

POWER





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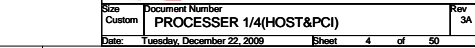
Power States

POWER PLANE	VOLTAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
VIN	+10V~+19V	MAIN POWER		S0~S5
+RTC_CELL	+3V~+3.3V	RTC		S0~S5
+3VPCU	+3.3V	8051 POWER	3V5V_EN	S0~S5
+5VPCU	+5V	DC/DC POWER IC SOURCE	3V5V_EN	S0~S5
+15V	+15V	LARGE POWER	3V5V_EN	S0~S5
VCC3_LAN	+3.3V	LAN POWER	LAN_ON	
+5VSUS	+5V	SLP_S4# CTRLD POWER	SUSON	
+3VSUS	+3.3V	SLP_S4# CTRLD POWER	SUSON	
+1.5VSUS	+1.5V	SODIMM POWER	SUSON	
+0.75V_DDR_VTT	+0.9V	SODIMM POWER	MAIN_ON	
+5V	+5V	SLP_S3# CTRLD POWER	MAIN_ON	
+3V	+3.3V	SLP_S3# CTRLD POWER	MAIN_ON	
+1.8V	+1.8V	CPU,PCH POWER	MAIN_ON	
+1.5V	+1.5V	PCH POWER	MAIN_ON	
+1.05V_VTT	+1.05V~+1.1V	CPU POWER	MAIN_ON	
+1.05V_PCH	+1.05V	PCH POWER	1.05V_RUN_ON	
VCC_CORE	0V~+1.5V	CPU CORE POWER	VRON	
LCDVCC	+3.3V	LCD Power	ENVDD	
BAT-V	+10V~+17V	MAIN BATTERY		
+5V_S5	+5V	PCH SUS POWER	S5_ON	
+3V_S5	+3.3V	Sys Management,PCH Resume Well	S5_ON	

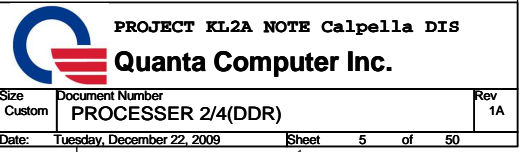
GND PLANE	PAGE	DESCRIPTION
 LANGND	26	
 IT8512_AGND	36	
 ADOGND	27	
 GND	ALL	

02

[3,8,9,10,11,12,14,15,18,23,24,25,26,27,28,29,30,31,32,33,34,35,36,38,39,43,44] +3V
[3,6,8,9,10,11,12,38,41,43,45] +1.05V_VTT
[14,15,38,40,44] 1.5VSUS



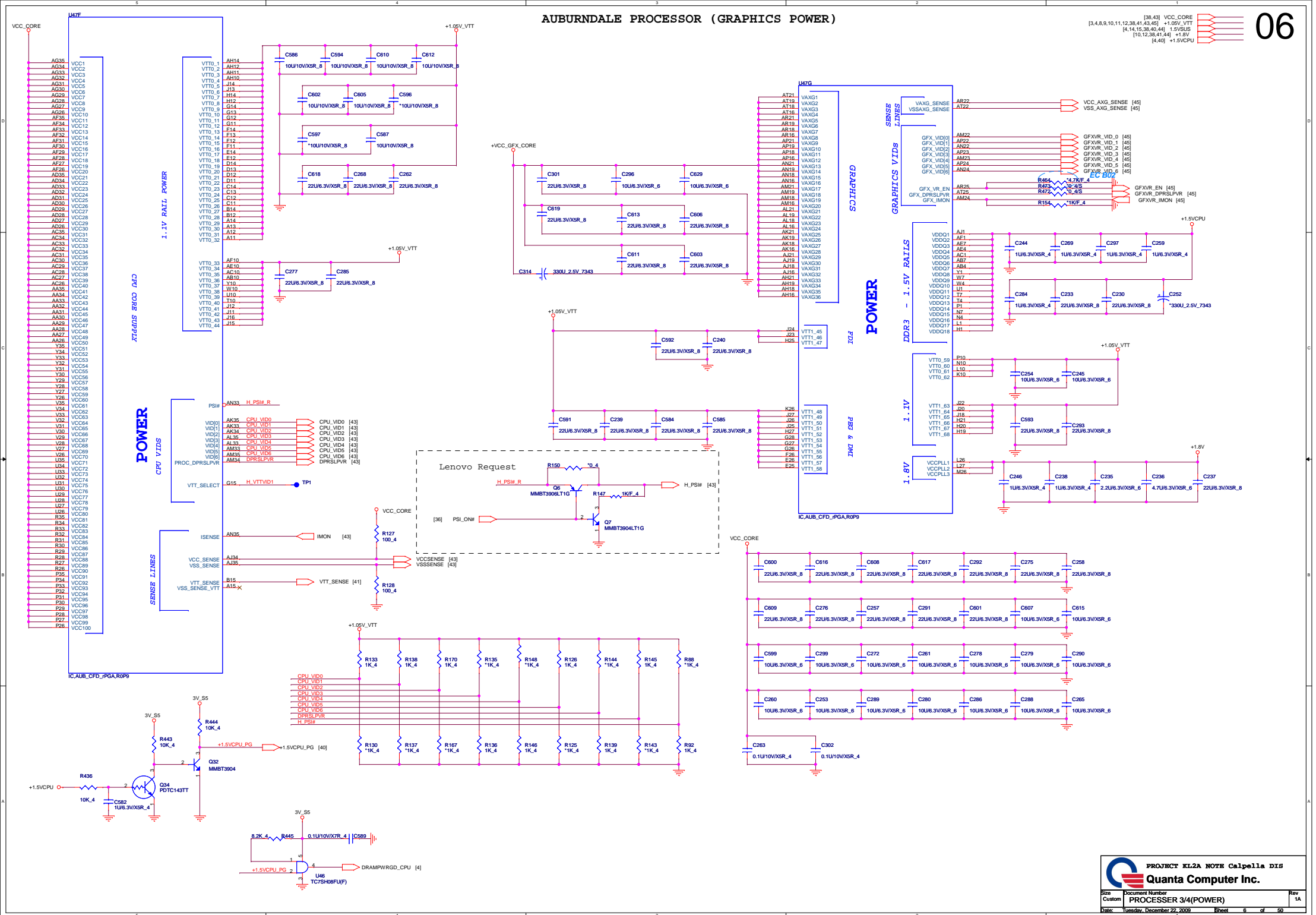
05

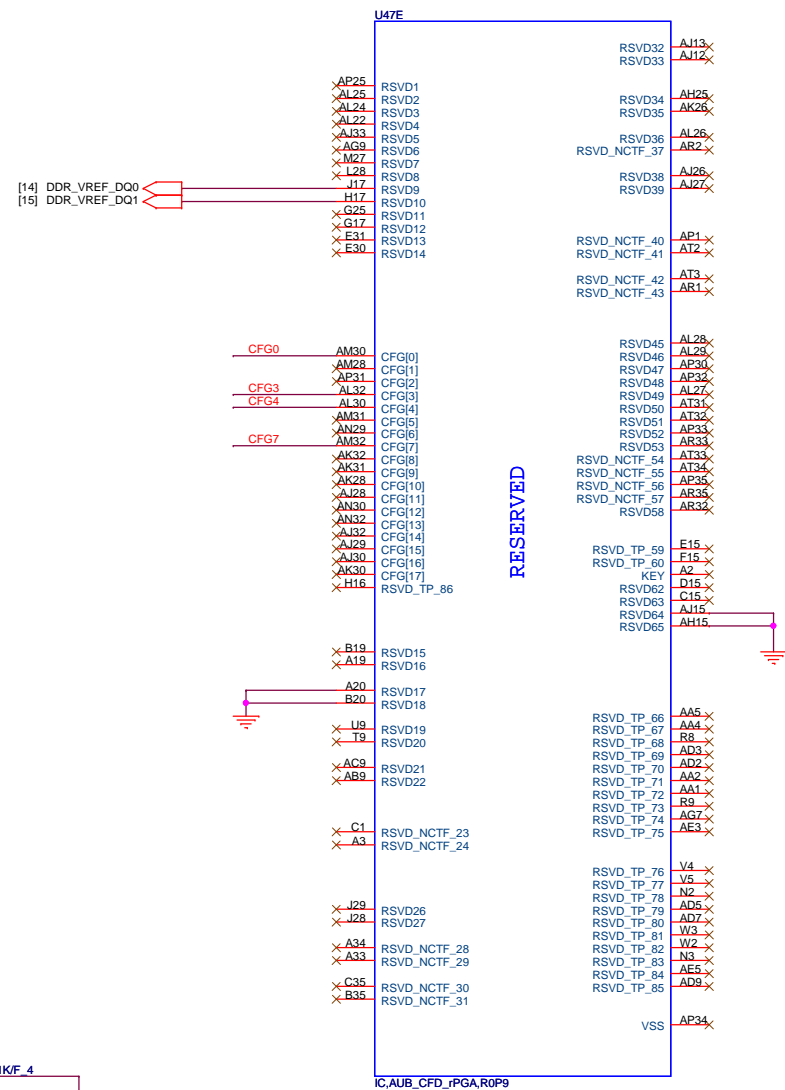


AUBURNDALE PROCESSOR (GRAPHICS POWER)

```
[38,43] VCC_CORE
[3,4,8,9,10,11,12,38,41,43,45] +1.05V_VTT
[4,14,15,38,40,44] 1.5VSUS
[10,12,38,41,44] +1.8V
[4,40] +1.5VCPU
```

06





CFG4 R121 ~3.01kF 4

CFG0 R123 ~3.01kF 4

CFG3 R124 ~3.01kF 4


CFG7 R163 ~3.01kF 4

CFG[1:0] - PCI_Express Configuration Select

* 11= 1 x 16 PEG

* 10= 2 x 8 PEG

IC,AUB_CFD_rPGA,R0P9



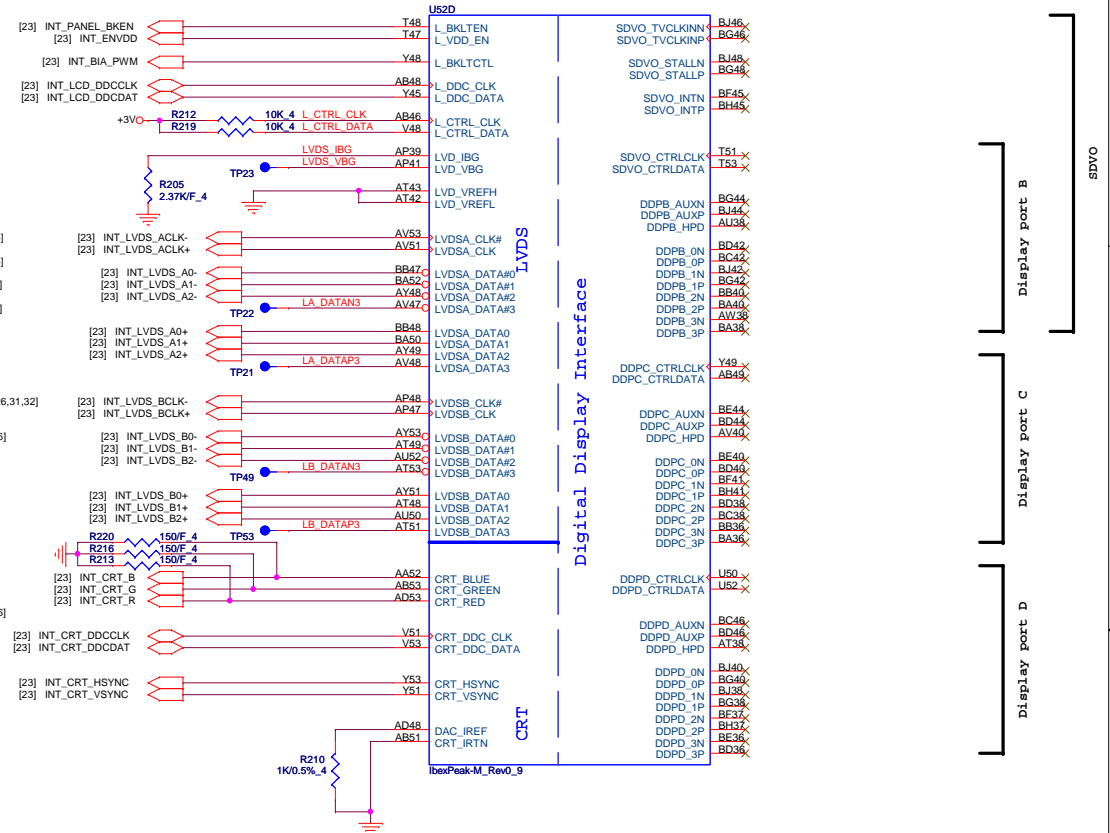
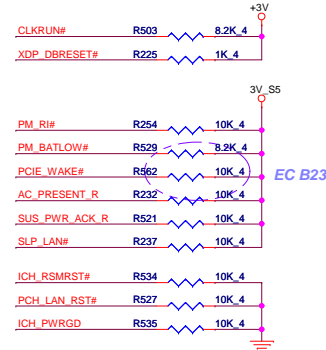
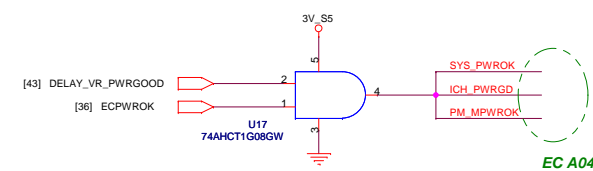
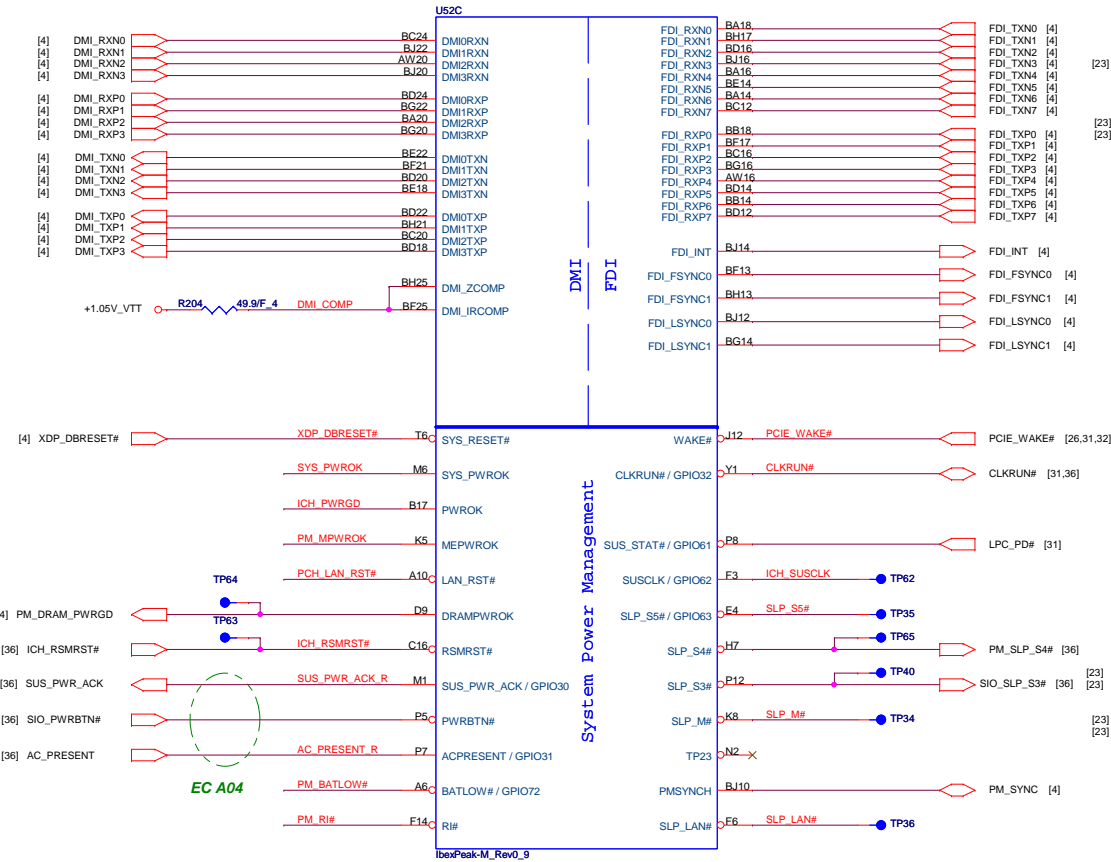
PROJECT KL2A NOTE Calpella DIS

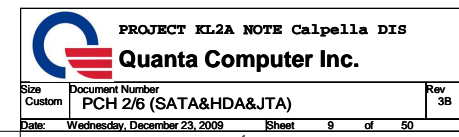
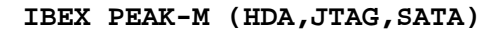
Quanta Computer Inc.

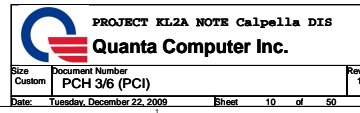
Size	Document Number	Rev
Custom	PROCESSOR 4/4(GND)	1A
Date:	Tuesday, December 22, 2009	Sheet 7 of 50

IBEX PEAK-M (DMI,FDI,GPIO)

IBEX PEAK-M (LVDS,DDI)





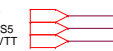


IBEX PEAK-M (GPIO,VSS_NCTF,RSVD)

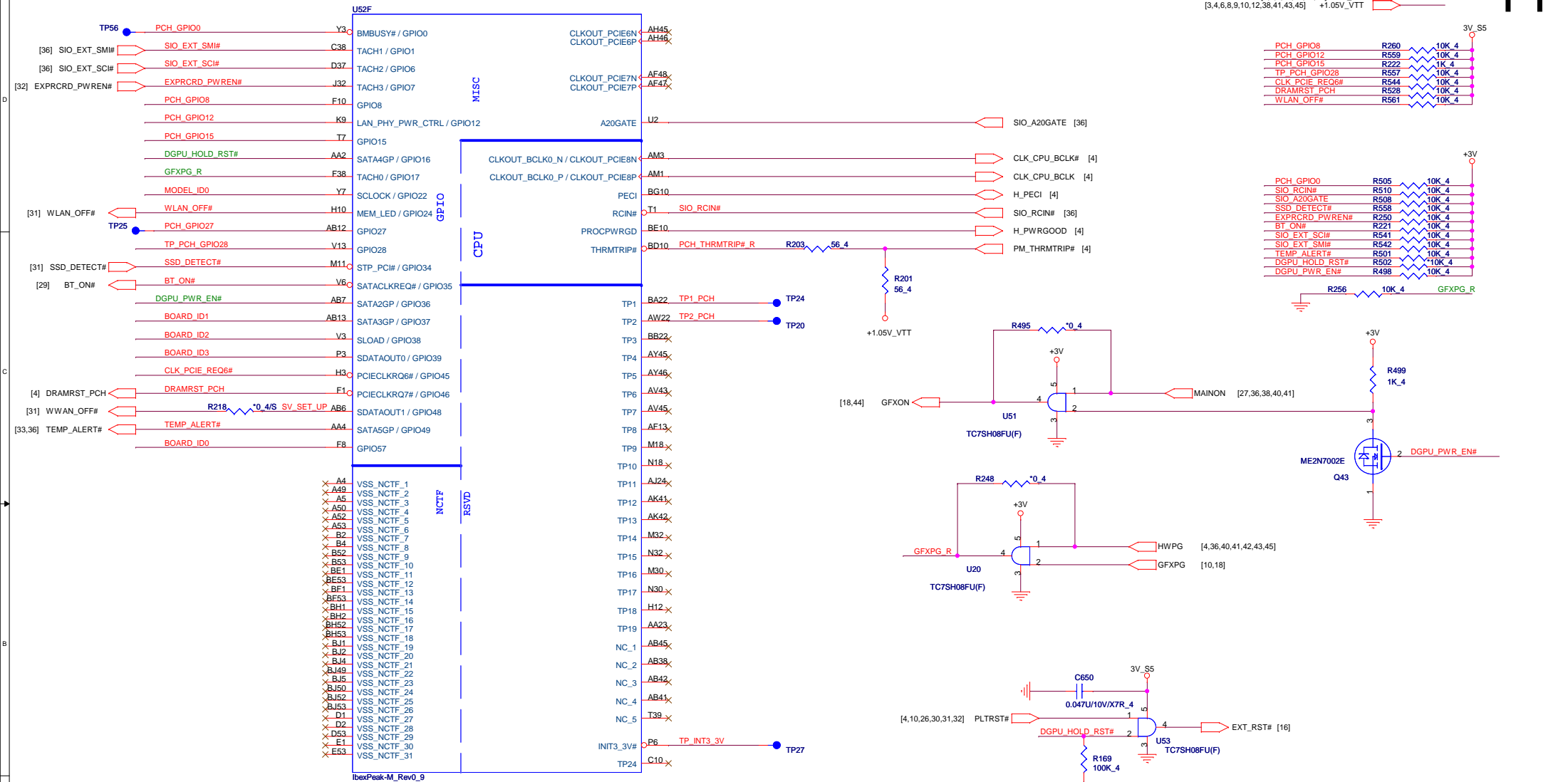
[3,4,8,9,10,12,14,15,18,23,24,25,26,27,28,29,30,31,32,33,34,35,36,38,39,43,44]

+3V

[6,8,9,10,12,31,38] 3V_S5
[3,4,6,8,9,10,12,38,41,43,45] +1.05V_VTT

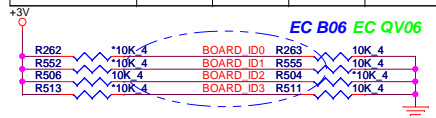


11



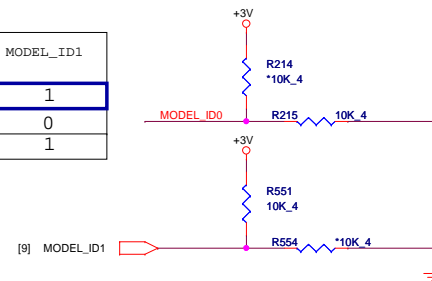
Board ID

Board ID For Function	ID3 GPIO39	ID2 GPIO38	ID1 GPIO37	ID0 GPIO57
SDV	0	0	0	0
SIV	0	0	0	1
SIT	0	0	1	0
SVT	0	1	0	0
SOVP	1	0	0	0

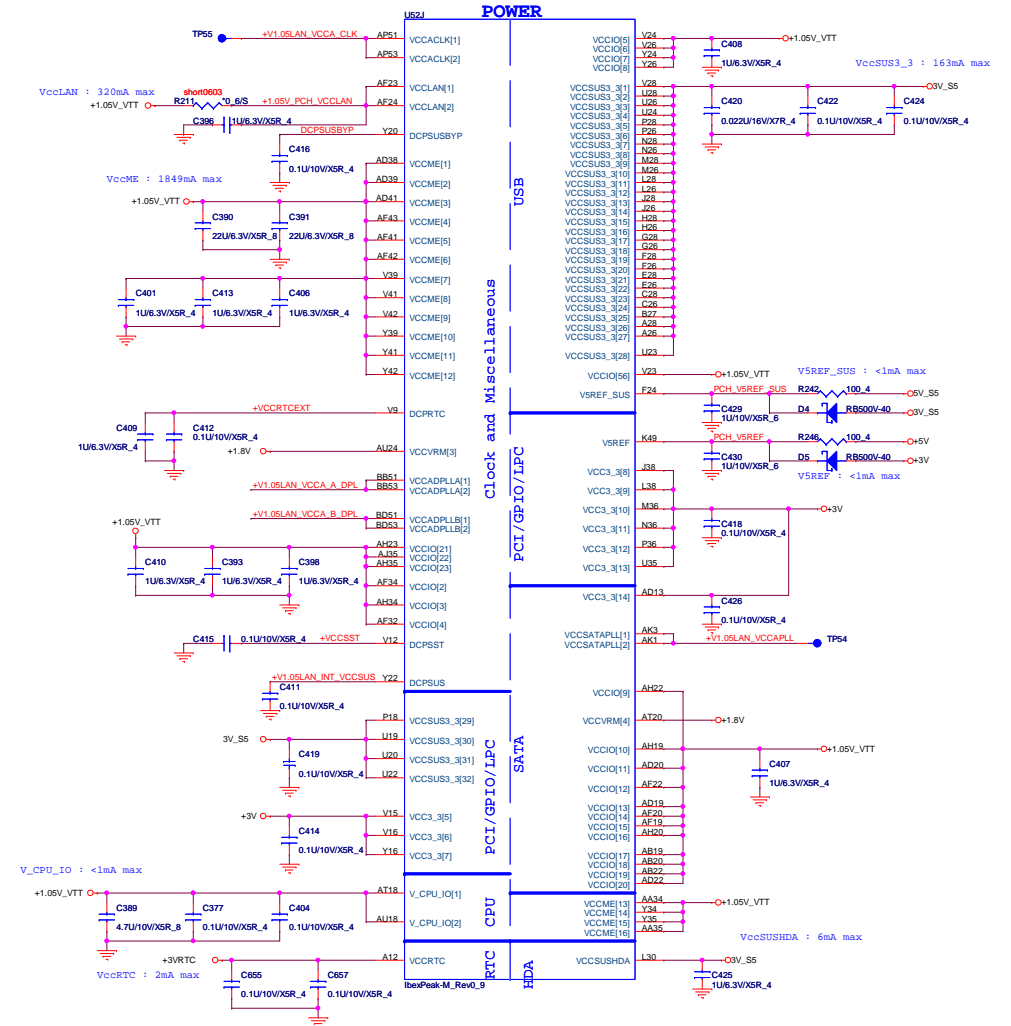


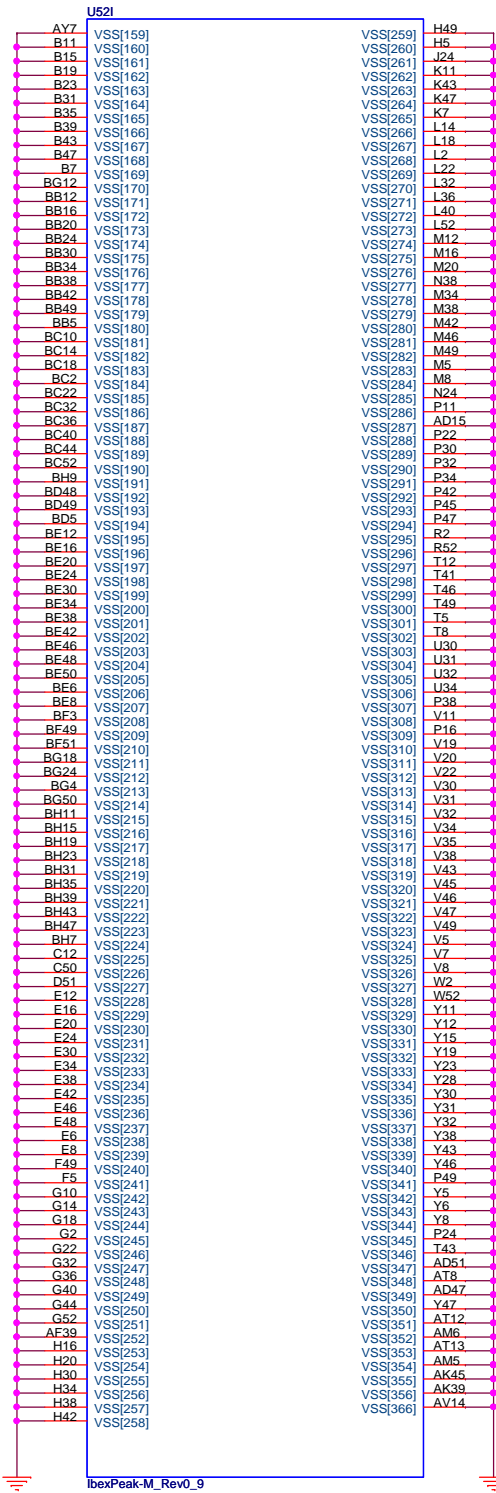
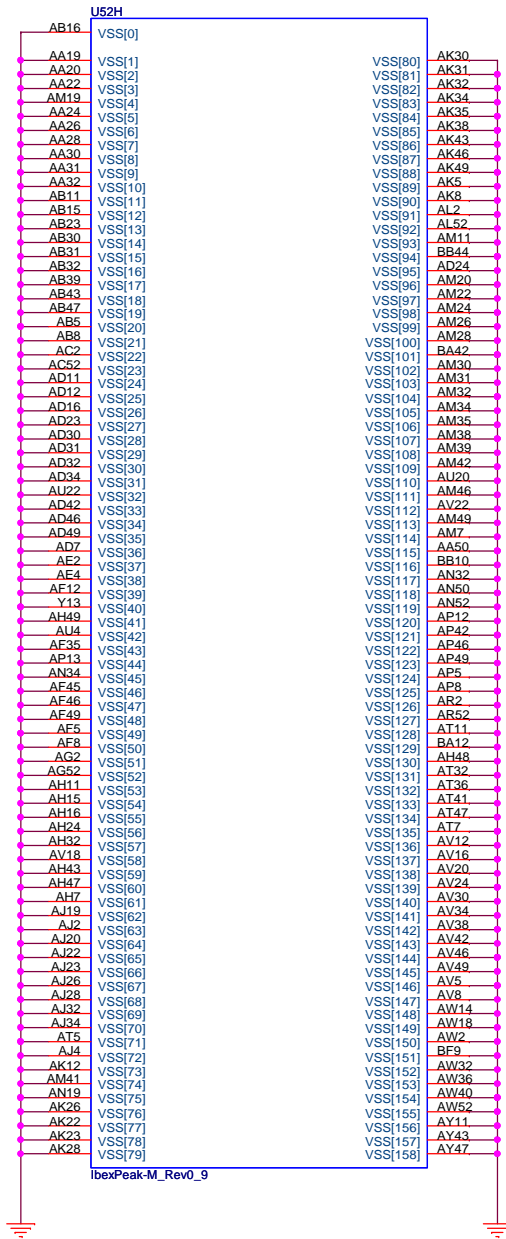
Model ID

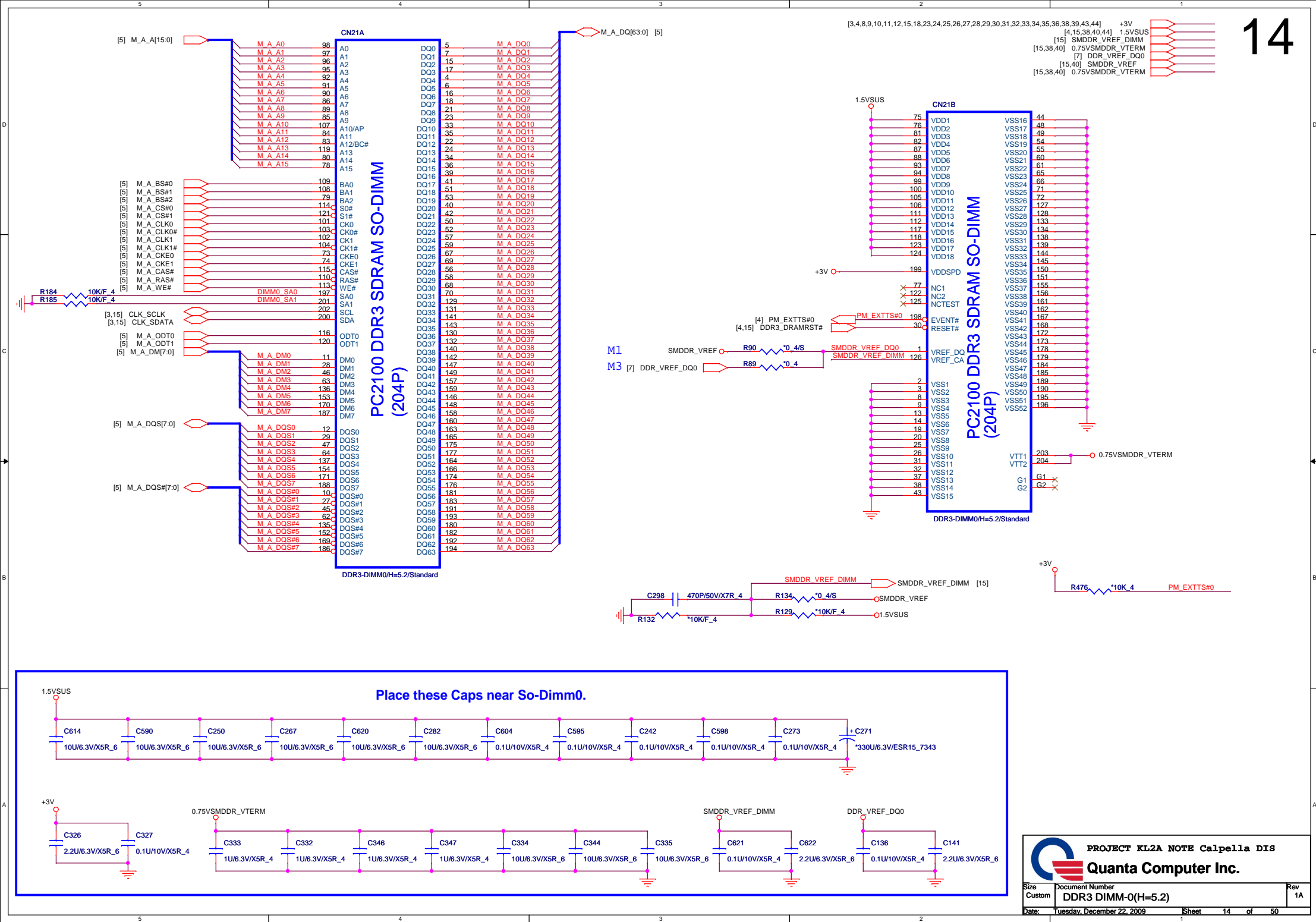
Model ID	MODEL_ID0	MODEL_ID1
14"	0	1
15"	1	0
Default	1	1

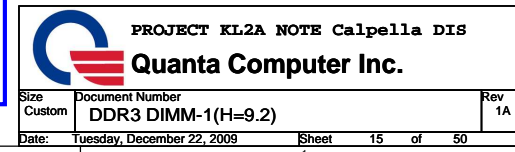


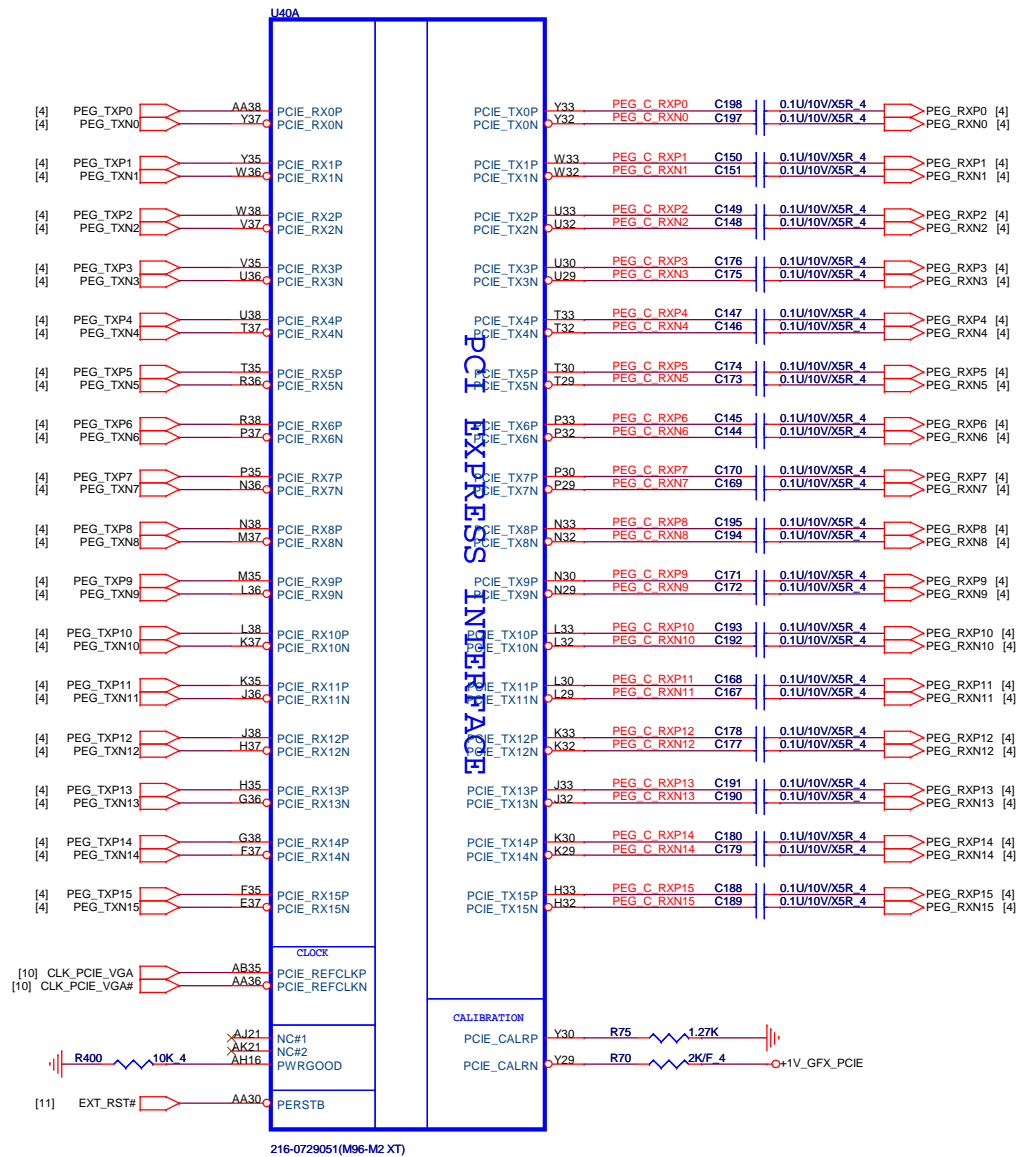
SV_SET_UP 1-X High = Strong (Default)



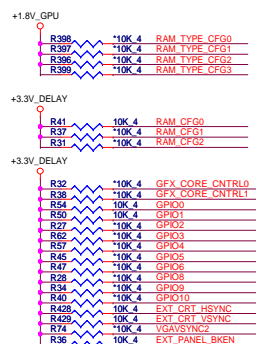






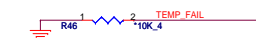


Note : Required Frequency = 800 MHz

**VRAM TYPE**

APERTURE SIZE

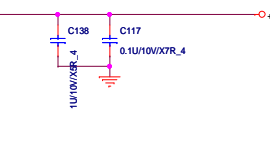
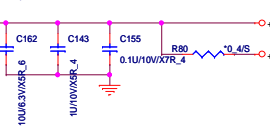
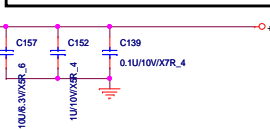
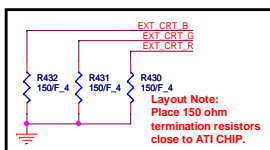
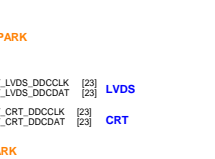
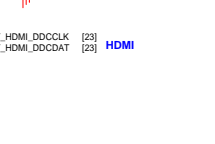
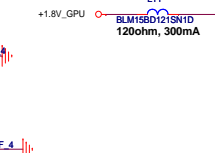
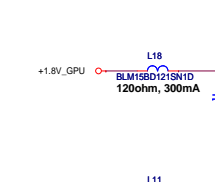
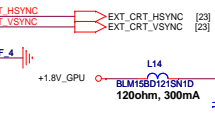
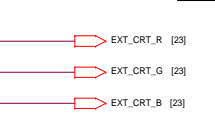
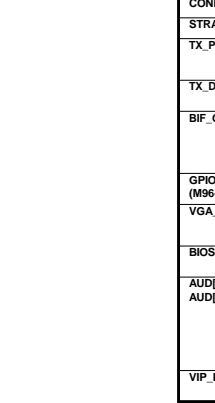
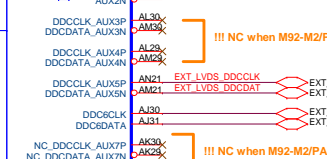
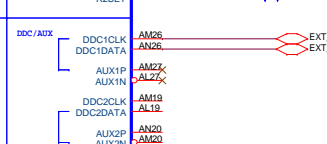
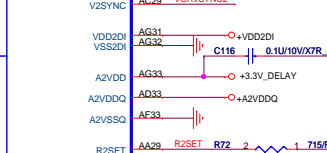
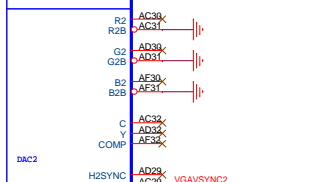
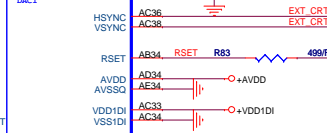
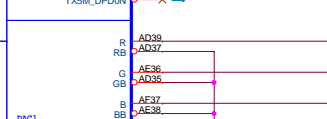
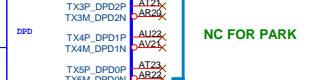
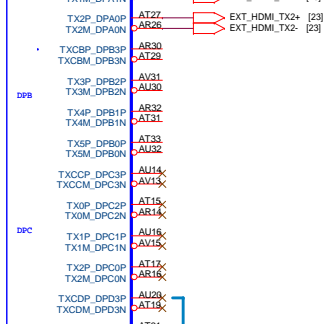
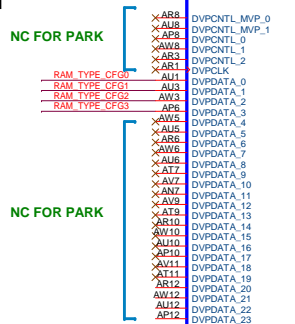
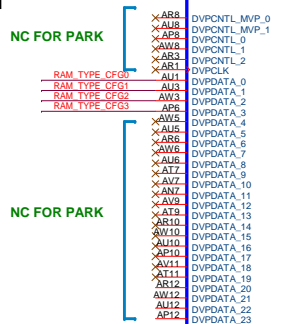
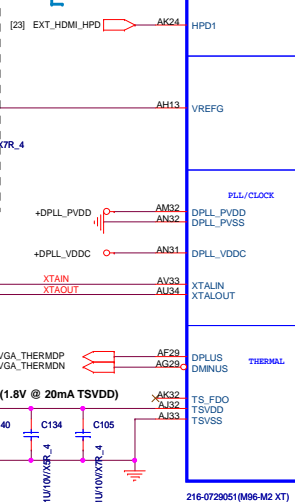
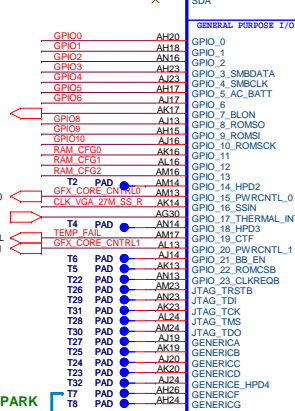
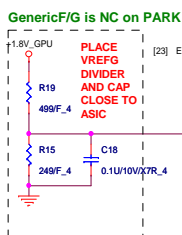
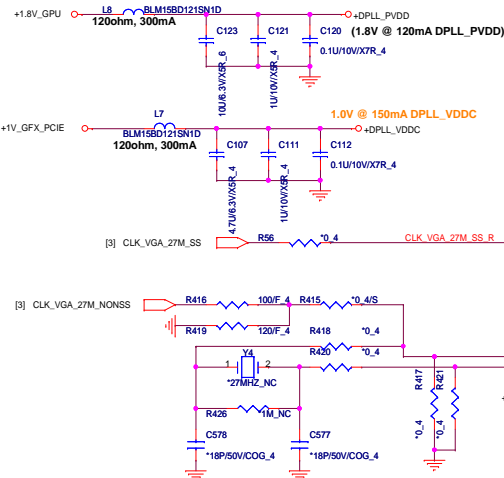
MEMORY APERTURE SIZE SELECT			
MEMORY SIZE	CFG2 GPIO13	CFG1 GPIO12	CFG0 GPIO11
128MB	0	0	0
256MB	0	0	1
64MB	0	1	0



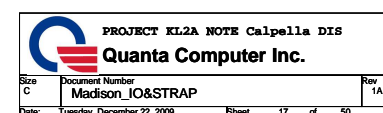
Power PWM config

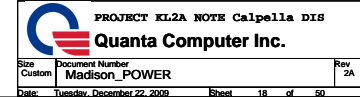
GPU Power-on sequence

- ```
1 => +VGPU_CORE
2 => +VGPU_IO
3 => +1V
4 => +1.5V_GPU
5 => +3V_D
6 => +1.8V_GPU
7 => dGPU_PWROK
```

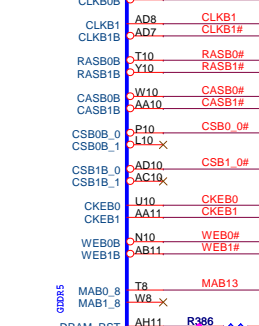
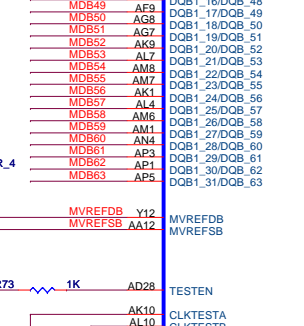
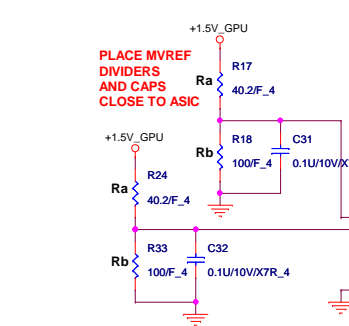
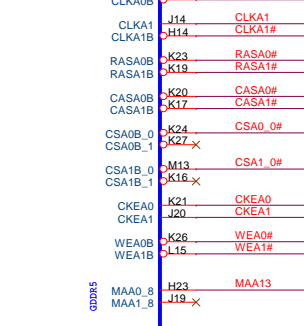
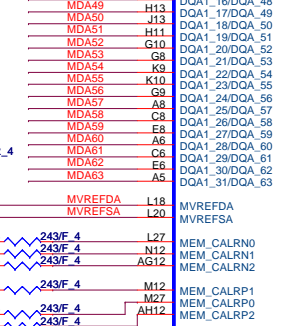
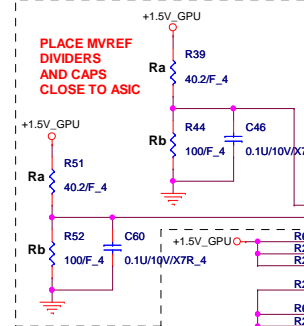
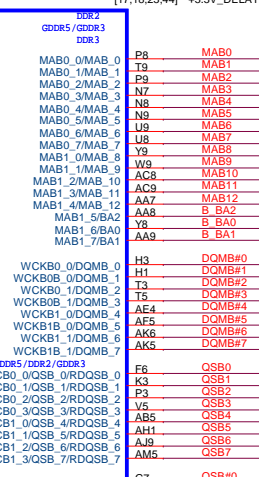
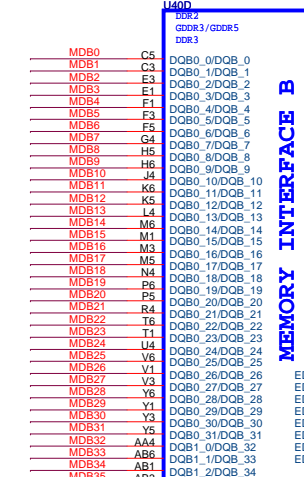
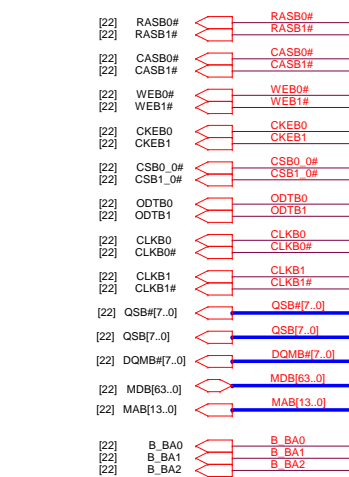
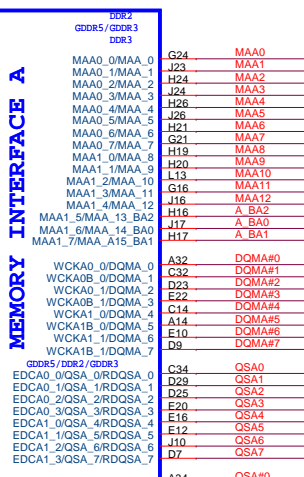
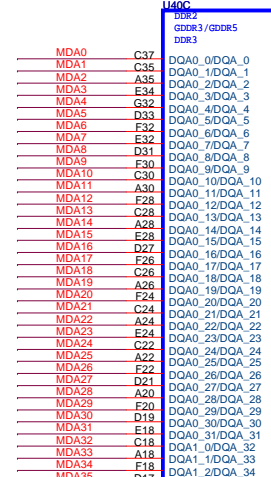
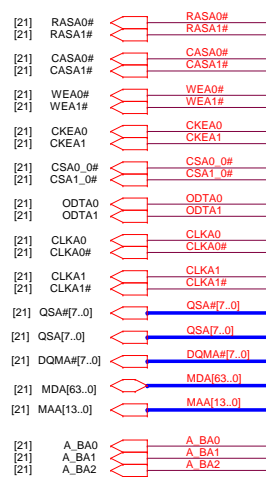


| CONFIGURATION STRAPS    |                       |                                                                                                                                                                                     |     |
|-------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| STRAPS                  | PIN                   | DESCRIPTION                                                                                                                                                                         | SET |
| TX_PWRS_ENB             | GPIO0                 | PCIE FULL TX OUTPUT SWING<br>0 = 50% Tx output swing<br>1 = Full Tx output swing                                                                                                    | 1   |
| TX_DEEMPH_EN            | GPIO1                 | PCIE TRANSMITTER DE-EMPHASIS ENABLED<br>0 = Disable ; 1 = Enable                                                                                                                    | 1   |
| BIF_GEN2_EN_A           | GPIO2                 | 0 = Advertises the PCIe device as 2.5 GT/s capable at power-on.<br>1 = Advertises the PCIe device as 5.0 GT/s capable at power-on.                                                  | 0   |
| GPIO_5_AC_BATT (M96-M2) | GPIO5                 | 1 = AC (Performance mode)<br>0 = Battery saving mode                                                                                                                                | 1   |
| VGA_DIS                 | GPIO9                 | 0: VGA Controller capacity enabled<br>1: The device will not be recognized as the system's VGA Controller                                                                           | 0   |
| BIOS_ROM_EN             | GPIO22                | Enable external BIOS ROM device<br>0 = Disable ; 1 = Enable                                                                                                                         | 0   |
| AUD[1]<br>AUD[0]        | VGAAHSYNC<br>VGAVSYNC | AUD[1]:0;<br>00 - No audio function;<br>01 - Audio for DisplayPort only;<br>10 - Audio for DisplayPort and HDMI if dongle is detected;<br>11 - Audio for both DisplayPort and HDMI. | 11  |
| VIP_DEVICE_STRAP_EN     | BIOS_ROM_EN           | VIP Device Strap Enable<br>0 = Disable ; 1 = Enable                                                                                                                                 | 0   |





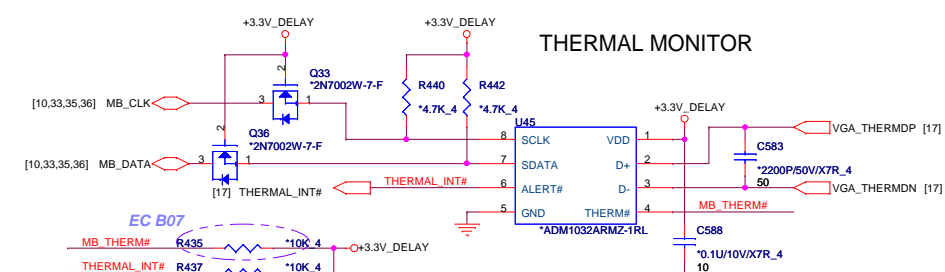




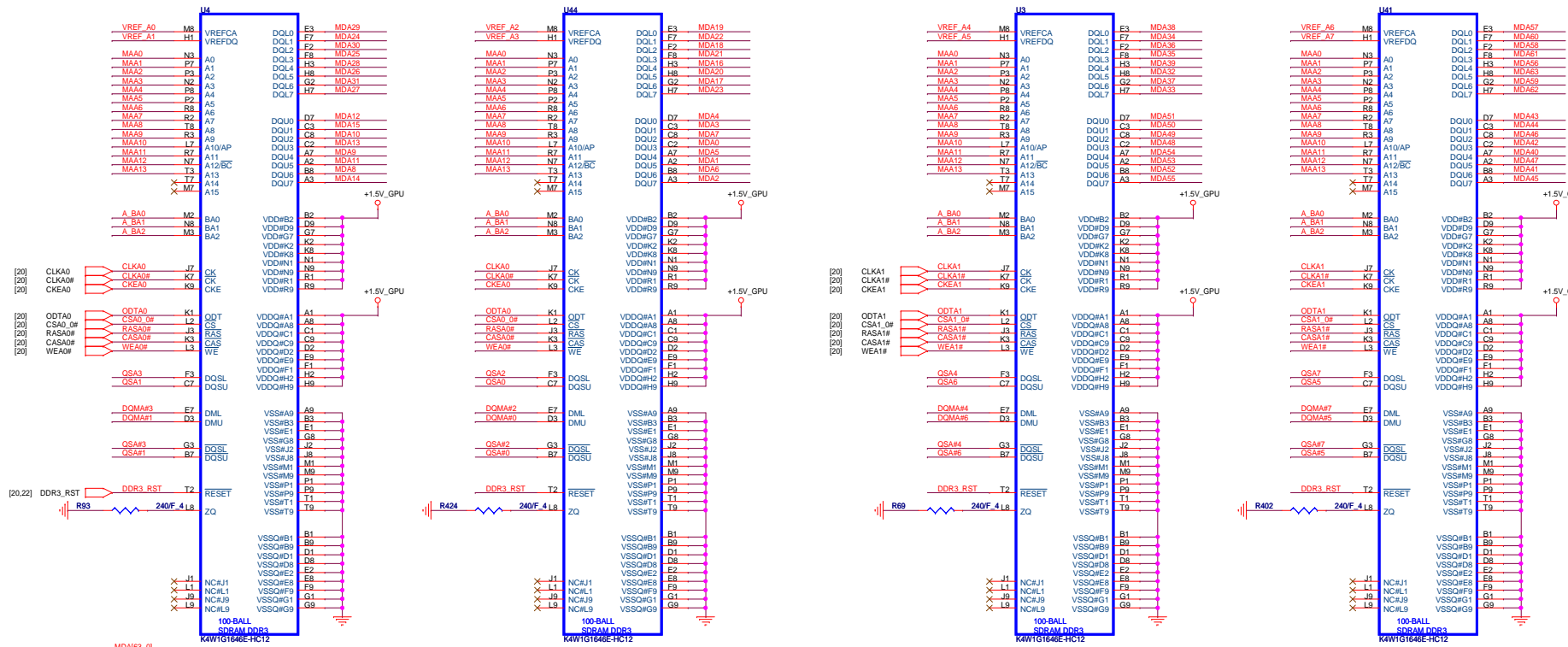
DDR3/GDDR3 Memory Stuff Option

|       | GDDR3 | DDR3 |
|-------|-------|------|
| MVDDQ | 1.8V  | 1.5V |
| Ra    | 40.2R | 100R |
| Rb    | 100R  | 100R |

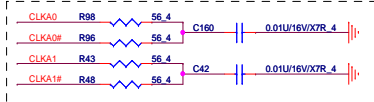
## THERMAL MONITOR



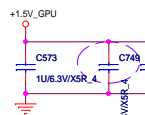




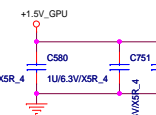
Placement has to be close to VRAM



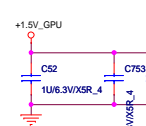
Close to U4



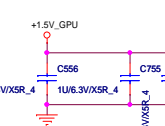
Close to U44



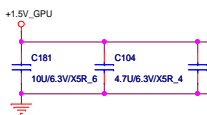
Close to U3



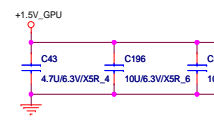
Close to U41

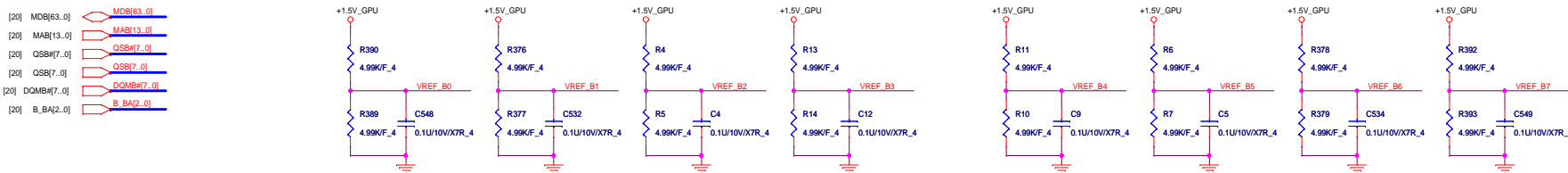
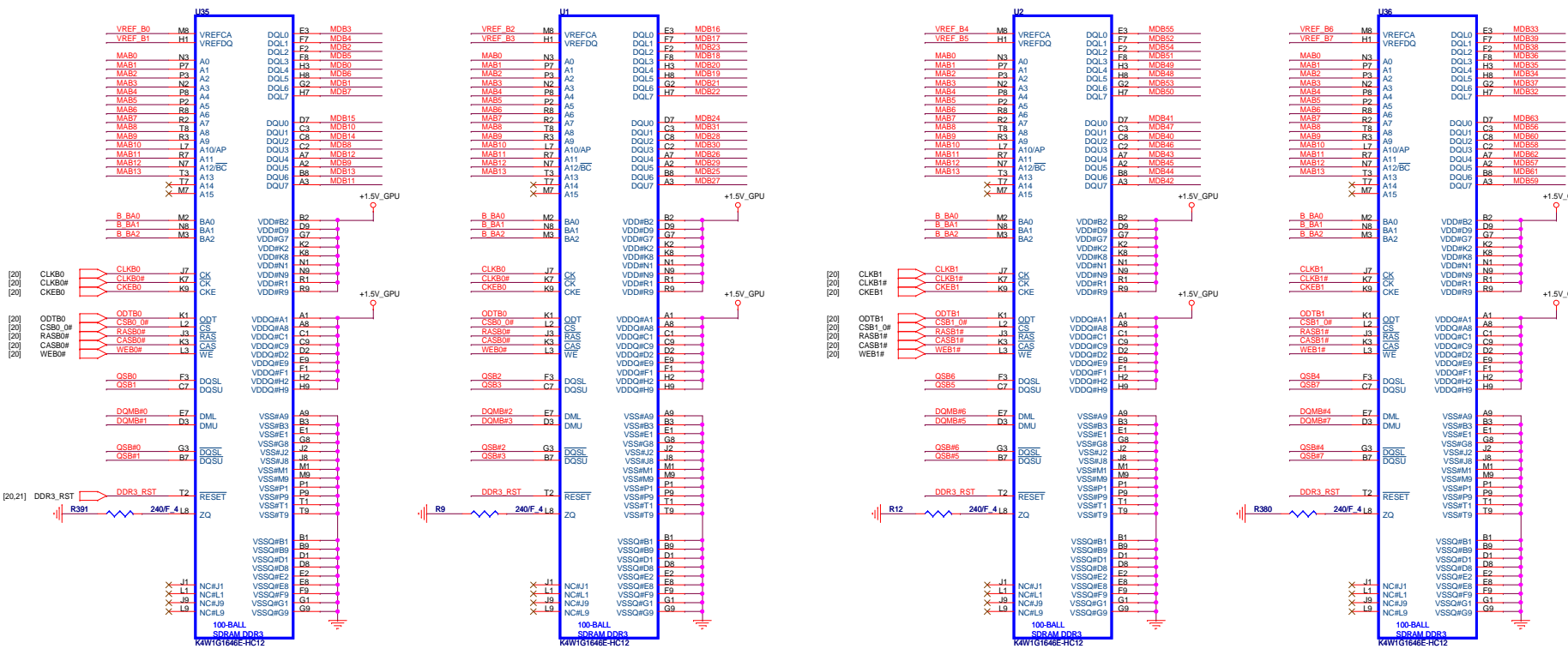


Close to U4 &amp; U44

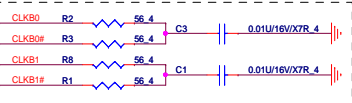


Close to U3 &amp; U41





Placement has to be close to VRAM



Close to U35

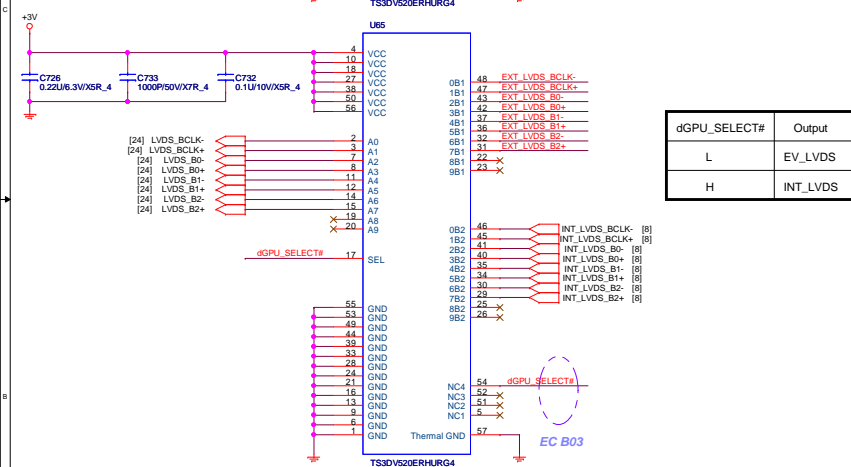
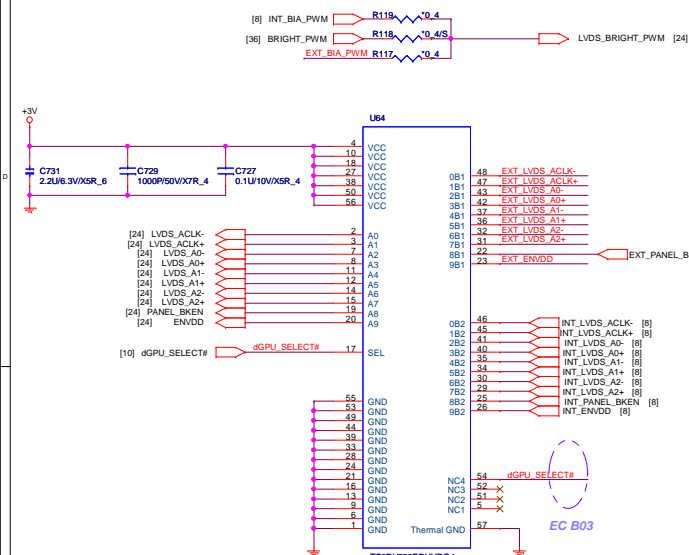
Close to U1

Close to U2

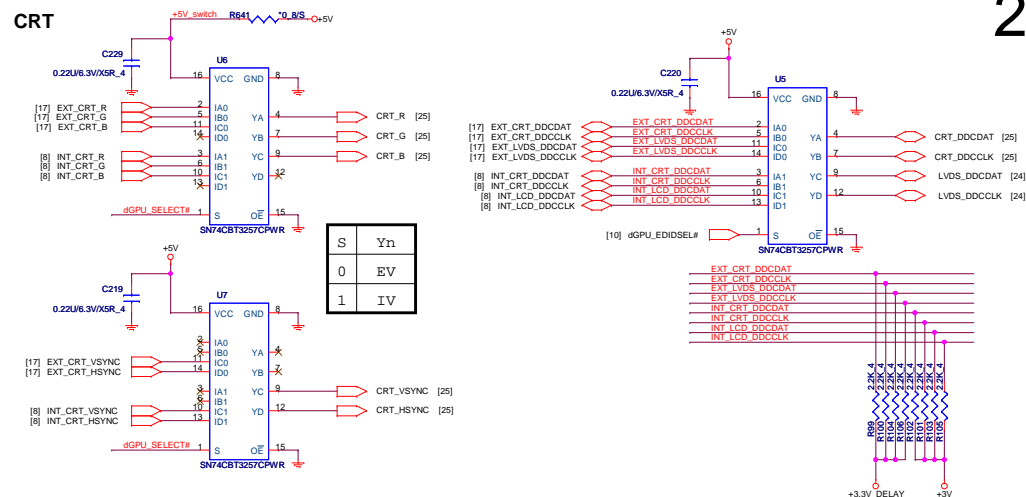
Close to U36

Close to U35 &amp; U1

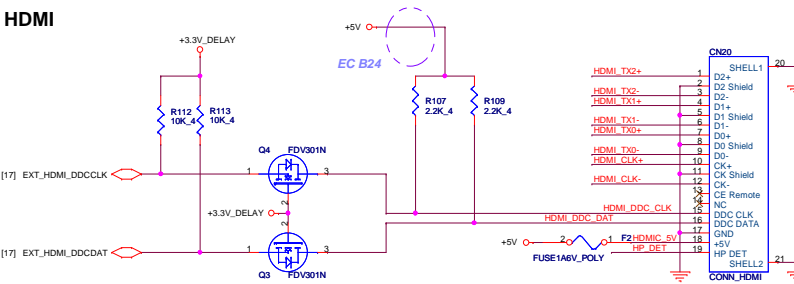
Close to U2 &amp; U36



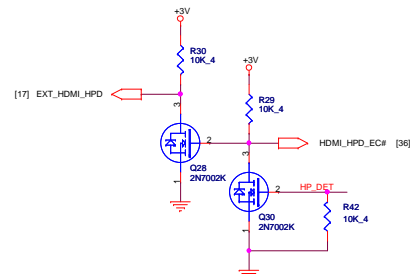
## CRT



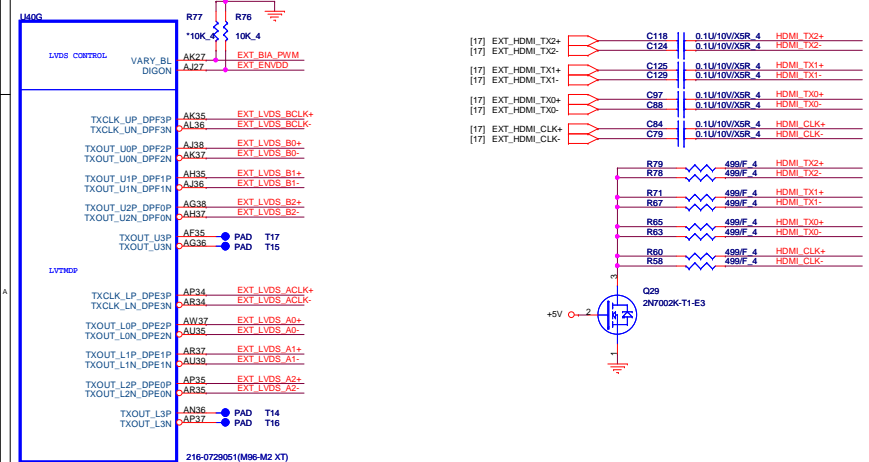
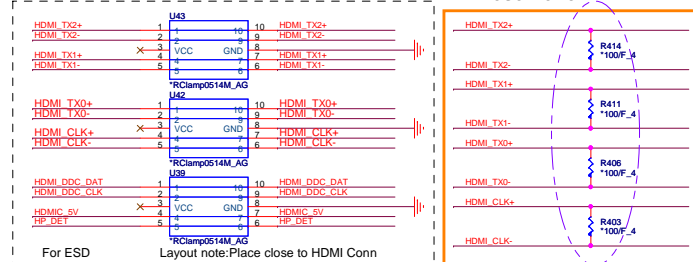
## HDMI



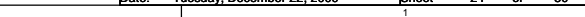
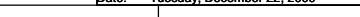
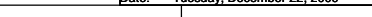
## HDMI Hot-PLUG to EC and GPU



## EMI reserve for HDMI



---

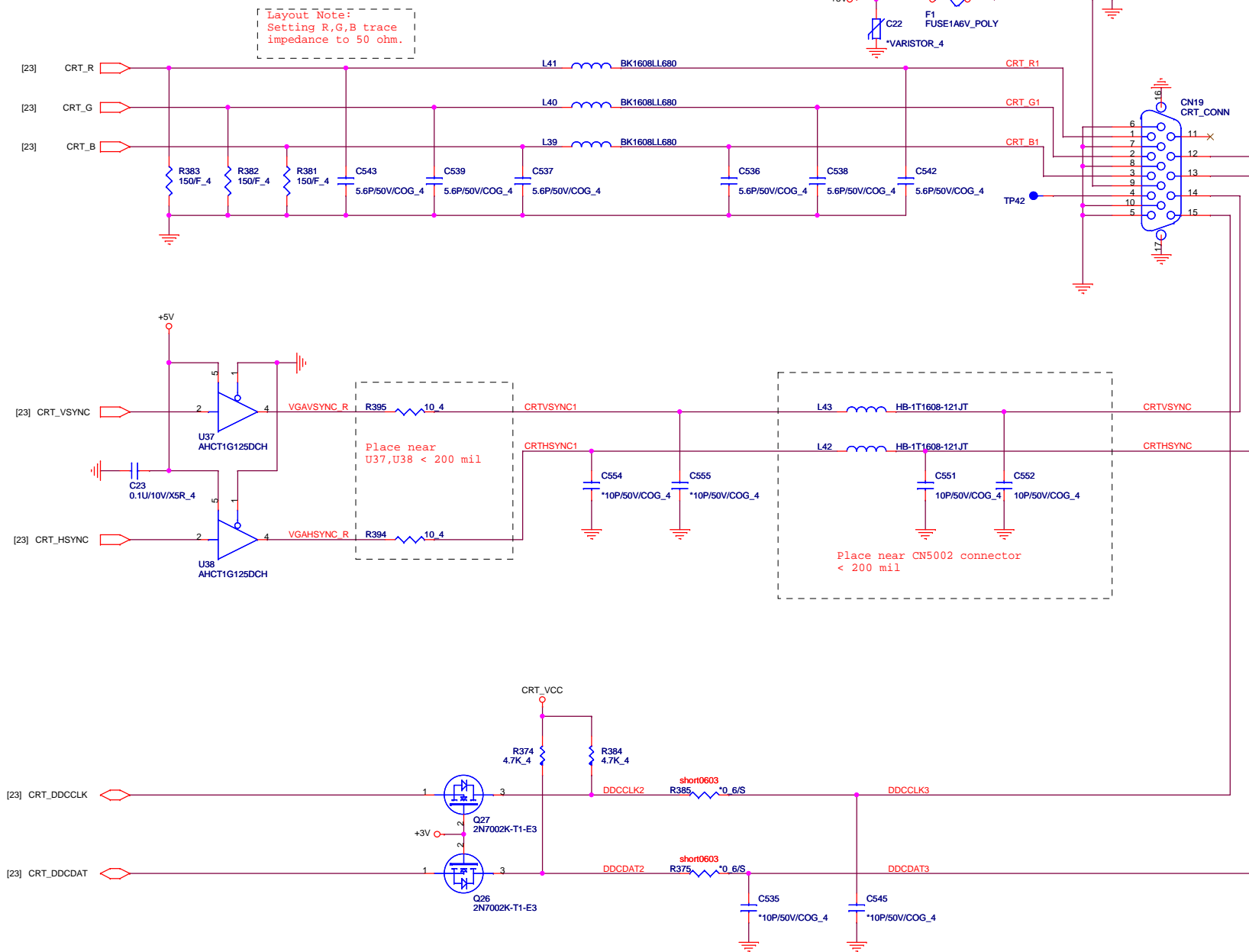


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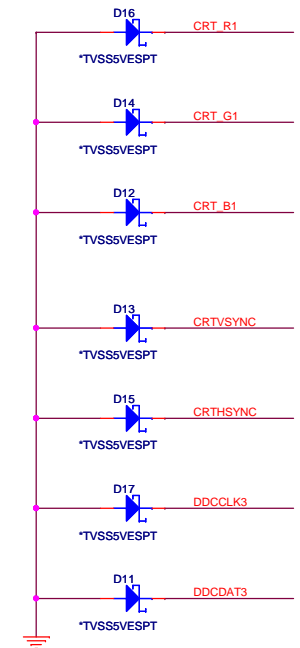


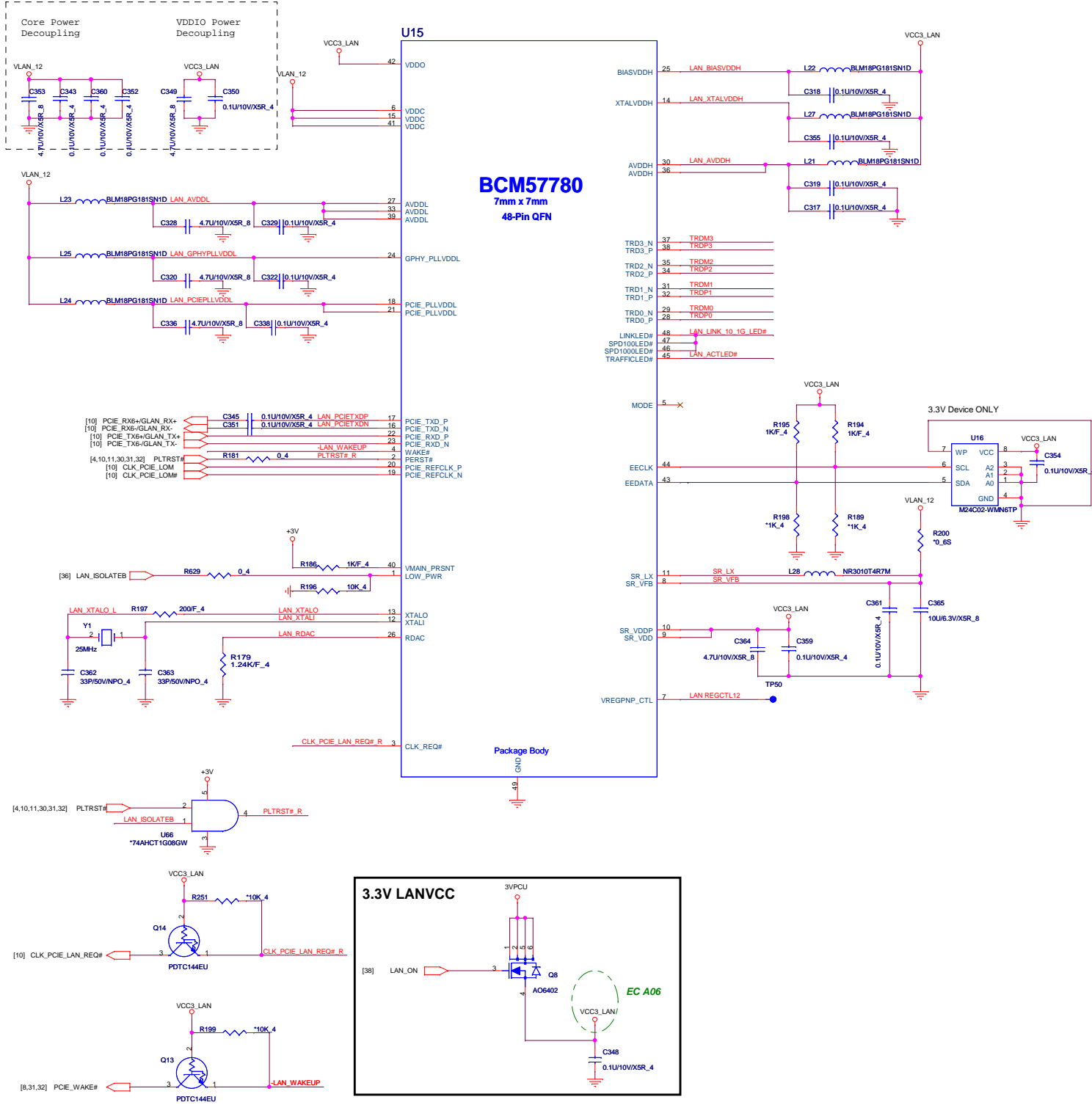
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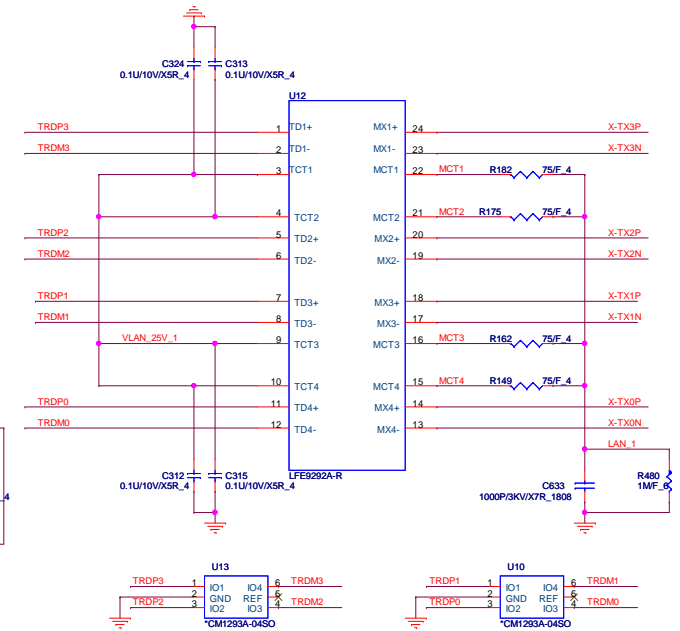


## ESD PROTECTION

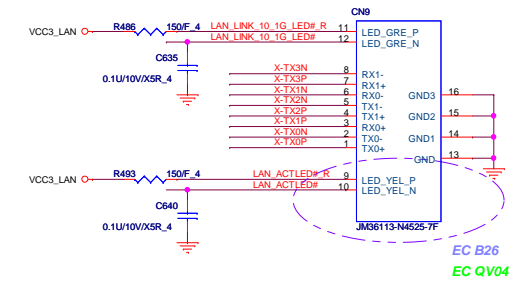




## Transformer



## RJ45 Connector

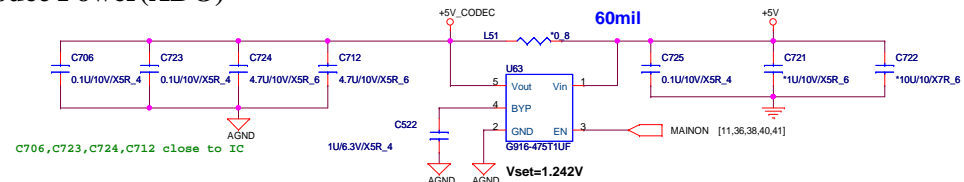
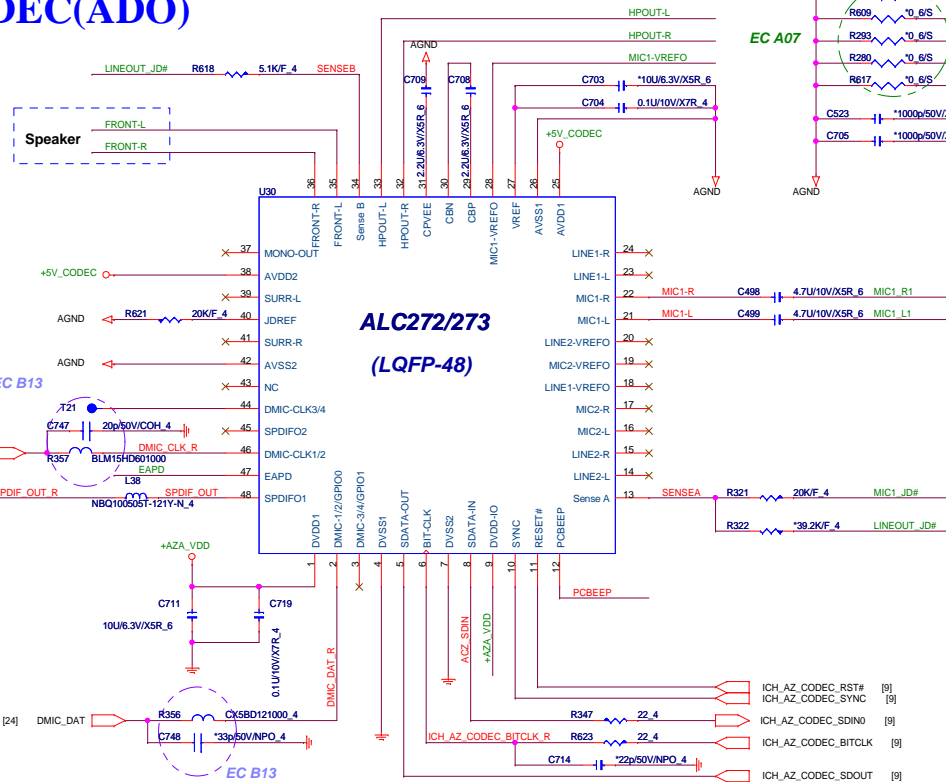




# CODEC(ADO)

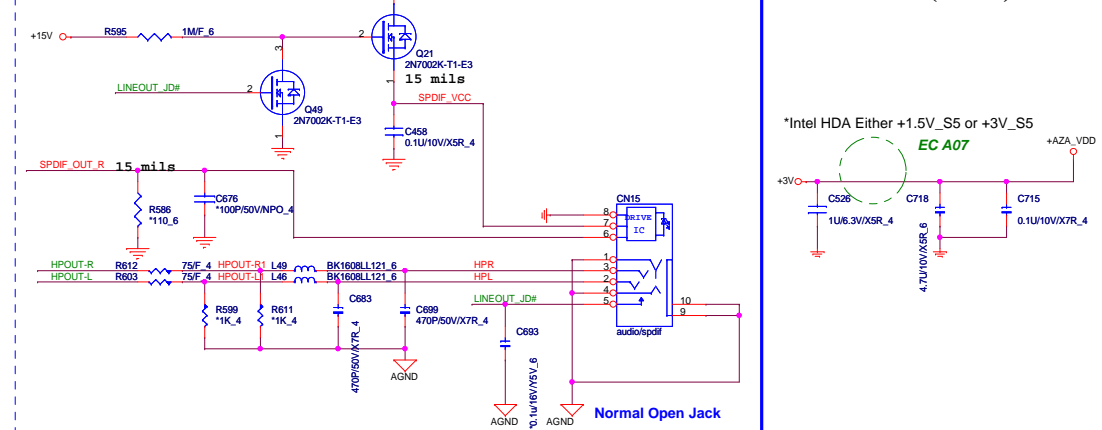
# Codec Power(ADO)

27

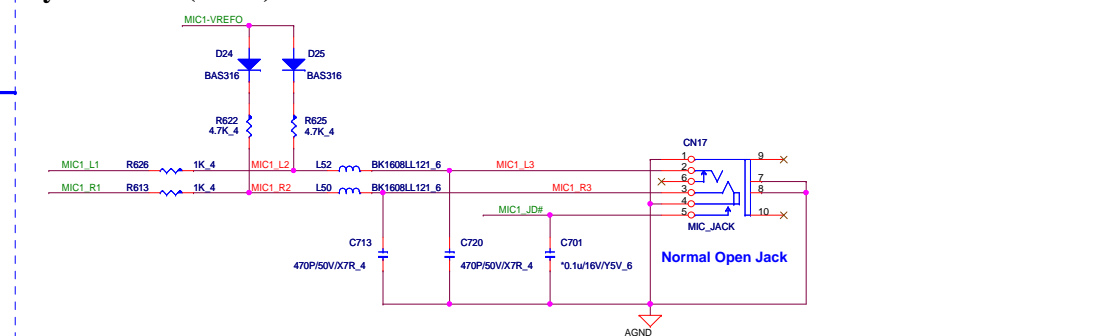


## Earphone(AMP)

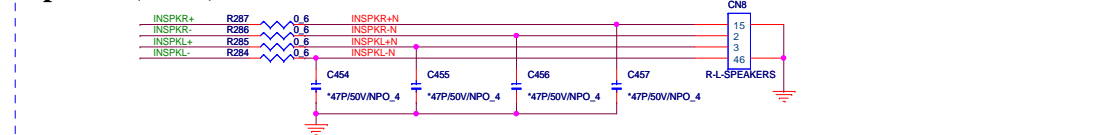
## HDA Power(ADO)



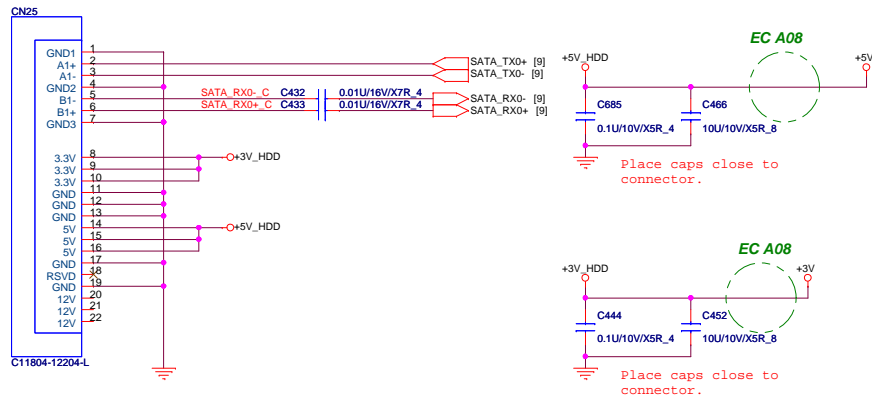
## System MIC(AMP)



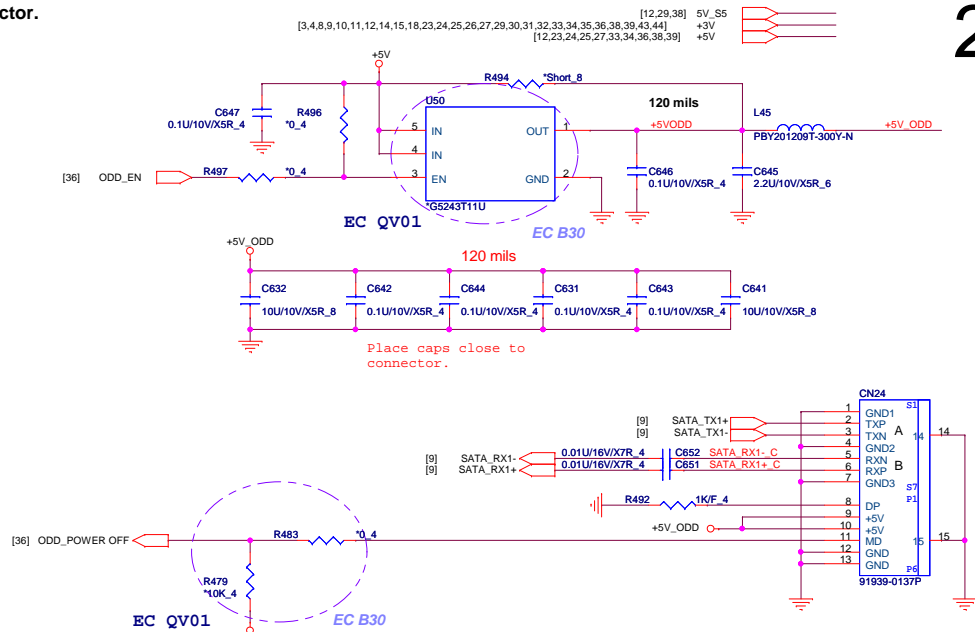
## Speaker(AMP)



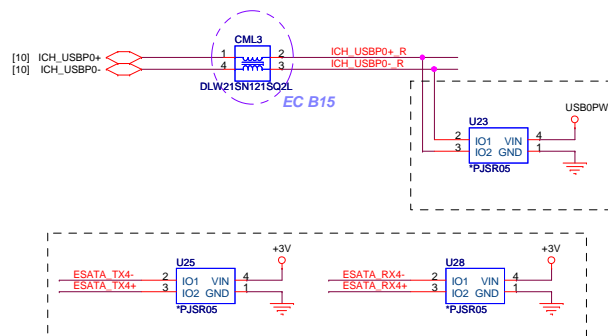
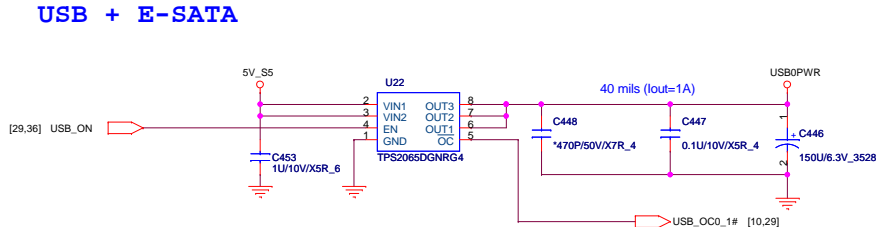
# SATA HDD Connector.



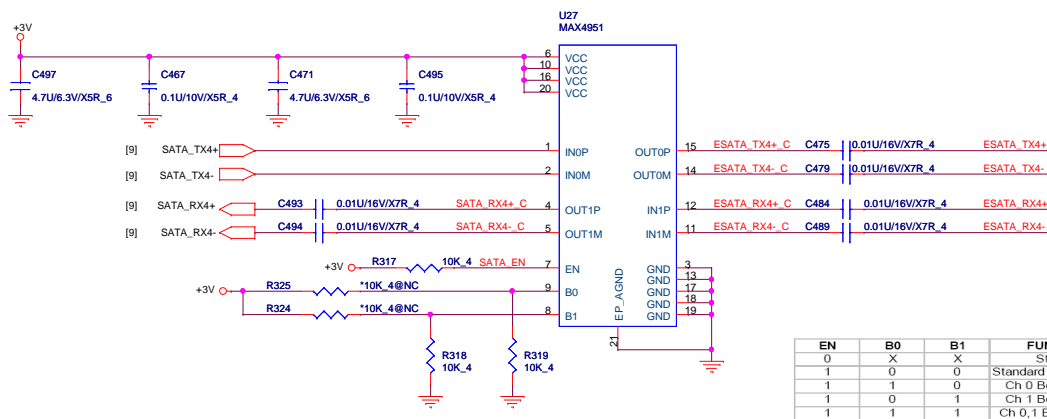
# SATA ODD Connector.



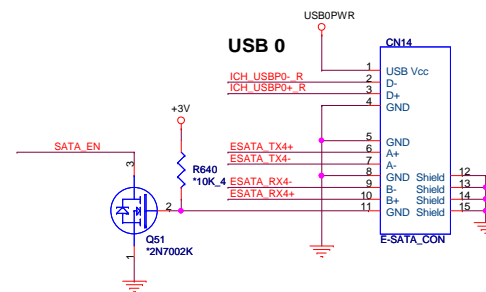
# USB + E-SATA



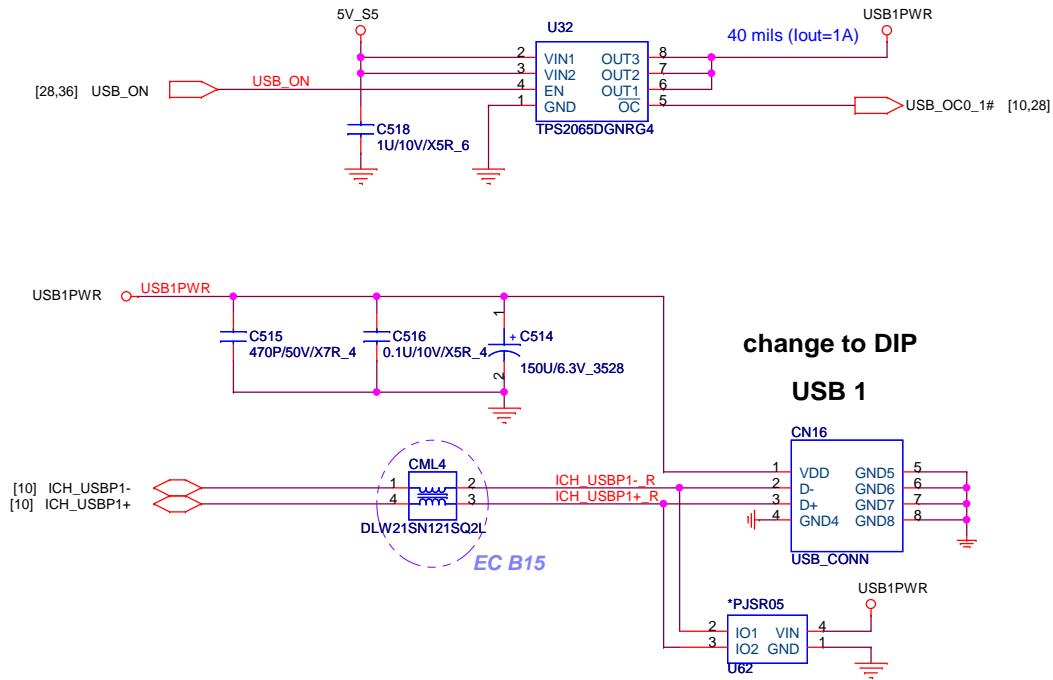
# E-SATA RE-DRIVER



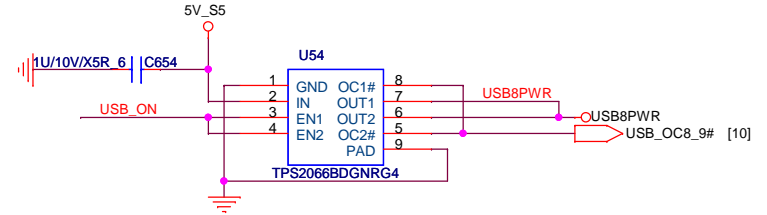
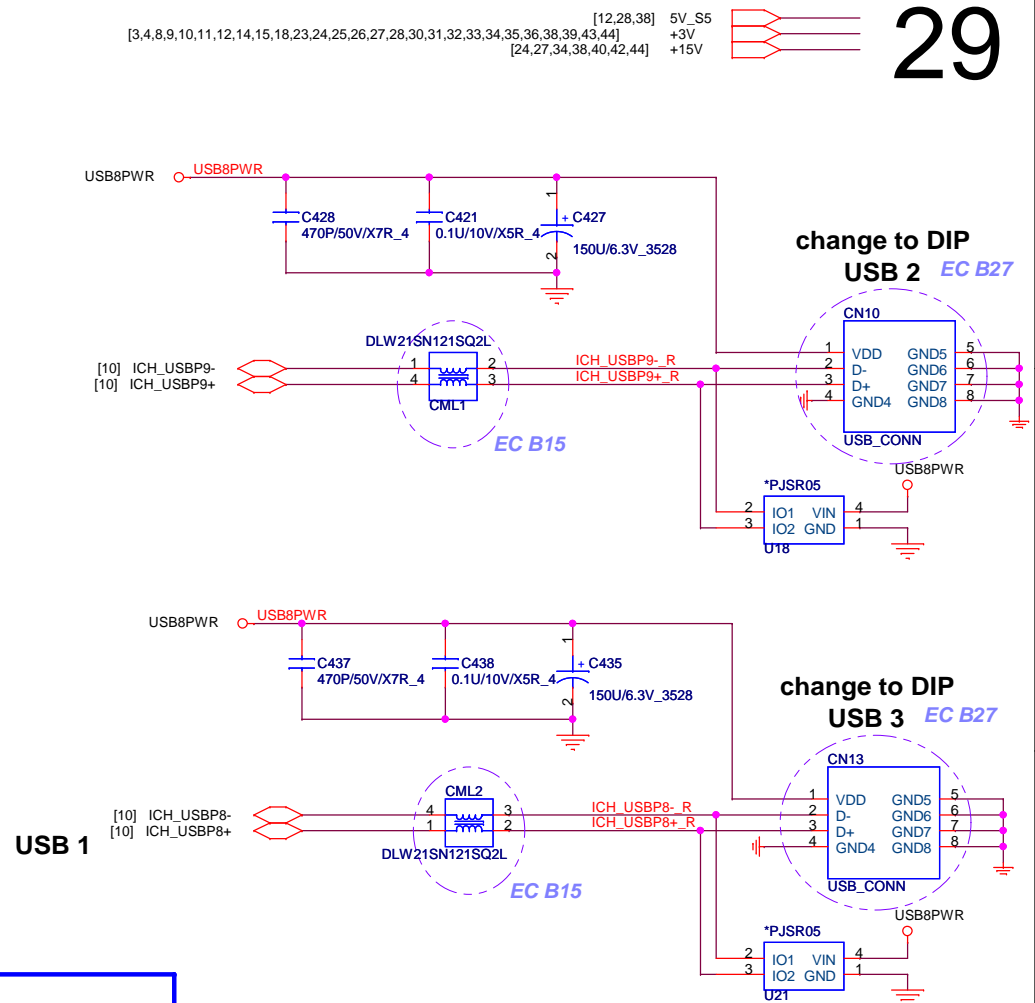
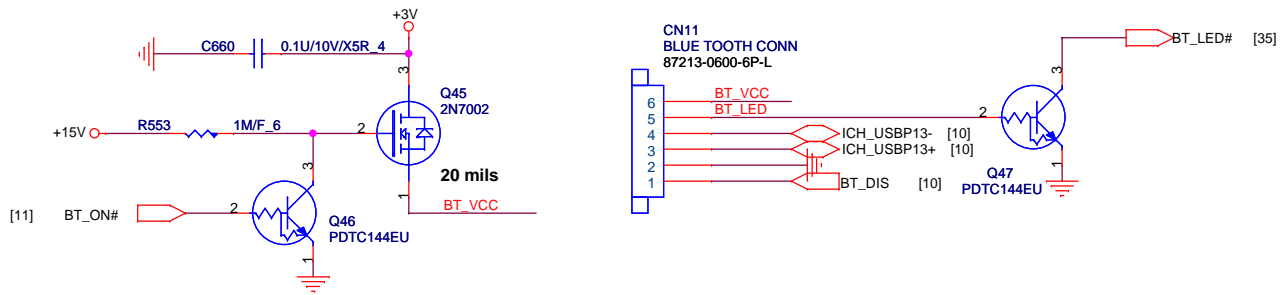
| EN | B0 | B1 | FUNCTION             |
|----|----|----|----------------------|
| 0  | X  | X  | Standby              |
| 1  | 0  | 0  | Standard SATA Output |
| 1  | 1  | 0  | Ch 0 Boost Output    |
| 1  | 0  | 1  | Ch 1 Boost Output    |
| 1  | 1  | 1  | Ch 0,1 Boost Output  |

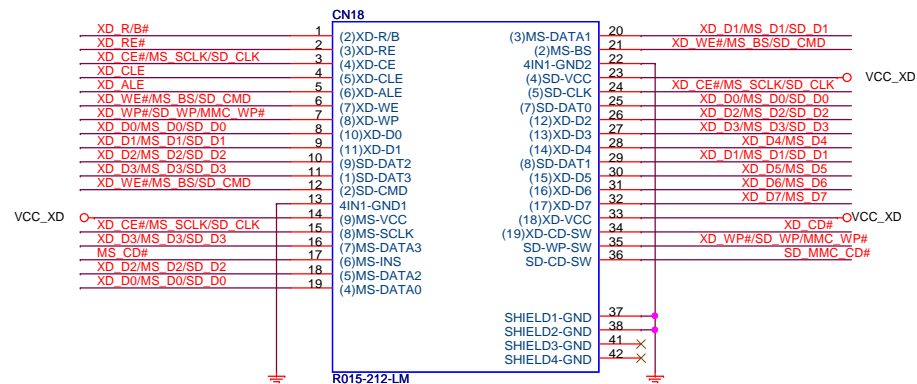


## USBX3

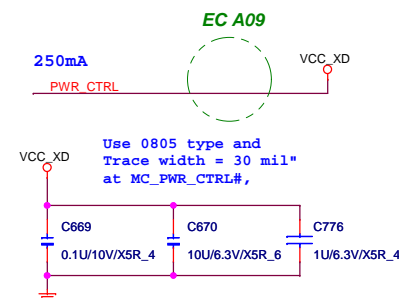


## BLUETOOTH

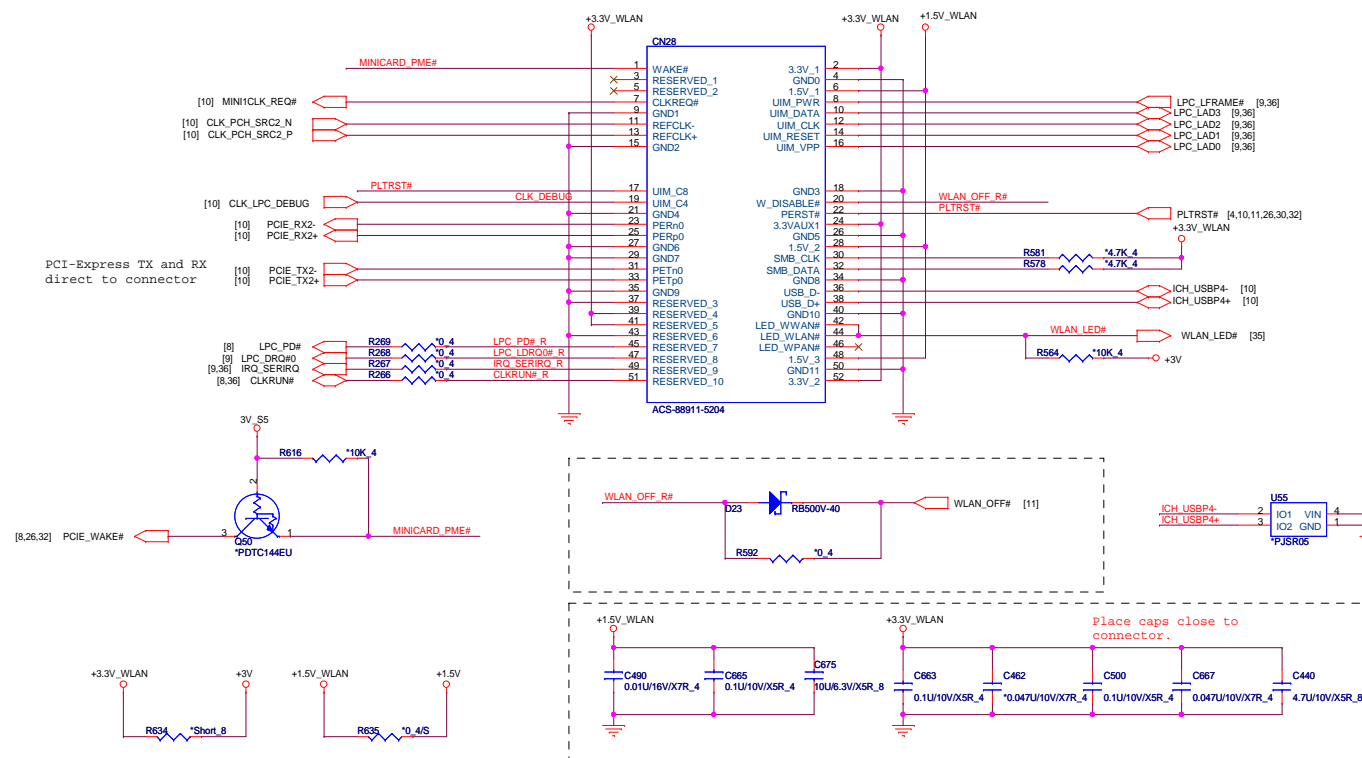




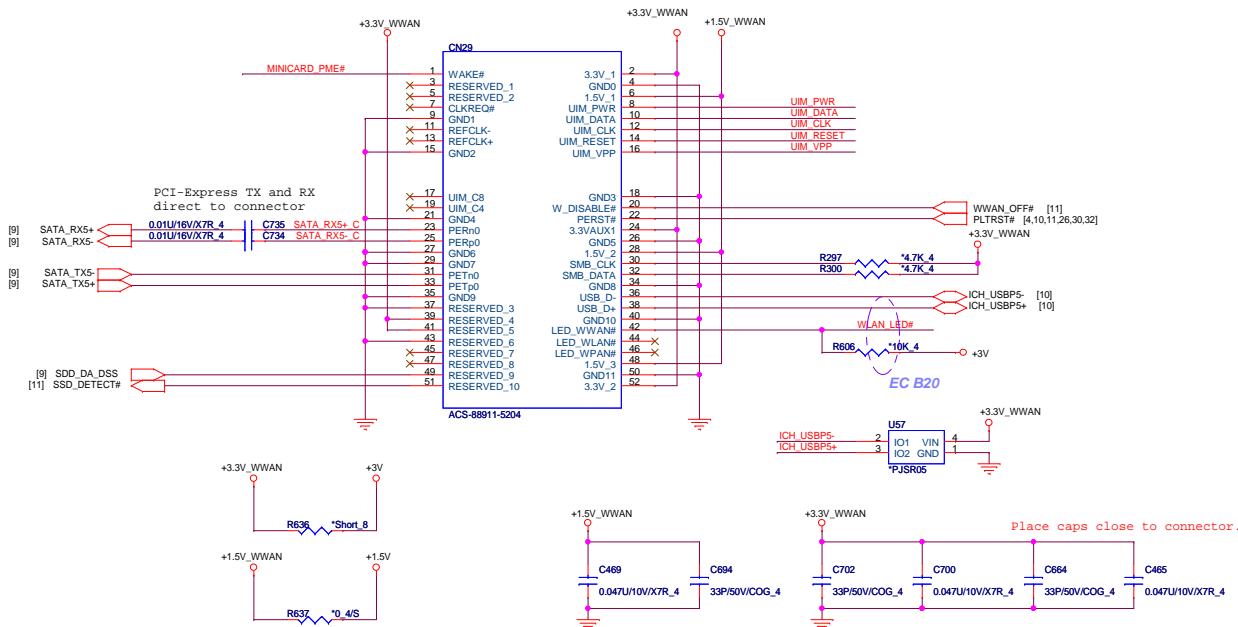
## Memory Card Power Supply



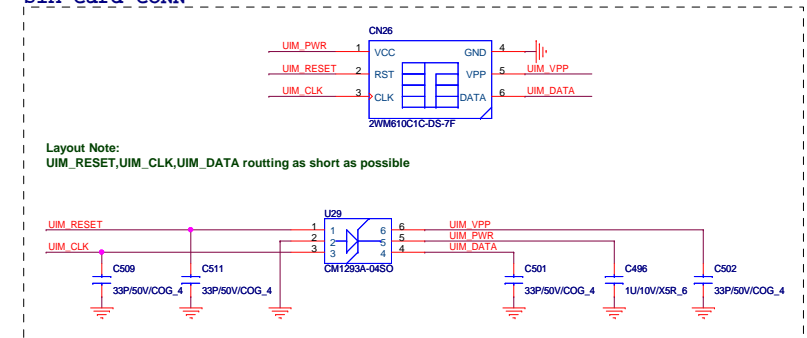
# MiniCard WLA connector



# MiniCard WWAN/SATA SSD connector

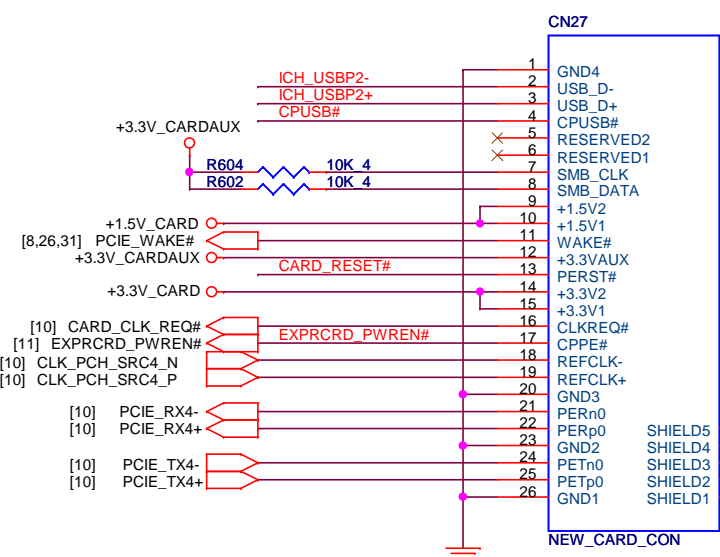
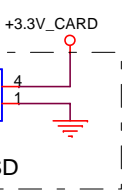
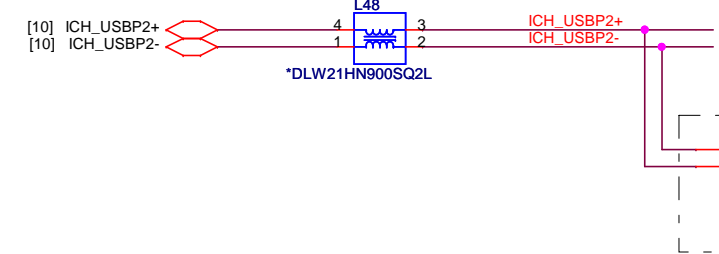


# SIM Card CONN

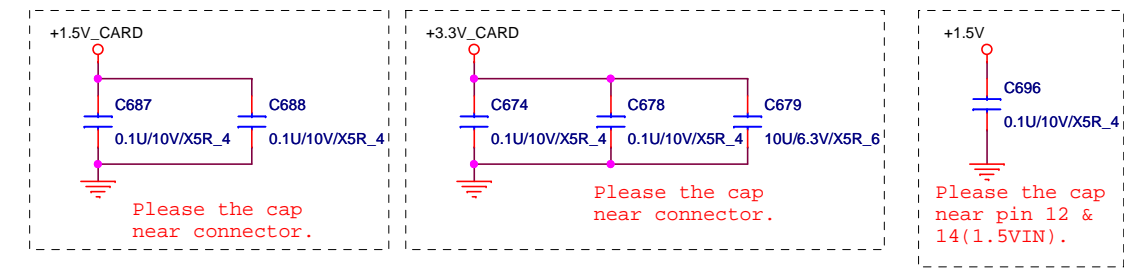
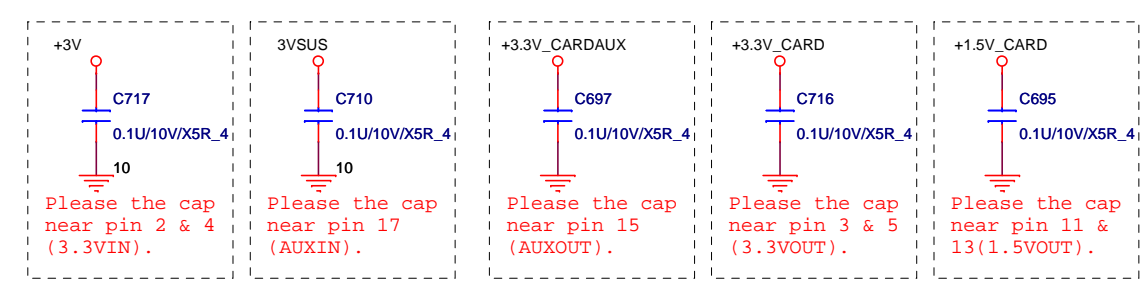
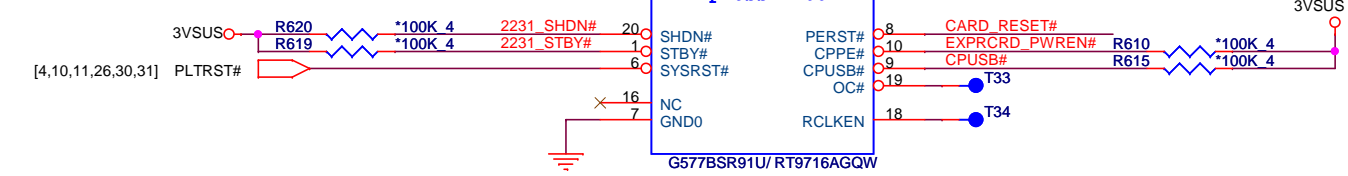


Express Card

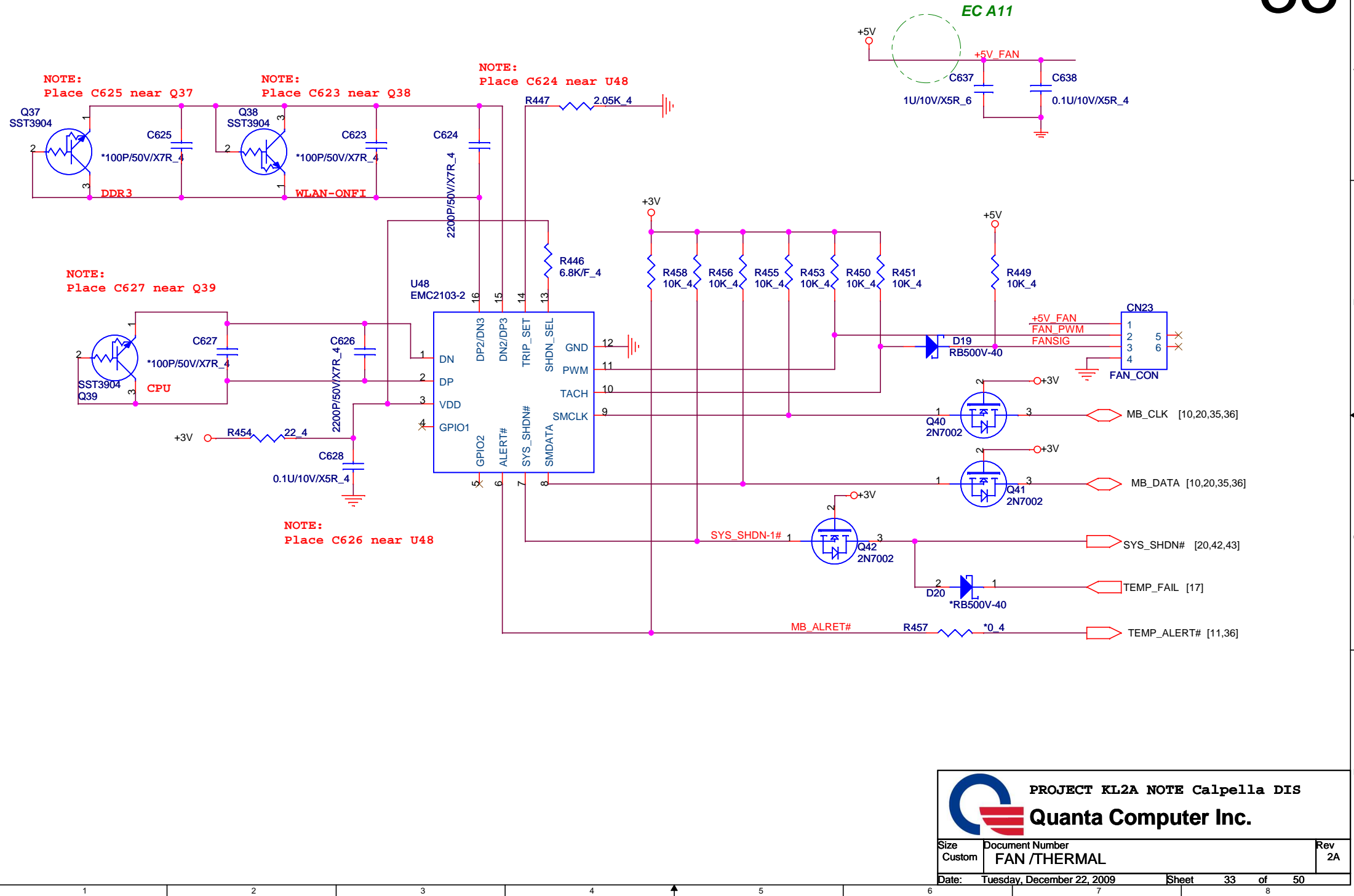
32



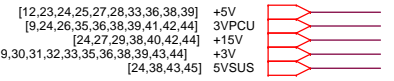
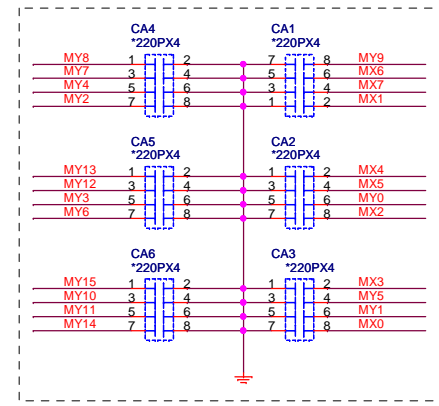
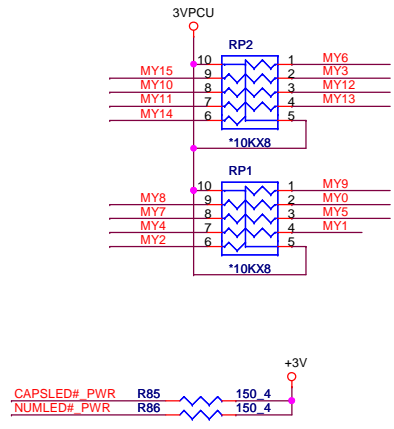
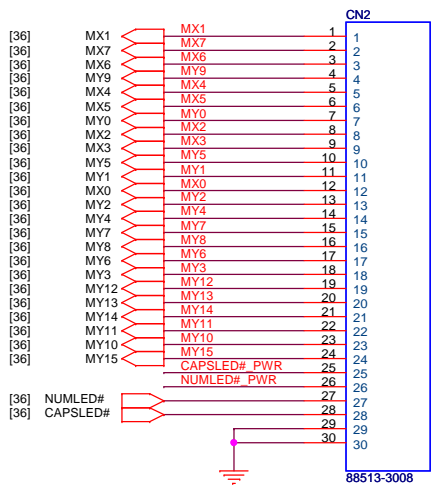
JAE PX10FS16PH-26P





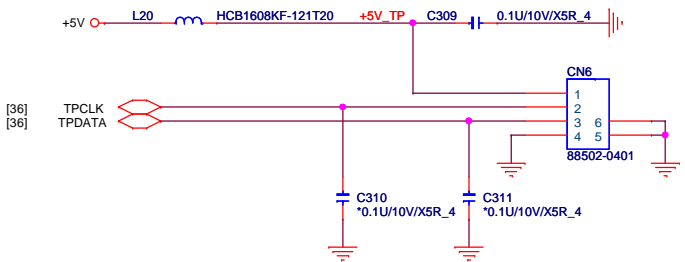


KEYBOARD

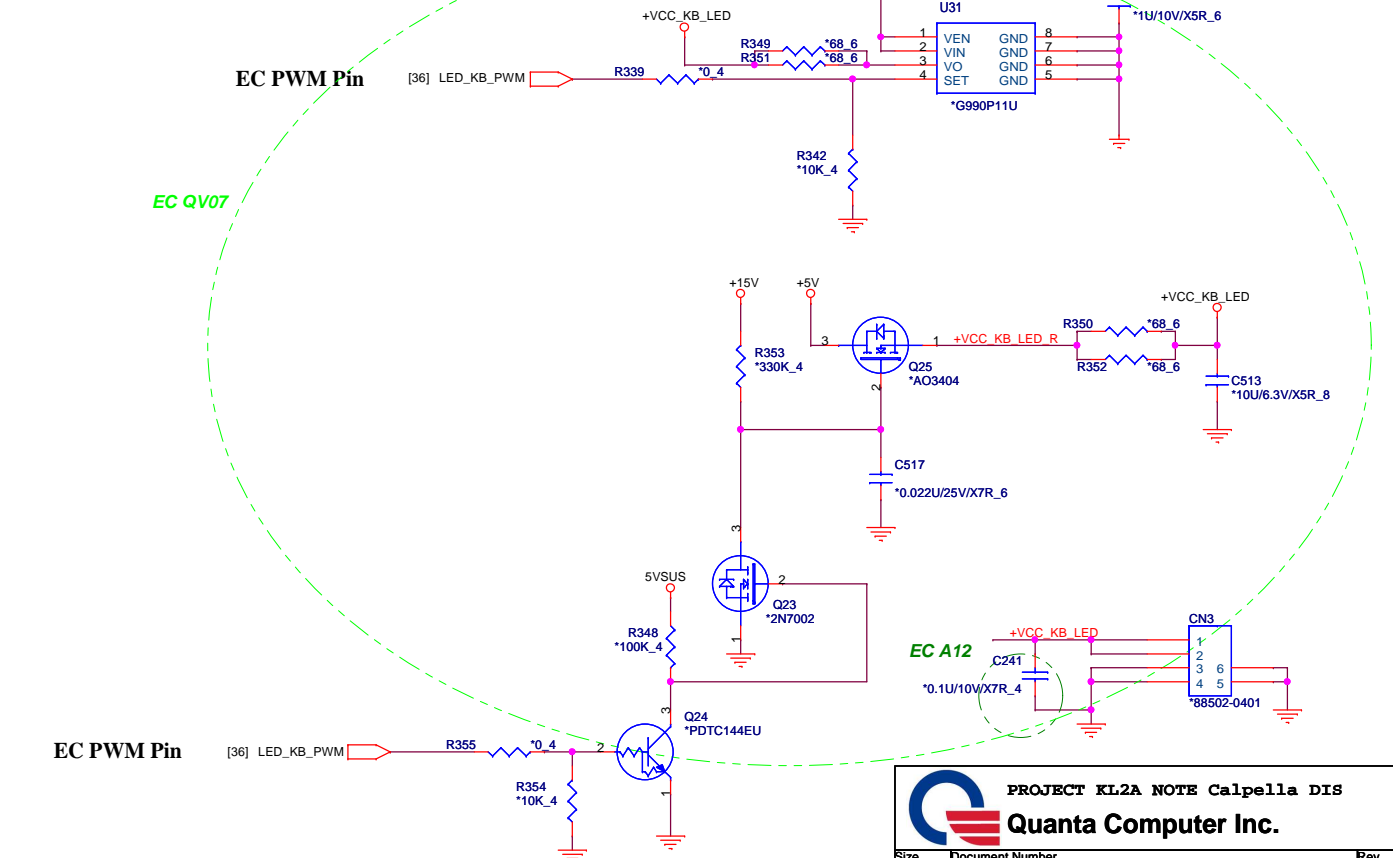


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Touch pad



Backlight Keyboard Con.





```

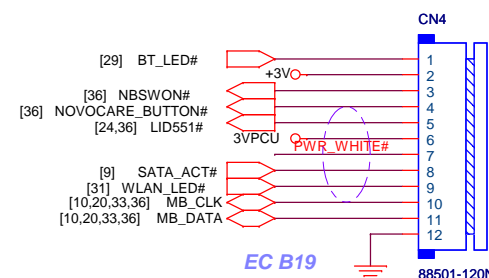
BT
[29] BT_LED#

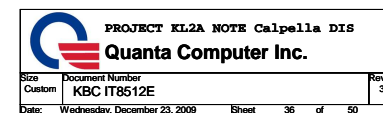
[36] NBSWON#
[36] NOVOCARE_BUTTON#
[24,36] LID551#

WWAN
HDD
WLAN
[9] SATA_ACT#
[31] WLAN_LED#
[10,20,33,36] MB_CLK#
[10,20,33,36] MB_DATA#

LIGHT SENSOR

```

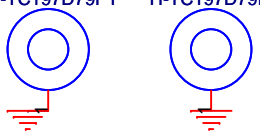




**MiniCard WLAN**

HOLE28  
H-TC197D79PT


HOLE30  
H-TC197D79PT



**MiniCard WWAN**

HOLE29  
H-TC197D79PT


HOLE31  
H-TC197D79PT



**Hole for PCH support**

HOLE25  
H-TC197D59PT

HOLE27  
H-TC197D59PT



**Drink Hole**

**ESD for ESATA**

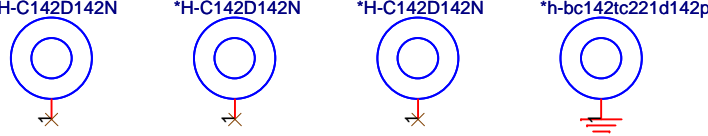
**Hole for CPU support**

HOLE4  
\*H-C142D142N

HOLE5  
\*H-C142D142N

HOLE7  
\*H-C142D142N

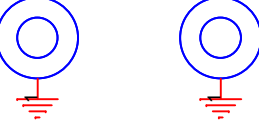
HOLE6  
\*h-bc142tc221d142pt



**VGA nut**

HOLE20  
H-TC197D59PT

HOLE22  
H-TC197D59PT



**Bluetooth nut**

**Boundary Hole**

HOLE1  
\*h-sd106p2-kl2

HOLE11  
\*H-C315I3146BO378D106P2

HOLE15  
\*H-C315I126D106P2

HOLE18  
\*H-C315I126D106P2

HOLE19  
\*H-C315I126D106P2

HOLE13  
\*H-TC197BC256D106P2

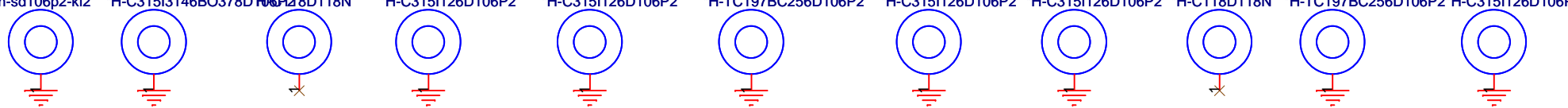
HOLE17  
\*H-C315I126D106P2

HOLE16  
\*H-C315I126D106P2

HOLE14  
\*H-C118D118N

HOLE8  
\*H-TC197BC256D106P2

HOLE3  
\*H-C315I126D106P2

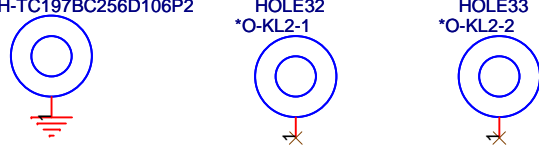


**Boundary Hole**

HOLE2  
\*H-TC197BC256D106P2

HOLE32  
\*O-KL2-1

HOLE33  
\*O-KL2-2



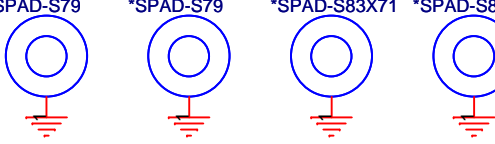
**PAD**

HOLE24  
\*SPAD-S79

HOLE26  
\*SPAD-S79

HOLE21  
\*SPAD-S83X71

HOLE23  
\*SPAD-S87X73

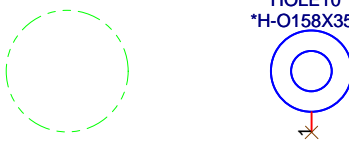


**Break Hole**

**Boundary Hole (ODD)**

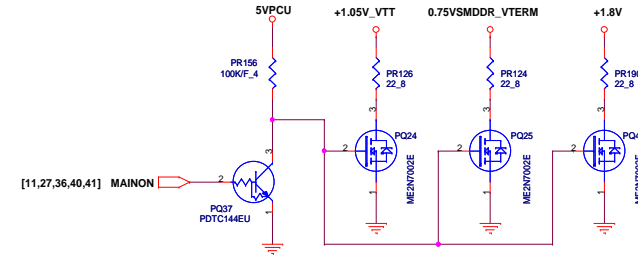
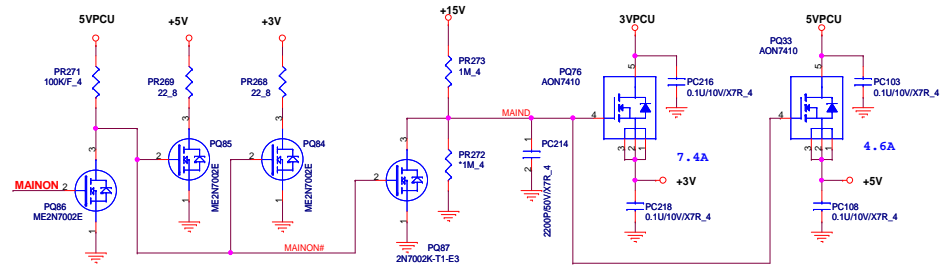
**HDD PAD**  
*EC QV08*

HOLE10  
\*H-O158X355D158X355N

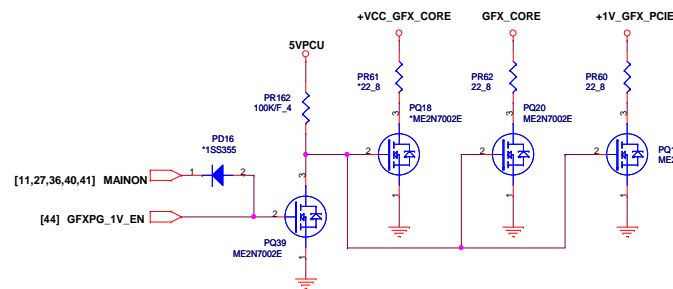
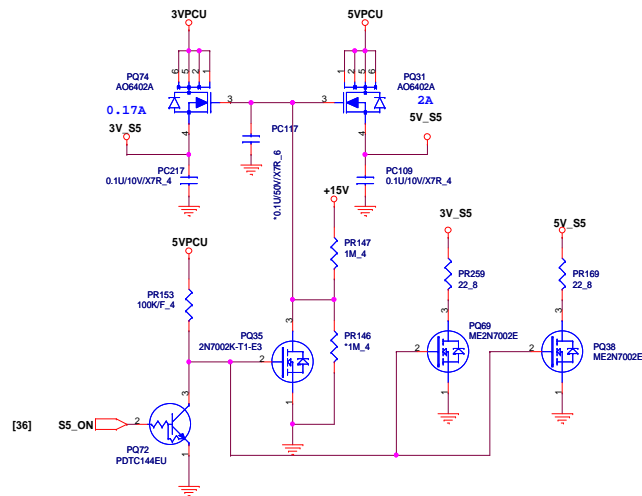


## DISCHARGE

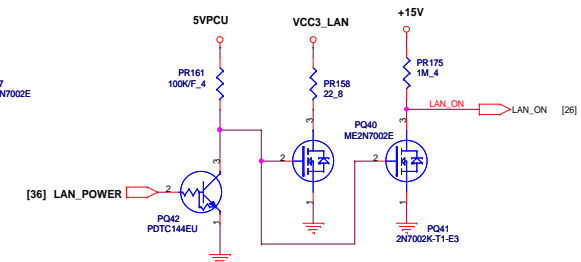
+3V, +5V



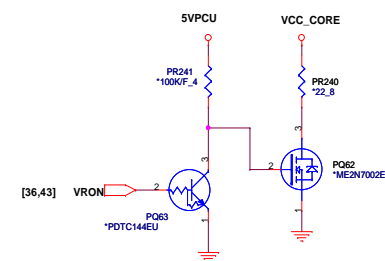
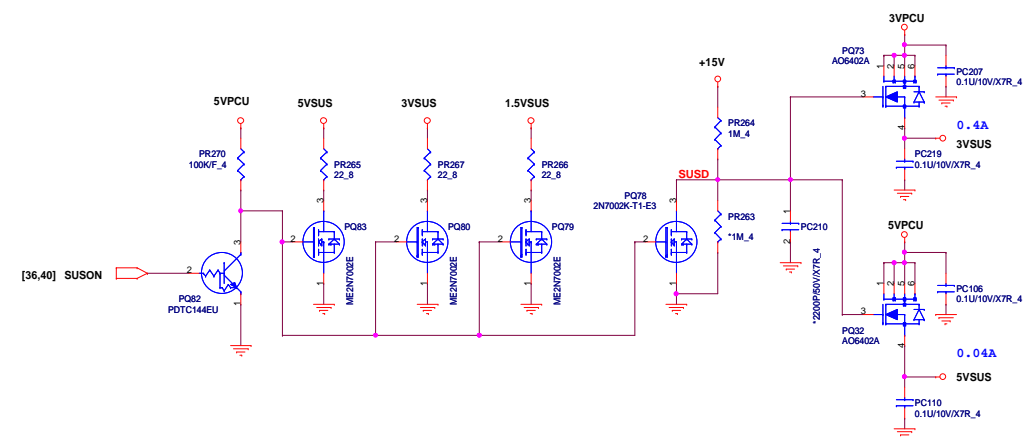
3V\_S5, 5V\_S5



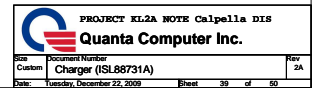
LANVCC

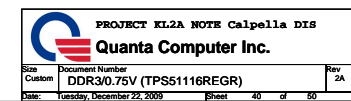


3VSUS, 5VSUS

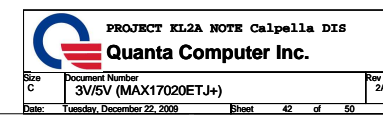


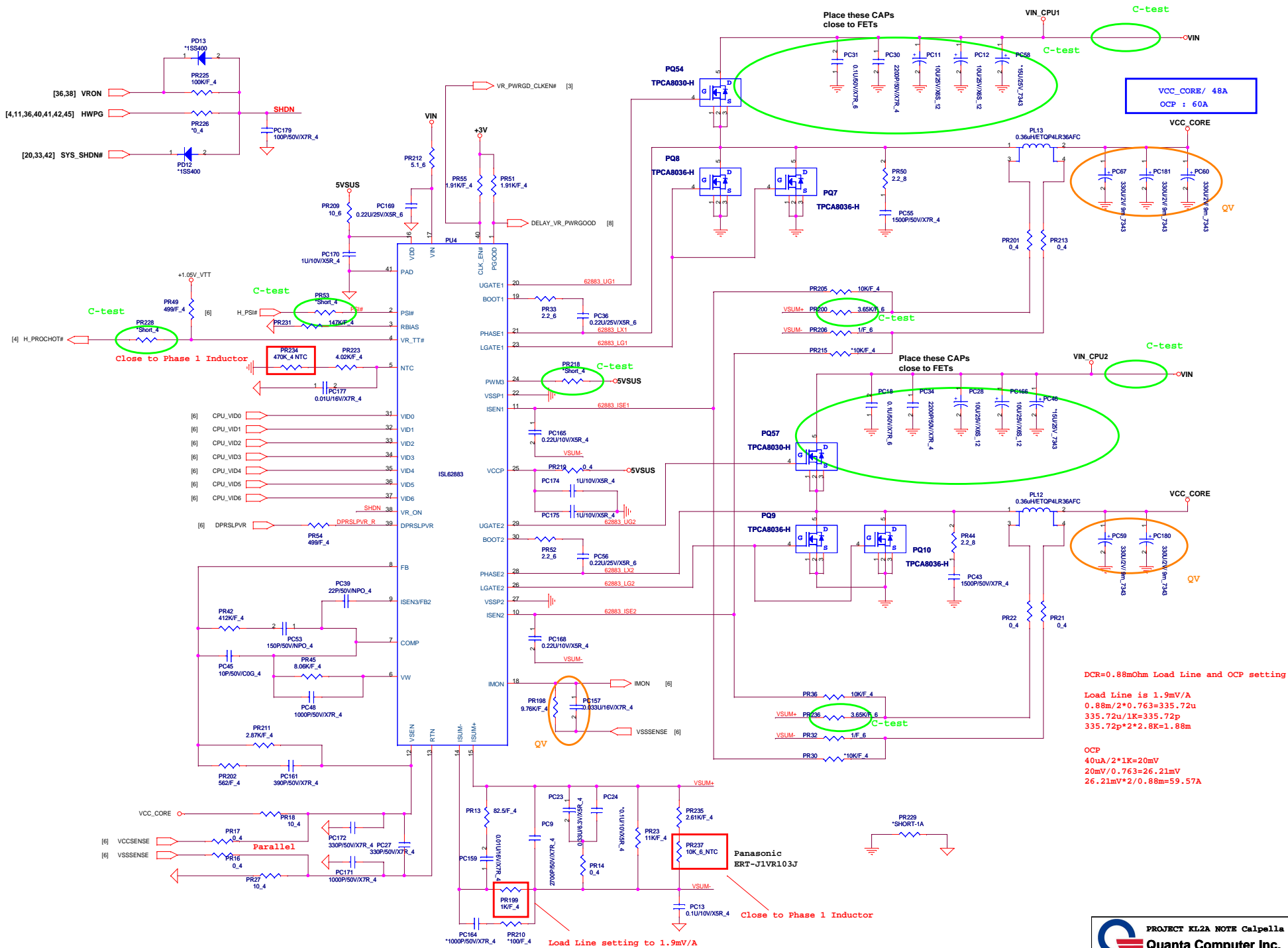


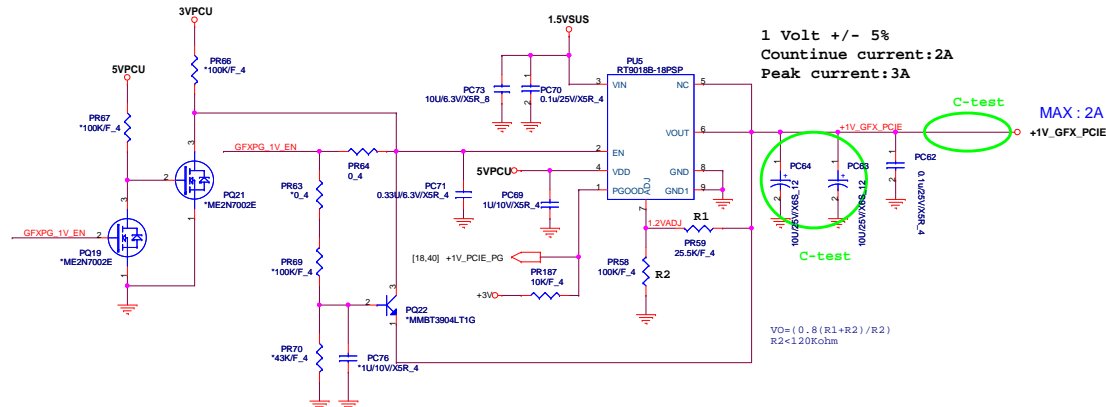
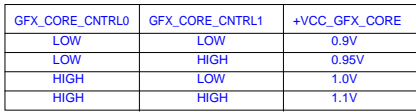




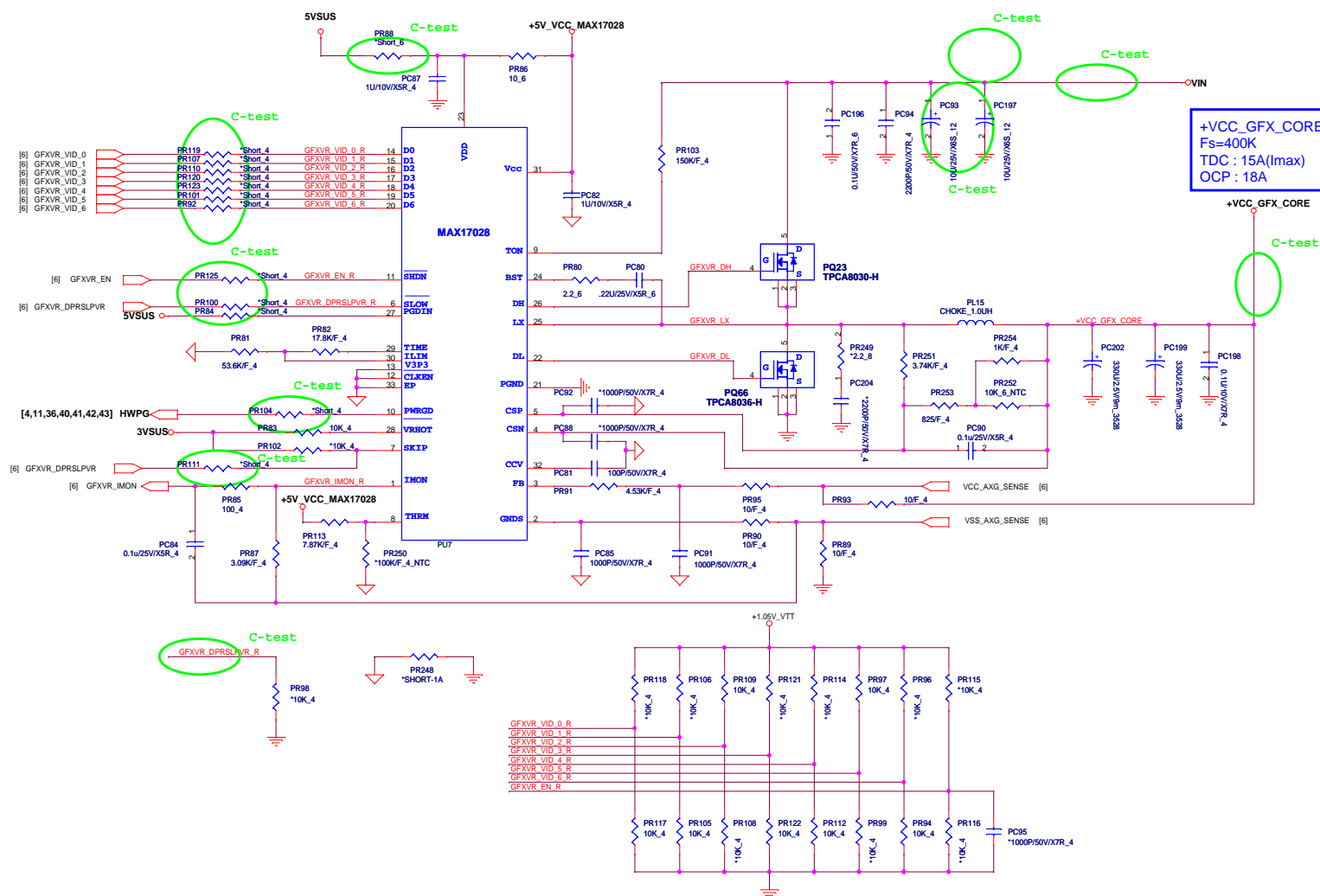












D

D

C


C

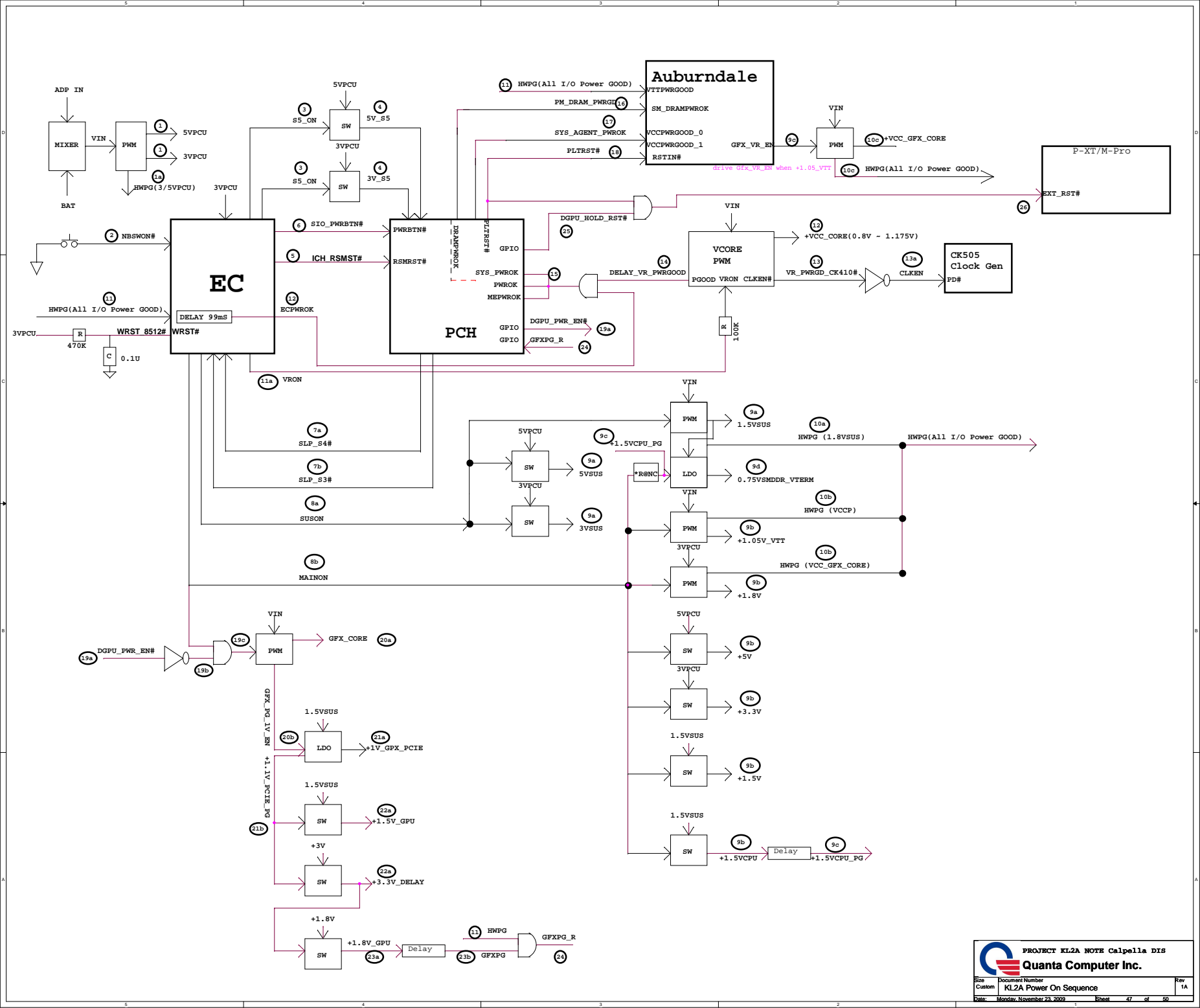
B

B

A

A

|                                                                                       |                           |                                |          |
|---------------------------------------------------------------------------------------|---------------------------|--------------------------------|----------|
|  |                           | PROJECT KL2A NOTE Calpella DIS |          |
|                                                                                       |                           | Quanta Computer Inc.           |          |
| Size                                                                                  | Document Number           |                                | Rev      |
| Custom                                                                                | POWER BLOCK               |                                | 1A       |
| Date:                                                                                 | Monday, November 23, 2009 | Sheet                          | 46 of 50 |



| EC #    | Page | Description                            | Part Affected                 |
|---------|------|----------------------------------------|-------------------------------|
| EC-A-01 | 03   | DEL 0 ohm change to short pad          | R630                          |
| EC-A-02 | 04   | DEL R90 we use CRB schematic           | R90                           |
| EC-A-03 | 04   | DEL JTAG                               | R474,R471,R475,R462,R460      |
| EC-A-04 | 08   | DEL 0hom                               | R519,R226,R231,R229,R235      |
| EC-A-05 | 24   | DEL 0hom and change to short PAD       | R120,R142,R632,R323           |
| EC-A-06 | 26   | DEL 0hom and change to short PAD       | R187                          |
| EC-A-07 | 27   | DEL 0hom and change 0 Ohn to short pad | R614,R360,R609,R293,R280,R617 |
| EC-A-08 | 28   | DEL 0hom                               | R302,R277                     |
| EC-A-09 | 30   | DEL 0hom                               | R575                          |
| EC-A-10 | 30   | Add C741 for EMI                       | C741                          |
| EC-A-11 | 33   | DEL 0hom                               | R488                          |
| EC-A-12 | 34   | Add C241 for EMI                       | C241                          |
| EC-A-13 | 35   | Add C736,C737 for EMI                  | C736,C737                     |
| EC-A-14 | 03   | Reserve C742,C743 for EMI              | C742,C743                     |
| EC-A-15 | 11   | Change Board ID                        | R262,R263                     |
| EC-A-16 | 11   | Add R169 100K for DGPU_HOLD_RST#       | R169                          |
| EC-A-17 | 18   | Add R157 for +3.3V_DELAY sequence      | R157                          |
| EC-A-18 | 23   | DEL U8, the BRIGHT_PWM by EC control   | U8                            |
| EC-A-19 | 26   | Add NAND get U66 for LAN power saving  | U66                           |
| EC-A-20 | 36   | DE-POP R331,R340,R330,R328 for ME      | R331,R340,R330,R328           |

| EC #    | Page     | Description                                                              | Part Affected                                                                              |
|---------|----------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| EC-B-01 | 04       | Change C581 to 47nF for CRB schematic                                    | C581                                                                                       |
| EC-B-02 | 06       | DE-POP R464                                                              | R464                                                                                       |
| EC-B-03 | 08       | U64,U65 PIN54 connect to dGPU_SELECT#                                    | U64,U65                                                                                    |
| EC-B-04 | 09       | Add R640 to 10K pull high for SERIRQ                                     | R640                                                                                       |
| EC-B-05 | 09       | Change R490,R482,R478,R489 to short pad                                  | R490,R482,R478,R489                                                                        |
| EC-B-06 | 26       | Change Board ID, DE-POP R262,R555, POP R263,R552                         | R262,R555,R263,R552                                                                        |
| EC-B-07 | 20       | POP R435 for U45 open drain                                              | R435                                                                                       |
| EC-B-08 | 27       | Chabge C681 to 4.7u for POP noise                                        | C681                                                                                       |
| EC-B-09 | 27       | Change U58 uotput value                                                  | Ri: R311, R591, R605 and R306 change to 22K<br>Rf: R594, R310, R598 and R298 change to 56K |
| EC-B-10 | 10       | Change PORT6 to PORT5, BIOS require                                      |                                                                                            |
| EC-B-11 | 09       | Change SSD to PORT0, HDD to PORT1,ODD to PORT4, E-SATA to PORT5          |                                                                                            |
| EC-B-12 | 35       | connect SW2 PIN1 and PIN3                                                | SW2                                                                                        |
| EC-B-13 | 27       | R357 change to CX5HD601000, R356 change to CX5BD121000 and add C747,C748 | R357,R356,C747,C748                                                                        |
| EC-B-14 | 23       | POP R404,R406,R411,R414 for EMI request                                  | R404,R406,R411,R414                                                                        |
| EC-B-15 | 28,29    | POP CML1,CML2,CML3,CML4, change PN to CX21SQ2L000                        | CML1,CML2,CML3,CML4                                                                        |
| EC-B-16 | 35       | Change VGA LED5 to same as power LED and DEL UMA_RED_LED# net            | LED5                                                                                       |
| EC-B-17 | 35       | Change R368,R362,R363,R366,R364,R371 to 0603 CS11003F953                 | R368,R362,R363,R366,R364,R371                                                              |
| EC-B-18 | 36       | DEL SW3                                                                  | SW3                                                                                        |
| EC-B-19 | 35       | CN4.PIN7 change to PWR_WHITE# for power buttom S3 flicker                | CN4                                                                                        |
| EC-B-20 | 31       | CN29.PIN42 change to WLAN_LED#                                           | CN29                                                                                       |
| EC-B-21 | 30       | Connect U56.PIN16 to PCH and add a diode for D3E mode                    | U56                                                                                        |
| EC-B-22 | 03       | POP C744,C249,C742,C743,C745,C307 for RF                                 | C744,C249,C742,C743,C745,C307                                                              |
| EC-B-23 | 08       | R562 change to 10K for CRB schematic                                     | R562                                                                                       |
| EC-B-24 | 23       | DEL D1 for HDMI test                                                     | D1                                                                                         |
| EC-B-25 | 03,09,10 | POP C423,C463,C656 for RF request                                        | C423,C463,C656                                                                             |
| EC-B-26 | 26       | Change CN9 footprint for ME request                                      | CN9                                                                                        |
| EC-B-27 | 29       | Change CN10, CN13 footprint for ME requestion                            | CN10,CN13                                                                                  |
| EC-B-28 | 10       | DePOP R228, R227 for change to SPI                                       | R228,R227                                                                                  |
| EC-B-29 | 09       | Change U49 PN to AKE391P0N00                                             | R228,R227                                                                                  |
| EC-B-30 | 28       | POP U50 and relate schematic for ODD power saving                        | U50...                                                                                     |

| EC #     | Page | Description                                                  | Part Affected       |
|----------|------|--------------------------------------------------------------|---------------------|
| EC-QV-01 | 28   | DE-POP U50 and relate schematic for ODD                      | U50...              |
| EC-QV-02 | 09   | DE-POP R247 FOR ME full SKU                                  | R247                |
| EC-QV-03 | 36   | Change R336 and R343 to 2.2K for SANYO battery not to 100KHz | R336,R343           |
| EC-QV-04 | 09   | Change CN9.pin9,pin10,pin11,pin12 define                     | CN9                 |
| EC-QV-05 | 09   | POP Y5,R500,C649,C648                                        | Y5,R500,C649,C648   |
| EC-QV-06 | 11   | Change Board ID                                              | R506,R504,R552,R555 |
| EC-QV-07 | 34   | DE-POP backlight control                                     | U31,CN3.....        |
| EC-QV-07 | 37   | DEL HDD support                                              | HOLE9,HOLE12        |