

CV962H-A 板卡维修手册

1. 机型板卡配置对应表

机型	工厂	板卡型号	内存/闪存配置
58X	东山精密	CV962H-A	2G+8G
58X4 ECHO	东山精密	CV962H-A	2G+8G
58R4	东山精密	CV962H-A	2G+8G
58R5	东山精密	CV962H-A	2G+16G
55X3	东山精密	CV962H-A/ TD.T962.796	2G+8G
55X4 ECHO	东山精密	CV962H-A/ TD.T962.796	2G+8G
55R4	东山精密/TCL	CV962H-A/ TD.T962.796	2G+8G
55K6 (四川广电)	东山精密	CV962H-A/ TD.T962.796	2G+8G
55R5	东山精密	CV962H-A/ TD.T962.796	2G+16G
55AI4A	东山精密	CV962H-A/ TD.T962.796	2G+16G
55AI5A	东山精密	CV962H-A/ TD.T962.796	2G+16G
55K8	东山精密	CV962H-A/ TD.T962.796	2G+16G
55K8 (北方联通)	东山精密	CV962H-A/ TD.T962.796	2G+16G
50X4 ECHO	东山精密	CV962H-A	2G+8G
50R4	东山精密	CV962H-A	2G+8G
50R5	东山精密	CV962H-A	2G+16G
50K8	东山精密	CV962H-A	2G+16G
50K8 (北方联通)	东山精密	CV962H-A	2G+16G
50AI5A	东山精密	CV962H-A	2G+16G
43X4 ECHO	冠捷	CV962H-A	2G+8G
43K8	冠捷	CV962H-A	2G+8G

2. 产品外观及端口

如下为该板卡的外观及端子



配置一 /OPTION 1

功能:带 RF 隔离器, 带 CEC,带 ARC,带 DB,带 DTS,2GB DDR4,8GB EMMC,VBY1 屏接口

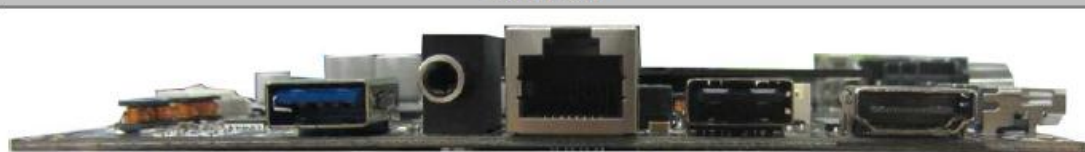
FUNCTIONS: RF ISOLATOR, CEC,ARC , DB ,DTS,2GB DDR4,8GB EMMC,VBY1

FRONT VIEW



HDMI2, HDMI1(UART), AV, COAX, USB1, TV

SIDE VIEW



USB3, EARPHONE, RJ45, USB2, HDMI3(ARC)

3. 板卡特性

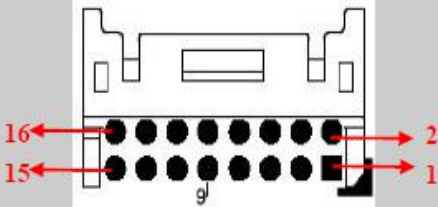
PANEL	Type	TFT-LCD/LED	
	Resolution	Max:1920X1080/4KX2K	
	Interface	Double LVDS / 8 LAN VBY1	
	Voltage	12V	
ATV	Receiving range	48.25MHz – 863.25MHz	
	Input Impedance	75Ω	
	Video System	PAL	
	Sound System	BG, DK, I, M	
		NICAM/A2	
DTV	Receiving range	DTMB: VHF (48.5MHz – 223MHz), UHF (470MHz - 806MHz)	
	Input Impedance	75 Ω	
	Video System	MPEG-2 MP@ML, MPEG-2 MP@HL, H.264,H.265	
	Bandwidth	8MHZ	
	Modulation	DTMB: 4QAM, 16QAM, 32QAM,64QAM	
	Sound System	MPEG-1 Layer 1/2, MPEG-2 Layer 2, DD+	
AV	Color system	PAL/NTSC/SECAM	
	Video Level	1Vp-p@75ohm	
HDMI	Format	480i,480p,576i,576p,720p,1080i,1080p,4K2K	
Processor	CPU	Cortex-A53*4Core@1.5GHz	
	GPU	Mali-450*5core@750MHz	
	O/S	Android 5.1	
	RAM	1GB/2GB	
	EMMC FLASH	4GB/8GB/16GB	
AUDIO INPUT	CVBS Audio	Audio Level	0.2-----2 Vrms
AUDIO OUTPUT	Max Output power	2 X8W @ 8ohm THD<10%@1KHZ	
RJ45 NETWORK	IEEE 802.3 10/100M Ethernet controller and PHY interface		
Keyboard	Built-in 12bit SAR ADC input channels		
Standby power	<0.2W		

4. 板卡硬件配置

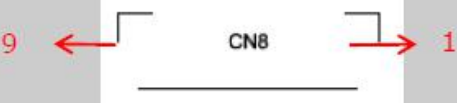
OS	Android
CPU	Quad-core A53
GPU	Mali-450
CPU Frequency	1.5GHz
GPU Frequency	750MHz
DDR SIZE	2GByte/1GByte DDR4
eMMC Flash	8GByte
Notes	--

5. 接口定义

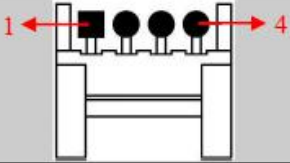
◆ **CN1(2×8PIN/2.0): POWER & INVERTER CONNECTOR**
(供电&INVERTER 接口)

		
NO.	SYMBOL	DESCRIPTION
1	BLO	Back-Light ON/OFF Control for Panel,
2	ADJ	Brightness Adjustment for Panel
3	PON	Power On/Off
4	NC	No Connection
5	NC	
6	NC	
7	GND	Ground
8	GND	
9	GND	
10	12V	+12V Power Supply
11	12V	+12V Power Supply
12	12V	
13	GND	Ground
14	GND	
15	AMP_12V	+12V Power Supply for Amplifier
16	AMP_12V	

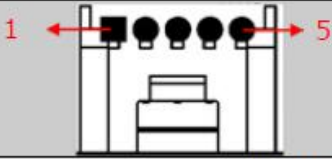
◆ ***CN8(9PIN/1.25): EXTERNAL WIFI CONNECTOR(外挂 WIFI 接口)**

		
NO.	SYMBOL	DESCRIPTION
1	WIFI_DEV_WAKE	NC
2	DISABLE_BT_WL	预留
3	NC	No Connection
4	GND	Ground
5	WIFI_USB_D+	USB Data+
6	WIFI_USB_D-	USB Data-
7	5V_RF	+5V DC Power Supply for RF
8	BT_HOST_WAKE	NC
9	BT_DEV_WAKE	NC

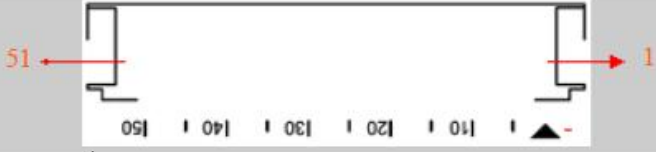
◆ **CNA2(4PIN/2.54): SPEAKER CONNECTOR (喇叭输出接口)**

		
NO.	SYMBOL	DESCRIPTION
1	RO+	Audio Right Channel Output+
2	RO-	Audio Right Channel Output-
3	LO-	Audio Left Channel Output-
4	LO+	Audio Left Channel Output+

◆ **CNK1(5PIN/2.0):IR & KEY & LED CONNECTOR(遥控按键 LED 控制接口)**

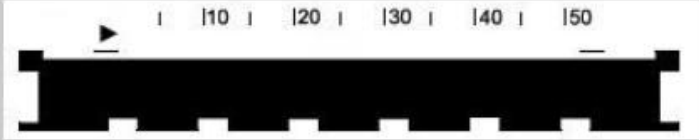
		
NO.	SYMBOL	DESCRIPTION
1	3.3V	+3.3V DC Power Supply
2	IR	IR Receiver
3	RED	Red Indicator
4	GRN	Green Indicator
5	GND	Ground

◆ CNW1(51PIN/0.5): LVDS CONNECTOR (LVDS 接口)

		
NO.	SYMBOL	DESCRIPTION
1	VCC-Panel	Power Supply for Panel
2	VCC-Panel	
3	VCC-Panel	
4	VCC-Panel	
5	NC	No Connection
6	GND	Ground
7	GND	
8	GND	
9	NC	No Connection
10	NC	
11	RXE4+	LVDS EVEN 4+ Signal
12	RXE4-	LVDS EVEN 4- Signal
13	RXE3+	LVDS EVEN 3+ Signal
14	RXE3-	LVDS EVEN 3- Signal
15	GND	Ground
16	RXEC+	LVDS EVEN Clock+ Signal
17	RXEC-	LVDS EVEN Clock- Signal
18	GND	Ground
19	RXE2+	LVDS EVEN 2+ Signal
20	RXE2-	LVDS EVEN 2- Signal
21	RXE1+	LVDS EVEN 1+ Signal
22	RXE1-	LVDS EVEN 1- Signal
23	RXE0+	LVDS EVEN 0+ Signal
24	RXE0-	LVDS EVEN 0- Signal
25	NC	No Connection
26	NC	
27	RXO4+	LVDS ODD4+ Signal
28	RXO4-	LVDS ODD4- Signal
29	RXO3+	LVDS ODD3+ Signal
30	RXO3-	LVDS ODD3- Signal
31	GND	Ground
32	RXOC+	LVDS ODD Clock+ Signal
33	RXOC-	LVDS ODD Clock- Signal
34	GND	Ground
35	RXO2+	LVDS ODD2+ Signal

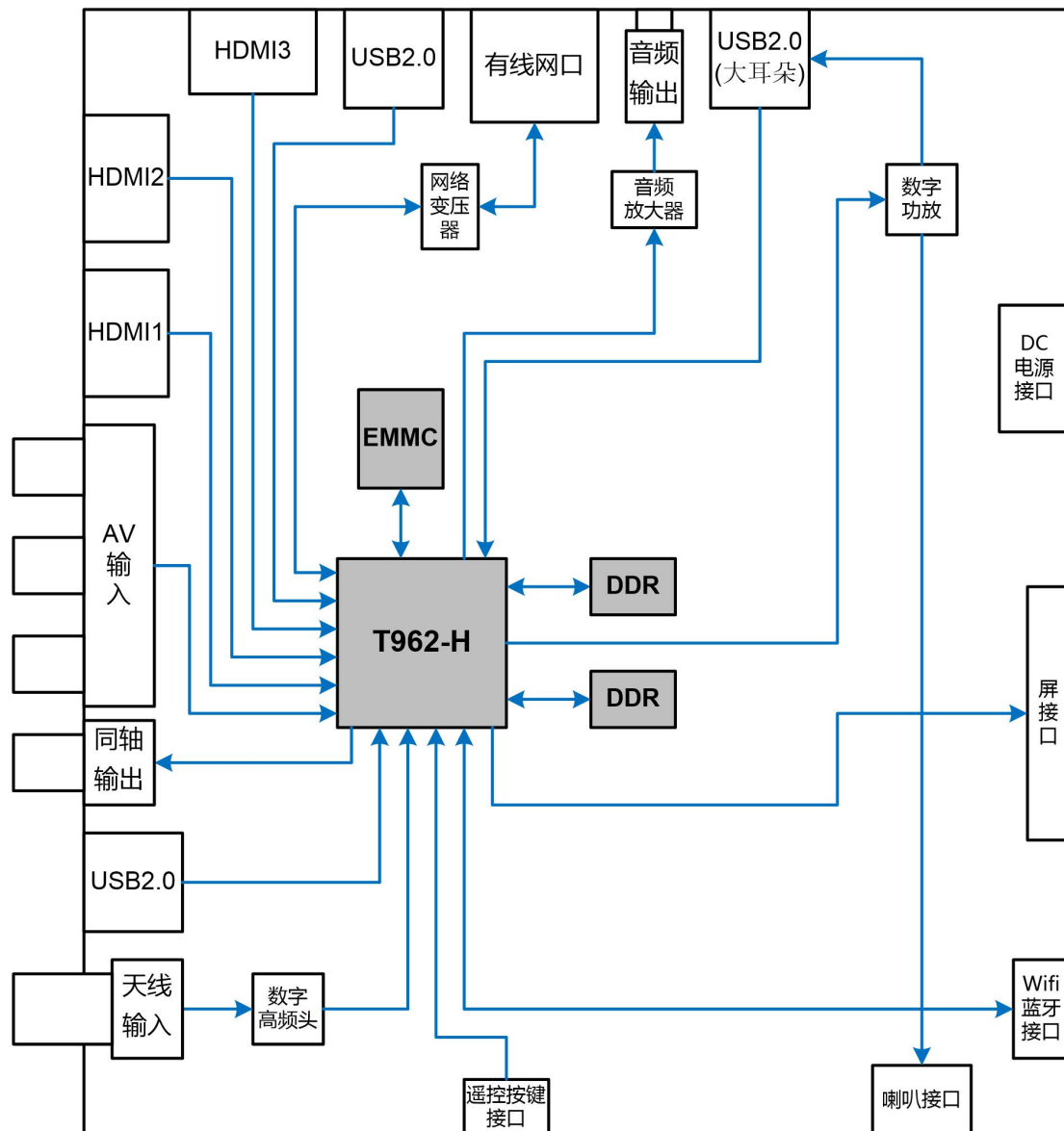
36	RX02-	LVDS ODD2- Signal
37	RX01+	LVDS ODD1+ Signal
38	RX01-	LVDS ODD1- Signal
39	RX00+	LVDS ODD0+ Signal
40	RX00-	LVDS ODD0- Signal
41	GND	Ground
42	NC	No Connection
43	NC	
44	NC	
45	LVDS_SEL	Select LVDS System
46	NC	No Connection
47	NC	
48	NC	
49	NC	
50	NC	
51	NC	

◆ *CNW11(51PIN/0.5): V-BY-ONE CONNECTOR (V-BY-ONE 接口)

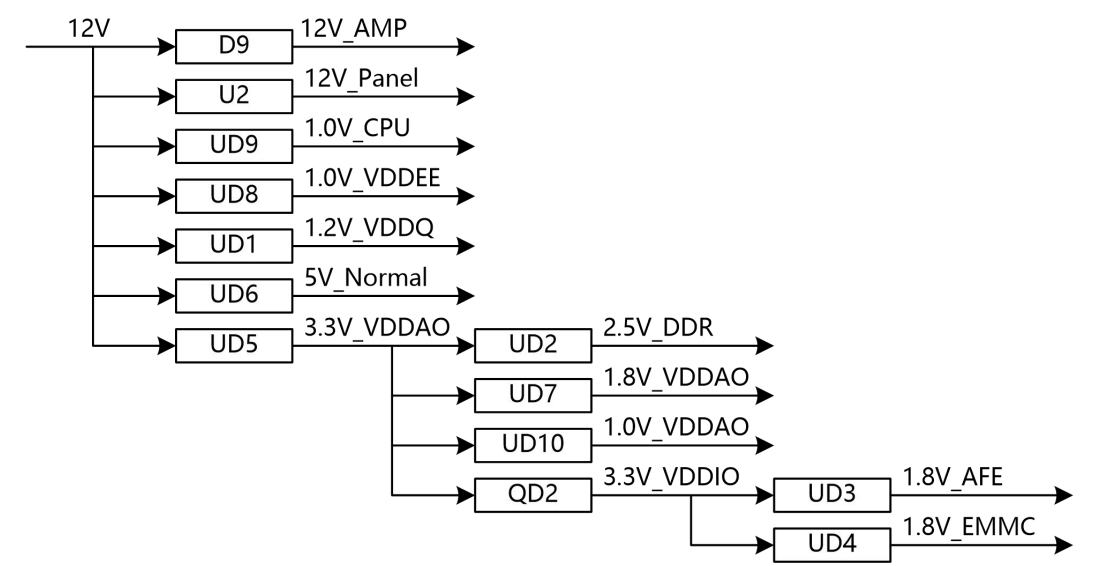
		
NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	VBY7P	V-by-One HS Data Lane 7
3	VBY7N	V-by-One HS Data Lane 7
4	GND	Ground
5	VBY6P	V-by-One HS Data Lane 6
6	VBY6N	V-by-One HS Data Lane 6
7	GND	Ground
8	VBY5P	V-by-One HS Data Lane 5
9	VBY5N	V-by-One HS Data Lane 5
10	GND	Ground
11	VBY4P	V-by-One HS Data Lane 4
12	VBY4N	V-by-One HS Data Lane 4
13	GND	Ground
14	VBY3P	V-by-One HS Data Lane 3
15	VBY3N	V-by-One HS Data Lane 3
16	GND	Ground
17	VBY2P	V-by-One HS Data Lane 2
18	VBY2N	V-by-One HS Data Lane 2
19	GND	Ground

20	VBY1P	V-by-One HS Data Lane 1
21	VBY1N	V-by-One HS Data Lane 1
22	GND	Ground
23	VBY0P	V-by-One HS Data Lane 0
24	VBY0N	V-by-One HS Data Lane 0
25	GND	Ground
26	LOCKN_TX	Lock detect
27	HTPDN_TX	Hot Plug Detect
28	Bit_SEL	'Bit_SEL 1(H/L/NC)
29	AGP	'AGP(H/L/NC)
30	D_Format	D_Format
31	Bit_SEL_1	Bit_SEL 1(H/L/NC)
32	V-BY-ONE WP	V-BY-ONE Write Protection
33	SCL VB1 OUT	I2C Clock signal
34	SDA VB1 OUT	I2C Data signal
35	D_Format1	Data fromat 1
36	D_Format0	Data fromat 0
37	NC	No Connection(Optional)
38	GND	Ground
39	GND	
40	GND	
41	GND	
42	GND	
43	NC	No Connection
44	VCC_PANEL	Power Supply for Panel
45	VCC_PANEL	
46	VCC_PANEL	
47	VCC_PANEL	
48	VCC_PANEL	
49	VCC_PANEL	
50	VCC_PANEL	Power Supply for Panel
51	VCC_PANEL	

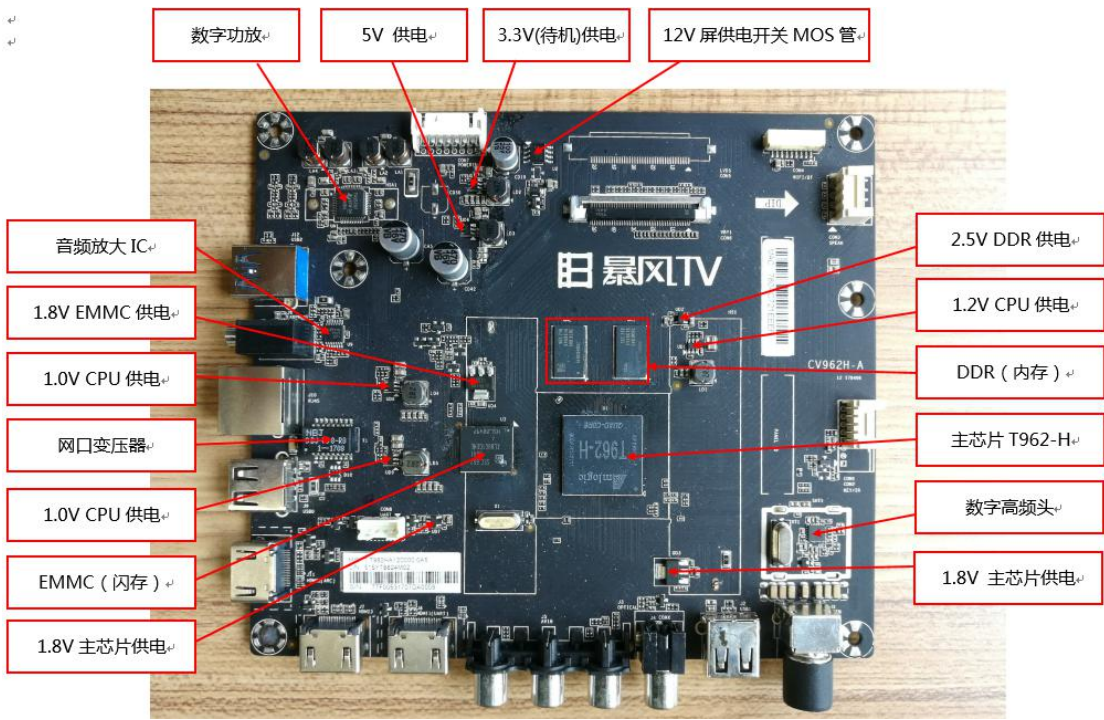
6. 电路框图



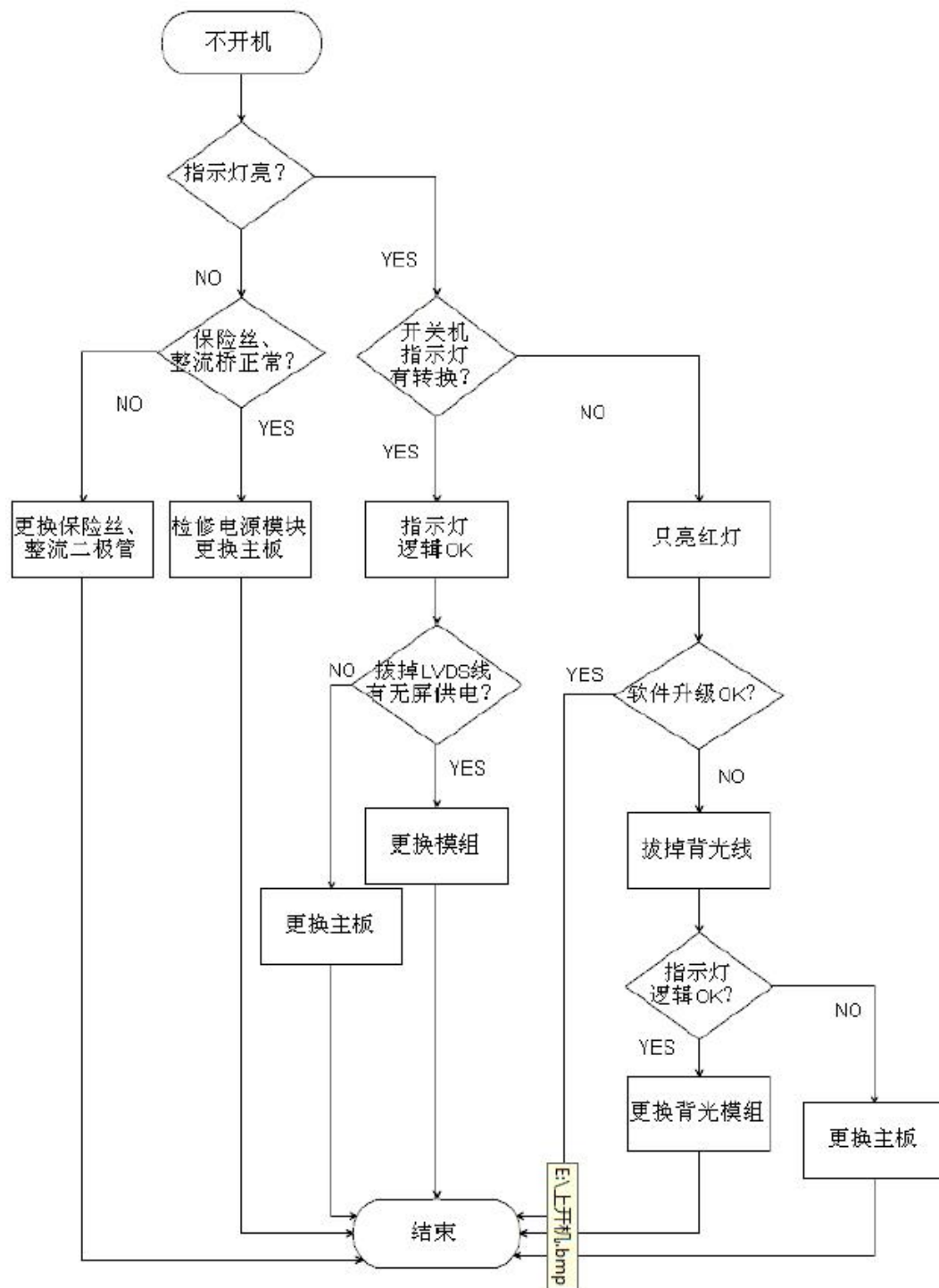
7. 供电框图

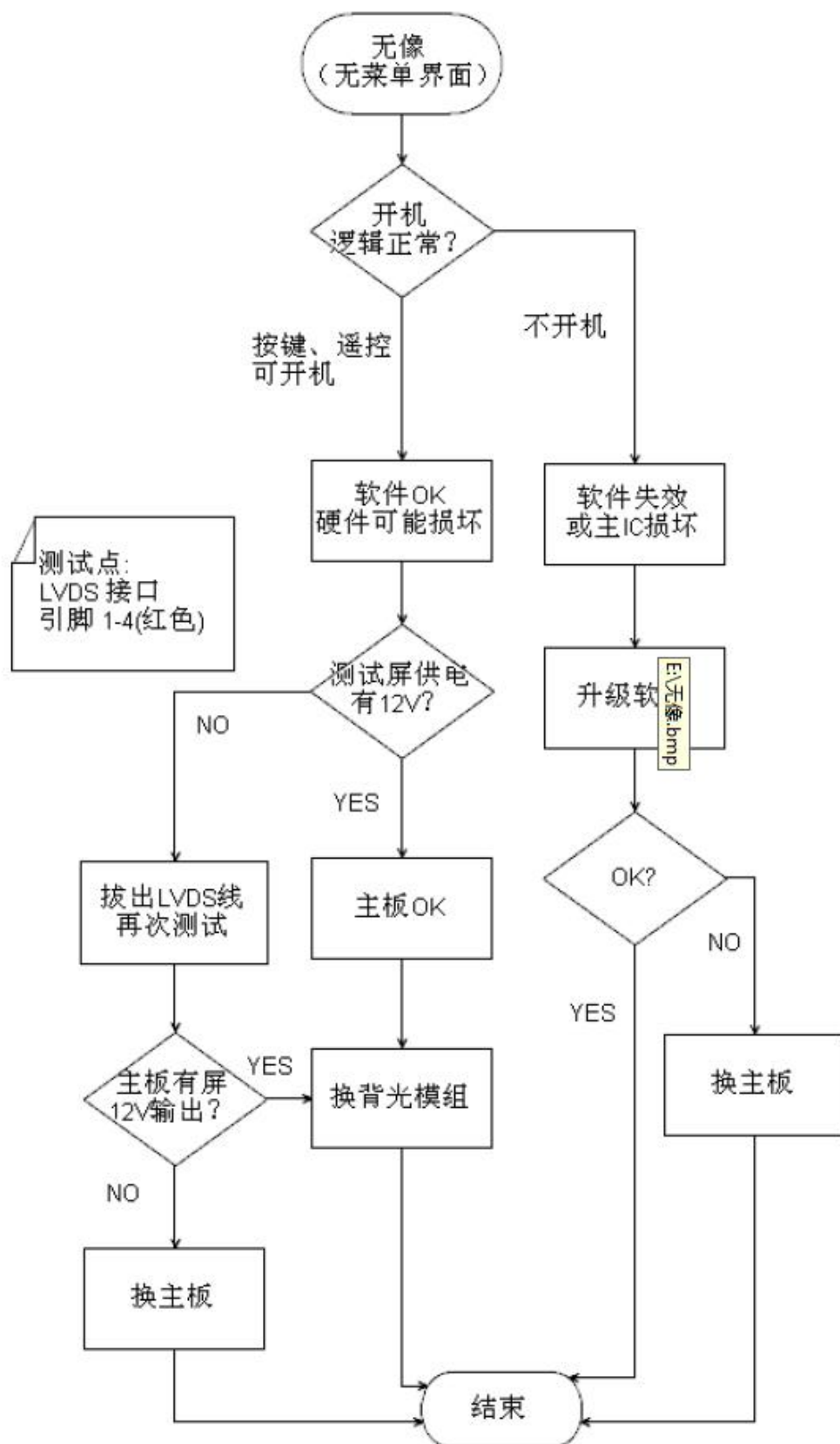


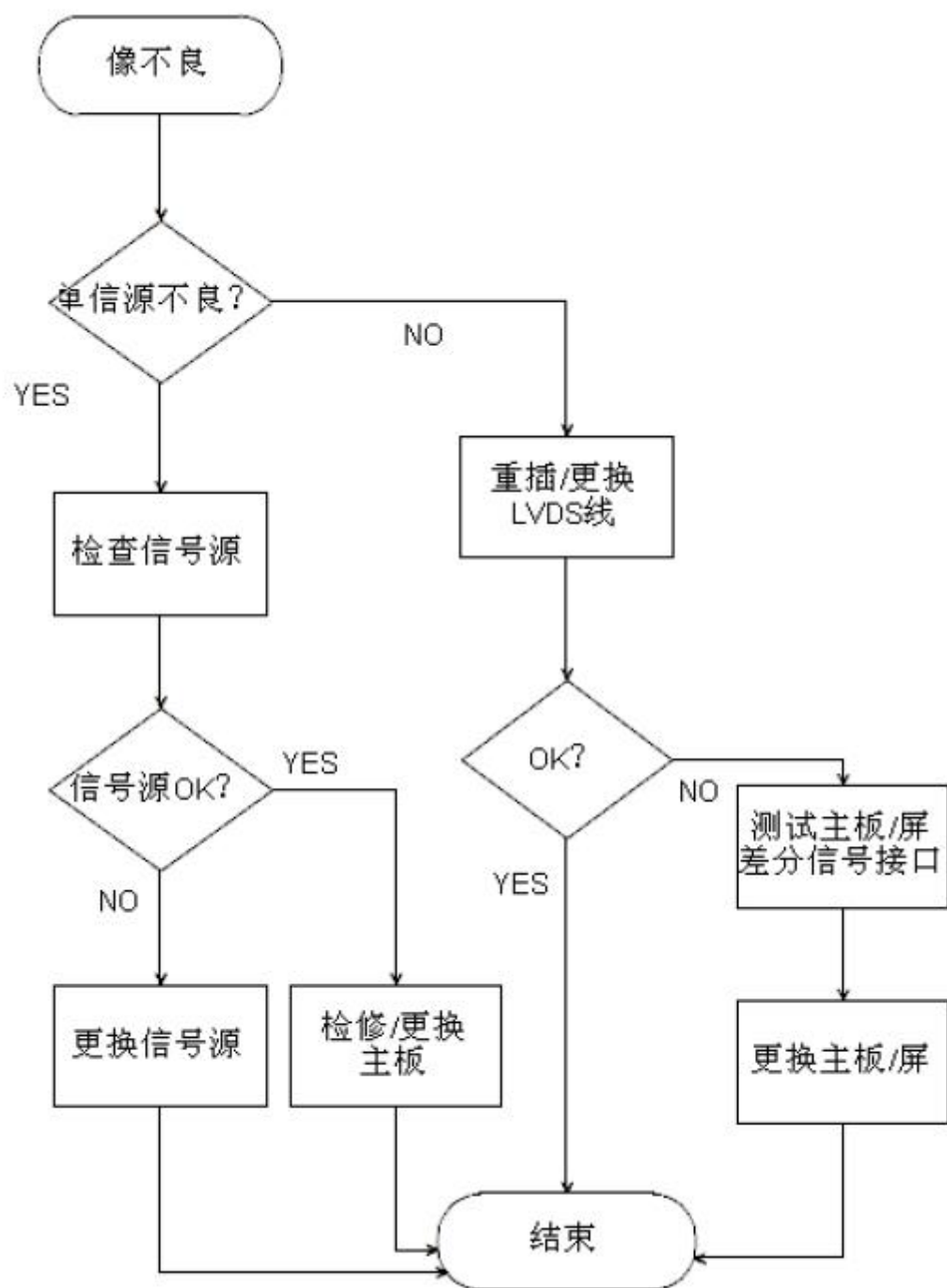
8. 关键模块示意图



9. 常见故障分析步骤







10.板卡配屏差异

配置1	2G+8G	LG屏	U2贴9435 , R92贴300K , R93贴47K , C44贴10uF/16V R208、R234、R235贴4.7K , R212、R228、R229、R230、R231不贴
配置2	2G+8G	群创屏	U2贴9435 , R92贴300K , R93贴47K , C44贴10uF/16V , R228、R230贴33欧, R229、R231贴4.7K , R208、R212、R234、R235不贴
配置3	2G+8G	华星屏	U2贴9435 , R92贴300K , R93贴47K , C44贴10uF/16V , R208、R212、R228、R229、R230、R231、R234、R235 不贴
配置4	2G+8G	熊猫屏	U2贴4459 , R92贴47K , R93改为4.7K , C44贴22uF/16V , R212贴0欧 , R208、R234、R235、R228、R229、R230、R231不贴
配置5	2G+16G	LG屏	U2贴9435 , R92贴300K , R93贴47K , C44贴10uF/16V R208、R234、R235贴4.7K , R212、R228、R229、R230、R231不贴
配置6	2G+16G	群创屏	U2贴9435 , R92贴300K , R93贴47K , C44贴10uF/16V , R228、R230贴33欧, R229、R231贴4.7K , R208、R212、R234、R235不贴
配置7	2G+16G	华星屏	U2贴9435 , R92贴300K , R93贴47K , C44贴10uF/16V , R208、R212、R228、R229、R230、R231、R234、R235 不贴
配置8	2G+16G	熊猫屏	U2贴4459 , R92贴47K , R93改为4.7K , C44贴22uF/16V , R212贴0欧 , R208、R234、R235、R228、R229、R230、R231不贴