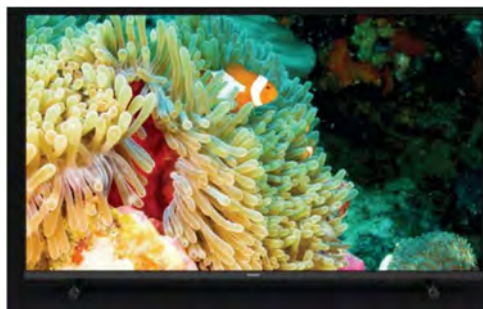


Service
Service
Service

TPM23.6L

LA



Service Manual

Chassis name	Platform	Model name	
TPM23.6L LA	MT9286(T56)	32PHD6918/43	
		32PHD6918/77	
		32PHG6918/78	
		43PFD6918/43	
		43PFD6918/77	
		43PFG6918/78	

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1. Product information

Product information is subject to change without notice.

For detailed product information, please visit www.philips.com/support

Operating System

Android OS:

Android 11

Display Type

Diagonal screen size

- 80 cm / 32 inch
- 108 cm/43 inch

Display resolution

- 43PFx6918: 1920 x 1080
- 32PHx6918: 1366 x 768

Reception

- Antenna input: 75 ohm coaxial (F-type)
- Tuner bands: Hyperband, UHF, VHF
- ISDBT
- Analog video playback: NTSC, 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)

Display Input Resolution

Supported Video only resolution

Resolution — Refresh rate

- 480i - 60 Hz
- 576i - 50 Hz
- 1080i - 50 Hz, 60 Hz

Supported Computer/Video resolution

Resolution — Refresh rate

- 640 x 480 - 60Hz
- 576p - 50Hz
- 720p - 50 Hz, 60 Hz
- 1920 x 1080p - 24 Hz, 25 Hz, 30 Hz, 50 Hz, 60 Hz

Connectivity

TV Side

- USB 1: USB 2.0
- Antenna (75 ohm)
- Headphones: Stereo mini-jack 3.5mm
- HDMI 1 in: ARC - HDR
- HDMI 2 in: HDR
- HDMI 3 in: HDR

TV Bottom

- Digital Audio out: Optical
- USB 2: USB 2.0
- Network LAN: RJ45

Sound

- Output power (RMS): 43" 16W/32" 10W
- Dolby MS12 V2.6
- Surround Sound
- Auto Volume Level

Multimedia

Connections

- USB 2.0
- Ethernet LAN RJ-45
- Wi-Fi 802.11ac, Dual Band
- BT 5.0

Supported USB file systems

- FAT 16, FAT 32

Playback formats

3G

• Containers: PS, TS, M2TS, TTS, AVCHD, MP4, M4V, MKV, ASF, AVI, 3GP, QuickTime

• Video Codecs: AVI, MKV, HEVC, H.264/MPEG-4 AVC, MPEG1, MPEG2, MPEG4, VP9, HEVC (H.265), AV1

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

• Subtitles:

– Formats: SRT, SMI, SSA, SUB, ASS, TXT

– Character encodings : UTF-8(Unicode), UTF-16, Simplified Chinese, Central Europe, Cyrillic, Western Europe, Greek, Turkish, Hebrew, Korean

• Maximum Supported Data Rate:

– MPEG-4 AVC (H.264) is supported up to High

Profile @ L5.1. 30Mbps

– H.265 (HEVC) is supported up to Main/Main 10

Profile up to Level 5.1 40Mbps

- Image Codecs: JPEG, GIF, PNG, BMP, HEIF

Power

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

Power

- Mains power: AC 110-240V +/-10%
- Ambient temperature: 5 °C to 35 °C (40 °F to 95 °F)

When testing the standby power consumption:

- Wake-On-Lan (WoWLAN) must be turned off.
- Wait at least 10 minutes to enter a stable state before the power consumption testing for standby mode.

2. Precautions, Notes, and Abbreviation List

2.1 Safety Instructions

Safety regulations require the following during a repair:

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

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

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

2.2 Warnings

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

- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.3 Notes

2.3.1 General

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground (⊥), or hot ground (⌵), depending on the tested area of circuitry. The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode with a colour bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz for PAL, or 61.25 MHz for NTSC (channel 3).
- Where necessary, measure the waveforms and voltages with (⌚) and without (⌚) aerial signal. Measure the voltages in the power supply section both in normal operation (⌚) and in stand-by (⌚). These values are indicated by means of the appropriate symbols.

2.3.2 Schematic Notes

- All resistor values are in ohms, and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 kΩ).
- Resistor values with no multiplier may be indicated with either an “E” or an “R” (e.g. 220E or 220R indicates 220 Ω).
- All capacitor values are given in micro-farads ($\mu = \times 10^{-6}$), nano-farads ($n = \times 10^{-9}$), or pico-farads ($p = \times 10^{-12}$).
- Capacitor values may also use the value multiplier as the decimal point indication (e.g. 2p2 indicates 2.2 pF).
- An “asterisk” (*) indicates component usage varies. Refer to the diversity tables for the correct values.
- The correct component values are listed on the Philips Spare Parts Web Portal.

2.3.3 Spare parts

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

2.3.4 BGA (Ball Grid Array) ICs

Introduction

For more information on how to handle BGA devices, visit this URL: <http://www.atyourservice-magazine.com>. Select “Magazine”, then go to “Repair downloads”. Here you will find Information on how to deal with BGA-ICs.

BGA Temperature Profiles

For BGA-ICs, you must use the correct temperature-

profile. Where applicable and available, this profile is added to the IC Data Sheet information section in this manual.

2.3.5 Lead-free Soldering

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

- Use only lead-free soldering tin. If lead-free solder paste is required, please contact the manufacturer of your soldering equipment. In general, use of solder paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free soldering tin. The solder tool must be able:
 - To reach a solder-tip temperature of at least 400°C.
 - To stabilize the adjusted temperature at the solder-tip.
 - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature of around 360°C - 380°C is reached and stabilized at the solder joint. Heating time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C, otherwise wear-out of tips will increase drastically and flux-fluid will be destroyed. To avoid wear-out of tips, switch “off” unused equipment or reduce heat.
- Mix of lead-free soldering tin/parts with leaded soldering tin/parts is possible but PHILIPS recommends strongly to avoid mixed regimes. If this cannot be avoided, carefully clear the solder-joint from old tin and re-solder with new tin.

2.3.6 Alternative BOM identification

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

The third digit in the serial number (example:

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

By looking at the third digit of the serial number, one can identify which B.O.M. is used for the TV set he is working with. If the third digit of the serial number contains the number “1” (example: AG1B0335000001), then the TV set has been manufactured according to B.O.M. number 1. If the third digit is a “2” (example: AG2B0335000001), then

the set has been produced according to B.O.M. no. 2. This is important for ordering the correct spare parts!

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

Identification: The bottom line of a type plate gives a 14-digit serial number. Digits 1 and 2 refer to the production centre (e.g. SN is Lysomice, RJ is Kobierzyce), digit 3 refers to the B.O.M. code, digit 4 refers to the Service version change code, digits 5 and 6 refer to the production year, and digits 7 and 8 refer to production week (in example below it is 2010 week 10 / 2010 week 17). The 6 last digits contain the serial number.

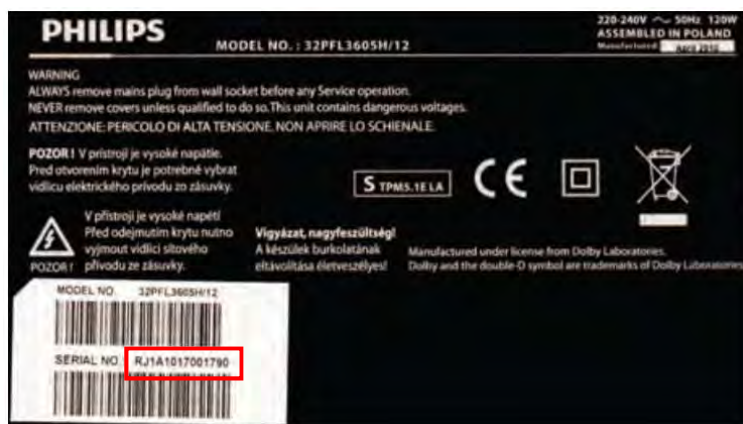


Figure 3-1 Serial number (example)

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

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

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

2.3.8 Practical Service Precautions

- It makes sense to avoid exposure to electrical shock. While some sources are expected to have a

possible dangerous impact, others of quite high potential are of limited current and are sometimes held in less regard.

- **Always respect voltages.** While some may not be dangerous in themselves, they can cause unexpected reactions that are best avoided. Before reaching into a powered TV set, it is best to test the high voltage insulation. It is easy to do, and is a good service precaution.

2.4 Abbreviation List

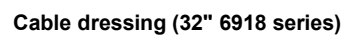
0/6/12	SCART switch control signal on A/V board. 0 = loop through (AUX to TV), 6 = play 16 : 9 format, 12 = play 4 : 3 format	BLR	Board-Level Repair
DNR	Digital Noise Reduction: noise reduction feature of the set	BTSC	Broadcast Television Standard Committee. Multiplex FM stereo sound system, originating from the USA and used e.g. in LATAM and AP-NTSC countries
AARA	Automatic Aspect Ratio Adaptation: algorithm that adapts aspect ratio to remove horizontal black bars; keeps the original aspect ratio	B-TXT	Blue TeleteXT
ACI	Automatic Channel Installation: algorithm that installs TV channels directly from a cable network by means of a predefined TXT page	C	Centre channel (audio)
ADC	Analogue to Digital Converter	CEC	Consumer Electronics Control bus: remote control bus on HDMI connections
AFC	Automatic Frequency Control: control signal used to tune to the correct frequency	CL	Constant Level: audio output to connect with an external amplifier
AGC	Automatic Gain Control: algorithm that controls the video input of the feature box	CLR	Component Level Repair
AM	Amplitude Modulation	ComPair	Computer aided rePair
AP	Asia Pacific	CP	Connected Planet / Copy Protection
AR	Aspect Ratio: 4 by 3 or 16 by 9	CSM	Customer Service Mode
ASF	Auto Screen Fit: algorithm that adapts aspect ratio to remove horizontal black bars without discarding video information	CTI	Color Transient Improvement: manipulates steepness of chroma transients
ATSC	Advanced Television Systems Committee, the digital TV standard in the USA	CVBS	Composite Video Blanking and Synchronization
ATV	See Auto TV	DAC	Digital to Analogue Converter
Auto TV	A hardware and software control system that measures picture content, and adapts image parameters in a dynamic way	DBE	Dynamic Bass Enhancement: extra low frequency amplification
AV	External Audio Video	DCM	Data Communication Module. Also referred to as System Card or Smartcard (for iTV).
AVC	Audio Video Controller	DDC	See "E-DDC"
AVIP	Audio Video Input Processor	D/K	Monochrome TV system. Sound carrier distance is 6.5 MHz
B/G	Monochrome TV system. Sound carrier distance is 5.5 MHz	DFI	Dynamic Frame Insertion
BDS	Business Display Solutions (iTV)	DFU	Directions For Use: owner's manual
		DMR	Digital Media Reader: card reader
		DMSD	Digital Multi Standard Decoding
		DNM	Digital Natural Motion
		DRAM	Dynamic RAM
		DRM	Digital Rights Management
		DSP	Digital Signal Processing
		DST	Dealer Service Tool: special remote control designed for service technicians
		DTCP	Digital Transmission Content Protection; A protocol for protecting digital audio/video content that is traversing a high speed serial bus, such as IEEE-1394
		DVB-C	Digital Video Broadcast - Cable
		DVB-T	Digital Video Broadcast - Terrestrial
		DVD	Digital Versatile Disc
		DVI(-d)	Digital Visual Interface (d= digital only)
		E-DDC	Enhanced Display Data Channel (VESA)

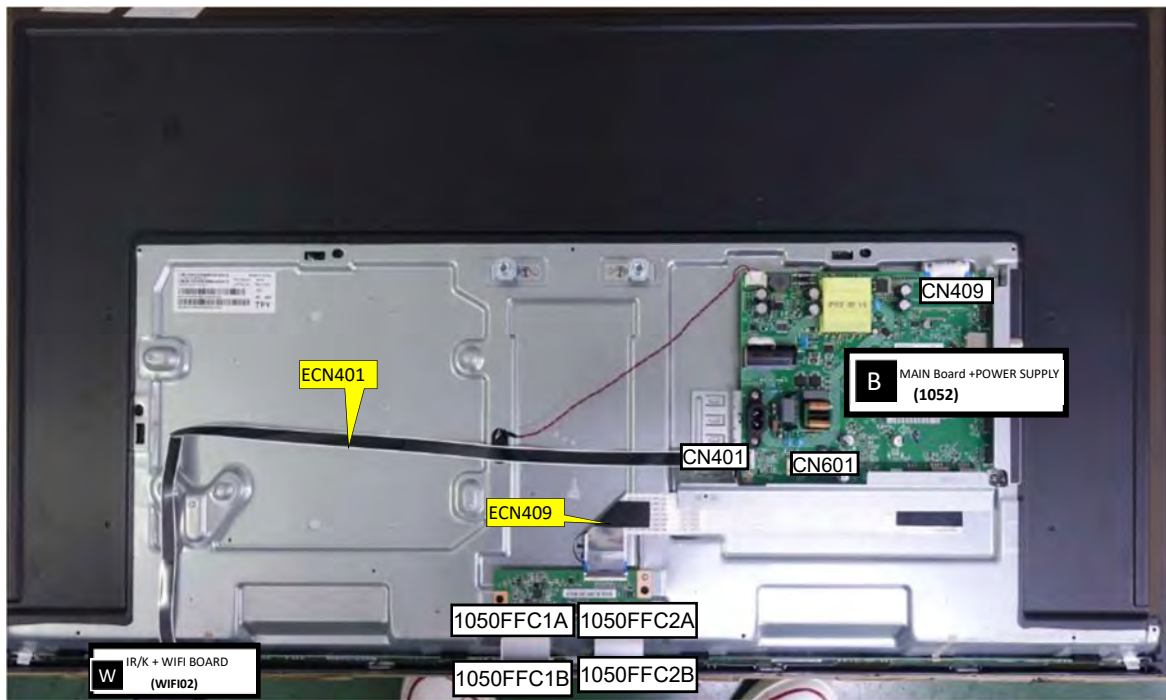
	standard for communication channel and display). Using E-DDC, the video source can read the EDID information form the display.		of the International Telecommunication Union relating to radio communication. ITU-656 (a.k.a. SDI), is a digitized video format used for broadcast grade video.
EDID	Extended Display Identification Data (VESA standard)		Uncompressed digital component or digital composite signals can be used. The SDI signal is self-synchronizing, uses 8 bit or 10 bit data words, and has a maximum data rate of 270 Mbit/s, with a minimum bandwidth of 135 MHz.
EEPROM	Electrically Erasable and Programmable Read Only Memory		Institutional TeleVision; TV sets for hotels, hospitals etc.
EMI	Electro Magnetic Interference		
EPG	Electronic Program Guide		
EPLD	Erasable Programmable Logic Device	iTV	
EU	Europe		
EXT	EXternal (source), entering the set by SCART or by cinches (jacks)	LS	Last Status; The settings last chosen by the customer and read and stored in RAM or in the NVM. They are called at start-up of the set to configure it according to the customer's preferences
FDS	Full Dual Screen (same as FDW)		
FDW	Full Dual Window (same as FDS)		
FLASH	FLASH memory		
FM	Field Memory or Frequency Modulation	LATAM	Latin America
FPGA	Field-Programmable Gate Array	LCD	Liquid Crystal Display
FTV	Flat TeleVision	LED	Light Emitting Diode
Gb/s	Giga bits per second	L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I
G-TXT	Green TeleteXT		
H	H_sync to the module		
HD	High Definition	LPL	LG.Philips LCD (supplier)
HDD	Hard Disk Drive	LS	Loudspeaker
HDCP	High-bandwidth Digital Content Protection: A "key" encoded into the HDMI/DVI signal that prevents video data piracy. If a source is HDCP coded and connected via HDMI/DVI without the proper HDCP decoding, the picture is put into a "snow vision" mode or changed to a low resolution. For normal content distribution the source and the display device must be enabled for HDCP "software key" decoding.	LVDS	Low Voltage Differential Signalling
		Mbps	Mega bits per second
		M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz
		MHEG	Part of a set of international standards related to the presentation of multimedia information, standardised by the Multimedia and Hypermedia Experts Group. It is commonly used as a language to describe interactive television services
		MIPS	Microprocessor without Interlocked Pipeline-Stages; A RISC-based microprocessor
HDMI	High Definition Multimedia Interface		
HP	HeadPhone		
I	Monochrome TV system. Sound carrier distance is 6.0 MHz	MOP	Matrix Output Processor
		MOSFET	Metal Oxide Silicon Field Effect Transistor, switching device
I ² C	Inter IC bus		
I ² D	Inter IC Data bus	MPEG	Motion Pictures Experts Group
I ² S	Inter IC Sound bus	MPIF	Multi Platform InterFace
IF	Intermediate Frequency	MUTE	MUTE Line
IR	Infra Red	MTV	Mainstream TV: TV-mode with Consumer TV features enabled (iTV)
IRQ	Interrupt Request		
ITU-656	The ITU Radio communication Sector (ITU-R) is a standards body subcommittee	NC	Not Connected
		NICAM	Near Instantaneous Compounded Audio

	Multiplexing. This is a digital sound system, mainly used in Europe.	PWM	Pulse Width Modulation
NTC	Negative Temperature Coefficient, non-linear resistor	QRC	Quasi Resonant Converter
		QTNR	Quality Temporal Noise Reduction
NTSC	National Television Standard Committee. Color system mainly used in North America and Japan. Color carrier NTSC M/N= 3.579545 MHz, NTSC 4.43= 4.433619 MHz (this is a VCR norm, it is not transmitted off-air)	QVCP	Quality Video Composition Processor
		RAM	Random Access Memory
		RGB	Red, Green, and Blue. The primary color signals for TV. By mixing levels of R, G, and B, all colors (Y/C) are reproduced.
NVM	Non-Volatile Memory: IC containing TV related data such as alignments	RC	Remote Control
		RC5 / RC6	Signal protocol from the remote control receiver
O/C	Open Circuit	RESET	RESET signal
OSD	On Screen Display	ROM	Read Only Memory
OAD	Over the Air Download. Method of software upgrade via RF transmission. Upgrade software is broadcasted in TS with TV channels.	RSDS	Reduced Swing Differential Signalling data interface
		R-TXT	Red Teletext
OTC	On screen display Teletext and Control; also called Artistic (SAA5800)	SAM	Service Alignment Mode
		S/C	Short Circuit
P50	Project 50: communication protocol between TV and peripherals	SCART	Syndicat des Constructeurs d'Appareils Radiorécepteurs et Téléviseurs
PAL	Phase Alternating Line. Color system mainly used in West Europe (colour carrier = 4.433619 MHz) and South America (colour carrier PAL M = 3.575612 MHz and PAL N = 3.582056 MHz)	SCL	Serial Clock I ² C
		SCL-F	CLock Signal on Fast I ² C bus
PCB	Printed Circuit Board (same as "PWB")	SD	Standard Definition
PCM	Pulse Code Modulation	SDA	Serial Data I ² C
PDP	Plasma Display Panel	SDA-F	DAta Signal on Fast I ² C bus
PFC	Power Factor Corrector (or Pre-conditioner)	SDI	Serial Digital Interface, see "ITU-656"
PIP	Picture In Picture	SDRAM	Synchronous DRAM
PLL	Phase Locked Loop. Used for e.g. FST tuning systems. The customer can give directly the desired frequency	SECAM	SEequence Couleur Avec Mémoire. Colour system mainly used in France and East Europe. Colour carriers = 4.406250 MHz and 4.250000 MHz
POD	Point Of Deployment: a removable CAM module, implementing the CA system for a host (e.g. a TV-set)	SIF	Sound Intermediate Frequency
		SMPS	Switched Mode Power Supply
POR	Power On Reset, signal to reset the uP	SoC	System on Chip
PSDL	Power Supply for Direct view LED backlight with 2D-dimming	SOG	Sync On Green
PSL	Power Supply with integrated LED drivers	SOPS	Self Oscillating Power Supply
PSLS	Power Supply with integrated LED drivers with added Scanning functionality	SPI	Serial Peripheral Interface bus; a 4-wire synchronous serial data link standard
PTC	Positive Temperature Coefficient, non-linear resistor	S/PDIF	Sony Philips Digital InterFace
		SRAM	Static RAM
PWB	Printed Wiring Board (same as "PCB")	SRP	Service Reference Protocol
		SSB	Small Signal Board
		SSC	Spread Spectrum Clocking, used to reduce the effects of EMI
		STB	Set Top Box
		STBY	STand-BY
		SVGA	800 × 600 (4:3)
		SVHS	Super Video Home System

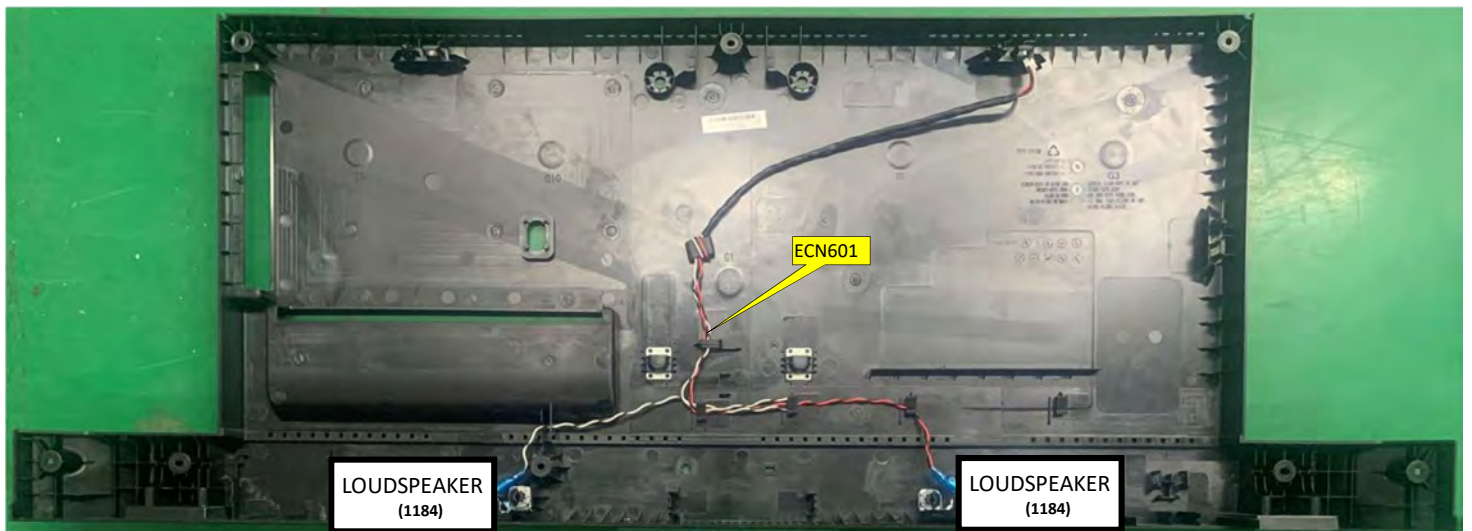
SW	Software	VGA	640 × 480 (4:3)
SWAN	Spatial temporal Weighted Averaging Noise reduction	VL	Variable Level out: processed audio output toward external amplifier
SXGA	1280 × 1024	VSB	Vestigial Side Band; modulation method
TFT	Thin Film Transistor	WYSIWYR	What You See Is What You Record: record selection that follows main picture and sound
THD	Total Harmonic Distortion		
TMD5	Transmission Minimized Differential Signalling	WXGA	1280 × 768 (15:9)
TS	Transport Stream	XTAL	Quartz crystal
TXT	TeleteXT	XGA	1024 × 768 (4:3)
TXT-DW	Dual Window with TeleteXT	Y	Luminance signal
UI	User Interface	Y/C	Luminance (Y) and Chrominance (C) signal
uP	Microprocessor	YPbPr	Component video. Luminance and scaled color difference signals (B-Y and R-Y)
UXGA	1600 × 1200 (4:3)		
V	V-sync to the module	YUV	Component video
VESA	Video Electronics Standards Association		

3.1 Cable Dressing





Cable dressing (43" 6918 series)



Back cover overview (43" 6918 series)

3.2 Assembly/Panel Removal

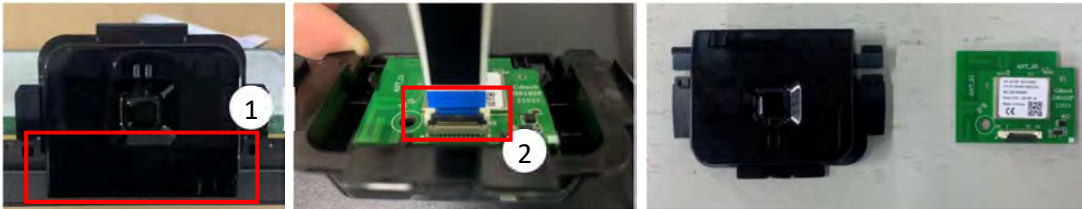
3.2.1 IR board Control Unit

1. Unplug the connector from the SSB.

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

2. Remove from clip [1] and connector [2] from the IR board control unit.
3. Remove the IR lens, IR board from the DECO_REAR_COVER.

When defective, replace the whole unit.



3.2.2 Stand removal

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

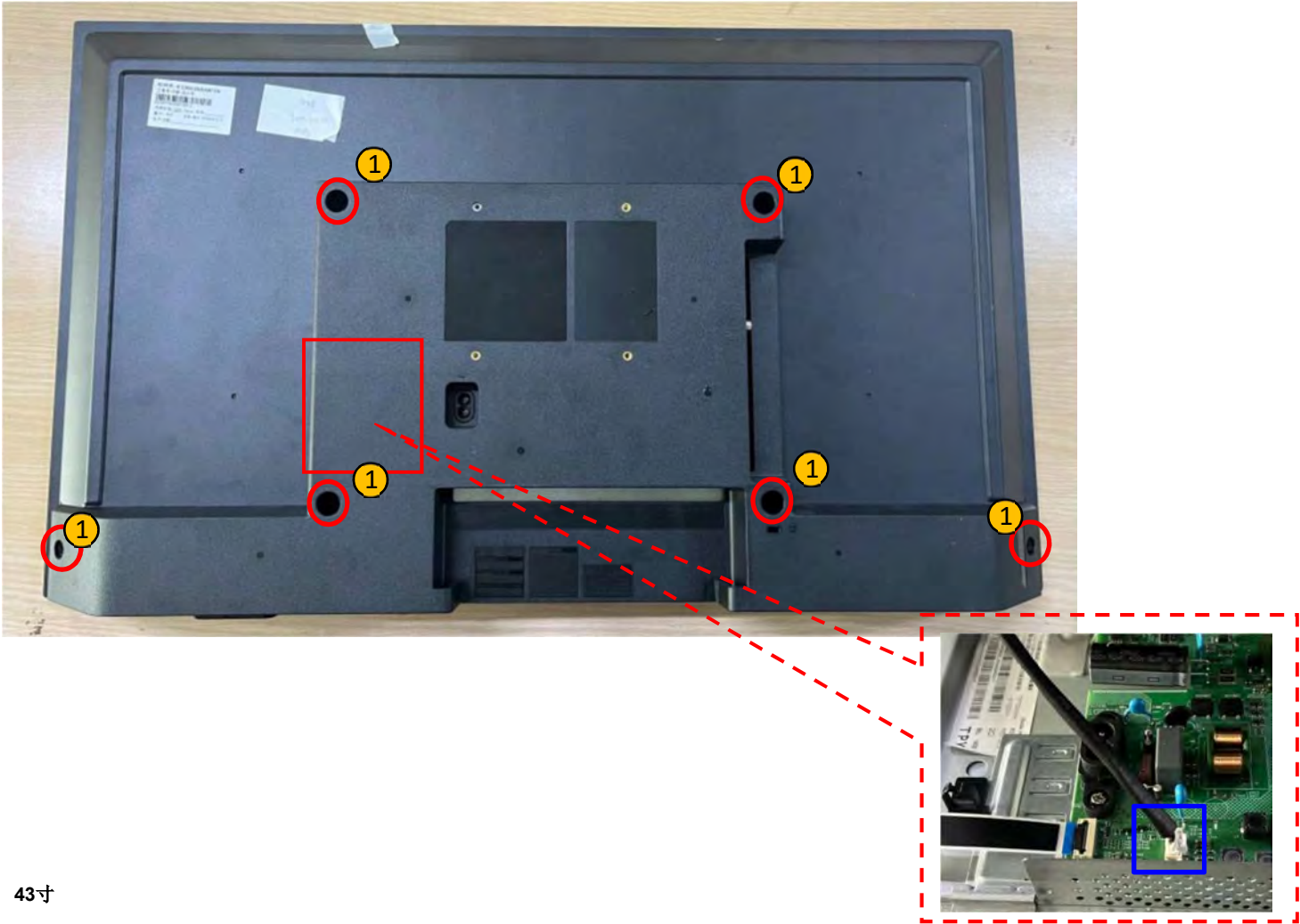


3.2.3 Rear Cover

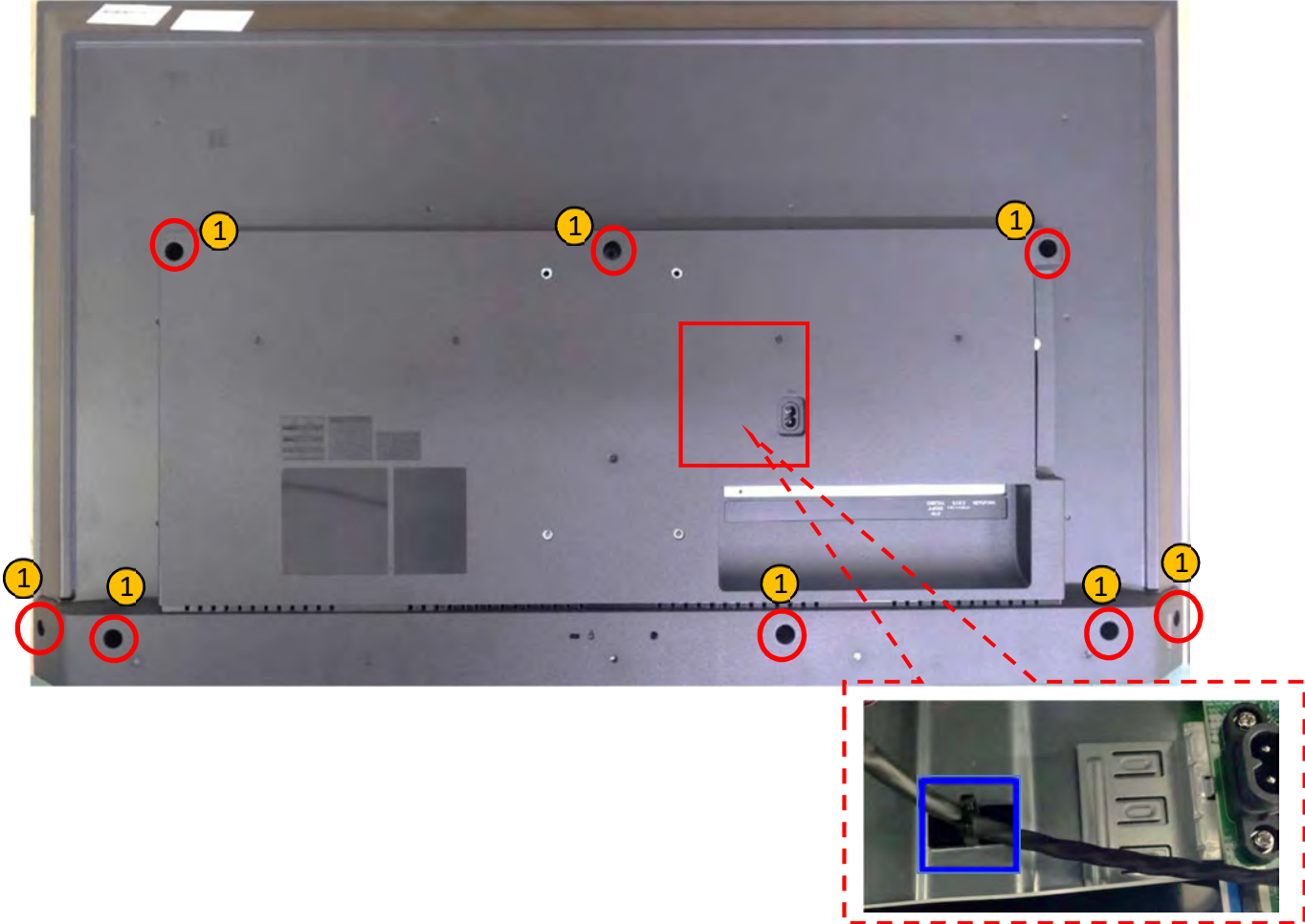
Warning: Disconnect the mains power cord before removing the rear cover.

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

32寸



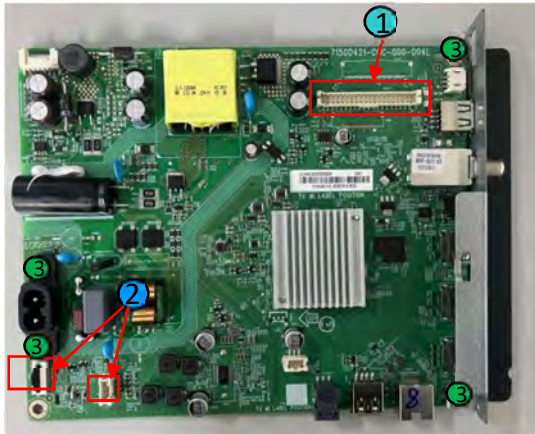
43寸



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 LVDS connector that connect with the SSB[1].
Caution: be careful, as these are very fragile connectors!
2. Unplug all other connectors [2] .
3. Remove all the fixation screws from the SSB [3].
4. The SSB can now be shifted from side connector cover, then lifted and taken out of the I/O bracket.



3.2.5 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 Speakers

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

When defective, replace the both units.

3.2.7 WIFI module

1. Unplug the connector from the SSB.
2. Remove fixation screw that secure the WIFI module.

When defective, replace the whole unit.

3.2.8 LCD Panel

1. Remove the SSB as described earlier.
2. Remove the PSU as described earlier.
3. Remove the stand bracket as described earlier.
4. Remove the IR/LED as described earlier.
5. Remove the fixations screws that fix the metal clamps to the front bezel. Take out those clamps.
6. Remove all other metal parts not belonging to the panel.
7. 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:

- Factory Mode.
- Customer Service Mode (CSM).

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 Factory mode:

Purpose

- To perform extended alignments.

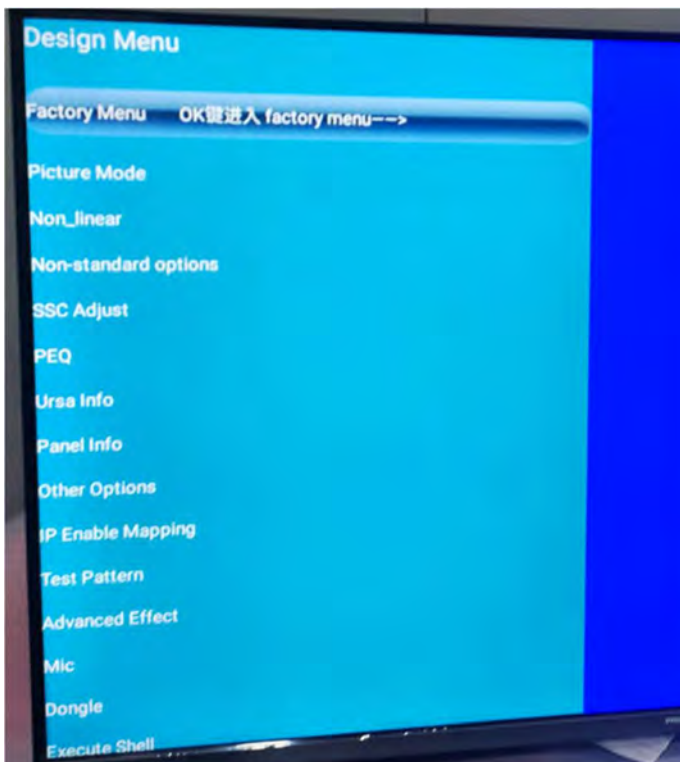
How to Activate the Factory mode

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

- 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.

4.3 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!

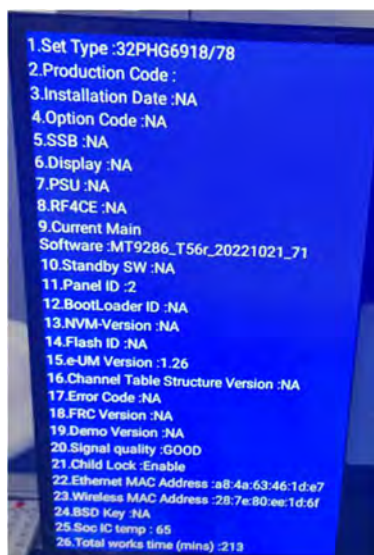
How to Navigate

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.



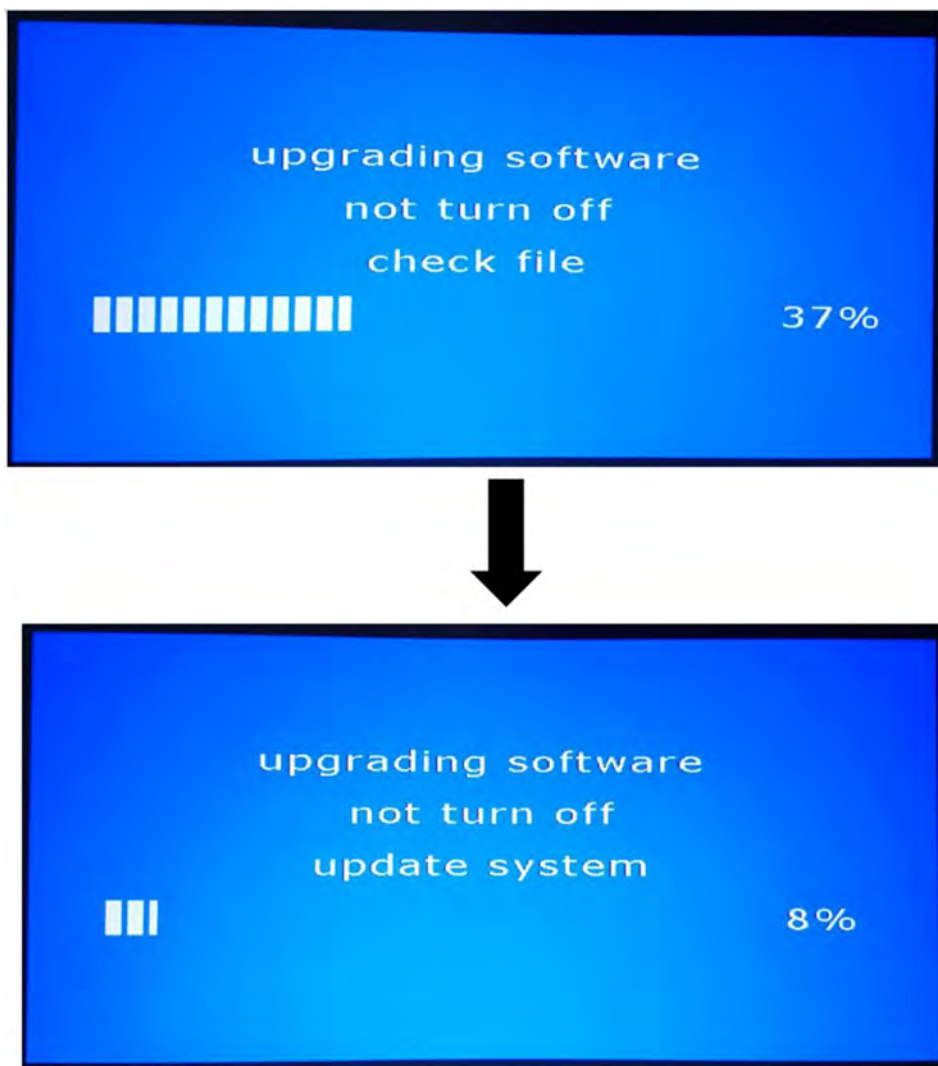
5. Software Upgrading

5.1.1. The following update is for .pkg file.

1. Copy "upgrade_image_no_tvcertificate_project_id_eu_user.pkg" or "upgrade_image_no_tvcertificate_project_id_as_user.pkg" to USB root directory
2. Rename "**upgrade_image_no_tvcertificate_project_id.pkg**"
3. Prepare a USB memory (File format: FLAT, Size: 1G~8G).
4. Copy the software to USB flash disk (root directory).
5. Insert USB to TV USB port1



6. AC Off / On
7. TV will start upgrade procedure, wait for complementingy. Window jumps out as below:



8. TV will auto reboot after complemented firmware upgrade.
9. Check the current software version after upgradING

Select Dashboard icon ◇ setting ◇ System ◇ About

About

Android TV OS security patch level

March 1, 2023

Kernel version

4.19.116++

#1 Thu Mar 9 23:26:43 CST 2023

Android TV OS build

RTM5.220609.298

Netflix ESN

NFANDROID2-PRV-REFPLUSW1EODM2KT56GTV-TPV==
PHILIPS=GOOGLE=TV=TA6=LT-26849-10FE6E43F39490
9C7E015591538CE72DFF09B813C1142162EC5086230
4B70EC0

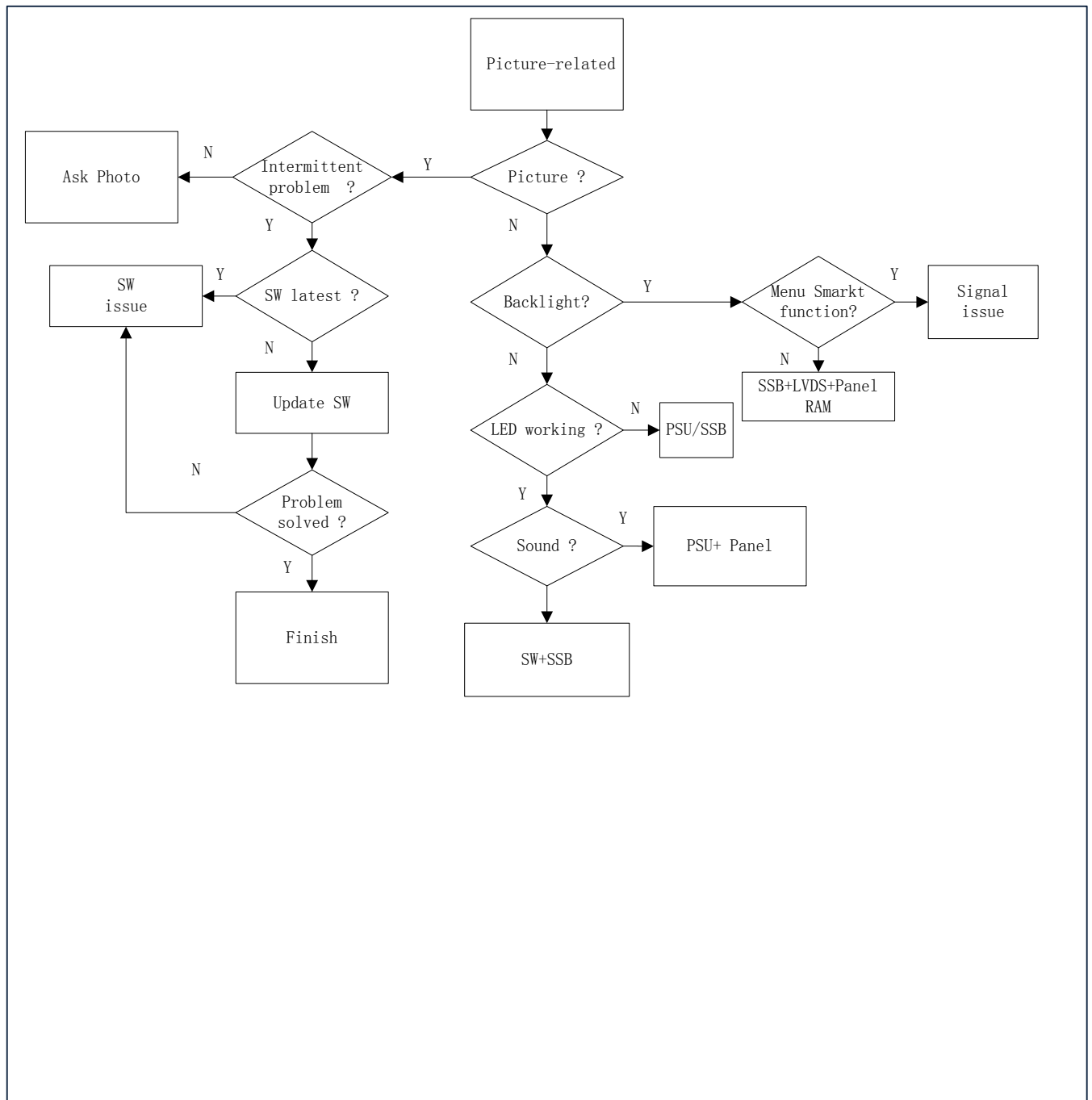
Software Version

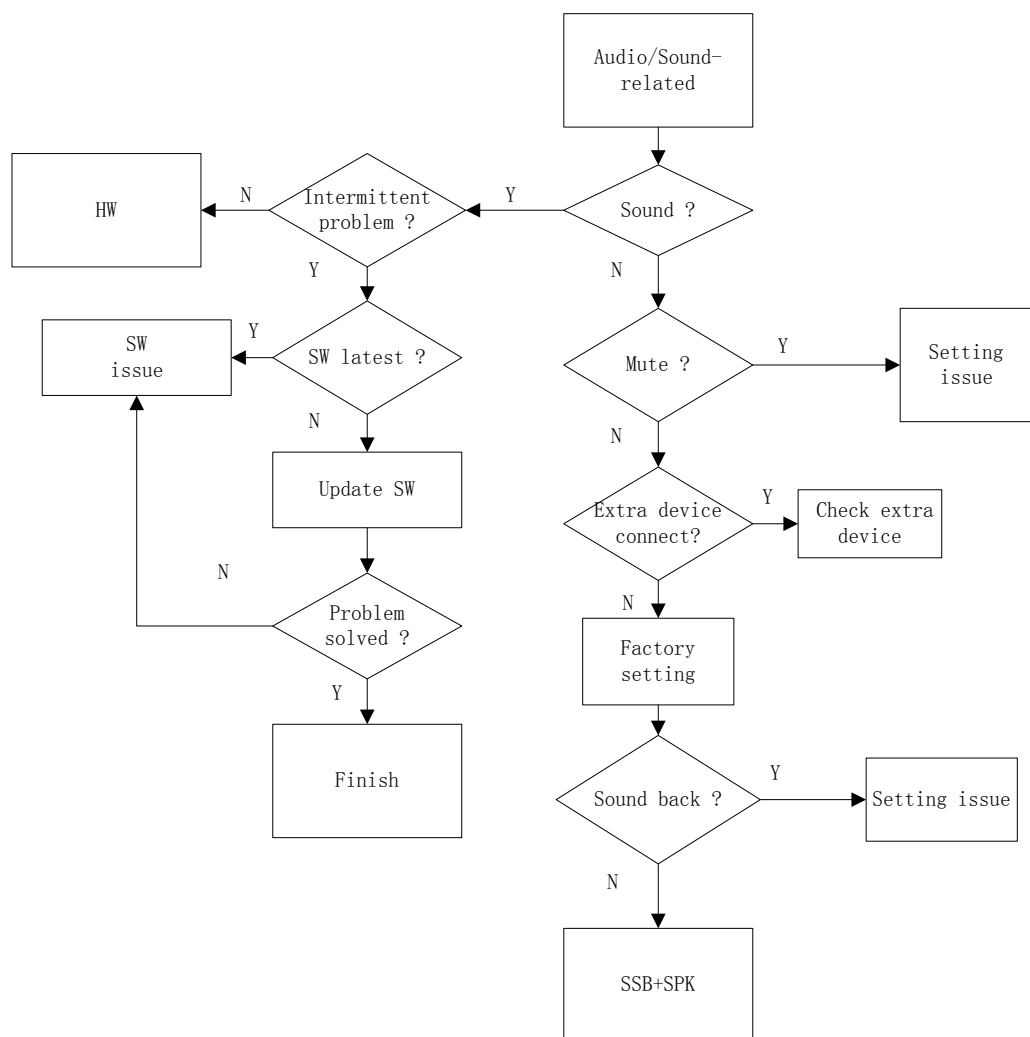
MT9286_T56r_20230309_153

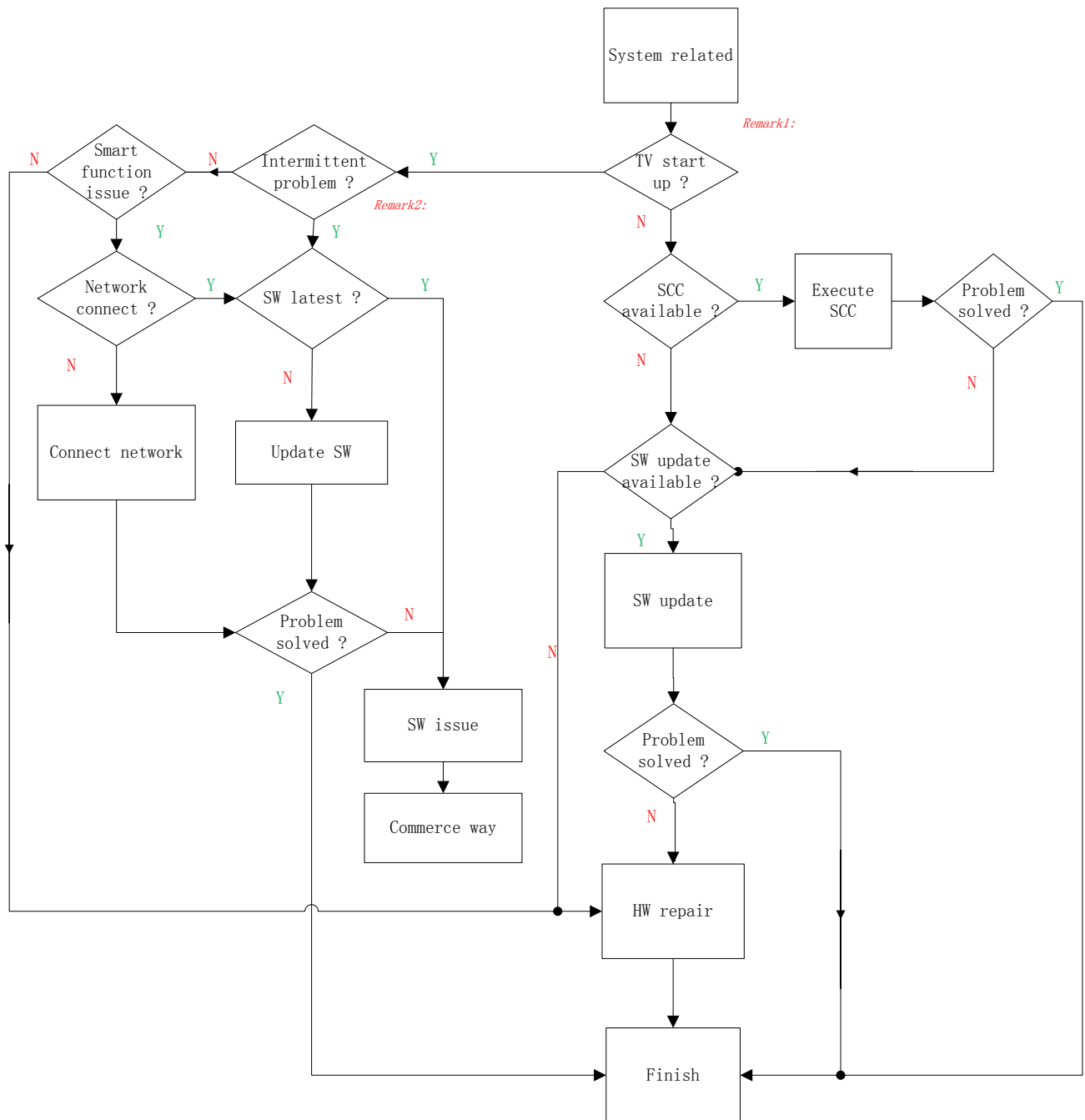
TPM236L

43PFG6918/78

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







Remark1 : What is System related issue ?

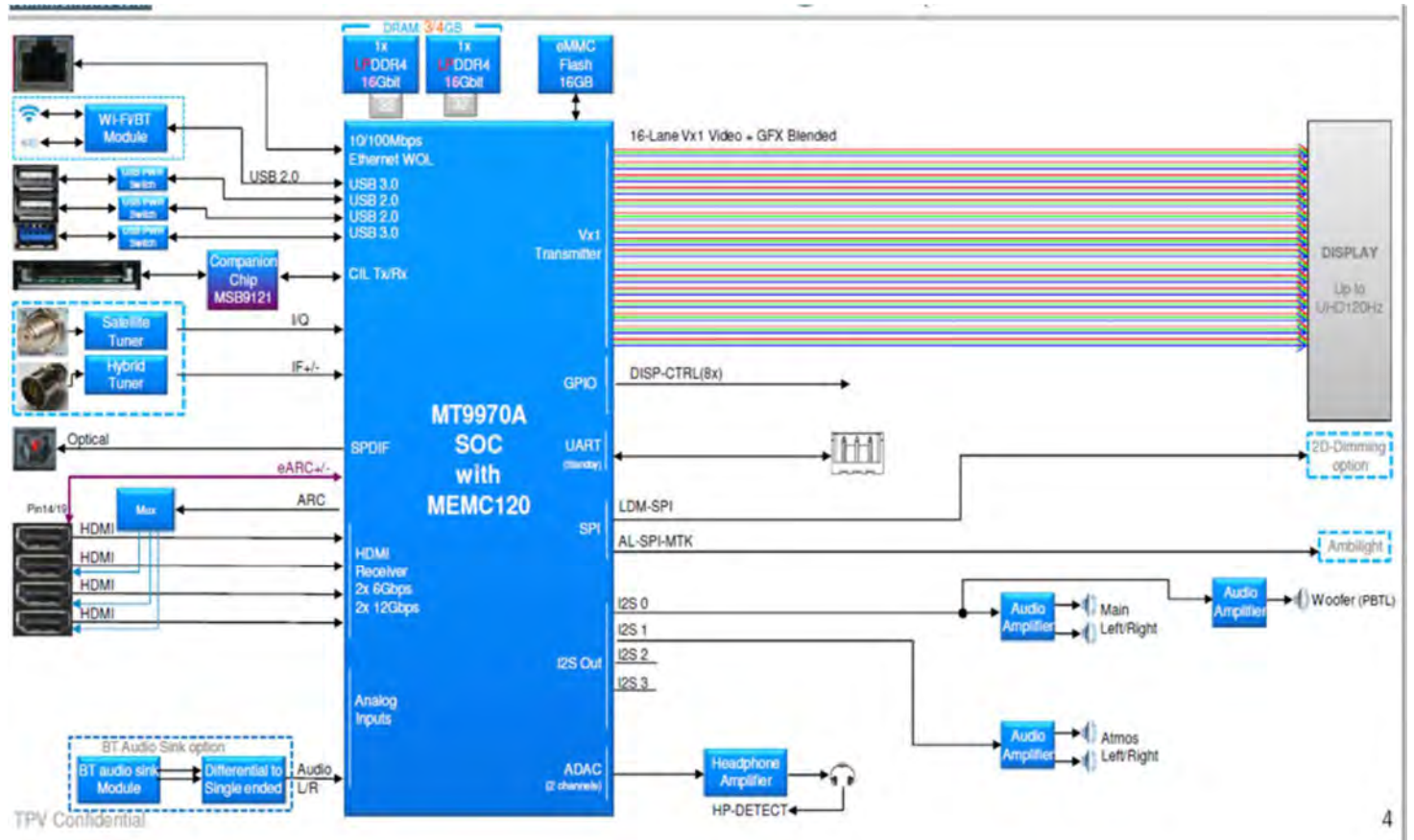
1. Permanent reboots
2. Intermittent reboots
3. No function, no standby LED (set dead)
4. No function, blinking LED
5. Set freezes, intermittently
6. Slow response to user interaction
7. Switches ON by itself
8. Switches Off by itself
9. Stuck in standby mode / unable to start up
10. Stuck on PHILIPS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

Remark2 : How to judge intermittent issue ?

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

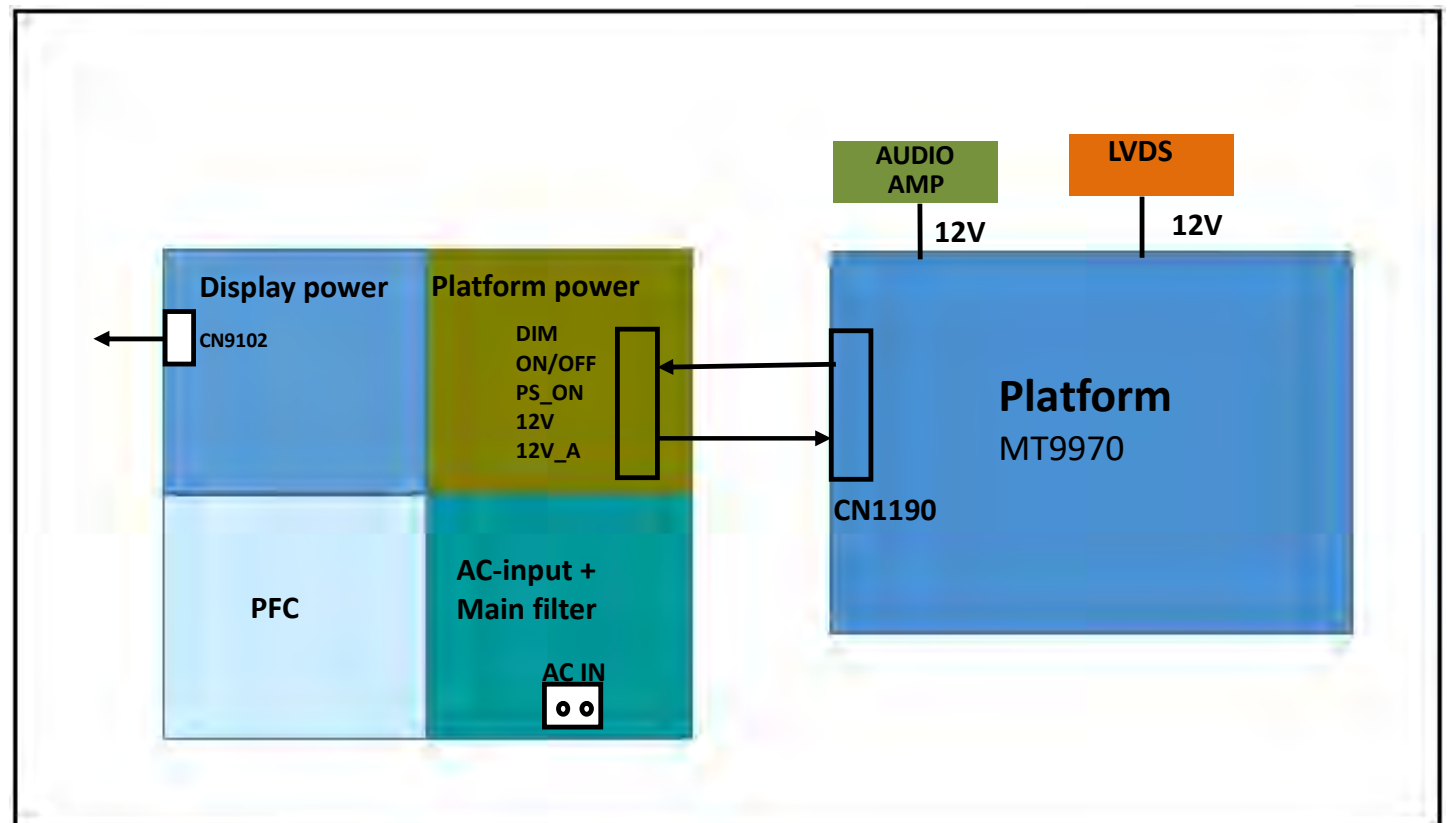
7. Electrical Diagram

7.1 Block diagram



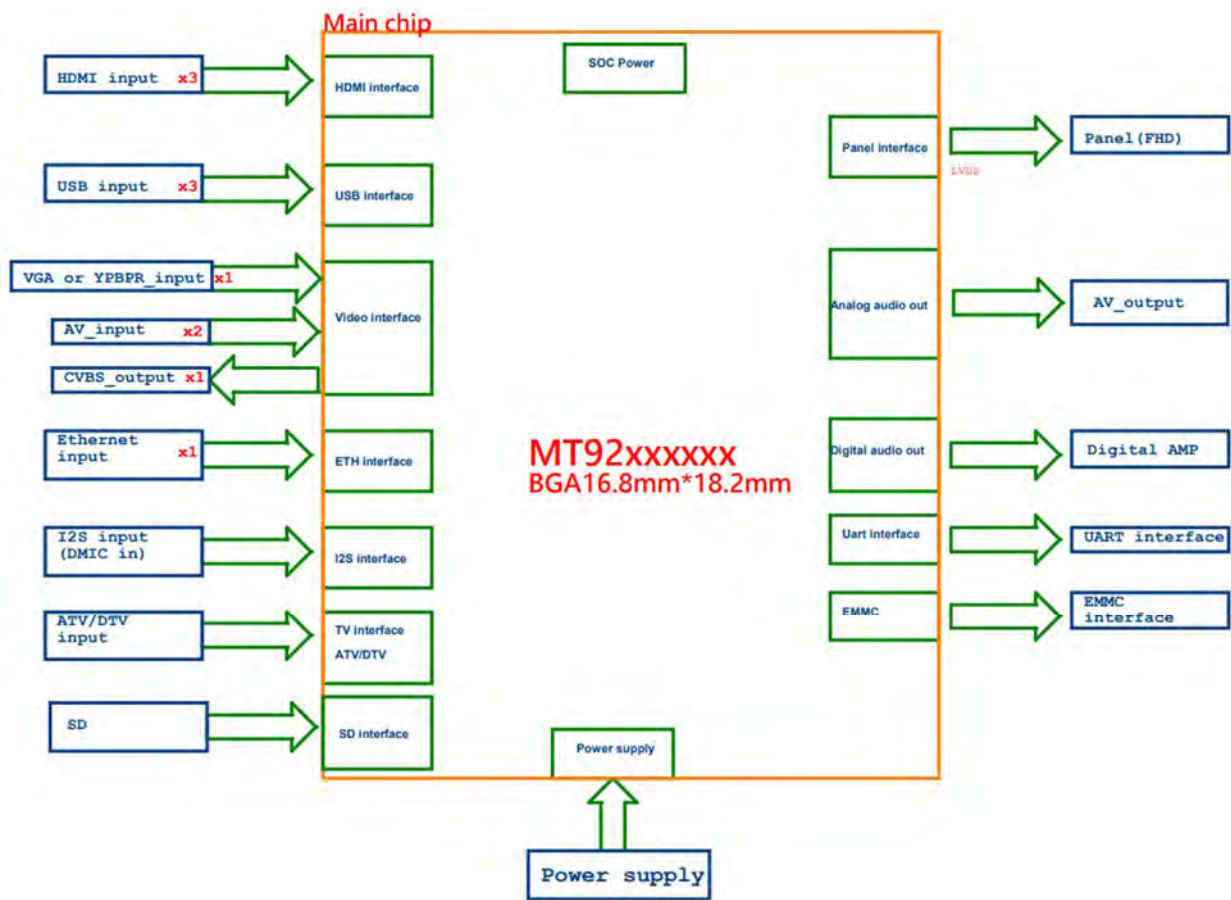
7.2 Power Supply

Power architecture of this platform.



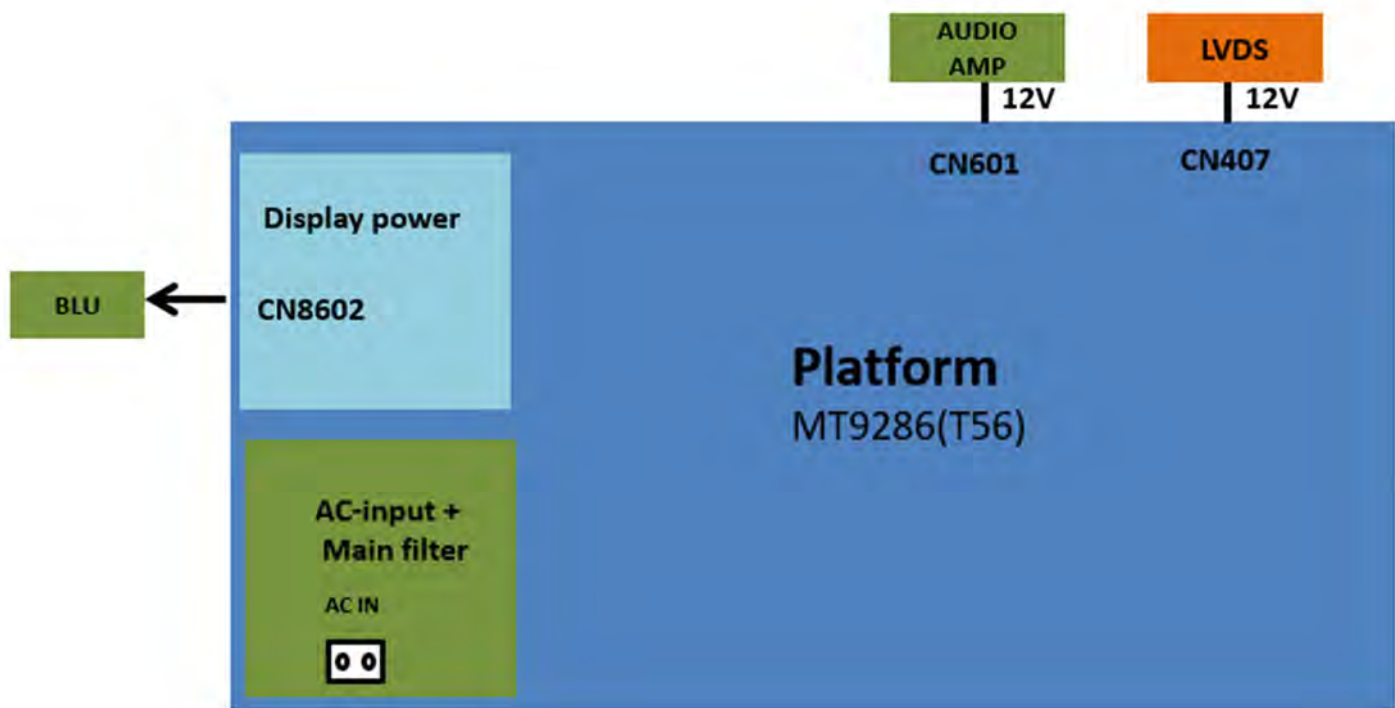
7.Electrical Diagram

7.1 Block diagram

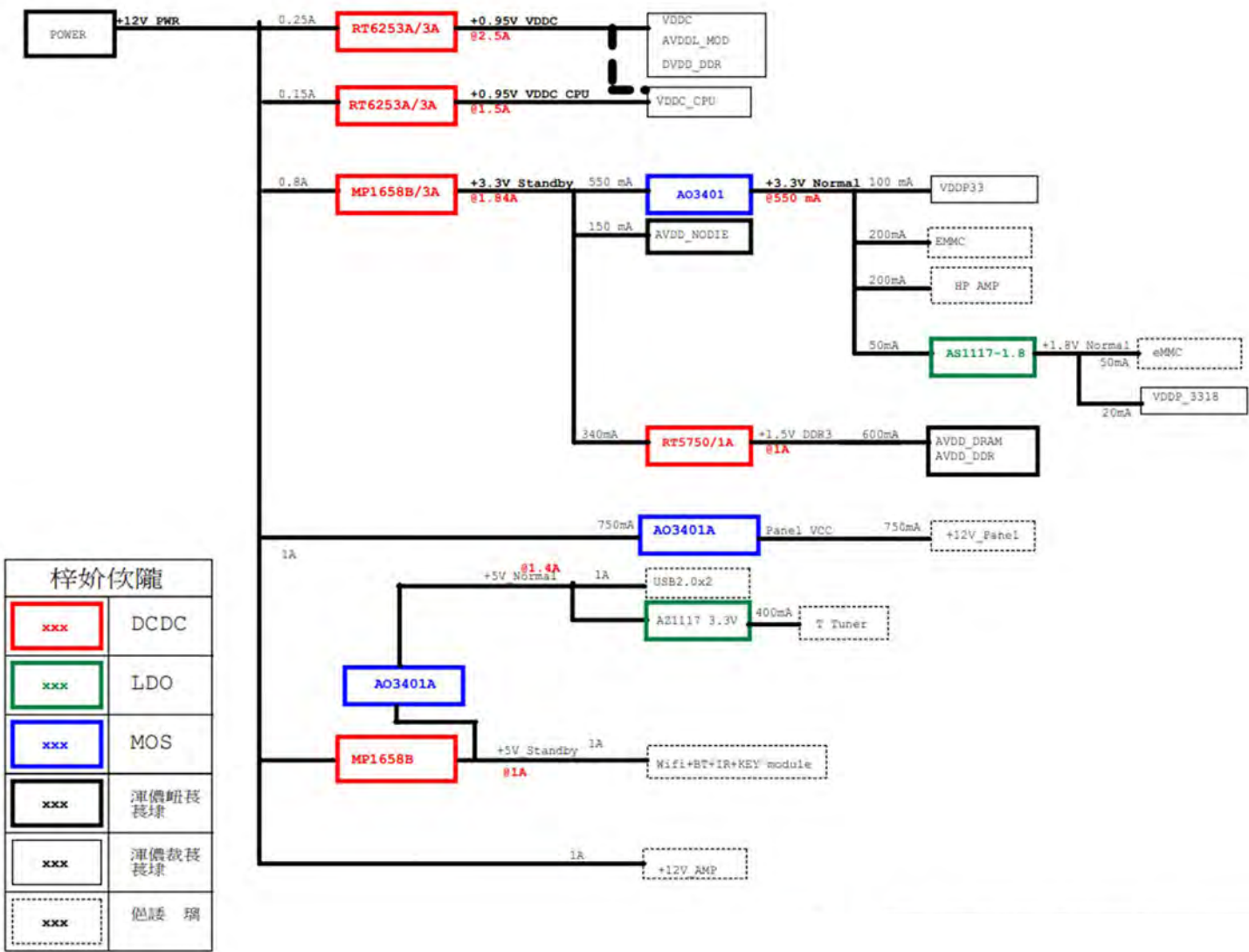


7.2 Power Supply

Power architecture of this platform.

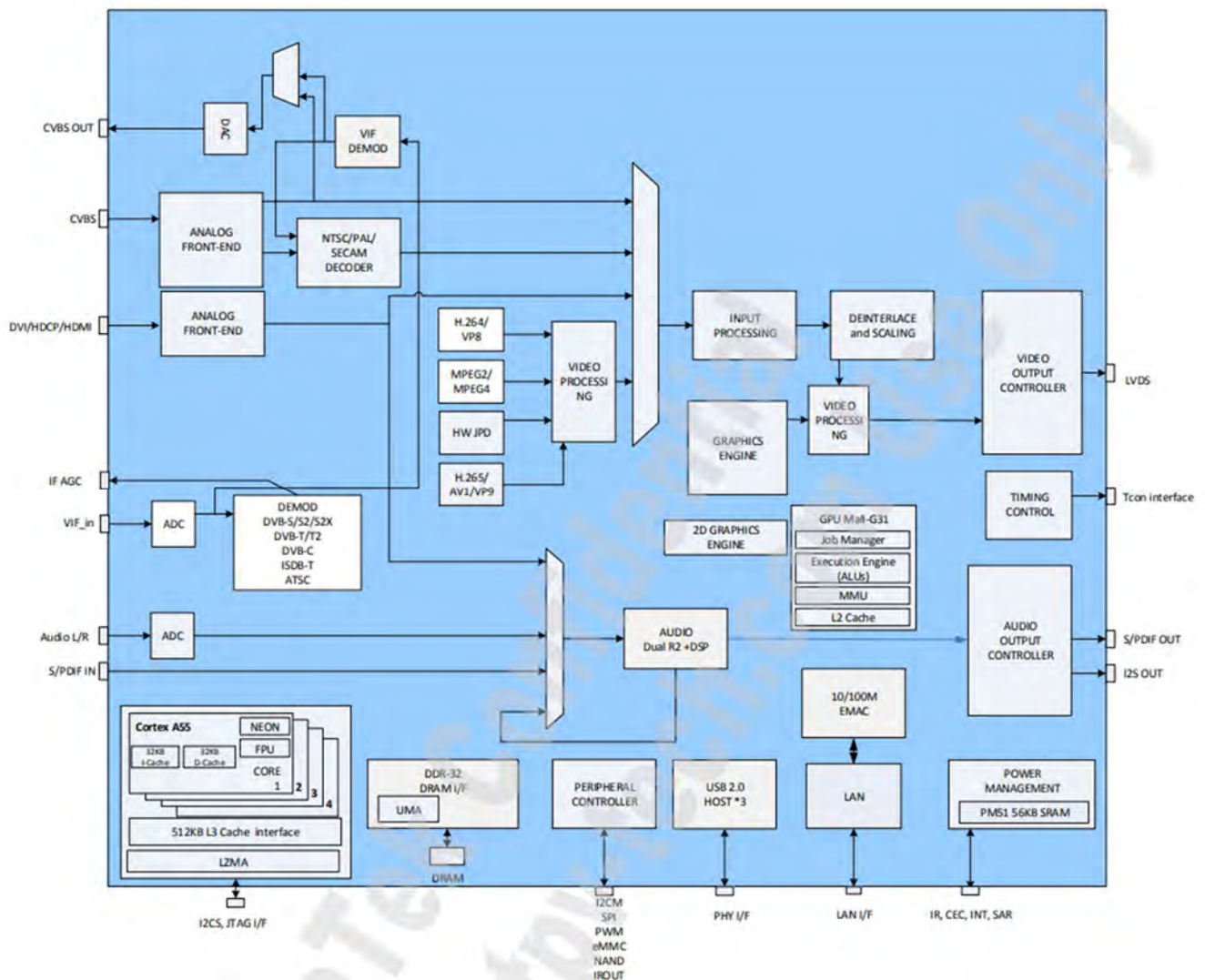


7.3 Power tree



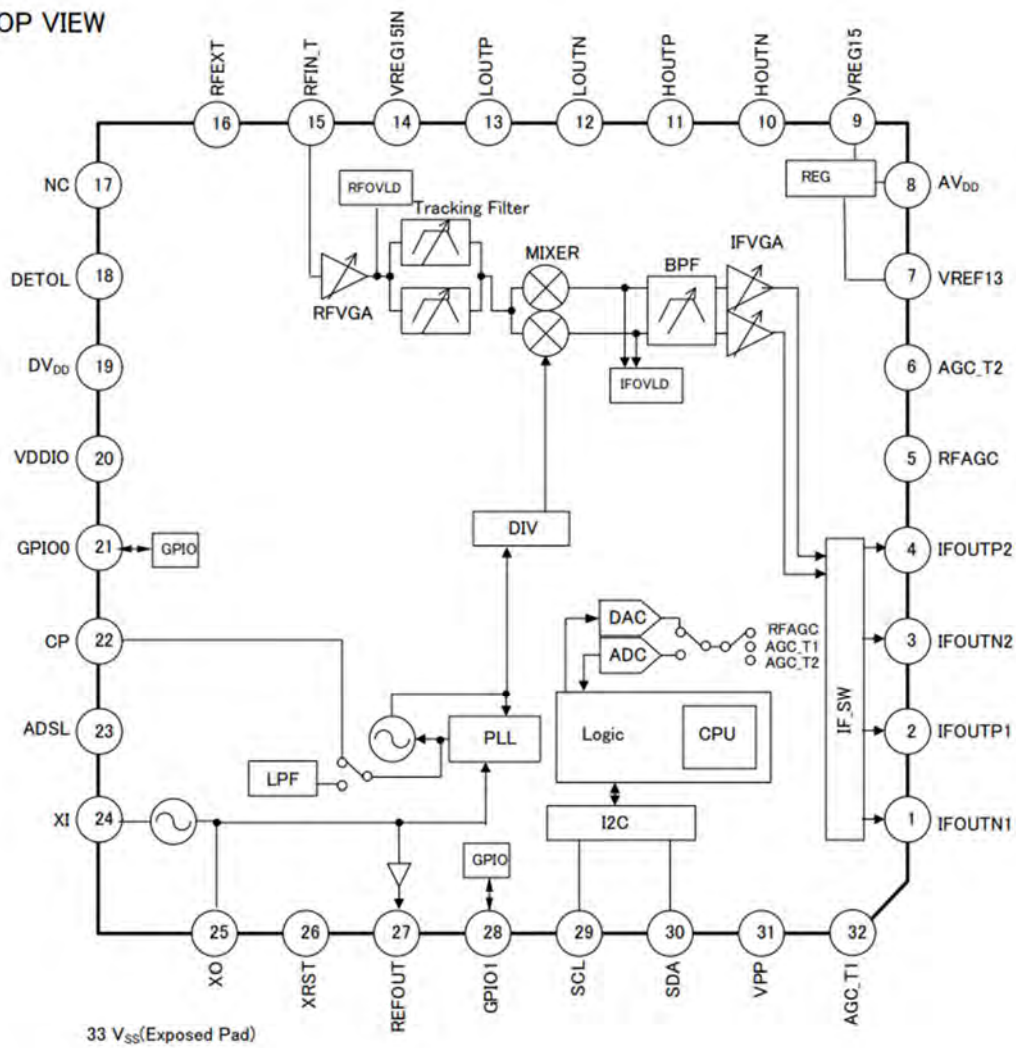
8. IC Data Sheets

8.1 MT9286HAATCB (IC U401--Scaler)

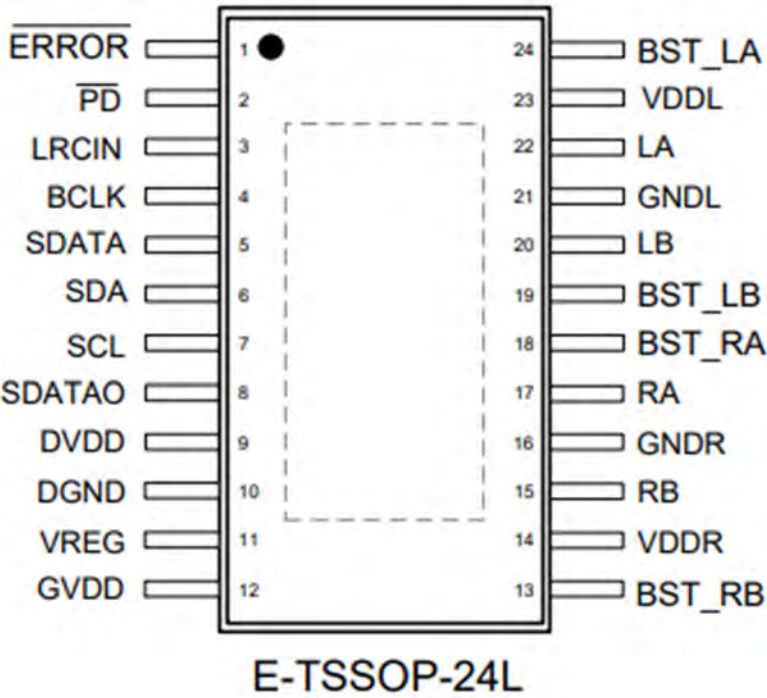
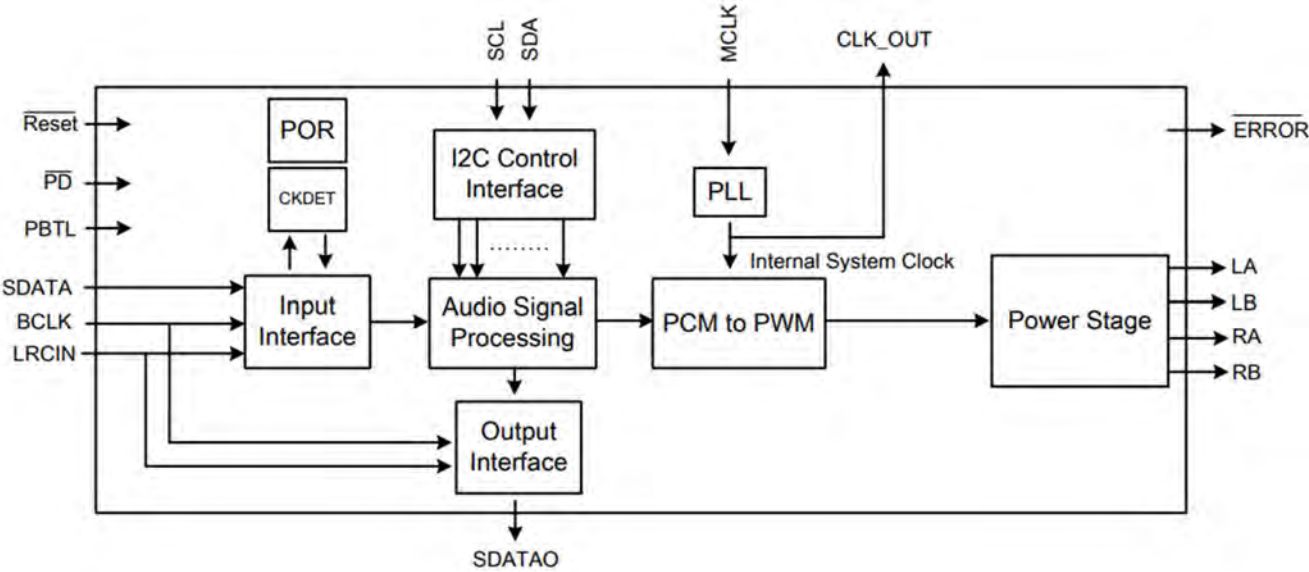


8.2 CXD6866ER DVB-T/C/T2 (IC U112--Tuner)

TOP VIEW



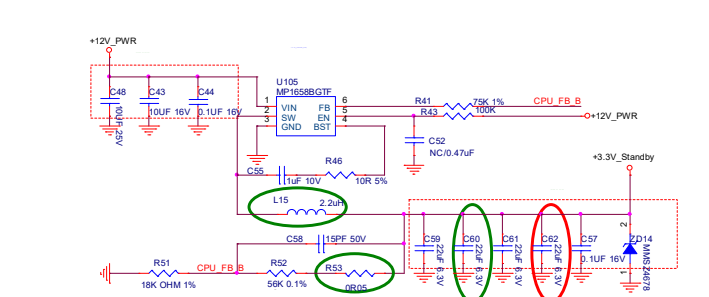
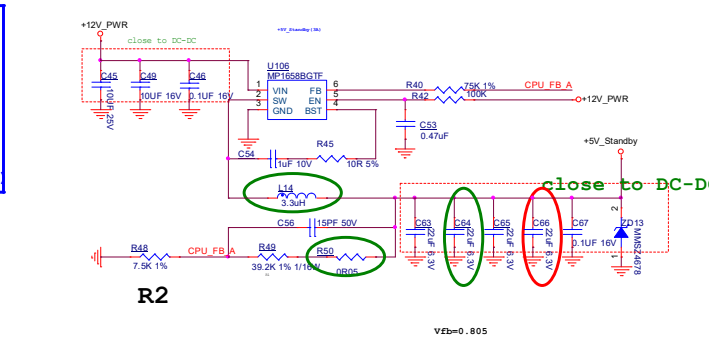
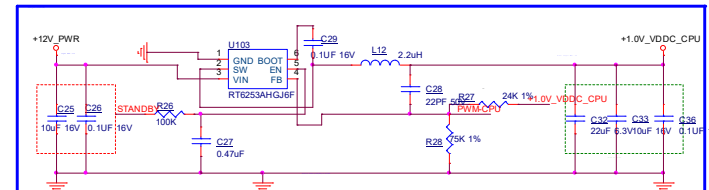
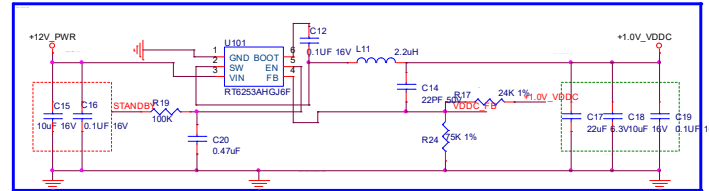
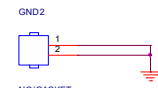
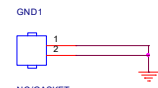
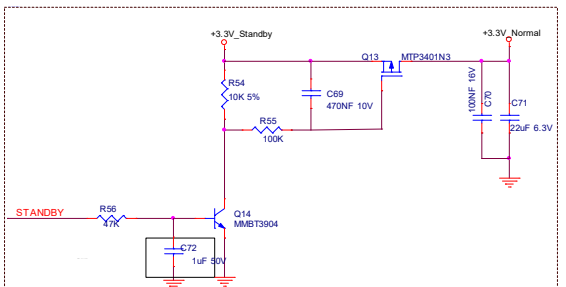
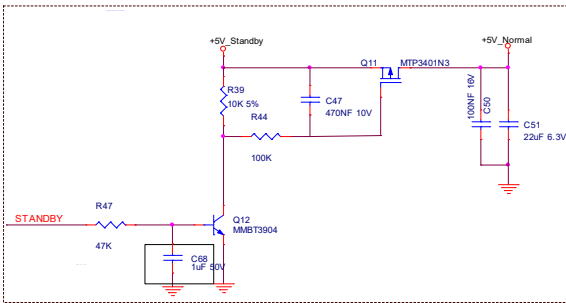
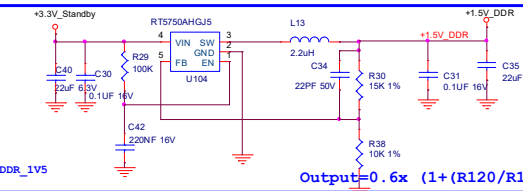
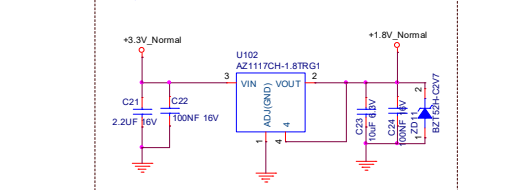
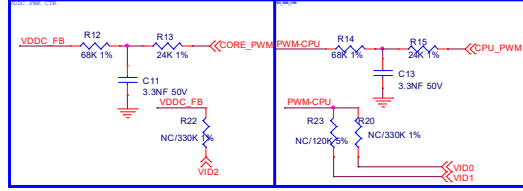
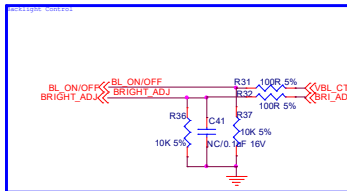
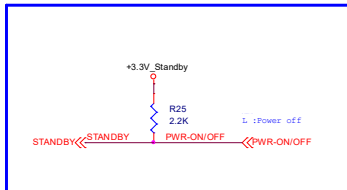
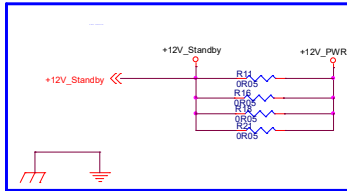
8.3 AD82088-QG24NRR E-TSSOP-24 (IC U601--Audio)



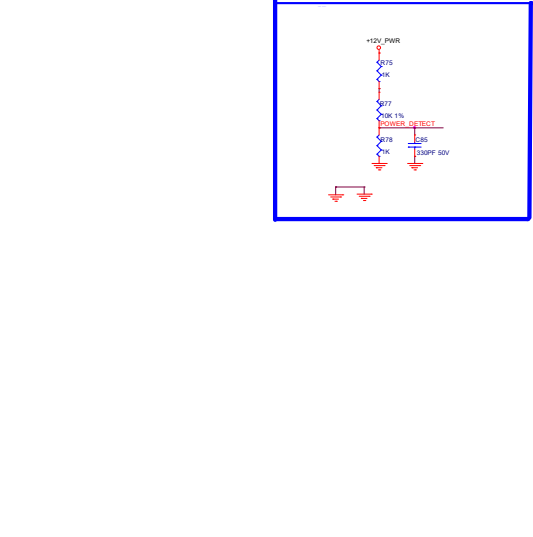
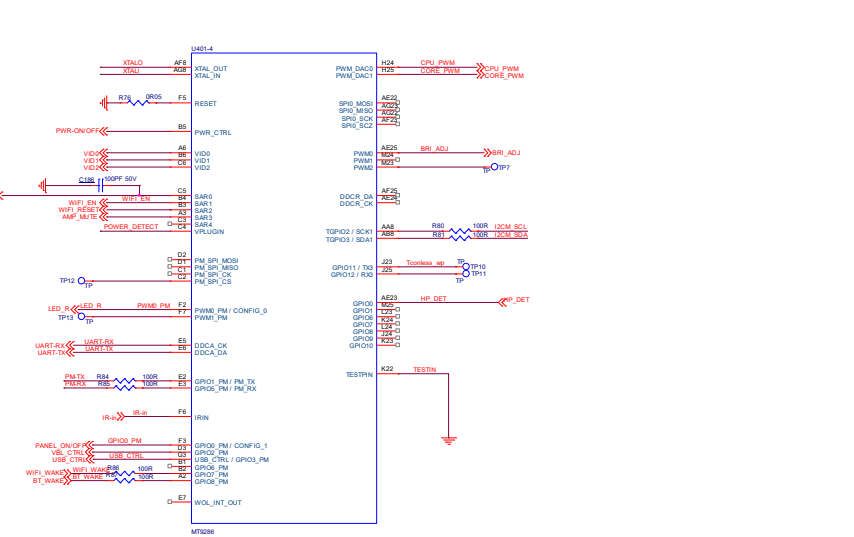
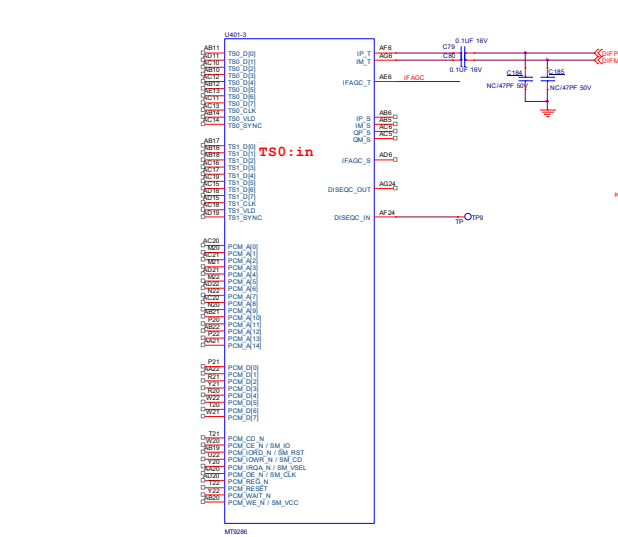
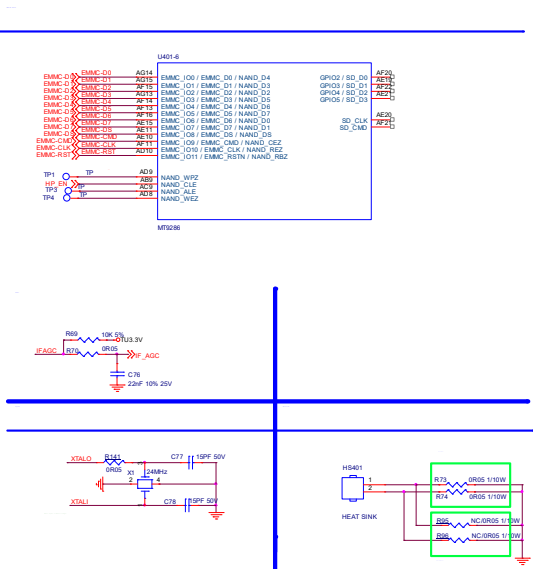
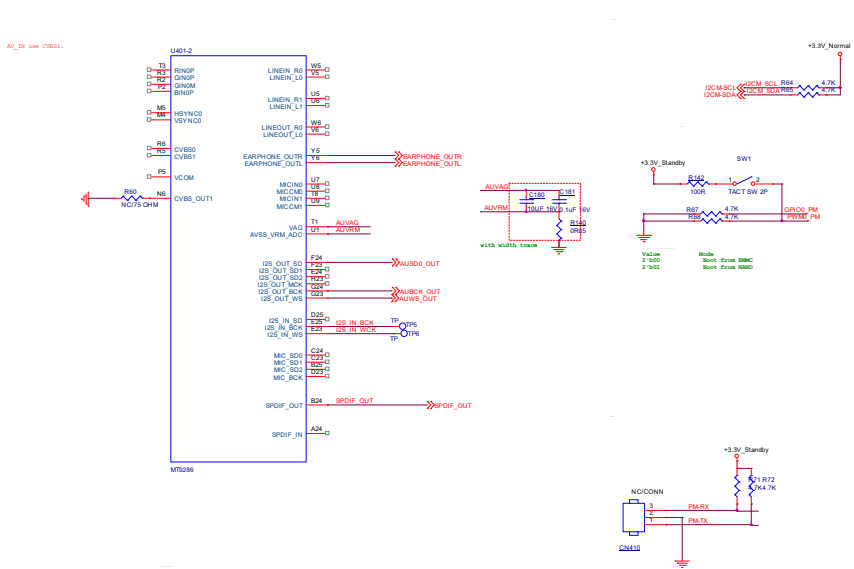
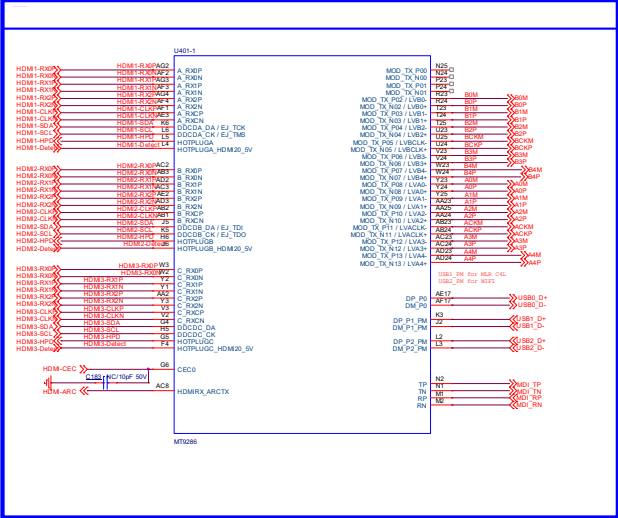
9.Circuit Diagrams

9.1 B 715GD421C SSB

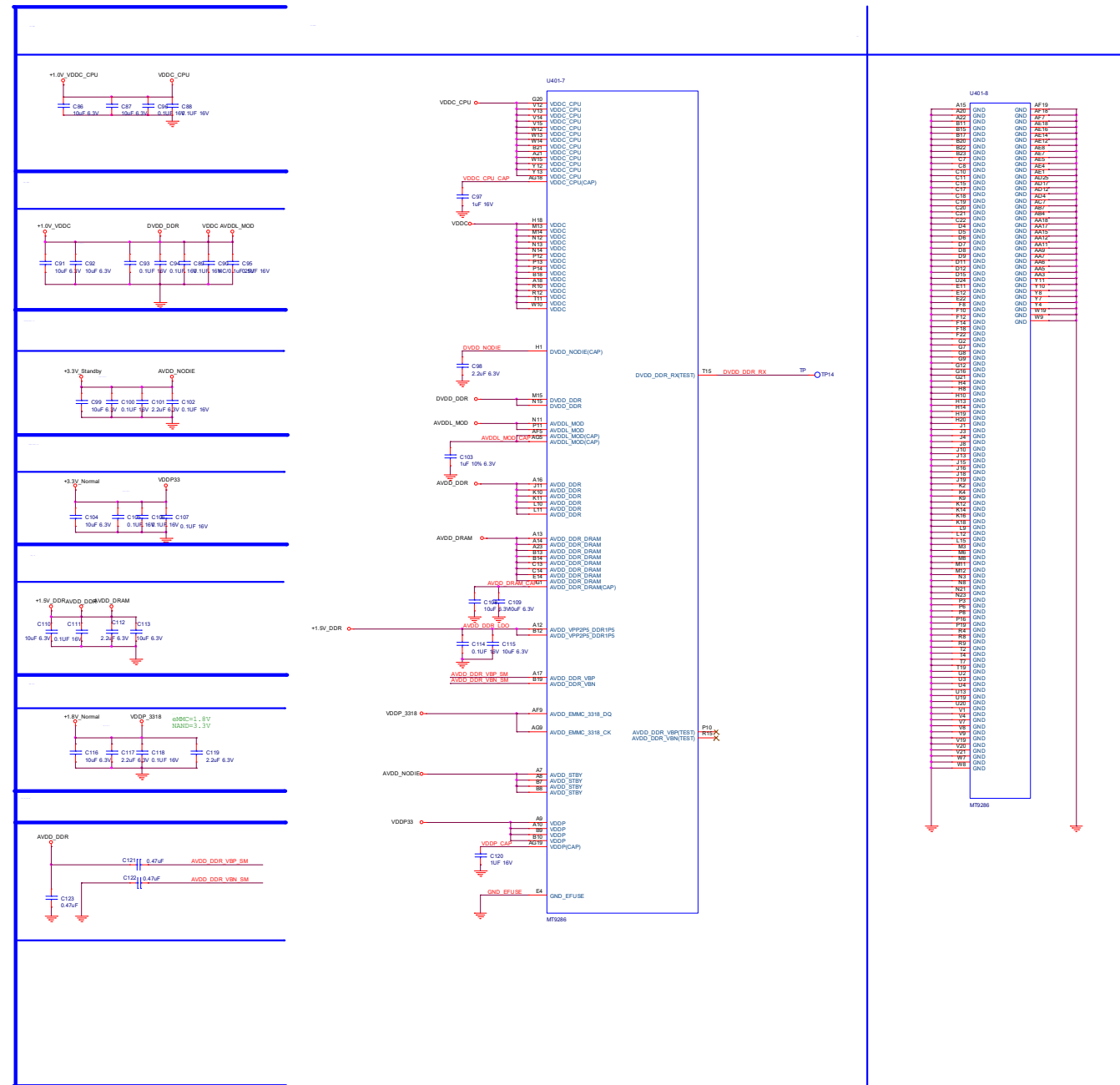
9-1-1 System POWER



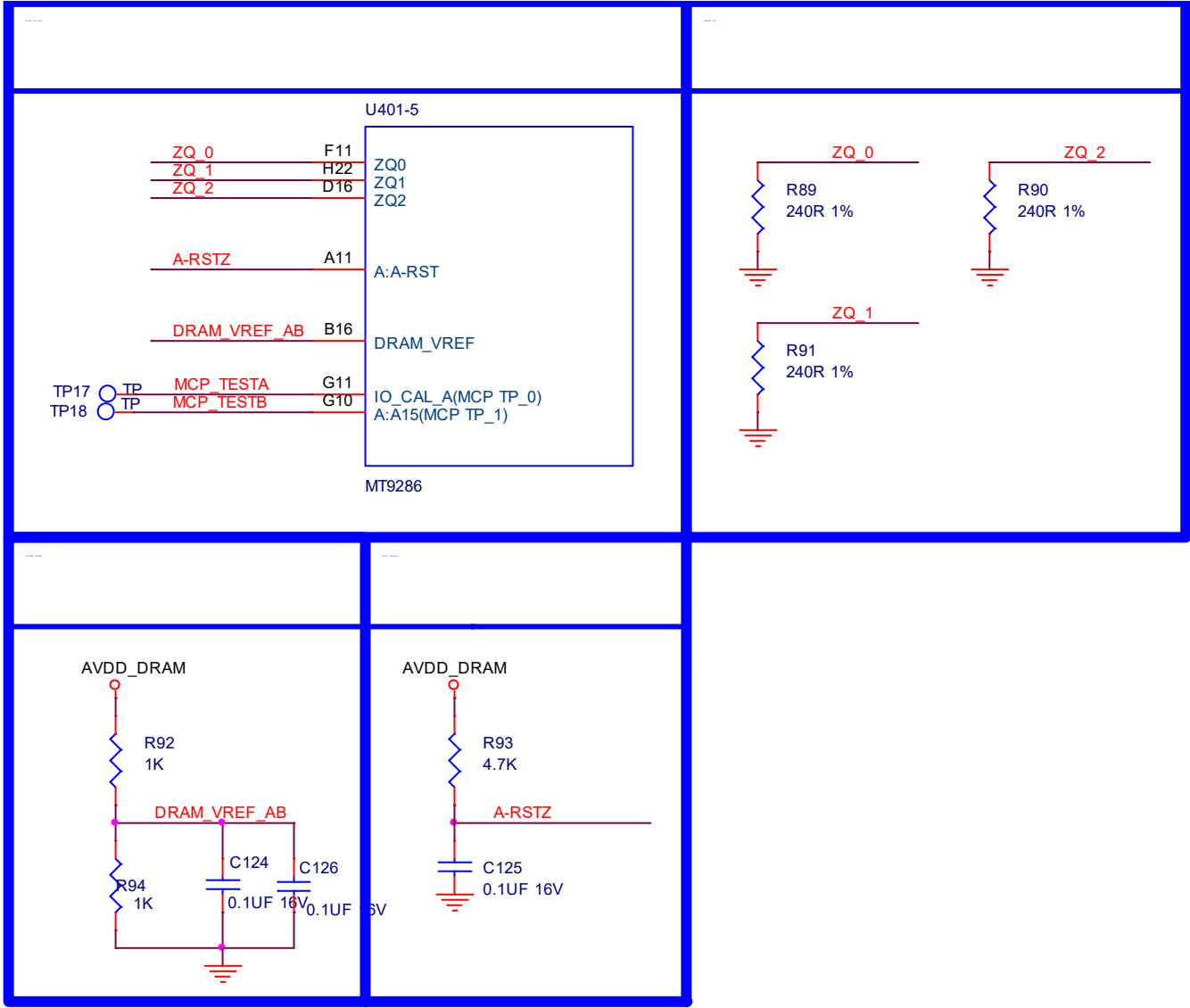
9-1-2 SOC MT92xxxxxx



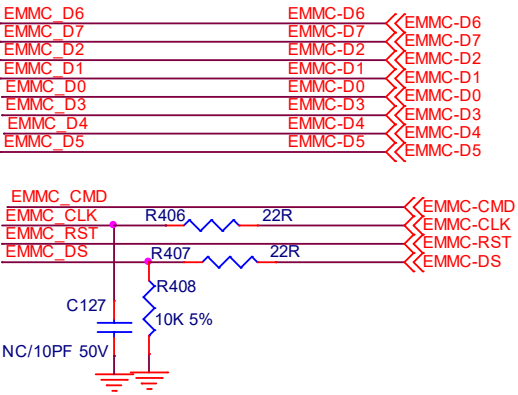
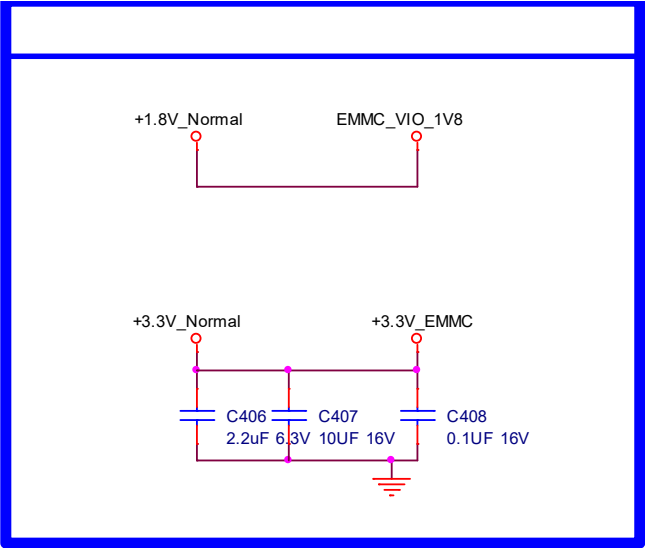
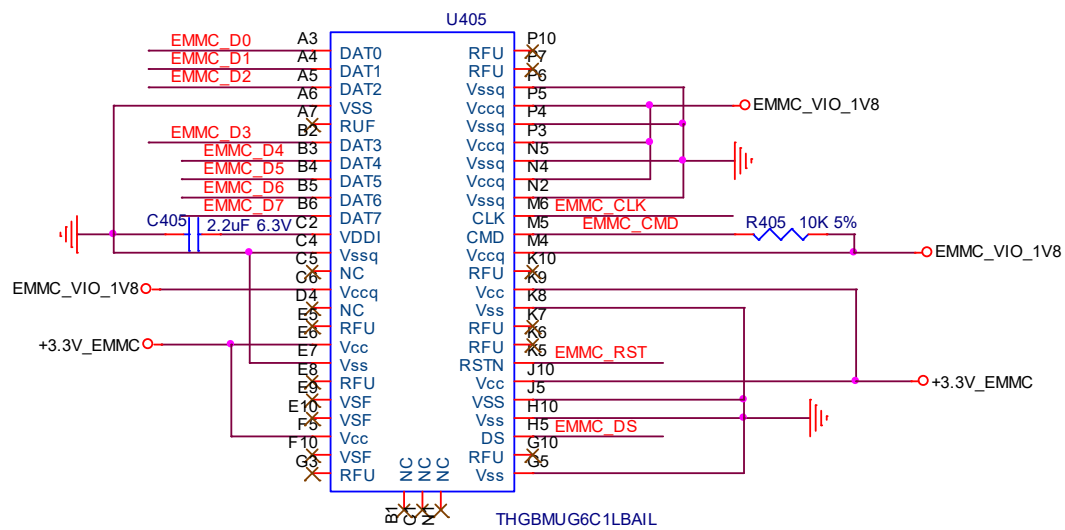
9-1-3 SOC_POWER



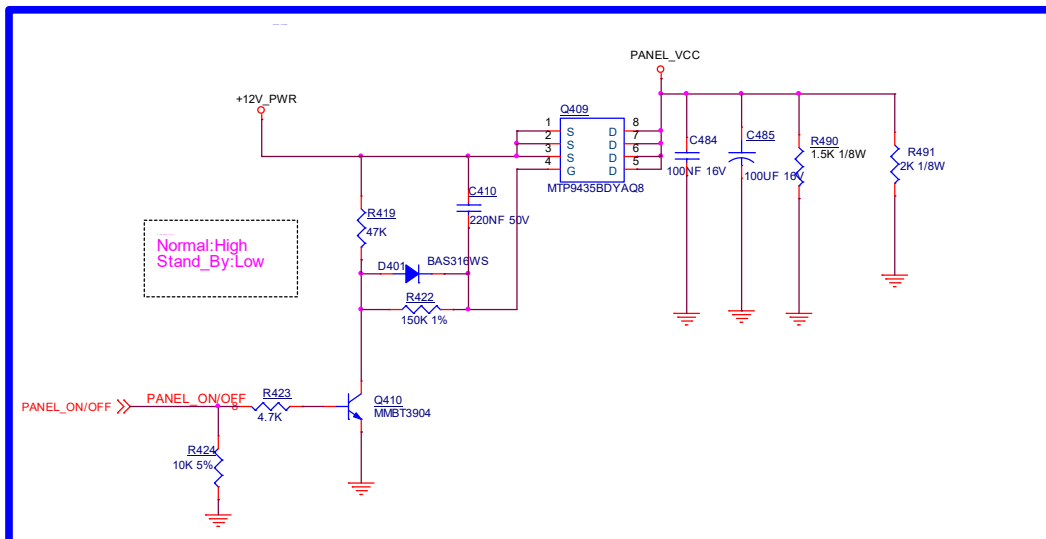
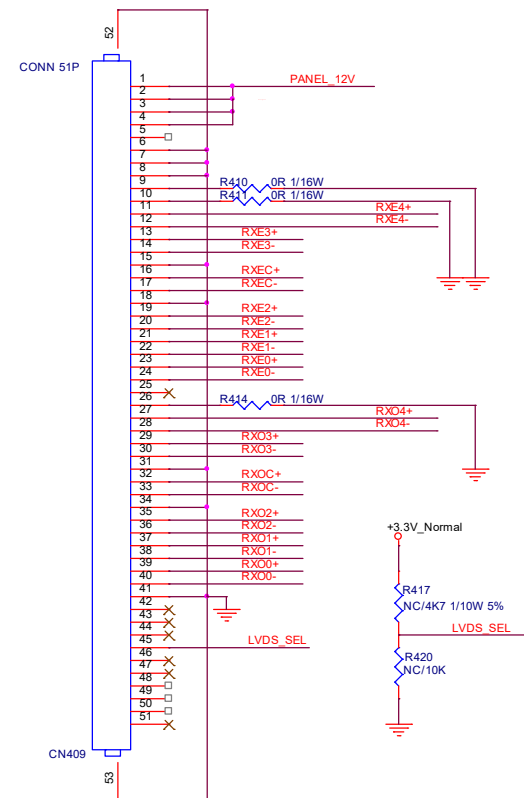
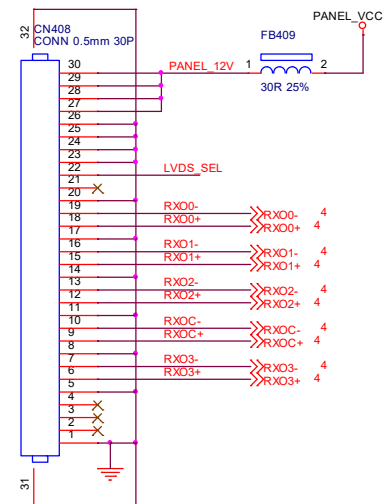
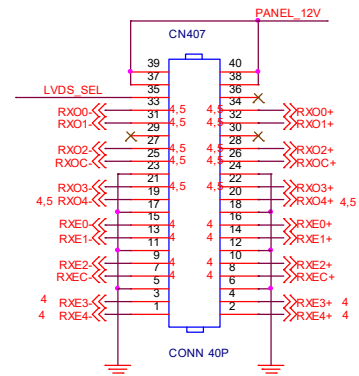
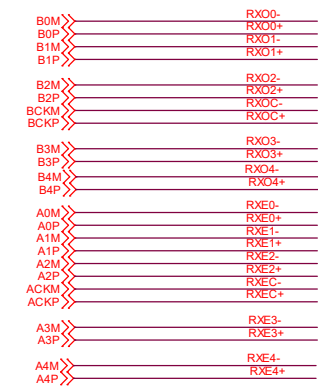
9-1-4 SOC DRAM



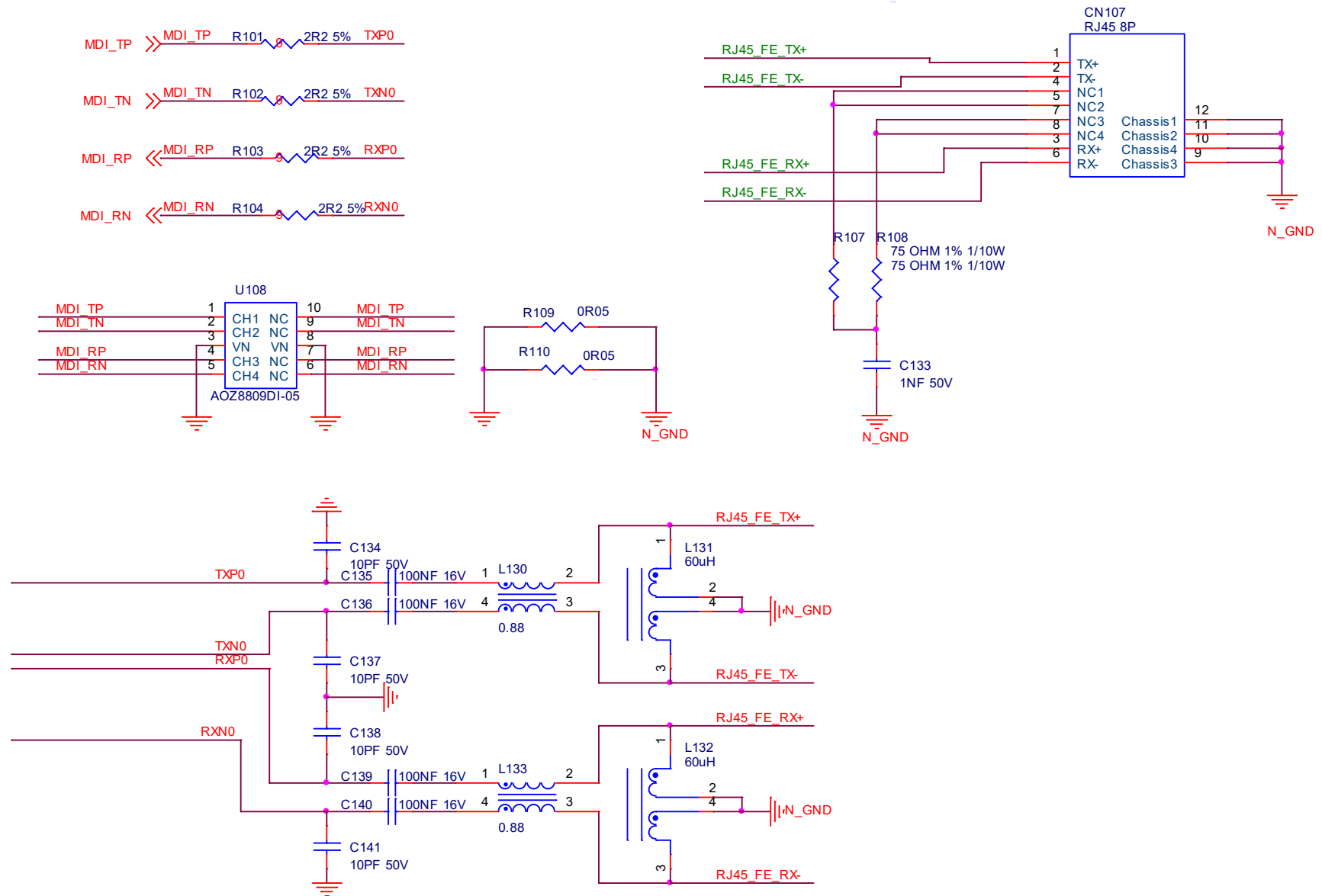
9-1-5 EMMC/Storage



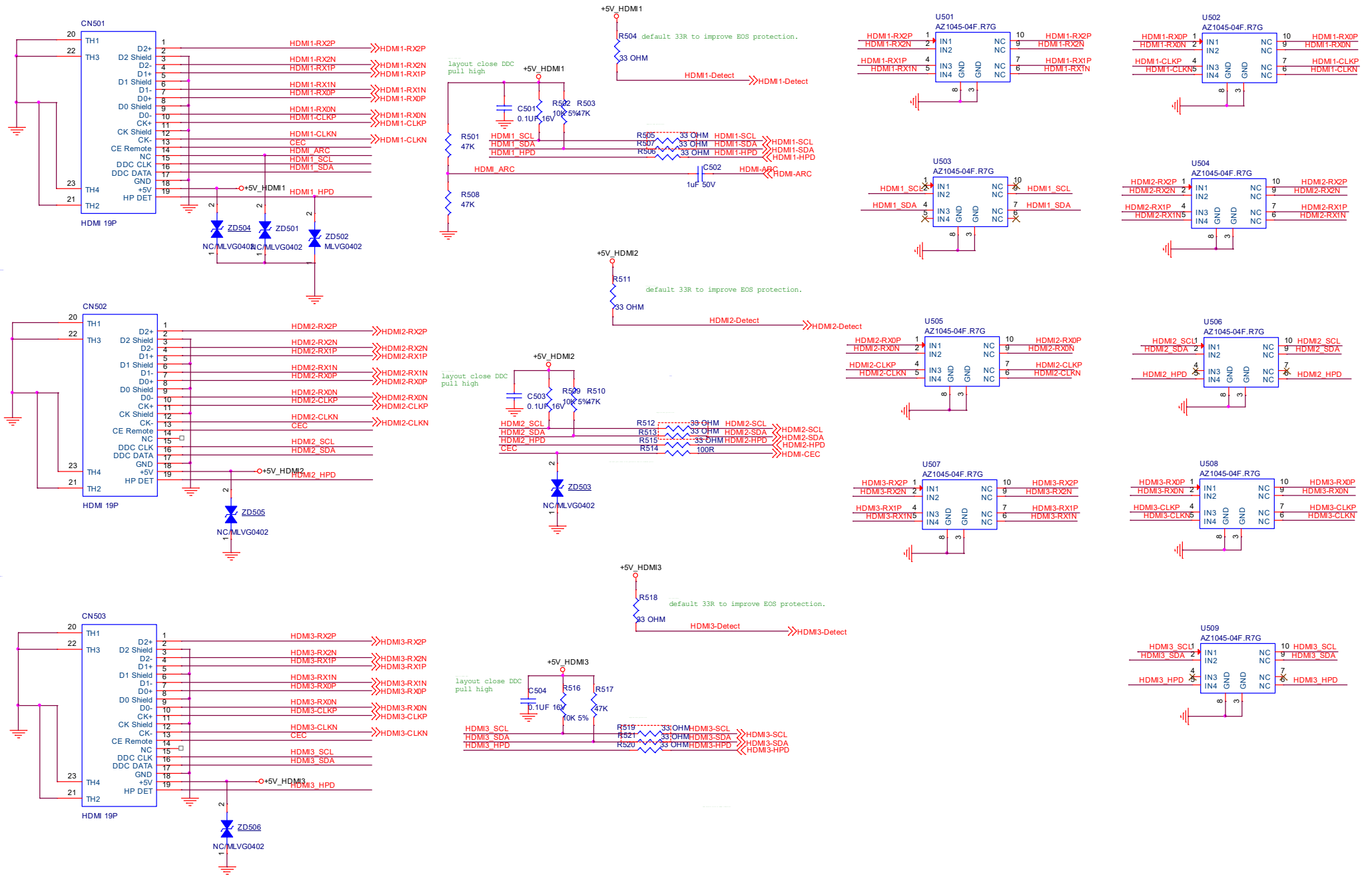
9-1-6 Panel Interfacerl



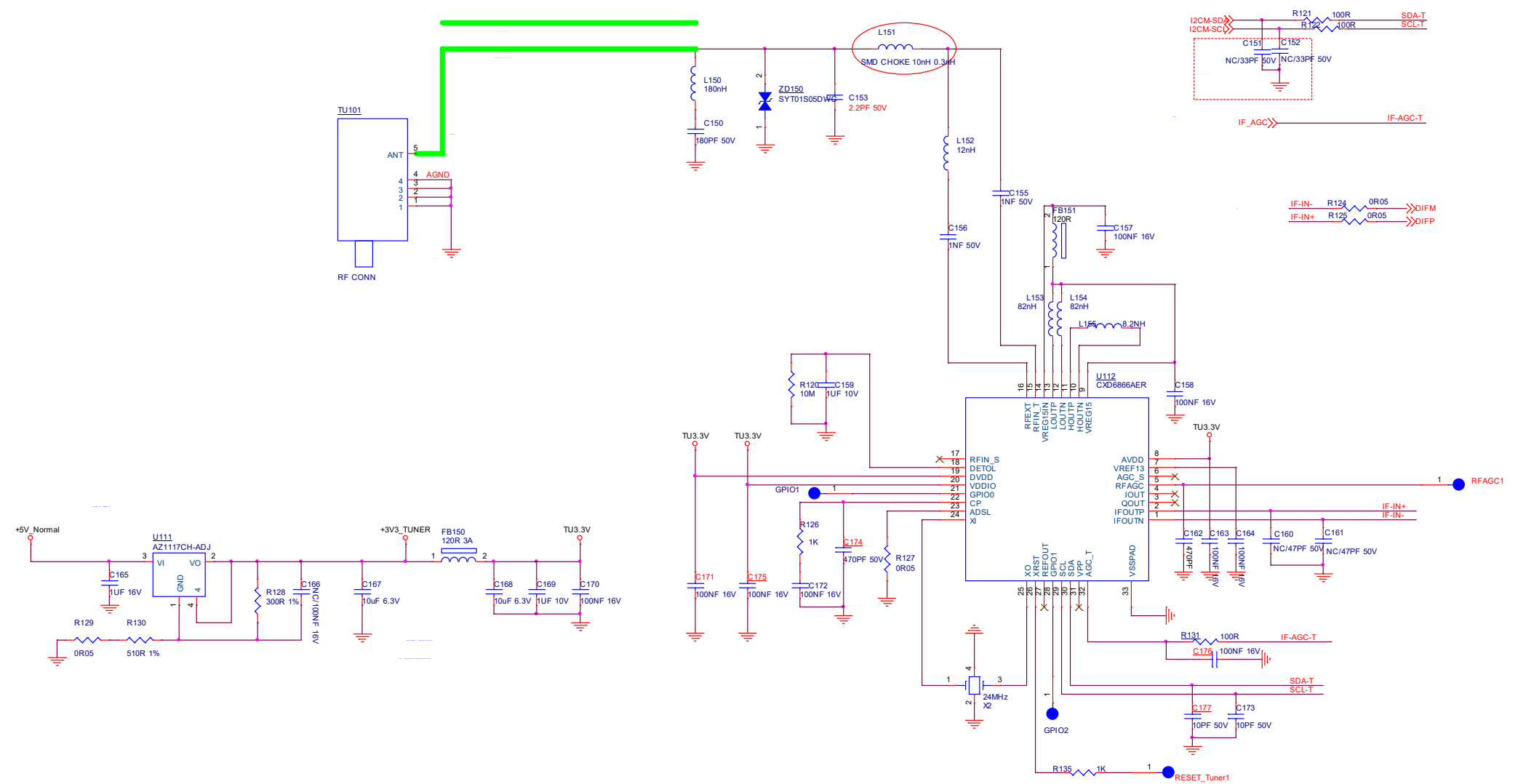
9-1-7 Ethernet



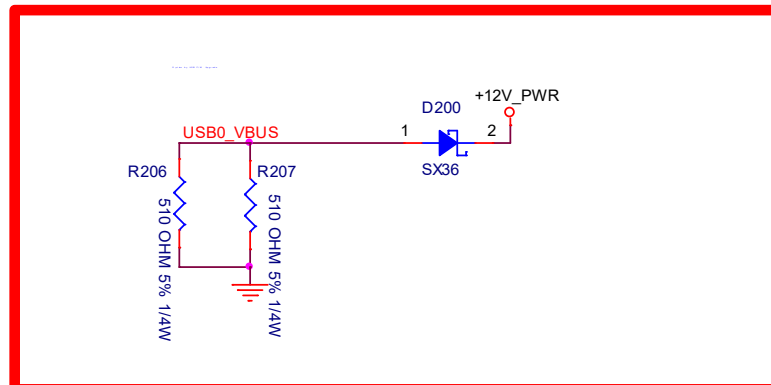
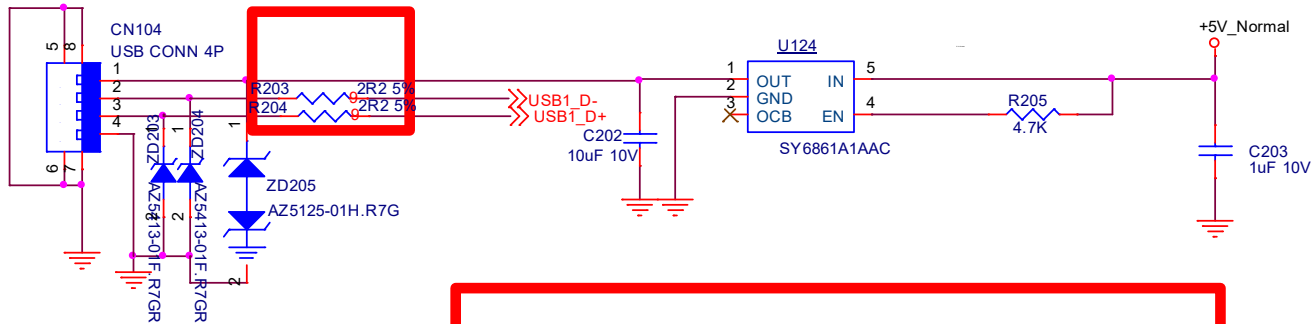
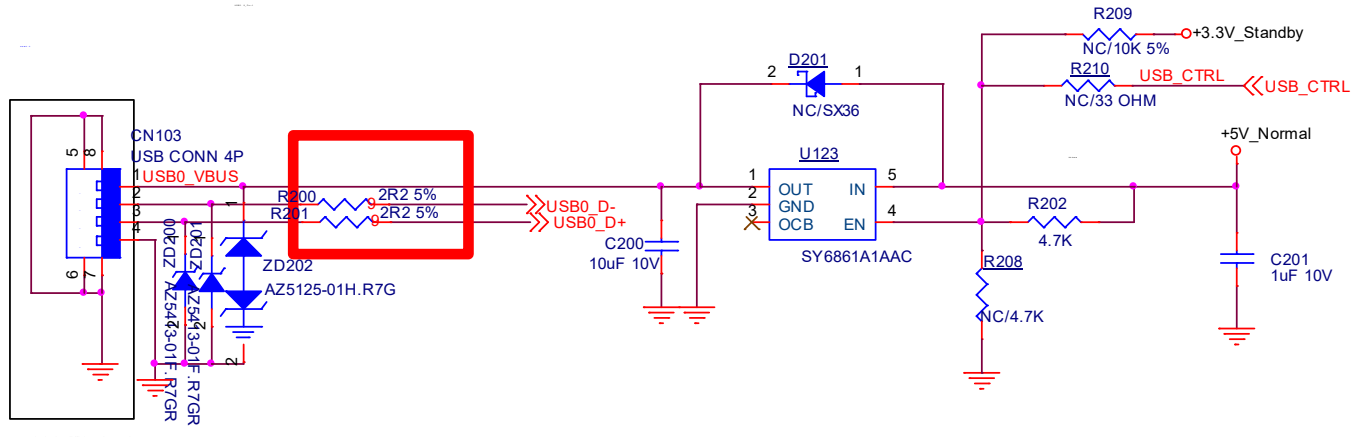
9-1-8 HDMI



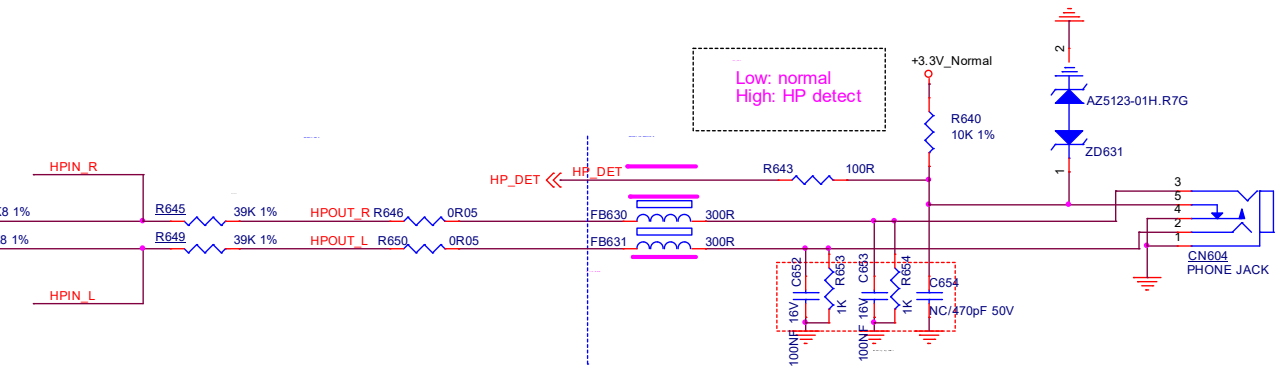
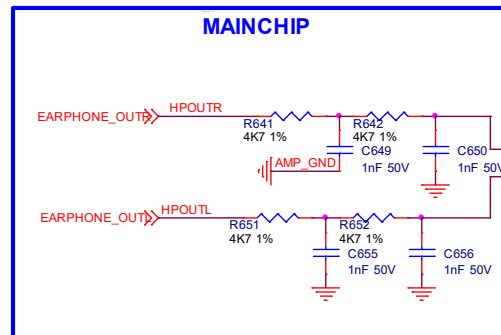
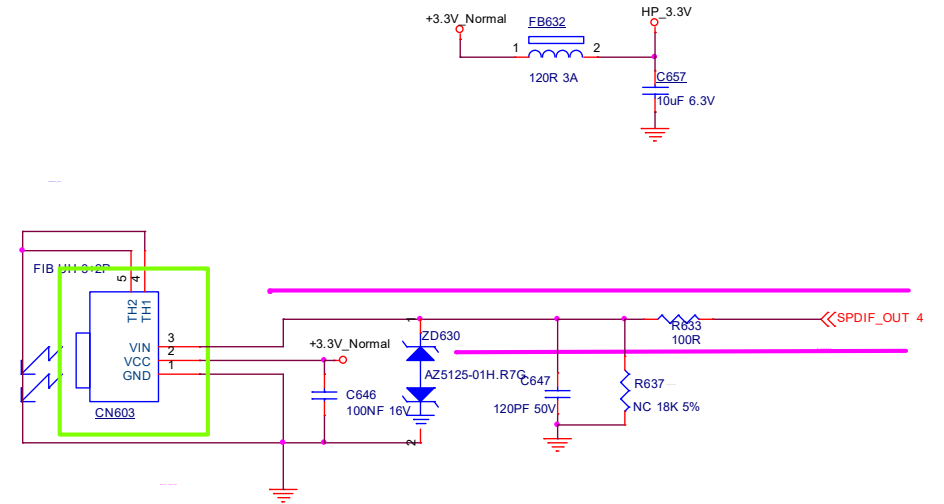
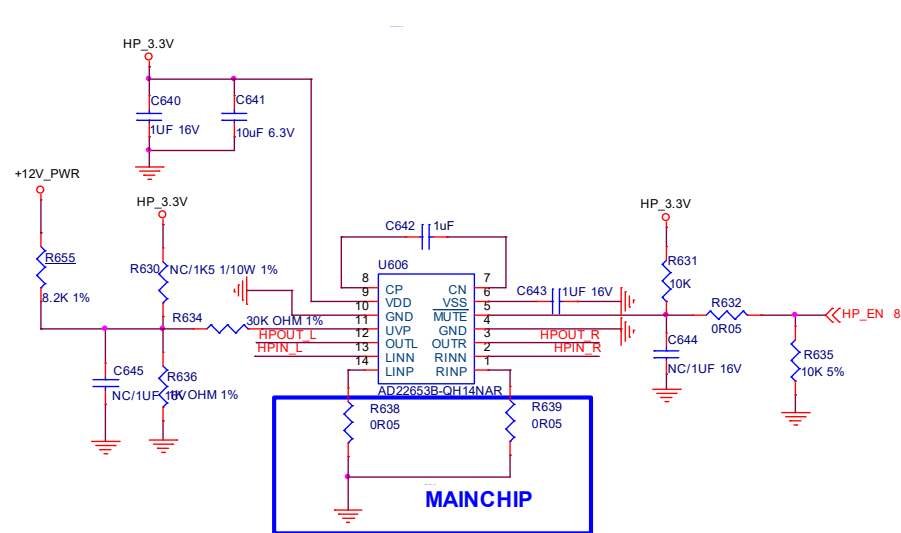
9-1-9 Tuner



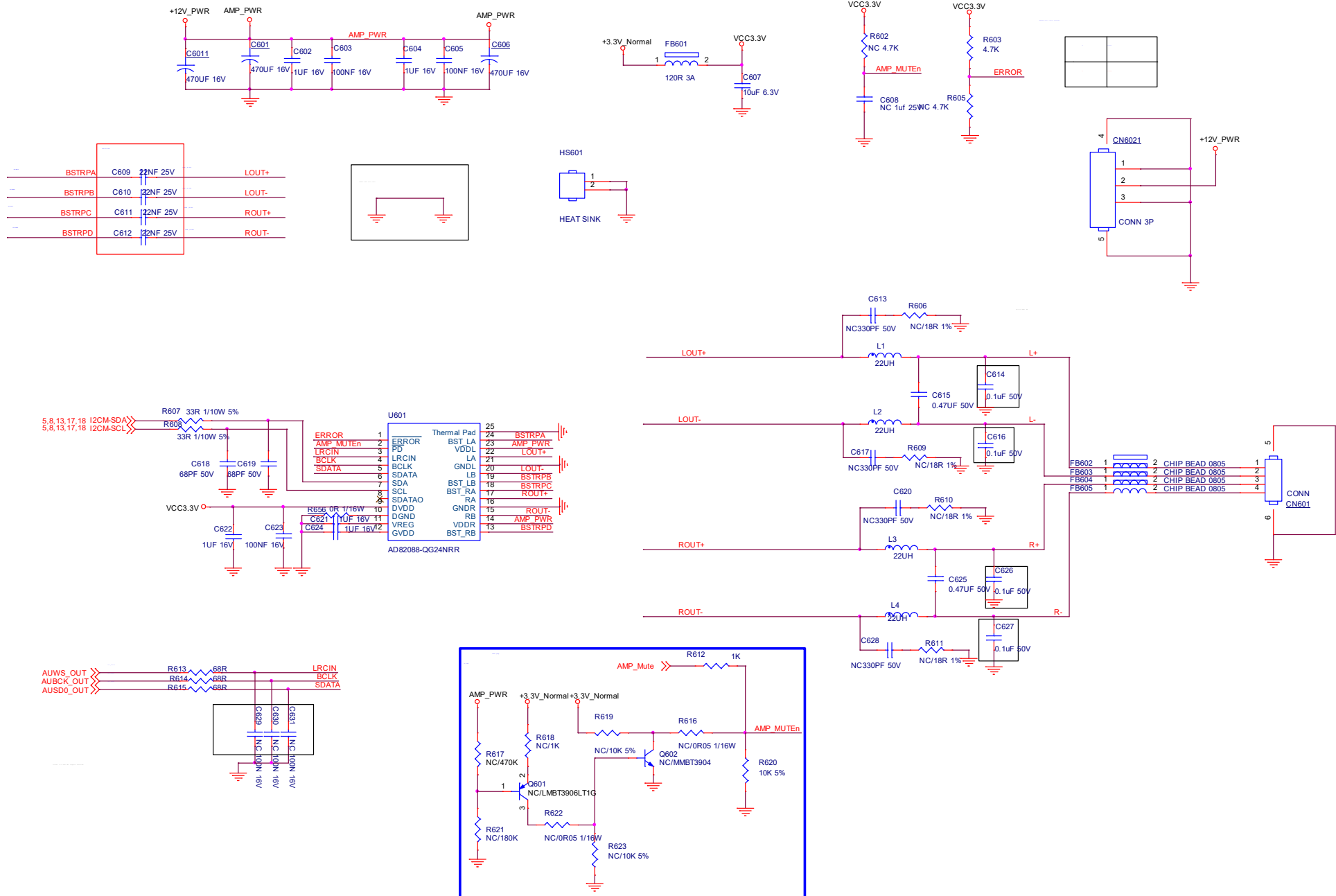
9-1-10 USB/WIFI



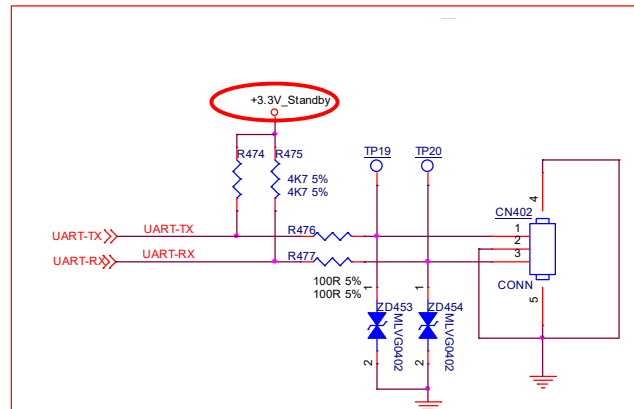
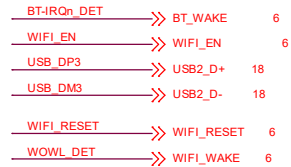
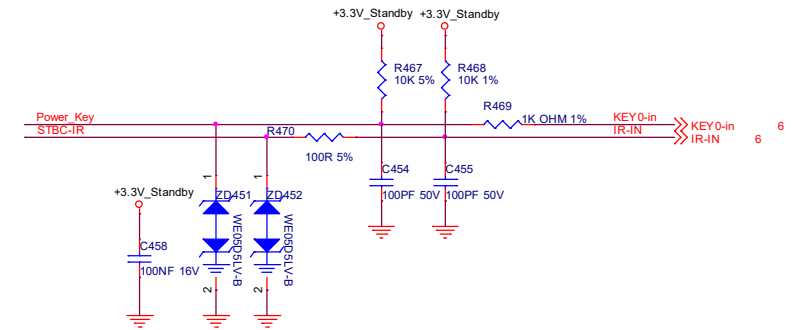
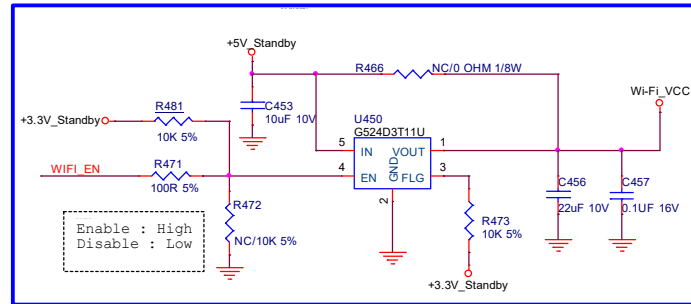
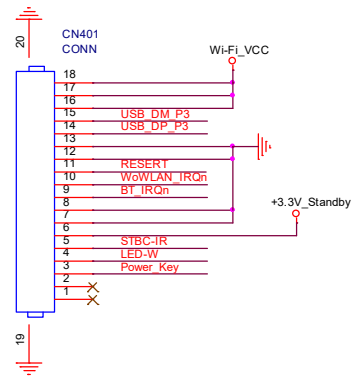
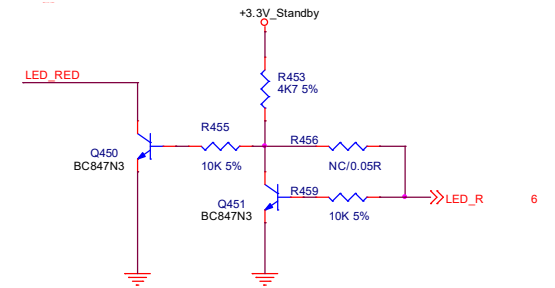
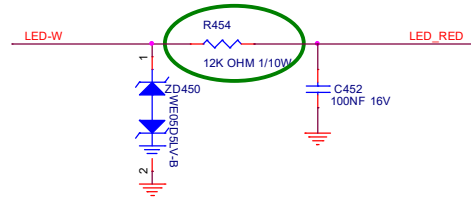
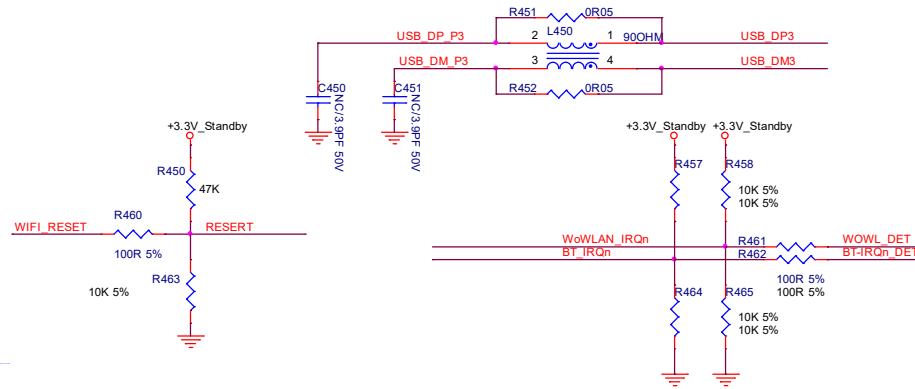
9-1-11 HP Amplifier



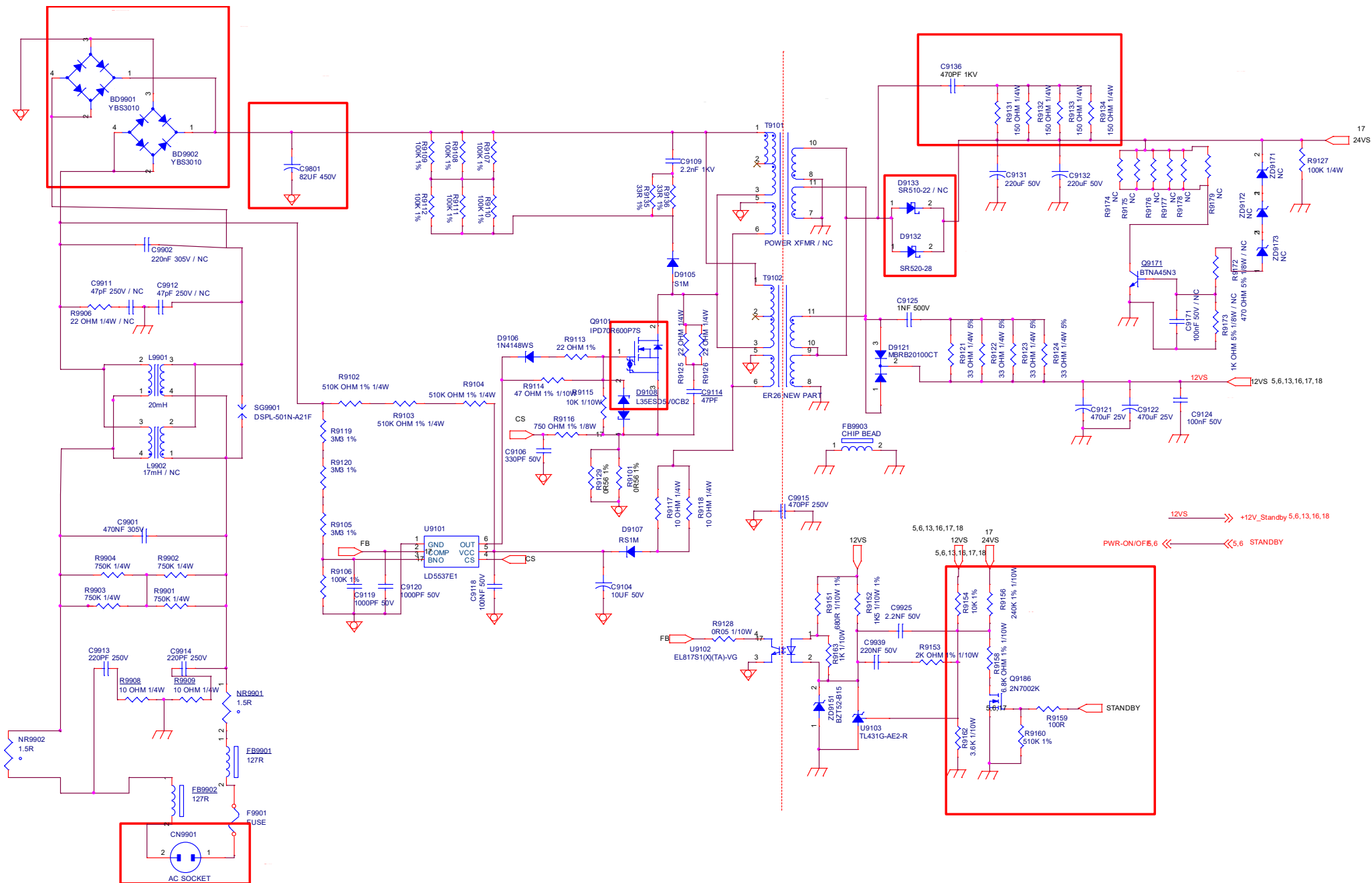
9-1-12 Speaker Amplifier



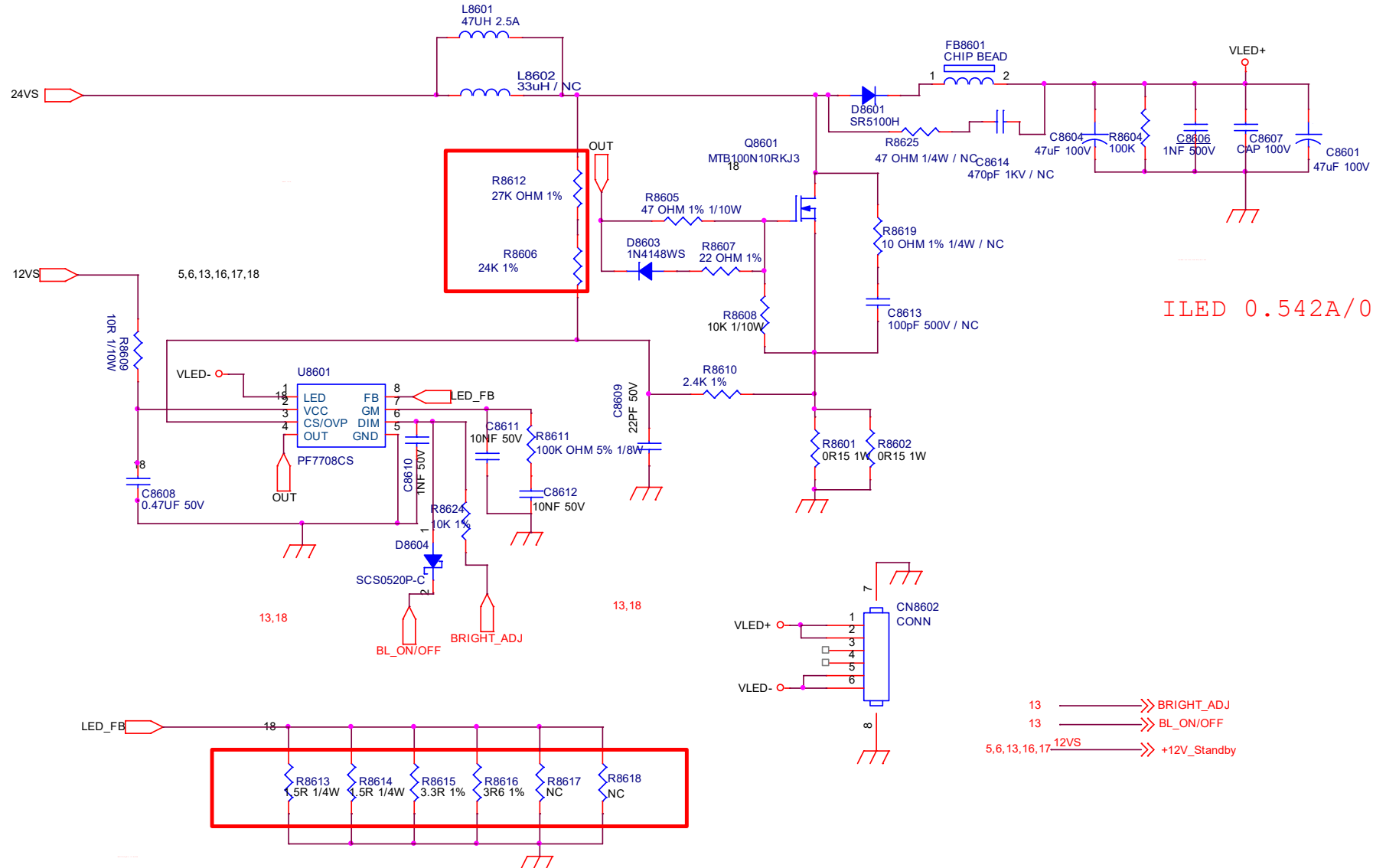
9-1-13 IR/KEY/WiFi



9-1-14 AC POWER



9-1-15 LED driver

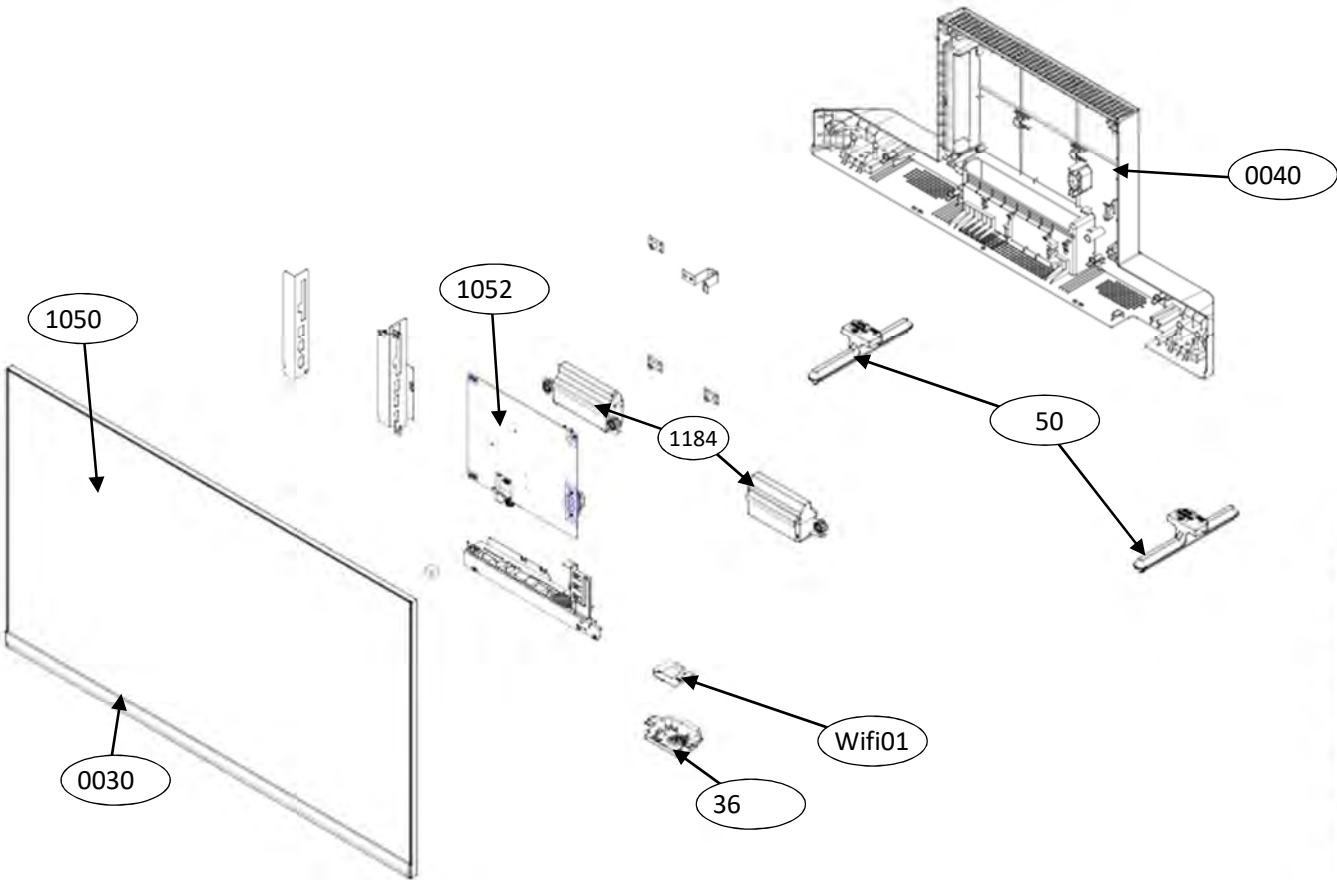


I LED 0.542A/0.570A/0.599A

13 —————>> BRIGHT_ADJ
13 —————>> BL_ON/OFF
5,6,13,16,17 —————>> +12V_Standby

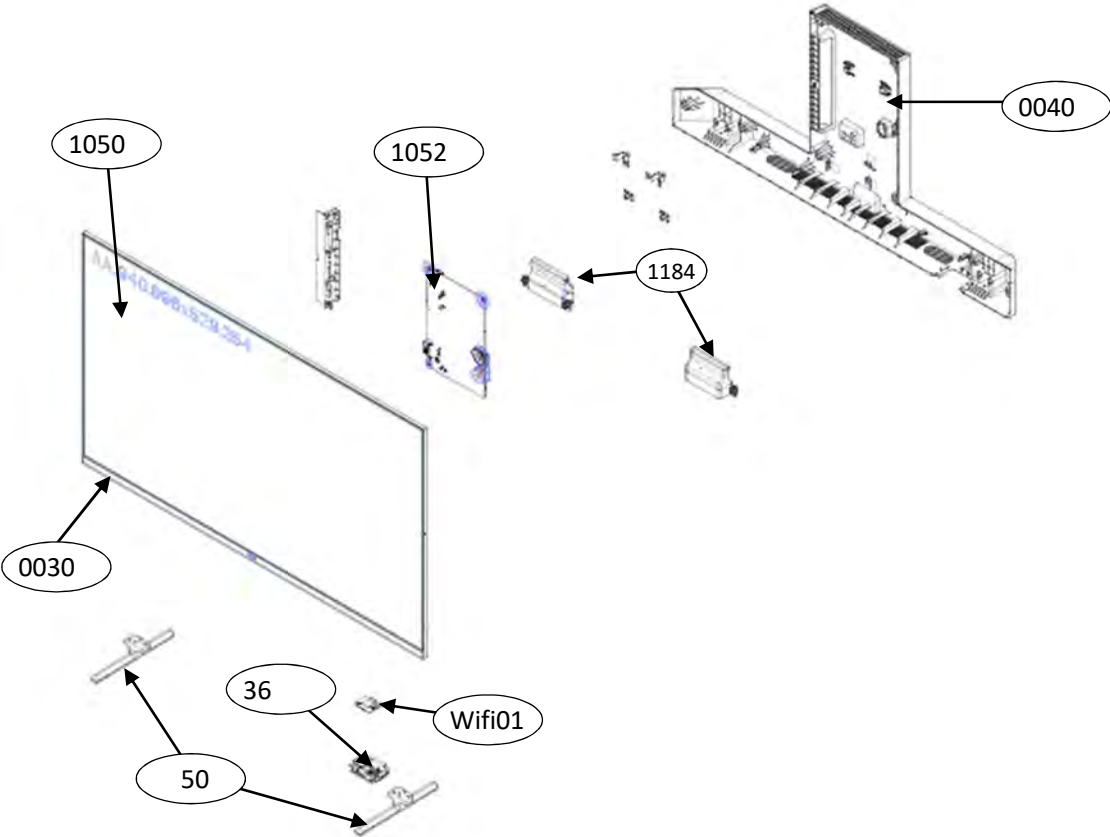
10. Styling Sheets

10.1 6918 series 32"



Pos NO	Description	Remark
30	BEZEL ASSY	
36	LENS	
40	REAR COVER	
50	Base	
1050	LCD PANEL	
1052	MAINB BOARD+POWER BOARD	
1176	REMOTE PHILIPS	Not displayed
1184	Speaker	
WiFi01	WiFi+ LdIrKyLs	

10.2 6918 series 43"



Pos NO	Description	Remark
30	BEZEL ASSY	
36	LENS	
40	REAR COVER	
50	Base	
1050	LCD PANEL	
1052	MAINB BOARD+POWER BOARD	
1176	REMOTE PHILIPS	Not displayed
1184	Speaker	
WiFi01	WiFi+ LdIrKyLs	

11. Dismantling procedure for specific handling parts

As complete appliances, LCDs are deemed to be hazardous waste (e.g. 16 02 13*, 20 01 35*) in the EU according to the German Waste Catalogue Ordinance. These appliances may only be handled by authorized handling plants.

LCDs must be stored in accordance with the requirements stipulated in Appendix VIII (1) or (2) of Directive 2012/12/EU and must, amongst other things, be stored in a weatherproof manner. Containers with covers must be used when storing and transporting LCDs.

Which appliances?

- **LCDs (TVs, Monitors) using either Light Emitting Diode (LED) or Cold Cathode Fluorescent Light (CCFL) sources.**

Requirements according to ANNEX VII of DIRECTIVE 2012/19/EU on waste electrical and electronic equipment (WEEE)

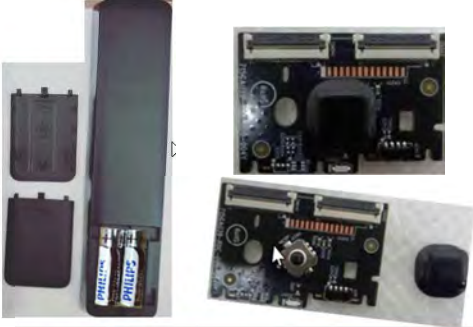
Materials and components with hazardous content

LCDs may contain hazardous substances like Pb and BFRs which are covered by exemptions under the RoHS directive. However, the majority is present in the printed circuit boards assembly. In order to reduce emissions as much as possible, a complete disposal of the old appliance is required. This treatment may only be performed in authorized handling plants.

No.	Substance	relevant
a)	mercury containing components, such as switches or backlighting lamps	N/A
b)	batteries	✓
c)	printed circuit boards of mobile phones generally, and of other devices if the surface of the printed circuit board is greater than 10 square centimetres	✓
d)	toner cartridges, liquid and paste, as well as colour toner	N/A
e)	plastic containing brominated flame retardants	N/A
f)	asbestos waste and components which contain asbestos	N/A
g)	cathode ray tubes	N/A
h)	chlorofluorocarbons (CFC), hydrochlorofluorocarbons (HCFC) or hydrofluorocarbons (HFC), hydrocarbons (HC)	N/A
i)	gas discharge lamps	N/A
j)	liquid crystal displays (together with their casing where appropriate) of a surface greater than 100 square centimetres and all those back-lighted with gas discharge lamps	✓
k)	external electric cables	✓
l)	components containing refractory ceramic fibres as described in Commission Directive 97/69/EC of 5 December 1997 adapting to technical progress for the 23rd time Council Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substance	N/A
m)	components containing radioactive substances with the exception of components that are below the exemption thresholds set in Article 3 of and Annex I to Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation	N/A
n)	electrolyte capacitors containing substances of concern (height > 25 mm, diameter > 25 mm or proportionately similar volume)	✓

	These substances, mixtures and components shall be disposed of or recovered in compliance with Directive 2008/98/EC	
o)	cathode ray tubes: the fluorescent coating has to be removed	N/A
p)	equipment containing gases that are ozone depleting or have a global warming potential (GWP) above 15, such as those contained in foams and refrigeration circuits: the gases must be properly extracted and properly treated. Ozone-depleting gases must be treated in accordance with Regulation (EC) No 1005/2009	N/A
q)	gas discharge lamps: the mercury shall be removed	N/A

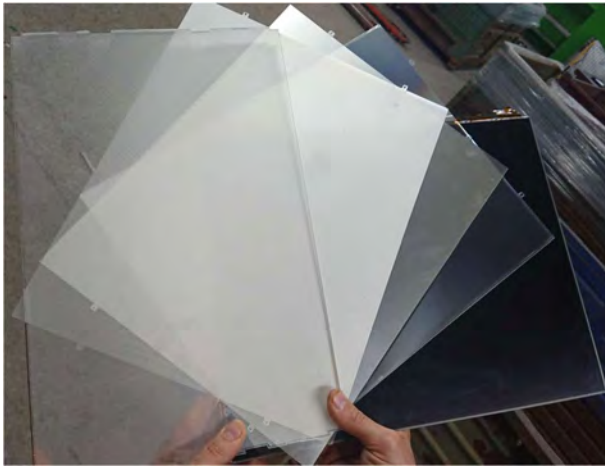
Below is a sample for you to follow

Necessary information according to ANNEX VII of DIRECTIVE 2012/19/ on waste electrical and electronic equipment (WEEE)		
Batteries can easily be removed from the remote control or printed circuit board assembly once the back cover of the remote control or product has been removed.		
The back cover of the display can easily be removed by hand and screw driver.		
Once removed this will expose the accessible electronic units (printed circuit boards),		
which can now be easily removed with appropriate tools.		

The diffusion panels can be accessed by lifting the inner casing, typically held in place with clips which can be removed with appropriate tools.



The panel consists of several plastic sheets which can be processed.



A final consideration is that of the back light which must be removed prior to processing. These may be present along either the bottom, or either side of the display as a strip of lights.



Lighting may be arranged across the entire back board of the display.

Displays of this kind will have either Light Emitting Diodes (LEDs) or Cold Cathode Fluorescent Lights (CCFL).

Plastic parts can contain brominated flame retardants