



Service Manual

Chassis name	Platform	Model name	Model name
TPM18.1E LA	MTK5596+333/334	43PUS7303/12	55PUS7303/62
		43PUS7363/12	55PUS7363/12
		43PUS7373/12	55PUS7373/12
		43PUS7383/12	55PUS7383/12
		43PUS7393/12	55PUS7393/12
		49PUS7503/12	55PUS7503/12
		49PUS7503/62	55PUS7503/62
		49PUS7803/12	55PUS7803/12
		49PUS8303/12	55PUS8303/12
		49PUS8503/12	55PUS8503/12
		50PUS7303/12	65OLED803/12
		50PUS7303/60	65OLED873/12
		50PUS7303/62	65OLED903/12
		50PUS7363/12	65OLED973/12
		50PUS7373/12	65PUS7303/12
		50PUS7383/12	65PUS7303/60
		50PUS7393/12	65PUS7363/12
		55OLED803/12	65PUS7803/12
		55OLED873/12	65PUS8303/12
		55OLED903/12	65PUS8503/12
		55OLED973/12	75PUS7803/12
		55PUS7303/12	75PUS8303/12
		55PUS7303/60	

1. Product information	4
2. Precautions, Notes, and Abbreviation List	6
3. Mechanical Instructions	12
Cable dressing (43" 7303/7363/7373/7383/7393 series)	12
Cable dressing (49/55" 7503/7803 & 50/55" 7303/7363/7373/7383/7393 series)	13
Cable dressing (49/55" 8303/8503 series)	14
Cable dressing (55"/65" OLED803/903 series)	15
Cable dressing (65" 7303/7363/7803 series)	16
Cable dressing (65" 8303/8503 series)	18
Cable dressing (65" OLED873 series)	19
Cable dressing (65" OLED973 series)	20
Cable dressing (75" 7803 series)	21
Cable dressing (75" 8303 series)	22
Assembly/Panel Removal	23
4. Service Modes	34
5. Software upgrading, Error Code and Set Option Code	38
6. Trouble Shooting	45
7. Electrical Diagram	48
8. IC Data Sheet	58
9. Circuit Diagrams	67
9.1 715G8175 P SU	67
9.2 715G8886 P SU	71
9.3 715G9106 P SU	75
9.4 715G9309 P SU	79
9.5 715G9324 P SU	83
9.6 715G9325 P SU	87
9.7 715G9614 P SU	92
9.8 715G8579 SSB	96
9.9 715G8465 SSB	119
9.10 715G9058 SSB	144
9.11 715G9337 SSB	167
9.12 715G8694 IR/LED Panel	190
9.13 715G8623 IR/LED Panel	191
9.14 715G9361 IR/LED Panel	192
9.15 715G9363 IR/LED Panel	193
9.16 715G8555 Keyboard control panel	194
9.17 715G9116 Keyboard control panel	195
9.18 715G6981 AMBI Panel	196
9.19 715G7004 AMBI Panel	198
9.20 715G7006 AMBI Panel	200
9.21 715G7007 AMBI Panel	202
9.22 715G7008 AMBI Panel	204
9.23 715G7865 AMBI Panel	208
9.24 715G8236 AMBI Panel	210
9.25 715G8789 AMBI Panel	212
9.26 715G9108 AMBI Panel	214

9.27 715G9109 AMBI Panel.....	216
9.28 715G9591 AMBI Panel.....	218
9.29 715G9592 AMBI Panel.....	220
9.30 715G9155 Connect ion Panel.....	222
9.31 715G9181 Connect ion Panel.....	223
9.32 715G9001 LED Pa nel.....	224
10. Styli ng Sheets	225
10.1 7303/7363/7373/7383/7393 series 43"	225
10.2 7503/7803 series 49/55" & 7 303/7363/7373/7383/7393 series 50/ 55".....	226
10.3 8303/8503 ser ies 49/55".....	227
10.4 7303/7363/7803 series 65".....	228
10.5 8303/8503 series 65"....	229
10.6 OLED873 ser ies 65".....	230
10.7 OLED803/903 series 55"	231
10.8 OLED803/903 series 65"	232
10.9 OLED973 ser ies 65".....	233
10.10 7803 ser ies 75"	234
10.11 8303 ser ies 75".....	235

1. Product information

Product information is subject to change without notice.
For detailed product information, please visit
www.philips.com/support

Display Type

Diagonal screen size

- 108 cm / 43 inch
- 123 cm / 49 inch
- 126 cm / 50 inch
- 139 cm / 55 inch
- 164 cm / 65 inch
- 189 cm / 75 inch

Display resolution

- 3840 x 2160
-

Operating System

Android OS :
Android Nougat 7

Reception

- Aerial input : 75 ohm coaxial (IEC75)
- Tuner bands : Hyperband, S-Channel, UHF, VHF
- DVB : DVB-T2, DVB-C (cable) QAM
- Analogue video playback : SECAM, PAL
- Digital video playback : MPEG2 SD/HD (ISO/IEC 13818-2), MPEG4 SD/HD (ISO/IEC 14496-10), HEVC*
- Digital audio playback (ISO/IEC 13818-3)
- Satellite aerial input : 75 ohm F-type
- Input frequency range : 950 to 2150MHz
- Input level range : 25 to 65 dBm
- DVB-S/S2 QPSK, symbol rate 2 to 45M symbols, SCPC and MCPC
- LNB : DiSEqC 1.0, 1 to 4 LNBs supported, Polarity selection 14/18V, Band selection 22kHz, Tone burst mode, LNB current 300mA max

* Only for DVB-T2, DVB-S2

Display Input Resolution

Video formats

Resolution – Refresh rate

- 480i – 60 Hz
- 480p – 60 Hz

- 576i – 50 Hz
- 576p – 50 Hz
- 720p – 50 Hz, 60 Hz
- 1080i – 50 Hz, 60 Hz
- 1080p – 24 Hz, 25 Hz, 30 Hz
- 2160p – 24 Hz, 25 Hz, 30 Hz, 50 Hz, 60 Hz

Computer formats

Resolutions (amongst others)

- 640 x 480p – 60Hz
 - 800 x 600p – 60Hz
 - 1024 x 768p – 60Hz
 - 1280 x 768p – 60Hz
 - 1360 x 765p – 60Hz
 - 1360 x 768p – 60Hz
 - 1280 x 1024p – 60Hz
 - 1920 x 1080p – 60Hz
 - 3840 x 2160p – 24 Hz, 25 Hz, 30 Hz, 50 Hz, 60 Hz
-

Connectivity

Common

TV Side

- Common Interface slot: CI+/CAM
- USB 1 – USB 2.0
- USB 2 – USB 3.0
- Headphones – Stereo mini-jack 3.5mm
- HDMI 1 in – ARC – MHL – Ultra HD – HDR
- HDMI 2 in – ARC – Ultra HD – HDR

TV Bottom

- Audio out – Optical Toslink
- Network LAN – RJ45
- YPbPr, L/R
- HDMI 4 in – ARC
- HDMI 3 in – ARC
- Antenna(75 ohm)
- Satellite tuner

OLED973 Series

TV Bottom

- Common Interface slot: CI+/CAM
- USB 1 – USB 2.0
- USB 2 – USB 3.0
- Headphones – Stereo mini-jack 3.5mm
- HDMI 1 in – ARC – MHL – Ultra HD – HDR
- HDMI 2 in – ARC – Ultra HD – HDR
- Audio out – Optical Toslink
- Network LAN – RJ45
- YPbPr, L/R

- HDMI 4 in – ARC
- HDMI 3 in - ARC
- Antenna(75 ohm)
- Satellite tuner

Video formats (For OLED 803/903)

Resolution — Refresh rate

- 480i - 60 Hz
- 480p - 60 Hz
- 576i - 50 Hz
- 576p - 50 Hz
- 720p - 50 Hz, 60 Hz
- 1080i - 50 Hz, 60 Hz
- 1080p - 24 Hz, 25 Hz, 30 Hz
- 2160p - 24 Hz, 25 Hz, 30 Hz, 50 Hz, 60 Hz

Computer formats

Resolutions (amongst others)

- 640 x 480p - 60 Hz
- 800 x 600p - 60 Hz
- 1024 x 768p - 60 Hz
- 1280 x 768p - 60 Hz
- 1360 x 765p - 60 Hz
- 1360 x 768p - 60 Hz
- 1280 x 1024p - 60 Hz
- 1920 x 1080p - 60 Hz
- 3840 x 2160p - 24 Hz, 25 Hz, 30 Hz, 50 Hz, 60 Hz

Sound

Output power (RMS):

7303/7803/73x3 series: 20W

7503/8303 series: 25W

8503 series: 45W

OLED873/803/903 series: 50W

OLED973 series: 60W

Dolby Audio

DTS Premium Sound TM

Multimedia

Connections

USB 2.0 / USB 3.0

Ethernet LAN RJ-45

Wi-Fi 802.11a/b/g/n/ac (built-in)

BT2.1 with EDR & BT4.0 & BT 4.2with BLE(* Your TV

doesn't support Bluetooth subwoofer and Bluetooth speakers)

Supported USB file systems

FAT 16, FAT 32, NTFS

Playback formats

Video Codecs : AVI, MKV, H264/MPEG-4 AVC, MPEG-1, MPEG-2, MPEG-4, WMV9/VC1, HEVC

Audio Codecs : AAC, MP3, WAV, WMA(v2 up to v9.2), WMA-PRO(v9 and v10)

Subtitles :

Formats : SRT,SUB,TXT,SMI

Character encodings : UTF-8,Central Europe and Eastern Europe (Windows-1250), Cyrillic (Windows-1251),Greek (Windows-1253),Turkish (Windows-1254),Western Europe (Windows-1252)

Image Codecs : JPEG

Limitations :

Maximum supported total bit rate for a media file is 30Mbps.

Maximum supported video bit rate for a media file is 20Mbps.

MPEG-4 AVC(H.264) is supported up to High Profile @ L5.1.

- H.265(HEVC) is supported upto Main / Main 10 Profile up to Level 5.1
- VC-1 is supported up to Advanced Profile @ L3.

Supported media server software (DMS)

- You can use any DLNA V1.5 certified media server software(DMS class)
- You can use the Philips TV Remote app (iOS and Android) on mobile devices.

Performance may vary, depending on the capabilities of the mobile device and the software used.

Power

- Mains power : AC 220-240V +/-10%
- Ambient temperature : 5°C to 35°C
- Power saving features : Eco mode , Picture mute (for radio), Auto switch-off timer, Eco settings menu.

2. Precautions, Notes, and Abbreviation List

2.1 Safety Instructions

Safety regulations require the following during a repair:

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

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

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

2.2 Warnings

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD ▲). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential.
- Be careful during measurements in the high voltage section.
- Never replace modules or other components while the unit is switched “on”.
- When you align the set, use plastic rather than metal

tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.3 Notes

2.3.1 General

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground ($\perp$), or hot ground ($\downarrow$), depending on the tested area of circuitry. The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode 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 ($\square$) and without ($\times$) aerial signal. Measure the voltages in the power supply section both in normal operation ($\textcircled{I}$) and in stand-by ($\textcircled{P}$). These values are indicated by means of the appropriate symbols.

2.3.2 Schematic Notes

- All resistor values are in ohms, and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 k Ω).
- 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.

2.3.3 Spare parts

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

2.3.4 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.

2.3.5 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.

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

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

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

Identification: The bottom line of a type plate gives a 14-digit serial number. Digits 1 and 2 refer to the production centre (e.g. SN is Lysomice, RJ is Kobierzycze), 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 2010 week 10 / 2010 week 17). The 6 last digits contain the serial number.

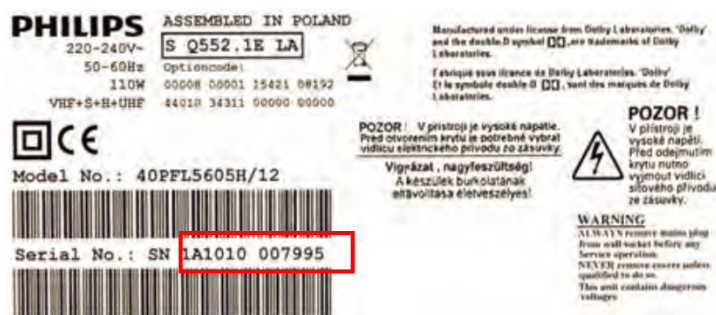


Figure 3-1 Serial number (example)

2.3.7 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!

2.3.8 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.

2.4 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
DNR	Digital Noise Reduction: noise reduction feature of the set
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	Analog ue 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
BDS	Business Display Solutions (iTV)
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	
DCM	Data Communication Module. Also referred to as System Card or Smartcard (for iTV).	
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	
DRAM	Dynamic RAM	
DRM	Digital Rights Management	
DSP	Digital Signal Processing	
DST	Dealer Service Tool: special remote control designed for service technicians	
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	
DVB-C	Digital Video Broadcast - Cable	
DVB-T	Digital Video Broadcast - Terrestrial	
DVD	Digital Versatile Disc	
DVI(-d)	Digital Visual Interface (d= digital only)	
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.	

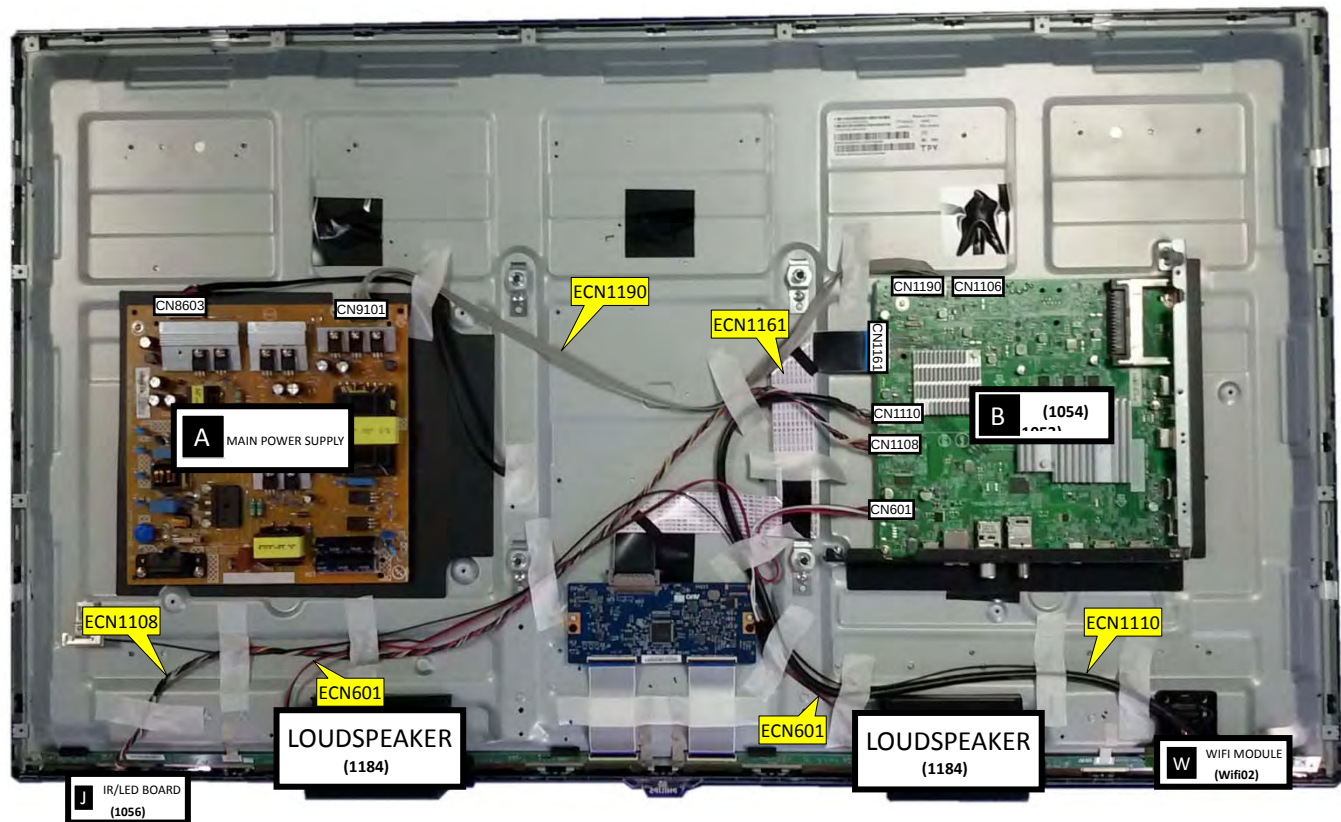
EDID	Extended Display Identification Data (VESA standard)		Uncompressed digital component or digital composite signals can be used. The SDI signal is self-synchronizing, uses 8 bit or 10 bit data words, and has a maximum data rate of 270 Mbit/s, with a minimum bandwidth of 135 MHz.		
EEPROM	Electrically Erasable and Programmable Read Only Memory				
EMI	Electro	Magnetic Interference			
EPG	Elec	tronic Program Guide			
EPLD	Er	asable Programmable Logic Device	iTV	Institutional TeleVision; TV sets for hotels, hospitals etc.	
EU	Europe				
EXT	EXTernal (source), entering the set by SCART or by cinches (jacks)		LS	Last Status; The settings last chosen by the customer and read and stored in RAM or in the NVM. They are called at start-up of the set to configure it according to the customer's preferences	
FDS	Full Dual Screen (same as FDW)				
FDW	Full	Dual Window (same as FDS)			
FLASH	FLASH	memory			
FM	Field	Memory or Frequency Modulation	LATAM	Latin	America
FPGA	Field-P	rogrammable Gate Array	LCD	Liquid	Crystal Display
FTV	Flat	TeleVision	LED	Light	Emitting Diode
Gb/s	Giga	bits per second	L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I	
G-TXT	Green	TeleteXT			
H	H_	sync to the module			
HD	High Definition		LPL	LG.Philips	LCD (supplier)
HDD	Ha	rd Disk Drive	LS	Loud	speaker
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.		LVDS	Lo	w Voltage Differential Signalling
			Mbps	Mega	bits per second
			M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz	
			MHEG	Part of a set of international standards related to the presentation of multimedia information, standardised by the Multimedia and Hypermedia Experts Group. It is commonly used as a language to describe interactive television services	
			MIPS	Microprocessor without Interlocked Pipeline-Stages; A RISC-based microprocessor	
HDMI	High	Definition Multimedia Interface	MOP	Matr	ix Output Processor
HP	H	eadPhone	MOSFET	Metal Oxide Silicon Field Effect Transistor, switching device	
I	Monochrome TV system. Sound carrier distance is 6.0 MHz		MPEG	Motion	Pictures Experts Group
I²C	Inter	IC bus	MPIF	Multi	Platform InterFace
I²D	Inter	IC Data bus	MUTE	MUTE	Line
I²S	Inter	IC Sound bus	MTV	Mainstream TV: TV-mode with Consumer TV features enabled (iTV)	
IF	Inter	mediate Frequency	NC	Not	Connected
IR	Infr	a Red	NICAM	Near Instantaneous Compounded Audio Multiplexing. This is a digital sound system, mainly used in Europe.	
IRQ	Interr	upt Request	NTC	Negative Temperature Coefficient, non-linear resistor	
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.				

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)		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.	
			RC	Rem	ote Control
NVM	Non-Volatile Memory: IC containing TV related data such as alignments		RC5 / RC6	Signal protocol from the remote control receiver	
O/C	Open	Circuit	RESET	RESET	signal
OSD	On	Screen Display	ROM	Read Only Memory	
OAD	Over the Air Download. Method of software upgrade via RF transmission. Upgrade software is broadcasted in TS with TV channels.		RSDS	Reduced Swing Differential Signalling data interface	
			R-TXT	Red	TeleteXT
			SAM	Ser	vice Alignment Mode
			S/C	Shor	t Circuit
OTC	On screen display Teletext and Control; also called Artistic (SAA5800)		SCART	Syndicat des Constructeurs d'Appareils Radiorécepteurs et Téléviseurs	
P50	Project 50: communication protocol between TV and peripherals		SCL	Serial Clock I ² C	
PAL	Phase Alternating Line. Color system mainly used in West Europe (colour carrier = 4.433619 MHz) and South America (colour carrier PAL M = 3.575612 MHz and PAL N = 3.582056 MHz)		SCL-F	CLo	ck Signal on Fast I ² C bus
			SD	Standard	Definition
			SDA	Ser	ial Data I ² C
			SDA-F	D	Ata Signal on Fast I ² C bus
			SDI	Ser	ial Digital Interface, see "ITU-656"
			SDRAM	Syn	chronous DRAM
PCB	Pr	inted Circuit Board (same as "PWB")	SECAM	SEequence Couleur Avec Mémoire. Colour system mainly used in France and East Europe. Colour carriers = 4.406250 MHz and 4.250000 MHz	
PCM	Pulse	Code Modulation			
PDP	Plasma	Display Panel			
PFC	Power Factor Corrector (or Pre-conditioner)		SIF	Sound	Intermediate Frequency
PIP	Pic	ture In Picture	SMPS	Switch	ed Mode Power Supply
PLL	Phase Locked Loop. Used for e.g. FST tuning systems. The customer can give directly the desired frequency		SoC	System on Chip	
			SOG	Syn	c On Green
			SOPS	Self	Oscillating Power Supply
POD	Point Of Deployment: a removable CAM module, implementing the CA system for a host (e.g. a TV-set)		SPI	Serial Peripheral Interface bus; a 4-wire synchronous serial data link standard	
			S/PDIF	Son	y Philips Digital InterFace
POR	Power On Reset, signal to reset the uP		SRAM	Static	RAM
PSDL	Power Supply for Direct view LED backlight with 2D-dimming		SRP	Ser	vice Reference Protocol
			SSB	Small	Signal Board
PSL	Power Supply with integrated LED drivers		SSC	Spread Spectrum Clocking, used to reduce the effects of EMI	
PSLS	Power Supply with integrated LED drivers with added Scanning functionality				
PTC	Positive Temperature Coefficient, non-linear resistor		STB	Set	Top Box
			STBY	ST	and-BY
			SVGA	800	× 600 (4:3)
PWB	Pr	inted Wiring Board (same as "PCB")	SVHS	Super	Video Home System
PWM	Pulse	Width Modulation	SW	Software	
QRC	Qua	si Resonant Converter	SWAN	Spatial temporal Weighted Averaging Noise reduction	
QTNR	Quality	Temporal Noise Reduction			
QVCP	Quality	Video Composition Processor	SXGA	1280	× 1024

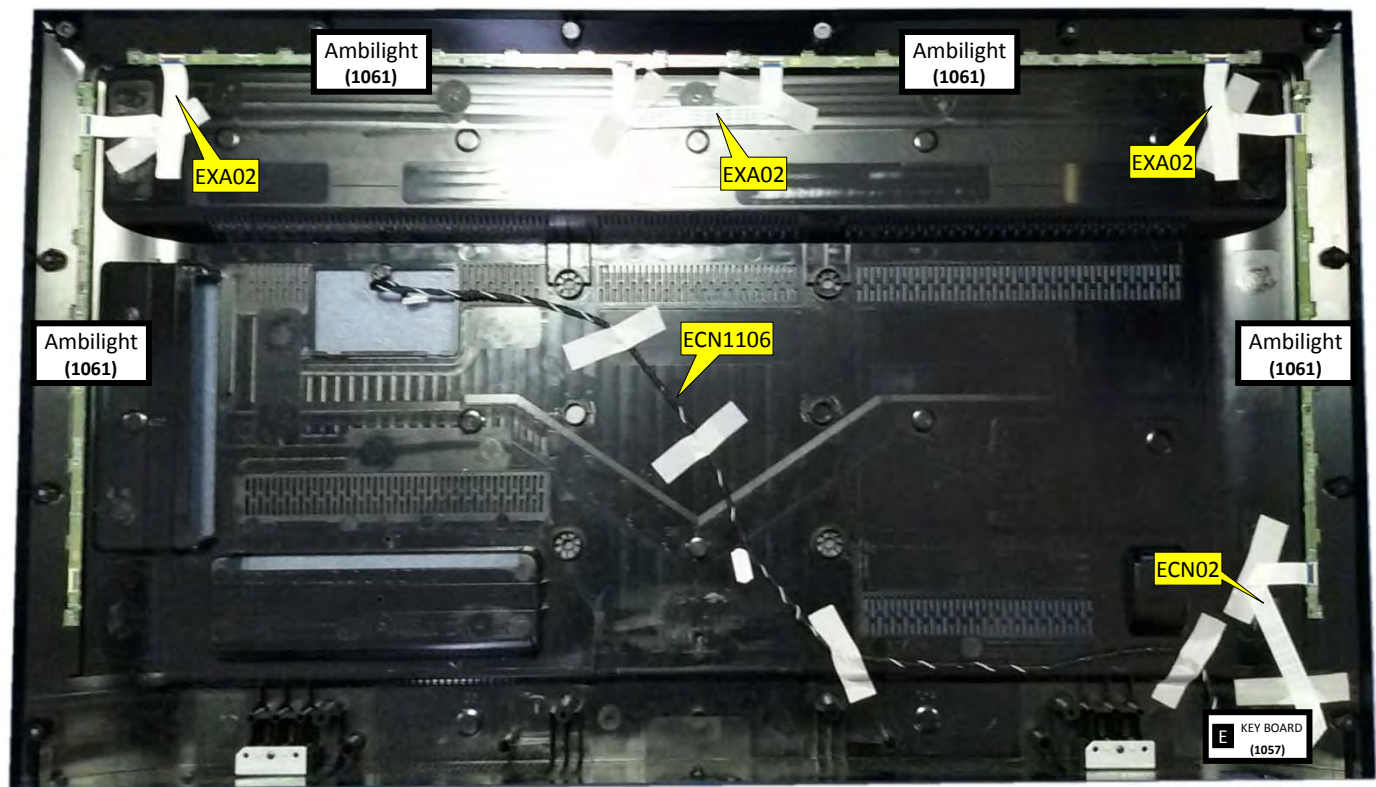
TFT	Thin	Film Transistor			toward external amplifier
THD	T	total Harmonic Distortion	VSB	V	vestigial Side Band; modulation method
TMDS		Transmission Minimized Differential Signalling	WYSIWYR		What You See Is What You Record: record selection that follows main picture and sound
TS		Transport Stream			
TXT	T	teleteXT	WXGA	1280	× 768 (15:9)
TXT-DW	Dual	Window with TeleteXT	XTAL	Quartz	crystal
UI		User Interface	XGA	1024	× 768 (4:3)
uP	Micro	processor	Y	Luminance	signal
UXGA	1600	× 1200 (4:3)	Y/C		Luminance (Y) and Chrominance (C) signal
V	V	-sync to the module	YPbPr		Component video. Luminance and scaled color difference signals (B-Y and R-Y)
VESA	Video	Electronics Standards Association	YUV	Component	video
VGA	640	× 480 (4:3)			
VL		Variable Level out: processed audio output			

3. Mechanical Instructions

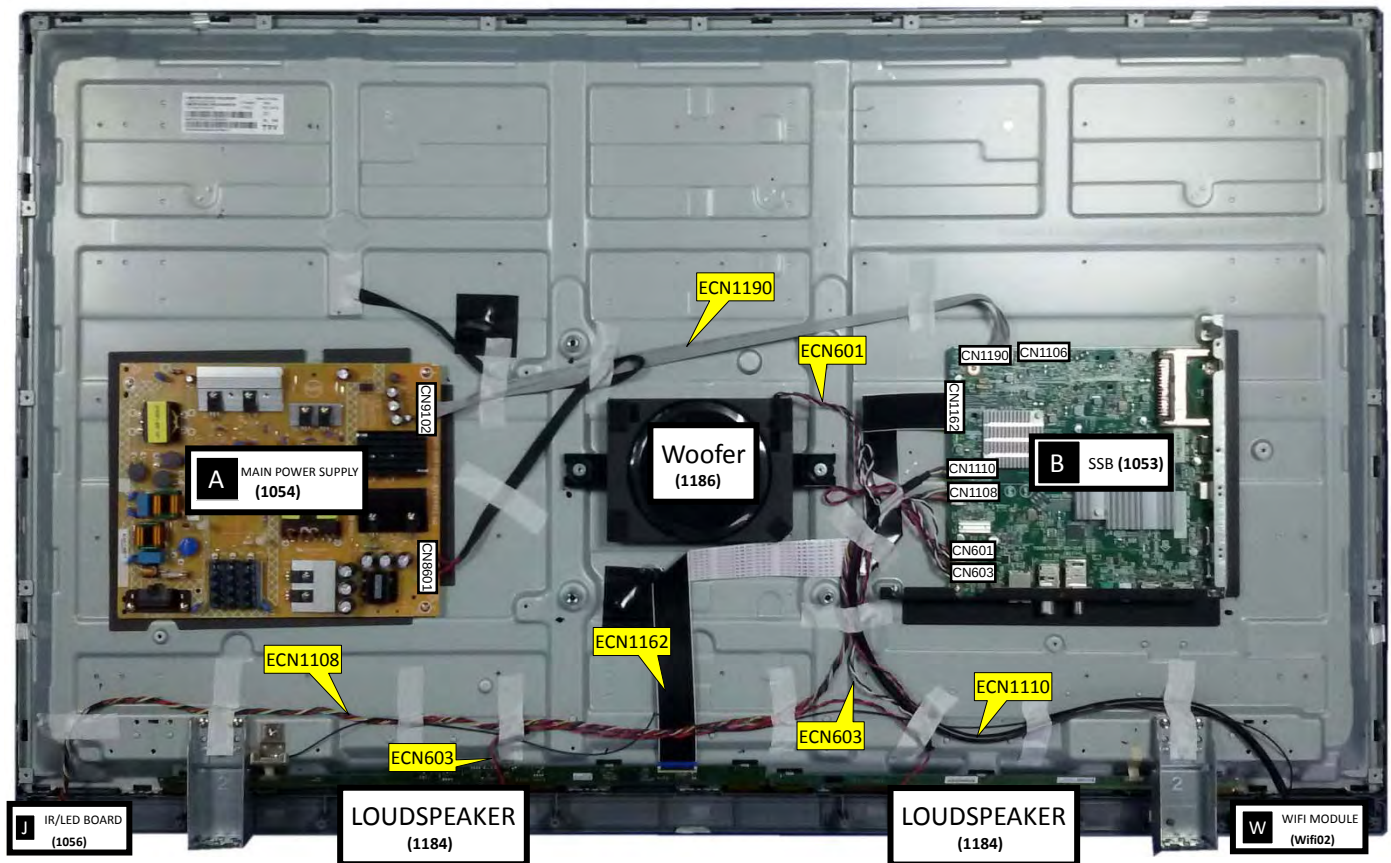
3.1 Cable Dressing



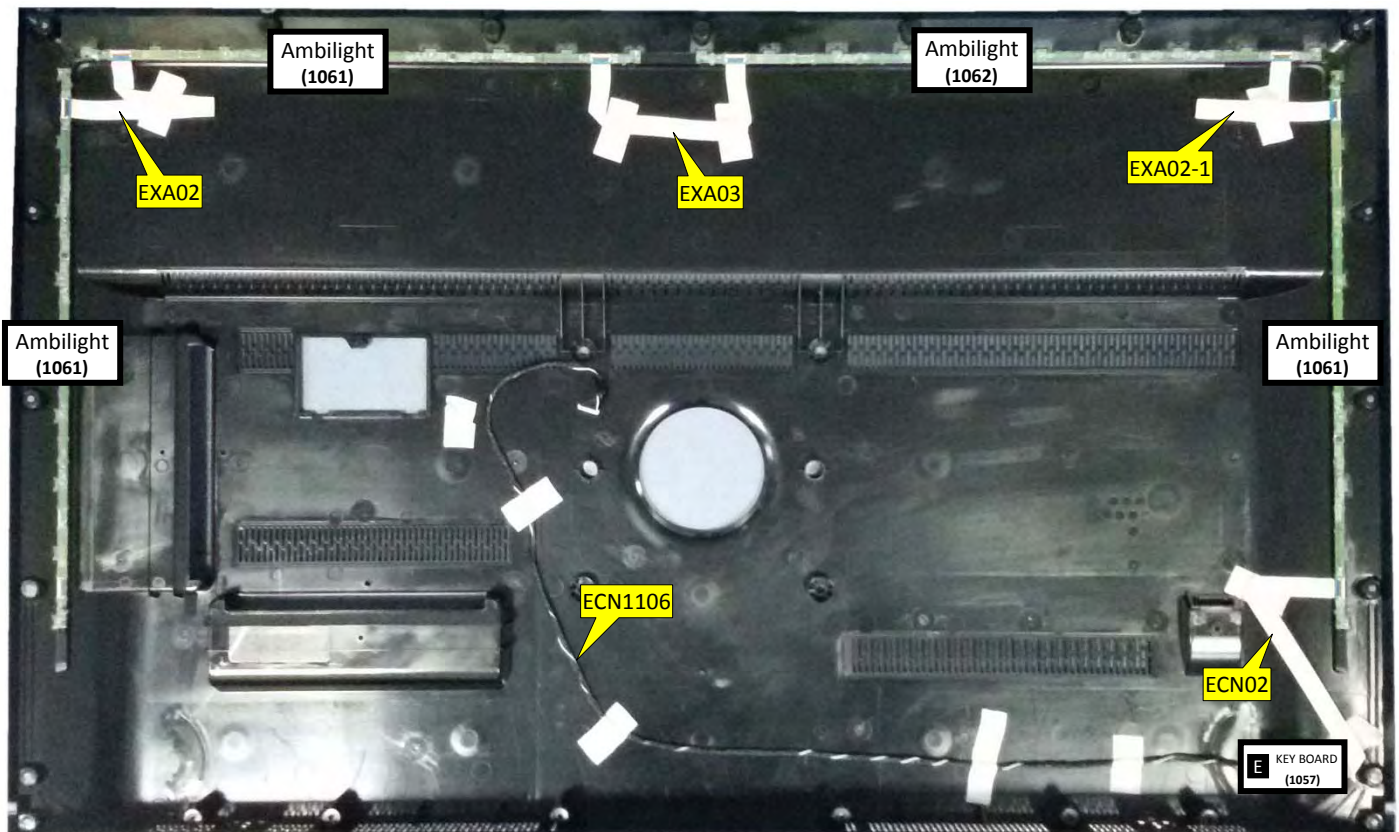
Cable dressing (43" 7303/7363/7373/7383/7393 series)



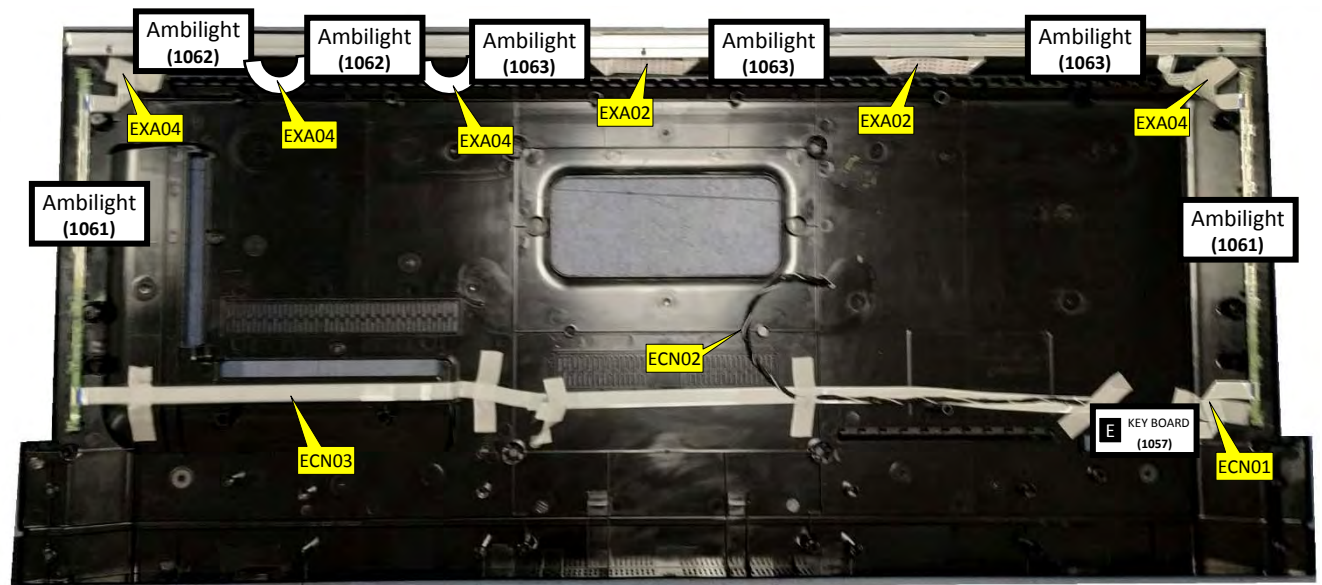
Back cover overview (43" 7303/7363/7373/7383/7393 series)



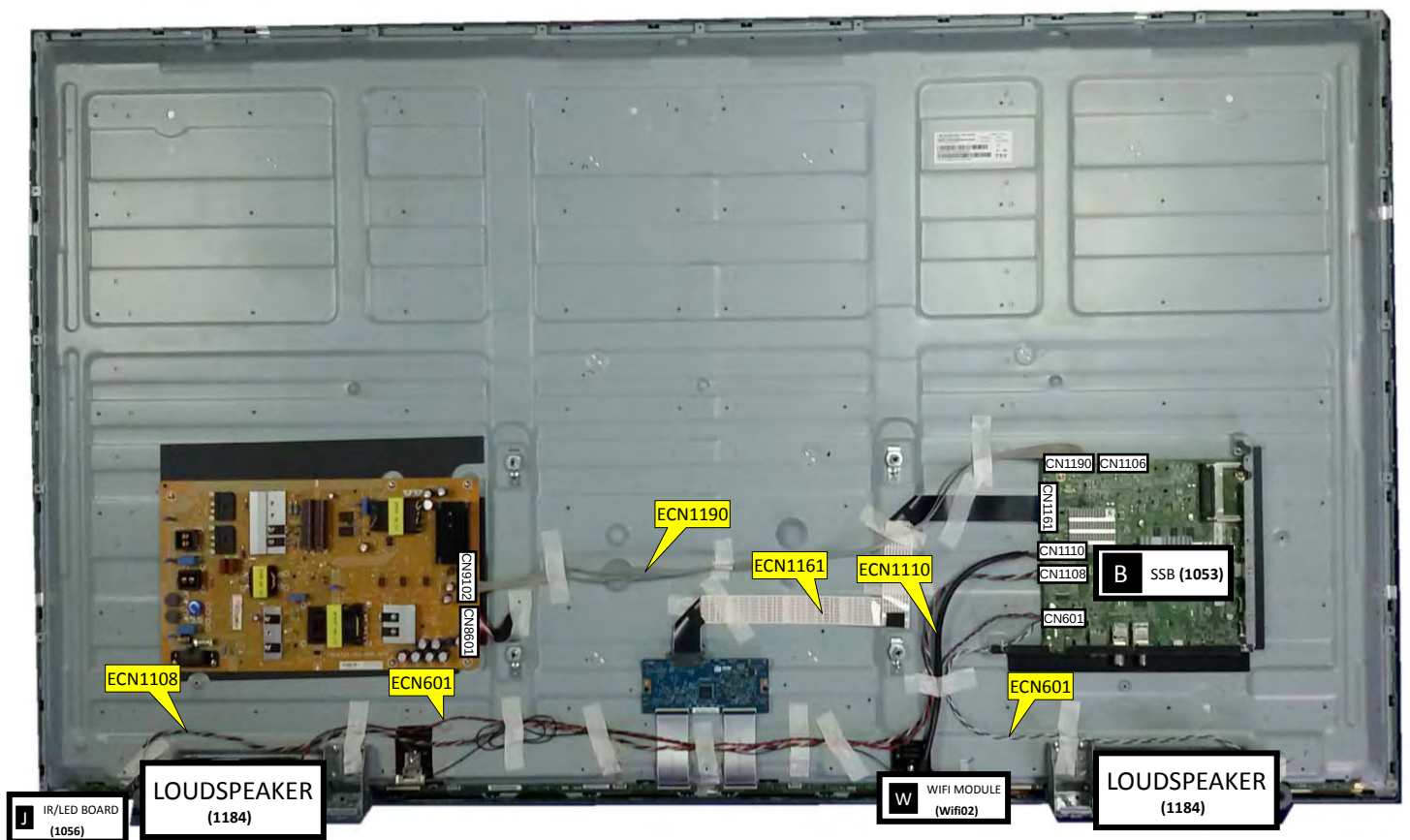
Cable dressing (49/55" 7503/7803 & 50/55" 7303/7363/7373/7383/7393 series)



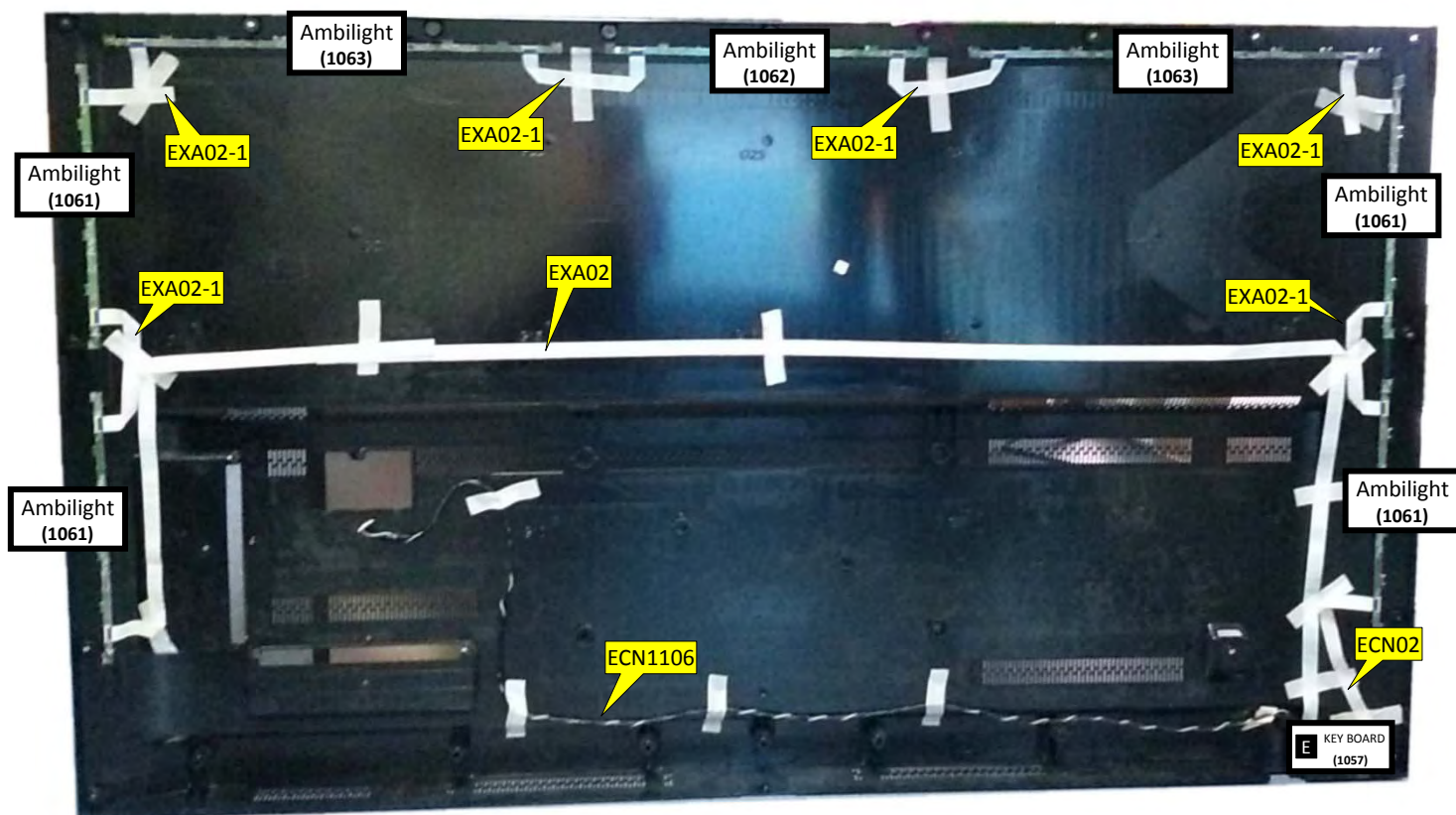
Back cover overview (49/55" 7503/7803 & 50/55" 7303/7363/7373/7383/7393 series)



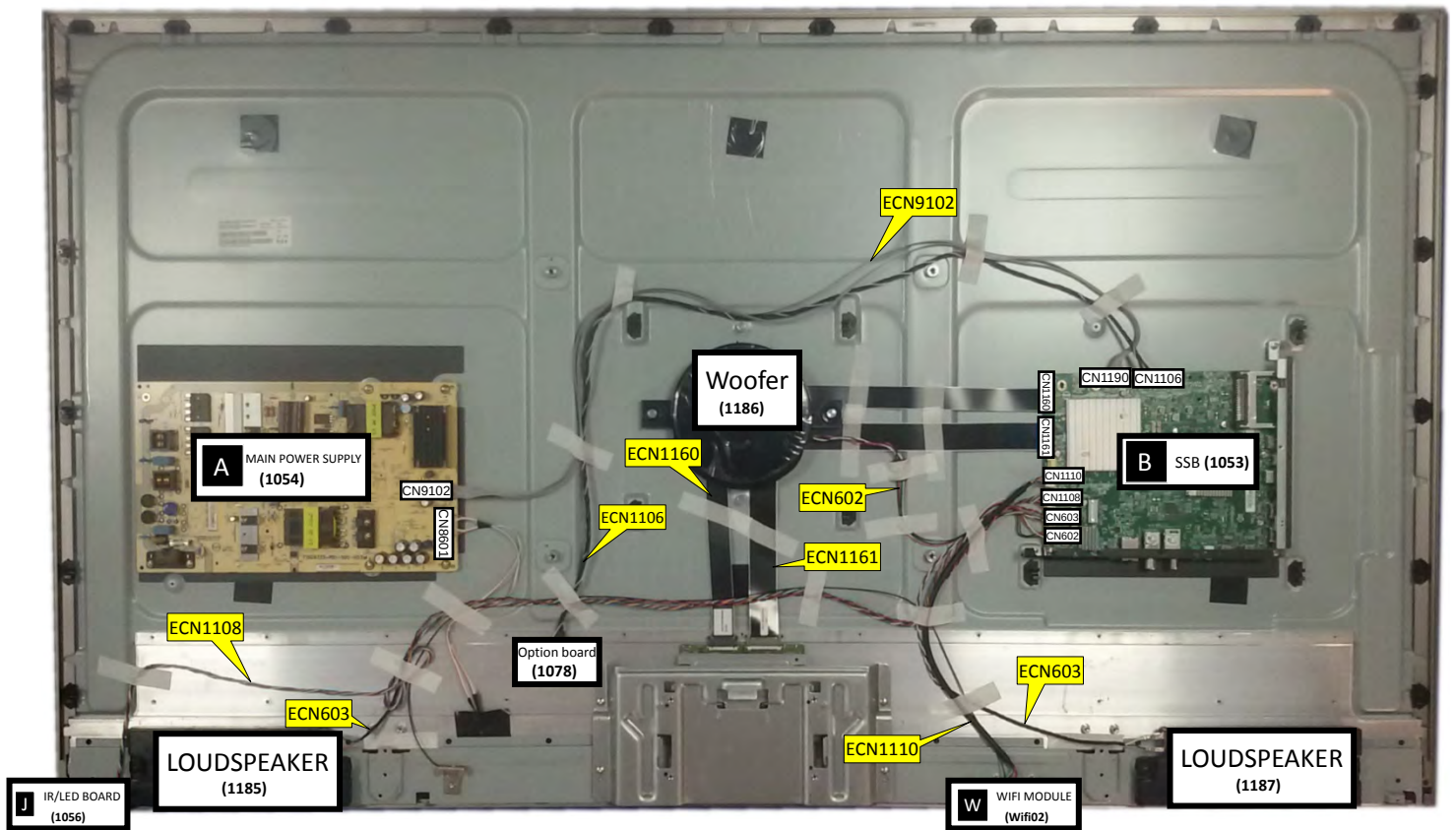
Back cover overview (65" 803/903 series)



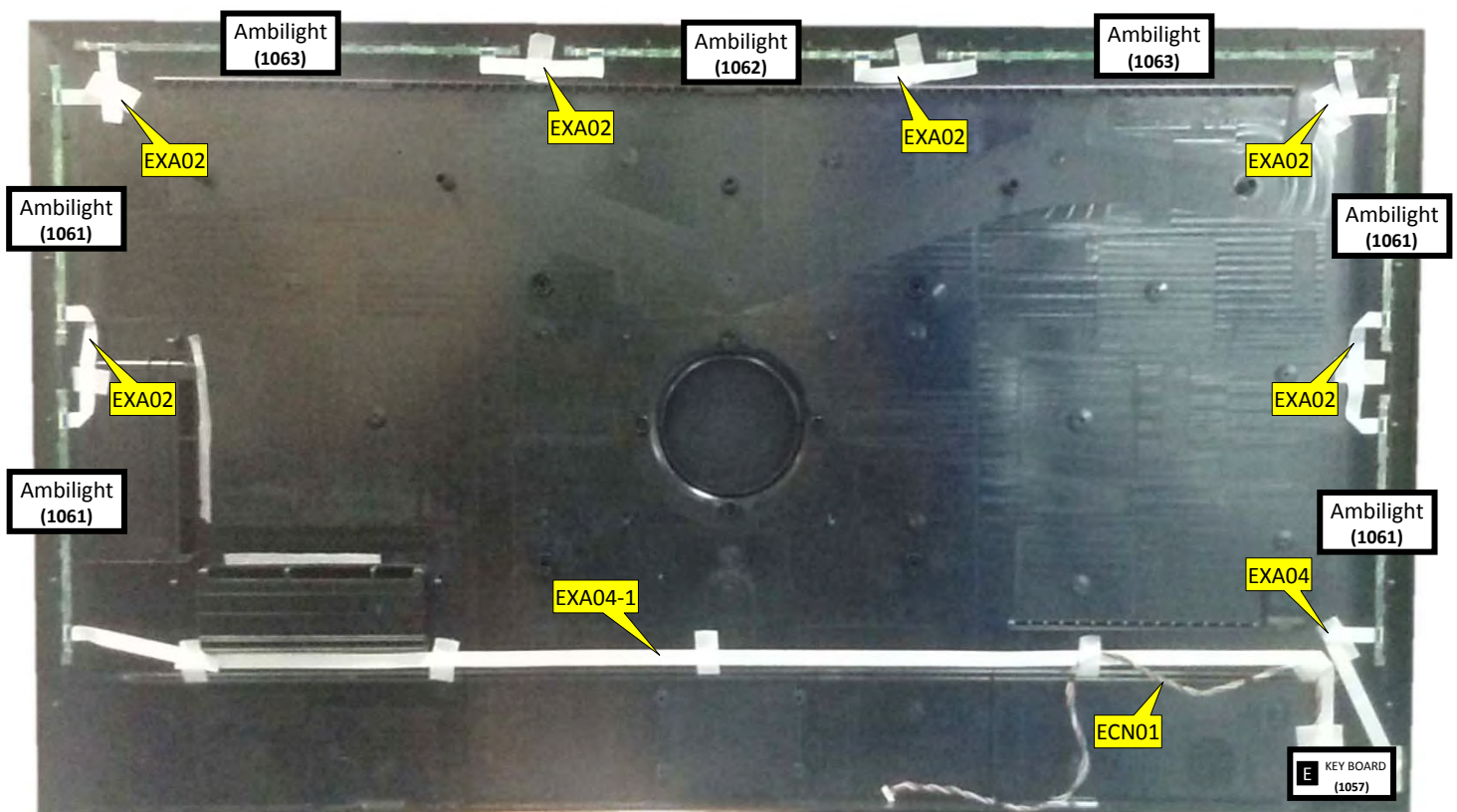
Cable dressing (65" 7303/7363/7803 series)



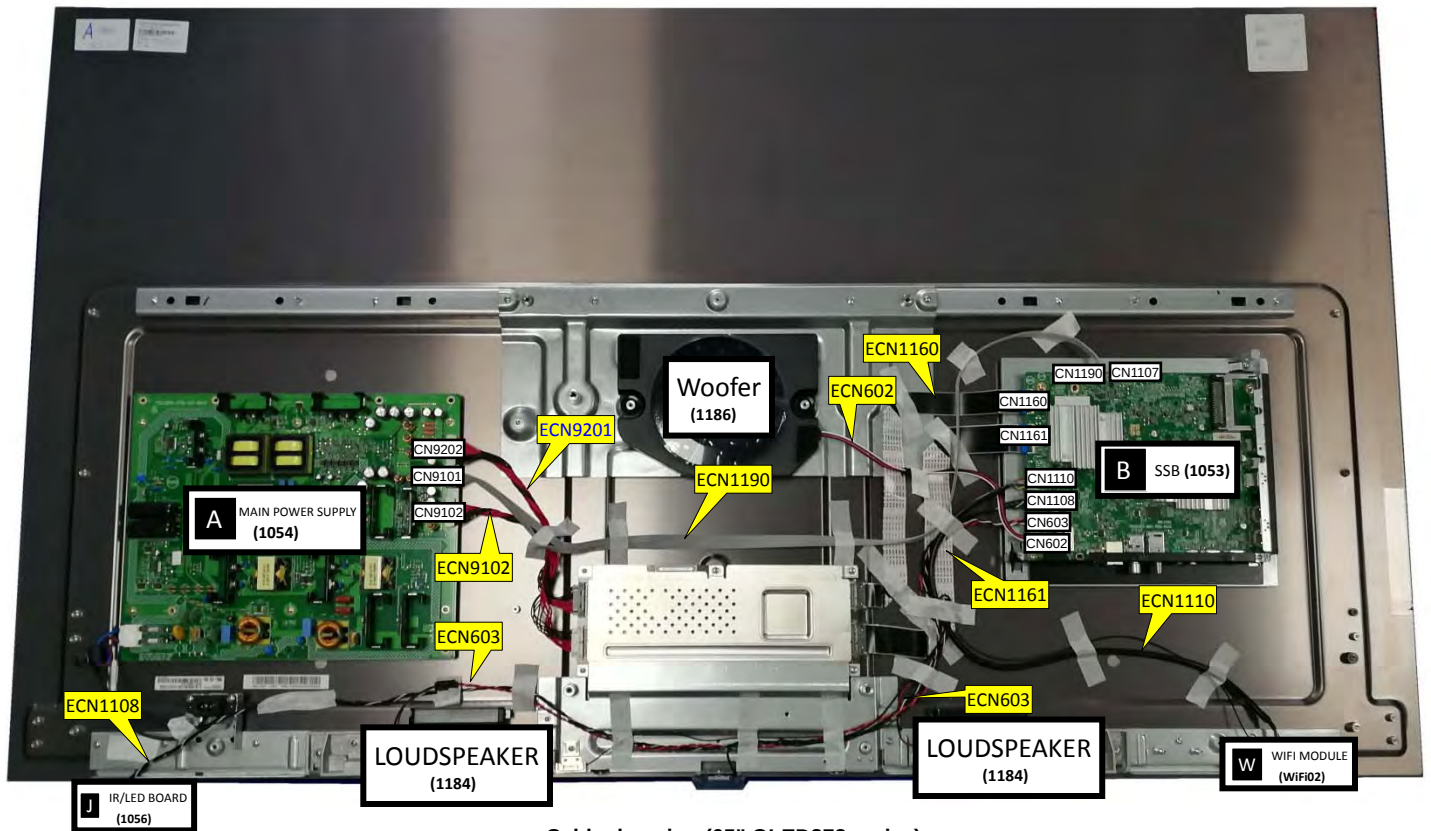
Back cover overview (65" 7303/7363/7803 series)



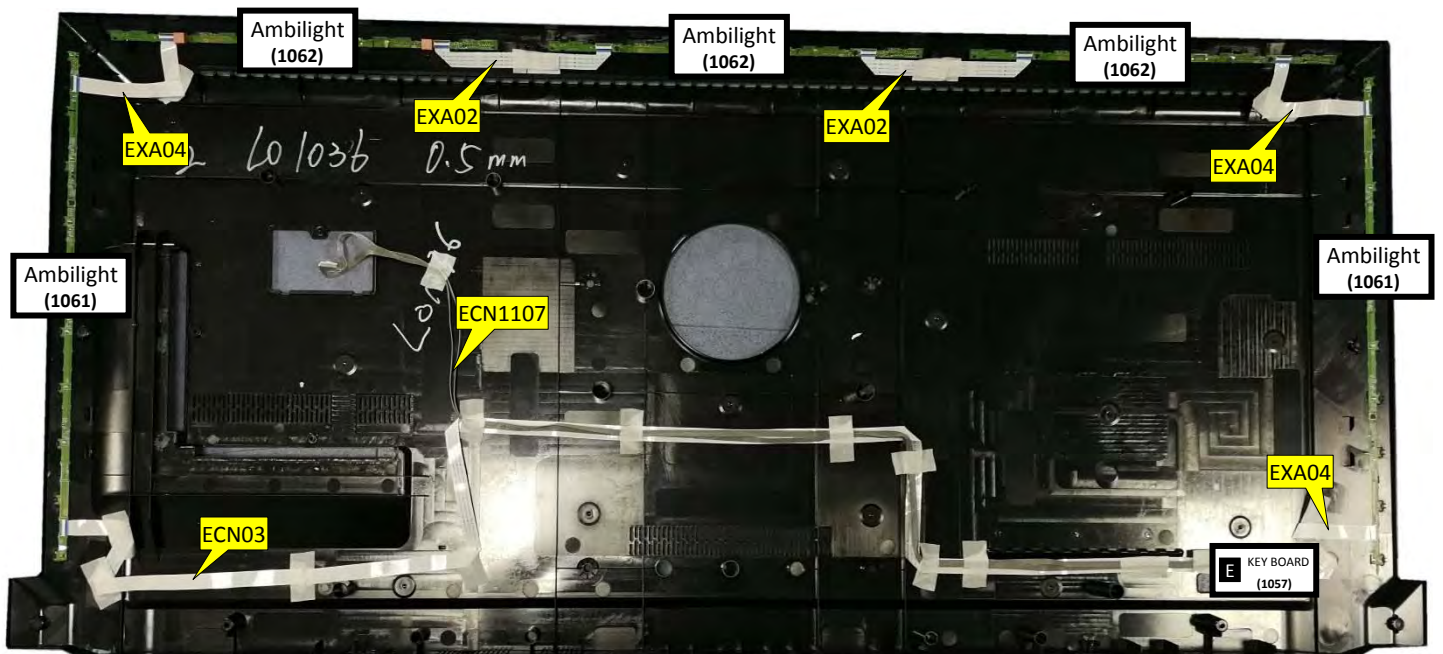
Cable dressing (65" 8303/8503 series)



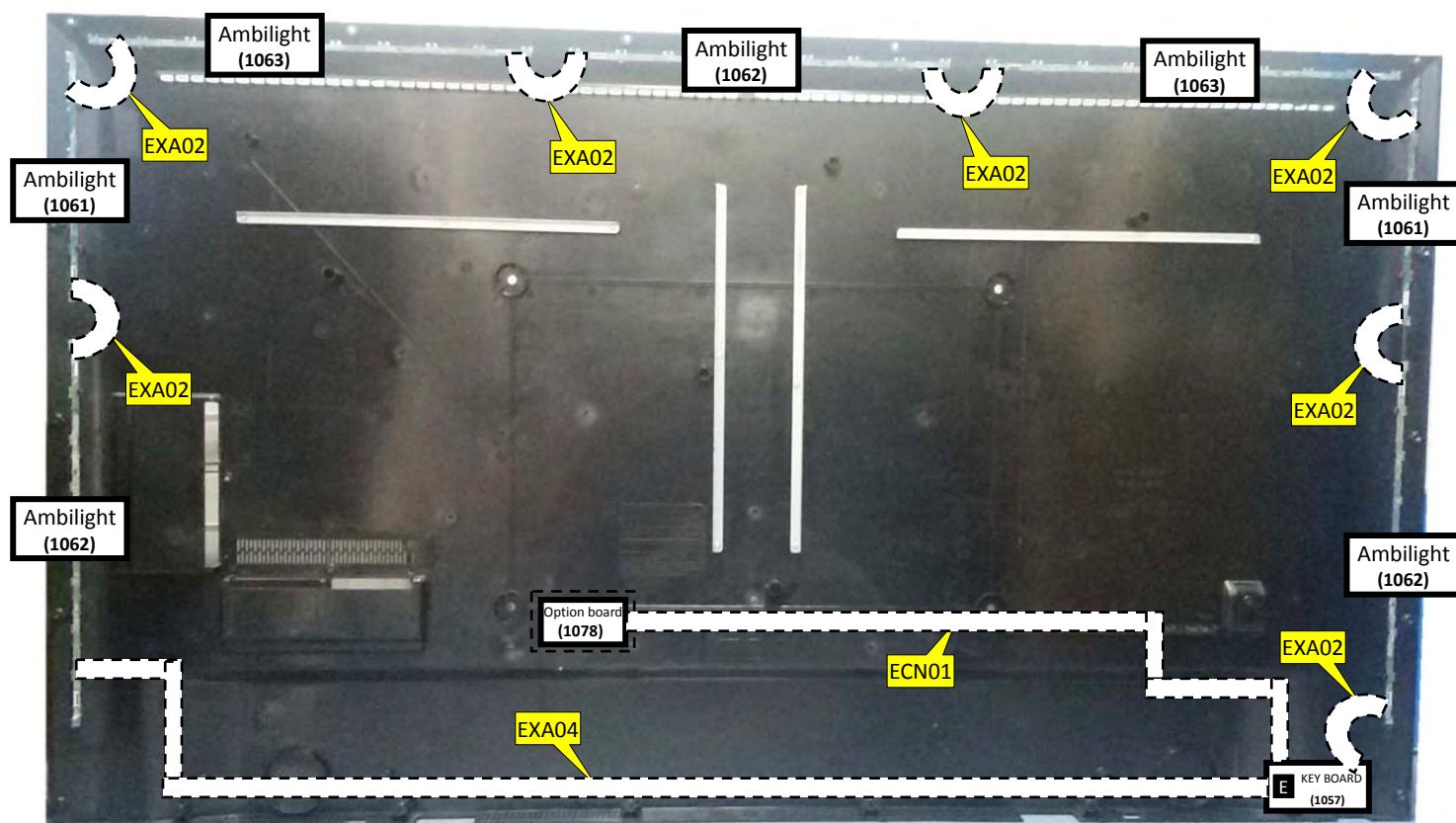
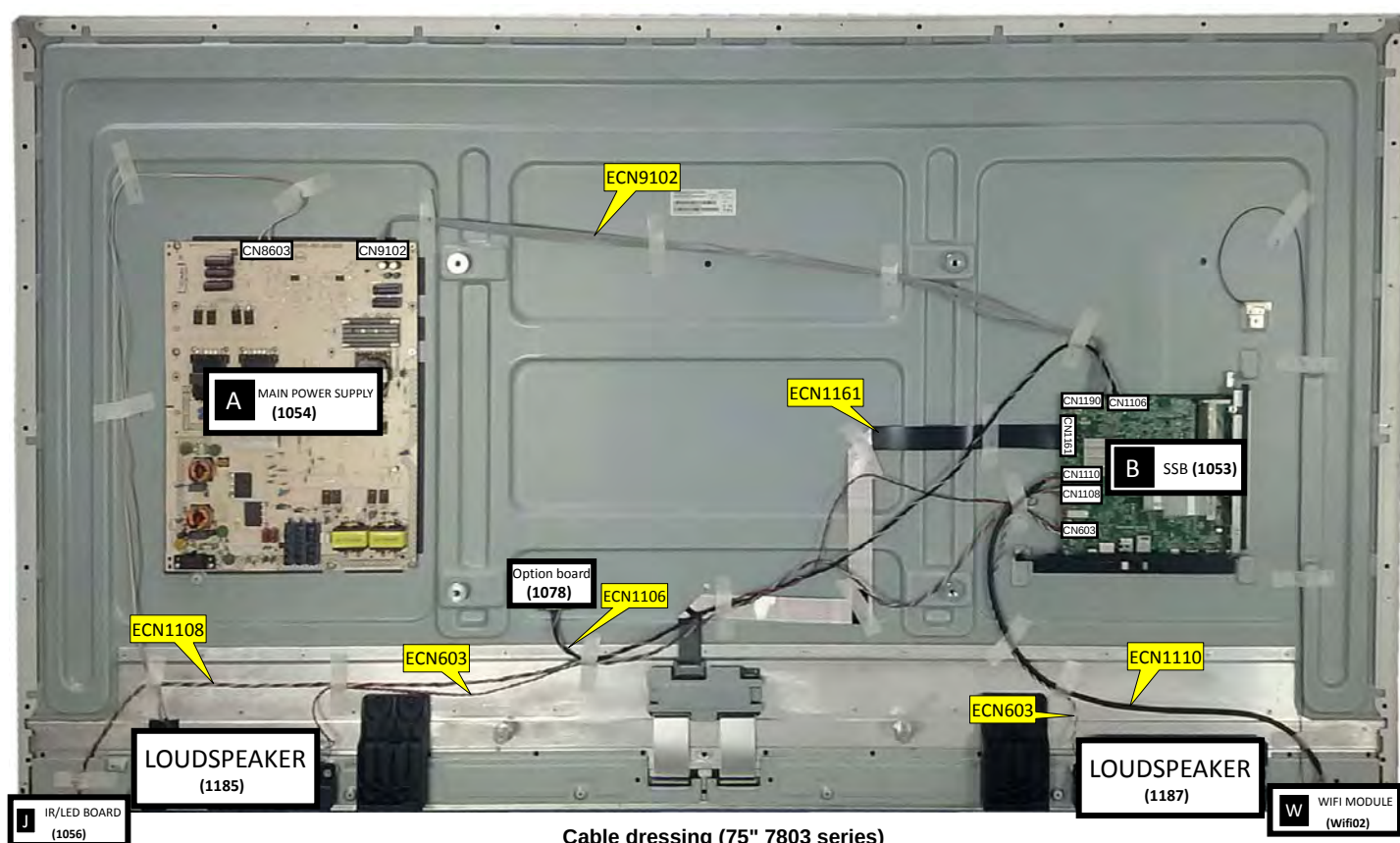
Back cover overview (65" 8303/8503 series)

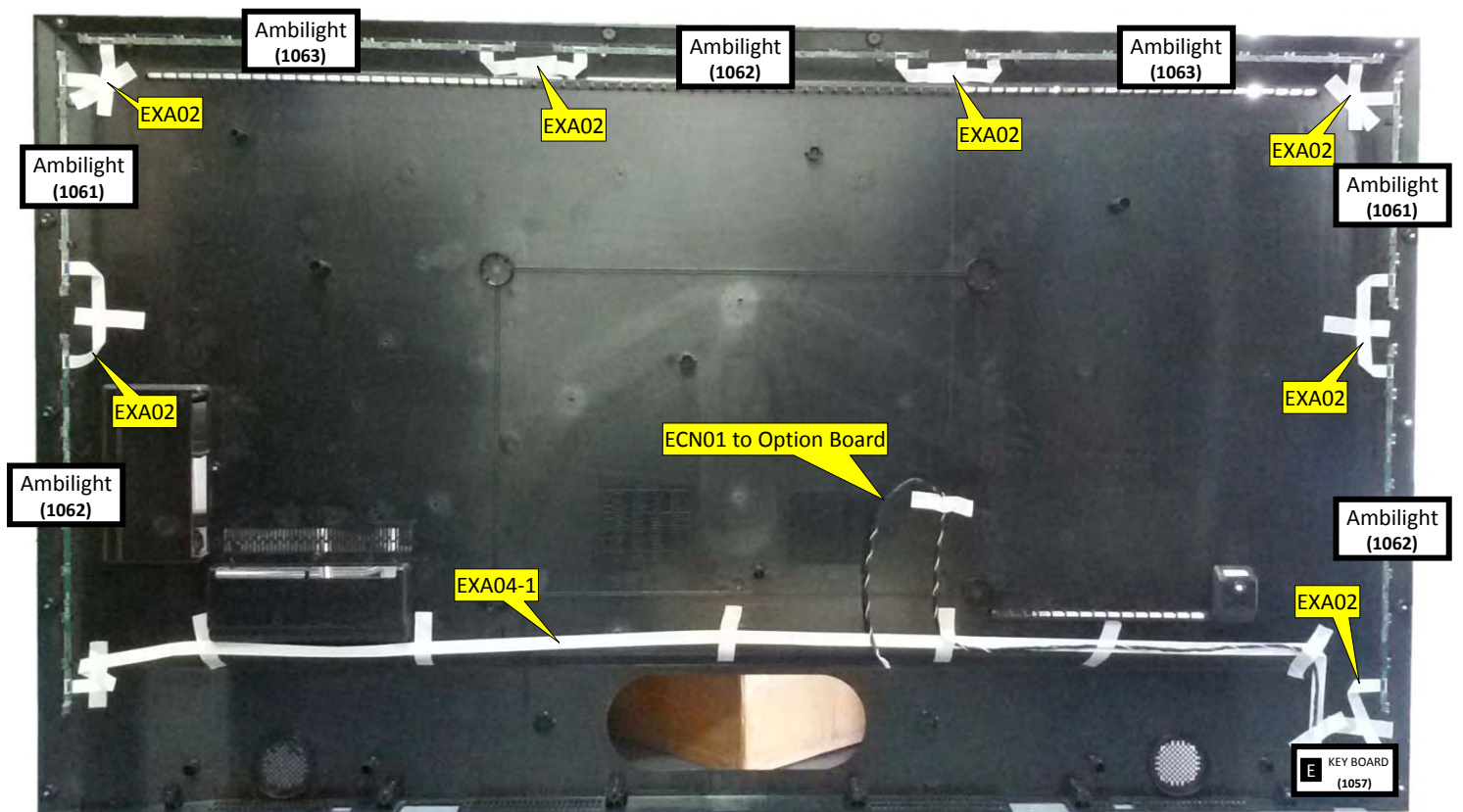
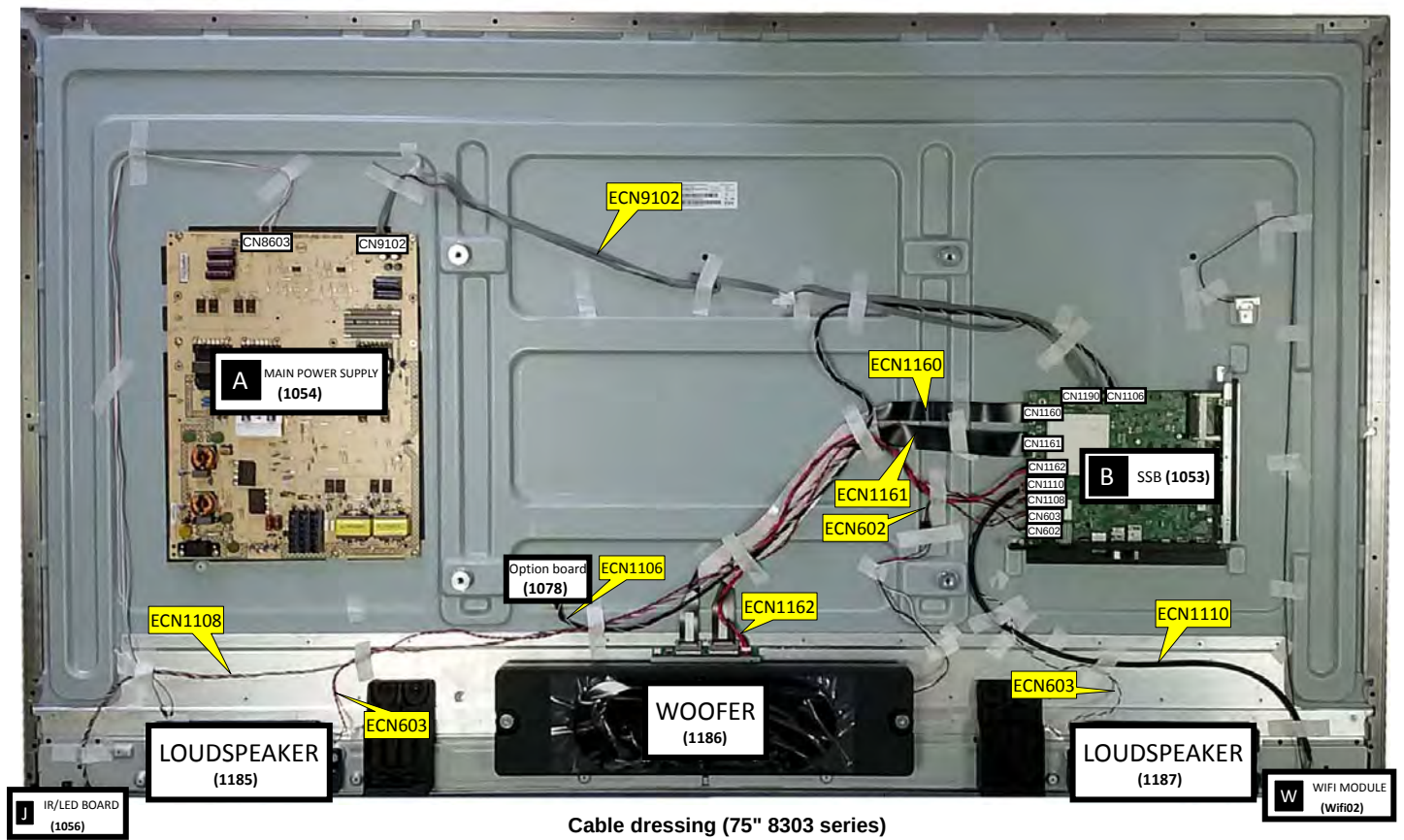


Cable dressing (65" OLED873 series)



Back cover overview (65" OLED873 series)





3.2 Assembly/Panel Removal

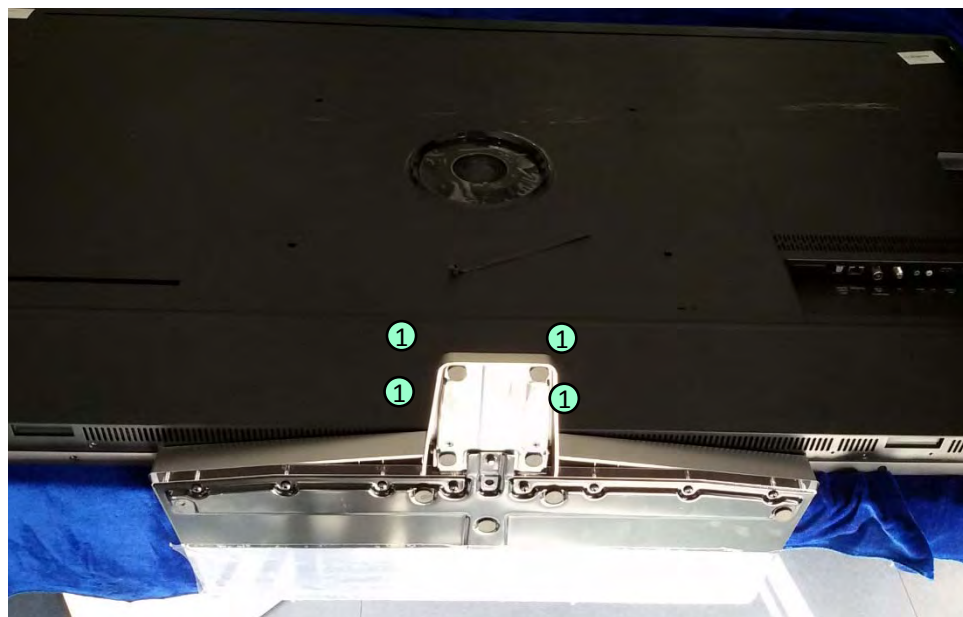
3.2.1 Stand/Base removal

Common:

1. Remove the fixation screws [1] that secure the stand.
2. Take the stand bracket out from the set.



(43" 7303 Series)



(65" 8303 Series)



(65" OLED879 Series)



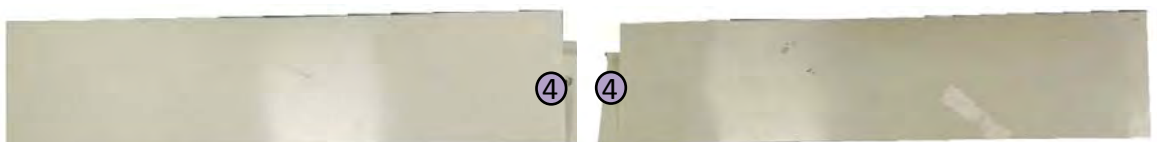
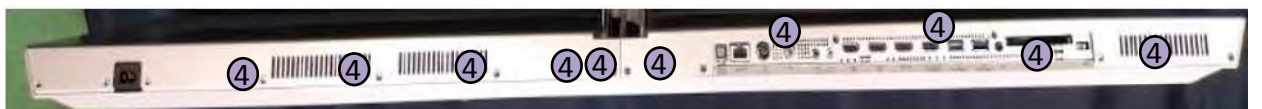
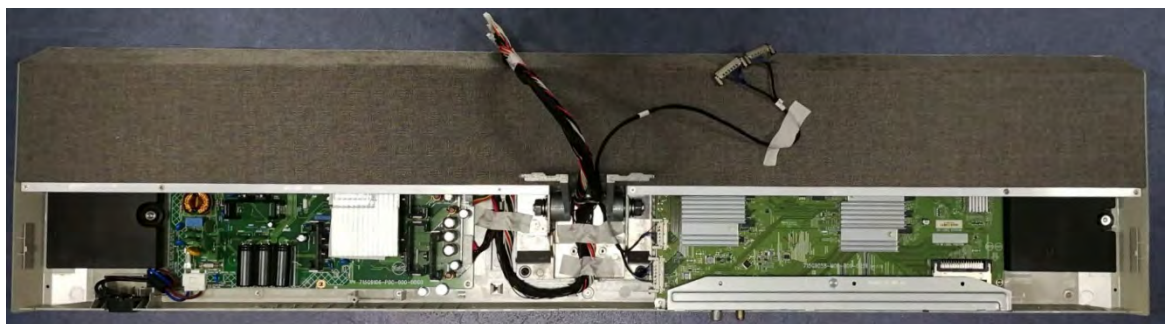
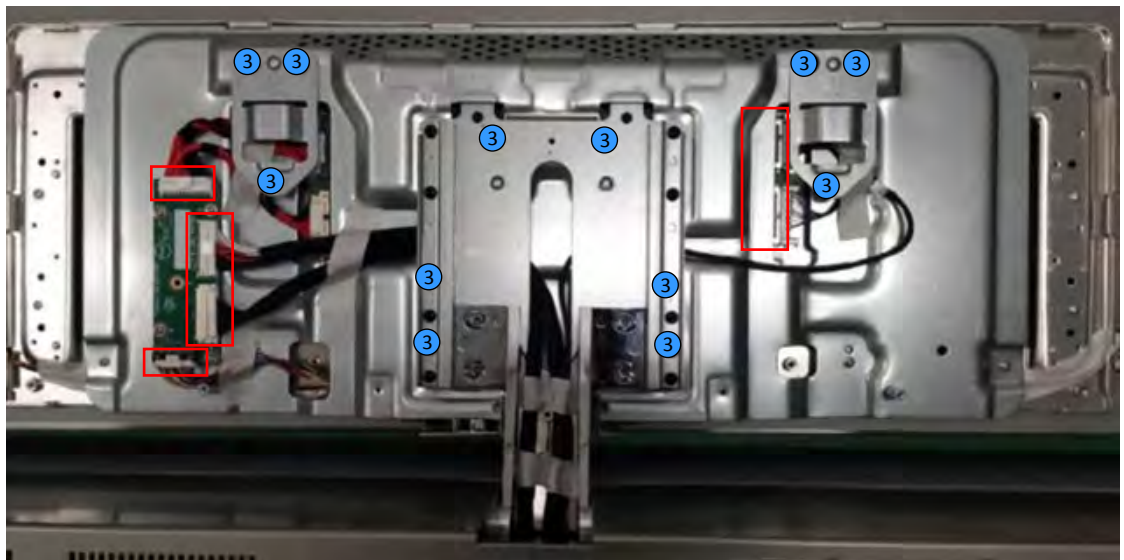
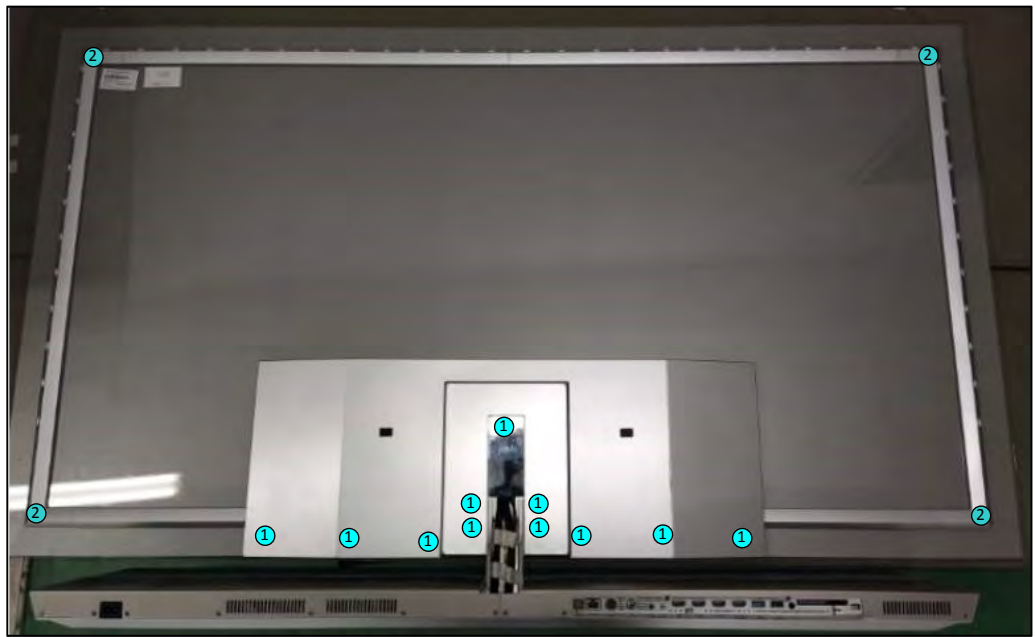
(75" 8303 Series)

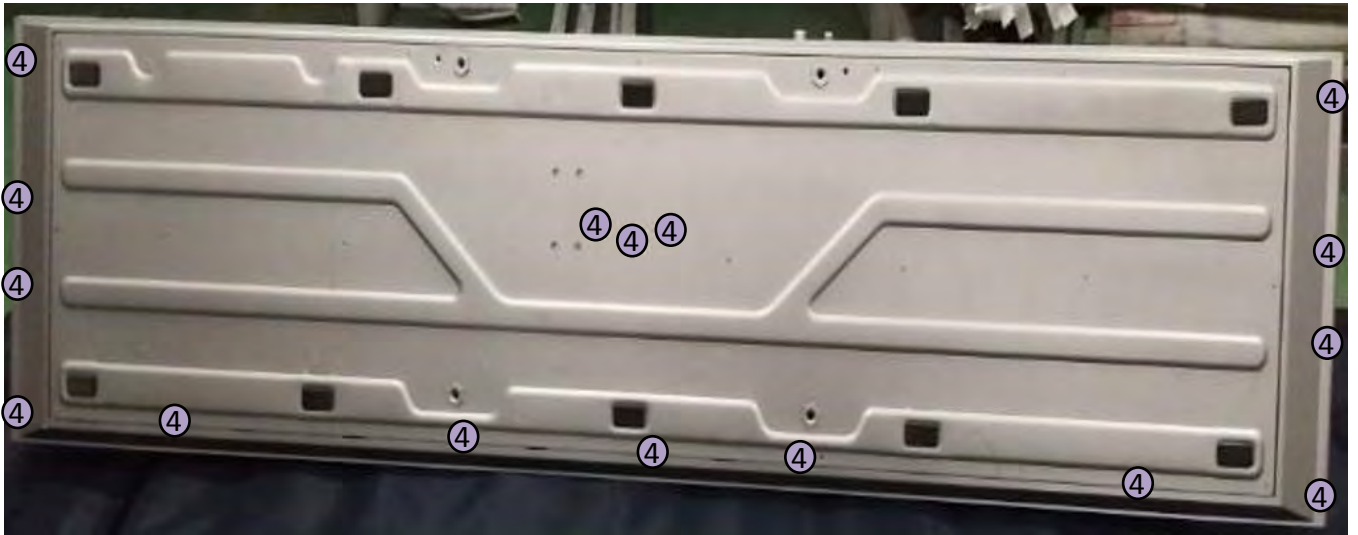
OLED 973 Series:



(55/65" OLED803/903 Series)

1. Remove all fixation screws [1] then take out rear cover.
2. Remove all fixation screws [2] & plastics.
3. Hold the base then remove all fixation screws [3], take out all iron bracket.
4. Unplug all connectors, then take the base ass'y out from the set.
5. Remove all fixation screws [4] then take the base out.





3.2.2 IR board Control Unit

Common:

1. Unplug the connector from the SSB.
Caution: be careful, as these are very fragile connectors!
2. Remove all the fixation screws [1] and connector from the IR board control unit.
3. Remove the IR lens, IR board from the DECO_REAR_COVER.

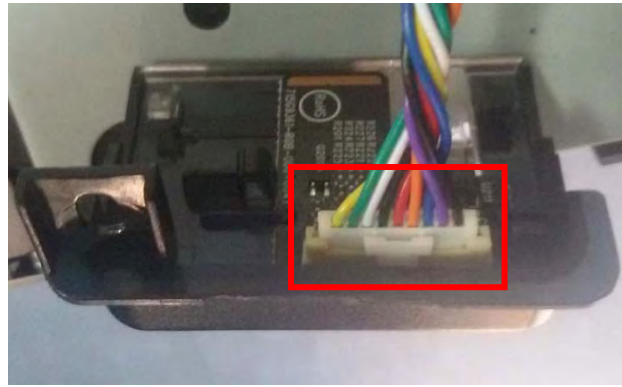
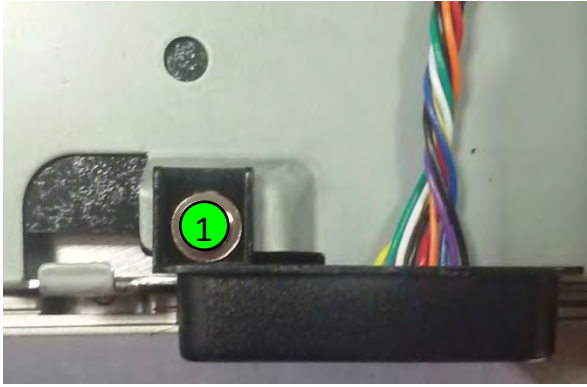
When defective, replace the whole unit.



(43" 7303 Series)



(49" 8503 & 55/65" OLED803/903Series)

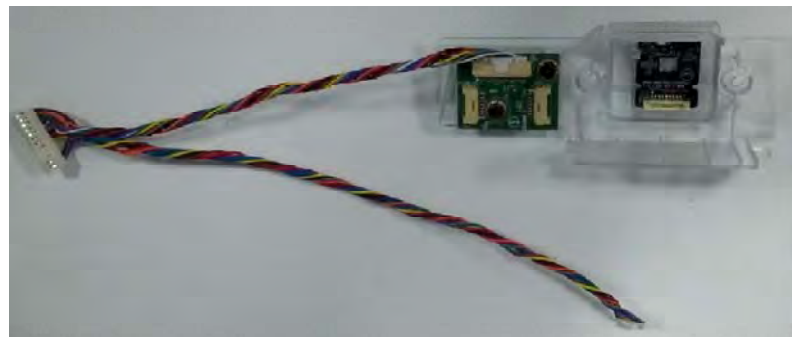
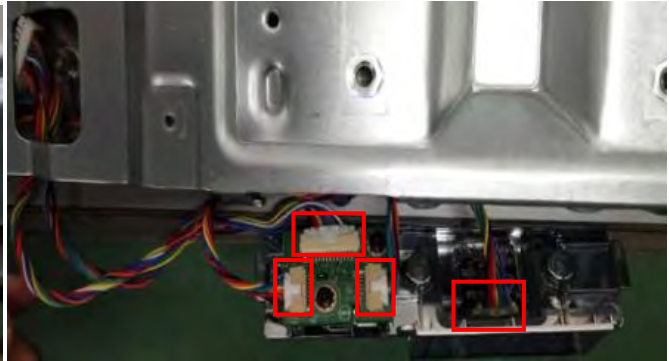
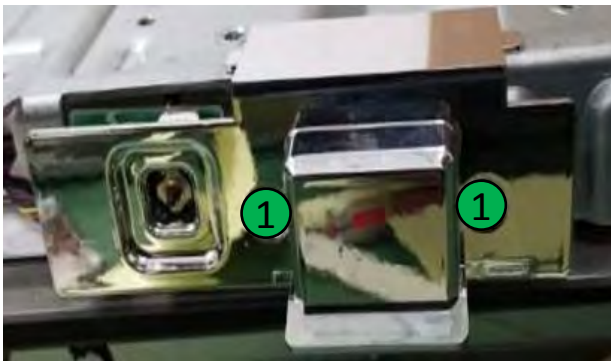


(65" 8303 Series)

OLED 973 Series:

1. Remove all the fixation screws [1] and connector from the DECO ASS'Y.
2. Remove lens, take out IR board & Key board.

When defective, replace the whole unit.

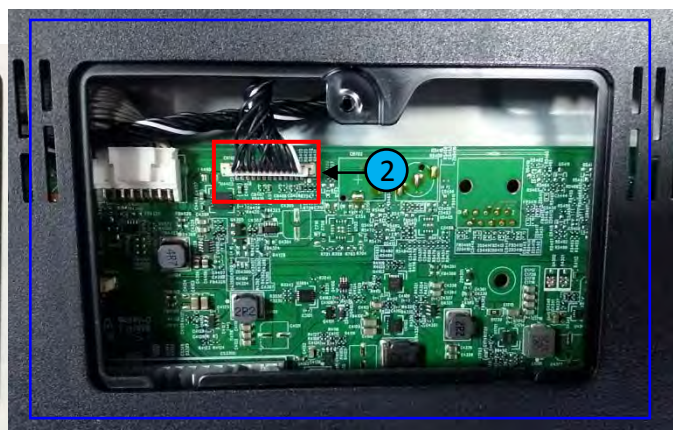
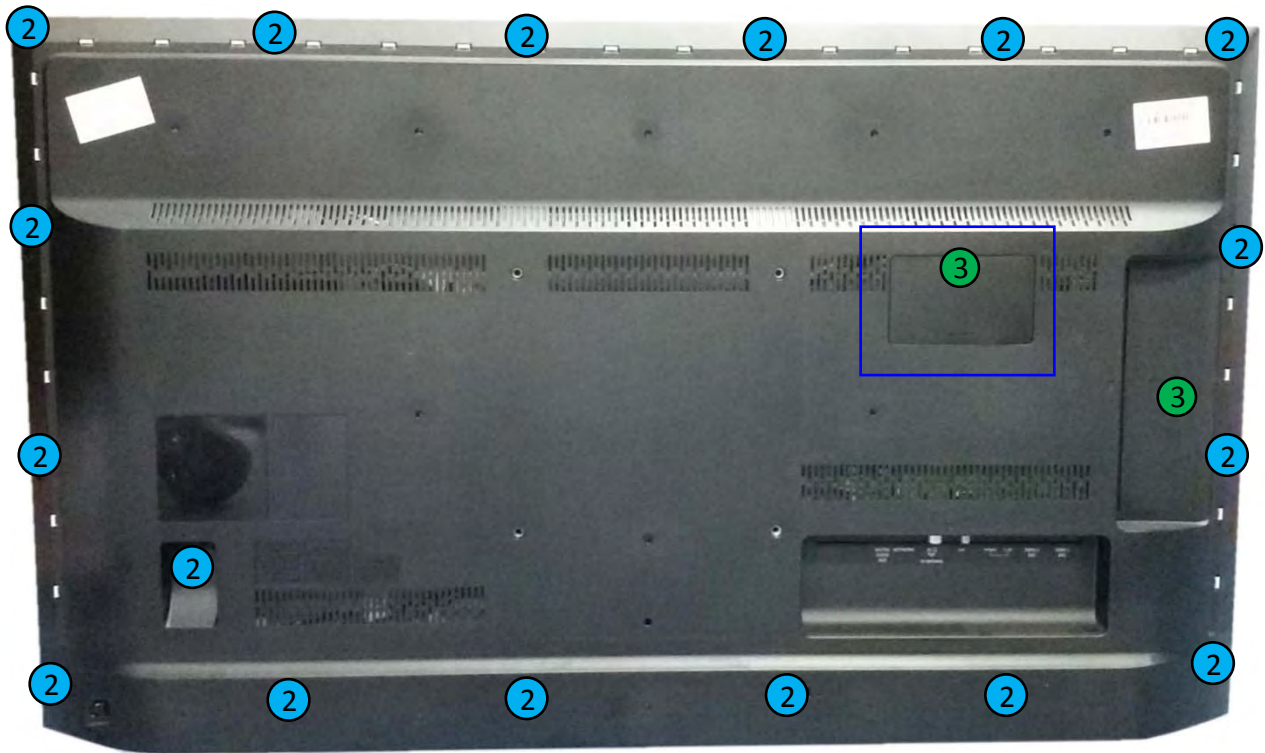


3.2.3 Rear Cover

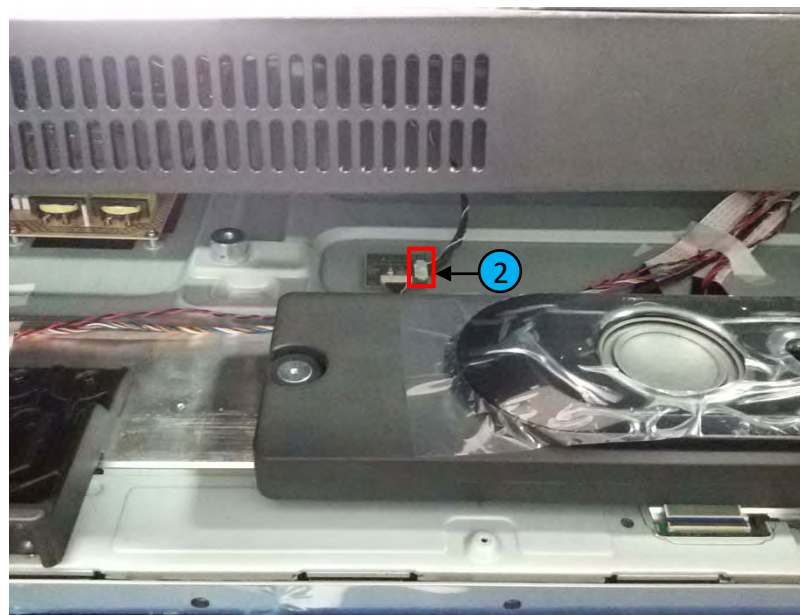
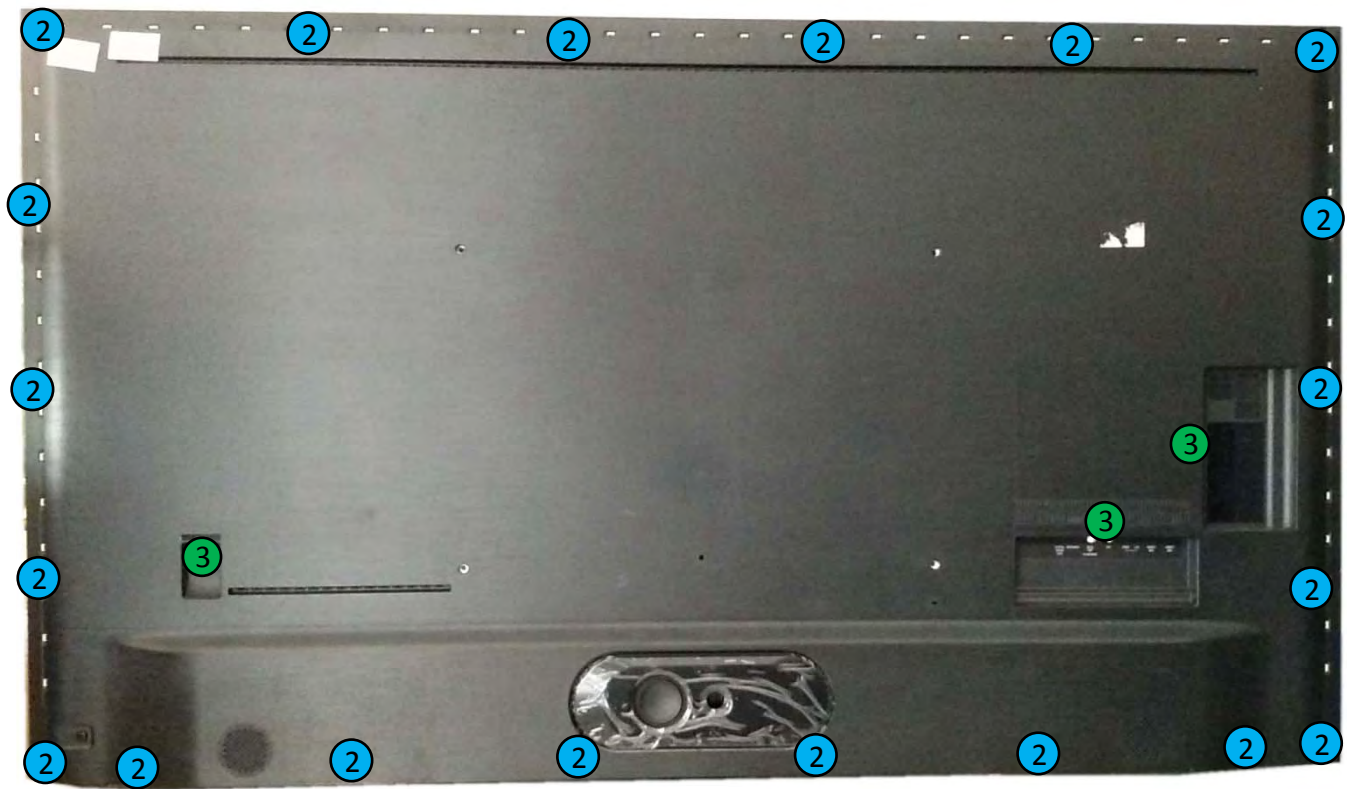
Warning: Disconnect the mains power cord before removing the rear cover.

Common:

1. Remove all fixation screws [2] and [3] that secure the Back cover assy.
2. Unplug the connector [2] that marked by red box below.
3. Gently lift the rear cover from the TV. Make sure that wires and cables are not damaged while lifting the rear cover from the set.



(43" 7303 series)



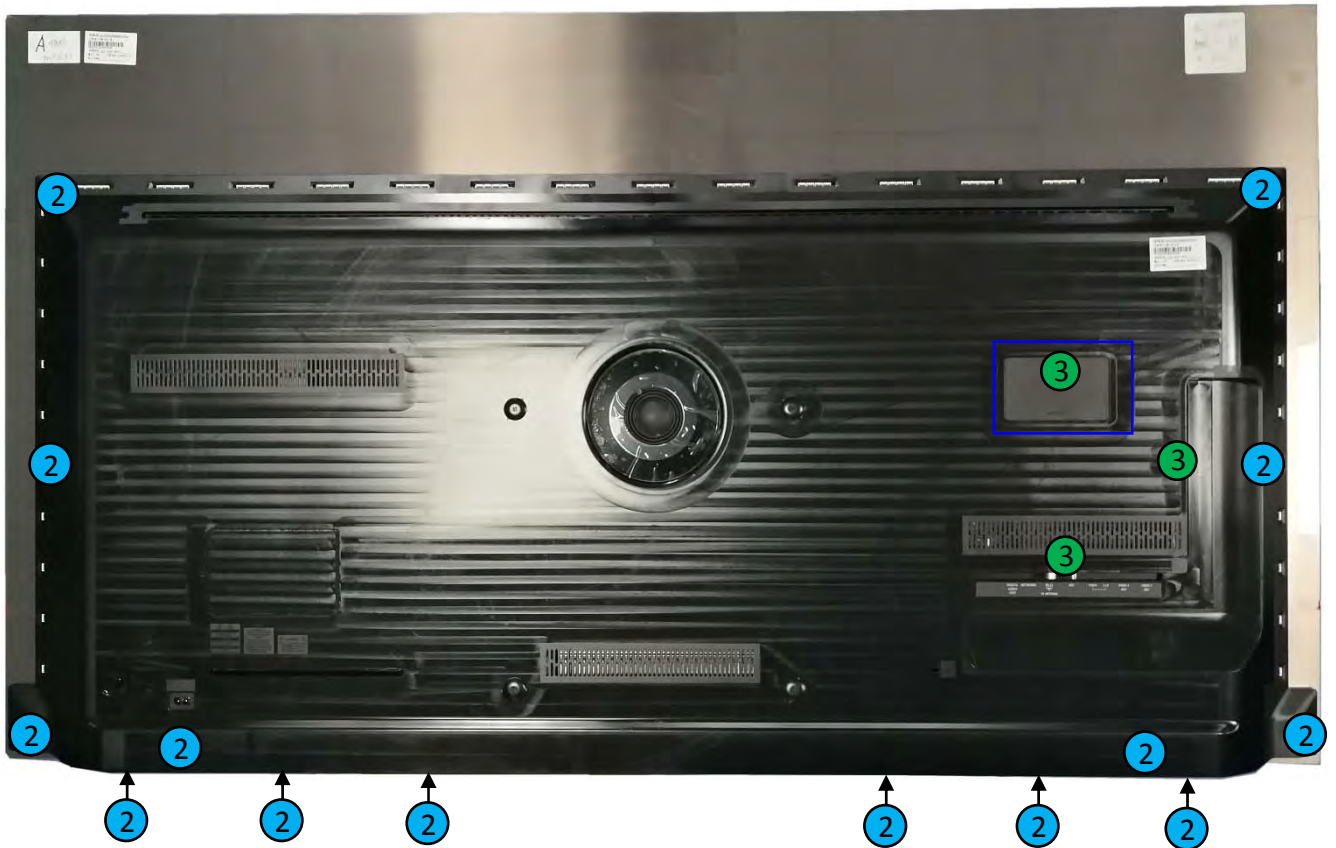
(75" 8303 series)

OLED 973 series:

Clarified in [chapter 3.2.1](#) base removal.

OLED 873 series:

1. Remove all fixation screws [2] and [3] that secure the Back cover assy.
2. Unplug the connector [2] that marked by red box below from SSB.
3. Gently lift the rear cover from the TV. Make sure that wires and cables are not damaged while lifting the rear cover from the set.

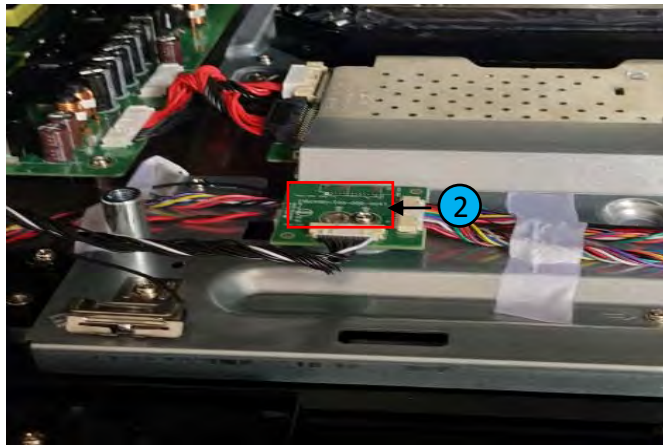


(OLED 873 series)

Remark: Picture above is taken from model OLED873, but instructions will be similar for OLED803/903 series models.



(OLED 873 series)



(OLED 803/903 series)

3.2.4 Keyboard Control Unit

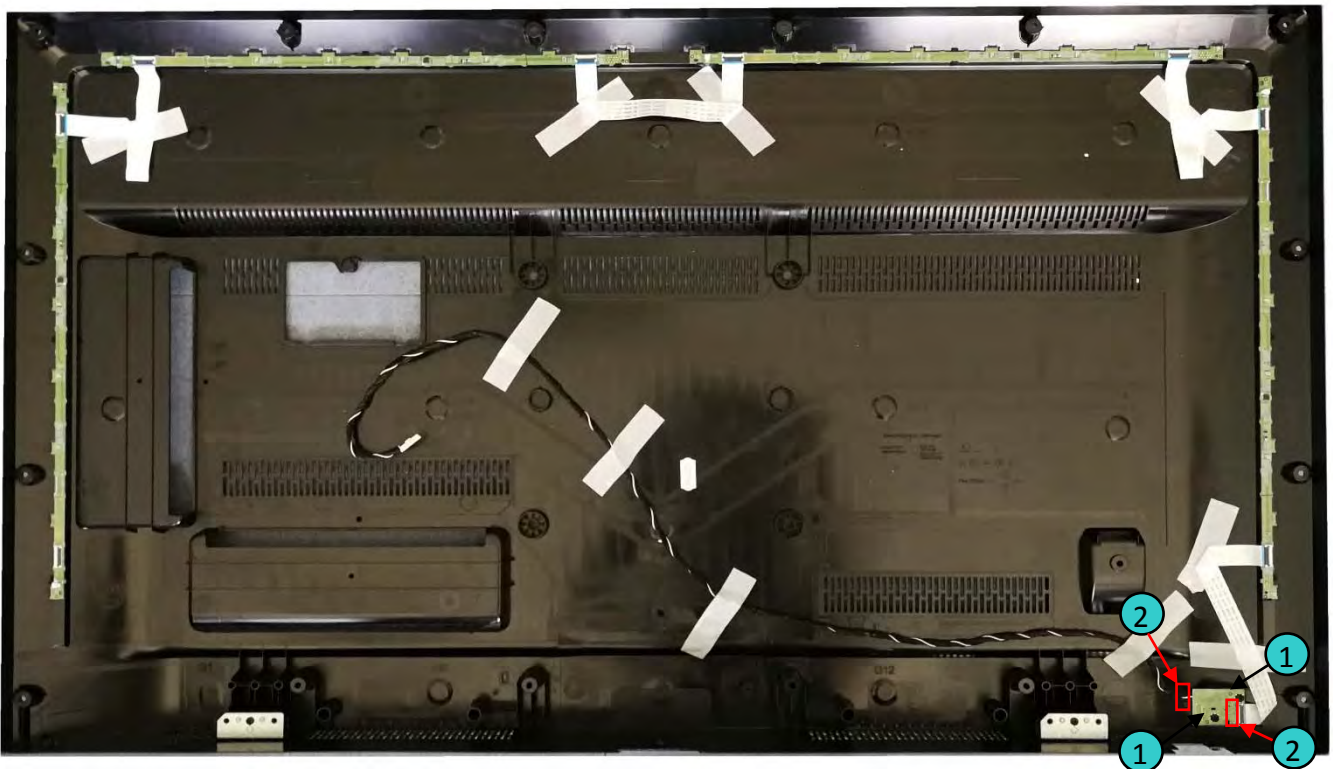
Common:

1. Release the connector from the SSB Board.

Caution: be careful, the Keyboard is catch on the Back cover, please be careful to avoid damage the fragile connectors!

2. Remove all the fixation screws [1] and connectors [2] from the keyboard control panel then take it out from the Back cover.

When defective, replace the whole unit.



Remark: Picture above is taken from model 43PUS7303/12, but instructions will be similar for other series models.

OLED 973 series:

Clarified in [chapter 3.2.2](#).

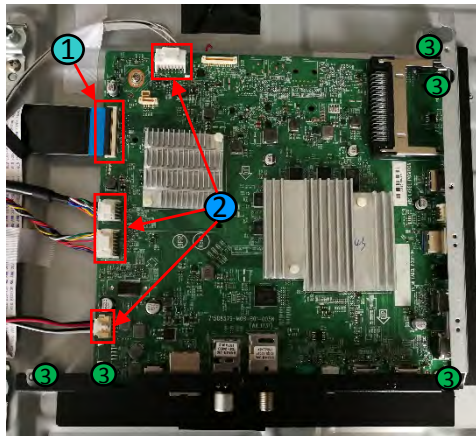
3.2.5 Small Signal Board (SSB)

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

1. Release the clips from the LVDS connector that connect with the SSB[1].

Caution: be careful, as these are very fragile connectors!

2. Unplug all other connectors [2] .
3. Remove all the fixation screws from the SSB [3].
4. The SSB can now be shifted from side connector cover, then lifted and taken out of the I/O bracket.



3.2.6 Power Supply Unit (PSU)

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

1. Gently unplug all connectors from the PSU.
2. Remove all fixation screws from the PSU.
3. The PSU can be taken out of the set now.

3.2.7 Speakers

1. Gently release the tapes that secure the speaker cables.
2. Unplug the speaker connector from the SSB.
3. Take the speakers out.

When defective, replace the both units.

3.2.8 WIFI module

1. Unplug the connector that marked by red box.
2. Remove fixation screw [3] that secure the WIFI module.

When defective, replace the whole unit.



3.2.9 LCD Panel

1. Remove the SSB as described earlier.

2. Remove the PSU as described earlier.
3. Remove the keyboard control panel as described earlier.
4. Remove the stand bracket/base as described earlier.
5. Remove the IR/LED as described earlier.
6. Remove the fixations screws that fix the metal clamps to the front bezel. Take out those clamps.
7. Remove all other metal parts not belonging to the panel.
8. Lift the LCD Panel from the bezel.

When defective, replace the whole unit.

4. Service Modes

4.1 Service Modes

The Service Mode feature is split into following parts:

- Service Alignment Mode (SAM).
- Factory Mode.
- Customer Service Mode (CSM). SAM and the Factory mode offer features, which can be used by the Service engineer to repair/align a TV set.

SAM and the Factory mode offer features, which can be used by the Service engineer to repair/align a TV set. Some features are:

- Make alignments (e.g. White Tone), reset the error buffer (SAM and Factory Mode).
- Display information ("SAM" indication in upper right corner of screen, error buffer, software version, operating hours, options and option codes, sub menus).

The CSM is a Service Mode that can be enabled by the consumer. The CSM displays diagnosis information, which the customer can forward to the dealer or call centre. In CSM mode, "CSM", is displayed in the top right corner of the screen. The information provided in CSM and the purpose of CSM is to:

- Increase the home repair hit rate.
- Decrease the number of nuisance calls.
- Solved customers' problem without home visit.

Note: For the new model range, a new remote control (RC) is used with some renamed buttons. This has an impact on the activation of the Service modes. For instance the old "MENU" button is now called "HOME" (or is indicated by a "house" icon).

4.2 Service Alignment Mode (SAM)

Purpose

- To modify the NVM.
- 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 (White Tone).
- NVM Editor.
- Set screen mode to full screen (all content is visible).

How to Activate SAM

To activate SAM, use one of the following methods:

- Press the following key sequence on the remote control transmitter: **"062596"**, directly followed by the **"INFO/OK"** button. Do not allow the display to time out between entries while keying the sequence.
- Or via ComPair.

After entering SAM, the following items are displayed,

with "SAM" in the upper right corner of the screen to indicate that the television is in Service Alignment Mode.

How to Navigate

- In the SAM menu, select menu items with the 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 **UP/DOWN keys** to display the next/previous menu items.

- With the “LEFT/RIGHT” keys, it is possible to:
 - (De) activate the selected menu item.
 - (De) activate the selected sub menu.
 - Change the value of the selected menu item.
- When you press the MENU button once while in top level SAM, the set will switch to the normal user menu (with the SAM mode still active in the background).

How to Store SAM Settings

To store the settings changed in SAM mode (except the RGB Align settings), leave the top level SAM menu by using the POWER button on the remote control transmitter or the television set. The mentioned exceptions must be stored separately via the STORE button.

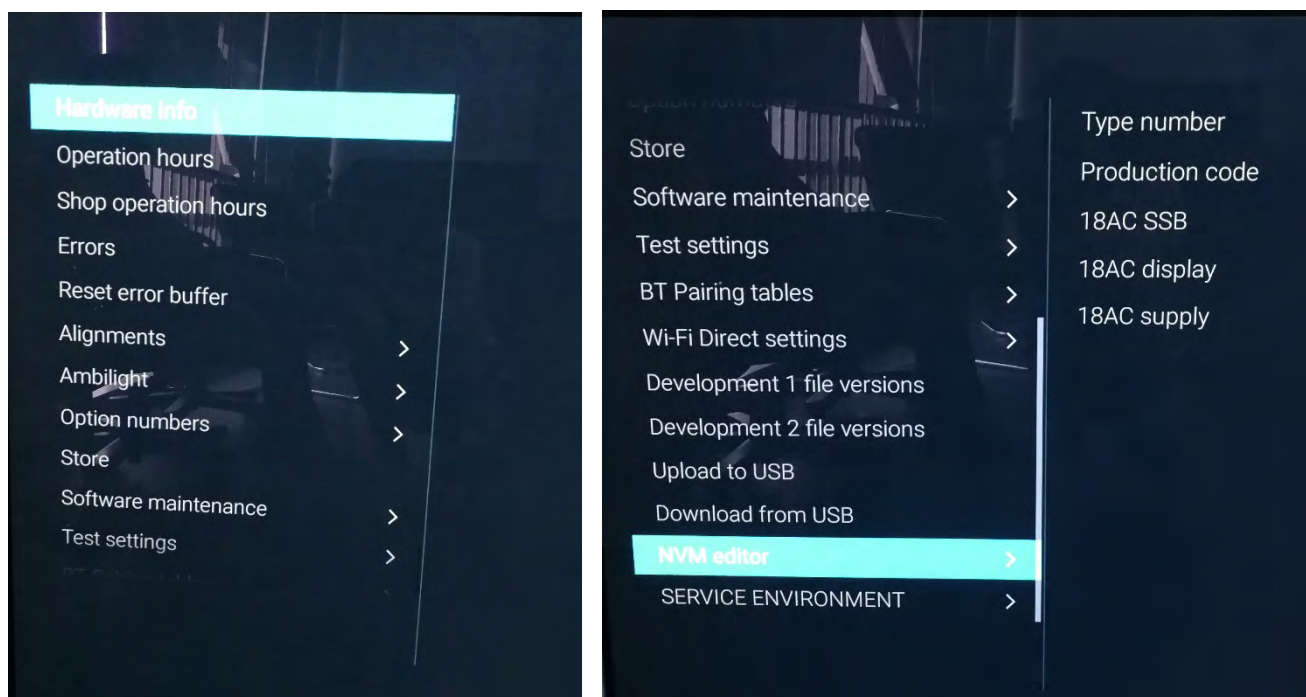
How to Exit SAM

Use one of the following methods:

- Switch the set to STANDBY by pressing the mains button on the remote control transmitter or the television set.
- Via a standard RC-transmitter, key in “00” sequence.

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.

SAM mode overview



Remark:

1. Press following Key Combination to reset the "OP Hour": "**Menu/Home**" + "**101011**" on the remote control transmitter.
2. Under main menu “NVM editor”, you can use the **UP/DOWN keys** to view and change the set Type number, the set Production code or the 18AC of a part.(The NVM-editor still has the same function as before, alpha-numeric entry.)

4.3 Factory mode:

Purpose

- To perform extended alignments.

Specifications

- Displaying and or changing Panel ID information.
- Displaying and or changing Tuner ID information.
- Error buffer clearing.

- Various software alignment settings.
- Testpattern displaying.
- Public Broadcasting Service password Reset.
- etc.

How to Activate the Factory mode

To activate the Factory mode, use the following method:

- Press the following key sequence on the remote control transmitter: from the “**menu/home**” press “**1999**”, directly followed by the “**Back/Return**” button. Do not allow the display to time out between entries while keying the sequence.

After entering the Factory mode, we can see many items displayed, use the **UP/DOWN** keys to display the next/previous menu items

Factory mode overview

0. F/W VERSION	Press OK
1. PANEL_ID	29
2. DEMOD_TYPE	3
3. NVM ADDRESS	0
4. NVM VALUE	0
5. NVM STORE	Press OK
6. VIRGIN_MODE	Off
7. ORT_MODE	Off
8. DRM WARNING	On
9. AGING MODE	Off
10. COLOR TEMP MODE	Normal >>
11. CLR_TEMP_R	127
12. CLR_TEMP_G	127

How to Exit the Factory mode

Use one of the following methods:

- Select EXIT_FACTORY from the menu and press the “OK” button.

Note: When the TV is switched “off” by a power interrupt, or normal switch to “stand-by” while in the factory mode, the TV will show up in “normal operation mode” as soon as the power is supplied again. The error buffer will not be cleared.

4.4 Customer Service Mode (CSM)

Purpose

The Customer Service Mode shows error codes and information on the TV's operation settings. The call centre can instruct the customer (by telephone) to enter CSM in order to identify the status of the set. This helps the call centre to diagnose problems and failures in the TV set before making a service call.

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

Specifications

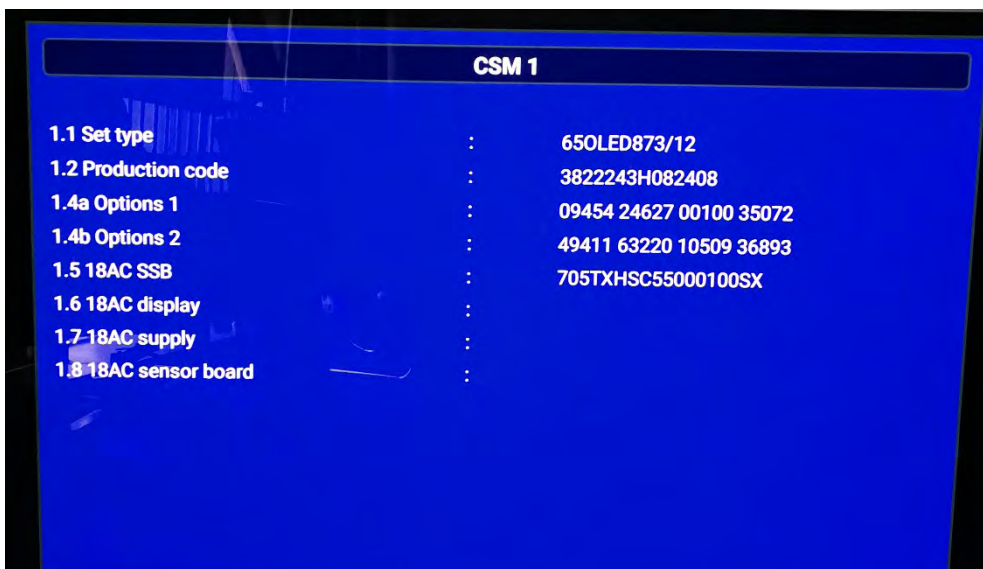
- Ignore “Service unfriendly modes”.
- Line number for every line (to make CSM language independent).
- Set the screen mode to full screen (all contents on screen is visible).
- After leaving the Customer Service Mode, the original settings are restored.
- Possibility to use “CH+” or “CH-” for channel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

How to Activate CSM

To activate CSM, press the following key sequence on a standard remote control transmitter: “**123654**” (do not allow the display to time out between entries while keying the sequence). After entering the Customer Service Mode, the following items are displayed. use the **Right/Left** keys to display the next/previous menu items

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

CSM Overview



How to Navigate

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

How to Exit CSM

To exit CSM, use one of the following methods.

- Press the MENU/HOME button on the remote control transmitter.
- Press the POWER button on the remote control transmitter.
- Press the POWER button on the television set.

5. Software Upgrading, Error code and Panel Code

5.1 Software Upgrading

Step 1: Ready for F/W Upgrade

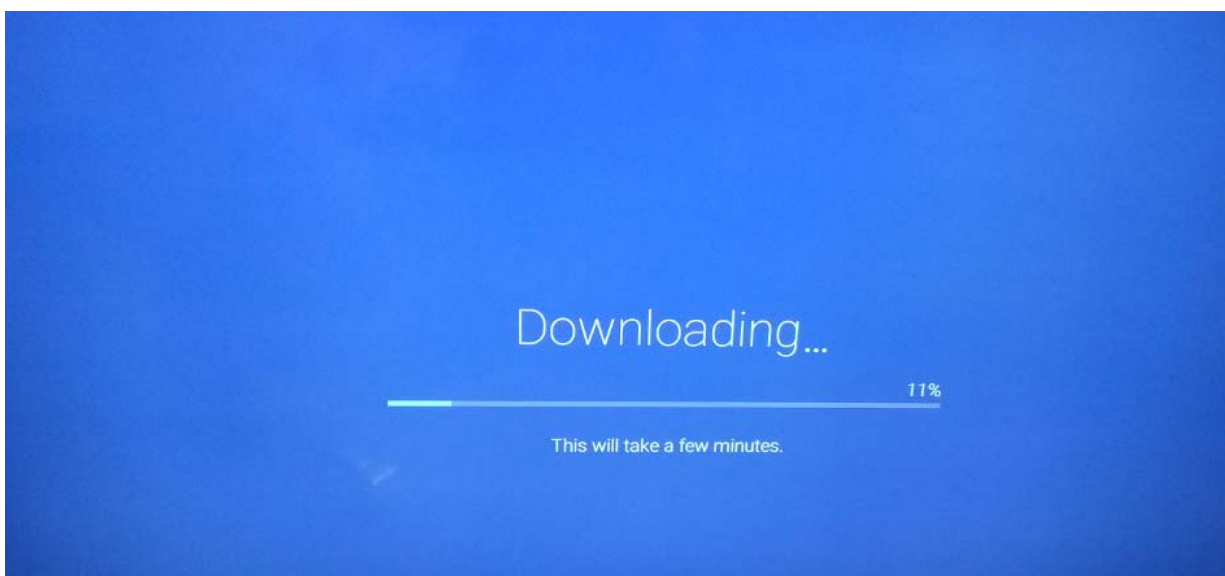
1. Rename the software as "autorun.upg".
2. Prepare a USB memory (File format: FLAT, Size: 1G~8G).
3. Copy the software to USB flash disk (root directory).

Note the version of this F/W before you change the software file name.

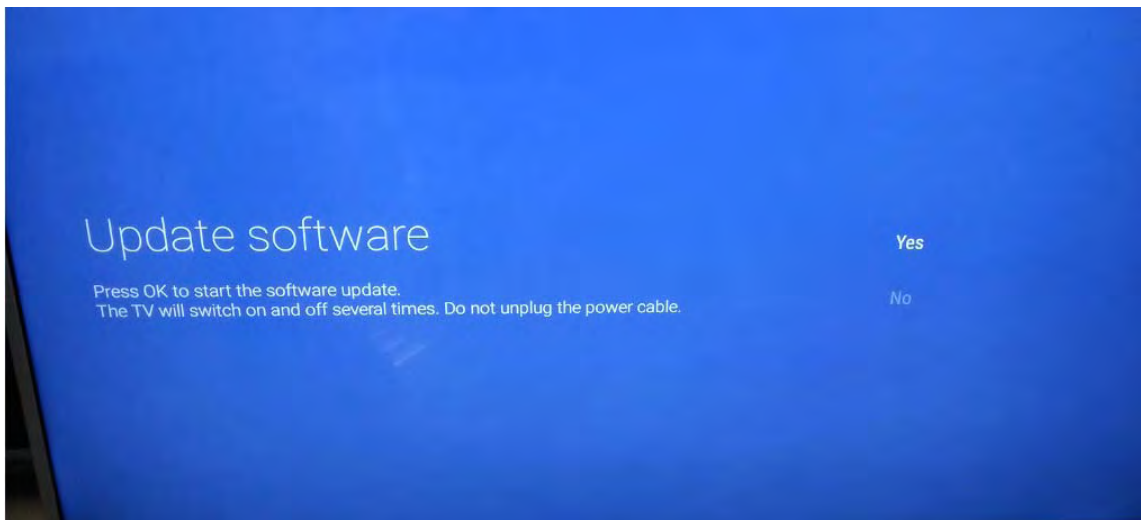


Step 2: F/W Upgrade

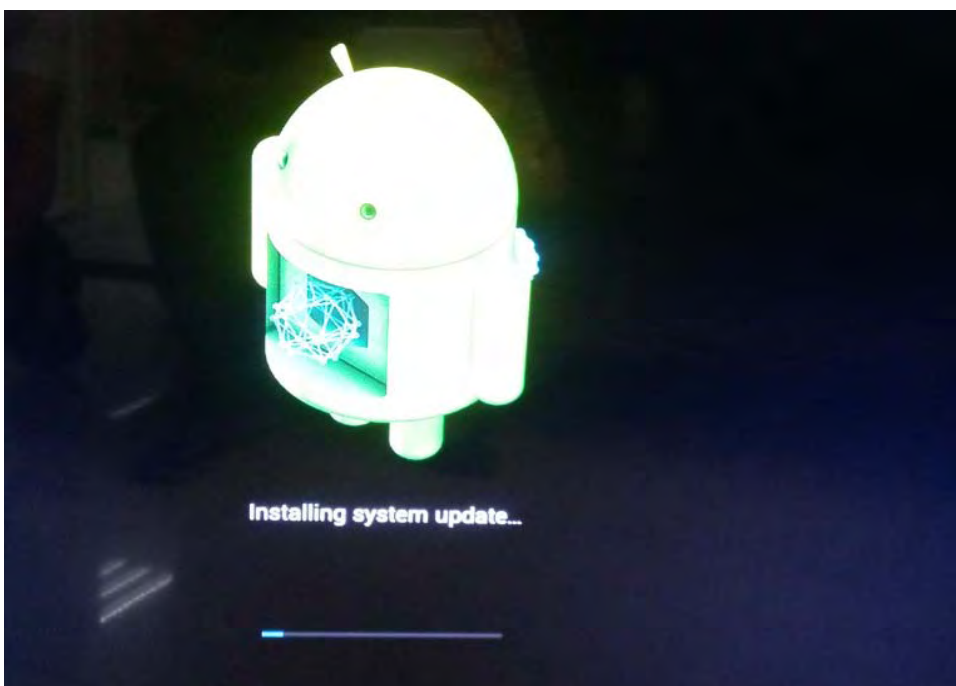
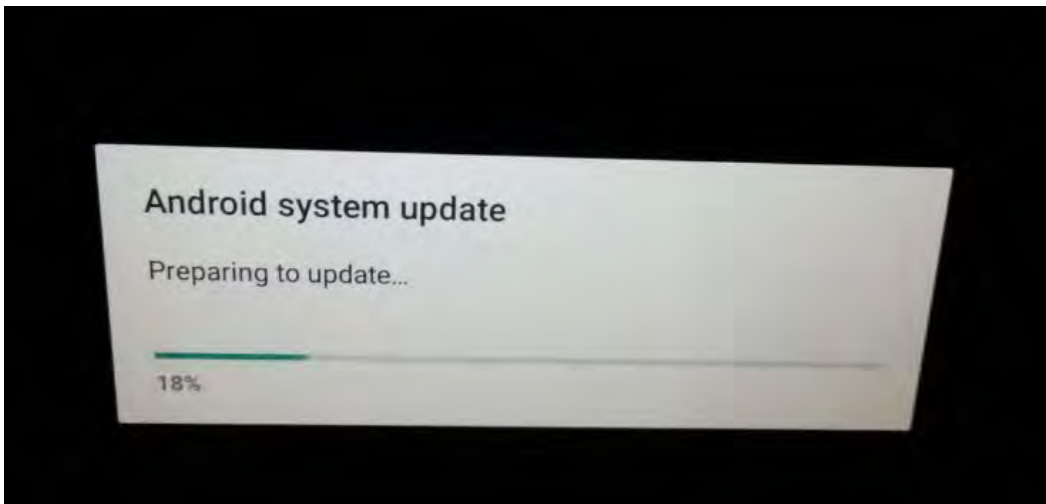
1. Plug the USB memory on the USB port on the side I/O port of TV (Please connect to USB 2.0 port, not recommend USB 3.0 port.).
2. AC on (Power plug).
3. TV will take a few minutes the downloading to detect the software, and then upgrade automatically as detect the software



4. Press OK to start software upgrade



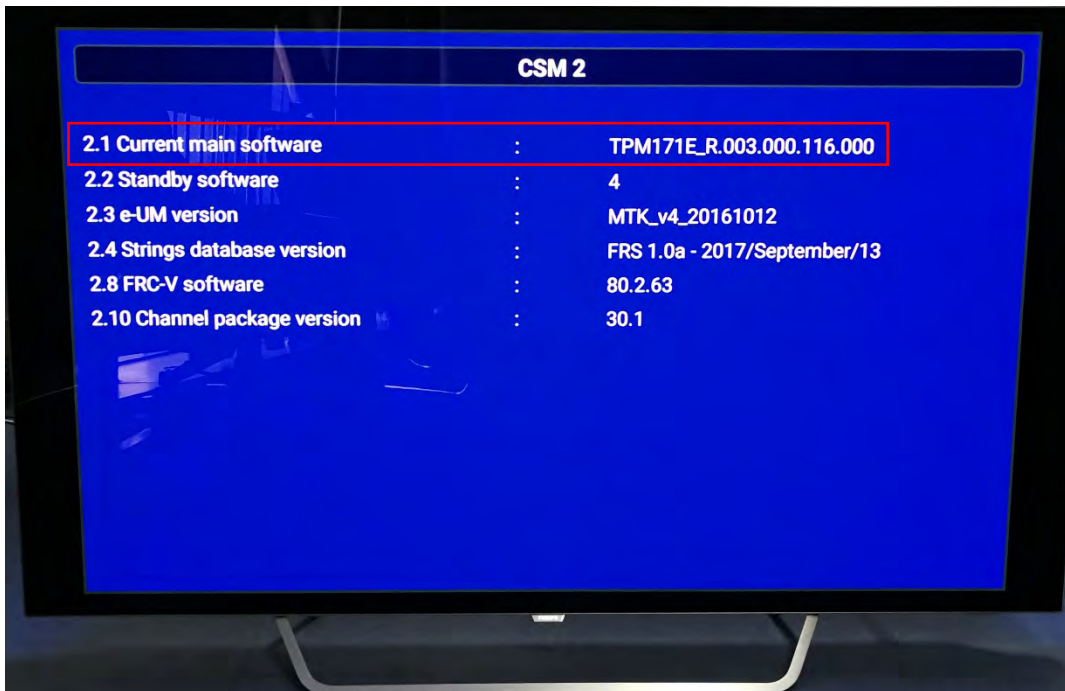
5. Upgrade in progress



Step 3: Check the SW version

1. After burning software, TV will restart.
2. Press "123654", enter Customer Service Mode to check if the software version is correct.

Caution: Please make sure that software upgrade is finished before unplug the USB and AC power!



5.2 Error Code

5.2.1 Introduction

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

- Activated (SW) protection.
- Failing I2C device.
- General I2C error.

The last five 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 never leads to a deadlock situation. It must always be diagnosable (e.g. error buffer via OSD or blinking LED).

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.

5.2.2 How to Read the Error Buffer

You can read the error buffer in below ways:

- On screen via the SAM/CSM (if you have a picture).

Example:

- **ERROR: 000 000 000 000 000:** No errors detected
- **ERROR: 013 000 000 000 000:** Error code 13 is the last and only detected error
- **ERROR: 034 013 000 000 000:** Error code 13 was detected first and error code 34 is the last detected (newest) error
- Via the blinking LED procedure (when you have no picture).

5.2.3 Error codes overview

In this chassis only "layer 2" error codes are available and point to problems on the SSB. They are triggered by LED blinking when CSM is activated. Only the following layer 2 errors are defined:

Description	LAYER 1 error	LAYER 2 error	Monitored	Error	I ² C address	EB: in error buffer	Device	Defective board
				Prot.		BL: Blinking LED		
I ² C BUSES								
DSP bus (00)	2	11	SOC	E	00	BL/EB	SSB	Audio DSP
AMP bus (01)	2	12	SOC	E	01	BL/EB	SSB	Audio DSP
SSB bus (0F)	2	13	SOC	E	0F	BL/EB	SSB	SSB
BE bus (3F)	2	14	SOC	E	3F	BL/EB	SSB	SSB
FE bus (2F)	2	17	SOC	E	2F	BL/EB	SSB	SSB
DISP bus (30)	2	18	SOC	E	30	BL/EB	SSB	Display
AMBI bus (31)	2	19	SOC	E	31	BL/EB	SSB	Proj AL
SOC doesn't boot (HW cause)	2	15	St-by μ P	P	D4	BL	MT5593	SSB
Supply related								
12V	3	16	St-by μ P	P		BL		Supply
SSB								
I2C switch (SSB bus)	9	24	SOC	E	E0	EB	PCA9540	Audio DSP
I2C switch (BE bus)	2	25	SOC	E	E0	EB	PCA9540	SSB
Channel dec	2	27	SOC	E	C8-CE	EB	Silab Si216x	SSB
Boston (HDMI2.2)	2	29	SOC	E	40	EB	SIL 9777	SSB
Lnb controler	2	31	SOC	E	10	EB	LNBH 25	SSB
Tuner	2	34	SOC	E	C0	EB	Si2151/AV 2019	SSB
Tuner S2	2	36	SOC	E		EB		
Class - D 3 (DSP bus)	9	35	SOC	E	D8	EB	TAS 5760 LD	Audio DSP
Audio DSP	9	36	SOC	E	70	EB		Audio DSP
Class-D 1	2/9	37	SOC	E	D8	EB	TAS5760LD	SSB/Audio DSP
DSP EEPROM	9	38	SOC	E	A0	EB	Durango	Audio DSP
Class - D 2	2/9	39	SOC	E	DA	EB	TAS 5760 LD	SSB/Audio DSP
T° sensor SSB	2	42	SOC	E	98	EB	LM 75	T° sensor
Light sensor	6	43	SOC	E	52	EB	TSL2571	SET
B&O signal board	4	44	SOC	E		EB		
HDD XFS repair	8	45	SOC	E		EB		
DSP doesn't boot (SW cause)	9	52	SOC	E	70	EB	MT5593	Audio DSP
SOC doesn't boot (SW cause)	2	53	St-by μ P	P	D4	BL	MT5593	SSB
FRC	2	61	SOC	E	34	EB	NT72324/72333	SSB
ASIC	2	62	SOC	E	84	EB	ASIC	SSB
Display	5	63	SOC	E	34	EB	Innolux	Display

5.2.4 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
- By using the CLEAR command in the Factory mode:
- By using the following key sequence on the remote control transmitter: **"062599"** directly followed by the **OK** button.
- 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.

5.3 Set Option Code

For all models of TPM18.1E_LA chassis, a SET OPTION code is used instead of the DISPLAY OPTION code.

The Set Option Code feature allows using one single Set Option number to define all settings for a specific TV set type.

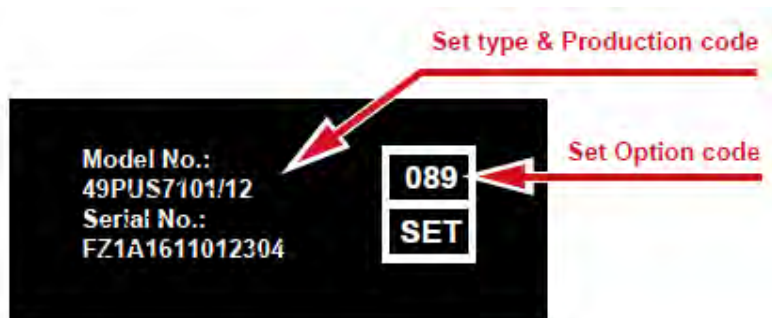
5.3.1 Where to find the Set Option Code

Refer to the stickers on the TV set. The Set Option Code (three digit decimal value), Set type and Production code can be read from two stickers matching the TV set:

- Family sticker, stuck on the Back Cover:



- Set Option code sticker, in general, stuck on the Deco frame:



5.3.2 How to set the Set Option Code after SSB Replacement

1. Take note of the Set Option Code of the TV set. Set Option Code, Set type and Production code can be read from two stickers on the TV set.

2. Switch "ON" the TV set.

The modified TV set should start up with the default values.

3. Enter the Set Option Code.

Using a standard remote control, successively press:

"062598" + MEMU/HOME + "xxx",

- with "xxx" is the three digit decimal value of a valid Set Option Code (See below table), corresponding with the modified TV set, and MEMU/HOME is the button with the home icon.

CTN_ALT BOM#	Panel Type	Setting Set Option Code	CTN_ALT BOM#	Panel Type	Setting Set Option Code
43PUS7303/12	TPT430U3-EQYSHM.G S1AX	238	50PUS7393/12	TPT500U1-QVN03.U S7B0M	233
43PUS7303/12	TPT430U3-QVN03.U S0B1A	167	50PUS7393/12	TPT500B5-U1T01D S01B	220
43PUS7303/12	TPT430U3-EQYSHM.G S1BC	238	50PUS7393/12	TPT500B5-U1T01D S03B	220
43PUS7303/12	TPT430U3-QVN03.U S0B0K	167	55OLED803/12	LE550AQD-ELA6 KR LGD	192
43PUS7363/12	TPT430U3-QVN03.U S0B1D	195	55OLED903/12	LE550AQD-ELA6 KR LGD	192
43PUS7363/12	TPT430U3-QVN03.U S0B0V	195	55PUS7303/12	TPT550U1-QVN05.U S57B1A	233
43PUS7373/12	TPT430U3-QVN03.U S0B1C	208	55PUS7303/12	TPT550U2-EQYM6.G SM6C	202
43PUS7373/12	TPT430U3-QVN03.U S0B0U	208	55PUS7303/12	TPT550U2-EQYM6.G SM6F	202
43PUS7383/12	TPT430U3-QVN03.U S0B1D	195	55PUS7303/12	TPT550U1-QVN05.U S5B0AD	169
43PUS7383/12	TPT430U3-QVN03.U S0B0V	209	55PUS7303/12	TPT550U1-QVN05.U S57B0F	169
65PUS7303/60	TPT650UA-QVN07.U S500H	#N/A	55PUS7303/60	TPT550U1-QVN05.U S5B0AD	#N/A
43PUS7393/12	TPT430U3-QVN03.U S0B1A	198	55PUS7303/62	TPT550U1-QVN05.U S57B1A	233
43PUS7393/12	TPT430U3-QVN03.U S0B0K	198	55PUS7303/62	TPT550U1-QVN05.U S57B0F	233
49PUS7503/12	TPT490F2-FN02.S S802A	171	55PUS7363/12	TPT550U1-QVN05.U S57B1F	196
49PUS7503/62	TPT490F2-FN02.S S802A	236	55PUS7363/12	TPT550U1-QVN05.U S5B0AA	196
49PUS7803/12	TPT490U2-QUB8B.K SD9P0A	245	55PUS7373/12	TPT550U1-QVN05.U S57B1D	222
49PUS7803/12	TPT490U2-QUB8A.K S89P0D	173	55PUS7373/12	TPT550U1-QVN05.U S57B0R	222
49PUS8303/12	TPT490U2-EQLLA3.G SA3A	177	55PUS7383/12	TPT550U1-QVN05.U S57B1E	225
49PUS8503/12	TPT490U2-EQLLA3.G SA3A	181	55PUS7383/12	TPT550U1-QVN05.U S57B0S	225
50PUS7303/12	TPT500U1-QVN03.U S5B0Y	168	55PUS7393/12	TPT550U1-QVN05.U S57B1G	197
50PUS7303/12	TPT500U1-QVN03.U S7B1B	229	55PUS7393/12	TPT550U1-QVN05.U S5B0AB	197
50PUS7303/12	TPT500U1-QVN03.U S7B0M	233	55PUS7503/12	TPT550U1-QVN05.U S57B1C	172
50PUS7303/12	TPT500B5-U1T01D S01B	199	55PUS7503/12	TPT550U2-EQYM6.G SM6D	243
50PUS7303/12	TPT500B5-U1T01D S03B	199	55PUS7503/12	TPT550U1-QVN05.U S57B0E	172
50PUS7303/60	TPT500B5-U1T01D S03B	#N/A	55PUS7503/62	TPT550U1-QVN05.U S57B1C	237
50PUS7303/62	TPT500U1-QVN03.U S7B1B	230	55PUS7503/62	TPT550U1-QVN05.U S57B0E	237
50PUS7303/62	TPT500U1-QVN03.U S7B0M	233	55PUS7803/12	TPT550U1-QVN05.U S57B0D	174
50PUS7303/62	TPT500B5-U1T01D S01B	231	55PUS8303/12	TPT550U2-EQLLA3.G SA3A	178
50PUS7303/62	TPT500B5-U1T01D S03B	231	55PUS8503/12	TPT550U2-EQLLA3.G SA3A	182
50PUS7363/12	TPT500U1-QVN03.U S7B1D	230	65OLED803/12	LE650AQD-ELA6 KR LGD	191
50PUS7363/12	TPT500U1-QVN03.U S7B0U	230	65OLED873/12	LC650AQD-EKAA KR LGD	164
50PUS7363/12	TPT500B5-U1T01D S01G	211	65OLED903/12	LE650AQD-ELA6 KR LGD	193
50PUS7363/12	TPT500B5-U1T01D S03C	211	65OLED973/12	LC650AQD-GKA6 KR LGD	134
50PUS7373/12	TPT500U1-QVN03.U S7B1C	231	65PUS7303/12	TPT650UA-QVN06.U S300AL	170
50PUS7373/12	TPT500U1-QVN03.U S7B0T	231	65PUS7303/12	TPT650UA-QVN06.U S301B	170
50PUS7373/12	TPT500B5-U1T01D S01H	214	65PUS7363/12	TPT650UA-QVN06.U S300Z	228
50PUS7373/12	TPT500B5-U1T01D S03D	214	65PUS7363/12	TPT650UA-QVN06.U S301C	228
50PUS7383/12	TPT500U1-QVN03.U S7B1D	232	65PUS7803/12	TPT650U2-EQYLA3.G SA3A	175
50PUS7383/12	TPT500U1-QVN03.U S7B0U	232	65PUS8303/12	TPT650U2-EQLLA3.G SA3A	179
50PUS7383/12	TPT500B5-U1T01D S01G	217	65PUS8503/12	TPT650U2-EQLLA3.G SA3A	183
50PUS7383/12	TPT500B5-U1T01D S03C	217	75PUS7803/12	TPT750U1-QVR01.U S202A	176
50PUS7393/12	TPT500U1-QVN03.U S7B1B	233	75PUS8303/12	TPT750U2-EQLLA3.G SA3A	180

Result:

After accepting the Set Option Code the TV set stores the following items in NVM:

- the TV Set type (Model Number),
- the related option codes, and the default White Point values.

Then the TV set switches to Stand-by to indicate the process is completed.

Note:

Entering a non existing Set Option Code has no effect.

4. Use remote control to switch "ON" the TV set.

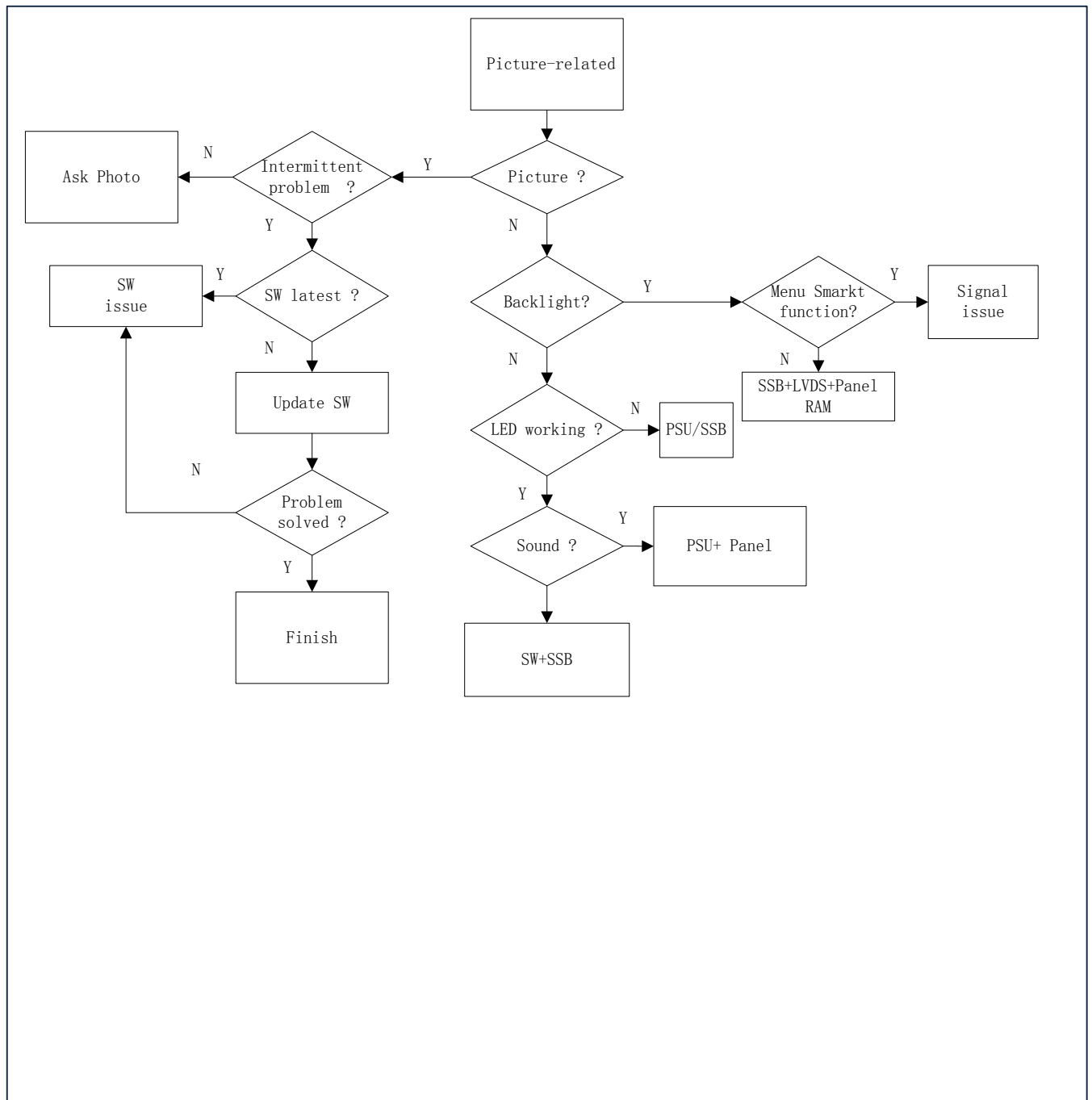
5. Use SAM mode to check the **Set type** (Model number) in NVM and to manually correct if it is wrong.

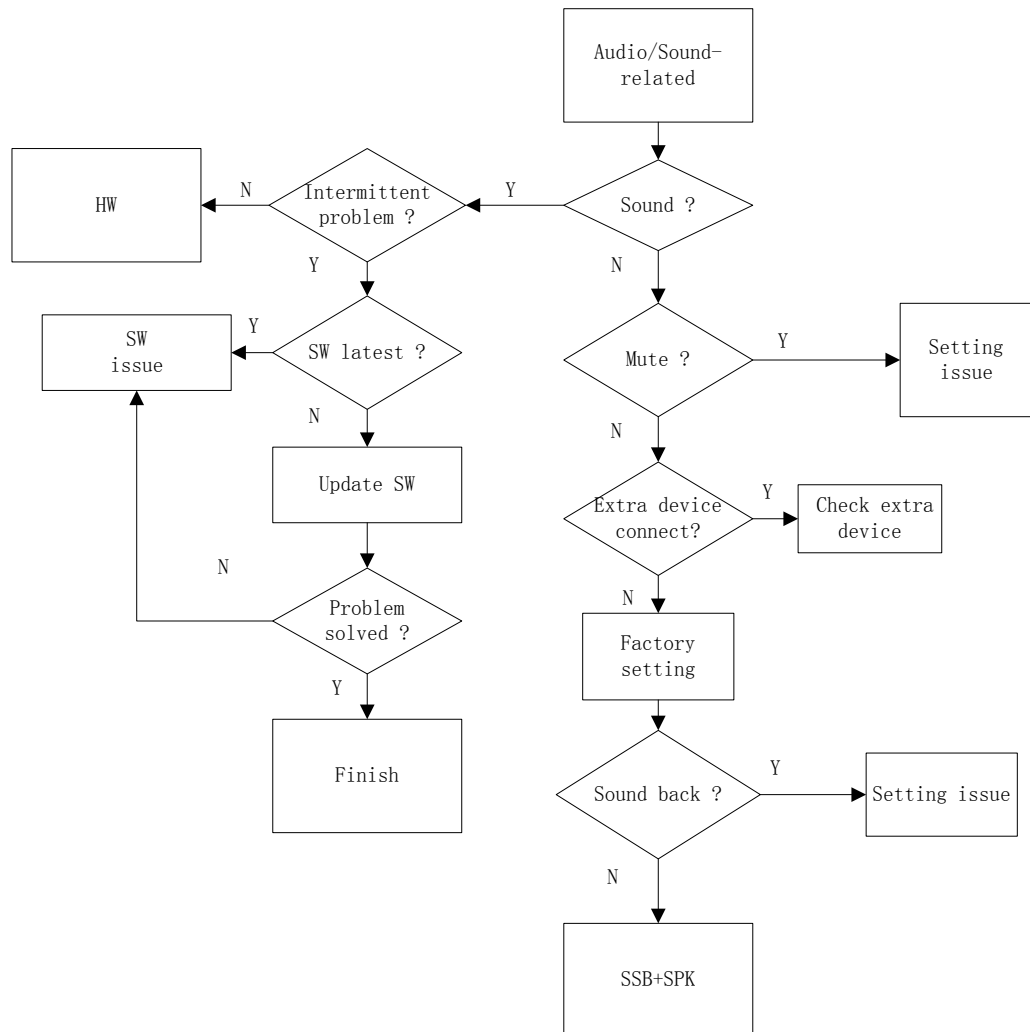
6. Optionally, check other TV-related items present in NVM and manually adapt them via SAM:

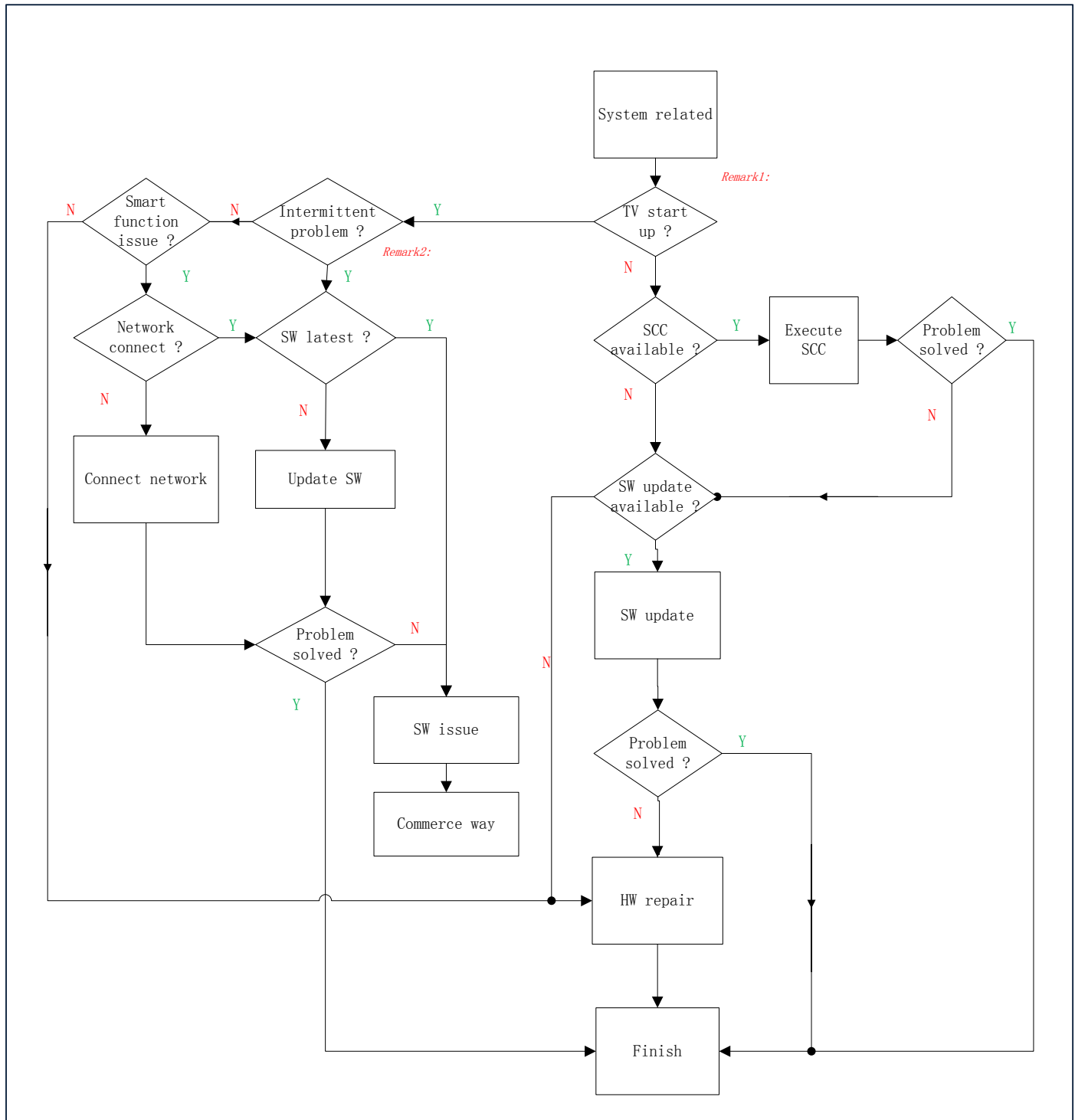
- TV Production code (Serial number on stickers),
- 18 AC of replacement SSB (see bar code sticker on SSB),
- 18 AC of actual Power Supply Unit (see bar code sticker on PSU board),
- 18 AC of actual Display Panel.

Result:

After leaving the SAM mode, the TV set should switch to Standby. The NVM should contain the correct option codes, TV related items and default White Point values.







Remark1 : What is System related issue ?

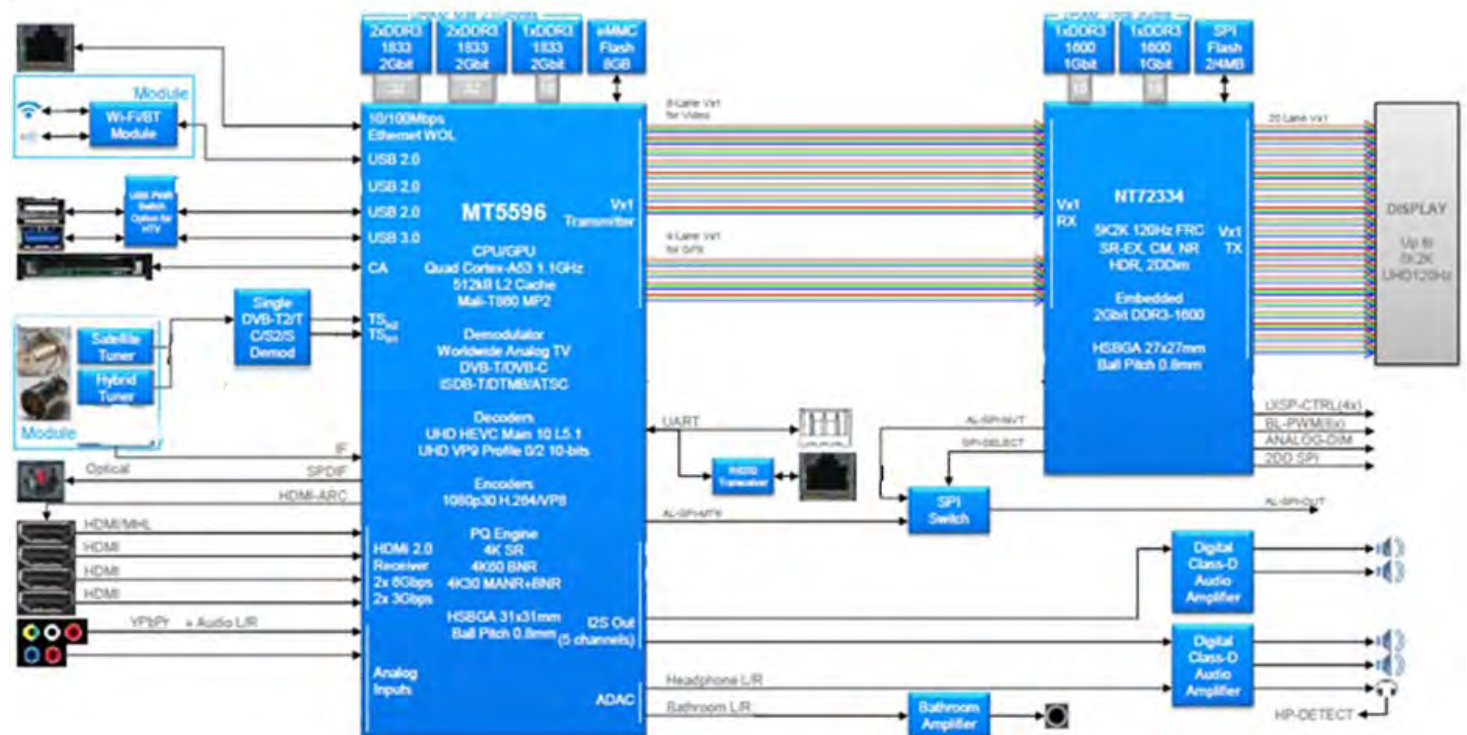
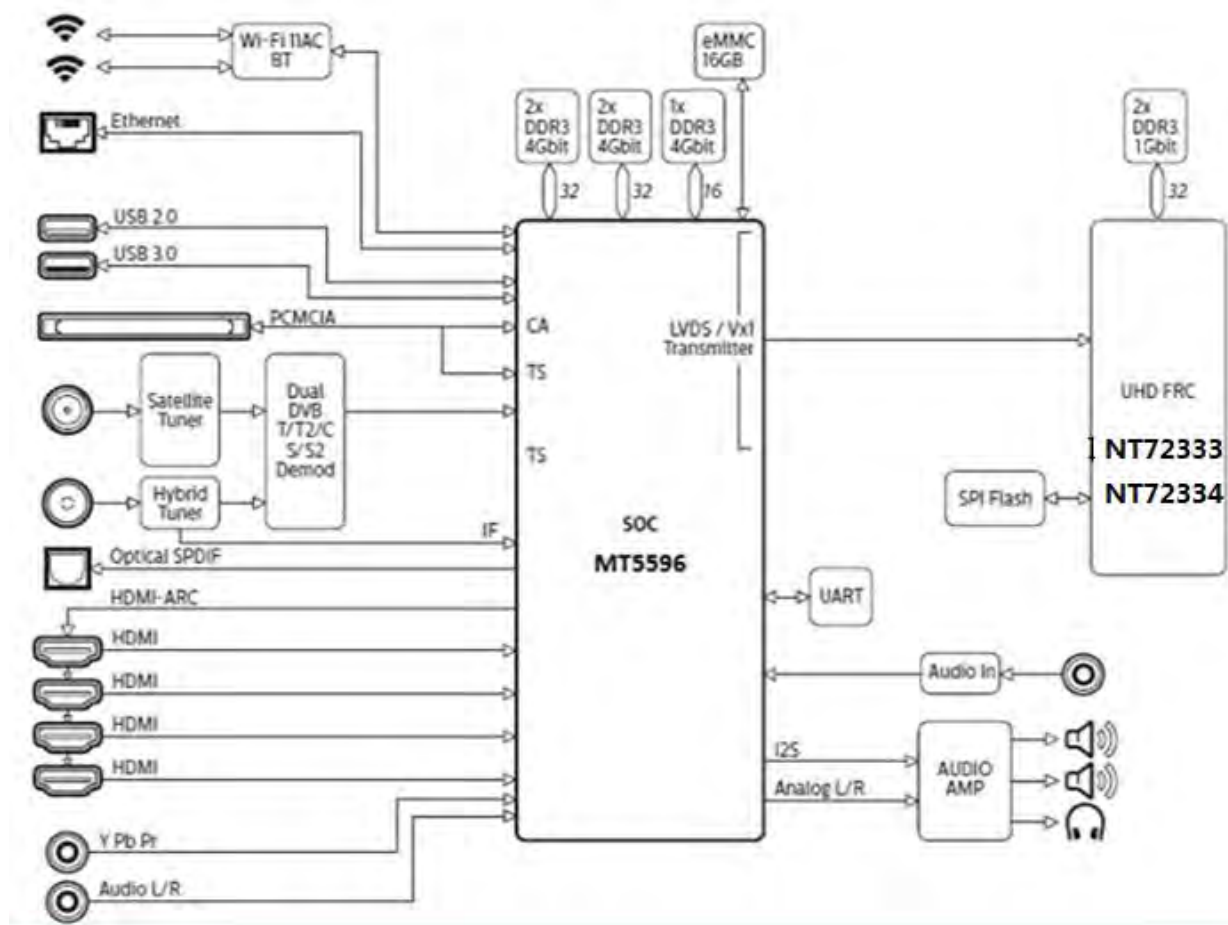
1. Permanent reboots
2. Intermittent reboots
3. No function, no standby LED (set dead)
4. No function, blinking LED
5. Set freezes, intermittently
6. Slow response to user interaction
7. Switches ON by itself
8. Switches Off by itself
9. Stuck in standby mode / unable to start up
10. Stuck on PHILIPS / ANDROID logo
11. CAM not recognized by TV
12. CAM authentication issue
13. Misc CAM issue
14. IP-EPG issues
15. BC-EPG issues
16. PVR issues w/ BC-EPG
17. PVR issues w/ IP-EPG
18. PVR issues / generic
19. EDFU-related issue
20. Features not available in UI / cannot be activated

Remark2 : How to judge intermittent issue ?

1. When the problem happened can be solved by:
 - 1) AC off AC on
 - 2) DC off DC on
 - 3) RC switch different source
2. The problem intermittent happened

7. Electrical Diagram

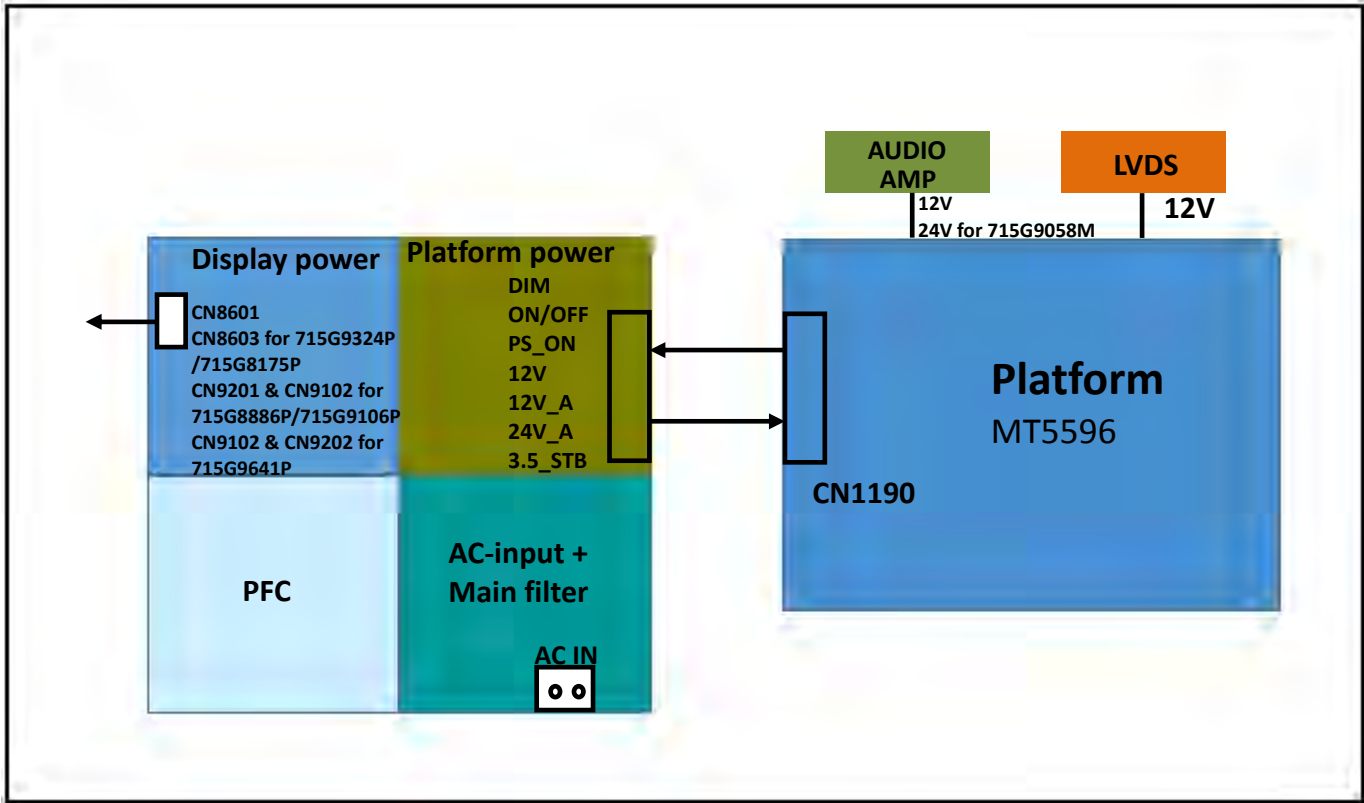
7.1 Block diagram



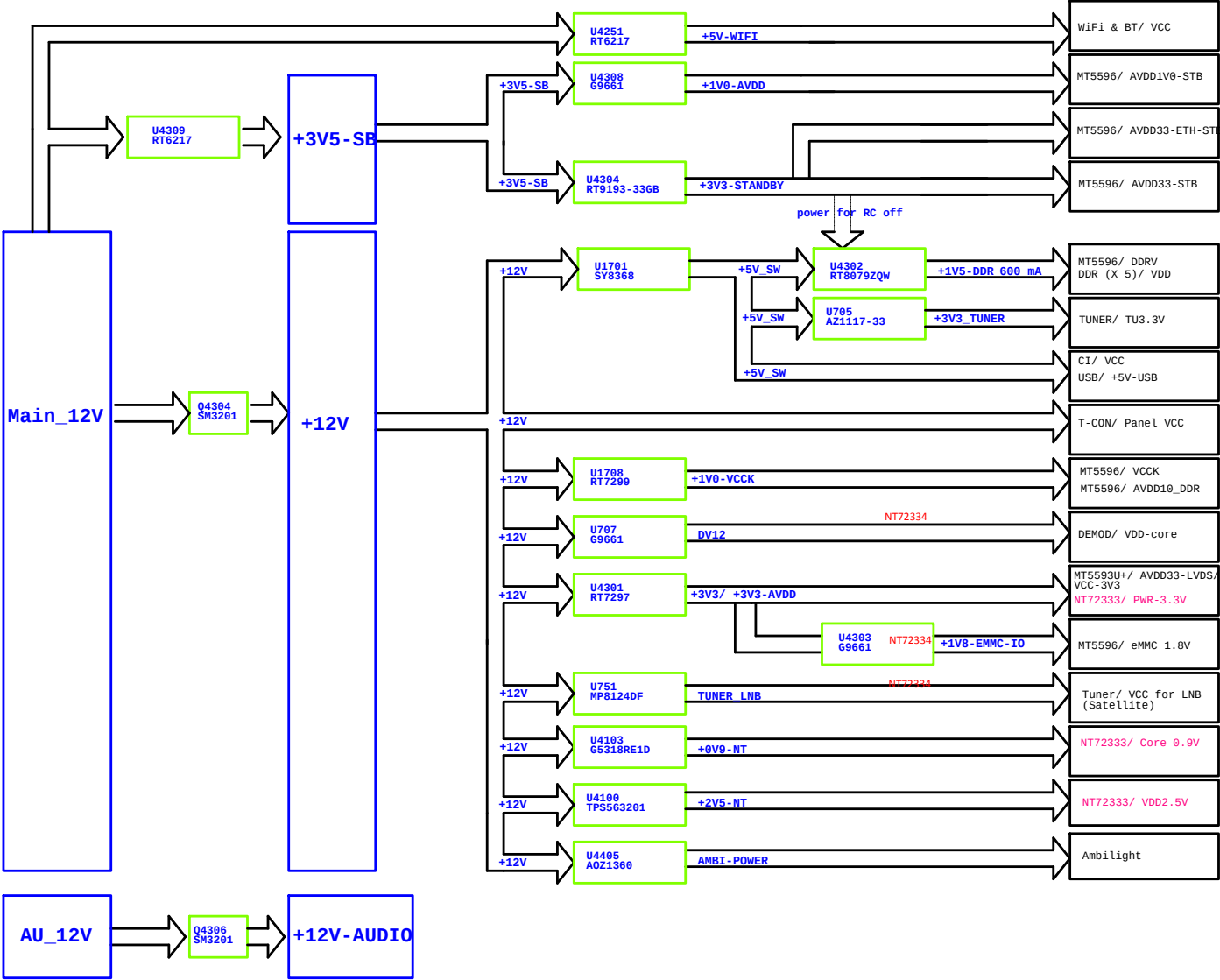
(For 715G9058M)

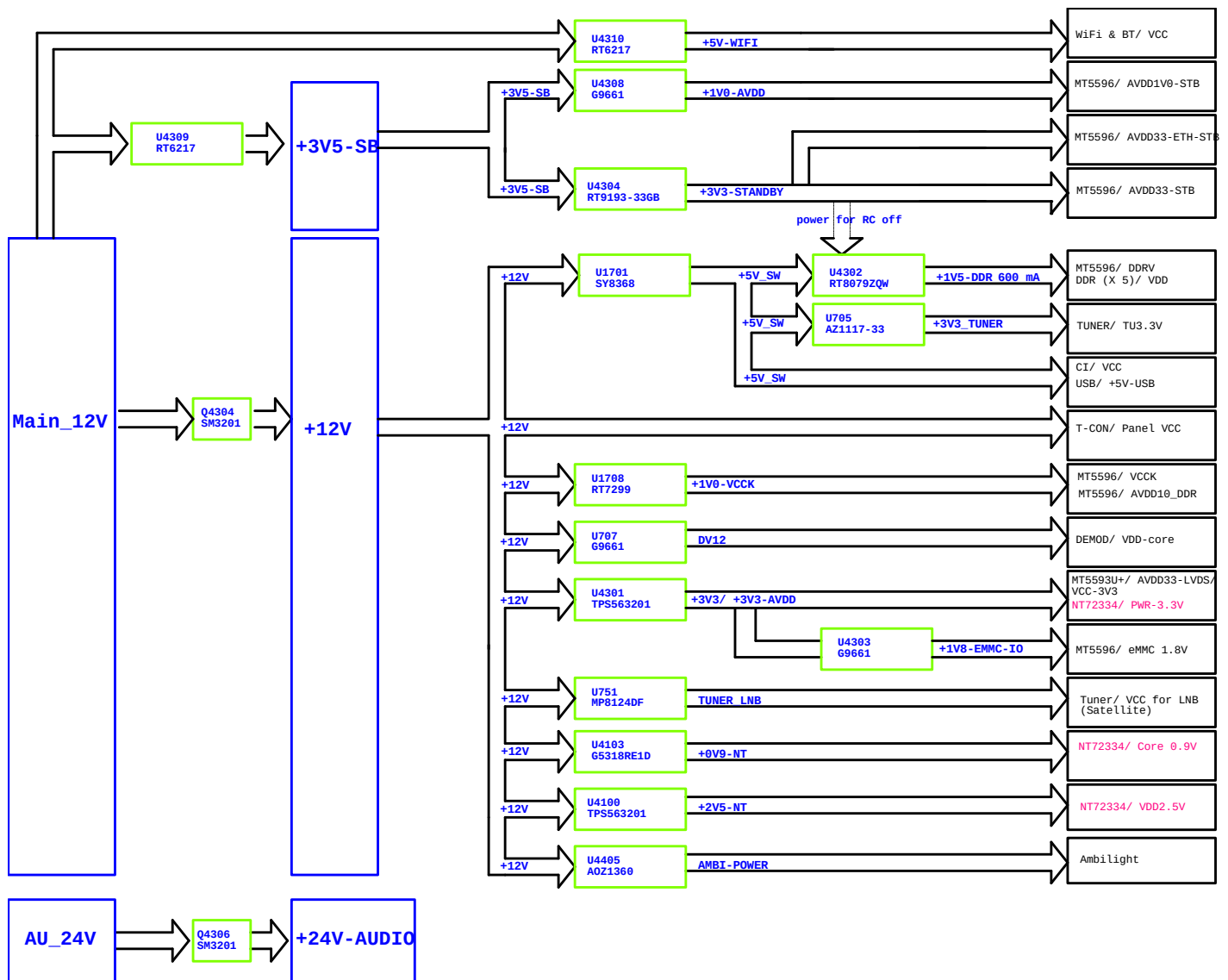
7.2 Power Supply

Power architecture of this platform.



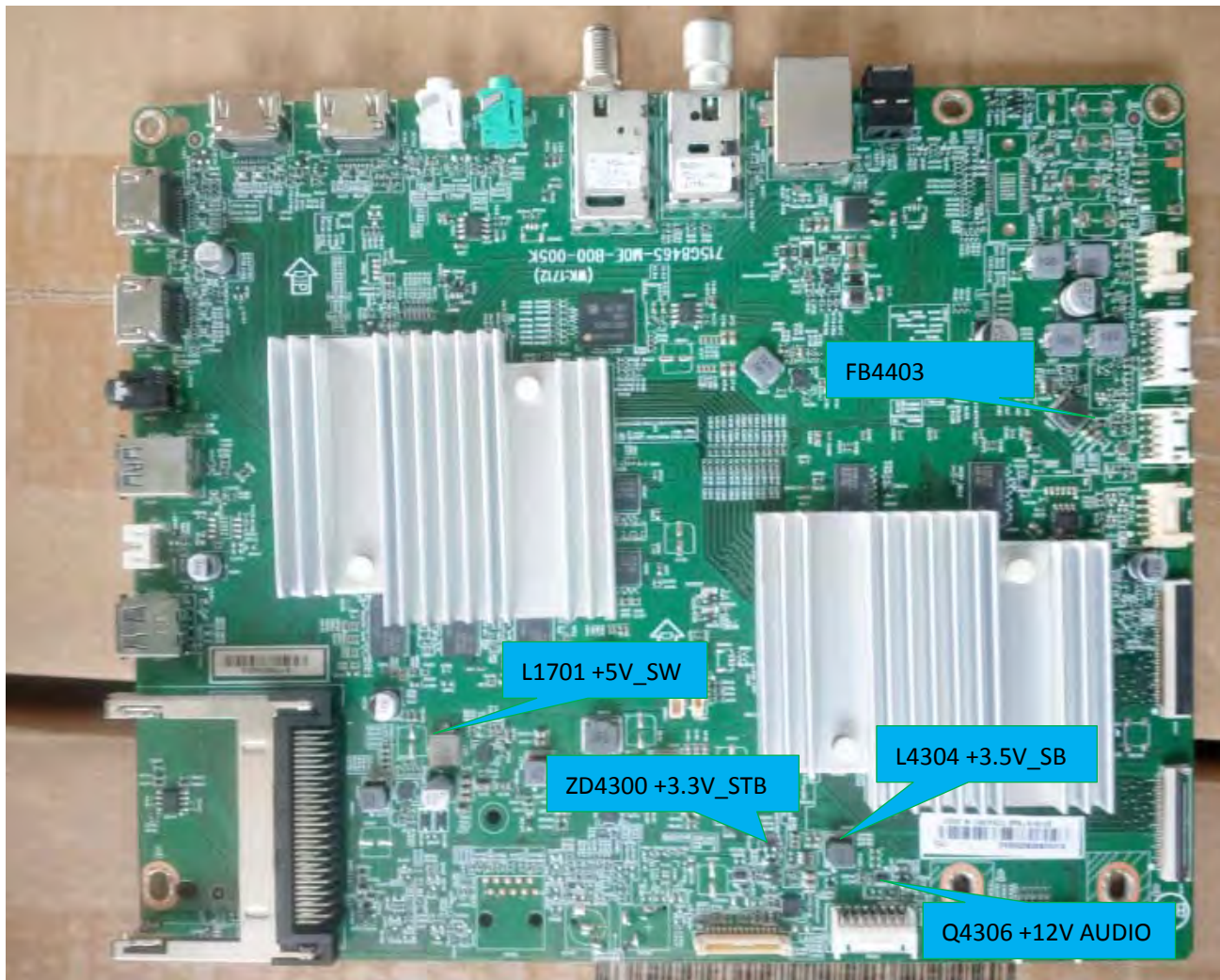
7.3 Power tree



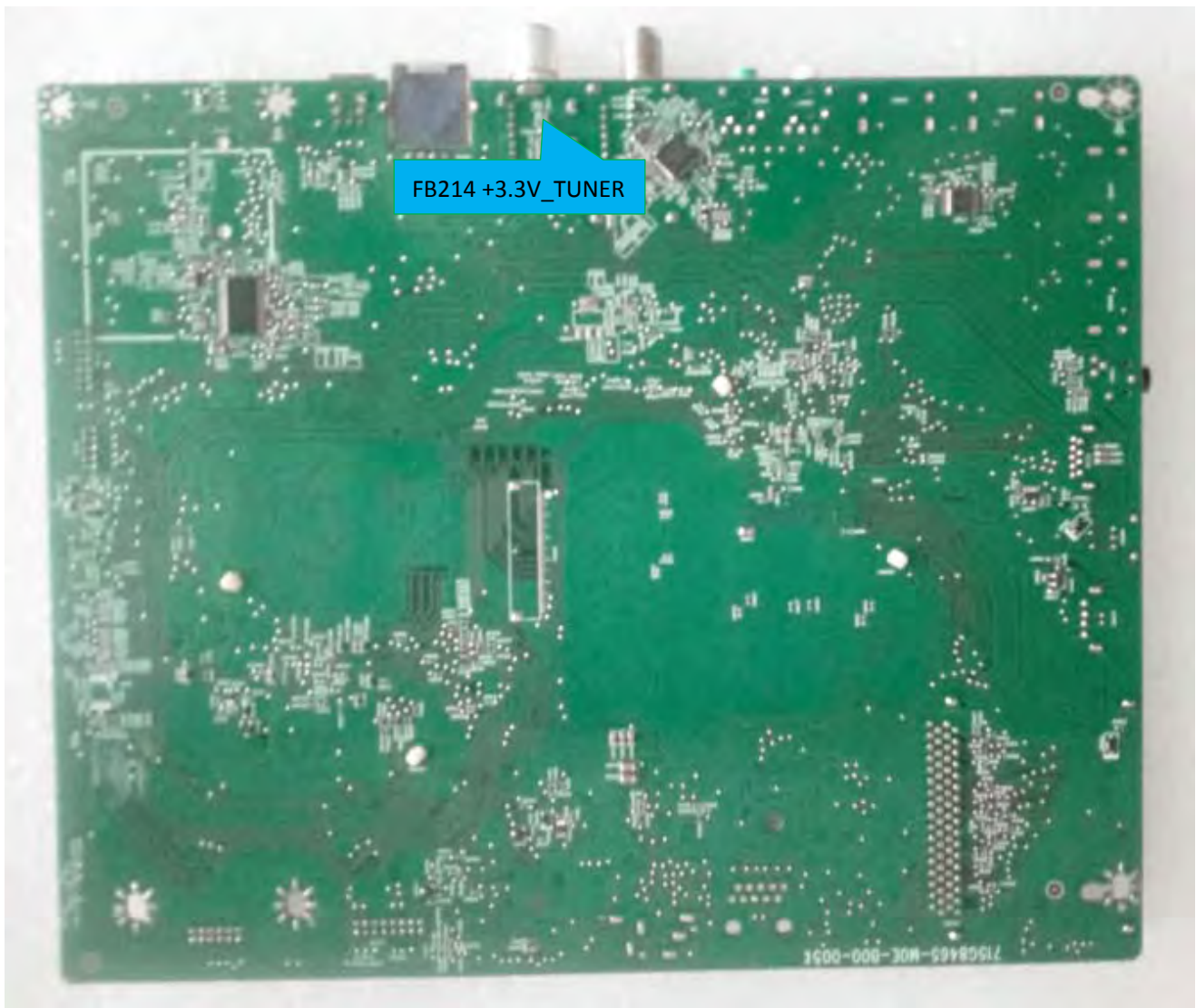


(For 715G9058M)

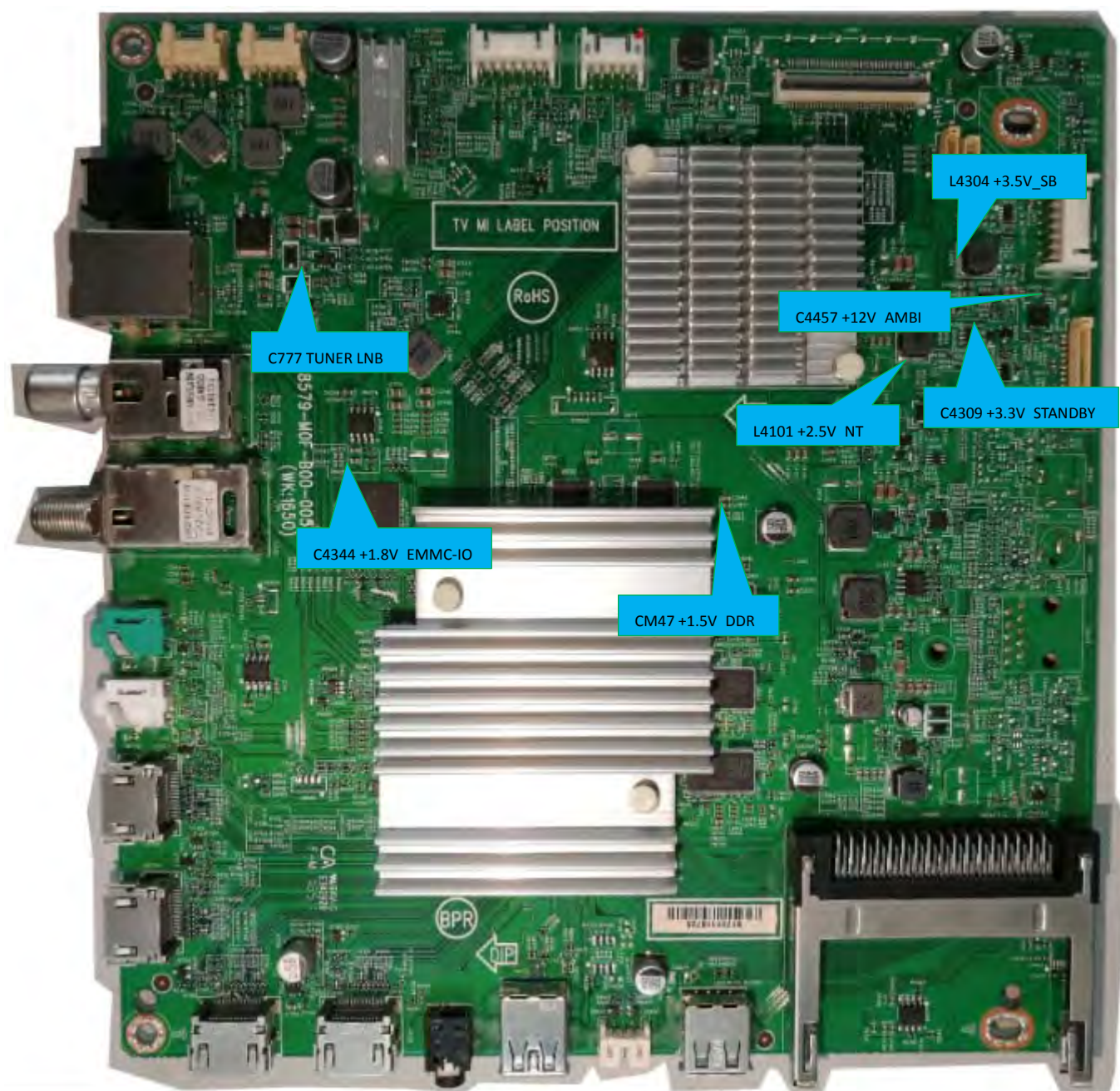
7.3 Power layout SSB



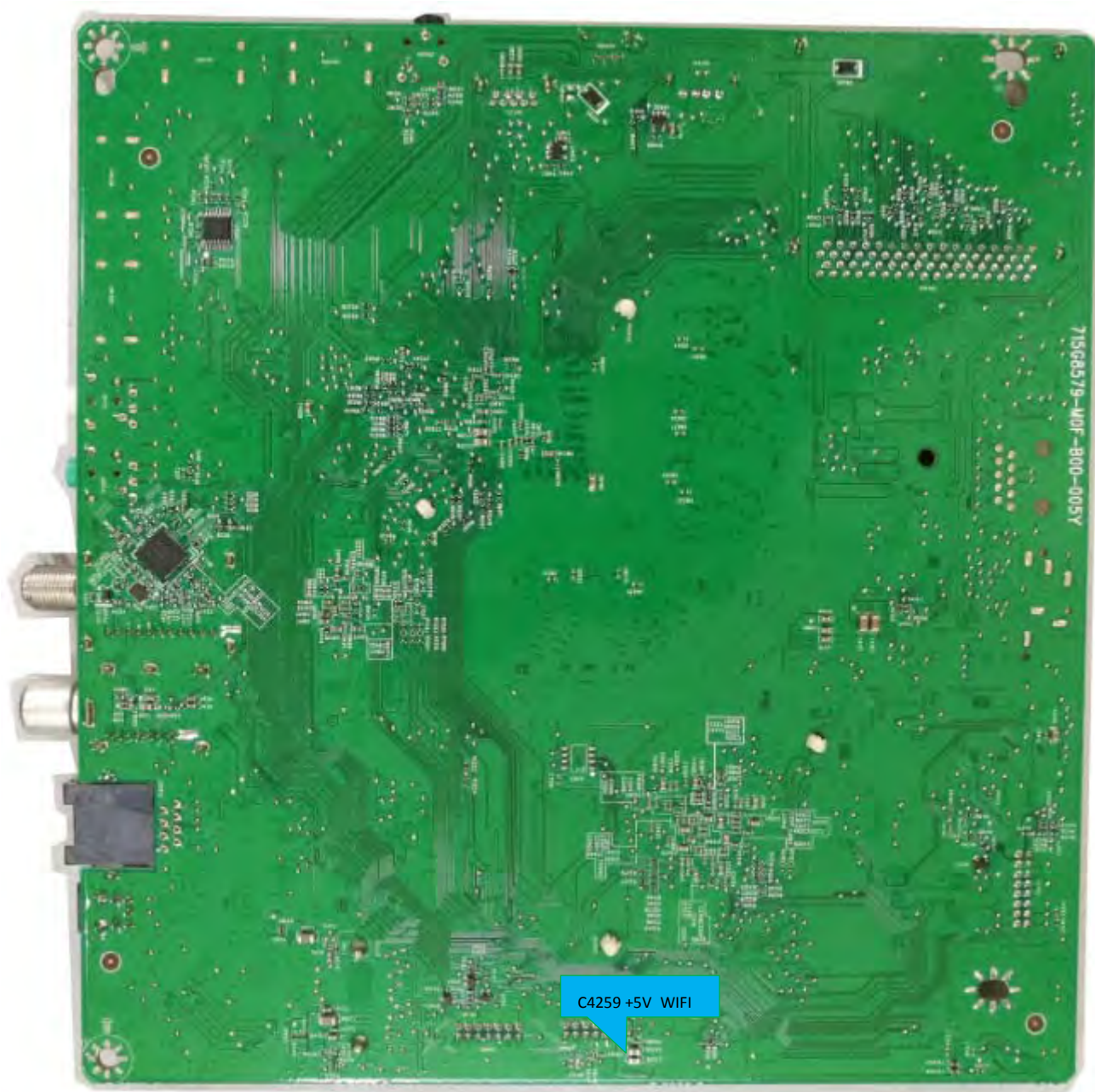
Power SSB Top View (For 715G8465M)



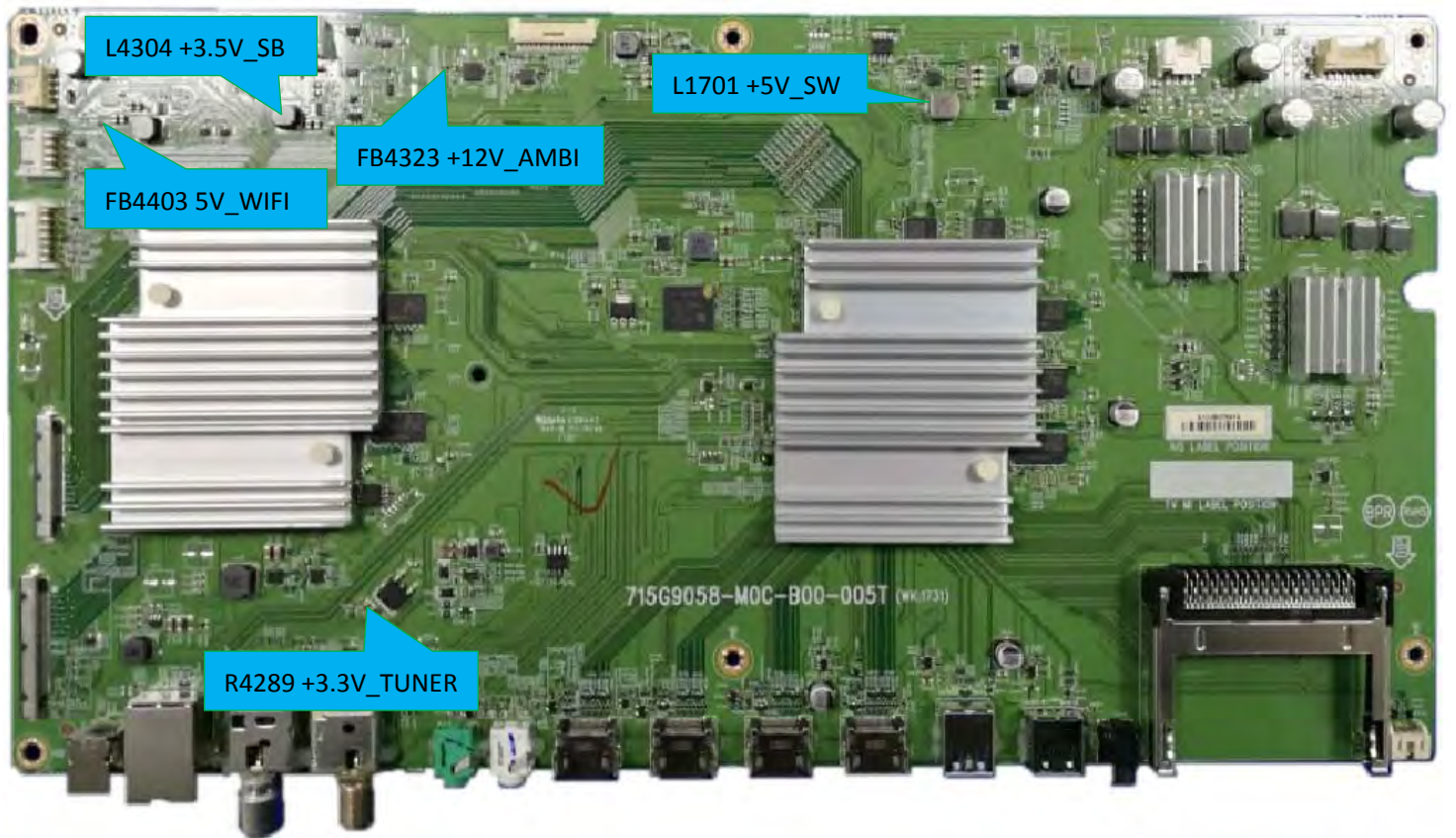
Power SSB Bottom View (For 715G8465M)



Power SSB Top View (For 715G8579M)



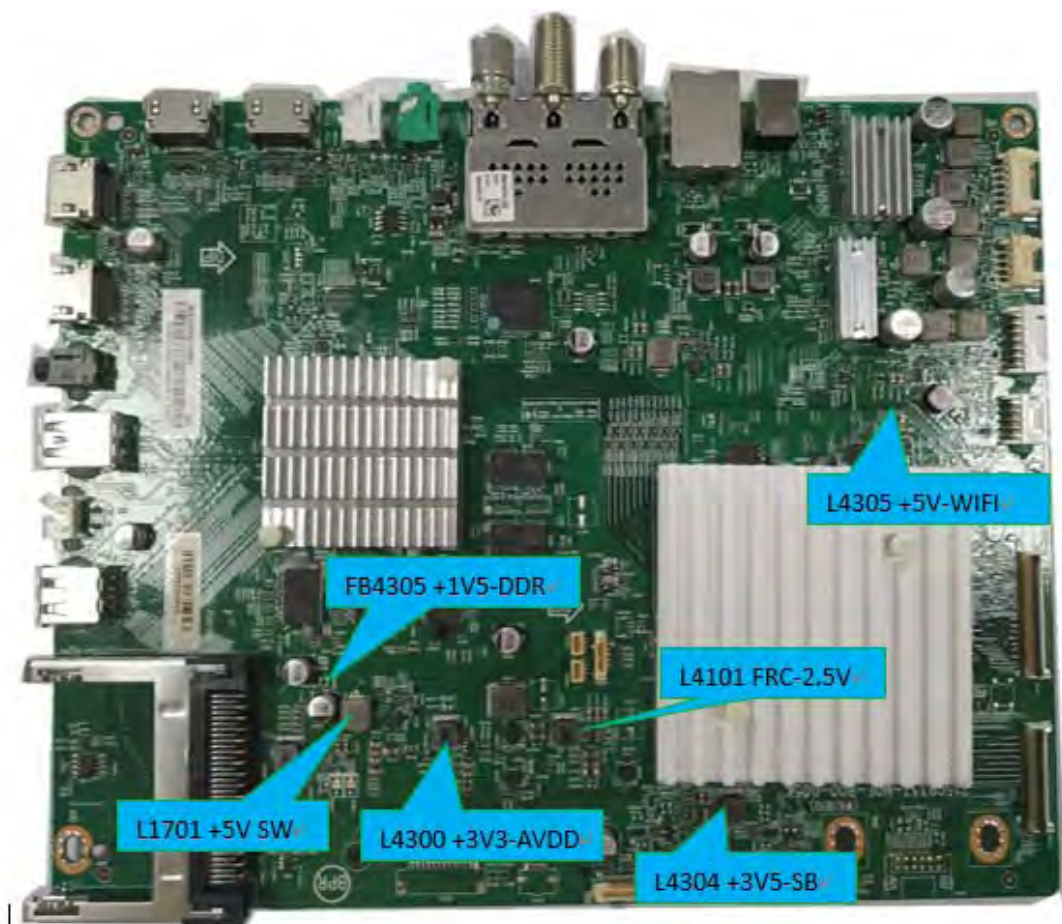
Power SSB Bottom View (For 715G8579M)



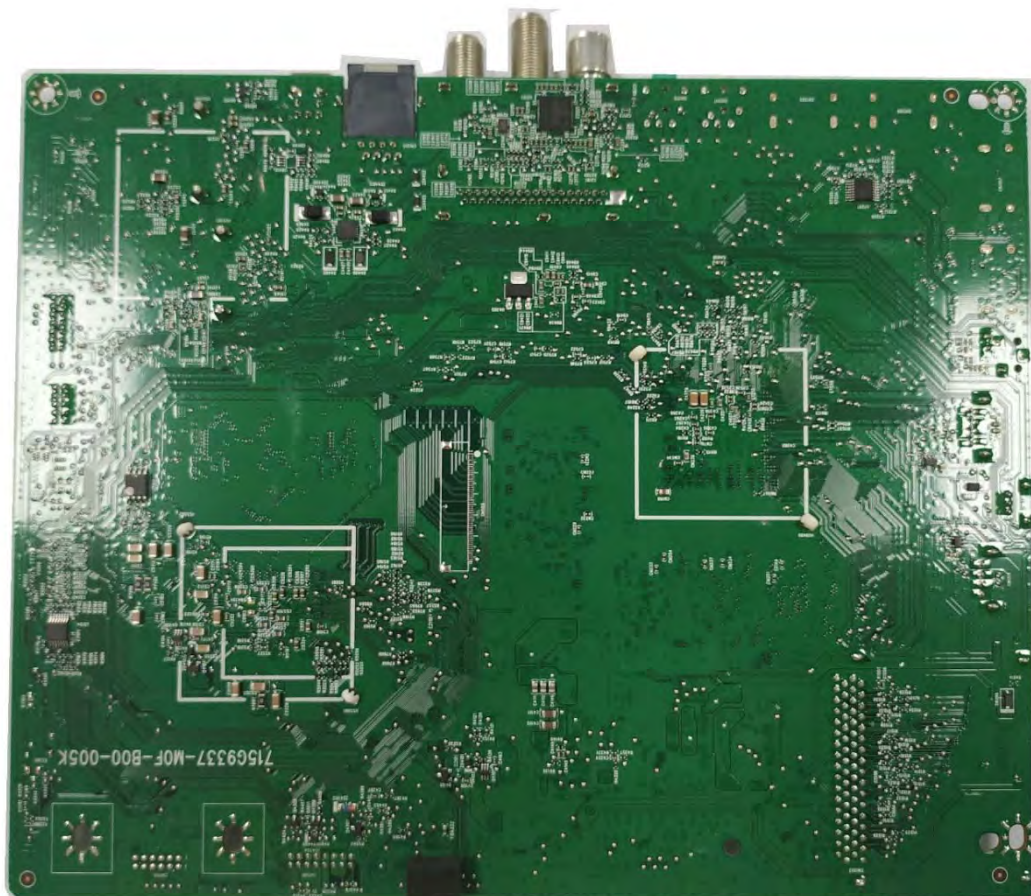
Power SSB Top View (For 715G9058M)



Power SSB Bottom View (For 715G9058M)



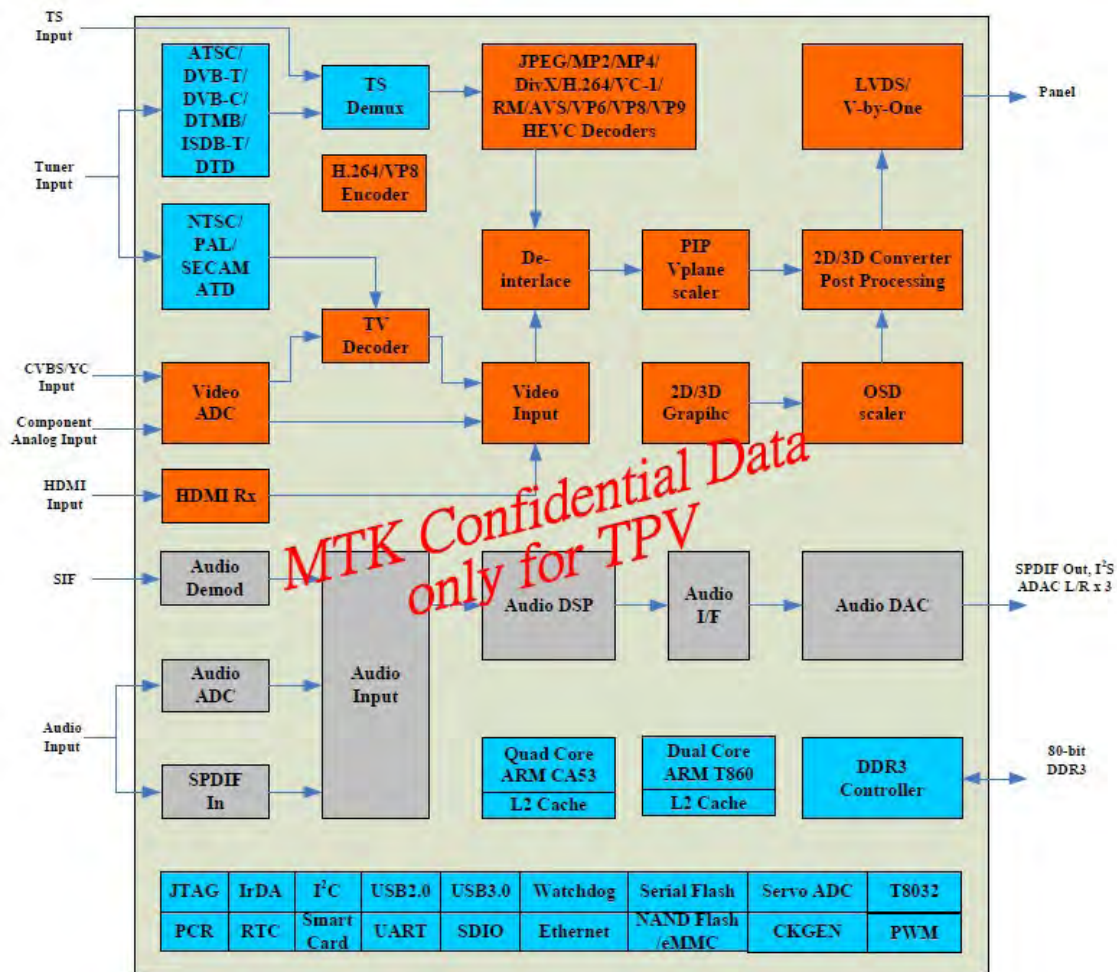
Power SSB Top View (For 715G9337M)



Power SSB Bottom View (For 715G9337M)

8. IC Data Sheets

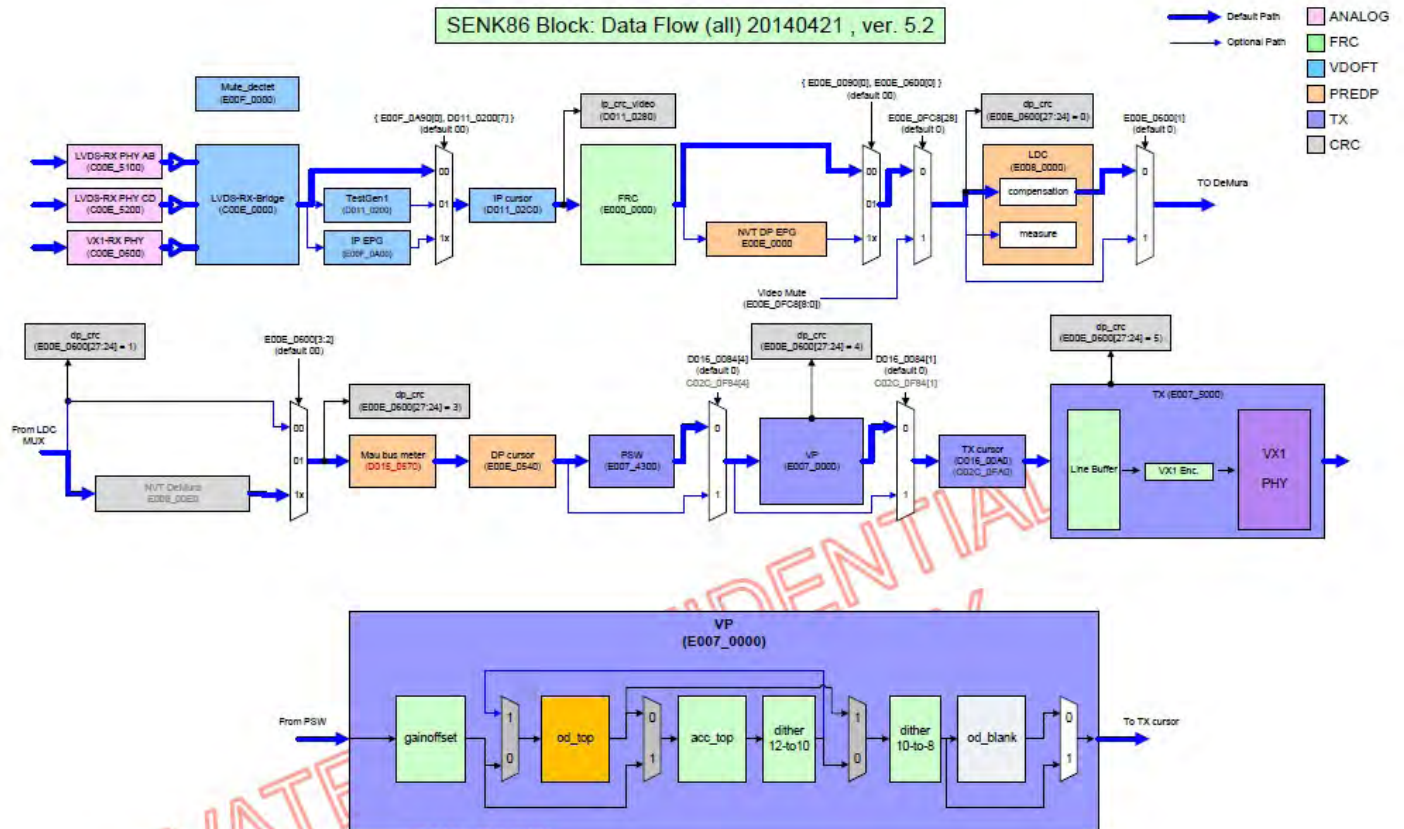
8.1 MT5596 UIIJ (IC U9400--Scaler)



The pinout table for the MT5596 UIIJ (IC U9400--Scaler) is as follows:

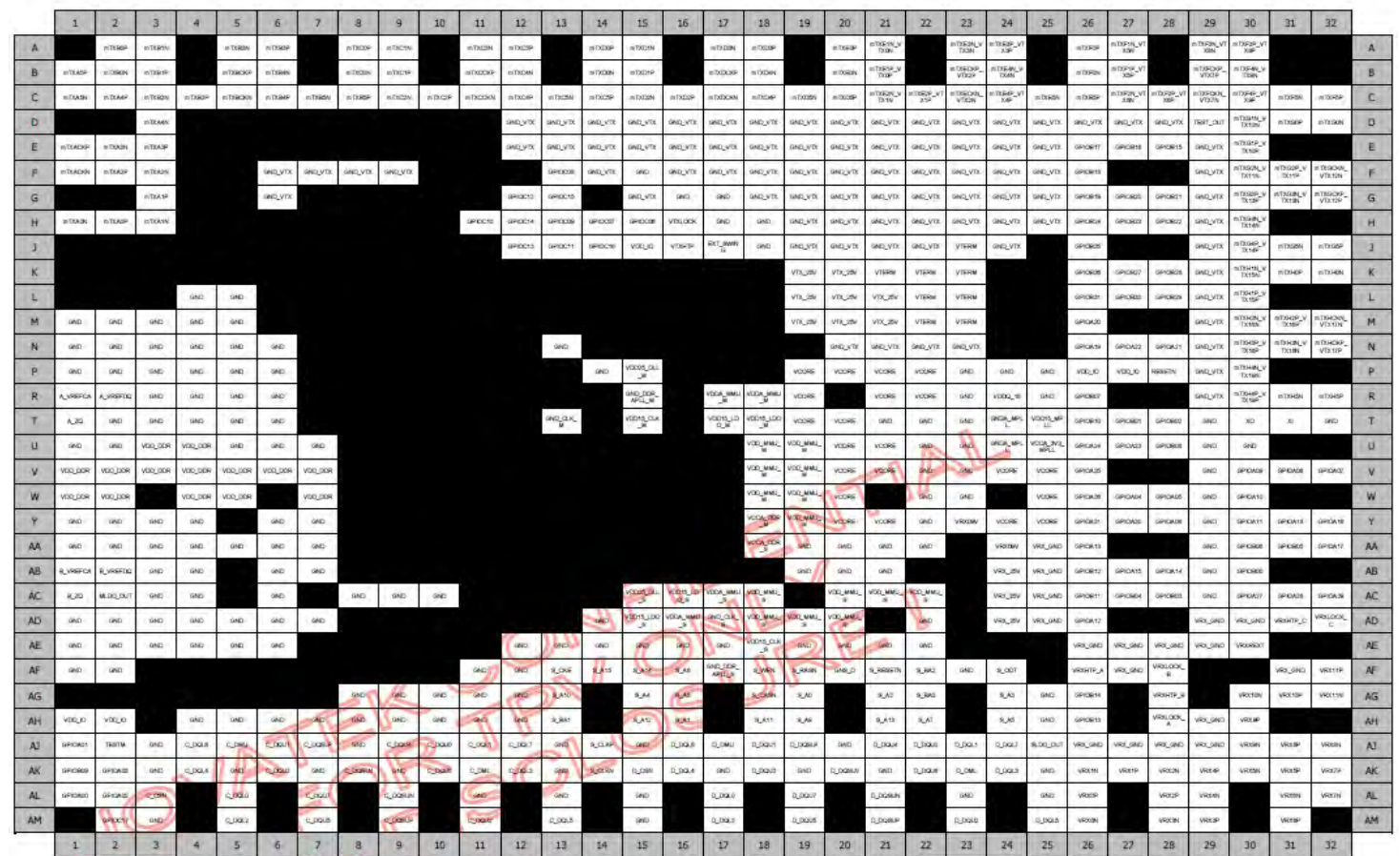
Pin	Symbol	Function
1	AVDD1	AVDD1
2	AVDD2	AVDD2
3	AVDD3	AVDD3
4	AVDD4	AVDD4
5	AVDD5	AVDD5
6	AVDD6	AVDD6
7	AVDD7	AVDD7
8	AVDD8	AVDD8
9	AVDD9	AVDD9
10	AVDD10	AVDD10
11	AVDD11	AVDD11
12	AVDD12	AVDD12
13	AVDD13	AVDD13
14	AVDD14	AVDD14
15	AVDD15	AVDD15
16	AVDD16	AVDD16
17	AVDD17	AVDD17
18	AVDD18	AVDD18
19	AVDD19	AVDD19
20	AVDD20	AVDD20
21	AVDD21	AVDD21
22	AVDD22	AVDD22
23	AVDD23	AVDD23
24	AVDD24	AVDD24
25	AVDD25	AVDD25
26	AVDD26	AVDD26
27	AVDD27	AVDD27
28	AVDD28	AVDD28
29	AVDD29	AVDD29
30	AVDD30	AVDD30
31	AVDD31	AVDD31
32	AVDD32	AVDD32
33	AVDD33	AVDD33
34	AVDD34	AVDD34
35	AVDD35	AVDD35
36	AVDD36	AVDD36
37	AVDD37	AVDD37
38	AVDD38	AVDD38
39	AVDD39	AVDD39
40	AVDD40	AVDD40
41	AVDD41	AVDD41
42	AVDD42	AVDD42
43	AVDD43	AVDD43
44	AVDD44	AVDD44
45	AVDD45	AVDD45
46	AVDD46	AVDD46
47	AVDD47	AVDD47
48	AVDD48	AVDD48
49	AVDD49	AVDD49
50	AVDD50	AVDD50
51	AVDD51	AVDD51
52	AVDD52	AVDD52
53	AVDD53	AVDD53
54	AVDD54	AVDD54
55	AVDD55	AVDD55
56	AVDD56	AVDD56
57	AVDD57	AVDD57
58	AVDD58	AVDD58
59	AVDD59	AVDD59
60	AVDD60	AVDD60
61	AVDD61	AVDD61
62	AVDD62	AVDD62
63	AVDD63	AVDD63
64	AVDD64	AVDD64
65	AVDD65	AVDD65
66	AVDD66	AVDD66
67	AVDD67	AVDD67
68	AVDD68	AVDD68
69	AVDD69	AVDD69
70	AVDD70	AVDD70
71	AVDD71	AVDD71
72	AVDD72	AVDD72
73	AVDD73	AVDD73
74	AVDD74	AVDD74
75	AVDD75	AVDD75
76	AVDD76	AVDD76
77	AVDD77	AVDD77
78	AVDD78	AVDD78
79	AVDD79	AVDD79
80	AVDD80	AVDD80
81	AVDD81	AVDD81
82	AVDD82	AVDD82
83	AVDD83	AVDD83
84	AVDD84	AVDD84
85	AVDD85	AVDD85
86	AVDD86	AVDD86
87	AVDD87	AVDD87
88	AVDD88	AVDD88
89	AVDD89	AVDD89
90	AVDD90	AVDD90
91	AVDD91	AVDD91
92	AVDD92	AVDD92
93	AVDD93	AVDD93
94	AVDD94	AVDD94
95	AVDD95	AVDD95
96	AVDD96	AVDD96
97	AVDD97	AVDD97
98	AVDD98	AVDD98
99	AVDD99	AVDD99
100	AVDD100	AVDD100

8.2 NT7233 3TBG/BA (IC U3100--Scaler)

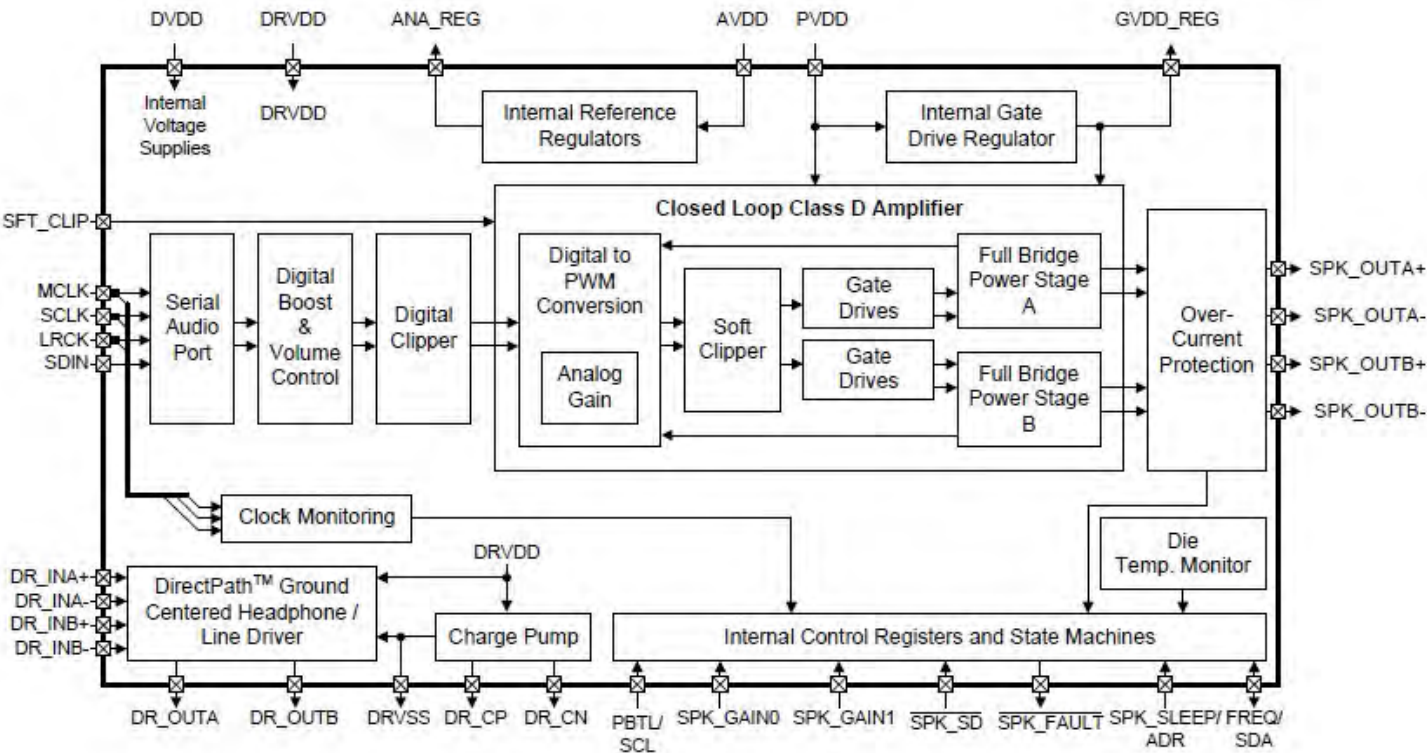


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
A																											A
B																											B
C																											C
D																											D
E																											E
F																											F
G																											G
H																											H
J																											J
K																											K
L																											L
M																											M
N																											N
P																											P
R																											R
T																											T
U																											U
V																											V
W																											W
Y																											Y
AA																											AA
AB																											AB
AC																											AC
AD																											AD
AE																											AE
AF																											AF
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	

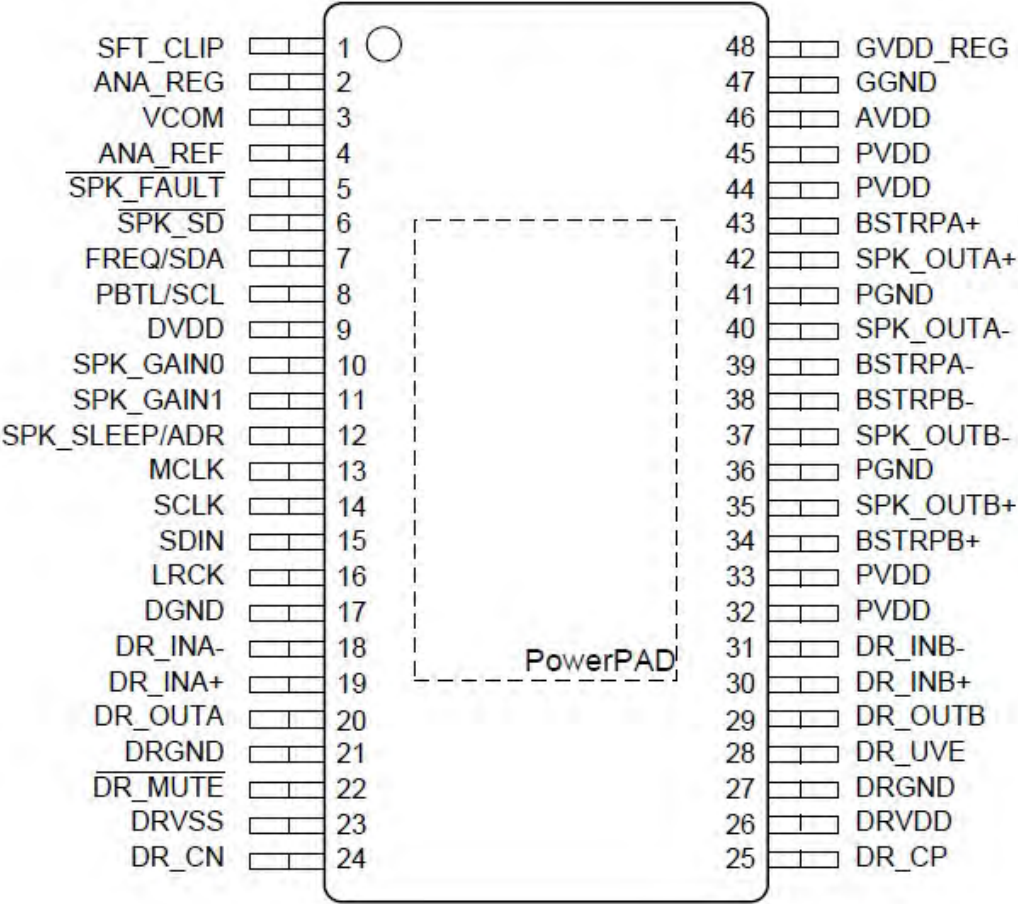
Video Path Diagram



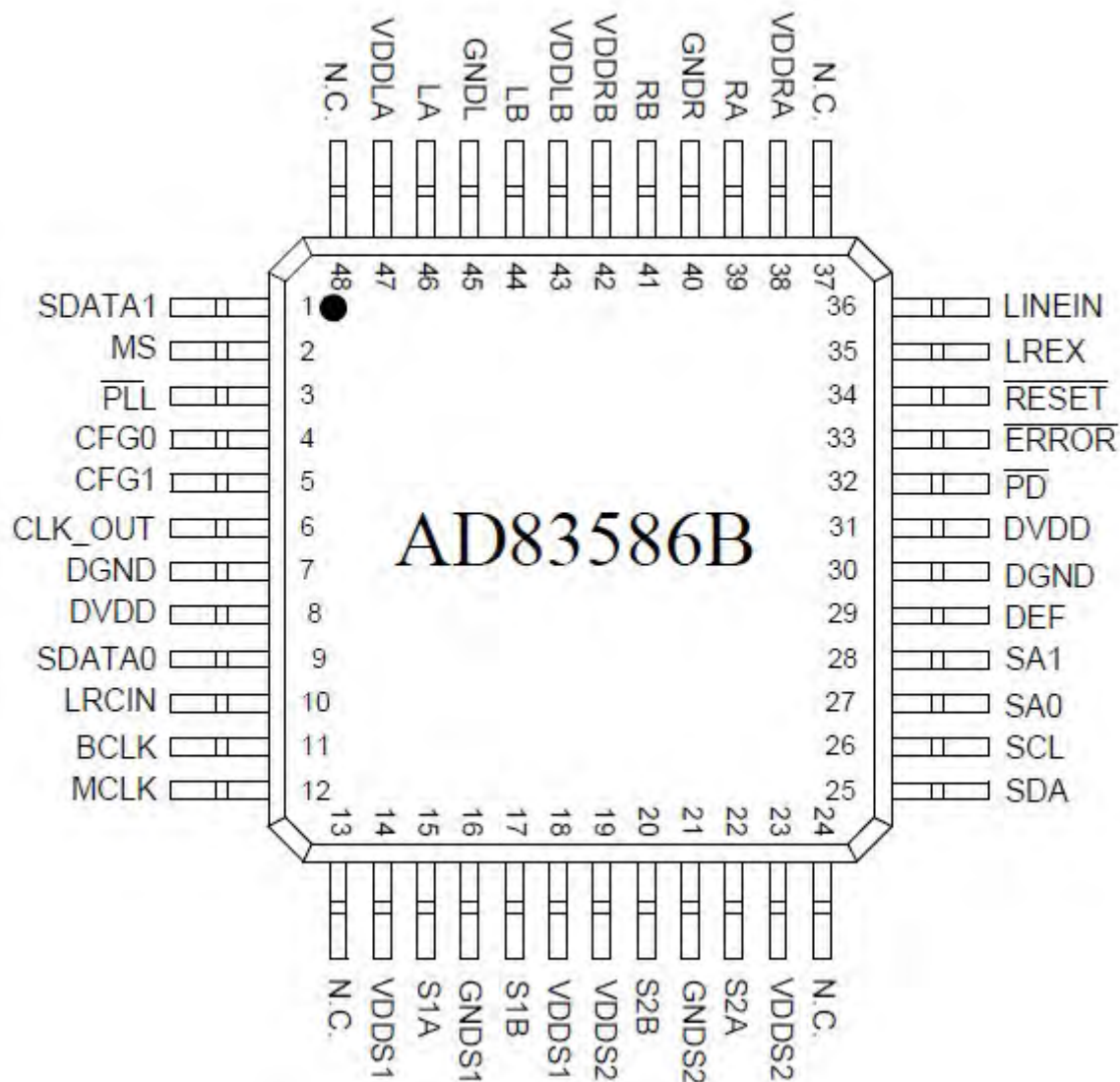
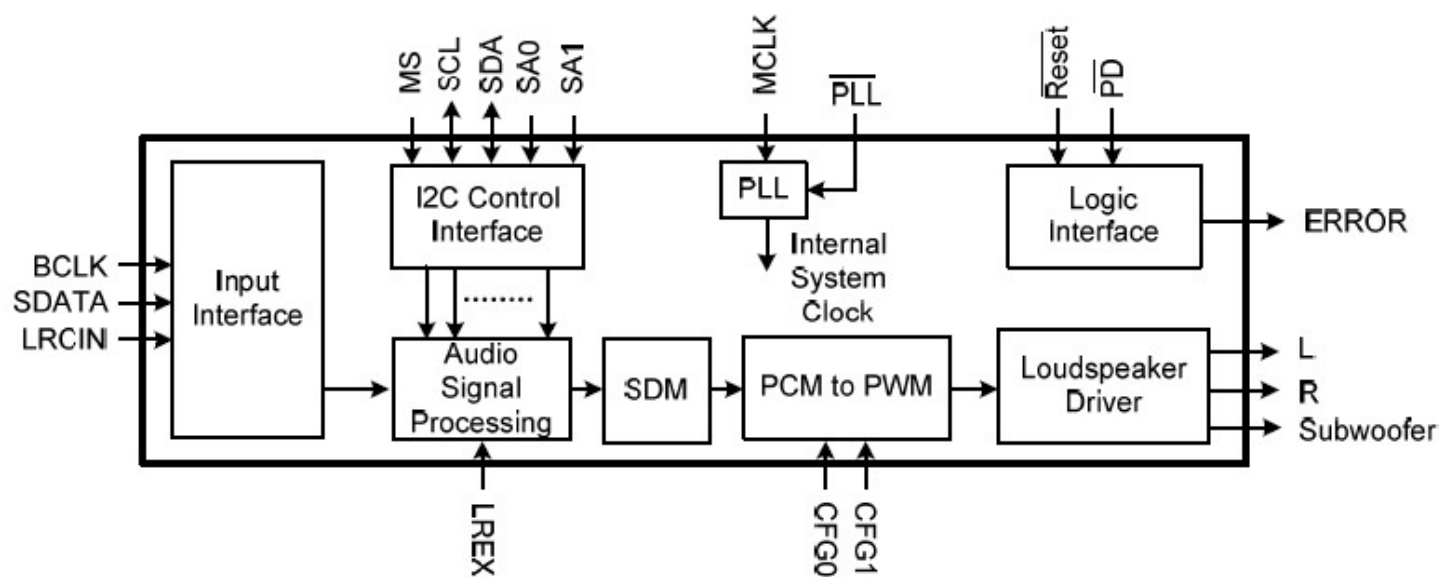
8.4 TAS576 0LDDCAR (IC U5100--Audio)



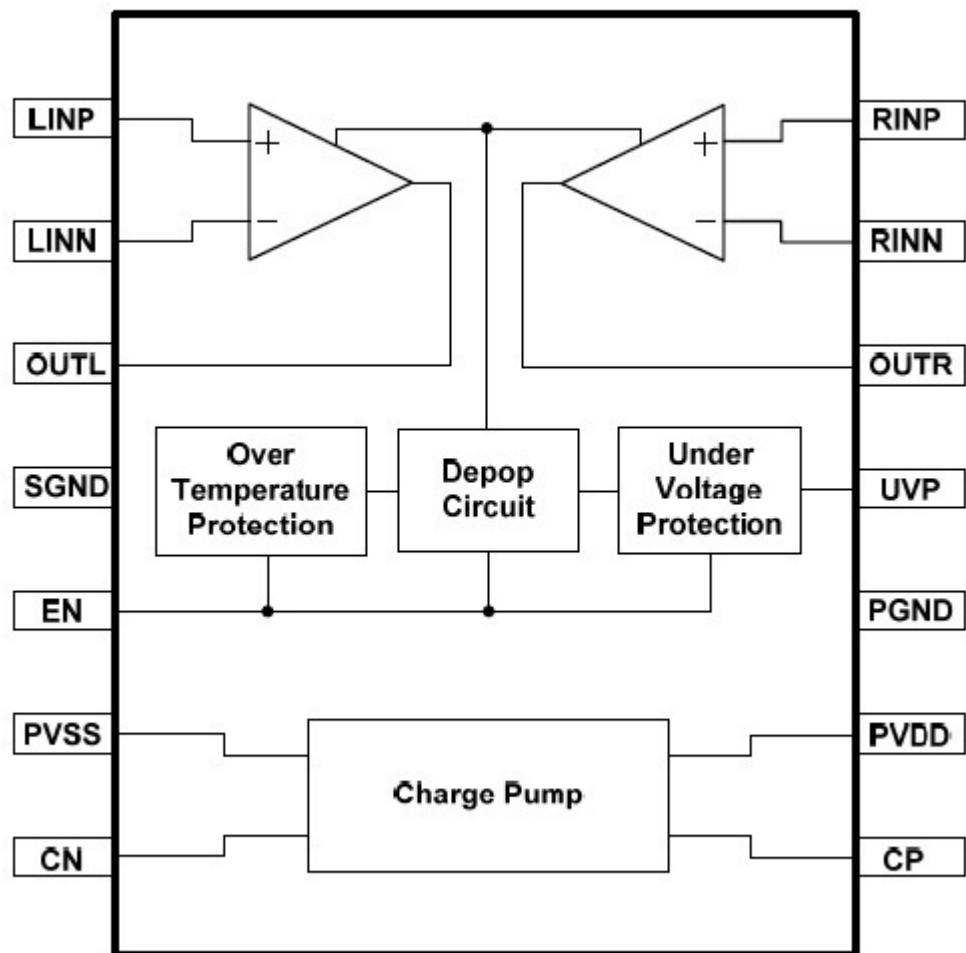
TSSOP PACKAGE
DCA-48
(TOP VIEW)



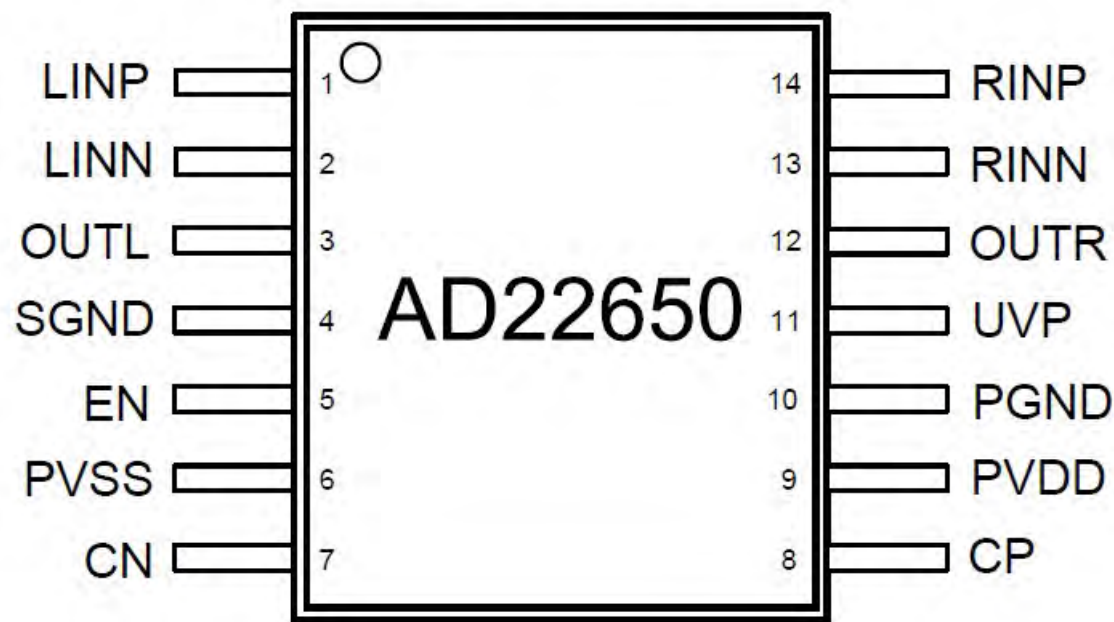
8.5 A D83586B-LG48NAY (IC U6000--Audio)



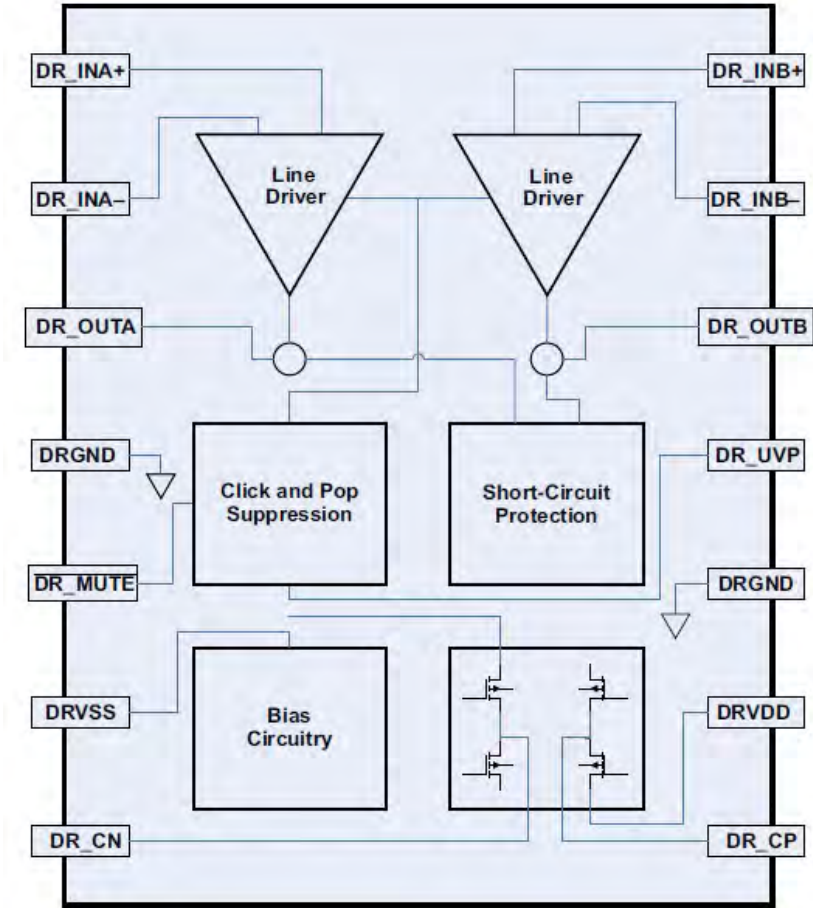
8.6 AD226 50-QH14NAR (IC U6001--Audio)



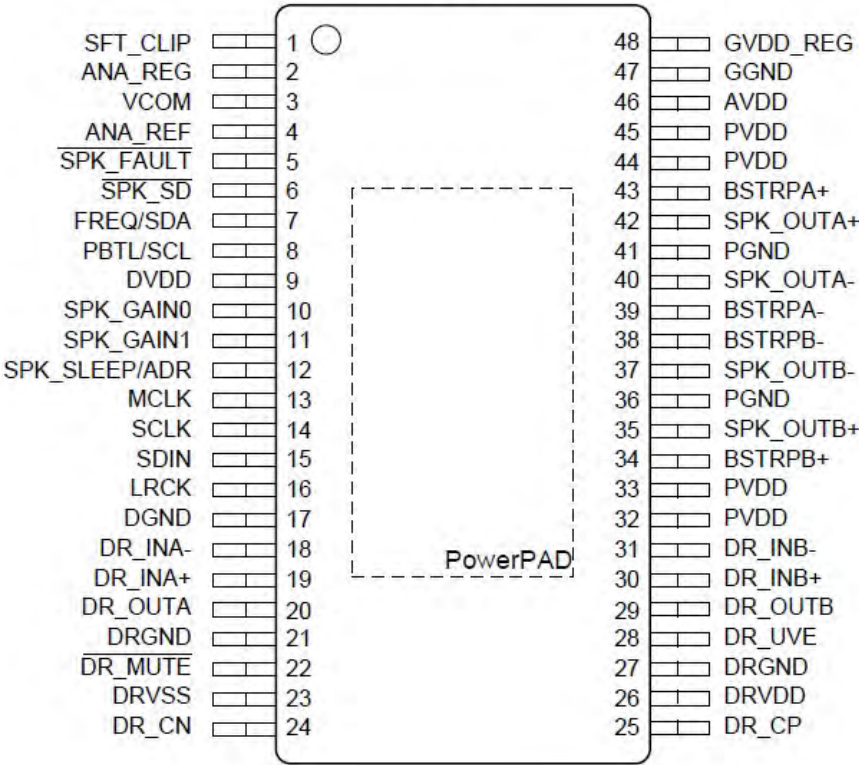
TSSOP-14
(Top View)



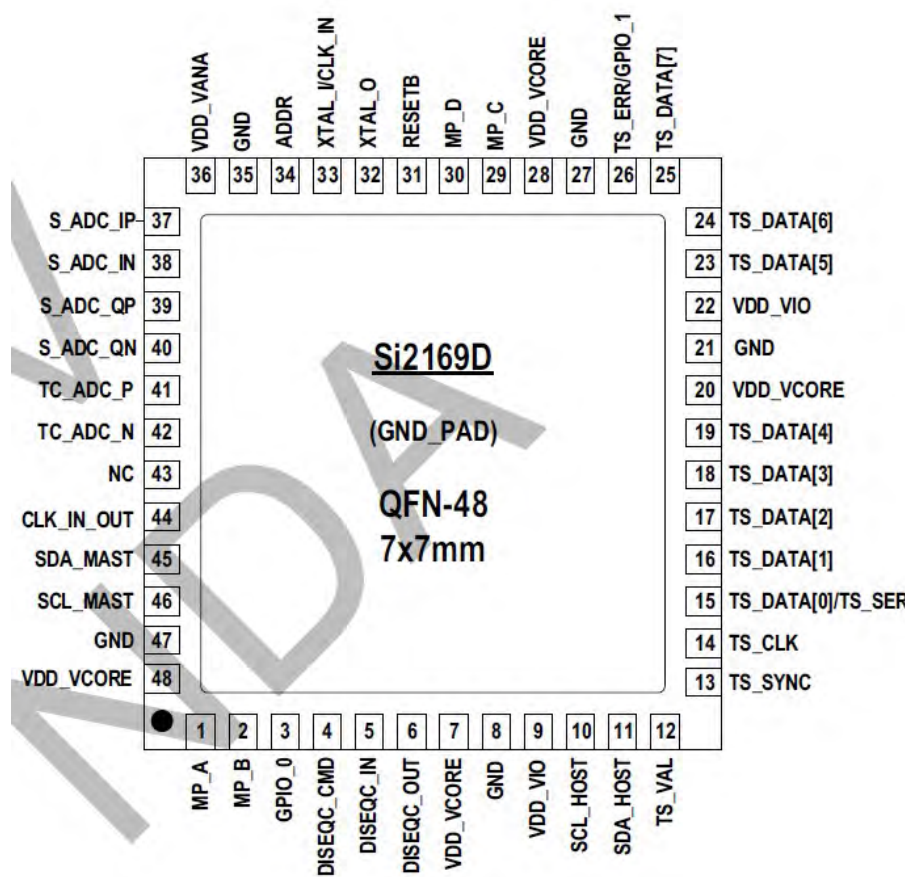
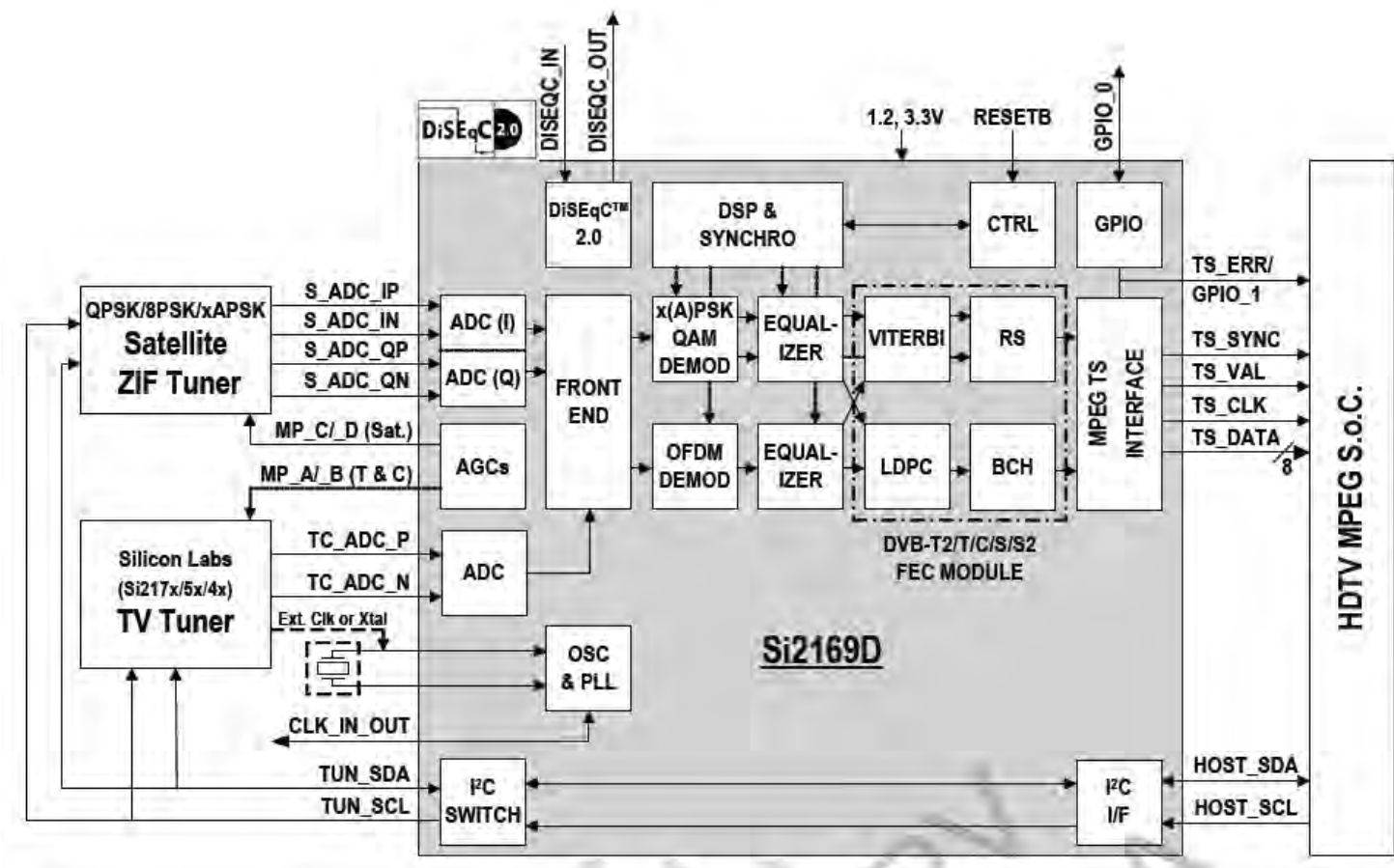
8.7 TAS576 0LDDCAR (IC U5200--Audio)



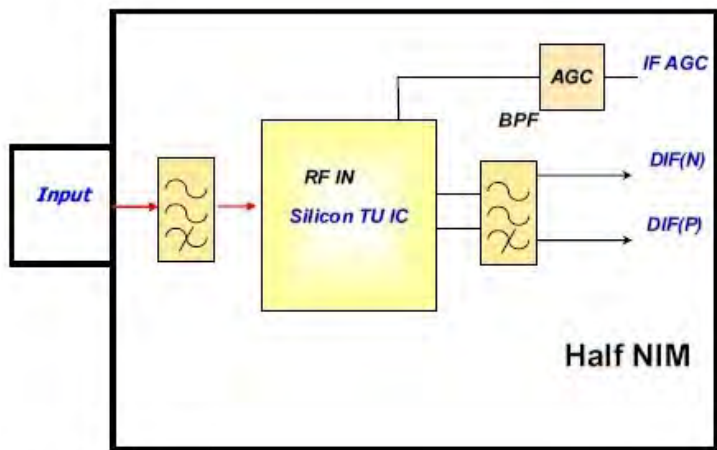
TSSOP PACKAGE
DCA-48
(TOP VIEW)



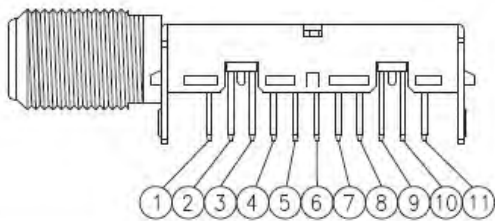
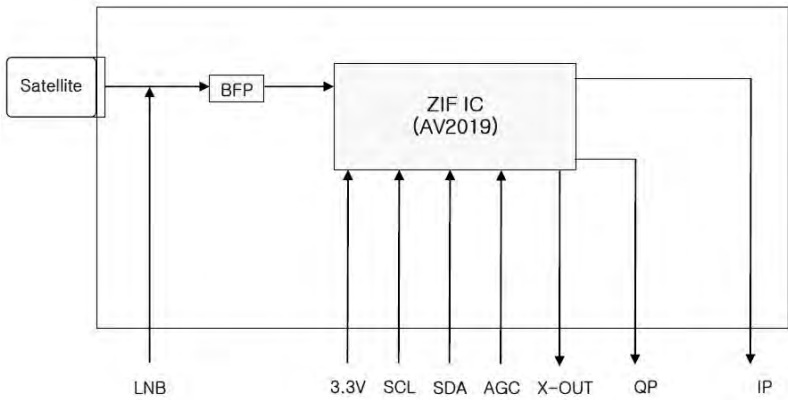
8.8 SI2169-D60 -GMR (IC U201--DEMODULATOR)



8.9 TDSY-G480 D EUROPE (TU201)



8.10 TDQS-A70 1F EUROPE (TU202)

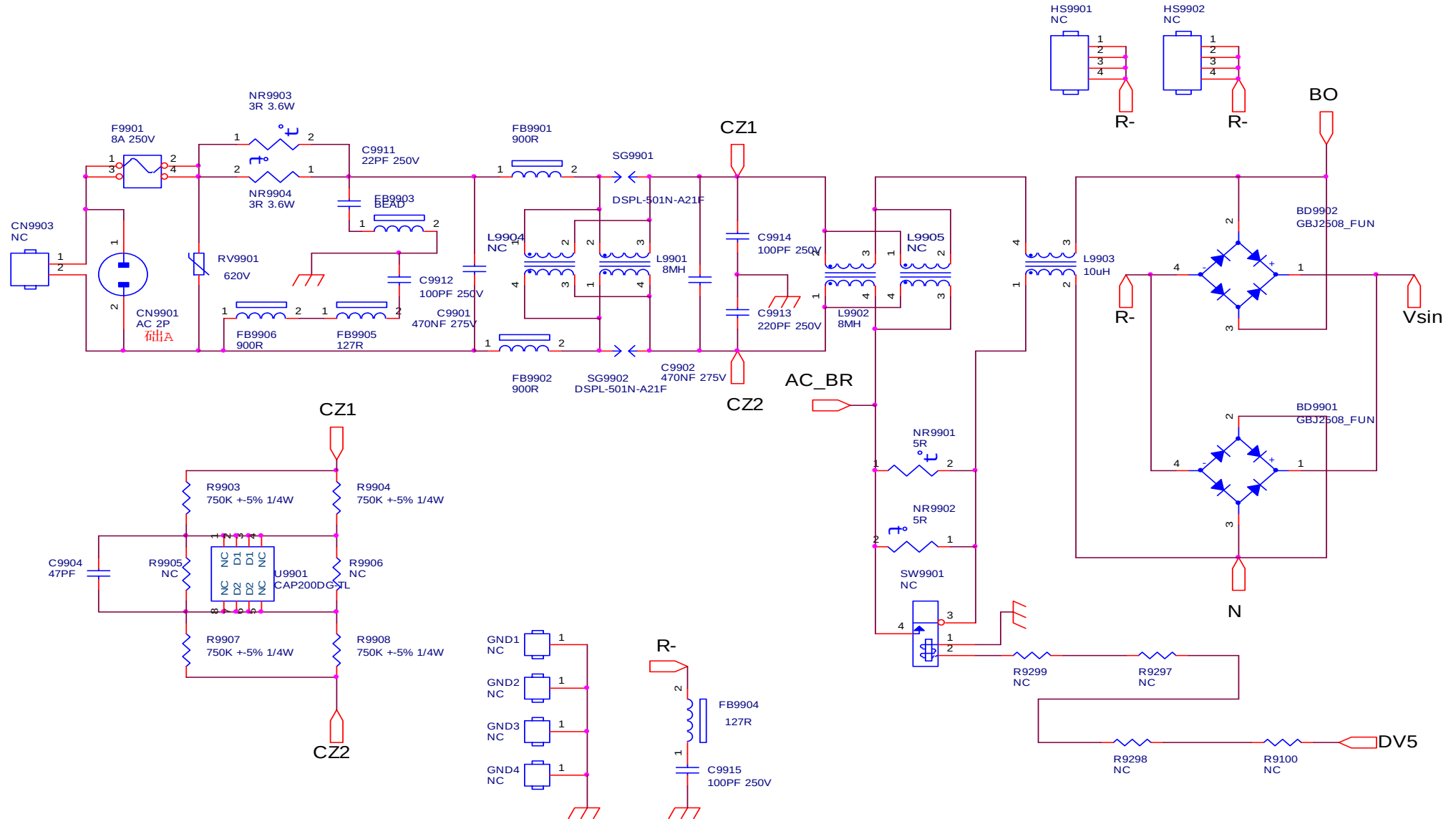


Pin No	Pin Name	Pin Description
1	LNB A	LNB power supply. To put 1nF of ceramic capacitor into ground.
2	NC	No Connection
3	TU 3.3V	+3.3V Supply for ZIF IC
4	NC	No Connection
5	QP Output	Base band output from Tuner to Demod.
6	IP Output	
7	NC	No Connection
8	AGC	AGC Voltage input
9	X-OUT	X-tal Output (refer to Address 0x01)
10	SDA	Serial programming interface data.
11	SCL	Serial programming interface clock.

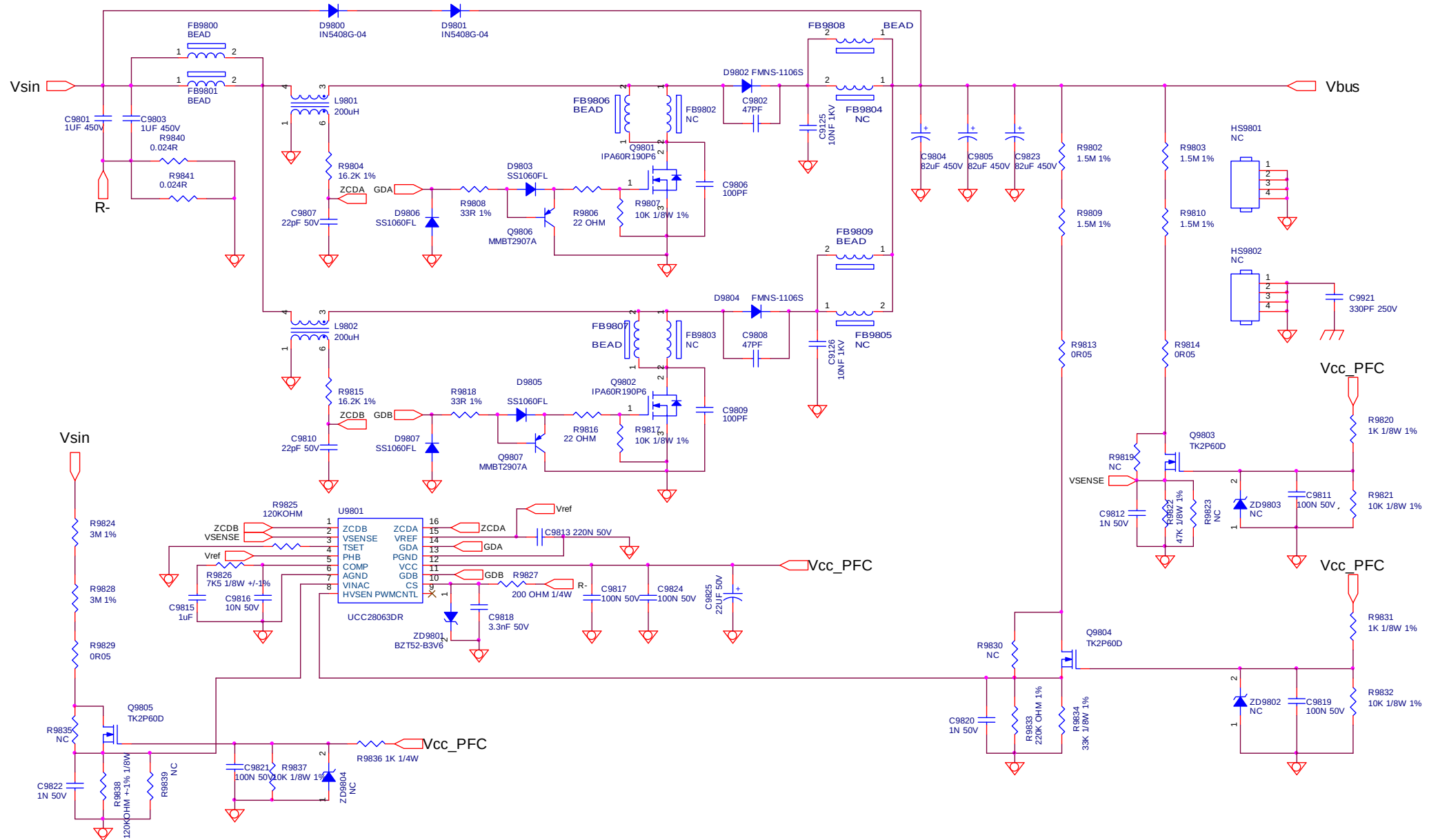
9. Circuit Diagrams

9.1 A 715G8175 PSU (For 75" 7803/8303 Series)

9-1-1 AC_input



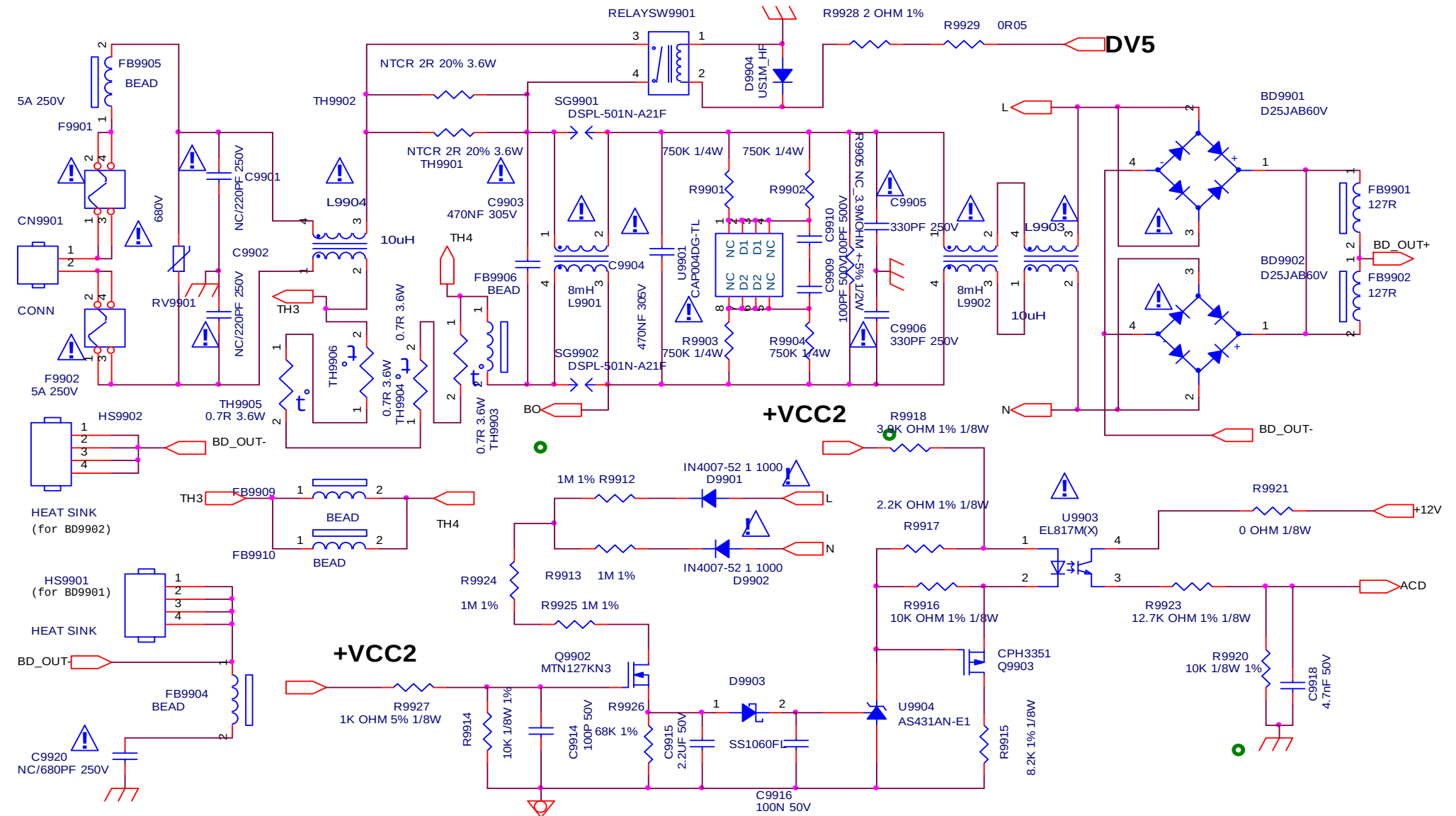
9-1-2 PFC with TI



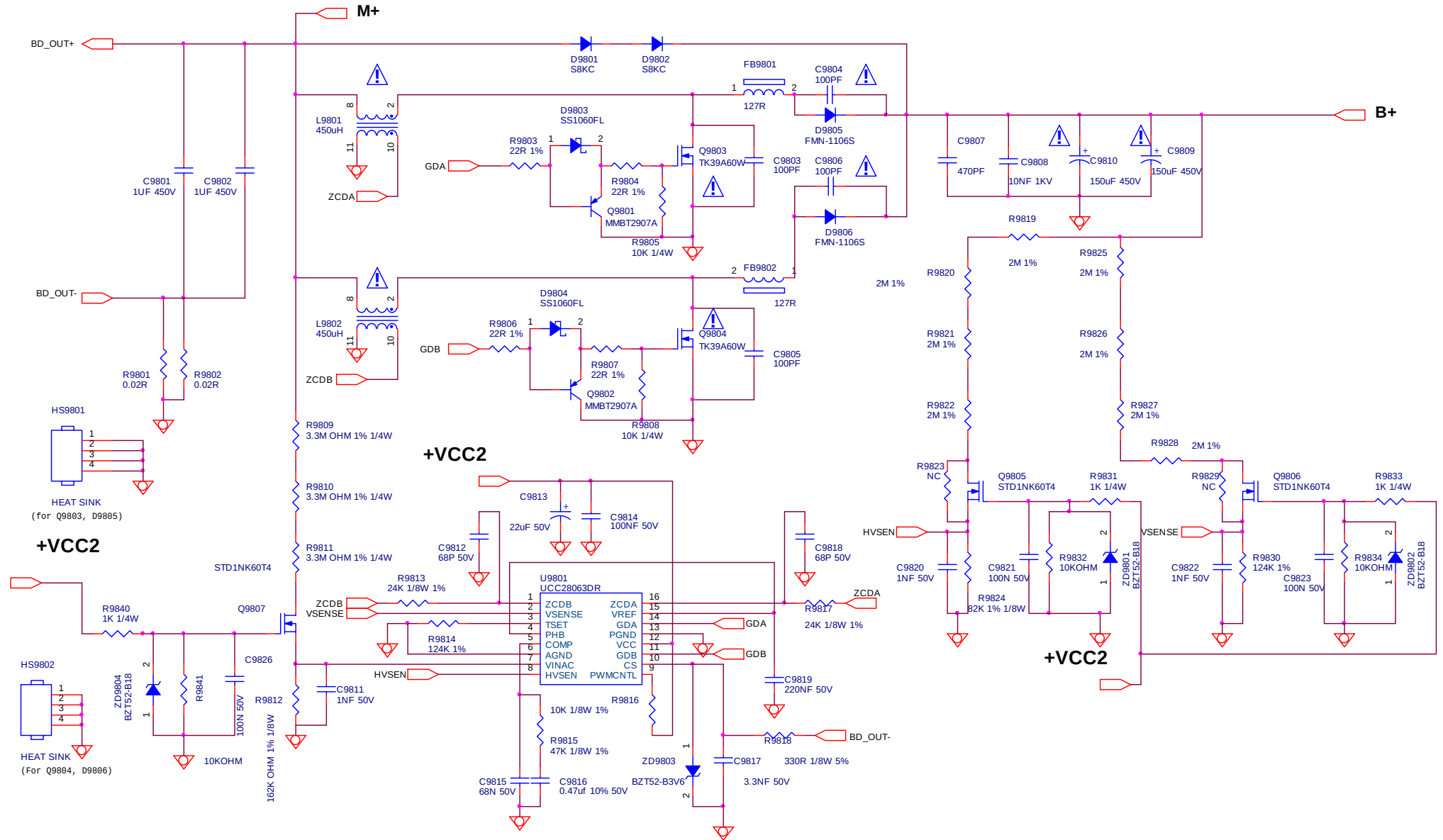
The diagram illustrates a complex power supply system, divided into 'HOT' and 'COLD' sections. The 'HOT' section includes an AC input, a bridge rectifier (D9104), a Vbus filter (C9101), a feedback loop (FB_LLC) with an op-amp (U9101), a voltage divider (VCC1), a regulator (REG), and a switch-mode power supply (SMPS) with a MOSFET (Q9101) and a transformer (T9101). The 'COLD' section includes a transformer (T9101), a rectifier (D9120), a filter capacitor (C9107), a voltage divider (VCC1), a regulator (REG), a switch-mode power supply (SMPS) with a MOSFET (Q9104) and a transformer (T9101), and a switch-mode power supply (SMPS) with a MOSFET (Q9101) and a transformer (T9101). The diagram also shows various control signals like ON/OFF, A3D, +VA, DIM, PS_ON, and +VM. A detailed inset shows the connection of the DIM signal to the power supply.

9.2 A 715G8886 PSU (For OLED873 Series)

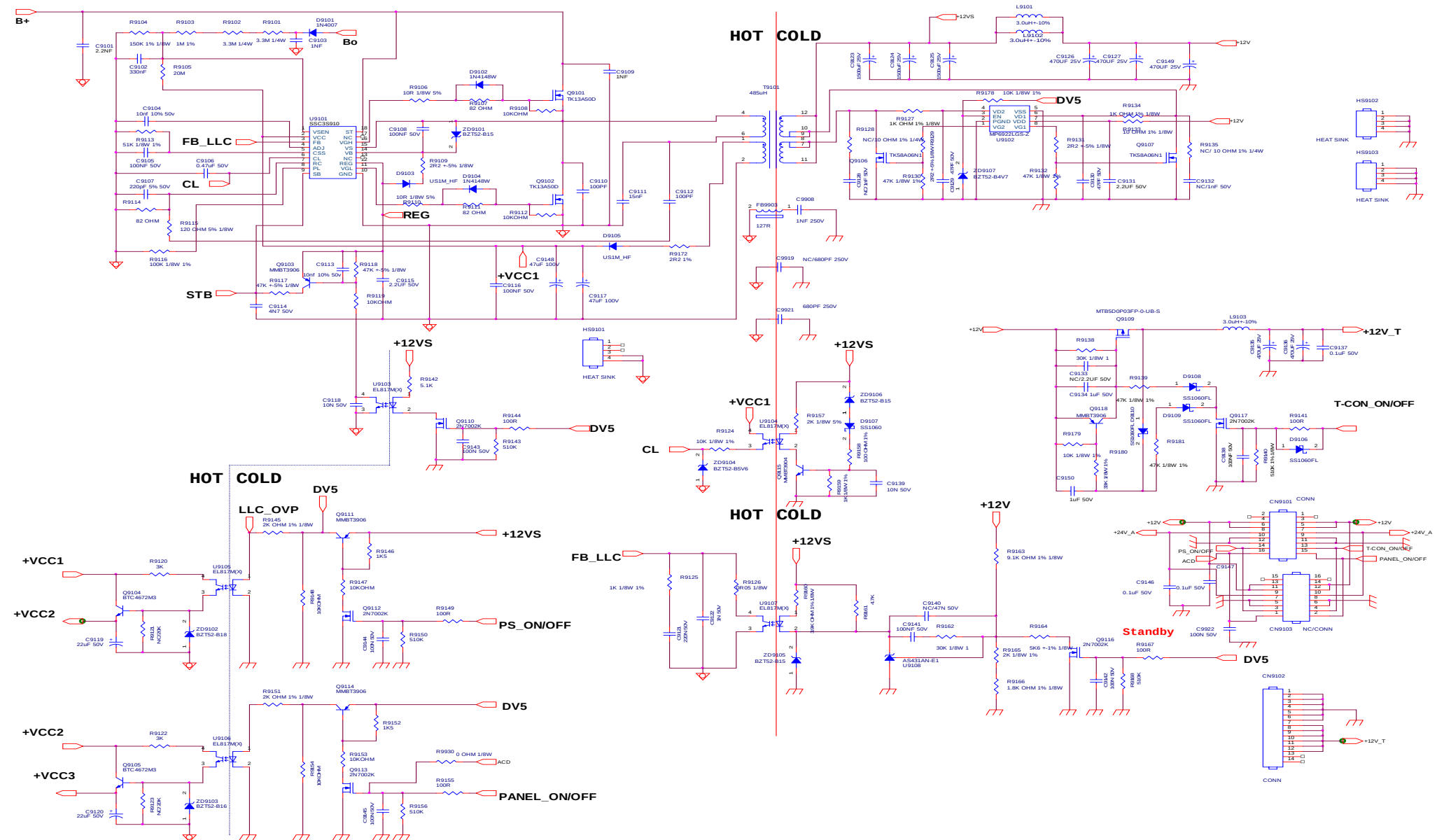
9-2-1 Input stage



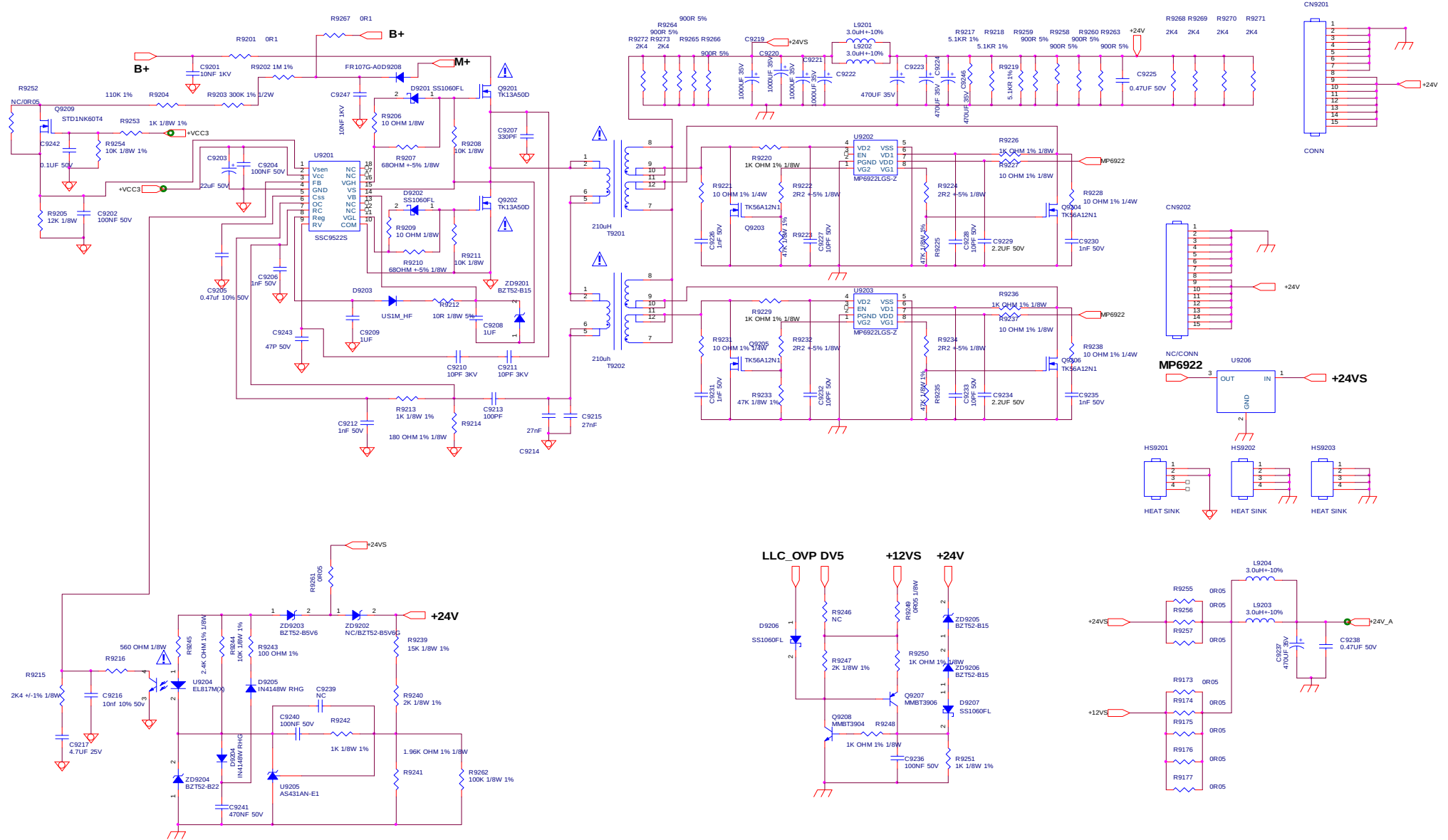
9-2-2 PFC stage



9-2-3 12V power stage

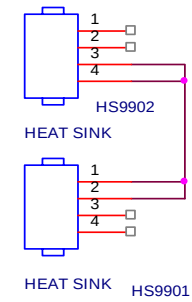
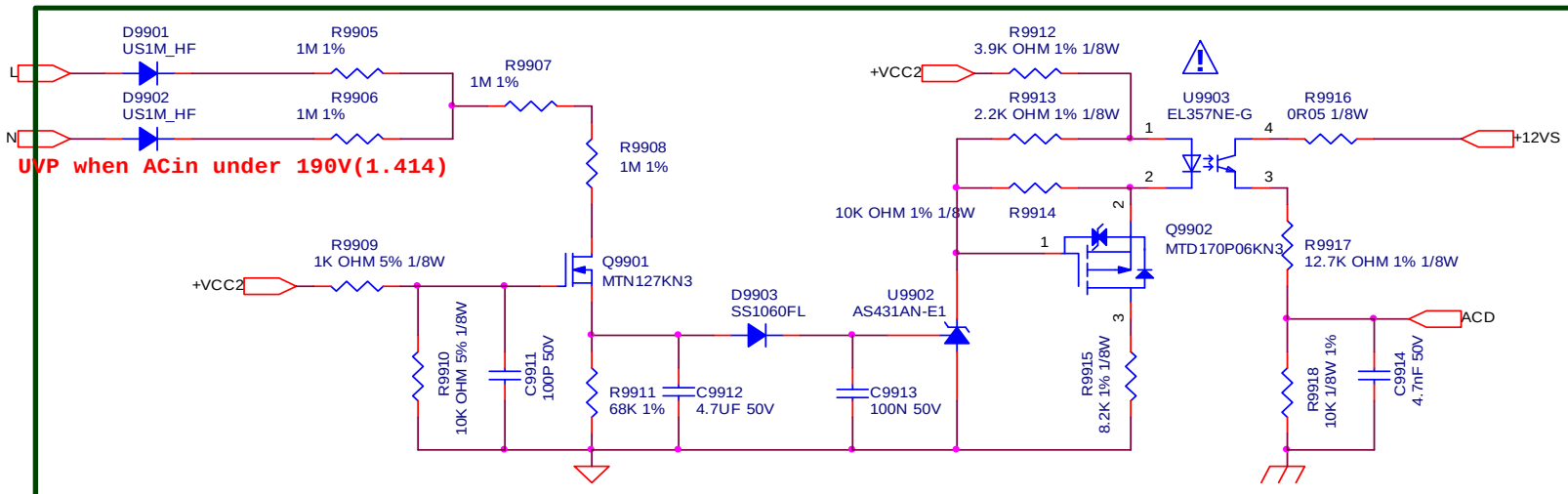
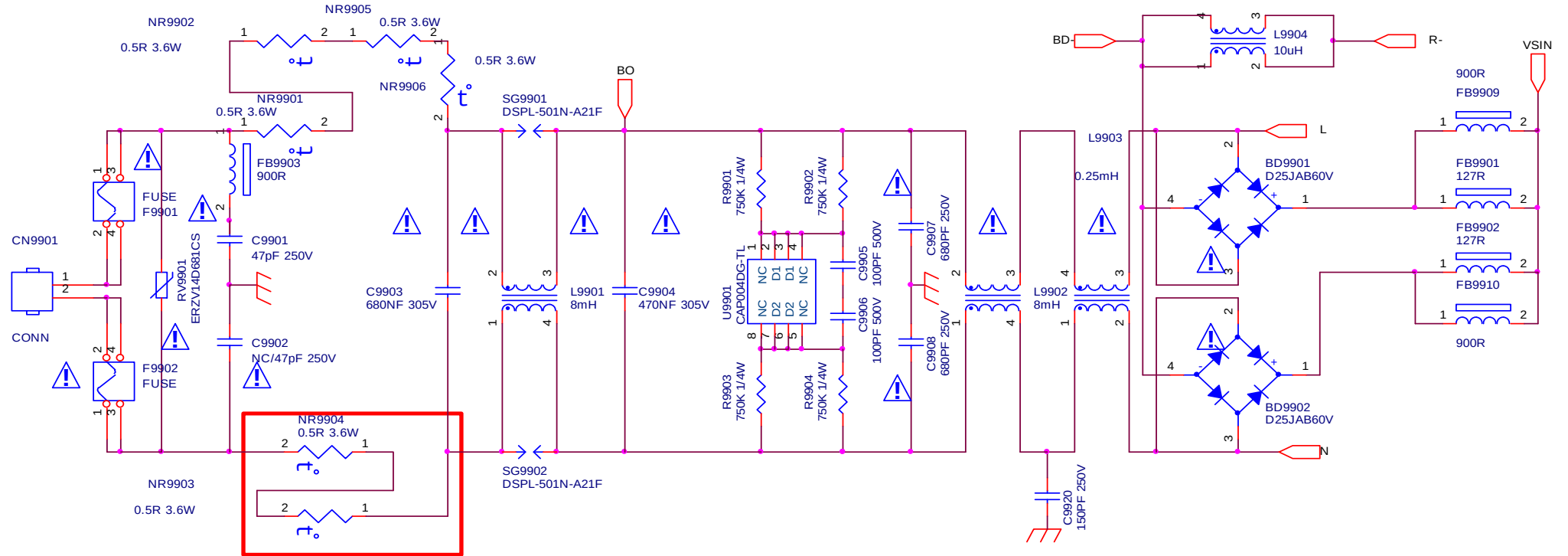


9-2-4 24V power stage

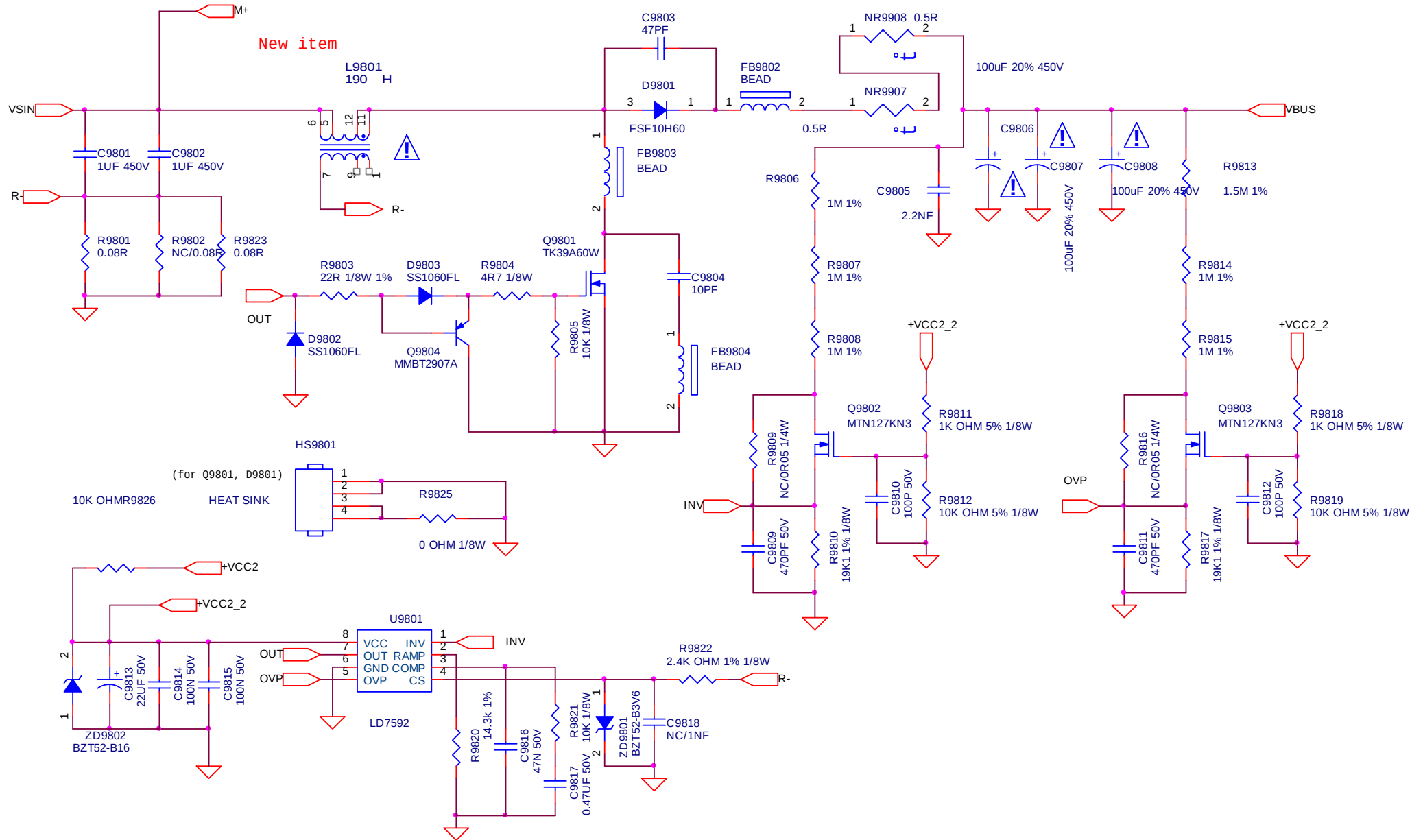


9.3 A 715G9106 PSU (For OLED973 Series)

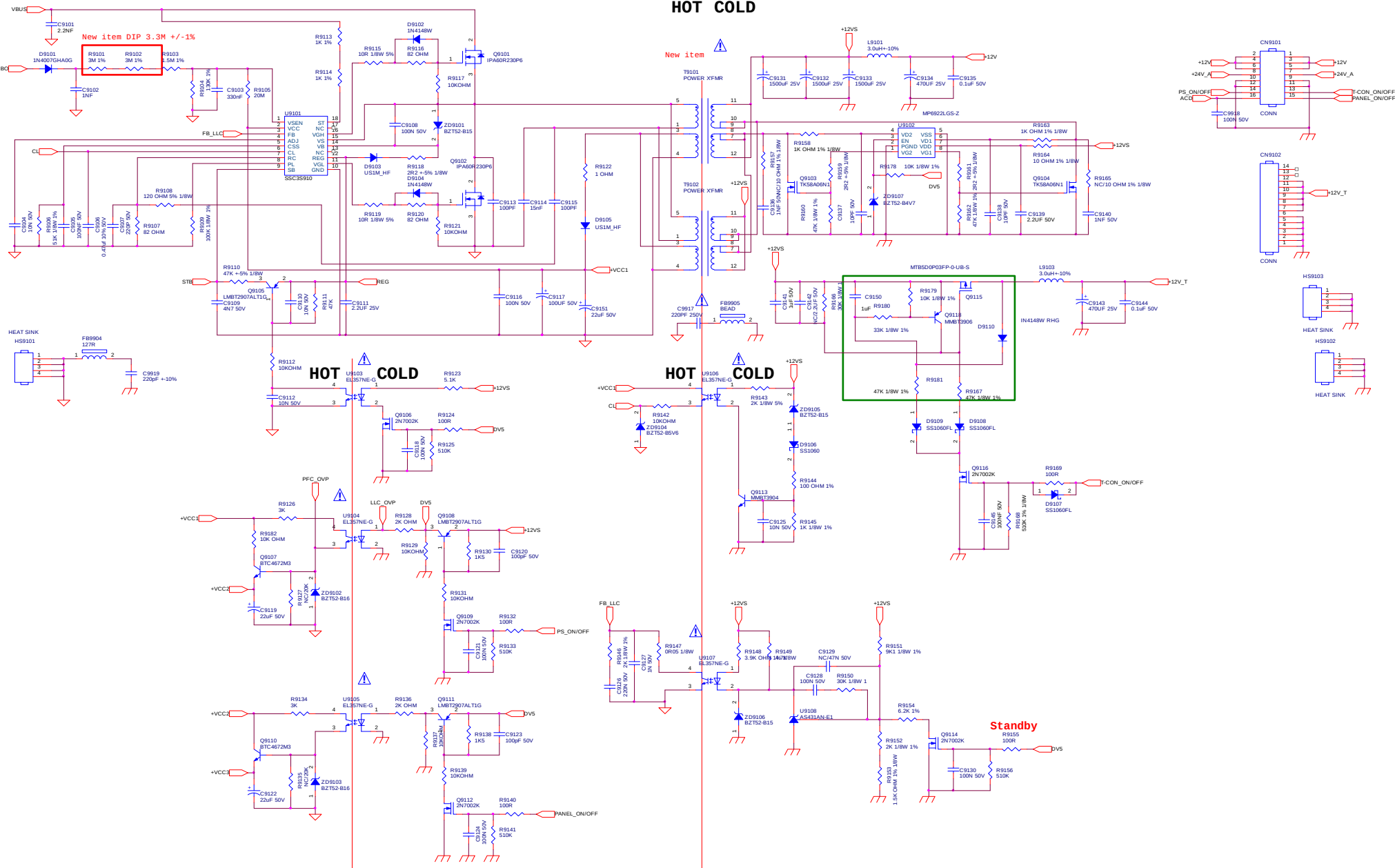
9-3-1 Input stage



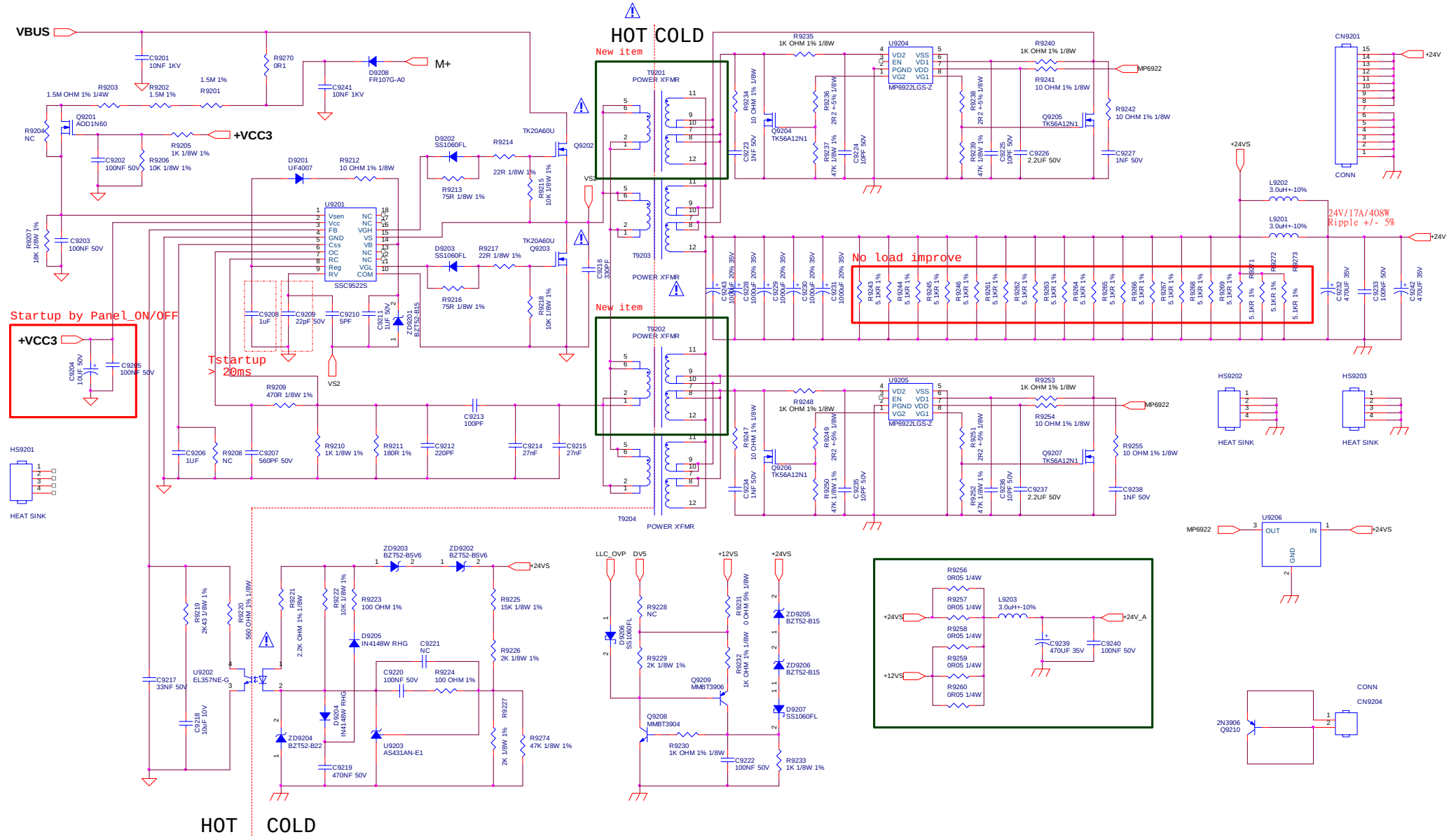
9-3-2 PFC stage



HOT COLD

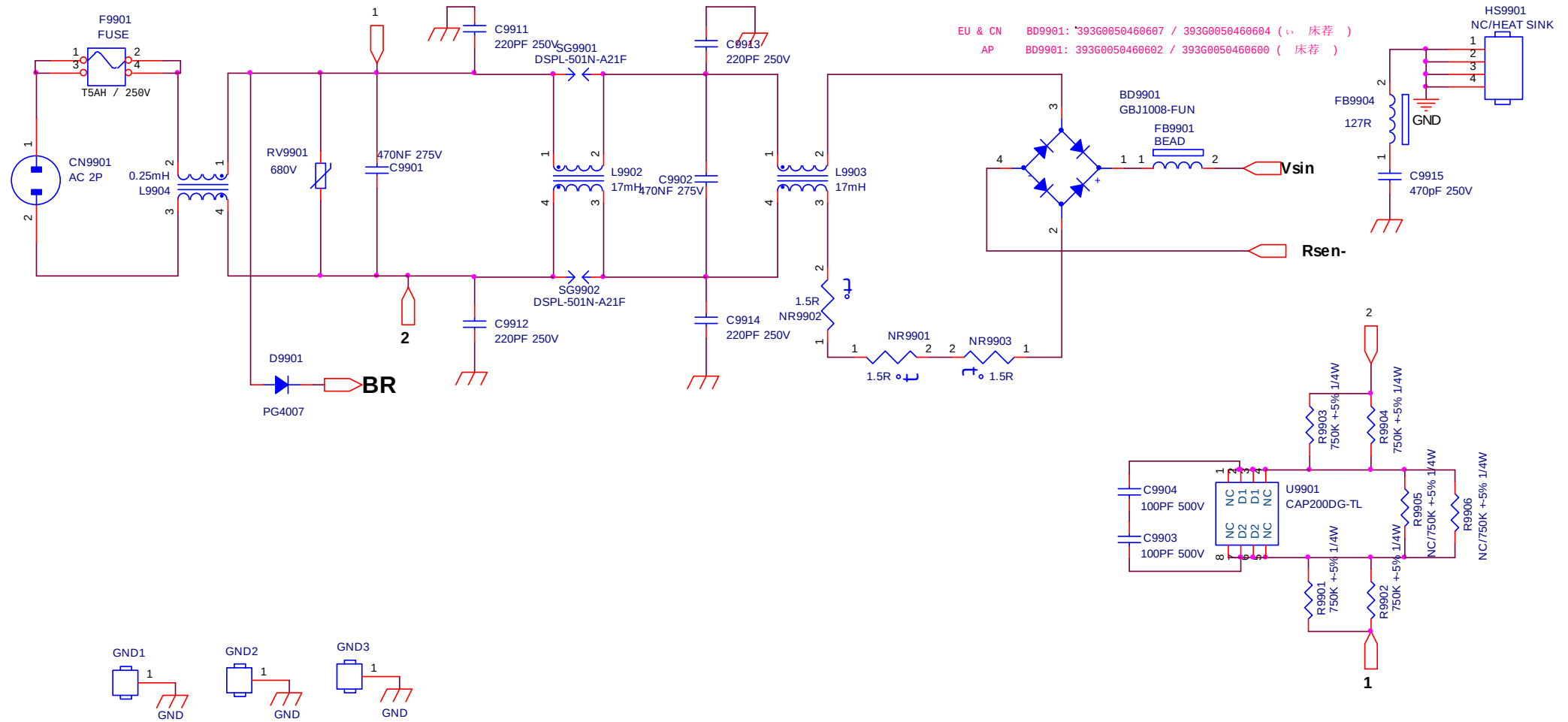


9-3-4 24V power stage

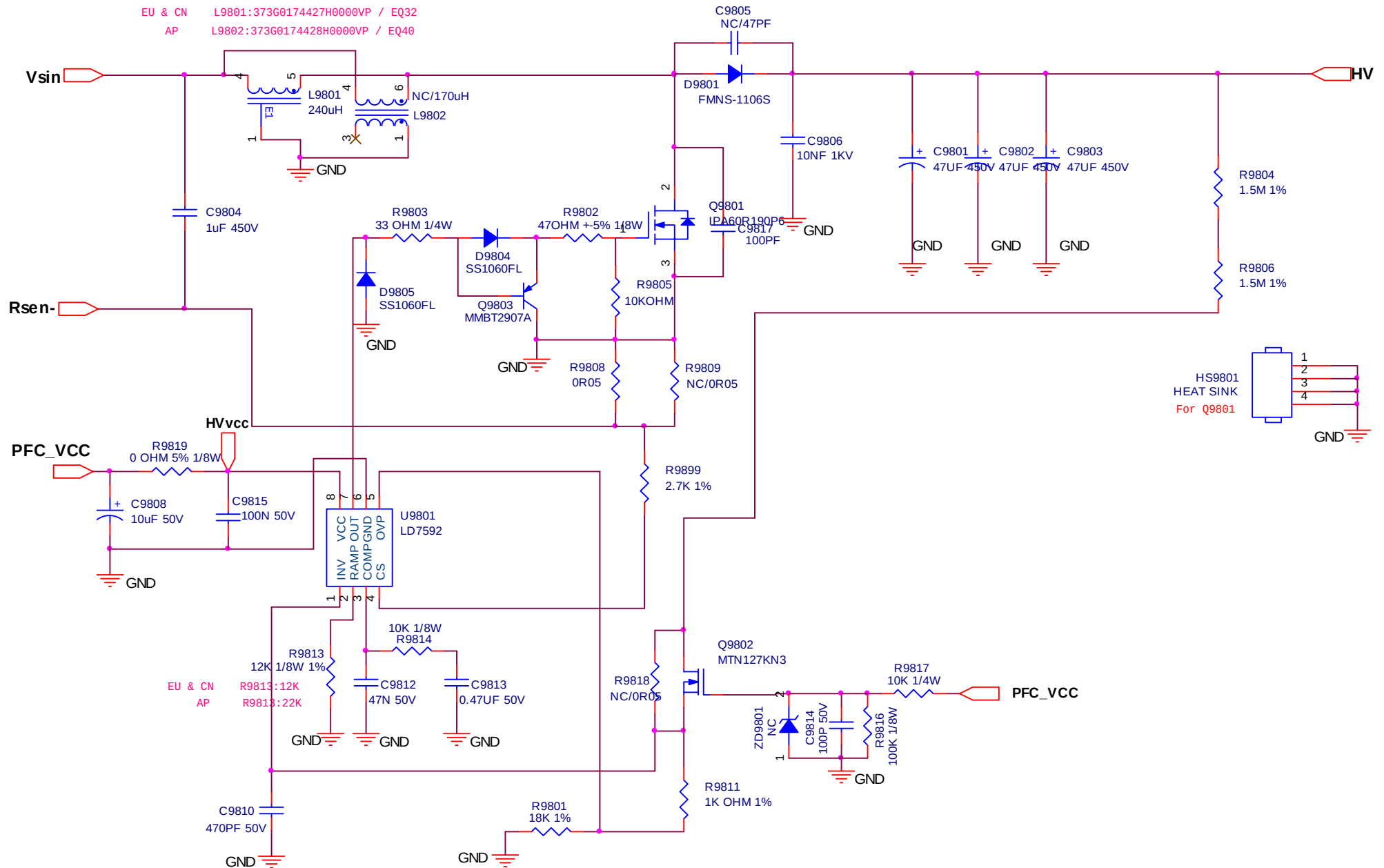


9.4 A 715G9309 PSU (For 49/55" 7503/7803/8303/8503 & 50/55" 7303/7363/7373/7383/7393 Series)

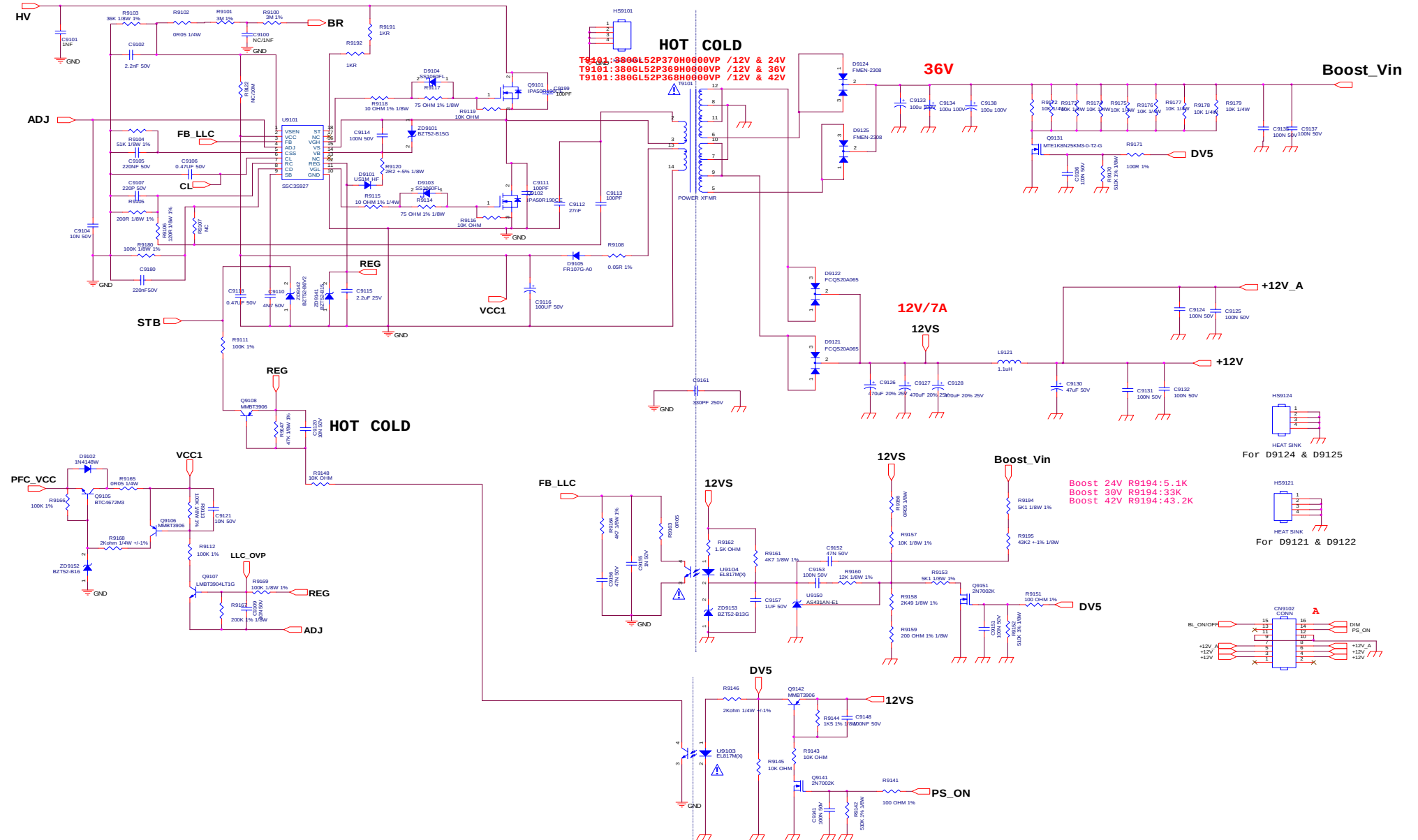
9-4-1 AC input



9-4-2 PFC with LD7592S

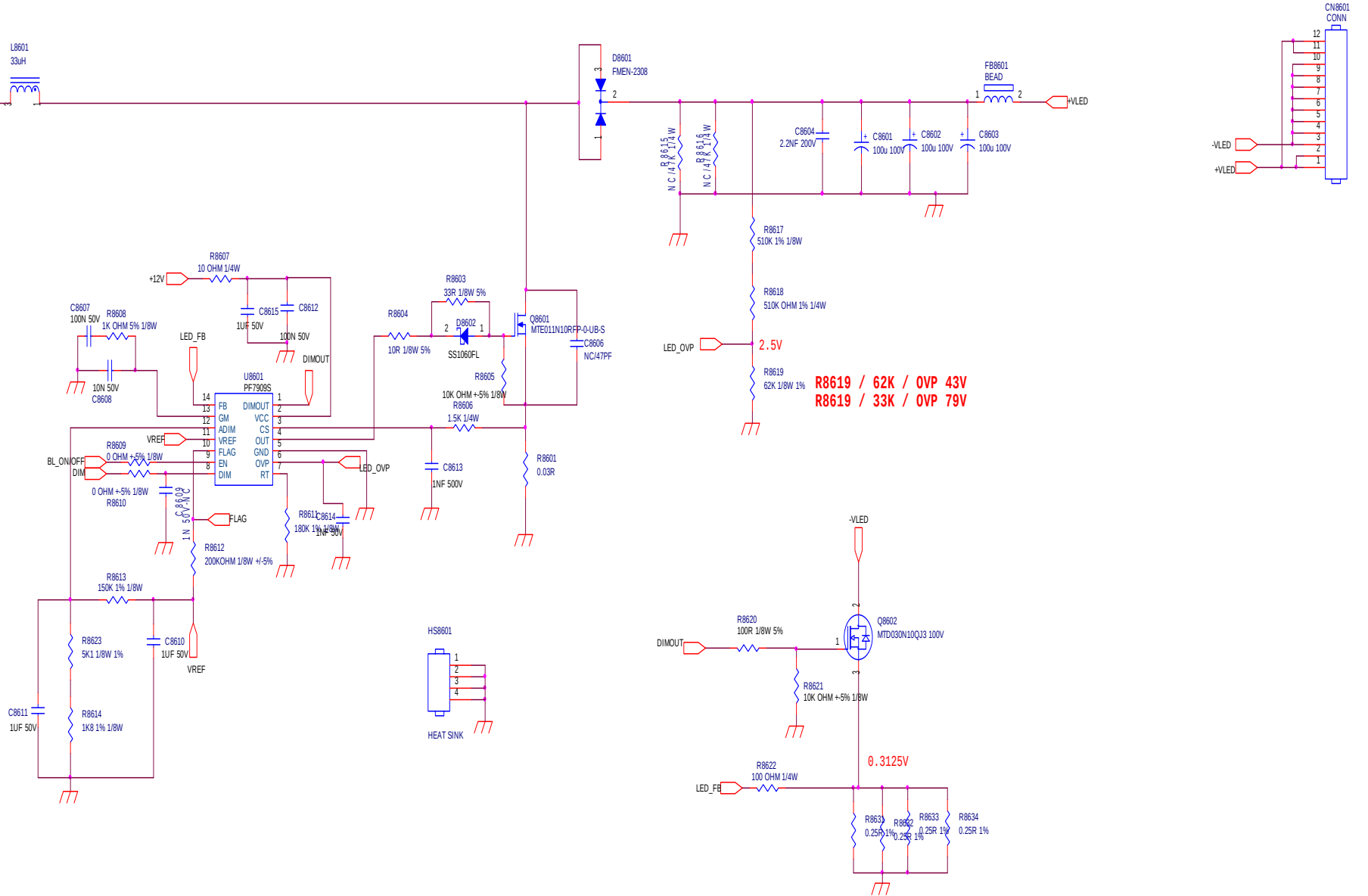


9-4-3 LLC with SSC3S927



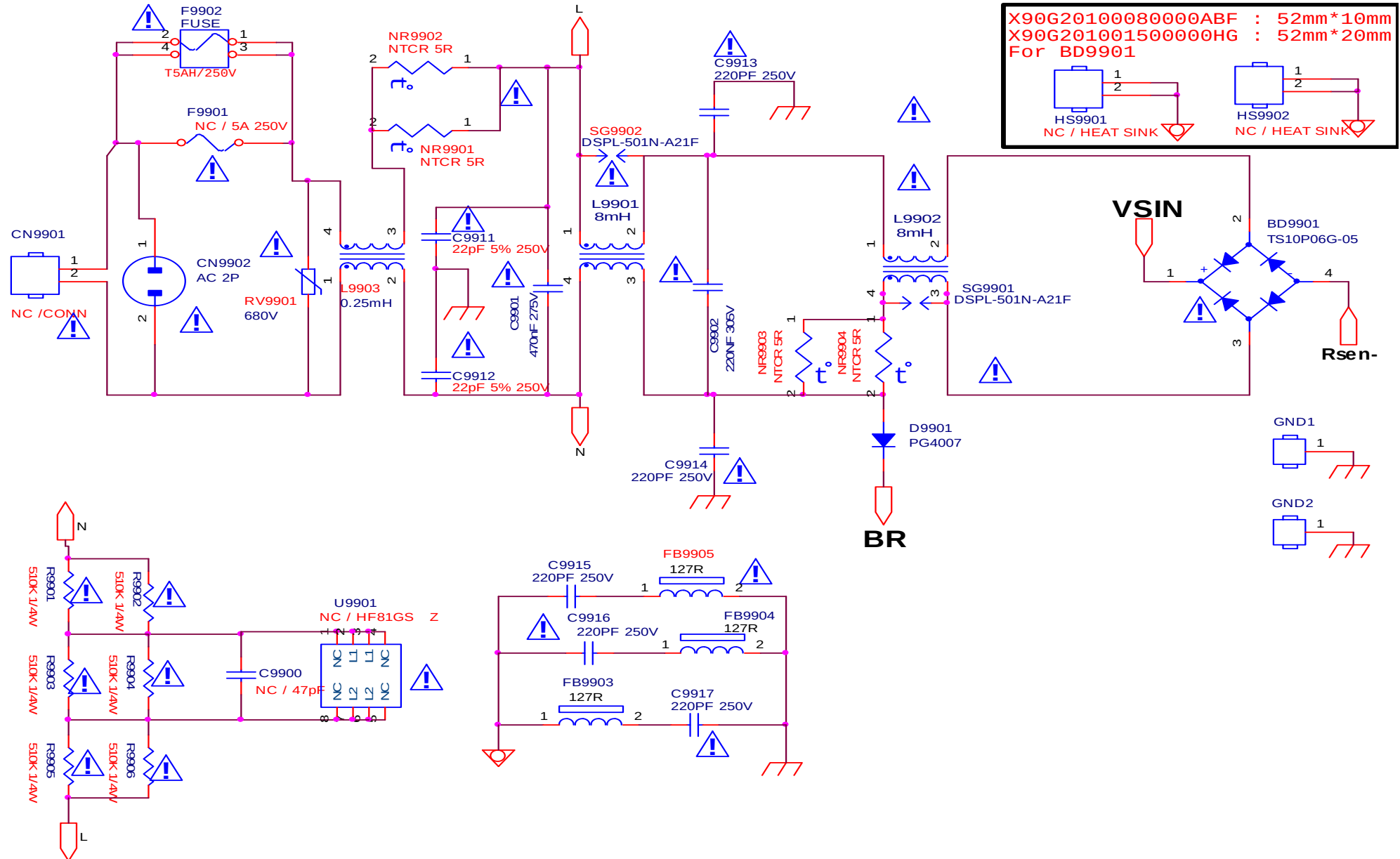
9-4-4 Driver with PF7909S

Boost_Vin

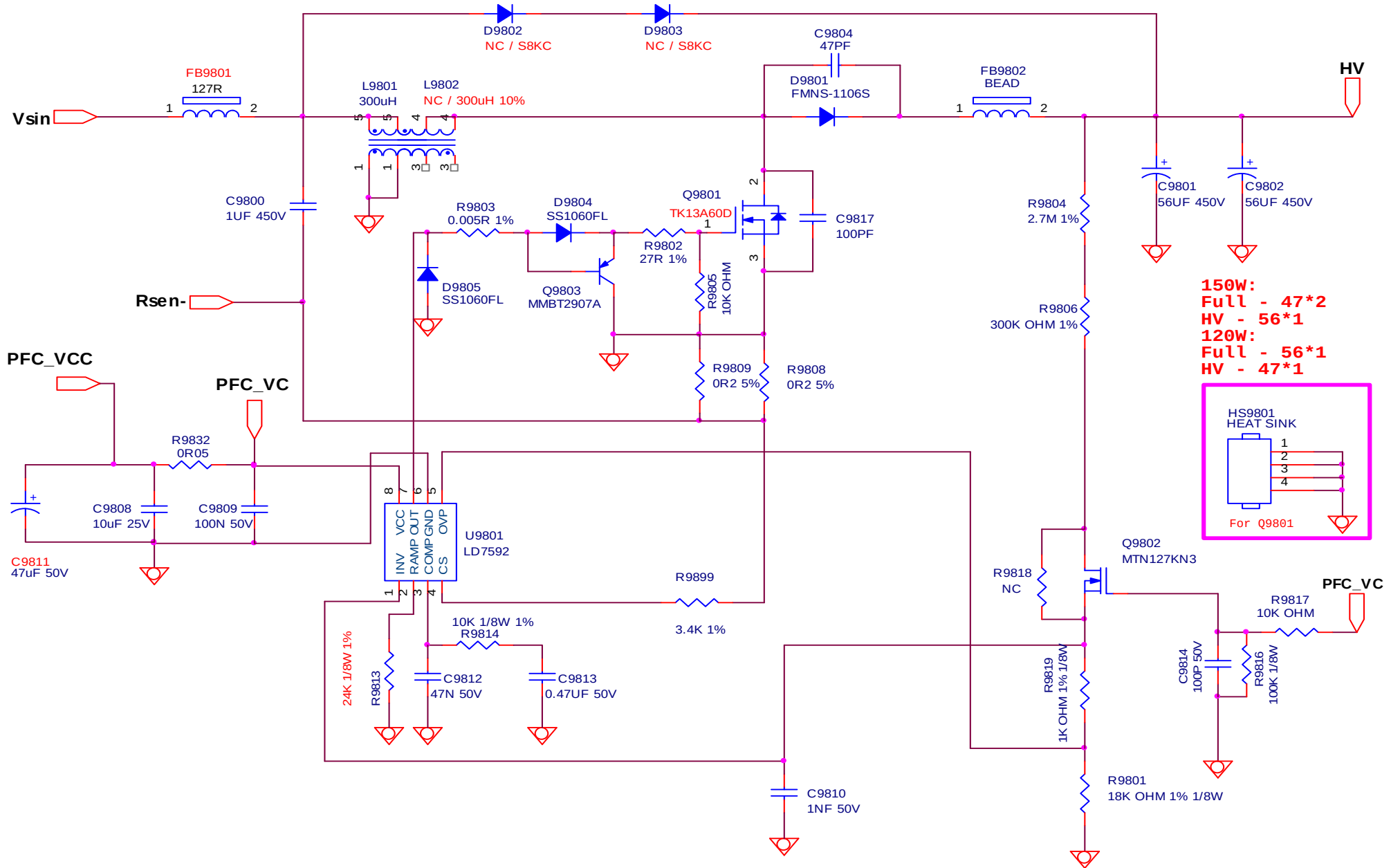


9.5 A 715G9324 PSU (For 43" 7303/7363/7373/7383/7393 Series)

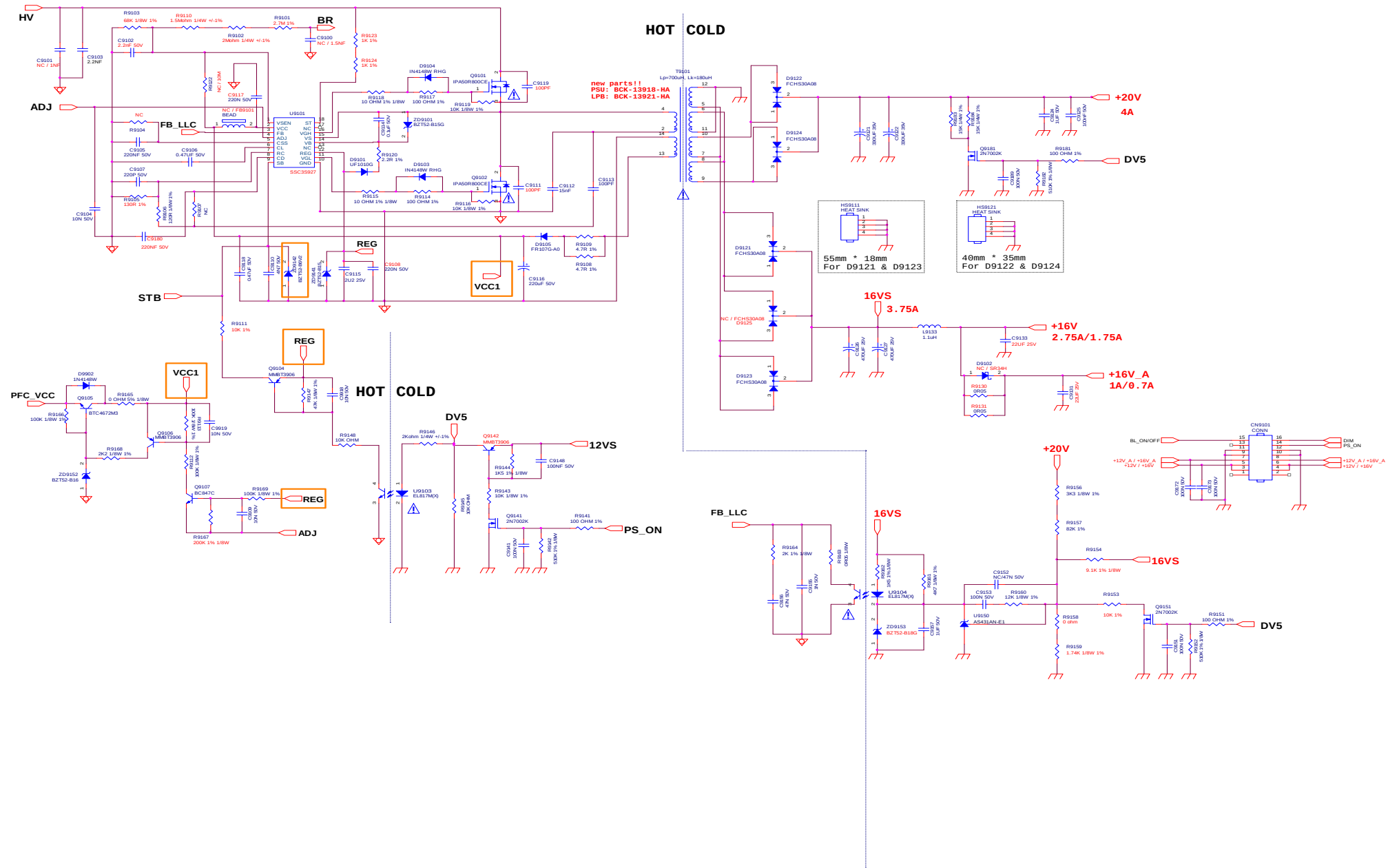
9-5-1 AC input



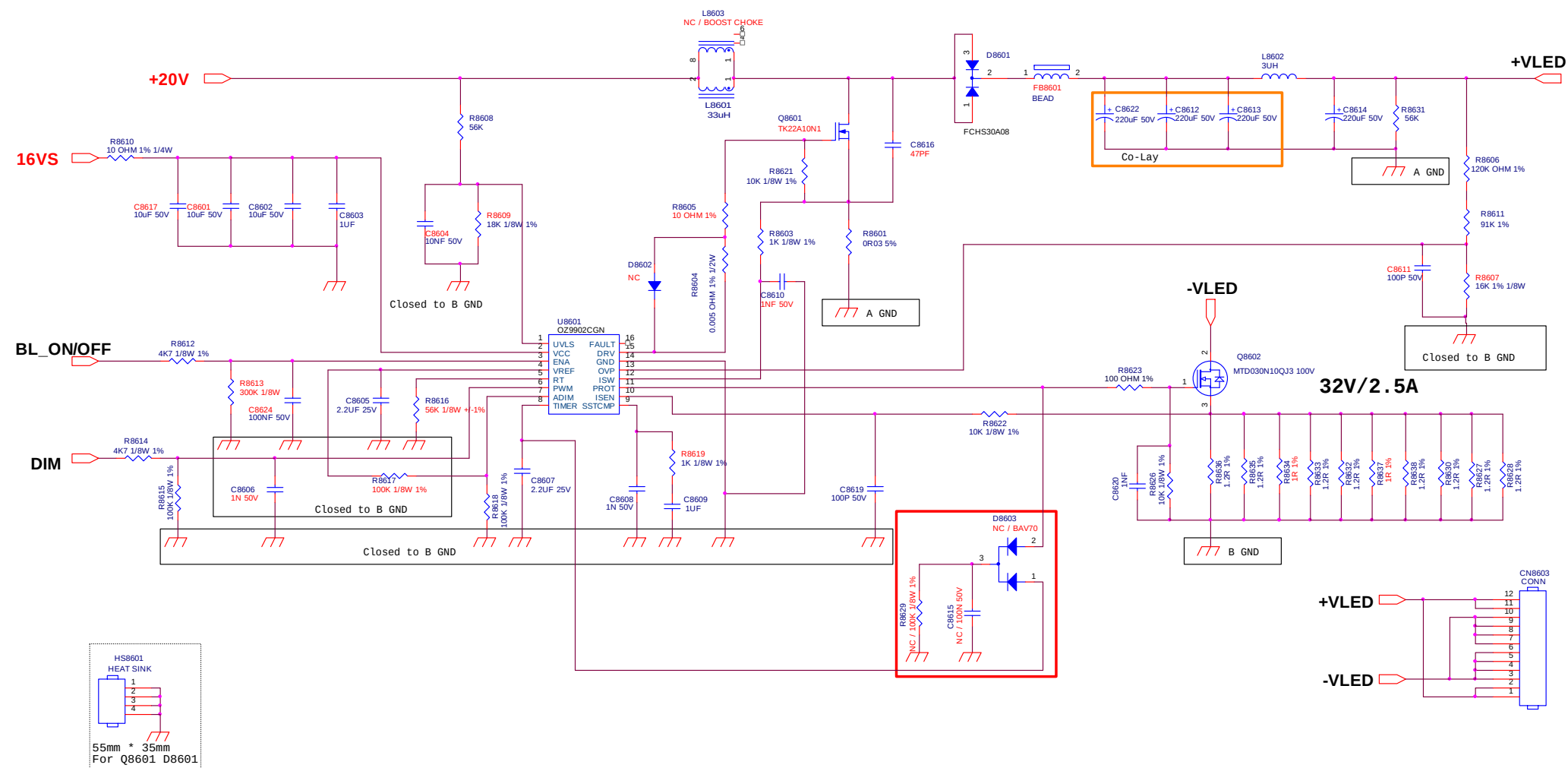
9-5-2 PFC with LD7592GS



9-5-3 LLC with SSC35927

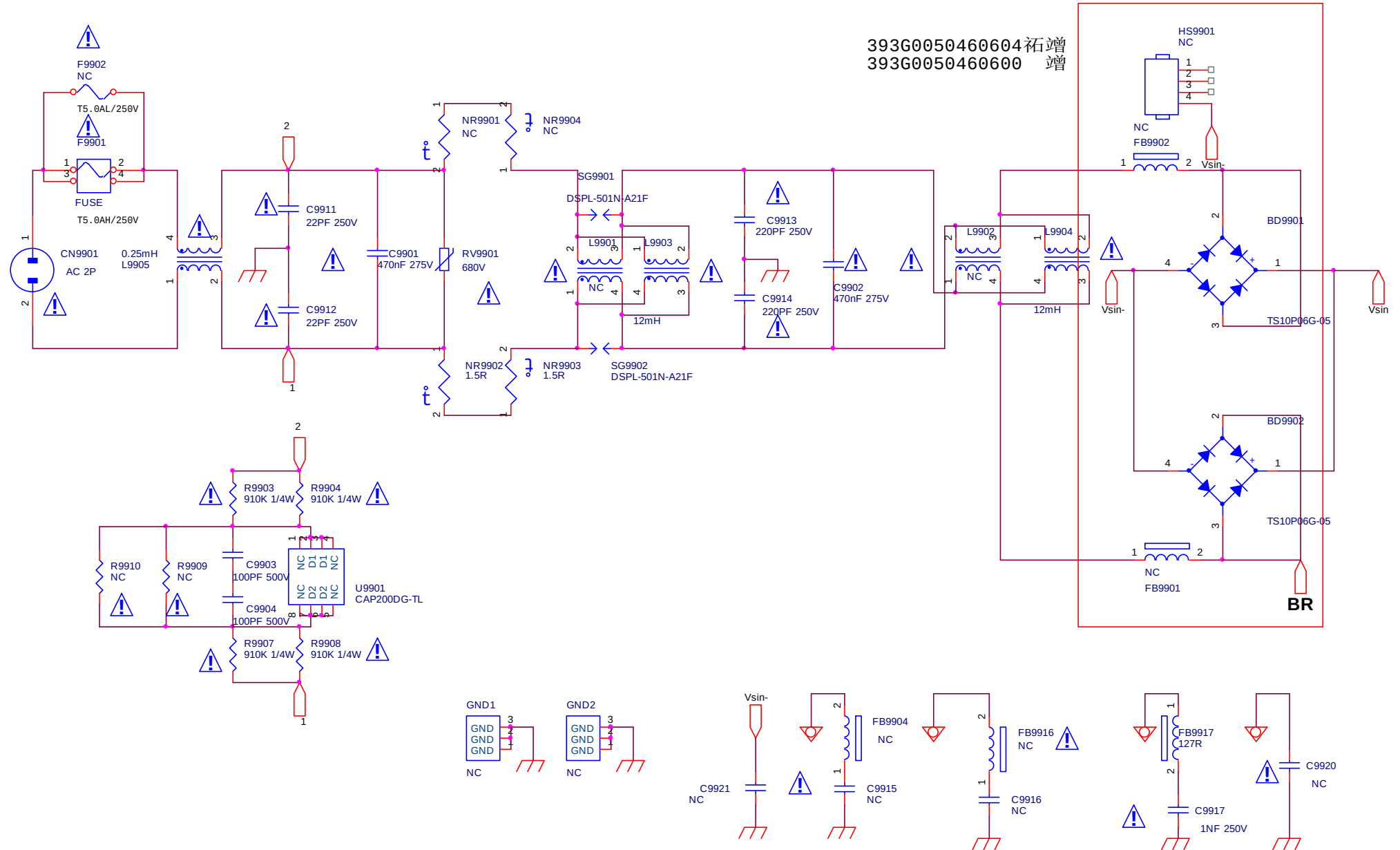


9-5-4 Driver with OZ9902C

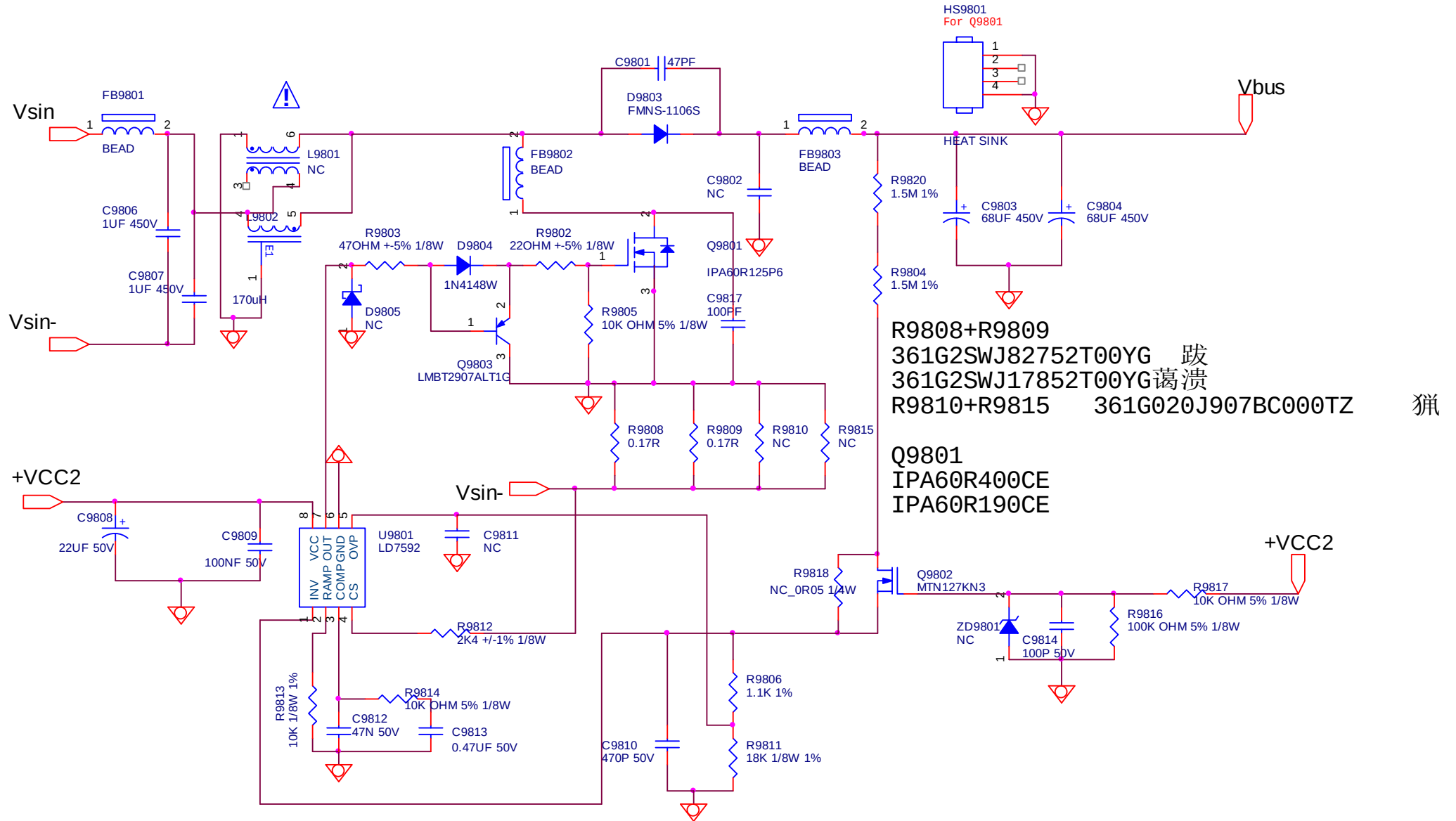


9.6 A 715G9325 PSU (For 65" 7303/7363/7803/8303/8503 Series)

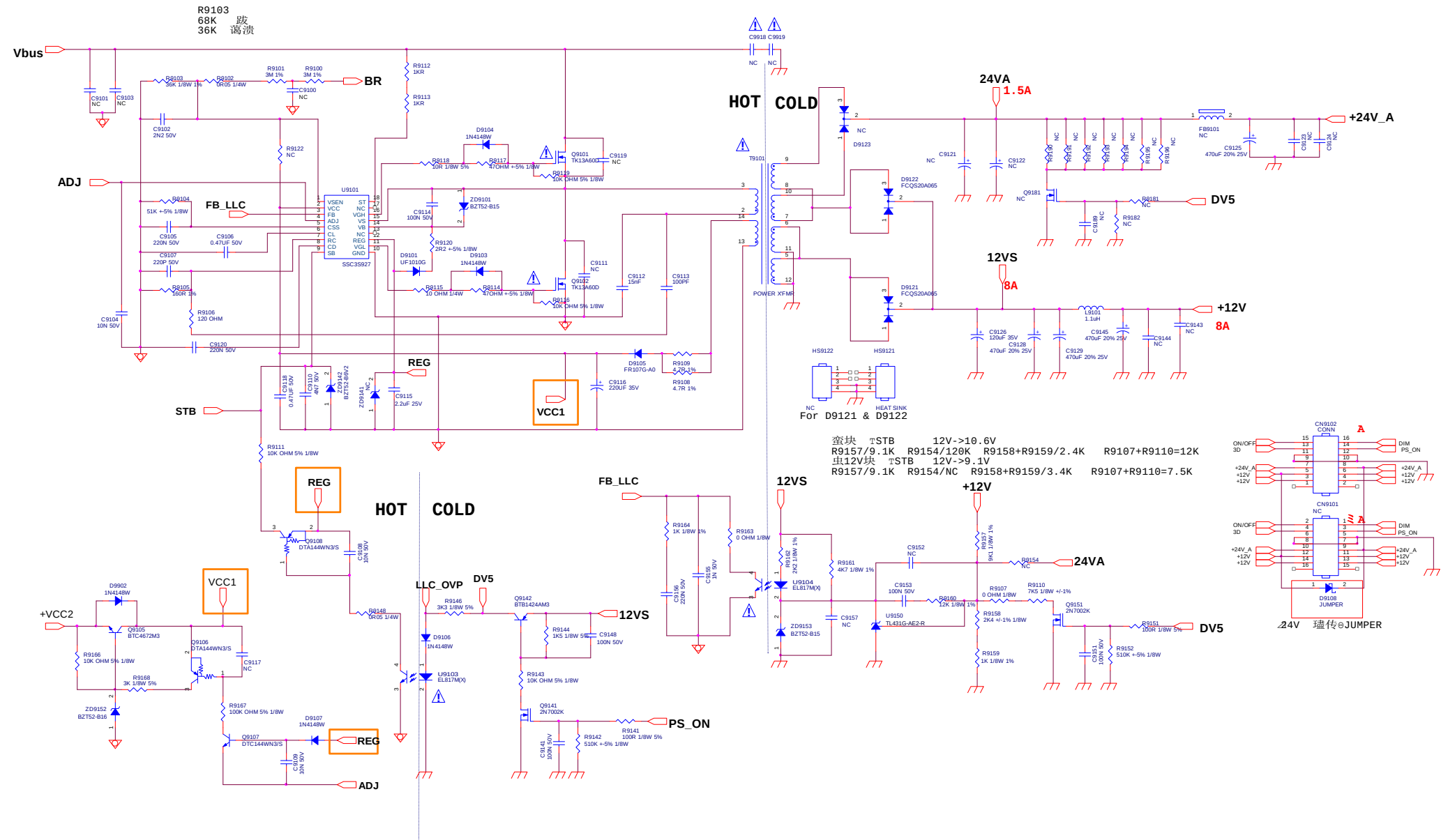
9-6-1 AC input



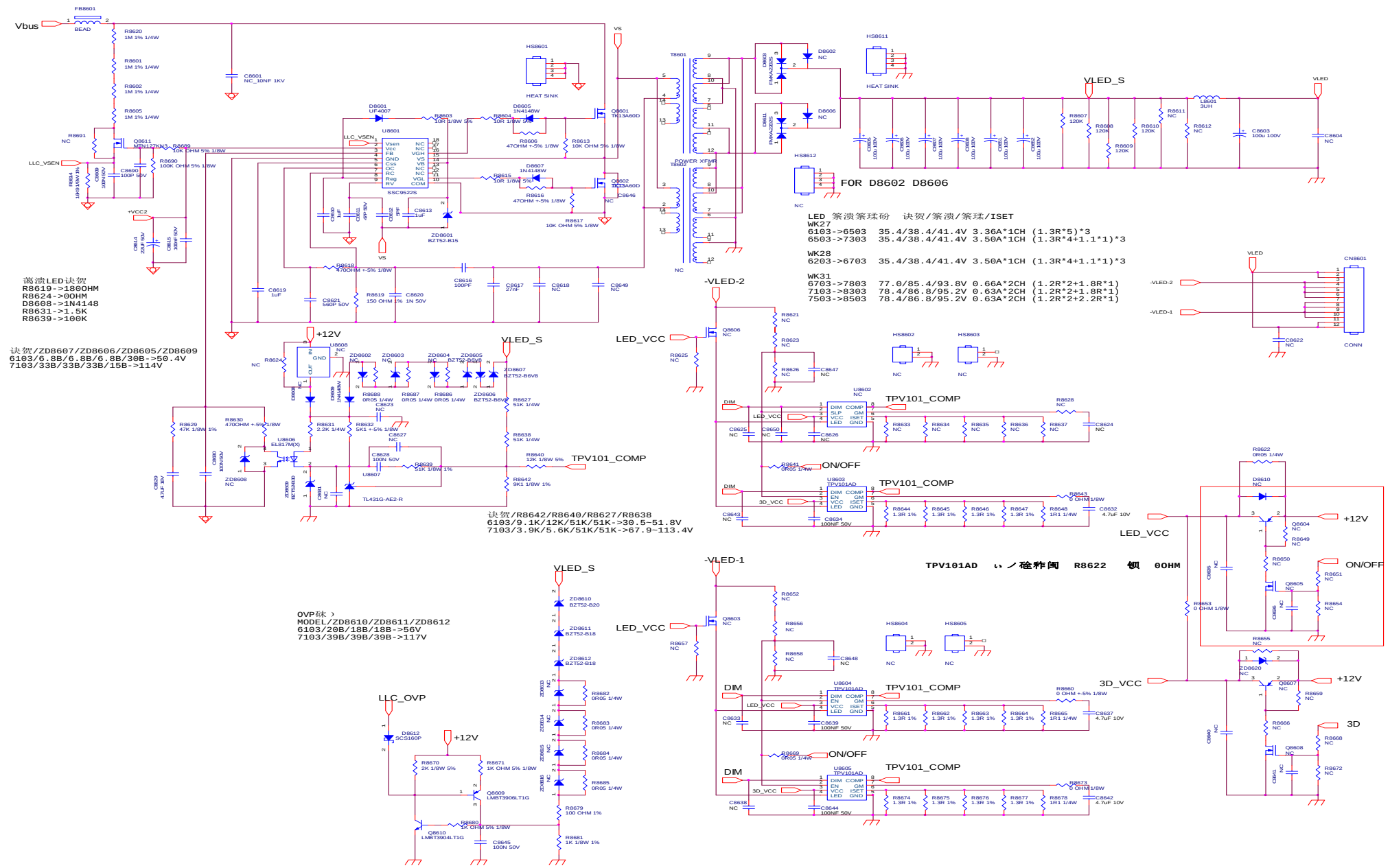
9-6-2 PFC with LD7592



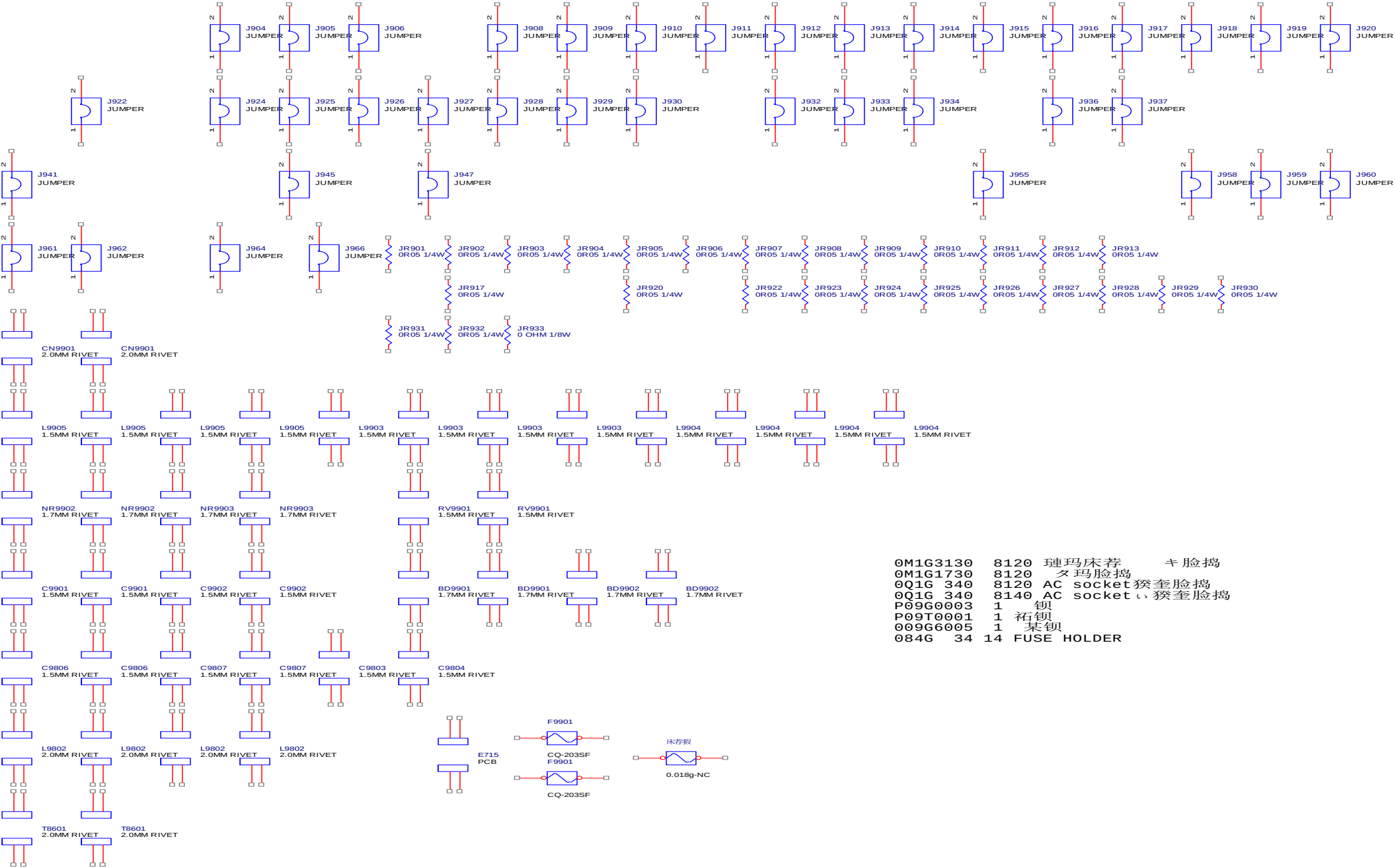
R9103
68K 跋
36K 藹潰



9-6-4 LLC SSC9522 with TPV101



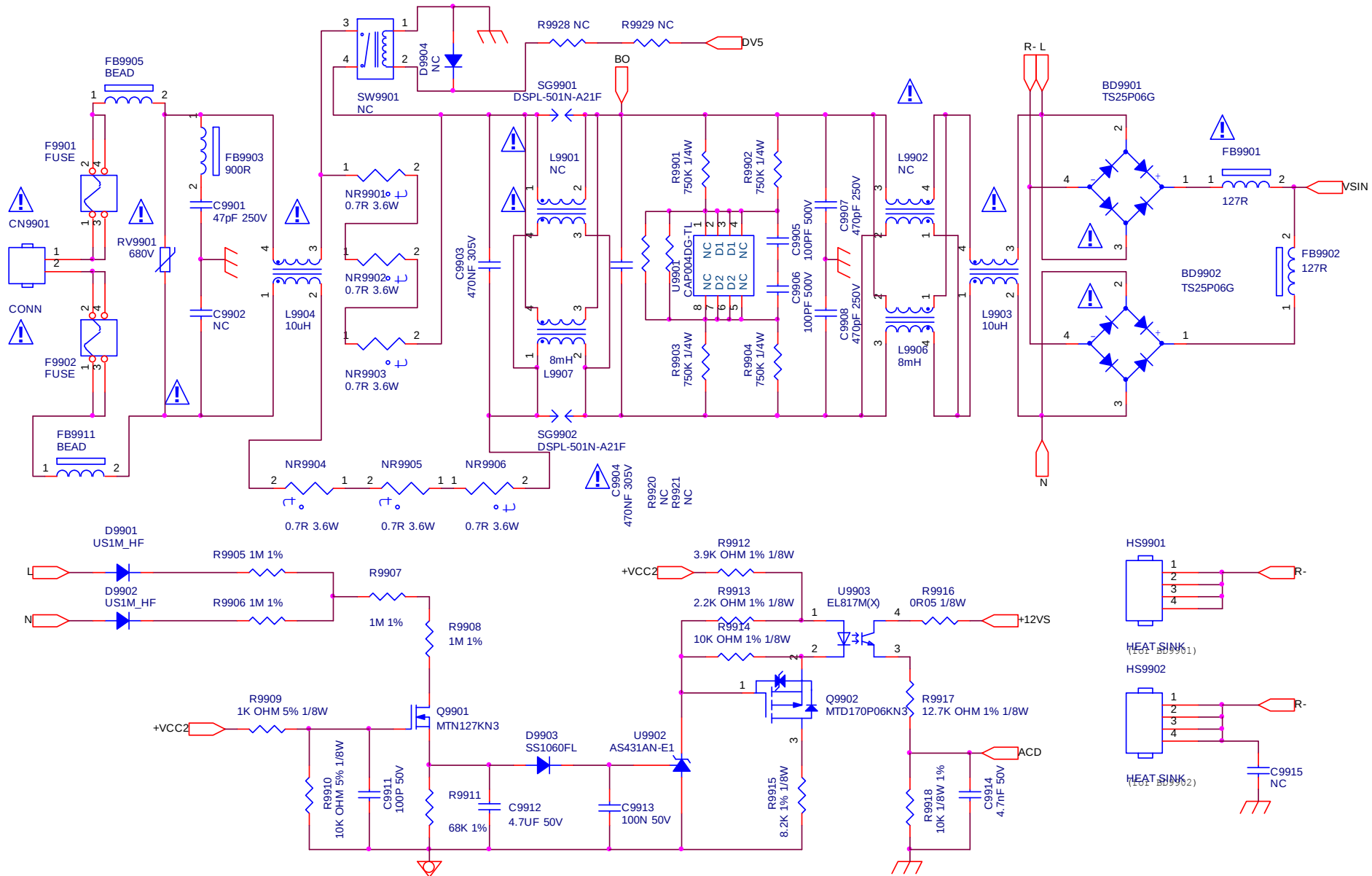
9-6-5 JUMPER



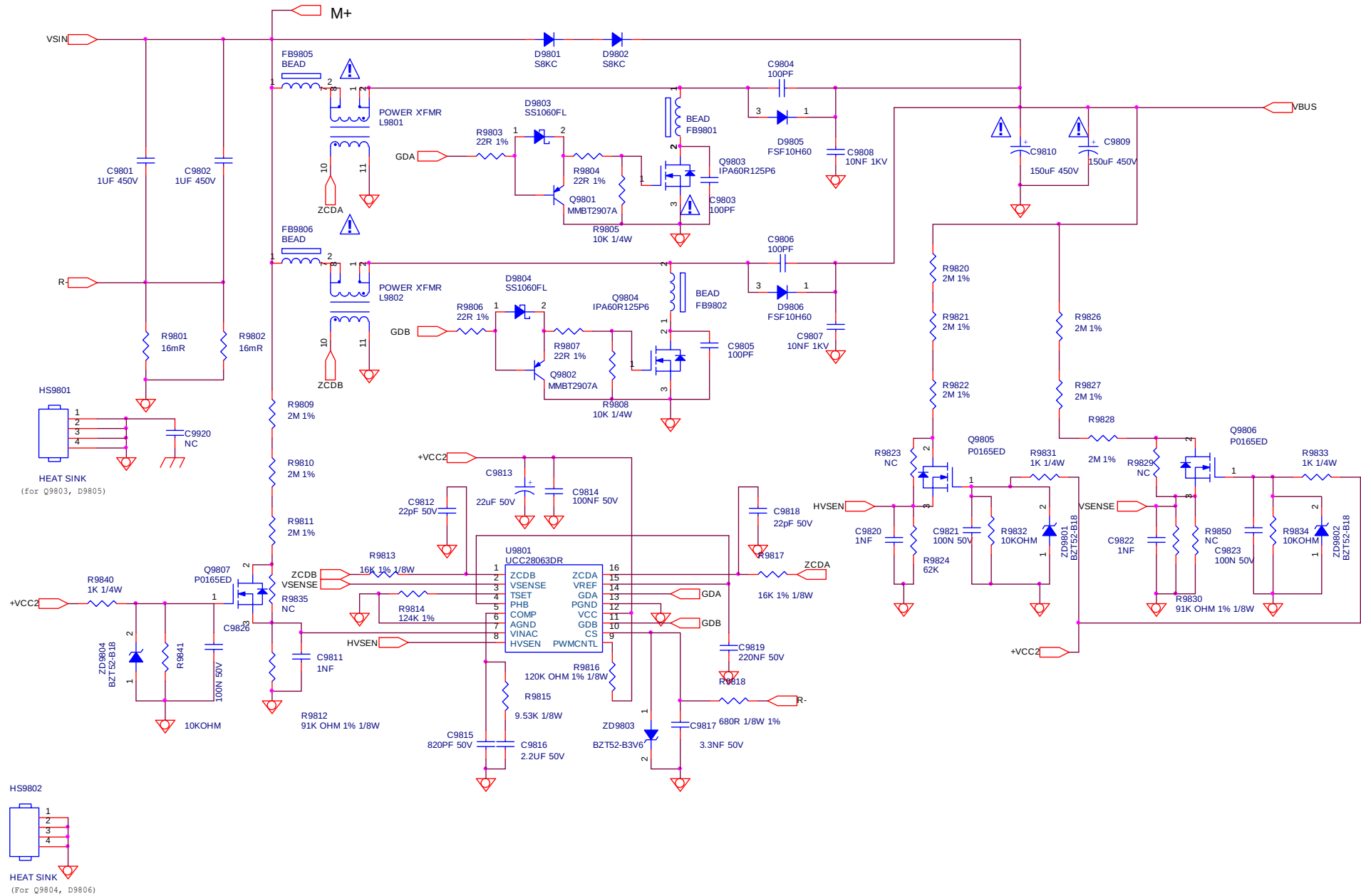
0M1G3130 8120 璉瑪床荐 キ脸搗
0M1G1730 8120 夕瑪脸搗
0Q1G 340 8120 AC socket 癩奎脸搗
0Q1G 340 8140 AC socket い癩奎脸搗
P09G0003 1 锁
P09T0001 1 柘锁
009G6005 1 某锁
084G 34 14 FUSE HOLDER

9.7 A 715G9614 PSU (For 55/65" 803/903 Series)

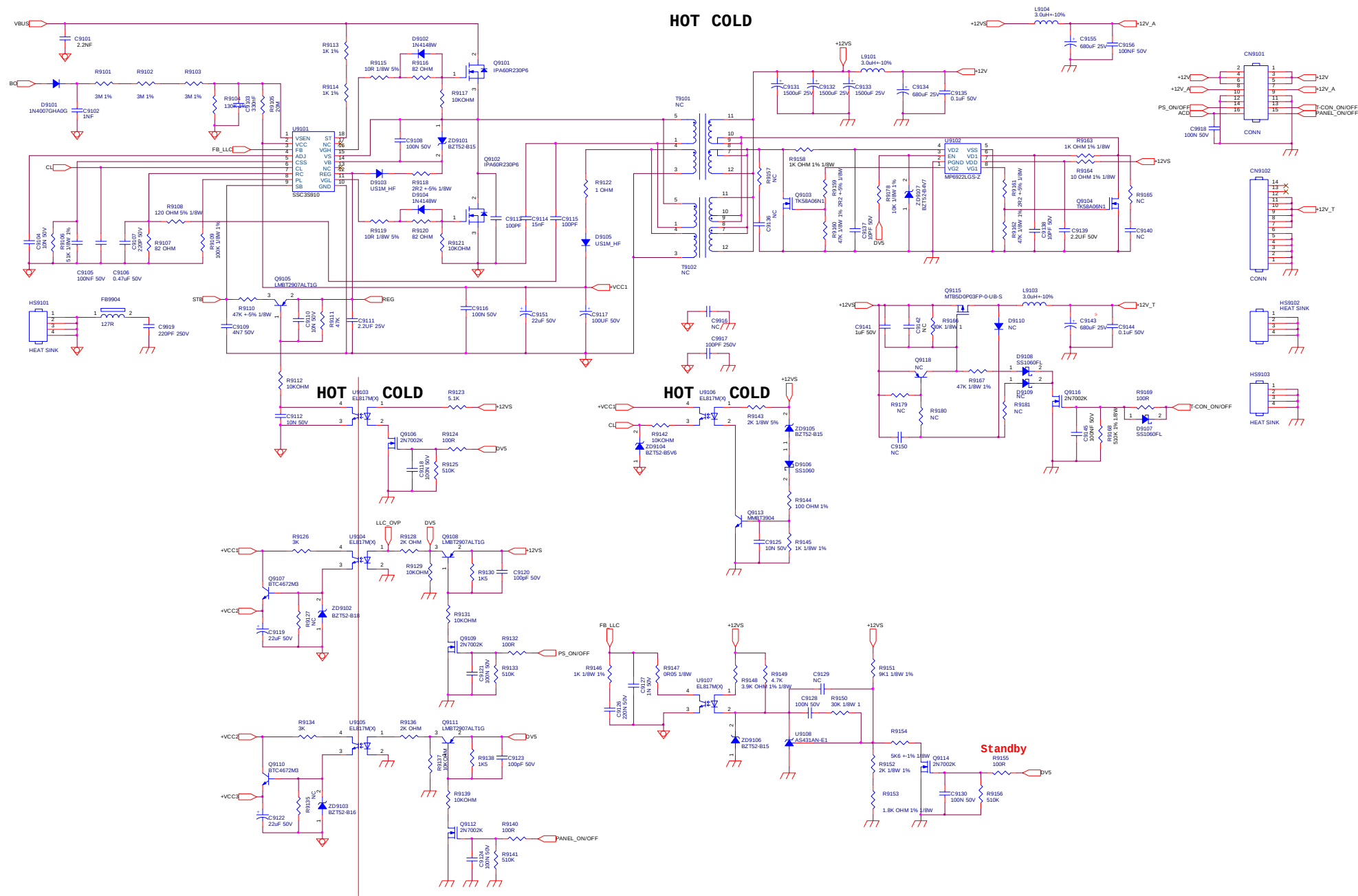
9-7-1 Input stage



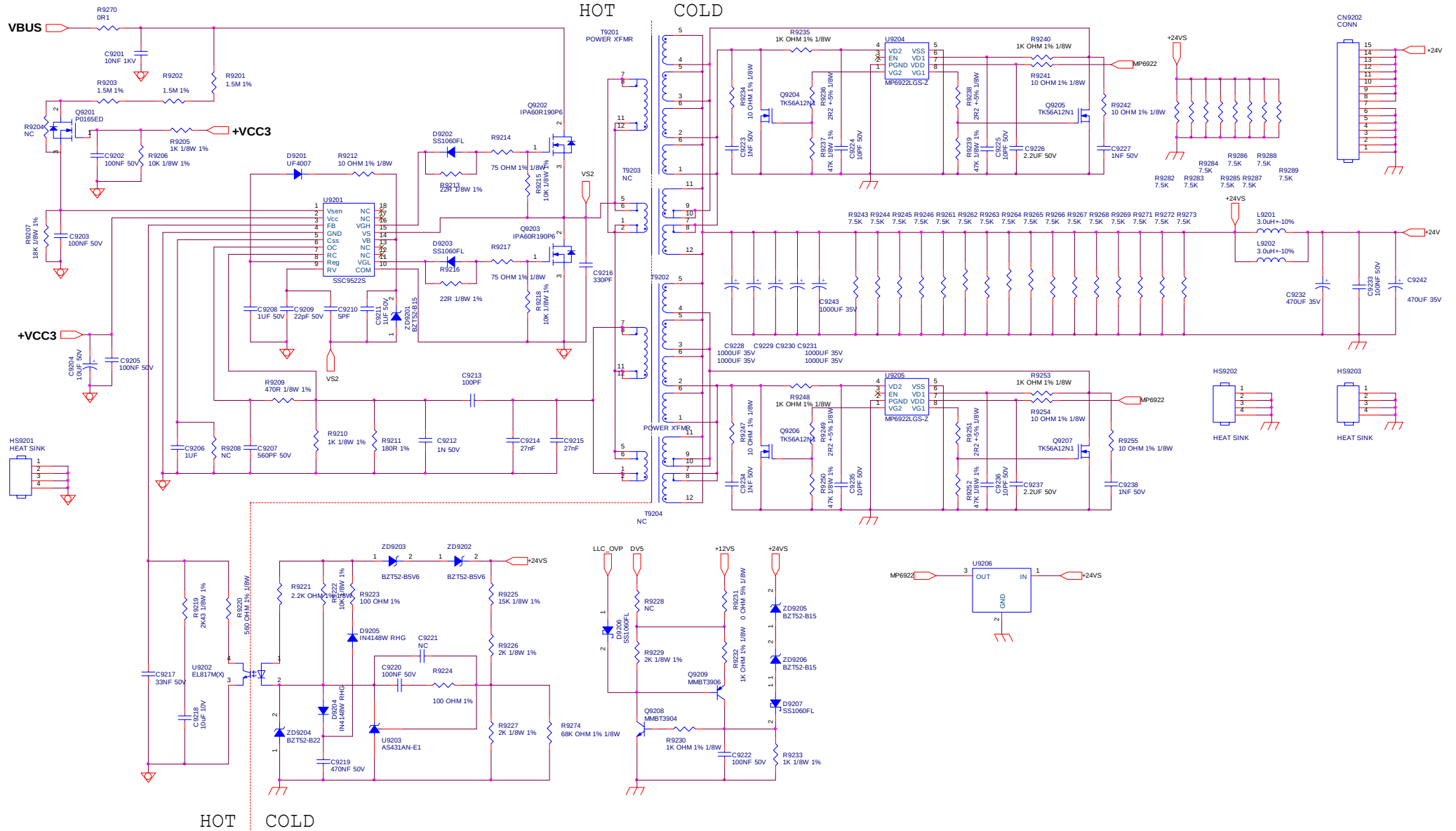
9-7-2 PFC stage



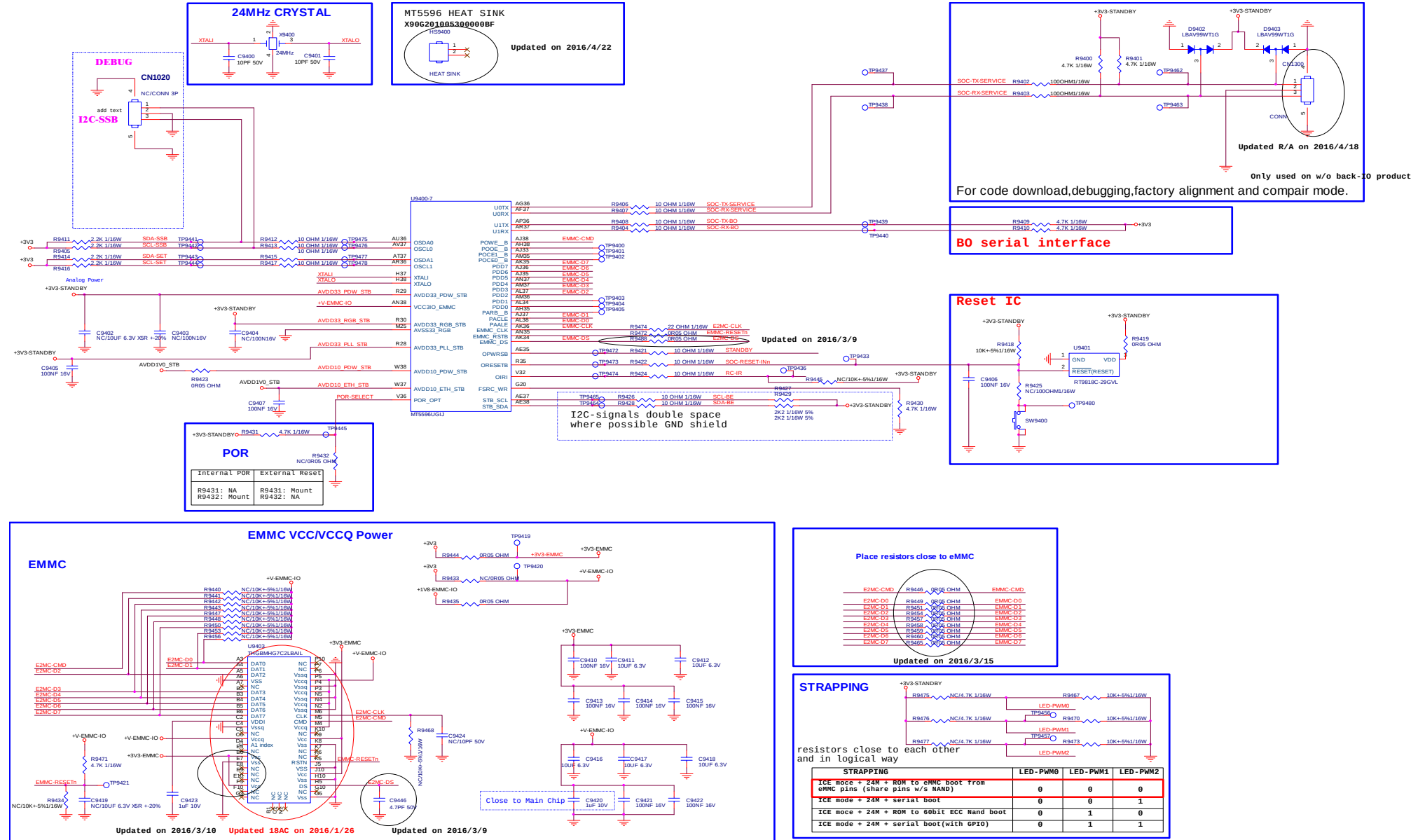
9-7-3 12V power stage



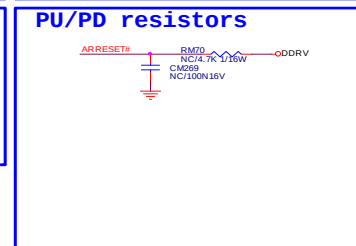
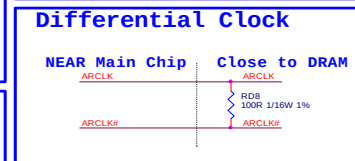
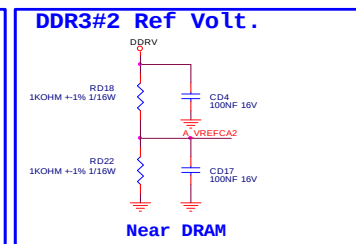
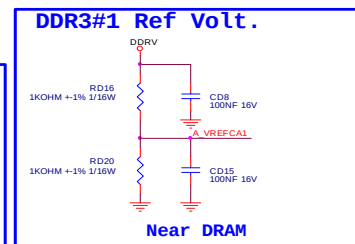
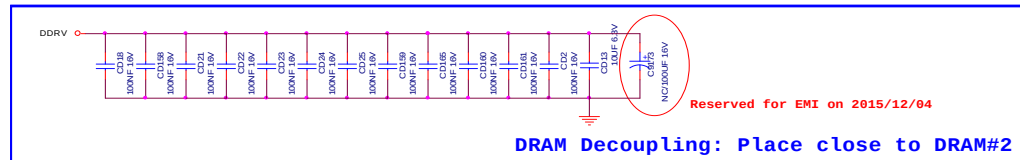
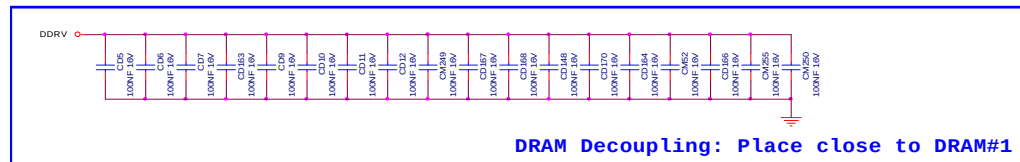
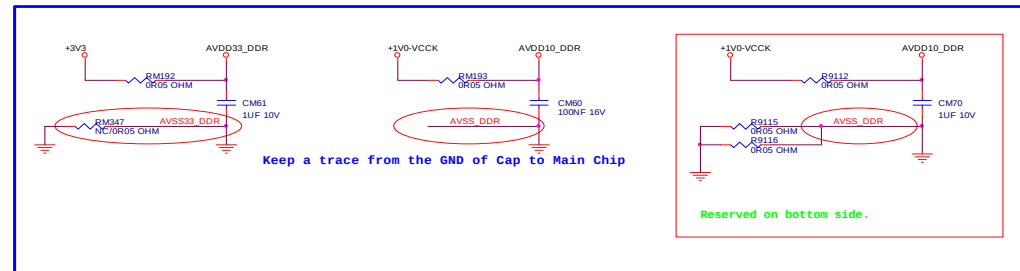
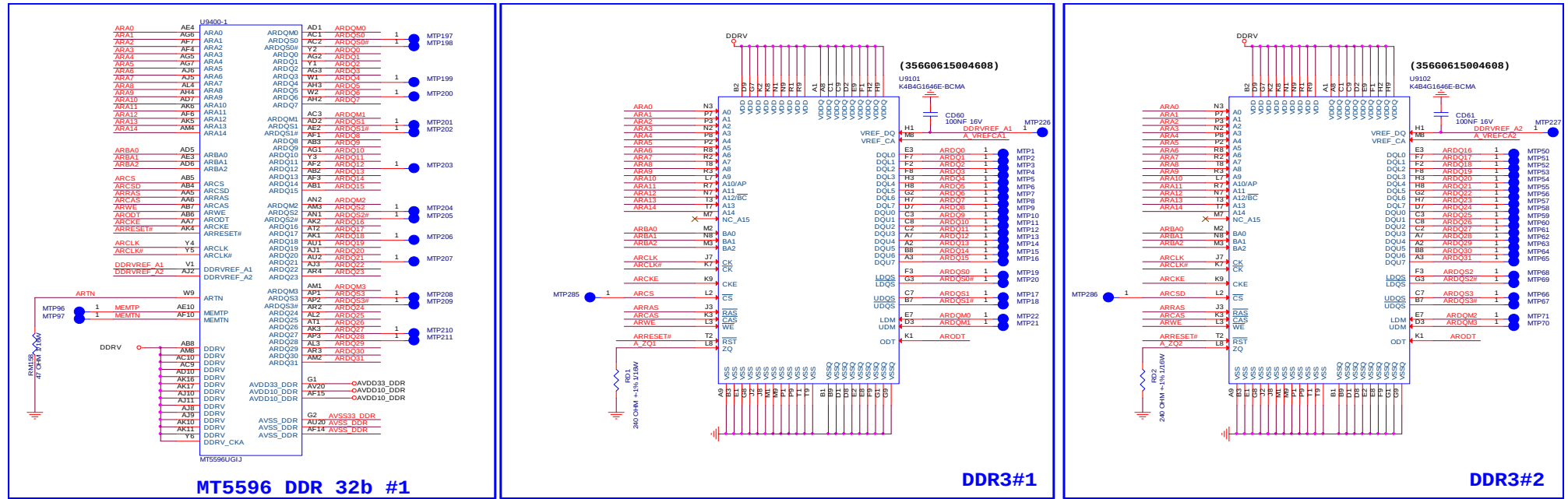
9-7-4 24V power stage



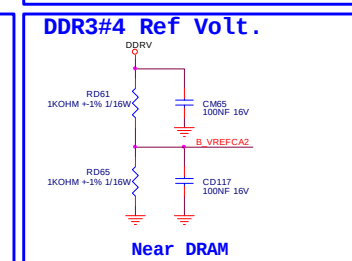
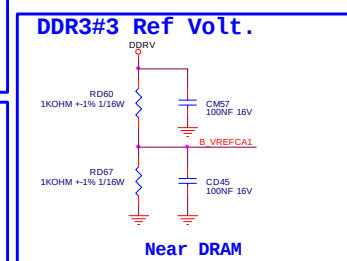
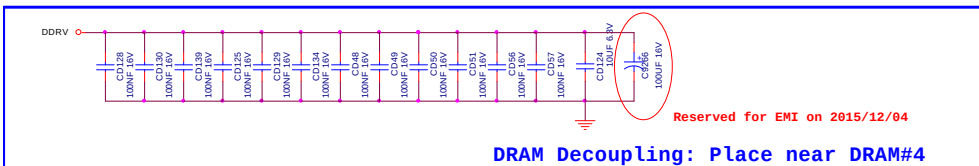
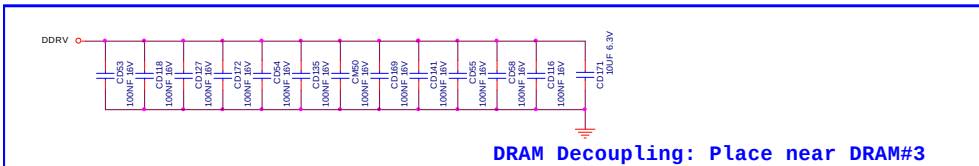
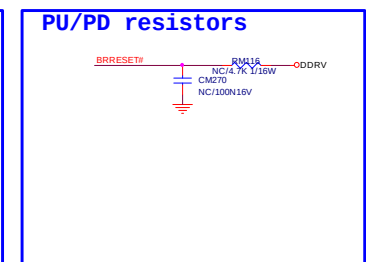
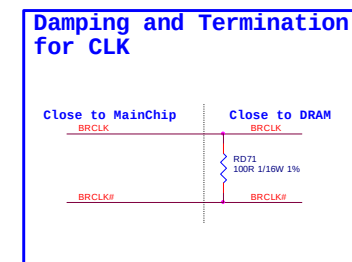
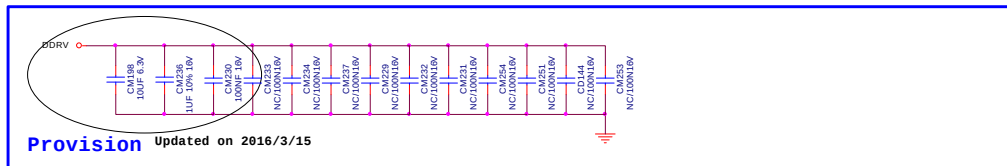
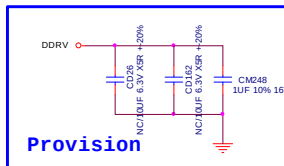
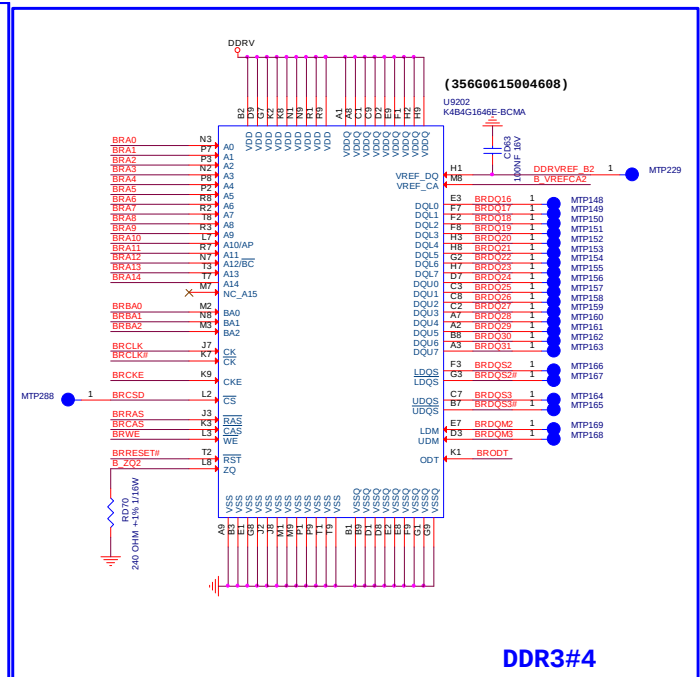
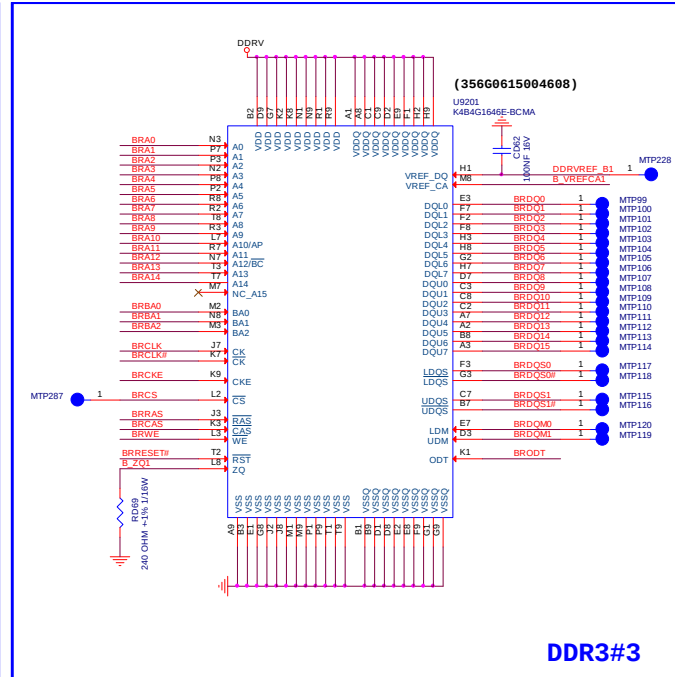
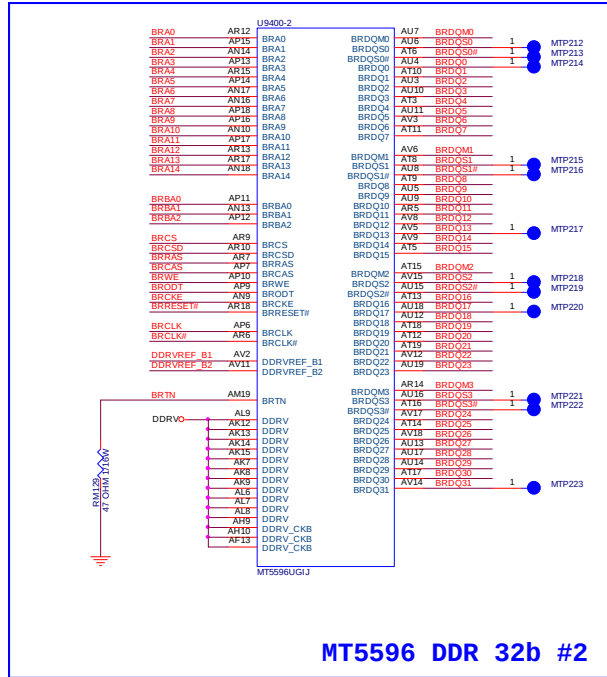
9-8-1 SOC-EMMC

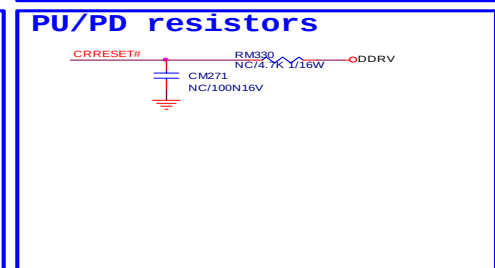
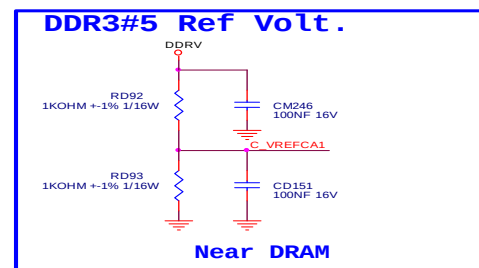
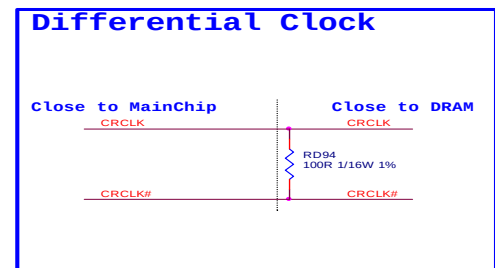
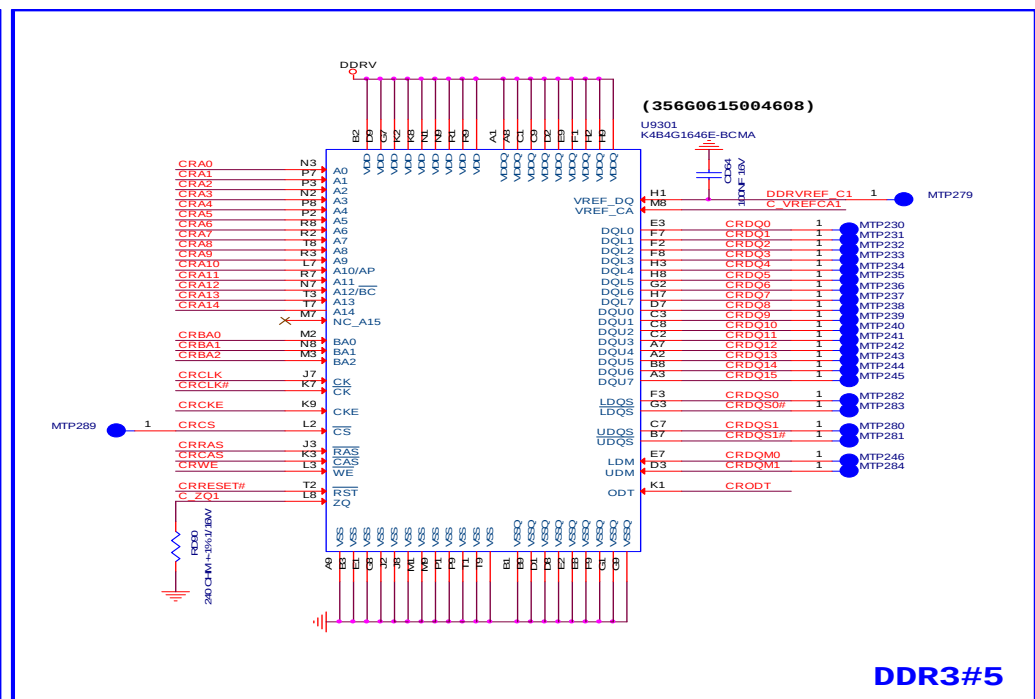


9-8-2 SOC-DDR3-1-2



9-8-3 SOC-DDR3-3-4



[illegible]

TUNER

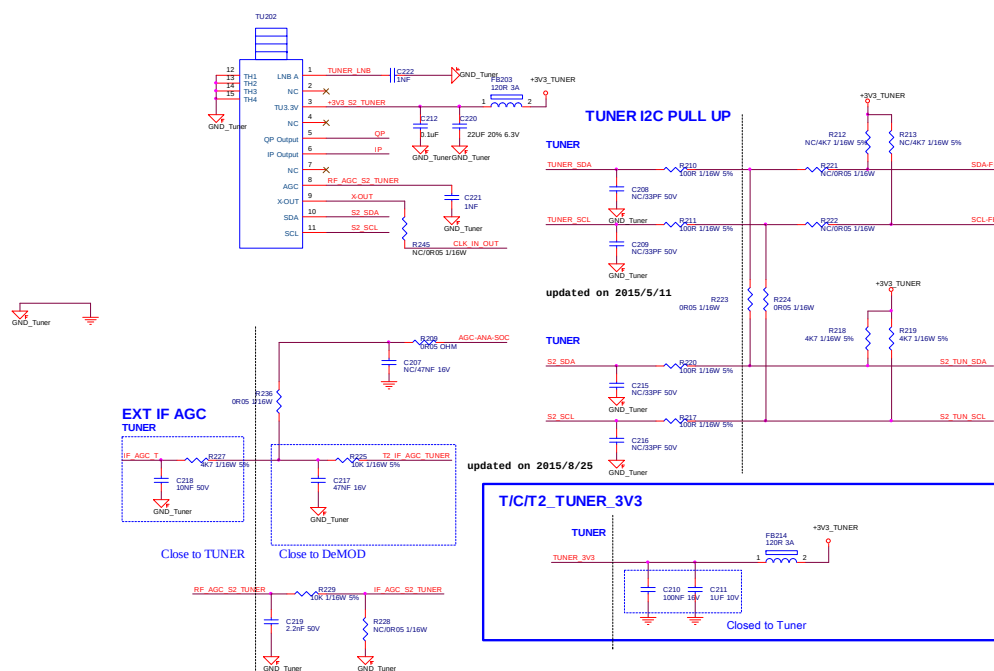
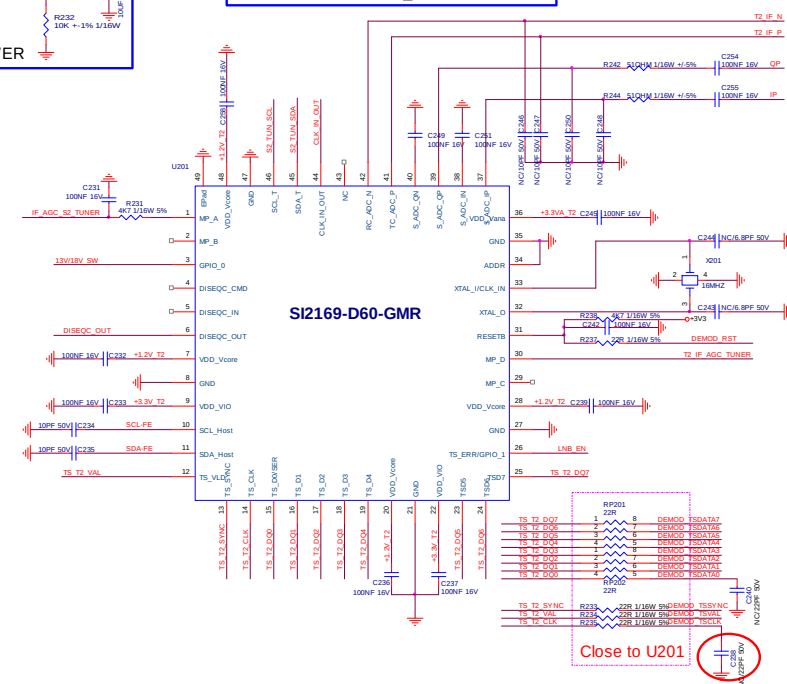
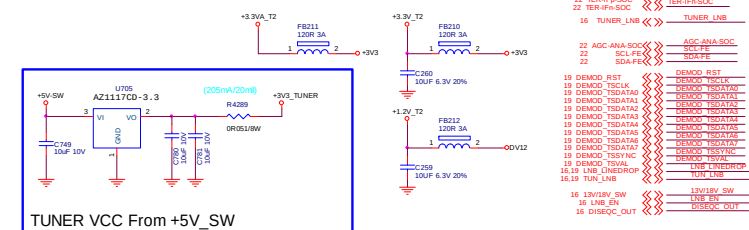
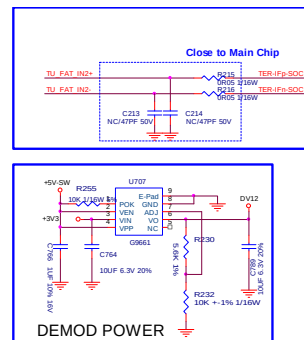
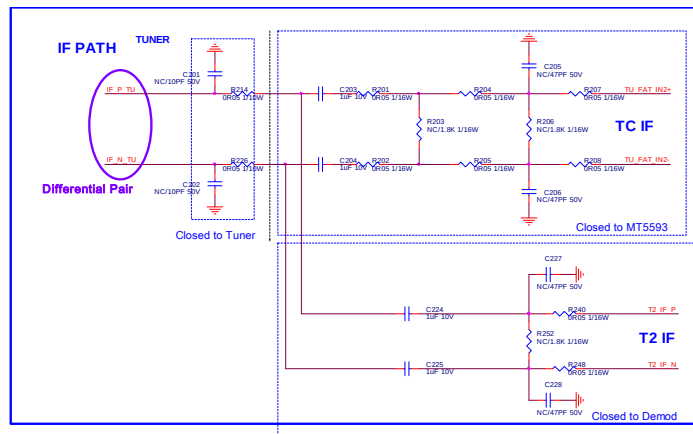
TU2001

8 9 10 11 12 13 14

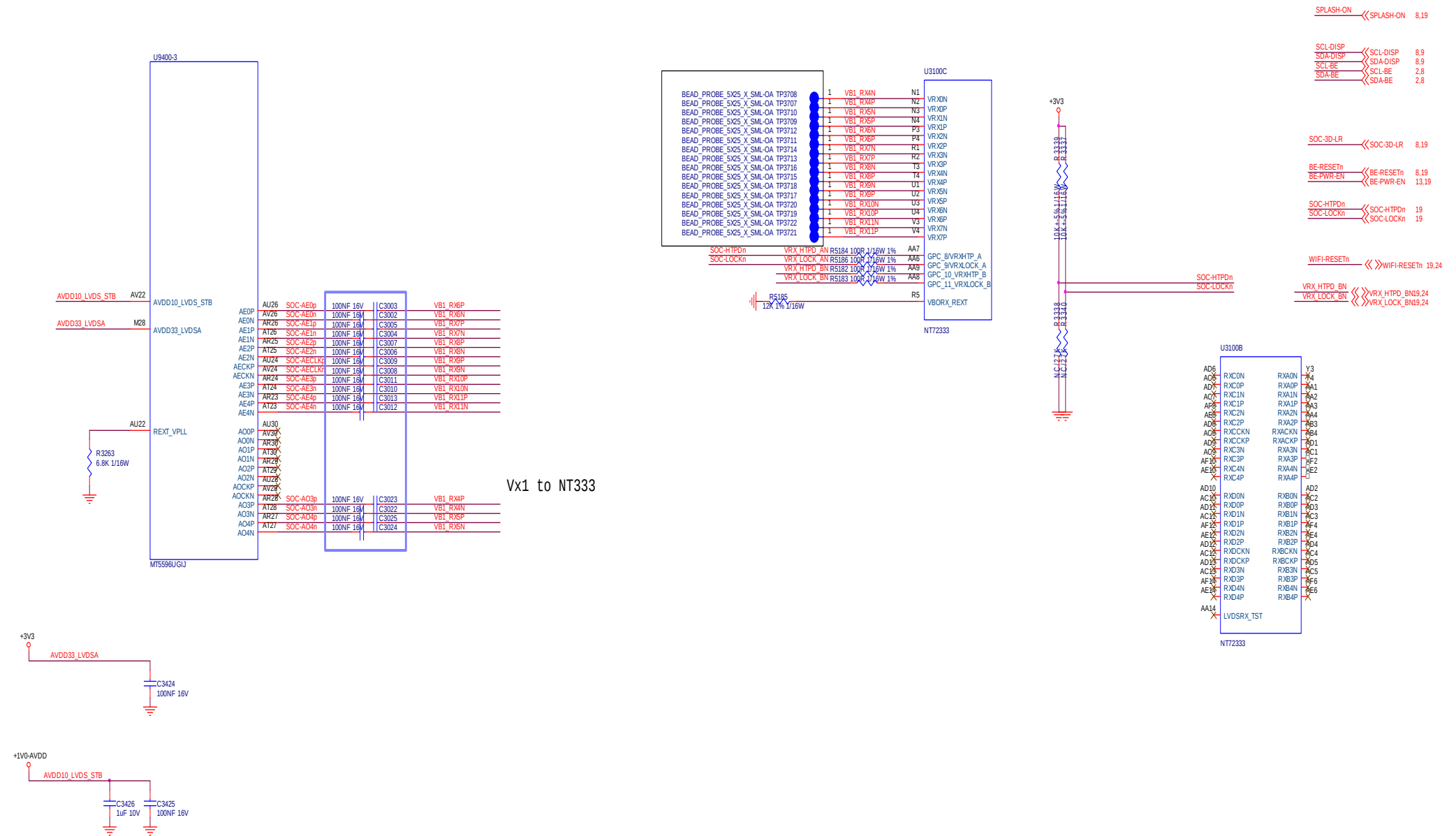
TH1 TH2 TH3 TH4 TH5 TH6

Avt. PWR SDA TUNER_SDA TUNER_SCL IF_N_TU IF_P_TU IF_AGC_T

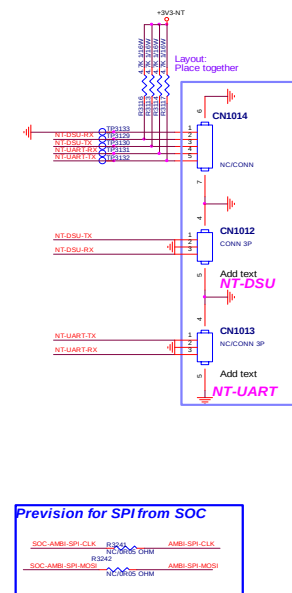
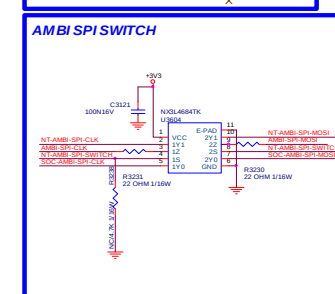
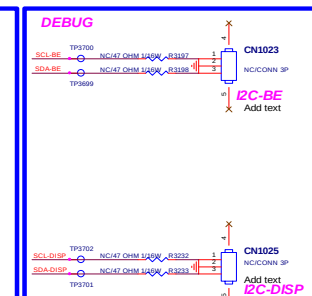
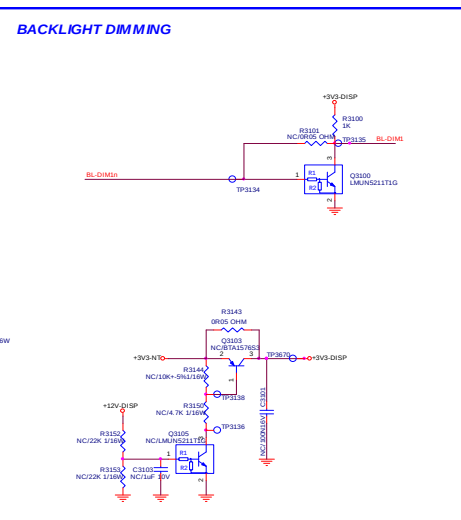
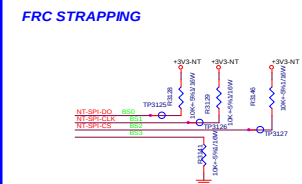
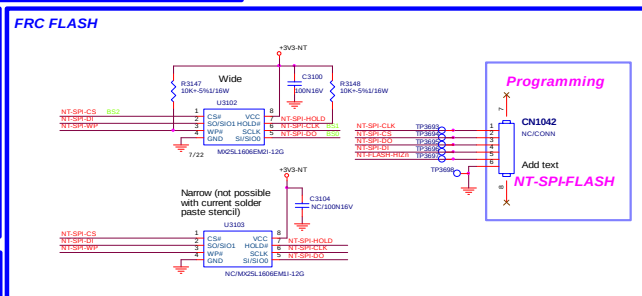
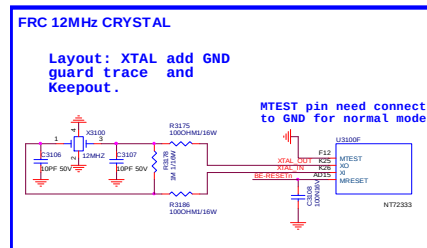
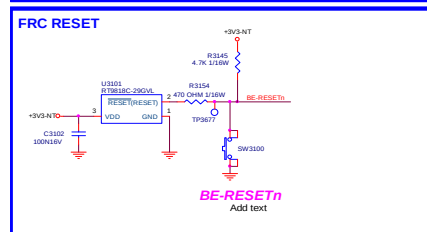
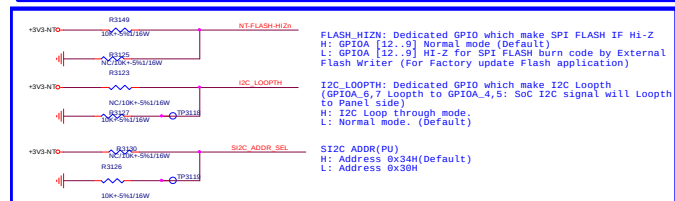
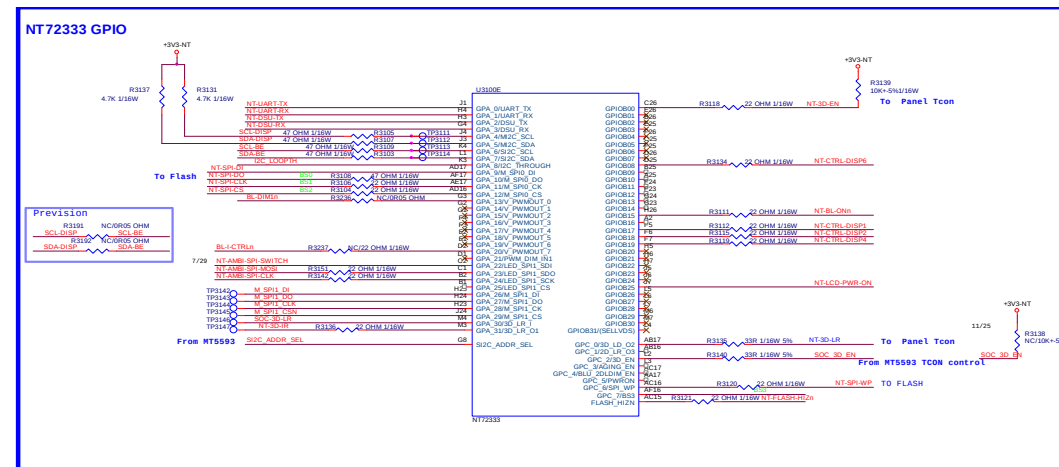
GND_Tuner



9-8-6 BE-NT72333a-Vx1-INPUT



9-8-7 BE-NT72333b-GPIO



15,19	BL-CTR _{HL}	BL-CTR _{HL}
15	NT-BL-CON	NT-BL-CON
9,15	BL-CON	BL-CON
19	BL-DIM _{HL}	BL-DIM _{HL}
9,18	NT-CTR _{DISP}	NT-CTR _{DISP}
9	NT-CTR _{HL}	NT-CTR _{HL}
18	NT-CTR _{DISP}	NT-CTR _{DISP}
9	NT-CTR _{HL}	NT-CTR _{HL}
9,18	NT-CTR _{DISP}	NT-CTR _{DISP}
9	SCL-DISP	SCL-DISP
9	SDA-DISP	SDA-DISP
9	SCL-BE	SCL-BE
2	SDA-BE	SDA-BE
19	SOC-AMBI-SPIC _{CLK}	SOC-AMBI-SPIC _{CLK}
19	SOC-AMBI-SP _{INHOS}	SOC-AMBI-SP _{INHOS}
23	AMBI-SP _{CLK}	AMBI-SP _{CLK}
23	AMBI-SP _{INHOS}	AMBI-SP _{INHOS}
19	SOC-3D _{IN}	SOC-3D _{IN}
18,23	NT-3D _{IN}	NT-3D _{IN}
9,15,18	NT-DSP-PW _{IN}	NT-DSP-PW _{IN}
18	BE-RES _{BE}	BE-RES _{BE}
7,13	BE-PW _{IN}	BE-PW _{IN}
7	SOC_3D_IN	SOC_3D_IN
9	NT-3D_IN	NT-3D_IN

[illegible]

TP-C12V.6

CNI161

TP3814 1

NT-VBL-TX5p TP3758 1

NT-VBL-TX5n TP3773 1

NT-VBL-TX4p TP3759 1

NT-VBL-TX4n TP3760 1

NT-VBL-TX3p TP3761 1

NT-VBL-TX3n TP3762 1

NT-VBL-TX2p TP3763 1

NT-VBL-TX2n TP3764 1

NT-VBL-TX1p TP3765 1

NT-VBL-TX1n TP3766 1

NT-VBL-TX0p TP3767 1

NT-VBL-TX0n TP3768 1

NT-VBL-TX9p TP3770 1

NT-VBL-TX9n TP3769 1

NT-VBL-TX8p TP3771 1

NT-VBL-TX8n TP3772 1

NT-LOCKn TP3844

NT-INTPDR TP3845

TP3830

TP3831

TP3832

TP3833

TP3834

TP3835

TP3836

TP3837

TP3838

TP3839

TP3840

TP3841

TP3842

TP3843

TP3844

TP3845

TP3846

TP3847

TP3848

TP3849

TP3850

TP3851

TP3852

TP3853

TP3854

TP3855

TP3856

TP3857

TP3858

TP3859

TP3860

TP3861

TP3862

TP3863

TP3864

TP3865

TP3866

TP3867

TP3868

TP3869

TP3870

TP3871

TP3872

TP3873

TP3874

TP3875

TP3876

TP3877

TP3878

TP3879

TP3880

TP3881

TP3882

TP3883

TP3884

TP3885

TP3886

TP3887

TP3888

TP3889

TP3890

TP3891

TP3892

TP3893

TP3894

TP3895

TP3896

TP3897

TP3898

TP3899

TP3900

TP3901

TP3902

TP3903

TP3904

TP3905

TP3906

TP3907

TP3908

TP3909

TP3910

TP3911

TP3912

TP3913

TP3914

TP3915

TP3916

TP3917

TP3918

TP3919

TP3920

TP3921

TP3922

TP3923

TP3924

TP3925

TP3926

TP3927

TP3928

TP3929

TP3930

TP3931

TP3932

TP3933

TP3934

TP3935

TP3936

TP3937

TP3938

TP3939

TP3940

TP3941

TP3942

TP3943

TP3944

TP3945

TP3946

TP3947

TP3948

TP3949

TP3950

TP3951

TP3952

TP3953

TP3954

TP3955

TP3956

TP3957

TP3958

TP3959

TP3960

TP3961

TP3962

TP3963

TP3964

TP3965

TP3966

TP3967

TP3968

TP3969

TP3970

TP3971

TP3972

TP3973

TP3974

TP3975

TP3976

TP3977

TP3978

TP3979

TP3980

TP3981

TP3982

TP3983

TP3984

TP3985

TP3986

TP3987

TP3988

TP3989

TP3990

TP3991

TP3992

TP3993

TP3994

TP3995

TP3996

TP3997

TP3998

TP3999

TP4000

TP4001

TP4002

TP4003

TP4004

TP4005

TP4006

TP4007

TP4008

TP4009

TP4010

TP4011

TP4012

TP4013

TP4014

TP4015

TP4016

TP4017

TP4018

TP4019

TP4020

TP4021

TP4022

TP4023

TP4024

TP4025

TP4026

TP4027

TP4028

TP4029

TP4030

TP4031

TP4032

TP4033

TP4034

TP4035

TP4036

TP4037

TP4038

TP4039

TP4040

TP4041

TP4042

TP4043

TP4044

TP4045

TP4046

TP4047

TP4048

TP4049

TP4050

TP4051

TP4052

TP4053

TP4054

TP4055

TP4056

TP4057

TP4058

TP4059

TP4060

TP4061

TP4062

TP4063

TP4064

TP4065

TP4066

TP4067

TP4068

TP4069

TP4070

TP4071

TP4072

TP4073

TP4074

TP4075

TP4076

TP4077

TP4078

TP4079

TP4080

TP4081

TP4082

TP4083

TP4084

TP4085

TP4086

TP4087

TP4088

TP4089

TP4090

TP4091

TP4092

TP4093

TP4094

TP4095

TP4096

TP4097

TP4098

TP4099

TP4100

TP4101

TP4102

TP4103

TP4104

TP4105

TP4106

TP4107

TP4108

TP4109

TP4110

TP4111

TP4112

TP4113

TP4114

TP4115

TP4116

TP4117

TP4118

TP4119

TP4120

TP4121

TP4122

TP4123

TP4124

TP4125

TP4126

TP4127

TP4128

TP4129

TP4130

TP4131

TP4132

TP4133

TP4134

TP4135

TP4136

TP4137

TP4138

TP4139

TP4140

TP4141

TP4142

TP4143

TP4144

TP4145

TP4146

TP4147

TP4148

TP4149

TP4150

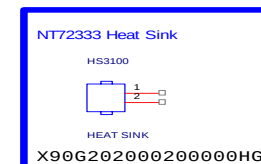
TP4151

TP4152

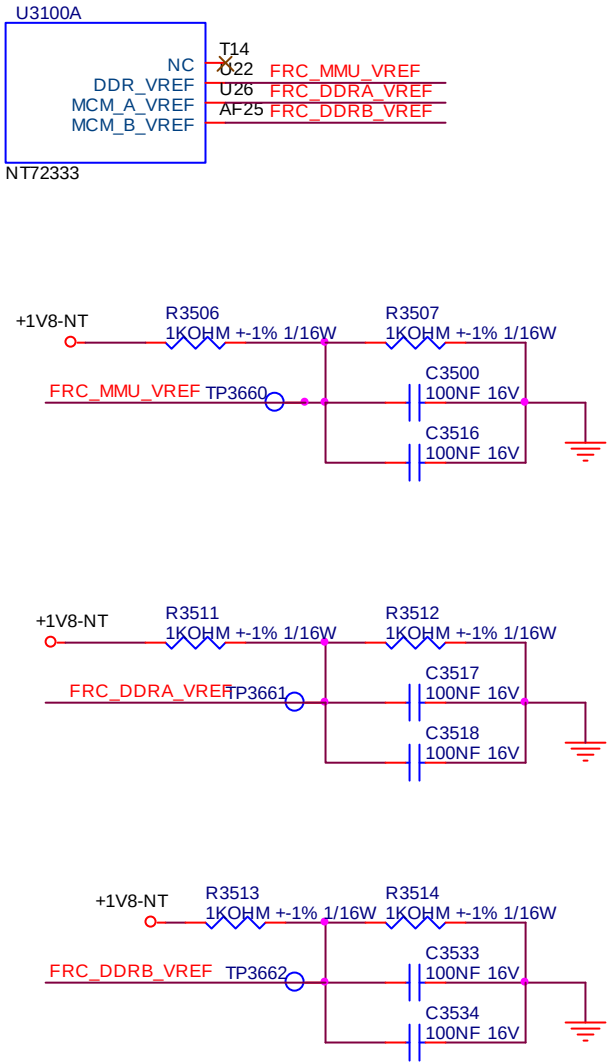
TP4153

TP4154

NT72333 POWER

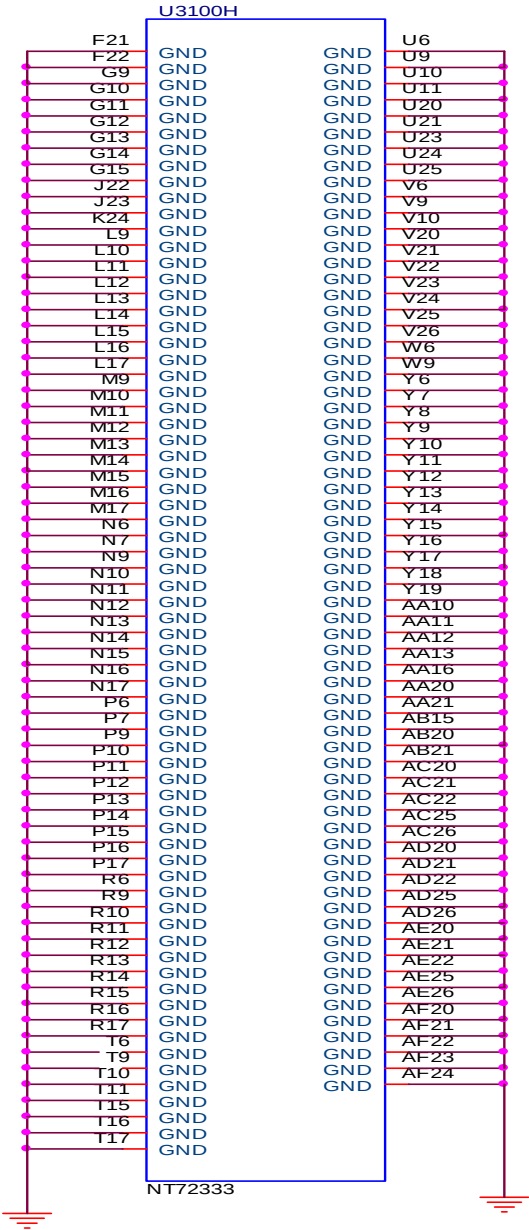


NT72333 DDR

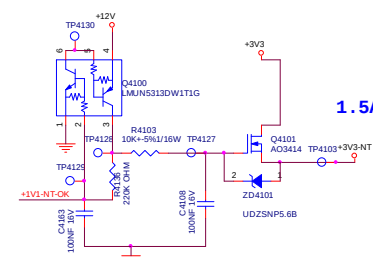


VREF voltage divider

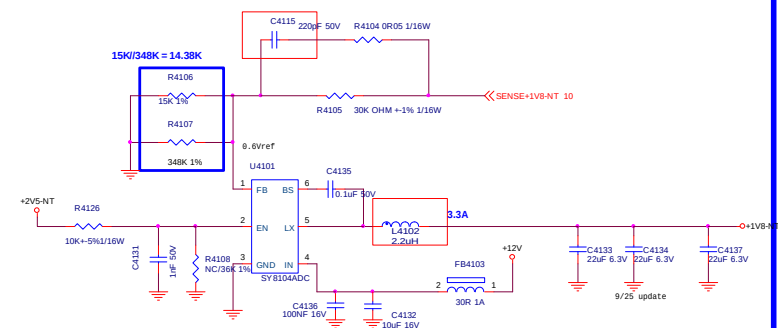
NT72333 GND



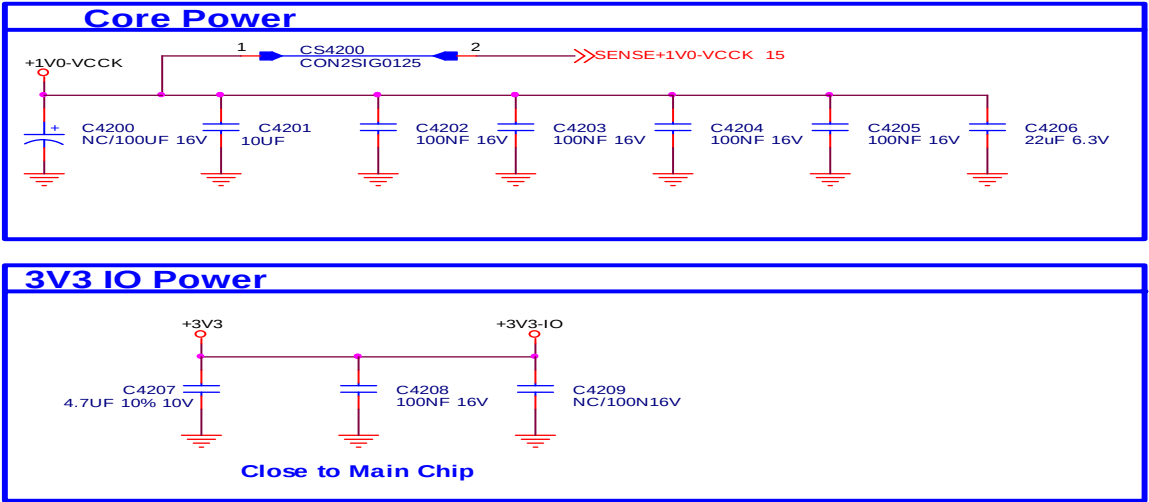
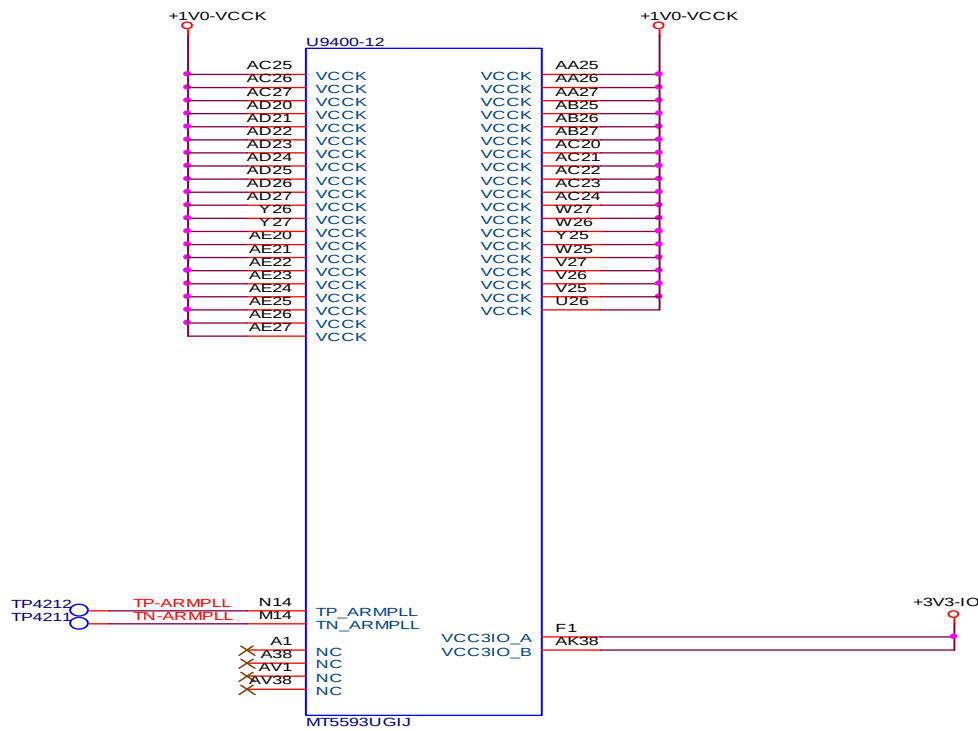
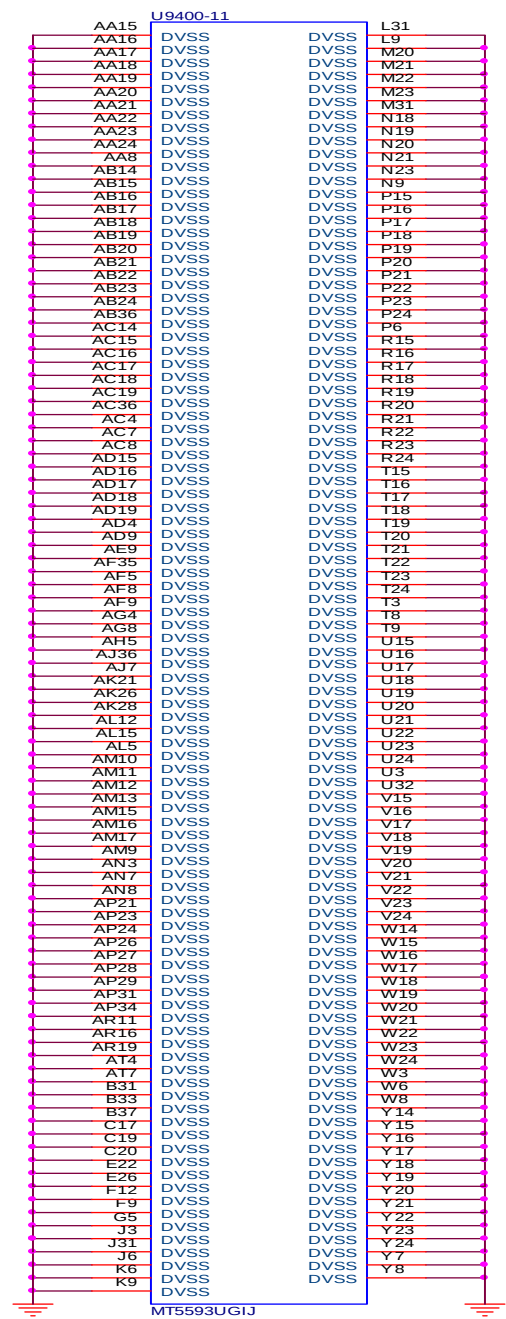
FRC_1.1V



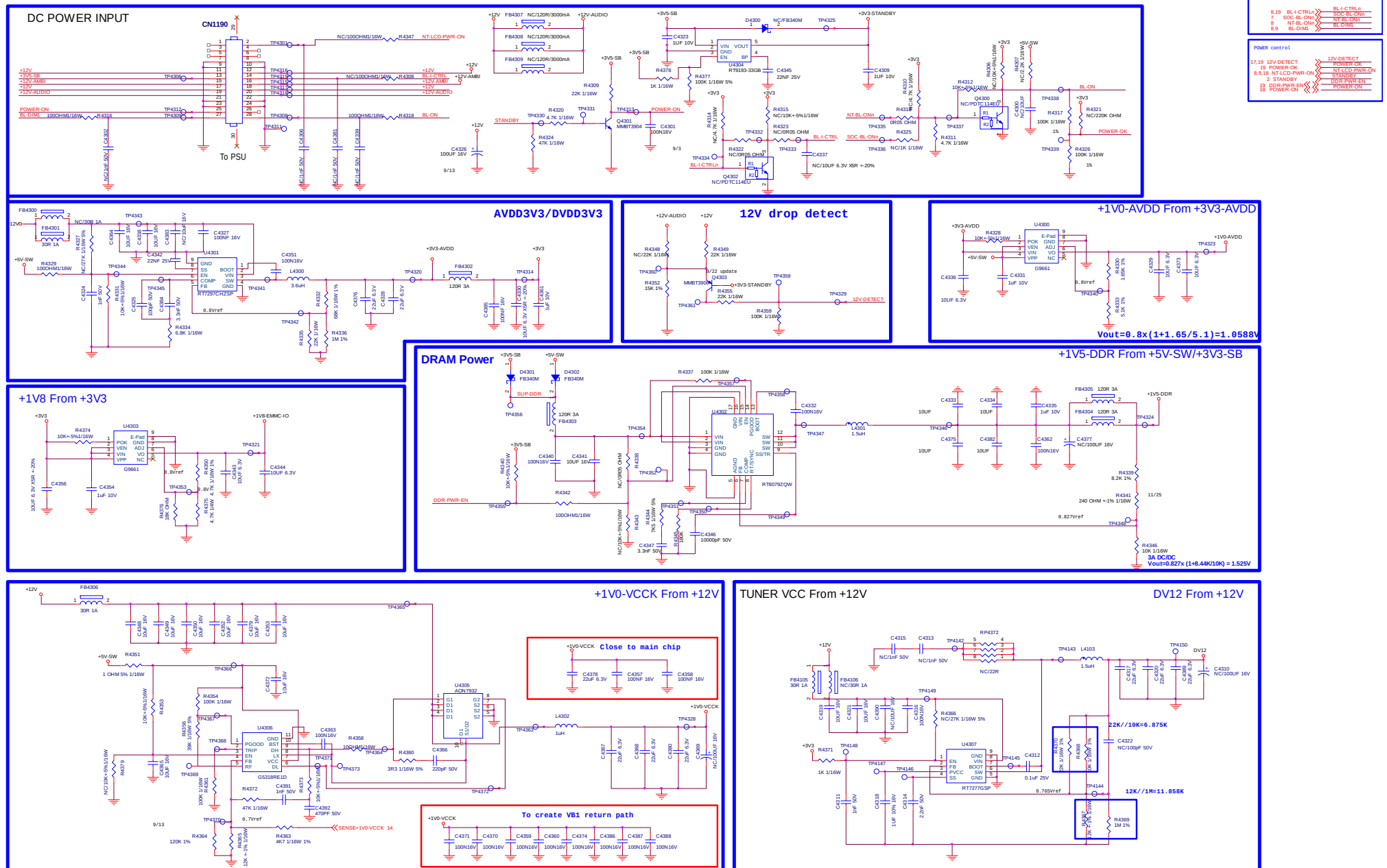
1.5A MAX



9-8-13 DCDC-SOC-VCCCK-DVSS



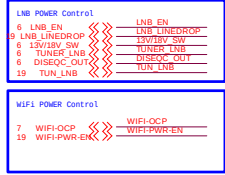
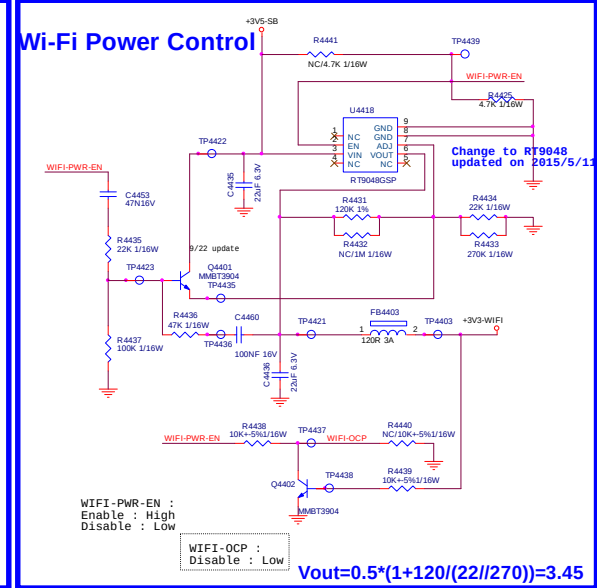
9-8-14 DCDC-SYSTEM-POWER1



+5V-SW from +12V

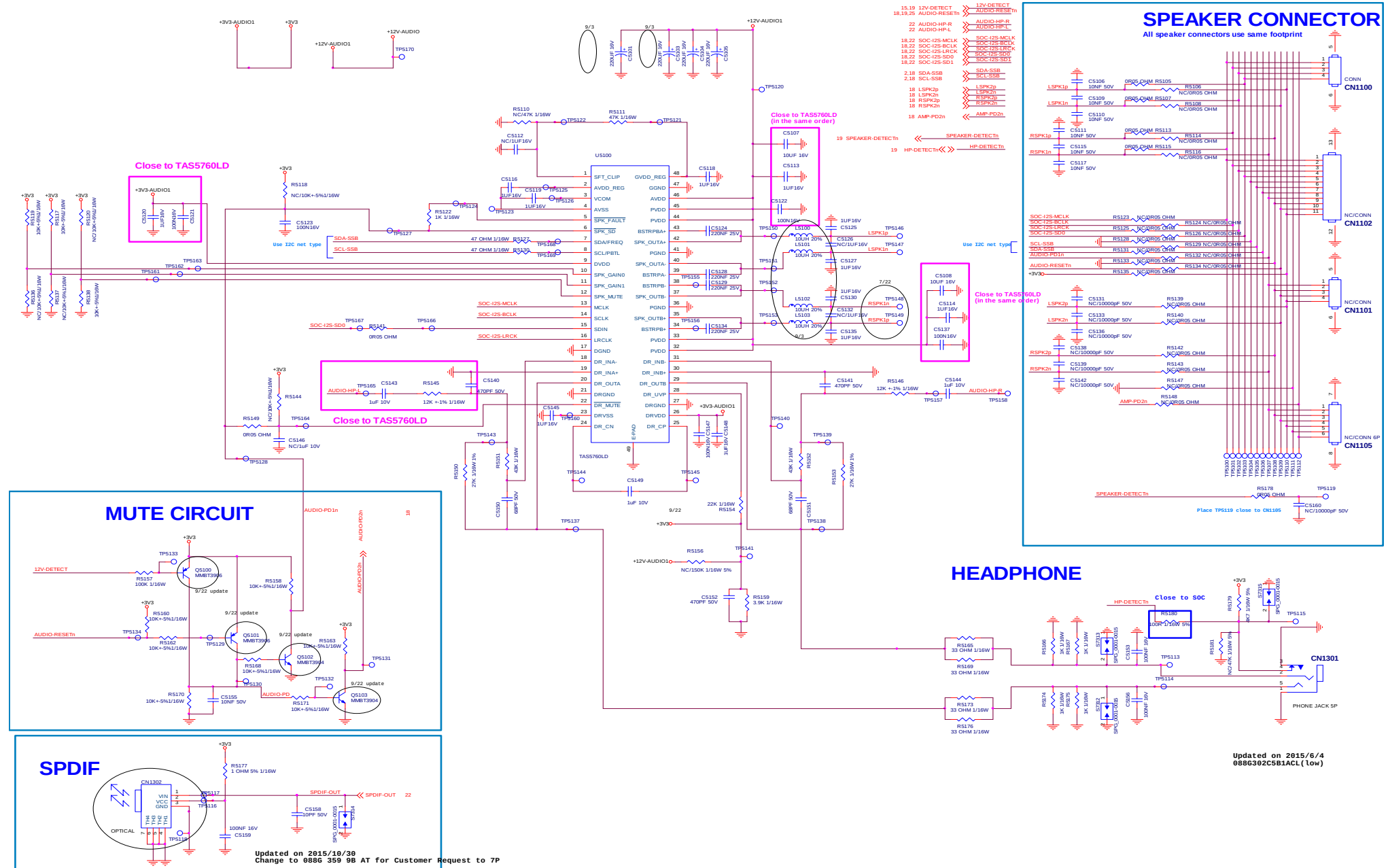
8A DC/DC

$V_{out} = 0.7 \times (1 + R1/R2) = 0.7 \times (1 + 15/2.379) = 5.11V$

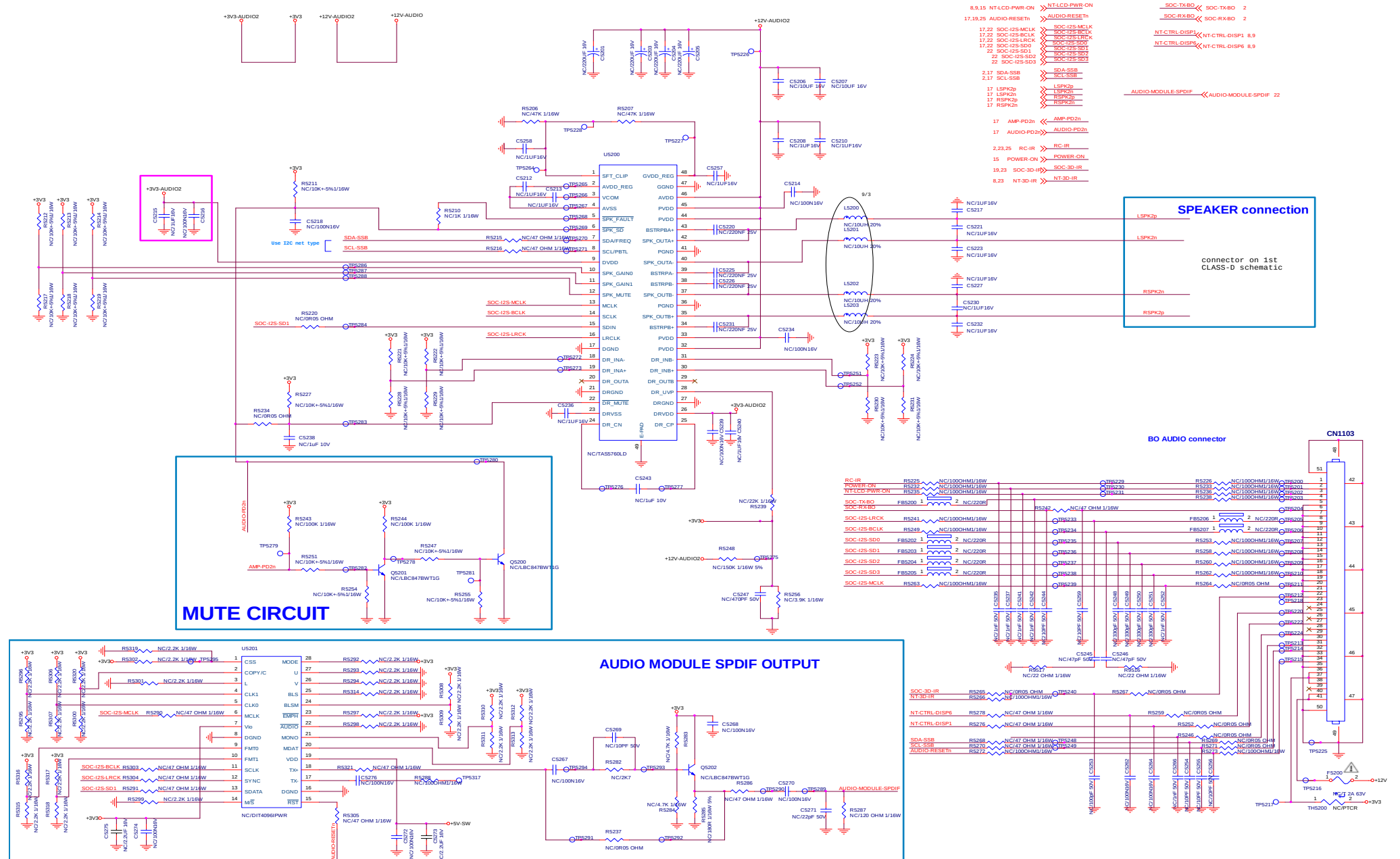


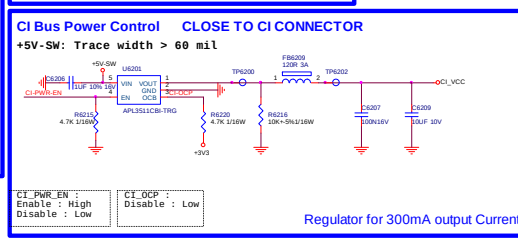
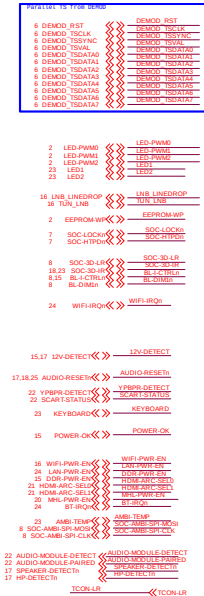
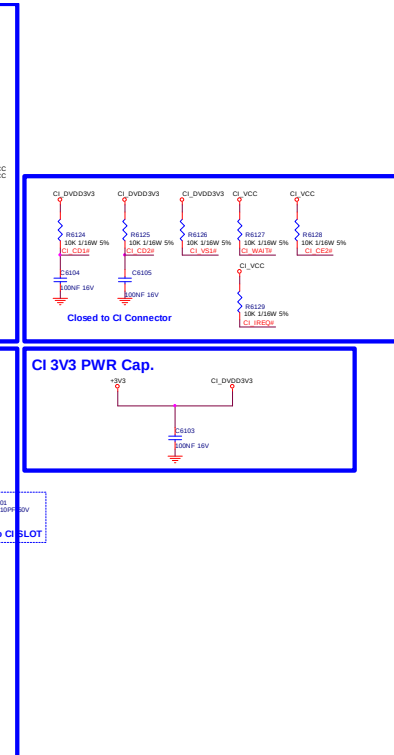
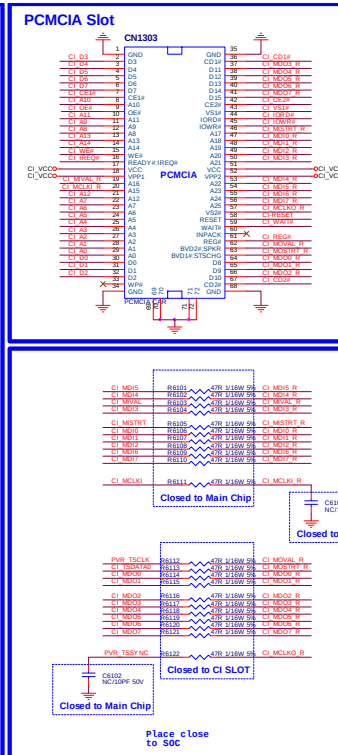
F4400	X	NA
C4457	X	X
C4459	X	X
C4458	X	X
R4430	NA	X
C4456	NA	X
C4455	NA	X
R4429	NA	X
U4404	NA	X
U4405	NA	NA
C4454	NA	NA
R4428	NA	NA

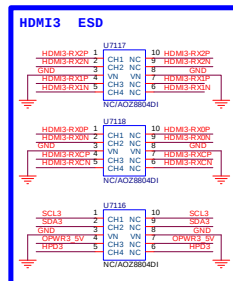
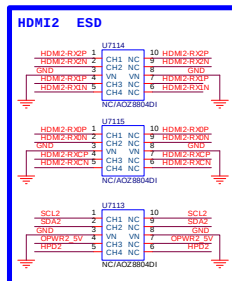
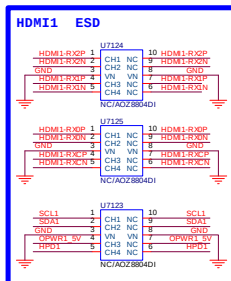
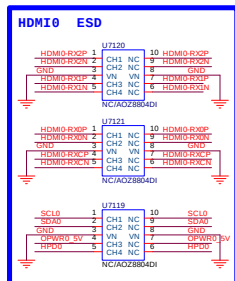
9-8-16 AUDIO-1st-CLASS-D-AMP



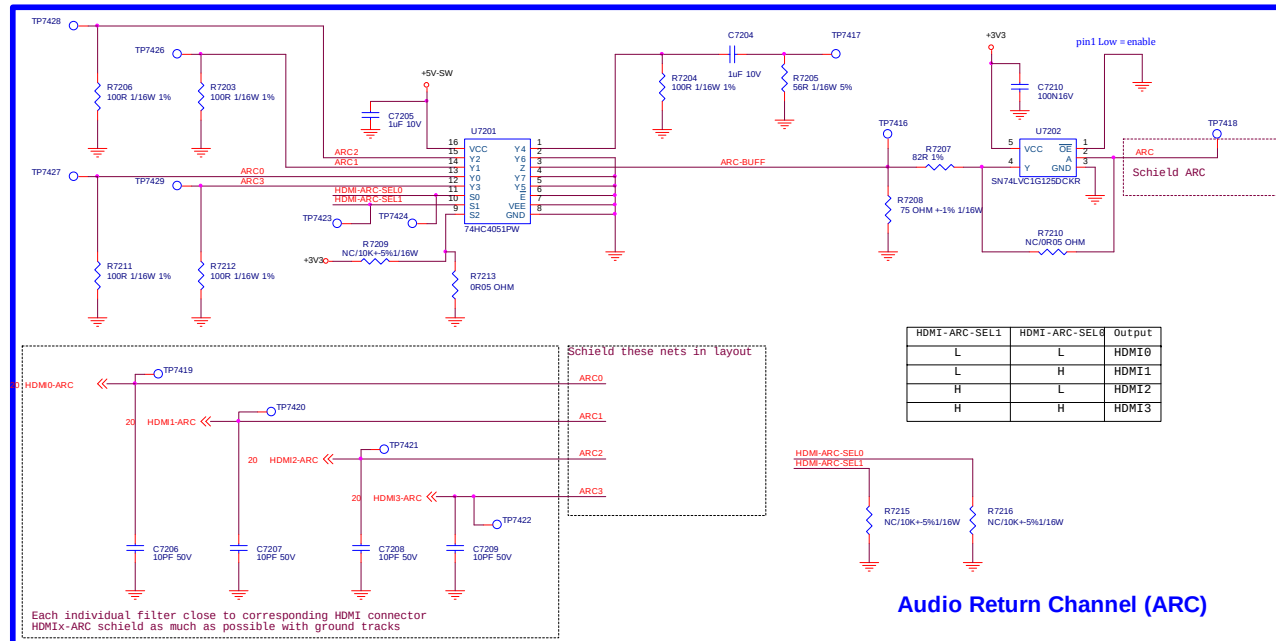
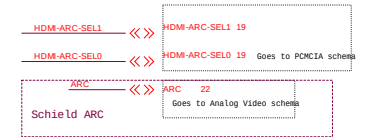
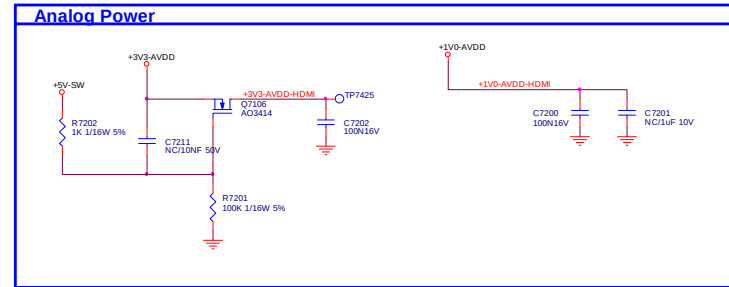
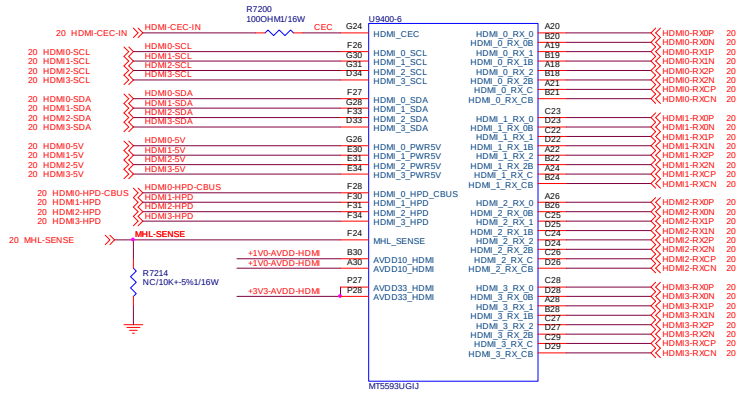
9-8-17 AUDIO-2nd-CLASS-D-AMP



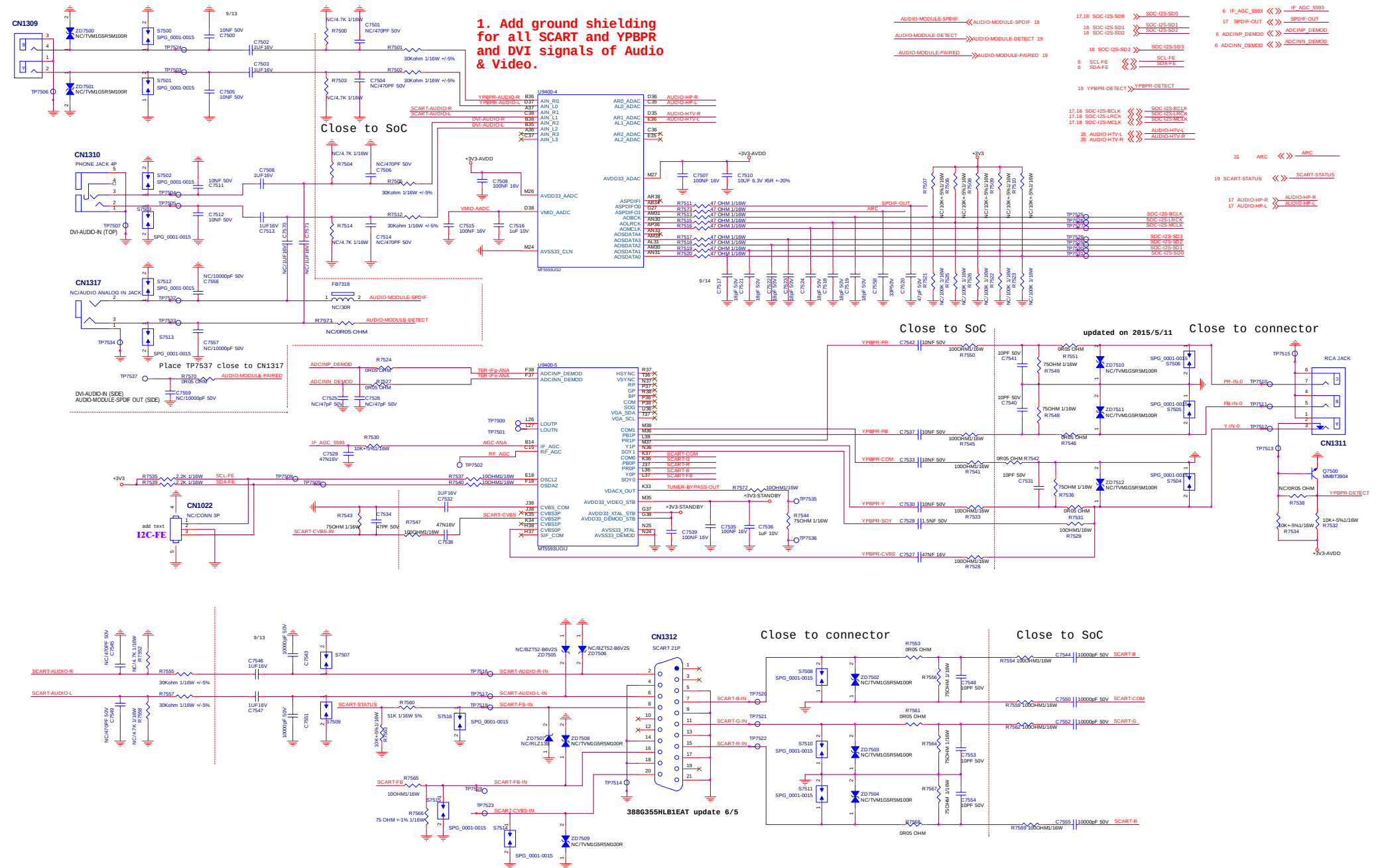
[illegible]

[illegible][illegible][illegible]

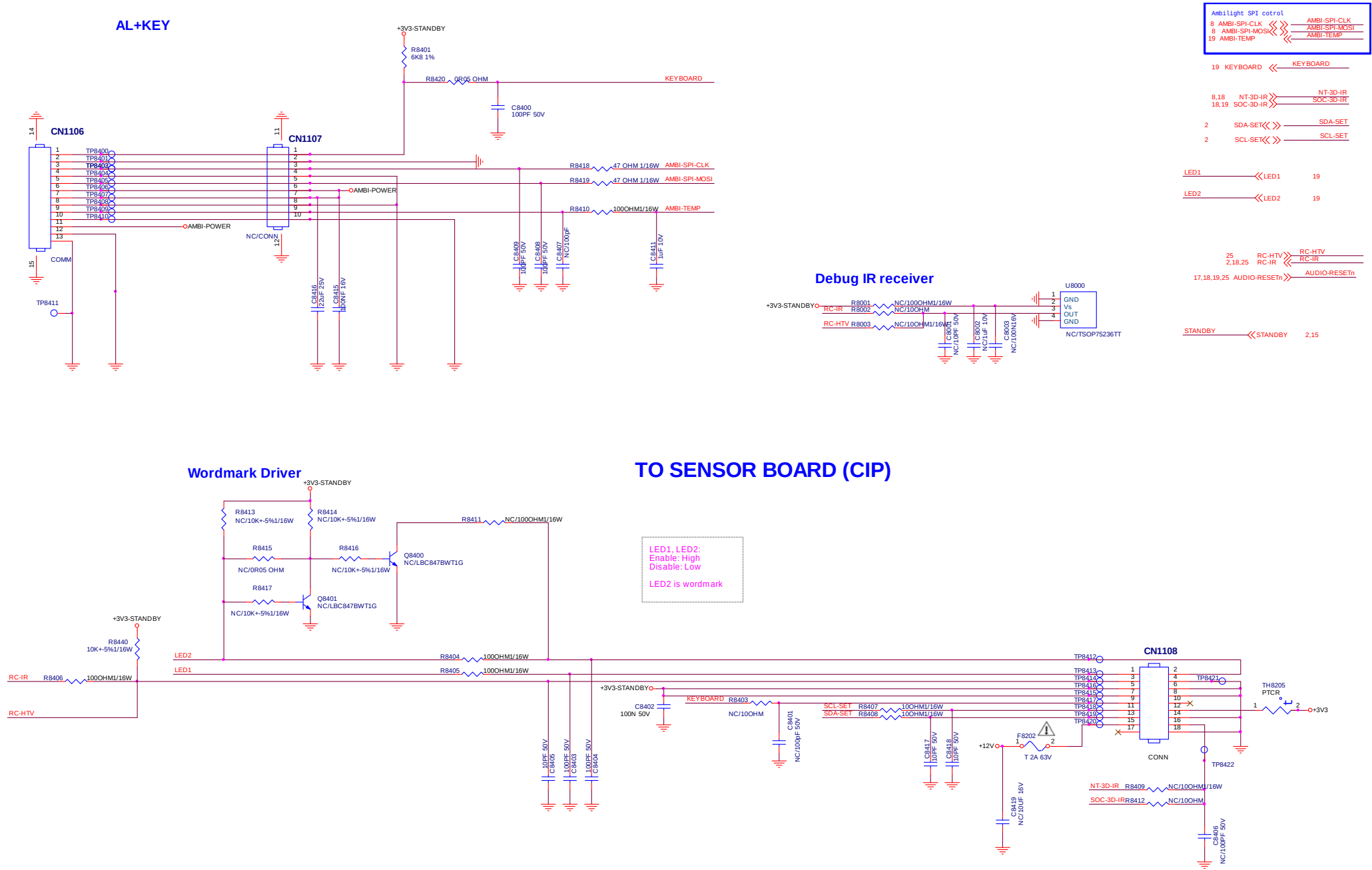
9-8-20 HDMI-SOC-ARC



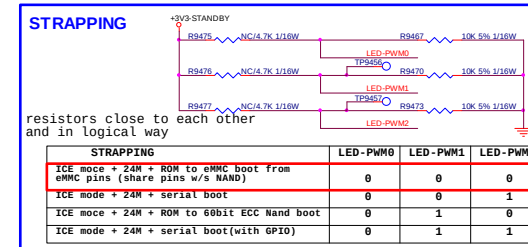
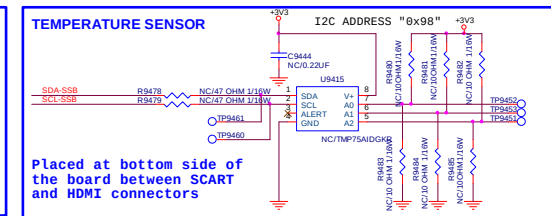
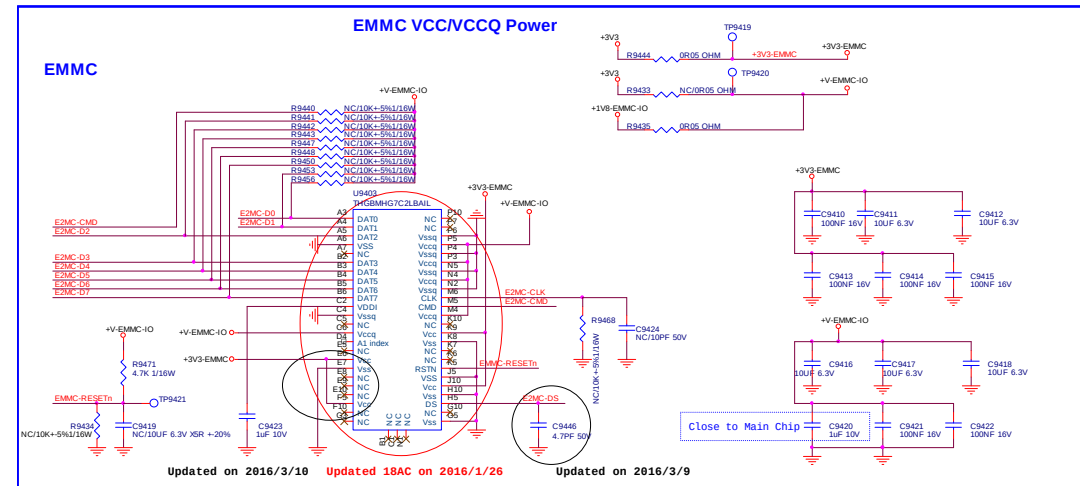
9-8-21 SCART-YPbPr-CVBS



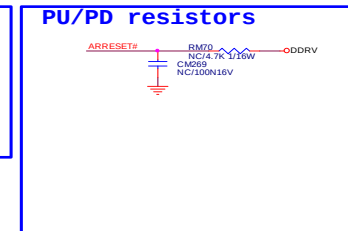
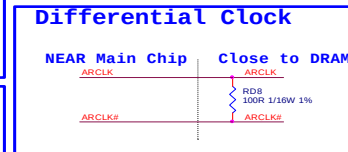
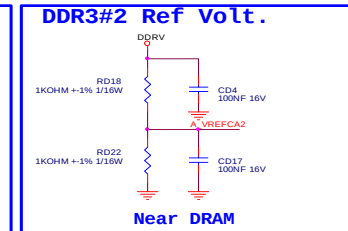
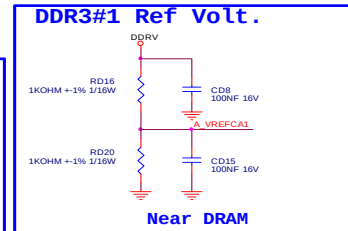
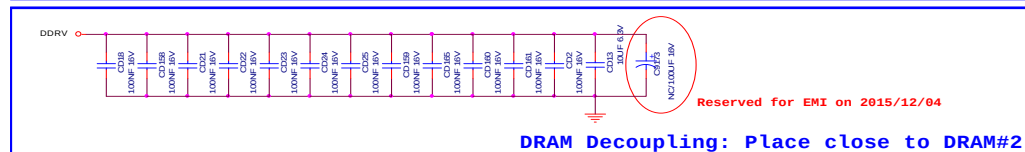
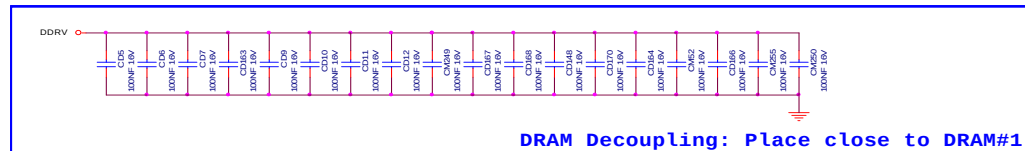
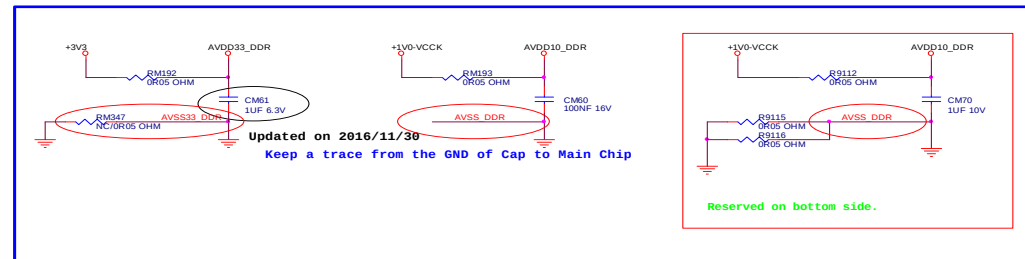
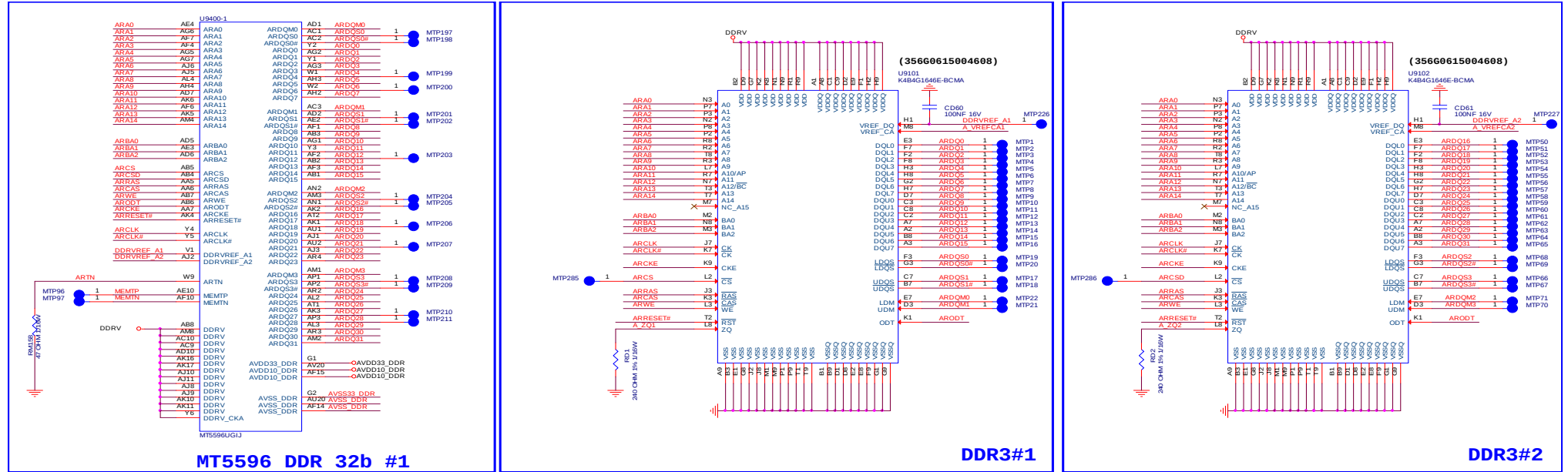
9-8-22 CTRL-CONNECTORS



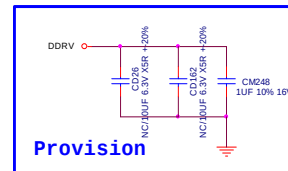
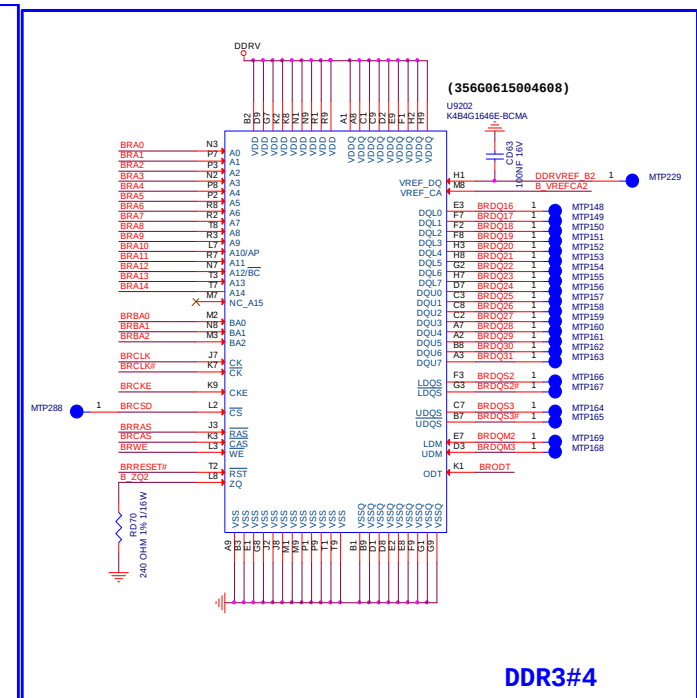
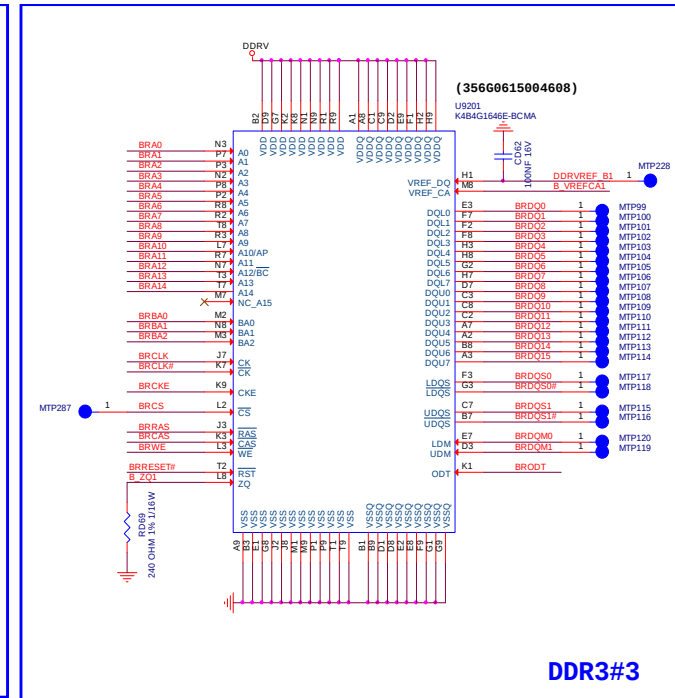
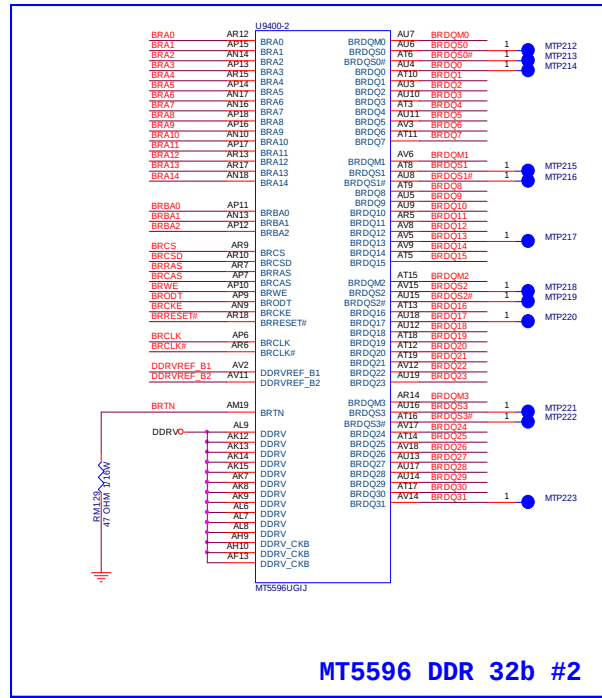
9-9-1 SOC-EMMC

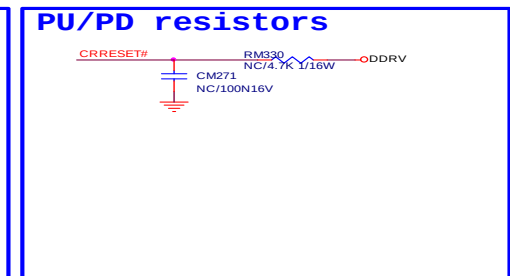
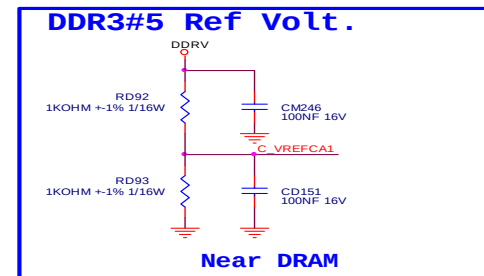
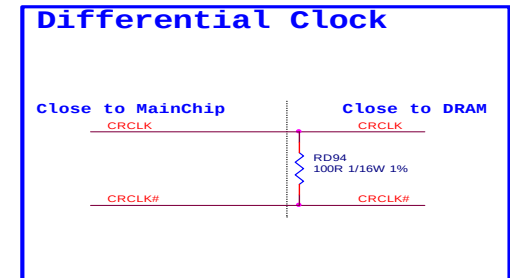
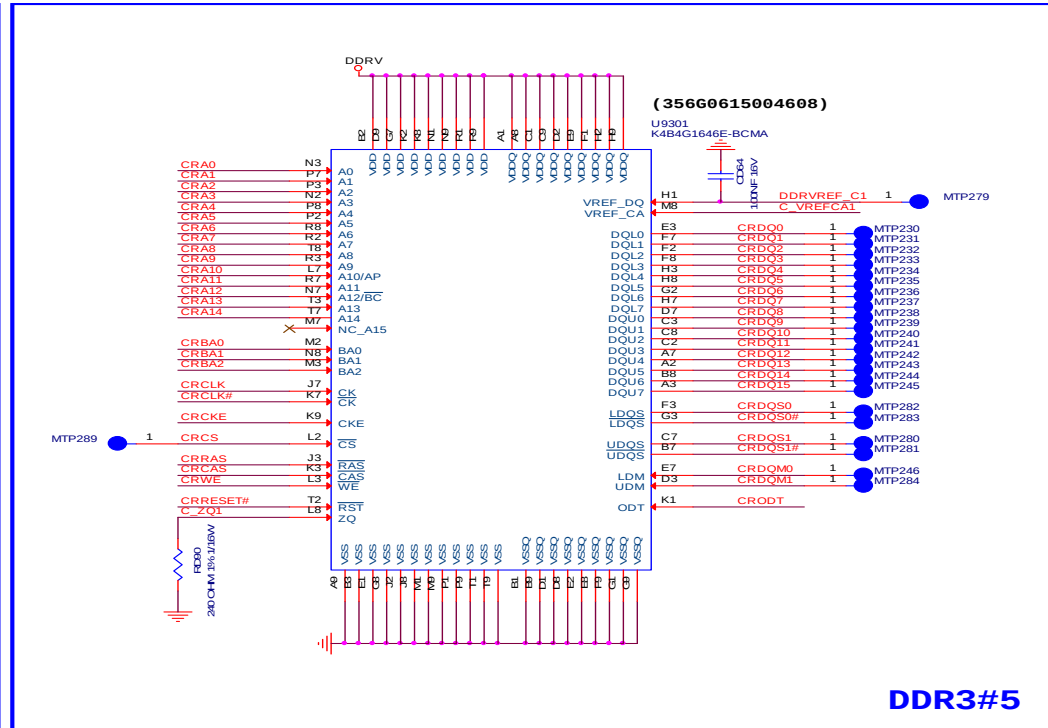


9-9-2 SOC-DDR3-1-2



9-9-3 SOC-DDR3-3-4



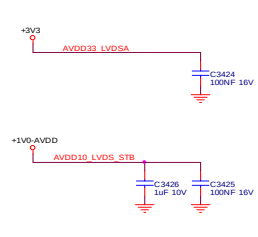
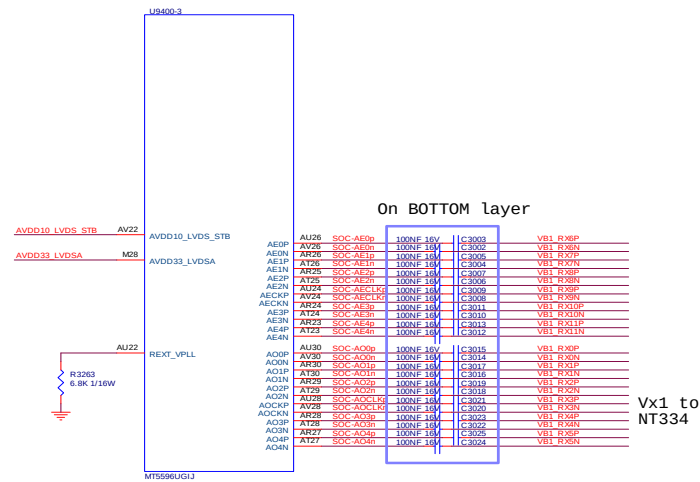
[illegible]

The image displays a series of circuit diagrams for the SI2169-D60-GMR tuner, organized into several functional blocks:

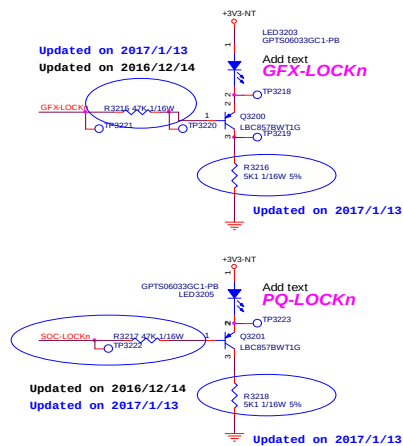
- IF PATH TUNER:** Shows the input stage for the IF path, including a differential pair and various biasing and matching components. Annotations include "Close to Tuner" and "Close to MT5593".
- TUNER:** Details the tuner core, including the TC IF and T2 IF stages, and the TUNER I2C PULL UP circuit. Annotations include "Close to Tuner" and "Close to Demod".
- DEMOD POWER:** Shows the demodulation power stage, including the U707 and U708 components. Annotations include "Close to Main Chip" and "Close to Demod".
- TUNER VCC From +5V_SW:** Shows the power supply regulation for the tuner, including the U705 and U706 components. Annotations include "Close to Tuner" and "Close to Demod".
- EXT IF AGC TUNER:** Shows the external IF AGC tuner stage, including the R227 and R228 components. Annotations include "Close to Tuner" and "Close to DeMod".
- T/C/T2_TUNER_3V3:** Shows the 3V3 power supply regulation for the tuner, including the R229 and R230 components. Annotations include "Close to Tuner" and "Close to Demod".
- SI2169-D60-GMR:** Shows the main tuner chip (U201) and its connections to various components, including the T2 IF N and T2 IF P stages. Annotations include "Close to U201" and "Close to Tuner".

The diagrams are dated with updates from 2015/5/11 to 2016/9/22, indicating a series of revisions to the design.

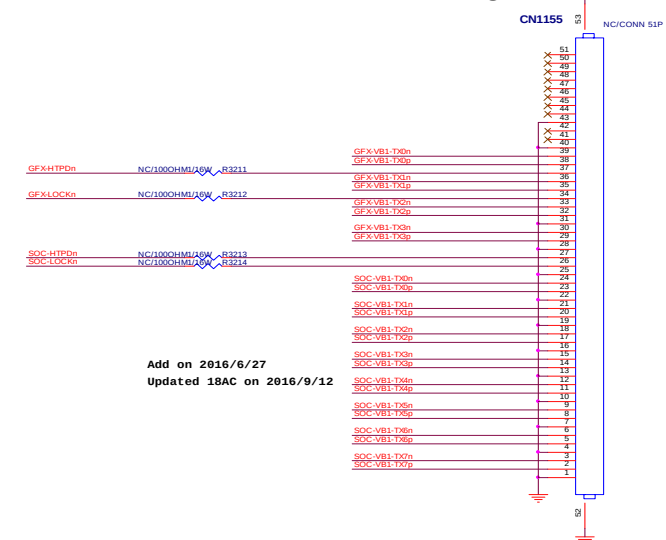
MT5596 Vx1 OUTPUT



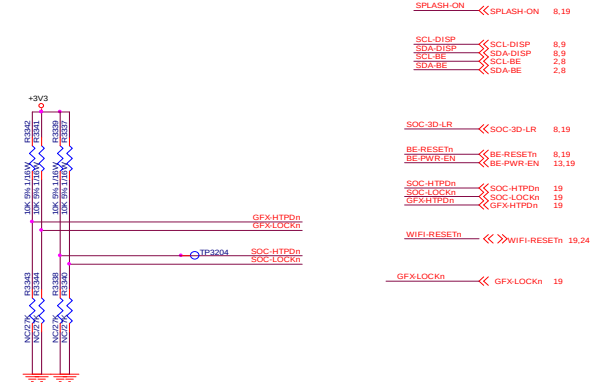
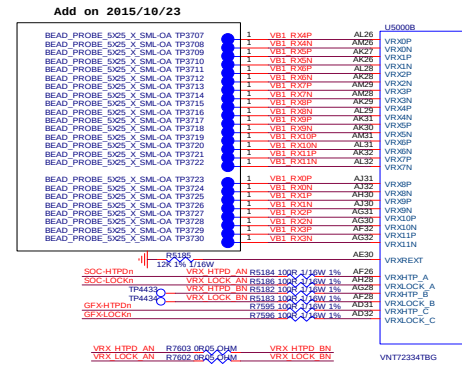
Add on 2016/6/24 for Debug



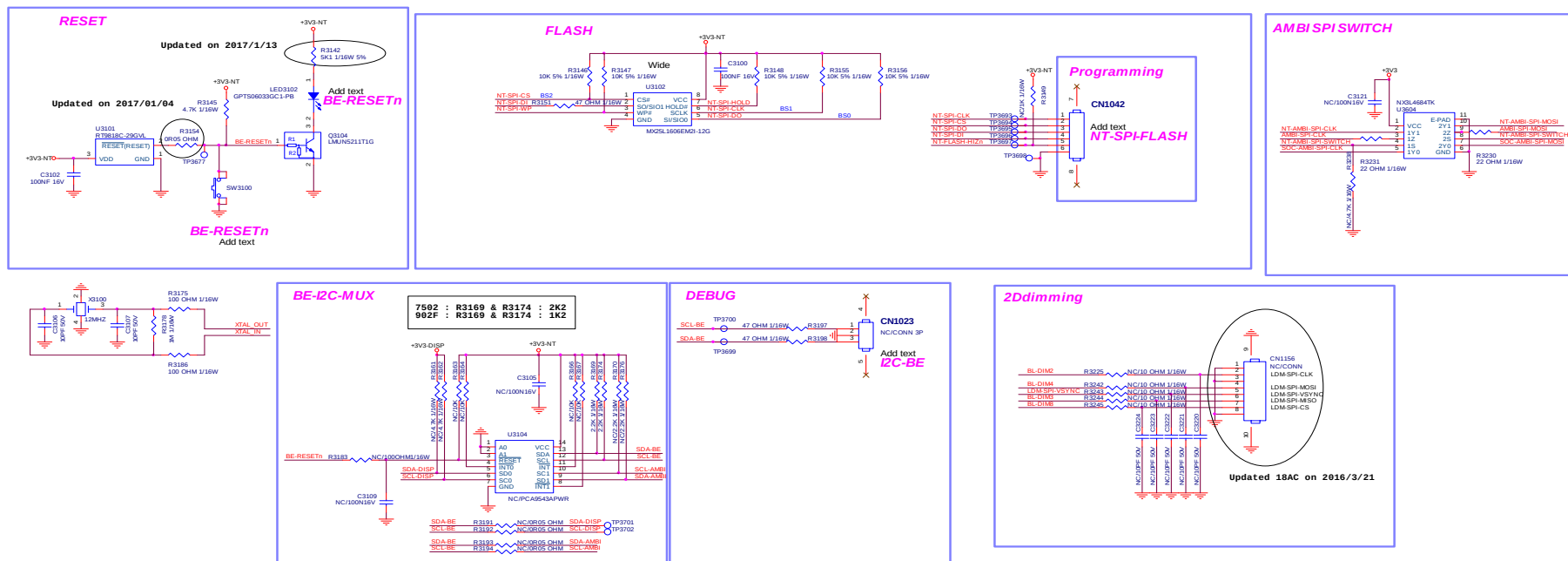
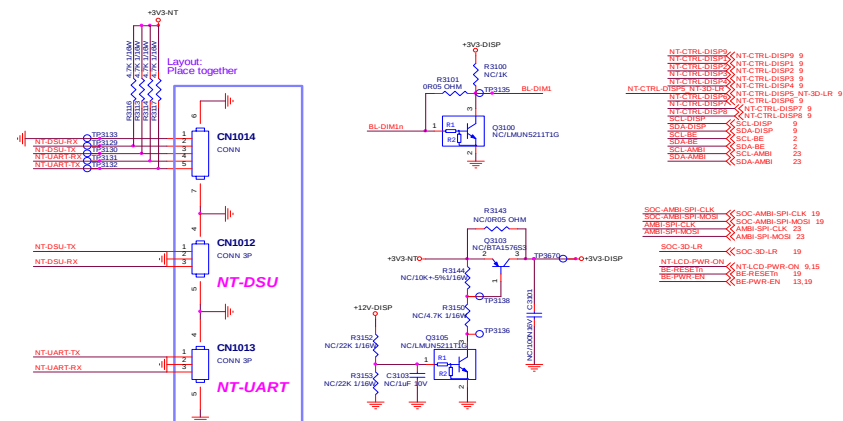
MT5596 Vx1 OUTPUT for Debug



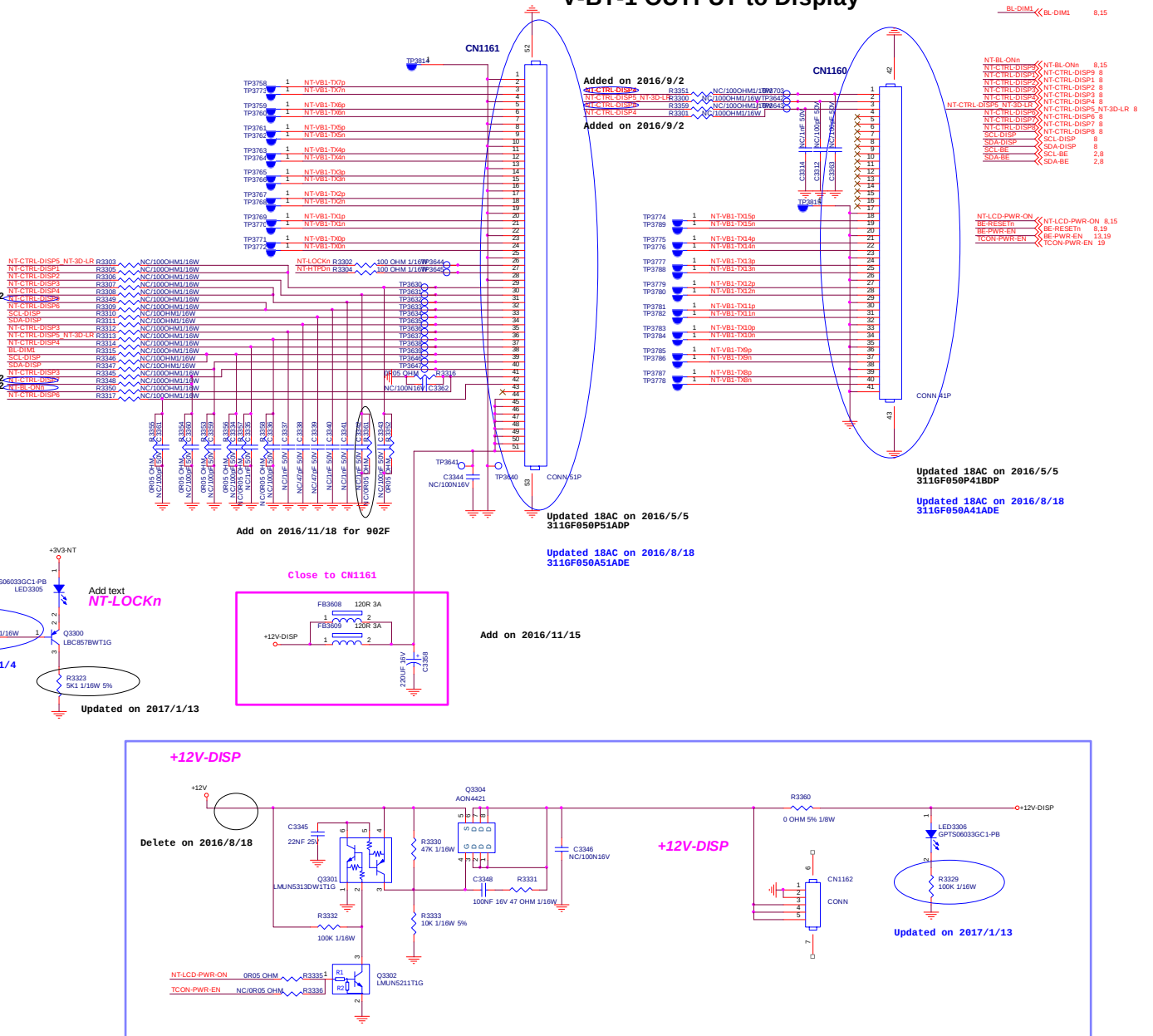
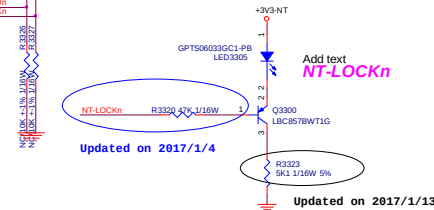
NT334 Vx1 INPUT



NT334 CONTROL



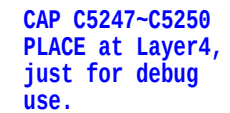
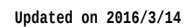
NT334 V-BY-1 OUTPUT



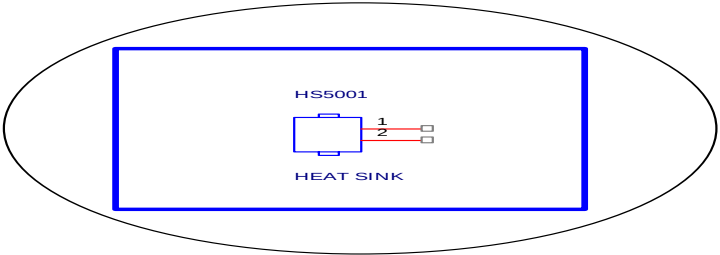
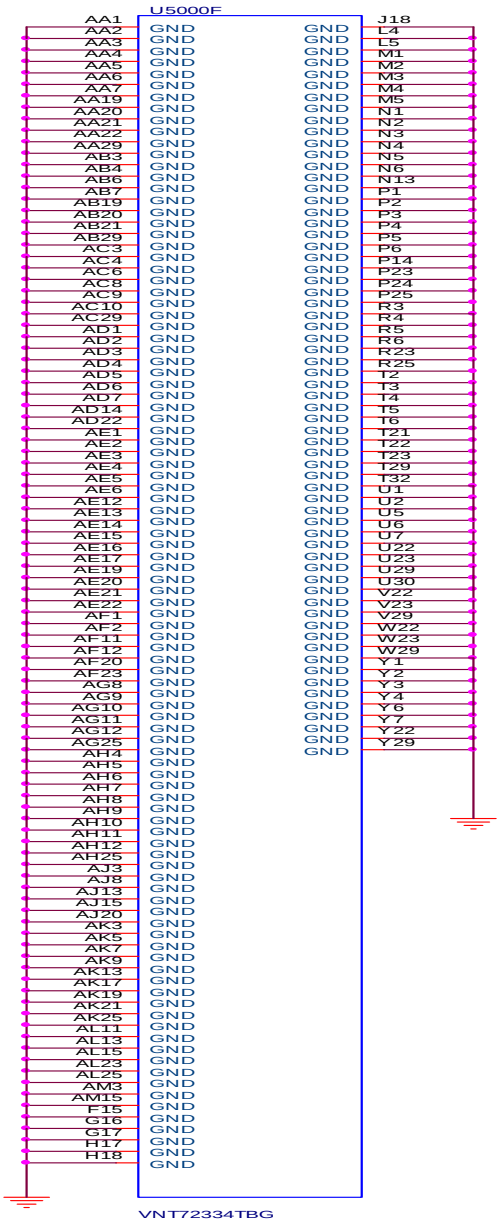


These POWER CAP PLACE at Layer4, just for debug use.

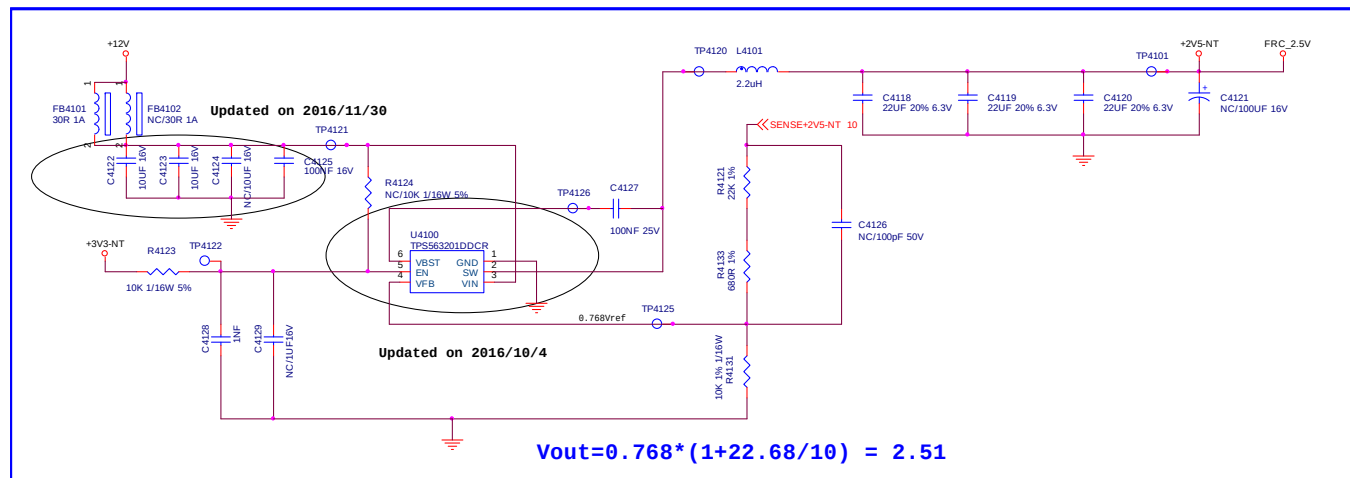
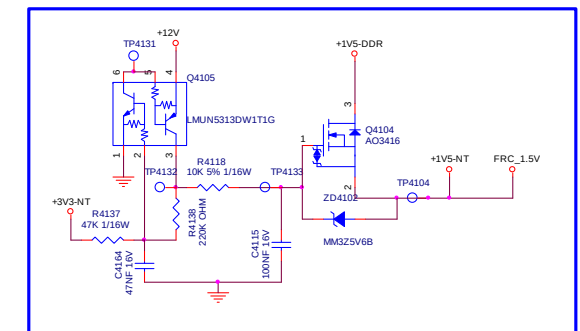
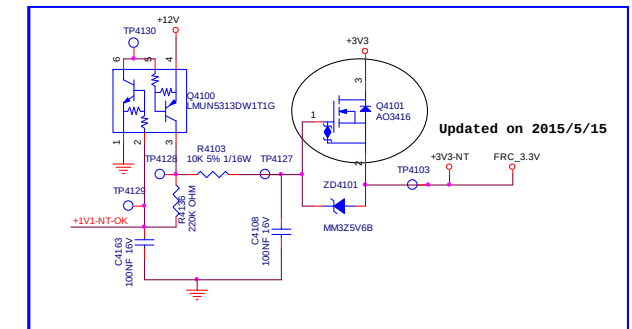
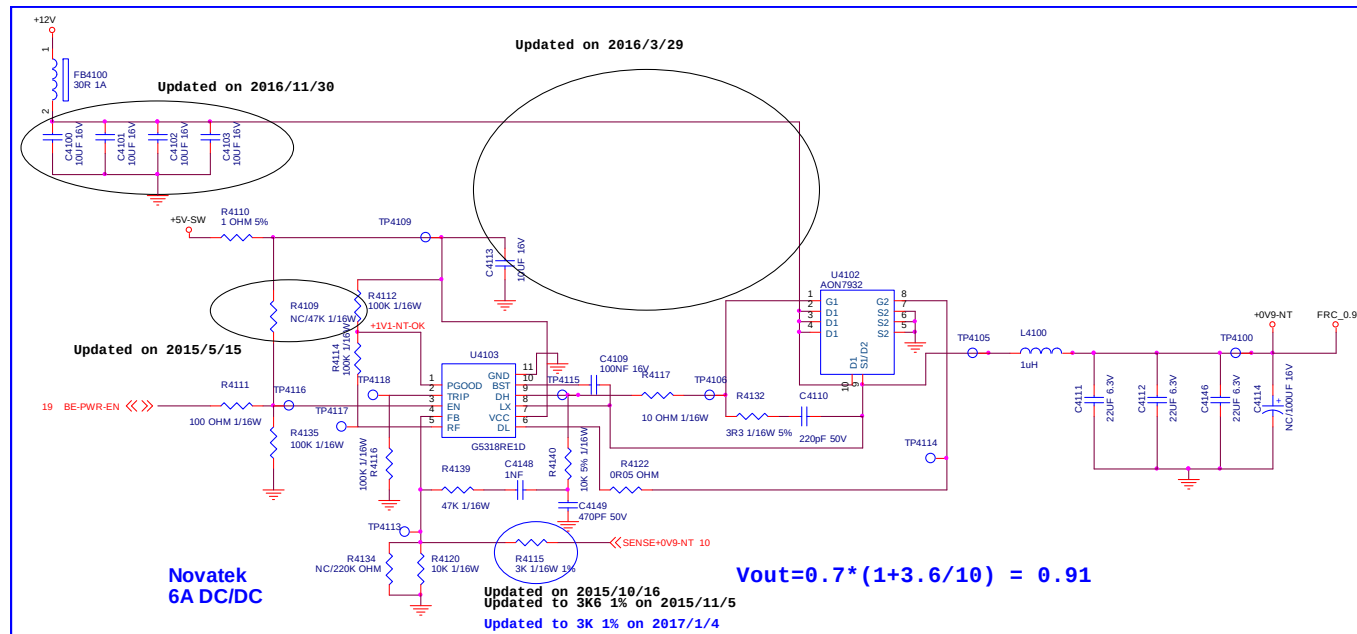
NT334 DDR A-B



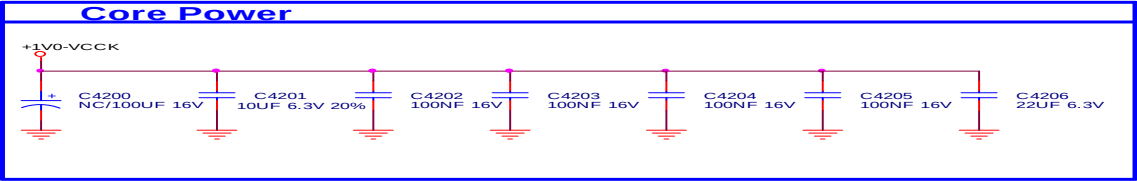
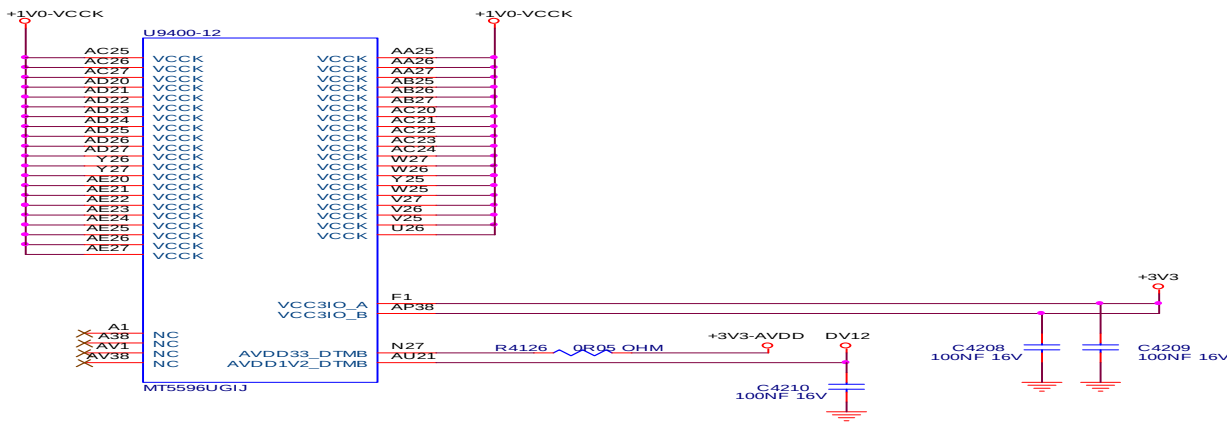
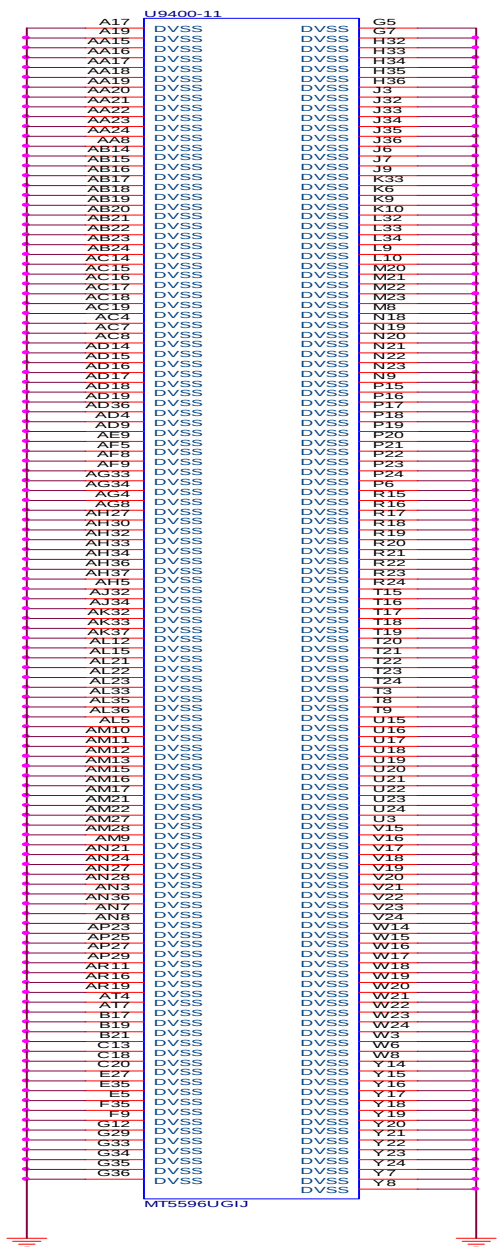
NT334 GROUND



9-9-12 DCDC-Novatek-POWER



9-9-13 DCDC-SOC-VCCK-DVSS



DC POWER INPUT

Updated on 2016/11/21
Add on 2015/7/21

Updated on 2016/5/27
Add on 2015/7/21

Updated on 2016/5/27
Add on 2015/7/21

Updated on 2016/4/1

Updated on 2015/5/15

Updated on 2016/8/24

Updated on 2015/7/6

Add on 2016/3/4

12V drop detect

+1V0-AVDD From +3V3-AVDD

Vout=0.8x(1+1.8/5.1)=1.082V

Vout=0.768*(1+33.2/10) = 3.31

Updated on 2016/10/4

Updated on 2016/3/25

Add on 2016/5/23

Add on 2016/5/23

Add on 2016/5/23

Add on 2016/8/24

Vout=0.791*(1+100/(22//120)) = 5.04
Vout=0.791*(1+100/(36//120)) = 3.64
Vout=0.791*(1+100/(39//120)) = 3.47
Vout=0.791*(1+150/(47)) = 3.315

OPWRSB_PWR > +12V ±3ms

POWER-ON Normal High Stand_ByLow

POWER-ON Normal High Stand_ByLow

Updated footprint on 2016/3/17

Updated on 2016/11/18

DRAM Power

3A DC/DC
Vout=0.827x(1+8.44K/10K) = 1.525V

AVDD1V0-STB From +3V6-STB

Vout=0.8*(1+4.7/(4.7//18)) = 1.808

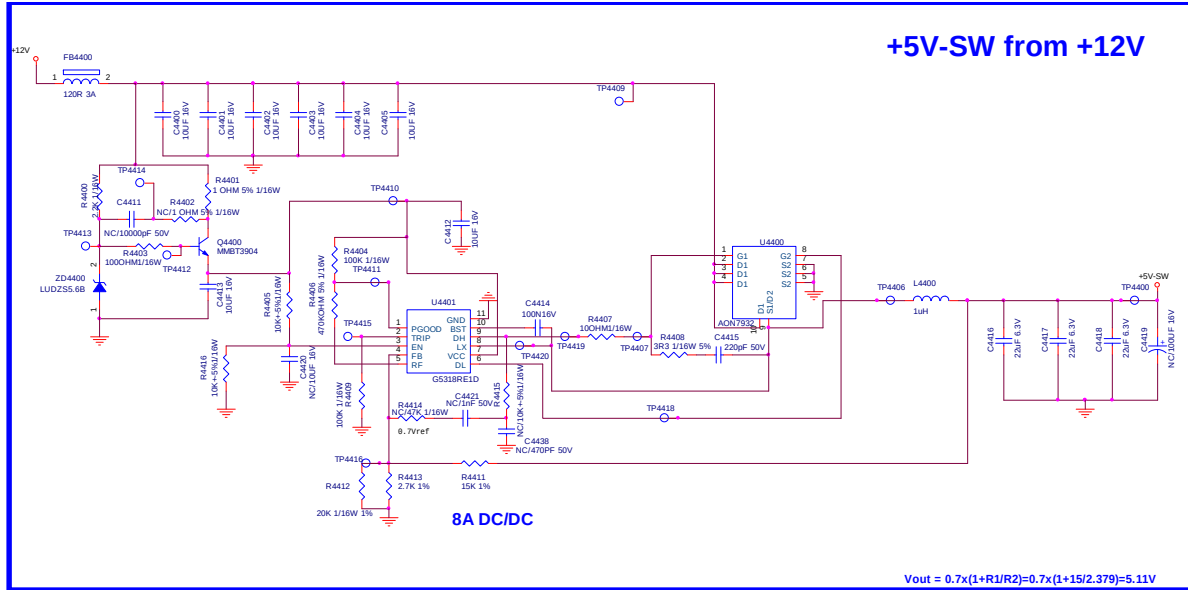
AVDD1V0-STB From +3V6-STB

Vout=0.8*(1+1.6/5.1) = 1.05

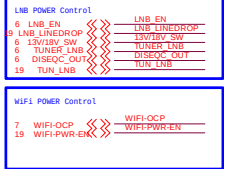
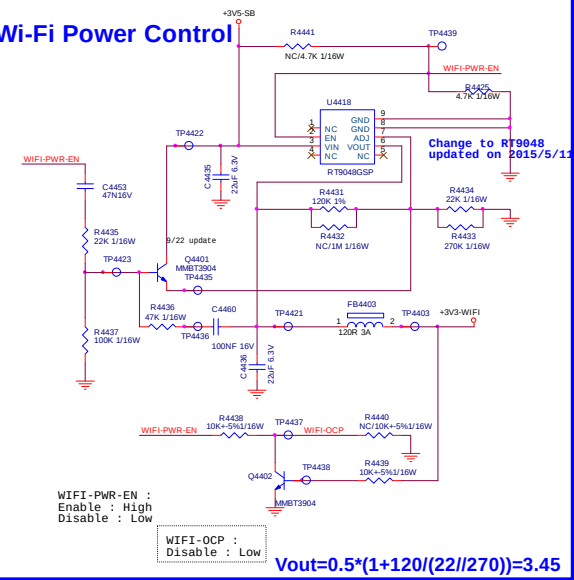
Close to main chip

To create VB1 return path

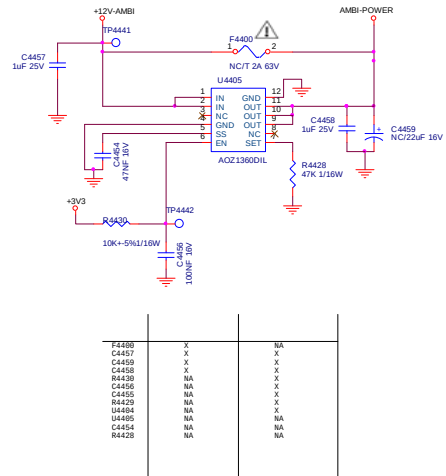
9-9-15 VCCK & DVSS



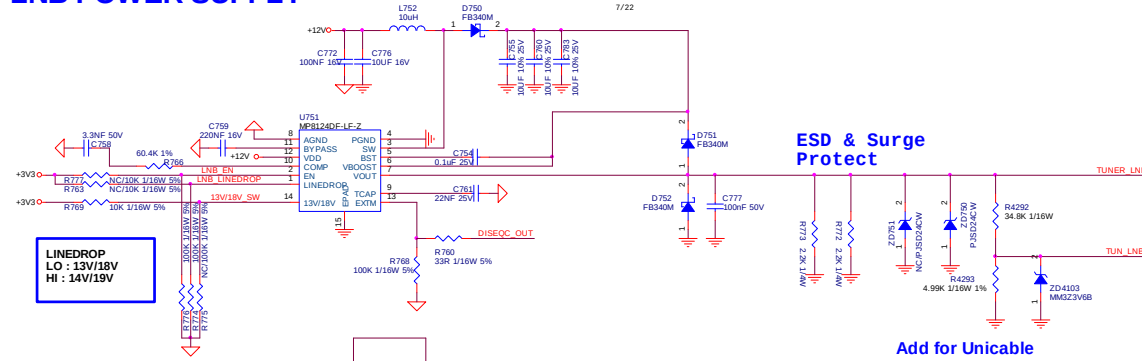
Wi-Fi Power Control



AMBILIGHT PROTECTION

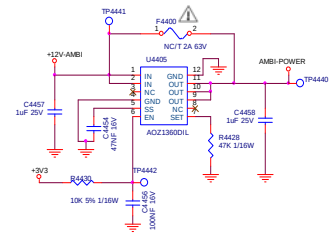
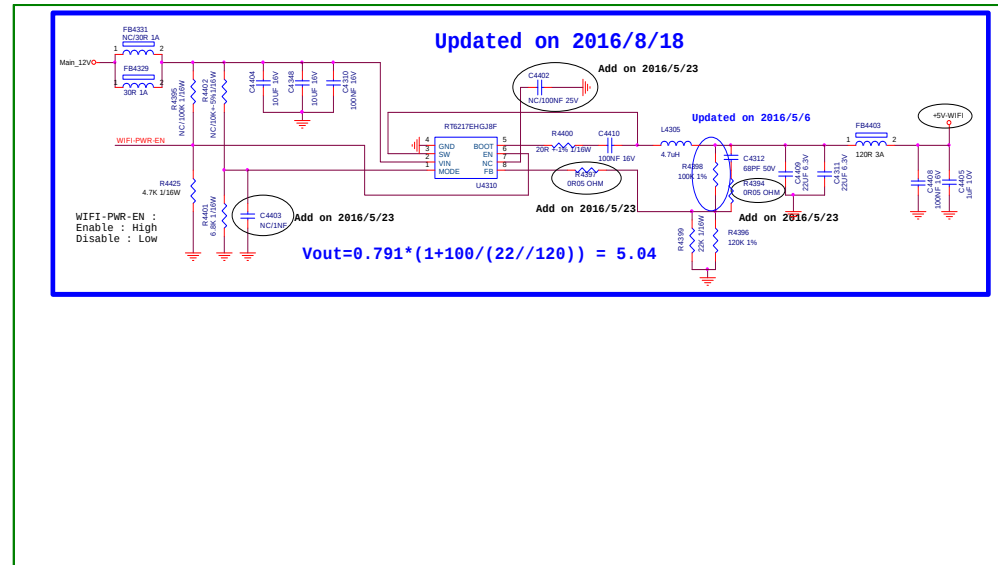
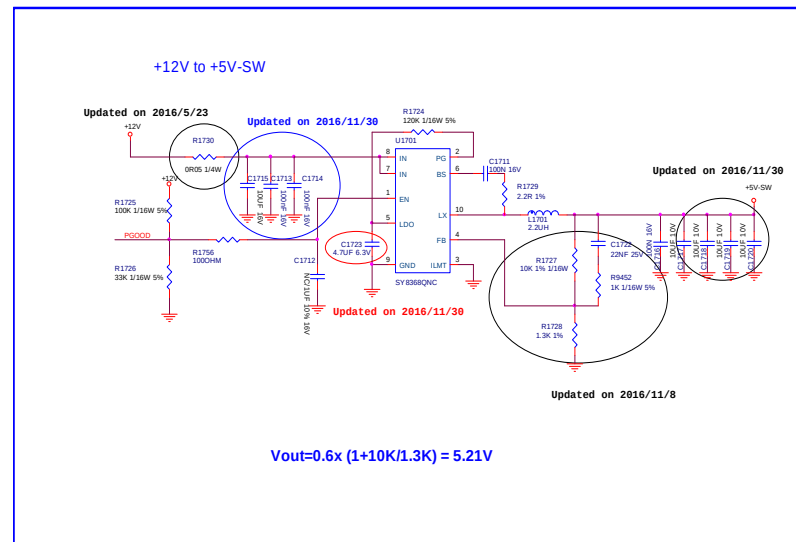


LNB POWER SUPPLY

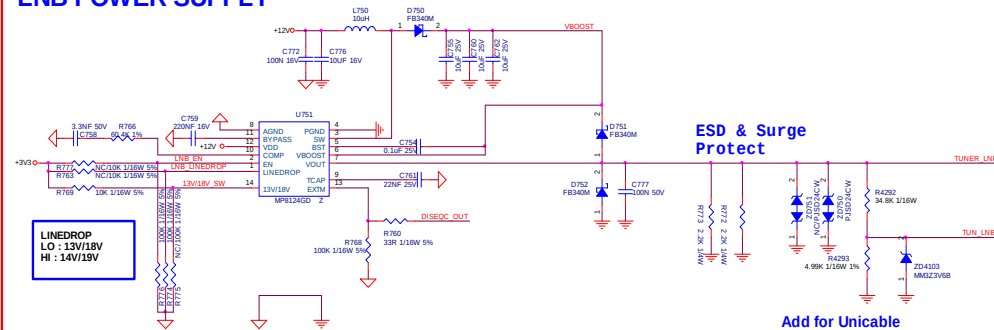


NC for PUT6401 models

9-9-16 DCDC-SYSTEM-POWER2

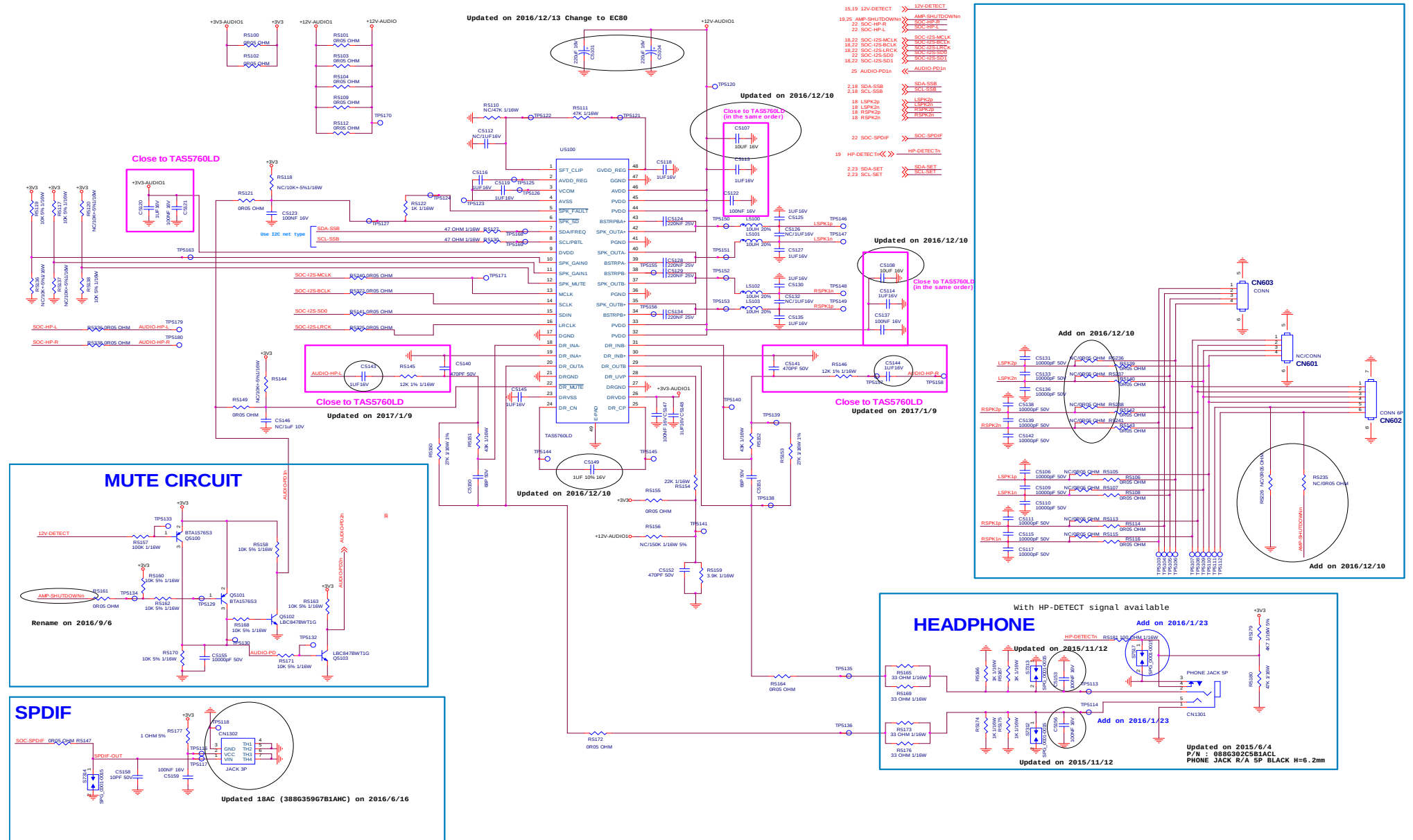


	2 Sided ambilight	3/4 Sided ambilight U4484
F4486	X	NA
C4457	X	X
C4459	X	X
C4458	X	X
R4439	NA	X
C4456	NA	X
U4485	NA	X
C4454	NA	X
R4428	NA	X

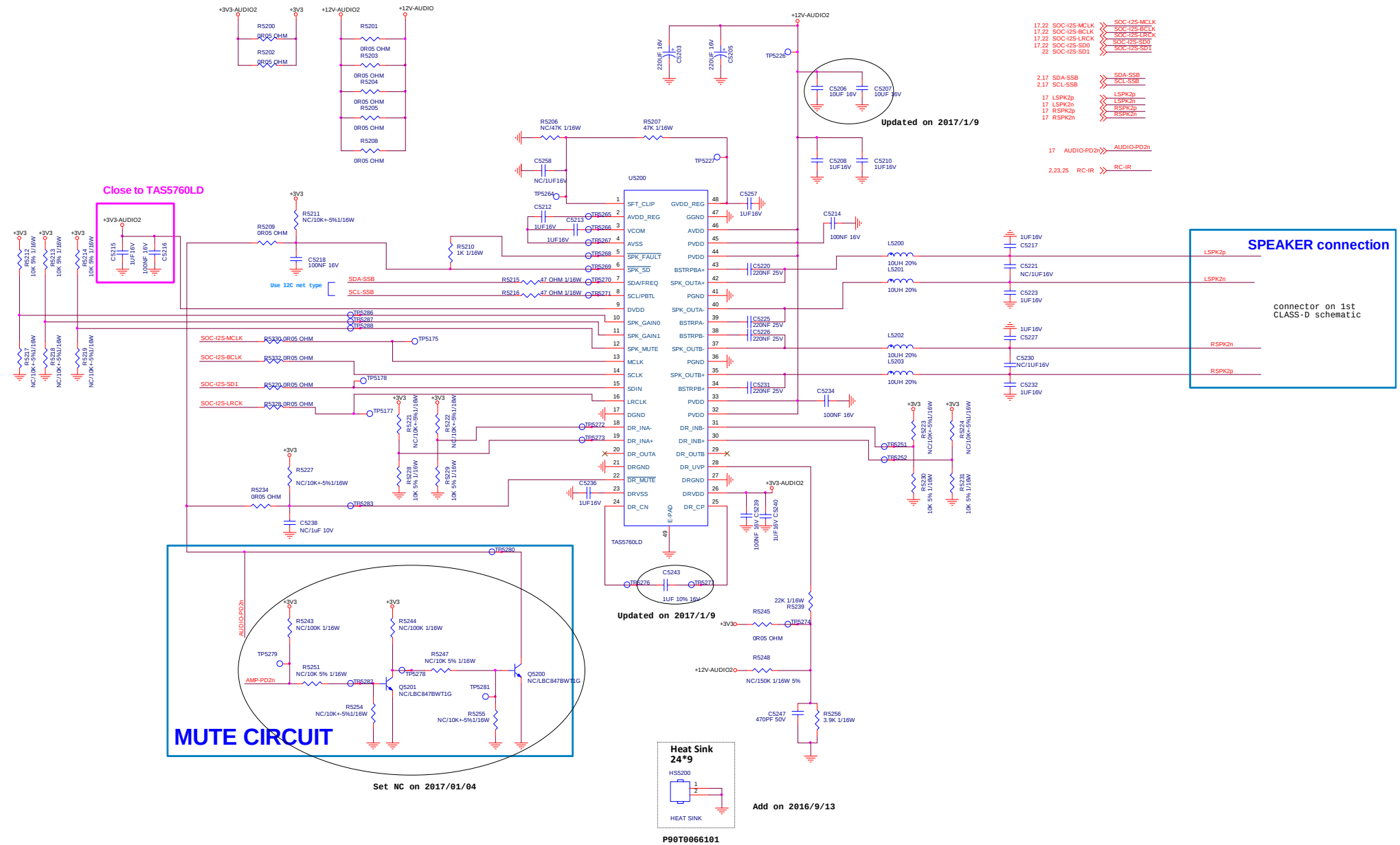


Add for Unicable

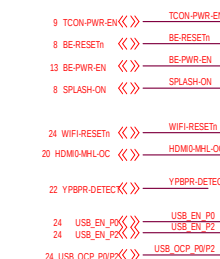
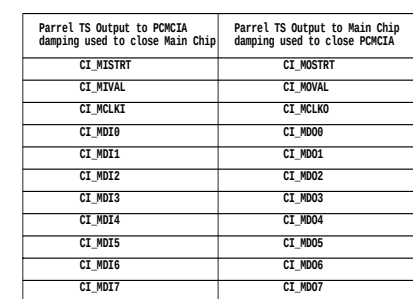
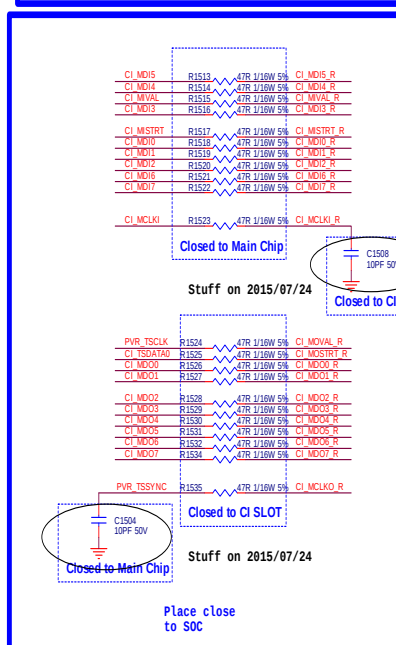
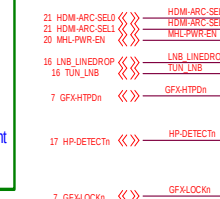
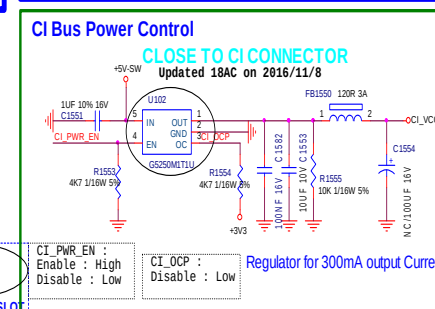
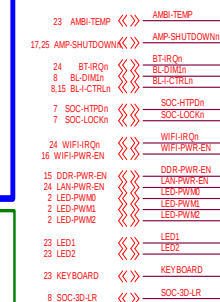
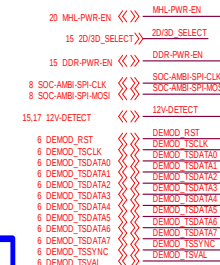
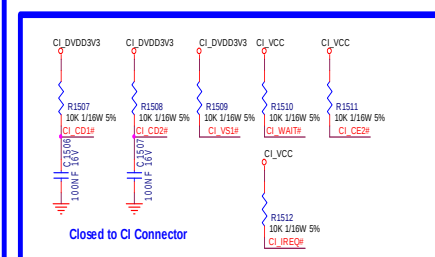
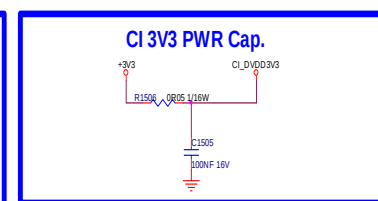
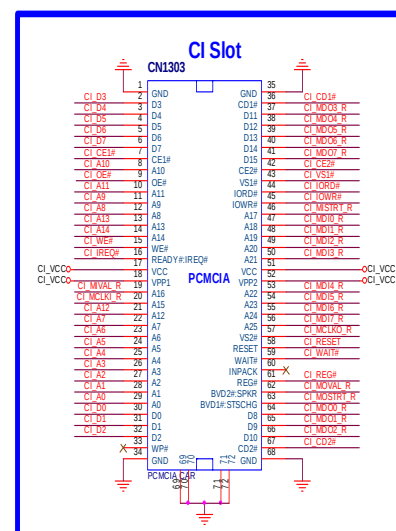
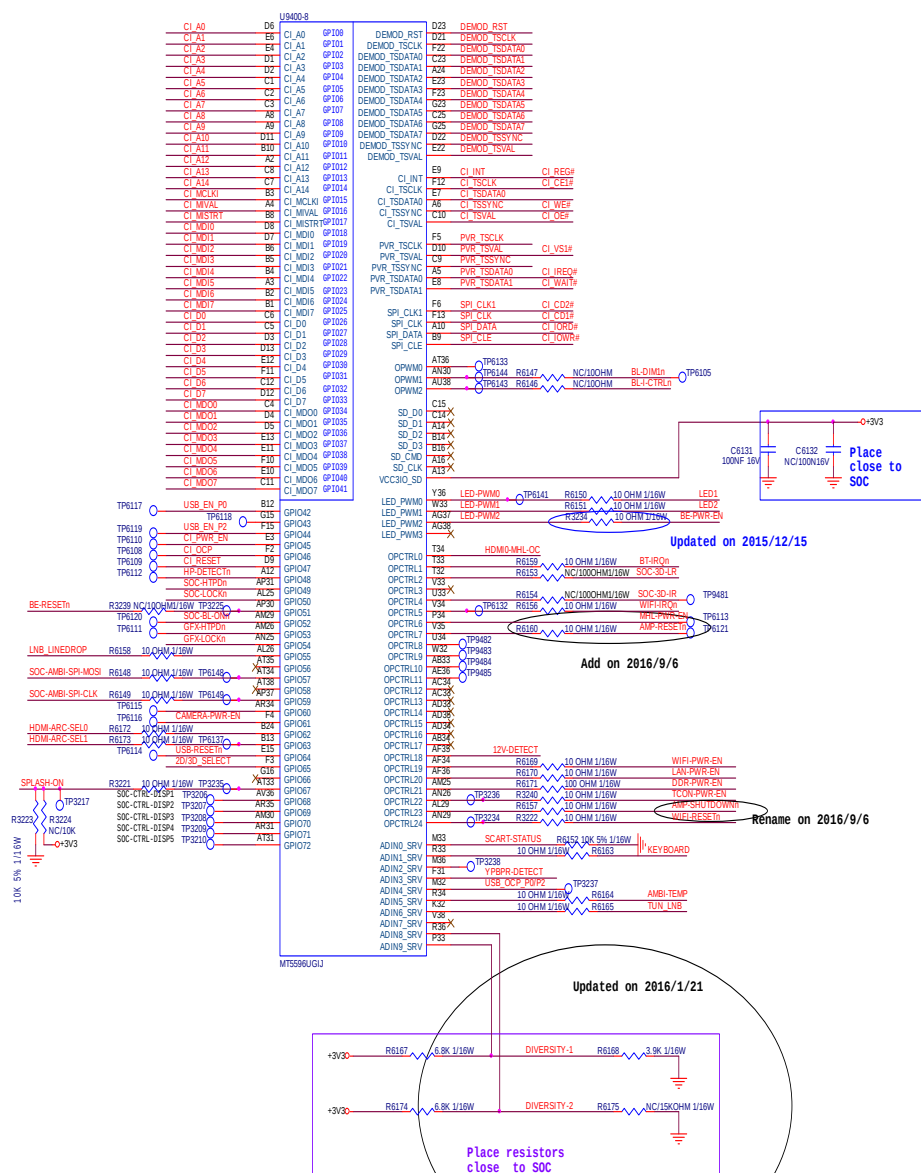
9-9-17 AUDIO-1st-CLASS-D-AMP



9-9-18 AUDIO-2nd-CLASS-D-AMP



9-9-19 PCMCIA



HDMI14 Connected to RX port 0

Updated on 2016/3/14

PCB Layout for RX signals: Common Mode 27.5 Ohm
Differential impedance 90 Ohm

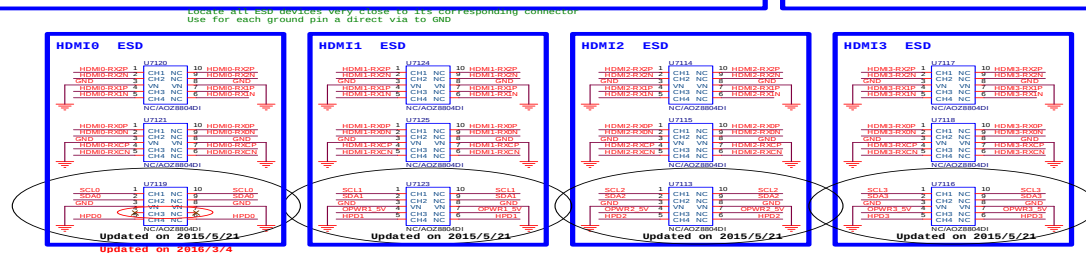
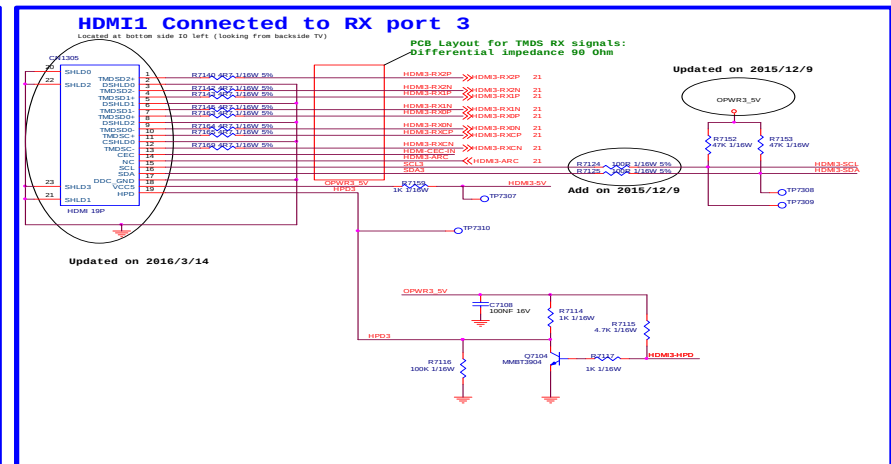
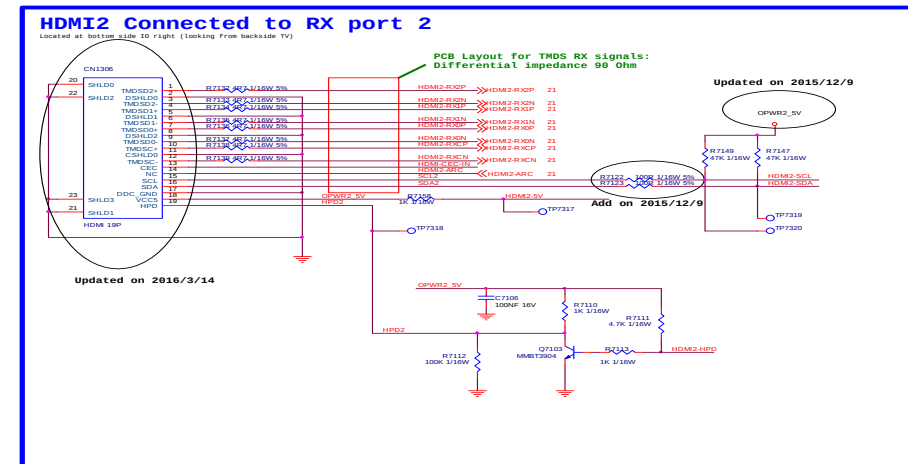
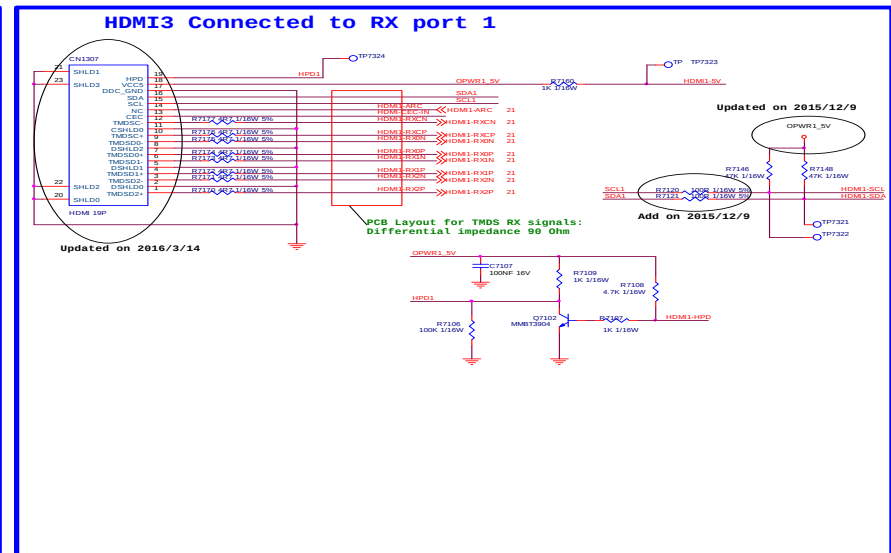
Updated on 2015/12/11

Power line for MHL = 0.5mm

need fine tune

Use double space clearance for
HDMI0-RX0P-CBUS to avoid crosstalk

ECBUS Impedance: 35 < Z=50 < 57.5ohm
Capacitance: < 80pF



Clearance = 2 x tracewidth for all SCL and SDA

Clearance = 2 x tracewidth for all SCL and SDA

[illegible][illegible]

HDMI-ARC-SEL0 HDMI-ARC-SEL0 19

Each individual filter close to corresponding HDMI connector
HDMIx-ARC shield as much as possible with ground tracks

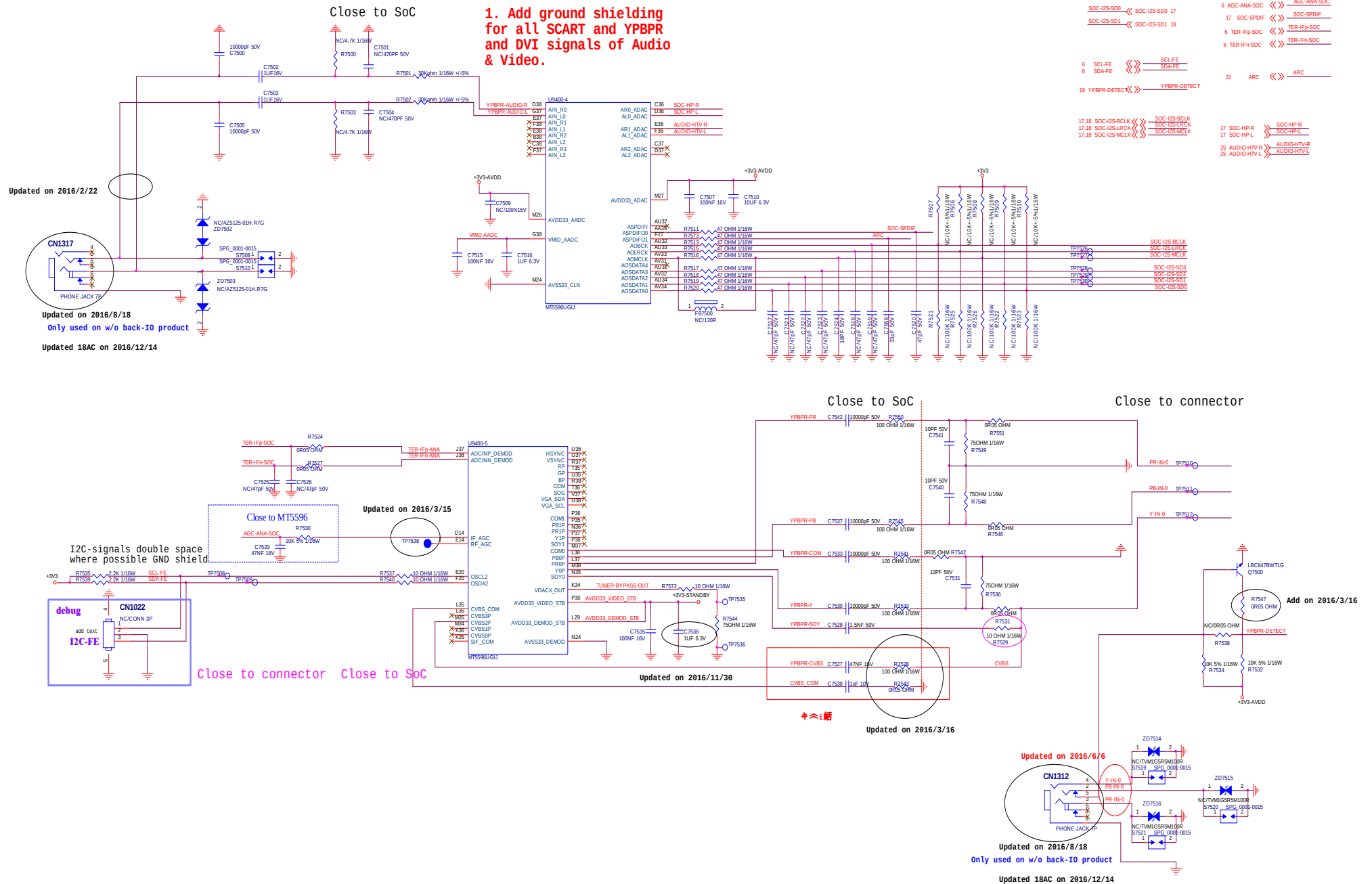
HDMI-ARC-SEL1	HDMI-ARC-SEL0	Output
L	L	HDMI0
L	H	HDMI1
H	L	HDMI2
H	H	HDMI3

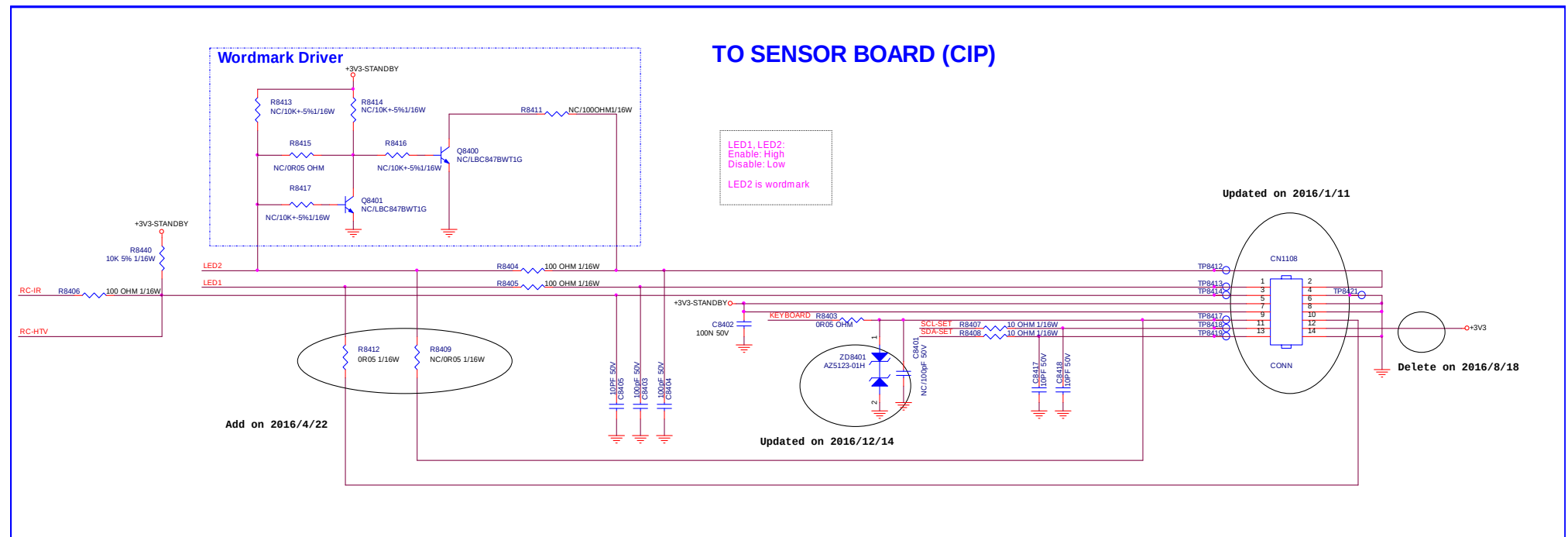
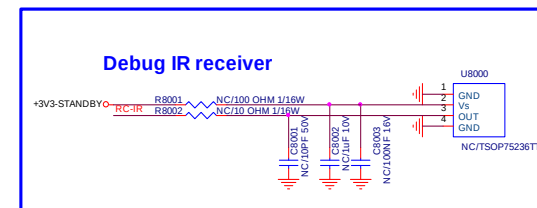
Audio Return Channel (ARC)

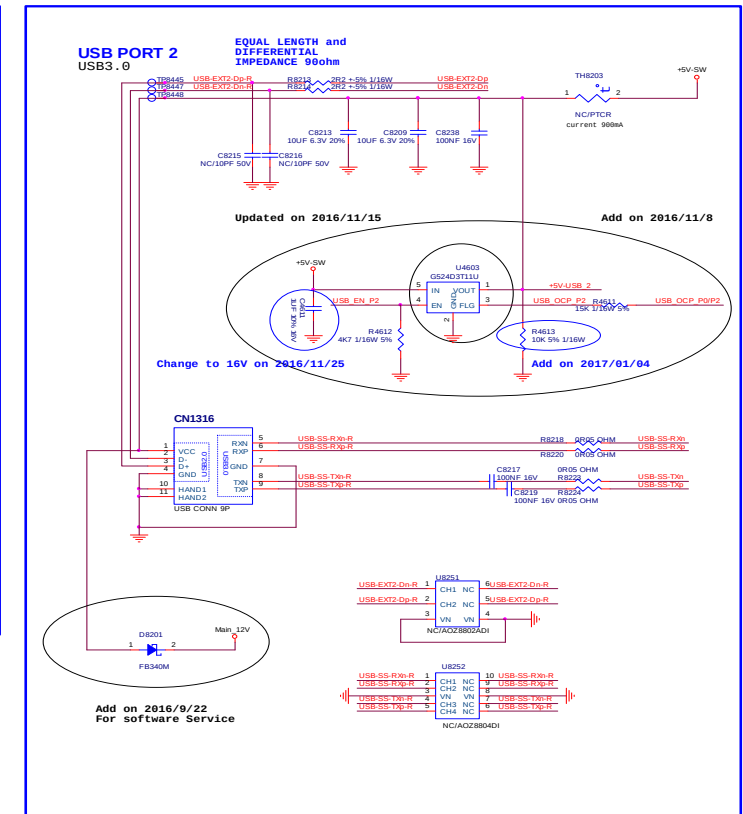
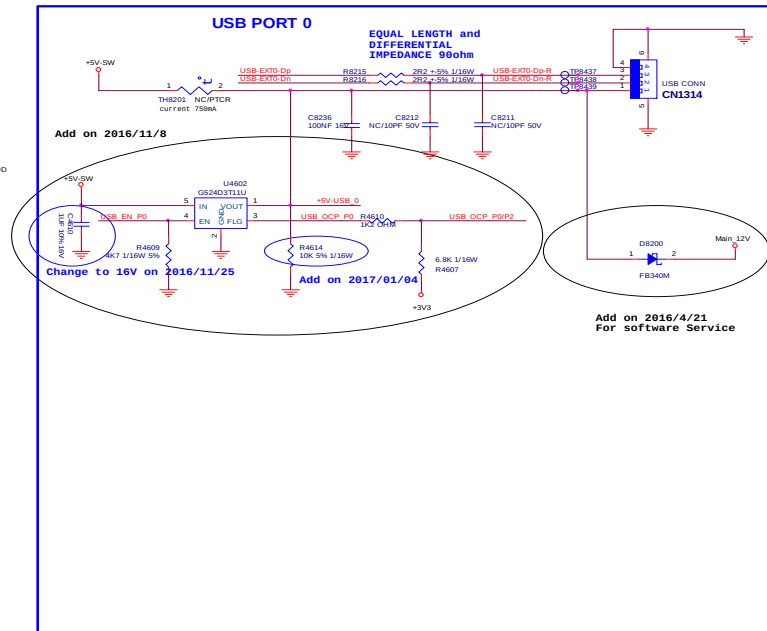
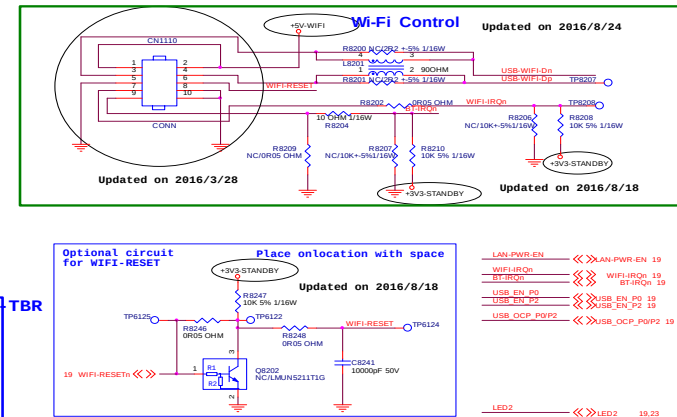
HDMI-ARC-SEL1	HDMI-ARC-SEL0	Output
L	L	HDMI
L	H	HDMI
H	L	HDMI
H	H	HDMI

Audio Return Channel (ARC)

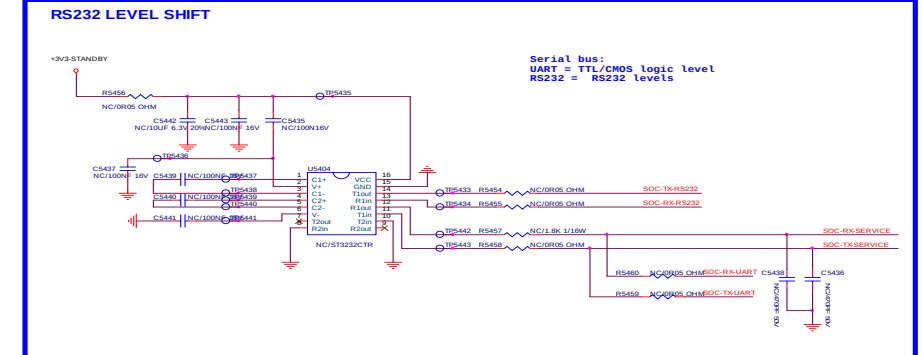
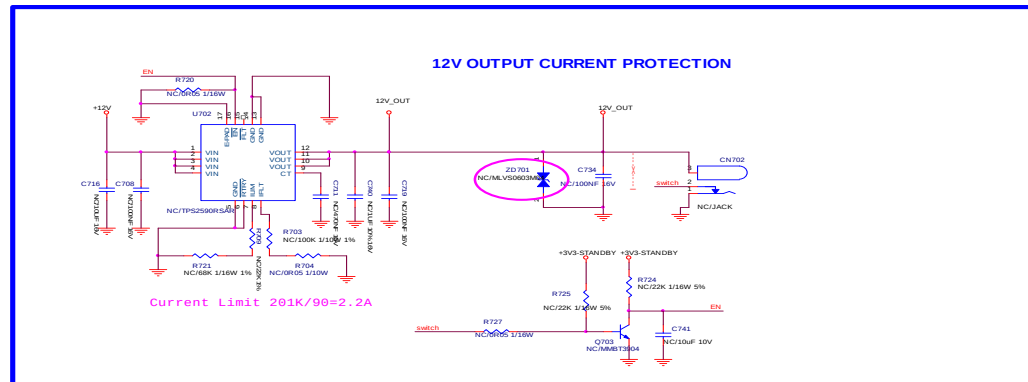
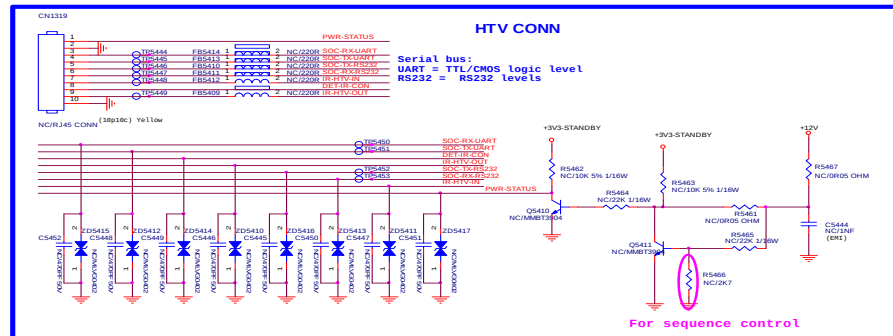
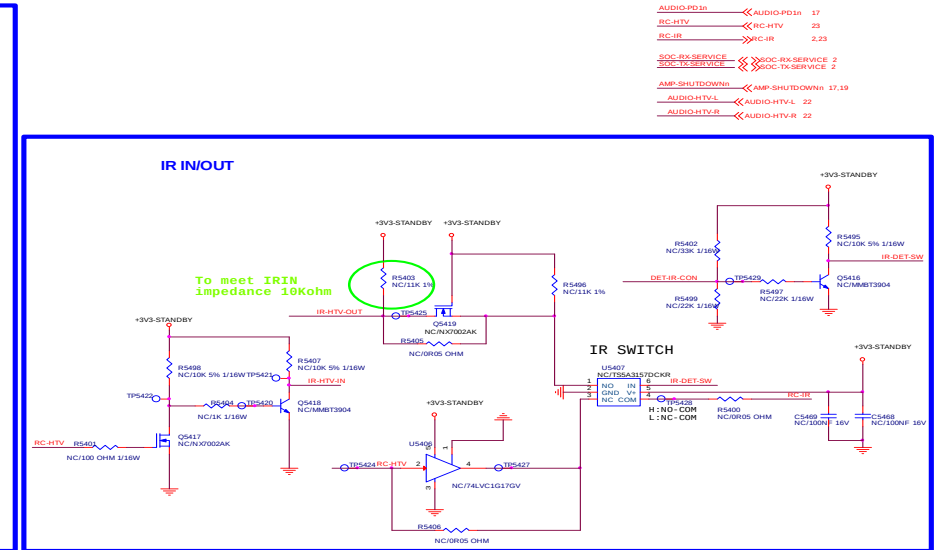
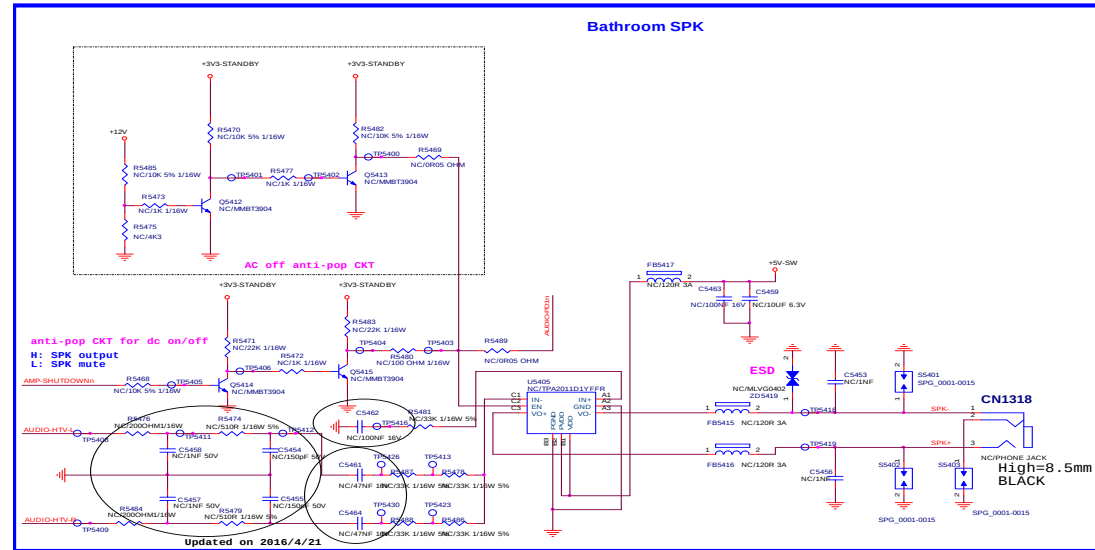
9-9-22 SCART-YPbPr-CVBS





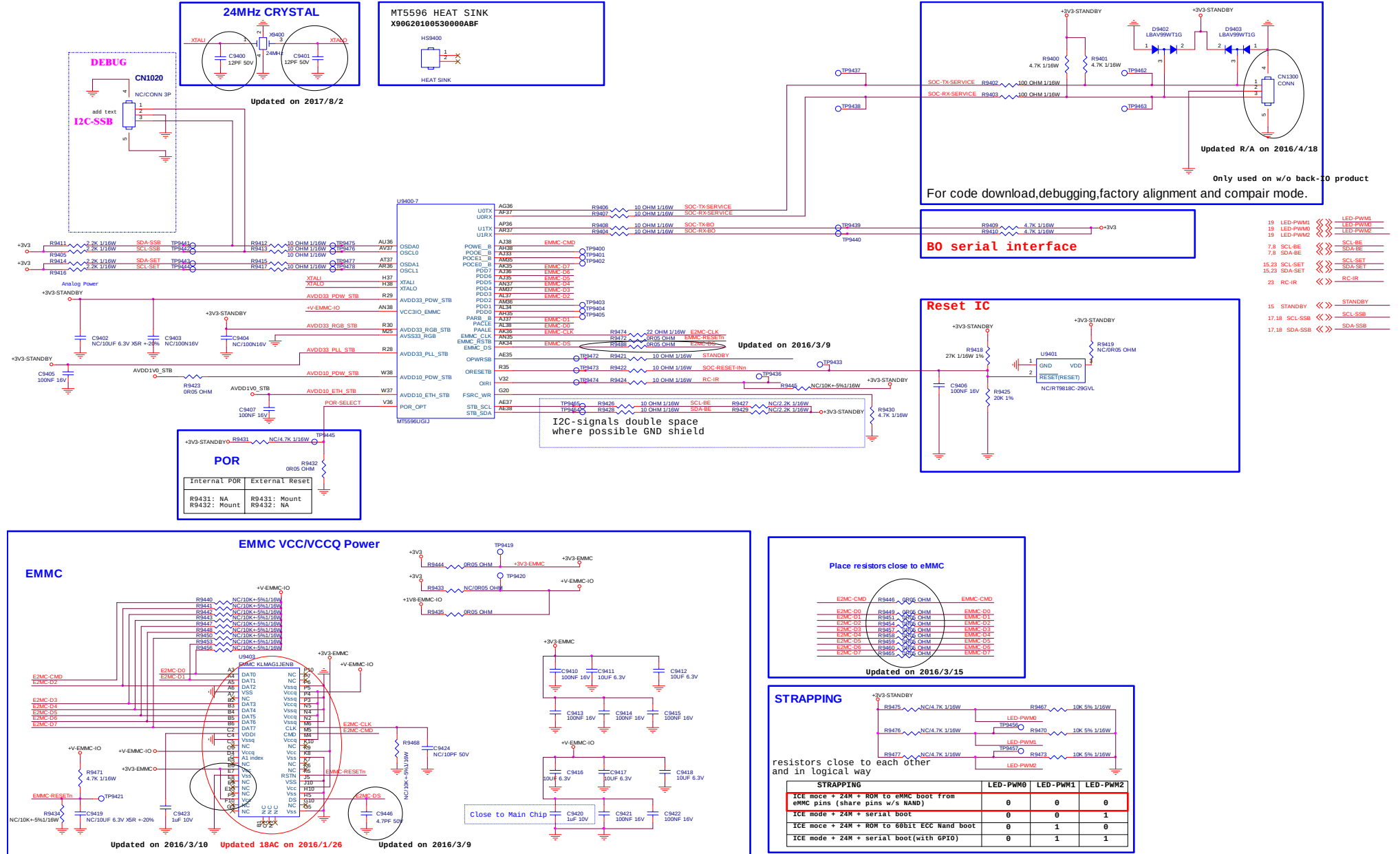
[illegible]

9-9-25 HTV

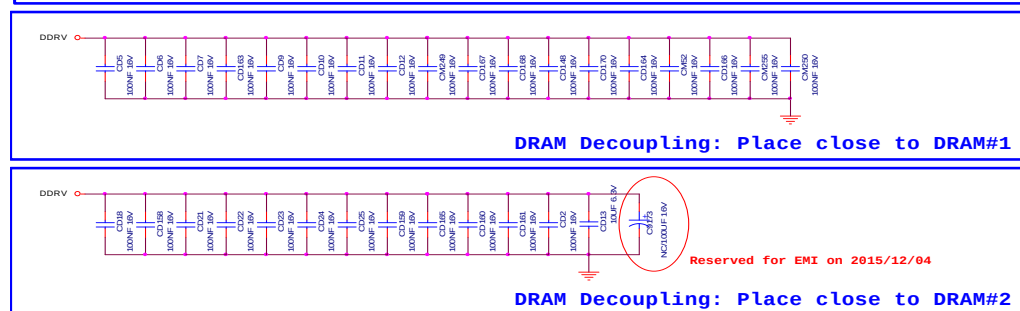
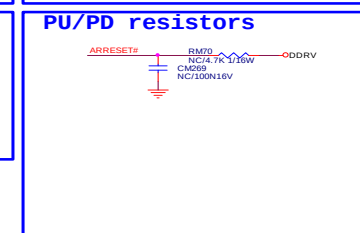
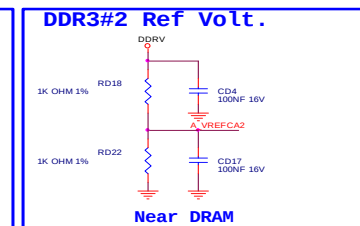
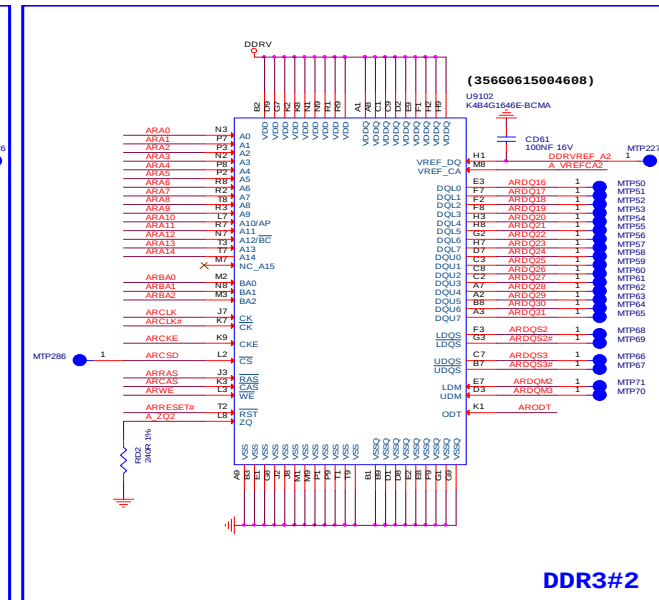


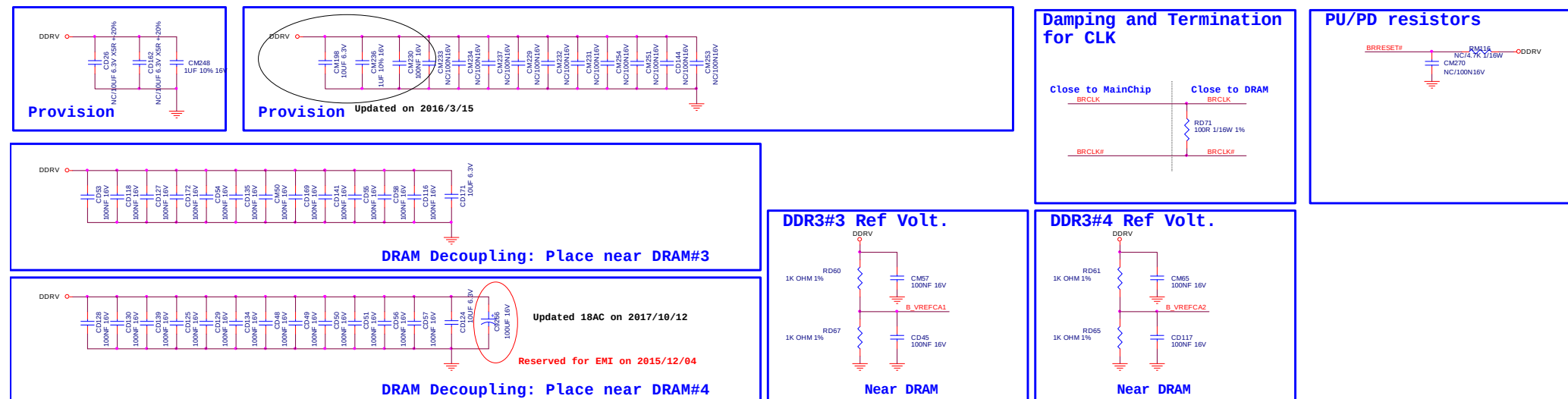
9.10 B 715G9058 SSB (For OLED973 Series)

9-10-1 SOC-EMMC



U9400-1							
ARA0	AE4	ARA0	ARDQM0	AD1	ARDQM0	1	MTF197
ARA1	AE6	ARA0	ARDQM1	AC1	ARDQM0	1	MTF198
ARA2	AE7	ARA2	ARDQ50	AC2	ARDQ50		
ARA3	AE4	ARA3	ARDQ50H	Y2	ARDQ50		
ARA4	AE6	ARA4	ARDQ51	AC2	ARDQ51		
ARA5	AE7	ARA4	ARDQ1	Y1	ARDQ51		
ARA6	AE3	ARA5	ARDQ2	AC3	ARDQ51		
ARA7	AE5	ARA6	ARDQ3	W1	ARDQ51	1	MTF199
ARA8	AE4	ARA6	ARDQ4	W2	ARDQ51	1	MTF200
ARA9	AE6	ARA9	ARDQ7	W2	ARDQ51	1	MTF200
ARA10	AE7	ARA10	ARDQ7	W2	ARDQ51	1	MTF200
ARA11	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA12	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA13	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA14	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA15	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA16	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA17	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA18	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA19	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA20	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA21	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA22	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA23	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA24	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA25	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA26	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA27	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA28	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA29	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA30	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA31	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA32	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA33	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA34	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA35	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA36	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA37	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA38	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA39	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA40	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA41	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA42	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA43	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA44	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA45	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA46	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA47	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA48	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA49	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA50	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA51	AE6	ARA11	ARDQ7	W2	ARDQ51	1	MTF200
ARA52	AE6	ARA11	ARDQ7</				

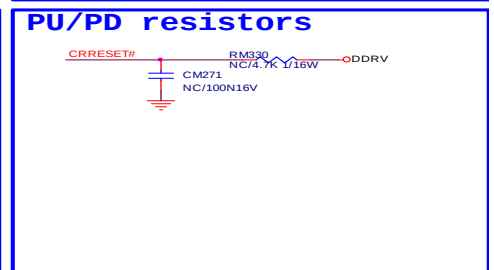
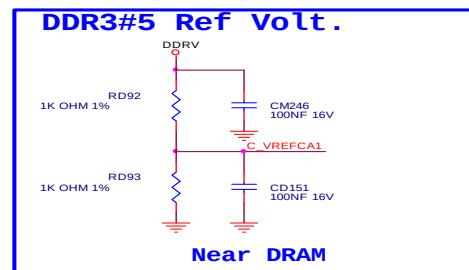
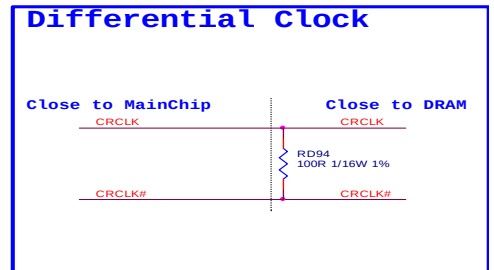
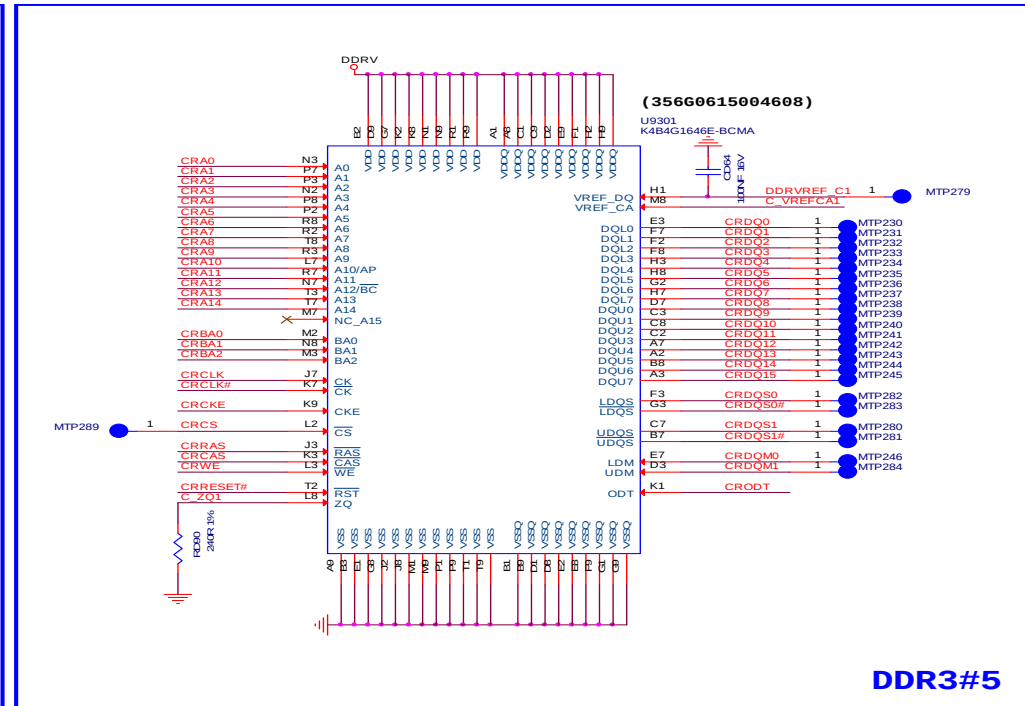




MT5596 DDR 16b

Pin-to-pin comparison diagram for MT5596 DDR 16b. The diagram shows connections for various signals between the MT5596 (left) and MT5596UG1J (right) devices. Key connections include:

- Address (CRA0-CRA14):** Connected to U9400-13.
- Data (CRDQ00-CRDQ15):** Connected to N1, M3, M4, M5, M6, M7, M8, M9, M10, M11, M12, M13, M14, M15, M16, M17, M18, M19, M20, M21, M22, M23, M24, M25, M26, M27, M28, M29, M30, M31, M32, M33, M34, M35, M36, M37, M38, M39, M40, M41, M42, M43, M44, M45, M46, M47, M48, M49, M50, M51, M52, M53, M54, M55, M56, M57, M58, M59, M60, M61, M62, M63, M64, M65, M66, M67, M68, M69, M70, M71, M72, M73, M74, M75, M76, M77, M78, M79, M80, M81, M82, M83, M84, M85, M86, M87, M88, M89, M90, M91, M92, M93, M94, M95, M96, M97, M98, M99, M100, M101, M102, M103, M104, M105, M106, M107, M108, M109, M110, M111, M112, M113, M114, M115, M116, M117, M118, M119, M120, M121, M122, M123, M124, M125, M126, M127, M128, M129, M130, M131, M132, M133, M134, M135, M136, M137, M138, M139, M140, M141, M142, M143, M144, M145, M146, M147, M148, M149, M150, M151, M152, M153, M154, M155, M156, M157, M158, M159, M160, M161, M162, M163, M164, M165, M166, M167, M168, M169, M170, M171, M172, M173, M174, M175, M176, M177, M178, M179, M180, M181, M182, M183, M184, M185, M186, M187, M188, M189, M190, M191, M192, M193, M194, M195, M196, M197, M198, M199, M200, M201, M202, M203, M204, M205, M206, M207, M208, M209, M210, M211, M212, M213, M214, M215, M216, M217, M218, M219, M220, M221, M222, M223, M224, M225, M226, M227, M228, M229, M230, M231, M232, M233, M234, M235, M236, M237, M238, M239, M240, M241, M242, M243, M244, M245, M246, M247, M248, M249, M250, M251, M252, M253, M254, M255, M256, M257, M258, M259, M260, M261, M262, M263, M264, M265, M266, M267, M268, M269, M270, M271, M272, M273, M274, M275, M276, M277, M278, M279, M280, M281, M282, M283, M284, M285, M286, M287, M288, M289, M290, M291, M292, M293, M294, M295, M296, M297, M298, M299, M300, M301, M302, M303, M304, M305, M306, M307, M308, M309, M310, M311, M312, M313, M314, M315, M316, M317, M318, M319, M320, M321, M322, M323, M324, M325, M326, M327, M328, M329, M330, M331, M332, M333, M334, M335, M336, M337, M338, M339, M340, M341, M342, M343, M344, M345, M346, M347, M348, M349, M350, M351, M352, M353, M354, M355, M356, M357, M358, M359, M360, M361, M362, M363, M364, M365, M366, M367, M368, M369, M370, M371, M372, M373, M374, M375, M376, M377, M378, M379, M380, M381, M382, M383, M384, M385, M386, M387, M388, M389, M390, M391, M392, M393, M394, M395, M396, M397, M398, M399, M400, M401, M402, M403, M404, M405, M406, M407, M408, M409, M410, M411, M412, M413, M414, M415, M416, M417, M418, M419, M420, M421, M422, M423, M424, M425, M426, M427, M428, M429, M430, M431, M432, M433, M434, M435, M436, M437, M438, M439, M440, M441, M442, M443, M444, M445, M446, M447, M448, M449, M450, M451, M452, M453, M454, M455, M456, M457, M458, M459, M460, M461, M462, M463, M464, M465, M466, M467, M468, M469, M470, M471, M472, M473, M474, M475, M476, M477, M478, M479, M480, M481, M482, M483, M484, M485, M486, M487, M488, M489, M490, M491, M492, M493, M494, M495, M496, M497, M498, M499, M500, M501, M502, M503, M504, M505, M506, M507, M508, M509, M510, M511, M512, M513, M514, M515, M516, M517, M518, M519, M520, M521, M522, M523, M524, M525, M526, M527, M528, M529, M530, M531, M532, M533, M534, M535, M536, M537, M538, M539, M540, M541, M542, M543, M544, M545, M546, M547, M548, M549, M550, M551, M552, M553, M554, M555, M556, M557, M558, M559, M560, M561, M562, M563, M564, M565, M566, M567, M568, M569, M570, M571, M572, M573, M574, M575, M576, M577, M578, M579, M580, M581, M582, M583, M584, M585, M586, M587, M588, M589, M590, M591, M592, M593, M594, M595, M596, M597, M598, M599, M600, M601, M602, M603, M604, M605, M606, M607, M608, M609, M610, M611, M612, M613, M614, M615, M616, M617, M618, M619, M620, M621, M622, M623, M624, M625, M626, M627, M628, M629, M630, M631, M632, M633, M634, M635, M636, M637, M638, M639, M640, M641, M642, M643, M644, M645, M646, M647, M648, M649, M650, M651, M652, M653, M654, M655, M656, M657, M658, M659, M660, M661, M662, M663, M664, M665, M666, M667, M668, M669, M670, M671, M672, M673, M674, M675, M676, M677, M678, M679, M680, M681, M682, M683, M684, M685, M686, M687, M688, M689, M690, M691, M692, M693, M694, M695, M696, M697, M698, M699, M700, M701, M702, M703, M704, M705, M706, M707, M708, M709, M710, M711, M712, M713, M714, M715, M716, M717, M718, M719, M720, M721, M722, M723, M724, M725, M726, M727, M728, M729, M730, M731, M732, M733, M734, M735, M736, M737, M738, M739, M740, M741, M742, M743, M744, M745, M746, M747, M748, M749, M750, M751, M752, M753, M754, M755, M756, M757, M758, M759, M760, M761, M762, M763, M764, M765, M766, M767, M768, M769, M770, M7

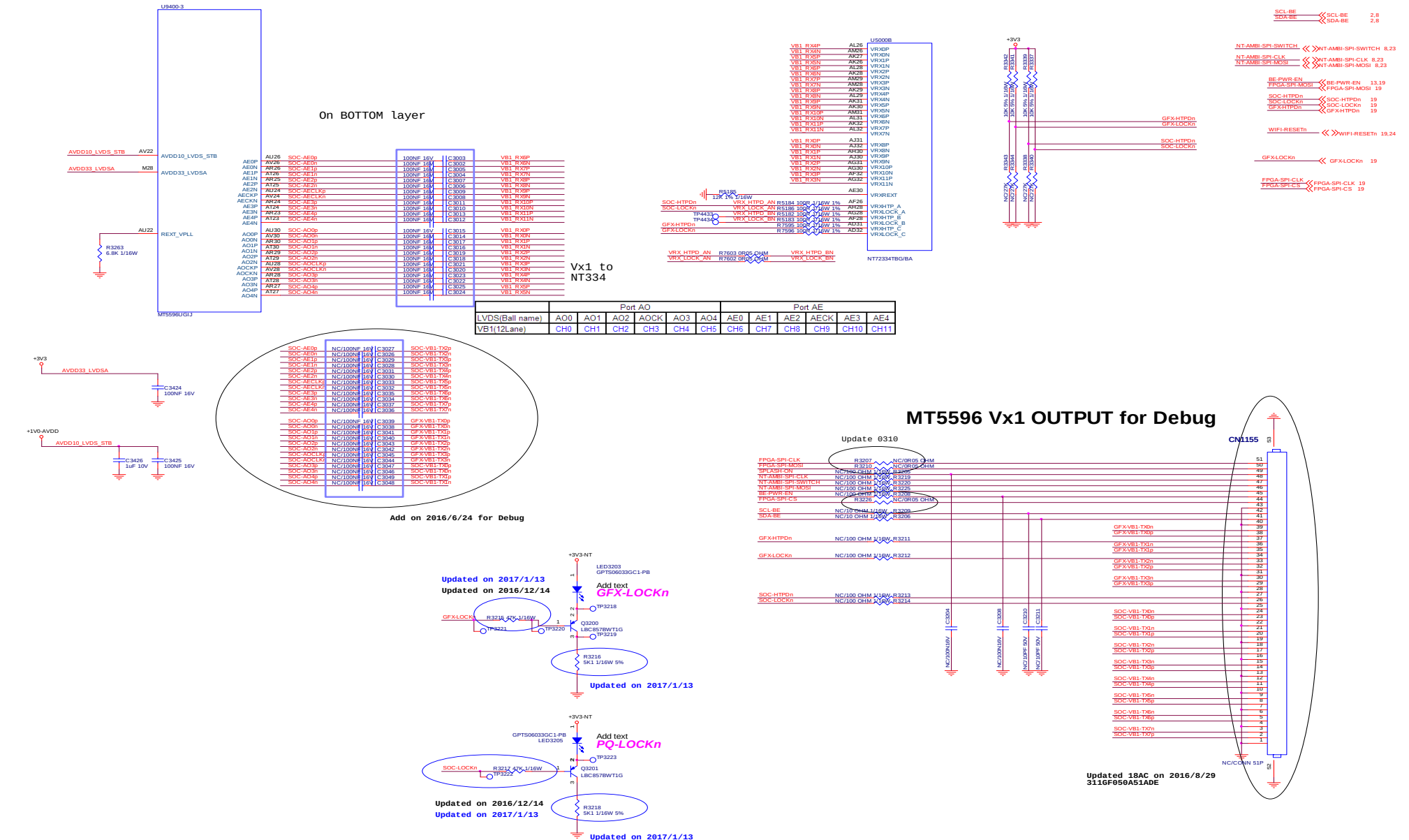


[illegible]

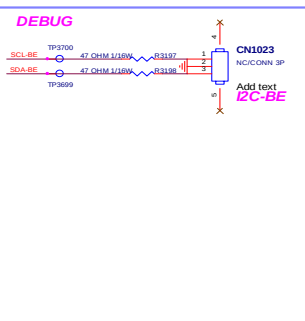
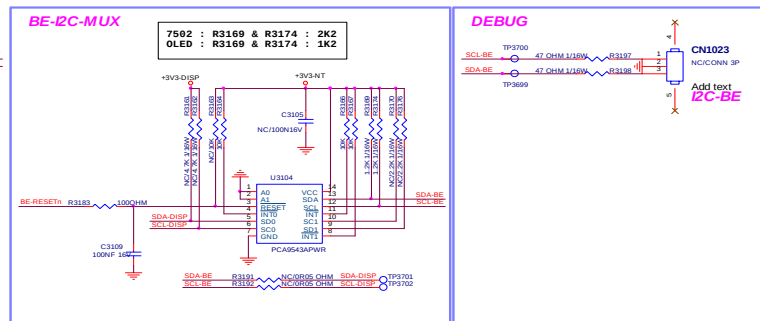
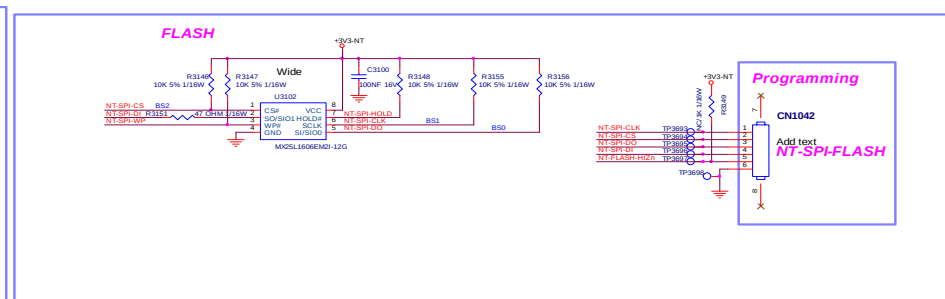
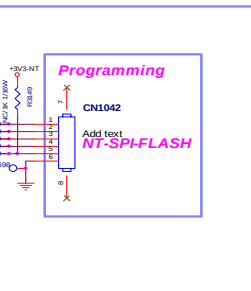
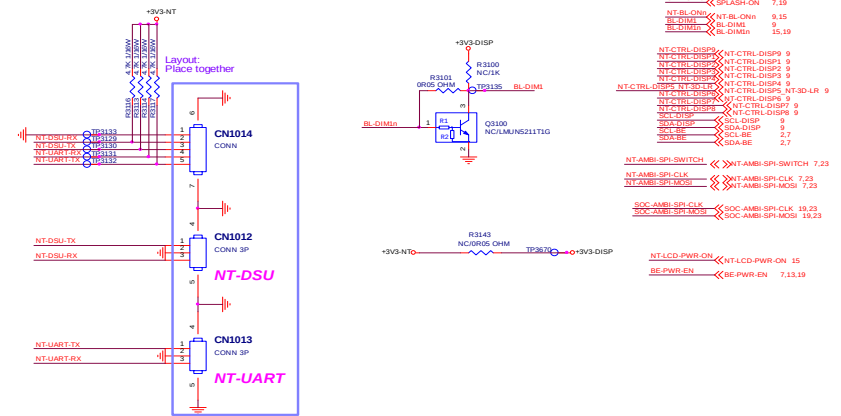
DVB-T/T2 Demodulator

MT5596 Vx1 OUTPUT

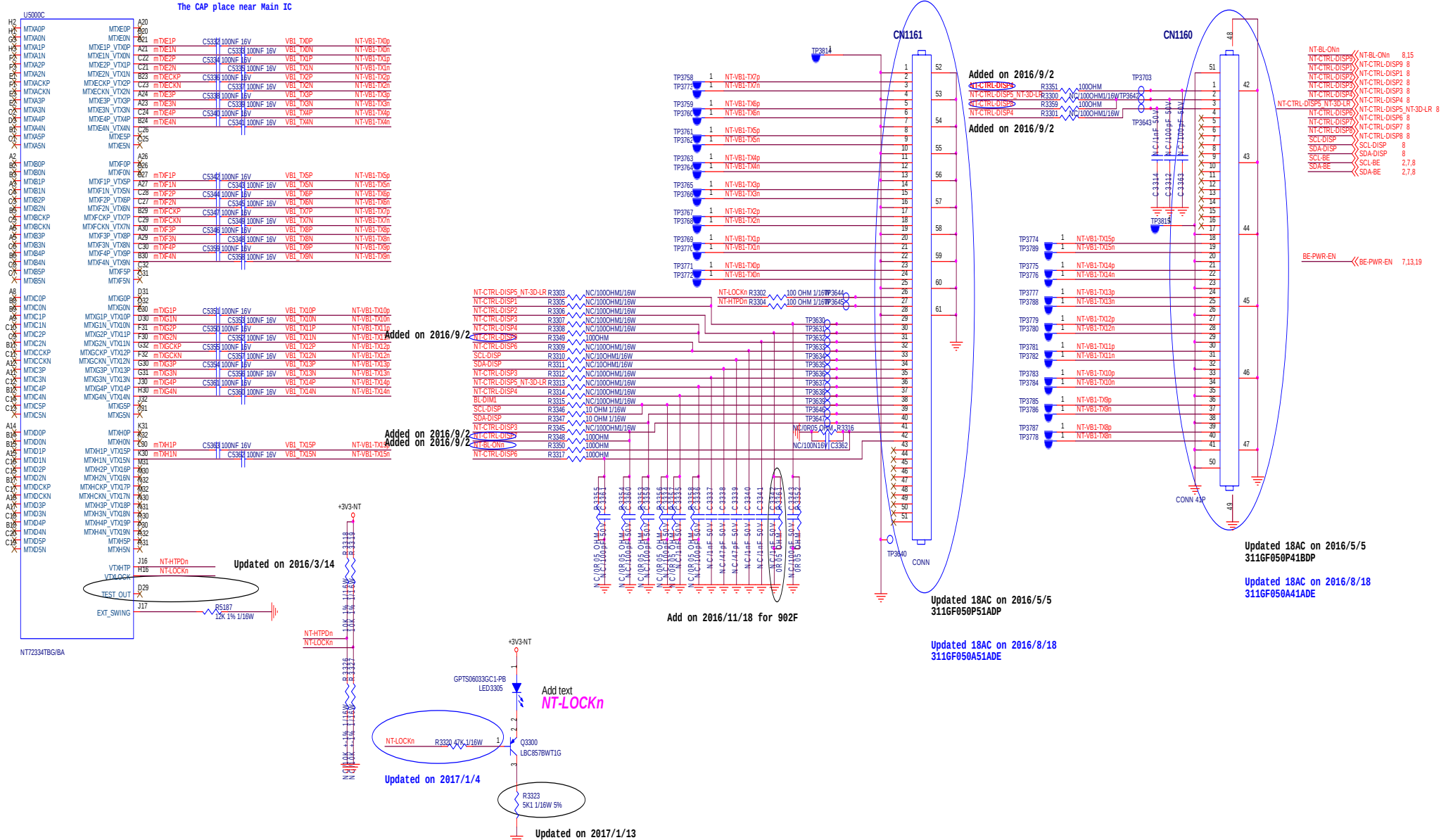
NT334 Vx1 INPUT



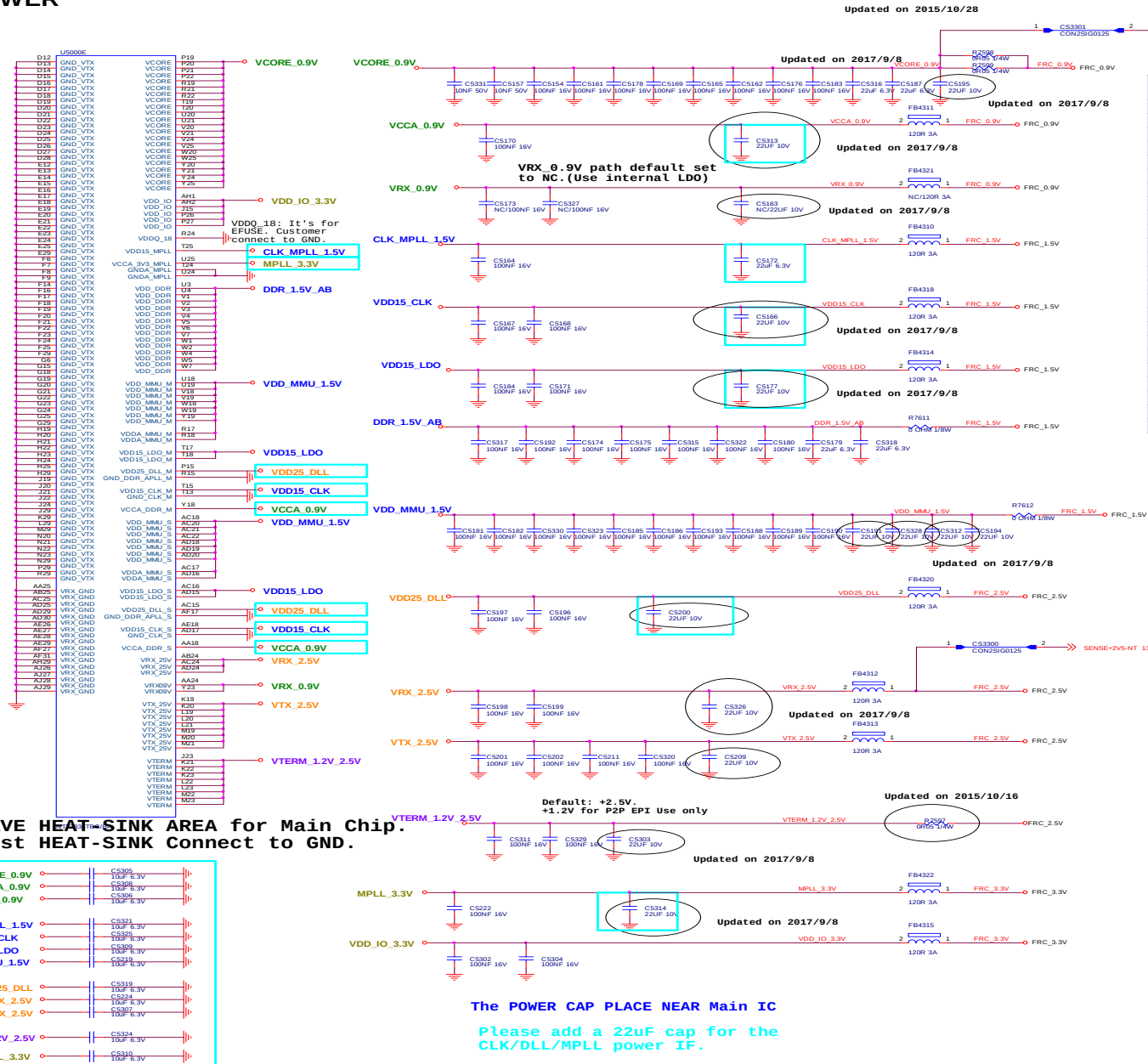
NT334 CONTROL



BL-DIM1 $\ll$ BL-DIM1 8



NT334 POWER



Power consumption estimate (Draft)

	Name	Ball name	Voltage (V)	Current (mA)	Power (mW)	Total Current (mA)
	LVR	LVR	0.9	0.2	0.18	4226.2
	MDDR	VCCA_DDR_M	0.9	30	27	
	SDDR	VCCA_DDR_S	0.9	30	27	
	VOORE	VOORE	0.9	4056	3650.4	
	VRX	VRX_0.9V	0.9	110	99	
	VTX	VTERM	1.2	TBD	TBD	1540
	EXT_DDR	EXT_DDR	1.5	284	426	
	INT_DDRDIE	VDD_DDR	1.5	284	426	
	MDDR	VDD15_LDO_M	1.5	110	165	
	MDDR	VDDA_MMU_M	1.5	68	102	
	MDDR	VDD_MMU_M	1.5	273	409.5	
	MDDR	VDD15_CLK_M	1.5	20	30	
	MPLL	VDD15_MPLL	1.5	30	45	
	SDDR	VDD15_LDO_S	1.5	110	165	
	SDDR	VDDA_MMU_S	1.5	68	102	
	SDDR	VDD_MMU_S	1.5	273	409.5	828
	SDDR	VDD15_CLK_S	1.5	20	30	
	MDDR	VDD25_DLL_M	2.5	37	92.5	
	SDDR	VDD25_DLL_S	2.5	37	92.5	
	VRX	VRX_25V	2.5	60	150	
	VTX	VTX_25V	2.5	694	1735	13
	JO	VDD_JO	3.3	5	16.5	
	LVR	LVR	3.3	1	3.3	
	MPLL	VCCA_3V3_MPLL	3.3	7	23.1	

PCB External Trace Width Calculator

Item	Trace Width Calculator (For Layout reference)			
+0.90V	Data		Units	
	Location	Sel External		
	Temp CHANGE	Solve 20	Degree C	
	Width	Solve 88	Mil	
	Thickness	Solve 1	☐ Mil ☒ Oz	
	Current	Solve 5.509	Amp	
	Data		Units	
	Location	Sel External		
	Temp CHANGE	Solve 20	Degree C	
	Width	Solve 100	Mil	
	Thickness	Solve 1	☐ Mil ☒ Oz	
	Current	Solve 6.482	Amp	
	+1.2V	Data		Units
		Location	Sel External	
Temp CHANGE		Solve 10	Degree C	
Width		Solve 20	Mil	
Thickness		Solve 1	☐ Mil ☒ Oz	
Current		Solve 1.61	Amp	
+1.5V		Data		Units
	Location	Sel External		
	Temp CHANGE	Solve 10	Degree C	
	Width	Solve 30	Mil	
	Thickness	Solve 1	☐ Mil ☒ Oz	
	Current	Solve 2.116	Amp	
	+2.5V	Data		Units
Location		Sel External		
Temp CHANGE		Solve 10	Degree C	
Width		Solve 10	Mil	
Thickness		Solve 1	☐ Mil ☒ Oz	
Current		Solve 1.61	Amp	
+3.3V		Data		Units
	Location	Sel External		
	Temp CHANGE	Solve 10	Degree C	
	Width	Solve 10	Mil	
	Thickness	Solve 1	☐ Mil ☒ Oz	
	Current	Solve 1.61	Amp	

RESERVE HEAT-SINK AREA for Main Chip.
Suggest **HEAT-SINK** Connect to GND.

These POWER CAP PLACE at Layer4, just for debug use.

NT334 DDR A-B



Updated on 2016/4/27

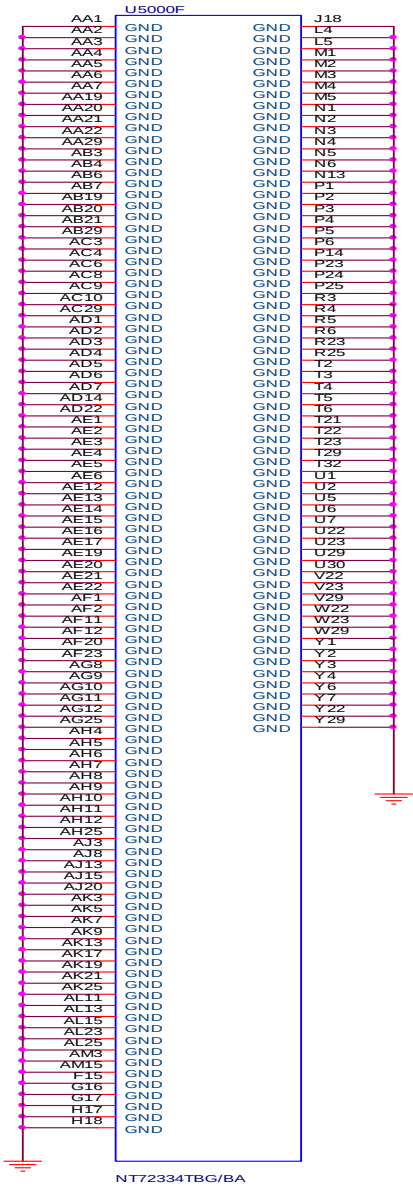
DDR3 DRAM CL11(1600MHz)

DDR POWER CAP PLACE NEAR DDR IC

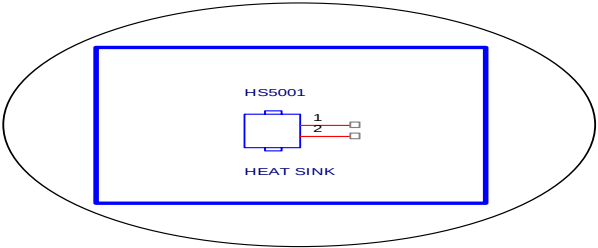
CAP C5247~C5250 PLACE at Layer4, just for debug use.

1. Please refer to AN01 (Layout Guide).
2. Reserve the solder Mask free for some DDR signals. (use for DDR tester probe connection)

NT334 GROUND



NT334 HEAT SINK X90G202000200000HG(40x40) or
X90G801000100000BF(FOOTPRINT90A8010-1X) or
X90G201005300000BF(Same as SoC)

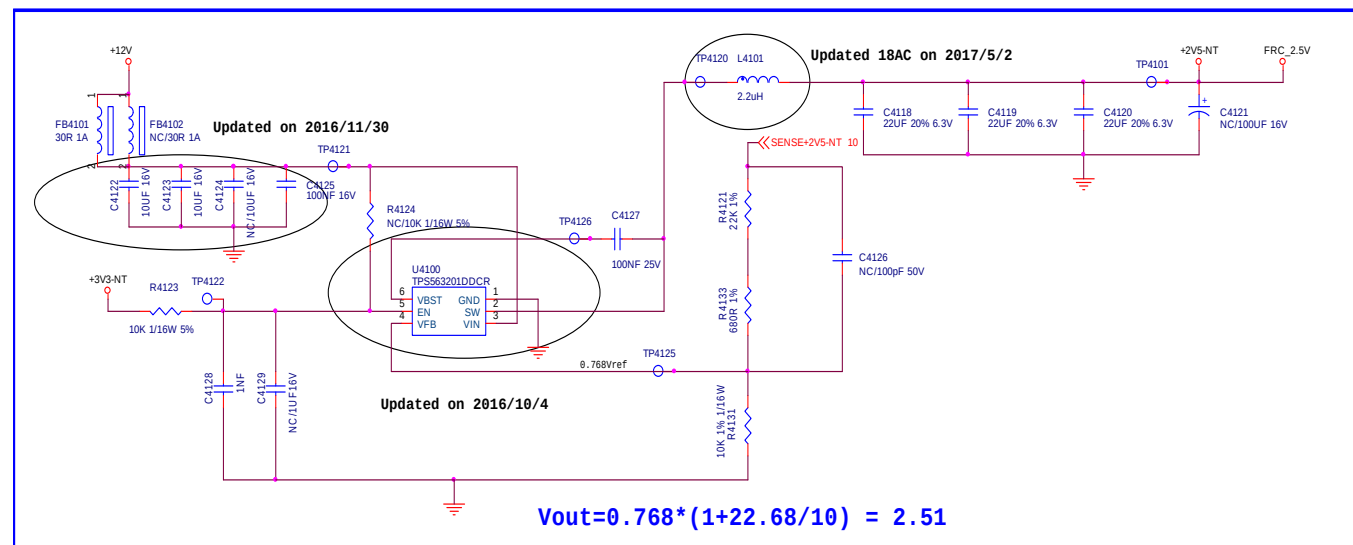
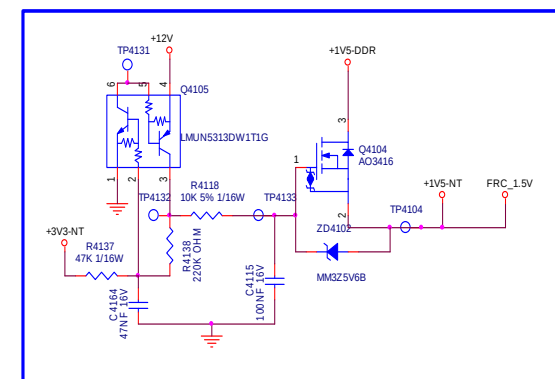
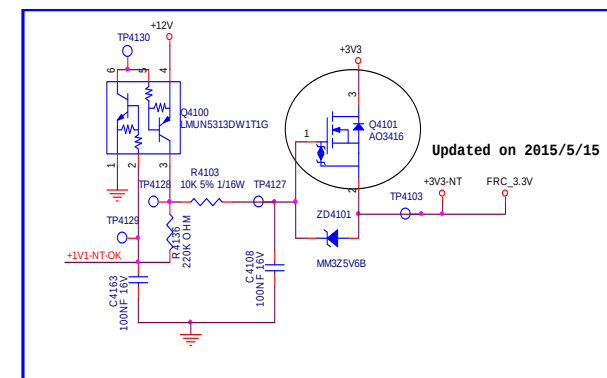
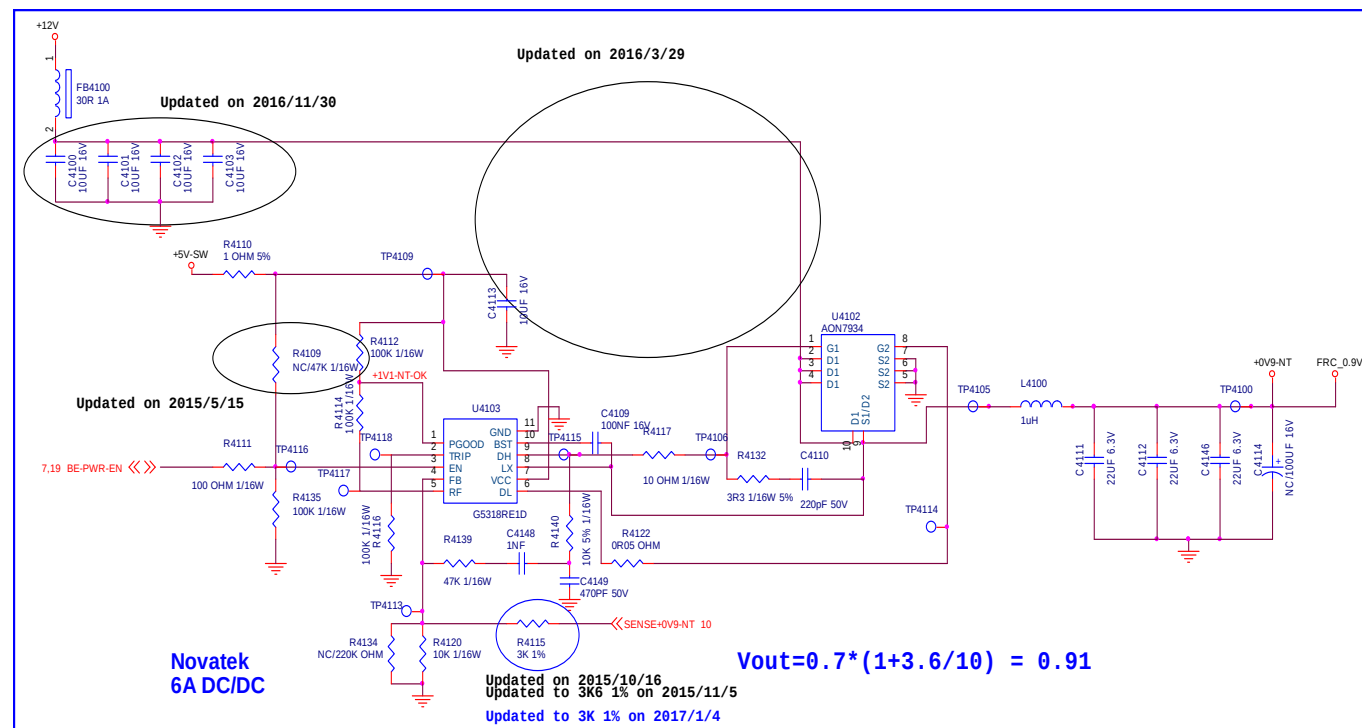


Updated 18AC on 2017/5/25
X90G201005300000BF

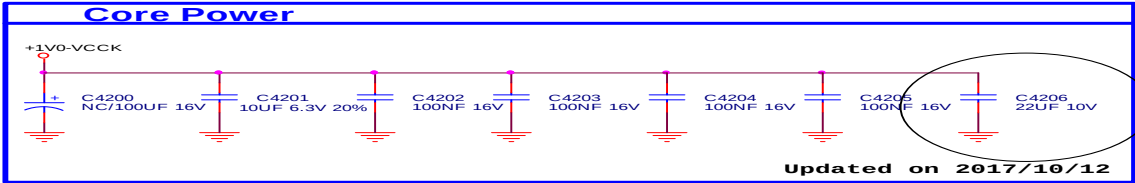
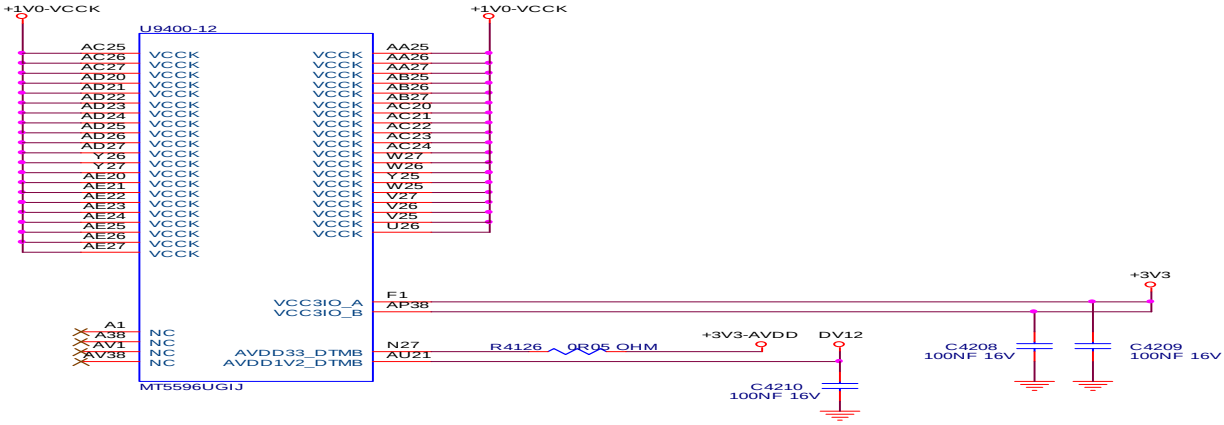
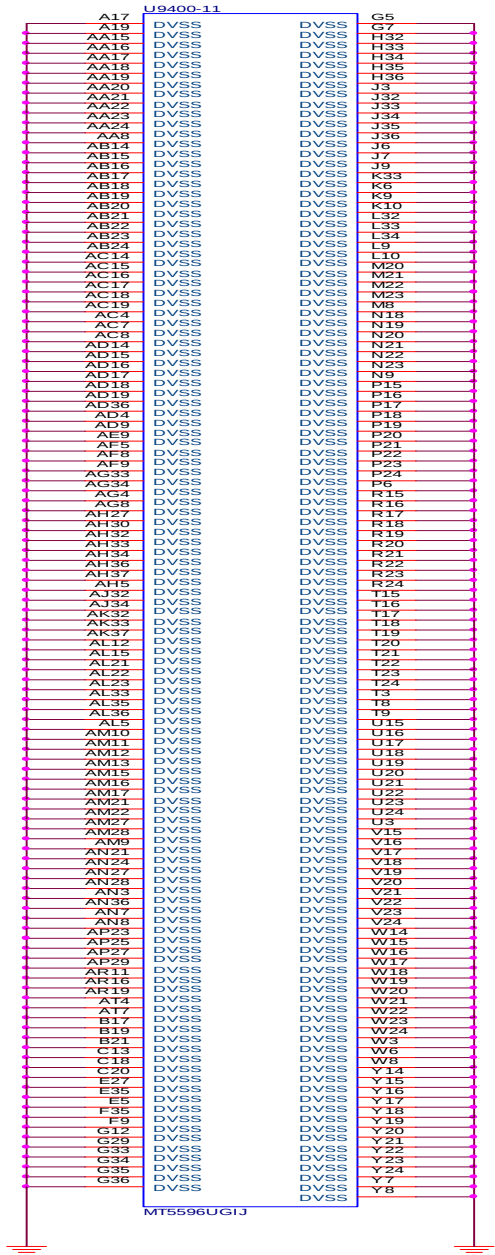
Updated 18AC on 2017/10/12
T90G801000400000ABF

Updated 18AC on 2017/11/14
T90G601000200000BF

9-10-12 DCDC-Novatek-POWER



9-10-13 DCDC-SOC-VCCK-DVSS



Updated on 2017/10/12

DC POWER INPUT

Updated on 2016/5/27
Add on 2015/7/21

Updated on 2016/11/11

Updated on 2016/5/27

Updated on 2016/4/1

Updated on 2015/5/15

Updated on 2016/5/24

Updated on 2015/7/6

Add on 2016/3/4

Add on 2017/5/24

Add
R191: Don't care
Low: Shutdown BL-ON(24V)

AVDD3V3/DVDD3V3

Updated 18AC on 2017/5/2

Add on 2016/3/4

Updated on 2016/10/4

$V_{out} = 0.768 * (1 + 33.2 / 10) = 3.31$

+1V8 From +3V3

Updated on 2016/3/25

Add on 2016/5/23

Updated on 2017/5/5

Updated on 2017/10/6

Add on 2016/5/23

Add on 2016/5/23

Updated on 2017/10/6

$V_{out} = 0.791 * (1 + 100 / (22 / 120)) = 5.04$
 $V_{out} = 0.791 * (1 + 100 / (36 / 120)) = 3.64$
 $V_{out} = 0.791 * (1 + 100 / (39 / 120)) = 3.47$
 $V_{out} = 0.791 * (1 + 68.3 / 22) = 3.239$

AVDD1V0-STB From +3V6-STB

Updated on 2017/5/3

Add on 2016/9/13

Updated on 2017/3/16

Updated on 2017/6/10

Add on 2016/3/15

DRAM Power

3A DC/DC
 $V_{out} = 0.6x (1 + 153.9K / 100K) = 1.5234V$

FAN Con.

FAN Controller

I2C address : 5CH

VBI return path

Close to main chip

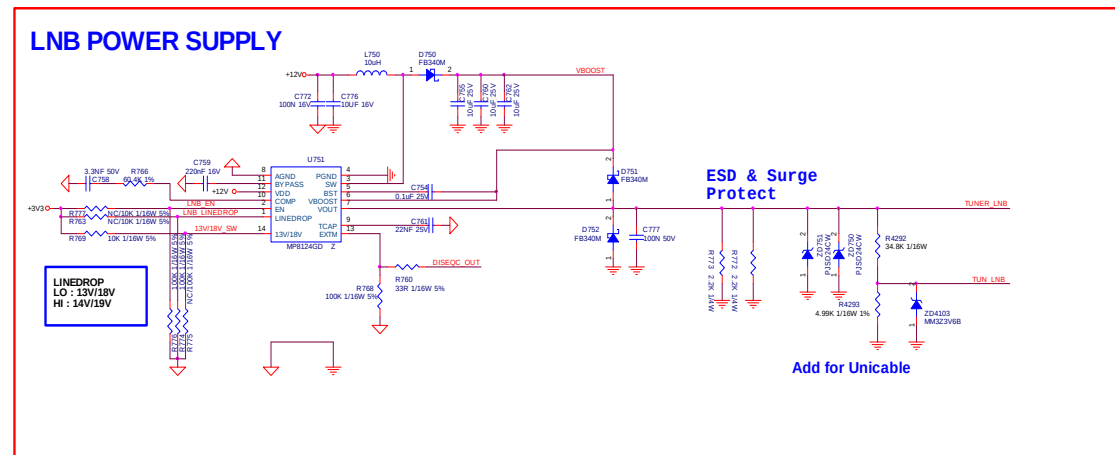
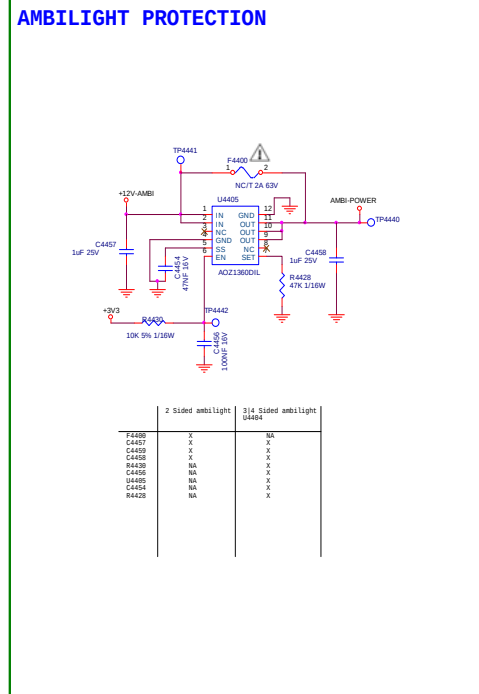
Close to DDR power source

Updated on 2016/5/23

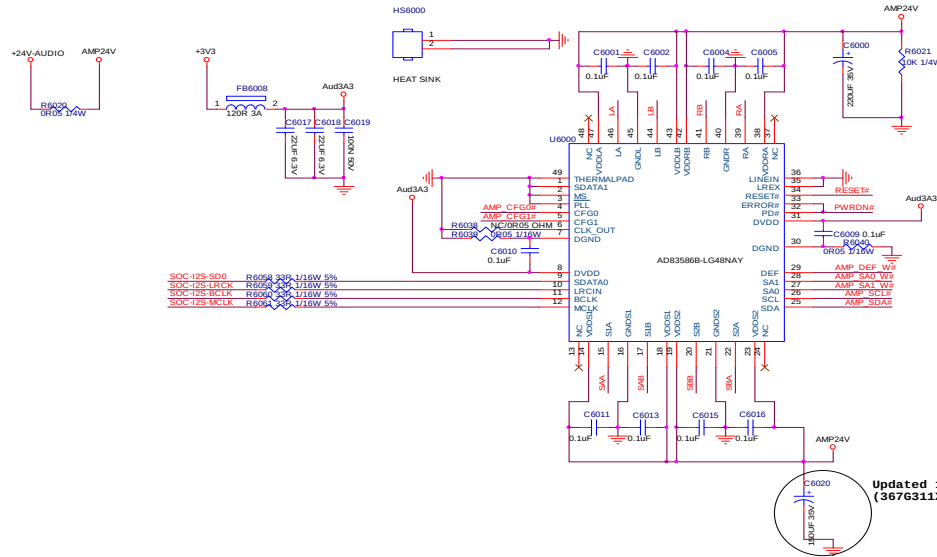
Updated on 2017/5/5

Updated on 2017/5/5

$V_{out} = 0.6 \times (1 + 105k/14k) = 5.1V$

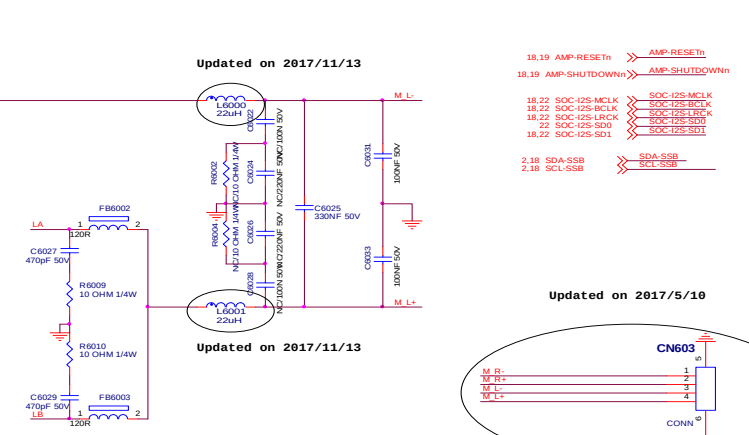


9-10-16 AUDIO-1st-CLASS-D-AMP



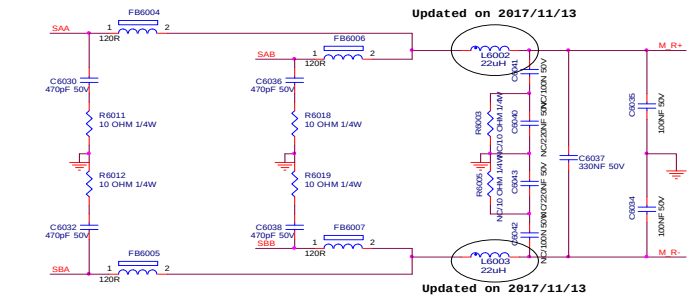
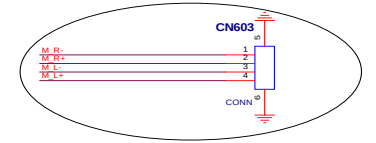
SOC-I2S-SD0 R6058 23P 1/16W 5%
 SOC-I2S-LRCK R6059 23P 1/16W 5%
 SOC-I2S-MCLK R6060 23P 1/16W 5%
 SOC-I2S-MCLK R6061 23P 1/16W 5%

Updated 18AC on 2017/10/12
 (3676311X151GLT00TP)



18.19 AMP-RESETn AMP-RESETn
 18.19 AMP-SHUTDOWNn AMP-SHUTDOWNn
 18.22 SOC-I2S-MCLK SOC-I2S-MCLK
 18.22 SOC-I2S-LRCK SOC-I2S-LRCK
 18.22 SOC-I2S-MCLK SOC-I2S-MCLK
 18.22 SOC-I2S-SD0 SOC-I2S-SD0
 2.18 SDA-SSB SDA-SSB
 2.18 SCL-SSB SCL-SSB

Updated on 2017/5/10



Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

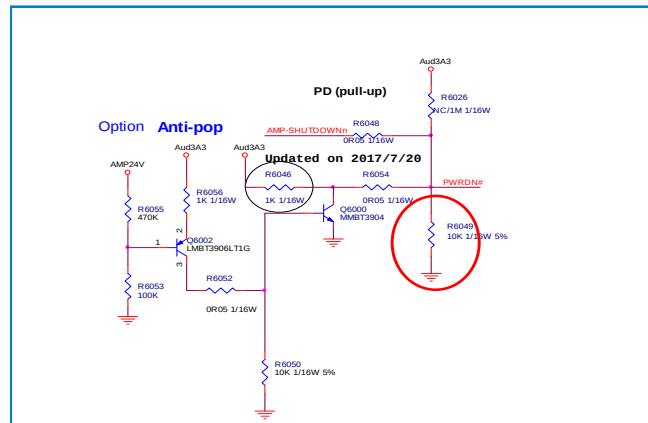
Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

Updated on 2017/11/13

MUTE CIRCUIT



Option Anti-pop

PD (pull-up)

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

Updated on 2017/7/20

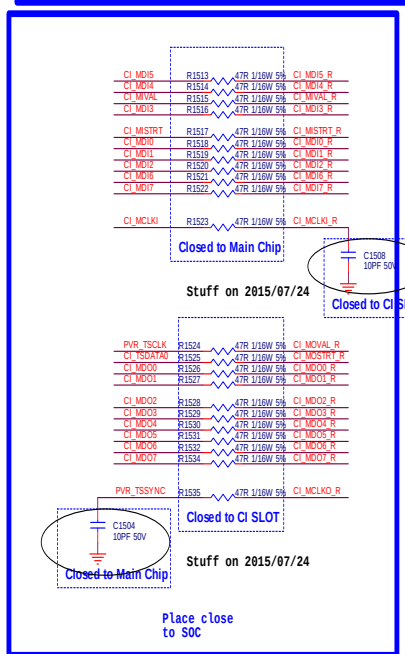
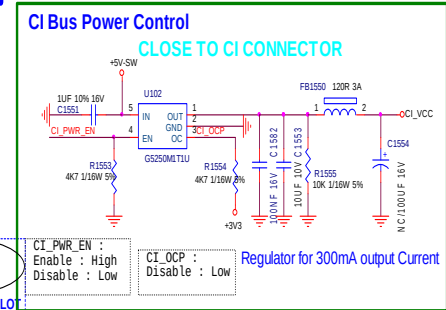
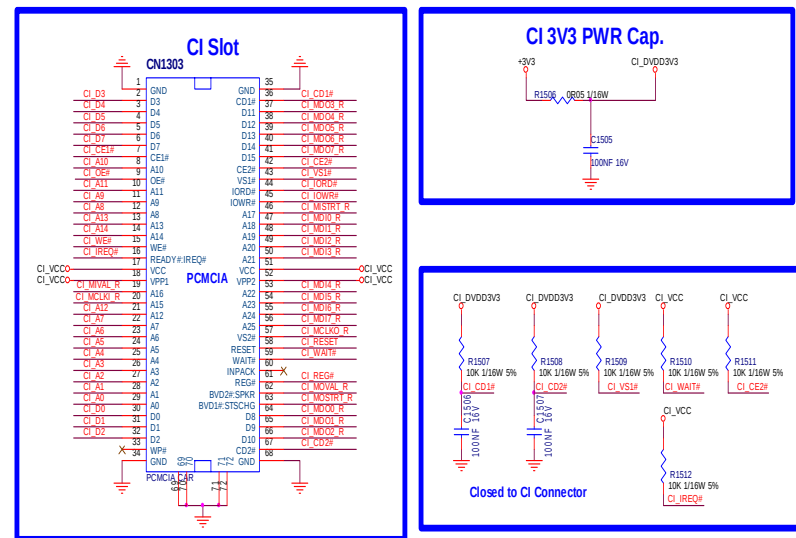
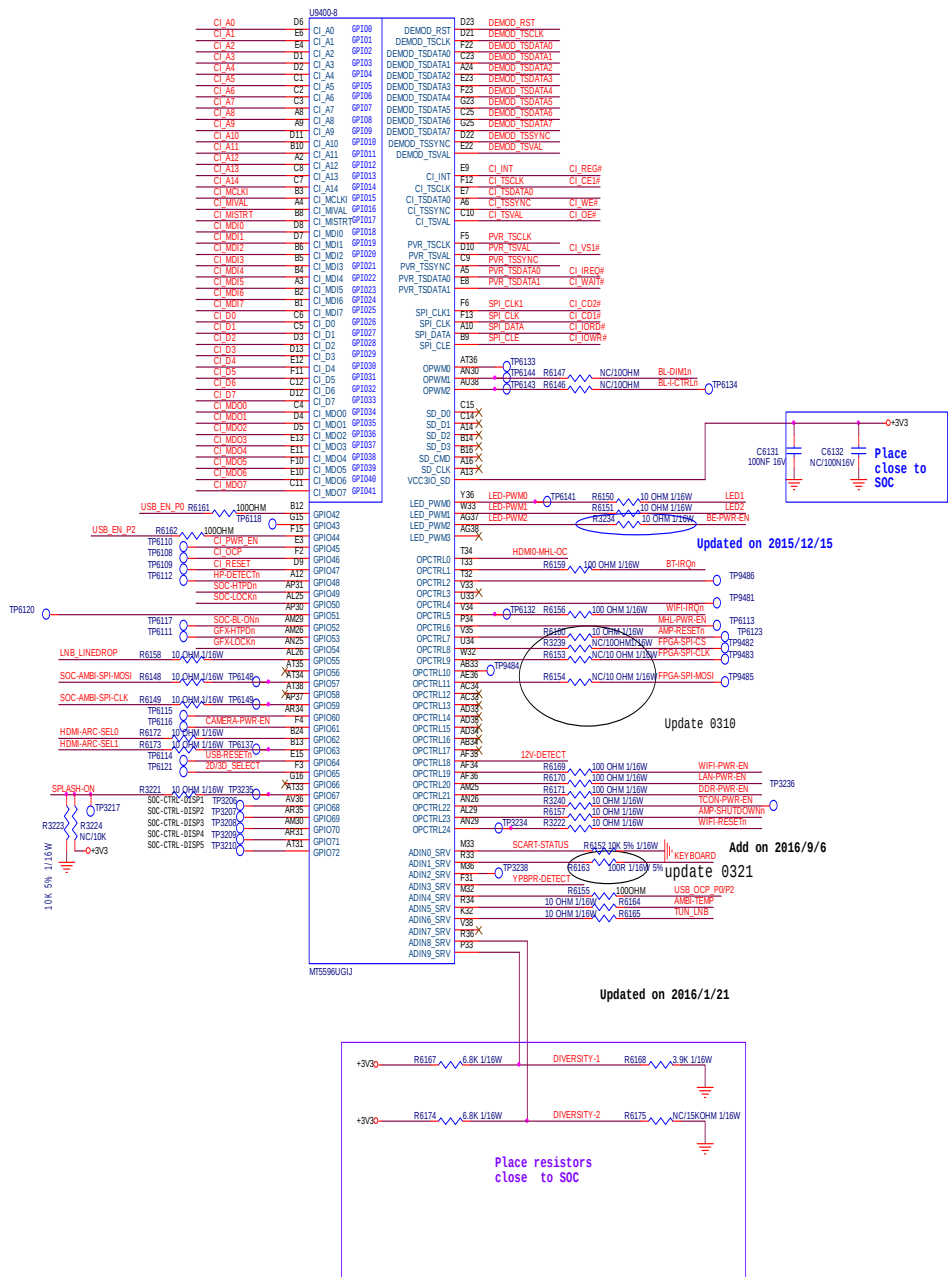
Updated on 2017/7/20

The image displays 14 circuit diagrams for the AD35596-78-3A audio codec, organized into four main sections with multiple revision updates:

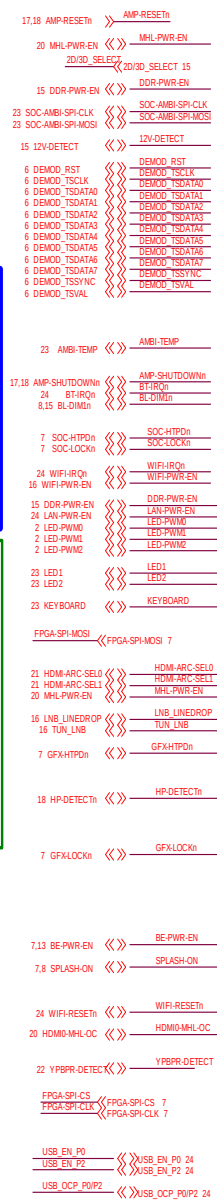
- Top Section:**
 - Left:** A large schematic for the main audio path, including I2C, AMP, and SPDIF blocks. Updates: 2017/7/20, 2016/9/6, 2016/9/7, 2017/11/13.
 - Right:** Schematics for the AMP and HP_DETECT blocks. Updates: 2017/11/13, 2017/5/10.
- MUTE CIRCUIT:**
 - Left:** I2C address decoder and reset logic. Updates: 2017/7/20, 2016/9/6.
 - Right:** AMP and HP_DETECT blocks with I2C address 0x6A. Updates: 2016/9/7, 2017/11/13.
- SPDIF:**
 - Left:** SPDIF output driver circuit. Updates: 2017/7/20, 2016/9/6.
 - Right:** SPDIF input and output drivers. Updates: 2017/10/6, 2017/7/31, 2017/10/6.
- HEADPHONE:**
 - Left:** HP_DETECT and HP_DETECT signal logic. Updates: 2017/11/13, 2015/11/12, 2016/1/23.
 - Right:** HP_DETECT and HP_DETECT signal logic. Updates: 2017/10/6, 2015/11/12, 2016/1/23.

Each diagram includes component values (resistors, capacitors, inductors) and pin connections. The diagrams are color-coded with blue and red lines to indicate different signal paths and components.

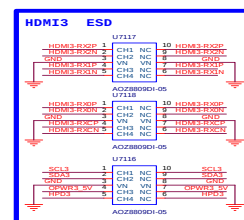
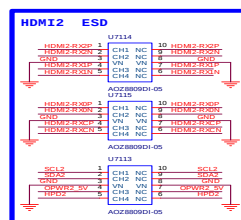
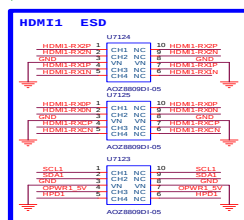
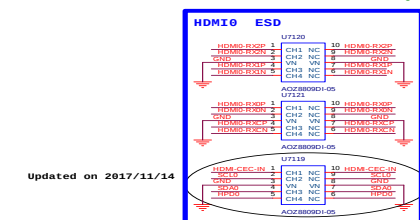
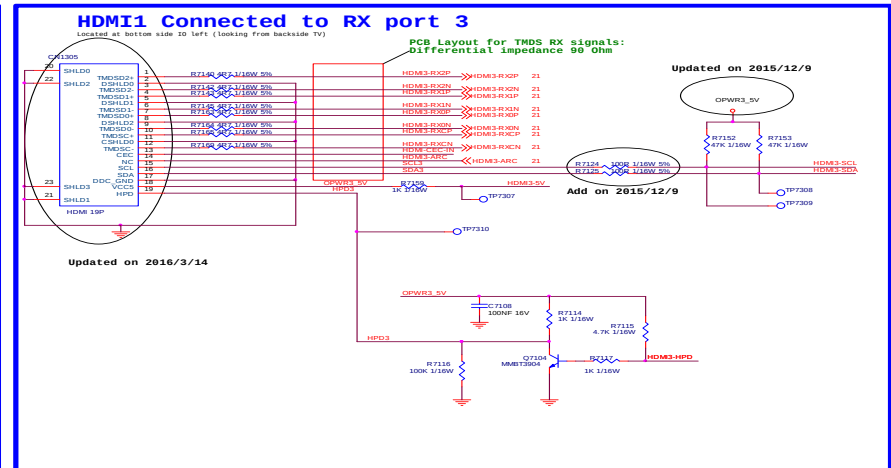
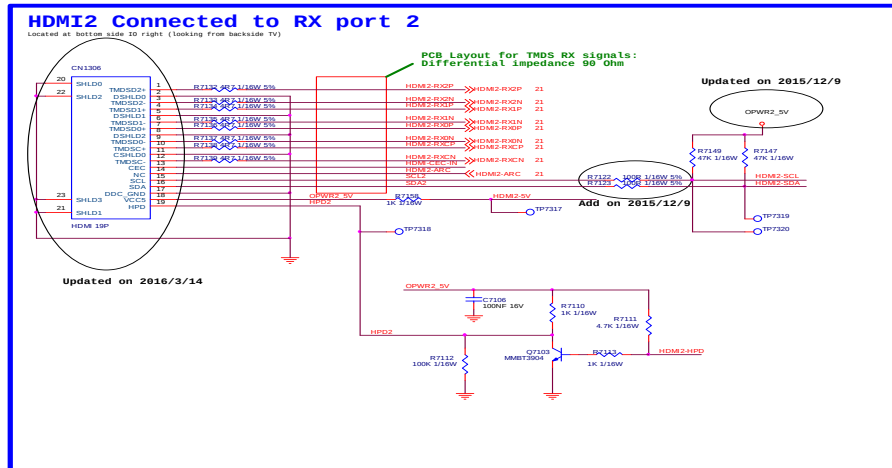
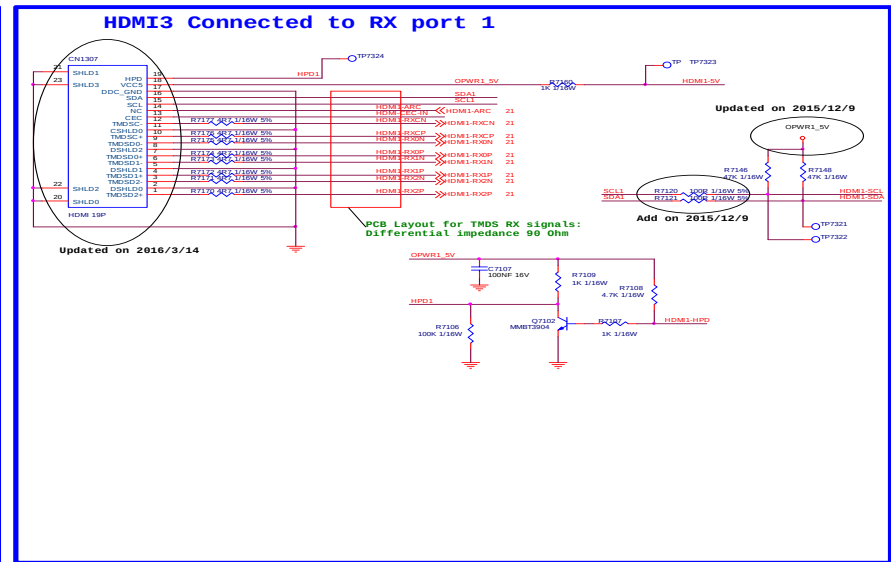
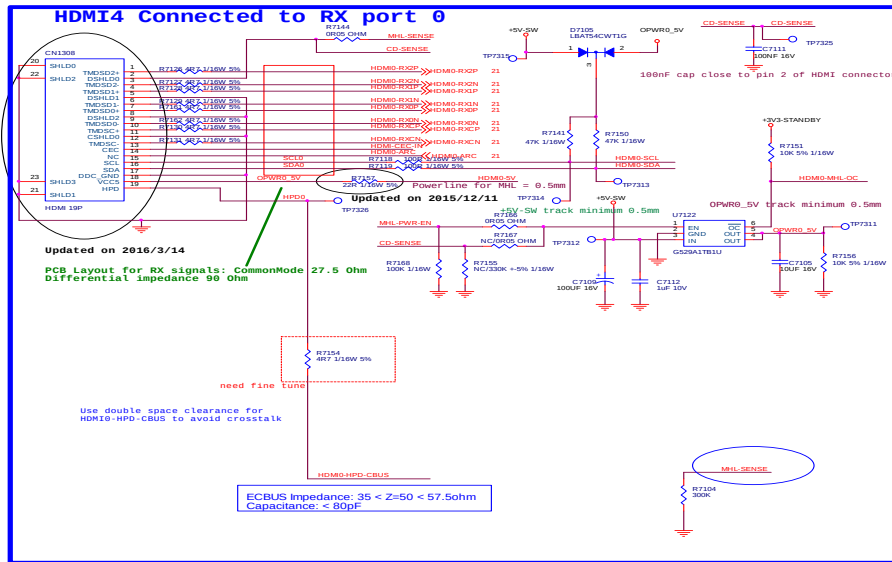
9-10-18 PCMCIA



Parrel TS Output to PCMCIA damping used to close Main Chip	Parrel TS Output to Main Chip damping used to close PCMCIA
CI_M1STR1	CI_M0STR1
CI_M1VAL	CI_M0VAL
CI_MCLK1	CI_MCLK0
CI_MDI0	CI_MDI00
CI_MDI1	CI_MDI01
CI_MDI2	CI_MDI02
CI_MDI3	CI_MDI03
CI_MDI4	CI_MDI04
CI_MDI5	CI_MDI05
CI_MDI6	CI_MDI06
CI_MDI7	CI_MDI07



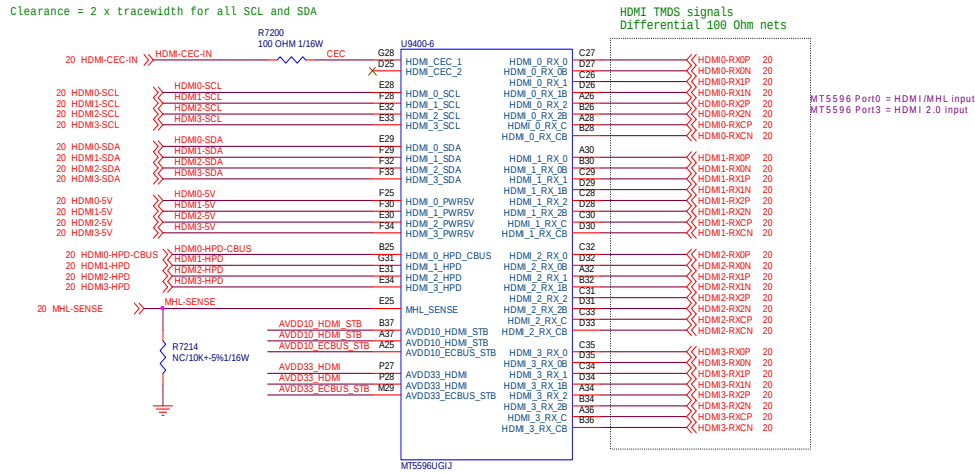
9-10-19 HDMI-INPUTS



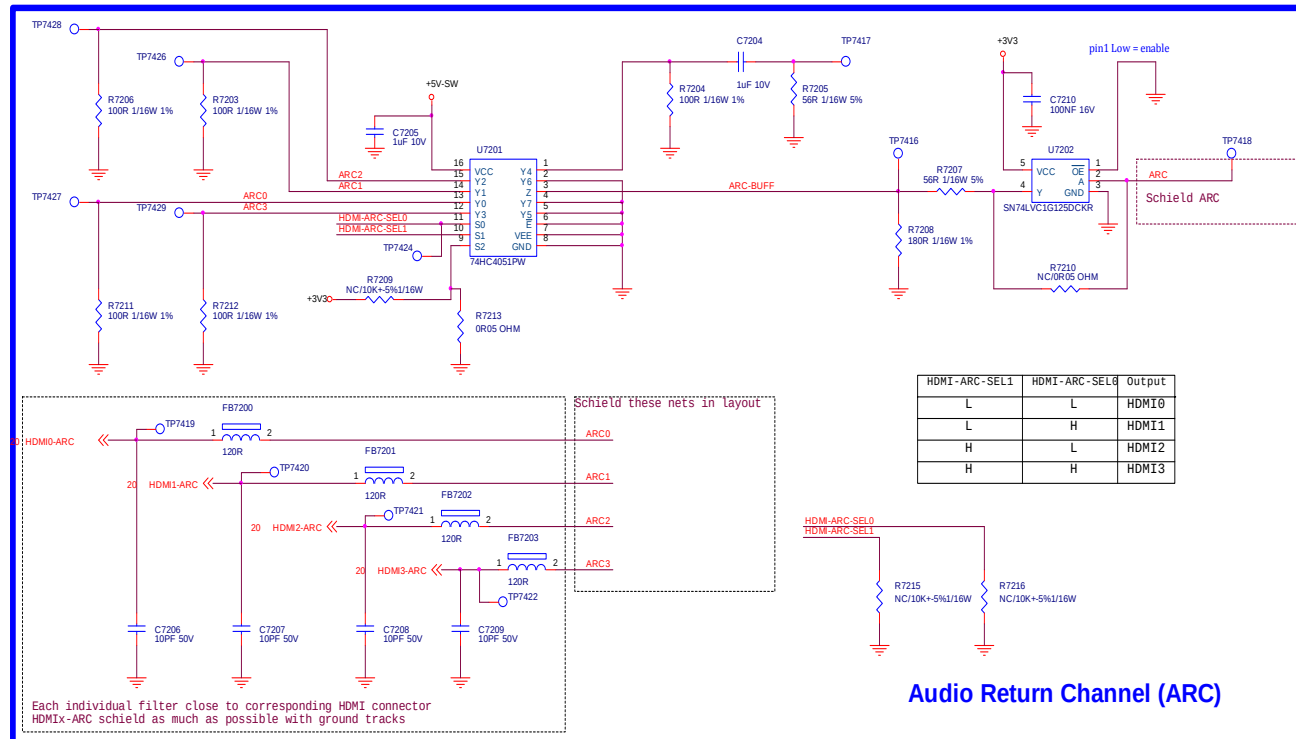
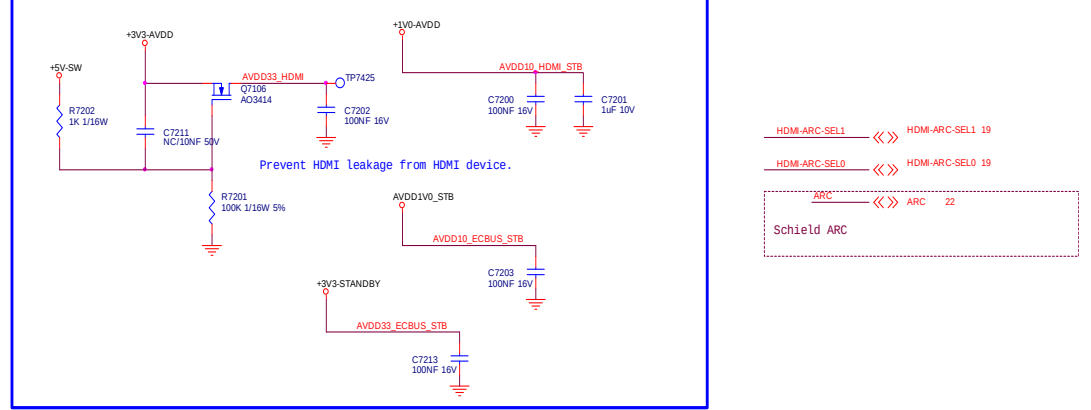
Updated 18AC on 2017/8/29

9-10-20 HDMI-SOC-ARC

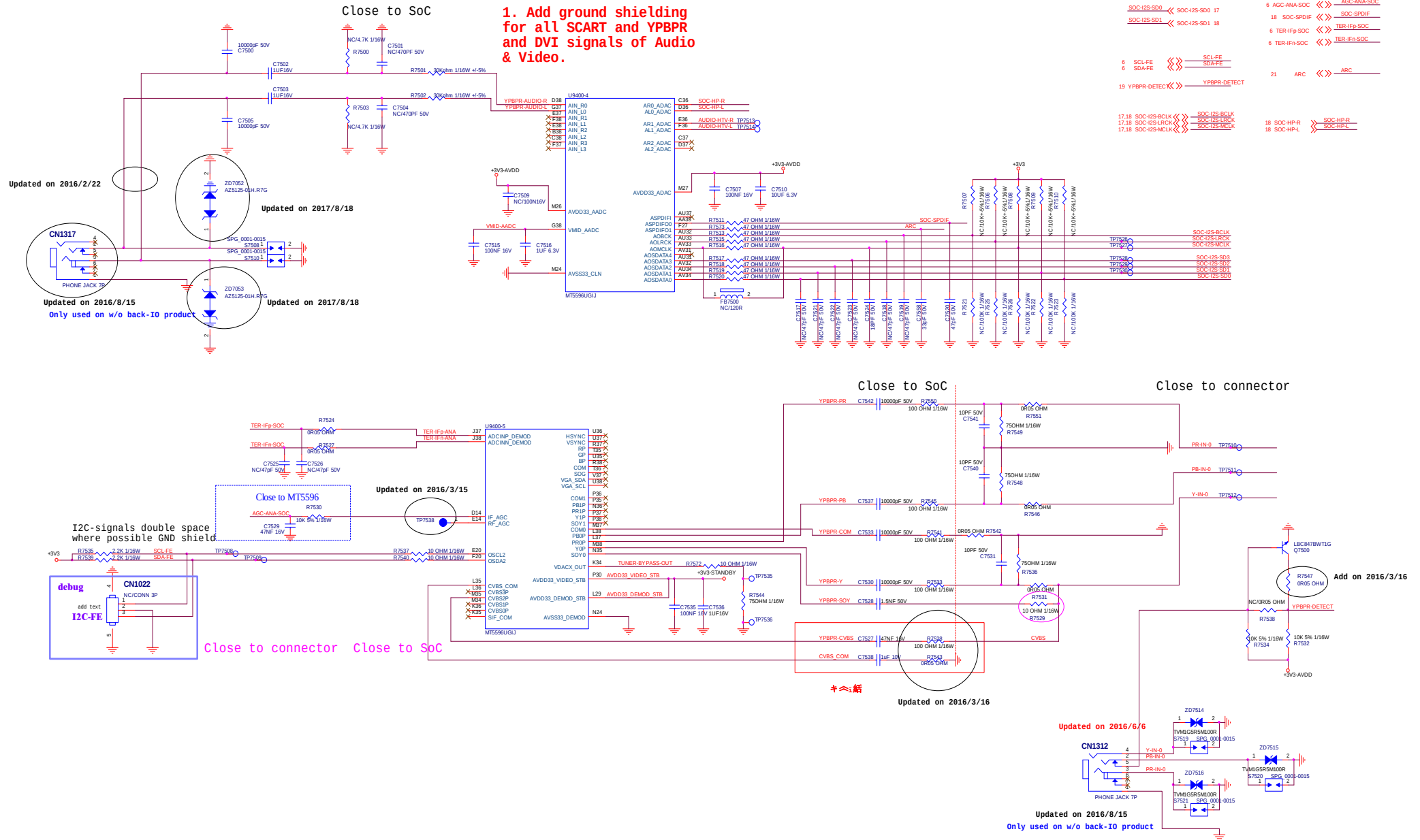
Clearance = 2 x tracewidth for all SCL and SDA



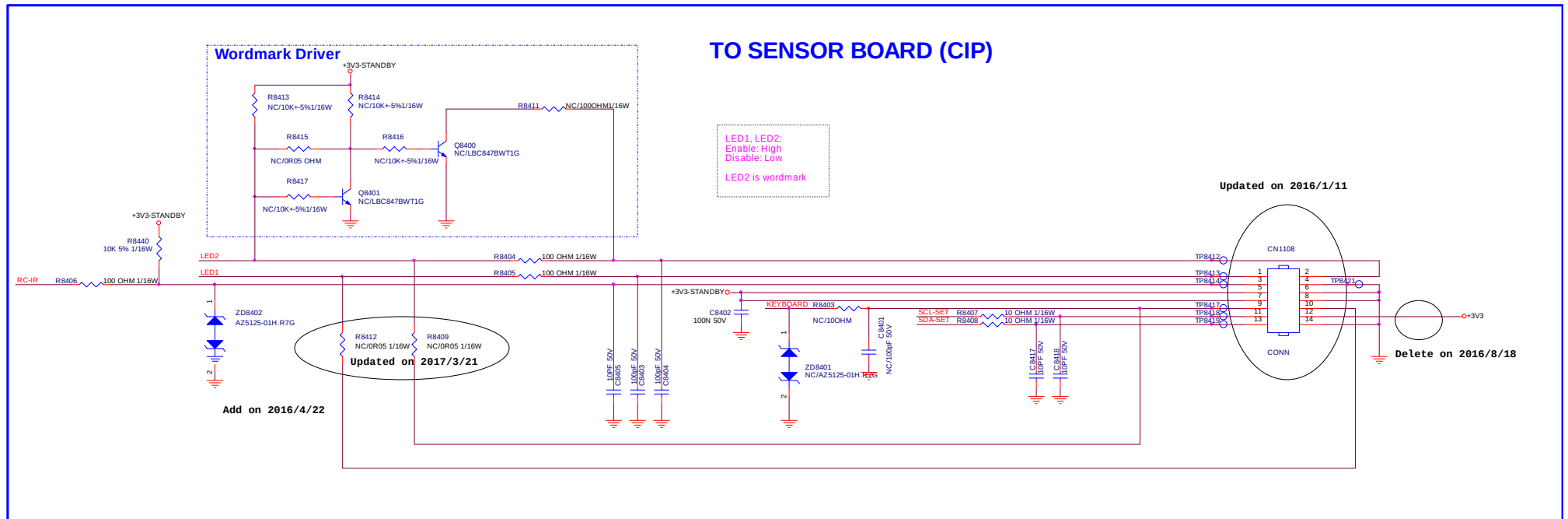
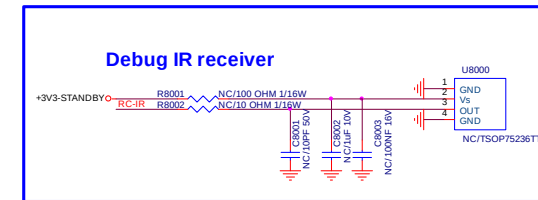
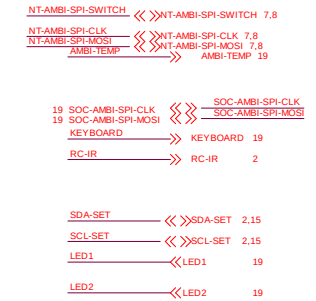
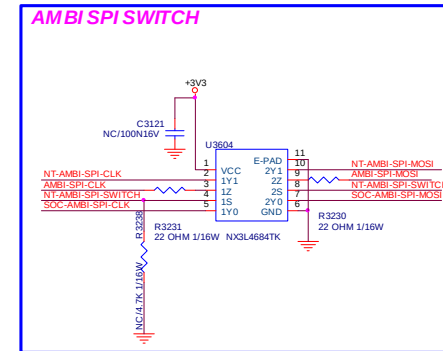
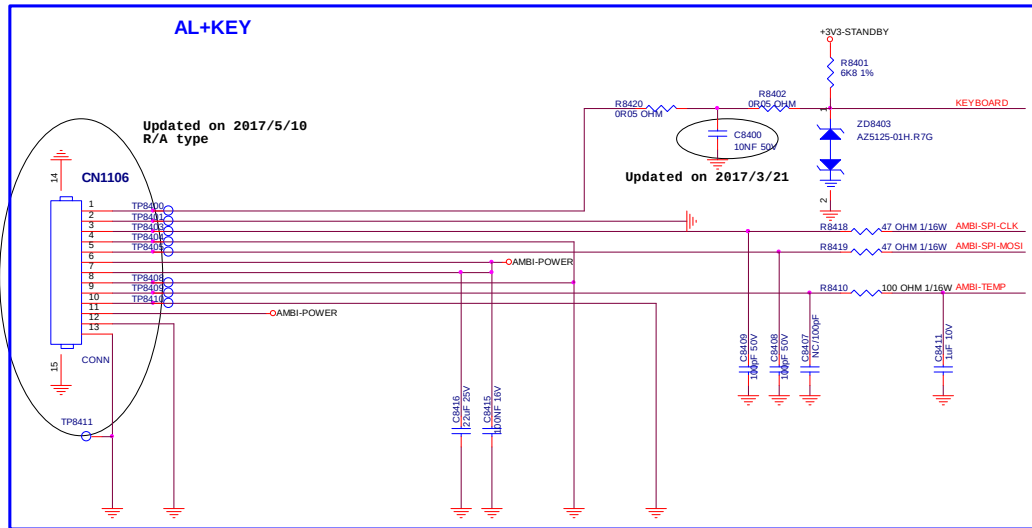
Analog Power

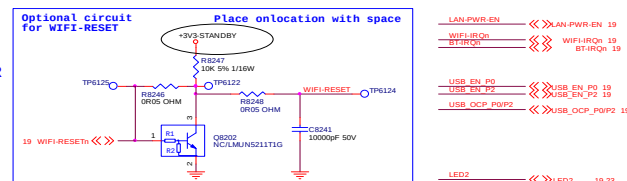
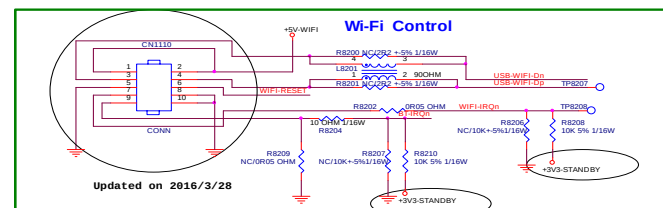
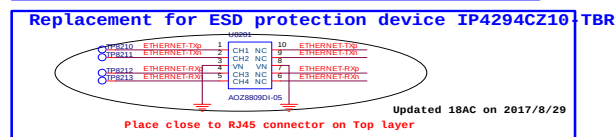
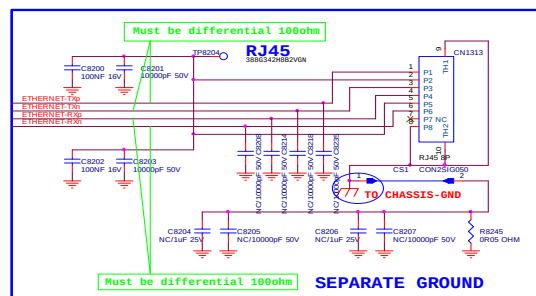
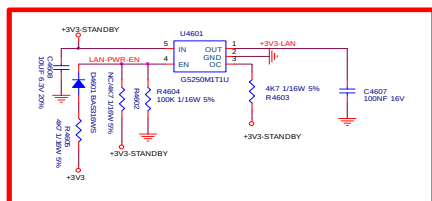
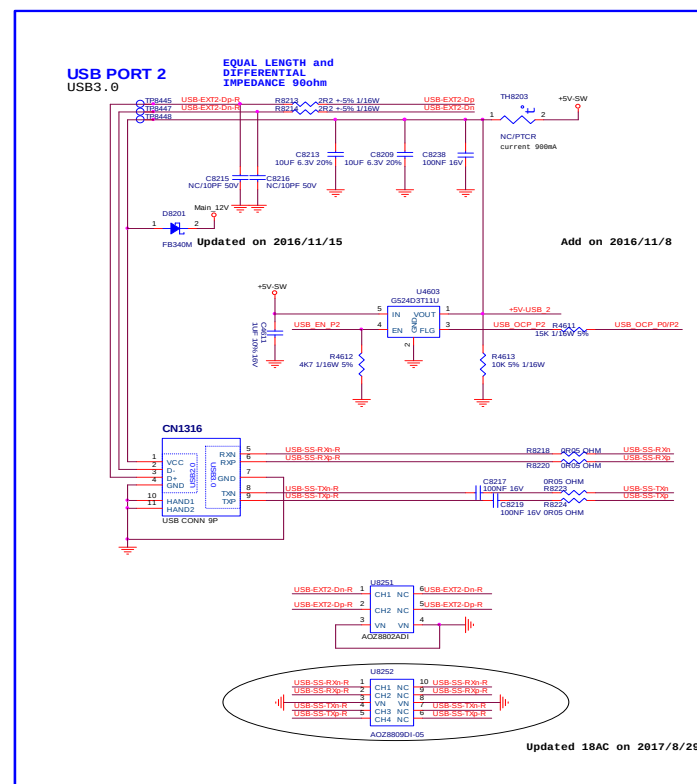
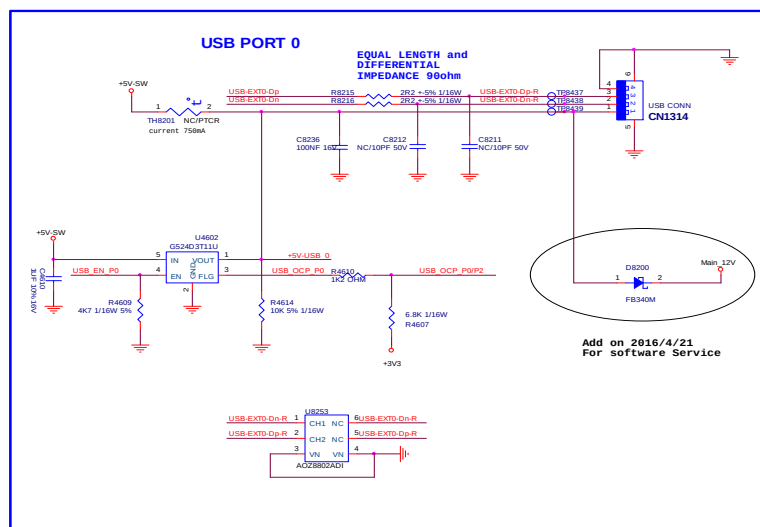
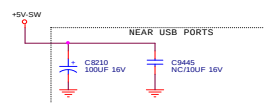


9-10-21 SCART-YPbPr-CVBS



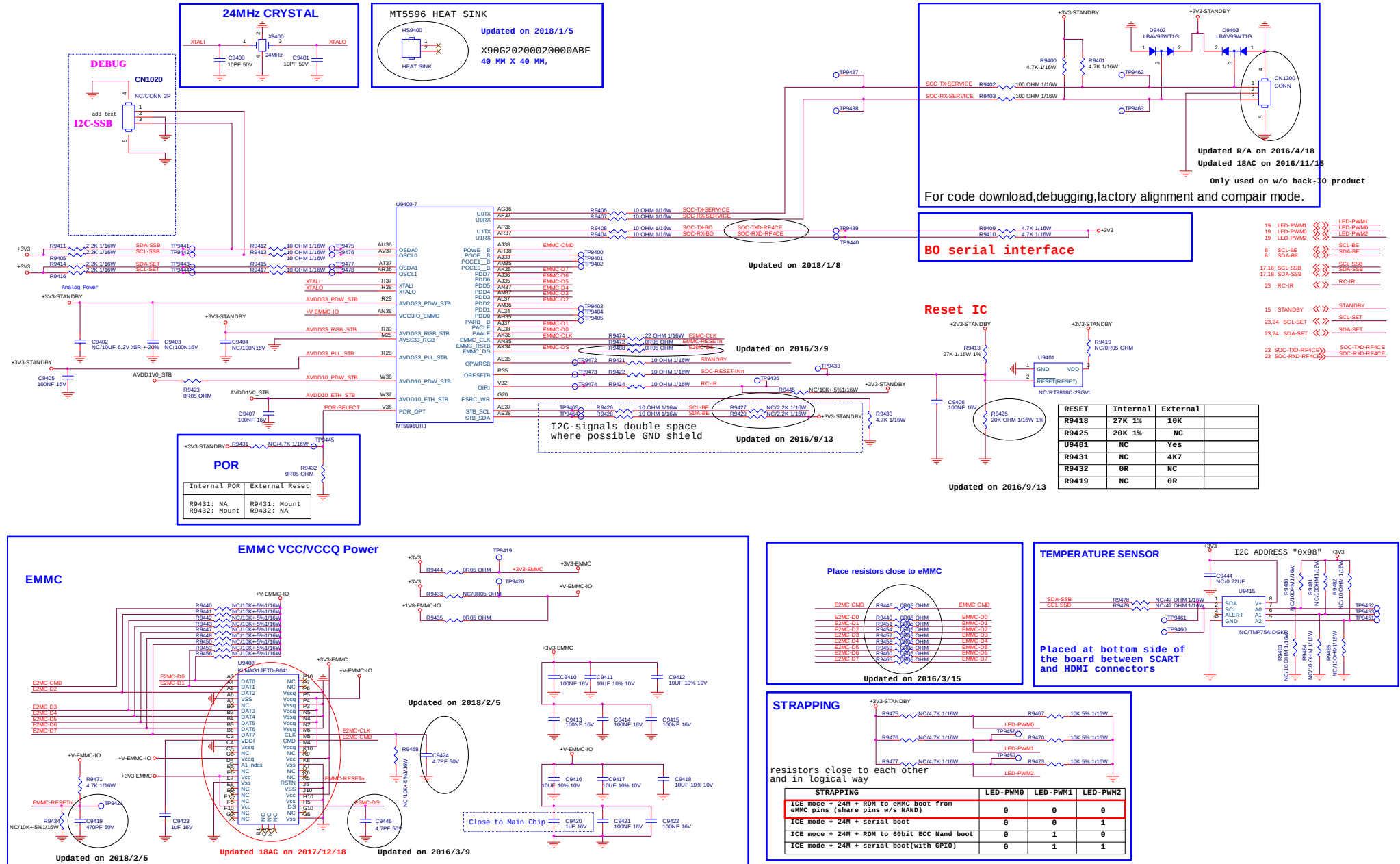
9-10-22 CTRL-CONNECTORS



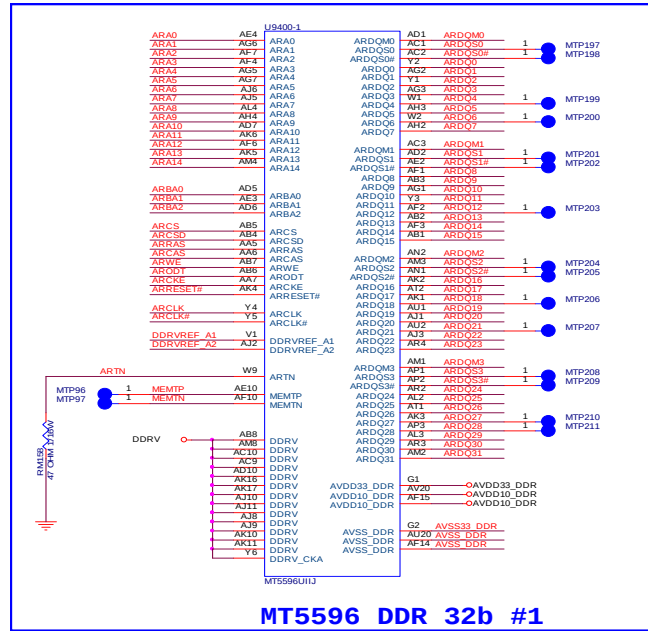
[illegible][illegible]

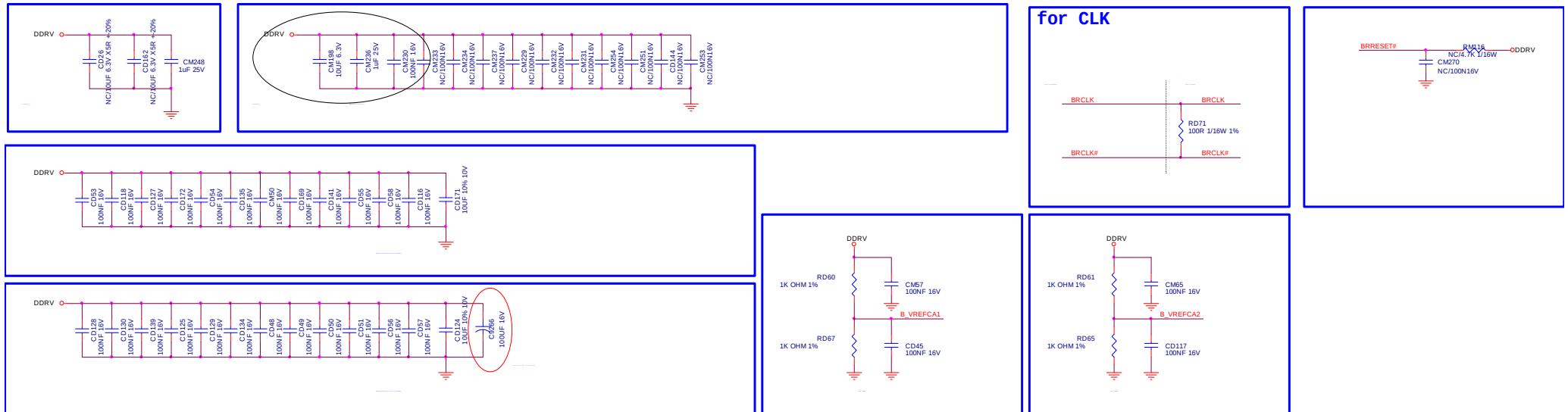
9.11 B 715G9337 SSB (For 55/65"OLED803/903 Series)

9-11-1 SOC-EMMC

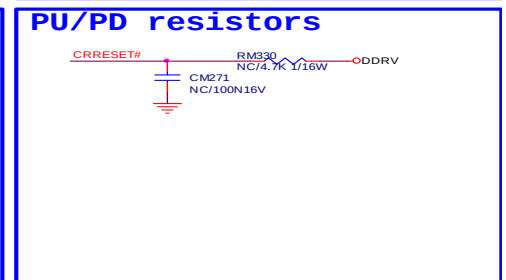
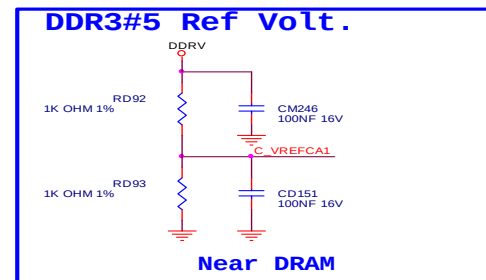
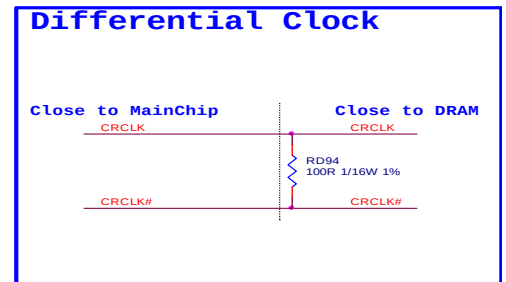
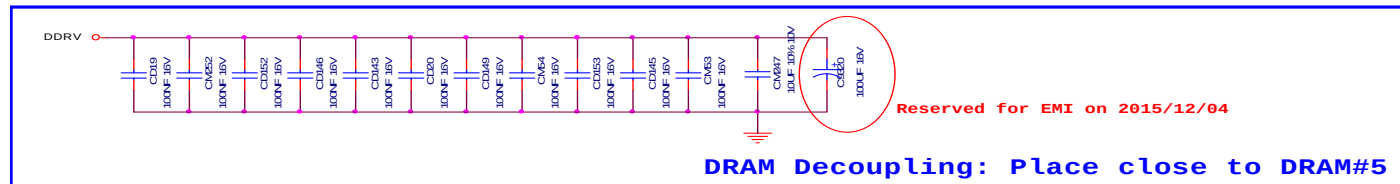
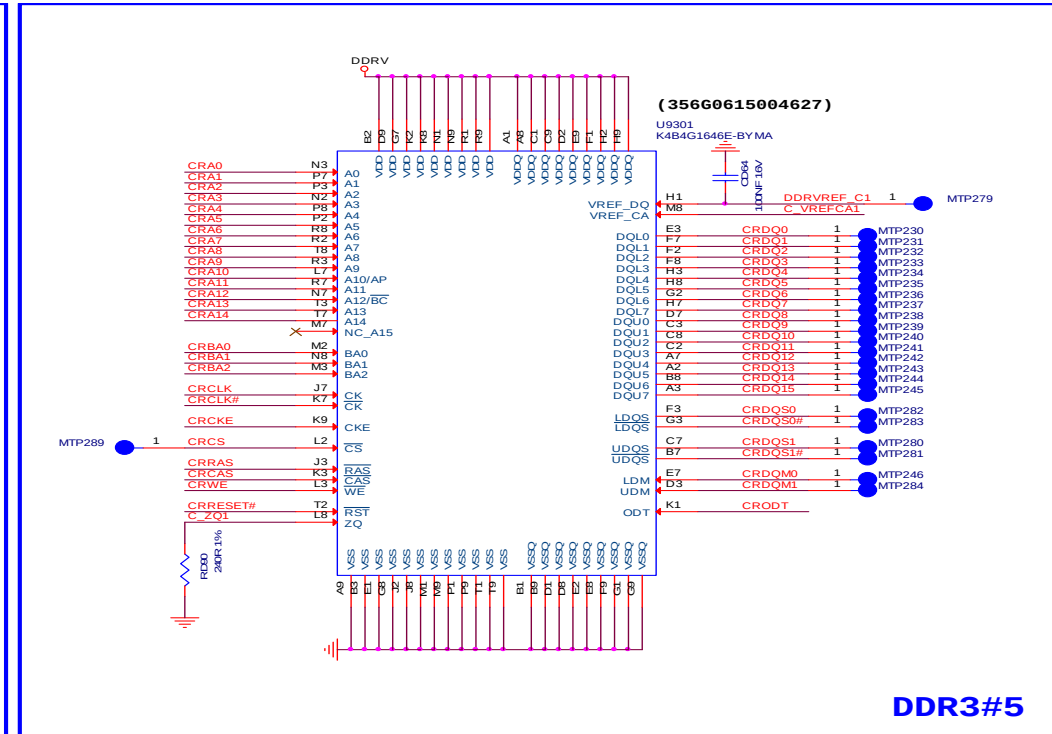
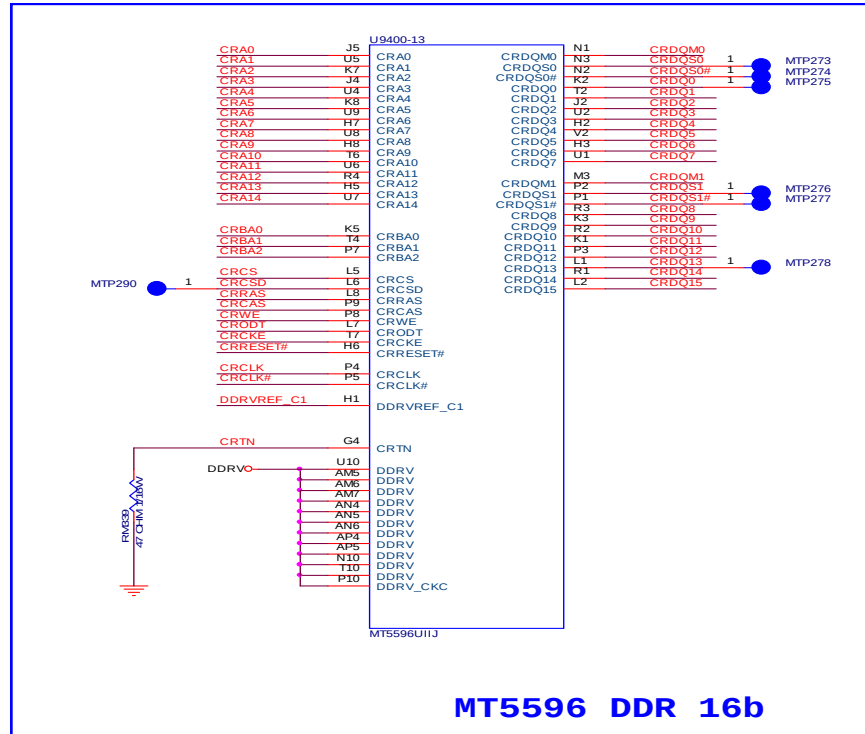


9-11-2 SOC-DDR3-1-2

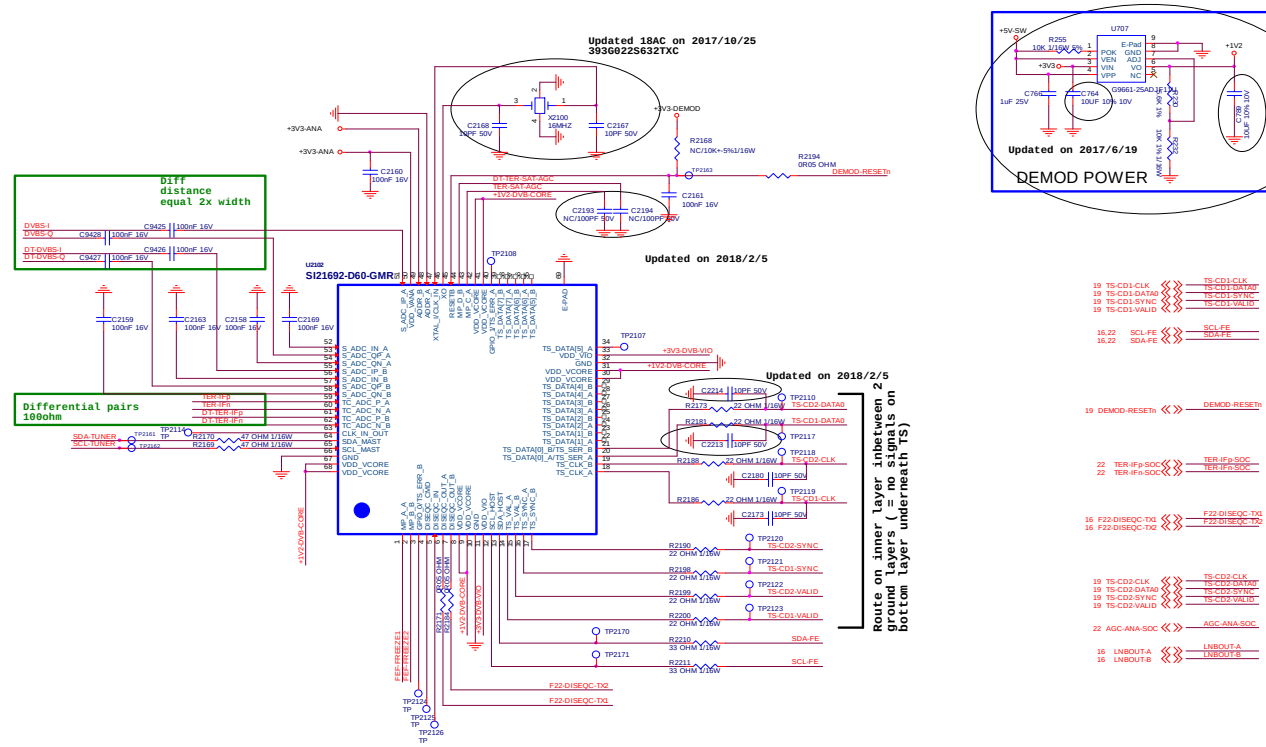
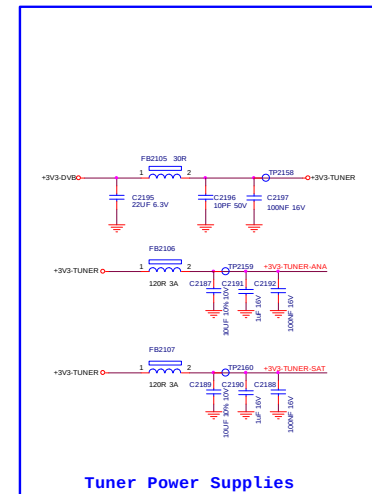
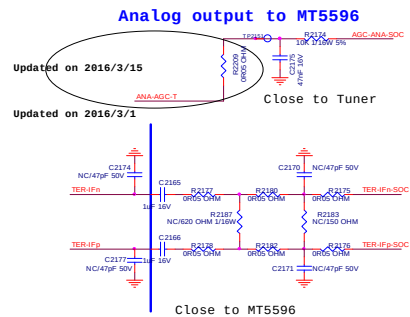
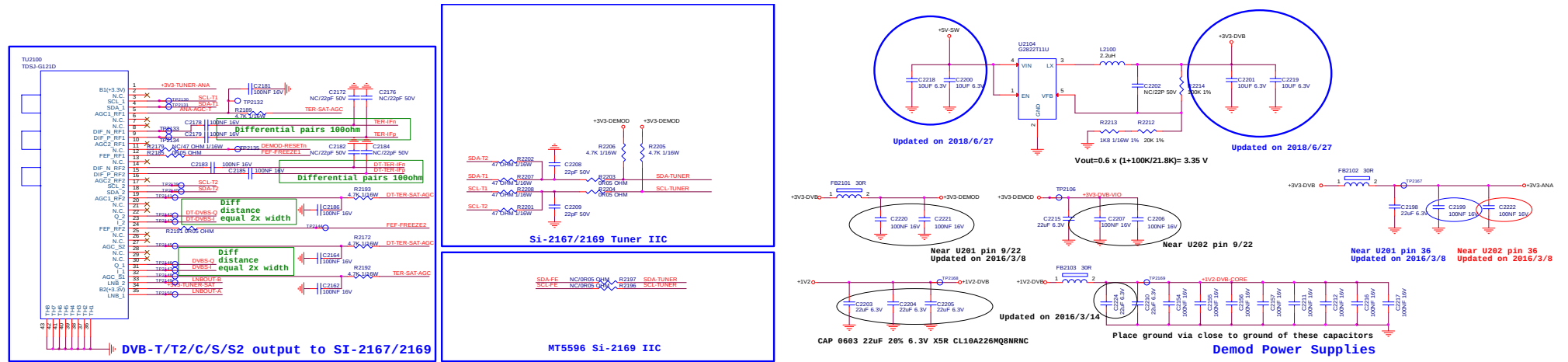


[illegible]

9-11-4 SOC-DDR3-5



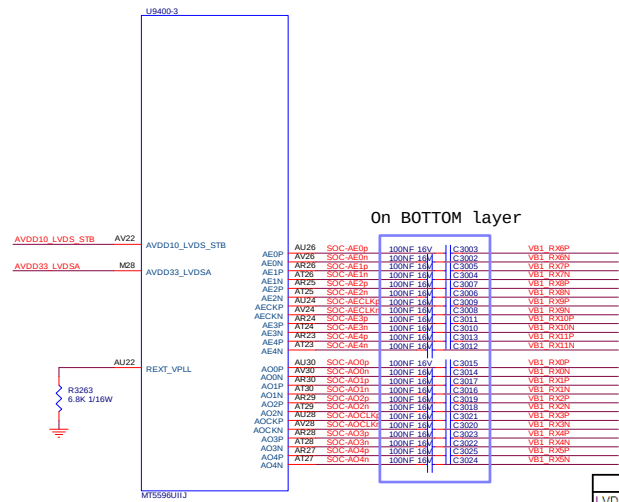
9-11-5 FE-TUNER-DEMODO-TPV



DUAL DEMODULATOR

Route on inner layer inbetween 2 ground layers (= no signals on bottom layer underneath TS)

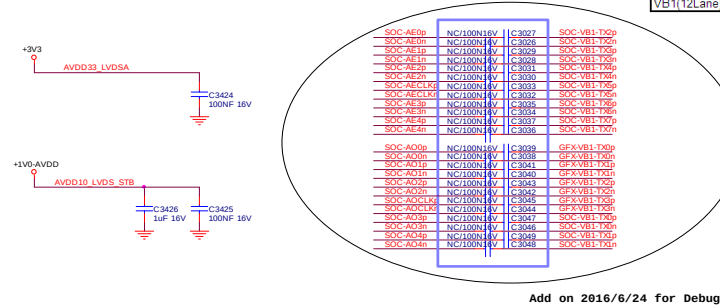
MT5596 Vx1 OUTPUT



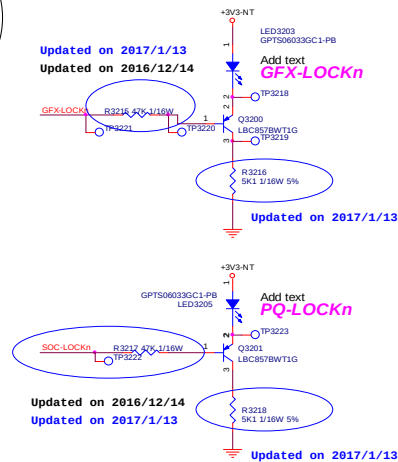
On BOTTOM layer

Vx1 to
NT334

	Port A0						Port AE					
LVDS(Ball name)	A00	A01	A02	A0CK	A03	A04	AE0	AE1	AE2	AECK	AE3	AE4
VB1(12Lane)	CH0	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11



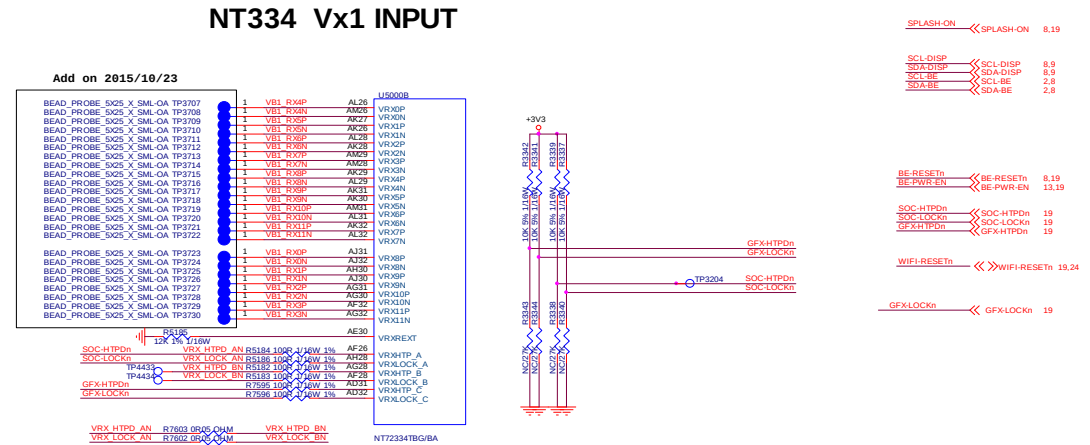
Add on 2016/6/24 for Debug



MT5596 Vx1 OUTPUT for Debug

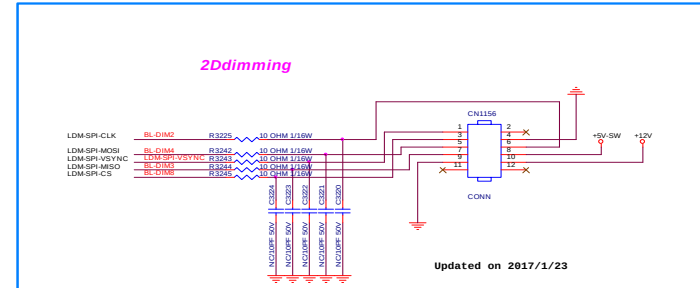
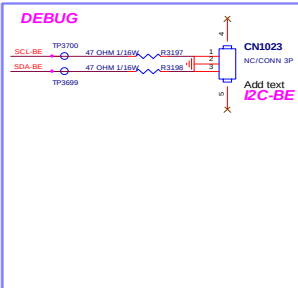
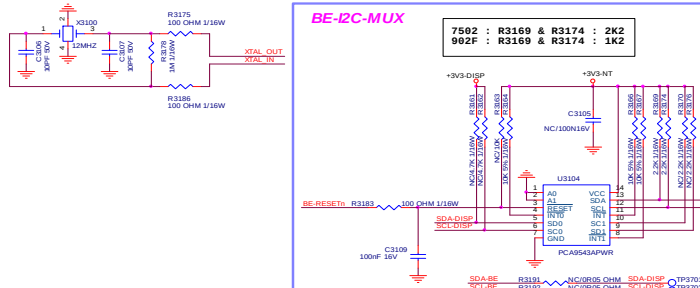
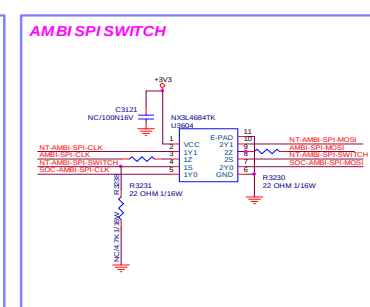
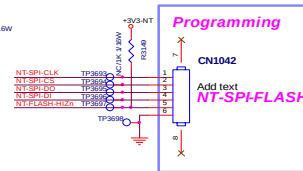
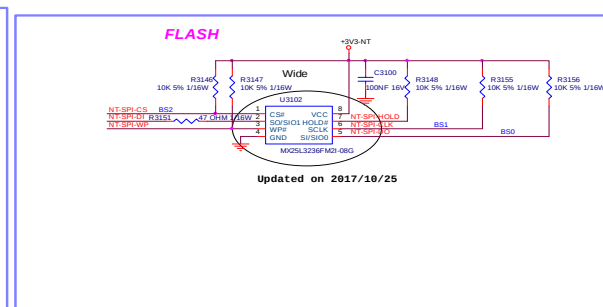
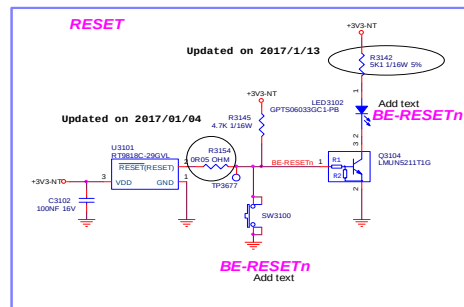
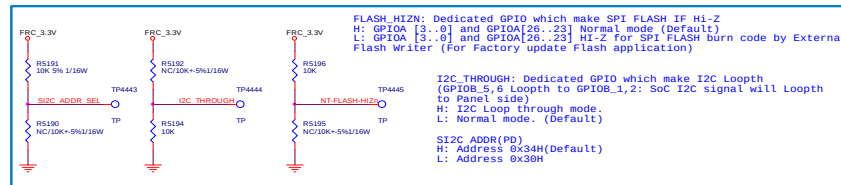
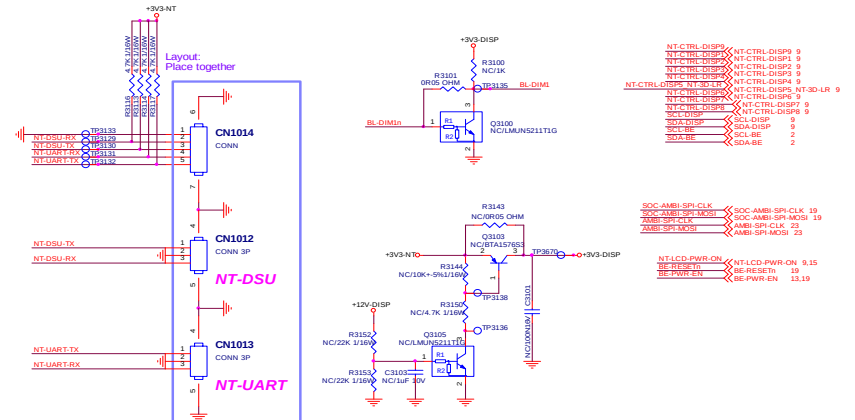
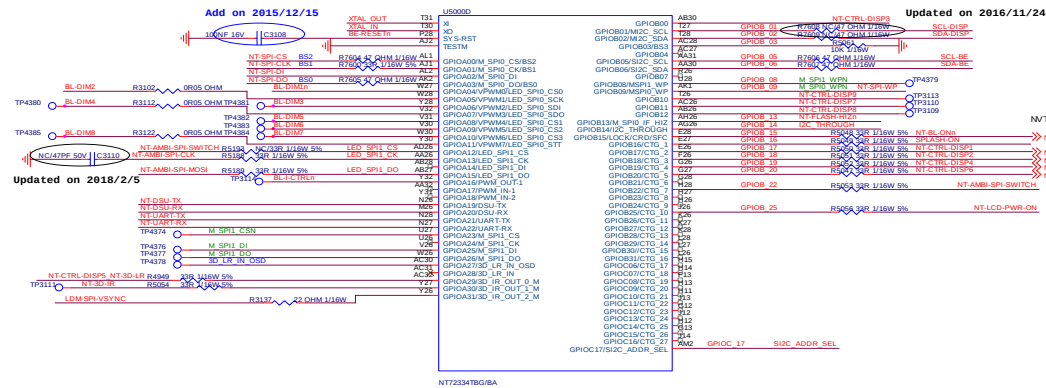


Add on 2016/6/27
Updated 18AC on 2016/9/12

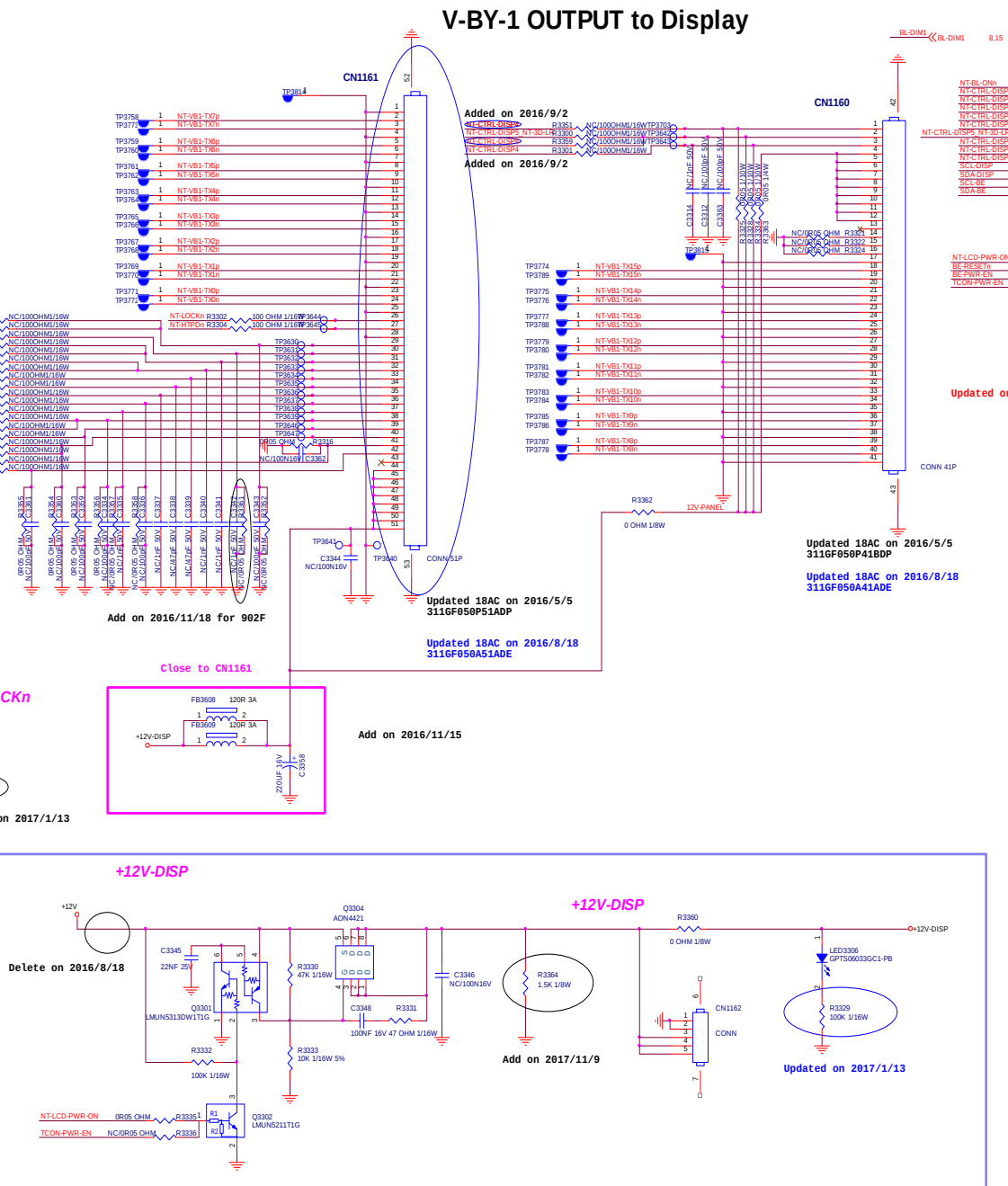


NT334 Vx1 INPUT

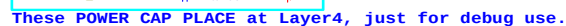
NT334 CONTROL



NT334 V-BY-1 OUTPUT

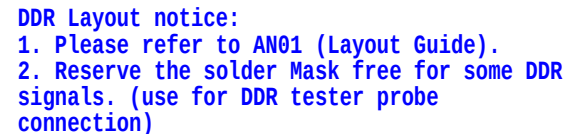
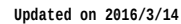


NT334 POWER

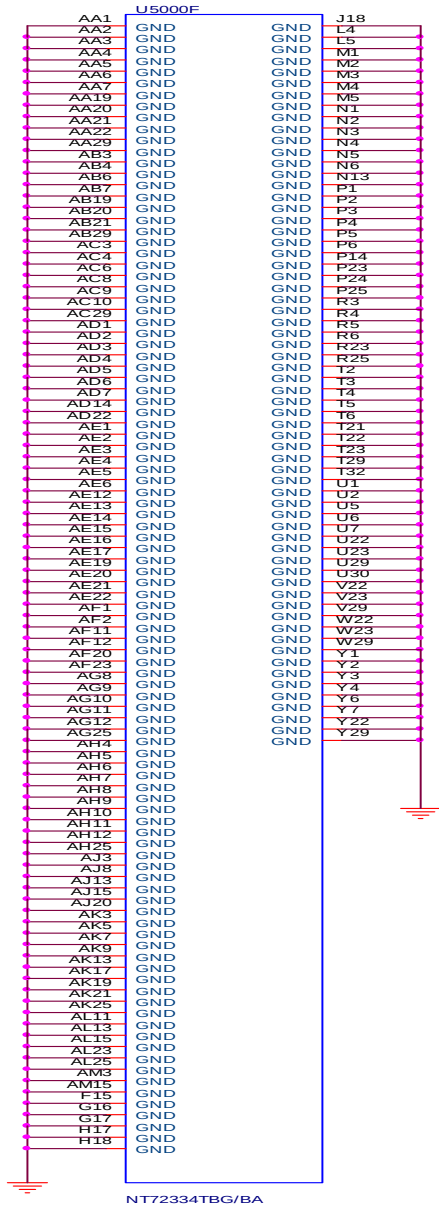


Name	Ball name	Voltage (V)	Current (mA)	Power (mW)	Total Current (mA)
LVR	LVR	0.9	0.2	0.18	4226.2
MDDR	VCCA_DDR_M	0.9	30	27	
SDDR	VCCA_DDR_S	0.9	30	27	
VOORE	VOORE	0.9	4056	3650.4	
VRX	VRX_0.9V	0.9	110	99	
VTX	VTBM	1.2	TBD	TBD	1540
EXT_DDR	EXT_DDR	1.5	284	426	
INT_DDR.DIE	VDD_DDR	1.5	284	426	
MDDR	VDDI5_LDO_M	1.5	110	165	
MDDR	VDDA_MMU_M	1.5	68	102	
MDDR	VDD_MMU_M	1.5	273	409.5	
MDDR	VDDI5_CLK_M	1.5	20	30	
MPLL	VDDI5_MPLL	1.5	30	45	
SDDR	VDDI5_LDO_S	1.5	110	165	
SDDR	VDDA_MMU_S	1.5	68	102	
SDDR	VDD_MMU_S	1.5	273	409.5	
SDDR	VDDI5_CLK_S	1.5	20	30	
MDDR	VDD25_DLL_M	2.5	37	92.5	828
SDDR	VDD25_DLL_S	2.5	37	92.5	
VRX	VRX_25V	2.5	60	150	
VTX	VTX_25V	2.5	694	1735	
IO	VDD_IO	3.3	5	16.5	
LVR	LVR	3.3	1	3.3	13
MPLL	VCCA_3V3_MPLL	3.3	7	23.1	

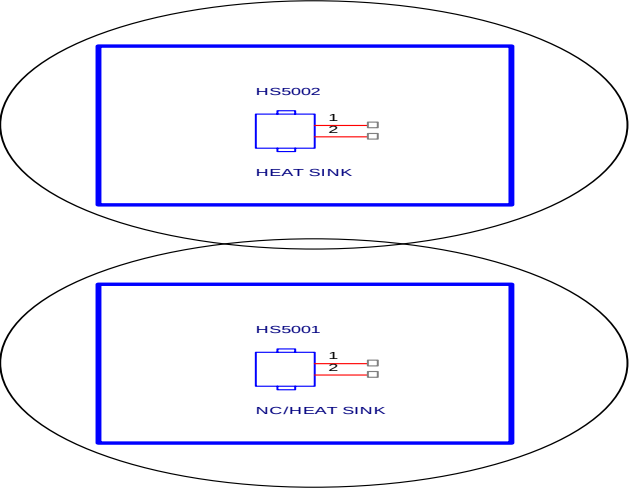
Trace Width Calculator (For Layout reference)	
0.90V	item Location Set External Temp CHANGE Solve 20 Width Solve 60 Thickness Solve 1 Current Solve 5.509
	Units
	Degree C
	Mil
	Mil @ Oz
	Amp
+1.2V	Location Set External Temp CHANGE Solve 20 Width Solve 100 Thickness Solve 1 Current Solve 6.402
	Units
	Degree C
	Mil
	Mil @ Oz
	Amp
+1.5V	Location Set External Temp CHANGE Solve 10 Width Solve 20 Thickness Solve 1 Current Solve 1.61
	Units
	Degree C
	Mil
	Mil @ Oz
	Amp
-2.5V	Location Set External Temp CHANGE Solve 10 Width Solve 30 Thickness Solve 1 Current Solve 2.116
	Units
	Degree C
	Mil
	Mil @ Oz
	Amp
-3.3V	Location Set External Temp CHANGE Solve 10 Width Solve 10 Thickness Solve 1 Current Solve 3.01
	Units
	Degree C
	Mil
	Mil @ Oz
	Amp



NT334 GROUND

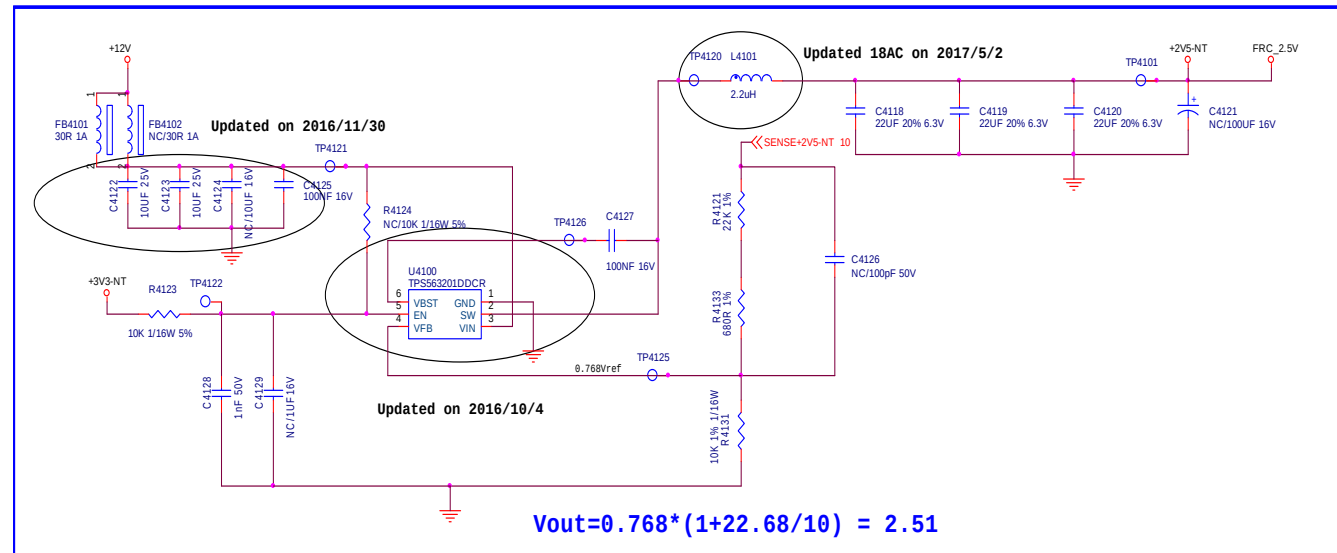
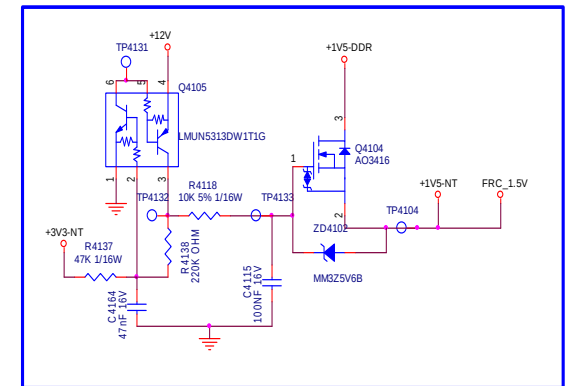
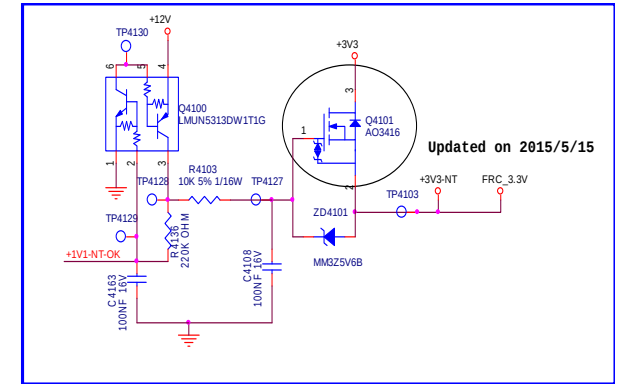


NT334 HEAT SINK X90G202000200000HG(40x40) or
X90G801000100000BF(FOOTPRINT90A8010-1X) or
X90G201005300000BF(Same as SoC)

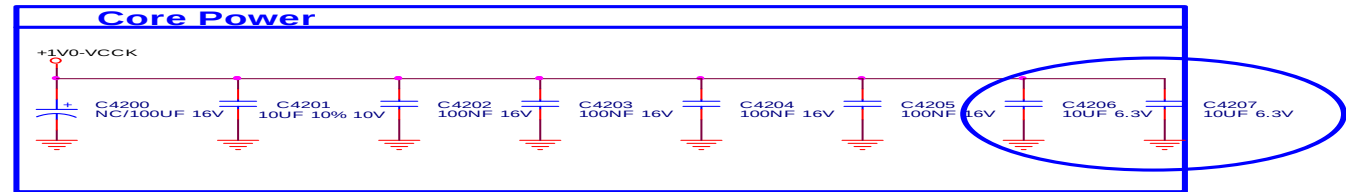
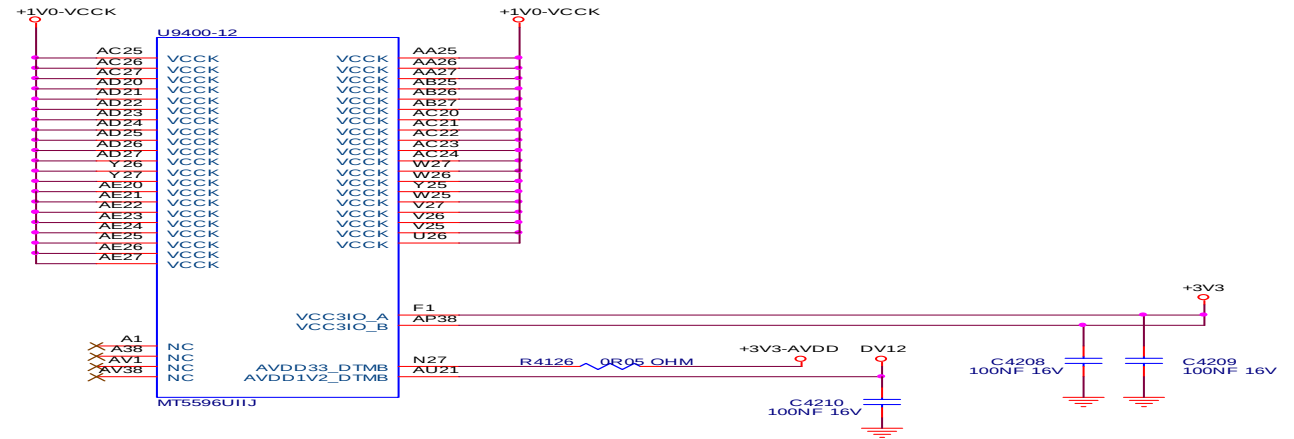
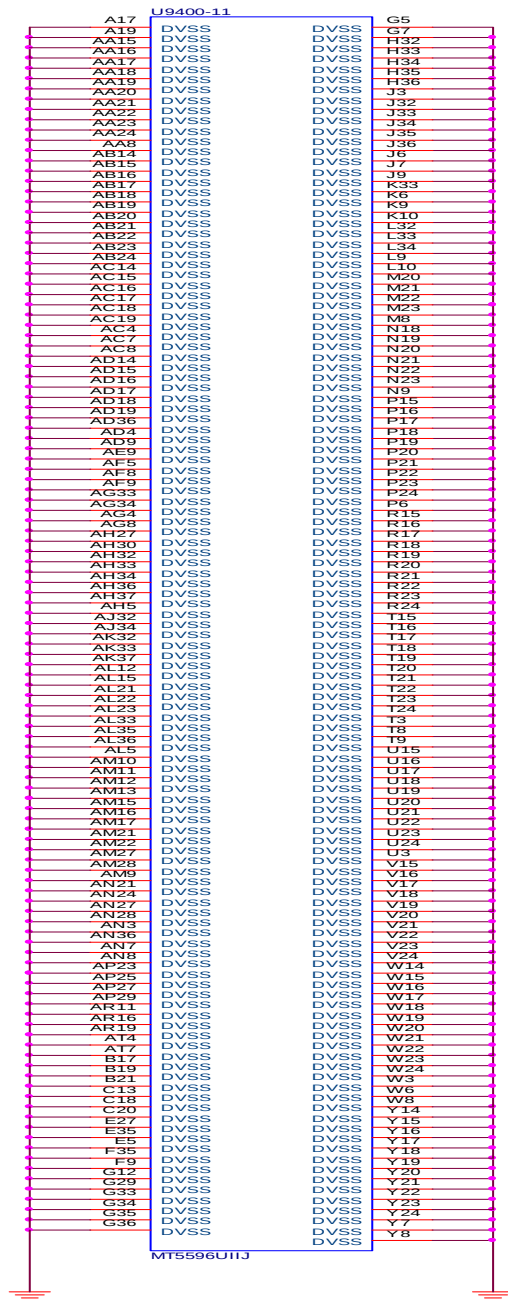


Updated 18AC on 2017/12/18
X90G801000500000BF

Updated 18AC on 2017/6/19
X90G201005300000BF

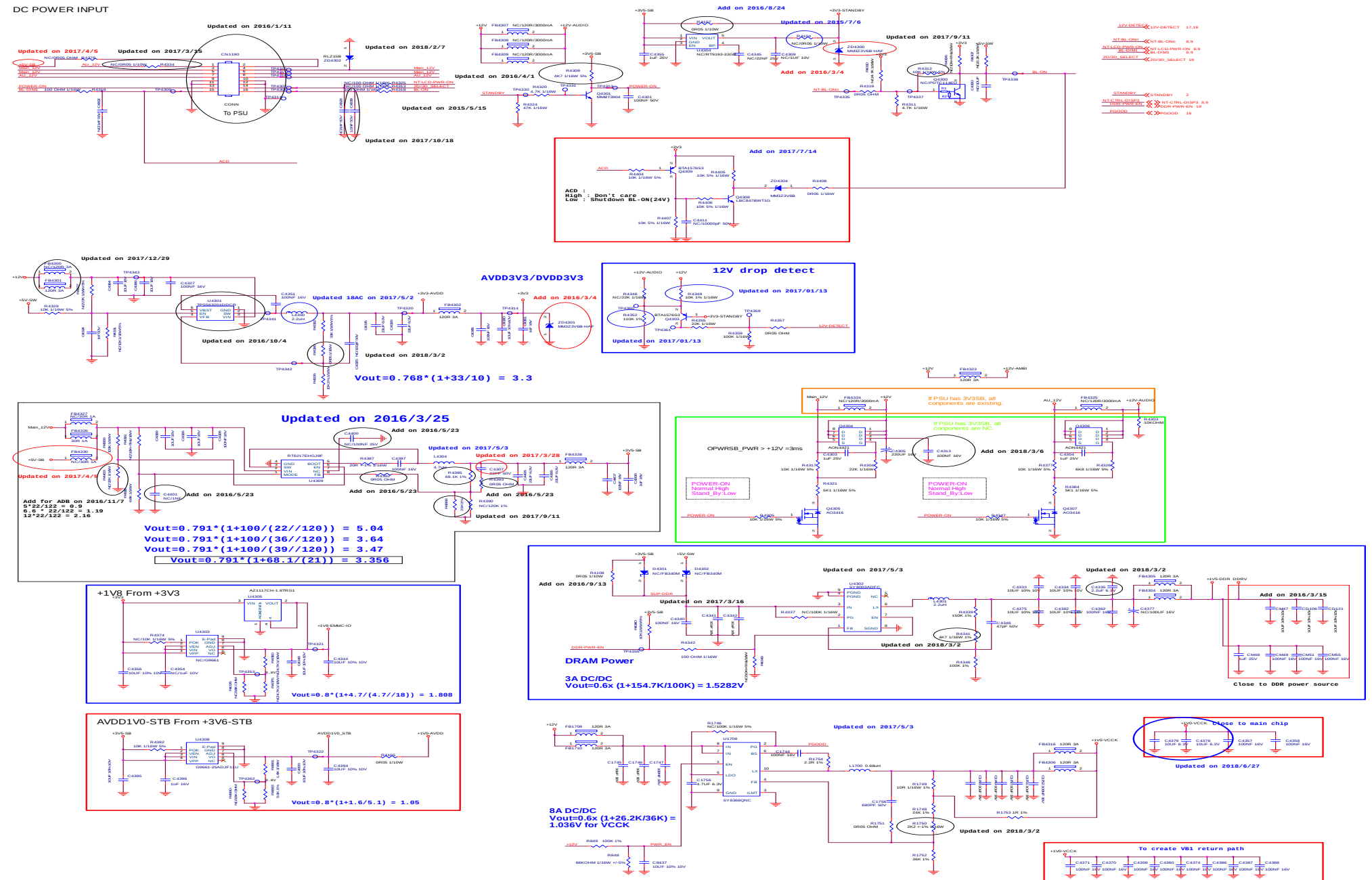


9-11-13 DCDC-SOC-VCCK-DVSS

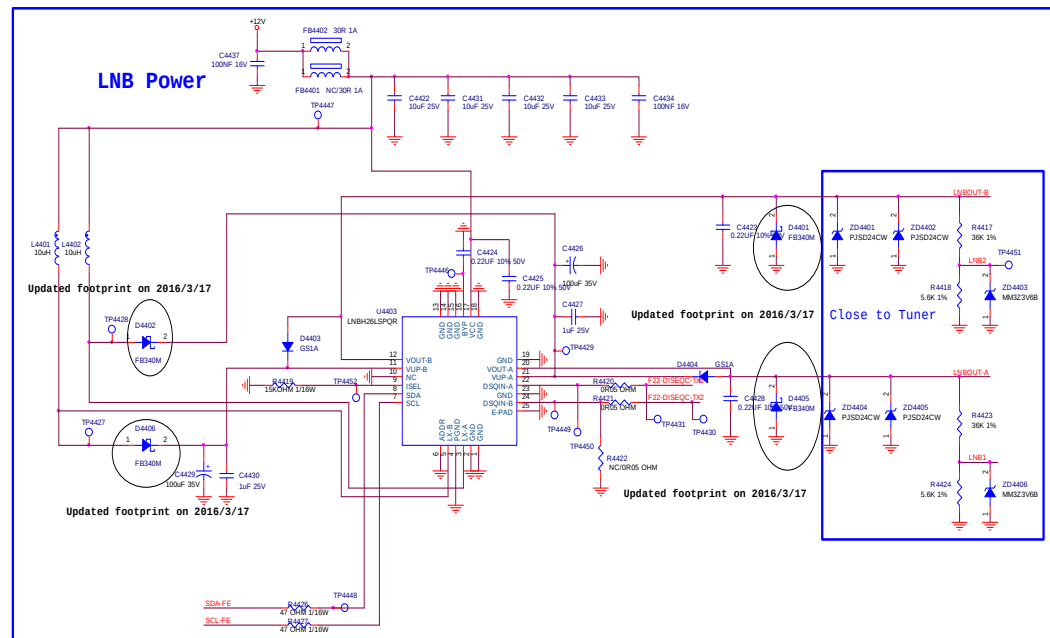
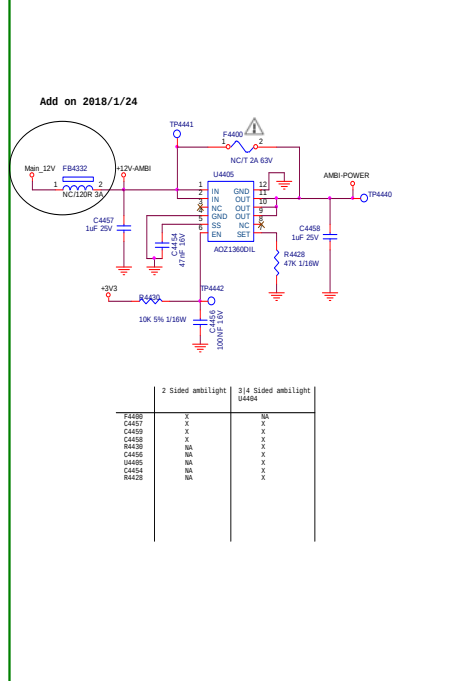
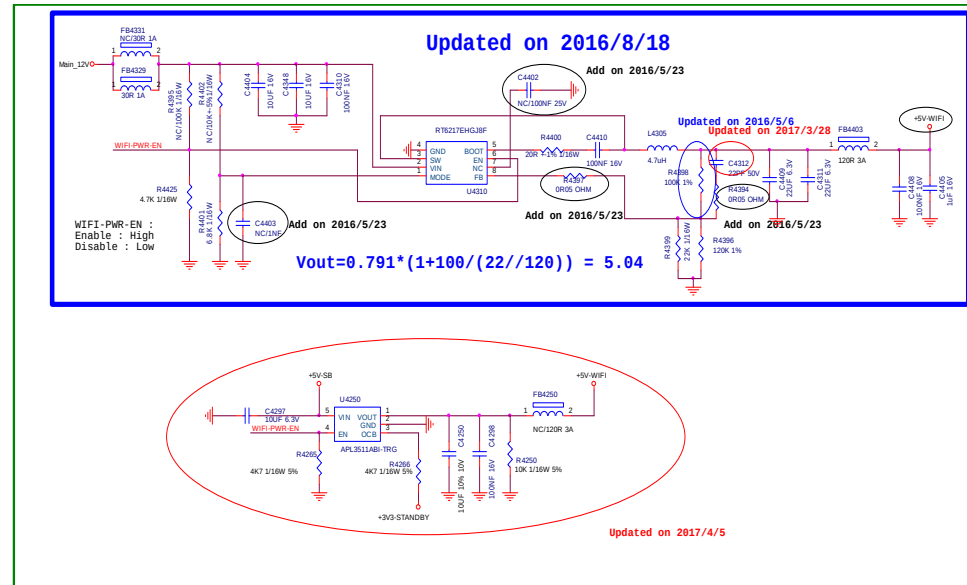
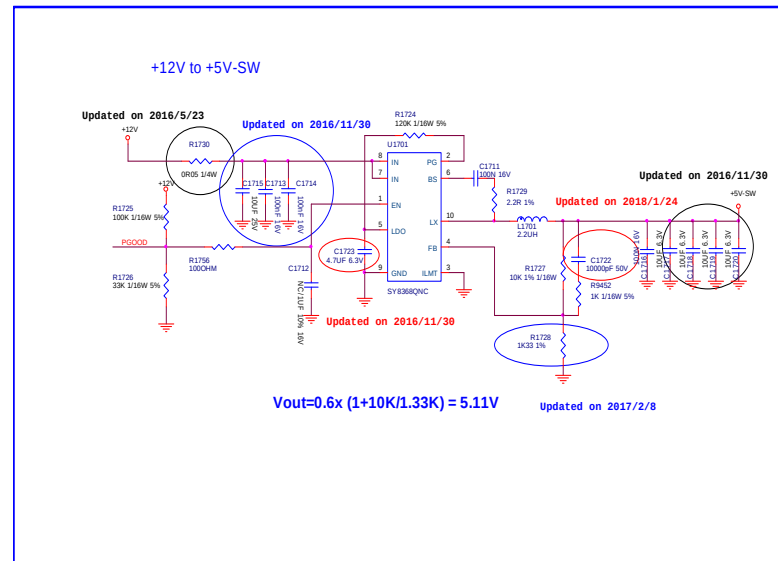


Updated on 2018/6/27

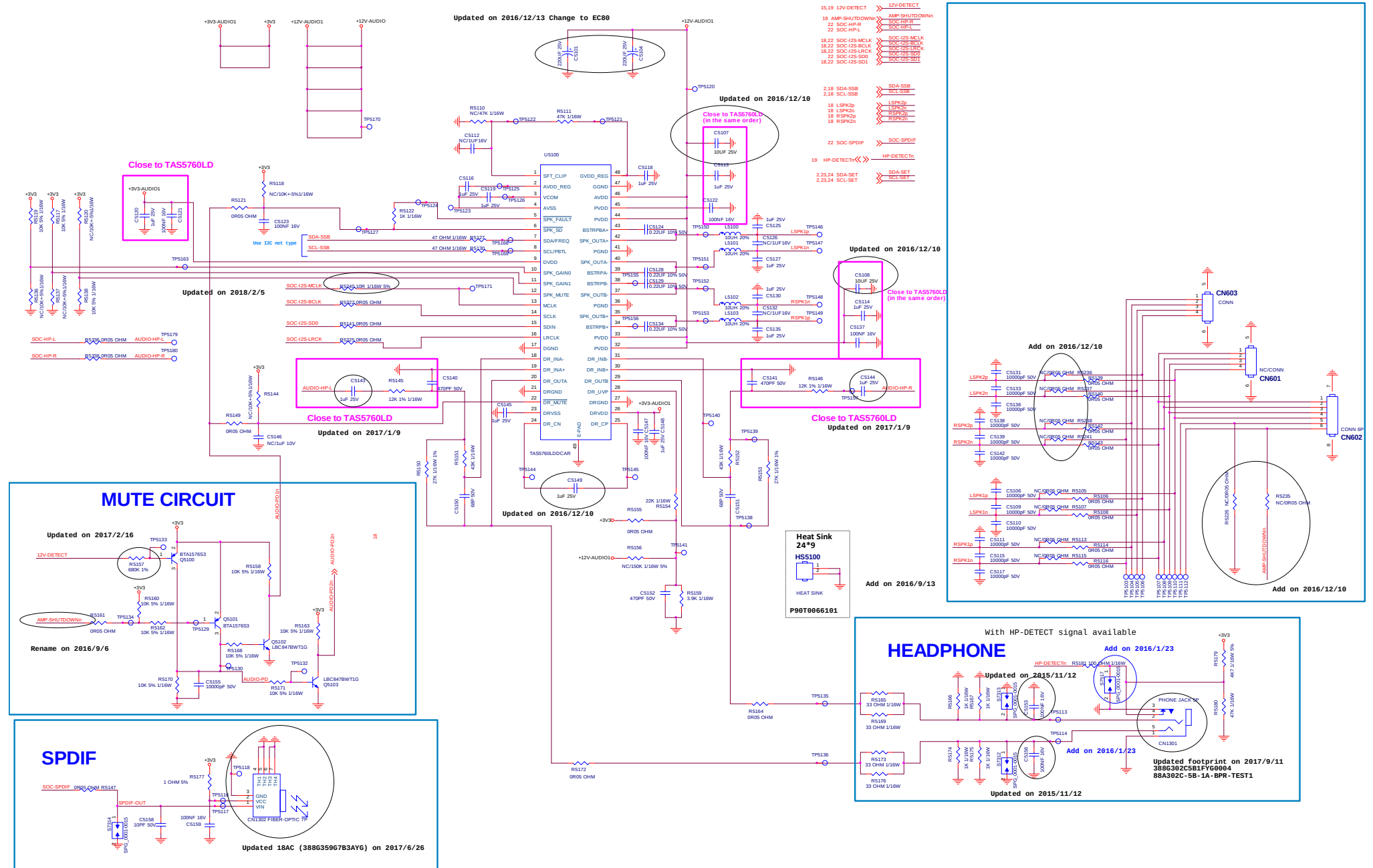
DC POWER INPUT



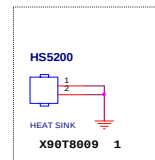
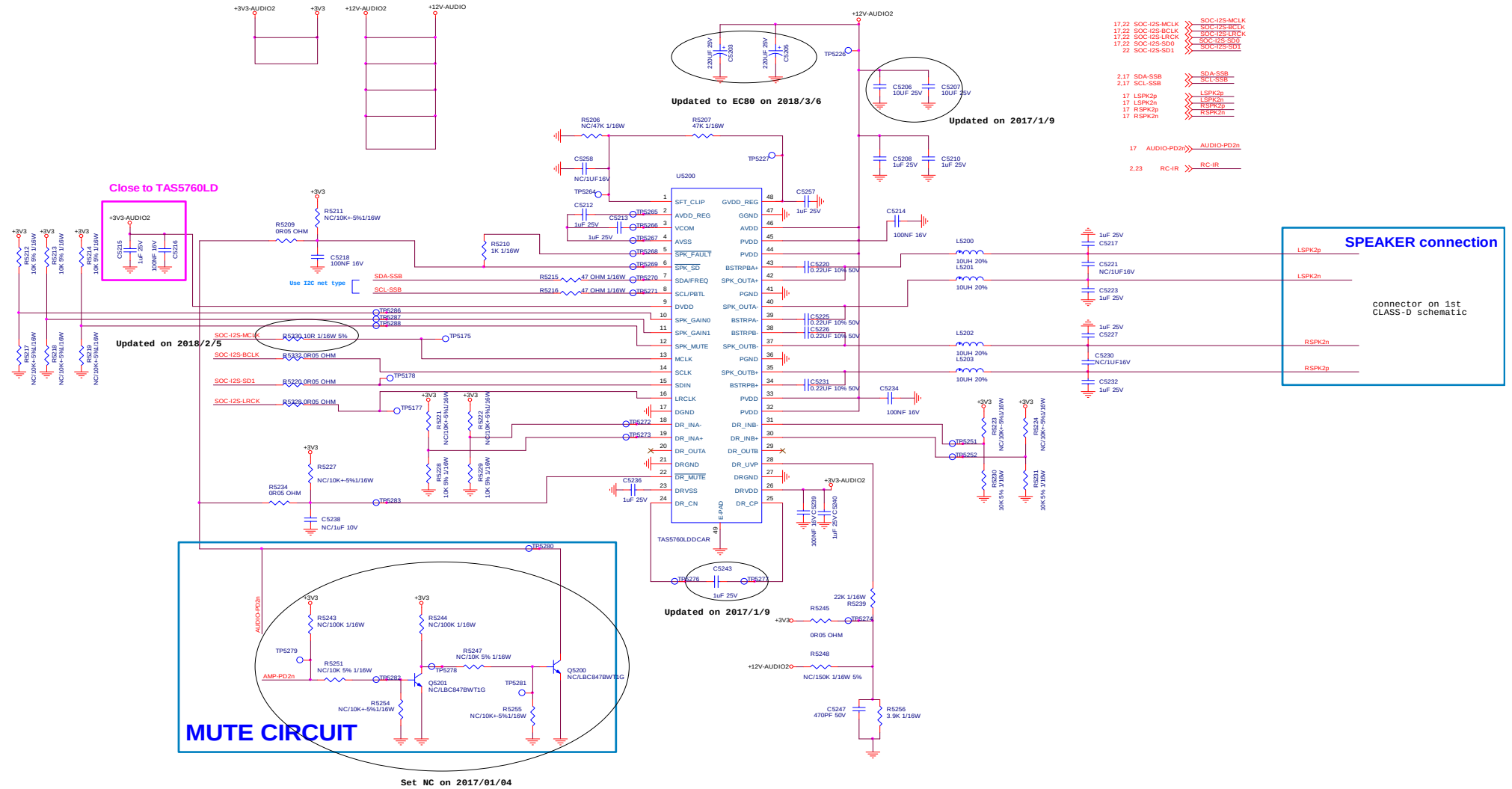
9-11-15 DCDC-SYSTEM-POWER2



9-11-16 AUDIO-1st-CLASS-D-AMP

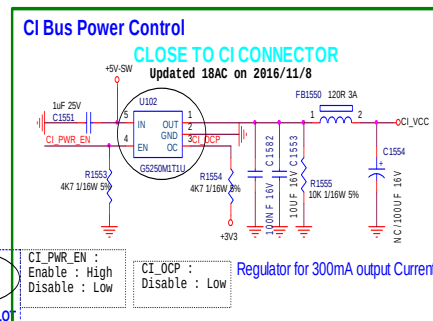
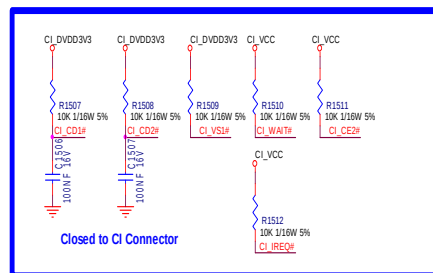
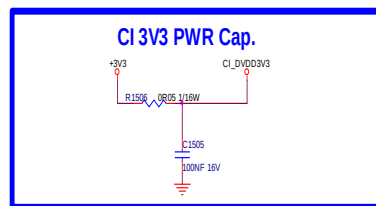
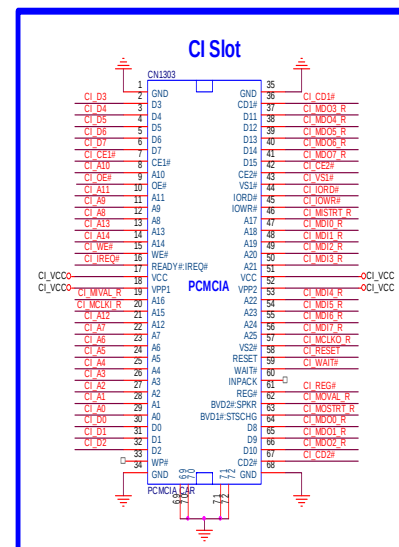
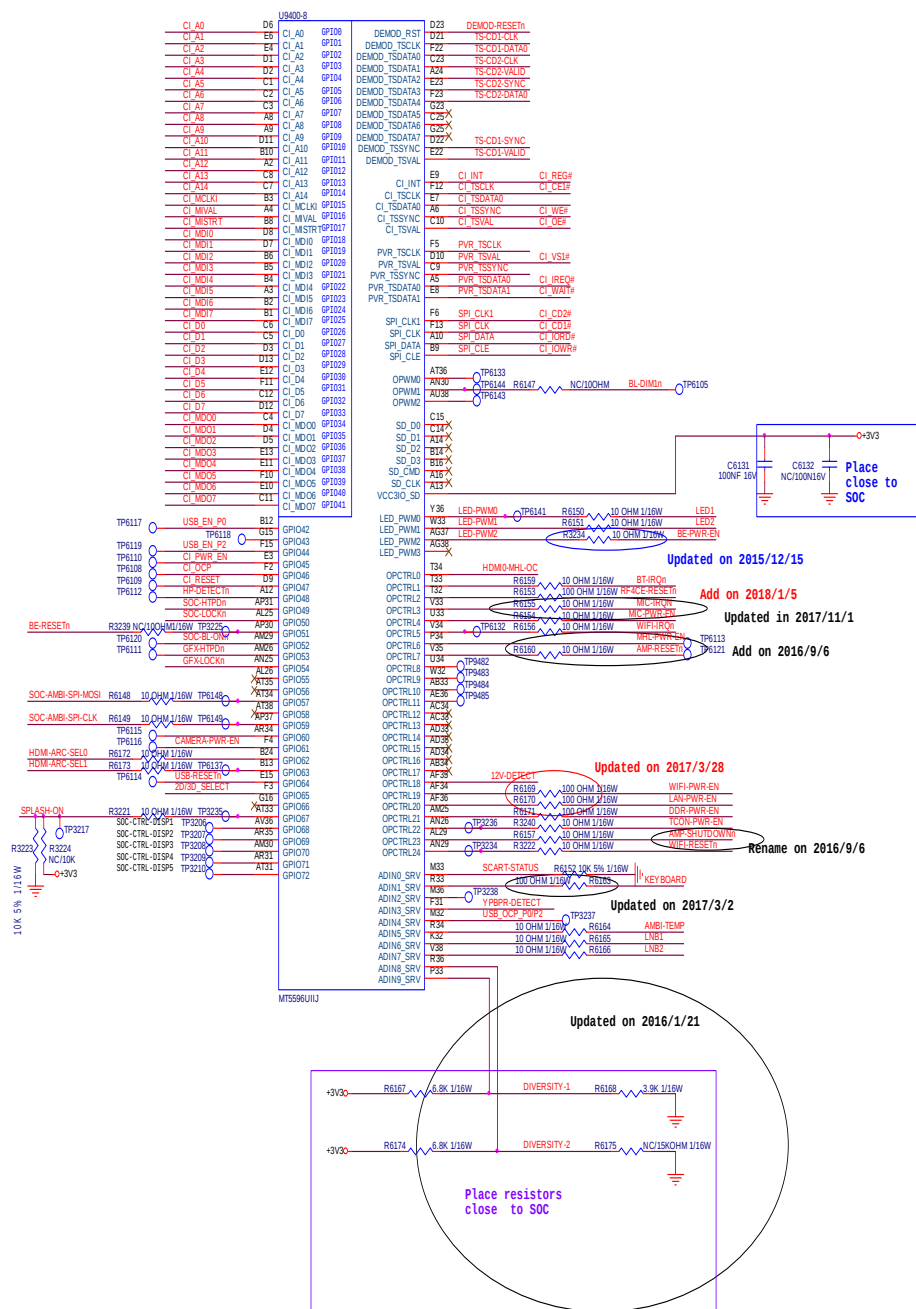


9-11-17 AUDIO-2nd-CLASS-D-AMP

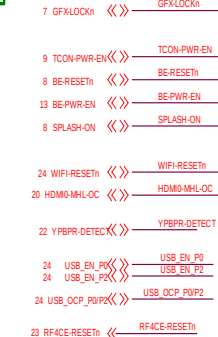
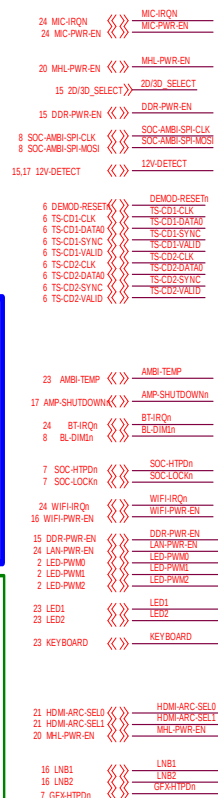
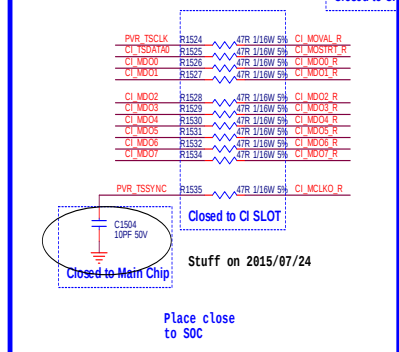


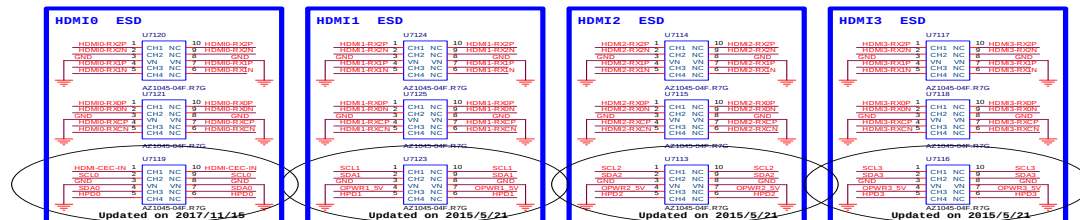
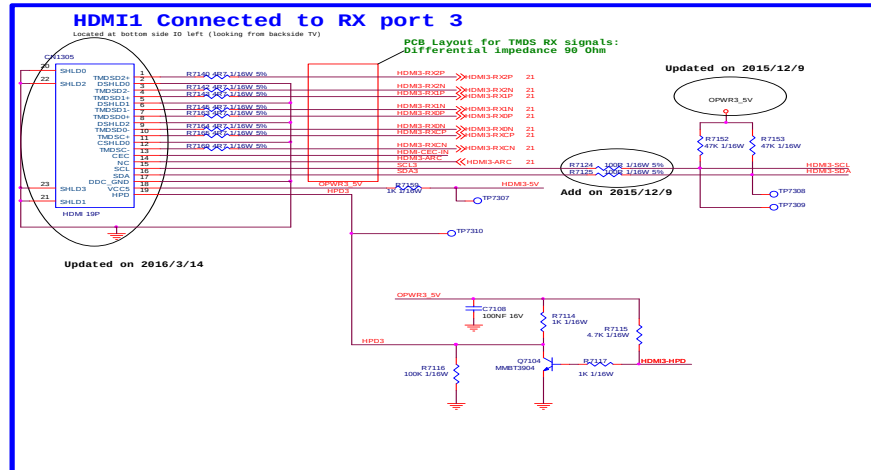
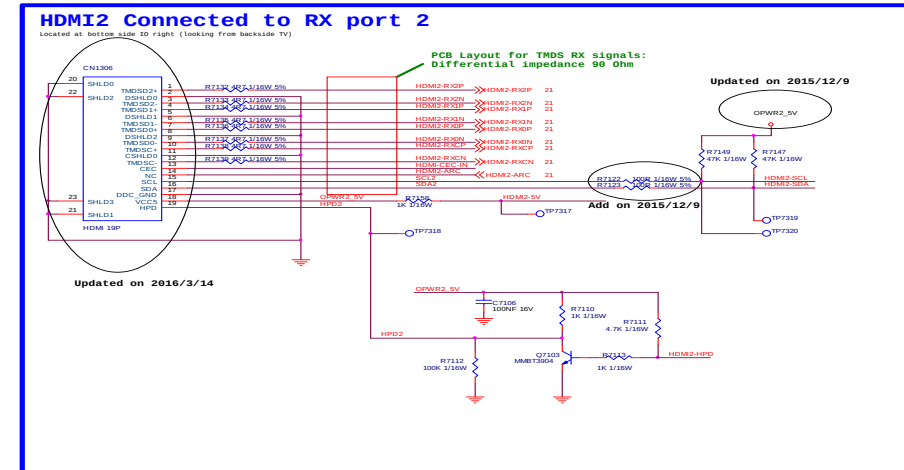
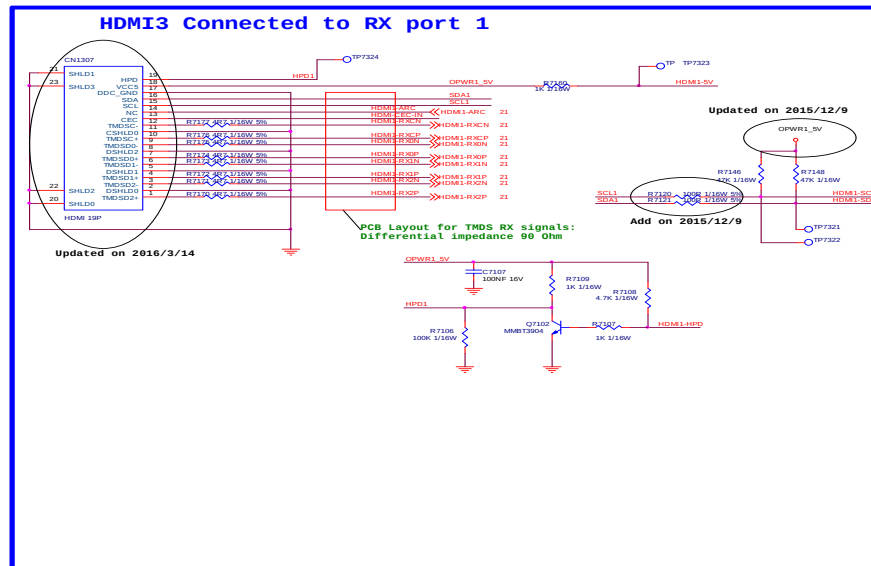
Updated on 2018/3/6

9-11-18 PCMCIA



Parrel TS Output to PCMCIA damping used to close Main Chip	Parrel TS Output to Main Chip damping used to close PCMCIA
CI_MISTR	CI_MOSTR
CI_MIVAL	CI_MOVAL
CI_MCLKI	CI_MCLKO
CI_MDI0	CI_MD00
CI_MDI1	CI_MD01
CI_MDI2	CI_MD02
CI_MDI3	CI_MD03
CI_MDI4	CI_MD04
CI_MDI5	CI_MD05
CI_MDI6	CI_MD06
CI_MDI7	CI_MD07



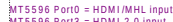


- | | | | |
|--------------|----|--------------|----|
| HDMIO-SCL | ↔↔ | HDMIO-SCL | 21 |
| HDMIO-SPI | ↔↔ | HDMIO-SPI | 21 |
| HDMIO-SPI2 | ↔↔ | HDMIO-SPI2 | 21 |
| HDMIO-SCL | ↔↔ | HDMIO-SCL | 21 |
| HDMIO-SDA | ↔↔ | HDMIO-SDA | 21 |
| UTMI0-SDA | ↔↔ | HDMIO-SDA | 21 |
| HDMIO-SPI2 | ↔↔ | HDMIO-SPI2 | 21 |
| HDMIO-SDA | ↔↔ | HDMIO-SDA | 21 |
| HDMIO-HPCBUS | ↔↔ | HDMIO-HPCBUS | 21 |
| HDMIO-HFPO | ↔↔ | HDMIO-HFPO | 21 |
| HDMIO-HFPO | ↔↔ | HDMIO-HFPO | 21 |
| HDMIO-HFPO | ↔↔ | HDMIO-HFPO | 21 |
| MIL-PWEN-EN | ↔↔ | MIL-PWEN-EN | 19 |
| HDMIO-CEC-IN | ↔↔ | HDMIO-CEC-IN | 21 |
| MIL-SENSE | ↔↔ | MIL-SENSE | 21 |
| HDMIO-SV | ↔↔ | HDMIO-SV | 21 |
| HDMIO-SV | ↔↔ | HDMIO-SV | 21 |
| HDMIO-SV | ↔↔ | HDMIO-SV | 21 |
| HDMIO-SV | ↔↔ | HDMIO-SV | 21 |
| HDMIO-MIL-OC | ↔↔ | HDMIO-MIL-OC | 19 |

Clearance = 2 x tracewidth for all SCL and SDA

Clearance = 2 x tracewidth for all SCL and SDA

HDMI TMDS signals
Differential 100 Ohm nets

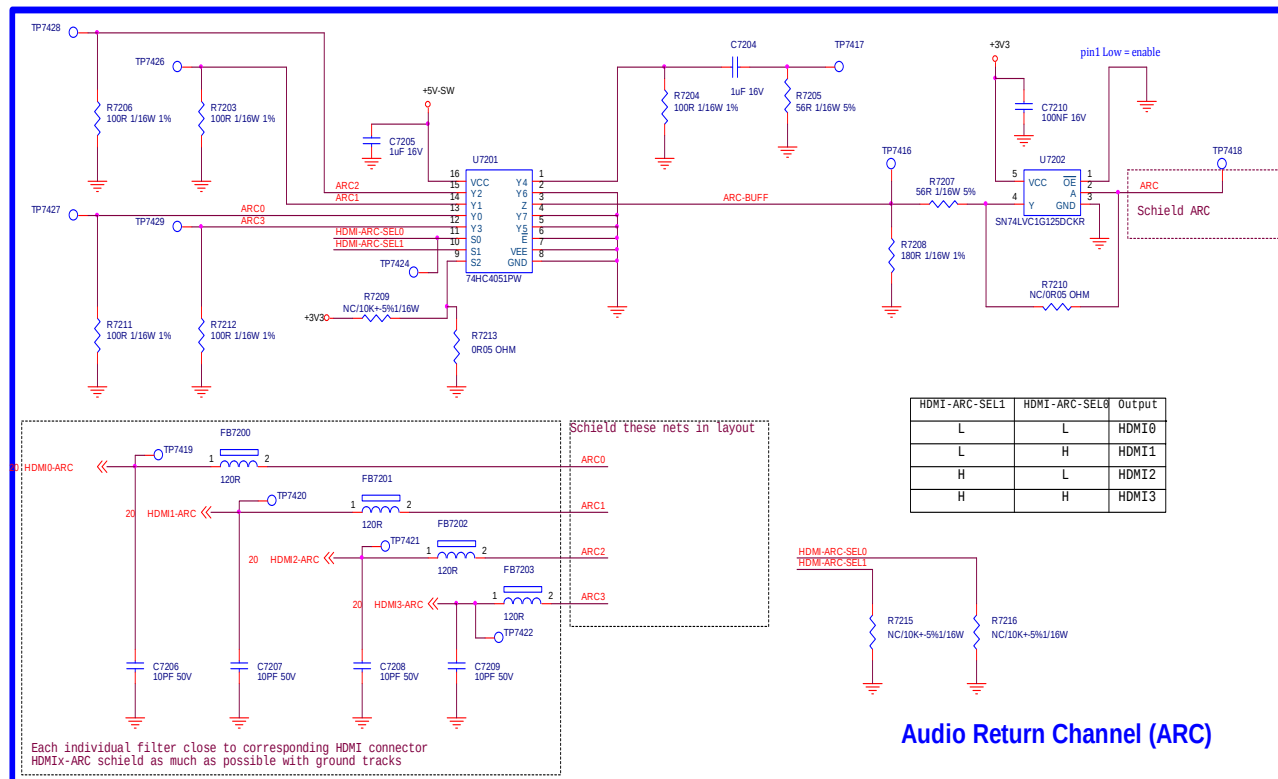
[illegible]

HDMI-ARC-SEL1 <> HDMI-ARC-SEL1 19

HDMI-ARC-SEL0 <> HDMI-ARC-SEL0 19

ARC <> ARC 22

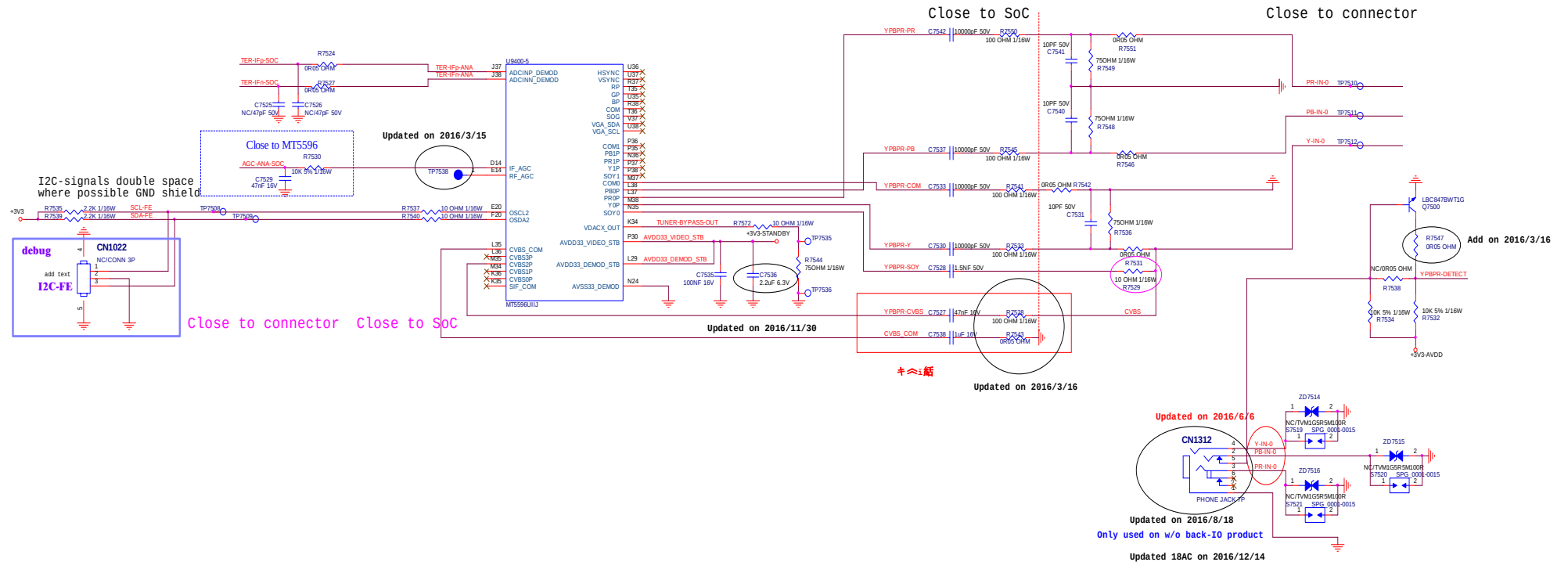
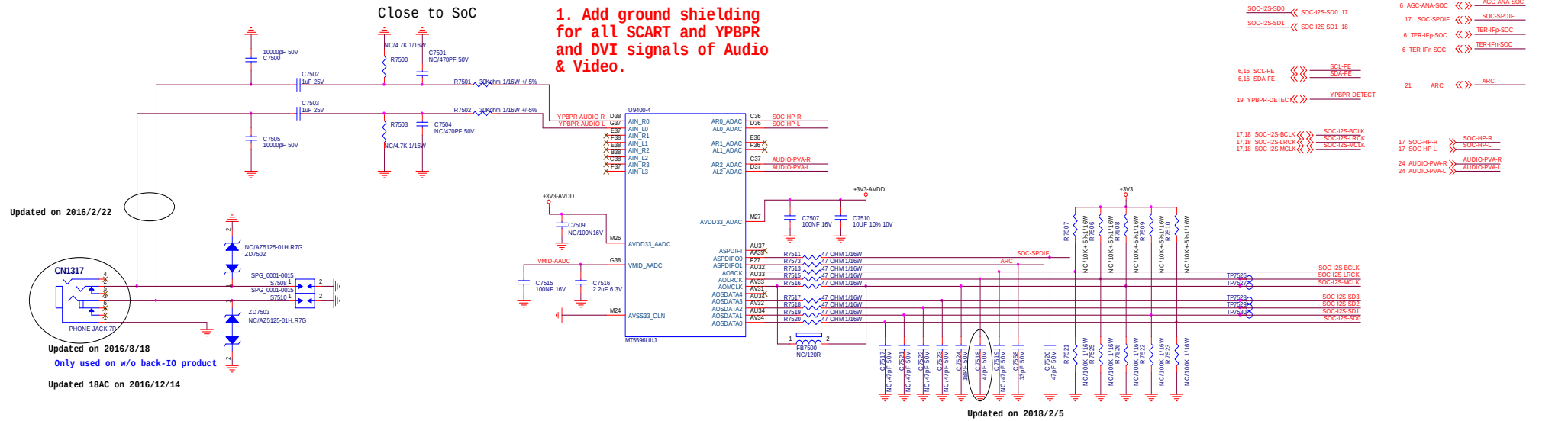
Schild ARC



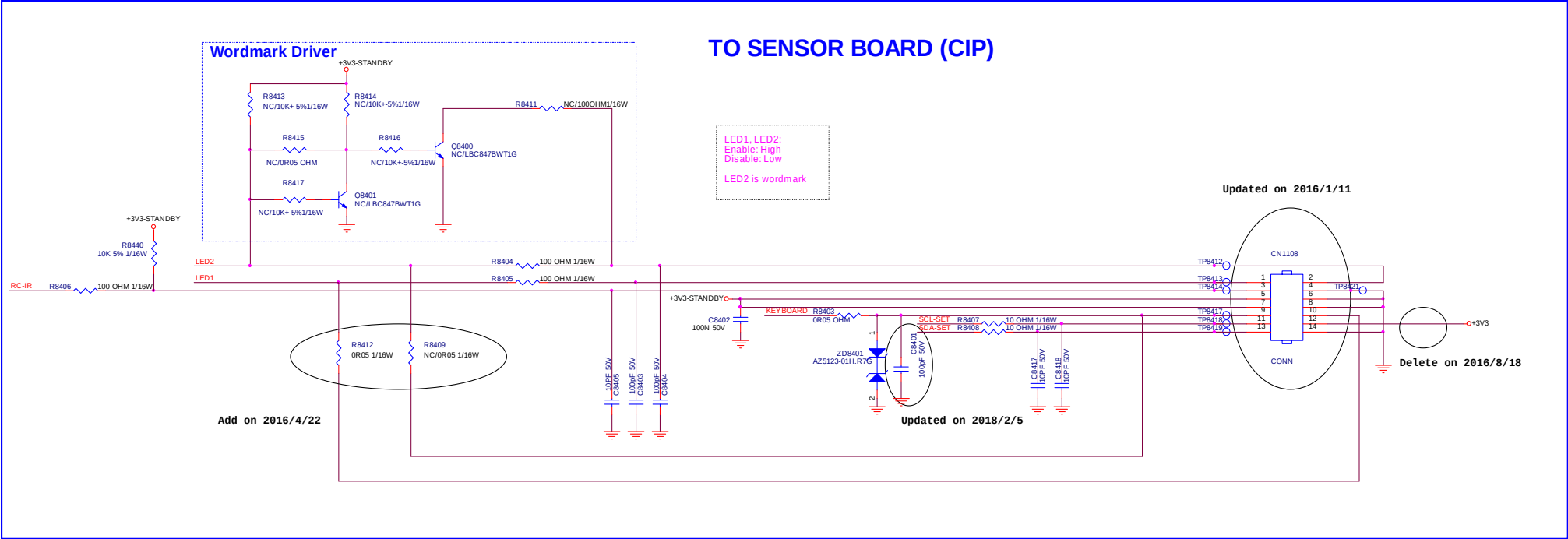
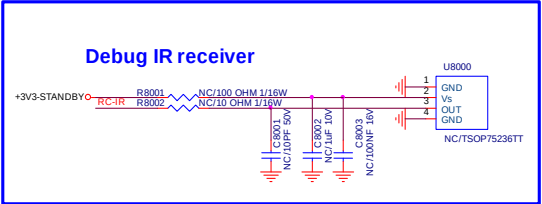
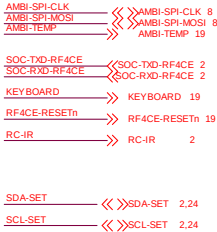
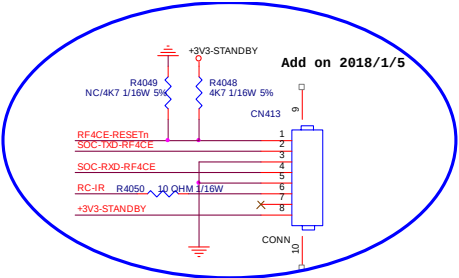
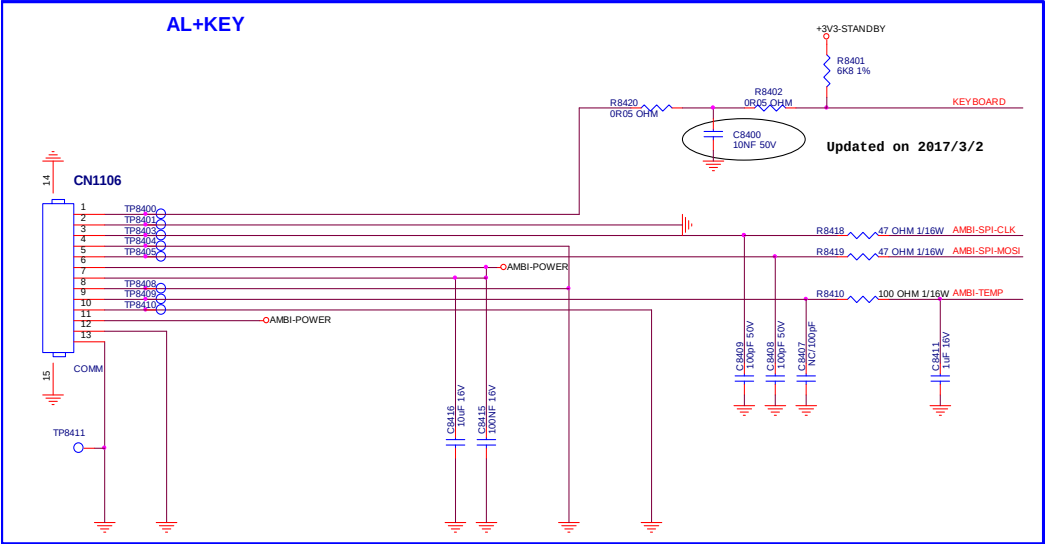
HDMI-ARC-SEL1	HDMI-ARC-SEL0	Output
L	L	HDMI0
L	H	HDMI1
H	L	HDMI2
H	H	HDMI3

Audio Return Channel (ARC)

9-11-21 SCART-YPbPr-CVBS



9-11-22 CTRL-CONNECTORS

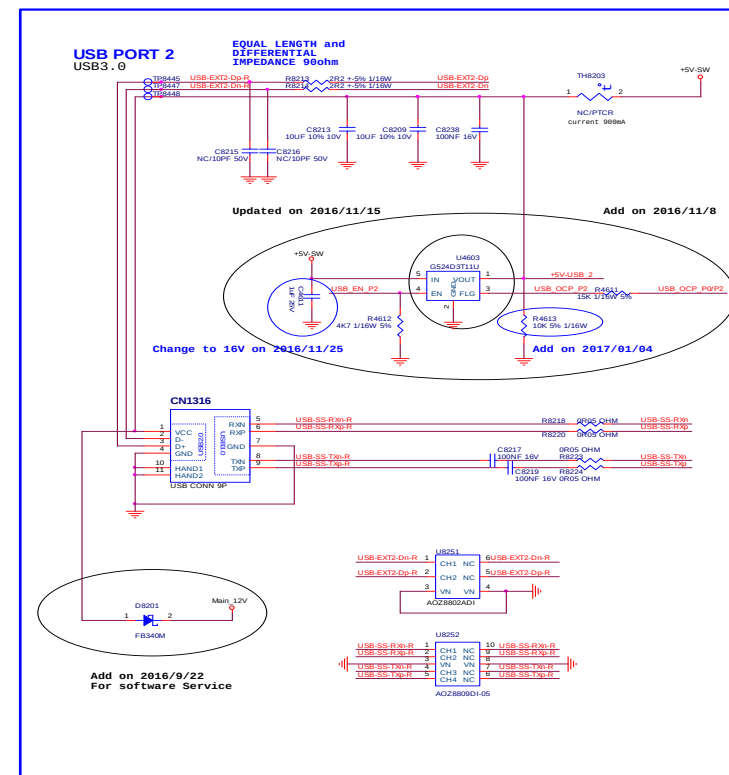
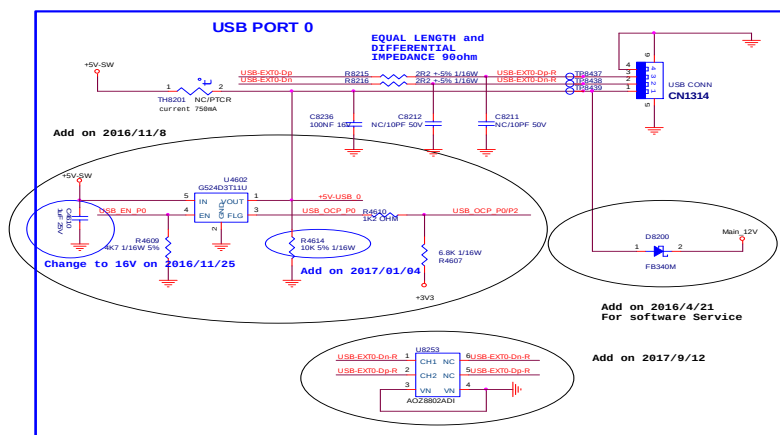
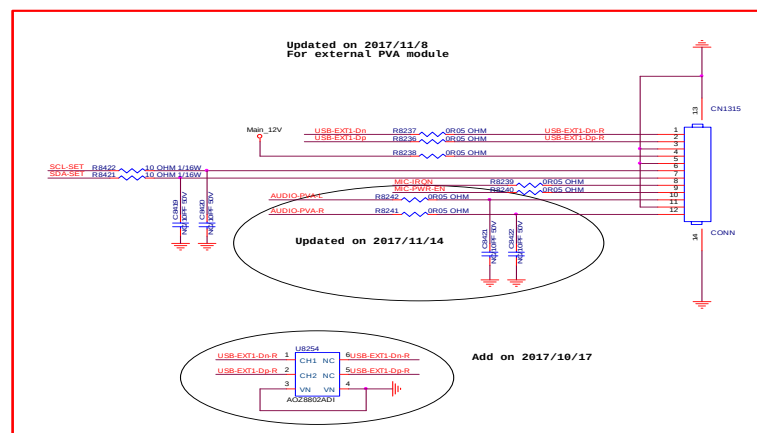
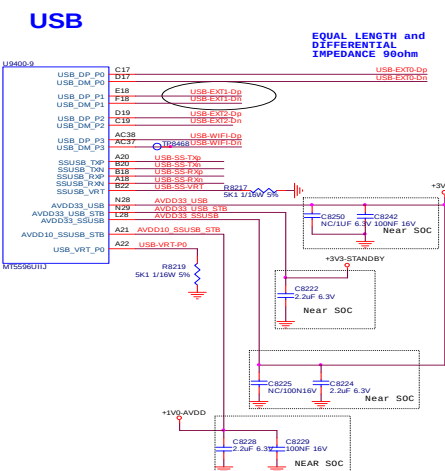
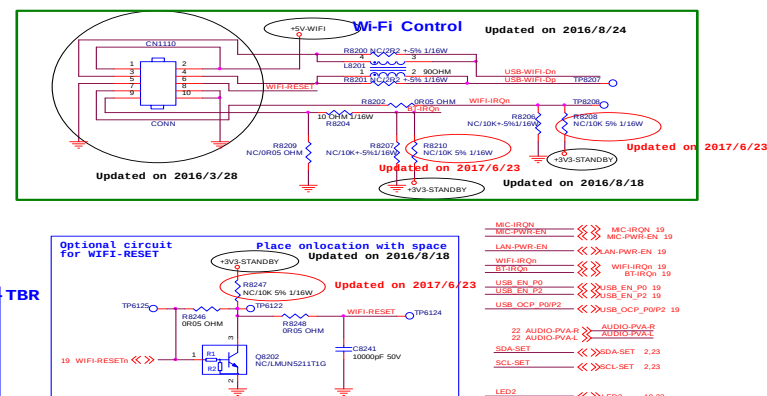
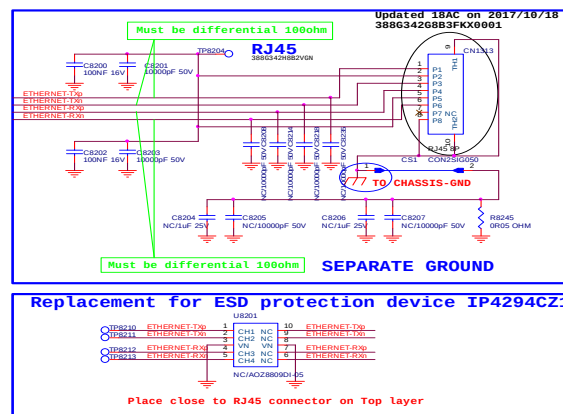


TO SENSOR BOARD (CIP)

LED1, LED2:
Enable: High
Disable: Low
LED2 is wordmark

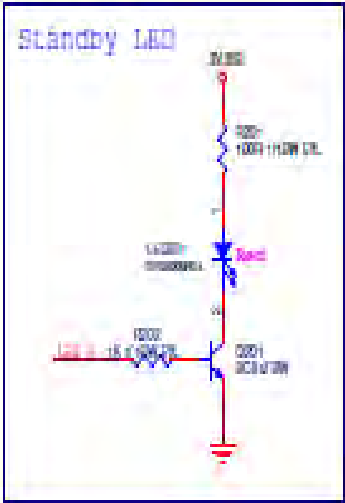
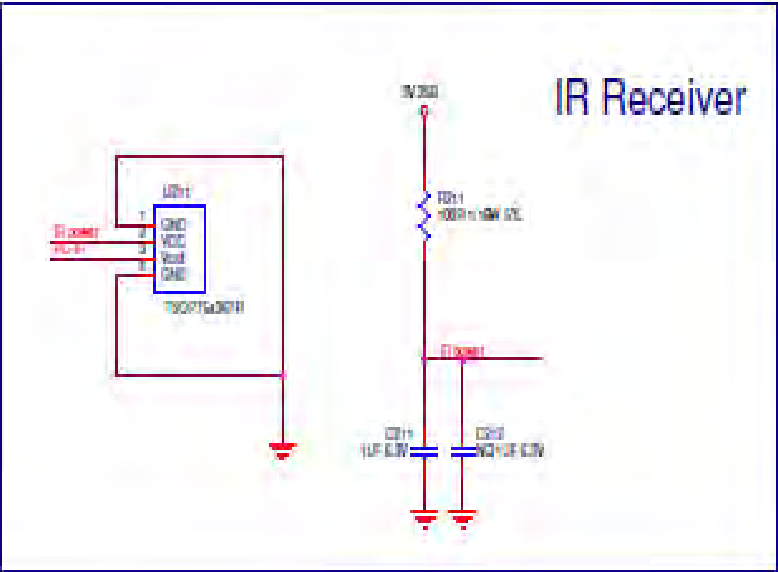
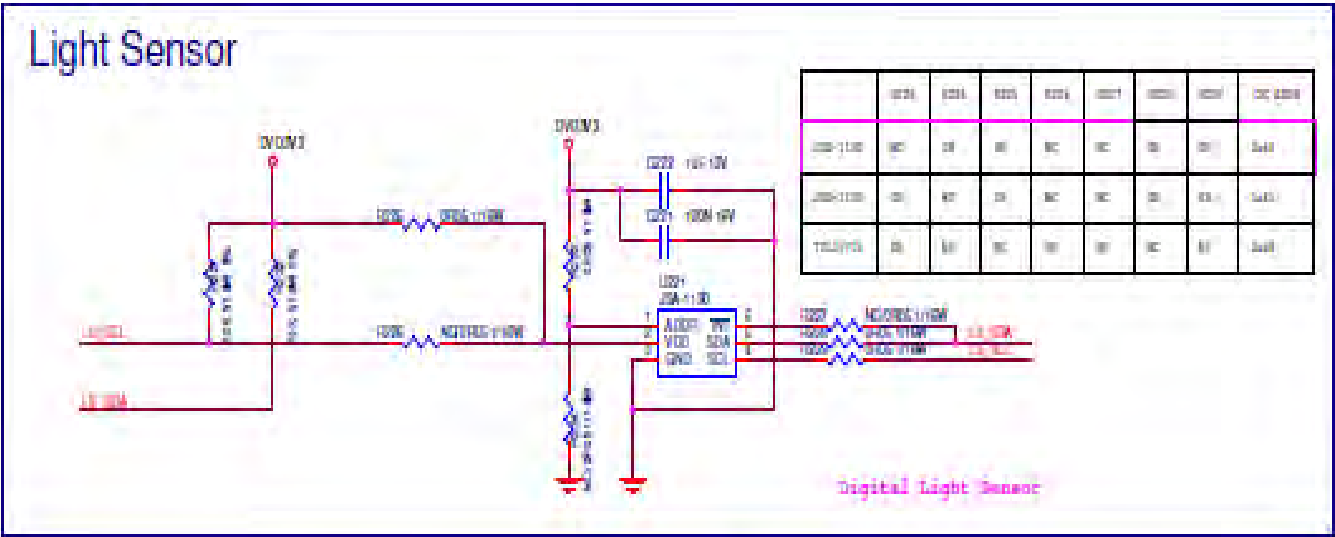
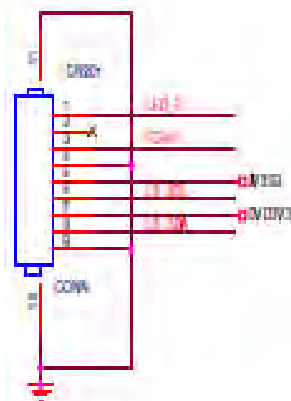
Updated on 2016/1/11

Delete on 2016/8/18

[illegible]

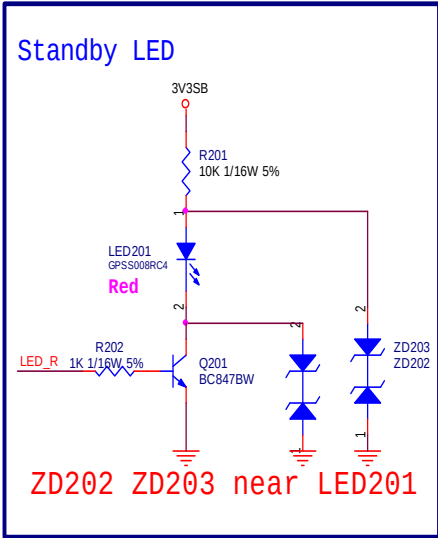
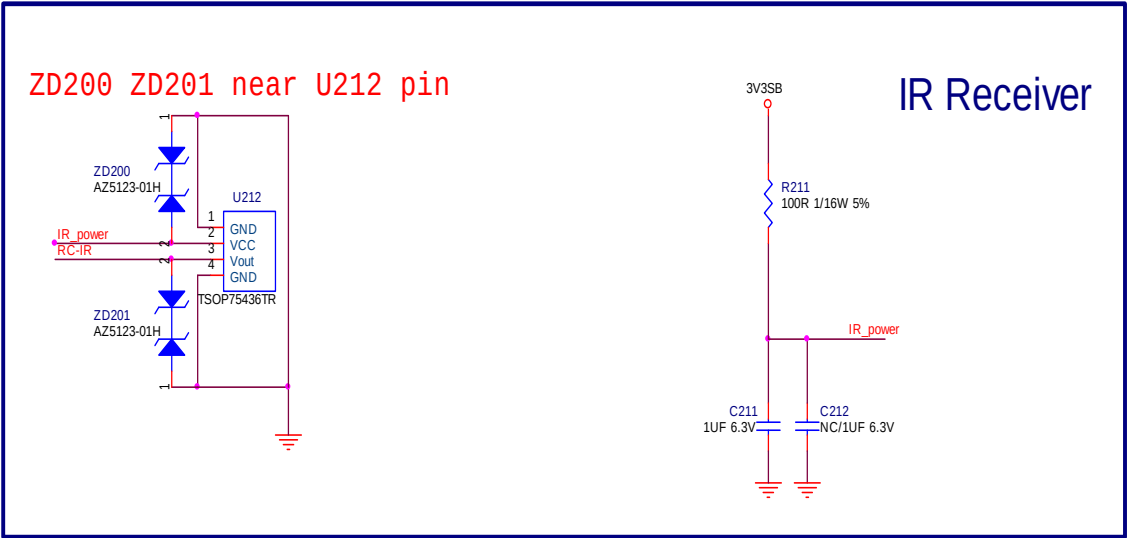
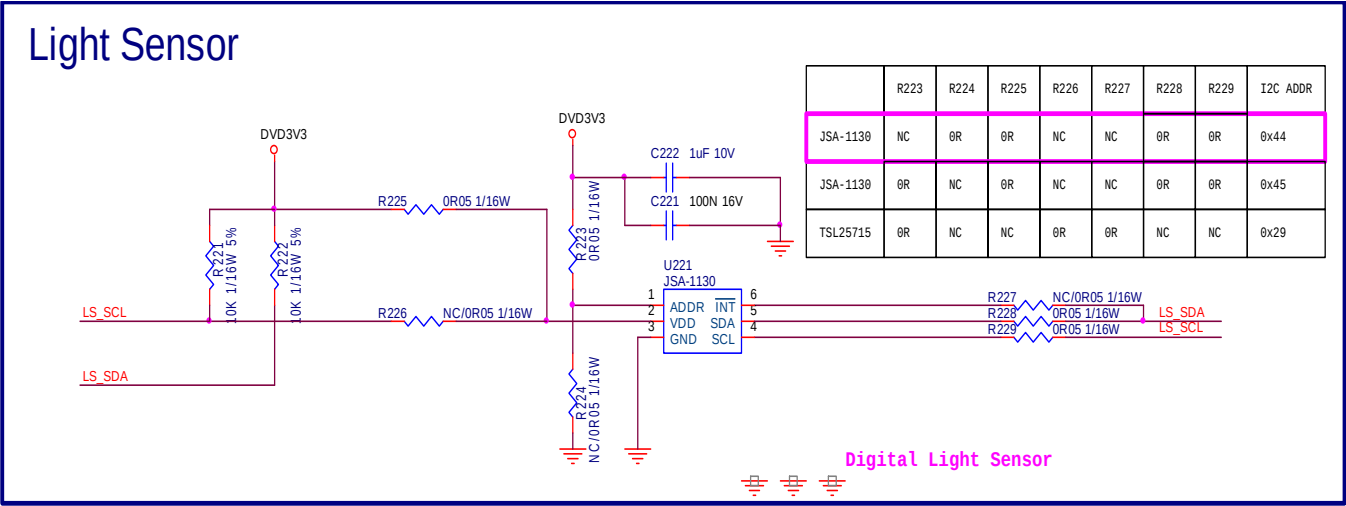
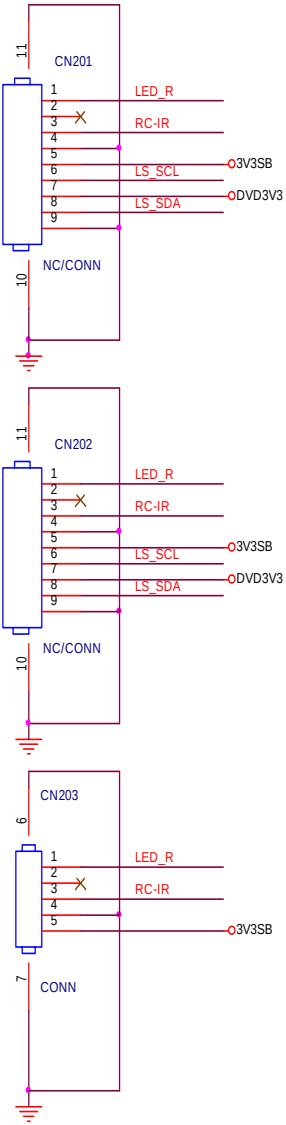
9.12 J 715G8694 IR/LED Panel (For 7503 Series)

9-12-1 LED&IR&Light sensor

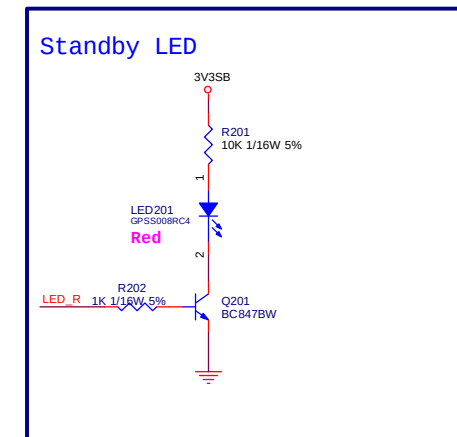
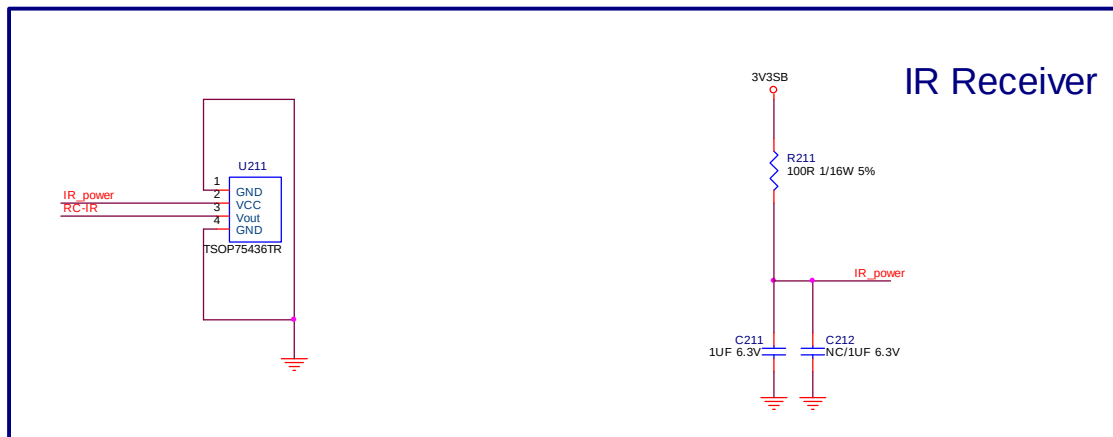
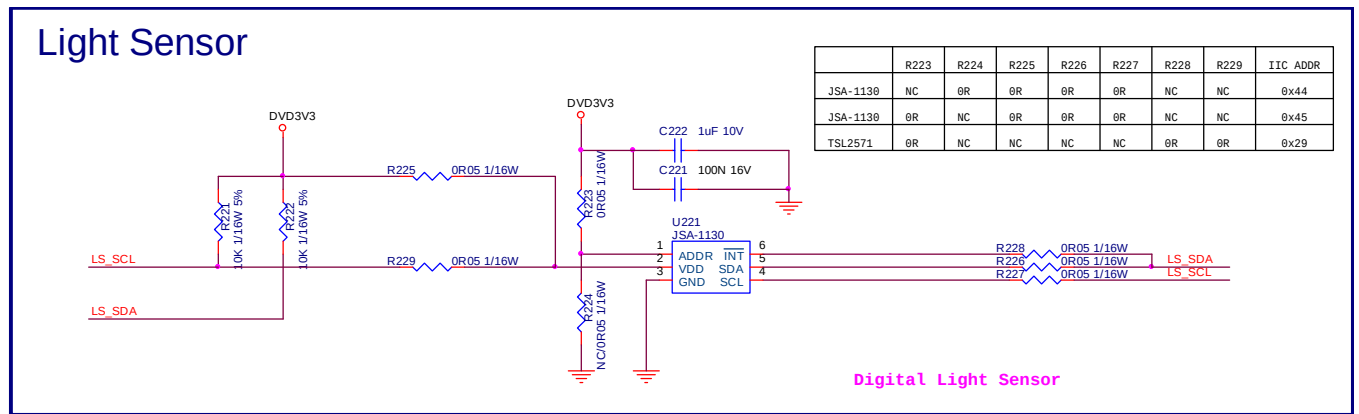
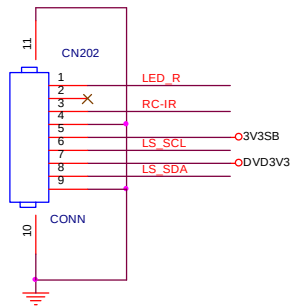


9.13 J 715G8623 IR/LED Panel (For 7303/OLED873/OLED803 Series)

9-13-1 IR

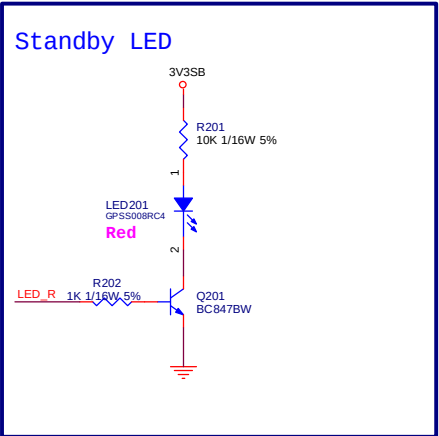
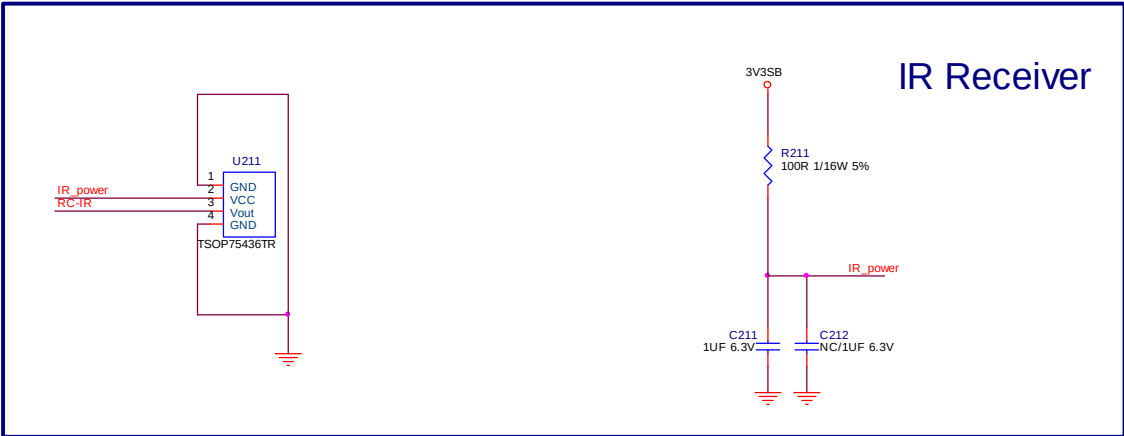
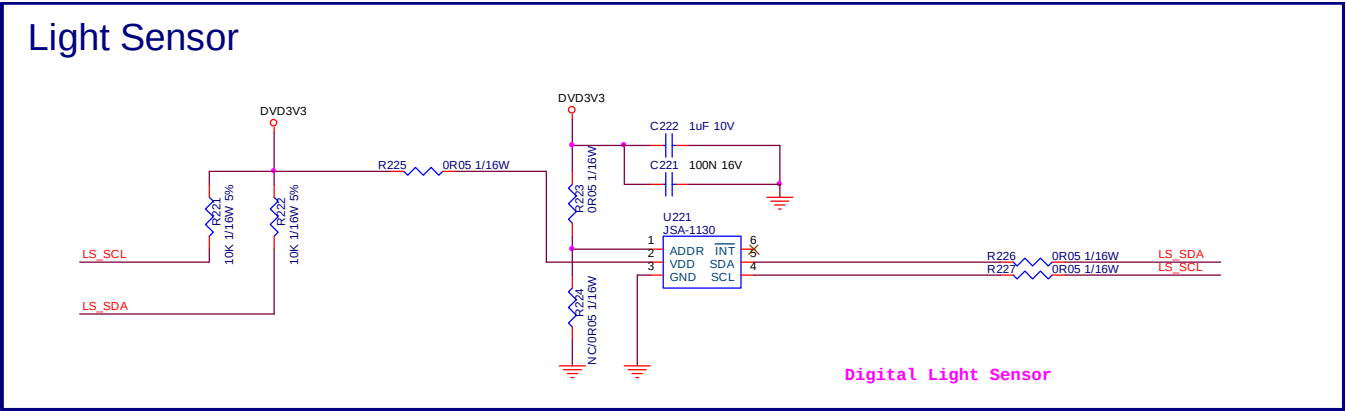
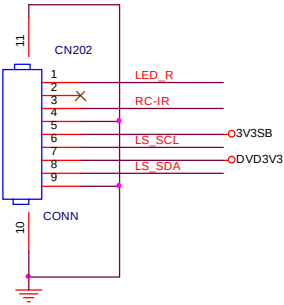


9-14-1 IR&STB LED&Light sensor



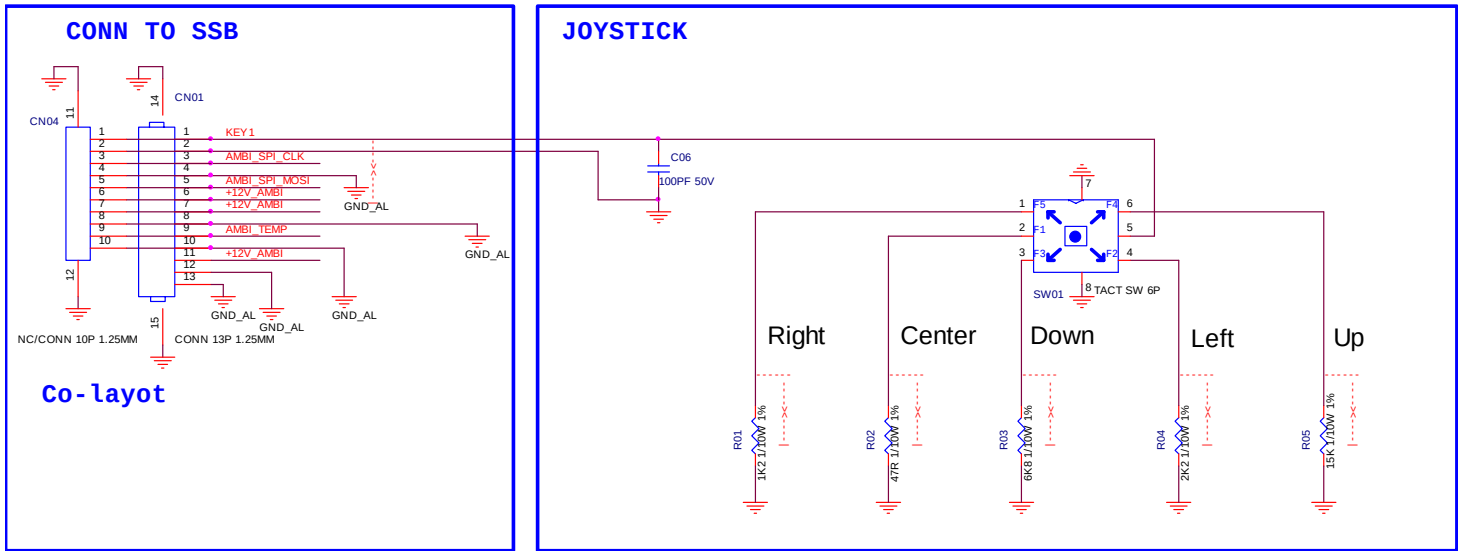
9.15 J 715G9363 IR/LED Panel (For OLED973/OLED903 Series)

9-15-1 IR&STB LED&Light sensor



9.16 E 715G8555 Keyboard control panel (For 7**3/8*03/OLED873/OLED803/OLED903 Series)

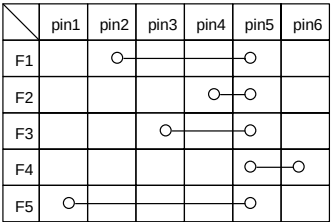
9-16-1 Key



Joystick key define

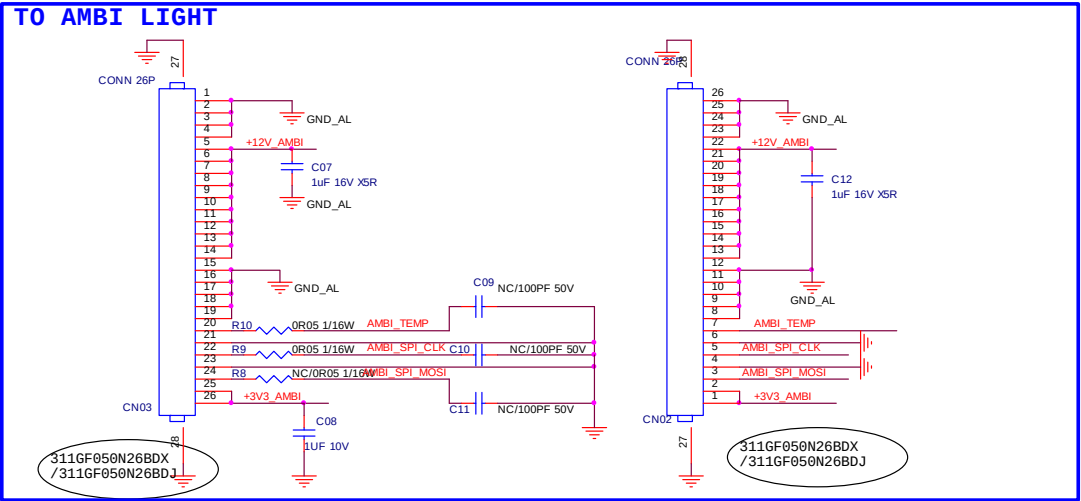
Direction	switch	Key function	Resistance	Voltage	Range
Center	2-5 short	Menu	0R	0V	0.0 to 0.22 V
Right	1-5 short	CH+	1K2	0.5V	0.39 to 0.60 V
Left	4-5 short	CH-	2K2	0.81V	0.67 to 0.95 V
Down	3-5 short	VOL-	6K8	1.65V	1.41 to 1.87 V
Up	6-5 short	VOL+	15K	2.27V	1.93 to 2.58 V
NA	NA	No function	NA	3.3V	3.135 to 3.465V

Joystick circuit diagram



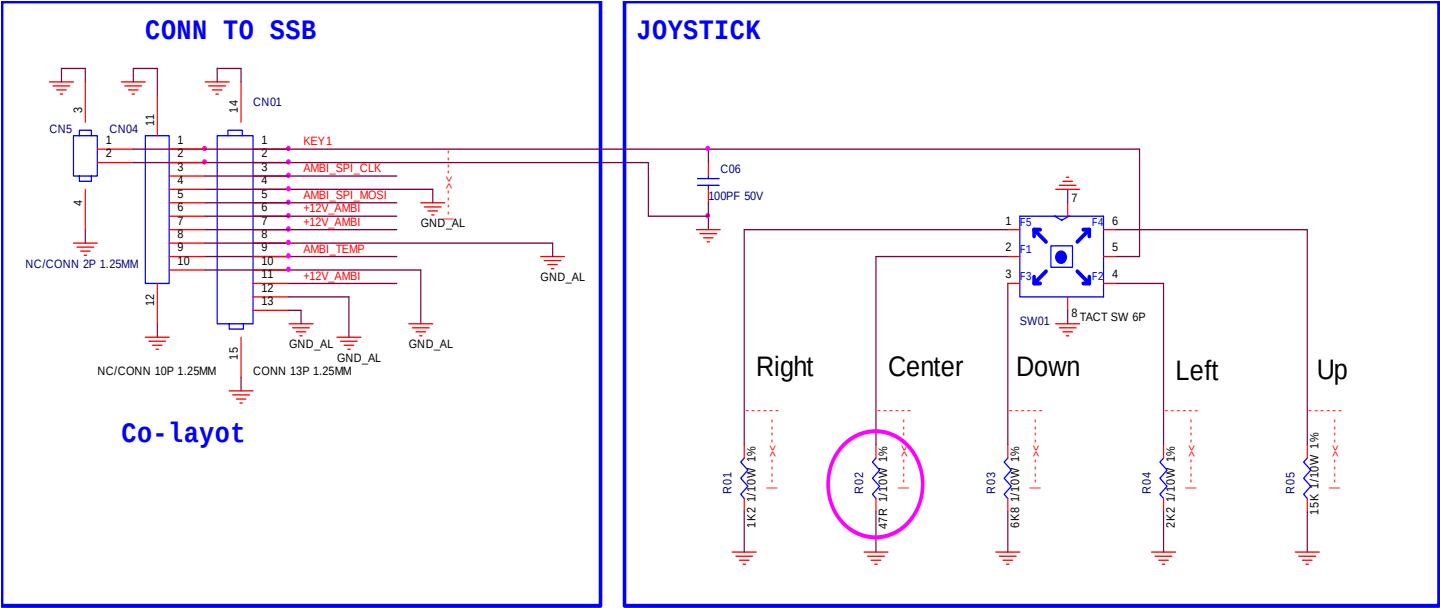
Joystick diversity for AL

	CN03	C07	R9	R10
AL2	N	N	N	N
AL3/AL4	Y	Y	Y	Y



9.17 E 715G9116 Keyboard control panel (For OLED973 Series)

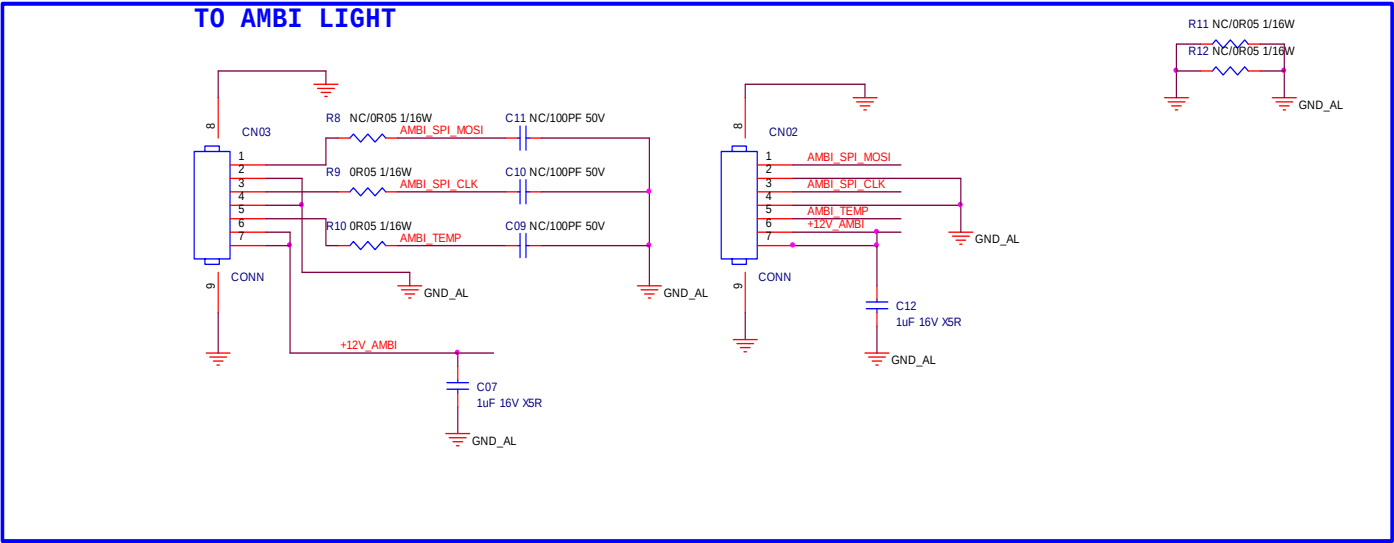
9-17 1 Key



Direction	switch	Key function	Resistance	Voltage
Center	2-5 short	Menu	47R	0V
Right	1-5 short	CH+	1K2	0.5V
Left	4-5 short	CH-	2K2	0.81V
Down	3-5 short	VOL-	6K8	1.65V
Up	6-5 short	VOL+	15K	2.27V
		No function		3.3V

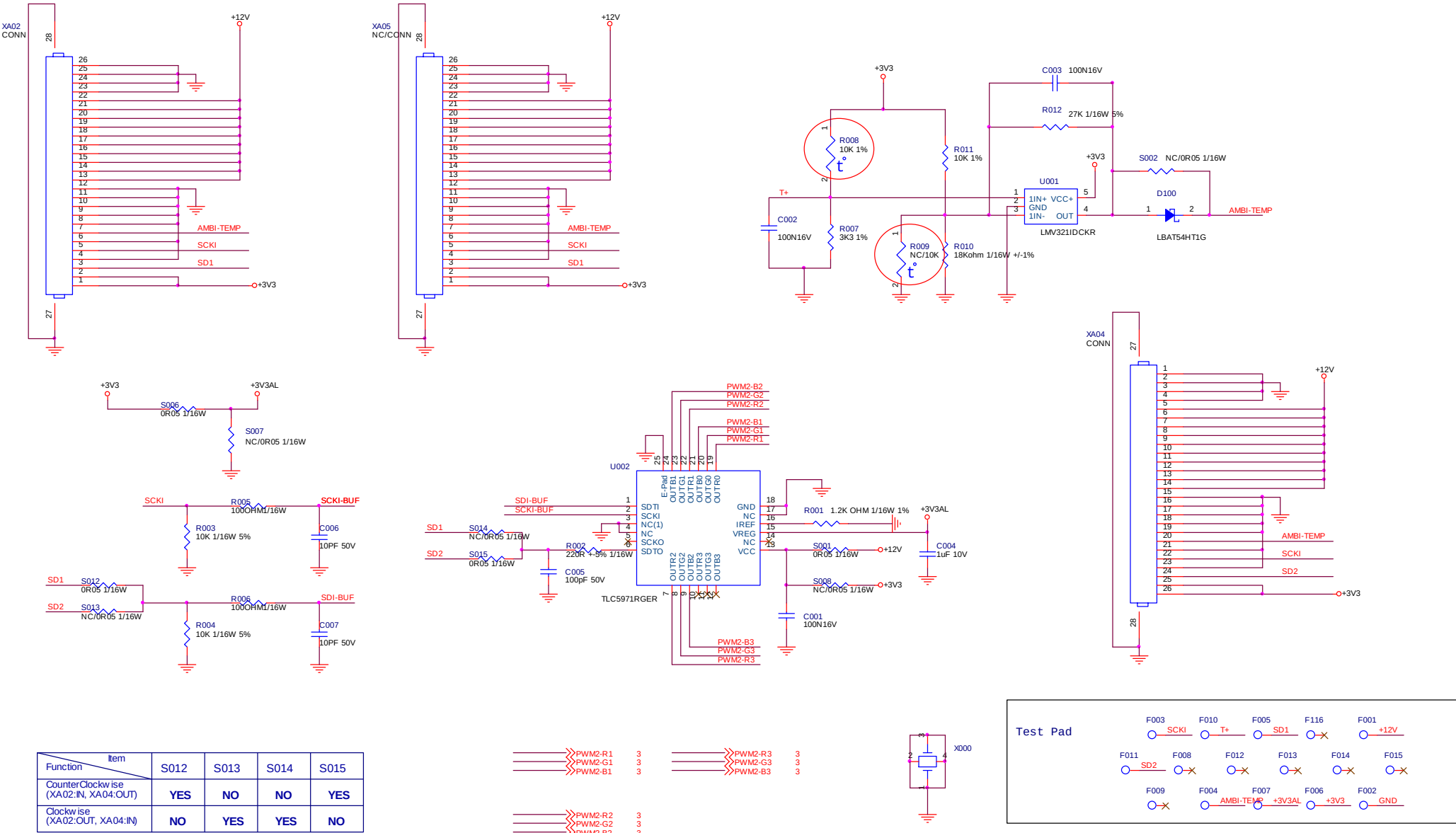
Joystick circuit diagram

	pin1	pin2	pin3	pin4	pin5	pin6
F1		○	—	—	○	
F2				○	○	
F3			○	—	○	
F4					○	○
F5	○	—			○	

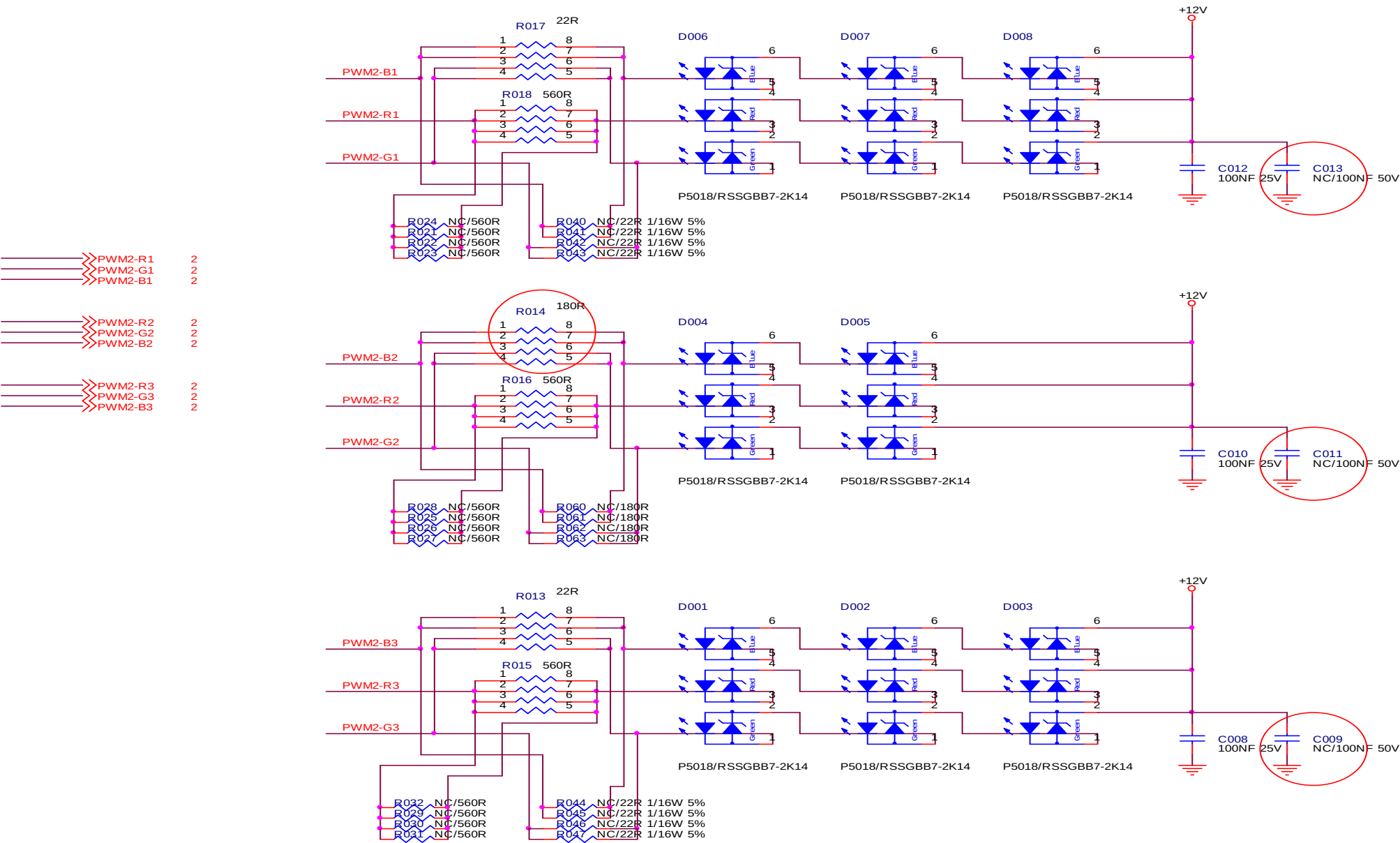


9.18 715G6981 AMBI Panel (For 43" 7303/7363/7373/7383/7393, 65"OLED803/903 Series)

9-18-1 TLC5971

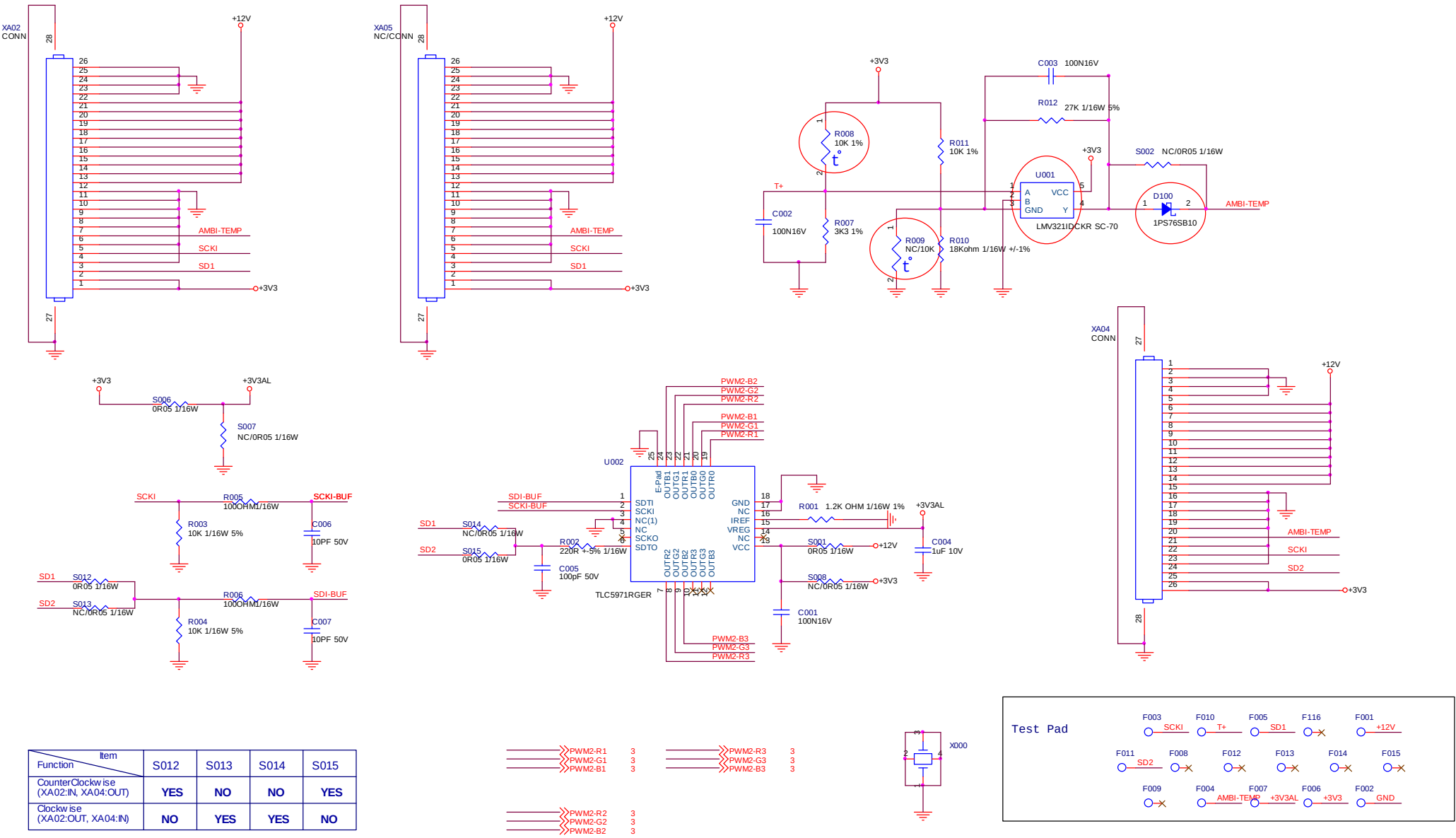


9-18-2 Ambilight 8-LED

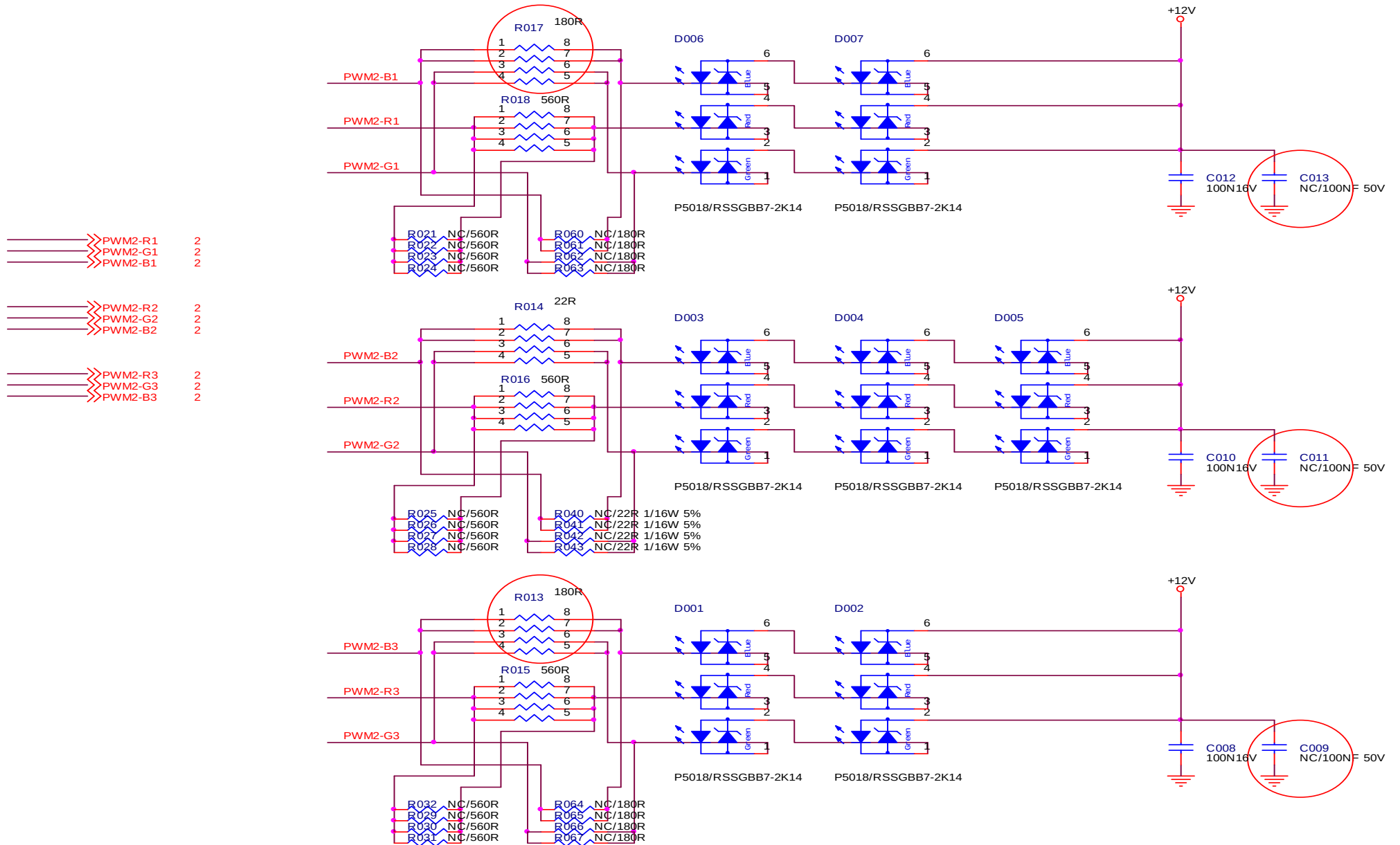


9.19 715G7004 AMBI Panel (For 65" 7303/7363/7803/8303/8503, 55"/OLED803/903 Series)

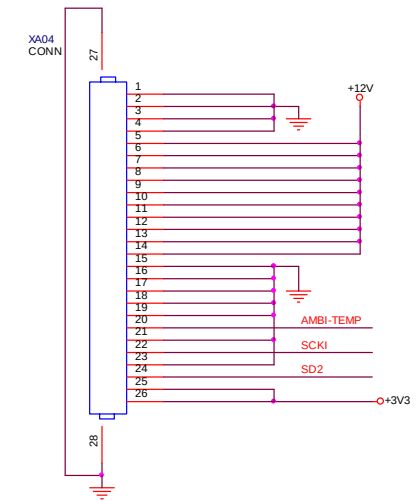
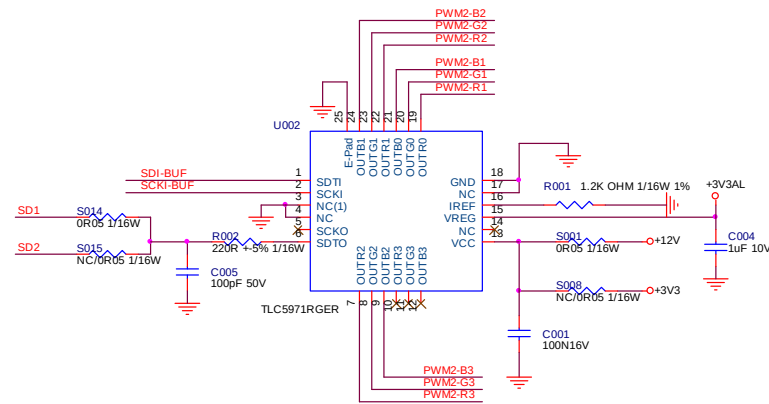
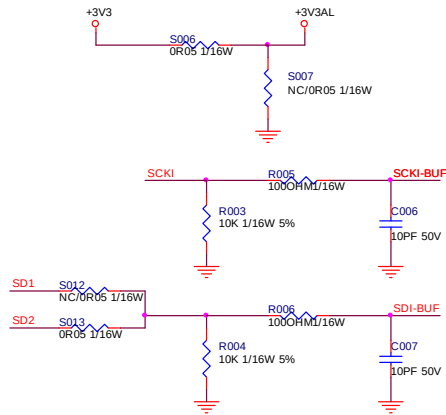
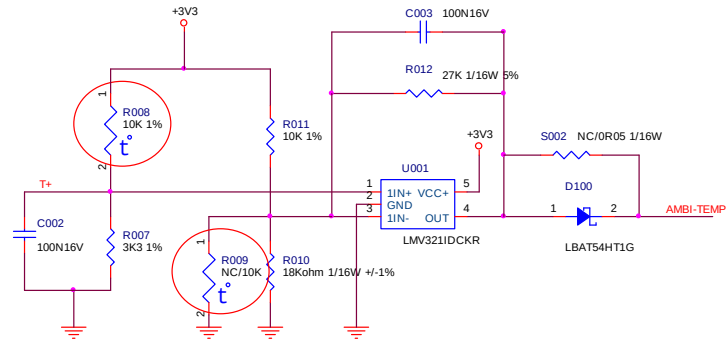
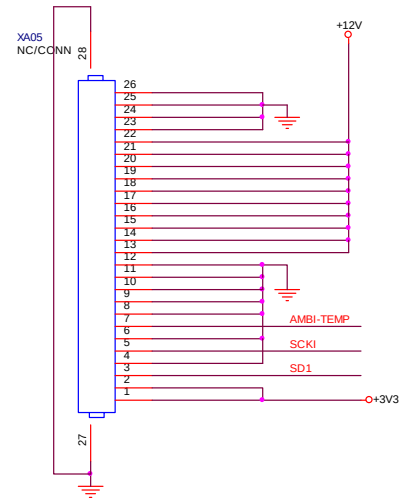
9-19-1 TLC5971



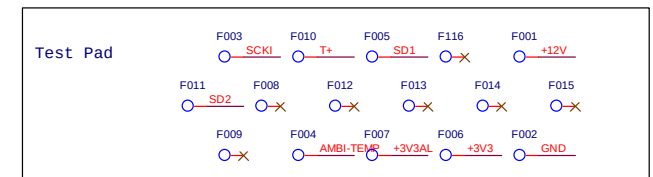
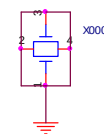
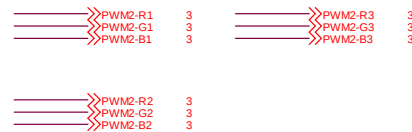
9-19-2 Ambilight 7-LED



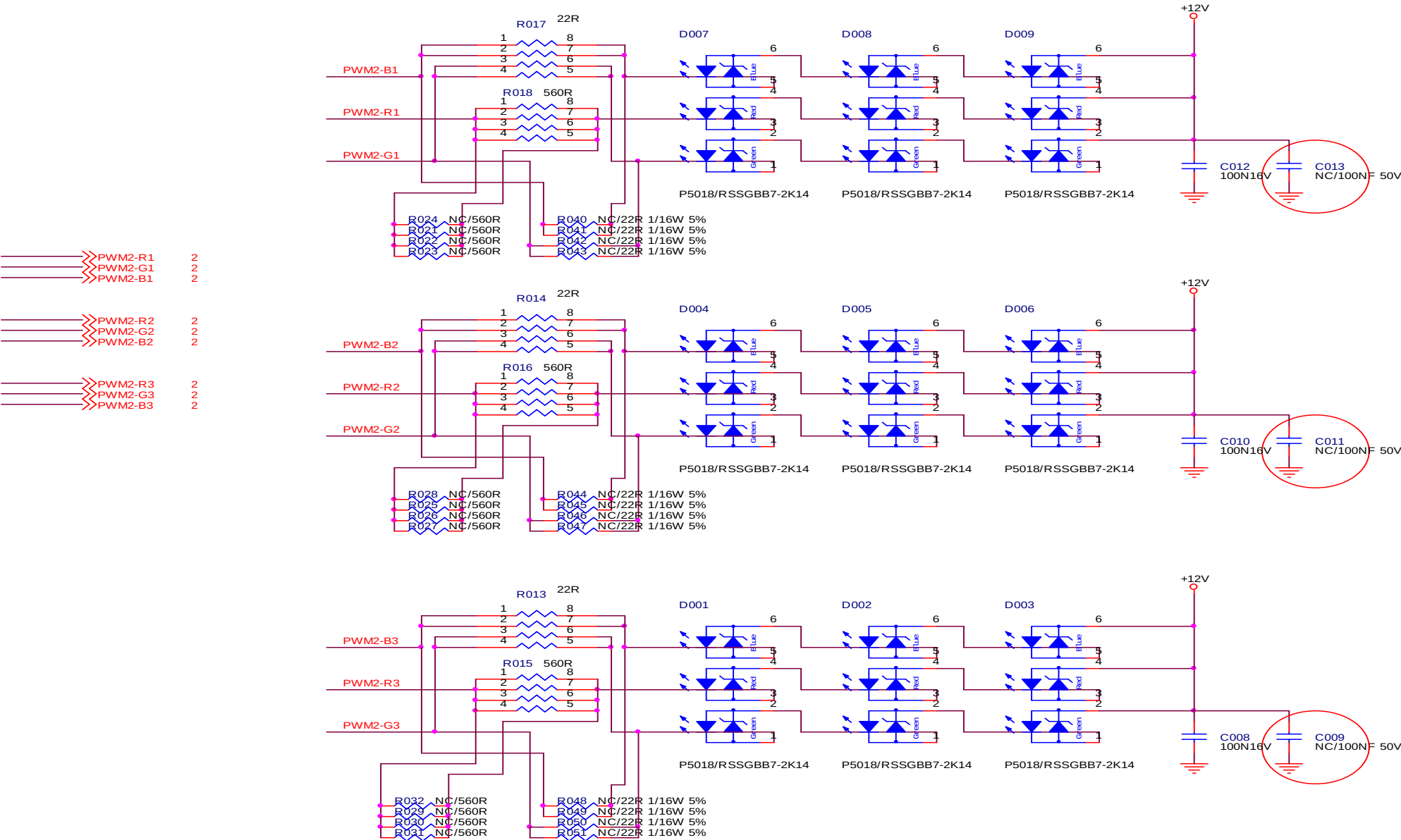
9-20-1 TLC5971



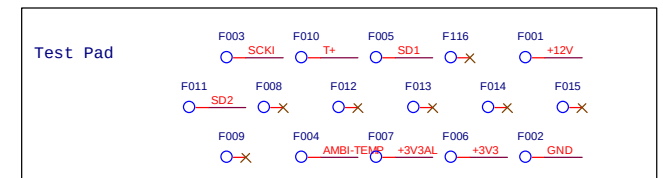
Function \ Item	S012	S013	S014	S015
CounterClockwise (XA02:IN, XA04:OUT)	YES	NO	NO	YES
Clockwise (XA02:OUT, XA04:IN)	NO	YES	YES	NO



9-20-2 Ambilight 9-LED

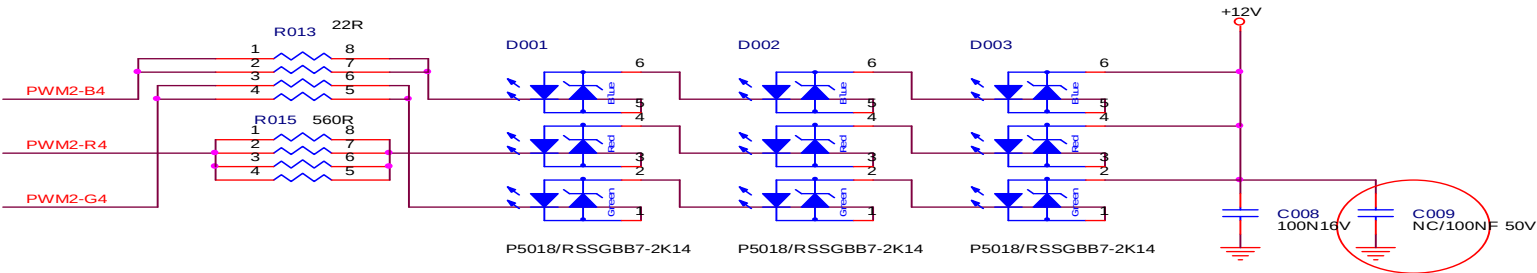
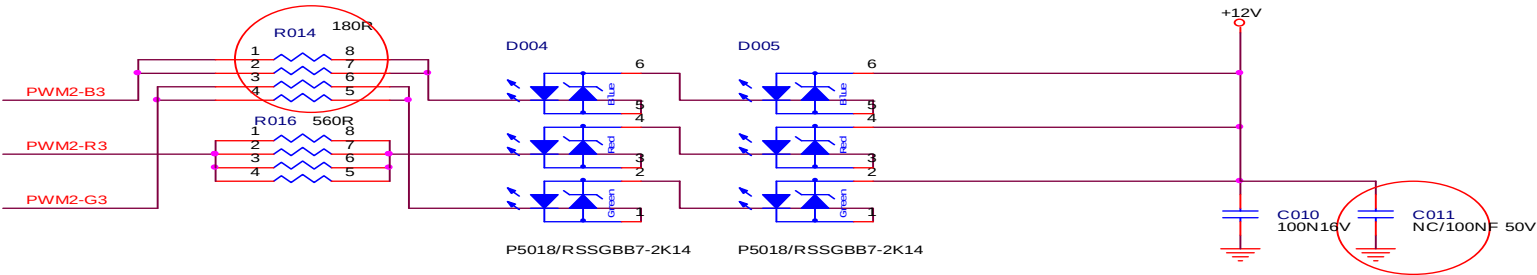
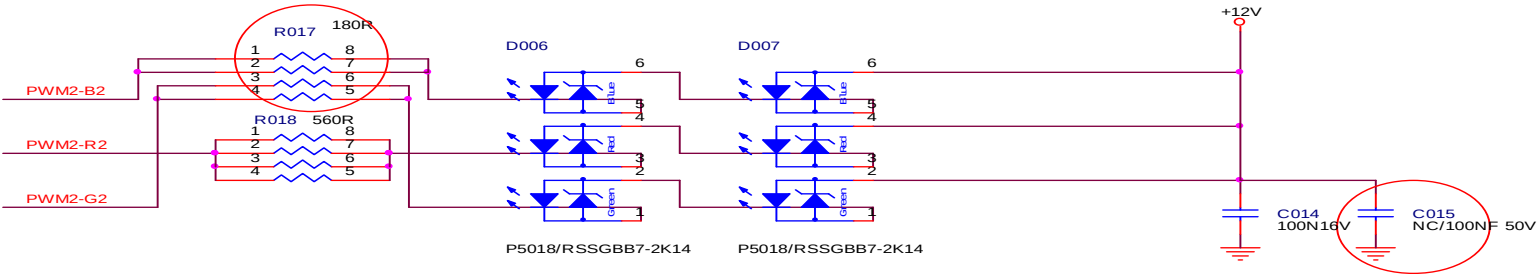
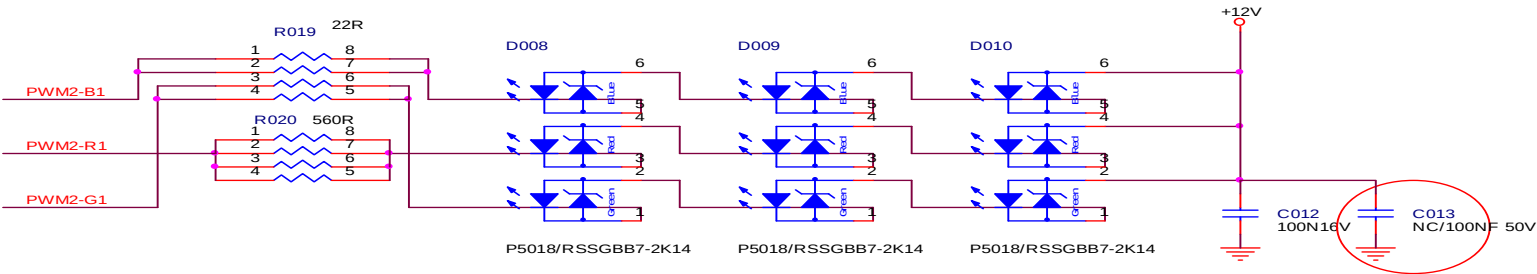
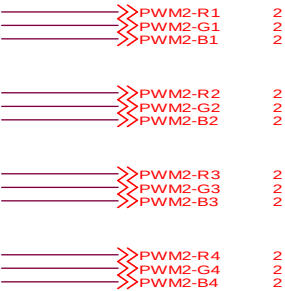


9-21-1 TLC5971

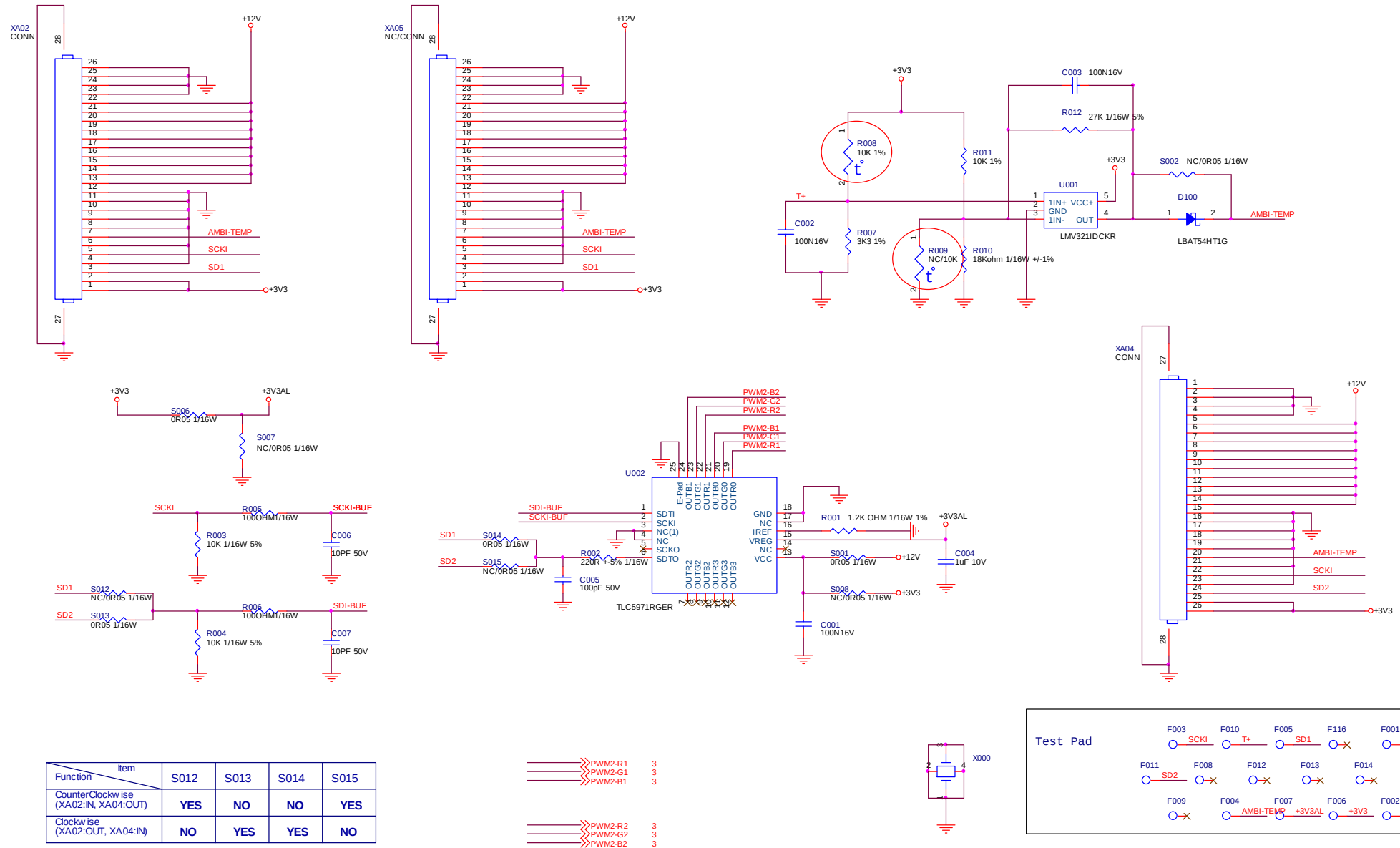


Function \ Item	S012	S013	S014	S015
CounterClockwise (XA02:IN, XA04:OUT)	YES	NO	NO	YES
Clockwise (XA02:OUT, XA04:IN)	NO	YES	YES	NO

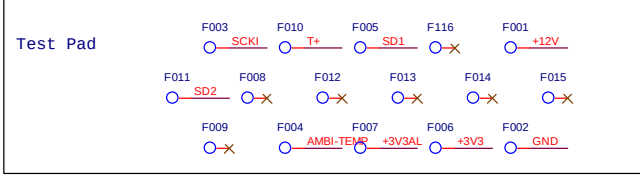
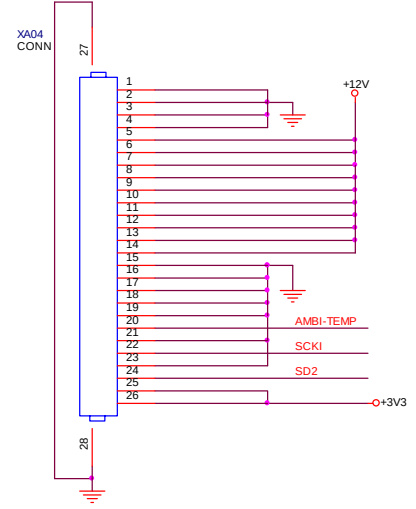
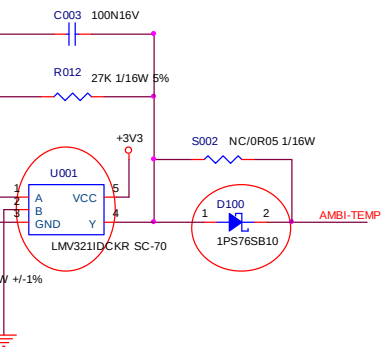
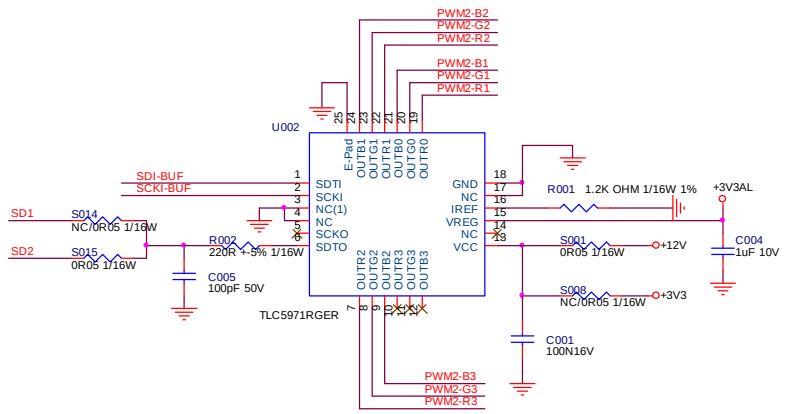
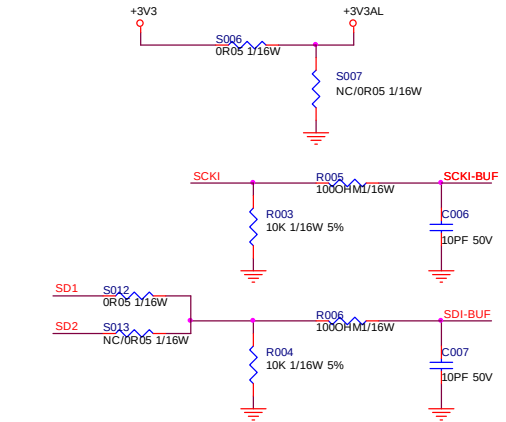
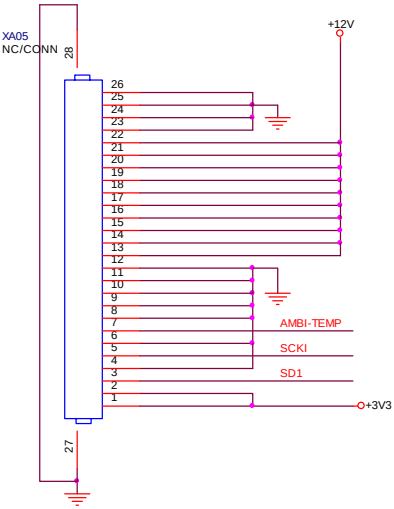
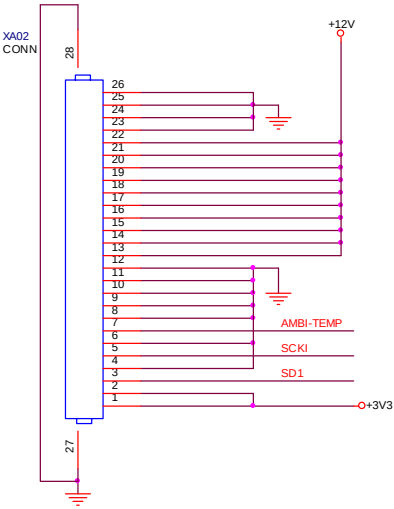
9-21-2 Ambilight 10-LED



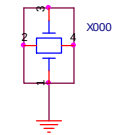
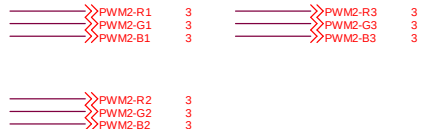
9-22-1 TLC5971



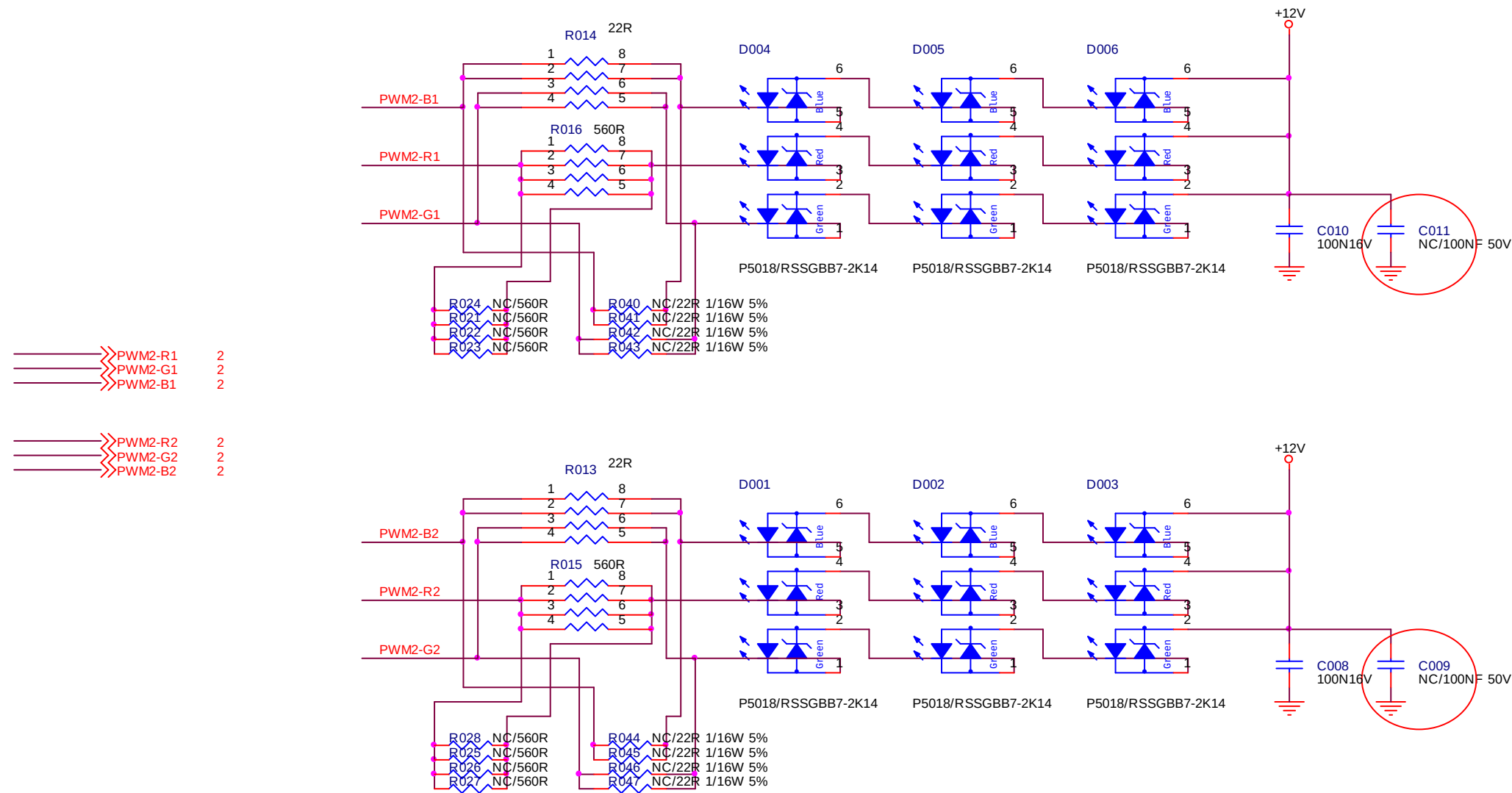
9-22-2 TLC5971_2



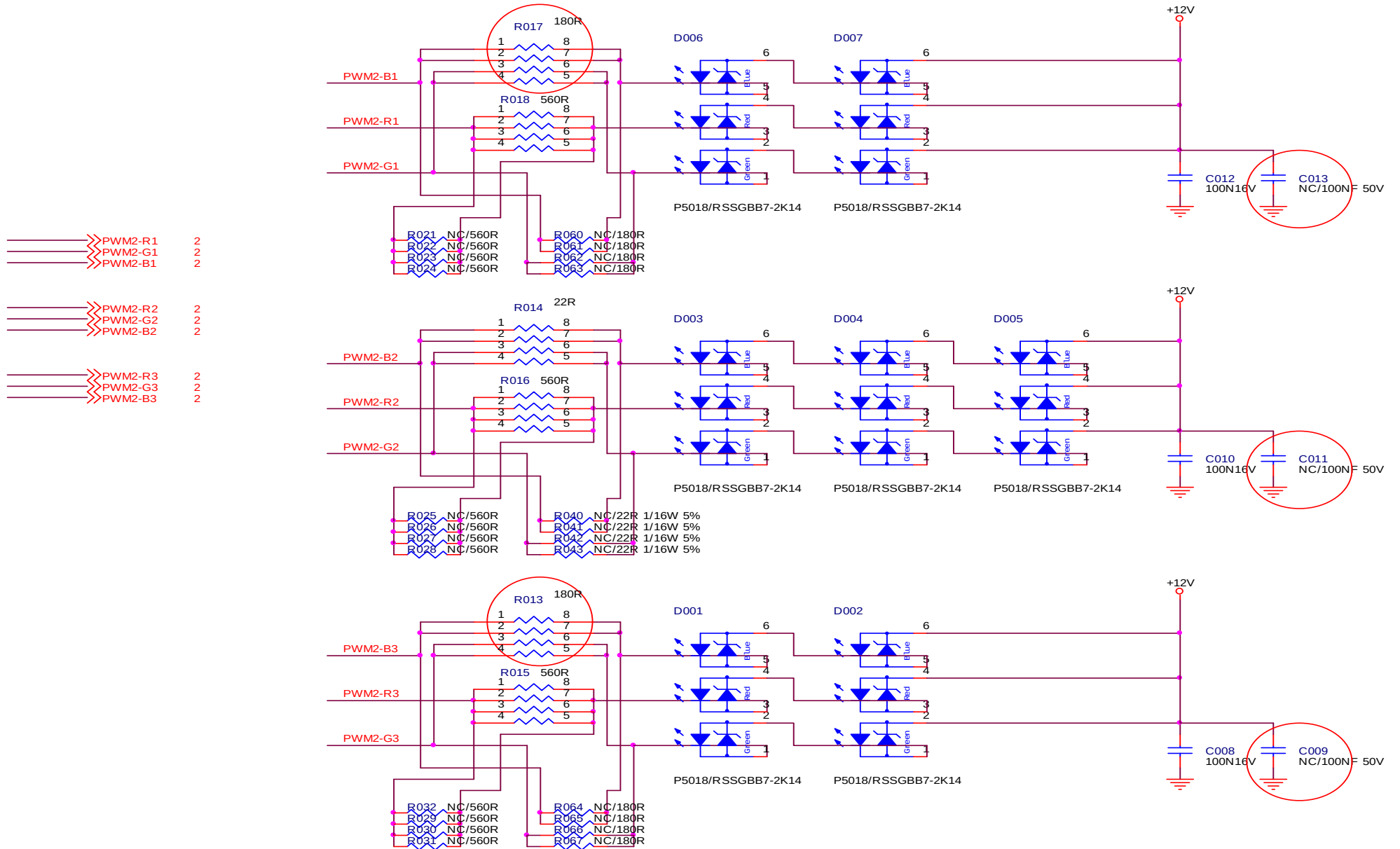
Function \ Item	S012	S013	S014	S015
CounterClockwise (XA02:IN, XA04:OUT)	YES	NO	NO	YES
Clockwise (XA02:OUT, XA04:IN)	NO	YES	YES	NO



9-22-3 Ambilight 6-LED

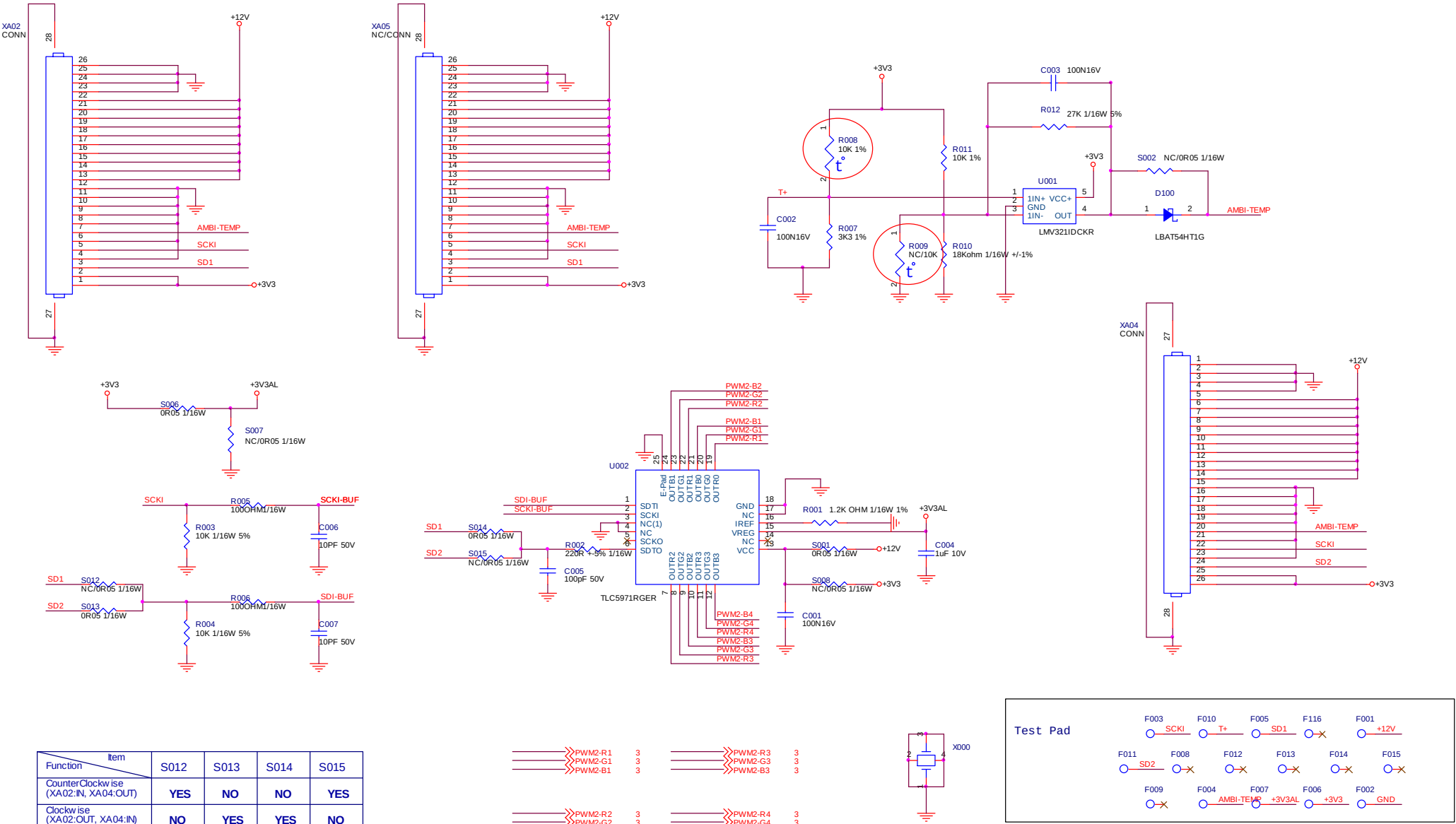


9-22-4 Ambilight 7-LED

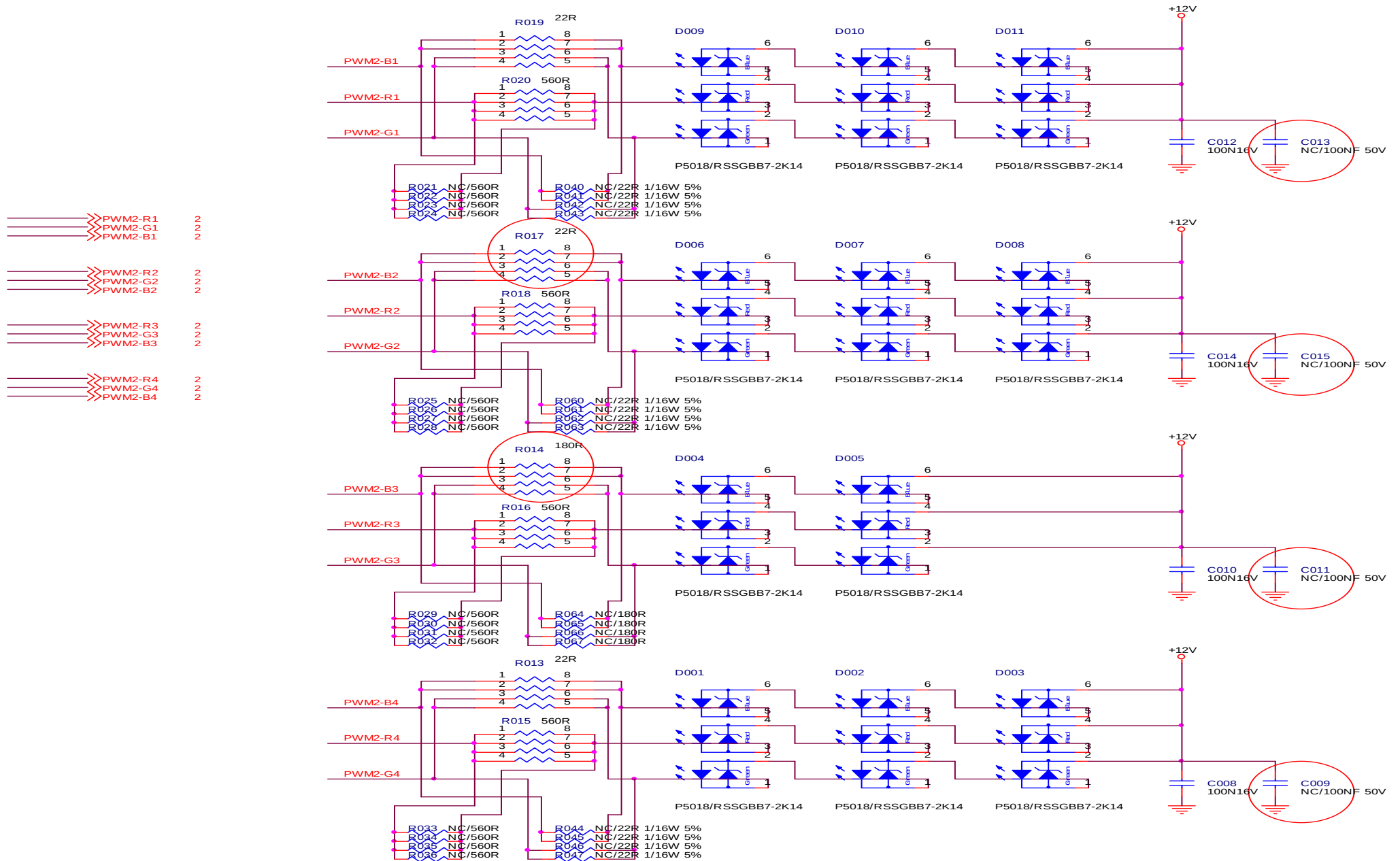


9.23 715G7865 AMBI Panel (For 55" models)

9-23-1 TLC5971

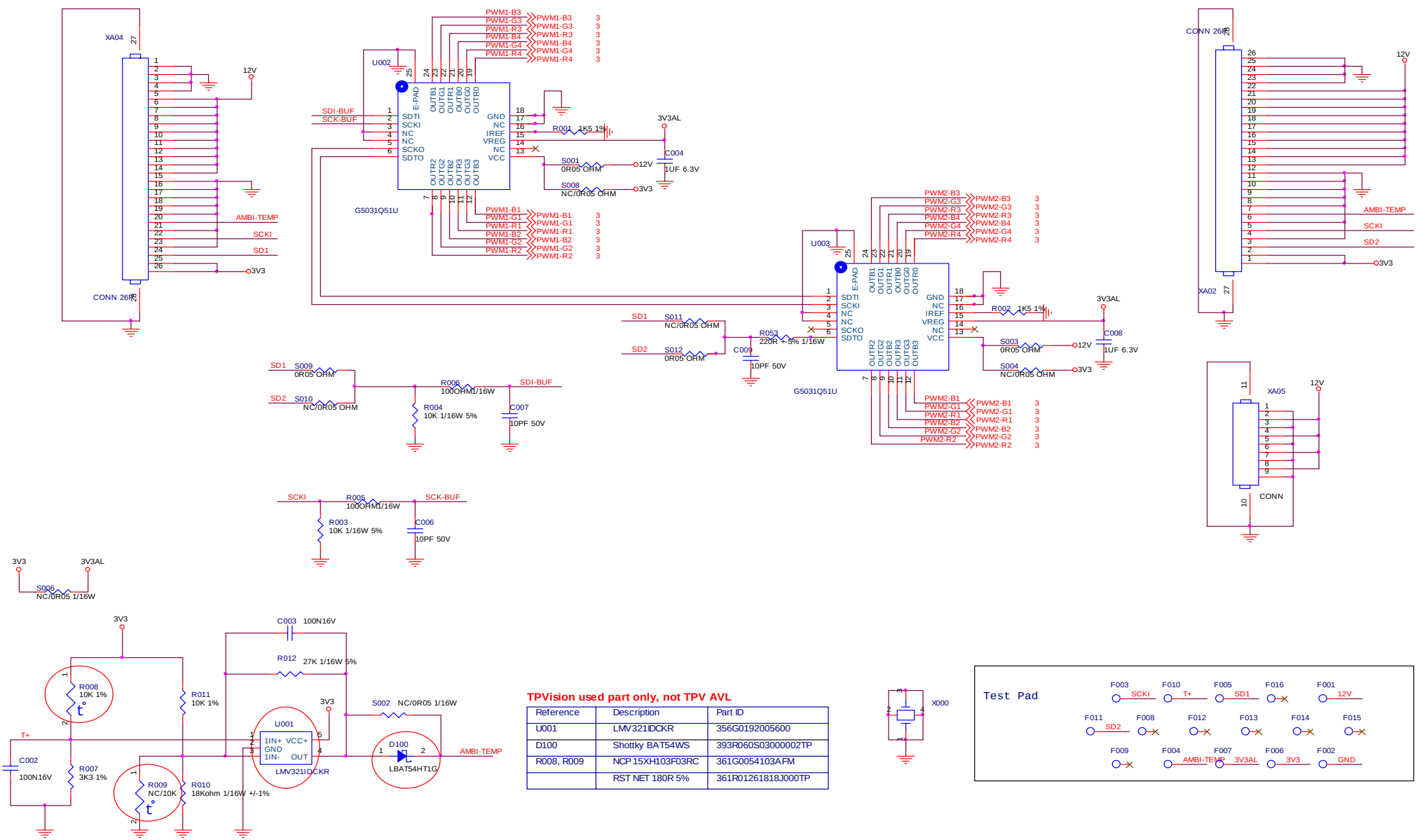


9-23-2 Ambilight 11-LED



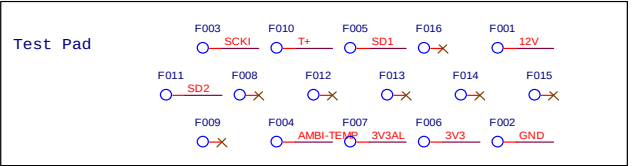
9.24 715G8236 AMBI Panel (For OLED 873 Series)

9-24-1 TLC5971

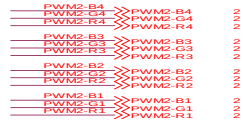


TPVision used part only, not TPV AVL

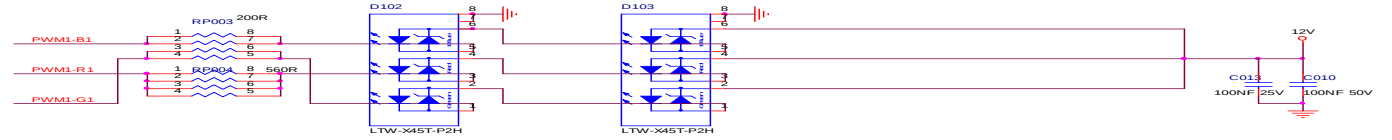
Reference	Description	Part ID
U001	LMV321IDCKR	356G0192005600
D100	Shottky BAT54WS	393R060S03000002TP
R008, R009	NCP 15XH103F03RC	361G0054103AFM
	RST NET 180R 5%	361R01261818J000TP



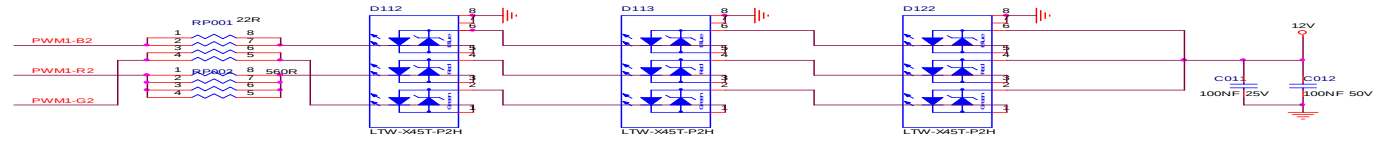
9-24-2 20LED



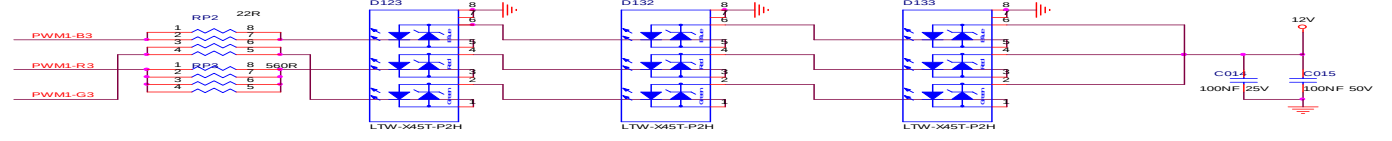
1



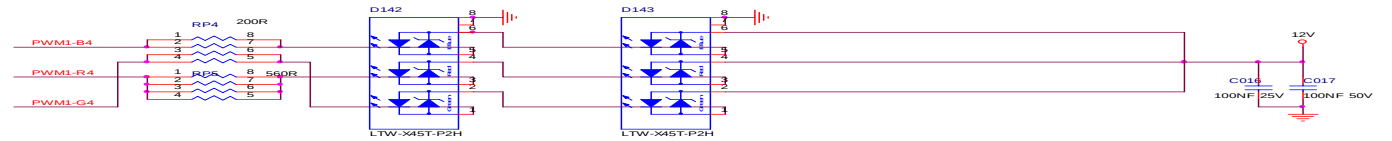
2



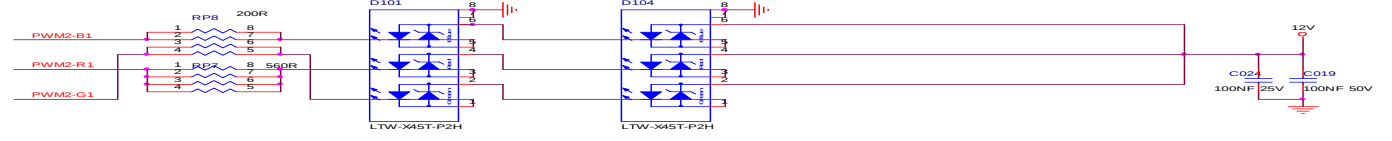
3



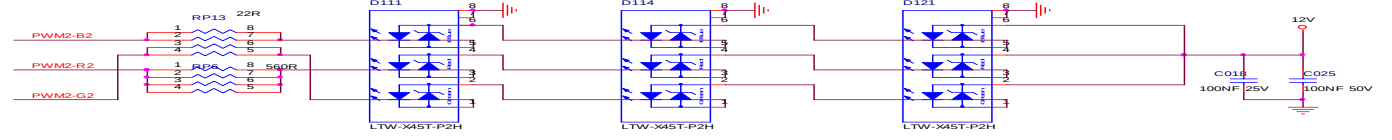
4



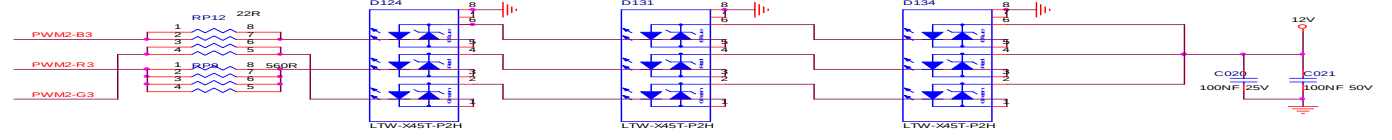
5



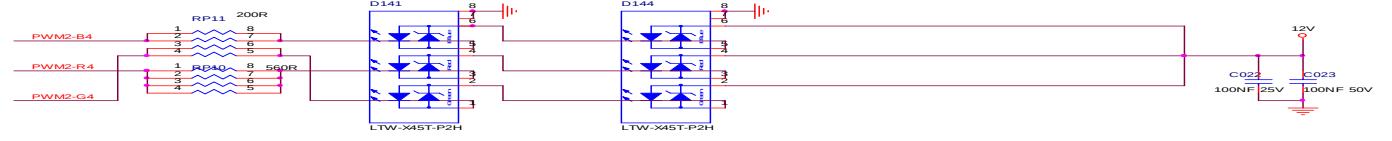
6



7

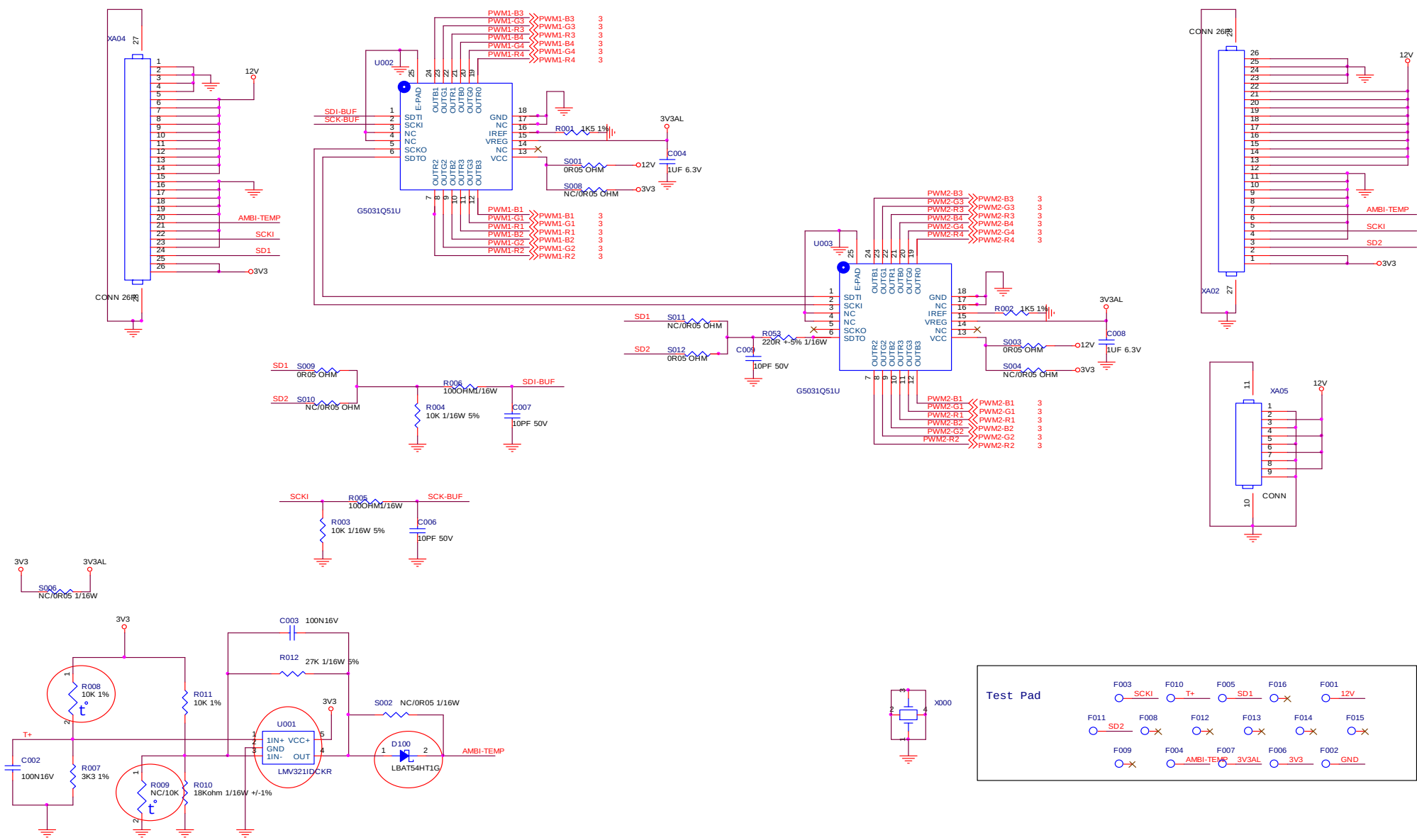


8



9.25 715G8789 AMBI Panel (For OLED 873 Series)

9-25-1 TLC5971

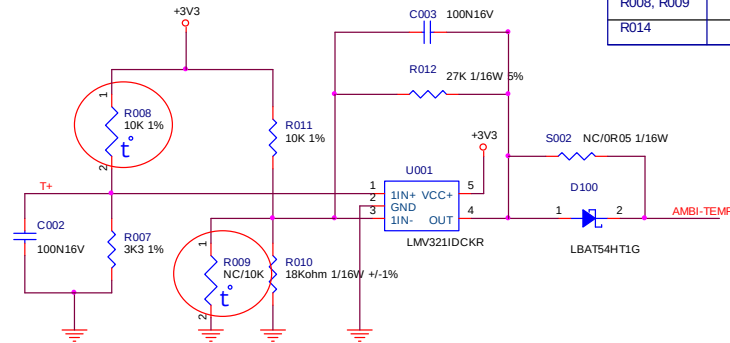
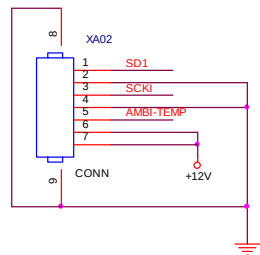


— PWM2-B4		PWM2-B4	2
— PWM2-G4		PWM2-G4	2
— PWM2-R4		PWM2-R4	2
— PWM2-B3		PWM2-B3	2
— PWM2-G3		PWM2-G3	2
— PWM2-R3		PWM2-R3	2
— PWM2-B2		PWM2-B2	2
— PWM2-G2		PWM2-G2	2
— PWM2-R2		PWM2-R2	2
— PWM2-B1		PWM2-B1	2
— PWM2-G1		PWM2-G1	2
— PWM2-R1		PWM2-R1	2



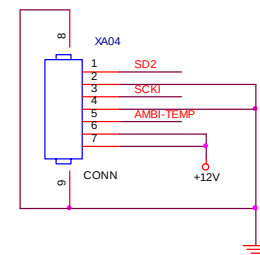
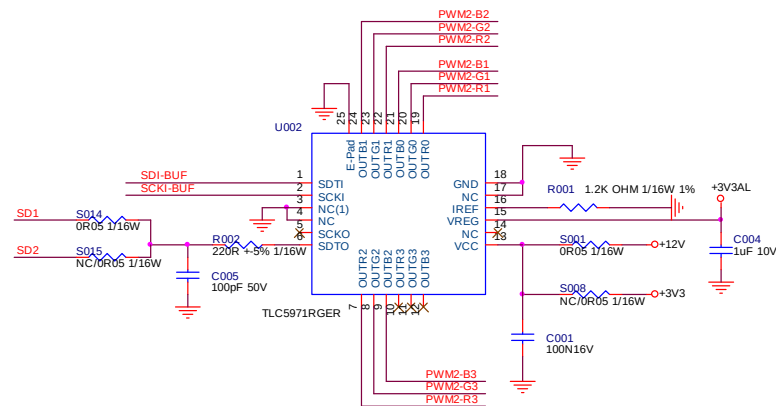
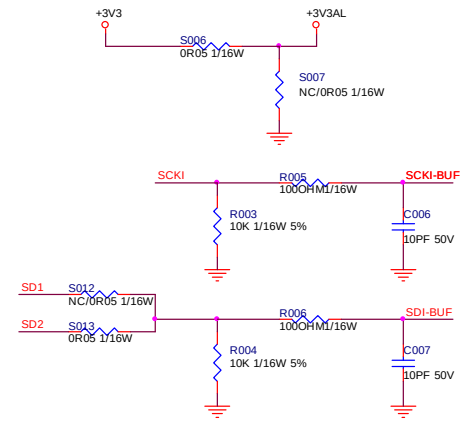
9.26 715G9108 AMBI Panel (For OLED 973 Series)

9-26-1 TLC5971

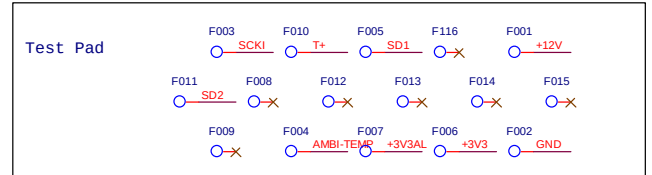
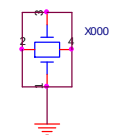
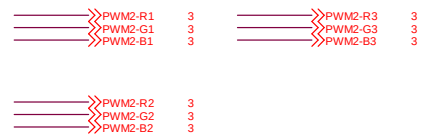


TPVision used part only, not TPV AVL

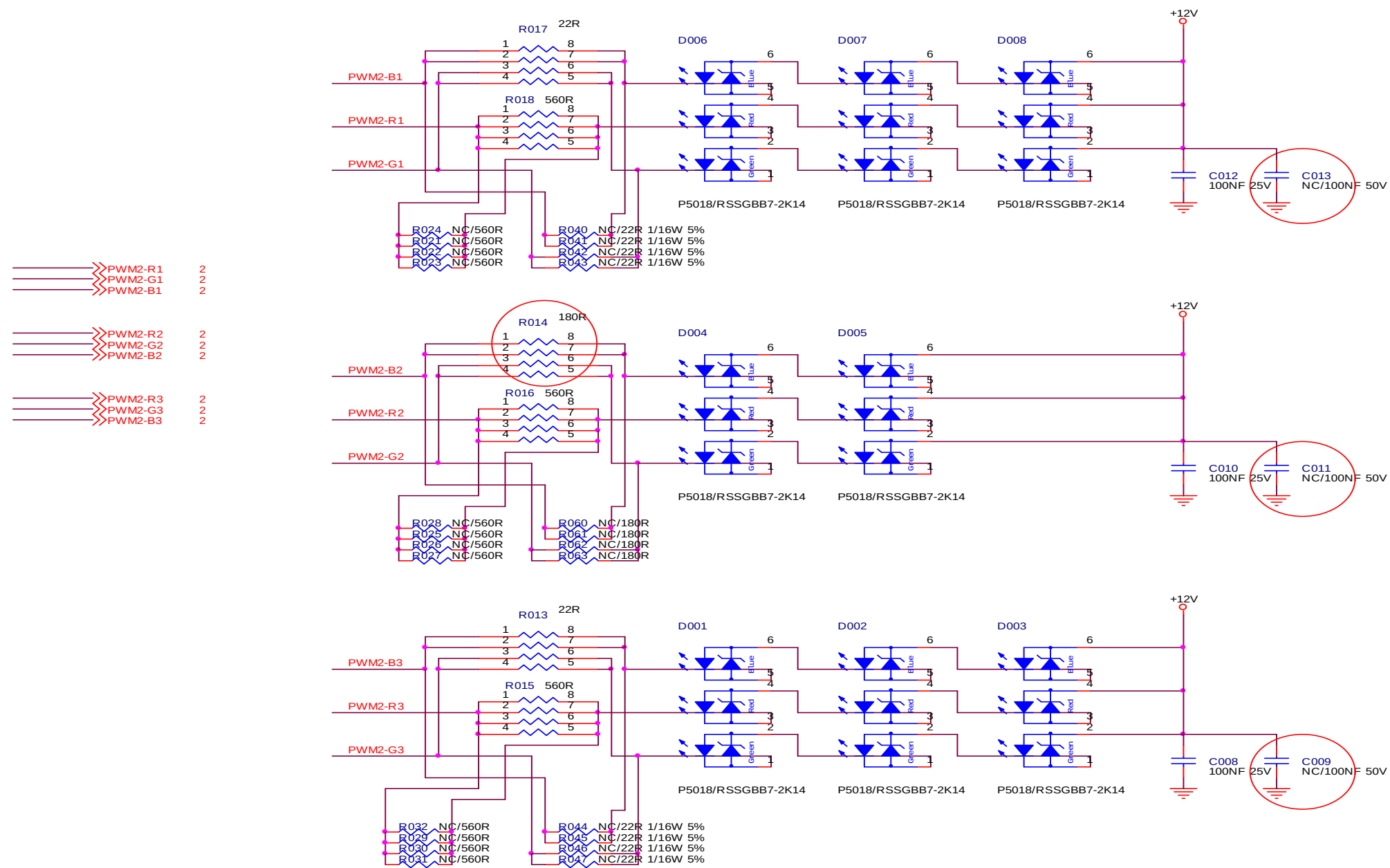
Reference	Description	Part ID
R008, R009	NCP 15XH103F03RC	361G0054103AFM
R014	RST NET 180R 5%	361R01261818J000TP



Function	Item	S012	S013	S014	S015
CounterClockw ise (XA02:IN, XA04:OUT)		YES	NO	NO	YES
Clockw ise (XA02:OUT, XA04:IN)		NO	YES	YES	NO

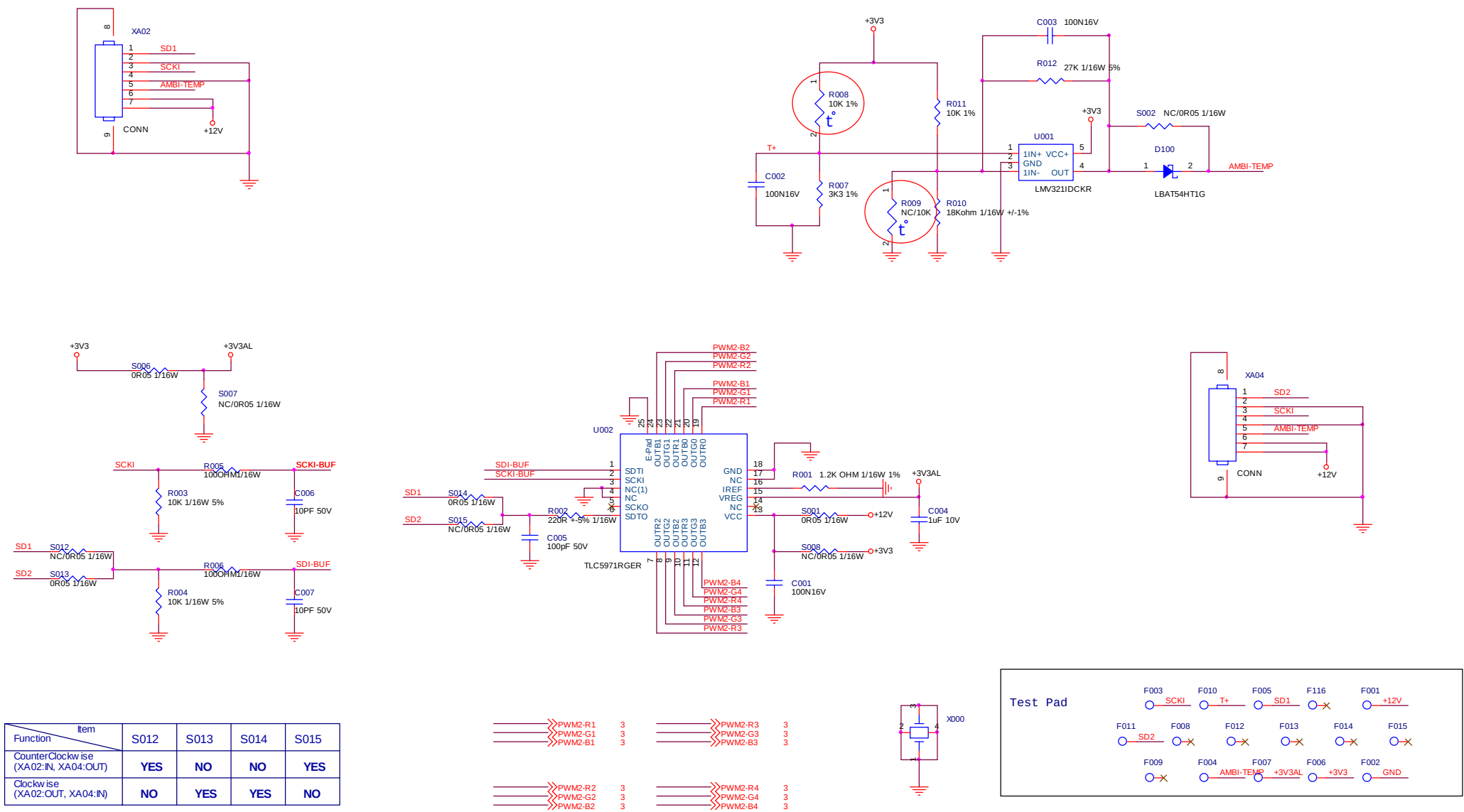


9-26-2 Ambilight 8-LED

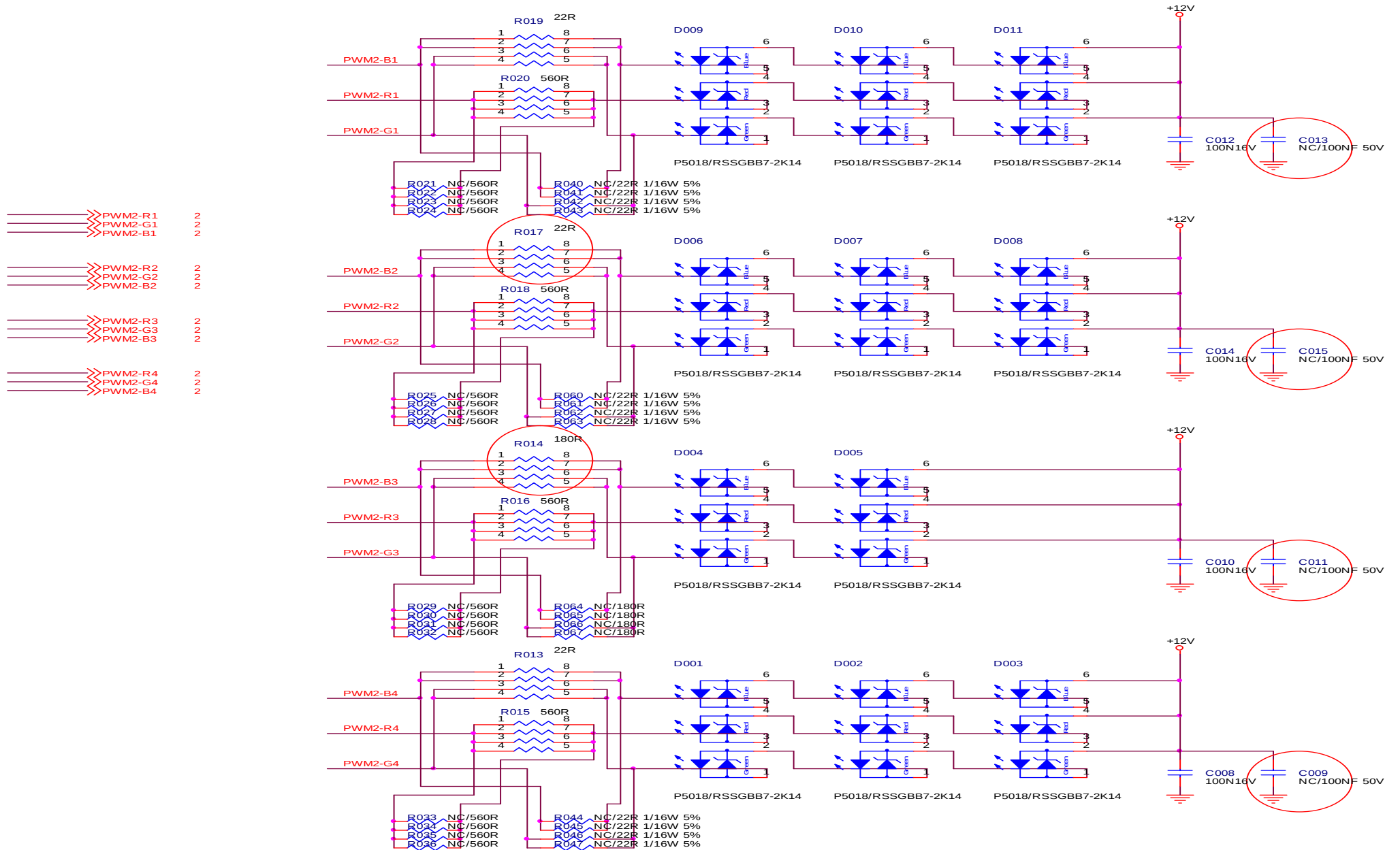


9.27 715G9109 AMBI Panel (For OLED 973 Series)

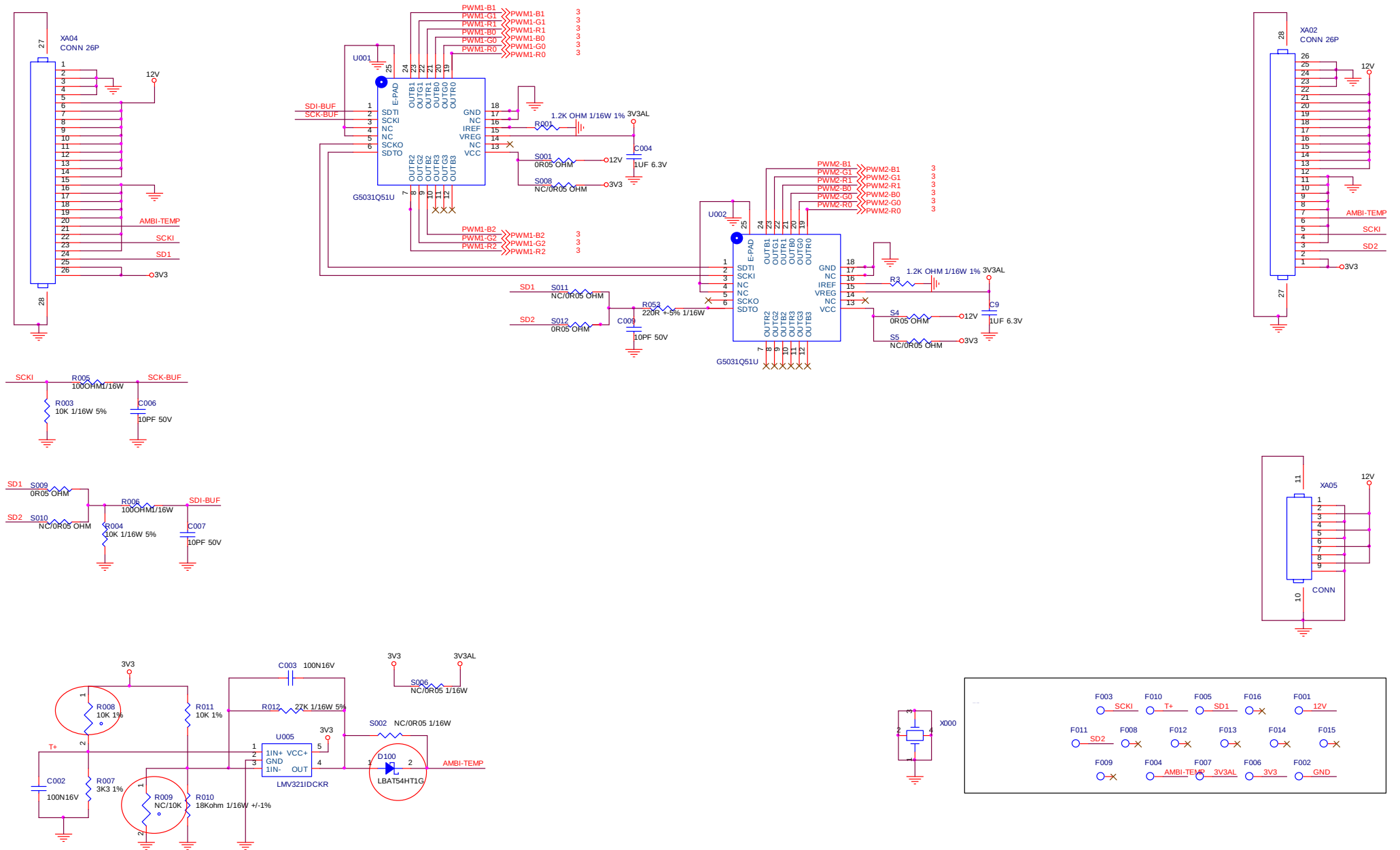
9-27-1 TLC5971



9-27-2 Ambilight 11-LED



9-28-1 G5031



9-28-2 Ambilight 15LED

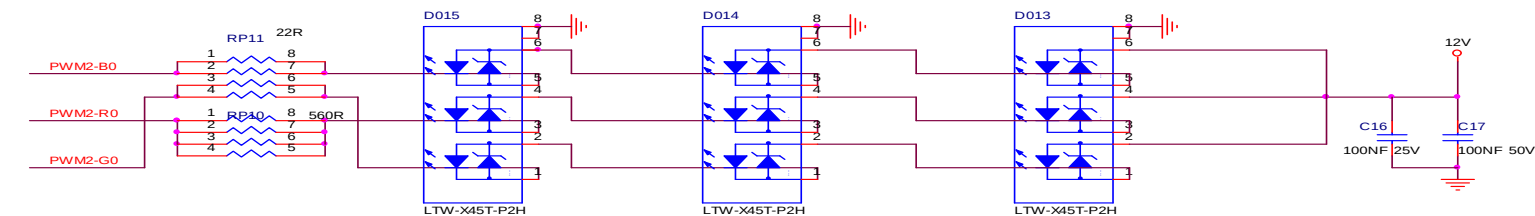
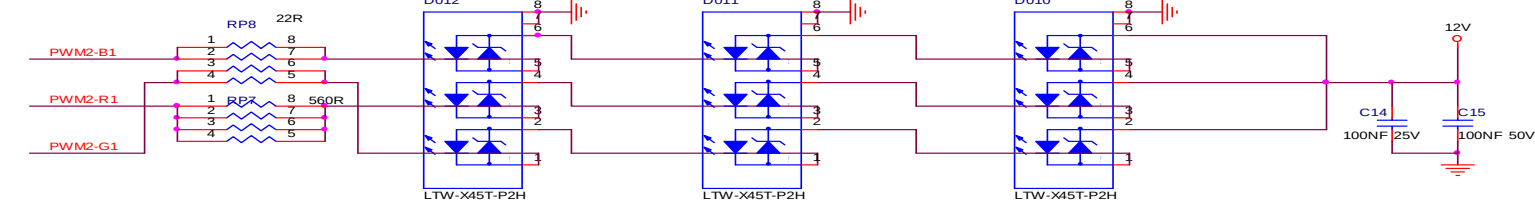
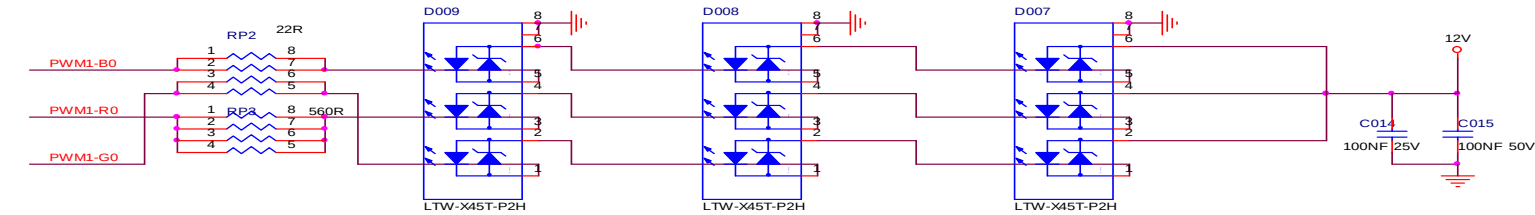
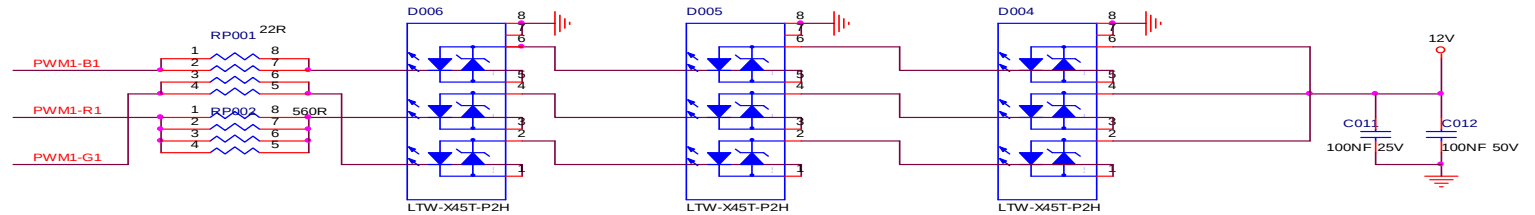
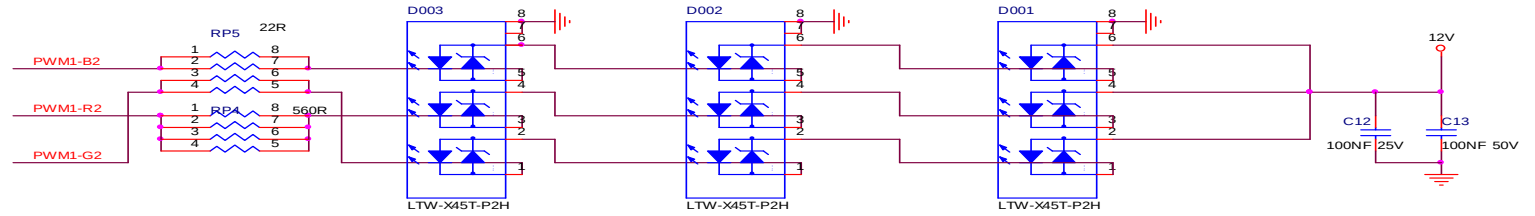
PWM1-B2 >> PWM1-B2
PWM1-G2 >> PWM1-G2
PWM1-R2 >> PWM1-R2

PWM1-B1 >> PWM1-B1
PWM1-G1 >> PWM1-G1
PWM1-R1 >> PWM1-R1

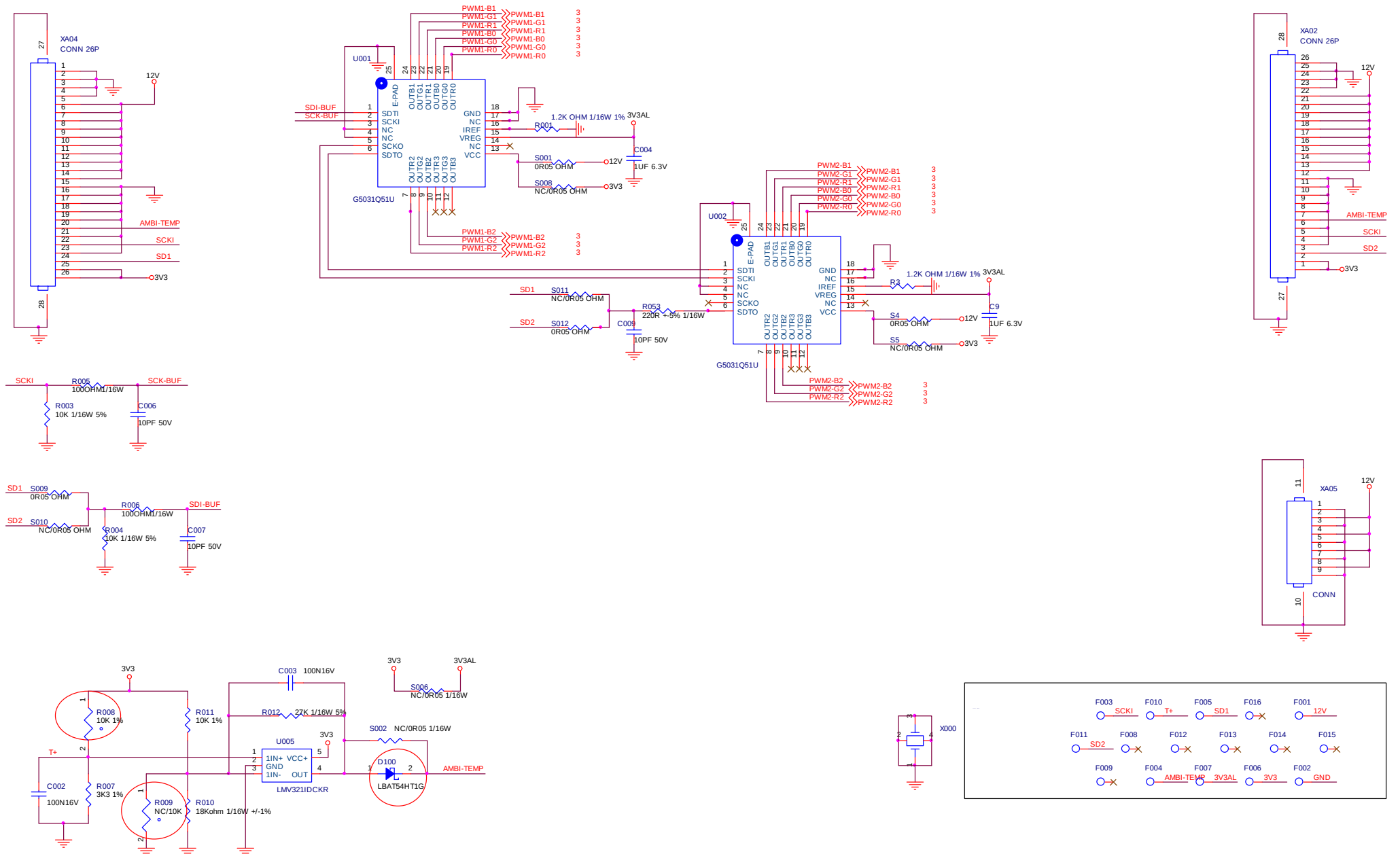
PWM1-B0 >> PWM1-B0
PWM1-G0 >> PWM1-G0
PWM1-R0 >> PWM1-R0

PWM2-B1 >> PWM2-B1
PWM2-G1 >> PWM2-G1
PWM2-R1 >> PWM2-R1

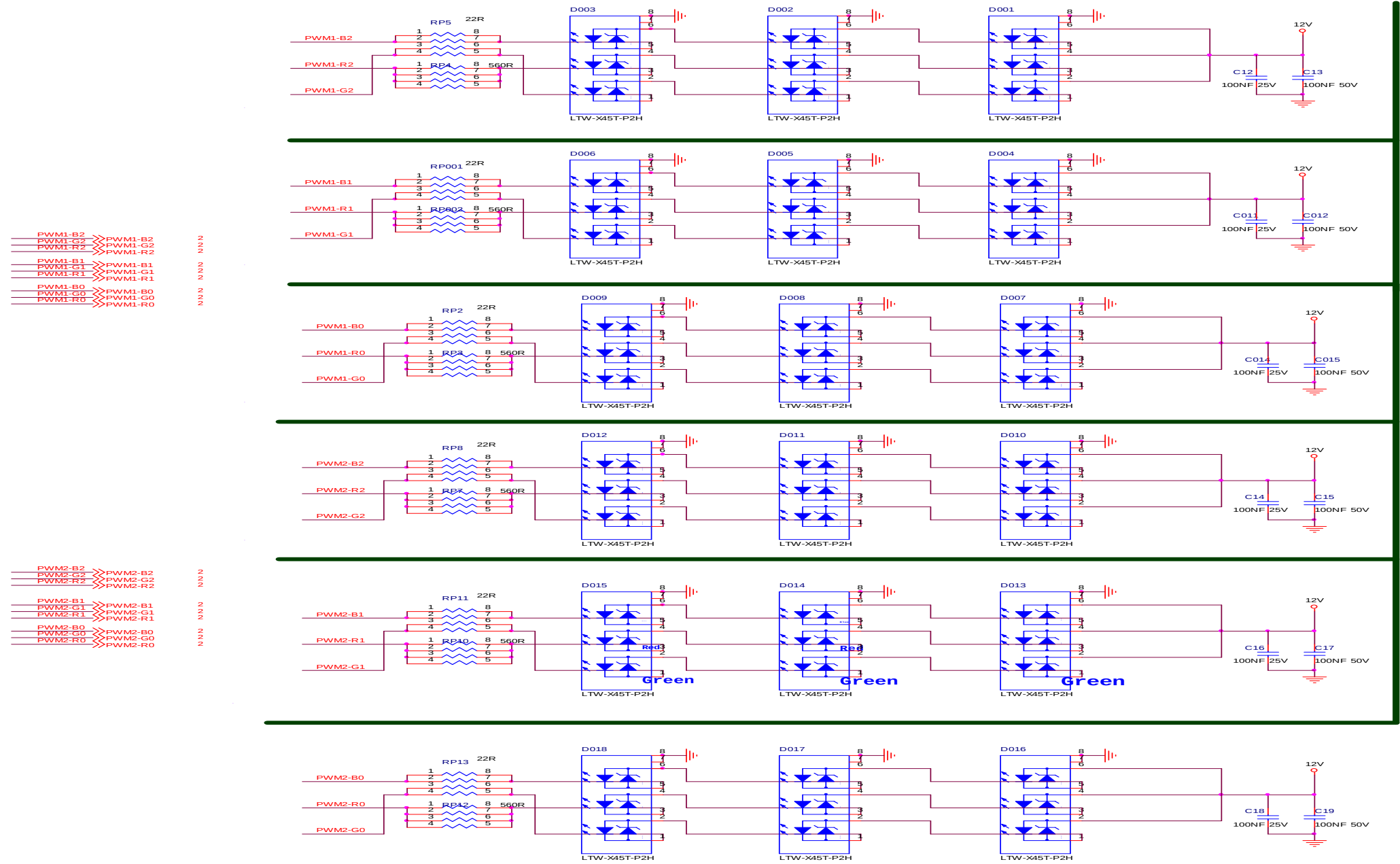
PWM2-B0 >> PWM2-B0
PWM2-G0 >> PWM2-G0
PWM2-R0 >> PWM2-R0



9-29-1 G5031

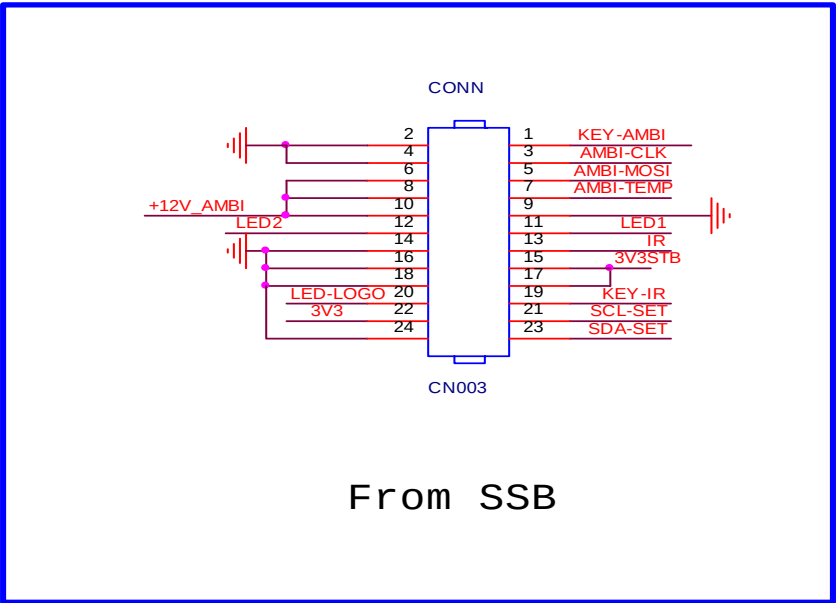
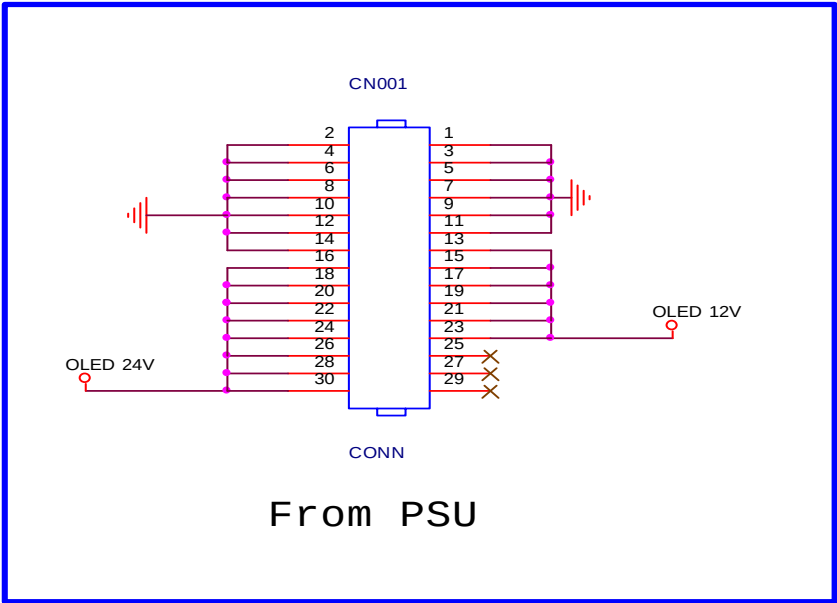
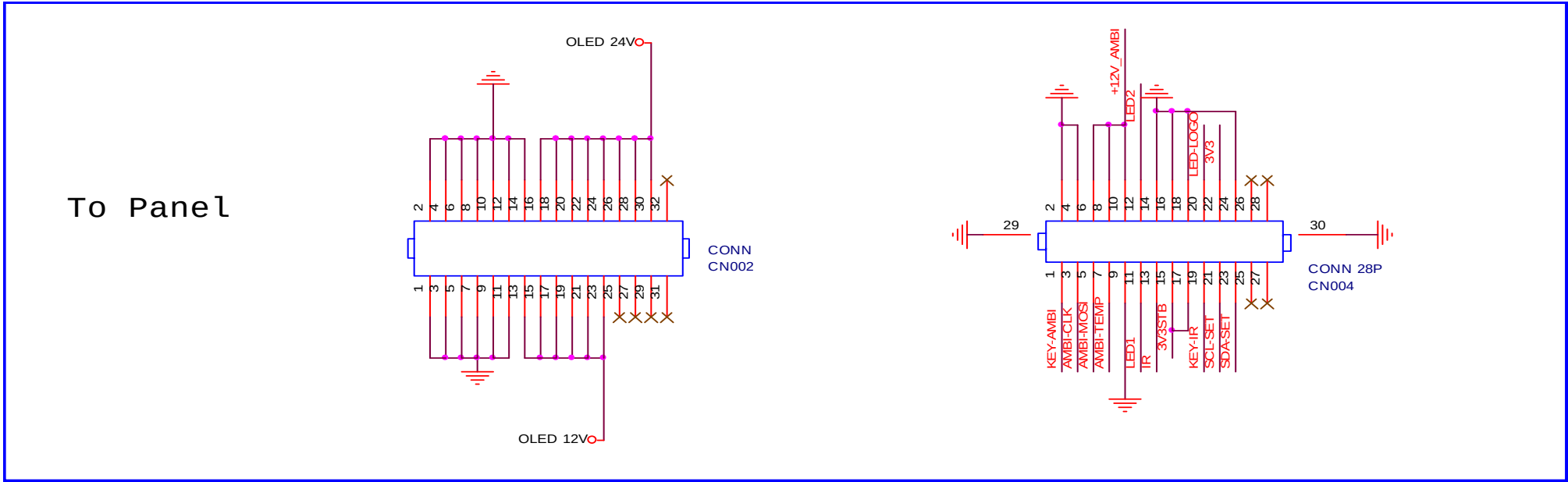


9-29-2 Ambilight 18LED



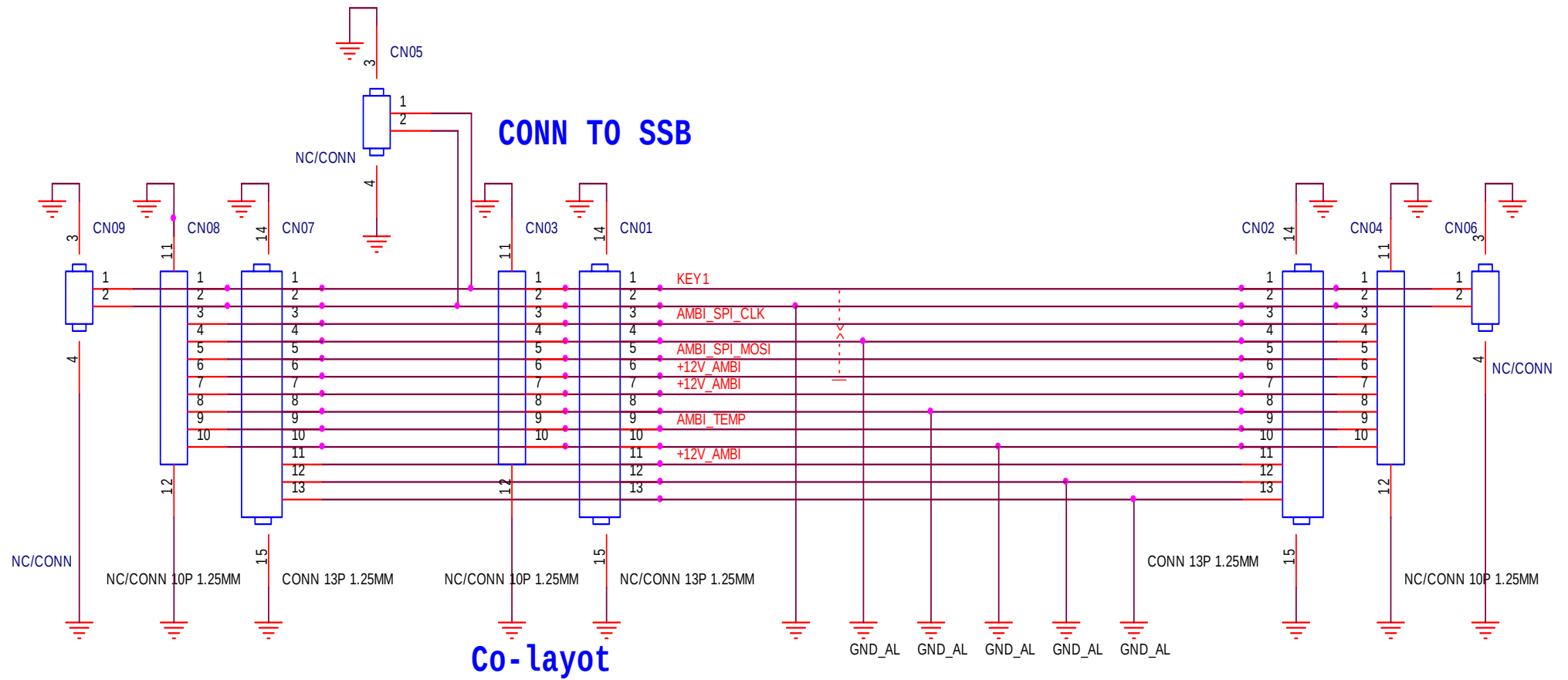
9.30 715G9155 Connection Panel (For OLED 973 Series)

9-30-1 dress wire board



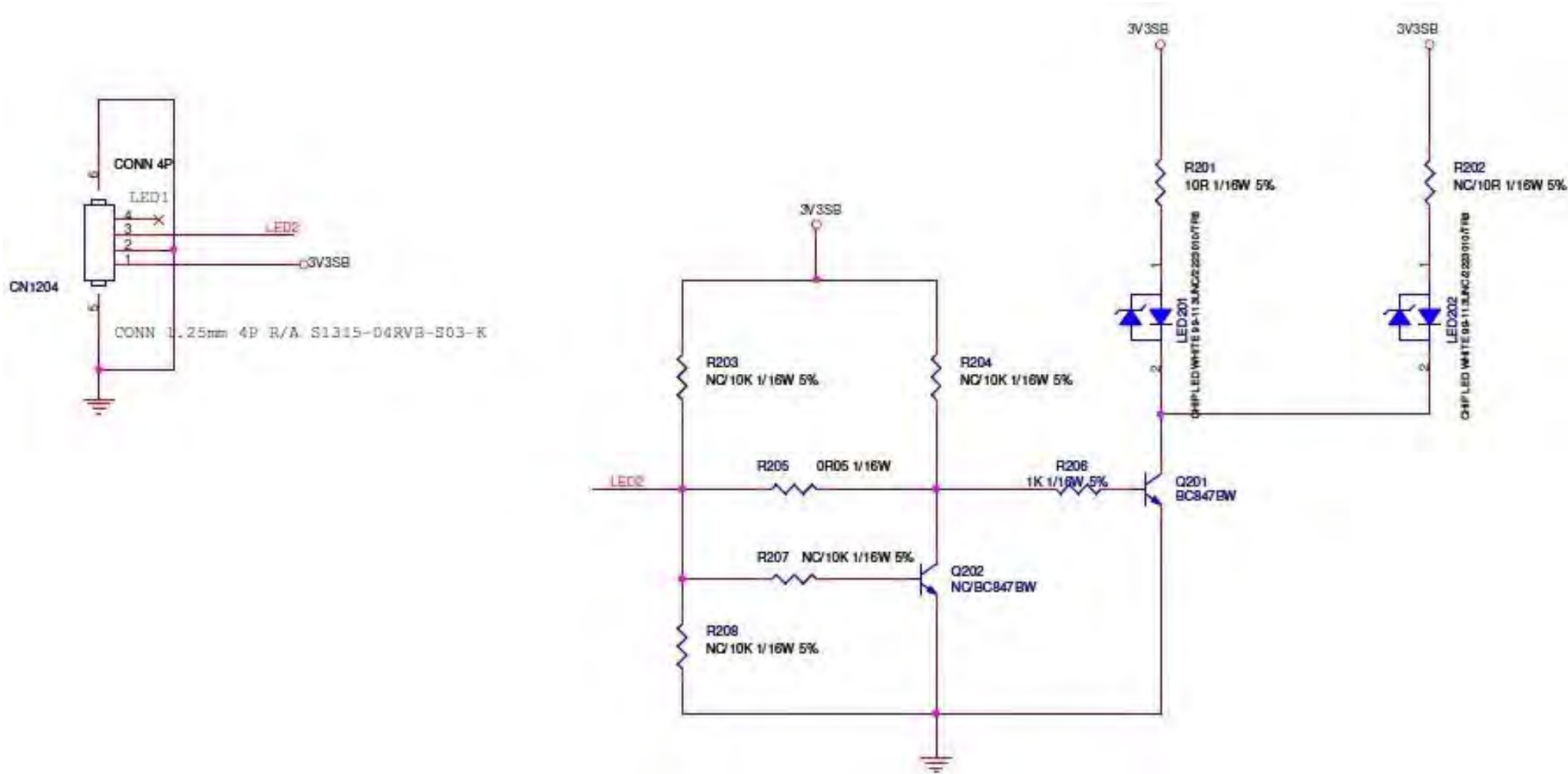
9.31 715G9181 Connection Panel (For 49" 7503 & 49/55/65" 7803/8303/8503 & 75" 7803/8303Series & 55/65"OLED803/903)

9-31-1 Interface board



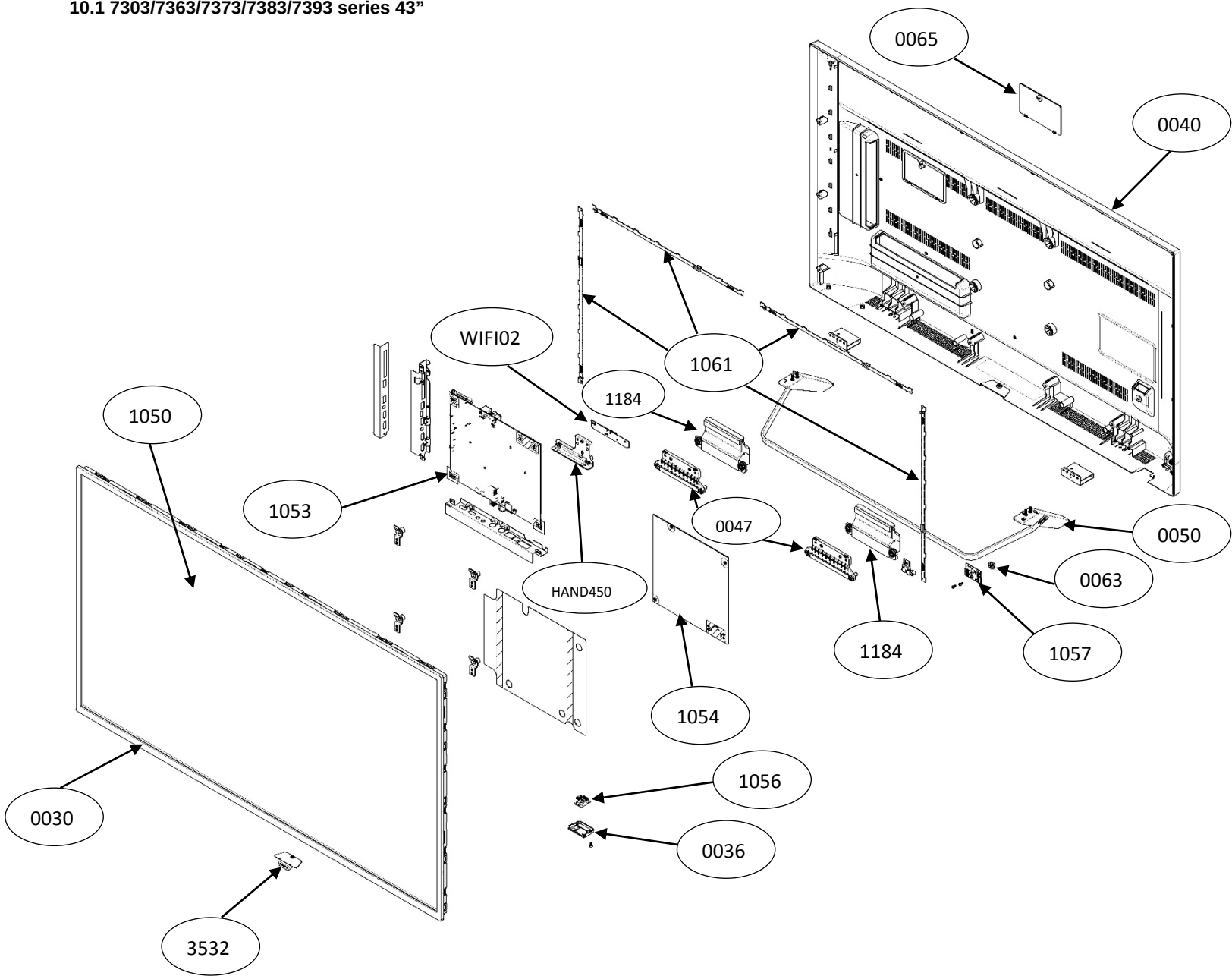
9.32 715G9001 LED Panel (For OLED 873 Series)

9-32-1 Wordmark



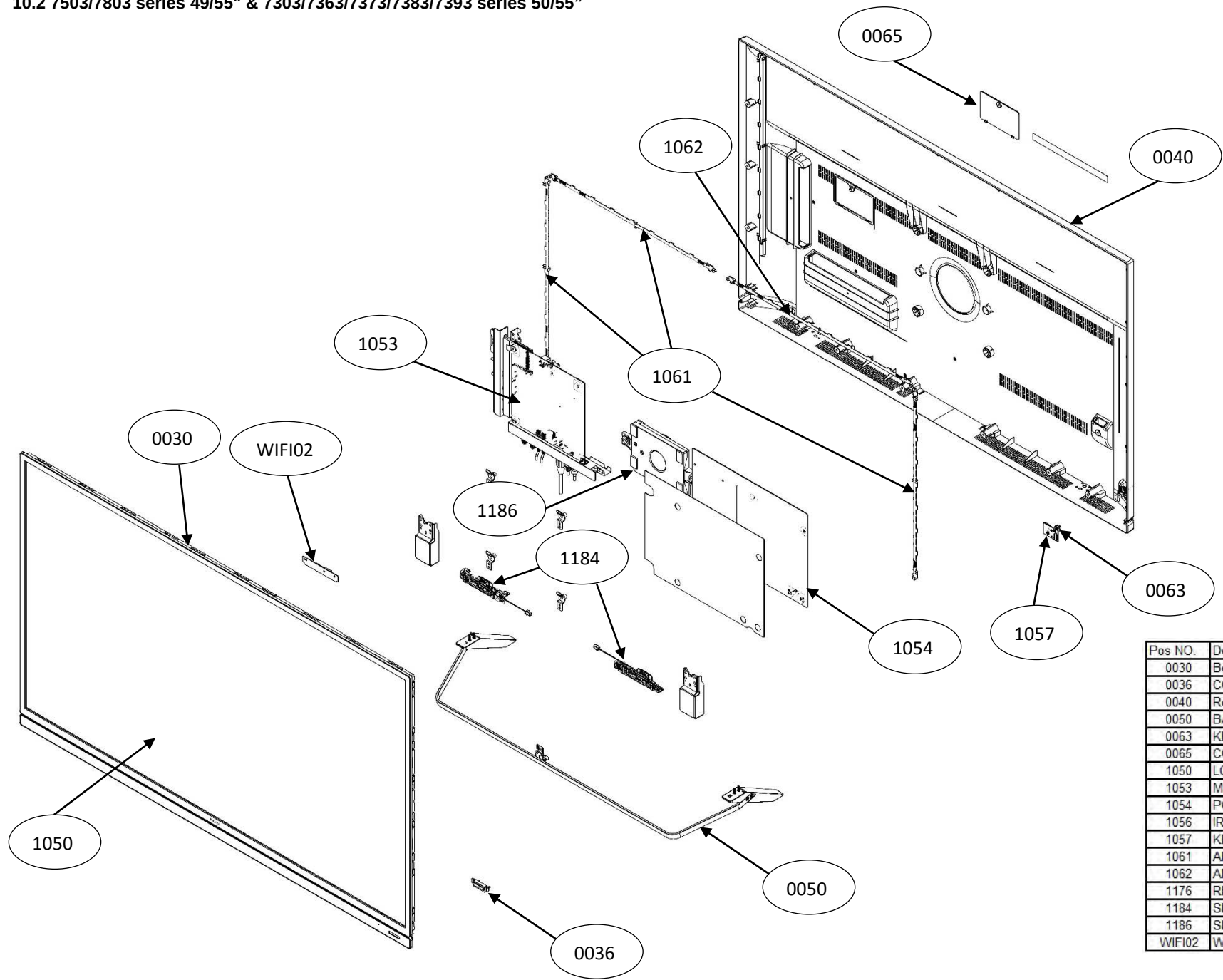
10. Styling Sheets

10.1 7303/7363/7373/7383/7393 series 43"



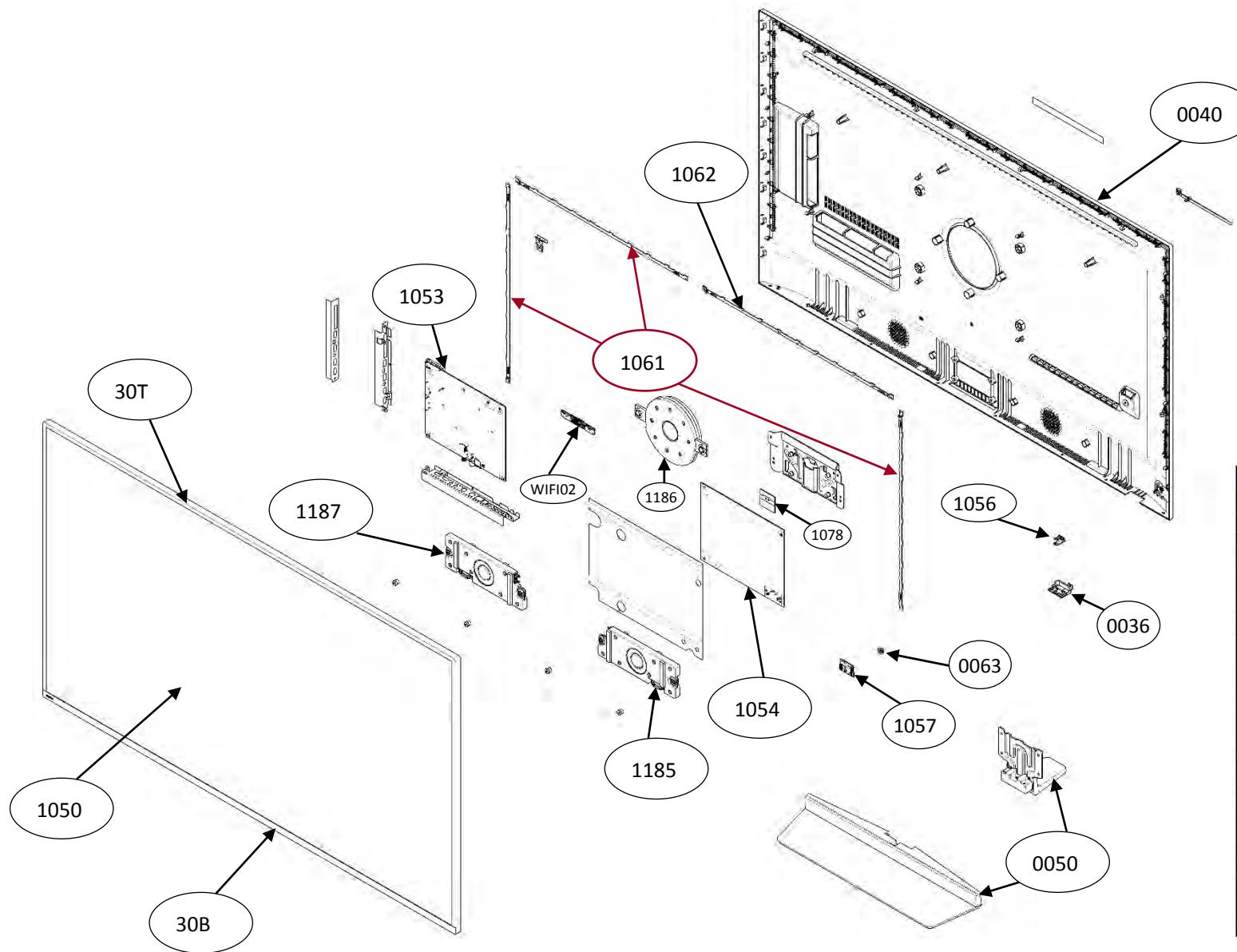
Pos NO.	Description	Remark
0030	Bezel(Integrated with panel)	
0036	COVER LENS IR	
0040	Rear Cover	
0047	HDD Holder	
0050	BASE	
0063	KEY FUNCTION	
0065	COVER_CLOCK REAR	
1050	LCD PANEL	
1053	MAIN BOARD	
1054	POWER BOARD	
1056	IR BOARD	
1057	KEY BOARD	
1061	AMBILIGHT (4)	
1176	REMOTE CONTROL	Not displayed
1184	SPEAKERS	
3532	DECO LOGO	
Hand 450	Case holder	
WIFI02	WIFI/BT USB	

10.2 7503/7803 series 49/55" & 7303/7363/7373/7383/7393 series 50/55"



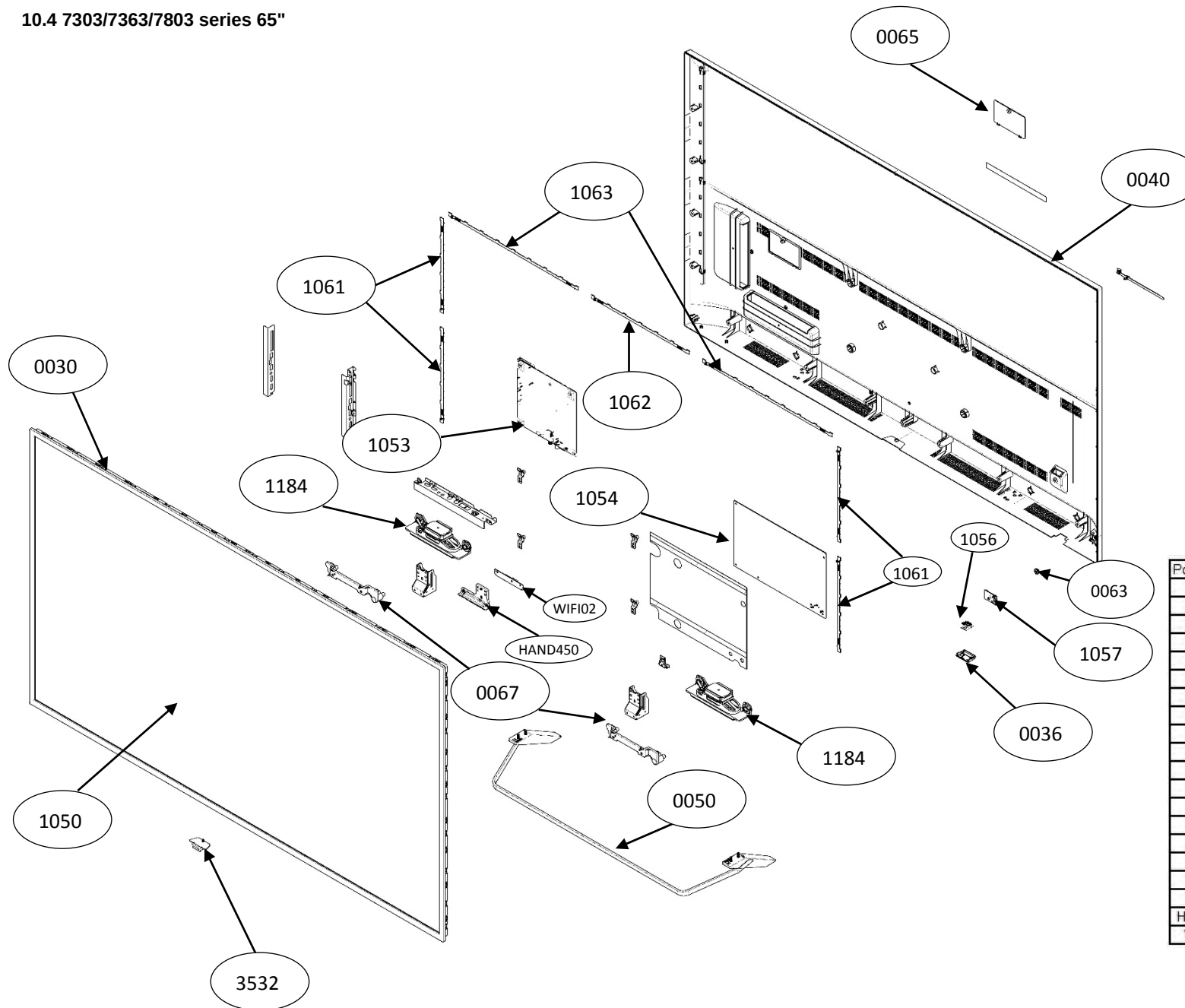
Pos NO.	Description	Remark
0030	Bezel(Integrated with panel)	
0036	COVER LENS IR	
0040	Rear Cover	
0050	BASE	
0063	KEY FUNCTION	
0065	COVER CLOCK REAR	
1050	LCD PANEL	
1053	MAIN BOARD	
1054	POWER BOARD	
1056	IR BOARD	
1057	KEY BOARD	
1061	AMBILIGHT (3)	
1062	AMBILIGHT	
1176	REMOTE CONTROL	Not displayed
1184	SPEAKERS	
1186	SPEAKER Woofer	
WIFI02	WIFI/BT USB	

10.3 8303/8503 series 49/55"



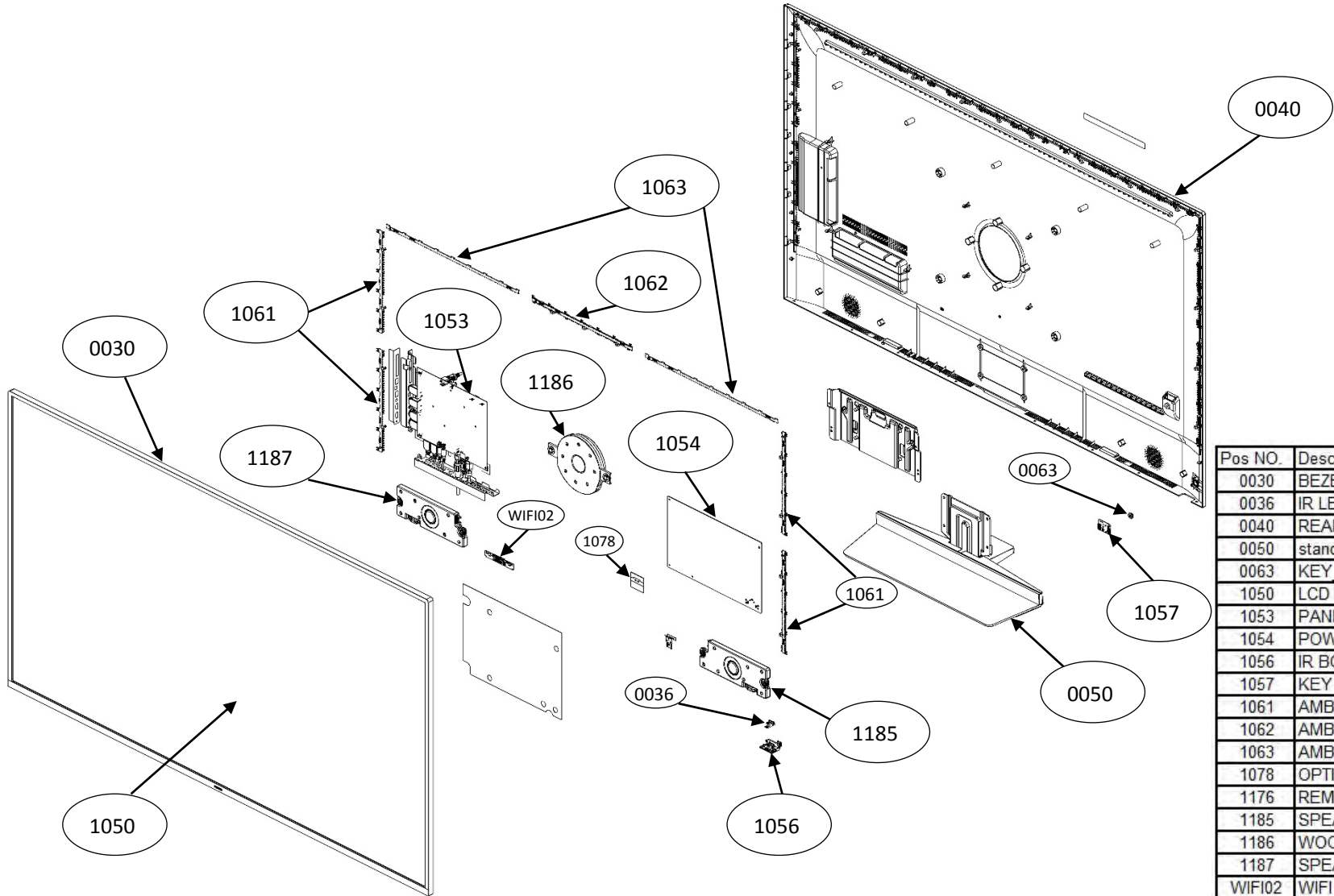
Pos NO.	Description	Remark
0036	LENS IR	
0040	REAR COVER	
0050	CENTRAL STAND (Neck Base & Screws included)	
0063	KEY FUNCTION	
1050	LCD PANEL	
1053	PANEL SSB	
1054	POWER BOARD	
1056	IR BOARD	
1057	KEY BOARD	
1061	AMBI-LIGHT BOARD ASSY(3)	
1062	AMBI-LIGHT BOARD ASSY	
1078	OPTION BOARD	
1176	REMOTE CONTROL	Not displayed
1185	SPEAKER R	
1186	WOOFER	
1187	SPEAKER L	
30B	BEZEL(Integrated with panel)	
30T	Bezel_Plastic Front- TOP(Integrated with panel)	
WIFI02	WIFI/BT USB	

10.4 7303/7363/7803 series 65"



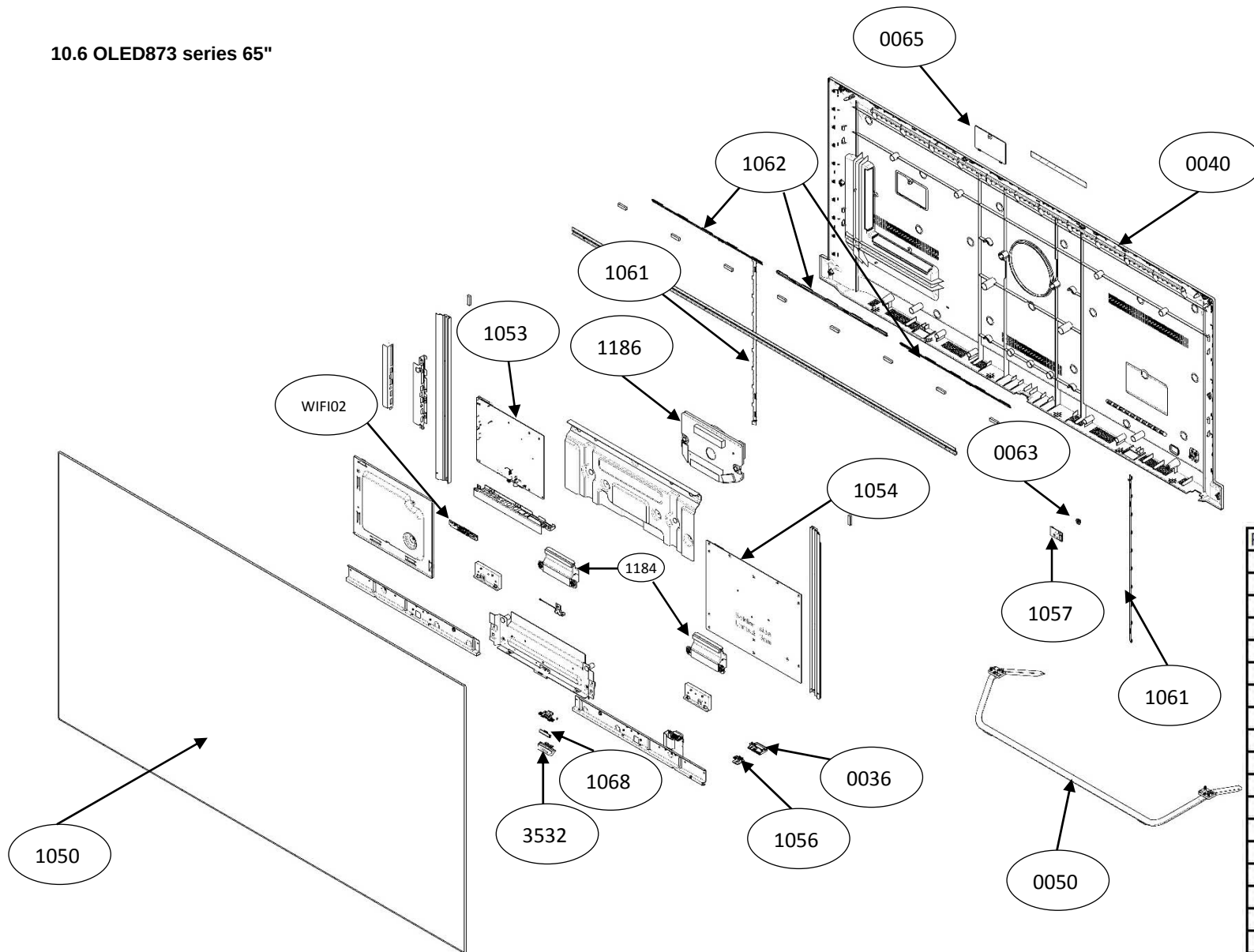
Pos NO.	Description	Remark
0030	Bezel(Integrated with panel)	
0036	COVER LENS IR	
0040	Rear Cover	
0050	BASE	
0063	KEY FUNCTION	
0065	COVER CLOCK REAR	
0067	COVER SPK	
1050	LCD PANEL	
1053	MAIN BOARD	
1054	POWER BOARD	
1056	IR BOARD	
1057	KEY BOARD	
1061	AMBILIGHT (4)	
1062	AMBILIGHT	
1063	AMBILIGHT (2)	
1176	REMOTE CONTROL	Not displayed
1184	SPEAKERS	
3532	DECO LOGO	
Hand 450	Case holder	
WiFi02	WiFi/BT USB	

10.5 8303/8503 series 65"



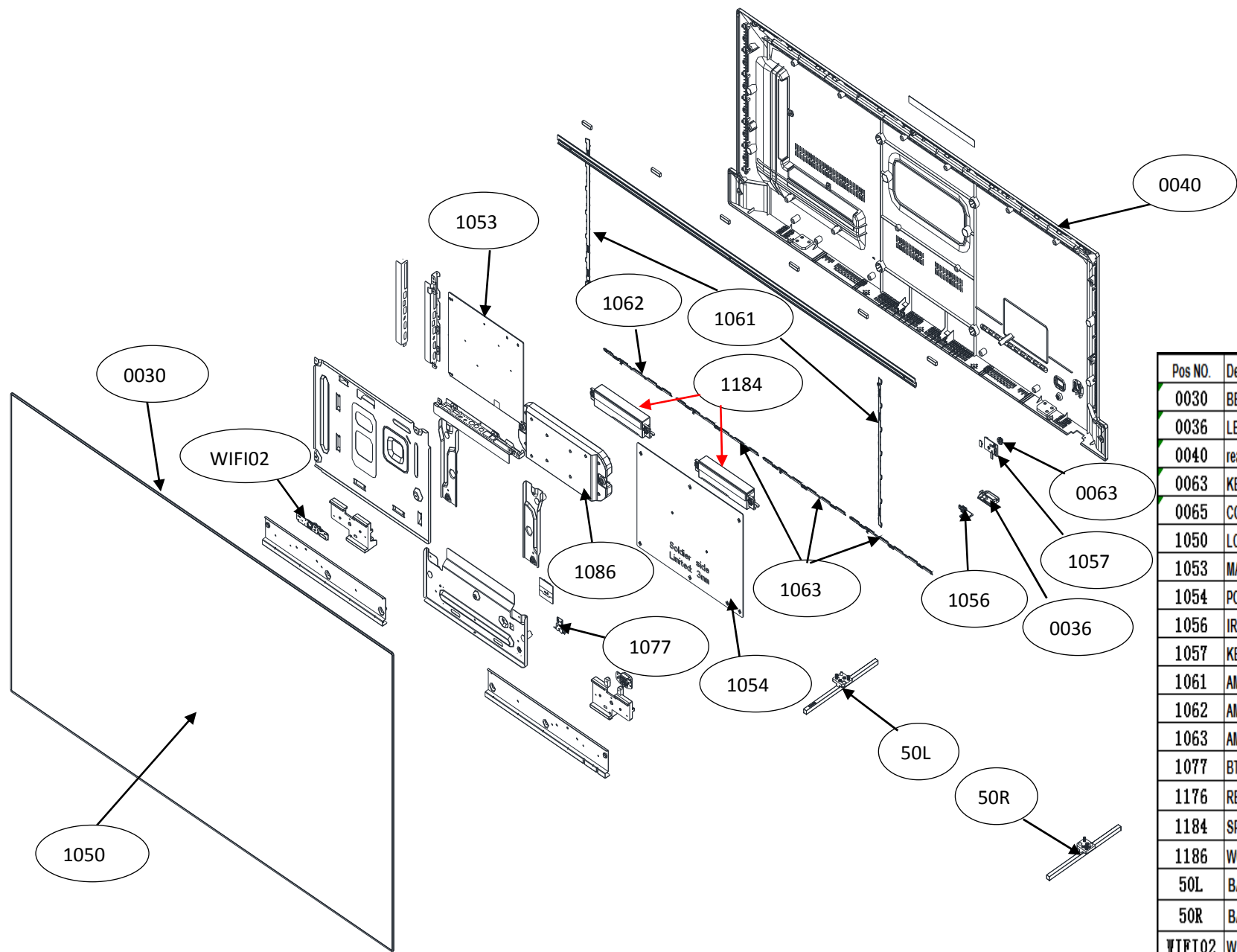
Pos NO.	Description	Remark
0030	BEZEL(Integrated with panel)	
0036	IR LENS	
0040	REAR COVER	
0050	stand-base	
0063	KEY FUNCTION	
1050	LCD PANEL	
1053	PANEL SSB	
1054	POWER BOARD	
1056	IR BOARD	
1057	KEY BOARD	
1061	AMBILIGHT(4)	
1062	AMBILIGHT(1)	
1063	AMBILIGHT(2)	
1078	OPTION BOARD	
1176	REMOTE CONTROL	Not displayed
1185	SPEAKER R	
1186	WOOFER	
1187	SPEAKER L	
WIFI02	WIFI USB	

10.6 OLED873 series 65"



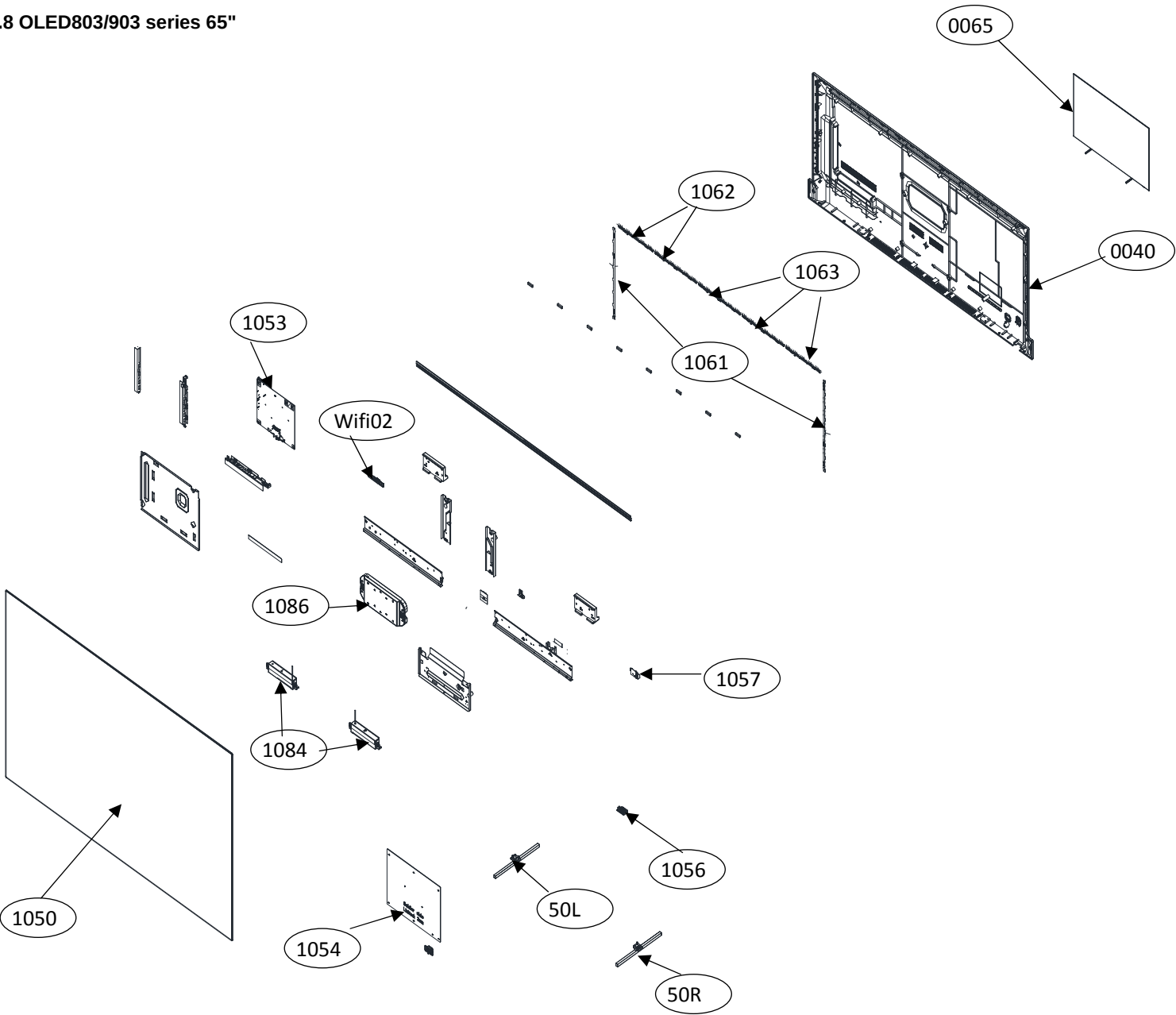
Pos NO.	Description	Remark
0036	COVER LENS IR	
0040	REAR COVER	
0050	BASE	
0063	KEY FUNCTION	
0065	COVER CLOCK REAR	
1050	LCD PANEL	
1053	PANEL SSB	
1054	POWER BOARD	
1056	IR BOARD	
1057	KEY BOARD	
1061	AMBILIGHT(2)	
1062	AMBILIGHT(3)	
1068	LED BOARD	
1176	REMOTE CONTROL	Not displayed
1184	SPEAKERS	
1186	WOOFER	
3532	DECO LOGO	
WIFI02	WIFI USB	

10.7 OLED803/903 series 55"



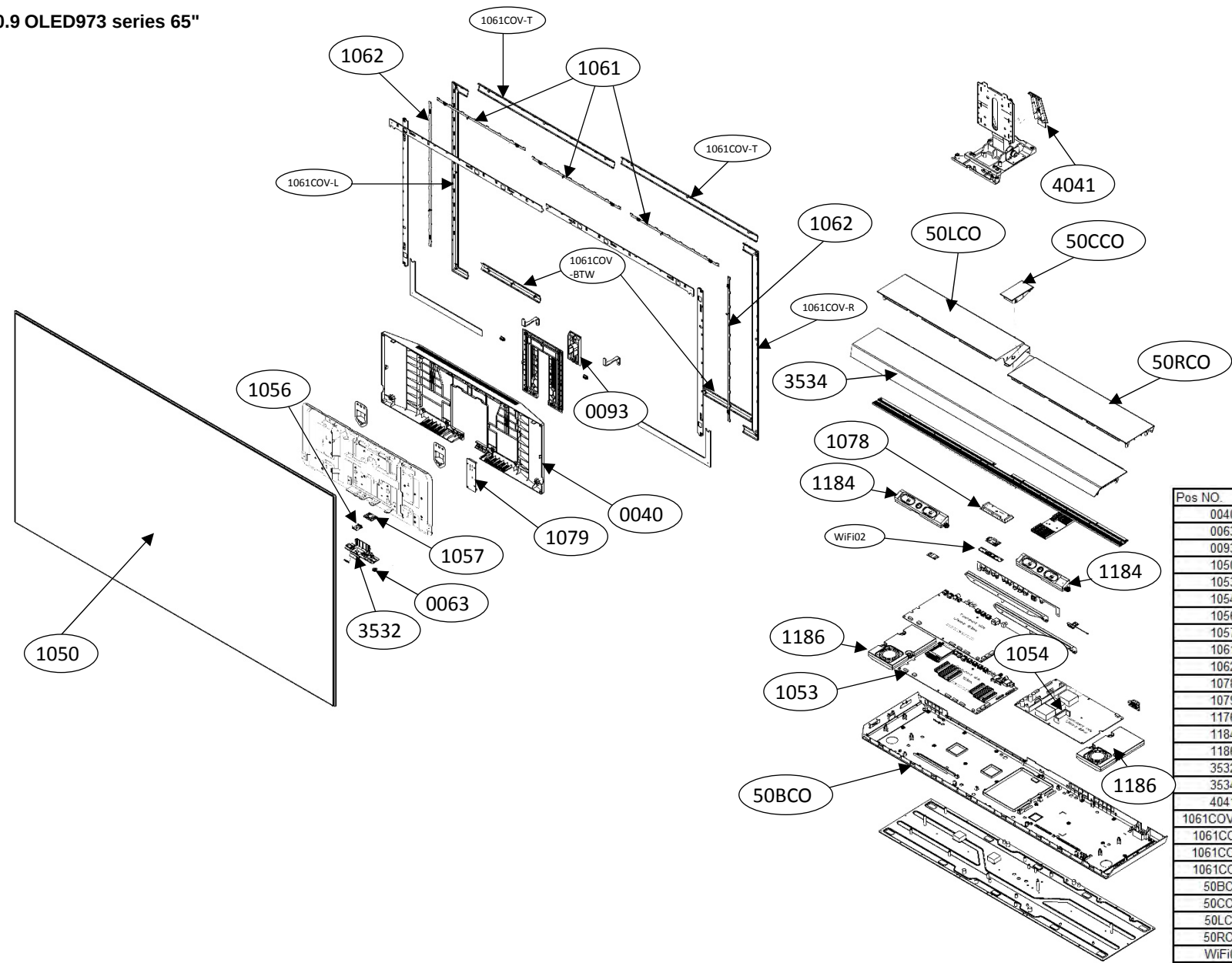
Pos NO.	Description	Remark
0030	BEZEL(integrated with panel)	
0036	LENS IR	
0040	rear cover	
0063	KEY_FUNCTION	
0065	COVER CLOCK REAR	
1050	LCD PANEL	
1053	MAIN BOARD	
1054	POWER BOARD	
1056	IR BOARD	
1057	KEY BOARD	
1061	AMBILIGHT(2)	
1062	AMBILIGHT	
1063	AMBILIGHT(3)	
1077	BT ANTENNA	
1176	REMOTE CONTROL	Not displayed
1184	SPEKERS(2)	
1186	WOOFER	
50L	BASE L	
50R	BASE R	
WIFI02	WIFI/BT USB	

10.8 OLED803/903 series 65"



Pos NO.	Description	Remark
0030	BEZEL(integrated with panel)	
0036	LENS IR	
0040	rear cover	
0063	KEY_FUNCTION	
0065	COVER_CLOCK_REAR	
1050	LCD_PANEL	
1053	MAIN_BOARD	
1054	POWER_BOARD	
1056	IR_BOARD	
1057	KEY_BOARD	
1061	AMBILIGHT(2)	
1062	AMBILIGHT(2)	
1063	AMBILIGHT(3)	
1077	BT_ANTENNA	
1176	REMOTE_CONTROL	Not displayed
1184	SPEKERS(2)	
1186	WOOFER	
50L	BASE_L	
50R	BASE_R	
WIFI02	WIFI/BT_USB	

10.9 OLED973 series 65"



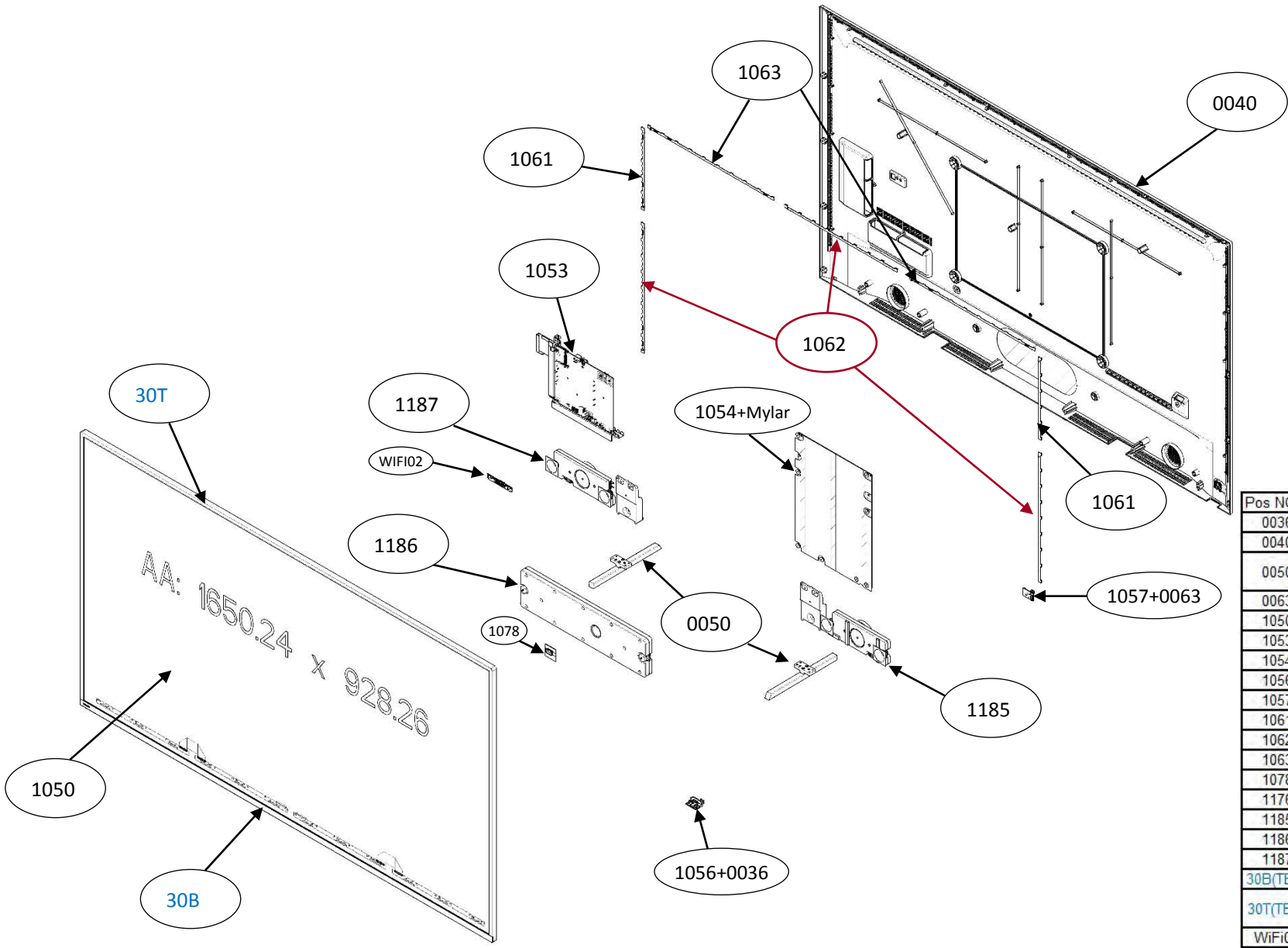
Pos NO.	Description	Remark
0040	REAR COVER	
0063	KEY FUNCTION	
0093	COVER HINGE	
1050	LCD PANEL	
1053	MAIN BOARD	
1054	POWER BOARD	
1056	IR BOARD	
1057	KEY BOARD	
1061	AMBILIGHT (3)	
1062	AMBILIGHT (2)	
1078	OPTION BOARD	
1079	OPTION BOARD	
1176	REMOTE CONTROL	Not displayed
1184	SPEAKERS	
1186	WOOFER	
3532	DECO LOGO	
3534	DECO SHEET	
4041	COVER CABLE COVER	
1061COV-BTW	AMBILIGHT BTW COVER	
1061COV-L	AMBILIGHT LEFT COVER	
1061COV-R	AMBILIGHT RIGHT COVER	
1061COV-T	AMBILIGHT TOP COVER	
50BCO	BASE BTM COVER	
50CCO	BASE CENTER COVER	
50LCO	BASE LEFT COVER	
50RCO	BASE RIGHT COVER	
WiFi02	WIFI/BT USB	

This exploded view diagram illustrates the assembly of a display unit. The components are labeled with callouts and arrows indicating their assembly sequence:

- 30T**: Points to the top edge of the main display frame.
- 30B**: Points to the bottom edge of the main display frame.
- 1050**: Points to the bottom bezel or frame component.
- 1061**: Points to the top bezel or frame component.
- 1062**: Points to the internal display panel, highlighted with a red circle and red arrows indicating its insertion into the frame.
- 1063**: Points to the top bezel or frame component.
- 1053**: Points to a small electronic component, likely a camera or sensor.
- 1187**: Points to a small electronic component, likely a camera or sensor.
- WIFI02**: Points to a small electronic component, likely a camera or sensor.
- 1054**: Points to a small electronic component, likely a camera or sensor.
- 1057+0063**: Points to a small electronic component, likely a camera or sensor.
- 1185**: Points to a small electronic component, likely a camera or sensor.
- 1078**: Points to a small electronic component, likely a camera or sensor.
- 0050**: Points to a small electronic component, likely a camera or sensor.
- 1056+0036**: Points to a small electronic component, likely a camera or sensor.

Pos NO.	Description	Remark
0036	LENS IR	
0040	REAR COVER	
0050	EDGE STAND – L/R identical (Screws included)(2)	
0063	KEY FUNCTION	
1050	LCD PANEL	
1053	PANEL SSB	
1054	POWER BOARD	
1056	IR BOARD	
1057	KEY BOARD	
1061	AMBI-LIGHT BOARD ASSY(2)	
1062	AMBI-LIGHT BOARD ASSY(3)	
1063	AMBI-LIGHT BOARD ASSY(2)	
1078	OPTION BOARD	
1176	REMOTE CONTROL	Not displayed
1185	SPEAKER R	
1187	SPEAKER L	
30B	BEZEL(Integrated with panel)	
30T	Bezel_Plastic Front- TOP(Integrated with panel)	
WiFi02	WIFI/BT USB	

10.11 8303 series 75"



Pos NO.	Description	Remark
0036	LENS IR	
0040	REAR COVER	
0050	EDGE STAND - L/R identical (Screws included)	
0063	KEY FUNCTION	
1050	LCD PANEL	
1053	PANEL SSB	
1054	POWER BOARD	
1056	IR BOARD	
1057	KEY BOARD	
1061	AMBI-LIGHT(2)	
1062	AMBI-LIGHT(3)	
1063	AMBI-LIGHT(2)	
1078	OPTION BOARD	
1176	REMOTE CONTROL	Not displayed
1185	SPEAKER	
1186	WOOFER	
1187	SPEAKER	
30B(TBD)	BEZEL(Integrated with panel)	
30T(TBD)	BEZEL_Plastic Front- TOP(Integrated with panel)	
WiFi02	WiFi/BT USB	