

Service  
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**Service**

**5261**

# Service Manual

Chassis name	Platform	Model name
5261	MSD3463	39PHH5261/96

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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](http://www.philips.com/support)

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## Display Type

Diagonal screen size

- 39PHH5261/96 : 38.5 inch

Display resolution

- 39PHH5261/96 : 1366\*768p

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## Input resolution

- 800 x 600p - 60 Hz
- 1024 x 768p - 60 Hz
- 1280 x 768p - 60 Hz
- 1360 x 765p - 60 Hz
- 1360 x 768p - 60 Hz
- 1280 x 1024p - 60 Hz
- 1920 x 1080p - 60 Hz23.5

Video formats Resolution — Refresh rate

- 480i, 480p, 576i, 576p, 720p, 1080i, 1080p (24/25/30/50/60Hz)

Computer formats Resolutions (amongst others)

720\*400@70HZ

640\*480@60HZ

800\*600@60HZ

1024\*768@60HZ

1360\*768@60HZ

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## Dimensions and Weights

39PHH5261/96

- without TV stand:

Width 888 mm - Height 511 mm - Depth 83mm - Weight 5.3kg

- with TV stand:

Width 888 mm - Height 560mm - Depth 219mm - Weight 5.5kg

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## Connectivity

HDMI Number	*3
HDMI 1.4a	HDMI-1/2/3
HDMI 2.0	N/A
HDMI/DVI	Yes for all ports
HDMI ARC	HDMI-3
EasyLink (HDMI-CEC)	Yes for all ports
Scart (EU) Connections	N/A
YPbPr/CVI (EU/Latam) Connections	*1
CVBS (EU/Latam) Connections	*1
Audio L/R in	*1
CI+ slots	N/A
Antenna	*2
Satellite (for K&S only)	N/A
USB	USB2.0
USB Harddisk Format (Power)	FAT/NTFS (500mA)
VGA	YES
VGA/DVI Audio Input	YES

Digital audio out (SPDIF)	*1
Headphone	*1
Ethernet-LAN RJ-45	N/A
Service Connector	VGA connectable
Wireless connections	N/A
Wi-Fi Band Concurrent	N/A
WoWLAN	N/A
WoLAN	N/A
Bluetooth for subwoofer/RC (do not claim commercially)	N/A
Multichannel over BT	N/A
HDCP v2.2 (on HDMI 2.0 port)	N/A
MHL (HDMI+power+return channel)	HDMI-1 support MHL
Wi-fi Miracast Certified (HDCP 2.2 supported)	N/A
GoogleCast Receiver	N/A
Tablet Screen Mirroring (Wi-Fi Miracast)	N/A
TAD AppFTA channels (free app)	N/A
TAD Server, FTA channel	N/A
Indep. Watching (TV&PVR), FTA&CI+	N/A
SAT>IP Client, FTA	N/A
HEVC @ FHD 60Hz	N/A
HEVC @ UHD 60Hz	N/A
H264 @ UHD	N/A
VP9 @ UHD	N/A

## Sound

<b>Sound (Internal)</b>	
Output Power (10% THD) RMS	2*8W
Speaker configuration	8W+8W
Speaker system	2
Speaker type	built-in(normal)
Auto Volume Levelier / Auto Volume Levelier +	YES
Sound Claim (Incredible Surround/Cinema Surround/Clear Sound/Ambiwoo/3D Movie/Incredible Surround 3D)	Standard,Music,Cinema,Personal
Bass ( <i>Bass control/DBE/Ultra Bass/Ultra Bass II</i> )	YES
Wireless Sound Interface	N/A
Dolby Digital DecoderType	N/A
DTS Studio Sound	N/A
DTS 2.0+ Digital out	N/A
Acoustic Compensation Filters	N/A
Dynamic Treble Enhancement	N/A
Programmable Bass And Treble Curve	N/A
Visible Sound	N/A
<b>Sound (External)</b>	

External Sound device type	N/A
Output Power (10% THD) RMS	N/A

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### Multimedia

Video Playback Formats	MJPEG,MPEG1,MPEG2, MPEG4,H.264,FLV
Subtitles Formats Support	N/A
Music Playback Formats	MP2/MP3 /AAC/M4A /PCM
Picture Playback Formats	JPEG、BMP、PNG

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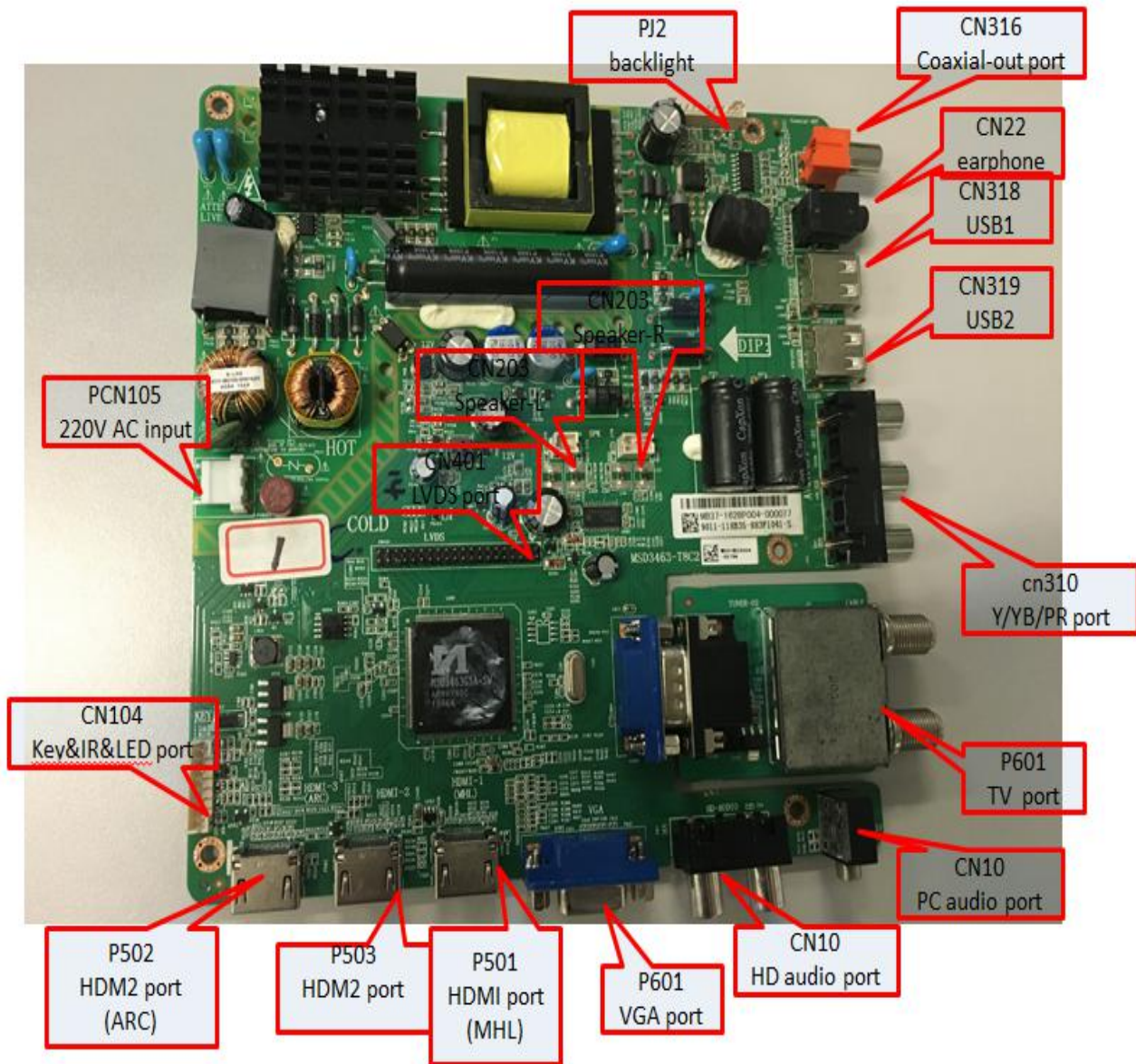
### Power

Product specifications are subject to change without notice. For more specification details of this product, see [www.philips.com/support](http://www.philips.com/support)

#### Power

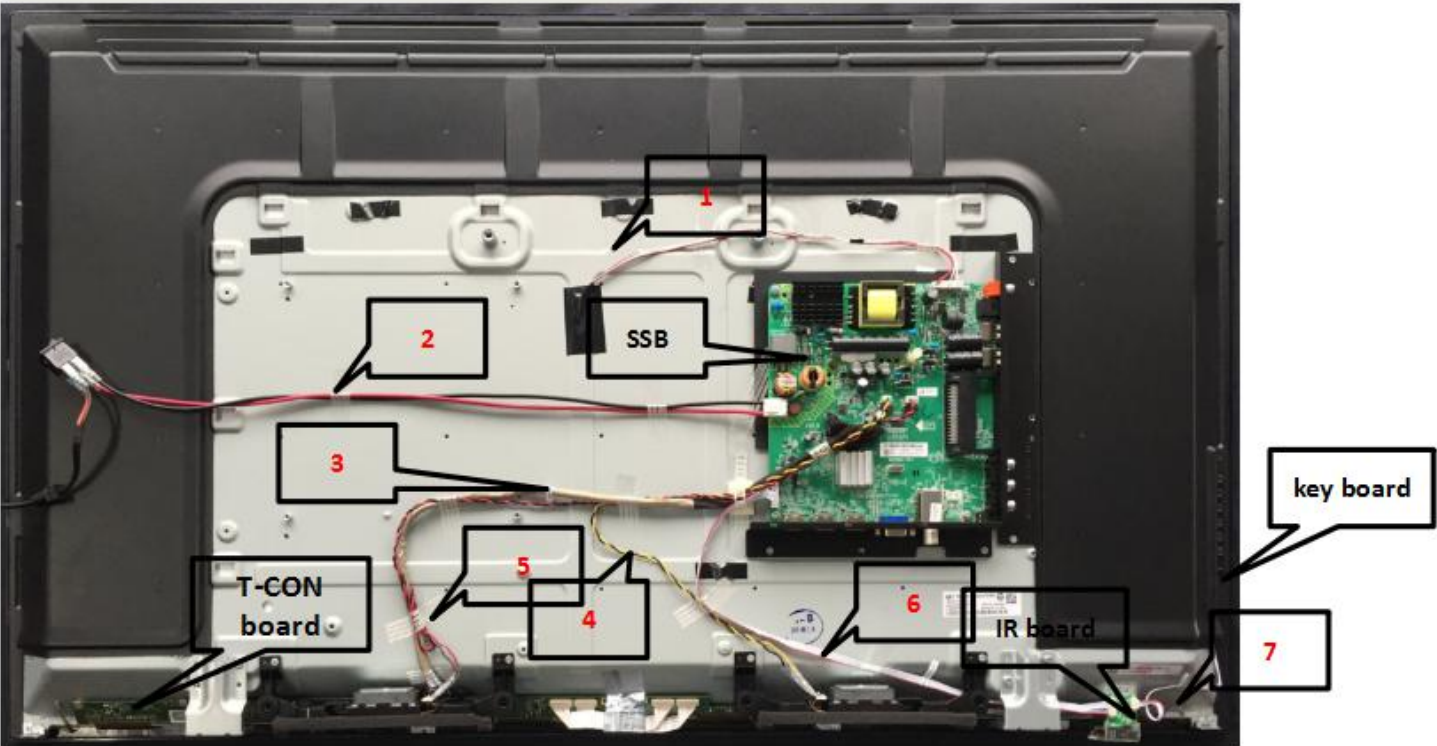
- Mains power : AC 100-240V 50/60Hz
- Standby Energy Consumption:≤0.5W
- Ambient temperature : 5°C to 40°C

## 2. Connections Overview



### 3. Mechanical Instructions

#### 3.1 Cable Dressing





Serial no	part description	function
1	Backlight wire	Connect to PJ2
2	Power wire	Connect to PCN105
3	LVDS wire	Cn401 to T-CON board
4	Speaker wire	CN203 to speaker (yellow black wire)
5	Speaker wire	CN201 to speaker (red black wire)
6	two-terminal wire	CN104 to IR board
7	two-terminal wire	IR Board to key board

#### 3.2 Assembly/Panel Removal

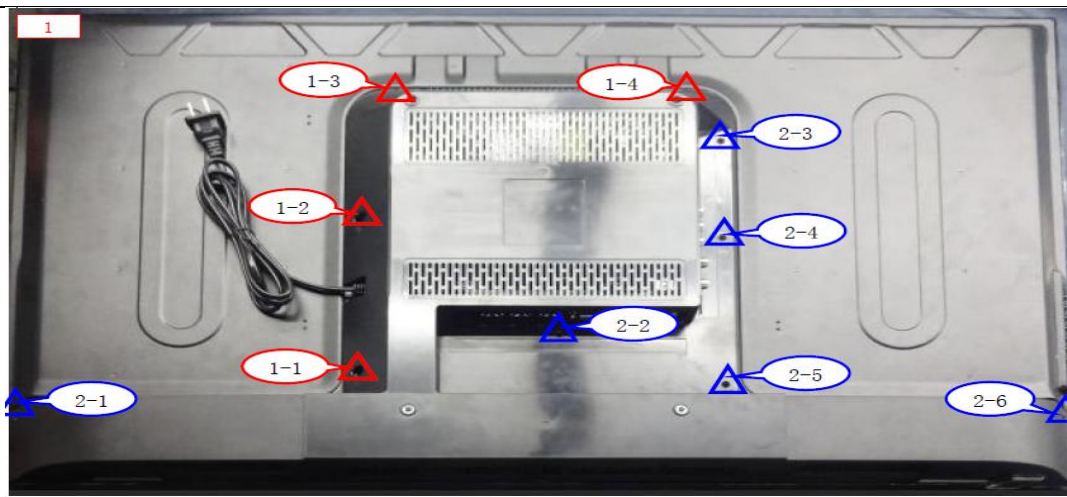
- 3.2.1 Stand removal**1. Remove the fixation screws [1] that secure the stand  
2. Take the stand bracket out from the set.




#### 3.2.2 Disassemble Back Cover-1

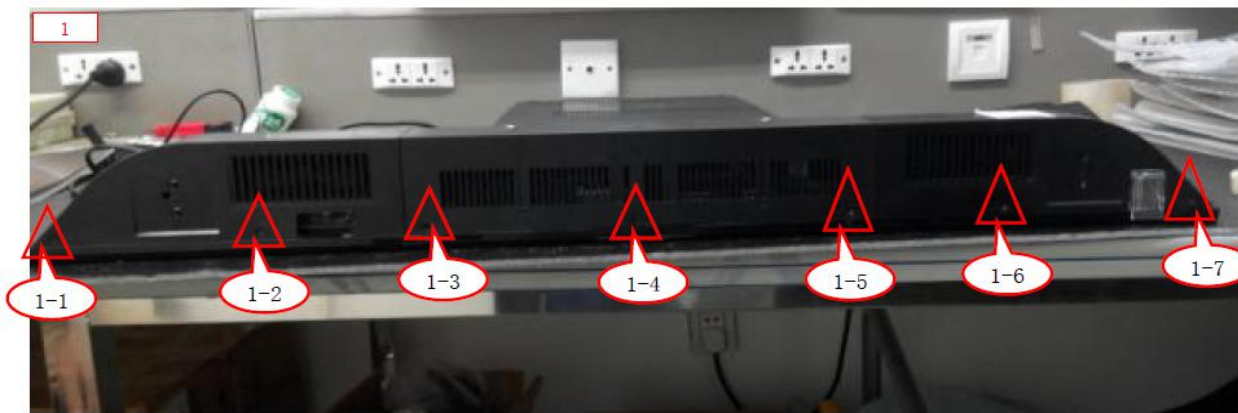
1. Take off screws on 1-1 to 1-4  $\Phi 3\times 5\text{mm}$  with electric screwdriver. Figure 1   
2. Take off screws on 2-1 to 2-6  $\Phi 3\times 6\text{mm}$  with electric screwdriver. Figure 1   
3. Classify and place disassembled screw well.





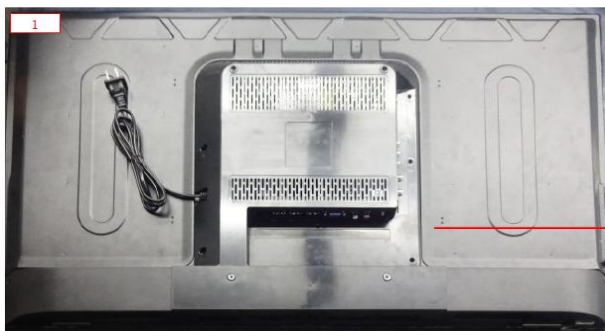
### 3.2.3 Disassemble Back Cover-2

1. Take off screws on 1-1 to 1-7  $\Phi 3 \times 5\text{mm}$  with electric screwdriver. Figure 1 
2. Classify and place disassembled screw well.



### 3.2.4 Disassemble Back Cover-3

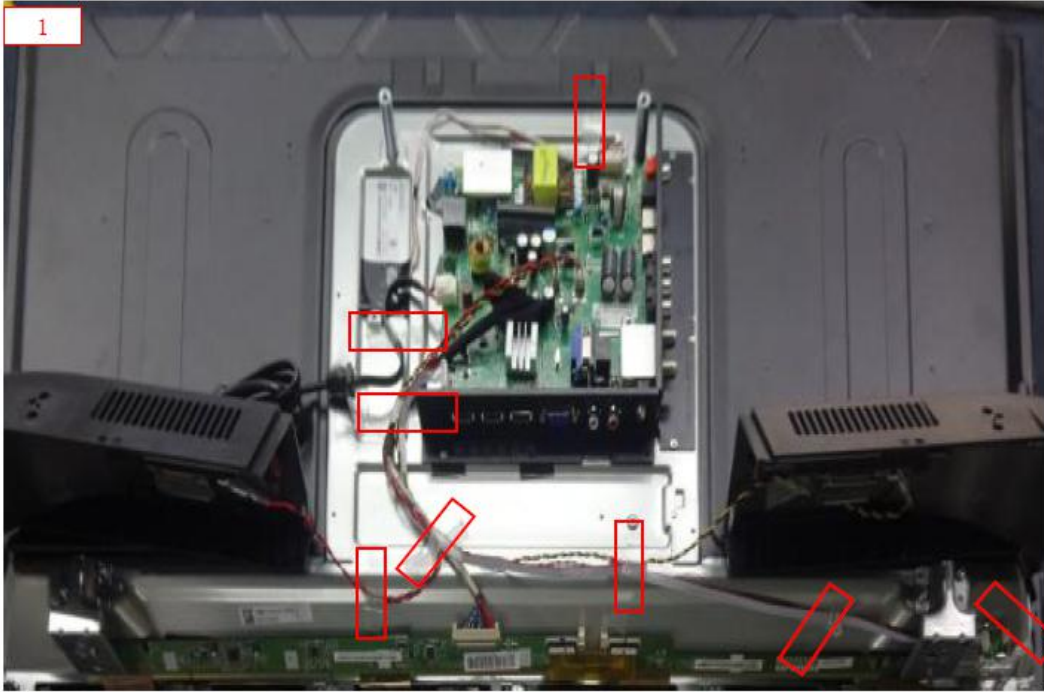
1. Place back cover. Figure 1
2. Place disassembled back cover well.









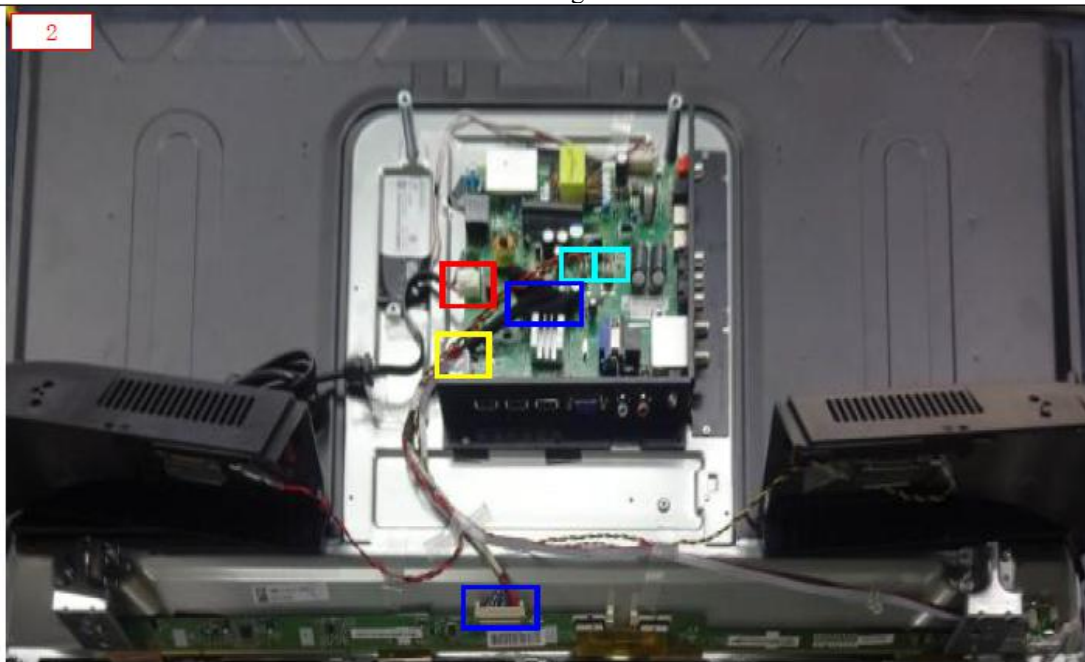
### 3.2.5 Disassemble Wire-1

1. Tear tape(8PCS). Figure 1 







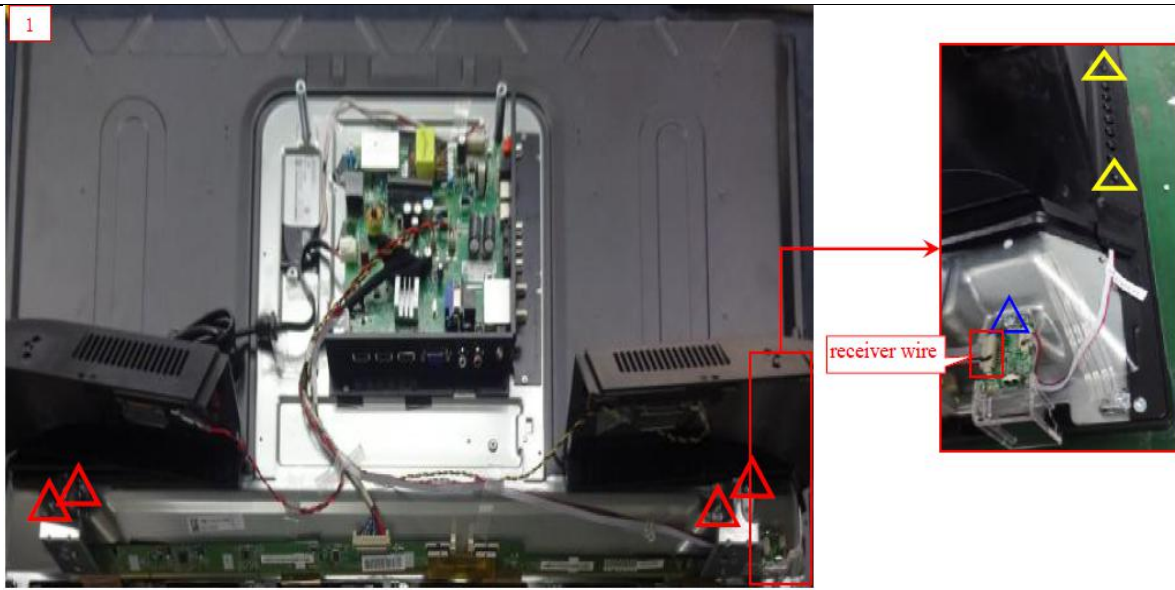
### 3.2.6 Disassemble wire-2

1. Pull down power cord from mainboard. Figure 1 
2. Pull down LVDS wire from mainboard. Figure 1 
3. Pull down speaker wire from mainboard. Figure 1 
4. Pull down Receiver wire from mainboard. Figure 1 



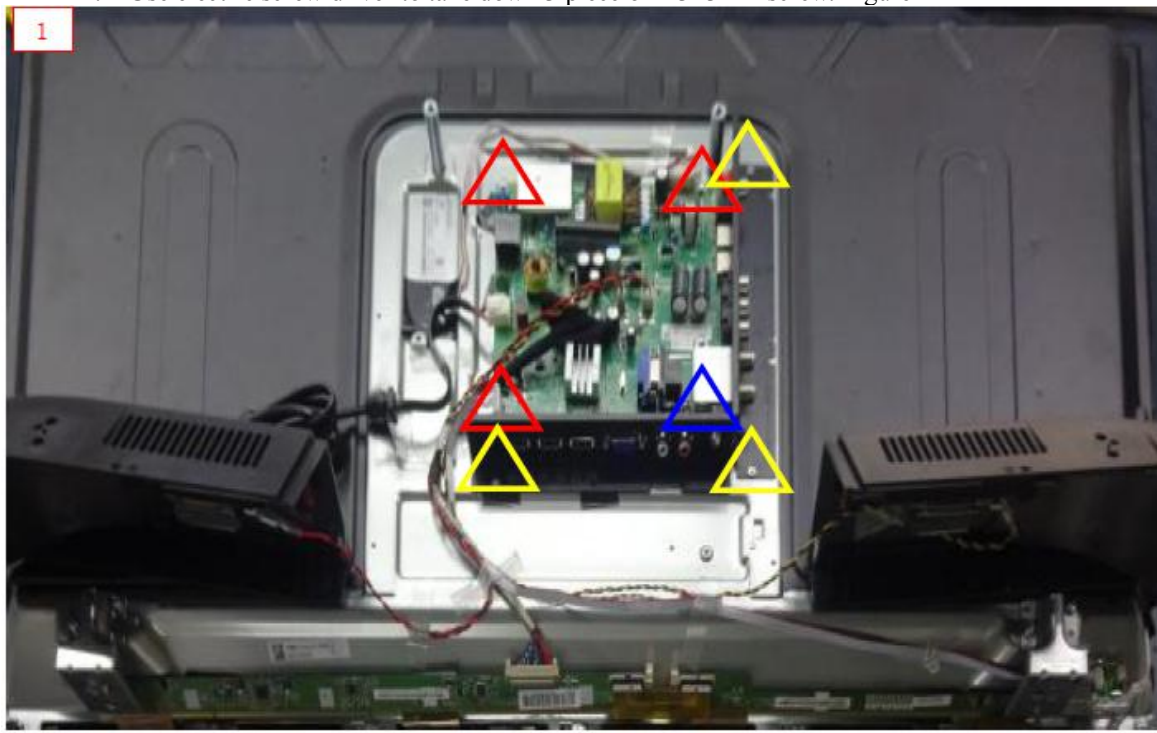
### 3.2.7 Disassemble main board, power board, IO baffle

1. Use electric screw driver to take down 4 piece of  $\Phi 4 \times 6\text{mm}$  screws. Figure 1 
2. Use electric screw driver to take down 1 piece of  $\Phi 3 \times 5\text{mm}$  screw. Figure 1 
3. Take down receiver wire from receiver board. Figure 1 
4. Use electric screw driver to take down 2 piece of  $\Phi 3 \times 8\text{mm}$  screw. Figure 1 




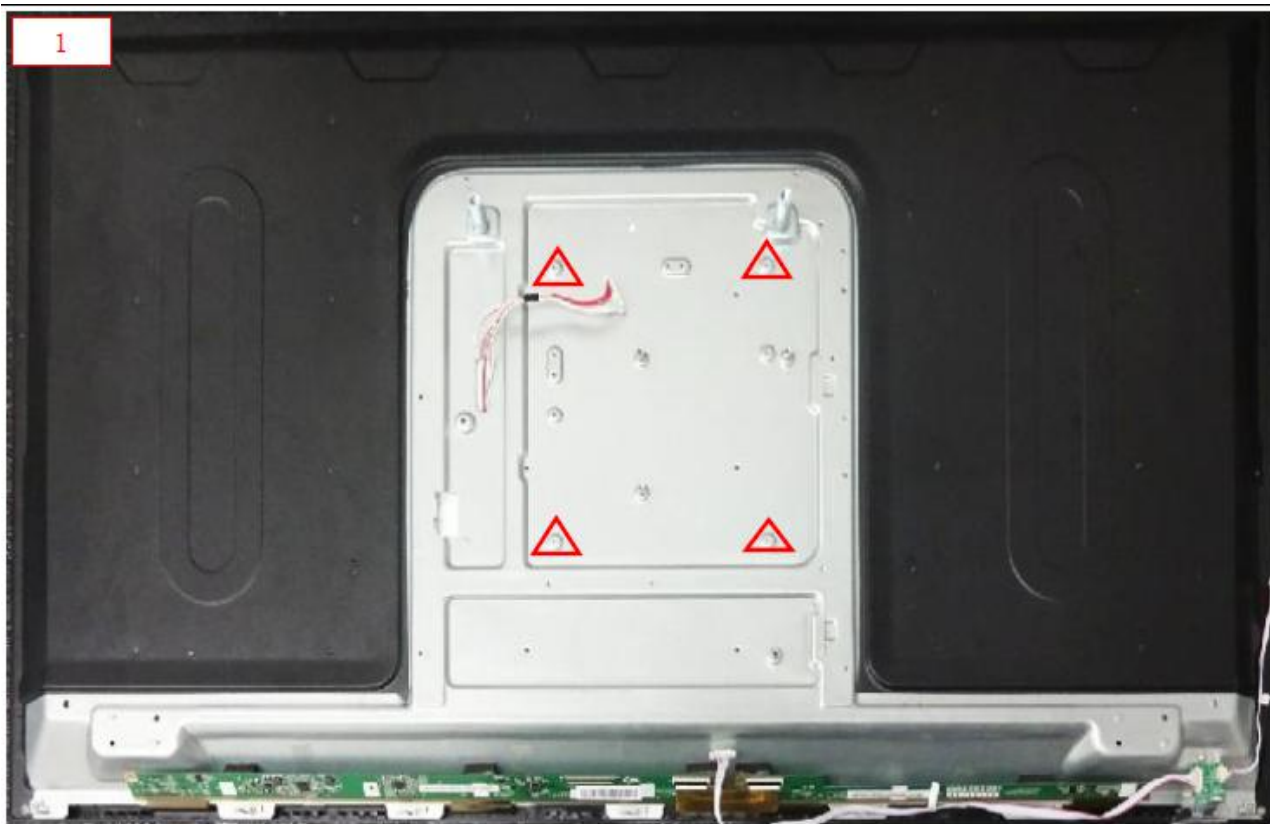
### 3.2.8 Disassemble Material-4

1. Use electric screw driver to take down 3 piece of M3×7mm screws. Figure 1 ▲
2. Use electric screw driver to take down 1 piece of Φ3×8mm screw. Figure 1 ▲
3. Take out motherboard and receiving window from back plate. Figure 1
4. Use electric screw driver to take down 3 piece of Φ3×3mm screw. Figure 1 ▲



### 3.2.9 Disassemble Material-4

1. Use electric screw driver to take down 4 pieces of hex head screws. Figure 1 



### 3.2.10 LCD Panel

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

When defective, replace the whole unit.

## 4. Factory Mode

### *Purpose*

Press the following key sequence on a standard RC transmitter: “1999” directly followed by MENU,

- To perform extended alignments.

Primary menu	Secondary menu	Value,remark
ADC ADJUST	MDOE	VGA/YPBPR(SD)/YPBPR(HD) ,Selection
	R-GAIN	Front-end gain adjustment
	G-GAIN	
	B-GAIN	
	R-OFFSET	Clamp level adjustment
	G-OFFSET	
	B-OFFSET	
	AUTO ADC	ADC automatically adjust
PICTURE MODE	MODE	VGA/HDMI1/HDMI2/HDMI3/ DTV/ATV/AV/YPBPR
	PICTURE MODE	Dynamic/Standard/Soft/User
	BRIGHTNESS	BRIGHTNESS
	CONTRAST	CONTRAST
	COLOR	COLOR
	SHARPNESS	SHARPNESS
	TINT	TINT
	Copy all	No function
W/B ADJUST	Source	VGA/HDMI1/HDMI2/HDMI3/ DTV/ATV/AV/YPBPR
	TEMPERATURE	Cool, Standard, Warm
	R-GAIN	White level adjustment
	G-GAIN	
	B-GAIN	
	R-OFFSET	Black level adjustment
	G-OFFSET	
	B-OFFSET	
	Copy all	No function
SSC	MIU Enable	DDR spectrum enable
	MIU0 Span	Exhibition frequently wide
	MIU Step	Spread spectrum step
	LVDS enable	LVDS spectrum enable
	LVDS Span	Exhibition frequently wide
	LVDS Step	Spread spectrum step
	LVDS swing	LVDS swing
Spectral set	2HOUR OFF	2hours power off enable
	WDT	on/off
	WHITE PATTERN	OFF/White/Red/Green/Blue/Black/192Grey
	GE/GOP PATTERN	
	BMAP PATTERN	
	Restore user default	Factory reset
	PVR_RECORD ALL	PVR Record on/off
	Power	on/off/Mem
	Mirror Enable	Mirror Enable enable
	Ageing mode	Ageing mode enable
	Auto Volume	on/off
	PVR Encrypt	on/off
Qmap adjust	PQ setting	
PEQ	PEQsetting	
other	Test pattern	
	UART DEBUG	DEBUG ON/OFF
	HDMI CEC/ARC	CEC/ARC ON/OFF

	Backlight	Adjust backlight
OverScan	Overscan_resolution	Reselution select
	Overscan_hsize	Adjust overscan H size
	Overscan_hposition	Adjust overscan H position
	Overscan_vsize	Adjust overscan V size
	Overscan_vposition	Adjust overscal V position
HDCPKey usb upgrade	HDCPKey usb upgrade	
SW information	SW information	
Non-linear	MODE	Feature Selection
	OSD 0	Curve adjustment
	OSD 25	
	OSD 50	
	OSD 75	
	OSD 100	
Channel table1	KTC factory Frequecy table set	
Channel table2	KTC factory Frequecy table set	
Channel dvbt	KTC factory Frequecy table set	

## 5. Software Upgrading and Panel Code

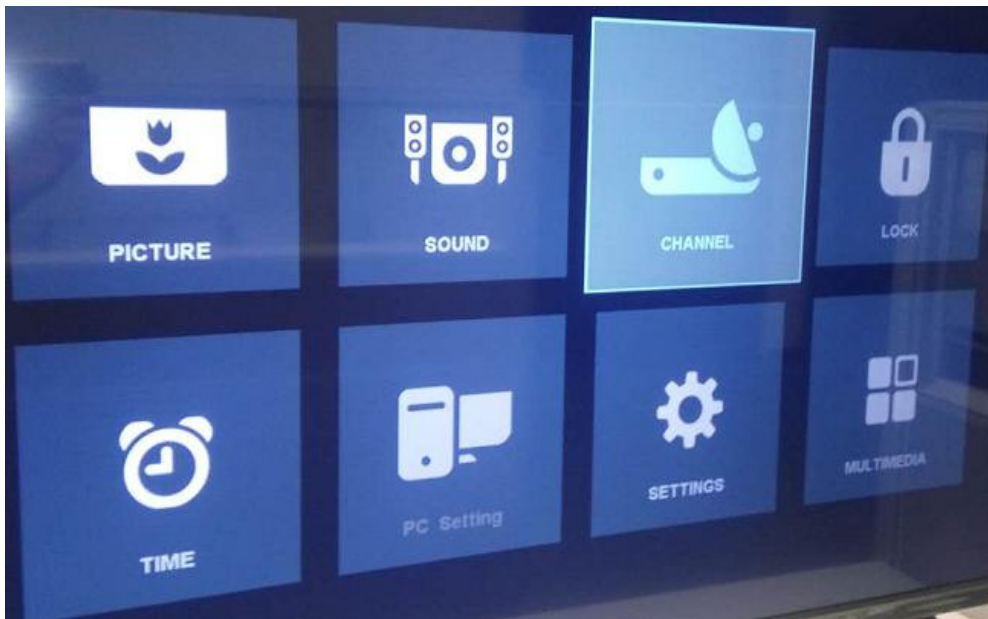
### 5.1 Software Upgrading

Operations and procedure of software upgrading:

- 1). Changed the file name to "MERGE.bin", then stored software in the FAT32 format blank U disk.
- 2). Insert USB flash disk into the USB upgrade port, upgrade the software according to the following the operating instructions:  
Select AIR or DTV signal source, press Menu key to pop up the main menu, then choose.

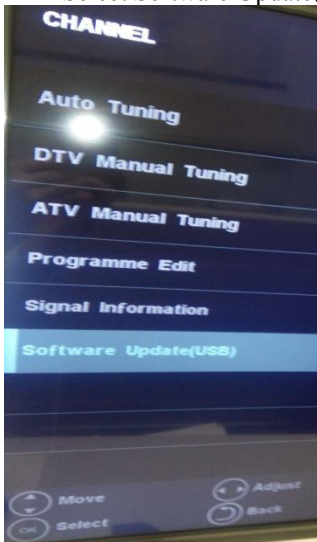


Select CHANNEL, press right key or OK key to enter.

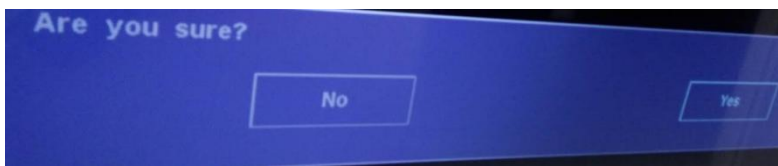




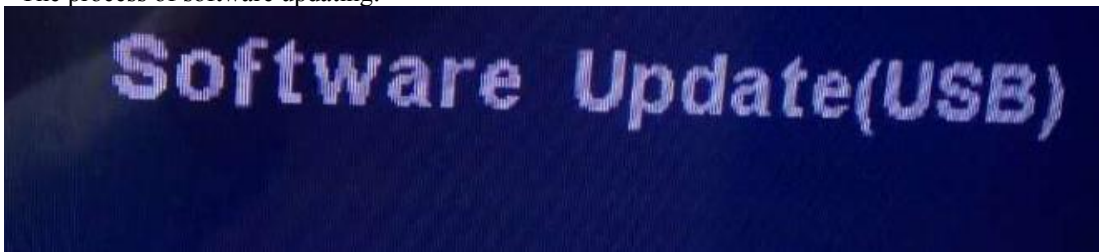
Select Software Update(USB), press right key or OK key to enter.



Software update menu will pop up when press confirm key, then select “Yes” to confirm:



The process of software updating:



Method 2 : Keep pressing VOL+ and CH+ keys on the machine panel, power on the machine, the standby light flashes quickly after about 5 seconds, standby light extinguish and turn into lighting after about a minute, means that the upgrade is completed.

5.1.4 Notice :

- ①. When the machine Upgrading (U disk light flash), do not remove U disk or switch off the power, otherwise it will destroy the software and lead can not upgrade.
- ②. The machine must be power off when inserted or pulled out U disk, to avoid U disk or damage the machine.

## 5.2 Panel Code

Press the following key sequence on a standard RC transmitter: “1999” directly followed by MENU, can see the panel type information from factory menu, see the Panel PN from the configuration table

CTN ALT BOM#	Panel Type	Panel PN
39PHH5261/96	K390WK1-NA260A3	7422-390PDK-335A1011-F

## 6. Circuit Descriptions

### 6.1 Introduction

The 5261 is covered by MSD3463 platform. The major deltas versus its predecessor support DVB-T, with also multi-media, Video out. The MSD3463 chassis comes with the following stylings:

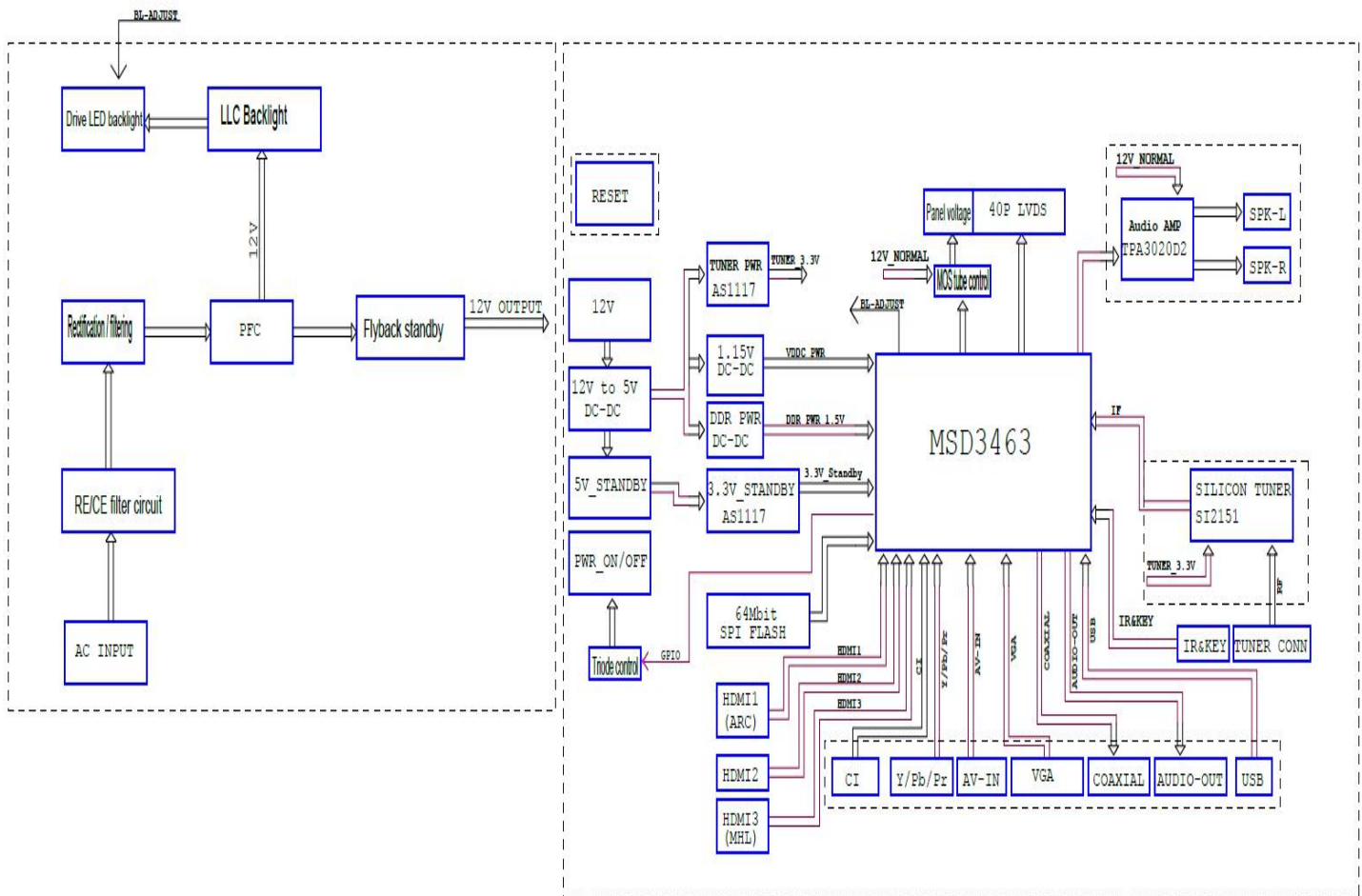
- Series 5261 39PHH5261/96

#### 6.1.1 Implementation

Key components of this chassis are:

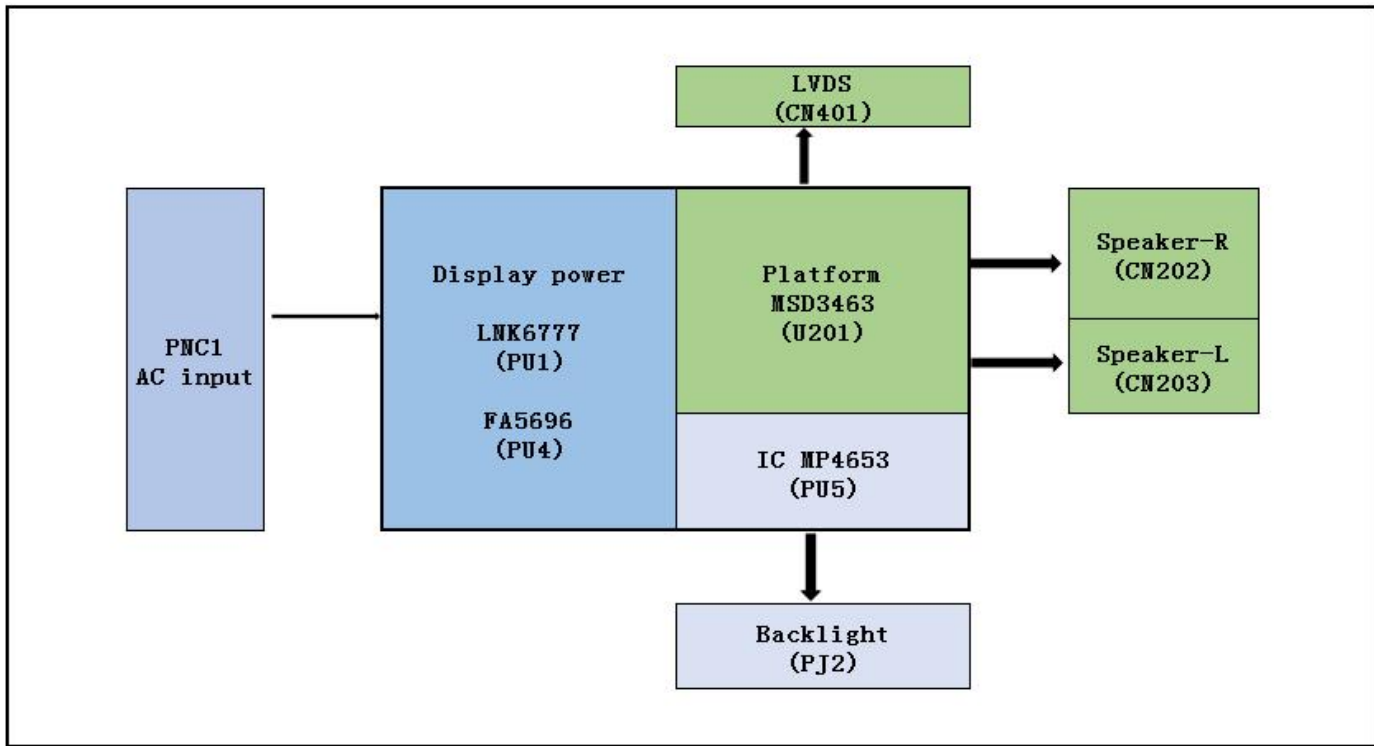
- TUNER POWER AS1117
- VDDC POWER
- MSD3463GSA-Z1 T8C2
- DDR POWER 1.5V
- 3.3V STANDBY AS1117
- 64 Mbit SPI FLASH
- HDMI1 ARC
- HDMI2 PORT
- HDMI3 MHL

#### 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.

- +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:
  - side-view LED without scanning: PSL power panel
  - side-view LED with scanning: PSLs power panel
  - direct-view LED without 2D-dimming: PSL power panel

- direct-view LED with 2D-dimming: PSDL power panel.

**PSL** stands for **P**ower **S**upply with integrated **L**ED-drivers.

**PSLS** stands for a **P**ower **S**upply with integrated **L**ED-drivers with added **S**canning functionality (added microcontroller).

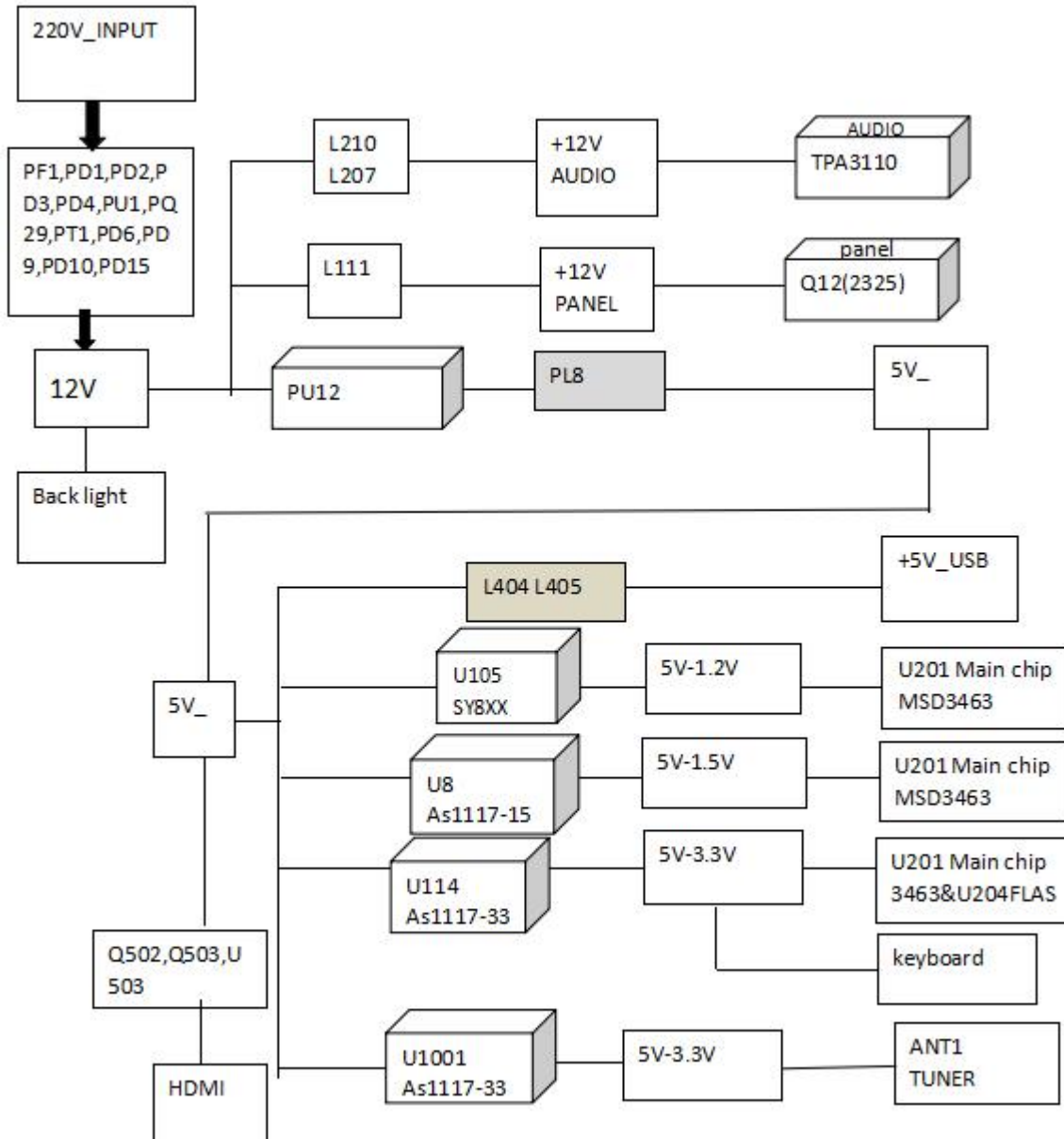
**PSDL** stands for a **P**ower **S**upply for **D**irect-view **L**ED backlight with 2D-dimming.

### 6.3 DC/DC Converters

The on-board DC/DC converters deliver the following voltages(depending on set execution):

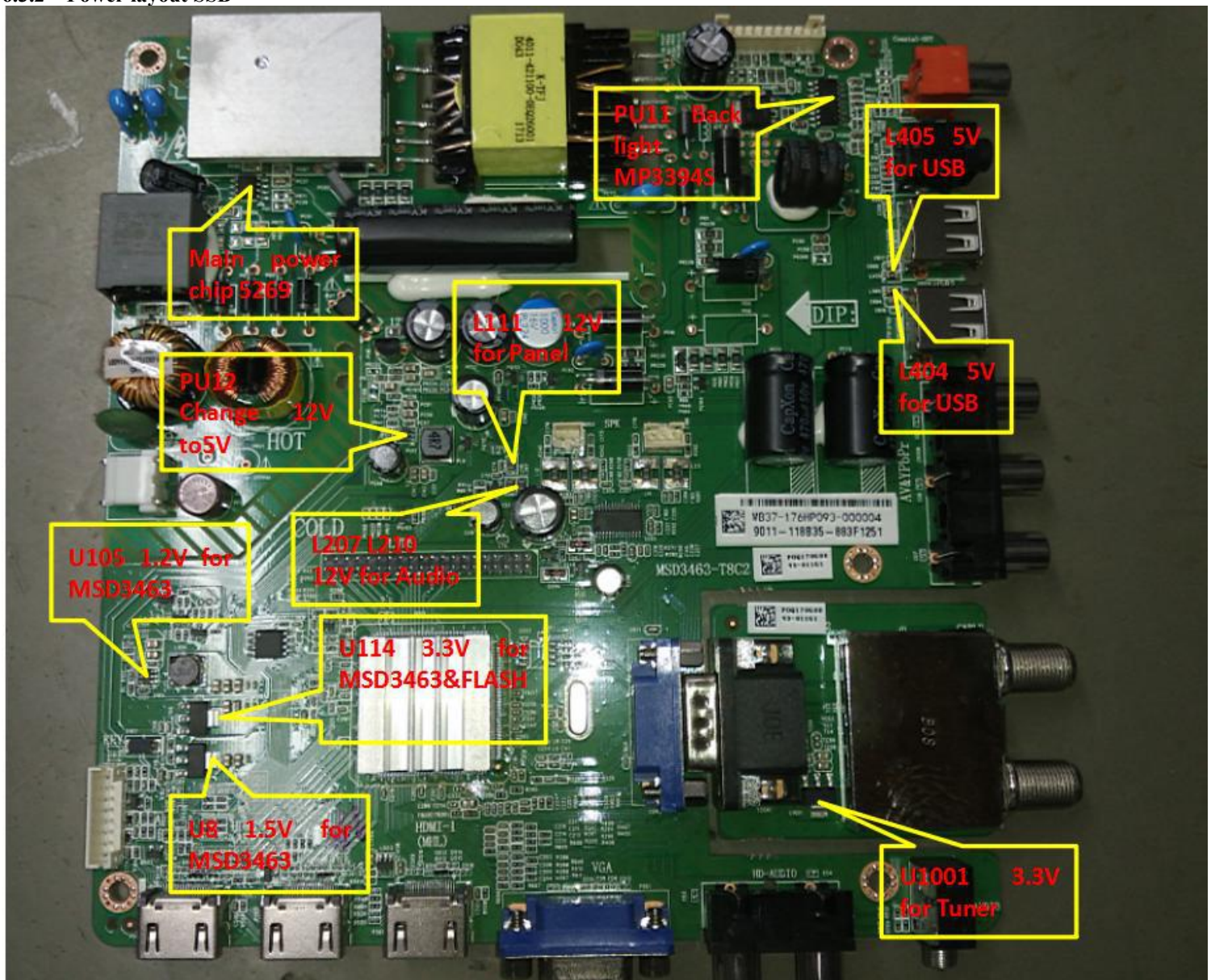
- +5V-SB, permanent voltage for the Stand-by Power system
- +3V3-STANDBY, voltage for IR/Key board
- +12V, input from the power supply for the panel common(active mode)
- +3V3-EMMC, +V-EMMC-IO, voltage for EMMC when TV on
- +1V5-DDR, +VREF-A2-DQ,, +VREF-A2-CA, voltage for DDR
- TUNER\_3V3, supply voltage for tuner
- +5V-SW, input intermediate supply voltage for USB Power
- +12V-AUDIO1 for the AUDIO AMP
- +3.3VA\_T2, +1.2V\_T2 voltage for Demodulator IC channel decoder

#### 6.3.1 Power Tree





### 6.3.2 Power layout SSB



Power SSB Top View

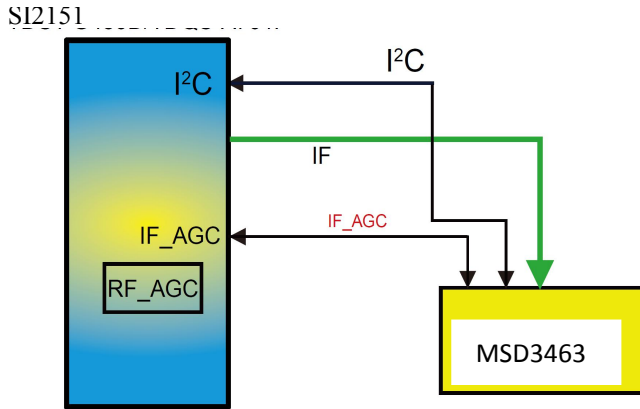
## 6.4 Front-End Analogue and DVB-T; reception

### 6.4.1 DVB-T part

The Front-End for analogue tuner consist of the following key components:

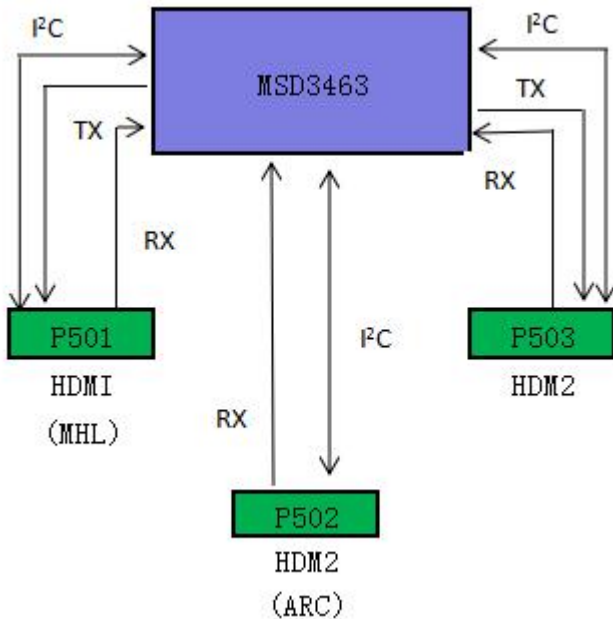
- TUNER POWER SUPPLY IC AMS1117-3.3V
- CUP MSD3463 Processor
- TUNER SI2151 Processor

Below find a block diagram of the front-end application for CN1 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 HDMI1.4a) with digital audio/PC DVI input/MHL/CEC
- HDMI 2: HDMI input ( TV digital interface support HDCP) with digital audio/PC DVI input/CEC
- HDMI 3: HDMI input ( TV digital interface support HDMI1.4a) with digital audio/PC DVI input/CEC/ARC
- +5V detection mechanism
- Stable clock detection mechanism
- HPD control
- Sync detection
- TMDS output control
- CEC control
- ARC control
- MHL control



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## 6.6 Video and Audio Processing - MSD3463

The MSD3463 is the main audio and video processor (or System-on-Chip) for this platform. It has the following features:

1. Worldwide multi-standard analog TV demodulator
2. PAL/SECAM/DVB-T/DVB-T2 /DVB-C demodulators
3. 1920\*1080@60Hz direct drive
4. Powerful CPU core
5. A transport de-multiplexer
6. A multi-standard video decoder
7. Rich format audio codec
8. HDMI1.4 receiver
9. MHL input
10. 2D converter
11. PWM dimming (LED backlight)
12. Two-link LVDS,

### 1 OVERVIEW

The MediaTek MSD3463 family consists of a DTV front-end demodulator, a backend decoder and a TV controller and offers high integration for advanced applications. It integrates a transport de-multiplexer, a high definition video decoder, an audio decoder, a -link LVDS transmitter, and a NTSC/PAL/SECAM TV decoder. The MSD3463 enables consumer electronics manufacturers to build high quality, low cost and feature-rich DTV.

**World-Leading Audio/Video Technology:** The MSD3463 supports Full MPEG2/4/H.264 video decoder standards, and JPEG. The MSD3463 also supports MediaTek MDDi™ de-interlace solution which can reach very smooth picture quality for motions.

The special color processing technology provides a natural, deep colors and true studio quality video. Moreover, the MSD3463 family has built-in high resolution and high-quality audio codec.

**Rich Features for High Value Products:** The MSD3463 family enables true single-chip experience. It integrates high-quality HDMI1.4, high speed VGA ADC, a-link LVDS, USB2.0 receiver, and ATSC/DVB-T/DVBC/DTMB/ISDB-T demodulators.

**All New FHD@60Hz Experience:** The MSD346 family provides consumers with FHD 60Hz direct drive.

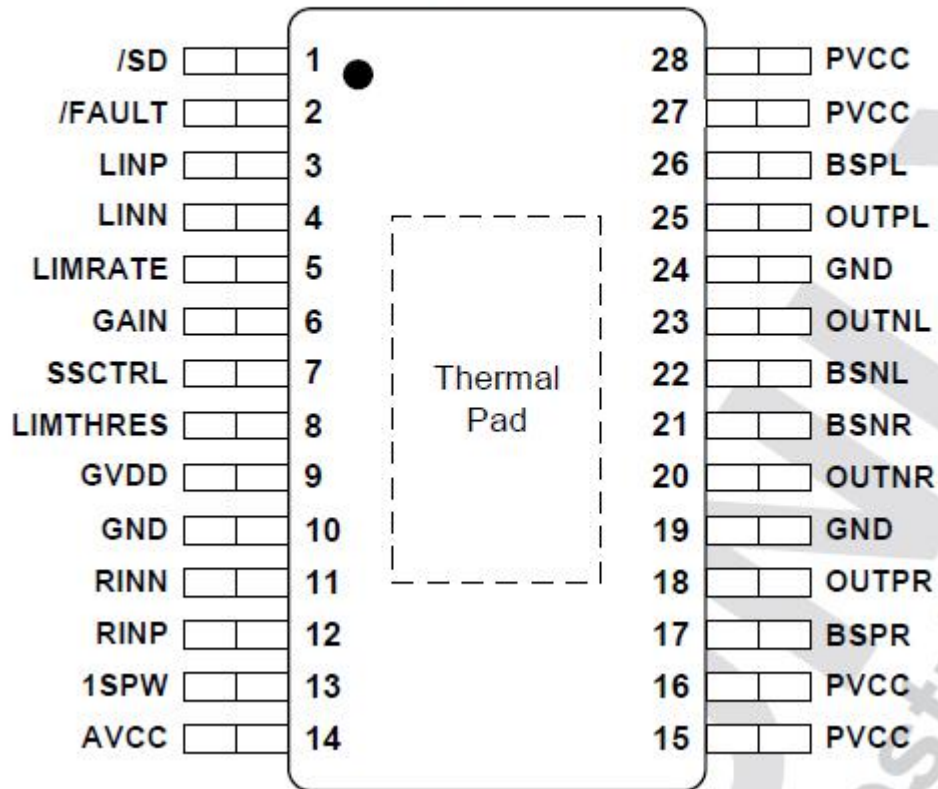
**WW Common Platform Capability:** The MSD3463 family supports ATSC, DVB-T, DVB-C, and ISDB-T demodulation functions. It reserves transport stream inputs for external demodulators for other countries or areas. TV maker can easily port the same UI to worldwide TV models. First-class adjacent and co-channel rejection capability grants excellent reception. Professional error-concealment provides stable, smooth and mosaic-free video quality.

## MSD3463

The diagram illustrates the internal architecture of the ADXL345, showing the signal flow from inputs to outputs. Key components include:

- Inputs:** LINP, LINN, RINN, RNP, FBTL, AGND, AVCC, GND, and various feedback signals (OUTPL FB, OUTNL FB, OUTNR FB, OUTPR FB).
- Control and Protection:** Gain Control, PLIMIT, Ramp Generator, Bases and References, Startup Protection Logic, and a block containing SC Detect, DC Detect, Thermal Detect, and UVLO/OVLO.
- Processing:** Two main signal paths (top and bottom) each consisting of a Gain Control stage, a PLIMIT stage, and a PWM Logic stage.
- Outputs:** OUTPL, OUTNL, OUTNR, and OUTPR, each with a feedback loop (OUTPL FB, OUTNL FB, OUTNR FB, OUTPR FB).
- Power and Biasing:** AVCC, GND, and various biasing points (BSPL, BSNL, BSNR, BSPL, BSPL).

28 Pin HTSSOP  
PWP Package  
Top View

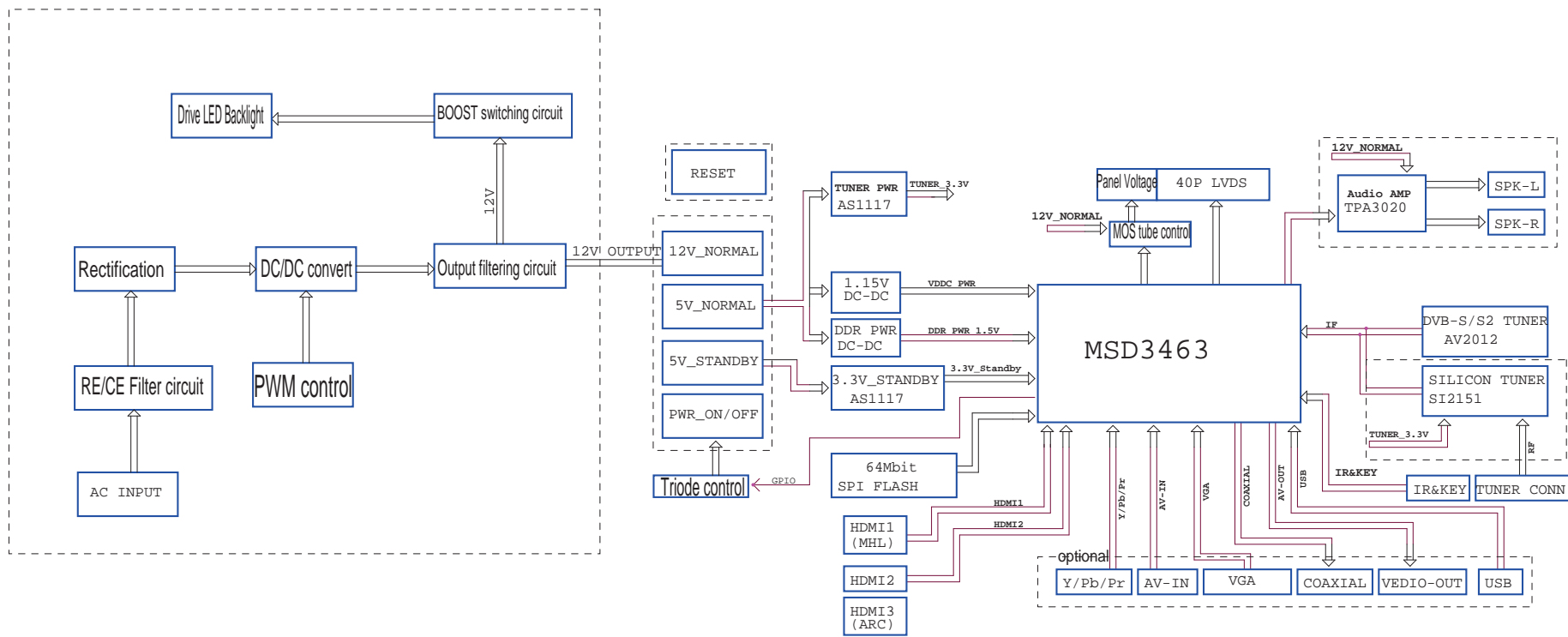


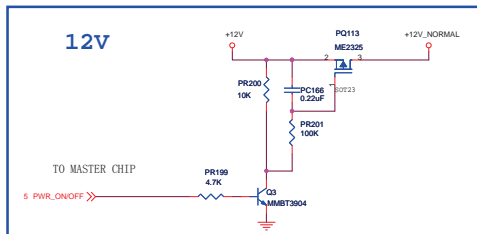
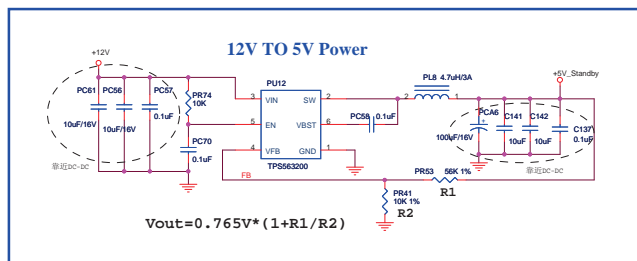
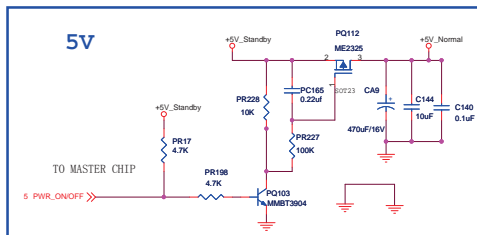
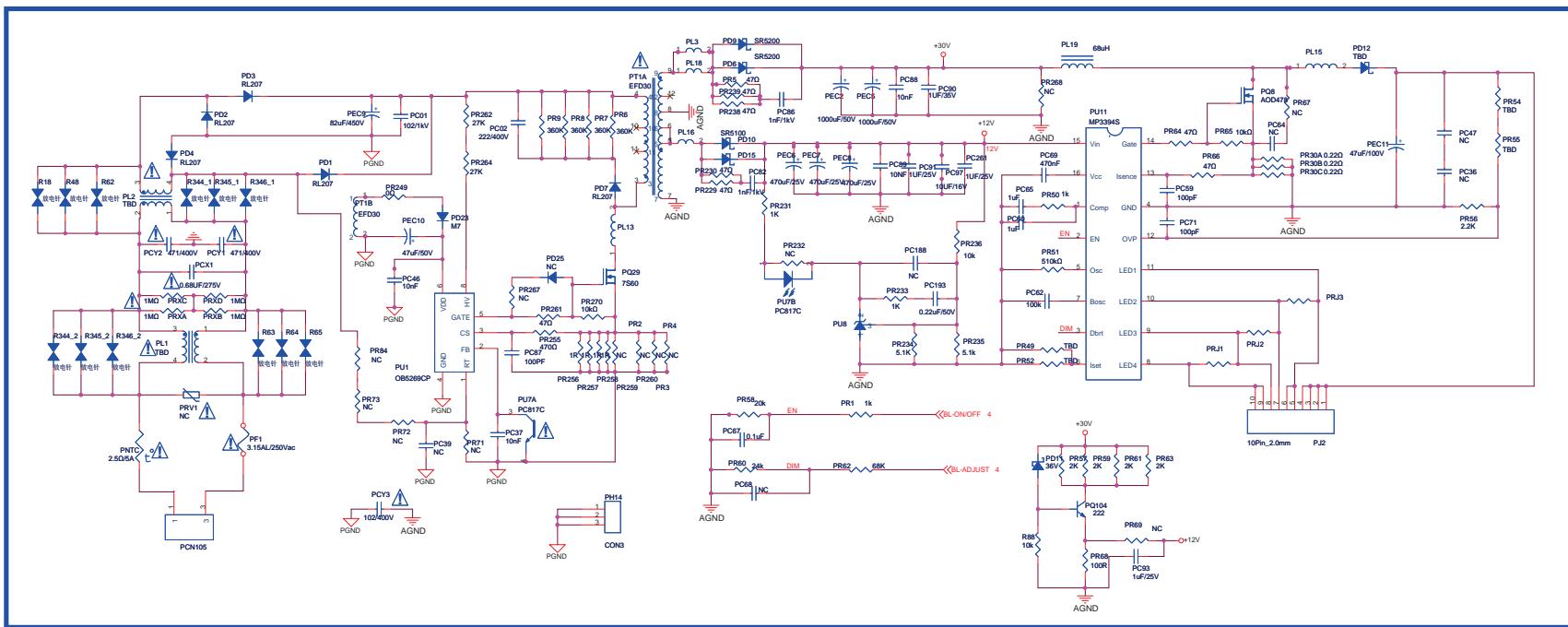
# 8.Circuit Diagrams

MSD3463-T8C2 Three in One board Circuit Diagrams VER:A1.0 2015-11-10

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3	Power & LED Driver
4	System Power
5	MSD3463
6	Video&VGA&USB&Amplify &LVDSpage
7	HDMI page
8	Tuner page

History Rev			
DATE	Rev	Description	Author
11/10/2015	Ver:A1.0	First Version Release	ZHQING

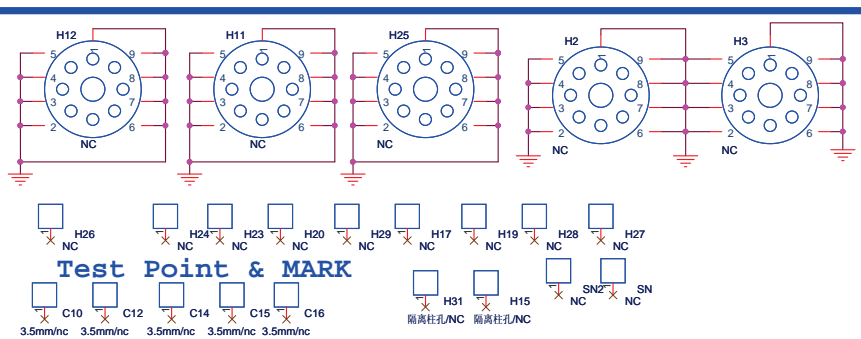
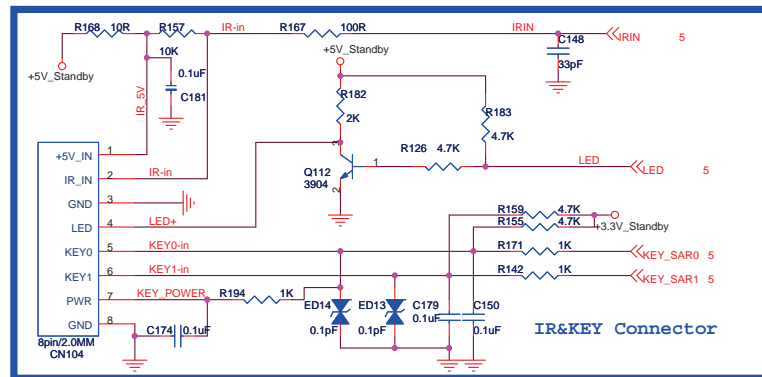
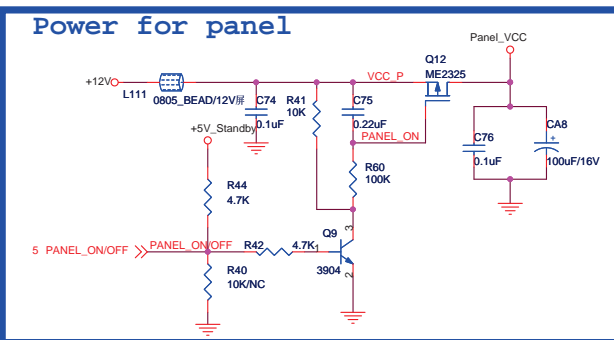
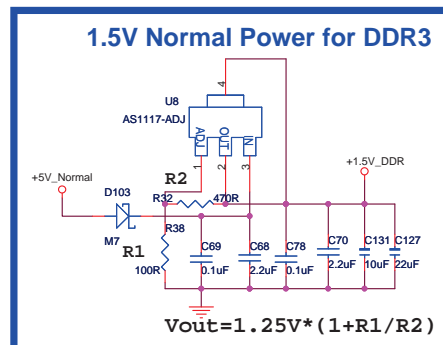
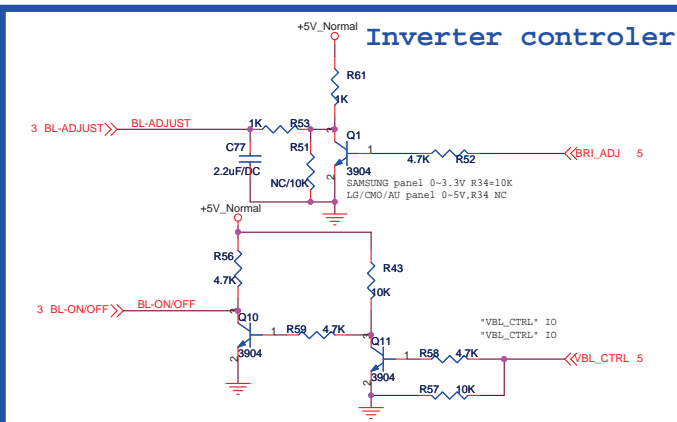
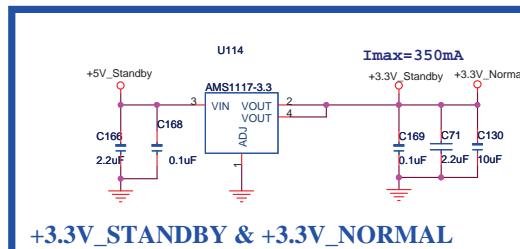
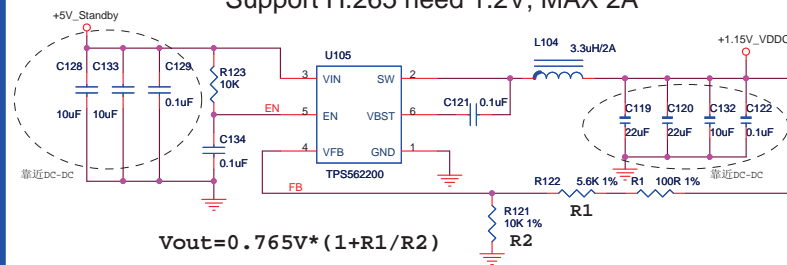


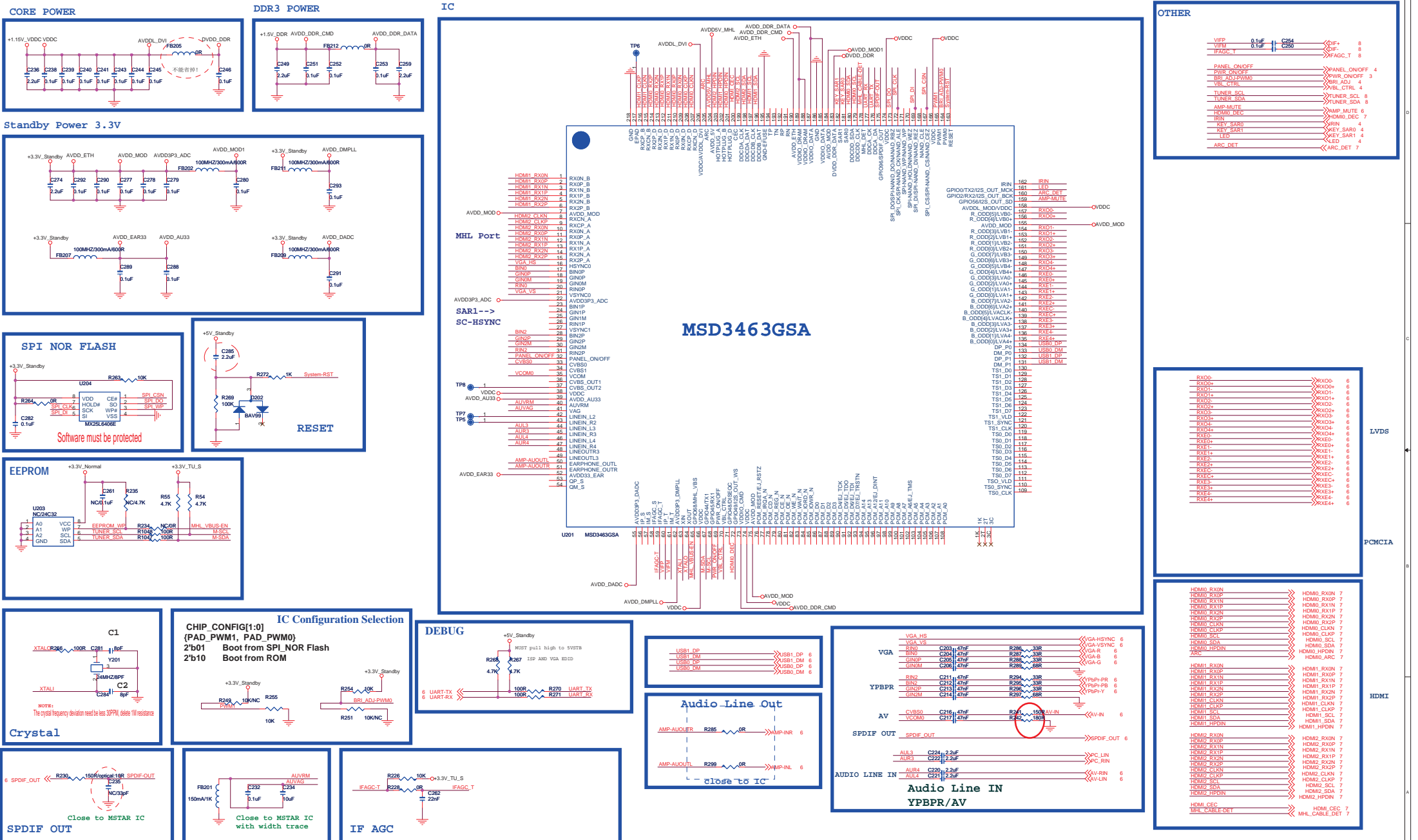




1.2V 2A for VDDC

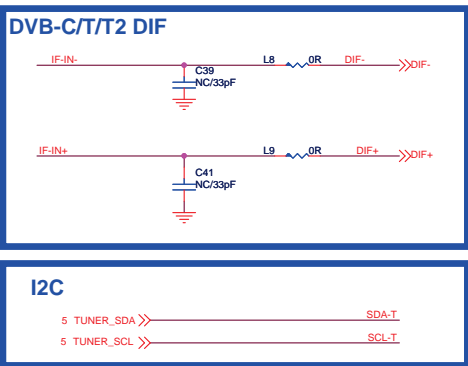
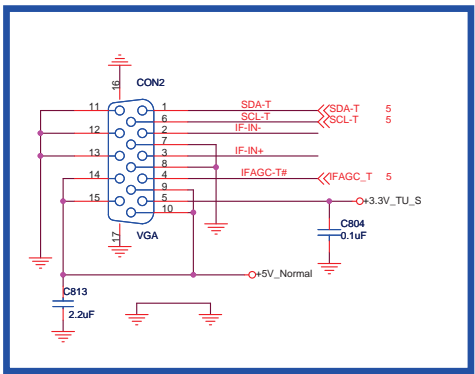
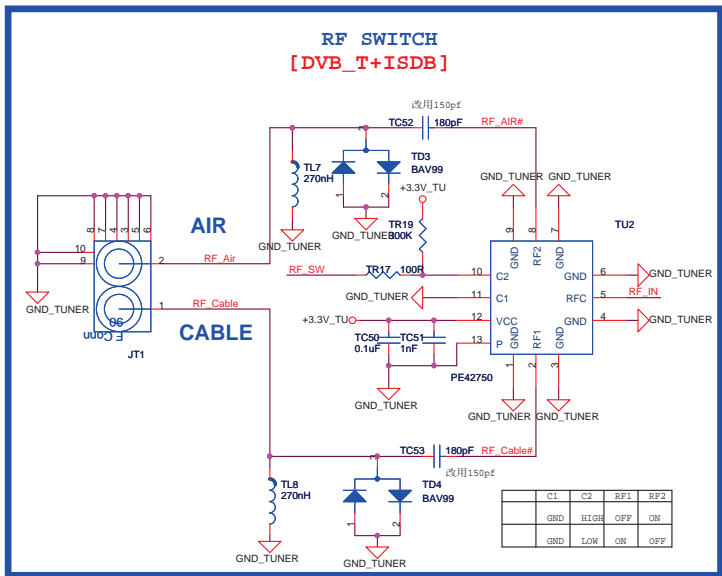
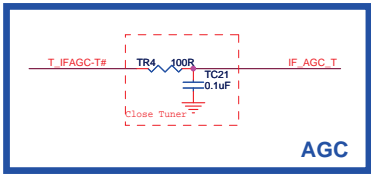
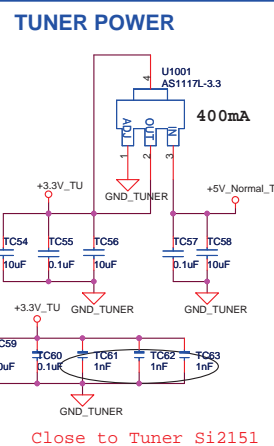
Support H.265 need 1.2V, MAX 2A





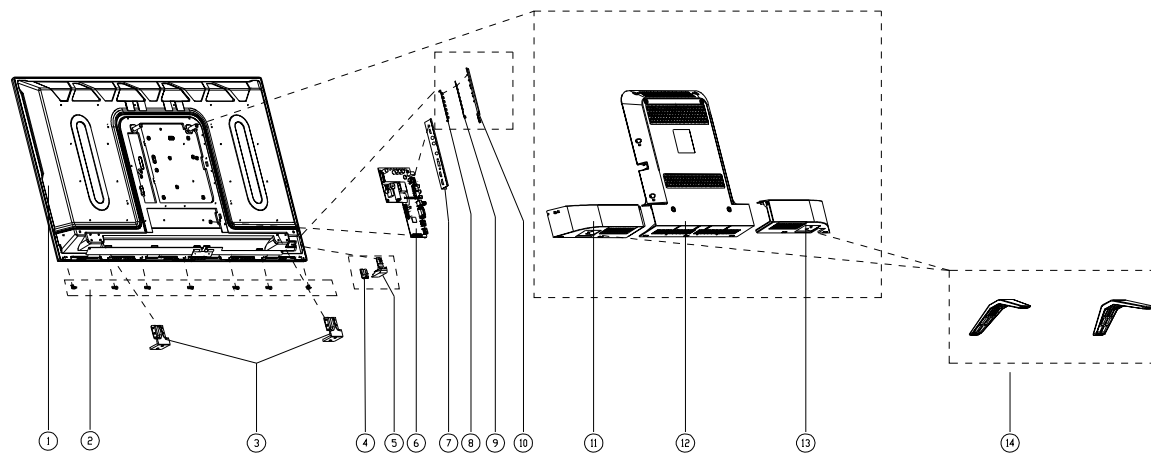




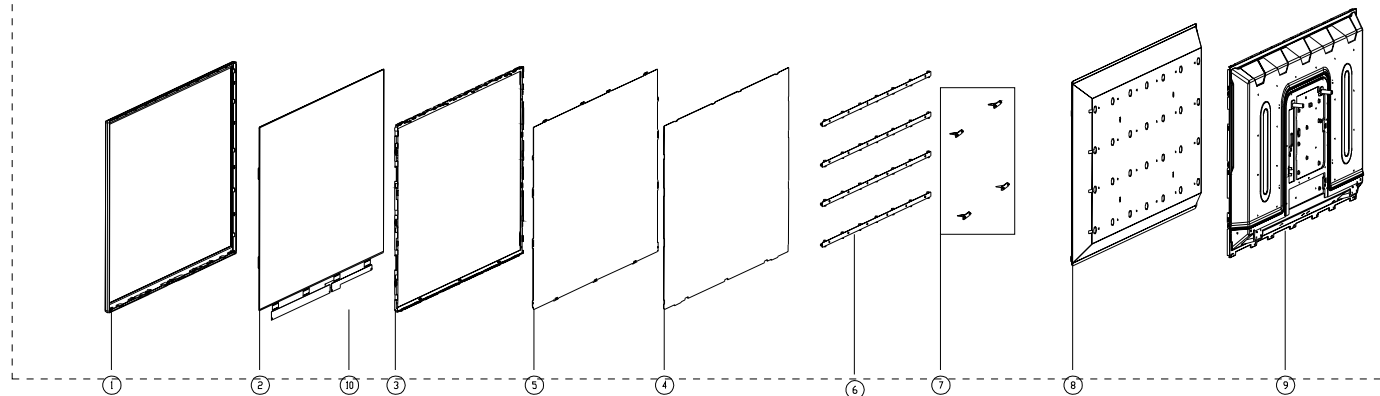


# 9. Styling Sheet

5261 series 39"



## 模组 (Module)



序号/No.	名称/Name	数量/Qty
14	模组	1
13	模组	1
12	模组	1
11	模组	1
10	模组	1
9	模组	1
8	模组	1
7	模组	1
6	模组	1
5	模组	1
4	模组	1
3	模组	2
2	模组	3
1	模组	1

序号/No.	名称/Name	数量/Qty
9	模组	1
8	模组	1
7	模组	4
6	模组	4
5	模组	1
4	模组	2
3	模组	4
2	模组	1
1	模组	1

X± 200	X*± 0.050	39K1 爆炸图		KTC®	
X± 100	X*± 0.010	39K1 EXPLOSIVE VIEW		深圳市康冠技术有限公司	
XX± .01	XX*± 0.005	料号		日期	
XX± .005	XX*± 0.002	批准		2015-12-3	
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		绘图		1:1 1/1 A	