
Service Manual



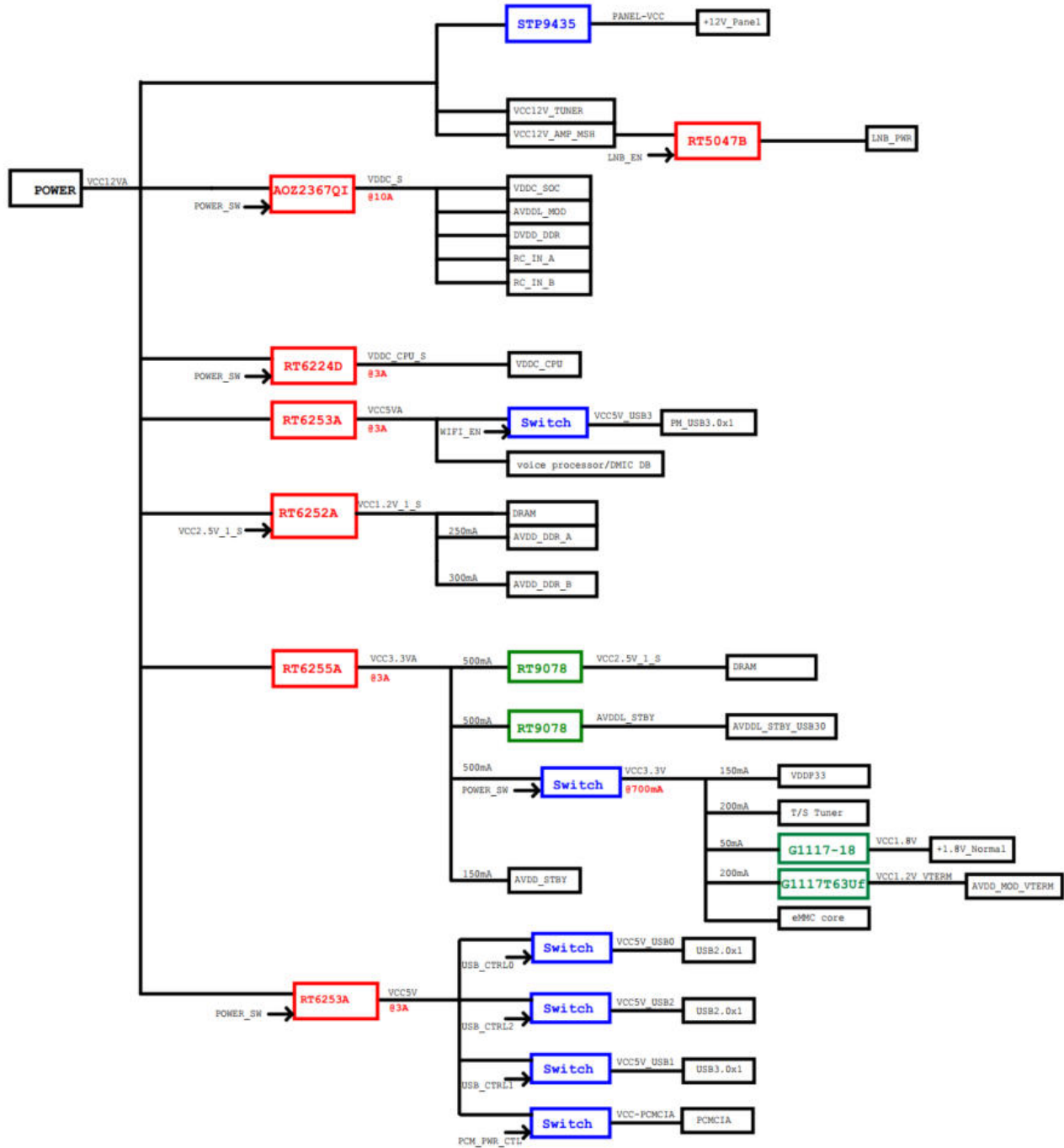
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SAFETY NOTICE

1. There are many electrical and mechanical parts in the QCA+ series touchscreen, which the technician need pay attention to the safety precaution before repairing.
2. It is essential that all the components should be replaced with the same or authorized components as recommended in this manual to prevent Shock, Fire, or any other Hazards.
3. Please do not modify the original mechanical or electrical design without previous verification from the manufacturer or authorized agent.
4. Before start repairing or disassembling the machine, please make sure unplug the machine from any power source and properly grounded.

Part A. System Diagram:



Part B. Recommended Spare Parts List

RECOMMENDED SPARE PARTS LIST (STV-9824-PLUS)

Model Name:STV-9824-PLUS/98D8100/1MT679A3NTBT/CS01T

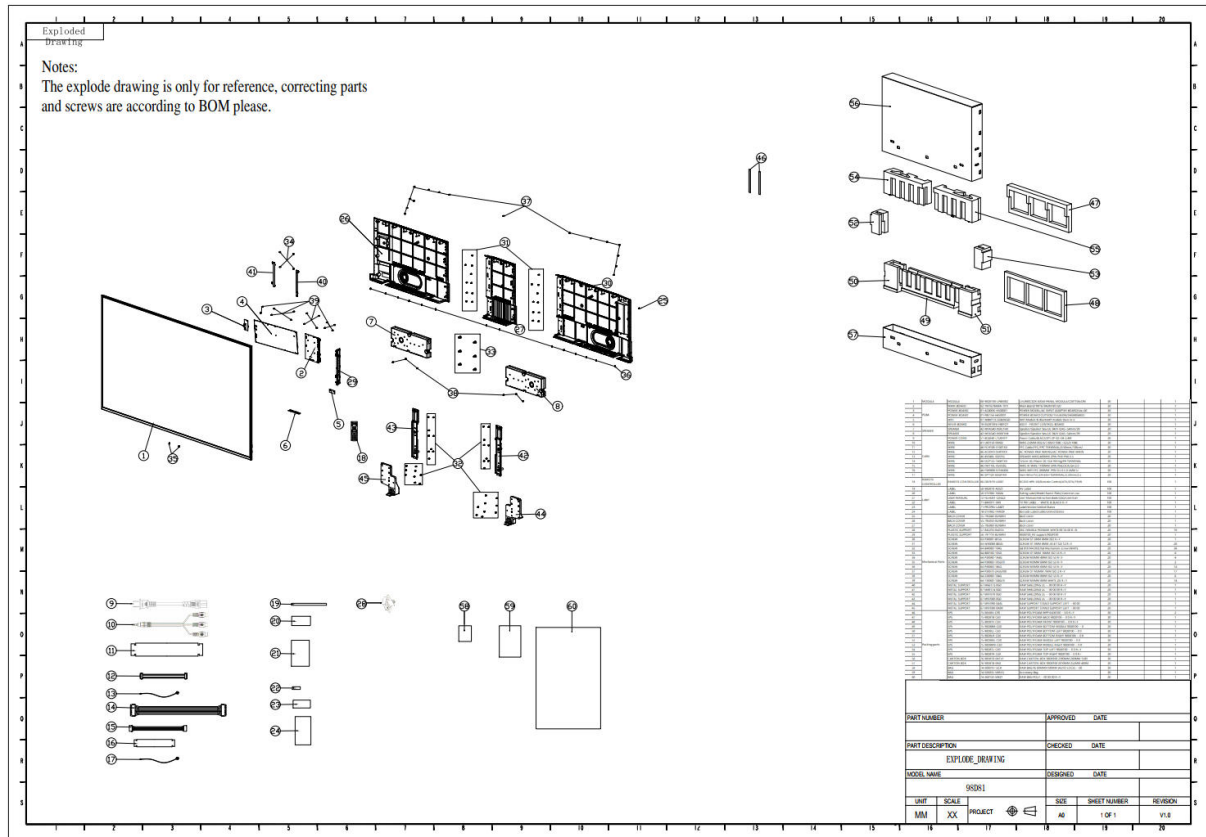
No.	Category	Part Name(EN)	ODM Partner Material	Material Description(EN)	9P-98D810R3-NL0AU
1	MODULE	MODULE	08-98D8100-LPBX002	LVU980CSDX E0050 PANEL MODULE/CS01T0A/DM	1
2	PCBA	MAIN BOARD	02-1MT679AMA-T02I	Main Board/1MT679A3NTBT/15V/UD	1
3		POWER BOARD	81-ACB00X-H500001	POWER MODEL/AC INPUT ADAPTER BOARD/Uo=00	1
4		POWER BOARD	81-PBE154-H450001	POWER BOARD OUTSIDE/15V/450W/SHG9804A02-	1
5		WIFI	07-WBMT76-63BUNGD	WIFI Module & Bluetooth module (two-in-o	1
6	SPEAKER	KEY/IR BOARD	08-85D810F4-FB01OT	ASS'Y - FRONT CONTROL BOARD	1
7		SPEAKER	42-WFA540-X6KL1HX	Speaker/Speaker box/UL 94/V-0/45~54mm/39	1
8		SPEAKER	42-WFA540-X6KR1HX	Speaker/Speaker box/UL 94/V-0/45~54mm/39	1
9	Cable	POWER CORD	51-BCB240-L1U0H1P	Power Cable/BLACK/DTI-2P-02+04-2.4M	1
10		WIRE	41-UK0150-0KK02	WIRE 2.6MM 0D2.6/7.8(9/0.10BC+S25/0.10BC	1
11		WIRE	46-FCH108-51G02XX	FFC Cable/FFC/FPC TERMINAL/0.50mm/108cm/	1
12		WIRE	46-ACK010-05P01XX	AC POWER PAIR WIRING/AC POWER PAIR WRIN	1
13		WIRE	46-BV040L-02J01G	SPEAKER WIRE/400MM 2PIN PHD PHD 2.5	1
14		WIRE	46-DCP125-14G01XX	125cm DC/Power DC Out Wiring/PH TERMINAL	1
15		WIRE	46-FM110L-05V03G	WIRE IR WIRE 1100MM 5PIN PH(LOCK) GH 2.0	1
16		WIRE	46-FW0800-07DA00G	WIRE WIFI FFC 800MM 7PIN 0.5 0.5 0.5MM U	1
17		WIRE	46-SPT120-02G01XX	Horn Wire/TJC3/XH/EH TERMINAL/2.50mm/2.5	1
18	REMOTE CONTROLLER	REMOTE CONTROLLER	06-H87R19-ZX001	RC870-HPR-V0/Remote Control/Smart IR/19/	1
19	Label	LABEL	58-98D810-A0JZ1	AV Label	1
20		LABEL	58-STV982-160Z4	Rating Label/Model Name Plate/Common cou	1
21		USER MANUAL	72-NLHD61-QSGZ3	QSG/STV+/Common countries	1
22		QSG	70-XIAOMI-EPEZ2	Quick Start Guide	1
23		LABEL	71-98D810-SCRZ3	Label/sticker/Common countries	2
24		LABEL	71-CNFPTZ-LABS1	Label/sticker/Common countries	1
25		LABEL	71-BAR011-A09	TV PRI LABEL -- WHITE & BLACK R=Y	1
26		LABEL	71-PROP65-LABZ1	Label/sticker/United States	1
27	Mechanical Parts	LABEL	7B-STV982-FAMZ9	Barcode Label/Lable/United States	1
28		BACK COVER	55-795040-0UY6RH	Back cover	1
29		BACK COVER	55-795050-0UY6RH	Back cover	1
30		BACK COVER	55-795060-0UY6RH	Back cover	1
31		PLASTIC SUPPORT	57-845310-0UD1A	DEC HANDLE PIONEER WHITE 00 1A 00 R=N	10
32		PLASTIC SUPPORT	56-797110-BUY6RH	98D8100_AV support/98D8100	1
33		SCREW	63-P3008T-BF5G	SCREW-ST 3MM 8MM ISO R=Y	1
34		SCREW	63-W30080-B05G	SCREW-ST 3MM 8MM JIS B 1122 12 R=Y	20
35		SCREW	64-B40080-104G	GB 818 M4.0X8.0B-Machanism screw/WHITE	36
36		SCREW	64-B80160-105G	SCREW-ST 8MM 16MM ISO 53 R=Y	6
37		SCREW	64-P30040-1A4G	SCREW M3MM 4MM ISO 53 R=Y	4
38		SCREW	64-P30060-105GT0	SCREW M3MM 6MM ISO 53 R=Y	2
39		SCREW	64-P30060-1B5G	SCREW M3MM 6MM ISO 53 R=Y	14
40		SCREW	64-P30070-2H5G100	SCREW-ST M3MM 7MM ISO 2 R=Y	17
41		SCREW	64-S30080-104G	SCREW M3MM 8MM ISO 53 R=Y	6
42		SCREW	64-T30080-104G70	SCREW M3MM 8MM WHITE ZN R=Y	14
43		SCREW	66-Z97570-00E	NUT-HEXAGON ISO R=Y	4
44		METAL SUPPORT	67-M66173-0G0	RAW SHIELDING UL -- 00 00 00 R=Y	1
45		METAL SUPPORT	67-M66174-0G0	RAW SHIELDING UL -- 00 00 00 R=Y	1
46		METAL SUPPORT	67-M97070-0G0	RAW SHIELDING UL -- 00 00 00 R=Y	1
47		METAL SUPPORT	67-M97080-0G0	RAW SHIELDING UL -- 00 00 00 R=Y	1
48		METAL SUPPORT	67-M97090-0A8L	RAW SUPPORT STAND SUPPORT LEFT -- 00 00	1
49		METAL SUPPORT	67-M97090-0A8R	RAW SUPPORT STAND SUPPORT LEFT -- 00 00	1
50	Packing parts	EPS	75-605065-CP0	RAW POLYFOAM MPP 65D6100 -- 0 0 R=Y	2
51		EPS	75-98D81B-CE0	RAW POLYFOAM BACK 98D8100 -- 0 0 R=Y	1
52		EPS	75-98D81F-CE0	RAW POLYFOAM FRONT 98D8100 -- 0 0 R=Y	1
53		EPS	75-98D8BM-CE0	RAW POLYFOAM BOTTOM-MIDDLE 98D8100 -- 0	1
54		EPS	75-98D8LL-CE0	RAW POLYFOAM BOTTOM-LEFT 98D8100 -- 0 0	1
55		EPS	75-98D8LR-CE0	RAW POLYFOAM BOTTOM-RIGHT 98D8100 -- 0 0	1
56		EPS	75-98D8ML-CE0	RAW POLYFOAM MIDDLE-LEFT 98D8100 -- 0 0	1
57		EPS	75-98D8MR-CE0	RAW POLYFOAM MIDDLE-RIGHT 98D8100 -- 0 0	1
58		EPS	75-98D8TL-CE0	RAW POLYFOAM TOP-LEFT 98D8100 -- 0 0 R=Y	1
59		EPS	75-98D8TR-CE0	RAW POLYFOAM TOP-RIGHT 98D8100 -- 0 0 R=	1
60		Honeycomb panel	79-228138-0QH	TV RAW PALLET PALLET -- 00 00 R=Y	1
61		CARTON BOX	76-98D810-0ATR6	RAW CARTON-BOX 98D8100 2390MM 280MM 1500	1
62		CARTON BOX	76-98D81B-0AD	RAW CARTON-BOX 98D8100 2610MM 255MM 400M	1
63		BAG	74-008010-12CZ8R	RAW BAG PE 80MMX100MM (AUTO LOCK) -- 00/	1
64		BAG	74-026035-5WE9V	RAW BAG PE 260X350MM 00 00 00 R=Y/RAW BA	1
65		BAG	74-260150-50KY7	FOAM BAG/XCPD/RAW\260150-5\HDPE+EPE\T0.0	1

STV-9824-PLUS:



Part D: Exploded Views

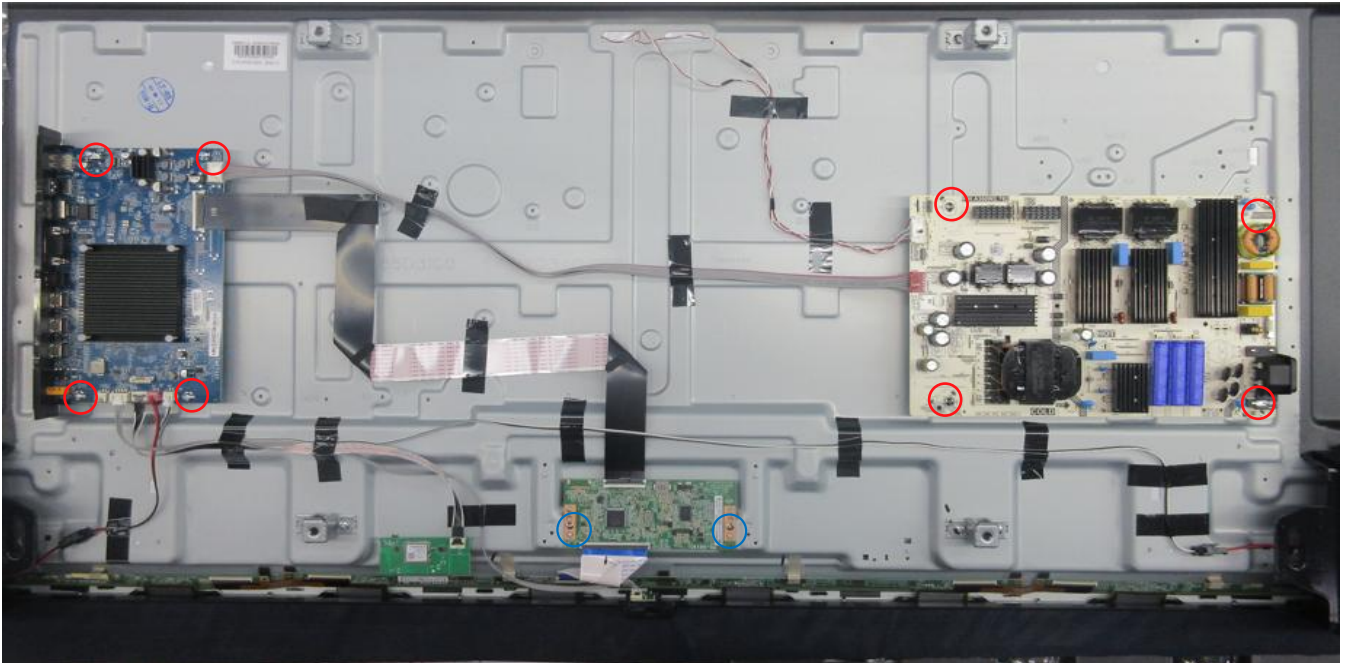
STV-9824-PLUS:



Part E. Replace OC module

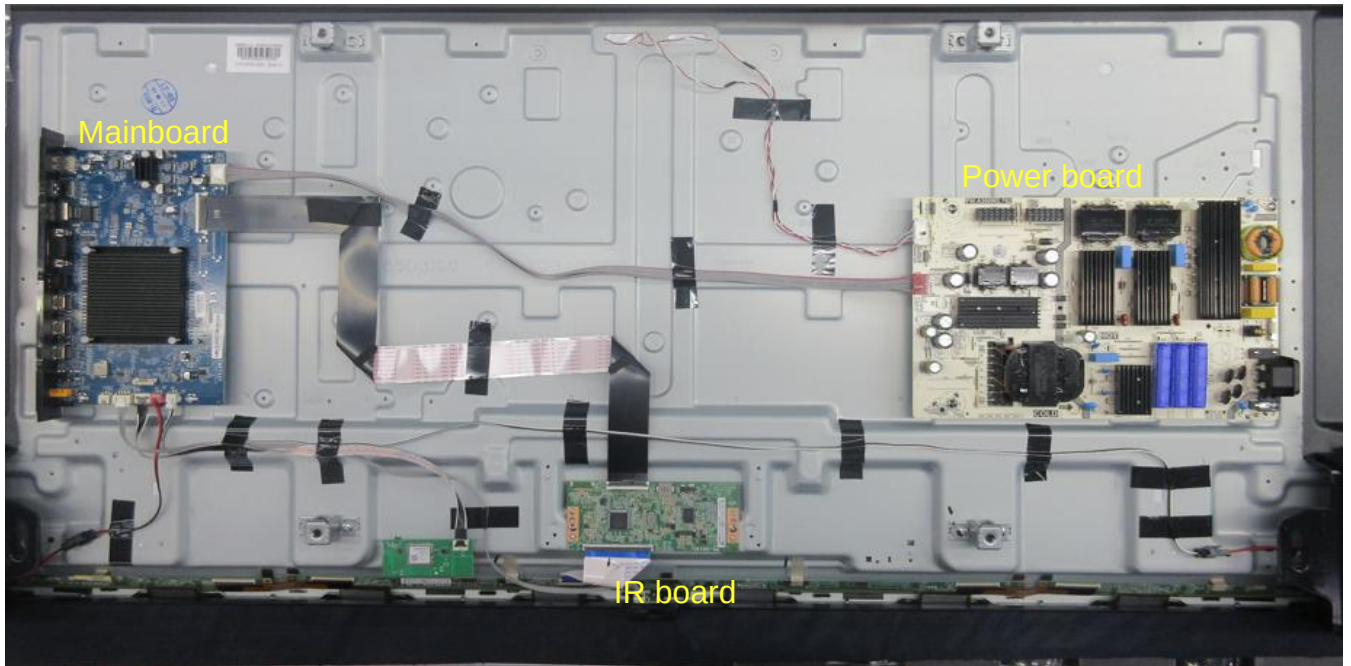
1. Take off rear covers, remove all components like mainboard, power board, camera & mic board, inner cables and IR PCB SET from the original defect unit.
2. Remove glass from defect unit.
3. Assemble new OC module to original glass
4. Assemble all of components that removed from the defect unit to the new OC module.
5. Hang on the screen and power on, testing.
6. Keep the T-CON board of defect unit as spare parts buffer

Part F. Overview of PCBA screws



Color	Picture	Description
		M3*8 Power board ground Screws
		M3*4 T-CON board screws

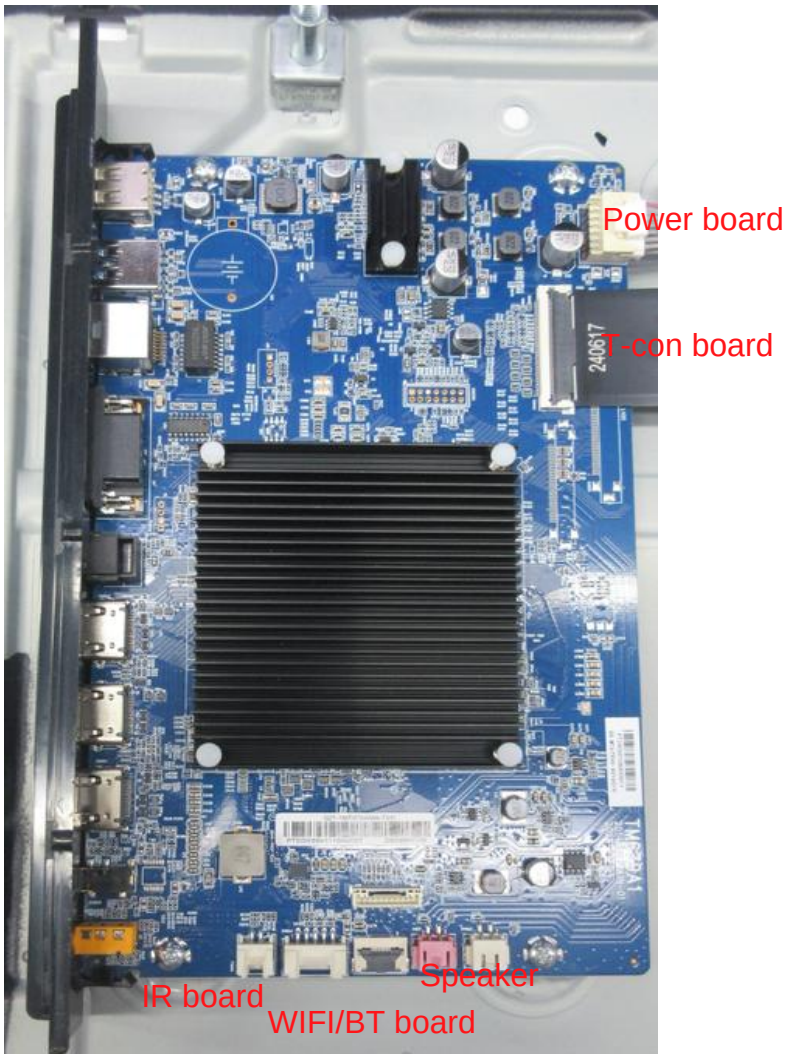
Part G. Overview of PCBAs



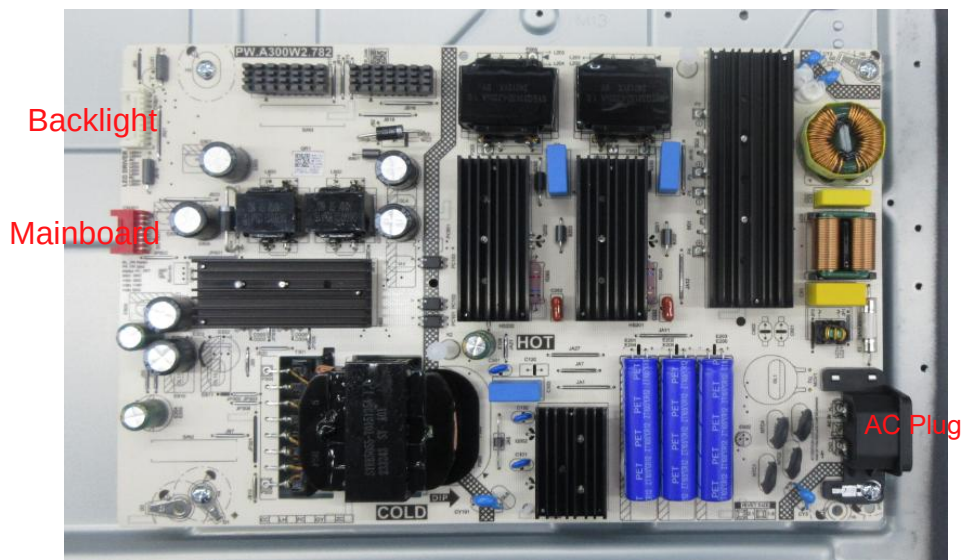
T-con board

WIFI/BT board

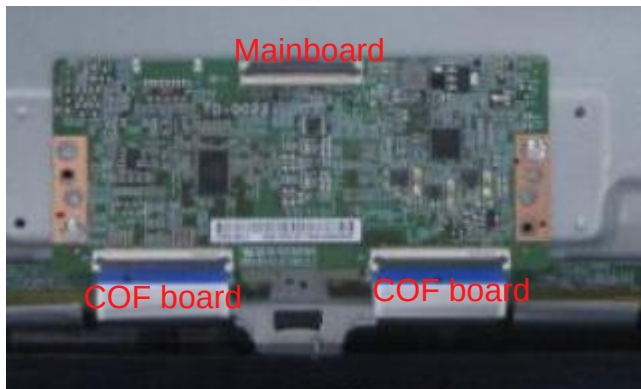
1. Mainboard wiring



2. Power board wiring



3. T-con board wiring



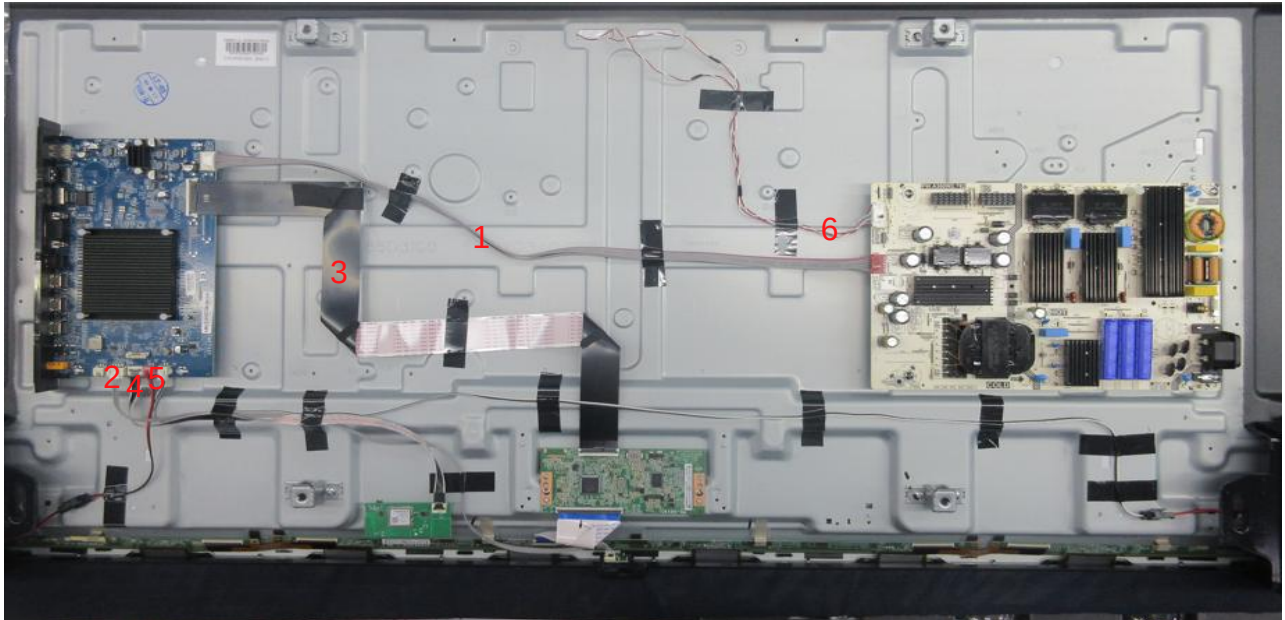
4. WIFI/BT board wiring



5.IR board wiring



Part H. Internal cables



NO.	Part name
1	DC cable
2	IR cable
3	T-con cable
4	WIFI/BT cable
5	Speaker cable
6	Backlight cable

Part I.Replacing the battery in remote control

a. Remove the back cover of the remote control and remove the battery



b. Take the new batteries and install them



PartJ.Movement Debugging Instructions

1.Overview

The factory menu is mainly used for factory production and function debugging related to the factory. Currently, it is mainly divided into 5 major functions (DesignMode hotkey/Factory Menu/Other Setting/Service Setting/Param Setting), as shown in Figure 1.

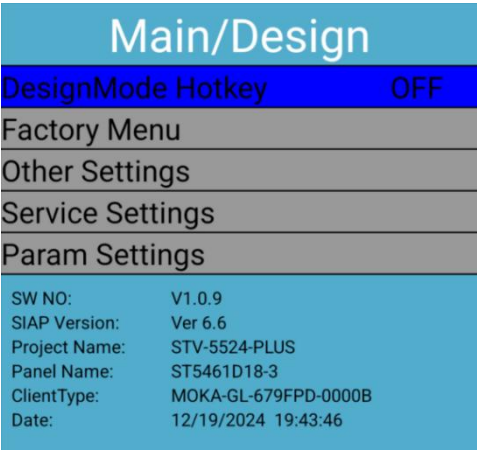


Figure 1. Factory Menu Interface

The following table briefly introduces the functions of each menu:

Name	Description
DesignMode Hotkey	D mode switch
Factory Menu	Enter the factory menu
Other Setting	Enter other setting menus
Service Setting	Enter the after-sales information menu
Param Setting	Enter the parameter setting menu

The method to enter the factory menu: Operate the remote control in sequence as "Menu - Up - Down - Volume Up- Volume Up- Volume Down-Volume Down - Back".

2. Factory Menu

After opening the factory application, select "Factory Menu" and click the "OK" button to enter the factory menu interface, as shown in the following figure:

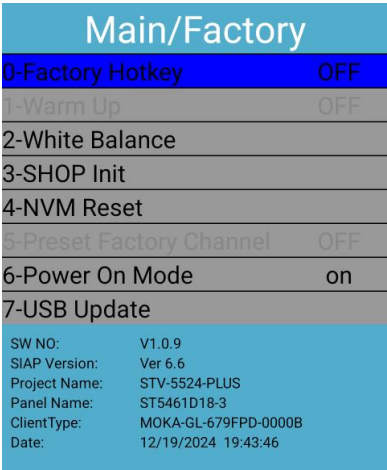


Figure 2. Factory Menu Interface

2.0 Factory HotKey （P Mode Switch）

This function is a factory shortcut function switch, with states of ON/OFF. The state can be modified by pressing the direction keys.

ON: Open the factory P mode.

OFF: Close the factory P mode.

After opening the P mode, a series of factory production-related work can be carried out (such as entering the factory aging function, factory serial port communication function, etc.), and the P mode shortcut information will be displayed in the lower left corner, as shown in Figure 3.

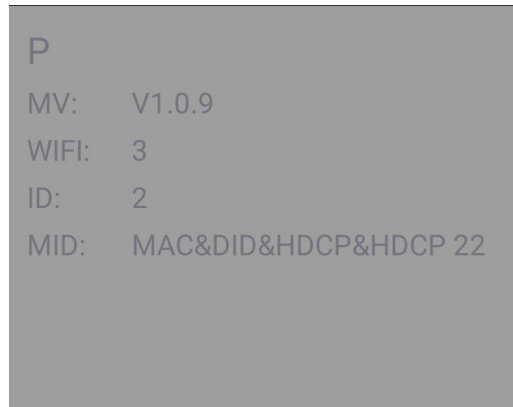


Figure 3. P Mode Shortcut Information

MV: System software version

WIFI: Factory Wi-Fi hotspot strength

ID: System PID code

MID: The status of the copied KEY. If the corresponding KEY is copied, it will be displayed here; otherwise, it will not be displayed. Commonly burned KEYs include DID/MAC/HDCP 1.4/HDCP 2.2

2.1 Warm Up

This function, when turned on, will enter the factory aging function, as shown in Figure 4.



Figure 4. Aging Interface

The aging time information is recorded under "PW" in the lower left corner.

2.2 White Balance

This function is used for engineers to manually debug white balance data, and the system will automatically save the relevant values after adjustment.

Main\Factory\White balance	
Source	HDMI 3
Picture mode	Standard
Color Temp	Standard
R Gain	135
G Gain	128
B Gain	153
R Offset	0
G Offset	0
B Offset	0
SW NO:	V1.0.9
SIAP Version:	Ver 6.6
Project Name:	STV-5524-PLUS
Panel Name:	ST5461D18-3
ClientType:	MOKA-GL-679FPD-0000B
Date:	12/19/2024 19:43:46

Figure 5.White Balance Settings Interface

The specific function explanations are shown in the following table:

Option	Function Description
SOURCE	Display white balance of each channel
Picture mode	Debug different picture modes such as User/Standard/Vivid
COLOR TEMP	Debug different color temperature modes such as Standard/COOL/WARM
R-GAIN	R channel gain, manually adjustable, cannot be changed after automatic debugging
G-GAIN	G channel gain, manually adjustable, cannot be changed after automatic debugging
B-GAIN	B channel gain, manually adjustable, cannot be changed after automatic debugging
R-OFFSET	R channel offset, manually adjustable, cannot be changed after automatic debugging
G-OFFSET	G channel offset, manually adjustable, cannot be changed after automatic debugging
B-OFFSET	B channel offset, manually adjustable, cannot be changed after automatic debugging

2.3 SHOP Init

This function is used for resetting the device before leaving the factory. After execution, all information of factory production debugging will be cleared, and the default settings related to the system will be restored.

After the SHOP initialization is successful, it will display the state as shown in Figure 6, and manual power - off is required.



Figure 6. SHOP Reset Successful

2.4 NVM Reset

This function is for developers to use NVM reset. After execution, it will automatically power on, and after power on, it will open the P mode and enter the HDMI1 channel.

2.5 Preset Factory Channel

This function is used for presetting channel information for factory production in TV - related models. This model does not support this function.

2.6 Power On Mode

This function sets the power - on mode of the device after power - on, which is divided into three types: on/standby/QHB.

On: Directly power on after power - on.

Standby: Keep standby after power - on.

QHB: Silent standby, enter standby after power - on without backlight.

2.7 USB Update

This function is for R & D personnel to use a USB flash drive for program upgrade or key copying.

USB Upgrade	
Main Upgrade	
HDCP Upgrade	Do
HDCP KEY 2.2 Upgrade	Do
MAC Upgrade	Do
Device ID Upgrade	Do
SerialNumber Upgrade	Do
MAC	null
Device ID	900c5dd8343d2bd303cafd16 c342df08ceabcd14
Serial Number	12345678912345

Figure 7. USB Upgrade Interface

2.7.1 Main Upgrade(Main Program Upgrade)

This function is used for upgrading software with a USB flash drive.

Upgrade method: Place the device main program in the root directory of a USB flash drive with a FAT32 file system, and click the "OK" button to upgrade. (Note: This function is still under development and is not currently supported.)

Remarks: This model supports upgrading with the Power key on the button panel.

Upgrade method:

- 1. Place the upgrade file in the root directory of the USB flash drive (the USB flash drive needs to be in FAT32 format) as shown in the following figure. Power off the large screen and connect the USB flash drive to the USB port of the whole machine.**
- 2. While powering on and starting up, hold down the Power key on the device button panel until the screen shows that it enters the upgrade interface.**
- 3. After the upgrade interface shows 100%, the large screen will automatically restart, and the upgrade is completed.**



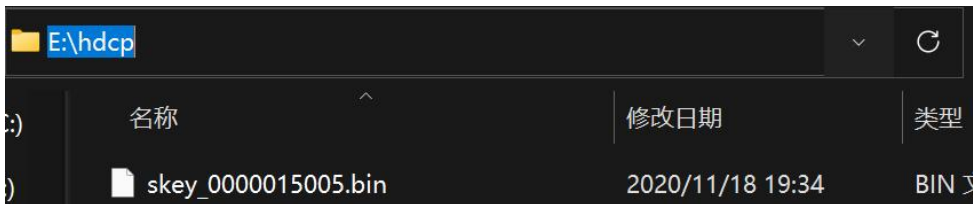
名称	修改日期	类型	大小
upgrade_image.pkg	2024/9/7 1:13	PKG 文件	1,746,565...

Figure 8. Files Related to USB Flash Drive Upgrading the Main Program

2.7.2 HDCP Upgrade(Copying HDCP Key 1.4)

This function is used for copying the HDMI HDCP Key 1.4.

Copying method: Create a folder named "hdcp" in the root directory of the USB flash drive, and place the key file in this folder, then click the "OK" button to burn.



名称	修改日期	类型
skey_0000015005.bin	2020/11/18 19:34	BIN 文

Figure 9. Directory of USB Flash Drive for Copying HDCP KEY 1.4

2.7.3 HDCP KEY 2.2 Upgrade(Copying HDCP Key 2.2)

This function is used for copying the HDMI HDCP Key 2.2.

Copying method: Create a folder named "hdcp22" in the root directory of the USB flash drive, and place the key file in this folder, then click the "OK" button to burn.



名称	修改日期	类型	大小
00040003_hdcp_key2.2.bin	2019/9/10 23:57	BIN 文件	4 KB

Figure 10. Directory of USB Flash Drive for Copying HDCP KEY 2.2

2.7.4 MAC Upgrade(Copying Ethernet MAC Address)

This function is used for copying the Ethernet MAC address. After successful copying, the copied MAC address will be displayed in the MAC information column.

Copying method:

1. Save the MAC address in MacAddressData.txt, with one MAC address per line, as shown in Figure 11.

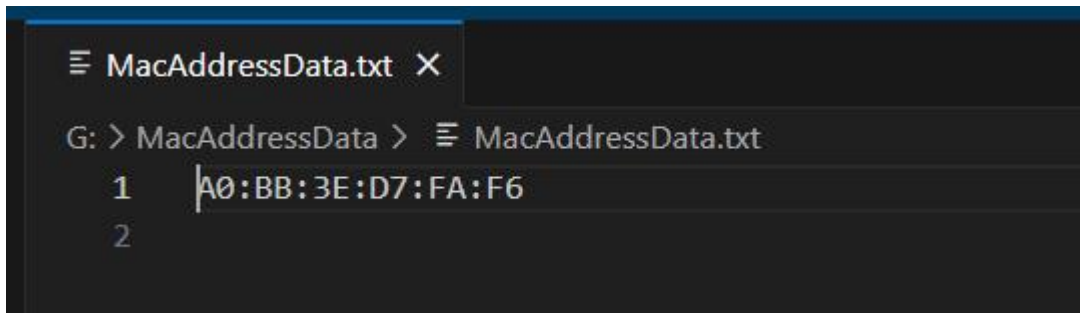


Figure 11. Format of File for Copying MAC Address

2.Place MacAddressData.txt in the MacAddressData file in the root directory of the USB flash drive.



Figure 12.The file directory where the MAC address is copied

3.Click the "OK" button to burn. After successful copying, the copied MAC address will be seen as shown in the following figure.

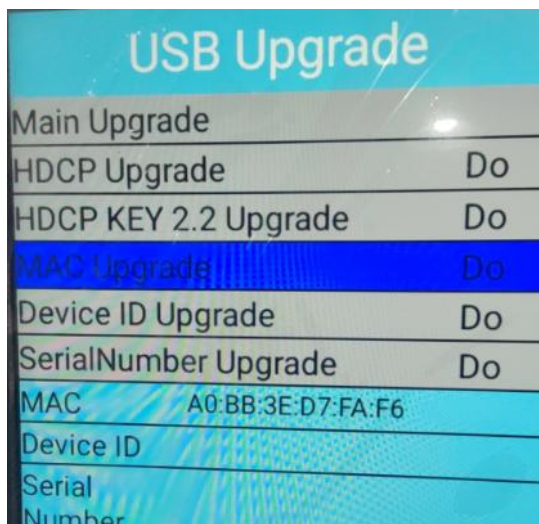


Figure 13. MAC Copying Successful

2.7.5 Device ID Upgrade (Copying Device ID)

This function is used for copying the unique ID of the device.

Copying method:

1.Save the applied ID to the id.txt file, as shown in the following figure.

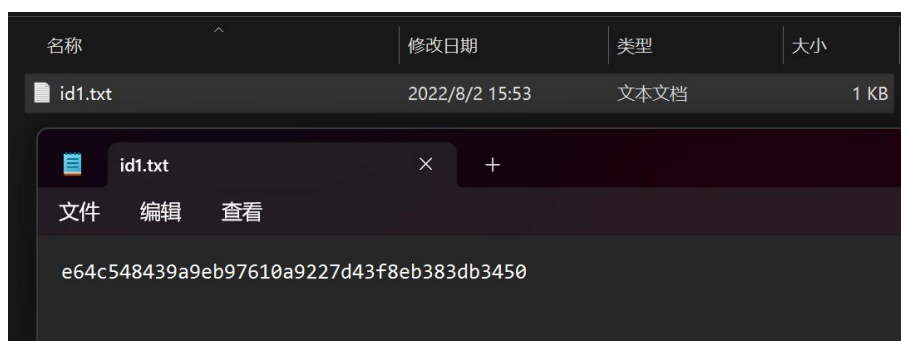


Figure 14. Device ID File

2.Create a folder named "deviceid" in the root directory of the USB flash drive and place the id file in it.

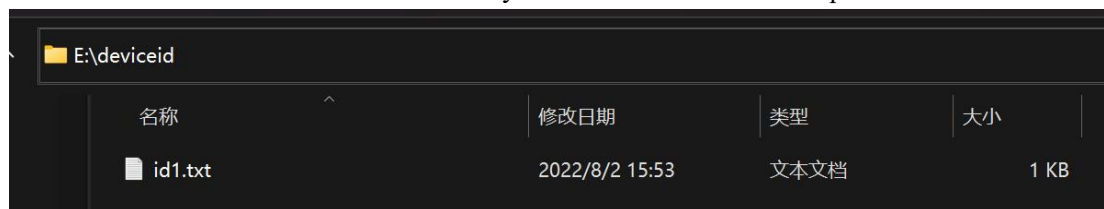


Figure 15. Path for Copying Device ID

3.Click the "OK" button to burn. After successful copying, the copied Device ID will be seen as shown in the following figure.

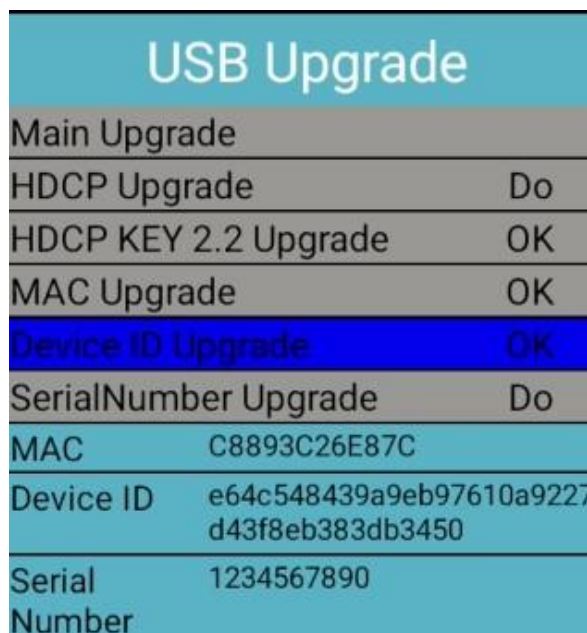


Figure 16. The Device ID was copied successfully

2.7.6 SerialNumber Upgrade

This function is used for copying the SN number with a USB flash drive.

Copying method: Create a folder named "sn" in the root directory of the USB flash drive, place the applied SN number file in it, and then click the "OK" button to copy.

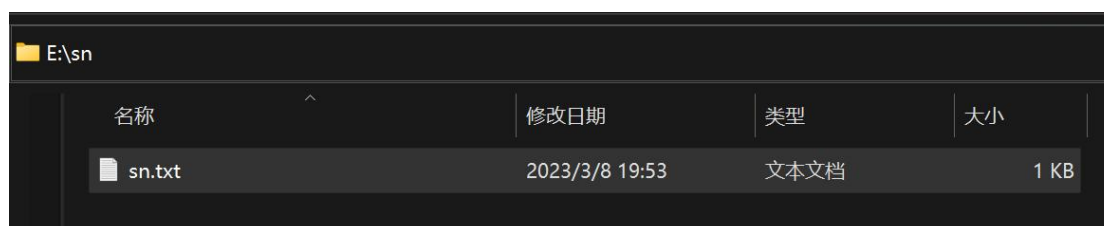


Figure 17. File Path for Copying SN Number

3.Other Setting

After opening the factory application, select "Other Setting" with the cursor and click the "OK" button to enter the other setting interface, as shown in the following figure:

Main/other	
UartDebug	ON
WatchDog	ON
Adb	ON
OTG USB	Device
OTA Server Env	Official
Country Code	None
SW NO: V1.0.9	
SIAP Version: Ver 6.6	
Project Name: STV-5524-PLUS	
Panel Name: ST5461D18-3	
ClientType: MOKA-GL-679FPD-0000B	
Date: 12/19/2024 19:43:46	

Figure 18. Other Setting Interface

3.1 UartDebug

Turn on and off the debugging serial port information.

ON: Turn on the debugging serial port information.

OFF: Turn off the debugging serial port information.

3.2 WatchDog

The default is on.

3.3 ADB

This function is used for switching the ADB function.

ON: Turn on the ADB function.

OFF: Turn off the ADB function.

3.4 OTG USB

This function is used for setting the function of the OTG USB port, which can be set to Host and Device functions.

Host: Set the OTG USB port to Host mode, which can be used for functions such as reading a USB flash drive.

Device: Set the OTG USB port to Device mode, which can be used for functions such as USB ADB debugging.

3.5 OTA Server Env

This function is used for switching the OTA environment, with options of Official and Test for switching.

3.6 Country Code

This function is used for selecting and switching the country code. The default is none (when it is none, the current country code is determined according to the time zone set in the settings). When selecting a country code, the priority is higher than the country code set by the time zone.

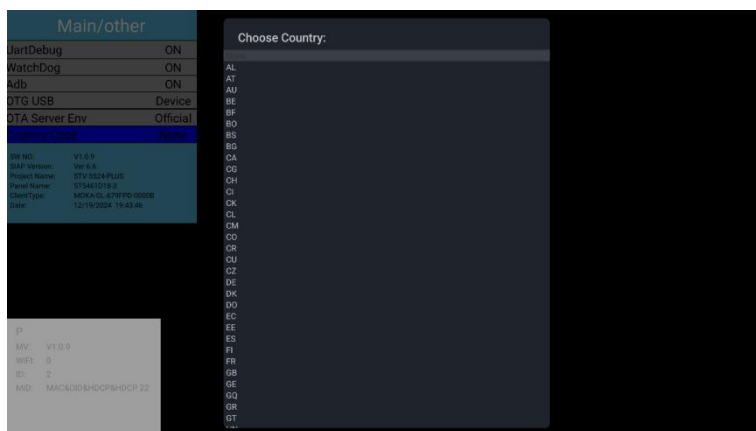


Figure 19. Country Code Setting Interface

4.Service Setting

This page displays detailed information of the system software, as shown in the following figure:

Product Info	
Device ID	900c5dd8343d2bd303cafd16c342df08ceebcd14
S/N	12345678912345
MAC	98:7A:9B:03:3D:E5
User ID	
Project ID:	2
Client Type:	MOKA-GL-679FPD-0000B
PQ Version:	
Country Code	HK
SW NO:	V1.0.9
SIAP Version:	Ver 6.6
Project Name:	STV-5524-PLUS
Panel Name:	ST5461D18-3
Client Type:	MOKA-GL-679FPD-0000B
Date:	12/19/2024 19:43:46

Figure 20. After - sales Information Menu Interface

The specific descriptions are shown in the following table:

Name	Description
Device ID	The Device ID of the device.
S/N	The serial number of the device.
MAC	The MAC address of the Ethernet.
User ID	The identifier for the device's
Project ID	The PID number of the device.
Client Type	The identifier of the device's OTA upgrade model.
PQ Version	The PQ database version number of the device software.
Country Code	The current country code of the device.

Remarks: Method for switching the device PID: Select the "Project ID" item, use the left and right direction keys to switch the PID, and press "OK" to confirm. The system will restart and take effect.

5.Param Setting

The function of this page is the parameter setting menu, as shown in the following figure:



Figure 21. Parameter Setting Menu Interface

5.1 Picture Cure

This function is used to set the image parameter curve, which is currently not supported.

5.2 Sound Cure

This function is used to set the sound parameter curve, which is currently not supported.

5.3 SSC Adjust

This function is used for hardware engineers to debug spread spectrum related settings.

5.4 Panel Settings

This function is currently not supported.

5.5 BackLight

This item provides the display and adjustment of the backlight intensity, with a range of 0 - 100.

5.6 Import Logo

This item provides the function of modifying the boot picture, which is not supported at this time.

Notice: Confidential, Any unauthorized disclosure and distribution is prohibited !

Please do not forward to end users to avoid usage problems caused by incorrect settings, thanks.

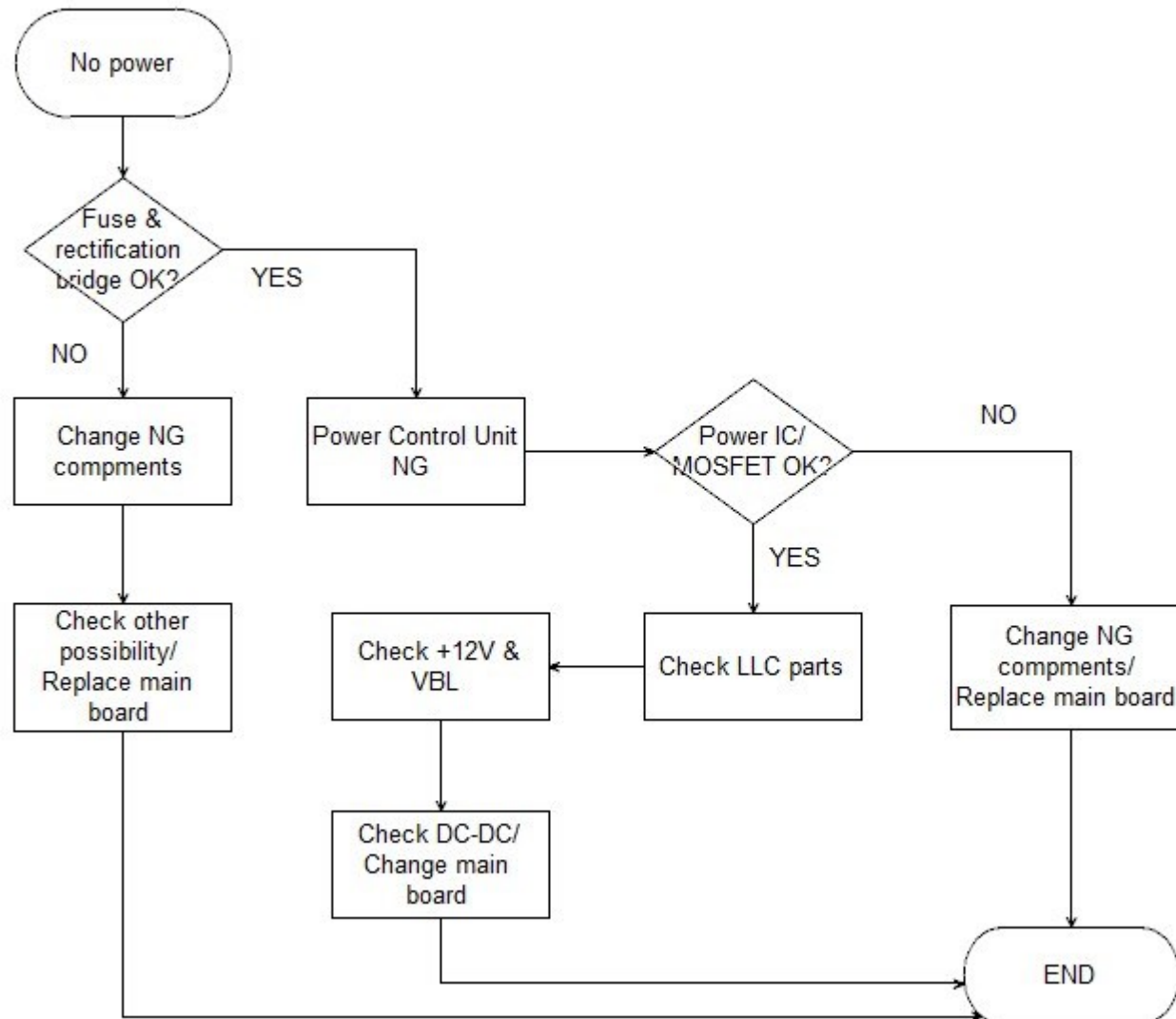
Part K . Trouble shooting

Terms:

- ✓ **IR:** *Infrared Receiver*
- ✓ **RC:** *Remote Control*
- ✓ **IR logic:** *IR blink with RC action*
- ✓ **LVDS:** *Low Voltage Differential Signal, output from processor and input for panel*
- ✓ **O/C:** *Open Cell, panel with source board*
- ✓ **BL:** *Back Light, light source for panel module*
- ✓ **LB:** *LED (Light Emitting Diode) Bar, light source for BL module*
- ✓ **VBL:** *Voltage for Back Light (before Boost)*
- ✓ **VLED:** *Voltage for LED (after Boost)*
- ✓ **OVP:** *Over Voltage Protection*
- ✓ **OSD:** *On Screen Display*
- ✓ **AMP:** *Amplifier*

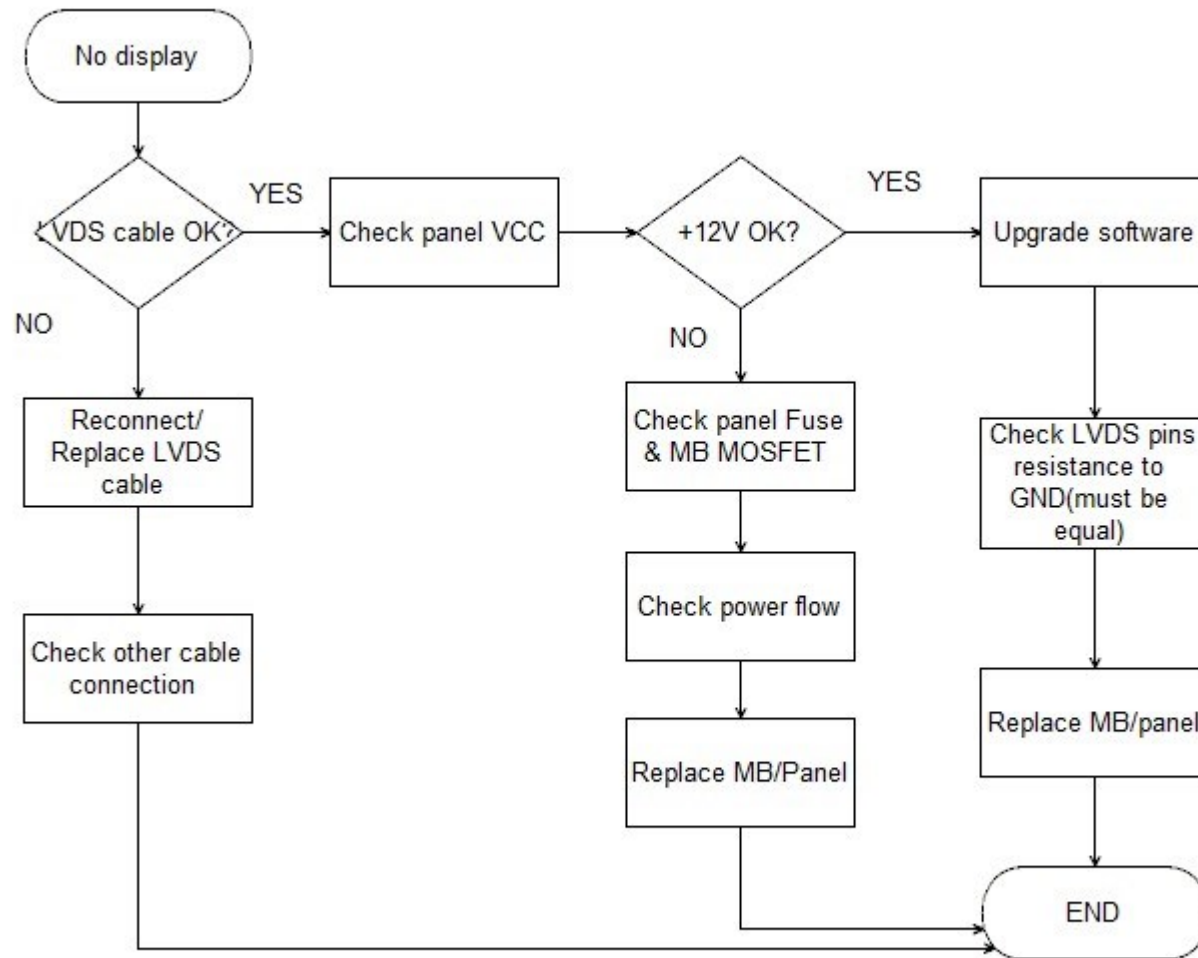
1.No power

No power LED, RC or Key can not turn on TV. Power LED no light/no change.



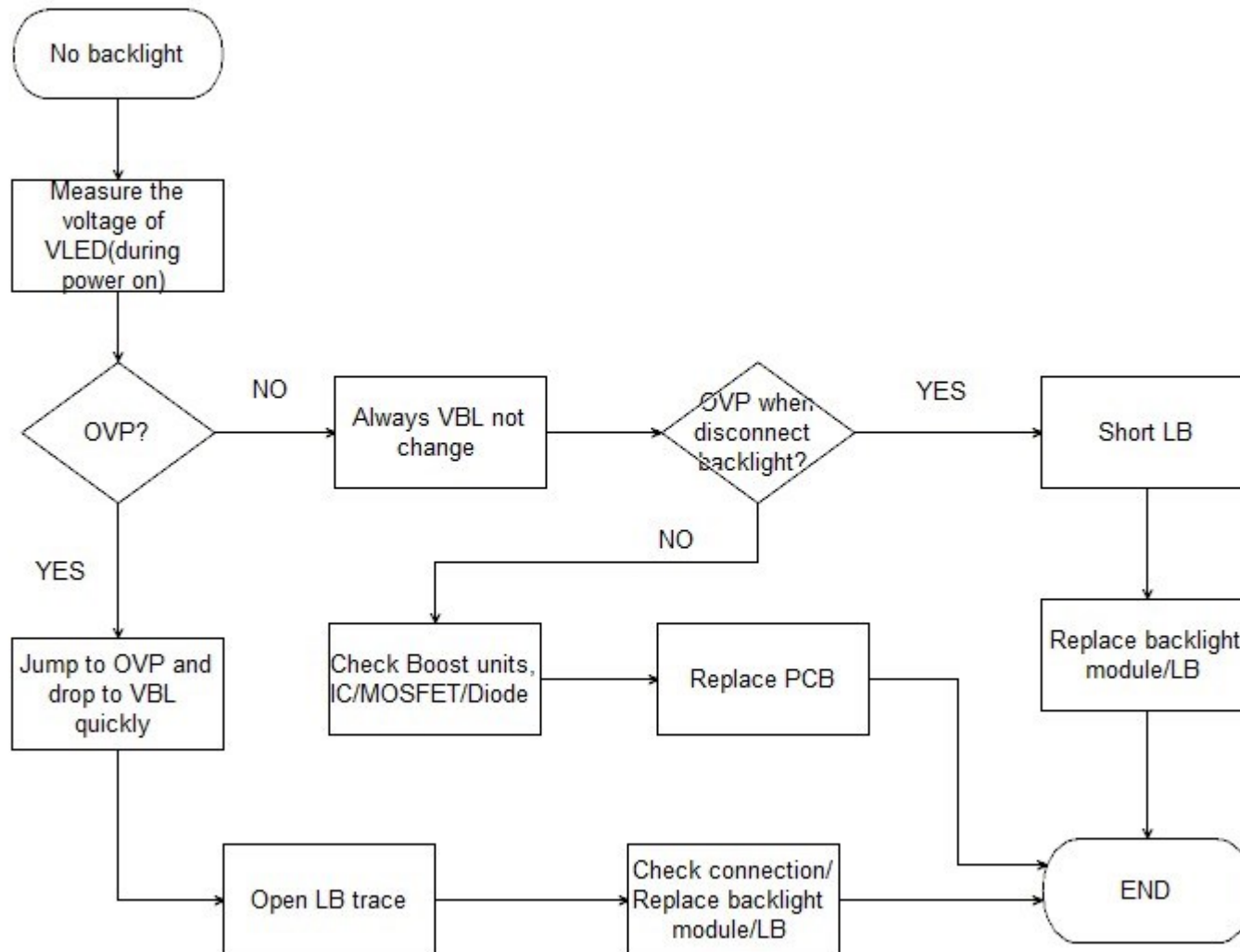
2.No Display / Black Panel

Back light is OK, sound is OK, but no picture.



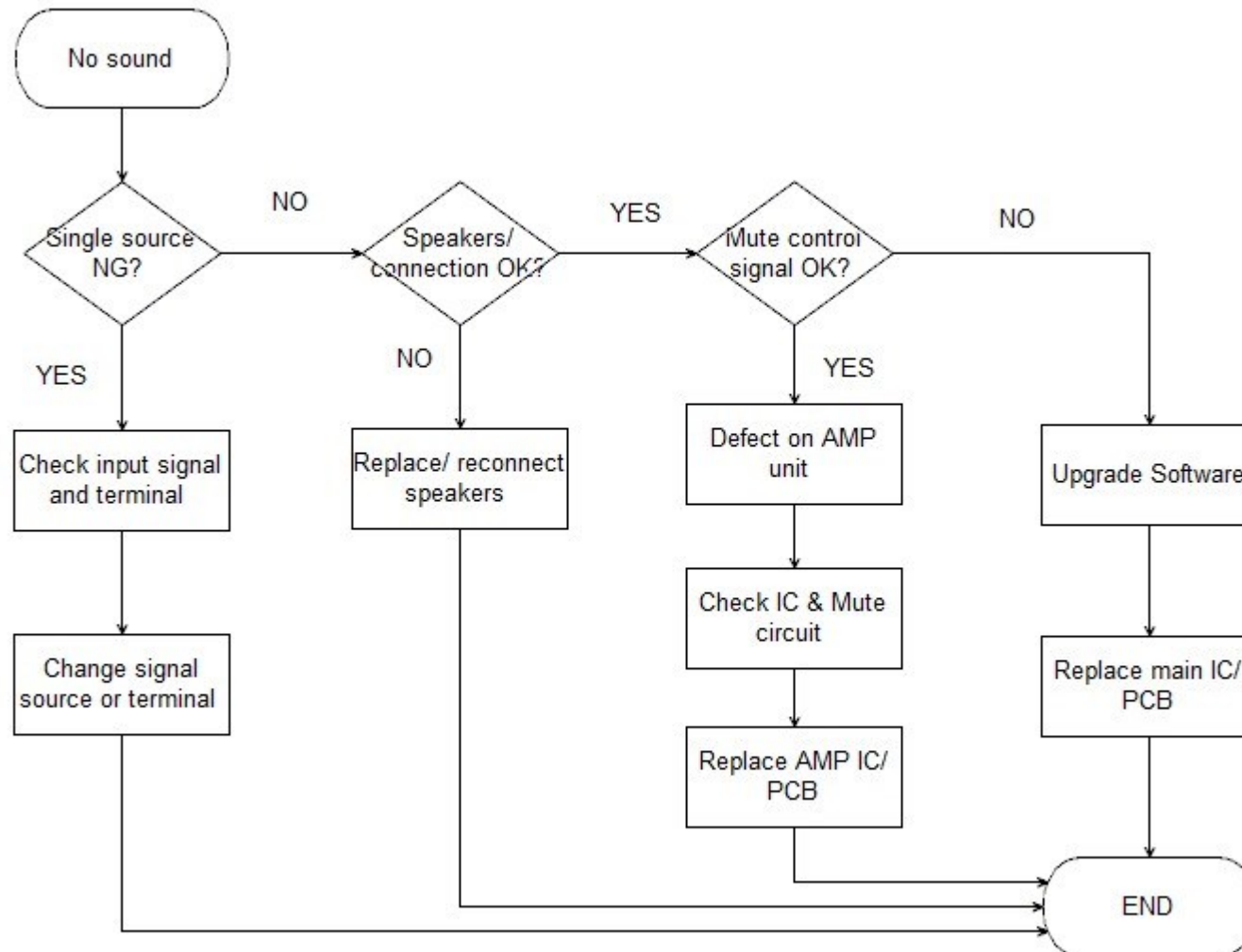
3.No back light

Power LED logic OK, sound OK, but no picture(Different from No Display).



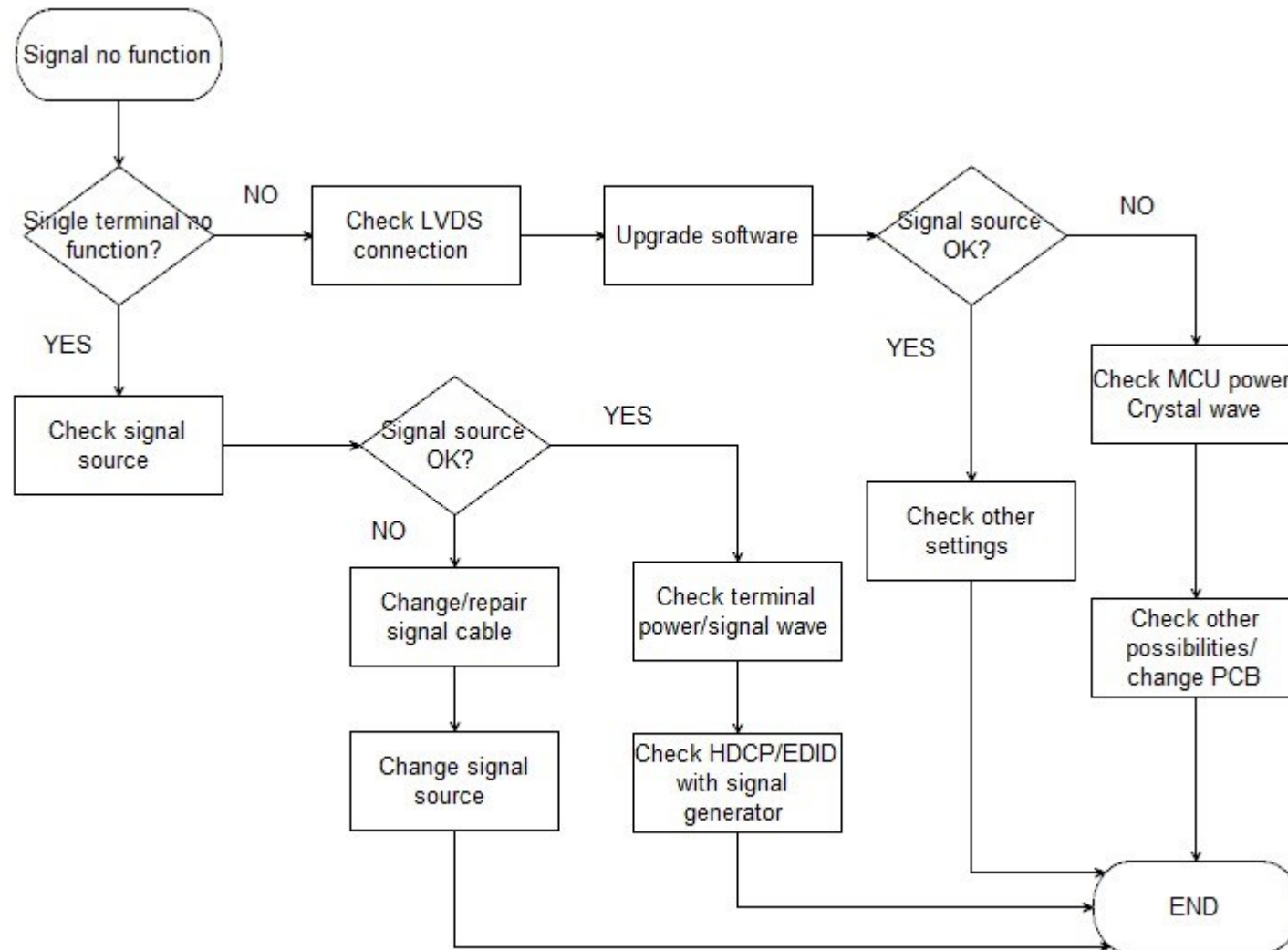
4.No sound

One or all signal source without sound.



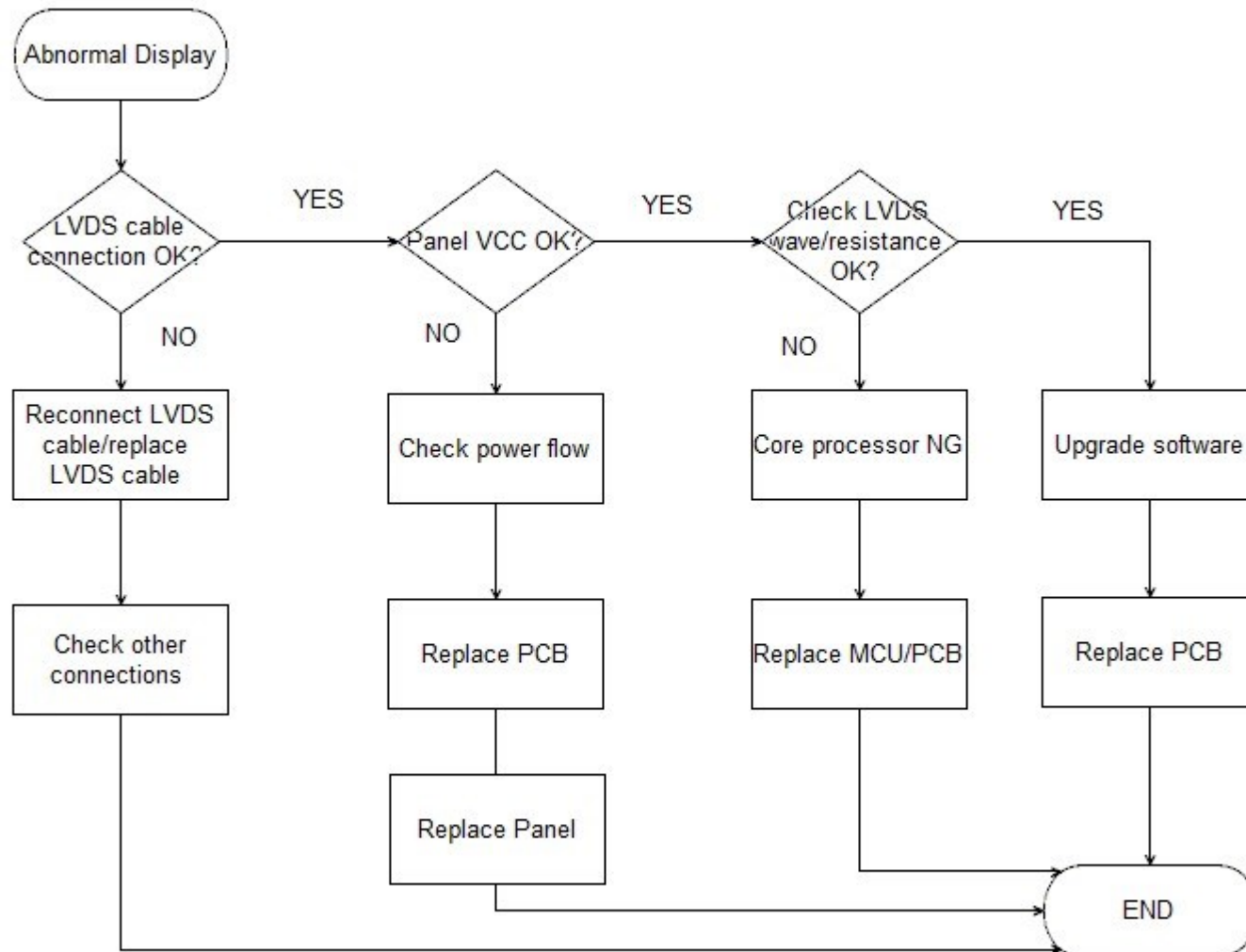
5.Signal source no function

One or several source no function.

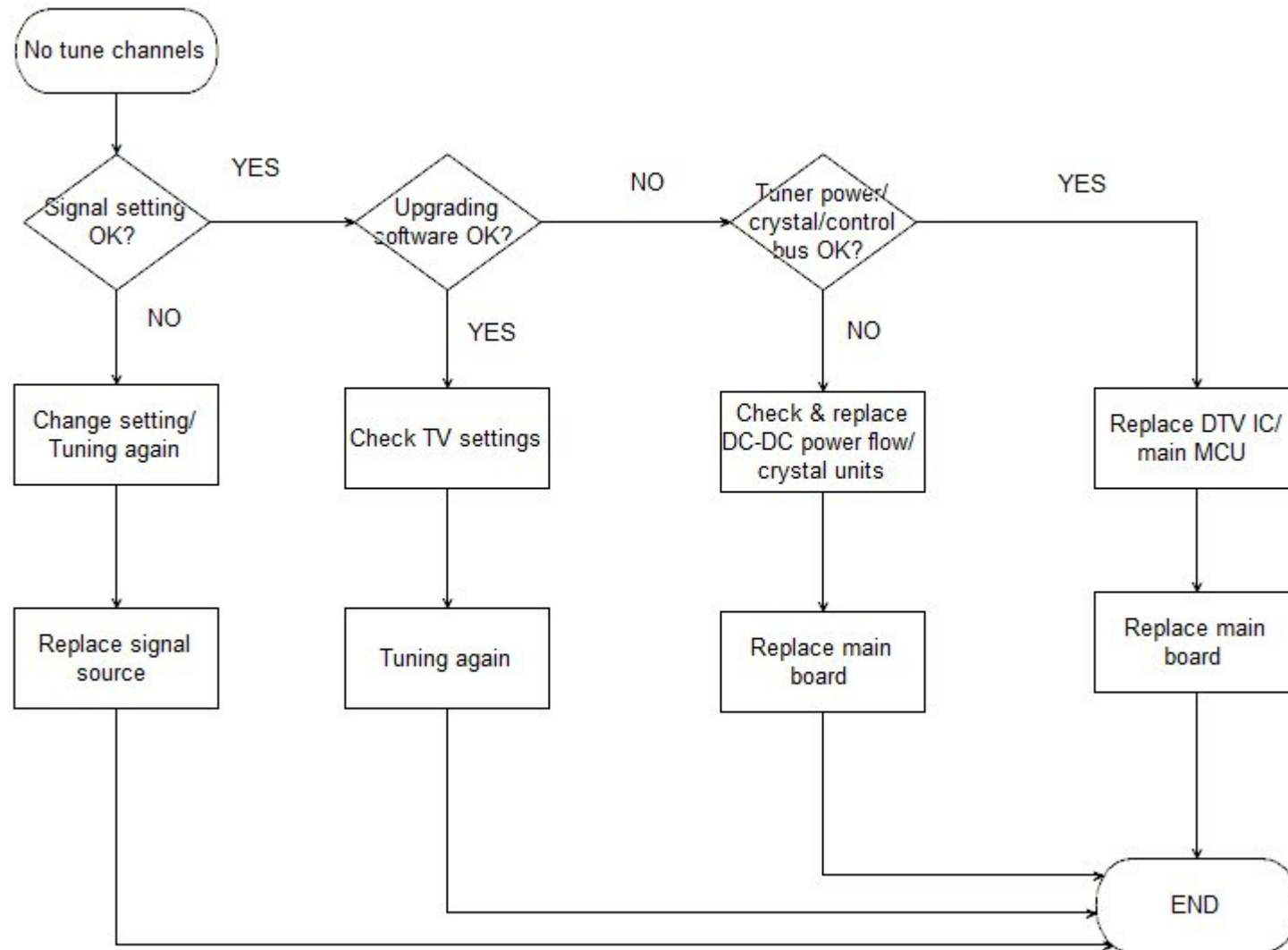


6. Abnormal Display

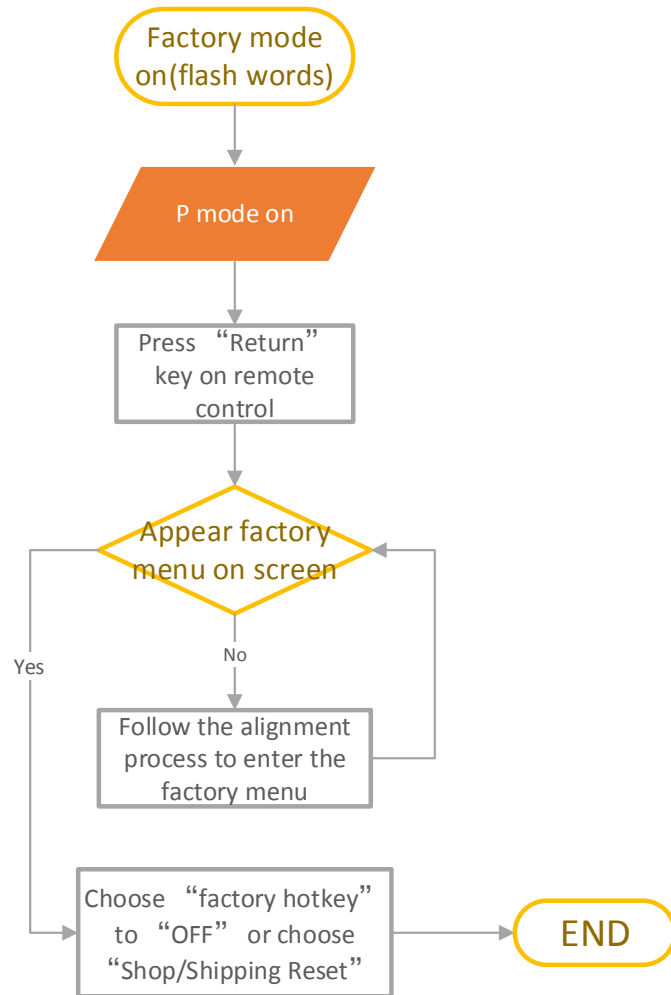
OSD NG or picture NG.



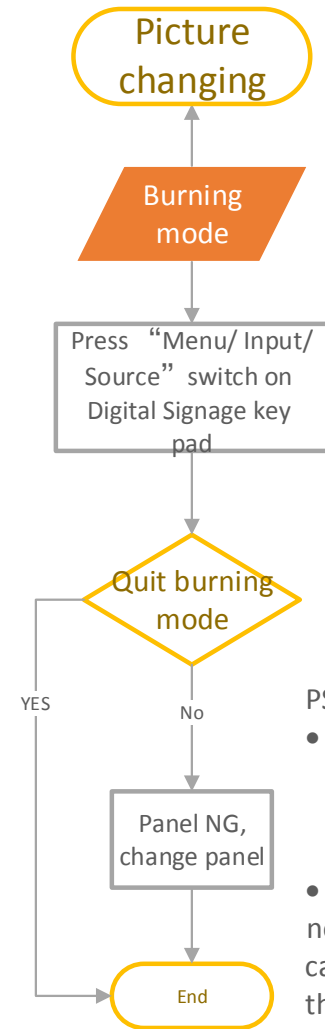
7.No tuning channels DTV or ATV no Channels



8.P mode on and burning mode



- PS: If you choose "Shop/Shipping Reset", the Digital Signage will automatically restart. When start again, the Digital Signage turn to welcome screen



PS:

- Most of the time, main board burning mode have time records on screen.
- If the Digital Signage can not exit burning mode, you can check panel CLK signal if the voltage is not 1.1V~1.3V panel NG.

Upgrade SOP

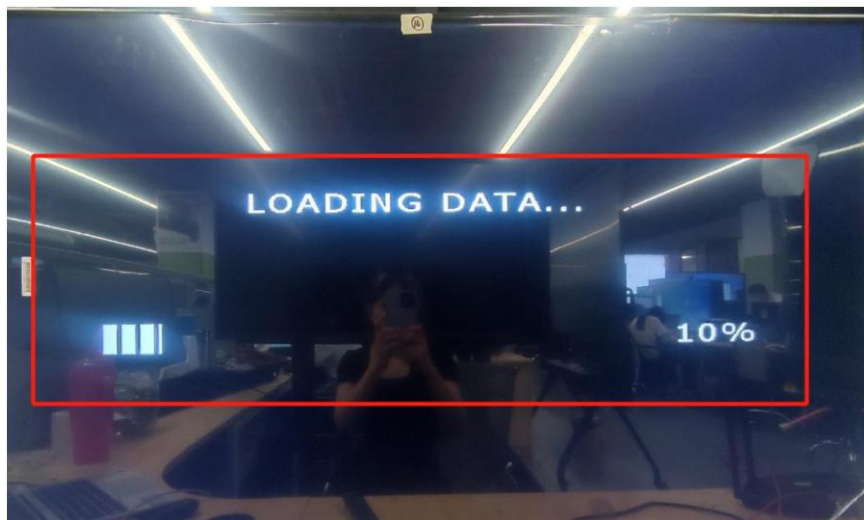
Firmware upgrade steps:

Step 1: Prerequisites, please prepare a FAT32 format USB flash drive. (Do not use Kingston branding)



Step 2: Download the corresponding version of the firmware file (upgrade_image.pkg) to the root directory of the USB drive and connect it to the USB port of the machine.

Step 3: After plugging in the USB flash drive, first power off the machine, press and hold the power button, and then power on the machine until the upgrade progress bar appears.



Step 4: When the upgrade progress bar loads to 100%, it will automatically restart the boot, that is, the upgrade is successful.