TOSHIBA

Leading Innovation

REVISED:02

# SERVICE MANUAL

## LCD Color Television

# 50L2333D(G), (B)
# 50L2331D(G)
# 50L2337D(G), (B)

# REVISION HISTORY

| REV | Date | Reason for Change |
|---|---|---|
| 1 | Jul/25/2013 | - Addition of the 50L2333D(B) model<br>- Addition of the 50L2331D(G) and 50L2337D(G)/(B) model<br>- Addition of the location number (E322) of the power cord in INTERCONNECT<br>- Updating of the Parts List (Exploded View)<br>- Addition of "PANEL IDENTIFICATION"<br>- Addition of "DESTINATION SETTING CHANGE" |
| 2 | Dec/19/2014 | - Addition of "AFTER MAIN PCB REPLACEMENT".<br>- Updating of the Parts List (Exploded View page) |

# CONTENTS

# IMPORTANT NOTICE

**WARNING:**

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# GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

# LEAD-FREE SOLDER

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

**WARNING: This product is manufactured using lead free solder.**
**DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT!**

The melting temperature of lead-free solder is higher than that of leaded solder by 30ºC to 40ºC (54ºF to 72ºF). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or PCB being soldered. Great care should be made to ensure high-quality soldering when servicing this product especially when soldering large components, through-hole pins, and on PCBs as the level of heat required to melt lead-free solder is high.

# SAFETY INSTRUCTION

**WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW.**

## Safety Precaution

**WARNING: SERVICING SHOULD NOT BE ATTEMPTED BY ANYONE UNFAMILIAR WITH THE NECESSARY PRECAUTIONS ON THIS RECEIVER. THE FOLLOWING ARE THE NECESSARY PRECAUTIONS TO BE OBSERVED BEFORE SERVICING THIS CHASSIS.**

1. An isolation transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.

2. Always disconnect the power plug before any disassembling of the product. It may result in electrical shock.

3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as nonmetallic control knobs, insulating covers, shields, isolation resistor-capacitor network, etc.

4. Always keep tools, components of the product, etc away from the children, These items may cause injury to children.

5. Depending on the model, use an isolation transformer or wear suitable gloves when servicing with the power on, and disconnect the power plug to avoid electrical shock when replacing parts. In some cases, alternating current is also impressed in the chassis, so electrical shock is possible if the chassis is contacted with the power on.

6. Always use the replacement parts specified for the particular model when making repairs. The parts used in products require special safety characteristics such as inflammability, voltage resistance, etc. therefore, use only replacement parts that have these same characteristics. Use only the specified parts when the ⚠ mark is indicated in the circuit diagram or parts list.

7. Parts mounting and routing dressing of wirings should be the same as that used originally. For safety purposes, insulating materials such as isolation tube or tape are sometimes used and printed circuit boards are sometimes mounted floating. Also make sure that wirings is routed and clamped to avoid parts that generate heat and which use high voltage. Always follow the manufactured wiring routes / dressings.

8. Always ensure that all internal wirings are in accordance before re-assembling the external casing after a repairing completed. Do not allow internal wiring to be pinched by cabinets, panels, etc. Any error in reassembly or wiring can result in electrical leakage, flame, etc., and may be hazardous.

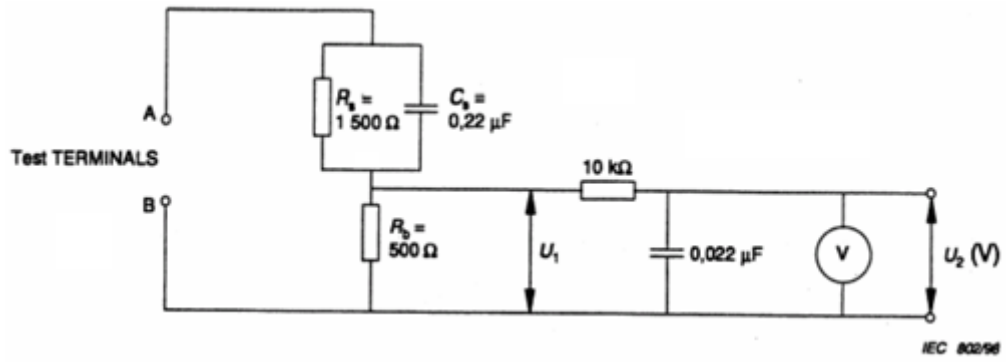
9. NEVER remodel the product in any way. Remodeling can result in improper operation, malfunction, or electrical leakage and flame, which may be hazardous.

10. Touch current check. (After completing the work, measure touch current to prevent an electric shock.)

- Plug the AC cord directly into the AC outlet. Do NOT use an isolation transformer for this check.
- Connect a measuring network for touch currents between each exposed metallic part on the set and a good earth ground such as a water pipe.

Annex D
(normative)

Measuring network for TOUCH CURRENTS




Resistance values in orms (Ω).

V: Voltmeter or oscilloscope
(r.m.s. or peak reading)

Input resistance : ≧ 1 MΩ
Input capacitance : ≦ 200 pF
Frequency range : 15 Hz to 1 MHz and d.c. respectively

**Note:** Appropriate measures should be taken to obtain the correct value in case of non sinusoidal waveforms.

The measuring instrument is calibrated by comparing the frequency factor of $U_2$ with the solid line in figure F.2 of IEC 60990 at various frequencies. A calibration curve is constructed showing the deviation of $U_2$ from the ideal curve as a function of frequency.

TOUCH CURRENT = $U_2$ / 500 (peak value).

- The potential at any point (TOUCH CURRENT) expressed as voltage $U_1$ and $U_2$ does not exceed the following value:

The part or contact of a TERMINAL is not HAZARDOUS LIVE if:

a) The open-circuit voltage should not exceed 35 V (peak) a.c. or 60 V d.c. or, if a) is not met.

b) The measurement of the TOUCH CURRENT shall be carried out in accordance with IEC 60990, with the measuring network described in **Annex D** of this standard.

The TOUCH CURRENT expressed as voltages $U_1$ and $U_2$, does not exceed the following values:
- for a.c. : $U_1$ = 35 V (peak) and $U_2$ = 0.35 V (peak);
- for d.c. : $U_1$ = 1.0 V

**Note:** The limit values of $U_2$ = 0.35 V (peak) for a.c. and $U_1$ = 1.0 V for d.c. correspond to the values 0.7 mA (peak) a.c. and 2.0 mA d.c.

## Product Safety Notice

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create electrical shock, fire, or other hazards.

# HOTEL MODE

| | | Function | Setting *off(normal set) | | Information |
|---|---|---|---|---|---|
| 1 | 1 | Hotel Mode On/Off | Off/On | Off | Hotel mode enable<br>*On: hotel mode on |
| | 2 | Panel Lock | Off/On | Off | Inhibit all buttons which are on TV body<br>*On: not available Side key |
| | 3 | Panel Lock W/O Input Selector Keys. | Off/On | Off | Inhibit all buttons which are on TV body only disable input key<br>*On: not available Side key only disable input key |
| | 4 | Disable Remote Control | Off/On | Off | Inhibit the remote control.<br>*Setting is enable at the Service mode.<br>*On: not available remote control |
| | 5 | Disable All Menu | Off/On | Off | *On: All of user menu will be disabled.<br>*Off: All of user menu will work normally. |
| | 6 | Disable Setup Menu | Off/On | Off | Inhibit set up menu<br>*On: set up menu Inhibit |
| | 7 | Setup Menu W/O Lang. | Off/On | Off | Inhibit display set up menu except for language setting.<br>*There is only language setting at the Setup menu.<br>*On: only lang. display at setup menu. |

| | | | | | |
|---|---|---|---|---|---|
| | 8 | Max Volume Setting | 0~100[dec] | 100 | Max volume control<br>Max vol setting Method:<br>Setting 100 volume, and turning and choice this value. |
| | 9 | Digital Tuner | Off/On | On | DTV source selection depends on Digital Tuner setting.<br>*On: enable DTV<br>*Off: hide DTV |
| | 10 | USB Port | Off/On | On | MEDIA source selection depends on USB port setting.<br>*On: enable MEDIA in inputs menu<br>*Off: hide MEDIA in inputs menu<br>*Off (Enable 5V): Disable USB, but enable the 5V power. |
| | 11 | TV to USB | NO/YES | NO | It will clone the data of TV to USB disk. The data includes user setting, the setting of hotel mode and channel table. |
| | 12 | USB to TV | NO/YES | NO | It will clone the data of USB disk to TV. The data includes user setting, the setting of hotel mode and channel table. |
| | 13 | Disable NIT Update | Off/On | Off | *On: enable NIT update<br>*Off: disable NIT update |
| | 14 | Detect SCART | On / Off | On | ON: Pin8 will go on normal operation and it is going to switch between sources automatically.<br>Off: Pin8 is ignored and the automatic source switching would be enabled. |

| | | | | | |
|---|---|---|---|---|---|
| 2 | 1 | Fixed Pos/Video | Off/ On(AC)/ On | Off | Remote control power button on or TV power switch (on side body) on, then display goes to fixed POS/Video (= nealy equal #9)<br>*On: fixed pos/video set<br>*On (AC): TV tunes to preset “Pos/Video” (channel or input) only when AC power is applied. When TV is powered on by power button, tune to the last channel or input. |
| | | | ATV(0~99)/SCART/AV/ YPBPR/HDMI1/HDMI2/ PC/DTV | | *TV, Component, AV,…, PC,HDMI,….Off<br>TV:1~255[dec] (normal:0)<br>DTV: depends on channel auto tuning |
| | 2 | Fixed Volume | Off/On | Off | Remote control power button on or TV power switch(on side body) on , then forced volume setting<br>*101~ : not available |
| | | | 0~100[dec] (normal:50) | | |
| | 3 | Fixed Picture Mode | Off/On | Off | Remote control power button on or TV power switch(on side body) on, then picture mode is selected<br>*On: Fixed selectable Pic. |
| | | | 0:Dynamic(Default)<br>1:Standard<br>2:Mild<br>3:Movie<br>4:Memory | | |
| | 4 | Welcome Message | Off/On | Off | Remote control power button on or TV power |

| | | | | | |
|---|---|---|---|---|---|
| | | | 1:Default<br>2:8 Sec.<br>3:15 Sec. | | switch(on side body) on, then fixed "Welcome to our hotel" Message is displayed.<br>'Until first operation' means that first event for TV occur (ex. Ch up). |
| | 5 | Update Welcome Message | YES/NO | NO | It will update the logo, when TV on the new logo show.<br>*Using USB, user replaces the user original message with the default welcome message.<br>As below is message, the file limitation items:<br>1. File format should be JPG file.<br>2. JPG Resolution <= 1360 x 768.<br>3. JPG file size < 64KB.<br>4. JPG file name is “Hotel_Logo.jpg”. |
| | 6 | Teletext | Off/On | On | Teletext functions are depend on Teletext setting<br>*On: enable Teletext functions and operation<br>*Off: disable Teletext functions and operation |
| | 7 | ATV/DTV P+/P- | Off/On | Off | *On: enable ATV/DTV P+/P-<br>*Off: disable ATV/DTV P+/P |
| | 8 | TV Power | Disabled/<br>On/ Standby | Disabled | *Disabled: TV returns to previous Standby/On state when AC power is applied.<br>*On: Power TV on when AC power is applied.<br>*Standby: Put TV in Standby when AC power is applied. |
| | 9 | Reset Menu | YES/NO | NO | Set to default all setting in Hotel mode menu |

How to enter Hotel Mode.

1) Press “MUTE” button on the remote, and display [mute].

2) Within 2 sec, press “MUTE” button on the remote again, and hold the button down for 3 sec.

3) Then, press “INPUT” button on the TV side. Then hotel mode menu will appear.

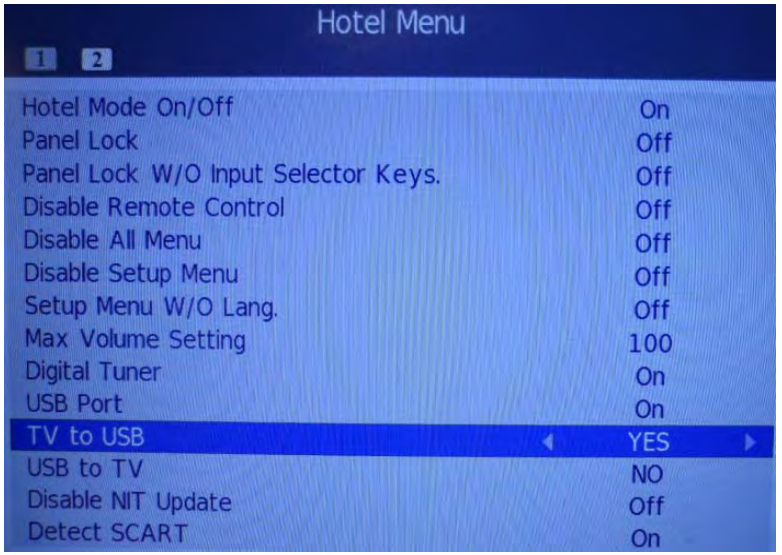
How to exit Hotel mode.

Turn the TV power off

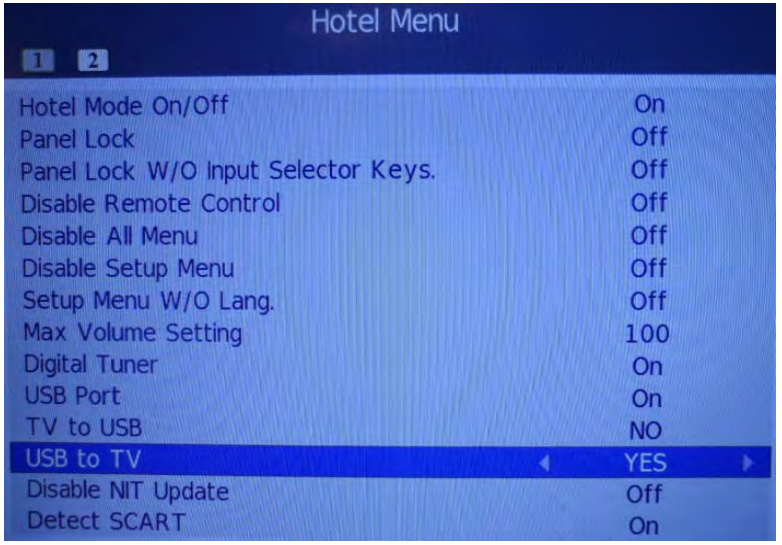
# Copying Hotel Mode Setting



**TV to USB:**
Copying a BIN file into USB flash.




**USB to TV:**
Copying a BIN file into TV.



# Copying Hotel Mode Setting



**TV to USB Step :**

1. Insert USB flash disk into TV USB port.

2. Please press “MUTE” key twice (MUTE icon disappear) , at the same time, press “SOURCE” by keypad for a while.
->“Hotel Menu” will come out.

3. Select the item “TV to USB” and press Left or Right button to choose “YES”. Then press “OK” button.
->The hotel settings will copy into USB disk with file name HOTEL_xxx23xxx.BIN

4. Once copy is finished. The OSD message “Please wait...” will disappear then shown "OK! " message.

# Copying Hotel Mode Setting



**USB to TV Step (method 1) :**

1. Insert USB disk with available file into TV USB port.

2. Please press “MUTE” key twice (MUTE icon disappear) , at the same time, press “SOURCE” by keypad for a while.
->“Hotel Menu” will come out.

3. Selecting the item “USB to TV ” and press Left or Right button to choose “YES”. Then press “OK” button.
->The hotel settings will copy from USB to TV with file name HOTEL_xxx23xxx.BIN.

4. Once copy is finished. The OSD message “Please wait...” will disappear then shown "Please remove USB memory, then TV will be reset automatically" message.

# Copying Hotel Mode Setting



**USB to TV Step (method 2) :**

1. Insert USB disk with available file into TV USB port.

2. Please reboot (AC Off/On) TV to update hotel settings automatically.

->the set will shown “Hotel Mode Settings Update Please Wait”.

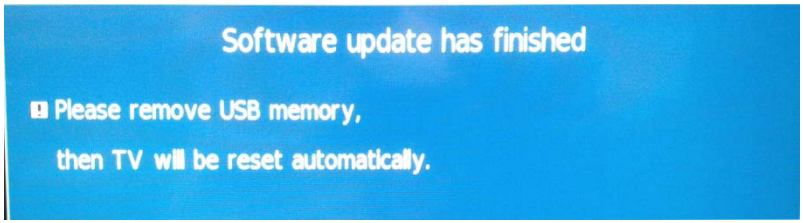
3. The OSD message “Please wait...” will disappear then shown “Update is finished .Please remove USB memory, then TV will be reset automatically.”

4. Please remove USB disk then turn AC Off/On to reboot TV. The new settings will be active.

# Firmware Upgrade – USB



1. Copying a firmware BIN file to USB disk. (root directory)
2. Plug in USB disk to TV USB port.
3. Reboot (AC Off/On) TV to update F/W automatically.
4. During firmware upgrade will have display a OSD on LCD screen and power status LED will be blinking.
5. When F/W upgrade is finished, a message on screen will be shown then unplug USB disk.
6. TV will be reset automatically.

# Definition of Firmware file name



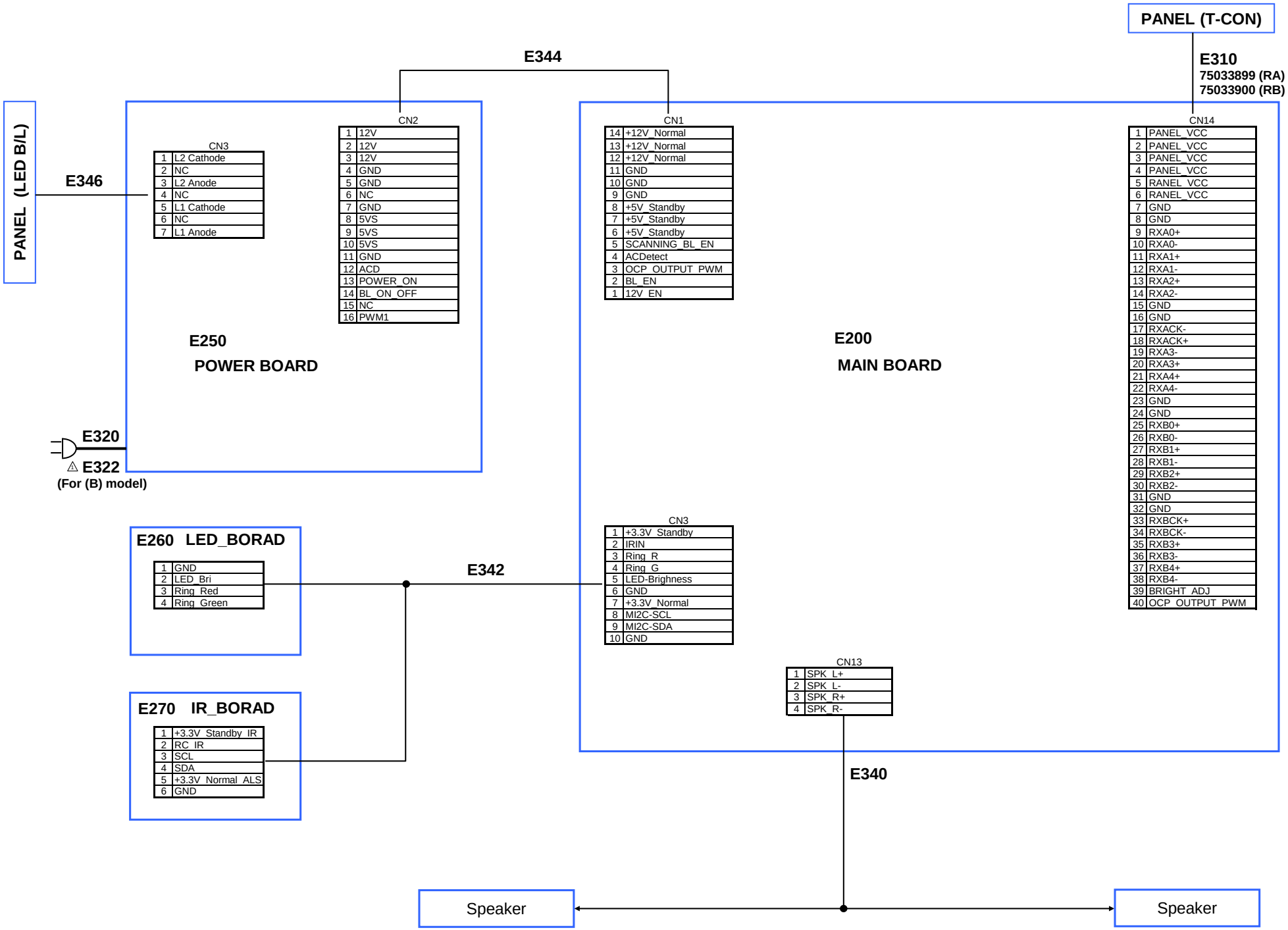
File name: xxx23xxx_001_REV00.bin.

xx: for all TV size.

x23xxx: model series.

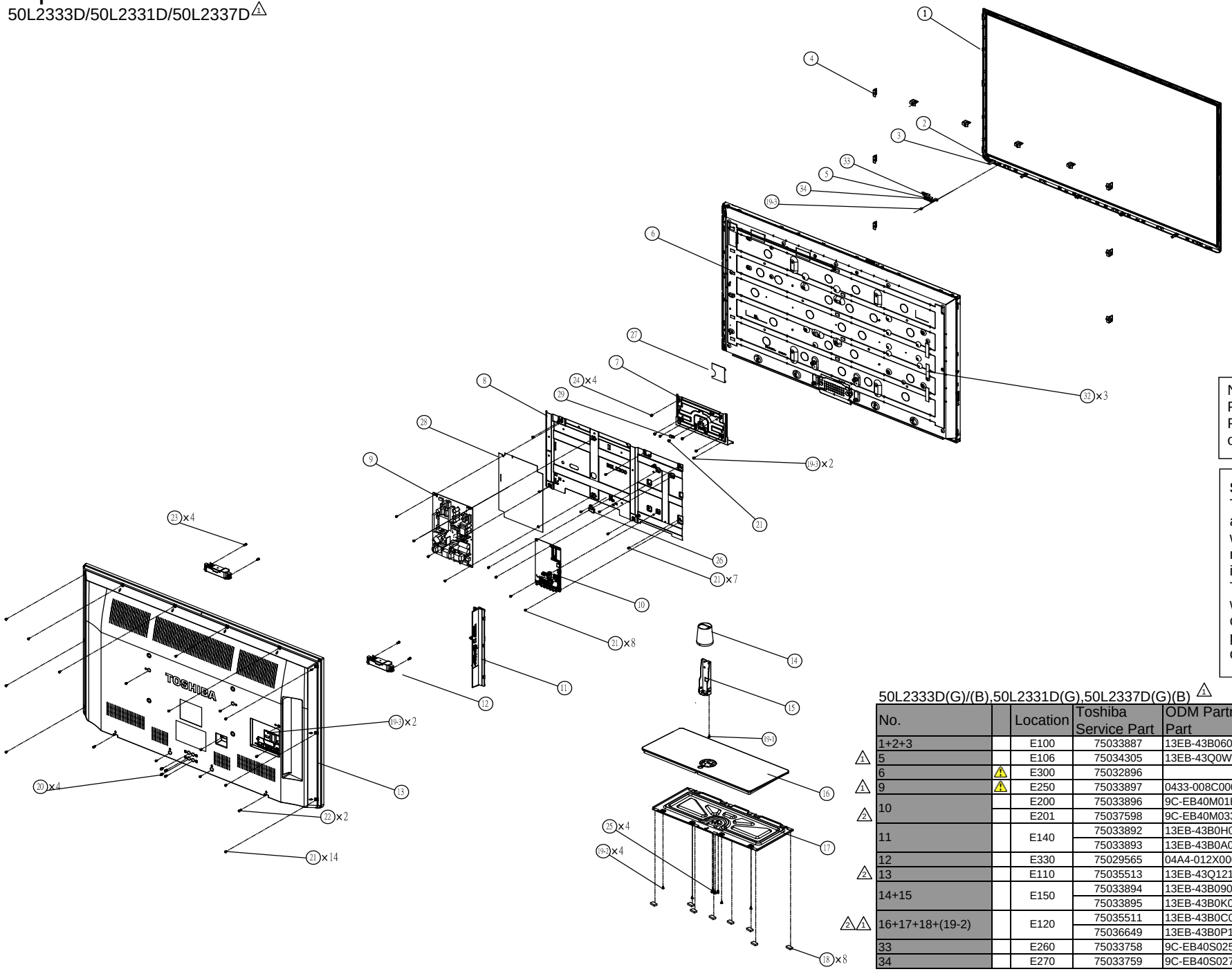
001 : firmware version ex 001 is 0.01, 100 is 1.00

REV00: fixed for revision 00


PANEL (T-CON)
E310
75033899 (RA)
75033900 (RB)
E344
PANEL (LED B/L)
E346
CN3
1 L2 Cathode
2 NC
3 L2 Anode
4 NC
5 L1 Cathode
6 NC
7 L1 Anode
CN2
1 12V
2 12V
3 12V
4 GND
5 GND
6 NC
7 GND
8 5VS
9 5VS
10 5VS
11 GND
12 ACD
13 POWER_ON
14 BL_ON_OFF
15 NC
16 PWM1
E250
POWER BOARD
CN1
14 +12V_Normal
13 +12V_Normal
12 +12V_Normal
11 GND
10 GND
9 GND
8 +5V_Standby
7 +5V_Standby
6 +5V_Standby
5 SCANNING_BL_EN
4 ACDetect
3 OCP_OUTPUT_PWM
2 BL_EN
1 12V_EN
E200
MAIN BOARD
CN14
1 PANEL_VCC
2 PANEL_VCC
3 PANEL_VCC
4 PANEL_VCC
5 RANEL_VCC
6 RANEL_VCC
7 GND
8 GND
9 RXA0+
10 RXA0-
11 RXA1+
12 RXA1-
13 RXA2+
14 RXA2-
15 GND
16 GND
17 RXACK-
18 RXACK+
19 RXA3-
20 RXA3+
21 RXA4+
22 RXA4-
23 GND
24 GND
25 RXB0+
26 RXB0-
27 RXB1+
28 RXB1-
29 RXB2+
30 RXB2-
31 GND
32 GND
33 RXBCK+
34 RXBCK-
35 RXB3+
36 RXB3-
37 RXB4+
38 RXB4-
39 BRIGHT_ADJ
40 OCP_OUTPUT_PWM
E320
E322
(For (B) model)
E260 LED_BORAD
1 GND
2 LED_Bri
3 Ring_Red
4 Ring_Green
E342
CN3
1 +3.3V_Standby
2 IRIN
3 Ring_R
4 Ring_G
5 LED-Brighness
6 GND
7 +3.3V_Normal
8 MI2C-SCL
9 MI2C-SDA
10 GND
E270 IR_BORAD
1 +3.3V_Standby_IR
2 RC_IR
3 SCL
4 SDA
5 +3.3V_Normal_ALS
6 GND
CN13
1 SPK_L+
2 SPK_L-
3 SPK_R+
4 SPK_R-
E340
Speaker
Speaker

# Exploded View

50L2333D/50L2331D/50L2337D⚠1




Note:
Please see PPL put on Web-PRESS for the latest information or other parts.

**SAFETY PRECAUTION**
The parts identified by ⚠ mark are critical for safety. Replace only with part number specified. The mounting position of replacement is to be identical with originals. The substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

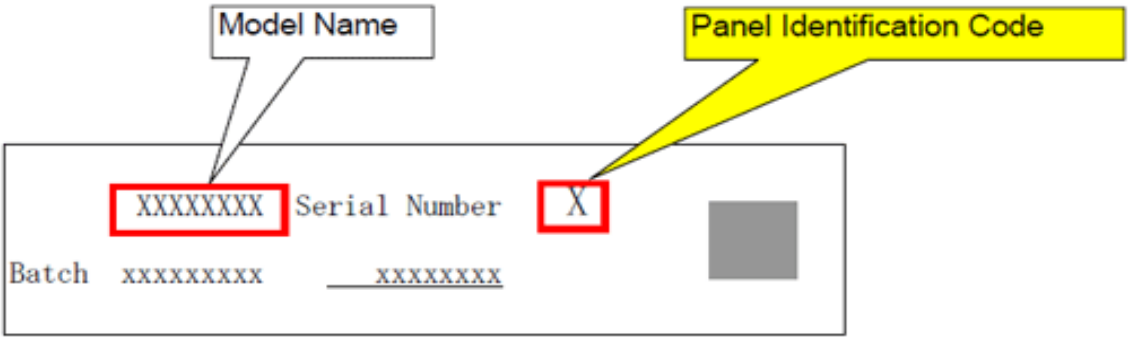
50L2333D(G)/(B),50L2331D(G),50L2337D(G)(B) ⚠1

| No. | | Location | Toshiba Service Part | ODM Partner Part | Description |
|---|---|---|---|---|---|
| 1+2+3 | | E100 | 75033887 | 13EB-43B0601 | FRONT COVER (FRONT BEZEL) |
| ⚠1 5 | | E106 | 75034305 | 13EB-43Q0W11 | SUPPORT FOR SMALL BOARD |
| 6 | ⚠ | E300 | 75032896 | | LCD PANEL, LG, LC500DUE-SFR1 |
| ⚠1 9 | ⚠ | E250 | 75033897 | 0433-008C000 | POWER BOARD ASSY |
| 10 | | E200 | 75033896 | 9C-EB40M01H0 | MAIN BOARD ASSY |
| ⚠2 | | E201 | 75037598 | 9C-EB40M0330 | MAIN BOARD ASSY, WITHOUT TUNER |
| 11 | | E140 | 75033892 | 13EB-43B0H01 | SIDE KEY BEZEL ASSY |
| | | | 75033893 | 13EB-43B0A01 | |
| 12 | | E330 | 75029565 | 04A4-012X000 | SPEAKER (LEFT AND RIGHT) |
| ⚠2 13 | | E110 | 75035513 | 13EB-43Q1211 | BACK COVER ASSY |
| 14+15 | | E150 | 75033894 | 13EB-43B0901 | NECK ASSY |
| | | | 75033895 | 13EB-43B0K01 | |
| ⚠2⚠1 16+17+18+(19-2) | | E120 | 75035511 | 13EB-43B0C01 | STAND ASSY |
| | | | 75036649 | 13EB-43B0P11 | |
| 33 | | E260 | 75033758 | 9C-EB40S0250 | LED BOARD ASSY |
| 34 | | E270 | 75033759 | 9C-EB40S0270 | IR BOARD ASSY |

# PANEL IDENTIFICATION

⚠1

### Serial No. part printed on Rating Label



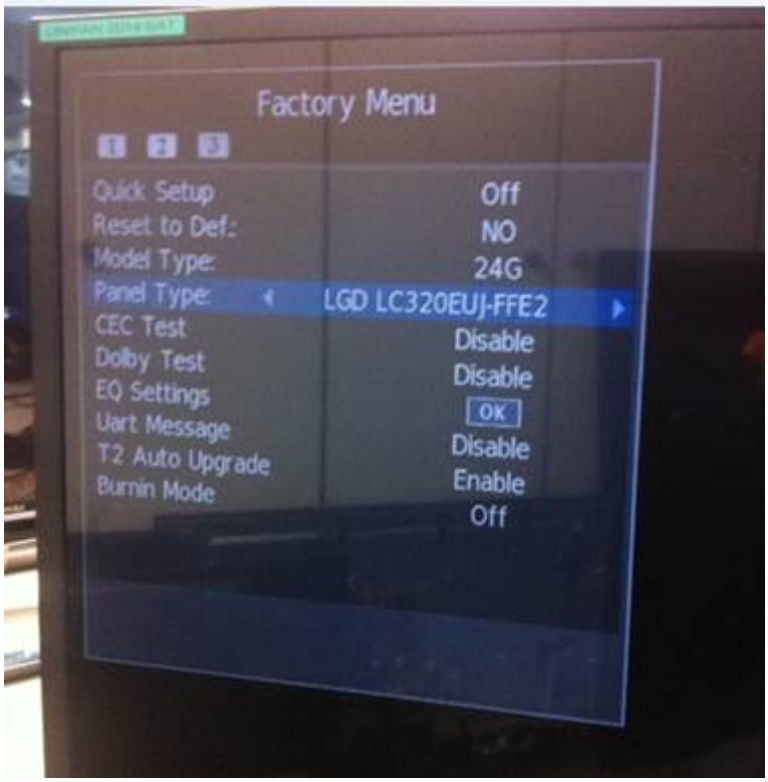

### Panel Identification Code

| Marking | Panel Vendor | Marking | Panel Vendor | Marking | Panel Vendor |
|---|---|---|---|---|---|
| A | AUO | J | | S | SHARP |
| B | | K | SAMSUNG | T | |
| C | CMO | L | LPL/LGD | U | |
| D | | M | | V | |
| E | | N | | W | |
| F | | P | | X | |
| G | | Q | | Y | |
| H | IPS | R | | Z | |

# AFTER MAIN PCB REPLACEMENT

The following setting must be checked after PCB replacement to make sure, that PCB setting corresponds to the panel type:

1. **Enter Factory Menu:**
   - **MENU**
   - **Applications**
   - **Sleep Timer + “2766”**
2. **Go to page 3 and select the proper panel type (take care of the full panel name, not only panel vendor name).**
   Panel type can be found on the panel serial number sticker.




3. **Press EXIT to leave the factory mode (please make sure you have selected the proper panel type, before you press EXIT !).**

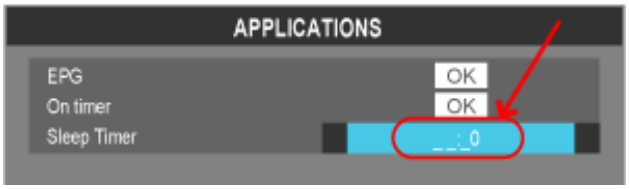
4. **If the proper panel type was set, TV will come up with proper picture after TV restart.**

PLEASE TAKE CARE: set may come up with NO PICTURE at all when wrong panel was selected and it will be very difficult/impossible to adjust the proper settings afterwards.

# DESTINATION SETTING CHANGE

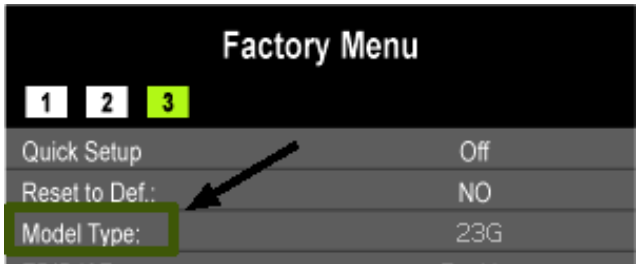
Whenever replacing the Main PCB with new one, perform this procedure.

1. IR Key MENU → APPLICATIONS → Sleep Timer → OK.
2. When display _ _ : _ 0 input 4 numbers 2766.



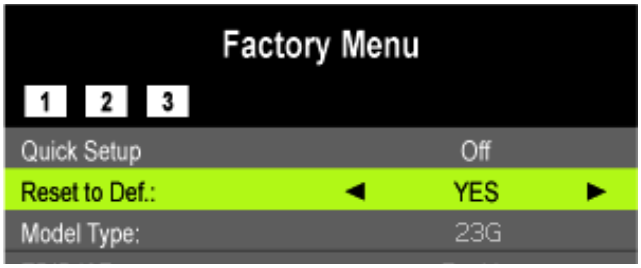

The Factory menu will display.


3. Move to Tag "3" by Right/Left Arrow key on the Remote.
4. Select "Model Type" cell.




5. Select the appropriate model type by Right/Left Arrow key on the Remote.


6. Select "Reset to Def".
7. Select "Yes" and press "OK" button on the Remote.



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REV. 02
Dec/19/2014

# CONTENTS



# REVISION HISTORY

| Date | Author | Ver | Comments |
|---|---|---|---|
| 2012/08/27 | Jeff/Jerry | 1.00 | For SR stage. |
| 2012/09/14 | Jeff/Jerry | 1.01 | For SR2 stage. |
| 2012/10/20 | Jeff/Jerry | 1.02 | For ER stage. |
| 2012/11/07 | Jeff/Jerry | 1.03 | For ER2 stage. |
| 2012/11/21 | Jeff/Jerry | 1.03a | For PR stage. |

Unihan

Title : Contents&History

MAIN BOARD

Engineer: Jeff Y Hsiao/Jerry Lo

| Size | Project Name | Rev |
|---|---|---|
| B | L2300 | 1.03a |

Date: Thursday, December 20, 2012 Sheet 1 of 23

# TV System Power Budget Block Diagram

AC 220~240

PSU Unit
32"/39"/50"
+5V_Standby
+12V_Normal
GPIO_12V_EN
GPIO_OCP_OUTPUT_PWM
GPIO_BL_EN
ACDetect
SCANNING_BL_EN

LIPS

32WX/32FHD/39FHD/50FHD
LED Driver

PANEL_VCC
+12V_Normal
0.7A
Panel _Tcon
32WX/32FHD
GPIO_Panel_VCC_ON
1.3A
AMP(7W+7W)
Amp efficiency:85% , Devition 5%

PANEL_VCC
+12V_Normal
0.7A
Panel _Tcon
39FHD
GPIO_Panel_VCC_ON
1.3A
AMP(7W+7W)
Amp efficiency:85% , Devition 5%

PANEL_VCC
+12V_Normal
0.7A
Panel _Tcon
50FHD
GPIO_Panel_VCC_ON
1.3A
AMP(7W+7W)
Amp efficiency:85% , Devition 5%

+5V_Standby
3947mA
1307mA
NORMAL_PWR_CTL
+5V_Normal

U2
DC/DC
TPS5432DDAR
1047mA
Enable_Control
+3.3V_Normal
1047mA

U17
LDO
APE1117AK-HF
240mA
TUNER_3.3V
240mA
TU1
TUNER
SUT_RE221

10mA
SPDIF_OUT CIRCUIT

10mA
SC_CVBS_OUT CIRCUIT

330mA
+5V_Standby
Enable_Control
U1
LDO
RT9043-GB
+3.3V_Standby
330mA

U7
MSD8841BX_BGA20x20
AVDD_ALIVE(ball=N7)= 17.31mA
AVDD_DVI(ball=L7,K7)= 18.64mA
AVDD_DMPLL(ball=P6)= 6.01mA
AVDD_MPLL(ball=M8)= 13.24mA
Power on Max. current= 55.2mA
Standby Max. current= 2.912mA
56mA

U8 Reset IC
G690H293T73UF
Power on Max. current= 20mA
Standby Max. current=
20mA

U11 SPI Flash
W25Q64FVSSIG
Power on Max. current= 45mA
Standby Max. current= 0.05mA
45mA

U27 MHL to HDMI
MSG1200
Power on Max. current= 95.12mA
Standby Max. current= 1.12mA
96mA

U3
LDO
RT9043-GB
85mA
+1.2V_Standby_MHL

U27 MHL to HDMI
MSG1200
Power on Max. current= 85mA
Standby Max. current= 0.58mA

IR_ALS Board
Power on Max. current= 15mA
Standby Max. current=
15mA

LED_Board
Power on Max. current= 10mA
Standby Max. current=
10mA

0.046mA
U27 MHL to HDMI
MSG1200
Power on Max. current= 0.046mA
Standby Max. current= 0.046mA

410mA
+3.3V_Normal
Enable_Control
U6
DC/DC
TPS5432DDAR
((1340mA/1000)*1.2)/(0.8)/5= 0.402
+1.2V_Normal
1339mA

U7
MSD8841BX_BGA20x20
VDDC (ball=G9,H9,K10,K11,L10,M12,M13,
N12,P14,P15,R10,R14,R15,T10)= 1266.25mA

DVDDC(ball=M14)(DVDD_DDR)= 55.5mA
AVDDLV_USB(ball=K12)= 1.08mA
AVDDL_MOD(ball=R16)= 7.8mA
AVDD11_ETH(ball=L11)= 0.67mA
AVDD1P1(ball=P10)= 7.7mA
Power on Max. current= 1339mA

1900mA
USB_5V
500mA(Min).
USB
GPIO_USB1_PWR_SW
VCC-PCMCIA
500mA(Min).
PCMCIA
GPIO_PCM_5V_CTL
+5V_HDMIC
900mA(Max).
MHL
PS_CTRL#

DEMOD

Enable_Control
80mA
U21
LDO
RT9043-GB
55mA
U24
MSB1230-LF
AVDD_SAR_T2(Pin33)
AVDD33_ADC_T2(Pin36)
AVDD_MPLL_T2(Pin43)
AVDD_APLL_TS/SDR_T2(Pin47)
VDD33_T2(Pin7,18,28,31,50,53,60)
Power on Max. current= 55mA
25mA
U23 SPI_Flash
EN25F20-100GCP
Power on Max. current= 25mA

445mA
Enable_Control
+5V_Normal
U21
LDO
RT9025_25PSP
DT2_2.5V
443mA
43mA
U24
MSB1230-LF
AVDD25_ADC_T2(pin42)
Power on Max. current= 43mA

DT2_2.5V
400mA
Enable_Control
+5V_Normal
U22
LDO
RT9025_25PSP
DT2_1.2V
400mA
U24
MSB1230-LF
VDDC1(Pin9)
VDDC2(Pin20)
VDDC3(Pin30)
VDDC4(Pin51)
VDDC5(Pin59)
Power on Max. current= 400mA

50mA
U7
MSD8841BX_BGA20x20
VDDP(ball=R19,T19)= 8.59mA
AVDD_AU(ball=T7)= 17.32mA
AVDD_EAR(ball=R7)= 5.08mA
AVDD_LPLL(ball=W17,W18)=18.19mA
Power on Max. current= 49.18mA
105.24mA
U7
MSD8841BX_BGA20x20
AVDD_ADC(ball=V8,W7,W8)= 36.2mA
AVDD25_PGA(ball=W11)= 0.01mA
AVDD_REF(ball=W9)= 0.43mA
AVDD_LAN(ball=W14)= 15.3mA
AVDD_MOD(ball=V16,W16)= 53.3mA
Power on Max. current= 105.24mA

110mA
U5
LDO
RT9043-GB
+2.5V_Normal
105.24mA
U19 TS21C_HF

Enable_Control
200mA
U4
DC/DC
RT8059GJ5
+1.5V_Normal
530mA
((530mA/1000)*1.5)/(0.8)/5= 0.198
U7
MSD8841BX_BGA20x20
AVDD_DDR0(ball=J17,K15,K16,L15)= 57.5mA
AVDD_DDR1(ball=K17,L17,M17,L16)= 52.5mA
Power on Max. current= 110mA
U12 DDR3 Memory
H5TQ2G63DFR-PBC
VDD1..9(ball=N1,R1,B2,K2,G7,K8,D9,N9,R9)
VDDQ1..9(ball=A1,C1,F1,D2,H2,A8,C9,E9,H9)
Power on Max. current= 210mA
U13 DDR3 Memory
H5TQ1G63DFR-PBC
VDD1..9(ball=N1,R1,B2,K2,G7,K8,D9,N9,R9)
VDDQ1..9(ball=A1,C1,F1,D2,H2,A8,C9,E9,H9)
Power on Max. current= 210mA

30mA
U18 NAND Flash
H27U2G8F2C
VCC1(Pin12)
VCC2(Pin37)
Power on Max. current= 30mA

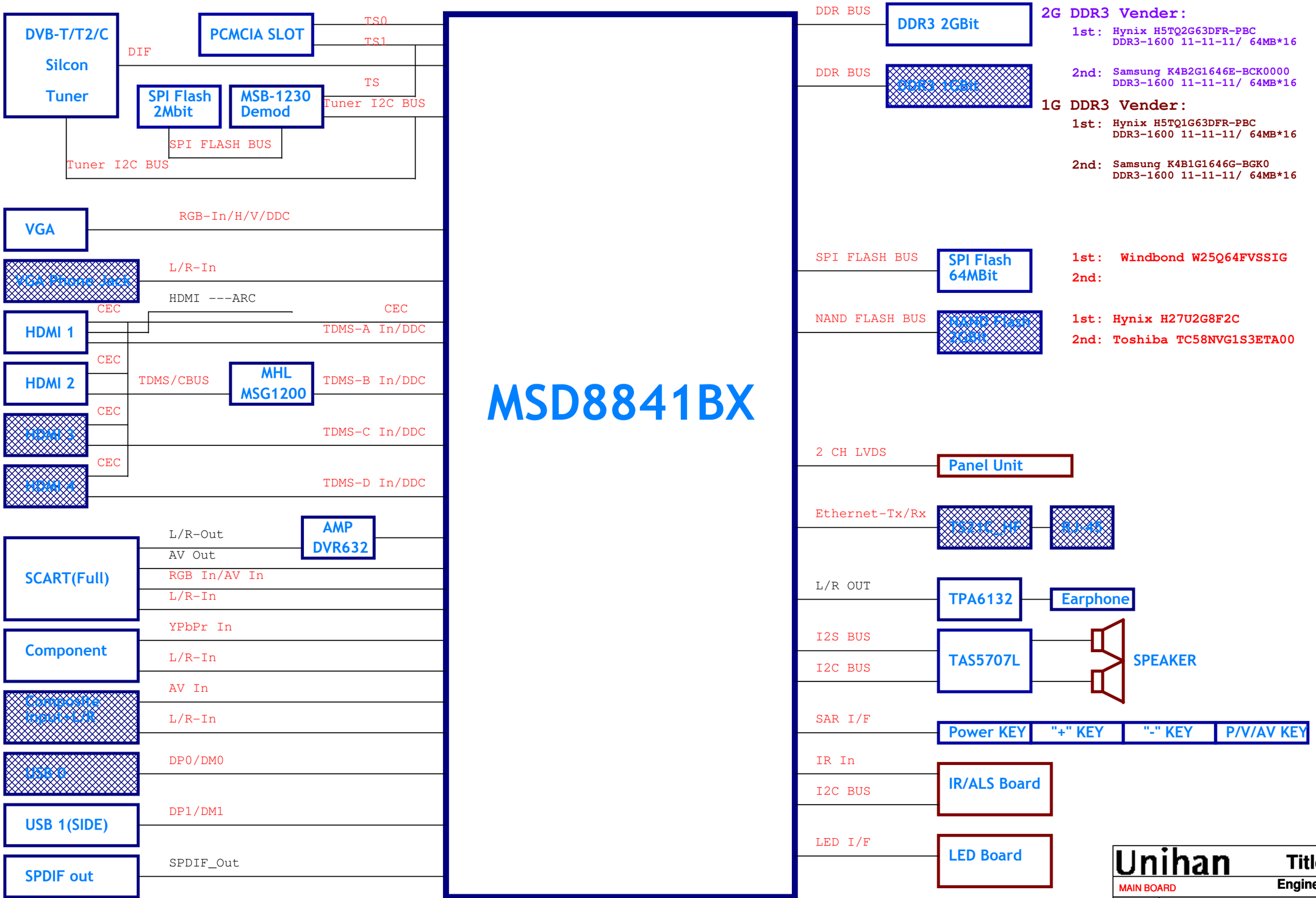
20mA
pull high Resistor
Power on Max. current= 20mA

4mA
Headphone Amplifier
Power on Max. current= 4mA

83mA
U16 Audio Power Amplifier
TAS5707L
TAS5707L= 83mA
Power on Max. current= 83mA

25mA
U14 Line Driver
DRV632PWR
VDD(Pin 9)
Power on Max. current= 25mA

Unihan
Title : TV System Power Budget
MAIN BOARD
Engineer: Jeff Y Hsiao/Jerry Lo
Size: D | Project Name: L2300 | Rev: 1.03a
Date: Thursday, December 20, 2012 | Sheet 2 of 25




Unihan

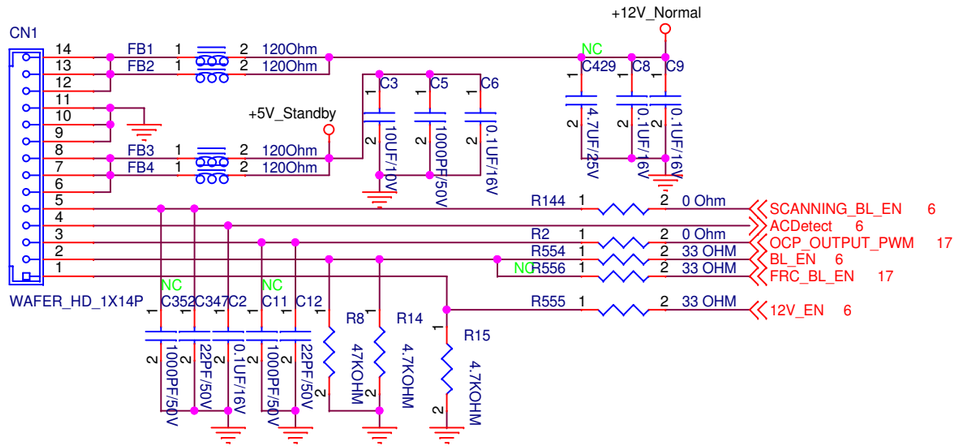
Title : Block Diagram

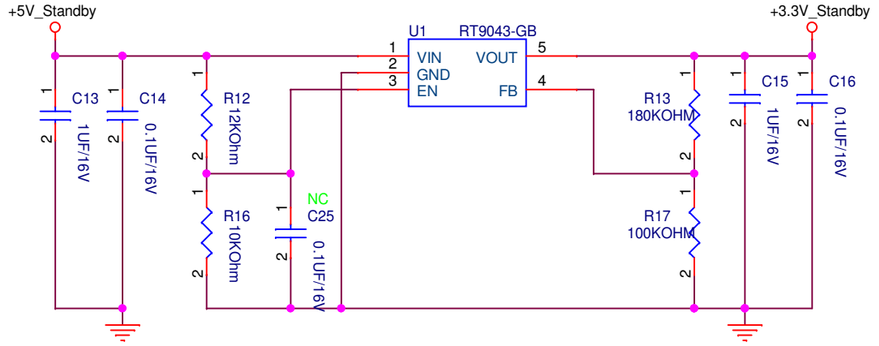
MAIN BOARD

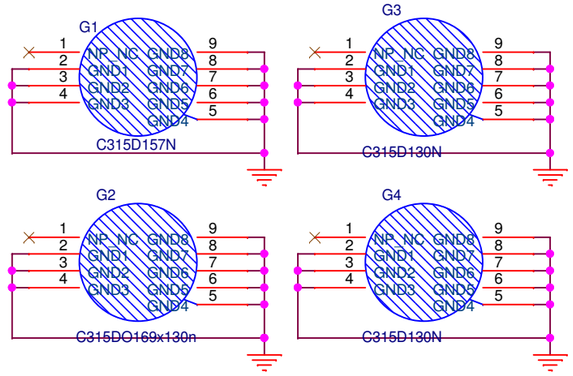
Engineer: Jeff Y Hsiao/Jerry Lo

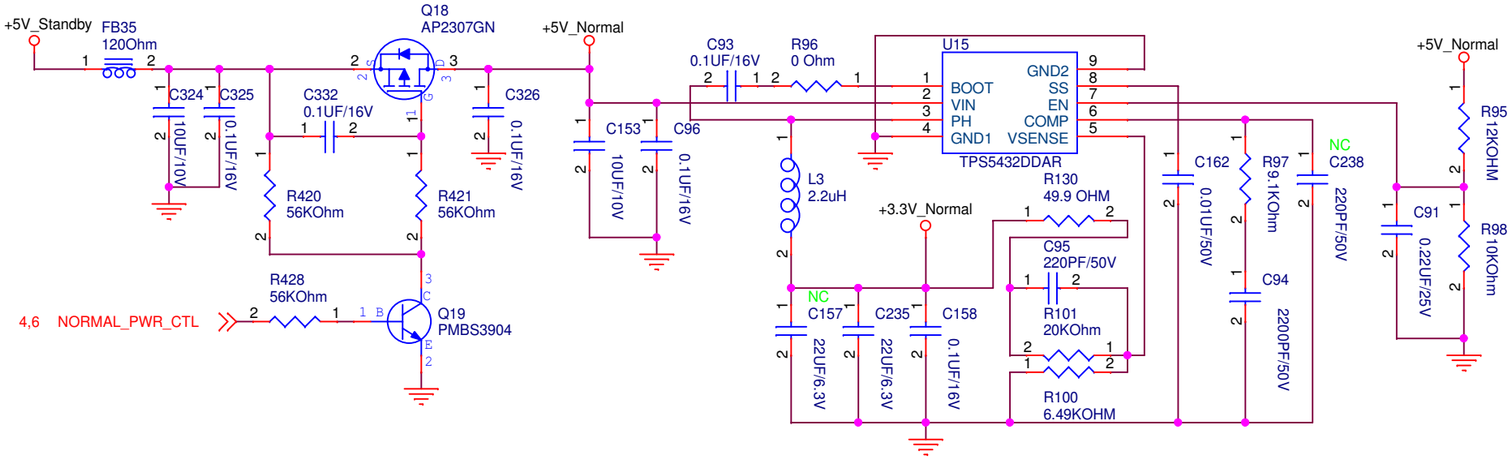
| Size | Project Name | Rev |
|---|---|---|
| B | L2300 | 1.03a |

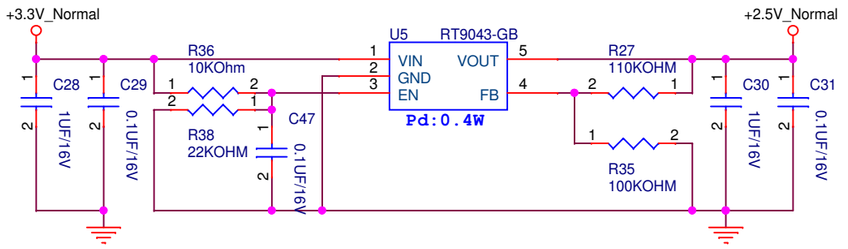
Date: Thursday, December 20, 2012 Sheet 3 of 23

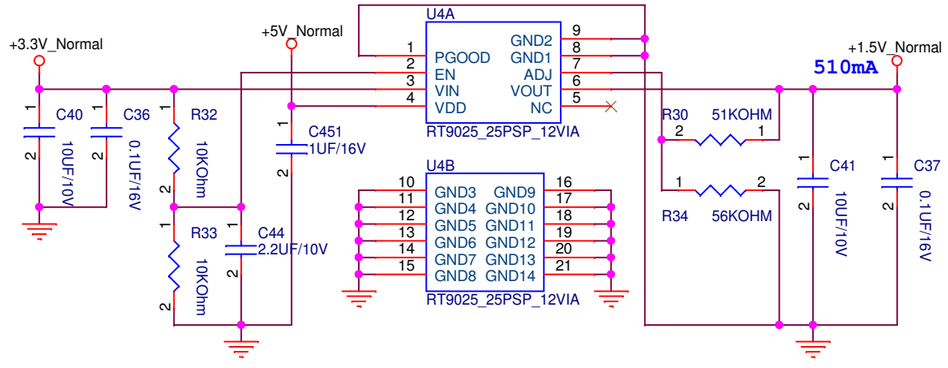


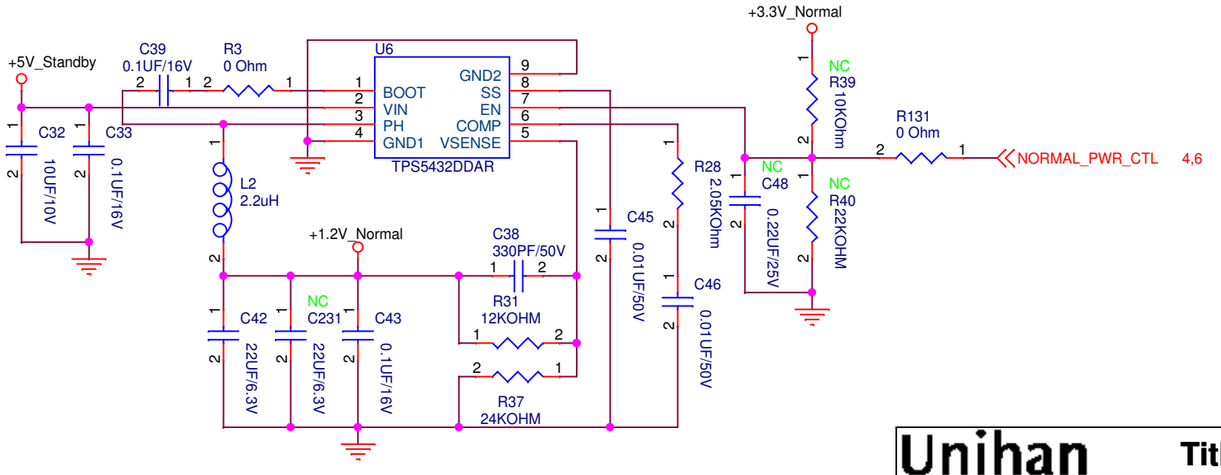



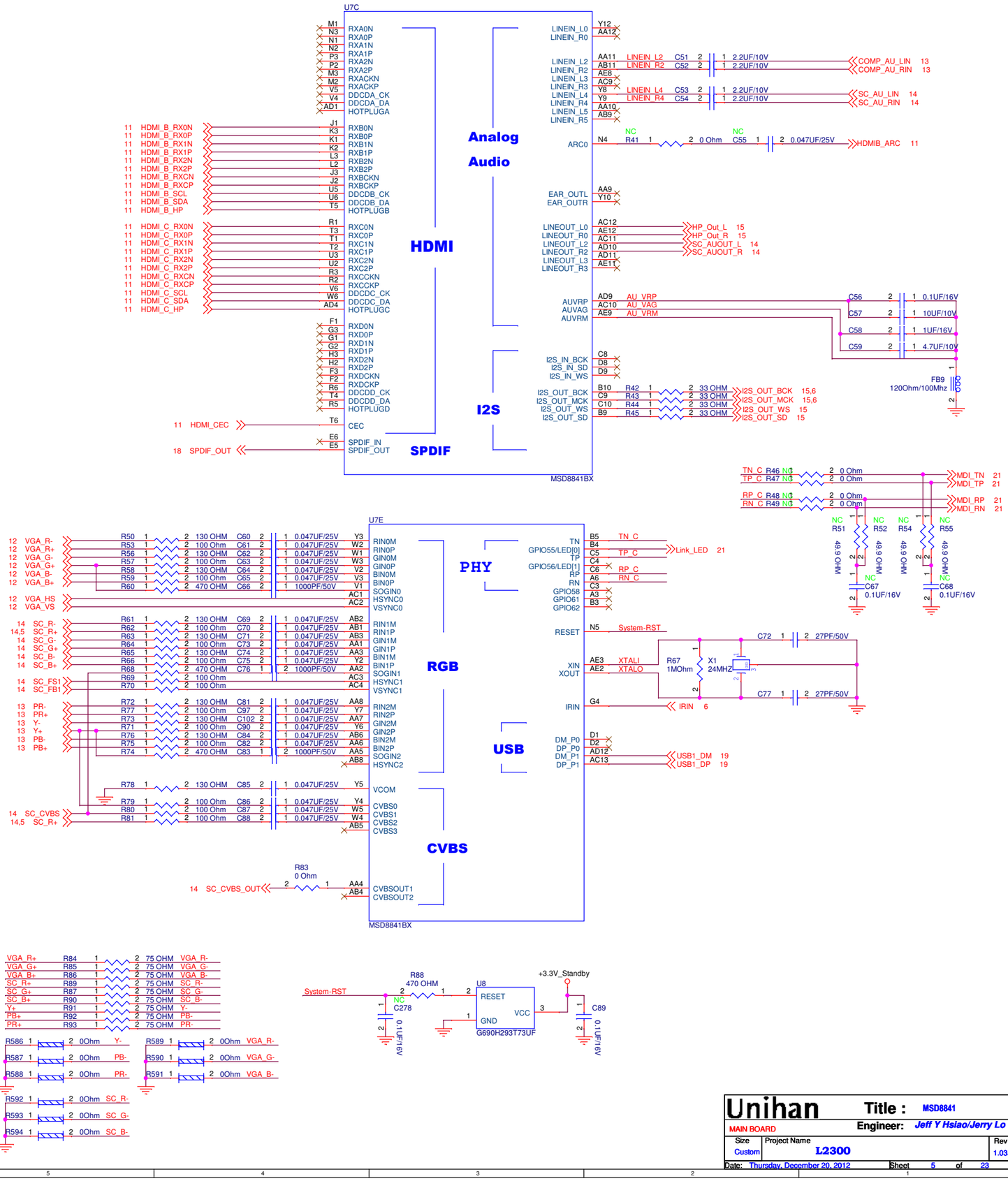



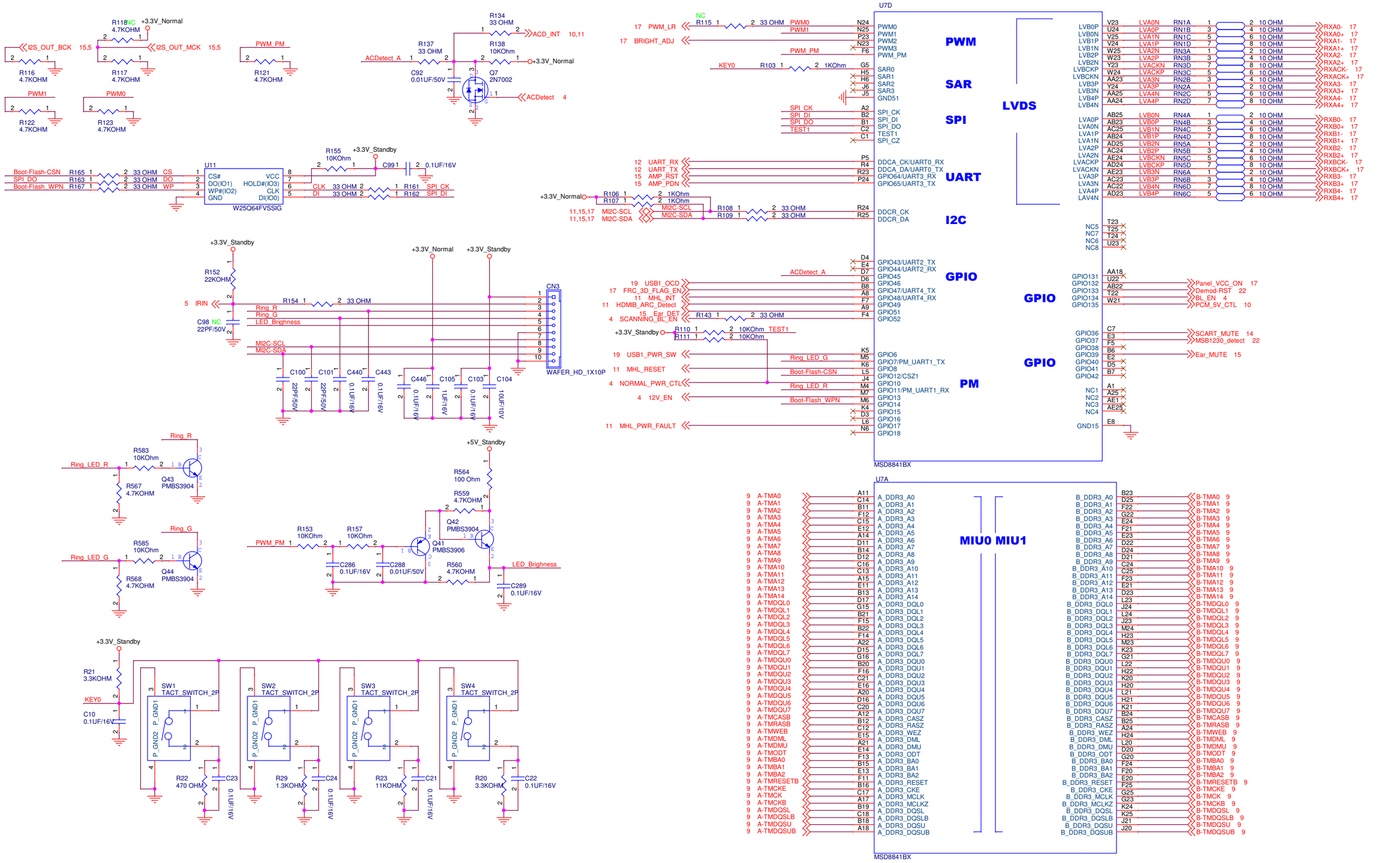



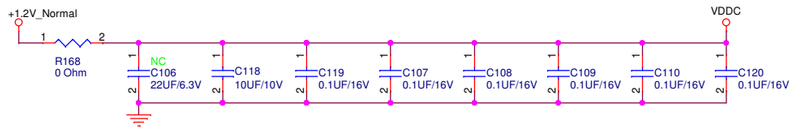

| | | |
|---|---|---|
| Unihan | Title : DC to DC | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | |
| Size: B | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 4 of 23 | |

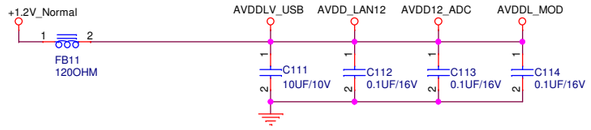


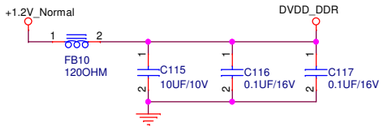

| | | |
|---|---|---|
| Unihan | Title : | MSD8841 |
| MAIN BOARD | Engineer: | Jeff Y Hsiao/Jerry Lo |
| Size: Custom | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 5 of 23 | |

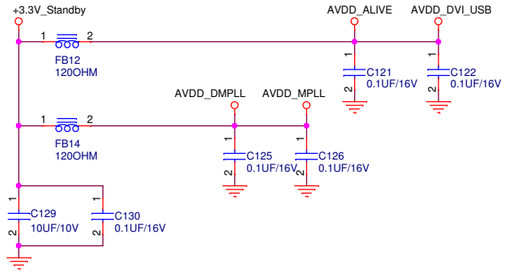


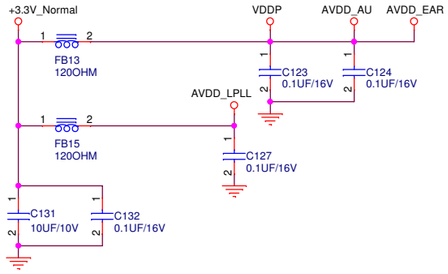

| | | |
|---|---|---|
| Unihan | Title : MSD8841 | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | |
| Size: C | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 6 of 23 | |

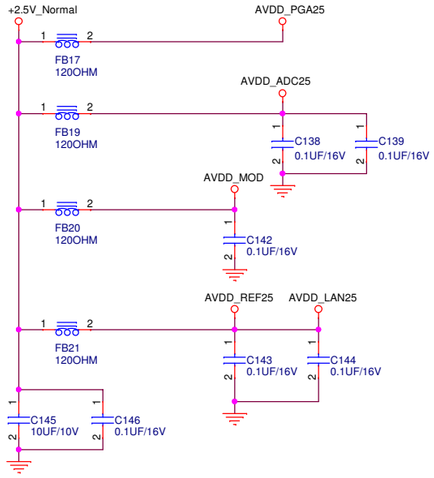


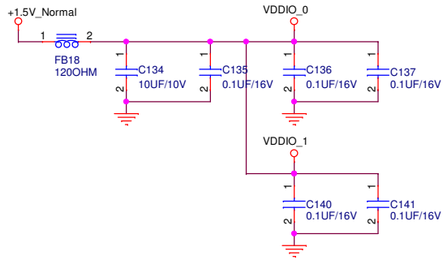



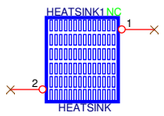



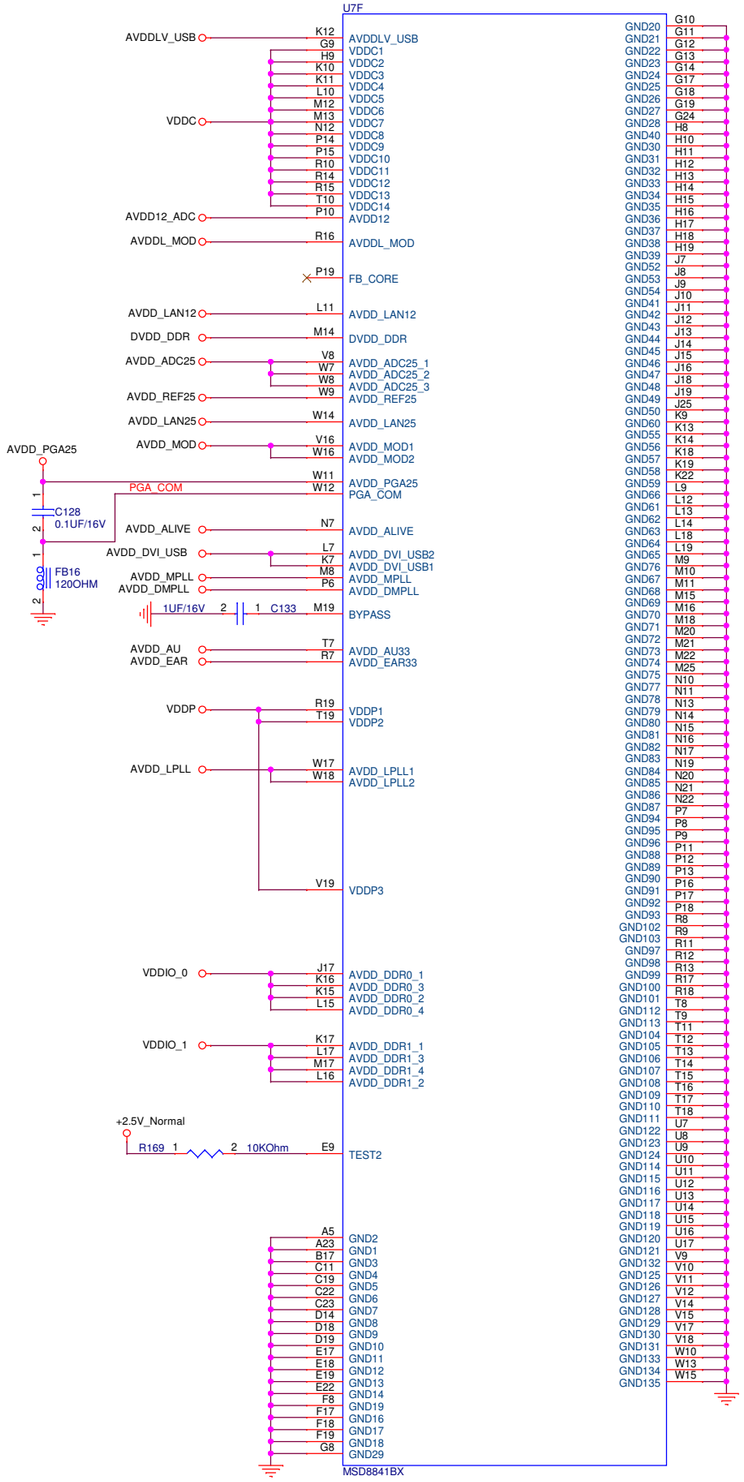




| | | | |
|---|---|---|---|
| Unihan | Title : MSD8841 | | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | | |
| Size: Custom | Project Name: L2300 | | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | | Sheet 7 of 23 | |

PAD_PCM_A[14:0] 10

PAD_PCM_D[7:0] 10

PAD_TS1_D[7:0] 10

PAD_TS0_D[7:0] 10

U7B

PAD_PCM_D0 V20 PCM_D[0]/NF_AD[0]
PAD_PCM_D1 AD22 PCM_D[1]/NF_AD[1]
PAD_PCM_D2 AB21 PCM_D[2]/NF_AD[2]
PAD_PCM_D3 AE17 PCM_D[3]/NF_AD[3]
PAD_PCM_D4 AC18 PCM_D[4]/NF_AD[4]
PAD_PCM_D5 AE18 PCM_D[5]/NF_AD[5]
PAD_PCM_D6 AA19 PCM_D[6]/NF_AD[6]
PAD_PCM_D7 AD18 PCM_D[7]/NF_AD[7]

PAD_PCM_A0 AA21 PCM_A[0]
PAD_PCM_A1 Y22 PCM_A[1]
PAD_PCM_A2 R20 PCM_A[2]
PAD_PCM_A3 W19 PCM_A[3]
PAD_PCM_A4 T20 PCM_A[4]
PAD_PCM_A5 AA22 PCM_A[5]
PAD_PCM_A6 V21 PCM_A[6]
PAD_PCM_A7 AB16 PCM_A[7]
PAD_PCM_A8 W22 PCM_A[8]
PAD_PCM_A9 AE20 PCM_A[9]
PAD_PCM_A10 AD19 PCM_A[10]
PAD_PCM_A11 AB17 PCM_A[11]
PAD_PCM_A12 AB20 PCM_A[12]
PAD_PCM_A13 AC20 PCM_A[13]
PAD_PCM_A14 AE21 PCM_A[14]

**CI**
**PCMCIA**

10 PAD_PCM_IRQA_N_ACD Y19 PCM_IRQA_N
10 PAD_PCM_OE_N AD20 PCM_OE_N
10 PAD_PCM_IORD_N AC19 PCM_IORD_N
10 PAD_PCM_CE_N AB18 PCM_CE_N
10 PAD_PCM_WE_N AD21 PCM_WE_N
10 PAD_PCM_CD_N AB19 PCM_CD_N
10 PAD_PCM_RESET T21 PCM_RST
10 PAD_PCM_REG_N AA20 PCM_REG_N
10 PAD_PCM_IOWR_N Y18 PCM_IOWR_N
10 PAD_PCM_WAIT_N U21 PCM_WAIT_N

20 NAND_ALE R21 NF_ALE
20 NAND_WPZ W20 NF_WPZ
20 NAND_CEZ Y20 NF_CEZ
20 NAND_CLE AC21 NF_CLE
20 NAND_REZ P21 NF_REZ
20 NAND_WEZ P22 NF_WEZ
20 NAND_RBZ Y21 NF_RBZ
P20 NF_CEZ1

**P-FLASH**

**TS1**
**(In/Out)**

TS1_D[0] AC14 PAD_TS1_D0
TS1_D[1] AD14 PAD_TS1_D1
TS1_D[2] AE14 PAD_TS1_D2
TS1_D[3] AD15 PAD_TS1_D3
TS1_D[4] AC15 PAD_TS1_D4
TS1_D[5] AD16 PAD_TS1_D5
TS1_D[6] AD17 PAD_TS1_D6
TS1_D[7] AC17 PAD_TS1_D7
TS1_CLK AC16
TS1_VLD AE15 PAD_TS1_CLK 10
TS1_SYNC AD13 PAD_TS1_VLD 10
PAD_TS1_SYNC 10

**TS0**
**(In)**

TS0_D[0] Y16 PAD_TS0_D0
TS0_D[1] AA17 PAD_TS0_D1
TS0_D[2] AA16 PAD_TS0_D2
TS0_D[3] Y13 PAD_TS0_D3
TS0_D[4] AA13 PAD_TS0_D4
TS0_D[5] AA14 PAD_TS0_D5
TS0_D[6] AB14 PAD_TS0_D6
TS0_D[7] AA15 PAD_TS0_D7
TS0_CLK AB15
TS0_VLD Y15 PAD_TS0_CLK 10
TS0_SYNC Y14 PAD_TS0_VLD 10
PAD_TS0_SYNC 10

**Front End**

IP AE6 ZIF_IP
IM AD6 ZIF_IM
C147 0.1UF/16V
C148 0.1UF/16V
R170 0 Ohm
R171 180 OHM NC
R172 0 Ohm
C150 22PF/50V NC
C151 22PF/50V NC
DIFP 16,22
DIFM 16,22

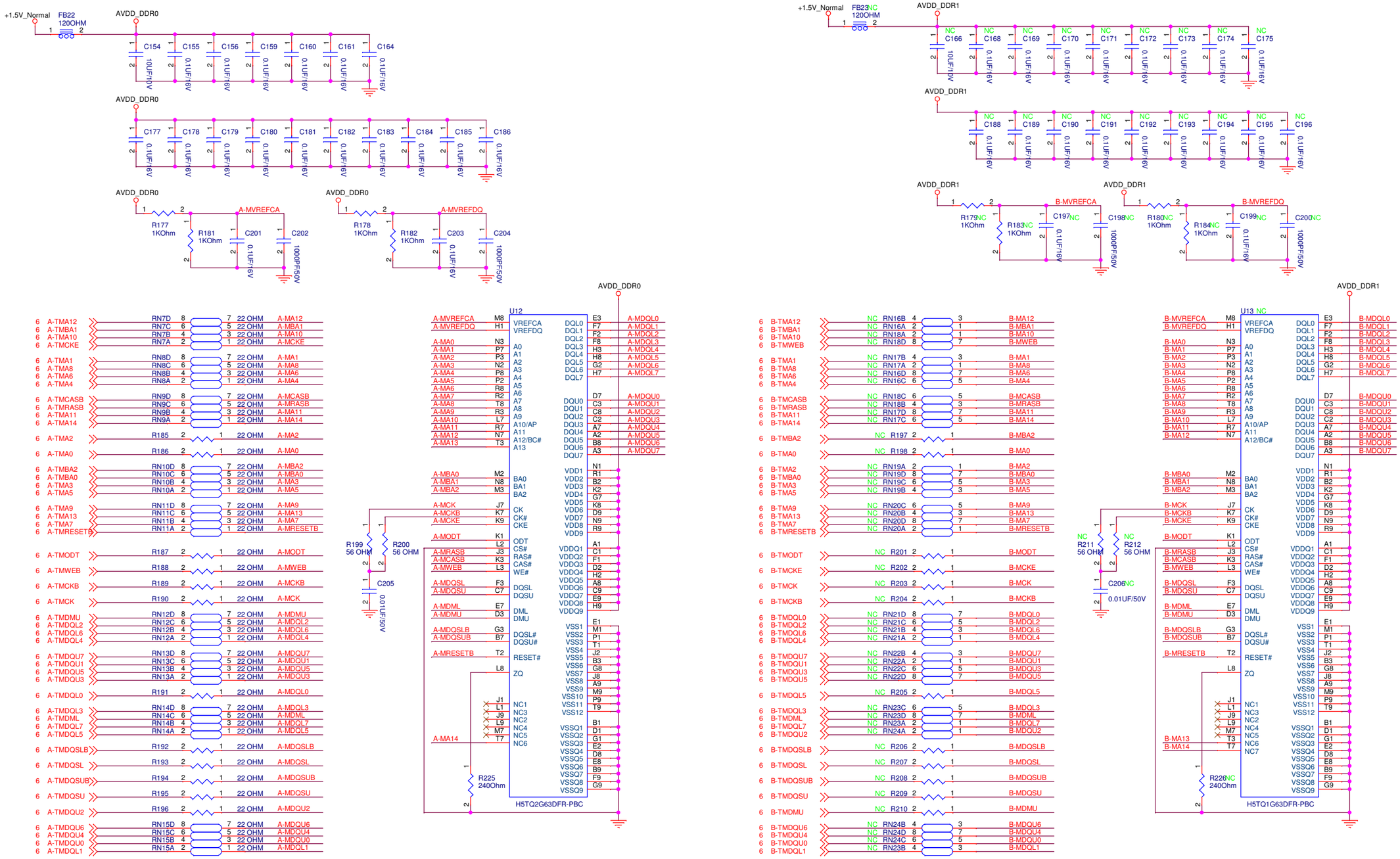
VIFP AD7
VIFM AC7
SIFP AC8
SIFM AD8

IFAGC AC5 IF_AGC 16
RFAGC AD5 RF_AGC 16

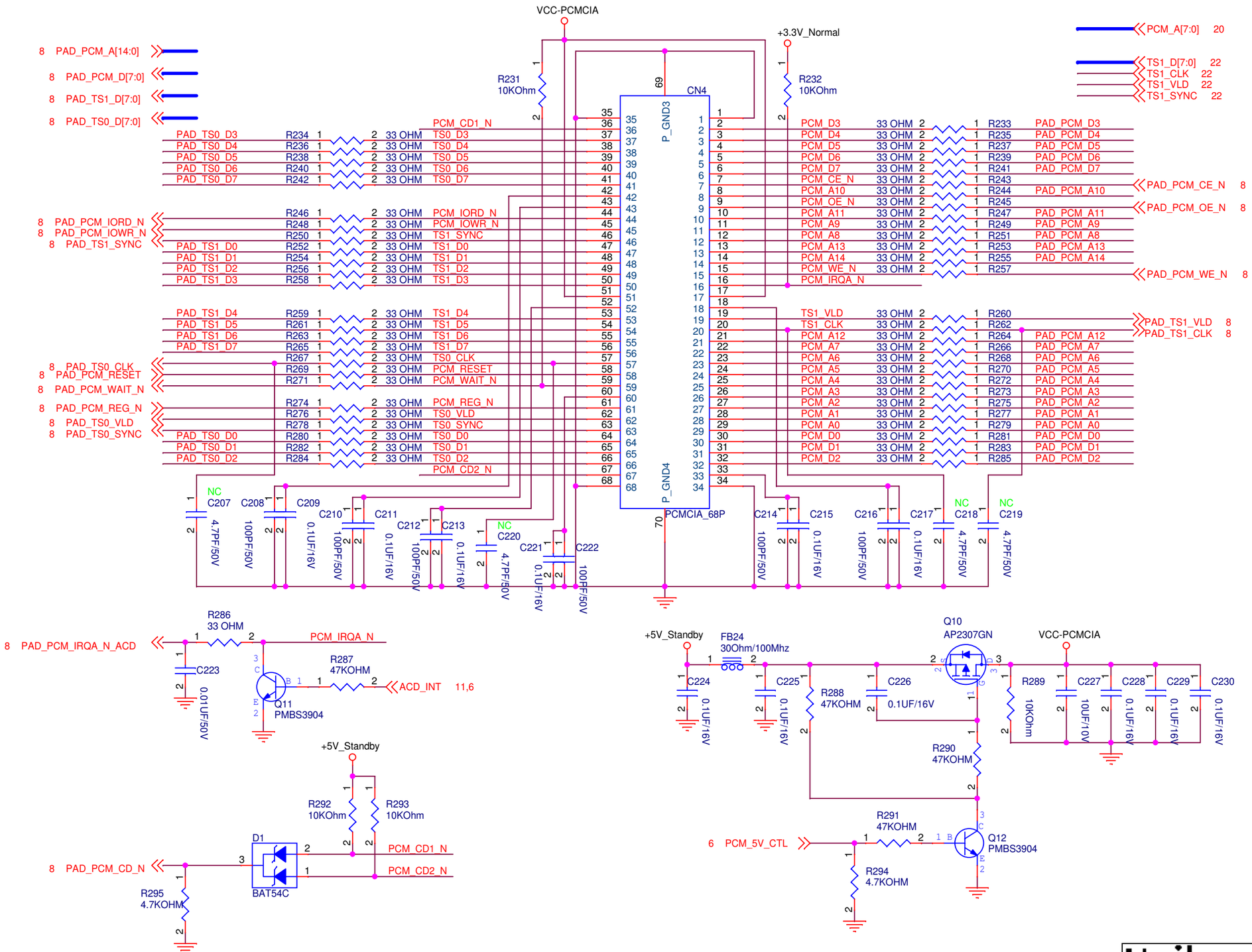
GPIO73 AD3
GPIO74 AD2
GPIO75 AC6 R175 33 OHM TUNER_CTRL 16
GPIO76 AE5 R176 33 OHM MS_SCL 16,22
MS_SDA 16,22

MSD8841BX

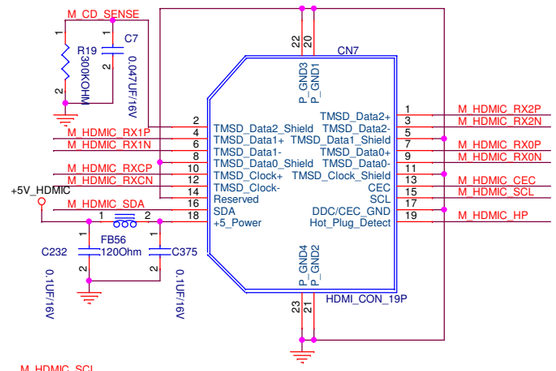
| | | | |
|---|---|---|---|
| Unihan | Title : MSD8841 | | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | | |
| Size: B | Project Name: L2300 | | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 8 of 23 | | |

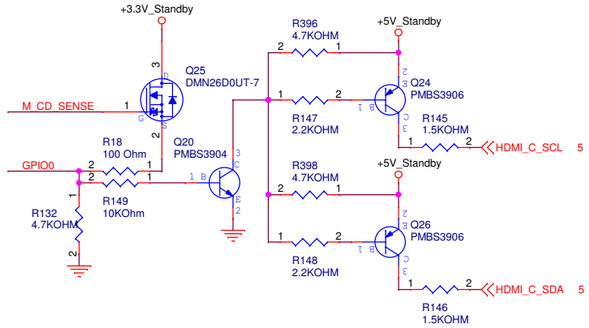


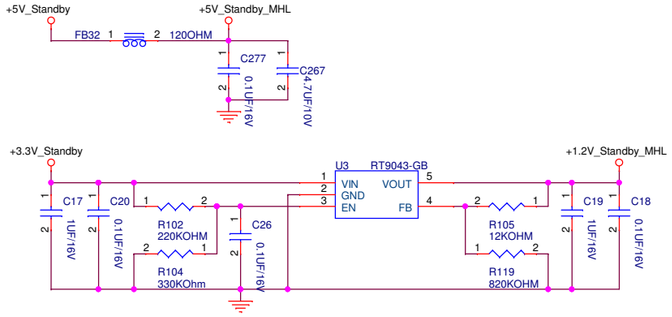

| | | | |
|---|---|---|---|
| Unihan | Title : DDR3 | | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | | |
| Size: C | Project Name: L2300 | | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 9 of 23 | | |

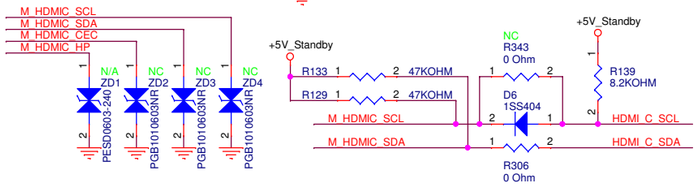


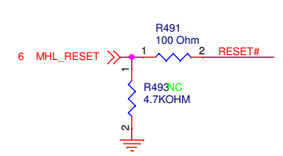

| | | |
|---|---|---|
| Unihan | Title : MSD8841 | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | |
| Size: B | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 10 of 23 | |

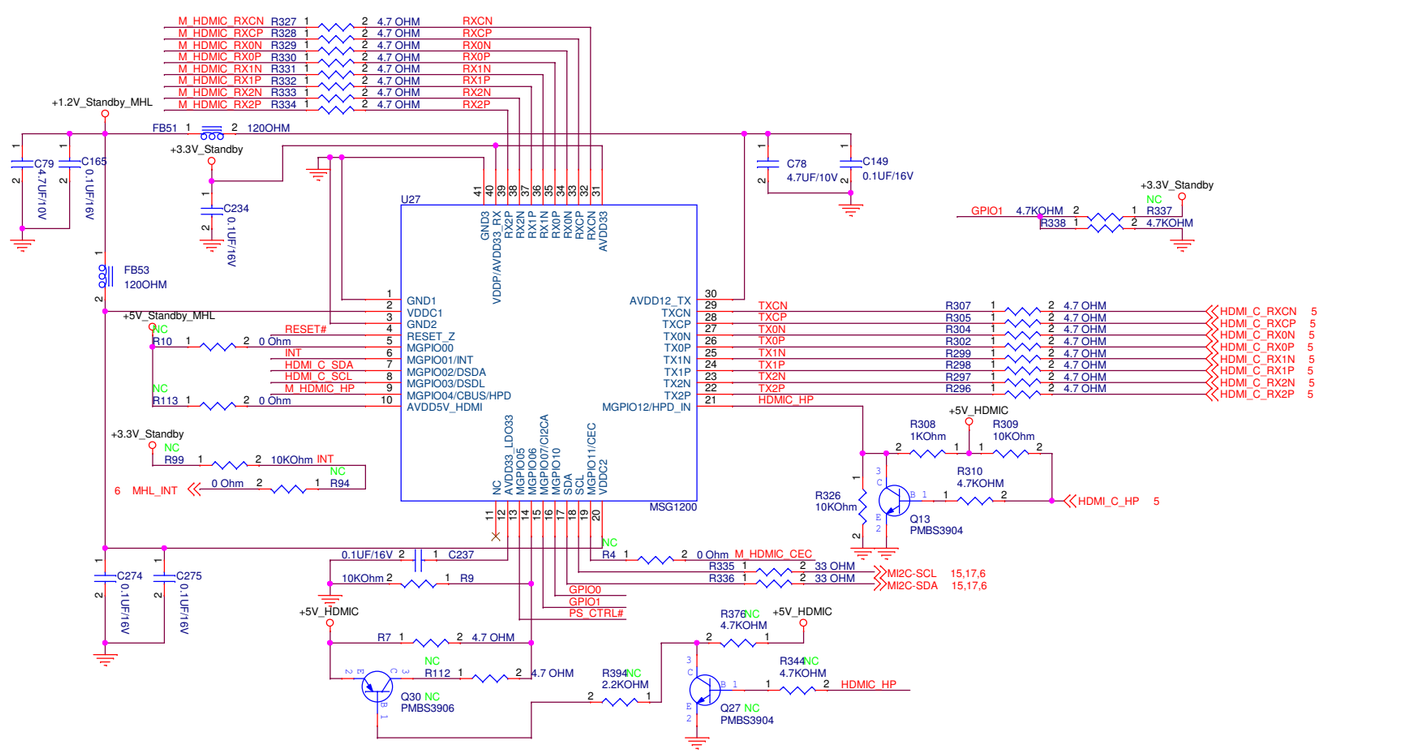


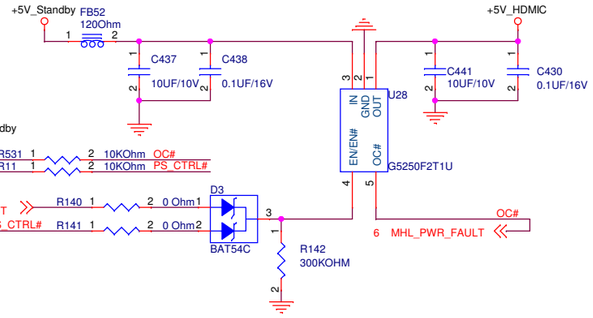



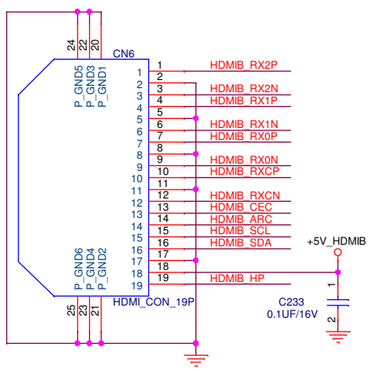



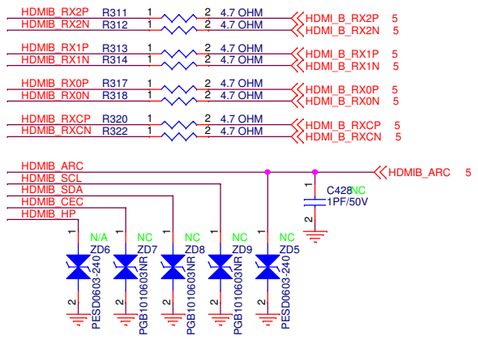



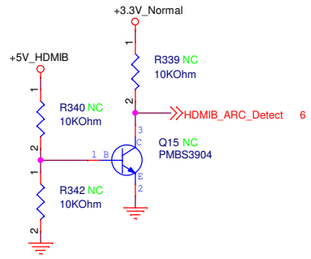



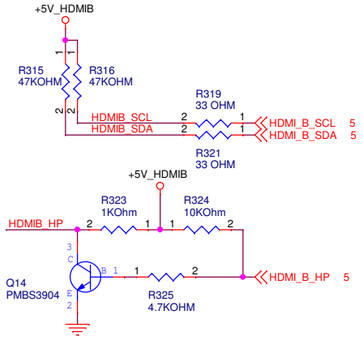



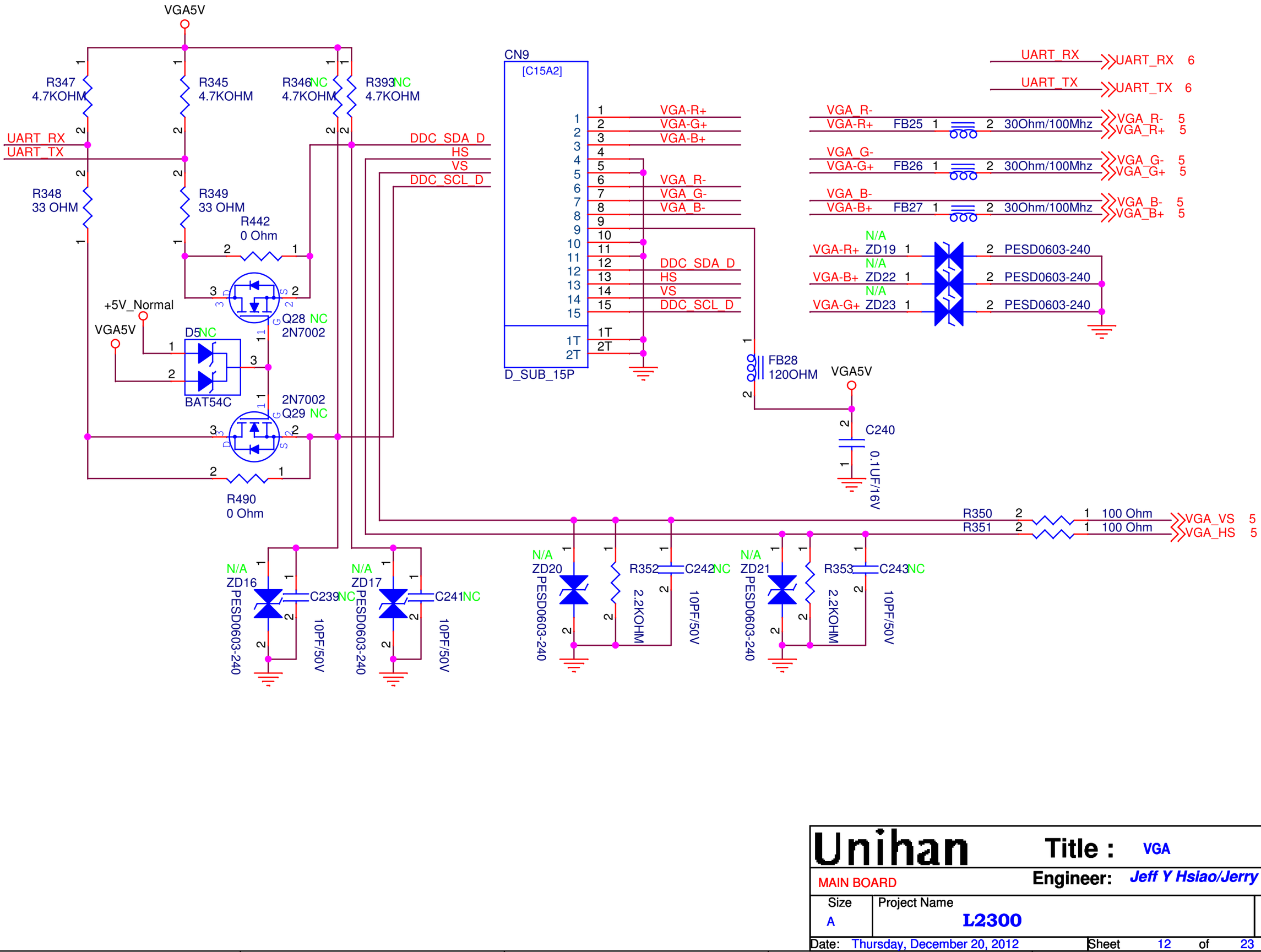



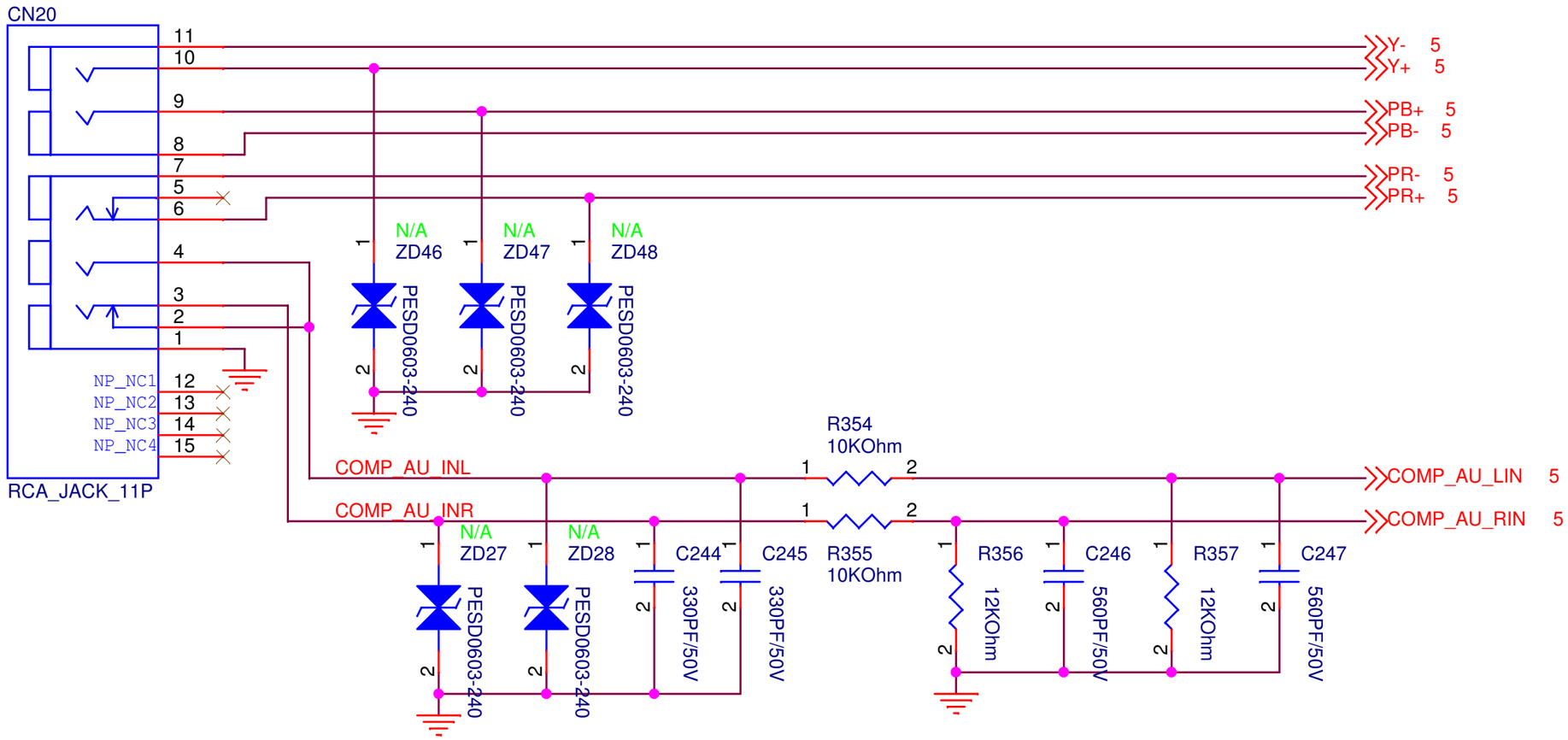





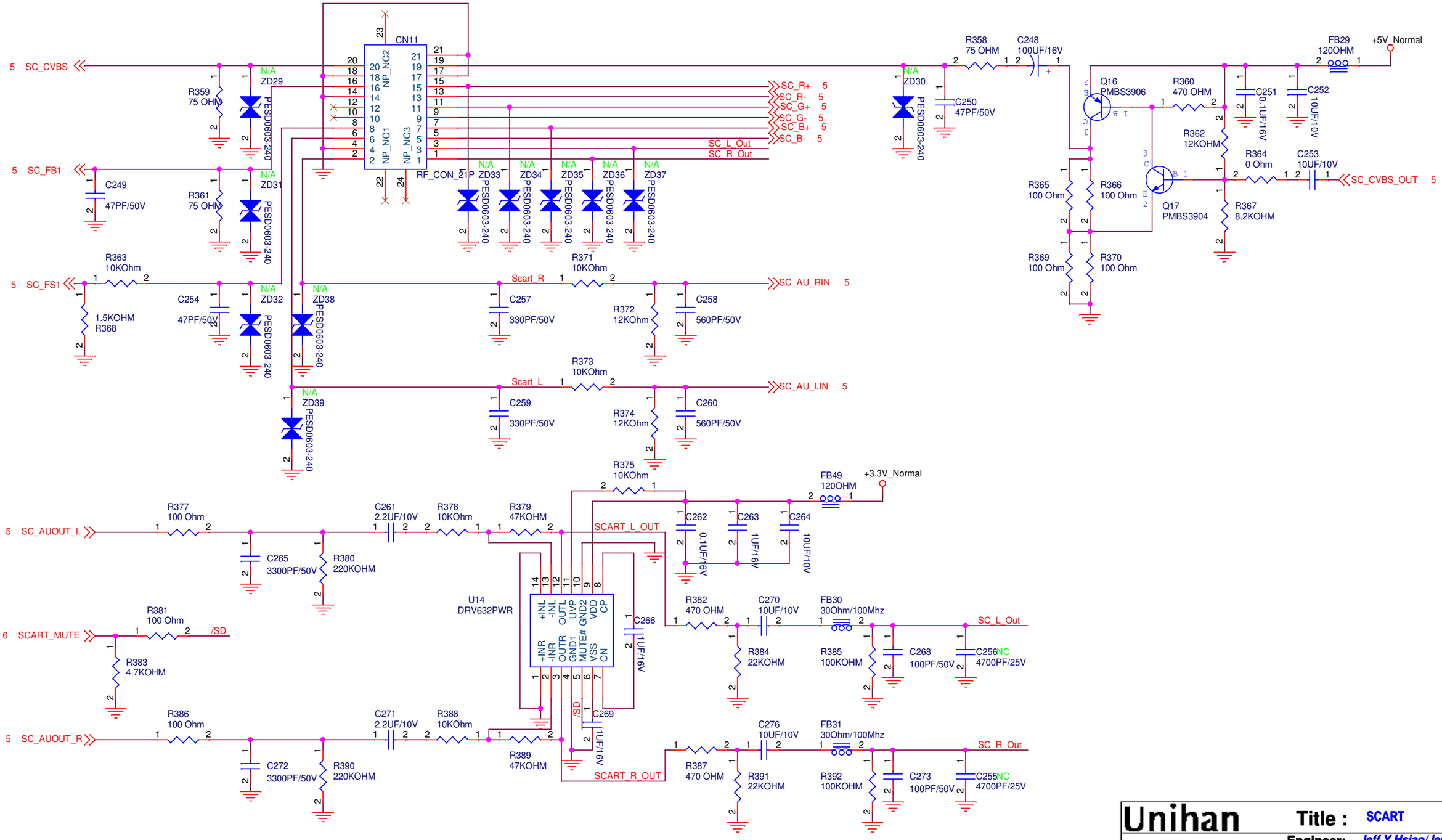
| | | |
|---|---|---|
| Unihan | Title : | HDMI and MHL |
| MAIN BOARD | Engineer: | Jeff Y Hsiao/Jerry Lo |
| Size: C | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 11 of 23 | |



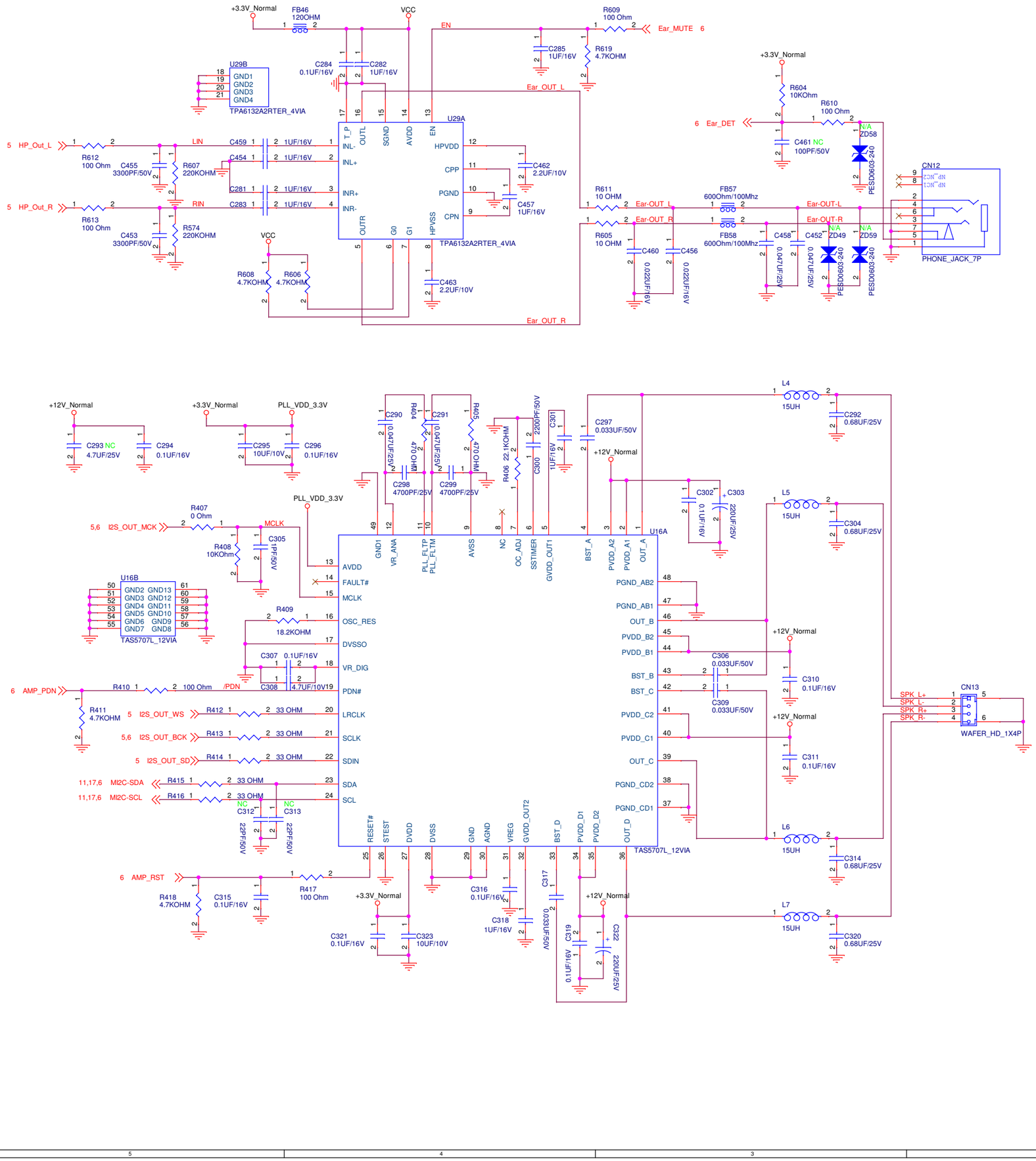

| | | |
|---|---|---|
| Unihan | Title : VGA | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | |
| Size: A | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 12 of 23 | |



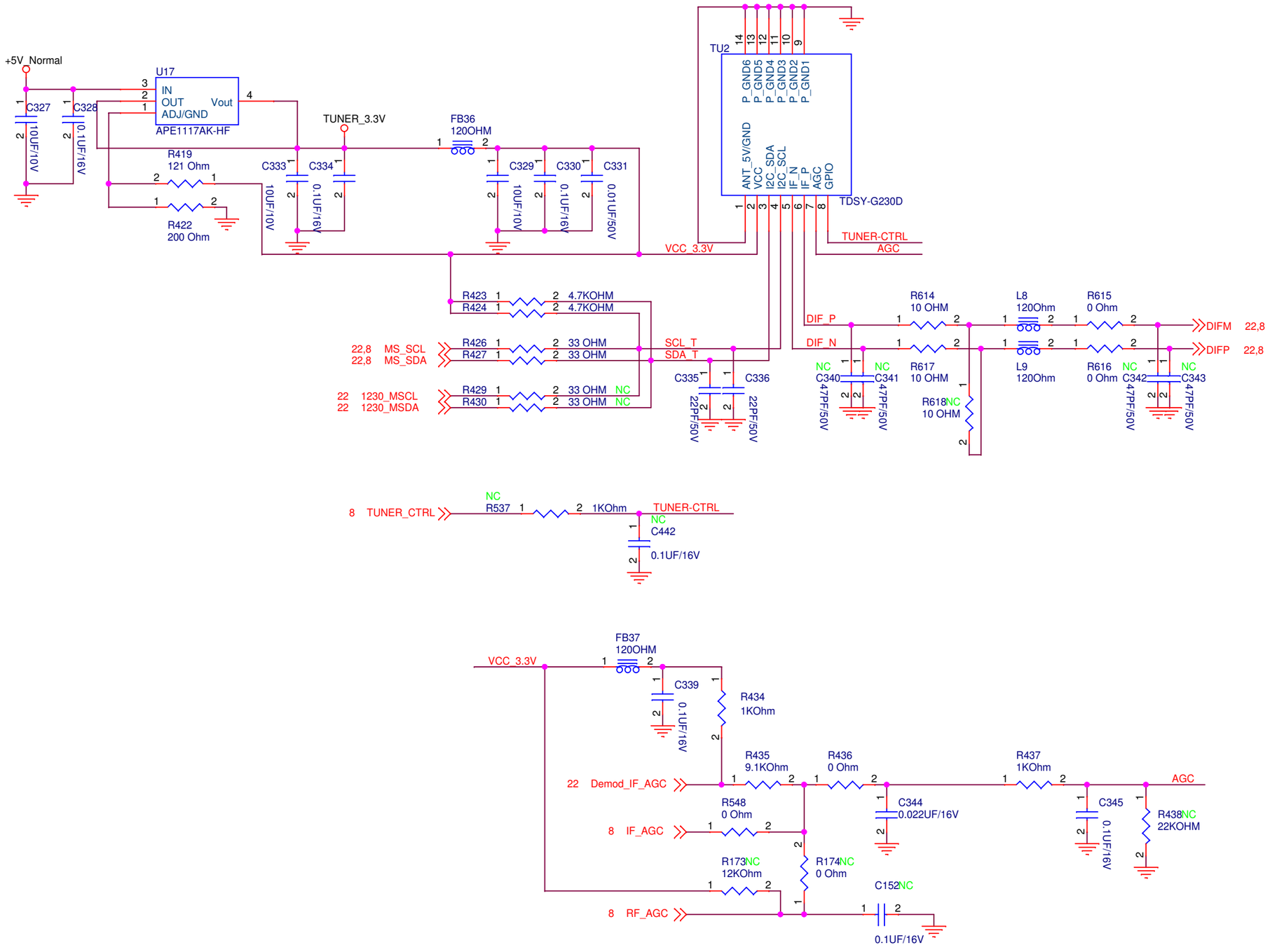

| | | |
|---|---|---|
| Unihan | Title : COMPONENT | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | |
| Size: A | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 13 of 23 | |



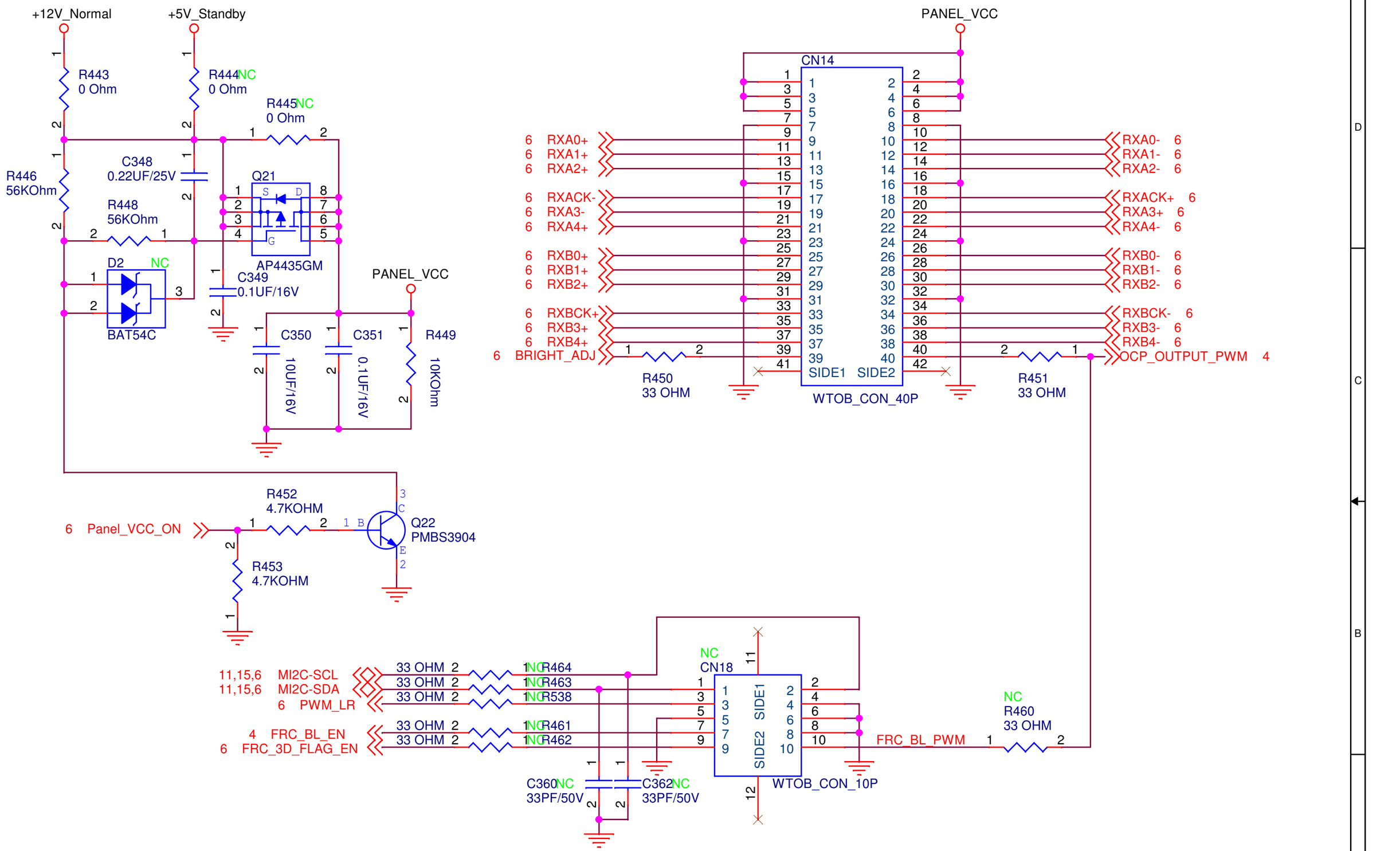

| | | |
|---|---|---|
| Unihan | Title : SCART | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | |
| Size: B | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 14 of 23 | |



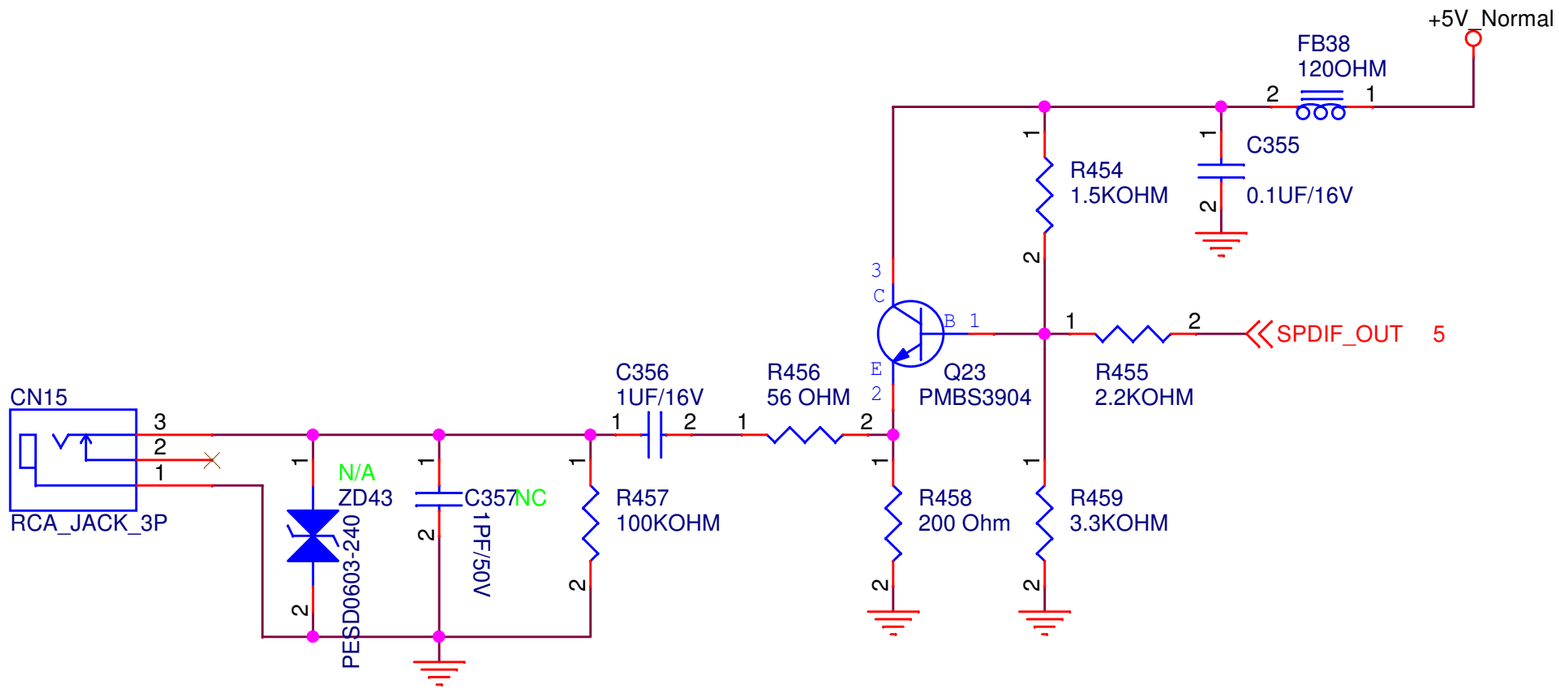

| | | | |
|---|---|---|---|
| Unihan | Title : | Audio AMP | |
| MAIN BOARD | Engineer: | Jeff Y Hsiao/Jerry Lo | |
| Size: C | Project Name: L2300 | | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 15 of 23 | | |



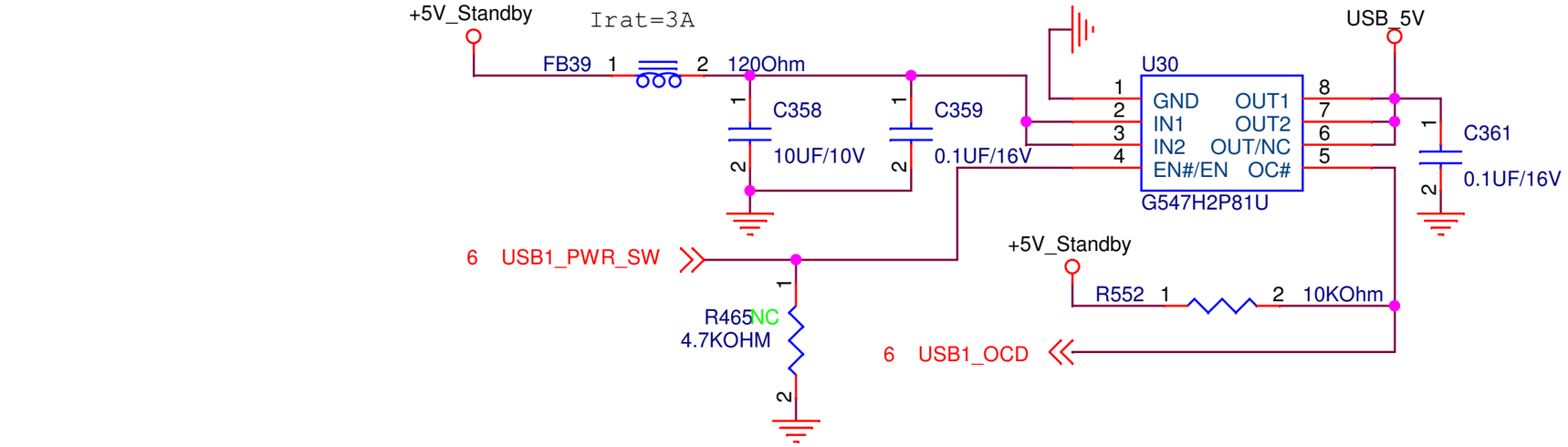

| | | | |
|---|---|---|---|
| Unihan | Title : | Tuner | |
| MAIN BOARD | Engineer: | Jeff Y Hsiao/Jerry Lo | |
| Size: B | Project Name: L2300 | | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 16 of 23 | | |

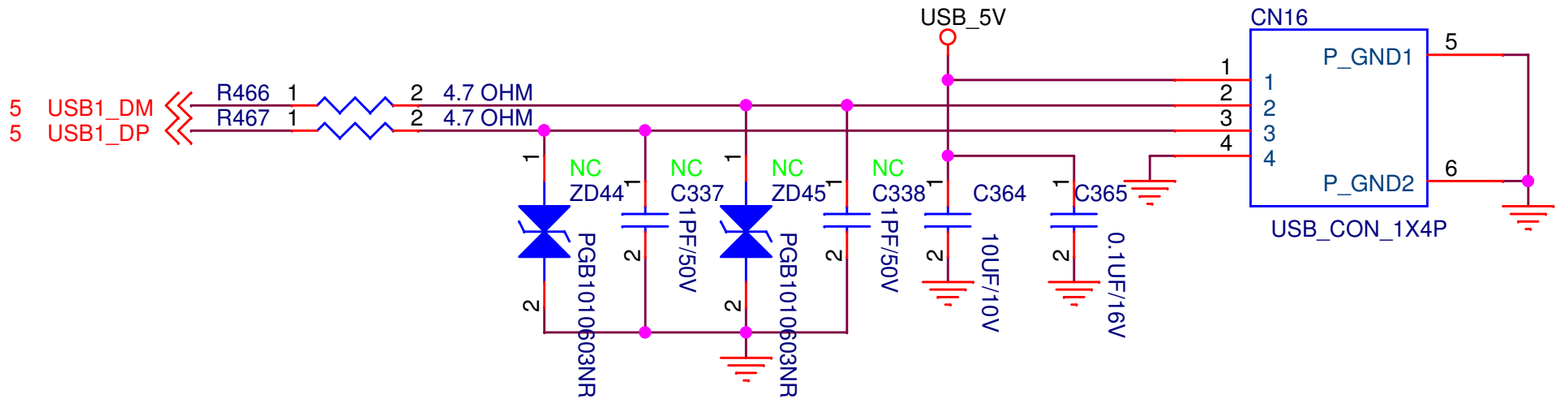



| | | |
|---|---|---|
| Unihan | Title : LVDS Interface | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | |
| Size: A | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 17 of 23 | |

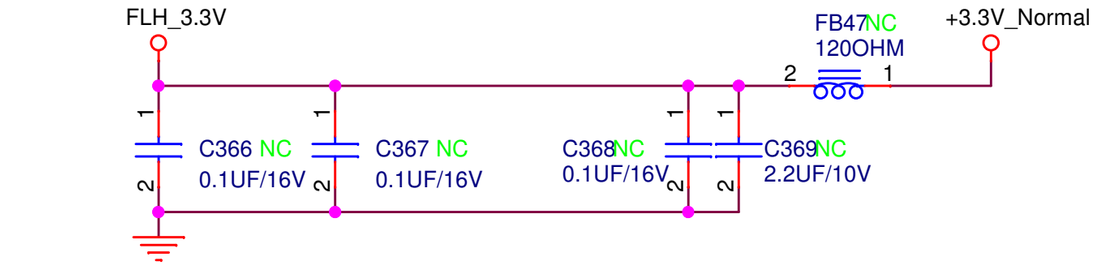


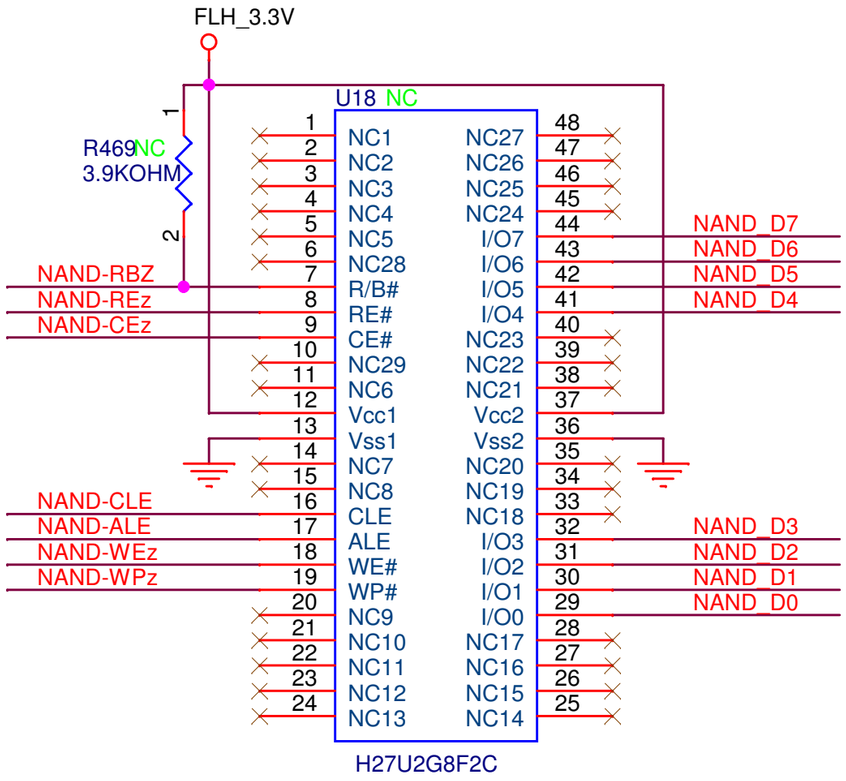

| | | |
|---|---|---|
| Unihan | Title : SPDIF OUT | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | |
| Size: A | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 18 of 23 | |



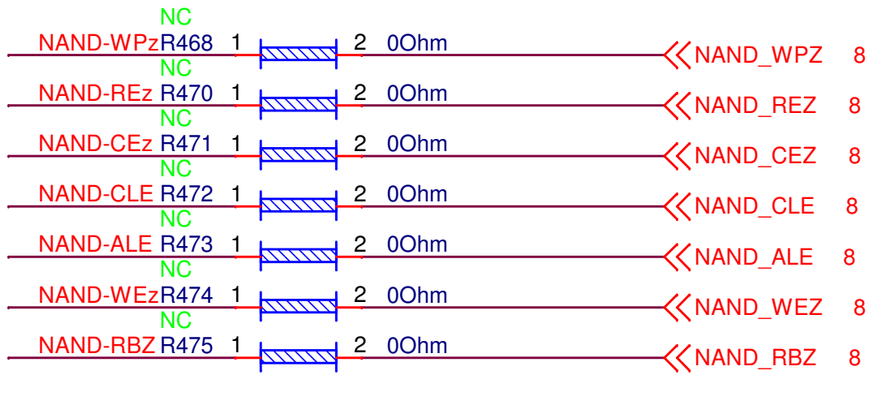



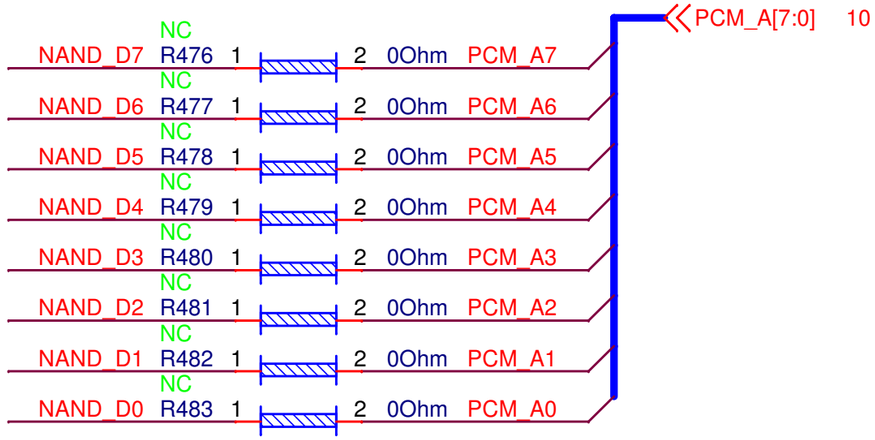

| | | |
|---|---|---|
| Unihan | Title : USB | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | |
| Size: A | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 19 of 23 | |



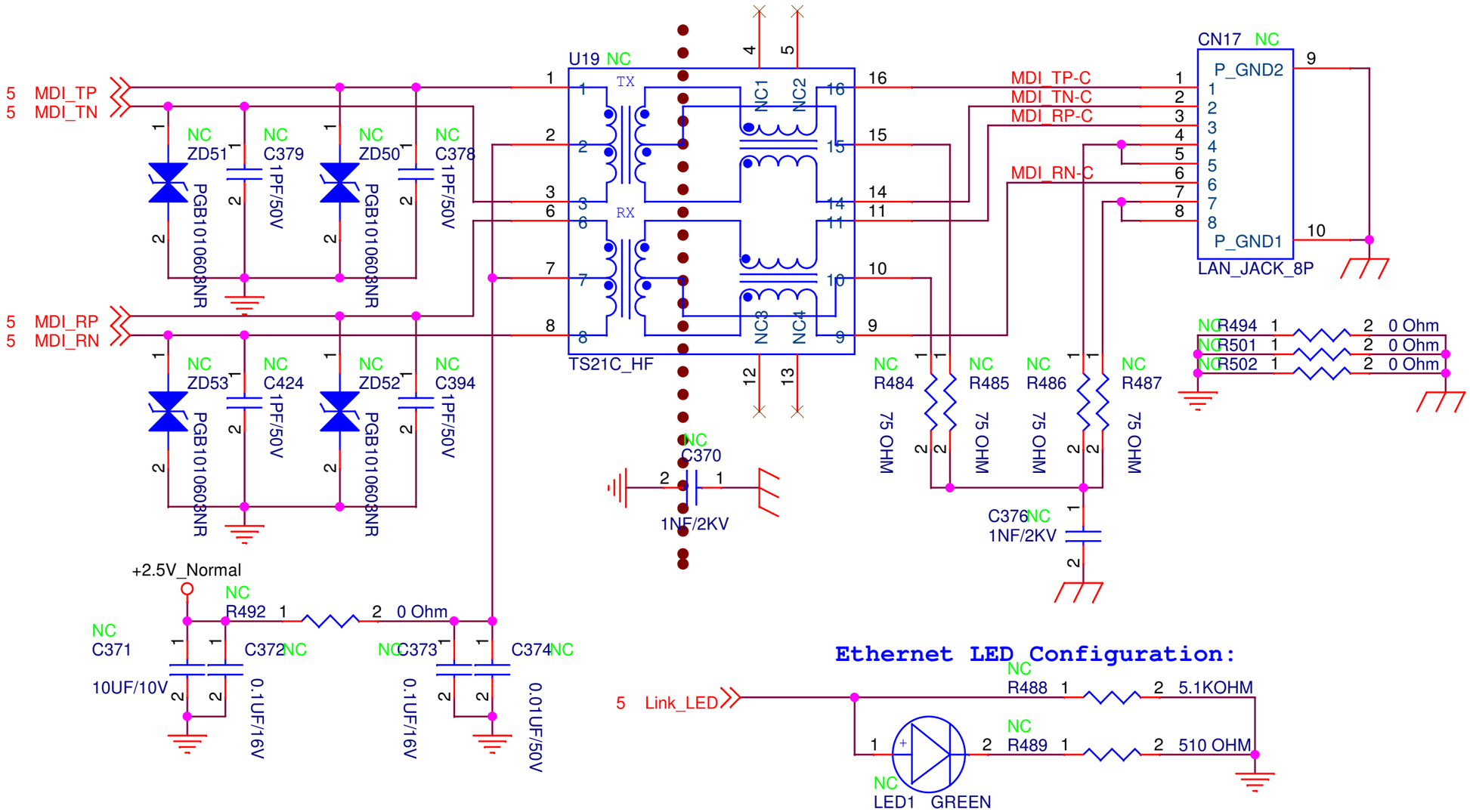




1Gbit: Hynix-----0500-00SJ000

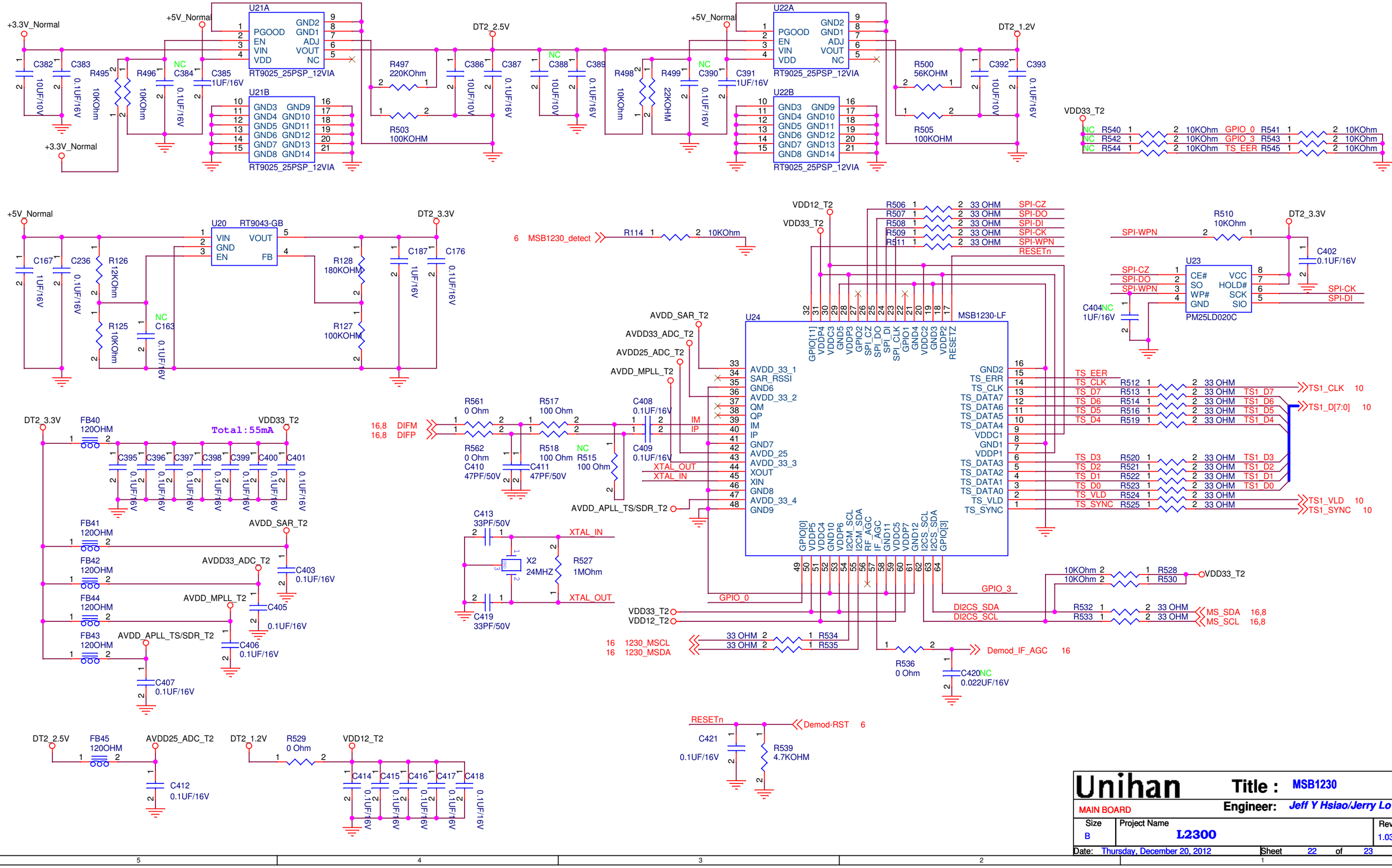


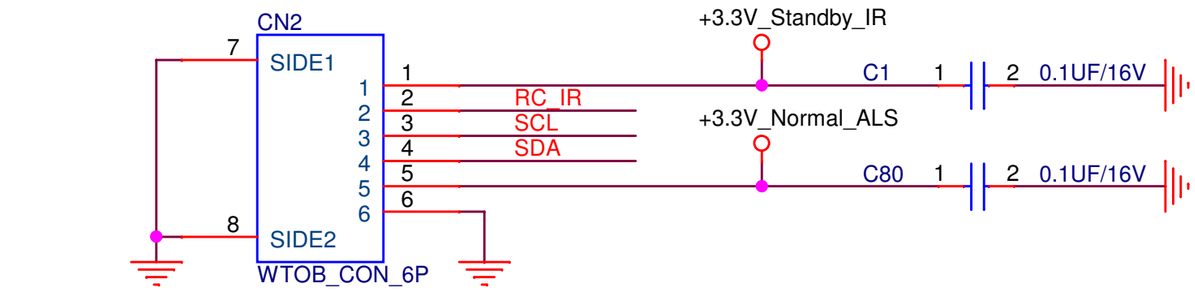

| | | |
|---|---|---|
| Unihan | Title : NAND FLASH | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | |
| Size: A | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 20 of 23 | |

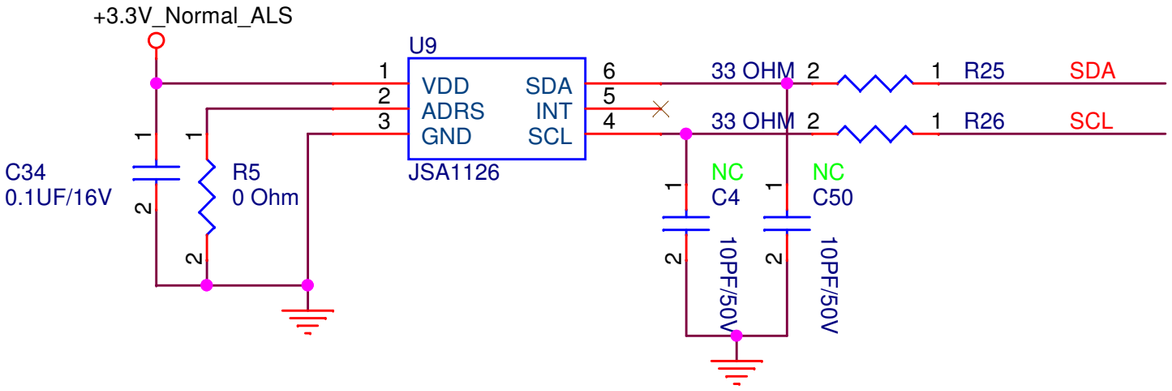


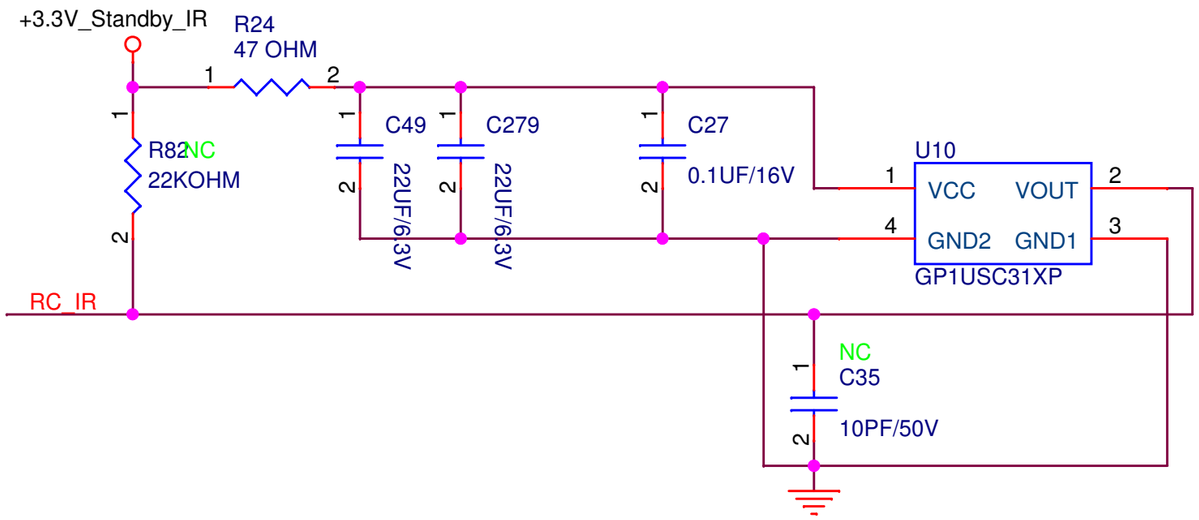

| | | |
|---|---|---|
| Unihan | Title : Ethernet Conn | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | |
| Size: A | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 21 of 23 | |




| | | |
|---|---|---|
| Unihan | Title : MSB1230 | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | |
| Size: B | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 22 of 23 | |



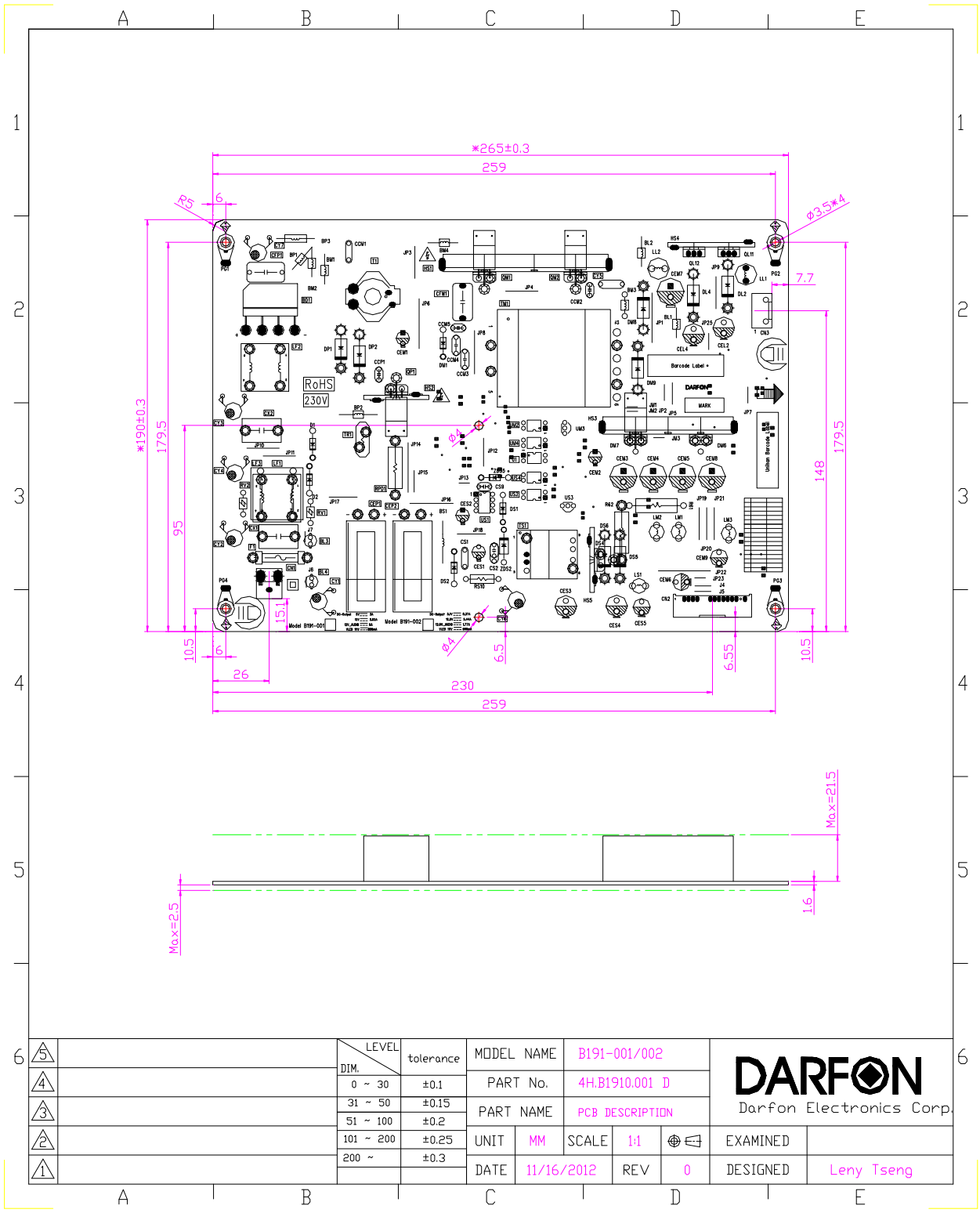




| | | |
|---|---|---|
| Unihan | Title : IR_ALS | |
| MAIN BOARD | Engineer: Jeff Y Hsiao/Jerry Lo | |
| Size: A | Project Name: L2300 | Rev: 1.03a |
| Date: Thursday, December 20, 2012 | Sheet 23 of 23 | |

DARFON

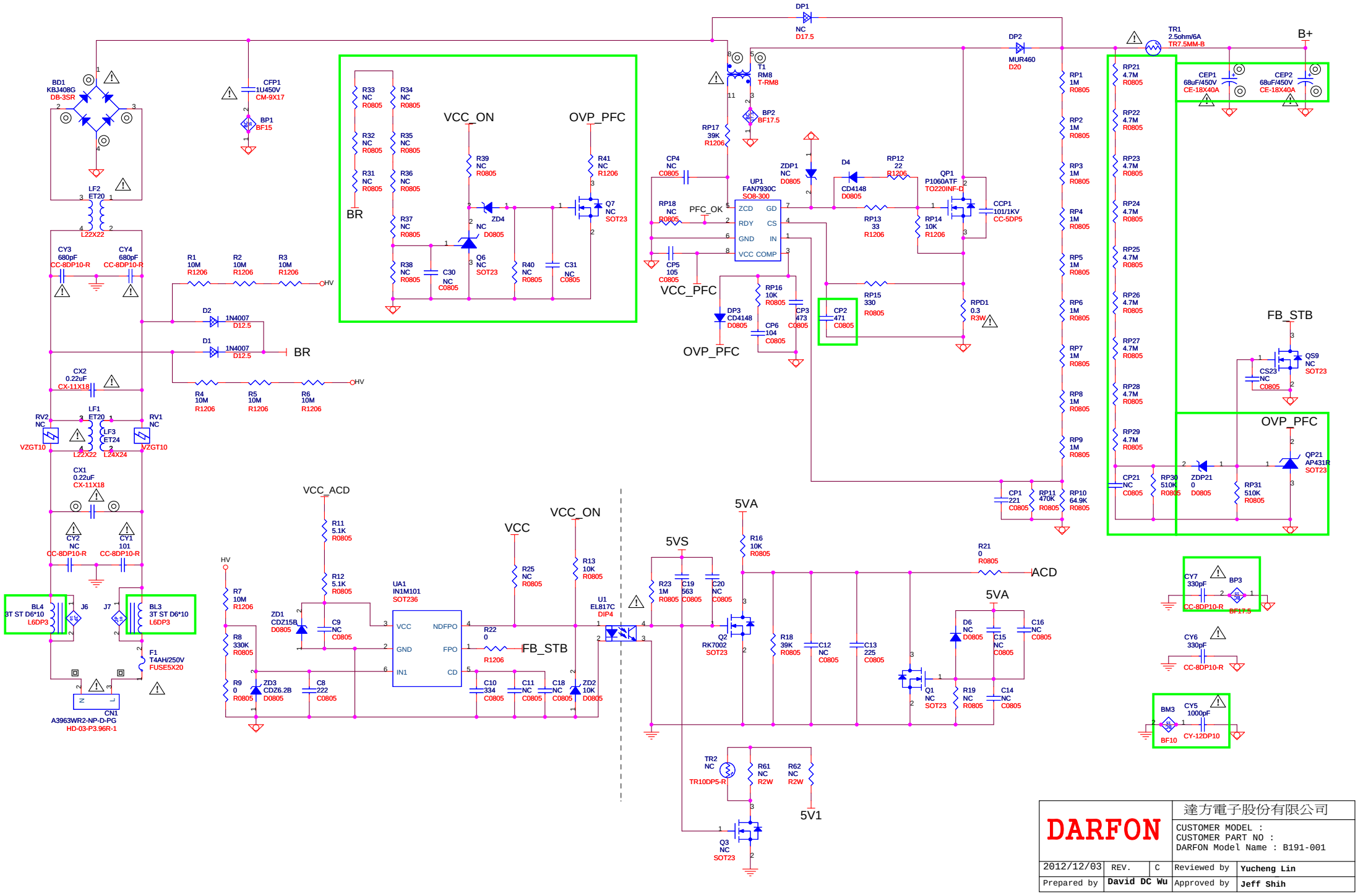
# Release Notice

| | | | | |
|---|---|---|---|---|
| Subject: | PCB Outline Drawing | Part No.: | BK.01191.001 | Rev.: 0 |
| | | Doc. No.: | 209-C002 | |
| Project Code: | BK.01191.001 | | | Page 1 of1 |
| Model Name: | B191-001 | | | |




| DIM. | tolerance |
|---|---|
| 0 ~ 30 | ±0.1 |
| 31 ~ 50 | ±0.15 |
| 51 ~ 100 | ±0.2 |
| 101 ~ 200 | ±0.25 |
| 200 ~ | ±0.3 |

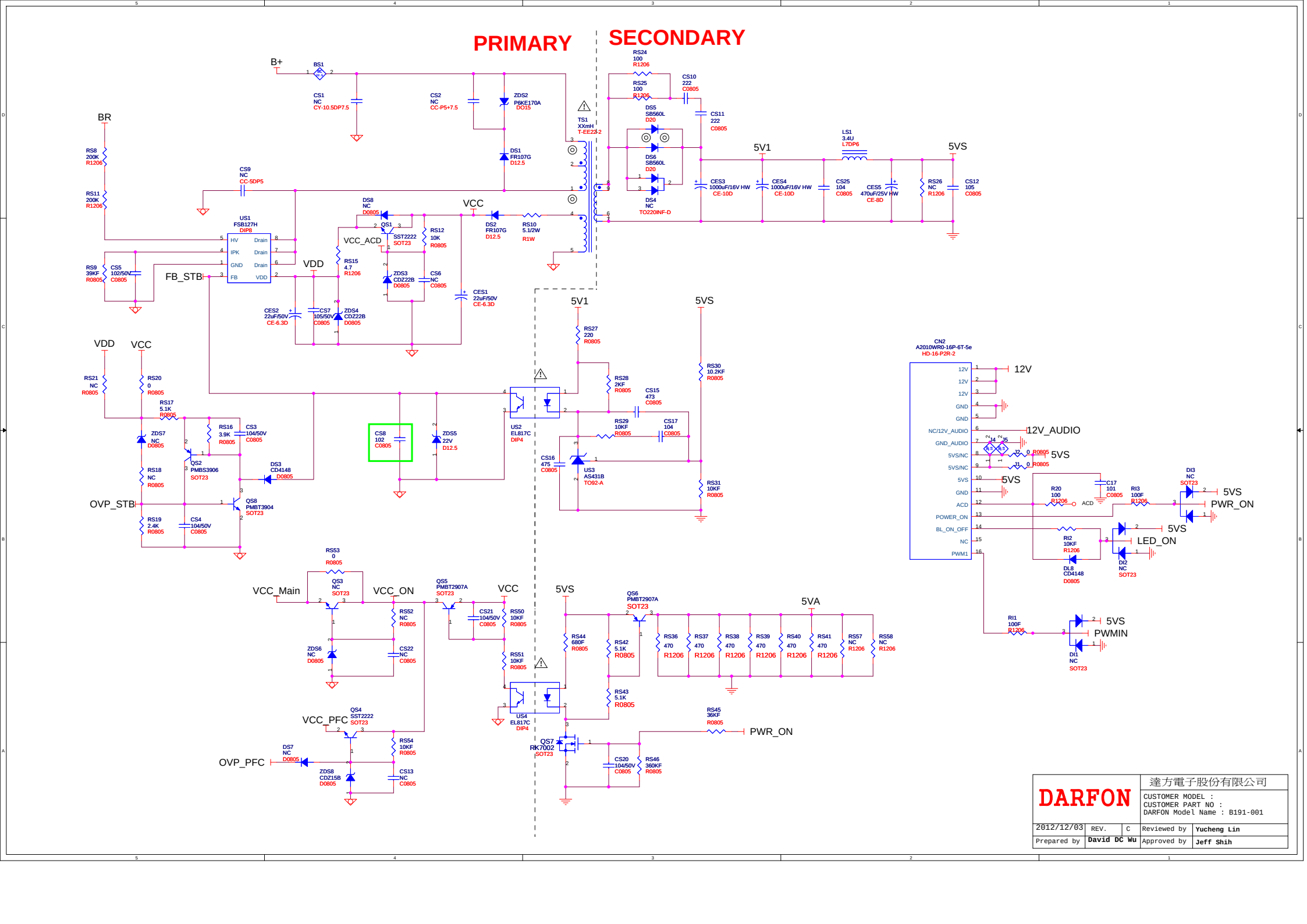
| | | | | | |
|---|---|---|---|---|---|
| MODEL NAME | B191-001/002 | | | DARFON Darfon Electronics Corp. | |
| PART No. | 4H.B1910.001 D | | | | |
| PART NAME | PCB DESCRIPTION | | | | |
| UNIT | MM | SCALE | 1:1 | EXAMINED | |
| DATE | 11/16/2012 | REV | 0 | DESIGNED | Leny Tseng |

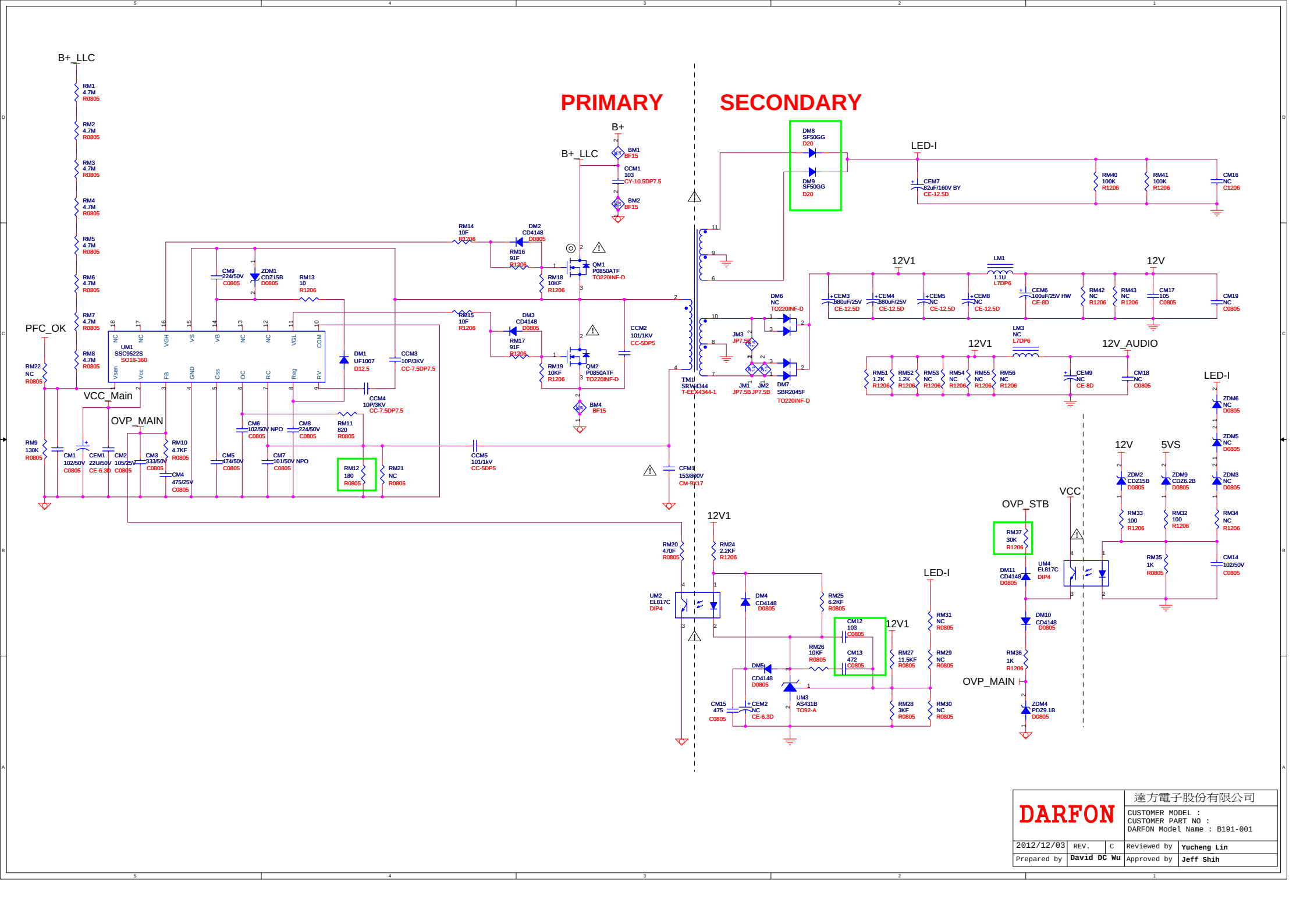



DARFON 達方電子股份有限公司

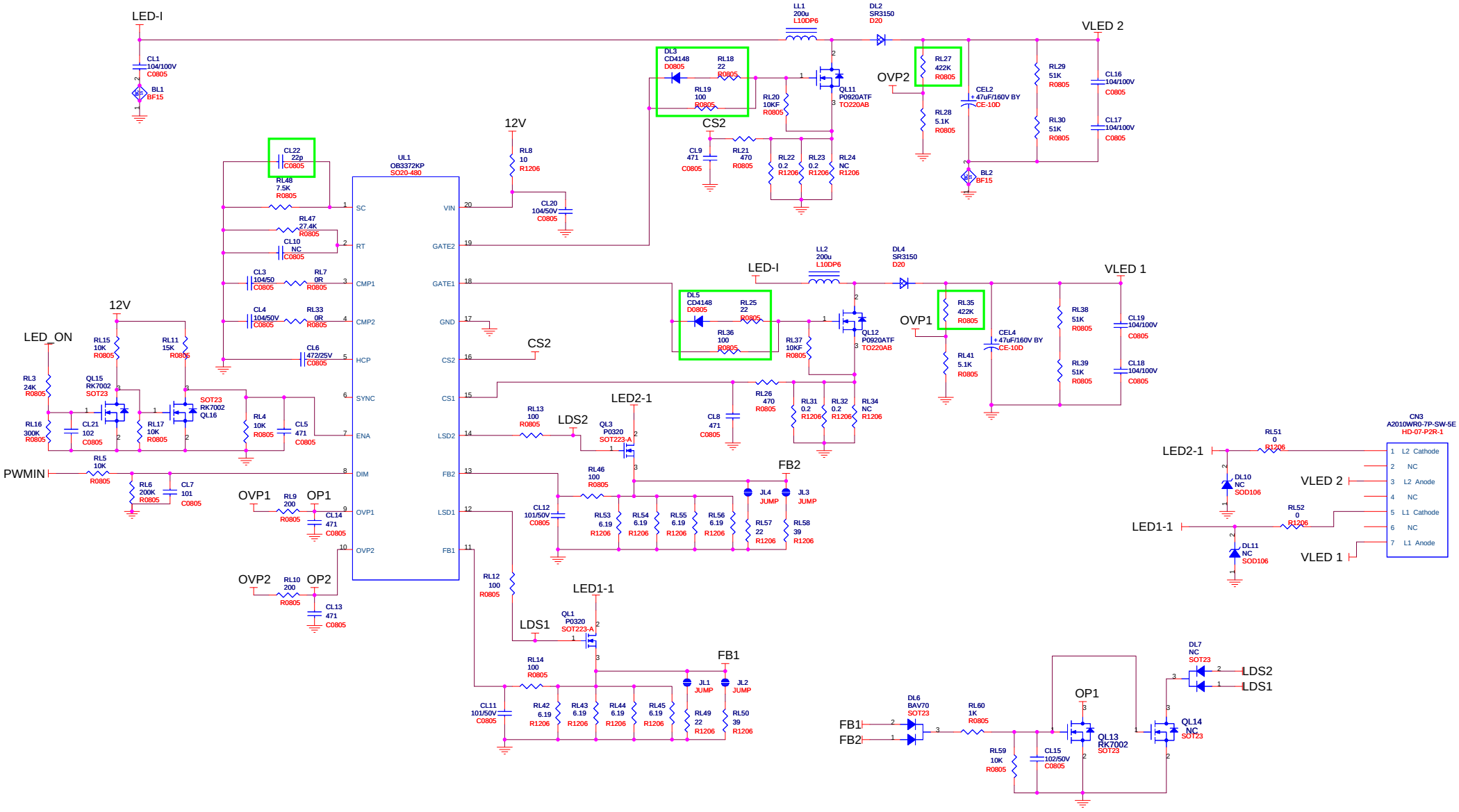
CUSTOMER MODEL :
CUSTOMER PART NO :
DARFON Model Name : B191-001

| | | | | | |
|---|---|---|---|---|---|
| 2012/12/03 | REV. | C | Reviewed by | Yucheng Lin |
| Prepared by | David DC Wu | | Approved by | Jeff Shih |

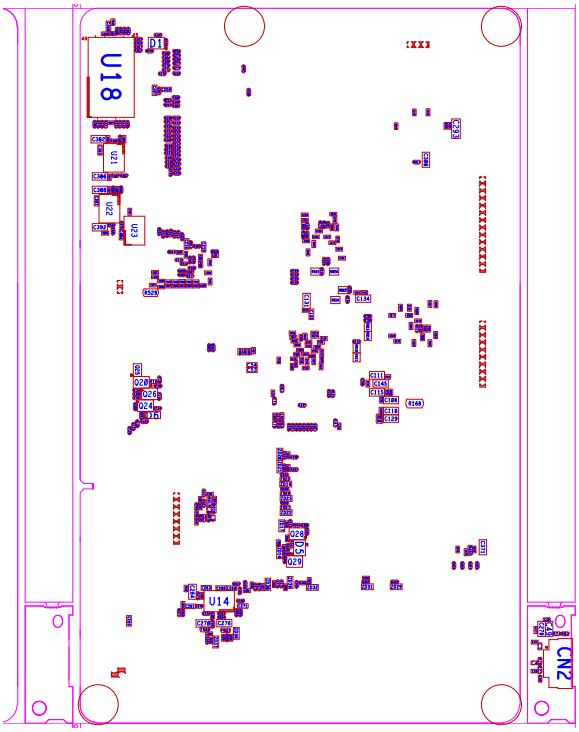

PRIMARY
SECONDARY
B+
BS1
CS1 NC CY-10.5DP7.5
CS2 NC CC-P5+7.5
ZDS2 P6KE170A DO15
DS1 FR107G D12.5
TS1 XXmH T-EE22-2
BR
RS8 200K R1206
RS11 200K R1206
CS9 NC CC-5DP5
US1 FSB127H DIP8
HV Drain
IPK Drain
GND Drain
FB VDD
RS9 39KF R0805
CS5 102/50V C0805
FB_STB
VDD
VCC
VCC_ACD
DS8 NC D0805
QS1 SST2222 SOT23
RS12 10K R0805
RS15 4.7 R1206
ZDS3 CDZ22B D0805
CS6 NC C0805
DS2 FR107G D12.5
RS10 5.1/2W R1W
CES1 22uF/50V CE-6.3D
CES2 22uF/50V CE-6.3D
CS7 105/50V C0805
ZDS4 CDZ22B D0805
RS24 100 R1206
RS25 100 R1206
CS10 222 C0805
CS11 222 C0805
DS5 SB560L D20
DS6 SB560L D20
DS4 NC TO220INF-D
5V1
LS1 3.4U LTDP6
5VS
CES3 1000uF/16V HW CE-10D
CES4 1000uF/16V HW CE-10D
CS25 104 C0805
CES5 470uF/25V HW CE-8D
RS26 NC R1206
CS12 105 C0805
RS27 220 R0805
RS28 2KF R0805
CS15 473 C0805
RS29 10KF R0805
CS17 104 C0805
CS16 475 C0805
US3 AS431B TO92-A
US2 EL817C DIP4
RS30 10.2KF R0805
RS31 10KF R0805
CS8 102 C0805
ZDS5 22V D12.5
RS21 NC R0805
RS20 0 R0805
RS17 5.1K R0805
ZDS7 NC D0805
RS16 3.9K R0805
CS3 104/50V C0805
QS2 PMBS3906 SOT23
DS3 CD4148 D0805
RS18 NC R0805
QS8 PMBT3904 SOT23
OVP_STB
RS19 2.4K R0805
CS4 104/50V C0805
CN2 A2010WR0-16P-6T-5e HD-16-P2R-2
12V
12V
12V
GND
GND
NC/12V_AUDIO
12V_AUDIO
GND_AUDIO
5VS/NC
5VS
5VS/NC
5VS
5VS
GND
ACD
POWER_ON
BL_ON_OFF
NC
PWM1
R20 100 R1206
ACD
C17 101 C0805
RI3 100F R1206
DI3 NC SOT23
PWR_ON
RI2 10KF R1206
DL8 CD4148 D0805
DI2 NC SOT23
LED_ON
RI1 100F R1206
DI1 NC SOT23
PWMIN
RS53 0 R0805
QS3 NC SOT23
VCC_Main
VCC_ON
QS5 PMBT2907A SOT23
VCC
CS21 104/50V C0805
RS50 10KF R0805
RS51 10KF R0805
RS52 NC R0805
ZDS6 NC D0805
CS22 NC C0805
US4 EL817C DIP4
5VS
QS6 PMBT2907A SOT23
5VA
RS44 680F R0805
RS42 5.1K R0805
RS43 5.1K R0805
RS36 470 R1206
RS37 470 R1206
RS38 470 R1206
RS39 470 R1206
RS40 470 R1206
RS41 470 R1206
RS57 NC R1206
RS58 NC R1206
RS45 36KF R0805
PWR_ON
QS7 RK7002 SOT23
CS20 104/50V C0805
RS46 360KF R0805
VCC_PFC
QS4 SST2222 SOT23
RS54 10KF R0805
OVP_PFC
DS7 NC D0805
ZDS8 CDZ15B D0805
CS13 NC C0805
DARFON
達方電子股份有限公司
CUSTOMER MODEL :
CUSTOMER PART NO :
DARFON Model Name : B191-001
2012/12/03
REV. C
Reviewed by Yucheng Lin
Prepared by David DC Wu
Approved by Jeff Shih



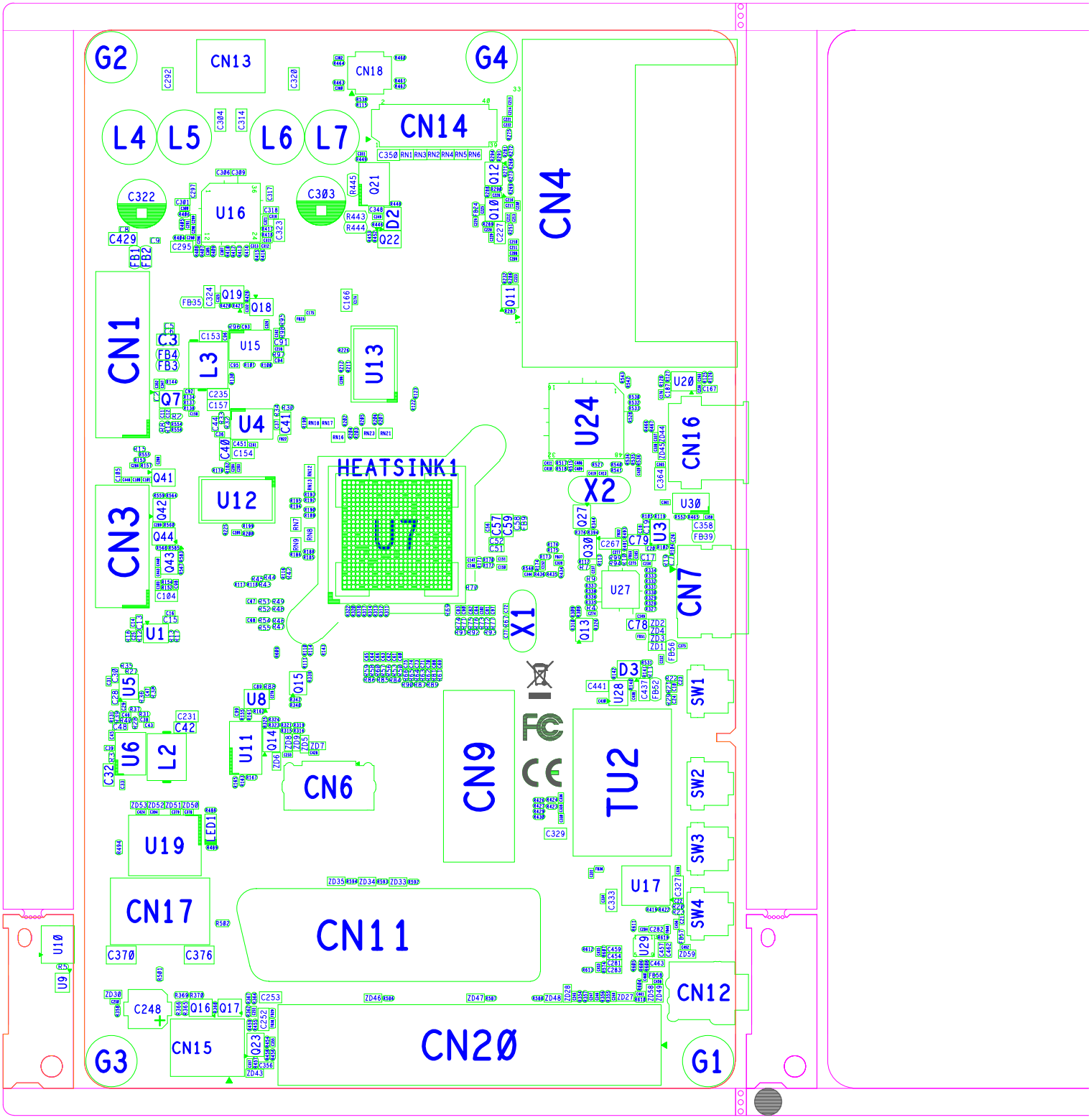

| | | | | | |
|---|---|---|---|---|---|
| DARFON | | | 達方電子股份有限公司 | | |
| CUSTOMER MODEL : | | | | | |
| CUSTOMER PART NO : | | | | | |
| DARFON Model Name : B191-001 | | | | | |
| 2012/12/03 | REV. | C | Reviewed by | Yucheng Lin | |
| Prepared by | David DC Wu | | Approved by | Jeff Shih | |




| | | | | |
|---|---|---|---|---|
| DARFON | 達方電子股份有限公司 | | | |
| | CUSTOMER MODEL :<br>CUSTOMER PART NO :<br>DARFON Model Name : B191-001 | | | |
| 2012/12/03 | REV. | C | Reviewed by | Yucheng Lin |
| Prepared by | David DC Wu | | Approved by | Jeff Shih |


U18
U14
CN2

PCB MADE IN CHINA




PEGATRON

R&D DEPARTMENT/ENGINEER:

06/Jeff Y Hsiao

# CONTENTS



# REVISION HISTORY

| Date | Author | Ver | Comments |
|---|---|---|---|
| 2012/09/03 | Jeff/Webb | 1.00 | For SR stage. |
| 2012/12/17 | Jeff/Webb | 1.01 | For MP stage. |

Unihan

Title : Contents&History

LED BOARD

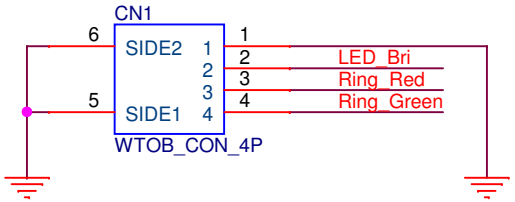
Engineer: Jeff Y Hsiao/Webb Chen

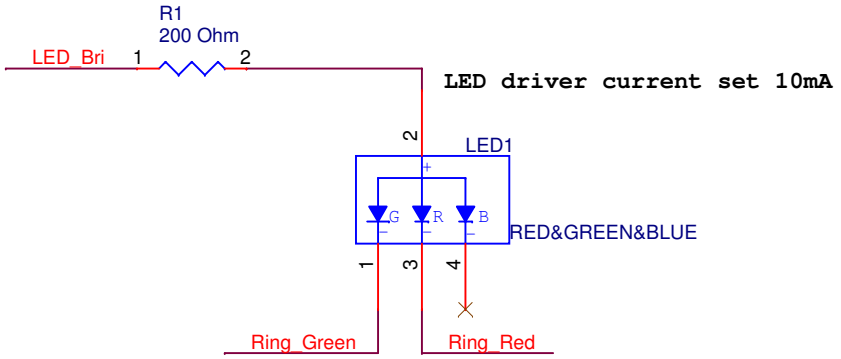
| Size | Project Name | Rev |
|---|---|---|
| B | L2300 | 1.01 |

Date: Monday, March 18, 2013 Sheet 1 of 2

Power On mode-------Green

Standby mode--------Red




| | | |
|---|---|---|
| Unihan | Title : LED | |
| LED BOARD | Engineer: Jeff Y Hsiao/Webb Chen | |
| Size: A | Project Name: L2300 | Rev: 1.01 |
| Date: Monday, March 18, 2013 | Sheet 2 of 2 | |