TCL
SERVICE MANUAL

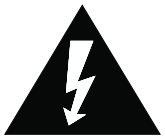
C32E320-MT10L-LA

1. Caution·····2
2. specification·····6
3. Alignment Procedure·····7
4. Block diagram·····19
5. Scheme Diagram ·····20
5. Troubleshooting·····29
6. PCB Layout ·····36

This manual is the latest at the time of printing, and does not include the modification which may be made after the printing, by the constant improvement of product

1. CAUTION

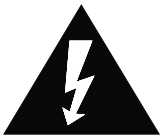
CAUTION:
Use of controls, adjustments or procedures other than those specified herein may result in hazardous radiation exposure.







CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lighting flash with arrowhead symbol, with an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to the person.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT SAFETY INSTRUCTIONS

CAUTION:

Read all of these instructions. Save these instructions for later use. Follow all Warnings and Instructions marked on the audio equipment.

1. Read Instructions- All the safety and operating instructions should be read before the product is operated.
2. Retain Instructions- The safety and operating instructions should be retained for future reference.
3. Heed Warnings- All warnings on the product and in the operating instructions should be adhered to.
4. Follow Instructions- All operating and use instructions should be followed.

FOR YOUR PERSONAL SAFETY

1. When the power cord or plug is damaged or frayed, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
2. Do not overload wall outlets and extension cords as this can result in fire or electric shock.
3. Do not allow anything to rest on or roll over the power cord, and do not place the TV where power cord is subject to traffic or abuse. This may result in a shock or fire hazard.
4. Do not attempt to service this television set yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
5. Never push objects of any kind into this television set through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the television set.
6. If the television set has been dropped or the cabinet has been damaged, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
7. If liquid has been spilled into the television set, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
8. Do not subject your television set to impact of any kind. Be particularly careful not to damage the picture tube surface.
9. Unplug this television set from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

10.1. Do not place this television set on an unstable cart, stand, or table. The television set may fall, causing serious injury to a child or an adult, and serious damage to the appliance. Use only with a cart or stand recommended by the manufacturer, or sold with the television set. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.

10.2. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



PROTECTION AND LOCATION OF YOUR SET

11. • Do not use this television set near water ... for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.
    • Never expose the set to rain or water. If the set has been exposed to rain or water, unplug the set from the wall outlet and refer servicing to qualified service personnel.

12. Choose a place where light (artificial or sunlight) does not shine directly on the screen.

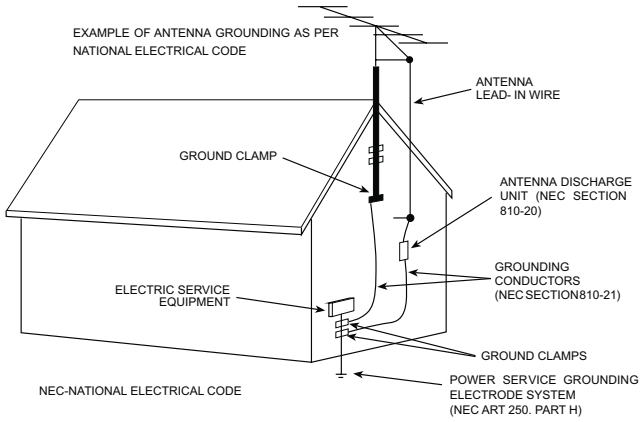
13. Avoid dusty places, since piling up of dust inside TV chassis may cause failure of the set when high humidity persists.

14. The set has slots, or openings in the cabinet for ventilation purposes, to provide reliable operation of the receiver, to protect it from overheating. These openings must not be blocked or covered.
    • Never cover the slots or openings with cloth or other material.
    • Never block the bottom ventilation slots of the set by placing it on a bed, sofa, rug, etc.
    • Never place the set near or over a radiator or heat register.
    • Never place the set in a "built-in" enclosure, unless proper ventilation is provided.

PROTECTION AND LOCATION OF YOUR SET

15.1. If an outside antenna is connected to the television set, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges, Section 810 of the National Electrical Code, NFPA No. 70-1975, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrode, and requirements for the grounding electrode.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS



15.2. Note to CATV system installer : (Only for the television set with CATV reception)

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

16. An outside antenna system should not be located in the vicinity of overhead power lines or other electric lights or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

17. For added protection for this television set during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna. This will prevent damage due to lightning and power-line surges.

OPERATION OF YOUR SET

18. This television set should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply at your home, consult your television dealer or local power company. For television sets designed to operate from battery power, refer to the operating instructions.
19. If the television set does not operate normally by following the operating instructions, unplug this television set from the wall outlet and refer servicing to qualified service personnel. Adjust only those controls that are covered in the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the television set to normal operation.
20. When going on a holiday : If your television set is to remain unused for a period of time, for instance, when you go on a holiday, turn the television set "off" and unplug the television set from the wall outlet.

IF THE SET DOES NOT OPERATE PROPERLY

21. If you are unable to restore normal operation by following the detailed procedure in your operating instructions, do not attempt any further adjustment. Unplug the set and call your dealer or service technician.
22. Whenever the television set is damaged or fails, or a distinct change in performance indicates a need for service, unplug the set and have it checked by a professional service technician.
23. It is normal for some TV sets to make occasional snapping or popping sounds, particularly when being turned on or off. If the snapping or popping is continuous or frequent, unplug the set and consult your dealer or service technician.

FOR SERVICE AND MODIFICATION

24. Do not use attachments not recommended by the television set manufacturer as they may cause hazards.
25. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
26. Upon completion of any service or repairs to the television set, ask the service technician to perform routine safety checks to determine that the television is in safe operating condition.

TCL WW R&D
FPD CENTER

Factory Alignment Specification of normal SIACP

For MT10-LA

Version 1.0

PREPARED BY :江阳 DATE : 2011-4-22

APPROVED BY : DATE :

Table of Contents

Feature Specification 4
INFO 5
1.Electrical Assembly Alignment 5
1.1 Preconditions – DC/DC Check 5
1.2 SW download 5
1.3 Panel ID check and modify 6
1.4 Functional Test 6
1.5 DDC & EDID Test 6
1.6 HDCP Test 7
2.Final Assembly Alignment 7
2.1 FactoryMenu 7
2.2 Entering to “P” Mode 7
2.3 White Balance Alignment 7
2.4 High Pot. and Insulating Resistance Tests 8
3.Factory default settings 8
Appendix ❶ “How to download FLASH SW” 11
Appendix❷ “How to upgrade FLASH SW from USB” 11
Appendix ❸ “Modify panel ID with RC” 12

Disclosure

The information contained in this document is proprietary to TCL SZ FPD lab and shall not be disclosed by the recipient to third persons without the written permission of the team leader or GM of R&D.

Revision History

Status, Ver	Date, Drafter	Description of changes
V1.0	2011-4-22	This is the draft version of normal SIACP • HDMI as the main absolute input • The password of factory menu is 9735 • Use RC to change project ID • White Balance

Feature Specification

These chassises are designed for South America LCD TV. The main chip is from Mediatec (MT5310 series) and supports below inputs and outputs:

class	item	Status	MT10B-LA	MT10L-LA
Input & Output	**ATV** (PAL- M/N, NTSC-M)	√	Cable&Antenna	Cable&Antenna
	DTV (SBTVD-T)	√	Antenna	Antenna
	HDMI (480i/p, 576i/p, 720p up to 1080i/p, compliant v1.2. with HDCP)	3	P300 P301 P302	P301 P302 P303
	VGA	1	P406	P406
	VGA/DVI audio	1	P400	P400
	CMP (YPrPb can support from 480i up to 1080p,audio)	1	P1 P455 (Audio)	P404
	Side AV or back AV (CVBS,audio)	2	P304 P404	P423 P421
	USB player (picture,video,audio)	2	P303 P401	P401 P427
	Headphone output	√	P800	P800
	SPDIF output	Optical	P405	P405
	AV out	1	P498	P407 P424 P425
function				
Others				

VGA connector of MT5310B definition:

VGA: Pin4:RXD VGA Pin11:TXD

INFO

↳ All tests and measurements mentioned hereafter have to be carried out at a normal mains voltage (**220 ~ 240 VAC**)
↳ All voltages have to be measured with respect to ground, unless otherwise stated
↳ All final tests have to be done on a complete set including LCD panel in a room with temperature of **25+/-7°C**
↳ The White Balance (color temperature) has to be performed into subdued lighted room after at least **1 hour** of warm-up/burn-in. This is applicable for both Alignment and Picture Performance evaluation at OQA in order to be set free of any temperature drift (colorimetry vs time)

1.Electrical Assembly Alignment

1.1 Preconditions – DC/DC Check

Before power on, please check the board according to the relevant block diagram and circuit diagram, and make sure that no serious error should destroy the board. For example,the output of DC/DC and LDO should not shorted to ground.

Supply a suited voltage and power on , then check the voltage according to the relevant block diagram , circuit diagram and voltage spec . the error should less than 5% .For example, the voltage for main chip(DV33, AV33, VCCK,etc.), the voltage for DDR (DDRV) , the voltage for amplifier(AUDIO_PWR),etc. Only the standby voltage is necessary if there is no software in the flash .

Position	Value	Remarks
R111	3.3V +/-5%	+3V3SB
C117 (positive pin)	5.0V +/-5%	+5V
C101 (positive pin)	1.1V +/-5%	Vcck
U105	1.2V +/-5%	AVDD1V2
U104	3.3V +/-5%	DVDD3V3
U109	3.3V +/-5%	A VDD3V3
U12	1.5V +/-5%	DDRV
C100 (positive pin)	12V +/-5%	+12V
U102	5.0V +/-5%	TUNER_VCC

Note: Different model may have different configuration of DC/DC circuit.

1.2 SW download

Download the latest release MT10_SW into the flash using MTK SW tool. See Appendix❶ "**How to download FLASH SW**". Or upgrade the SW from USB port See Appendix❷ **"How to**

upgrade FLASH SW from USB".

Remenber to do "Reset all" after upgrade the SW.

1.3 Project ID check and modify

There is different ID stored in the NVM depended on different Panels. Modify it with Hyper terminal if the initial ID or a wrong ID make the set can not display clearly. See Appendix❸. It can be checked and modified in **Factory menu->Project info->Project ID** if the set can display clearly . The set should be restart if the project ID is changed .

1.4 Functional Test

Once the boards (chassis, KB, IR, PSU…) and the panel are well interconnected, connect all external generator devices to relevant inputs/outputs below according to their respective test patterns format and check picture content and sound quality accordingly:

Source	**Test signal** (generator)	**Test pattern** (format/image)
Analog /Digital Tuner	RF cable	Full Band (VHF/UHF) + CATV SBTVD-T
Composite(CVBS)	Chroma/Fluke	PAL Half Color & Gray bars
VGA	Chroma/QuantumData	1024x768@60Hz Half Color & Gray bars
CMP (YPrPb)	Chroma/QuantumData	1080i@60Hz Half Color & Gray bars
HDMI	DVD with HDMI compliancy	Movie 720p@60Hz
Headphone	RF cable	First channel
Loud Speakers	RF cable	First channel
USB	USB device	Picture musica Video

Audio tones can be defined by the factory (ie: 1KHz & 3KHz, sweep, …).
Picture video formats can be changed by the factory according to their own standard.

1.5 DDC & EDID Test

The E-EDID data structure are according to VESA Enhanced EDID 1.3 (and EIA/CEA-861B for HDMI).

HDMI have their own separate bin files:

For EDID check, it's needed to check whether the correct EDID is downloaded by checking corresponding EDID NVM Checksum or read them out to check bit by bit if it is in line with the released EDID bin file.

1.6 HDCP Test

For HDCP compliancy, it's needed to check whether the HDCP key has been well set.

2.Final Assembly Alignment

2.1 FactoryMenu

Follow the below steps to pop-up the Factory Menu in case of "**FactoryKey**" is disable:

- press RemoteControl key "**MENU**" to display main menu
- Select "Picture" and press "**OK**" key to enter the picture submenu
- Select "Contrast" item
- press the subsequence RemoteControl keys "**9**", "**7**", "**3**" and "**5**"

Press RemoteControl key "**Return**" To pop-up the Factory Menu in case of "**FactoryKey**" is enable.

The status of "**Factory Key**" can be changed in **Factory Menu**->**Hotkey**

Press RemoteControl "**OK**" key or "**RIGHT**" key to enter the submenu.

Press RemoteControl "**Menu**" key to go back to the root menu.

Press RemoteControl "**RIGHT**"or "**LEFT**" key to change the values.

Press RemoteControl "**OK**" key run the function.

Press RemoteControl "**Exit**" key exit the factorymenu.

2.2 Entering to "P" Mode

Turned on the factory key to enter into "P" mode.The TV will display the following info in bottom left corner in "P" mode.

-main version *

-project ID *

-P/PS/D *

2.3 White Balance Alignment

Make sure that the picture mode is **"vivid**", enter to **"P" mode**(turned on the factory key) and **switch off** "**Pic. Enhance**" in **Factory Menu**-> **White Balance** before white balance alignment .

VGA,**CMP**, **DTV**,**CVBS_PAL** Color Coordinates are relative to HDMI.

CVBS_SECAM and **CVBS_NTSC** Color Coordinates are relative to CVBS_PAL.

Warm and **Cool** Color Coordinates are relatives to **Normal** mode.

Only **HDMI(YUV 720p@60Hz)** input requires color temperature adjustment. **All the Relative Matrix Offsets** should be set while doing alignment.

Each panel has it's own colour coordinates, Please refer to the following table.

Dynamic/70% W	L32V6200/L32E5200		L42E5200F/L42V6200F		C32E320/L32P60		C42E320F/L42P60F	
	x	y	x	y	x	y	x	y
Normal	0.275	0.310	0.275	0.290	0.280	0.290	0.280	0.290
Cool	0.265	0.285	0.265	0.290	0.270	0.280	0.270	0.280
Warm	0.305	0.330	0.305	0.330	0.312	0.330	0.320	0.320

- **Expected Targets and Tolerances**

The measured parameters should be "x, y" coordinates.

The White Balance alignment should be performed using a contact less analyzer (ei: Minolta CA-210). The analyzer may not touch the screen surface, and measurement must be performed in a dark environment keeping the probe(s) at 90+/-2° from the panel.

The result should measure up the relevant spec.

2.4 High Pot. and Insulating Resistance Tests

At the end of the process, a High Pot. and an Insulating Resistance tests are required for matching Safety Electrical requirements (ei: xxxx)

- **High Voltage Withstanding requirements**

- "Voltage" ⇨ **3500 VAC**
- "Max Leakage Current" ⇨ **10 mA**
- "Test Time" ⇨ **5 sec**

- **Insulating Resistance requirements**

- "Voltage" ⇨ **DC500V**
- "Threshold Min" ⇨ **4MΩ**
- "Test Time" ⇨ **3 sec**

3.Factory default settings

Do the "Reset shop" before packing.The detail of reset shop follow OOB setting.

"Factory Menu" Definition

1). Hotkey

Item	Sub-item	Value	Note
Hotkey		Off/On	OFF: hotkey is invalid ON : hotkey(Return key) is availability

2). Burning Mode

Item	Sub-item	Value/Sub-item	Note
Burning Mode		Off/On	Select panel On with left/right key, Press “EXIT” key to enter the burning mode; Press “Menu” key on keyboard to exit the burning mode

3). ADC（Need not to do ADC when alignment）

4). White Balance

Item	Sub-item	Value	Note
White Balance	Source	HDMI,etc	For balance source：HDMI,VGA,DTV,PAL,SECAM,NTSC,Scart RGB,CPM, HDMI
	Color Temperature	Normal /Warm/Cool	The value of Warm and cool is the offset of Normal mode. Cool is the preset status
	R Gain		R White balance
	G Gain		G White balance
	B Gain		B White balance
	R Offset		R Gray balance
	G Offset		G Gray balance
	B Offset		B Gray balance
	White Balance Init		Press “Right” key to initial the preset RGB Gain/Offset value
	Pic. Enhance	On/Off	Press “Right” key to switch off all of the items in the feature submenu. This should be done before white balance alignment. If it’s off, the way to switch it on is to reset user/shop or set on the features in Feature sub-item manually.
	Picture related	Flesh tone	Select On/Off to open/close the function
		Adaptive luma control	Select On/Off to open/close the function
		Light sensor	Select On/Off to open/close the function
		Dynamic backlight	Select Auto/High/Mid/Low to set the backlight control
		Back light	0~100 Set the backlight

5). Reset Shop

Item	Sub-item	Value	Note
Reset Shop			Clear date of NVM in user menu,include the value related installation,and Clear date of factory menu except the item of Balance and sound ,set to default value

6). Reset ALL

Item	Sub-item	Value	Note
Reset ALL			Clear NVM values，and set to default value

7) . Power Mode

Item	Sub-item	Value	Note
Power Mode		Boot/Standby/ Last Status	Boot: Enter power on mode Standby: Enter standby mode Last Status: power on according to last status

8) . USB Clone Mode

Item	Sub-item	Value	Note
USB Clone Mode	USB Clone Mode	All/ChannelList /EEPROM/ User Setting	Select to choose the things you want to clone
	TV TO USB	DO	Press “Right” key to copy the data(WB,ADC,picture setting,etc) to USB
	USB TO TV	DO	Press “Right” key to set the data(WB,ADC,picture setting) from USB

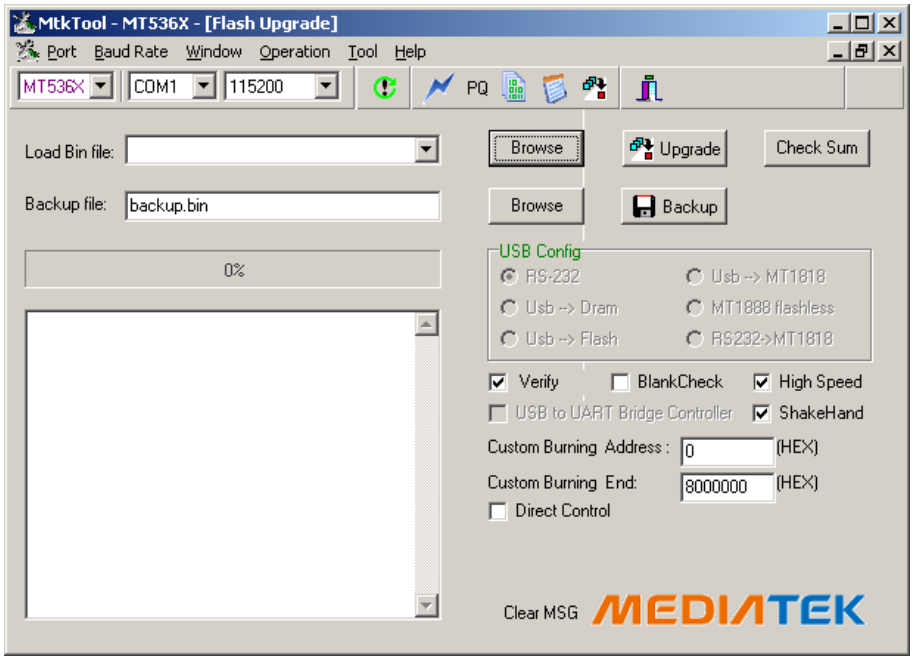
9) . Other

Item	Sub-item	Value	Note
Project info	Project ID	***	
	Project Name	***	
	Panel ID	***	
	Panel	***	
	Version	***	
	Date	***	
	Time	***	
	MCU Version	***	
	RCU	***	
	PSU	***	
	Region	***	
	Product S/N	***	
Tuner AGC			

Appendix ❶ "How to download FLASH SW"

Prepare MTK SW tool for update.

1. Connect the PC to the serial connector on board using a special serial device (USB or COMx).
2. Provide the a correct voltage to the board
3. Start "**MTKTOOL.exe**" application under MTKxx folder, and set the parameters as below picture(notice:select MT536X chassiss):



4. Press "Browse" button to select the corresponding SW bin file to upload
5. Press "Upgrade" button then press "NOR" button to start downloading the SW and wait the gauge displayed "100%" that means the SW has been successfully downloaded.
   In the meanwhile, all operations such erasing flash and so… are parsed into the debug window script.
6. Once the SW is downloaded, switch-off/on the chassis board and wait few seconds for eeprom update.

Appendix❷ "How to upgrade FLASH SW from USB"

Upgrade with loader:

1. Save the new software file(*.pkg) in the root directory of USB, and modify it's name as upgrade.pkg.
2. Plug in the USB when TV set is "power off" or "standby" (TV set should be on "standby" status if using a touch sensing keyboard).
3. Press down "power" key on keyboard, power on if it is on "power off" status , release the "power" key 2~5 second later , the LED on IR board will flash after upgrade begin, the TV set will start up if upgrade succeed.The LED is on but no flash if upgrade fail,check the set and

try again.

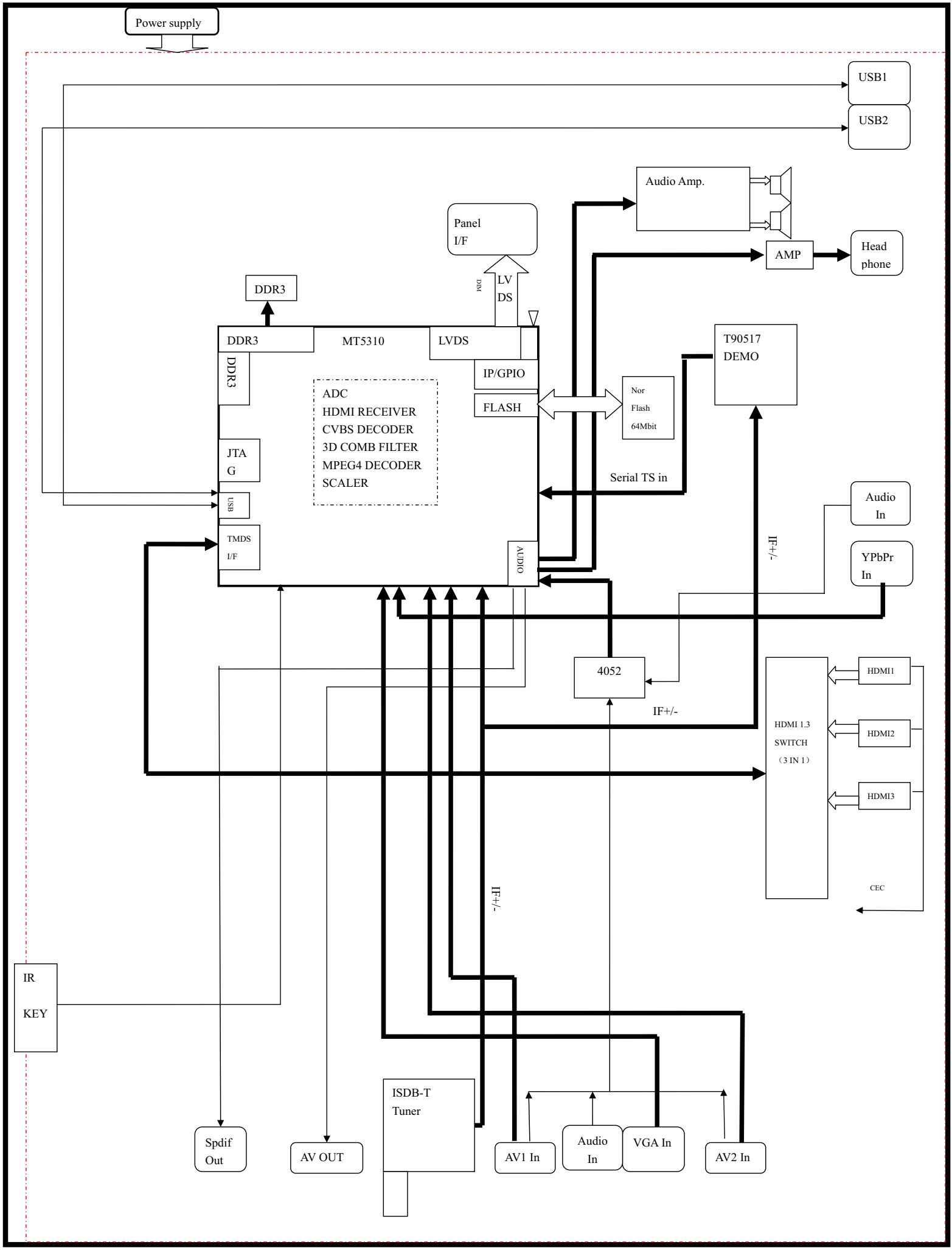
Upgrade without loader(The TV set should be able to display normally):

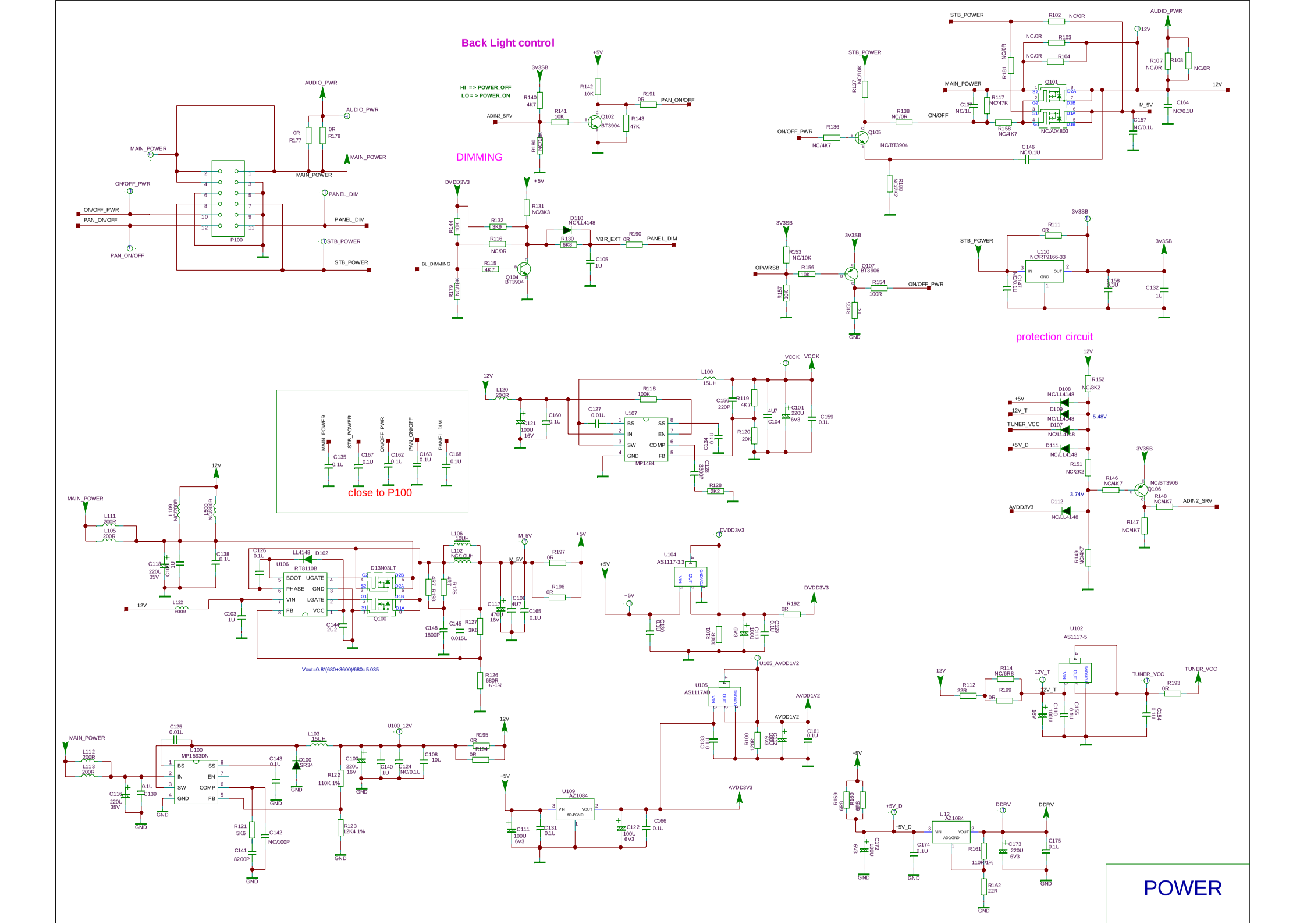
1. Save the new software file(*.pkg) in the root directory of USB, and modify it's name as a software number, such as "V8-0MT1006-LF1V017.pkg".
2. Plug in the USB.
3. Upgrade the SW follow the indication display on the screen

Appendix ❸ "Modify panel ID with RC"

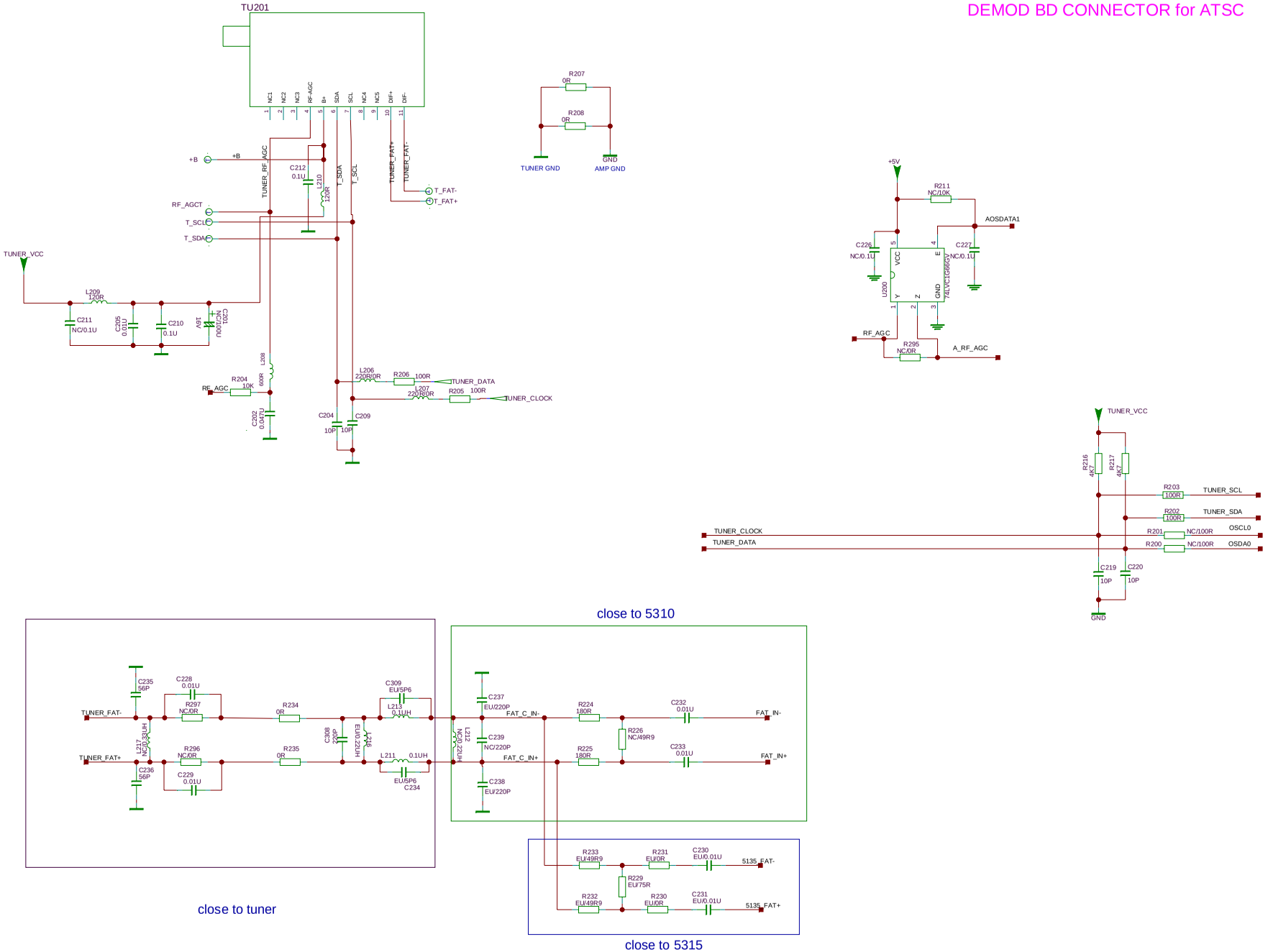
"Modify panel ID without panel but via a RC"

- **062598+MENU+xxx (xxx:Panel ID)**

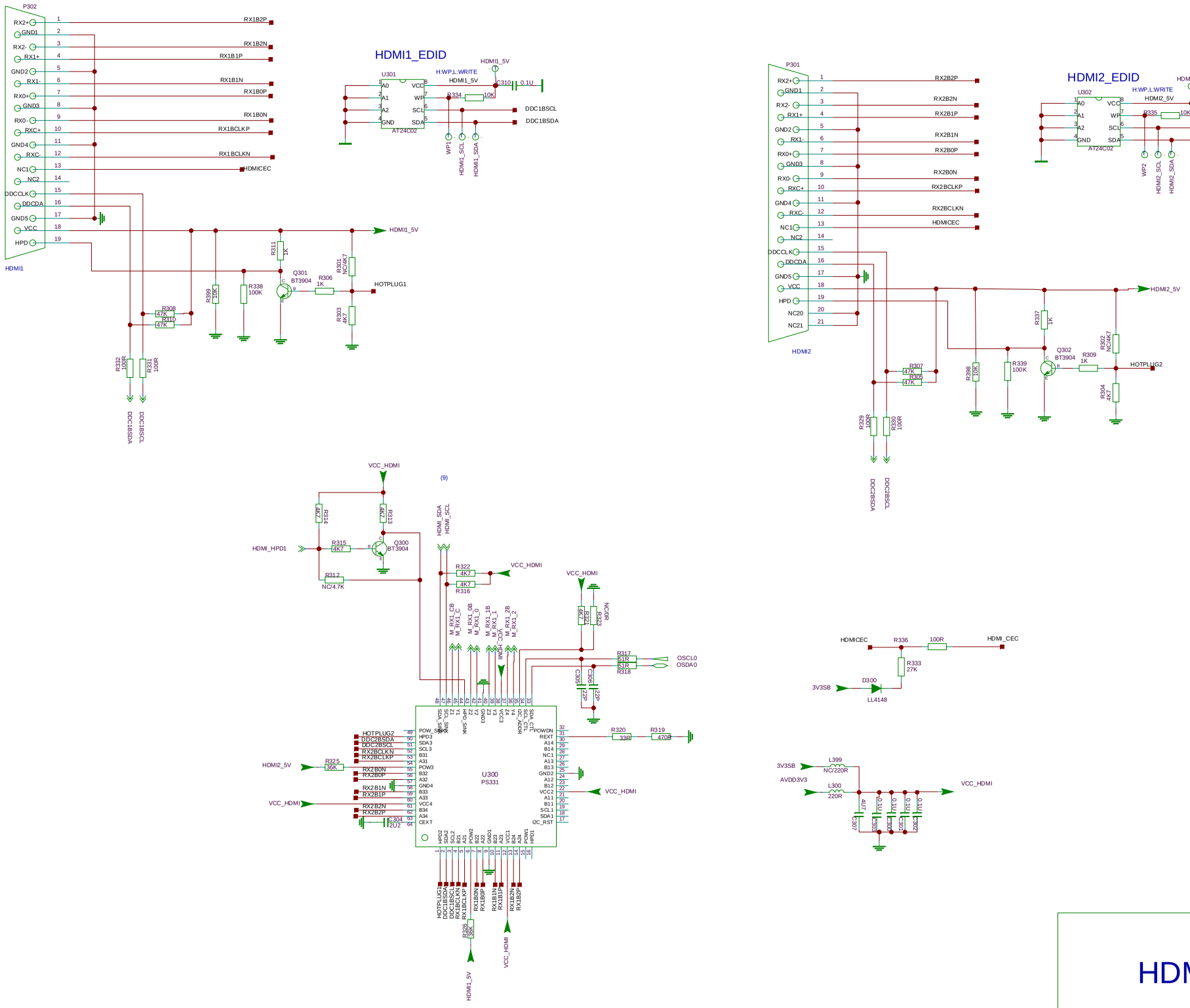

Power supply
USB1
USB2
Audio Amp.
Panel
I/F
AMP
Head
phone
DDR3
LV
DS
DDR3
MT5310
LVDS
T90517
DEMO
DDR3
IP/GPIO
ADC
HDMI RECEIVER
CVBS DECODER
3D COMB FILTER
MPEG4 DECODER
SCALER
FLASH
Nor
Flash
64Mbit
JTA
G
Serial TS in
Audio
In
USB
TMDS
I/F
AUDIO
IF+/-
YPbPr
In
4052
IF+/-
HDMI1
HDMI 1.3
SWITCH
（3 IN 1）
HDMI2
HDMI3
CEC
IF+/-
IR
KEY
ISDB-T
Tuner
Spdif
Out
AV OUT
AV1 In
Audio
In
VGA In
AV2 In


Back Light control
HI = > POWER_OFF
LO = > POWER_ON
DIMMING
protection circuit
close to P100
Vout=0.8*(680+3600)/680=5.035
POWER

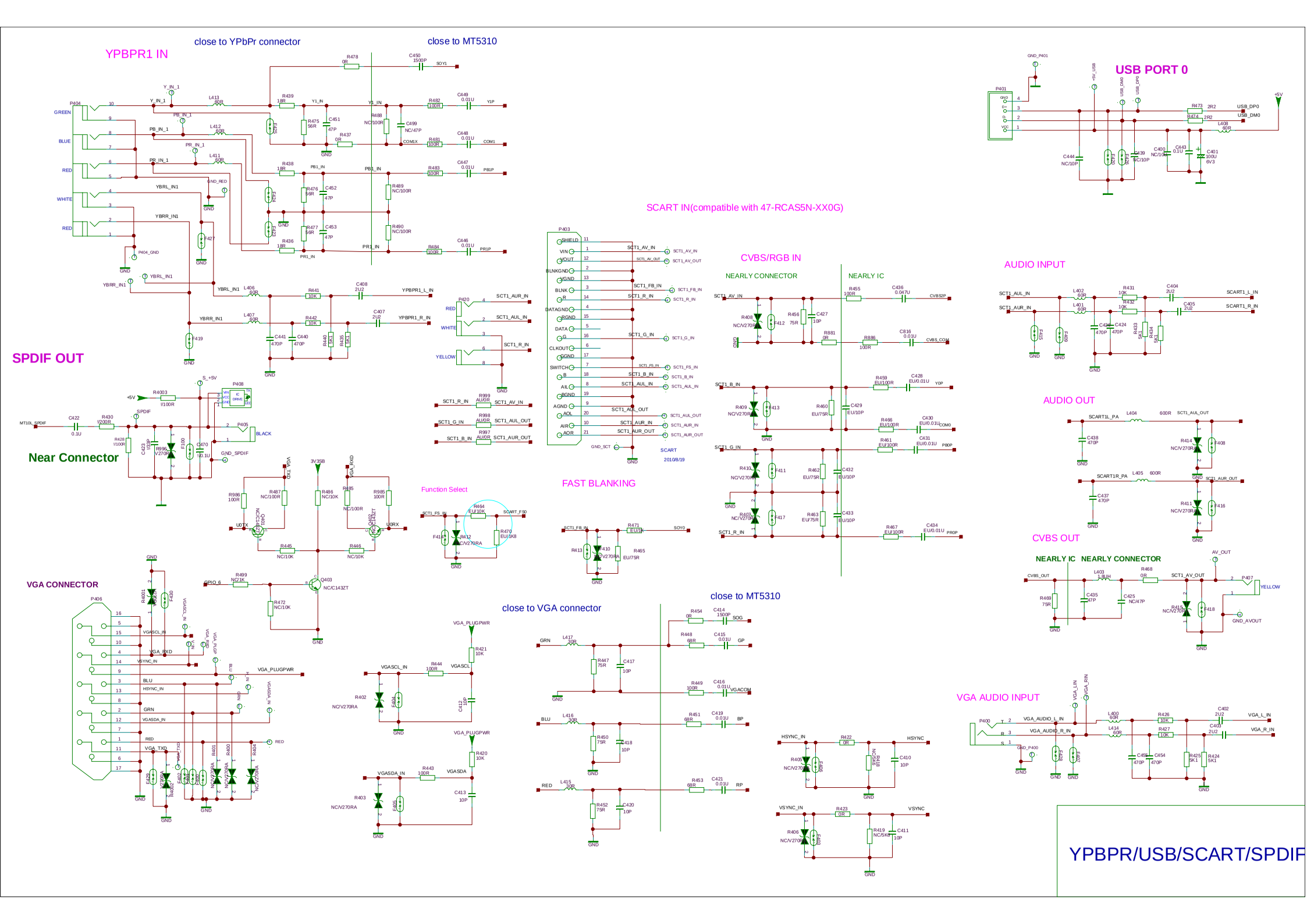
DEMOD BD CONNECTOR for ATSC

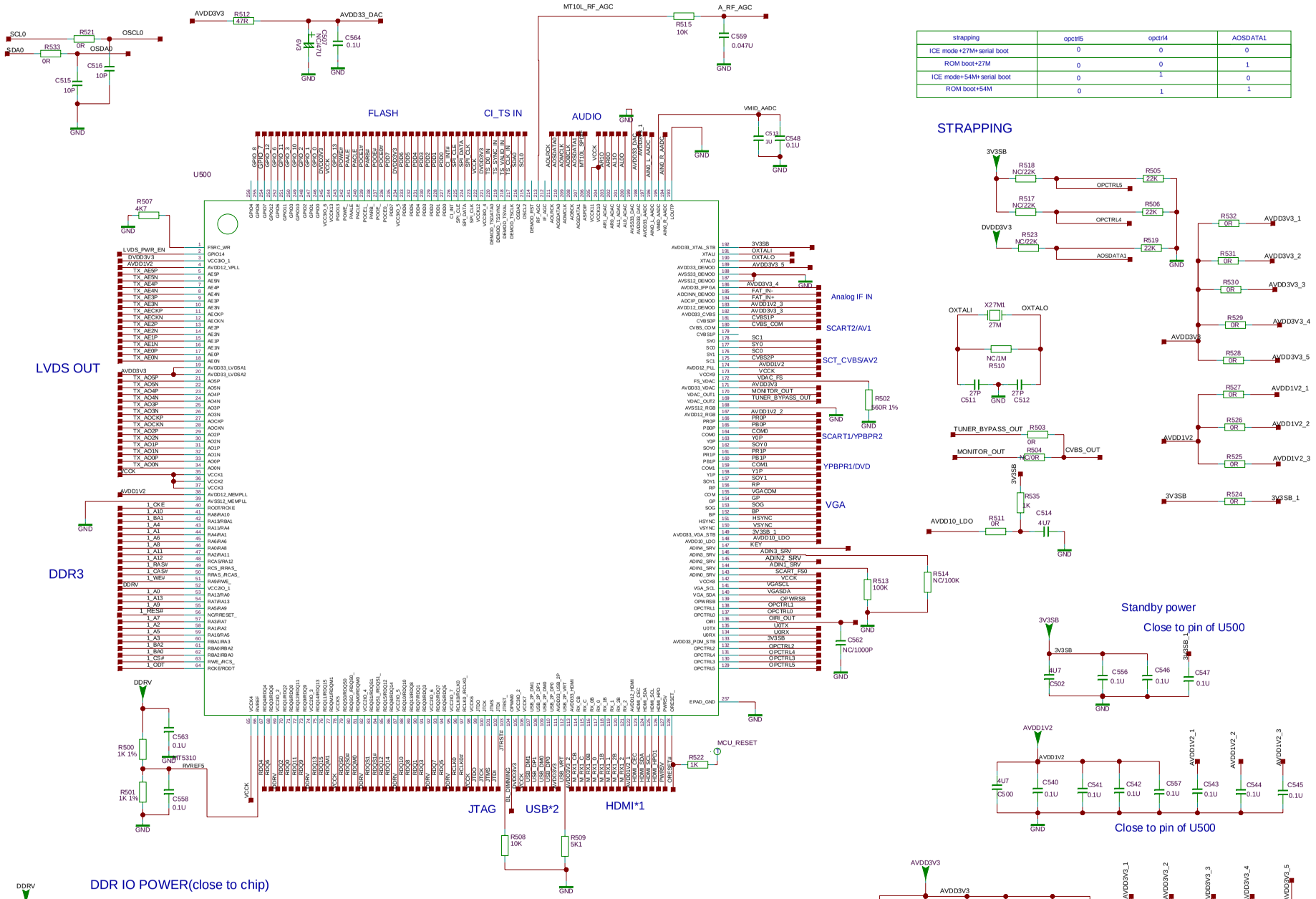


TUNER/BPF


P302
RX2+
GND1
RX2-
RX1+
GND2
RX1-
RX0+
GND3
RX0-
RXC+
GND4
RXC-
NC1
NC2
DDCCLK
DDCDA
GND5
VCC
HPD
RX1B2P
RX1B2N
RX1B1P
RX1B1N
RX1B0P
RX1B0N
RX1BCLKP
RX1BCLKN
HDMICEC
HDMI1
HDMI1_EDID
U301
AT24C02
H:WP,L:WRITE
HDMI1_5V
C310
0.1U
R334
10K
DDC1BSCL
DDC1BSDA
WP1
HDMI1_SCL
HDMI1_SDA
R311
1K
Q301
BT3904
R306
1K
R301
NC/4K7
HOTPLUG1
R303
4K7
R308
47K
R310
47K
R399
10K
R338
100K
R332
100R
R331
100R
DDC1BSDA
DDC1BSCL
P301
RX2B2P
RX2B2N
RX2B1P
RX2B1N
RX2B0P
RX2B0N
RX2BCLKP
RX2BCLKN
HDMICEC
HDMI2
HDMI2_EDID
U302
C311
R335
10K
DDC2BSCL
DDC2BSDA
WP2
HDMI2_SCL
HDMI2_SDA
R337
1K
Q302
BT3904
R309
1K
R302
NC/4K7
HOTPLUG2
R304
4K7
R307
47K
R305
47K
R398
10K
R339
100K
R329
100R
R330
100R
DDC2BSDA
DDC2BSCL
VCC_HDMI
R314
4K7
R313
4K7
R315
4K7
Q300
BT3904
R312
NC/4.7K
HDMI_HPD1
HDMI_SDA
HDMI_SCL
(9)
R322
4K7
R316
4K7
R323
NC/0R
R324
NC/0R
R317
51R
R318
51R
OSCL0
OSDA0
C305
22P
C306
22P
U300
PS331
R320
33R
R319
470R
R325
36K
C304
2U2
R326
56K
HDMI5_5V
HDMI1_5V
HDMICEC
R336
100R
HDMI_CEC
R333
27K
3V3SB
D300
LL4148
L399
NC/220R
AVDD3V3
L300
220R
C307
C303
C308
C301
C302
0.1U
4U7

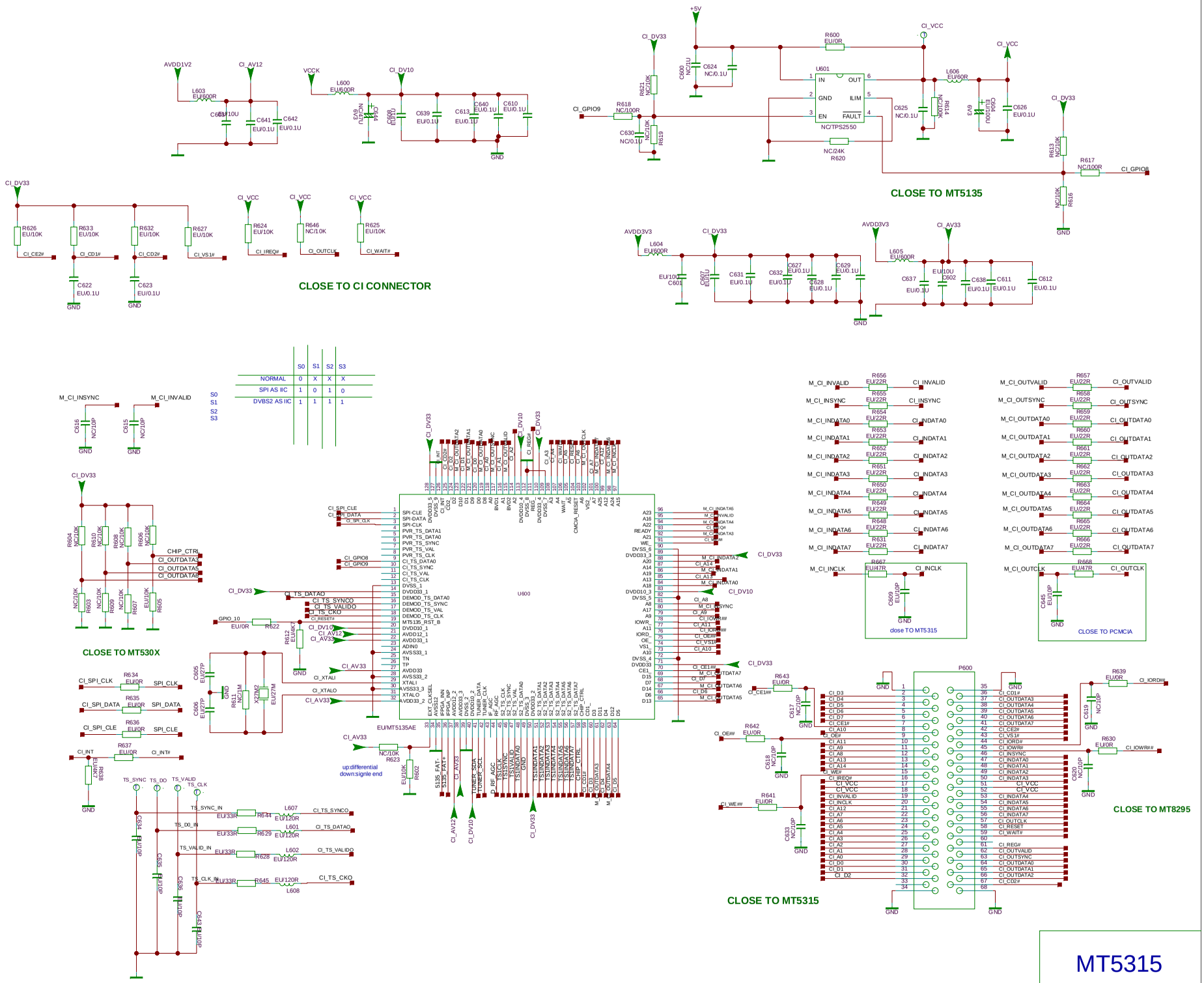
HDMI

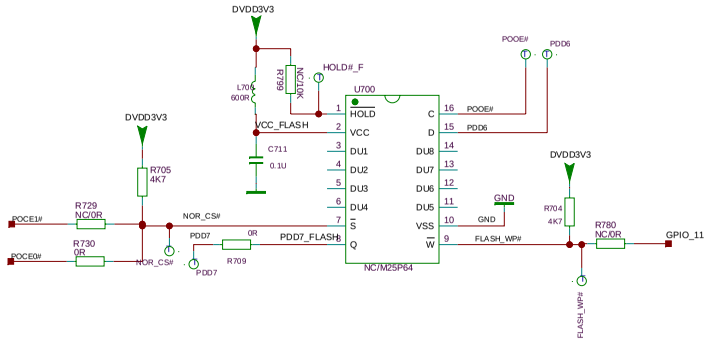

close to YPbPr connector
close to MT5310
YPBPR1 IN
USB PORT 0
SCART IN(compatible with 47-RCAS5N-XX0G)
CVBS/RGB IN
NEARLY CONNECTOR
NEARLY IC
AUDIO INPUT
SPDIF OUT
Near Connector
AUDIO OUT
Function Select
FAST BLANKING
CVBS OUT
NEARLY IC
NEARLY CONNECTOR
VGA CONNECTOR
close to VGA connector
close to MT5310
VGA AUDIO INPUT
YPBPR/USB/SCART/SPDIF

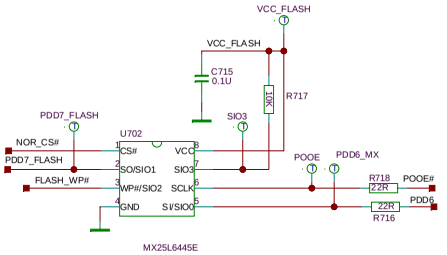


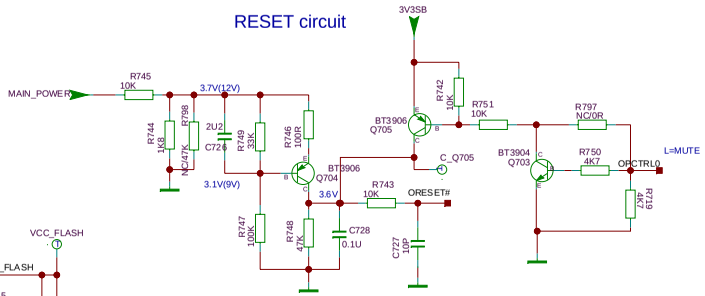
strapping	opctrl5	opctrl4	AOSDATA1
ICE mode+27M+serial boot	0	0	0
ROM boot+27M	0	0	1
ICE mode+54M+serial boot	0	1	0
ROM boot+54M	0	1	1

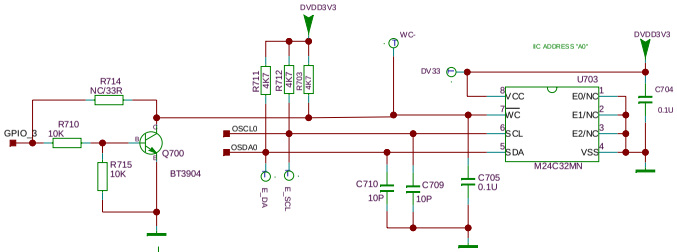
MT5310

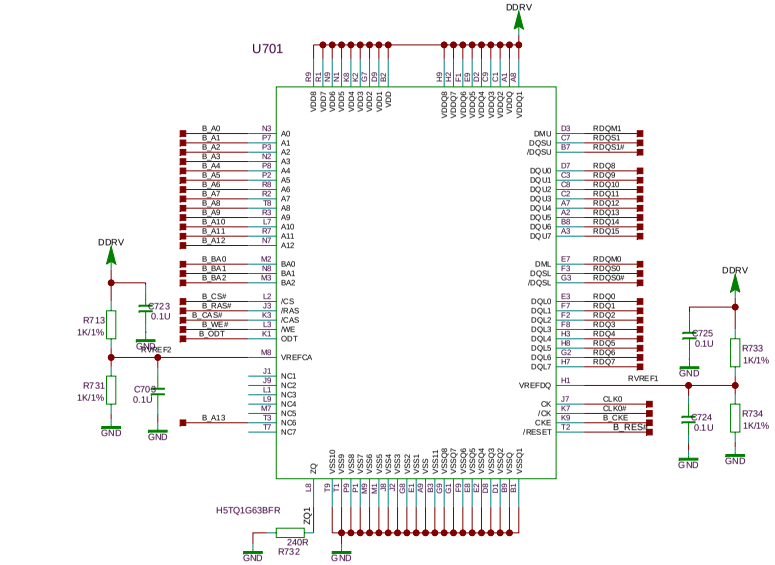

CLOSE TO MT5135
CLOSE TO CI CONNECTOR
CLOSE TO MT530X
CLOSE TO MT5315
CLOSE TO MT8295
CLOSE TO PCMCIA
close TO MT5315
EU/MT5135AE
up:differential
down:signle end
MT5315

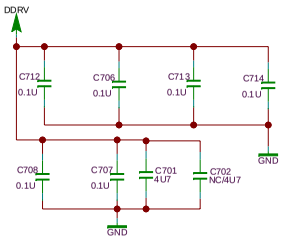






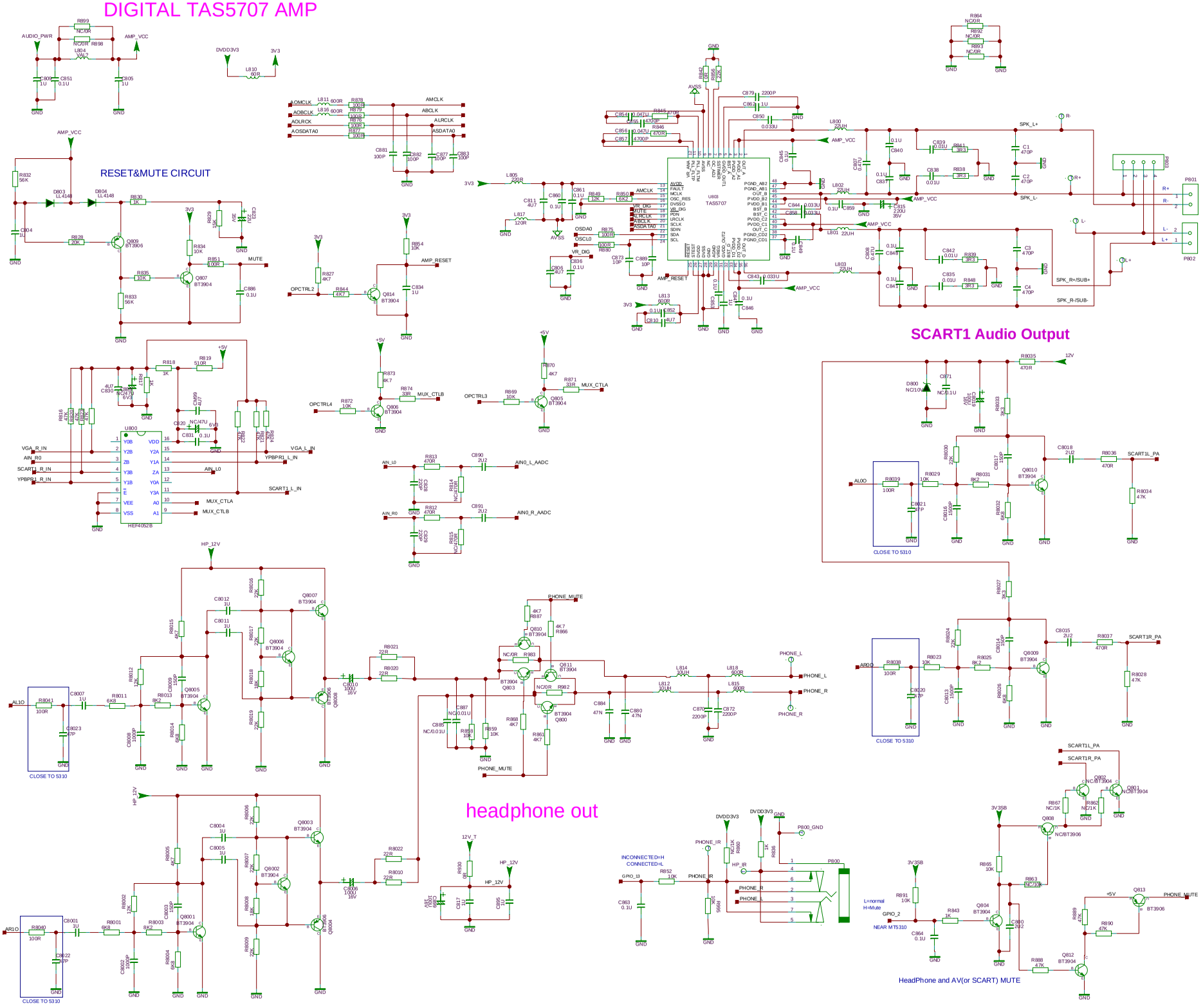




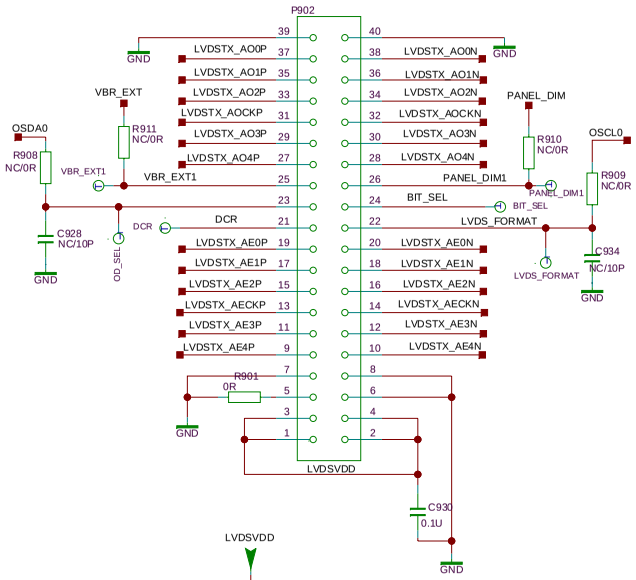


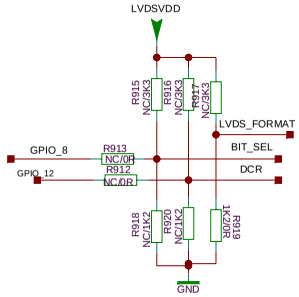
FLASH/DDR3/JTAG

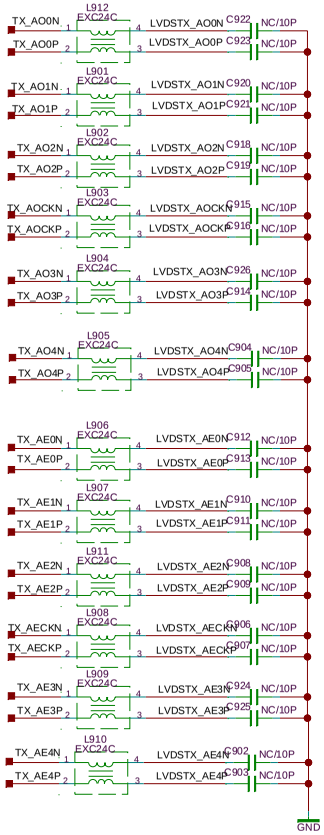
DIGITAL TAS5707 AMP



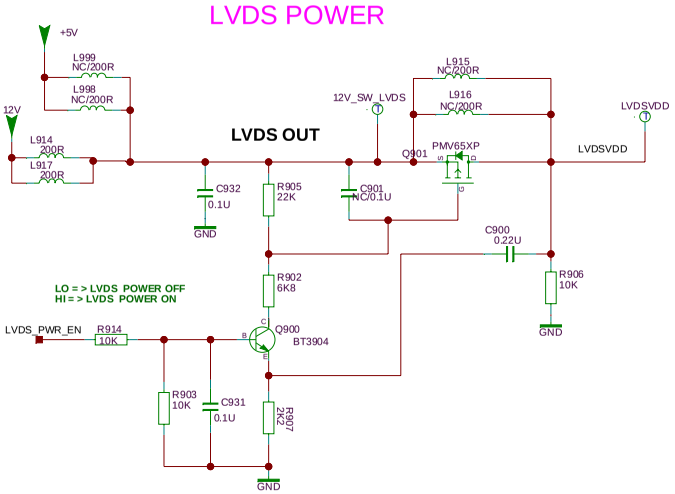
LVDS OUT



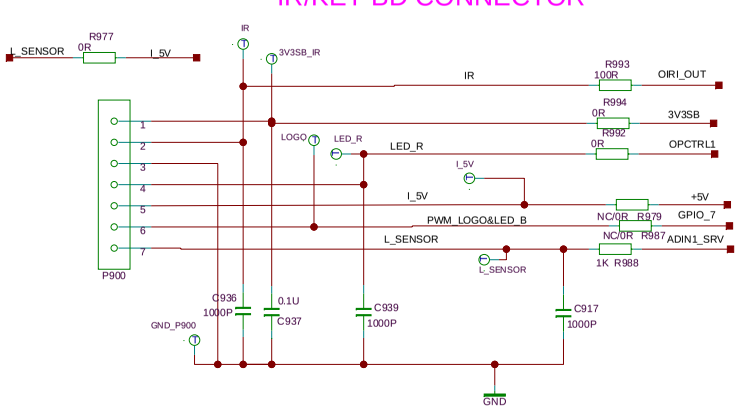


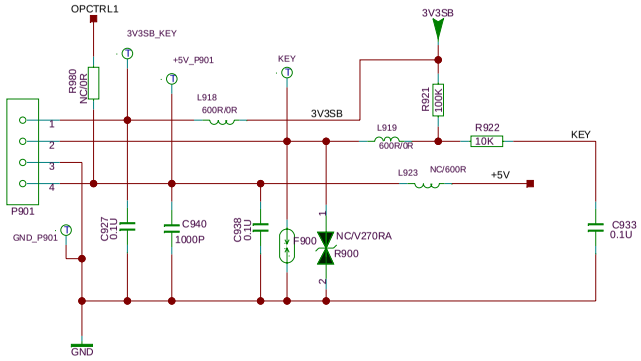


LVDS POWER



IR/KEY BD CONNECTOR





LVDS