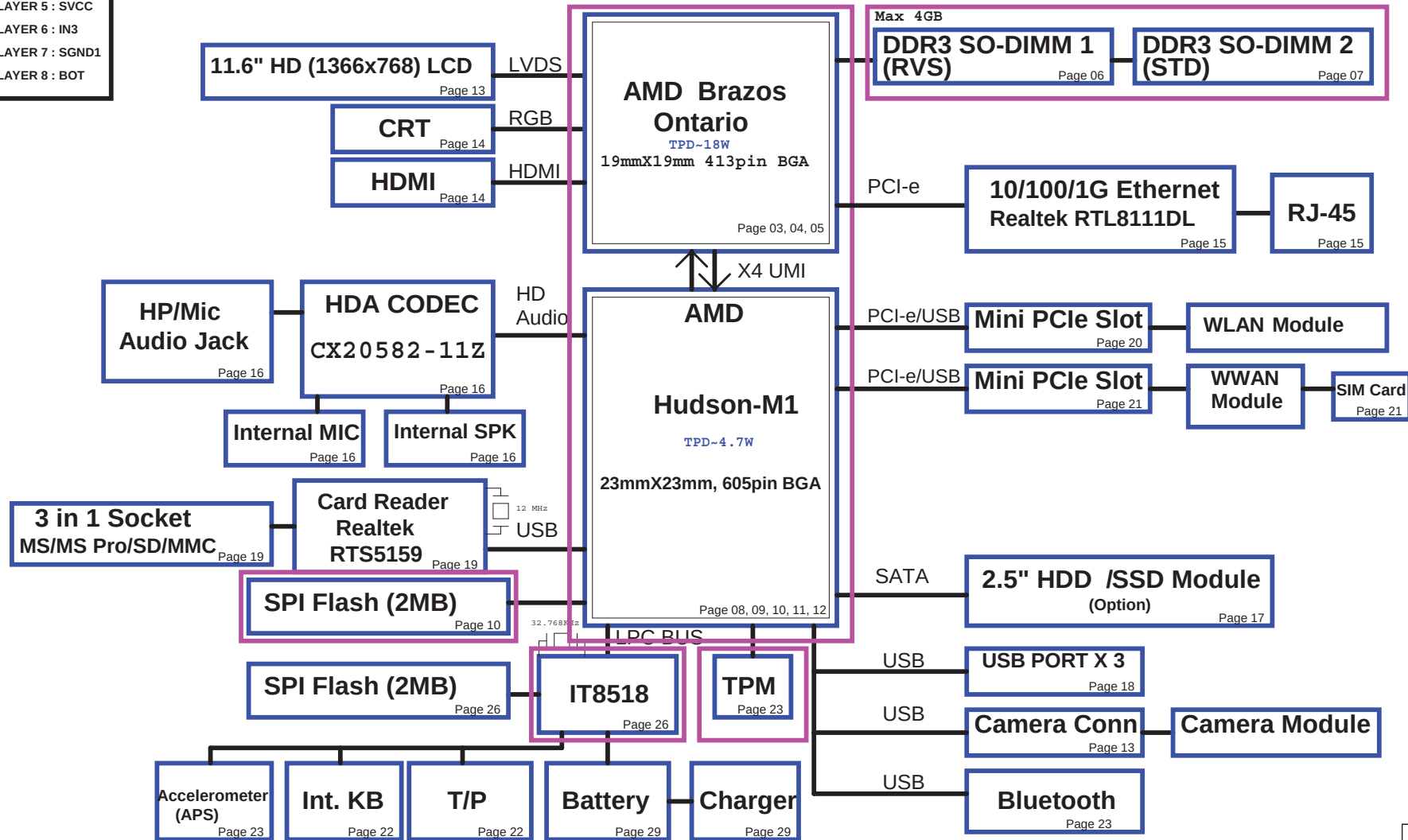


## MK-2.0 &amp; Dublin-1.5B Block Diagram -- AMD Ontario

LAYER 1 : TOP  
 LAYER 2 : SGND  
 LAYER 3 : IN1  
 LAYER 4 : IN2  
 LAYER 5 : SVCC  
 LAYER 6 : IN3  
 LAYER 7 : SGND1  
 LAYER 8 : BOT



## POWER

|                                                                 |         |
|-----------------------------------------------------------------|---------|
| <b>DC/DC</b><br>3V_PCU, 5V_PCU, +15V                            | Page 30 |
| <b>REGULATOR (DDR3)</b><br>1.5V_SUS, 0.75V_DDR_VTT              | Page 31 |
| <b>REGULATOR</b><br>+1V                                         | Page 32 |
| <b>REGULATOR</b><br>1.1V_S5, +1.1V                              | Page 33 |
| <b>REGULATOR</b><br>+1.8V                                       | Page 34 |
| <b>CPU Core</b>                                                 | Page 35 |
| <b>RUN POWER SW</b><br>3V_SUS, 5V_SUS, 3V_S5, 5V_S5<br>+3V, +5V | Page 36 |
| <b>Discharge</b>                                                | Page 36 |

## Power Sequence

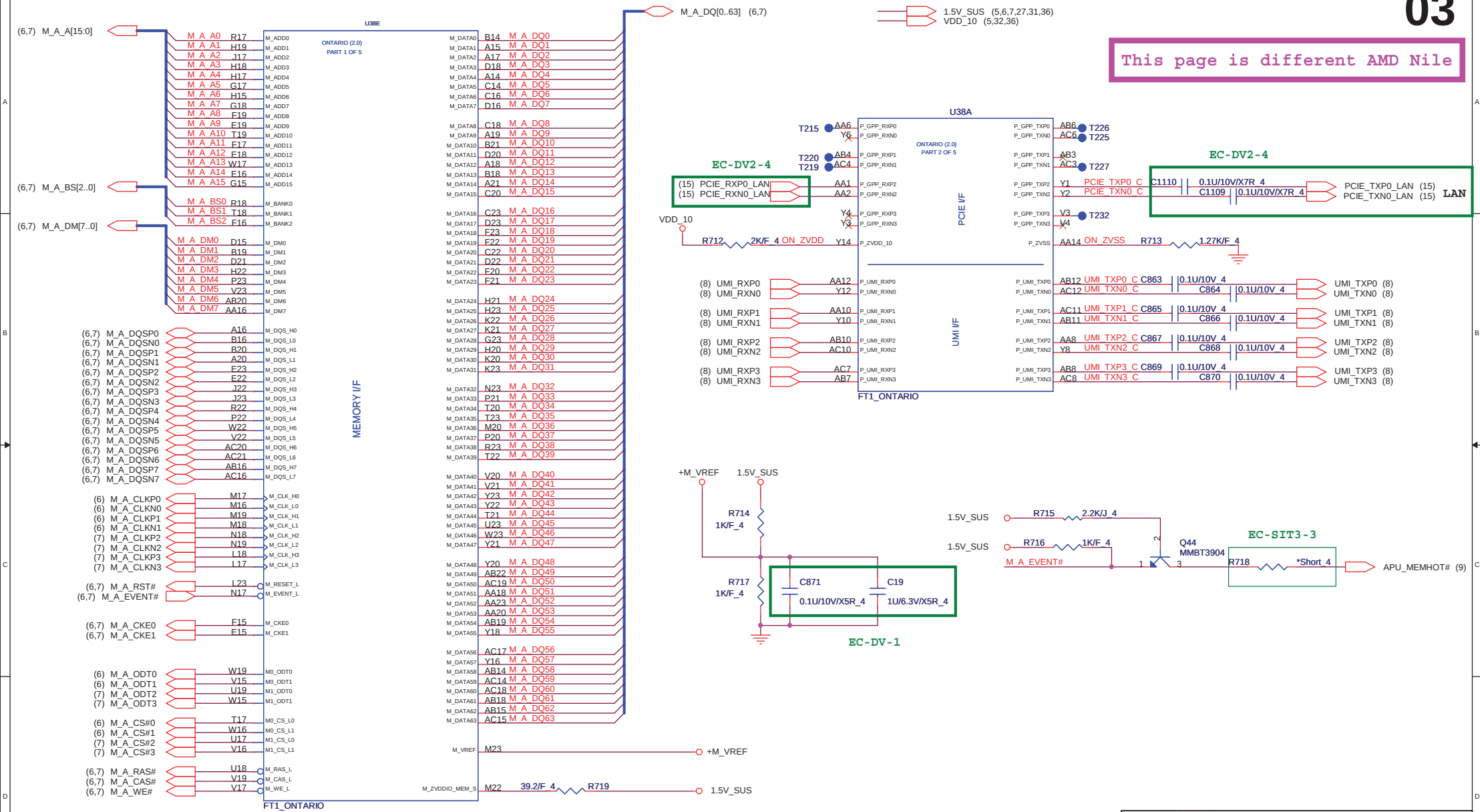
The diagram illustrates the power sequence for a system. The signals shown are:

- AC IN
- 3V/5VPCU
- NBSWON#
- DNBSWON#
- S5\_ON/S5
- RSMRST#
- PCIE\_WAKE#
- SUSC
- USB
- SUSON
- MAINON
- VR\_ON
- CPU\_CORE
- VRM\_PWRGD
- HWPg
- ECPWROK
- SB\_PWRGD\_IN
- CPU RESET
- CPU POWER OK

|                                       |              |                       |
|---------------------------------------|--------------|-----------------------|
| SB820 SMBUS                           | Pin NO.      | SMBUS Function Define |
| PCLK_SMB<br>PDAT_SMB<br>(+3V)         | AD22<br>AE22 | DDR / RFID            |
| SB_SMBCLK1<br>SB_SMBDATA1<br>(+3V_S5) | F5<br>F4     | not used              |
| SB_SCLK2<br>SB_SDATA2<br>(+3V_S5)     | D25<br>F23   | not used              |
| SB_SCLK3<br>SB_SDATA3<br>(+3V_S5)     | B26<br>E26   | not used              |
| SB_SCLK3<br>SB_SDATA3<br>(+3V_S5)     | B26<br>E26   | not used              |

| KBC SMBUS                             | Pin NO.    | SMBUS Function Define |
|---------------------------------------|------------|-----------------------|
| MBCLK<br>MBDATA<br>(+3VPCU)           | 110<br>111 | Battery               |
| MBCLK_THRM<br>MBDATA_THRM<br>(+3VPCU) | 115<br>116 | Thermal               |

This page is different AMD Nile



Quanta Computer Inc.

PROJECT : MK2.0

| Size | Document Number             | Rev |
|------|-----------------------------|-----|
|      | ONTARIO MEM & PCIE I/F(1/3) | 1A  |

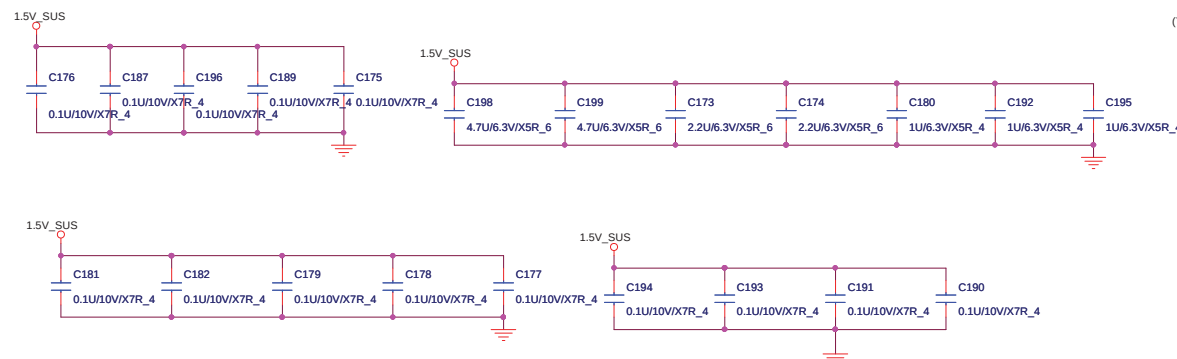
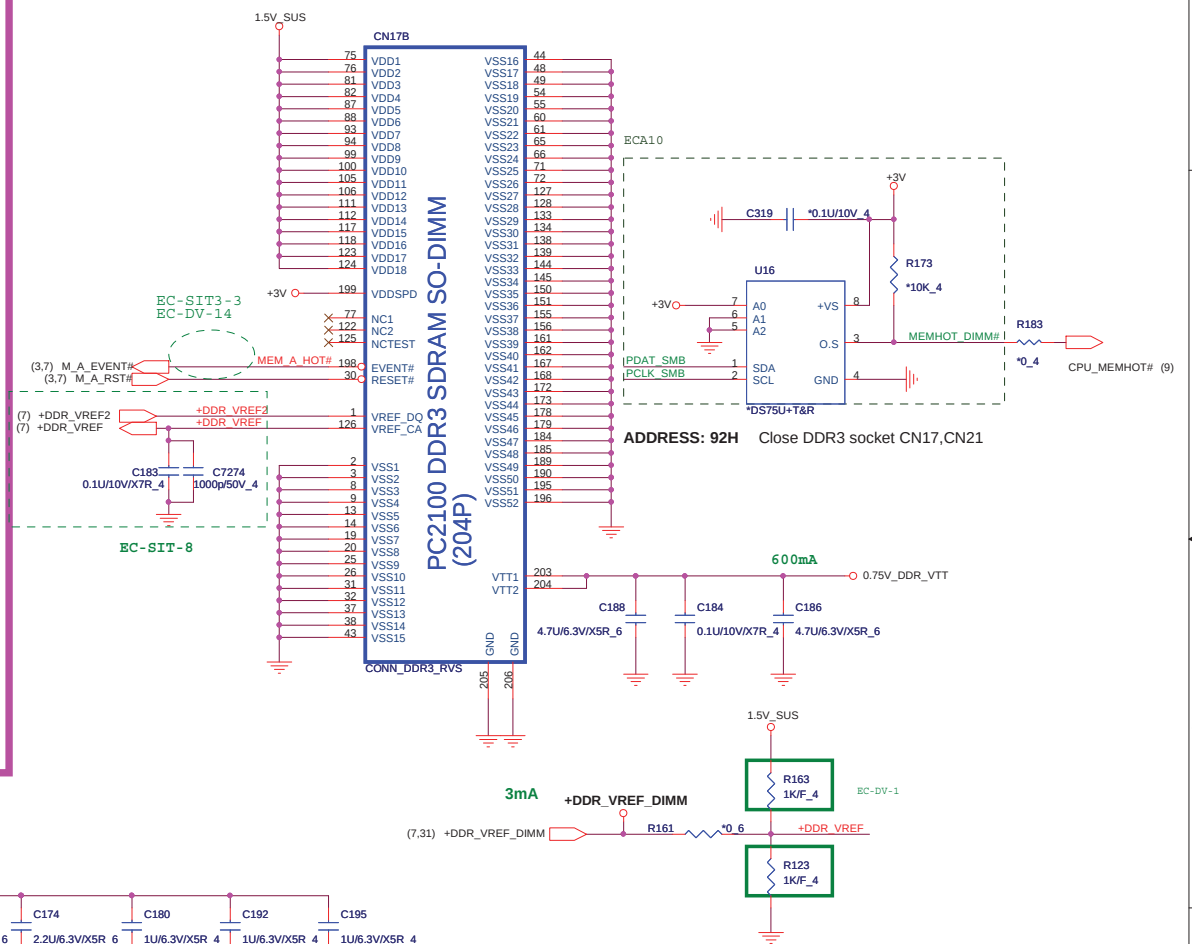
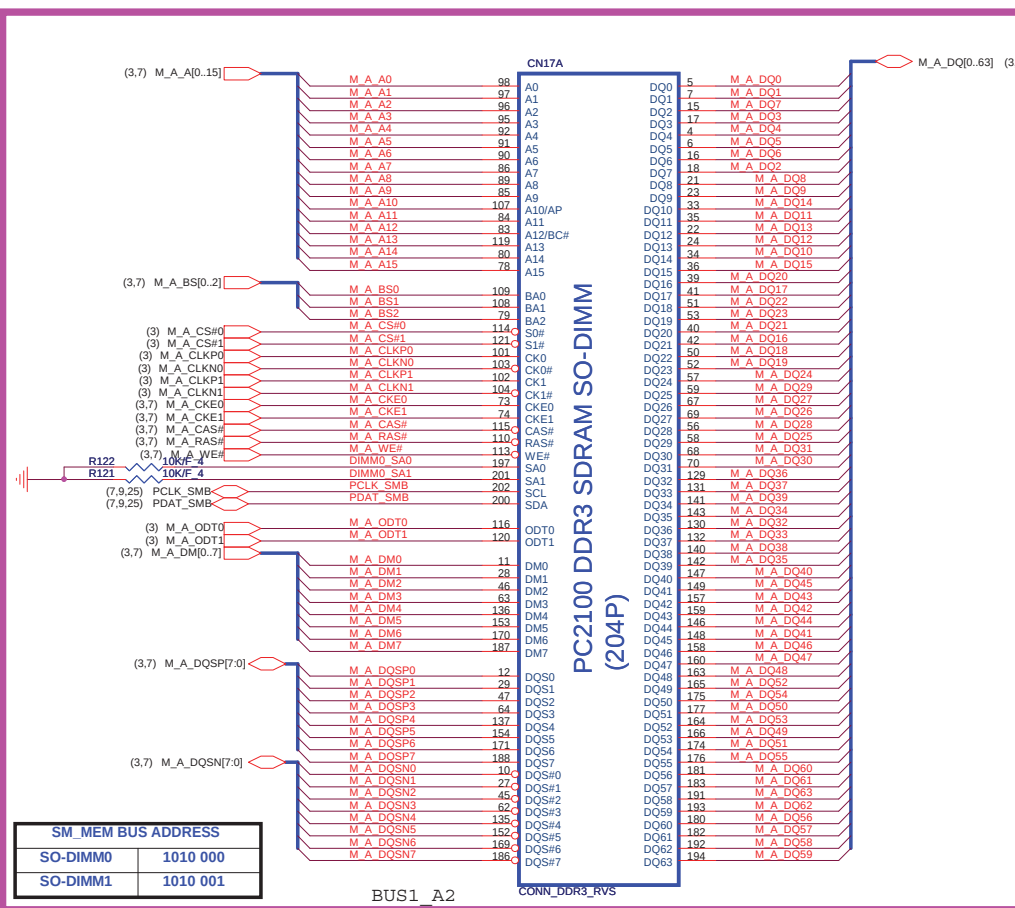
Date: Friday, October 29, 2010 Sheet 3 of 47

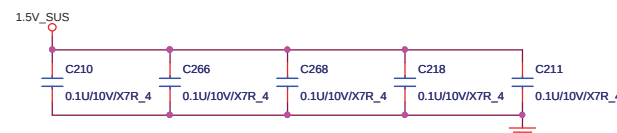
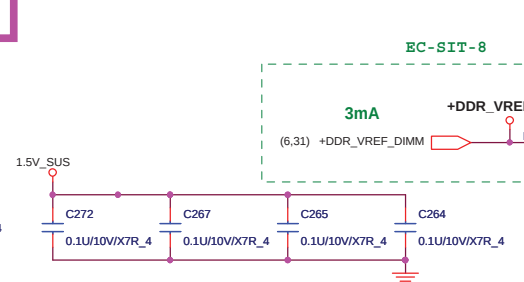
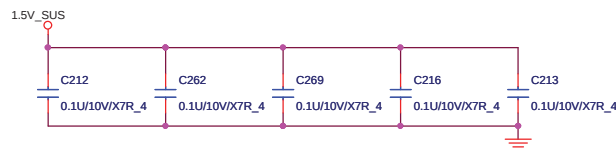
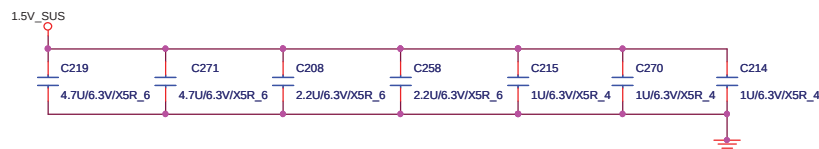
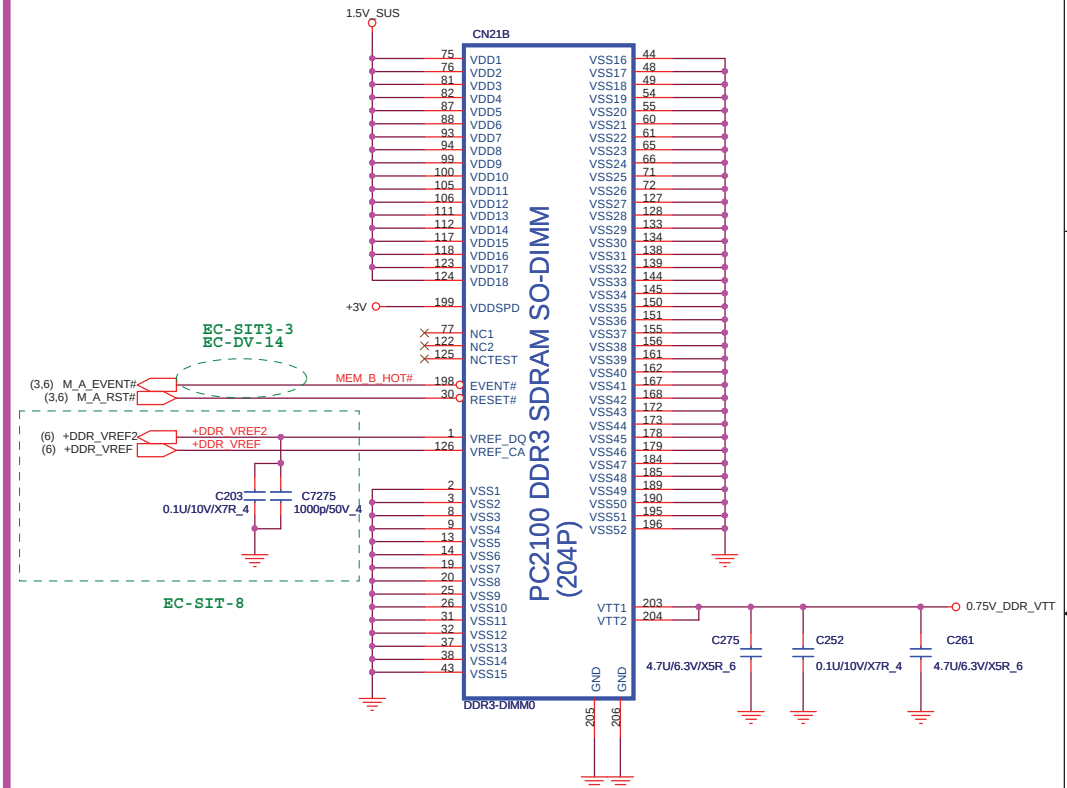
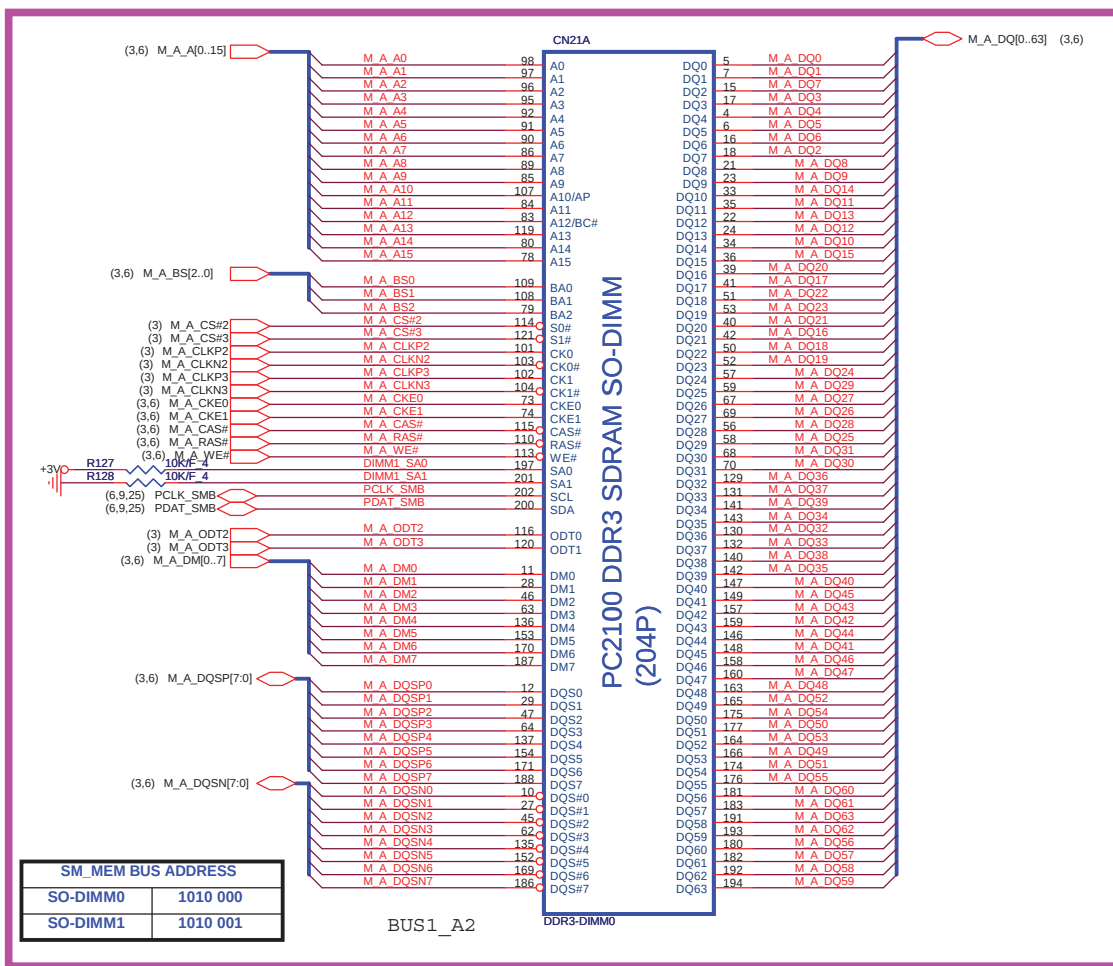




1.5V\_SUS (3.5,7,27,31,36)  
+DDR\_VREF\_DIMM (7,31)  
0.75V\_DDR\_VTT (7,31,36)

+3V (4,5,7,8,9,10,11,12,13,14,15,16,17,19,20,21,23,24,25,26,27,30,32,33,35,36)

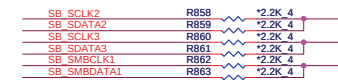
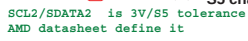
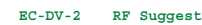
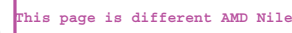
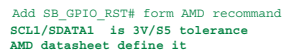
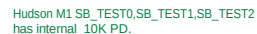














SATA PORT 0,1,2,3  
can support AHCI  
mode

PLACE SATA AC COUPLING  
CAPS CLOSE TO Hudson M1

## SATA HDD

(17) SATA\_TXP0  
(17) SATA\_TXN0  
(17) SATA\_RXN0  
(17) SATA\_RXP0

C1052 0.01U/16V/X7R 4  
C1053 0.01U/16V/X7R 4  
C1054 0.01U/16V/X7R 4  
C1055 0.01U/16V/X7R 4

SATA\_TXP0 C AH9  
SATA\_TXN0 C AJ9  
SATA\_RXN0 C AJ8  
SATA\_RXP0 C AH8

T282 AH10  
T283 AJ10  
T284 AG10  
T285 AF10  
T286 AG12  
T287 AF12  
T288 AJ12  
T289 AH12  
T290 AH14  
T291 AJ14  
T292 AG14  
T293 AF14  
T294 AG17  
T295 AF17  
T296 AJ17  
T297 AH17  
T298 AJ18  
T299 AH18  
T300 AH19  
T301 AJ19

XTLVDD\_SATA-- SATA  
crystal power  
PLVDD\_SATA--  
SATA PLL  
POWER

PLACE SATA\_CAL RES  
VERY CLOSE TO BALL  
OF Hudson M1

AVDD\_SATA

R867 1K/F 4  
R868 931/F 4  
+3V0 R869 10K/F 4  
AD11

C1056 \*22P/50V/NPO 4  
Y10 \*25MHZ  
R870 \*1M/F 4  
C1057 \*22P/50V/NPO 4  
SATA\_X1 AD16  
SATA\_X2 AC16

SPI\_DI J5  
SPI\_DO E2  
SPI\_CLK K4  
SPI\_CS1# K9  
ROM\_RST# G2  
T131

EC-SIT-14

16Mbit (2M Byte), SPI

Winbond AKE38ZP0N00  
SST AKE28FP0K07  
MX AKE37FP0Z13

SPI\_CS1# R881 \*47 4  
SPI\_CLK R884 \*47 4  
SPI\_DO R884 \*47 4  
SPI\_DI R885 \*15 4  
CE# VDD 8  
SCK 6  
SI 5  
SO 2  
HOLD# 7  
WP# VSS 4  
TP13

EC-DV-2 RF Suggest

SPI\_CLK  
C370 \*15P/50V/NPO\_4

EC-DV-1

## Hudson M1

Part 2 of 5

FLASH

SERIAL ATA

HW MONITOR

SPI ROM

FC\_CLK AH28  
FC\_FBCLKOUT AG28  
FC\_FBCLKIN AF26  
FC\_OE#/GPIO145 AE28  
FC\_AVD#/GPIO146 AG29  
FC\_WE#/GPIO148 AG26  
FC\_CE1#/GPIO149 AE27  
FC\_CE2#/GPIO150 AE29  
FC\_INT1/GPIO144 AF29  
FC\_INT2/GPIO147 AH27  
FC\_ADQ0/GPIO128 AJ27  
FC\_ADQ1/GPIO129 AJ26  
FC\_ADQ2/GPIO130 AH25  
FC\_ADQ3/GPIO131 AH24  
FC\_ADQ4/GPIO132 AG23  
FC\_ADQ5/GPIO133 AH23  
FC\_ADQ6/GPIO134 AJ22  
FC\_ADQ7/GPIO135 AG21  
FC\_ADQ8/GPIO136 AE21  
FC\_ADQ9/GPIO137 AJ23  
FC\_ADQ10/GPIO138 AJ23  
FC\_ADQ11/GPIO139 AJ24  
FC\_ADQ12/GPIO140 AJ25  
FC\_ADQ13/GPIO141 AG25  
FC\_ADQ14/GPIO142 AH26  
FC\_ADQ15/GPIO143

FANOUT0/GPIO52 W5  
FANOUT1/GPIO53 W6  
FANOUT2/GPIO54 Y9  
FANIN0/GPIO56 W7  
FANIN1/GPIO57 Y9  
FANIN2/GPIO58 W8

TEMPIN0/GPIO171 A6  
TEMPIN1/GPIO172 A5  
TEMPIN2/GPIO173 B5  
TEMPIN3/TALERT#/GPIO174 C7  
TEMP\_COMM

VIN0/GPIO175 A3  
VIN1/GPIO176 B4  
VIN2/GPIO177 C5  
VIN3/GPIO178 A7  
VIN4/GPIO179 B7  
VIN5/GPIO180 B8  
VIN6/GBE\_STAT3/GPIO181 B8  
VIN7/GBE\_LED3/GPIO182 A8

NC1 G27  
NC2 Y2

W5 CCD\_ON (13)  
W6 BT\_ON (20,23)  
W7 WLAN\_OFF# (20)  
W8 BT\_DET# (23)  
W9 WWAN\_OFF# (21)

B6 TEMPIN0  
A6 TEMPIN1  
A5 TEMPIN2  
B5 SB\_TALERT#  
C7 SB\_TALERT# (4)

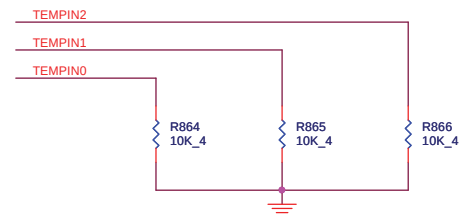
A3 CPU\_TYPE  
B4 SB\_HOLE\_TIME  
A4 CPU\_SENSOR  
C5 BOARD\_ID0  
A7 BOARD\_ID1  
B7 BOARD\_ID2  
B8 BOARD\_ID3

R917 10K 4

AVDD\_SATA (11)  
+3V (4,5,6,7,8,9,11,12,13,14,15,16,17,19,20,21,23,24,25,26,27,30,32,33,35,36)  
3V\_S5 (8,9,11,12,18,20,23,25,26,36)  
3V\_PCU (8,13,14,15,18,25,26,29,30,36)

This page is different AMD Nile

AMD recommend : TEMPIN0 / TEMPIN1 / TEMPIN2  
can not maintain on floating stages when without usage.  
Do not care pull high or pull down.

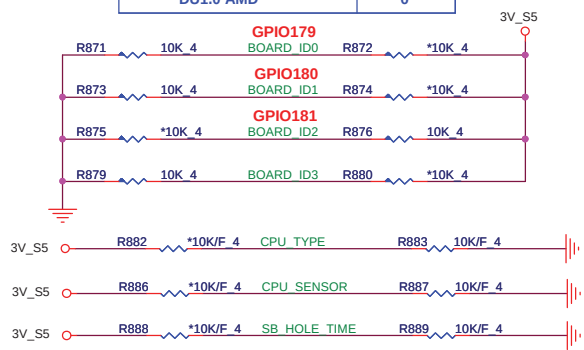


MB ID

| CPU THERMAL | GPIO179 |
|-------------|---------|
| External    | 1       |
| SB-TSI      | 0       |

| SB8XX Hold Time | GPIO180 |
|-----------------|---------|
| 1.2V            | 1       |
| 1.1V            | 0       |

| DU1/MK2   | GPIO181 |
|-----------|---------|
| MK2.0 AMD | 1       |
| DU1.0 AMD | 0       |



Quanta Computer Inc.  
PROJECT : MK2.0

|       |                          |                |
|-------|--------------------------|----------------|
| Size  | Document Number          | Rev            |
|       | HUDSON SATA/BIDS(3/5)    | 1A             |
| Date: | Friday, October 29, 2010 | Sheet 10 of 47 |

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PLACE ALL THE DECOUPLING CAPS ON  
THIS SHEET CLOSE TO SB AS POSSIBLE

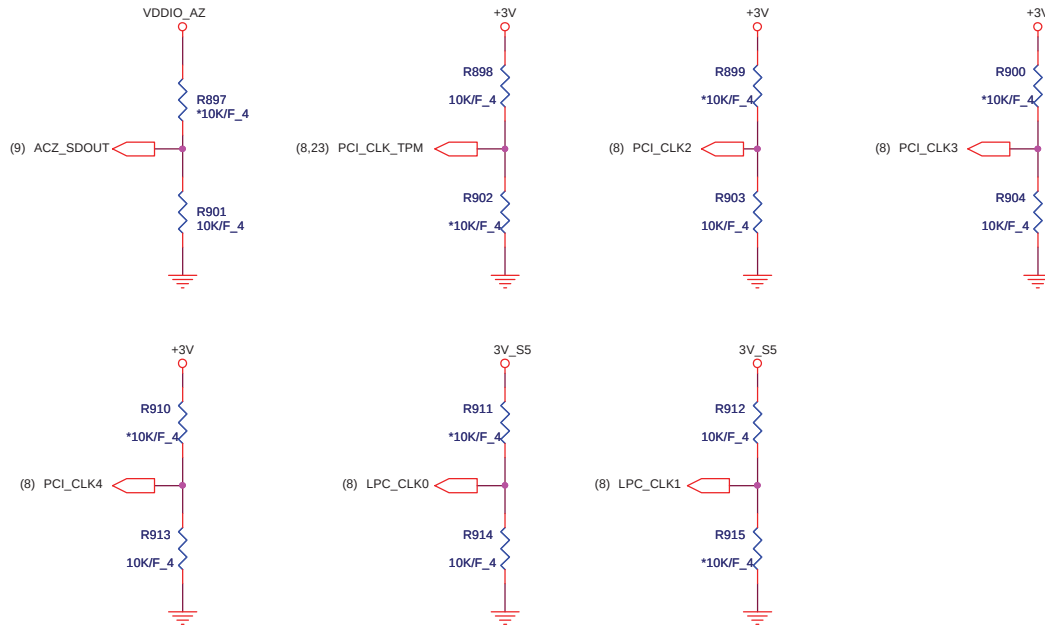




OVERLAP COMMON PADS WHERE  
POSSIBLE FOR DUAL-OP RESISTORS.

## REQUIRED STRAPS

internal have pull  
Hi 10K , confirm AMD  
ward this pull Hi  
not need



PCI\_CLK4 CPU/NB HT Clock Selection  
0 V - Reserved.  
3.3 V - Required setting for integrated clock mode.  
This strap is not used if the strap CLKGEN is  
configured for external clock generator mode.

## REQUIRED STRAPS

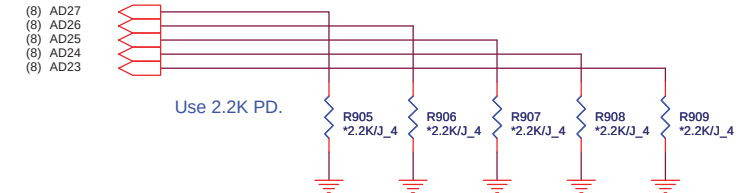
|           | AZ_SDOUT                    | PCI_CLK1                   | PCI_CLK2                           | PCI_CLK3                      | PCI_CLK4                     | LPC_CLK0               | LPC_CLK1                  | GPIO200                                   | GPIO199 |
|-----------|-----------------------------|----------------------------|------------------------------------|-------------------------------|------------------------------|------------------------|---------------------------|-------------------------------------------|---------|
| PULL HIGH | LOW POWER MODE              | ALLOW PCIE Gen2<br>DEFAULT | Watchdog Timer Enabled             | USE DEBUG STRAP               | non_Fusion CLOCK MODE        | EC ENABLED             | CLKGEN ENABLED<br>DEFAULT | H,H = Reserved<br>H,L = SPI ROM (Default) |         |
| PULL LOW  | PERFORMANCE MODE<br>DEFAULT | FORCE PCIE Gen1            | Watchdog Timer Disabled<br>DEFAULT | IGNORE DEBUG STRAP<br>DEFAULT | FUSION CLOCK MODE<br>DEFAULT | EC DISABLED<br>DEFAULT | CLKGEN DISABLED           | L,H = LPC ROM<br>L,L = FWH ROM            |         |

VDDIO\_AZ (11)  
+3V (4,5,6,7,8,9,10,11,13,14,15,16,17,19,20,21,23,24,25,26,27,30,32,33,35,36)  
3V\_S5 (8,9,10,11,18,20,23,25,26,36)

12

## DEBUG STRAPS

HUDSON-M1 HAS 15K INTERNAL PU FOR PCI\_AD[27:23]

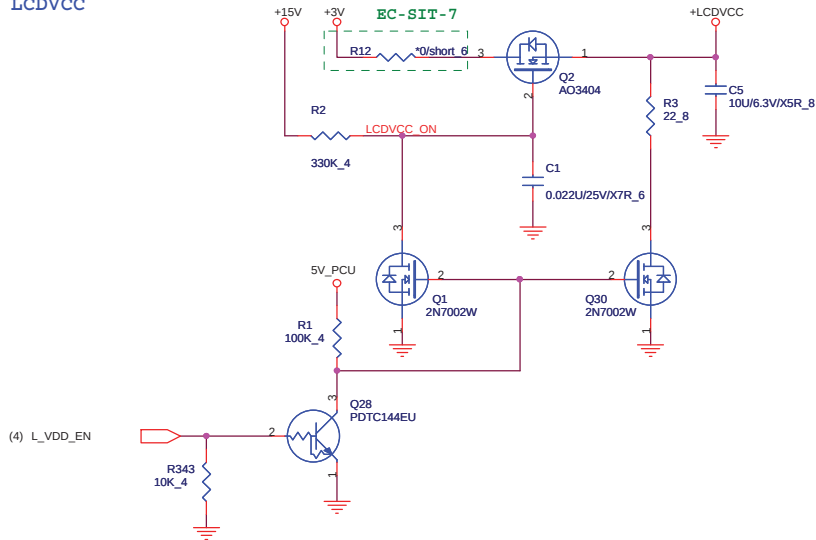


|           | PCI_AD27               | PCI_AD26                       | PCI_AD25              | PCI_AD24                           | PCI_AD23                        |
|-----------|------------------------|--------------------------------|-----------------------|------------------------------------|---------------------------------|
| PULL HIGH | USE PCI PLL<br>DEFAULT | DISABLE ILA AUTORUN<br>DEFAULT | USE FC PLL<br>DEFAULT | USE DEFAULT PCIE STRAPS<br>DEFAULT | DISABLE PCI MEM BOOT<br>DEFAULT |
| PULL LOW  | BYPASS PCI PLL         | ENABLE ILA AUTORUN             | BYPASS FC PLL         | USE EEPROM PCIE STRAPS             | ENABLE PCI MEM BOOT             |

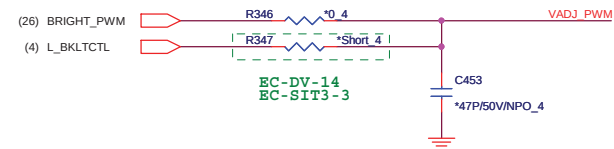
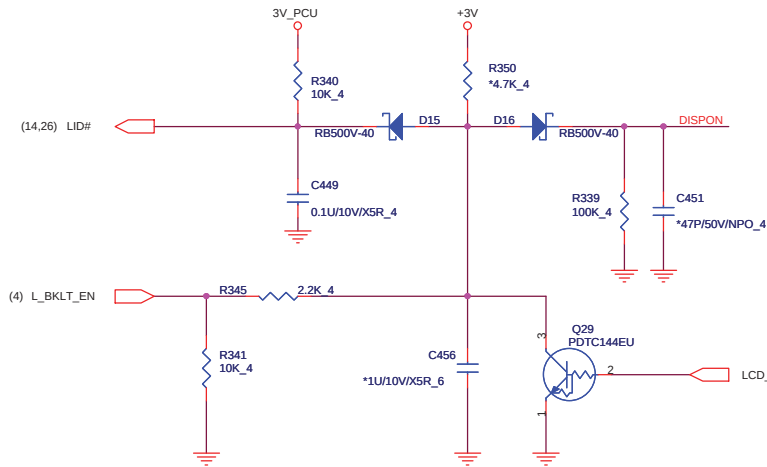
<http://hobi-elektronika.net>

+3V (4,5,6,7,8,9,10,11,12,14,15,16,17,19,20,21,23,24,25,26,27,30,32,33,35,36)  
 3V\_PCU (8,10,14,15,18,25,26,29,30,36)  
 +15V (23,30,33,36)  
 +5V (14,16,17,22,24,26,27,36)  
 VIN (29,30,31,32,33,35,36)  
 5V\_SUS (25,32,34,35,36)  
 5V\_PCU (27,29,30,31,33,36)

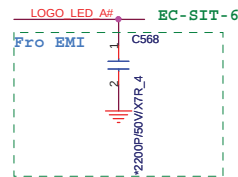
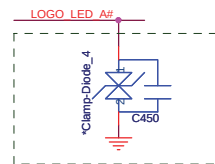
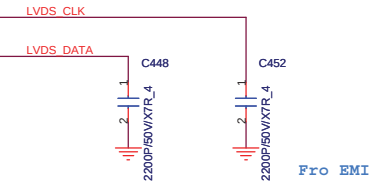
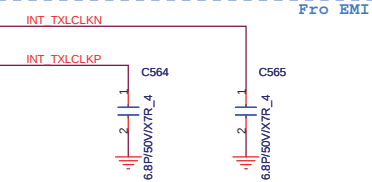
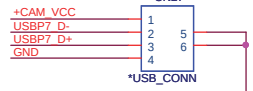
## LCDVCC



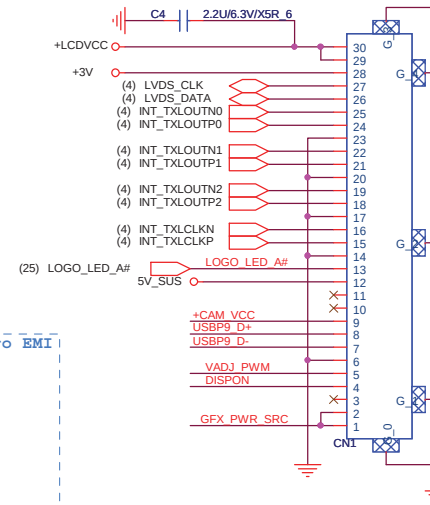
## Back light



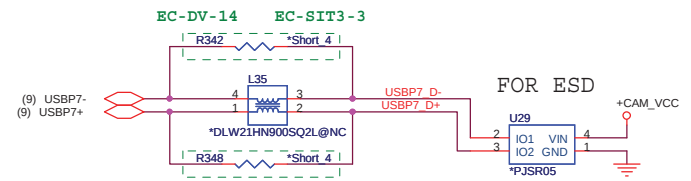
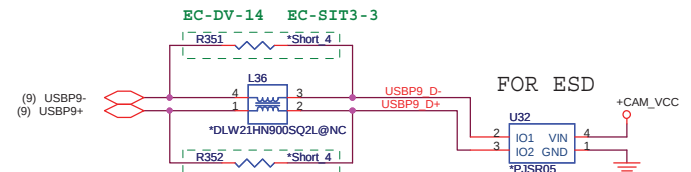
## EC-DV2-1



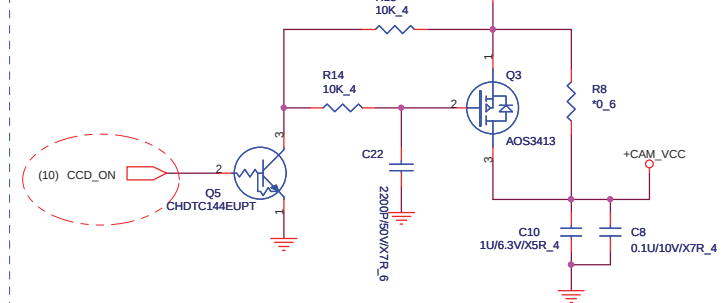
## LVD-A30SFY+



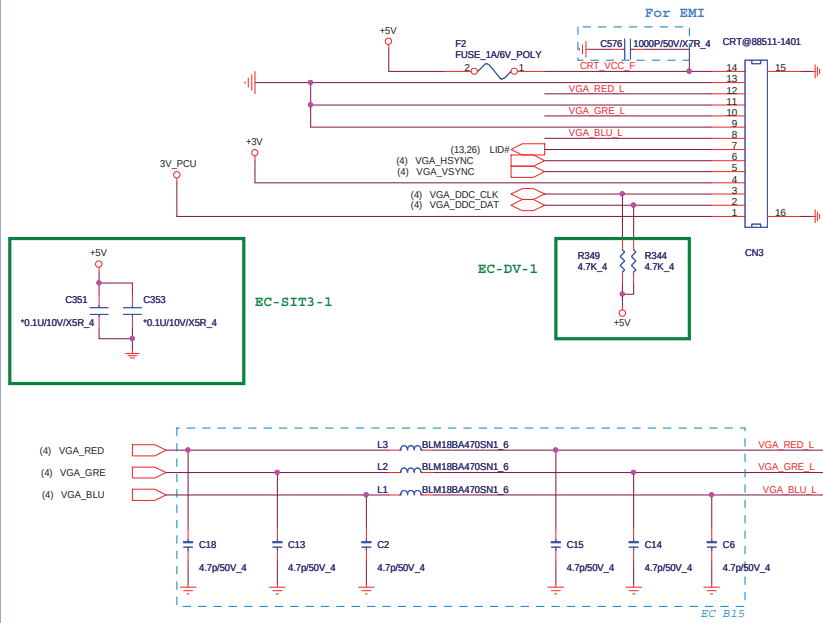
LVDS (11.6")  
 (1024x600,  
 1366x768)



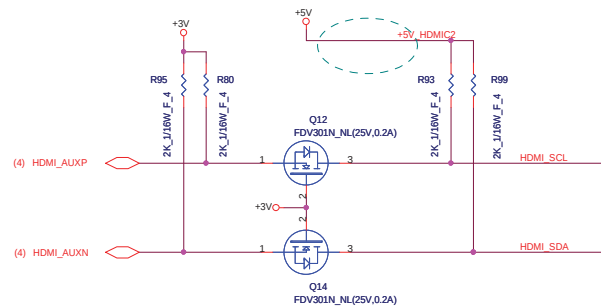
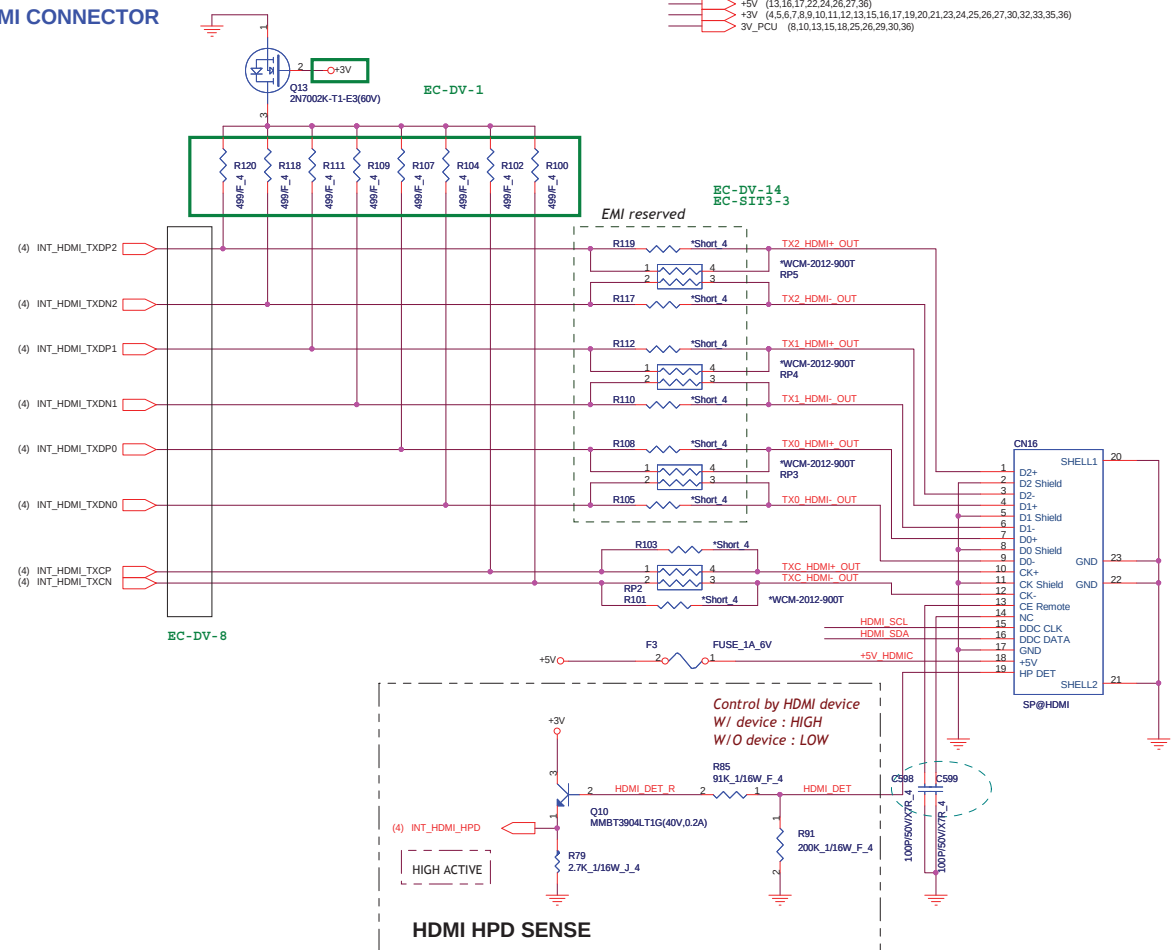
## CAMERA VCC Control



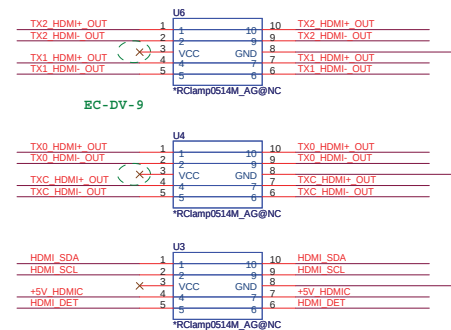
## CRT FFC CONNECTOR



## HDMI CONNECTOR



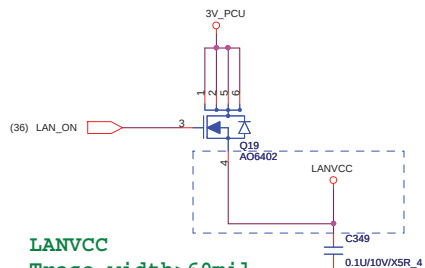
For ESD ---> Layout note: Place close to HDMI Conn



<http://hobi-elektronika.net>

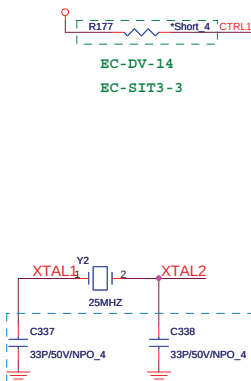


## LANVCC

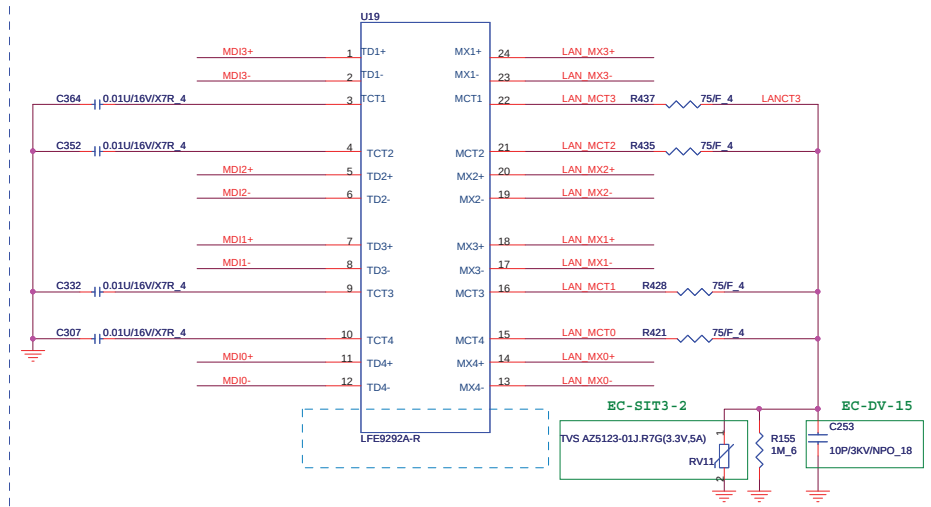


LANVCC  
Trace width>60mil,  
Trace length<200mil

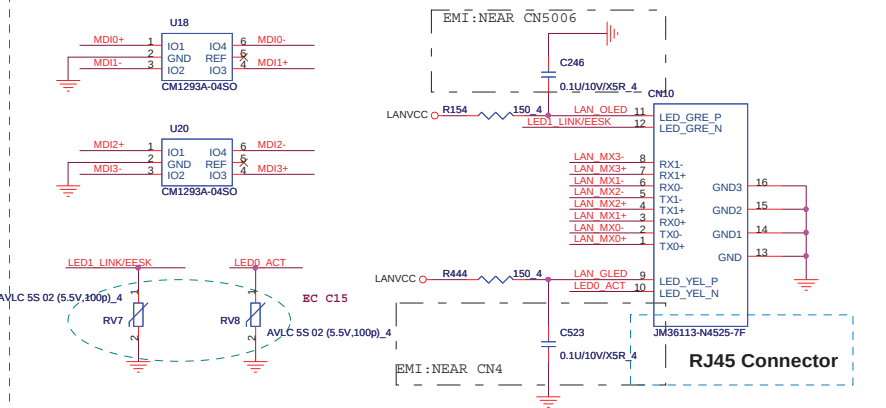
## LANVCC



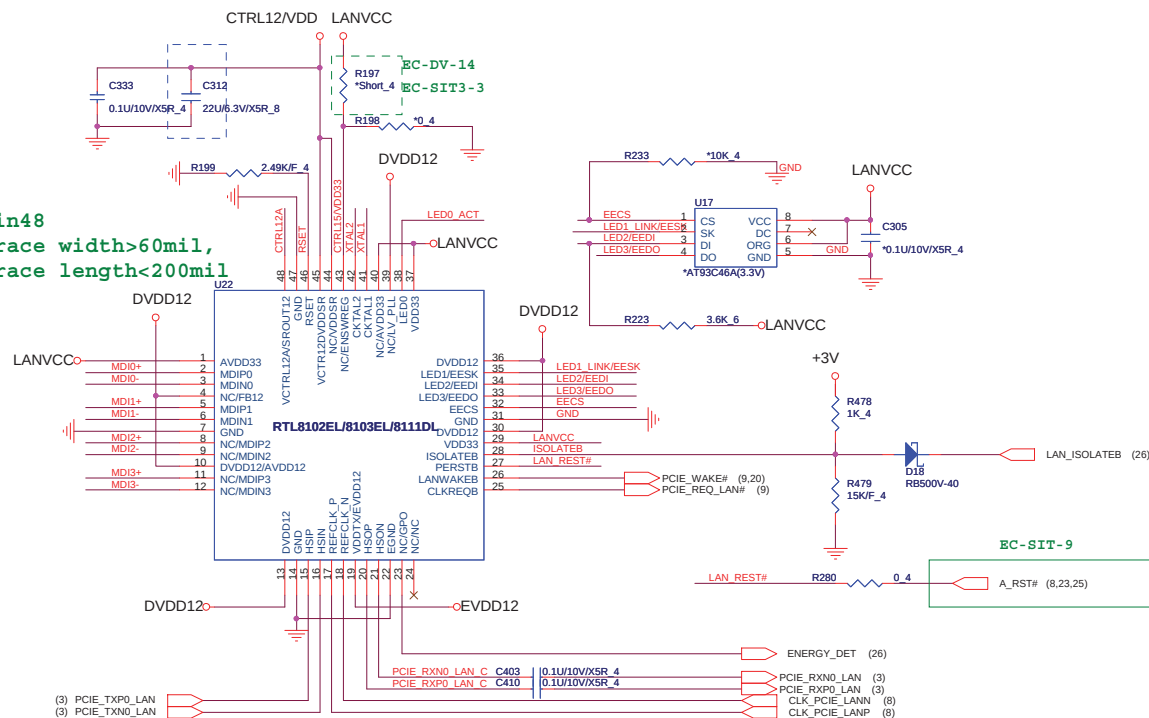
## Transformer



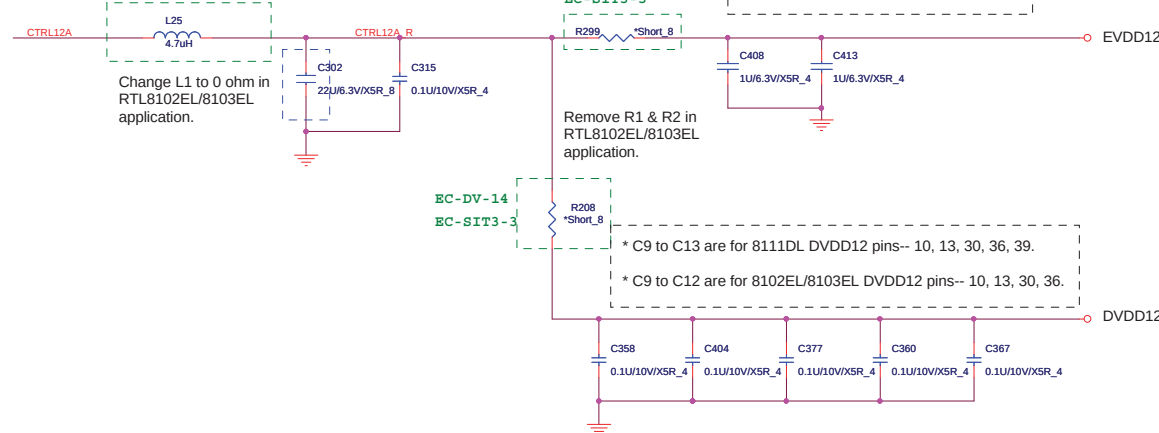
## RJ45 Connector



Pin48  
Trace width>60mil,  
Trace length<200mil



Note 1: The Trace length between L1 and 8111DL's Pin 1 must be within 0.5 cm. C5 and C8 to L1 must be within 0.5cm. Refer to Layout guide for more detail.



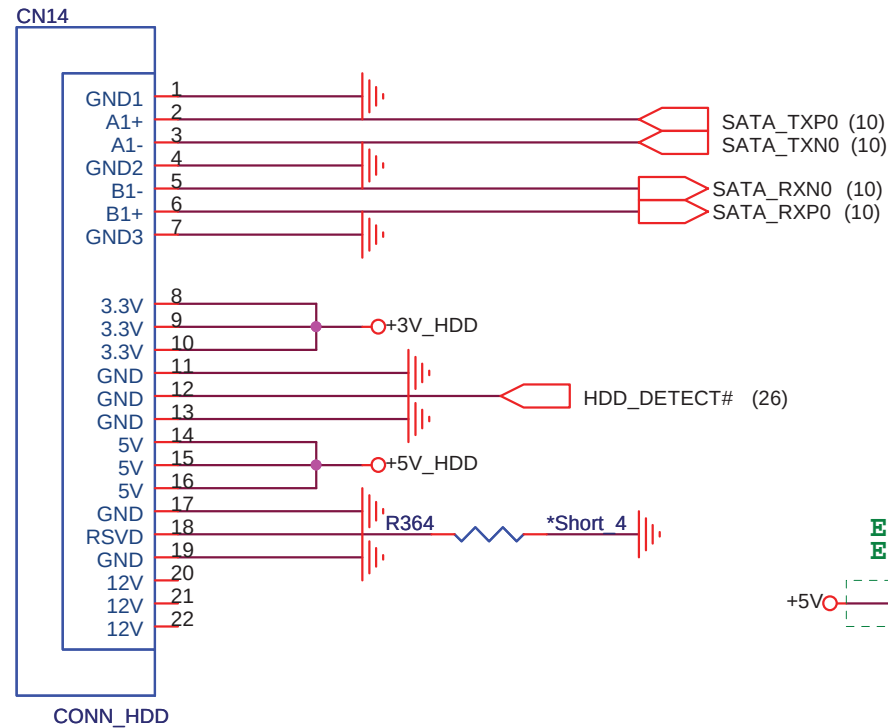
<http://hobi-elektronika.net>



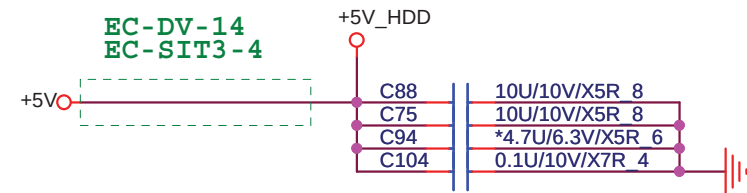


1

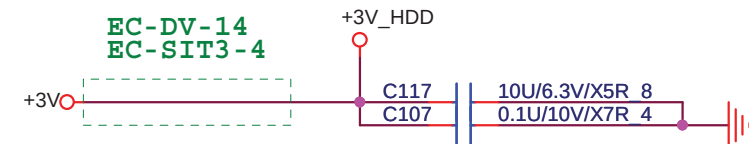
+3V (4,5,6,7,8,9,10,11,12,13,14,15,16,19,20,21,23,24,25,26,27,30,32,33,35,36)  
+5V (13,14,16,22,24,26,27,36)



DC Current rating: 2 A (MAX)



DC Current rating: 3 A (MAX)



Quanta Computer Inc.

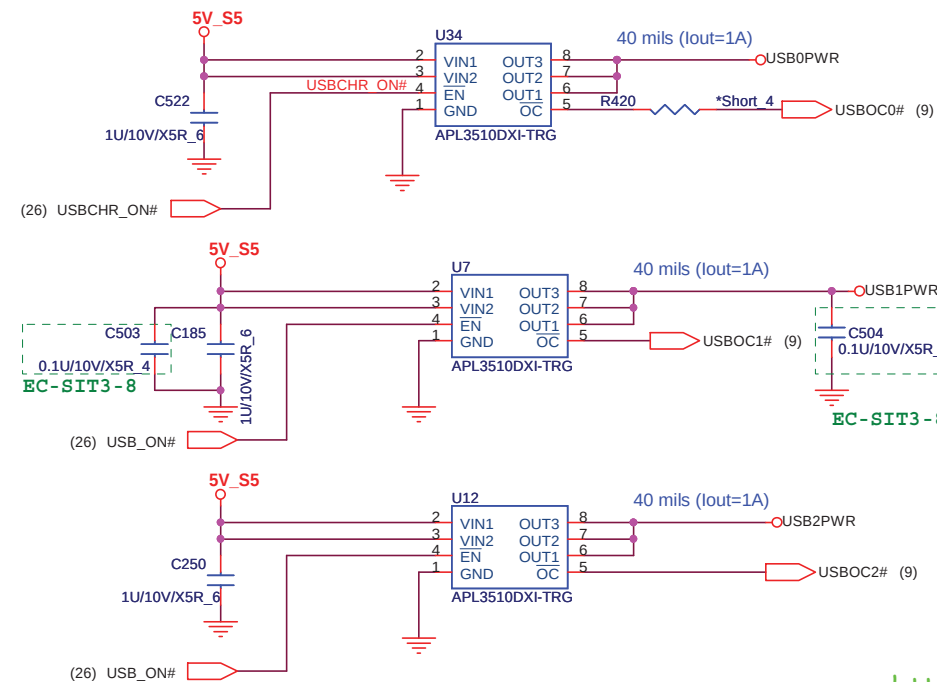
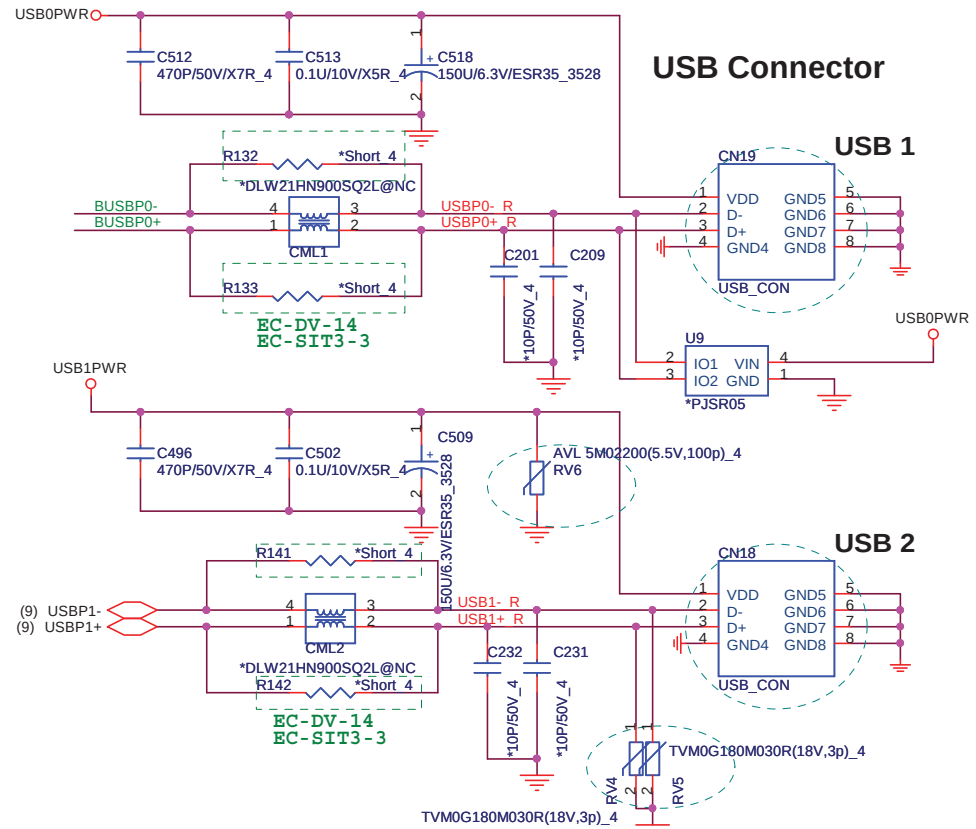
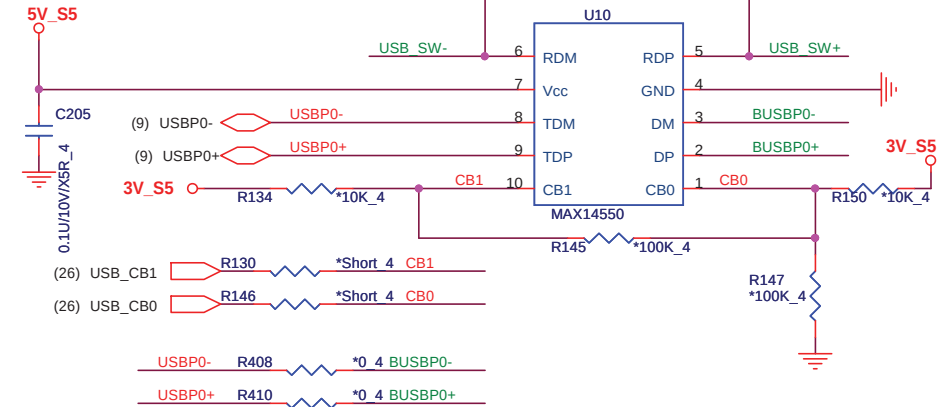
PROJECT : MK2.0

| Size  | Document Number          | Rev            |
|-------|--------------------------|----------------|
|       | <b>SATA</b>              | 1A             |
| Date: | Friday, October 29, 2010 | Sheet 17 of 47 |

# USB SLEEP CHARGE (NEW)

| CB0/CB1 | Function            | Int./Ext. R |
|---------|---------------------|-------------|
| 0 0     | S5 auto detect      | Use Int. R  |
| 0 1     | Blackberry(choice)  | NC          |
| 1 0     | iPod/iPhone(choice) | Use Ext. R  |
| 1 1     | S0 auto detect      | NC          |

## Sleep charger notice



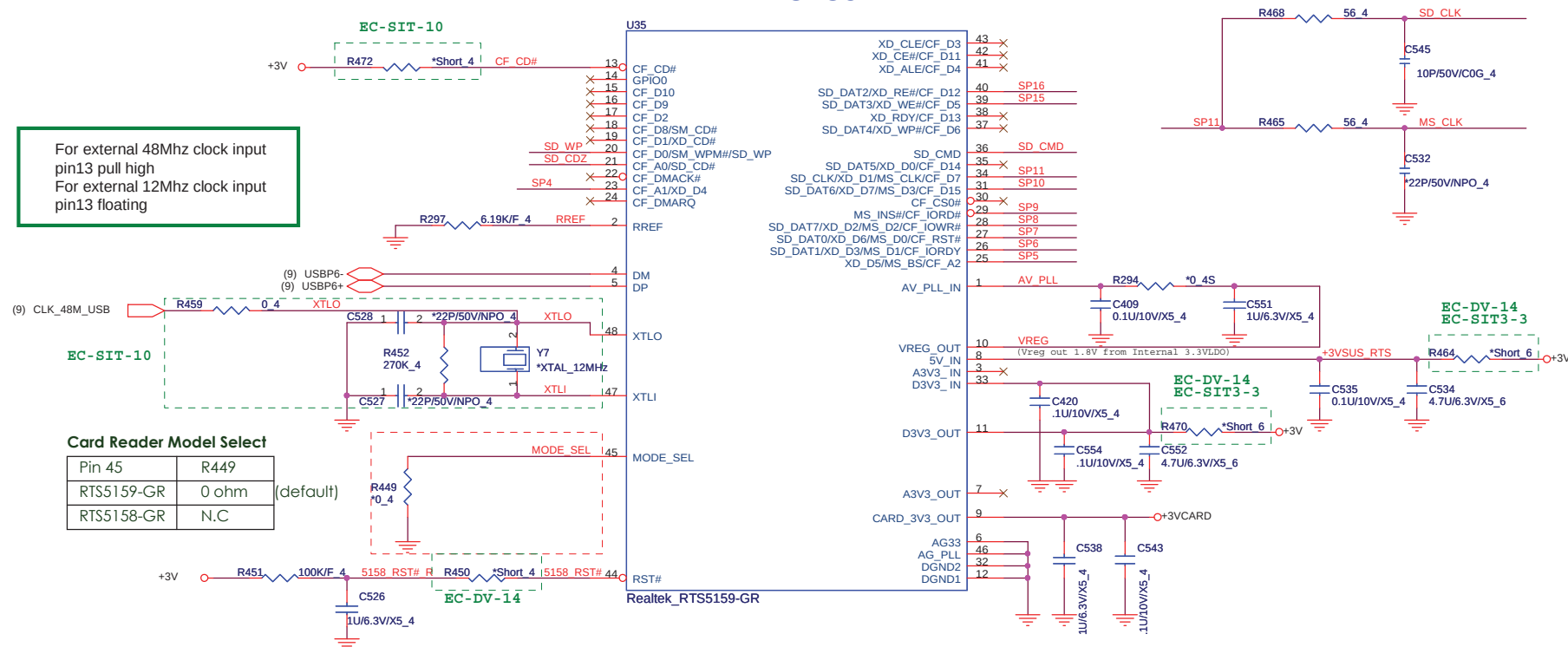
- 5V\_S5 (36)
- 3V\_S5 (8,9,10,11,12,20,23,25,26,36)
- 5V\_SUS (13,25,32,34,35,36)
- 3V\_PCU (8,10,13,14,15,25,26,29,30,36)

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PROJECT : MK2.0

|       |                          |                |
|-------|--------------------------|----------------|
| Size  | Document Number          | Rev            |
|       | <b>USB x 3</b>           | 1A             |
| Date: | Friday, October 29, 2010 | Sheet 18 of 47 |

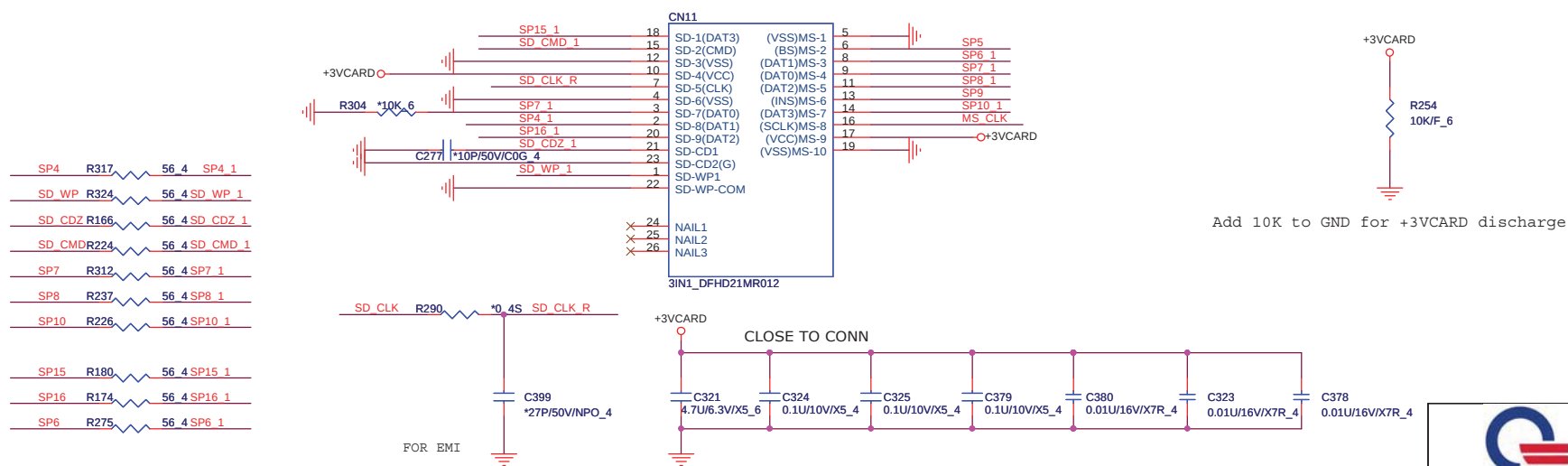
# RTL5159



Note:

|      | SD/MMC  | MS      |
|------|---------|---------|
| SP0  |         |         |
| SP1  |         |         |
| SP2  | SD WP   |         |
| SP3  | SD CD#  |         |
| SP4  | SD DAT1 |         |
| SP5  |         | MS BS   |
| SP6  |         | MS D1   |
| SP7  | SD DAT0 | MS D0   |
| SP8  | SD DAT7 | MS D2   |
| SP9  |         | MS INS# |
| SP10 | SD DAT6 | MS D3   |
| SP11 | SD CLK  | MS SCLK |
| SP12 | SD DAT5 |         |
| SP13 | SD DAT4 |         |
| SP14 |         |         |
| SP15 | SD DAT3 |         |
| SP16 | SD DAT2 |         |
| SP17 |         |         |
| SP18 |         |         |
| SP19 |         |         |

### 3 IN 1 CARD READER



Add 10K to GND for +3VCARD discharge

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+3V (4,5,6,7,8,9,10,11,12,13,14,15,16,17,20,21,23,24,25,26,27,30,32,33,35,36)



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PROJECT : MK2.0

| Size | Document Number | Rev |
|------|-----------------|-----|
|      |                 |     |

|  |                            |    |
|--|----------------------------|----|
|  | <b>Card Reader-RTL5159</b> | 1A |
|--|----------------------------|----|

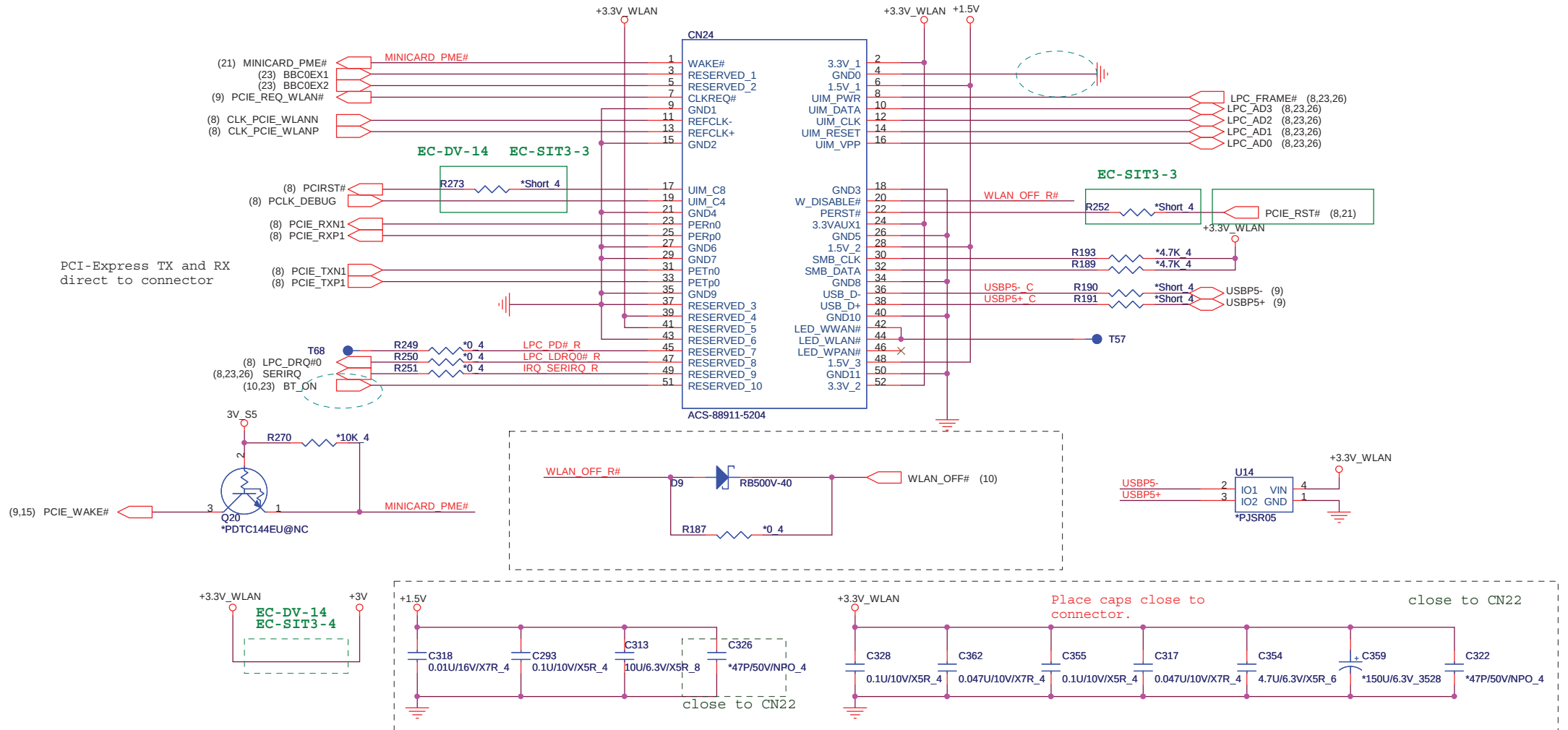
Date: Friday, October 29, 2010 Sheet 19 of 47

|       |                          |       |    |    |    |
|-------|--------------------------|-------|----|----|----|
| Date: | Friday, October 20, 2017 | Sheet | 10 | of | 41 |
|       |                          | 1     |    |    |    |

# MiniCard WLAN connector

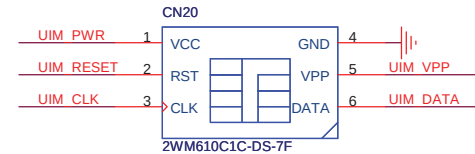
+3V (4,5,6,7,8,9,10,11,12,13,14,15,16,17,19,21,23,24,25,26,27,30,32,33,35,36)  
+1.5V (21,36)  
3V\_S5 (8,9,10,11,12,18,23,25,26,36)

20

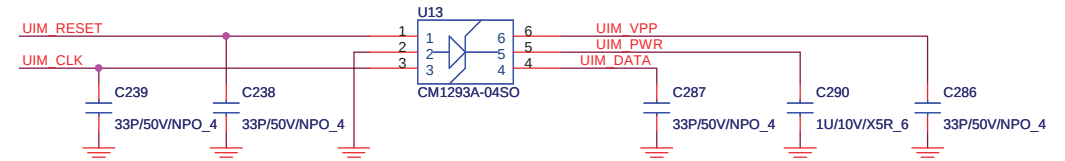


<http://hobi-elektronika.net>

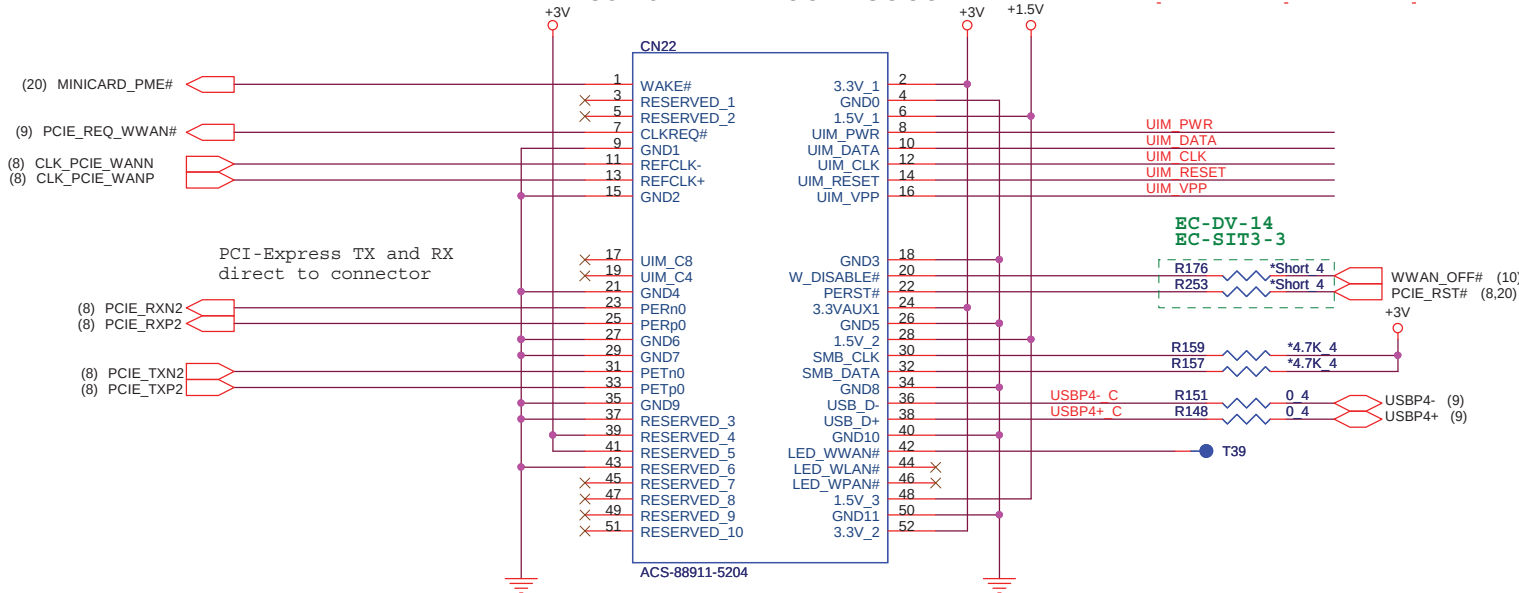
## SIM Card CONN



Layout Note:  
UIM\_RESET, UIM\_CLK, UIM\_DATA routing as short as possible



## MiniCard WWAN connector



EC-DV-14  
EC-SIT3-3

R176 \*Short 4  
R253 \*Short 4

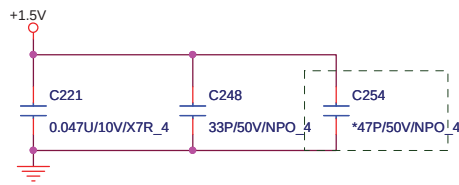
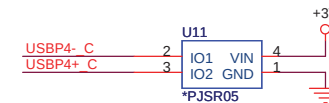
WWAN\_OFF# (10)  
PCIE\_RST# (8,20)

R159 \*4.7K 4  
R157 \*4.7K 4

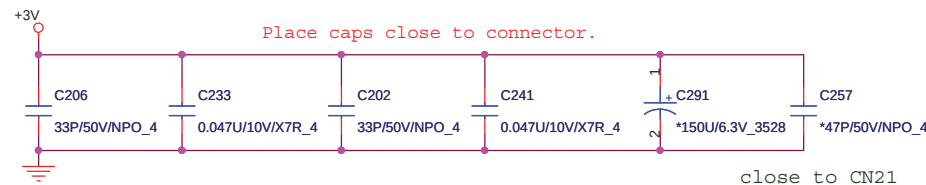
R151 0 4  
R148 0 4

USBP4- C (9)  
USBP4+ C (9)

T39



close to CN21



close to CN21

Place caps close to connector.

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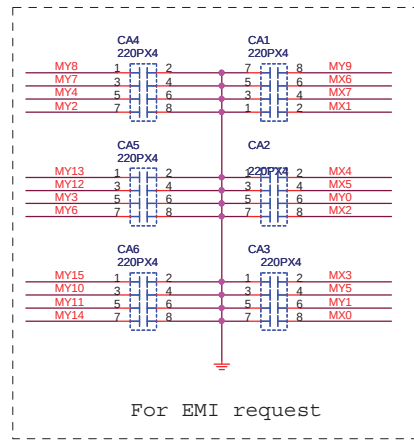
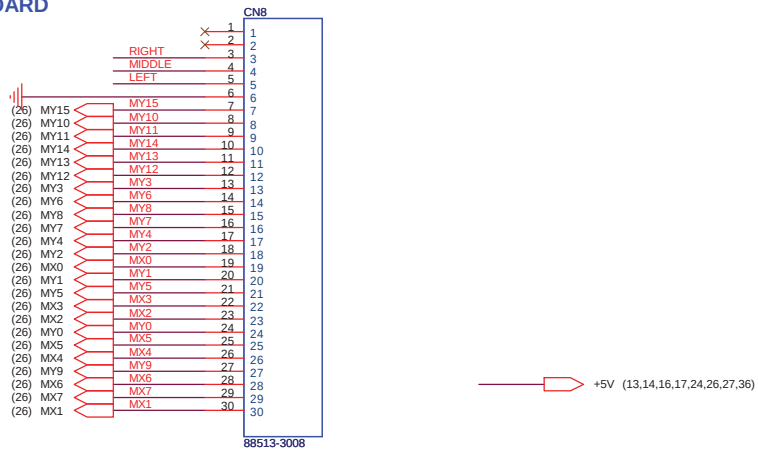


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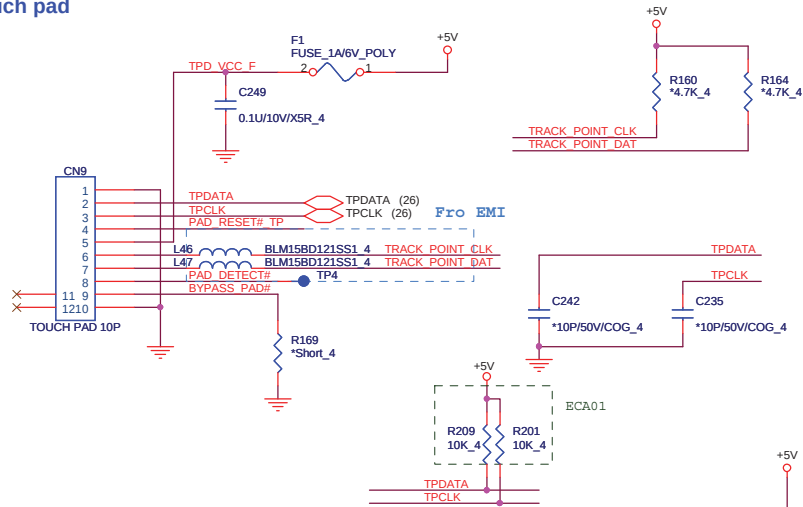
PROJECT : MK2.0

|       |                          |                |
|-------|--------------------------|----------------|
| Size  | Document Number          | Rev            |
|       | WWAN                     | 1A             |
| Date: | Friday, October 29, 2010 | Sheet 21 of 47 |

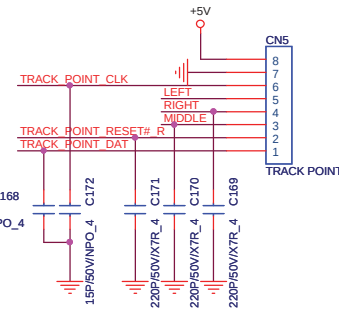
## KEYBOARD



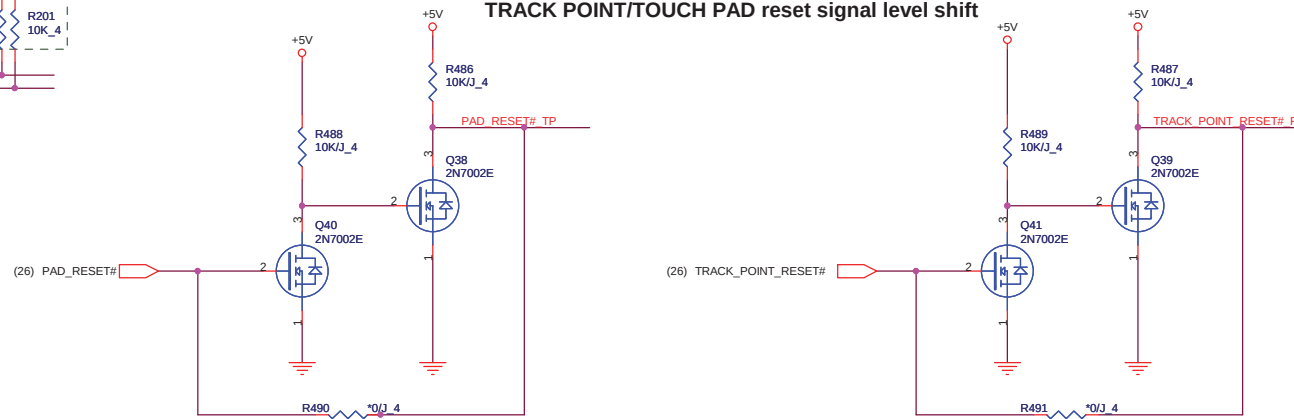
## Touch pad



## TRACK POINT

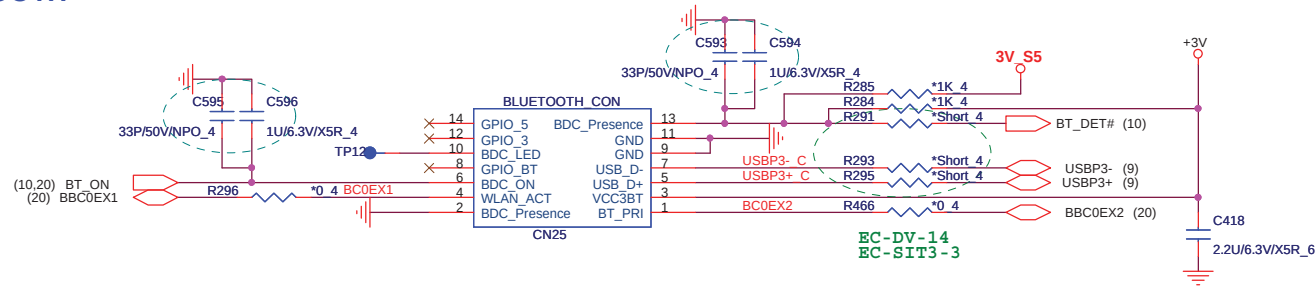


## TRACK POINT/TOUCH PAD reset signal level shift

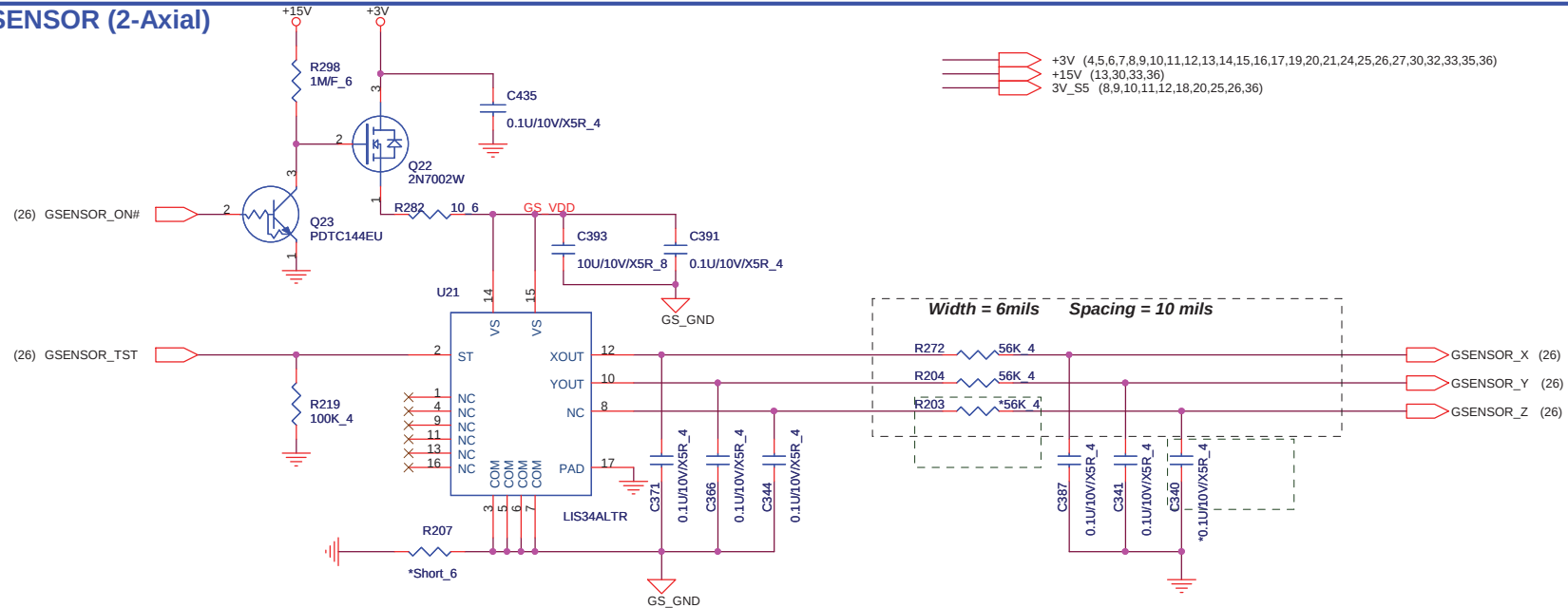




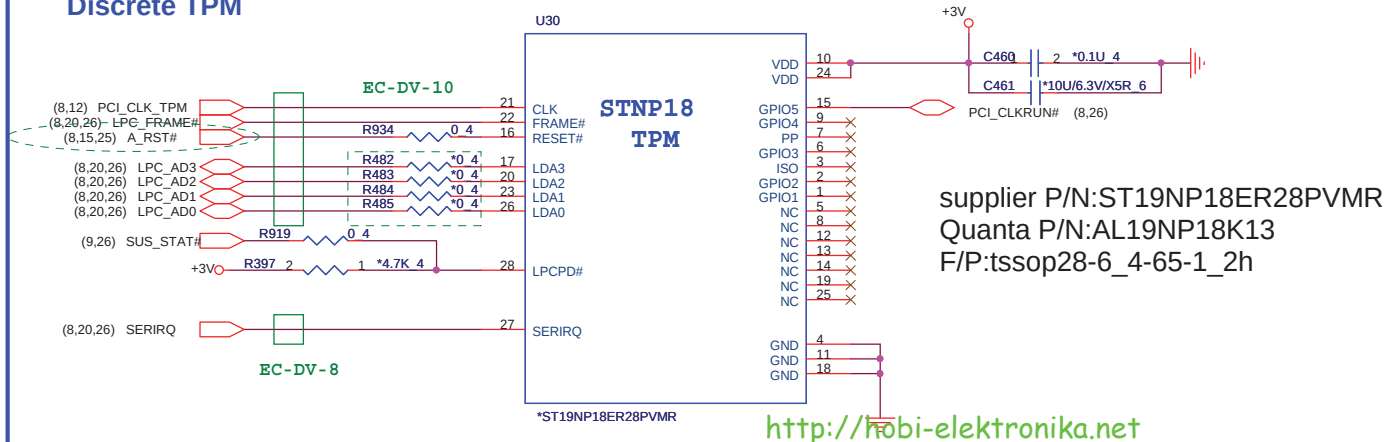
## BLUETOOTH



## G-SENSOR (2-Axial)

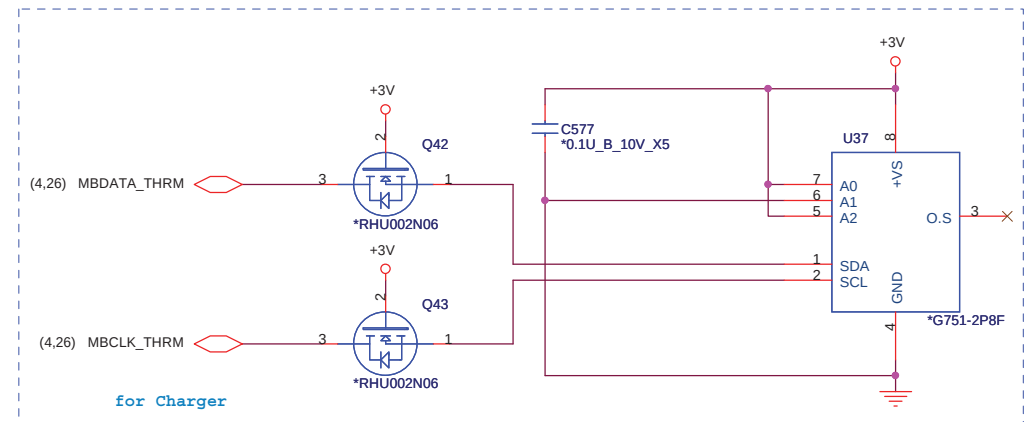
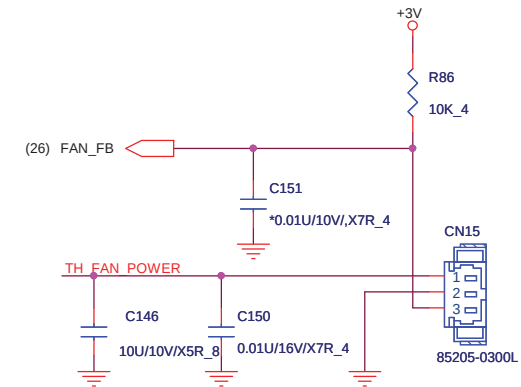
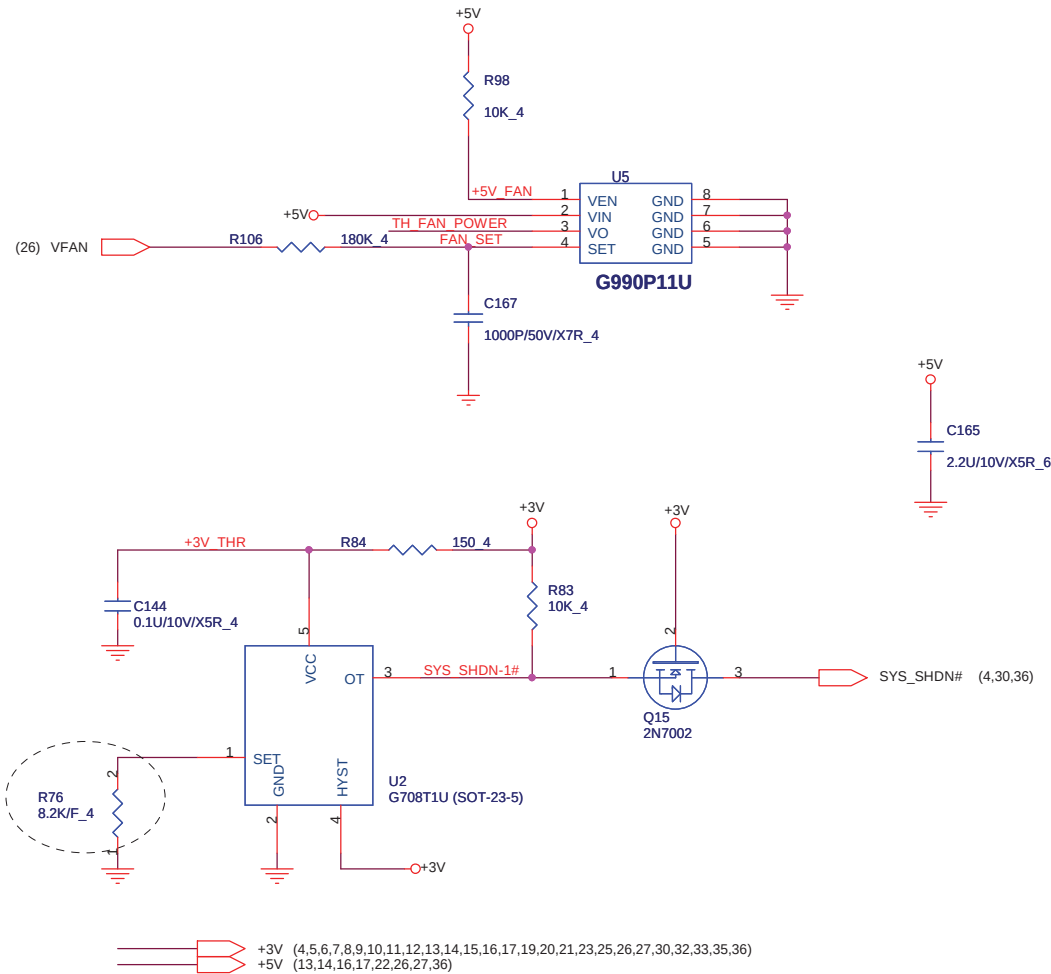


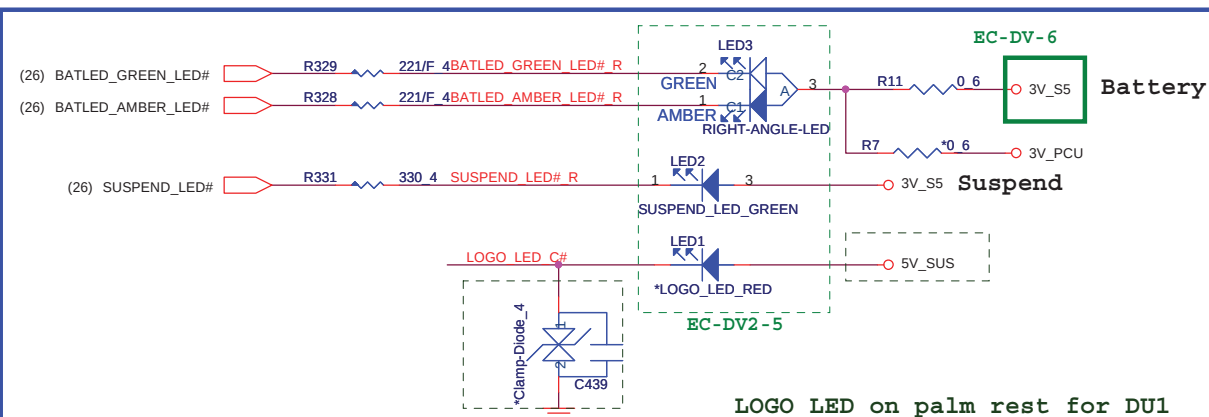
## Discrete TPM



<http://hobi-elektronika.net>

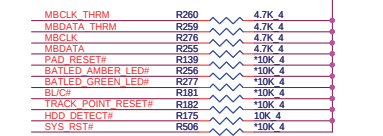
FANPWR = 1.6\*VSET



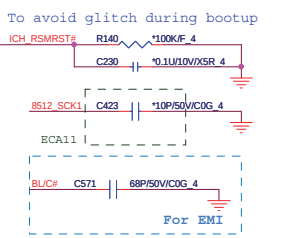
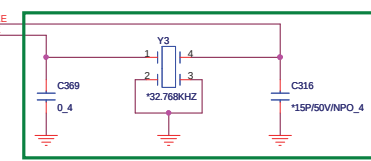
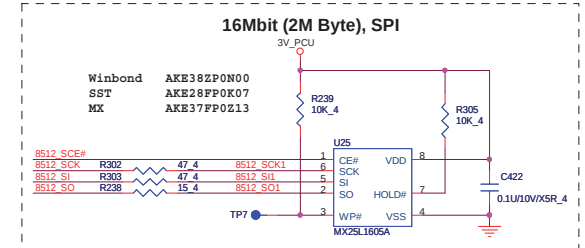
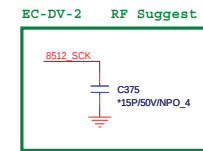
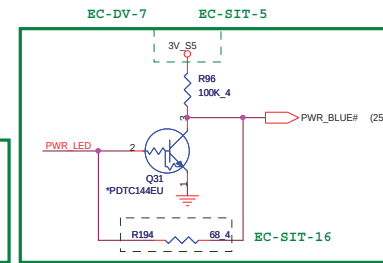
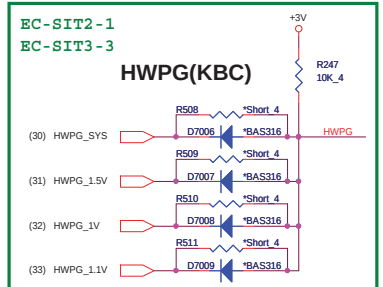
[illegible]

### POWER BUTTON

The schematic diagram illustrates the power button circuit. It features a power switch (CN2) connected to a network of resistors (R4, R6, R10) and capacitors (C562, C563). The circuit is protected by EMI components (2200P/50V/X7R\_4) and includes a MOSFET (C7) and a diode (C9) for protection. The output is connected to the PWR\_BLUE# pin (26) and the NBSWON# pin (26).



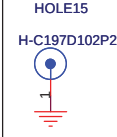
| EC Optional |        |        |
|-------------|--------|--------|
|             | IT8518 | IT8502 |
| R11         | V      |        |
| R7          |        | V      |
| R192        |        | V      |
| R195        | V      |        |
| C350        |        | V      |
| Q31         | V      |        |
| R96         | V      |        |
| R194        |        | V      |



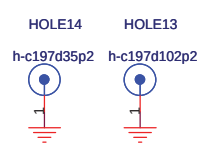
### Hole for CPU support



### MiniCard WLAN

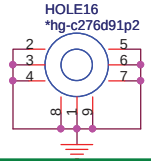


### MiniCard WLAN



EC-DV-13

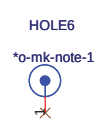
### BLUETOOTH



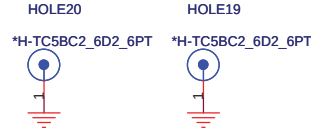
### CRT



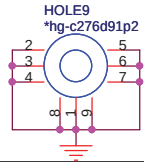
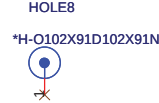
### Keyboard



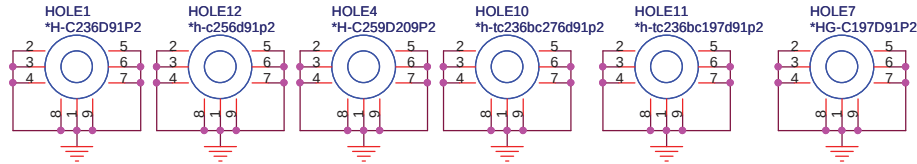
### SB



### Boundary Hole

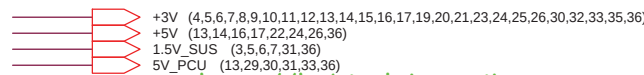
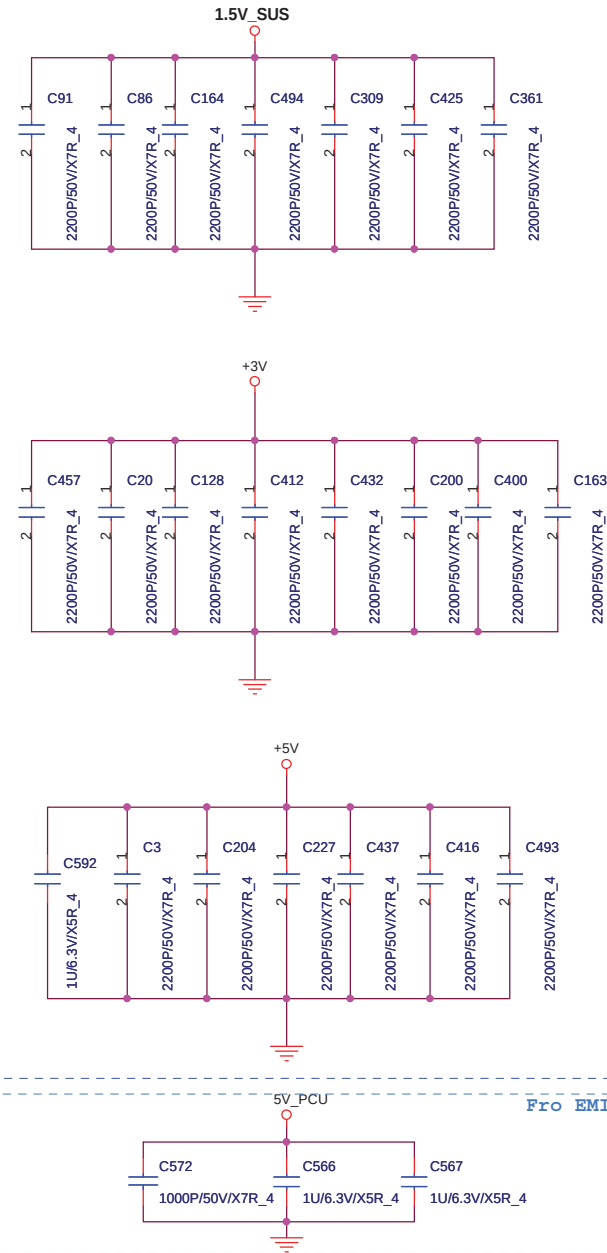


### Boundary Hole



EC-DV-13

### EMI



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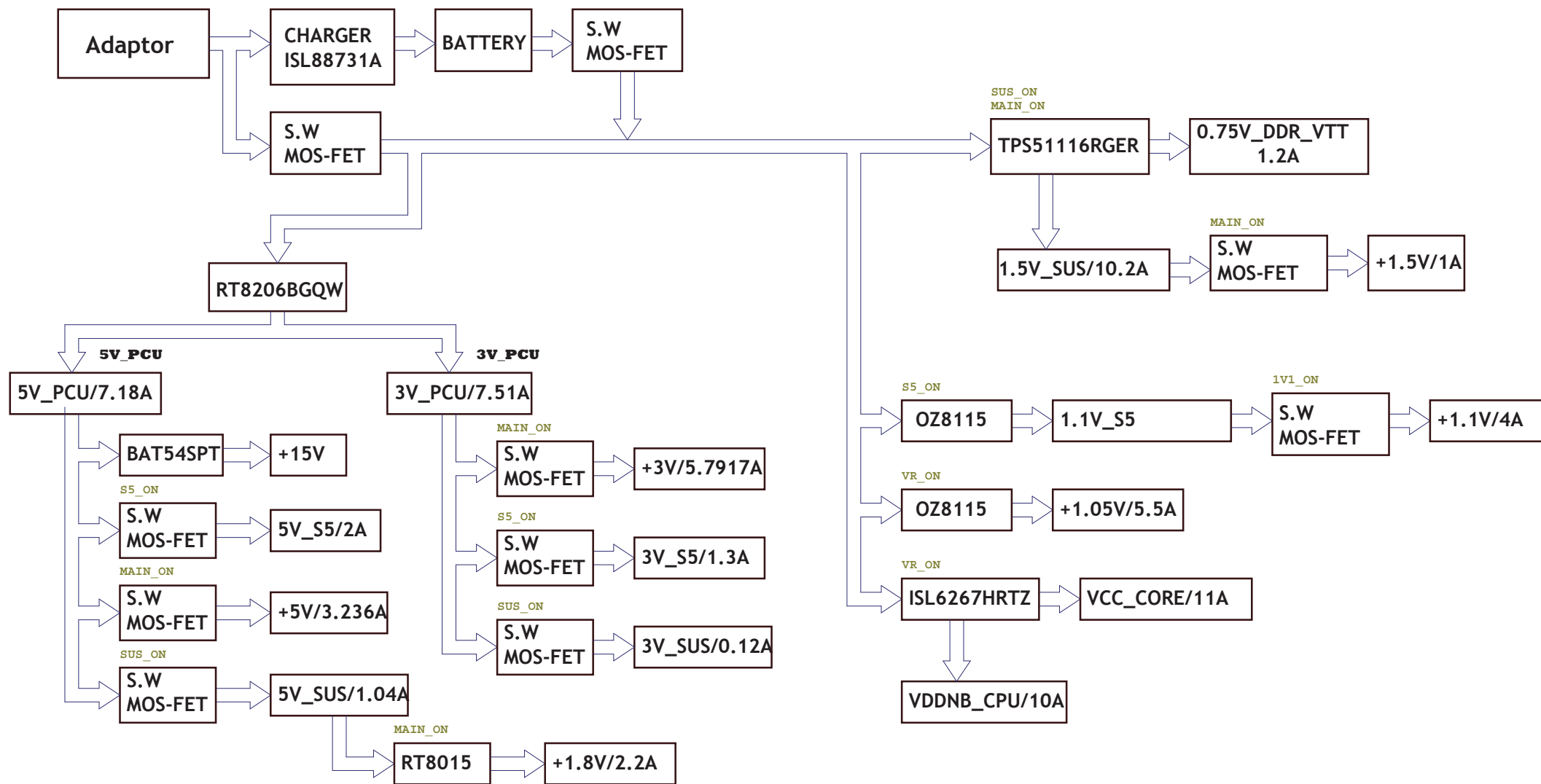
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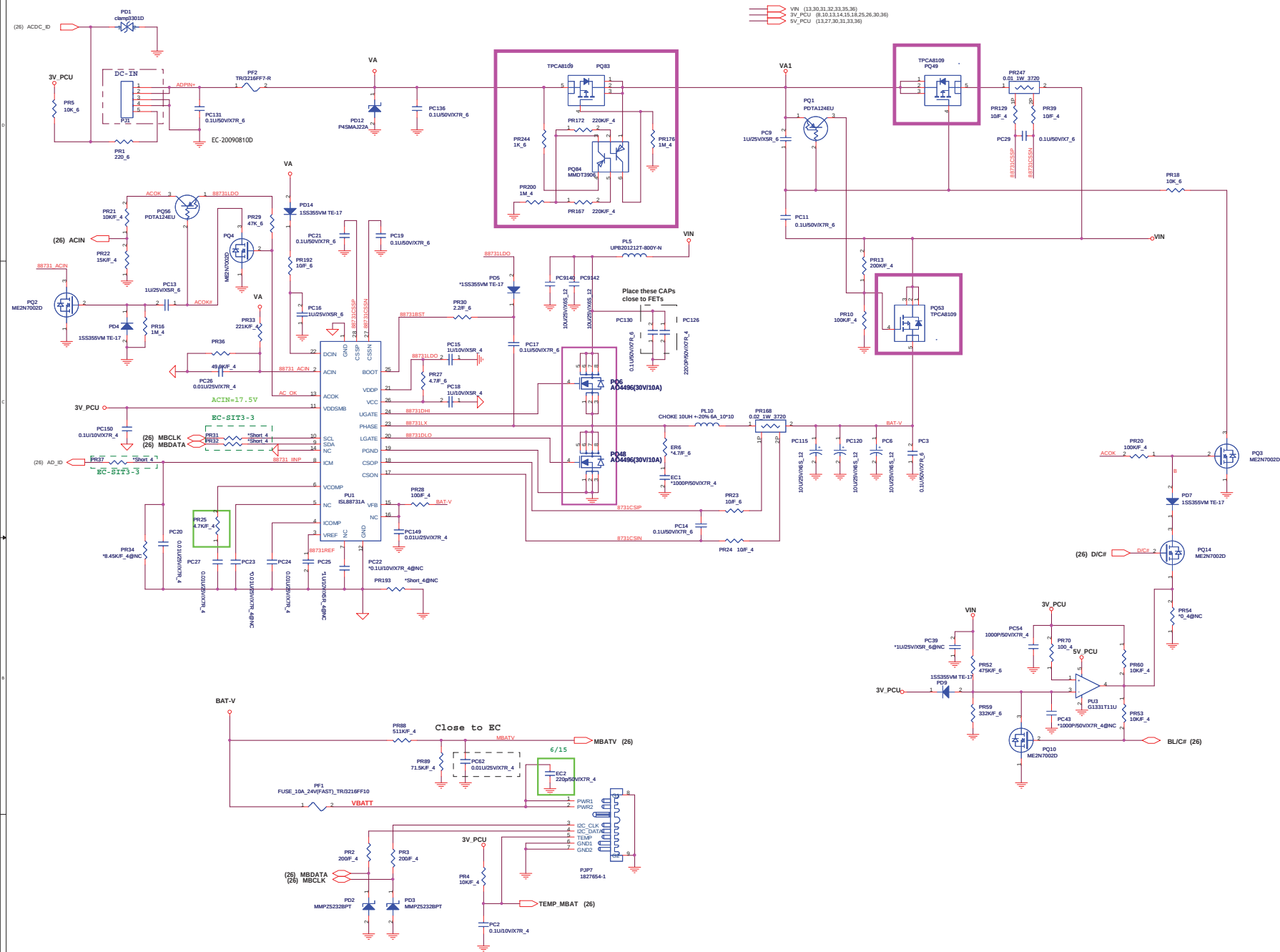
PROJECT : MK2.0

|       |                          |                |
|-------|--------------------------|----------------|
| Size  | Document Number          | Rev            |
|       | <b>Screw Hole/EMI</b>    | 1A             |
| Date: | Friday, October 29, 2010 | Sheet 27 of 47 |

# Brazos SYSTEM POWER BLOCK DIAGRAM

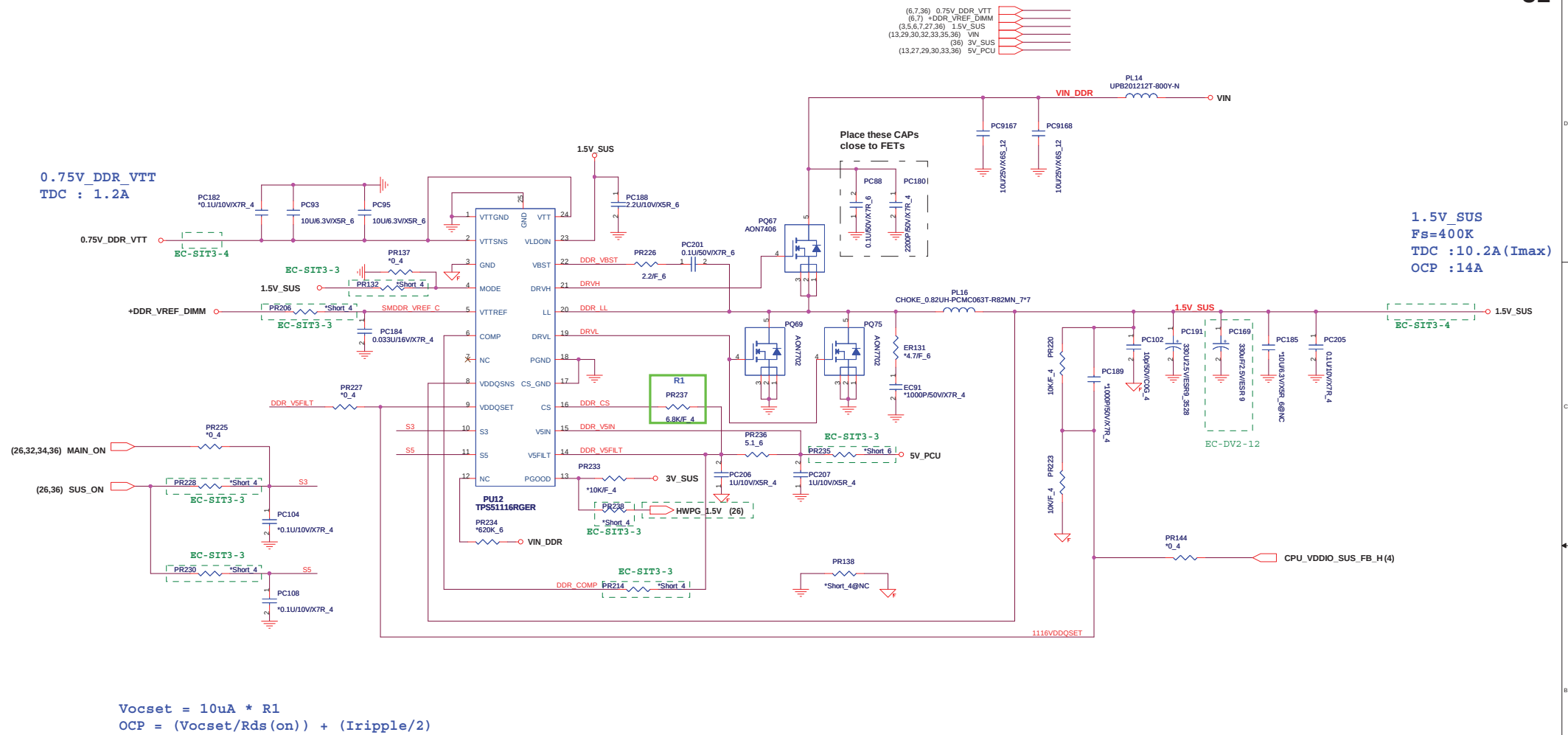
28



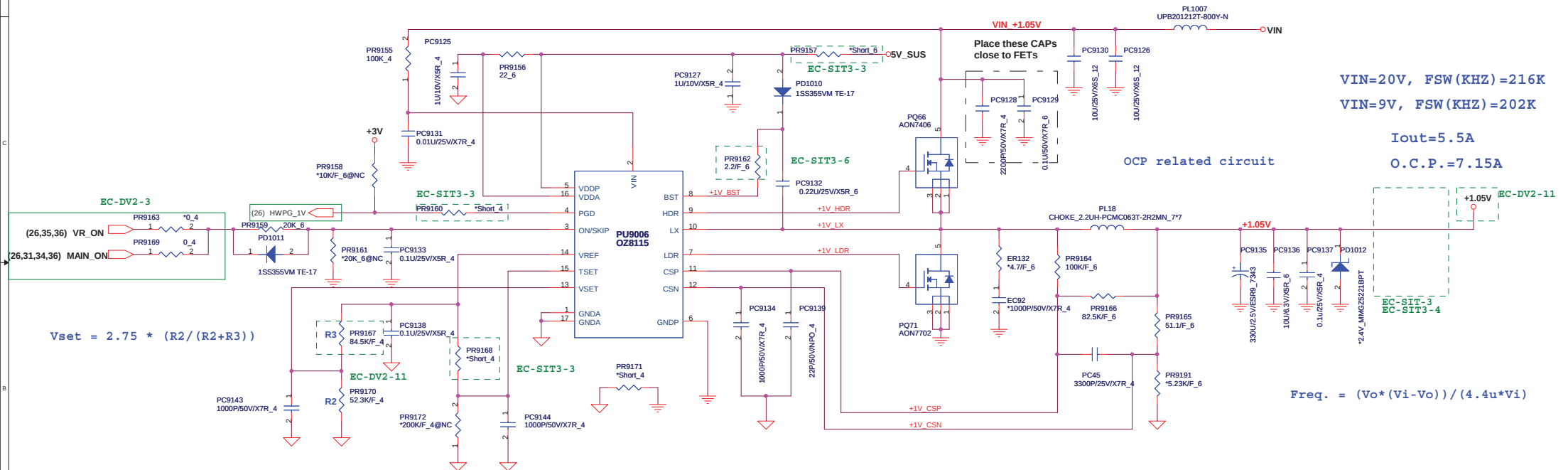








(13,29,30,31,33,35,36) VIN  
(3,5,36) +1.05V  
(13,25,34,35,36) 5V\_SUS  
(4,5,6,7,8,9,10,11,12,13,14,15,16,17,19,20,21,23,24,25,26,27,30,33,35,36) +3V



$$\text{Freq.} = (V_o * (V_i - V_o)) / (4.4u * V_i)$$

VIN=20V, FSW(KHZ)=216K  
VIN=9V, FSW(KHZ)=202K

Iout=5.5A  
O.C.P.=7.15A

This page is different AMD Nile

VIN=20V, FSW(KHZ)=236K

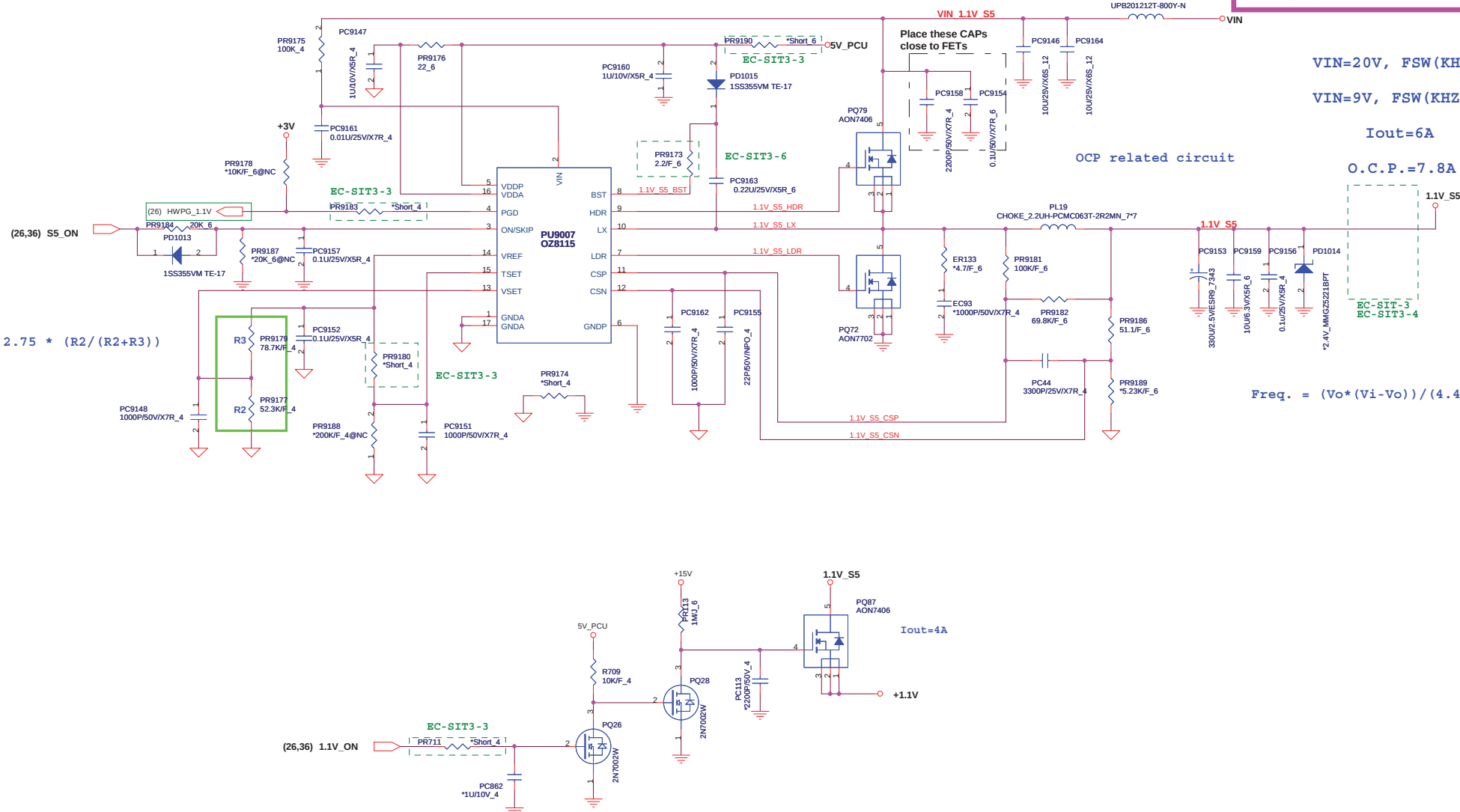
VIN=9V, FSW(KHZ)=219K

Iout=6A

O.C.P.=7.8A

Freq. = (Vo\*(Vi-Vo))/(4.4u\*Vi)

$$V_{set} = 2.75 * (R2 / (R2 + R3))$$

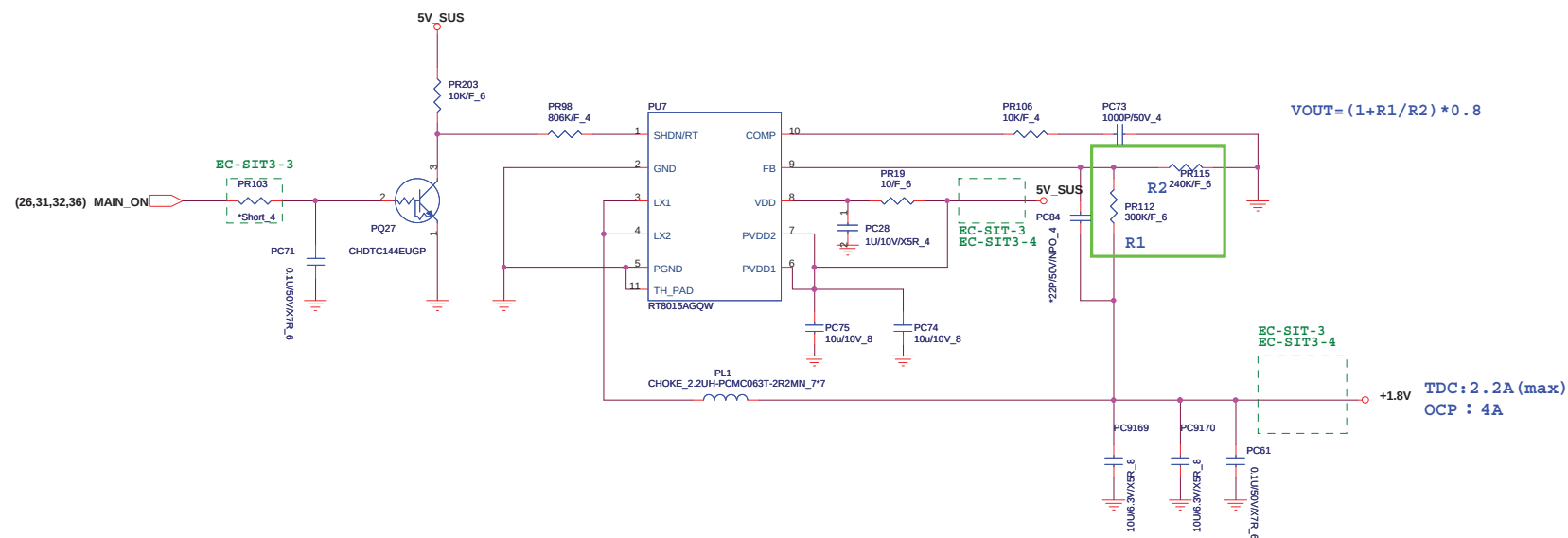


Quanta Computer Inc.

PROJECT : MK2.0

| Size | Document Number       | Rev |
|------|-----------------------|-----|
|      | <b>+1.1V (OZ8115)</b> | 1A  |

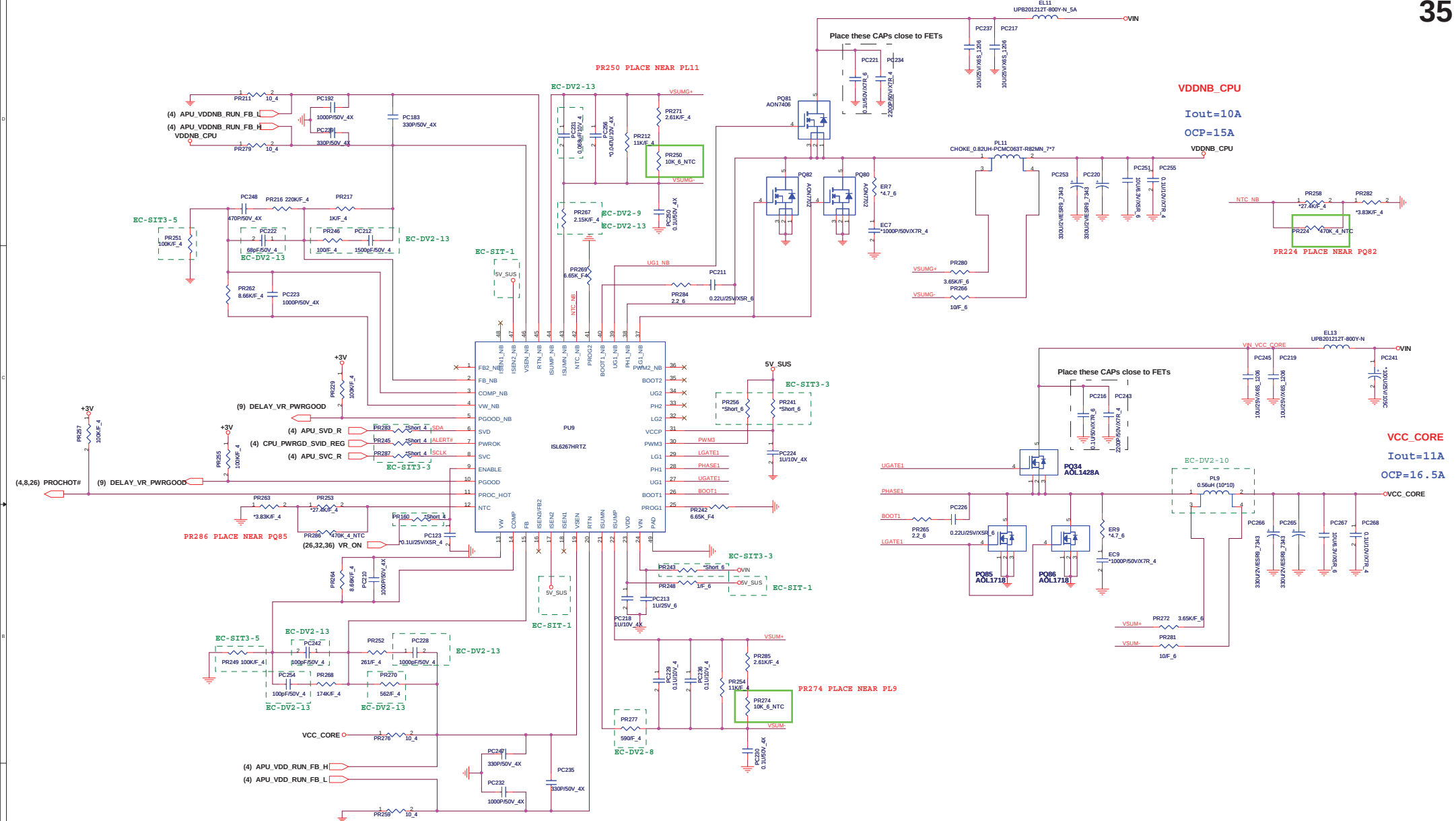
| Date | Friday, October 29, 2010 | Sheet | 33 | of | 47 |
|------|--------------------------|-------|----|----|----|
|------|--------------------------|-------|----|----|----|



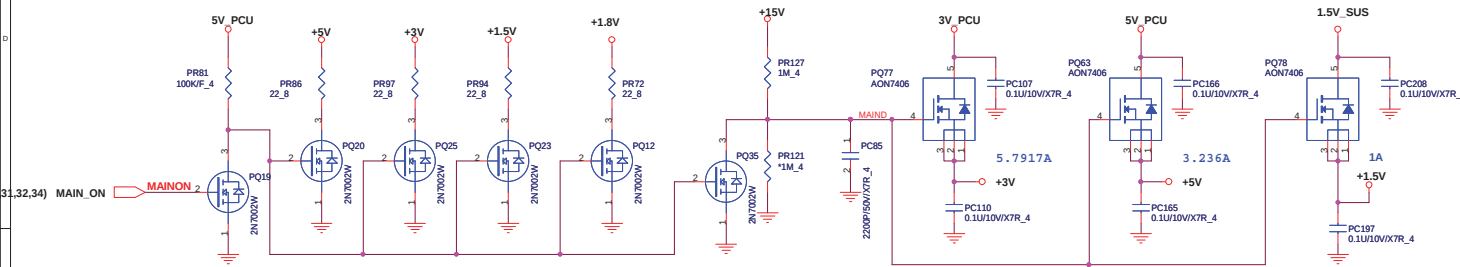
Quanta Computer Inc.

PROJECT : MK2.0

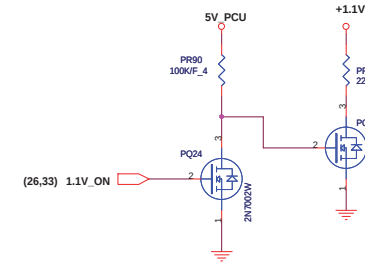
| Size  | Document Number          | Rev            |
|-------|--------------------------|----------------|
|       | +1.8V (RT8015AGQW)       | 1A             |
| Date: | Friday, October 29, 2010 | Sheet 34 of 47 |



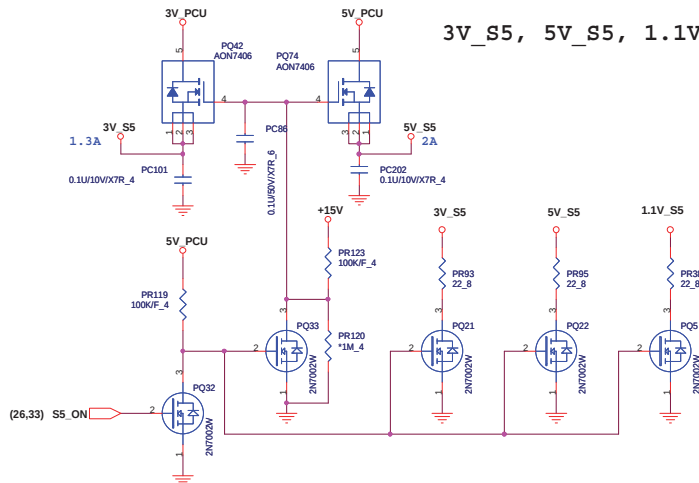
+3V, +5V, +1.8V, +1.5V



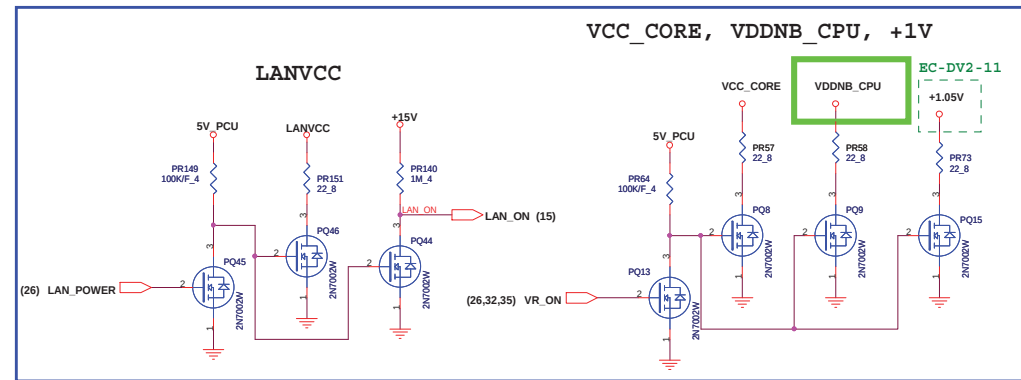
+1.1V



3V\_S5, 5V\_S5, 1.1V\_S5

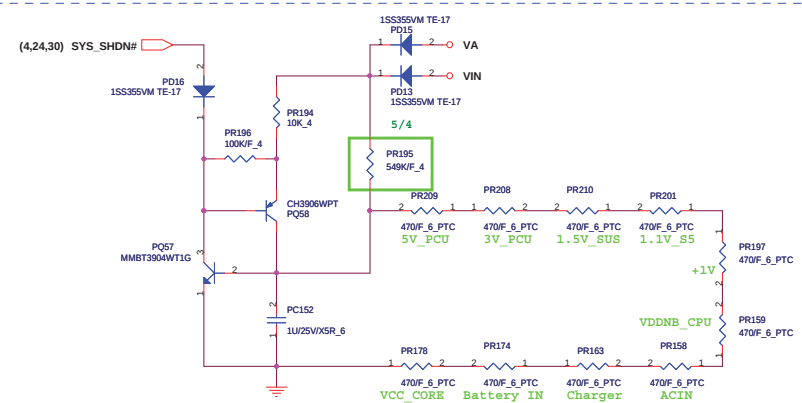
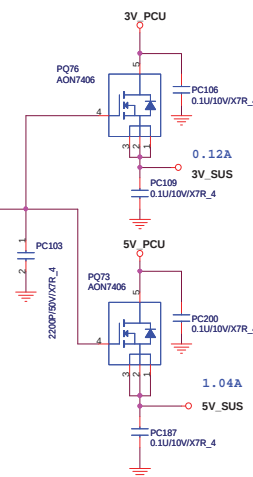
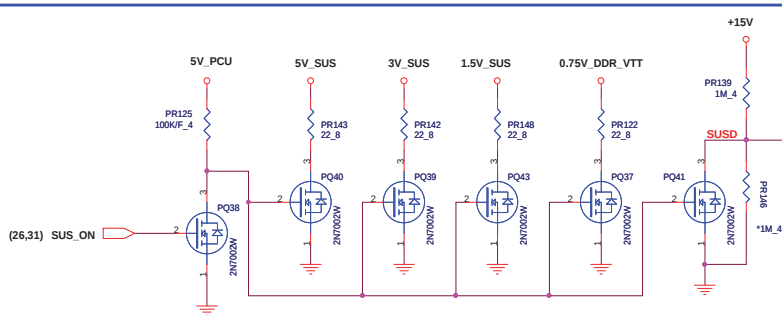


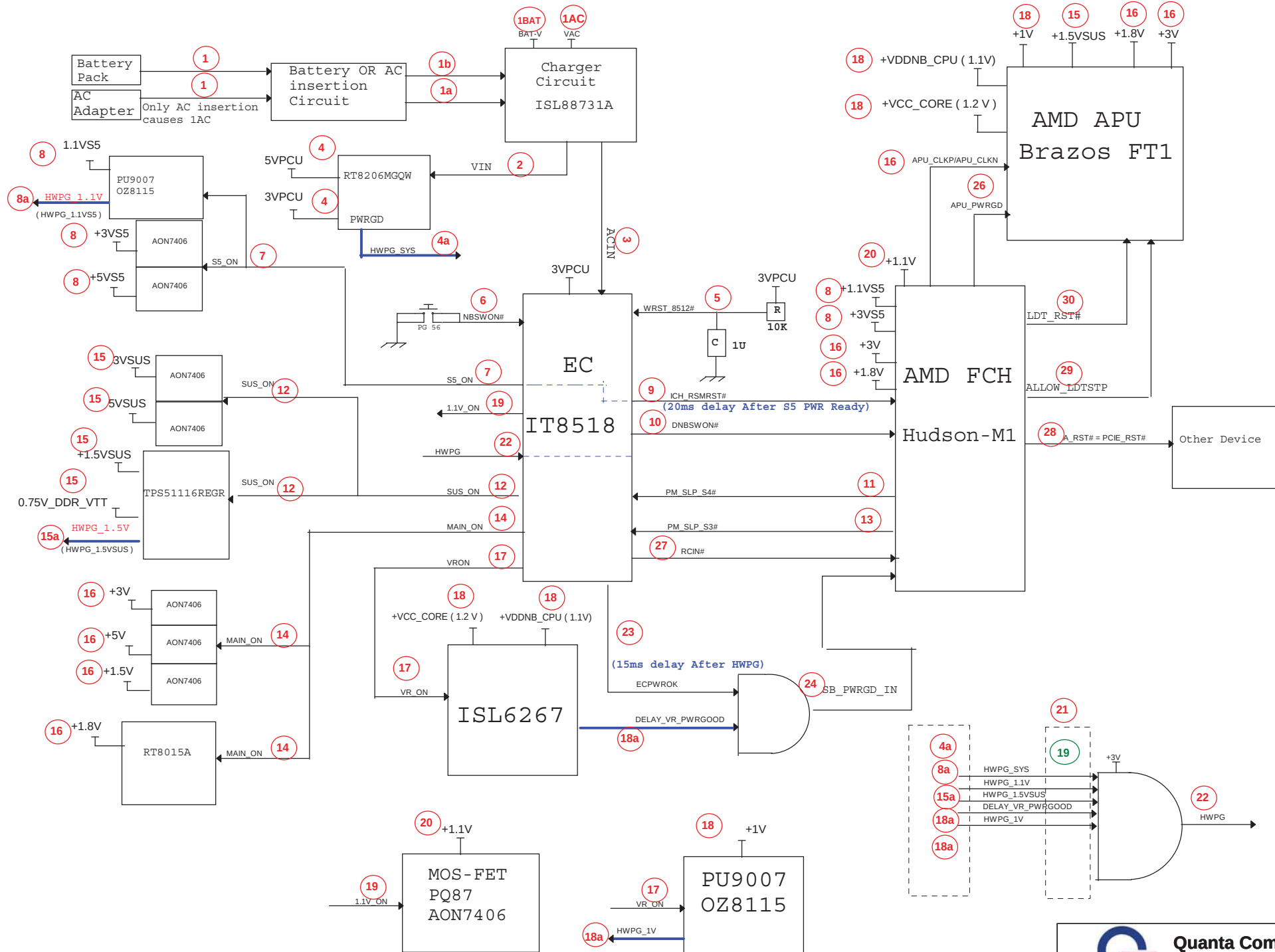
LANVCC



VCC\_CORE, VDDNB\_CPU, +1V

3V\_SUS, 5V\_SUS, 1.5V\_SUS, 0.75V\_DDR\_VTT







[illegible]

## Revision History

| Revision | Date | Phase | Change List     | Release Schematic Date | Release Gerber File Date |
|----------|------|-------|-----------------|------------------------|--------------------------|
| A1A      |      | DV    | Initial release |                        |                          |
|          |      |       |                 |                        |                          |
|          |      |       |                 |                        |                          |
|          |      |       |                 |                        |                          |
|          |      |       |                 |                        |                          |
|          |      |       |                 |                        |                          |
|          |      |       |                 |                        |                          |
|          |      |       |                 |                        |                          |

## Schematic Value Explanation Description :

### RESISTOR

| Value   | F  | 4            | 6            | 8            | 12           | 1210         | *      | Description                           |
|---------|----|--------------|--------------|--------------|--------------|--------------|--------|---------------------------------------|
| *1K/F_4 | 1% | 0402 (1005 ) |              |              |              |              | DE POP | 1K ohm 1% SMD 0402 package and DE POP |
| 1K_6    | 5% |              | 0603 (1608 ) |              |              |              | POP    | 1K ohm 5% SMD 0603 package and POP    |
| 1K_8    | 5% |              |              | 0805 (2125 ) |              |              | POP    | 1K ohm 5% SMD 0805 package and POP    |
| 1K_12   | 5% |              |              |              | 1206 (3216 ) |              | POP    | 1K ohm 5% SMD 1206 package and POP    |
| 1K_1210 | 5% |              |              |              |              | 1210 (3225 ) | POP    | 1K ohm 5% SMD 1210 package and POP    |

### CAPACITOR

| Value           | Voltage | Material | 6            |  |  |  | *      | Description                           |
|-----------------|---------|----------|--------------|--|--|--|--------|---------------------------------------|
| *0.1U/10V/X5R_4 | 10V     | X5R      | 0402 (1005 ) |  |  |  | DE POP | 0.1UF 10V X5R SMD 0402 package DE POP |
| 1U/25V/X7R_6    | 25V     | X7R      | 0603 (1608 ) |  |  |  | POP    | 0.1UF 25V X7R SMD 0603 package POP    |
|                 |         |          |              |  |  |  |        |                                       |

| EC #                      | Page               | Date     | Part Affected                           | Description                                                                         |
|---------------------------|--------------------|----------|-----------------------------------------|-------------------------------------------------------------------------------------|
| EC-DV-01<br>(AMD Suggest) | 11                 | 10/08/01 | C1094                                   | Change value from 0.1U to 1U                                                        |
|                           | 11                 | 10/08/01 | L60                                     | Add a Inductor and connect to VDDPL_1.1V                                            |
|                           | 11                 | 10/08/01 | C1073                                   | Change value from 4.7U to 2.2U                                                      |
|                           | 11                 | 10/08/01 |                                         | PCH NET"XDDXL_33_S" change power rail from 3V_S5 to +3V                             |
|                           | 4                  | 10/08/01 | R728                                    | Because Prochot# has been pull up +3V, delete one pull up resistor. Delete R728.    |
|                           | 8                  | 10/08/01 | C1042, C1045, C1043, C1044              | Change value from 18P to 22P.                                                       |
|                           | 10                 | 10/08/01 | U44                                     | Change SPI ROM input and output with PCH.                                           |
|                           | 4                  | 10/08/01 | R92                                     | "LTDP0_APD"add pull down resistor                                                   |
|                           | 4                  | 10/08/01 | R739,R740                               | Delete R739, R740                                                                   |
|                           | 14                 | 10/08/01 | R344,R349                               | "VGA_DAC_SDA and VGA_DAC_SCL" add pull up 4.7k resistor from +3V to +5V power rail. |
|                           | 14                 | 10/08/01 | R100,R102,R104,R107,R109,R111,R118,R120 | Change resistor value to 499 ohm                                                    |
|                           | 14                 | 10/08/01 | Q13                                     | Change Q13 power rail from +3X to +5V                                               |
|                           | 03                 | 10/08/01 | C871, C19                               | Add C871 and C19                                                                    |
|                           | 06                 | 10/08/01 | R123,R163                               | Change value from 10k to 1K                                                         |
|                           | 11                 | 10/08/01 |                                         | Change "VDDIO_AZ" from +1.5V_SUS to +3V                                             |
|                           | 9                  | 10/08/01 | R324                                    | Change value from 4.7K to 10K                                                       |
|                           | 9                  | 10/08/01 | R324                                    | USBOC1# and USBOC2# change pull up voltage from 3V_SUS to 3V_S5                     |
| EC-DV-02                  | 8<br>9<br>10<br>26 | 10/08/02 | C376,C381<br>C382,<br>C370<br>C375      | Add RF tesm suggest                                                                 |
| EC-DV-03                  | 9                  | 10/08/02 | RP12                                    | Change footprint type for layout                                                    |
| EC-DV-04                  | 26                 | 10/08/02 | U15                                     | Change EC from IT8502E to IT8518                                                    |
| EC-DV-05                  | 26                 | 10/08/02 | R192, R195                              | To prevent EC leakage issue                                                         |
| EC-DV-06                  | 25                 | 10/08/02 |                                         | Change battery LED power rail from 3V_PCU to 3V_S5                                  |
| EC-DV-07                  | 26                 | 10/08/02 | R96,Q31                                 | Fro EC suggest, change power LED control singnal from low active to high active.    |
| EC-DV-08                  | 14<br>23           | 10/08/02 |                                         | Celete duplicate net.                                                               |
| EC-DV-09                  | 14                 | 10/08/02 |                                         | Delete GND net of pin3 from U4 and U6                                               |
|                           |                    |          |                                         |                                                                                     |

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| EC #      | Page | Date     | Part Affected                                             | Description                                                                     |
|-----------|------|----------|-----------------------------------------------------------|---------------------------------------------------------------------------------|
| EC-DV2-1  | 13   | 10/08/24 | CN27,R342,R348                                            | Because LVDS CONN still combine, delete USB component.                          |
| EC-DV2-2  | 9    | 10/08/24 | R937,R938,R849,R851                                       | EPROM setting from SPI to LPC ROM.                                              |
| EC-DV2-3  | 32   | 10/08/24 | PR9153,PR9169                                             | AMD Suggest it to meet power sequence.                                          |
| EC-DV2-4  | 3,8  | 10/08/24 | C109,C110                                                 | AMD Suggest that use APU PCIe interface to link LAN to enhance its performance. |
| EC-DV2-5  | 25   | 10/08/24 | LED1,LED2,LED3                                            | For ID design. Delete LED1 ,add LED2 and LED3                                   |
| EC-DV2-6  | 30   | 10/08/24 | PR221                                                     | For 5V_PCU OCP                                                                  |
| EC-DV2-7  | 30   | 10/08/24 | PR215                                                     | For 3V_PCU OCP                                                                  |
| EC-DV2-8  | 35   | 10/08/24 | PR277                                                     | For VDDNB_CPU OCP                                                               |
| EC-DV2-9  | 35   | 10/08/24 | PR267                                                     | For VCC_CORE OCP                                                                |
| EC-DV2-10 | 35   | 10/08/24 | PL9                                                       | For CPU Ripple voltage                                                          |
| EC-DV2-11 | 32   | 10/08/24 | PR9167                                                    | For AMD request change +1V to +1.05V                                            |
| EC-DV2-12 | 31   | 10/08/24 | PC169                                                     | For 1.5V_SUS output ripple voltage                                              |
| EC-DV2-13 | 35   | 10/08/24 | PC231,PC212,PR246,PC222,PC242,<br>PC228,PC254,PR270,PR267 | Chip vendor suggest.                                                            |
| EC-DV2-14 | 26   | 10/08/24 | D7006,D7007,D7008,D7009,R508,R509,R510,R511               | Mount Diode for easy debug                                                      |
|           |      |          |                                                           |                                                                                 |


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## FL7B / MK2 Schematic EC Tracking Record DV ( for SIT) 09. 17, 2010

| EC #      | Page     | Date     | Part Affected                                           | Description                                                                                                                                    |
|-----------|----------|----------|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| EC-SIT-1  | 35       | 10/09/17 | PU9                                                     | Chip vendor(Intersil) suggest that some power chip pin change from +5V to 5V_SUS to prevent 5V leakage current.                                |
| EC-SIT-2  | 31~34    | 10/09/17 | PJP2,PJP6,PJP12,PJP13,PJP14,PJP15,<br>PJP16,PJP17,PJP18 | Power jump PCB footprint change from open type to short type                                                                                   |
| EC-SIT-3  | 26       | 10/09/17 | R512                                                    | For S3/S4/S5 leaksge issue from 20mA to 5mA. This pin is re-define from output to input.<br>But EC don't use this pin. Resever it.             |
| EC-SIT-4  | 25       | 10/09/17 | CN2 pin4                                                | Power LED plan change from 3VPCU to 3V_S5 to prevent LED flight one tie issue during plug adapter.<br>Fix ECR72256 from Vendor(ITE) suggestion |
| EC-SIT-5  | 26       | 10/09/17 | Q31, R194                                               | Power LED enable lever from high active to low active. Delete Q31, add R194.<br>Fix ECR72256 from EC team member request                       |
| EC-SIT-6  | 25<br>13 | 10/09/17 | Q24,Q21,Q25,R311,R301,R288,R314<br>C568                 | Because MK2B don't support Logo LED function, delete them. Delete Q24,Q21,Q25,R311,R301,R288,R314,C568                                         |
| EC-SIT-7  | 13       | 10/09/17 | R12                                                     | Reserve R12(short pad) to prevent LCD short current verication.                                                                                |
| EC-SIT-8  | 6<br>7   | 10/09/17 | C7274, C7275                                            | Change DDR DIMM Module VREF_CA and VREF_DQ reference power.                                                                                    |
| EC-SIT-9  | 15       | 10/09/17 |                                                         | Because LAN interface cahnge FCH to APU, change its reset signal from PCIE_RST# to A_RST#.                                                     |
| EC-SIT-10 | 19       | 10/09/17 | Y7, C257, C258,R472,R459                                | Cardreader clock input from 12MHZ crystal to FCH internal clock.                                                                               |
| EC-SIT-11 | 5        | 10/09/17 | C927, R9796,C934                                        | Delete C927,C934 for layout. Add R796 for AMD suggest.                                                                                         |
| EC-SIT-12 | 8        | 10/09/17 | C1111                                                   | Reserve a capacitor for RF team request.                                                                                                       |
| EC-SIT-13 | 11       | 10/09/17 | L48,L50,L52                                             | AMD suggest. Change its current sustain from 1.5A to 5A.                                                                                       |
| EC-SIT-14 | 10       | 10/09/17 | R881,R884,R885,R877,R878,C1058                          | Because BIOS and EC use the same ROM, delete them from BOM.                                                                                    |
| EC-SIT-15 | 8        | 10/09/27 | C1043,C1044                                             | Crystal vendor suggest(TXC and Hosonic)that chage fromm 22P to 10P to get good sin=gnal                                                        |
| EC-SIT-16 | 26       | 10/10/05 | R194                                                    | Change value from 0 ohm to 68 ohm to meet ITE8518 current limit issue.                                                                         |
|           |          |          |                                                         |                                                                                                                                                |

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## FL7B / MK2 Schematic EC Tracking Record SIT3 ( for SIT3 ) 10. 29, 2010

| EC #      | Page     | Date     | Part Affected                                                                                               | Description                                                       |
|-----------|----------|----------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| EC-SIT3-1 | 15,16,18 | 10/10/28 | RV1, RV3, RV9,RV10,RV11,C503,C504                                                                           | Add ESDprotect component for ESD request.                         |
| EC-SIT3-2 | 4        | 10/10/28 | R739,R740,R741,R742,T116,T179                                                                               | Delete unnecessary component R739,R740,R741,R742. Add T116 ,T179. |
| EC-SIT3-3 | 3        | 10/10/28 | R718                                                                                                        | change to short pad                                               |
|           | 4        |          | R743,R745,R750,R788,R789,R791,R790,R793,R792,R795,R794,R730,R725,R731                                       |                                                                   |
|           | 5        |          | R785,R786                                                                                                   |                                                                   |
|           | 6        |          | R124                                                                                                        |                                                                   |
|           | 7        |          | R158                                                                                                        |                                                                   |
|           | 8        |          | R809,R810,R811,R812                                                                                         |                                                                   |
|           | 9        |          | R825,R827,R831                                                                                              |                                                                   |
|           | 11       |          | R890,R891,R893,R894                                                                                         |                                                                   |
|           | 13       |          | R342,R348,R347,R351,R352                                                                                    |                                                                   |
|           | 14       |          | R119,R117,R112,R110,R108,R105,R103,R101                                                                     |                                                                   |
|           | 15       |          | R177,R197,R208,R299                                                                                         |                                                                   |
|           | 16       |          | R477,R306,R323                                                                                              |                                                                   |
|           | 18       |          | R132,R133,R141,R142                                                                                         |                                                                   |
|           | 19       |          | R470,R464,R450,R472                                                                                         |                                                                   |
|           | 20       |          | R273,R252                                                                                                   |                                                                   |
|           | 21       |          | R176,R253                                                                                                   |                                                                   |
|           | 23       |          | R291,R293,R295                                                                                              |                                                                   |
|           | 26       |          | R508,R509,R510,R511                                                                                         |                                                                   |
|           | 29       |          | PR31,PR32,PR37                                                                                              |                                                                   |
|           | 30       |          | PR155,PR218,PR153,PR126,PR207,PR219,PR145,PR222                                                             |                                                                   |
|           | 31       |          | PR132,PR206,PR228,PR230,PR238,PR214,PR235,PR9157,PR9160,PR9168,PR9190,PR9183,PR9180,PR711,PR103,PR256,PR243 |                                                                   |
|           | 35       |          | PR160,PR287,PR245,PR283,PR241                                                                               |                                                                   |
| EC-SIT3-4 | 5        | 10/10/28 | R787,R796,R784                                                                                              | delete power jump                                                 |
|           | 17       |          | R38,R72                                                                                                     |                                                                   |
|           | 20       |          | R200                                                                                                        |                                                                   |
|           | 31       |          | PJP12,PJP13,PJP6                                                                                            |                                                                   |
|           | 32       |          | PJP14,PJP15                                                                                                 |                                                                   |
|           | 33       |          | PJP16,PJP17                                                                                                 |                                                                   |
|           | 34       |          | PJP2,PJP18                                                                                                  |                                                                   |
| EC-SIT3-5 | 35       | 10/10/28 | PR251,PR249                                                                                                 | Change for PSI function                                           |
| EC-SIT3-6 | 32,33    | 10/10/28 | PR9162,PR9173                                                                                               | Change for switch phase voltage                                   |

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|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
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| <b>BOM Matrix Table</b>                                                                                                                     |                 |
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