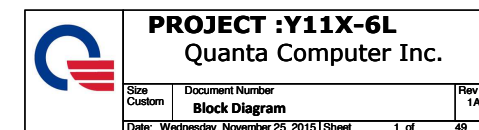


**LAYER 1 : TOP**  
**LAYER 2 : SGND**  
**LAYER 3 : IN1(High)**  
**LAYER 4 : IN2(Low)**  
**LAYER 5 : SVCC**  
**LAYER 6 : BOT**



+3V 4,10,11,12,13,14,15,16,17,18,20,21,25,26,27,28,29,30,32,33,34,40,44,45  
+1.0V 4,6,34,39  
+VCCSTPLL 4,5,6,9,13,39,40

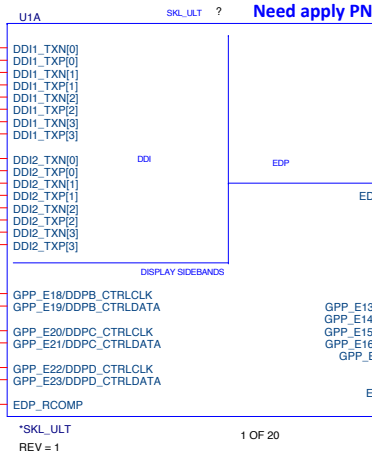
## HDMI

26 IN\_D2# IN\_D2# E55  
26 IN\_D2 IN\_D2# F55  
26 IN\_D1# IN\_D1# F58  
26 IN\_D1 IN\_D1# F53  
26 IN\_D0# IN\_D0# G53  
26 IN\_D0 IN\_D0# F56  
26 IN\_CLK# IN\_CLK# G56  
26 IN\_CLK IN\_CLK# G56

26 SDVO\_CLK  
26 SDVO\_DATA

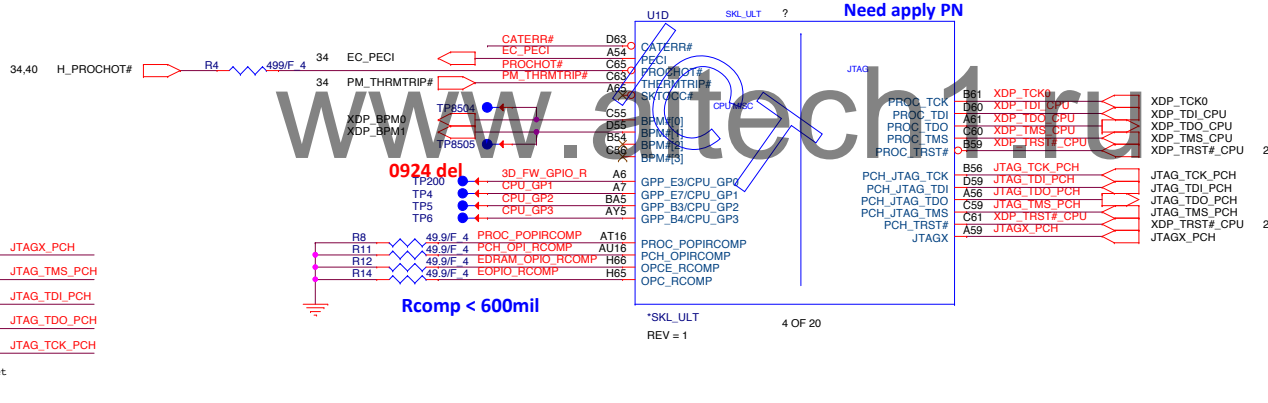
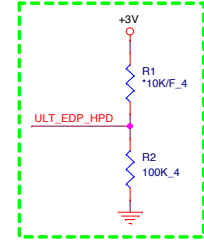
1026 modify

+1.0V R3 24.9/F 4 EDP\_RCOMP  
eDP\_COMPIO and ICOMPO signals should be shorted near balls and routed with typical impedance <25 mohms



need surport to FHD 2 Lane

Reserve EDP\_HPD opposites circuit!



Close to EC

PM\_THRMTRIP# R5 1K 4 +VCCSTPLL  
Processor pull-up (CPU)  
TO BE REPLACED WITH 1K OHMS FOR SKL.  
470 OHM IS FOR I/P

PLACE NEAR CPU

+1.0V  
XDP\_TMS\_CPU R17 \*51.4  
XDP\_TDI\_CPU R19 \*51.4  
XDP\_TDO\_CPU R20 \*51.4

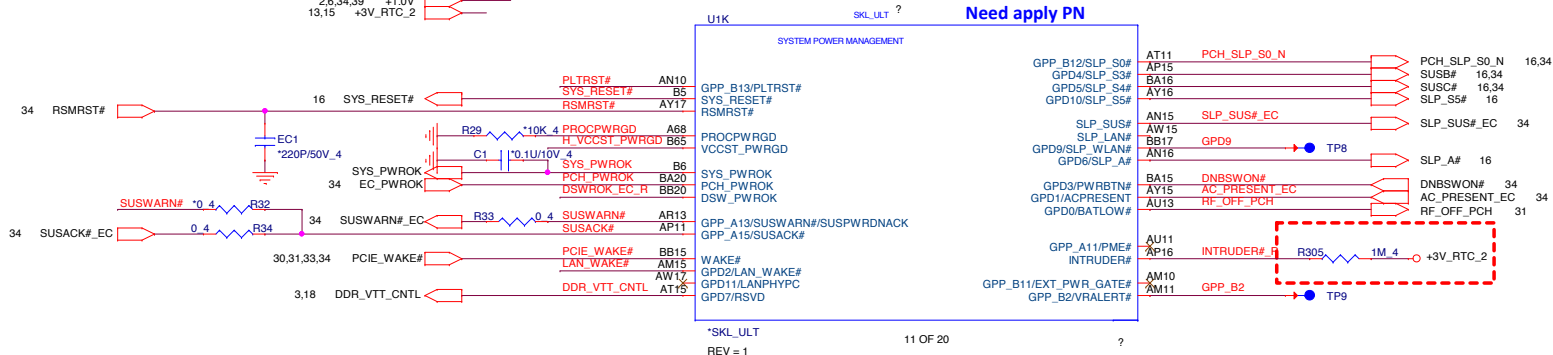
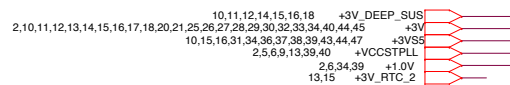
+1.0V  
H\_PROCHOT# R21 1K 4  
XDP\_TCK0 R22 51.4  
XDP\_TRST#\_CPU R23 51.4



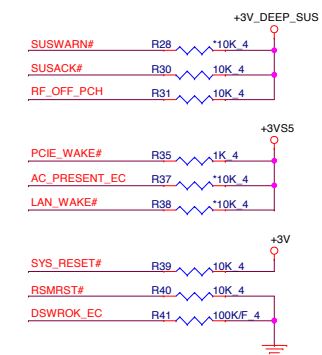
**PROJECT :Y11X-6L**  
**Quanta Computer Inc.**

|  |  |           |
|--|--|-----------|
| Size Custom  | Document Number<br><b>02 - SKYPAKE 1/20(eDP/DDI)</b> | Rev<br>1A |
| Date: Wednesday, November 25, 2015   Sheet 2 of 49 |  |           |

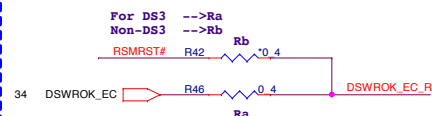




## PCH Pull-high/low(CLG)

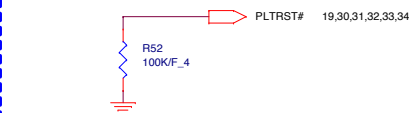


## For DS3 Sequence

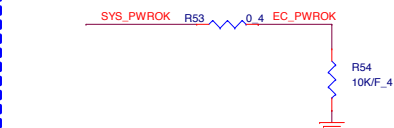


## PLTRST#(CLG)

Rise/Fall time less than 100ns

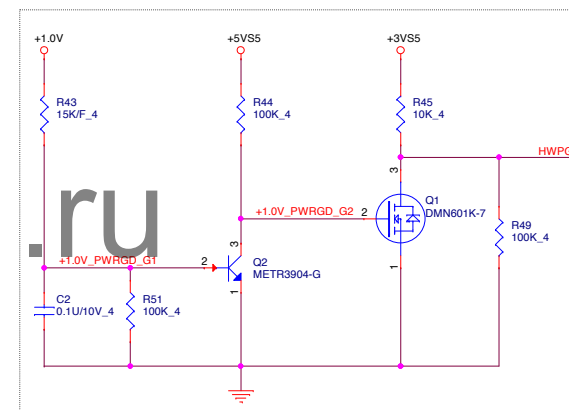


## System PWR\_OK(CLG)

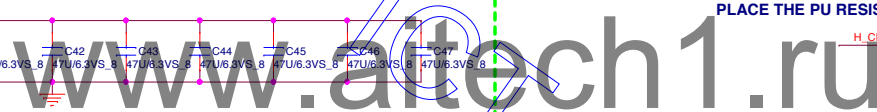


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H\_VCCST\_PWRGD trace 0.3" - 1.5"





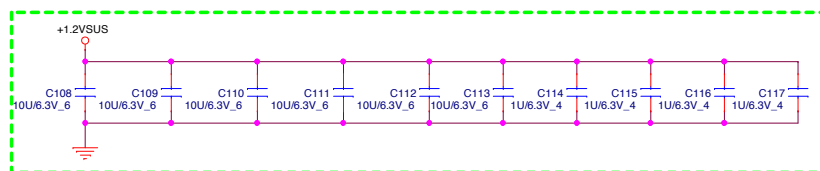


|   |   |   |   |   |
|---|---|---|---|---|
| 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|

|   |   |  |           |
|---|---|--|-----------|
|  | <b>PROJECT :Y11X-6L</b><br>Quanta Computer Inc. |  |           |
|   | Size<br>Custom                                  | Document Number<br><b>05 -- SKYPAKE 6/20 (POWER-1)</b> | Rev<br>1A |
| Date: Wednesday, November 25, 2015  |   | Sheet 5 of 49  |           |

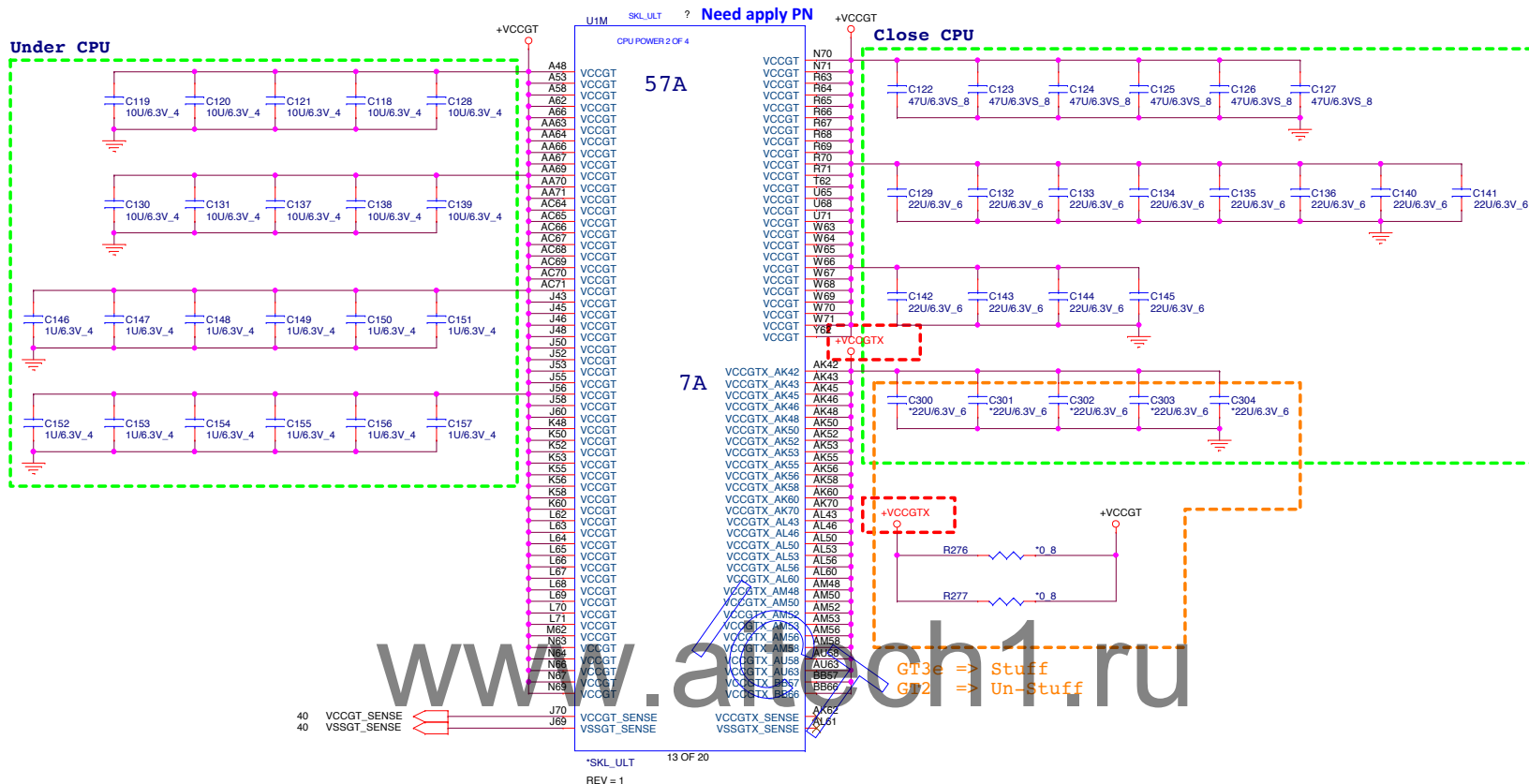


| Power Rail             | Description   | Control                             |
|------------------------|---|-------------------------------------|
| V <sub>CC</sub>        | Processor IA Cores Power Rail   | SVID                                |
| V <sub>CCGT</sub>      | Processor Graphics Power Rails  | SVID                                |
| V <sub>CCGTX</sub>     | Processor Graphics Extended Power Rail<br>Available only for GT3/GT4 processor SKUs | SVID                                |
| V <sub>CCSA</sub>      | System Agent Power Rail   | SVID/Fixed<br>(SKU dependent)       |
| V <sub>CCIO</sub>      | IO Power Rail   | Fixed                               |
| V <sub>CCST</sub>      | Sustain Power Rail  | Fixed                               |
| V <sub>CCPLL</sub>     | Processor PLLs power rail   | Fixed                               |
| V <sub>DDQ</sub>       | Integrated Memory Controller Power Rail   | Fixed (Memory technology dependent) |
| V <sub>CCOPC</sub>     | Processor OPC power rail (available only in SKU's with OPC)                         | Fixed                               |
| V <sub>CCOPC_1P8</sub> | Processor OPC power rail (available only in SKU's with OPC)                         | Fixed                               |
| V <sub>CCEOPIO</sub>   | Processor EOPIO power rail (available only in SKU's with OPC)                       | Fixed                               |

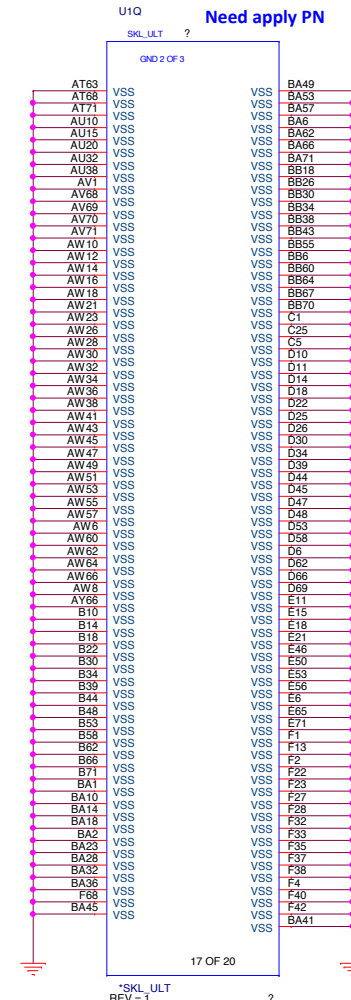
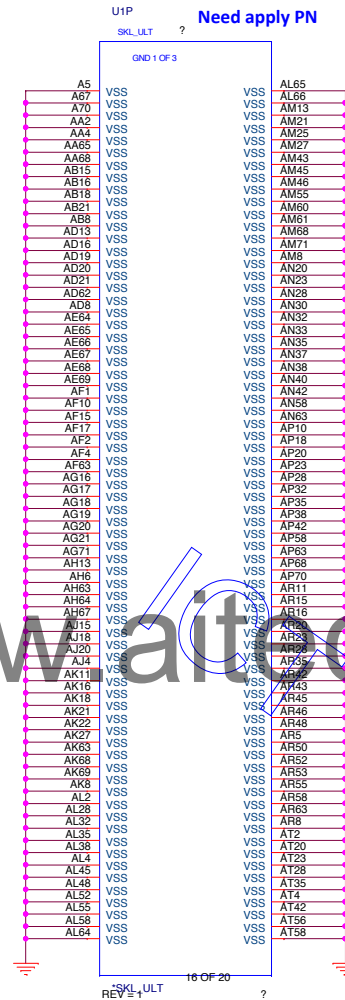
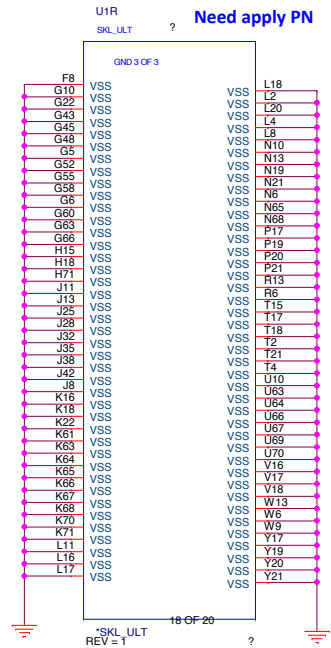


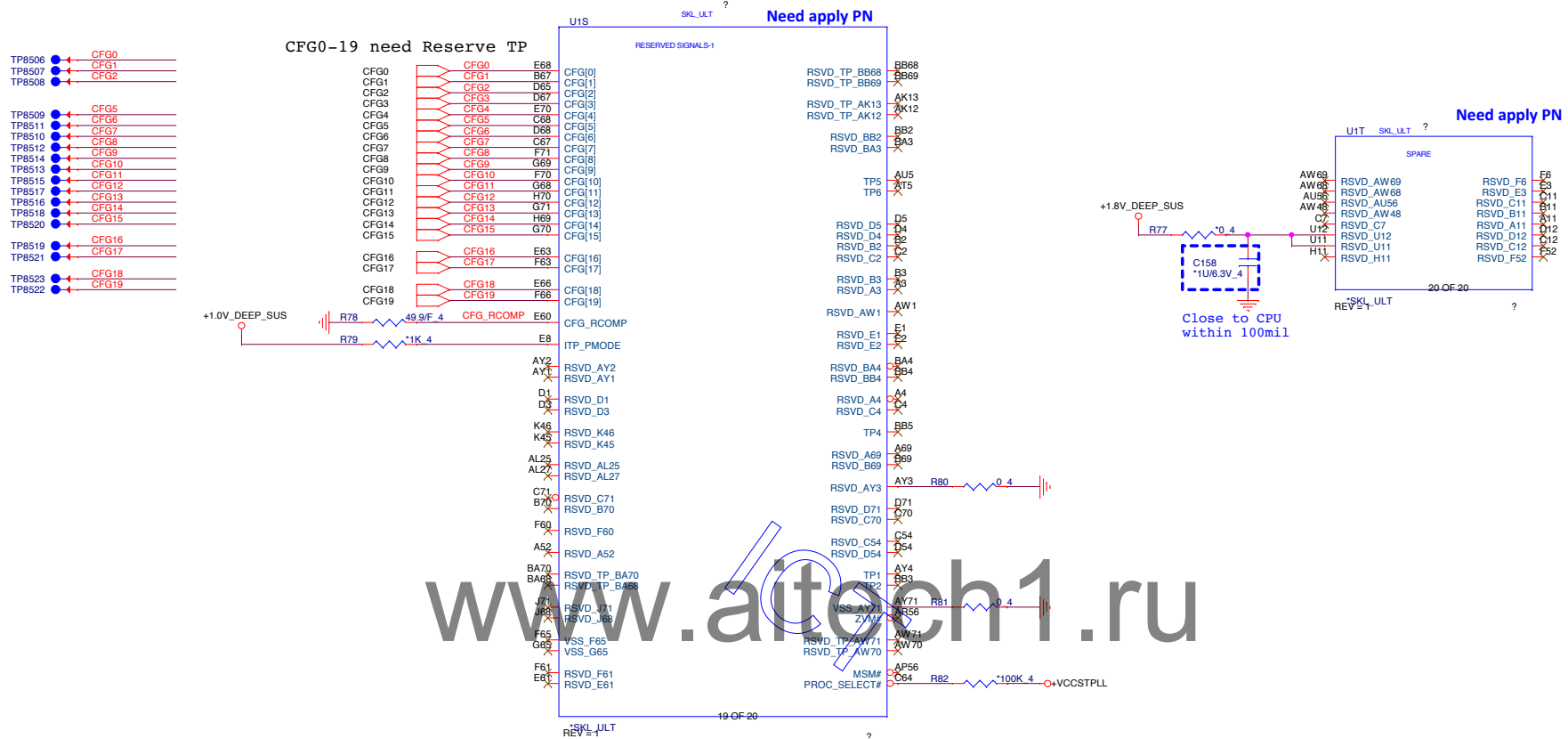
Close to CPU

+VCCGT 40,41  
+VCC\_CORE 5,42  
+1.2VSUS 3,6,17,18,37,39,47



| Power Rail             | Description   | Control                             |
|------------------------|---|-------------------------------------|
| V <sub>CC</sub>        | Processor IA Cores Power Rail   | SVID                                |
| V <sub>CCGT</sub>      | Processor Graphics Power Rails  | SVID                                |
| V <sub>CCGTx</sub>     | Processor Graphics Extended Power Rail<br>Available only for GT3/GT4 processor SKUs | SVID                                |
| V <sub>CCSA</sub>      | System Agent Power Rail   | SVID/Fixed (SKU dependent)          |
| V <sub>CCIO</sub>      | IO Power Rail   | Fixed                               |
| V <sub>CCST</sub>      | Sustain Power Rail  | Fixed                               |
| V <sub>CCPLL</sub>     | Processor PLLs power rail   | Fixed                               |
| V <sub>DDQ</sub>       | Integrated Memory Controller Power Rail   | Fixed (Memory technology dependent) |
| V <sub>CCOPC</sub>     | Processor OPC power rail (available only in SKU's with OPC)                         | Fixed                               |
| V <sub>CCOPC_1P8</sub> | Processor OPC power rail (available only in SKU's with OPC)                         | Fixed                               |
| V <sub>CCEOPIO</sub>   | Processor EOPIO power rail (available only in SKU's with OPC)                       | Fixed                               |



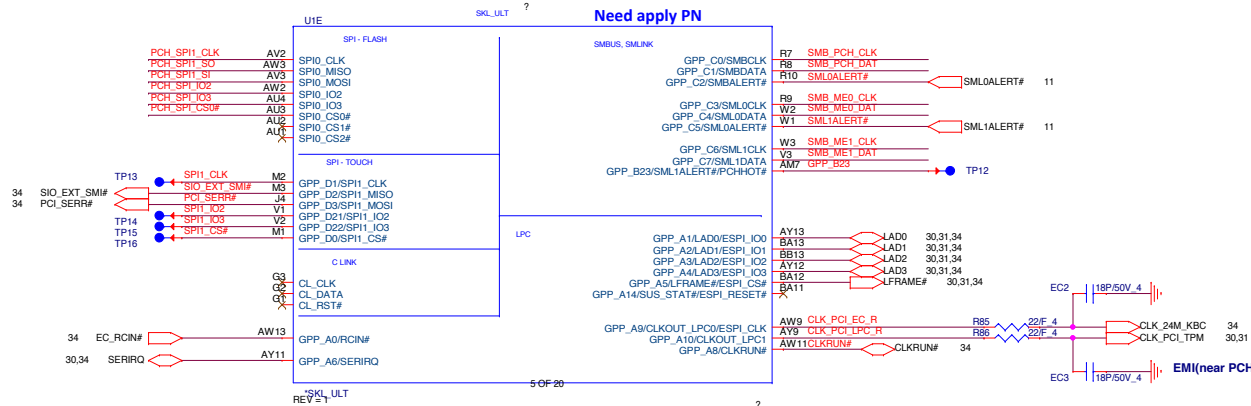


### Processor Strapping

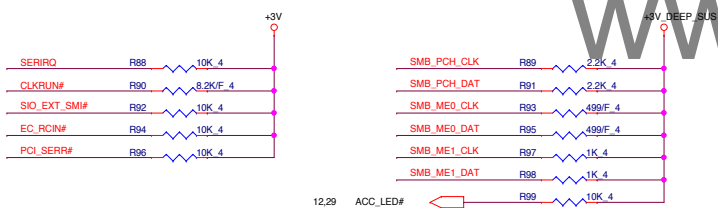
The CFG signals have a default value of '1' if not terminated on the board.

|  | 1                                       | 0  | Circuit        |
|--|---|--|----------------|
| CFG3<br>(Physical Debug Enable)<br>DFX_Privacy | Disable:                                | Enable: Set DFX Enable in DFX interface MSR  | CFG3 R83 ~1K 4 |
| CFG4<br>(DP Presence Strap)                    | Disable; No physical DP attached to eDP | Enable; An ext DP device is connected to eDP | CFG4 R84 ~1K 4 |
|  |   |  |                |

+3V\_DEEP\_SUS 4,11,12,14,15,16,18  
 +3V 2,4,11,12,13,14,15,16,17,18,20,21,25,26,27,28,29,30,32,33,34,40,44,45  
 +5V 25,26,27,28,29,44  
 +1.0V 2,4,5,34,39  
 +3VSS 4,15,16,31,34,36,37,38,39,43,44,47

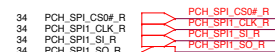


## GPIO Pull UP

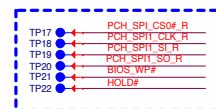


## PCH SPI ROM(CLG)

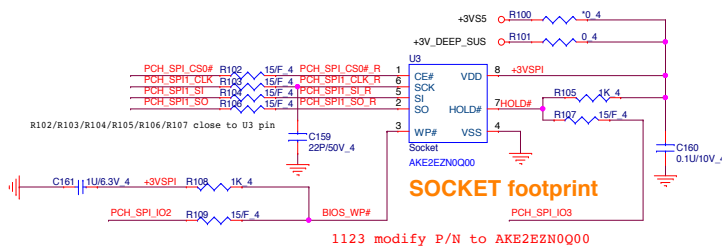
| Vender     | Size | P/N                           |
|------------|------|-------------------------------|
| EON        | 8MB  | AKE3EZ00Q01 (EN25QH64-104HIP) |
| Winbond    | 8MB  | AKE3EF00N07 (W25Q64FVSSIQ)    |
| GigaDevice | 8MB  | AKE3EG00Q01 (GD25B64BSIGR)    |
| Socket     |      | DFHS08FS023                   |



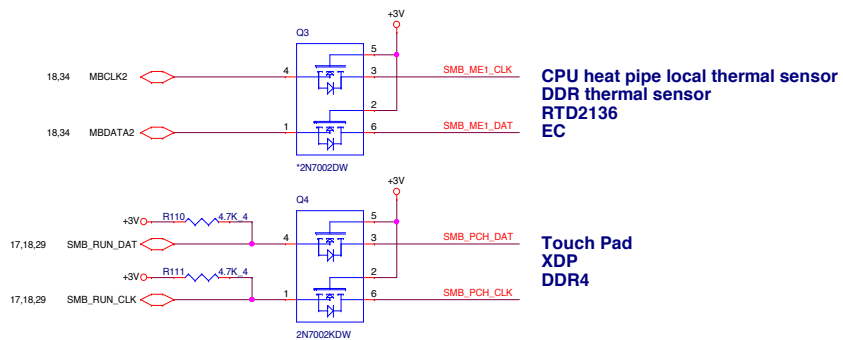
need place to TOP



## PCH SPI ROM(CLG)

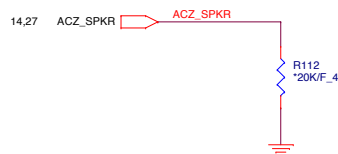


## SMBus/Pull-up(CLG)

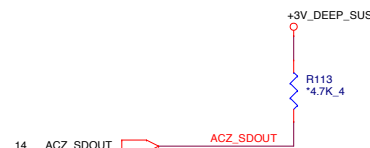


# Functional Strap Definitions

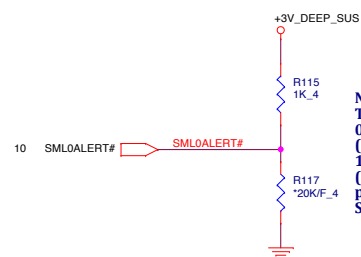
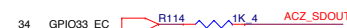
**DESIGN NOTE:**  
WEAK PULL UP RESISTOR PRESENT ON THIS NET



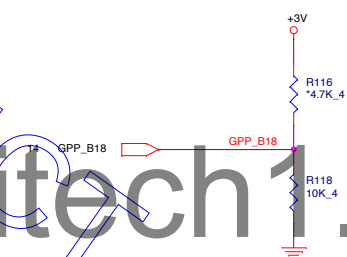
**TOP SWAP OVERRIDE**  
HIGH - TOP SWAP ENABLE  
LOW-DISABLED  
HIGH: LPC SELECTED FOR SYSTEM FLASH  
WEAK INTERNAL PD



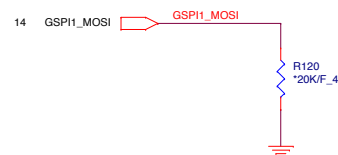
**No Boot:**  
The signal has a weak internal pull-down.  
0 = Enable security measures defined in the Flash Descriptor.  
1 = Disable Flash Descriptor Security (override). This strap should only be asserted high using external pull-up in manufacturing/debug environments ONLY. This function is useful when running ITP/XDP.



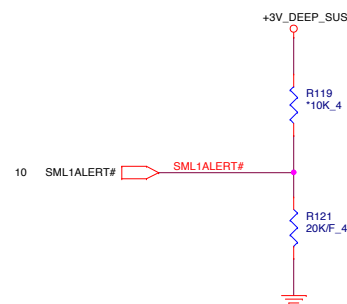
**No Boot:**  
The signal has a weak internal pull-down.  
0 = Disable Intel ME Crypto Transport Layer Security (TLS) cipher suite (no confidentiality).  
1 = Enable Intel ME Crypto Transport Layer Security (TLS) cipher suite (with confidentiality). Must be pulled up to support Intel AMT with TLS and Intel SBA (Small Business Advantage) with TLS.



**No Boot:**  
The signal has a weak internal pull-down.  
0 = Disable No Reboot mode.  
1 = Enable No Reboot mode (PCH will disable the TCO Timer system reboot feature). This function is useful when running ITP/XDP.




**No Boot:**  
The signal has a weak internal pull-down.  
This field determines the destination of accesses to the BIOS memory range. Also controllable using Boot BIOS Destination bit (Chipset Configuration Registers: Offset 3410h:Bit 10). This strap is used in conjunction with Boot BIOS Destination Selection 0 strap.  
**Bit 10      Boot BIOS Destination**  
0            SPI  
1            LPC

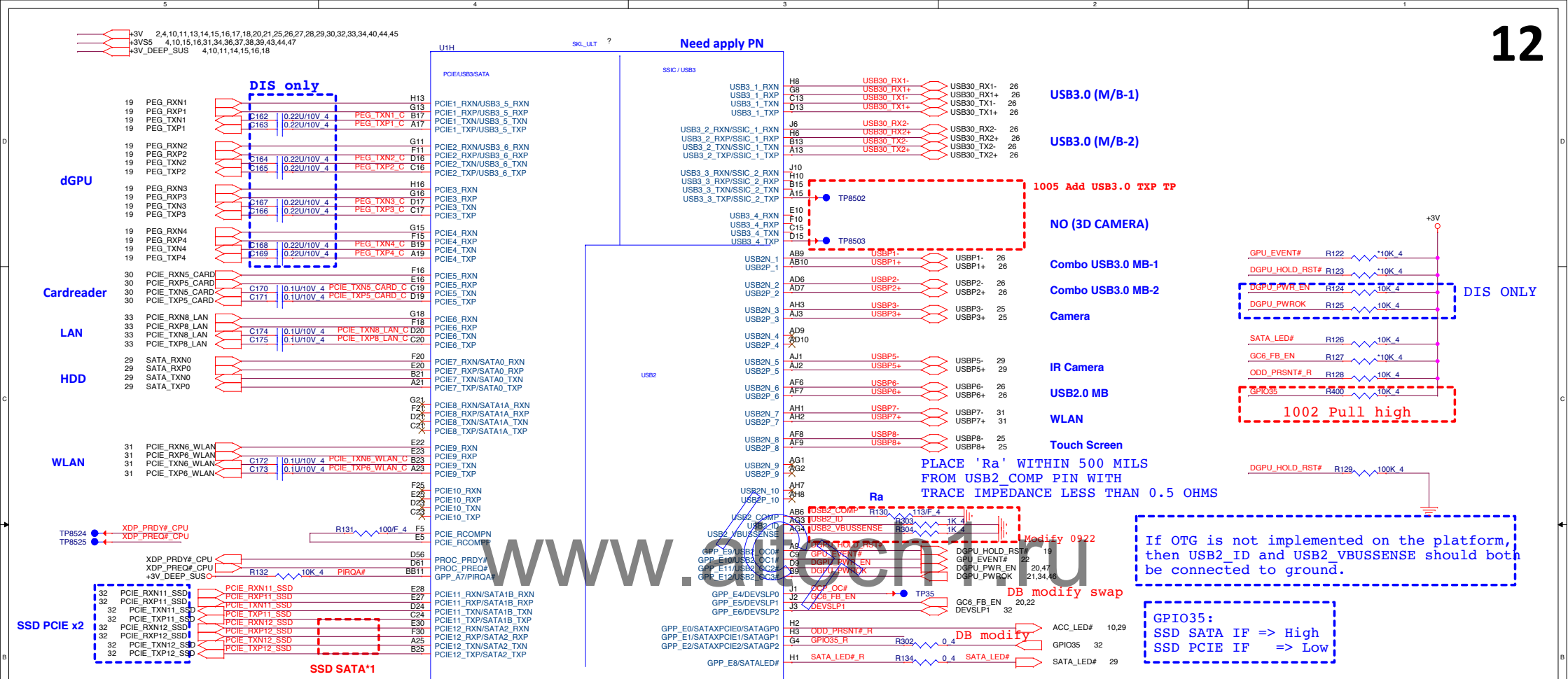


**No Boot:**  
The signal has a weak internal pull-down.  
0 = LPC is selected for EC.  
1 = eSPI is selected for EC.

+3V    2,4,10,12,13,14,15,16,17,18,20,21,25,26,27,28,29,30,32,33,34,40,44,45  
+3VSS    4,10,15,16,31,34,36,37,38,39,43,44,47  
+3V\_DEEP\_SUS    4,10,12,14,15,16,18

|   |   |           |
|---|---|-----------|
|  <b>PROJECT :Y11X-6L</b><br>Quanta Computer Inc. |   |           |
| Size<br>Custom  | Document Number<br><b>11 - SKYPAKE 15/20(HDA)</b> | Rev<br>1A |
| Date: Wednesday, November 25, 2015  | Sheet   | 11 of 49  |





## PCI-E Port Mapping Table

| PCI-E Port | Function         | CLK RQ Port | Function   |
|------------|------------------|-------------|------------|
| Port1      | dGPU             | Port0       | VGA        |
| Port2      | dGPU             | Port1       | SSD        |
| Port3      | dGPU             | Port2       | WLAN       |
| Port4      | dGPU             | Port3       | LAN        |
| Port5      | CardReader       | Port4       | CardReader |
| Port6      | LAN              | Port5       | Un-used    |
| Port7      | HDD              |             |            |
| Port8      |                  |             |            |
| Port9      | WLAN             |             |            |
| Port10     |                  |             |            |
| Port11     | PCI-E x2         |             |            |
| Port12     | PCI-E x2 / SATA2 |             |            |

### USB3.0 Port Mapping Table

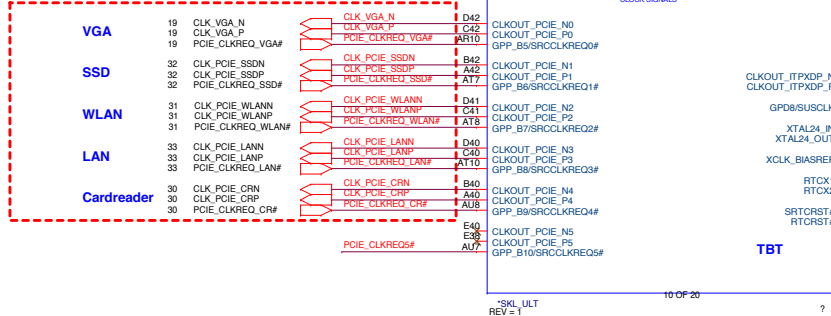
|        |             |
|--------|-------------|
| USB3.0 | Function    |
| PORT-1 | USB3.0 MB-1 |
| PORT-2 | USB3.0 MB-2 |
| PORT-3 | NC          |
| PORT-4 | NC          |

### USB2.0 Port Mapping Table

| USB2.0  | Function           |
|---------|--------------------|
| PORT-1  | Cobime USB3.0 MB-1 |
| PORT-2  | Cobime USB3.0 MB-2 |
| PORT-3  | Camera             |
| PORT-4  | NC                 |
| PORT-5  | IR Camera          |
| PORT-6  | USB2.0 MB          |
| PORT-7  | WLAN               |
| PORT-8  | Touch Screen       |
| PORT-9  | NC                 |
| PORT-10 | NC                 |

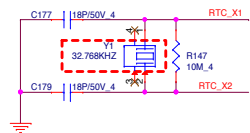
|                |   |
|----------------|---|
| +1.0V_DEEP_SUS | 9,15,38,39  |
| +BAT_RTC       | 31,35,48  |
| +1.8V_DEEP_SUS | 5,9,15,38   |
| +3V            | 2,4,10,11,12,14,15,16,17,18,20,21,25,26,27,28,29,30,32,33,34,40,44,45 |
| +3VPCU         | 6,29,31,34,35,36,43,48  |

## 1005 SWAP CLK RQ Port

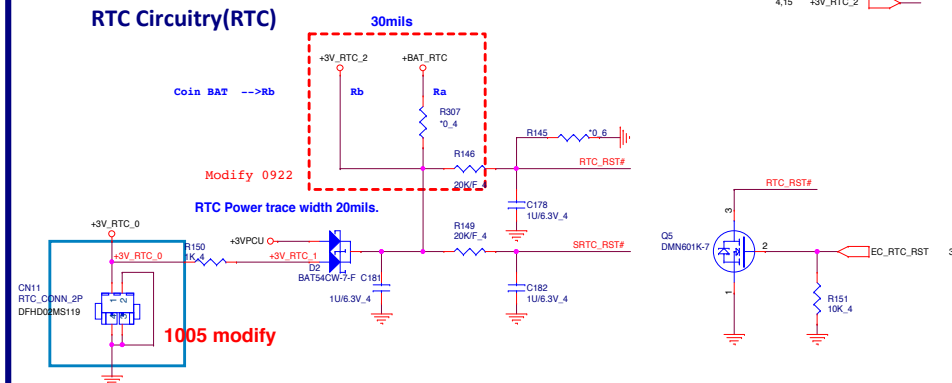


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## RTC Clock 32.768KHz

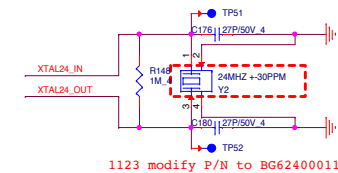


## RTC Circuitry(RTC)

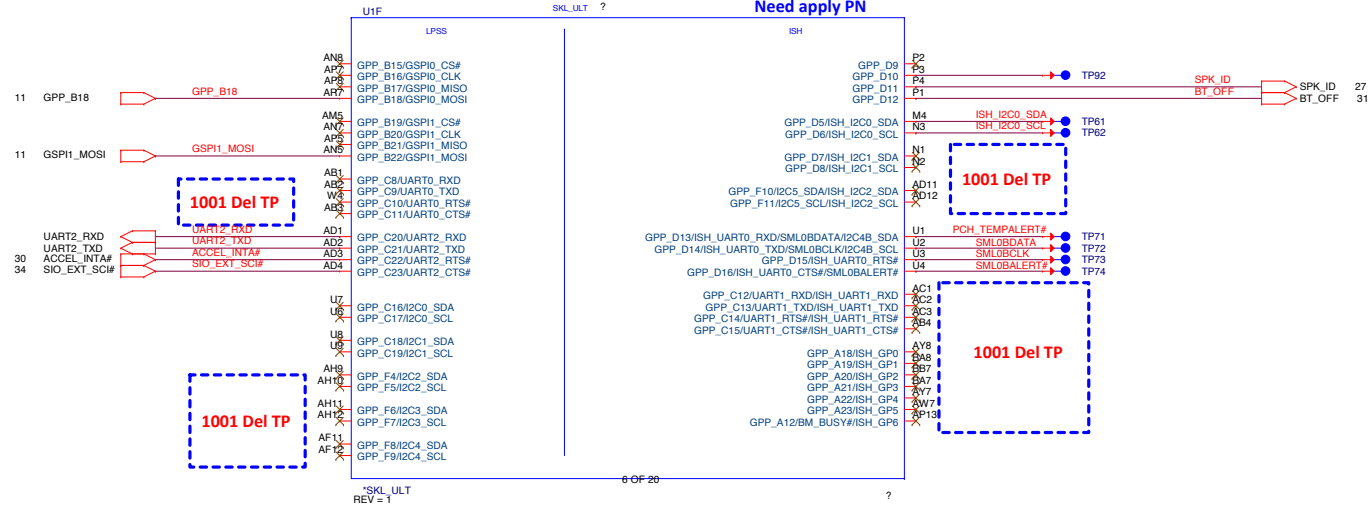
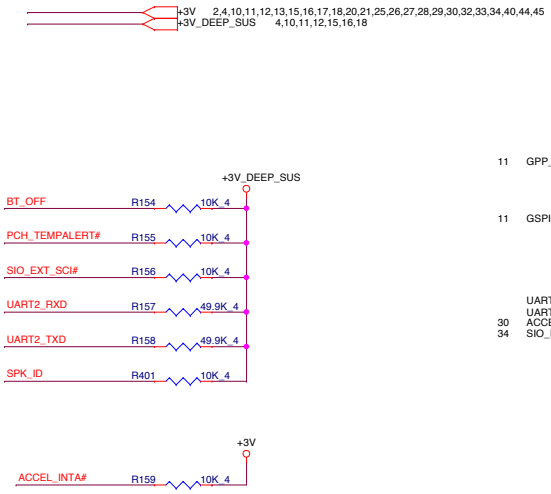


## External Crystal

The 24 MHz (50 Ohm ESR) XTAL used for Skylake-U needs to be replaced by 38.4 MHz (30 Ohm ESR) XTAL for Cannonlake-U.

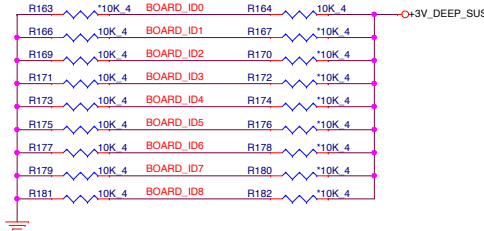


Skylake (GPIO)



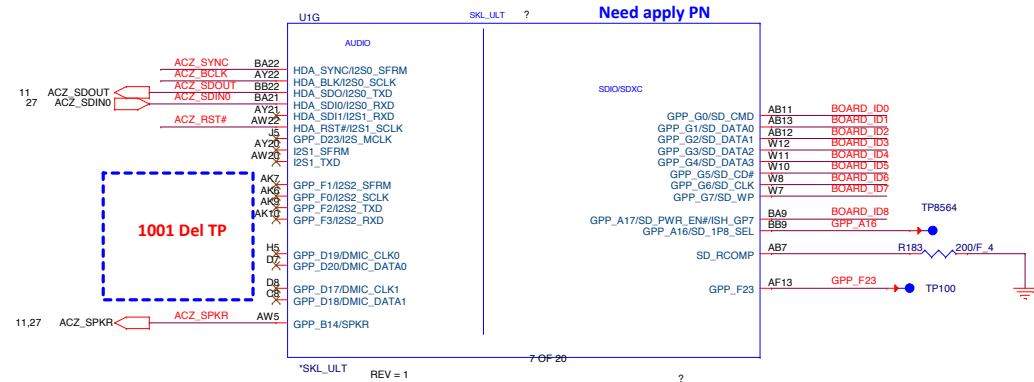
HDA Bus(CLG)


HDA Bus(CLG)



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| Skylake    | BOARD_ID[8:7]             | BOARD_ID[6:5]             | Board ID [4:3]  | BOARD_ID[2:1]                            | BOARD_ID0          |
|------------|---------------------------|---------------------------|---|--|--------------------|
| Model      | ID8 ID7                   | ID6 ID5                   | ID4 ID3   | ID2 ID1                                  | ID0                |
| Definition | Reserve<br>(Default = 00) | Reserve<br>(Default = 00) | 00 Single Rank (X1B)<br>01 Dual Rank (X1B)<br>10 Meso-AMD (X1A)<br>11 Reserve | 00 14"<br>01 15"<br>10 17"<br>11 Reserve | 0 : UMA<br>1 : DIS |

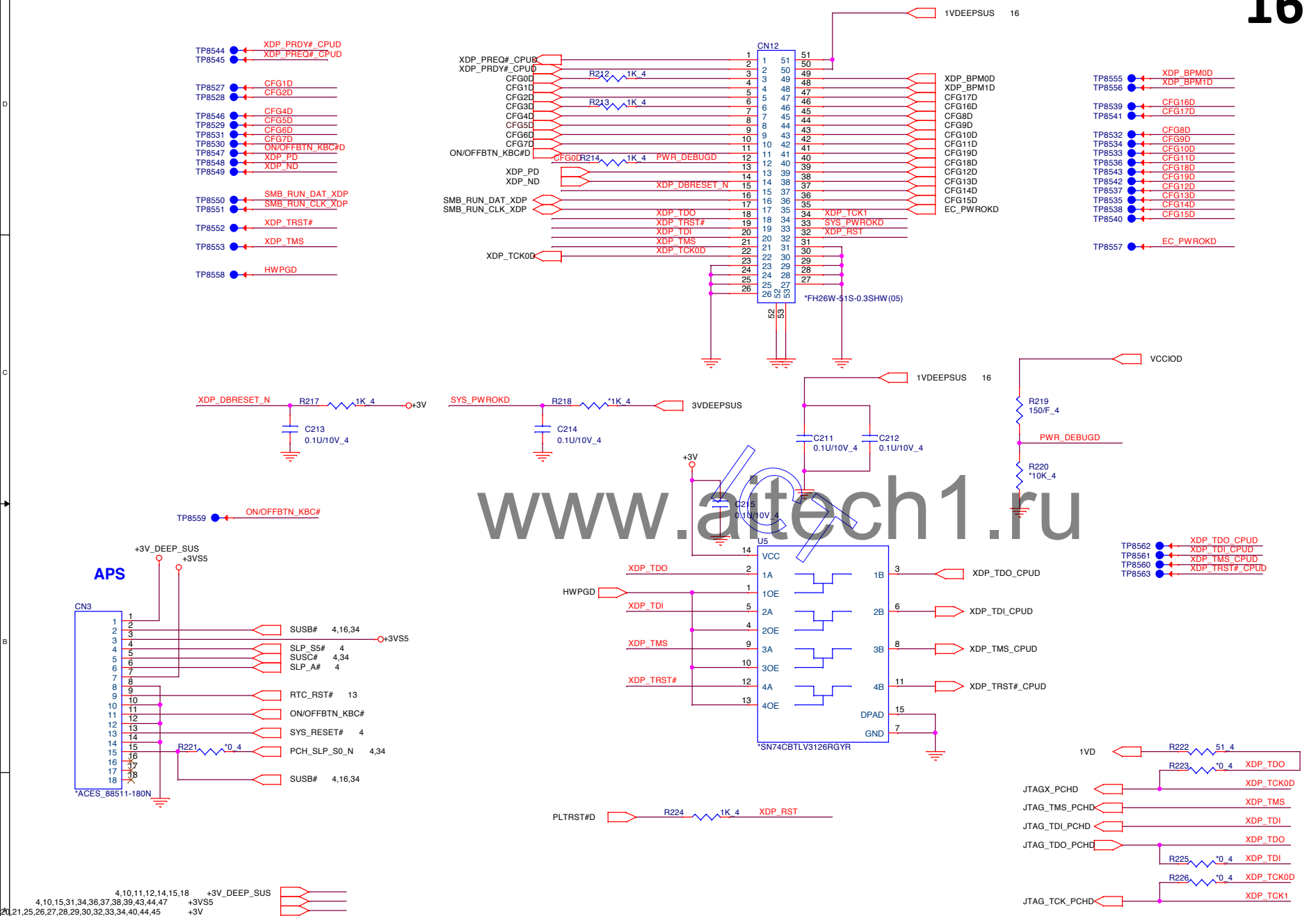


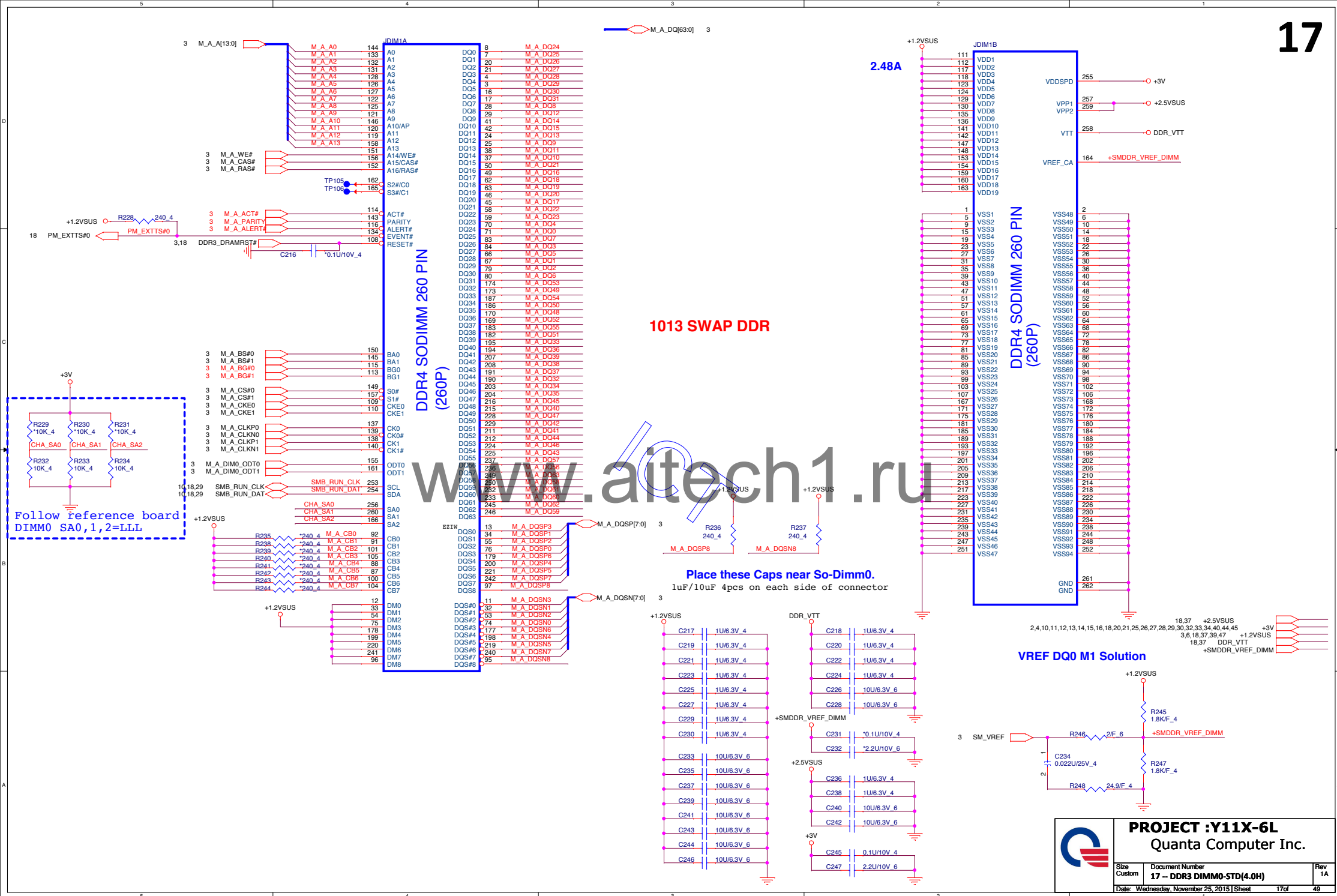


**PROJECT :Y11X-6L**  
Quanta Computer Inc.

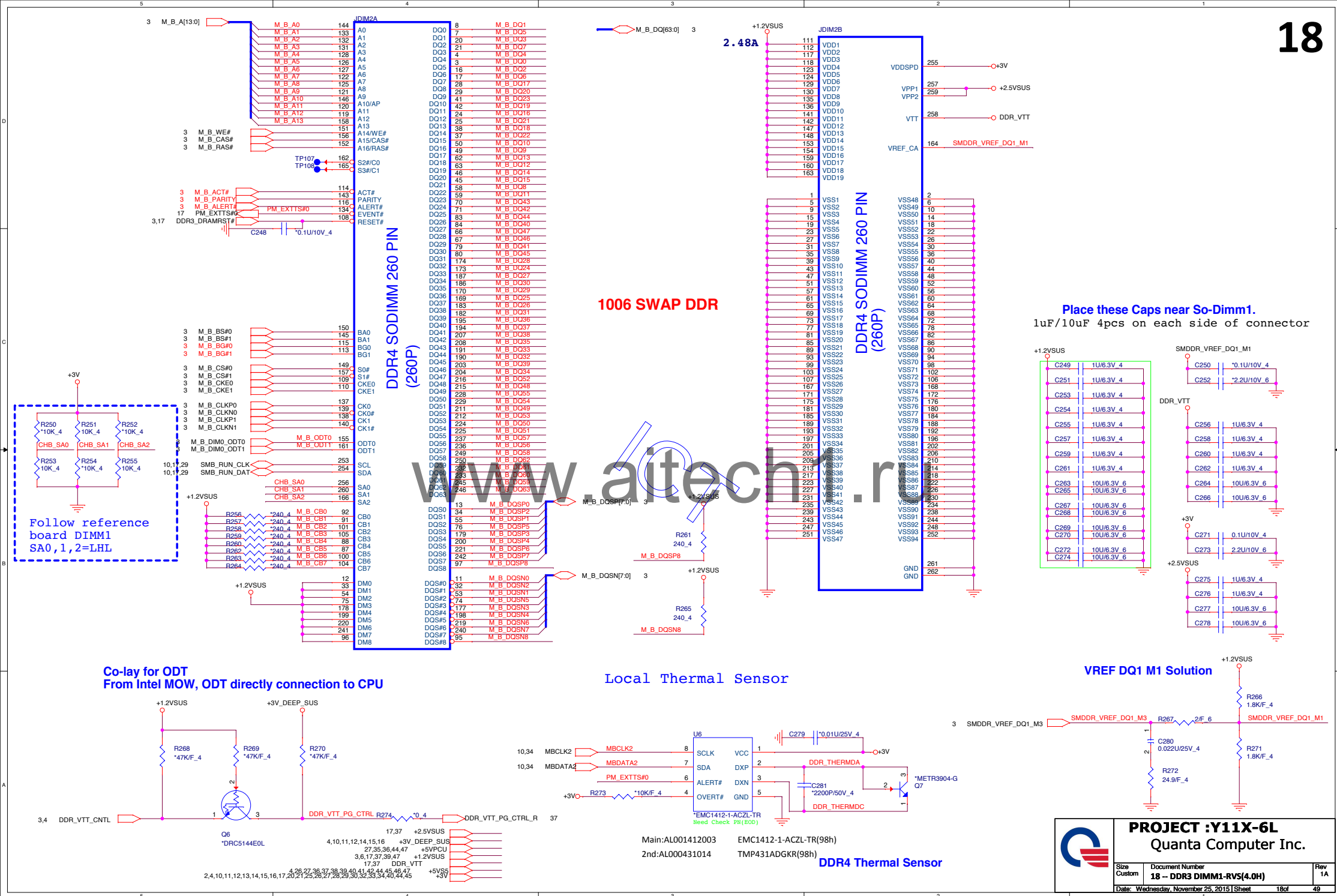
|  |   |        |
|--|---|--------|
| Size Custom                                      | Document Number 14 – SKYPAKE 19/20 (GPIO) | Rev 1A |
| Date: Wednesday, November 25, 2015 Sheet 14of 49 |   |        |













PEX\_IOVDD + PEX\_IOVDDQ = 1.042A

PEX\_PLL\_HVDD +  
PEX\_SVDD\_3V3 = 143mA

PEX\_PLLVDD = 130mA

if stuff Da,Db,Ra,Rb, do not stuff Ua,Ub,Ca,Cb,Rc,Rd

20.21,47  
21.22,45,47  
22,47  
20.23,24,46  
+3V  
+1.5V\_GFX  
+3V  
+VGACORE



VDD33 = 56mA

Power up  
sequence

ALL 3.3V  
+3VGFX & +3V3\_AON

NVDD

+VGACORE

PEX\_VDD

+1.05V\_GFX

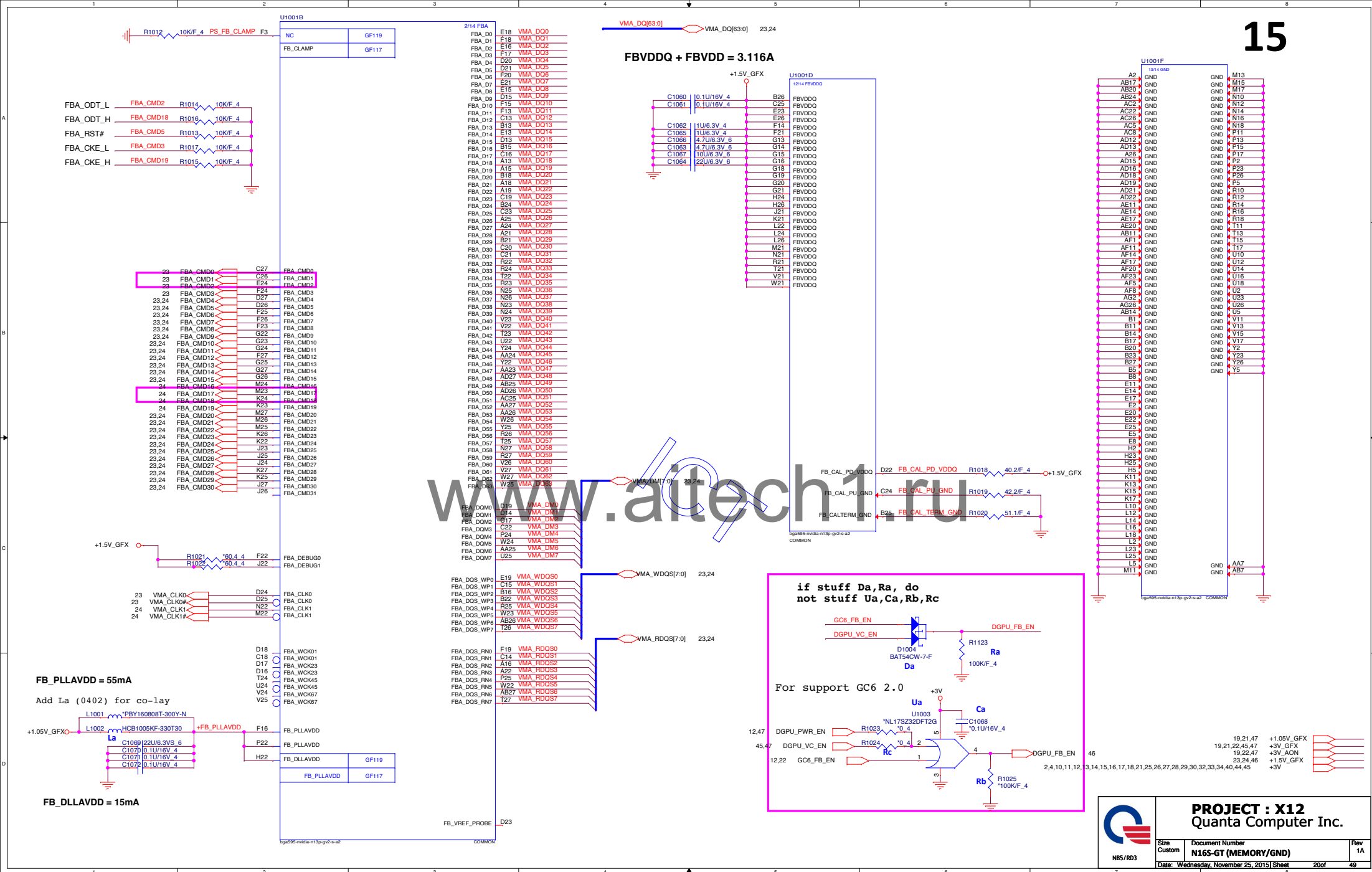
FBVDDQ

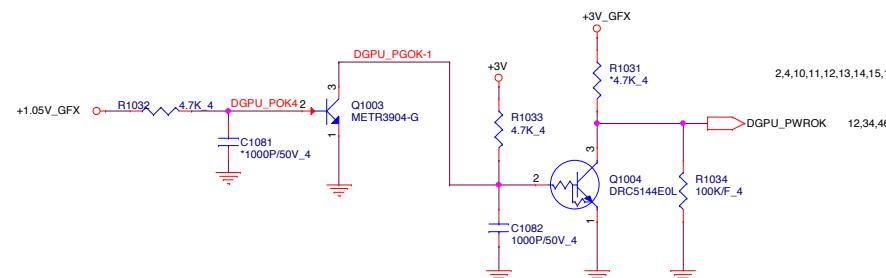
+1.35V\_GFX

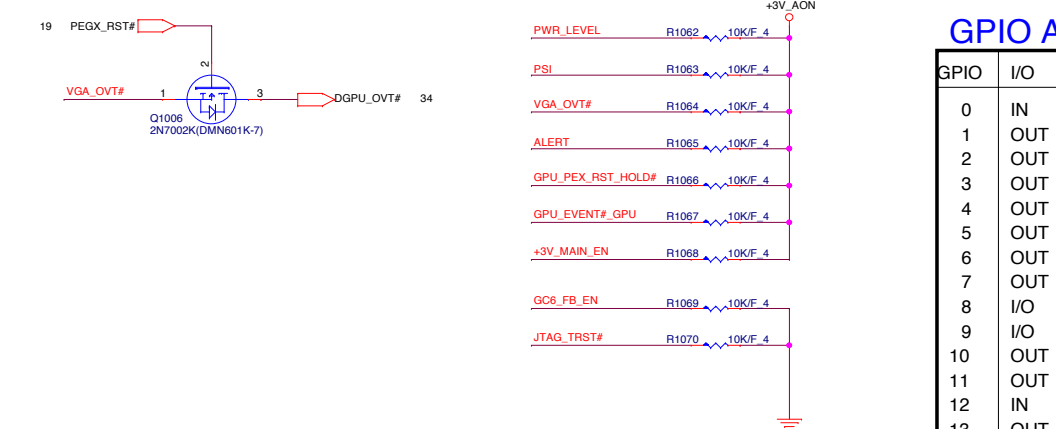
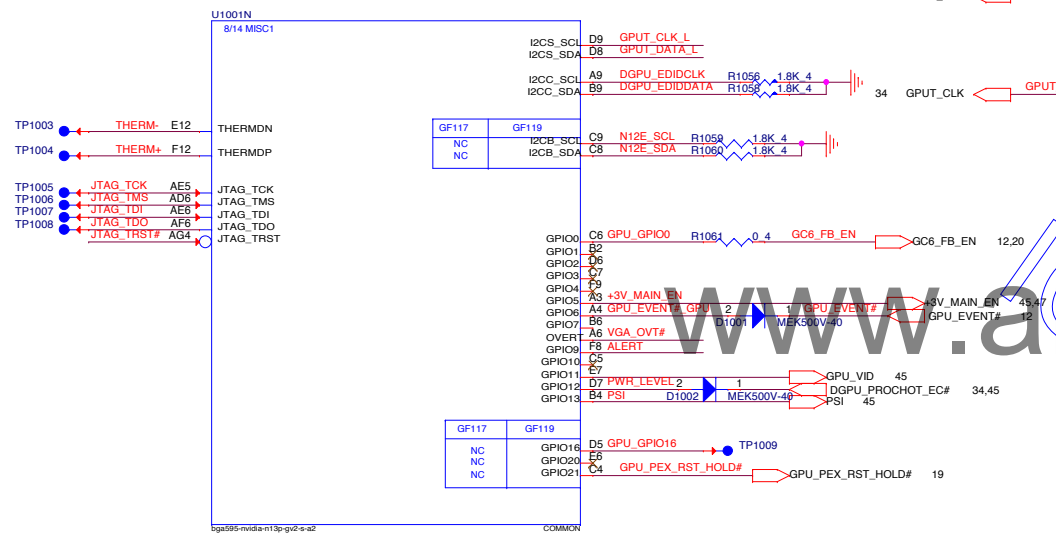


**PROJECT : X12**  
**Quanta Computer Inc.**

|                                    |  |           |
|------------------------------------|--|-----------|
| Size<br>Custom                     | Document Number<br><b>N16S-GT (PCIE I/F) /NVDD</b> | Rev<br>1A |
| Date: Wednesday, November 25, 2015 | Sheet<br>19of                                      | 49        |







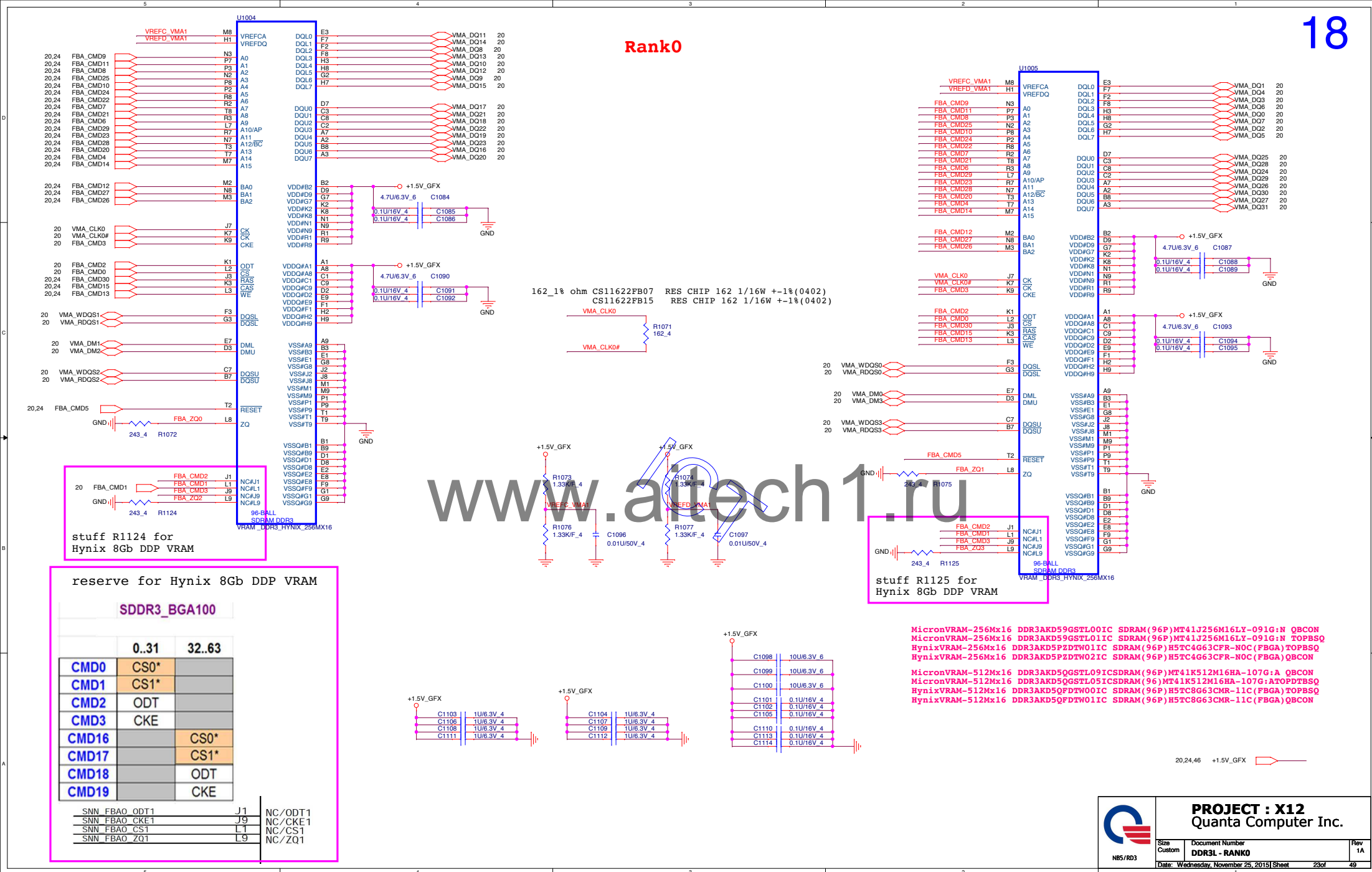
| Resistor Values | Pull-Up to 3V3_MAIN | Pull-Down to GND |
|-----------------|---------------------|------------------|
| 4.99 kΩ         | 1000                | 0000             |
| 10.0 kΩ         | 1001                | 0001             |
| 15.0 kΩ         | 1010                | 0010             |
| 20.0 kΩ         | 1011                | 0011             |
| 24.9 kΩ         | 1100                | 0100             |
| 30.1 kΩ         | 1101                | 0101             |
| 34.8 kΩ         | 1110                | 0110             |
| 45.3 kΩ         | 1111                | 0111             |

| RAMCFG<br>Sx0 | DESCRIPTION                     | Vendor  | Vendor P/N           | Strapping | TOP B/S      | QBC          |
|---------------|---------------------------------|---------|----------------------|-----------|--------------|--------------|
| 0101<br>0011  | DDR3 256Mx16, 64bit, 4Gb,900MHz | HYNIX   | H5TC4G63CFR-NOC      | 0x3       | AKD5PZDTW01  | AKD5PZDTW02  |
| 0011          | DDR3 256Mx16, 64bit, 4Gb,900MHz | Micron  | MT41J256M1GLY-091G:N | 0x5       | AKD59SGSTL01 | AKD59SGSTL00 |
| 1001          | DDR3 256Mx16, 64bit, 4Gb,900MHz | SAMSUNG | MT41K512M16BA-107G:A | 0x9       | AKD50GSGTL05 | AKD50GSGTL09 |
|               | DDR3 512Mx16, 64bit, 4Gb,900MHz | Micron  | H5TC4G63CGR-11C      | ?x9       | AKD50GSDTW00 | AKD50GSDTW01 |
|               | DDR3 512Mx16, 64bit, 4Gb,900MHz | HYNIX   |                      |           |              |              |

| GPIO | I/O | PIN              | USAGE  |
|------|-----|------------------|--|
| 0    | IN  | FB_CLAMP_MON     | FB Clamp monitor                               |
| 1    | OUT | MEM_VDD_CTL      | Memory VDD VID                                 |
| 2    | OUT | LCD_BL_PWM       | Panel Backlight PWM                            |
| 3    | OUT | LCD_VCC          | PANEL POWER ENABLE                             |
| 4    | OUT | LCD_BLEN         | PANEL BACKLIGHT ENABLE                         |
| 5    | OUT | Reserved         | --   |
| 6    | OUT | FB_CLAMP_TGL_REQ | Active low FB Clamp toggle request             |
| 7    | OUT | 3D_VISION        | 3D VISION LEFT/RIGHT signal                    |
| 8    | I/O | OVERT            | ACTIVE LOW THERMAL OVER TEMP                   |
| 9    | I/O | ALERT            | ACTIVE LOW THERMAL ALERT                       |
| 10   | OUT | MEM_VREF_CTL     | MEMORY VREF CONTROL                            |
| 11   | OUT | PWR_VID          | GPU CORE_VDD PWM Control signal                |
| 12   | IN  | PWR_LEVEL        | AC Power detect or power supply overdraw input |
| 13   | OUT | PSI              | Phase Shedding                                 |

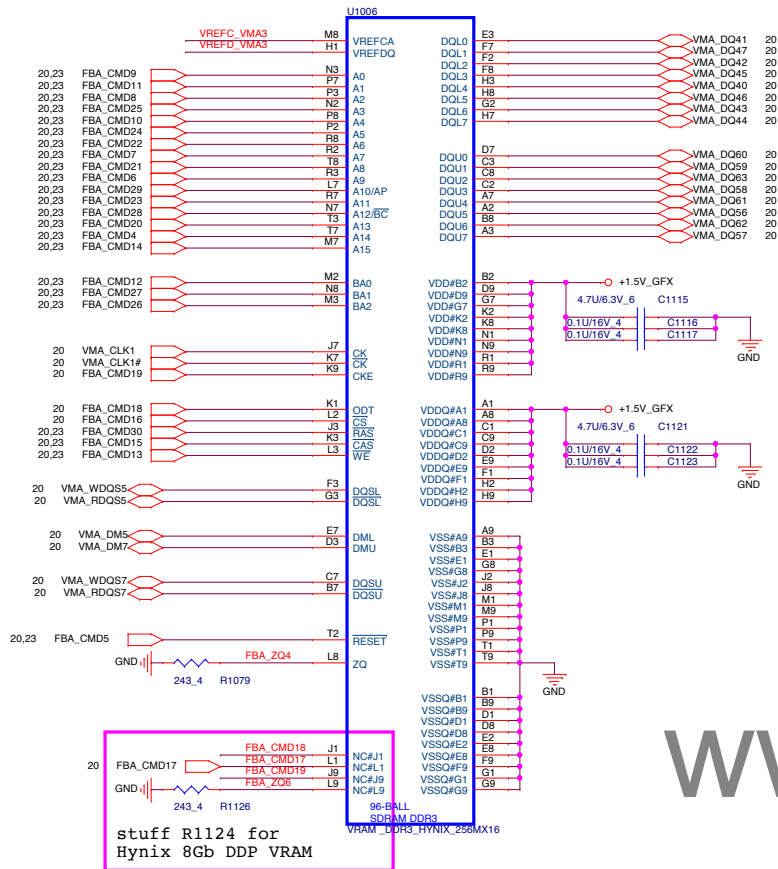


## Rank0



Rank0

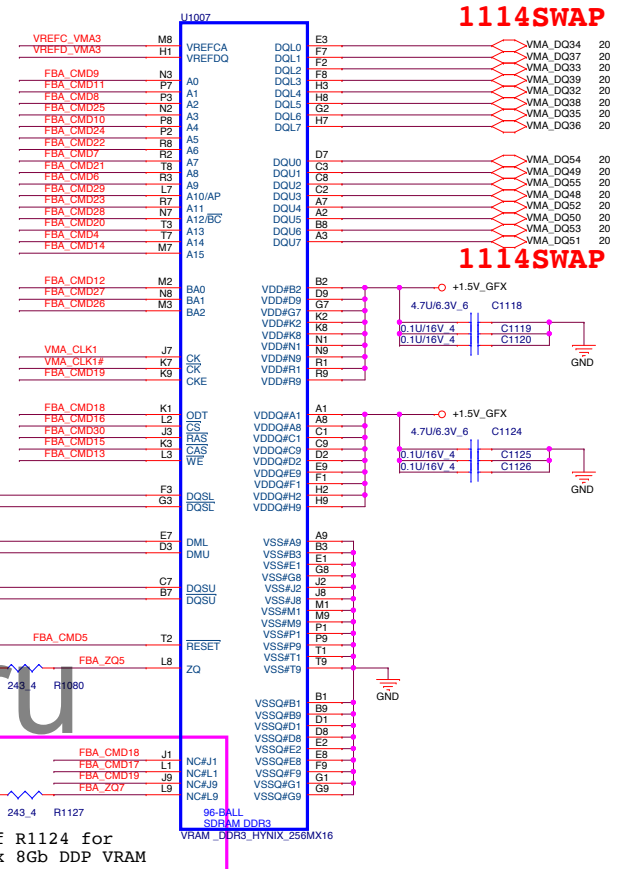
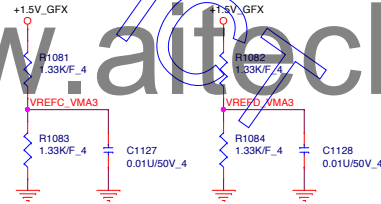
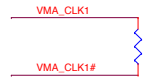
20



1114SWAP

1114SWAP

162\_1% ohm CS11622FB07 RES CHIP 162 1/16W +-1%(0402)  
CS11622FB15 RES CHIP 162 1/16W +-1%(0402)

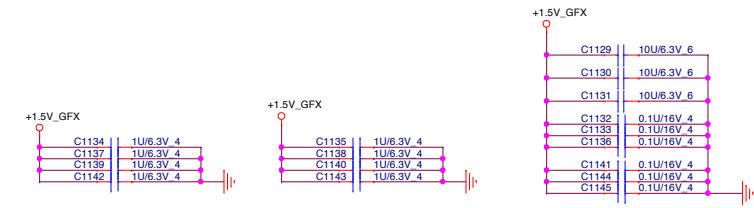


1114SWAP

1114SWAP

stuff R1124 for  
Hynix 8Gb DDP VRAM

MicronVRAM-256Mx16 DDR3AKD59GSTL00IC SDRAM(96P)MT41J256M16LY-091G:N QBCON  
MicronVRAM-256Mx16 DDR3AKD59GSTL01IC SDRAM(96P)MT41J256M16LY-091G:N TOPBSQ  
HynixVRAM-256Mx16 DDR3AKD5P2DTW01IC SDRAM(96P)H5TC4G63CFR-NOC(FBGA)TOPBSQ  
HynixVRAM-256Mx16 DDR3AKD5P2DTW02IC SDRAM(96P)H5TC4G63CFR-NOC(FBGA)QBCON  
MicronVRAM-512Mx16 DDR3AKD59GSTL09ICSDRAM(96P)MT41K512M16HA-107G:A QBCON  
MicronVRAM-512Mx16 DDR3AKD59GSTL05ICSDRAM(96P)MT41K512M16HA-107G:ATOPDTBSQ  
HynixVRAM-512Mx16 DDR3AKD5QFDTW00IC SDRAM(96P)H5TC8G63CMR-11C(FBGA)TOPBSQ  
HynixVRAM-512Mx16 DDR3AKD5QFDTW01IC SDRAM(96P)H5TC8G63CMR-11C(FBGA)QBCON

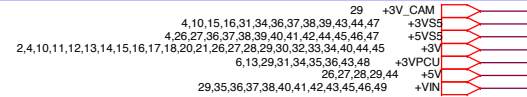
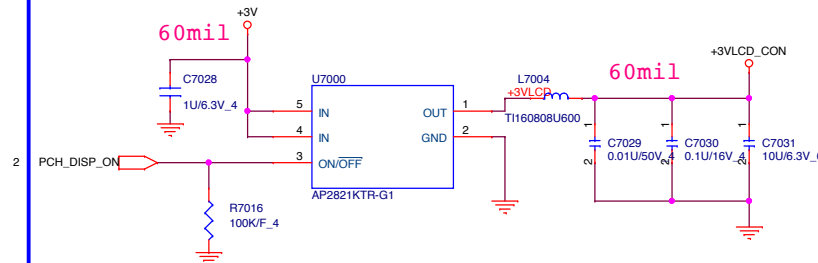
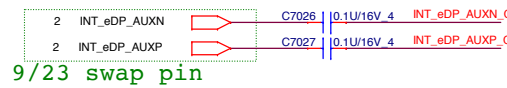
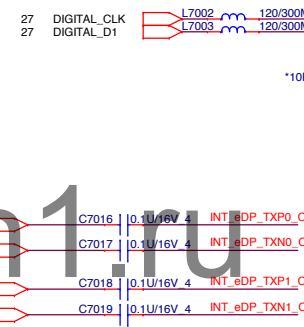
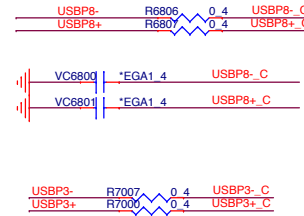
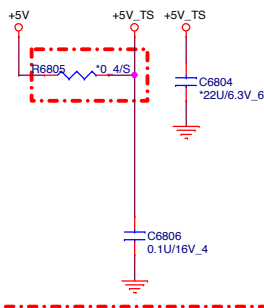
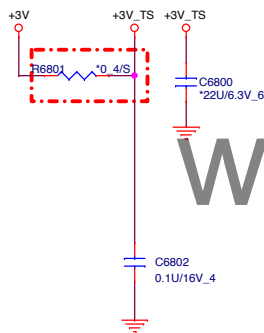
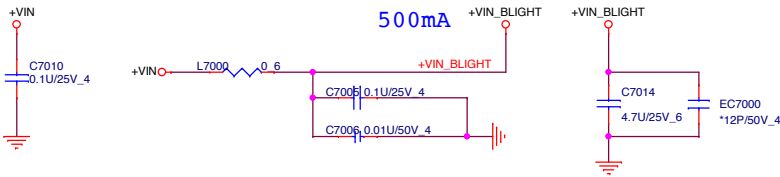
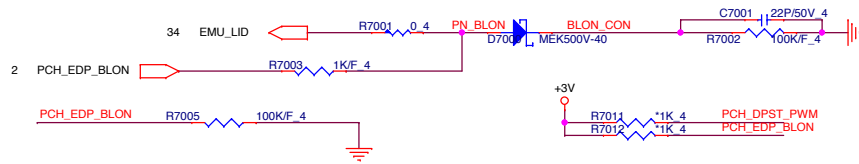


**PROJECT : X12**  
**Quanta Computer Inc.**

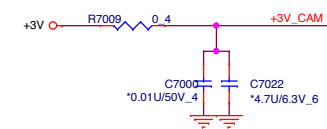
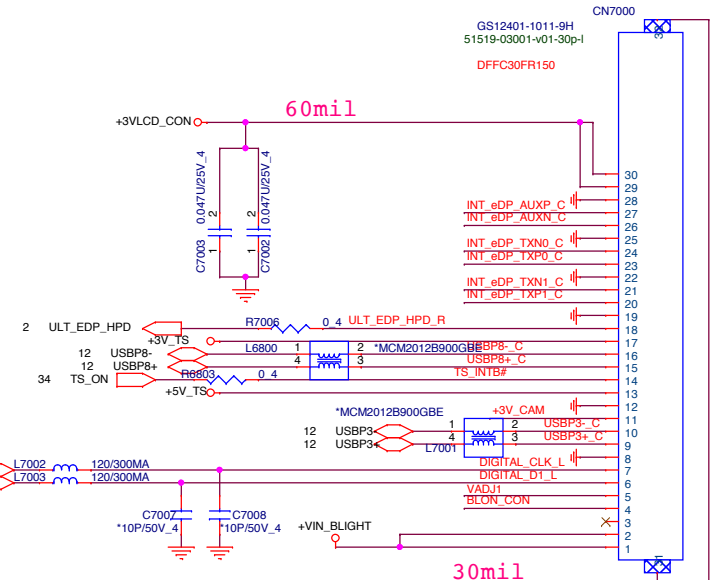
Size Custom Document Number **DDR3L - RANK0** Rev 1A  
Date: Wednesday, November 25, 2015 Sheet 24 of 49



# LID Switch



# eDP Conn.

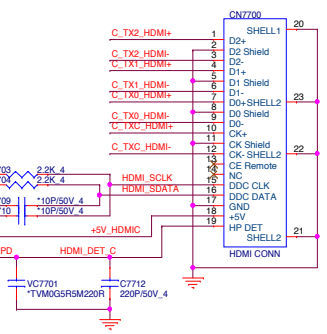
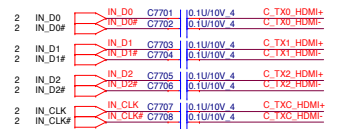
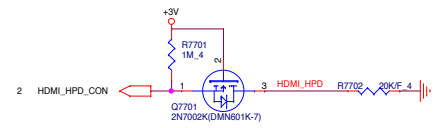
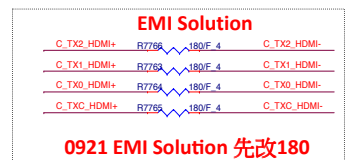


**PROJECT : Y62P/Y63P**  
**Quanta Computer Inc.**

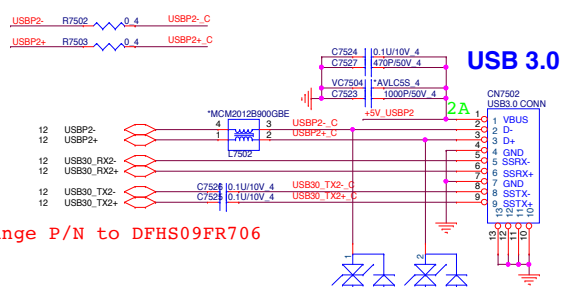
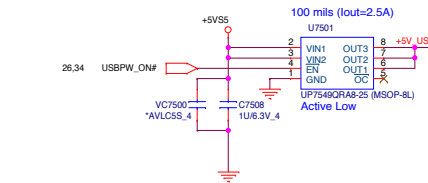
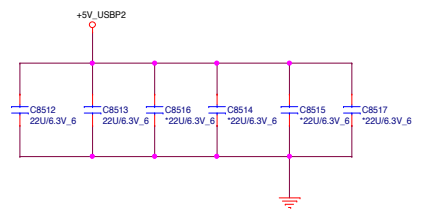
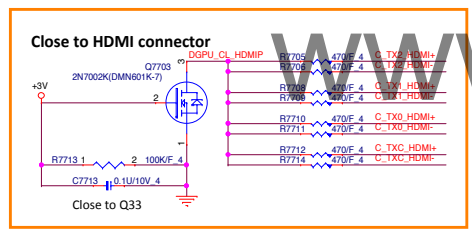
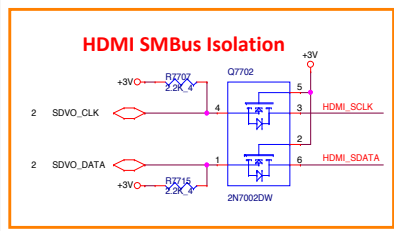
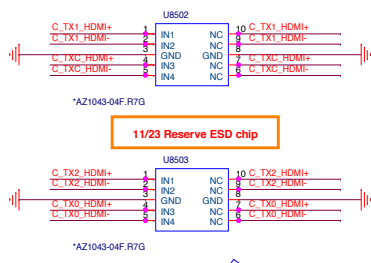
|   |                         |     |
|---|-------------------------|-----|
| Size  | Document Number         | Rev |
| Custom  | <b>LCD CONN/LID/CAM</b> | 1A  |
| Date: Wednesday, November 25, 2014 Sheet 25 of 49 |                         |     |



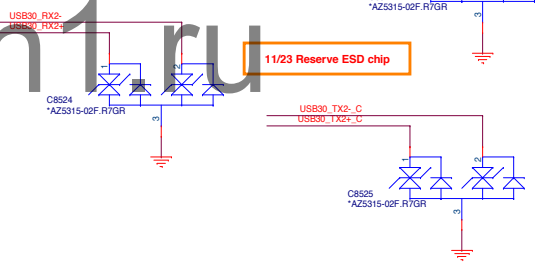
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25,27,28,29,44  
4,27,36,37,38,39,40,41,42,44,45,46,47



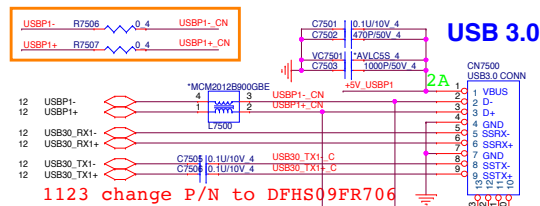
1014改FP



1123 change P/N to DFHS09FR706

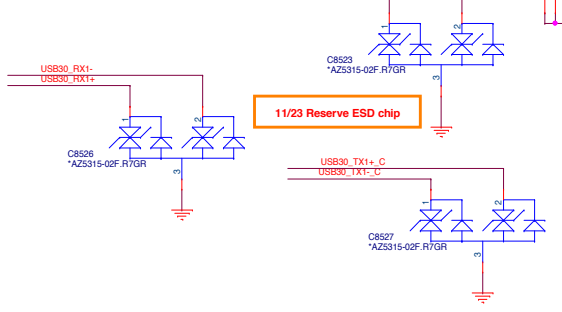


### USB 2.0/3.0 Combo

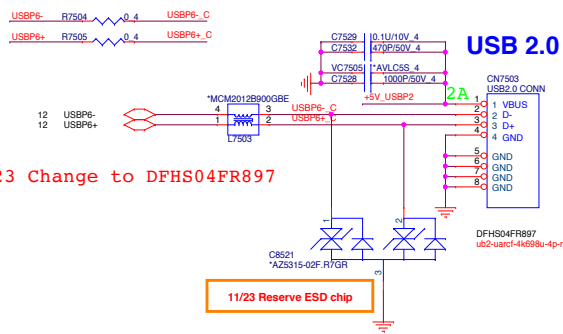


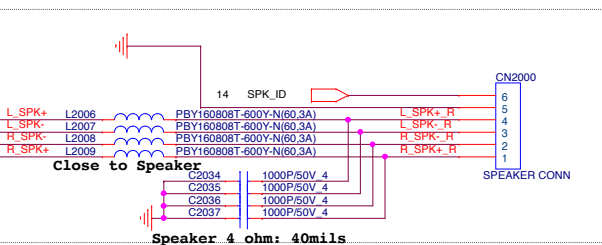
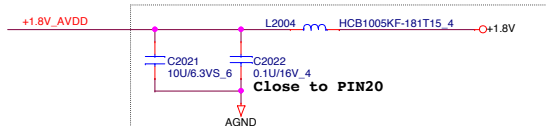
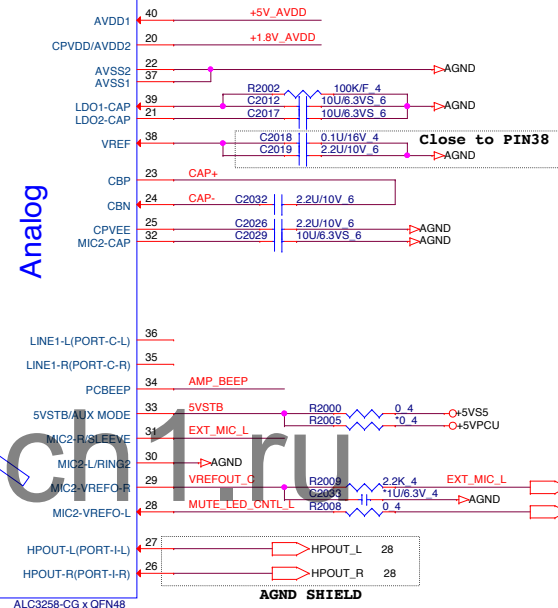
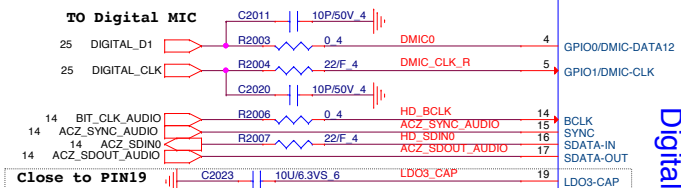
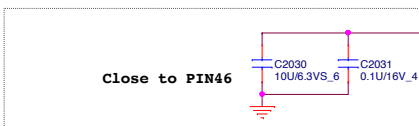
1014改FP

1123 change P/N to DFHS09FR706

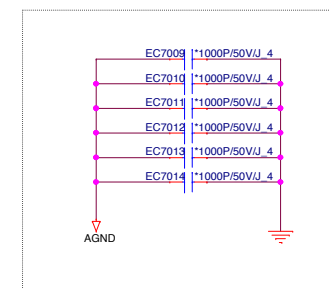
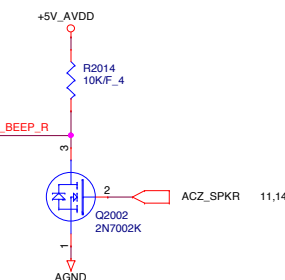
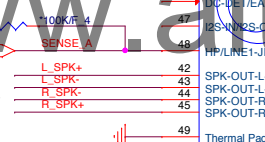


1123 Change to DFHS04FR897



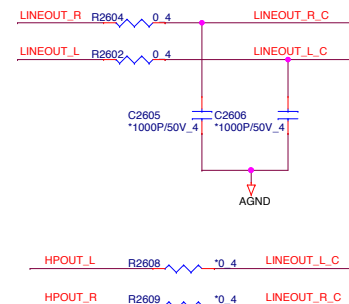


Speaker 4 ohm: 40mils

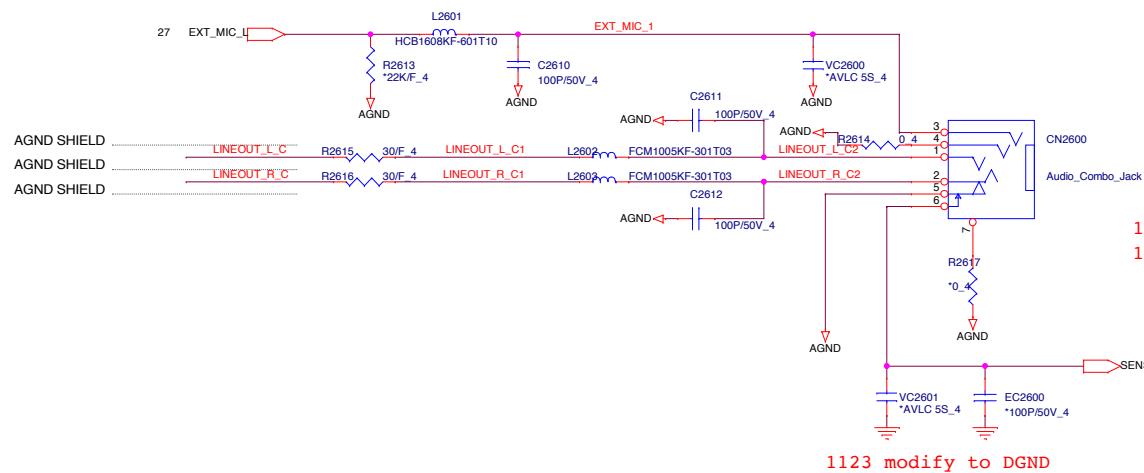


place to near or under codec





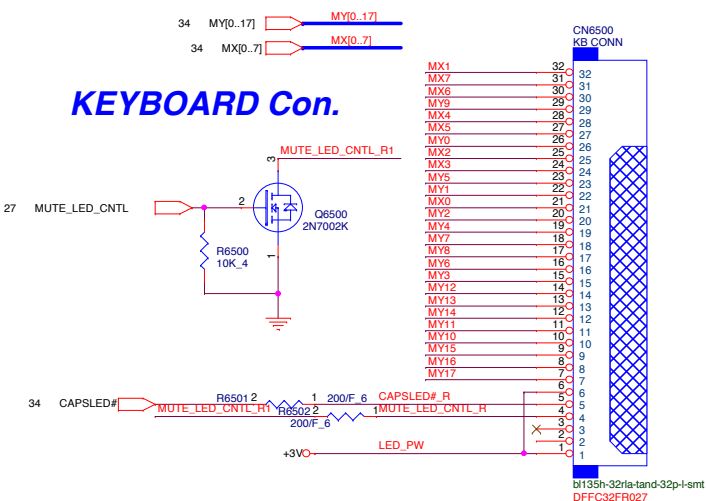
## Audio Combo



```
1123 modify P/N to DFTJ06FR836
1123 modify FP to audio-2sj3095-096211f-6p
```

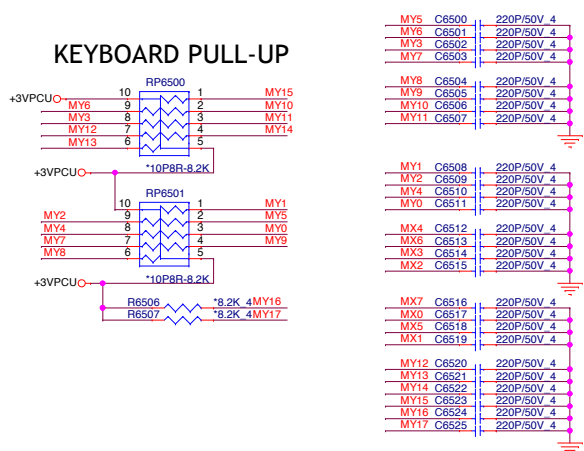
1123 modify to DGND

## KEYBOARD Con.

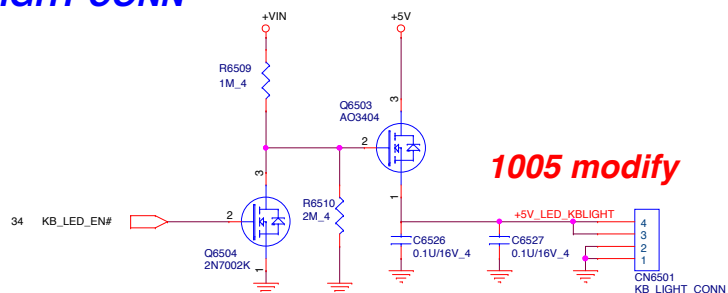
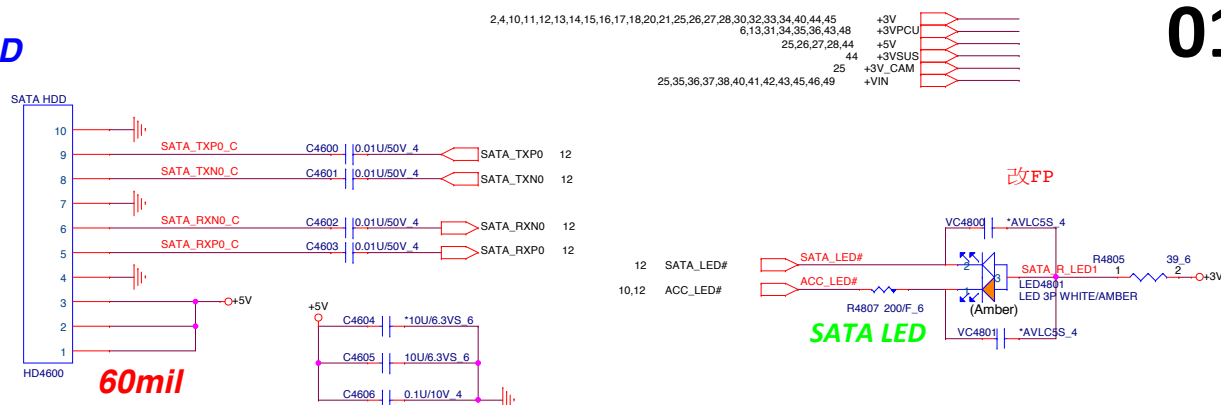


**1005 modify**

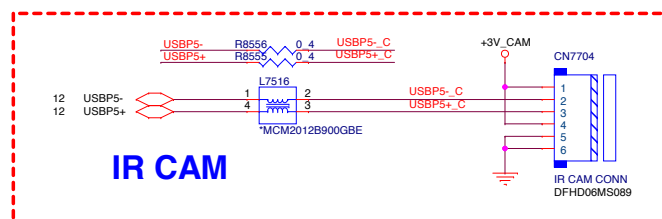
## KEYBOARD PULL-UP



***KB LIGHT CONN***

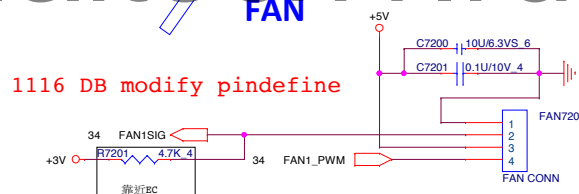
**HDD**

## IR CAM

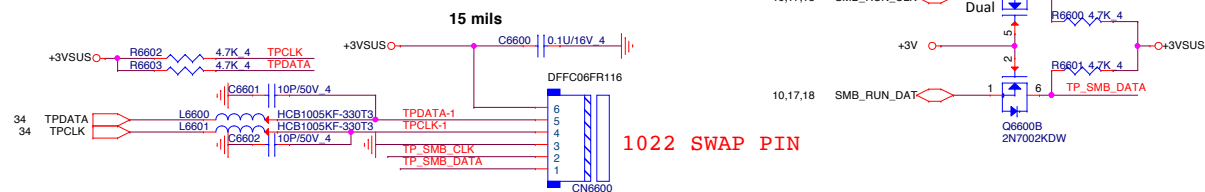


### 1015 Add IR CAM circuit

## FAN



## Touch Pad Connector

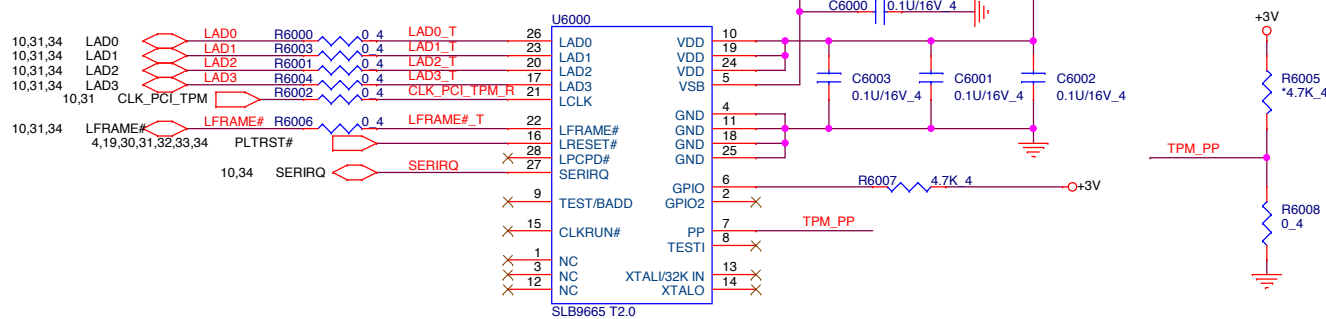


1022 SWAP PIN

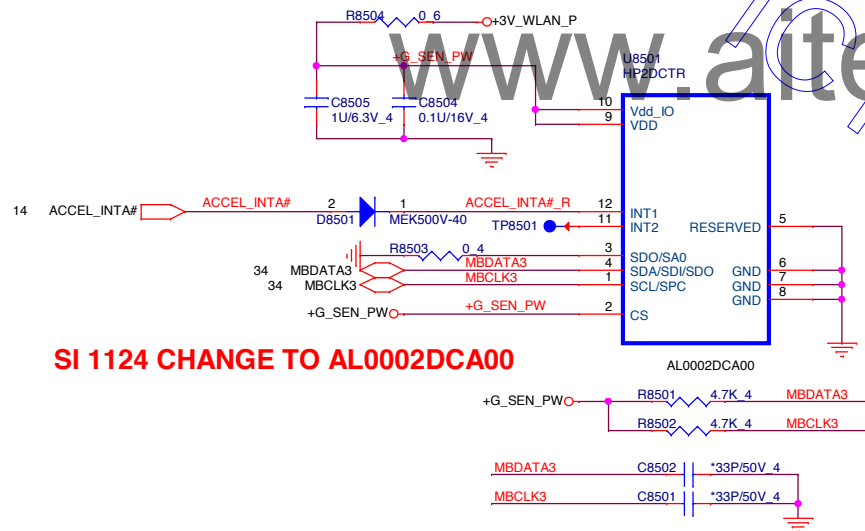
1005 DFFC06FR116

## TPM (2.0)

PN:AL009665K01



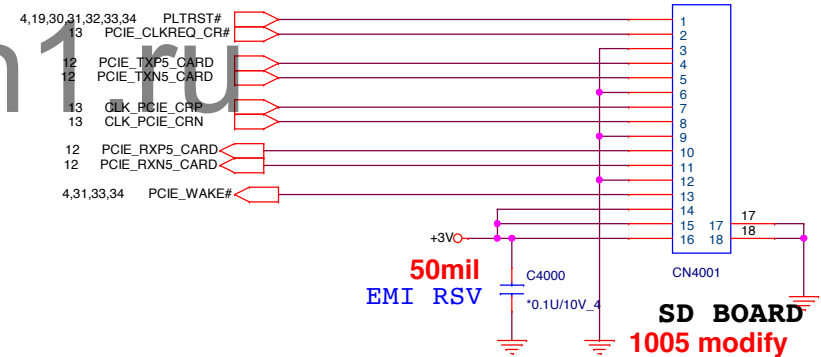
## Accelerometer Sensor



SI 1124 CHANGE TO AL0002DCA00

1014 modify pindefine

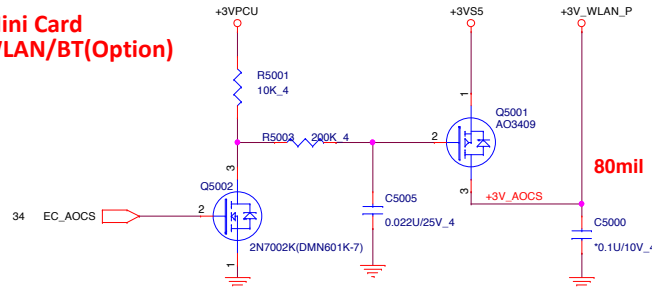
51619-01601-v01-16p-I  
DFFC16FR042



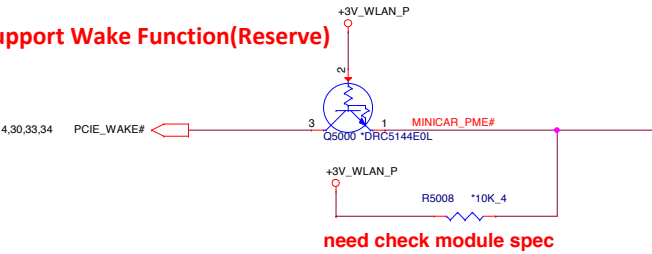
SD BOARD  
1005 modify

|       |                              |                |
|-------|------------------------------|----------------|
| Title |                              | <Title>        |
| Size  | Document Number              | Rev            |
| B     | <Doc>                        | <RevCode>      |
| Date: | Wednesday, November 25, 2015 | Sheet 30 of 49 |

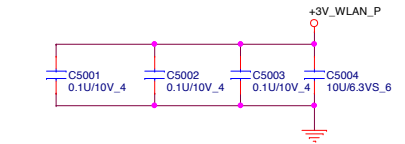
Mini Card  
WLAN/BT(Optional)



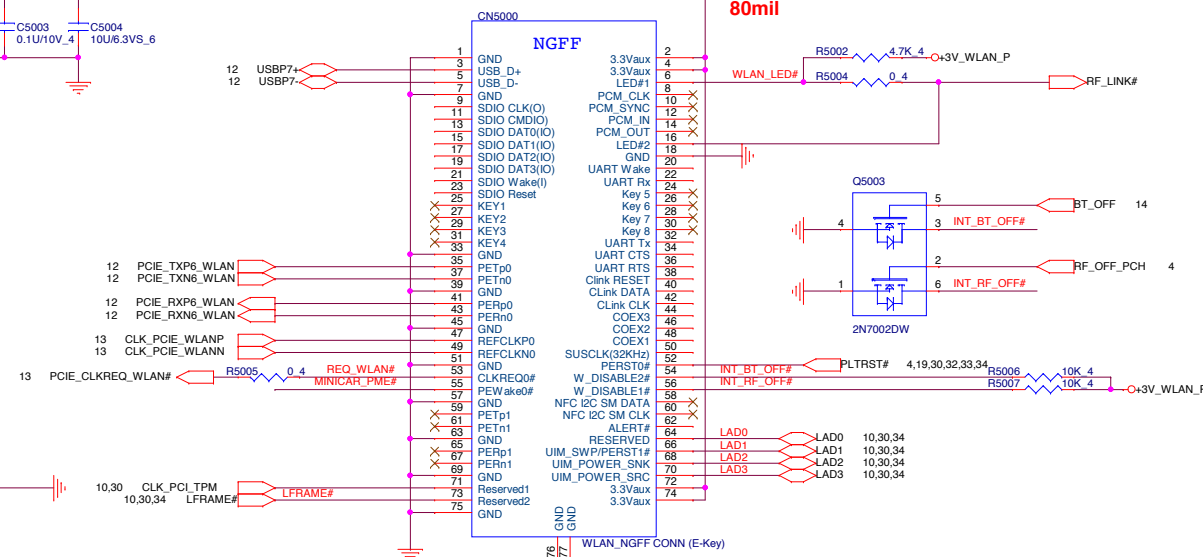
Support Wake Function(Reserve)



need check module spec

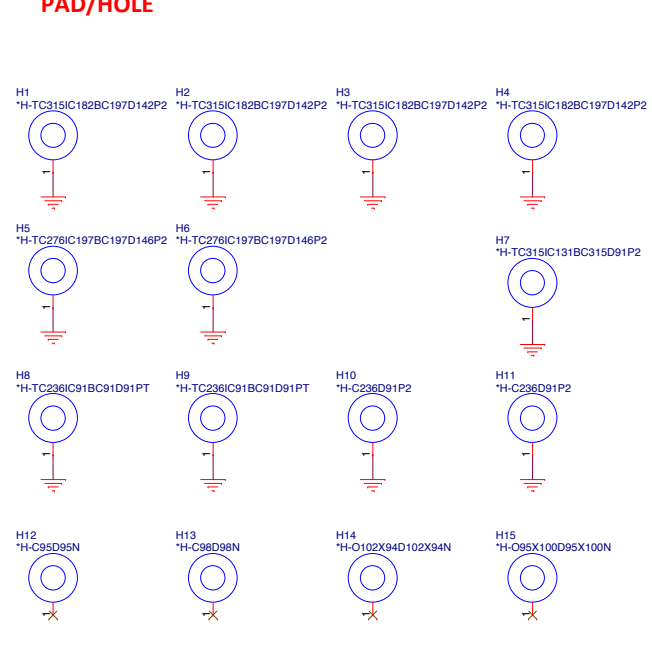


1014 改FP 缺料號

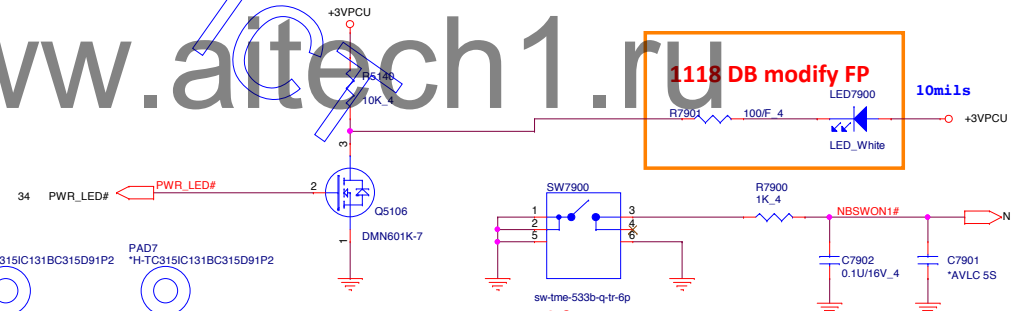


80mil

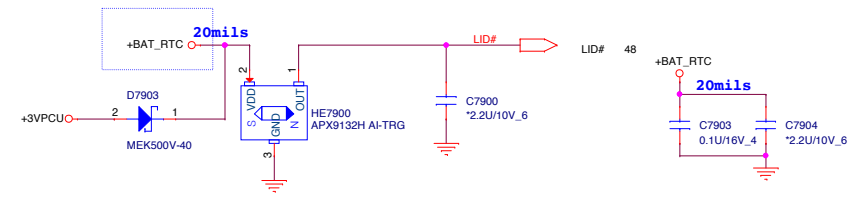
PAD/HOLE



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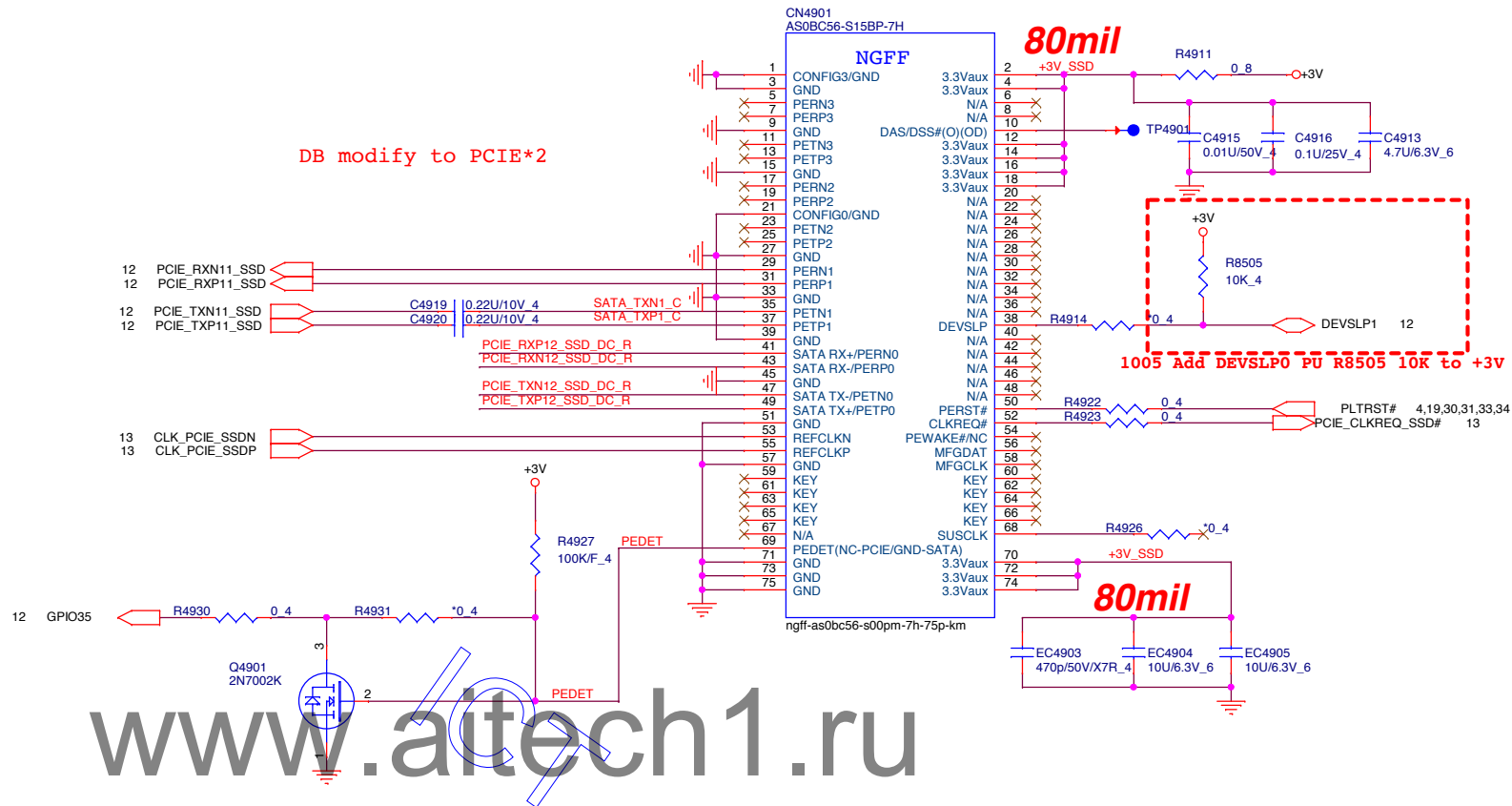


1118 DB modify FP

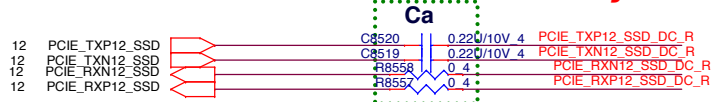


1118 change to M2 MBZRQ001010

|  |   |                       |
|--|---|-----------------------|
|  | <b>PROJECT : X1BD</b><br>Quanta Computer Inc. |                       |
|  | Size Custom                                   | Document Number <Doc> |
|  | Date: Wednesday, November 25, 2015            | Sheet 31 of 49        |



**1018 modify**



2,4,10,11,12,13,14,15,16,17,18,20,21,25,26,27,28,29,30,33,34,40,44,45 +3V

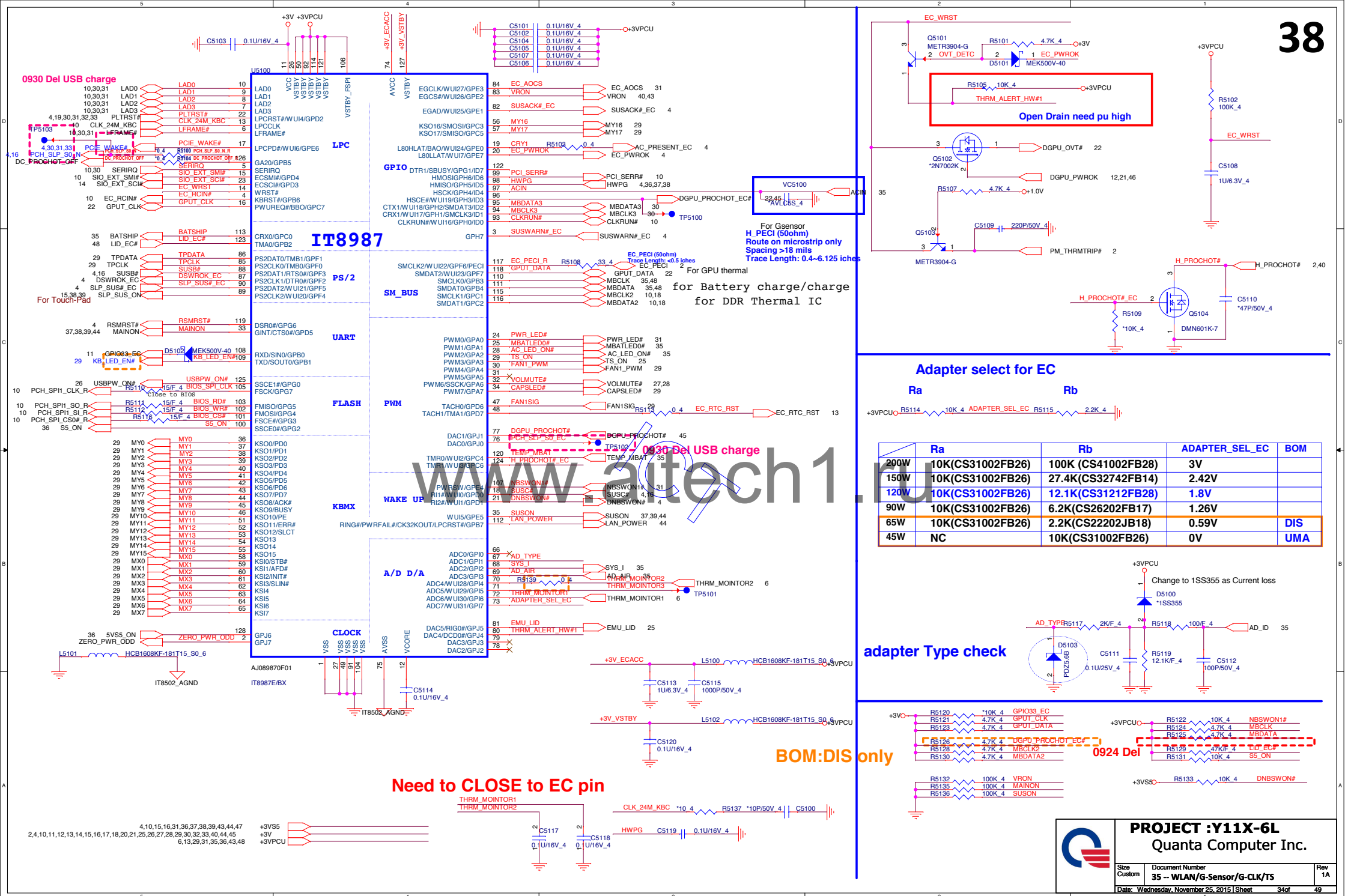


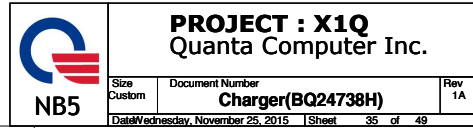
**Quanta Computer Inc.**  
**PROJECT : PS8527A**

| Size  | Document Number              | Rev            |
|-------|------------------------------|----------------|
|       | <b>SATA3.0 redriver</b>      |                |
| Date: | Wednesday, November 25, 2015 | Sheet 32 of 49 |

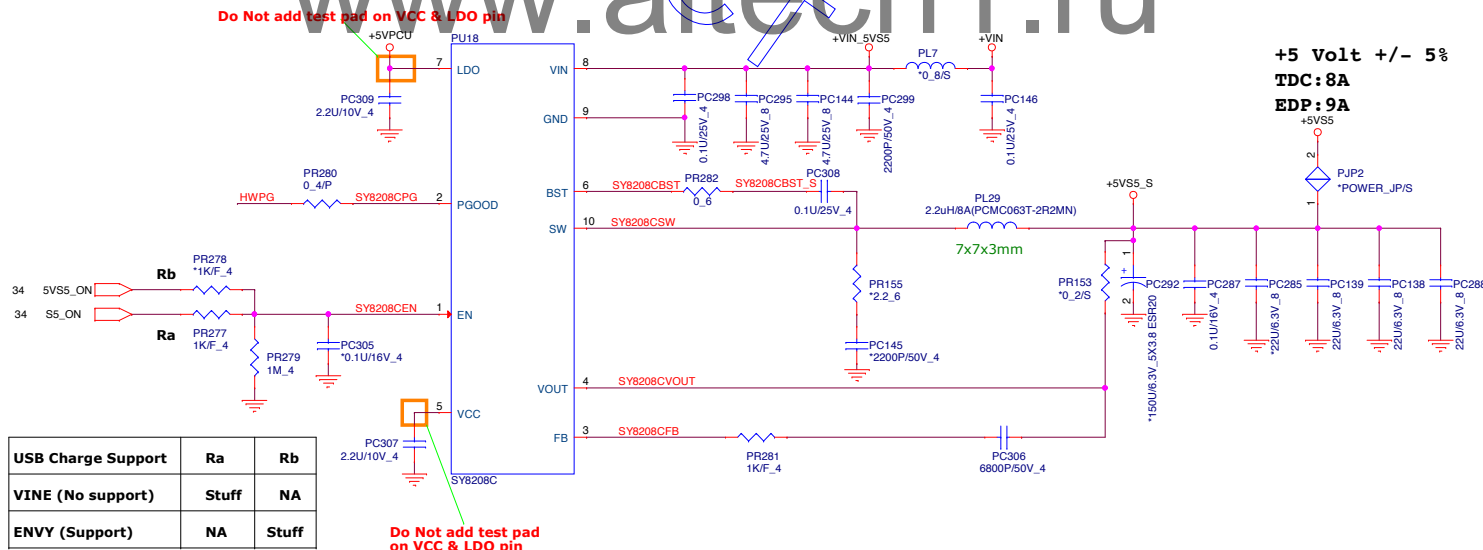
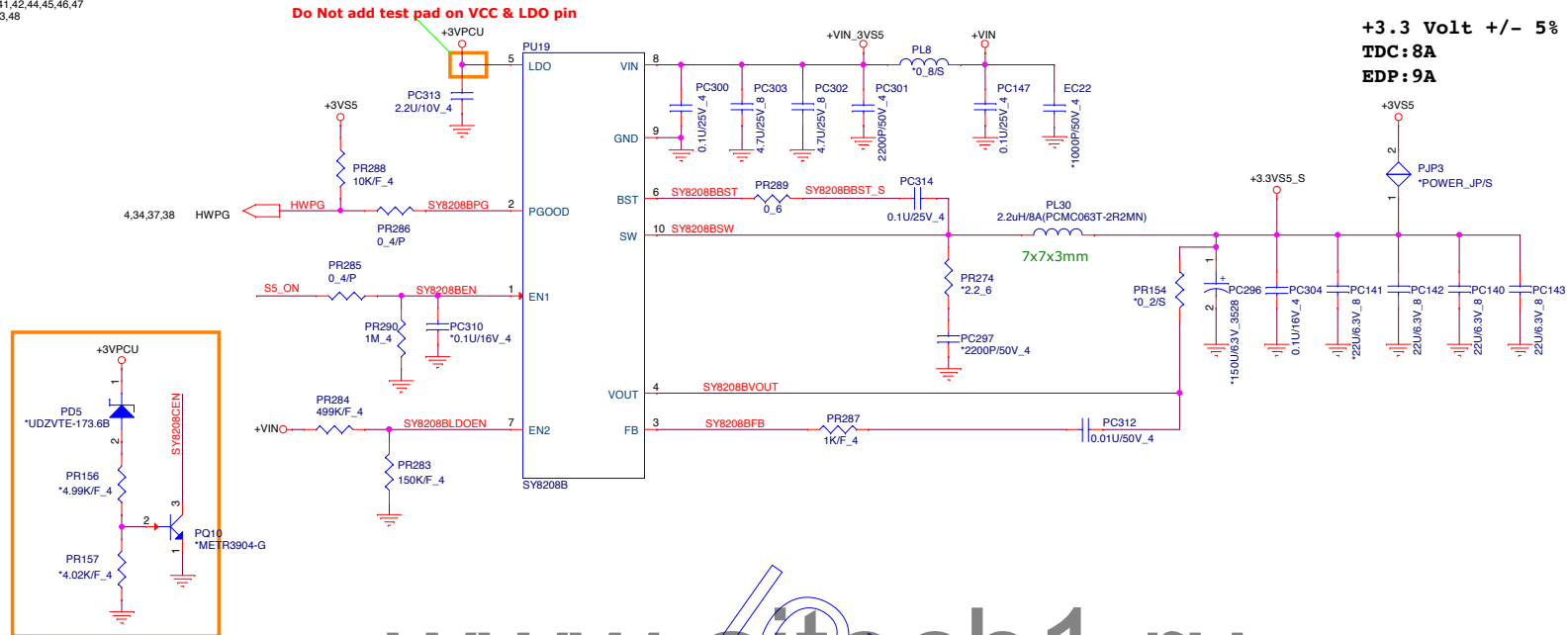






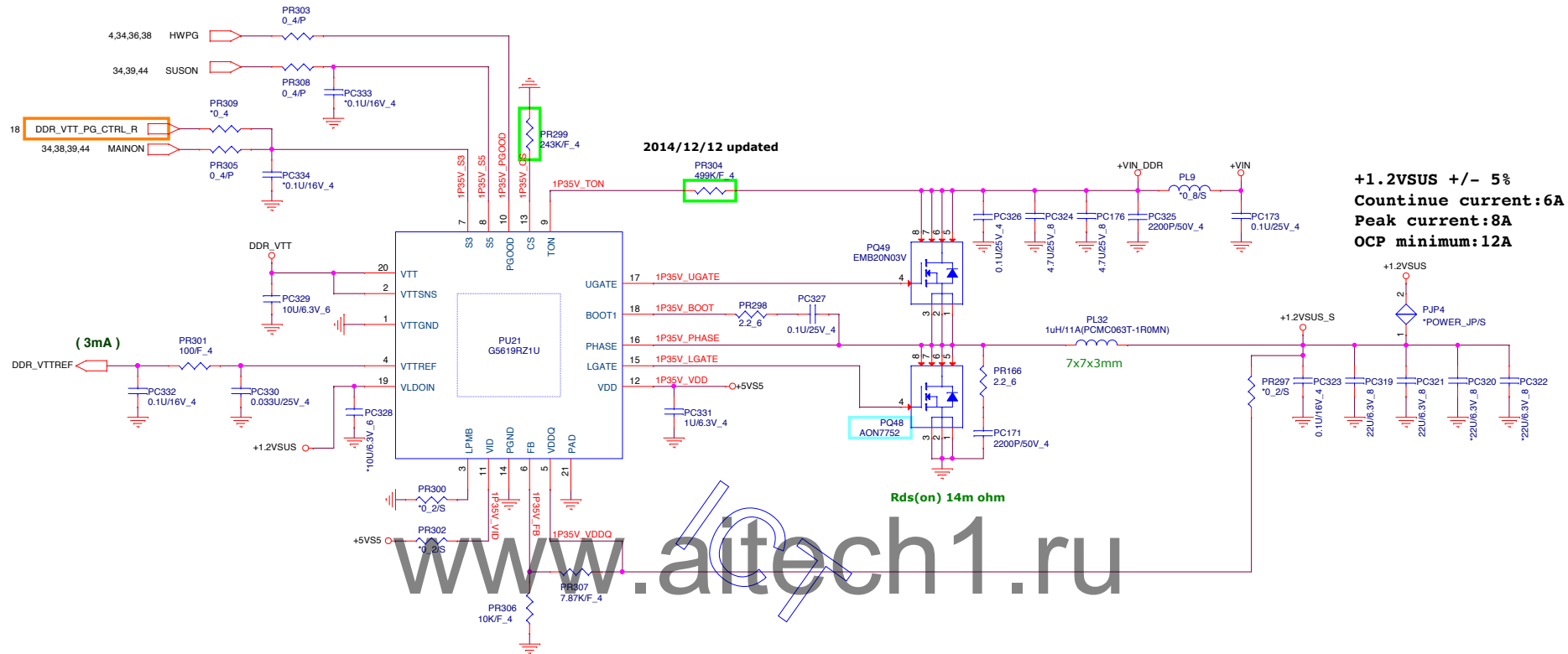


|        |                                       |
|--------|---------------------------------------|
| +VIN   | 25,29,35,37,38,40,41,42,43,45,46,49   |
| +3VS5  | 4,10,15,16,31,34,37,38,39,43,44,47    |
| +5VS5  | 4,26,27,37,38,39,40,41,42,44,45,46,47 |
| +3VPCU | 6,13,29,31,34,35,43,48                |
| +5VPCU | 27,35,44,47                           |

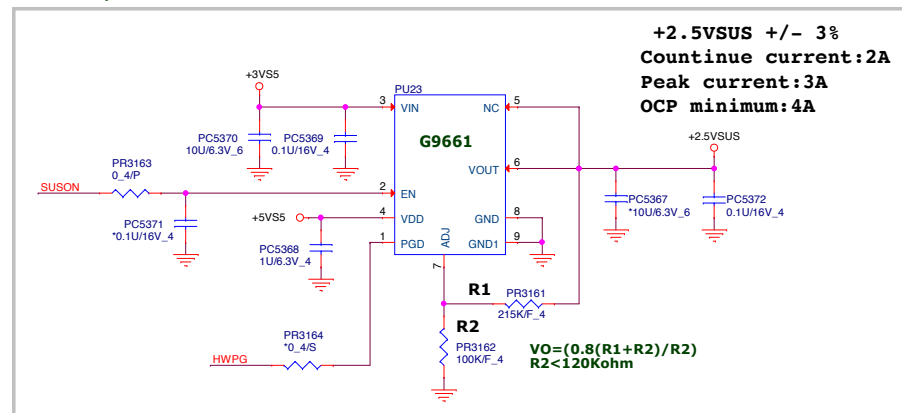


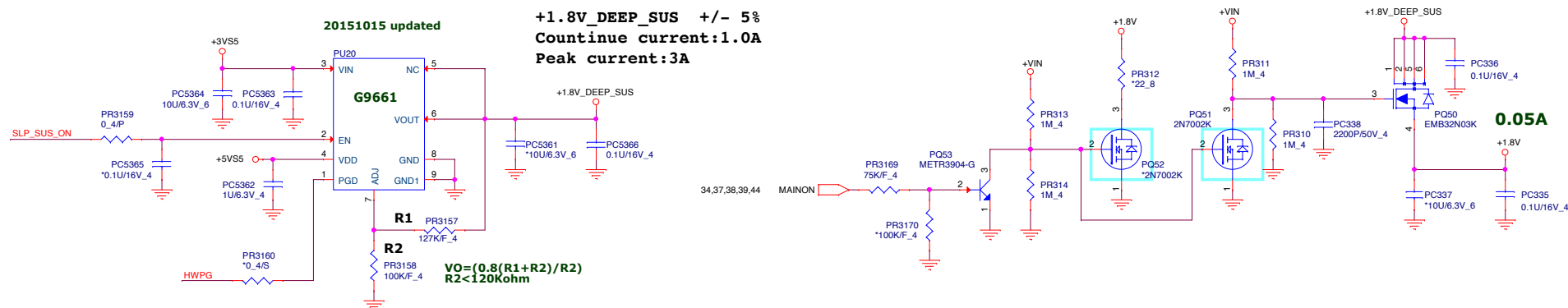
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|--------------------|-------|-------|
| USB Charge Support | Ra    | Rb    |
| VINE (No support)  | Stuff | NA    |
| ENVY (Support)     | NA    | Stuff |

+VIN 25,29,35,36,38,40,41,42,43,45,46,49  
 +5VS5 4,26,27,36,38,39,40,41,42,44,45,46,47  
 +1.2VSUS 3,6,17,18,39,47  
 DDR\_VTT 17,18



20151015 updated



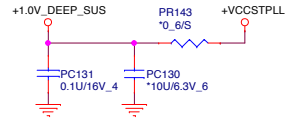


+1.0V 2,4,6,34  
 +3VSS 4,10,15,16,31,34,36,37,38,43,44,47  
 +5VSS 4,26,27,36,37,38,40,41,42,44,45,46,47  
 +VCCIO 6  
 +1.2VSUS 3,6,17,18,37,47  
 +VCCSTPLL 2,4,5,6,9,13,40  
 +1.0V\_DEEP\_SUS 9,15,38  
 +1.2V\_VCCPLL\_OC 6  
 MAINON 34,37,38,44

**Volume Segment**  
**Vcc\_ST: 0.12A**  
**Vcc\_PLL: 0.12A**

**<= 10ms, full load ready**  
**(Vcc\_ST+Vcc\_PLL)**

**Imax:0.24A**

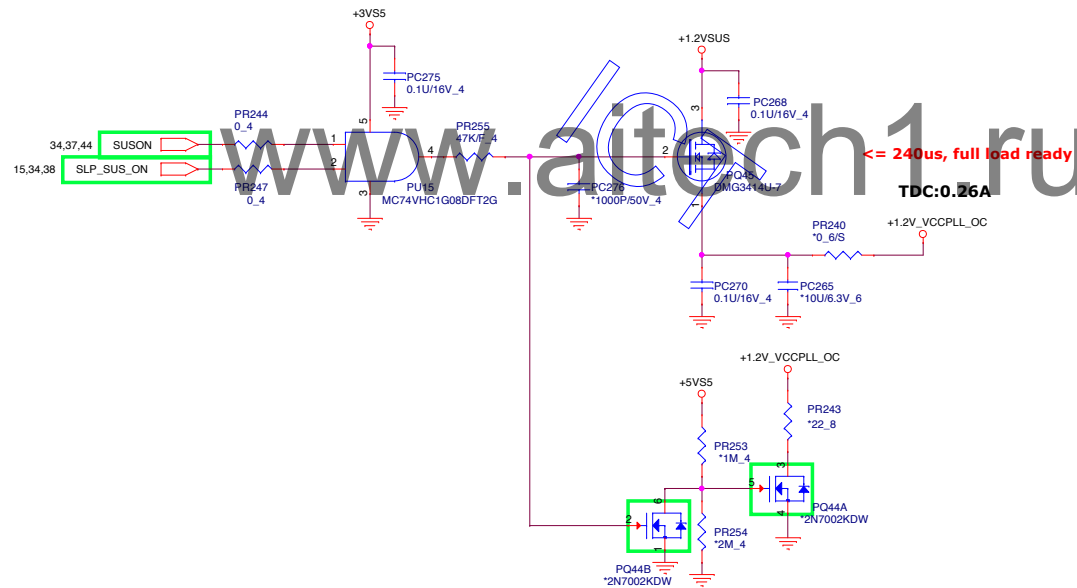
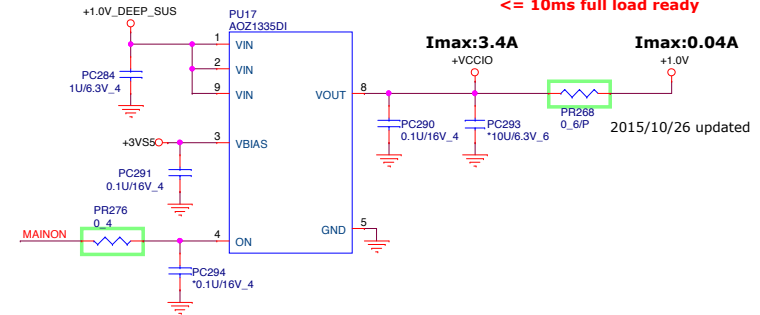


**Volume Segment**  
**Vcc\_STG: 0.04A**  
**Vcc\_IO: 3.4A**

**<= 10ms full load ready**

**Imax:3.4A**

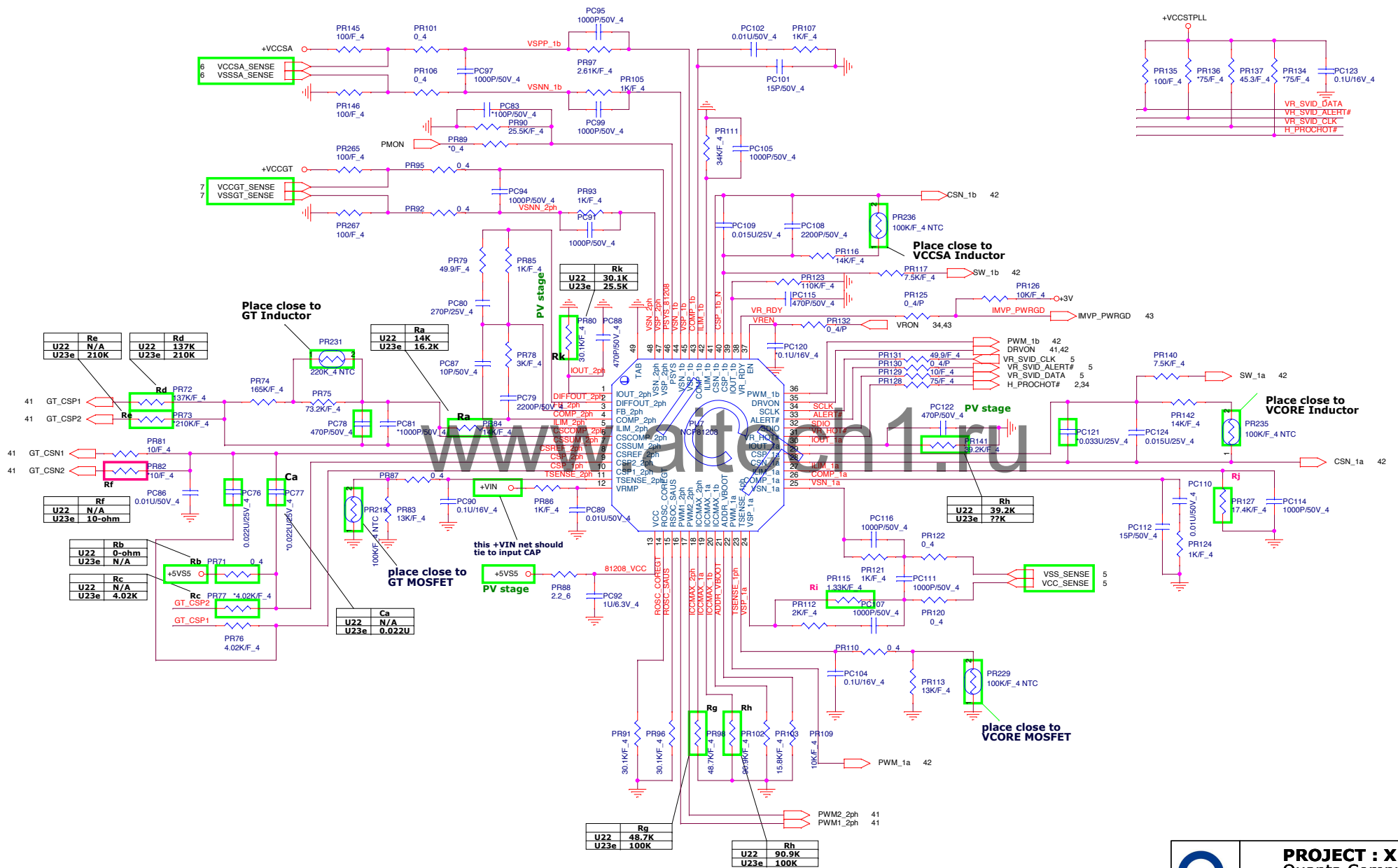
**Imax:0.04A**



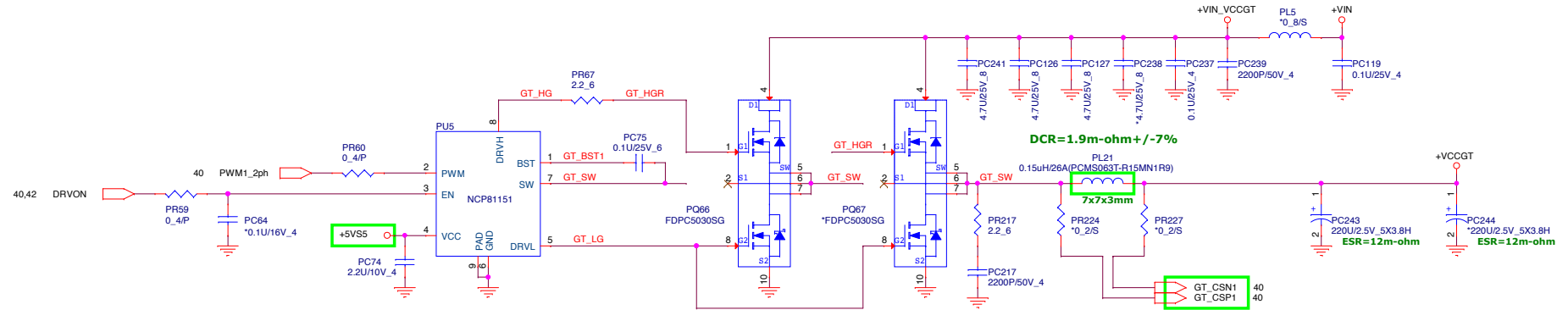
**<= 240us, full load ready**

**TDC:0.26A**



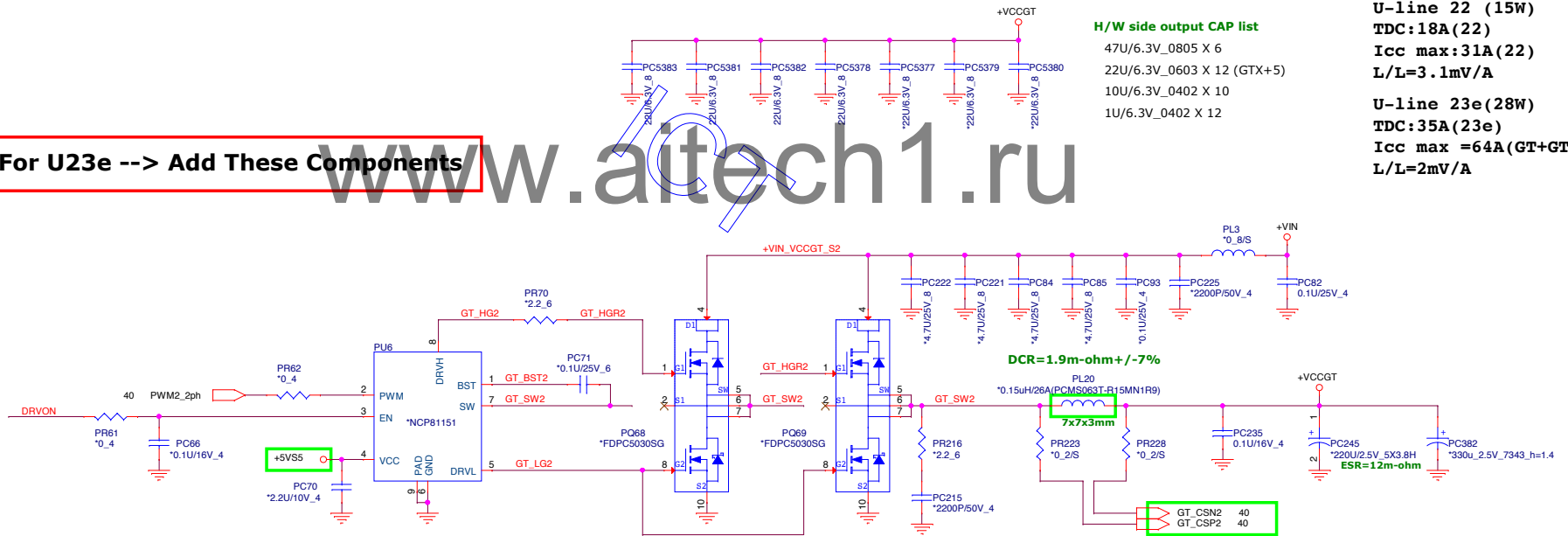


+5V 25,26,27,28,29,44  
 +VIN 25,29,35,36,37,38,40,42,43,45,46,49  
 +5VPCU 27,35,36,44,47  
 +VCCGT 7,40



For U23e --> Add These Components

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+VCCGT

U-line 22 (15W)

TDC:18A(22)

Icc max:31A(22)

L/L=3.1mV/A

U-line 23e(28W)

TDC:35A(23e)

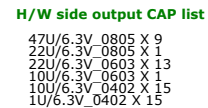
Icc max =64A(GT+GTx)

L/L=2mV/A

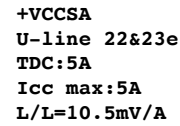


**PROJECT : X1Q**  
Quanta Computer Inc.

| Size   | Document Number              | Rev            |
|--------|------------------------------|----------------|
| Custom | +VCCSA (NCP81253)            | 2A             |
| Date:  | Wednesday, November 25, 2015 | Sheet 41 of 49 |

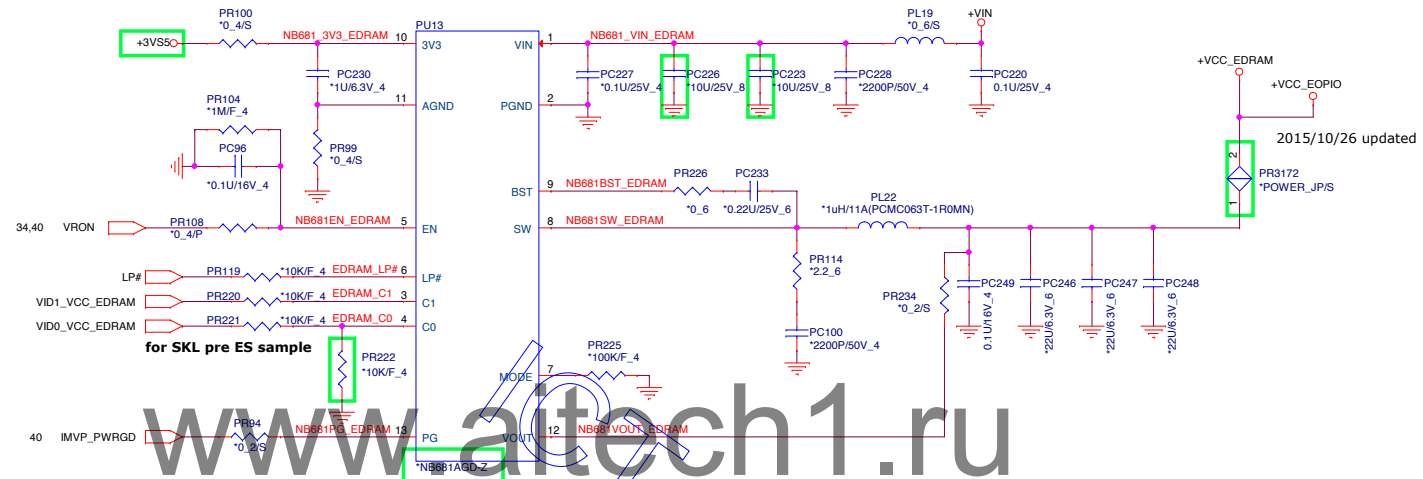
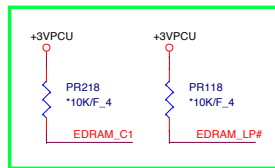


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+VIN 25,29,35,36,37,38,40,41,42,45,46,49  
 +3VPCU 6,13,29,31,34,35,36,48  
 +VCC\_EOPIO 5  
 +VCC\_EDRAM 5  
 +3VS5 4,10,15,16,31,34,36,37,38,39,44,47

**+VCC\_EDRAM +/- 5%**  
**Countinue current:4.5A**  
**Peak current:6A**



**VCC\_EDRAM**

| LP# | C1 | C0 | Vout |
|-----|----|----|------|
| 0   | X  | X  | 0    |
| 1   | 0  | 0  | 0.8  |
| 1   | 0  | 1  | 0.95 |
| 1   | 1  | 0  | 1.0  |
| 1   | 1  | 1  | 1.05 |

**MODE**

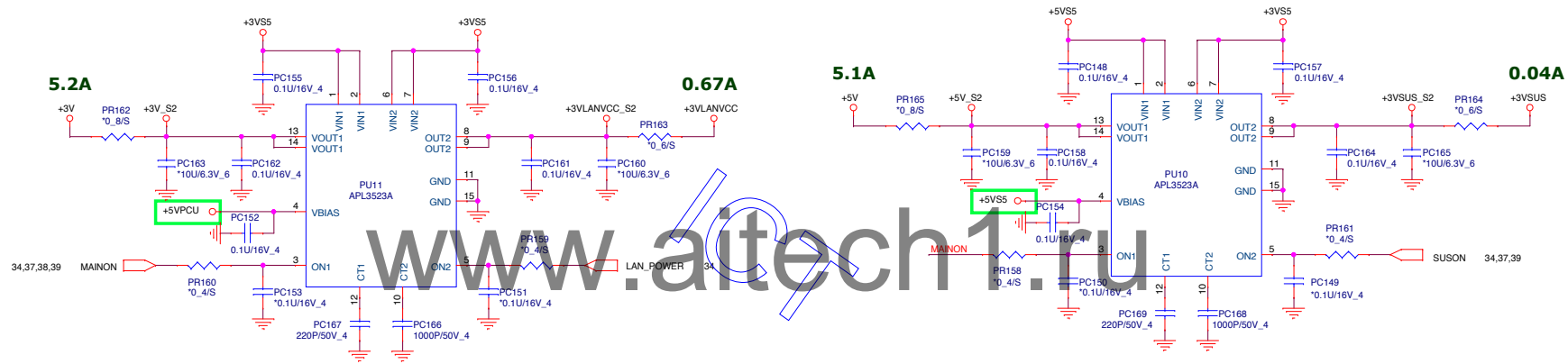
|    | VR rail     | Resistor |
|----|-------------|----------|
| M1 | VCCIO       | 0        |
| M2 | PRIMCORE    | Float    |
| M3 | EDRAM/EOPIO | 100K     |
| M4 | other       | 150K     |



**PROJECT : X1Q**  
Quanta Computer Inc.

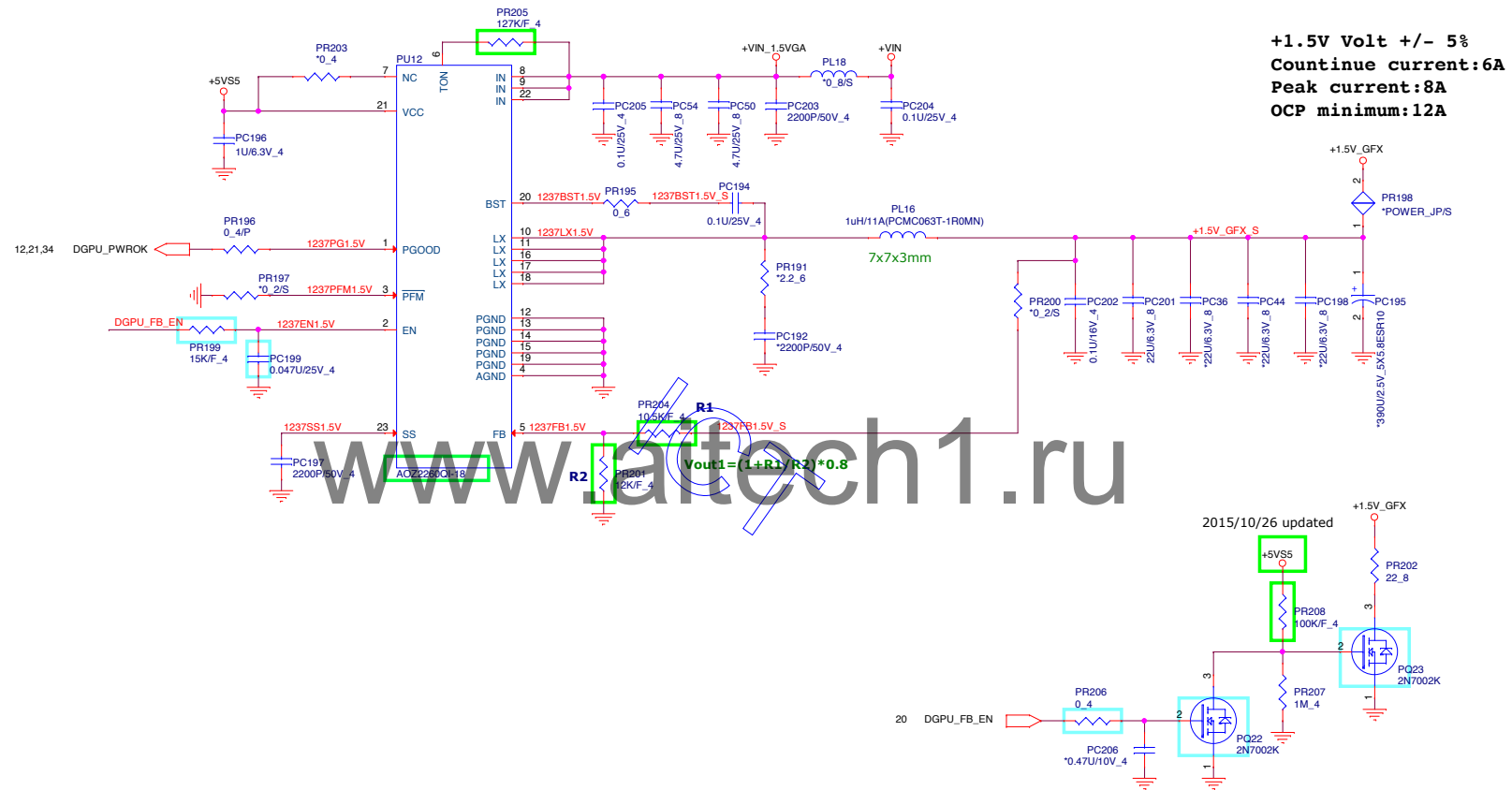
| Size                               | Document Number        | Rev |
|------------------------------------|------------------------|-----|
| Custom                             | +VCC_EDRAM (NB681)_23E |     |
| Date: Wednesday, November 25, 2015 | Sheet 43 of 49         |     |

|          |   |
|----------|---|
| +3V      | 2,4,10,11,12,13,14,15,16,17,18,20,21,25,26,27,28,29,30,32,33,34,40,45 |
| +5V      | 25,26,27,28,29  |
| +VIN     | 25,29,35,36,37,38,40,41,42,43,45,46,49                                |
| +3VSS    | 4,10,15,16,31,34,36,37,38,39,43,47                                    |
| +5VSS    | 4,26,27,36,37,38,39,40,41,42,45,46,47                                 |
| +3VSUS   | 29  |
| +5VPCU   | 27,35,36,47   |
| +3VLAVCC | 33  |



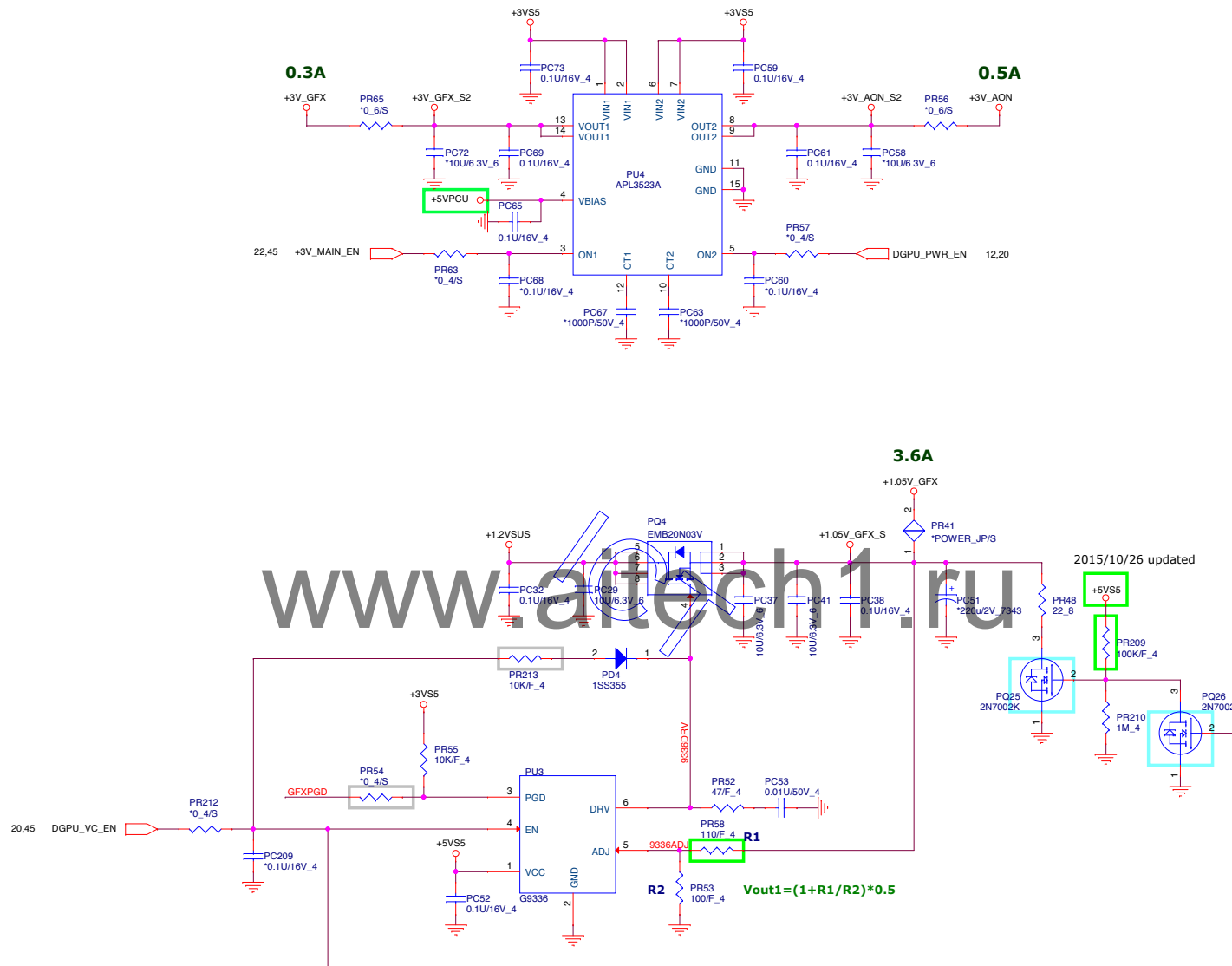


+VIN 25,29,35,36,37,38,40,41,42,43,45,49  
 +5VSS 4,26,27,36,37,38,39,40,41,42,44,45,47  
 +1.5V\_GFX 20,23,24

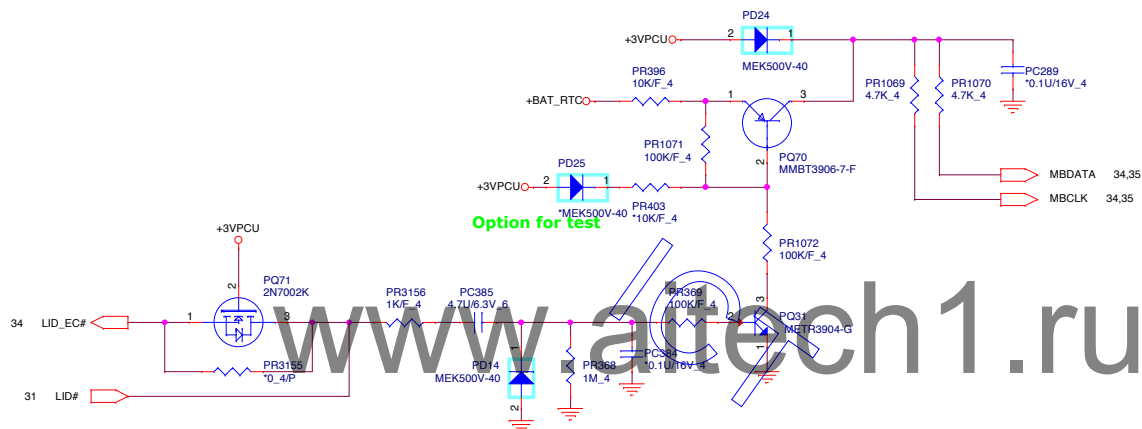


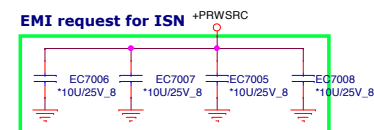
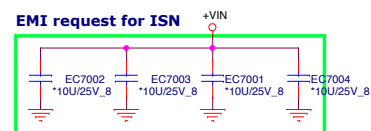


|            |  |
|------------|--|
| +VIN       | 25,29,35,36,37,38,40,41,42,43,45,46,49 |
| +3VS5      | 4,10,15,16,31,34,36,37,38,39,43,44     |
| +5VS5      | 4,26,27,36,37,38,39,40,41,42,44,45,46  |
| +3V_GFX    | 19,21,22,45                            |
| +3V_AON    | 19,22                                  |
| +1.2VSUS   | 3,6,17,18,37,39                        |
| +1.05V_GFX | 19,20,21                               |



+3VPCU 6,13,29,31,34,35,36,43  
+BAT\_RTC 13,31,35





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