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# Service Manual

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# 1. Revision List

Manual xxxx xxx xxxx.0

- First release.

# 2. Technical Specifications and Connections

Index of this chapter:

[2.1 Technical Specifications](#)

[2.2 Directions for Use](#)

[2.3 Connections](#)

[2.4 Chassis Overview](#)

Notes:

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

## 2.1 Technical Specifications

For on-line product support please use the links in [Table 2-1](#). Here is product information available, as well as getting started, user manuals, frequently asked questions and software & drivers.

Table 2-1 Described Model numbers

CTN	Styling	Published in:
<a href="#">32HFL5530/93</a>	ME8	3122 785 18510
<a href="#">32HFL5530/97</a>		
<a href="#">42HFL5580/93</a>		
<a href="#">42HFL5580/97</a>		

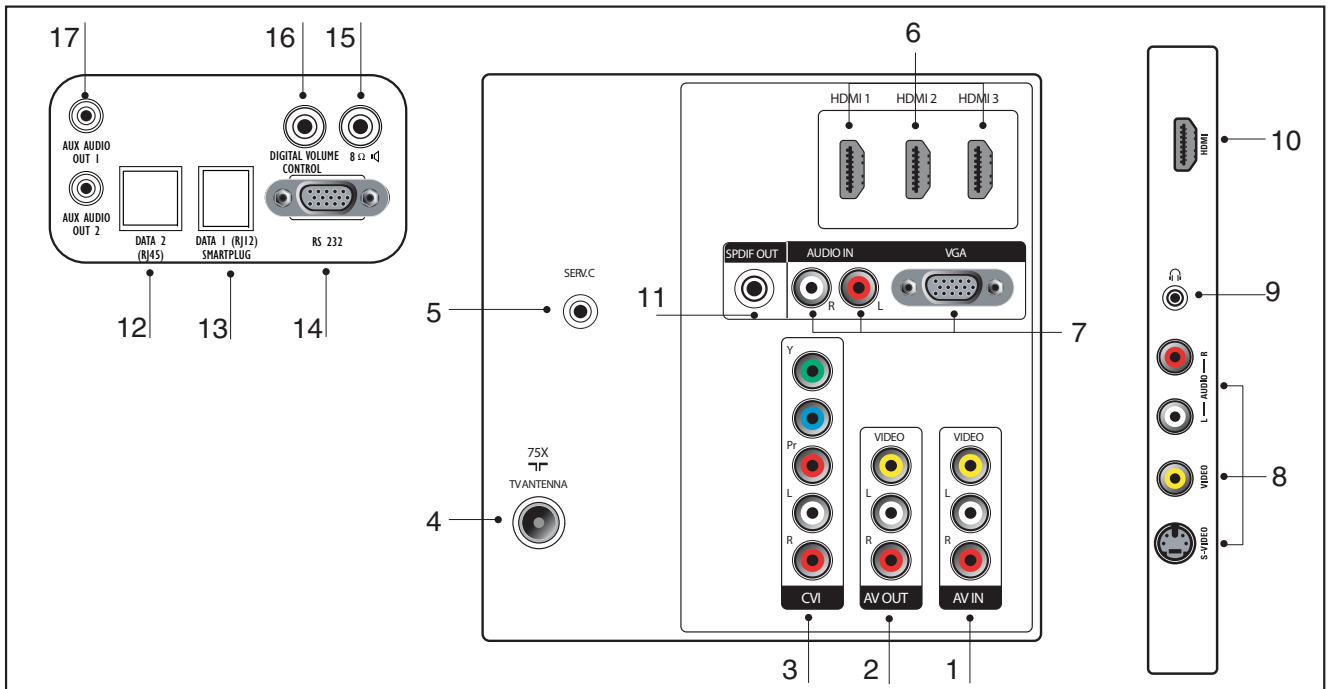
## 2.2 Directions for Use

You can download this information from the following websites:

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

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

2.3 Connections



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090406

Figure 2-1 Connection overview

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

2.3.1 Rear and Side Connections

**1 - AV In: Cinch: Video CVBS - In, Audio - In**

Ye - Video CVBS	1 V <sub>PP</sub> / 75 Ω	
Wh - Audio L	0.5 V <sub>RMS</sub> / 10 kΩ	
Rd - Audio R	0.5 V <sub>RMS</sub> / 10 kΩ	

**2 - AV Out: Cinch: Video CVBS - Out, Audio - Out**

Ye - Video CVBS	1 V <sub>PP</sub> / 75 Ω	
Wh - Audio L	0.5 V <sub>RMS</sub> / 10 kΩ	
Rd - Audio R	0.5 V <sub>RMS</sub> / 10 kΩ	

**3 - CVI: Cinch: Video YPbPr - In, Audio - In**

Gn - Video Y	1 V <sub>PP</sub> / 75 Ω	
Bu - Video Pb	0.7 V <sub>PP</sub> / 75 Ω	
Rd - Video Pr	0.7 V <sub>PP</sub> / 75 Ω	
Wh - Audio L	0.5 V <sub>RMS</sub> / 10 kΩ	
Rd - Audio R	0.5 V <sub>RMS</sub> / 10 kΩ	

**4 - Aerial - In**

- - IEC-type (EU)	Coax, 75 Ω	
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**5 - Service Connector (ComPair)**

1 - SDA-S	I <sup>2</sup> C Data (0 - 5 V)	
2 - SCL-S	I <sup>2</sup> C Clock (0 - 5 V)	
3 - Ground	Gnd	

**6 - HDMI1, 2 and 3 (optional): Digital Video, Digital Audio - In**

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	

**7 - PC: VGA: Video RGB - In, Cinch: Audio - In**

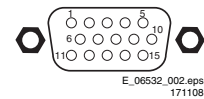


Figure 2-2 VGA Connector

1 - Video Red	0.7 V <sub>PP</sub> / 75 Ω	
2 - Video Green	0.7 V <sub>PP</sub> / 75 Ω	
3 - Video Blue	0.7 V <sub>PP</sub> / 75 Ω	
4 - n.c.		
5 - Ground	Gnd	
6 - Ground Red	Gnd	
7 - Ground Green	Gnd	
8 - Ground Blue	Gnd	
9 - +5V <sub>DC</sub>	+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	
Wh - Audio L	0.5 V <sub>RMS</sub> / 10 kΩ	
Rd - Audio R	0.5 V <sub>RMS</sub> / 10 kΩ	

**8 - S-Video (Hosiden): Video Y/C - In**

1 - Ground Y	Gnd	
2 - Ground C	Gnd	
3 - Video Y	1 V <sub>PP</sub> / 75 Ω	
4 - Video C	0.3 V <sub>PP</sub> / 75 Ω	

**8 - Cinch: Video CVBS - In, Audio - In**

Ye - Video CVBS	1 V <sub>PP</sub> / 75 Ω	
Wh - Audio L	0.5 V <sub>RMS</sub> / 10 kΩ	
Rd - Audio R	0.5 V <sub>RMS</sub> / 10 kΩ	

**9 - Head phone - Out**

Bk - Head phone	32 - 600 Ω / 10 mW	
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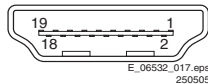
**10 - HDMI: Digital Video, Digital Audio - In**

Figure 2-3 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	

**11 - Cinch: S/PDIF - Out**

Bk - Coaxial	0.4 - 0.6V <sub>PP</sub> / 75 ohm	
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**12 - RJ45 DATA2 (Xpress Box - In/Out)**

1 - +12V	+12V/1W	
2 - Gnd	Gnd	
3 - TXD	Send	
4 - RXD	Receive	
5 - TXD232	Send	
6 - RXD232	Receive	
7 - SDA3_IR-OUT	Signal	
8 - POR (*)	Signal	
9 - CVBS-terr	Signal	
10 - Gnd	Gnd	

(\*) POR= Power On Reset

**13 - RJ12 DATA1 (HM-Link - In/Out)**

1 - LED-in_SCL	< 0.3 V, active low	
2 - IR-in_SDA	< 0.3 V, active low	
3 - MODE_HP-DET	Vcc	
4 - TV Power Status	4.5 to 5 V: TV "On" < 0.3 V: TV "Stdby" High impedance: TV "Off"	
5 - Gnd	Gnd	
6 - IR-out	Signal	

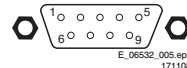
**14 - iBoard Service Connector (RS232-UART)**

Figure 2-4 RS232 Connector

1 - n.c.		
2 - RXD232	Receive	
3 - TXD232	Send	
4 - n.c.		
5 - Gnd	Ground	
6 - n.c.		
7 - n.c.		
8 - n.c.		
9 - n.c.		

**15 - Mini Jack: Bathroom speaker (8 W / 1 W - Output)**

1 - Control Signal	OUT-	
2 - Control Signal	OUT+	
3 - Control Signal	OUT+	

**16 - Mini Jack: Digital Volume Control**

1 - Control Signal	Up/Down	
2 - Vcc	+5V_AUD	
3 - Ground	Gnd	

**17 - Mini Jack: AUX1 Audio - Out**

1 - Ground	Gnd	
2 - Control Signal	HP-DETECT	
3 - Audio R	0.2 - 2 V <sub>RMS</sub> / 10 kohm	
4 - Audio L	0.2 - 2 V <sub>RMS</sub> / 10 kohm	

**17 - Mini Jack: AUX2 Audio - Out**

1 - Ground	Gnd	
2 - Control Signal	HP-DETECT	
3 - Audio R	0.2 - 2 V <sub>RMS</sub> / 10 kohm	
4 - Audio L	0.2 - 2 V <sub>RMS</sub> / 10 kohm	

**2.4 Chassis Overview**

Refer to chapter "Block Diagrams" for PWB/CBA locations.



## 3. Precautions, Notes, and Abbreviation List

### Index of this chapter:

[3.1 Safety Instructions](#)

[3.2 Warnings](#)

[3.3 Notes](#)

[3.4 Abbreviation List](#)

### 3.1 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. Of de set ontploft!

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 MΩ and 12 MΩ.
  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.

### 3.2 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.

### 3.3 Notes

#### 3.3.1 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 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 ( $\textcircled{S}$ ). These values are indicated by means of the appropriate symbols.

#### 3.3.2 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 kΩ).
- Resistor values with no multiplier may be indicated with either an “E” or an “R” (e.g. 220E or 220R indicates 220 Ω).
- 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 on the Philips Spare Parts Web Portal.

#### 3.3.3 Spare Parts

For the latest spare part overview, consult your Philips Spare Part web portal.

#### 3.3.4 BGA (Ball Grid Array) ICs

##### Introduction

For more information on how to handle BGA devices, visit this URL: <http://www.atyourservice-magazine.com>. 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. Where applicable and available, this profile is added to the IC Data Sheet information section in this manual.

#### 3.3.5 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. 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.

### 3.3.6 Alternative BOM identification

It should be noted that on the European Service website, "Alternative BOM" is referred to as "Design variant".

The **third digit** in the serial number (example: AG2B033500001) 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: AG1B033500001), then the TV set has been manufactured according to B.O.M. number 1. If the third digit is a "2" (example: AG2B033500001), 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.



Figure 3-1 Serial number (example)

### 3.3.7 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!

### 3.3.8 Practical Service Precautions

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

### 3.4 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
AARA	Automatic Aspect Ratio Adaptation: algorithm that adapts aspect ratio to remove horizontal black bars; keeps the original aspect ratio
ACI	Automatic Channel Installation: algorithm that installs TV channels directly from a cable network by means of a predefined TXT page
ADC	Analogue to Digital Converter
AFC	Automatic Frequency Control: control signal used to tune to the correct frequency
AGC	Automatic Gain Control: algorithm that controls the video input of the feature box
AM	Amplitude Modulation
AP	Asia Pacific
AR	Aspect Ratio: 4 by 3 or 16 by 9
ASF	Auto Screen Fit: algorithm that adapts aspect ratio to remove horizontal black bars without discarding video information
ATSC	Advanced Television Systems Committee, the digital TV standard in the USA
ATV	See Auto TV
Auto TV	A hardware and software control system that measures picture content, and adapts image parameters in a dynamic way
AV	External Audio Video
AVC	Audio Video Controller
AVIP	Audio Video Input Processor
B/G	Monochrome TV system. Sound carrier distance is 5.5 MHz
BLR	Board-Level Repair
BTSC	Broadcast Television Standard Committee. Multiplex FM stereo sound system, originating from the USA and used e.g. in LATAM and AP-NTSC countries
B-TXT	Blue TeleteXT
C	Centre channel (audio)
CEC	Consumer Electronics Control bus: remote control bus on HDMI connections
CL	Constant Level: audio output to connect with an external amplifier
CLR	Component Level Repair
ComPair	Computer aided rePair
CP	Connected Planet / Copy Protection
CSM	Customer Service Mode
CTI	Color Transient Improvement: manipulates steepness of chroma transients
CVBS	Composite Video Blanking and Synchronization
DAC	Digital to Analogue Converter
DBE	Dynamic Bass Enhancement: extra low frequency amplification
DDC	See "E-DDC"
D/K	Monochrome TV system. Sound carrier distance is 6.5 MHz
DFI	Dynamic Frame Insertion
DFU	Directions For Use: owner's manual
DMR	Digital Media Reader: card reader
DMSD	Digital Multi Standard Decoding
DNM	Digital Natural Motion

DNR	Digital Noise Reduction: noise reduction feature of the set		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.
DRAM	Dynamic RAM		
DRM	Digital Rights Management		
DSP	Digital Signal Processing	ITV	Institutional TeleVision; TV sets for hotels, hospitals etc.
DST	Dealer Service Tool: special remote control designed for service technicians	LS	Last Status; The settings last chosen by the customer and read and stored in RAM or in the NVM. They are called
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	LATAM	according to the customer's preferences
DVB-C	Digital Video Broadcast - Cable	LCD	Latin America
DVB-T	Digital Video Broadcast - Terrestrial	LED	Liquid Crystal Display
DVD	Digital Versatile Disc	L/L'	Light Emitting Diode
DVI(-d)	Digital Visual Interface (d= digital only)		Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I
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.	LPL	LG.Philips LCD (supplier)
EDID	Extended Display Identification Data (VESA standard)	LS	Loudspeaker
EEPROM	Electrically Erasable and Programmable Read Only Memory	LVDS	Low Voltage Differential Signalling
EMI	Electro Magnetic Interference	Mbps	Mega bits per second
EPLD	Erasable Programmable Logic Device	M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz
EU	Europe	MIPS	Microprocessor without Interlocked Pipeline-Stages; A RISC-based microprocessor
EXT	EXternal (source), entering the set by SCART or by cinches (jacks)	MOP	Matrix Output Processor
FDS	Full Dual Screen (same as FDW)	MOSFET	Metal Oxide Silicon Field Effect Transistor, switching device
FDW	Full Dual Window (same as FDS)	MPEG	Motion Pictures Experts Group
FLASH	FLASH memory	MPIF	Multi Platform InterFace
FM	Field Memory or Frequency Modulation	MUTE	MUTE Line
FPGA	Field-Programmable Gate Array	NC	Not Connected
FTV	Flat TeleVision	NICAM	Near Instantaneous Compounded Audio Multiplexing. This is a digital sound system, mainly used in Europe.
Gb/s	Giga bits per second	NTC	Negative Temperature Coefficient, non-linear resistor
G-TXT	Green TeleteXT	NTSC	National Television Standard Committee. Color system mainly used in North America and Japan. Color carrier NTSC M/N= 3.579545 MHz, NTSC 4.43= 4.433619 MHz (this is a VCR norm, it is not transmitted off-air)
H	H_sync to the module		
HD	High Definition		
HDD	Hard Disk Drive		
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.	NVM	Non-Volatile Memory: IC containing TV related data such as alignments
HDMI	High Definition Multimedia Interface	O/C	Open Circuit
HP	HeadPhone	OSD	On Screen Display
I	Monochrome TV system. Sound carrier distance is 6.0 MHz	OTC	On screen display Teletext and Control; also called Artistic (SAA5800)
I <sup>2</sup> C	Inter IC bus	P50	Project 50: communication protocol between TV and peripherals
I <sup>2</sup> D	Inter IC Data bus	PAL	Phase Alternating Line. Color system mainly used in West Europe (color carrier= 4.433619 MHz) and South America (color carrier PAL M= 3.575612 MHz and PAL N= 3.582056 MHz)
I <sup>2</sup> S	Inter IC Sound bus	PCB	Printed Circuit Board (same as "PWB")
IF	Intermediate Frequency	PCM	Pulse Code Modulation
IR	Infra Red	PDP	Plasma Display Panel
IRQ	Interrupt Request	PFC	Power Factor Corrector (or Pre-conditioner)
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.	PIP	Picture In Picture
	Uncompressed digital component or digital composite signals can be used. The SDI signal is self-synchronizing,	PLL	Phase Locked Loop. Used for e.g. FST tuning systems. The customer can give directly the desired frequency
		POD	Point Of Deployment: a removable CAM module, implementing the CA system for a host (e.g. a TV-set)
		POR	Power On Reset, signal to reset the uP
		PTC	Positive Temperature Coefficient, non-linear resistor
		PWB	Printed Wiring Board (same as "PCB")

PWM	Pulse Width Modulation	Y	Luminance signal
QRC	Quasi Resonant Converter	Y/C	Luminance (Y) and Chrominance (C) signal
QTNR	Quality Temporal Noise Reduction		
QVCP	Quality Video Composition Processor	YPbPr	Component video. Luminance and scaled color difference signals (B-Y and R-Y)
RAM	Random Access Memory		
RGB	Red, Green, and Blue. The primary color signals for TV. By mixing levels of R, G, and B, all colors (Y/C) are reproduced.	YUV	Component video
RC	Remote Control		
RC5 / RC6	Signal protocol from the remote control receiver		
RESET	RESET signal		
ROM	Read Only Memory		
RSDS	Reduced Swing Differential Signalling data interface		
R-TXT	Red TeleteXT		
SAM	Service Alignment Mode		
S/C	Short Circuit		
SCART	Syndicat des Constructeurs d'Appareils Radiorécepteurs et Téléviseurs		
SCL	Serial Clock I <sup>2</sup> C		
SCL-F	CLock Signal on Fast I <sup>2</sup> C bus		
SD	Standard Definition		
SDA	Serial Data I <sup>2</sup> C		
SDA-F	DAta Signal on Fast I <sup>2</sup> C bus		
SDI	Serial Digital Interface, see "ITU-656"		
SDRAM	Synchronous DRAM		
SECAM	SEequence Couleur Avec Mémoire. Color system mainly used in France and East Europe. Color carriers= 4.406250 MHz and 4.250000 MHz		
SIF	Sound Intermediate Frequency		
SMPS	Switched Mode Power Supply		
SoC	System on Chip		
SOG	Sync On Green		
SOPS	Self Oscillating Power Supply		
SPI	Serial Peripheral Interface bus; a 4-wire synchronous serial data link standard		
S/PDIF	Sony Philips Digital InterFace		
SRAM	Static RAM		
SRP	Service Reference Protocol		
SSB	Small Signal Board		
STBY	STand-BY		
SVGA	800x600 (4:3)		
SVHS	Super Video Home System		
SW	Software		
SWAN	Spatial temporal Weighted Averaging Noise reduction		
SXGA	1280x1024		
TFT	Thin Film Transistor		
THD	Total Harmonic Distortion		
TMDS	Transmission Minimized Differential Signalling		
TXT	TeleteXT		
TXT-DW	Dual Window with TeleteXT		
UI	User Interface		
uP	Microprocessor		
UXGA	1600x1200 (4:3)		
V	V-sync to the module		
VESA	Video Electronics Standards Association		
VGA	640x480 (4:3)		
VL	Variable Level out: processed audio output toward external amplifier		
VSF	Vestigial Side Band; modulation method		
WYSIWYR	What You See Is What You Record: record selection that follows main picture and sound		
WXGA	1280x768 (15:9)		
XTAL	Quartz crystal		
XGA	1024x768 (4:3)		

# 4. Mechanical Instructions

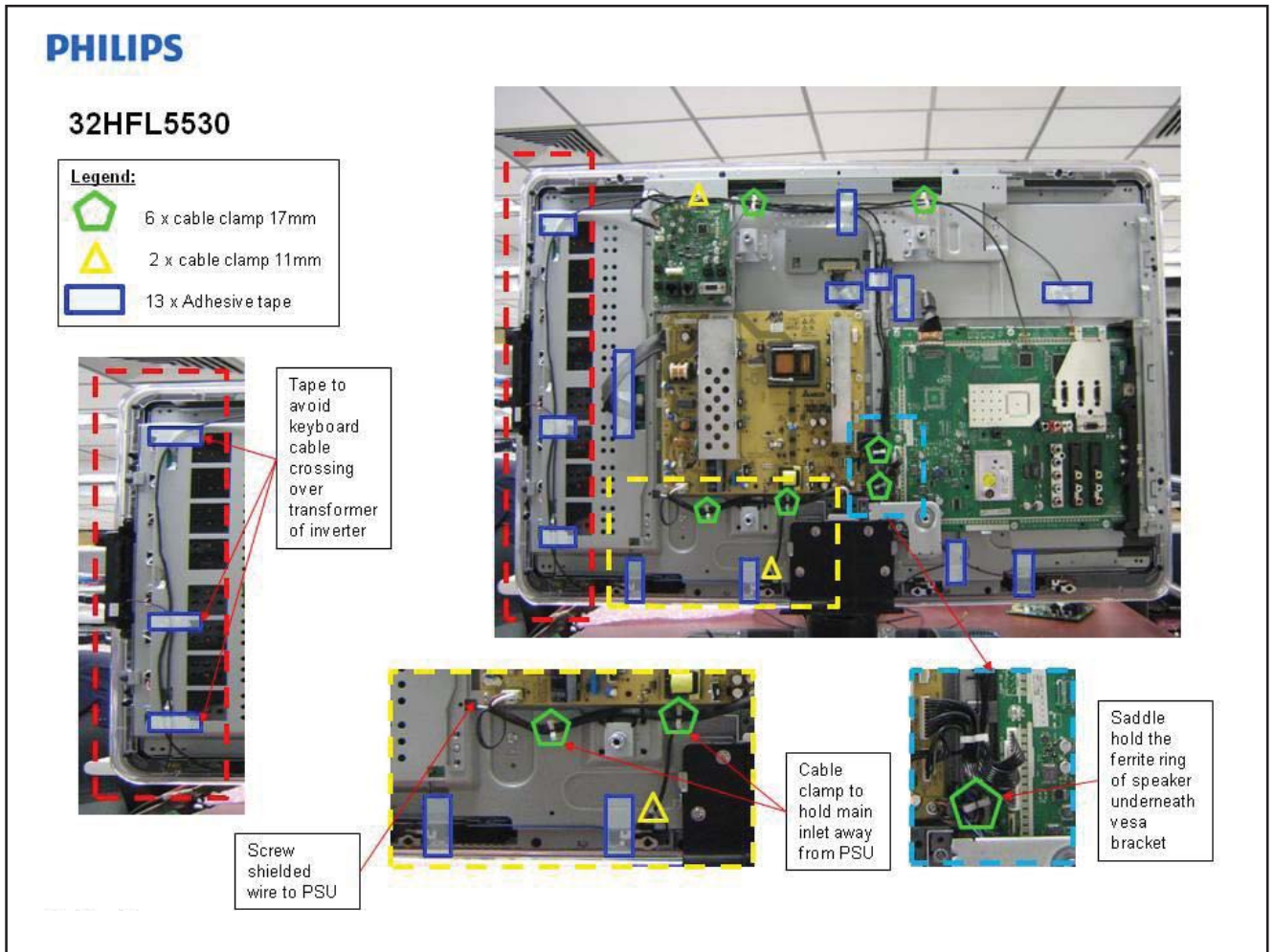
**Index of this chapter:**

- [4.1 Cable Dressing](#)
- [4.2 Service Positions](#)
- [4.3 Assy/Panel Removal ME8 Styling](#)
- [4.4 Set Re-assembly](#)

**Notes:**

- Figures below can deviate slightly from the actual situation, due to the different set executions.
- Follow the disassemble instructions in described order.

## 4.1 Cable Dressing




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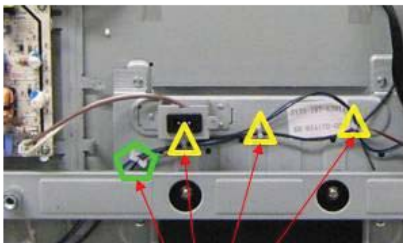
Figure 4-1 Cable dressing 32-inch sets



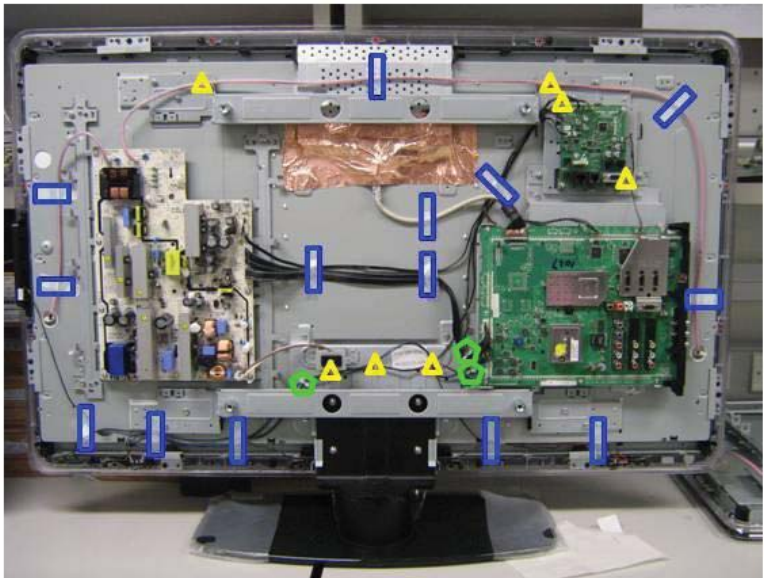
**PHILIPS**

**42HFL5580**

- Legend:**
-  3 x cable clamp 17mm
  -  7 x cable clamp 11mm
  -  14 x Adhesive tape



Saddle to hold IR cable and speaker cable



Saddle to hold the ferrite ring of the cable

18510\_205\_090407.eps  
090407

Figure 4-2 Cable dressing 42-inch sets

## 4.2 Service Positions

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

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

### 4.2.1 Foam Bars

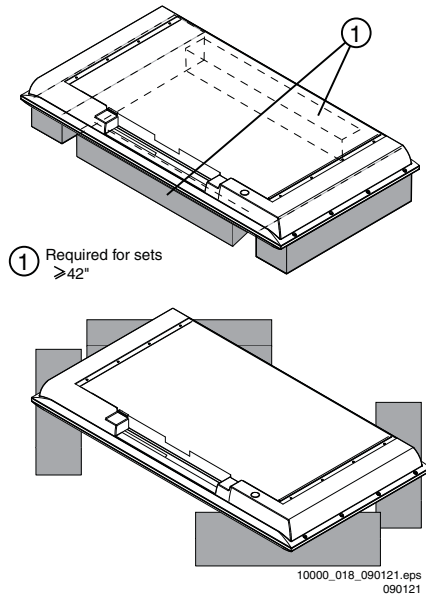


Figure 4-3 Foam bars

The foam bars (order code 3122 785 90580 for two pieces) can be used for all types and sizes of Flat TVs.

See figure [Figure 4-3](#) for details. Sets with a display of 42" and larger, require **four** foam bars [1]. Ensure that the foam bars are always supporting the cabinet and **never** only the display.

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

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

## 4.3 Assy/Panel Removal ME8 Styling

### 4.3.1 Rear Cover

#### Warning:

- Disconnect the mains power cord before you remove the rear cover.
- The speakers (located in the rear cover) should never be (dis)connected when the set is playing! This can damage the amplifiers on the SSB.

**Note:** it is **not** necessary to remove the stand while removing the rear cover.

Removal sequence:

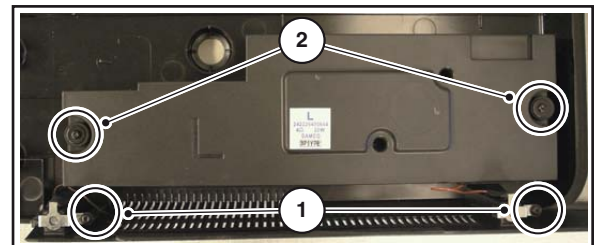
1. Remove all screws of the rear cover.
2. Lift the rear cover from the TV. Make sure that wires and flat coils are not damaged while lifting the rear cover from the set.

### 4.3.2 Woofers (in rear cover)

Refer to next figure for details.

1. Remove the screws [1] and lift the whole unit from the rear cover.

Take the speakers out together with their casing. When defective, replace the whole unit.



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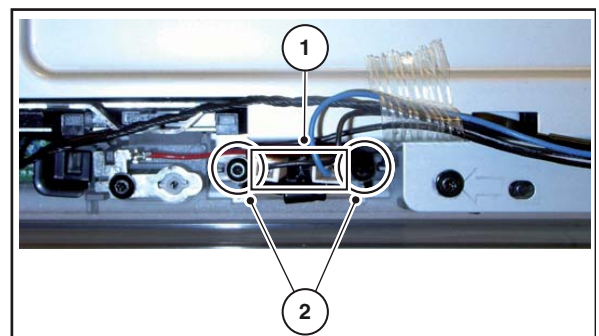
Figure 4-4 Woofer

### 4.3.3 Tweeters (if present)

Refer to next figure for details.

**Warning:** The speakers should never be connected or disconnected when the set is playing! This can damage the amplifiers on the SSB.

1. Release the connectors [1].
2. Remove the screws [2] and lift the whole unit from the set. When defective, replace the whole unit.



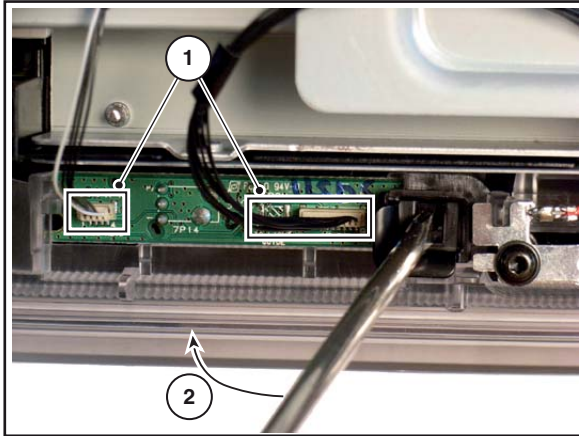
H\_17650\_095.eps  
180108

Figure 4-5 Tweeter

4.3.4 IR & LED Board

Refer to next figure for details.

1. Unplug connectors [1].
  2. Use a flat screw driver to release the clip by pushing it in the indicated direction [2].
  3. Lift the board and take it out of the set.
- When defective, replace the whole unit.



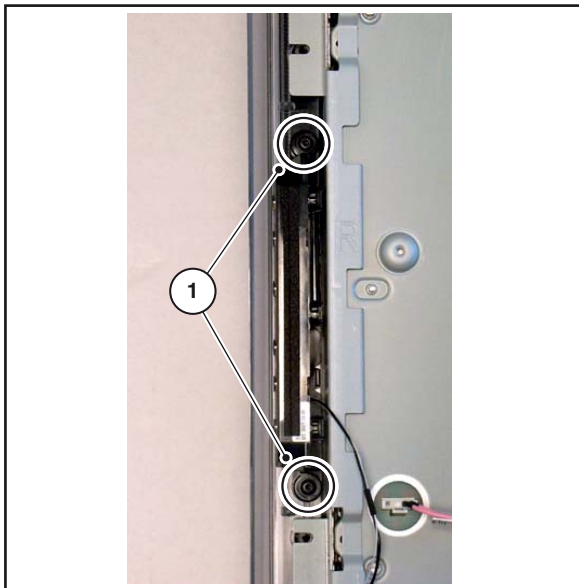
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180108

Figure 4-6 IR & LED Board

4.3.5 Key Board

Refer to next figure for details.

1. Unplug connectors.
  2. Remove the screws [1].
  3. Lift the unit and take it out of the set.
- When defective, replace the whole unit.



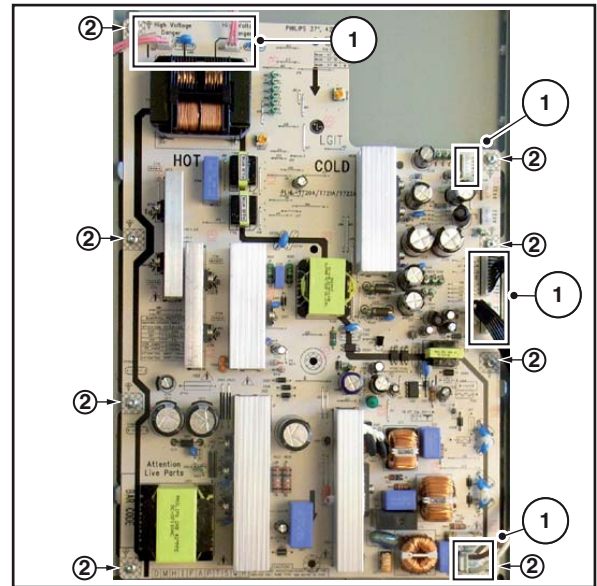
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180108

Figure 4-7 Key Board

4.3.6 Display Supply Panel

Refer to next figure for details (is for 42" set, for other screensizes the process might slightly deviate):

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



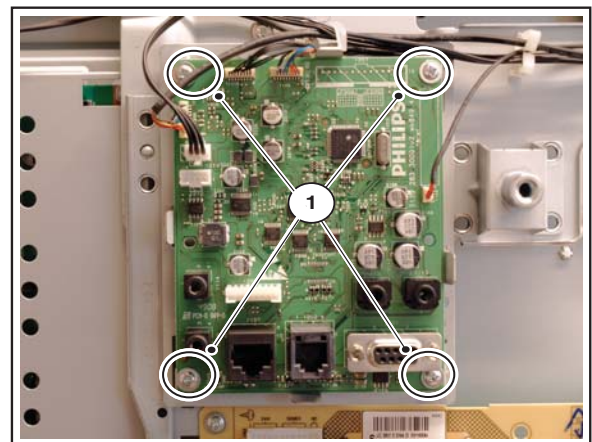
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230108

Figure 4-8 Display Supply Panel (42" set)

4.3.7 iBoard

Refer to next figure for details.

1. Unplug connectors.
  2. Remove the screws [1].
  3. Lift the unit and take it out of the set.
- When defective, replace the whole unit.



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090409

Figure 4-9 iBoard



### 4.3.8 Small Signal Board (SSB)

Refer to next figure for details.

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

1. Unplug the LVDS connector(s) [1].

**Caution:** be careful, as this is a very fragile connector!

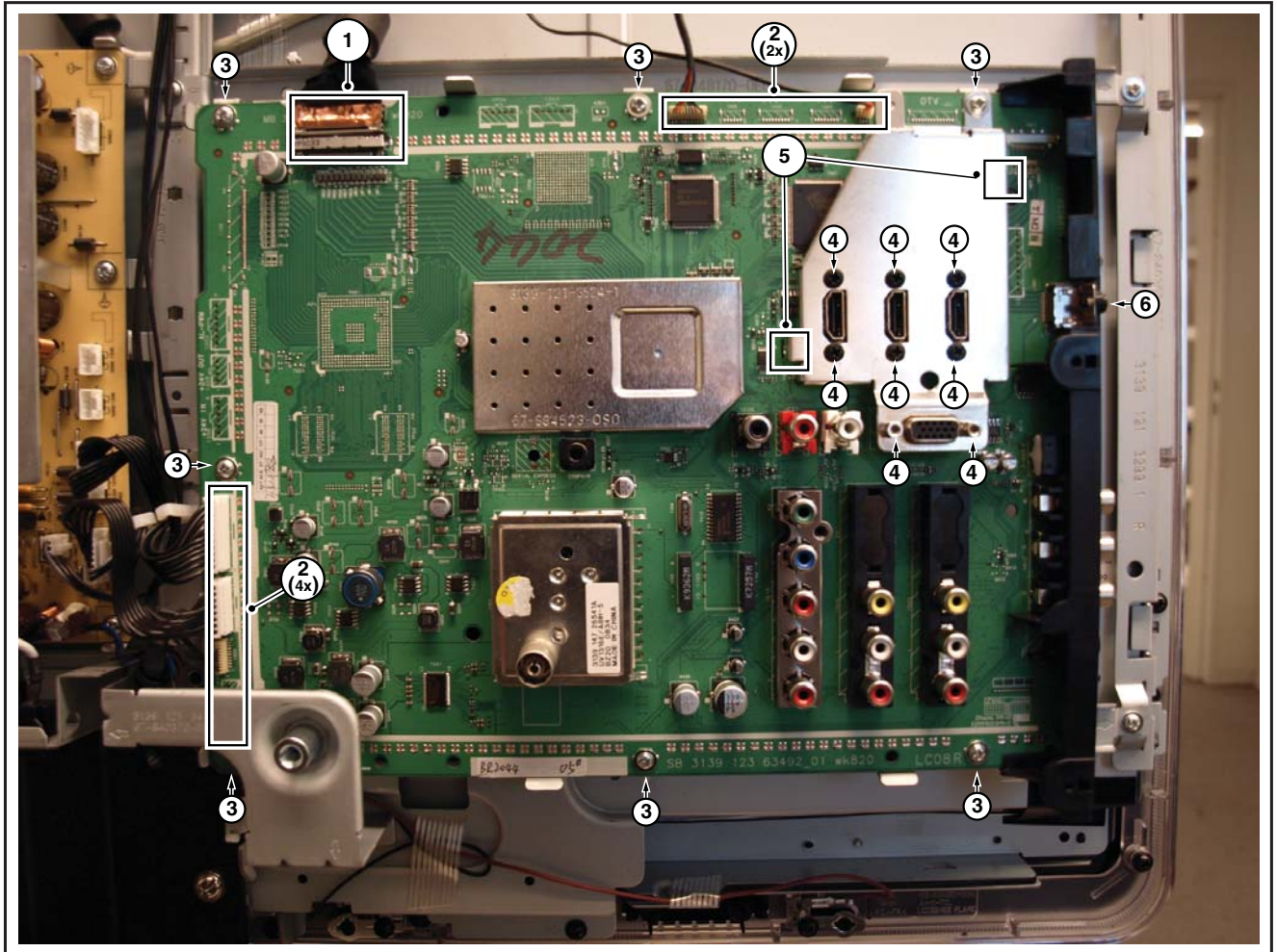
2. Unplug the connectors [2].

3. Remove the screws [3].

4. The SSB can now be taken out of the set, together with the front shield and the side cover.

5. To remove the shield, remove the screws [4] and lift it of while releasing clips [5].

6. Remove screw [6] and slide the cover sideways from the SSB.



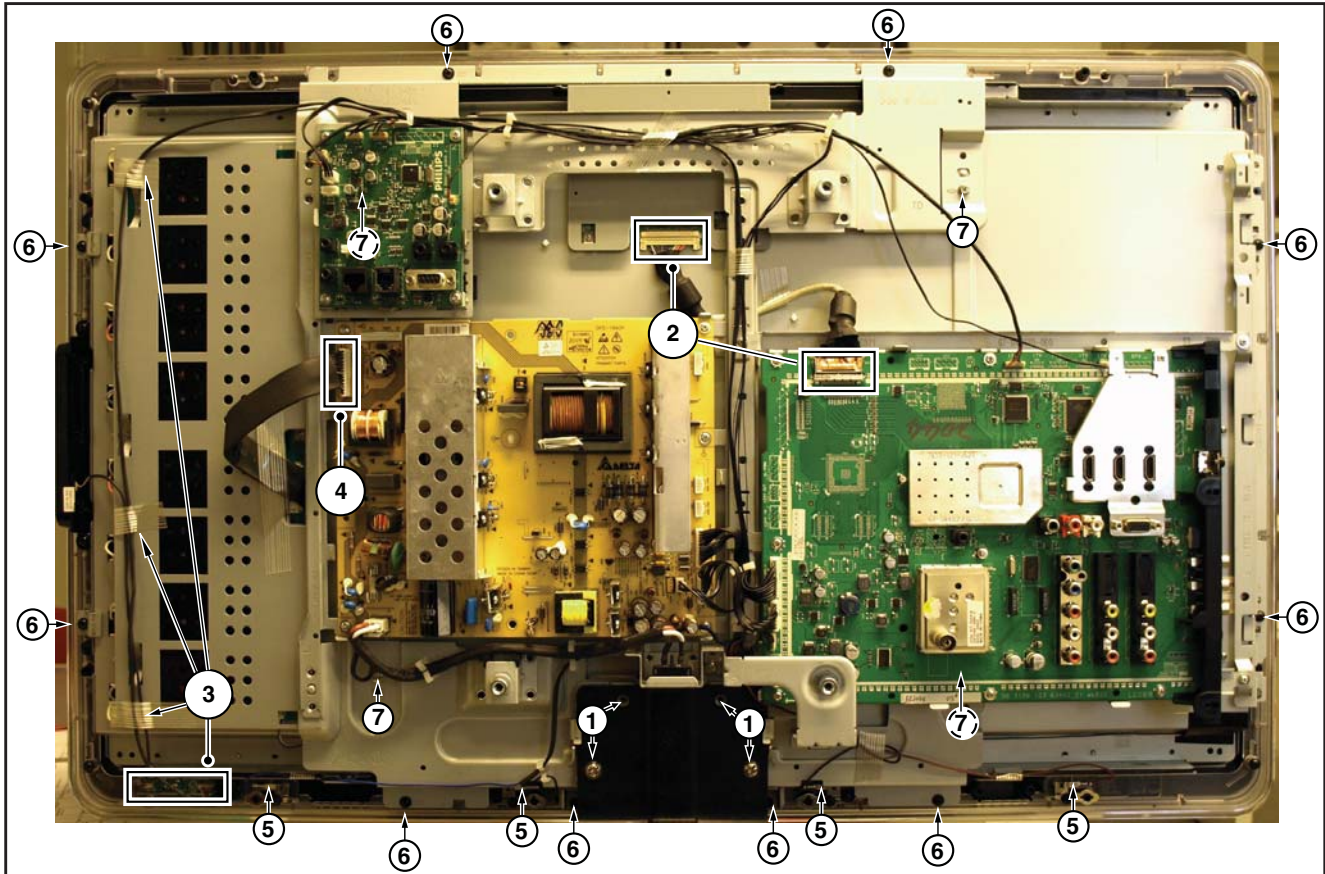
18510\_207\_090407.eps  
090407

Figure 4-10 Small Signal Board

## 4.3.9 LCD Panel

Refer to next figures for details. **Note that this description is for the 32" model numbers.** For other screensizes the process might slightly deviate.

1. **Remove the stand.**
2. Unplug the LVDS connector(s) [1] and remove the adhesive tape. **Caution:** be careful, as this is a very fragile connector!
3. Unplug the IR/LED Panel [3] connectors and remove the adhesive tapes.
4. Unplug the Inverter connector [4].
5. Unplug the Speaker cables at the "rim contacts" [5].
6. Remove the screws [6] that hold the complete subframe to the front cabinet.
7. Remove the screws [7] that mount the subframe to the LCD panel. In some sets some of these screws are hidden and require further dismantling of the boards. This is for instance the case with the screws hidden by the iBoard and the SSB in the 32" sets.
8. If all these steps are taken, lift the complete subframe from the set together with all panels.
9. The LCD panel can now be lifted from the front cabinet.



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090408

Figure 4-11 LCD Panel removal (32" sets)

## 4.4 Set Re-assembly

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

**Notes:**

- While re-assembling, make sure that all cables are placed and connected in their original position. See [Figure 4-1](#) and [Figure 4-2](#).
- Pay special attention not to damage the EMC foams in the set. 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 Hotel mode](#)
- [5.3 Service Modes](#)
- [5.4 Service Tools](#)
- [5.5 Error Codes](#)
- [5.6 The Blinking LED Procedure](#)
- [5.7 Software Upgrading](#)
- [5.8 Fault Finding and Repair Tips](#)

### 5.1 Test Points

In the chassis schematics and layout overviews, the test points (Fxxx) are mentioned. In the schematics, test points are indicated with a rectangular box around "Fxxx" or "Ixxx", in the layout overviews with a "half-moon" sign.

As most signals are digital, it will be difficult to measure waveforms with a standard oscilloscope. 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 Hotel mode

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

After repair, place the set into hotel mode (iTV-Mode) again. Key-in the same code on the remote control as described above. The text message "TV Is Now In iTV Mode" appears. A cold start must be performed as described above. The set is now in the hotel mode (iTV-Mode) again.

### 5.3 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 [ComPair](#)).

#### 5.3.1 General

Some items are applicable to all Service Modes or are general. These are listed below.

#### Life Timer

During the life time cycle of the TV set, a timer is kept. It counts the normal operation hours (not the Stand-by hours). The actual value of the timer is displayed in SDM and CSM in a decimal value. Every two soft-resets increase the hour by +1.

#### Software Identification, Version, and Cluster

The software ID, version, and cluster will be shown in the main menu display of SDM, SAM, and CSM.

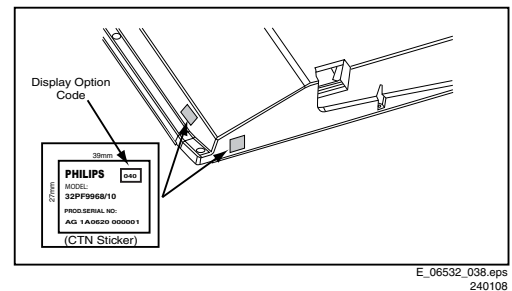
The screen will show: "AAAAABCD X.YY", where:

- **AAAAA** is the chassis name: LC82H.
- **B** is the region indication: E= Europe, A= AP/China, U= NAFTA, L= LATAM.
- **C** is the display indication: L= LCD, P= Plasma.
- **D** is the language/feature indication: 1= standard, H= 1080p full HD.
- **X** is the main version number: this is updated with a major change of specification (incompatible with the previous software version). Numbering will go from 1 - 9 and A - Z.
  - If the main version number changes, the new version number is written in the NVM.
  - If the main version number changes, the default settings are loaded.
- **YY** is the sub version number: this is updated with a minor change (backwards compatible with the previous versions) Numbering will go from 00 - 99.
  - If the sub version number changes, the new version number is written in the NVM.
  - If the NVM is fresh, the software identification, version, and cluster will be written to NVM.

#### Display Option Code Selection

When after an SSB or display exchange, the display option code is not set properly, it will result in a TV with "no display". Therefore, **it is required** to set this display option code after such a repair.

To do so, press the following key sequence on a standard RC transmitter: "062598" directly followed by **MENU** and "xxx", where "xxx" is a 3 digit decimal value of the panel type: see column "Display code" in table [6-3 Option code overview](#), or see sticker on the side/bottom of the cabinet. When the value is accepted and stored in NVM, the set will switch to Stand-by, to indicate that the process has been completed.



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240108

Figure 5-1 Location of Display Option Code sticker

During this algorithm, the NVM-content must be filtered, because several items in the NVM are TV-related and not SSB-related (e.g. Model and Prod. S/N). Therefore, "Model" and "Prod. S/N" data is changed into "See Type Plate".

In case a call centre or consumer reads "See Type Plate" in CSM mode, he needs to look to the side/bottom sticker to identify the set, for further actions.



### 5.3.2 Service Default Mode (SDM)

#### Purpose

Set the TV in SDM mode in order to be able to:

- Create a pre-defined setting for measurements to be made.
- Override software protections.
- Start the blinking LED procedure.
- Read the error buffer.
- Check the life timer.

#### Specifications

Table 5-1 SDM default settings

Region	Freq. (MHz)	Default syst.
Europe (except France), AP-PAL/-Multi	475.25	PAL B/G
France		SECAM L
NAFTA, AP-NTSC	61.25 (channel 3)	NTSC M
LATAM		PAL M

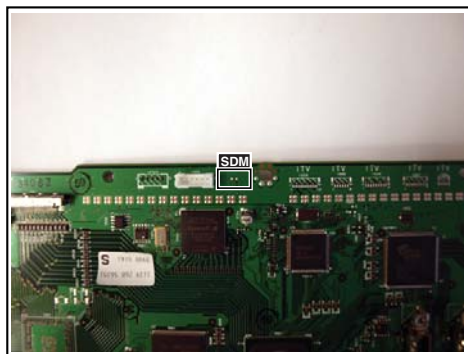
- Set linear video and audio settings to 50%, but volume to 25%. Stored user settings are not affected.
- All service-unfriendly modes (if present) are disabled, since they interfere with diagnosing/repairing a set. These service unfriendly modes are:
  - (Sleep) timer.
  - Blue mute/Wall paper.
  - Auto switch “off” (when there is no “ident” signal).
  - Hotel or hospital mode.
  - Child lock or parental lock (manual or via V-chip).
  - Skipping, blanking of “Not favourite”, “Skipped” or “Locked” presets/channels.
  - Automatic storing of Personal Preset or Last Status settings.
  - Automatic user menu time-out (menu switches back/OFF automatically).
  - Auto Volume levelling (AVL).

#### How to Activate

To activate SDM, use **one** of the following methods:

- Press the following key sequence on the remote control transmitter: “062596” directly followed by the **MENU** button (do not allow the display to time out between entries while keying the sequence).
- Short (one of) the “Service” jumpers on the TV board during cold start (see Figure “Service jumper”). Then press the mains button (remove the short after start-up).

**Caution:** Activating SDM by shorting “Service” jumpers will override the DC speaker protection (error 1), the General I2C error (error 4), and the Trident video processor error (error 5). When doing this, the service-technician must know exactly what he is doing, as it could damage the television set.

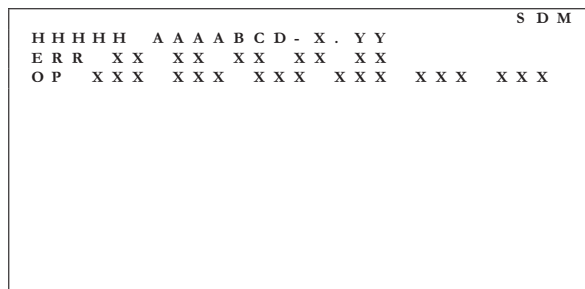


I\_17760\_046.eps  
030308

Figure 5-2 Service jumper (SSB component side)

#### On Screen Menu

After activating SDM, the following screen is visible, with SDM in the upper right corner of the screen to indicate that the television is in Service Default Mode.



G\_16860\_030.eps  
260107

Figure 5-3 SDM menu

Menu explanation:

- **HHHHH:** Are the operating hours (in decimal).
- **AAAABCD-X.YY.** See paragraph [Software Identification, Version, and Cluster](#) for the SW name definition.
- **SDM:** The character “SDM” to indicate that the TV set is in Service mode.
- **ERR:** Shows all errors detected since the last time the buffer was erased. Five errors possible.
- **OP:** Used to read-out the option bytes. See [Option Bit Overview](#) for a detailed description. Seven codes are possible.

#### How to Navigate

As this mode is read only, there is not much to navigate. To switch to other modes, use one of the following methods:

- Command MENU from the user remote will enter the normal user menu (brightness, contrast, colour, etc...) with “SDM” OSD remaining, and pressing MENU key again will return to the last status of SDM again.
- To prevent the OSD from interfering with measurements in SDM, command “OSD” (“STATUS” for NAFTA and LATAM) from the user remote will toggle the OSD “on/off” with “SDM” OSD remaining always “on”.
- Press the following key sequence on the remote control transmitter: “062596” directly followed by the **OSD/STATUS/INFO/i+** button to switch to SAM (do not allow the display to time out between entries while keying the sequence).

#### How to Exit

Switch the set to STANDBY by pressing the mains button on the remote control transmitter or on the television set.

If you switch the television set “off” by removing the mains (i.e., unplugging the television), the television set will remain in SDM when mains is re-applied, and the error buffer is not cleared. The error buffer will only be cleared when the “clear” command is used in the SAM menu.

#### Note:

- If the TV is switched “off” by a power interrupt while in SDM, the TV will show up in the last status of SDM menu as soon as the power is supplied again. The error buffer will not be cleared.
- In case the set is in Factory mode by accident (with “F” displayed on screen), pressing and hold “VOL-” and “CH-” together will leave Factory mode.

### 5.3.3 Service Alignment Mode (SAM)

#### Purpose

- To change option settings.
- To display / clear the error code buffer.
- To perform alignments.

#### Specifications

- Operation hours counter (maximum five digits displayed).
- Software version, error codes, and option settings display.
- Error buffer clearing.
- Option settings.
- Software alignments (Tuner, White Tone, and Audio).
- NVM Editor.
- ComPair Mode switching.
- Set the screen mode to full screen (all contents on screen are viewable).

#### How to Activate

To activate SAM, use one of the following methods:

- Press the following key sequence on the remote control transmitter: "062596" directly followed by the **OSD/STATUS/INFO/i+** button (it depends on region which button is present on the RC). Do not allow the display to time out between entries while keying the sequence.
- Or via ComPair.

After entering SAM, the following screen is visible, with SAM in the upper right corner of the screen to indicate that the television is in Service Alignment Mode.

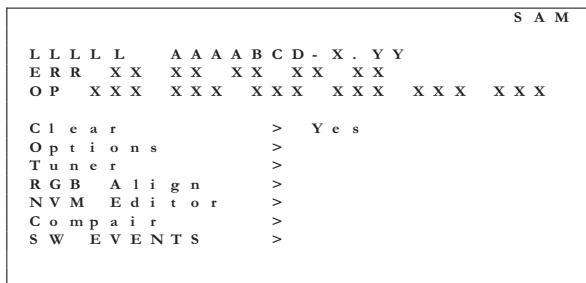


Figure 5-4 SAM menu

Menu explanation:

1. **LLLLL**. This represents the run timer. The run timer counts normal operation hours, but does not count Stand-by hours.
2. **AAAABCD-X.YY**. See paragraph [Software Identification, Version, and Cluster](#) for the SW name definition.
3. **SAM**. Indication of the Service Alignment Mode.
4. **ERR (ERRor buffer)**. Shows all errors detected since the last time the buffer was erased. Five errors possible.
5. **OP (Option Bytes)**. Used to read-out the option bytes. See [Option Bit Overview](#) for a detailed description. Seven codes are possible.
6. **Clear**. Erases the contents of the error buffer. Select the CLEAR menu item and press the MENU RIGHT key. The content of the error buffer is cleared.
7. **Options**. Used to set the option bits. See [Option Bit Overview](#) for a detailed description.
8. **Tuner**. Used to align the tuner. See [6.3.1 Tuner Adjustment \(RF AGC Take Over Point\)](#) for a detailed description.
9. **RGB Align**. Used to align the White Tone. See [6.3.2 RGB Alignment](#) for a detailed description.
10. **NVM Editor**. Can be used to change the NVM data in the television set. See also [5.8 Fault Finding and Repair Tips](#) further on.
11. **ComPair**. Can be used to switch the television to "In Application Programming" mode (IAP), for software uploading via ComPair. See also [5.4.1 ComPair](#).

**Caution:** When this mode is selected without ComPair connected, the TV will be blocked. Remove the AC power to reset the TV.

12. **SW Events**. Only to be used by development to monitor SW behaviour during stress test.

#### How to Navigate

- In the SAM menu, select menu items with the MENU UP/DOWN keys on the remote control transmitter. The selected item will be indicated. When not all menu items fit on the screen, use the MENU UP/DOWN keys to display the next / previous menu items.
- With the MENU LEFT/RIGHT keys, it is possible to:
  - Activate the selected menu item.
  - Change the value of the selected menu item.
  - Activate the selected sub menu.
- When you press the MENU button twice while in top level SAM, the set will switch to the normal user menu (with the SAM mode still active in the background). To return to the SAM menu press the MENU button.
- Command **OSD/STATUS/INFO/i+** button from the user remote will toggle the OSD "on/off" with "SAM" OSD remaining always "on".
- Press the following key sequence on the remote control transmitter: "062596" directly followed by the **MENU** button to switch to SDM (do not allow the display to time out between entries while keying the sequence).

#### How to Store SAM Settings

To store the settings changed in SAM mode (except the OPTIONS settings), leave the top level SAM menu by using the POWER button on the remote control transmitter or the television set.

#### How to Exit

Switch the set to STANDBY by pressing the mains button on the remote control transmitter or the television set.

#### Note:

- When the TV is switched "off" by a power interrupt while in SAM, the TV will show up in "normal operation mode" as soon as the power is supplied again. The error buffer will not be cleared.
- In case the set is in Factory mode by accident (with "F" displayed on screen), pressing and hold "VOL-" and "CH-" together will leave Factory mode.

### 5.3.4 Customer Service Mode (CSM)

#### Purpose

The Customer Service Mode shows error codes and information on the TV's operation settings. A call centre can instruct the customer (by telephone) to enter CSM in order to identify the status of the set. This helps them to diagnose problems and failures in the TV before making a service call. The CSM is a read-only mode; therefore, modifications are not possible in this mode.

#### Specifications

- Ignore "Service unfriendly modes".
- Line number for every line (to make CSM language independent).
- Set the screen mode to full screen (all contents on screen are viewable).
- After leaving the Customer Service Mode, the original settings are restored.
- Possibility to use "CH+" or "CH-" for channel surfing, or enter the specific channel number on the RC.

#### How to Activate

To activate CSM, press the following key sequence on the remote control transmitter: "123654" (do not allow the display to time out between entries while keying the sequence).

Upon entering the Customer Service Mode, the following screen will appear:

```

1  M O D E L   : 4 2 P F L 7 4 0 3 / 9 3
2  P R O D S / N : A G 1 A 0 8 1 2 1 2 3 4 5 6
3  S W I D   : L C 8 2 A L 1 - 1 . x x
4  O P      : X X X X X X X X X X X X X X X X X X
5  C O D E S : X X X X X X X X
6  S S B    : 3 1 3 9 1 2 3 6 3 4 9 1
7  N V M    : X X X X X X X X
8  F l a s h D a t a : X X . X X . X X . X X
9  D I S P L A Y : X X X X X X X X X X
P A G E D O W N :
  
```

L\_17760\_026a.aps  
120208

Figure 5-5 CSM menu -1- (example)

```

1 0 T U N E R   : W E A K / G O O D / S T R O N G
1 1 S Y S T E M : P A L / N T S C / S E C A M
1 2 S O U N D  : M O N O / S T E R E O / N I C A M
1 3 H D A U    : Y E S / N O
1 4 F O R M A T : X X X X X X X X
1 5 D F R S W I D : (*)
1 6 F P G A F W : X X . X X . X X
1 7 :
1 8 :
P A G E U P :
  
```

(\*) referring to bolt-on DFI SW ID

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Figure 5-6 CSM menu -2- (example)

#### Menu Explanation

1. **MODEL.** Type number, e.g. 32PFL7762D/05. (\*)
2. **PROD S/N.** Product serial no., e.g. AG1A0712123456. (\*)
3. **SW ID.** Software cluster and version is displayed.
4. **OP.** Option code information.
5. **CODES.** Error buffer contents.
6. **SSB.** Indication of the SSB factory ID (= 12nc). (\*)
7. **NVM.** The NVM software version no.
8. **Flash Data.** PQ (picture quality) and AQ (audio quality) data version. This is a sub set of the main SW.
9. **DISPLAY.** Indication of the display ID (=12 nc).
10. **TUNER.** Indicates the tuner signal condition: "Weak" when signal falls below threshold value, "Medium" when signal is at mid-range, and "Strong" when signal falls above threshold value.
11. **SYSTEM.** Gives information about the video system of the selected transmitter (PAL/SECAM/NTSC).
12. **SOUND.** Gives information about the audio system of the selected transmitter (MONO/STEREO/NICAM).
13. **HDAU.** HDMI audio stream detection. "YES" means audio stream detected. "NO" means no audio stream present. Only displayed when HDMI source is selected.
14. **FORMAT.** Gives information about the video format of the selected transmitter (480i/480p/720p/1080i).
15. **DFR SW ID.** Referring to bolt-on SW ID.
16. **FPGA FW.** Only applicable to sets with an FPGA.
17. **Reserved.**
18. **Reserved.**

(\*) If an NVM IC is replaced or initialised, the Model Number, Serial Number, and SSB Code Number must be re-written to the NVM. ComPair will foresee in a possibility to do this.

#### How to Exit

To exit CSM, use one of the following methods:

- Press the MENU button twice, or POWER button on the remote control transmitter.
- Press the POWER button on the television set.

## 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 you 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. You do not have to know anything about I2C or UART commands yourself, 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 (new) ComPair II interface box is connected to the PC via a USB cable. For the TV chassis, the ComPair interface box and the TV communicate via a bi-directional cable via the service connector(s).

#### How to Connect

This is described in the ComPair chassis fault finding database.

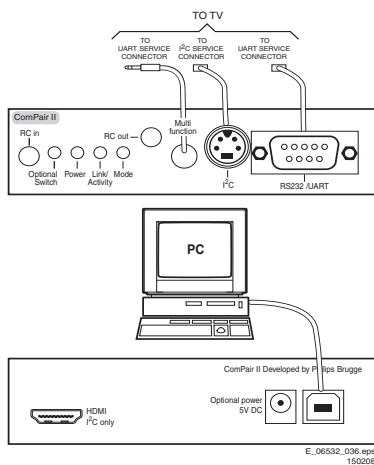


Figure 5-7 ComPair II interface connection

**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 the Philips Service web portal.
- ComPair I<sup>2</sup>C interface cable: 9965 100 07325 (to be used for upgrading the Main software).

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

### 5.4.2 LVDS Tool

Support of the LVDS Tool has been discontinued.

## 5.5 Error Codes

### 5.5.1 Introduction

Error codes are required to indicate failures in the TV set. In principle a unique error code is available for every:

- Activated protection.
- Failing I2C device.
- General I2C error.
- SDRAM failure.

The last errors, stored in the NVM, are shown in the Service menu's. This is called the error buffer.

The error code buffer contains all errors detected since the last time the buffer was erased. The buffer is written from left to right. When an error occurs that is not yet in the error code buffer, it is displayed at the left side and all other errors shift one position to the right.

An error will be added to the buffer if this error differs from any error in the buffer. The last found error is displayed on the left. An error with a designated error code may **never** lead to a deadlock situation. This means that it must always be diagnosable (e.g. error buffer via OSD or blinking LED procedure, ComPair to read from the NVM).

In case a failure identified by an error code automatically results in other error codes (cause and effect), only the error code of the MAIN failure is displayed.

**Example:** In case of a failure of the I2C bus (CAUSE), the error code for a "General I2C failure" and "Protection errors" is displayed. The error codes for the single devices (EFFECT) is not displayed. All error codes are stored in the same error buffer (TV's NVM) except when the NVM itself is defective.

### 5.5.2 How to Read the Error Buffer

You can read the error buffer in 3 ways:

- On screen via the SAM/SDM/CSM (if you have a picture).  
Example:
  - ERROR: 0 0 0 0 0: No errors detected
  - ERROR: 6 0 0 0 0: Error code 6 is the last and only detected error
  - ERROR: 9 6 0 0 0: Error code 6 was detected first and error code 9 is the last detected (newest) error
- Via the blinking LED procedure (when you have no picture). See [5.6 The Blinking LED Procedure](#).
- Via ComPair.

### 5.5.3 Error Codes

In case of non-intermittent faults, write down the errors present in the error buffer and clear the error buffer before you begin the repair. This ensures 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 and not the actual cause of the problem (for example, a fault in the protection detection circuitry can also lead to a protection).

Table 5-2 Error code overview

Error code <sup>1)</sup>	Description	Item no.	Remarks
0	No error.		
1	DC Protection of speakers.		
2	+12V protection error.		12V missing or "low".
3	Reserved.		
4	General I2C error.		note 2
5	Trident Video Processor communication error.	7C01	When Trident IC is defective, error 10 and 14 might also be reported. Trident communicates via parallel bus, not via the I2C bus. The I2C bus of Trident is only used in ComPair mode.
6	I2C error while communicating with the NVM.	7L23	The TV will not start-up due to critical data not available from the NVM, but the LED will blink the error code.
7	I2C error while communicating with the Tuner.	1101	
8	I2C error while communicating with the IF Demodulator.	7113	
9	I2C error communicating with the Sound Processor.	7411	
10	SDRAM defective.	7D01	
11	I2C error while communicating with the HDMI IC.	7N01	
12	Brazil/China/Hong Kong ISDTV digital bolt-on module communication failure		
13	Reserved		
14	SDRAM defective.	7D02	
15	Reserved		
16	Reserved		
17	I2C error while communicating with FPGA	7700 or external	
18	Reserved (iTV)		(iTV)
19	I2C error while communicating with bolt-on DFI		1080p 100Hz sets only
20	Reserved		
21	I2C error while communicating with the HDMI mux IC	7M07	
22	Reserved.		
23	Reserved.		

#### Notes

- Some of the error codes reported are depending on the option code configurations.
- This error means: no I2C device is responding to the particular I2C bus. Possible causes: SCL/SDA shorted to GND, SCL shorted to SDA, or SCL/SDA open (at uP pin). The internal bus of the Trident platform should not cause the entire system to halt as such an error can be reported.

#### 5.5.4 How to Clear the Error Buffer

The error code buffer is cleared in the following cases:

- By using the CLEAR command in the SAM menu:
  - To enter SAM, press the following key sequence on the remote control transmitter: "062596" directly followed by the OSD/STATUS/INFO/i+ button (do not allow the display to time out between entries while keying the sequence).
  - Make sure the menu item CLEAR is selected. Use the MENU UP/DOWN buttons, if necessary.
  - Press the MENU RIGHT button to clear the error buffer. The text on the right side of the "CLEAR" line will change from "CLEAR?" to "CLEARED"
- If the contents of the error buffer have not changed for 50 hours, the error buffer resets automatically.

**Note:** If you exit SAM by disconnecting the mains from the television set, the error buffer is not reset.

## 5.6 The Blinking LED Procedure

### 5.6.1 Introduction

The software is capable of identifying different kinds of errors. Because it is possible that more than one error can occur over time, an error buffer is available, which is capable of storing the last five errors that occurred. This is useful if the OSD is not working properly.

Errors can also be displayed by the blinking LED procedure. The method is to repeatedly let the front LED pulse with as many pulses as the error code number, followed by a period of 1.5 seconds in which the LED is "off". Then this sequence is repeated.

**Example (1):** error code 4 will result in four times the sequence LED "on" for 0.25 seconds / LED "off" for 0.25 seconds. After this sequence, the LED will be "off" for 1.5 seconds. Any RC5 command terminates the sequence. Error code LED blinking is in red colour.

**Example (2):** the content of the error buffer is "1 2 9 6 0 0" After entering SDM, the following occurs:

- 1 long blink of 5 seconds to start the sequence,
- 12 short blinks followed by a pause of 1.5 seconds,
- 9 short blinks followed by a pause of 1.5 seconds,
- 6 short blinks followed by a pause of 1.5 seconds,
- 1 long blink of 1.5 seconds to finish the sequence,
- The sequence starts again with 12 short blinks.

### 5.6.2 Displaying the Entire Error Buffer

Additionally, the entire error buffer is displayed when Service Mode "SDM" is entered. In case the TV set is in protection or Stand-by: The blinking LED procedure sequence (as in SDM-mode in normal operation) must be triggered by the following RC sequence: "MUTE" "062500" "OK".

In order to avoid confusion with RC5 signal reception blinking, this blinking procedure is terminated when a RC5 command is received.

To erase the error buffer, the RC command "MUTE" "062599" "OK" can be used.

## 5.7 Software Upgrading

In this chassis, the following SW "stack" is used:

- TV main SW (processor and processor NVM).

### 5.7.1 TV Main SW Upgrade

For instructions on how to upgrade the TV Main software, refer to ComPair.



## 5.8 Fault Finding and Repair Tips

### Notes:

- It is assumed that the components are mounted correctly with correct values and no bad solder joints.
- Before any fault finding actions, check if the correct options are set.

### 5.8.1 NVM Editor

In some cases, it can be convenient if one directly can change the NVM contents. This can be done with the "NVM Editor" in SAM mode. With this option, single bytes can be changed.

### Caution:

- **Do not change the NVM settings without understanding the function of each setting, because incorrect NVM settings may seriously hamper the correct functioning of the TV set!**
- Always write down the existing NVM settings, before changing the settings. This will enable you to return to the original settings, if the new settings turn out to be incorrect.

**Table 5-3 NVM editor overview**

	Hex	Dec.	Description
.ADR	0x000A	10	Existing value
.VAL	0x0000	0	New value
.Store	Store?		

### 5.8.2 Load Default NVM Values

It is possible to download default values automatically into the NVM in case a blank NVM is placed or when the NVM first 20 address contents are "FF". After the default values are downloaded, it is possible to start-up and to start aligning the TV set. To initiate a forced default download the following action has to be performed:

1. Switch "off" the TV set with the mains cord disconnected from the wall outlet (it does not matter if this is from "Stand-by" or "Off" situation).
2. Short-circuit the SDM jumpers on the SSB (keep short circuited).
3. Press "P+" or "CH+" on the local keyboard (and keep it pressed).
4. Reconnect the mains supply to the wall outlet.
5. Release the "P+" or "CH+" when the set is "on" or blue LED is blinking.

When the downloading has completed successfully, the set should be into Stand-by, i.e. red LED on.

#### Alternative method (1):

1. Go to SAM.
2. Select NVM Editor.
3. Select ADR (address) to 1 (Dec.).
4. Change the VAL (value) to 170 (Dec.).
5. Store the value.
6. Do a hard reset to make sure new default values took place.

#### Alternative method (2):

It is also possible to upload the default values to the NVM with ComPair in case the SW is changed, the NVM is replaced with a new (empty) one, or when the NVM content is corrupted. After replacing an EEPROM (or with a defective/no EEPROM), default settings should be used to enable the set to start-up and allow the Service Default Mode and Service Alignment Mode to be accessed.

### 5.8.3 Start-up/Shut-down Flowcharts

On the next pages you will find start-up and shut-down flowcharts, followed by a trouble shooting flowchart, which might be helpful during fault finding. Please note that some events are only related to PDP sets, and therefore not applicable to this LCD chassis.

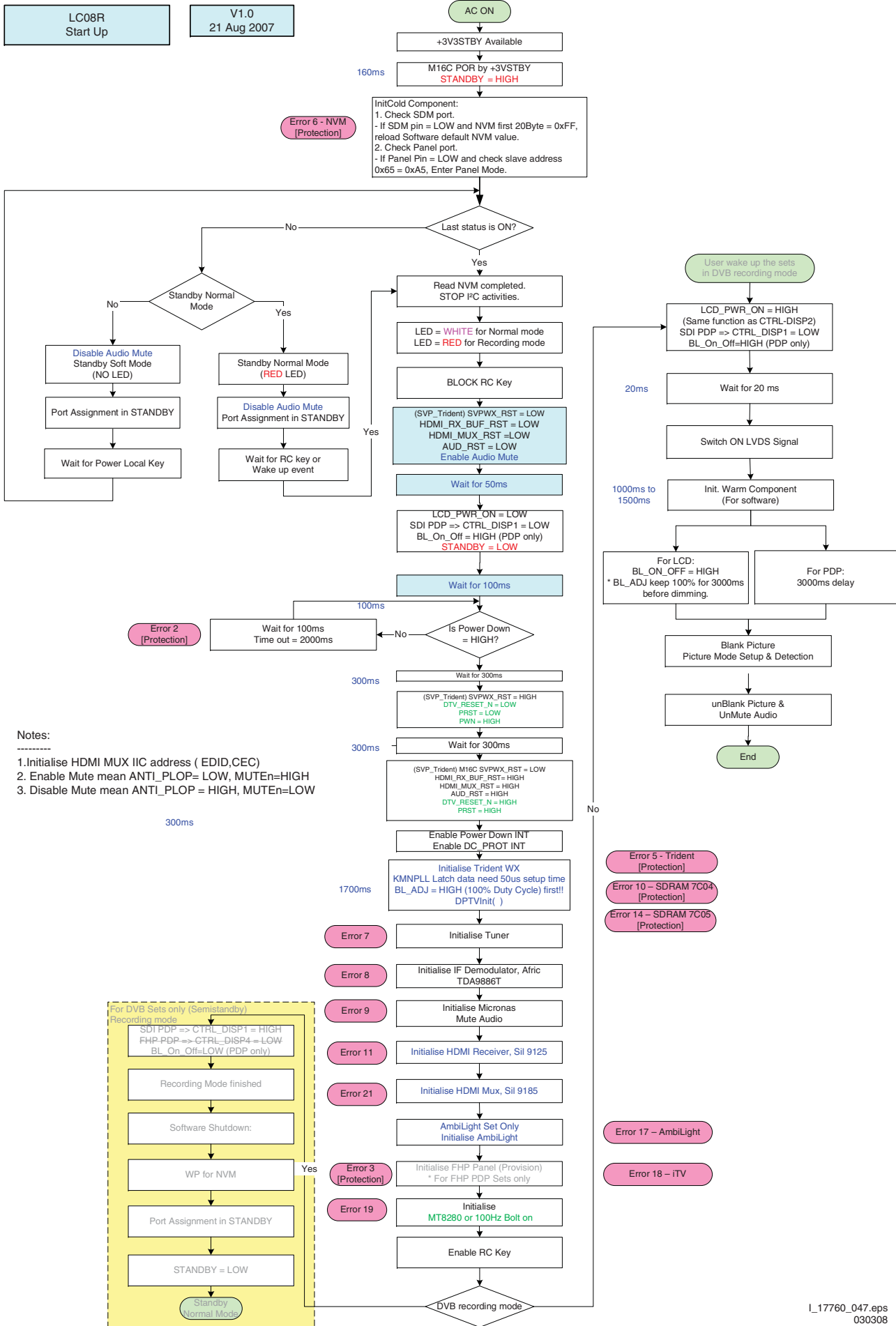


Figure 5-8 Start-up flowchart

STANDBY / TACT SWITCH STANDBY

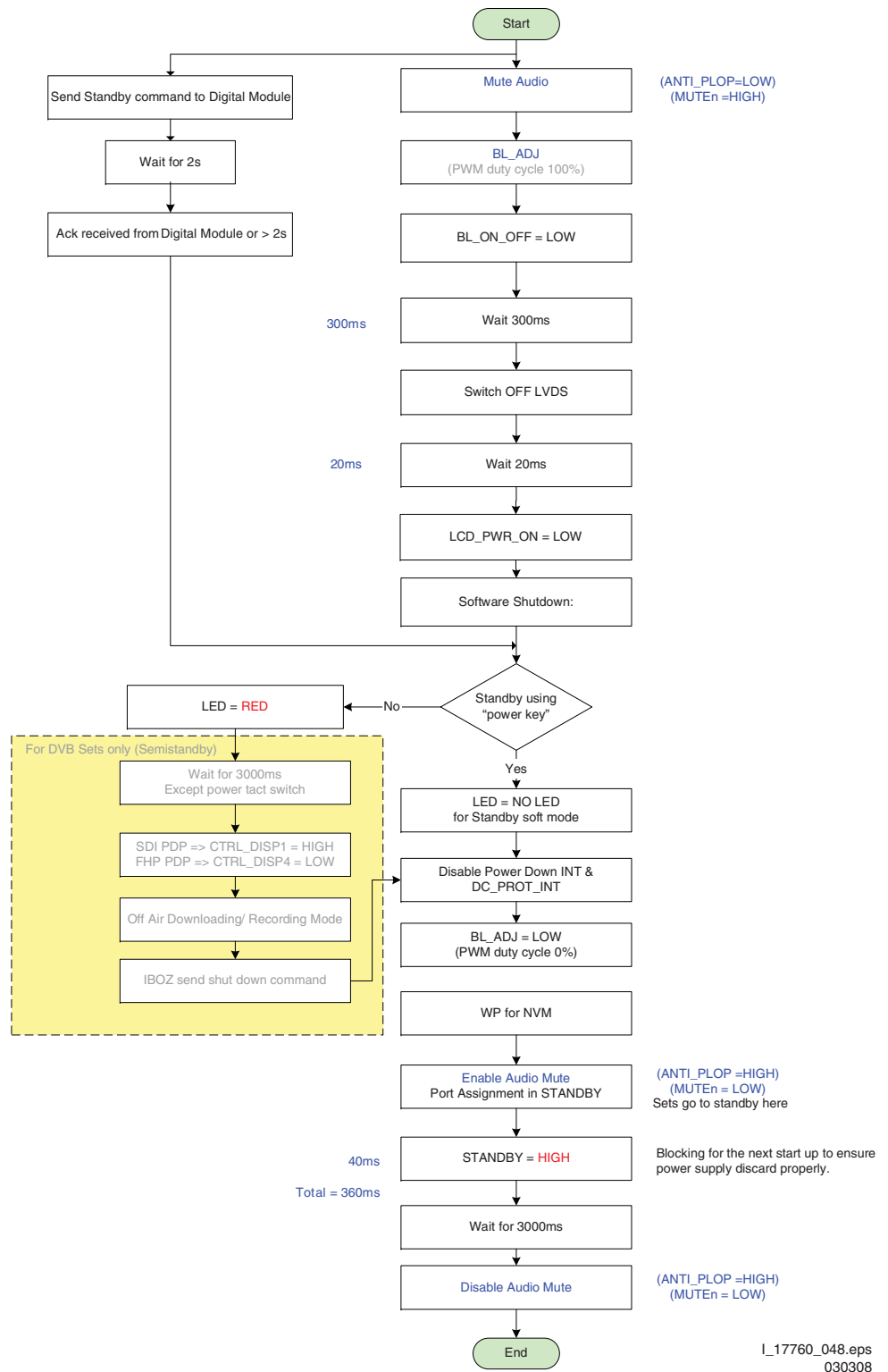
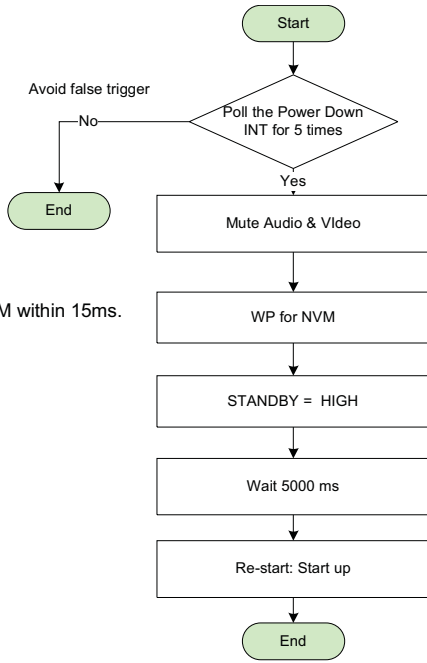


Figure 5-9 Stand-by / Tact Switch Stand-by flowchart

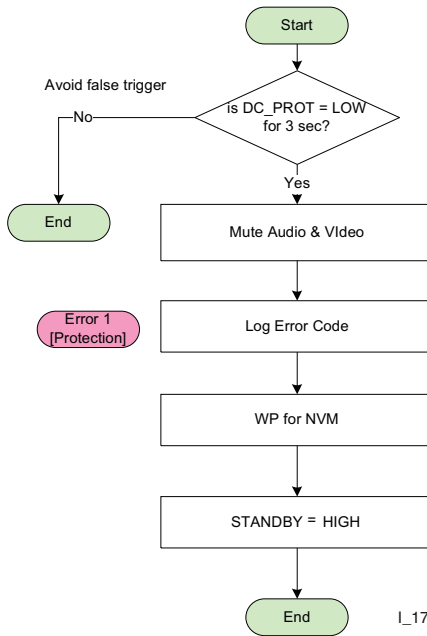
Power Down INT:  
AC OFF or Transient INT

Notes:

- 1. Power Down INT will based on fall edge triggering
- 2. +3V3STBY will stay for 15ms, software must perform WP for NVM within 15ms.

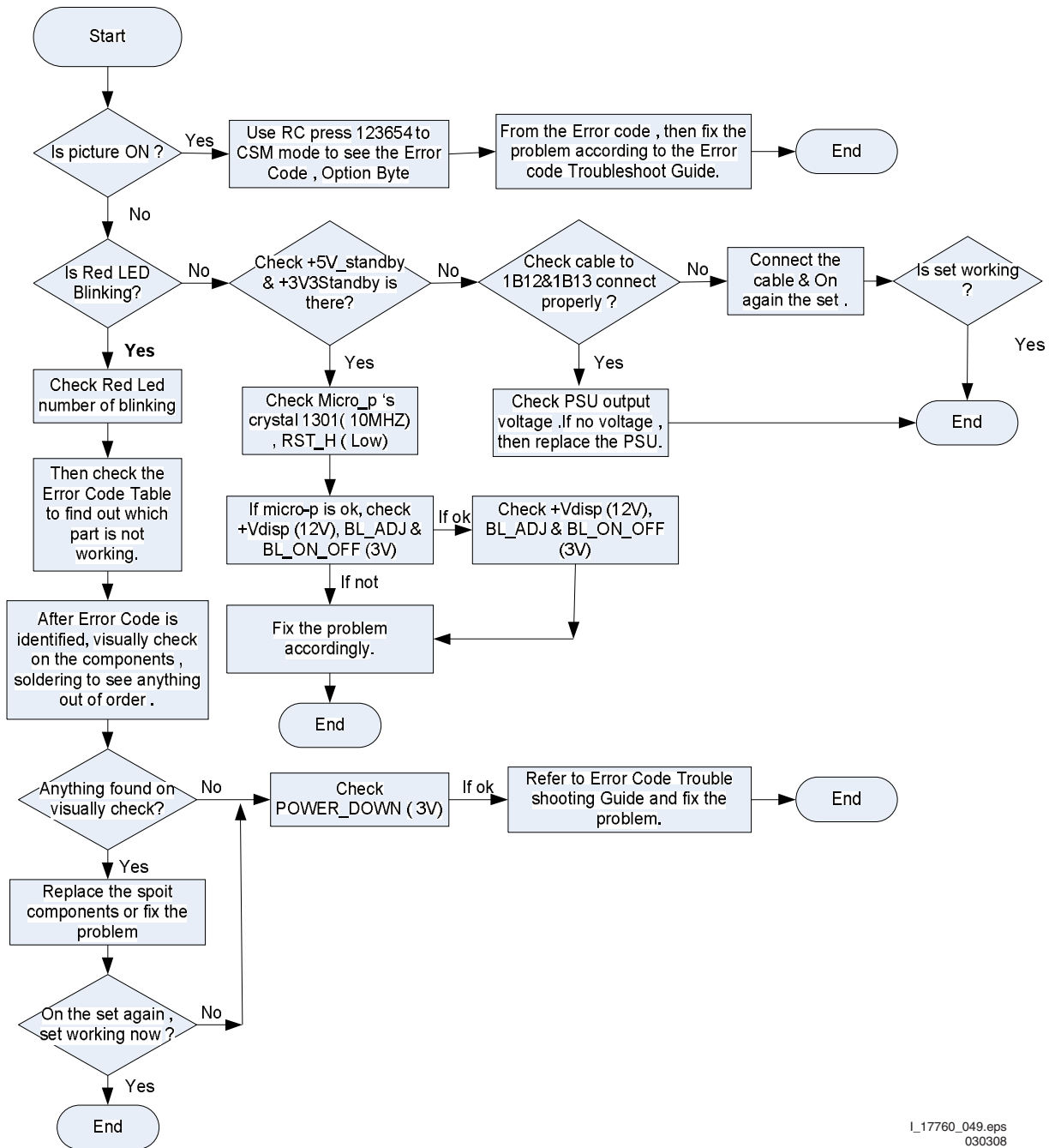


DC\_PROT INT



I\_17760\_027.eps  
180908

Figure 5-10 Power Down & DC\_PROT flowchart



I\_17760\_049.eps  
030308

Figure 5-11 Troubleshooting flowchart

## 6. Alignments

### Index of this chapter:

[6.1 General Alignment Conditions](#)

[6.2 Hardware Alignments](#)

[6.3 Software Alignments](#)

[6.4 Option Settings](#)

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

**General:** 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.

### 6.1 General Alignment Conditions

Perform all electrical adjustments under the following conditions:

- Power supply voltage (depends on region):
  - AP-NTSC: 120 V<sub>AC</sub> or 230 V<sub>AC</sub> / 50 Hz (± 10%).
  - AP-PAL-multi: 120 - 230 V<sub>AC</sub> / 50 Hz (± 10%).
  - EU: 230 V<sub>AC</sub> / 50 Hz (± 10%).
  - LATAM-NTSC: 120 - 230 V<sub>AC</sub> / 50 Hz (± 10%).
  - US: 120 V<sub>AC</sub> / 60 Hz (± 10%).
- Connect the set to the mains via an isolation transformer with low internal resistance.
- Allow the set to warm up for approximately 15 minutes.
- Measure voltages and waveforms in relation to correct ground (e.g. measure audio signals in relation to AUDIO\_GND).
 

**Caution:** It is not allowed to use heatsinks as ground.
- Test probe: Ri > 10 MΩ, Ci < 20 pF.
- Use an isolated trimmer/screwdriver to perform alignments.

### 6.2 Hardware Alignments

There are no hardware alignments foreseen for this chassis, but below find an overview of the most important DC voltages on the SSB. These can be used for checking proper functioning of the DC/DC converters.

Description	Test Point	Specifications (V)			Diagram
		Min.	Typ.	Max.	
+12V_DISP	FP12	11.4	12.0	12.6	B01A_DC-DC
+VTUN	FP11	30	33	36	B01A_DC-DC
+3V3_STBY	FP10	3.20	3.30	3.40	B01A_DC-DC
+3V3+SW	FP20	3.13	3.3	3.46	B01A_DC-DC
+1V2_SW	FP24	1.18	1.25	1.31	B01A_DC-DC
+5V_SW	FQ05	4.85	5.10	5.35	B01B_DC-DC
+1V8_SW	FQ06	1.72	1.82	5.25	B01B_DC-DC
+2V5_SW	FQ03	2.38	2.5	2.62	B01B_DC-DC
+5V_IF	F129	4.75	5	5.25	B02_TUNER_IF
+5VS	F131	4.75	5	5.25	B02_TUNER_IF
+5V_TUN	F146	4.75	5	5.25	B02_TUNER_IF
+1V2_ADC	FC04	1.14	1.2	1.26	B04A_TRIDENT
+1V2_PLL	FC05	1.14	1.2	1.26	B04A_TRIDENT
+1V2_CORE	FC06	1.14	1.2	1.26	B04A_TRIDENT
+2V5_VDDM Q	FD01	2.38	2.5	2.62	B04B_DDR
+VDISP	FR10	11.4	12.0	12.6	B04E_LVDS
+8V	F401	7.60	8.00	8.40	B05A_AUDIOPR OCESSOR

### 6.3 Software Alignments

With the software alignments of the Service Alignment Mode (SAM) the Tuner and RGB settings can be aligned. To store the data: Use the RC button "Menu" to switch to the main menu and next, switch to "Stand-by" mode.

#### 6.3.1 Tuner Adjustment (RF AGC Take Over Point)

**Purpose:** To keep the tuner output signal constant as the input signal amplitude varies.

This chassis comes with the UV13x6(x) tuner. No alignment is necessary, as the AGC alignment is done automatically (standard value: "15"). However in case of problems use the following method (use multi meter and RF generator):

- Apply a vision IF carrier of 38.9 (China: 38.0) MHz (105 dBμV = 178 mVrms) to test point F143 (input via 50 Ω coaxial cable terminated with an RC network of series 10 nF with 120 Ω to ground).
- Measure voltage on test point F116 with a FET probe.
- Adjust AGC (via SAM menu: TUNER -> AGC), until voltage on test point F116 is 3.3 +0.5/-1.0 V.
- Store settings and quit SAM.

#### 6.3.2 RGB Alignment

- Set "Active control" to "Off" (if present).
- Choose "TV menu", "Picture" and set picture settings as follows:

Picture Setting	
Brightness	50
Colour	50
Contrast	100
Tint (for NTSC)	0

#### White Tone Alignment:

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

In case you have a colour analyser:

- Measure with a calibrated contact less colour analyser (e.g. Minolta CA-210) in the centre of the screen. Consequently, the measurement needs to be done in a dark environment.
- Adjust the correct x, y coordinates (while holding one of the White point registers R, G or B on "256") by means of decreasing the value of one or two other white points to the correct x, y coordinates (see table "White D alignment values"). Tolerance: dx: ± 0.004, dy: ± 0.004.
- Repeat this step for the other colour Temperatures that need to be aligned.
- When finished return to the SAM root menu and press STANDBY on the RC to store the aligned values to the NVM.

Table 6-1 White D alignment values

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

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

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

**Table 6-2 Tint settings**

Alignment	32"	42"
WARM_RED	256	128
WARM_GREEN	241	120
WARM_BLUE	189	110
NORMAL_RED	251	125
NORMAL_GREEN	256	128
NORMAL_BLUE	220	120
COOL_RED	243	110
COOL_GREEN	256	118
COOL_BLUE	233	140

#### **Black Level Offset Alignment**

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

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

#### **ADC YPbPr Gray Scale Alignment**

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

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

## 6.4 Option Settings

### 6.4.1 Introduction

The microprocessor communicates with a large number of I<sup>2</sup>C ICs in the set. To ensure good communication and to make 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 with the STORE command.
- The new option setting becomes active after the TV is switched "off" and "on" again with the mains switch (the EAROM is then read again).

### 6.4.2 How To Set Option Codes

When the NVM is replaced, all options will require resetting. To be certain that the factory settings are reproduced exactly, you must set all option numbers. You can find the correct option numbers in table "Option Codes OP1...OP7" below.

#### **How to Change Options Codes**

An option code (or "option byte") represents eight different options (bits). When you change these numbers directly, you can set all options very quickly. All options are controlled via seven option bytes (OP1... OP7).

Activate SAM and select "Options". Now you can select the option byte (OP1 to OP7) with the CURSOR UP/ DOWN keys, and enter the new 3 digit (decimal) value. For the correct factory default settings, see the next table "Option codes OP1...OP7". For more detailed information, see the second table "Option codes at bit level". If an option is set (value "1"), it represents a certain decimal value.

When all the correct options (bits) are set, the sum of the decimal values of each Option Byte (OP) will give the option code.

**Table 6-3 Option code overview**

CTN	Option Code	Display Code
32HFL5530/93	192 029 226 249 073 197 131	069
32HFL5530/97	128 029 234 249 073 196 131	069
42HFL5580/93	192 029 226 249 073 197 129	130
42HFL5580/97	128 029 234 249 073 196 129	138

**Option Bit Overview**

Below find an overview of the Option Codes on bit level.

**Table 6-4 Option codes at bit level (OP1-OP7)**

Option Byte & Bit	Dec. Value	Option Name	Description
<b>Byte OP1</b>			
Bit 7 (MSB)	128	BBE	ON = BBE is available; OFF = BBE is not available
Bit 6	64	CHINA	ON = SW is for CHINA only; OFF = SW is for Non-China AP cluster
Bit 5	32	DTV_CHINA	ON = DTV_CHINA will be available (Reserved); OFF = DTV_CHINA will not be available
Bit 4	16	DTV_EU	ON = DTV will be available; OFF = DTV will not be available
Bit 3	8	UK_PNP	ON = UK PNP is available (for analogue TV only); OFF = UK PNP is not available (for analogue TV only)
Bit 2	4	VIRGIN_MODE	ON = Virgin Mode (PNP) is available; OFF = Virgin Mode (PNP) is not available
Bit 1	2	ACI	ON = ACI is available; OFF = ACI is not available
Bit 0 (LSB)	1	ATS	ON = ATS is available; OFF = ATS is not available
<b>Byte OP2</b>			
Bit 7 (MSB)	128	1080P	ON = 1080p is available; OFF = 1080p is not available
Bit 6	64	LIGHT_SENSOR	ON = Light Sensor is available; OFF = Light Sensor is not available
Bit 5	32	AMBILIGHT	ON = Ambilight Feature will be available; OFF = Ambilight Feature will not be available
Bit 4	16	BACKLIGHT_DIMMING	ON = Backlight Dimming is available; OFF = Backlight Dimming is not available
Bit 3	8	HUE	ON = Hue is available; OFF = Hue is not available
Bit 2	4	2D3DCF	ON = 3D Comb Filter is available; OFF = 2D Comb Filter is available
Bit 1	2	WSSB	ON = WSS is available; OFF = WSS is not available
Bit 0 (LSB)	1	WIDE_SCREEN	ON = TV is 16x9 set; OFF = TV is 4x3 set
<b>Byte OP3</b>			
Bit 7 (MSB)	128	CVI1	ON=CVI1 (YPbPr) (For ROW)
Bit 6	64	HDMI3	ON = HDMI3 (rear) is available; OFF = HDMI3 (rear) is not available
Bit 5	32	HDMI4	ON = HDMI4 (side) is available; OFF = HDMI4 (side) is not available
Bit 4	16	VCHIP	ON = VChip is available; OFF = VChip is not available
Bit 3	8	VIDEO_TXT	ON = Video-TXT is available; OFF = Video-TXT is not available
Bit 2	4	STEREO_DBX	ON = Stereo DBX detection is available (LATAM); OFF = Stereo DBX detection is not available
Bit 1	2	STEREO_NICAM_2CS	ON = Stereo NICAM 2CS detection is available (EU/AP/China); OFF = Stereo NICAM 2CS detection is not available
Bit 0 (LSB)	1	LIP_SYNC	ON = Lip Sync is available; OFF = Lip Sync is not available
<b>Byte OP4</b>			
Bit 7 (MSB)	128	HDMI2	ON = HDMI2 is available; OFF = HDMI2 is not available
Bit 6	64	HDMI1	ON = HDMI1 is available; OFF = HDMI1 is not available
Bit 5	32	VGA	ON = VGA is available; OFF = VGA is not available
Bit 4	16	SVHS3	ON = SVHS3 is available; OFF = SVHS3 is not available
Bit 3	8	AV3	ON = AV3 is available; OFF = AV3 is not available
Bit 2	4	CVI	ON = CVI is available; OFF = CVI is not available
Bit 1	2	SVHS2	ON = SVHS2 is available; OFF = SVHS2 is not available
Bit 0 (LSB)	1	AV2	ON = AV2 is available; OFF = AV2 is not available
<b>Byte OP5</b>			
Bit 7 (MSB)	128	NVM_CHECK	ON = NVM (range) checking is available; OFF = NVM (range) checking is not available
Bit 6	64	DNM	ON = DNM is available; OFF = DNM is not available
Bit 5	32	SUBWOOFER	ON = Sub woofer is available; OFF = Sub woofer is not available
Bit 4	16	MP_ALIGN	ON = Using multi-point alignment for Gamma & White Point; OFF = Using old way for Gamma (pre-defined) & WP alignment
Bit 3	8	SYS_RECOVERY	ON = System Recovery is available; OFF = System Recovery is not available
Bit 2	4	ED_HD_DNM	ON = DNM not available on ED and HD signal; OFF = DNM available on ED and HD signal
Bit 1	2	HOTEL	ON = Hotel/BDS is available; OFF = Hotel/BDS is not available
Bit 0 (LSB)	1	SS_DEMO	ON = Split Screen Demo is available; OFF = Split Screen Demo is not available
<b>Byte OP6</b>			
Bit 7 (MSB)	128	BACKLIGHT_BOOST	ON = iLAB Backlight boost feature is available; OFF = iLAB Backlight boost feature is not available
Bit 6	64	STATIC_DIMMING	ON = iLAB Static Dimming feature is available; OFF = iLAB Static Dimming feature is not available
Bit 5	32	CEC	ON = CEC feature available; OFF = CEC feature not available
Bit 4	16	AUTO_HDMI	ON = Auto HDMI feature available; OFF = Auto HDMI feature not available
Bit 3	8	TUNER PROFILE	0 = ATV_EU_PHILIPS UV1318S/AIH-3; 1 = ATV_EU_Panasonic EN57K28G3F; 2 = DTV_EU_PHILIPS TD1316AF/IHP-2; 3 = Not Used (Reserved); 4 = ATV_AP_PHILIPS UV1316E/AIH-4; 5 = ATV_CHINA_PHILIPS UV1356; 6 = ATV_CHINA_ALPS TEDE9-286B; 7 = ATV_CHINA_Tuner2 (Reserved); 8 = ATV_LATAM_PHILIPS UV1338/AIH-4; 9 = ATV_LATAM_PHILIPS UV1336; 10 = DTV_CHINA_Tuner1 (Reserved); 11 = DTV_CHINA_Tuner2 (Reserved); 12 = Not Used (Reserved); 13 = Not Used (Reserved); 14 = Not Used (Reserved); 15 = Not Used (Reserved)
Bit 2	4		
Bit 1	2		
Bit 0 (LSB)	1		
<b>Byte OP7</b>			
Bit 7 (MSB)	128	OPC_VOL_UP_UNMUTE	ON = Volume Up key will unmute the TV; OFF = Volume Up key will not unmute the TV
Bit 6	64	Reserved	Not Used (Reserved)
Bit 5	32	OPC_DTV_LATAM	ON = Brazil Digital available; OFF = Brazil Digital not available
Bit 4	16	CABINET PROFILE	0 = All flat response; 1 = ME8 42/47/52 Basic; 2 = ME8 42/47/52 AMBL; 3- 16 = Reserved
Bit 3	8		
Bit 2	4		
Bit 1	2		
Bit 0 (LSB)	1		



## 7. Circuit Descriptions

### Index of this chapter:

- [7.1 Introduction](#)
- [7.2 iBoard](#)

### 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 [9. Block Diagrams](#) and [10. Circuit Diagrams and PWB Layouts](#). Where necessary, you will find a separate drawing for clarification.

### 7.1 Introduction

The LC8.2HA LA is the Hospitality version of the LC8.2A LA chassis. Refer to the Service Manual of the LC8.2A LA chassis for a description of all circuits outside the iBoard scope.

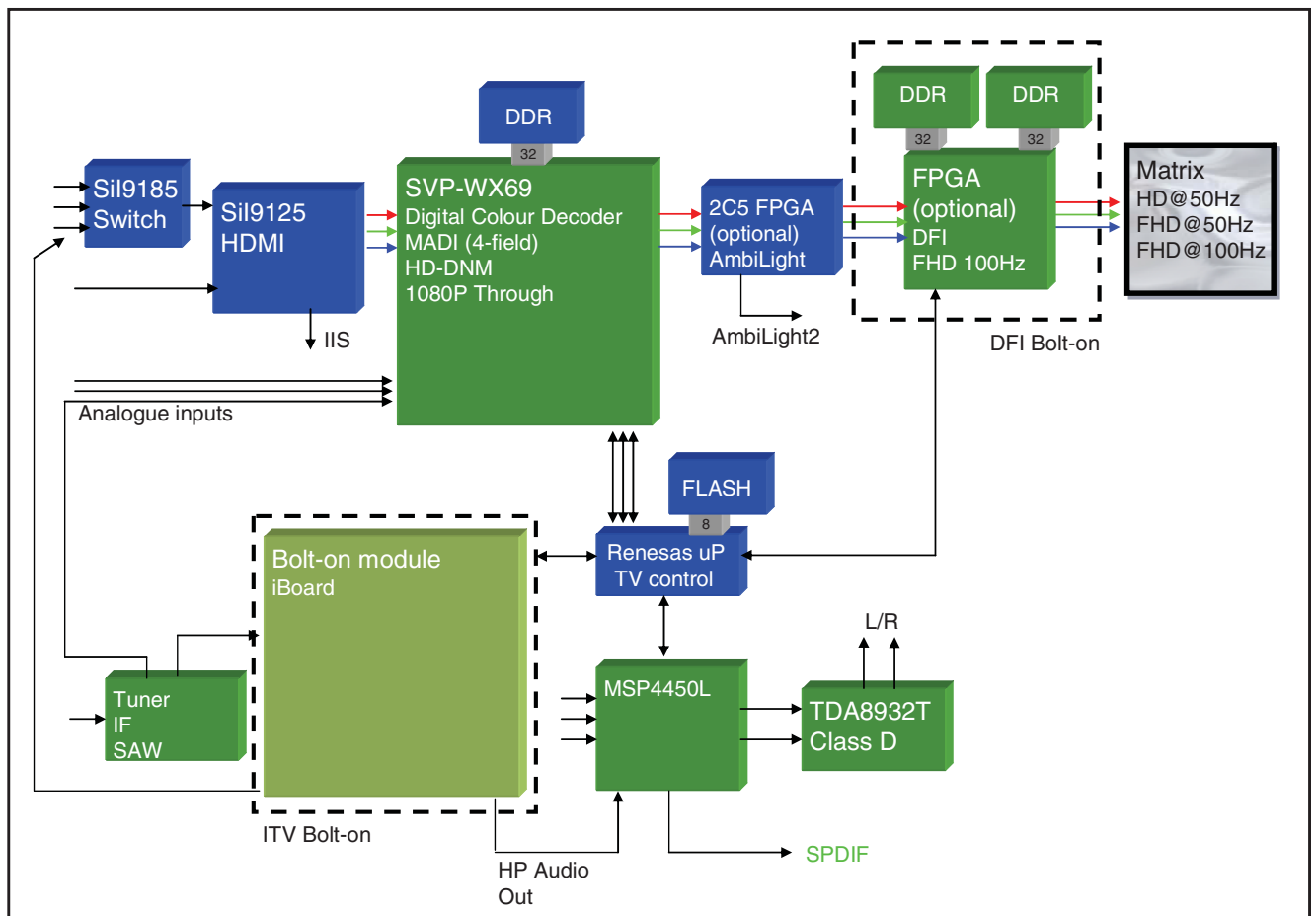
The hospitality-specific features comprise:

- Advanced Hotel mode (volume lock, front control lock out, guest menu, welcome message, etc.)
- External loudspeaker connection.
- Time synchronisation via Teletext
- Channel protection
- Energy saving features
- Multimedia Player (Philips Connectivity Panel).
- Wireless SmartLoader for fast cloning.
- SmartPlug Xpress and Serial Xpress Control interfaces.

The chassis supports these basic application types:

- Stand-alone
- Interactive via SmartCard (Serial Xpress or SmartPlug Xpress add-on box)
- Interactive via 3rd-party set-top box.

Refer to figure “LC08R Architecture” for details.



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Figure 7-1 LC08R Architecture

7.2 iBoard

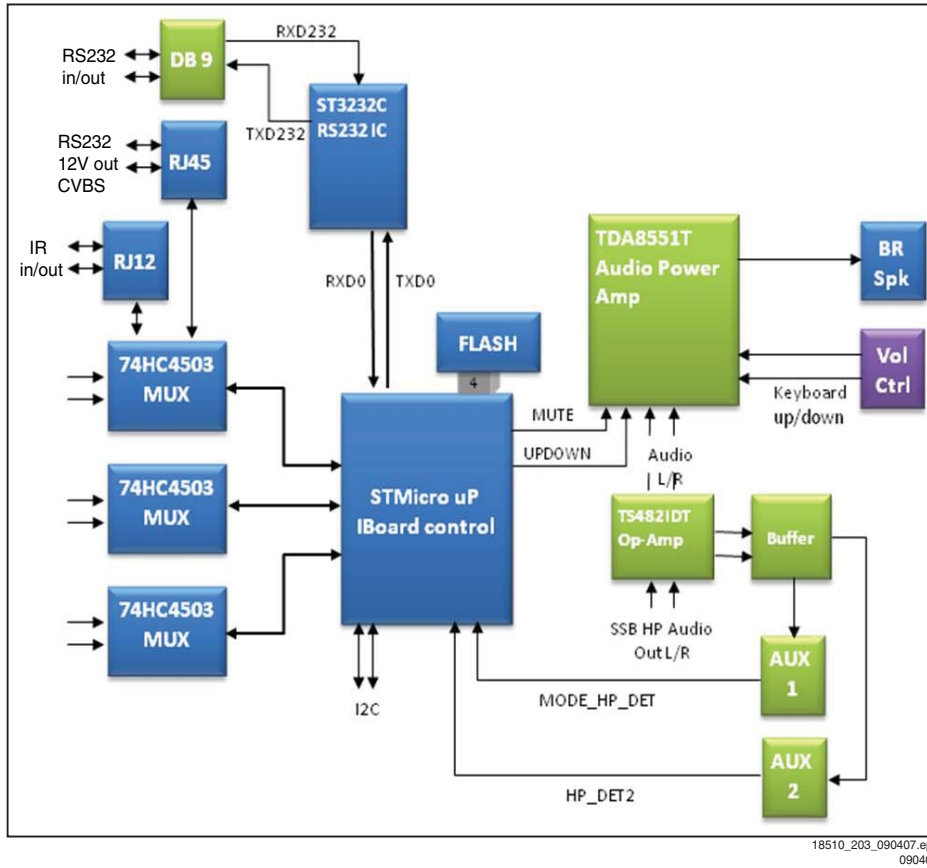


Figure 7-2 iBoard block diagram

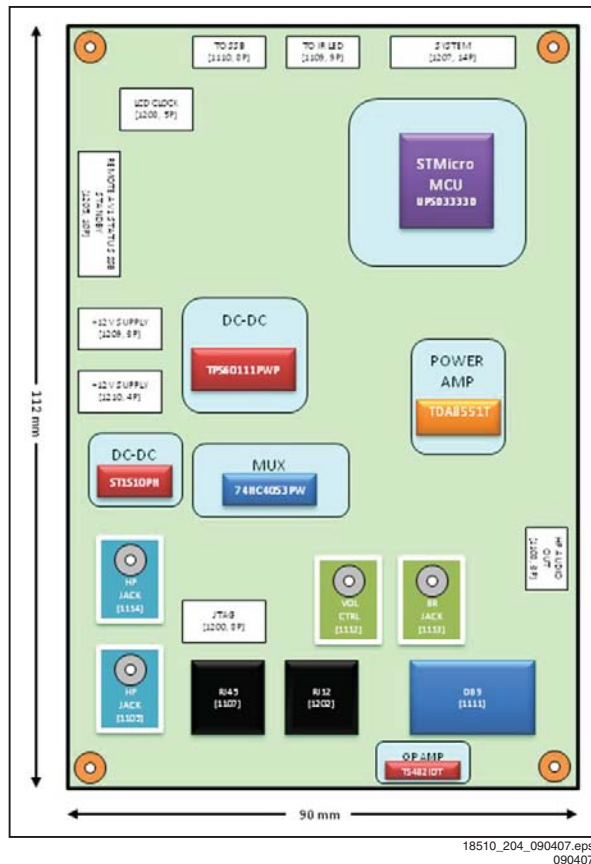


Figure 7-3 iBoard cell layout

The iBoard intercepts the information from the IR Receiver and has full control over its interpretation and processing. It may also relay the same commands to the TV or send different IR commands to the TV. The IR signal could also be in another encoding format and bit rate, e.g. RC6MM. The iBoard also has full control over the LED. This makes it possible to implement within the iBoard features such as Wireless SmartLoading, Message Blinking, power status indication, etc. These features are implemented without additional software in the TV Microprocessor.

The iBoard communicates with the TV in I<sup>2</sup>C (but other protocol is also possible). The iBoard is the I<sup>2</sup>C slave device and the TV is the I<sup>2</sup>C master. Functionally, the iBoard controls the TV and it is the master of the TV. The CVBS\_ter signal is used as a monitor signal for automatic channel installation, which is controlled by the microprocessor.

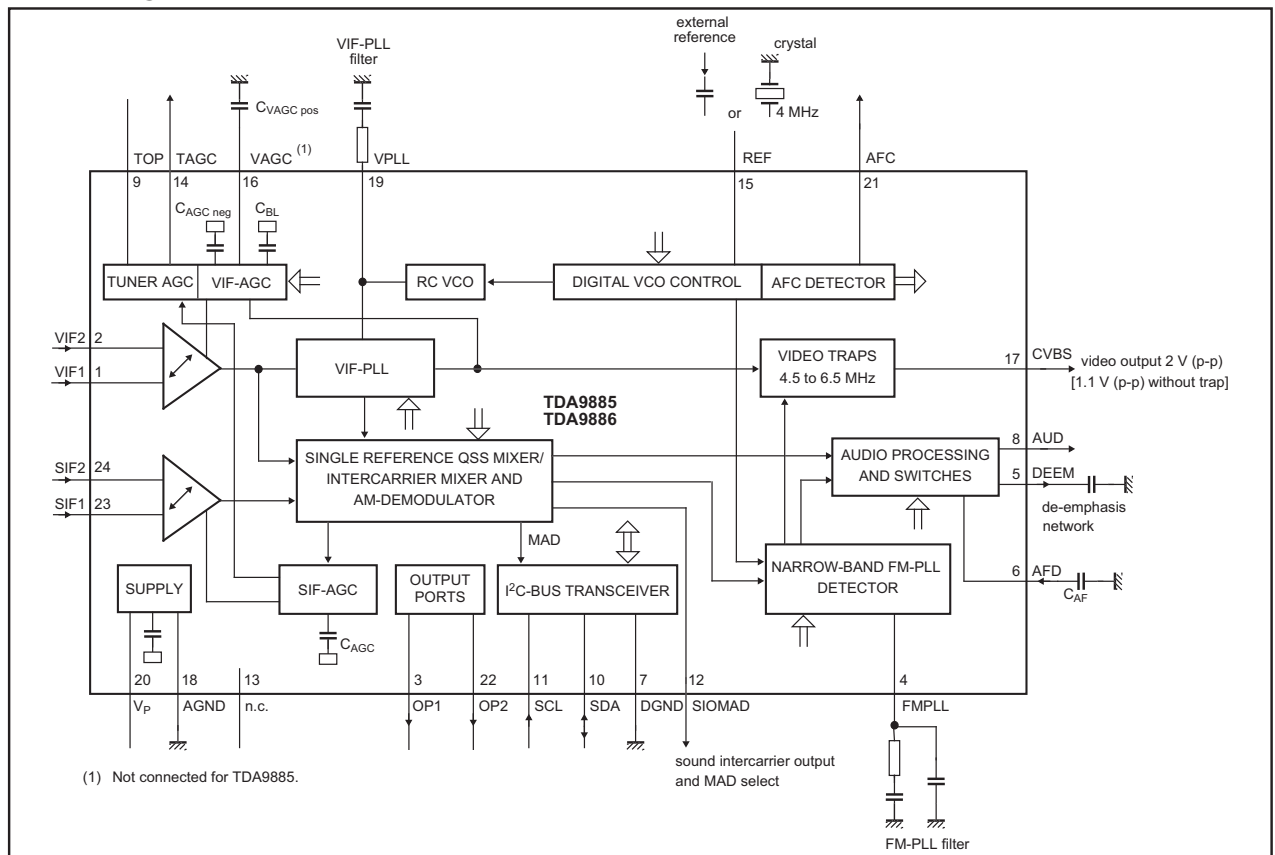
# 8. IC Data Sheets

## 8.1 IC Data Sheets

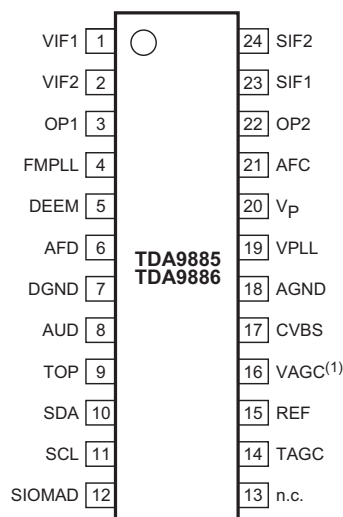
This section shows the internal block diagrams and pin layouts of ICs that are drawn as “black boxes” in the electrical diagrams (with the exception of “memory” and “logic” ICs).

### 8.1.1 Diagram B03, Type TDA9886T (IC7113), IF-PLL demodulator

#### Block Diagram



#### Pin Configuration



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090325

Figure 8-1 Internal block diagram and pin configuration

8.1.2 Diagram B07A, Type SIL9185 (IC7M07), HDMI switch

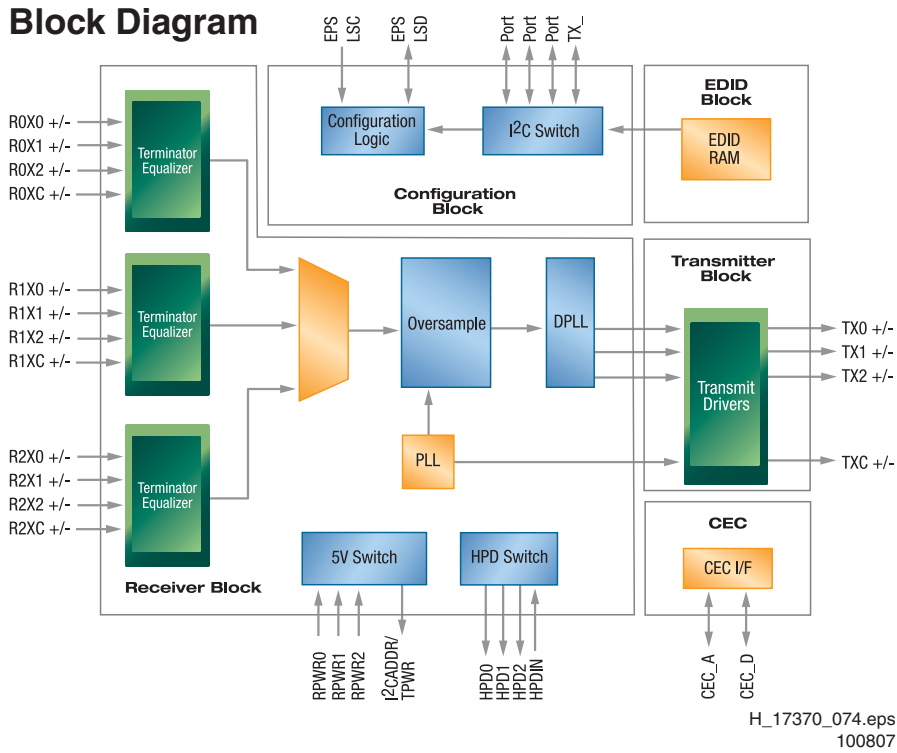


Figure 8-2 Internal block diagram

8.1.3 Diagram B07B, Type SIL9125 (IC7N01), HDMI receiver

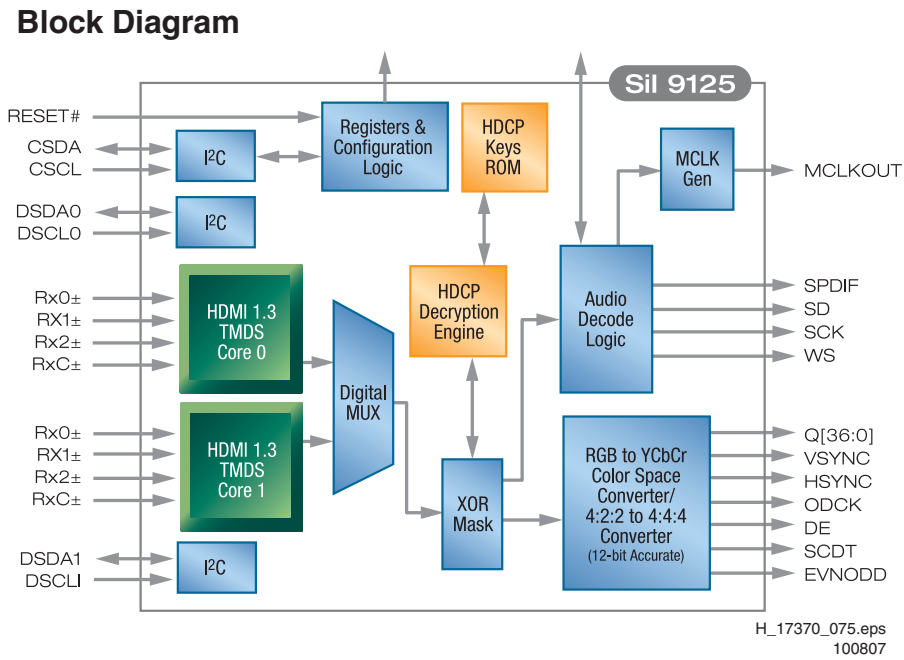
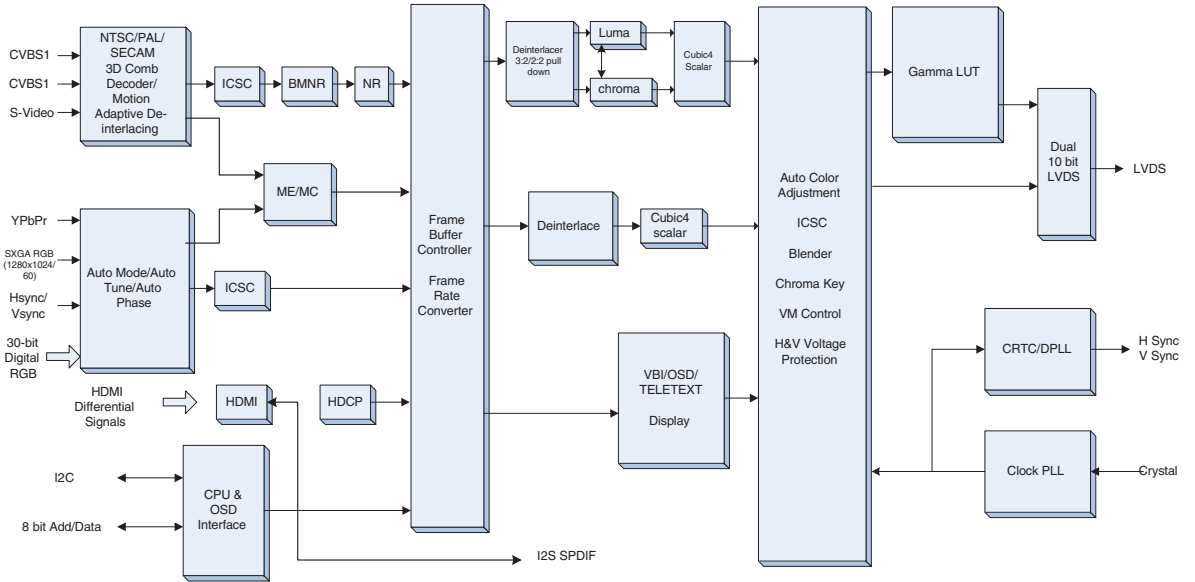


Figure 8-3 Internal block diagram

8.1.4 Diagram B04A, Type SVP WX69 (IC7C01), Trident Video processor

Block Diagram



Pin Configuration

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
A	MD27	MD26	MD25	MD23	MD21	DQM2	MD19	MD12	DQM1	MD7	MD6	DQM4	MD2	TA1P	TB1P	TC1P	TGLK1P	TD1P	TE1P	TA2P	
B	DQM3	DQS3	VSS	VDDH	MD22	DQS2	MD18	MD13	DQS1	MD9	MD5	DQS4	MD1	TA1H	TB1H	TC1H	TGLK1H	TD1H	TE1H	TA2H	
C	MD28	MD29	MD30	VDDH	MD24	VSS	MD17	MD14	VSS	MD9	MD4	VSS	MD0	VDDC	VDDC	LVDSVSSC	LVDSVDDC	LVDSVSSO	LVDSVSSO	TB2P	
D	HCK4	VSS	MD31	VDDH	VDDH	MD20	MD16	MD15	MD11	MD10	VDDH	MD3	VDDC	VDDC	VDDC	LVDSVDDC	LVDSVDDC	LVDSVDDP	TB2H	TC2P	
E	HCK4S	VDDR	MVREF	VSSR	VDDH	VDDH	VSSR	VDDR	VDDH	VDDH	VDDH	VDDH	VDDH	VDDC	VDDC	VDDC	LVDSVSSA	LVDSVDDA	LVDSVSSP	TC2H	TGLK2P
F	MA11	MA10	MA9	MA8	VDDH		VDDC-9	VDDH-10	VSS-5	Signal-59		Tap total- 73				VSSF	TESTMODE	RESET	TGLK2H	TD2P	
G	MA4	MA5	MA6	MA7	VDDH	VDDH-3			SVP_UR_WX 334				VDDH-4	VDDC	PWR10	INTN		TD2H	TE2P		
H	MA3	MA2	MA1	MA0	VDDC	VSS-1		VSS	VSS	VSS	VSS	VSS	VSS	VDDC-5		VDDC	SDA	SCL	TE2H	VSS	
J	CAS#	RAS#	CS1#	CS0#	VDDC	VDDC-3		VSS	VSS	VSS	VSS	VSS	VSS	VSS-2		VDDC	CPU_CS	ALE	WR#	RD#	
K	WE#	CLKE	BA0	BA1	VDDC	Signal-51		VSS	VSS	VSS	VSS	VSS	VSS	Signal-84		VDDC	AD4	AD5	AD6	AD7	
L	RZC+	RZC-	THDS_GND	PVCC	VSS	THDS_GND-5		VSS	VSS	VSS	VSS	VSS	VSS	Right total- 95		VDDH	AD0	AD1	AD2	AD3	
M	RZ0+	RZ0-	THDS_GND	AVCC	ANTST0	Left total- 63		VSS	VSS	VSS	VSS	VSS	VSS			VDDH	ADDR7	ADDR6	ADDR5	ADDR4	
N	RZ1+	RZ1-	THDS_GND	AVCC	AVCC			VSS	VSS	VSS	VSS	VSS	VSS			VDDH	ADDR0	ADDR1	ADDR2	ADDR3	
P	RZ2+	RZ2-	THDS_GND	AVCC	AVSS33_AUDIO	Total Balls- 334										VSSM-3	VDDH	VS	VSS	HS	RZ4 (MC)
R	THDS_GND	PDVDD	PAVSS2	PLF2	AVDD33_AUDIO			VDDC-2	VDDH-2	Signal-65	Bit total- 69			center Total- 36		VDDC	VDDH	VDDH	DPB_9	DPB_8	
T	PDVSS	PAVSS1	PAVDD1	PAVDD2	AVSS_ADC1	AVSS_ADC4	AVSS_ADC2	AVDD_ADC3	AVSS_ADC3	PWR5P	DSCL	VDDH	VDDH	VDDC	VDDC	VSS	DPB_10	DPB_11	DPB_CLK	DPB_12	
W	PAVDD	MLF1	AVDD3_OUTBUF	FB2	AVDD_ADC1	AVDD_ADC4	AVDD_ADC2	PC_R	AVDD3_ADC2	A1N_VS	DSDA	VS	DPA_22	DPA_15	DPA_14	DPA_3	DPA_7	DPB_15	DPB_14	DPB_13	
V	PAVSS	CVBS_OUT2	AVDD3_BG_ASS	FS1	AVDD3_ADC2	Y_G1	REXT	PR_R3	C	A1N_HS	SODT	SD0	DPA_21	DPA_16	DPA_13	DPA_9	DPA_6	DPA_1	DPB_HS	DPB_VS	
W	XTAL1	CVBS_OUT1	AVSS_BG_ASS	FS2	AVDD3_ADC2	Y_G2	AVDD3_ADC2	PR_R2	PB_B1	PC_B	AUDIOCLK	SFDIF	DPA_20	DPA_17	DPA_12	DPA_10	DPA_5	DPA_2	DPA_0	DPB_DE	
V	XTAL0	AVSS_OUTBUF	AVDD3_ADC1	CVBS1	FB1	Y_G3	PC_G	PR_R1	PB_B2	PB_B3	SCK	DPA_23	DPA_19	DPA_18	DPA_18	DPA_11	DPA_4	DPA_3	DPA_HS	DPA_VS	

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Figure 8-4 Internal block diagram and pin configuration

8.1.5 Diagram B05A, Type MSP4450P (IC7411), Micronas Sound Processor

Block Diagram

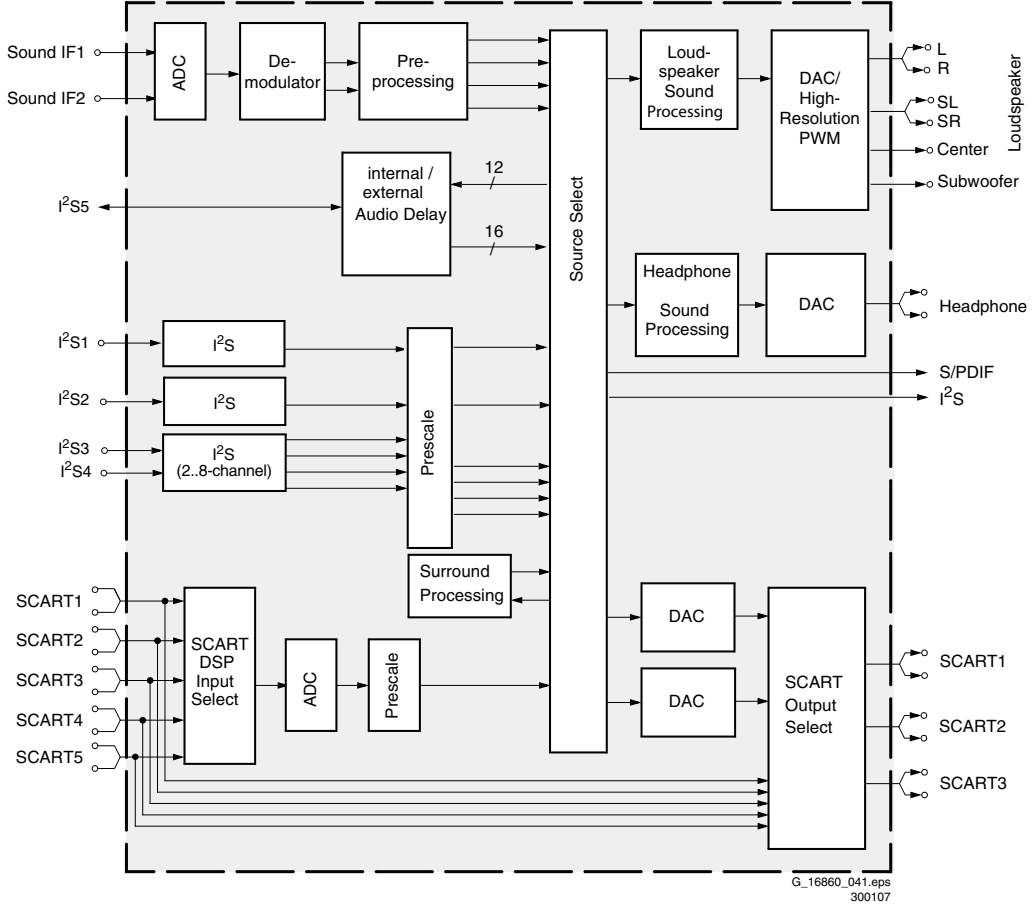
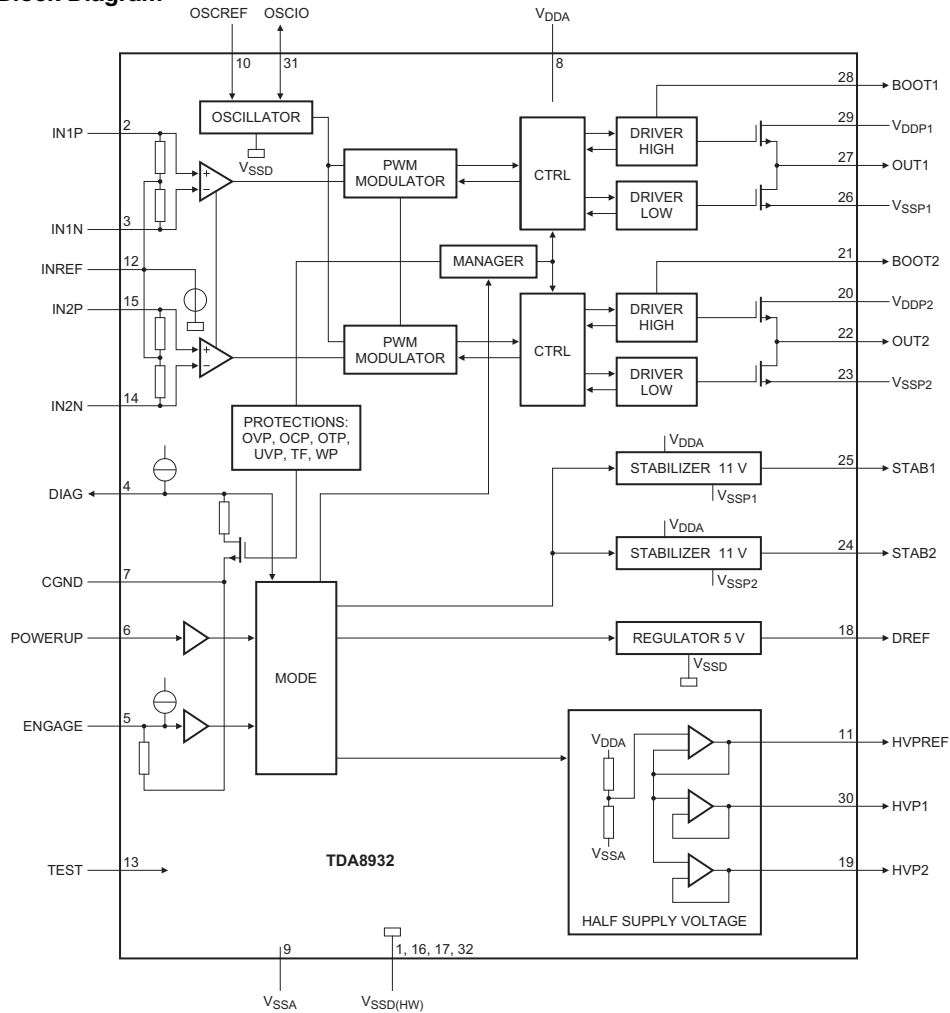


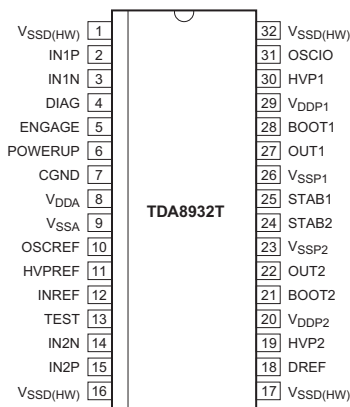
Figure 8-5 Internal block diagram

8.1.6 Diagram B05B, Type TDA8932T (IC7A01), Audio Amplifier

Block Diagram



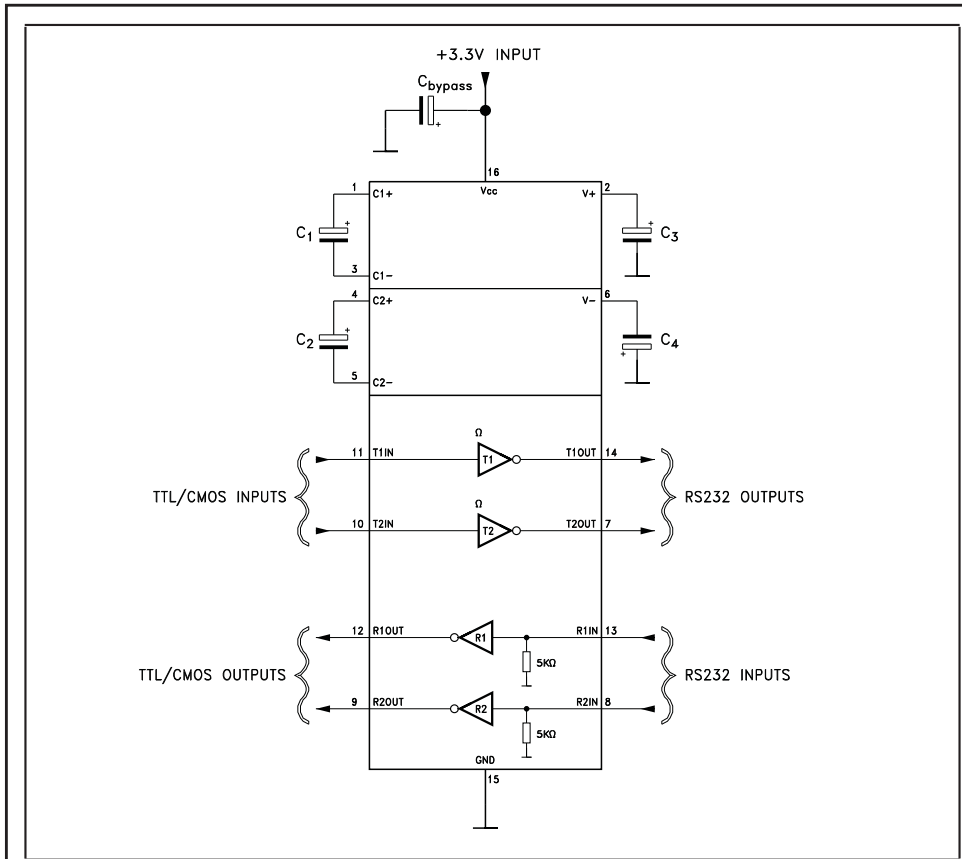
Pin Configuration



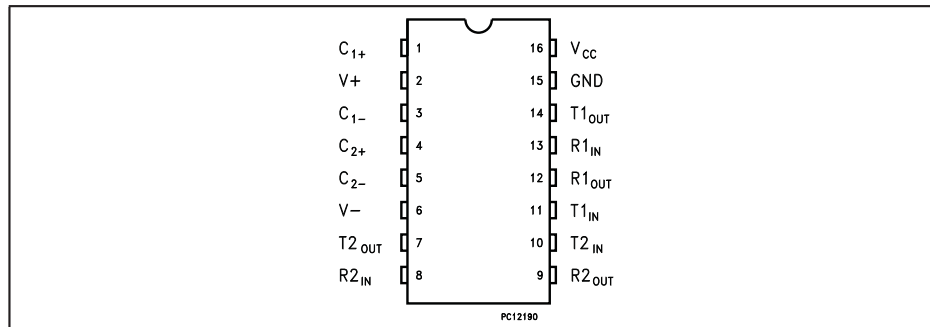
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300107

Figure 8-6 Internal block diagram and pin configuration

8.1.7 Diagram HC01, Type ST3232C (IC7107), RS232 Driver



PIN CONFIGURATION



PIN DESCRIPTION

PIN N°	SYMBOL	NAME AND FUNCTION
1	C <sub>1+</sub>	Positive Terminal for the first Charge Pump Capacitor
2	V+	Doubled Voltage Terminal
3	C <sub>1-</sub>	Negative Terminal for the first Charge Pump Capacitor
4	C <sub>2+</sub>	Positive Terminal for the second Charge Pump Capacitor
5	C <sub>2-</sub>	Negative Terminal for the second Charge Pump Capacitor
6	V-	Inverted Voltage Terminal
7	T <sub>2</sub> OUT	Second Transmitter Output Voltage
8	R <sub>2</sub> IN	Second Receiver Input Voltage
9	R <sub>2</sub> OUT	Second Receiver Output Voltage
10	T <sub>2</sub> IN	Second Transmitter Input Voltage
11	T <sub>1</sub> IN	First Transmitter Input Voltage
12	R <sub>1</sub> OUT	First Receiver Output Voltage
13	R <sub>1</sub> IN	First Receiver Input Voltage
14	T <sub>1</sub> OUT	First Transmitter Output Voltage
15	GND	Ground
16	V <sub>CC</sub>	Supply Voltage

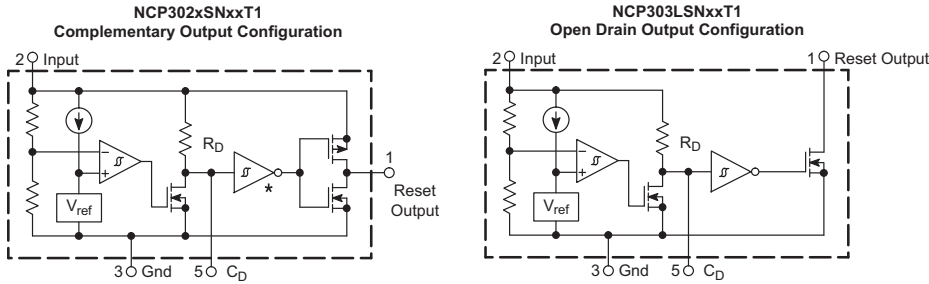
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Figure 8-7 Internal block diagram and pin configuration



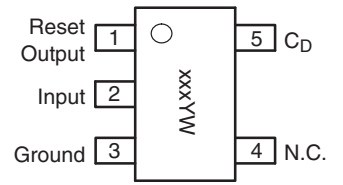
8.1.8 Diagram HC01, Type NCP303LSN45 (IC7103), Voltage Detector

Block Diagram



\* Inverter for active low devices.  
 Buffer for active high devices. This device contains 28 active transistors.

Pin Configuration



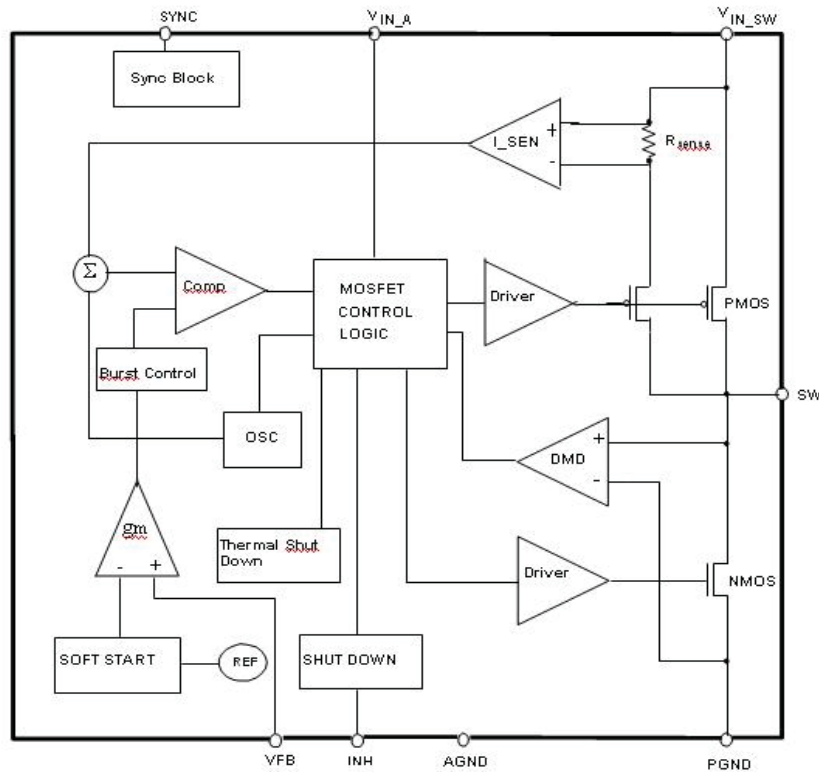
xxx = 302 or 303  
 Y = Year  
 W = Work Week  
 (Top View)

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 100405

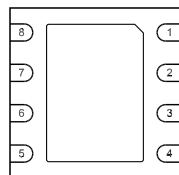
Figure 8-8 Internal block diagram and pin configuration

8.1.9 Diagram HC01, Type ST1S10 (IC7125), Stepdown Regulator

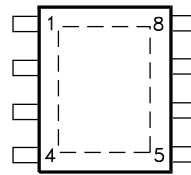
Block Diagram



Pin Configuration



DFN8 (4x4)



PowerSO-8

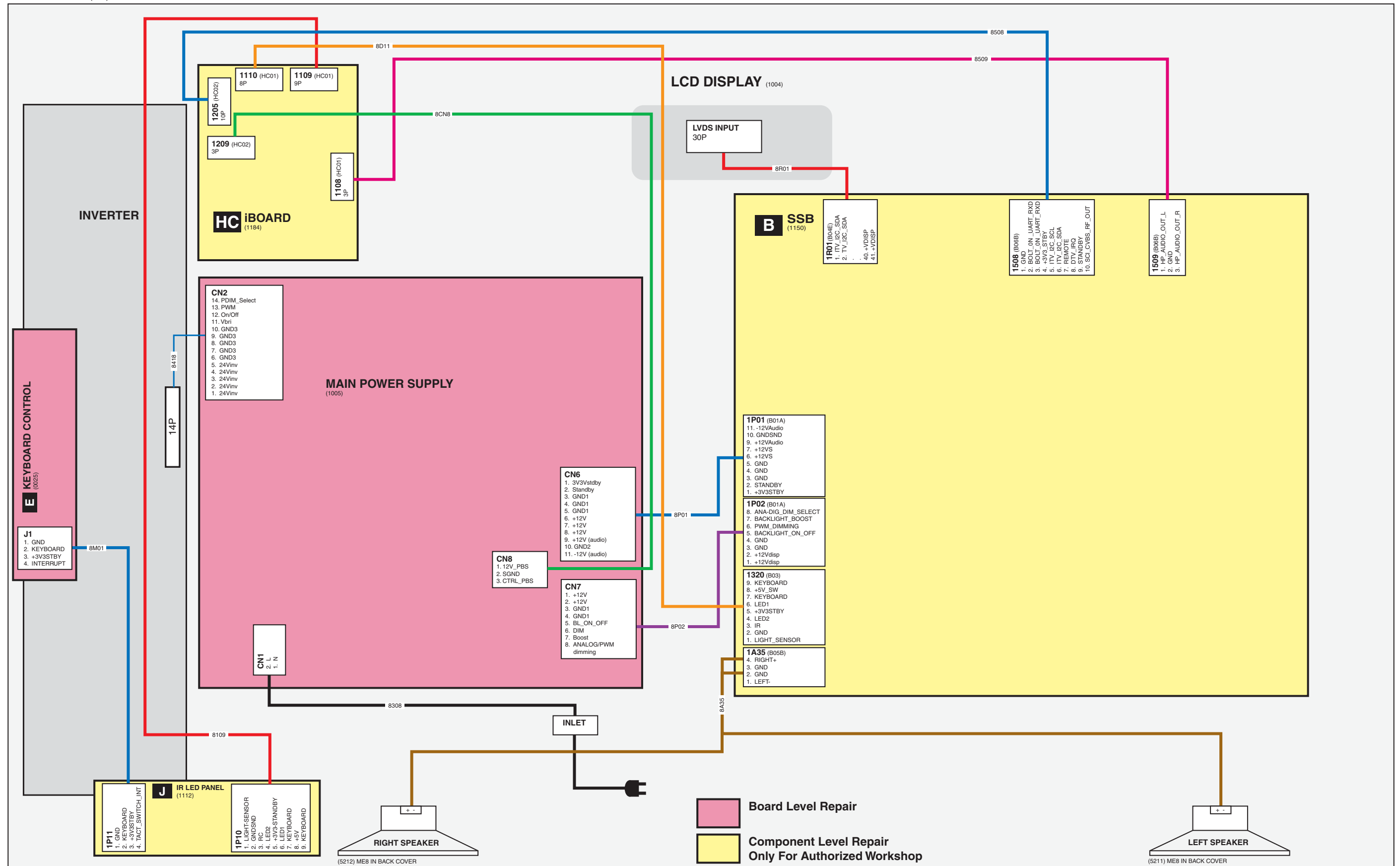
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Figure 8-9 Internal block diagram and pin configuration

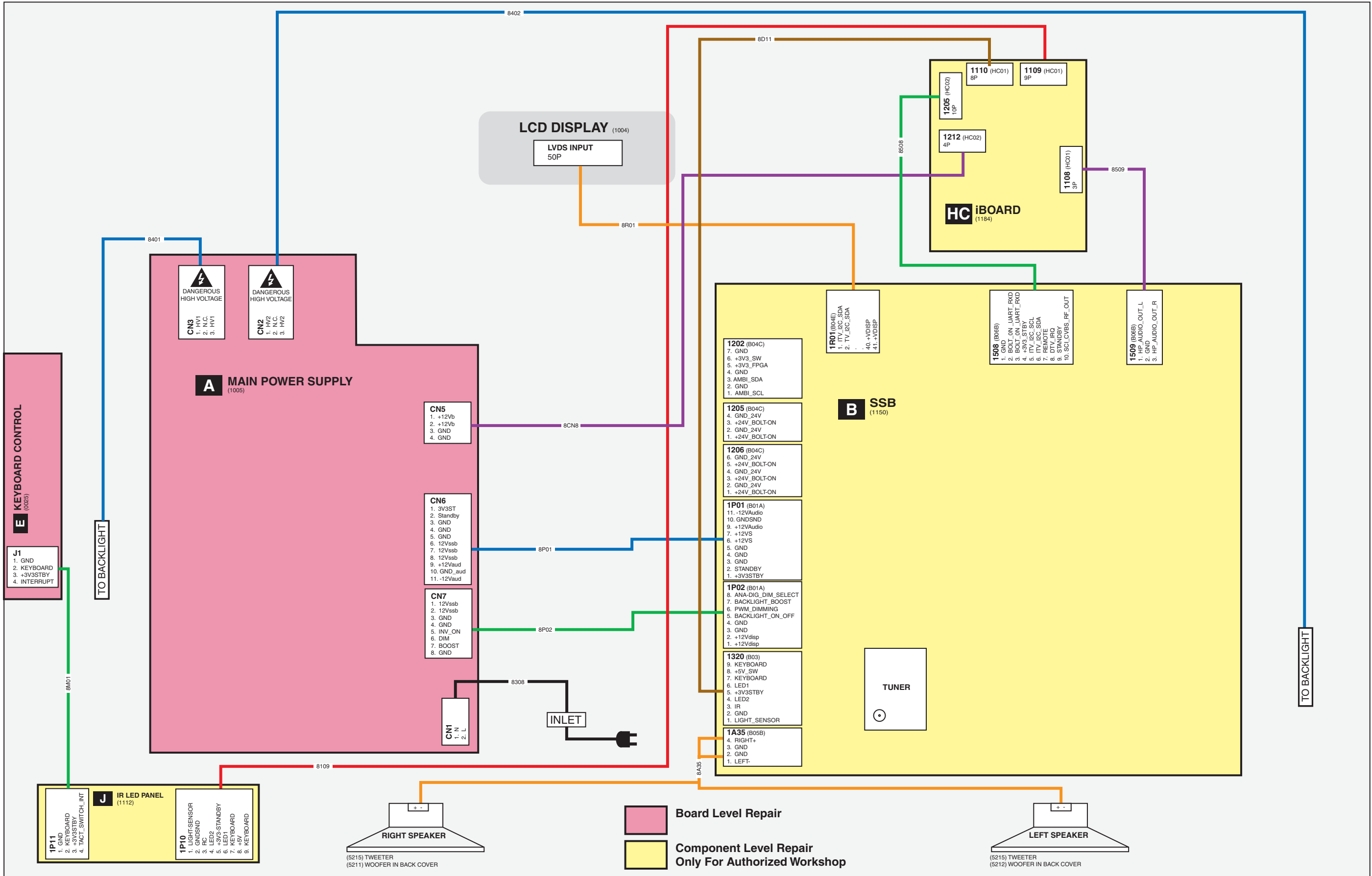


# 9. Block Diagrams

Wiring Diagram 32" (ME8)  
WIRING 32" (ME8)

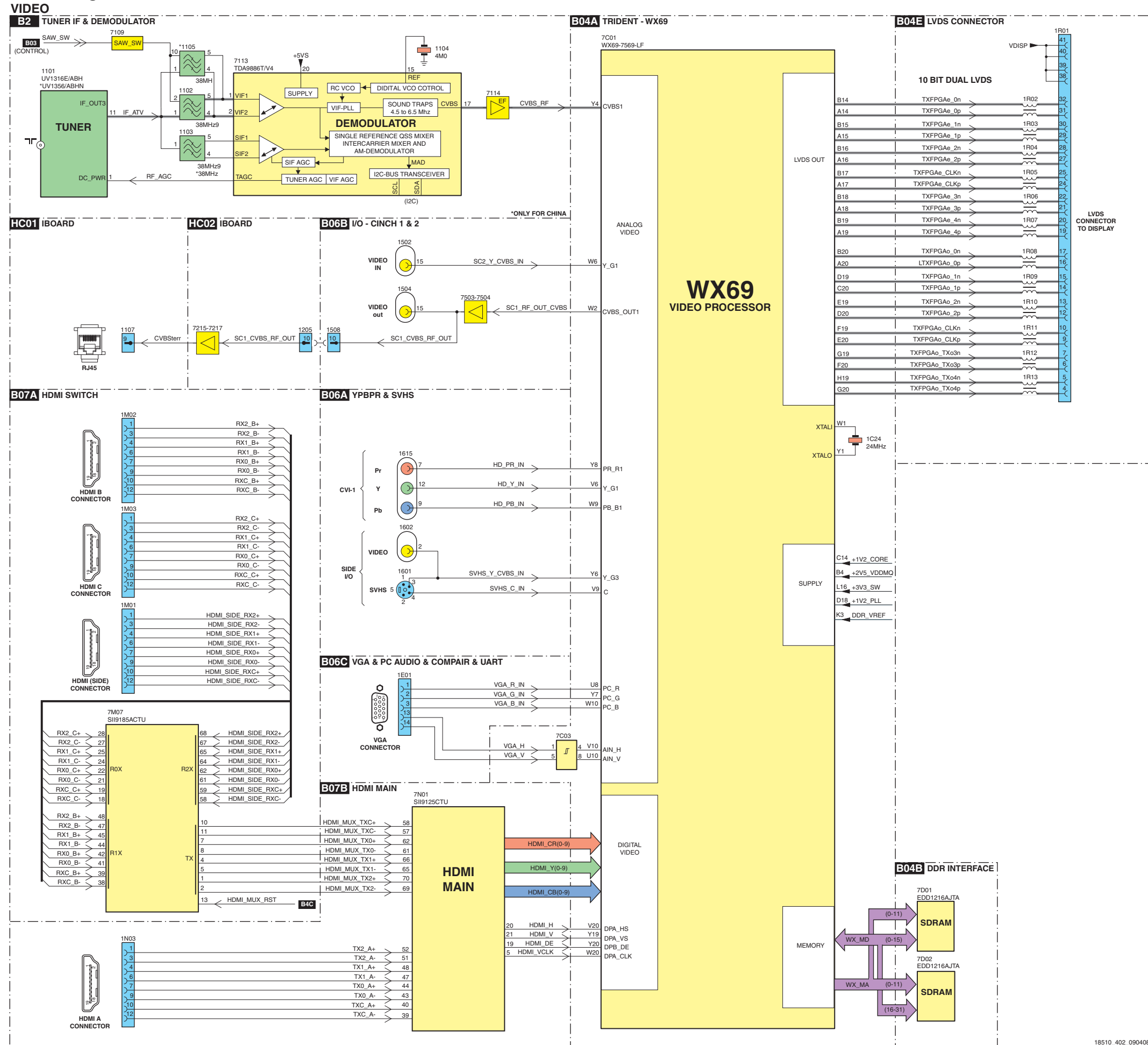


**Wiring Diagram 42" (ME8)**  
**WIRING DIAGRAM 42" (ME8)**

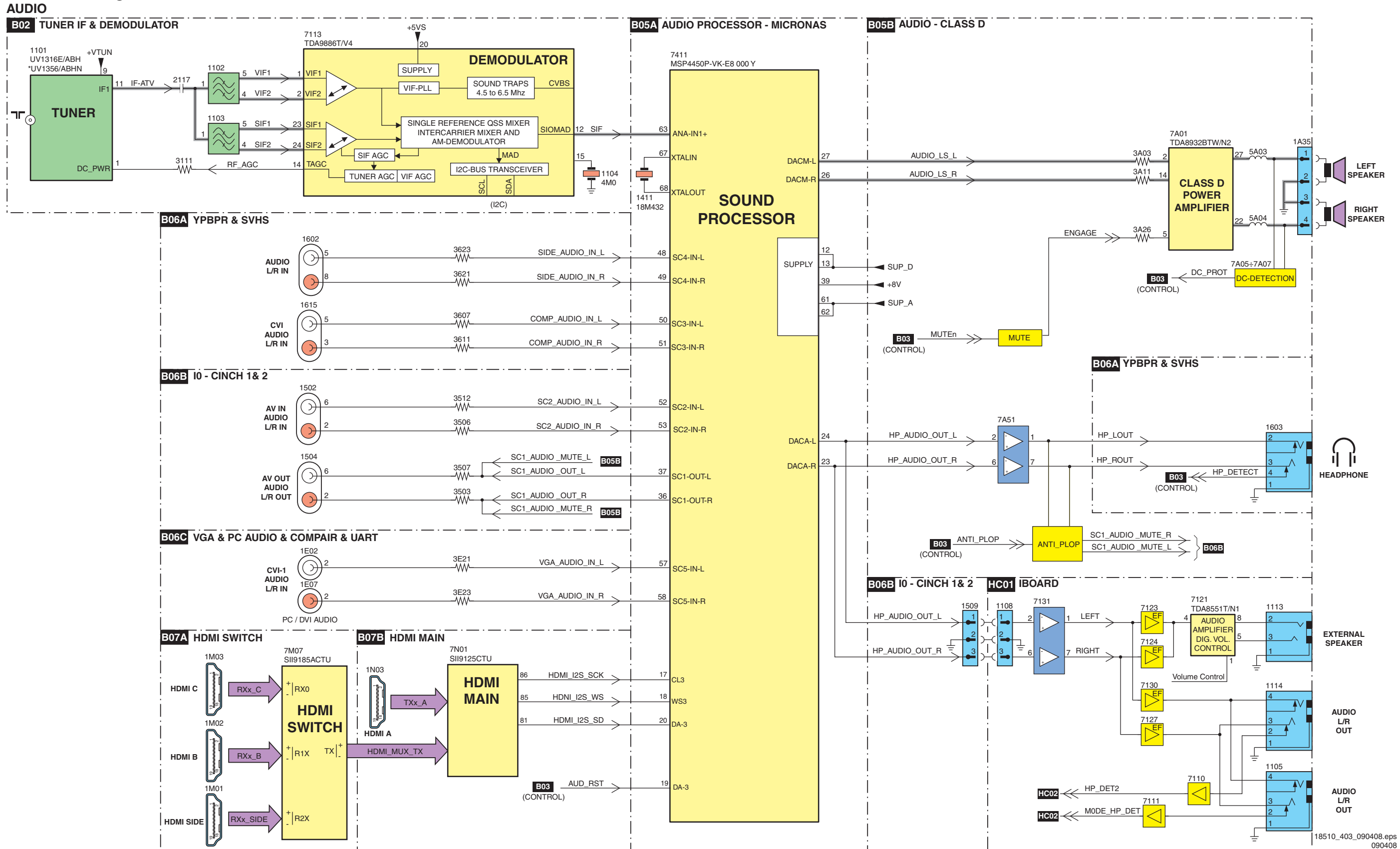


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### Block Diagram Video

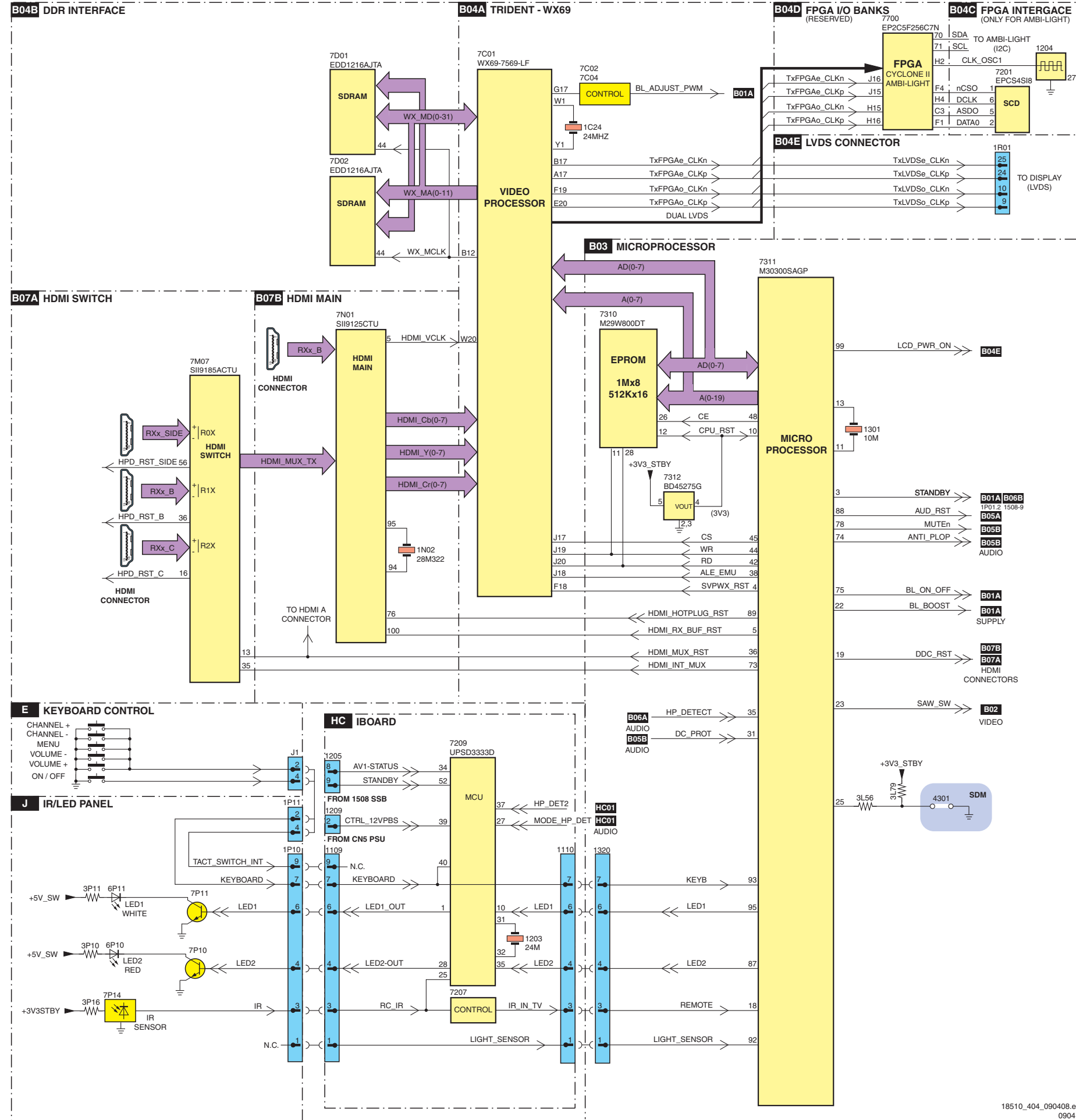


**Block Diagram Audio**



### Block Diagram Control & Clock Signals

#### CONTROL & CLOCK SIGNALS

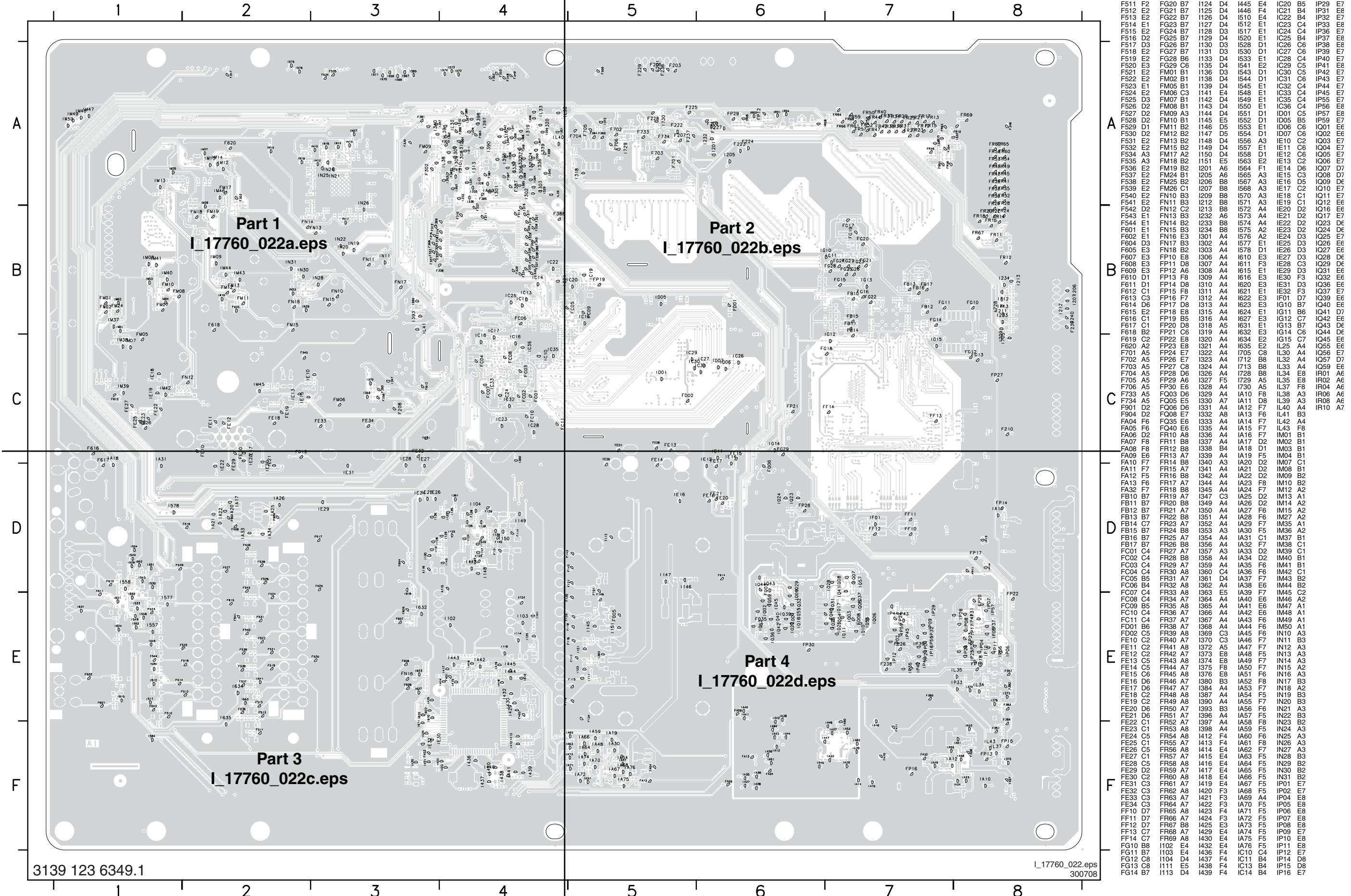


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SSB: Test Points (Overview Bottom Side)

A115 D4	F101 D5	F116 E4	F120 E4	F130 D4	F140 D4	F201 A5	F205 A5	F211 B8	F225 A5	F236 A5	F240 B8	F309 A4	F313 B4	F317 B4	F321 B4	F325 B3	F329 B4	F333 B4	F337 B4	F341 B4	F348 A4	F352 A4	F357 E8	F363 A4	F367 A4	F381 A3	F385 A4	F401 E4	FG15 B7	I114 E4	I440 F4	IC15 B5	IP17 E8
A116 D3	F112 D5	F117 E5	F121 D4	F131 D4	F142 D5	F202 A6	F207 A5	F222 A5	F227 A6	F237 A5	F302 A3	F310 B4	F314 B3	F318 B3	F322 B3	F326 B4	F330 A3	F334 B4	F338 B4	F345 C2	F349 A4	F353 A4	F360 E7	F364 A5	F368 B3	F382 E8	F386 A4	F402 F3	FG16 B7	I118 E4	I441 F4	IC16 C4	IP25 E8
A124 E4	F114 D4	F118 E5	F128 D4	F133 E4	F143 D4	F203 A5	F208 C3	F223 A6	F228 A5	F238 E7	F303 A2	F311 B4	F315 A4	F319 B4	F323 A3	F327 B3	F331 B4	F335 B4	F339 B4	F346 A8	F350 C3	F354 A7	F361 A4	F365 A5	F369 B3	F383 E8	F387 A4	F403 F5	FG17 B7	I120 E4	I442 F4	IC17 B4	IP26 E7
A125 D4	F115 E5	F119 E5	F129 D4	F134 E5	F146 E5	F204 A6	F210 C8	F224 A6	F229 A5	F239 B8	F305 A5	F312 B3	F316 B3	F320 B3	F324 B4	F328 B4	F332 B4	F336 B4	F340 B4	F347 A2	F351 F8	F356 C3	F362 A4	F366 B4	F380 A4	F384 E8	F388 B4	F404 F3	FG18 B7	I121 E5	I443 E4	IC18 C4	IP27 E7

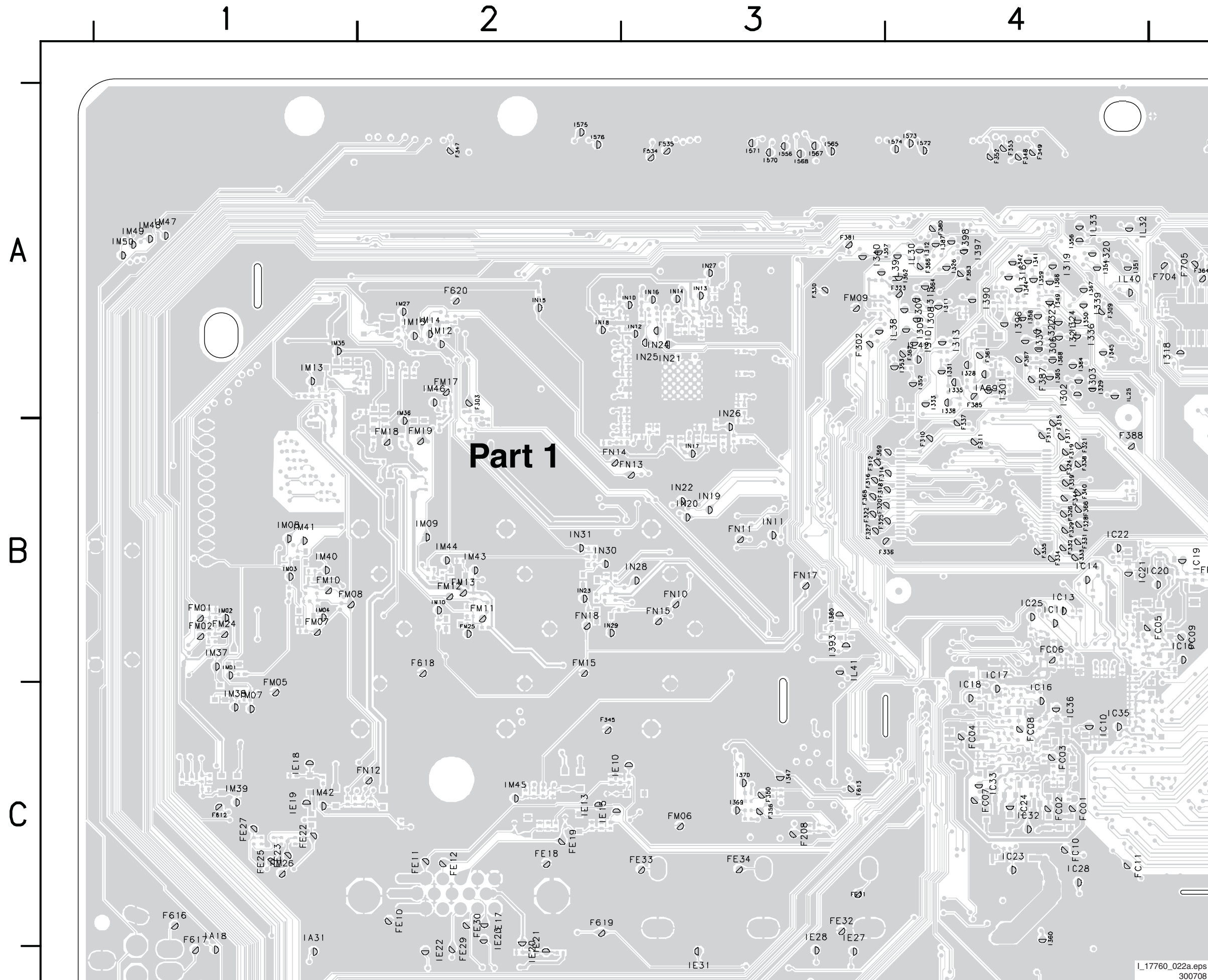


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SSB: Test Points (Part 1 Bottom Side)



SSB: Test Points (Part 2 Bottom Side)

5

6

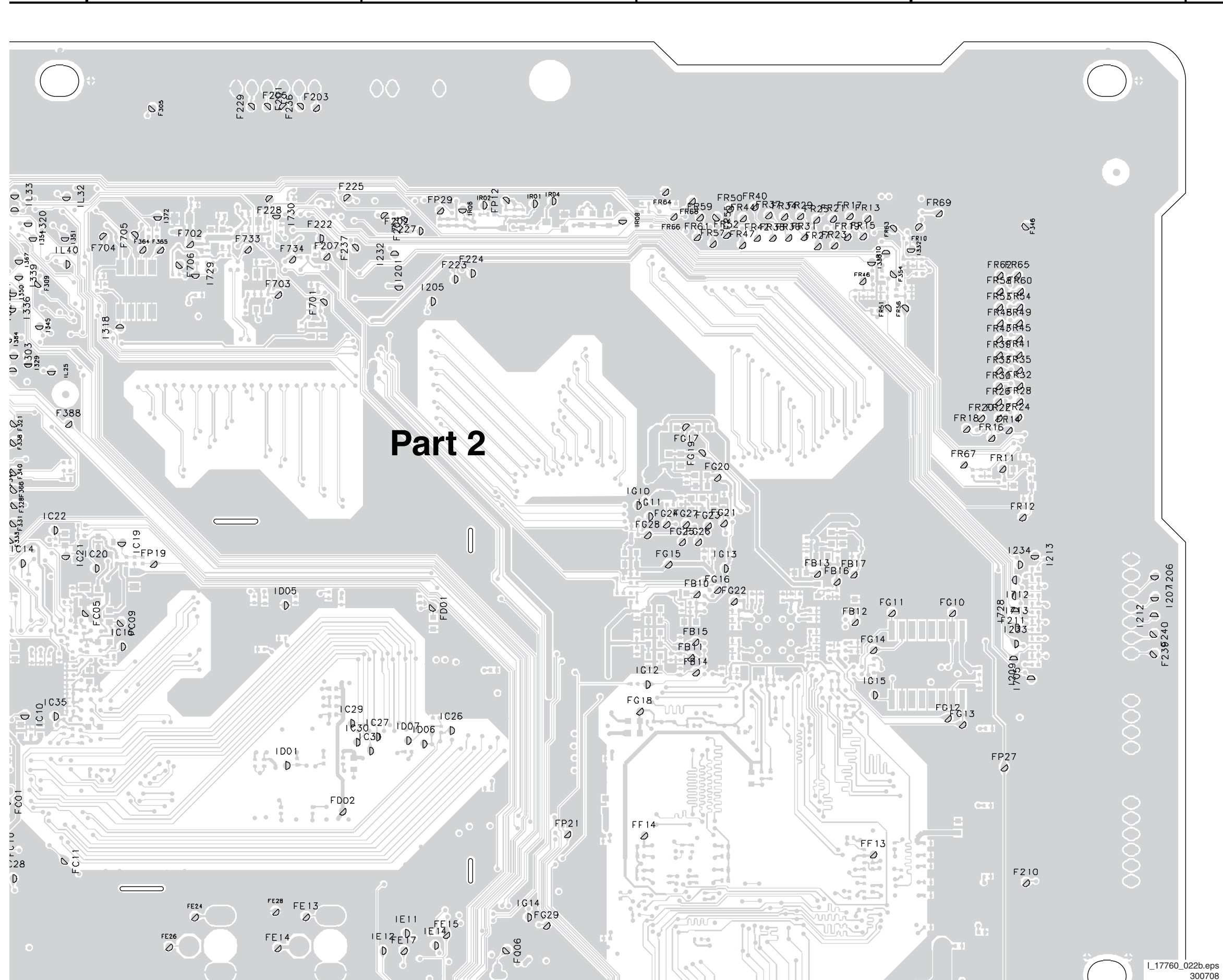
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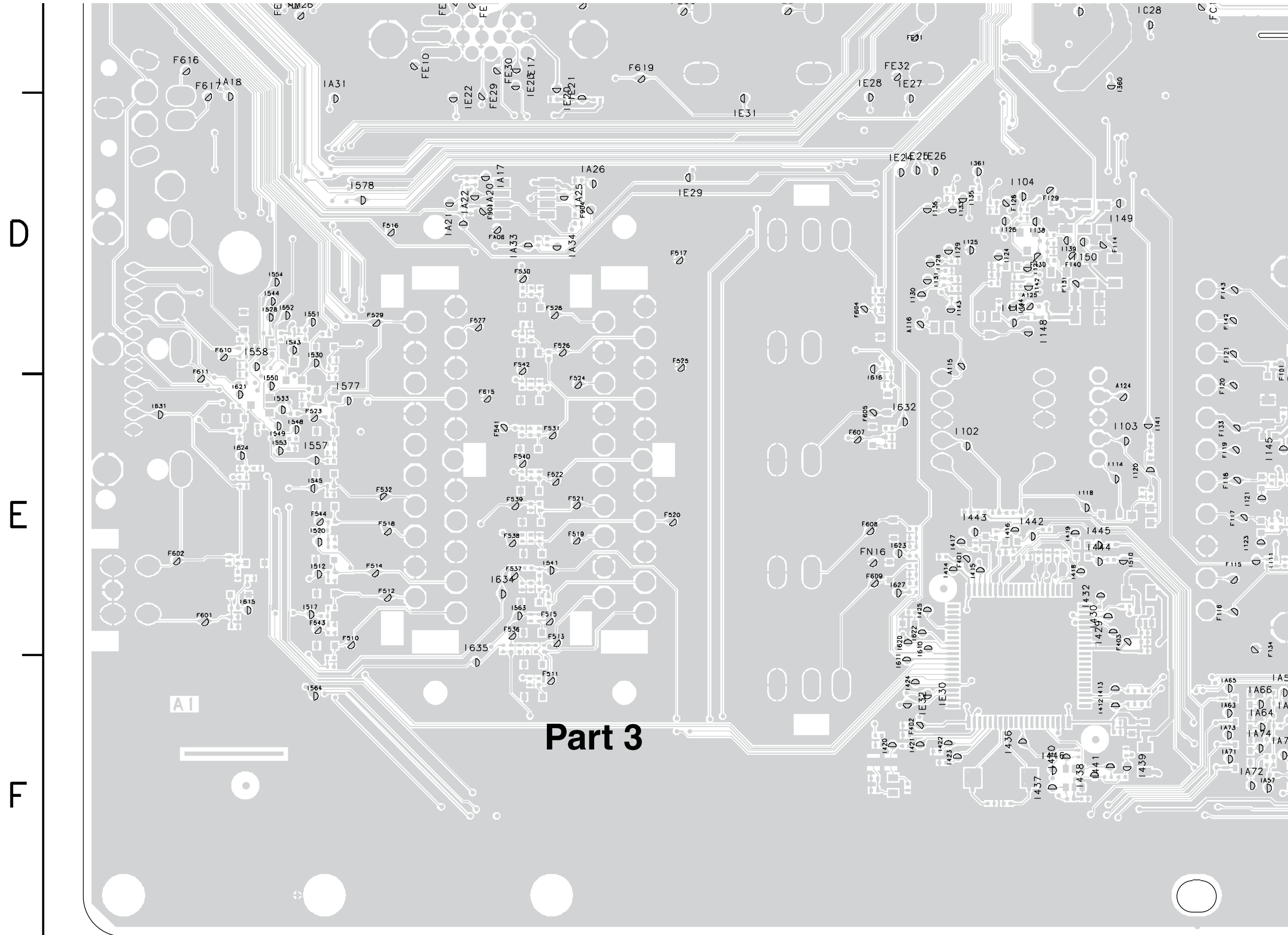
A

B

C

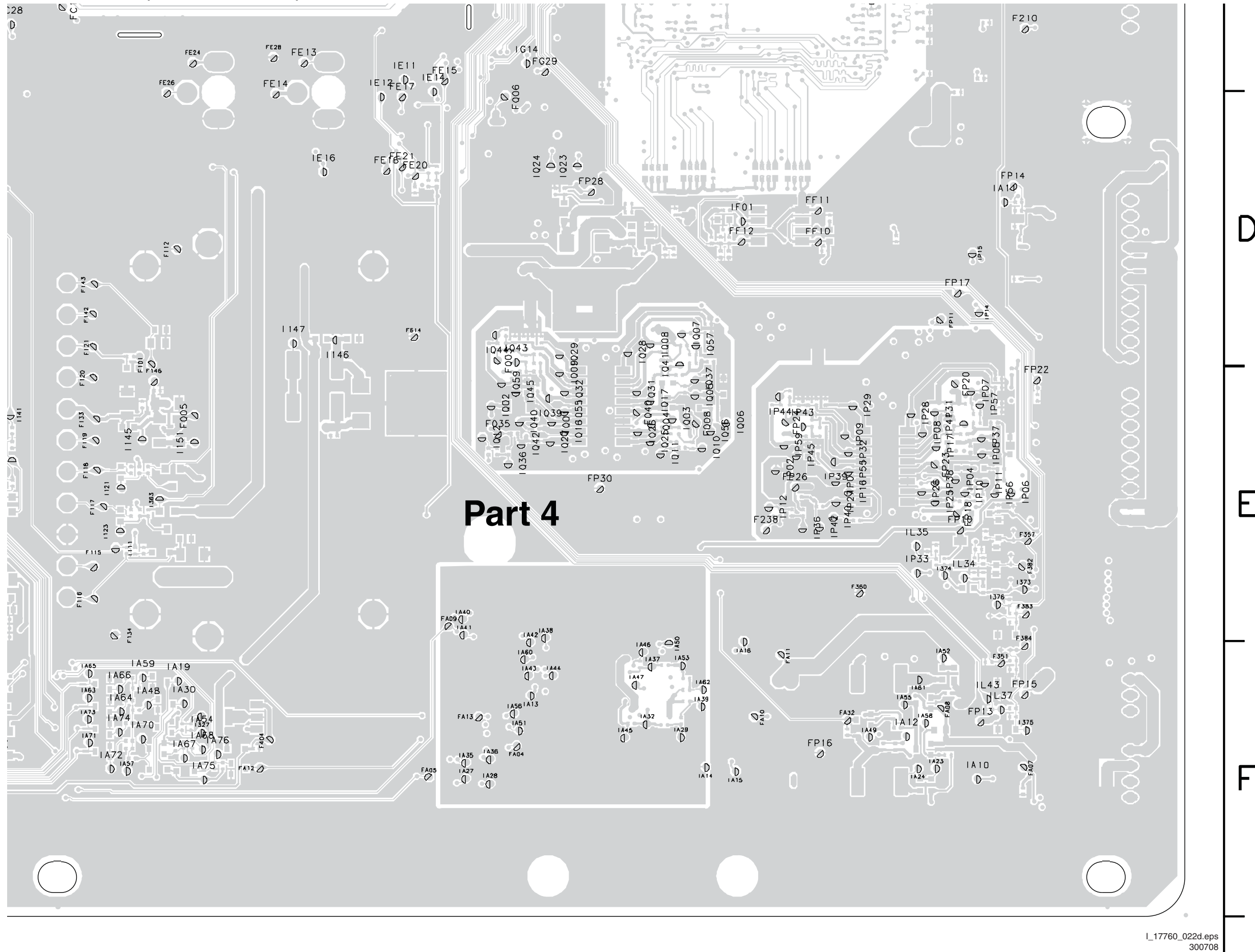


SSB: Test Points (Part 3 Bottom Side)



Part 3

SSB: Test Points (Part 4 Bottom Side)



Part 4

5

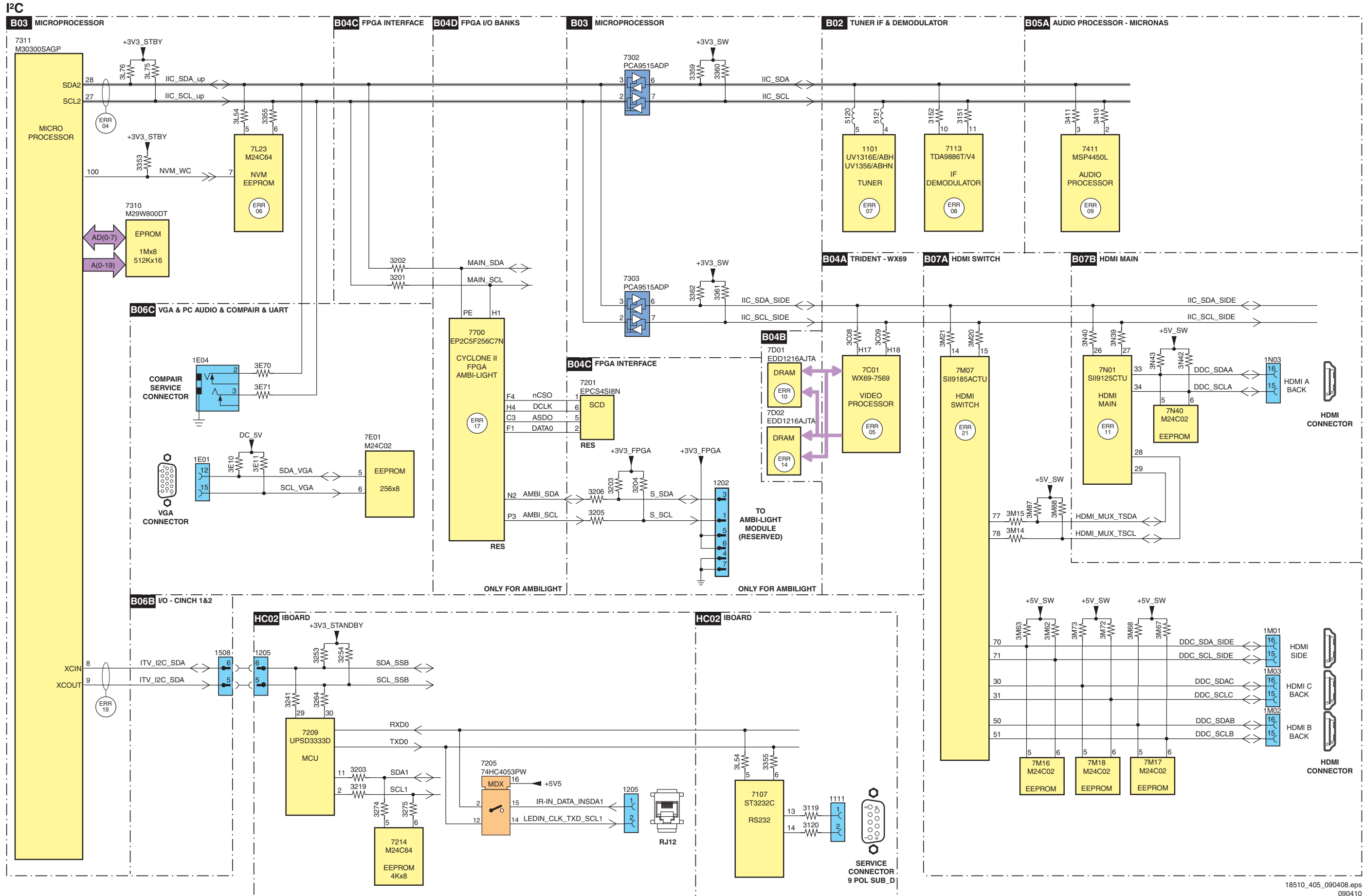
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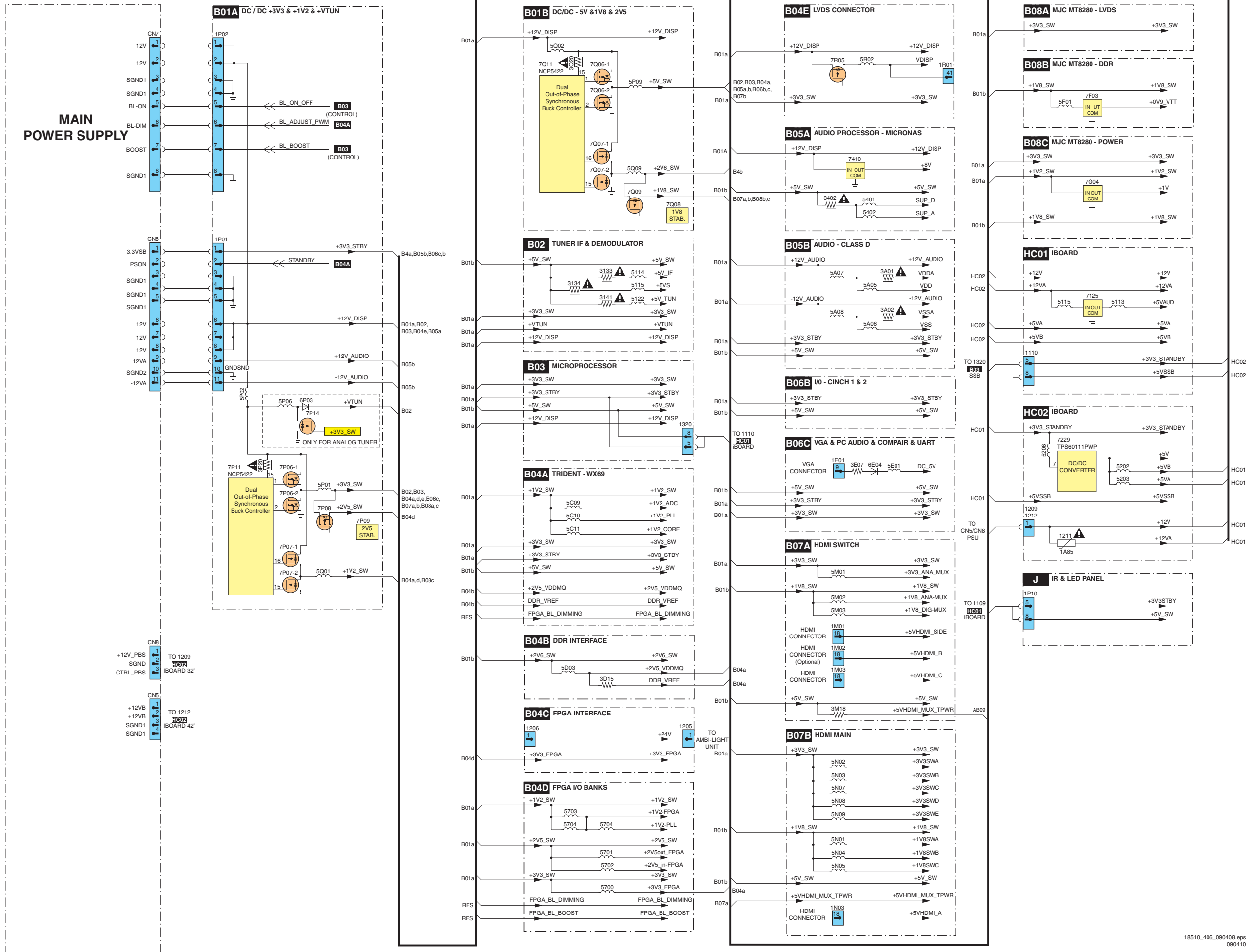
### I2C IC Overview



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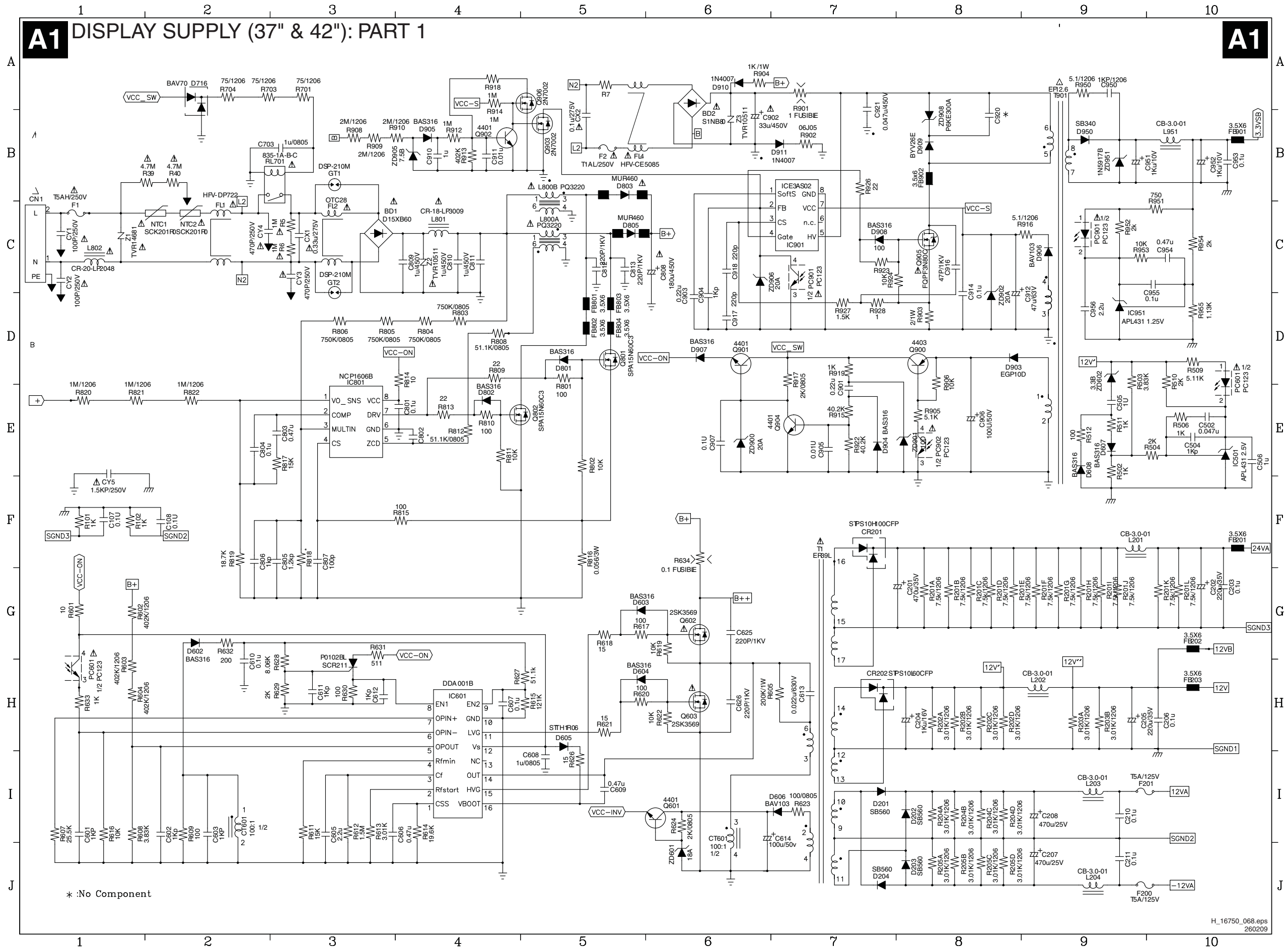
### Supply Lines Overview

SUPPLY LINES OVERVIEW



# 10. Circuit Diagrams and PWB Layouts

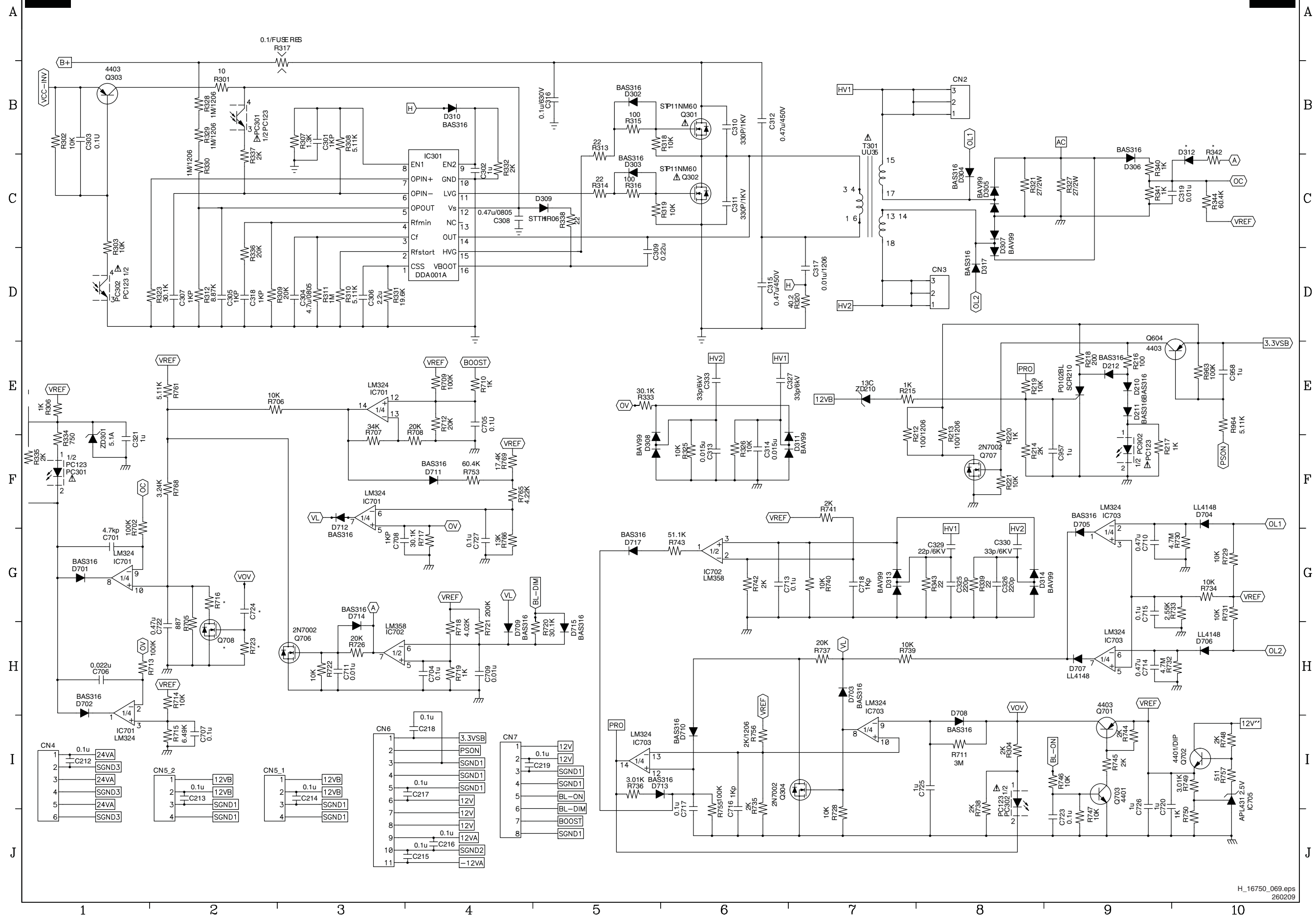
## Main Power Supply (42"): Part 1



Main Power Supply (42"): Part 2

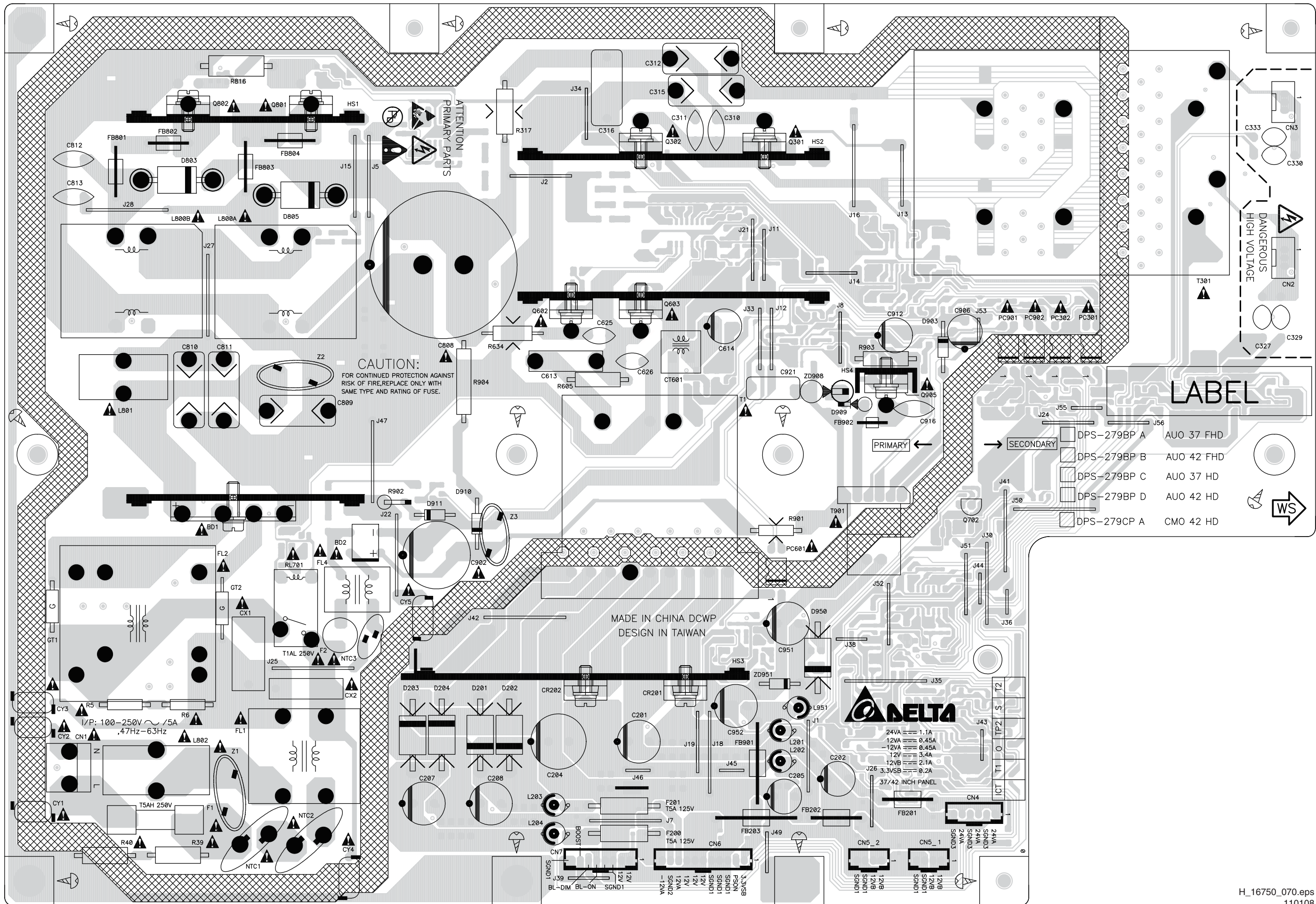
A2 DISPLAY SUPPLY (37" & 42"): PART 2

A2

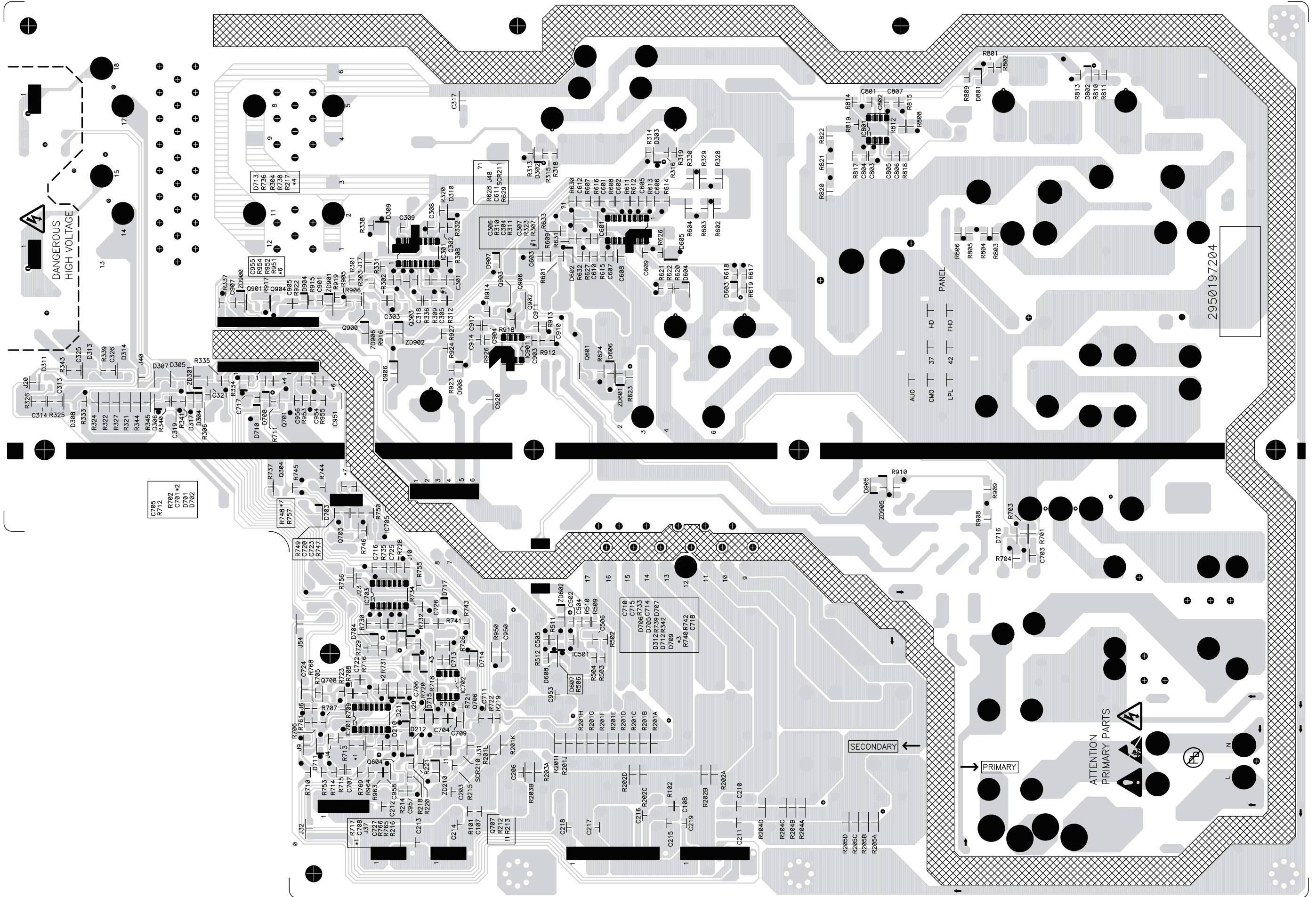




Layout Main Power Supply (42") (Top Side)



Layout Main Power Supply (42") (Bottom Side)

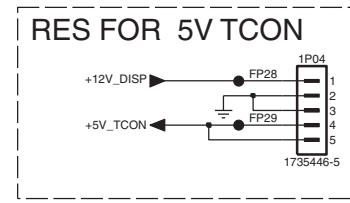
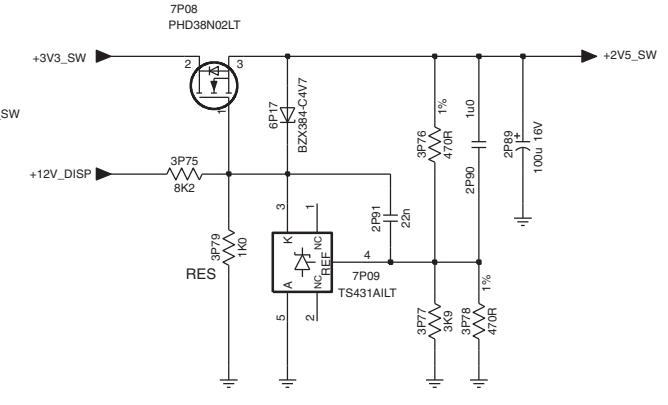
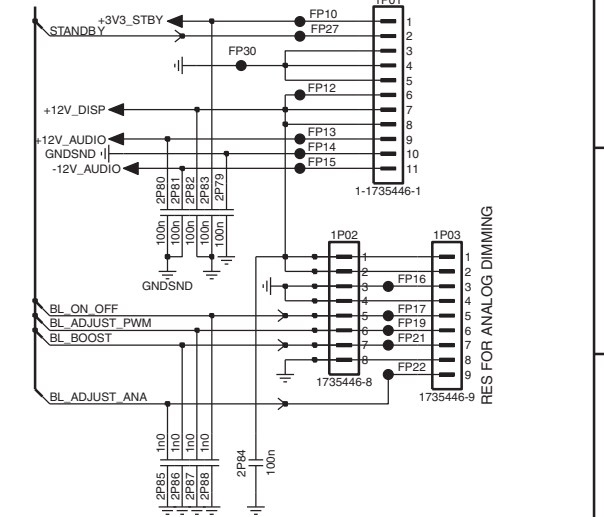
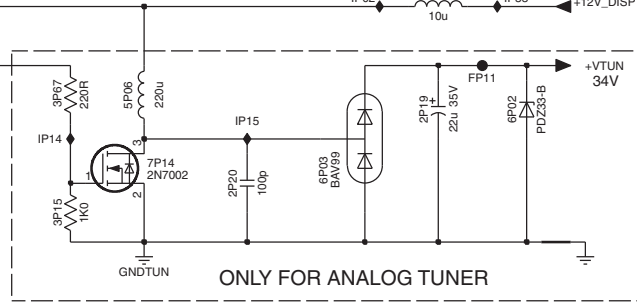
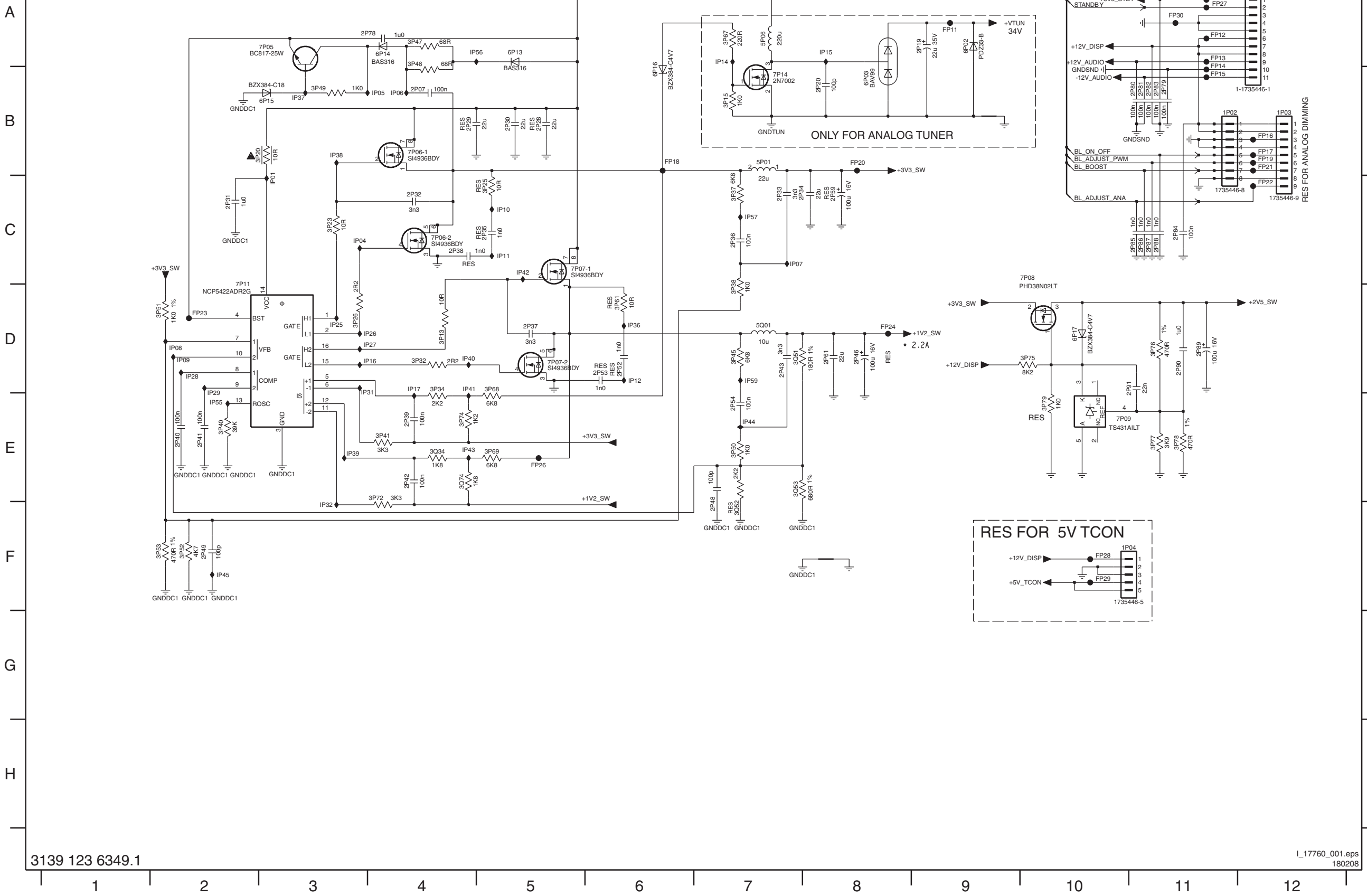




SSB: DC/DC +3V3, +1V2, & +VTUN

B01A DC/DC +3V3 & +1V2 & +VTUN

B01A



- 1P01 A12
- 1P02 B11
- 1P03 B12
- 1P04 F11
- 2P07 B4
- 2P19 A9
- 2P20 B8
- 2P28 B5
- 2P29 B4
- 2P30 B5
- 2P31 C2
- 2P32 C4
- 2P33 C7
- 2P34 C8
- 2P35 C5
- 2P36 C7
- 2P37 D5
- 2P38 C4
- 2P39 E4
- 2P40 E2
- 2P41 E2
- 2P42 E4
- 2P43 D7
- 2P44 D8
- 2P48 F7
- 2P49 F2
- 2P52 D6
- 2P53 D6
- 2P54 E7
- 2P59 C8
- 2P61 D8
- 2P78 A4
- 2P79 B11
- 2P80 B11
- 2P81 B11
- 2P82 B11
- 2P83 B11
- 2P84 C11
- 2P85 C11
- 2P86 C11
- 2P87 C11
- 2P88 C11
- 2P89 D11
- 2P90 D11
- 2P91 D11
- 3P13 D4
- 3P15 B7
- 3P20 B3
- 3P23 C3
- 3P25 C5
- 3P26 D3
- 3P32 D4
- 3P34 D4
- 3P37 C7
- 3P38 D7
- 3P40 E2
- 3P41 E4
- 3P45 D7
- 3P47 A4
- 3P48 A4
- 3P49 B3
- 3P50 E7
- 3P51 D2
- 3P52 F2
- 3P53 F2
- 3P61 D6
- 3P67 A7
- 3P68 D5
- 3P69 E5
- 3P72 E4
- 3P74 E4
- 3P75 D10
- 3P76 D11
- 3P77 E11
- 3P78 E11
- 3P79 E10
- 3Q34 E4
- 3Q51 D7
- 3Q52 F7
- 3Q53 E7
- 3Q74 E4
- 4P16 B6
- 5P01 B7
- 5P02 A9
- 5P06 A7
- 5Q01 D7
- 6P02 A9
- 6P03 B8
- 6P13 A5
- 6P14 A4
- 6P15 B3
- 6P16 B6
- 6P17 D10
- 7P05 A3
- 7P06-1 B4
- 7P06-2 C4
- 7P07-1 C5
- 7P07-2 D5
- 7P08 C10
- 7P09 E11
- 7P11 D2
- 7P14 B7
- FP10 A11
- FP11 A9
- FP12 A11
- FP13 A11
- FP14 B11
- FP15 B11
- FP16 B12
- FP17 B12
- FP18 B6
- FP19 B12
- FP20 B8
- FP21 B12
- FP22 C12
- FP23 D2
- FP24 D8
- FP25 E5
- FP27 A11
- FP28 F10
- FP29 F10
- FP30 A11
- FP01 C3
- FP02 A8
- FP03 C3
- FP04 B4
- FP05 B4
- FP06 B4
- FP07 C7
- FP08 D2
- FP09 D2
- FP10 C5
- FP11 C5
- FP12 D6
- FP14 A7
- FP15 A8
- FP16 D4
- FP17 D4
- FP25 D3
- FP26 D4
- FP27 D4
- FP28 D2
- FP29 E2
- FP31 D4
- FP32 F3
- FP33 A9
- FP36 D6
- FP37 B3
- FP38 B3
- FP39 E3
- FP40 D4
- FP41 D4
- FP42 C5
- FP43 E4
- FP44 E7
- FP45 F2
- FP55 E2
- FP56 A5
- FP57 C7
- FP59 D7

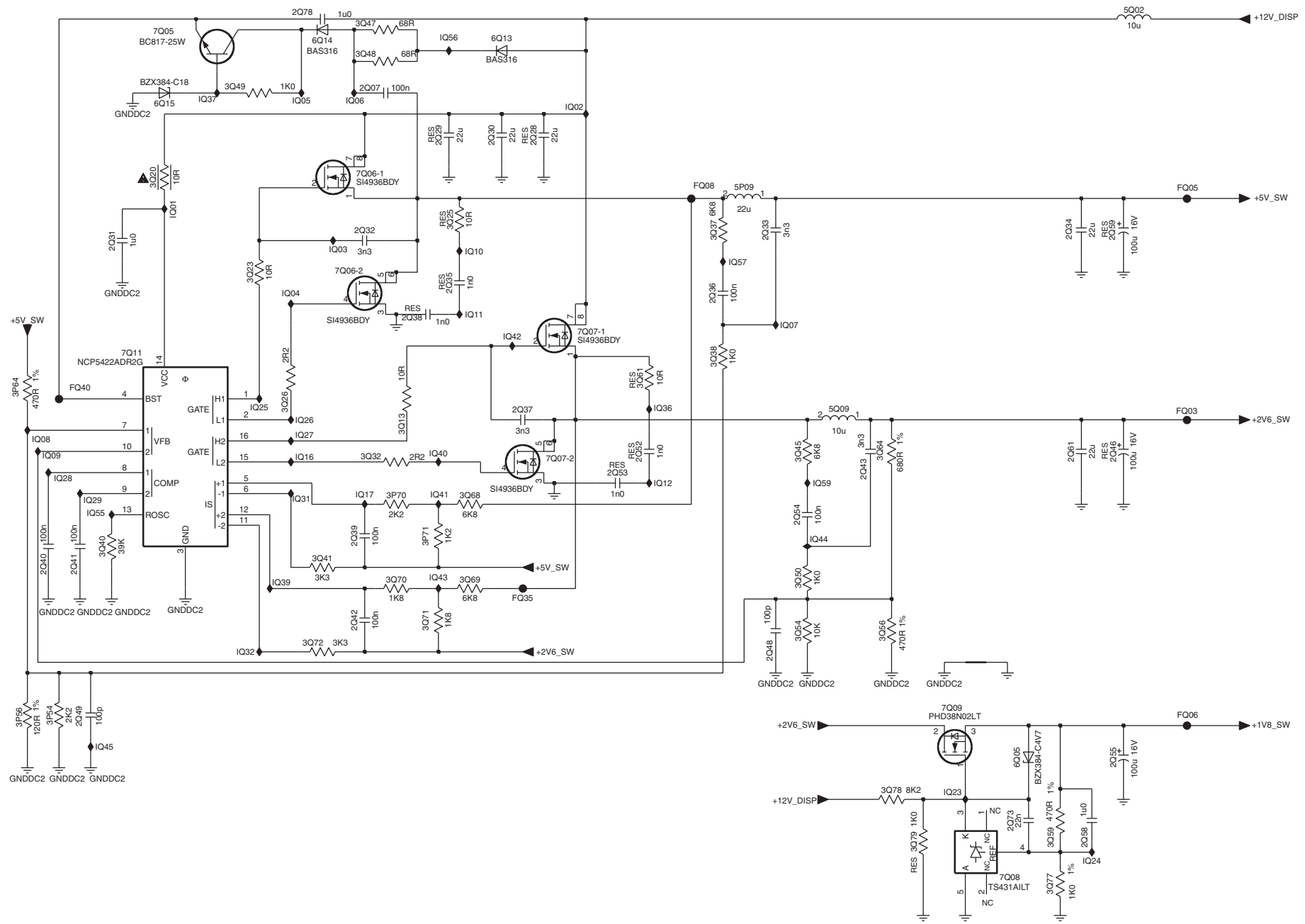
SSB: DC/DC +5V, +1V8, & +2V5

B01B DC/DC - 5V & 1V8 & 2V5

B01B

A  
B  
C  
D  
E  
F  
G  
H

1 2 3 4 5 6 7 8 9 10 11 12



- 2Q07 B4
- 2Q28 B5
- 2Q29 B5
- 2Q30 B5
- 2Q31 C2
- 2Q32 C4
- 2Q33 C7
- 2Q34 C9
- 2Q35 C5
- 2Q36 C6
- 2Q37 D5
- 2Q38 C4
- 2Q39 E4
- 2Q40 E2
- 2Q41 E2
- 2Q42 E4
- 2Q43 D7
- 2Q44 D9
- 2Q48 F7
- 2Q49 F2
- 2Q52 D6
- 2Q53 D6
- 2Q54 E7
- 2Q55 F9
- 2Q58 G9
- 2Q59 C9
- 2Q61 D9
- 2Q73 G8
- 2Q78 A4
- 3P54 F2
- 3P56 F2
- 3P64 D2
- 3P70 D4
- 3P71 E4
- 3Q13 D4
- 3Q20 B3
- 3Q23 C3
- 3Q25 C5
- 3Q26 D4
- 3Q32 D4
- 3Q37 C6
- 3Q38 D6
- 3Q40 E2
- 3Q41 E4
- 3Q45 D7
- 3Q47 A4
- 3Q48 A4
- 3Q49 B3
- 3Q50 E7
- 3Q54 E7
- 3Q56 E8
- 3Q59 G9
- 3Q61 D6
- 3Q64 D8
- 3Q68 D5
- 3Q69 E5
- 3Q70 E4
- 3Q71 E4
- 3Q72 E4
- 3Q77 G9
- 3Q78 F8
- 3Q79 G8
- 5P09 B7
- 5Q02 A9
- 5Q09 D7
- 6Q05 F8
- 6Q13 A5
- 6Q14 A4
- 6Q15 B3
- 7Q05 A3
- 7Q06-1 B4
- 7Q06-2 C4
- 7Q07-1 C5
- 7Q07-2 D5
- 7Q08 G9
- 7Q09 F8
- 7Q11 D3
- FQ03 D10
- FQ05 B10
- FQ06 F10
- FQ08 B6
- FQ35 E5
- FQ40 D2
- IQ01 C3
- IQ02 B5
- IQ03 C4
- IQ04 C4
- IQ05 B4
- IQ06 B4
- IQ07 C7
- IQ08 D2
- IQ09 D2
- IQ10 C5
- IQ11 C5
- IQ12 D6
- IQ16 D4
- IQ17 D4
- IQ23 F8
- IQ24 G9
- IQ25 D3
- IQ26 D4
- IQ27 D4
- IQ28 D2
- IQ29 E2
- IQ31 D4
- IQ32 F3
- IQ36 D6
- IQ37 B3
- IQ39 E4
- IQ40 D5
- IQ41 D5
- IQ42 C5
- IQ43 E5
- IQ44 E7
- IQ45 F2
- IQ45 E2
- IQ55 E2
- IQ56 A5
- IQ57 C7
- IQ59 D7

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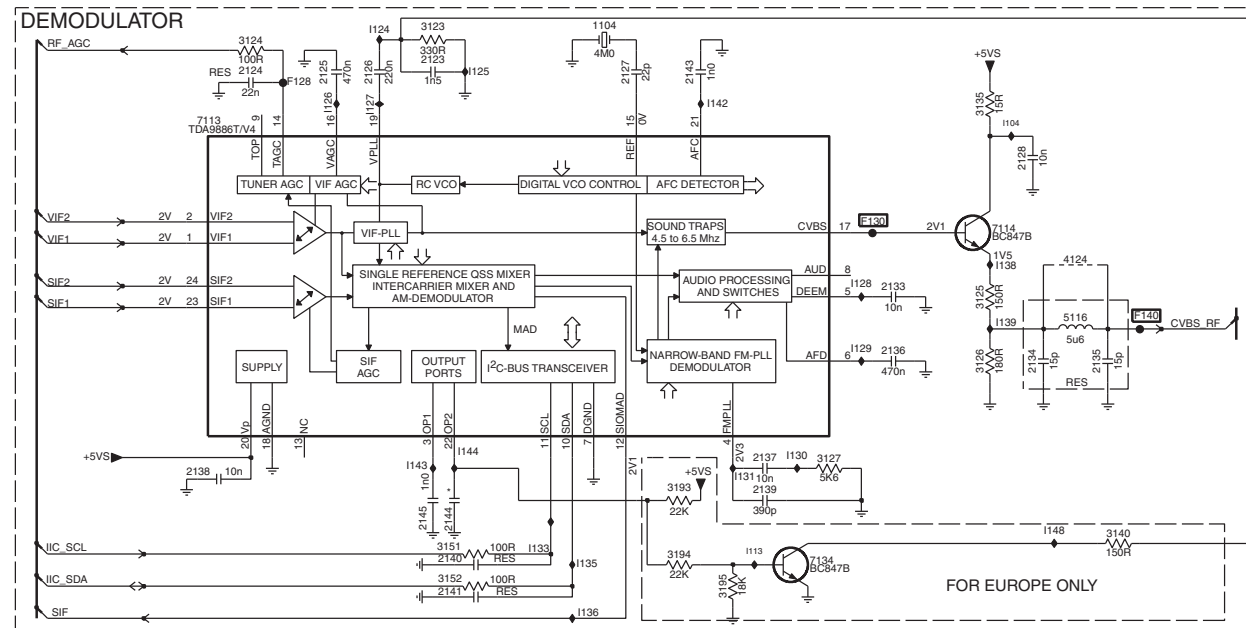
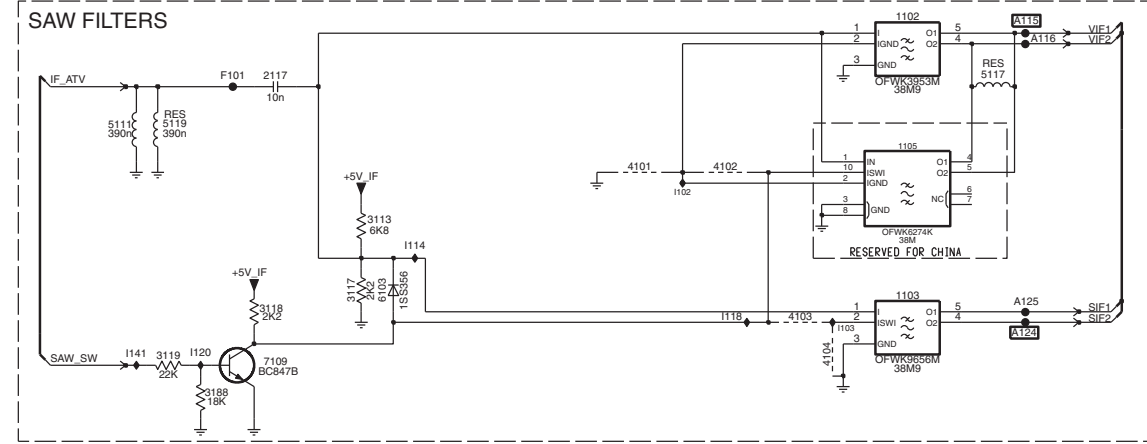
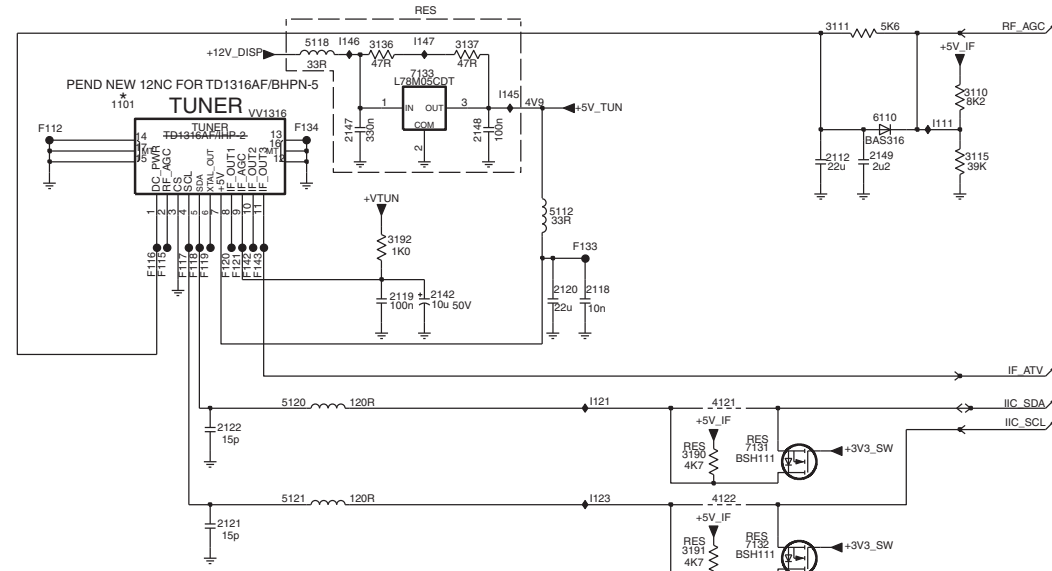
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SSB: Tuner IF & Demodulator

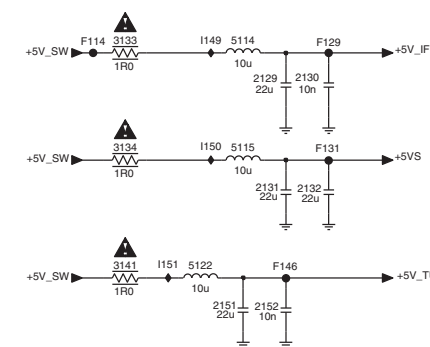
**B02**

**TUNER IF & DEMODULATOR**

**B02**



	EUROPE	AP	CHINA	LATAM
1101	UV1316E	UV1316E	UV1356	UV1336
1102	K3953	K7257M	-	M1971M
1103	K9656M	K9362	K9352	-
1105	-	-	K6274k	-
4101	Y	-	Y	Y
4102	-	Y	-	-
4103	Y	-	-	-
4104	-	Y	Y	-
2144	-	10n	10n	10n
3193	22K	-	-	-
3194	22K	-	-	-
3195	18K	-	-	-
3140	150R	-	-	-
7134	BC847B	-	-	-

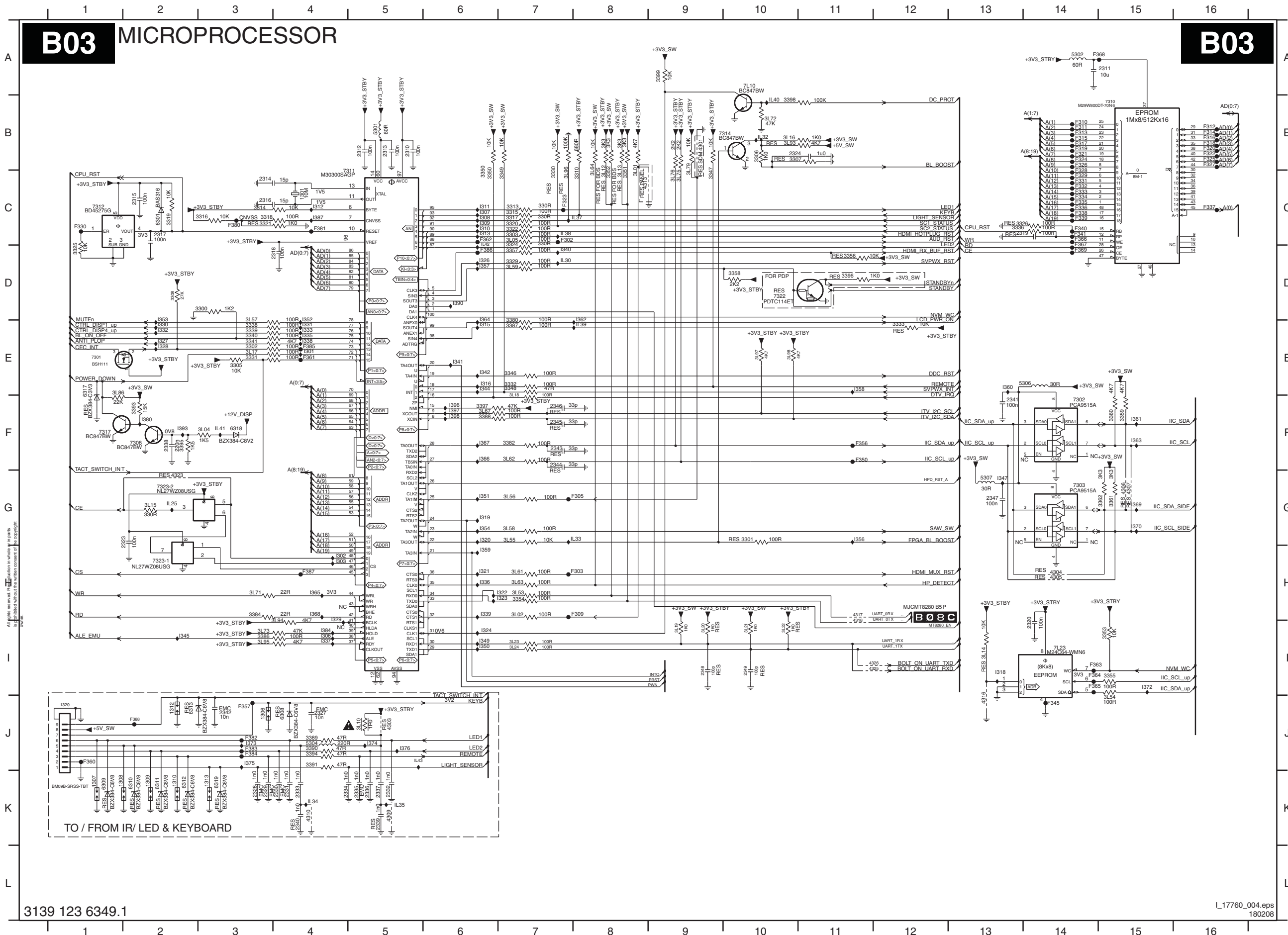


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1101 B3  
1102 B15  
1103 D15  
1104 F5  
1105 C15  
2112 C8  
2117 B11  
2118 D6  
2119 D5  
2120 D6  
2121 E4  
2122 D4  
2123 F4  
2124 F3  
2125 F3  
2126 F4  
2127 F5  
2128 G8  
2129 I14  
2130 I4  
2131 I4  
2132 I4  
2133 H7  
2134 H8  
2135 H8  
2136 H7  
2137 I6  
2138 I3  
2139 I6  
2140 J4  
2141 J4  
2142 D5  
2143 F6  
2144 I4  
2145 I4  
2147 B4  
2148 B5  
2149 C8  
2151 J14  
2152 J14  
3110 B9  
3111 B8  
3113 C2  
3115 C9  
3117 D12  
3118 D11  
3119 D10  
3123 F4  
3124 F3  
3125 H8  
3126 H8  
3127 I7  
3133 H13  
3134 I13  
3135 G8  
3136 B5  
3137 B5  
3140 J9  
3141 J13  
3151 J4  
3152 J4  
3158 D11  
3190 E7  
3191 E7  
3192 C5  
3193 I6  
3194 J6  
3195 J6  
4101 C13  
4102 C14  
4103 D14  
4104 D15  
4104 D7  
4123 E7  
4124 H8  
5111 B10  
5112 C6  
5114 H4  
5115 I4  
5116 H8  
5117 B16  
5118 B4  
5119 B10  
5120 D4  
5121 E4  
5122 J14  
6103 D12  
6110 B8  
7109 D11  
7113 G3  
7114 G8  
7131 E7  
7132 E7  
7133 B5  
7134 J7  
A115 B16  
A116 B16  
A124 D16  
A125 D16  
F101 B11  
F112 C2  
F114 H13  
F115 C3  
F116 C3  
F117 C3  
F118 C3  
F119 C3  
F120 C4  
F121 C4  
F128 F3  
F129 H15  
F130 G7  
F131 I15  
F133 C6  
F134 B4  
F140 H9  
F142 C4  
F143 C4  
F146 J14  
I102 C14  
I103 D15  
I104 G8  
I111 B8  
I113 J6  
I114 C12  
I118 D14  
I120 D10  
I121 D6  
I123 E6  
I124 F4  
I125 F5  
I126 G3  
I127 G4  
I128 H7  
I129 H7  
I130 I7  
I131 I6  
I133 J5  
I135 J5  
I136 J5  
I137 C5  
I138 H8  
I139 H8  
I141 D10  
I142 G6

**SSB: Micro Processor**



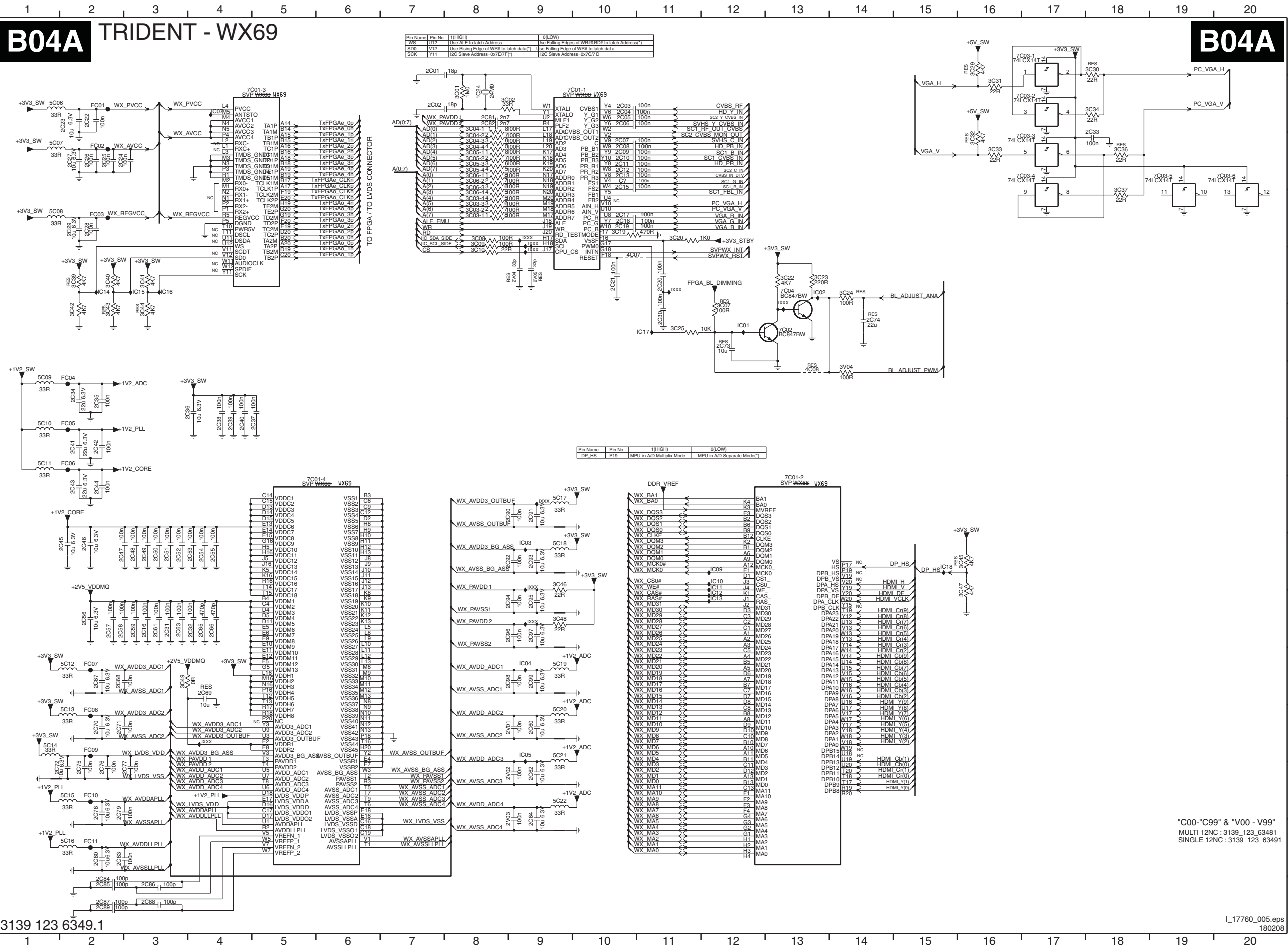
1301 C4	3L73 I3	I335 E4
1306 J3	3L75 C9	I336 H6
1307 K1	3L76 C9	I337 I4
1308 K1	3L79 B9	I338 E4
1309 K2	3L86 E1	I339 H6
1310 K2	3L93 B10	I340 D7
1312 J2	3L94 I4	I341 E6
1313 K3	3L95 I3	I342 E6
1320 J1	3L96 C7	I344 E6
2310 B5	3L97 E10	I345 I2
2311 A15	3L98 E10	I347 G13
2312 B5	4301 B9	I349 I11
2313 B5	4303 J5	I350 I11
2314 C3	4304 H4	I351 G6
2315 C2	4305 H4	I352 D4
2316 C3	4306 G15	I353 D2
2317 C2	4307 G15	I354 G6
2318 D3	4309 K5	I356 G11
2319 C13	4310 K4	I357 D6
2320 I14	4313 C8	I358 E11
2323 G2	4316 J13	I359 H6
2324 B10	4317 H11	I360 E13
2327 J4	4318 I11	I361 F15
2328 K3	4323 G2	I362 D8
2329 K3	4325 I12	I363 F15
2330 K4	4326 I12	I364 D6
2331 K4	5301 B5	I365 H4
2332 K4	5302 A14	I366 F6
2333 K4	5304 J4	I367 F6
2334 K4	5306 E14	I368 H4
2335 K5	5307 G13	I369 G15
2336 K5	5308 C2	I370 G15
2337 K5	6308 J4	I372 I15
2338 F2	6309 K1	I373 J3
2339 K5	6310 K2	I374 J5
2340 K4	6311 K2	I375 J3
2341 F13	6312 K2	I376 J5
2342 J3	6313 J2	I380 F2
2343 F7	6317 E1	I384 I4
2344 F7	6318 F3	I387 C4
2345 F7	6319 K3	I390 D6
2346 F7	7301 E1	I393 F2
2347 G13	7302 F14	I396 F6
2348 B9	7303 G14	I397 F6
2349 I10	7308 F2	I398 F6
3300 D3	7310 B15	IL25 G2
3301 G10	7311 C5	IL30 G2
3302 E3	7312 C1	IL32 B10
3303 E3	7314 B9	IL33 G8
3305 E3	7317 F1	IL34 K4
3306 B10	7322 D10	IL35 K5
3307 B10	7323 I12	IL37 C8
3308 D2	7323-2 G2	IL38 C7
3310 C8	7L10 A10	IL39 E8
3313 C7	7L23 I14	IL40 B10
3314 C3	F302 C7	IL41 F3
3315 C7	F303 H8	IL42 C6
3316 C3	F305 G8	IL43 J5
3317 C7	F309 H8	
3318 C3	F310 B14	
3319 C3	F311 B14	
3320 C7	F312 B16	
3321 C3	F313 B14	
3322 C7	F314 B16	
3323 C10	F315 B16	
3325 D1	F316 B16	
3326 C13	F317 B14	
3329 D7	F318 B16	
3330 C13	F323 C7	
3331 E3	F324 B14	
3332 E7	F325 B16	
3333 E12	F326 B16	
3334 E3	F326 B14	
3335 E3	F327 B16	
3336 E3	F328 C14	
3337 C9	F329 C14	
3338 E7	F330 C1	
3339 C7	F331 C14	
3340 E3	F332 B16	
3341 E3	F332 B16	
3342 E3	F333 C14	
3343 E3	F333 C14	
3344 E3	F334 C14	
3345 H7	F336 C14	
3346 D11	F337 C16	
3347 D7	F338 C14	
3348 E7	F339 C14	
3349 C7	F340 C14	
3350 D10	F341 C14	
3351 F15	F341 C14	
3352 C8	F343 C14	
3353 I15	F345 C14	
3354 H7	F346 C14	
3355 I15	F347 C16	
3356 D11	F348 C14	
3357 D7	F349 C14	
3358 D10	F350 F11	
3359 F15	F350 F11	
3360 F15	F351 J14	
3361 G15	F352 F11	
3362 G15	F352 F11	
3363 E7	F353 J3	
3364 F7	F360 J1	
3365 I3	F362 C6	
3366 E7	F363 I14	
3367 F6	F364 I14	
3368 J4	F365 I14	
3369 J4	F366 C14	
3370 J4	F367 C14	
3371 F2	F368 A15	
3372 J4	F369 D14	
3373 F2	F380 C3	
3374 D11	F381 C4	
3375 F6	F382 J3	
3376 B10	F383 J3	
3377 A9	F384 J3	
3L01 C8	F385 E4	
3L02 H7	F386 D6	
3L04 F3	F387 H4	
3L05 C7	F388 J2	
3L10 J5	I301 E4	
3L12 C8	I302 H4	
3L13 C8	I303 H4	
3L14 H3	I306 H4	
3L15 G2	I307 C6	
3L16 B10	I308 C6	
3L17 E3	I309 C6	
3L18 F7	I310 C6	
3L19 B9	I311 C6	
3L20 B9	I312 C4	
3L21 I10	I313 C6	
3L22 I10	I315 E6	
3L23 I7	I316 E6	
3L24 I7	I318 I13	
3L53 H7	I319 G6	
3L54 I15	I320 G6	
3L55 G7	I321 H6	
3L56 G7	I322 H6	
3L57 E3	I323 H6	
3L58 G7	I324 I6	
3L59 D7	I326 D6	
3L61 H7	I327 E2	
3L62 F7	I328 E2	
3L63 H7	I329 H4	
3L64 B8	I330 E2	
3L67 F6	I331 E4	
3L71 H3	I332 E2	
3L72 B10	I333 E4	

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SSB: Trident WX69



B04A

- 1C24 B7
- 2C01 A6
- 2C02 B6
- 2C03 B9
- 2C04 B9
- 2C05 C9
- 2C06 B9
- 2C07 B9
- 2C08 B9
- 2C09 B9
- 2C10 B9
- 2C11 B9
- 2C12 C9
- 2C13 B9
- 2C15 C9
- 2C16 H3
- 2C17 C9
- 2C18 C9
- 2C19 C9
- 2C20 D9
- 2C22 B2
- 2C23 B2
- 2C24 B2
- 2C25 B2
- 2C26 B2
- 2C27 B2
- 2C28 C2
- 2C29 C2
- 2C30 D9
- 2C31 B1
- 2C32 B2
- 2C33 B1
- 2C34 E2
- 2C35 B1
- 2C36 F3
- 2C37 F4
- 2C38 F4
- 2C39 F4
- 2C40 F4
- 2C41 F2
- 2C42 F2
- 2C43 F2
- 2C44 F2
- 2C45 G2
- 2C46 G2
- 2C47 G2
- 2C48 G3
- 2C49 G3
- 2C50 G3
- 2C51 G3
- 2C52 G3
- 2C53 G3
- 2C54 G3
- 2C55 G4
- 2C56 H2
- 2C57 H2
- 2C58 H3
- 2C59 H3
- 2C60 I8
- 2C61 H3
- 2C62 I8
- 2C63 H3
- 2C64 K8
- 2C65 H4
- 2C66 H4
- 2C67 I2
- 2C68 I2
- 2C69 H3
- 2C70 I2
- 2C71 I2
- 2C72 J2
- 2C73 I0
- 2C74 D12
- 2C75 J2
- 2C77 J3
- 2C78 K2
- 2C79 K2
- 2C80 K2
- 2C81 B7
- 2C82 B7
- 2C83 K2
- 2C84 K2
- 2C85 K2
- 2C86 K2
- 2C87 L2
- 2C88 L3
- 2C89 G7
- 2C90 G7
- 2C91 G8
- 2C92 G7
- 2C93 H8
- 2C94 H8
- 2C95 H8
- 2C96 H8
- 2C97 H8
- 2C98 H8
- 2C99 H8
- 3C00 H7
- 3C01 B7
- 3C02 B7
- 3C03 C7
- 3C04 B7
- 3C05 B7
- 3C06 C7
- 3C07 C7
- 3C08 C7
- 3C09 C7
- 3C10 D7
- 3C11 C9
- 3C12 D11
- 3C13 D11
- 3C14 D3
- 3C15 A15
- 3C16 A13
- 3C17 B13
- 3C18 B13
- 3C19 C9
- 3C20 C9
- 3C21 D11
- 3C22 D11
- 3C23 D11
- 3C24 D12
- 3C25 D9
- 3C29 A13
- 3C30 A15
- 3C31 A13
- 3C32 B13
- 3C33 B13
- 3C34 B15
- 3C36 B15
- 3C37 C15
- 3C39 B2
- 3C40 D2
- 3C41 D3
- 3C42 D2
- 3C43 D2

"C00-C99" & "V00 - V99"  
MULTI 12NC : 3139\_123\_63481  
SINGLE 12NC : 3139\_123\_63491

3139 123 6349.1

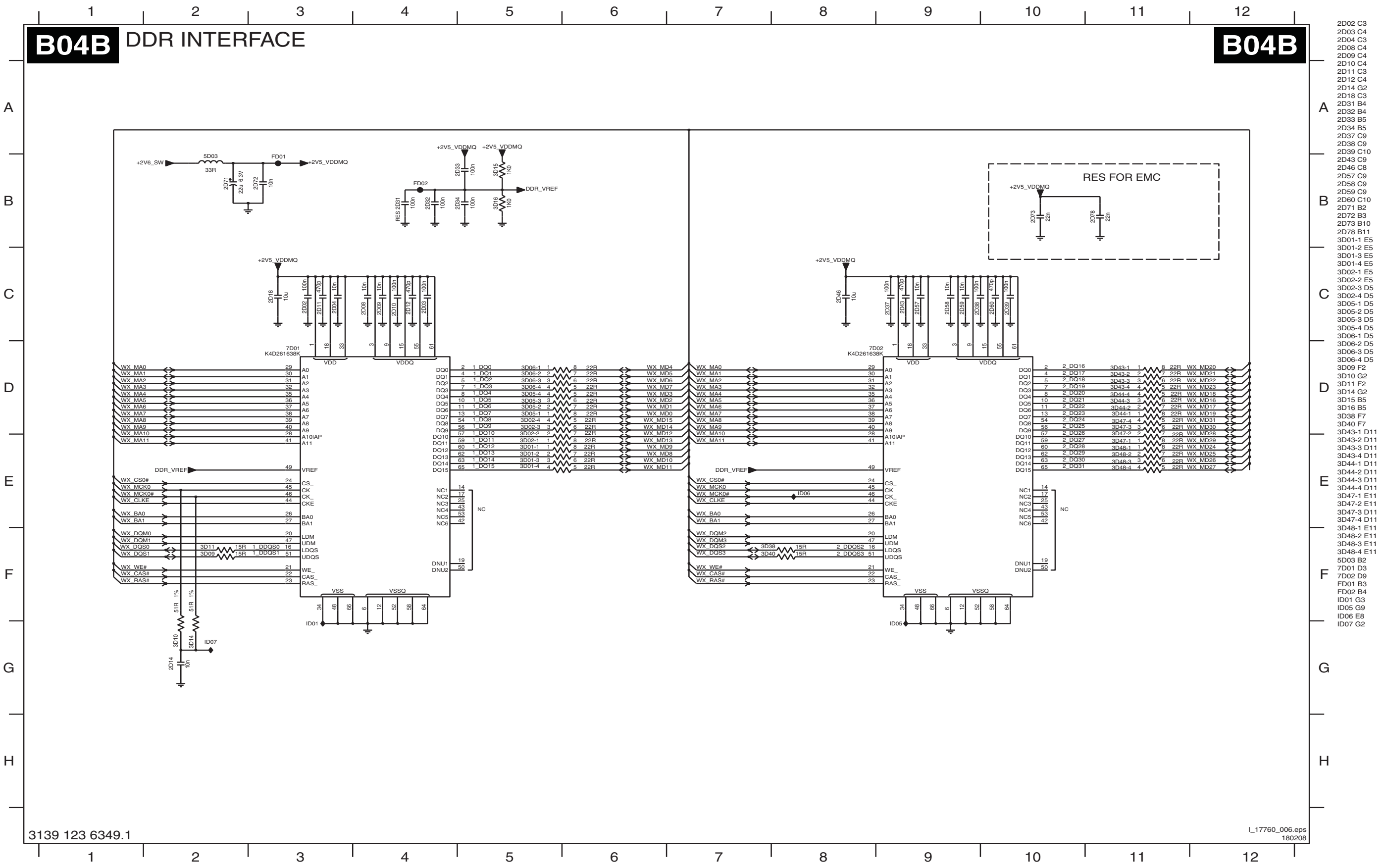
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SSB: DDR Interface

B04B DDR INTERFACE

B04B

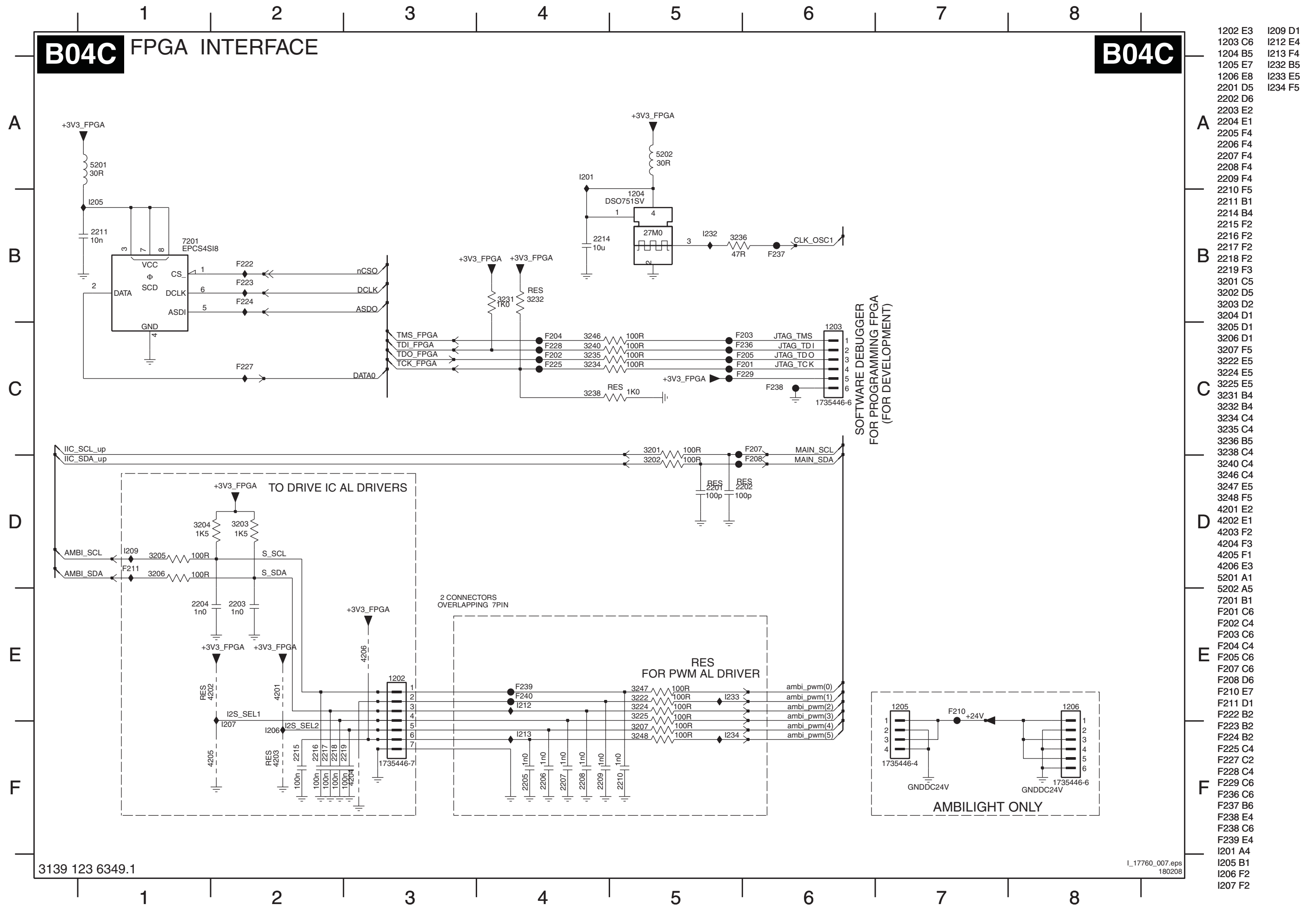


- 2D02 C3
- 2D03 C4
- 2D04 C3
- 2D08 C4
- 2D09 C4
- 2D10 C4
- 2D11 C3
- 2D12 C4
- 2D14 G2
- 2D18 C3
- 2D31 B4
- 2D32 B4
- 2D33 B5
- 2D34 B5
- 2D37 C9
- 2D38 C9
- 2D39 C10
- 2D43 C9
- 2D46 C8
- 2D57 C9
- 2D58 C9
- 2D59 C9
- 2D60 C10
- 2D71 B2
- 2D72 B3
- 2D73 B10
- 2D78 B11
- 3D01-2 E5
- 3D01-3 E5
- 3D01-4 E5
- 3D02-1 E5
- 3D02-2 E5
- 3D02-4 D5
- 3D05-1 D5
- 3D05-2 D5
- 3D05-3 D5
- 3D05-4 D5
- 3D06-1 D5
- 3D06-2 D5
- 3D06-3 D5
- 3D06-4 D5
- 3D09 F2
- 3D10 G2
- 3D11 F2
- 3D14 G2
- 3D15 B5
- 3D16 B5
- 3D38 F7
- 3D40 F7
- 3D43-1 D11
- 3D43-2 D11
- 3D43-3 D11
- 3D44-1 D11
- 3D44-2 D11
- 3D44-3 D11
- 3D47-1 E11
- 3D47-2 E11
- 3D47-3 D11
- 3D47-4 D11
- 3D48-1 E11
- 3D48-2 E11
- 3D48-3 E11
- 3D48-4 E11
- 5D03 B2
- 7D01 D3
- 7D02 D9
- FD01 B3
- FD02 B4
- ID01 G3
- ID05 G9
- ID06 E8
- ID07 G2

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**SSB: FPGA Interface**

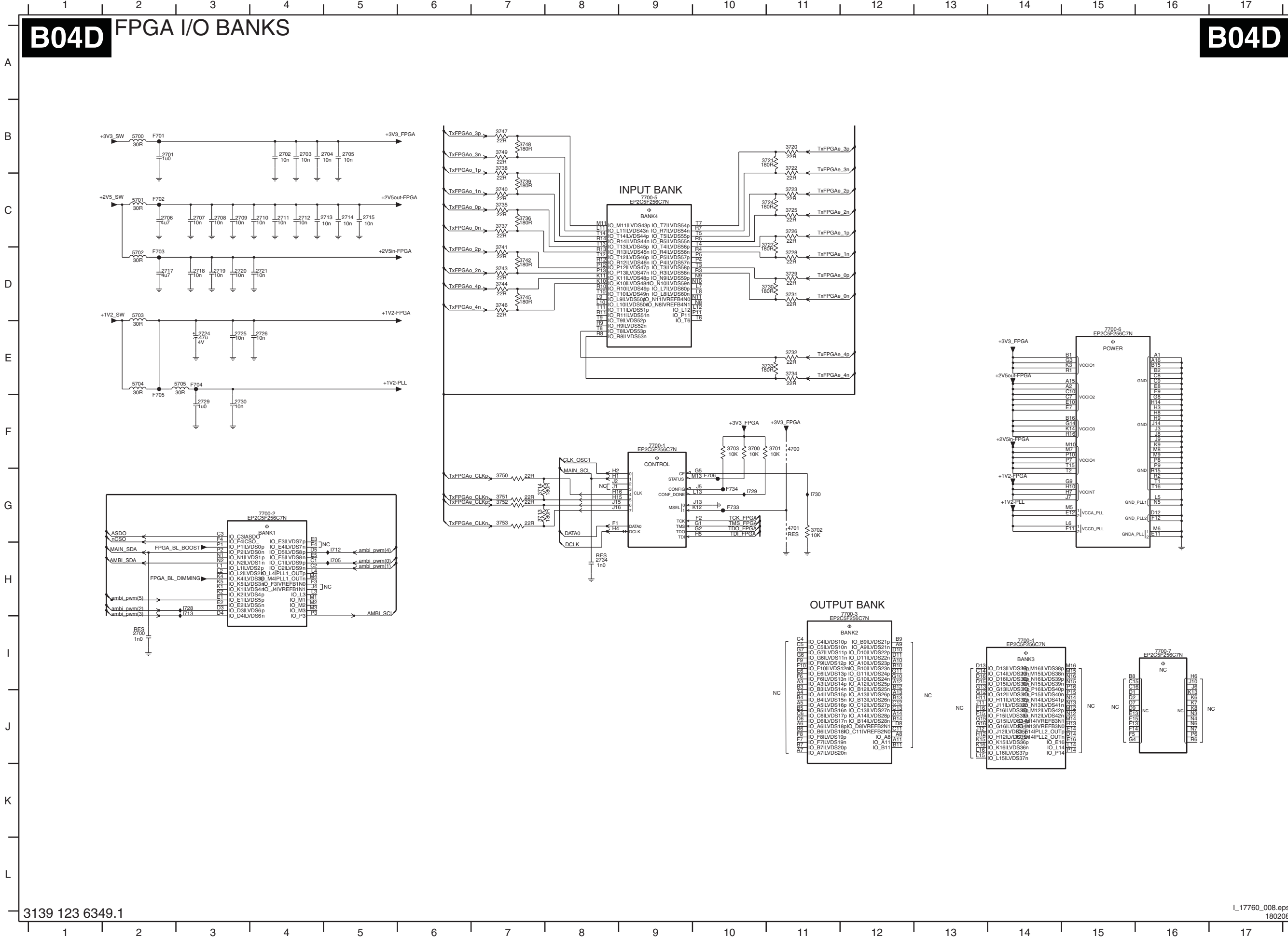


- 1202 E3
- 1203 C6
- 1204 B5
- 1205 E7
- 1206 E8
- 2201 D5
- 2202 D6
- 2203 E2
- 2204 E1
- 2205 F4
- 2206 F4
- 2207 F4
- 2208 F4
- 2209 F4
- 2210 F5
- 2211 B1
- 2214 B4
- 2215 F2
- 2216 F2
- 2217 F2
- 2218 F2
- 2219 F3
- 3201 C5
- 3202 D5
- 3203 D2
- 3204 D1
- 3205 D1
- 3206 D1
- 3207 F5
- 3222 E5
- 3224 E5
- 3225 E5
- 3231 B4
- 3232 B4
- 3234 C4
- 3235 C4
- 3236 B5
- 3238 C4
- 3240 C4
- 3246 C4
- 3247 E5
- 3248 F5
- 4201 E2
- 4202 E1
- 4203 F2
- 4204 F3
- 4205 F1
- 4206 E3
- 5201 A1
- 5202 A5
- 7201 B1
- F201 C6
- F202 C4
- F203 C6
- F204 C4
- F205 C6
- F207 C6
- F208 D6
- F210 E7
- F211 D1
- F222 B2
- F223 B2
- F224 B2
- F225 C4
- F227 C2
- F228 C4
- F229 C6
- F236 C6
- F237 B6
- F238 E4
- F238 C6
- F239 E4
- I201 A4
- I205 B1
- I206 F2
- I207 F2
- I209 D1
- I213 E4
- I232 B5
- I233 E5
- I234 F5

SSB: FPGA I/O Banks

B04D FPGA I/O BANKS

B04D

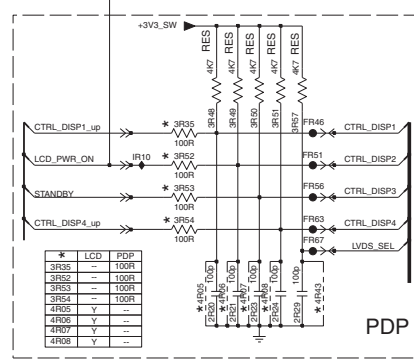
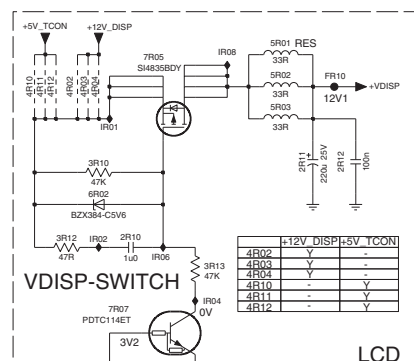
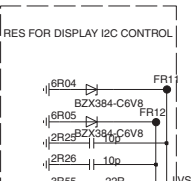
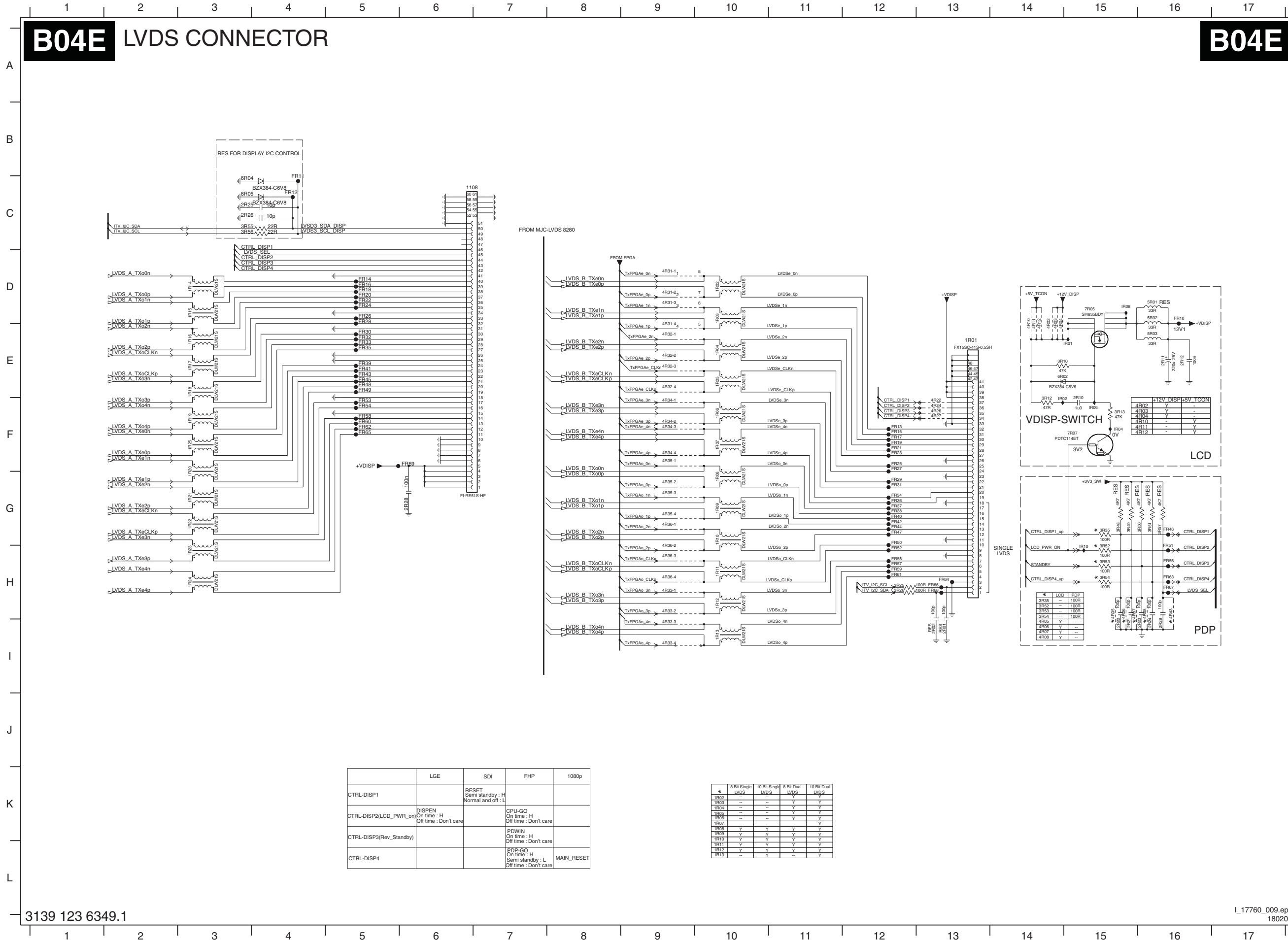


- 2700 I2
- 2701 B2
- 2702 B4
- 2703 C3
- 2704 B5
- 2705 B5
- 2706 C2
- 2707 C3
- 2708 C3
- 2709 C3
- 2710 C4
- 2711 C4
- 2712 C4
- 2713 C5
- 2714 C5
- 2715 C5
- 2717 D2
- 2718 D3
- 2719 D3
- 2720 D3
- 2721 D4
- 2722 E3
- 2723 E3
- 2724 E3
- 2725 E3
- 2726 E4
- 2729 F3
- 2730 F3
- 2734 H8
- 3700 F10
- 3701 F11
- 3702 G11
- 3703 F10
- 3713 G7
- 3714 G7
- 3720 B11
- 3721 B11
- 3722 B11
- 3723 C11
- 3724 C11
- 3725 C11
- 3726 C11
- 3727 C11
- 3728 D11
- 3729 D11
- 3730 D11
- 3731 D11
- 3732 E11
- 3733 E11
- 3734 E11
- 3735 C7
- 3736 C7
- 3737 C7
- 3738 B7
- 3739 C7
- 3740 C7
- 3741 D7
- 3742 D7
- 3743 D7
- 3744 D7
- 3745 D7
- 3746 D7
- 3747 B7
- 3748 B7
- 3749 B7
- 3750 G7
- 3751 G7
- 3752 G7
- 3753 G7
- 4700 F11
- 4701 G11
- 5700 B2
- 5701 C2
- 5702 D2
- 5703 D2
- 5704 E2
- 5705 E3
- 7700-1 F9
- 7700-2 G4
- 7700-3 H12
- 7700-4 I14
- 7700-5 G9
- 7700-6 E15
- 7700-7 I16
- F701 B2
- F702 C2
- F703 E3
- F704 G10
- F733 G10
- F734 G10
- I705 H5
- I712 H5
- I713 H3
- I728 H3
- I729 G10
- I730 G11

SSB: LVDS Connector

**B04E** LVDS CONNECTOR

**B04E**



	LGE	SDI	FHP	1080p
CTRL-DISP1		RESET Semi standby : H Normal and off : L		
CTRL-DISP2(LCD_PWR_on)	DISPEN On time : H Off time : Don't care		CPU-GO On time : H Off time : Don't care	
CTRL-DISP3(Rev_Standby)			PDWIN On time : H Off time : Don't care	
CTRL-DISP4			PDP-GO On time : H Semi standby : L Off time : Don't care	MAIN_RESET

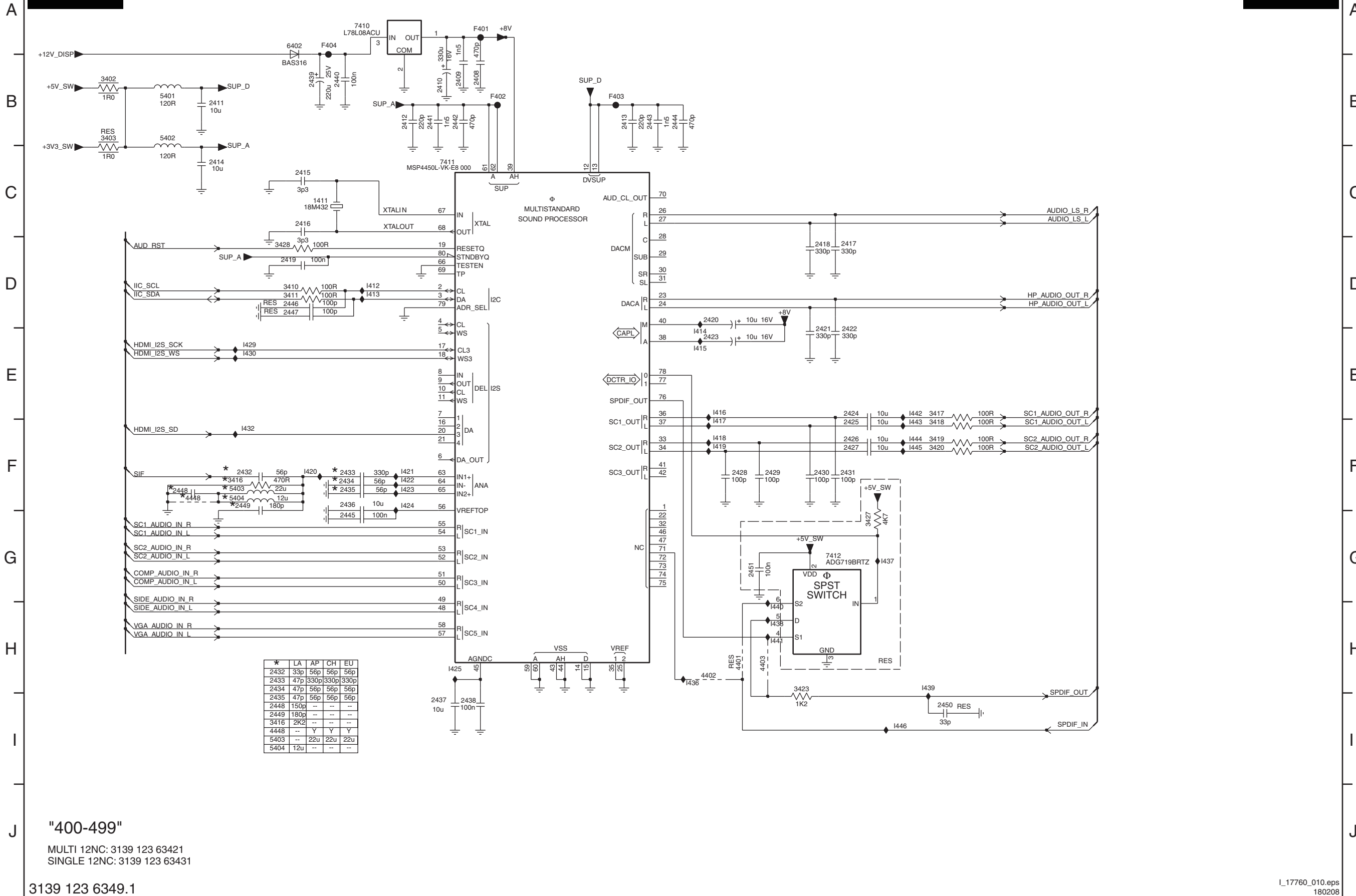
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FR02	Y	Y	Y	Y
FR03	Y	Y	Y	Y
FR04	Y	Y	Y	Y
FR05	Y	Y	Y	Y
FR06	Y	Y	Y	Y
FR07	Y	Y	Y	Y
FR08	Y	Y	Y	Y
FR09	Y	Y	Y	Y
FR10	Y	Y	Y	Y
FR11	Y	Y	Y	Y
FR12	Y	Y	Y	Y
FR13	Y	Y	Y	Y

- 1108 C6
- 1R01 E13
- 1R02 D10
- 1R03 D10
- 1R04 E10
- 1R05 E10
- 1R06 F10
- 1R07 F10
- 1R08 G10
- 1R09 G10
- 1R10 G10
- 1R11 H10
- 1R12 H10
- 1R13 H10
- 1R14 D3
- 1R15 D3
- 1R16 E3
- 1R17 E3
- 1R18 E3
- 1R19 F3
- 1R20 F3
- 1R21 G3
- 1R22 G3
- 1R23 H3
- 1R24 H3
- 1R25 F3
- 2R01 I13
- 2R02 I13
- 2R10 F15
- 2R11 E16
- 2R12 E16
- 2R20 I15
- 2R21 I16
- 2R24 I16
- 2R25 C3
- 2R26 C3
- 2R28 G6
- 2R29 I16
- 3R10 E14
- 3R12 F14
- 3R13 F15
- 3R25 H12
- 3R26 H12
- 3R35 G15
- 3R48 G15
- 3R49 G15
- 3R50 G15
- 3R51 G16
- 3R52 H15
- 3R53 H15
- 3R54 H15
- 3R55 C3
- 3R56 C3
- 3R57 G16
- 4R02 D14
- 4R03 D14
- 4R04 D14
- 4R05 H15
- 4R06 H15
- 4R07 H15
- 4R08 H16
- 4R10 D14
- 4R11 D14
- 4R12 D14
- 4R22 F13
- 4R24 F13
- 4R26 F13
- 4R27 F13
- 4R31-1 D9
- 4R31-2 D9
- 4R31-3 D9
- 4R31-4 E9
- 4R32-1 E9
- 4R32-2 E9
- 4R32-3 E9
- 4R32-4 E9
- 4R33-1 H9
- 4R33-2 H9
- 4R33-3 H9
- 4R33-4 H9
- 4R34-1 F9
- 4R34-2 F9
- 4R34-3 F9
- 4R34-4 F9
- 4R35-1 F9
- 4R35-2 G9
- 4R35-3 G9
- 4R35-4 G9
- 4R36-1 G9
- 4R36-2 H9
- 4R36-3 H9
- 4R36-4 H9
- 4R43 H9
- 5R01 D16
- 5R02 D16
- 5R03 E14
- 6R02 E14
- 6R04 C3
- 6R05 C3
- 7R05 D15
- 7R07 F15
- FR10 D16
- FR11 C4
- FR12 C4
- FR13 F12
- FR14 D5
- FR15 F12
- FR16 D5
- FR17 F12
- FR18 D5
- FR19 F12
- FR20 D5
- FR21 F12
- FR22 D5
- FR23 F12
- FR24 D5
- FR25 F12
- FR26 D5
- FR27 F12
- FR28 D5
- FR29 G12
- FR30 E5
- FR31 G12
- FR32 E5
- FR33 E5
- FR34 G12
- FR35 E5
- FR36 G12
- FR37 G12
- FR38 G12
- FR39 E5
- FR40 G12
- FR41 E5
- FR42 G12
- FR43 E5
- FR44 G12
- FR45 E5
- FR46 G12
- FR47 G12
- FR48 E5
- FR49 E5
- FR50 G12
- FR51 H16
- FR52 H16

**SSB: Audio Processor Micronas**

**B05A AUDIO PROCESSOR - MICRONAS**

**B05A**



- 1411 C4
- 2408 B5
- 2409 B5
- 2410 B5
- 2411 B3
- 2412 B4
- 2413 B6
- 2414 B3
- 2415 B3
- 2416 C3
- 2417 C8
- 2418 C8
- 2419 C3
- 2420 D7
- 2421 D8
- 2422 D8
- 2423 D7
- 2424 D8
- 2425 D8
- 2426 E8
- 2427 E8
- 2428 E7
- 2429 E7
- 2430 E8
- 2431 E8
- 2432 E3
- 2433 E4
- 2434 E4
- 2435 E4
- 2436 E4
- 2437 G5
- 2438 G5
- 2439 B4
- 2440 B4
- 2441 B5
- 2442 B5
- 2443 B6
- 2444 B7
- 2445 E4
- 2446 C3
- 2447 D3
- 2448 E2
- 2449 E3
- 2450 G9
- 2451 F7
- 3402 B2
- 3403 B2
- 3410 C3
- 3411 C3
- 3416 E3
- 3417 D9
- 3418 D9
- 3419 E9
- 3420 E9
- 3423 G8
- 3427 E8
- 3428 C3
- 4401 F7
- 4402 G7
- 4403 F7
- 4448 E3
- 5401 B2
- 5402 B2
- 5403 E3
- 5404 E3
- 6402 A3
- 7410 A4
- 7411 B5
- 7412 F8
- F401 A5
- F402 B5
- F403 B6
- F404 A4
- I412 C4
- I413 C4
- I414 D7
- I415 D7
- I416 D7
- I417 D7
- I418 E7
- I419 E7
- I420 E3
- I421 E4
- I422 E4
- I423 E4
- I424 E4
- I425 G5
- I429 D3
- I430 D3
- I432 D3
- I433 G7
- I436 F8
- I437 F8
- I438 F7
- I439 G9
- I440 F7
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- I442 D9
- I443 D9
- I444 E9
- I445 E9
- I446 G8

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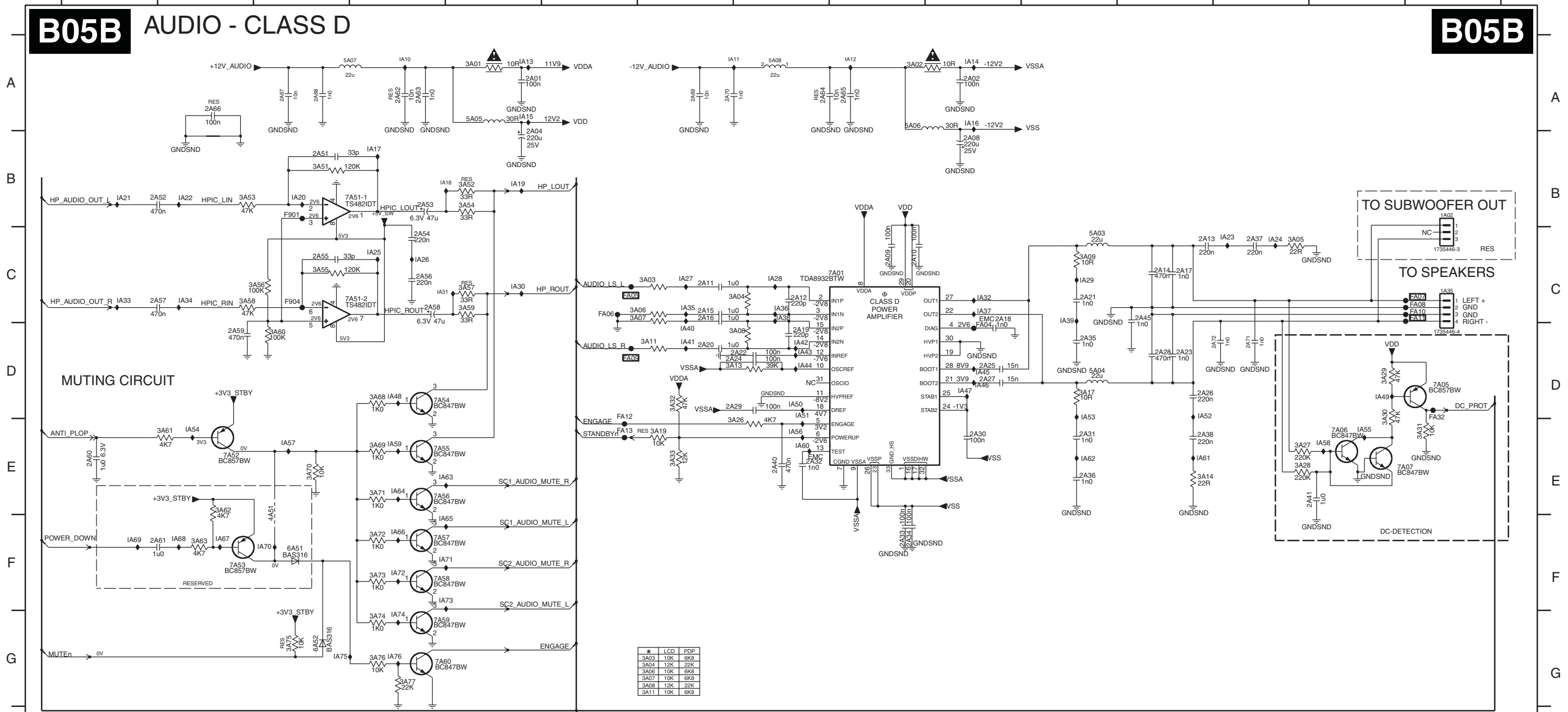
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SINGLE 12NC: 3139 123 63431

3139 123 6349.1

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SSB: Audio Class-D

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2A01 A5	2A12 C8	2A19 D8	2A26 D12	2A33 F9	2A41 E14	2A56 C4	2A63 A4	2A69 A7	3A05 C13	3A14 E12	3A30 D14	3A54 B5	3A61 E2	3A72 F4	5A03 C11	6A52 G3	7A52 E2	7A59 G4	FA07 C15	FA32 D15	IA16 A10	IA23 C13	IA30 C5	IA37 C10	IA44 D8	IA51 D8	IA58 E4	IA65 F5	IA72 F4
2A02 A10	2A13 C12	2A20 D7	2A27 D10	2A34 F9	2A45 C12	2A57 C2	2A64 A8	2A71 D13	3A06 C7	3A17 D11	3A31 E15	3A55 C3	3A62 E2	3A73 F4	5A04 D11	7A01 C9	7A53 F2	7A60 G4	FA08 C15	FA10 A4	IA17 B4	IA24 C13	IA31 C4	IA38 C8	IA45 D10	IA52 D12	IA59 E4	IA66 F4	IA73 F5
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2A08 B10	2A15 C7	2A22 D8	2A29 D8	2A36 E11	2A52 B2	2A59 D2	2A66 A2	2A73 A5	3A08 D8	3A26 E8	3A33 E7	3A57 C5	3A64 D4	3A75 G3	5A06 A9	7A06 E14	7A55 E4	F904 C3	FA10 C15	IA12 A9	IA19 B5	IA26 C4	IA33 C1	IA40 D7	IA47 D10	IA54 E2	IA61 E12	IA68 F2	IA75 G3
2A09 C9	2A16 C7	2A23 D12	2A30 E10	2A37 C13	2A53 B4	2A60 E1	2A67 A3	2A74 A9	3A09 C11	3A27 E13	3A51 B3	3A58 C2	3A69 E4	3A76 G4	5A07 A4	7A07 E14	7A56 E4	FA04 D10	FA11 C15	IA13 A5	IA20 B3	IA27 C7	IA34 C2	IA41 D7	IA48 D4	IA55 E14	IA62 E11	IA69 F1	IA76 G4



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REF	LCR	PDP
3A03	10K	6K8
3A04	15K	22K
3A06	10K	6K8
3A07	10K	6K8
3A08	12K	22K
3A11	10K	6K8



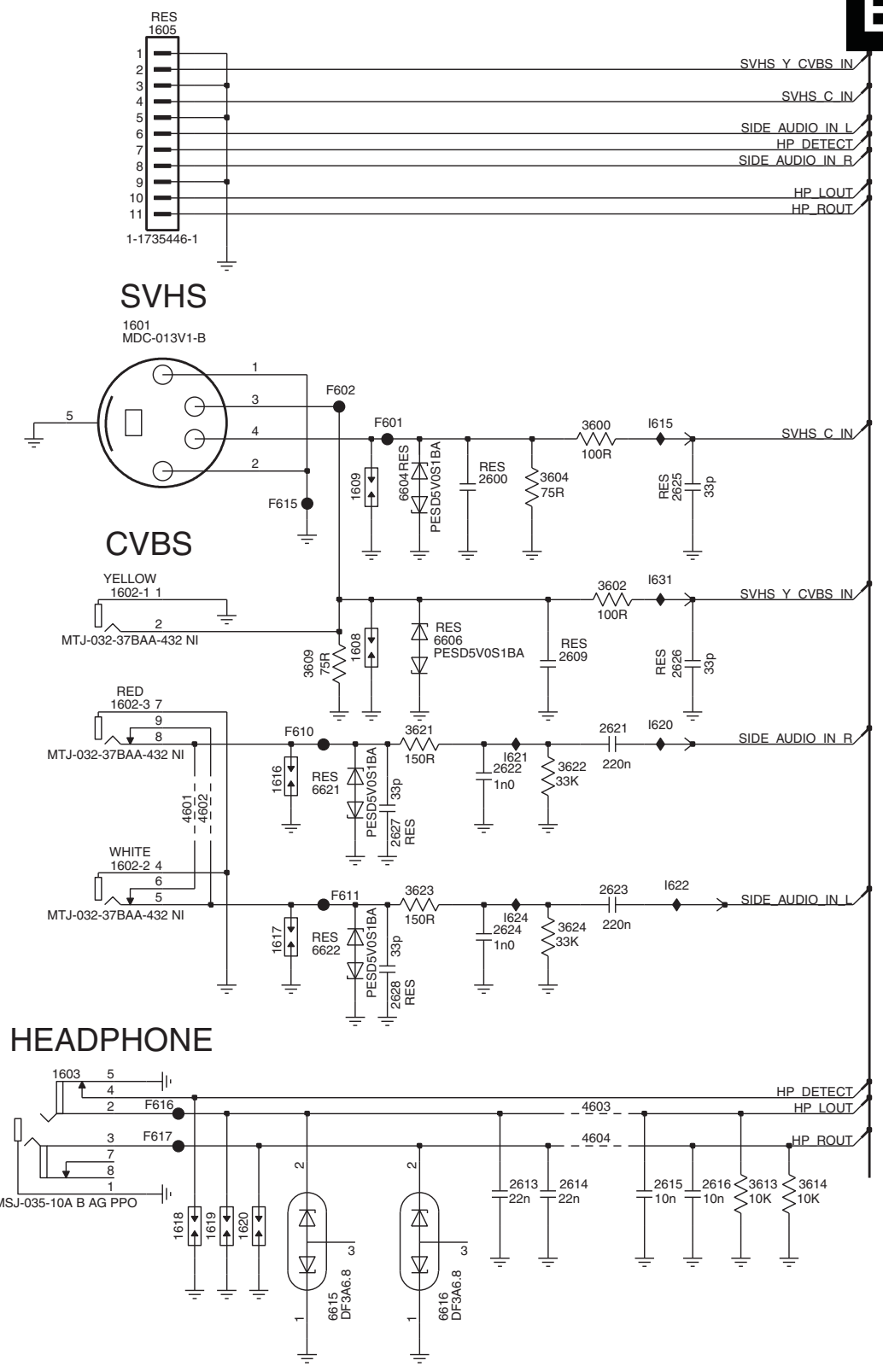
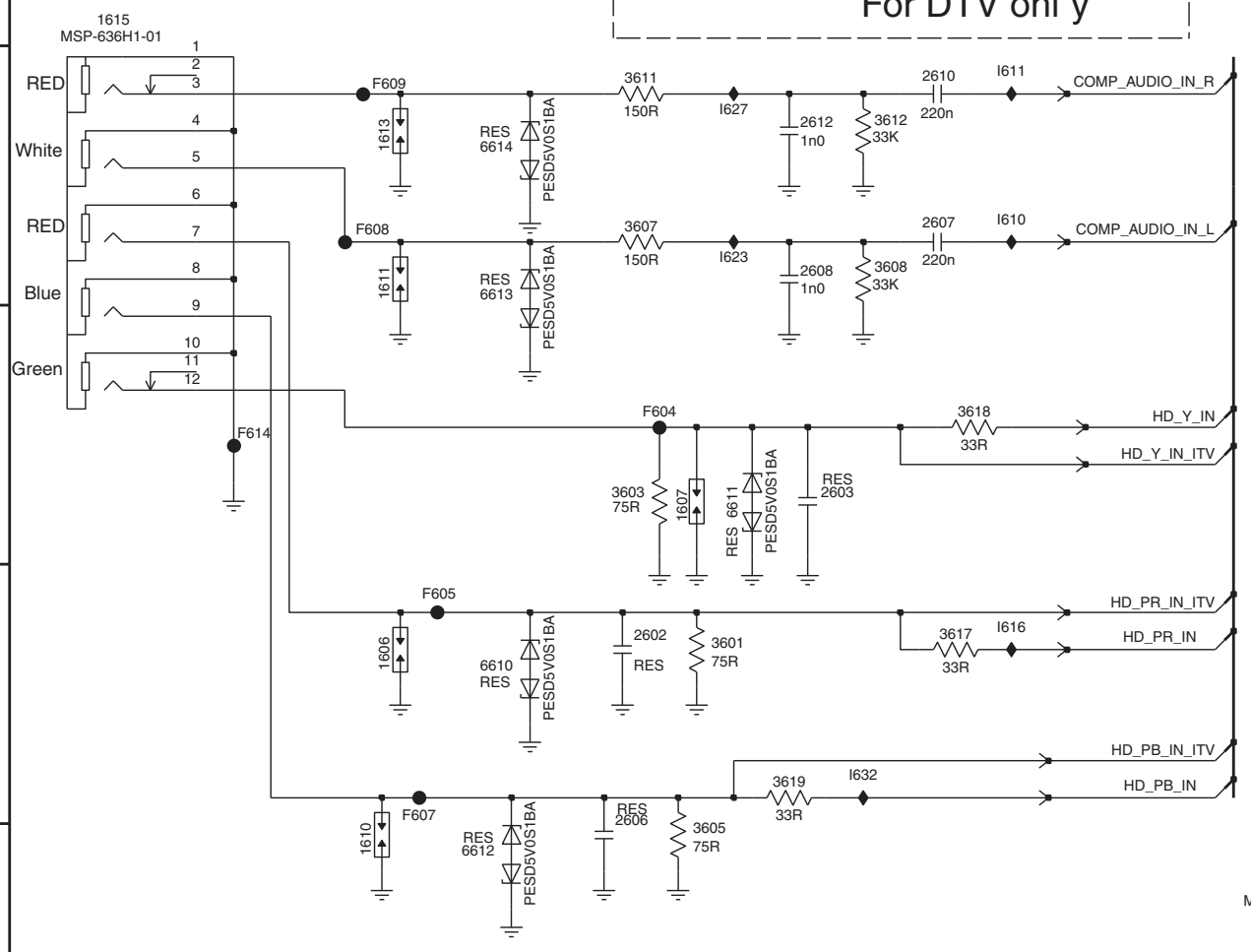
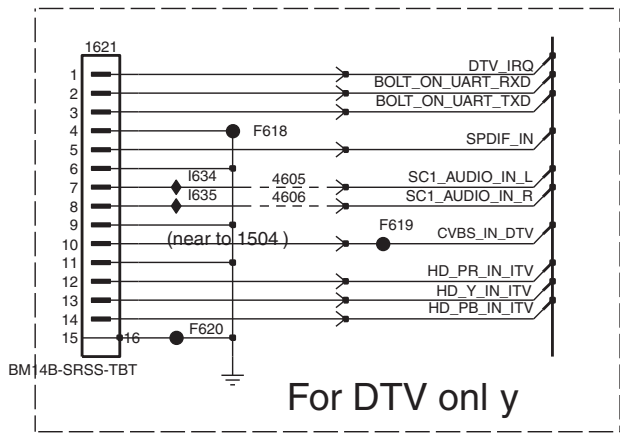
SSB: YPbPr & SVHS

**B06A** YPBPR & SVHS

**B06A**

A  
B  
C  
D  
E  
F

1 2 3 4 5 6 7 8 9



- 1601 B6
- 1602-1 C6
- 1602-2 D6
- 1602-3 D6
- 1603 E5
- 1605 A6
- 1606 E2
- 1607 D3
- 1608 C7
- 1609 C7
- 1610 F2
- 1611 C2
- 1613 C2
- 1615-1 D1
- 1615-2 E1
- 1615-3 C1
- 1616 D6
- 1617 E6
- 1618 F6
- 1619 F6
- 1620 F6
- 1621 A3
- 2600 C7
- 2602 E3
- 2603 D4
- 2606 E3
- 2607 C4
- 2608 C3
- 2609 C8
- 2610 C4
- 2612 C3
- 2613 F7
- 2614 F8
- 2615 F8
- 2616 F8
- 2621 D8
- 2622 D7
- 2623 D8
- 2624 E7
- 2625 C8
- 2626 C8
- 2627 D7
- 2628 E7
- 3600 B8
- 3601 E3
- 3602 C8
- 3603 D3
- 3604 C8
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- 3607 C3
- 3608 C4
- 3609 C6
- 3611 C3
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- 3613 F8
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- 3618 D4
- 3619 E3
- 3621 D7
- 3622 D8
- 3623 D7
- 3624 E8
- 4601 D6
- 4602 D6
- 4603 E8
- 4604 F8
- 4605 B4
- 4606 B4
- 6604 C7
- 6606 C7
- 6610 E2
- 6611 D3
- 6612 F2
- 6613 C2
- 6614 C2
- 6615 F7
- 6616 F7
- 6621 D7
- 6622 E7
- 6601 B7
- 6602 B7
- 6604 D3
- 6605 E2
- 6608 C2
- 6609 C2
- 6610 D6
- 6611 D7
- 6614 C1
- 6615 C6
- 6616 E6
- 6617 E6
- 6619 B4
- 6620 B3
- 6610 C4
- 6611 C4
- 6615 B8
- 6616 E4
- 6620 D8
- 6621 D7
- 6623 C3
- 6624 E7
- 6627 C3
- 6631 C8
- 6632 E4
- 6634 A3
- 6635 B3

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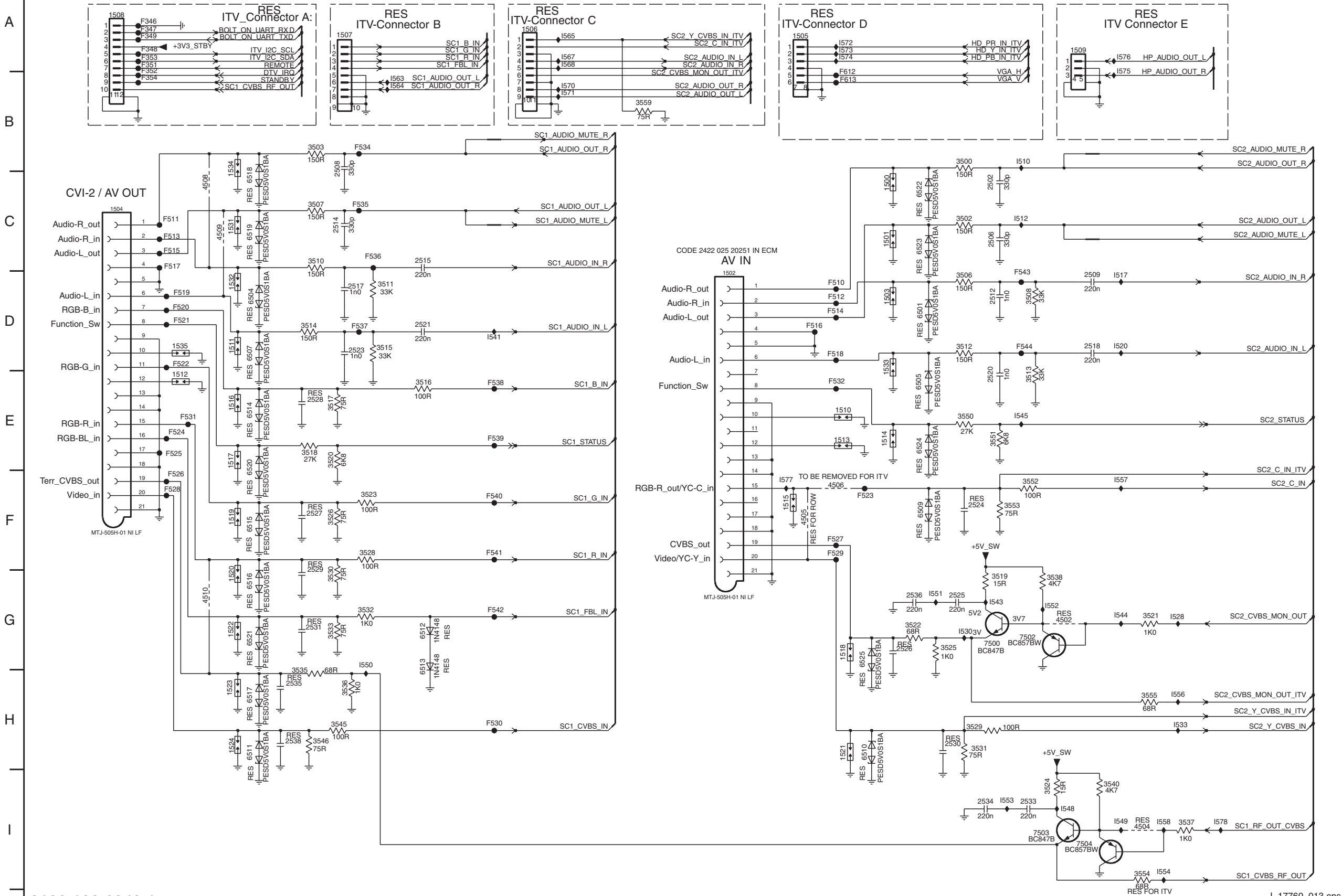
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SSB: I/O Cinch 1 & 2

**B06B** IO - CINCH 1 & 2

**B06B**



- 1500 C9
- 1501 C9
- 1502 D7
- 1503 D9
- 1504 C1
- 1505 A8
- 1506 A5
- 1507 A4
- 1508 A1
- 1509 A11
- 1510 E9
- 1511 D2
- 1512 E2
- 1513 E8
- 1514 E9
- 1515 F8
- 1516 E2
- 1517 E2
- 1518 G9
- 1519 F2
- 1520 G2
- 1521 H9
- 1522 G2
- 1523 H2
- 1524 H2
- 1531 C2
- 1532 D2
- 1533 E9
- 1534 C2
- 1535 D2
- 2502 C10
- 2506 C10
- 2508 B3
- 2509 D11
- 2512 D10
- 2514 C3
- 2515 C4
- 2517 D4
- 2518 D11
- 2520 E10
- 2521 D4
- 2523 D4
- 2524 F10
- 2526 G9
- 2527 F3
- 2528 E3
- 2529 F3
- 2530 H10
- 2531 G3
- 2533 H10
- 2534 H10
- 2535 H3
- 2536 G9
- 2538 H3
- 3500 B10
- 3502 C10
- 3503 B3
- 3506 D10
- 3507 C3
- 3508 D10
- 3510 C3
- 3511 D4
- 3512 D10
- 3513 E10
- 3514 D3
- 3515 D4
- 3516 E4
- 3517 E3
- 3518 E3
- 3519 G10
- 3520 E3
- 3521 G12
- 3522 G9
- 3523 F4
- 3524 I11
- 3525 G10
- 3526 F3
- 3529 H10
- 3530 G3
- 3531 H10
- 3532 G4
- 3533 G3
- 3535 H3
- 3536 H4
- 3537 H2
- 3538 G11
- 3540 I11
- 3545 H3
- 3546 H3
- 3550 E10
- 3551 E10
- 3552 F10
- 3553 F10
- 3554 I12
- 3555 H12
- 3559 B7
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- 4504 I12
- 4505 F8
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- 4508 C2
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- 4510 G2
- 6501 D9
- 6504 D3
- 6505 E9
- 6507 D3
- 6509 F9
- 6510 H9
- 6511 H3
- 6512 G4
- 6513 G4
- 6514 E3
- 6515 F3
- 6516 G3
- 6517 H3
- 6518 C3
- 6519 C3
- 6520 E3
- 6521 G3
- 6522 C9
- 6523 C9
- 6524 E9
- 6525 G9
- 7500 G10
- 7502 G11
- 7503 H10
- 7504 H11
- 7505 A2
- 7506 A2
- 7507 A2
- 7508 A2
- 7509 A2
- 7510 A2
- 7511 A2
- 7512 A2
- 7513 A2
- 7514 A2
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- 7518 A2
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- 7529 A2
- 7530 A2
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- 7535 A2
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- 7540 A2
- 7541 A2
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- 7550 A2

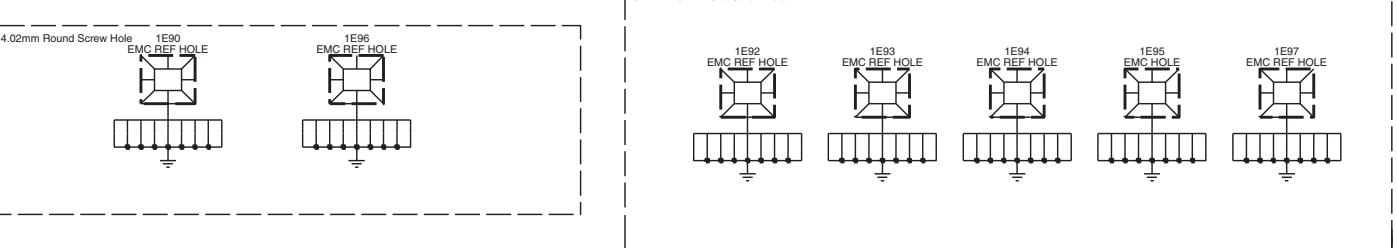
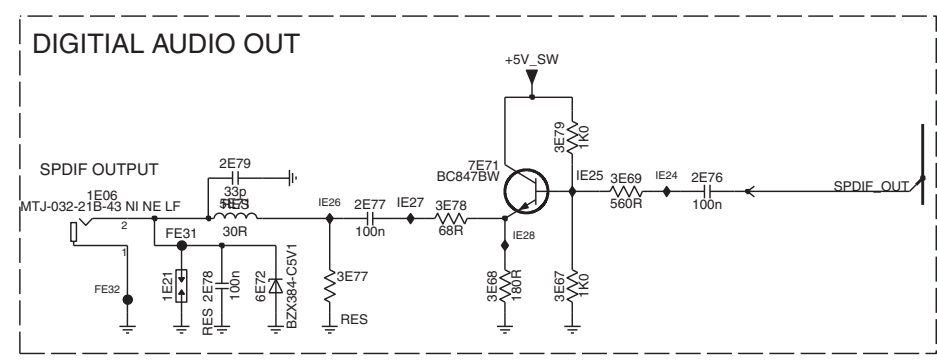
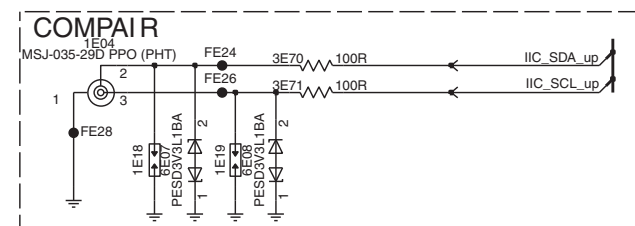
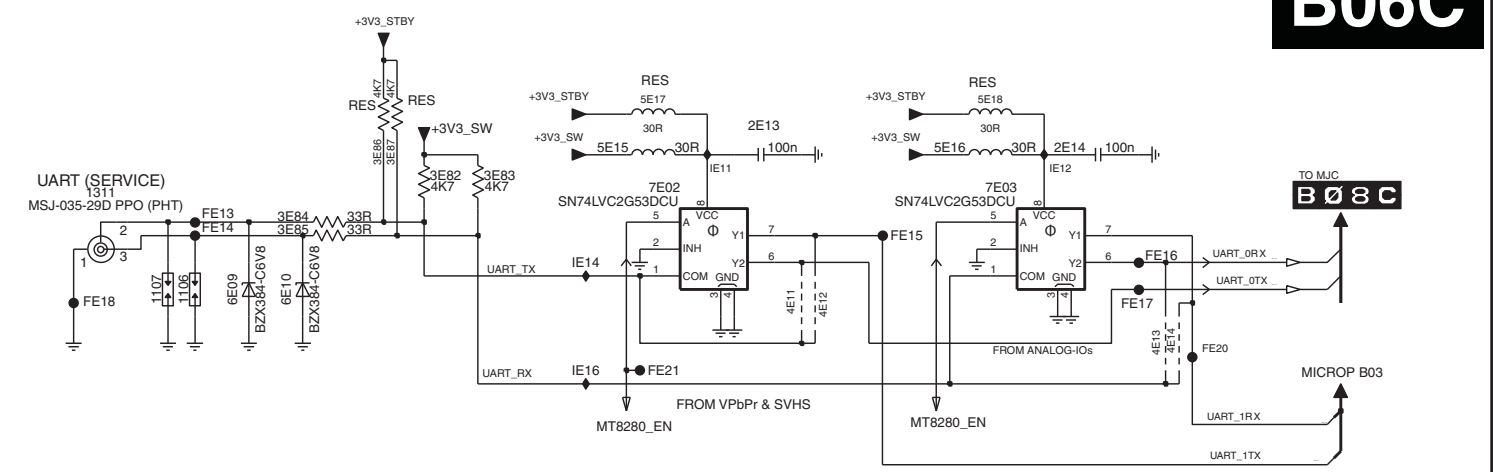
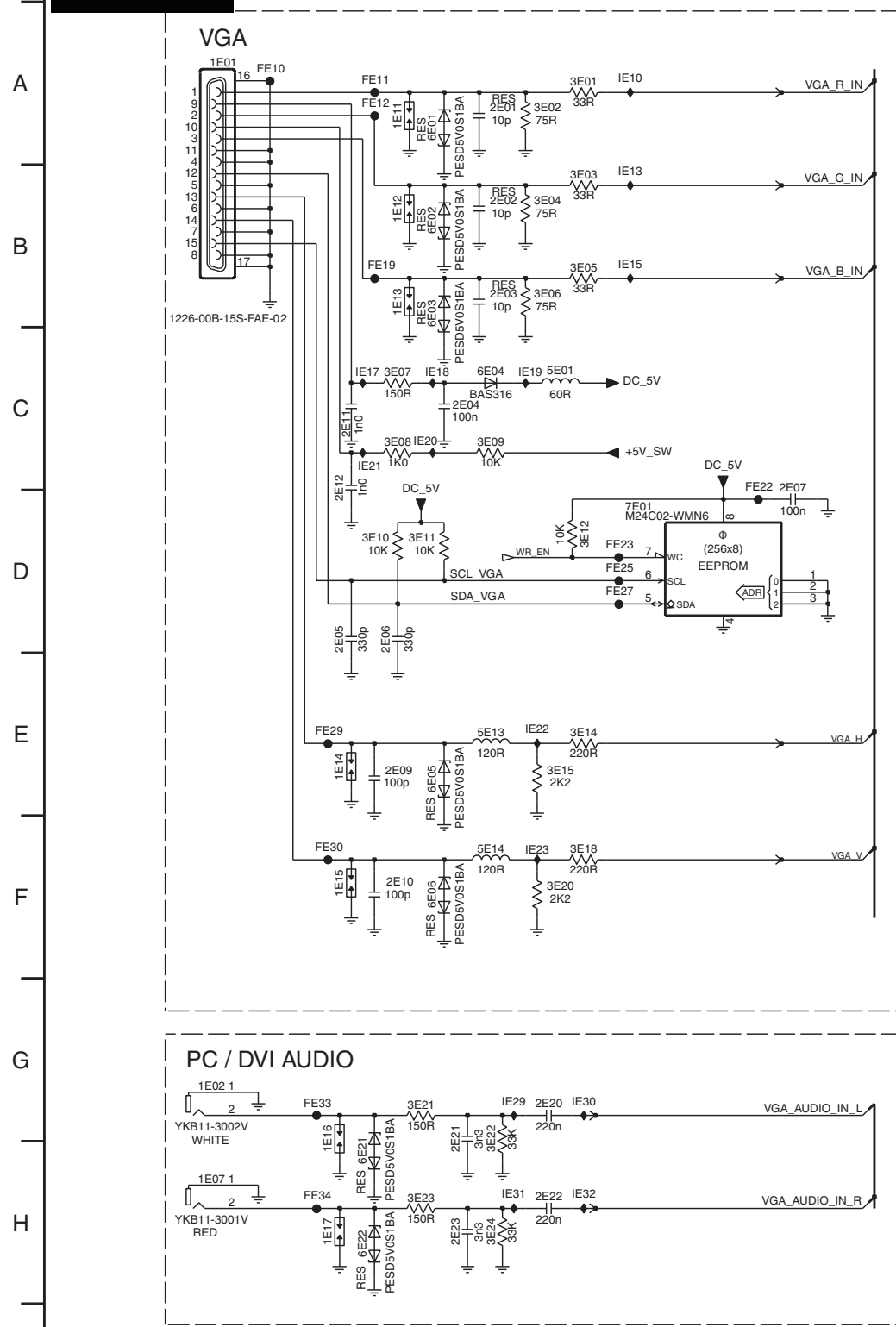
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180208

SSB: VGA, PC Audio, ComPair, UART

B06C VGA, PC AUDIO, COMPAIR, UART

B06C



- 1106 B7
- 1107 B7
- 1311 A6
- 1E01 A1
- 1E02 G1
- 1E04 C6
- 1E06 F6
- 1E07 H1
- 1E11 A2
- 1E12 B2
- 1E13 B2
- 1E14 E2
- 1E15 F2
- 1E16 G2
- 1E17 H2
- 1E18 D7
- 1E19 D7
- 1E21 F7
- 1E90 G7
- 1E92 G10
- 1E93 G11
- 1E94 G11
- 1E95 G12
- 1E96 G8
- 1E97 G13
- 2E01 A3
- 2E02 B3
- 2E03 B3
- 2E04 C3
- 2E05 D2
- 2E06 D2
- 2E07 D5
- 2E09 E2
- 2E10 F2
- 2E11 C2
- 2E12 C2
- 2E13 A10
- 2E14 A11
- 2E20 G3
- 2E21 G3
- 2E22 H3
- 2E23 H3
- 2E26 F10
- 2E77 F8
- 2E78 F7
- 2E79 F7
- 3E01 A4
- 3E02 A3
- 3E03 B4
- 3E04 B3
- 3E05 B4
- 3E06 B3
- 3E07 C2
- 3E08 C2
- 3E09 C3
- 3E10 D2
- 3E11 D3
- 3E12 D4
- 3E14 E4
- 3E15 E3
- 3E18 F4
- 3E20 F3
- 3E21 G3
- 3E22 G3
- 3E23 H3
- 3E24 H3
- 3E67 F9
- 3E68 F8
- 3E69 F9
- 3E70 D7
- 3E71 D7
- 3E77 F8
- 3E78 F8
- 3E79 F9
- 3E82 A8
- 3E83 A8
- 3E84 A7
- 3E85 B7
- 3E86 A8
- 3E87 A8
- 4E11 B10
- 4E12 B10
- 4E13 B12
- 4E14 B12
- 5E01 C3
- 5E13 E3
- 5E14 F3
- 5E15 A9
- 5E16 A11
- 5E17 A9
- 5E18 A11
- 5E71 F7
- 6E01 A3
- 6E02 B3
- 6E03 B3
- 6E04 C3
- 6E05 E3
- 6E06 F3
- 6E07 D7
- 6E08 D7
- 6E09 B7
- 6E10 B7
- 6E21 H2
- 6E22 H2
- 6E72 F7
- 7E01 D4
- 7E02 A9
- 7E03 A11
- 7E71 F8
- FE10 A2
- FE11 A2
- FE12 A2
- FE13 A7
- FE14 A7
- FE15 B11
- FE16 B12
- FE17 B12
- FE18 B6
- FE19 B2
- FE20 B12
- FE21 B9
- FE22 D5
- FE23 D4
- FE24 D7
- FE25 D4
- FE26 D7
- FE27 D4
- FE28 D6
- FE29 E2
- FE30 F2
- FE31 F7
- FE32 F6
- FE33 G2
- FE34 H2
- IE10 A4
- IE11 A10
- IE12 A11
- IE13 B4
- IE14 B9
- IE15 B4
- IE16 B9
- IE17 C2
- IE18 C3
- IE19 C3
- IE20 C3
- IE21 C2
- IE22 E3
- IE23 F3
- IE24 F9
- IE25 F9
- IE26 F8
- IE27 F8
- IE28 F9
- IE29 G3
- IE30 G4
- IE31 H3
- IE32 H4

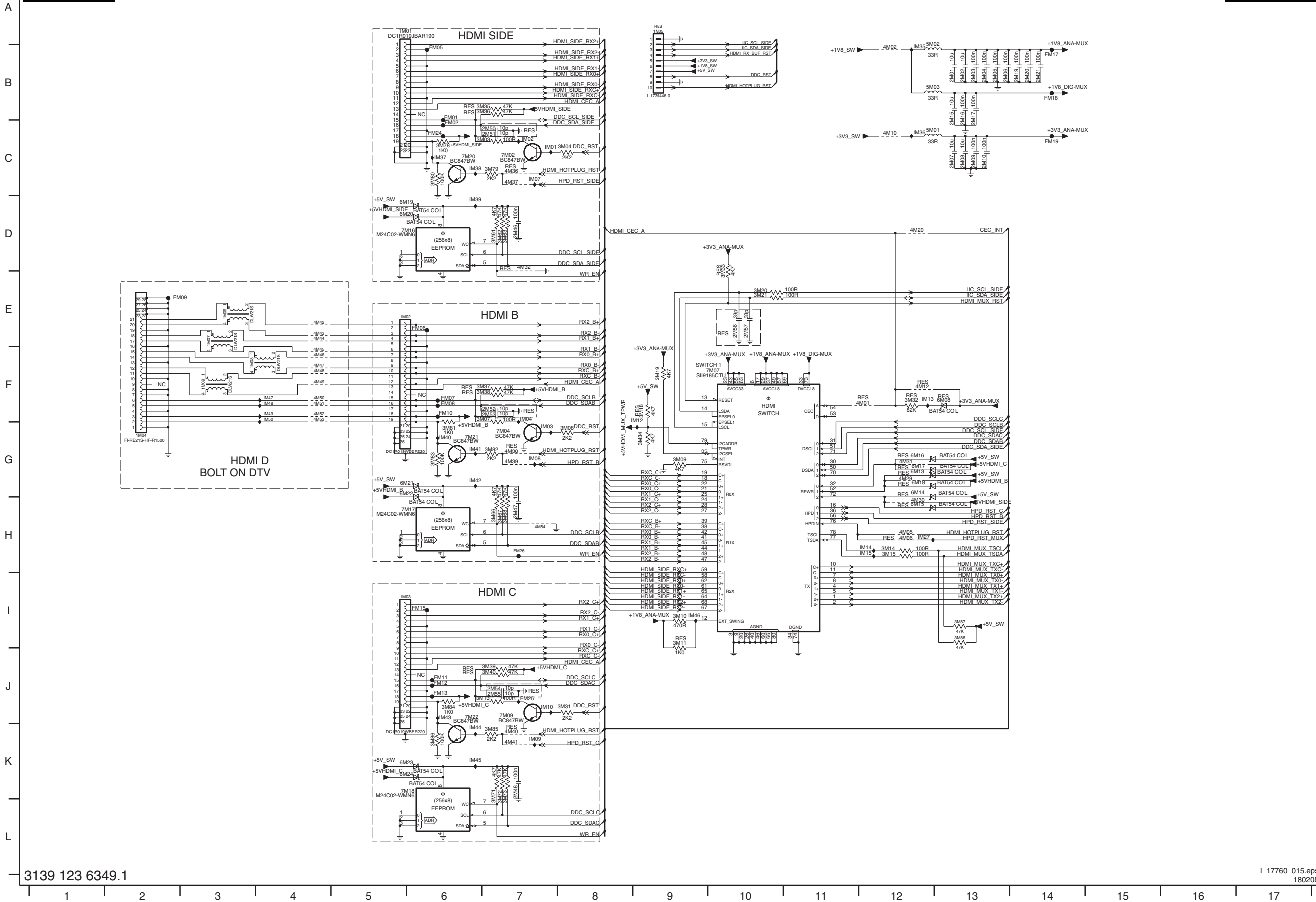
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180208

SSB: HDMI Switch

B07A HDMI SWITCH

B07A



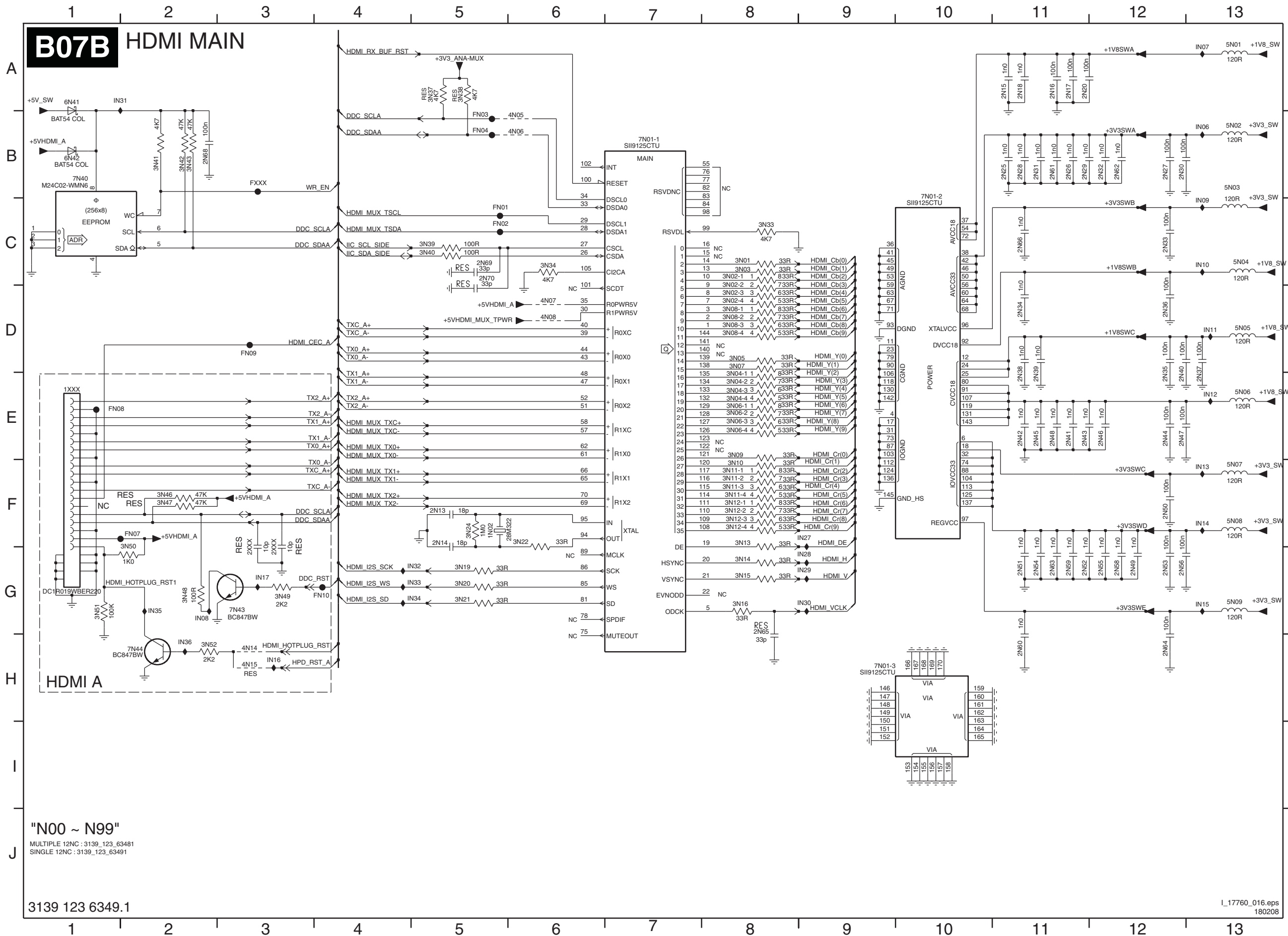
- 1M01 A5
- 1M02 E5
- 1M03 I5
- 1M04 G2
- 1M05 A9
- 1M06 E3
- 1M07 E3
- 1M08 F3
- 1M09 F3
- 2M01 B13
- 2M02 B13
- 2M03 B13
- 2M04 B13
- 2M05 B13
- 2M06 B13
- 2M07 C13
- 2M08 C13
- 2M09 C13
- 2M10 C13
- 2M11 B13
- 2M12 B13
- 2M13 B13
- 2M14 B13
- 2M15 B13
- 2M16 B13
- 2M17 B13
- 2M18 B13
- 2M19 B13
- 2M20 B13
- 2M21 B14
- 2M22 D7
- 2M23 H7
- 2M24 H7
- 2M25 F7
- 2M26 F7
- 2M27 E7
- 2M28 E7
- 2M29 E7
- 2M30 E7
- 2M31 J7
- 2M32 J7
- 2M33 J7
- 2M34 J7
- 2M35 J7
- 2M36 J7
- 2M37 F7
- 2M38 F7
- 2M39 J7
- 2M40 J7
- 2M41 D7
- 2M42 D7
- 2M43 D7
- 2M44 D7
- 2M45 D7
- 2M46 D7
- 2M47 H7
- 2M48 K7
- 2M49 J7
- 2M50 J7
- 2M51 C7
- 2M52 F7
- 2M53 F7
- 2M54 J7
- 2M55 J7
- 2M56 E10
- 2M57 E10
- 2M58 C7
- 2M59 C7
- 2M60 C8
- 2M61 F7
- 2M62 G8
- 2M63 G8
- 2M64 G8
- 2M65 B7
- 2M66 B7
- 2M67 F7
- 2M68 F7
- 2M69 K7
- 2M70 K7
- 2M71 K7
- 2M72 K7
- 2M73 K7
- 2M74 C5
- 2M75 C7
- 2M76 C6
- 2M77 C6
- 2M78 C6
- 2M79 C6
- 2M80 C6
- 2M81 G6
- 2M82 G6
- 2M83 G6
- 2M84 J6
- 2M85 K7
- 2M86 K6
- 2M87 I3
- 2M88 I3
- 2M89 F12
- 2M90 H12
- 2M91 B12
- 2M92 B12
- 2M93 G12
- 2M94 G12
- 2M95 G12
- 2M96 G12
- 2M97 G12
- 2M98 G12
- 2M99 G12
- 2M100 G12
- 2M101 G12
- 2M102 G12
- 2M103 G12
- 2M104 G12
- 2M105 G12
- 2M106 G12
- 2M107 G12
- 2M108 G12
- 2M109 G12
- 2M110 G12
- 2M111 G12
- 2M112 G12
- 2M113 G12
- 2M114 G12
- 2M115 G12
- 2M116 G12
- 2M117 G12
- 2M118 G12
- 2M119 G12
- 2M120 G12
- 2M121 G12
- 2M122 G12
- 2M123 G12
- 2M124 G12
- 2M125 G12
- 2M126 G12
- 2M127 G12
- 2M128 G12
- 2M129 G12
- 2M130 G12
- 2M131 G12
- 2M132 G12
- 2M133 G12
- 2M134 G12
- 2M135 G12
- 2M136 G12
- 2M137 G12
- 2M138 G12
- 2M139 G12
- 2M140 G12
- 2M141 G12
- 2M142 G12
- 2M143 G12
- 2M144 G12
- 2M145 G12
- 2M146 G12
- 2M147 G12
- 2M148 G12
- 2M149 G12
- 2M150 G12

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SSB: HDMI Main

B07B HDMI MAIN



- 1N02 E5
- 1N03 D2
- 2N13 E5
- 2N14 E5
- 2N15 A10
- 2N16 A10
- 2N17 A10
- 2N18 A10
- 2N20 A10
- 2N25 B10
- 2N26 B10
- 2N27 B11
- 2N28 B10
- 2N29 B10
- 2N30 B11
- 2N31 B10
- 2N32 B11
- 2N33 C11
- 2N34 C10
- 2N35 D11
- 2N36 C11
- 2N37 D11
- 2N38 D10
- 2N39 D10
- 2N40 D11
- 2N42 D10
- 2N43 D10
- 2N44 D11
- 2N45 D10
- 2N46 D11
- 2N47 D11
- 2N48 D10
- 2N49 E11
- 2N50 E11
- 2N51 E10
- 2N52 E10
- 2N53 E11
- 2N54 E10
- 2N55 E11
- 2N56 E11
- 2N58 E11
- 2N59 E10
- 2N60 F10
- 2N61 B10
- 2N62 B11
- 2N63 E10
- 2N64 F11
- 2N65 F10
- 2N66 C10
- 2N68 B3
- 2N69 C5
- 2N70 C5
- 2N71 E3
- 2N72 E3
- 3N01 C7
- 3N02-1 C7
- 3N02-2 C7
- 3N02-3 C7
- 3N02-4 C7
- 3N03 C7
- 3N04-1 D7
- 3N04-2 D7
- 3N04-3 D7
- 3N04-4 D7
- 3N05 D7
- 3N06-1 D7
- 3N06-2 D7
- 3N06-3 D7
- 3N06-4 D7
- 3N07 D7
- 3N08-1 C7
- 3N08-2 C7
- 3N08-3 C7
- 3N08-4 C7
- 3N09 D7
- 3N10 D7
- 3N11-1 E7
- 3N11-2 E7
- 3N11-3 E7
- 3N11-4 E7
- 3N12-1 E7
- 3N12-2 E7
- 3N12-3 E7
- 3N12-4 E7
- 3N13 E7
- 3N14 E7
- 3N15 E7
- 3N16 F7
- 3N19 E5
- 3N20 F5
- 3N21 F5
- 3N22 E5
- 3N24 E5
- 3N33 B8
- 3N34 C6
- 3N37 A5
- 3N38 A5
- 3N39 C5
- 3N40 C5
- 3N41 B2
- 3N42 B2
- 3N43 B3
- 3N46 E2
- 3N48 F2
- 3N49 F3
- 3N50 E2
- 3N51 F2
- 3N52 F3
- 4N05 A5
- 4N06 B5
- 4N07 C6
- 4N08 C6
- 4N14 F3
- 4N15 F3
- 5N01 A12
- 5N02 A12
- 5N03 B12
- 5N04 C12
- 5N05 C12
- 5N06 D12
- 5N07 D12
- 5N08 E12
- 5N09 F12
- 6N41 A2
- 6N42 B2
- 7N01-1 B7
- 7N01-2 B9
- 7N01-3 F9
- 7N40 B2
- 7N43 F3
- 7N44 F2
- FN10 A5
- FN11 B5
- FN12 B3
- FN13 B5
- FN14 B5
- FN15 C3
- FN16 D2
- FN17 E2
- FN18 F4
- FN19 A12
- FN20 A2
- FN21 A2
- FN22 A12
- FN23 B12
- FN24 C12
- FN25 C12
- FN26 D12
- FN27 D12
- FN28 E12
- FN29 E3
- FN30 F3
- FN31 F3

"N00 ~ N99"  
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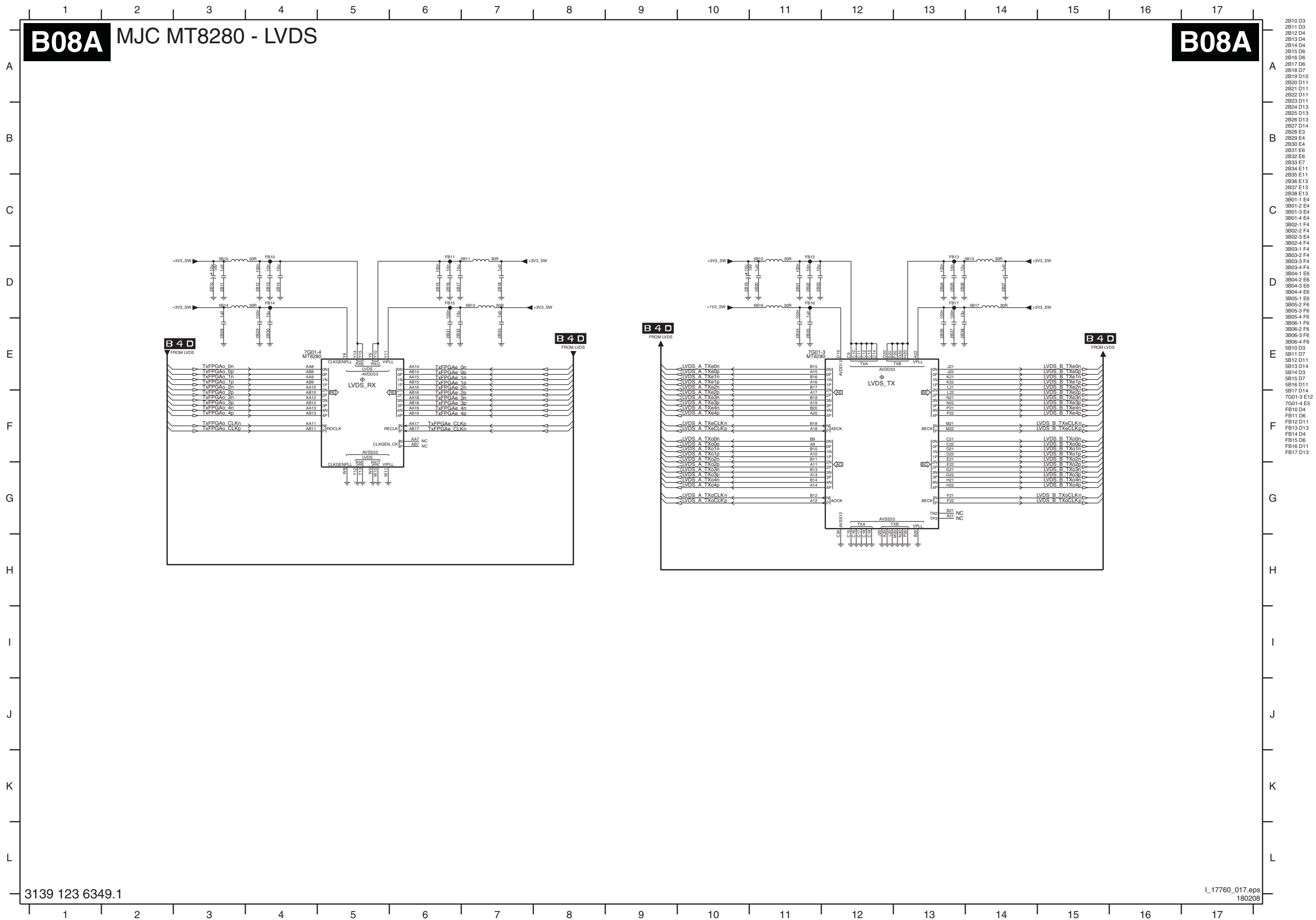
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SSB: MJC MT8280 LVDS

B08A MJC MT8280 - LVDS

B08A



- 2B10 D3
- 2B11 D3
- 2B12 D4
- 2B13 D4
- 2B14 D4
- 2B15 D6
- 2B16 D6
- 2B17 D6
- 2B18 D7
- 2B19 D10
- 2B20 D11
- 2B21 D11
- 2B22 D11
- 2B23 D11
- 2B24 D13
- 2B25 D13
- 2B26 D13
- 2B27 D14
- 2B28 E3
- 2B29 E4
- 2B30 E4
- 2B31 E6
- 2B32 E6
- 2B33 E7
- 2B34 E11
- 2B35 E11
- 2B36 E13
- 2B37 E13
- 2B38 E13
- 3B01-1 E4
- 3B01-2 E4
- 3B01-3 E4
- 3B01-4 E4
- 3B02-1 F4
- 3B02-2 F4
- 3B02-3 E4
- 3B02-4 F4
- 3B03-1 F4
- 3B03-2 F4
- 3B03-3 F4
- 3B03-4 F4
- 3B04-1 E6
- 3B04-2 E6
- 3B04-3 E6
- 3B04-4 E6
- 3B05-1 E6
- 3B05-2 F6
- 3B05-3 F6
- 3B05-4 F6
- 3B06-1 F6
- 3B06-2 F6
- 3B06-3 F6
- 3B06-4 F6
- 5B10 D3
- 5B11 D7
- 5B12 D11
- 5B13 D14
- 5B14 D3
- 5B15 D7
- 5B16 D11
- 5B17 D14
- 7G01-3 E12
- 7G01-4 E5
- FB10 D4
- FB11 D6
- FB12 D11
- FB13 D13
- FB14 D4
- FB15 D6
- FB16 D11
- FB17 D13

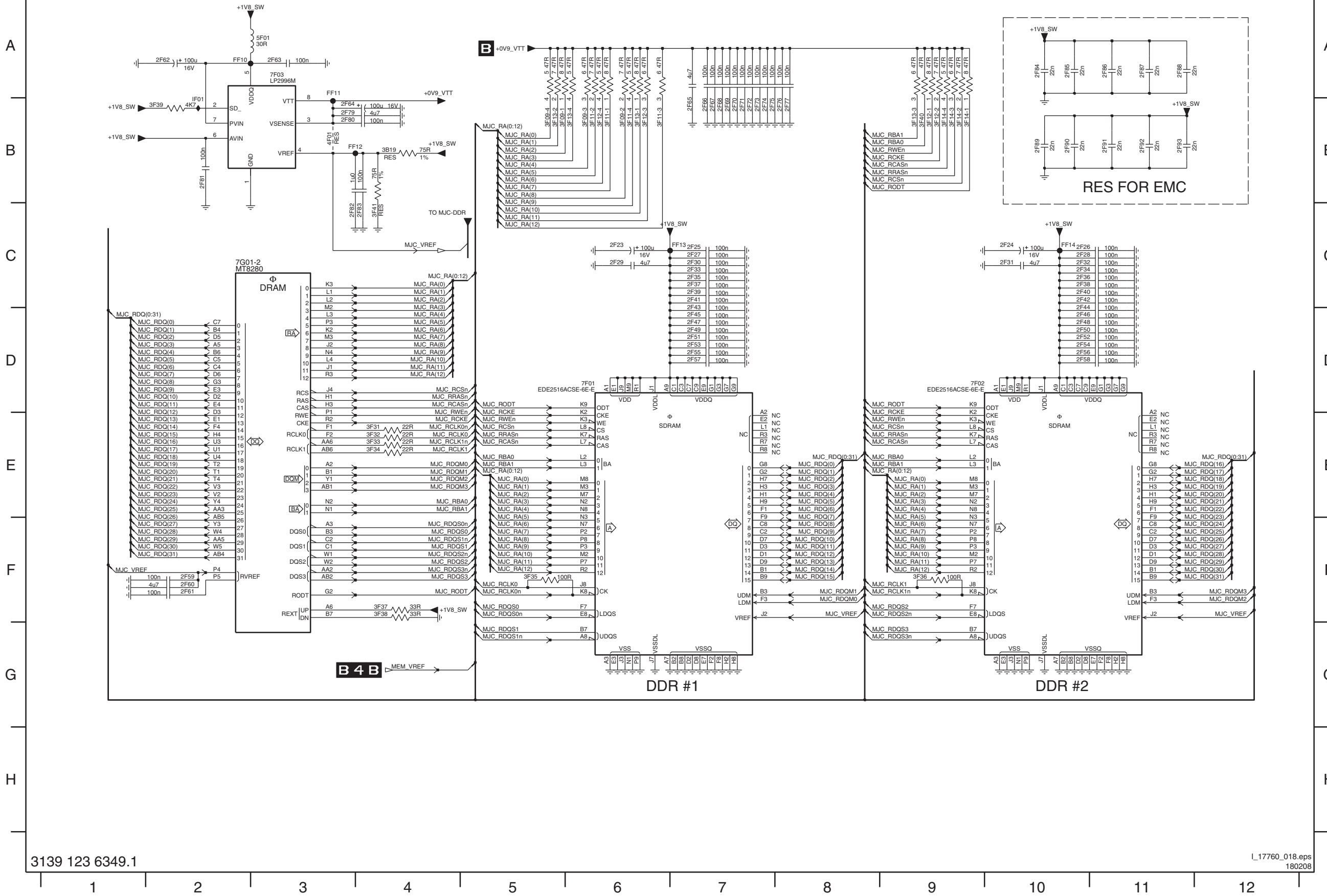


**SSB: MJC MT8280 DDR**

**B08B**

**MJC MT8280 - DDR**

**B08B**



- 2F23 C6
- 2F24 C10
- 2F25 C7
- 2F26 C10
- 2F27 C7
- 2F28 C10
- 2F29 C6
- 2F30 C7
- 2F31 C10
- 2F32 C10
- 2F33 C7
- 2F34 C10
- 2F35 C7
- 2F36 C10
- 2F37 C7
- 2F38 C10
- 2F39 C7
- 2F40 C10
- 2F41 C7
- 2F42 C10
- 2F43 D7
- 2F44 D10
- 2F45 D7
- 2F46 D10
- 2F47 D7
- 2F48 D10
- 2F49 D7
- 2F50 D10
- 2F51 D7
- 2F52 D10
- 2F53 D7
- 2F54 D10
- 2F55 D7
- 2F56 D10
- 2F57 D7
- 2F58 D10
- 2F59 F2
- 2F60 F2
- 2F61 F2
- 2F62 A2
- 2F63 A3
- 2F64 B3
- 2F65 B7
- 2F66 B7
- 2F67 B7
- 2F68 B7
- 2F69 B7
- 2F70 B7
- 2F71 B7
- 2F72 B7
- 2F73 B7
- 2F74 B7
- 2F75 B7
- 2F76 B8
- 2F77 B8
- 2F79 B3
- 2F80 B3
- 2F81 B2
- 2F82 C3
- 2F83 C4
- 2F84 A10
- 2F85 A10
- 2F86 A11
- 2F87 A11
- 2F88 A11
- 2F89 B10
- 2F90 B10
- 2F91 B11
- 2F92 B11
- 2F93 B11
- 3F19 B4
- 3F09-1 B5
- 3F09-2 B6
- 3F09-3 B6
- 3F09-4 B5
- 3F11-1 B6
- 3F11-2 B6
- 3F11-3 B6
- 3F11-4 B6
- 3F12-1 B9
- 3F12-2 B9
- 3F12-3 B6
- 3F12-4 B6
- 3F13-1 B6
- 3F13-2 B5
- 3F13-3 B9
- 3F13-4 B6
- 3F14-1 B9
- 3F14-2 B9
- 3F14-3 B9
- 3F14-4 B9
- 3F31 E4
- 3F32 E4
- 3F33 E4
- 3F34 E4
- 3F35 F5
- 3F36 F9
- 3F37 F4
- 3F38 F4
- 3F39 B2
- 3F40 B9
- 3F41 C4
- 4F01 B3
- 5F01 A3
- 7F01 D6
- 7F02 D10
- 7F03 A3
- 7G01-2 C2
- FF10 A2
- FF11 A3
- FF12 B4
- FF13 C7
- FF14 C10
- IF01 B2

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SSB: MJC MT8280 Power

**B08C** MJC MT8280 - POWER

**B08C**

A

B

C

D

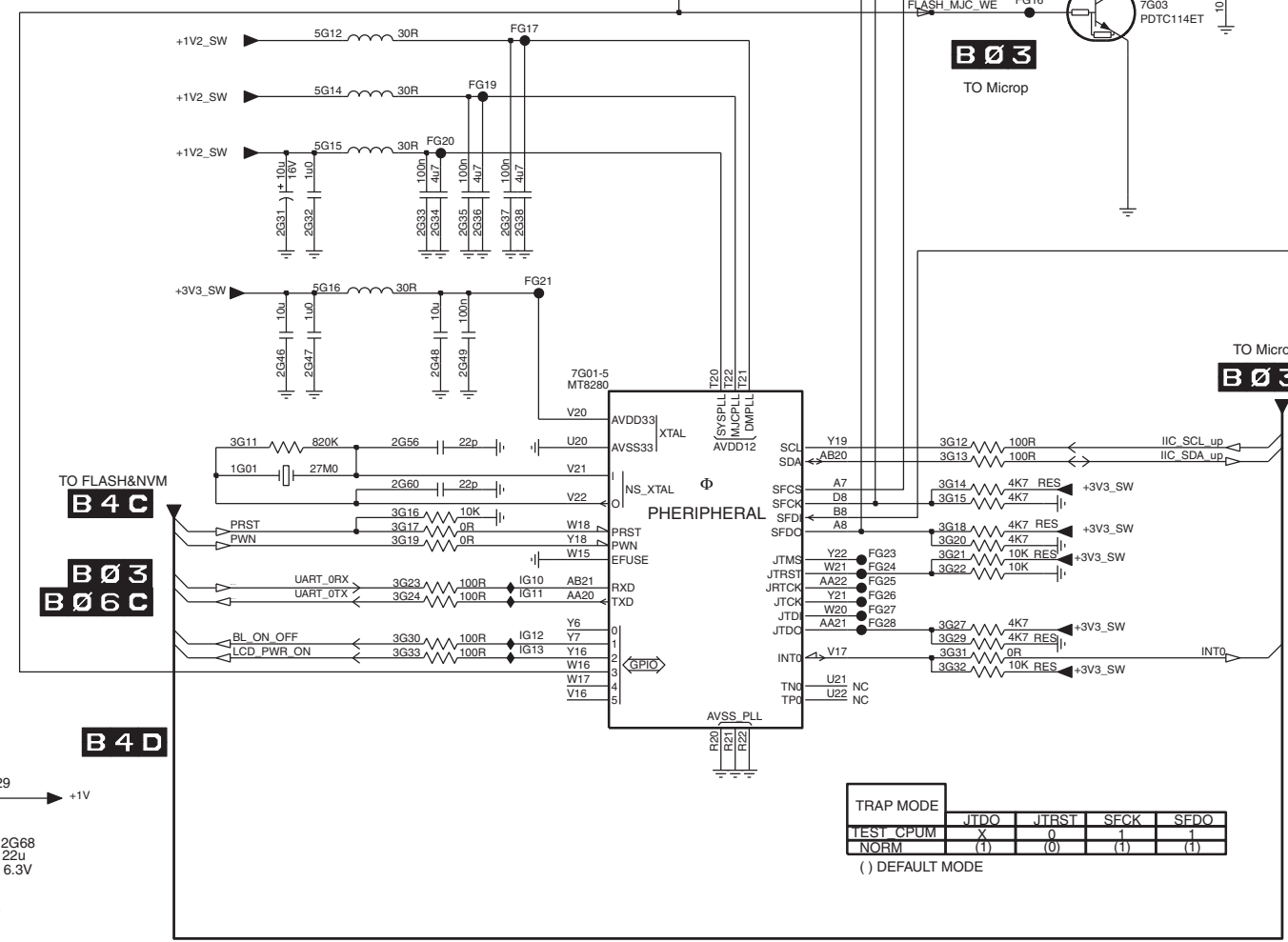
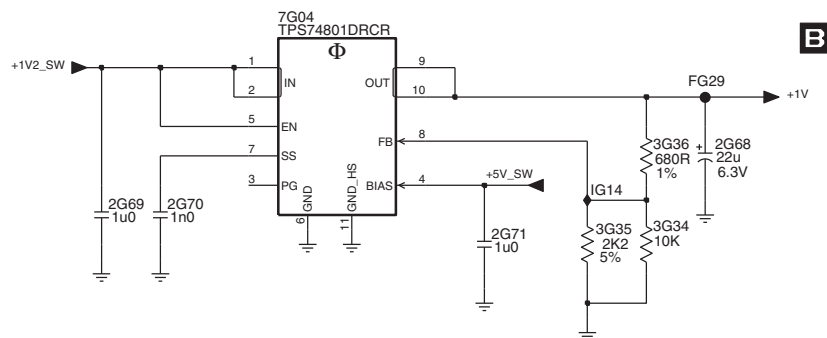
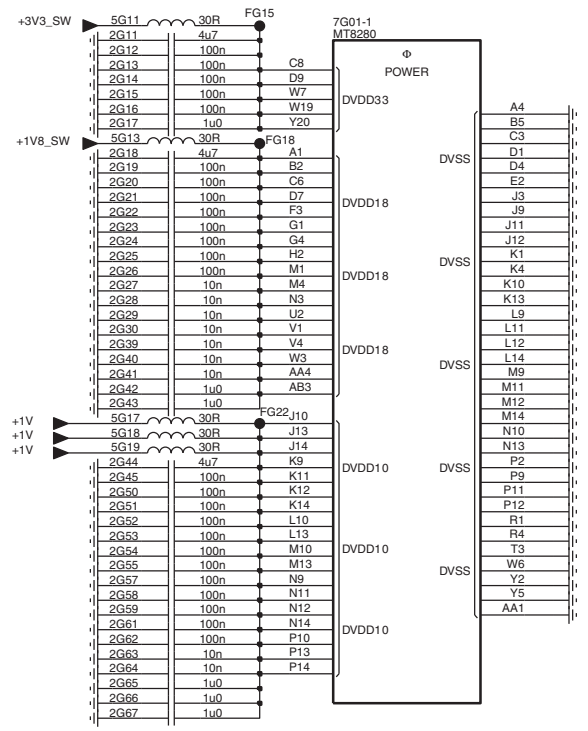
E

F

G

H

- 1G01 E6
- 2G10 A11
- 2G11 B2
- 2G12 B2
- 2G13 B2
- 2G14 B2
- 2G15 B2
- 2G16 B2
- 2G17 B2
- 2G18 C2
- 2G19 C2
- 2G20 C2
- 2G21 C2
- 2G22 C2
- 2G23 C2
- 2G24 C2
- 2G25 C2
- 2G26 C2
- 2G27 C2
- 2G28 C2
- 2G29 C2
- 2G30 C2
- 2G31 C6
- 2G32 C6
- 2G33 C7
- 2G34 C7
- 2G35 C7
- 2G36 C7
- 2G37 C7
- 2G38 C7
- 2G39 D2
- 2G40 D2
- 2G41 D2
- 2G42 D2
- 2G43 D2
- 2G44 D2
- 2G45 D2
- 2G46 D6
- 2G47 D7
- 2G48 D7
- 2G49 D7
- 2G50 D2
- 2G51 D2
- 2G52 D2
- 2G53 D2
- 2G54 E2
- 2G55 E2
- 2G56 E7
- 2G57 E2
- 2G58 E2
- 2G59 E2
- 2G60 E7
- 2G61 E2
- 2G62 E2
- 2G63 E2
- 2G64 E2
- 2G65 E2
- 2G66 E2
- 2G67 E2
- 2G68 G5
- 2G69 G2
- 2G70 G2
- 2G71 G4
- 3G10 B10
- 3G11 E6
- 3G12 E9
- 3G13 E9
- 3G14 E9
- 3G15 E9
- 3G16 E7
- 3G17 E7
- 3G18 E7
- 3G19 E7
- 3G20 E9
- 3G21 E9
- 3G22 E9
- 3G23 E7
- 3G24 E7
- 3G27 F9
- 3G29 F9
- 3G30 F7
- 3G31 F9
- 3G32 F9
- 3G33 F7
- 3G34 G4
- 3G35 G4
- 3G36 G4
- 3G38 B8
- 5G10 A11
- 5G11 B2
- 5G12 C6
- 5G13 C2
- 5G14 C6
- 5G15 C6
- 5G16 D6
- 5G17 D2
- 5G18 D2
- 5G19 D2
- 7G01-1 B3
- 7G01-5 D8
- 7G02 A11
- 7G03 B10
- 7G04 F3
- FG10 A11
- FG11 B12
- FG12 B10
- FG13 B10
- FG14 B10
- FG15 B3
- FG16 B10
- FG17 B7
- FG18 C3
- FG19 C7
- FG20 C7
- FG21 D7
- FG22 D3
- FG23 E9
- FG24 E9
- FG25 E9
- FG26 E9
- FG27 E9
- FG28 F9
- FG29 F5
- IG10 E7
- IG11 E7
- IG12 F7
- IG13 F7
- IG14 G4
- IG15 B10



TRAP MODE				
	ITDO	JTRST	SFCK	SFDO
TEST CPUM	X	0	( )	( )
NORM	( )	( )	( )	( )

( ) DEFAULT MODE



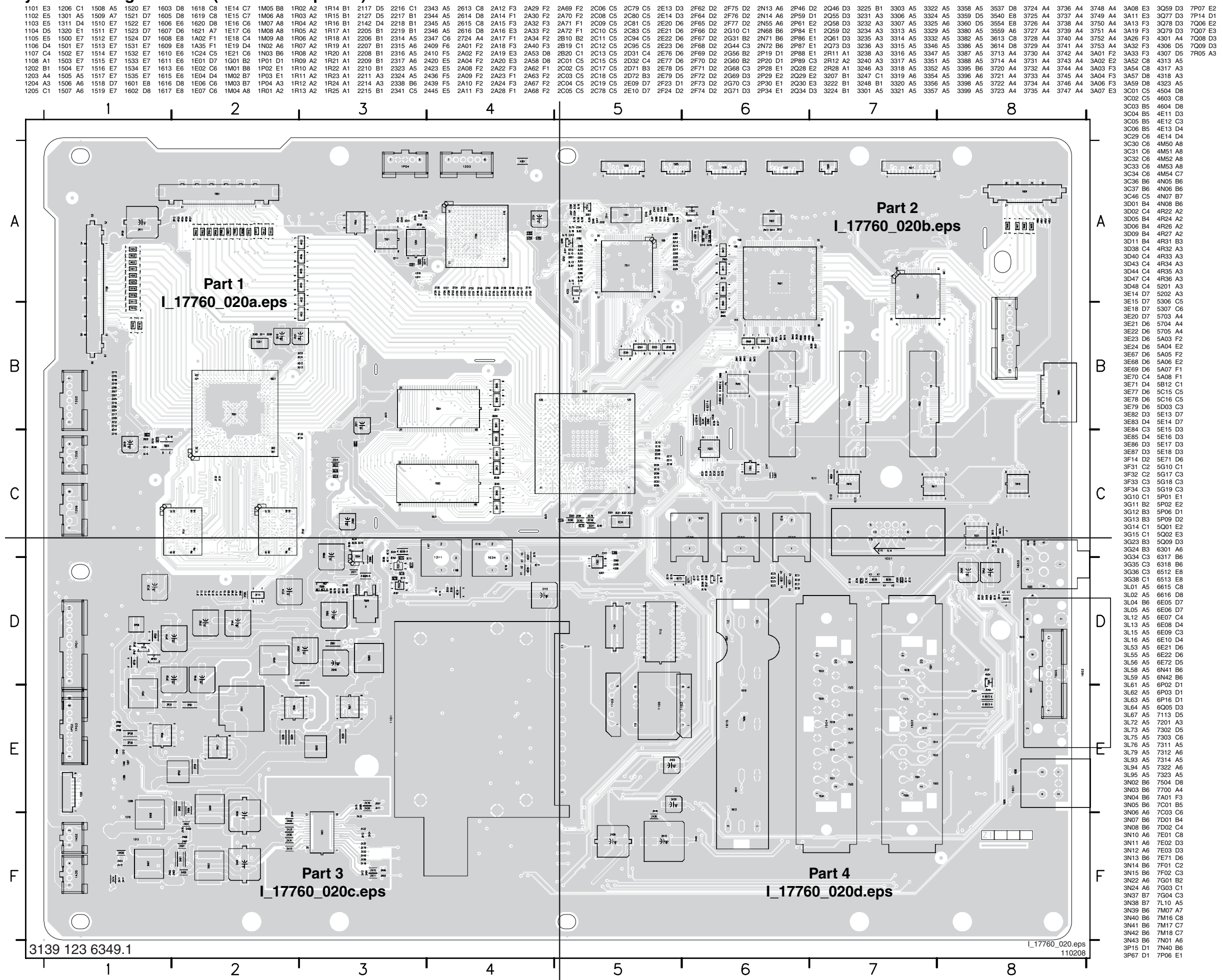
SSB: SRP List

Table with columns: Netname, Diagram, and a grid of component identifiers (e.g., AD(0:7), B04A (2x), HDML\_Cb(0), B08A (1x), IF\_ATV, B03 (2x), LVDS\_B\_Txo4p, B08B (1x), SC1\_AUDIO\_MUTE\_R, B08C (1x), TxPPGAe\_4p, B04B (1x), +0V9\_VTT, B08C (2x), +12V\_AUDIO, B01B (1x), +12V\_AUDIO, B06A (1x), +12V\_DISP, B01B (4x), +12V\_DISP, B02 (2x), +12V\_DISP, B03 (1x), +12V\_DISP, B04 (1x), +12V\_DISP, B05A (1x), +12V\_DISP, B05B (1x), +12V\_ADC, B04B (5x), +12V\_CORE, B04B (2x), +12V\_PLL, B04B (4x), +12V\_SW, B01B (2x), +12V\_SW, B04B (1x), +12V\_SW, B04E (1x), +12V\_SW, B08B (1x), +12V-FPGA, B04E (2x), +12V-PLL, B04E (2x), +1V8\_ANA-MUX, B07B (3x), +1V8\_DIG-MUX, B07E (2x), +1V8\_SW, B02 (1x), +1V8\_SW, B07B (2x), +1V8\_SW, B08A (4x), +1V8\_SW, B08C (9x), +1V8SWA, B08A (1x), +1V8SWB, B08A (1x), +24V, B04D (1x), +2V5\_SW, B01B (1x), +2V5\_SW, B04E (1x), +2V5\_VDDMQ, B04B (2x), +2V5\_VDDMQ, B04C (6x), +2V5in-FPGA, B04E (2x), +2V5out-FPGA, B04E (2x), +2V6\_SW, B02 (3x), +2V6\_SW, B04C (1x), +3V3\_ANA-MUX, B07B (5x), +3V3\_ANA-MUX, B08A (1x), +3V3\_FPGA, B04E (4x), +3V3\_FPGA, B01B (1x), +3V3\_STBY, B04A (33x), +3V3\_STBY, B04B (1x), +3V3\_STBY, B06A (3x), +3V3\_STBY, B06C (1x), +3V3\_STBY, B07A (3x), +3V3\_SW, B01B (4x), +3V3\_SW, B03 (2x), +3V3\_SW, B04A (17x), +3V3\_SW, B04B (17x), +3V3\_SW, B04E (1x), +3V3\_SW, B05A (1x), +3V3\_SW, B05B (1x), +3V3\_SW, B07A (3x), +3V3\_SW, B07B (2x), +3V3\_SW, B08B (7x), +3V3SWA, B08A (1x), +3V3SWB, B08A (1x), +3V3SWC, B08A (1x), +3V3SWD, B08A (1x), +3V3SWE, B08A (1x), +5V\_IF, B03 (6x), +5V\_SW, B02 (3x), +5V\_SW, B03 (3x), +5V\_SW, B04A (2x), +5V\_SW, B04E (2x), +5V\_SW, B05B (3x), +5V\_SW, B06A (1x), +5V\_SW, B06C (2x), +5V\_SW, B07A (2x), +5V\_SW, B07B (9x), +5V\_SW, B08A (1x), +5V\_TCON, B01B (1x), +5V\_TCON, B05A (1x), +5V\_TUN, B03 (2x), +5VHDMI\_A, B08A (4x), +5VHDMI\_B, B07B (4x), +5VHDMI\_C, B07B (4x), +5VHDMI\_MUX\_TPWR, B07B (1x), +5VHDMI\_MUX\_TPWR, B08A (1x), +5VHDMI\_SIDE, B07B (4x), +5VS, B03 (4x), +8V, B05B (2x), +VDISP, B05A (3x), +VTUN, B01B (1x), +VTUN, B03 (1x), -12V\_AUDIO, B01B (1x), -12V\_AUDIO, B06A (1x), A(0), B04A (2x), A(0), B04B (1x), A(0:7), B04A (1x), A(1), B04A (2x), A(1:7), B04A (1x), A(10), B04A (2x), A(11), B04A (2x), A(12), B04A (2x), A(13), B04A (2x), A(14), B04A (2x), A(15), B04A (2x), A(16), B04A (2x), A(17), B04A (2x), A(18), B04A (2x), A(19), B04A (2x), A(2), B04B (1x), A(2), B04B (1x), A(3), B04A (2x), A(3), B04B (1x), A(4), B04A (2x), A(4), B04B (1x), A(5), B04A (2x), A(5), B04B (1x), A(6), B04A (2x), A(6), B04B (1x), A(7), B04A (2x), A(7), B04B (1x), A(8), B04A (2x), A(8:19), B04A (2x), A(9), B04A (2x), AD(0), B04A (2x), AD(0), B04B (1x)

3104 313 6349.1



Layout Small Signal Board (Overview Top Side)



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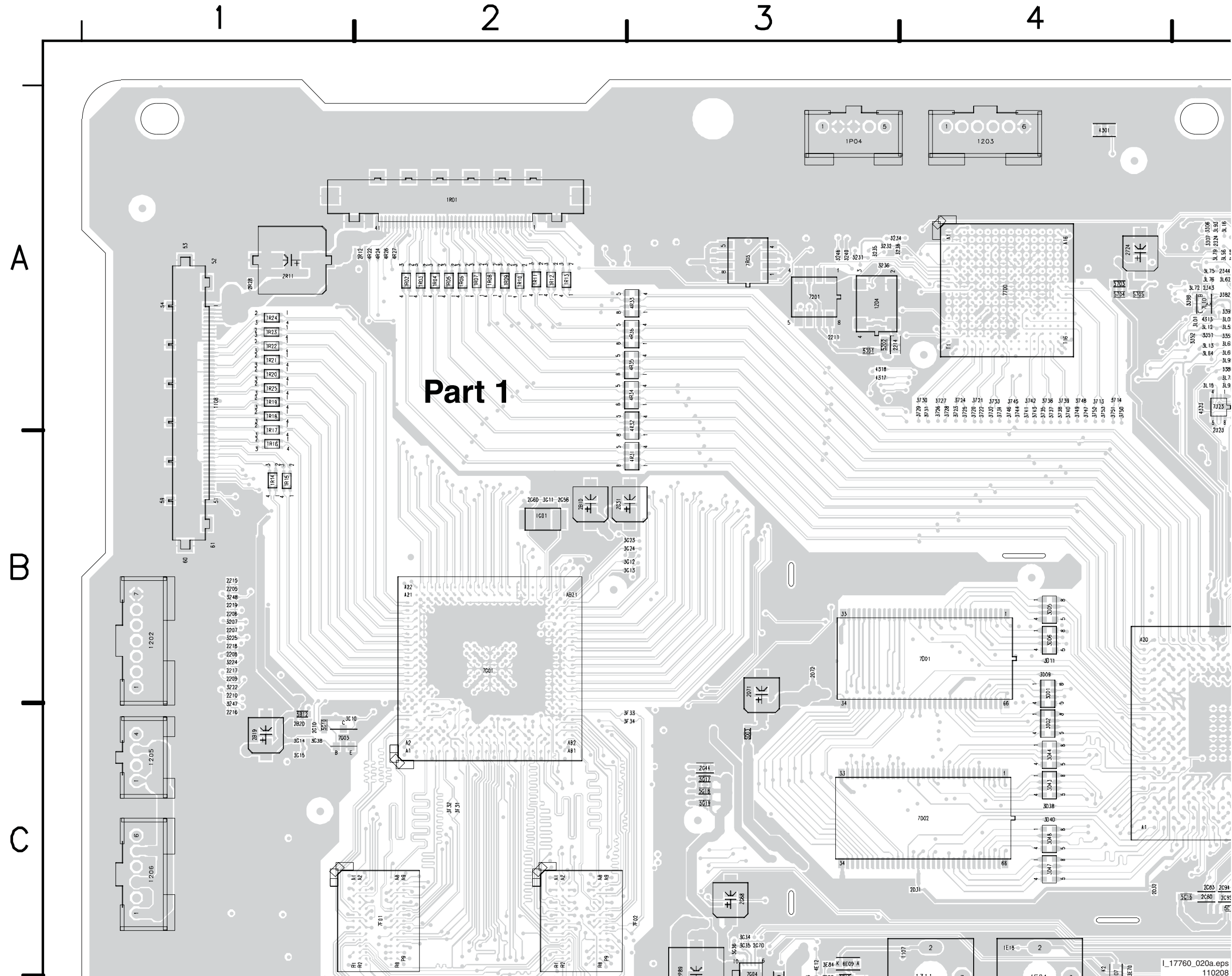
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Layout Small Signal Board (Part 1 Top Side)



Layout Small Signal Board (Part 2 Top Side)

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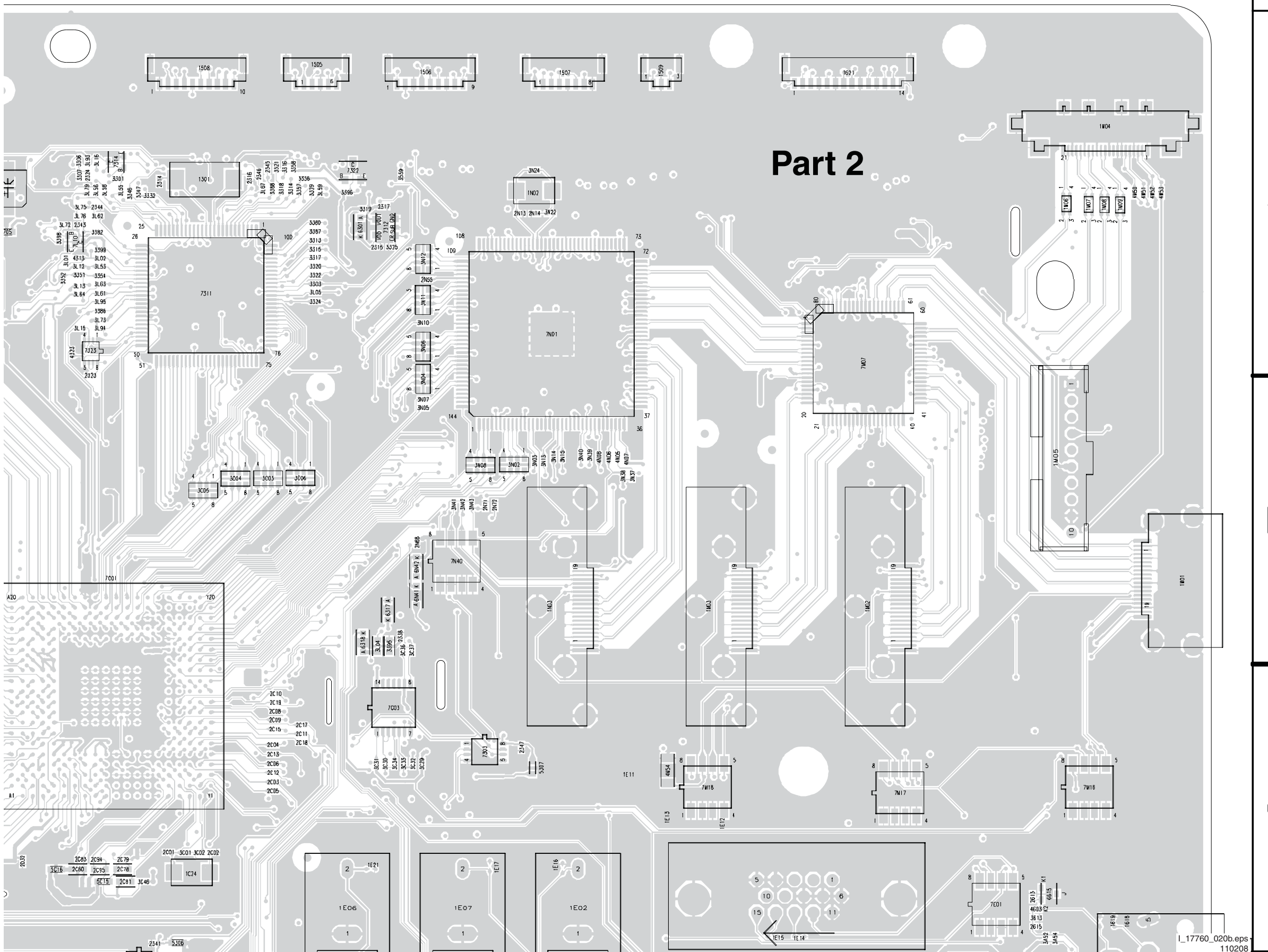
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Part 2

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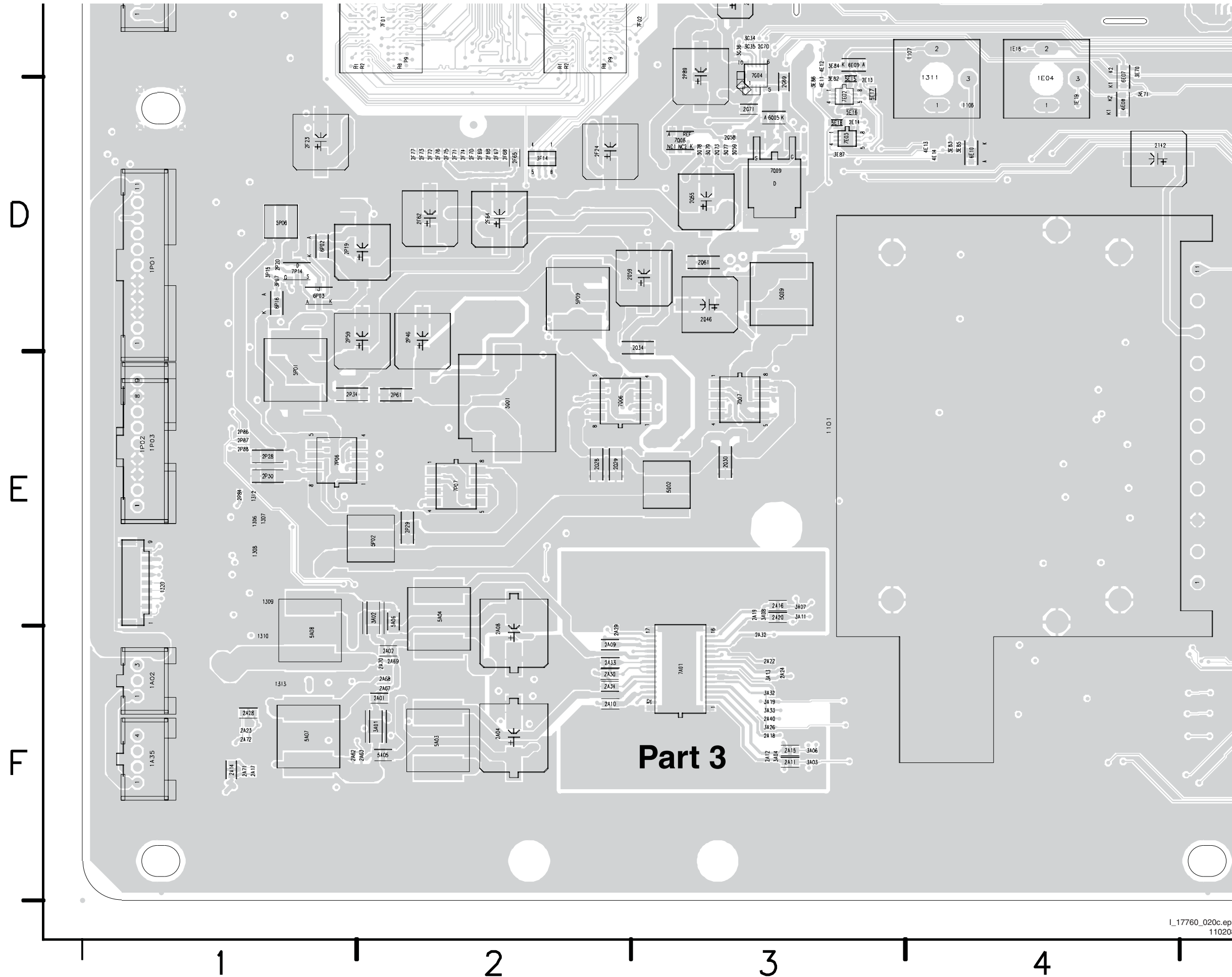
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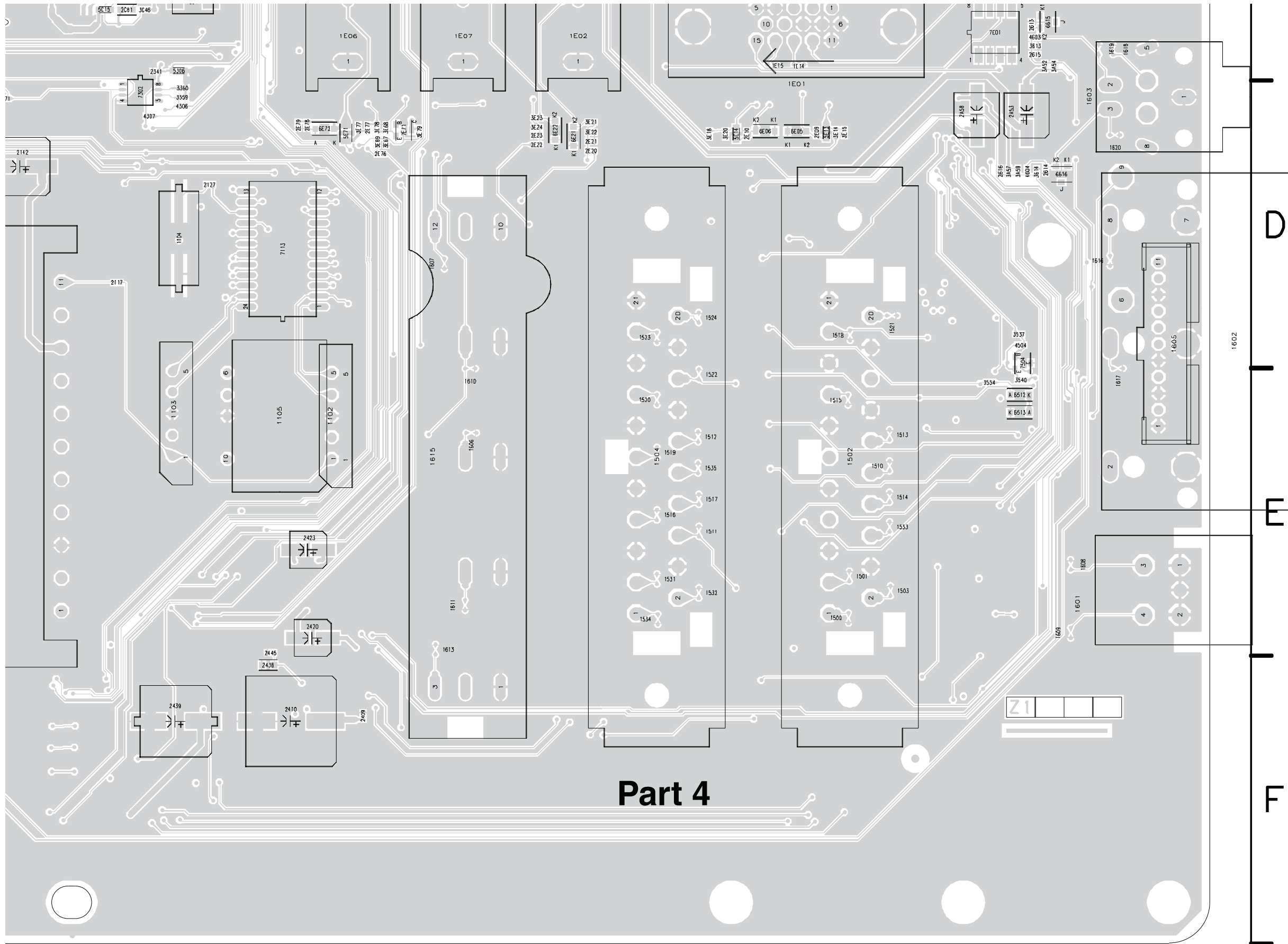




Layout Small Signal Board (Part 3 Top Side)



Layout Small Signal Board (Part 4 Top Side)



Part 4

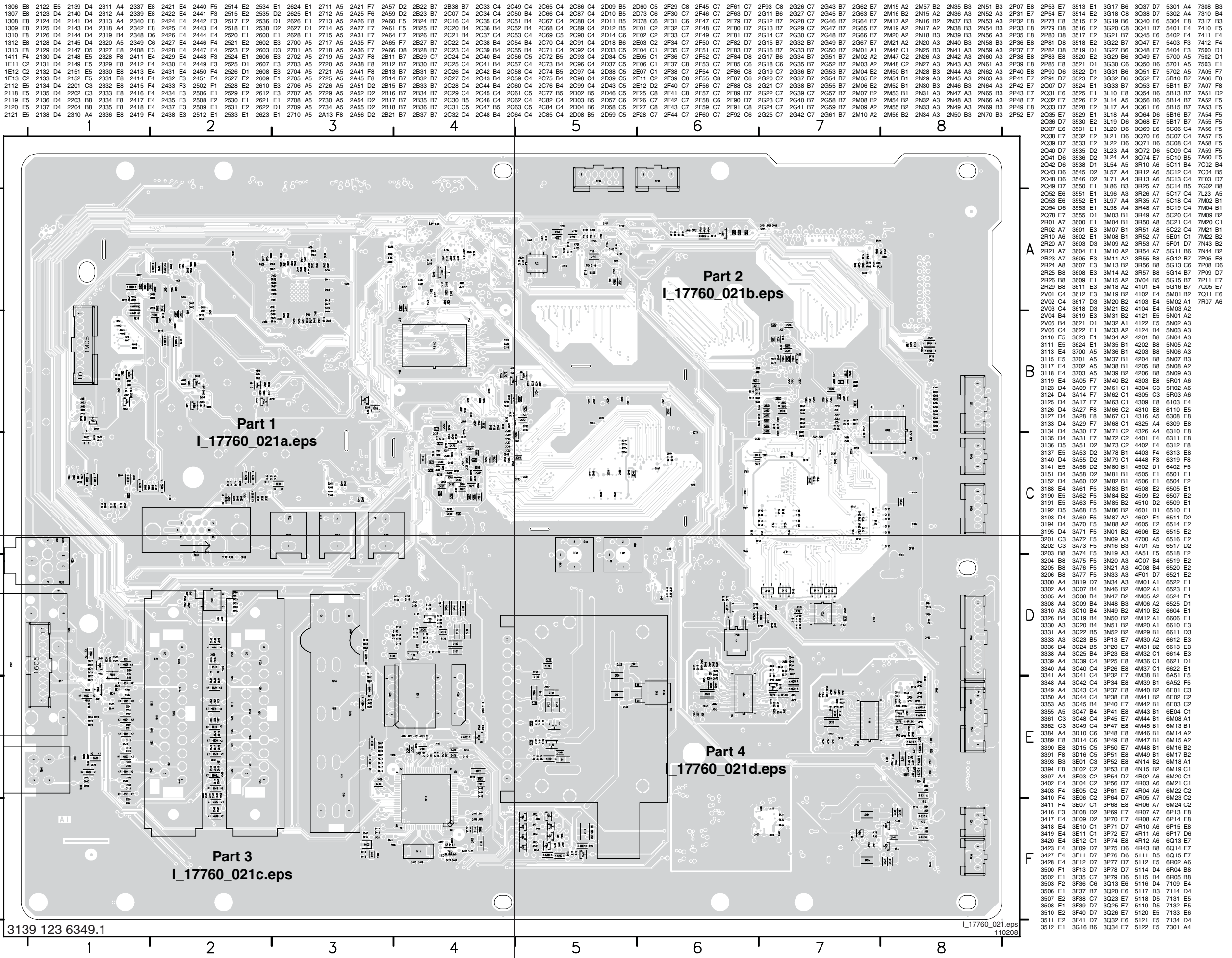
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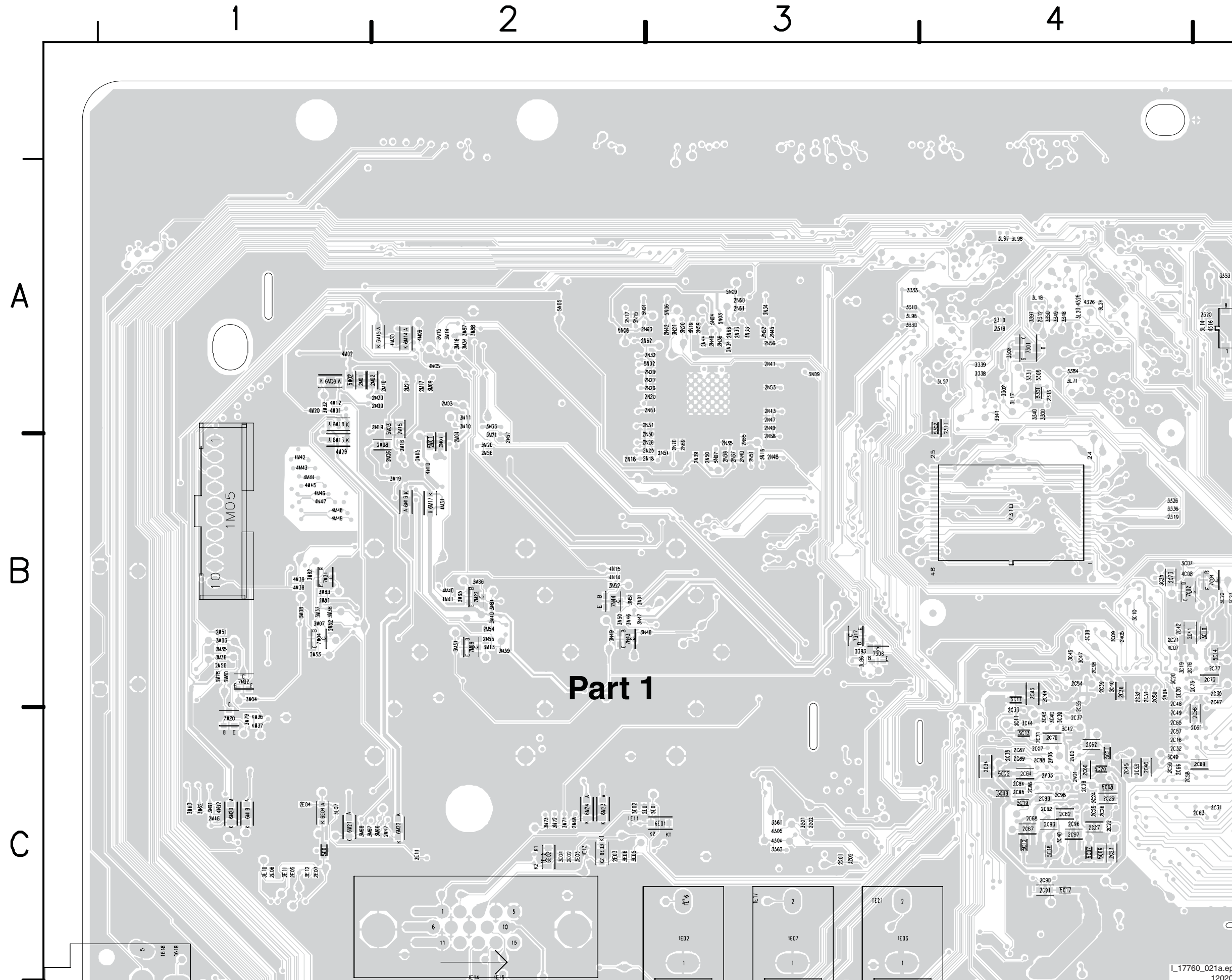
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Layout Small Signal Board (Overview Bottom Side)





Layout Small Signal Board (Part 1 Bottom Side)



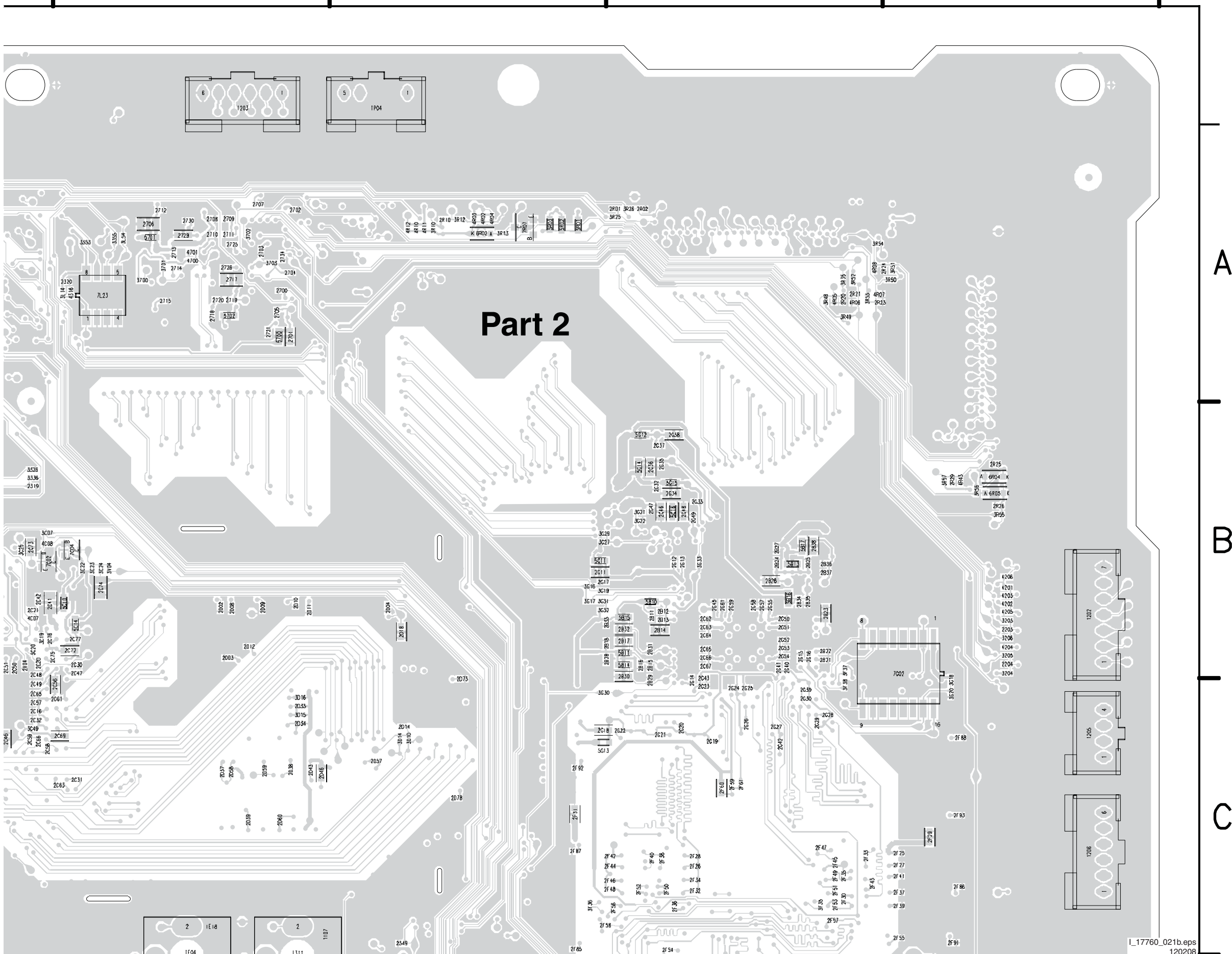
Layout Small Signal Board (Part 2 Bottom Side)

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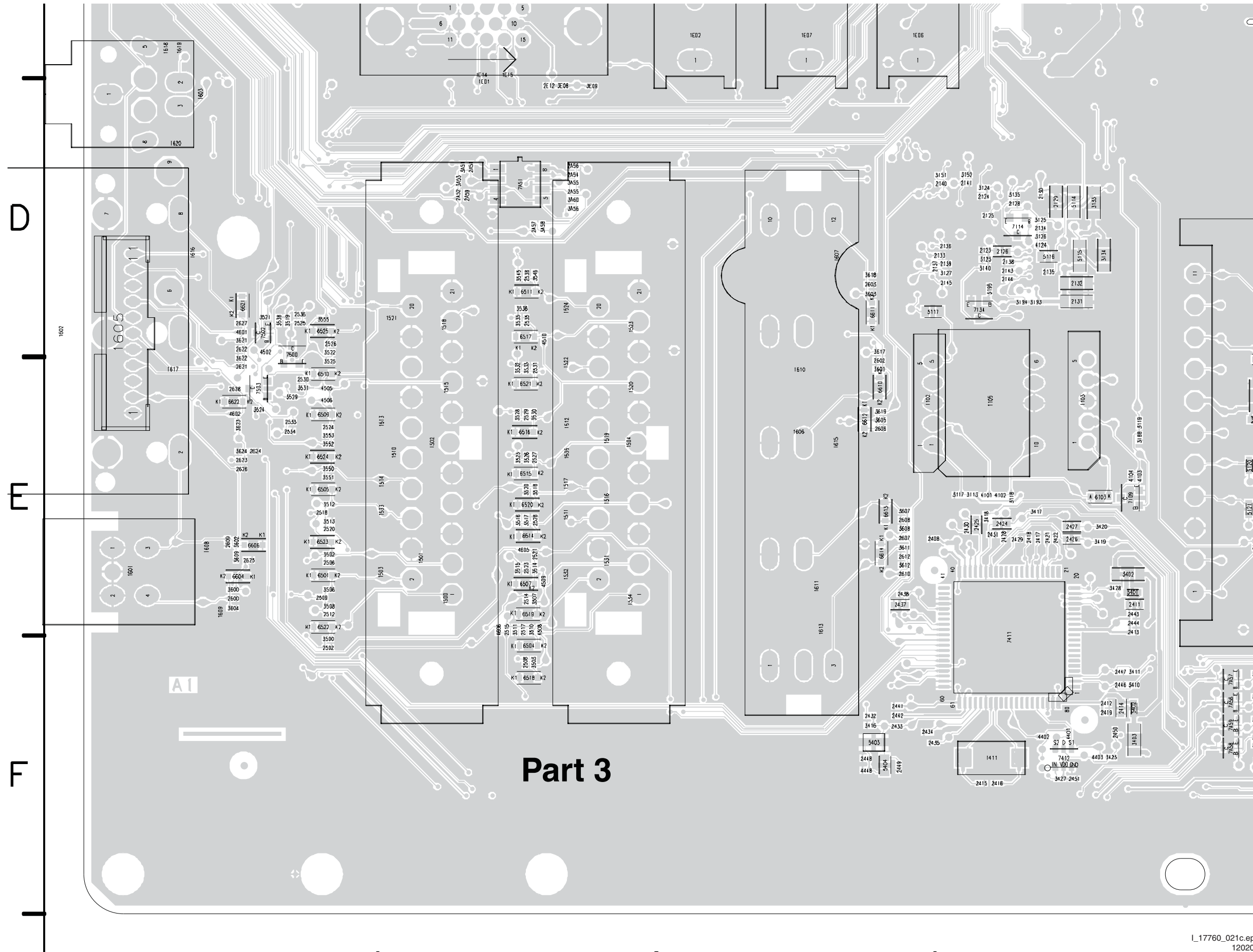


A

B

C

Layout Small Signal Board (Part 3 Bottom Side)



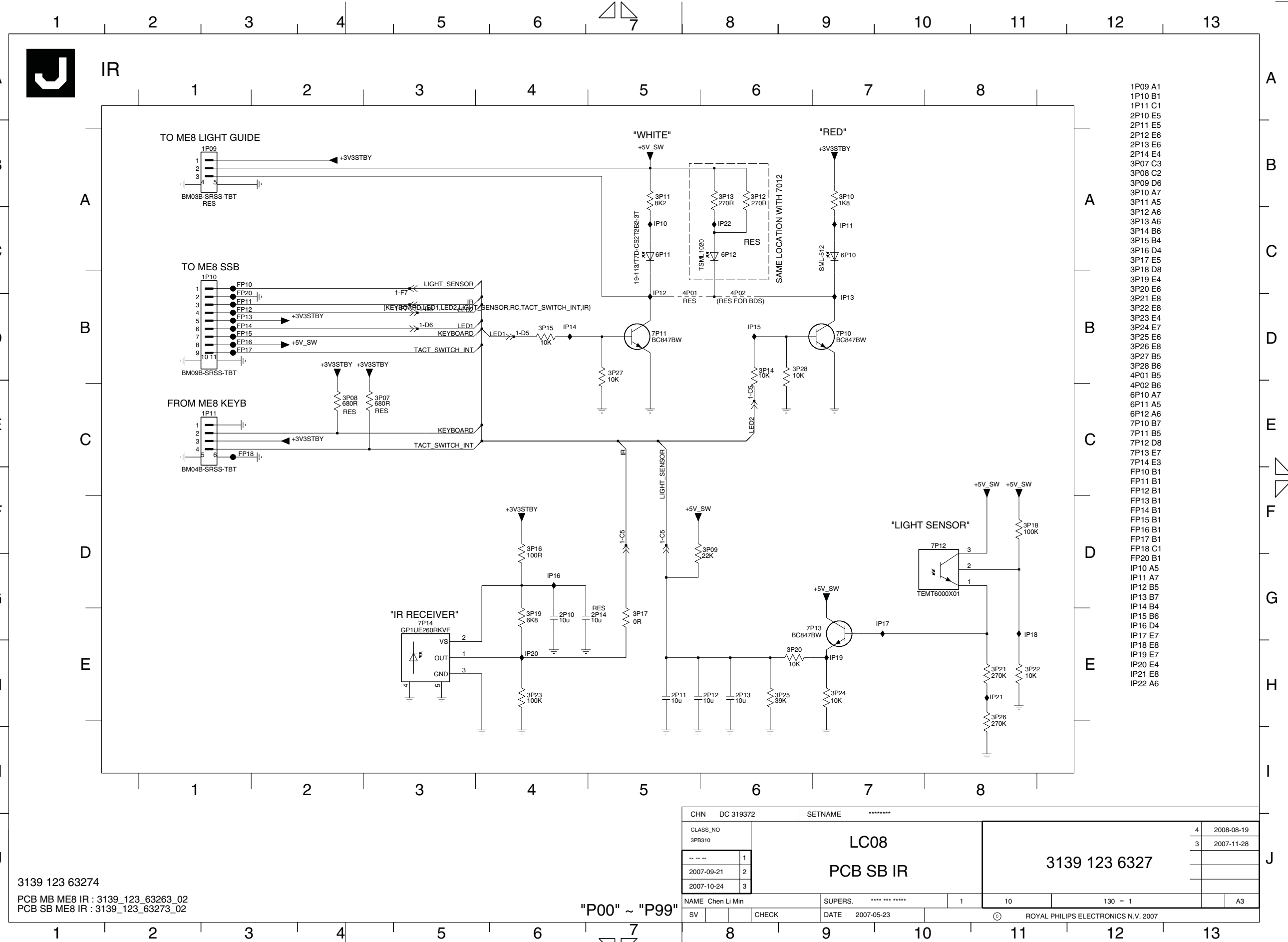




IR / LED Panel

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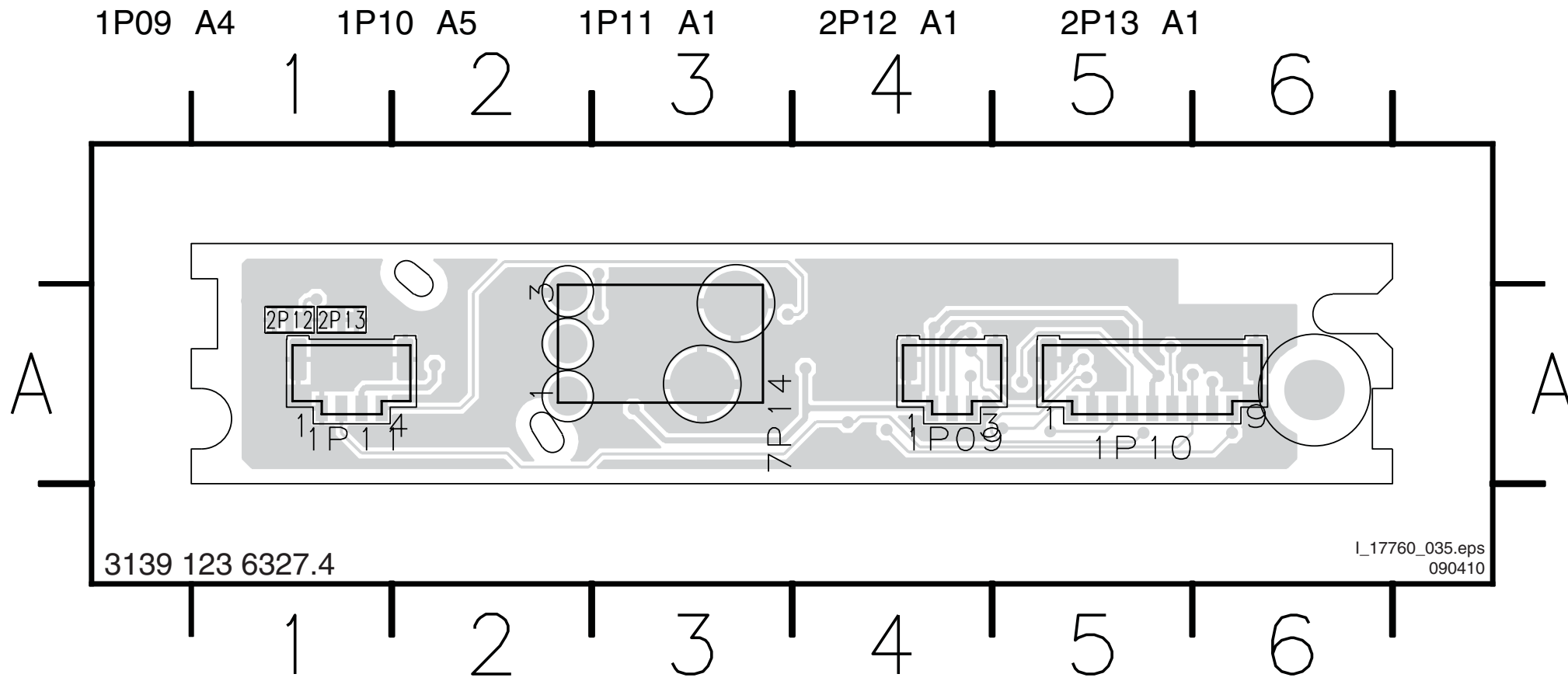


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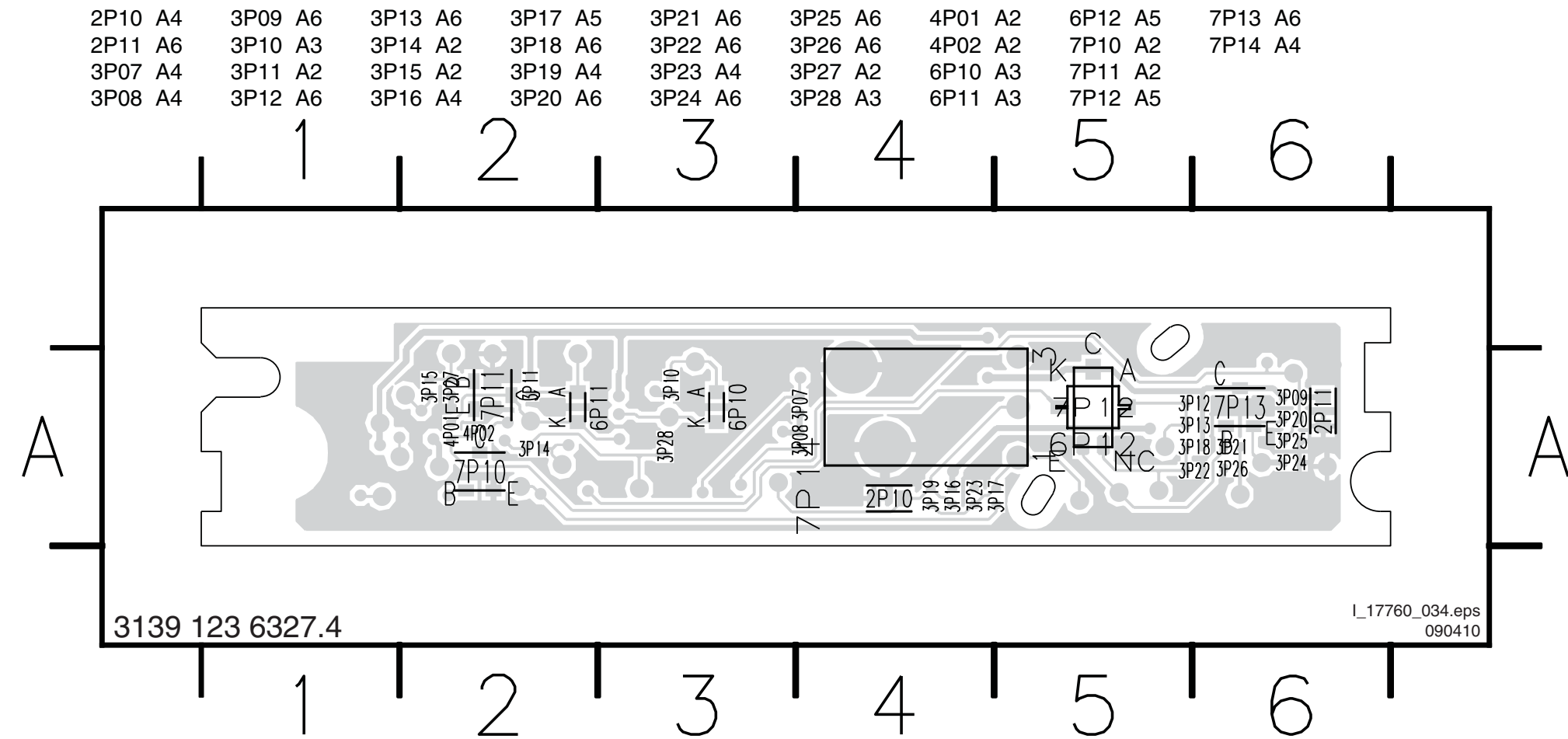
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"P00" ~ "P99"

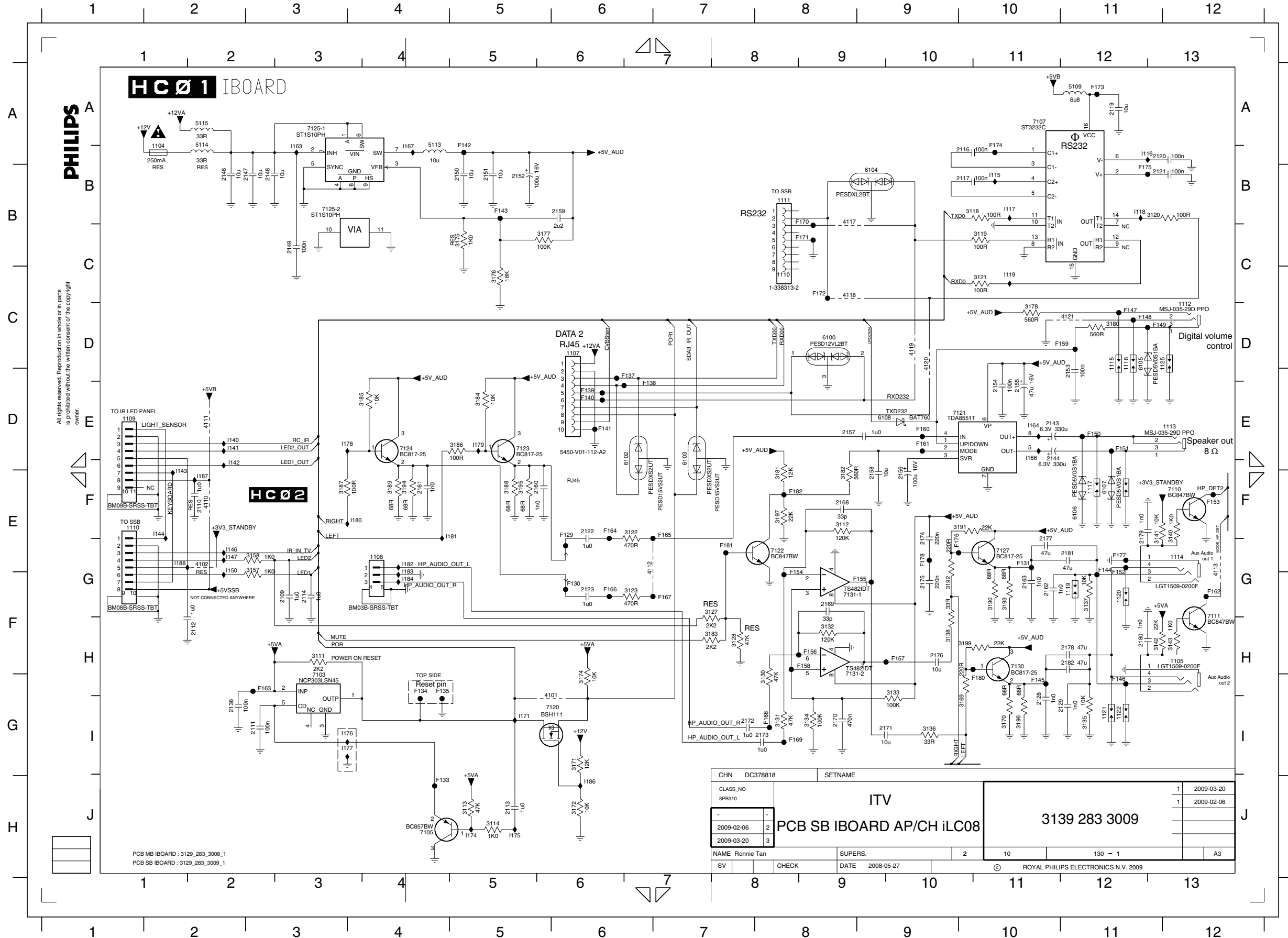
**Layout Front IR / LED Panel (Top Side)**



**Layout Front IR / LED Panel (Bottom Side)**



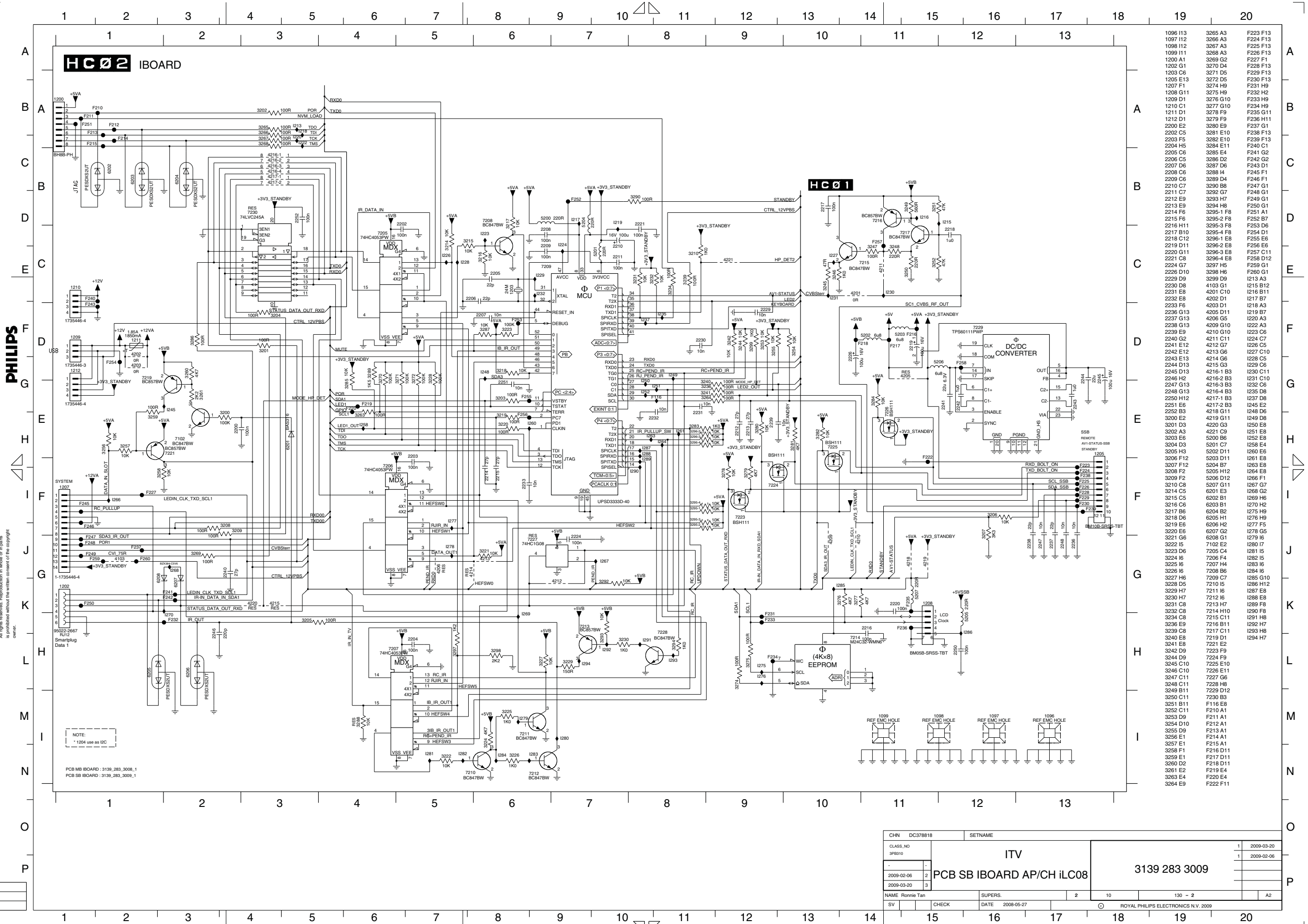
iBoard



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1108 E4	3182 E8	F180 G10
1109 D1	3183 F7	F181 E7
1110 E1	3184 D5	F182 E8
1111 B8	3185 D4	F185 B0
1112 C12	3186 D5	F186 A11
1113 D12	3187 E3	F187 B10
1114 E12	3188 E5	F188 B11
1115 C11	3189 E4	F189 C10
1116 C11	3190 F10	F190 E10
1117 E11	3191 E10	F191 F9
1119 F11	3192 F9	F192 D2
1120 F11	3193 F10	F193 E10
1121 G11	3194 E4	F194 E2
1122 G11	3195 E5	F194 E2
1125 C12	3196 G10	F194 E2
2109 F3	3197 E8	F195 E2
2110 E2	3199 F10	F196 A3
2111 G3	4101 G6	F196 D10
2112 F2	4102 E2	F196 D10
2113 H5	4110 E2	F196 A4
2114 F3	4111 D2	F197 G5
2116 A10	4112 E6	F197 H5
2117 B10	4113 E12	F197 H5
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2121 B11	4119 C9	F197 D4
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2147 B3	6103 D7	F197 D4
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3133 G9	F156 F8	F197 D4
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			ROYAL PHILIPS ELECTRONICS N.V. 2009

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CHN	DC378818	SETNAME	
CLASS_NO	3P8310	ITV	
		PCB SB IBOARD AP/CH iLC08	3139 283 3009
2009-03-20	2		
2009-03-20	3		
NAME	Ronnie Tan	SUPERS.	2
SV	CHECK	DATE	2008-05-27
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