

TV Productor Service Manual

DATE: 2015-01-12

YOUR COMPANY NAME:

YOUR MODEL NAME:

Production & Function Describtion:

Action: CV512H-B42

Function: USB、HDMI、CVBS/AUDIO、 PC AUDIO IN 、
VGA、 ATV、 COAXIAL OUT 、 EARPHONE
OUT

TV System: PAL+SECAM

Approved Signatures:

| Approved By Customer Project Leader | Reviewed By Project Leader | Issued By D.C.C. |
|---|-------------------------------|---------------------|
| | | |

Express Luck Industrial Limited

Address:No.88,BaoTong,NanRoad,Xikeng,HengGangTown,LongGangDist
ric,Shenzhen,Guangdong, China

TEL : 0086-0755-89739888 FAX : 0086-0755-89739666

- 1. Basic Function & Specifications**
- 2. Maintenance & Safety**
- 3. Instruments**
- 4. Software Upgrade**
- 5. Main Function & Specifications**
- 6. Main board circuit diagram**
- 7. Main board service manual**

1. Basic Specifications

Working Temp: 0~40°C

Storage Temp: -20~60°C

Humidity (Working) : 10~90%

Humidity (Store) : 10~90%

LED Lifespan (50 Lum, Tube current < Rating) : 60000 hour (I_L=4.5Ma 25°C)

MTBF:50000 hour (Panel Module NOT included)

Power requirement: Voltage 100~240 V 50 / 60 Hz

(Note: The above specifications are suitable for most of the TV models, and for your reference only.)

2. Maintenance & Safety

2.1 Safety Warning:

(1) The inside key components in the LED must be offered and replaced by qualified and

appointed manufacturer. Otherwise it may generate electricshocks, fires or other important unsafety cases.

(2) Don't try to change the circuits without authorized permission.

(3) Ensure to study the maintenance and service manual thoroughly before doing any of the maintaining actions.

2.2 High Voltage Warning:

Please be highly noted the high voltages in the circuit.

2.3 Electricshocks and Fires Warning:

*Connect the insulate transformer between the AC current to the LED before repairing the panel.

*Take care of the Soldering Pad related to the high voltage circuit. When there occurs short-circuit case, please replace the overheated components in time.

*All protective equipments must be re-installed according to the original design.

*Check the rosin joints, stack welds and the insulations, ensure there is no objection attached.

2.4 Antistatic Warning:

*The inner circuit boards in the LED TV are sensitive to the statics. Please take care of the

ESD protection when replace the circuit boards.

*The circuit boards must be packed by antistatic bags.

*Please wear antistatic ring and gloves when during repairing works.

2.5 Attention:

LVDS VDD – if the LED is in 5V, it must be switched to the setting of 5V. And if the LED is in 12V, it must be switched to the setting of 12V. (Switch setting: CN9 -- 5V or 12V)

3. Instruments

3.1 Multimeter:

Max Input Current : over 1A / Max Input Voltage : 500Vdc

Measurement Range : 10Mvr~100Vdc / Accuracy : 0.03%

3.2 Oscillograph

Frequency Band : over 20M /Input Impedance : over 1M

Input Capacitance : below 30pF / Max Input Voltage : 250V

3.3 PC: XGA (1024X768@60Hz)

3.4 HD Singal Generator: 480P 576P 720P 1080i@50/60HZ

3.5 DVD Player: Audio/Video output, S-VIDEO output, HDMI output.

3.6 VGA cable, S-VIDEObable, RCA cable, YpbPr cable and HDMI cable.

4. Software Upgrade

The chip inside the LED is designed with a FLASH ROM memory program:
it can be erased

and reprogrammed, it can be also updated via the USB port. the program is related to the chip fucntion ---Different functions of chips need to be planted with different versions of prgrams.

Please upgrade the new software by the USB port the instruction steps below:

-----Please copy the new software to the USB

-----Power ON the TV and press MENU to display the main menu ,then press / to the

OPTION menu. And then select the software in the root of your USB memory , Press ENTER .then press to update and to cancel.

Remarks: When the first upgrading is finished, the action of turning on the tv will be a little slow. So when you turn on the TV at the first time, you need to press the "power" key on the remote control several times until you turn on the tv. Turning on the TV at the first time is very important, you need to operate it carefully to avoid the upgrading is not successful.

LED TV CONTROL BOARD SPECIFICATION

MODEL : CV512H-B42-12

| Approved by Cultraview | | Approved by Customer | |
|------------------------|--------|----------------------|--|
| AUTHOR : | Jun Yi | Comments : | |
| CHECKED BY : | | CHECKED BY : | |
| APPROVED BY : | | APPROVED BY: | |
| DATE: | | DATE: | |
| Company's seal: | | | |
| | | | |

Please return us one original approved by you with your signatures.

客户承认签章后敬请寄回正本一份

Content 目录

| | | |
|-----|---|----|
| 1. | GENERAL DESCRIPTION (概述) | 4 |
| 2. | PICTURES (主板端口图片) | 6 |
| 3. | FEATURES (特性说明) | 8 |
| 4. | PRESET MODE FOR USB (USB 多媒体支持格式) | 9 |
| 5. | ELECTRICAL CHARACTERISTICS (电气特性) | 11 |
| 6. | PROTECTION CAPABILITY (保护性能) | 13 |
| 7. | INTERNATIONAL STANDARDS (国际标准) | 13 |
| 8. | INTERFACE DEFINITION (接口定义) | 14 |
| 9. | MECHANICAL DIMENSION (结构尺寸图) | 19 |
| 10. | SCHEMATICS OF IR BOARD & KEY BOARD (遥控和按键原理图) | 21 |
| 11. | APPLICATION REQUIREMENT (应用注意事项) | 22 |
| 12. | MOUNT PRECAUTIONS (组装注意事项) | 23 |

THE CHANGE LIST OF UPGRADES（升级变更列表）

| Version | Description | Page | Redaction | Checked | Date |
|---------|---|------|-------------|---------|-------------|
| V1.0 | First Release | ALL | Jun Yi | | Au.29.2014 |
| V1.1 | Update the picture, change double USB to single USB | P6-7 | Lirong chen | | Dec,02,2014 |
| | | | | | |
| | | | | | |
| | | | | | |

1. GENERAL DESCRIPTION（概述）

- **CV512H-B42-12's** power part is an energy-efficient ultrathin DC-line switching power supply unit, with max 95W/115VAC input, 75W output. It fits to 42" LED backlight panel.

CV512H-B42-12 方案的电源部分为高效率开关电源，最大输入功率为 95W/115VAC，总输出功率为75W，支持42寸LED背光屏。

- **CV512H-B42-12** is a digital and analogue TV board, it can receive the analogue television (PAL/SECAM) and digital television (DVB-T/T2/C/S2) signal. It is suitable for the market in Europe (include UK), Australia etc.

CV512H-B42-12是数模一体电视主板，它可以接收模拟电视(PAL / SECAM)和数字电视(DVB-T /T2/ C/S2)信号。适用于欧洲（包括UK），澳洲等市场。

- Supports DVB-T MPEG-4 extended ASP up to 1080p@30fps.
支持DVB-T MPEG-4 扩展ASP到1080p@30fps。
- Supports H.264 MP/HP@L4.1 for SD and HD decoding.
支持 H.264 MP/HP@L4.1 SD 和 HD 解码。
- Supports USB 2.0 multimedia play, supports audio and video play; supports txt and picture browse.
支持USB 2.0多媒体播放，支持音频和视频播放；支持文字、图片浏览。
- Analogue and digital HD port input signal largest support 1080P.
模拟和数字高清端口输入信号最大支持1080p。
- Support analogue & digital 1000 Pages Teletext.
支持模拟与数字 1000 页图文。
- The largest support various TFT-LCD 1920x1080 resolutions module.
最大支持各种TFT-LCD 1920x1080分辨率模块。
- The HDMI supports 1.4a, the HDCP supports 1.1.
HDMI 支持1.4a，HDCP支持1.1。
- Support three HDMI input, and the first channel can support ARC function, the second channel can support MHL function.
支持3路HDMI输入，第一个通道可支持ARC，第二个通道可支持MHL功能。

- 3-D video noise reduction.
支持3D视频降噪。
- Enhanced motion adaptive 3D Y/C separation comb filter for NTSC/PAL system.
增强动态自适应3D Y/C分离梳状滤波器的NTSC/PAL系统。
- Supports USB update.
支持USB升级
- Supports Video SDTV at 480i/576i and 480p/576p.
支持视频480i/576i 和480p/576p的标清电视。
- Supports Video HDTV at 720P and 1080i and 1080P.
支持视频720P、1080i 和1080P的高清电视。
- Supports PC RGB input up to UXGA@60Hz(165MHz).
PC RGB输入最大支持UXGA@60Hz(165MHz)。
- Reliable EMC and ESD handle
可靠的 EMC 和防静电处理

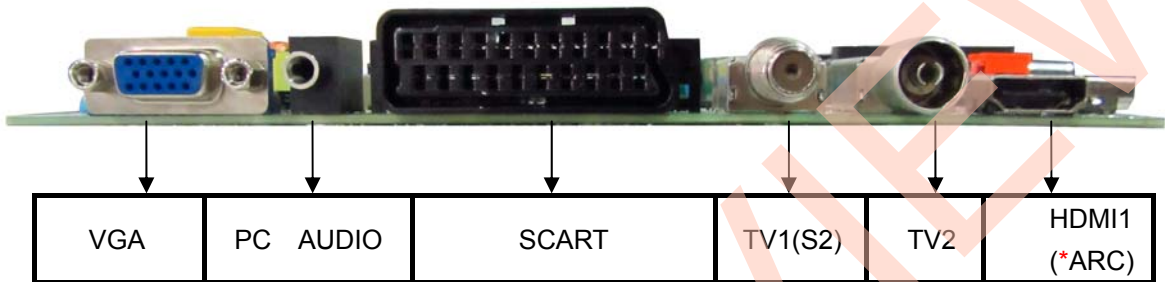
2. PICTURES（主板端口图片）

The optional function are marked with “*” .

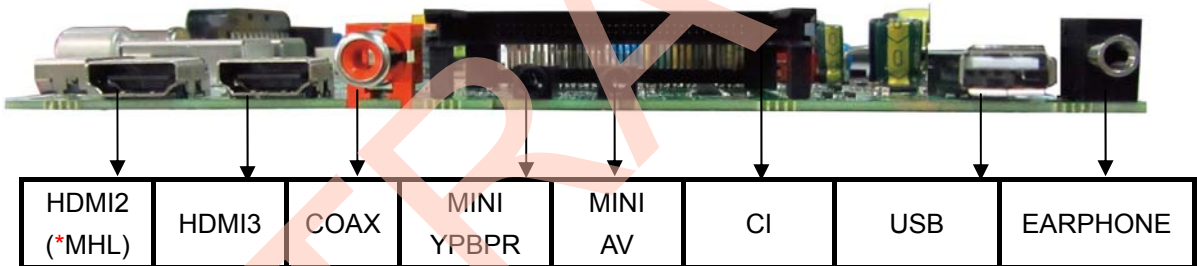
带 “*” 为可选功能，默认不带

Europe Board Type（欧洲版型）：

FRONT VIEW（前视图）

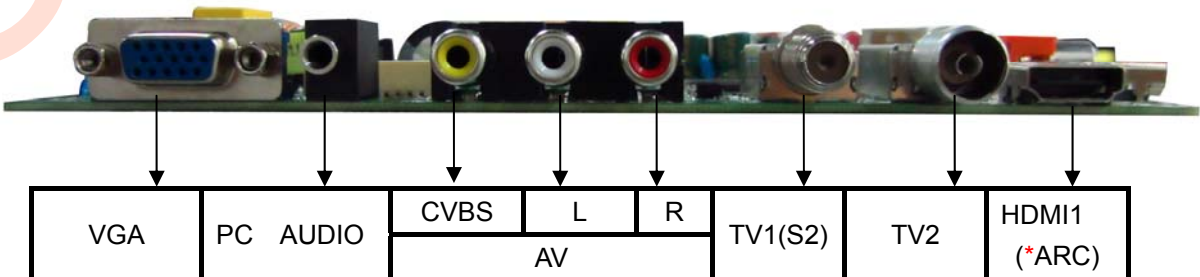


SIDE VIEW（侧视图）

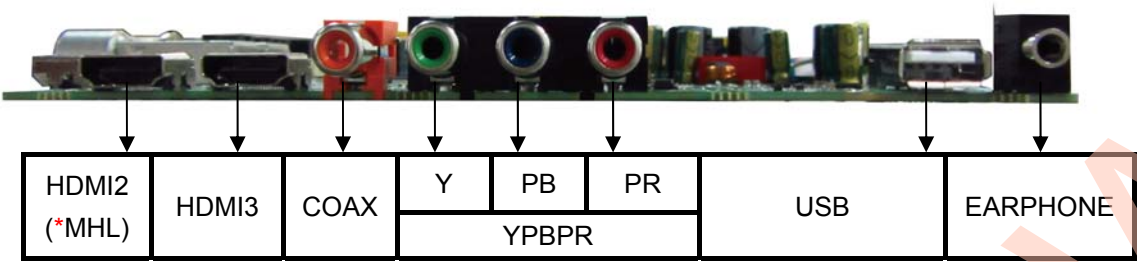


Australia Board Type（澳洲版型）：

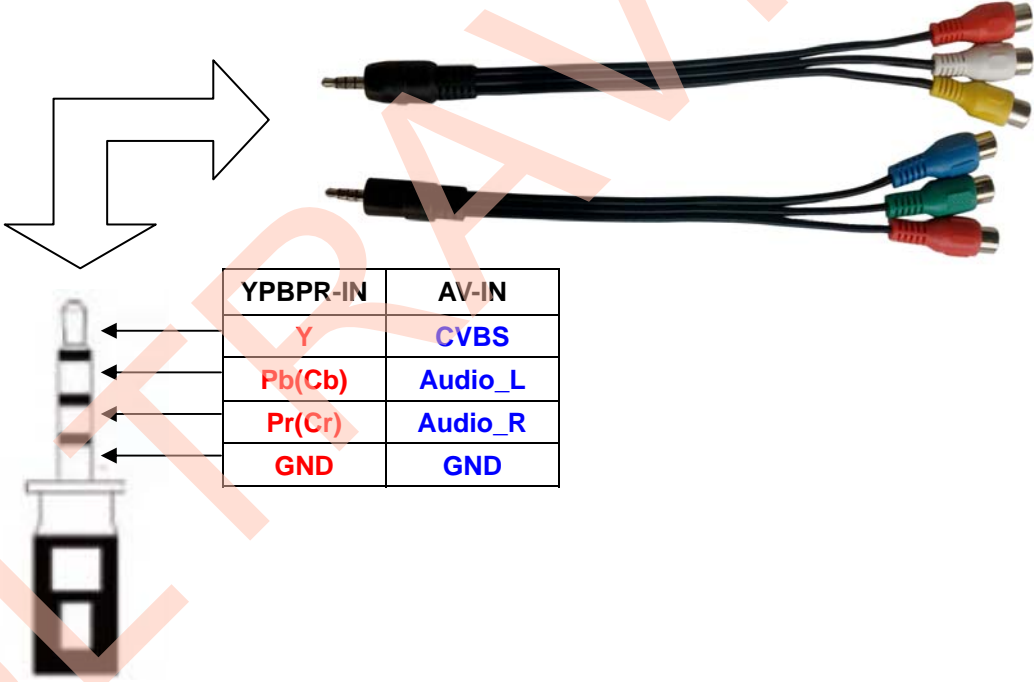
FRONT VIEW（前视图）



SIDE VIEW (侧视图)



EXTERNAL CONNECTORS



3. FEATURES (特性说明)

| | | |
|-------|---------------------------|--|
| PANEL | Type (类型) | TFT-LCD/LED |
| | Resolution (最大分辨率) | Max. 1920X1080 |
| | Interface (接口) | Single/ Double LVDS |
| | Voltage (电压) | 5V, 12V |
| ATV | Receiving range (接收范围) | 48.25MHz – 863.25MHz |
| | Input Impedance (输入阻抗) | 75Ω |
| | Video System (视频制式) | PAL ,SECAM ,NTSC |
| | Sound System (声音制式) | BG, DK, I NICAM/A2 |
| DTV | Receiving range (接收范围) | VHF (174MHz – 230MHz) |
| | | UHF (474MHz - 862MHz) |
| | Input Impedance (输入阻抗) | 75Ω |
| | Bandwidth (带宽) | 7MHz/8MHz |
| | Modulation (调制) | DVB-T:COFDM QPSK, 16QAM, 64QAM |
| | | DVB-T2: COFDM QPSK, 16QAM ,64QAM , 256QAM |
| | | DVB-C:16QAM, 32QAM, 64QAM, 128QAM, 256QAM |
| | | DVB-S2: QPSK, 8PSK |
| RGB | Video Level (视频信号幅度) | 0.7Vp-p@75ohm |
| | Format (格式) | Max UXGA@60Hz |
| AV | Color system (彩色制式) | PAL/NTSC/SECAM |
| | Video Level (视频信号幅度) | 1Vp-p@75ohm |
| YpbPr | Video Level (视频信号幅度) | Y:1Vp-p@75ohm, PbPr:0.7Vp-p@75ohm |
| | Format (格式) | 480i, 480p, 576i, 576p, 720p, 1080i, 1080p |
| HDMI | Format (格式) | 480i, 480p, 576i, 576p, 720p, 1080i, 1080p |
| SCART | Video (视频) | CVBS&RGB input, CVBS output |

| | | | |
|--------------|--|----------------------|---------------|
| SCART | Video output/input （视频输出/输入） | RGB: 0.7Vp-p@75ohm | |
| | | CVBS: 1Vp-p@75ohm | |
| | Audio output/input （音频输出/输入） | 500mVrms | |
| AUDIO INPUT | PC Audio | Audio Level | 0.2----2 Vrms |
| | CVBS Audio | | |
| | Component audio | | |
| AUDIO OUTPUT | Max Output Power （最大输出功率） | 2 X8W @ 8ohm THD<10% | |
| Keyboard | Power, Menu, Source, CH+, CH-, VOL+, VOL- 电源, 菜单, 信号源, 频道+, 频道-, 声音+, 声音- | | |

4. PRESET MODE FOR USB (USB 多媒体支持格式)

USB FORMAT MODE

| Media (媒体) | File Exit. (扩展名) | Codec (编码解调器) | | Remark |
|---------------|---------------------|--|--|--|
| | | Video (视频) | Audio (音频) | |
| MOVIE | .avi | MJPEG | MP3, WMA, AAC,PCM (AC3 Need license) | The Max Resolution And Frame Rate: 1280X720@30fps Max Data Rate: 20 Mbps |
| | | Xvid,MPEG-4,H.264, WMV9/VC-1 (Divx Need license) | | The Max Resolution And Frame Rate:1080p@30fps Max Data Rate: 20 Mbps |
| | .mp4/ .mpeg4 | MPEG-2,MPEG-4,H. 264,Xvid,MJPEG | MP3, AAC,PCM (AC3 Need license) | |
| | .ts/ .trp | MPEG-1,MPEG-2,H. 264,VC-1 | MP1/MP2/MP 3,AAC(AC3 Need license) | |
| | .mpg/ .mpeg | MPEG-1,MPEG-2 | MP1/MP2/MP 3,AAC,PCM (AC3 Need license) | |

| | | | | | |
|--|----------------|--|-----|--|---|
| MOVIE | .mkv | MPEG-2/4,H.264, Xvid,RV30,RV40,VC-1(Divx Need license) | | MP3,AAC, PCM,COOK (AC3 Need license) | The Max Resolution And Frame Rate:1080p@30fps Max Data Rate: 20 Mbps |
| | .mov | MPEG4,H264,MJPEG | | MP3,AAC,PCM,AMRNB | |
| | .dat | MPEG-1 | | MP1 | |
| | .vob | MPEG-2 | | MP1/MP2/MP3,PCM (AC3 Need license) | |
| | .rm/.rmvb | RV30,RV40 | | AAC,COOK | |
| PHOTO | .jpg | Progressive DCT | | | Max Resolution: 1920×1080 |
| | .jpeg | Baseline DCT | | | Max Resolution: 7680×4320 |
| | .bmp | ---- | | | Max Resolution: 1920×1080 Pixel Depth: 8/24/32 bit |
| | .png | ---- | | | Max Resolution: 1920x1080 |
| MUSIC | .mp3 | --- | MP3 | Sample Rate: 32K~48KHz | |
| | .wmv | --- | PCM | Bit Rate: 32K~320Kbps Channel: Mono/Stereo | |
| | .mp4/.aac/.m4a | --- | AAC | Sample Rate: 8K~48KHz Bit Rate: 24K~384Kbps Channel: Mono/Stereo | |
| TEXT | .txt | ANSI/UNICODE GB/UTF8 | | | File Size: Max 10MB |
| Note: 1) This product includes the following optional patented technologies : Dolby, DIVX, SRS , etc. If you need to use these patented, please provide the patent license to us, so that the product can meet your requirements. (此产品包括如下可选的专利技术: DOLBY、DIVX、SRS 等, 如您需要开通这些功能, 请提前提供相关专利许可给到我司, 以便产品能满足您的要求。) | | | | | |

- 2) USB only support PHOTO, MUSIC and MOVIE. The system automatically classified files, only show the supported files.
- 3) Support hard disk, the maximum storage capacity is 1T.
- 4) Photo non-support EXIF format.
- 5) Flash non-support animation.
- 6) Support for text files.

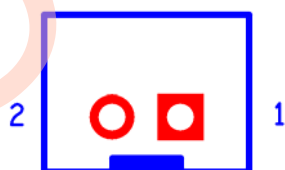
5. ELECTRICAL CHARACTERISTICS (电气特性)

5.1 Input Electrical Specifications(输入特性)

| Input | Minimum | Nominal | Maximum | Unit |
|---------------------------|---|---------|---------|------|
| Voltage | 90 | 115/230 | 264 | Vac |
| Current | — | — | 2.0 | A |
| Frequency | 47 | 50/60 | 63 | Hz |
| Efficiency | ≥80%min(Full load with input AC voltage of 115Vac @ 60Hz and 230Vac @ 50Hz) | | | |
| Standby Power Consumption | ≤0.5W At 240Vac input and no load condition | | | |
| Inrush current | Cannot be damaged components | | | |
| Leakage Current | Less Than 0.35mA, 240Vac input | | | |
| Input Fuse | T3.15A/250VAC | | | |

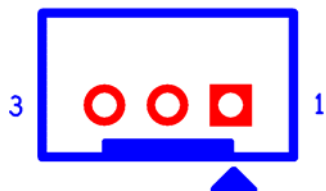
5.2 LED Driver Power Output Connector& out put characteristics (LED 背光供电控制接口与输出特性)

PJ5/PJ6: 2PIN-2.0



| NO | Definition | Voltage(Volts) | | | Current(mA) | | |
|----|------------|----------------|-----|-----|-------------|-----|-----|
| | | Min | Nom | Max | Min | Nom | Max |
| 1 | V+ | 80 | 85 | 90 | 480 | 500 | 520 |
| 2 | V- | / | | | / | | |

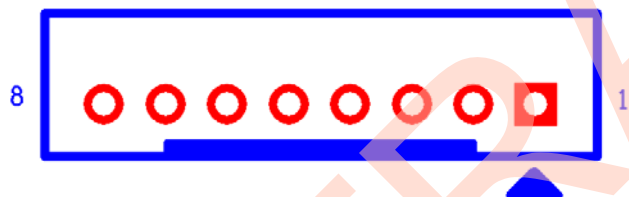
PJ3/PJ4: 3PIN-2.0



| NO | Definition | Voltage(Volts) | | | Current(mA) | | |
|----|------------|----------------|-----|-----|-------------|-----|-----|
| | | Min | Nom | Max | Min | Nom | Max |
| 1 | V+ | 80 | 85 | 90 | 480 | 500 | 520 |
| 2 | V- | / | | | / | | |
| 3 | V- | / | | | / | | |

备注：采用单路总恒流

PJ2: 8PIN-2.0



| NO | Definition | Voltage(Volts) | | | Current(mA) | | |
|----|------------|----------------|-----|-----|-------------|-----|-----|
| | | Min | Nom | Max | Min | Nom | Max |
| 1 | V+ | / | / | / | / | / | / |
| 2 | V- | / | | | / | | |
| 3 | V+ | / | / | / | / | / | / |
| 4 | V- | / | | | / | | |
| 5 | V+ | / | / | / | / | / | / |
| 6 | V- | / | | | / | | |
| 7 | V+ | / | / | / | / | / | / |
| 8 | V- | / | | | / | | |

备注：采用单路总恒流。

PJ1: 8PIN-2.0



| NO | Definition | Voltage(Volts) | | | Current(mA) | | |
|----|------------|----------------|-----|-----|-------------|-----|-----|
| | | Min | Nom | Max | Min | Nom | Max |
| 1 | V+ | / | / | / | / | / | / |
| 2 | V+ | / | / | / | / | / | / |
| 3 | V+ | / | / | / | / | / | / |
| 4 | V+ | / | / | / | / | / | / |
| 5 | V- | / | | | / | | |
| 6 | V- | / | | | / | | |
| 7 | V- | / | | | / | | |
| 8 | V- | / | | | / | | |

备注：采用单路总恒流。

6. PROTECTION CAPABILITY（保护性能）

LED Short Protection:（LED 短路保护）

Auto restart (自动恢复)

LED Open Protection:（LED 开路保护）

Shut down or auto restart（关断或自动恢复）

Fuse protection（保险丝过流保护）

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.

（当 AC 输入电流超过电源内置保险丝的额定电流时，保险丝必须熔断，呈开路状态，保险丝保护启动后电源将不能启动。）

7. INTERNATIONAL STANDARDS (国际标准)

EMI standards（EMI 标准）

The power supply shall compliance with the following radio disturbance Criterion.

该电源应符合下列无线电干扰标准。

Sound and television broadcast receivers and associated equipment

| | |
|--|---|
| EN55013 | Sound and television broadcast receivers and associated equipment radio disturbance characteristics limits and methods of measurement |
| GB13837 | 声音和电视广播接收机及有关设备无线电干扰特性限值和测试方法 |
| FCC CFR 47 Part 15 subpart B 美国联邦通信法规第 47 卷 15 章内无意式的辐射器材的相关规定 | |

EMS standards（EMS 标准）

➤ Electrostatic Discharge Immunity Test: IEC-1000-4-2 8KV, Criteria B

（防静电测试标准：IEC-1000-4-2 touch discharge ±4KV, air discharge ±8KV, Criteria B）

- EFT/Burst Immunity Test: IEC-1000-4-4 1KV, Criteria B

(快速脉冲群测试标准: IEC-1000-4-4 1KV, Criteria B)

Safety Compliance (安规依据)

Design to meet : IEC60950 / 2005; IEC60065

(设计依据: IEC60950 / 2005; IEC60065)

Isolation (绝缘性能)

Insulation resistance (绝缘阻抗)

| | |
|---------------------------|--------------------------------------|
| Input To Output | DC500V 50MΩmin (at room temperature) |
| Input To PG | DC500V 50MΩmin (at room temperature) |
| Insulation voltage (绝缘耐压) | |
| Input To Output | 3000Vac 50Hz 1minute ≤10mA |
| Input To PG | 1500Vac 50Hz 1minute ≤10mA |

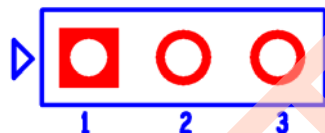
8. INTERFACE DEFINITION (接口定义)

All jacks recognize the square pad as first pin.

The optional connectors and terminals are marked with “*” .

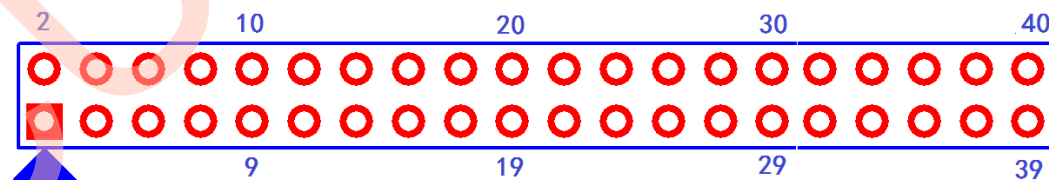
带“*”为可选连接器和端子

J9 (1×3PIN/2.54mm): PANEL POWER SUPPLY (屏电源)



| NO. | SYMBOL | DESCRIPTION |
|-----|--------|-------------------------|
| 1 | +12V | +12V Panel Power Supply |
| 2 | VCC | Panel Power Supply |
| 3 | +5V | +5V Panel Power Supply |

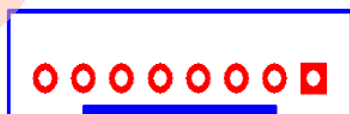
J10 (2X20pin/2.0mm): LVDS INTERFACE (LVDS 接口)



| NO. | SYMBOL | DESCRIPTION |
|-----|--------|------------------------|
| 1 | VCC | Power Supply for Panel |
| 2 | VCC | Power Supply for Panel |
| 3 | VCC | Power Supply for Panel |
| 4 | GND | Ground |
| 5 | GND | Ground |

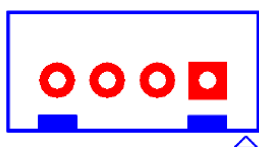
| | | |
|----|----------|----------------------------|
| 6 | GND | Ground |
| 7 | RXO0- | LVDS ODD 0- Signal |
| 8 | RXO0+ | LVDS ODD 0+ Signal |
| 9 | RXO1- | LVDS ODD 1- Signal |
| 10 | RXO1+ | LVDS ODD 1+ Signal |
| 11 | RXO2- | LVDS ODD 2- Signal |
| 12 | RXO2+ | LVDS ODD 2+ Signal |
| 13 | GND | Ground |
| 14 | GND | Ground |
| 15 | RXOC- | LVDS ODD Clock- Signal |
| 16 | RXOC+ | LVDS ODD Clock + Signal |
| 17 | RXO3- | LVDS ODD 3- Signal |
| 18 | RXO3+ | LVDS ODD 3+ Signal |
| 19 | RXE0- | LVDS EVEN 0- Signal |
| 20 | RXE0+ | LVDS EVEN 0+ Signal |
| 21 | RXE1- | LVDS EVEN 1- Signal |
| 22 | RXE1+ | LVDS EVEN 1+ Signal |
| 23 | RXE2- | LVDS EVEN 2- Signal |
| 24 | RXE2+ | LVDS EVEN 2+ Signal |
| 25 | GND | Ground |
| 26 | GND | Ground |
| 27 | RXEC- | LVDS EVEN Clock- Signal |
| 28 | RXEC+ | LVDS EVEN Clock + Signal |
| 29 | RXE3- | LVDS EVEN 3- Signal |
| 30 | RXE3+ | LVDS EVEN 3+ Signal |
| 31 | GND | Ground |
| 32 | GND | Ground |
| 33 | ON-PBACK | Backlight ON/OFF control |
| 34 | ON-PANEL | Panel power ON/OFF control |
| 35 | SCL | IIC SCL |
| 36 | SDA | IIC SDA |
| 37 | RXO4- | LVDS ODD 4- Signal |
| 38 | RXO4+ | LVDS ODD 4+ Signal |
| 39 | RXE4- | LVDS EVEN 4- Signal |
| 40 | RXE4+ | LVDS EVEN 4+ Signal |

*J15 (8pin/2.0): DVD POWER&CONTROL (DVD 电源控制接口)

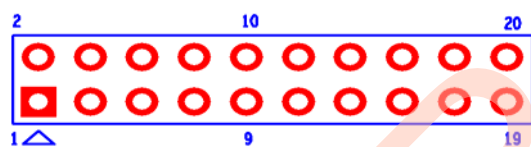


| NO. | SYMBOL | DESCRIPTION |
|-----|----------|-------------|
| 1 | DVD_STB | DVD STANDBY |
| 2 | DVD_AUTO | DVD AUTO |

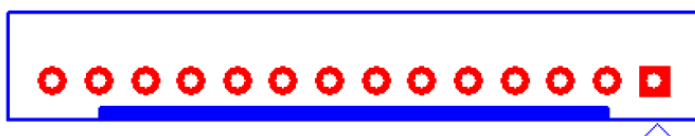
| | | |
|---|--------|------------------------------|
| 3 | DVD_IR | IR Data Transfer to DVD |
| 4 | +12V | +12V DC Power Supply for DVD |
| 5 | GND | Ground |
| 6 | GND | Ground |
| 7 | +5V | +5V DC Power Supply for DVD |
| 8 | +5V | +5V DC Power Supply for DVD |

J1 (4PIN/2.54): SPEAKER CONNECTOR (喇叭输出接口)

| NO. | SYMBOL | DESCRIPTION |
|-----|--------|-------------------------|
| 1 | R+ | Audio R+ Channel Output |
| 2 | R- | Audio R- Channel Output |
| 3 | L- | Audio L- Channel Output |
| 4 | L+ | Audio L+ Channel Output |

***J14(2×10PIN/2.0) : INTRENAL HDMI CONNECTOR** (内置 HDMI 接口)

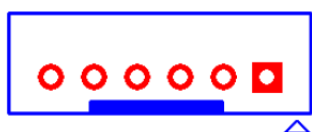
| NO. | SYMBOL | DESCRIPTION |
|-----|----------|--------------------------|
| 1 | Data2+ | HDMI 2+ Signal |
| 2 | Data2- | HDMI 2- Signal |
| 3 | Data1+ | HDMI 1+ Signal |
| 4 | Data1- | HDMI 1- Signal |
| 5 | Data0+ | HDMI 0+ Signal |
| 6 | Data0- | HDMI 0- Signal |
| 7 | Clock+ | HDMI Clock+ Signal |
| 8 | Clock- | HDMI Clock- Signal |
| 9 | HDMI_SCL | HDMI DDC IIC SCL |
| 10 | HDMI_SDA | HDMI DDC IIC SDA |
| 11 | GND | Ground |
| 12 | GND | Ground |
| 13 | HDMI+5V | HDMI +5V DC Power Supply |
| 14 | HPD | HDMI Hot Plug Detect |
| 15 | GND | Ground |
| 16 | GND | Ground |
| 17 | CEC | CEC Signal |
| 18 | +5V | +5V DC Power Supply |
| 19 | SCL | Main IIC SCL |
| 20 | SDA | Main IIC SDA |

J17 (14pin/2.0): KEY&IR&LED CONNECTOR (按键、遥控和指示灯控制接口)

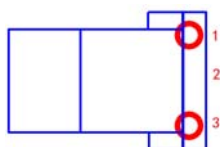
| NO. | SYMBOL | DESCRIPTION |
|-----|--------|---------------------|
| 1 | GND | Ground |
| 2 | K7 | Key7(Reserved) |
| 3 | POWER | POWER |
| 4 | VOL+ | VOL+ |
| 5 | VOL- | VOL- |
| 6 | INPUT | INPUT |
| 7 | CH+ | CH+ |
| 8 | CH- | CH- |
| 9 | MENU | MENU |
| 10 | GND | Ground |
| 11 | IR | IR Receiver |
| 12 | LED_G | Green Indicator |
| 13 | LED_R | Red Indicator |
| 14 | +5V | +5V DC Power Supply |

***J16 (11pin/2.0): INTERNAL YPBPR INPUT CONNECTOR** (内置 YPBPR 输入接口)

| NO. | SYMBOL | DESCRIPTION |
|-----|--------|---------------------|
| 1 | GND | Ground |
| 2 | Y | YPbPr-Y Input |
| 3 | GND | Ground |
| 4 | Pr | YPbPr-Pr Input |
| 5 | GND | Ground |
| 6 | Pb | YPbPr-Pb Input |
| 7 | LIN | Left Channel Input |
| 8 | GND | Ground |
| 9 | RIN | Right Channel Input |
| 10 | GND | Ground |
| 11 | NC | NC |

J6 (6PIN/2.0/红色): INVERTER CONNECTOR (背光接口)

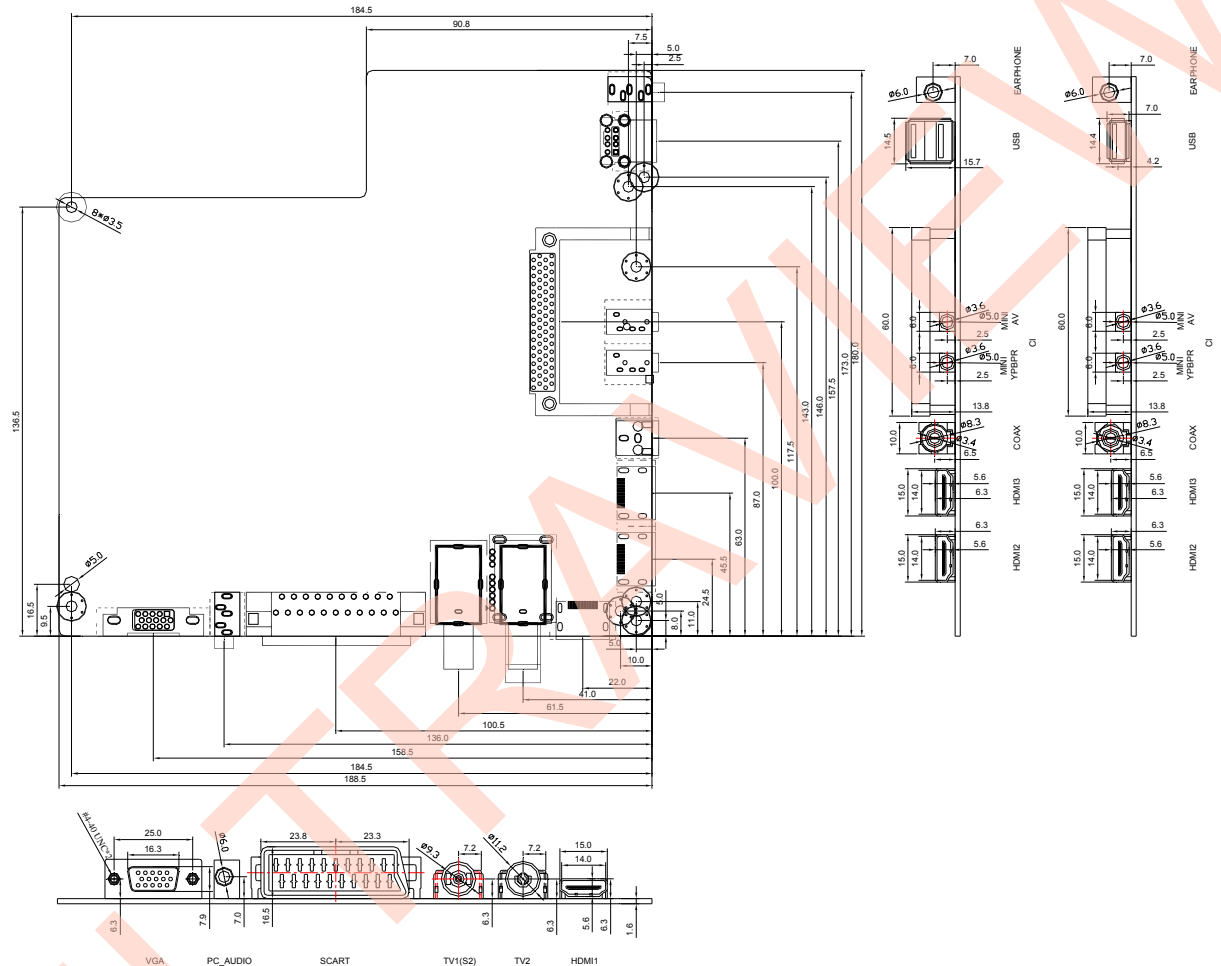
| NO. | SYMBOL | DESCRIPTION |
|-----|--------|--|
| 1 | GND | Ground |
| 2 | GND | Ground |
| 3 | ADJ | Brightness Adjustment for Panel(Volts DC Output) |
| 4 | ON/OFF | Back-Light ON/OFF Control for Panel (1: ON/0: OFF) |
| 5 | +12V | INVERTER +12V DC Power Supply |
| 6 | +12V | INVERTER +12V DC Power Supply |

PCON1: AC INPUT CONNECTOR (交流输入接口)

| NO. | SYMBOL | DESCRIPTION |
|-----|--------|--------------|
| 1 | L | LIVE (火线) |
| 2 | NC | NC |
| 3 | N | NEUTRAL (零线) |

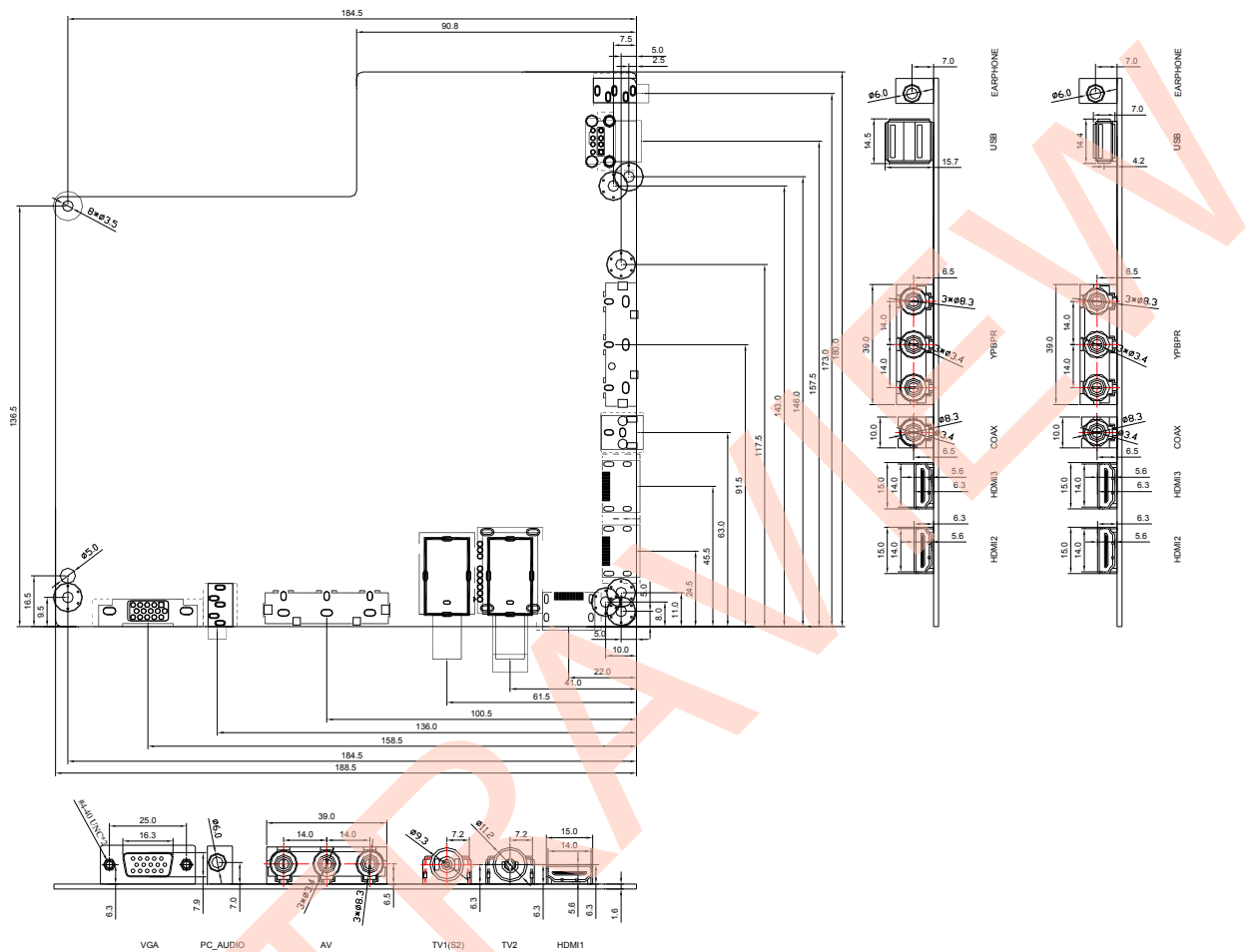
9. MECHANICAL DIMENSION (结构尺寸图)

Europe Board Type :



The thickness of PCB board: 1.6 mm
 Component the tallest altitude: 16.5mm
 Install diameter inside the bore 3.5 mm

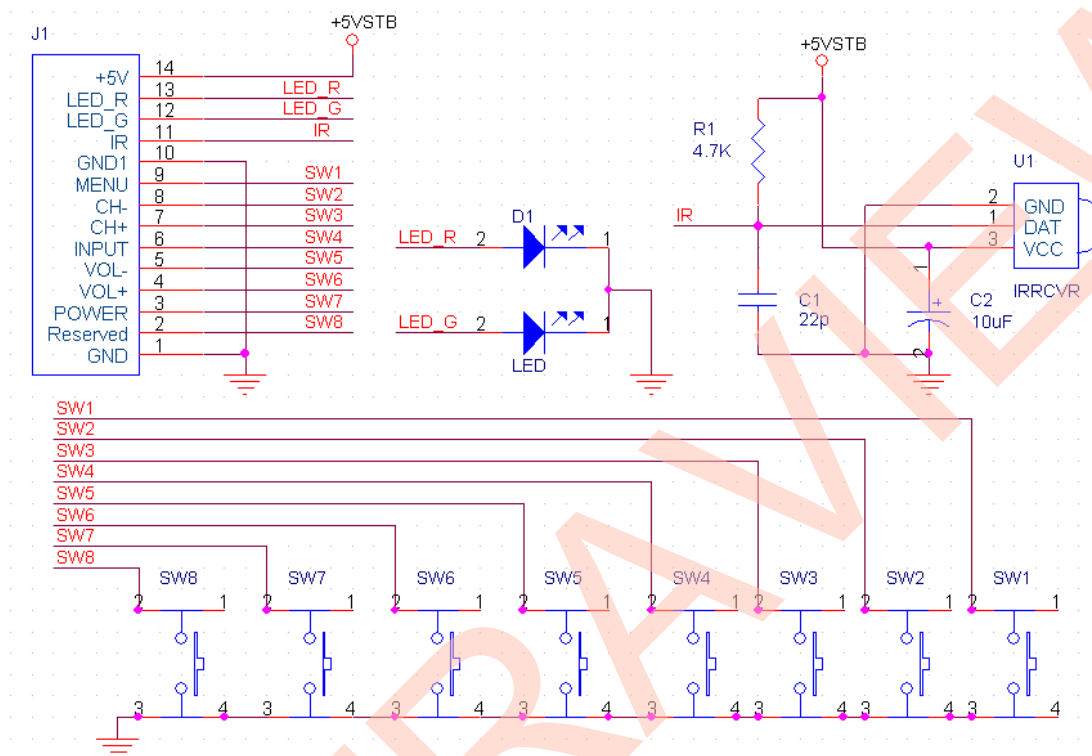
Australia Board Type:



The thickness of PCB board: 1.6 mm
 Component the tallest altitude: 16.5mm
 Install diameter inside the bore 3.5 mm

10. SCHEMATICS OF IR BOARD & KEY BOARD

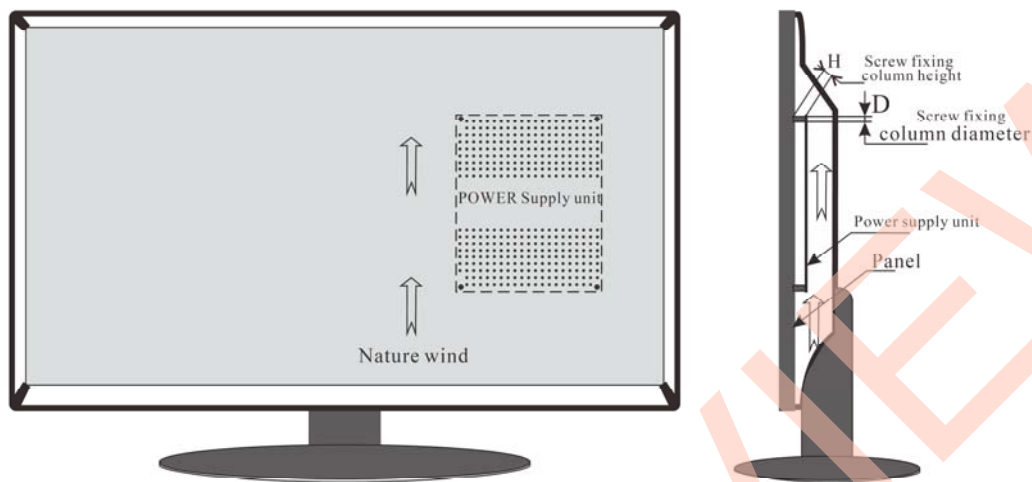
(遥控和按键原理图)



11. APPLICATION REQUIREMENT（应用注意事项）

- Relative humidity ≤80%
相对湿度≤80%
- Store temperature -10~+60 °C
存储温度-10~+60 °C
- Use temperature 0~+40 °C
使用温度 0~+40 °C
- The procedure of the whole machine assembles and transports need to attend ESD transaction.
整机装配和运输过程中需要注意 ESD 保护。
- The hole of each port does not be opened too small, especially the HDMI port hole, avoid the whole set morphing to cause the extrusion of port when installing.
每个端口的开孔不应开得太小，尤其是 HDMI 端口，避免装配挤压导致端口变形。
- The hole of RGB socket is recommended the situation of not using the screw stationary on the RGB socket to fix on the structure board.
VGA 端口上的螺丝柱建议是不使用螺丝固定到结构挡板上。
- The connected wire which between the other boards and this board can't be leaded too long, or affect performance and image quality.
其他外接模块与电视主板的连接线长度不要太长，以免影响性能和图像质量。
- The whole set inner wires matching reasonable, each connected wire try to not directly cross the PCB board, especially cross over from the main IC and power module, avoid affect the whole set EMC performance.
整机内部线材装配要合理，各连接线尽量不直接穿过 PCB 主板，尤其是横跨主芯片和电源模块，避免影响整机的 EMC 性能。
- in order to obtain better EMC effect of the whole set, we suggest the LVDS twisted pair wire between the main board and panel must be tied up well and try to use shielding wire. If it's possible, try to put on the magnetic belt ring on the wire which near the board terminal.
为了获得更好的整体 EMC 效应，我们建议主板和面板之间的 LVDS 双绞线必须绑好，尽量使用屏蔽线。如果可能的话，尽量把磁环放在靠近主板端。
- The HDMI and HDCP on the main board are all passed the related certifications, but we just provide testing certification of the inner usage standard. If you need to use legal HDMI and HDCP, please apply related association as formal member by yourself.
主板上的 HDMI 和 HDCP 已通过了相关的认证，但我们只提供内部使用的标准的测试认证。如果您需要使用合法的 HDMI 和 HDCP 认证，请先成为相关协会的会员。
- There is ROHS identification on the board and package, the board match ROHS standard.
主板和包装带都符合 ROHS 标准。

12. MOUNT PRECAUTIONS (组装注意事项)



Note1: The H should be greater than or equal 9mm, otherwise you must add the mylar under PCB bottom.

H的高度必须大于等于9mm,如果小于9mm,则必须在PCB底层加麦拉片绝缘.

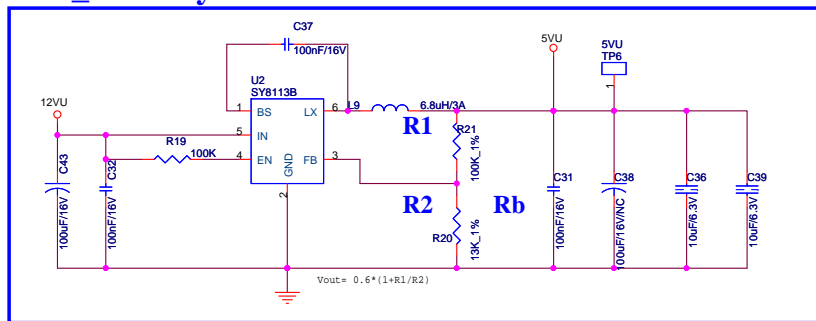
Note2: The D should be less than 8mm. Mount the power supply unit to the screw fixing column using M3 screw. The maximum value of the tightening torque is 0.4N-M.

D的直径须小于8mm,将电源锁在螺丝柱上需使用M3的螺丝。最大扭矩为0.4N-M。

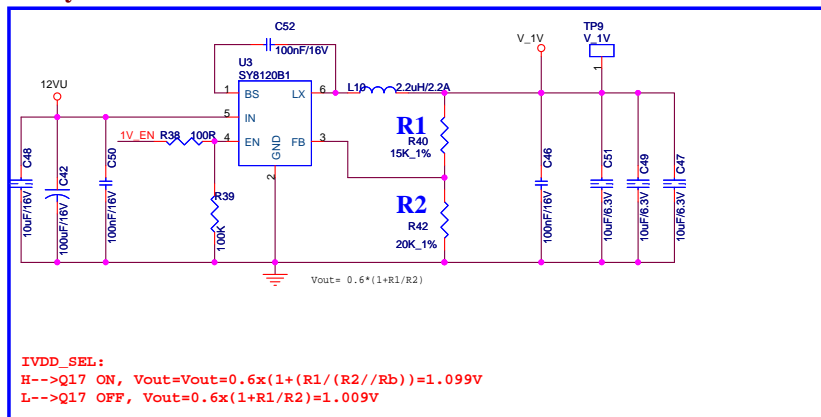
Note3: The Power supply unit is usually designed without the case. Please take care about ESD at anytime.

因为本产品为无外壳之设计,故在任何时候均应注意静电防护。

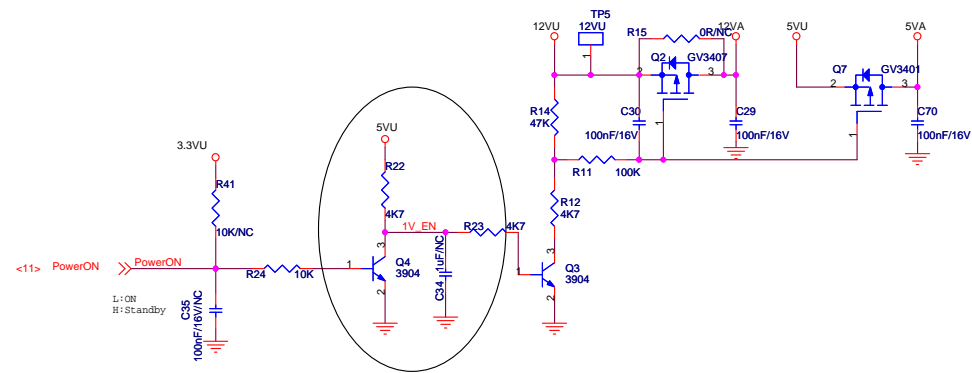
+5V_Standby POWER 3A



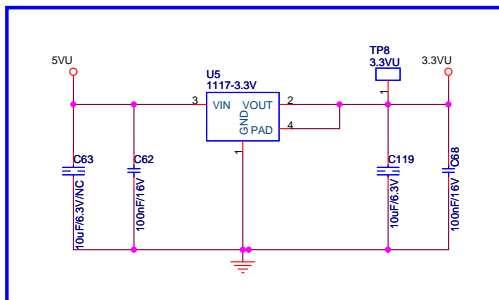
1V System Power 2A



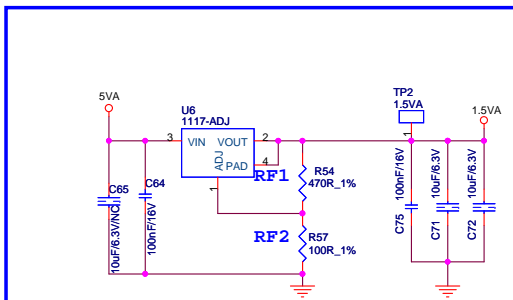
5V & 12V Switch Power



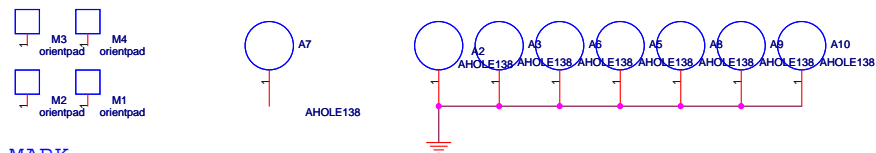
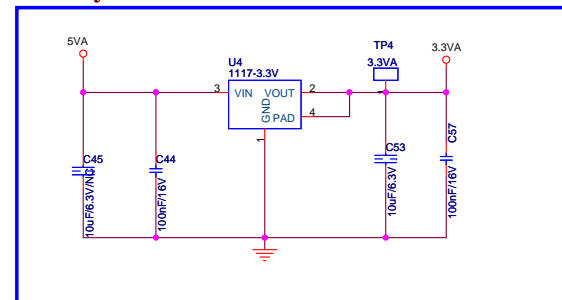
+3.3V STANDBY POWER

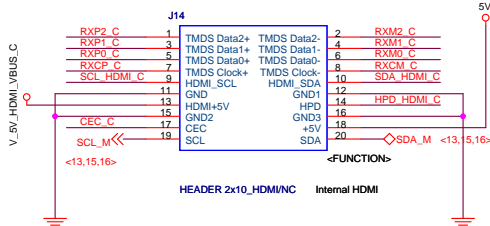
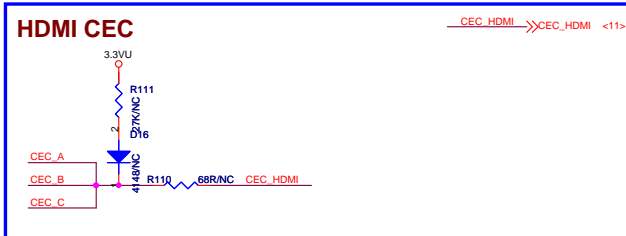
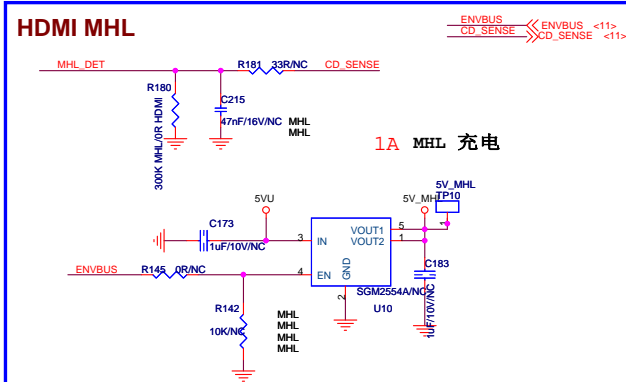
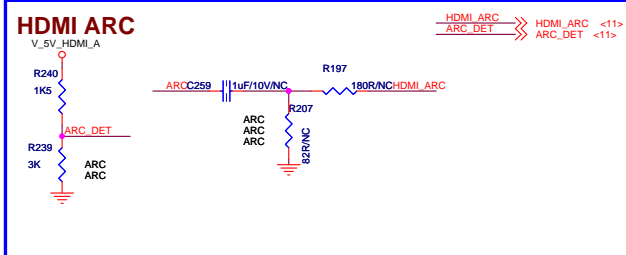
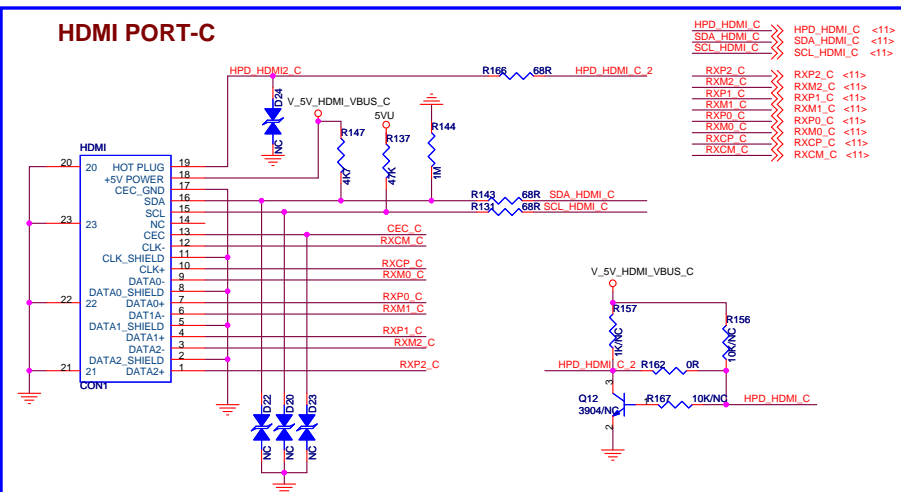
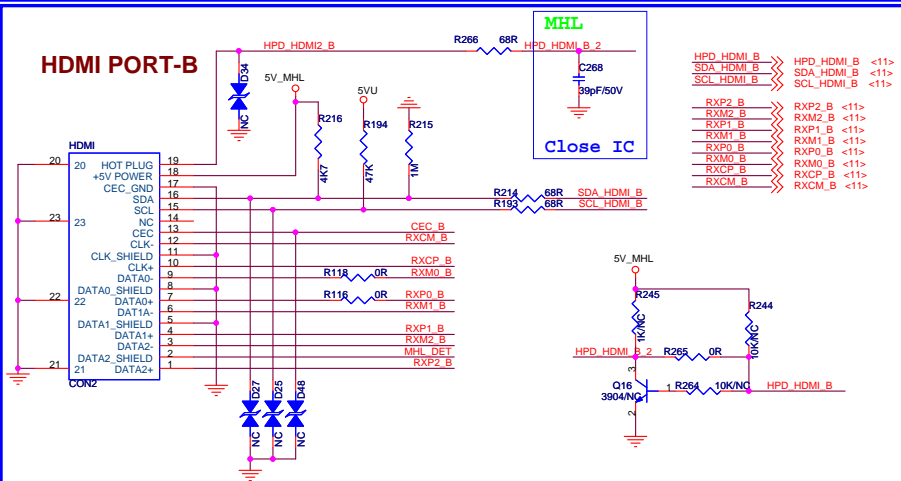
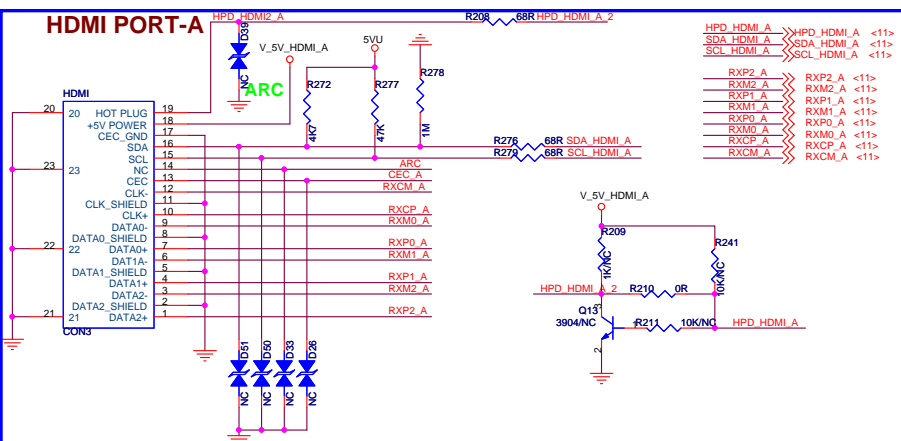


1.5V DDR Power

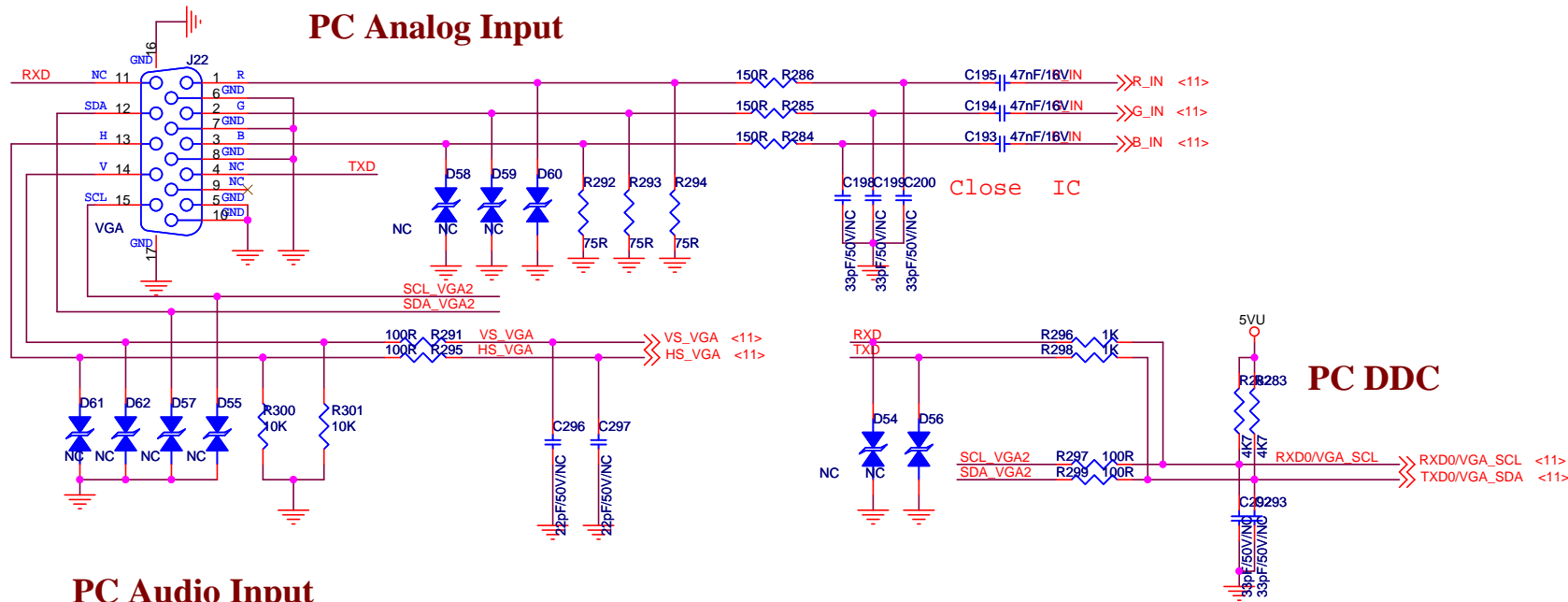


3.3V System Power

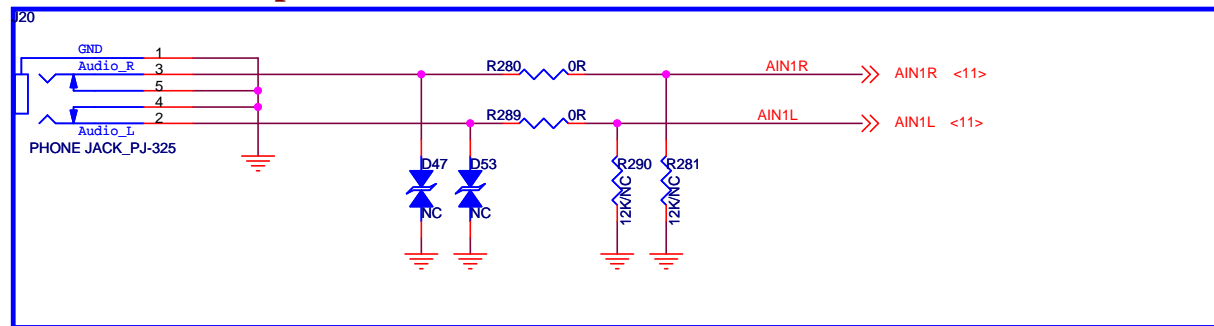




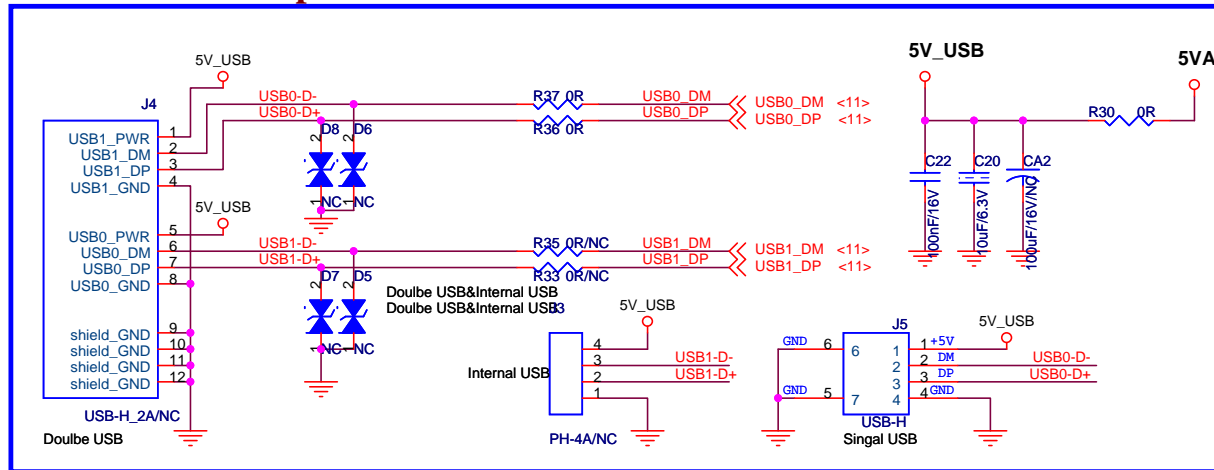
PC Analog Input



PC Audio Input



Dual USB Input



| Title |
|-------|
|-------|

CV512H-B42

Size

Document Number

Rev

Custom

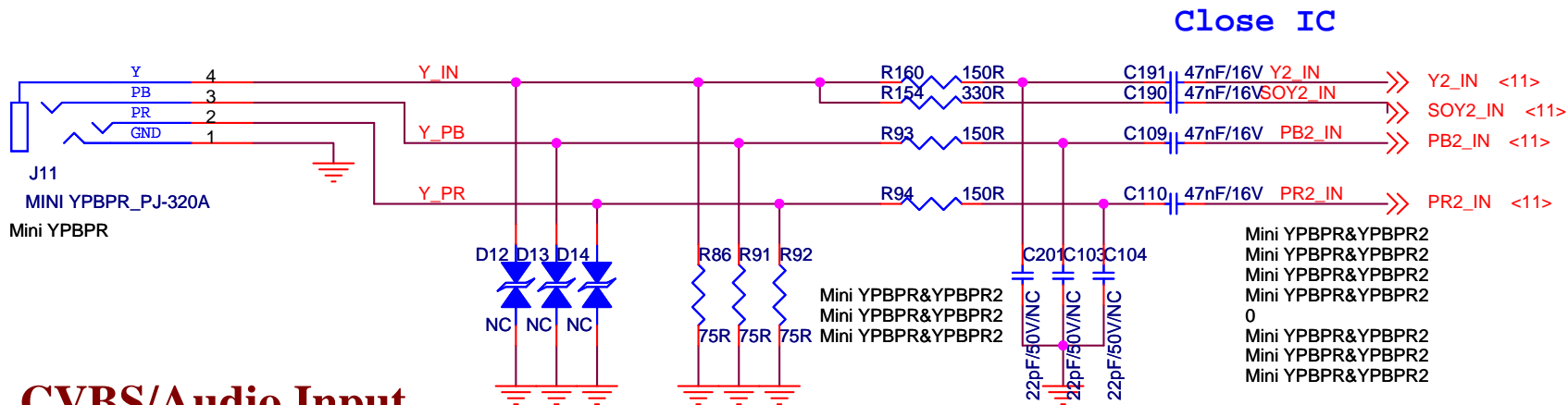
PC & USB

Date: Saturday, August 30, 2014

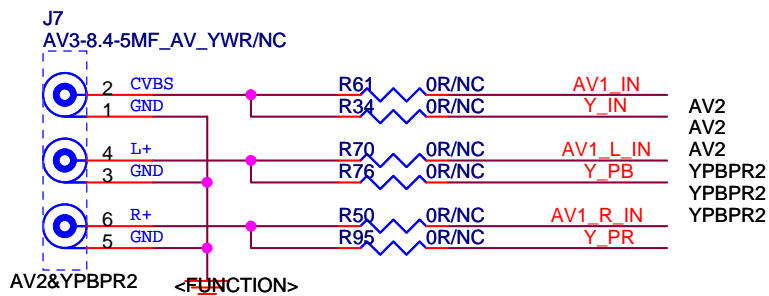
Sheet 3 of 16

| | |
|---|--|
| | |
| 6 | |

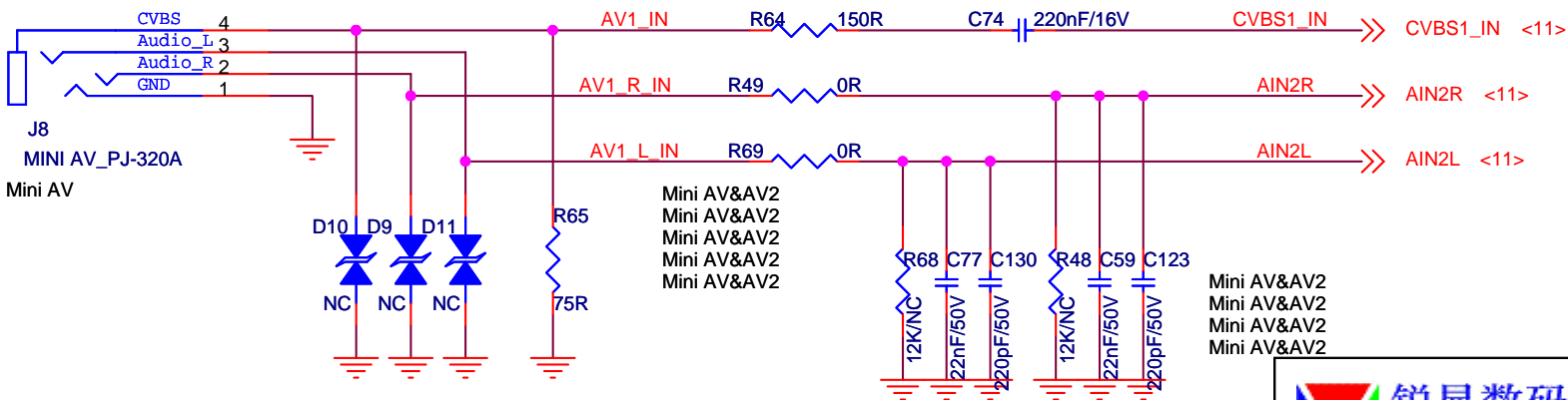
YPbPr Input



CVBS/Audio Input



MINI AV Input



Title

CV512H-B42

Size

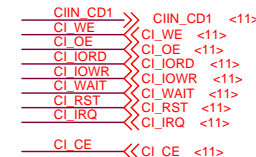
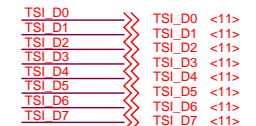
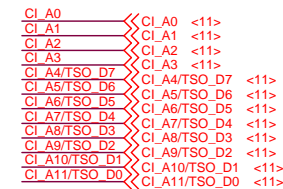
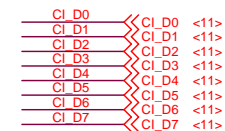
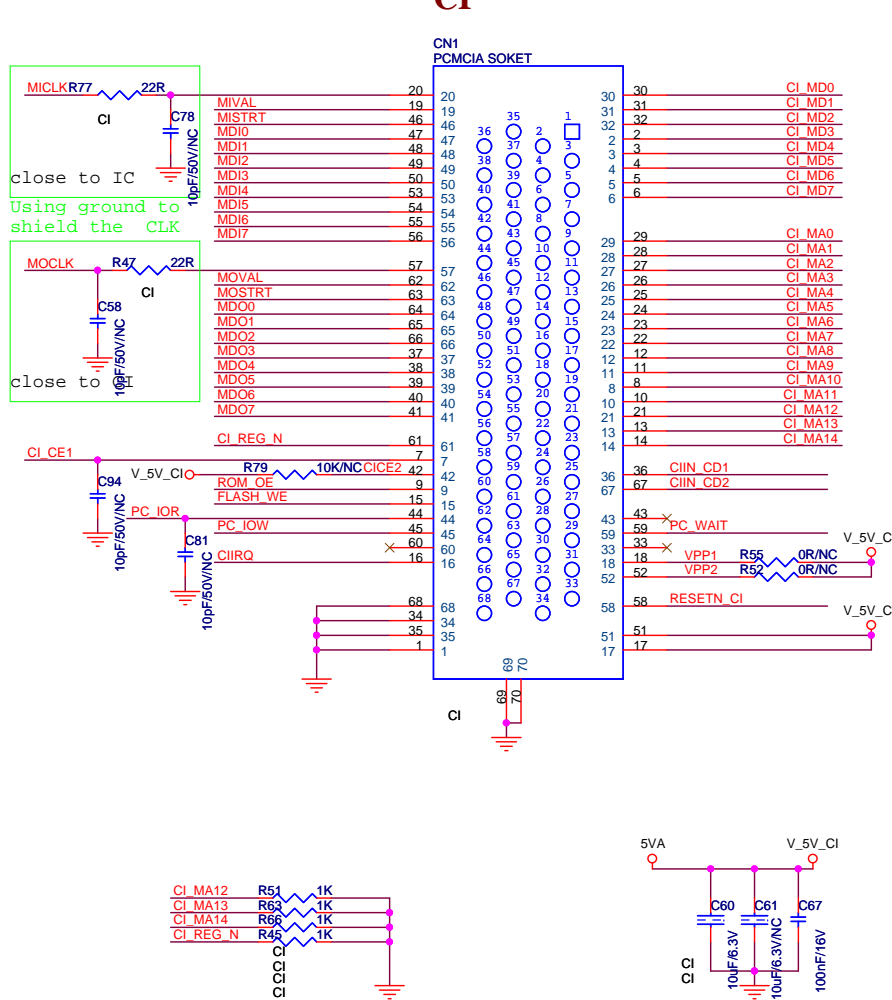
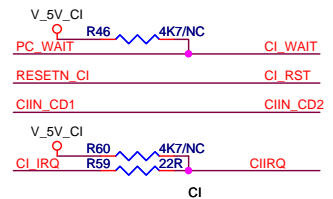
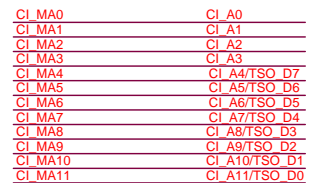
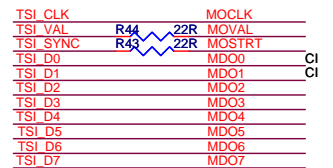
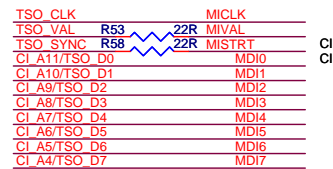
Document Number

YPbPr & AV

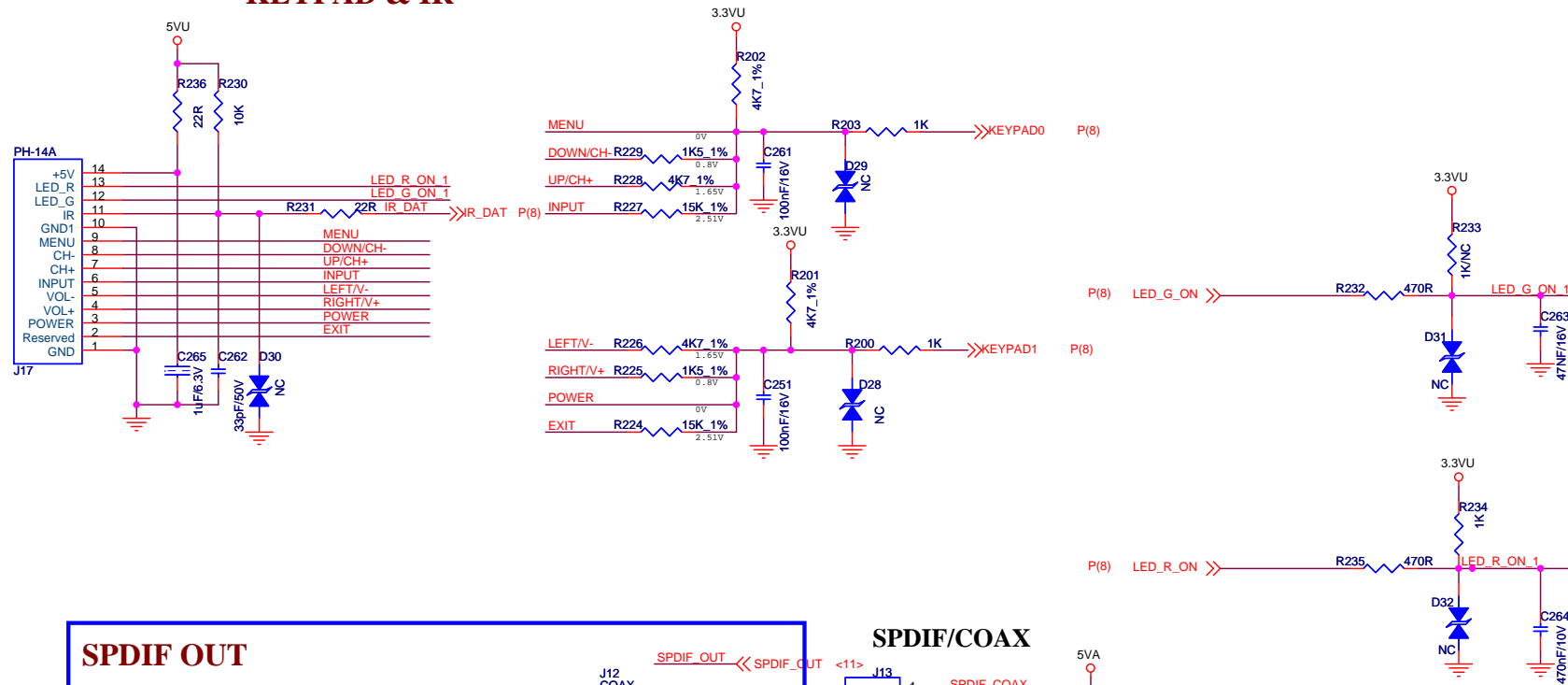
| | |
|-----|----|
| Rev | 12 |
|-----|----|

Date: Saturday, August 30, 2014

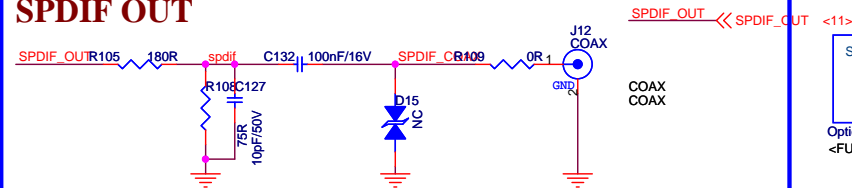
| | | | |
|-------|---|----|----|
| Sheet | 4 | of | 16 |
|-------|---|----|----|



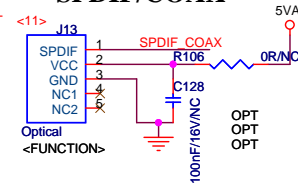
KEYPAD & IR



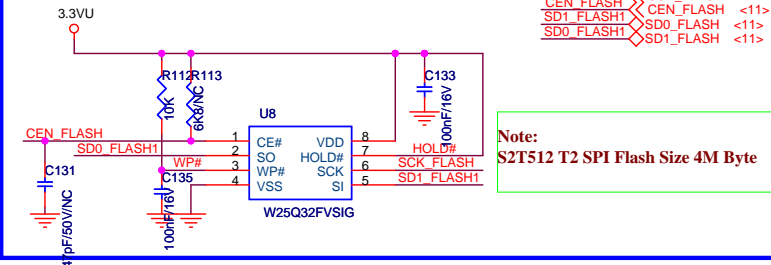
SPDIF OUT



SPDIF/COAX

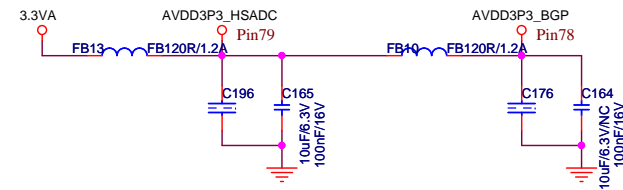
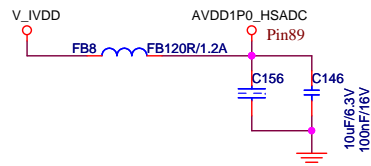


SPI Flash

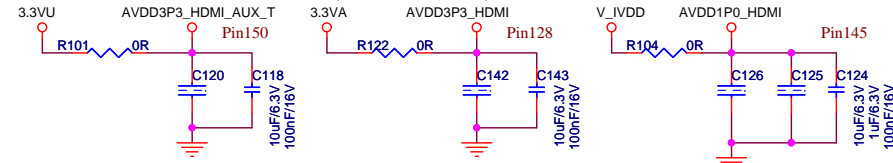


ADC POWER/GND (1.0V/3.3V)

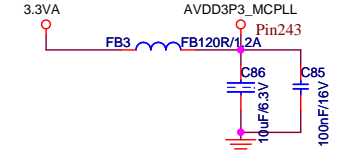
FB for ADC need $R_{dc} < 0.015$, $Z = 120/100\text{MHz}$, $I_{dc} > 3A$
Default part MHC3216S121W



HDMI POWER/GND (1.0V/3.3V)

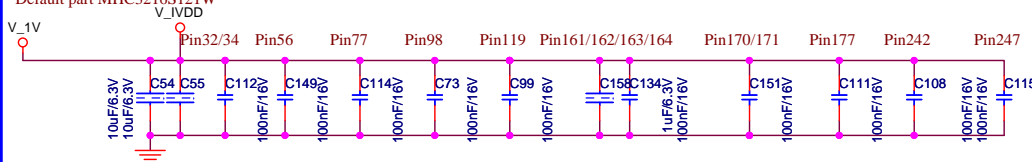


PLL POWER/GND (3.3V)

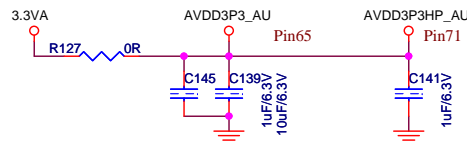


IVDD POWER (1.0V)

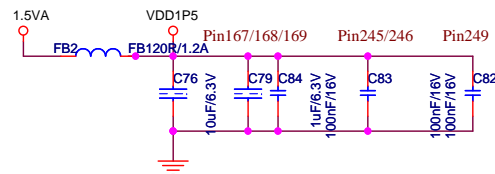
FB for CVDD need $R_{dc} < 0.015$, $Z = 120/100\text{MHz}$, $I_{dc} > 3A$
Default part MHC3216S121W



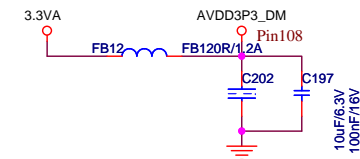
AUDIO POWER/GND (3.3V)



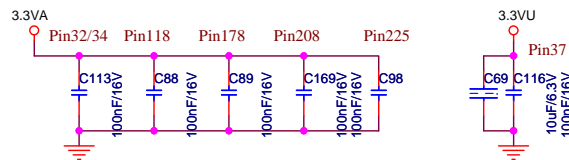
DDR POWER (1.5V)



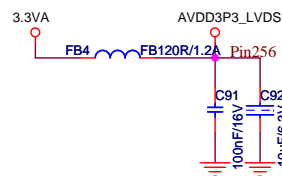
DEMOD POWER/GND (3.3V/1.0V)



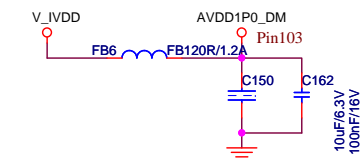
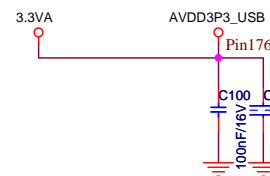
3.3V



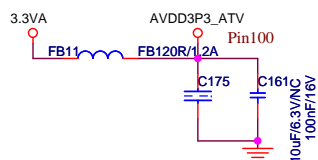
LVDS POWER/GND (3.3V)



USB POWER/GND (3.3V)



ATV POWER/GND (3.3V)

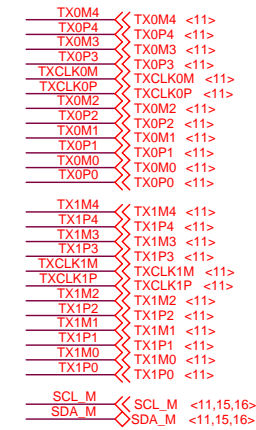
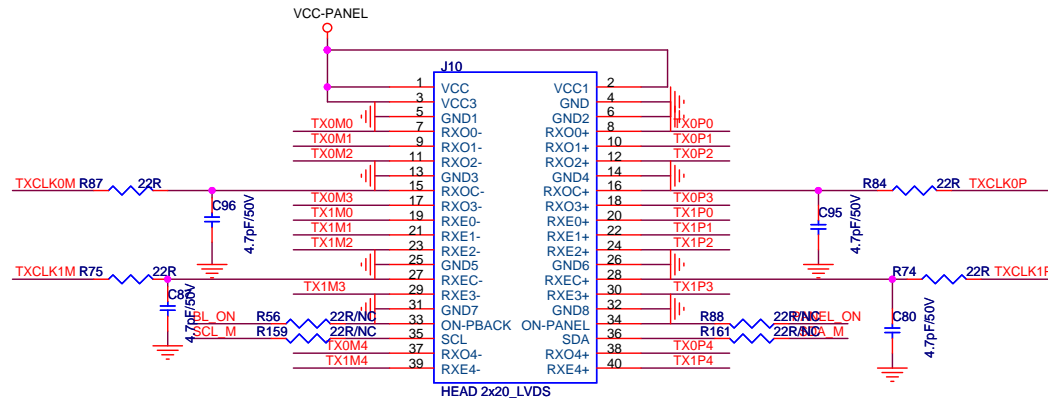


ALL FB except ADC, CVDD: need $R_{dc} < 0.2$, $Z = 300/100\text{MHz}$, $I_{dc} > 500\text{mA}$
Default part: MCB2012S301H



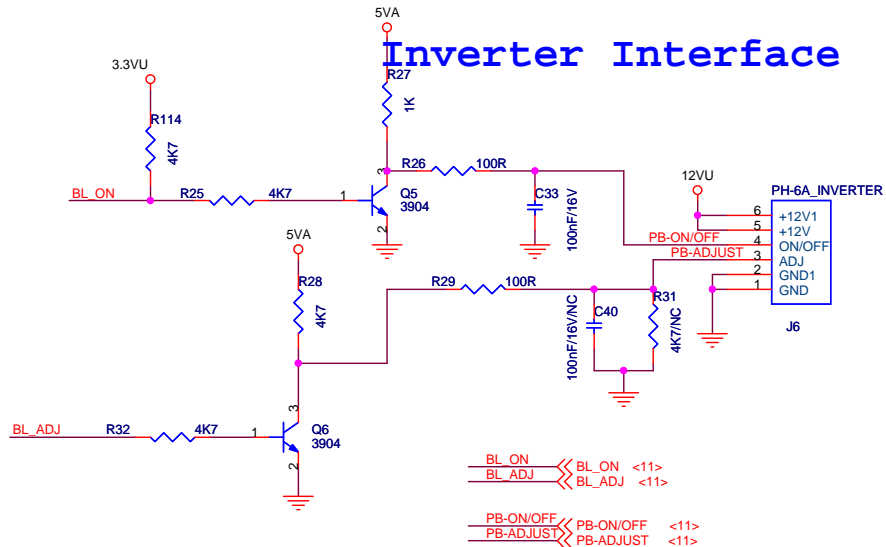
*Short these ground planes on PCB

Panel Interface

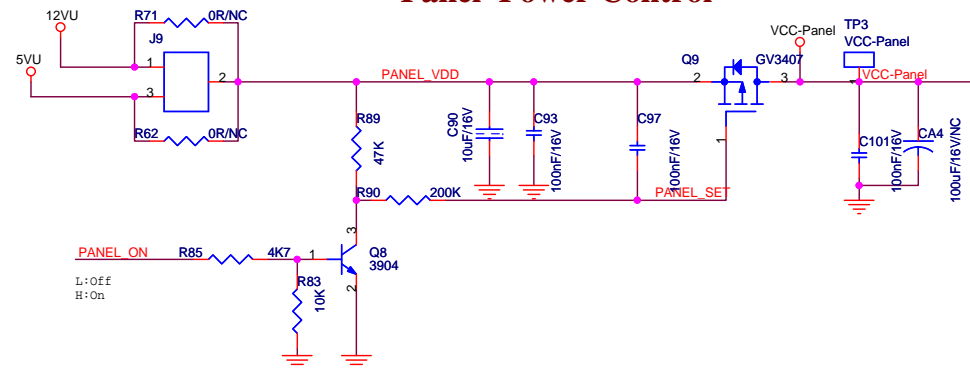


PANEL_ON << PANEL_ON <11>

Inverter Interface



Panel Power Control



| Title |
|-------|
|-------|

CV512H-B42

| | |
|--------|-----------------|
| Size | Document Number |
| Custom | |

Panel out

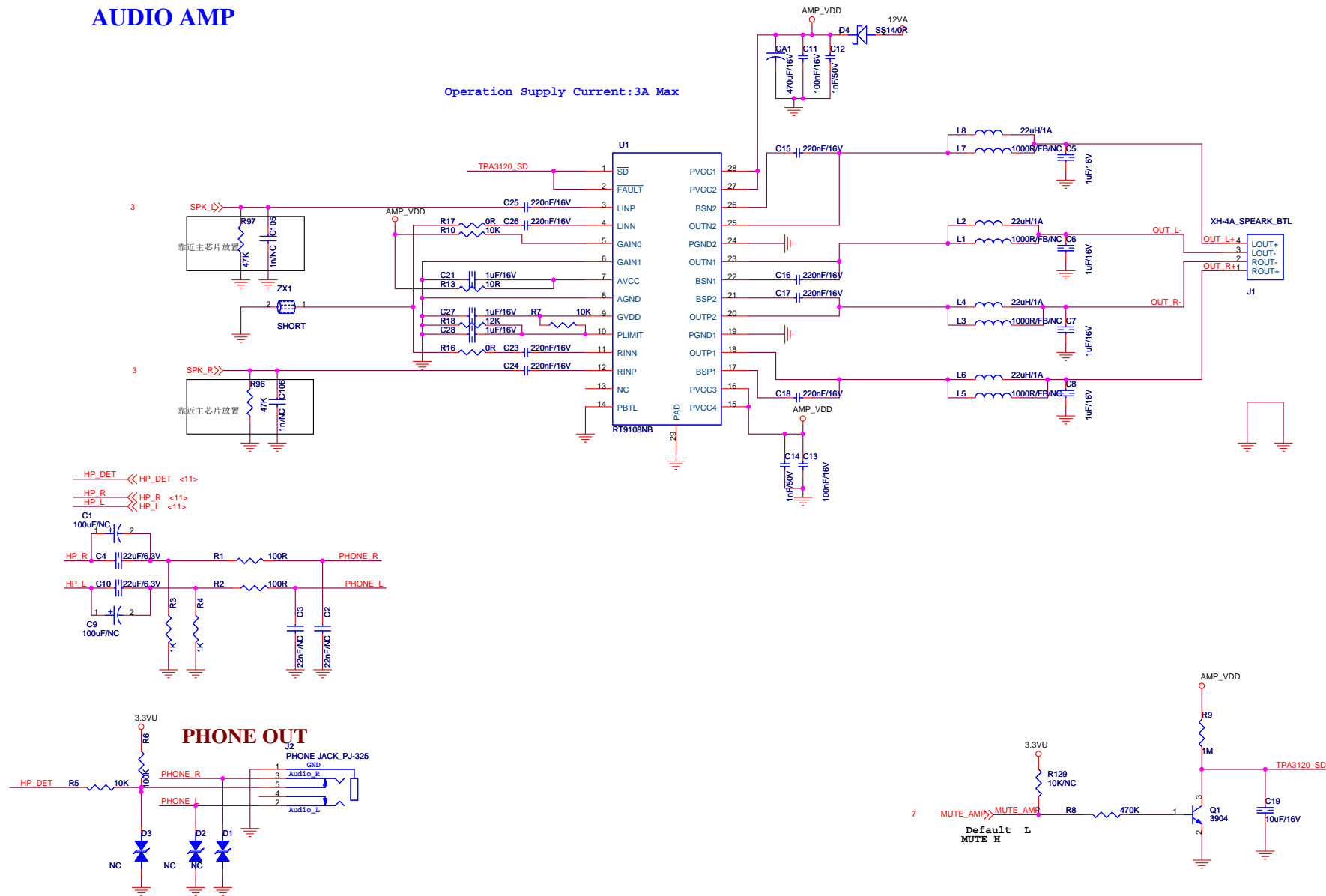
| | |
|-----|----|
| Rev | 12 |
|-----|----|

Date: Saturday, August 30, 2014

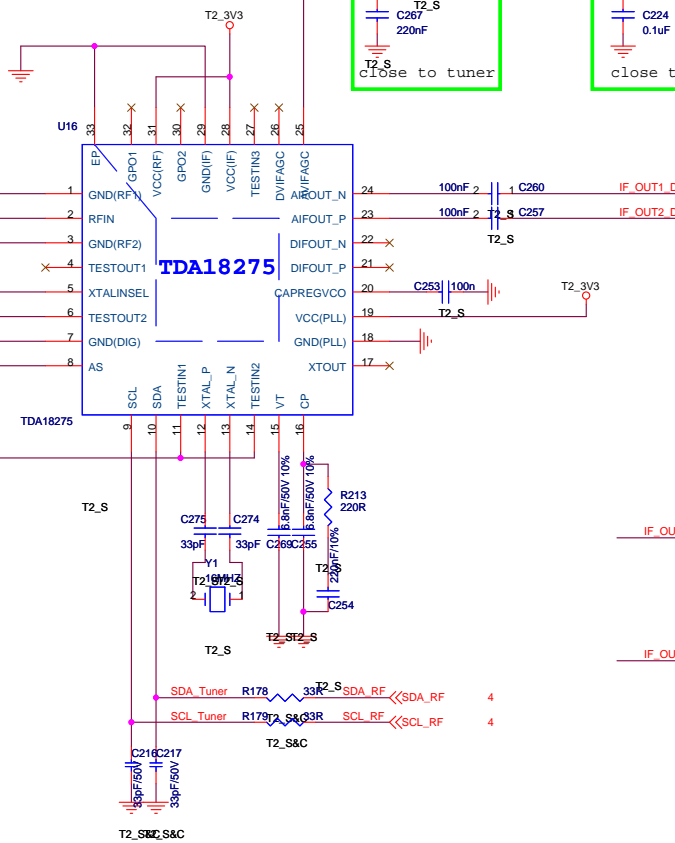
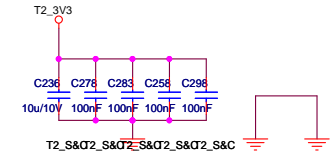
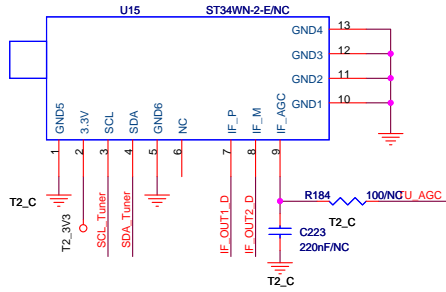
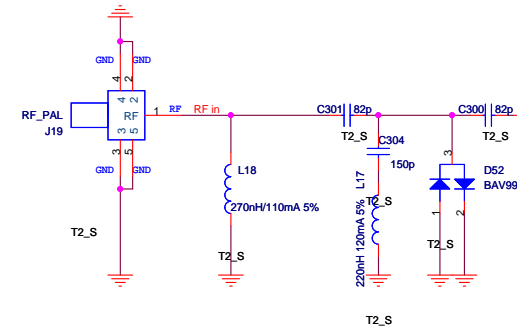
Sheet 10 of 16

AUDIO AMP

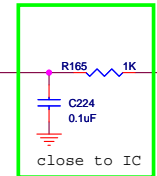
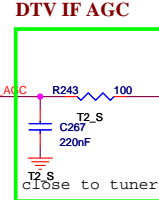
Operation Supply Current:3A Max



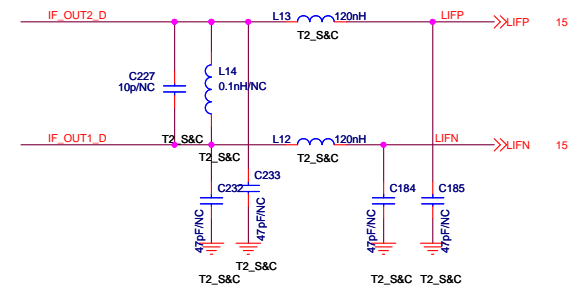
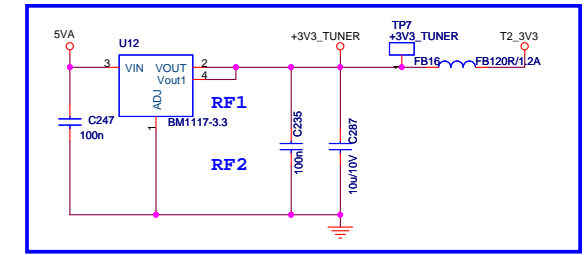
TDA18275 Circuit



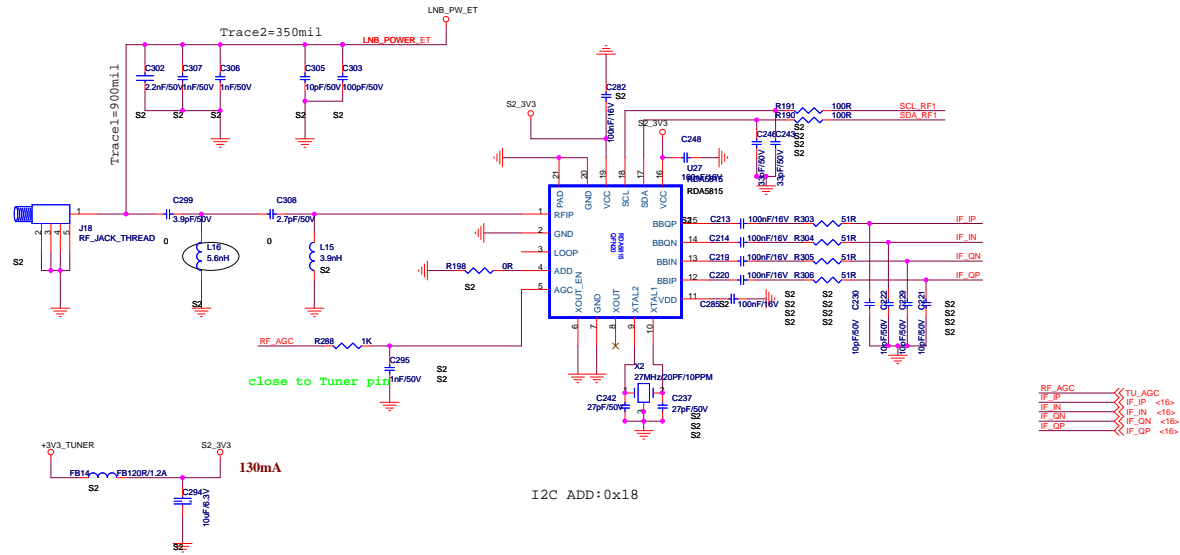
I2C ADD:0xC0



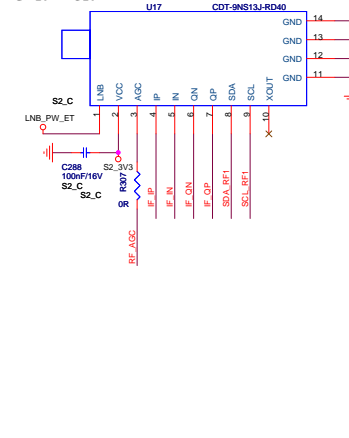
+3.3V SI-TUNER POWER



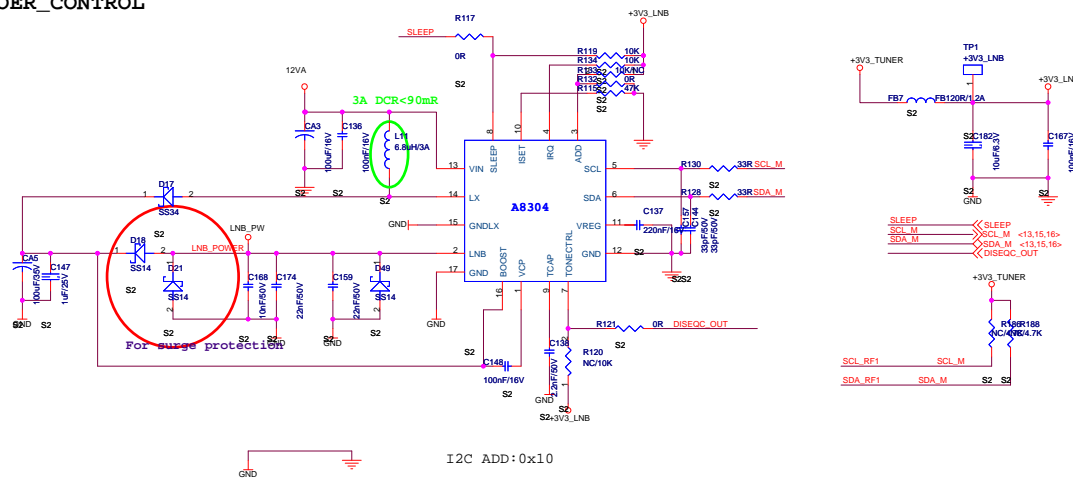
S2 SILICON TUNER



S2 CAN TUNER



LNB_POER_CONTROL

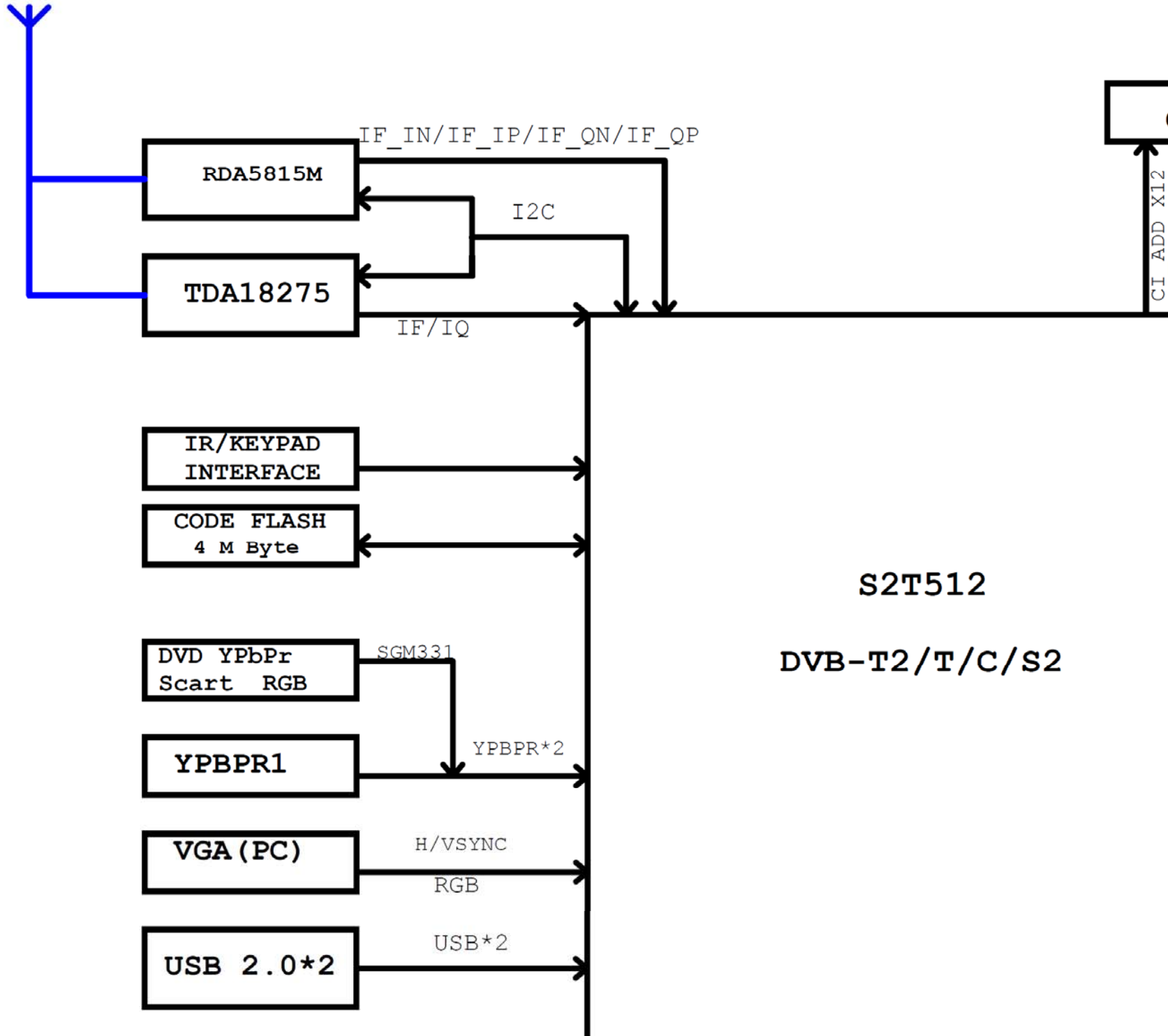


CV512H-B42

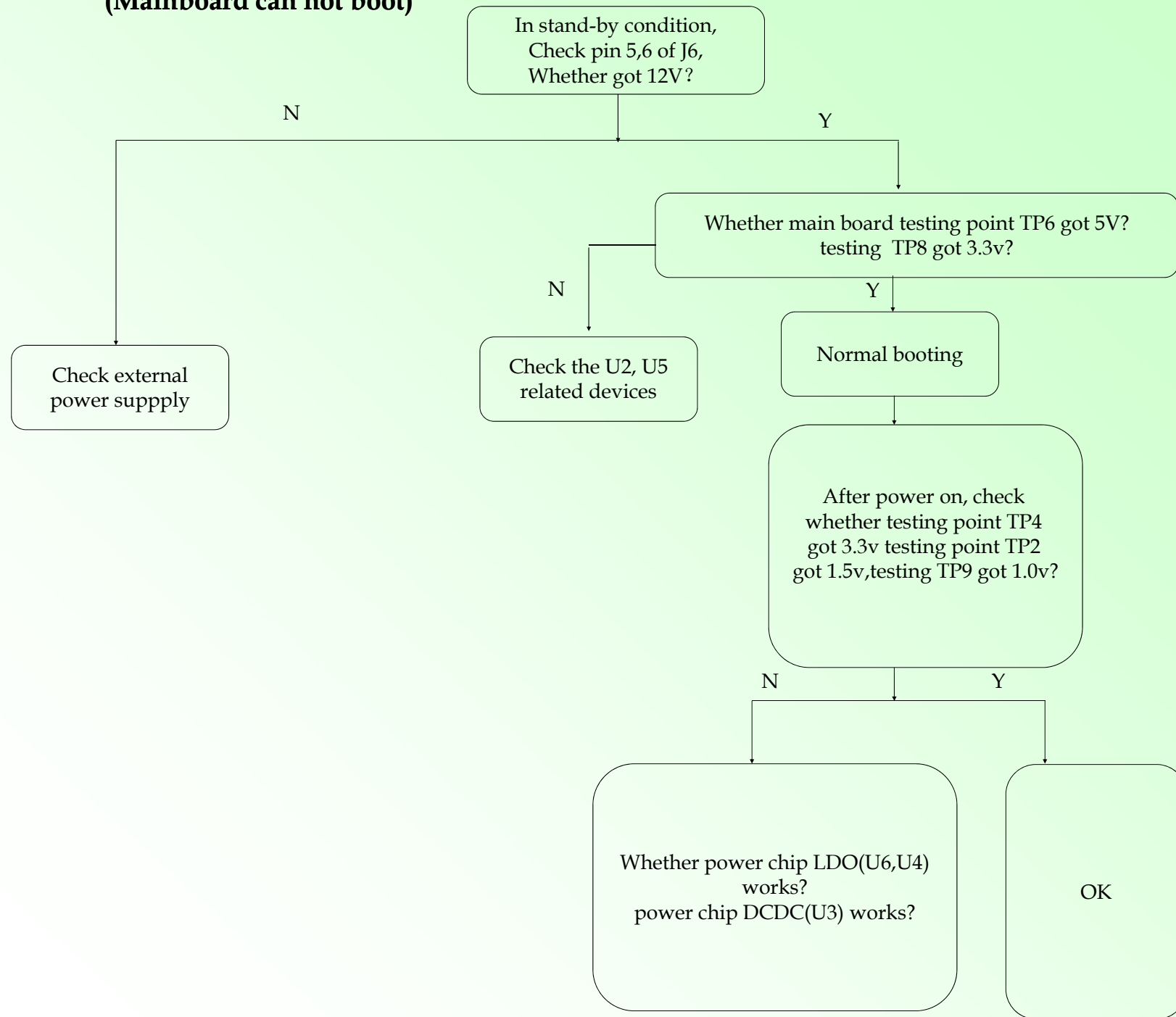
Common problems solution

- Power Unit Problem Solving**
- Display Unit Problem Solving**
- Audio Unit Problem Solving**
- Functional Unit Problem Solving**

ANTENNA

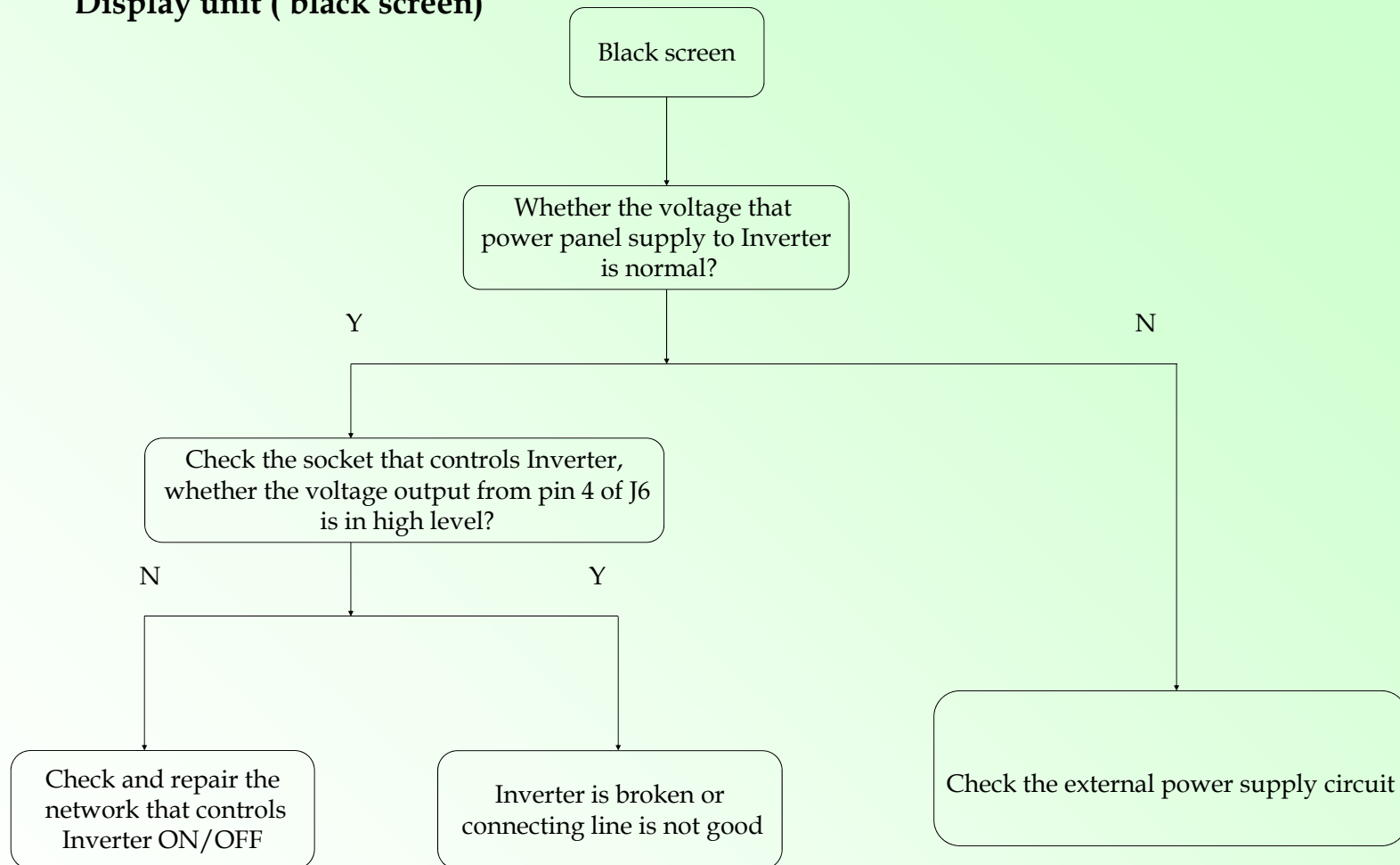


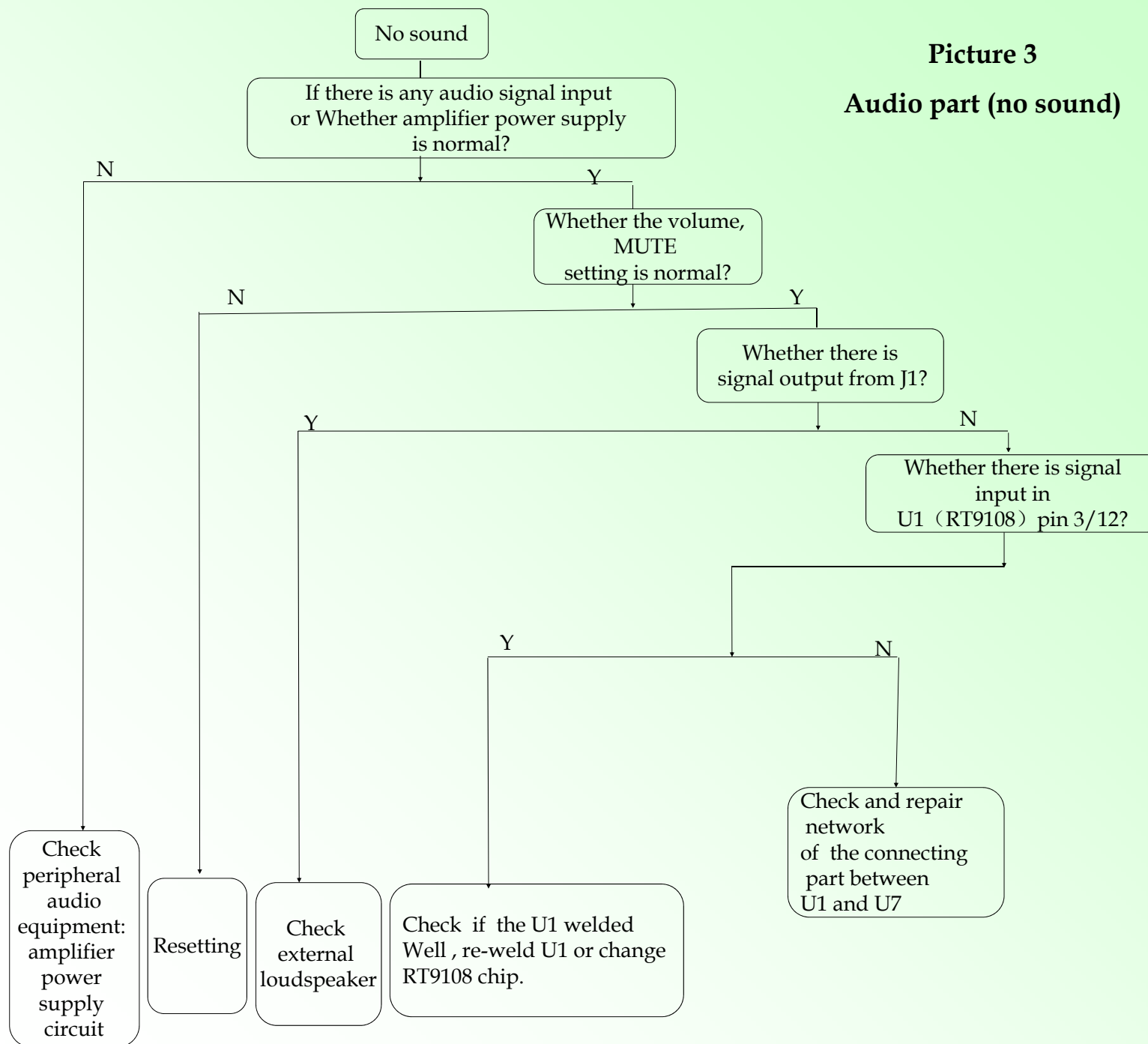
Picture 1: Power Units Problem Solving (Mainboard can not boot)



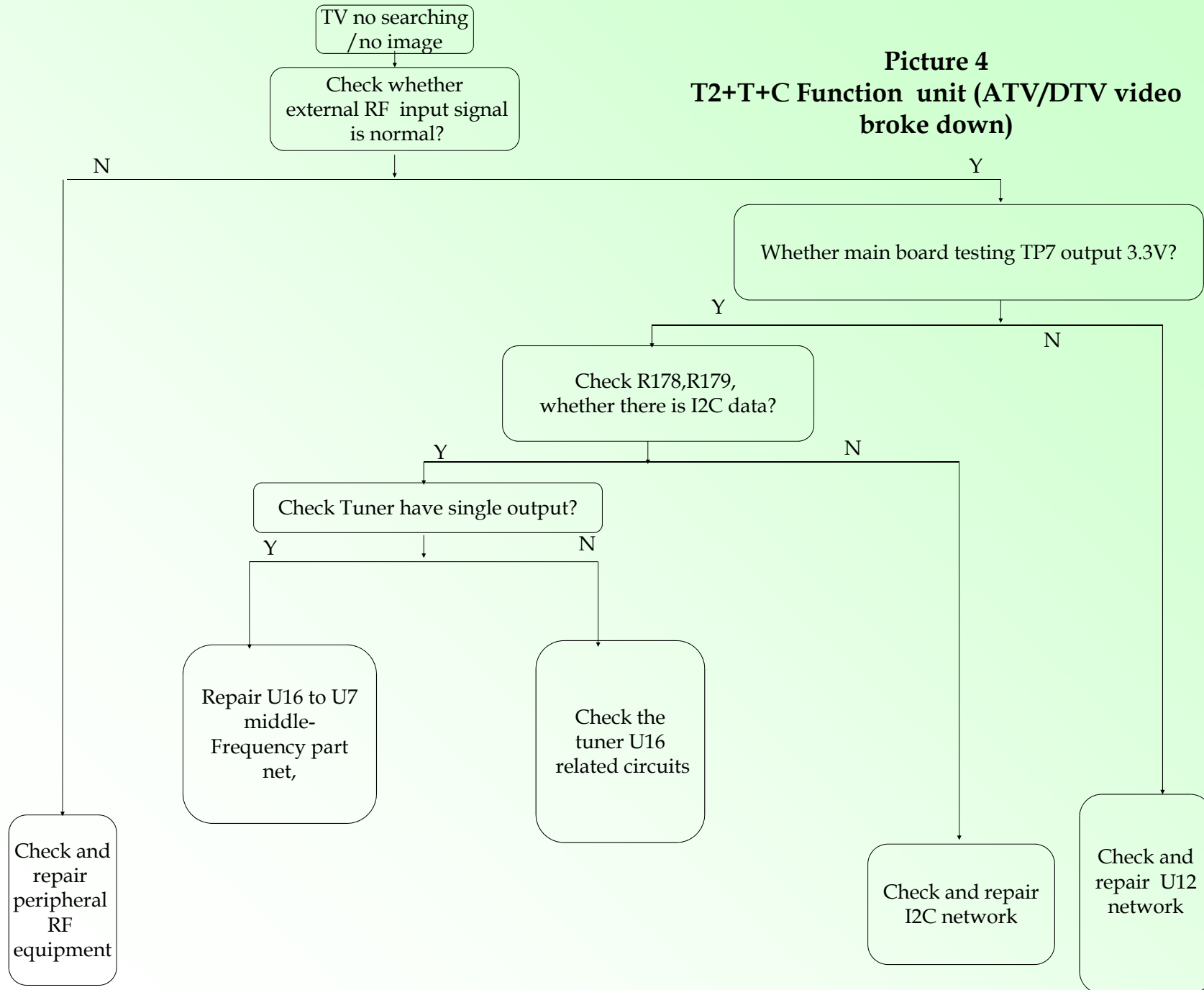
Picture 2

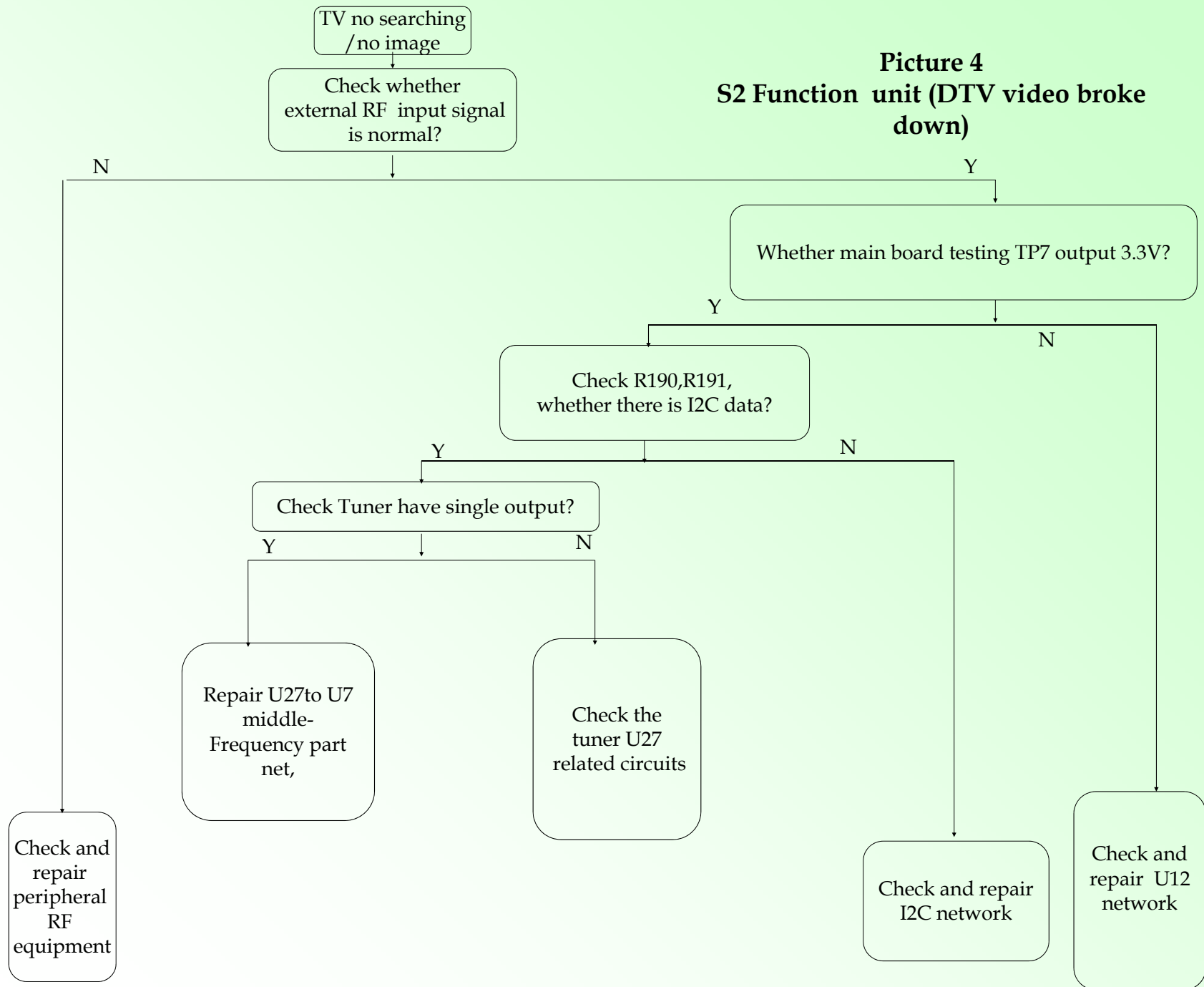
Display unit (black screen)





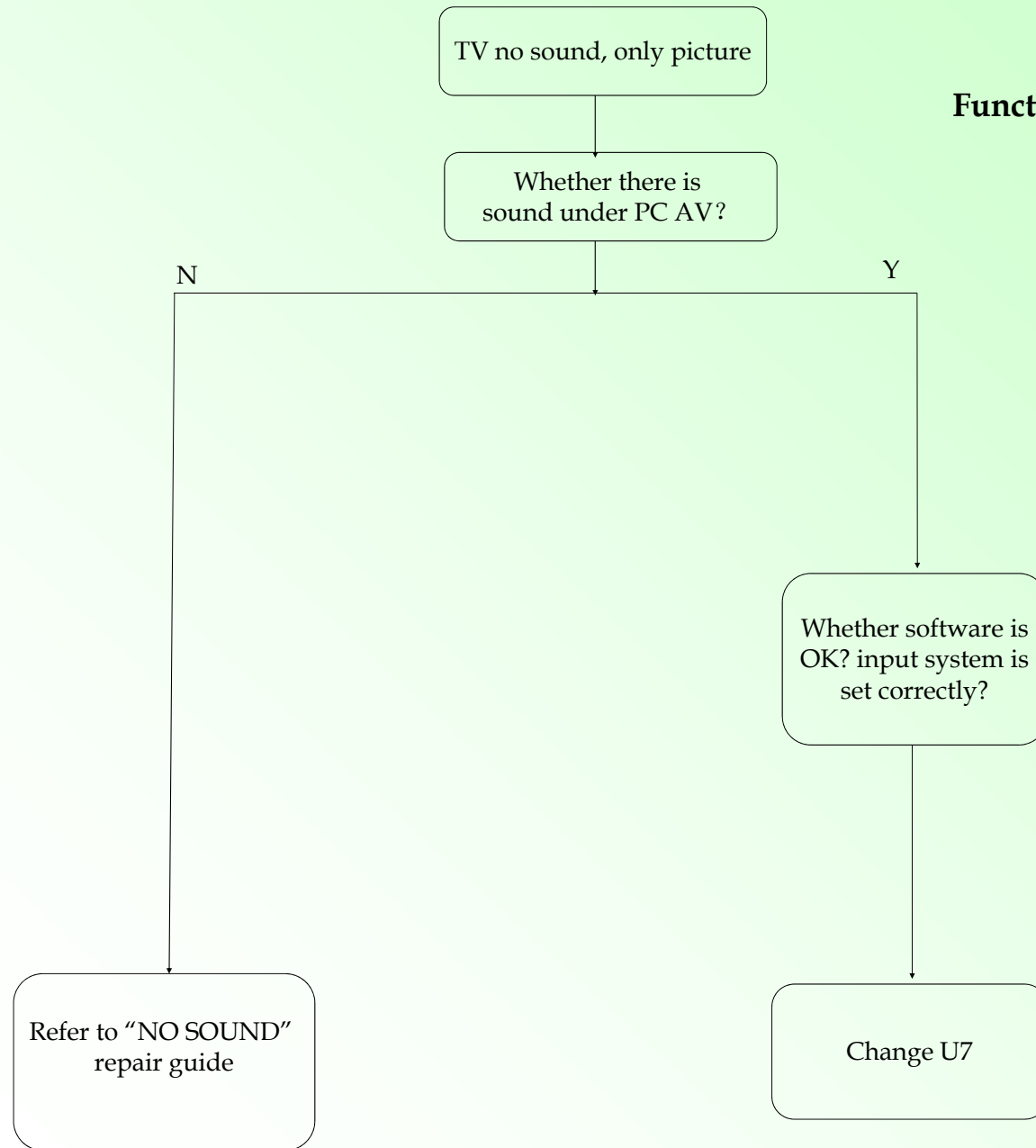
Picture 4
T2+T+C Function unit (ATV/DTV video broke down)





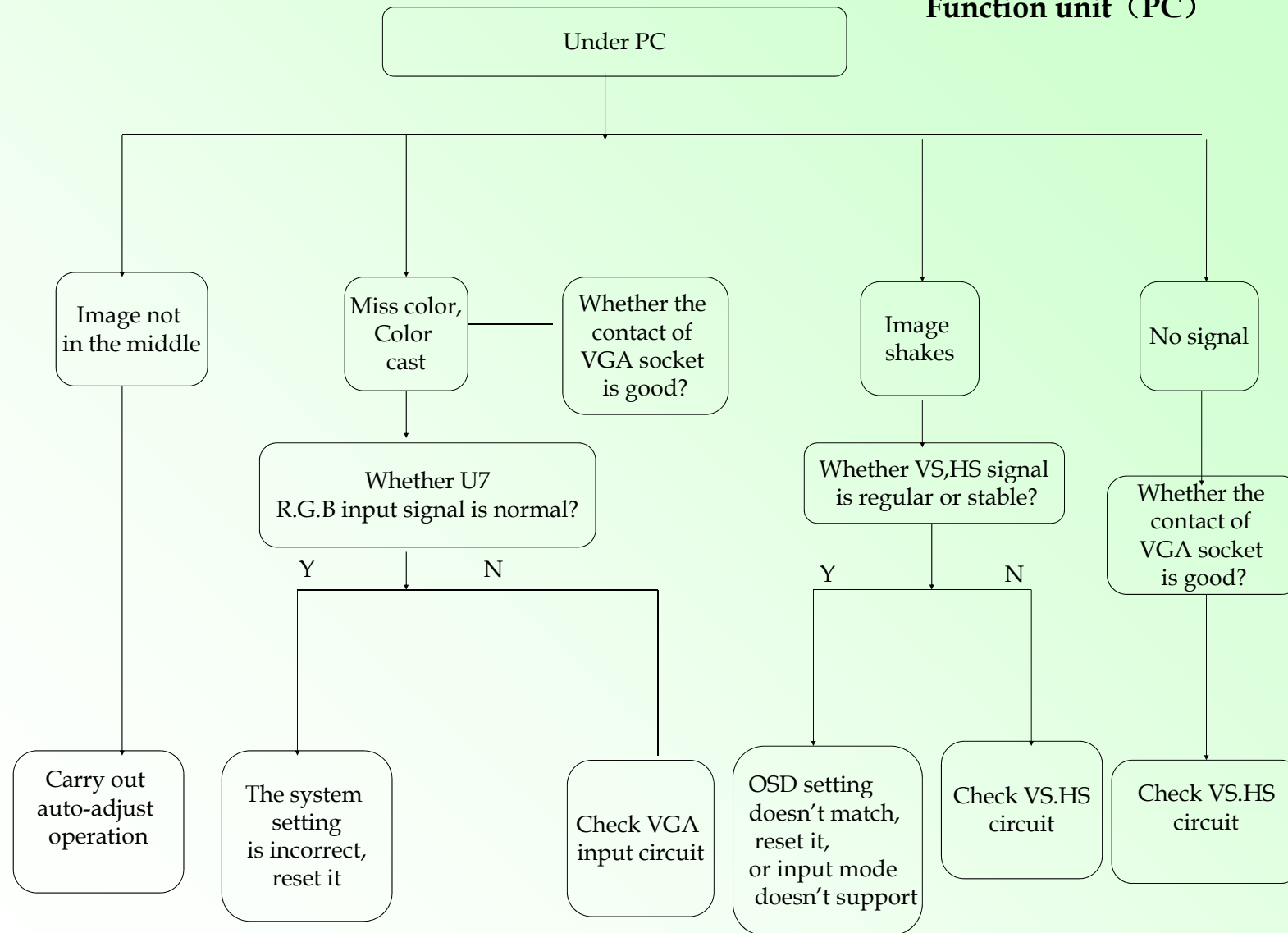
Picture 5

Function unit (ATV/DTV no sound)



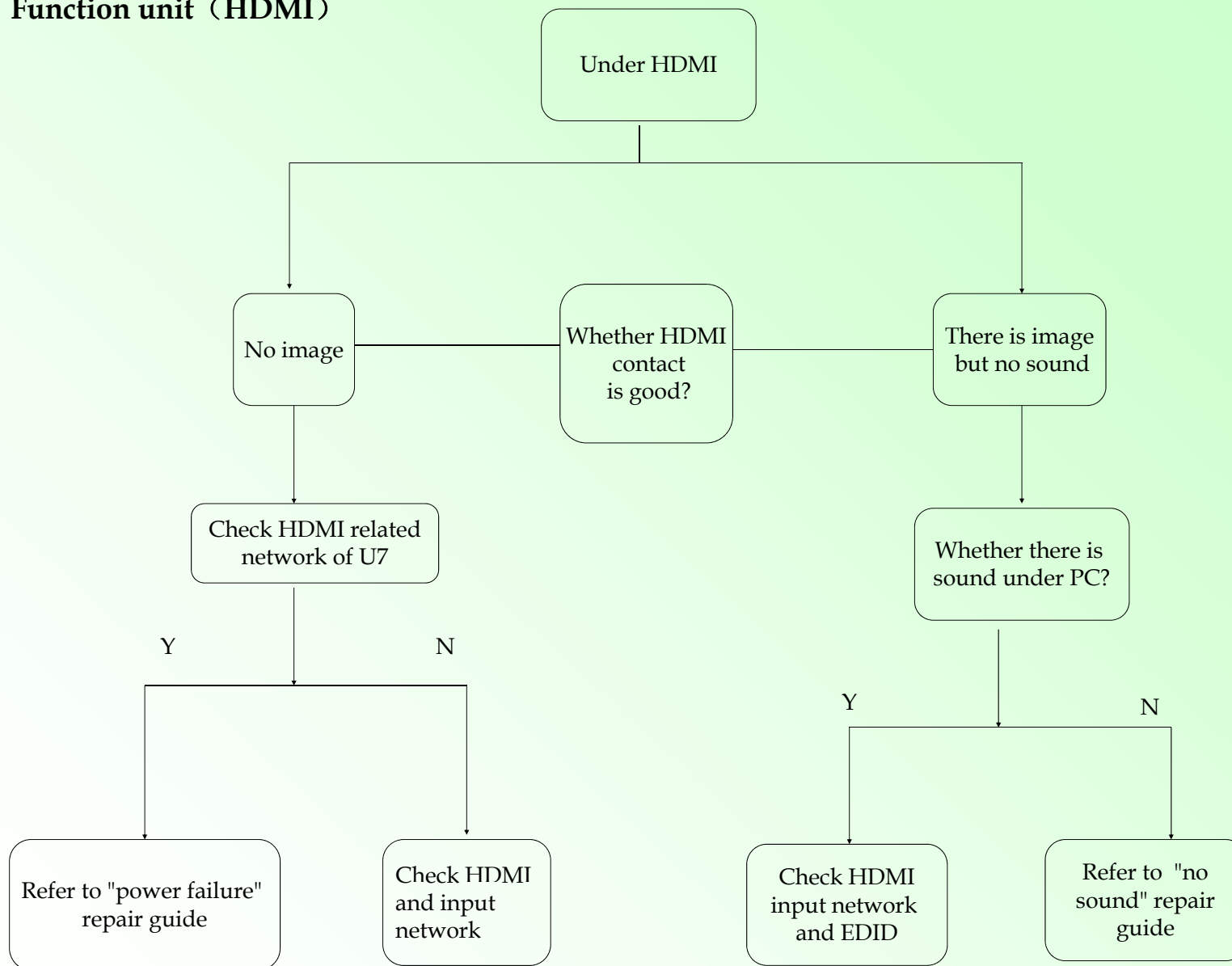
Picture 6

Function unit (PC)



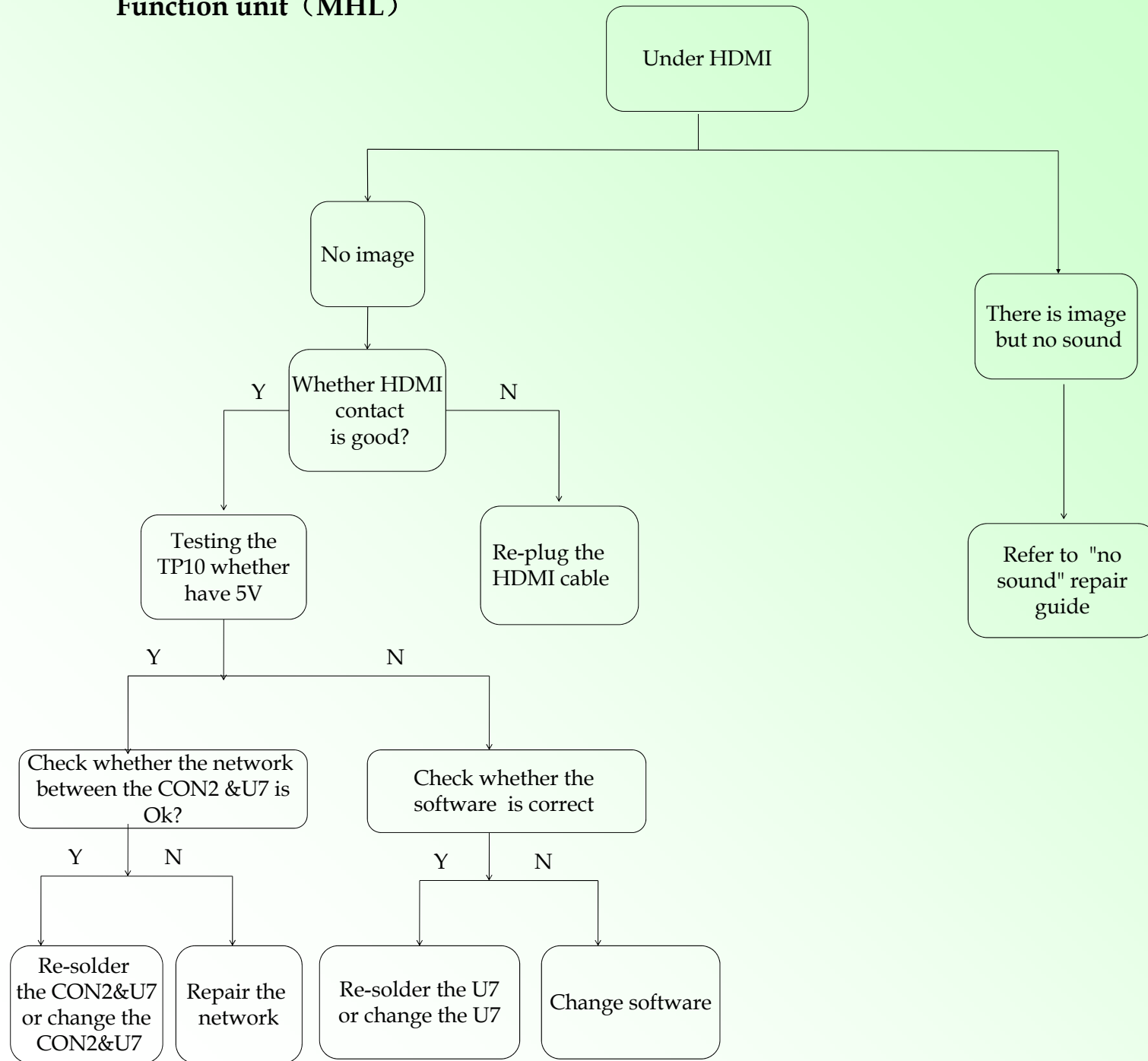
Picture 7

Function unit (HDMI)



Picture 8

Function unit (MHL)





MODEL NO: CV512H_B42_20_E8
M/O: 10004127
C/N: 890_JRS-512HB42-39H
S/N: SC720281512DA0974 49V350MA

Модуль электронный
E-01-32R05 50T
ГУЦИ.468119.189

CV512H-B42

HOT

COLD

CDV