

Service
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Service Manual

Chassis name	Platform	Model name	Model name
TPN17.1E LA	NT72461	22PFS4232/12	43PFT4112/05
		22PFT4232/12	43PFT4112/12
		32PFS4132/12	24PFS4032/12
		32PFT4132/05	24PFT4032/12
		32PFT4132/12	24PFT4032/60
		32PFT4132/60	24PHS4032/12
		32PHS4132/12	24PHT4032/05
		32PHT4132/05	24PHT4032/12
		32PHT4132/12	24PHT4032/60
		32PHT4132/60	32PHS4032/12
		43PFS4132/12	32PHT4032/05
		43PFT4132/05	32PHT4032/12
		43PFT4132/12	32PHT4032/60
		43PFT4132/60	22PFS4022/12
		49PFS4132/12	22PFT4022/05
		49PFT4132/12	22PFT4022/12
		32PHS4112/12	22PFT4022/60
		32PHT4112/05	24PFS4022/12
		32PHT4112/12	24PFT4022/12
		39PHS4112/12	24PFT4022/60
		39PHT4112/05	24PHS4022/12
		39PHT4112/12	24PHT4022/05
		43PFS4112/12	24PHT4022/12

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Product Information

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

For PHx series TV

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

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

For PFx series TV

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

Reception

For PxT series TV

- 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)
- Digital audio playback (ISO/IEC 13818-3)

For PxS series TV

- 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)
- 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

Specifications

14.1

Power

Product specifications are subject to change without notice. For more specification details of this product, see www.philips.com/support

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.

For power consumption information, see chapter **Product Fiche**.

The power rating stated on the product typeplate is the power consumption for this product during normal household use (IEC 62087 Ed.2). The maximum power rating, stated between brackets, is used for electrical safety (IEC 60065 Ed. 8.0).

2. Connections Overview

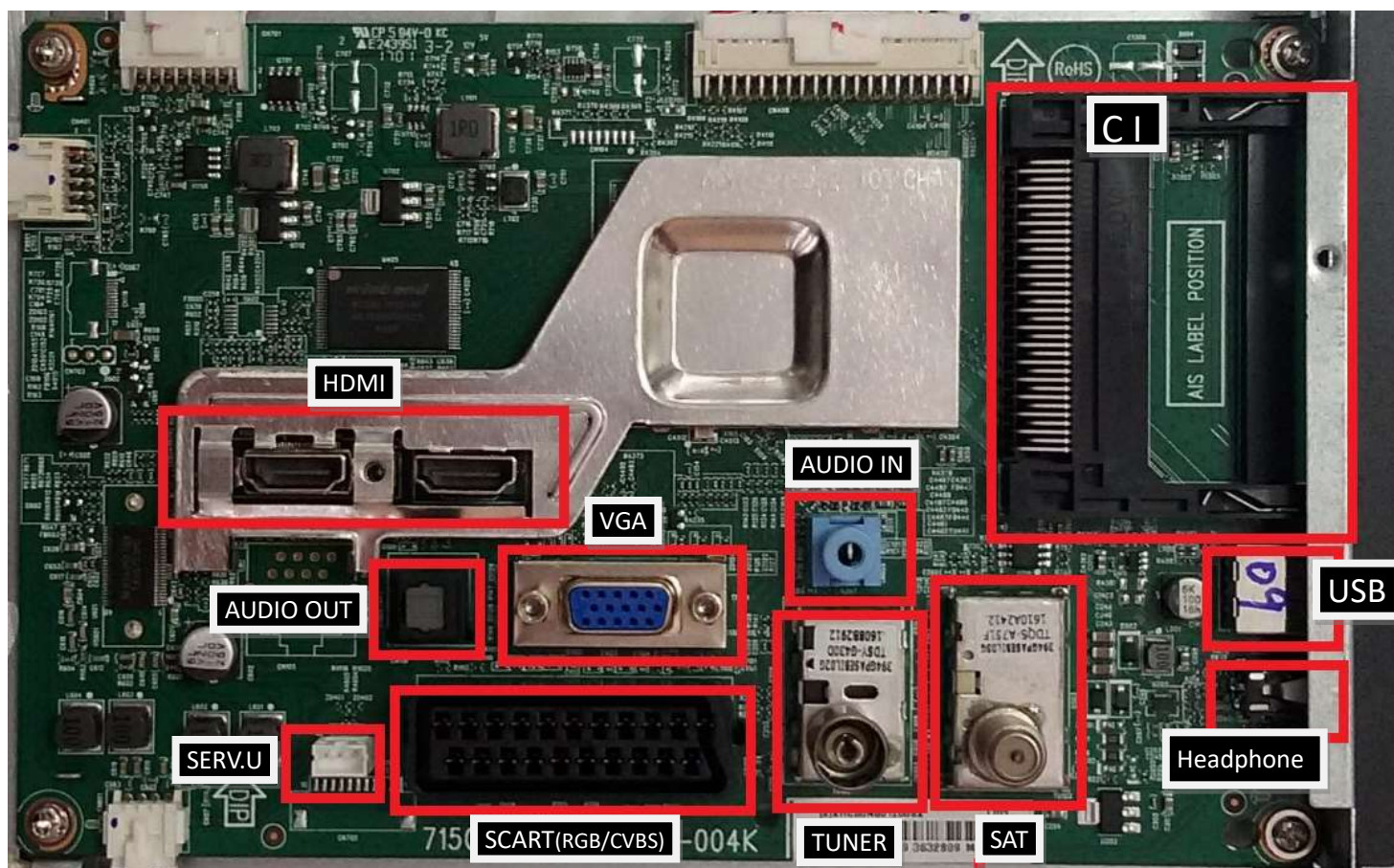


Figure 2-1 (24" 4022 series)

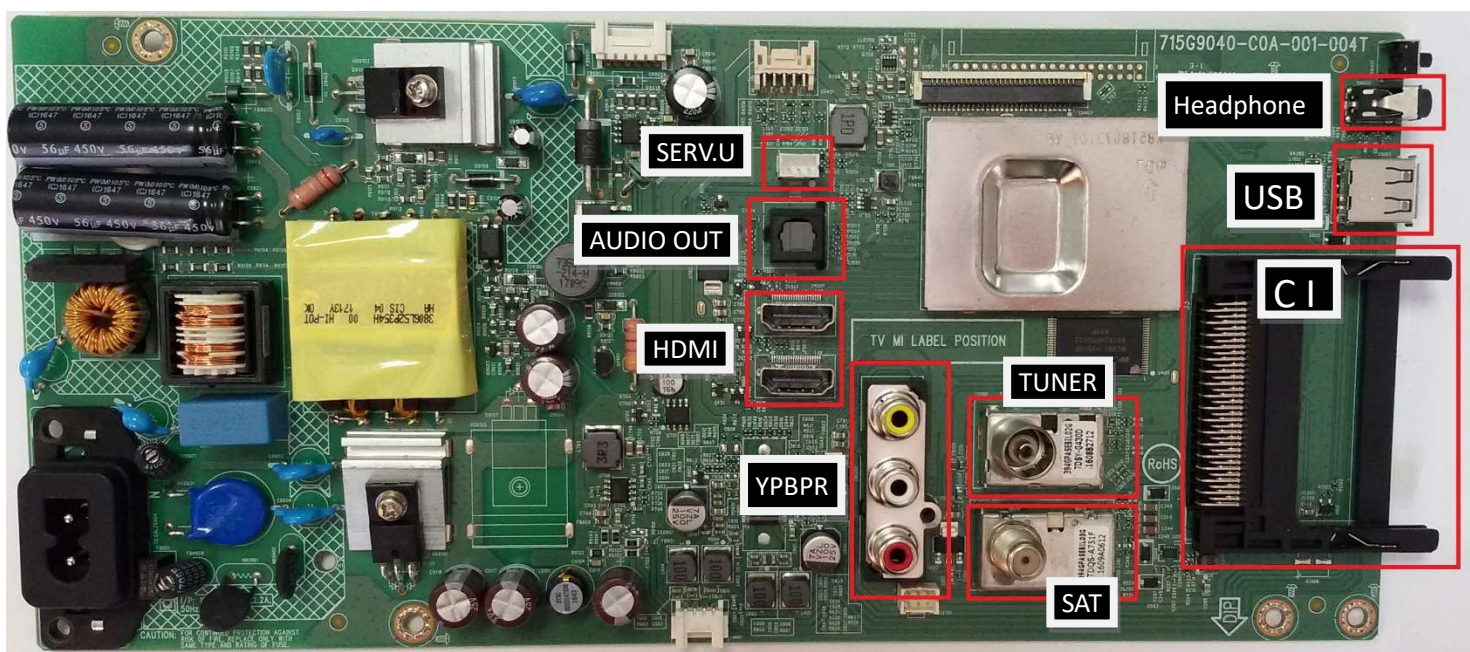


Figure 2-2 (32" 4112 series)

Remarks: [Figure 2-1](#) apply to the 24PFS4022/12, but will be similar for other series models except for 4112 series.

[Figure 2-2](#) apply to the 32PHS4112/12, but will be similar for other 4112 series models.

3. Mechanical Instructions

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

3.1 Cable Dressing

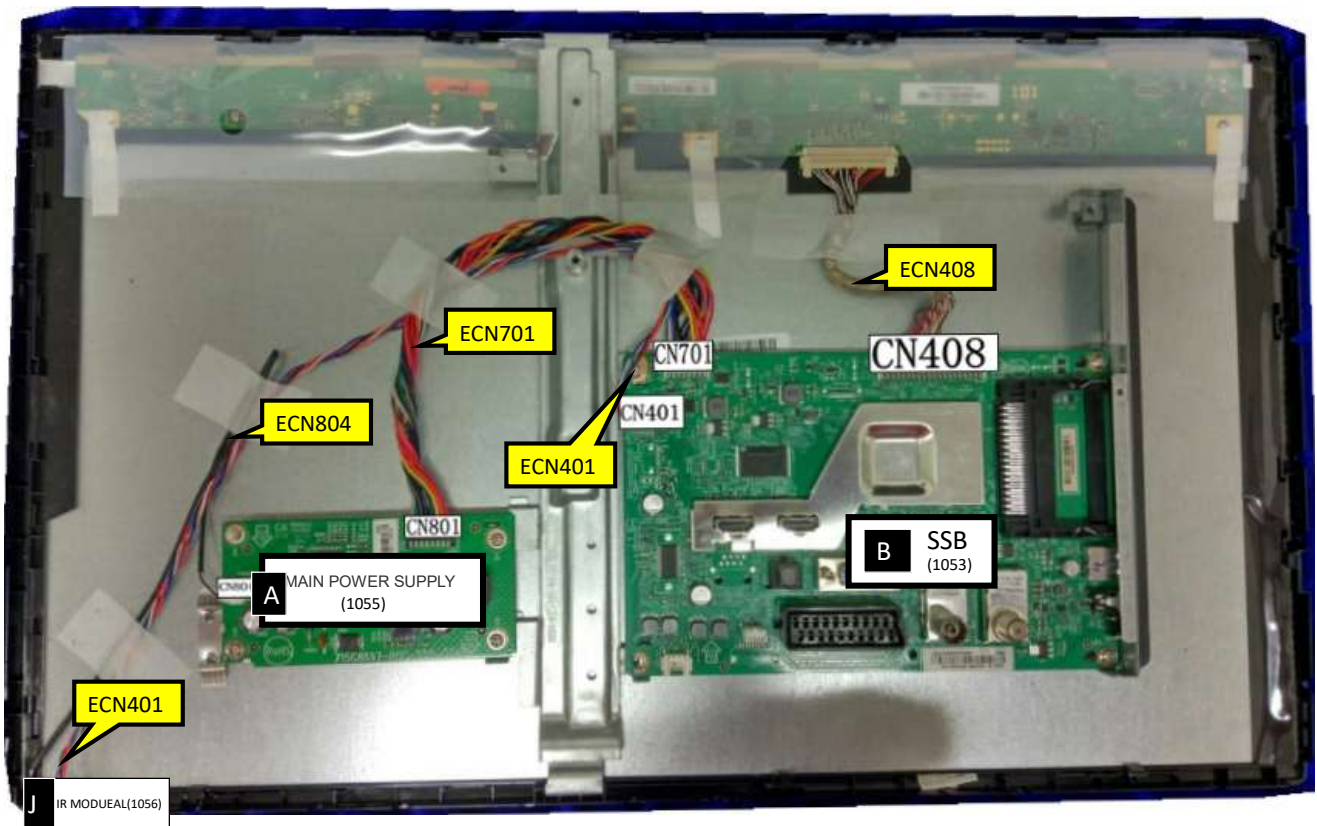


Figure 3-1 Cable dressing (22" 4232 series)

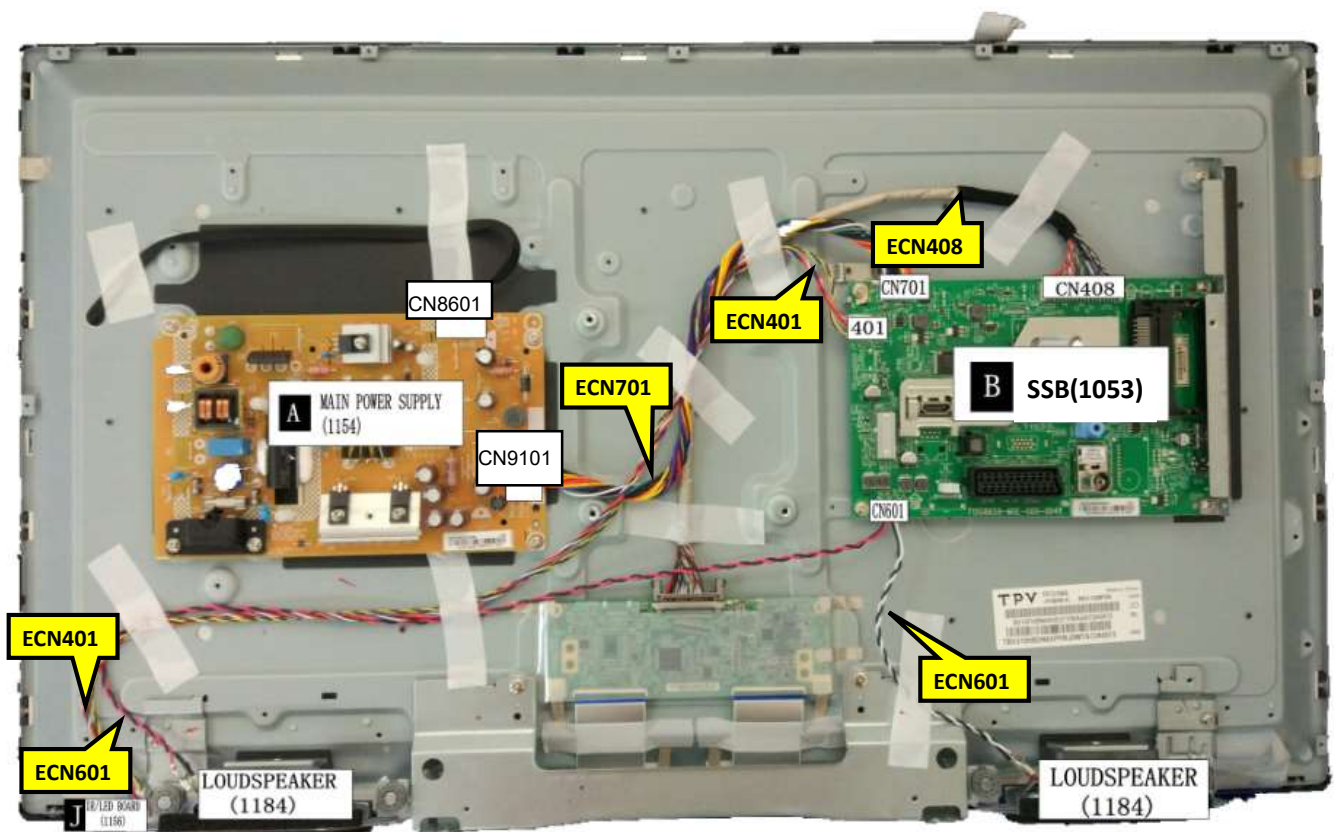


Figure 3-2 Cable dressing (32" 4032/4132 series)

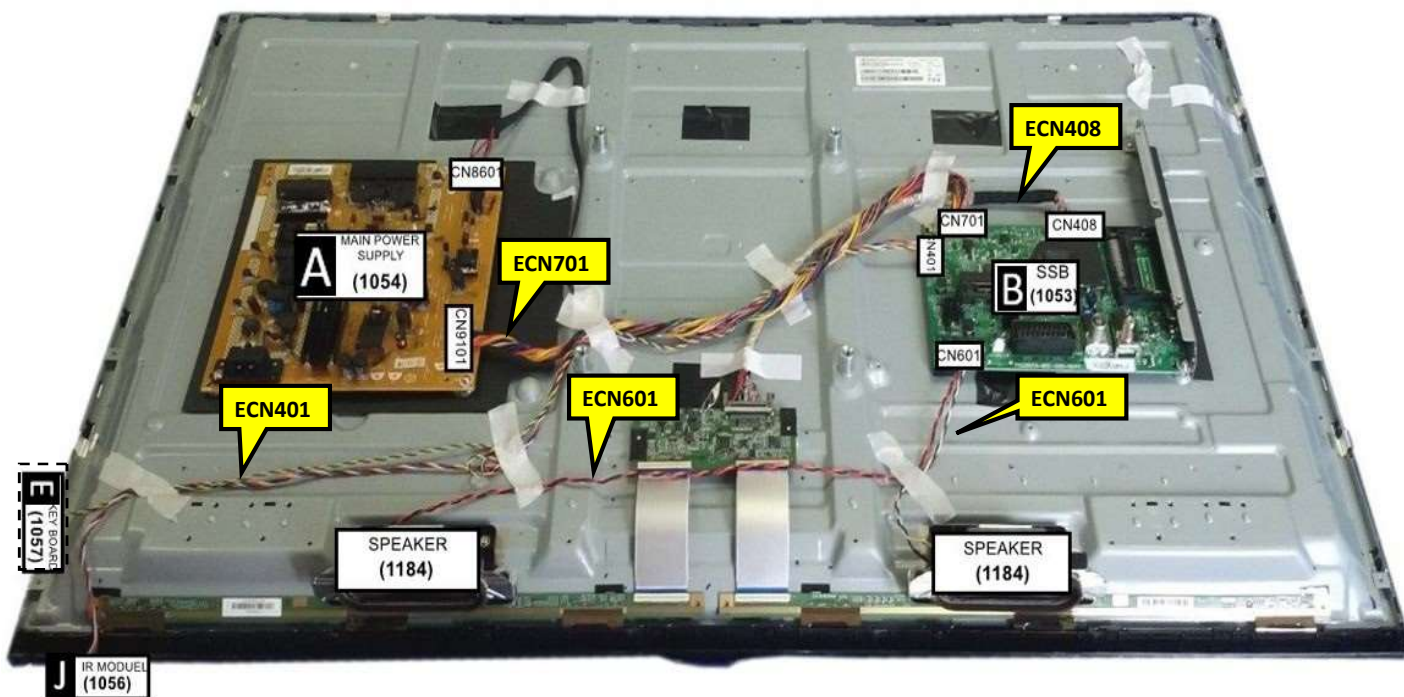


Figure 3-3 Cable dressing (43" 4132 series)

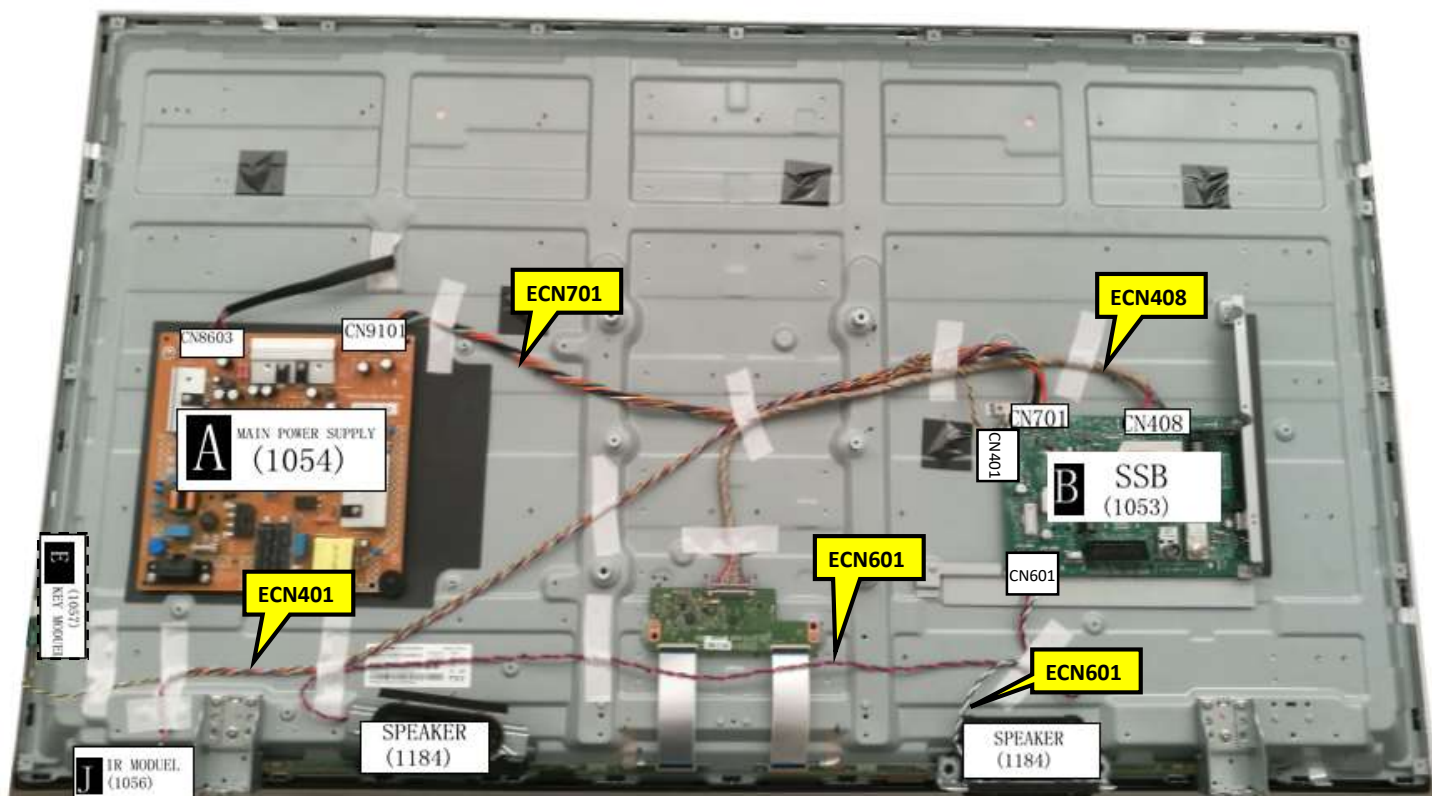


Figure 3-4 Cable dressing (49" 4132 series)



Figure 3-5 Cable dressing (32" 4112 series)

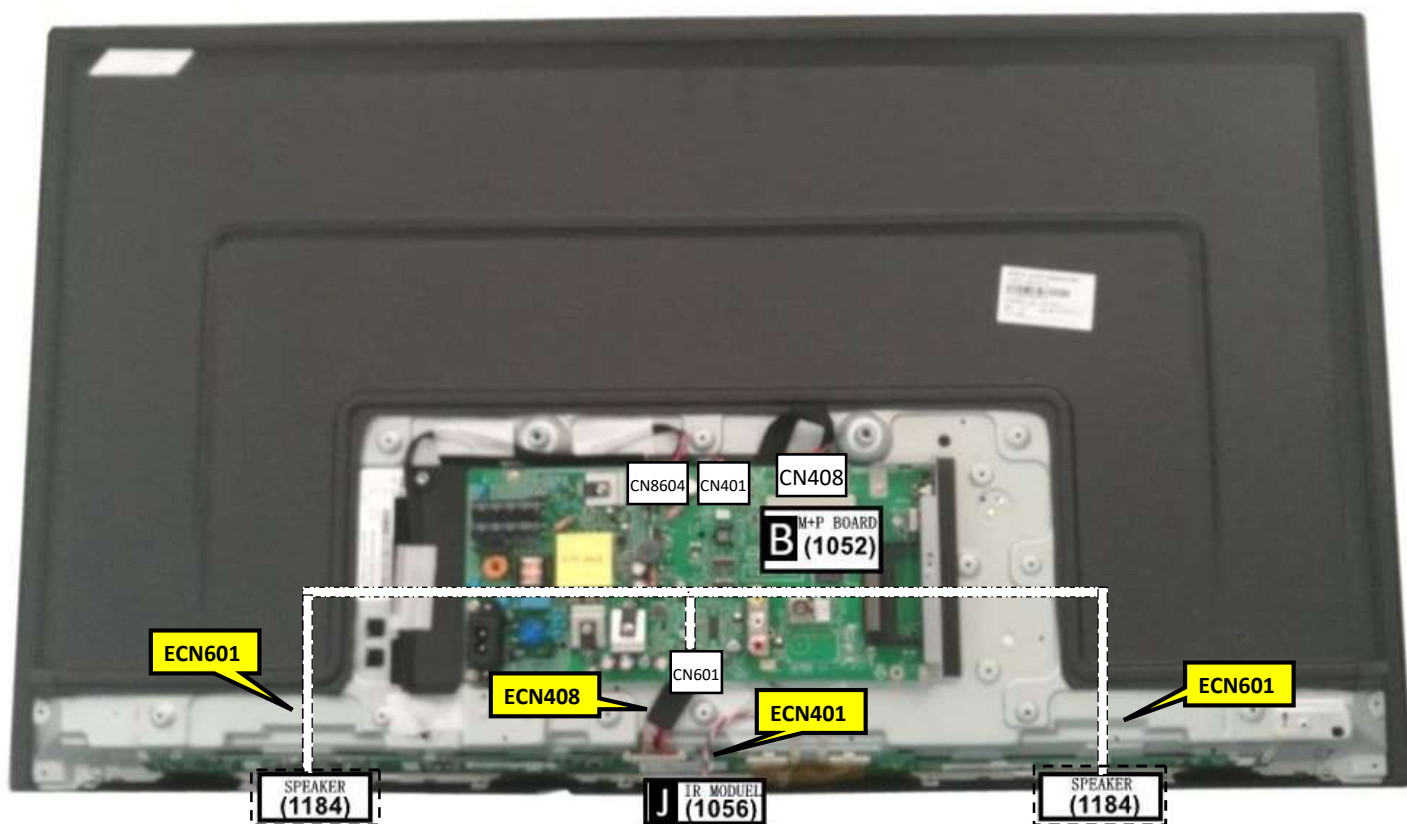


Figure 3-6 Cable dressing (39" 4112 series)

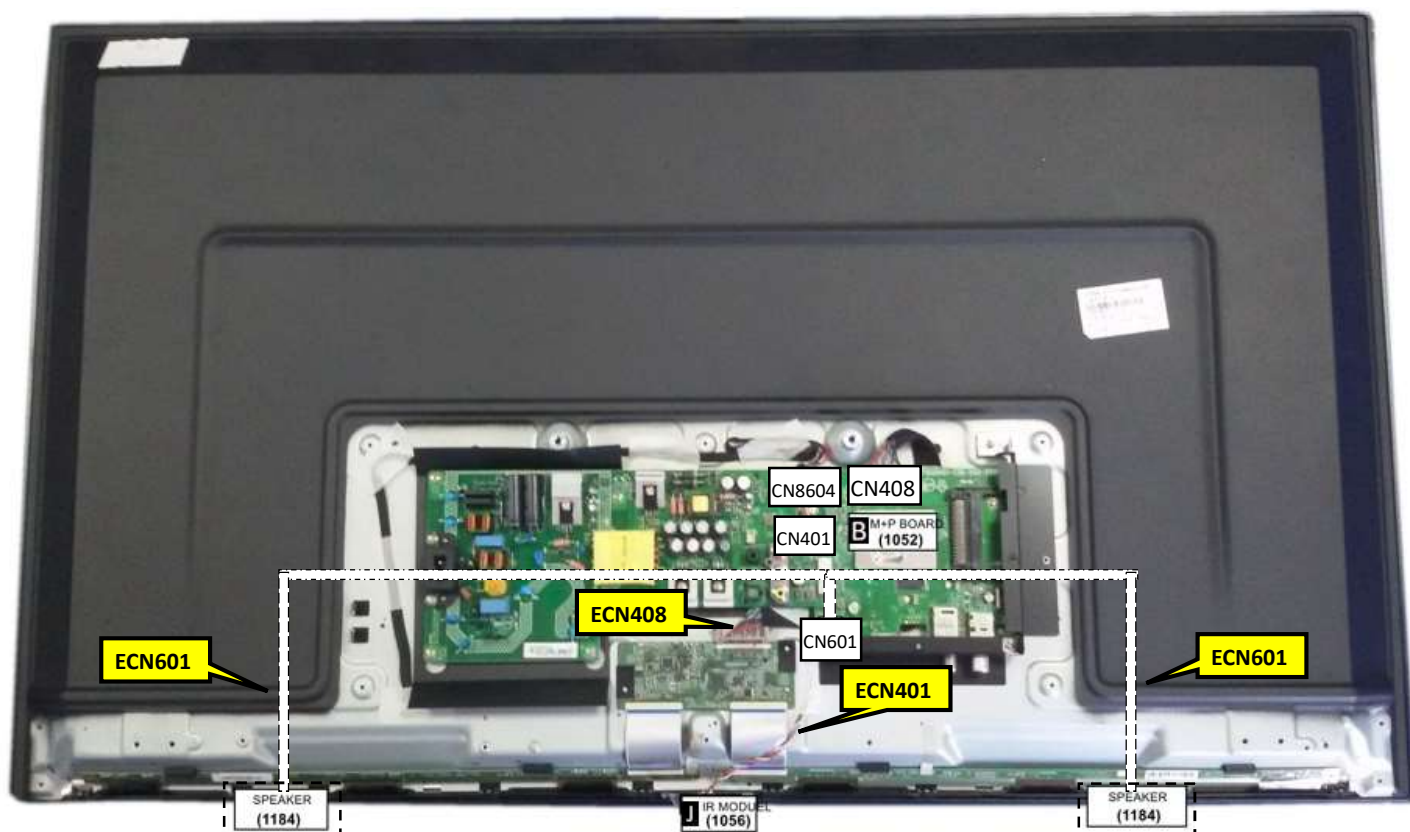


Figure 3-7 Cable dressing (43" 4112 series)

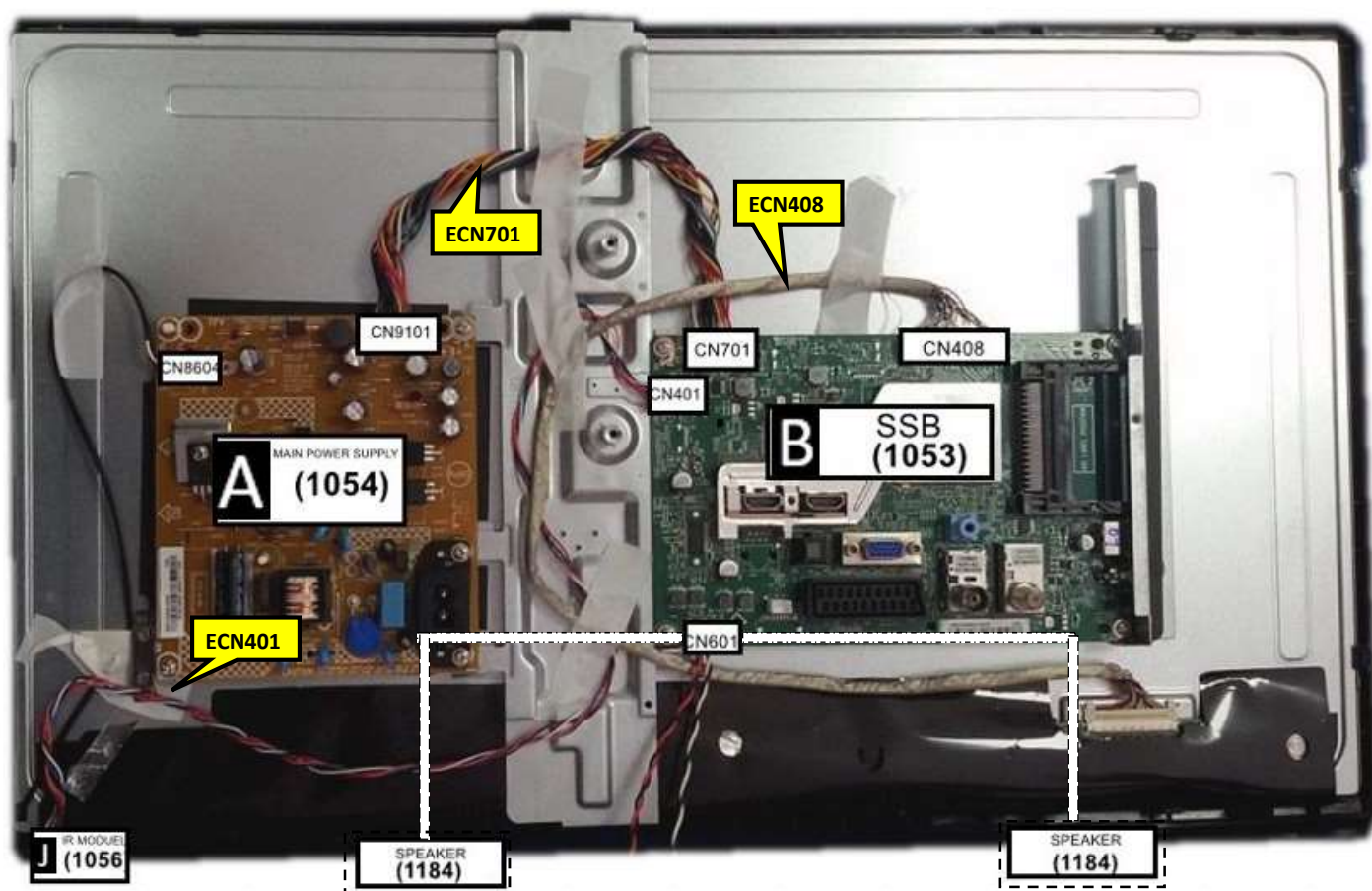


Figure 3-8 Cable dressing (24" 4022 series)

3.2 Assembly/Panel Removal

3.2.1 Stand removal

Notes: Refer to [Figure 3-9](#) and [Figure 3-10](#) for details. But Figures below can deviate slightly from the actual situation due to the different set executions.

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

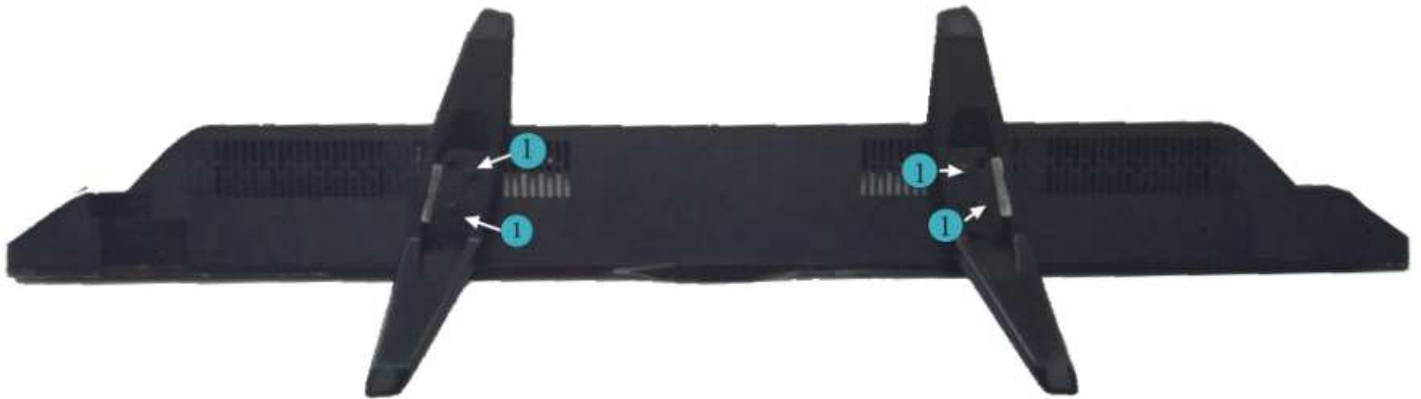


Figure 3-9



Figure 3-10 (For 4022 series)

3.2.2 Rear Cover

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

1. Remove fixation screws [2] and [3] that secure the Back cover assy. Refer to [Figure 3-11](#) for details.
Remove fixation screws [2] and [3] that secure the Back cover assy. Refer to [Figure 3-12](#) for details.
At the indicated areas [4] the cover is secured by clips. Be very careful with releasing those. Refer to [Figure 3-13](#) for details.
2. 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.

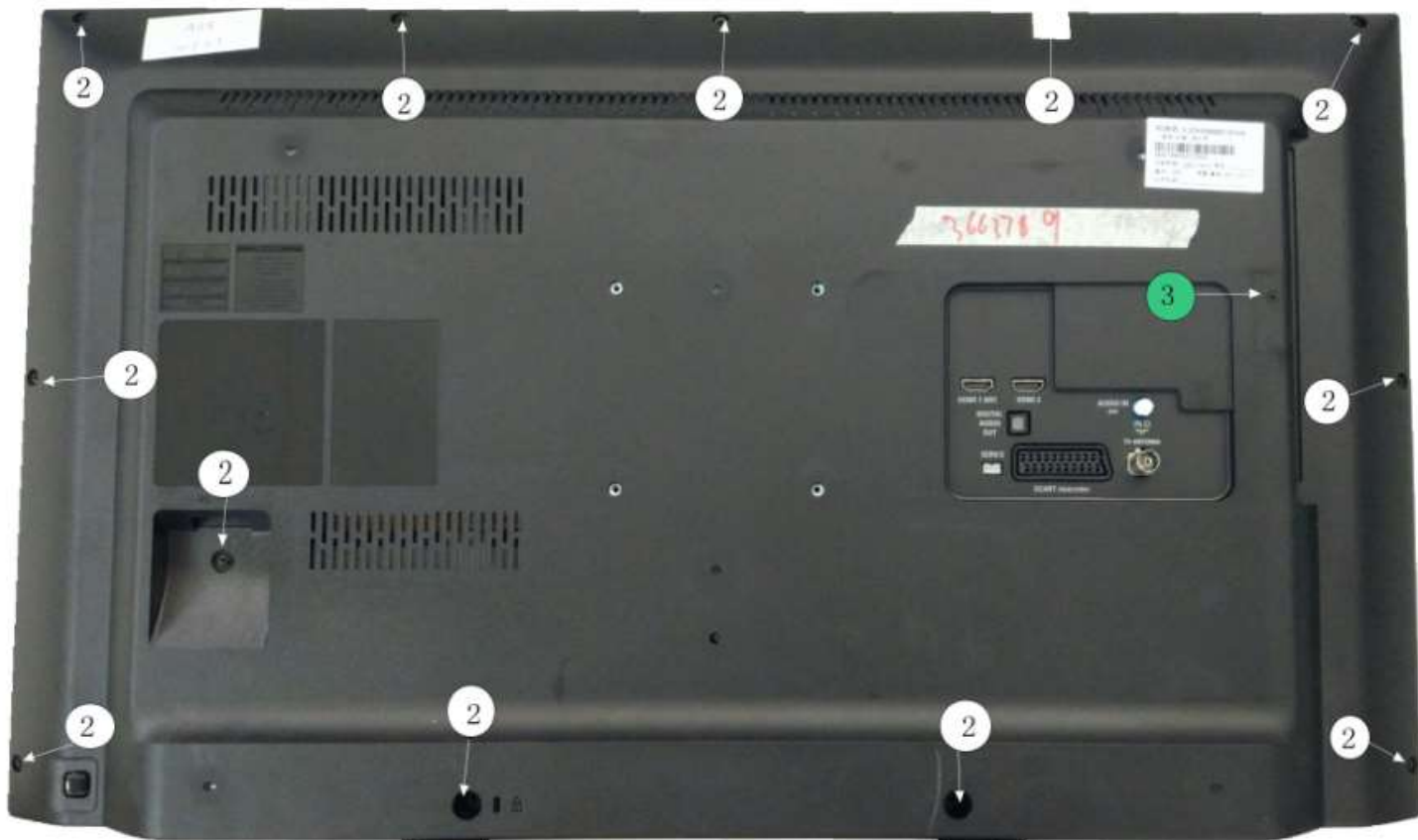


Figure 3-11 (For 4232/4132/4032 series)



Figure 3-12 (For 4112 series)



Figure 3-13 (For 4022 series)

3.2.3 Keyboard Control Unit

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] from the keyboard control panel and take it out from the Back cover

When defective, replace the whole unit.

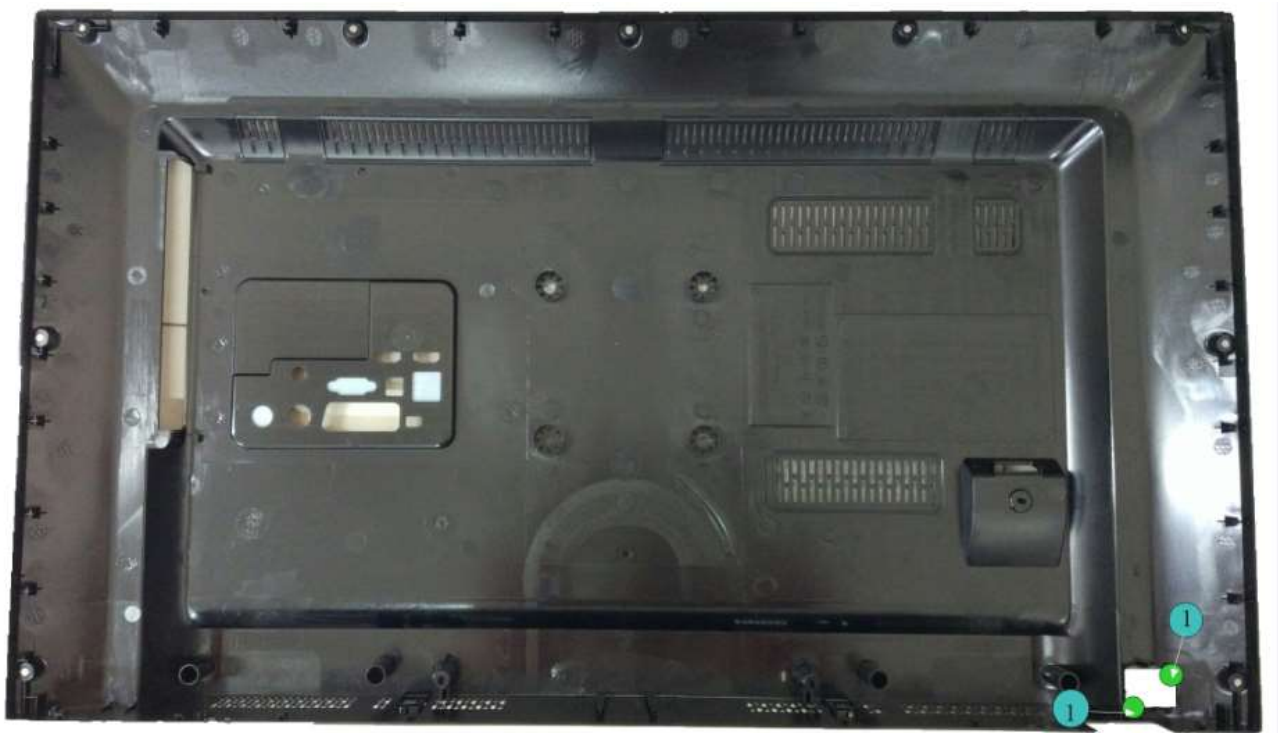


Figure 3-14

3.2.4 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 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 [3] from the SSB or M+P BOARD. Refer to [Figure 3-15](#) or [Figure 3-16](#) for details.
4. The SSB / M+P BOARD can now be shifted from side connector cover, then lifted and taken out of the I/O bracket.

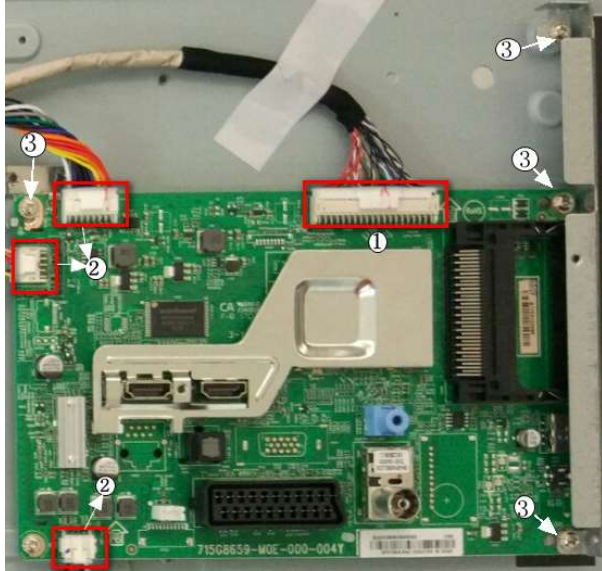


Figure 3-15 SSB

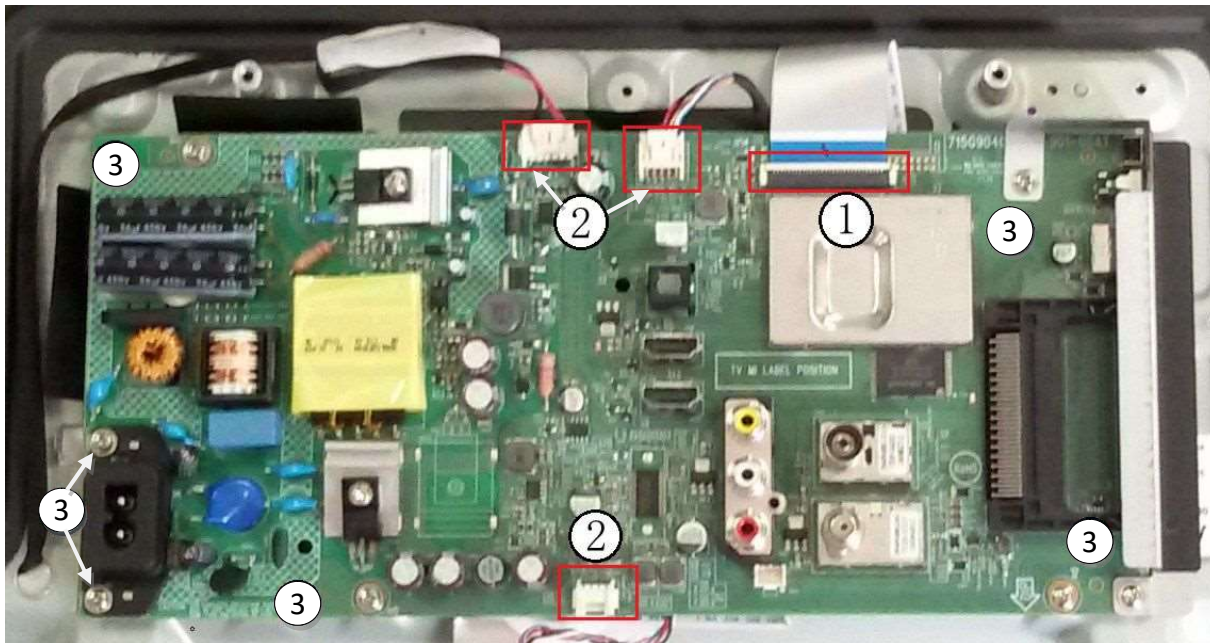


Figure 3-16 M+P BOARD (For 4112 Series)

3.2.5 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.

3.2.6 IR board Control Unit

1. Unplug the connector from the SSB.

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

2. Remove all the fixation screws 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.



Figure 3-17 (For 32" 4132 series)

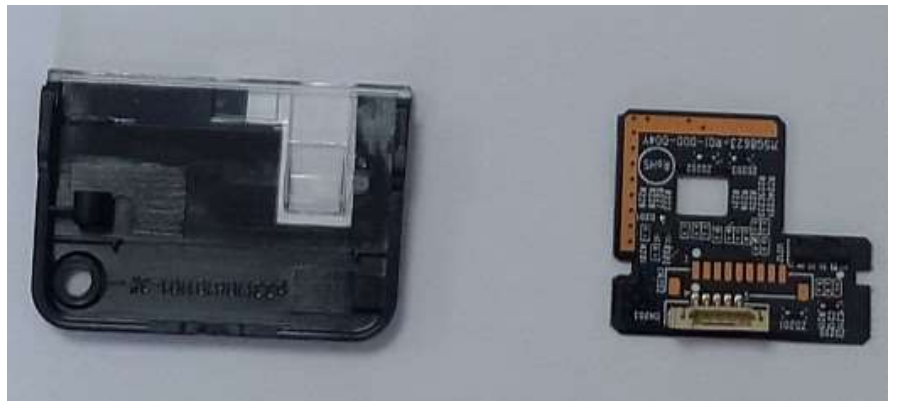


Figure 3-18 (For 43" 4132 series)

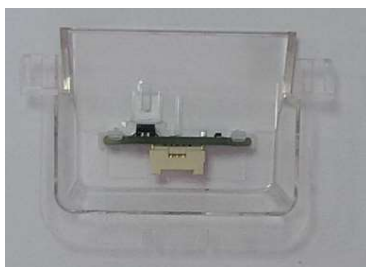


Figure 3-19 (For 32" 4112 series)

1. Unplug the connector from the SSB.

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

2. Remove the IR hold, IR board from the DECO_REAR_COVER.

When defective, replace the whole unit.

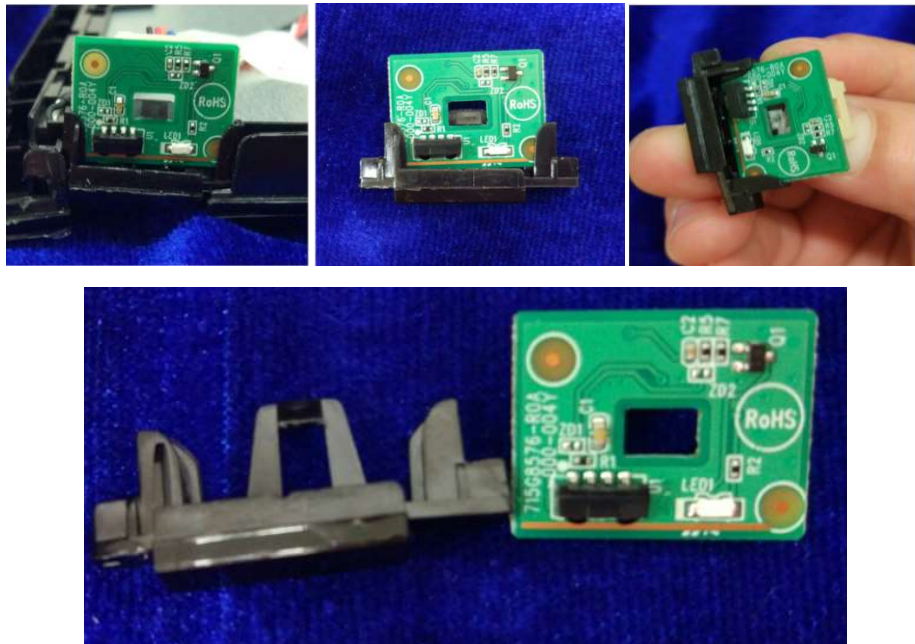


Figure 3-20 (For 22" 4232 series)

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.

Notes: For 24" 4022 & 32/39/43" 4112 series, the speaker is catch on the Back cover. Please be careful to avoid damage the fragile connectors when assembly! Refer to [Figure 3-21](#) and [Figure 3-22](#) for details.

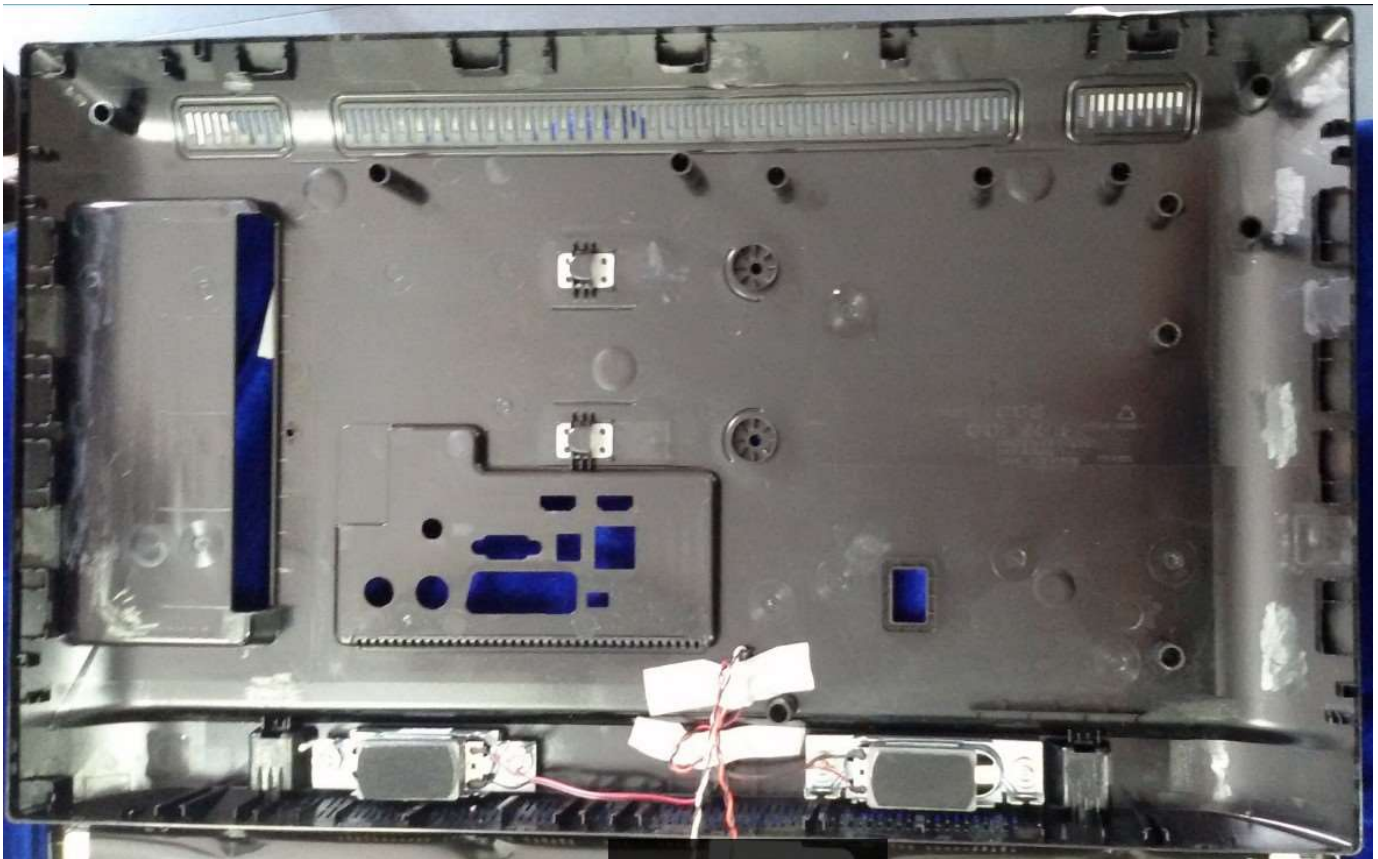


Figure 3-21 (For 24" 4022 series)

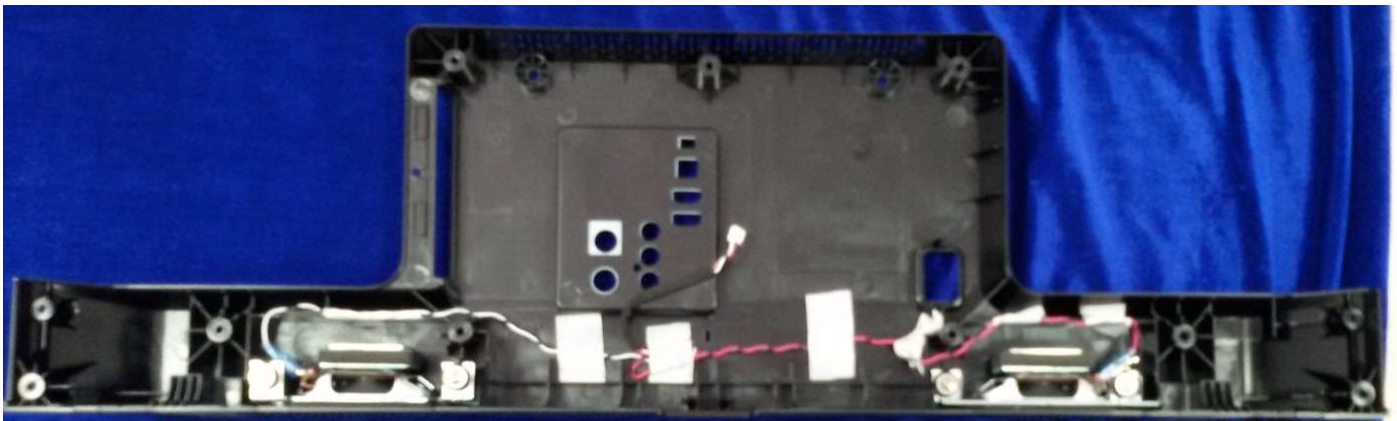


Figure 3-22(For 32" 4112 series)

3.2.8 WIFI module

1. Unplug the connector from the SSB..
 2. Remove fixation screw that secure the WIFI module,
- When defective, replace the whole unit.

3.2.9 LCD Panel

Remove the SSB as described earlier.

Remove the keyboard control panel as described earlier.

Remove the stand bracket as described earlier.

Remove the IR/LED as described earlier.

Remove the fixations screws that fix the metal clamps to the front bezel. Take out those clamps.

Remove all other metal parts not belonging to the panel.

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

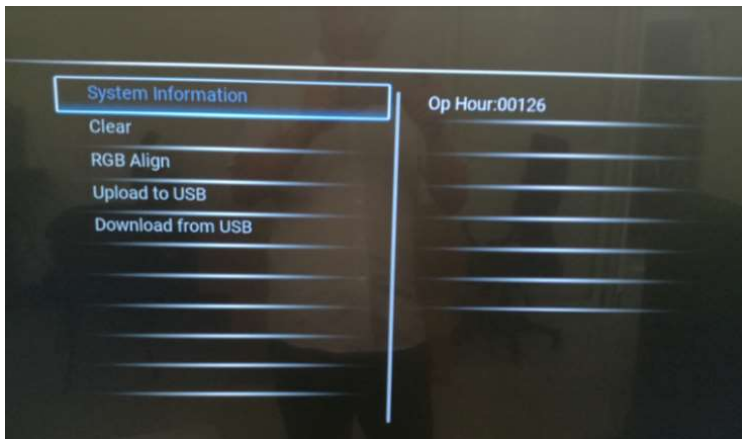
Use one of the following methods:

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



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

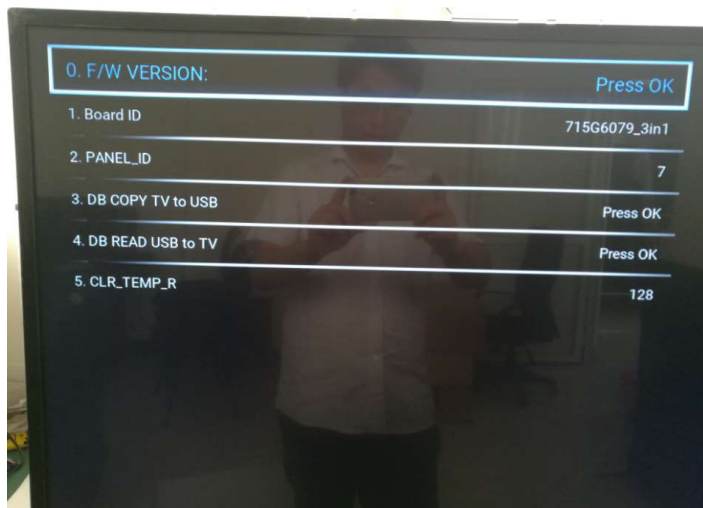
To activate the Factory mode, use the following method:

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



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.

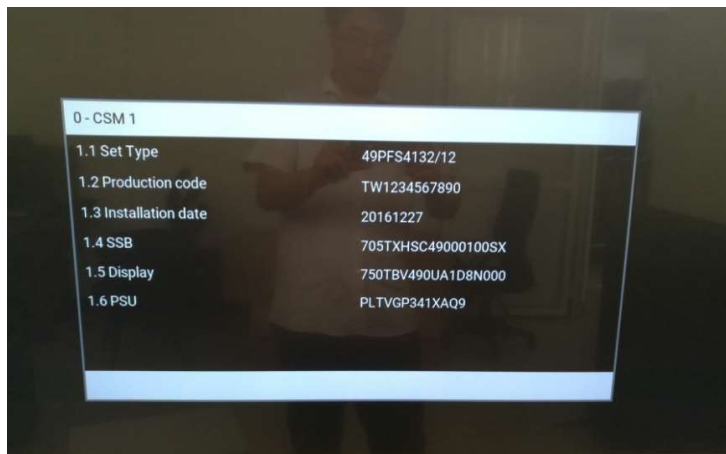
Possibility to use “CH+” or “CH-” for channel surfing, or enter the specific channel number on the RC.

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.

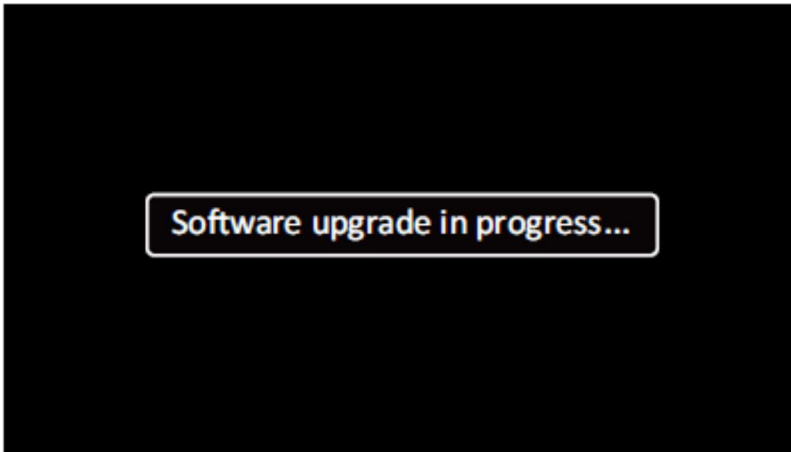
Press the POWER button on the television set.

5. Software Upgrading, Error code and Panel Code

5.1 Software Upgrading

5.1.1. The following update is for .pkg file.

1. Rename the file to "upgrade_loader.pkg"
2. Prepare a USB memory.
3. Copy the software to USB flash disk(root directory).
4. Switch off the TV and Insert the USB memory stick that contains the software update files in one of the TV's USB 2.0 ports.
Note: It contains USB3.0 port, if connect on it, the software may can't be detected.
5. Switch on the TV. The TV will detect the USB memory s tick automatically. Then a window jumps out as below



6. When the TV software is updated, the TV will turn on again automatically. Remove your USB flash drive.
7. We can enter in CSM or Factory mode to check the current software version.

5.1.2. The following update is for .upg file.

Step 1: Ready for F/W Upgrade

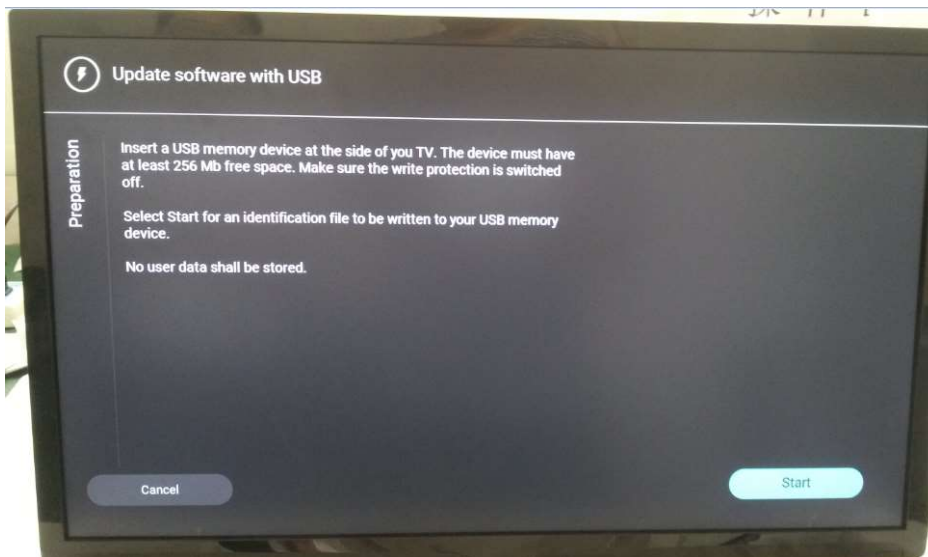
1. Prepare a USB memory.
2. Copy the software to USB flash disk(root directory).

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

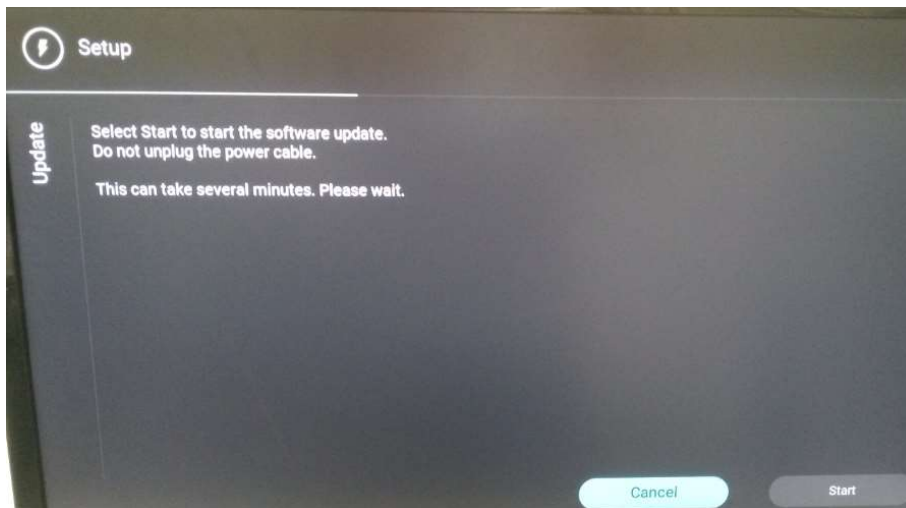


Step 2: F/W Upgrade

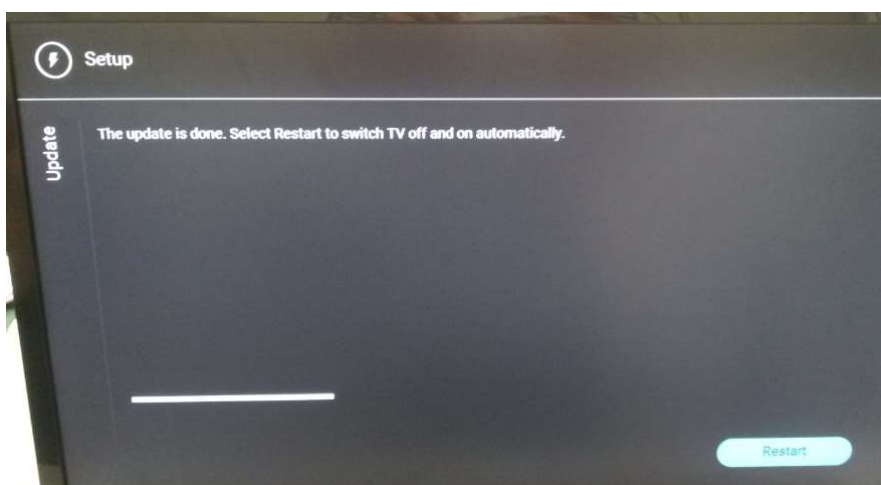
1. Plug the USB memory on the USB port on the side I/O port of TV (Please connect to USB 2.0 port, not recommend USB3.0 port)
2. AC on (Power plug)
3. TV will show message as below image, Press [Start] to detect the software automatically



4. Press [Start] to start software upgrade



5. Upgrade in progress
6. After software upgrade complete, select [Restart] to reboot TV.



Step 3: Check the SW version

1. After burning software, TV will restart
2. Press "Menu+1999+back", enter Factory 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!

5.2.1 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 three 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	Medium	Error/	I²C address	EB: in error buffer BL: Blinking LED	Device	Defective board
					Prot.				
I²C BUSES									
I²C 0 (SSB bus)	2	13	SOC	I²CM0	E		BL/EB	SSB	SSB
I²C MCU (BE bus)	2	14	SOC	I²CMCU	E		BL/EB	SSB	SSB
I²C 2 (FE bus)	2	15	SOC	I²CM2	E		BL/EB	SSB	SSB
I²C 1 (SFR bus)	2	18	SOC	I²CM1	E		BL/EB	SSB	SSB
SOC doesn't boot (HW cause)	2	15	St-by µP		P	D4	BL	MT5593	SSB
Supply related:									
12V	3	16	St-by µP	I/O	P		BL		Supply
Display supply (POK)	3	17	SOC	I/O	E		EB		Supply
SSB									
I2C switch	2	24	SOC	I²CMCU	E	E0	EB	PCA9540	SSB
Channel dec	2	27	SOC	I²CM2	E	D8-DC	EB	Silab Si216x	SSB
Boston (HDMI2.2)	2	29	SOC	I²CM0	E	64	EB	SIL 9777	SSB
Lnb controler	2	31	SOC	I²CM2	E	10	EB	LNBH 25	SSB
Kleernet (Wireless Audio)	2	32	SOC	I²CM1	E		EB		SSB
DTV Tuner	2	34	SOC	I²CM2	E	C0	EB	Silab Si2157 (H/T models) Sony Helene (K/S models)	SSB
Tuner DVB-S2	2	36	SOC	I²CM2	E	C6	EB	STV 6111	SSB
Class-D	2	37	SOC	I²CM3	E	36	EB	TAS 5731 PHP	SSB
FPGA PQ	2	38	SOC	I²CMCU	E	84?	EB	Durango	SSB
2nd Audio amplifier	2	39	SOC	I²CM3?	E	?	EB	?	SSB
T° sensor SSB/set	2	42	SOC	I²CM1	E	98	EB	LM 75	T°sensor
Light sensor	6	43	SOC	I²CM3	E	72	EB	TSL2571	SET
SOC doesn't boot (SW cause)	2	53	St-by µP		P	D4	BL	MT5593	SSB
NT72324	2	61	SOC	I²CM2	E	34	EB	NT72324	SSB
NT72323	2	62	SOC	I²CM2	E	A4	EB	NT72323	SSB
Splash error	2	65	SOC	-	E	-	EB	NT314, MT 5593,	SSB

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.

Panel Code

Press the following key sequence on a standard RC transmitter: "062598" directly followed by MENU and "xxx", where "xxx" is a 3 digit decimal value of the panel type: see column "Display Code" in below tab. After resetting the Display Code, restart the set immediately.

CTN_ALT BOM#	Panel Type	Display Code	CTN_ALT BOM#	Panel Type	Display Code
22PFS4232/12	TPM215WF1-WU3101.K	008	43PFT4132/12	TPT430H3-FHBN10.K SA8P	029
22PFT4232/12	TPM215WF1-WU3101.K	008	43PFT4132/60	TPT430H3-DUYSHA.G S1BH	006
32PFS4132/12	TPT315B5-EUJFFE S1R	005	43PFT4132/60	TPT430H3-DUYSHA.G S1CB	006
32PFS4132/12	TPT315B5-FHBN0.K S49P2N	019	49PFS4132/12	TPT490H2-DUYSHA.G SC1D	007
32PFT4132/05	TPT315B5-EUJFFE S1R	005	49PFS4132/12	TPT490H2-DUYSHA	025
32PFT4132/05	TPT315B5-FHBN0.K S49P2N	019	49PFT4132/12	TPT490H2-DUYSHA.G SC1D	007
32PFT4132/12	TPT315B5-EUJFFE S1R	005	49PFT4132/12	TPT490H2-DUYSHA	025
32PFT4132/12	TPT315B5-FHBN0.K S49P2N	019	32PHS4112/12	TPT315B5-AN10.S SH02E	016
32PFT4132/60	TPT315B5-EUJFFE S1R	005	32PHT4112/05	TPT315B5-AN10.S SH02E	016
32PFT4132/60	TPT315B5-FHBN0.K S49P2N	019	32PHT4112/12	TPT315B5-AN10.S SH02E	016
32PHS4132/12	TPT315B5-WHBN0.K S8D62R	004	39PHS4112/12	TPT390U2-TA2A0.Q S01A	017
32PHS4132/12	TPT315B5-AN10.S SH02B	013	39PHT4112/05	TPT390U2-TA2A0.Q S01A	017
32PHS4132/12	TPT315B5-WHBN85.K SD850A	020	39PHT4112/12	TPT390U2-TA2A0.Q S01A	017
32PHS4132/12	TPT315B5-WHBN55.K	024	43PFS4112/12	TPT430H3-DUYSHA.G S1CR	018
32PHS4132/12	TPT315B5-WHBN55.K	022	43PFS4112/12	TPT430H3-FHBN10.K SA9E	027
32PHS4132/12	TPT315B5-WHBN55.K	023	43PFT4112/05	TPT430H3-DUYSHA.G S1CR	018
32PHS4132/12	TPT315B5-AN10.S SH02R	030	43PFT4112/05	TPT430H3-FHBN10.K SA9E	027
32PHT4132/05	TPT315B5-WHBN0.K S8D62R	004	43PFT4112/12	TPT430H3-DUYSHA.G S1CR	018
32PHT4132/05	TPT315B5-AN10.S SH02B	013	43PFT4112/12	TPT430H3-FHBN10.K SA9E	027
32PHT4132/05	TPT315B5-WHBN85.K SD850A	020	24PFS4032/12	TPM238WF1-FHBN10.K (Rev.5855)	010
32PHT4132/05	TPT315B5-WHBN85.K SDN30A	021	24PFT4032/12	TPM238WF1-FHBN10.K (Rev.5855)	010
32PHT4132/05	TPT315B5-WHBN55.K SD941A	022	24PFT4032/60	TPM238WF1-FHBN10.K (Rev.5855)	010
32PHT4132/05	TPT315B5-WHBN55.K SD850A	023	24PHS4032/12	TPM236WH2-WHBN00.K (Rev.5946)	009
32PHT4132/05	TPT315B5-WHBN55.K SD940A	024	24PHT4032/05	TPM236WH2-WHBN00.K (Rev.5946)	009
32PHT4132/05	TPT315B5-AN10.S SH02R	030	24PHT4032/12	TPM236WH2-WHBN00.K (Rev.5946)	009
32PHT4132/12	TPT315B5-WHBN0.K S8D62R	004	24PHT4032/60	TPM236WH2-WHBN00.K (Rev.5946)	009
32PHT4132/12	TPT315B5-AN10.S SH02B	013	32PHS4032/12	TPT315B5-WHBN0.K S8D62W	012
32PHT4132/12	TPT315B5-WHBN85.K SD850A	020	32PHS4032/12	TPT315B5-AN10.S SH02F	013
32PHT4132/12	TPT315B5-WHBN85.K SDN30A	021	32PHT4032/05	TPT315B5-WHBN0.K S8D62W	012
32PHT4132/12	TPT315B5-WHBN55.K SD941A	022	32PHT4032/12	TPT315B5-WHBN0.K S8D62W	012
32PHT4132/12	TPT315B5-WHBN55.K SD850A	023	32PHT4032/12	TPT315B5-AN10.S SH02F	013
32PHT4132/12	TPT315B5-WHBN55.K SD940A	024	32PHT4032/60	TPT315B5-WHBN0.K S8D62W	012
32PHT4132/12	TPT315B5-AN10.S SH02R	030	32PHT4032/60	TPT315B5-AN10.S SH02F	013
32PHT4132/60	TPT315B5-WHBN0.K S8D62R	004	32PHT4032/60	TPT315B5-AN10.S SH02B	013
32PHT4132/60	TPT315B5-AN10.S SH02B	013	22PFS4022/12	TPM215WF1-WU3101.K (REV.485BD)	008
32PHT4132/60	TPT315B5-WHBN85.K SDN30A	021	22PFT4022/05	TPM215WF1-WU3101.K (REV.485BD)	008
43PFS4132/12	TPT430H3-DUYSHA.G S1BH	006	22PFT4022/12	TPM215WF1-WU3101.K (REV.485BD)	008
43PFS4132/12	TPT430H3-DUYSHA.G S1CB	006	22PFT4022/60	TPM215WF1-WU3101.K (REV.485BD)	008
43PFS4132/12	TPT430H3-FHBN10.K SA8F	026	24PFS4022/12	TPM238WF1-FHBN10.K 5856	010

43PFS4132/12	TPT430H3-FHBN10.K SA8P	029	24PFS4022/12	TPM238WF1-LF1L0.Q S1A	011
43PFT4132/05	TPT430H3-DUYSHA.G S1BH	006	24PFT4022/12	TPM238WF1-FHBN10.K 5856	010
43PFT4132/05	TPT430H3-DUYSHA.G S1CB	006	24PFT4022/12	TPM238WF1-LF1L0.Q S1A	011
43PFT4132/05	TPT430H3-FHBN10.K SA8F	026	24PFT4022/60	TPM238WF1-FHBN10.K 5856	010
43PFT4132/05	TPT430H3-FHBN10.K SA8P	029	24PHS4022/12	TPM236WH2-WHBN00.K 5947	009
43PFT4132/12	TPT430H3-DUYSHA.G S1BH	006	24PHT4022/05	TPM236WH2-WHBN00.K 5947	009
43PFT4132/12	TPT430H3-DUYSHA.G S1CB	006	24PHT4022/12	TPM236WH2-WHBN00.K 5947	009
43PFT4132/12	TPT430H3-FHBN10.K SA8F	026			

6. Circuit Descriptions

6.1 Introduction

The TPN17.1E LA is a new chassis launched in EU in 2017. The whole range is covered by NT72461 platform. The major deltas versus its predecessor support DVB-S2; ;DVB-T;DVB-T2, with also USB 2.0, Video out

The TPN17.1E LA chassis comes with the following stylings:

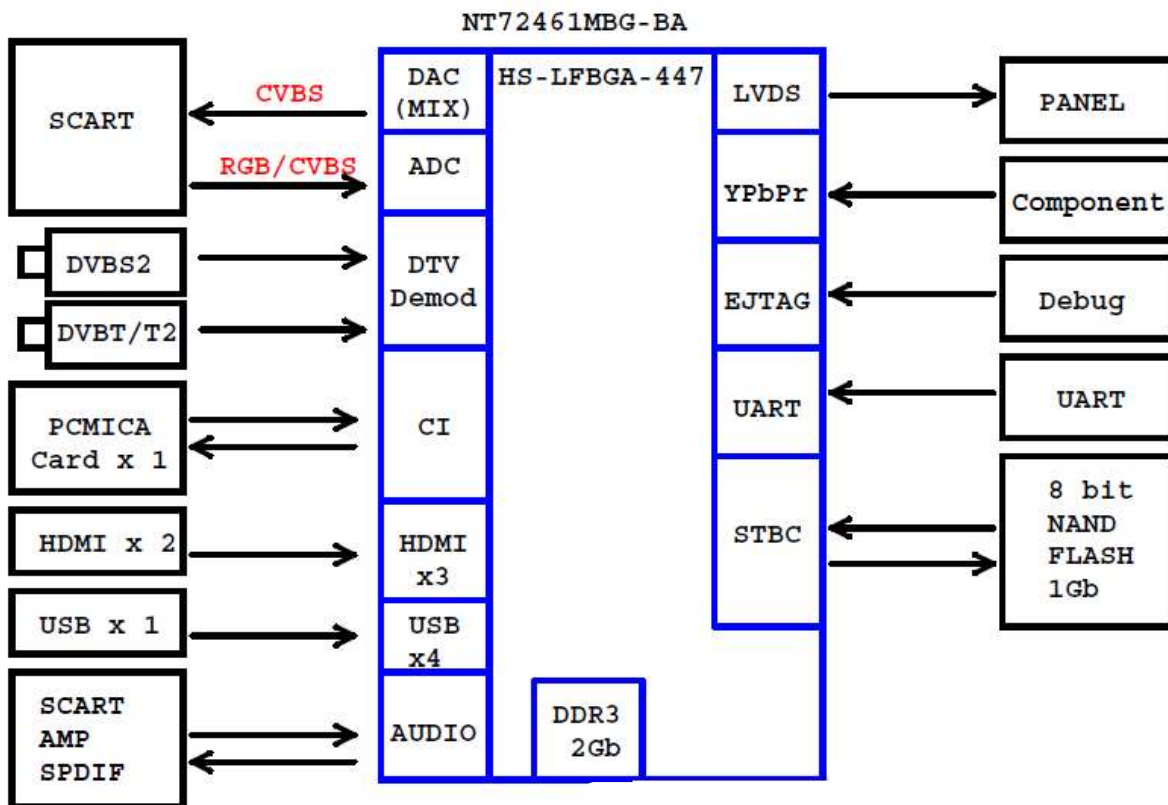
- series xxPxx4132/xx
- series xxPxx4022/xx
- series xxPxx4032/xx
- series xxPxx4112/xx
- series xxPFx4232/xx

6.1.1 Implementation

Key components of this chassis are:

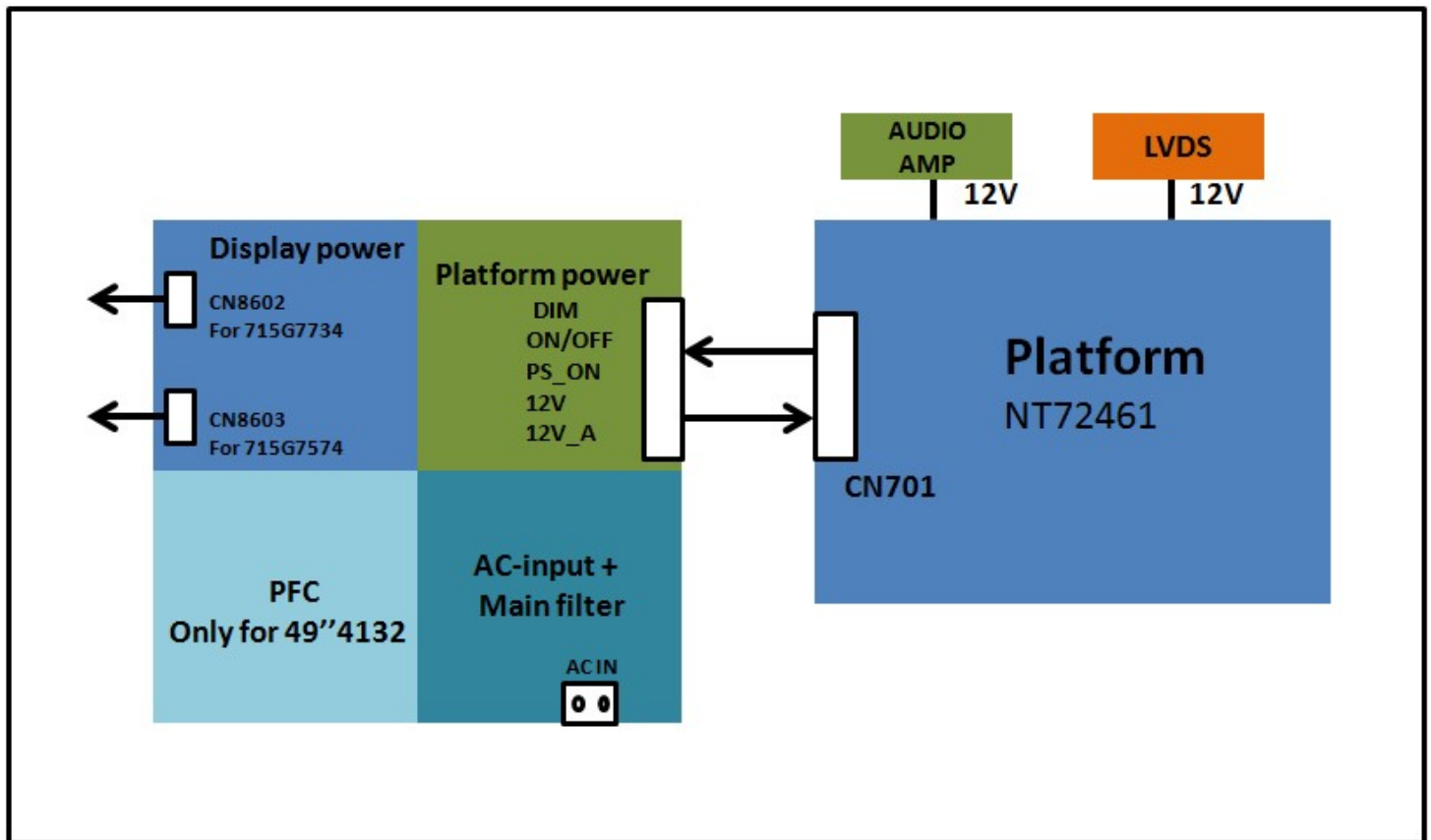
- SCALER NT72461MBG-PA HS-LFBGA-447
- NAND FLASH W29N01GVSI AA 1Gb TSOP-48
- AUDIO TAS5753MDDCAR 20W HTSSOP-48
- TUNER EU SS07CA-6-E
- TUNER EU ST42CS-2-E

6.1.2 Block diagram



6.2 Power Supply

Power architecture of this platform.



6.2.1 Power Supply Unit

All power supplies are a black box for Service. When defective, a new board must be ordered and the defective one must be returned, unless the main fuse of the board is broken. Always replace a defective fuse with one with the correct specifications! This part is available in the regular market.

Consult the Philips Service web portal for the order codes of the boards.

Important delta's with the platform are:

- New power architecture for LED backlight
- "Boost"-signal is now a PWM-signal + continuous variable

The control signals are:

- PS-ON
- Lamp "on/off"
- DIM (PWM) (not for PSDL)

In this manual, no detailed information is available because of design protection issues.

- +8.5V output (standby mode)
- +12 output (on-mode)
- +12V_audio (audio AMP power)
- Output to the display; in case of
 - IPB: High voltage to the LCD panel
 - PSL and PSLS (LED-driver outputs)
 - PSDL (high frequent) AC-current.

6.2.2 Diversity

The diversity in power supply units is mainly determined by the diversity in displays.

The following displays can be distinguished:

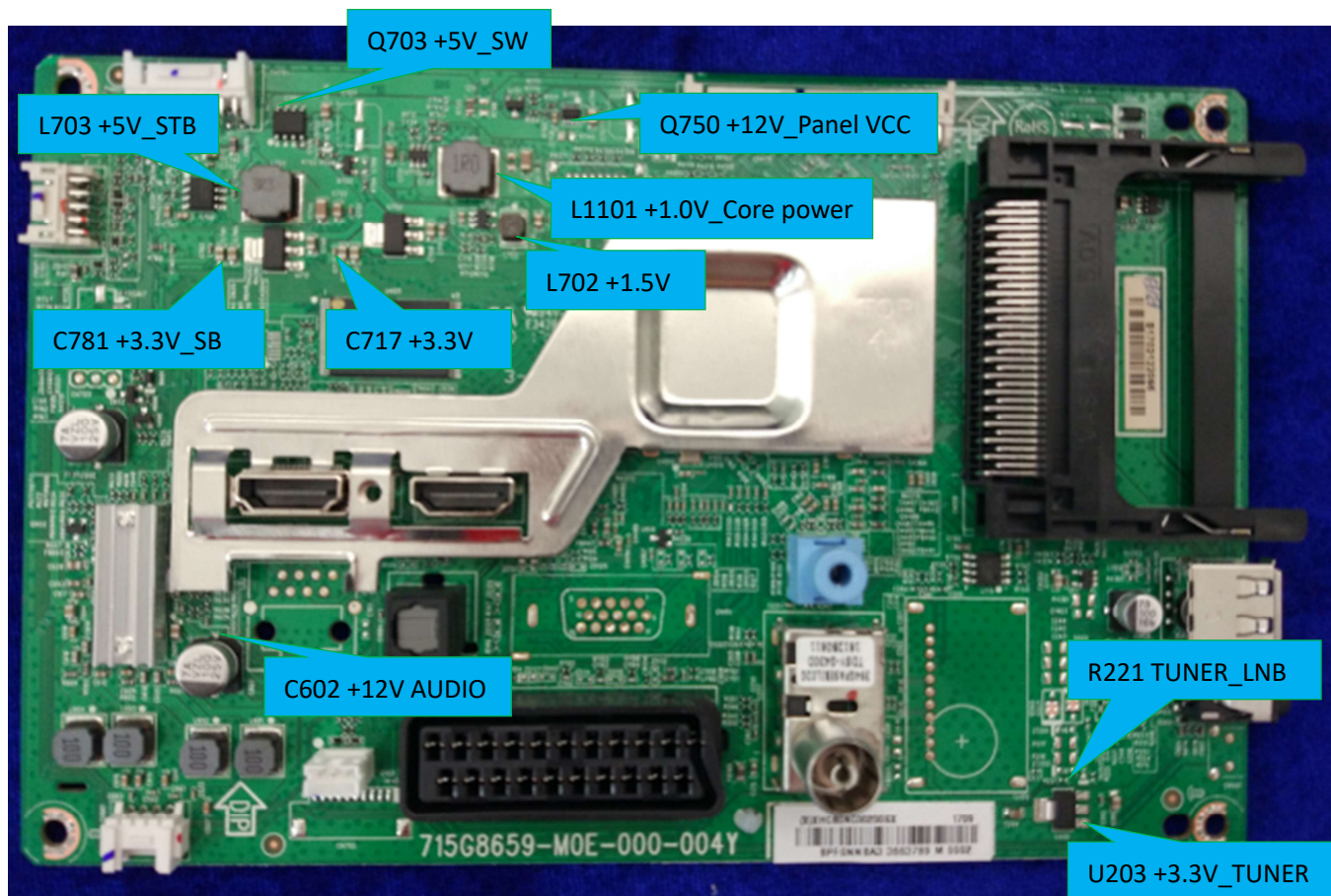
- CCFL/EEFL backlight: power panel is conventional IPB
- LED backlight:

- PSDL** stands for a **P**ower **S**upply for **D**irect-view **L**ED backlight with 2D-dimming.

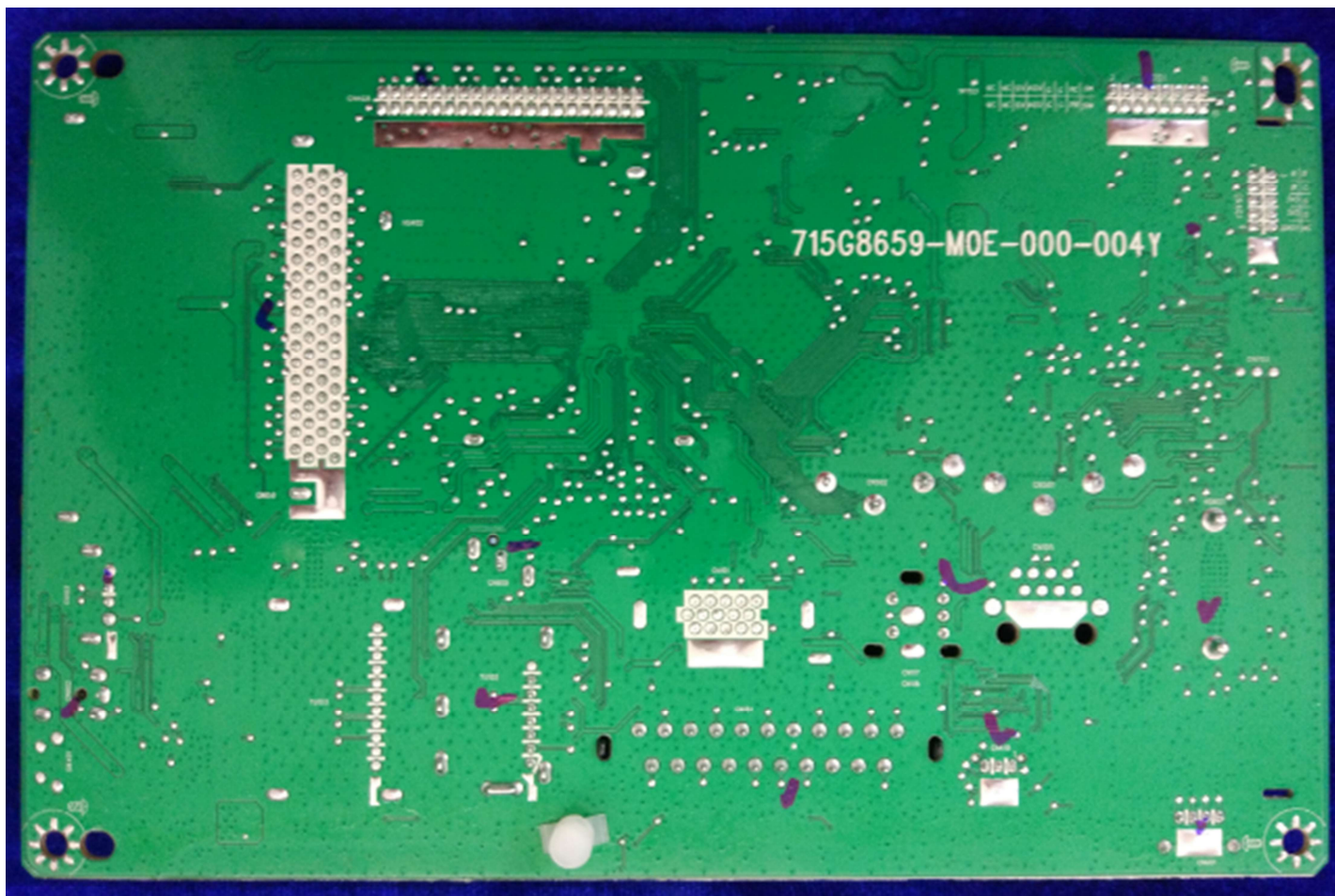
- +3V3-SB, permanent voltage for the Stand-by Power system
- +3V3-STANDBY, voltage for IR/Key board
- +12V, input from the power supply for the panel common(active mode)
- 12V, input from the power supply for LNB supply
- +3V3-EMMC, voltage for EMMC when TV on
- TUNER_3V3, supply voltage for tuner
- +5V-SW, input intermediate supply voltage for USB Power
- +12V-AUDIO1 for the AUDIO AMP
- +3.3VA T2, voltage for Demodulator IC channel decoder

6.3.2 Power layout SSB / M+P BOARD

6.3.2.1 715G8659M BOARD (For 4232 & 4132 & 4032 & 4022 Series)

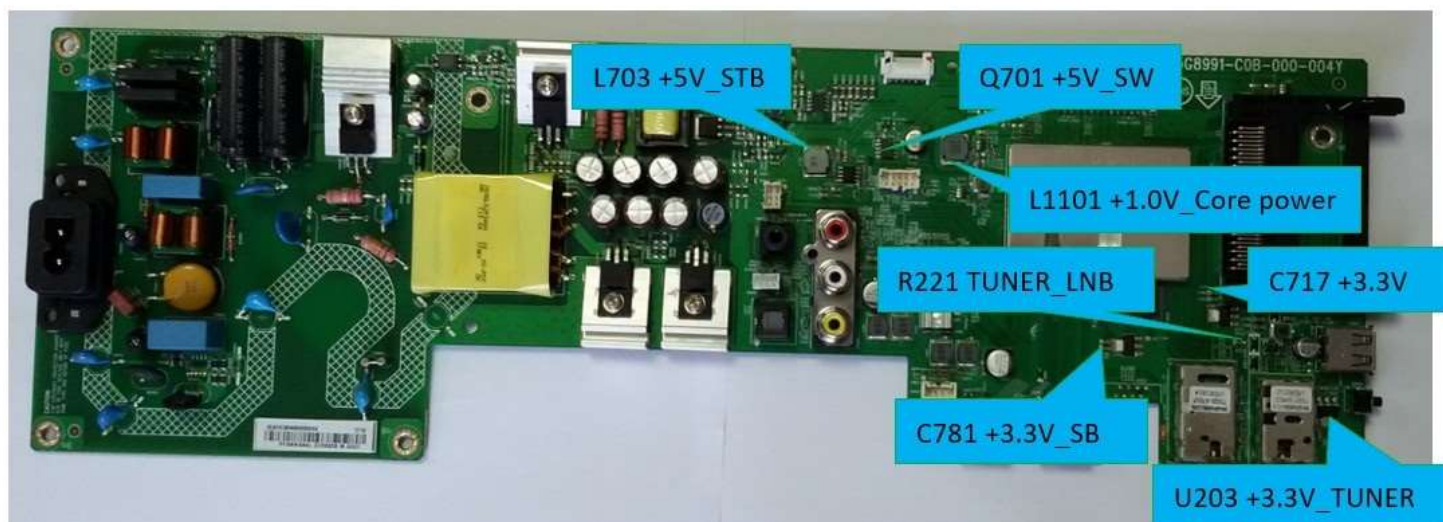


Power SSB Top View

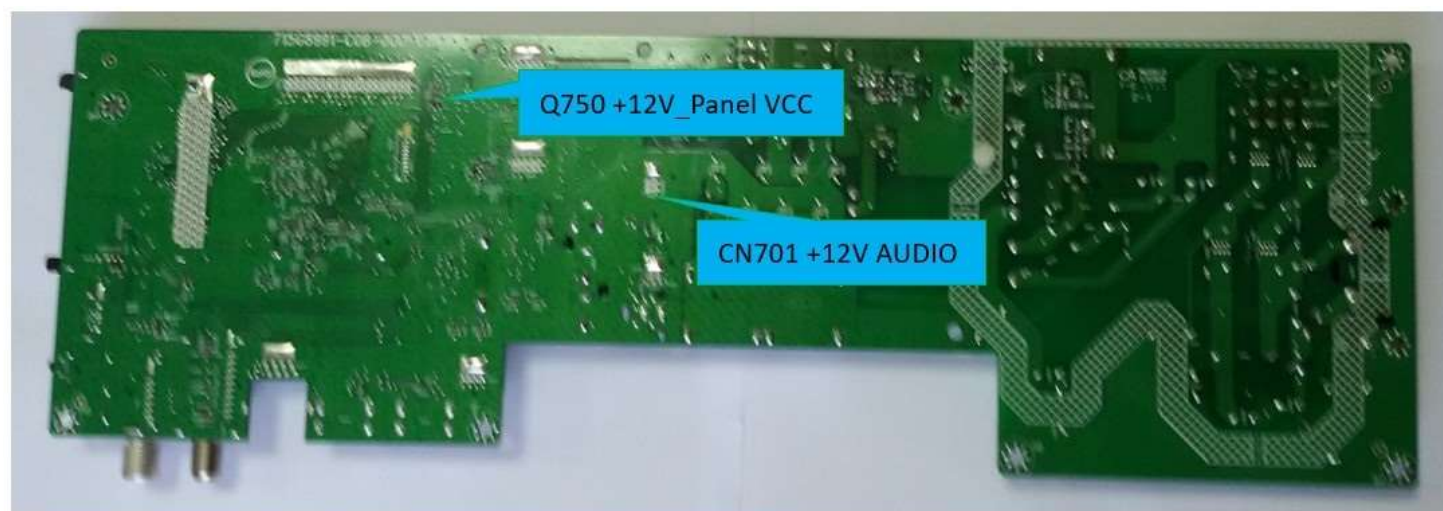


Power SSB Bottom View

6.3.2.2 715G8991C BOARD (For 43"4112 Series)

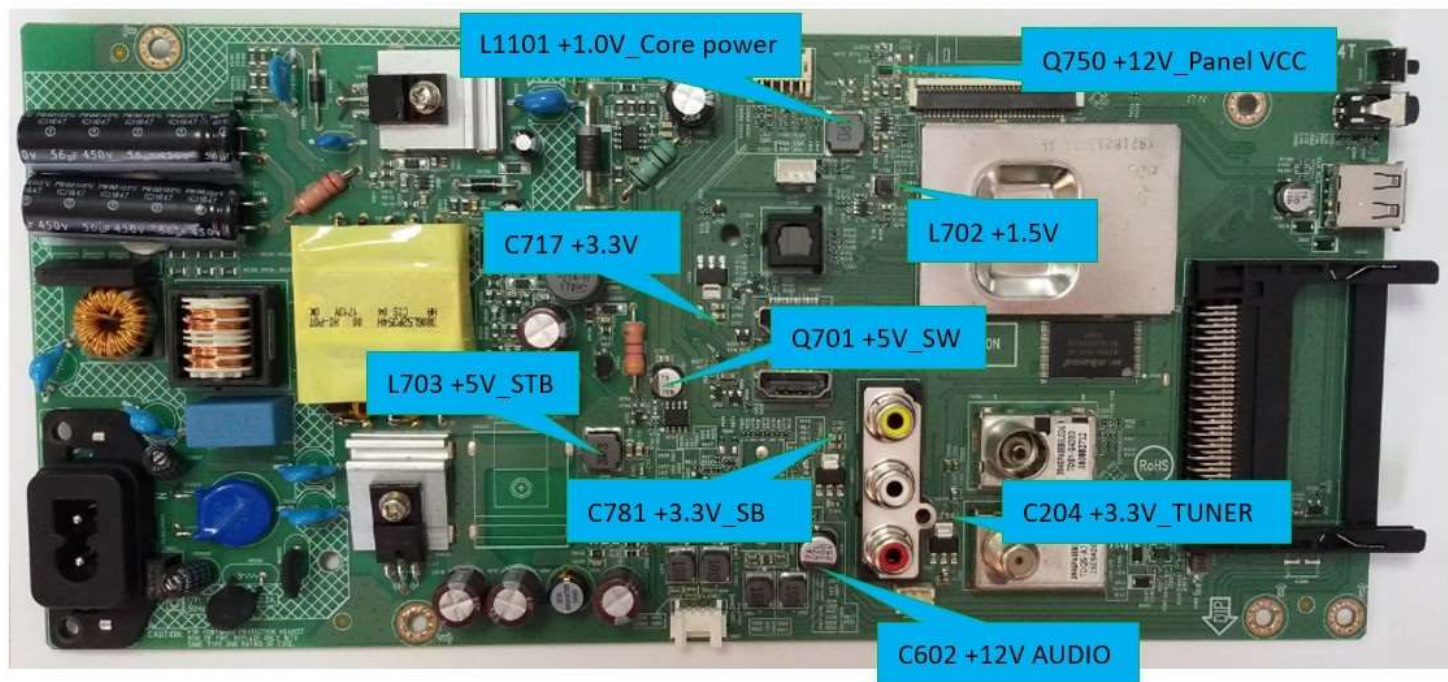


Power M+P BOARD Top View

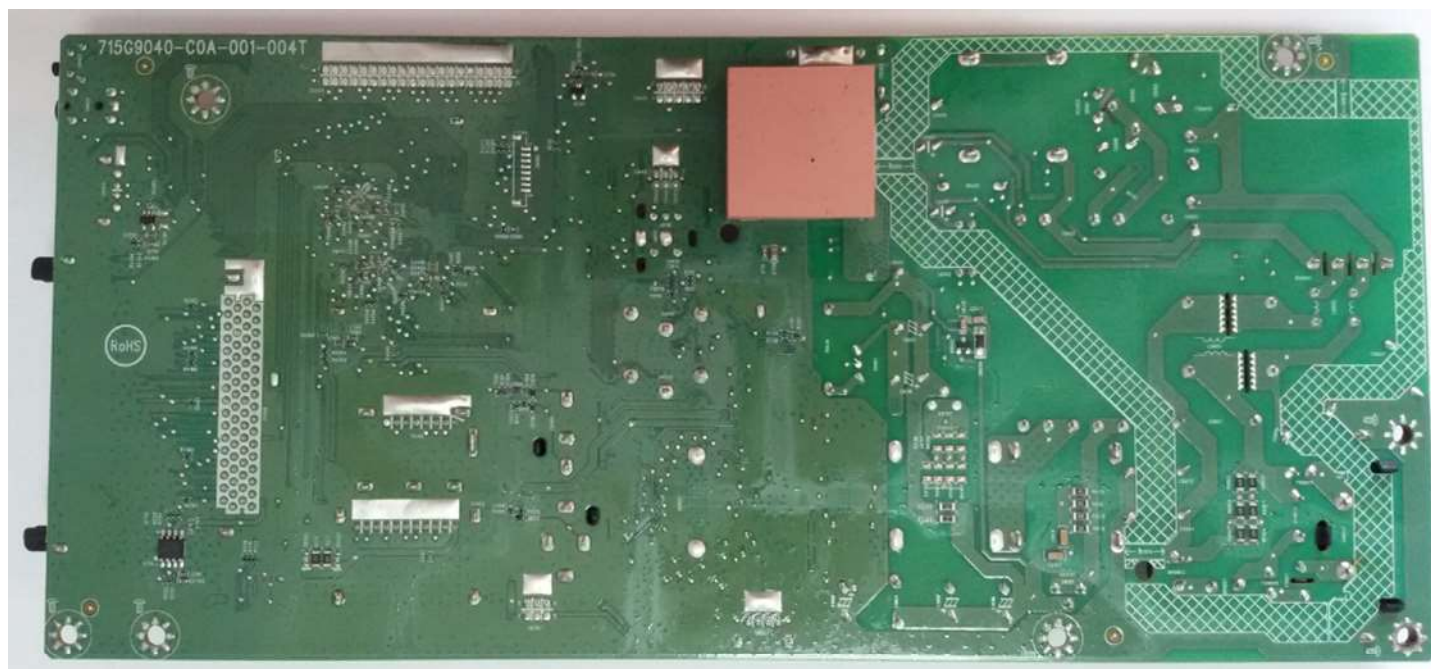


Power M+P BOARD Bottom View

6.3.2.3 715G9040C BOARD (For 32"4112 Series)

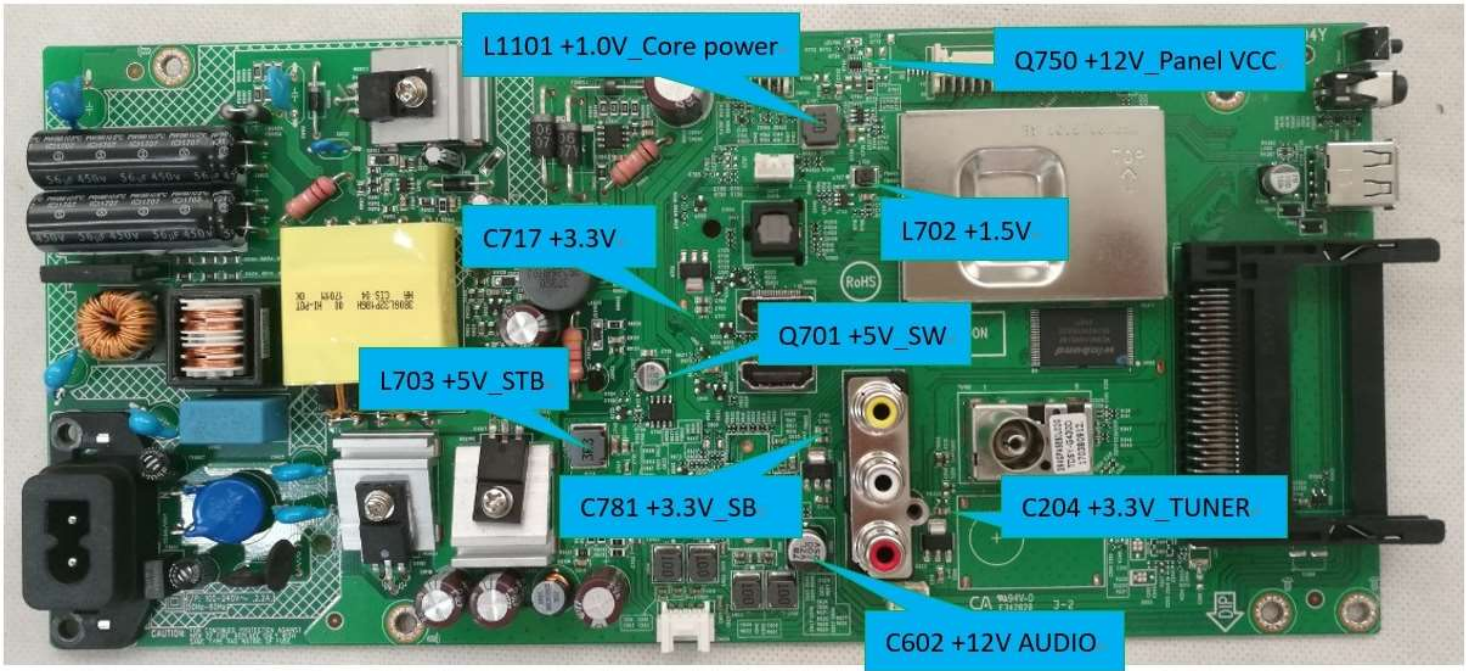


Power M+P BOARD Top View

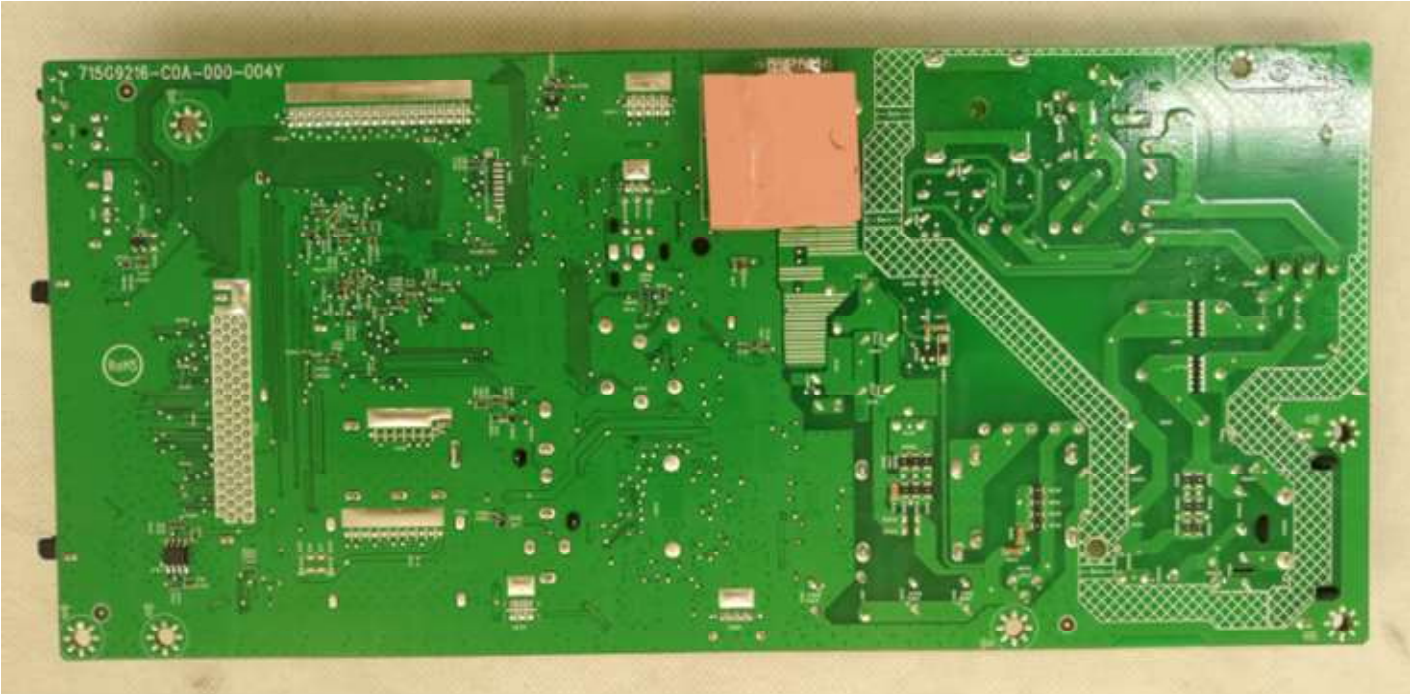


Power M+P BOARD Bottom View

6.3.2.4 715G9216C BOARD (For 39"4112 Series)



Power M+P BOARD Top View



Power M+P BOARD Bottom View

6.4 Front-End Analogue and DVB-T, DVB-T2; DVB-S2 reception

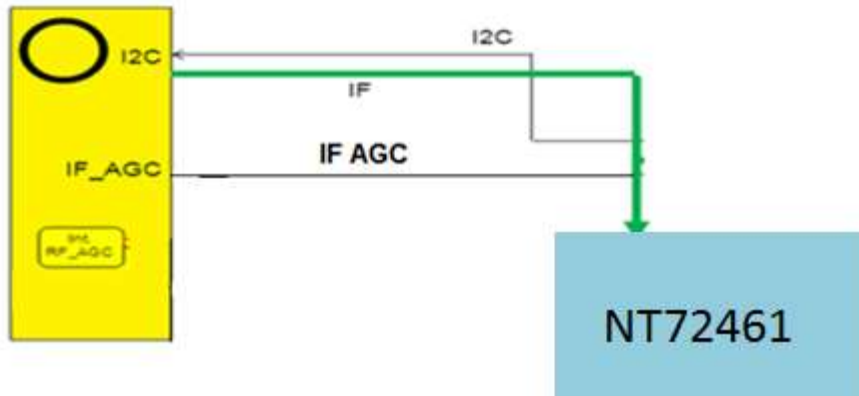
6.4.1 DTB-T/T2 part

The Front-End for DVT part consist of the following key components:

- TUNER EU ST42CS-2-E
- SCALER NT72461MBG-PA HS-LFBGA-447

Below find a block diagram of the front-end application for DTV part.

ST42CS-2-E

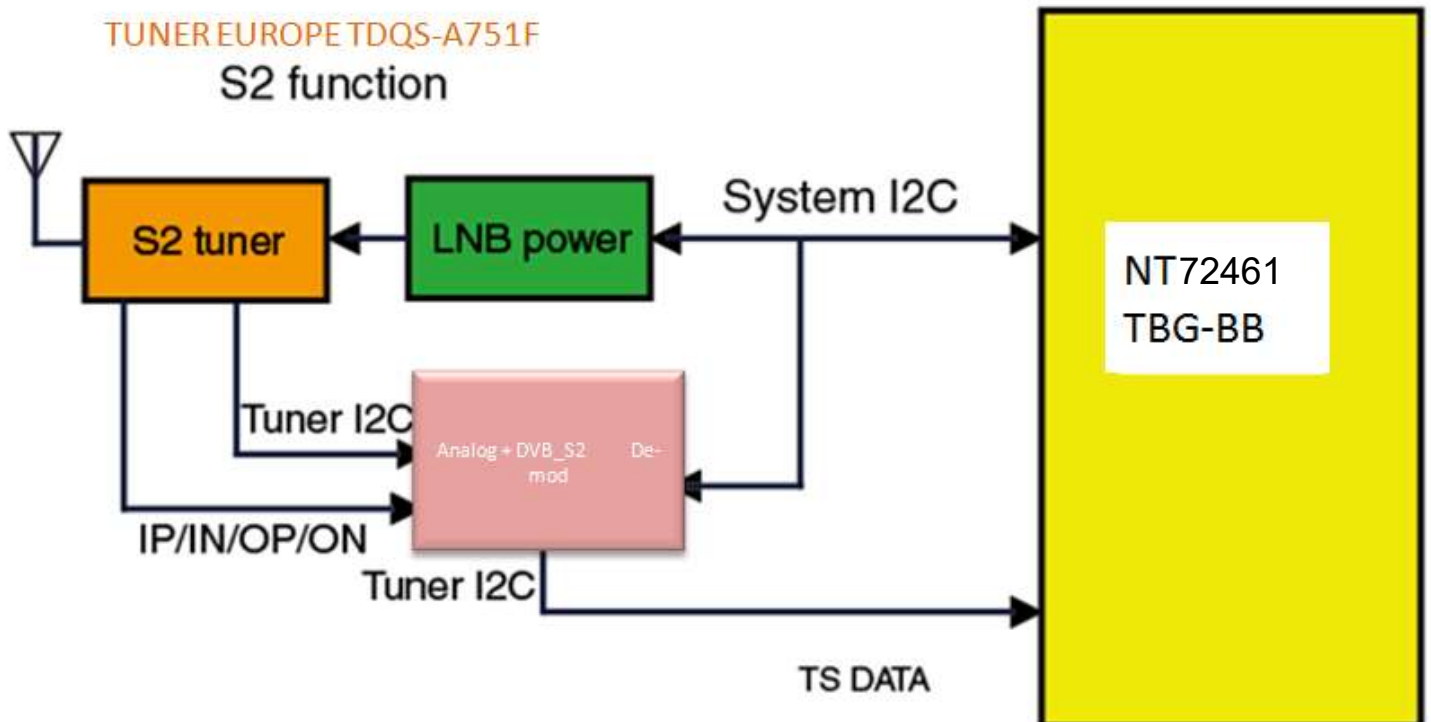


6.4.2 DTB-S2 part

The Front-End for DVT part consist of the following key components:

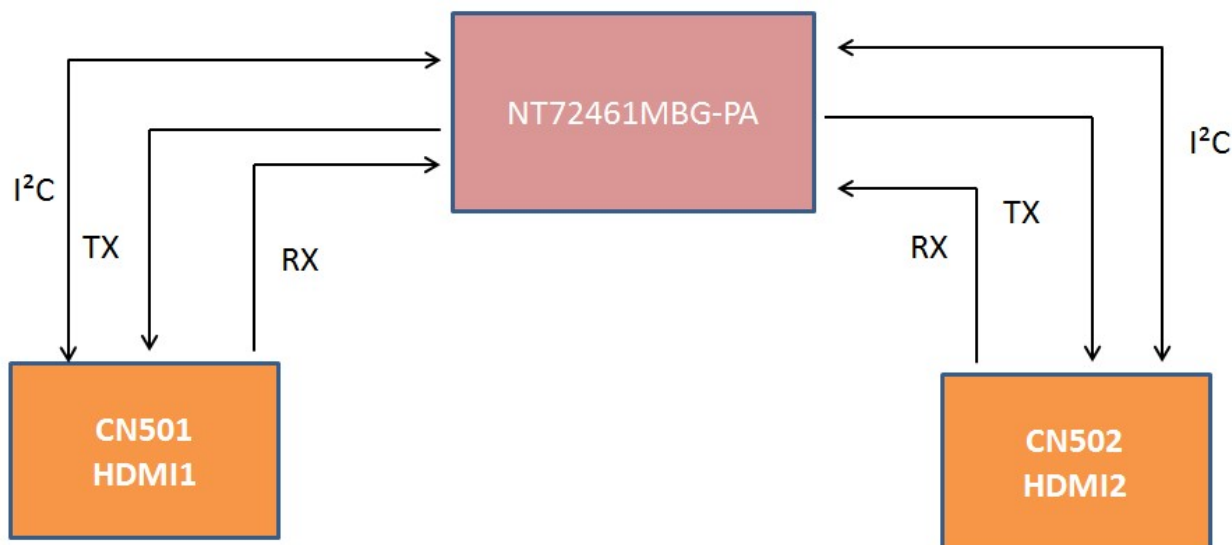
- TUNER EU SS07CA-6-E
- SCALER NT72461MBG-PA HS-LFBGA-447

Below find a block diagram of the front-end application for DTV part.



6.5 HDMI

Refer to below for the application.



The following HDMI connector can be used:

- HDMI 1: HDMI input (TV digital interface support HDMI1.4/HDCP1.3) with digital audio/PC DVI input/ARC
- HDMI 2: HDMI input (TV digital interface support HDCP) with digital audio/PC DVI input/ARC
- +5V detection mechanism
- Stable clock detection mechanism
- Audio return channel(ARC)
- TMDS output control
- HPD control
- CEC control

6.6 Video and Audio Processing – NT72461MBG

The NT72461MBG is the main audio and video processor (or System-on-Chip) for this platform. It has the following features:

- DVB-T /DVB-T2/ DVB-S2 demodulators
- Power CPU core
- A multi-standard video decoder
- A transport de-multiplexer
- Rich format audio codec
- Local dimming (LED backlight)
- TCON
- Panel overdrive control

The NT72461MBG-PA is an integrated digital TV system-on-chip which compliants with variety ATV as NTSC, PAL and SECAM, and DTV standards as ISDB-T, DVB-T/-T2/-C/-S/-S2, ITU-T J.83B, ATSC, integrates DTV and multi-media AV decoder, SIF demodulator, and support A/V post-processing.

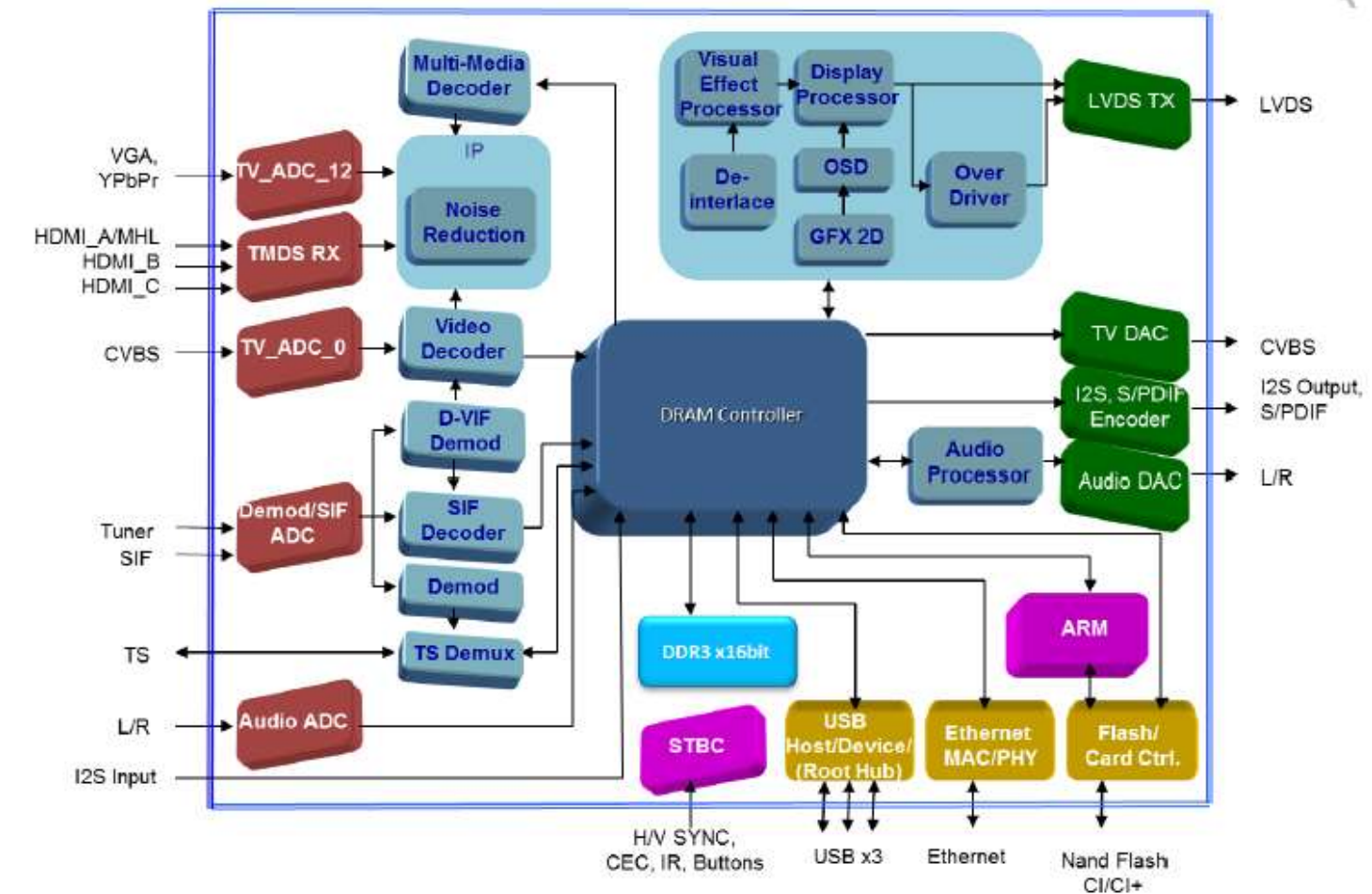
The integrated video ADC and video decoder support PC VGA port, YPbPr or SCART, CVBS and SCART S-Video Input. Regarding the tuner input, the digital VIF performs the universal analog TV demodulation (NTSC, PAL, and SECAM), including IF processing, AGC, video demodulation, and second sound IF generation (SSIF).The video decoder supports universal TV video format. The integrated audio ADC supports stereo audio input corresponding to video input sources. The integrated TV sound decoder supports universal TV sound format.

The advanced picture quality and color engine create more vivid image impression than ever. The HDMI receiver v1.4b, supports deep color, CEC features and 3D formats. The USB high speed host supports updating firmware code, multi-media playback from the external USB flash devices.

The standby controller can operate sololy from the main system, powered by the standby power source from power module, consumes as low current as possible. It meets the requirement of Green appliance.

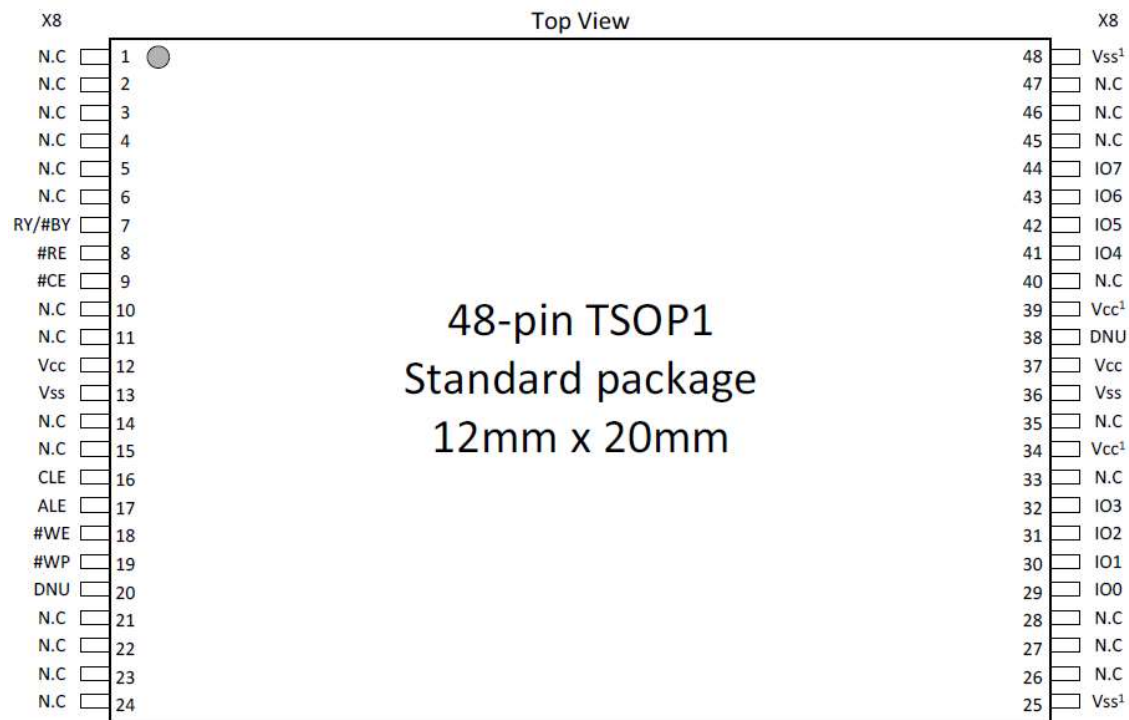
7. IC Data Sheets

7.1NT72461MBG-PA (IC U401)

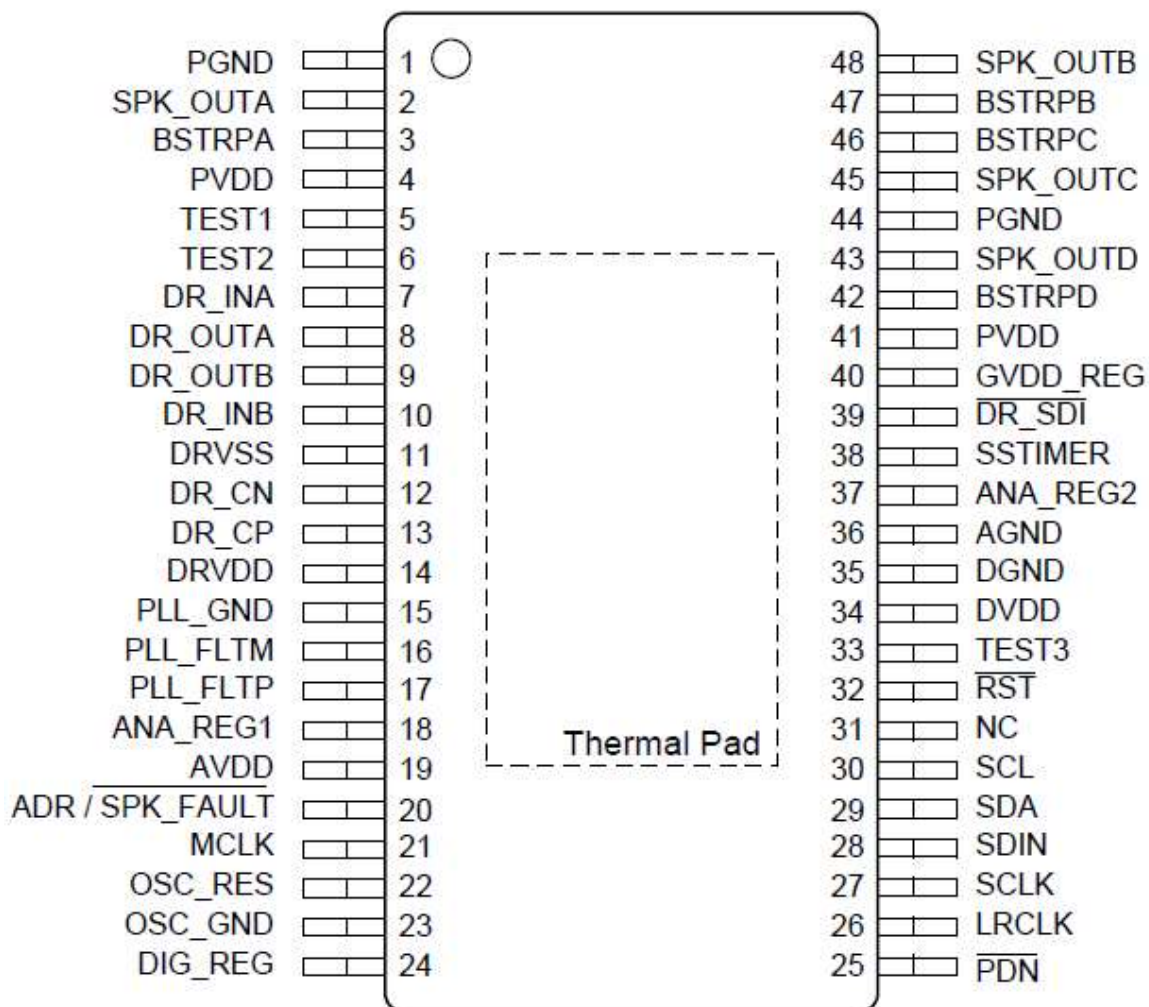
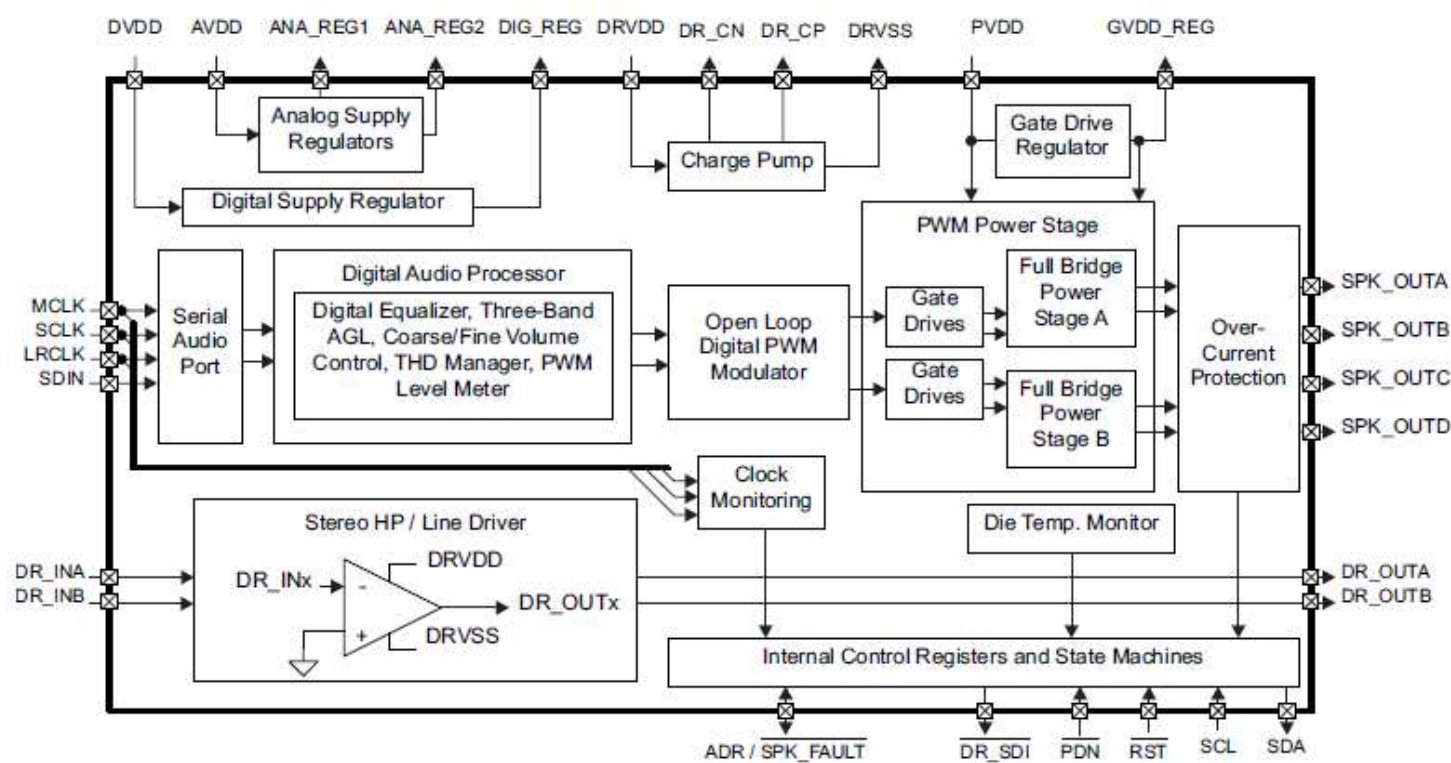


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
A	VS0_000	VS0_001	VS0_002	VS0_003	VS0_004	VS0_005	VS0_006	VS0_007	VS0_008	VS0_009	VS0_010	VS0_011	VS0_012	VS0_013	VS0_014	VS0_015	VS0_016	VS0_017	VS0_018	VS0_019	VS0_020	VS0_021	VS0_022	VS0_023	A
B	VS0_024	VS0_025	VS0_026	VS0_027	VS0_028	VS0_029	VS0_030	VS0_031	VS0_032	VS0_033	VS0_034	VS0_035	VS0_036	VS0_037	VS0_038	VS0_039	VS0_040	VS0_041	VS0_042	VS0_043	VS0_044	VS0_045	VS0_046	VS0_047	B
C	VS0_048	VS0_049	VS0_050	VS0_051	VS0_052	VS0_053	VS0_054	VS0_055	VS0_056	VS0_057	VS0_058	VS0_059	VS0_060	VS0_061	VS0_062	VS0_063	VS0_064	VS0_065	VS0_066	VS0_067	VS0_068	VS0_069	VS0_070	VS0_071	C
D	VS0_072	VS0_073	VS0_074	VS0_075	VS0_076	VS0_077	VS0_078	VS0_079	VS0_080	VS0_081	VS0_082	VS0_083	VS0_084	VS0_085	VS0_086	VS0_087	VS0_088	VS0_089	VS0_090	VS0_091	VS0_092	VS0_093	VS0_094	VS0_095	D
E	VS0_096	VS0_097	VS0_098	VS0_099	VS0_100	VS0_101	VS0_102	VS0_103	VS0_104	VS0_105	VS0_106	VS0_107	VS0_108	VS0_109	VS0_110	VS0_111	VS0_112	VS0_113	VS0_114	VS0_115	VS0_116	VS0_117	VS0_118	VS0_119	E
F	VS0_120	VS0_121	VS0_122	VS0_123	VS0_124	VS0_125	VS0_126	VS0_127	VS0_128	VS0_129	VS0_130	VS0_131	VS0_132	VS0_133	VS0_134	VS0_135	VS0_136	VS0_137	VS0_138	VS0_139	VS0_140	VS0_141	VS0_142	VS0_143	F
G	VS0_144	VS0_145	VS0_146	VS0_147	VS0_148	VS0_149	VS0_150	VS0_151	VS0_152	VS0_153	VS0_154	VS0_155	VS0_156	VS0_157	VS0_158	VS0_159	VS0_160	VS0_161	VS0_162	VS0_163	VS0_164	VS0_165	VS0_166	VS0_167	G
H	VS0_168	VS0_169	VS0_170	VS0_171	VS0_172	VS0_173	VS0_174	VS0_175	VS0_176	VS0_177	VS0_178	VS0_179	VS0_180	VS0_181	VS0_182	VS0_183	VS0_184	VS0_185	VS0_186	VS0_187	VS0_188	VS0_189	VS0_190	VS0_191	H
J	VS0_192	VS0_193	VS0_194	VS0_195	VS0_196	VS0_197	VS0_198	VS0_199	VS0_200	VS0_201	VS0_202	VS0_203	VS0_204	VS0_205	VS0_206	VS0_207	VS0_208	VS0_209	VS0_210	VS0_211	VS0_212	VS0_213	VS0_214	VS0_215	J
K	VS0_216	VS0_217	VS0_218	VS0_219	VS0_220	VS0_221	VS0_222	VS0_223	VS0_224	VS0_225	VS0_226	VS0_227	VS0_228	VS0_229	VS0_230	VS0_231	VS0_232	VS0_233	VS0_234	VS0_235	VS0_236	VS0_237	VS0_238	VS0_239	K
L	VS0_240	VS0_241	VS0_242	VS0_243	VS0_244	VS0_245	VS0_246	VS0_247	VS0_248	VS0_249	VS0_250	VS0_251	VS0_252	VS0_253	VS0_254	VS0_255	VS0_256	VS0_257	VS0_258	VS0_259	VS0_260	VS0_261	VS0_262	VS0_263	L
M	VS0_264	VS0_265	VS0_266	VS0_267	VS0_268	VS0_269	VS0_270	VS0_271	VS0_272	VS0_273	VS0_274	VS0_275	VS0_276	VS0_277	VS0_278	VS0_279	VS0_280	VS0_281	VS0_282	VS0_283	VS0_284	VS0_285	VS0_286	VS0_287	M
N	VS0_288	VS0_289	VS0_290	VS0_291	VS0_292	VS0_293	VS0_294	VS0_295	VS0_296	VS0_297	VS0_298	VS0_299	VS0_300	VS0_301	VS0_302	VS0_303	VS0_304	VS0_305	VS0_306	VS0_307	VS0_308	VS0_309	VS0_310	VS0_311	N
P	VS0_312	VS0_313	VS0_314	VS0_315	VS0_316	VS0_317	VS0_318	VS0_319	VS0_320	VS0_321	VS0_322	VS0_323	VS0_324	VS0_325	VS0_326	VS0_327	VS0_328	VS0_329	VS0_330	VS0_331	VS0_332	VS0_333	VS0_334	VS0_335	P
R	VS0_336	VS0_337	VS0_338	VS0_339	VS0_340	VS0_341	VS0_342	VS0_343	VS0_344	VS0_345	VS0_346	VS0_347	VS0_348	VS0_349	VS0_350	VS0_351	VS0_352	VS0_353	VS0_354	VS0_355	VS0_356	VS0_357	VS0_358	VS0_359	R
T	VS0_360	VS0_361	VS0_362	VS0_363	VS0_364	VS0_365	VS0_366	VS0_367	VS0_368	VS0_369	VS0_370	VS0_371	VS0_372	VS0_373	VS0_374	VS0_375	VS0_376	VS0_377	VS0_378	VS0_379	VS0_380	VS0_381	VS0_382	VS0_383	T
U	VS0_384	VS0_385	VS0_386	VS0_387	VS0_388	VS0_389	VS0_390	VS0_391	VS0_392	VS0_393	VS0_394	VS0_395	VS0_396	VS0_397	VS0_398	VS0_399	VS0_400	VS0_401	VS0_402	VS0_403	VS0_404	VS0_405	VS0_406	VS0_407	U
V	VS0_408	VS0_409	VS0_410	VS0_411	VS0_412	VS0_413	VS0_414	VS0_415	VS0_416	VS0_417	VS0_418	VS0_419	VS0_420	VS0_421	VS0_422	VS0_423	VS0_424	VS0_425	VS0_426	VS0_427	VS0_428	VS0_429	VS0_430	VS0_431	V
W	VS0_432	VS0_433	VS0_434	VS0_435	VS0_436	VS0_437	VS0_438	VS0_439	VS0_440	VS0_441	VS0_442	VS0_443	VS0_444	VS0_445	VS0_446	VS0_447	VS0_448	VS0_449	VS0_450	VS0_451	VS0_452	VS0_453	VS0_454	VS0_455	W
Y	VS0_456	VS0_457	VS0_458	VS0_459	VS0_460	VS0_461	VS0_462	VS0_463	VS0_464	VS0_465	VS0_466	VS0_467	VS0_468	VS0_469	VS0_470	VS0_471	VS0_472	VS0_473	VS0_474	VS0_475	VS0_476	VS0_477	VS0_478	VS0_479	Y
AA	VS0_480	VS0_481	VS0_482	VS0_483	VS0_484	VS0_485	VS0_486	VS0_487	VS0_488	VS0_489	VS0_490	VS0_491	VS0_492	VS0_493	VS0_494	VS0_495	VS0_496	VS0_497	VS0_498	VS0_499	VS0_500	VS0_501	VS0_502	VS0_503	AA
AB	VS0_504	VS0_505	VS0_506	VS0_507	VS0_508	VS0_509	VS0_510	VS0_511	VS0_512	VS0_513	VS0_514	VS0_515	VS0_516	VS0_517	VS0_518	VS0_519	VS0_520	VS0_521	VS0_522	VS0_523	VS0_524	VS0_525	VS0_526	VS0_527	AB
AC	VS0_528	VS0_529	VS0_530	VS0_531	VS0_532	VS0_533	VS0_534	VS0_535	VS0_536	VS0_537	VS0_538	VS0_539	VS0_540	VS0_541	VS0_542	VS0_543	VS0_544	VS0_545	VS0_546	VS0_547	VS0_548	VS0_549	VS0_550	VS0_551	AC
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		

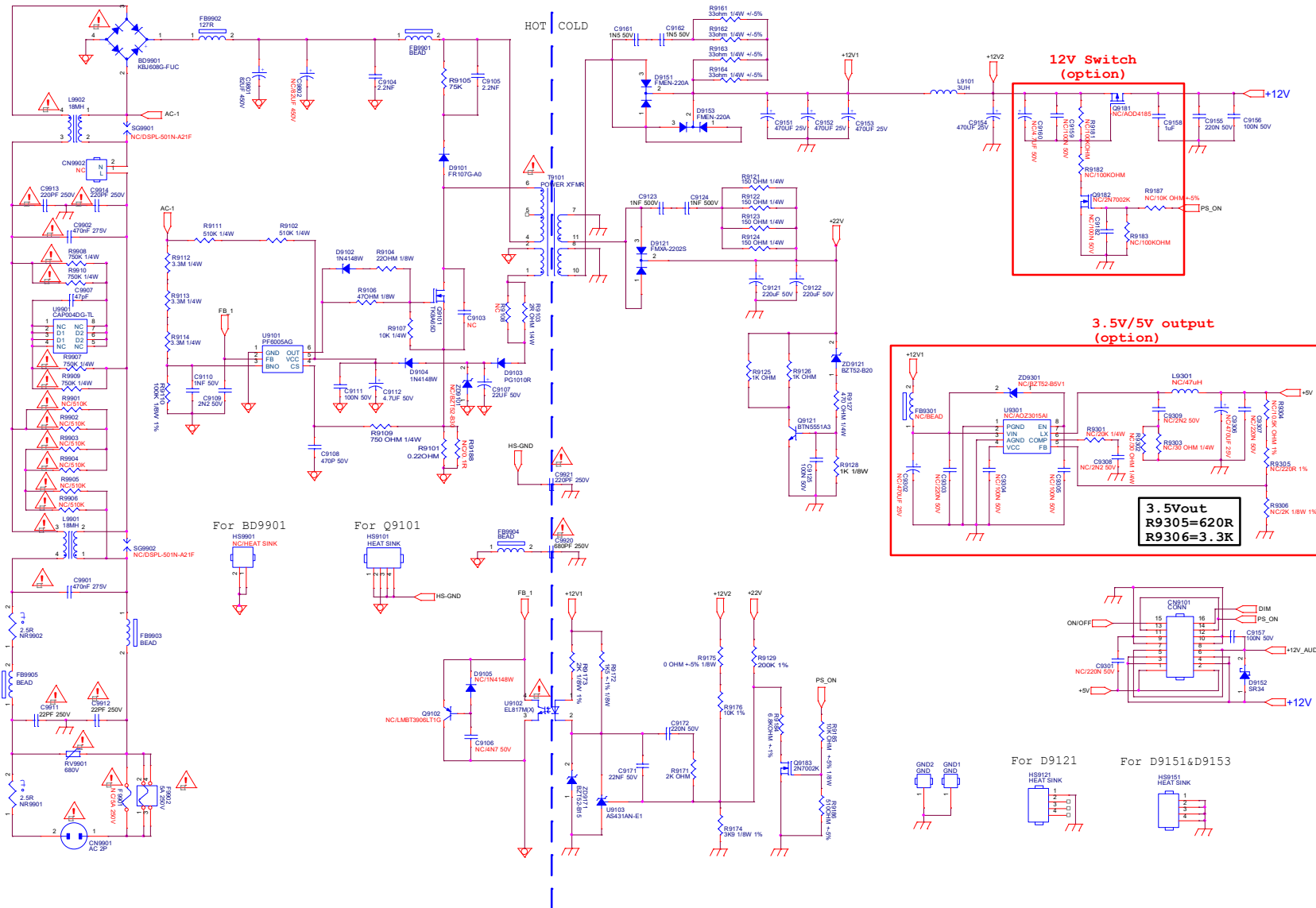
7.2 W29N01GVSIAA (IC U405)



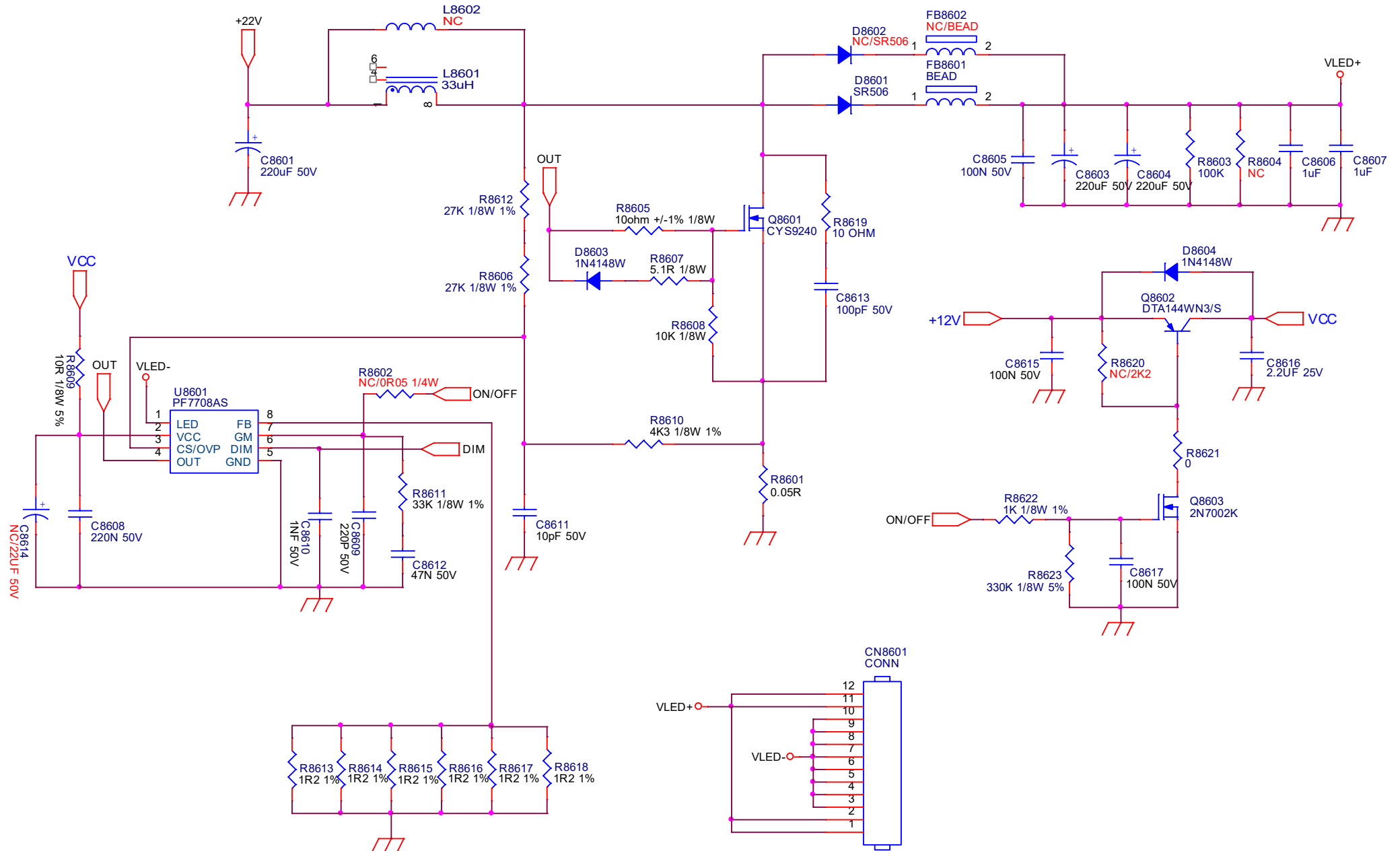
7.3 TAS5753MDDCAR (IC U601)



8-1-1 POWER

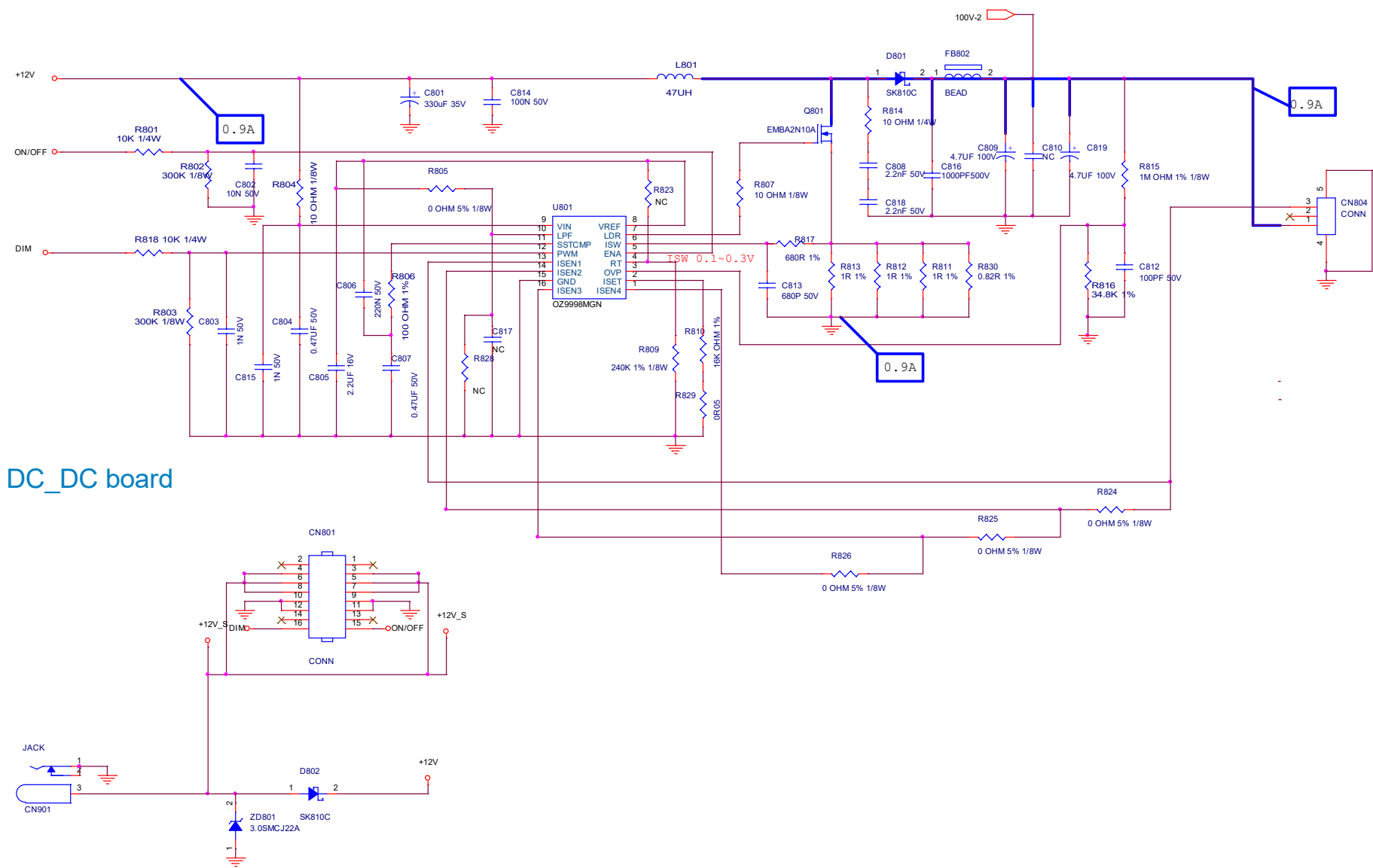


8-1-2 LED DRIVER



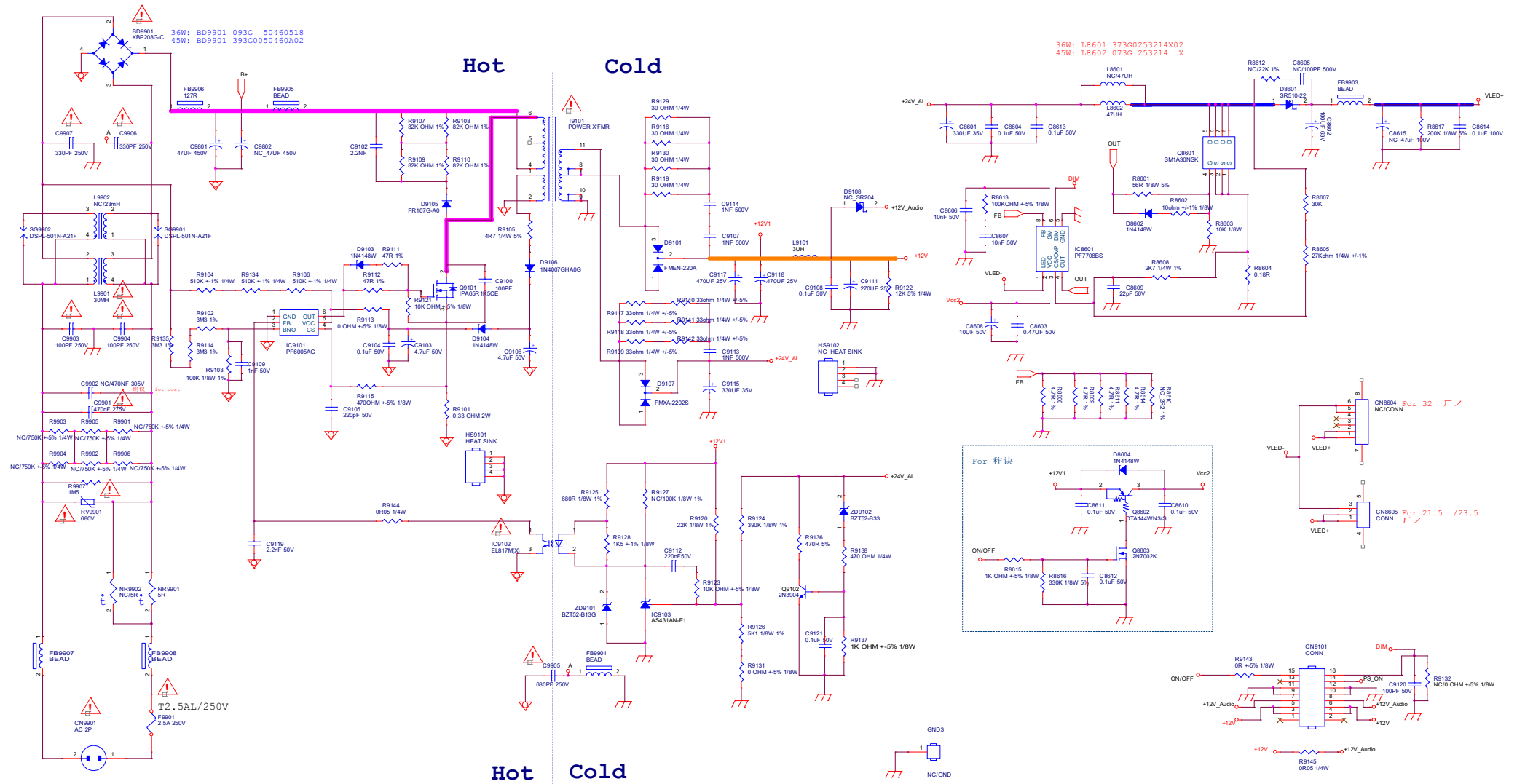
8.2 715G8697 PSU (For 22"4232 Series)

8-2-1 Converter



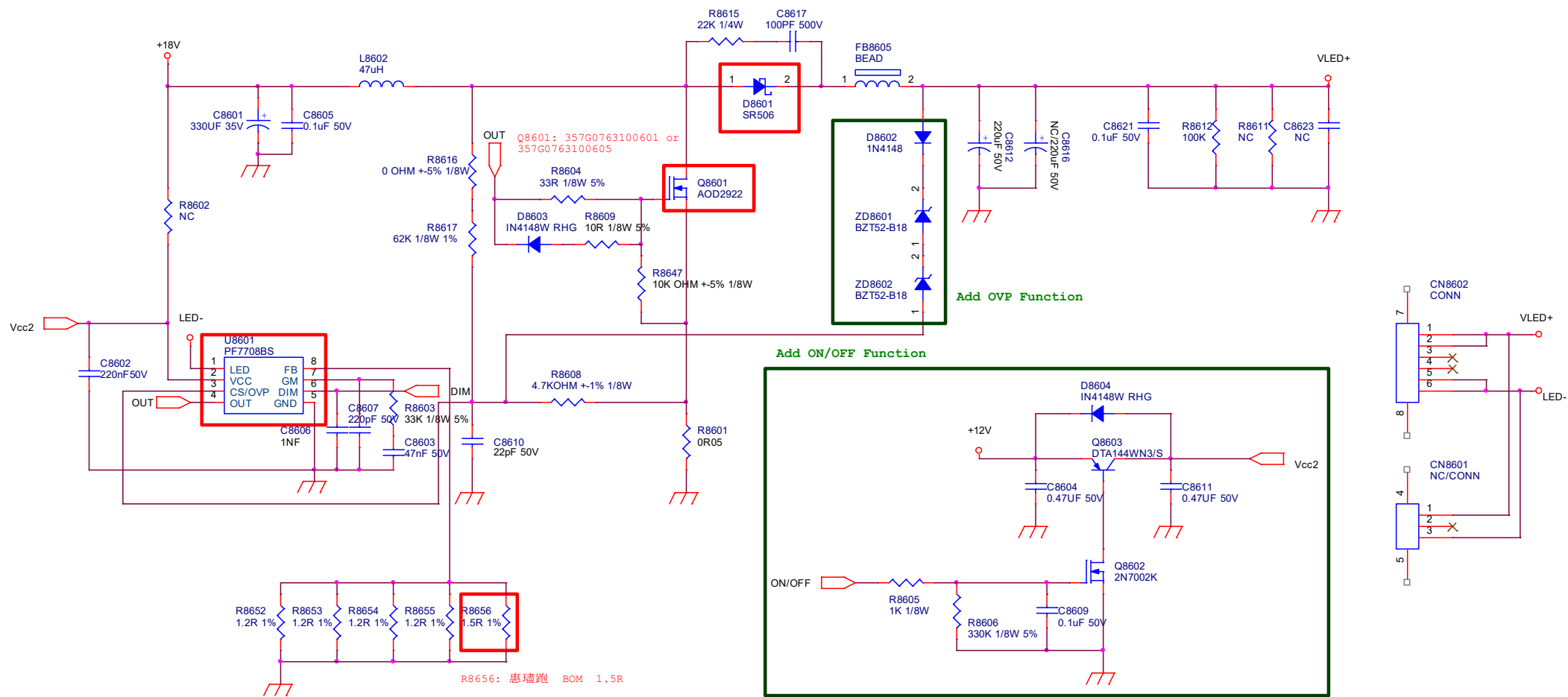
8.3 715G7735 PSU (For 24"4032 Series & 22/24" 4022 Series)

8-3-1 POWER

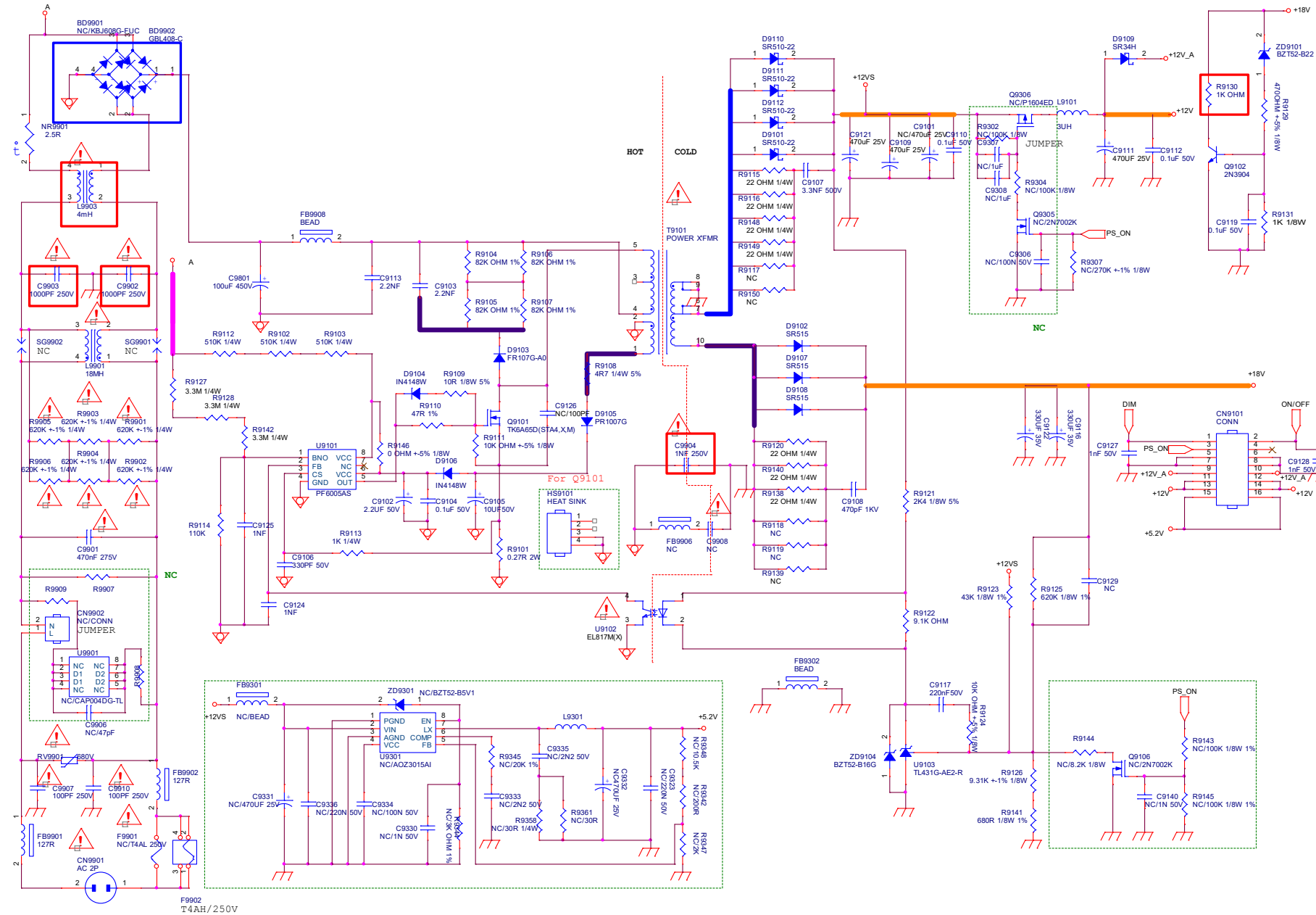


8.4 715G7734 PSU (For 32" 4132/4032 Series)

8-4-1 POWER

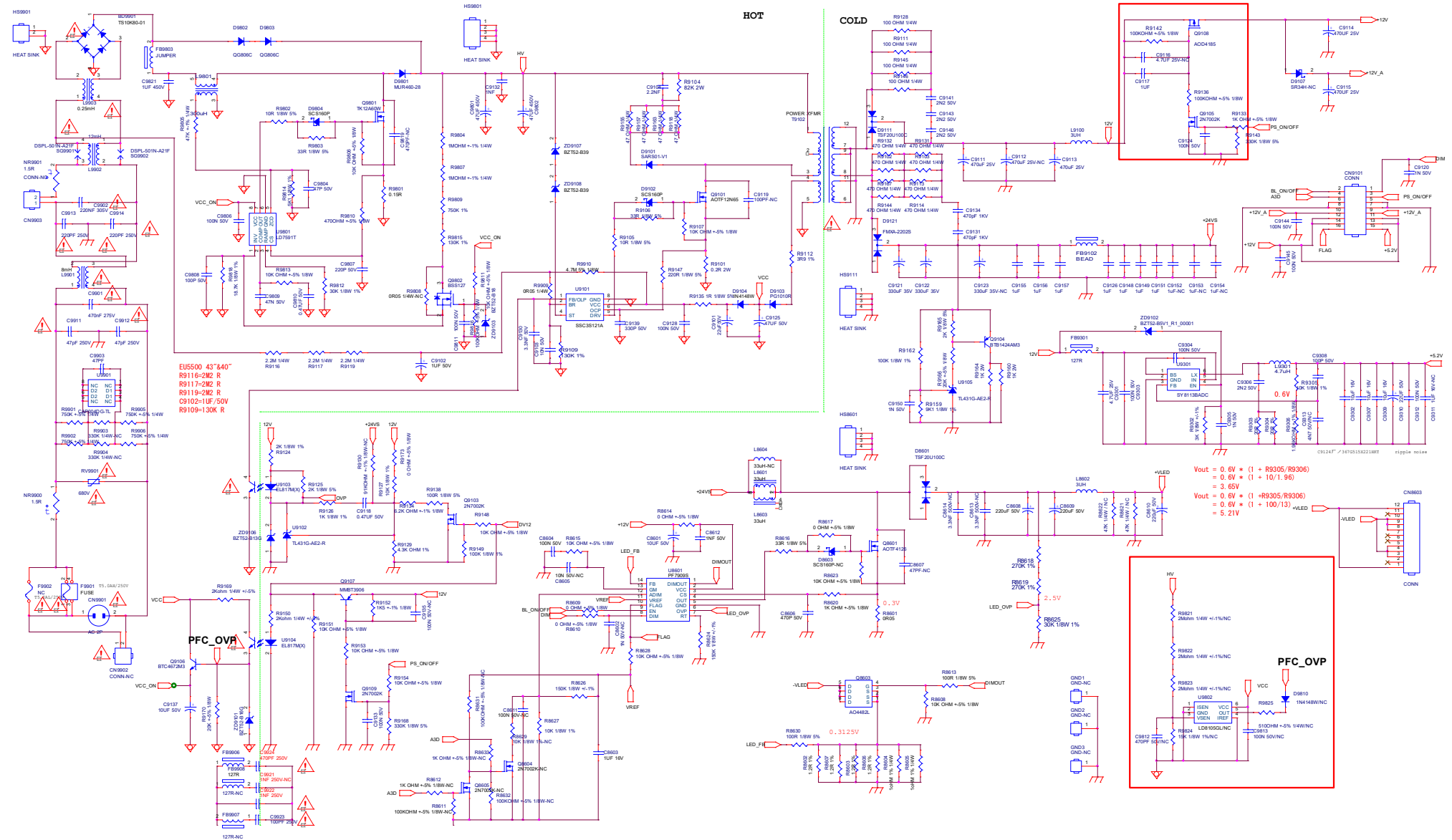


8-4-2 LED DRIVER

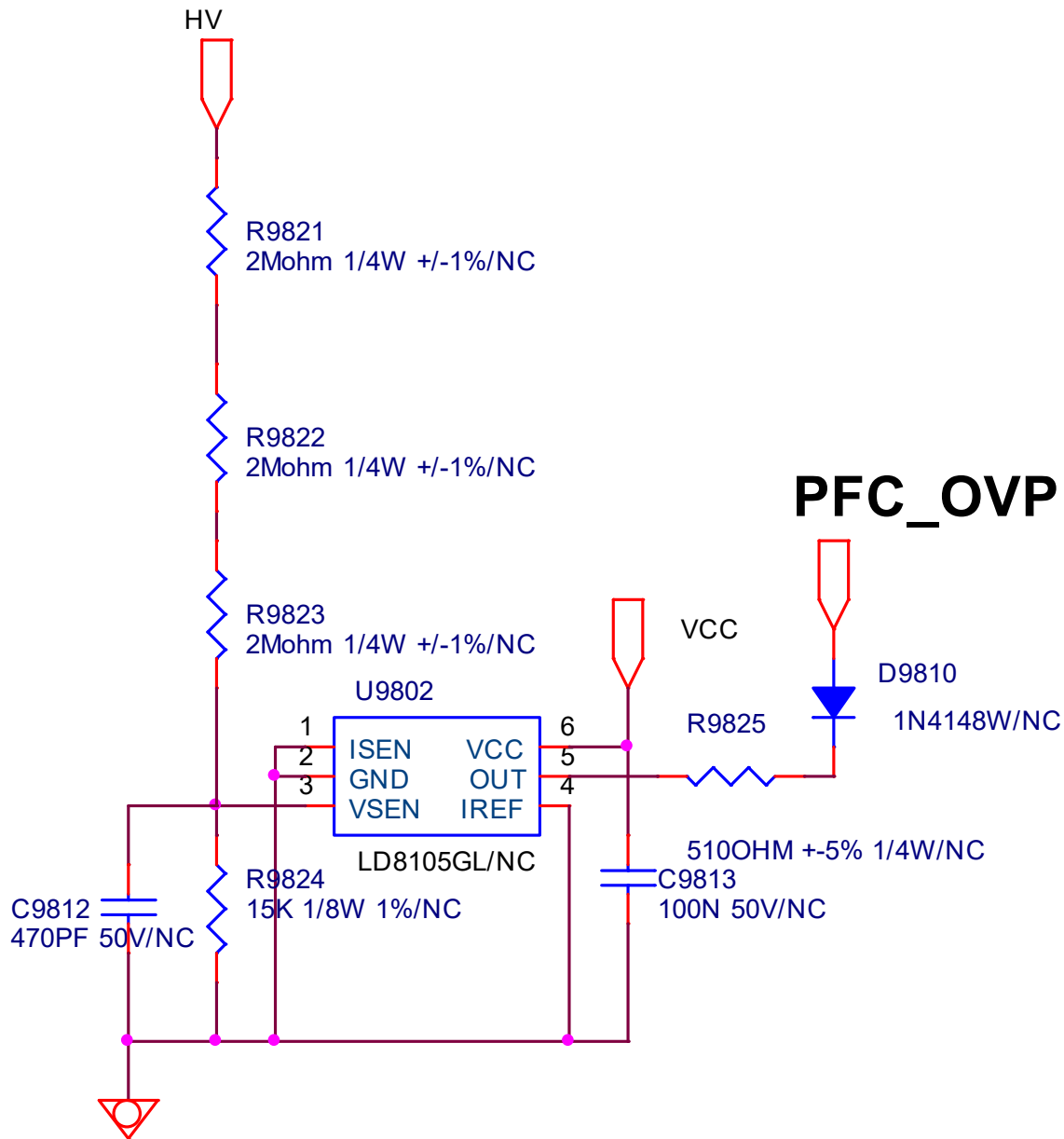


8.5 715G7574 PSU (For 49"4132 Series)

8.5-1 AC Input



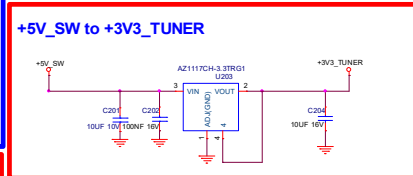
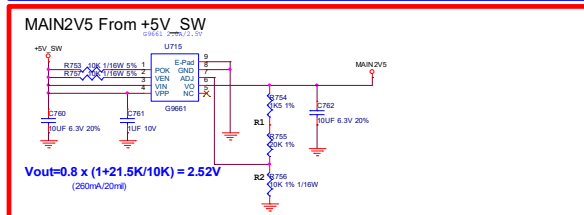
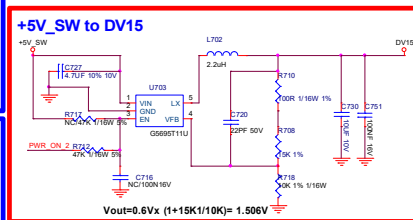
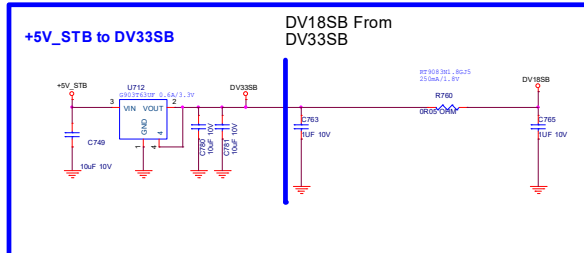
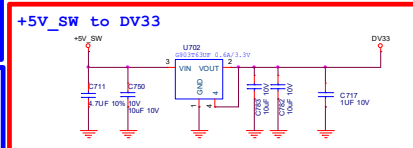
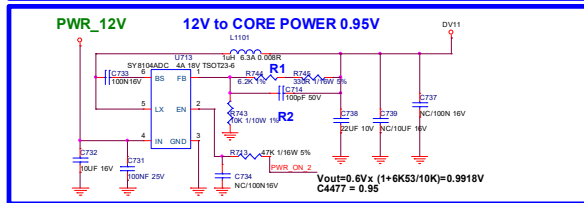
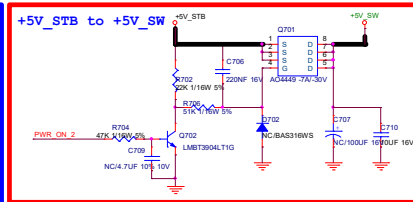
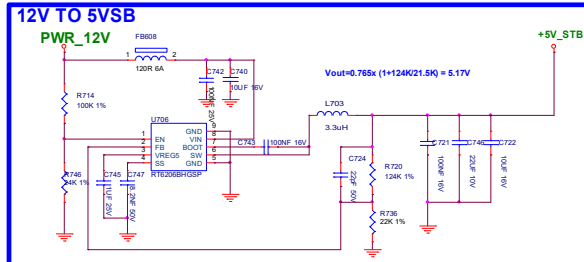
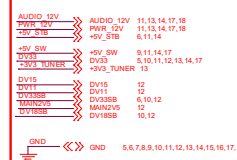
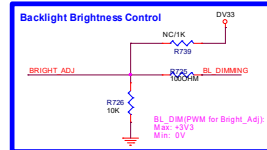
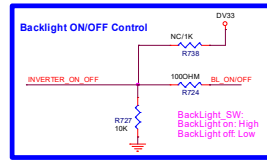
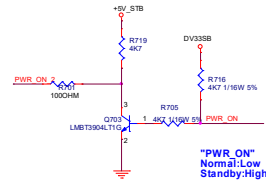
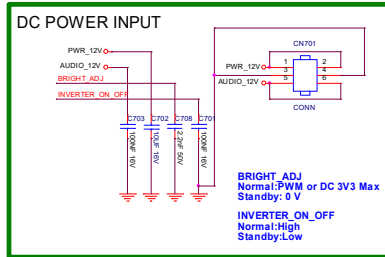
8-5-2 PFC



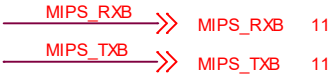
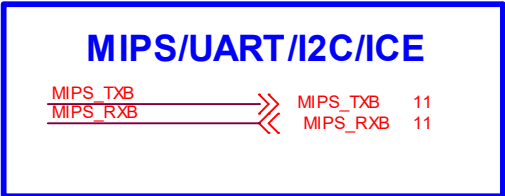
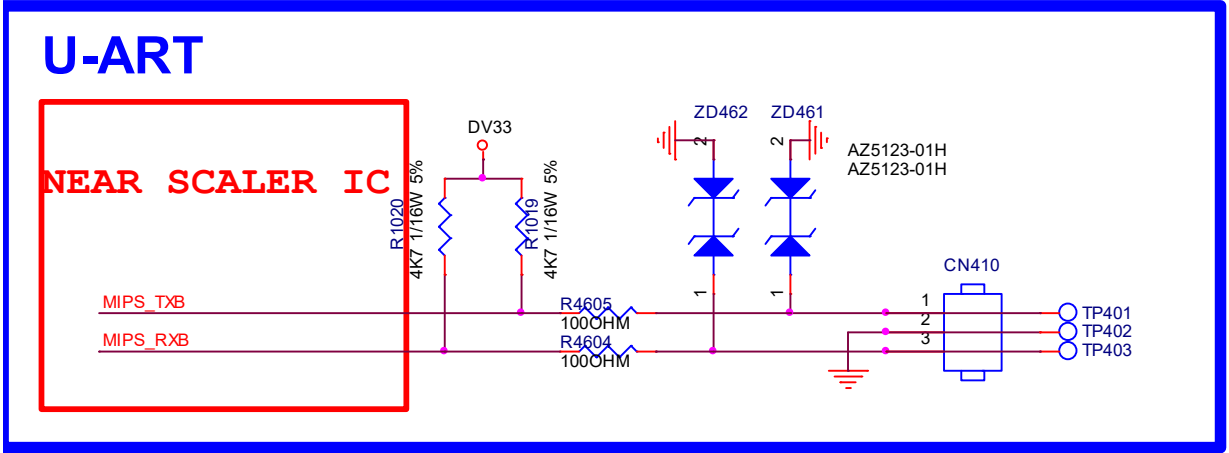
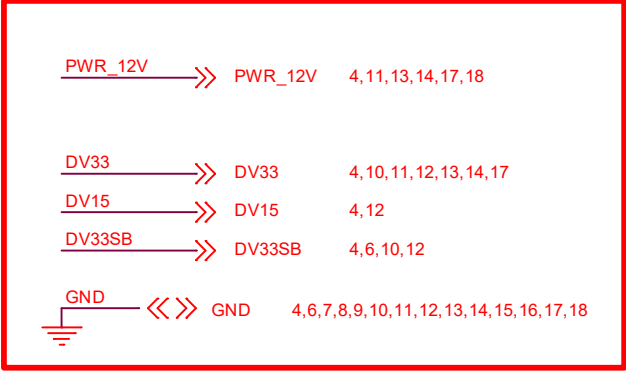
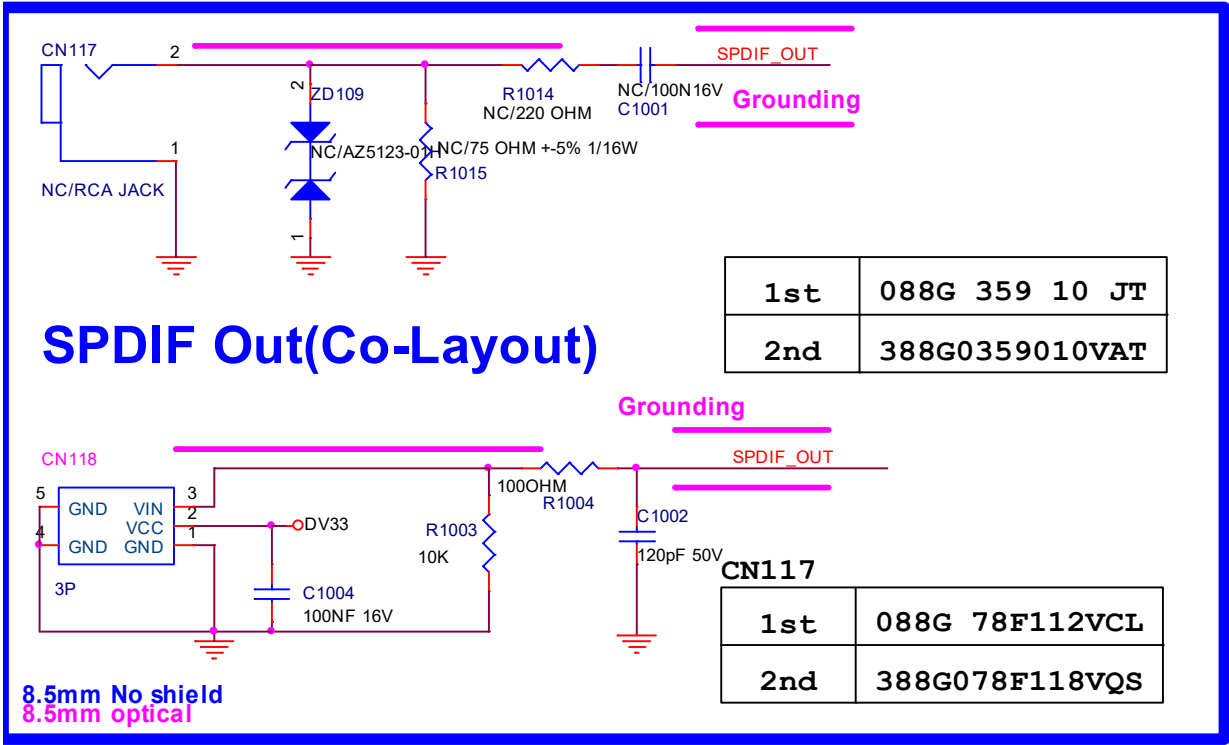
8.6 715G9216 M+P (For 39"4112 Series)

8-6-1 NT72461

2K17 EU NT72461 - 2 Layers 283mm X 125mm

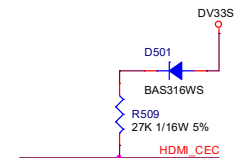
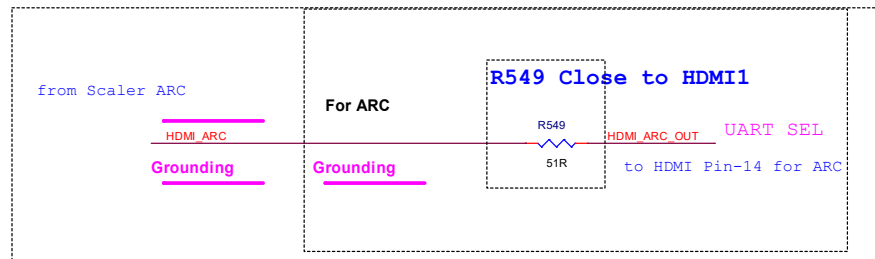
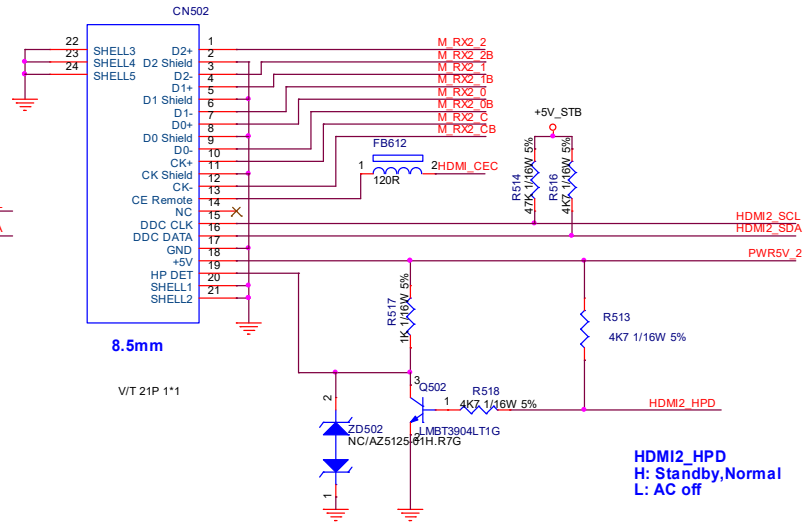
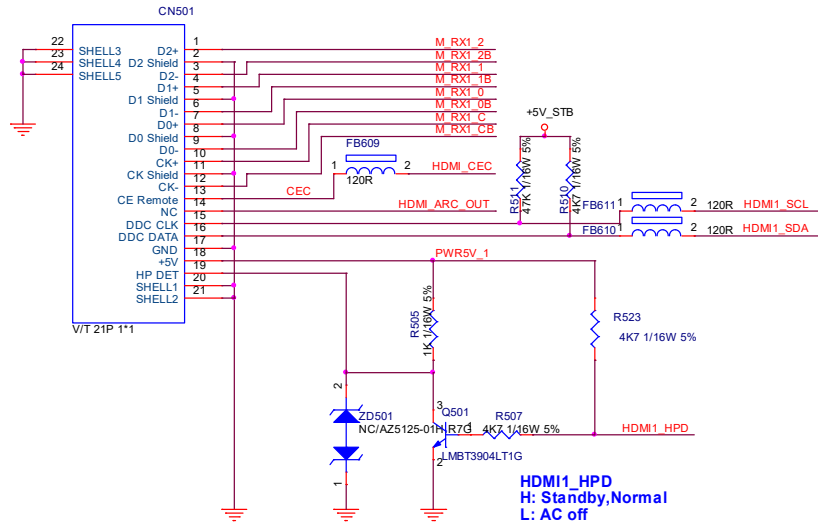


8-6-2 SPDIF/UART INPUT



8-6-3 HDMI

Rear HDMI 1



Pin	Signal	Function
1	PWR_12V	4, 11, 13, 14, 17, 18
2	+5V_STB	4, 11, 14
3	DV33	4, 5, 10, 11, 12, 13, 14, 17
4	DV15	4, 12
5	DV33SB	4, 10, 12
6	PWR5V_1	8
7	PWR5V_2	8
8	GND	4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18

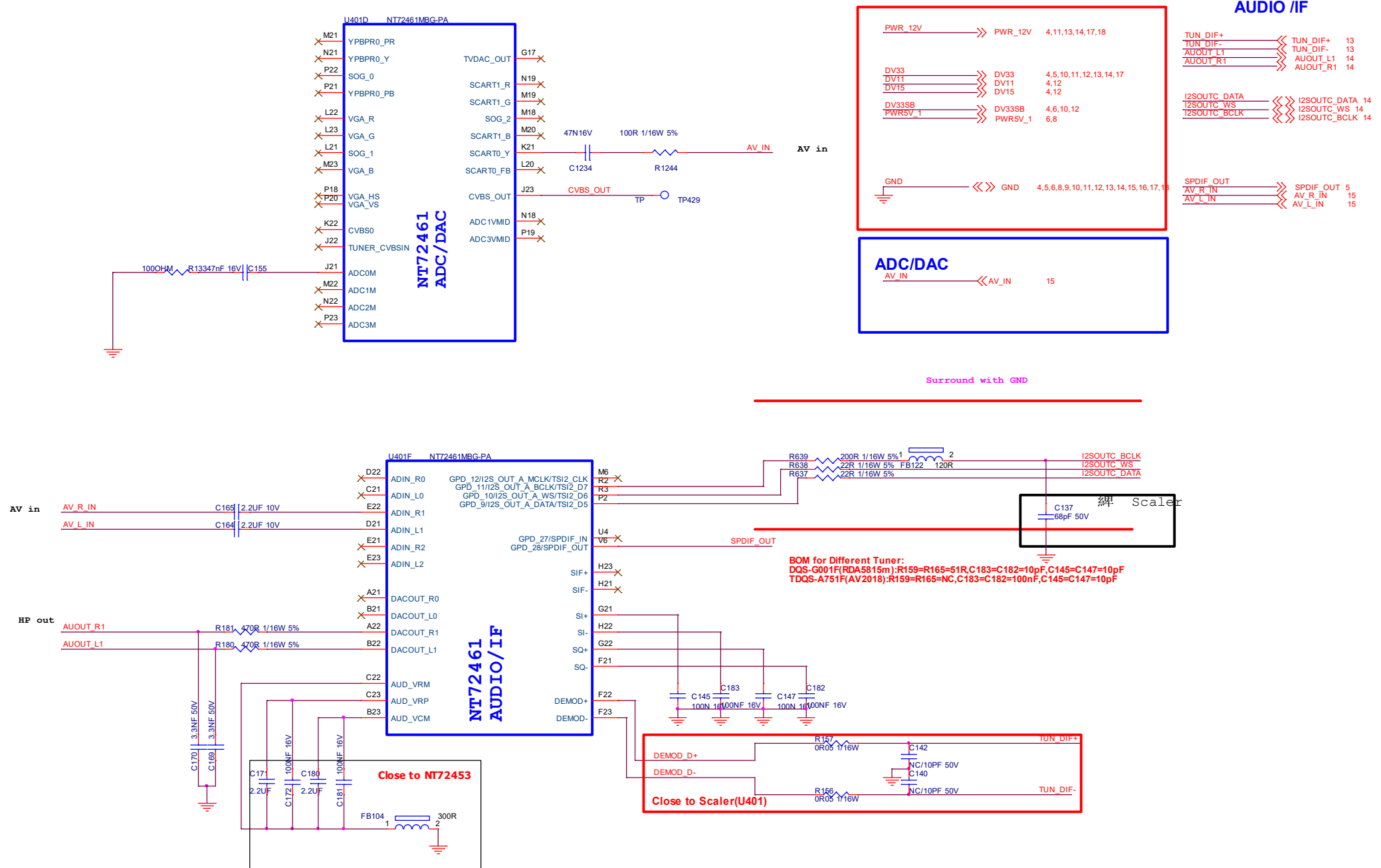
HDMI

M_RX1_2	»	M_RX1_2	8
T_RX1_2B	»	M_RX1_2B	8
T_RX1_1	»	M_RX1_1	8
M_RX1_1B	»	M_RX1_1B	8
T_RX1_0	»	M_RX1_0	8
T_RX1_0B	»	M_RX1_0B	8
T_RX1_C	»	M_RX1_C	8
M_RX1_CB	»	M_RX1_CB	8
HDMI1_SDA	»	HDMI1_SDA	8
HDMI1_SCL	»	HDMI1_SCL	8
HDMI_ARC	»	HDMI_ARC	8
HDMI_CEC	»	HDMI_CEC	8
M_RX2_2	»	M_RX2_2	8
T_RX2_2B	»	M_RX2_2B	8
M_RX2_1	»	M_RX2_1	8
T_RX2_1B	»	M_RX2_1B	8
T_RX2_0	»	M_RX2_0	8
T_RX2_0B	»	M_RX2_0B	8
M_RX2_C	»	M_RX2_CB	8
T_RX2_CB	»	M_RX2_CB	8
HDMI2_SDA	»	HDMI2_SDA	8
HDMI2_SCL	»	HDMI2_SCL	8

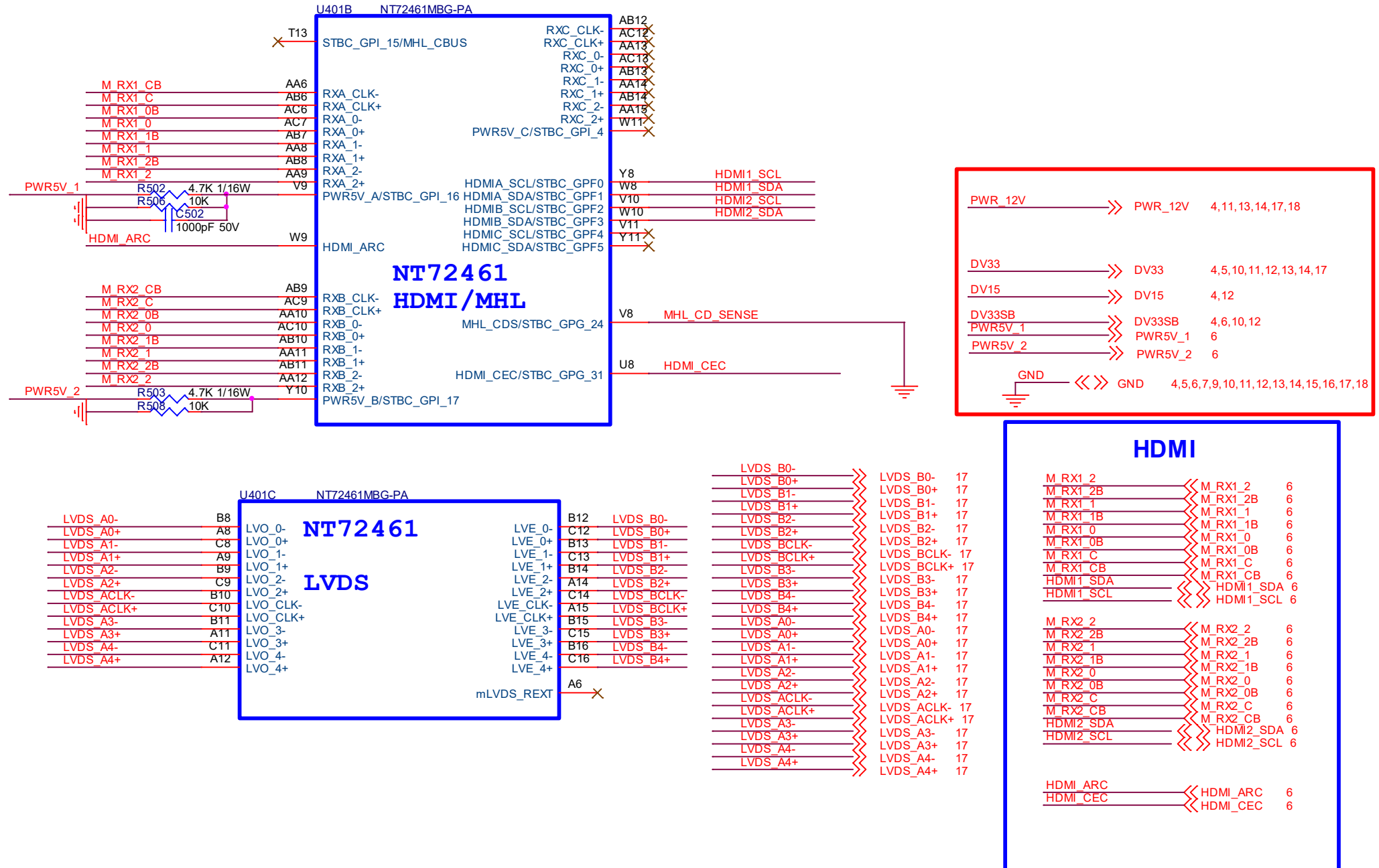
GPIO

HDMI1_HPD		HDMI1_HPD		10
HDMI2_HPD		HDMI2_HPD		10

8-6-4 NT72461_ADC/DAC/AUDIO/SIF



8-6-5 NT72461_HDMI/LVDS OUT



[illegible]

CLOSE TO CI CONNECTOR

U102
G524B3T11U

IN VOUT
EN(EN) OC

5 1

4 3CI OCP

R1303 4.7K 1/16W

R1302 4K7 1/16W 5%

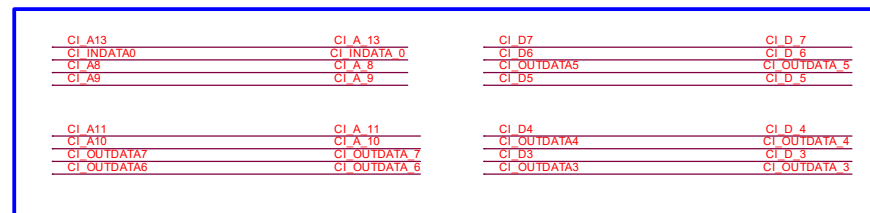
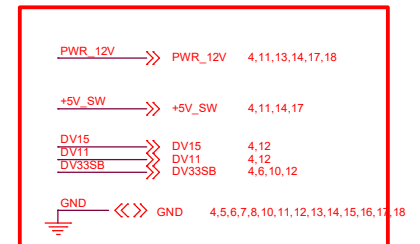
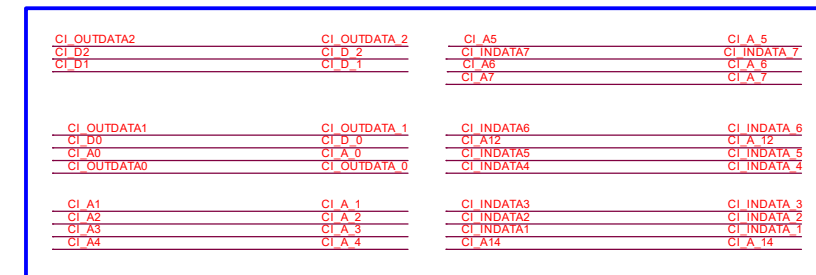
+5V_SW

C1306 NC/100UF 16V

C1303 16V 100NF 16V

C1305 10UF 10V

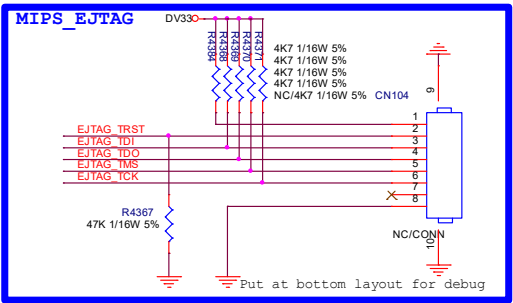
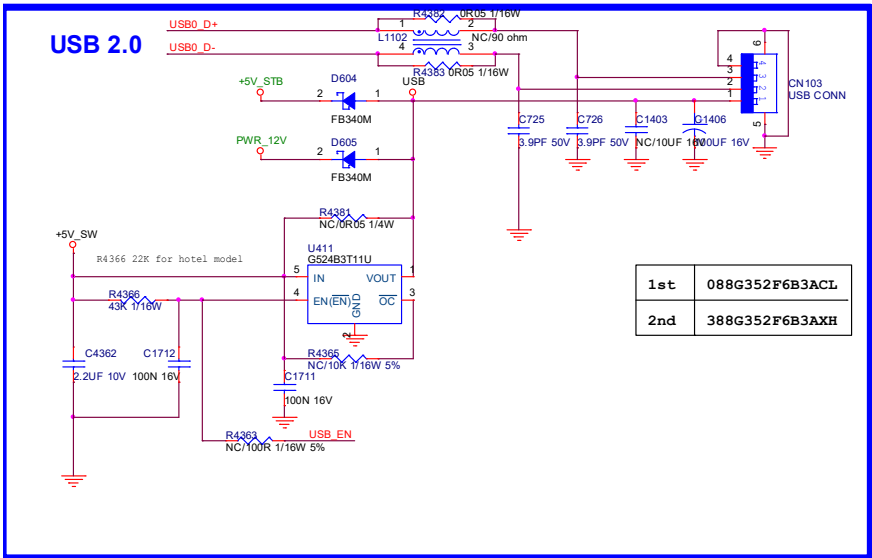
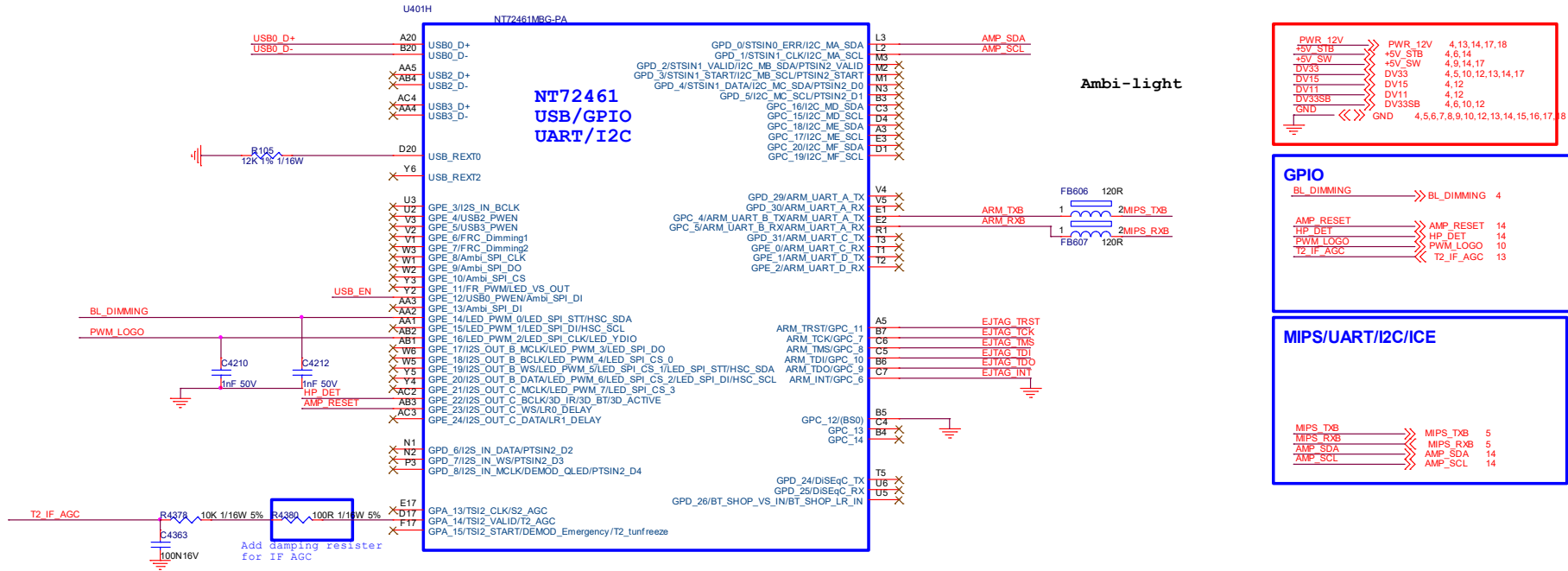
VCC_CI



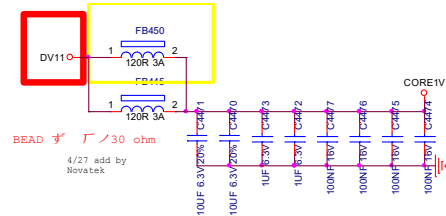
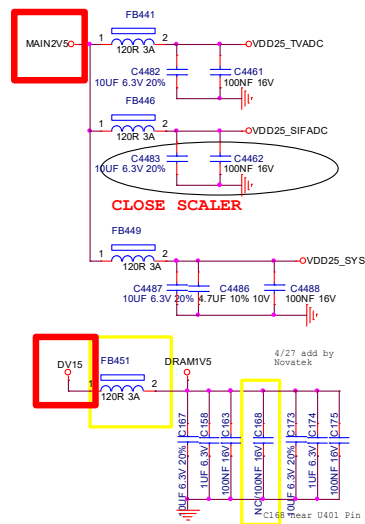
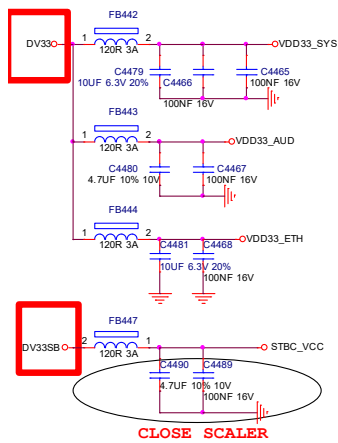
CI_INCLK	↔	CI_INCLK
CI_INVALID	↔	CI_INVALID
CI_INSYNC	↔	CI_INSYNC
CI_INDAT7	↔	CI_INDAT7
CI_INDAT6	↔	CI_INDAT6
CI_INDAT5	↔	CI_INDAT5
CI_INDAT4	↔	CI_INDAT4
CI_INDAT3	↔	CI_INDAT3
CI_INDAT2	↔	CI_INDAT2
CI_INDAT1	↔	CI_INDAT1
CI_INDAT0	↔	CI_INDAT0

[illegible]

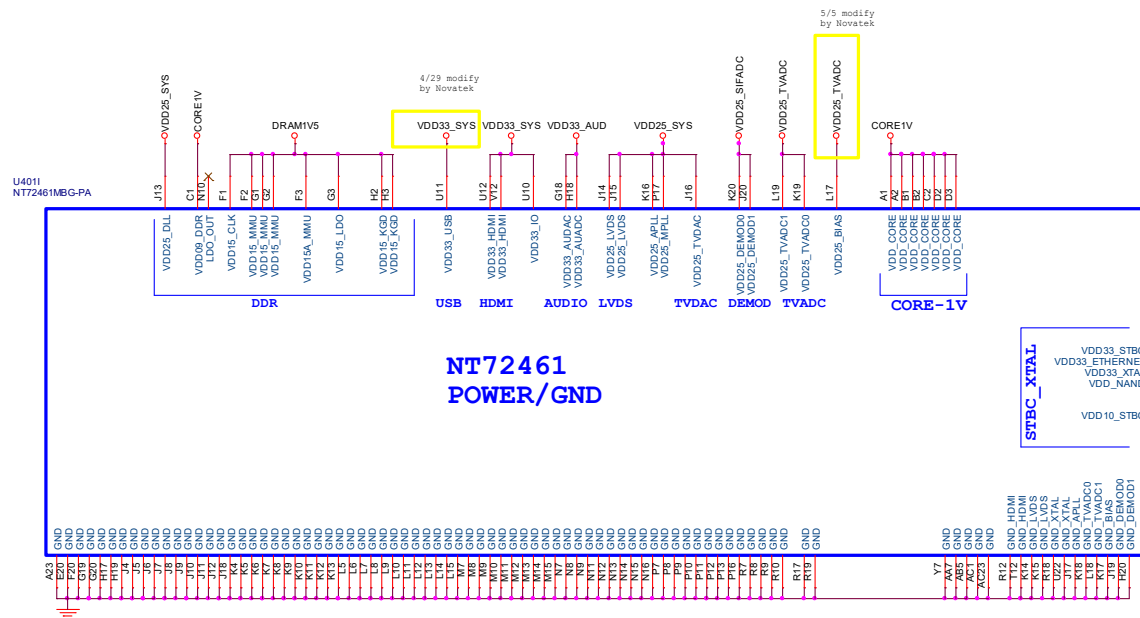
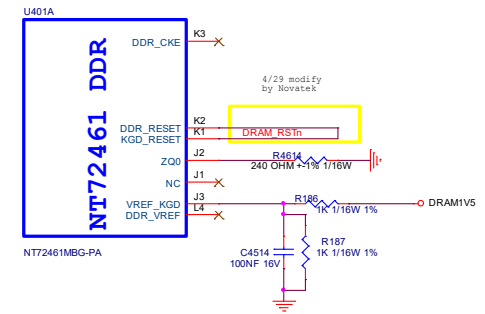
8-6-8 NT72461_USB/GPIO



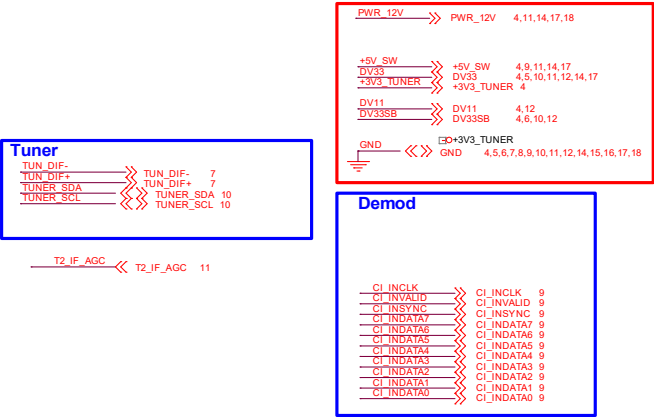
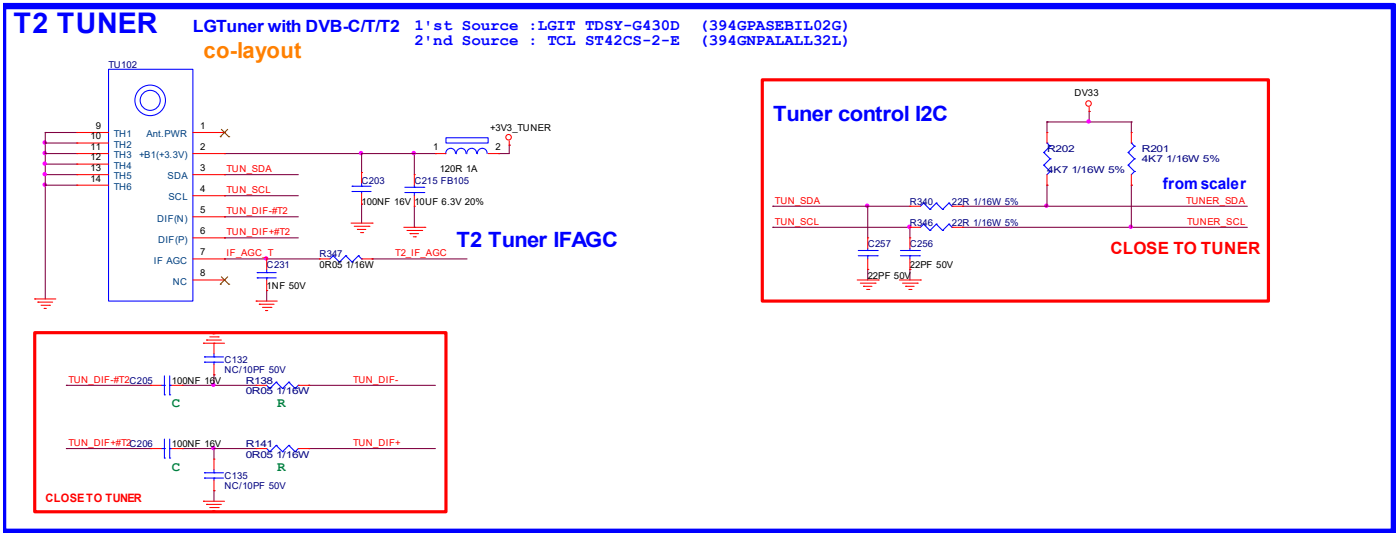
8-6-9 NT72461_POWER



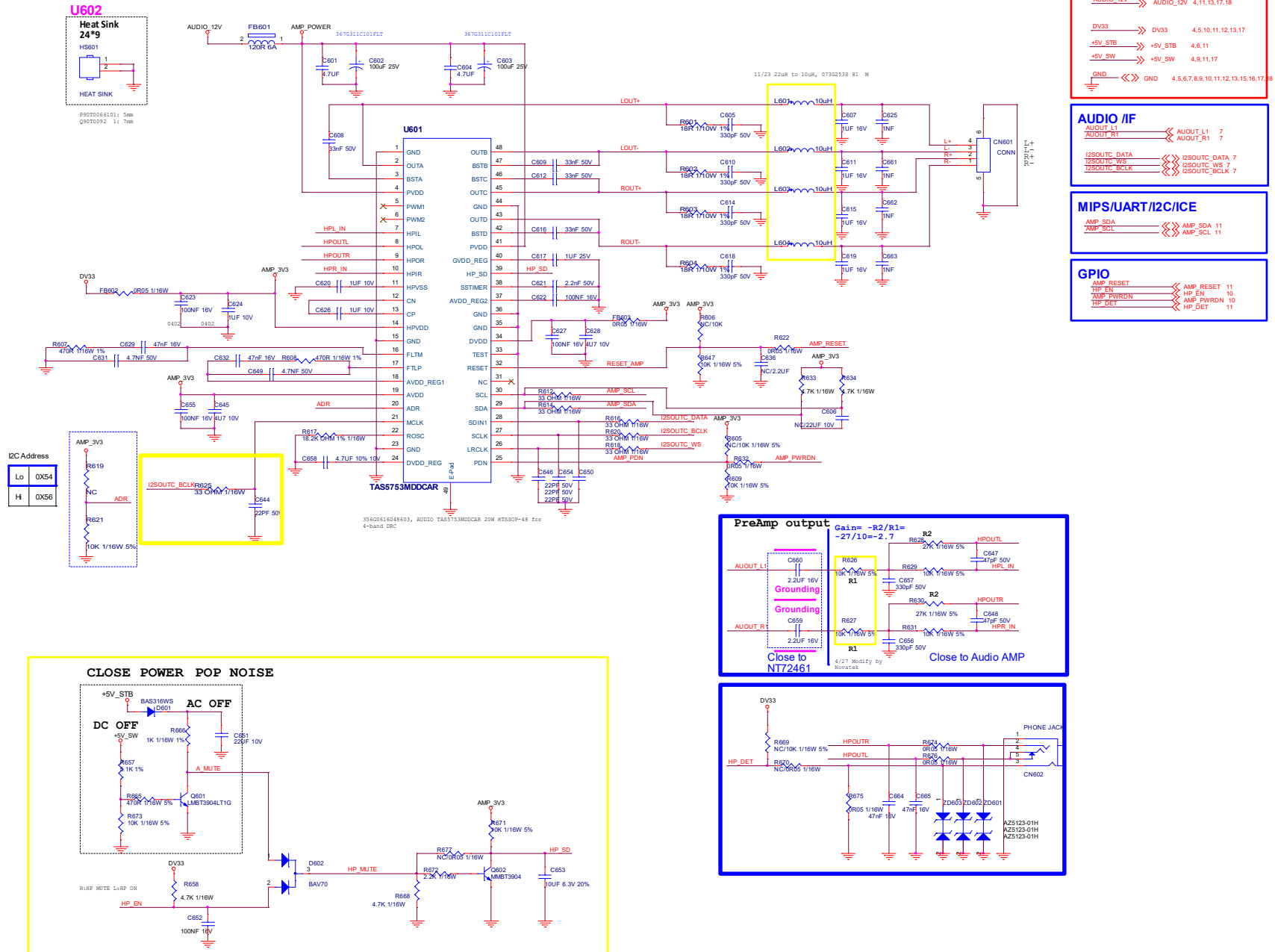
MAIN2V5	→	MAIN2V5	4
DV33	→	DV33	4, 5, 10, 11, 13, 14, 17
DV15	→	DV15	4
DV11	→	DV11	4
DV33SB	→	DV33SB	4, 6, 10
DV18SB	→	DV18SB	4, 10
GND	↔	GND	4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18



8-6-10 T2 Tuner



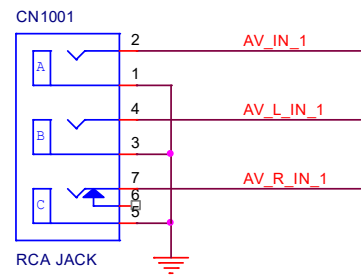
8-6-11 SPK AMP/HP OUT



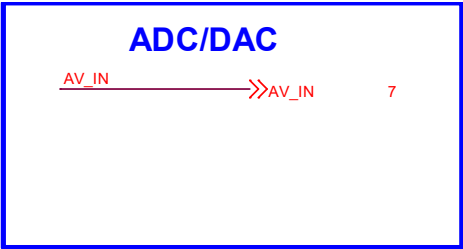
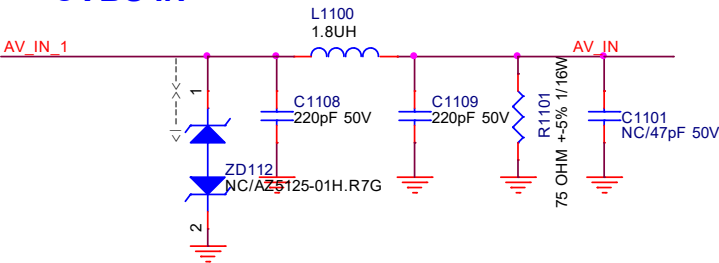
8-6-12 AV

1st	088G 78F137XCL
2nd	088G 78F137XYG

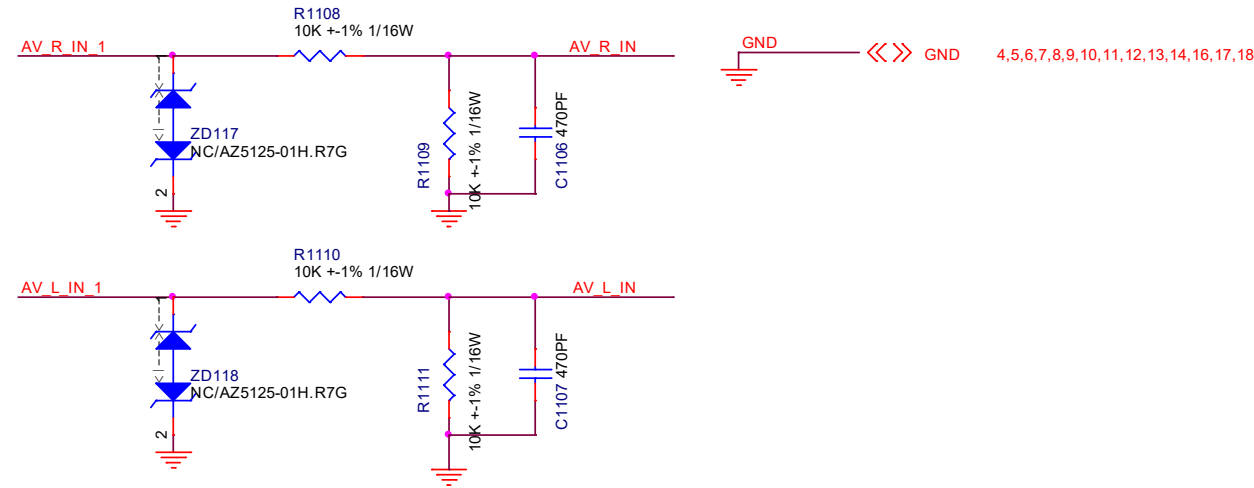
Helf AV(CVBS+L/R IN)



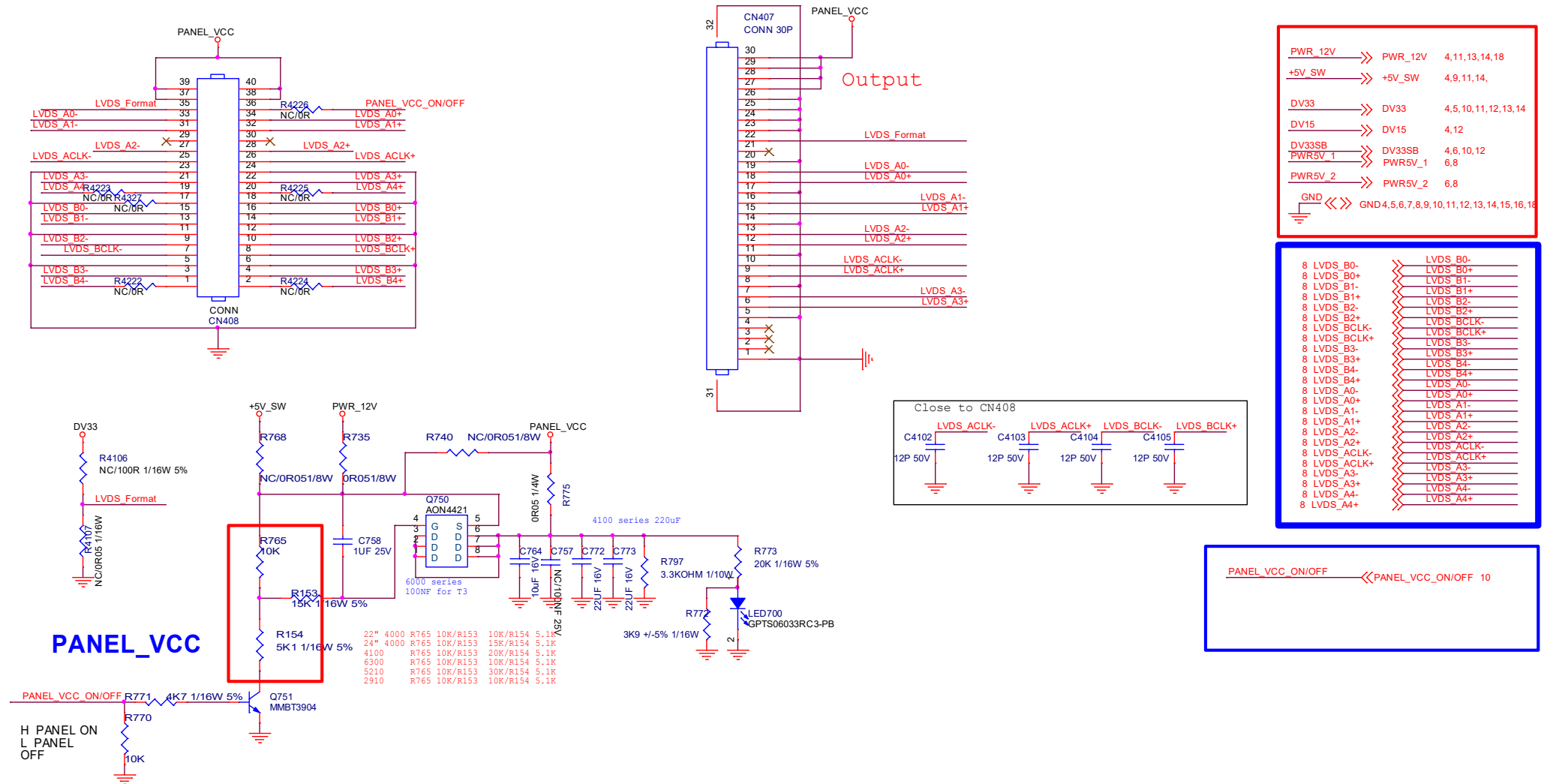
CVBS IN



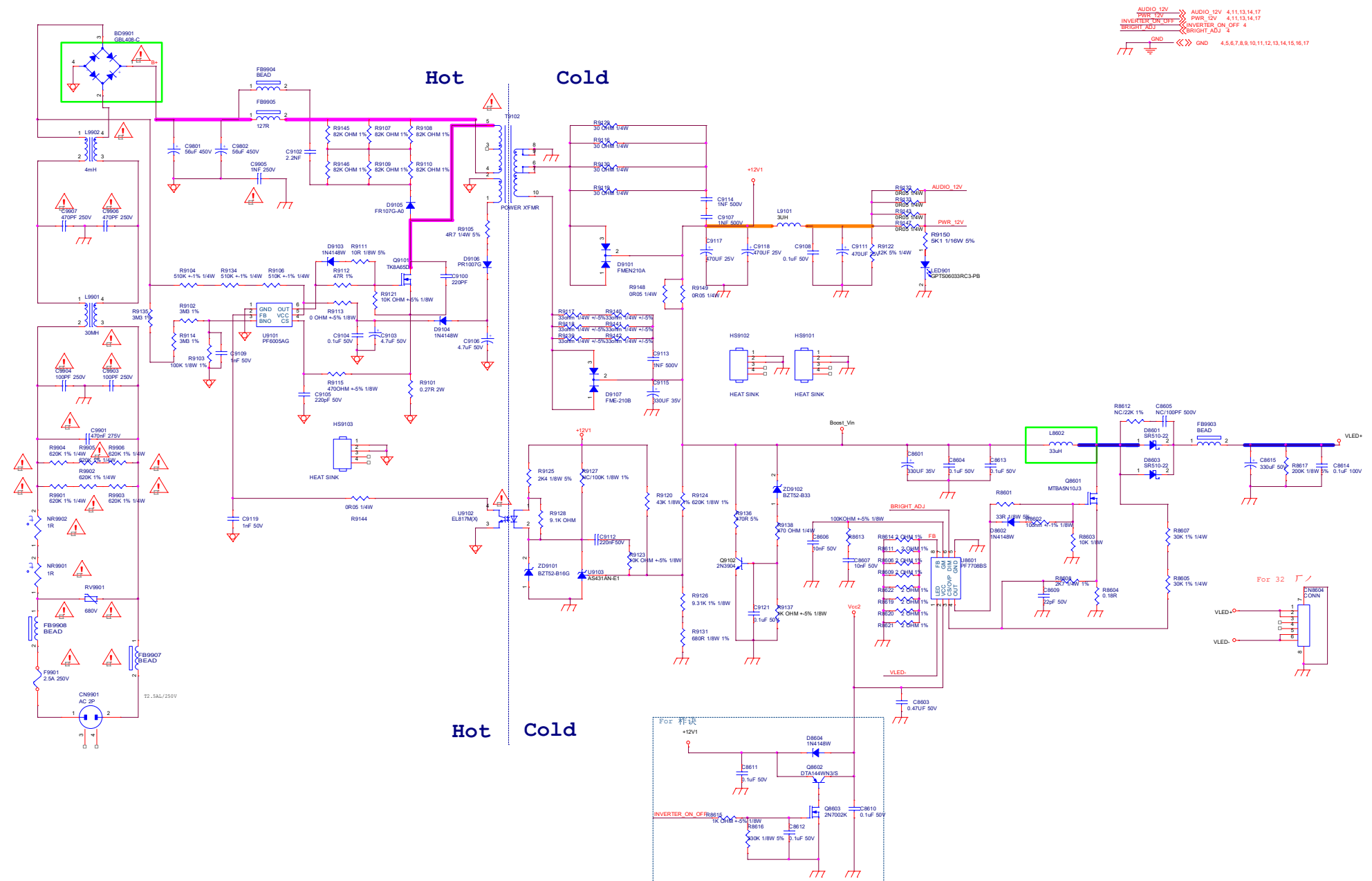
CVBS IN Audio Input



8-6-13 LVDS



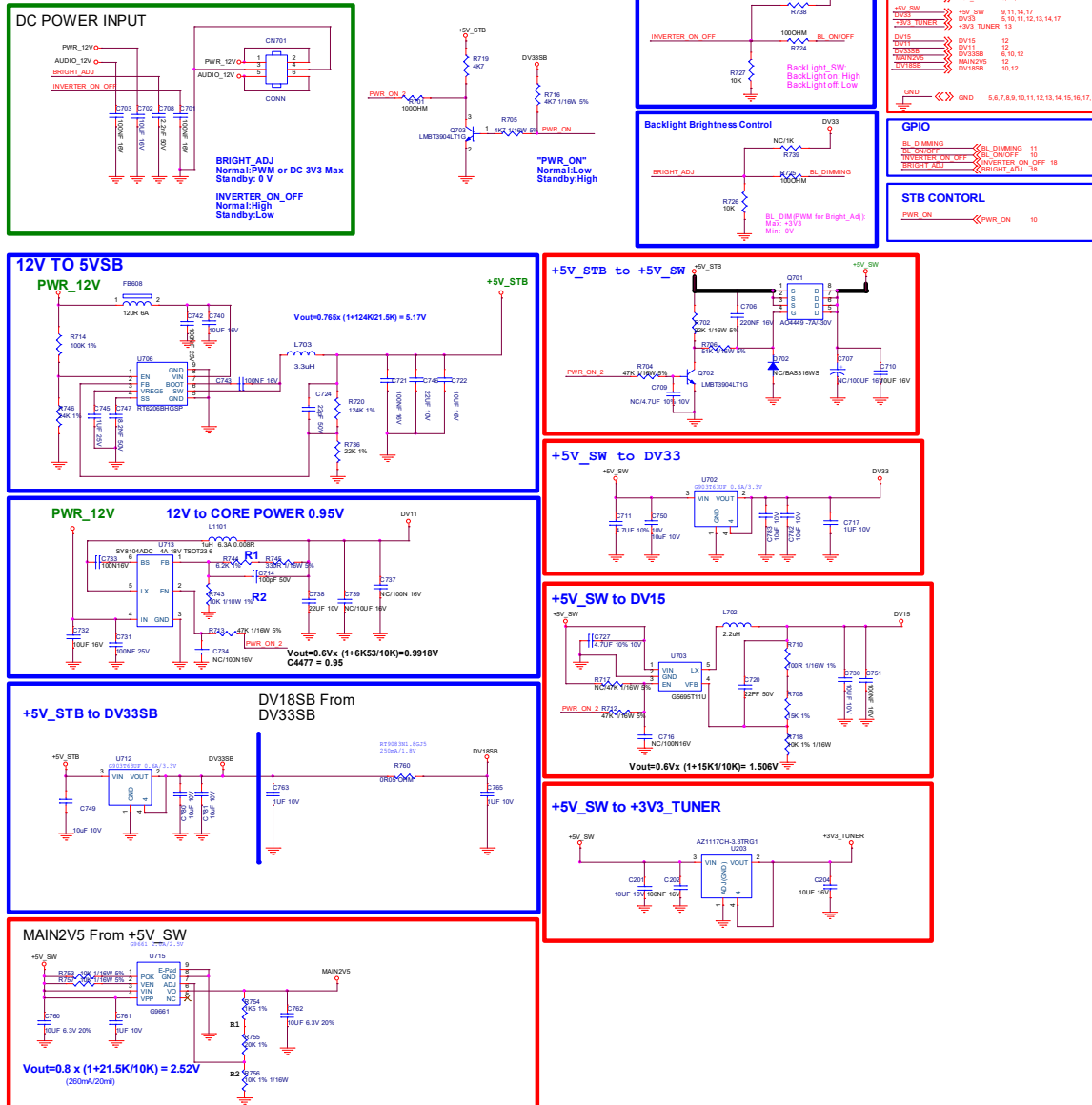
8-6-14 Power_32



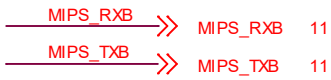
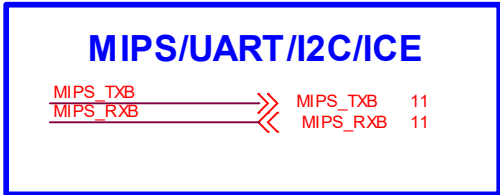
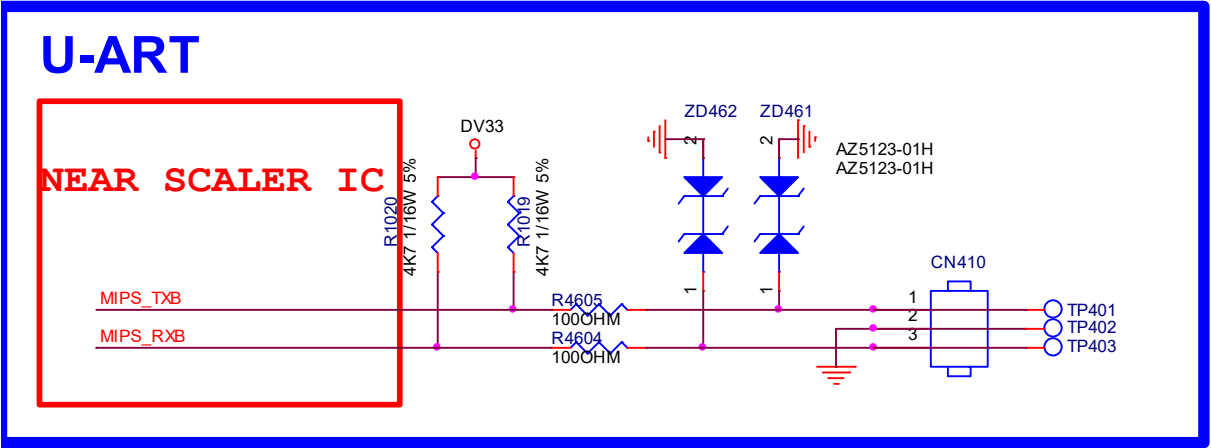
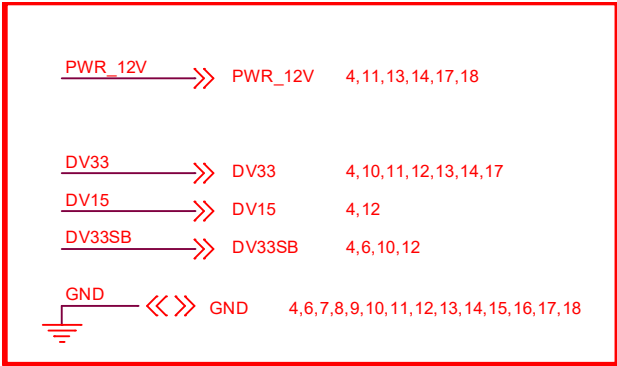
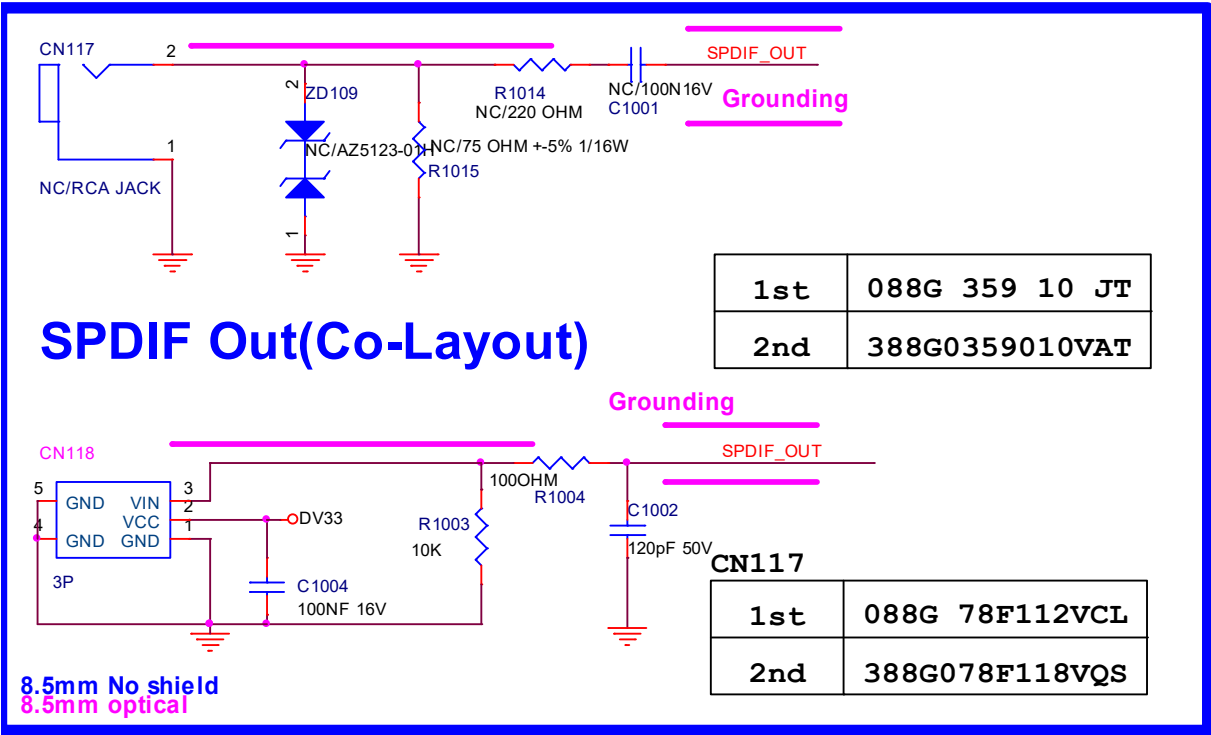
8.7 715G9040 M+P (For 32"4112 Series)

8-7-1 NT72461

2K17 EU NT72461 - 2 Layers 283mm X 125mm

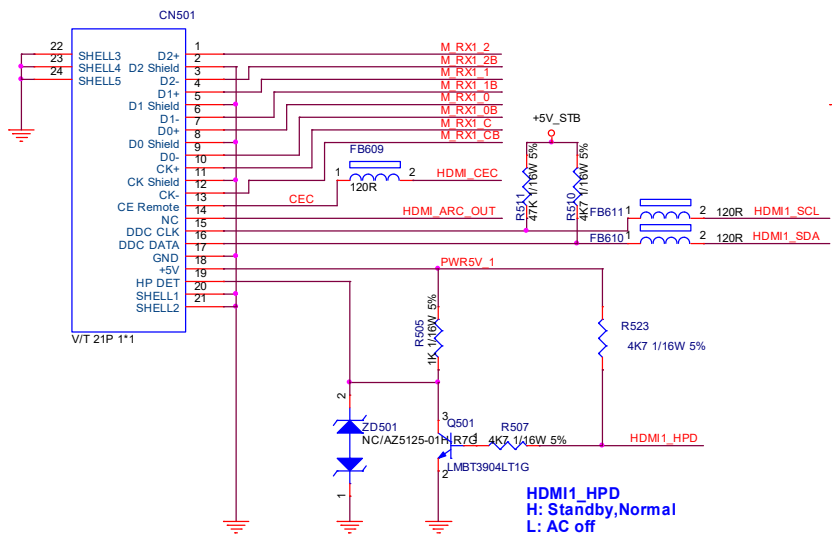


8-7-2 SPDIF/UART INPUT

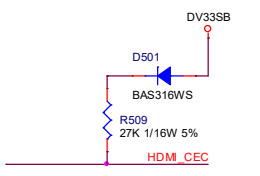
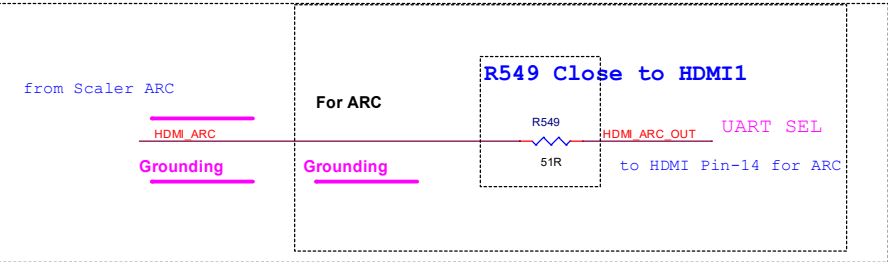
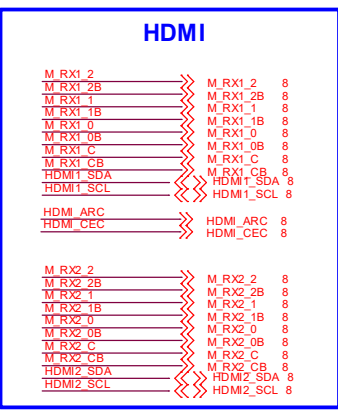
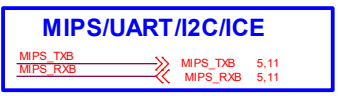
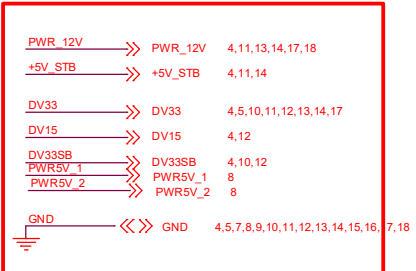
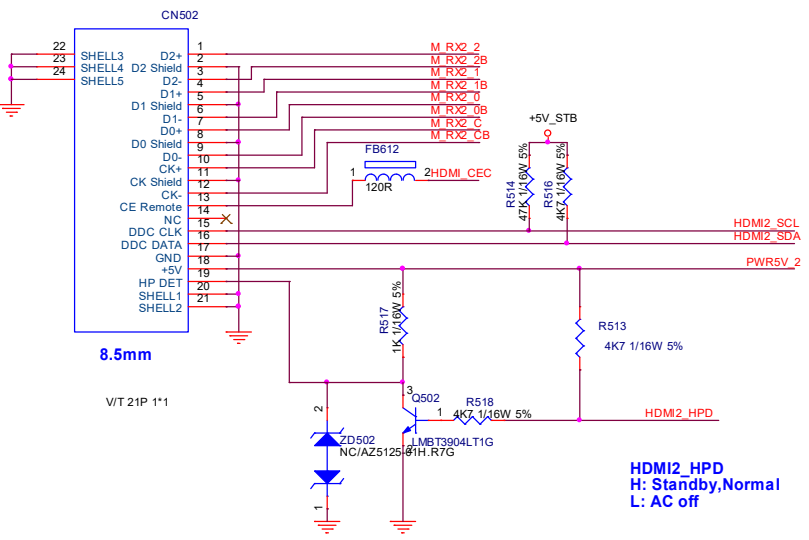


8-7-3 HDMI

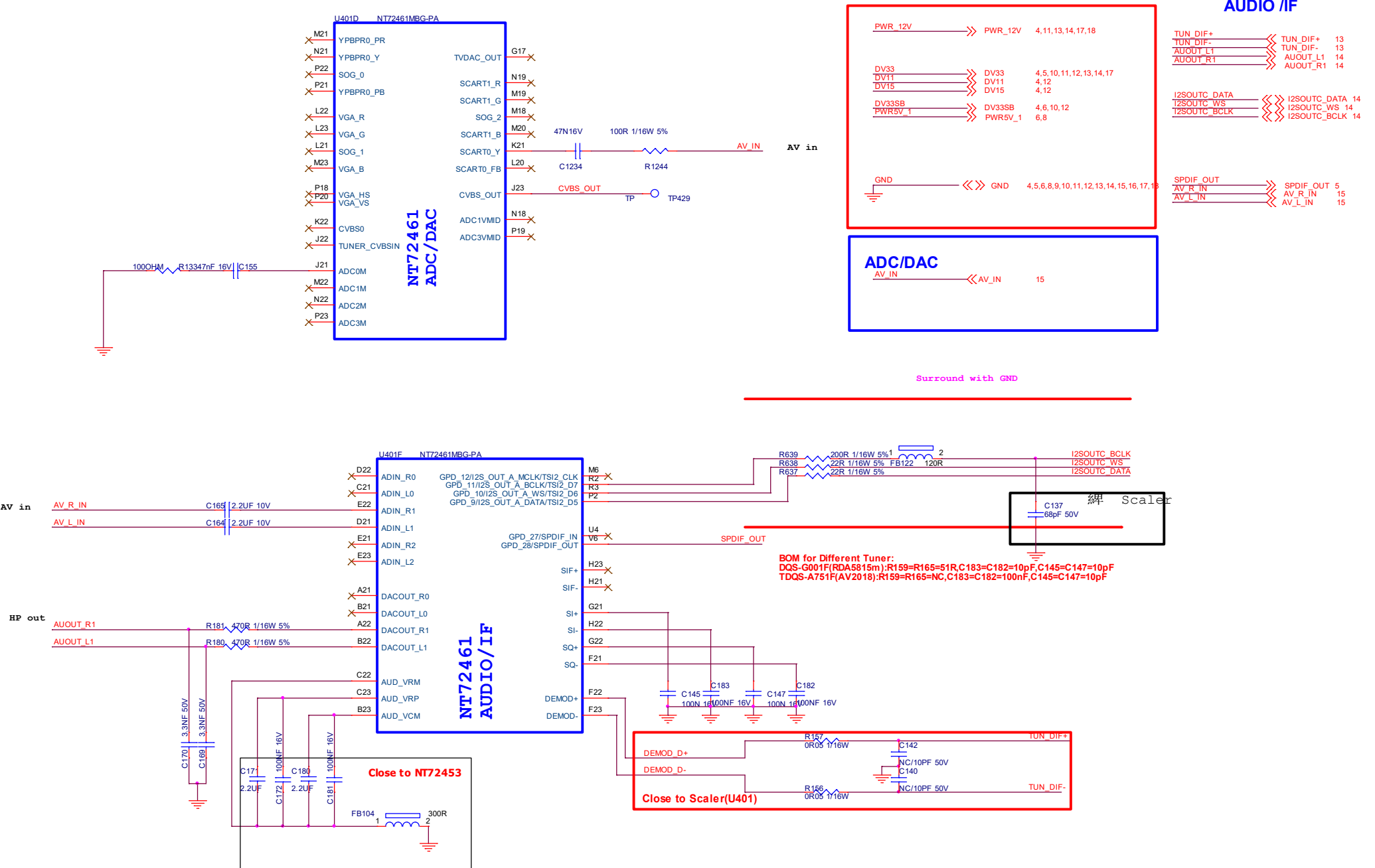
Rear HDMI 1



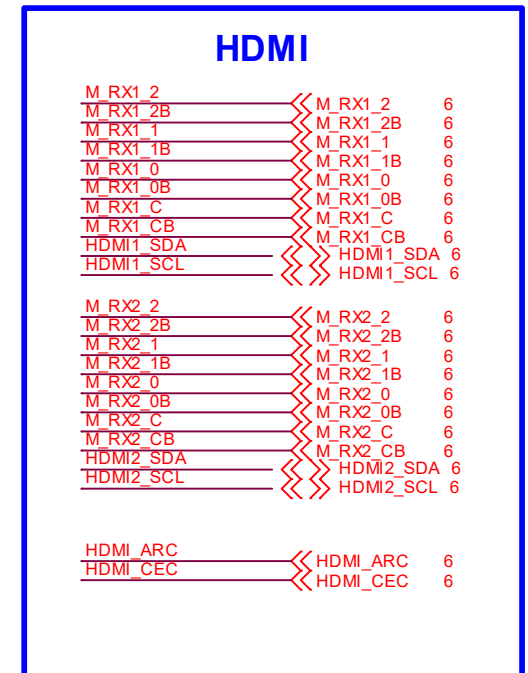
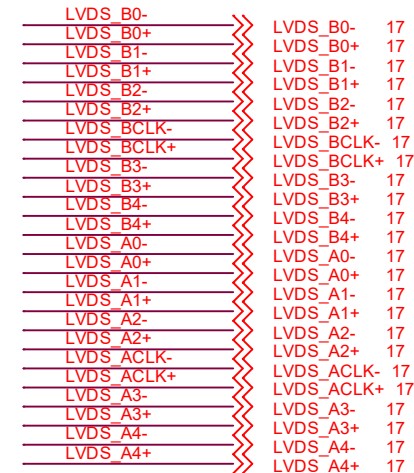
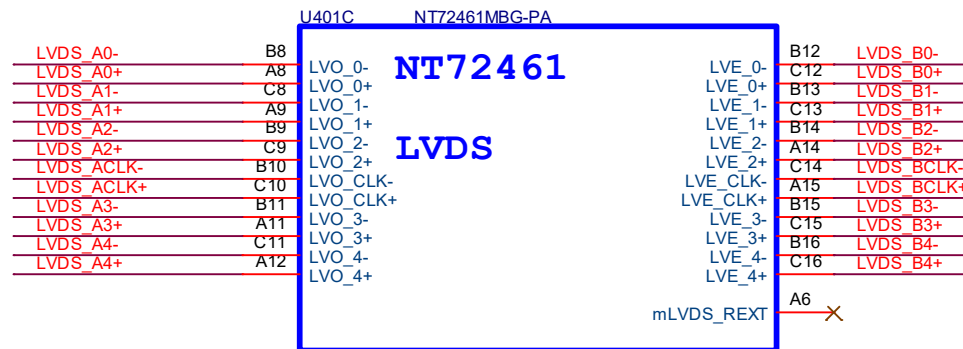
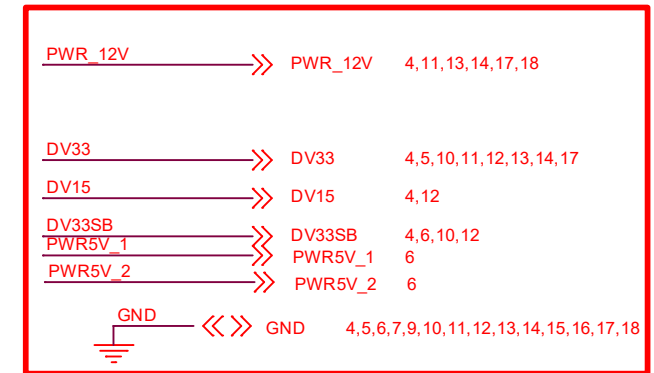
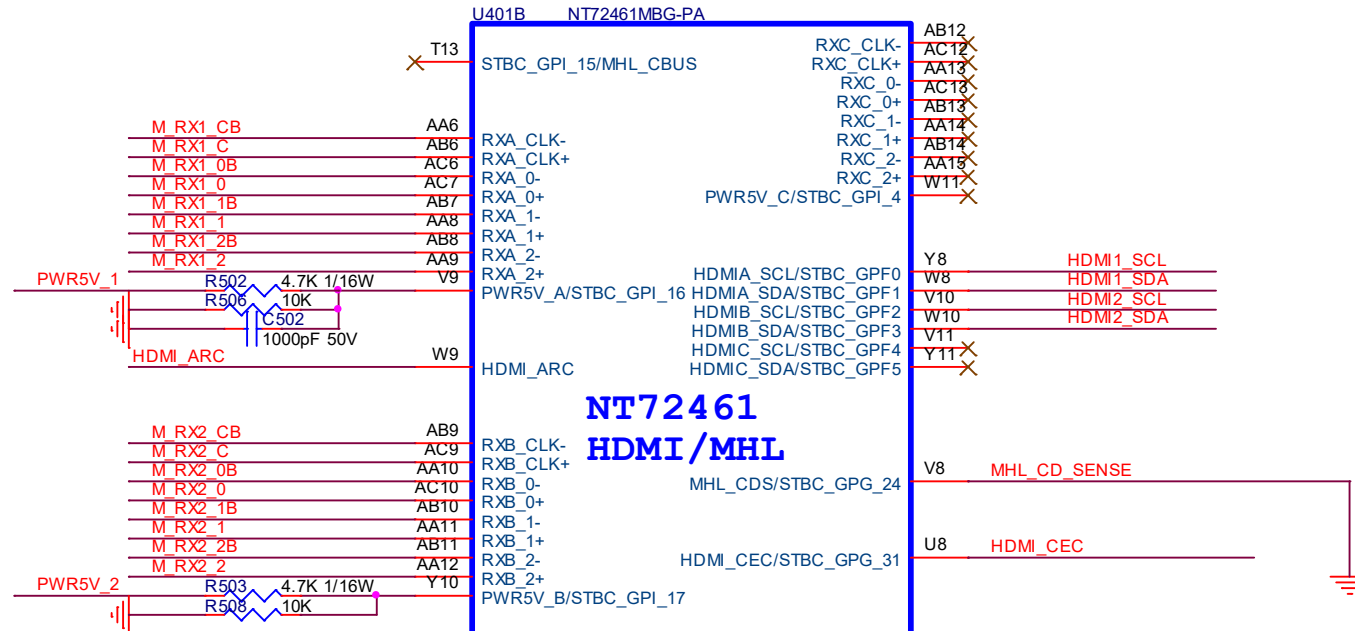
Rear HDMI 2



8-7-4 NT72461_ADC/DAC/AUDIO/SIF

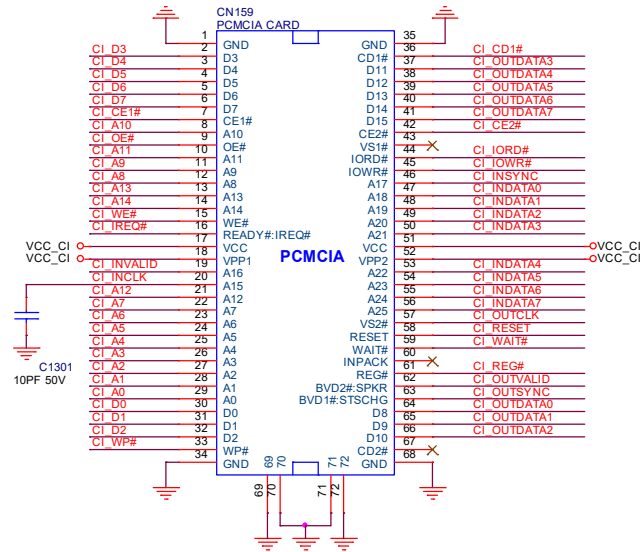


8-7-5 NT72461_HDMI/LVDS OUT



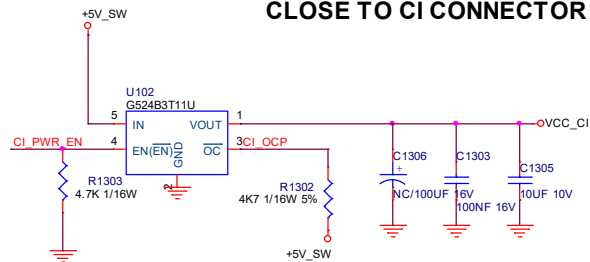
8-7-6 NT72461_CI

PCMCIA Slot



CI Bus Power Control

CLOSE TO CI CONNECTOR

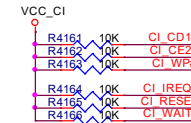


U401G NT72461MBG-PA

CI A 0	D13	GPB_2/CI_HA0/CI_ALE0
CI A 1	H13	GPB_3/CI_HA1/CI_ALE0
CI A 2	D12	GPB_4/CI_HA2
CI A 3	E12	GPB_5/CI_HA3
CI A 4	F12	GPB_6/CI_HA4
CI A 5	G12	GPB_7/CI_HA5
CI A 6	H12	GPB_8/CI_HA6
CI A 7	H11	GPB_9/CI_HA7
CI A 8	H10	GPB_10/CI_HA8
CI A 9	G9	GPB_11/CI_HA9
CI A 10	F9	GPB_12/CI_HA10
CI A 11	E9	GPB_13/CI_HA11
CI A 12	D9	GPB_14/CI_HA12
CI A 13	H9	GPB_15/CI_HA13
CI A 14	D8	GPB_16/CI_HA14
CI D 0	E8	GPB_17/CI_HAD0
CI D 1	F8	GPB_18/CI_HAD1
CI D 2	G8	GPB_19/CI_HAD2
CI D 3	H8	GPB_20/CI_HAD3
CI D 4	H7	GPB_21/CI_HAD4
CI D 5	H6	GPB_22/CI_HAD5
CI D 6	G5	GPB_23/CI_HAD6
CI D 7	F5	GPB_24/CI_HAD7
CI RESET	D16	GPA_24/CI_RST
CI CD1#	E16	GPA_25/CI_CD_0#
CI CE1#	F16	GPA_26/CI_CE#
CI IREQ#	G16	GPA_27/CI_IREQ#
CI IORD#	H16	GPA_28/CI_IORD#
CI IOWR#	H15	GPA_29/CI_IOWR#
CI DE#	H14	GPA_30/CI_DE#
CI WE#	G13	GPA_31/CI_WE#
CI REG#	F13	GPB_0/CI_REG#
CI WAIT#	E13	GPB_1/CI_HWAIT#

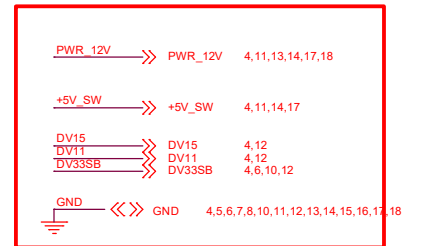
NT72461 CI/TS

GPC_0/STSIN0_CLK/I2C_MB_SDA	E5	CI_PWR_EN
GPC_1/STSIN0_VALID/I2C_MB_SCL	D5	CI_OCP
GPC_2/STSIN0_START/I2C_MC_SDA	H5	
GPC_3/STSIN0_DATA/I2C_MC_SCL	E4	
GPA_0/TSI1_ERR	C19	
GPA_1/TSI1_CLK	B19	
GPA_2/TSI1_VALID	C18	CI_OUTVALID
GPA_3/TSI1_SYN	A18	CI_OUTSYNC
GPA_4/TSI1_D0	C17	CI_OUTDATA_0
GPA_5/TSI1_D1	A17	CI_OUTDATA_1
GPA_6/TSI1_D2	B17	CI_OUTDATA_2
GPA_7/TSI1_D3	D17	CI_OUTDATA_3
GPA_8/TSI1_D4	E17	CI_OUTDATA_4
GPA_9/TSI1_D5	F17	CI_OUTDATA_5
GPA_10/TSI1_D6	E18	CI_OUTDATA_6
GPA_11/TSI1_D7	F18	CI_OUTDATA_7
GPA_12/CI_CD_1#	M4	
GPD_13/TSO_CLK/DEMODOUT_CLK	M5	CI_INVALID
GPD_14/TSO_VALID/DEMODOUT_VALID	N6	CI_INSYNC
GPD_15/TSO_SYN/TSI2_SYN/DEMODOUT_SYN	N5	CI_INDAT_0
GPD_16/TSO_D0/DEMODOUT_D0	P6	CI_INDAT_1
GPD_17/TSO_D1/DEMODOUT_D1	P5	CI_INDAT_2
GPD_18/TSO_D2/DEMODOUT_D2	P4	CI_INDAT_3
GPD_19/TSO_D3/DEMODOUT_D3	R6	CI_INDAT_4
GPD_20/TSO_D4/DEMODOUT_D4	R5	CI_INDAT_5
GPD_21/TSO_D5/DEMODOUT_D5	R4	CI_INDAT_6
GPD_22/TSO_D6/DEMODOUT_D6	R5	CI_INDAT_6
GPD_23/TSO_D7/DEMODOUT_D7	T6	CI_INDAT_7



CI_OUTDATA2	CI_OUTDATA_2	CI A5	CI A 5
CI D2	CI D 2	CI_INDAT_7	CI_INDAT_7
CI D1	CI D 1	CI A7	CI A 7
CI_OUTDATA1	CI_OUTDATA_1	CI_INDAT_6	CI_INDAT_6
CI D0	CI D 0	CI A12	CI A 12
CI A0	CI A 0	CI_INDAT_5	CI_INDAT_5
CI_OUTDATA0	CI_OUTDATA_0	CI_INDAT_4	CI_INDAT_4
CI A1	CI A 1	CI_INDAT_3	CI_INDAT_3
CI A2	CI A 2	CI_INDAT_2	CI_INDAT_2
CI A3	CI A 3	CI_INDAT_1	CI_INDAT_1
CI A4	CI A 4	CI A14	CI A 14

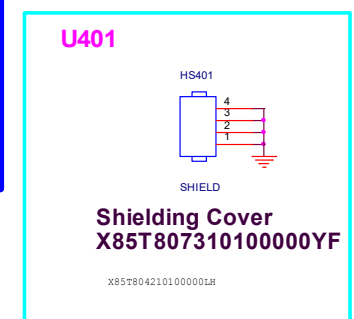
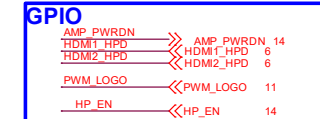
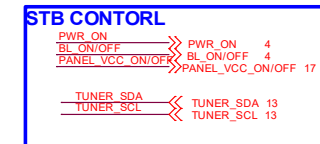
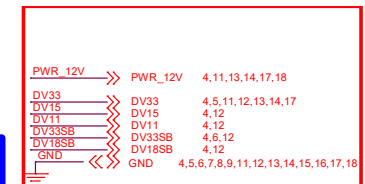
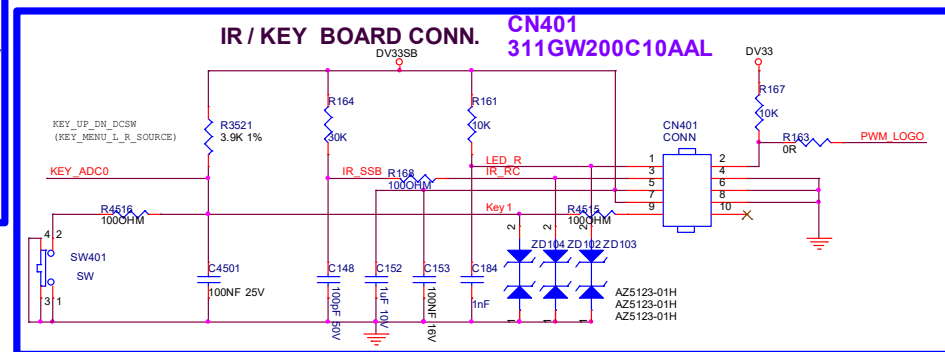
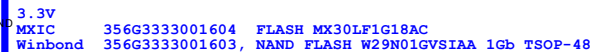
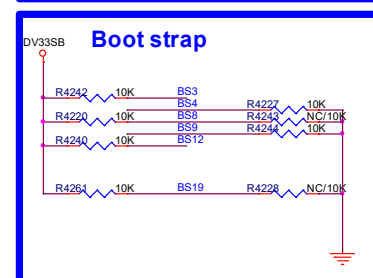
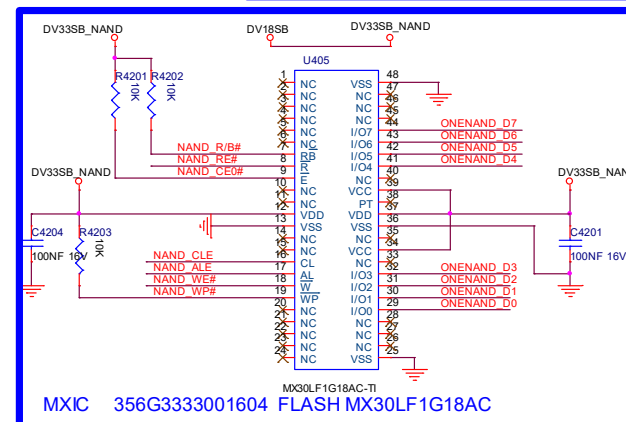
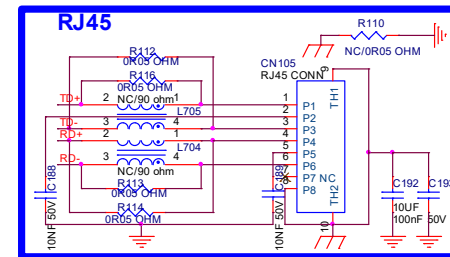
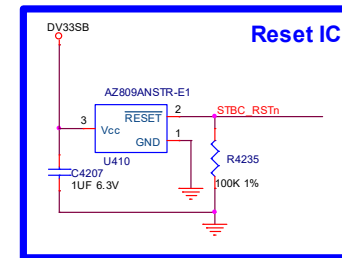
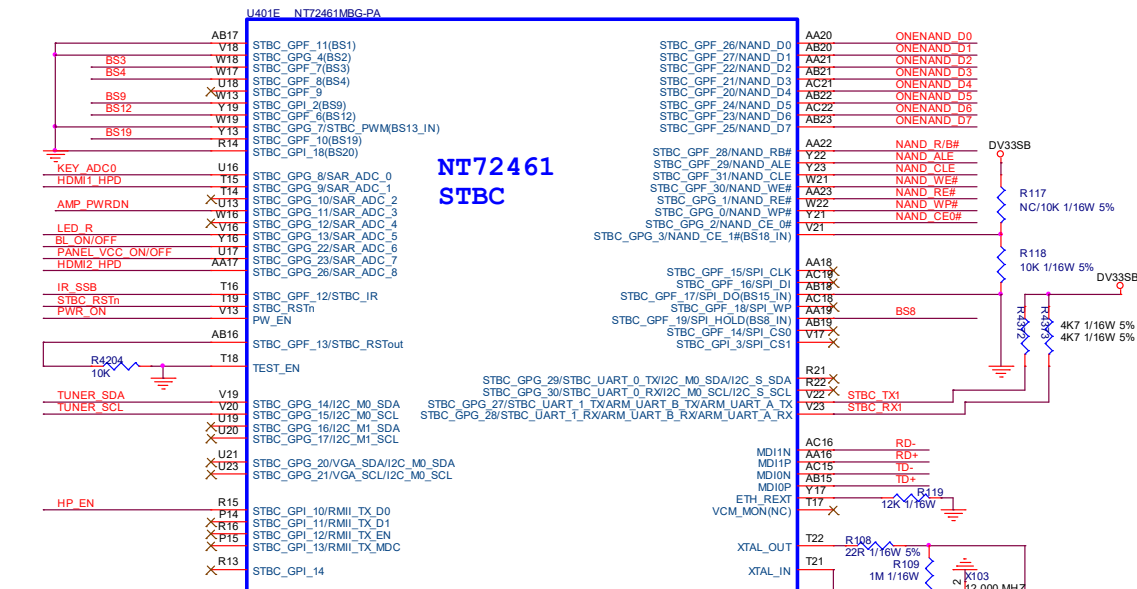
CI A13	CI A 13	CI D7	CI D 7
CI_INDAT_0	CI_INDAT_0	CI D6	CI D 6
CI A8	CI A 8	CI_OUTDATA5	CI_OUTDATA_5
CI A9	CI A 9	CI D5	CI D 5
CI A11	CI A 11	CI D4	CI D 4
CI A10	CI A 10	CI_OUTDATA4	CI_OUTDATA_4
CI_OUTDATA7	CI_OUTDATA_7	CI D3	CI D 3
CI_OUTDATA6	CI_OUTDATA_6	CI_OUTDATA3	CI_OUTDATA_3

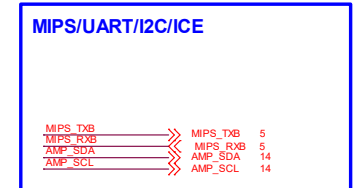
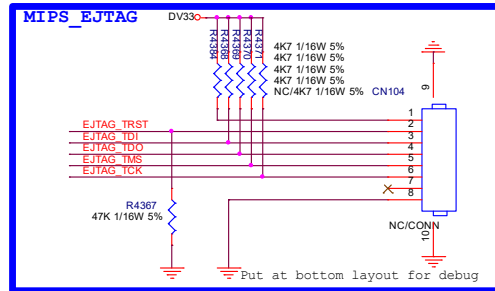


GPIO

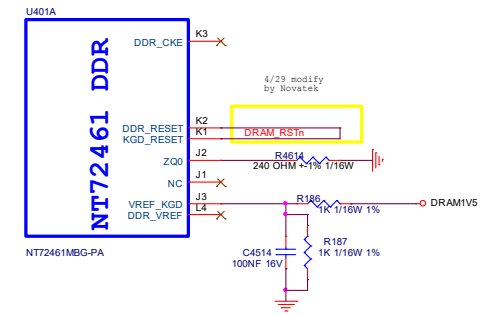
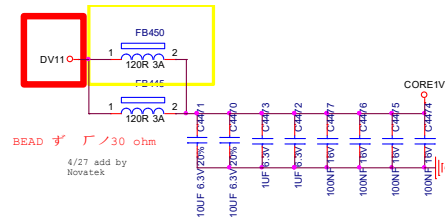
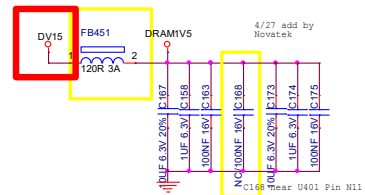
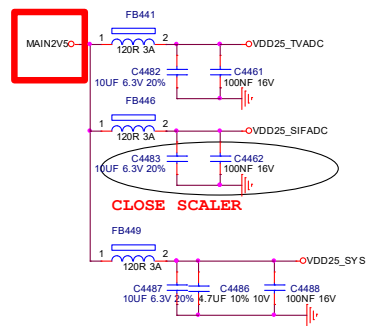
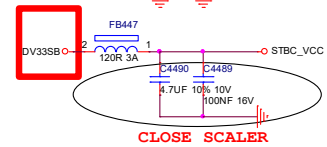
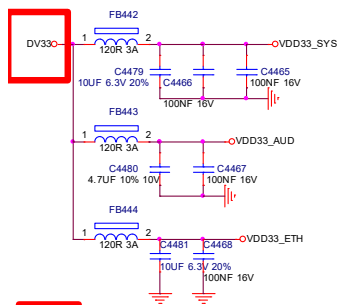
CI_INCLK	CI_INCLK
CI_INVALID	CI_INVALID
CI_INSYNC	CI_INSYNC
CI_INDAT_7	CI_INDAT_7
CI_INDAT_6	CI_INDAT_6
CI_INDAT_5	CI_INDAT_5
CI_INDAT_4	CI_INDAT_4
CI_INDAT_3	CI_INDAT_3
CI_INDAT_2	CI_INDAT_2
CI_INDAT_1	CI_INDAT_1
CI_INDAT_0	CI_INDAT_0

8-7-7 NT72461_STBC/FLASH/RJ45

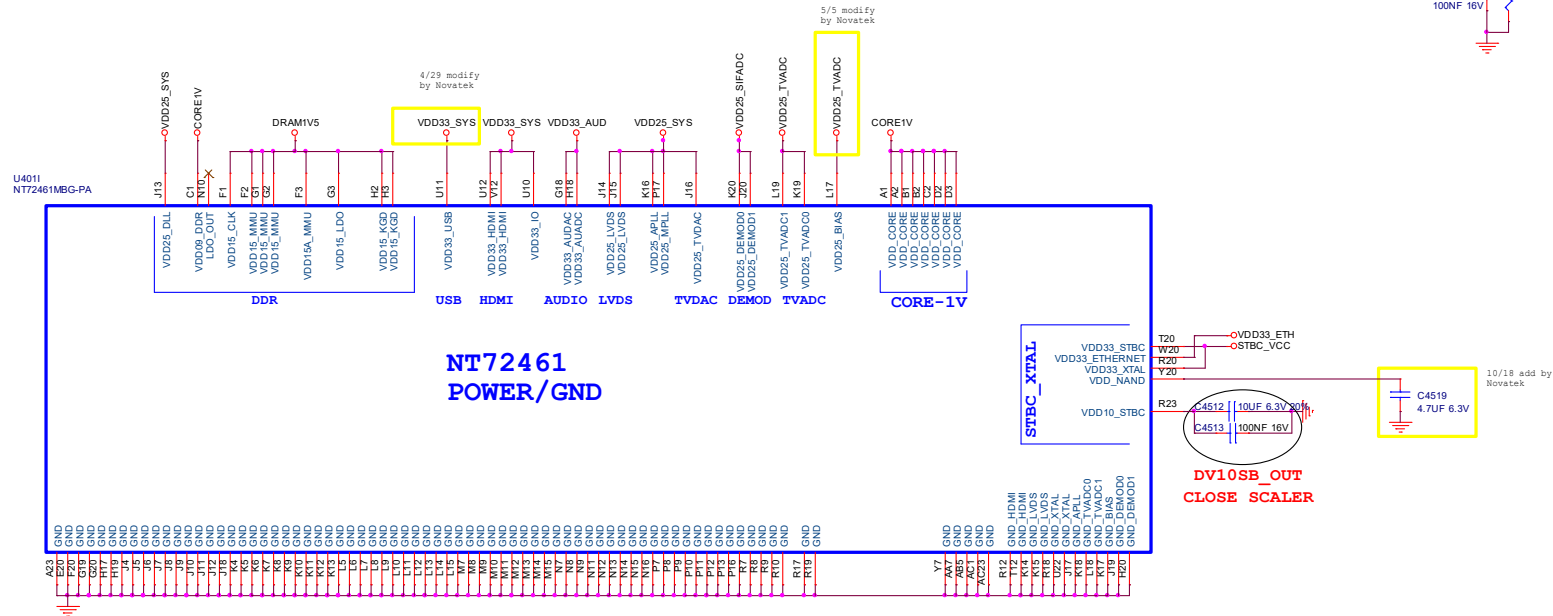




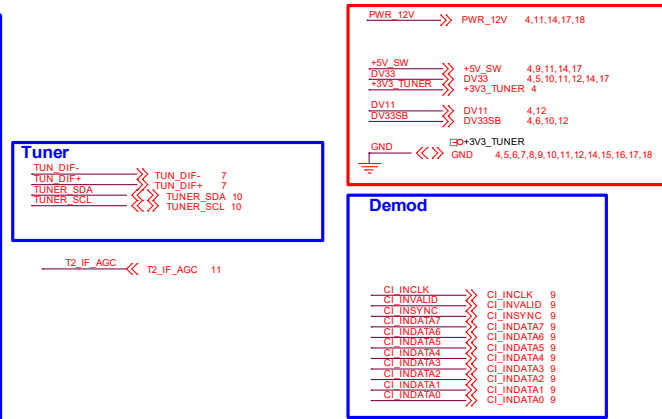
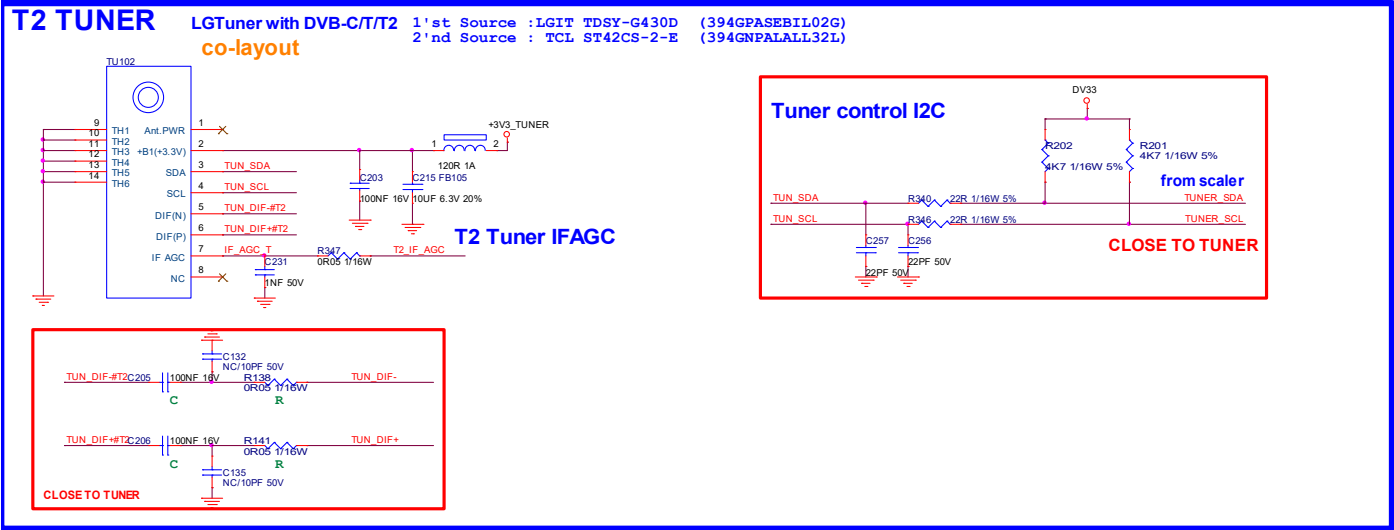
8-7-9 NT72461_POWER



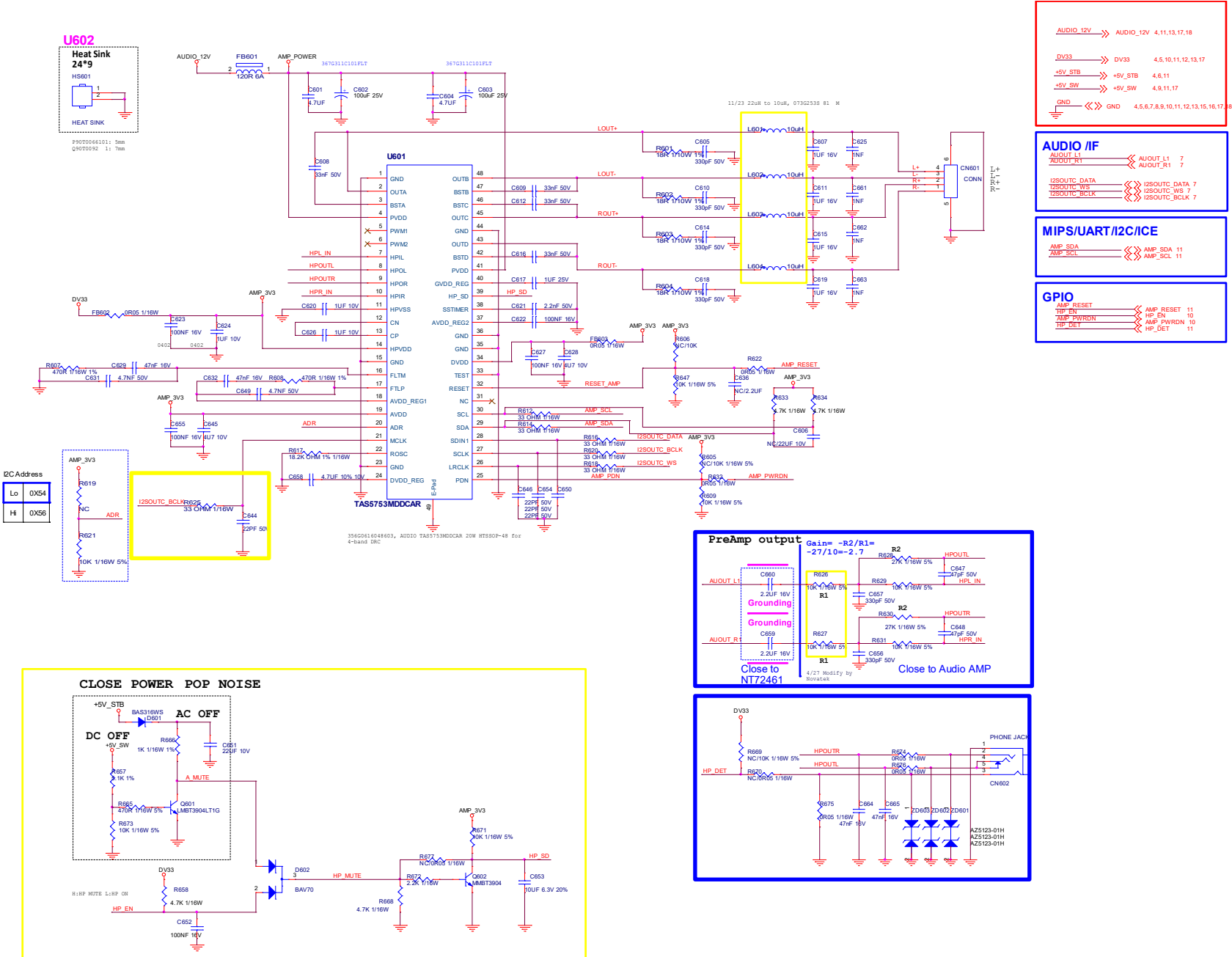
MAIN2V5	MAIN2V5	4
DV33	DV33	4, 5, 10, 11, 13, 14, 17
DV15	DV15	4
DV11	DV11	4
DV33SB	DV33SB	4, 6, 10
DV18SB	DV18SB	4, 10
GND	GND	4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18



8-7-10 T2 Tuner

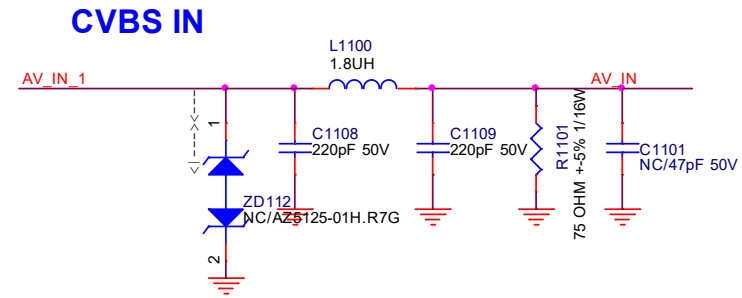
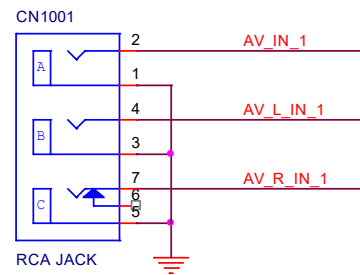


8-7-11 SPK AMP/HP OUT

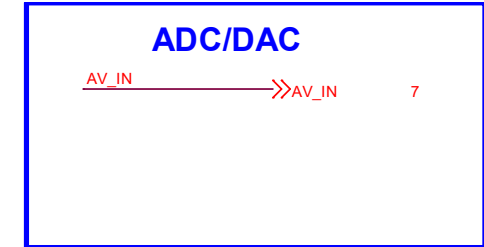
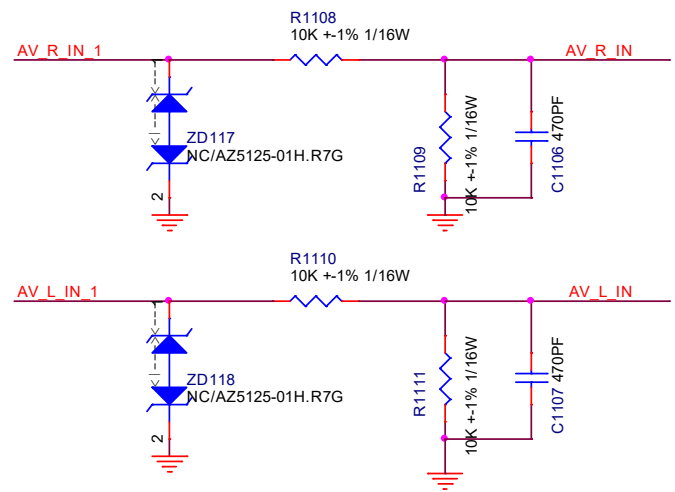


1st	088G 78F137XCL
2nd	088G 78F137XYG

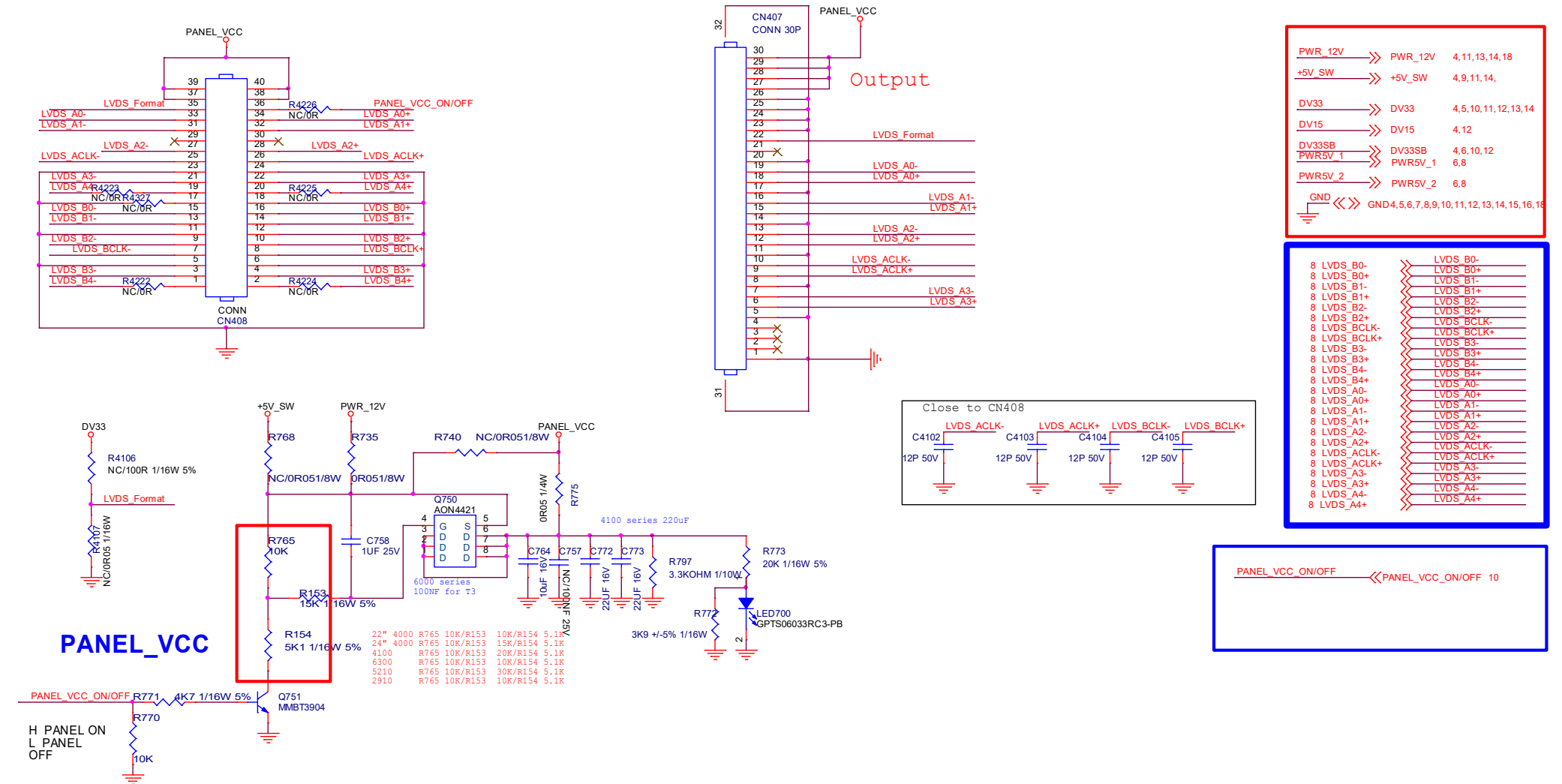
Helf AV(CVBS+L/R IN)



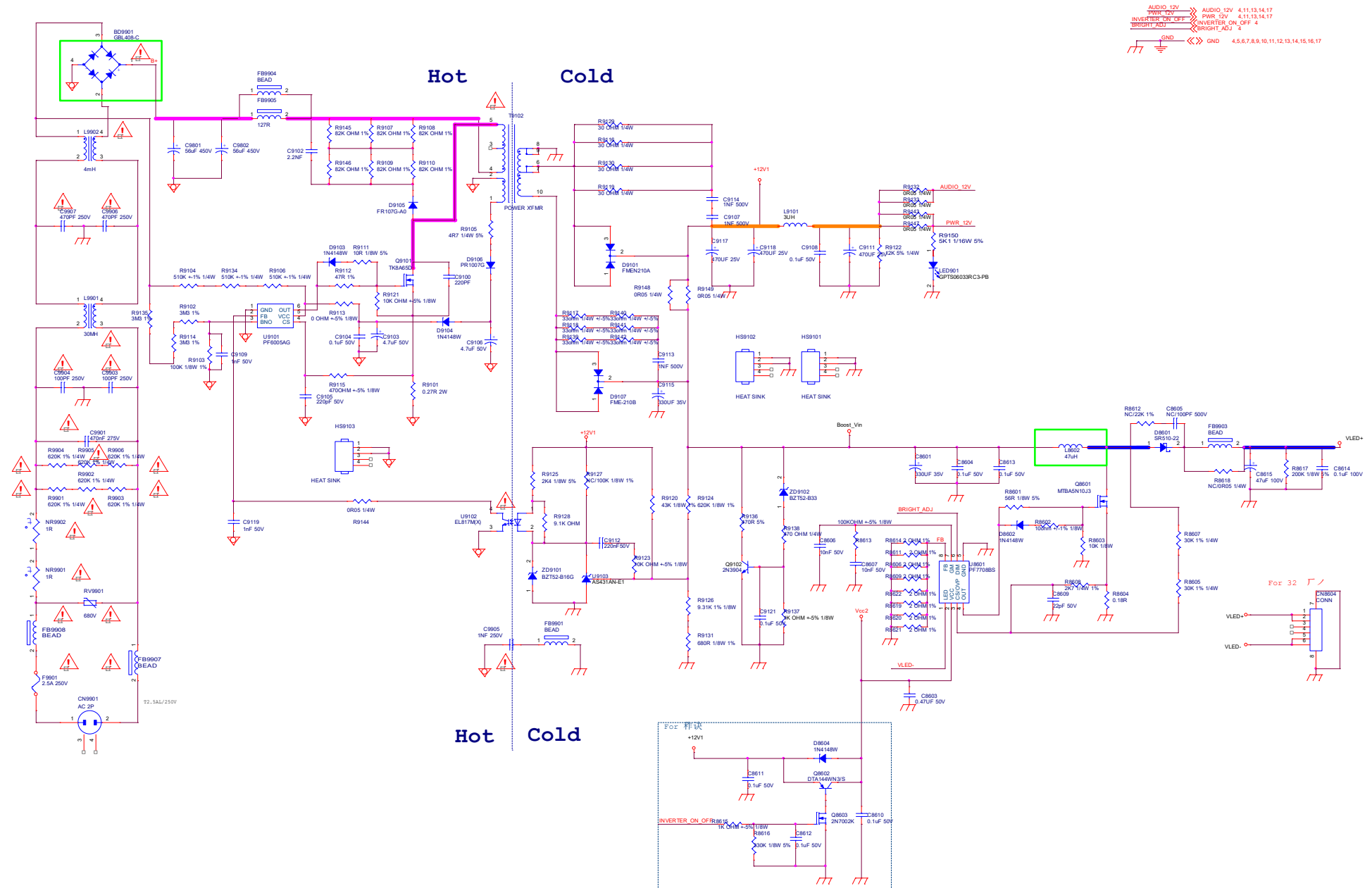
CVBS IN Audio Input



8-7-13 LVDS



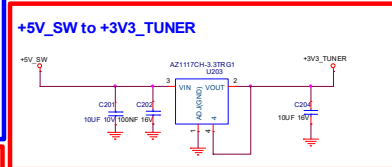
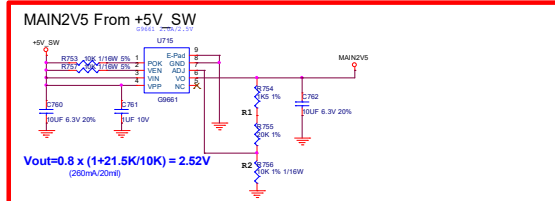
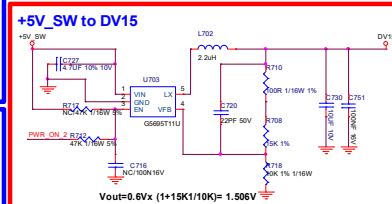
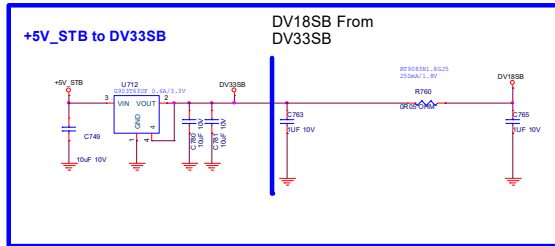
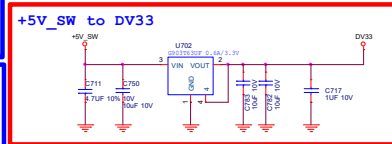
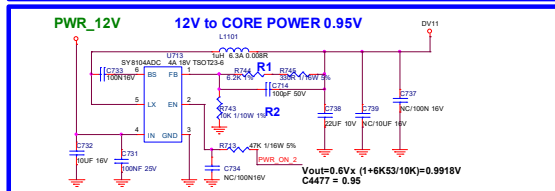
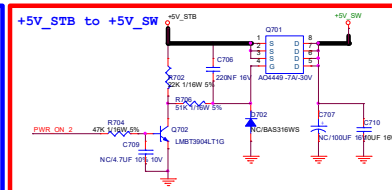
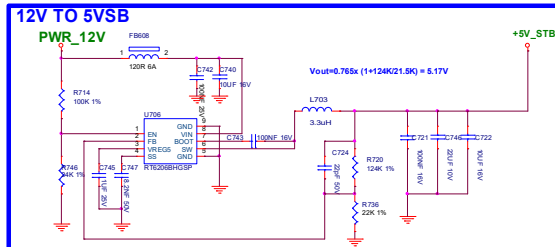
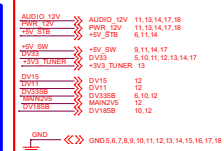
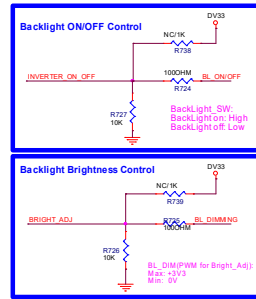
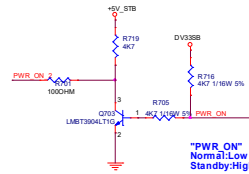
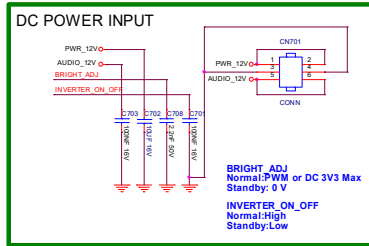
8-7-14 Power_32



8.8 715G8991 M+P (For 43"4112 Series)

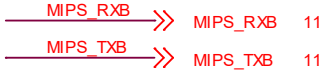
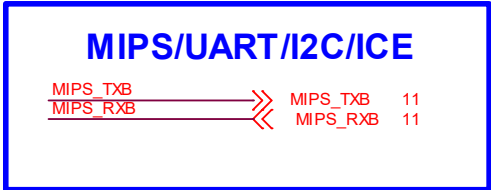
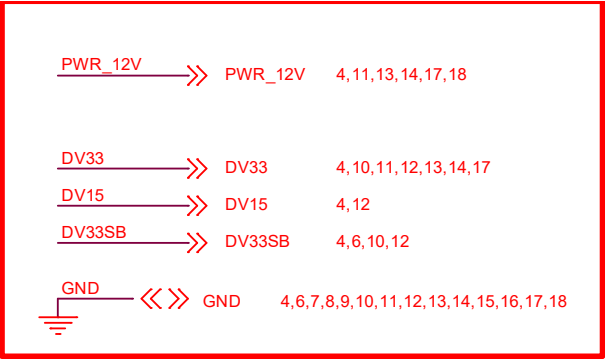
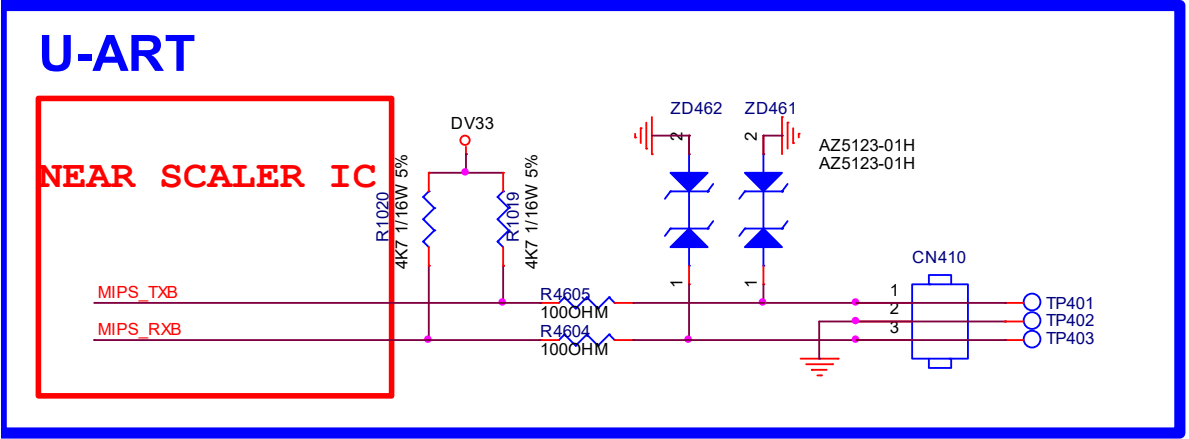
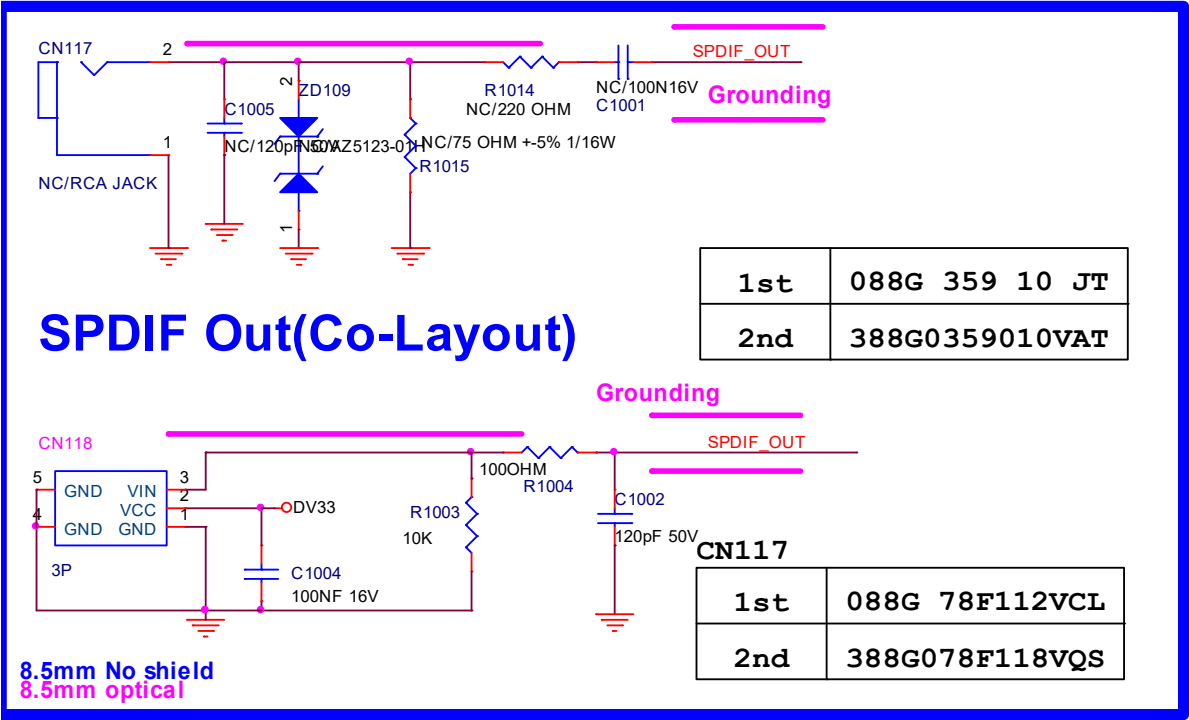
8-8-1 NT72461

2K17 EU NT72461 - 2 Layers 400mm X 124mm



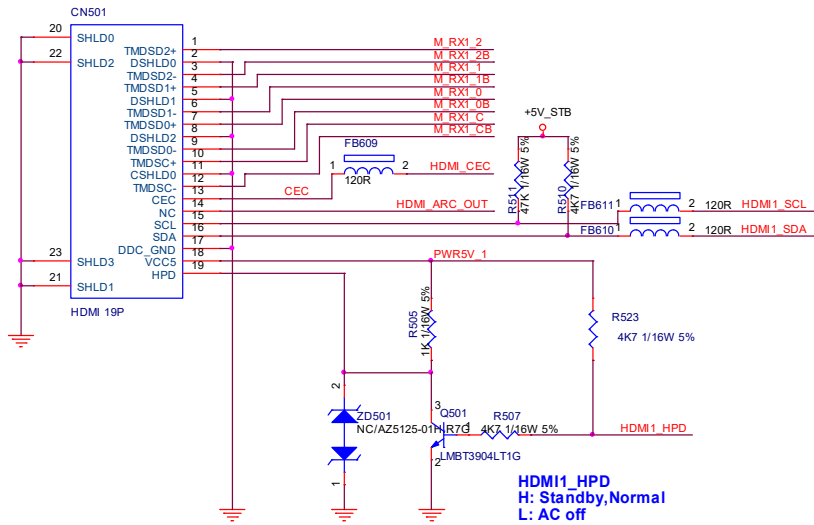
PWR_ON_2 <<> PWR_ON_2 17

8-8-2 SPDIF/UART INPUT

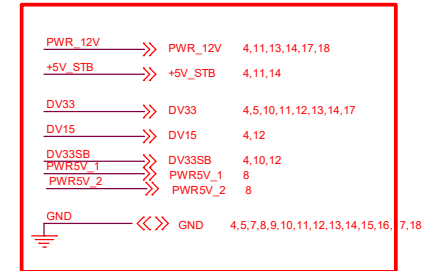
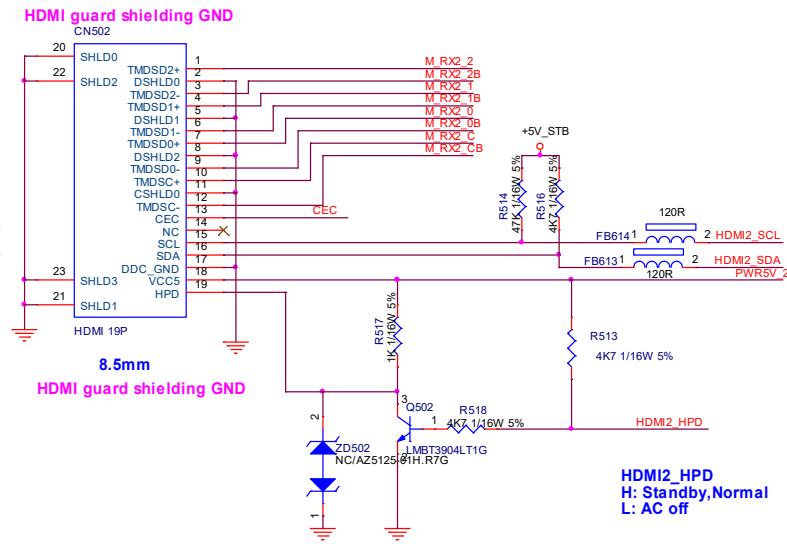


8-8-3 HDMI

HDMI 1 ARC



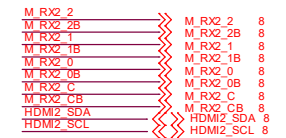
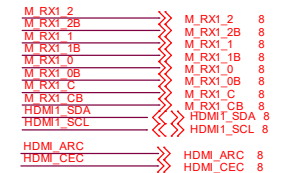
HDMI 2



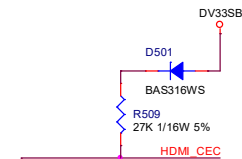
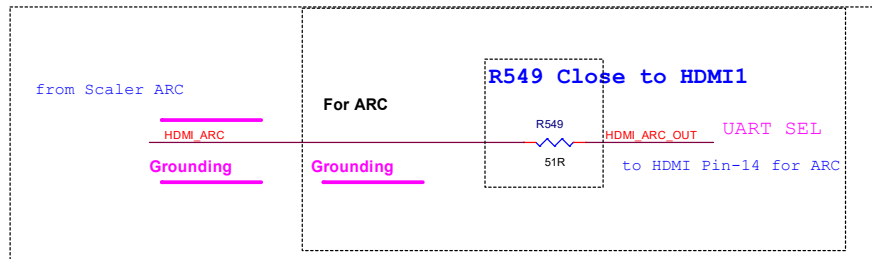
MIPS/UART/I2C/ICE



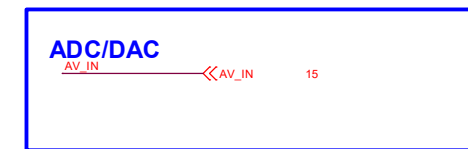
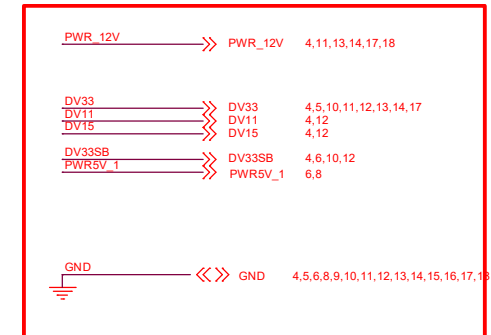
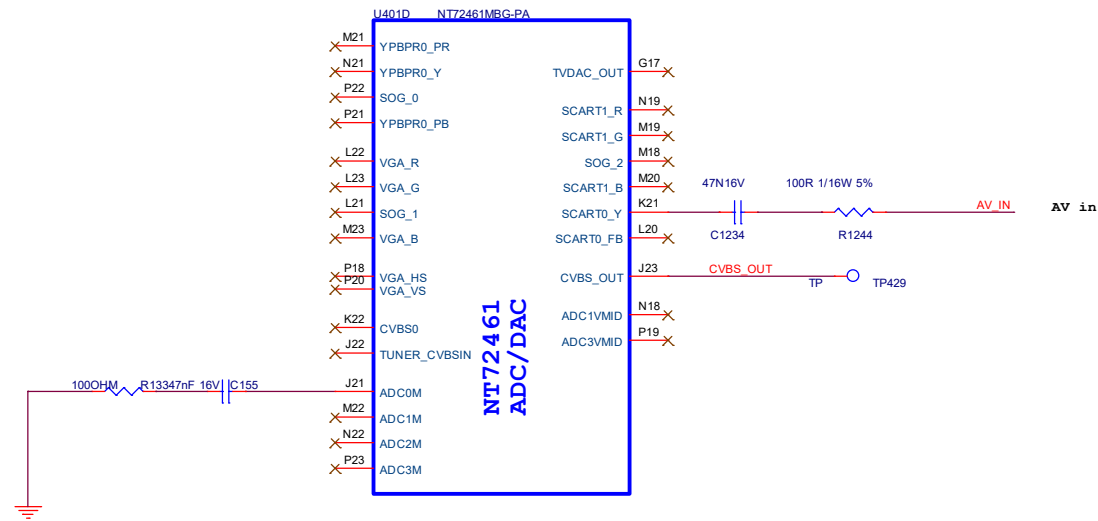
HDMI



GPIO



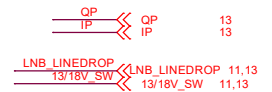
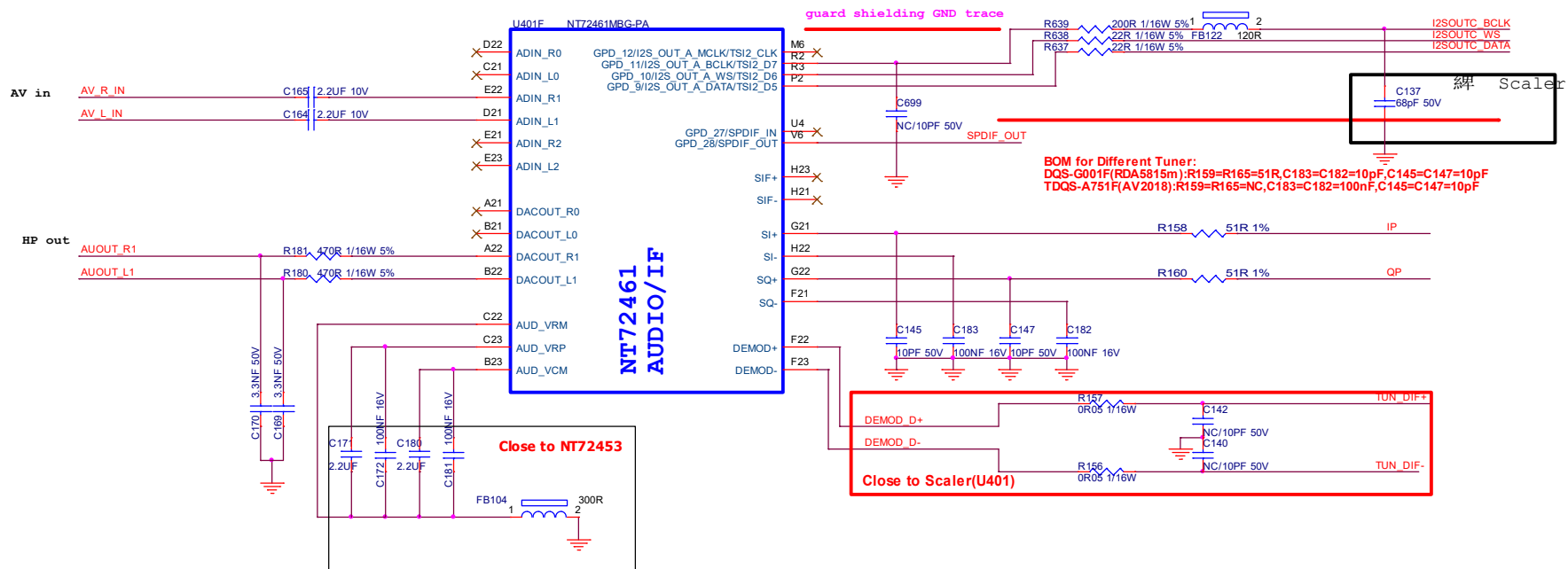
8-8-4 NT72461_ADC/DAC/AUDIO/SIF



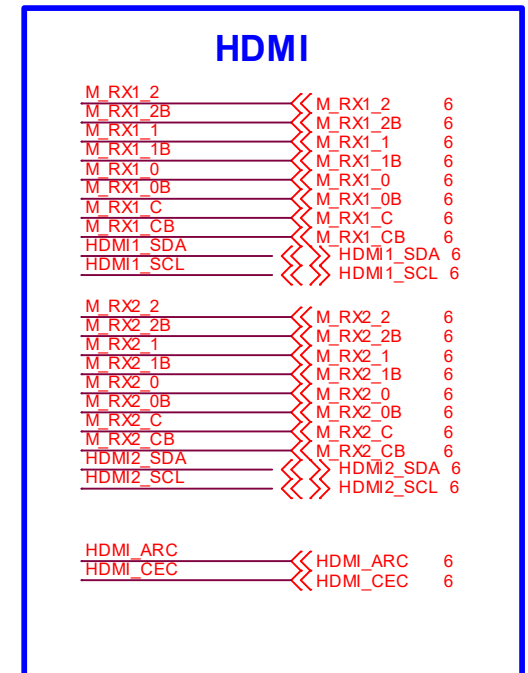
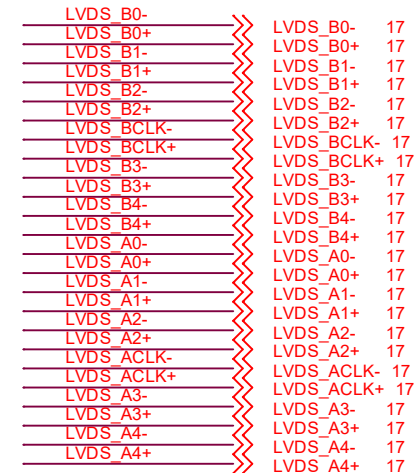
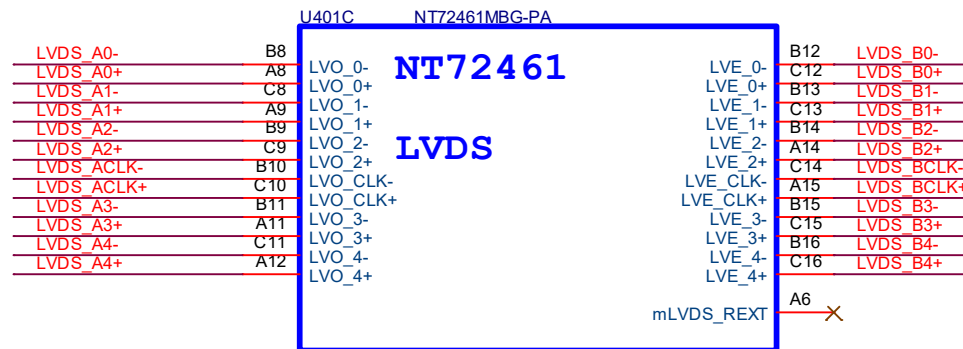
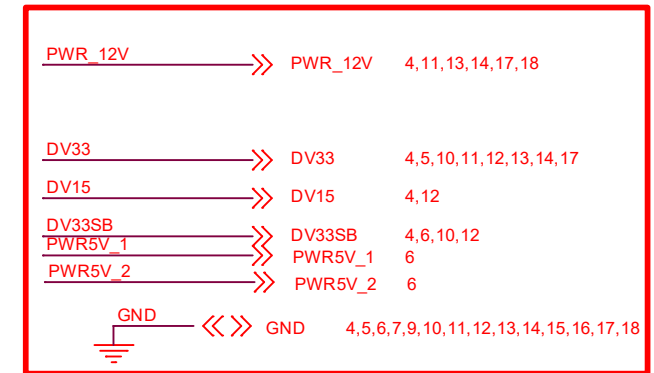
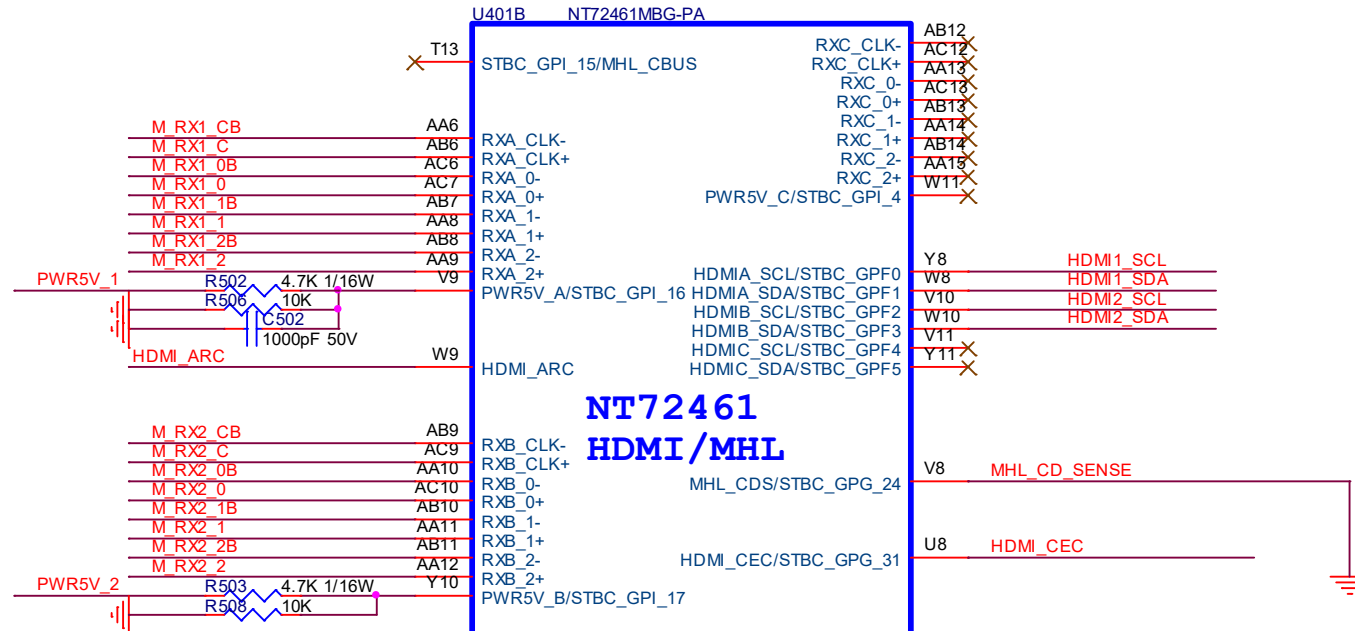
AUDIO /IF



Surround with GND

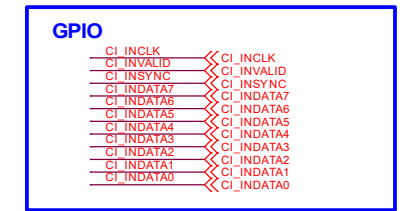
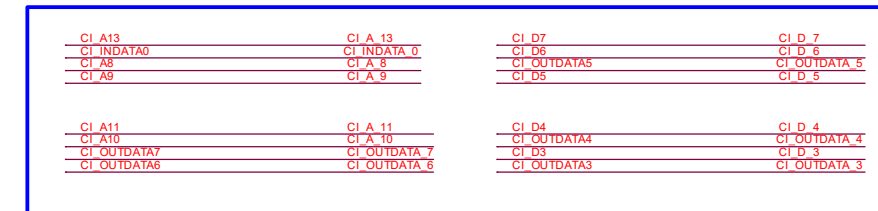
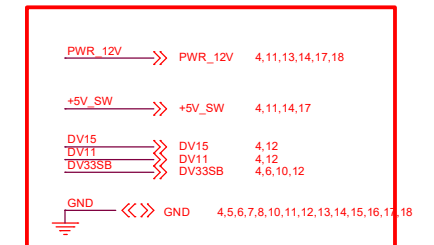
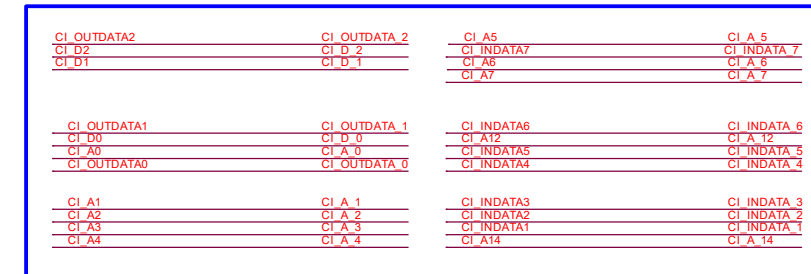


8-8-5 NT72461_HDMI/LVDS OUT

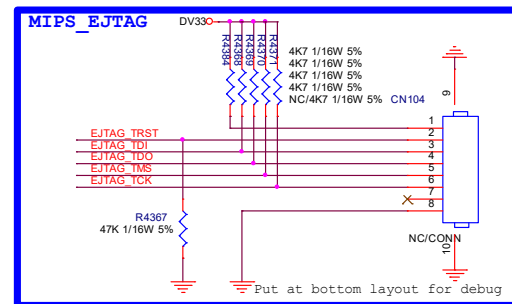
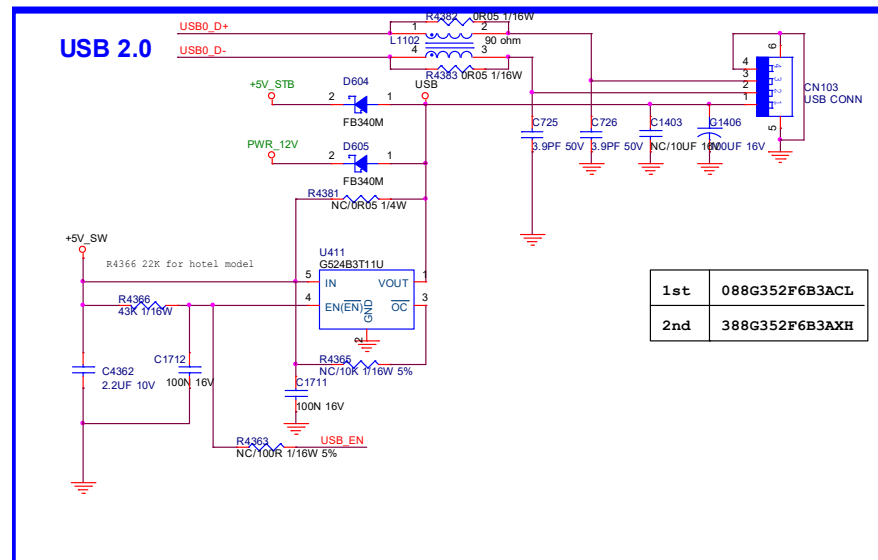
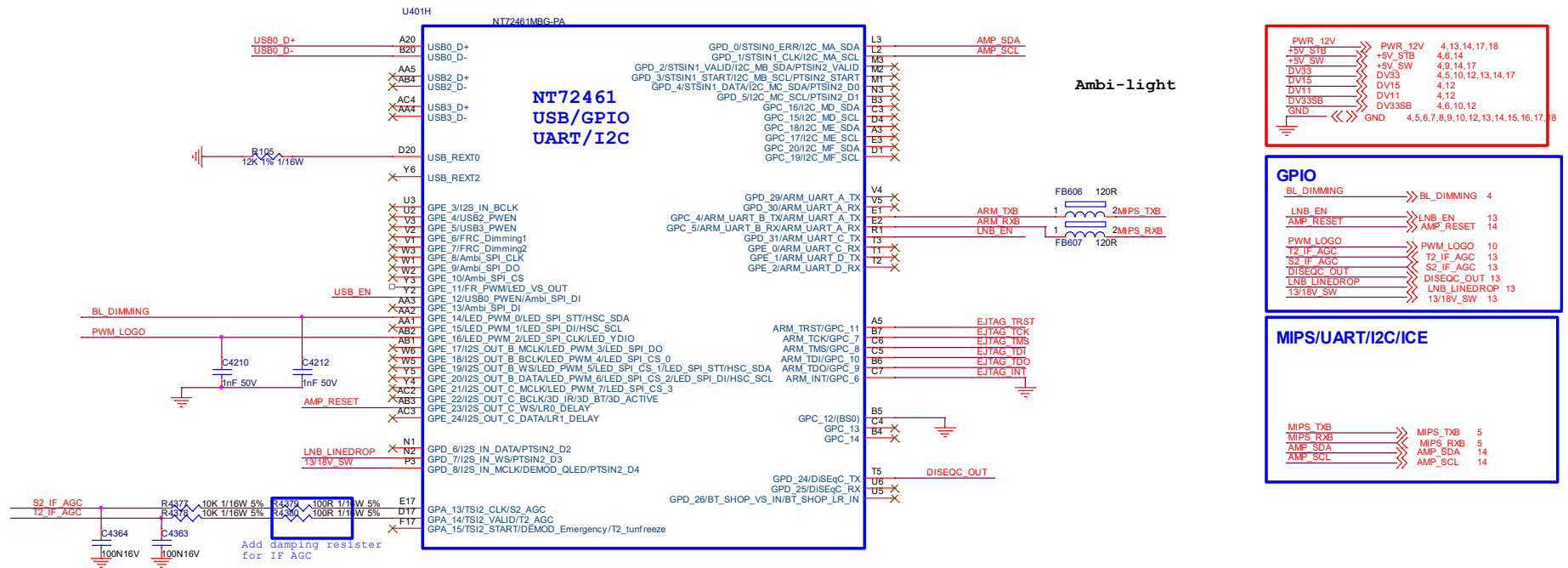


[illegible]

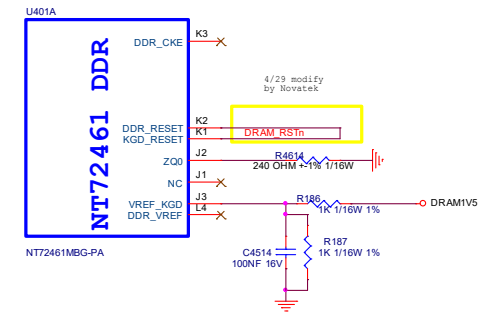
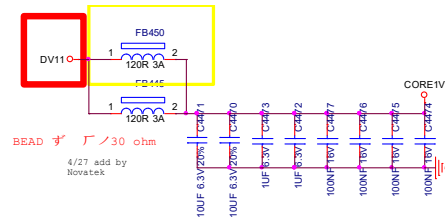
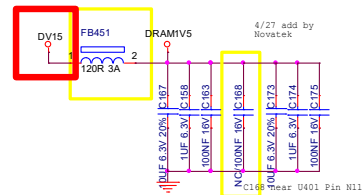
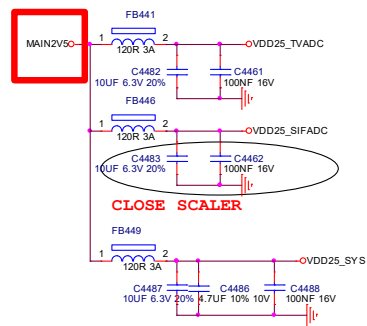
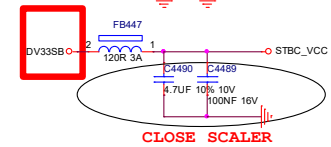
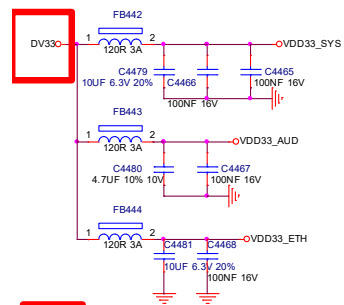
The diagram shows a 5V regulator circuit. The input is connected to a 4.7K resistor (R1303) and the output is connected to a 4K7 resistor (R1302). The output is also connected to three capacitors: C1306 (100UF), C1303 (16V 100NF), and C1305 (10UF 16V). The output is labeled +5V_SW.



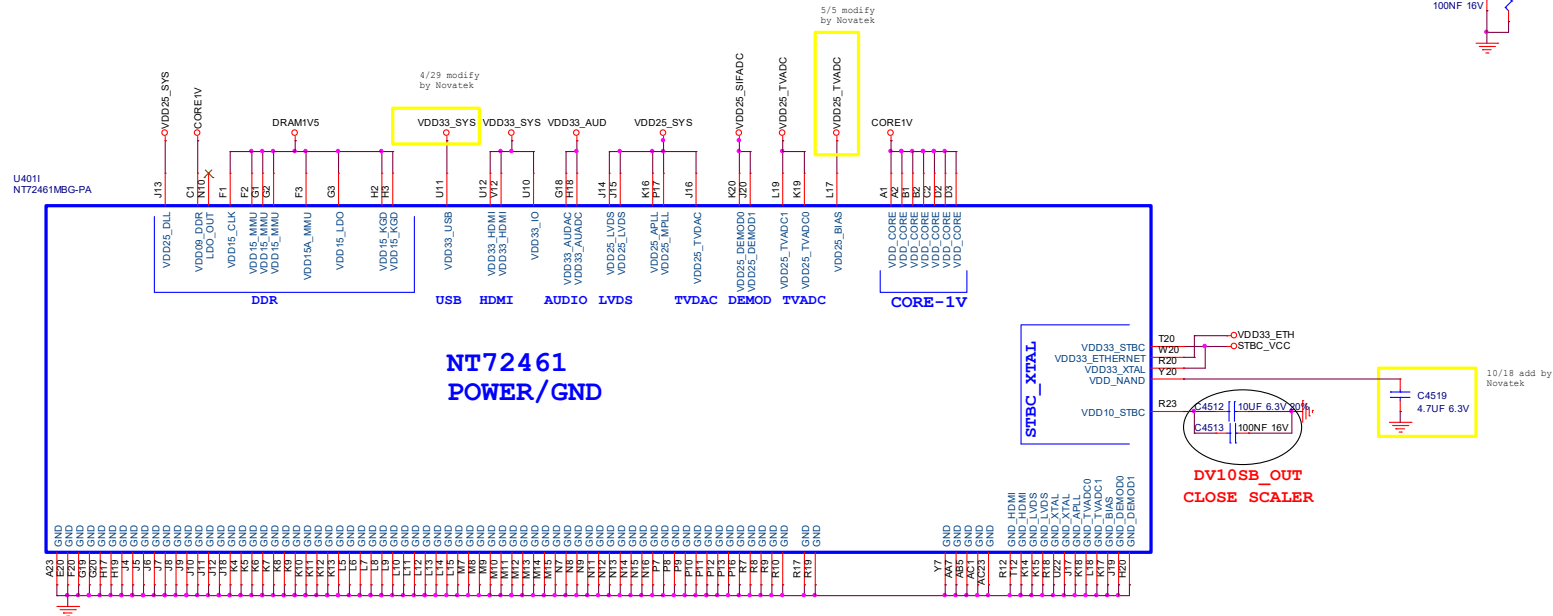
8-8-8 NT72461_USB/GPIO



8-8-9 NT72461_POWER



MAIN2V5	MAIN2V5	4
DV33	DV33	4, 5, 10, 11, 13, 14, 17
DV15	DV15	4
DV11	DV11	4
DV33SB	DV33SB	4, 6, 10
DV18SB	DV18SB	4, 10
GND	GND	4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18



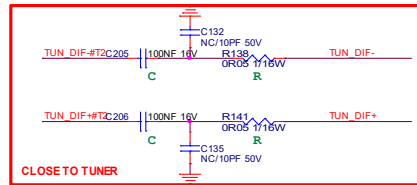
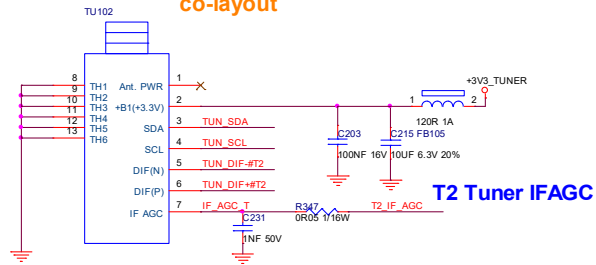
8-8-10 T2 /S2 Tuner

T2 TUNER

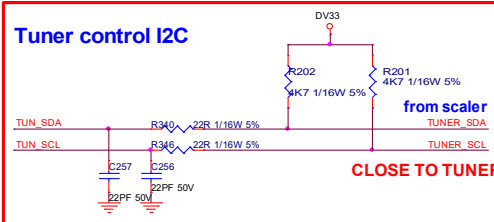
```

LGTuner with DVB-C/T/T2 1'st Source :LGIT TDSY-G480D (394GPASEBIL03G)
                          2'nd Source : TCL

```



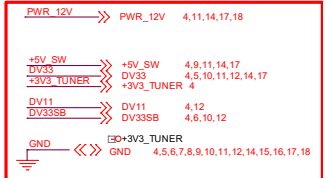
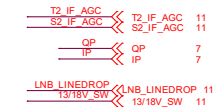
Tuner control I2C



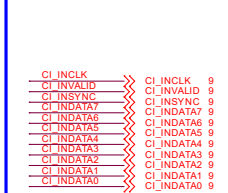
GPIO



Tuner

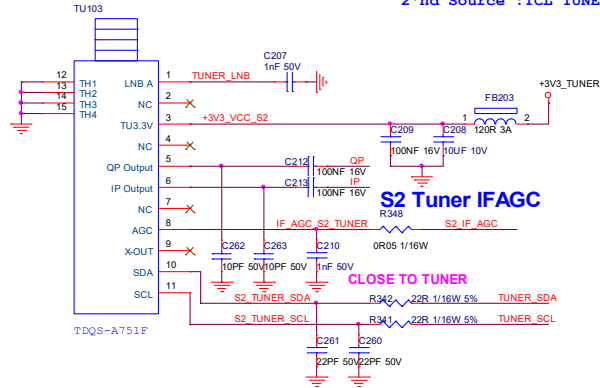


Demod

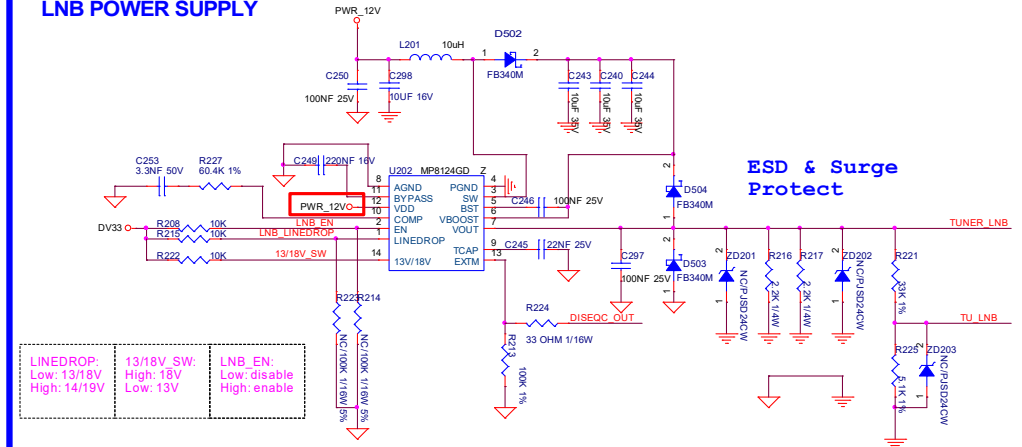


S2 TUNER

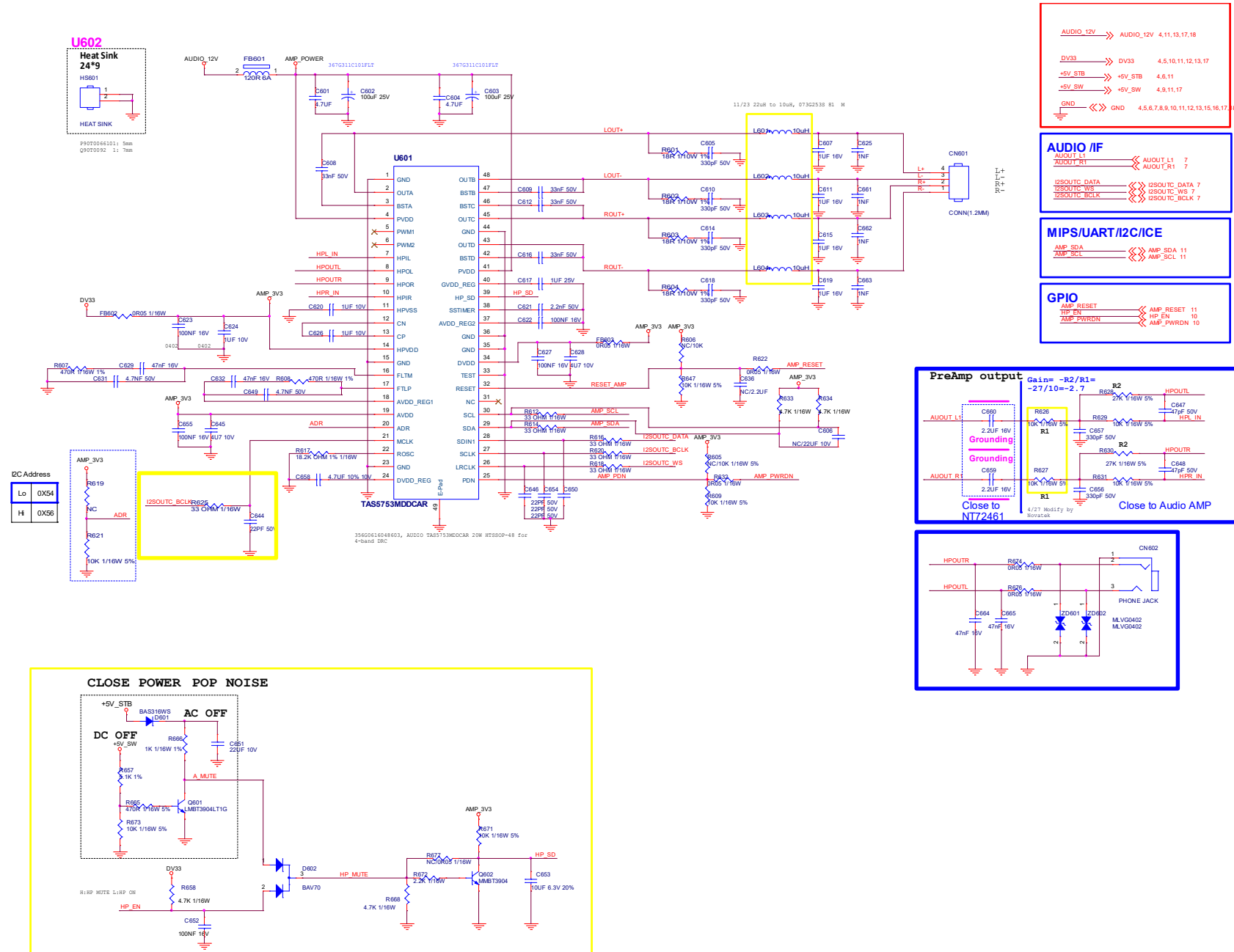
```
LGTuner with DVB-S/S2      1'st Source :LG TDQS-A701F (394GPASEBIL04G)
                             2'nd Source :TCL TUNER EU ()
```



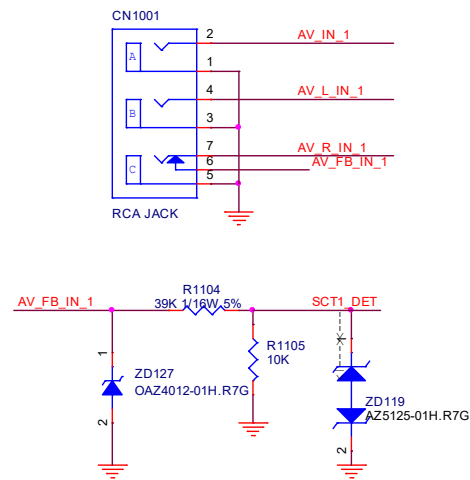
LNB POWER SUPPLY



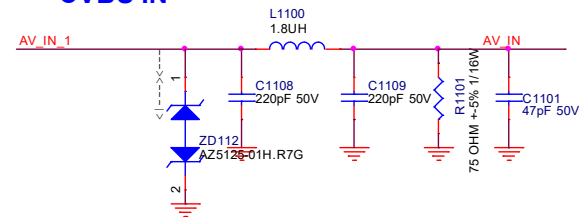
8-8-11 SPK AMP/HP OUT



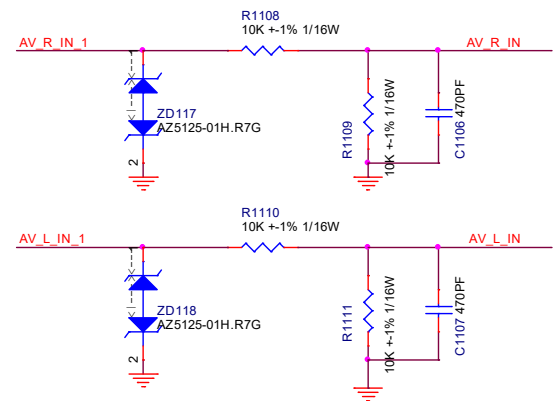
Half AV(CVBS+L/R IN)



CVBS IN



CVBS IN Audio Input



ADC/DAC

AV_IN >>> AV_IN 7

AUDIO /IF

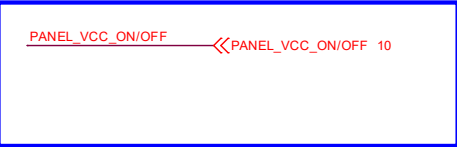
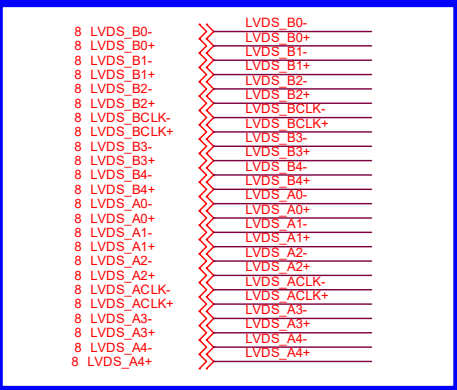
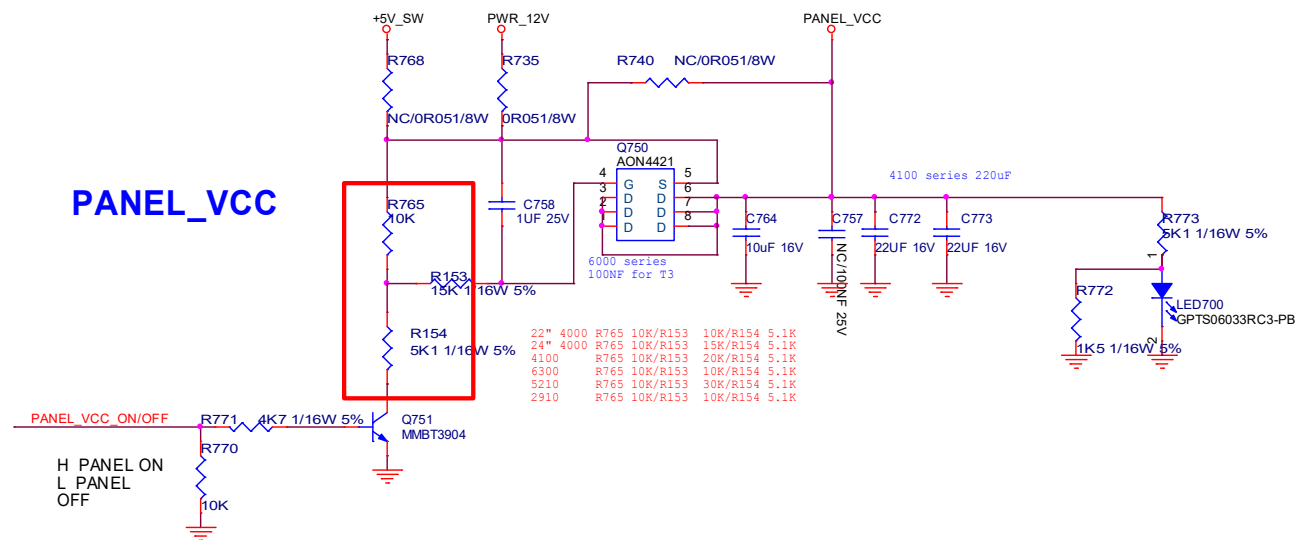
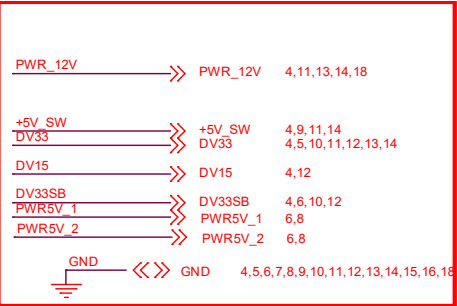
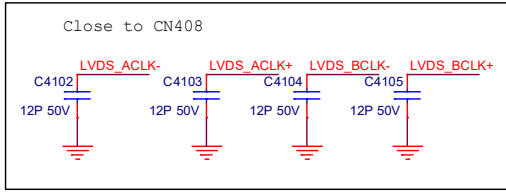
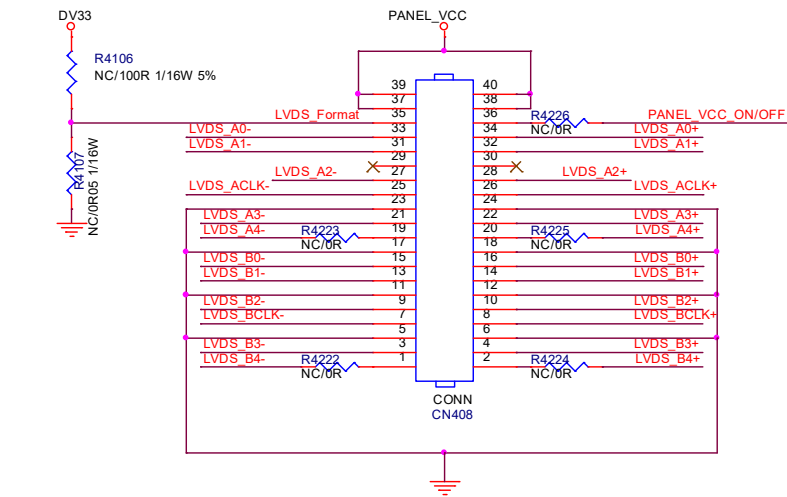
AV_R_IN >>> AV_R_IN 7
AV_L_IN >>> AV_L_IN 7

STB CONTORL

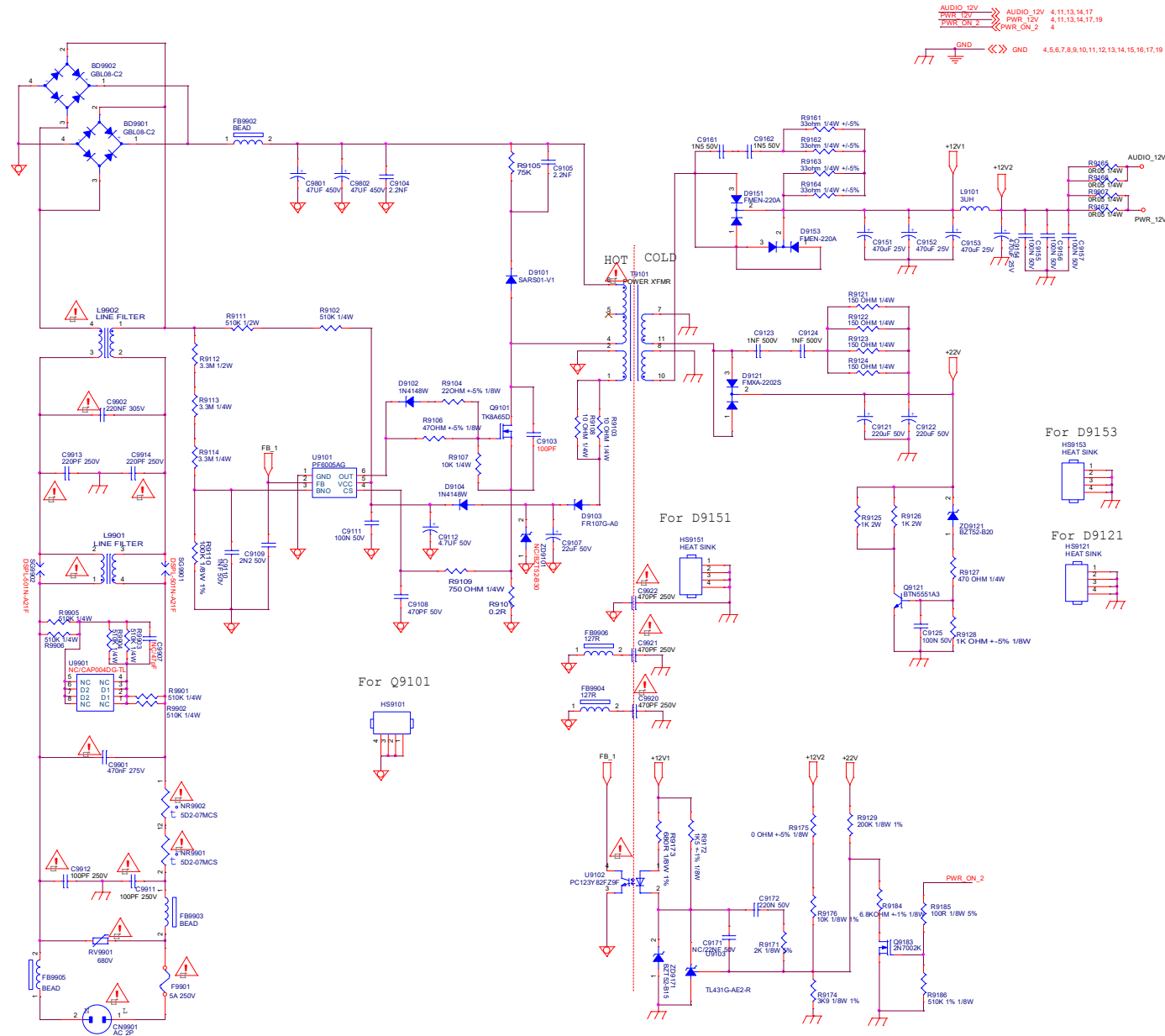
SCT1_DET >>> SCT1_DET 10

GND <<< GND 4,5,6,7,8,9,10,11,12,13,14,16,17,18

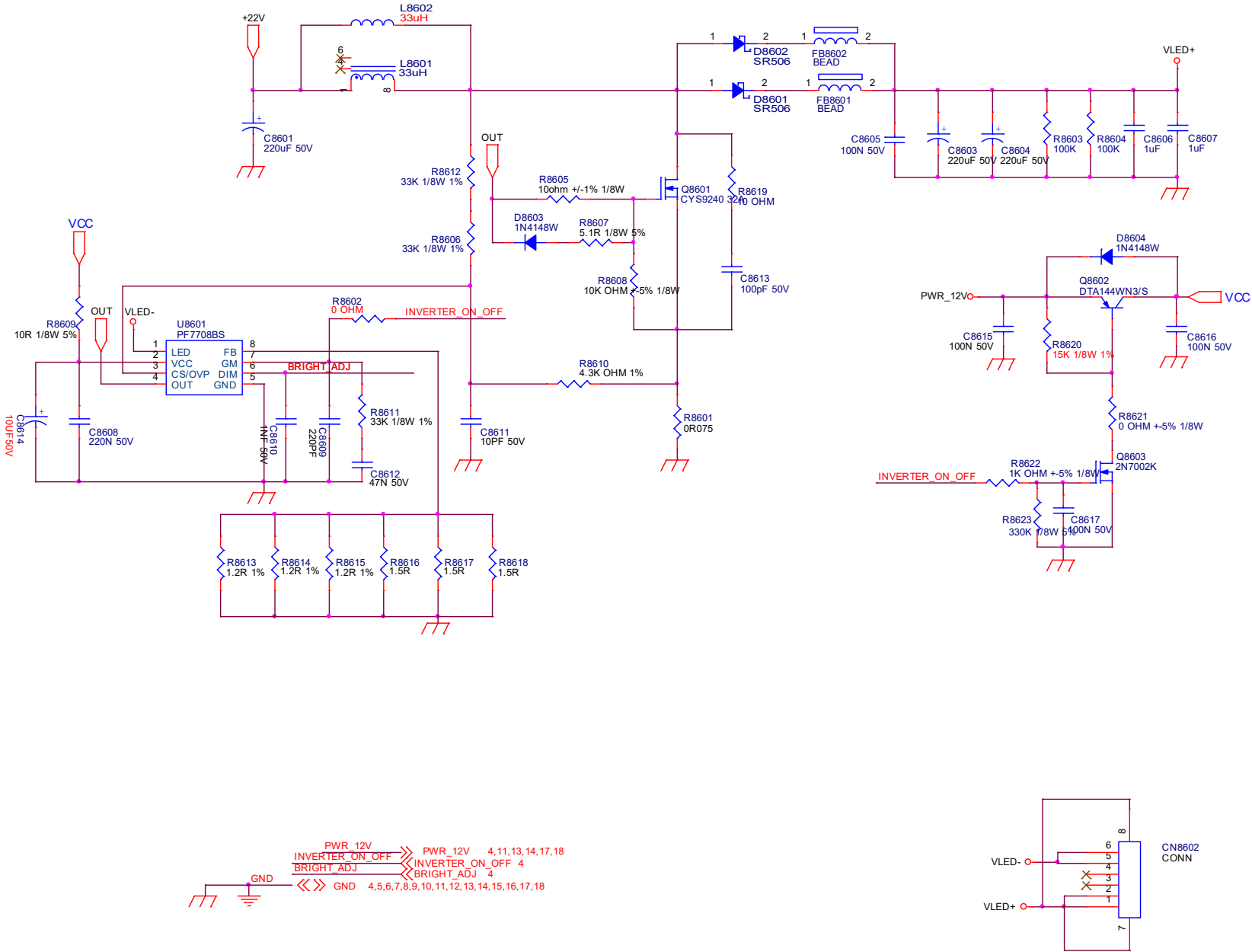
8-8-13 LVDS



8-8-14 Power



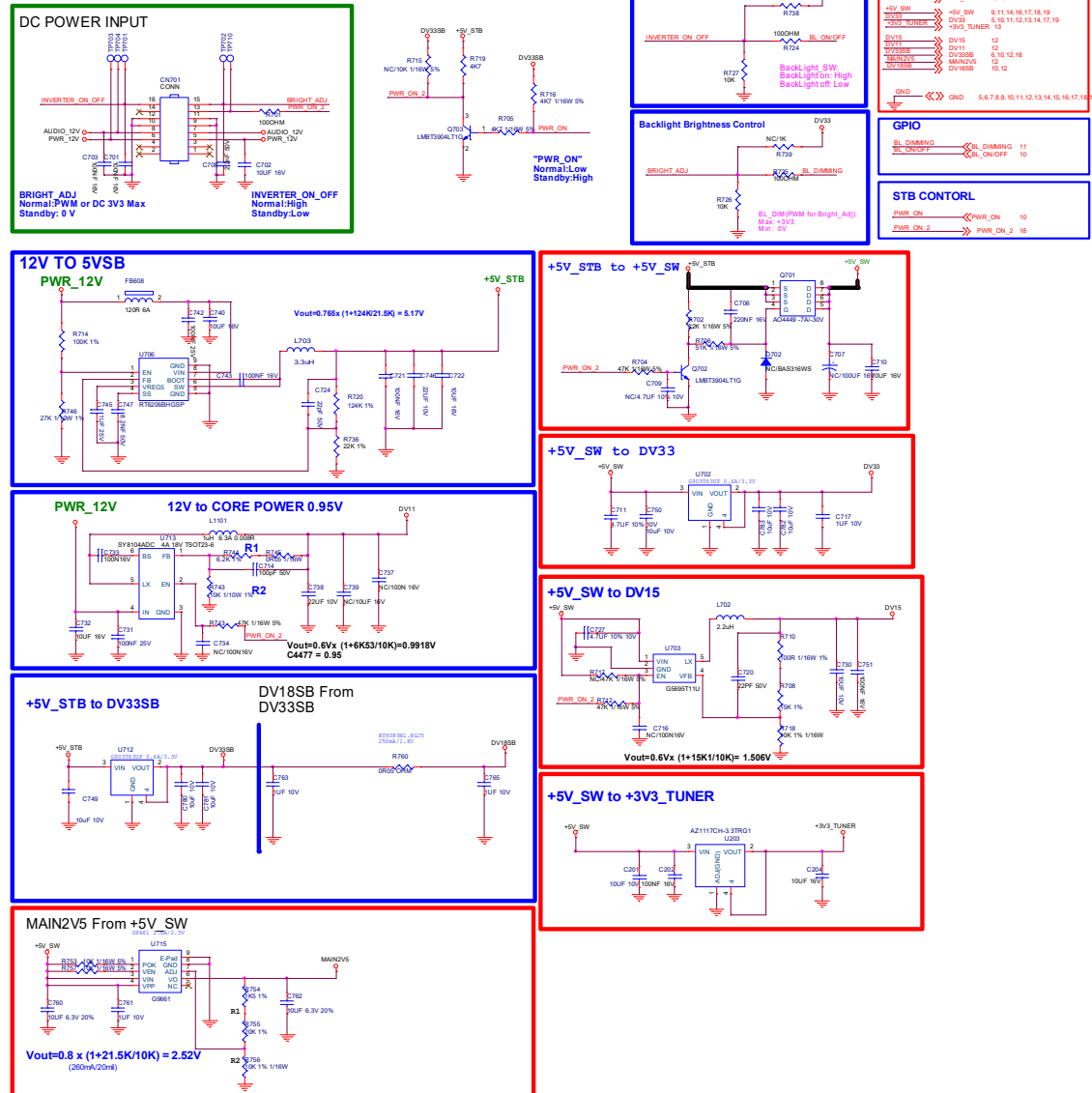
8-8-15 LED Driver



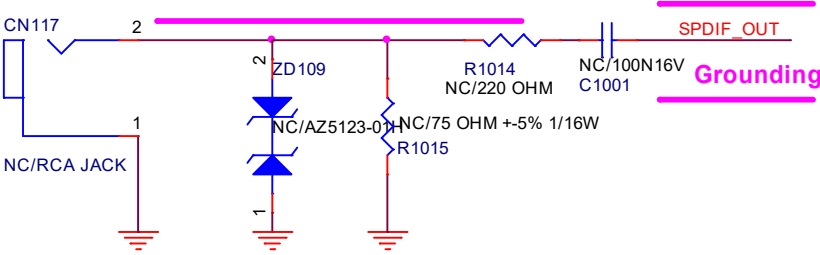
8.9 715G8659 MAIN (For 4232 & 4132 & 4032 & 4022 Series)

8-9-1 NT72461

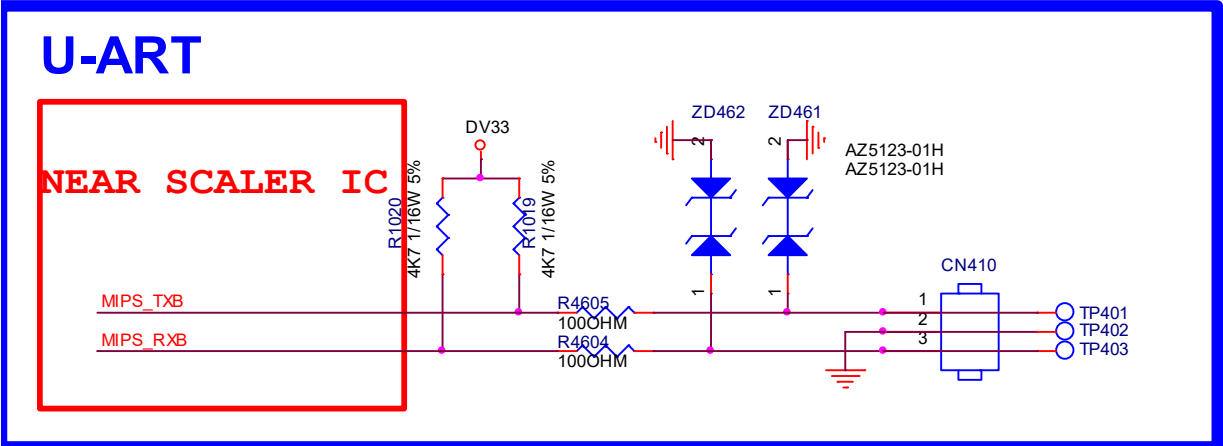
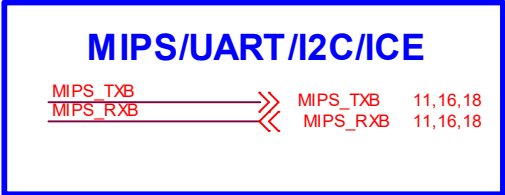
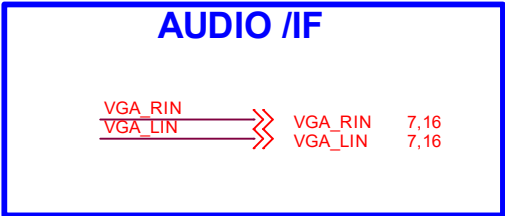
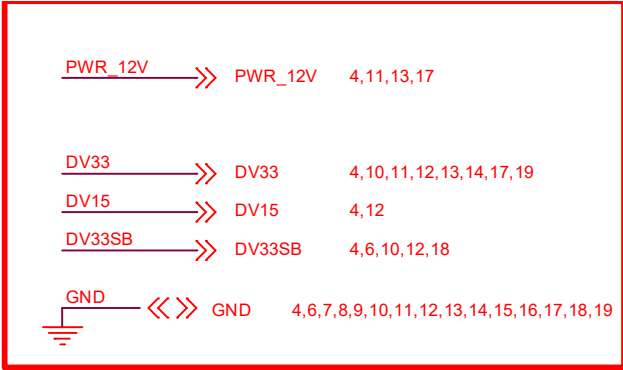
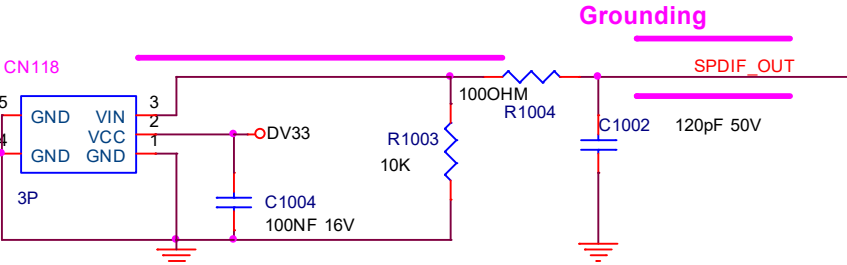
2K14 EU NT72461 - 2 Layers 193mm X 125mm



8-9-2 PDIF/UART INPUT

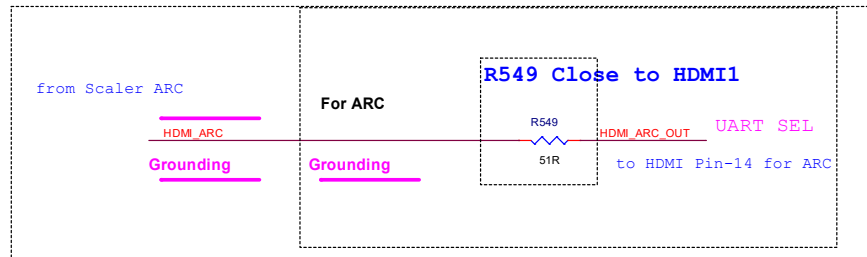
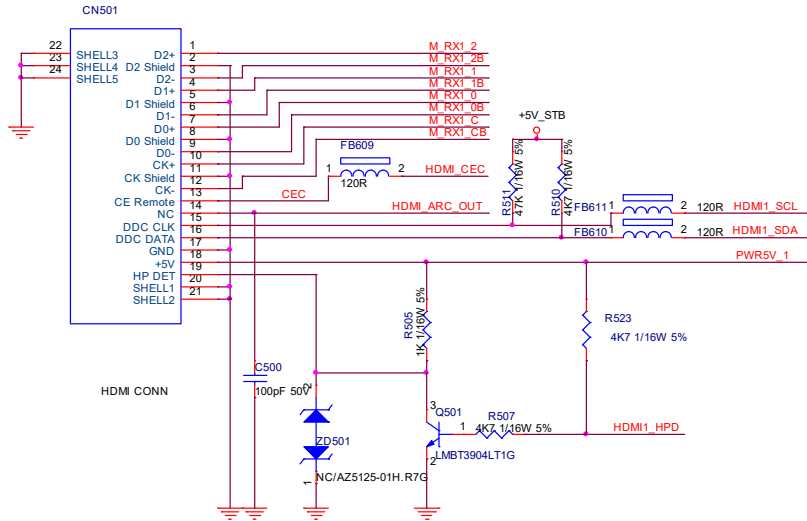


SPDIF Out(Co-Layout)

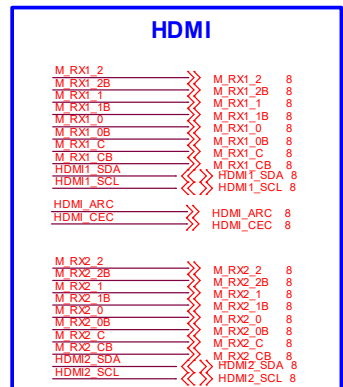
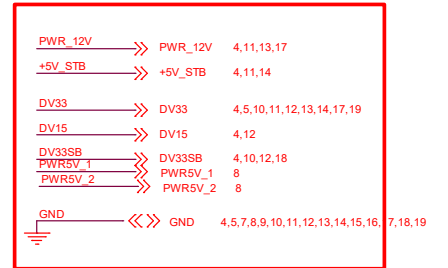
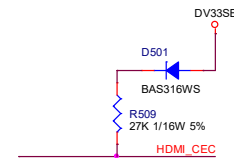
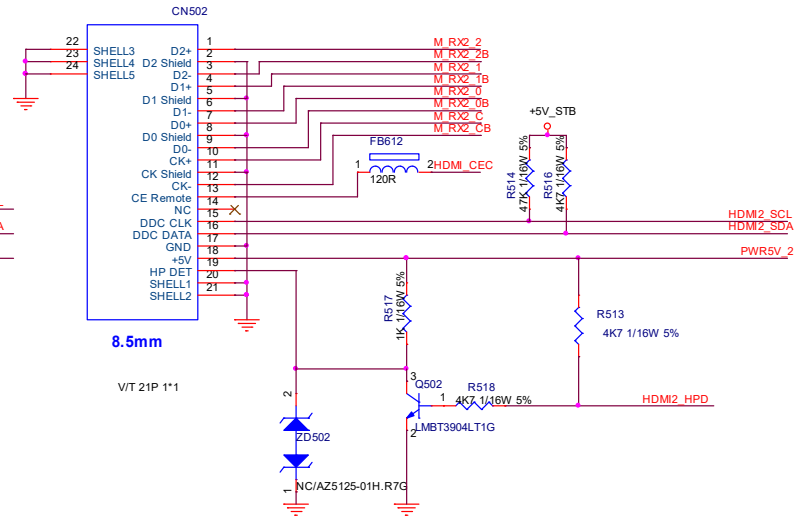


8-9-3 HDMI

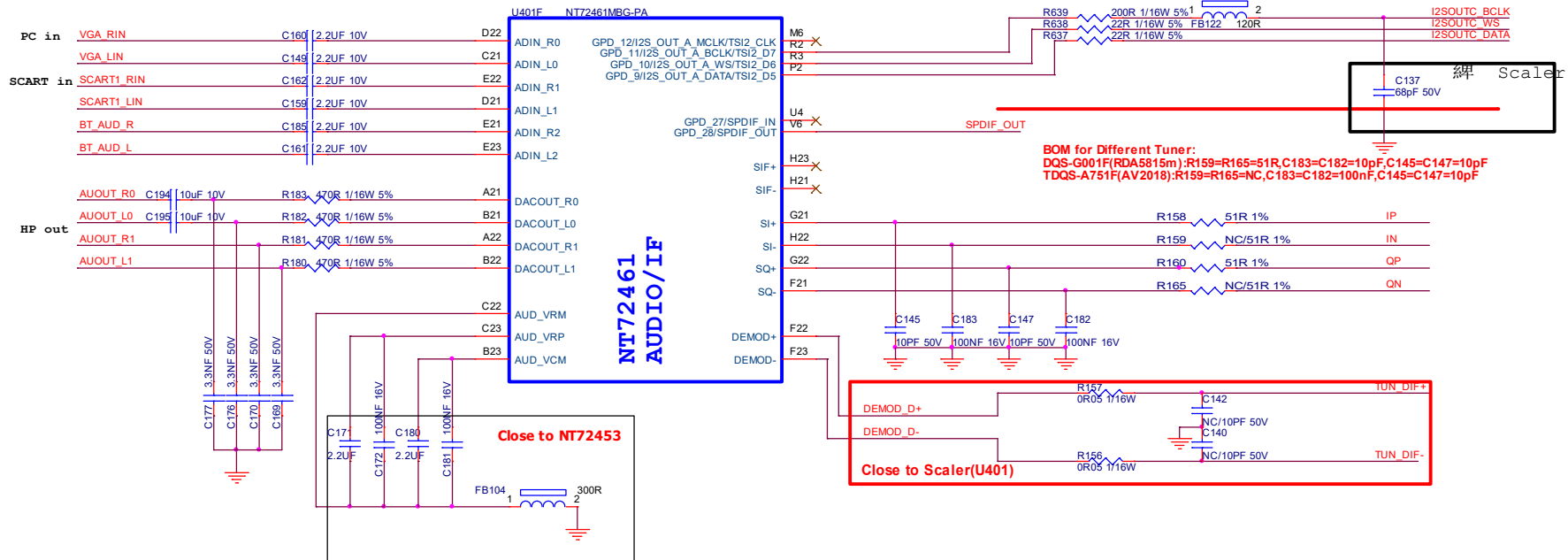
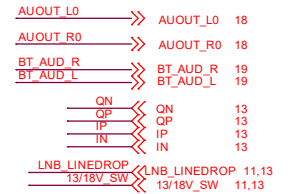
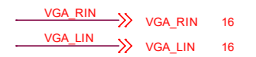
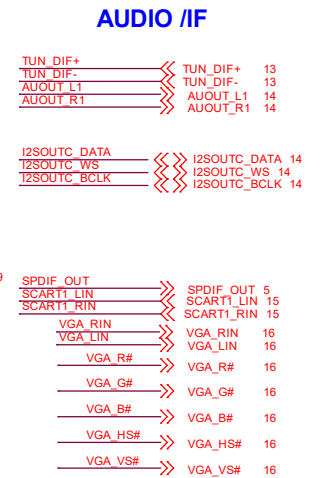
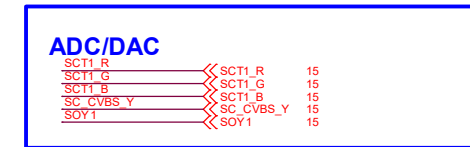
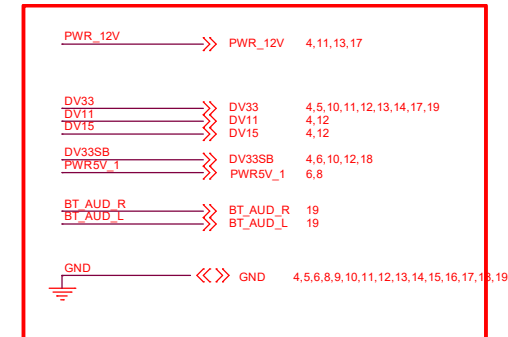
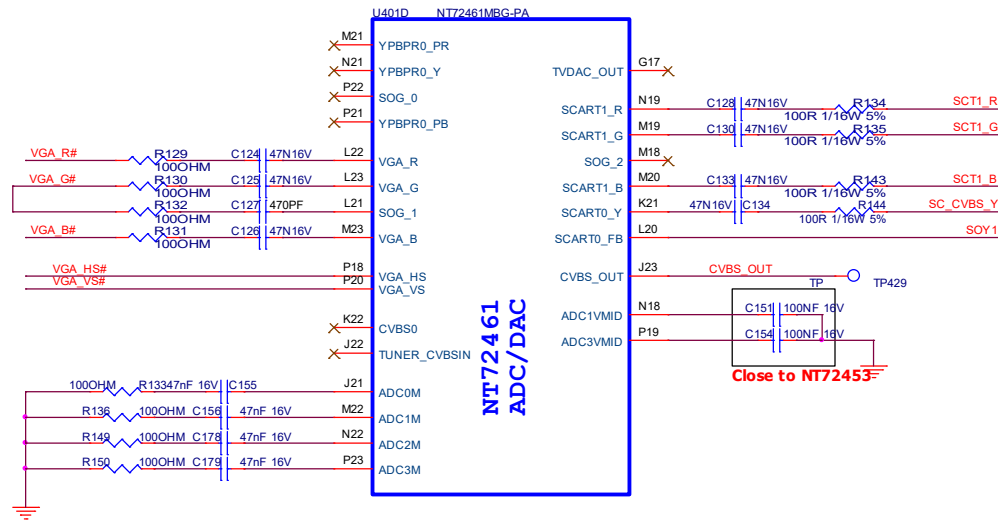
Rear HDMI 1



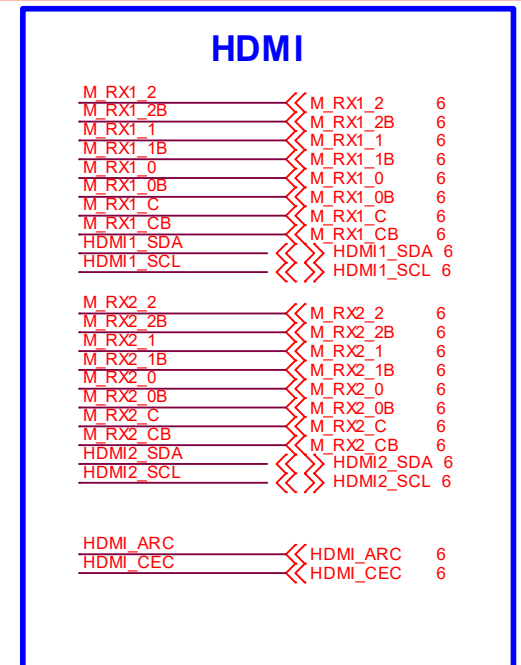
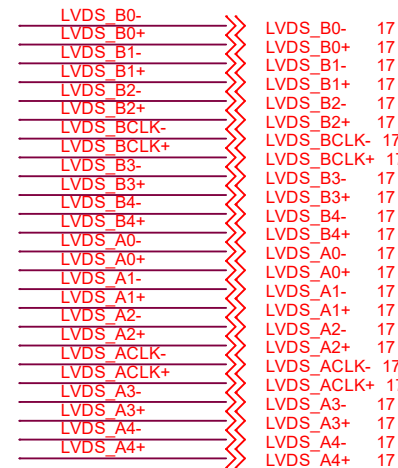
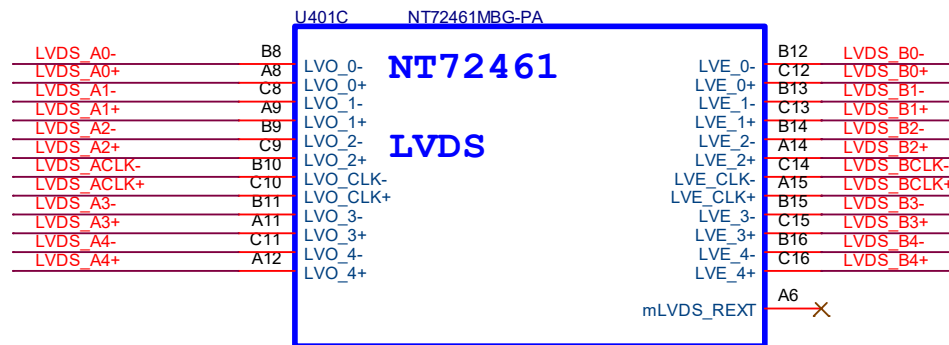
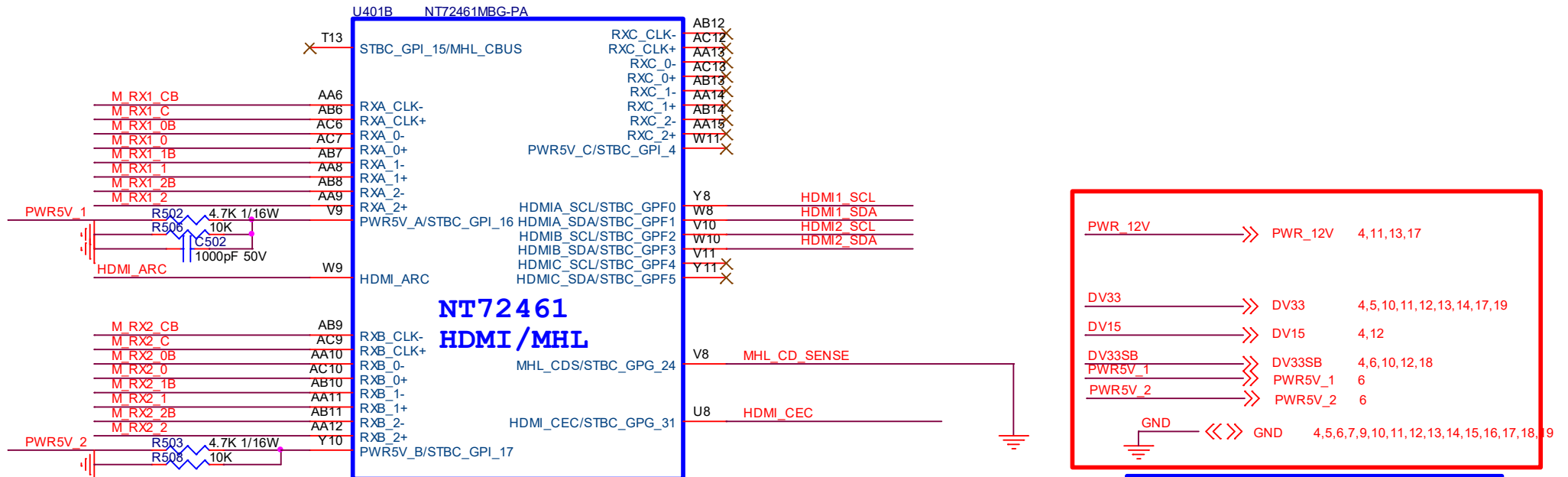
Rear HDMI 2



8-9-4 NT72461_ADC/DAC/AUDIO/SIF

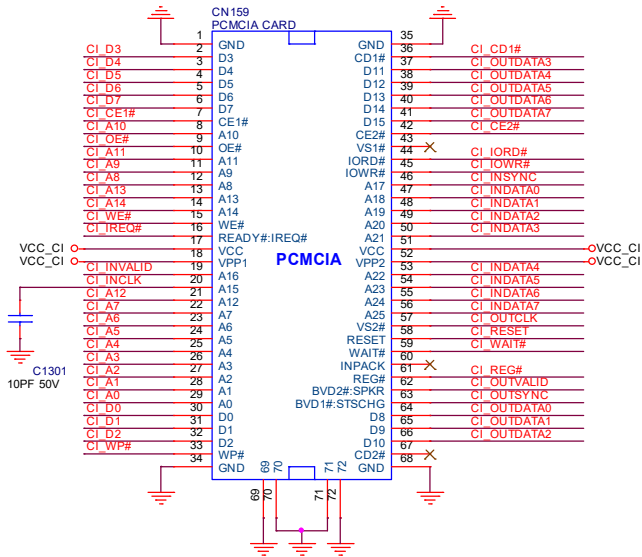


8-9-5 NT72461_HDMI/LVDS OUT



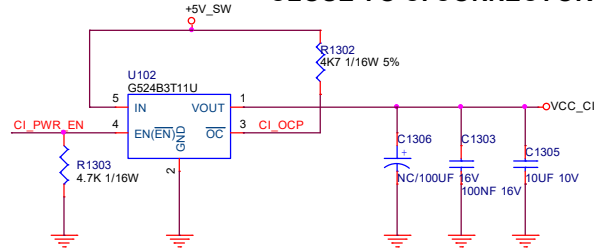
8-9-6 NT72461_CI

PCMCIA Slot

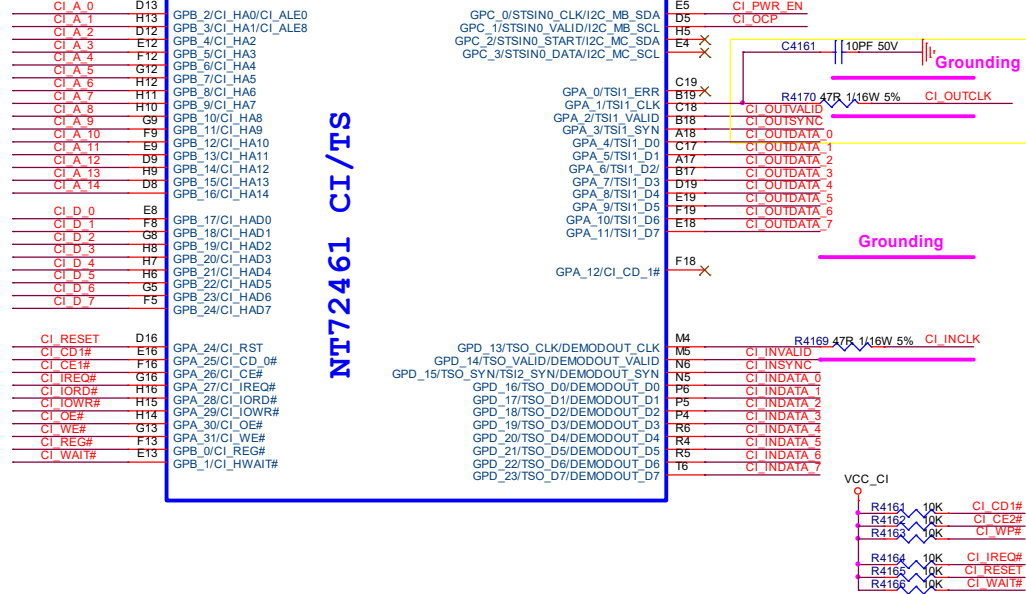


CI Bus Power Control

CLOSE TO CI CONNECTOR

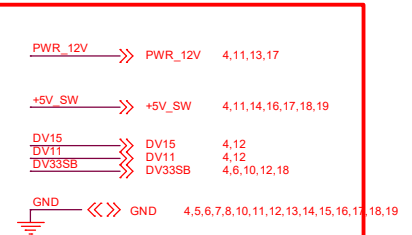


U401G NT72461MBG-PA



CI OUTDATA2	CI OUTDATA_2	CI A5	CI A 5
CI D2	CI D_2	CI INDATA7	CI INDATA_7
CI D1	CI D_1	CI A6	CI A 6
		CI A7	CI A 7
CI OUTDATA1	CI OUTDATA_1	CI INDATA6	CI INDATA_6
CI D0	CI D_0	CI A12	CI A 12
CI A0	CI A_0	CI INDATA5	CI INDATA_5
CI OUTDATA0	CI OUTDATA_0	CI INDATA4	CI INDATA_4
CI A1	CI A_1	CI INDATA3	CI INDATA_3
CI A2	CI A_2	CI INDATA2	CI INDATA_2
CI A3	CI A_3	CI INDATA1	CI INDATA_1
CI A4	CI A_4	CI A14	CI A 14

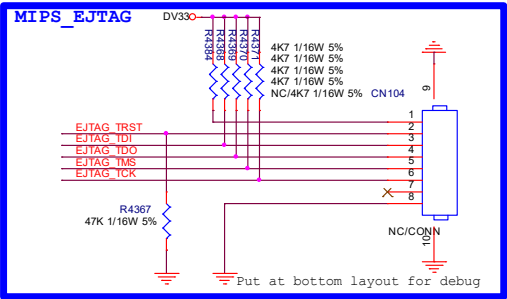
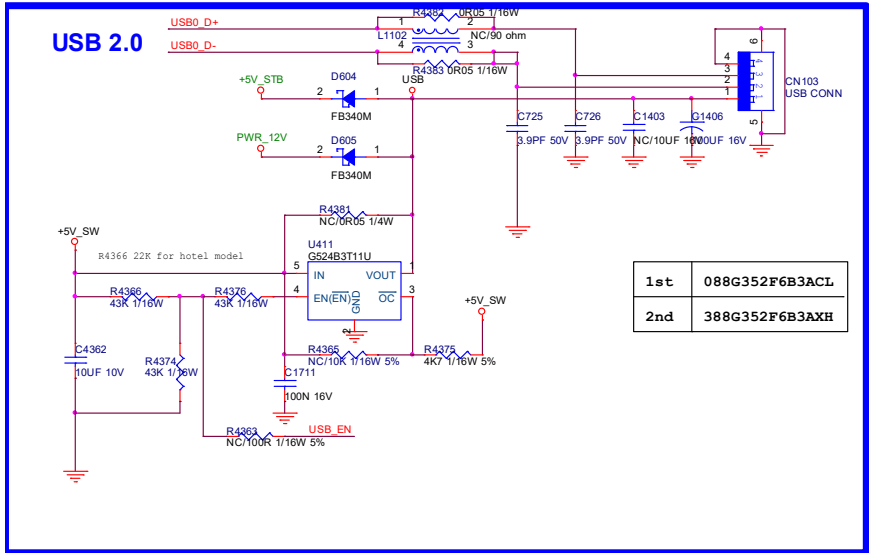
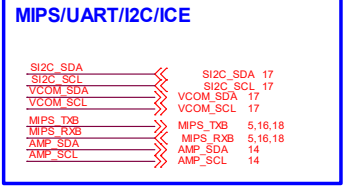
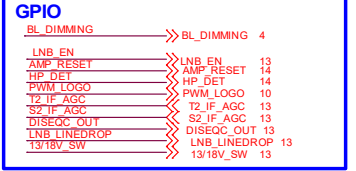
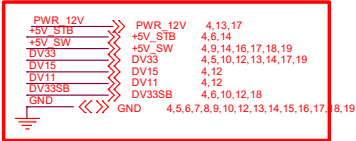
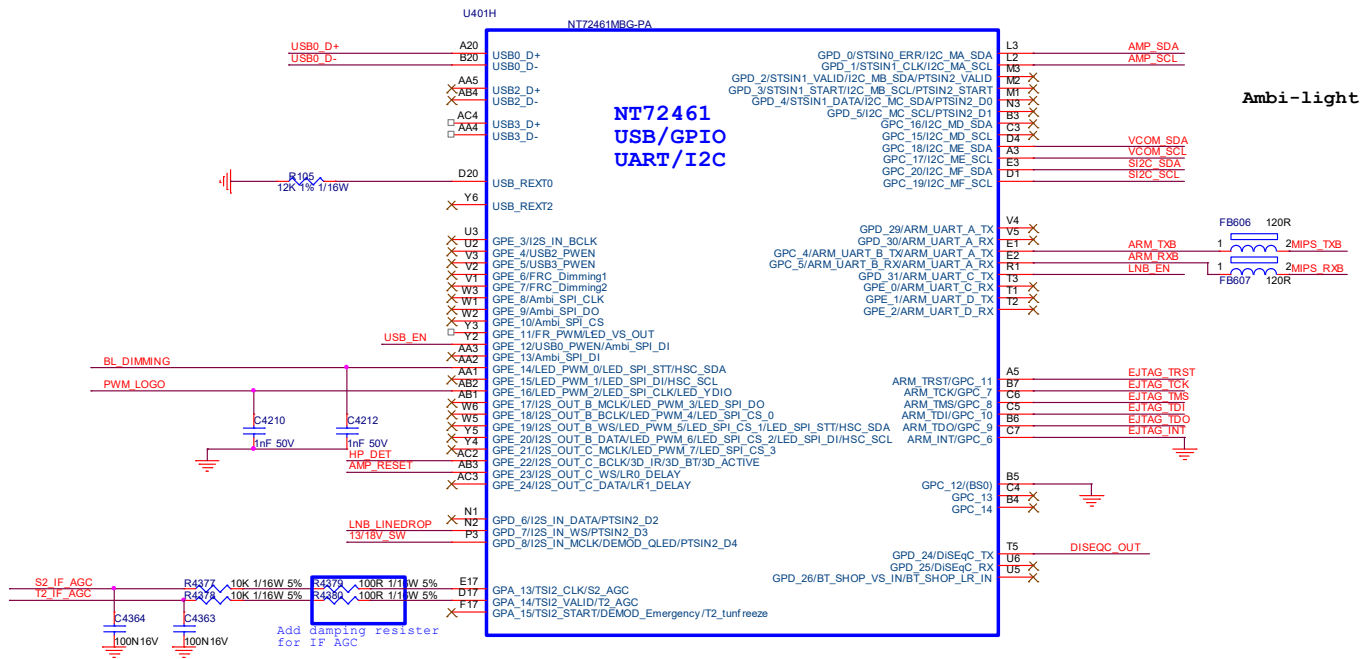
CI A13	CI A_13	CI D7	CI D_7
CI INDATA0	CI INDATA_0	CI D6	CI D_6
CI A8	CI A_8	CI OUTDATA5	CI OUTDATA_5
CI A9	CI A_9	CI D5	CI D_5
CI A11	CI A_11	CI D4	CI D_4
CI A10	CI A_10	CI OUTDATA4	CI OUTDATA_4
CI OUTDATA7	CI OUTDATA_7	CI D3	CI D_3
CI OUTDATA6	CI OUTDATA_6	CI OUTDATA3	CI OUTDATA_3



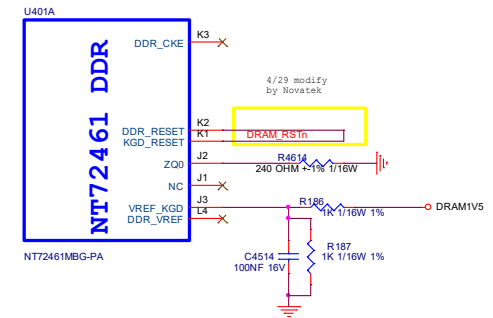
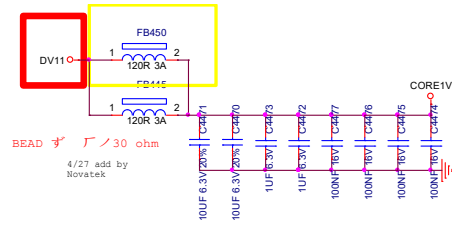
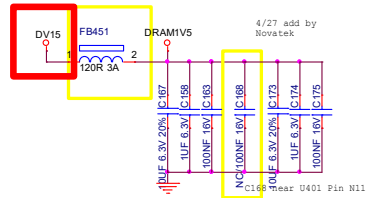
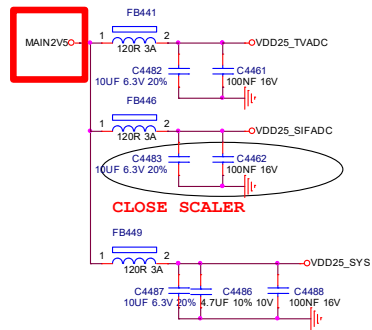
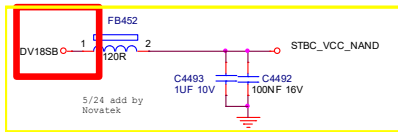
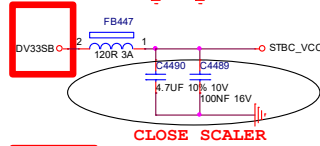
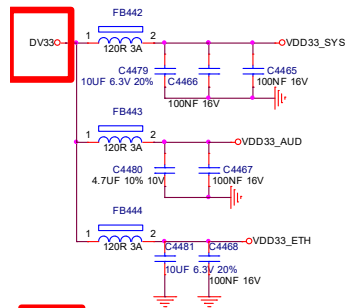
GPIO

CI INCLK	CI_INCLK
CI INVALID	CI_INVALID
CI INSYN	CI_INSYN
CI INDATA7	CI_INDATA7
CI INDATA6	CI_INDATA6
CI INDATA5	CI_INDATA5
CI INDATA4	CI_INDATA4
CI INDATA3	CI_INDATA3
CI INDATA2	CI_INDATA2
CI INDATA1	CI_INDATA1
CI INDATA0	CI_INDATA0

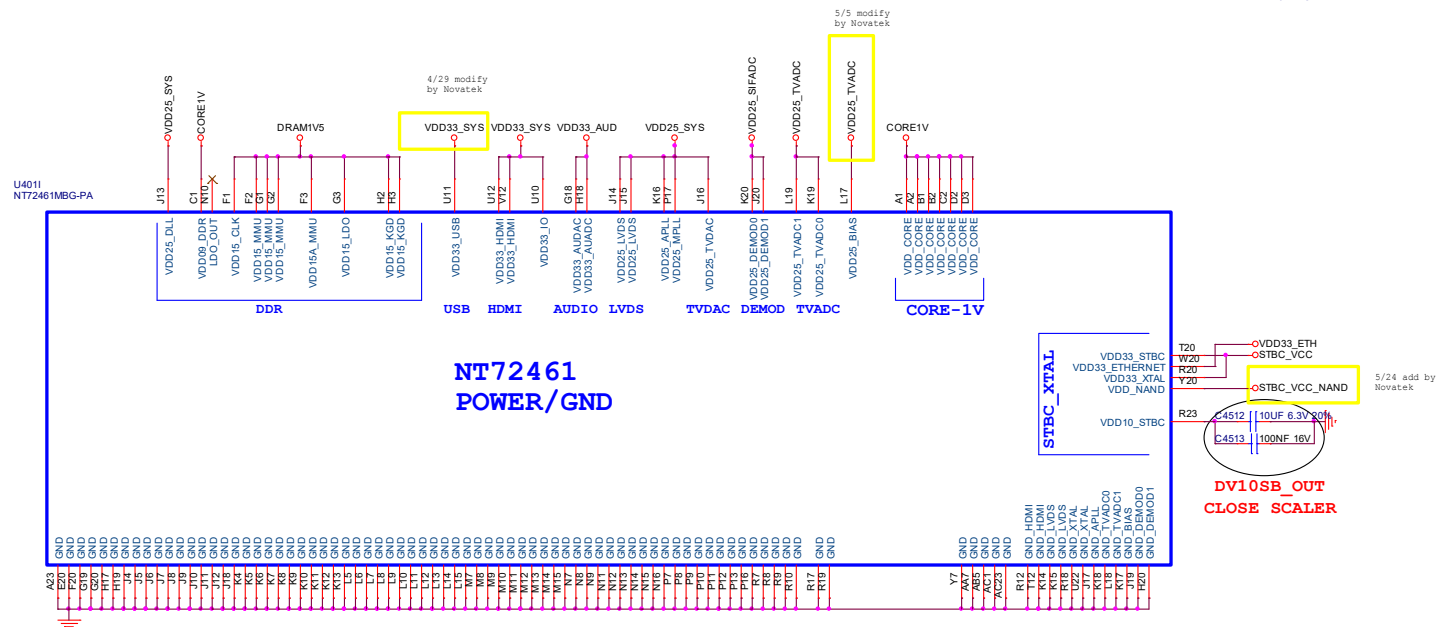
8-9-8 NT72461_USB/GPIO



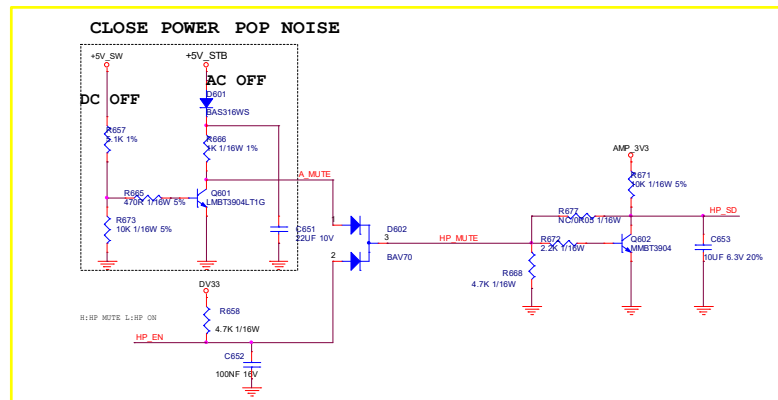
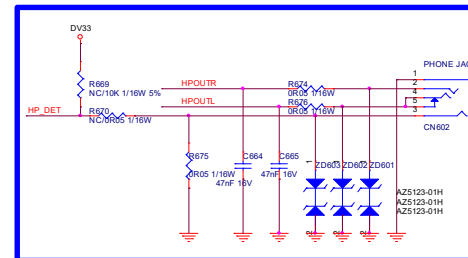
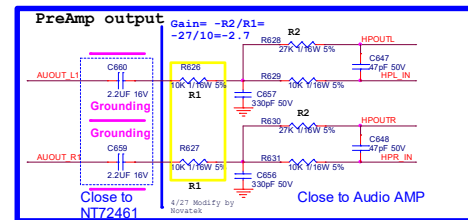
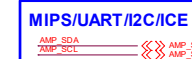
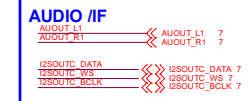
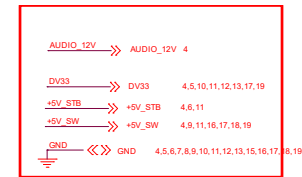
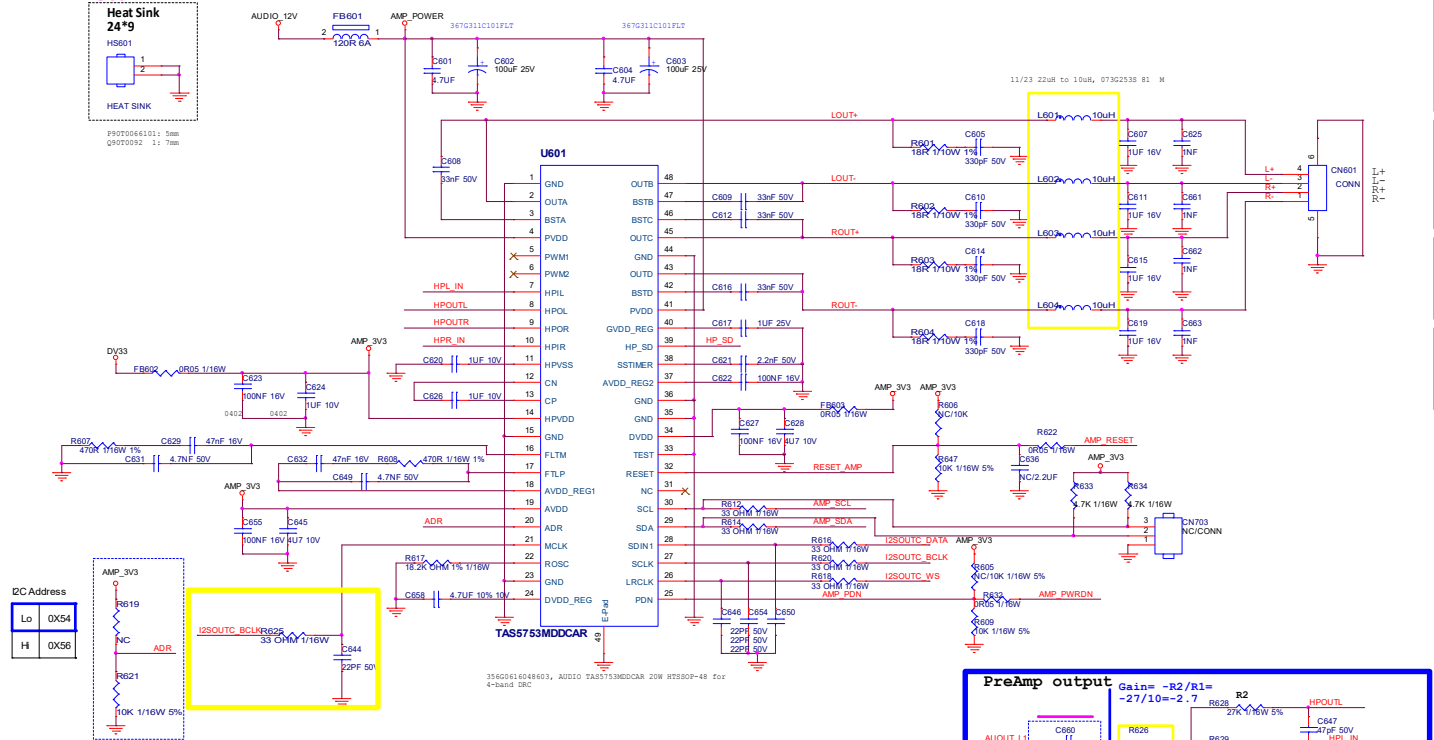
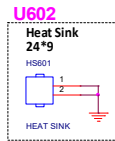
8-9-9 NT72461_USB/GPIO



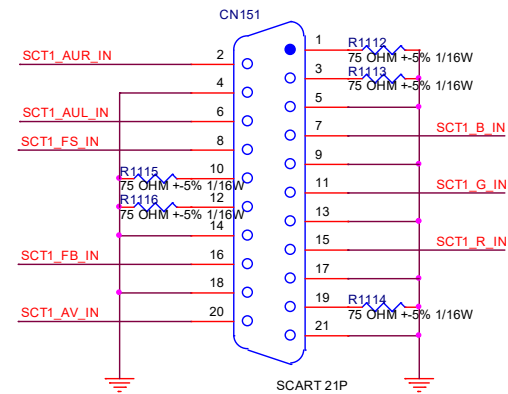
MAIN2V5	»»	MAIN2V5	4
DV33	»»	DV33	4,5,10,11,13,14,17,19
DV15	»»	DV15	4
DV11	»»	DV11	4
DV33SB	»»	DV33SB	4,6,10,18
DV18SB	»»	DV18SB	4,10
GND	««	GND	4,5,6,7,8,9,10,11,13,14,15,16,17,18,19



8-9-10 SPK AMP/HP OUT

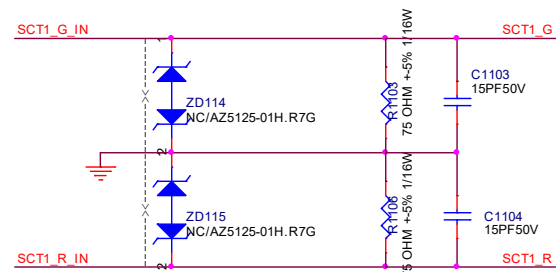
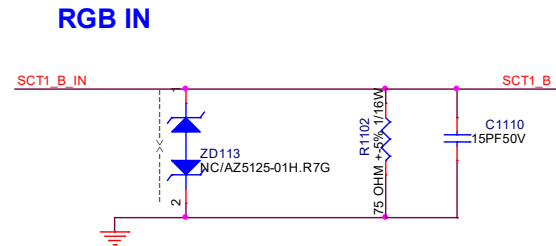
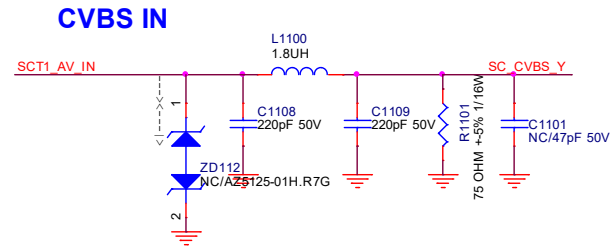
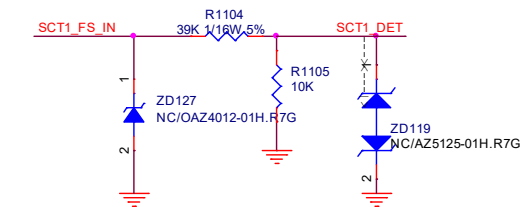


Half SCART(RGB+CVBS+L/R IN)

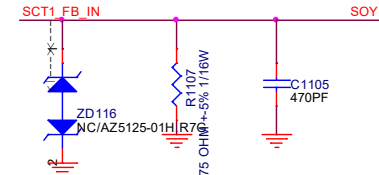


8.5mm No shield

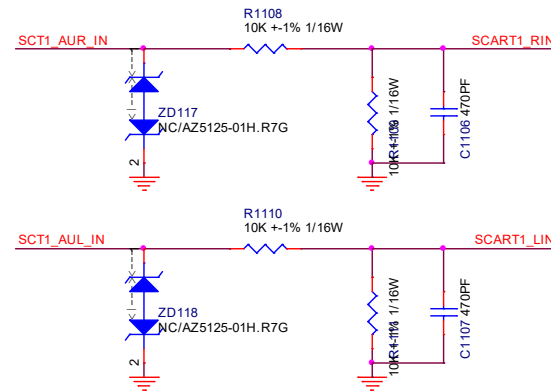
Function Select



FAST BLANKING/SOY



SCART Audio Input



ADC/DAC

SC CVBS_Y	>>>	SC CVBS_Y	7
SOY1	>>>	SOY1	7
SCT1_B	>>>	SCT1_B	7
SCT1_G	>>>	SCT1_G	7
SCT1_R	>>>	SCT1_R	7

AUDIO /IF

SCART1_RIN	>>>	SCART1_RIN	7
SCART1_LIN	>>>	SCART1_LIN	7

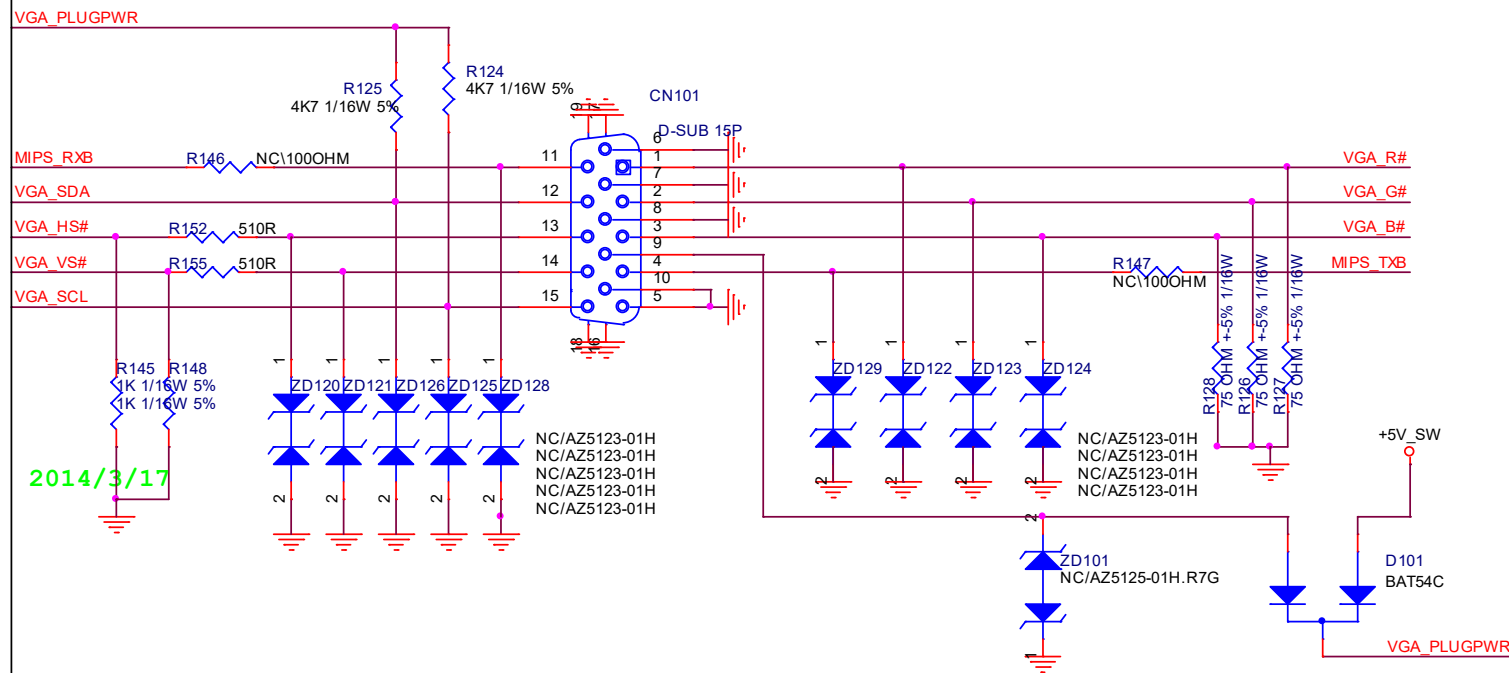
STB CONTORL

SCT1_DET	>>>	SCT1_DET	10
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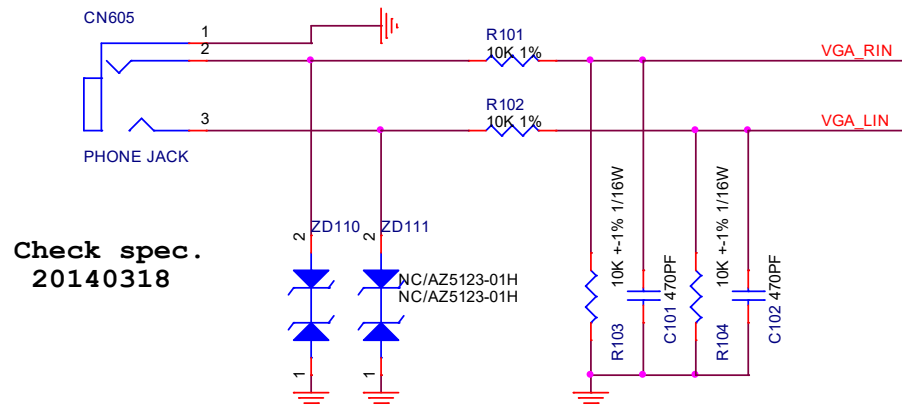
GND <<< GND 4,5,6,7,8,9,10,11,12,13,14,16,17,18,19

8-9-12 VGA In

VGA In



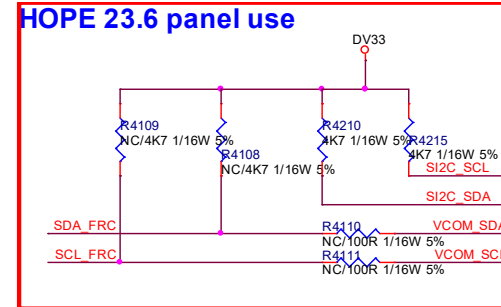
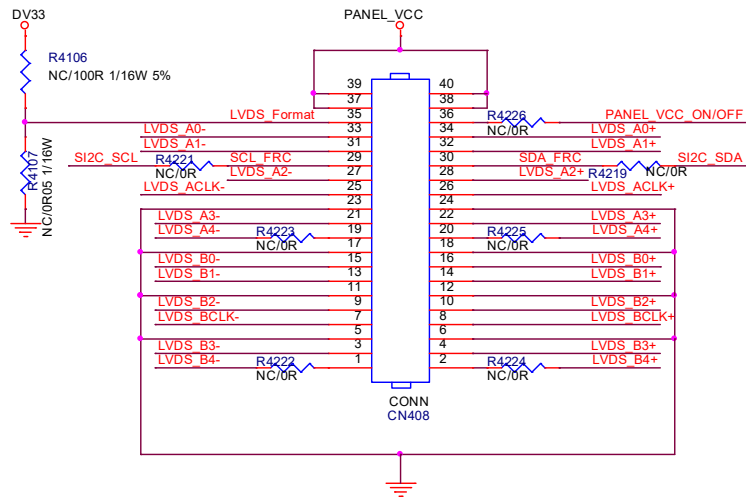
PC / DVI Audio in



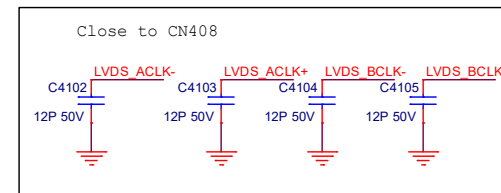
Check spec.
20140318

VGA_R#	→→	VGA_R#	7
VGA_G#	→→	VGA_G#	7
VGA_B#	→→	VGA_B#	7
VGA_HS#	→→	VGA_HS#	7
VGA_VS#	→→	VGA_VS#	7
VGA_SDA	→→	VGA_SDA	10
VGA_SCL	→→	VGA_SCL	10
VGA_RIN	→→	VGA_RIN	7
VGA_LIN	→→	VGA_LIN	7
+5V_SW	←←	+5V_SW	4,9,11,14,17,18,19
	←← →→	GND	4,5,6,7,8,9,10,11,12,13,14,15,17,18,19
MIPS_RXB	→→	MIPS_RXB	5,11,18
MIPS_TXB	→→	MIPS_TXB	5,11,18

8-9-13 LVDS

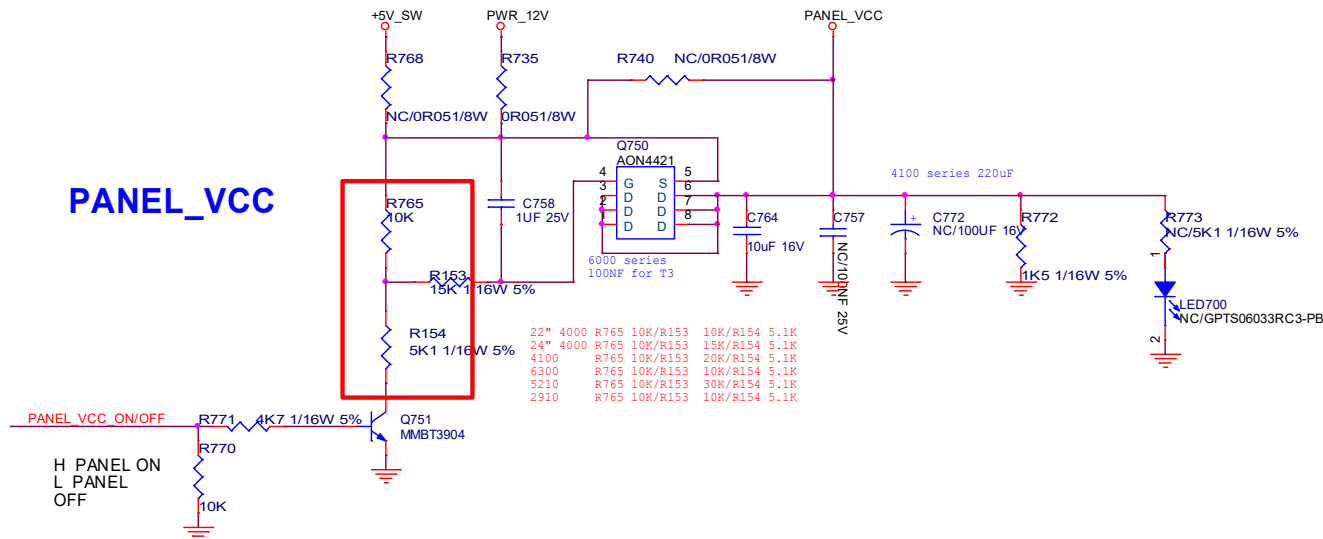


VCOM_SDA	→	VCOM_SDA	11
VCOM_SCL	→	VCOM_SCL	11
PWR_12V	→	PWR_12V	4, 11, 13
+5V_SW	→	+5V_SW	4, 9, 11, 14, 16, 18, 19
DV33	→	DV33	4, 5, 10, 11, 12, 13, 14, 19
DV15	→	DV15	4, 12
DV33SB	→	DV33SB	4, 6, 10, 12, 18
PWR5V_1	→	PWR5V_1	6, 8
PWR5V_2	→	PWR5V_2	6, 8
GND	→	GND	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19

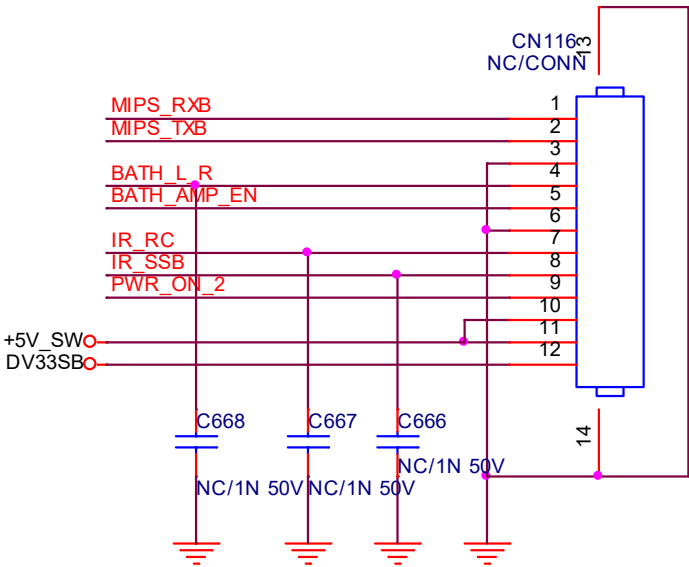


8 LVDS_B0-	LVDS_B0-
8 LVDS_B0+	LVDS_B0+
8 LVDS_B1-	LVDS_B1-
8 LVDS_B1+	LVDS_B1+
8 LVDS_B2-	LVDS_B2-
8 LVDS_B2+	LVDS_B2+
8 LVDS_BCLK-	LVDS_BCLK-
8 LVDS_BCLK+	LVDS_BCLK+
8 LVDS_B3-	LVDS_B3-
8 LVDS_B3+	LVDS_B3+
8 LVDS_B4-	LVDS_B4-
8 LVDS_B4+	LVDS_B4+
8 LVDS_A0-	LVDS_A0-
8 LVDS_A0+	LVDS_A0+
8 LVDS_A1-	LVDS_A1-
8 LVDS_A1+	LVDS_A1+
8 LVDS_A2-	LVDS_A2-
8 LVDS_A2+	LVDS_A2+
8 LVDS_ACLK-	LVDS_ACLK-
8 LVDS_ACLK+	LVDS_ACLK+
8 LVDS_A3-	LVDS_A3-
8 LVDS_A3+	LVDS_A3+
8 LVDS_A4-	LVDS_A4-
8 LVDS_A4+	LVDS_A4+

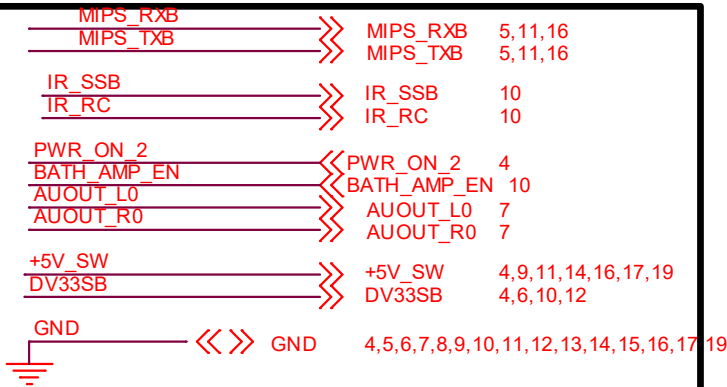
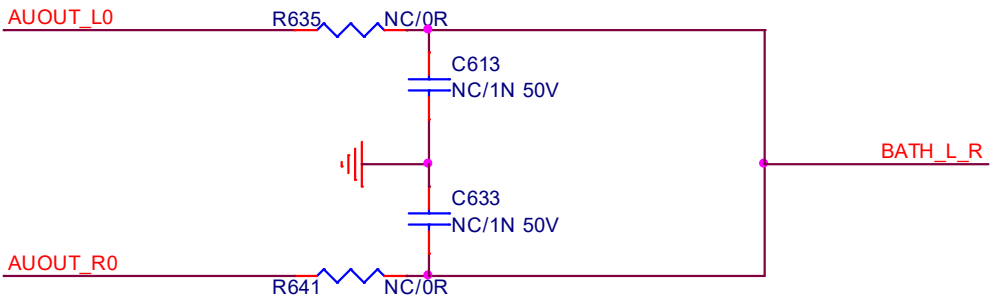
PANEL_VCC_ON/OFF	≪PANEL_VCC_ON/OFF	10
SI2C_SDA	≪SI2C_SDA	11
SI2C_SCL	≪SI2C_SCL	11



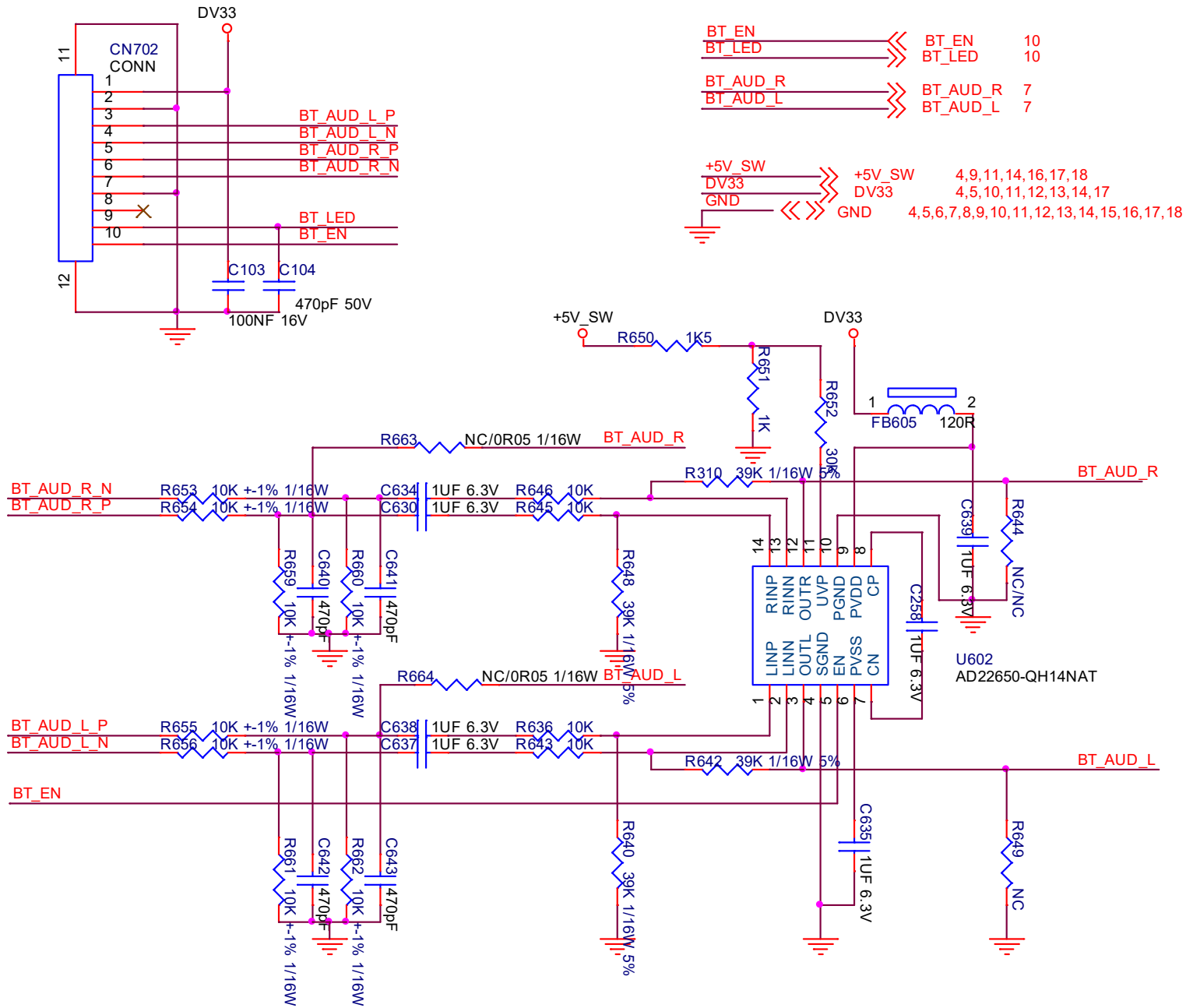
For BUH daughter board



Bathroom SPK audio out for BUH

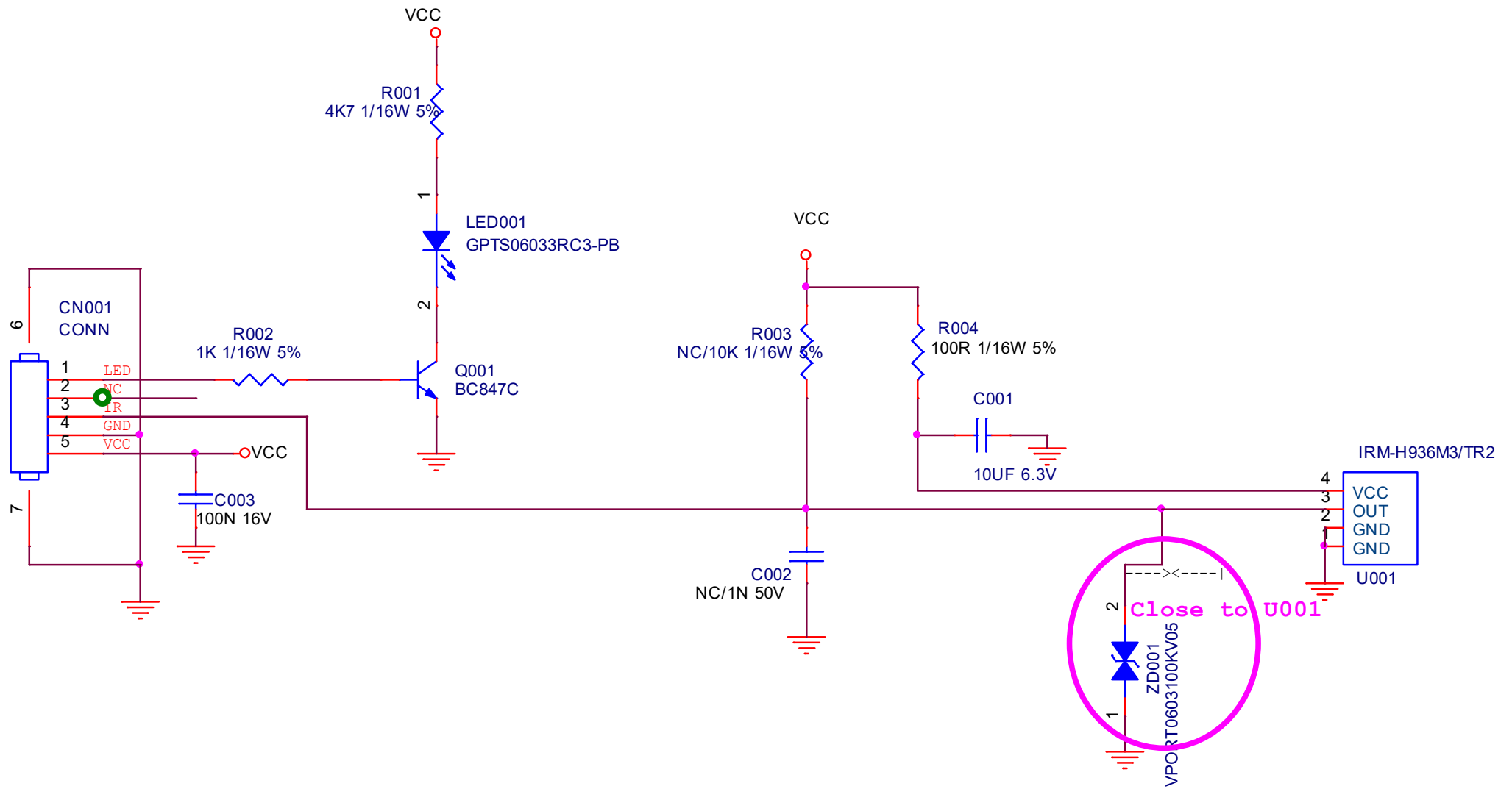


8-9-15 BT



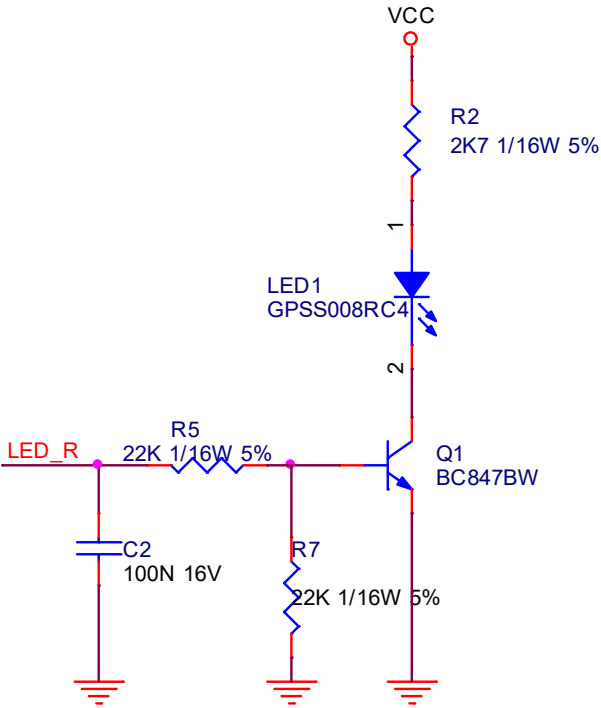
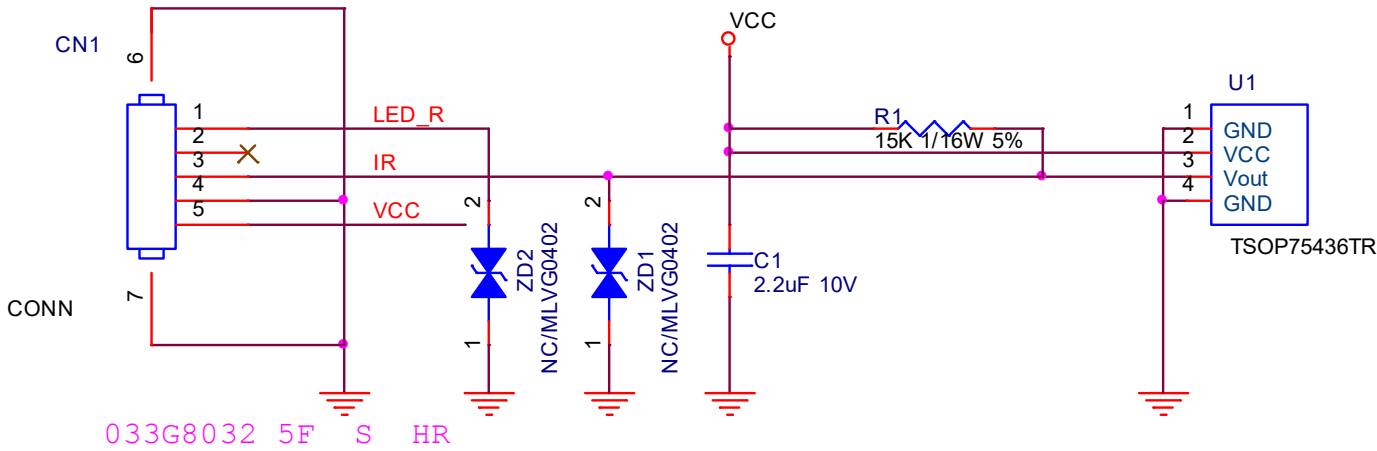
8.10 715G8791 IR/LED (For 32/39/43"4112 Series)

8-10-1 IR BOARD



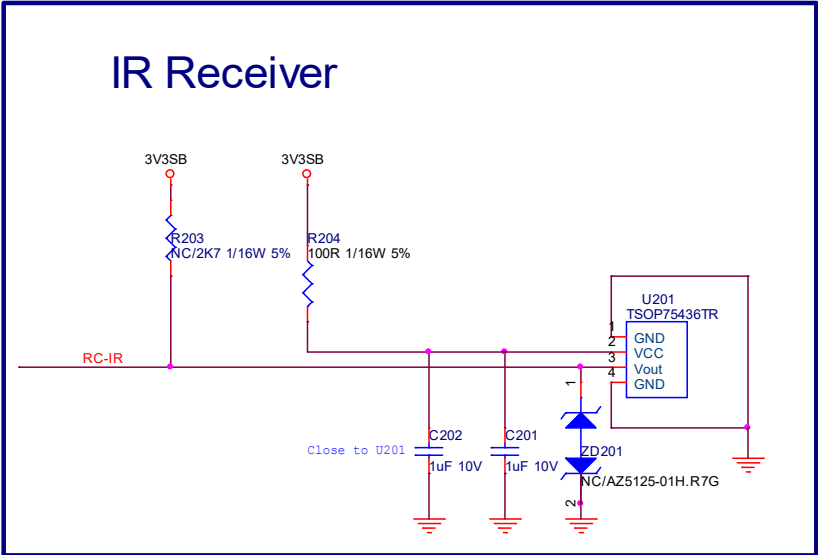
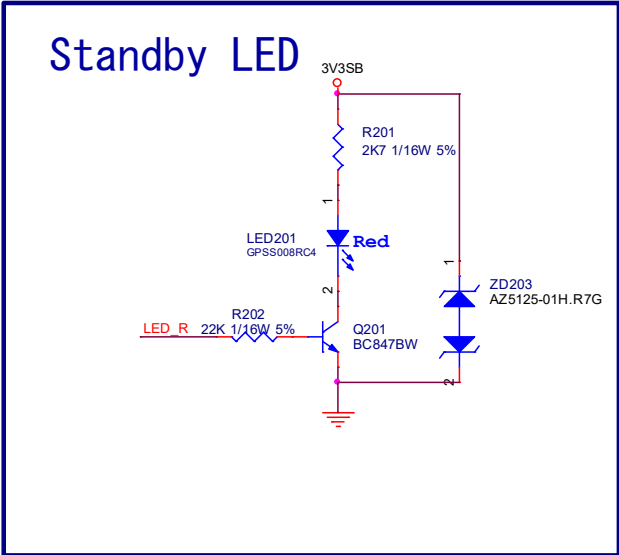
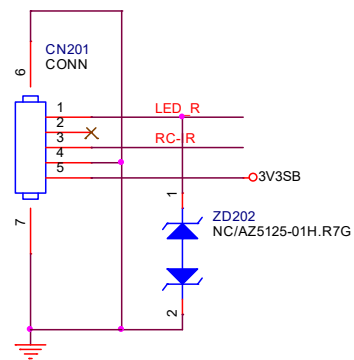
8.11 715G8576 IR/LED (For 22/24"4022 & 24"4032 & 22"4232 Series)

8-11-1 IR LED



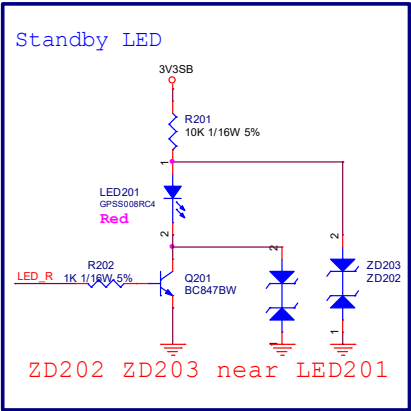
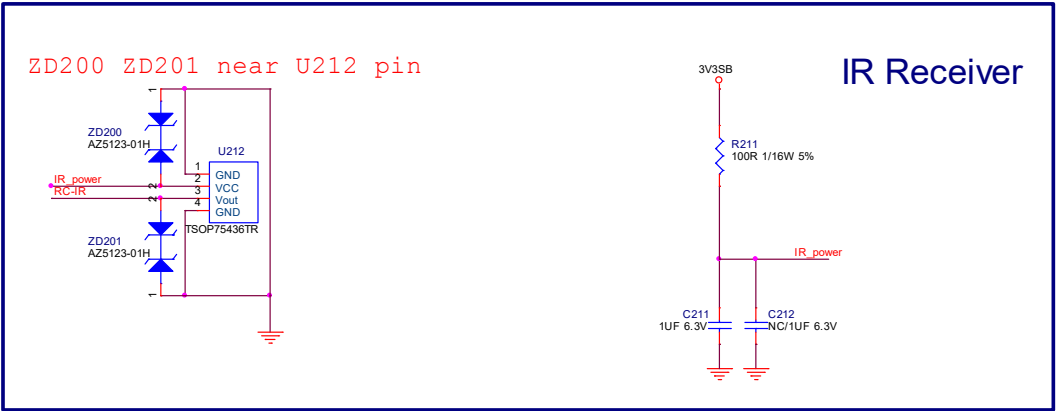
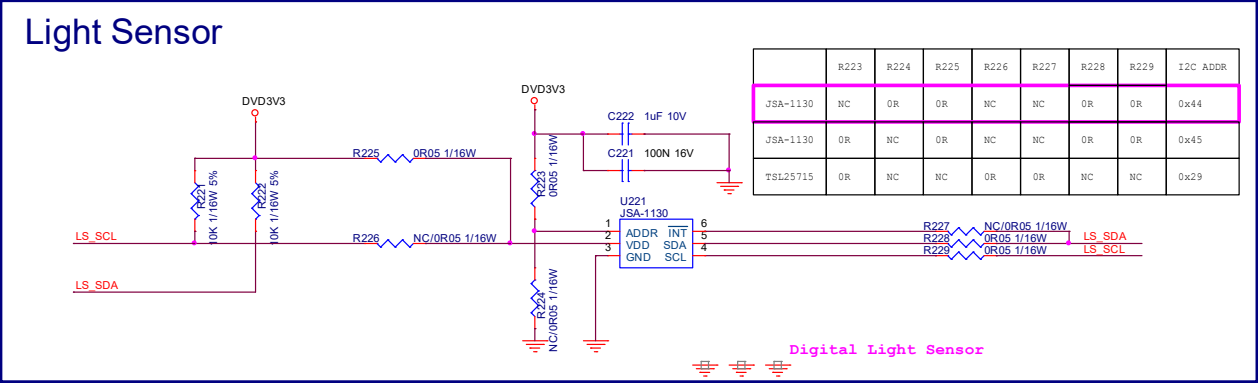
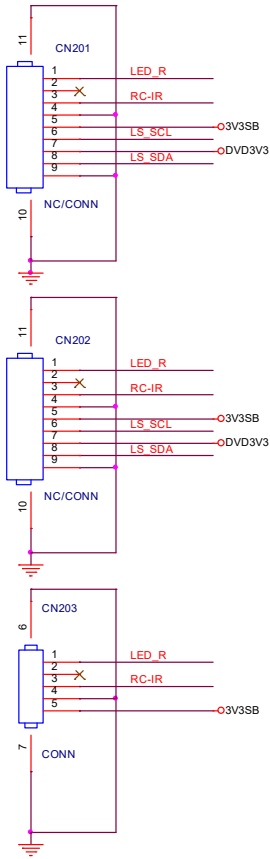
8.12 715G8767 IR/LED (For 32" 4132&4032 Series)

8-12-1 IR & LED & Light Sensor



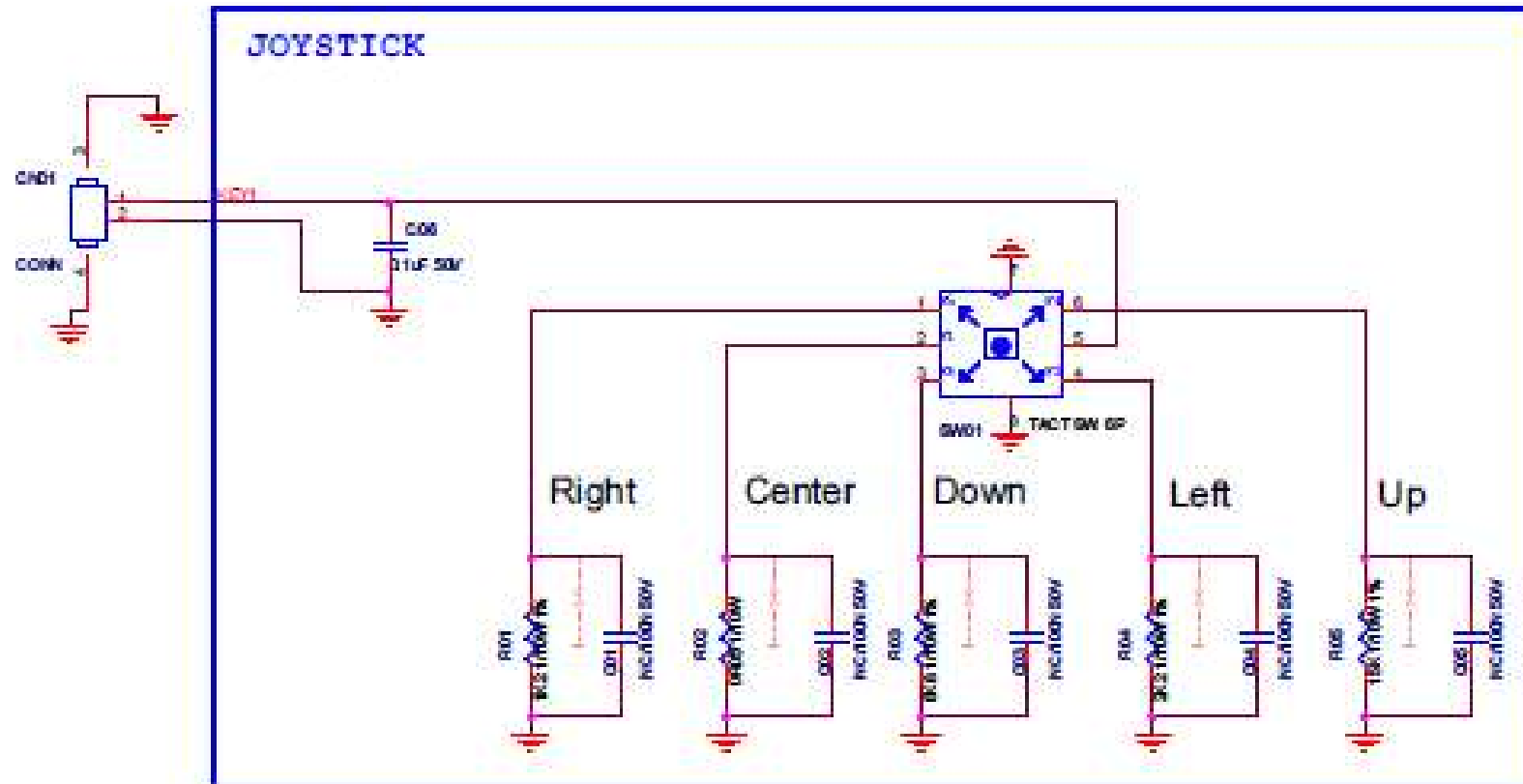
8.13 715G8623 IR/LED (For 43"/49" 4132 Series)

8-13-1 IR & LED & Light Sensor



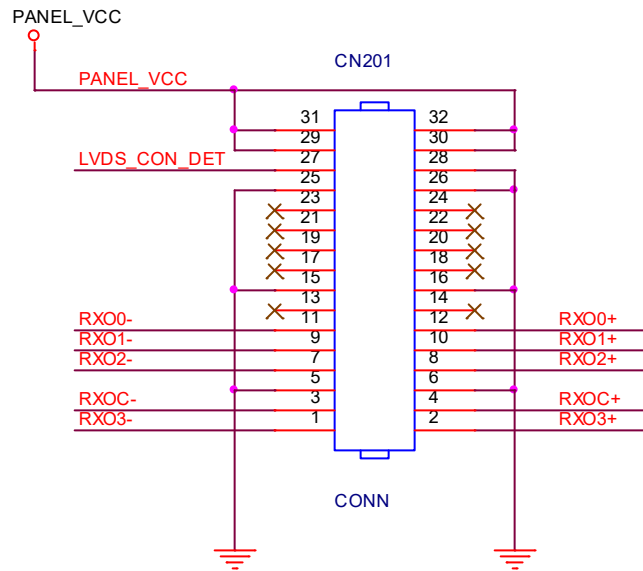
8.14 715G7088 KEY (For 32"/43"/49" 4132 Series & 32" 4032 Series)

8-14-1 KEY

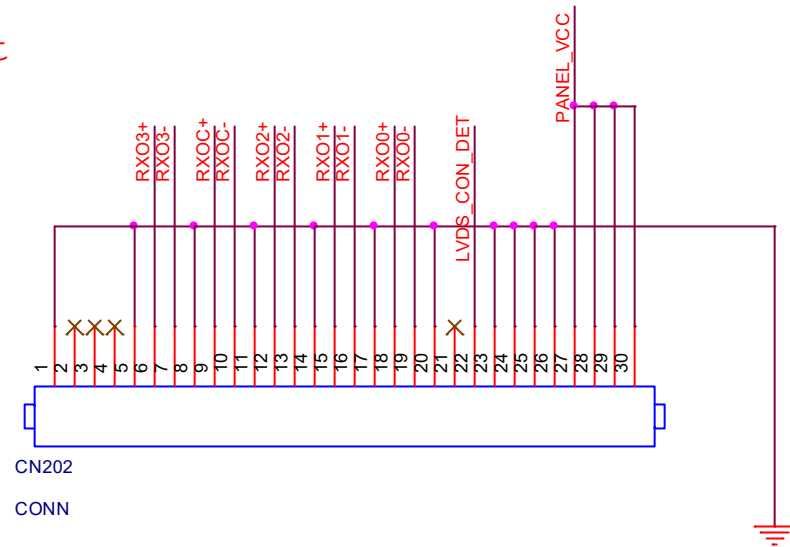


8-15-1 LVDS to FFC

Input

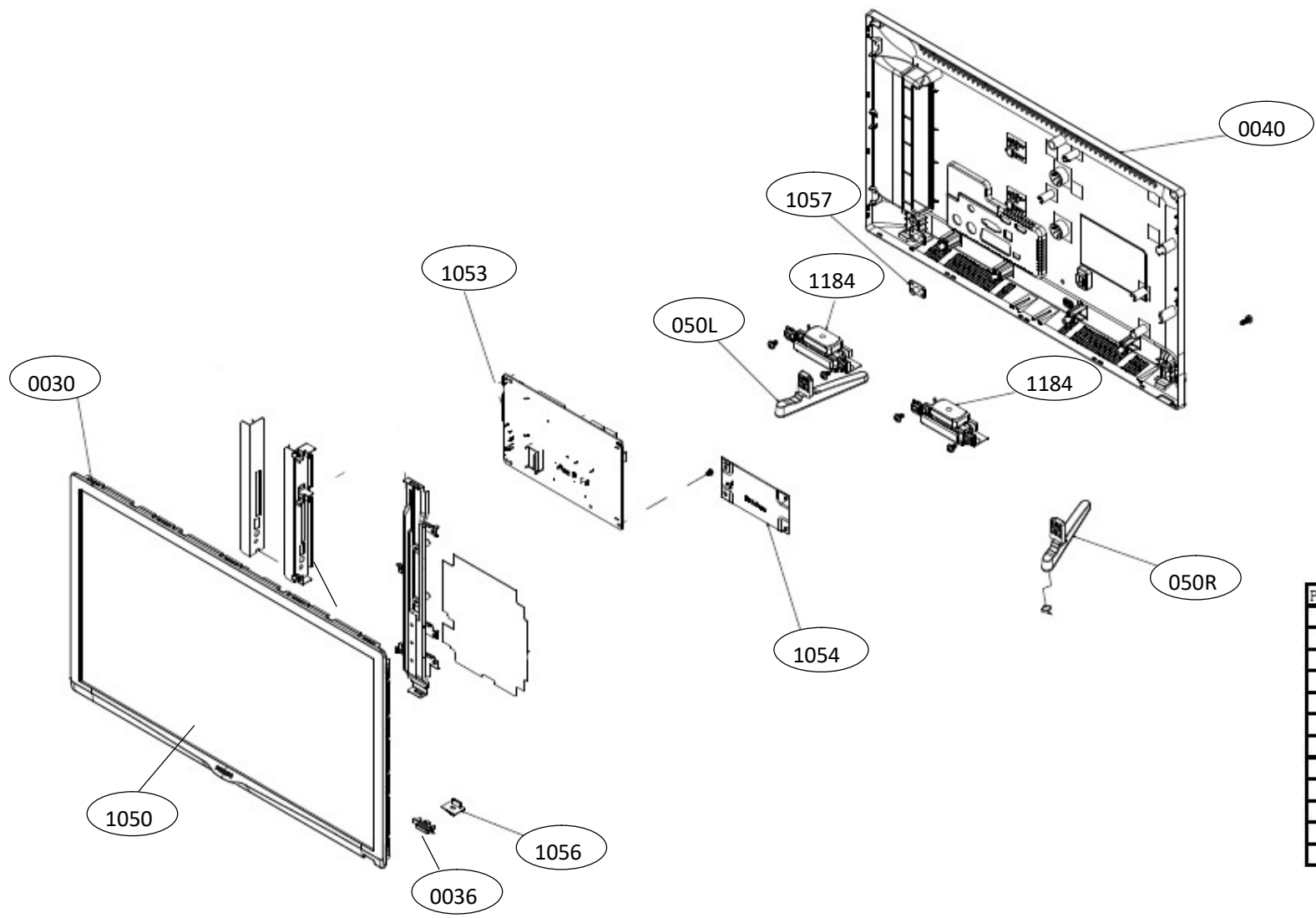


Output



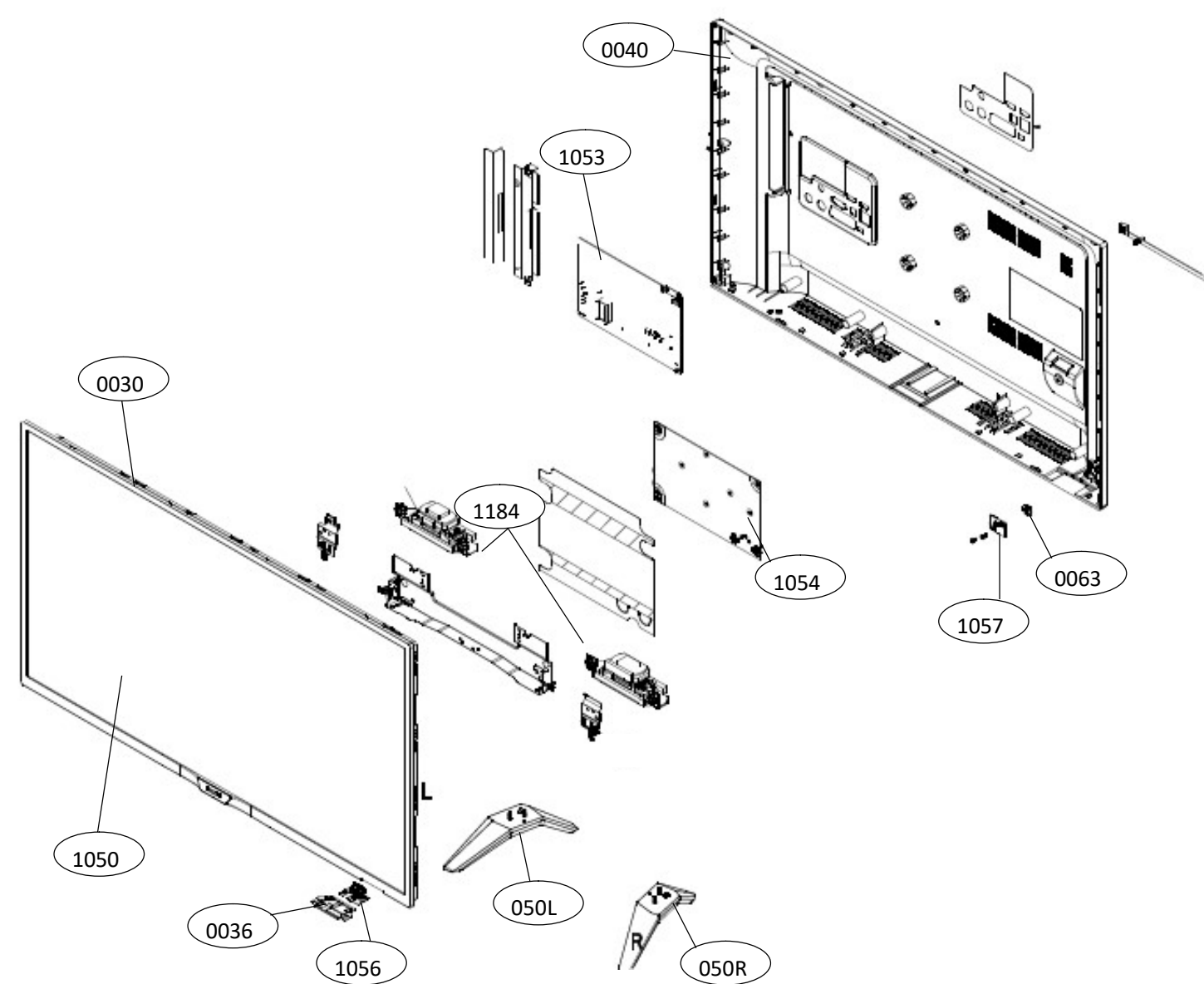
9. Styling Sheets

9.1 4232 series 22"



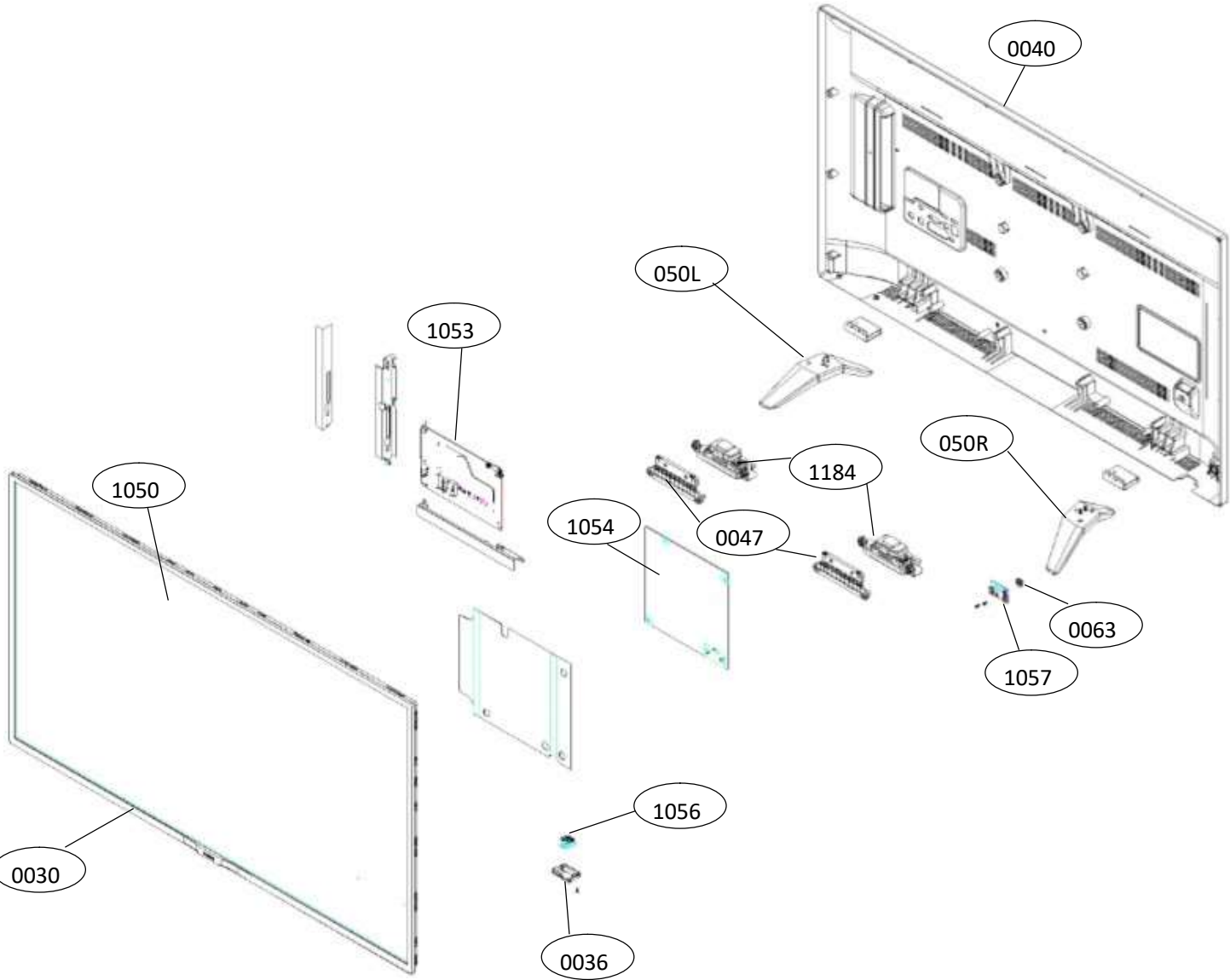
Pos NO.	Description	Remark
0030	BEZEL	
0036	LENS_IR	
0040	REAR COVER	
050L	EDGE STAND - L	
050R	EDGE STAND - R	
1050	DISPLAY PANEL	
1054	POWER SUPPLY UNIT	
1055	DRIVER BOARD	
1053	PANEL SSB	
1056	OPTION BOARD	
1176	REMOTE control	
1184	SPEAKER	

9.2 4132&4032 series 32"



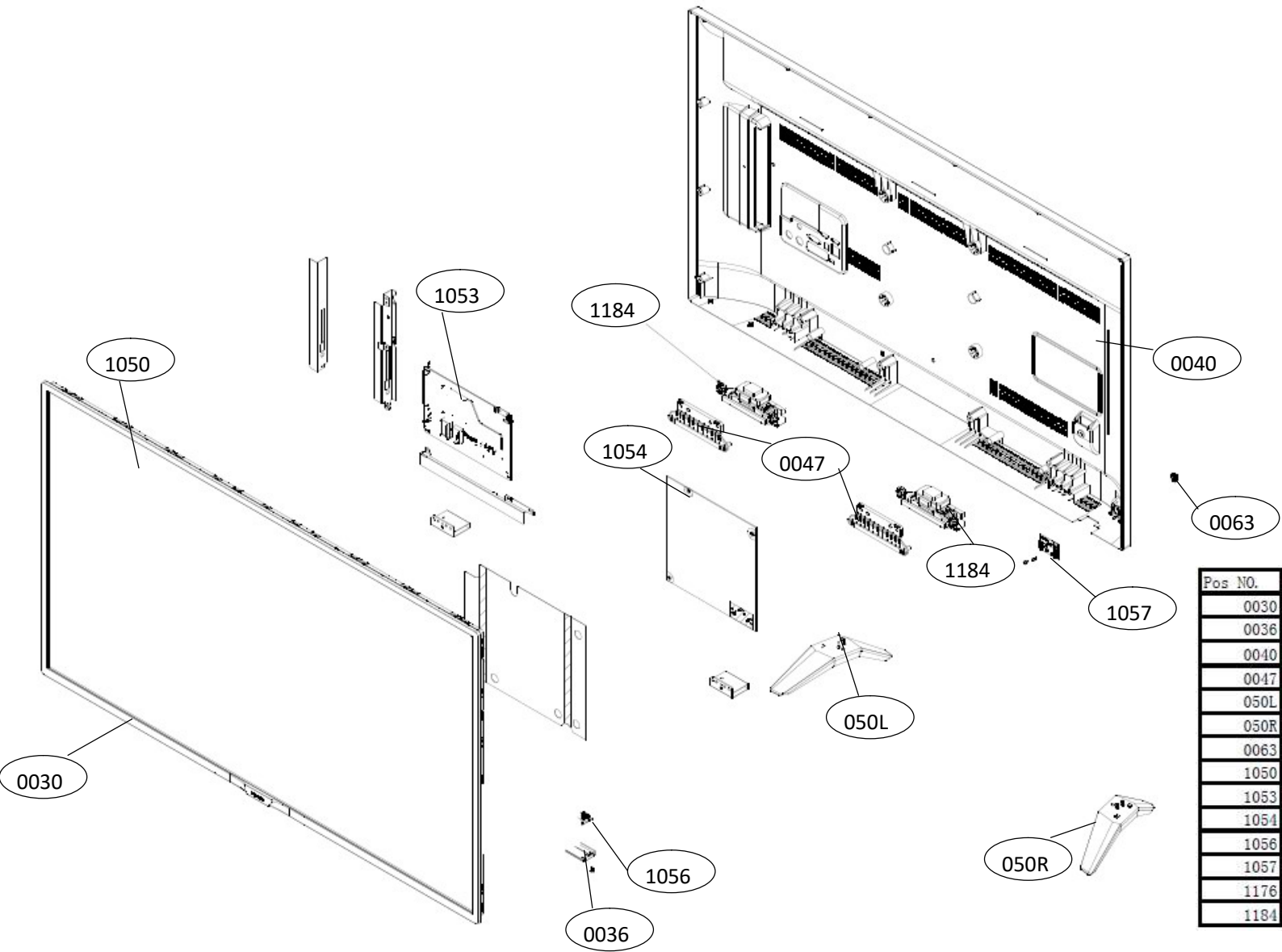
Pos NO.	Description	Remark
0030	BEZEL	
0036	LENS_IR	
0040	REAR COVER	
050L	EDGE STAND - L	
050R	EDGE STAND - R	
0063	KEY_FUNCTION	
1050	DISPLAY PANEL	
1053	PANEL SSB	
1054	POWER SUPPLY UNIT	
1056	IR/LED PANEL	
1057	KEYBOARD CONTROL PANEL	
1176	REMOTE control	Not displayed
1184	SPEAKER	

9.3 4132 series 43"



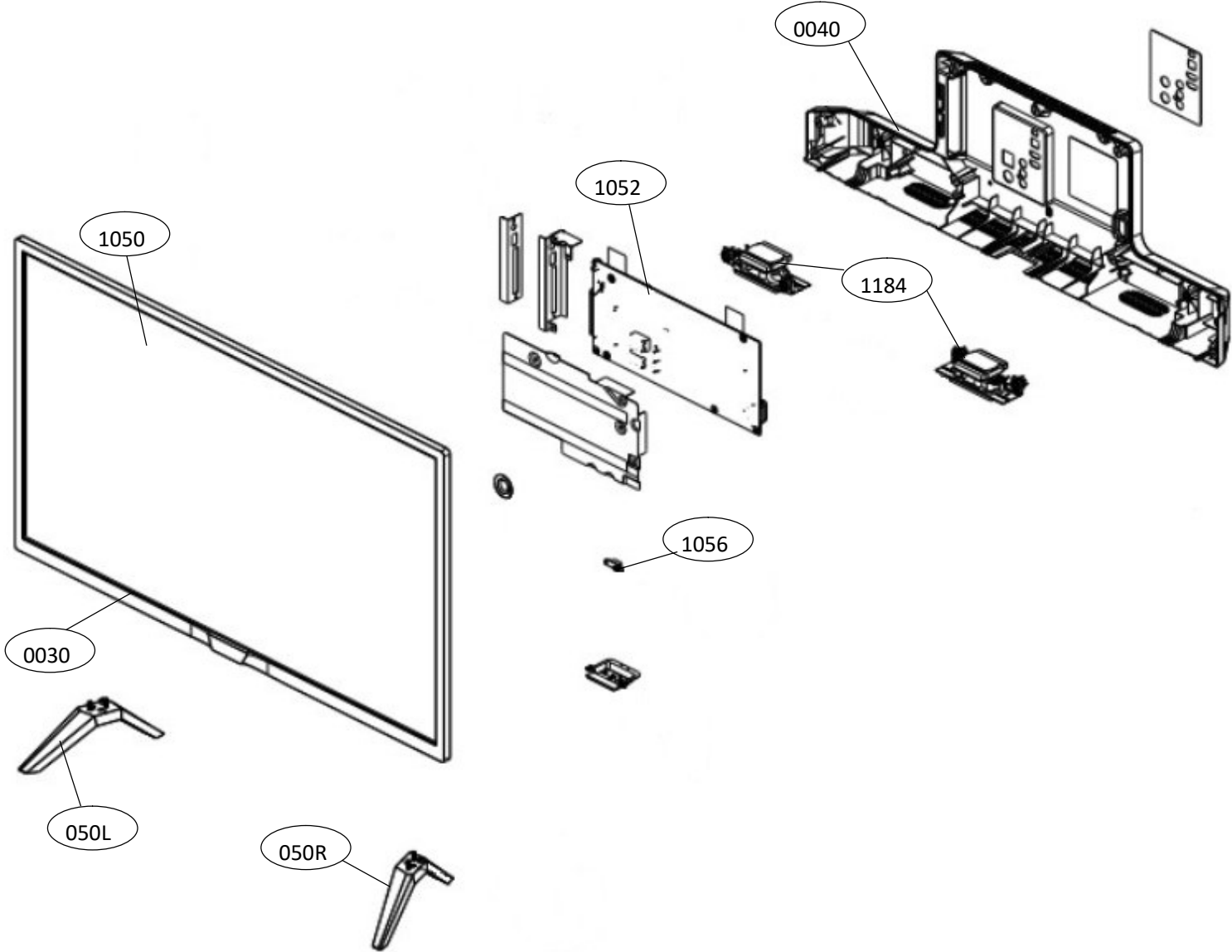
Pos NO.	Description	Remark
0030	BEZEL	
0036	LENS_IR	
0040	REAR COVER	
0047	HDD Holder	
050L	EDGE STAND - L	
050R	EDGE STAND - R	
0063	KEY_FUNCTION	
1050	LCD PANEL	
1053	MAIN BOARD	
1054	POWEWR BOARD	
1056	IR BOARD	
1057	KEY BOARD	
1176	REMOTE CONTROL	Not displayed
1184	SPEAKER	

9.4 4132 series 49"



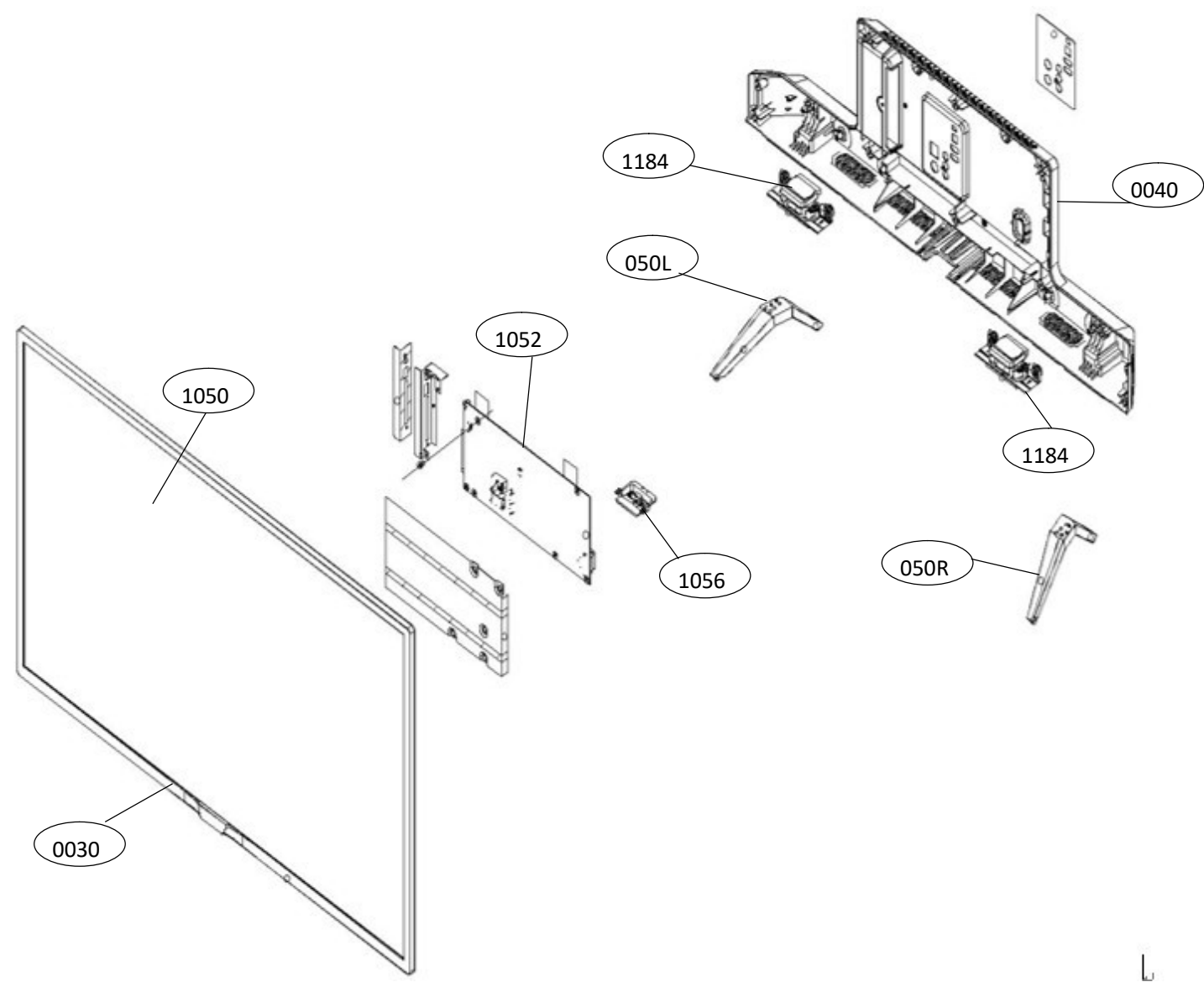
Pos NO.	Description	Remark
0030	BEZEL	
0036	LENS_IR	
0040	REAR COVER	
0047	HDD Holder	
050L	EDGE STAND - L	
050R	EDGE STAND - R	
0063	KEY FUNCTION	
1050	DISPLAY PANEL	
1053	PANEL SSB	
1054	POWER SUPPLY UNIT	
1056	IR/LED PANEL	
1057	KEYBOARD CONTROL PANEL	
1176	REMOTE control	Not displayed
1184	SPEAKER	

9.5 4112 series 32"



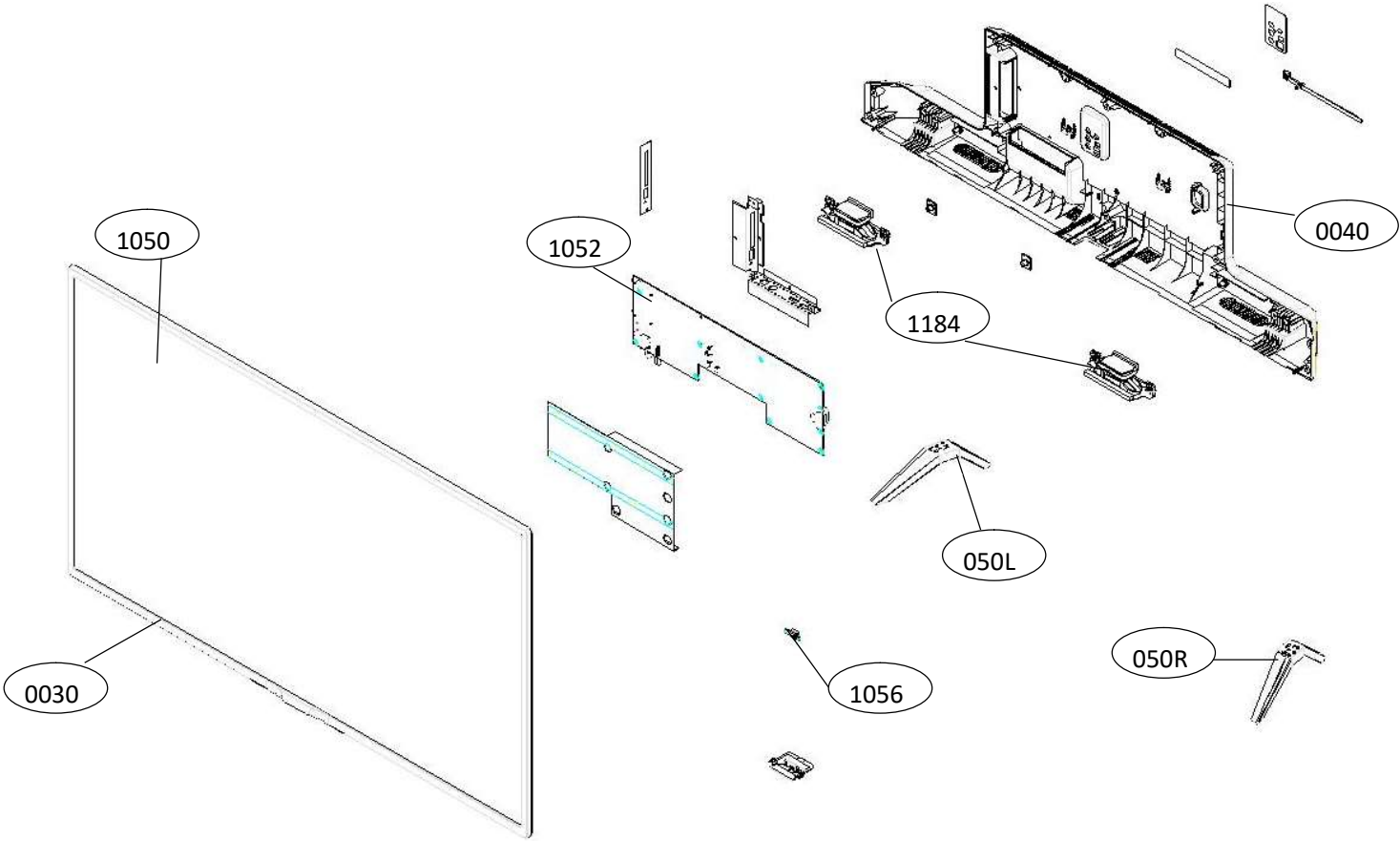
Pos NO.	Description	Remark
0030	Bezel	
0040	REAR COVER	
050L	EDGE STAND - L	
050R	EDGE STAND - R	
1050	LCD PANEL	
1052	MAIN + POWER Board	
1056	IR BOARD	
1176	REMOTE CONTROL	Not displayed
1184	SPEAKER	

9.6 4112 series 39"



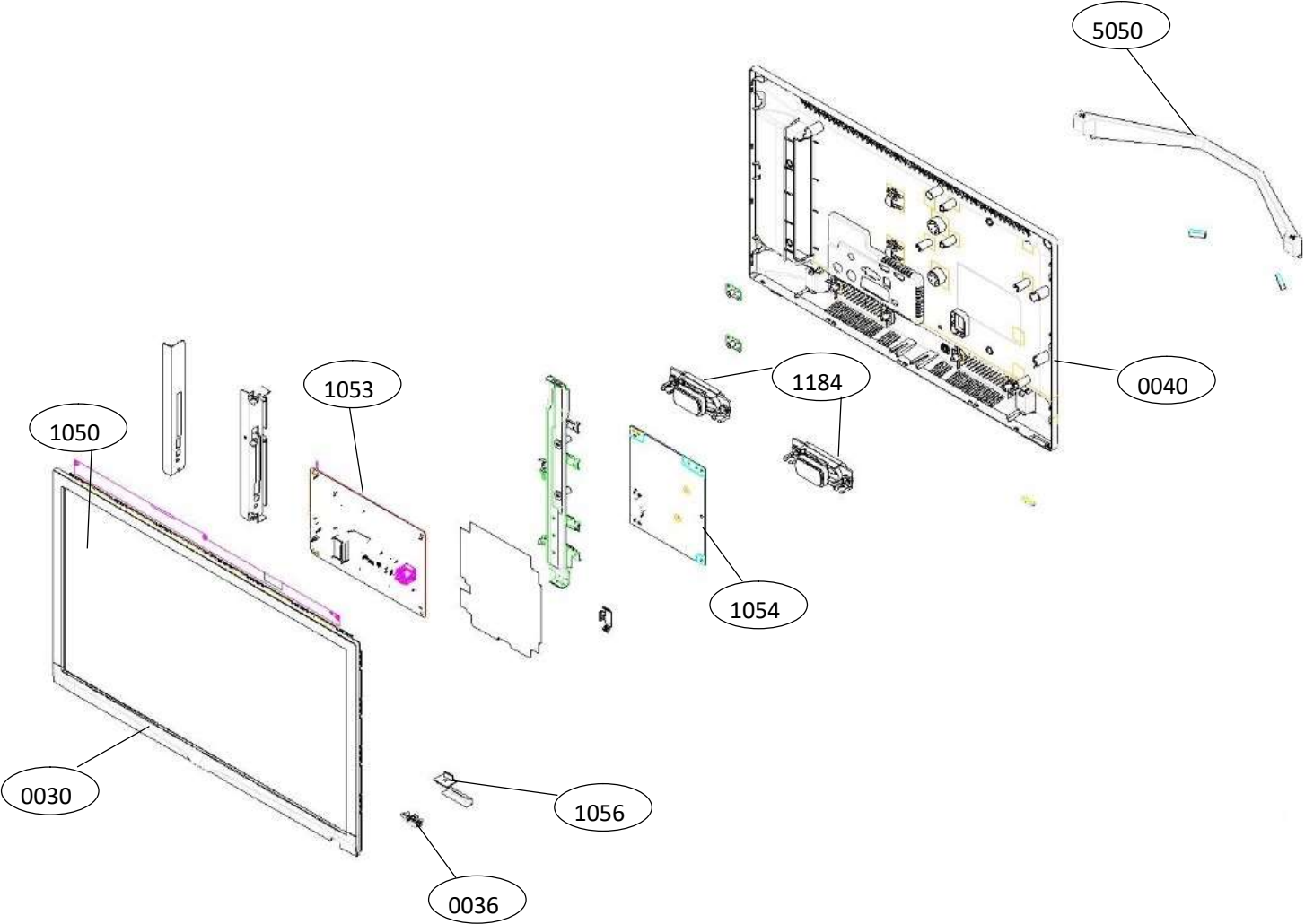
Pos NO.	Description	Remark
0030	Bezel	
0040	REAR COVER	
050L	EDGE STAND – L	
050R	EDGE STAND – R	
1050	LCD PANEL	
1052	MAIN + POWER Board	
1056	IR BOARD	
1176	REMOTE CONTROL	Not displayed
1184	SPEAKER	

9.7 4112 series 43"



Pos NO.	Description	Remark
0030	Bezel	
0040	REAR COVER	
050L	EDGE STAND – L	
050R	EDGE STAND – R	
1050	LCD PANEL	
1052	MAIN + POWER Board	
1056	IR BOARD	
1176	REMOTE CONTROL	Not displayed
1184	SPEAKER	

9.8 4032 series 24" & 4022 series 22/24"



Pos NO.	Description	Remark
0030	Bezel	
0036	LENS IR	
0040	REAR COVER	
1050	LCD PANEL	
1053	MAIN BOARD	
1054	POWER BOARD	
1056	IR BOARD	
1176	REMOTE CONTROL	Not displayed
1184	SPEAKER	
5050	CENTRAL STAND	