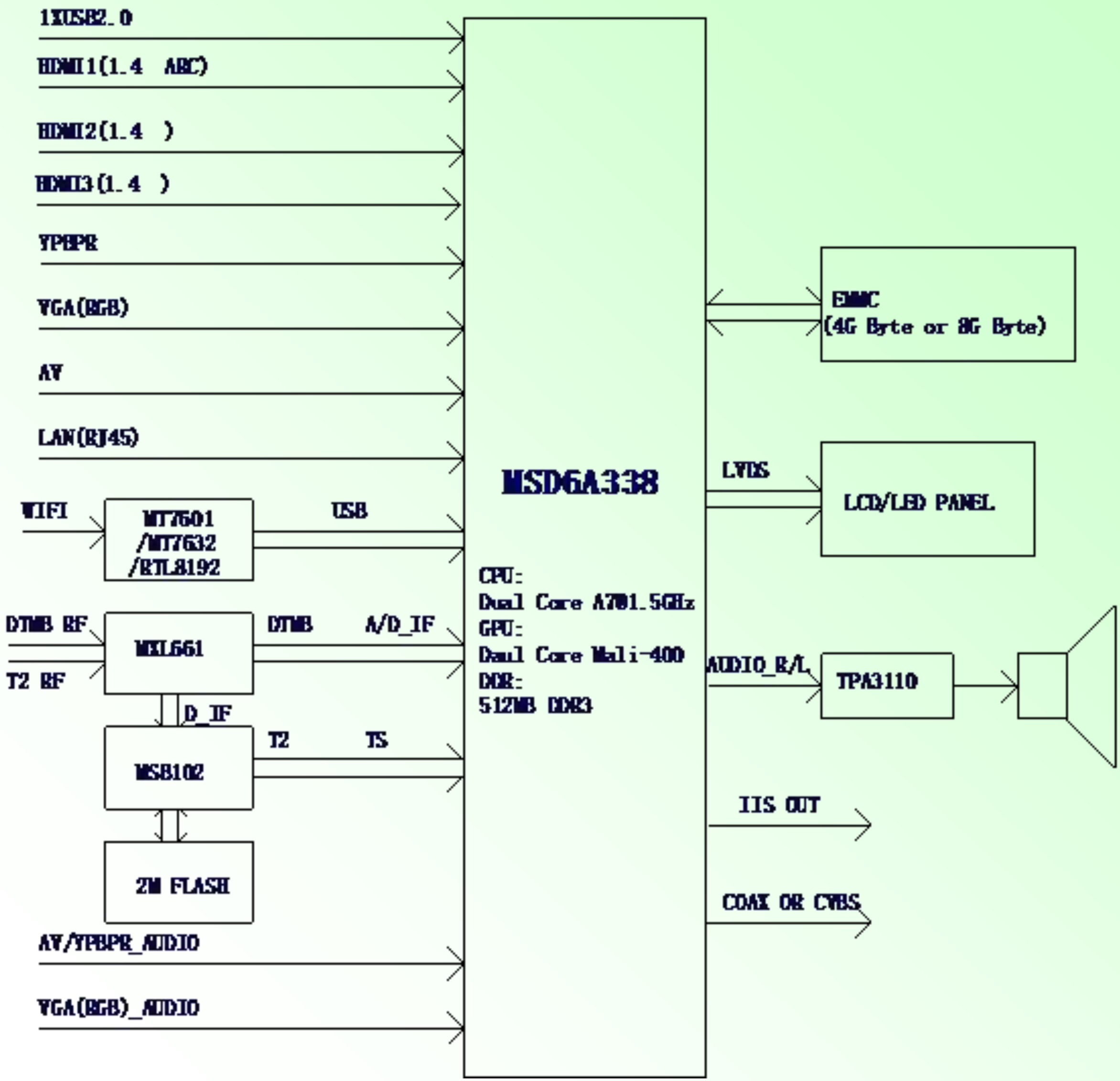
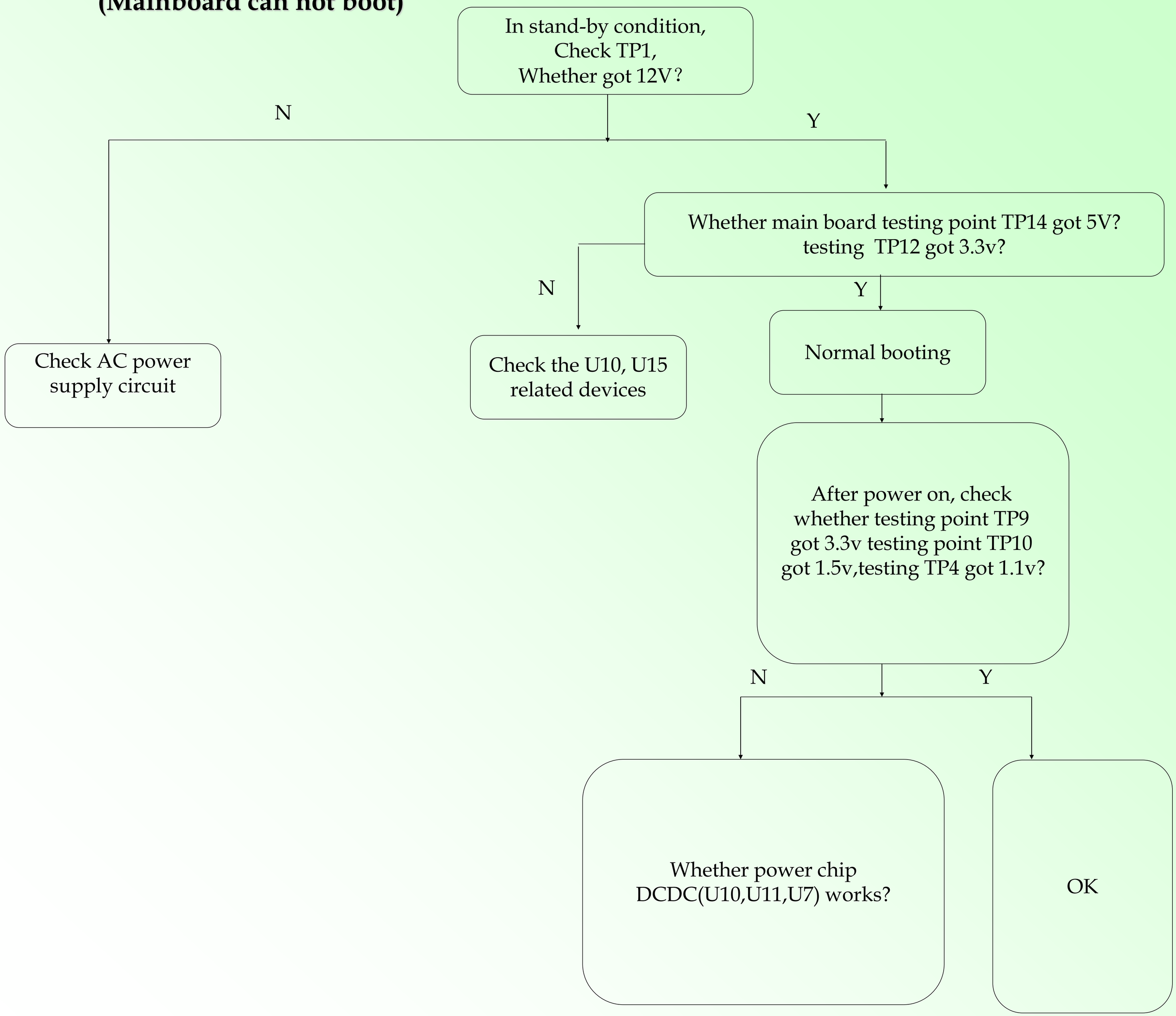
CV338H-T42
Common problems solution

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

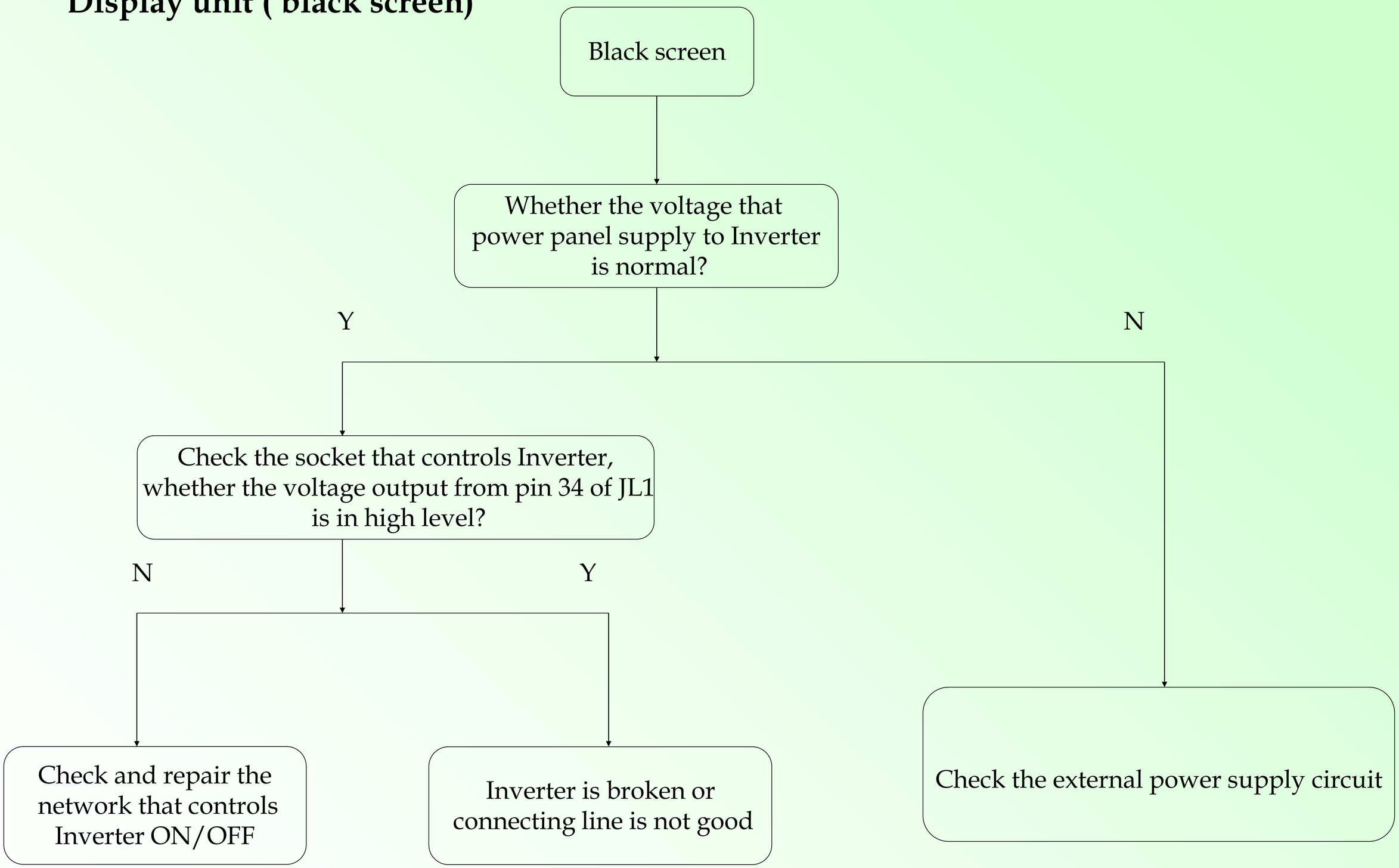

1XUSB2.0
HDMI1(1.4 ARC)
HDMI2(1.4)
HDMI3(1.4)
YPBPR
VGA(RGB)
AV
LAN(RJ45)
WIFI
MT7601
/MT7632
/RTL8192
USB
DTMB RF
T2 RF
MXL661
DTMB
A/D_IF
D_IF
MSB102
T2
TS
2M FLASH
AV/YPBPR_AUDIO
VGA(RGB)_AUDIO
MSD6A338
CPU:
Dual Core A7@1.5GHz
GPU:
Dual Core Mali-400
DDR:
512MB DDR3
EMMC
(4G Byte or 8G Byte)
LVDS
LCD/LED PANEL
AUDIO_R/L
TPA3110
IIS OUT
COAX OR CVBS

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



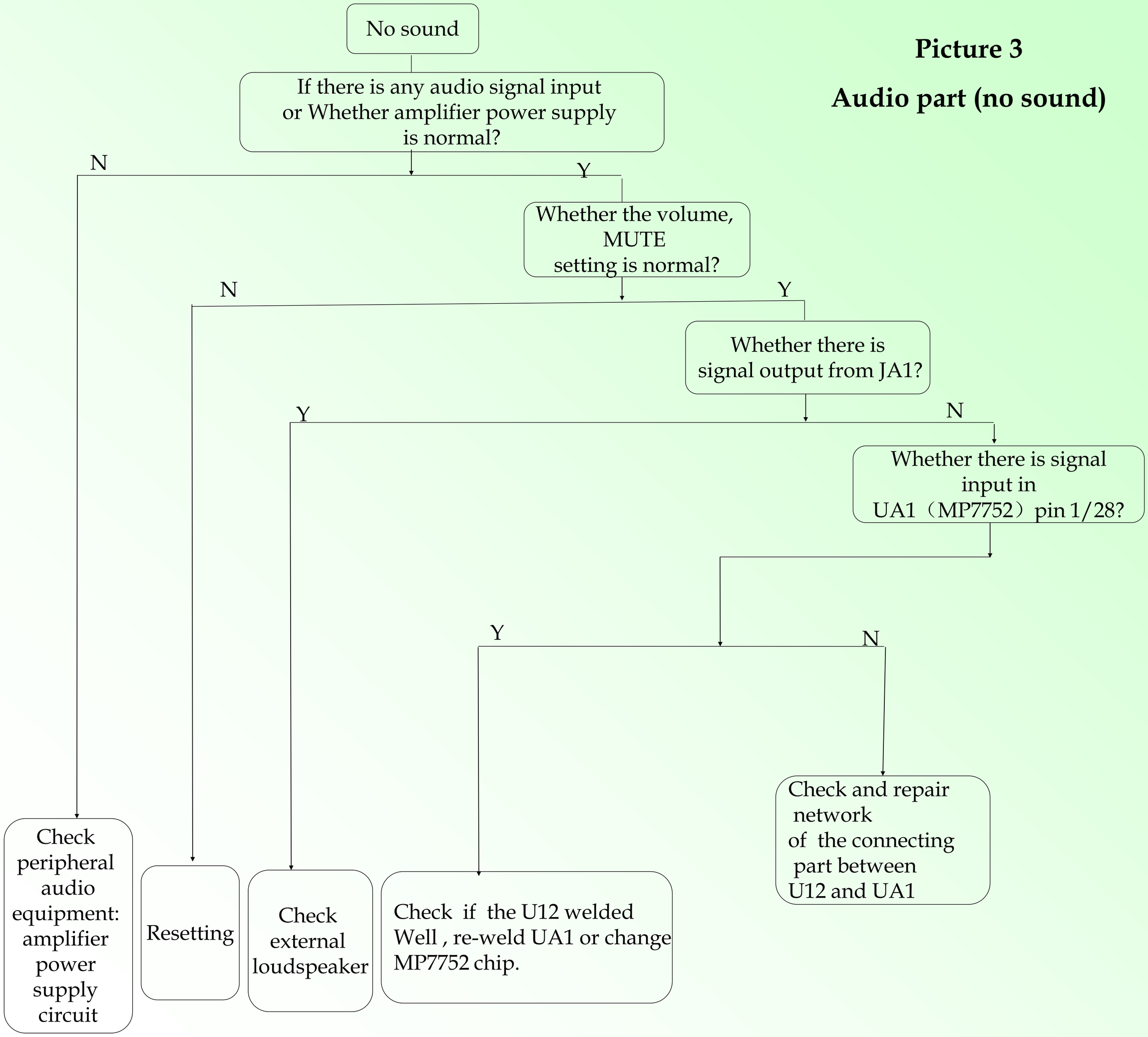
Picture 2

Display unit (black screen)

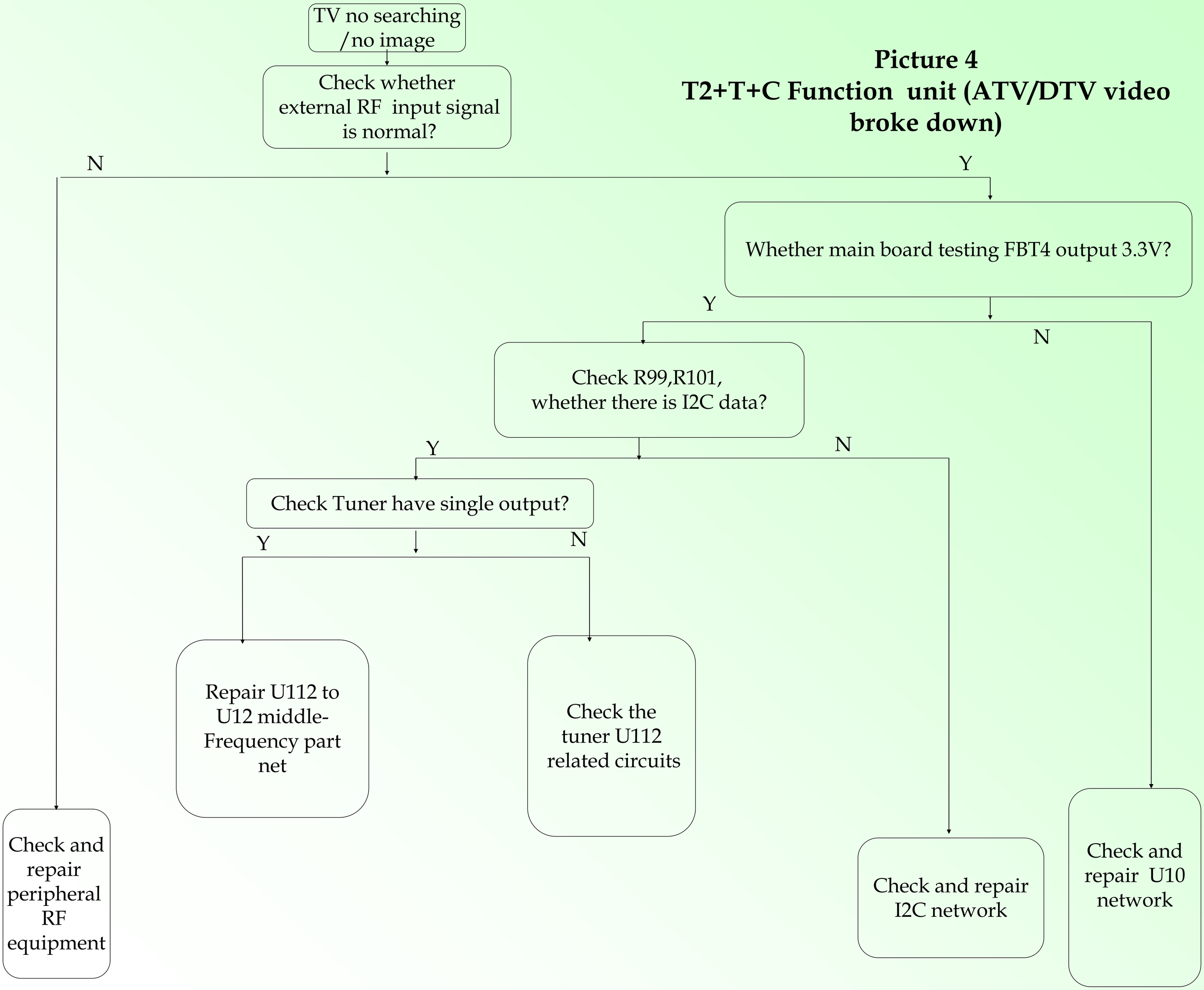


Picture 3

Audio part (no sound)

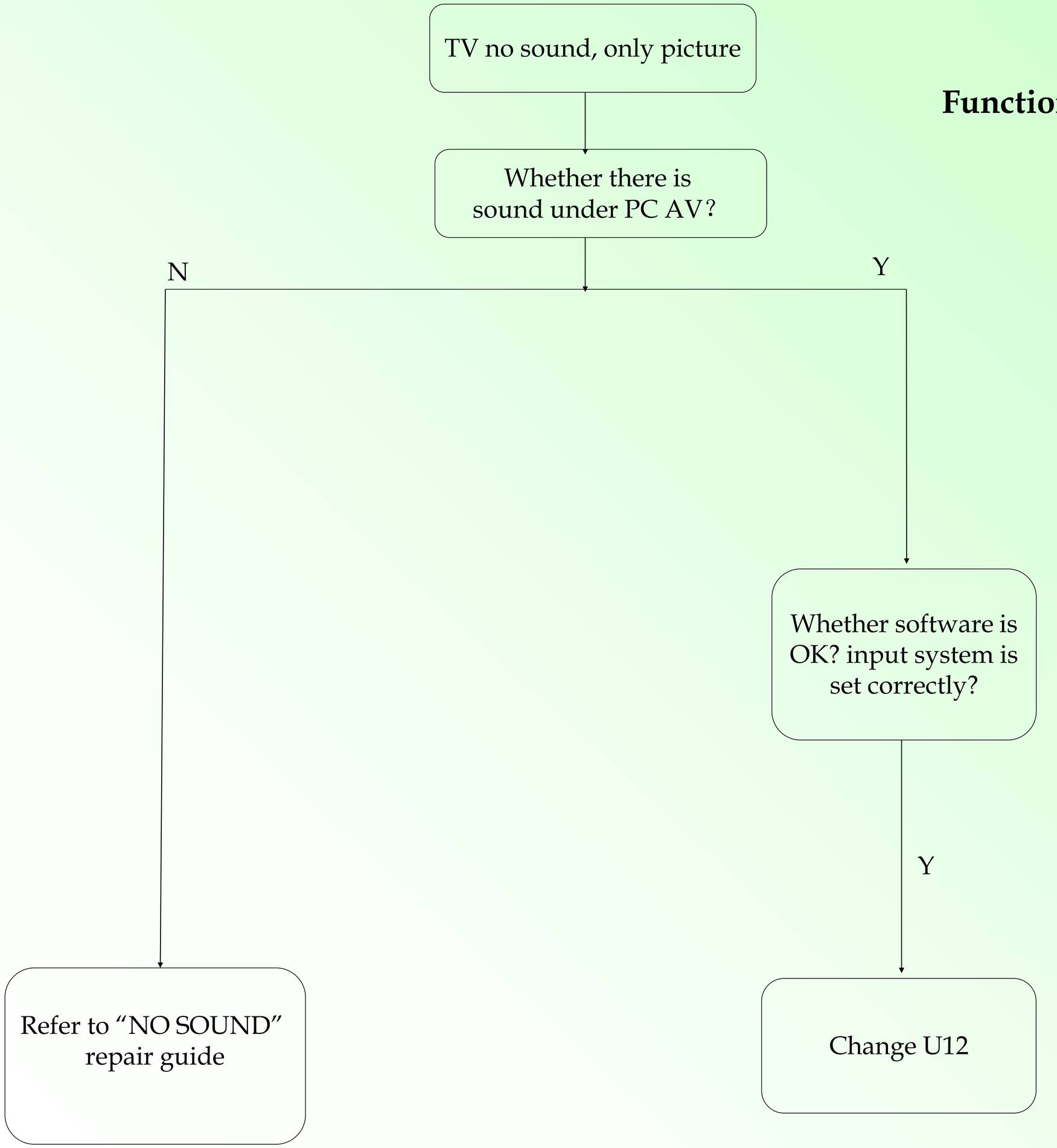


Picture 4
T2+T+C Function unit (ATV/DTV video broke down)



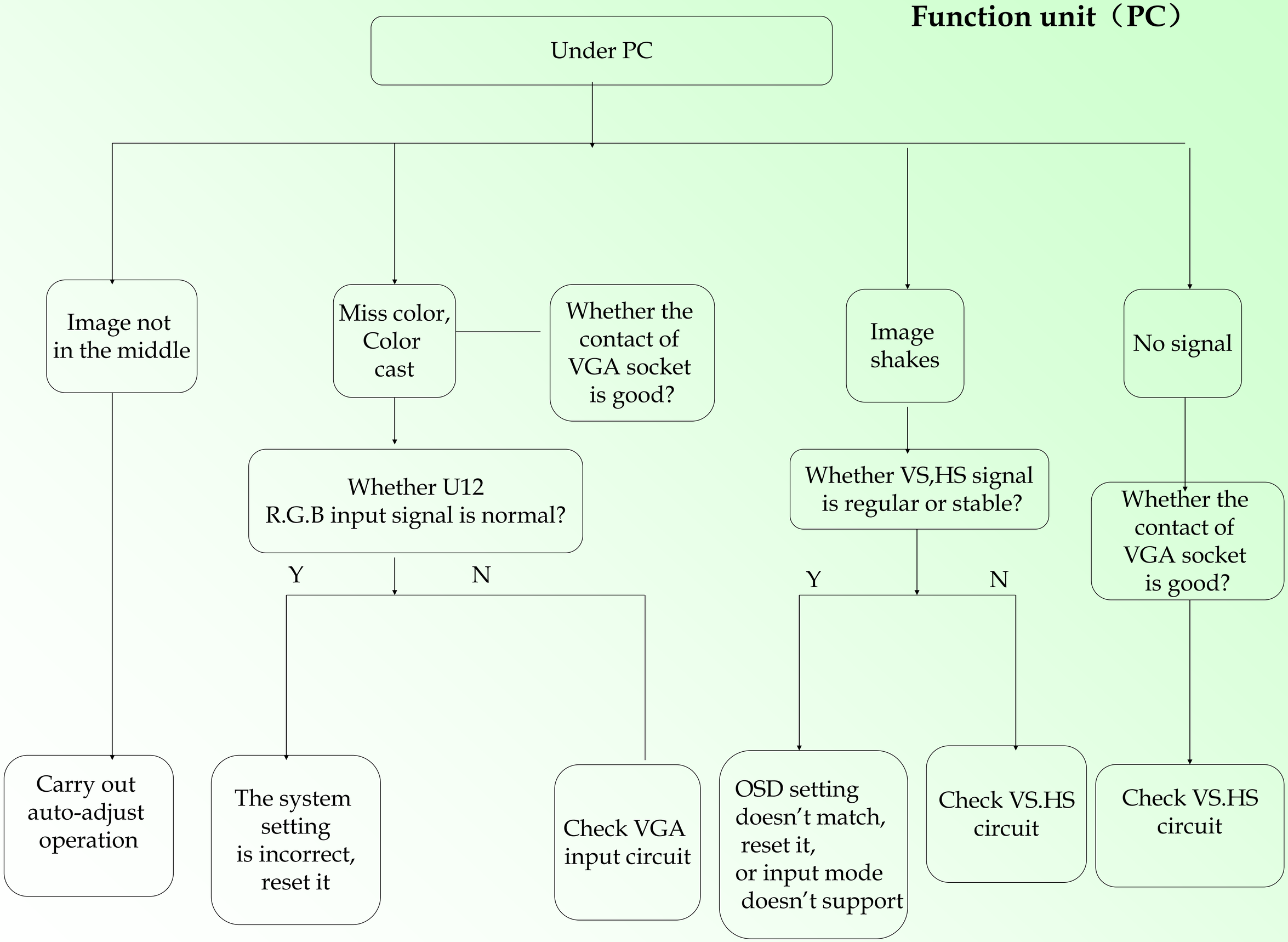
Picture 5

Function unit (ATV/DTV no sound)



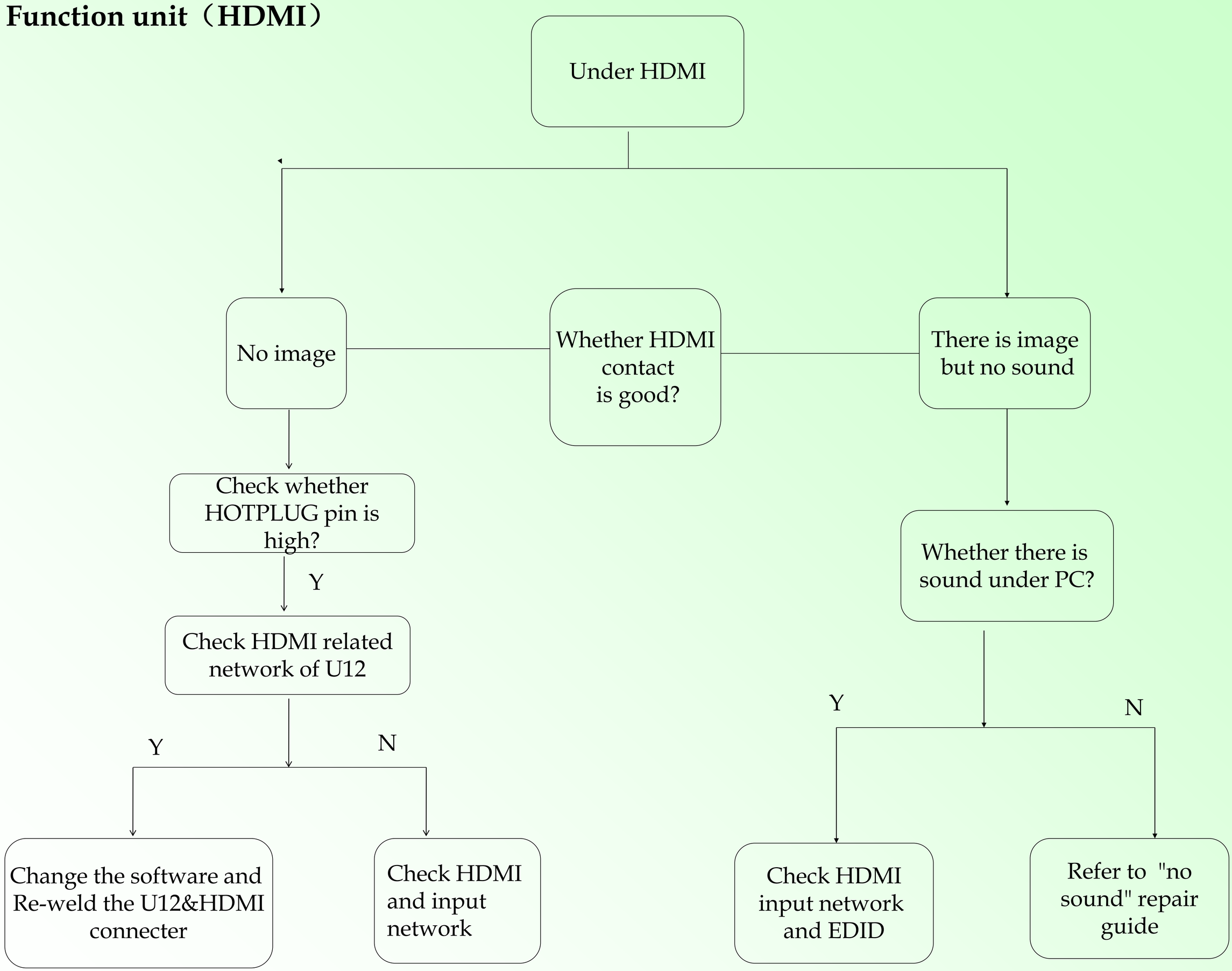
Picture 6

Function unit（PC）

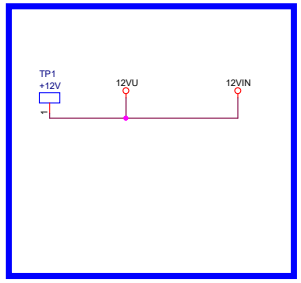


Picture 7

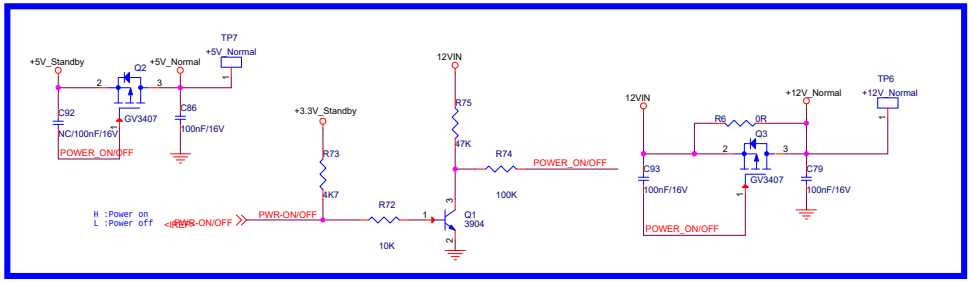
Function unit（HDMI）



POWER IN

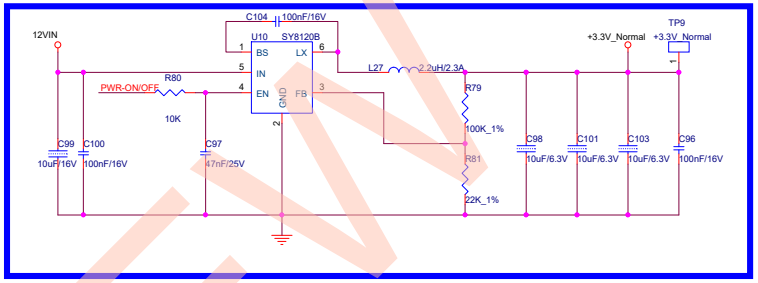


5V Normal Power

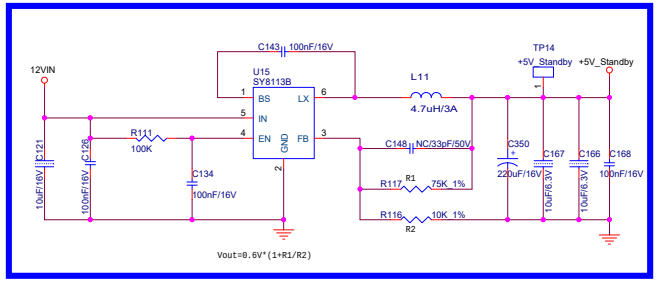


12V Normal Power

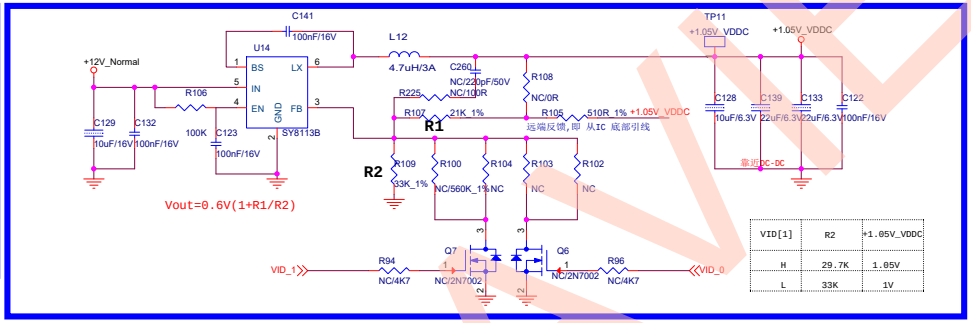
3.3V Normal Power



5V Standby Power

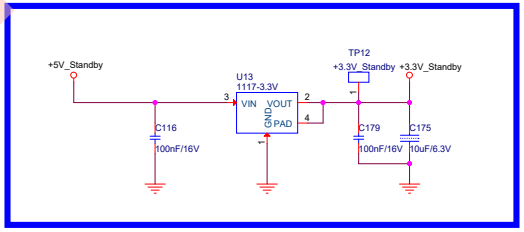


VDDC Power

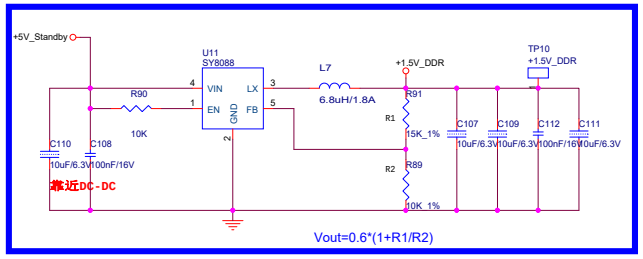


VID[1]	R2	+1.05V_VDDC
H	29.7K	1.05V
L	33K	1V

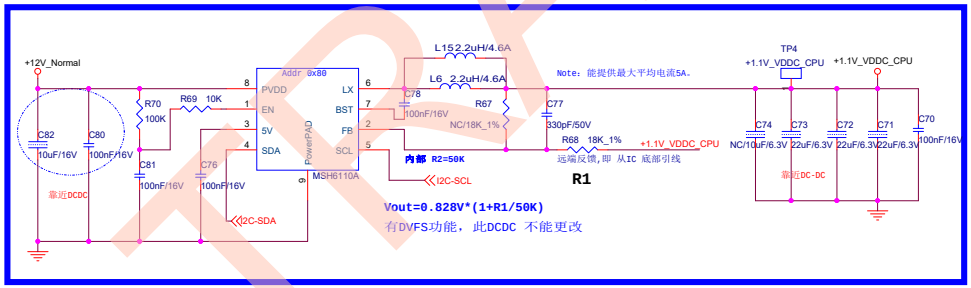
3.3V Standby Power

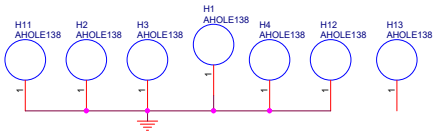


1.5V Normal Power for DDR3



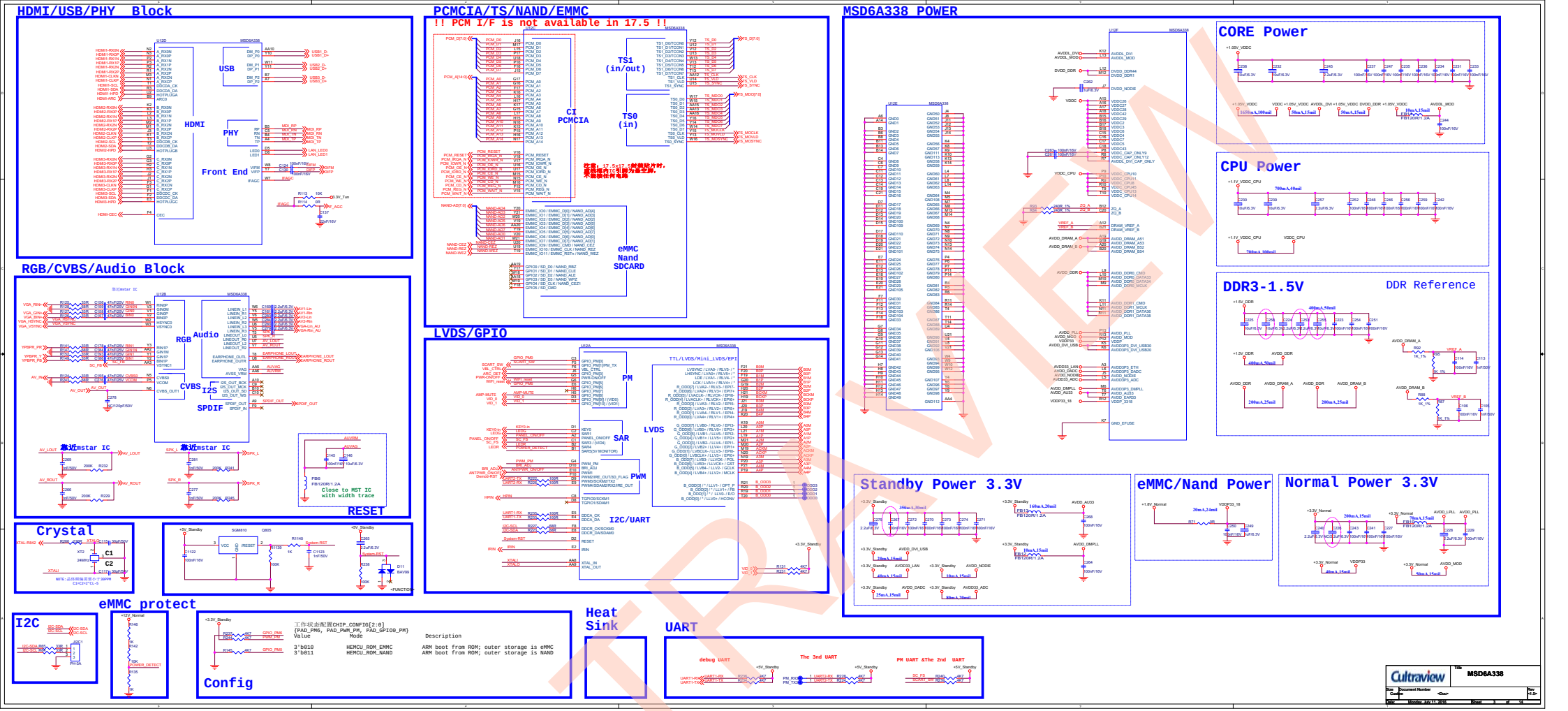
VDDC_CPU Power



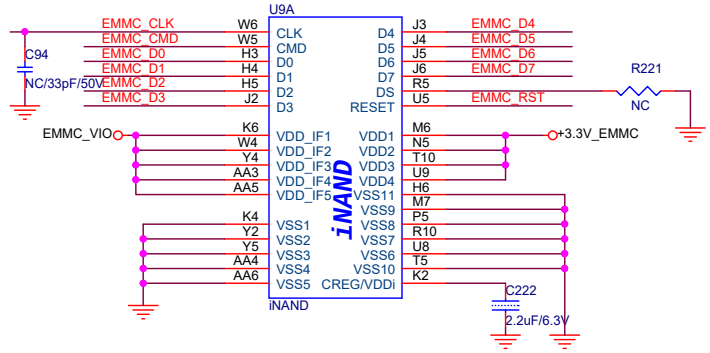


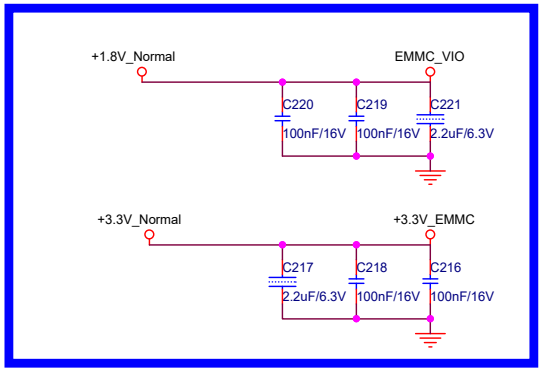
Cultraview	Title: DC POWER	
Size: Custom	Document Number: <Doc>	Rev: <1.5>
Date: Monday, July 11, 2016	Sheet 2 of 14	

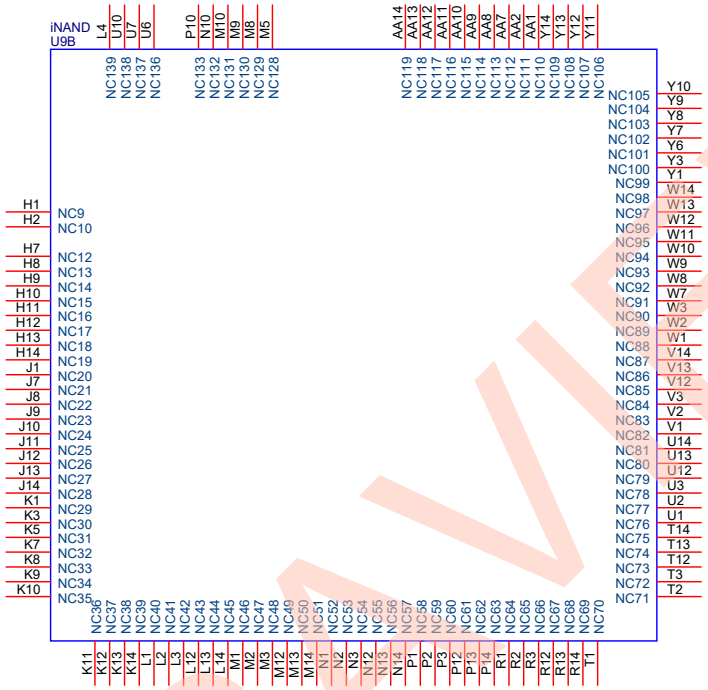
CULTRAVIEW


HDMI/USB/PHY Block
PCMCIA/TS/NAND/EMMC
!! PCM I/F is not available in 17.5 !!
MSD6A338 POWER
CORE Power
CPU Power
DDR3-1.5V
DDR Reference
RGB/CVBS/Audio Block
LVDS/GPIO
Standby Power 3.3V
eMMC/Nand Power
Normal Power 3.3V
Crystal
RESET
eMMC protect
I2C
Config
Heat Sink
UART
Cultraview
MSD6A338
CULTRAVIEW

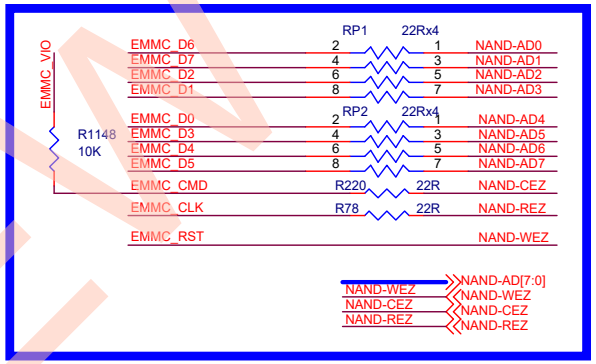
eMMC







NET



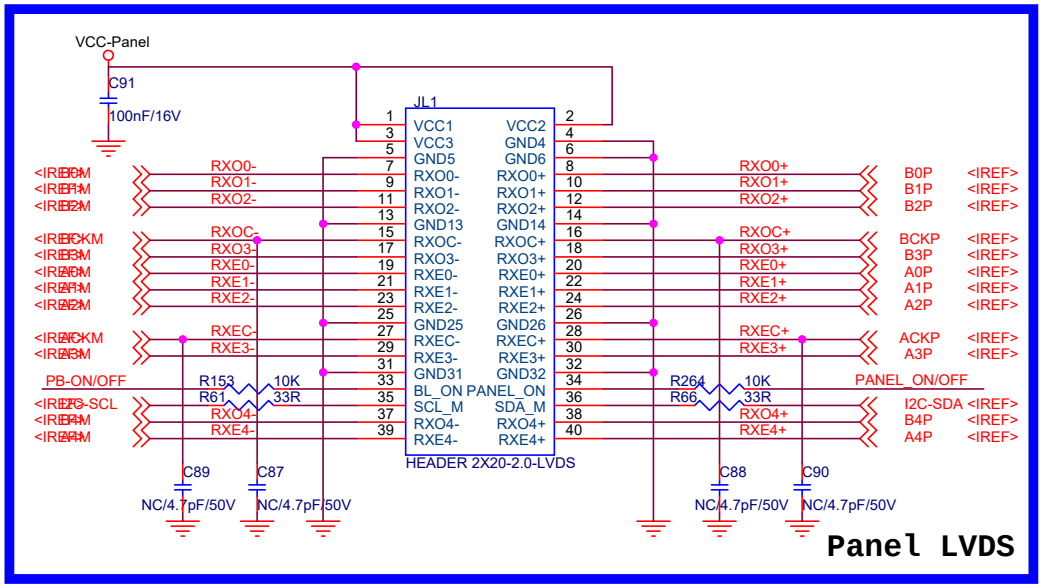
Cultraview

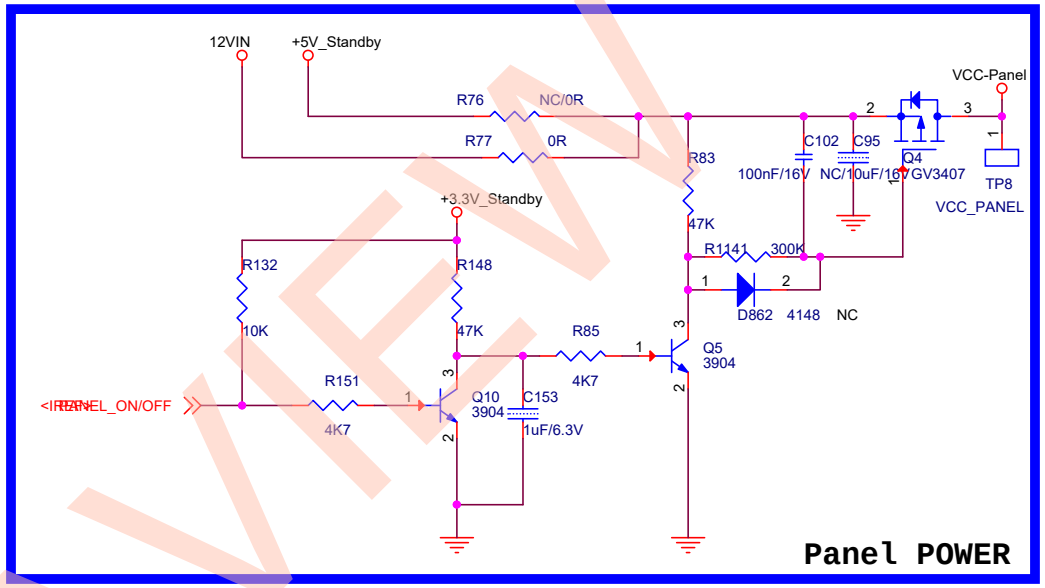
Title: EMMC

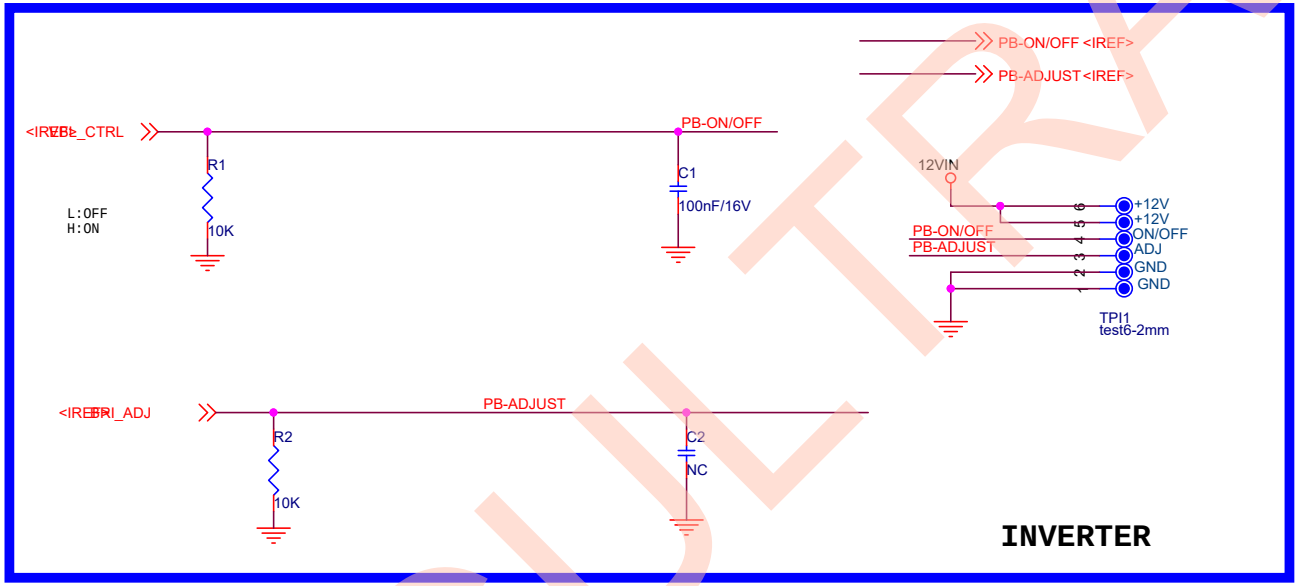
Size	Document Number	Rev
Custom	<Doc>	<1.5>

Date: Monday, July 11, 2016 Sheet 4 of 14

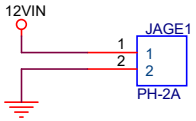
CULTRAVIEW







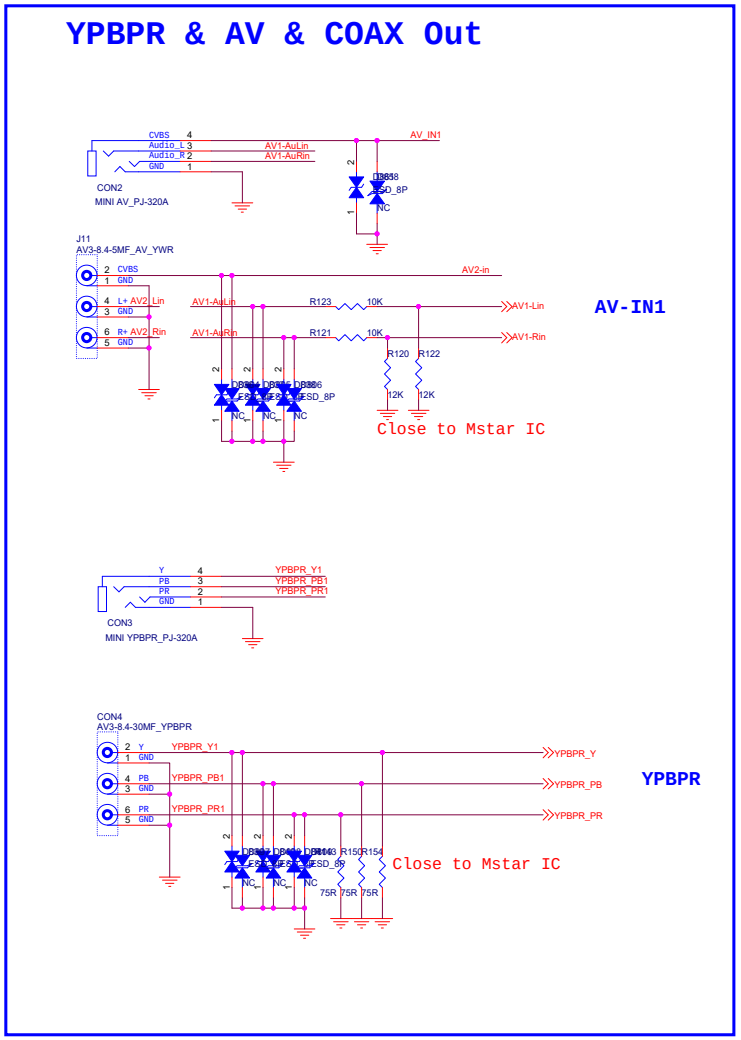
预留一个两PIN的座子给工厂老化用



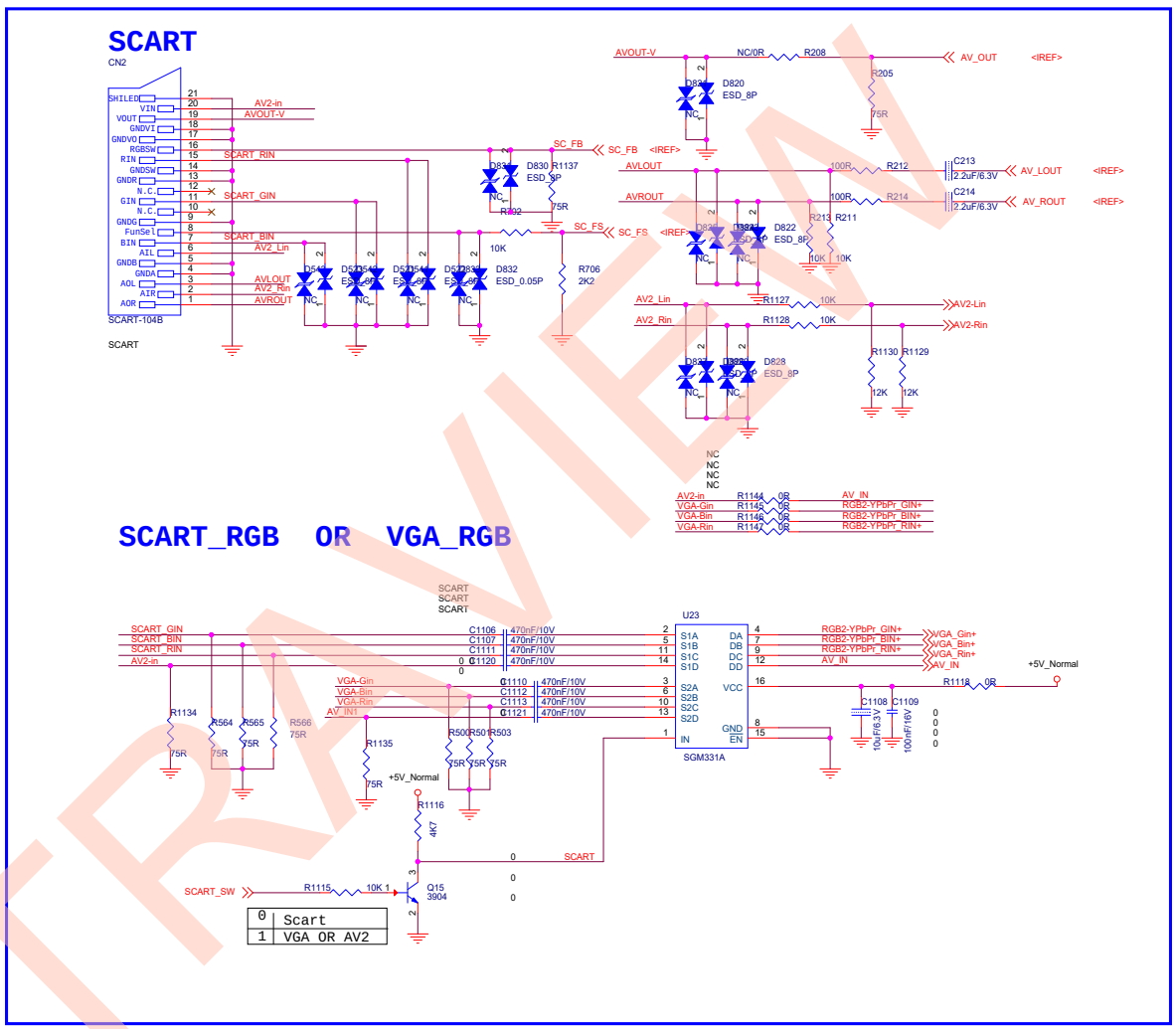
Cultraview	Title PANEL	
Size Custom	Document Number <Doc>	Rev <1.5>
Date: Monday, July 11, 2016	Sheet 5 of 14	

CULTRAVIEW

YPBPR & AV & COAX Out

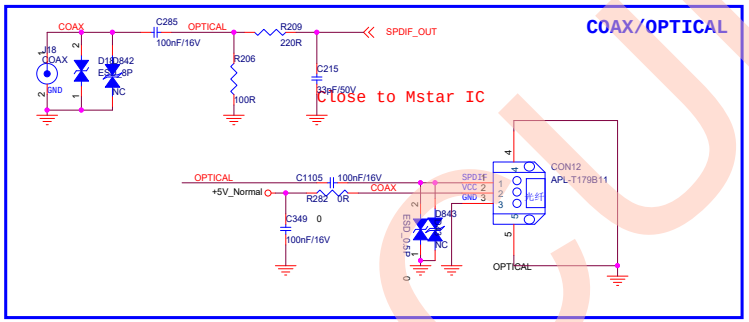


SCART

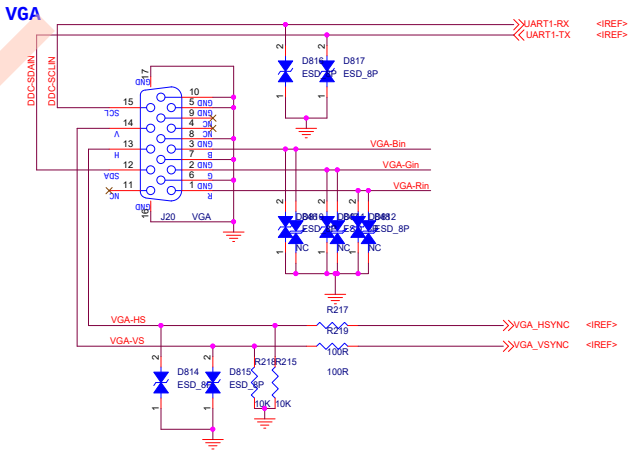


SCART_RGB OR VGA_RGB

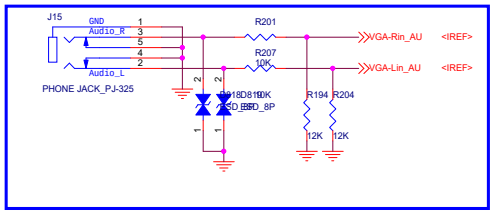
COAX/OPTICAL



VGA



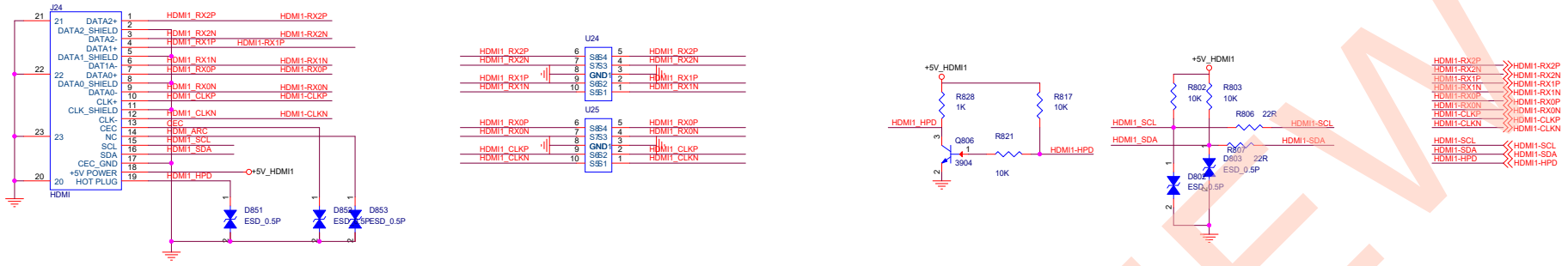
PC AUDIO



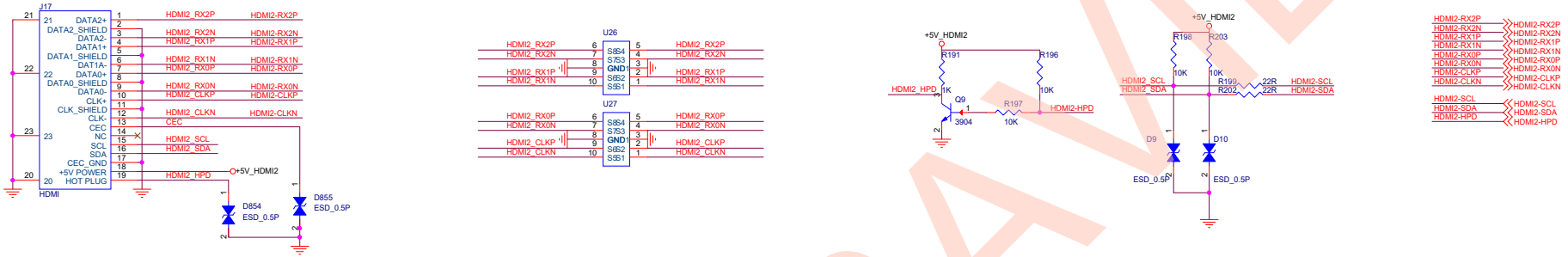
Cultraview	Title: Video/VGA/COAX	
Size: C	Document Number: <Doc>	Rev: <1.5>
Date: Monday, July 11, 2016	Sheet 6 of 14	

CULTRAVIEW

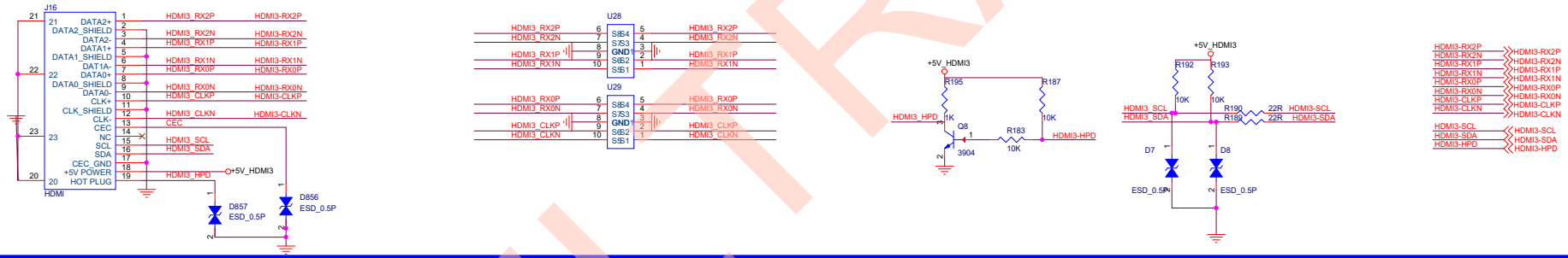
HDMI1(ARC)



HDMI2



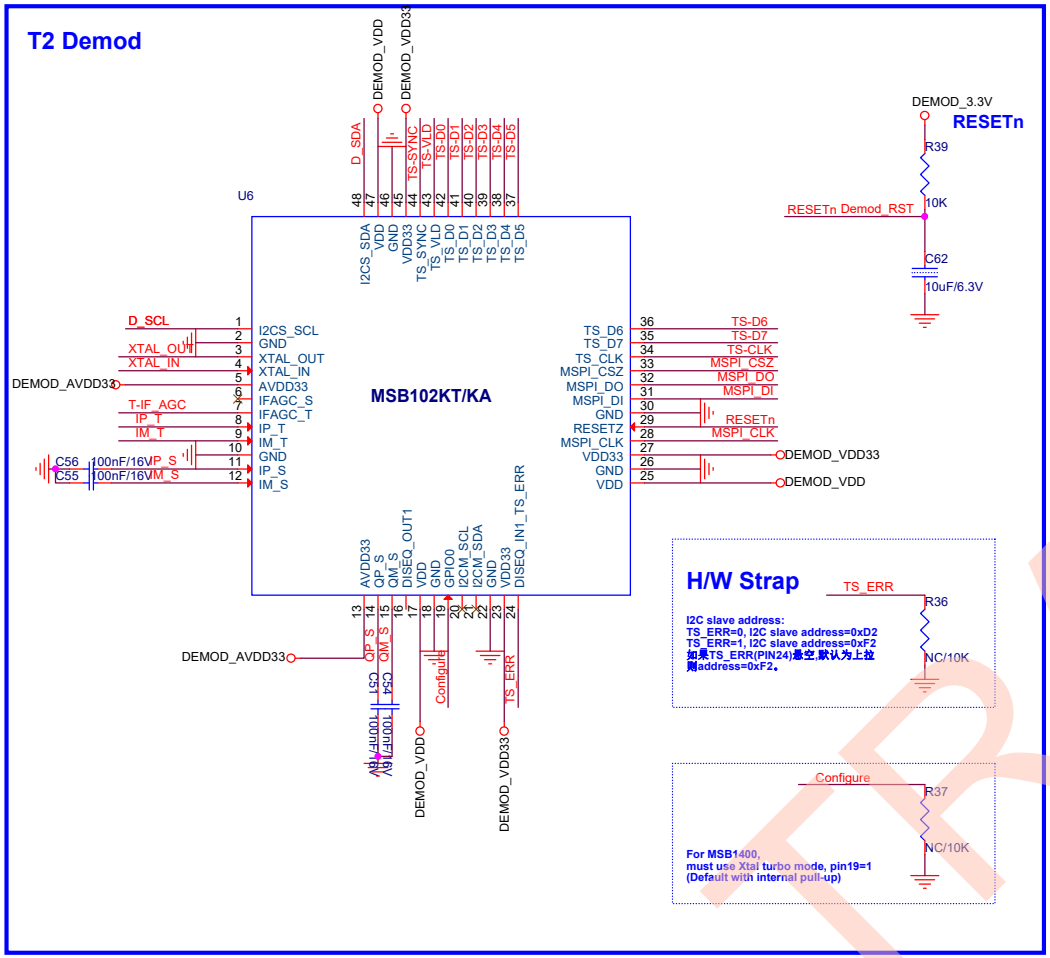
HDMI3

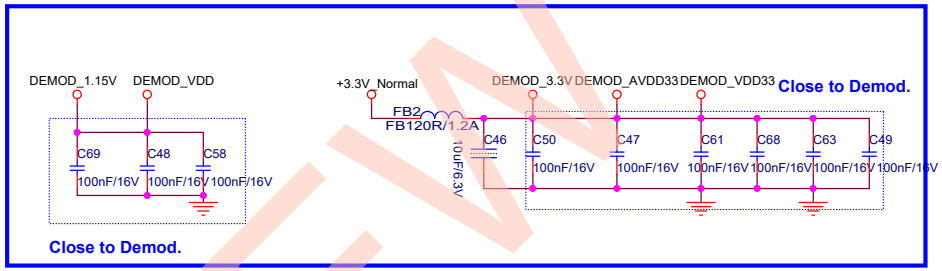


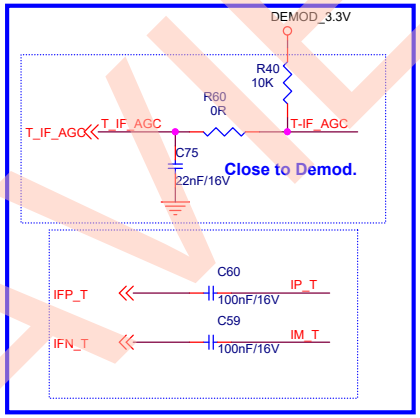
CEC & ARC

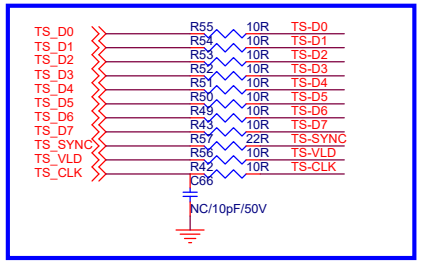
CULTRAVIEW

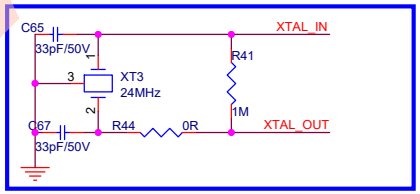
Cultraview	Title: HDMI	
Size: C	Document Number: <Doc>	Rev: <1.5>
Date: Monday, July 11, 2016	Sheet 7 of 14	

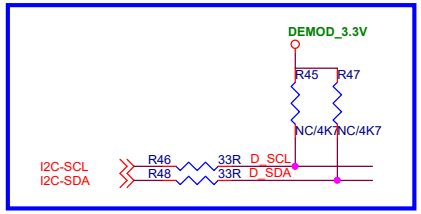


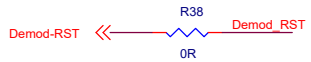


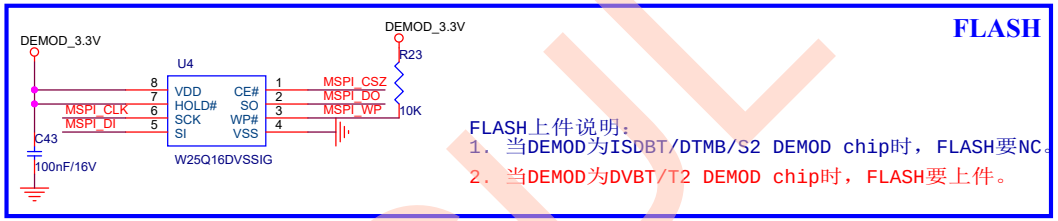


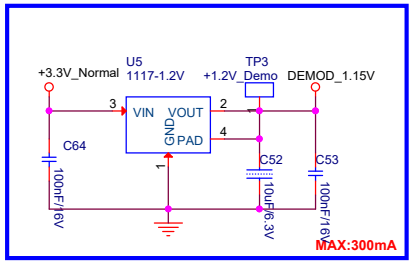












Cultraview

Title: T2 Demod MSB102KT

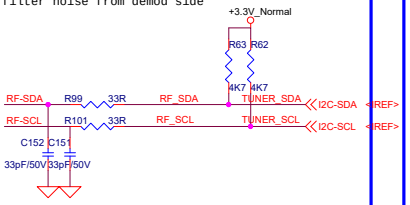
Size	Document Number	Rev
Custom	<Doc>	<1.5>

Date: Monday, July 11, 2016 Sheet 8 of 14

CULTRAVIEW

I2C Interface Filter

- filter noise from demod side

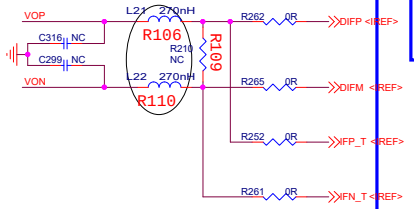


IFAGC Circuit

- R103 and R106 are related to Demod side's IFAGC design. Sometime need to fine tune for different Demod.
- Following IFAGC TBD table is common suggestion.

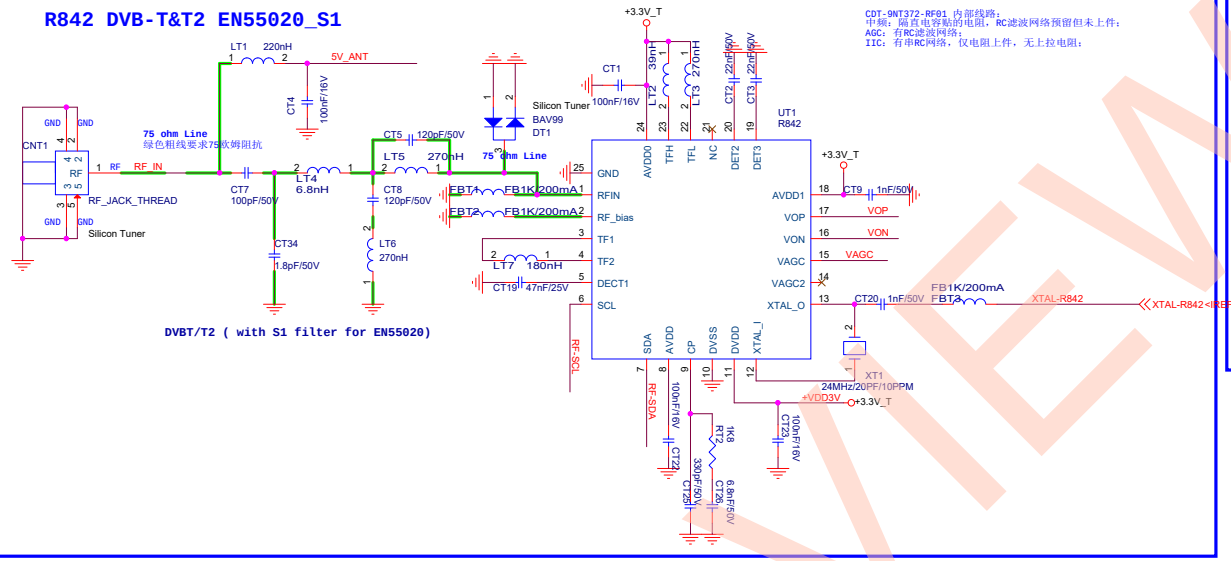
IFAGC TBD table	
Open drain	R103=100R
Push Pull	R103=10KR

IF Interface Filter

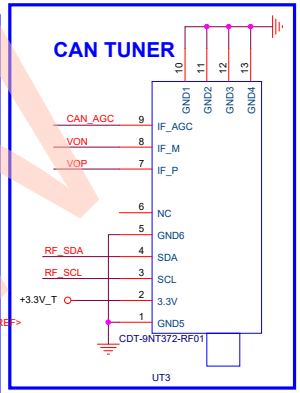


- C124, C130 are optional for AC coupling, short it if Demod side is already AC coupled.
- recommend to reserve R106, R110, R109 to filter noise from demod side.

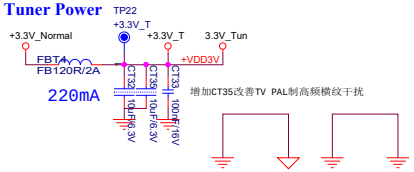
R842 DVB-T&T2 EN55020_S1



CAN TUNER

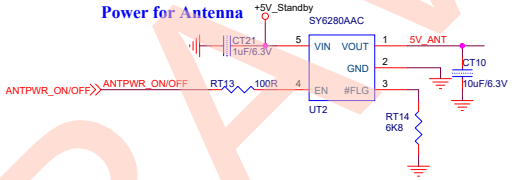


Tuner Power



(1) +VDD3V input voltage tolerance must be under +-5%
(2) +VDD3V input ripple must be under 30mVpp
(3) Using LDO for +VDD3V is recommended

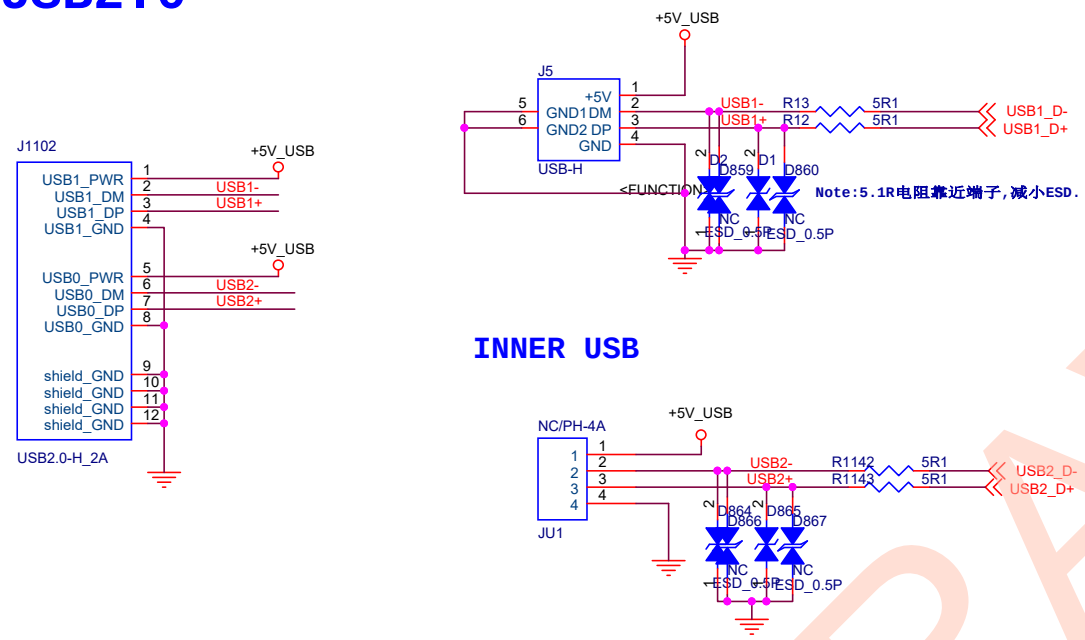
Power for Antenna



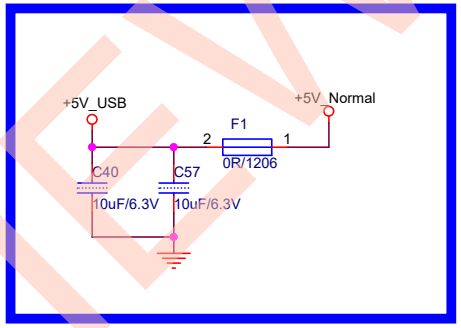
CULTRAVIEW

Cultraview	Title: TUNER	
Size: Custom	Document Number: <Doc>	Rev: <1.5>
Date: Monday, July 11, 2016	Sheet 9 of 14	

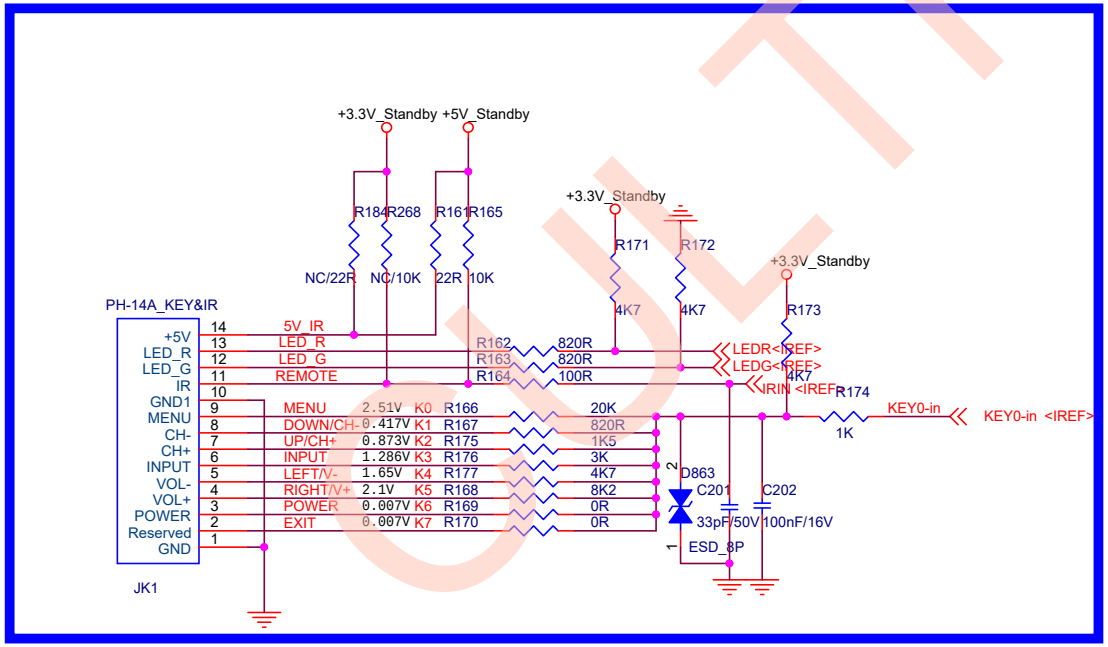
USB2.0



USB2.0 Power



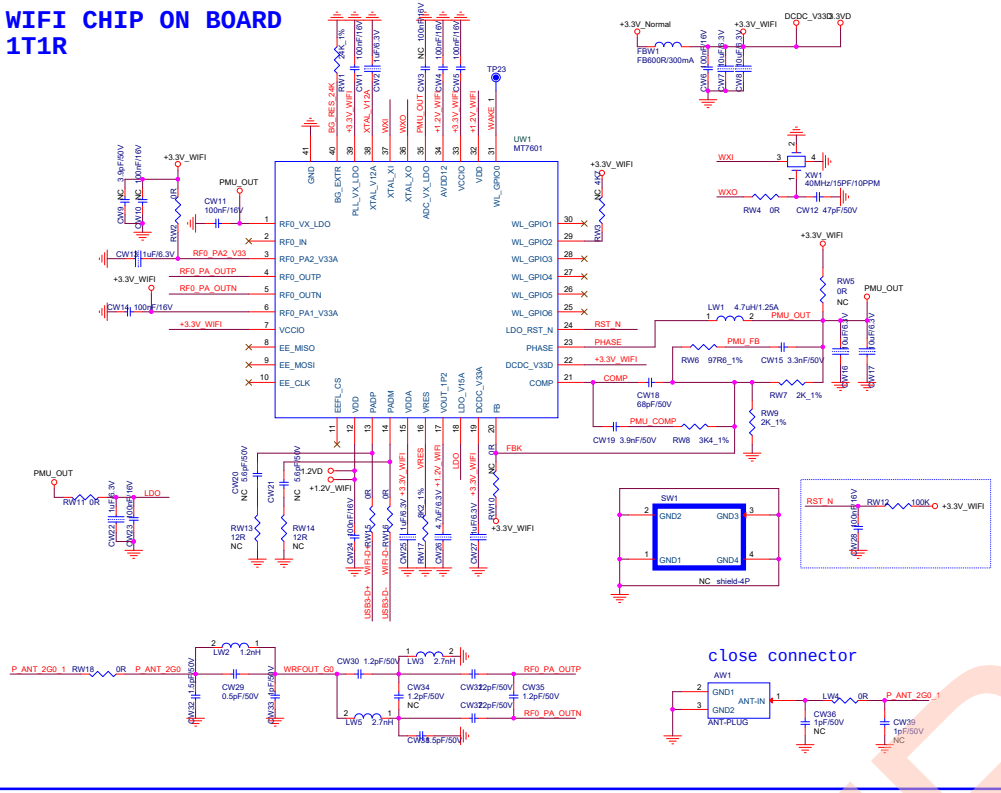
KEY/IR/LED



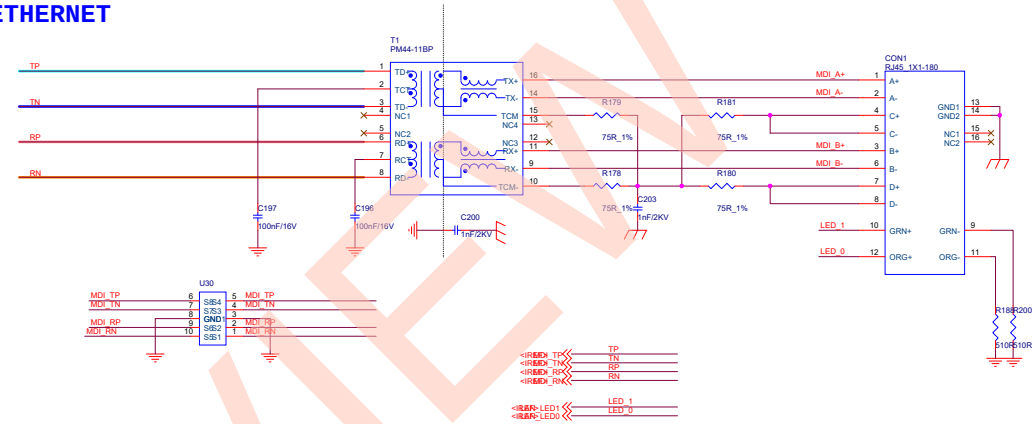
Cultraview	Title USB/KEY	
Size Custom	Document Number <Doc>	Rev <1.5>
Date: Monday, July 11, 2016	Sheet 10 of 14	

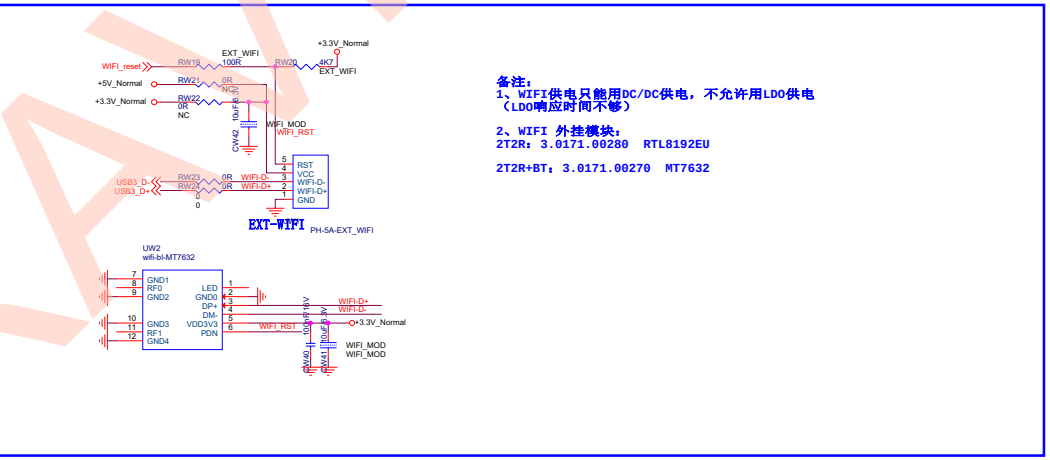
CULTRAVIEW

WIFI CHIP ON BOARD 1T1R



ETHERNET





备注:
1、WIFI供电只能用DC/DC供电，不允许用LDO供电
（LDO响应时间不够）

2、WIFI 外挂模块:
2T2R: 3.0171.00280 RTL8192EU

2T2R+BT: 3.0171.00270 MT7632

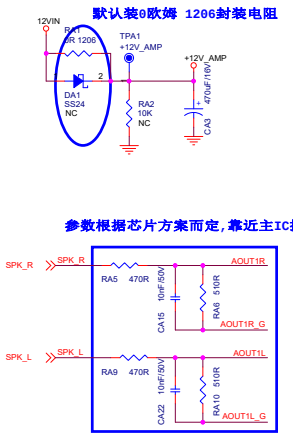
Cultraview	Title	ETHERNET PHY/WIFI
Size: Custom	Document Number: <Doc>	Rev: <1.5>
Date: Monday, July 11, 2016	Sheet 11 of 14	

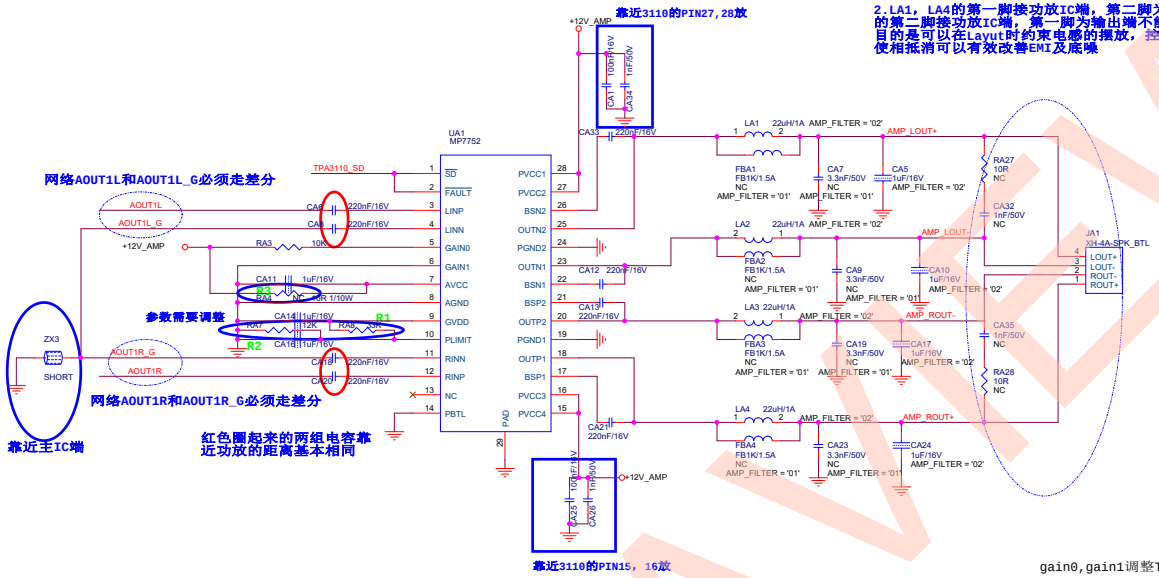
CULTRAVIEW

三合一电源功放固定用12V供电2x8W电路

注意事项：
1.这几颗物料带有逻辑关系，在Module项里，要求导出BOM时一起导出该属性以便好确认BOM中的相关性定义是否正确

2.LA1，LA4的第一脚接功放IC端，第二脚为输出端。LA2，LA3的第二脚接功放IC端，第一脚为输出端不能更改。这样做的目的是可以在Layut时约束电感的摆放，控制绕线电感的磁场使相抵消可以有效改善EMI及底噪





gain0,gain1调整TPS3110的增益，逻辑图如下：

gain1	gain0	AMPLIFIER GAIN (dB)	INPUT IMPEDANCE
0	0	20dB	60k
0	1	26dB	30k
1	0	32dB	15k
1	1	36dB	9k

输入阻抗越大抗干扰效果越好

替代料部分：

1、MP7752GF-Z(3.0102.84490)输入电压在5V---18V之间
   a.PVCC到PIN7之间串的10R电阻R3删除
   b.PLMIT的电压需要调整R1=33K,R2=12K
   c.电阻R3上面的10欧姆NC不装料

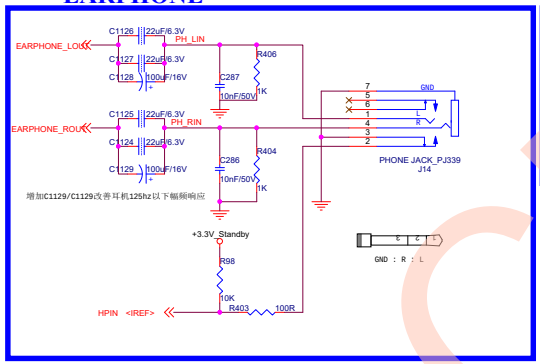
2、OB6220(3.0102.81480)输入电压在6V---20V之间
   a.PLMIT的电压需要调整R1=33K,R2=12K
   b.电阻R3上需要装10欧姆电阻，封装0603

3、TPA3110LD2(3.0102.61300)输入电压8V---26V之间
   a.PLMIT的电压需要调整R1=10K,R2=7.5K
   b.电阻R3上需要装10欧姆电阻，封装0603

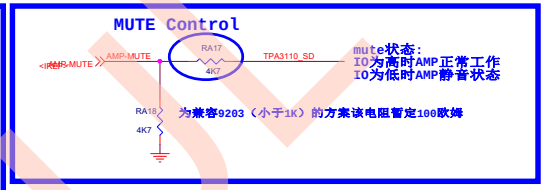
注意事项：

1、音频输入LAYOUT走线必须差分走线。地信号的差分线必须尽可能靠近主IC。
2、功放芯片的第7脚上的1uF电容的地脚必须尽快回到功放芯片第8脚。1uF电容地脚不需要与其他地线打孔连接。
3、功放的输入音频信号线上的隔直电容容易受到温度影响，所以放置位置需保持两组电容靠近功放的距离基本相同
4、功放左右声道电感尽量远离。 这2组电感必须保证距离在4.5mm以上，中间夹地线打孔。避免左右音频串音。且Layout时同一边两个电感绕线方式要相对
5、模拟信号尽量远离功放电感避免干扰，距离最少保持20mm以上
6、功放MUTE控制脚默认上电瞬间电平为低电平，控制电路的电平根据芯片不同，可修改。
7、固定26db放大倍数，可根据客户对功率限制做改动。
8、默认不装SK24，用0R替代。
9、现在对功放部分的电感要求兼容磁珠，电感封装使用WSA43-6R8M-RB，磁珠封装FB0805
10、三合一电源，功放只接12V供电。原来下电爆音电路可省
11、三合一电源一体板功放位置在左下角时注意电感距离PCB板边20mm以上。以避免AC线靠近功放电感引起传导超标。
12、当输出网络上使用磁珠的时候在SPEAKER_L+和AMP_LOUT-网络，SPEAKER_R+和AMP_ROUT-网络之间加RC电路改善EMI；具体追加CA32 CA33 RA27 RA28-----更新：20160223

EARPHONE



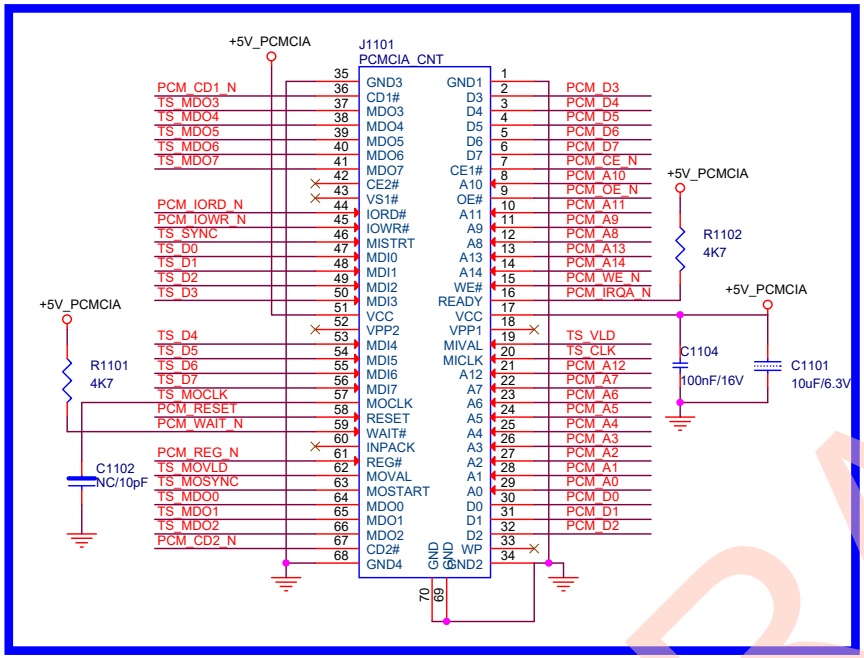
MUTE CONTROL



CULTRAVIEW

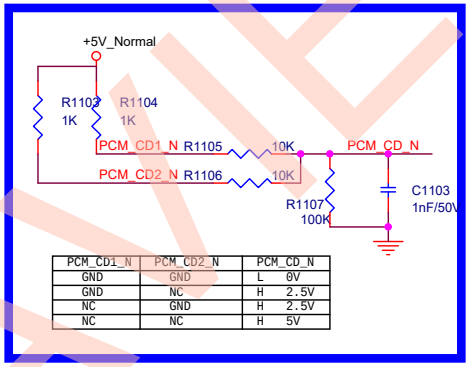
Cultraview	Title: AMP	
Size: Custom	Document Number: <Doc>	Rev: <1.5>
Date: Monday, July 11, 2016	Sheet 12 of 14	

PCMCIA



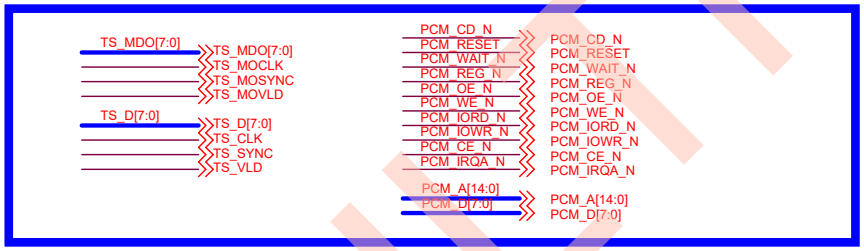
PCMCIA POWER

CARD DETECT



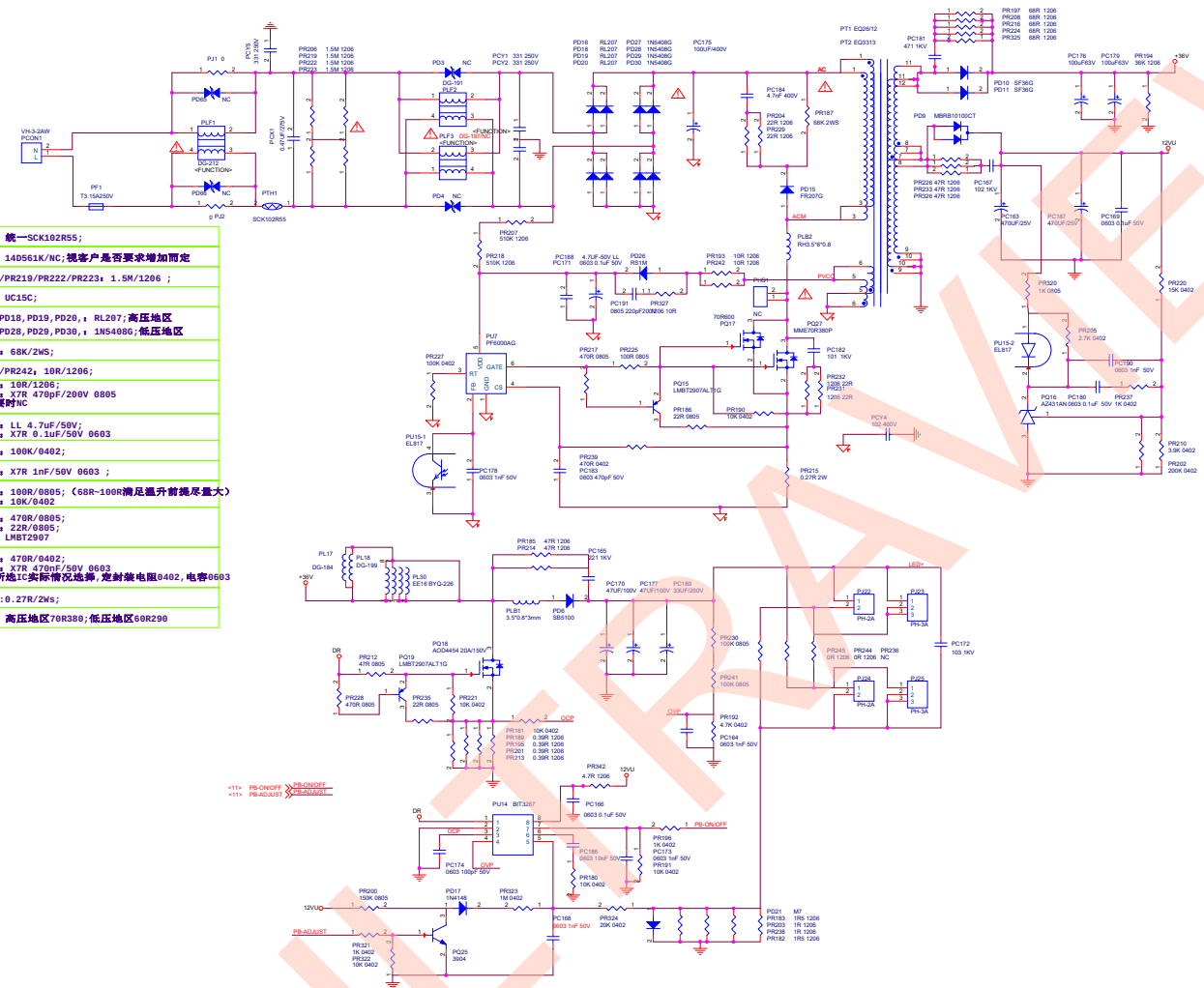
PCM_CD1_N	PCM_CD2_N	PCM_CD_N
GND	GND	L 0V
GND	NC	H 2.5V
NC	GND	H 2.5V
NC	NC	H 5V

NET



CULTRAVIEW

Cultraview	Title PCMCIA & CA	
Size B	Document Number <Doc>	Rev <1.5>
Date: Monday, July 11, 2016	Sheet 13 of 14	



PTH1：统一SCK102R55；
PVR1：14D561K/NC;视客户是否要求增加而定
PR206/PR219/PR222/PR223：1.5M/1206 ；
PLF4：UC15C；
PD16,PD18,PD19,PD20,：RL207;高压地区 PD27,PD28,PD29,PD30,：1N5408G;低压地区
PR187：68K/2WS；
PR193/PR242：10R/1206；
PR327：10R/1206； PC191：X7R 470pF/200V 0805 非必要时NC
PC188：LL 4.7uF/50V； PC171：X7R 0.1uF/50V 0603
PR227：100K/0402；
PC178：X7R 1nF/50V 0603 ；
PR225：100R/0805；（68R~100R满足温升前提尽量大） PR190：10K/0402
PR217：470R/0805； PR186：22R/0805； PQ15：LMBT2907
PR239：470R/0402； PC183：X7R 470nF/50V 0603 根据所选IC实际情况选择，定封装电阻0402，电容0603
PR215:0.27R/2Ws；
PQ27：高压地区70R380;低压地区60R290

PC181:471/1KV； PR197,PR208,PR216,PR224,PR325：68R/1206；
PC167：102/1KV； PR226/PR233/PR326：默认3只47R/1206.根据实际调试而定
PC169：X7R 0.1uF/50V 0603
PR220：15K/0402 F PR202：200K/0402 F PR210：3.9K/0402 F
PR320：1K/0805;封装0805,阻值视主控IC而做调整 PR205：2.7K/0402
PR237：1K/0402 PC180：X7R 0.1uF/50V 0603;最大不超过0.47uF PC190：X7R 1nF/50V 0603
虚拟负载堆常情况下NC,主要用在背光功率较大,为满足温升要求而防止偏暗时背光灯条被点亮的情况。

PL30：BYQ-226
PC165：221/1KV； PR185/PR214：47R/1206
PC170/PC177：47uF/100V； PC189：33UF/200V
PR192：4.7K/0402固定 PC164：X7R 1nF/50V 0603 PR230/PR241：封装0805,根据背光电压设置OVP点
PR236/PR244/PR245：0R/1206
PR212：47R/0805； PR221：10K/0402
PR228：470R/0805； PR235：22R/0805； PQ19：LMBT2907
PR189/PR195/PR201/PR213：0.39R/1206
PR181：20K/0402或10K/0402 升压电感温升满足,建议选择10K/0402,有利于EMI
PC166：X7R 0.1uF/50V 0603
PC174：X7R 100pF/50V 0603
PC173：X7R 1nF/50V 0603 PR196：1K/0402； PR191：10K/0402
PC186：X7R 10nF/50V 0603； PR180：10K/0402 以实际调试为准
PR321：1K/0402； PR322：10K/0402
PC168：X7R 1nF/50V 0603； PR200：150K/0805； PR323：1M/0402； PR324：20K/0402
PC193：X7R 220pF/200V 0805 三星； PR341：10R/1206； 保留位置，默认不装

CULTRAVIEW

Cultraview

Title: AC POWER

Size: D | Document Number: <Doc> | Rev: <1.5>

Date: Monday, July 11, 2016 | Sheet 14 of 14