Hadish
Sabz Parseh Co.

LED TV
SERVICE MANUAL

CHASSIS : 2842P639

MODEL : ZL-43SF5152

CAUTION
BEFORE SERVICING THE CHASSIS,
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.

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SAFETY PRECAUTIONS

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by ⚠ in the Schematic Diagram and Exploded View.
It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent Shock, Fire, or other Hazards.
Do not modify the original design without permission of manufacturer.

General Guidance

An **isolation Transformer should always be used** during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and it's components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this TV receiver is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

Before returning the receiver to the customer,

always perform an **AC leakage current check** on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to be sure the set is safe to operate without damage of electrical shock.

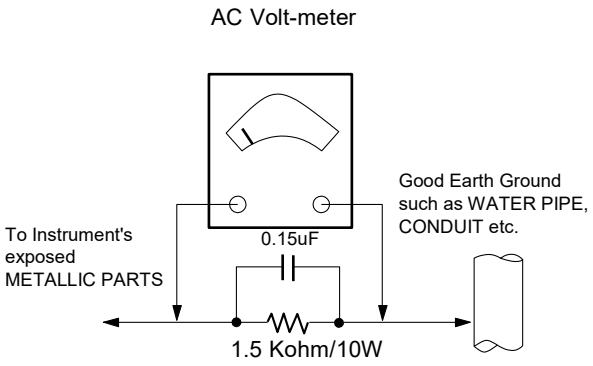
Leakage Current Cold Check(Antenna Cold Check)
With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone

jacks, etc.
If the exposed metallic part has a return path to the chassis, the measured resistance should be between 1MΩ and 5.2MΩ.
When the exposed metal has no return path to the chassis the reading must be infinite.
An other abnormality exists that must be corrected before the receiver is returned to the customer.

Leakage Current Hot Check (See below Figure)
Plug the AC cord directly into the AC outlet.

Do not use a line Isolation Transformer during this check.
Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.
Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.
Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which is corresponds to 0.5mA.
In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

Leakage Current Hot Check circuit



When 25A is impressed between Earth and 2nd Ground for 1 second, Resistance must be less than 0.1 Ω
*Base on Adjustment standard

SERVICING PRECAUTIONS

CAUTION: Before servicing receivers covered by this service manual and its supplements and addenda, read and follow the *SAFETY PRECAUTIONS* on page 3 of this publication.

NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

General Servicing Precautions

1. Always unplug the receiver AC power cord from the AC power source before;
   a. Removing or reinstalling any component, circuit board module or any other receiver assembly.
   b. Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
   c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.
   CAUTION: A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc) equipped with a suitable high voltage probe. Do not test high voltage by "drawing an arc".
3. Do not spray chemicals on or near this receiver or any of its assemblies.
4. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable non-abrasive applicator; 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength)
   CAUTION: This is a flammable mixture.
   Unless specified otherwise in this service manual, lubrication of contacts in not required.
5. Do not defeat any plug/socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
6. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
7. Always connect the test receiver ground lead to the receiver chassis ground before connecting the test receiver positive lead.
   Always remove the test receiver ground lead last.
8. *Use with this receiver only the test fixtures specified in this service manual.*
   CAUTION: Do not connect the test fixture ground strap to any heat sink in this receiver.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid-state) devices can be damaged easily by static electricity. Such components commonly are called *Electrostatically Sensitive (ES) Devices.* Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range or 500°F to 600°F.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a mall wire-bristle (0.5 inch, or 1.25cm) brush with a metal handle.
   Do not use freon-propelled spray-on cleaners.
5. Use the following unsoldering technique
   a. Allow the soldering iron tip to reach normal temperature. (500°F to 600°F)
   b. Heat the component lead until the solder melts.
   c. Quickly draw the melted solder with an anti-static, suction-type solder removal device or with solder braid.
   CAUTION: Work quickly to avoid overheating the circuit board printed foil.
6. Use the following soldering technique.
   a. Allow the soldering iron tip to reach a normal temperature (500°F to 600°F)
   b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.
   c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.
   CAUTION: Work quickly to avoid overheating the circuit board printed foil.
   d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.

IC Remove/Replacement

Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

Removal

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.
2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

Replacement

1. Carefully insert the replacement IC in the circuit board.
2. Carefully bend each IC lead against the circuit foil pad and solder it.
3. Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to the areas).

"Small-Signal" Discrete Transistor Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.
2. Bend into a "U" shape the end of each of three leads remaining on the circuit board.
3. Bend into a "U" shape the replacement transistor leads.
4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact then solder each connection.

Power Output, Transistor Device Removal/Replacement

1. Heat and remove all solder from around the transistor leads.
2. Remove the heat sink mounting screw (if so equipped).
3. Carefully remove the transistor from the heat sink of the circuit board.
4. Insert new transistor in the circuit board.
5. Solder each transistor lead, and clip off excess lead.
6. Replace heat sink.

Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.
2. Bend the two remaining leads perpendicular y to the circuit board.
3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.
4. Securely crimp each connection and solder it.
5. Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny, reheat them and if necessary, apply additional solder.

Fuse and Conventional Resistor Removal/Replacement

1. Clip each fuse or resistor lead at top of the circuit board hollow stake.
2. Securely crimp the leads of replacement component around notch at stake top.
3. Solder the connections.
   CAUTION: Maintain original spacing between the replaced component and adjacent components and the circuit board to prevent excessive component temperatures.

Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board causing the foil to separate from or "lift-off" the board. The following guidelines and procedures should be followed whenever this condition is encountered.

At IC Connections

To repair a defective copper pattern at IC connections use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections).

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary).
2. carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
4. Route the jumper wire along the path of the out-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area and clip off any excess jumper wire.

At Other Connections

Use the following technique to repair the defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.

1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side. Carefully crimp and solder the connections.
   CAUTION: Be sure the insulated jumper wire is dressed so the it does not touch components or sharp edges.

SPECIFICATION

1. GENERAL DESCRIPTION

HK.T.RT2842P639X is Android Smart control board of LED Panel which is suitable for Pan-European UK,MIDE,Australia,Africa market. Its USB slot can be used for software upgrade, and multimedia play, such as MP3 and JPEG. And it support HDMI 1.4a compliant, HDCP 1.4 compliant.The program is built in Cortex A53 ARM quad core CPU main chip and Android 9.0 OS,Also supports wired and wireless network connection, you can browse the web internet play online video.

HK.T.RT2842P639X 's power part is a high efficiency DC-line switching power supply unit. It supports LED panel larger than 32- 43" which resolution is up to 1920x1080.

Main Promotion Power and backlight Spec.			
Power	**Power Output**	**Backlight Value**	**Backlight Connectors**
55W	12V/19V	30V-55V/ Max:25W	2Pin/2.0mm 3Pin/2.0mm
55W	12V/32V	60V-94V/ Max:25W	
75W	12V/24V	45V-70V/ Max:42W	
75W	12V/33V	60V-94V/ Max:45W	
Note: 1.The accuracy of backlight current is 5%.			

2. STANDARD CONFIGURATION

Pictures are for reference only, specific to prevail in kind.
The optional connectors and functionsare marked with "*".

标准配置六	**DVB-T2/T/C + AV**
Functions	【HK.T.RT2842P639】COAX(*可选光纤), Earphone, DVB-T2/T/C, RJ45, HDMI1, HDM2, HDMI3(*ARC), USB, AV, USB.
Notes	
FRONT VIEW	
SIDE VIEW	

3. FEATURE

3.1 FEATURE 1

Chipset	RTD2841P(DDR 1G,Dolby)/ RTD2842P(DDR 1G,No Dolby)/RTD2851S(DDR 1.5G)			
Market	PAN Europe, UK, Australia, MIDE, Africa			
Panel	Type	TFT-LED;		
	Resolution	Max. 1920*1080		
	Interface	Single/Dual LVDS		
	FSS	33KHZ±5KHZ		
		66KHZ±8KHZ		
Input Signal	Analog TV (ATV)	Receiving range:		48.25MHz-863.25MHz
		Input impedance:		75Ω
		Video System		PAL,SECAM
		Sound System		BG,DK,I,
				NICAM/A2
		Teletext		1000Pages
		Max Storage Channels		100CH
	Digital TV (DVB-T/T2/S/S2+C)	Receiving Range		DVB-T/T2: VHF(52.5MHz-219MHz) UHF(474MHz-862MHz)
				*DVB-S/S2:(900MHz - 2200MHZ)
		Input impedance		75Ω
		Channel bandwidth		7MHz/8MHz
		Modulation	DVB-T	COFDM 2K/8K QPSK,16QAM,64QAM
			*DVB-S/S2	QPSK, 8PSK,16APSK
			DVB-T2	QPSK, 16QAM, 64QAM, 256QAM
			*DVB-C	16QAM, 32QAM, 64QAM, 128QAM, 256QAM
		Video system		MPEG-2, MPEG-4, H.264, H.265,AVS
		Sound system		MPEG-1 layer 1/2, MPEG-2 layer 2, DRA
		Basic function		EPG, Subtitle
		Max Storage Channels		1000CH(DVB-T+DVB-C, dynamic)
				*5000CH(DVB-S/S2, dynamic)

3.2 FEATURE 2

Input Signal	AV	CVBS	Video system: PAL /NTSC /SECAM Video Level: 1.0Vp-p +/-5%
	HDMI	Version	1.4a
		HDCP	HDCP 1.4a compliant receiver
		Format	480i,480P,576i,576p,720p,1080i,1080p
	CVBS Audio	L/R Input	0.2-2.0 Vrms
Output Signal	Audio Output	Freq. Response	100Hz-15KHz @±3dB (1KHz, 0dB reference signal)
		Max Output power (	2x8W(8Ω) THD+N<10% Audio Input: 1KHz @ 0.5Vrms
Power	Input	150VAC~240VAC/50Hz	
	Manage	Standby < 0.5W	
	Panel Voltage	12V	
Picture	Video decoder	Adaptive comb filter for all NTSC and PAL standards Cross-color reduction for NTSC by 3-line comb filtering Cross-color reduction for PAL by 5-line comb filtering	
	De-interlace	3D De-interlacing with Low Angle Detection	
	Noise Reduction	Dynamic noise reduction	
	Picture Enhance	DLTI/DCTI/Dynamic peaking filter Black/white level extension/Favorite Color Adjustment	
	Scaling	Support 4:3 / 16:9 with Non-linear scaling Advanced Scaling Engine	
Other	OSD language	English、French、German、Spanish、Italian、Portuguese.etc.	
	Key definition	VOL-、VOL+、CH-、CH+、MENU、SOURCE、POWER	
Interface	Input	ATV/DVB-C/T/T2	1 IEC 75 Ω
		*DVB-S2	1 SPIRAL 75 Ω
		AV	1MINI terminal
		YPBPR	1MINI terminal
		HDMI	3 HDMI terminal
			Debug(HDMI1), *ARC(HDMI3), *CEC
		USB Slot	2 USB2.0 Slot(Horizontal/Vertical)
		LAN	1 RJ45 terminal
	Output	COAX(*Optical)	1 COAX terminal *1 Optical terminal
		Earphone	1 Earphone terminal

3.3 HARDWARE CONFIGURATION

OS	Android 9.0（AOSP）	
CPU	ARM cortex –A55*4	
GPU	Mali470MP*3	
CPU Frequency	900MHz	
GPU Frequency	600MHz	
DDR SIZE	Embedded 1G Byte	
eMMC flash	4G/8G/16G Byte	
WLAN (WIFI)	Max Data Rate	150Mbps
	Operating Frequency	2.4GHz
	Communications Standard	IEEE 802.11b/g/n(1T1R)
***WIFI+BT** Model:RTL8723BU	Max Data Rate	150Mbps
	Operating Frequency	2.4GHz
	Communications Standard	**WIFI:** IEEE 802.11b/g/n **BT:** V2.1+EDR/BT V3.0/BT V4.0
***WIFI+BT** Model:RTL8723DU	Max Data Rate	150Mbps
	Operating Frequency	2.4GHz
	Communications Standard	**WIFI:** IEEE 802.11b/g/n **BT:** Compatible with Bluetooth V2.1,V4.2 Systems
LAN(RJ45) NETWORK (LAN)	10/100M auto-identification and DHCP	

Note: Licenses involved in specifications above are supposed to be obtained by customers themselves.

4.MEDIA PLAYER FORMAT

1. Video Decoder Support List						
P/N	**Video Decoder**	**Resolution**	**Max fps**	**Max bitrate (Mbps)**	**Bit depth**	**2841P/2851S**
MPEG 1/2/4	MPEG1	1920x1080	60	50M	8	V
	MPEG2 MP@HL	1920x1080	60	50M	8	V
	MPEG-4 SP@HL 3.0	1920x1080	60	25M	8	V
	MPEG-4 ASP@HL 4.0	1920x1080	60	25M	8	V
	MPEG-4 version3 (MP43)	1920x1080	60	25M	8	V
	Microsoft ISO MPEG-4 version 1 (MP4S)	1920x1080	60	25M	8	V
	Microsoft ISO MPEG-4 version 1.1 (M4S2)	1920x1080	60	25M	8	V
Xvid	XviD	1920x1080	60	25M	8	V
H.264*	H.264 BP LV 4.0	1920x1080	60	50M	8	V
	H.264 MP LV 4.0	1920x1080	60	50M	8	V
	H.264 HP LV 4.0	1920x1080	60	50M	8	V
	H.264 MP LV 5.1	1920x1080	60	50M	8	V
	H.264 HP LV 5.1	1920x1080	60	50M	8	V
	H.264 HP LV 5.2	1920x1080	60	50M	8	X
	H.264 MVC (version 11)	1920x1080	60	50M	8	V
H.265*	H.265 Main profile @ Level 4.1	1920x1080	60	50M	8	V
	H.265 Main10 profile @ Level 4.1	1920x1080	60	50M	10	V
	H.265 Main profile @ Level 5.0	1920x1080	60	50M	8	V
	H.265 Main10 profile @ Level 5.0	1920x1080	60	50M	10	V
	H.265 Main profile @ Level 5.1	1920x1080	60	50M	8	V

	H.265 Main10 profile @ Level 5.1	1920x1080	60	50M	10	V

	H.265 Still picture profile	1920x1080	NA	50M	NA	V
Generic	Motion JPEG	1920x1080	60	25M	8	V
WMV*	Window Media Video v9	1920x1080	60	25M	8	V
VC1	VC-1 (SP/MP/AP)	1920x1080	30	25M	8	V
VP8	VP8	1920x1080	30	25M	8	V
VP9	VP9	1920x1080	60	25M	8/10	V
RM*	RV 8 (rv30)	1920x1080	30	25M	8	V
	RV 9 (rv40)	1920x1080	30	25M	8	V
	RV 10 (rv40)	1920x1080	30	25M	8	V
AVS*	AVS Jizhun Profile LV 6.0	1920x1080	30	25M	8	V
	AVS Plus	1920x1080	30	25M	8	V
AVS 2.0*	AVS 2.0		60	150M	8/10	X
Sorenson	Sorenson H.263	1920x1080	30	25M	8	V
Motion JPEG	M-JPEG	1920x1080	60	25M	8	V
H.263	H.263 V_MS/FW/FOURCC/H263	1920x1080	30	25M	8	V

2. Audio Decoder list

PN	**Audio Decoder (For MM Video)**	**2841P/2851S**
PCM	wav: PCM / ADPCM / A-law PCM / u-law PCM	Yes
	WAV(192KHz)	Yes
	ADPCM IMA4	Yes
AMR	AMR-NB, AMR-WB/AMR-WB+	Yes
LPCM	DVD LPCM	Yes
RA	cook: COOK (RealAudio6)	Yes
MPEG 1/2/4	MPEG1 Layer1/2	Yes
	MPEG1 Layer1/2 (MPEG2	Yes
	MP3 (MPEG1 Layer3)	Yes
	MPEG-H 3D Audio	Yes

AAC*	MPEG2 AAC (AAC-LC)	Yes
	MPEG4 AAC-LC	Yes
	MPEG4 HE-AAC v1/v2	Yes
	raac: MPEG4 AAC-LC (RealAudio9	Yes
	racp: MPEG4 HE-AAC v2 (RealAudio10)	Yes
WMA*	WMA v7	Yes
	WMA v8	Yes
	WMA v9	Yes
	WMA Pro	NO
Dolby AC3 (DD) *	AC3	Yes
	Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD	Yes
	dnet: AC3 (RealAudio3)	Yes
Dolby EAC3 (DDCO) *	Dolby Digital Plus	Yes
	Dolby Digital Plus, Dolby lossless	Yes
Dolby AC4*	AC4	Yes
Dolby*	MS10	No
	MS11	Yes
	MS12	Yes
	MS12 for Dolby Atmos	Yes
	MS12 for MAT (Metadata-enhanced Audio Transmission)	Yes
MPEG-H	MPEG-H	Yes
DRA	DRA	Yes
FLAC	FLAC	Yes
	FLAC (96hz)	Yes
VORBIS	VORBIS	Yes

3. Image Decoder			
File Extension	**Container**	**Data Type**	**2841P/2851S**
***.jpg**	JPEG	baseline	Yes
		progressive	Yes
***.bmp**	BMP		Yes
***.png**	PNG		Yes
***.gif**	GIF		Yes
.mpo	MPO	3d	Yes
.jps	JPEG	3d baseline	Yes
.pns	PNG	3d	Yes

Note: Licenses involved in specifications above are supposed to be obtained by customers themselves.

5. SUBSTITUTABLE PRIMARY MATERIALS

5.1 GENERAL MATERIALS

Including SMT capacitors, SMT resistors, diodes, transistors, MOSFET, connectors, common inductance, electrolytic capacitor, PCB etc., and having no obvious changes in appearance or color. Our company has two or three alternative suppliers with these materials; maybe we will alternative use these materials for follow-up mass production due to delivery time, stock or other reasons. We no longer notice your company the alternative materials used. If necessary, you can apply for using related materials (mention as above) in samples stage.

(**Note**: The alternative materials which have been accepted by our materials Confirmation department and PP will enter our system.)

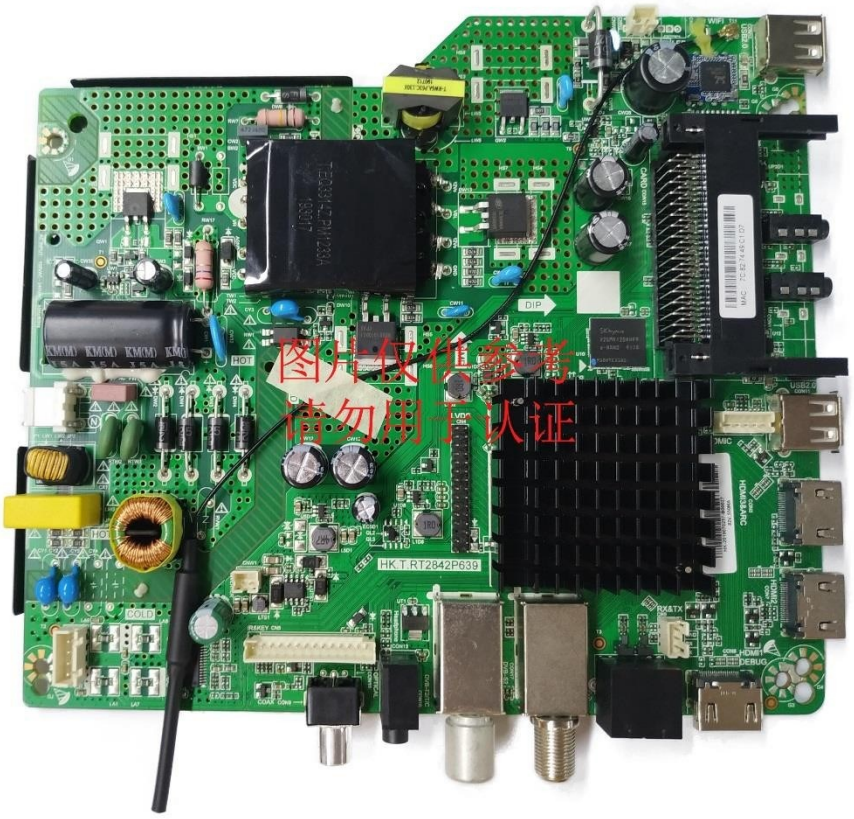
5.2 KEY MATERIALS

The table is for reference only, the actual is the standard.

NAME	TYPE	BRAND	BACKUP TYPE	BACKUP BRAND
EMMC FLASH	H26M41204HPR(8GX8Bit-BGA153)	SK hynix	THGBMHG6C1LBAIL(8GX8Bit-BGA153)	Toshiba
			KLM8G1GETF-B041(8GX8Bit-BGA153)	Samsung
LDO	LC1118	Leadchip		
	HH1117	HH	BL1117	BL
CRYSTAL	'X-27.000MHz	CREC		
	'X-24.000MHz	CREC		
	'X-16.000MHz	CREC		
DC_DC	SY8113	SILERGY	JW5057C	JouWatt
	MP1655	MPS		
AMP	AD52050B	ESMT	TI3138LD2	TI
			OB6228VP	On-Bright
Tuner	SI2150(IEC 头)	Silicon LABS		
	RT710(F 螺纹头)	Rafael		

6. FUNCTION LAYOUT

6.1 THE TOP VIEW OF HK.T.RT2842P639



图片仅供参考
请勿用于认证

6.2 REQUIREMENT OF WIRE HARNESS

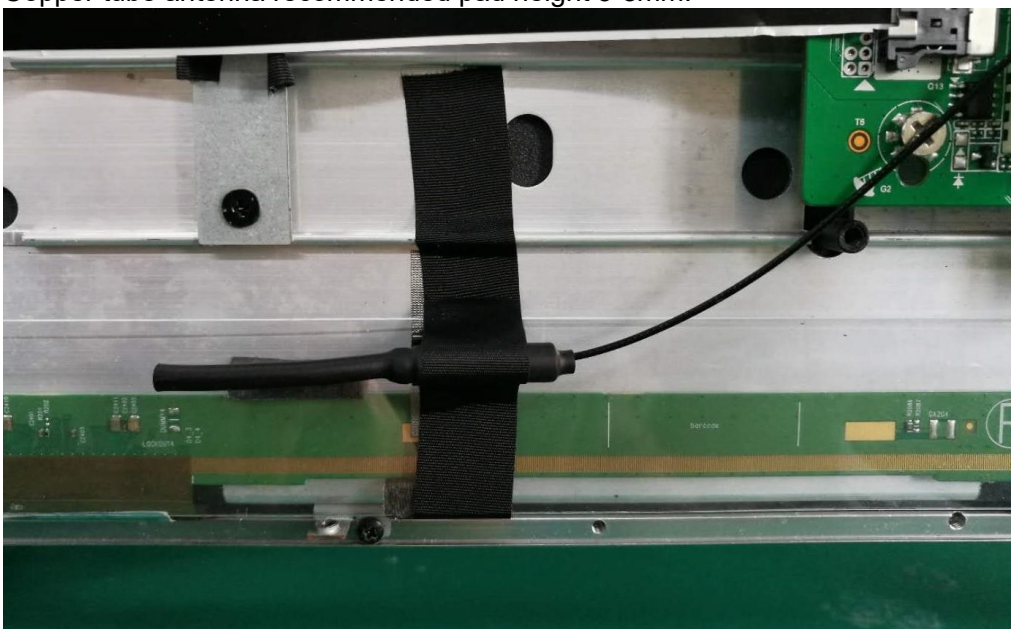
MINI AV_IN:

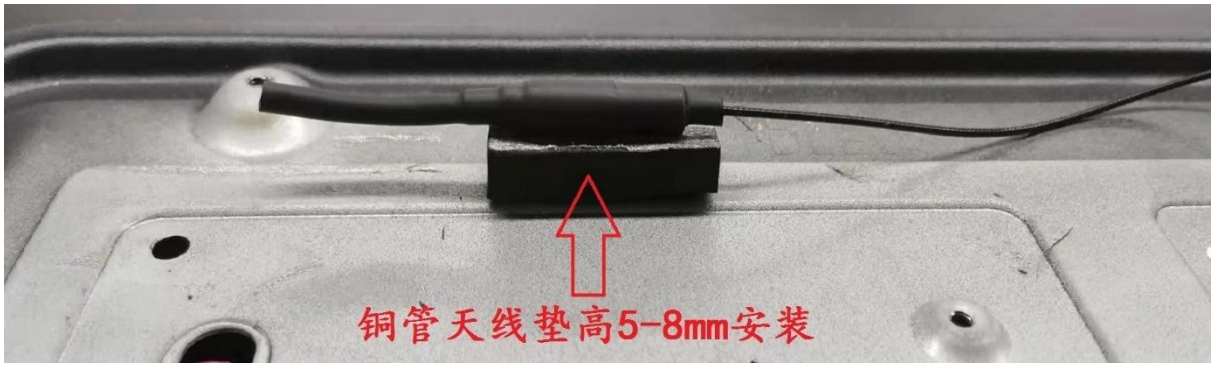
MINI COMPONENT_IN:

6.3 ANTENNA INSTALL VIEW

It is recommended that the antenna be assembled as far as possible on the lower edge of the TV case.

Copper tube antenna recommended pad height 5-8mm.





7. PCB DIMENSION AND CONFIGURABLE

7.1 PCB DIMENSION

PCB Height=20mm

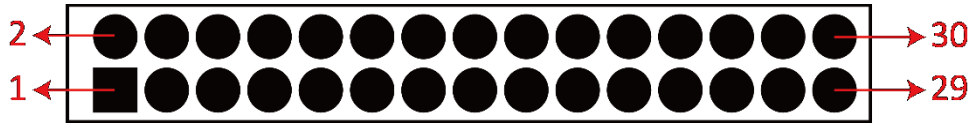
PCB Length=189.0mm

PCB Width=168.0mm

PCB Screw Bore Size: Diameter is 3.5mm and 5.0mm

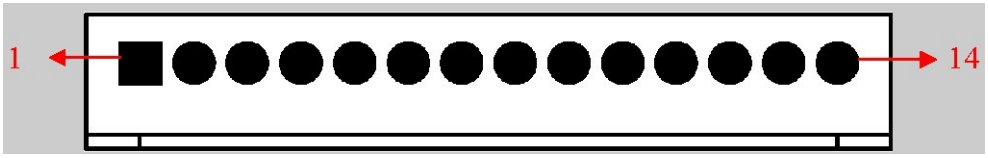
8. INTERFACE DEFINITION

Below, please see the definition and description from left PIN to right PIN or from up PIN to down PIN.



◆**CN4(2X15pin /2.0): TO LVDS**

NO	DEFINITION	NO	DEFINITION
1	VCC	2	VCC
3	VCC	4	GND
5	GND	6	NC
7	TXOM0	8	TXOP0
9	TXOM1	10	TXOP1
11	TXOM2	12	TXOP2
13	GND	14	GND
15	CLKOM	16	CLKOP
17	TXOM3	18	TXOP3
19	TXIM0	20	TXIP0
21	TXIM1	22	TXIP1
23	TXIM2	24	TXIP2
25	GND	26	GND
27	CLKIM	28	CLKIP
29	TXIM3	30	TXIP3

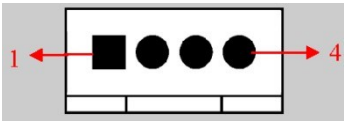


◆ **CN15 (14 Pin / 2.0): IR & KEY**

NO.	DEFINITION	DESCRIPTION
1	5V	5V Power Supply
2	R	Red indicator
3	G	Green indicator
4	IR	Remote Receive
5	GND	Ground
6	K0	SOURCE key
7	K1	MENU key
8	K2	CH+ (UP) key
9	K3	CH- (DOWN) key
10	K4	VOL+ (RIGHT) key
11	K5	VOL- (LEFT) key
12	K6	POWER key
13	K7	(Reserved)
14	GND	Ground

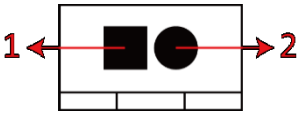
◆ **CN1 (4 Pin / 2.5): 2X8W SPEAKER OUT**

NO	DEFINITION	DESCRIPTION
1	LOUTP	Left Speak Out+
2	LOUTN	Left Speak Out-
3	ROUTN	Right Speak Out-
4	ROUTP	Right Speak Out+



◆ **CNW1 (2 Pin / 2.0): INVERTER**

NO	DEFINITION	DESCRIPTION
2	GND	Ground



◆ **XW1 AC INPUT CONNECTOR**

NO	DEFINITION	DESCRIPTION
1	L	LIVE
2	N	NEUTRAL

9.ELECTRICAL CHARACTERISTICS

9.1 AC INPUT ELECTRICAL SPECIFICATIONS

Input	Minimum	Nominal	Maximum	Unit
Voltage	130	150-240	264	V
Current	---	---	2.0	A
Frequency range	50/60±5%			Hz
Efficiency(Full Load)	80%minimum at 220Vac			
Standby Power Consumption	≦ 0.5W； 240Vac input and no load condition			
Inrush Current	80Atyp peak, 150Vac; 100Atyp peak, 240Vac			
Leakage Current	Less Than 0.35mA, 240Vac input			
Input Fuse	T3.15AL/250Vac			

9.2 DC OUTPUT CHARACTERISTICS

9.2.1 Rated Output Characteristics

Output Voltage	Regulation	Minimum current	Rated current	Maximum current	Maximum impact current
+12V	±10%	0	2.3A	4.5A	8A

9.2.2 Output Transient Response

Output Voltage	Voltage Tolerance Limit	Slew Rate	Load Change
+12V	±10%	0.2A/uS	Min to Max load

Note: Transient response measurements shall be made with a load changing repetition rate of 100Hz to 240Hz.

9.2.3 DC Output Ripple & Noise

Output Voltage	HF Ripple & Noise (Max.)
+12V	≤ 500mV

Note：

1) Measurements shall be made with an oscilloscope@ 20MHz bandwidth.

2) Outputs shall be bypassed at the connector with a 0.1 uF ceramic capacitor and a 10uF electrolytic capacitor to simulate system loading.

9.2.4 DC Output Rise Time

Output Voltage	Rise Time（ms）
+12V	≤100 ms

9.2.5 DC Output Overshoot

Output Voltage	Overshoot Voltage(V)
+12V	≤10%

9.2.6 Turn-ON Delay Time

Output Voltage	Turn-ON Delay Time
+12V	≤ 3S

9.2.7 Turn-OFF Delay Time

Output Voltage	Turn-OFF Delay Time
+12V	≥5 ms

9.2.8 Over Voltage Protection

9.2.9 Over Current Protection

Output Voltage	Over Current Protection
+12V	3.7A ≤ OCP ≤ 6A

9.2.10 Short Circuit Protection

When any output is short circuited to ground, the power supply is automatically protected, and the continuous short circuit is not damaged. The output impedance is less than 0.1 ohms, which is defined as a short-circuit circuit.

9.3 BACK LIGHT INPUT ELECTRICAL SPECIFICATIONS

INPUT VOLTAGE	Von/off		0	0.8	V	Off State
		2.5	3.3	5.5	V	On State
INPUT VOLTAGE	PWM	30	--	100	100%	PWM =100%时最亮
EFFICIENCY	η	85	--	--	%	PWM =100% ,RL= Panel

9.4 BACK LIGHT OUTPUT CHARACTERISTICS

CONNECTOR	Voltage (V)			Current (mA)		
	Min	Nom	Max	Min	Nom	Max
CNW4	56.7	65	73.5	100	550	580

9.5 BACK LIGHT OVER VOLTAGE PROTECTION

Output Voltage	Over Voltage
LED+	100V ≤ OVP ≤ 130V

9.6 BACK LIGHT OUTPUT CONNECTOR

◆ **CNW2 (2 pin 2.0):**

NO.	DEFINITION
1	LED-
2	LED+

◆ **CNW4 (3 pin 2.0):**

NO.	DEFINITION
1	LED-
2	LED-
3	LED+

Note: With Power of constant current part less than 45W

10. FUSE PROTECTION

The Fuse inside the power supply shall open when the AC input current is over the rated current of fuse.

This Fuse protection will cause switching power supply to fail.

10.1 SAFETY

The power supply shall compliance with the following Criterion:

1) UL60950/UL60065
2) EN60950/EN60065
3) GB4943-1995/GB8898-2011

10.2 ISOLATION

HI-POT

Input To Output	3000Vac 50Hz 1minute ≤10mA
Input To FG	3000Vac 50Hz 1minute ≤10mA
Output To FG	Non Isolated

Insulation resistance

Input To Output	DC500V 50MΩmin (at room temperature)
Input To FG	DC500V 50MΩmin (at room temperature)
Output To FG	Non Isolated

11. CONFIGURATION & GENERAL PRECAUTIONS

Relative Humidity: ≤ 80%

Storage Temperature: -10 ~ + 60℃

Operation Temperature: 0 ~ +40℃

Keep the board away from conductor, static electricity and water when it is working.

Don’t push or pull the connectors when the board is working.

Clean the board with soft dry cloth when it’s dirty.

12. NOTICE REGARDING TV MEDIA FORMAT AND INTERFACE TECHNOLOGY

媒体格式		接口技术及其他	
Dolby Digital Decoder	MPEG2/MPEG4	HDMI	Hbbtv2.0
Dolby Digital Plus Decoder	AMR-NB	HDCP	Netflix
Dolby MS11	AMR-WB	Wi-Fi	Freeview Play
Dolby MS12	DRA	USB	NTFS
Dolby Atmos	AAC/HEAAC	MHL	Seraphic Open Browser
Dolby Vision	H.264	Bluetooth	Seraphic TV Portal
DTS Sound	H.265	NFC	—
DTS TruSurround	DivX	DVB-T2	—
DTS HD	RMVB	DVB-S2x	—
DTS 2.0+Digital Out	WMA	ATSC	—
DTS Express 5.1	WMA Pro	PlayReady	—
DTS Studio Sound	dbx-tv	MSS	—
DTS Studio Sound II	—	Widevine	—

Introduction

This document is used to specify media formats, interface technologies and others that may be involved in TV products.

媒体格式		接口技术及其他	
Dolby Digital Decoder	MPEG2/MPEG4	HDMI	Hbbtv2.0
Dolby Digital Plus Decoder	AMR-NB	HDCP	Netflix
Dolby MS11	AMR-WB	Wi-Fi	Freeview Play
Dolby MS12	DRA	USB	NTFS
Dolby Atmos	AAC/HEAAC	MHL	Seraphic Open Browser
Dolby Vision	H.264	Bluetooth	Seraphic TV Portal
DTS Sound	H.265	NFC	—
DTS TruSurround	DivX	DVB-T2	—
DTS HD	RMVB	DVB-S2x	—
DTS 2.0+Digital Out	WMA	ATSC	—
DTS Express 5.1	WMA Pro	PlayReady	—
DTS Studio Sound	dbx-tv	MSS	—
DTS Studio Sound II	—	Widevine	—

Notice:

In the event the LCD TV Driver Boards (“Boards” purchased or customized by your good company include any hardware(e.g. TV master chip, output connector) and/or software that support the above mentioned media formats, interface technologies & others which may involve thir party technologies or intellectual properties, your company is hereby kindly reminded as follows:

1. The product price under the sale contracts between us does not include any royalties, licensing fees or expenses payable to the IP right holders for acquiring the right to use the third party technologies or the license of the third party’s intellectual properties which may be involved due to the Boards’ and relating TV sets’ supporting of the above mentioned media formats, interface technologies & others. If the IP right holders so request, you shall obtain valid license from the right holders and make payment at your own cost for such license.
2. If your company requests to reduce or cancel the media formats or interface technologies & others supported by the Boards, you shall, upon your confirmation of the Boards’ specifications, or upon payment of the contract price, whichever is earlier, notice us such requests in writing.
3. In the event the “Boards” purchased or customized by your good company do not include hardware and/or software that support part or entire of the above mentioned media formats and interface technologies & others, this Notice shall not be applicable to your company with respect to the media formats and interface technologies & others that not supported by the Boards.

4. The hardware, software and technologies related to the media formats and interface technologies & others that may be involved in the Boards are all provided by third parties . We may update this Notice from time to time. If you find any omissions, please do not hesitate to let us know.

Regarding the TV mainboard Products (following referred as “the Mainboard”), the technical requirements of which are wholly listed and defined under this Letter of Confirmation for Product Technical Requirements, due to the fact that it was ultimately confirmed and determined by the buyer regarding the software programmed to the Mainboard, and the Mainboard’s features and functions (including patented features and functions, whether the features and functions are realized and practiced through the chips embodied in the Mainboard, the Mainboard itself, or through the TV sets embodying the Mainboard), the buyer shall be responsible for obtaining appropriate licenses from the relating intellectual property right holders and other right holders, acquiring appropriate permissions to use the software programmed to the Mainboard, obtaining appropriate permissions to realize and practice the relating features and functions of the Mainboard, reporting the transaction data, arranging the payment of royalties, and performing other duties and responsibilities which are necessary to use, sell, offer for sale, import or otherwise to dispose of the Mainboard with programmed software without infringing the intellectual property rights of any third party.

As our company is specialized TV mainboard supplier and unable to acquire the performance or specifications requirements of the TV sets embodying the Mainboard, we hereby guarantee that the TV mainboard products supplied by our company are in conformance with the Letter of Confirmation for Product Technical Requirements which was confirmed in writing by both parties, and your company shall be responsible for the testing, debugging, tuning of the TV sets embodying the Mainboard, application for certifying the Mainboard and the TV sets embodying the Mainboard, and performing other duties and responsibilities which are
necessary for complying with the law and regulations of the countries and regions, where the Mainboard and the TV sets embodying the Mainboard were imported and sold.

ADJUSTMENT INSTRUCTION

BootLogo Import/ Export/ Switch Introduction

一：LOGO import

1. Prepare the LOGO picture to be replaced, with a resolution of 1280x720 in 2K and 1920x1080 in 4K;

2. Convert picture format;

(1) Open image format conversion tool：XnView.rar -> xnview.exe；

(2) Load LOGO image file and save it as .Raw format file.

(3) Name the raw file bootfile.raw and place it in the U disk root directory.

(4) Plug the U disk onto the TV and enter the password "source 2580" to open the factory menu；

Factory Menu → General Settings → BootLogo → LOGO Import→Confirm

(5) Operation LOGO Import option to import, after successful import, press power key long, choose Restart to take effect;

二：LOGO Export

1.Plug the U disk onto the TV and enter the password "source 2580" to open the factory menu；

Factory Menu → General Settings → BootLogo → LOGO Export→Confirm

三：LOGO Switch

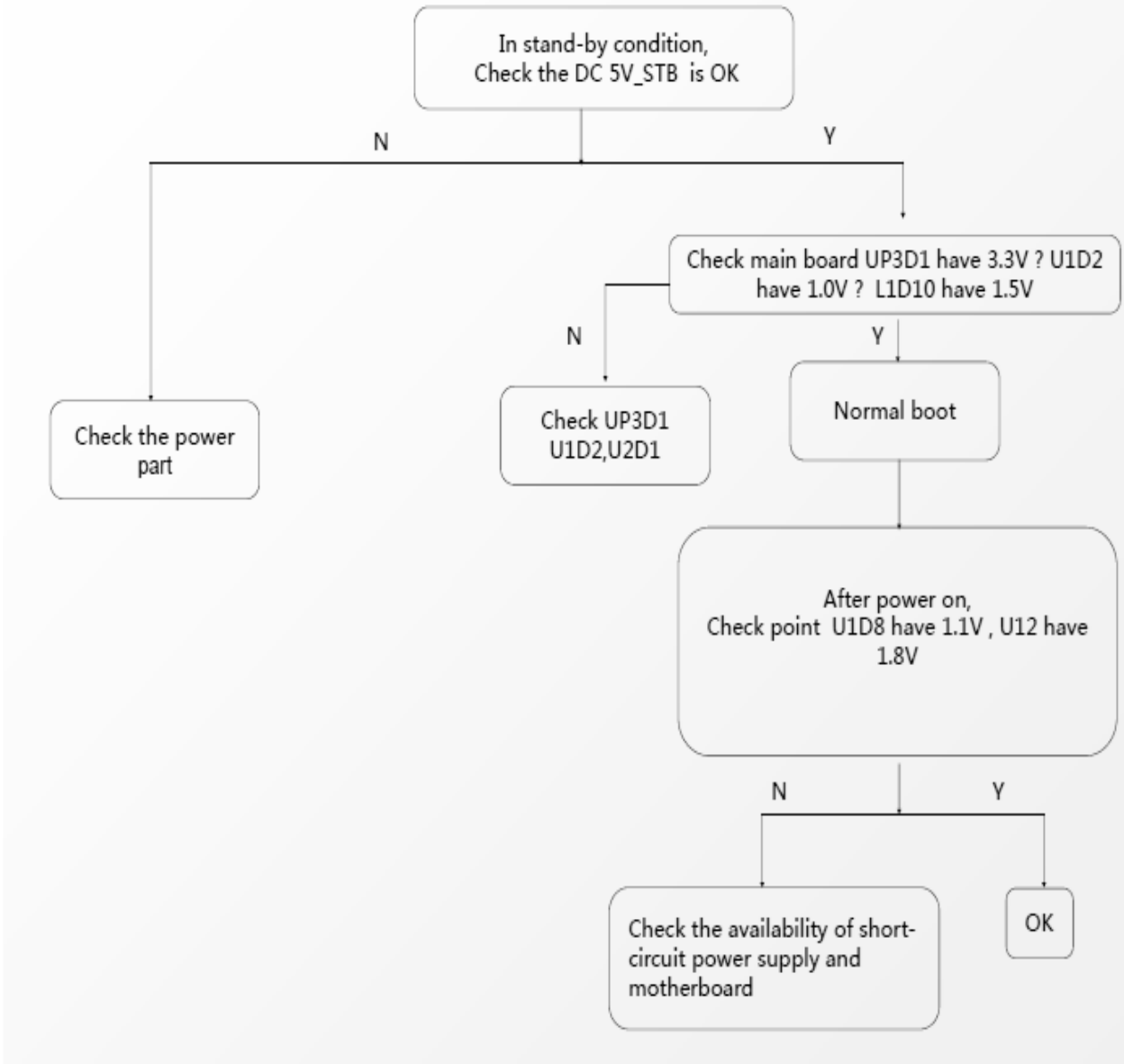
1. TV enter the password "source 2580" to open the factory menu；

Factory Menu → General Settings → BootLogo → Logo→ON/OFF

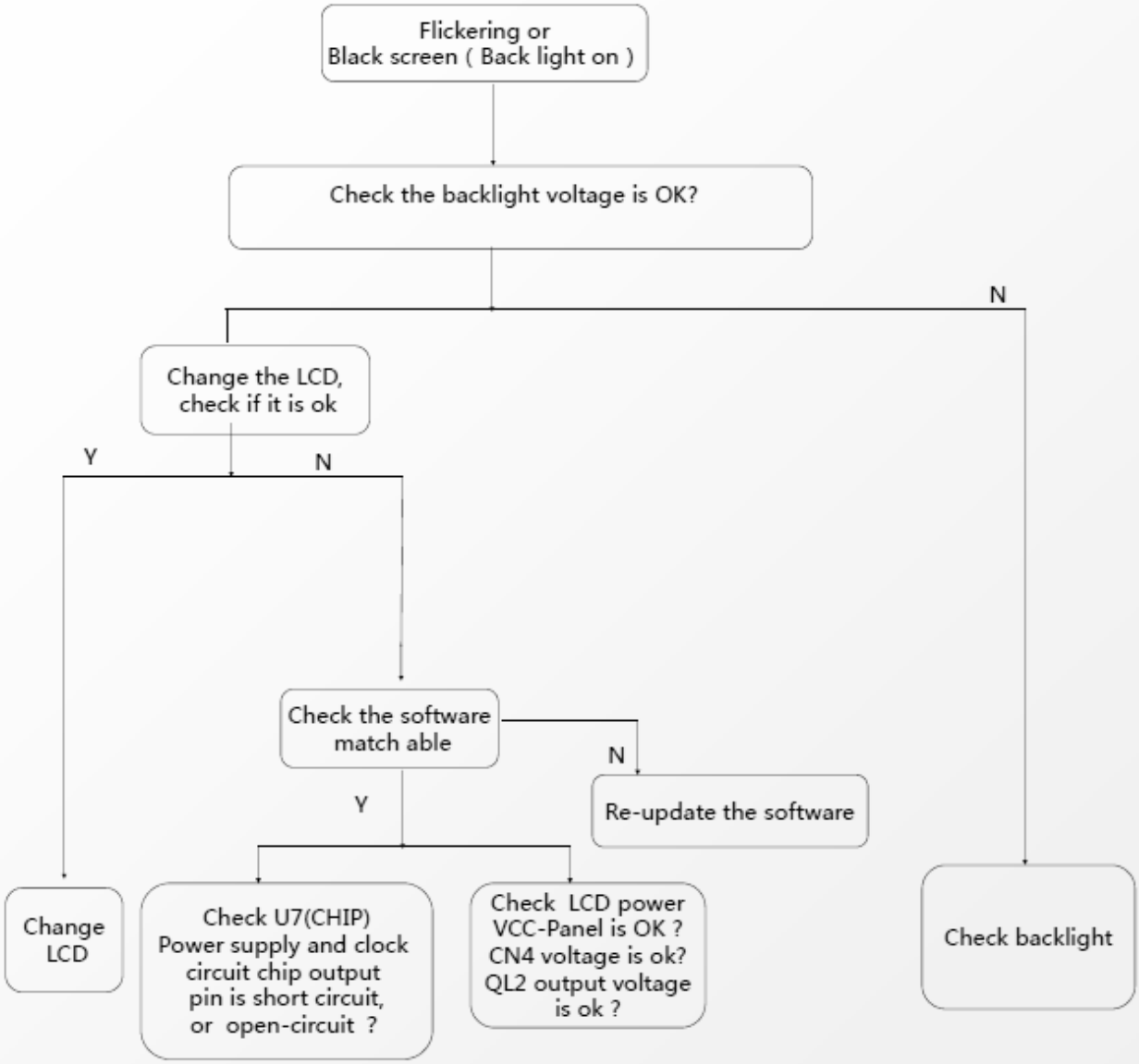
2.Select On, the TV has a logo, and select Off, the TV has a black screen without a logo.

TROUBLE SHOOTING

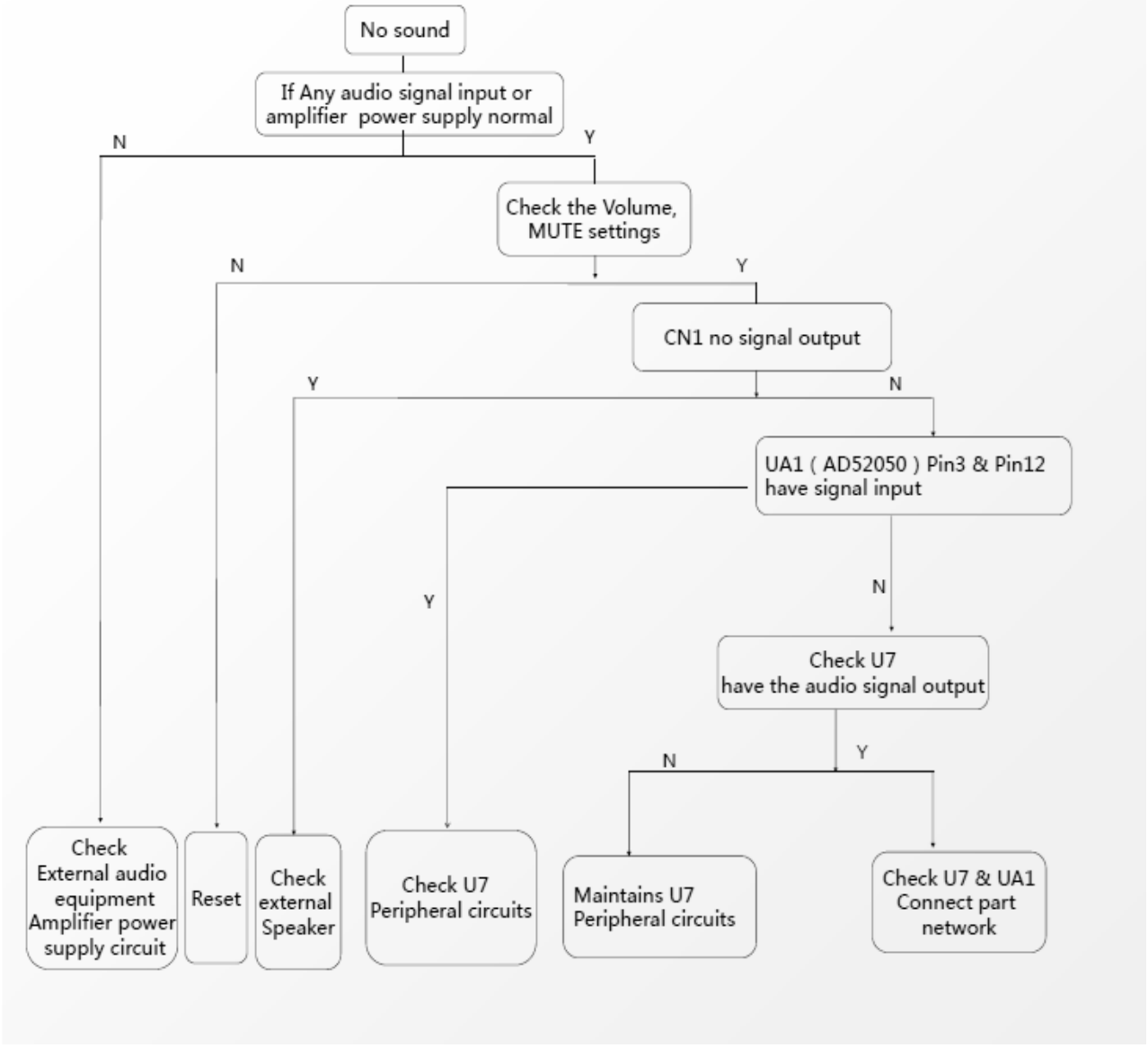
3.1 Power Units Problem Solving (Mainboard can not boot.)



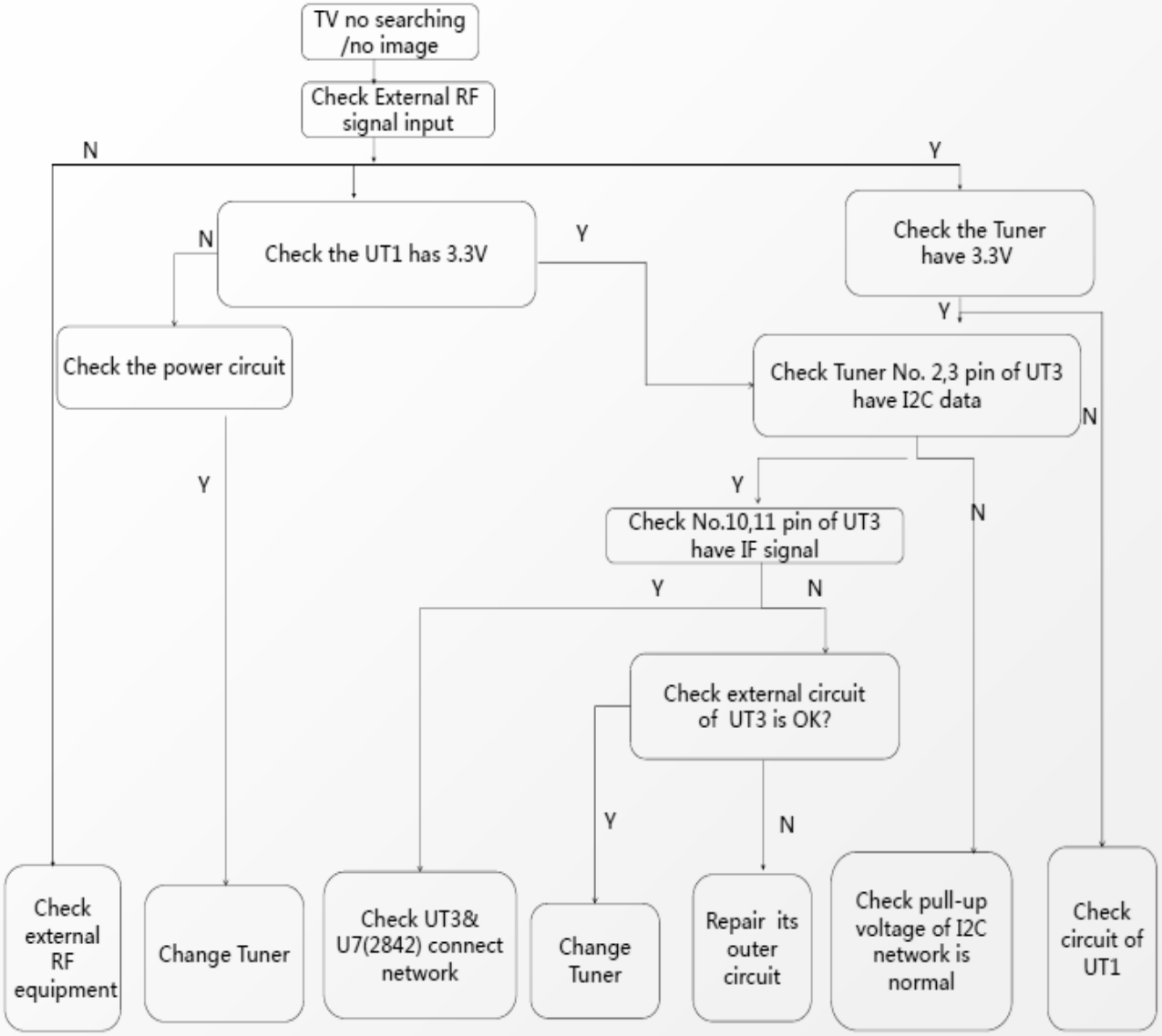
3.2 Display Unit (black screen)



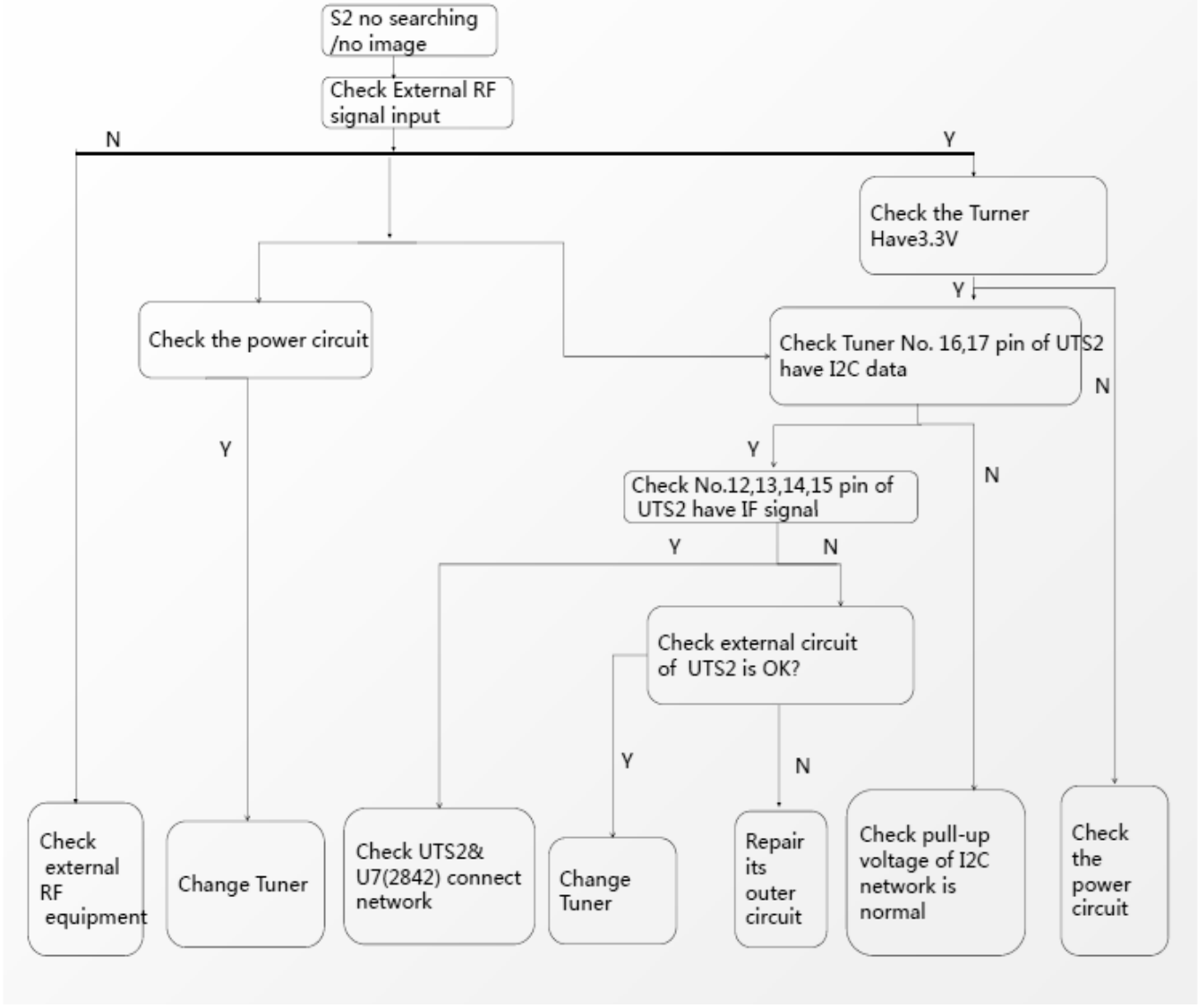
3.3 Audio Unit (no sound)



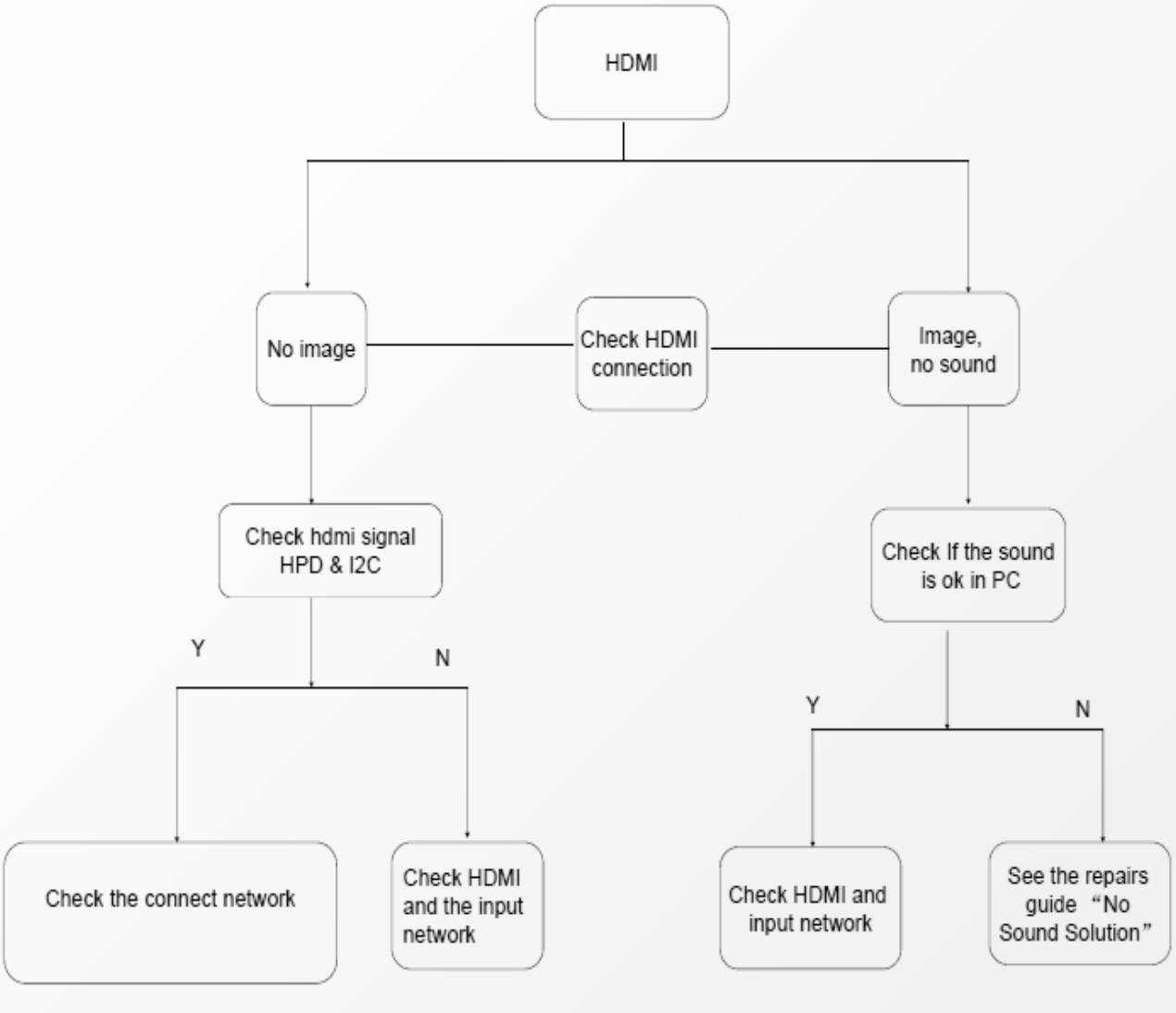
3.4 Function Unit (TV broke down)



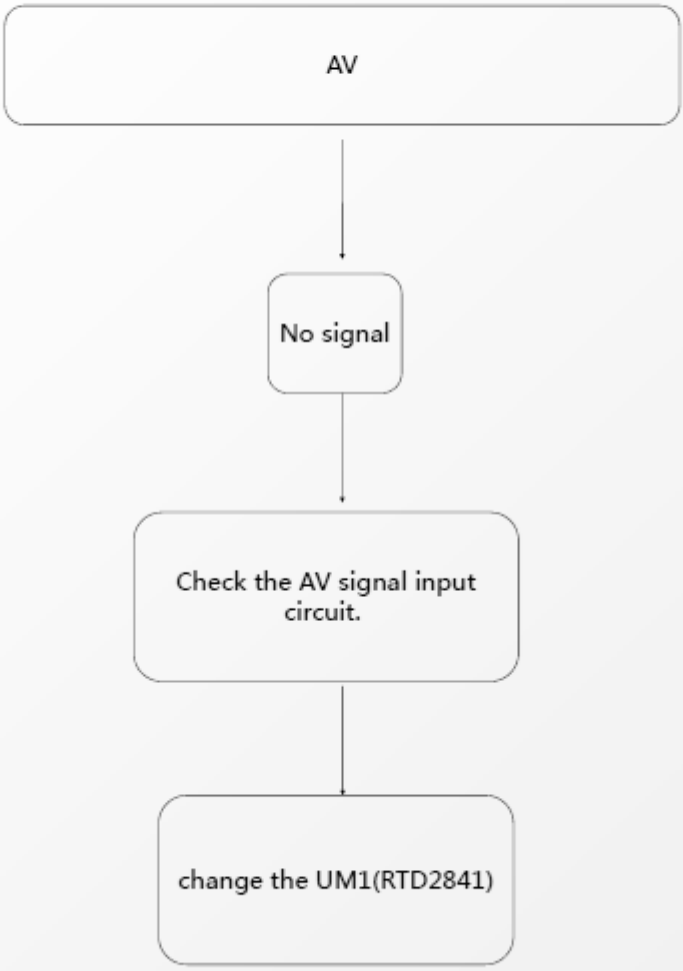
3.5 Function Unit (DVB-S2 broke down)



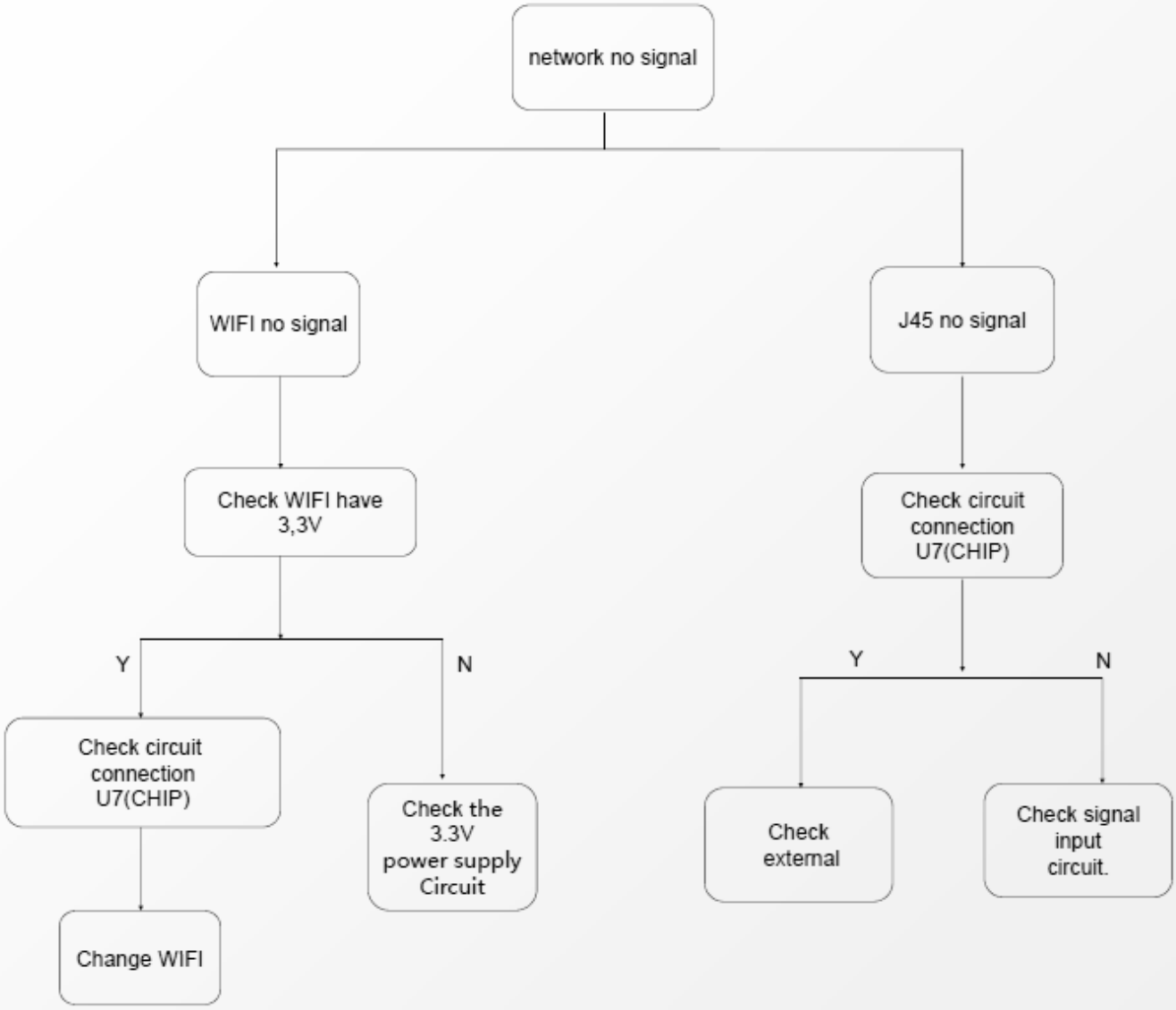
3.6 Function Unit （HDMI）



3.7 Function Unit (AV)

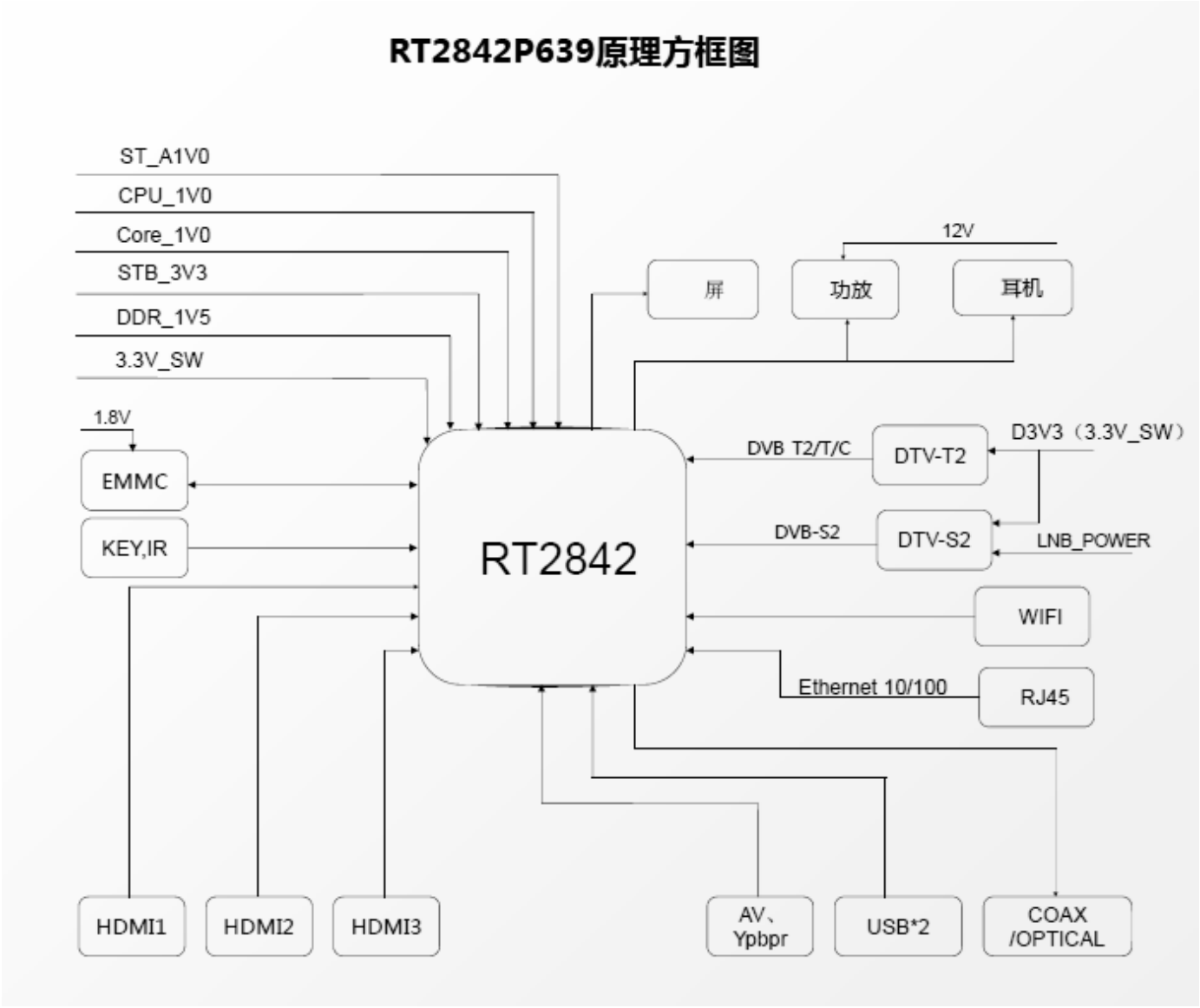


3.8 Function Unit （network no signal）



BLOCK DIAGRAM

EXPLODED VIEW



Hadish

Sabz Parseh Co.

Feb., 2021