Hadish
Sabz Parseh Co.

LED TV
SERVICE MANUAL

CHASSIS : 2936P636

MODEL : ZL-43BF5152

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

CONTENTS

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.

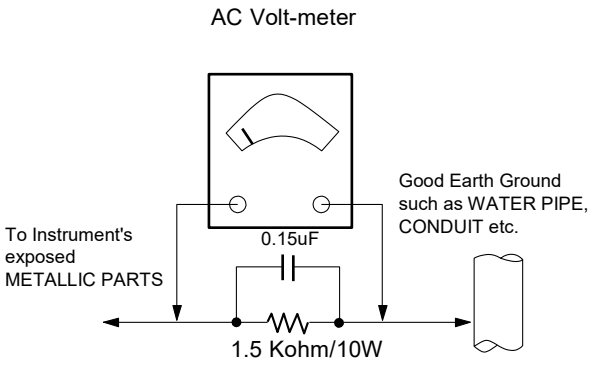
Leakage Current Cold Check(Antenna Cold Check)
With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn 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.RT2936P636X is an integration board of power supply, LED driver and TV control board. That's a digital and analog TV control board, which is suitable for the Australia、Middle East 、Southeast Asia and Colombia market. It is designed to apply the LVDS (Low Voltage Differential Signaling) as the interface. It can support LED backlight TFT panel between 24' to 43',maximum resolution supported is 1920x1080.

HK.T.RT2936P636X's power part is an energy-efficient ultrathin DC-line switching power supply unit, with max 55/75 watts multi-output.

Main Promotion Power and backlight Spec.			
Power	**Power Output**	**Backlight Value**	**Backlight Connectors**
65W	12V和19V	30V-44V/30W	2PIN-2.0 +2PIN-2.0 2PIN-2.0 +3PIN-2.0
65W	12V和24V	45V-63V/35W	
65W	12V和32V	64V-94V/35W	
75W	12V和24V	45V-63V/40W	
75W	12V和33V	64V-94V/45W	
75W	12V和48V	95V-140V/45W	

Note:
1. The accuracy of backlight current is 5%.
2. Due to the requirements of the harmonic current in electromagnetic compatibility (IEC61000-3-2), the rated input power should be less than 75W when the TV set is undering the rated input voltage.

2. STANDARD CONFIGURATION
Pictures are for reference only, specific to prevail in kind.

标准配置二	销售地区 ，主要端口 （澳洲、中东、东南亚）
Functions	【 HK.T. RT2936P636X 】HEADPHONE，YPbPr，AV IN，RF(IEC头)，HDMI3，HDMI 2（ARC），HDMI 1，USB X2，COAX OUT
Notes	
FRONT VIEW	
SIDE VIEW	

3. FEATURE

3.1 FEATURE 1

Chipset	RTD2936		
Market	Australia、Middle East、Colombia 、Southeast Asia		
Panel	Type	TFT-LED;	
	Resolution	Max. 1920*1080	
	Interface	Single/Dual LVDS 6bit/8bit	
Input Signal	Analog TV (ATV)	PAL 、SECAM System	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
		NTSC System	Video System : NTSC /PAL－N/PAL－M Sound System :M/N CC: CC1, 2, 3 and4, Text 1, 2, 3 and 4, XDS (eXtension Data Service)
	Digital TV (DVB-T/T2+C)	Receiving Range	VHF(52.5MHz-219MHz)
			UHF(474MHz-862MHz)
		Input impedance	75Ω
		Channel bandwidth	6MHz/7MHz/8MHz
		Modulation	DVB-T/T2: COFDM,2K/8K,QPSK,16QA,64QAM , 128QMA,256QAM
			DVB-C:16-256QAM
		Video system	MPEG-2, MPEG-4, H.264, AVS,H.265
		Sound system	MPEG-1 layer 1/2, MPEG-2 layer 2, DRA
		Basic function	EPG, Subtitle, LCN, Teletext
		Max Storage Channels	>800CH(dynamic)
	Digital TV (ISDB-T)	nput level	－83~－8dBm
		C/N	≦16dB (Air) ≦28dB (Cable)
		Channel bandwidth	6MHZ
		Modulation	ISDB
		Video system	H.264
		Sound system	Support MPEG1 Layer 1,2 and 3(mp3), and MPEG2 Layer 2
		Basic function	EPG, CC,GINGA(Optional)

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

	YUV	Signal	Y: 1Vp-p@75ohm UV :0.7Vp-p@75ohm
		Format	480i,480P,576i,576p,720p,1080i,1080p
	CVBS Audio YPBPR Audio	L/R RCA Input	0.2- 2.0 Vrms
Output Signal	Audio Output	Fre.q Response	100Hz-15KHz @±3dB (1KHz, 0dB reference signal)
		Max Output power	2x8W(8Ω) THD+N<10%
Power	Input	AC100-240V	
	Operate	Normal and Low power mode	
	Manage	Standby < 0.5W	
	Panel Voltage	5V,12V	
Picture	Video decoder	H/W auto multi-standard detection and color decoding. High performance adaptive 3D comb filter for Y/C separation. Handling of weak and noisy off-air signals. Support 3-ch for CVBS and S-Video output.	
	De-interlace	3D De-interlacing with Low Angle Detection	
	Noise Reduction	MPEG De-block&De-ringing noise reduction	
	Picture Enhance	Digital hut,saturation,brightness and contrast adjustments . Support DLTI/DCTI video-quality improvement. Support Black/white level extension and ACC. Support 2D Y peaking filter and coring. sRGB compliance and Gamma correction.	
	Scaling	Support 4:3 / 16:9 with Non-linear scaling Advanced Scaling Engine	
Other	Amplifier	2 X 8W (8Ω),	
	OSD language	English、Thai、Farsi、Malay、Lao,.etc.	
	Key definition	SOURCE、MENU、CH+、CH-、VOL+、VOL-、POWER	
Interface	Input	ATV/DTV	1 IEC /N 75 Ω
		CVBS	1 RCA terminal
		YPBPR	3 RCA terminal
		CVBS@YPBPR Audio	2 RCA terminal
		HDMI	3 HDMI terminal
		USB Slot	1 USB Slot(Horizontal) (SUPPORT Double USB)
	Output	Earphone	1 Earphone terminal
		Coax	1 RCA terminal(orange)

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

4.MEDIA PLAYER FORMAT

Movie format (by Video codec)					
File Extension	Container	P/N	Video Decoder	External	Resolution
		MPEG	MPEG1	O	768x576
			MPEG2 MP@HL	O	1920x1080
		H.264	H.264 BP LV4.0	O	1920x1080
			H.264 MP LV4.0	O	1920x1080
			H.264 HP LV4.0	O	1920x1080
		MPEG	MPEG-4 SP@HL 3.0	O	1920x1080
			MPEG-4 ASP@HL 4.0	O	1920x1080
*.mp4 *.mov *.3gp	MP4 (MPEG-4 Part 14)	H.264	H.264 BP LV 4.0	O	1920x1080
			H.264 MP LV 4.0	O	1920x1080
			H.264 HP LV 4.0	O	1920x1080
		MPEG	MPEG-4 SP@HL 3.0	O	1920x1080
			MPEG-4 ASP@HL 4.0	O	1920x1080
*.mkv	MKV (Matroska Video)	H.264	H.264 BP LV 4.0	O	1920x1080
			H.264 MP LV 4.0	O	1920x1080
			H.264 HP LV 4.0	O	1920x1080
		MPEG	MPEG-4 SP@HL 3.0	O	1920x1080
			MPEG-4 ASP@HL 4.0	O	1920x1080
*.mpg / *.mpeg *.vob	PS (Program Stream)	MPEG	MPEG1	O	768x576
		MPEG 1/2/4	MPEG2 MP@HL	O	1920x1080
Others (ts)	TS (Transport Stream)	MPEG	MPEG2 MP@HL	O	1920x1080
		H.264	H.264 BP LV 4.0	O	1920x1080
			H.264 MP LV 4.0	O	1920x1080
			H.264 HP LV 4.0	O	1920x1080
			H.264 MVC	O	1920x1080
		AVS	AVS Jizhun Profile LV6.0	O	1920x1080
*.rm *.rmvb		RM	RV 8 (rv30)	O	1920x1080
			RV 9 (rv40)	O	1920x1080
			RV 10 (rv40)	O	1920x1080
*.flv	FLV (FLash Video)	H.264	H.264 BP LV 4.0	O	1920x1080
			H.264 MP LV 4.0	O	1920x1080
			H.264 HP LV 4.0	O	1920x1080

Movie format (by Audio codec)					
File Extension	Container	P/N	Audio Decoder (For MM Video)	External	-
*.avi	AVI (Audio Video Interleave)	Generic (MTK)	wav : PCM / ADPCM	O	
			MPEG1 Layer1/2	O	
			MP3 (MPEG1 Layer3)	O	
			Window Media Audio V8	O	
		H.264	MPEG2 AAC (AAC-LC)	O	
			MPEG4 AAC-LC	O	
			MPEG4 HE-AAC	O	
*.wma *.wmv	ASF (Advanced Systems Format)	Generic (MTK)	Window Media Audio V8	O	
			Window Media Audio V9	O	
*.mp4	MP4 (MPEG-4 Part 14)	Generic (MTK)	MPEG1 Layer1/2	O	
			MP3 (MPEG1 Layer3)	O	
		H.264	MPEG2 AAC (AAC-LC)	O	
			MPEG4 AAC-LC	O	
			MPEG4 HE-AAC	O	
*.mkv	MKV (Matroska Video)	Generic (MTK)	wav : PCM / ADPCM / A-law PCM / u-law PCM	O	
			MPEG1 Layer1/2	O	
			MP3 (MPEG1 Layer3)	O	
			Window Media Audio V8	O	
		H.264	MPEG2 AAC (AAC-LC)	O	
			MPEG4 AAC-LC	O	
			MPEG4 HE-AAC	O	
*.mpg / *.mpeg *.vob	PS (Program Stream)	Generic (MTK)	MPEG1 Layer1/2	O	
			MP3 (MPEG1 Layer3)	O	PS System Layer don't have MP3 flag in spec.
			DVD LPCM	O	
Others (ts)	TS (Transport Stream)	Generic (MTK)	MPEG1 Layer1/2	O	
			DVD LPCM	O	

			DRA	O	
		H.264	MPEG2 AAC (AAC-LC)	O	
			MPEG4 AAC-LC	O	
			MPEG4 HE-AAC	O	
*.rm	RM (RealMedia)	Generic (MTK)	cook : COOK (RealAudio6)	O	
		H.264	raac : MPEG4 AAC-LC (RealAudio9)	O	
			racp : MPEG4 HE-AAC (RealAudio10)	O	
*.flv	FLV (FLash Video)	Generic (MTK)	MP3 (MPEG1 Layer3)	O	
		H.264	MPEG2 AAC (AAC-LC)	O	
			MPEG4 AAC-LC	O	
			MPEG4 HE-AAC	O	

Photo format					
File Extension	Container	-	Decoder	method	-
*.jpg	JPEG		baseline	H/w	
*.bmp	BMP (Bitmap)			S/W	
*.png	PNG (Portable Network Graphics)			S/W	

Music format					
File Extension	-	-	Decoder	method	-
*.mp3	MPEG-1/2 Audio Layer-3				
*.wav	LPCM/ADPCM				
*.m4a	Advanced Audio Coding				

Note1: Licenses are required for Divx,MPEG,H.264,AC3, MP3,WMA and ACC.

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.)

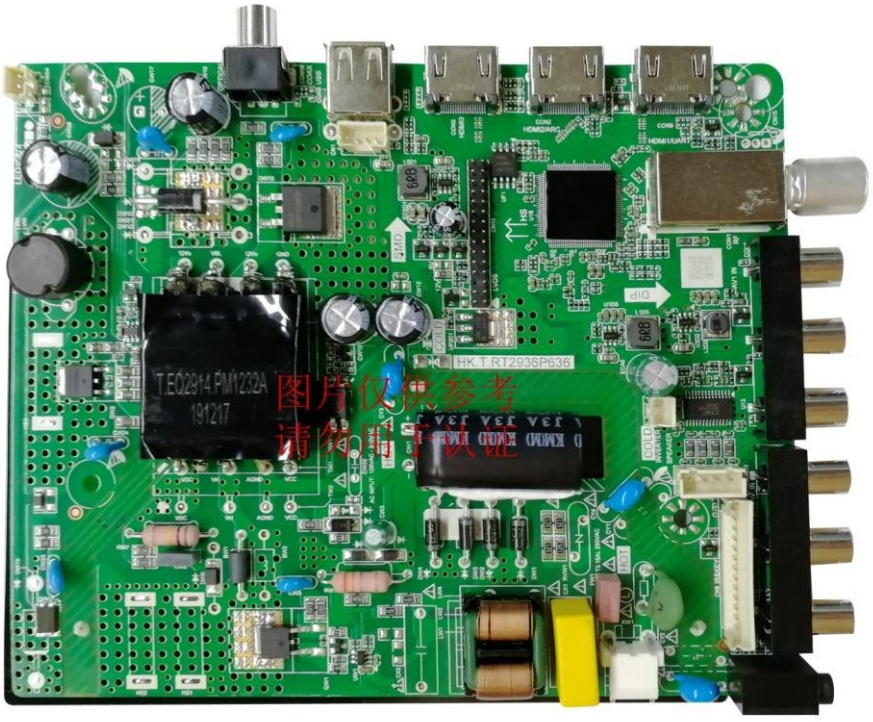
5.2 KEY MATERIALS

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

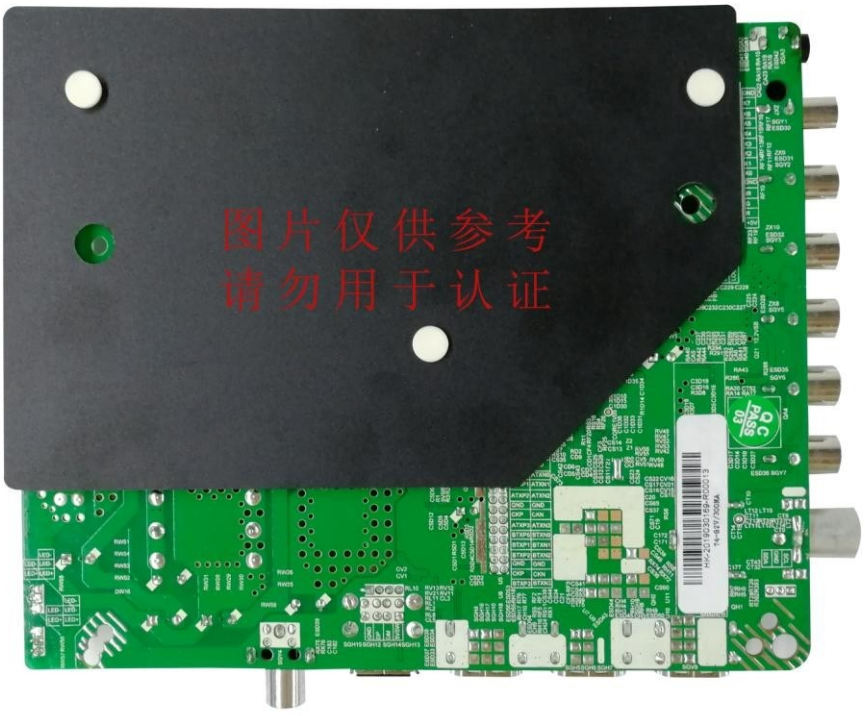
NAME	TYPE	BRAND	BACKUP TYPE	BACKUP BRAND
SPI FLASH	GD25Q64	GigaDevice	W25Q64 EN25Q64	Winbond EON
LDO	HH1117-ADJ	HUAHONG	BL1117	BEILING
			AP1117	AP
CRYSTAL	'X-24.000MHz	ML	'X-24.000MHz	FL
	'X-27.000MHz	ML	'X-27.000MHz	FL
DC_DC	SY8113BADC	SILERGY	XC8113	XC
	SY8120B1ABC	SILERGY	XC8112B	XC
AMP	R3118E	RDA	TPA3138	TI
			AD52050	ESMT

6. FUNCTION LAYOUT

6.1 THE TOP VIEW OF HK.T.RT2936P636X



6.2 THE BOTTOM VIEW OF HK.T.RT2936P636X



7. PCB DIMENSION AND CONFIGURABLE

7.1 PCB DIMENSION

PCB Height=20.00mm PCB

Length=134.50mm PCB

Width=153mm

PCB Screw Bore Size: Diameter is 3.5mm

7.2 CONFIGURABLE

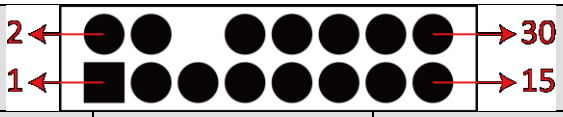
The structure chart is for a reference only; the actual item is the standard.

Jack configuration can be adjusted according to your jack terminal, it just depends on your board basic, and the final bracket Configuration is determined by the practical sample.

8. INTERFACE DEFINITION

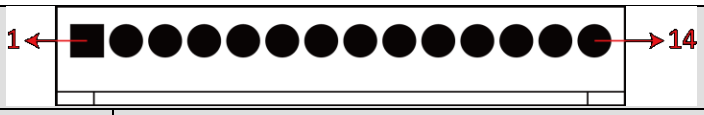
Below, please see the definition and description from left PIN to right PIN or from up PIN to down PIN.

◆ **CN10(2X15 Pin / 2.0): TO LVDS**



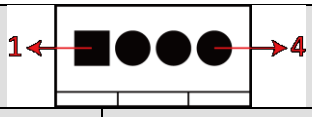
NO	DEFINITION	NO	DEFINITION
1	VCC	2	VCC
3	VCC	4	GND
5	GND	6	NC
7	RX00-	8	RX00+
9	RX01-	10	RX01+
11	RX02-	12	RX02+
13	GND	14	GND
15	RX0C-	16	RX0C+
17	RX03-	18	RX03+
19	RXE0-	20	RXE0+
21	RXE1-	22	RXE1+
23	RXE2-	24	RXE2+
25	GND	26	GND
27	RXEC-	28	RXEC+
29	RXE3-	30	RXE3+

◆ **CN8 (14Pin / 2.0): TO IR/KEY BOARD**



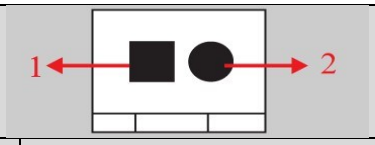
NO	DEFINITION	DESCRIPTION
1	+5V	5V Power Supply
2	R	Red Indicator
3	G	Green Indicator
4	IR	Remote Receive
5	GND	GND
6	K0	SOURCE
7	K1	MENU
8	K2	CH+
9	K3	CH-
10	K4	Vol+
11	K5	Vol-
12	K6	POWER
13	K7	(Reserved)
14	GND	Ground

◆ **CN12 (4 Pin / 2.54): SPEAKER OUT**



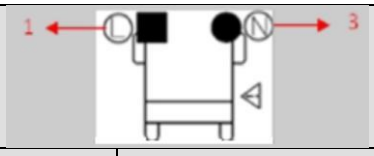
NO	DEFINITION	DESCRIPTION
1	LOUTP	Left Speak Out +
2	LOUTN	Left Speak Out-
3	ROUTN	Right Speak Out-
4	ROUTP	Right Speak Out+

◆ **CNW1 (2 pin 2.0): MAIN BOARD POWER**



NO	DEFINITION	DESCRIPTION
1	12V	12V Power Supply
2	GND	Ground

◆ **XW1 AC INPUT CONNECTOR**



NO	DEFINITION	DESCRIPTION
1	L	LIVE
2	N	NEUTRAL

9. ELECTRICAL CHARACTERISTICS

9.1 INPUT ELECTRICAL SPECIFICATIONS

9.1 .1 AC INPUT CHARACTERISTICS

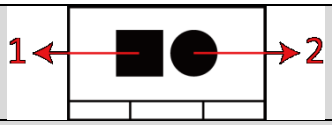
Input	Minimum	Nominal	Maximum	Unit
Voltage	90	100-240	264	V
Current	---	---	1.5	A
Frequency range	50/60±5%			Hz
Efficiency(Full Load)	80%minimum at 220Vac			
Standby Power Consumption	≦0.5W at 240Vac input and no load condition			
Inrush Current	80Atyp peak, 100Vac ; 100Atyp peak, 240Vac			
Leakage Current	Less Than 0.35mA, 240Vac input			
Input Fuse	T3.15AL/250Vac			

9.1.2 DIMMING CHARACTERISTICS

Dimming type		Digital dimming				
Parameter		Min	Typical	Max	Unit	Remark
PWM_REF Input	Duty	20	80	100	%	100%Maximum Duty Maximum Brightness
	Frequency	22	25	28	KHz	

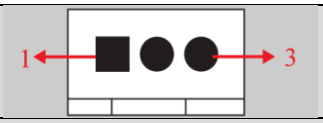
9.2 LED DRIVER POWER OUTPUT CONNECTOR

◆ **CNW2、CNW3 (2 pin 2.0): INVERTER**



NO.	DEFINITION
1	LED-
2	LED+

◆ **CNW4、CNW5(3 pin 2.0): INVERTER**



NO.	DEFINITION
1,2	LED-
3	LED+

◆**OUTPUT PROTECTION SPECIFICATION**

Signal Name	LED Short Protection Specification	LED Open Protection Specification
LED output	Auto restart	Shut down or auto restart

9.3 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.

9.4 RESET AFTER SHUTDOWN

If the power supply latches into a shutdown state because of 1 fault condition on its output, the power supply shall return to normal operation only after the fault has been removed，or the PS-On has been cycled off/on, or the AC INPUT has been cycled off/on with a off time of ten
second.

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) EN60950-1/EN60065
3) IEC60950/IEC60065
4) GB4943-2011/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.

ADJUSTMENT INSTRUCTION

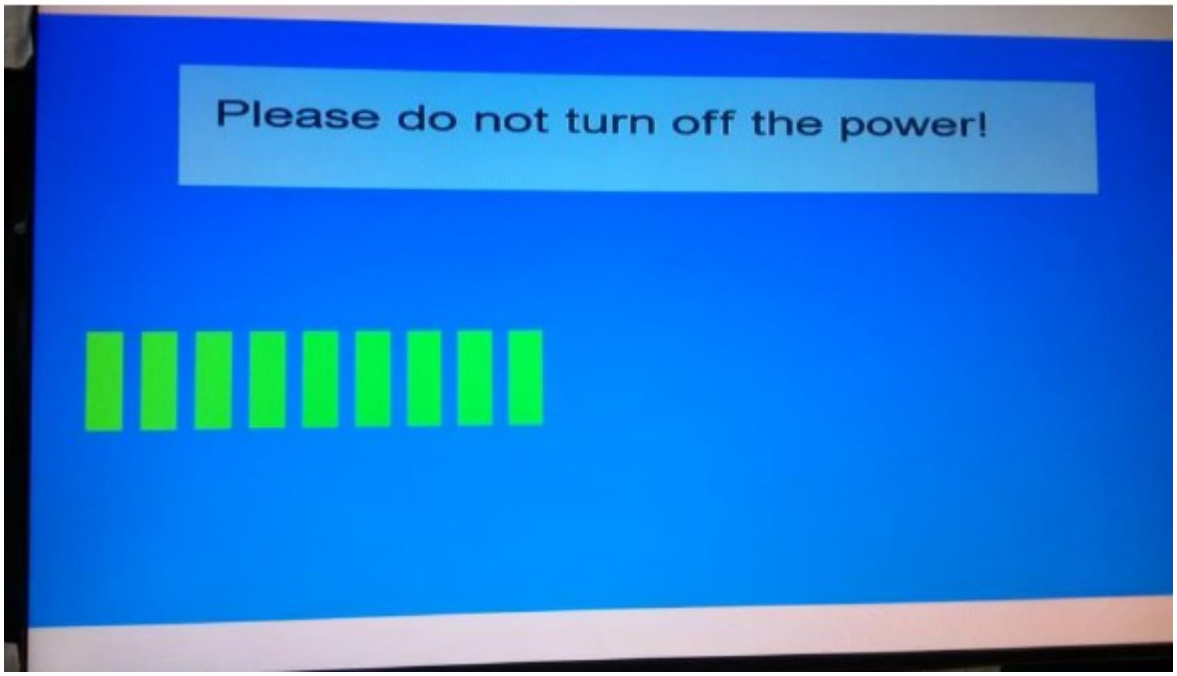
Follow the steps below to upgrade the software:
After exiting the mode (install_RTD2936.img)

1. First the software file with the name
Copy the compressed USB into the root
We disconnect the city, after the power inside the Ac

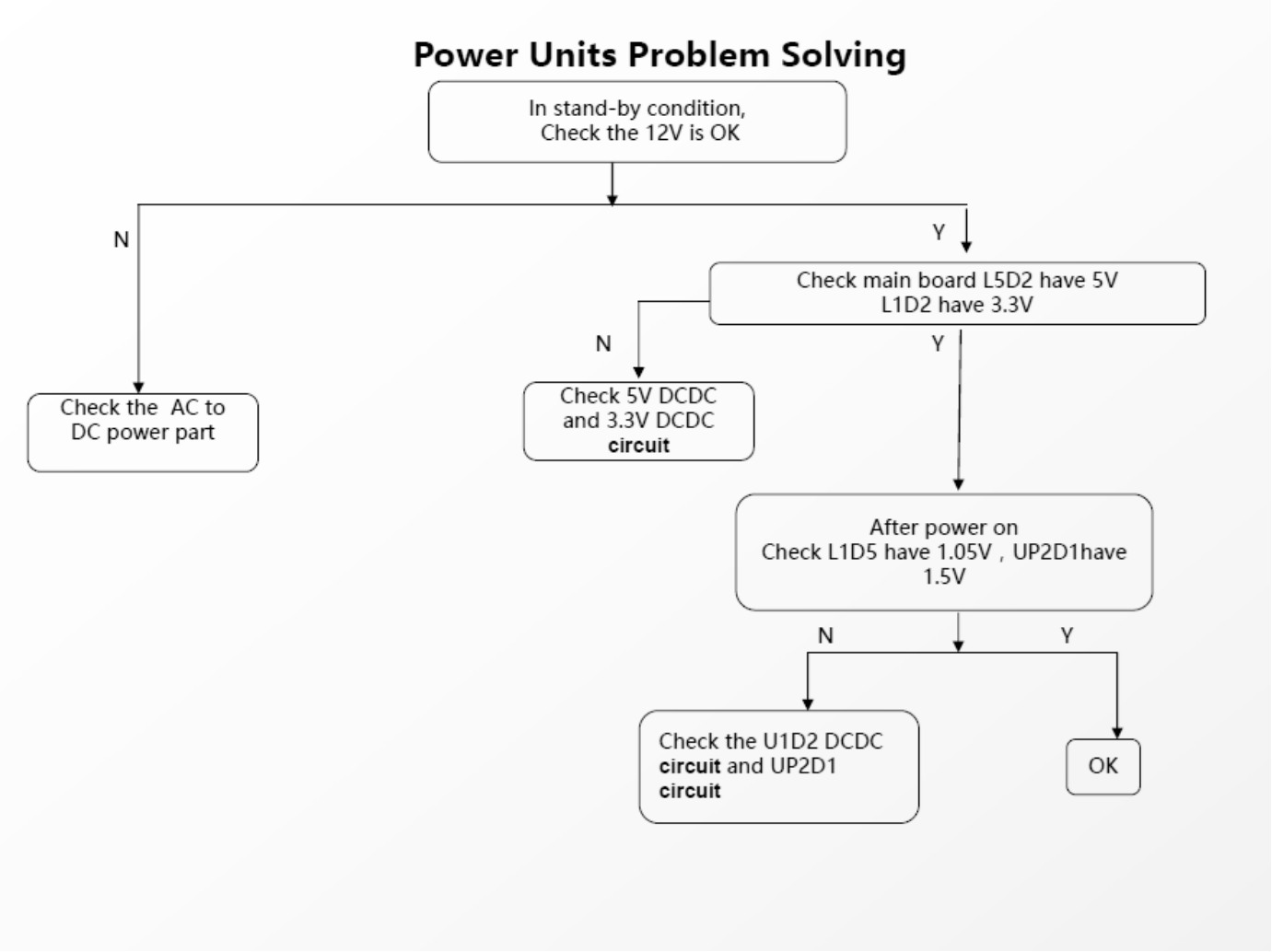
2. device is disconnected from the power supply
Turn on the device. The device turns on and the upgrade begins

The device's headlight flashes when it is updated. When you upgrade
When the device is restarted.

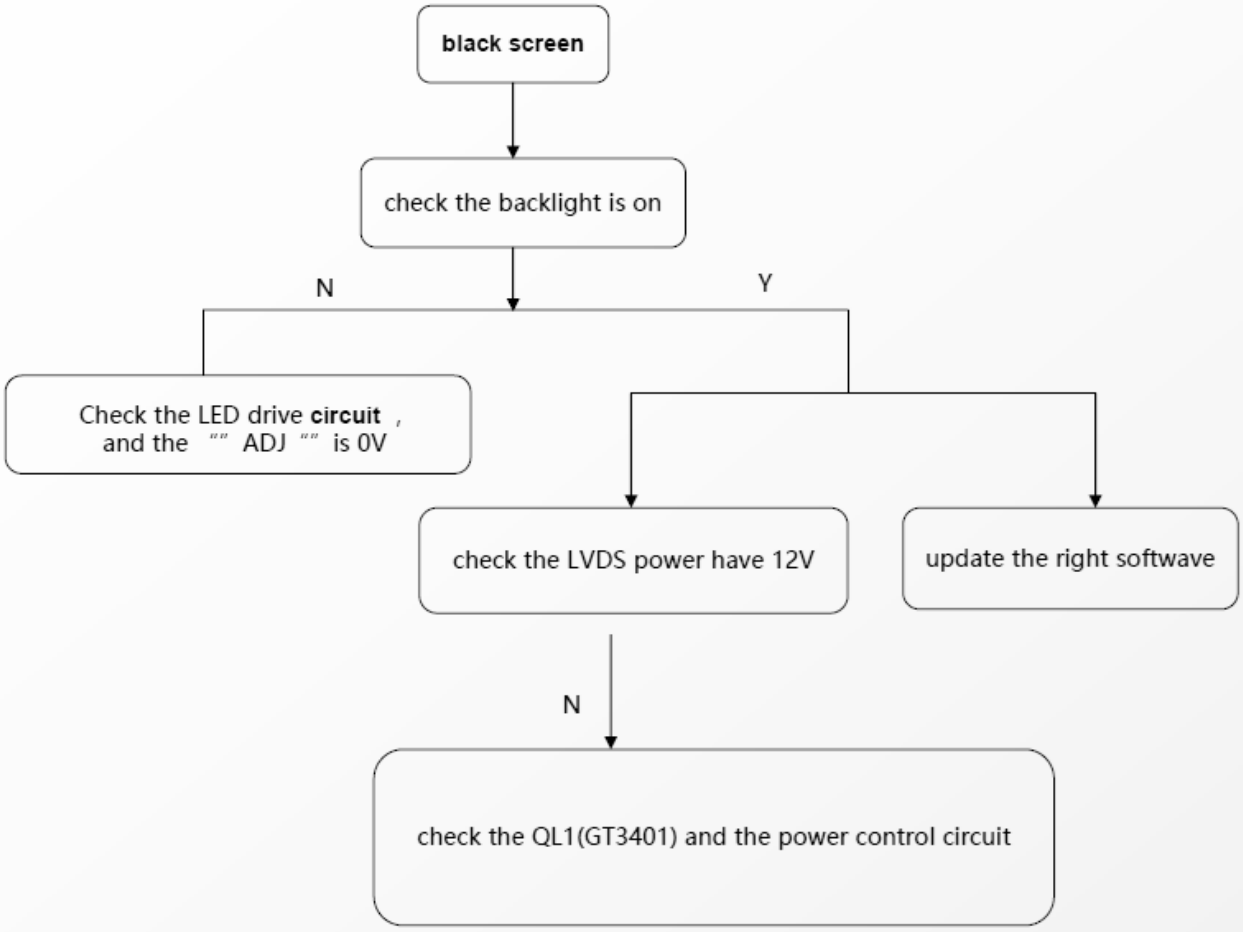
important points:
The device should not be unplugged when updating.

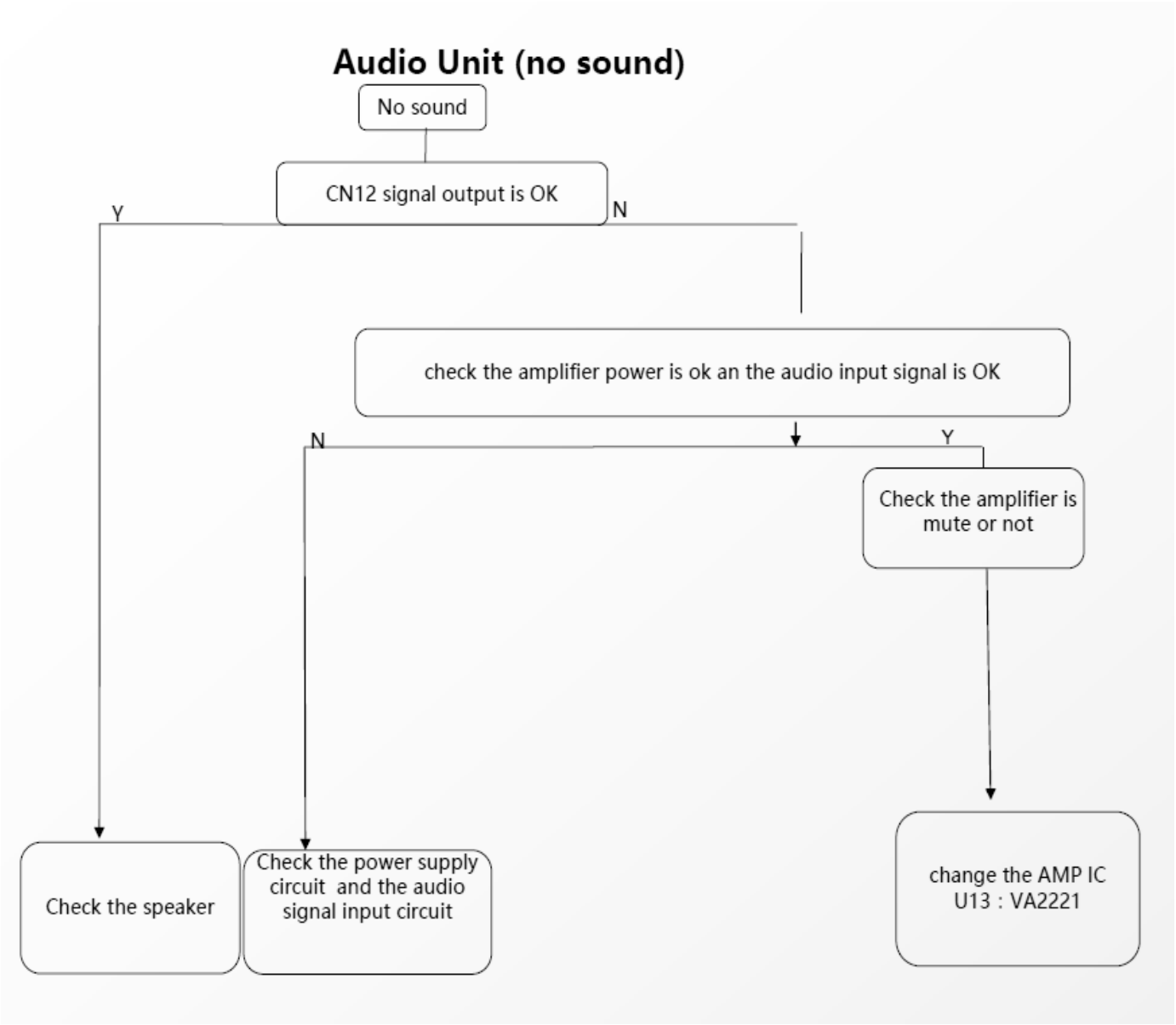


TROUBLE SHOOTING

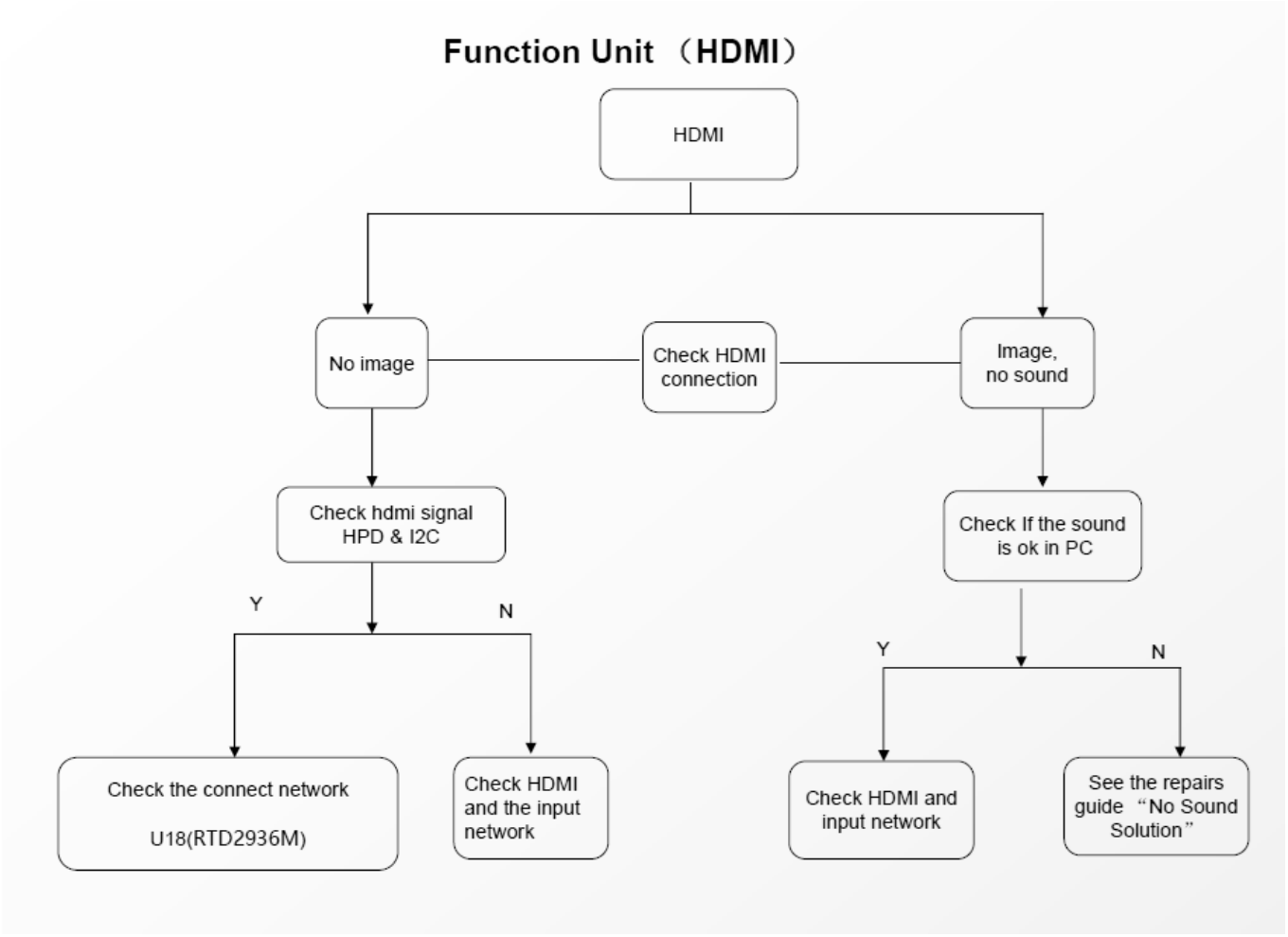


Display Unit (black screen)

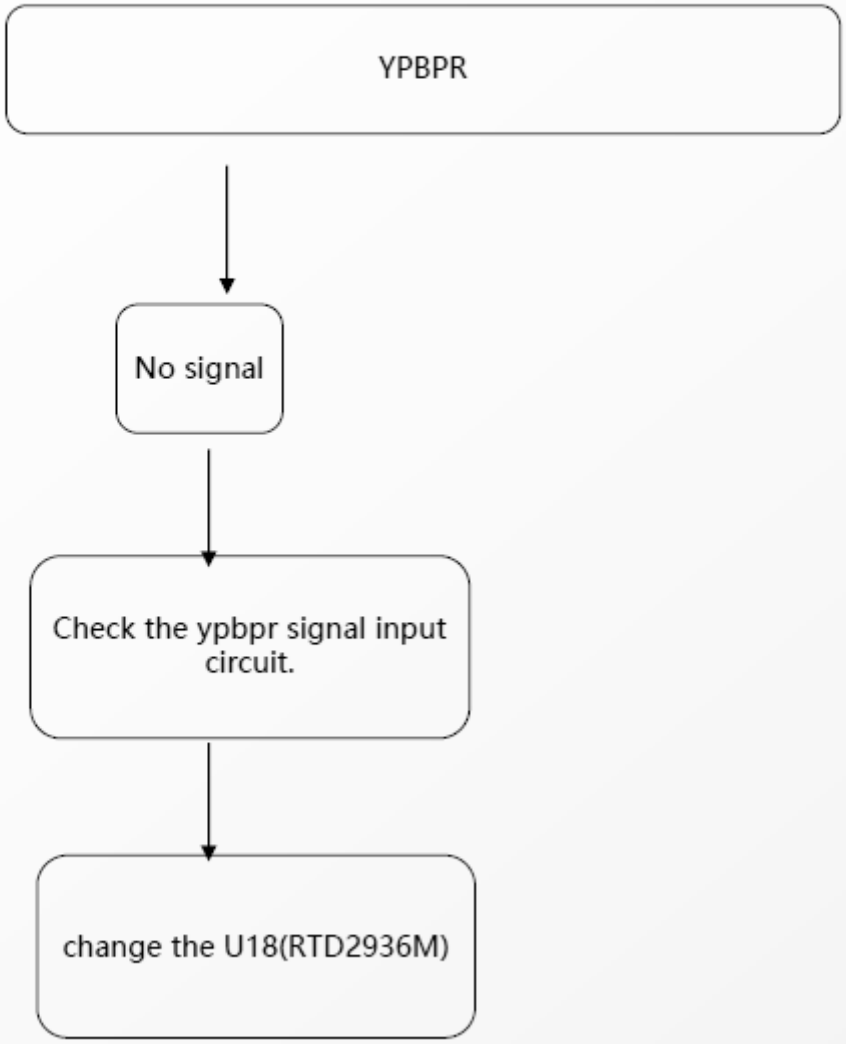



Audio Unit (no sound)
No sound
CN12 signal output is OK
Y
N
check the amplifier power is ok an the audio input signal is OK
N
Y
Check the amplifier is mute or not
Check the speaker
Check the power supply circuit and the audio signal input circuit
change the AMP IC U13 : VA2221

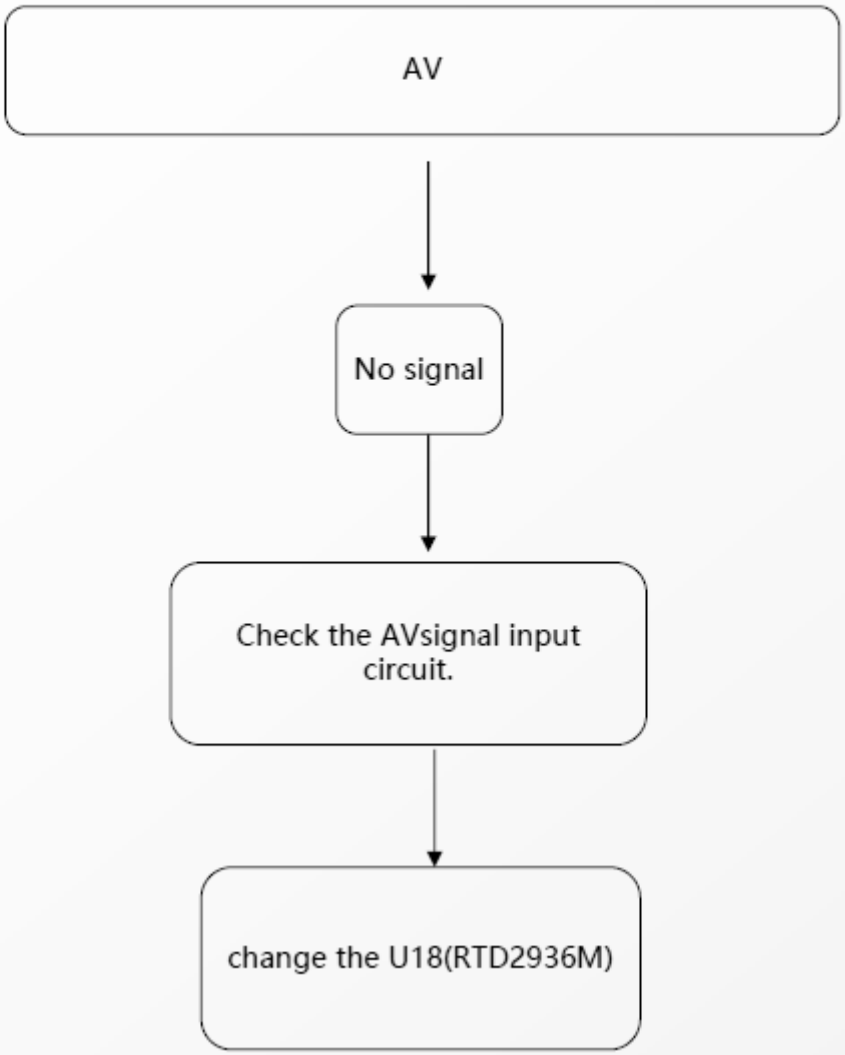
Function Unit （HDMI）



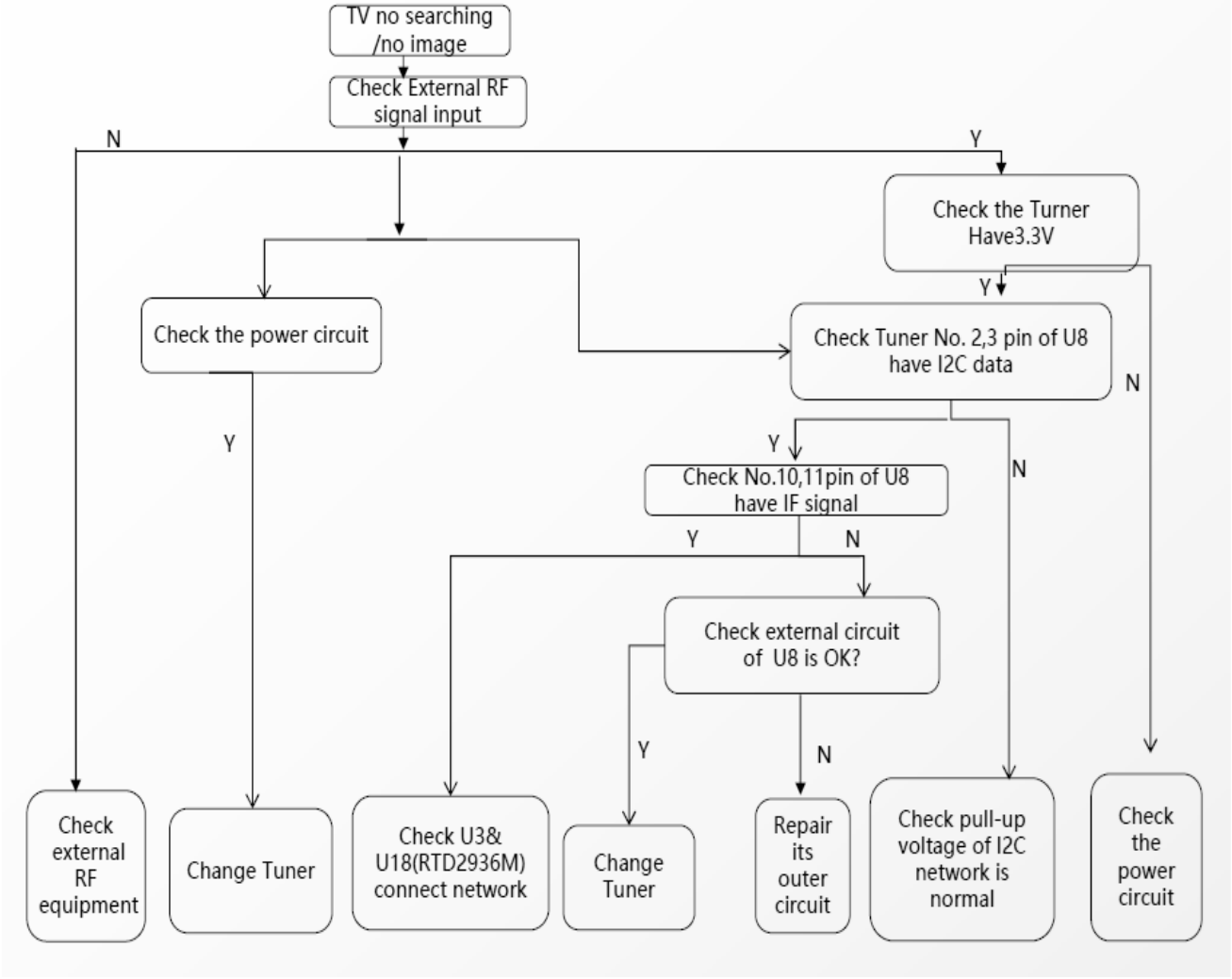
Function Unit (YPBPR)



Function Unit (AV)

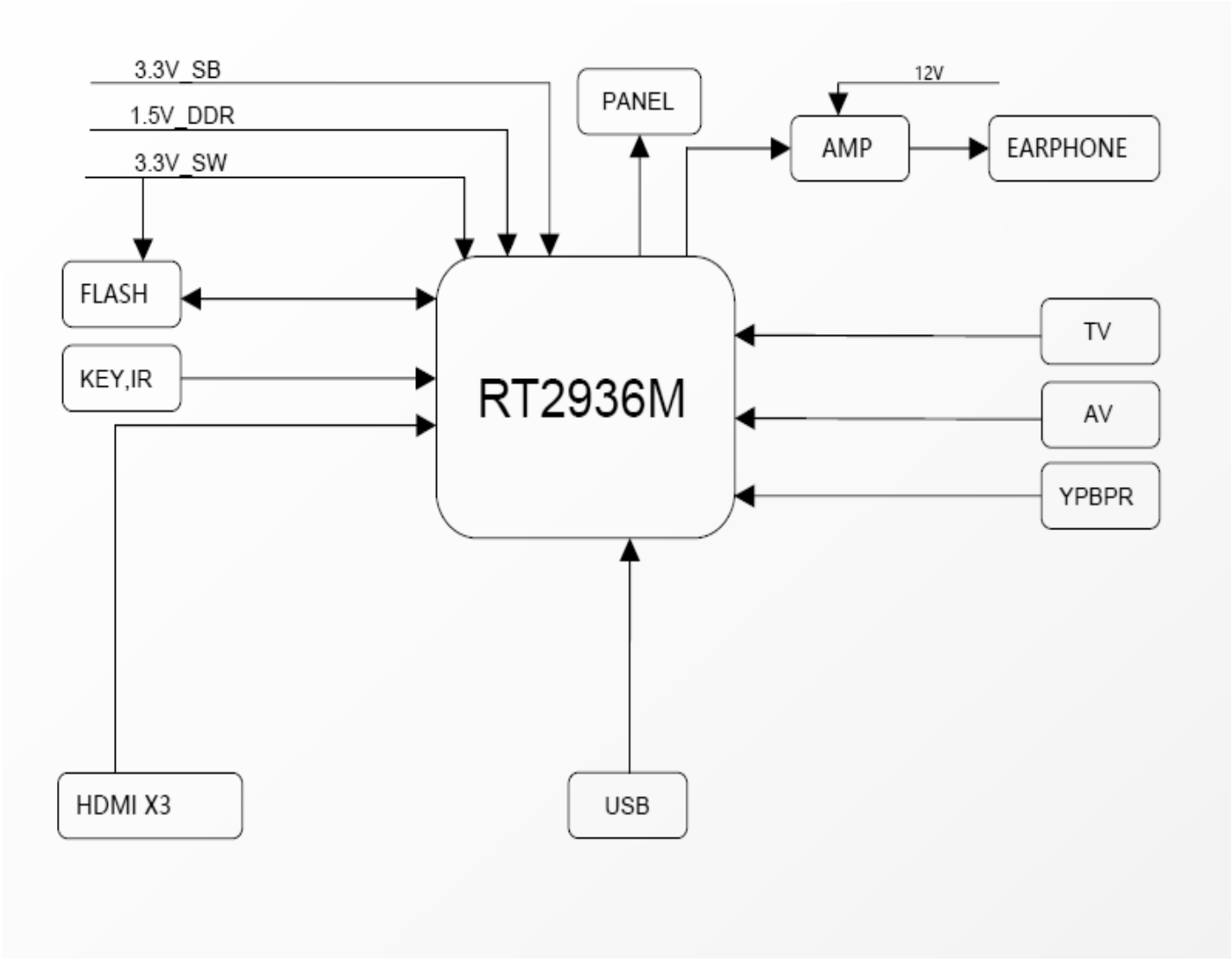


Function Unit (TV broke down)



BLOCK DIAGRAM

EXPLODED VIEW



SVC . SHEET

Hadish

Sabz Parseh Co.