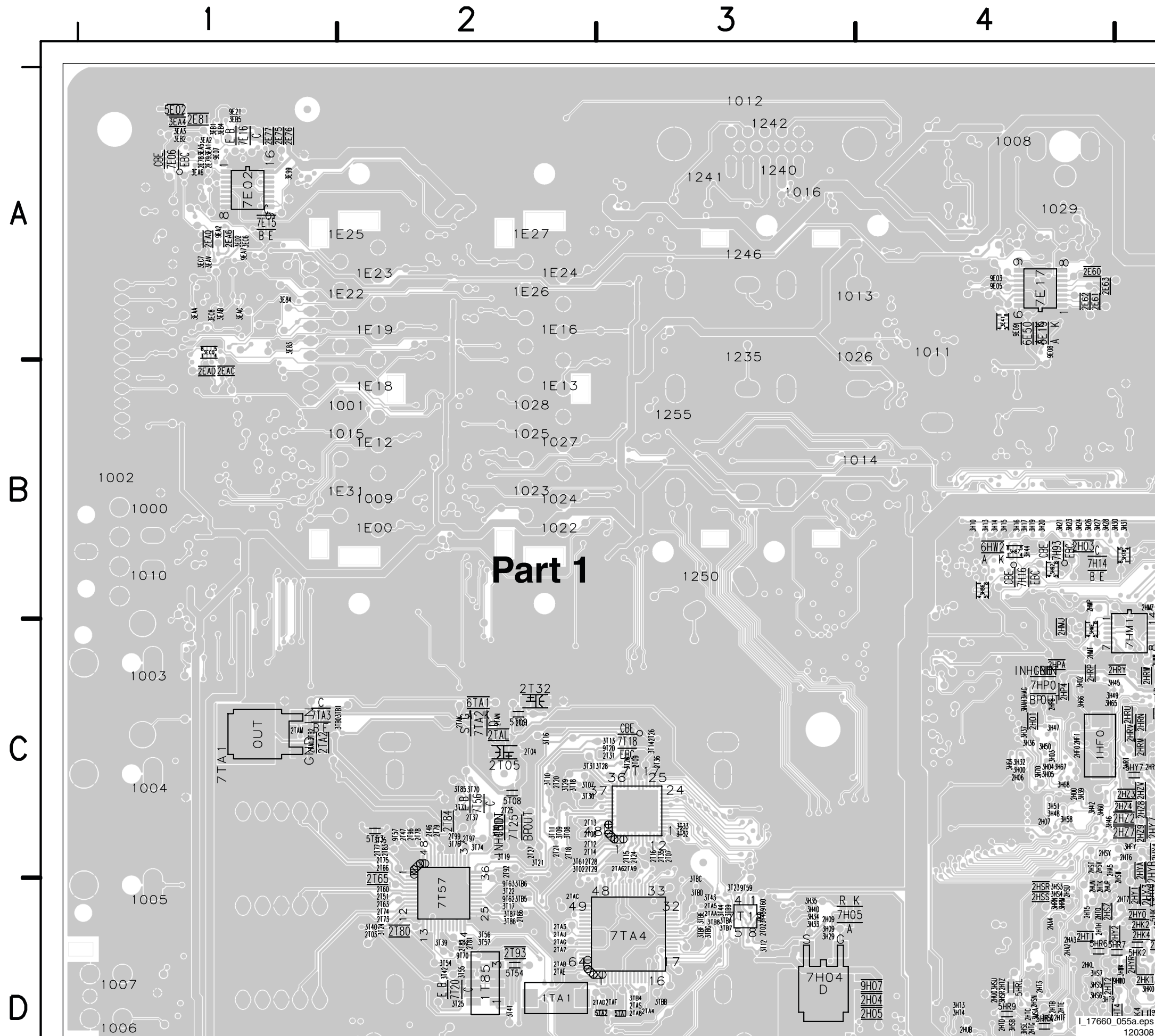
Layout Small Signal Board (Overview Bottom Side)

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2A22	F6	2A0A	F7	2AAT	G6	2ACO	F5	2AEZ	F5	2AFL	G5	2AGD	F6	2C13	A7	2C38	A8	2C62	B7	2C76	B7	2C90	A7	2CA6	A8	2CAM	A8	2CB4	C8	2CBJ	C8	2CG8	B8	2EA6	A1	2H00	C4	2HF0	C4	2HG7	C6	2HGN	D6	2HH4	C5	2HHK	C6	2HMN	C5	2HRS	C5	2NOU	E5	2U01	E8	3CDD	B7	3H32	C4	3HJ0	C6	3T12	C3	3U2E	G7	6N00	E6	9F11	A6

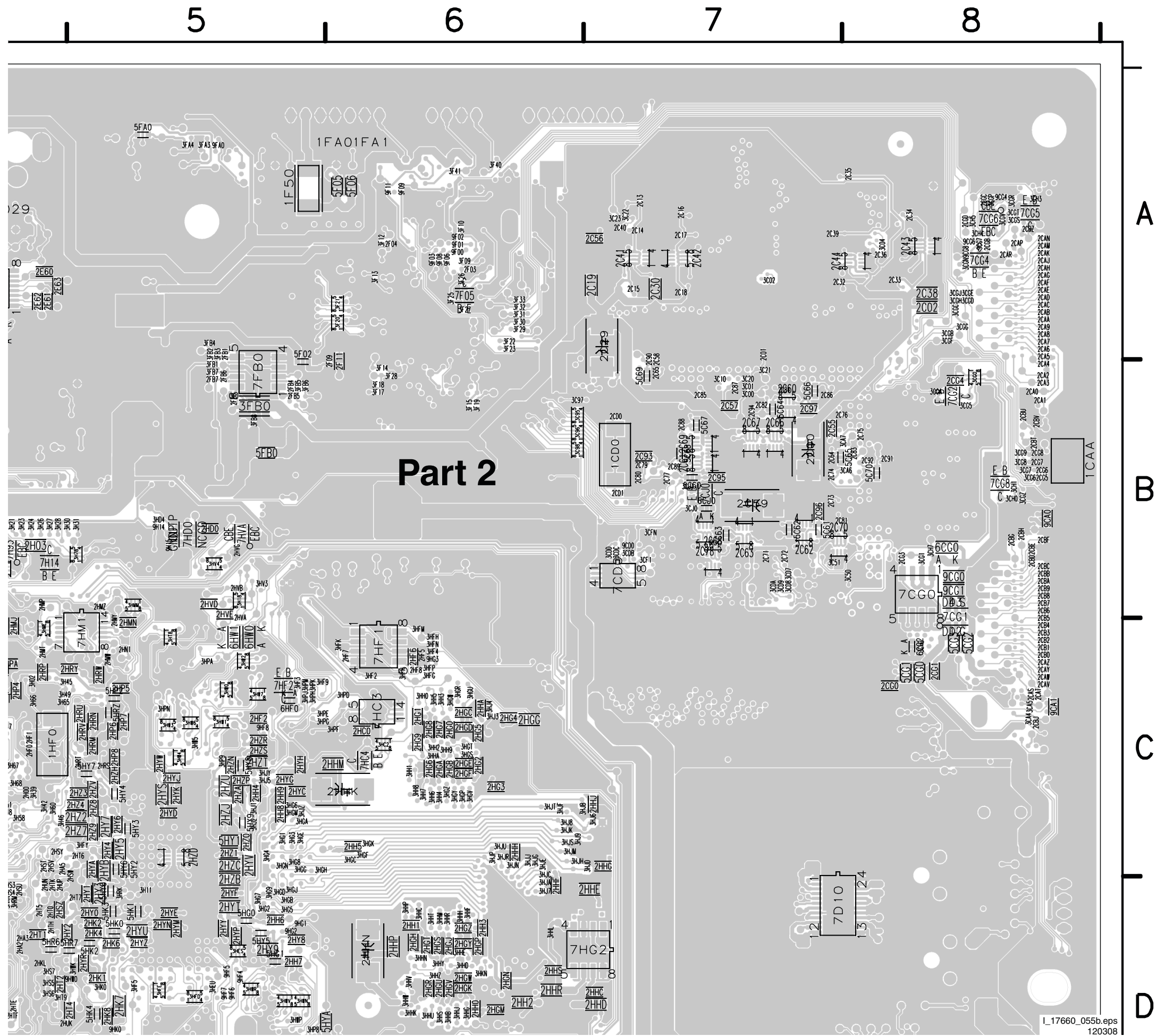


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3C97	B6	3H19	B4	3HHZ	D6	3PPH	E1	3U23	G7	5T54	D3	9E09	A4
3C98	B6	3H20	B4	3HJ1	C5	3PV6	E1	3U24	G7	5T52	D3	9E21	A4
3C4A	C8	3H21	B4	3HJ2	C5	3PW6	E1	3U25	G7	6C60	B8	9E2A	A1
3C45	C8	3H23	B4	3HJ3	C6	3PY6	E1	3U26	G7	6C62	B8	9E2A	A1
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3CDA	B7	3H30	B5	3HJ9	C6	3T10	C2	3U2C	G8	6H01	C5	9F08	A6
3H31	B5	3HJA	D6	3T11	C2	3U2D	G8	6H2A	B4	9F09	A6		
3H32	C4	3HJB	C6	3T12	C3	3U2E	G7	6N00	E6	9F11	A6		
3H33	D3	3HJC	C6	3T13	C3	3U2F	G7	6N01	E6	9FA0	A5		
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3H35	D3	3HJE	C6	3T15	C3	3U2K	G7	6P02	E2	9H14	B5		
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3H37	C4	3HJG	C6	3T17	D2	3U2N	G7	6U00	B8	9HF4	D5		
3H38	C6	3HJH	C6	3T18	C2	3U2R	G7	6U01	E7	9HF5	D5		
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3H40	D3	3HJK	C6	3T20	C2	3U2L	G7	6U03	E8	9HF7	D5		
3H41	B4	3HJM	C6	3T21	C2	3U2Y	G7	6U04	E8	9HF8	C5		
3H42	C4	3HJN	C6	3T22	D2	3U2W	G7	6U05	G8	9HG1	D5		
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3H49	C4	3HJV	C5	3T30	C2	3U3B	G7	7A11	F5	9PK0	E1		
3H50	C4	3HJW	C5	3T31	C2	3U3C	G7	7A12	F6	9P11	E4		
3H51	C4	3HJX	C5	3T32	C3	3U3D	G7	7A50	G5	9P13	E1		
3H52	C4	3HJY	C5	3T33	C3	3U3E	G7	7A50	G5	9P18	E1		
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3H54	D5	3HP0	D5	3T40	D2	3U3G	G7	7C00	B8	9T57	C2		
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3H61	C4	3HP7	C5	3T56	D2	3U3Z	F8	7C08	B8				
3H62	C4	3HP8	C5	3T57	D2	3U40	F8	7D10	D8				
3H63	C6	3HP9	C5	3T61	C2	3U43	F8	7E02	A1				
3H64	B5	3HP0	C5	3T70	C2	3U44	F7	7E06	A1				
3H65	D3	3HP1	C5	3T71	C2	3U45	F7	7E15	A1				
3H66	D3	3HP2	D5	3T72	D2	3U47	F8	7E16	A1				
3H67	D3	3HP3	D5	3T75	C2	3U48	F8	7E17	A4				
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3H70	D4												

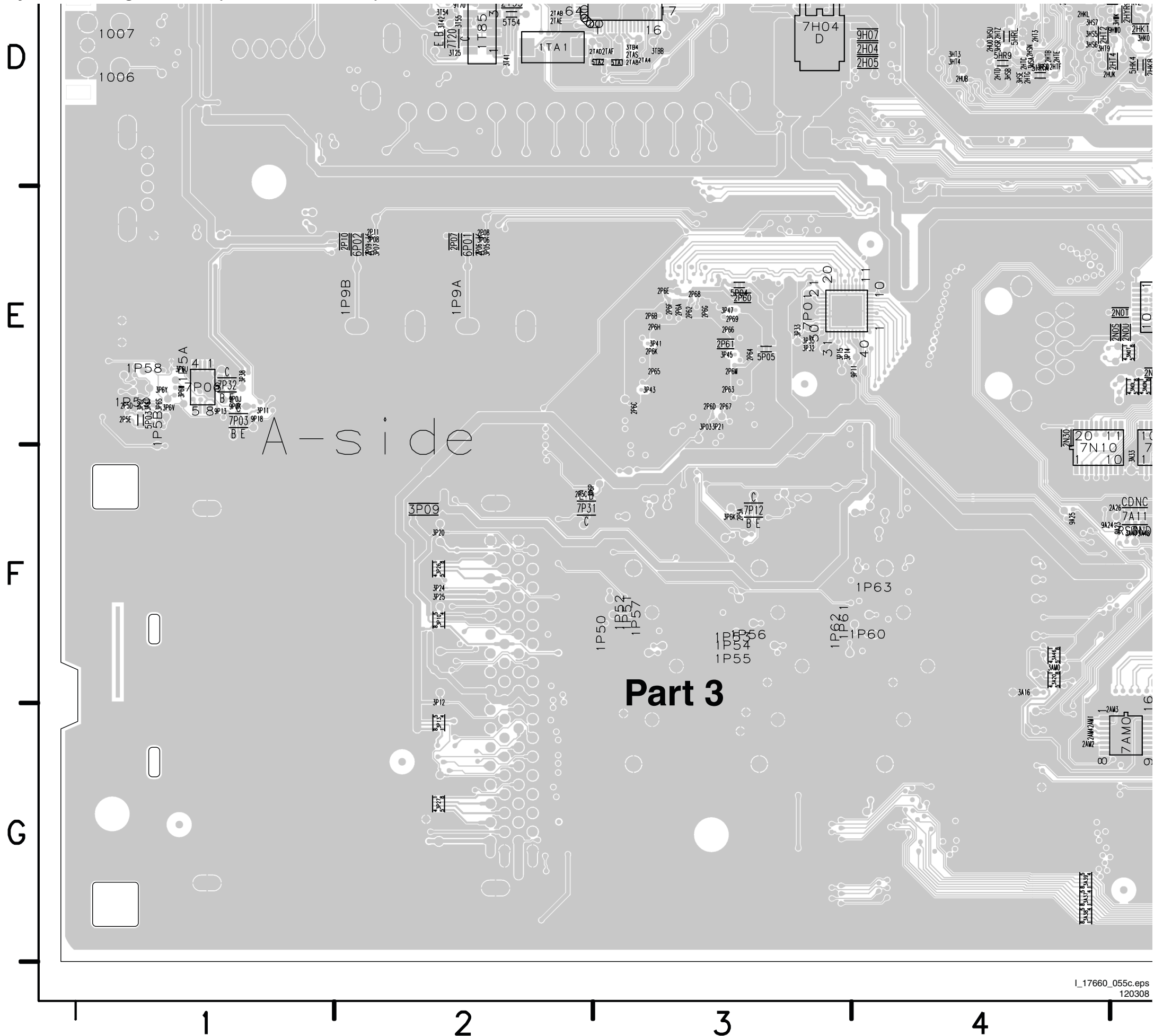
Layout Small Signal Board (Part 1 Bottom Side)



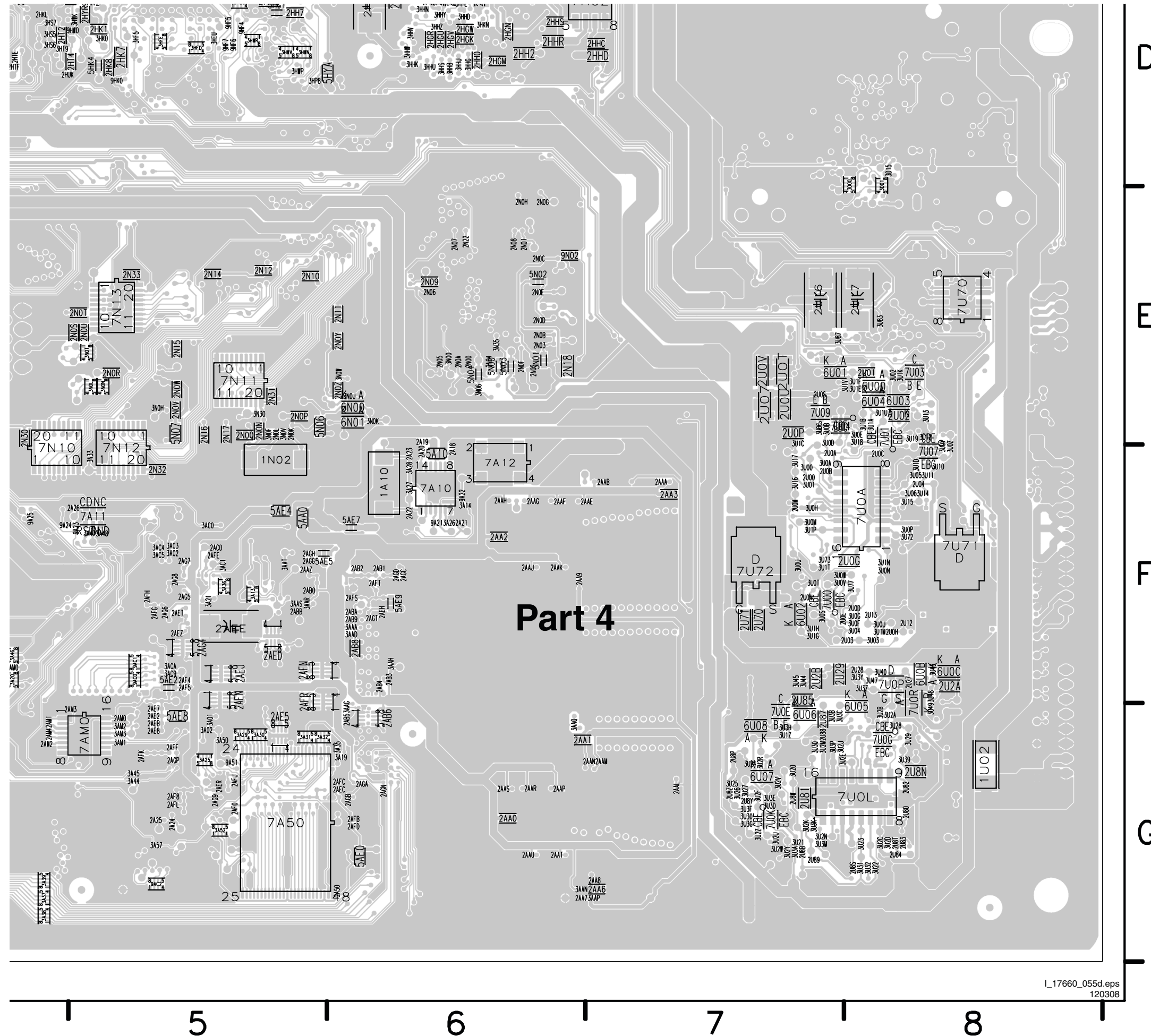
Layout Small Signal Board (Part 2 Bottom Side)



Layout Small Signal Board (Part 3 Bottom Side)



Layout Small Signal Board (Part 4 Bottom Side)

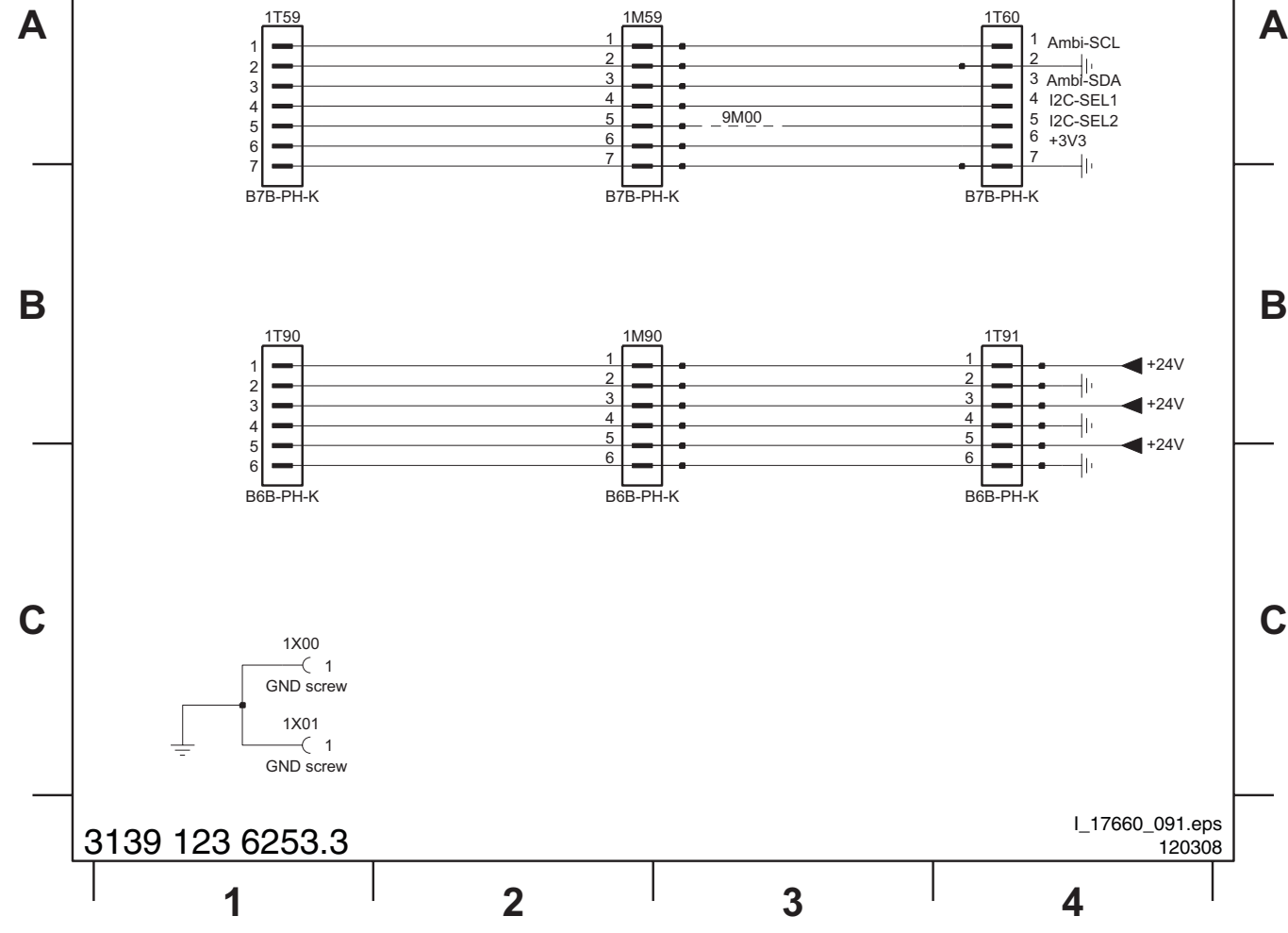


AmbiLight Interface Panel

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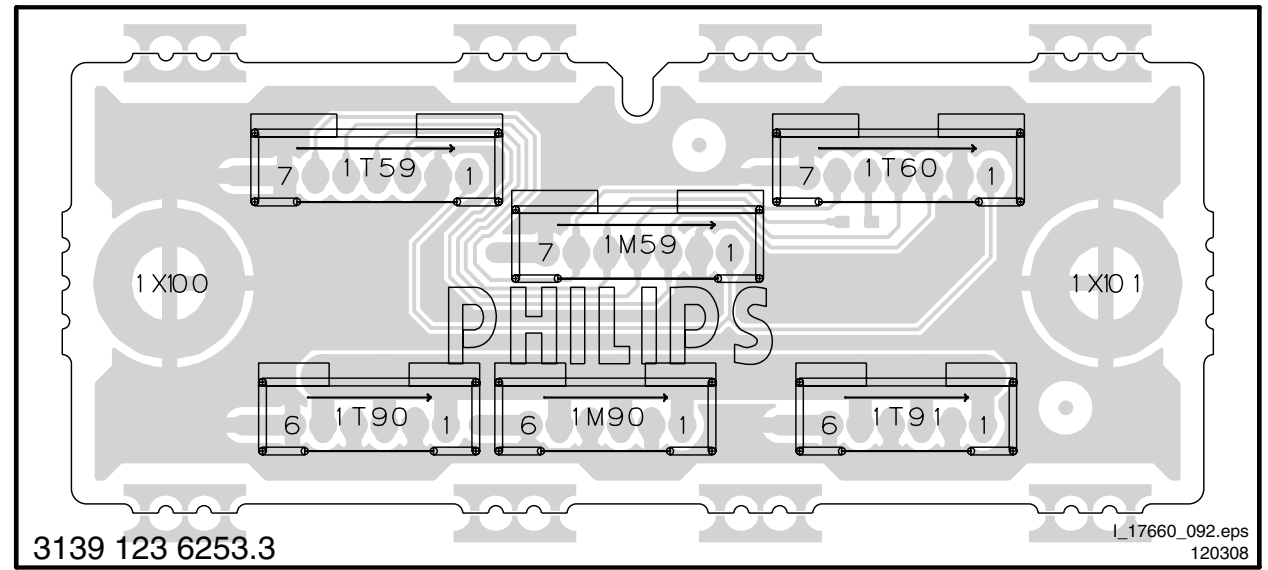
1 2 3 4

FA INTERFACE **FA**



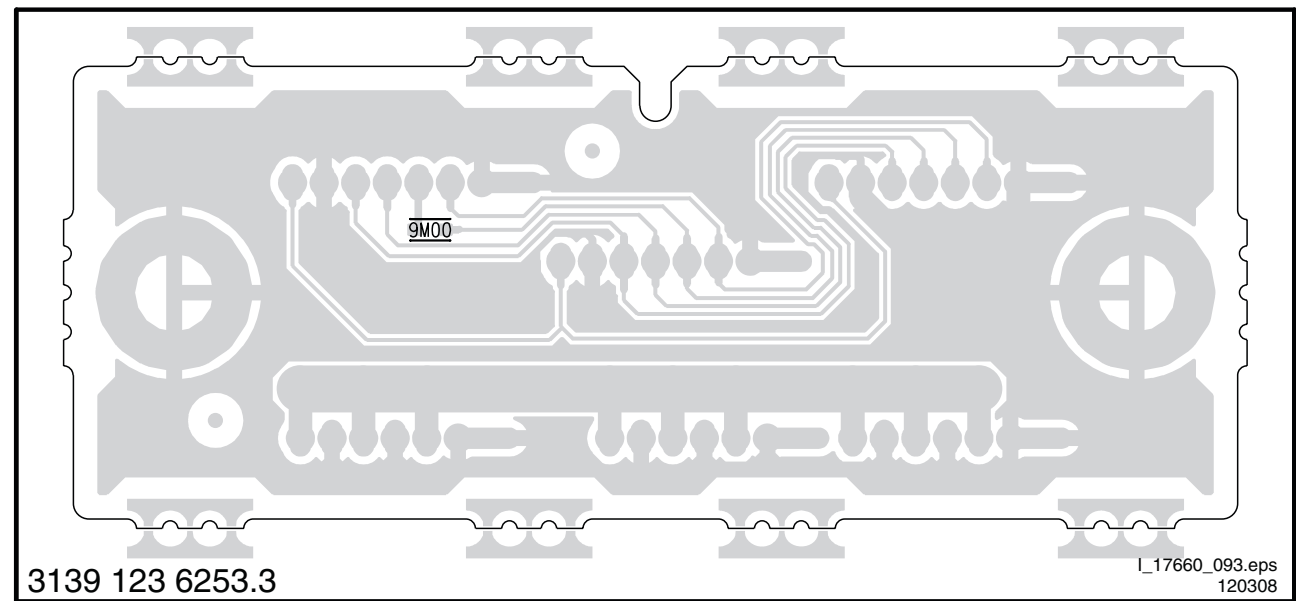
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1M59 -- 1T59 -- 1T90 -- 1X00 --
1M90 -- 1T60 -- 1T91 -- 1X01 --



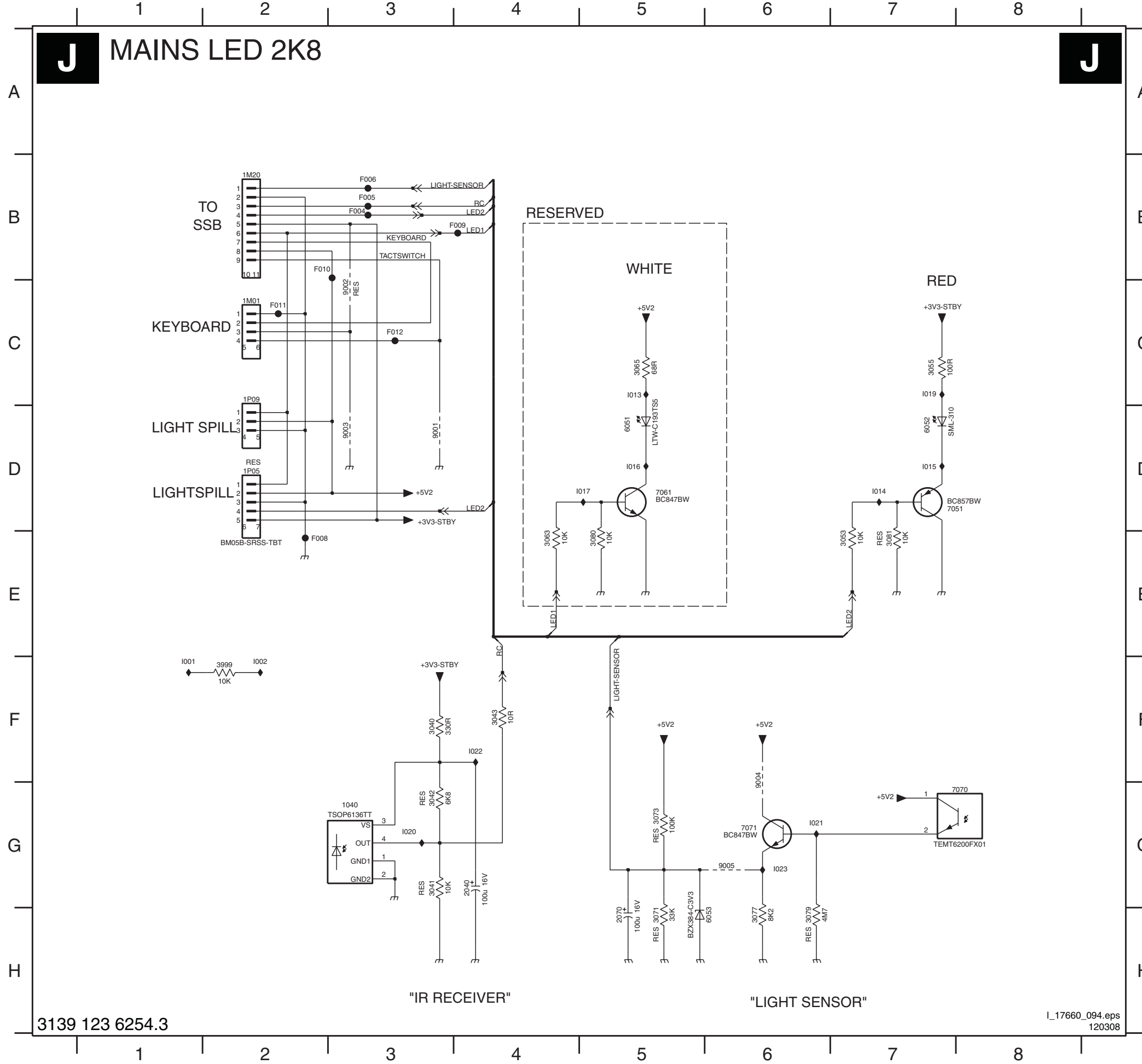
Layout AmbiLight Interface Panel (Top Side)

9M00 --



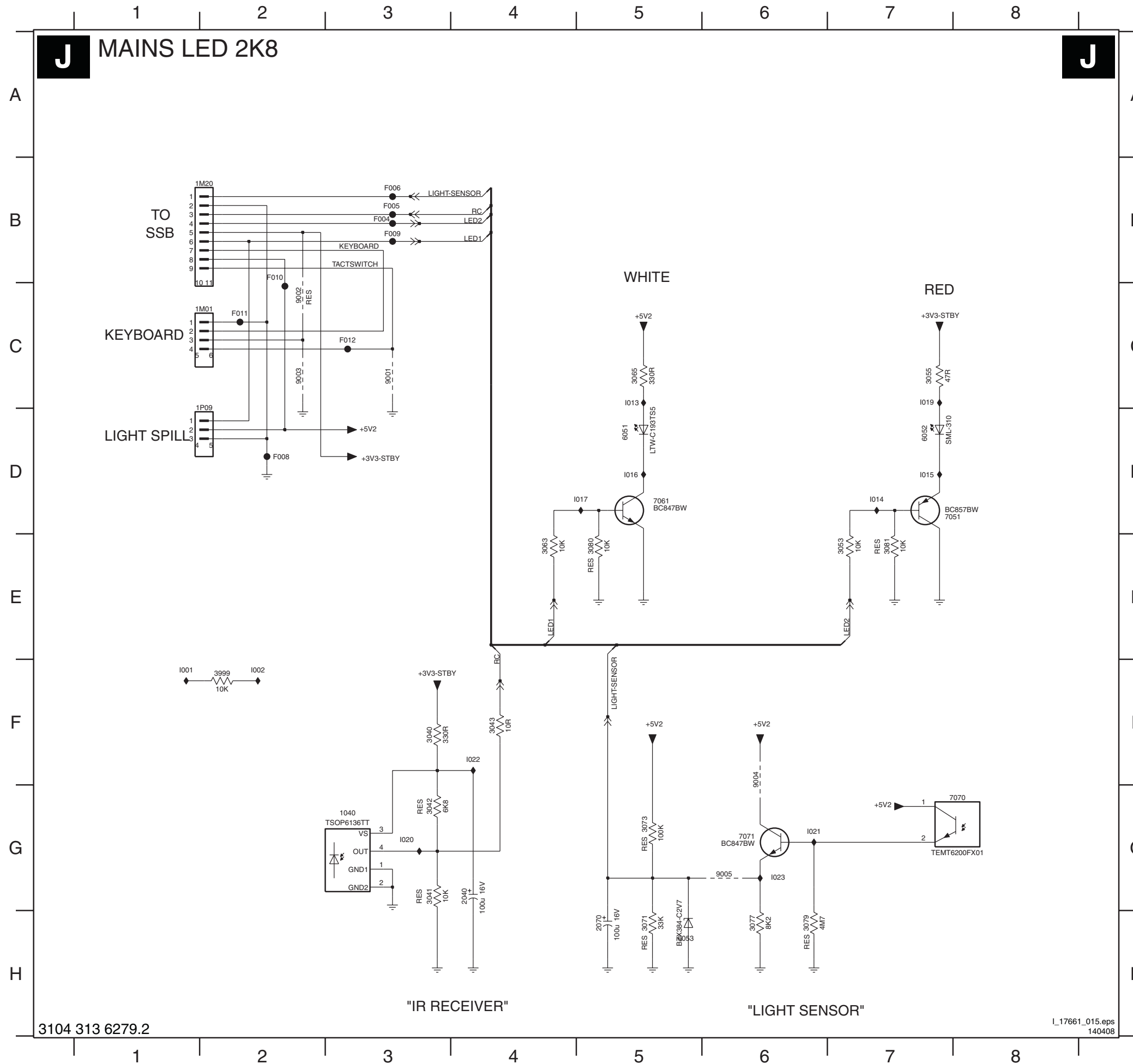
IR & LED Panel (VE)

J MAINS LED 2K8



- 1040 G3
- 1M01 C2
- 1M20 B2
- 1P05 D2
- 1P09 C2
- 2040 G4
- 2070 H5
- 3040 F3
- 3041 G3
- 3042 G3
- 3043 F4
- 3053 E7
- 3055 C7
- 3063 E4
- 3065 C5
- 3071 H5
- 3073 G5
- 3077 H6
- 3079 H6
- 3080 E5
- 3081 E7
- 3999 F2
- 6051 D5
- 6052 D7
- 6053 H6
- 7051 D7
- 7061 D5
- 7070 G8
- 7071 G6
- 9001 D3
- 9002 C3
- 9003 D3
- 9004 F6
- 9005 G6
- F004 B3
- F005 B3
- F006 B3
- F008 E2
- F009 B4
- F010 B2
- F011 C2
- F012 C3
- I001 F1
- I002 F2
- I013 C5
- I014 D7
- I015 D7
- I016 D5
- I017 D5
- I019 C7
- I020 G3
- I021 G6
- I022 F4
- I023 G6

IR & LED (ME) Panel



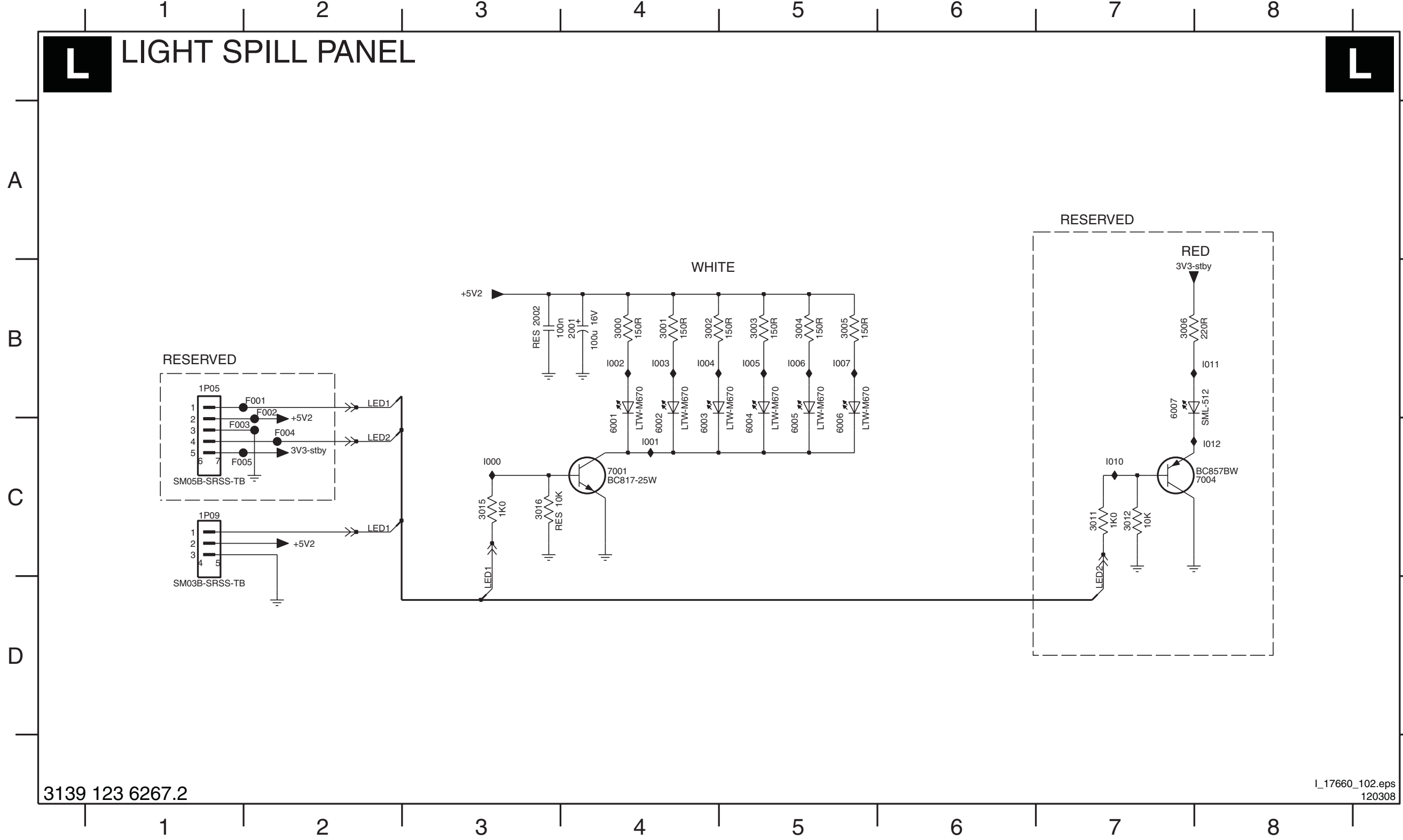
- 1040 G3
- 1M01 C2
- 1M20 B2
- 1P09 D2
- 2040 G4
- 2070 H5
- 3040 F3
- 3041 G3
- 3042 G3
- 3043 F4
- 3053 E7
- 3055 C7
- 3063 E4
- 3065 C5
- 3071 H5
- 3073 G5
- 3077 H6
- 3079 H6
- 3080 E5
- 3081 E7
- 3999 F2
- 6051 D5
- 6052 D7
- 7051 D7
- 7061 D5
- 7070 G8
- 7071 G6
- 9001 C3
- 9002 C2
- 9003 C2
- 9004 F6
- 9005 G6
- F004 B3
- F005 B3
- F006 B3
- F008 D2
- F009 B3
- F010 B2
- F011 C2
- F012 C3
- I001 F1
- I002 F2
- I013 C5
- I014 D7
- I015 D7
- I016 D5
- I017 D5
- I019 C7
- I020 G3
- I021 G6
- I022 F4
- I023 G6

3104 313 6279.2

L_17661_015.eps
140408

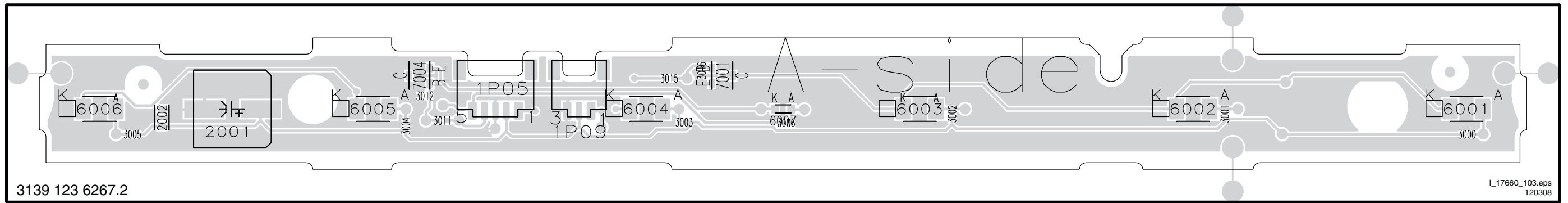
Light Guide Panel

LIGHT SPILL PANEL



- 1P05 B1
- 1P09 C1
- 2001 B4
- 2002 B3
- 3000 B4
- 3001 B4
- 3002 B4
- 3003 B5
- 3004 B5
- 3005 B5
- 3006 B7
- 3011 C7
- 3012 C7
- 3015 C3
- 3016 C3
- 6001 B4
- 6002 B4
- 6003 B4
- 6004 B5
- 6005 B5
- 6006 B5
- 6007 B7
- 7001 C4
- 7004 C8
- F001 B2
- F002 B2
- F003 C1
- F004 C2
- F005 C1
- I000 C3
- I001 C4
- I002 B4
- I003 B4
- I004 B4
- I005 B5
- I006 B5
- I007 B5
- I010 C7
- I011 B8
- I012 C8

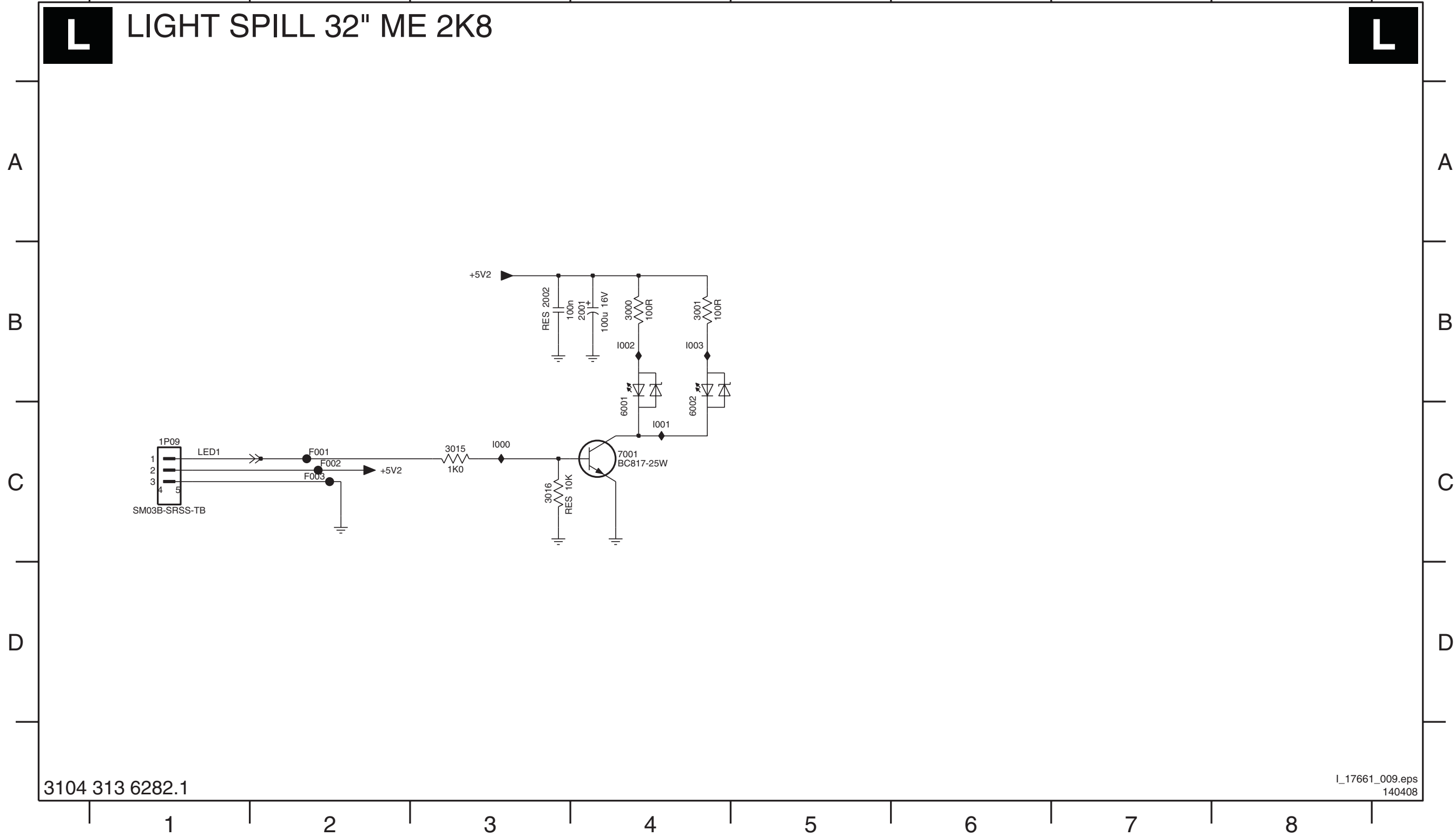
Layout Light Guide Panel (Bottom Side)



Light Guide Panel (32")

LIGHT SPILL 32" ME 2K8

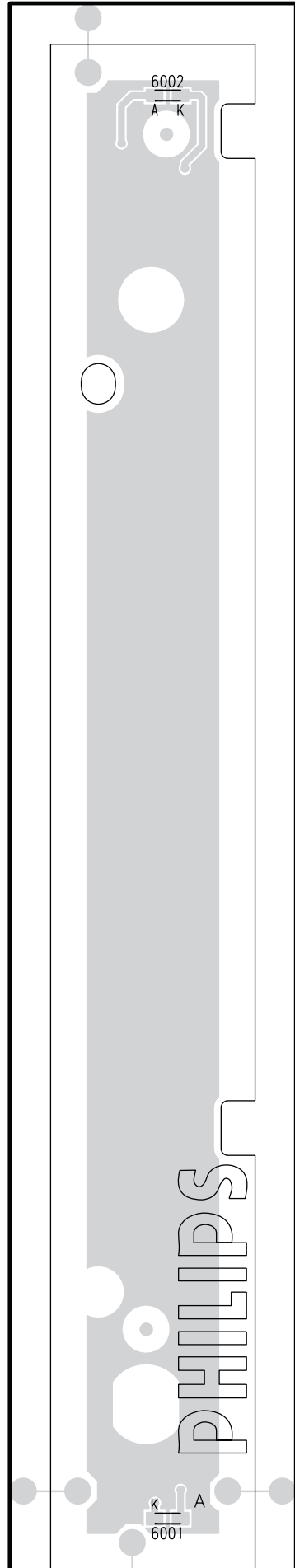
- 1P09 C2
- 2001 B4
- 2002 B3
- 3000 B4
- 3001 B4
- 3015 C3
- 3016 C3
- 6001 B4
- 6002 B4
- 7001 C4
- F001 C2
- F002 C2
- F003 C2
- I000 C3
- I001 C4
- I002 B4
- I003 B4



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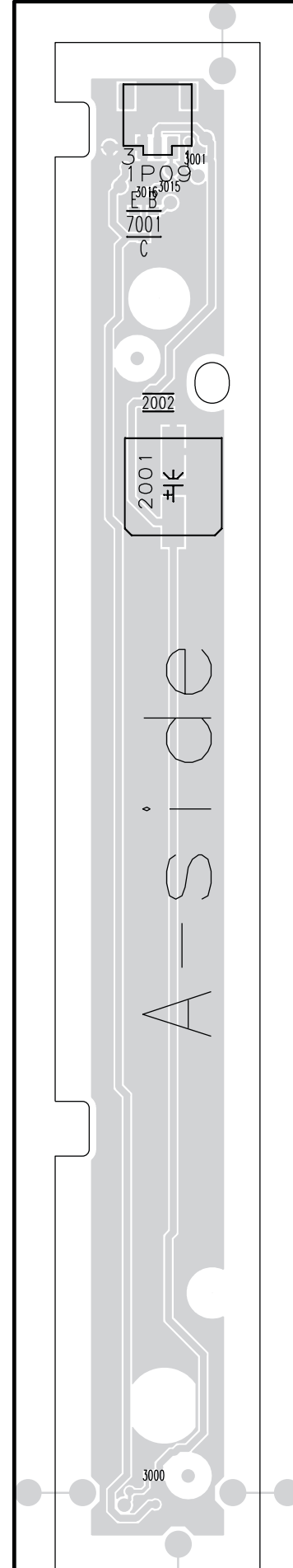
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140408

Layout Light Guide Panel (32") (Top Side)



- 6001 --
- 6002 --

Layout Light Guide Panel (32") (Bottom Side)

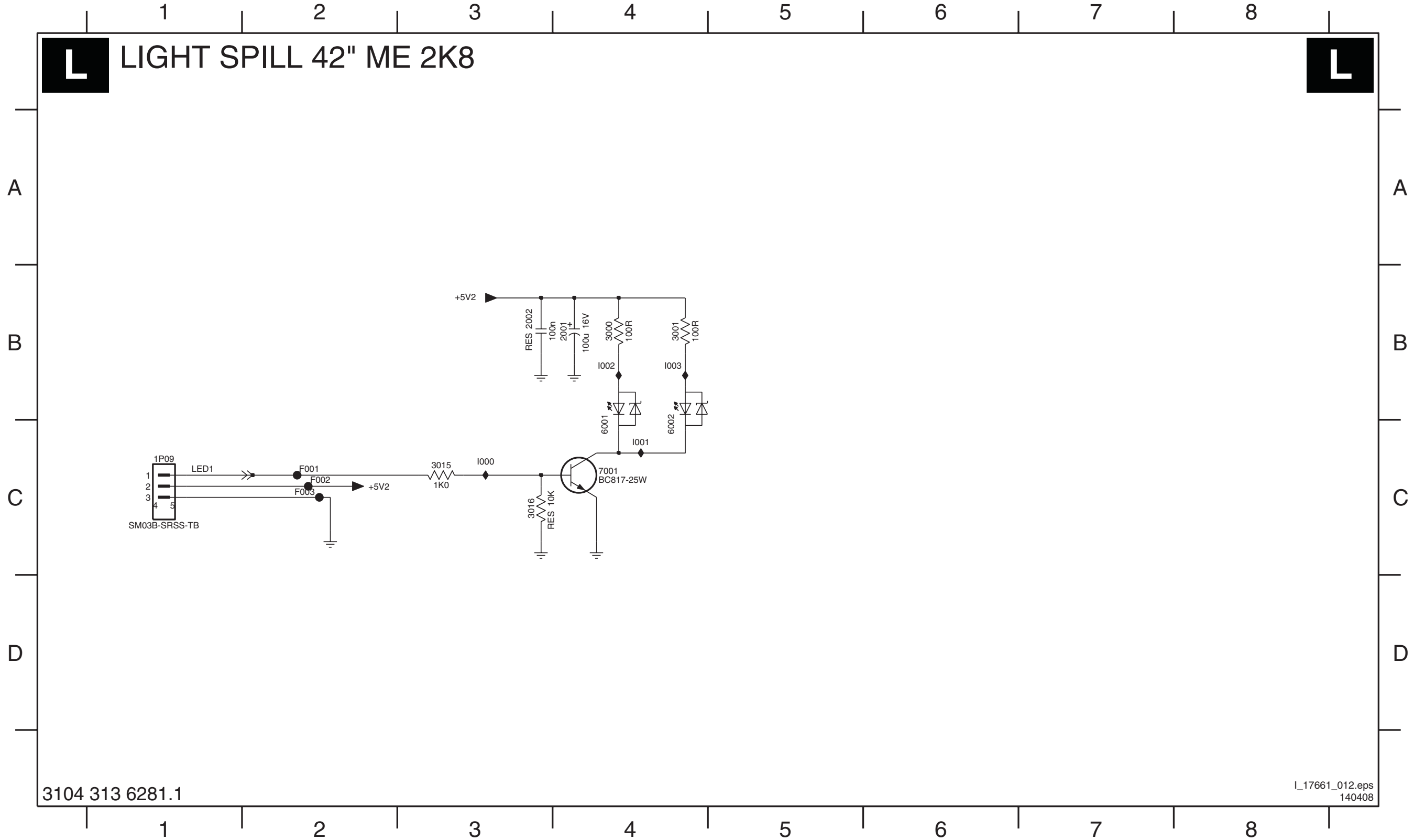


- 1P09 --
- 2001 --
- 2002 --
- 3000 --
- 3001 --
- 3015 --
- 3016 --
- 7001 --

Light Guide Panel (42")

LIGHT SPILL 42" ME 2K8

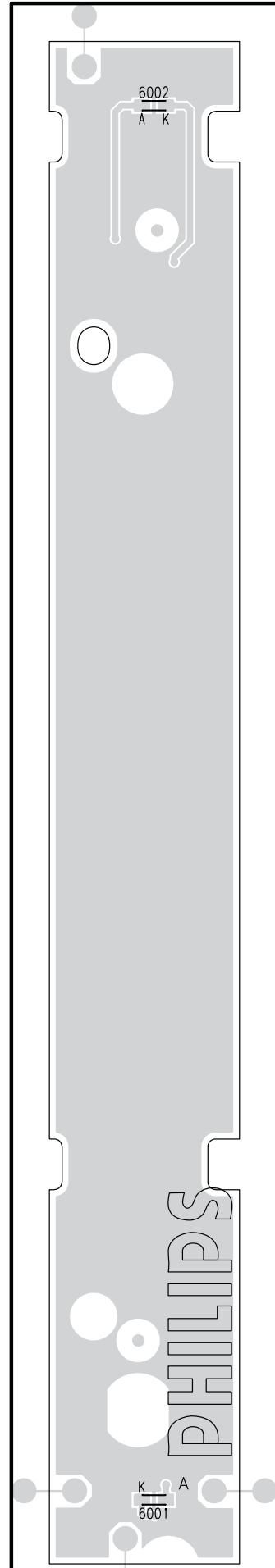
- 1P09 C2
- 2001 B4
- 2002 B3
- 3000 B4
- 3001 B4
- 3015 C3
- 3016 C3
- 6001 B4
- 6002 B4
- 7001 C4
- F001 C2
- F002 C2
- F003 C2
- I000 C3
- I001 C4
- I002 B4
- I003 B4



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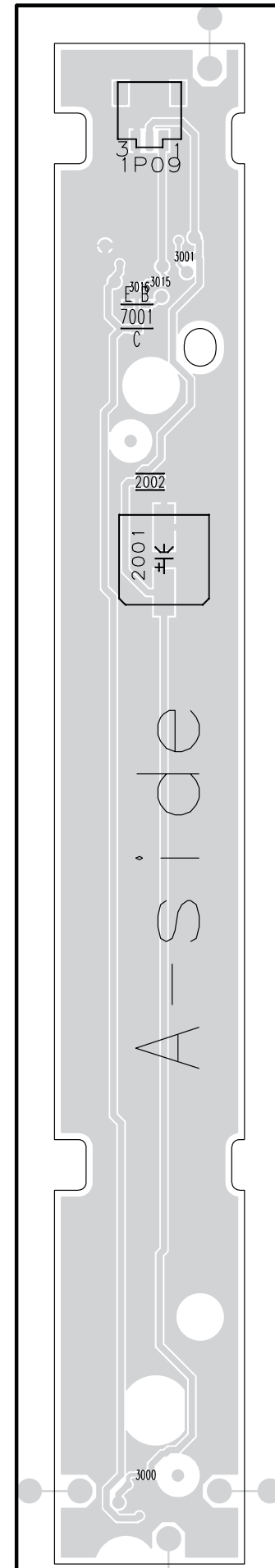
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Layout Light Guide Panel (42") (Top Side)



- 6001 --
- 6002 --

Layout Light Guide Panel (42") (Bottom Side)



- 1P09 --
- 2001 --
- 2002 --
- 3000 --
- 3001 --
- 3015 --
- 3016 --
- 7001 --

8. Alignments

Index of this chapter:

- 8.1 General Alignment Conditions
- 8.2 Hardware Alignments
- 8.3 Software Alignments
- 8.4 Option Settings
- 8.5 Reset of Repaired SSB

Note: The Service Default Mode (SDM) and Service Alignment Mode (SAM) 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: R_i > 10 Mohm, C_i < 20 pF.
- Use an isolated trimmer/screwdriver to perform alignments.

8.1.1 Alignment Sequence

- First, set the correct options:
 - In SAM, select “Options”, and then “Option numbers”.
 - Fill in the option settings for “Group 1” and “Group 2” according to the set sticker (see also paragraph “Option Settings”).
 - Press OK on the remote control **before** the cursor is moved to the left.
 - In submenu “Option numbers” select “Store” and press OK on the RC.

OR:

 - In main menu, select “Store” again and press OK on the RC.
 - Switch the set to Stand-by.
- Warming up (>15 minutes).

8.2 Hardware Alignments

Not applicable.

8.3 Software Alignments

Put the set in SAM mode (see Chapter 5 “Service Modes, Error Codes and Fault Finding”). The SAM menu will now appear on the screen. Select ALIGNMENTS and go to one of the sub menus. The alignments are explained below.

The following item can be aligned:

- Whitepoint.

To store the data:

- Press OK on the RC **before** the cursor is moved to the left.
- In main menu select “Store” and press OK on the RC.
- Press MENU on the RC to switch back to the main menu.

- Switch the set to stand-by mode.

For the next alignments, supply the following test signals via a video generator to the RF input:

- **EU/AP-PAL** models: a PAL B/G TV-signal with a signal strength of at least 1 mV and a frequency of 475.25 MHz
- **US/AP-NTSC** models: an NTSC M/N TV-signal with a signal strength of at least 1 mV and a frequency of 61.25 MHz (channel 3).
- **LATAM** models: an NTSC M TV-signal with a signal strength of at least 1 mV and a frequency of 61.25 MHz (channel 3).
- **DVB-T** models: see table “SDM default settings” in chapter 5.

8.3.1 White Point

- Set “Active control” to “Off”.
- Choose “TV menu”, “TV Settings” and then “Picture” and put:
 - “Dynamic contrast” to “Off”.
 - “Colour enhancement” to “Off”.
 - “Light sensor” to “Off” where applicable.
 - “Clear LCD” to “On” where applicable.
 - “Brightness” to “50”.
 - “Colour” to “0”.
 - “Contrast” to “100”.
- Go to the SAM and select “Alignments”-> “Whitepoint”.

White point alignment LCD screens:

- Use a 100% white screen as input signal and set the following values:
 - “Colour temperature”: “Normal”.
 - All “Whitepoint” values to: “127”.
 - “Red BL offset” values to “8”.
 - “Green BL offset” values to “8”.

In case you have a colour analyser:

- Measure with a calibrated (phosphor- independent) colour analyser 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 127) 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 press OK on the RC and then press STORE (in the SAM root menu) to store the aligned values to the NVM.
- Restore the initial picture settings after the alignments.

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).

- Select a COLOUR TEMPERATURE (e.g. COOL, NORMAL, or WARM).
- Set the RED, GREEN and BLUE default values according to the values in the “Tint settings” table.
- When finished press OK on the RC, then press STORE (in the SAM root menu) to store the aligned values to the NVM.
- Restore the initial picture settings after the alignments.

Table 8-2 Tint settings

Colour Temp.	R	G	B
Cool	113	119	123
Normal	124	117	115
Warm	127	105	77

8.4 Option Settings

8.4.1 Introduction

The microprocessor communicates with a large number of I²C ICs in the set. To ensure good communication and to make

8.4.2 Dealer Options

For dealer options, in SAM select “Dealer options” and then “Personal options”.

Table 8-3 Dealer options

Menu item	Subjects	Options	Description
Personal Options	Picture Mute	On	Picture is muted / not muted in case no input signal is detected at input connectors
		Off	
	Virgin Mode	On	TV starts up / does not start up (once) with a language selection menu after the Mains switch is turned “on” for the first time (virgin mode)
		Off	

8.4.3 (Service) Options

Select the sub menu's to set the initialization codes (options) of the set via text menus.

Table 8-4 Service options

Menu-item	Subjects	Options	Description
PIP/DS	Dual Screen	None	No DS
		One tuner dual screen	One tuner DS
		Two tuner dual screen	Two tuner DS
Display	Screen	“Value”	Used screen size, type, and resolution (see table “Option code overview” in this chapter)
	Dimming Backlight	On / Off	Feature present / not present
Video Repro	Perfect Pixel	On / Off	Perfect Pixel On / Off
	Ambient Light	Off / Mono / Stereo/Triple / Quad	Inverter not present / one inverter / two inverters / three inverters / four inverters
	Ambient Light technology	CCFL / LED	CCFL / LED
	Ambient Light driver	Pacific 3 / MOP / DFI	Ambient Light driver
	MOP	Present / Not present	MOP present / not present
	Light sensor	Present / Not present	MOP present / not present
Source selection	HDMI 3	Present / Not present	HDMI 3 Present / Not present
	HDMI CEC	On / Off	HDMI CEC On/ Off
Audio Repro	Acoustic System (Cabinet design, used for setting dynamic audio parameters)	None	
		Top A 2k8	
		MS7 model A 2k8	
		MS7 model B 2k8	
		ME7 32" 2k8	
		ME7 model A 2k8	
		ME7 model B 2k8	
		Step 63 Combat Coscone 2k8	
Miscellaneous	Tuner Type	TD1736 / TD1716	TD1736 = US, TD1716 = Europe
	Nyquist SAW filter	On / Off	SAW filter on/off
	I ² C configuration	with PCA9540 / with PCA9515 / via channel decoder	
	Upgrade assistant	Present / Not present	
Opt. no.	Group 1		xxxxx xxxxx xxxxx xxxxx (see set sticker)
	Group 2		xxxxx xxxxx xxxxx xxxxx (see set sticker)
	Store	Store	

digital diagnosis possible, the microprocessor has to know which ICs to address. The presence / absence of these specific ICs (or functions) is made known by the option codes.

Notes:

- After changing the option(s), save them by pressing the OK button on the RC **before** the cursor is moved to the left, select STORE in the SAM root menu and press OK on the RC.
- The new option setting is only active after the TV is switched “off” / “stand-by” and “on” again with the Mains switch (the NVM is then read again).

8.4.4 Opt. No. (Option numbers)

Select this sub menu to set all options at once (expressed in two long strings of numbers).

An option number (or "option byte") represents a number of different options. When you change these numbers directly, you can set all options very quickly. All options are controlled via eight option numbers.

When the NVM is replaced, all options will require resetting. To be certain that the factory settings are reproduced exactly, you must set both option number lines. You can find the correct option numbers on a sticker inside the TV set and in Table "Option code overview".

Example: The options sticker gives the following option numbers:

- 04368 00005 01066 08707
- 00000 00032 00512 00000

The first line (group 1) indicates hardware options 1 to 4, the second line (group 2) indicates software options 5 to 8. Every 5-digit number represents 16 bits (so the maximum value will be 65536 if all options are set).

When all the correct options are set, the sum of the decimal values of each Option Byte (OB) will give the option number. See tables "Option code overview" for the options.

Diversity

Not all sets with the same Commercial Type Number (CTN) necessarily have the same option code!

Use of Alternative BOM

An alternative BOM number usually indicates the use of an alternative display or power supply. This results in another display code thus in another Option code. For the power supply there is no difference. Refer to chapter 2 "Safety Instructions, Warnings, and Notes".

8.4.5 Option Code Overview

Table 8-5 Option code overview

CTN_ait BOM#	Options Group 1	Options Group 2	Displ. (code)
32PFL7623D/10_1	57617 38153 37983 45160	10120 23840 00137 00000	136
32PFL9603D/10_1	57617 36099 38623 45160	10136 23842 00145 00000	152
32PFL9603D/10_2	57617 36099 38623 45160	10131 23842 00145 00000	147
37PFL9603D/10_1	57617 36099 38623 45160	10125 23842 00129 00000	141
42PFL7403D/10_1	24833 37125 37983 45160	10126 23840 00138 00000	142
42PFL7403S/60_1	24833 37125 37983 45160	10126 23840 00138 00000	142
42PFL7423D/12_1	24833 37125 38623 45160	10126 23842 00138 00000	142
42PFL7423H/12_1	25089 37125 38623 45160	10126 23974 00170 00000	142
42PFL7433D/12_1	24833 37125 38623 45160	10126 23842 00138 00000	142
42PFL7433S/60_1	24833 35077 38623 45160	10126 23842 00138 00000	142
42PFL7623D/10_1	57617 38151 37983 45160	10114 23840 00153 00000	130
42PFL9603D/10_1	57617 34051 38623 45160	10126 23842 00129 00000	142
42PFL9603H/10_1	57873 34051 37599 45160	10126 23974 00161 00000	142
42PFL9703D/10_1	57633 34051 38623 45160	10127 23842 00129 00000	143
42PFL9703D/79_1	24833 34051 38623 45165	10127 21538 00129 00000	143
47PFL7403D/10_1	24833 37125 37983 45160	10129 23840 00138 00000	145
47PFL9603D/10_1	57617 34051 38623 45160	10129 23842 00129 00000	145
47PFL9603D/10_2	57617 34051 38623 45160	10129 23842 00129 00000	145
47PFL9703D/10_1	57633 34051 38623 45160	10130 23842 00129 00000	146
47PFL9703D/10_2	57633 34051 38623 45160	10130 23842 00129 00000	146
47PFL9703D/79_1	24833 34051 38623 45165	10130 21538 00129 00000	146
52PFL9703D/10_1	57633 34051 38623 45160	10134 23842 00129 00000	150

Important: after having edited the option numbers as described above, you **must** press OK on the remote control **before** the cursor is moved to the left!

8.5 Reset of Repaired SSB

A very important issue towards a repaired SSB from a service repair shop, implies the reset of the NVM on the SSB.

A repaired SSB in service should get the service Set type "00PF000000000" and Production code "0000000000000". Also the virgin bit is to be set. To set all this, you can use the ComPair tool.

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

Index of this chapter:

- 9.1 Introduction
- 9.2 Main Supply
- 9.3 On-Board Platform Supply
- 9.4 On-board DC/DC Converters
- 9.5 Front-End
- 9.6 PNX85xx
- 9.7 Back-end
- 9.8 Ambient Light, Spartan-3
- 9.9 DLNA
- 9.10 Abbreviation List
- 9.11 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.
- For a good understanding of the following circuit descriptions, please use the wiring, block (chapter 6) and circuit diagrams (chapter 7). Where necessary, you will find a separate drawing for clarification.

overview of the TV522/92 architecture can be found in next figure "Architecture of TV522/92 platform".

Sets with all resolutions @ 50 Hz use the PNX85xx SoC and the PNX5100 Video Back-end Processor for video processing. With the same configuration, a resolution of 1366 × 768p @ 100 Hz, or even 1920 × 1080p @ 100 Hz can be achieved.

9.1 Introduction

This chassis (member of the "TV522/92" platform) is a derivative from the Q528.1E LA chassis (member of the "TV520" platform). It comes with a two new stylings called "ME8" for sets from the xxPFL7xxx series and "VE8" for sets from the xxPFL9xxx series. In some sets, a light strip is incorporated on the front side of the set referred to as "Light Guide". This generates a diffuse light through a light pipe. The platform incorporates an improved (faster tuning, better phase noise performance, etc.) tuner block with separate support for DVB-C and DVB-T.

It's built around the PNX85xx "System on Chip" (SoC), which handles the video and audio processing, while the PNX51xx takes care of the video back-end processing. The Spartan-3 FPGA is used to process the data for the Pixelated AmbiLight units and can run the two, three and four sided AmbiLight versions.

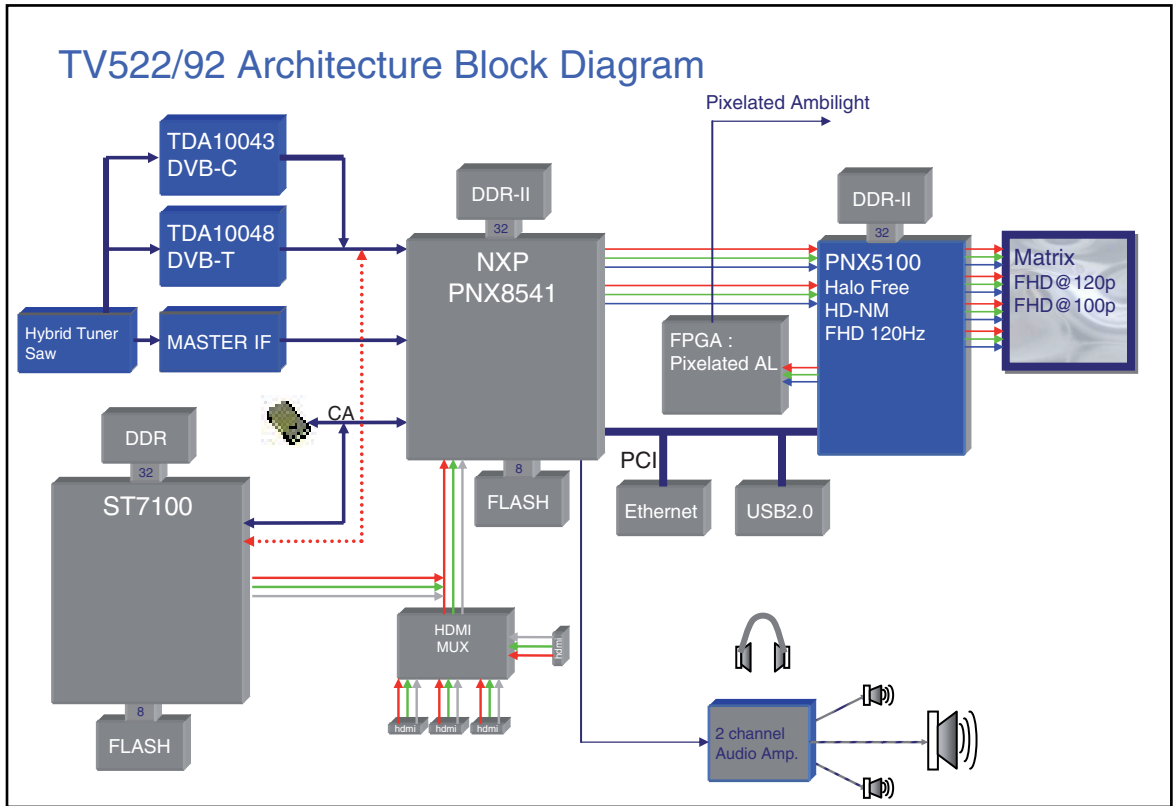
9.1.1 Features

The main features for this chassis are:

- 1080p resolution @ 100 Hz (in some sets).
- High performance back-end processing Perfect Pixel HD engine capable of 300 Mpixels/sec. With this technology, each pixel of the incoming picture is enhanced to better match the surrounding pixels, resulting in a more natural picture. Artifacts and noise in all sources from multimedia to standard TV to highly-compressed high-definition (HD) are detected and reduced. This results in a clean and razor sharp image.
- ClearLCD, a technology that uses scanning and back light dimming technology to reduce the motion blur on an LCD screen, caused by the slow response time and the "sample and hold" characteristic of LCD.
- The introduction of a module referred to as "Light Guide" on the front side of the set (in some sets).
- The introduction Pixelated LED AmbiLight (in some sets).
- Improved tuner compared to Q528.1E LA chassis
- Support of DVB-C reception (in some sets).
- For all other features: refer to the Q528.1E LA/LB Service Manual.

9.1.2 TV522/92 Architecture Overview

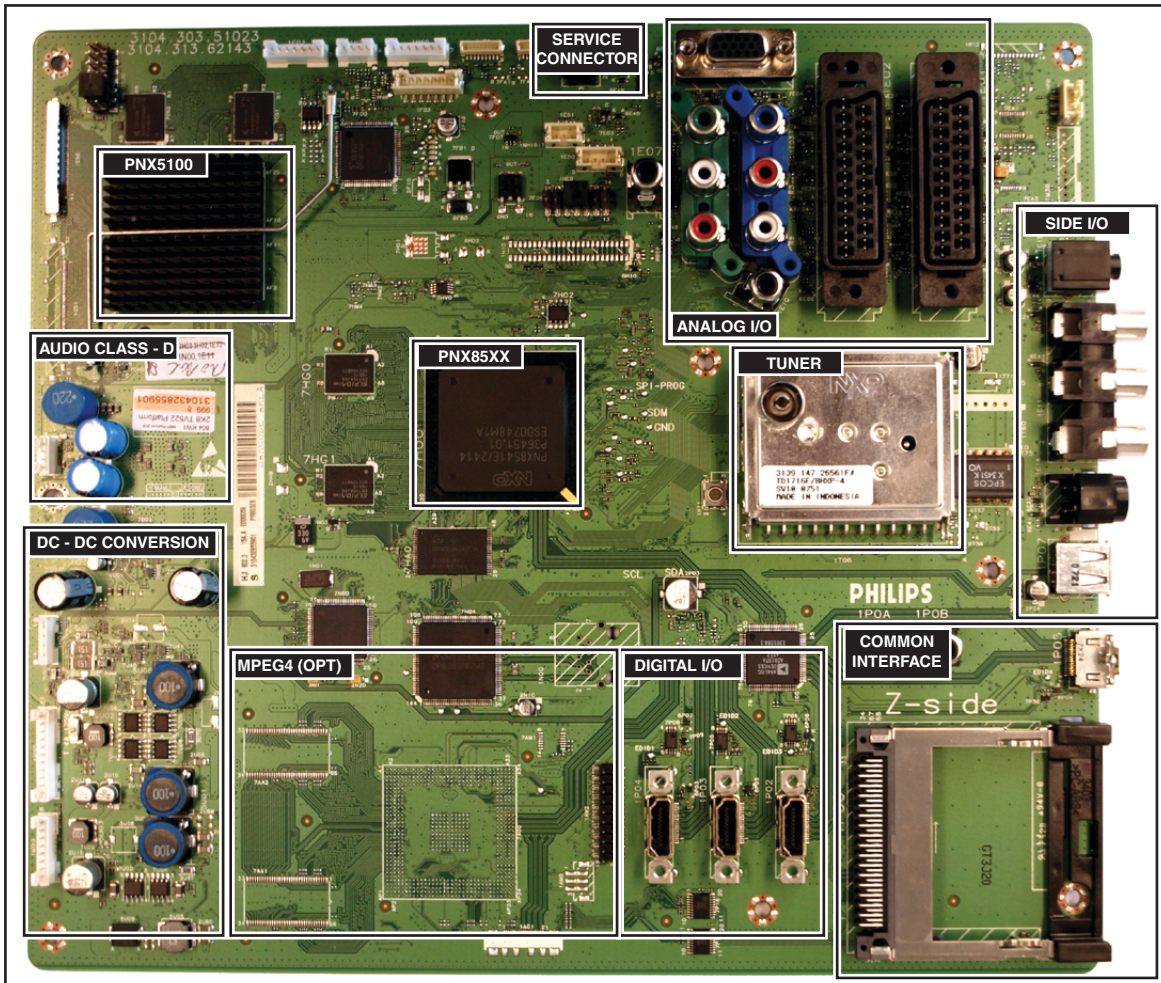
For details about the chassis block diagrams refer to chapter "Block diagrams, Test Point Overview, and Waveforms". An



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Figure 9-1 Architecture of TV522/92 platform

9.1.3 SSB Cell Layout



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Figure 9-2 SSB top view

9.2 Main Supply

9.2.1 32" Sets

The 32" sets in this chassis can come with two different buy-in Delta supply units:

- DPS-230B
- DPS-182CP A.

When defective, a new panel must be ordered and the defective panel must be sent for repair, unless the main fuse of the panel is broken. Always replace a defective fuse with one with the correct specifications! This part is available in the regular market.

Refer to the Spare Parts list for the order number of the supply unit.

DPS-230B

The supply unit delivers the following voltages to the chassis:

- 60/24V_I and 12V_I(connector CN2, LCD panel, 3 pins)
- 24V_A (connector CN4, Ambilight, 6 pins).
- 12 V_B (connector CN5, Bolt-on, 4 pins)
- +12 V_B (connector CN5a, Bolt-on provisional, 4 pins)
- 3.3 V_{SB}, 12 V_{SSB}, +12 V_{audio} and -12 V_{audio} (connector CN6, SSB, 11 pins)
- +12 V_{SSB} (connector CN7, SSB, 8 pins).

DC output protections - Short Circuit Protection

The 3.3 V standby power circuit has short circuit protection with an auto restart function and an over voltage protection which operates within a range of 120 to 140% of the nominal value. In case a short-circuit situation occurs at the 12 V, 12 V_B or 24 V_A output the over voltage protection operates within a range of 120 to 140% of the nominal value.

In case a short-circuit situation occurs at one of the + 12 V_A or - 12 V_A outputs, the over voltage protection intervenes at a maximum value of 19 V.

In case a short-circuit situation occurs at the 24 V_{INV} output, the supply unit will auto-recover when the fault condition is

removed. It operates within a range of 120 to 140% of the nominal value.

DPS-182CP A

The supply unit delivers the following voltages to the chassis:

- 24 V_{inv}(connector CN2 and CN3, LCD panel, 14 and 12 pins)
- 24 V_A (connector CN4, Ambilight, 6 pins).
- 12 V_B (connector CN5, Bolt-on, 4 pins)
- +12 V_B (connector CN5a, Bolt-on provisional, 4 pins)
- 3.3 V_{SB}, 12 V, +12 V_{audio} and -12 V_{audio} (connector CN6, SSB, 11 pins)
- +12 V (connector CN7, SSB, 8 pins).

DC output protections - Short Circuit Protection

The 3.3 V standby power circuit has short circuit protection with an auto restart function and an over voltage protection which operates within a range of 120 to 140% of the nominal value. In case a short-circuit situation occurs at the 12 V, 12 V_B or 24 V_A output the over voltage protection operates within a range of 120 to 140% of the nominal value.

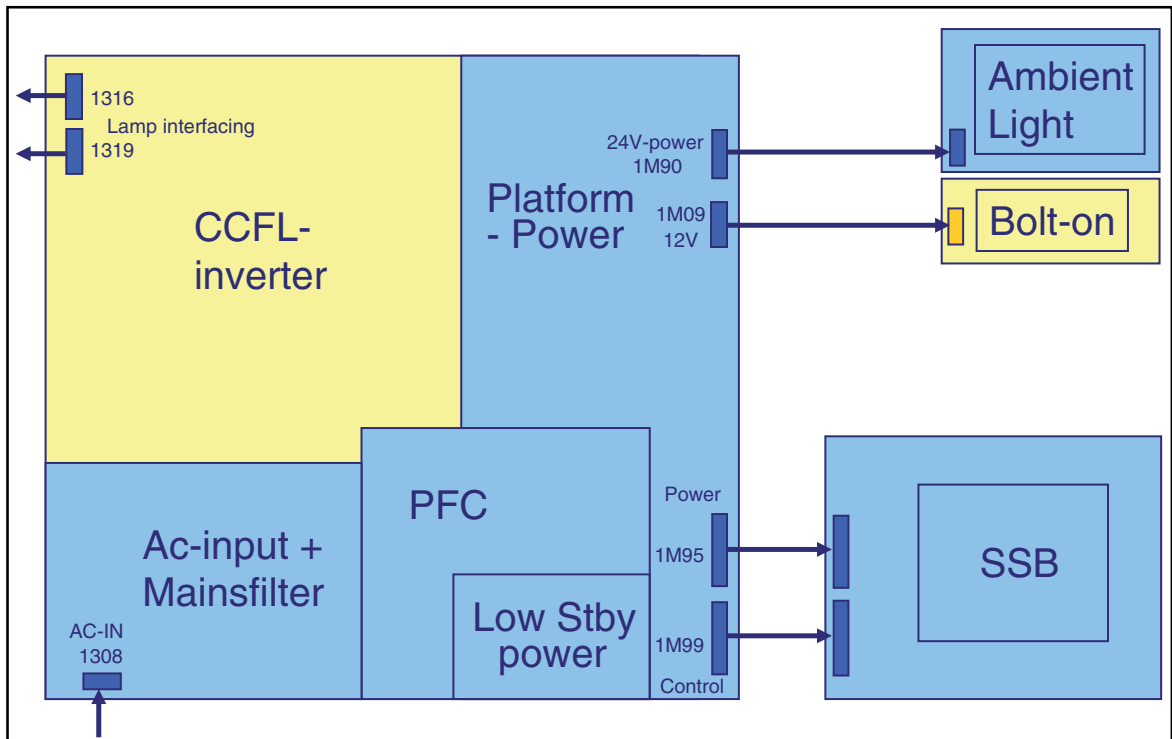
In case a short-circuit situation occurs at one of the + 12 V_A or - 12 V_A outputs, the over voltage protection intervenes at a maximum value of 19 V.

In case a short-circuit situation occurs at the 24 V_{INV} output, the supply unit will auto-recover when the fault condition is removed. It operates within a range of 120 to 140% of the nominal value.

9.2.2 37" and 42" Sets

The 37" and 42" sets in this chassis come with a IPB supply unit. The difference between both is the adjustment of the lamp current in the high-voltage inverter: 120 mA for 37" and 135 mA for 42" panels, adjustable with potentiometer 3224 (diagram A2).

Refer to the Spare Parts list for the order number of the supply unit.



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Figure 9-3 High level Power Architecture IPB42

The supply unit delivers the following voltages to the chassis:

Pin	1316	1319	1M09	1M90	1M95	1M99
1	HVR	HVL	+12V	+24V	+3V3standby	+12V
2	HVR	HVL	+12V	GND	Standby	+12V
3	n.c.	n.c.	GND	+24V	GND	GND
4	-	-	GND	GND	GND	GND
5	-	-	-	+24V	GND	Lamp On/Off
6	-	-	-	GND	+12V	DIM
7	-	-	-	-	+12V	Boost
8	-	-	-	-	+12V	Analog/PWM
9	-	-	-	-	+Vsnd	-
10	-	-	-	-	GND	-
11	-	-	-	-	-Vsnd	-

9.2.3 47" Sets

The 47" sets in this chassis come with a buy-in supply unit and is a black-box for Service. When defective, a new panel must be ordered and the defective panel must be sent for repair, unless the main fuse of the panel is broken. Always replace a defective fuse with one with the correct specifications! This part is available in the regular market.

Refer to the Spare Parts list for the order number of the supply unit.

9.3 On-Board Platform Supply

In this platform, an on-board platform supply has been foreseen. This means that the mains voltage, after filtering, is fed to the SSB.

The supply is a Self Oscillating Power Supply (SOPS) and working according to the Quasi Resonant Conversion (QRC) principle. For the on-board DC/DC converters refer to diagrams B01A, B01B and B01C. For a complete description of the On-Board Platform Supply, refer to the Q528.1E LA Service Manual.

9.4 On-board DC/DC Converters

In this platform, on-board DC/DC converters have been foreseen. See also diagrams B01A, B01B and B01C.

9.4.1 PSU Start-up Sequence

1. If the input voltage of the DC/DC converters is around 12 V (measured on the decoupling capacitors 2U01/2U02) and the ENABLE signals are "low" (active), then the output voltages should have their normal values.
2. First, the Stand-by Processor activates the +1V2 supply (via ENABLE-1V2).
3. Then, after this voltage becomes present and is detected OK (about 100 ms), the other voltage of +3V3 will be activated (via ENABLE-3V3).
4. The current consumption of controller IC 7U00 is around 20 mA (that means around 200 mV drop voltage across resistor 3U01).

9.4.2 Internal Protection

- Provides a SUPPLY-FAULT signal (active "low"), when the output voltage of any DC/DC converter is out of its limits ($\pm 10\%$ of the normal value). In such cases, the Stand-by Processor will immediately stop the supplies by sending a "high" control signal towards the external and internal supplies: ENABLE-xVx, POD-MODE, ON-MODE, and STAND-BY.

Note: The SUPPLY-FAULT control signal is "low" when any DC/DC converter is disabled by its control signal (ENABLE-xVx) and +12VSW is present, therefore it is ignored during start-up!

- The internal protection works together with the output over-voltage detector transistors 7U07-1 and 7U07-2.

9.4.3 1.2V and 3.3V DC/DC Converters

Introduction

The circuit used is a so-called "synchronous buck converter".

Some characteristics:

- Switching frequency: approx. 250 kHz.
- Efficiency: approx. 90%.
- Built-in output over-voltage and over-current protections
- Soft start.
- Software controlled "on/off" (via ENABLE line).

Block diagram

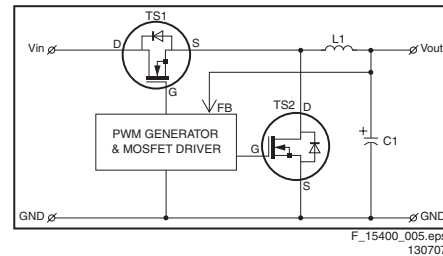


Figure 9-4 Block diagram synchronous buck converter.

The advantage of a "synchronous buck converter" over a "classical buck converter" is its better efficiency (about 90%). The difference between the two is that in a synchronous buck converter the "low-side" diode is replaced by a MOSFET TS2 (item 7U05). This, because the voltage drop across a MOSFET is smaller than the forward voltage drop of a diode. This second MOSFET TS2 conducts current during the "off" times of the first MOSFET TS1 (item 7U08 at the input side). The upper MOSFET TS1 conducts, to transfer energy from the input to the inductor L_1 and load R_L , while the lower MOSFET TS2 conducts to circulate the inductor current (free wheel). The synchronous PWM control block regulates the output voltage by modulating the conduction intervals of the upper and lower MOSFETs.

PWM Generator and MOSFET Drivers

This circuit is a one-chip solution (item 7U0A). It contains all the circuitry for two independent buck regulators (3V3 and 1V2). The MOSFETs 7U08, 7U02, 7U05 and 7U06 are the switching transistors, they are conducting alternatively.

- Time sequence 1: 7U08/7U02 is conducting; energy is stored in coil 5U01/5U00. The current is flowing from the +12VSW power supply source.
- Time sequence 2: 7U08/7U02 is blocked; energy is stored in coil 5U01/5U00.
- Time sequence 3: 7U05/7U06 is conducting, and the current circuit is now closed via 7U05/7U06, 5U01, 5U00, 2U06/2U0Z/2U07/2U0T/2U0U/2U0V, and the load. So the energy stored in the coil during time sequence T1 is consumed during sequence T3. The signal on the gate 7U05/7U06 is 180 degrees turned compared with the signal on the gate 7U08/7U02.

Voltage Booster

This circuit is built around capacitors 2U29 and 2U26, resistor 3U62/3U0A1, diodes 6U01 and 6U00, and transistor 7U03. It generates the +18 V boost voltage on pin 4 of item 7U00, to drive the "high-side" power MOS-FET 7U08/7U02. The voltage is generated only during normal operation of the converter; therefore, any drop in its value means an internal fault condition, which is sensed by the internal protection circuit. The AC component of the voltage on the source of transistor 7U08/7U02 is rectified by the diodes and added to the input voltage, resulting into the boost voltage. The resistor 3U02/3U1K limits the peak current through the rectifier diodes.

Over-current Detection

Over-current detection is done via components 3U05, 3U06, 3U15, 3U14, and 2U04 for the 3.3 V converter and 3U00, 3U01, 3U16, 3U17, and 2U00 for the 1.2 V converter.

Under-voltage Detection

There is an additional circuit (7U01-1, 7U01-2 and 6U04) to switch "Off" the 3.3 V converter in case the +12VS drops below 9 V.

Service Tips

- When a power MOS-FET is found defective, replace the other power MOS-FET as well.
- For a normal operation of the converter, it is important to check the switching frequency and the value of the boost voltage.

9.5 Front-End

Refer to figure "9-1 Architecture of TV522/92 platform" earlier in this chapter for details. Refer also to block diagrams B02A, B02B and B02C.

9.5.1 Device specifications**Tuner (TD1716)**

The tuner has the following specifications:

- Hybrid tuner with symmetrical IF output.
- Down conversion from RF to IF frequency (picture carrier 39.875 MHz at analogue reception, centre frequency 36.166 MHz at digital reception).
- AGC control signal is coming from master IF device (TDA9898).
- Only 5 V external supply needed (internal DC-DC conversion to 3.3 V).
- 4 MHz output is used by channel decoder (TDA10048) and master IF device (TDA9898).

The application in this chassis is as follows:

- I²C address C0.
- Broadband AGC, no IF section.
- I²C communication buffered via MUX.
- Gain to obtain optimised Master IF input level; AGC control is completely inside the tuner.
- Output level ca. 110 dB μ V (for strong input signal).

Repair tip: after replacement of the tuner, the option code should be checked, even when the set appears to function correctly! Refer also to chapter 5 "Service Modes, Error Codes, and Fault Finding".

Master IF (TDA9898)

- Down conversion from IF to low-IF frequency.
- Down conversion from IF to SIF.
- CVBS output.

The application in this chassis is as follows:

- I²C address 0x86.
- Down conversion from IF to low-IF frequency (5.166 MHz centre frequency).
- Advanced filtering (for further rejection of adjacent channels).
- Gain to obtain optimised channel decoder level. Control signal is coming from channel decoder.

SAW filter**X6874D and X3451K**

- Analogue sound for BG, I, DK, L, L'.
- DVB-T (digital reception sound **and** video).

For digital reception, the application in this chassis is as follows:

- Rejection of adjacent channels.
- Switching is done by Master IF (3 inputs).
- One SAW covering both 7 and 8 MHz channels.

X6774D

- Analogue video for BG, I, DK, L, L'.

Channel decoder (TDA10048) DVB-T

The channel decoder has the following specifications:

- I²C address 0x10.
- Decoding from low-IF to MPEG transport stream.
- During decoding: de-modulation, de-interleaving and error correction.
- External clock buffer required.
- No start-up requirements.
- AGC monitor.

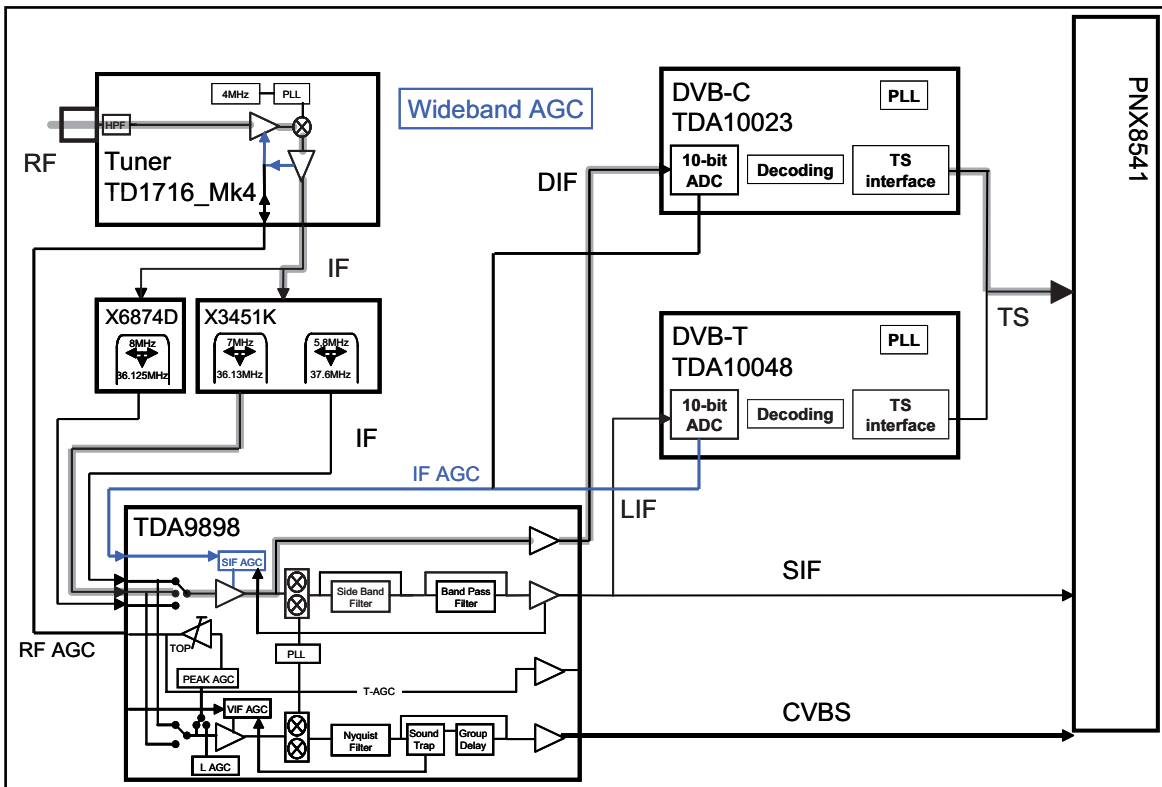
Channel decoder (TDA10023) DVB-C

The channel decoder has the following specifications:

- I²C address 0x1C.
- Decoding from low-IF to MPEG transport stream.
- During decoding: de-modulation, de-interleaving and error correction.
- External clock buffer required.
- No start-up requirements.
- AGC monitor.

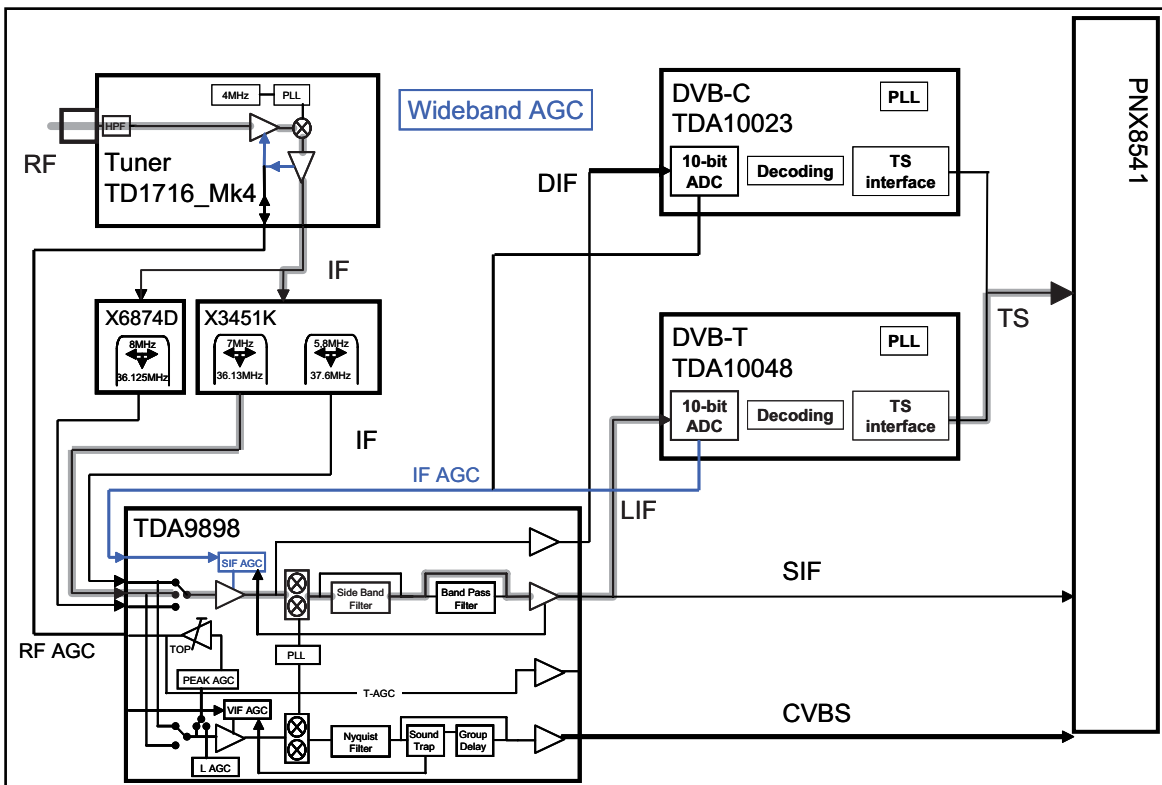
9.5.2 Digital signal processing (front-end)

Refer to figure "9-5 DVB-C signal broadcast reception block diagram" and "9-6 DVB-T signal broadcast reception block diagram" for details of digital signal processing.



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Figure 9-5 DVB-C signal broadcast reception block diagram



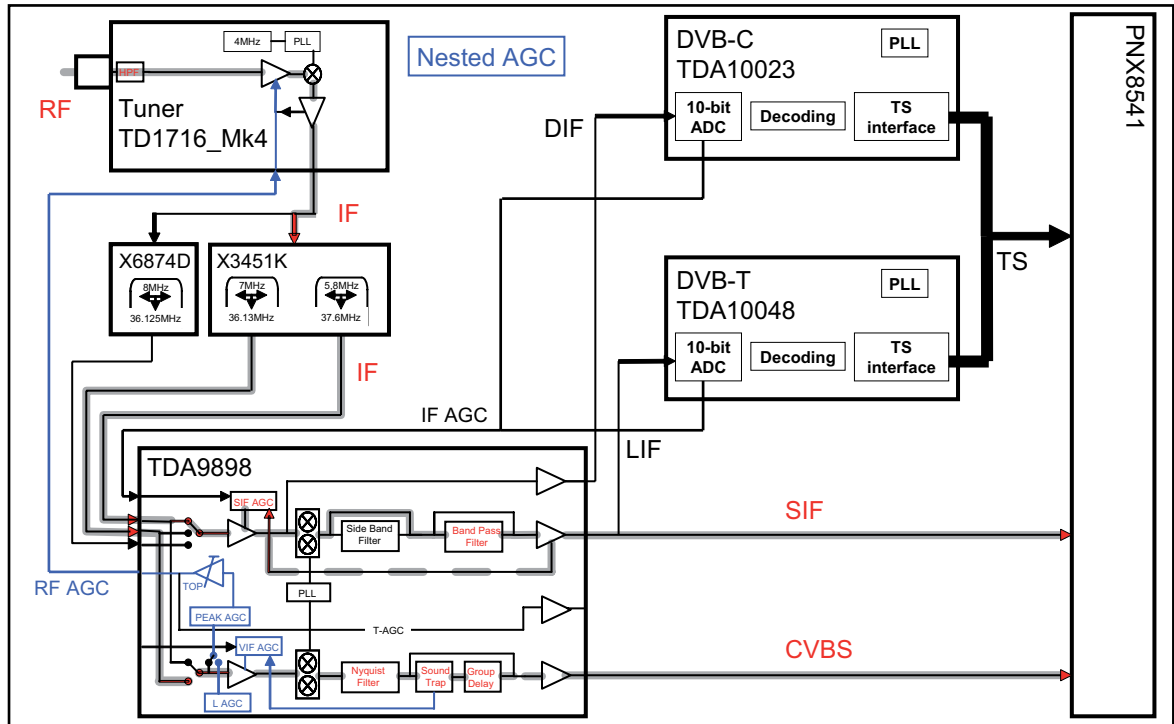
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Figure 9-6 DVB-T signal broadcast reception block diagram

9.5.3 Analogue signal processing (front-end)

diagram” for details of analogue signal processing.

Refer to figure “9-7 Analog video broadcast reception block



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Figure 9-7 Analog video broadcast reception block diagram

9.6 PNX85xx

In this chassis, the PNX85xx is responsible for the audio/video source decode functions and video improvement processing on both digital and analogue sources. It includes a multi-standard digital video decoder for MPEG2, and a multi-standard analogue video decoder for support of PAL, NTSC, and SECAM standards. Refer to diagram B04 for details.

9.6.1 Video Subsystem

Refer to figure "9-8 PNX85xx video flow diagram" for a clarification of the blocks that are used in this device.

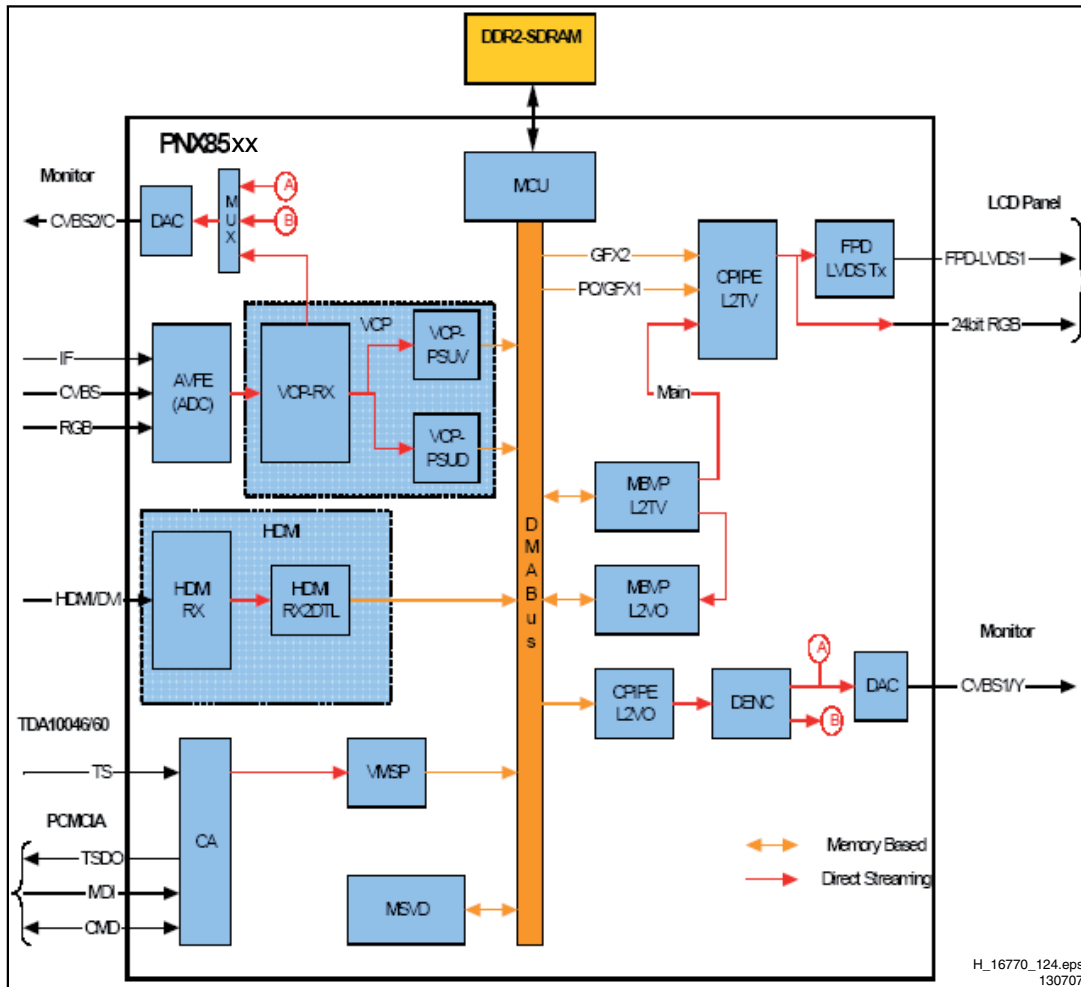


Figure 9-8 PNX85xx video flow diagram

The Analogue Video Front-End (AVFE) provides the interface to external analogue baseband video sources and IF inputs. It supports the following inputs:

- 1fh - CVBS, Y/C, YPbPr, RGB.
- 2fh - YPbPr, RGB.
- IF - low-IF, SSIF.

The Video Capture Pipe (VCP) is used to capture analogue video inputs and consists of a number of blocks:

- The VCP-RX block that contains digital IF processing, a Video Decoder, a 3D-combfilter, and a VBI-Data Capture unit together with a number of smaller control functions.
- The VCP-PSUD which allows VBI data, such as Teletext and Closed Captioning, to be stored in memory.
- The VCP-PSUV which allows captured video data to be stored in memory.

The HDMI receiver interface supports the capture of signals compliant with the HDMI V1.1 specification. It consists of two blocks:

- Block HDMI-RX contains the de-serializer, HDCP, audio and video data capture and info packet extraction, together with audio formatting.
- Block HDMI-RX2DTL allows captured video data to be stored in memory.

The Memory Based Video Processor TV (MBVP_L2TV) is used on the main video channel for de-interlacing and scaling of images, together with video measurement functions.

The Video Composition Pipe TV (CPIPE_L2TV) is used to perform picture improvements on video and merge the video layer and 2 graphics layers into a single stream.

The Flat Panel Display-LVDS (FPD-LVDS) provides a serial interface for 10-bit RGB output data towards the LCD panel.

The Memory Based Video Processor VO (MBVP_2LVO) is used on the main video channel for scaling of images for monitor out.

The Video Composition Pipe VO (CPIPE_VO) is used to merge a video and a graphics layer into a single stream together with insertion of VBI and CGMS data.

The Digital Encoder (DENC) supports encoding of a digital video stream from the CPIPE_VO into Analogue CVBS or Y/C.

9.6.2 Audio Subsystem

Refer to figure "9-9 PNX85xx audio flow diagram" for a clarification of the blocks that are used in this device.

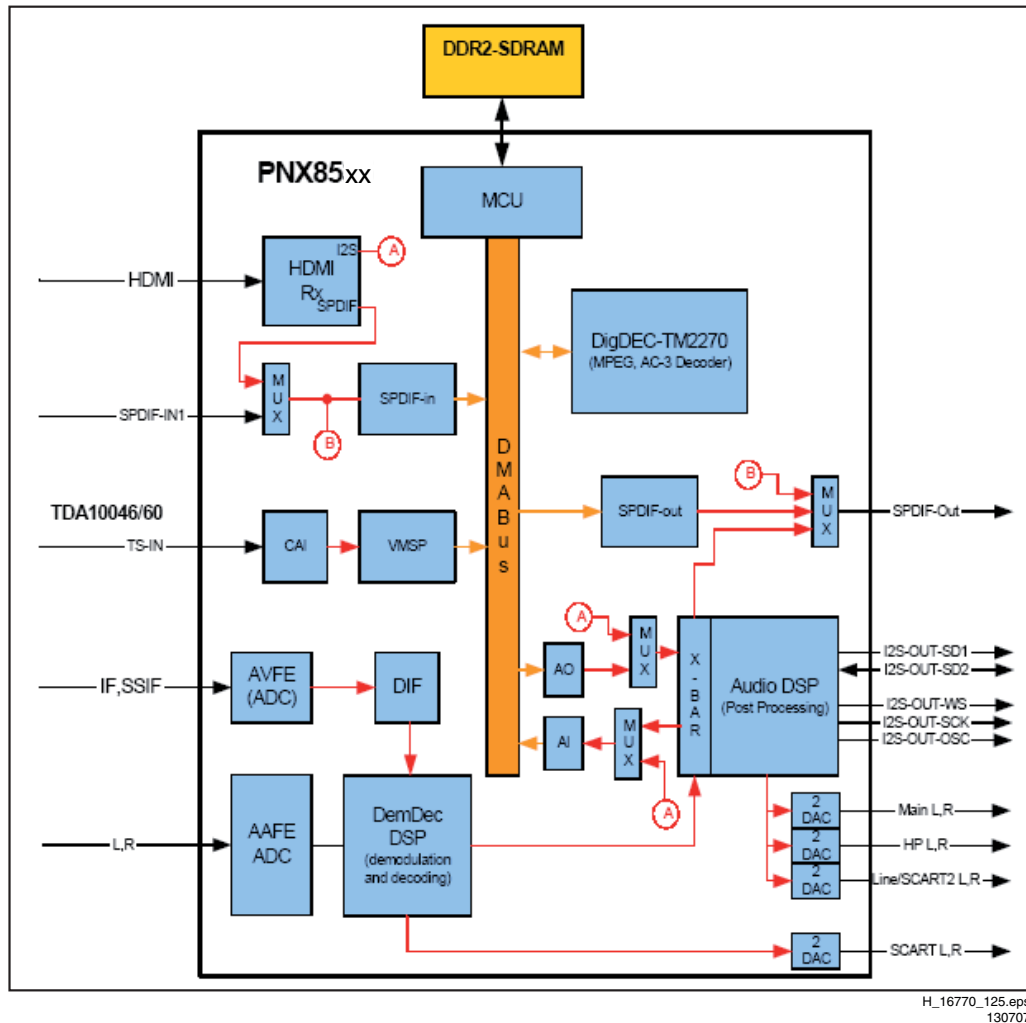


Figure 9-9 PNX85xx audio flow diagram

The Analogue Audio Front-End Input (AAFE) block is used to capture Baseband Audio Inputs.

The Sony/Philips Digital Interface (SPDIF) input is used to get compressed data into the system memory. The multiplexer in front of the block allows two possible sources of SPDIF signals.

The SPDIF Output is used to generate either PCM data or a compliant IEC-61937 compressed stream containing MPEG/Dolby Digital format.

The Audio Input (AI) block is used to transfer stereo audio (I²S channel) from the Audio DSP into the system memory for “lip-sync” delay.

The Audio Output (AO) block supports output of up to four stereo I²S channels. The AO is used to transfer data from the system memory to the Audio DSP, for post processing of the signal at a sampling frequency of 48 kHz (max.).

Demodulation & Decoding DSP is used for demodulation and decoding of all analogue terrestrial TV sound standards that the TV520 platform covers.

The Audio Post-Processing DSP supports DPLII together with volume and tone control, spatializers, and equalizers for 6 channels (max.)

Digital Audio Decoder DSP is used to decode digital compressed streams such as MPEG and AC-3. This runs as SW Codecs on the AV-DSP.

9.6.3 Audio-Video Codec Subsystem

The AV Codec subsystem consists of the modules required to capture and de-scramble Transport stream inputs together with decoding of Audio/video Streams. Refer to figure “PNX85xx video flow diagram” for a clarification.

The sub-system consists of the following modules:

The Conditional Access Interface block provides a direct interface towards a PCMCIA socket for Conditional Access. It supports both the DVB CI-CA Specification and the CableCard (POD) Interface.

The MPEG System Processor (VMSP) provides parsing an MPEG-2 transport stream, including de-scrambling, de-multiplexing and appropriate routing of data to the memory.

The Video MPEG Decoder (VMPG) performs MPEG2 decoding for both MP@ML and MP@HL streams.

9.6.4 Control and Compute Subsystem

Refer to figure “Control and compute subsystem” for a clarification of the blocks that are used in this device.

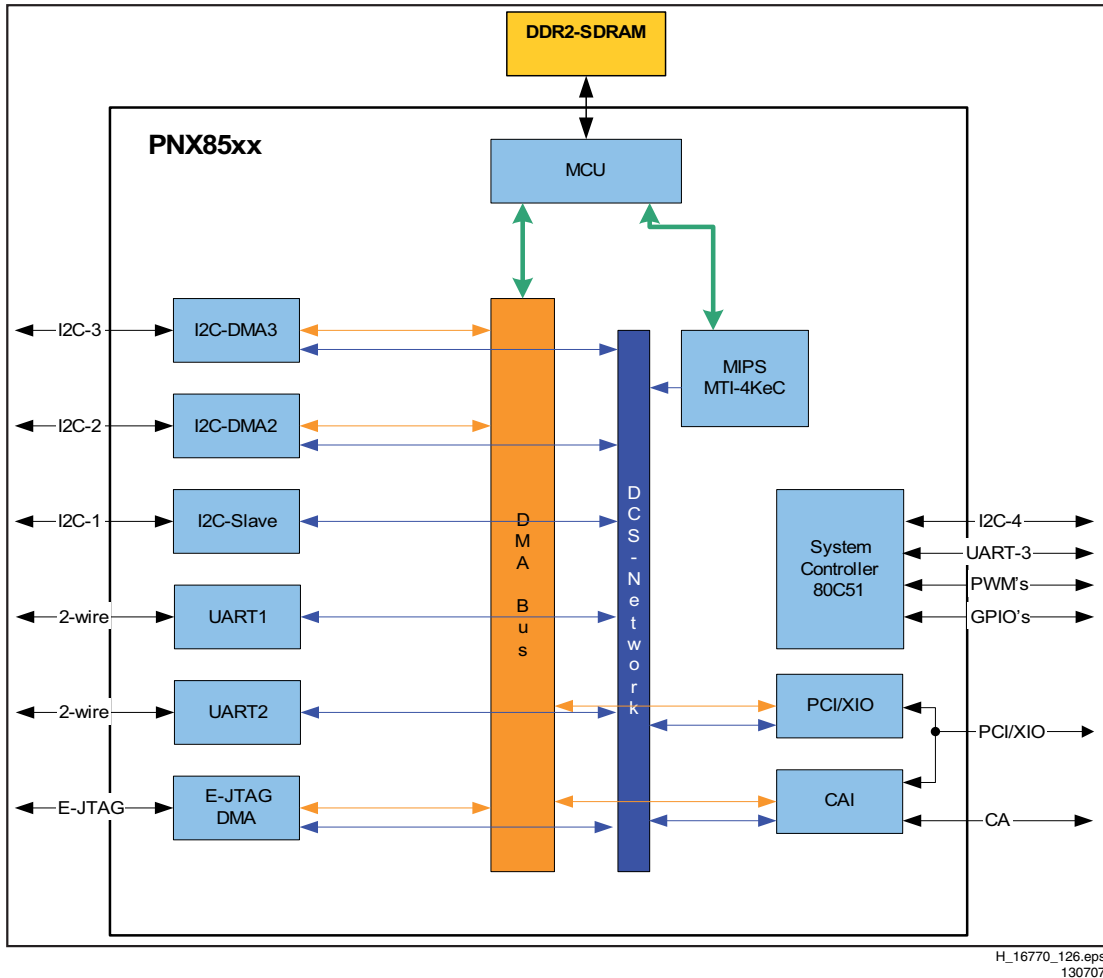


Figure 9-10 Control and compute subsystem

The Control and compute subsystem consists of the main processor, control peripherals and the memory system.

The MIPS 4KEc is a 32-bit MIPS RISC core. It has direct access to connectivity peripherals to support system features via PCI, I²C, UART or General Purpose I/O. A JTAG interface provides processor software debug capabilities.

The Memory Control Unit (MCU) is a 32-bit DDR2 SDRAM interface supporting DDR2-533 with an address range of 128 MB (max.).

The PCI/XIO interface supports PCI Rev2.2 and can be used to access 8/16-bit external NAND-Flash memory.

The Conditional Access Interface supports direct control and communication to the PC-Card attached to a PCMCIA interface. The interface supports the DVB CI-CA and CableCard specification.

9.7 Back-end

Refer to figures "9-1 Architecture of TV522/92 platform" earlier in this chapter for details. Refer also to block diagrams B05, B05, B06 and AB.

In HD sets (50 / 100 Hz), the output signal coming from the PNX85xx is fed to the PNX5100 and then to the Spartan-3 FPGA for driving the AmbiLight units. The PNX5100 3 also generates the pulse-width modulated signal needed for the "Dimming Backlight" feature, which ensures additional motion sharpness. As some displays require an analogue signal to switch the LCD, a multiplexer is added to transform the pulse width modulated signal. An additional signal, coming from the PNX85xx, makes the selection between analogue and pulse-width modulation, depending on which display is used. Scanning back light displays require an analogue signal, and all other displays a pulse-width modulated.

Refer to figure "9-11 PNX5100 Detailed Video Block diagram".

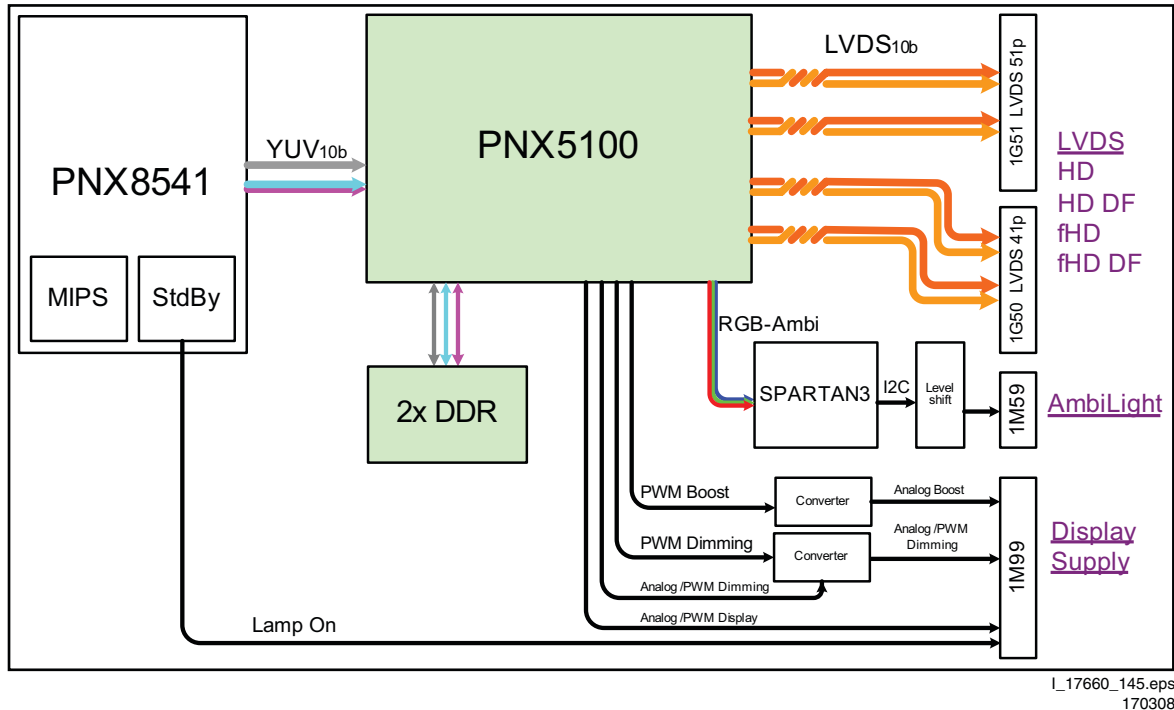


Figure 9-11 PNX5100 Detailed Video Block diagram

9.7.1 PNX5100

The PNX5100 performs the following tasks:

- Picture quality improvement (Natural Motion, etc.).
- Video and graphics (On Screen Display) mixing.
- Up conversion from 50/60 to 100/120 Hz.
- Colour processing
- Sharpness processing
- Backlight control
- AmbiLight pre processing
- Switching On and Off of the display
- Pattern generator

The PNX5050 interfaces:

- Video input (CMOS).
- Graphics input (PCI).
- I²C.
- Field memory (2 × DDR).
- Video output: LVDS (single, dual or quad) to display
- Backlight control: PWM for dimming and boost
- AmbiLight: CMOS sequential RGB to FPGA
- GPIO

Refer to figure “9-11 PNX5100 Detailed Video Block diagram” for details.

9.8 Ambient Light, Spartan-3

In this chassis, LED AmbiLight units are used as light units. The units are completely aligned in factory and are a “Black Box” for Service. When defective, they must be replaced entirely. Refer to the Spare Parts List for the correct order number.

The AmbiLight units are addressed by I²C. The communication with the SSB to the ARM processor(s) of the units is bi-directional.

On the SSB the FPGA Spartan-3 performs driving towards the Pixelated AmbiLight units. The following features have been incorporated:

- Dedicated dealer mode
- 9600 series:
 - Both left and right side of the screen two pixels
 - Lounge Light mode
 - One controlling microprocessor.
- 9700 series:
 - Both left and right side of the screen two pixels
 - Top side of the screen three pixels
 - Lounge Light mode
 - Two controlling microprocessors.

9.9 DLNA

Is an international, cross-industry collaboration of consumer electronics, computing industry and mobile device companies standard. The main objective of DLNA is the establishment of a wired and wireless interoperable network of personal computers (PC), consumer electronics (CE) and mobile devices in the home and on the road, enabling a seamless environment for sharing new digital media and content services. DLNA is focused on delivering an interoperability framework of design guidelines based on open industry standards to complete the cross-industry digital convergence. The TV522 platform is set up as Digital Media Player. It can find and play or display the content that is shared on your network by server devices. In this chassis, an Ethernet MAC/PHY for wired Ethernet is incorporated to support DLNA.

Main features:

- National Semiconductors DP83816
- Controlled over PCI interface
- Physical layer uses a top-entry RJ45 with integrated magnetics (UTP)
- Supports 10M and 100M (full and half duplex)
- Uses 3V3 only (divided into separate analog and digital supply planes)
- The network controller shares the interrupt with the USB host controller
- The network controller can access the DRAM to dump/ fetch packets.

9.10 Abbreviation List

0/6/12	SCART switch control signal on A/V board. 0 = loop through (AUX to TV), 6 = play 16 : 9 format, 12 = play 4 : 3 format	D/K	Monochrome TV system. Sound carrier distance is 6.5 MHz
2DNR	Spatial (2D) Noise Reduction	DFI	Dynamic Frame Insertion
3DNR	Temporal (3D) Noise Reduction	DFU	Directions For Use: owner's manual
AARA	Automatic Aspect Ratio Adaptation: algorithm that adapts aspect ratio to remove horizontal black bars; keeps the original aspect ratio	DLNA	Digital Living Network Alliance
ACI	Automatic Channel Installation: algorithm that installs TV channels directly from a cable network by means of a predefined TXT page	DMR	Digital Media Reader: card reader
ADC	Analogue to Digital Converter	DNM	Digital Natural Motion
AFC	Automatic Frequency Control: control signal used to tune to the correct frequency	DNR	Digital Noise Reduction: noise reduction feature of the set
AGC	Automatic Gain Control: algorithm that controls the video input of the feature box	DRAM	Dynamic RAM
AM	Amplitude Modulation	DRM	Digital Rights Management
ANR	Automatic Noise Reduction: one of the algorithms of Auto TV	DSP	Digital Signal Processing
AP	Asia Pacific	DST	Dealer Service Tool: special remote control designed for service technicians
AR	Aspect Ratio: 4 : 3 or 16 : 9	DTCP	Digital Transmission Content Protection; A protocol for protecting digital audio/video content that is traversing a high speed serial bus, such as IEEE-1394
ASF	Auto Screen Fit: algorithm that adapts aspect ratio to remove horizontal black bars without discarding video information	DVB-C	Digital Video Broadcast - Cable
ATSC	Advanced Television Systems Committee, the digital TV standard in the USA	DVB-T	Digital Video Broadcast - Terrestrial
ATV	See Auto TV	DVD	Digital Versatile Disc
Auto TV	A hardware and software control system that measures picture content, and adapts image parameters in a dynamic way	DVI(-d)	Digital Visual Interface (d= digital only)
AV	External Audio Video	E-DDC	Enhanced Display Data Channel (VESA standard for communication channel and display). Using E-DDC, the video source can read the EDID information from the display.
AVC	Audio Video Controller	EDID	Extended Display Identification Data (VESA standard)
AVIP	Audio Video Input Processor	EEPROM	Electrically Erasable and Programmable Read Only Memory
B/G	Monochrome TV system. Sound carrier distance is 5.5 MHz	EMI	Electro Magnetic Interference
BLR	Board-Level Repair	EPLD	Erasable Programmable Logic Device
BTSC	Broadcast Television Standard Committee. Multiplex FM stereo sound system, originating from the USA and used e.g. in LATAM and AP-NTSC countries	EU	Europe
B-TXT	Blue TeleteXT	EXT	EXternal (source), entering the set by SCART or by cinches (jacks)
C	Centre channel (audio)	FBL	Fast BLanking: DC signal accompanying RGB signals
CEC	Consumer Electronics Control bus: remote control bus on HDMI connections	FDS	Full Dual Screen (same as FDW)
CL	Constant Level: audio output to connect with an external amplifier	FDW	Full Dual Window (same as FDS)
CLR	Component Level Repair	FLASH	FLASH memory
COLUMBUS	COlour LUMinance Baseband Universal Sub-system	FM	Field Memory or Frequency Modulation
ComPair	Computer aided rePair	FPGA	Field-Programmable Gate Array
CP	Connected Planet / Copy Protection	FTV	Flat TeleVision
CSM	Customer Service Mode	Gb/s	Giga bits per second
CTI	Colour Transient Improvement: manipulates steepness of chroma transients	G-TXT	Green TeleteXT
CVBS	Composite Video Blanking and Synchronization	H	H_sync to the module
DAC	Digital to Analogue Converter	HD	High Definition
DBE	Dynamic Bass Enhancement: extra low frequency amplification	HDD	Hard Disk Drive
DDC	See "E-DDC"	HDCP	High-bandwidth Digital Content Protection: A "key" encoded into the HDMI/DVI signal that prevents video data piracy. If a source is HDCP coded and connected via HDMI/DVI without the proper HDCP decoding, the picture is put into a "snow vision" mode or changed to a low resolution. For normal content distribution the source and the display device must be enabled for HDCP "software key" decoding.
		HDMI	High Definition Multimedia Interface
		HP	HeadPhone
		I	Monochrome TV system. Sound carrier distance is 6.0 MHz
		I ² C	Inter IC bus
		I ² D	Inter IC Data bus
		I ² S	Inter IC Sound bus
		IF	Intermediate Frequency
		Interlaced	Scan mode where two fields are used to form one frame. Each field contains half the number of the total amount of

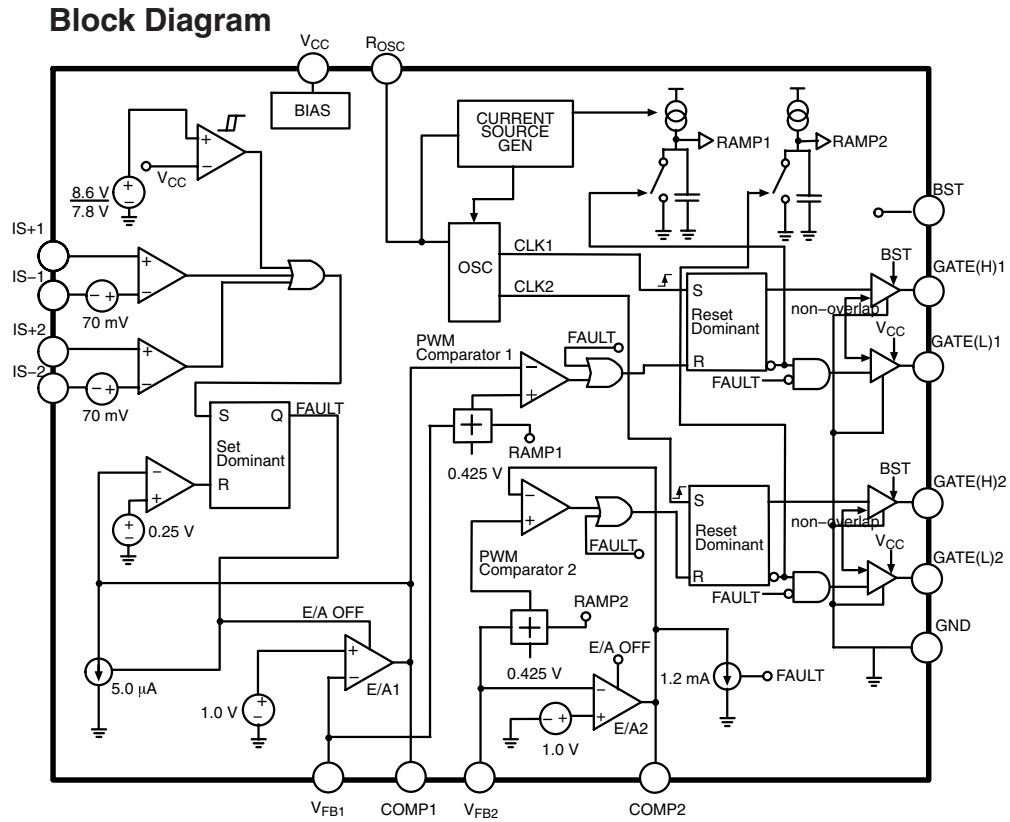
	lines. The fields are written in "pairs", causing line flicker.		PAL M = 3.575612 MHz and PAL N = 3.582056 MHz)
IR	Infra Red	PCB	Printed Circuit Board (same as "PWB")
IRQ	Interrupt Request	PCM	Pulse Code Modulation
ITU-656	The ITU Radio communication Sector (ITU-R) is a standards body subcommittee of the International Telecommunication Union relating to radio communication. ITU-656 (a.k.a. SDI), is a digitized video format used for broadcast grade video. Uncompressed digital component or digital composite signals can be used. The SDI signal is self-synchronizing, uses 8 bit or 10 bit data words, and has a maximum data rate of 270 Mbit/s, with a minimum bandwidth of 135 MHz.	PDP	Plasma Display Panel
		PFC	Power Factor Corrector (or Pre-conditioner)
		PIP	Picture In Picture
		PLL	Phase Locked Loop. Used for e.g. FST tuning systems. The customer can give directly the desired frequency
		POR	Power On Reset, signal to reset the uP
		Progressive Scan	Scan mode where all scan lines are displayed in one frame at the same time, creating a double vertical resolution.
		PTC	Positive Temperature Coefficient, non-linear resistor
ITV	Institutional TeleVision; TV sets for hotels, hospitals etc.	PWB	Printed Wiring Board (same as "PCB")
JOP	Jaguar Output Processor	PWM	Pulse Width Modulation
LS	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 customer's preferences	QRC	Quasi Resonant Converter
		QTNR	Quality Temporal Noise Reduction
		QVCP	Quality Video Composition Processor
		RAM	Random Access Memory
		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.
LATAM	Latin America		
LCD	Liquid Crystal Display	RC	Remote Control
LED	Light Emitting Diode	RC5 / RC6	Signal protocol from the remote control receiver
L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I	RESET	RESET signal
LORE	LOcal REgression approximation noise reduction	ROM	Read Only Memory
LPL	LG.Philips LCD (supplier)	R-TXT	Red TeleteXT
LS	Loudspeaker	SAM	Service Alignment Mode
LVDS	Low Voltage Differential Signalling	S/C	Short Circuit
Mbps	Mega bits per second	SCART	Syndicat des Constructeurs d'Appareils Radiorecepteurs et Televisieurs
M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz	SCL	Serial Clock I ² C
MIPS	Microprocessor without Interlocked Pipeline-Stages; A RISC-based microprocessor	SCL-F	CLock Signal on Fast I ² C bus
		SD	Standard Definition
		SDA	Serial Data I ² C
		SDA-F	DAta Signal on Fast I ² C bus
MOP	Matrix Output Processor	SDI	Serial Digital Interface, see "ITU-656"
MOSFET	Metal Oxide Silicon Field Effect Transistor, switching device	SDRAM	Synchronous DRAM
		SECAM	SÉquence Couleur Avec Mémoire. Colour system mainly used in France and East Europe. Colour carriers= 4.406250 MHz and 4.250000 MHz
MPEG	Motion Pictures Experts Group		
MPIF	Multi Platform InterFace	SIF	Sound Intermediate Frequency
MUTE	MUTE Line	SMPS	Switched Mode Power Supply
NC	Not Connected	SoC	System on Chip
NICAM	Near Instantaneous Compounded Audio Multiplexing. This is a digital sound system, mainly used in Europe.	SOG	Sync On Green
		SOPS	Self Oscillating Power Supply
NTC	Negative Temperature Coefficient, non-linear resistor	S/PDIF	Sony Philips Digital InterFace
NTSC	National Television Standard Committee. Colour system mainly used 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)	SRAM	Static RAM
		SSB	Small Signal Board
		STBY	STand-BY
		SVGA	800 × 600 (4 : 3)
		SVHS	Super Video Home System
		SW	Software
		SWAN	Spatial temporal Weighted Averaging Noise reduction
NVM	Non-Volatile Memory: IC containing TV related data such as alignments	SXGA	1280 × 1024
		TFT	Thin Film Transistor
O/C	Open Circuit	THD	Total Harmonic Distortion
OSD	On Screen Display	TMDS	Transmission Minimized Differential Signalling
OTC	On screen display Teletext and Control; also called Artistic (SAA5800)		
P50	Project 50: communication protocol between TV and peripherals	TXT	TeleteXT
		TXT-DW	Dual Window with TeleteXT
PAL	Phase Alternating Line. Colour system mainly used in West Europe (colour carrier = 4.433619 MHz) and South America (colour carrier	UI	User Interface
		uP	Microprocessor
		UXGA	1600 × 1200 (4 : 3)
		V	V-sync to the module

VCR	Video Cassette Recorder
VESA	Video Electronics Standards Association
VGA	640 × 480 (4 : 3)
VL	Variable Level out: processed audio output toward external amplifier
VSB	Vestigial Side Band; modulation method
WYSIWYR	What You See Is What You Record: record selection that follows main picture and sound
WXGA	1280 × 768 (15 : 9)
XTAL	Quartz crystal
XGA	1024 × 768 (4 : 3)
Y	Luminance signal
Y/C	Luminance (Y) and Chrominance (C) signal
YPbPr	Component video. Luminance and scaled colour difference signals (B-Y and R-Y)
YUV	Component video

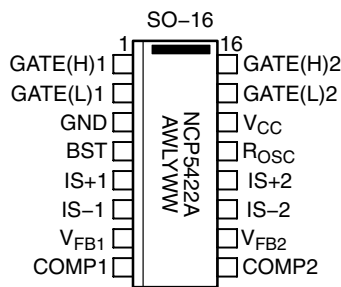
9.11 IC Data Sheets

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

9.11.1 Diagram B01A, NCP5422AD (IC 7U0A)



Pin Configuration



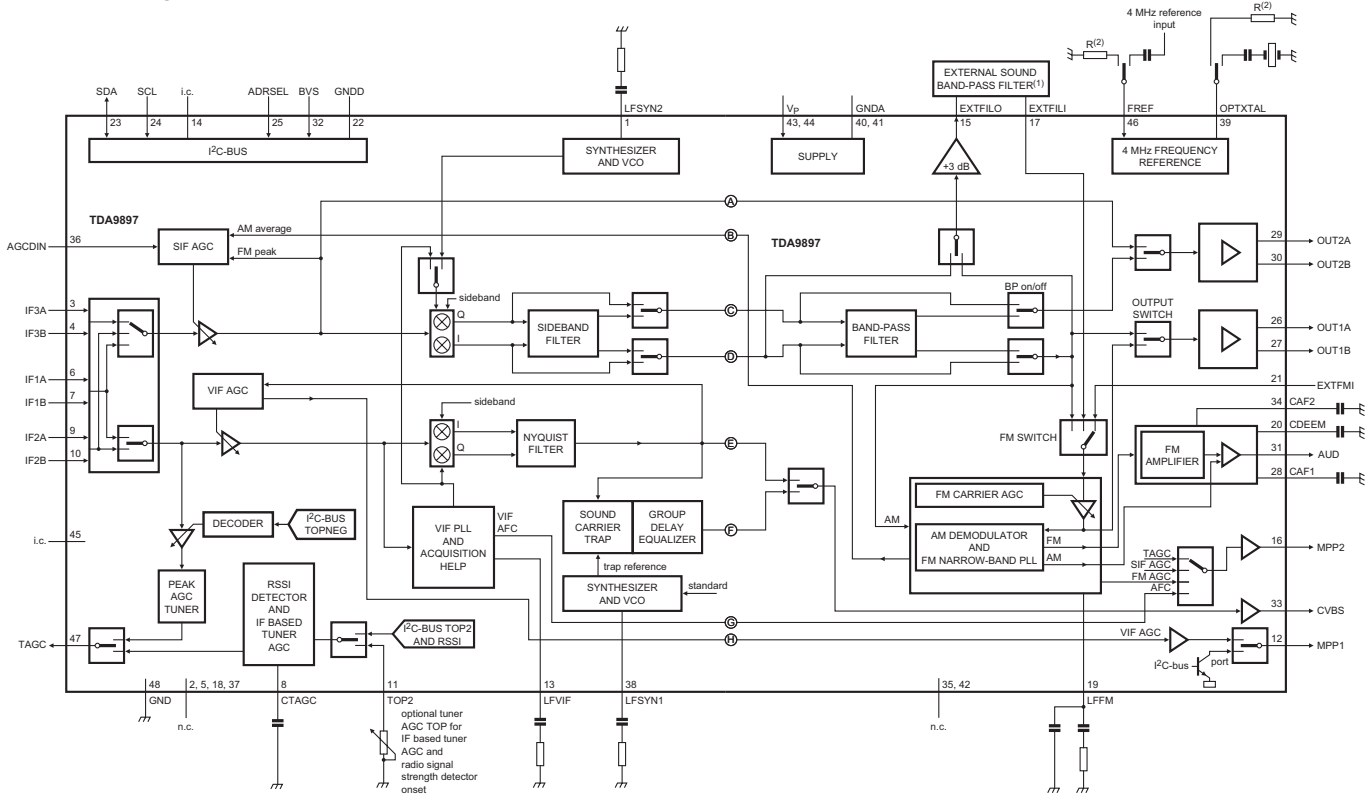
A = Assembly Location
 WL = Wafer Lot
 Y = Year
 WW = Work Week

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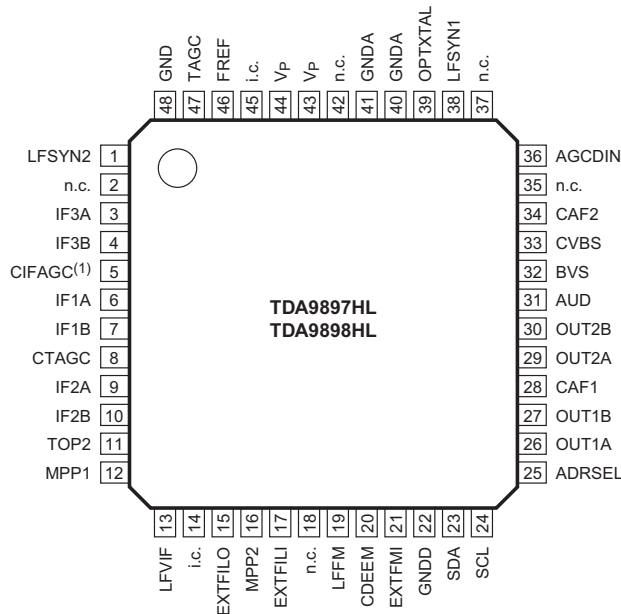
Figure 9-12 Internal block diagram and pin configuration

9.11.2 Diagram B02B, TDA9898HL (IC 7T59)

Block Diagram



Pin Configuration

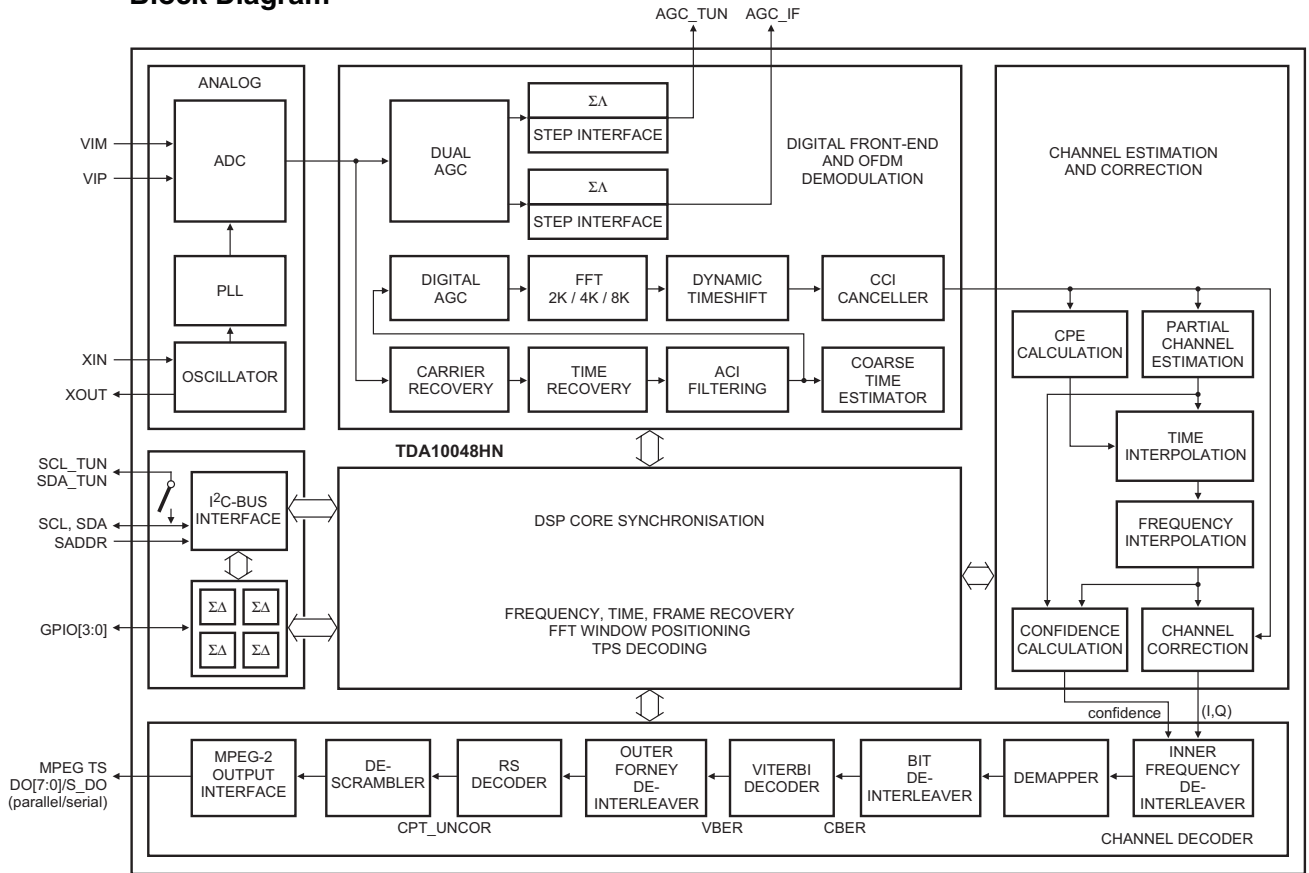


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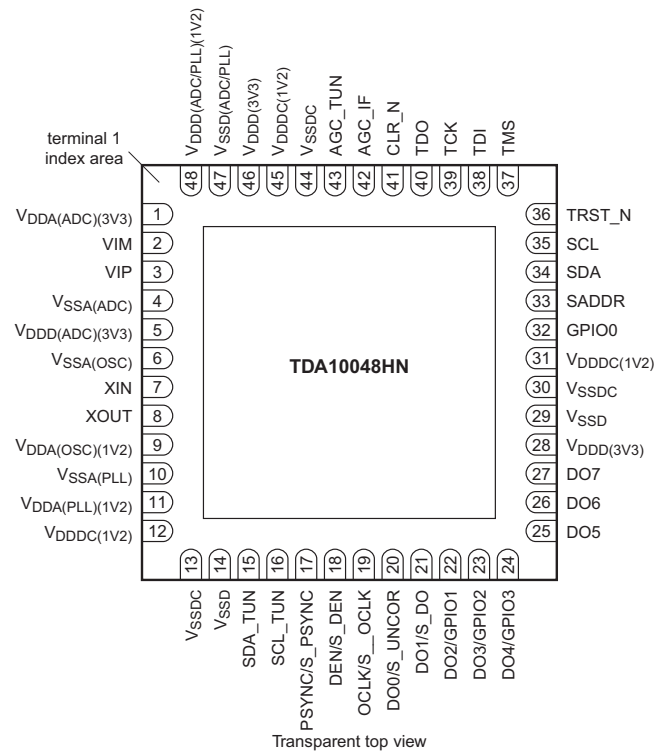
Figure 9-13 Pin configuration

9.11.3 Diagram B02A, TDA10048HN (IC7T17-1)

Block Diagram



Pin Configuration

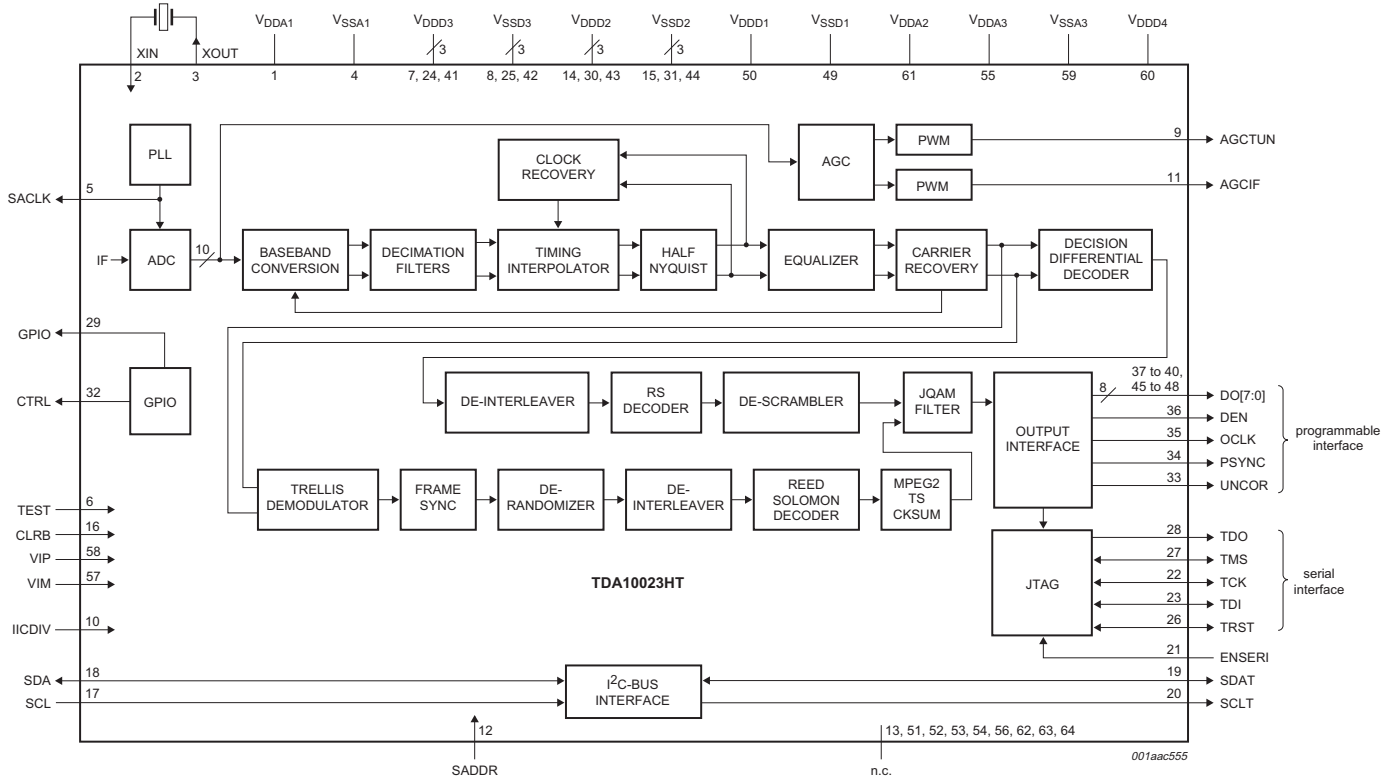


Transparent top view

Figure 9-14 Internal block diagram and pin configuration

9.11.4 Diagram B02C, TDA10023HT (IC7TA4)

Block Diagram



Pin Configuration

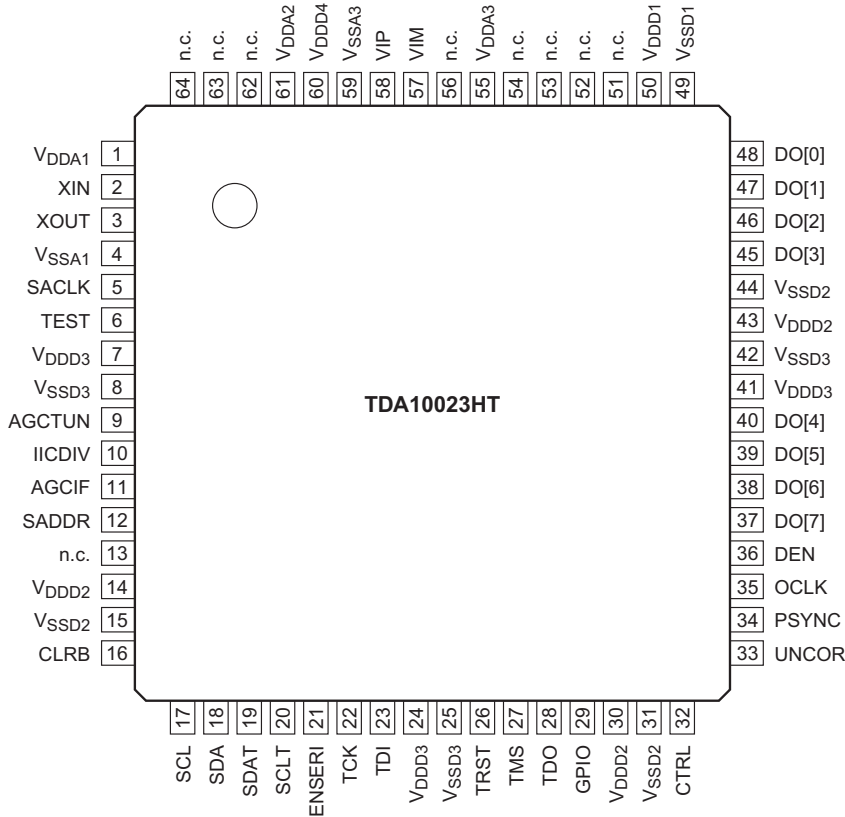
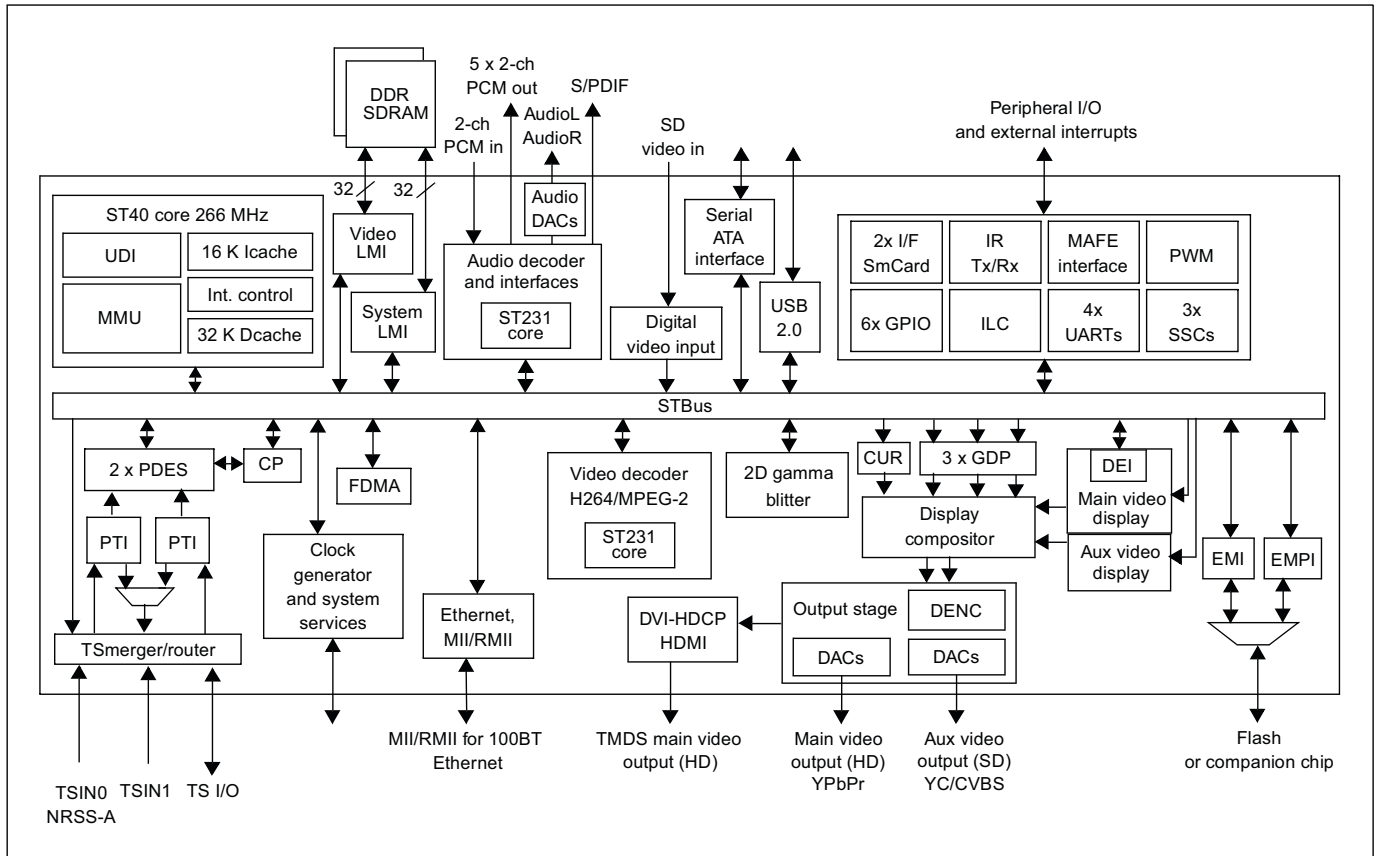


Figure 9-15 Internal block diagram and pin configuration

9.11.5 Diagram B03B to F, STi7100 (IC7A00)

Block Diagram

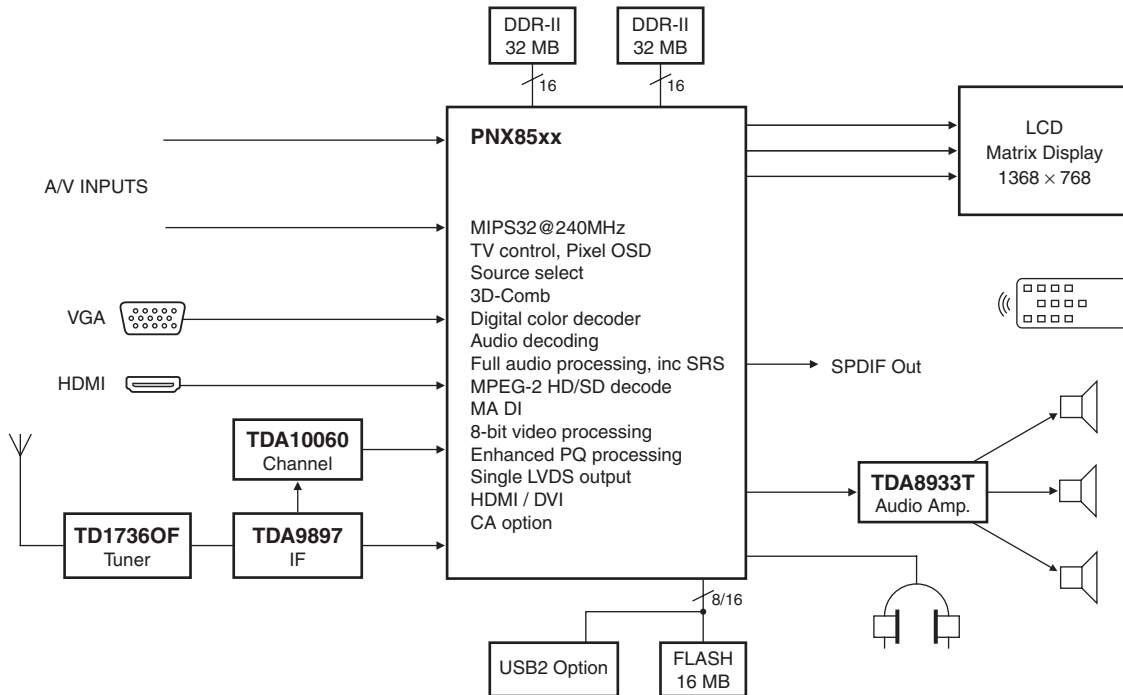


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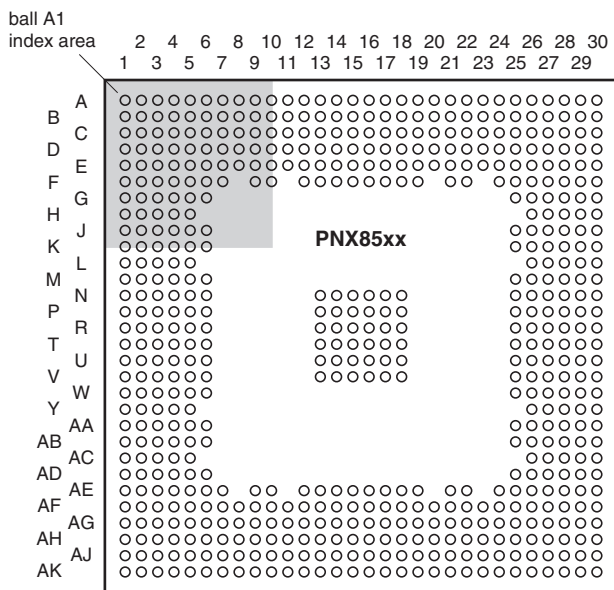
Figure 9-16 Internal block diagram and pin configuration

9.11.6 Diagram B04, PNX85xx (IC 7H00)

Block Diagram



Pin Configuration



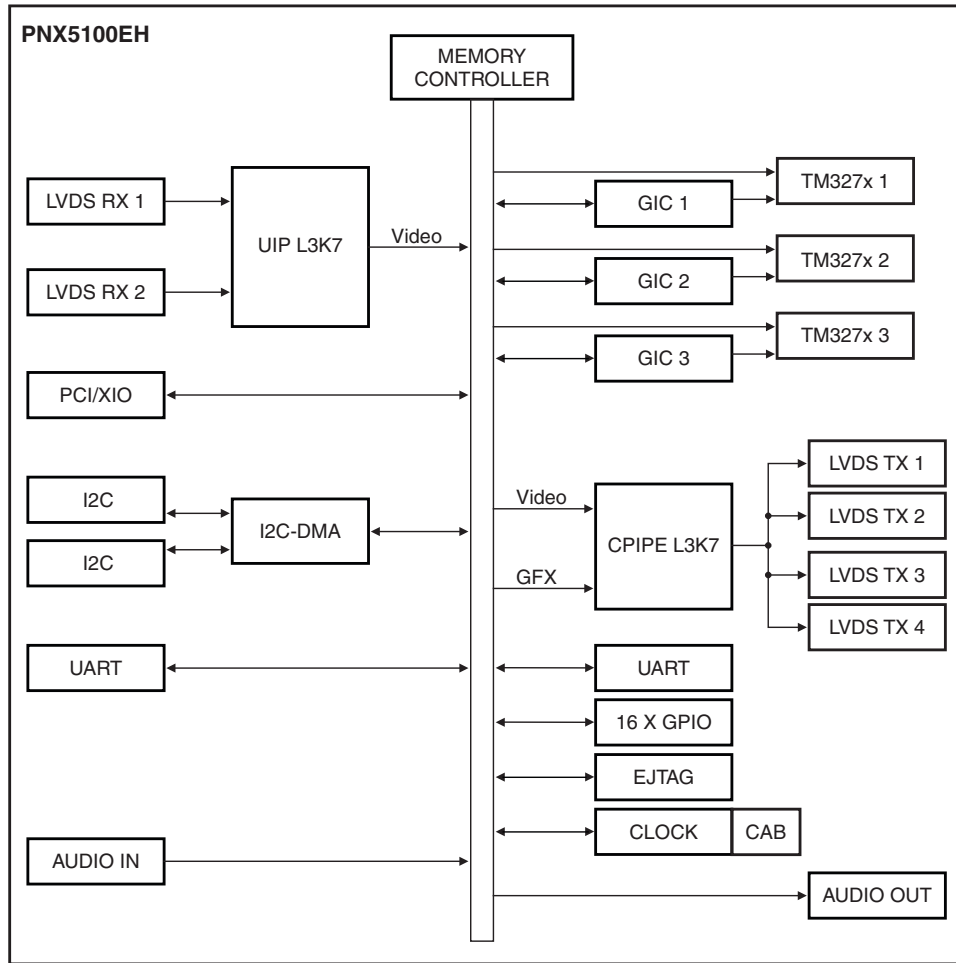
Transparent top view

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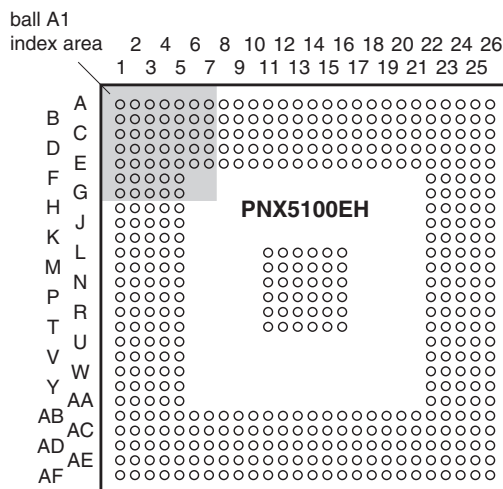
Figure 9-17 Pin configuration

9.11.7 Diagram B05, PNX5100 (IC 7C00)

Block Diagram



Pin Configuration



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Figure 9-18 Pin configuration

9.11.8 Diagram B06, XC3S250E Spartan-3 (IC 7F00)

Pin Configuration & Description

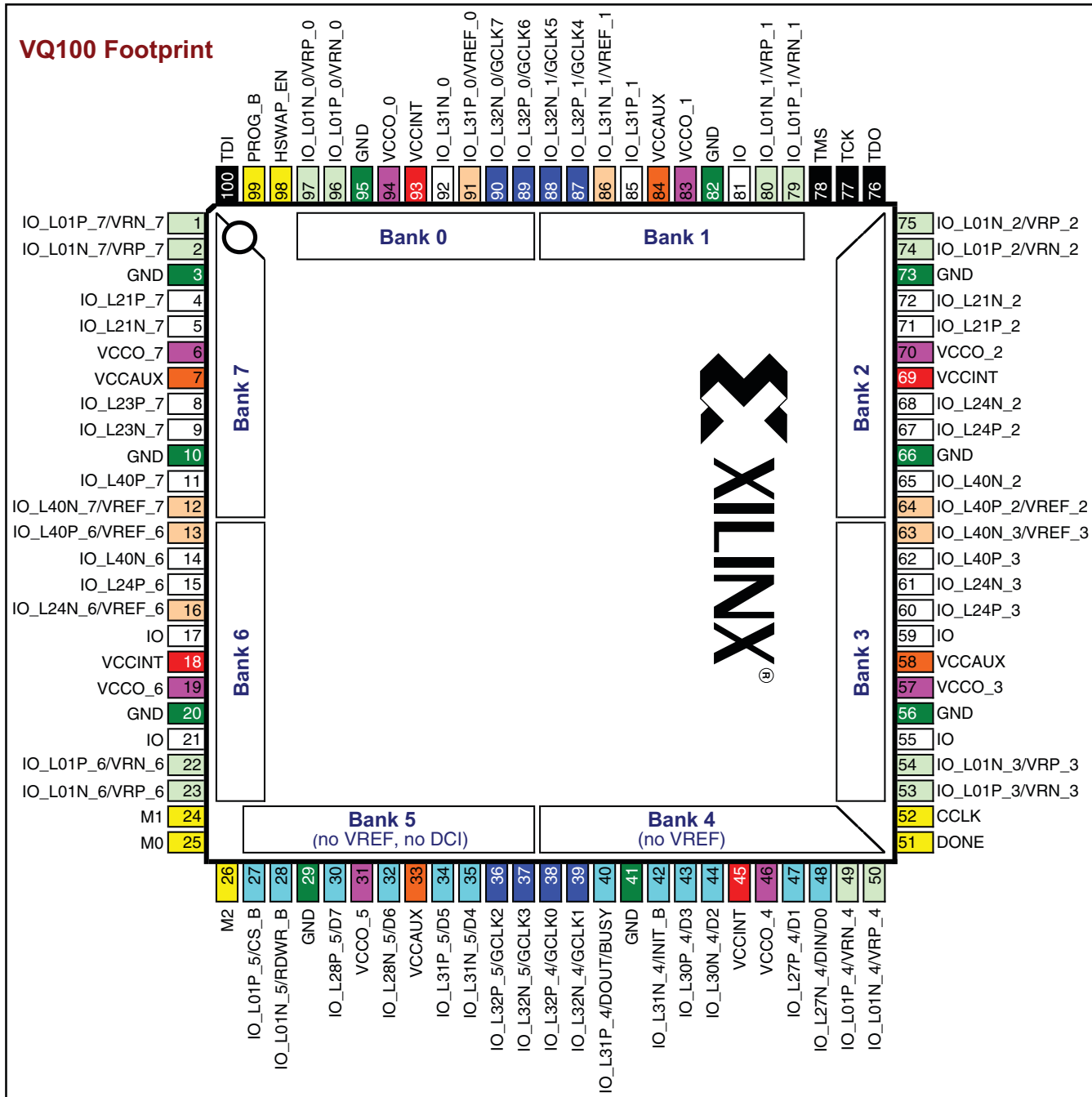


Figure 42: VQ100 Package Footprint (top view). Note pin 1 indicator in top-left corner and logo orientation.

- | | | | | | |
|----|--|----|---|---|--|
| 22 | I/O: Unrestricted, general-purpose user I/O | 12 | DUAL: Configuration pin, then possible user I/O | 7 | VREF: User I/O or input voltage reference for bank |
| 14 | DCI: User I/O or reference resistor input for bank | 8 | GCLK: User I/O or global clock buffer input | 8 | VCCO: Output voltage supply for bank |
| 7 | CONFIG: Dedicated configuration pins | 4 | JTAG: Dedicated JTAG port pins | 4 | VCCINT: Internal core voltage supply (+1.2V) |
| 0 | N.C.: No unconnected pins in this package | 10 | GND: Ground | 4 | VCCAUX: Auxiliary voltage supply (+2.5V) |

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Figure 9-19 Pin configuration

9.11.9 Diagram B07E, AD8197A (IC 7P02)

Block Diagram

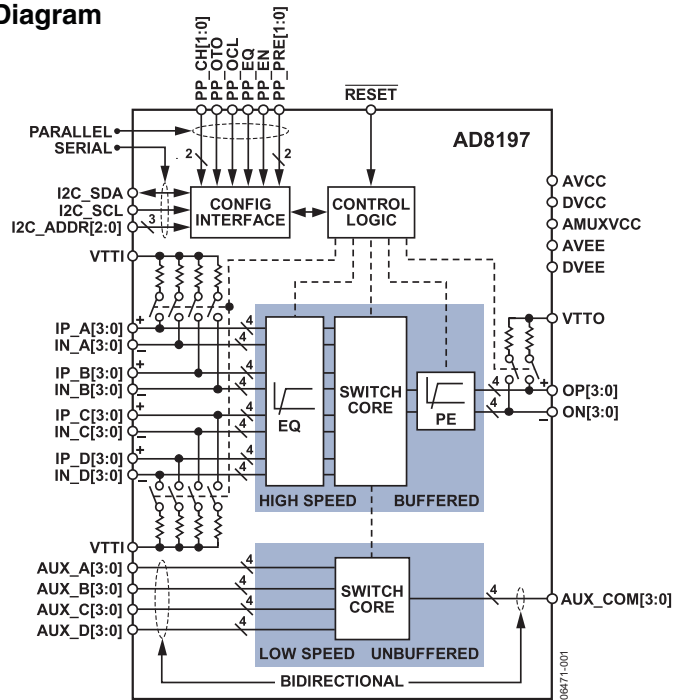
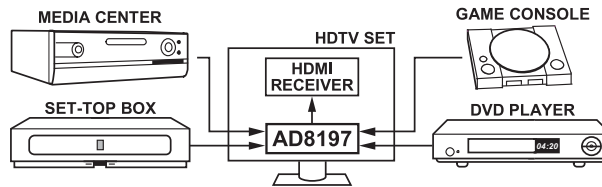
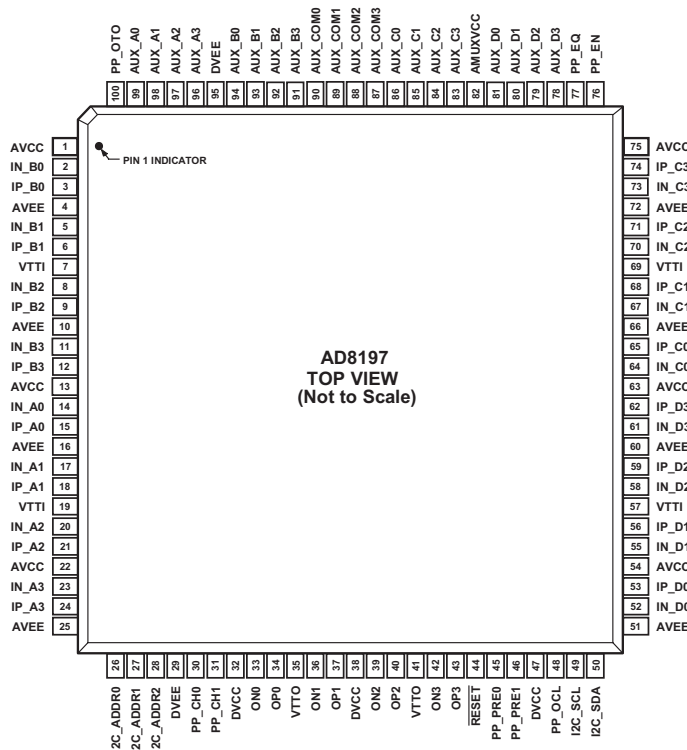


Figure 1.

TYPICAL APPLICATION



Pin Configuration

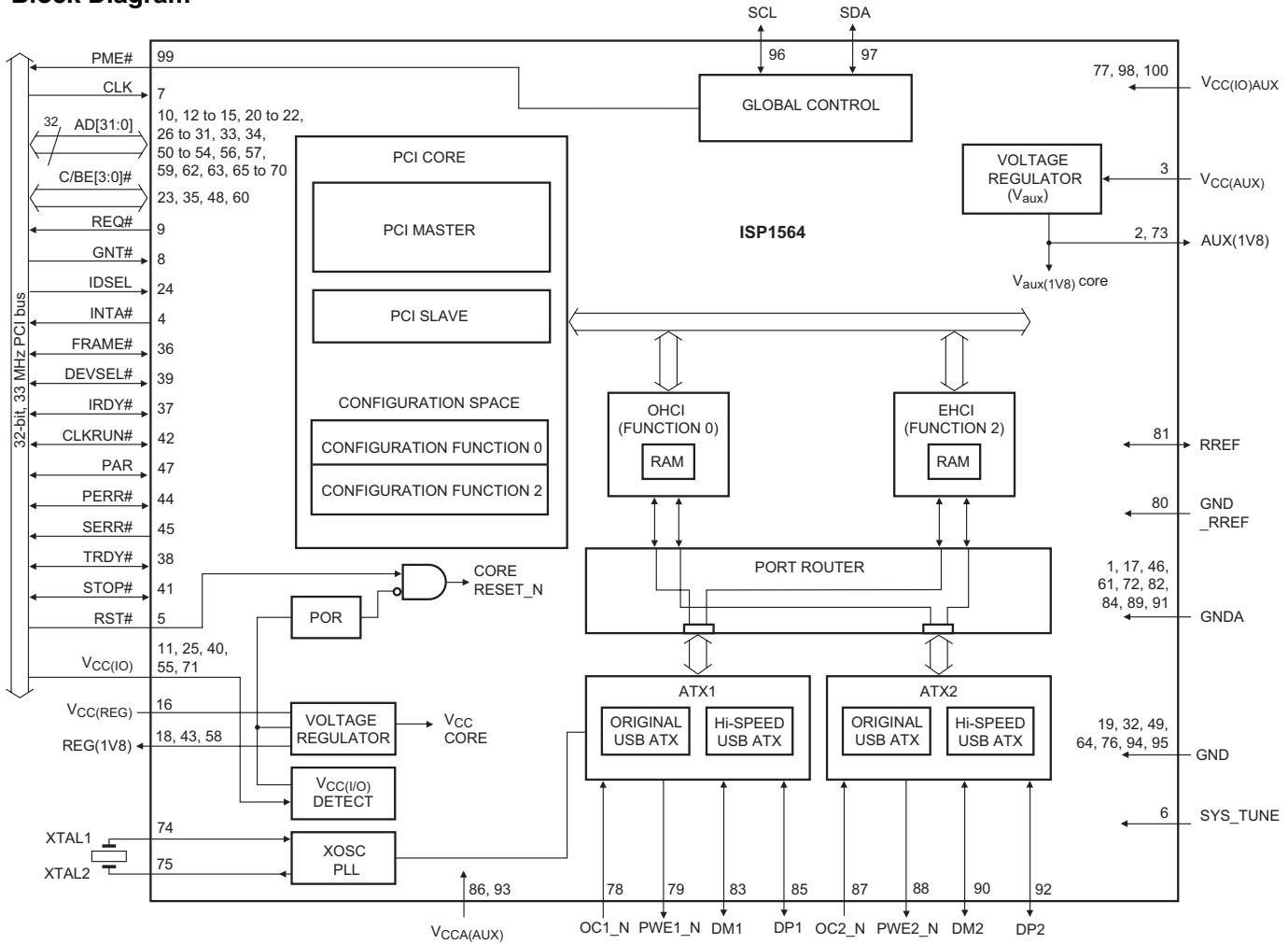


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150108

Figure 9-20 Internal block diagram and pin configuration

9.11.10 Diagram B09A, ISP1564HL (IC 7N00)

Block Diagram



Pin Configuration

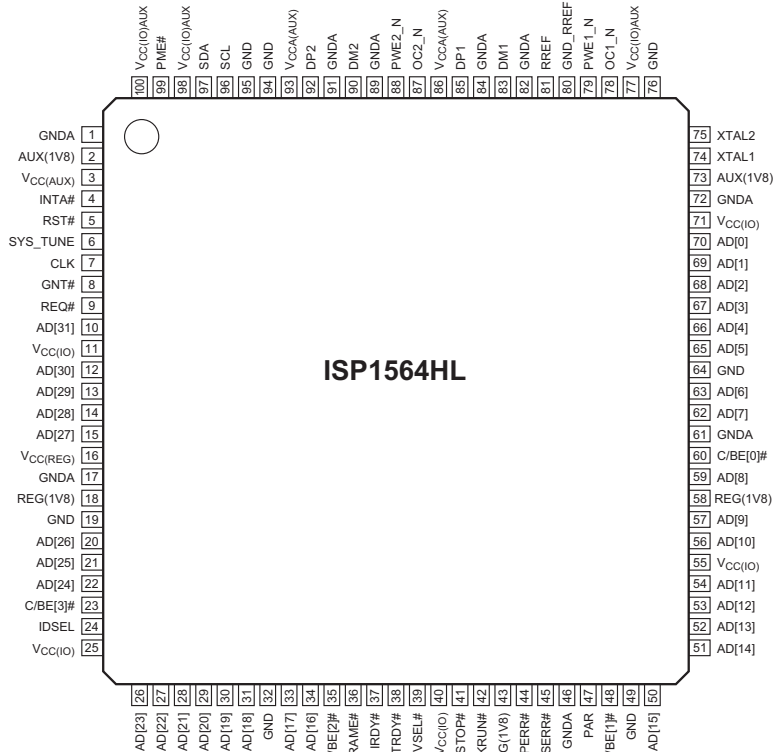
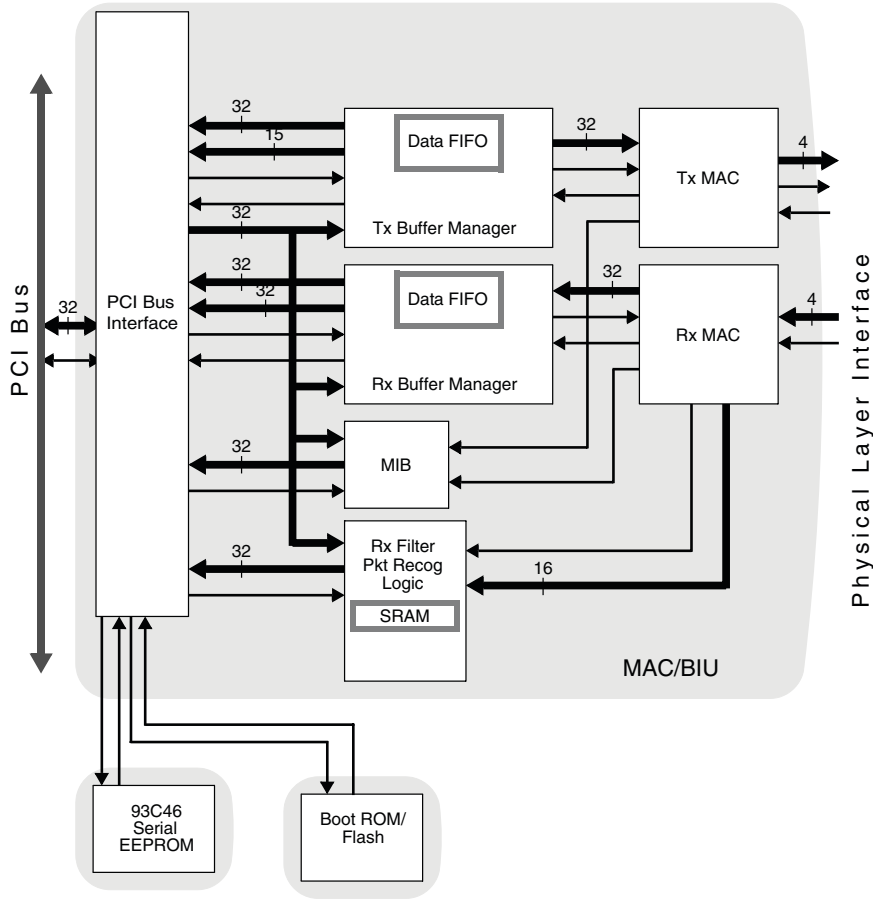


Figure 9-21 Internal block diagram and pin configuration

9.11.11 Diagram B09B, DP83816AVNG (IC 7N04)

Block Diagram



Pin Configuration

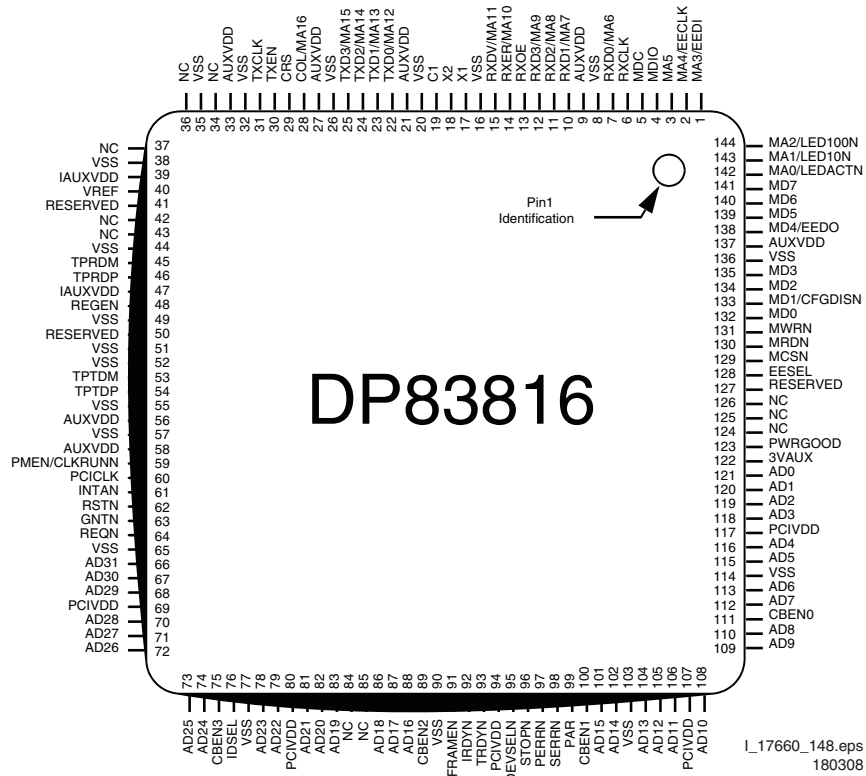
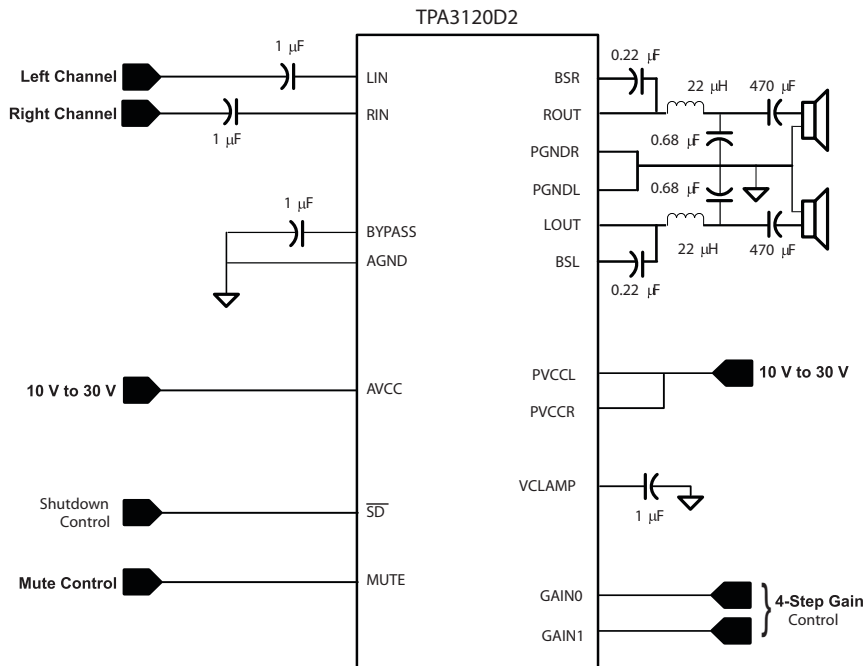


Figure 9-22 Internal block diagram and pin configuration

9.11.12 Diagram B10A, TPA3120D2 (IC 7D10)

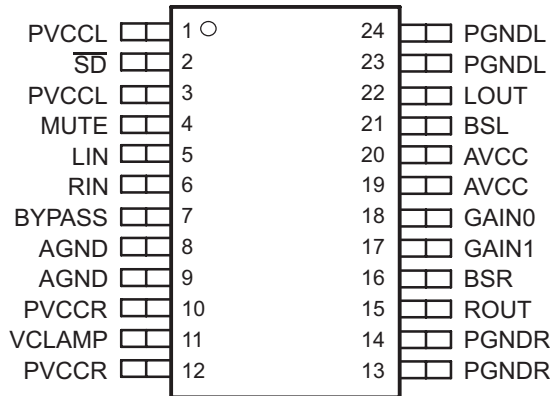
Block Diagram

SIMPLIFIED APPLICATION CIRCUIT



Pin Configuration

PWP (TSSOP) PACKAGE (TOP VIEW)

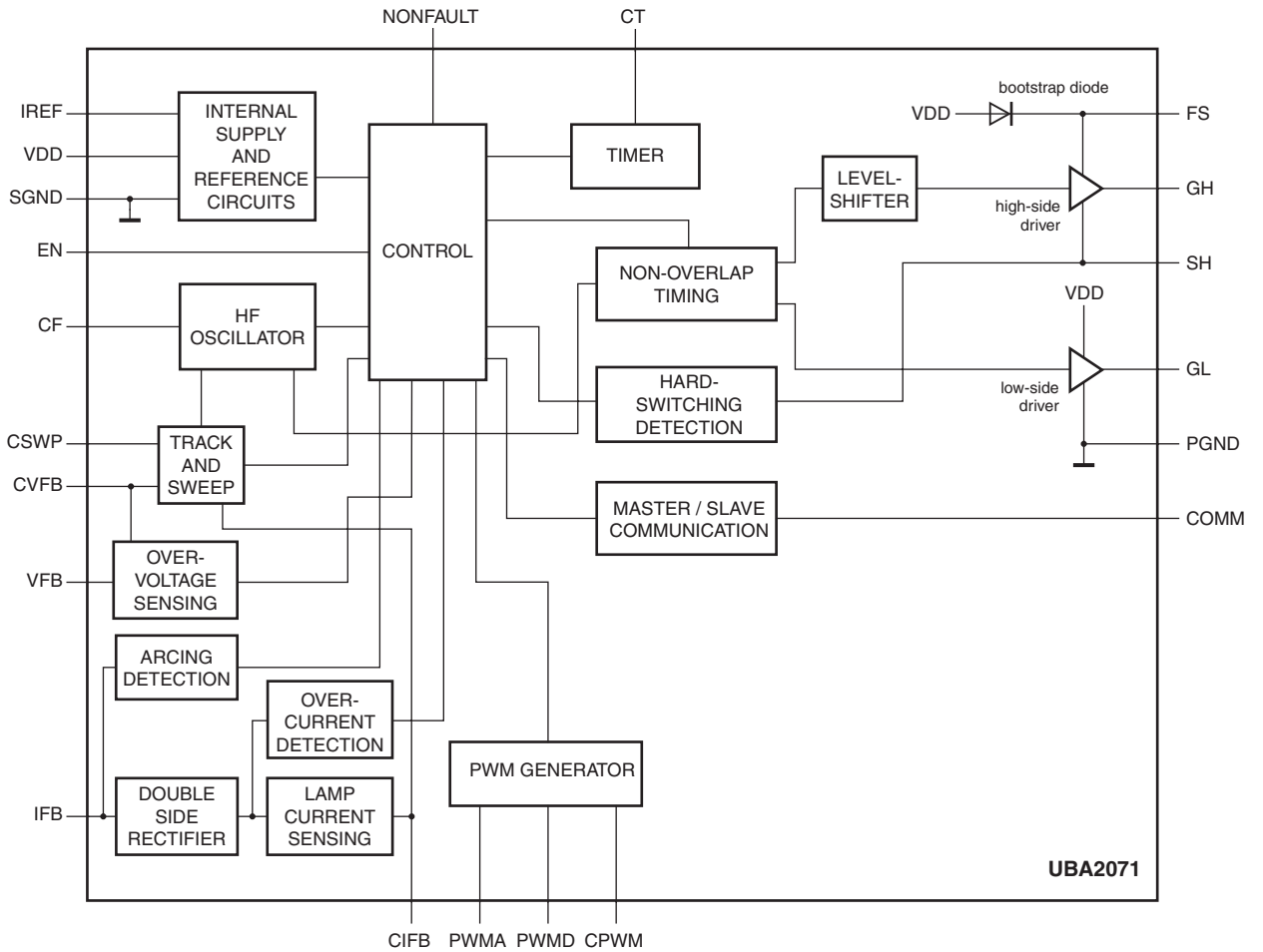


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180308

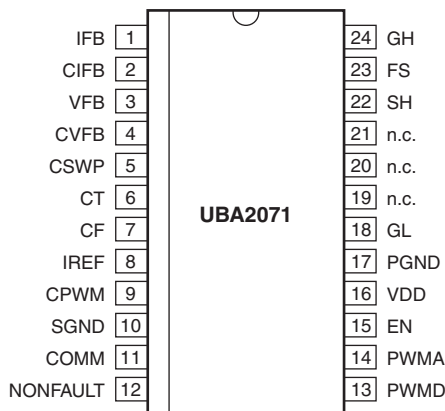
Figure 9-23 Internal block diagram and pin configuration

9.11.13 Diagram V2, UBA2071 (IC 7201)

Block Diagram



Pin Configuration



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140308

Figure 9-24 Internal block diagram and pin configuration

10. Spare Parts List

For the latest spare part overview, please consult the Philips Service website.

11. Revision List

Manual xxxx xxx xxxx.0

- First release.

Manual xxxx xxx xxxx.1

- **Added:** 32PFL7623D/10, 37PFL9603D/10, 42PFL7403D/10, 42PFL7403S/60, 42PFL7423D/12, 42PFL7423H/12, 42PFL7433D/12, 42PFL7433S/60, 42PFL7623D/10, 42PFL9703D/79, 47PFL7403D/10, 47PFL9703D/79.
- **Chapter 4:** added ME8+ disassembly instructions.
- **Chapter 5:** Added Stepwise Start-up information; removed error 25 (and -description); added error 48 description; additional textual changes.
- **Chapter 8:** Added option codes.
- **Chapter 9:** Added info for DPS-182CP A supply unit (32").