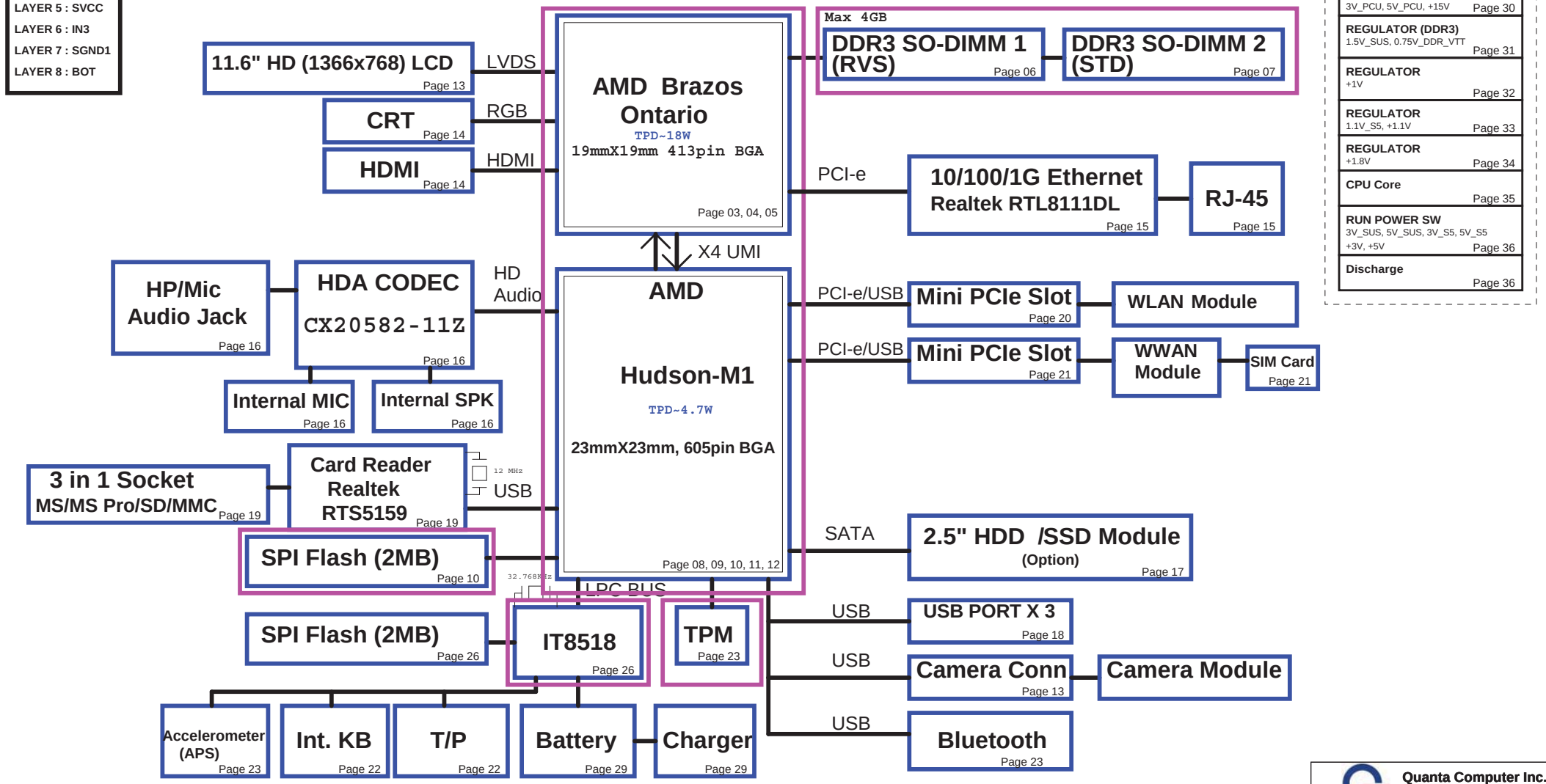
MK-2.0 & Dublin-1.5B Block Diagram -- AMD Ontario

PCB STACK UP 8L

- 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

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

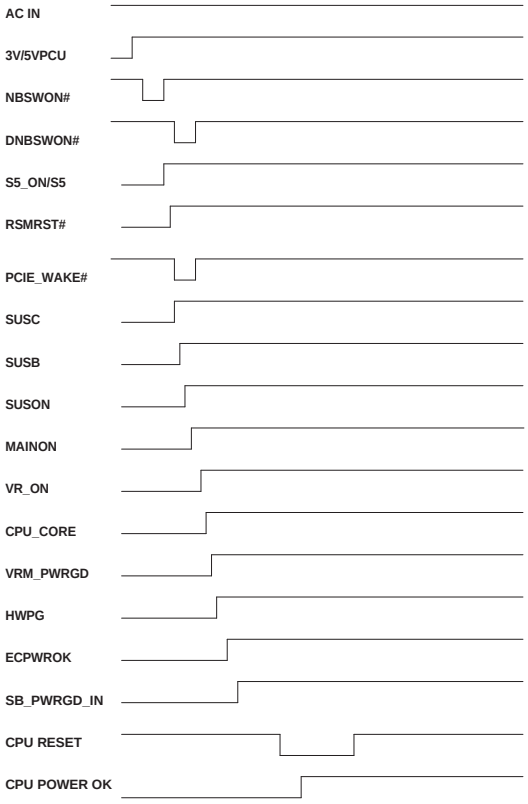
Quanta Computer Inc.
PROJECT : MK2.0

Size	Document Number	Rev
	System Block Diagram	1A

Date: Friday, October 29, 2010 Sheet 1 of 45

INDEX

Power Sequence

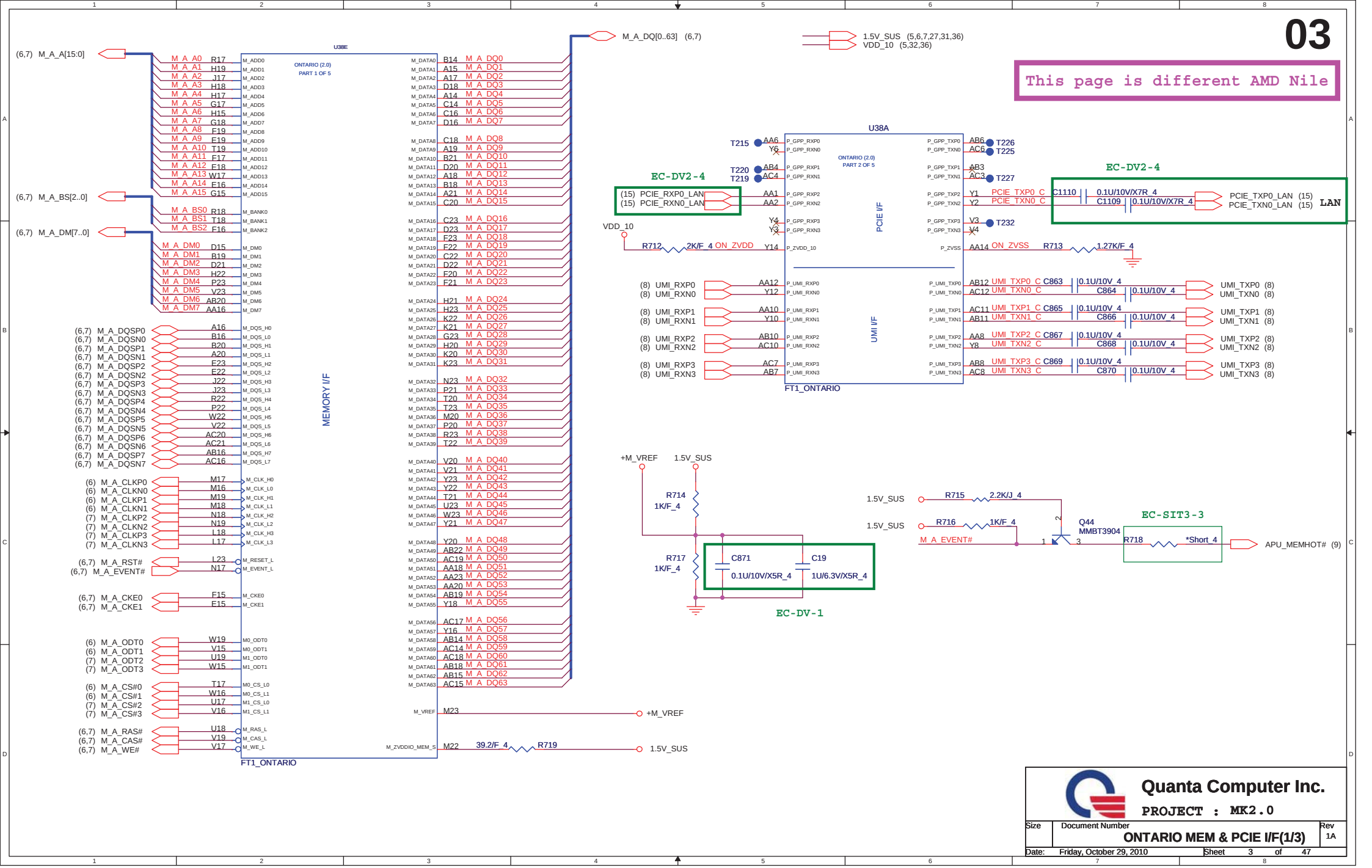


Hudson M1 SM BUS

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

KBC(EC) SM BUS

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



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1.5V_SUS (3,5,6,7,27,31,36)
+1.8V (5,34,36)
+3V (5,6,7,8,9,10,11,12,13,14,15,16,17,19,20,21,23,24,25,26,27,30,32,33,35,36)

EC-DV-1

EC-DV-12

EC-SIT3-3

EC-SIT3-2

EC-DV-11

DIFFERENTIAL ROUTING

VID Override Circuit

for normal operation
open all switches

HDMI Hot-plug

HDT+ Connector

HDT+ HEADER / PLACE ON TOP

Can remove on MP------>LX

Quanta Computer Inc.
PROJECT : MK2.0
Size | Document Number: ONTATIO DISPLAY/CLK/MI(2/3) | Rev: 1A
Date: Friday, October 29, 2010 | Sheet 4 of 47

This page is different AMD Nile

1.5V_SUS (3,6,7,27,31,36)
+1.05V (3,32,36)
+1.8V (4,34,36)
+3V (4,6,7,8,9,10,11,12,13,14,15,16,17,19,20,21,23,24,25,26,27,30,32,33,35,36)
VCC_CORE (35,36)
VDDNB_CPU (35,36)

VCC_CORE
VDDNB_CPU
1.5V_SUS

11A
10A
2A

U38C
ONTARIO (2.0)
PART 4 OF 5
POWER
FT1_ONTARIO

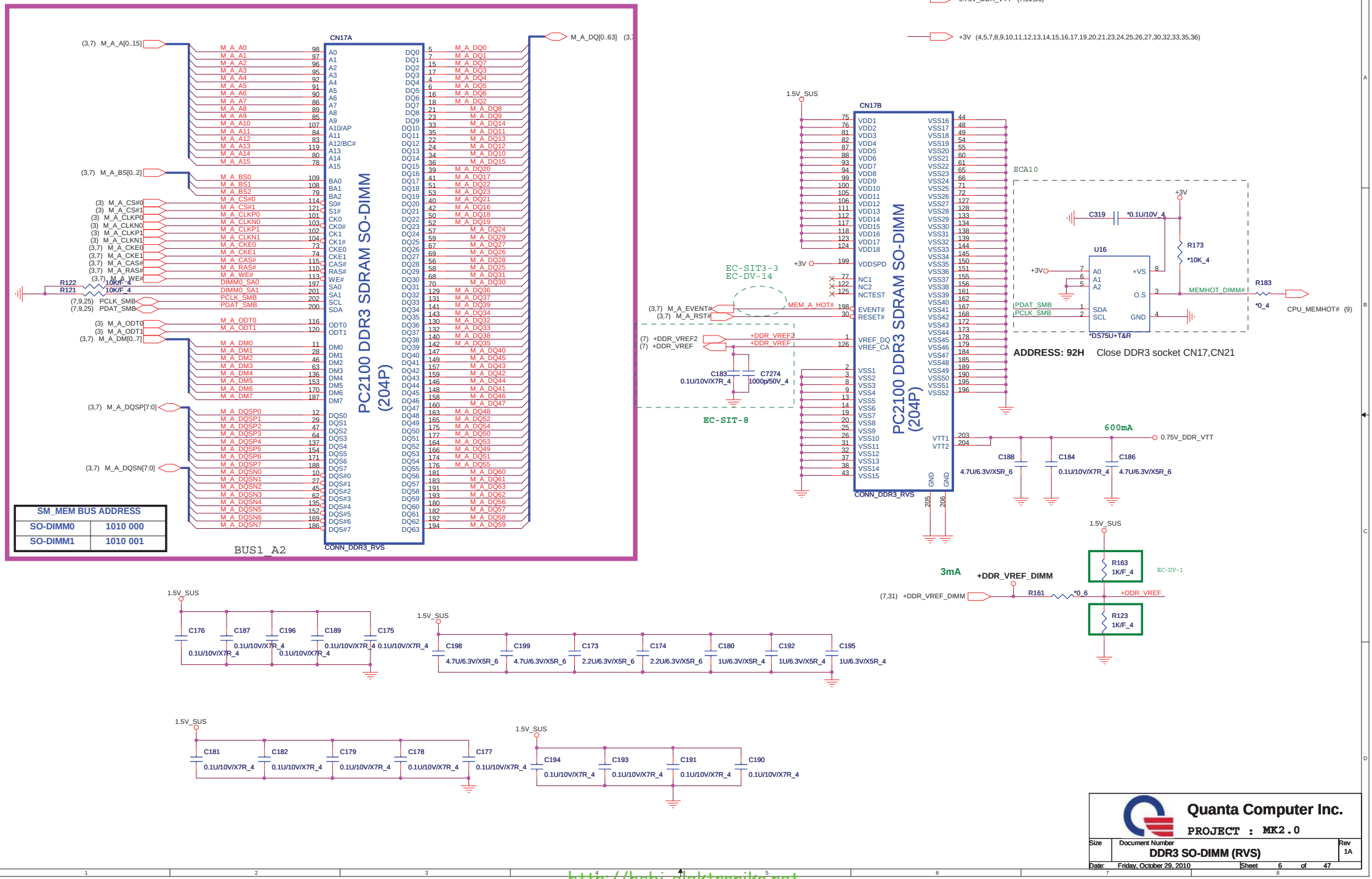
VDD_18 — 2A — EC-SIT3-4 — +1.8V
VDDAN_18_DAC — 150mA — EC-SIT3-4 — +1.8V
VDDPL_10 — 200mA — EC-SIT3-4 — EC-DV2-11 — +1.05V
VDD_10 — 5.5A — EC-SIT-11 — EC-DV2-11 — +1.05V — EC-SIT3-4
+3V — 500mA

EC-SIT-11

U38D
GROUND
FT1_ONTARIO

EMC CAPS
place capacitors under BGA

Quanta Computer Inc.
PROJECT : MK2.0
Size | Document Number: ONTARIO POWER & DECOUP(3/3) | Rev: 1A
Date: Friday, October 29, 2010 | Sheet 5 of 47



Quanta Computer Inc.

PROJECT : MK2.0

Size	Document Number	Rev
	DDR3 SO-DIMM (RVS)	1A

Date: Friday, October 29, 2010 Sheet 6 of 47

1.5V_SUS (3,5,6,27,31,36)
0.75V_DDR_VTT (6,31,36)
+3V (4,5,6,8,9,10,11,12,13,14,15,16,17,19,20,21,23,24,25,26,27,30,32,33,35,36)

CN21A

PC2100 DDR3 SDRAM SO-DIMM (204P)

DDR3-DIMM0

SM_MEM BUS ADDRESS	
SO-DIMM0	1010 000
SO-DIMM1	1010 001

BUS1_A2

CN21B

PC2100 DDR3 SDRAM SO-DIMM (204P)

DDR3-DIMM0

EC-SIT3-3
EC-DV-14

EC-SIT-8

EC-SIT-8

3mA

EC-DV-1

Quanta Computer Inc.
PROJECT : MK2.0

Size	Document Number	Rev
	DDR3 SO-DIMM (STD)	1A

Date: Friday, October 29, 2010 Sheet 7 of 47

This page is different AMD Nile expect RTC circuit

PCIE_VDDR (11)
3V_S5 (9,10,11,12,18,20,23,25,26,36)
3V_PCU (10,13,14,15,18,25,26,29,30,36)
+3V (4,5,6,7,9,10,11,12,13,14,15,16,17,19,20,21,23,24,25,26,27,30,32,33,35,36)

Add AND gate to reset all PCIE devices by AMD recommand

R801 0_4 +3V C1021 *0.1U/10V/X7R_4 U40 *TC7SH08FU (15,23,25) A_RST# R804 33_4 A_RST# A_RST# A_RST# R C1108 150P/25V_4 SB_ARST# SB_ARST# GATE

Add AND gate to reset all PCIE devices by AMD recommand

R932 0_4 +3V C1106 *0.1U/10V/X7R_4 U42 *TC7SH08FU (20,21) PCIE_RST# R933 33_4 PCIE_RST# PCIE_RST# R C1107 150P/25V_4 SB_GPIO_RST# (9)

A_RST# R936 *0_4 PCIE_RST#
SB_ARST# GATE R935 *0_4 SB_GPIO_RST#

PLACE THESE PCIE AC COUPLING CAPS CLOSE TO U41

U41A Hudson M1 Part 1 of 5

PCIE_RST# R P1 PCIE_RST#
A_RST# R L1 A_RST#

(3) UMI_RXP0 UMI_RXP0 C1026 0.1U/10V_4 UMI_RXP0_C AD26 UMI_TX0P
(3) UMI_RXN0 UMI_RXN0 C1027 0.1U/10V_4 UMI_RXN0_C AD27 UMI_TX0N
(3) UMI_RXP1 UMI_RXP1 C1023 0.1U/10V_4 UMI_RXP1_C AC28 UMI_TX1P
(3) UMI_RXN1 UMI_RXN1 C1028 0.1U/10V_4 UMI_RXN1_C AC29 UMI_TX1N
(3) UMI_RXP2 UMI_RXP2 C1024 0.1U/10V_4 UMI_RXP2_C AB29 UMI_TX2P
(3) UMI_RXN2 UMI_RXN2 C1029 0.1U/10V_4 UMI_RXN2_C AB28 UMI_TX2N
(3) UMI_RXP3 UMI_RXP3 C1030 0.1U/10V_4 UMI_RXP3_C AB26 UMI_TX3P
(3) UMI_RXN3 UMI_RXN3 C1032 0.1U/10V_4 UMI_RXN3_C AB27 UMI_TX3N

(3) UMI_TXP0 AE24 UMI_RX0P
(3) UMI_TXN0 AE23 UMI_RX0N
(3) UMI_TXP1 AD25 UMI_RX1P
(3) UMI_TXN1 AD24 UMI_RX1N
(3) UMI_TXP2 AC24 UMI_RX2P
(3) UMI_TXN2 AC25 UMI_RX2N
(3) UMI_TXP3 AB25 UMI_RX3P
(3) UMI_TXN3 AB24 UMI_RX3N

PCIE_VDDR R808 590/F_4 R803 2K/J_4 U600_CALRP AD29 PCIE_CALRP
U600_CALRN AD28 PCIE_CALRN

EC-DV2-4 T144 T145 AA28 AA29 GPP_TX0P GPP_TX0N

WLAN (20) PCIE_TXP1 C1035 0.1U/10V/X7R_4 PCIE_TXP1_C Y29 GPP_TX1P
(20) PCIE_TXN1 C1036 0.1U/10V/X7R_4 PCIE_TXN1_C Y28 GPP_TX1N
WWAN (21) PCIE_TXP2 C1037 0.1U/10V/X7R_4 PCIE_TXP2_C Y26 GPP_TX2P
(21) PCIE_TXN2 C1038 0.1U/10V/X7R_4 PCIE_TXN2_C Y27 GPP_TX2N
T91 W28 GPP_TX3P
T92 W29 GPP_TX3N

EC-DV2-4 T162 T169 AA22 Y21 GPP_RX0P GPP_RX0N

(20) PCIE_RXP1 AA25 GPP_RX1P
(20) PCIE_RXN1 AA24 GPP_RX1N
(21) PCIE_RXP2 W23 GPP_RX2P
(21) PCIE_RXN2 V24 GPP_RX2N
T93 W24 GPP_RX3P
T94 W25 GPP_RX3N

PCI EXPRESS INTERFACES

EC-SIT3-3

(4) DISP_CLKP DISP_CLKP R809 *Short_4 DISP_CLKP_R U29 NB_DISP_CLKP
(4) DISP_CLKN DISP_CLKN R810 *Short_4 DISP_CLKN_R U28 NB_DISP_CLKN

T212 M23 PCIE_RCLKP/NB_LNK_CLKP
T213 P23 PCIE_RCLKN/NB_LNK_CLKN

T96 T26 NB_HT_CLKP
T97 T27 NB_HT_CLKN

CPU_CLK (4) APU_CLKP APU_CLKP R811 *Short_4 APU_CLKP_R V21 CPU_HT_CLKP
(4) APU_CLKN APU_CLKN R812 *Short_4 APU_CLKN_R T21 CPU_HT_CLKN

T211 V23 SLT_GFX_CLKP
T210 T23 SLT_GFX_CLKN

To LAN Controller (15) CLK_PCIE_LANP RP9 0_4P2R_4 CLK_PCIE_LANP_R L29 GPP_CLK0P
(15) CLK_PCIE_LANN CLK_PCIE_LANN_R L28 GPP_CLK0N
To WLAN Controller (20) CLK_PCIE_WLANP RP10 0_4P2R_4 CLK_PCIE_WLANP_R N29 GPP_CLK1P
(20) CLK_PCIE_WLANN CLK_PCIE_WLANN_R N28 GPP_CLK1N

T216 M29 GPP_CLK2P
T217 M28 GPP_CLK2N

T102 T25 GPP_CLK3P
T103 V25 GPP_CLK3N

To WWAN Connector (21) CLK_PCIE_WANP RP11 0_4P2R_4 CLK_PCIE_WANP_R L24 GPP_CLK4P
(21) CLK_PCIE_WANN CLK_PCIE_WANN_R L23 GPP_CLK4N

T208 P25 GPP_CLK5P
T209 M25 GPP_CLK5N

T207 P29 GPP_CLK6P
T206 P28 GPP_CLK6N

T204 N26 GPP_CLK7P
T205 N27 GPP_CLK7N

T203 T29 GPP_CLK8P
T202 T28 GPP_CLK8N

CLOCK GENERATOR

T106 R816 0/J_4 OSCCLK L25 14M_25M_48M_OSC

R817 1M/F_4 25M_X1 L26 25M_X1
Y9 25MHz
C1043 10P/50V/C0G_4 EC-DV-1 EC-SIT-15
C1044 10P/50V/C0G_4 EC-DV-1 EC-DIT-15
25M_X2 L27 25M_X2

Hudson M1

PCI CLKS

PCICLK0 W2 PCI_CLK0 T90
PCICLK1/GPO36 W1 R918 22_4 PCI_CLK_TPM (12,23)
PCICLK2/GPO37 W3 PCI_CLK2 (12)
PCICLK3/GPO38 W4 PCI_CLK3 (12)
PCICLK4/14M_OSC/GPO39 Y1 PCI_CLK4 (12)

STRAP Function To EC

PCIRST# V2 PCIRST# L R805 33_4 PCIRST# (20)
C1031 150P/50V/NPO_4

AD0/GPIO0 AA1 T234
AD1/GPIO1 AA4 T233
AD2/GPIO2 AA3
AD3/GPIO3 AB1 T235
AD4/GPIO4 AA5 T238
AD5/GPIO5 AB2
AD6/GPIO6 AB6 T240
AD7/GPIO7 AB5 T239
AD8/GPIO8 AA6 T242
AD9/GPIO9 AC2
AD10/GPIO10 AC3
AD11/GPIO11 AC4 T243
AD12/GPIO12 AC1
AD13/GPIO13 AD1
AD14/GPIO14 AD2
AD15/GPIO15 AC6 T247
AD16/GPIO16 AE2
AD17/GPIO17 AE1 T252
AD18/GPIO18 AF8 T251
AD19/GPIO19 AE3 T254
AD20/GPIO20 AF1 T253
AD21/GPIO21 AG1 T256
AD22/GPIO22 AF2 T255
AD23/GPIO23 AF9
AD24/GPIO24 AD9
AD25/GPIO25 AC11
AD26/GPIO26 AF6
AD27/GPIO27 AF4
AD28/GPIO28 AF3 T258
AD29/GPIO29 AH2 T257
AD30/GPIO30 AG2 T260
AD31/GPIO31 AH3 T259
CBE0# AA8 T262
CBE1# AD5 T261
CBE2# AD8 T264
CBE3# AA10 T263
FRAME# AE8 T266
DEVSEL# AB9 T265
IRDY# AJ3 T268
TRDY# AE7 T267
PAR AC5 T270
STOP# AF5 T269
PERR# AE6 T272
SERR# AE4 SERR# T95
REQ0# AE11 T274
REQ1#/GPIO40 AH5 T273
REQ2#/CLK_REQ8#/GPIO41 AH4 T276
REQ3#/CLK_REQ5#/GPIO42 AC12 SB_GPIO42 T98
GNT0# AD12 T275
GNT1#/GPO44 AJ5 T278
GNT2#/GPO45 AH6 T277
GNT3#/CLK_REQ7#/GPIO46 AB12 GNT3#CLK_REQ7# T99
CLKRUN# AB11 PCI_CLKRUN# (23,26)
LOCK# AD7 LOCK# T100
INTE#/GPIO32 AJ6 SB_ARST# GATE
INTF#/GPIO33 AG6 T279 INTG# T101
INTG#/GPIO34 AG4
INTH#/GPIO35 AJ4 T250

PCI INTERFACE

Debug STRAPs
AD23 (12) AD24 (12) AD25 (12) AD26 (12) AD27 (12)

All the PCI bus has build-in Pull-UP/Down resistors

LPC_CLK0 LPC_CLK1 LPC_CLK0 (12) LPC_CLK1 (12) To STRAPs Page

LPCCLK0 H24 LPCCLK0_R R814 22_4 PCLK_591 (26)
LPCCLK1 H25 LPCCLK1_R R815 22_4 PCLK_DEBUG (20)
LAD0 J27 LPC_AD0 (20,23,26)
LAD1 J26 LPC_AD1 (20,23,26)
LAD2 H29 LPC_AD2 (20,23,26)
LAD3 H28 LPC_AD3 (20,23,26)
LFRAME# G28 LPC_FRAME# (20,23,26)
LDRQ0# J25 LPC_DRQ#0 (20)
LDRQ1#/CLK_REQ6#/GPIO49 AA18 T271
SERIRQ/GPIO48 AB19 SERIRQ (20,23,26)

C1039 *10P/50V/C0G_4

LPC

ALLOW_LDTSTP/DMA_ACTIVE# G21 ALLOW_LDTSTP (4)
PROCHOT# H21 PROCHOT# (4,26,35)
LDT_PG K19 APU_PWRGD (4)
LDT_STP# G22 T281
LDT_RST# J24 LDT_RST# (4)

CPU

32K_X1 C1 RTC_X1
32K_X2 C2 RTC_X2
RTCCLK D2 RTC_CLK R819 *10K/F_4 3V_S5
INTRUDER_ALERT# B2 INTRUDER_ALERT# T107
VDDBT_RTC_G B1 +VBAT

RTC_CLK must ready refore RSMRST#

INTRUDER_ALERT# Left not connected (Southbridge has 50-kohm internal pull-up to VBAT).

RTC

20mils 3V_PCU D22 RB500V-40 20mils +AVBAT
20mils D23 RB500V-40 R806 510/F_6 20mils
TERM10 +3VRTC C1033 1U/6.3V/X5R_4 G1 *SHORT_PAD1
R807 1K_4
TERM12 20mils
BT1 RTC_CON

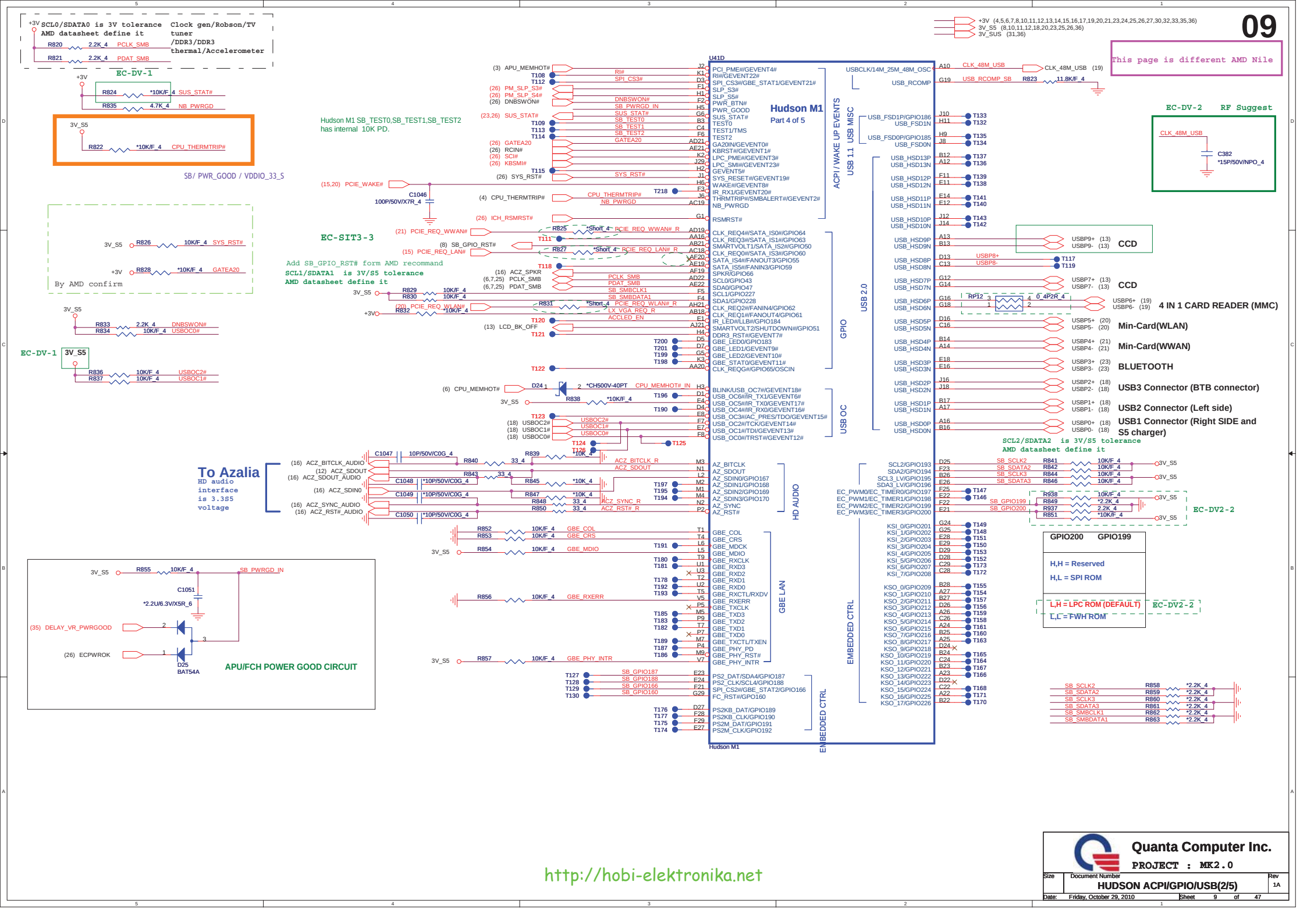
RTC P/N: AHL03002009 (CR2025)
Don't support chargeable Battery

LPC_CLK0 R813 4.3nH/750mA_4 C1040 6.8p/50V_4
PCLK_DEBUG C1041 22P/50V/NPO_4

EC-DV-1 C1042 22P/50V/NPO_4 R818 20M_6 Y8 32.768KHZ C1045 22P/50V/NPO_4 EC-DV-1

EC-DV-2 RF Suggest
PCI_CLK_TPM C376 *15P/50V/NPO_4 C381 *15P/50V/NPO_4

Quanta Computer Inc.
PROJECT : MK2.0
Size | Document Number: HUDSON PCIE/LPC/CPU IF(1/5) | Rev: 1A
Date: Friday, October 29, 2010 | Sheet 8 of 47


09
This page is different AMD Nile
SCL0/SDATA0 is 3V tolerance
AMD datasheet define it
Clock gen/Robson/TV tuner /DDR3/DDR3 thermal/Accelerometer
EC-DV-1
SB/ PWR_GOOD / VDDIO_33_S
Hudson M1 SB_TEST0,SB_TEST1,SB_TEST2 has internal 10K PD.
EC-SIT3-3
Add SB_GPIO_RST# form AMD recommand
SCL1/SDATA1 is 3V/S5 tolerance
AMD datasheet define it
By AMD confirm
EC-DV-1
To Azalia
HD audio interface is 3.3S5 voltage
APU/FCH POWER GOOD CIRCUIT
U41D
Hudson M1
Part 4 of 5
ACPI / WAKE UP EVENTS
USB 1.1 USB MISC
GPIO
USB 2.0
USB OC
HD AUDIO
GBE LAN
EMBEDDED CTRL
EC-DV-2 RF Suggest
CCD
CCD
4 IN 1 CARD READER (MMC)
Min-Card(WLAN)
Min-Card(WWAN)
BLUETOOTH
USB3 Connector (BTB connector)
USB2 Connector (Left side)
USB1 Connector (Right SIDE and S5 charger)
SCL2/SDATA2 is 3V/S5 tolerance
AMD datasheet define it
EC-DV2-2
GPIO200 GPIO199
H,H = Reserved
H,L = SPI ROM
L,H = LPC ROM (DEFAULT)
L,L = FWH ROM
EC-DV2-2
http://hobi-elektronika.net
Quanta Computer Inc.
PROJECT : MK2.0
HUDSON ACPI/GPIO/USB(2/5)
Rev 1A
Date: Friday, October 29, 2010
Sheet 9 of 47

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 — C1052 0.01U/16V/X7R_4 SATA_TXP0_C — C1053 0.01U/16V/X7R_4 SATA_TXN0_C
(17) SATA_RXN0 / (17) SATA_RXP0 — C1054 0.01U/16V/X7R_4 SATA_RXN0_C — C1055 0.01U/16V/X7R_4 SATA_RXP0_C

PLACE SATA_CAL RES VERY CLOSE TO BALL OF Hudson M1

XTLVDD_SATA-- SATA crystal power

PLVDD_SATA-- SATA PLL POWER

AVDD_SATA — R867 1K/F_4 SATA_CALRP — R868 931/F_4 SATA_CALRN

+3V — R869 10K/F_4

C1056 *22P/50V/NPO_4 — Y10 *25MHZ — R870 *1M/F_4 — C1057 *22P/50V/NPO_4

U41B

Hudson M1
Part 2 of 5

SERIAL ATA

T282	AH10	SATA_TX1P
T283	AJ10	SATA_TX1N
T284	AG10	SATA_RX1N
T285	AF10	SATA_RX1P
T286	AG12	SATA_TX2P
T287	AF12	SATA_TX2N
T288	AJ12	SATA_RX2N
T289	AH12	SATA_RX2P
T290	AH14	SATA_TX3P
T291	AJ14	SATA_TX3N
T292	AG14	SATA_RX3N
T293	AF14	SATA_RX3P
T294	AG17	SATA_TX4P
T295	AF17	SATA_TX4N
T296	AJ17	SATA_RX4N
T297	AH17	SATA_RX4P
T298	AJ18	SATA_TX5P
T299	AH18	SATA_TX5N
T300	AH19	SATA_RX5N
T301	AJ19	SATA_RX5P

AB14 SATA_CALRP
AA14 SATA_CALRN
AD11 SATA_ACT#/GPIO67
AD16 SATA_X1
AC16 SATA_X2

FLASH

FC_CLK	AH28	T303
FC_FBCLKOUT	AG28	T302
FC_FBCLKIN	AF26	T311
FC_OE#/GPIOD145	AF28	T305
FC_AVD#/GPIOD146	AG29	T304
FC_WE#/GPIOD148	AG26	
FC_CE1#/GPIOD149	AF27	
FC_CE2#/GPIOD150	AE29	T309
FC_INT1/GPIOD144	AF29	T308
FC_INT2/GPIOD147	AH27	T310
FC_ADQ0/GPIOD128	AJ27	T313
FC_ADQ1/GPIOD129	AJ26	T312
FC_ADQ2/GPIOD130	AH25	T314
FC_ADQ3/GPIOD131	AH24	T315
FC_ADQ4/GPIOD132	AG23	T317
FC_ADQ5/GPIOD133	AH23	T316
FC_ADQ6/GPIOD134	AJ22	T318
FC_ADQ7/GPIOD135	AG21	
FC_ADQ8/GPIOD136	AF21	T321
FC_ADQ9/GPIOD137	AH22	T320
FC_ADQ10/GPIOD138	AJ23	T323
FC_ADQ11/GPIOD139	AF23	T322
FC_ADQ12/GPIOD140	AJ24	T325
FC_ADQ13/GPIOD141	AJ25	T324
FC_ADQ14/GPIOD142	AG25	
FC_ADQ15/GPIOD143	AH26	T327

HW MONITOR

FANOUT0/GPIO52	W5	CCD_ON (13)
FANOUT1/GPIO53	W6	BT_ON (20,23)
FANOUT2/GPIO54	Y9	WLAN_OFF# (20)
FANIN0/GPIO56	W7	BT_DET# (23)
FANIN1/GPIO57	V9	WWAN_OFF# (21)
FANIN2/GPIO58	W8	T328
TEMPIN0/GPIO171	B6	TEMPIN0
TEMPIN1/GPIO172	A6	TEMPIN1
TEMPIN2/GPIO173	A5	TEMPIN2
TEMPIN3/TALERT#/GPIO174	B5	SB_TALERT#
TEMP_COMM	C7	SB_TALERT# (4)
VIN0/GPIO175	A3	CPU_TYPE
VIN1/GPIO176	B4	SB_HOLE_TIME
VIN2/GPIO177	A4	CPU_SENSOR
VIN3/GPIO178	C5	R917 10K_4
VIN4/GPIO179	A7	BOARD_ID0
VIN5/GPIO180	B7	BOARD_ID1
VIN6/GBE_STAT3/GPIO181	B8	BOARD_ID2
VIN7/GBE_LED3/GPIO182	A8	BOARD_ID3

SPI ROM

SPI_DI	J5	SPI_DI/GPIO164
SPI_DO	E2	SPI_DO/GPIO163
SPI_CLK	K4	SPI_CLK/GPIO162
SPI_CS1#	K9	SPI_CS1#/GPIO165
ROM_RST#	G2	ROM_RST#/GPIO161
T131		

NC1 G27
NC2 Y2

Hudson M1

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

TEMPIN2
TEMPIN1
TEMPIN0
R864 10K_4
R865 10K_4
R866 10K_4

EC-SIT-14

16Mbit (2M Byte), SPI

Winbond	AKE38ZP0N00
SST	AKE28FP0K07
MX	AKE37FP0Z13

3V_PCU
R877 *10K_4
R878 *10K_4
U44
SPI_CS1# — SPI_CLK — R881 *47_4 — SPI_CLK_R
SPI_DO — R884 *47_4 — SPI_DI_R
SPI_DI — R885 *15_4 — SPI_DO_R
CE# SCK SI SO WP# VDD HOLD# VSS
C1058 *0.1U/10V/X5R_4
TP13
*MX25L1605A

EC-DV-1

EC-DV-2 RF Suggest

SPI_CLK — C370 *15P/50V/NPO_4

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

3V_S5
GPIO179: R871 10K_4 BOARD_ID0 R872 *10K_4
GPIO180: R873 10K_4 BOARD_ID1 R874 *10K_4
GPIO181: R875 *10K_4 BOARD_ID2 R876 10K_4
R879 10K_4 BOARD_ID3 R880 *10K_4

3V_S5 — R882 *10K/F_4 CPU_TYPE R883 10K/F_4
3V_S5 — R886 *10K/F_4 CPU_SENSOR R887 10K/F_4
3V_S5 — R888 *10K/F_4 SB_HOLE_TIME R889 10K/F_4

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

+3V (4,5,6,7,8,9,10,12,13,14,15,16,17,19,20,21,23,24,25,26,27,30,32,33,35,36)
+1.1V (33,36)
3V_S5 (8,9,10,12,18,20,23,25,26,36)
1.1V_S5 (33,36)

This page is different AMD Nile

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

GPIOD Interface Not Implemented connected to GND through a 0-Ω resistor

U41C Hudson M1 Part 3 of 5

POWER

U41E Hudson M1 GROUND Part 5 of 5

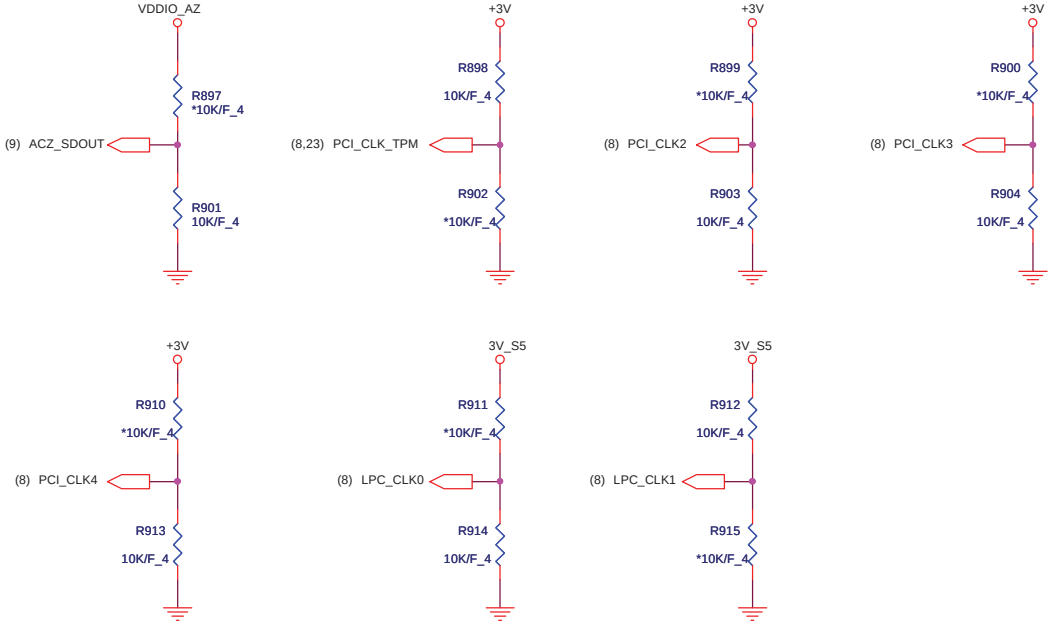
Quanta Computer Inc.
PROJECT : MK2.0
Size | Document Number: HUDSON PWR/GND(4/5) | Rev: 1A
Date: Friday, October 29, 2010 | Sheet 11 of 47

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)

OVERLAP COMMON PADS WHERE POSSIBLE FOR DUAL-OP RESISTORS.

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

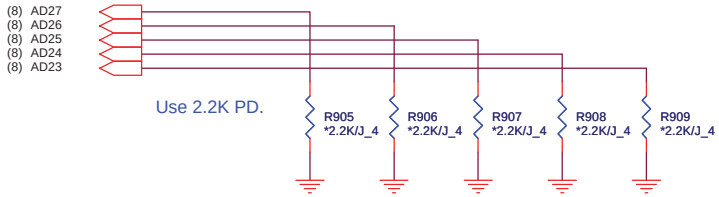
REQUIRED STRAPS



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.

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 DEFAULT	DISABLE ILA AUTORUN DEFAULT	USE FC PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	DISABLE PCI MEM BOOT DEFAULT
PULL LOW	BYPASS PCI PLL	ENABLE ILA AUTORUN	BYPASS FC PLL	USE EEPROM PCIE STRAPS	ENABLE PCI MEM BOOT

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 DEFAULT	Watchdog Timer Enabled	USE DEBUG STRAP	non_Fusion CLOCK MODE	EC ENABLED	CLKGEN ENABLED DEFAULT	H,H = Reserved H,L = SPI ROM (Default)
PULL LOW	PERFORMANCE MODE DEFAULT	FORCE PCIE Gen1	Watchdog Timer Disabled DEFAULT	IGNORE DEBUG STRAP DEFAULT	FUSION CLOCK MODE DEFAULT	EC DISABLED DEFAULT	CLKGEN DISABLED	L,H = LPC ROM L,L = FWH ROM

Quanta Computer Inc.
PROJECT : MK2.0

Size	Document Number	Rev
	HUDSON STRAPS/PWRGD(5/5)	1A
Date: Friday, October 29, 2010	Sheet 12 of 47	

+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

EC-SIT-7

+15V, +3V, +LCDVCC
R12 *0/short_6
Q2 AO3404
R2 330K_4
LCDVCC_ON
C1 0.022U/25V/X7R_6
R3 22_8
C5 10U/6.3V/X5R_8
5V_PCU
Q1 2N7002W
Q30 2N7002W
R1 100K_4
Q28 PDTC144EU
(4) L_VDD_EN
R343 10K_4

Back light

3V_PCU, +3V
R340 10K_4
R350 *4.7K_4
(14,26) LID#
D15 RB500V-40
D16 RB500V-40
DISPON
C449 0.1U/10V/X5R_4
R339 100K_4
C451 *47P/50V/NPO_4
(4) L_BKLT_EN
R345 2.2K_4
R341 10K_4
C456 *1U/10V/X5R_6
Q29 PDTC144EU
LCD_BK_OFF (9)

(26) BRIGHT_PWM
(4) L_BKLTCTL
R346 *0_4
R347 *Short_4
VADJ_PWM
EC-DV-14
EC-SIT3-3
C453 *47P/50V/NPO_4

GFX_PWR_SRC
C11 0.1U/25V/X7R_6
C12 0.1U/25V/X7R_6
C16 *10U/25V/X6S_12
R9 *Short_8
VIN

EC-DV2-1

CN27
+CAM_VCC
USBP7_D-
USBP7_D+
GND
*USB_CONN

Fro EMI

INT_TXLCLKN
INT_TXLCLKP
C564 6.8P/50V/X7R_4
C565 6.8P/50V/X7R_4

LVDS_CLK
LVDS_DATA
C448 2200P/50V/X7R_4
C452 2200P/50V/X7R_4

LOGO_LED_A#
*Clamp-Diode_4
C450

LOGO_LED_A#
EC-SIT-6
Fro EMI
C568 *2200P/50V/X7R_4

LVD-A30SFYG+

C4 2.2U/6.3V/X5R_6
+LCDVCC
+3V
(4) LVDS_CLK
(4) LVDS_DATA
(4) INT_TXLOUTN0
(4) INT_TXLOUTP0
(4) INT_TXLOUTN1
(4) INT_TXLOUTP1
(4) INT_TXLOUTN2
(4) INT_TXLOUTP2
(4) INT_TXLCLKN
(4) INT_TXLCLKP
(25) LOGO_LED_A#
5V_SUS
LOGO_LED_A#
+CAM_VCC
USBP9_D+
USBP9_D-
VADJ_PWM
DISPON
GFX_PWR_SRC
CN1

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

+3V
C455 *47P/50V/NPO_4
C454 *47P/50V/NPO_4
close to CN2

EC-DV-14 EC-SIT3-3

R351 *Short_4
L36 *DLW21HN900SQ2L@NC
R352 *Short_4
(9) USBP9-
(9) USBP9+
USBP9_D-
USBP9_D+
FOR ESD
U32 *PJSR05
+CAM_VCC

EC-DV-14 EC-SIT3-3

R342 *Short_4
L35 *DLW21HN900SQ2L@NC
R348 *Short_4
(9) USBP7-
(9) USBP7+
USBP7_D-
USBP7_D+
FOR ESD
U29 *PJSR05
+CAM_VCC

CAMERA VCC Control

+5V
R13 10K_4
R14 10K_4
Q3 AOS3413
R8 *0_6
(10) CCD_ON
Q5 CHDTC144EUPT
C22 2200P/50V/X7R_6
+CAM_VCC
C10 1U/6.3V/X5R_4
C8 0.1U/10V/X7R_4

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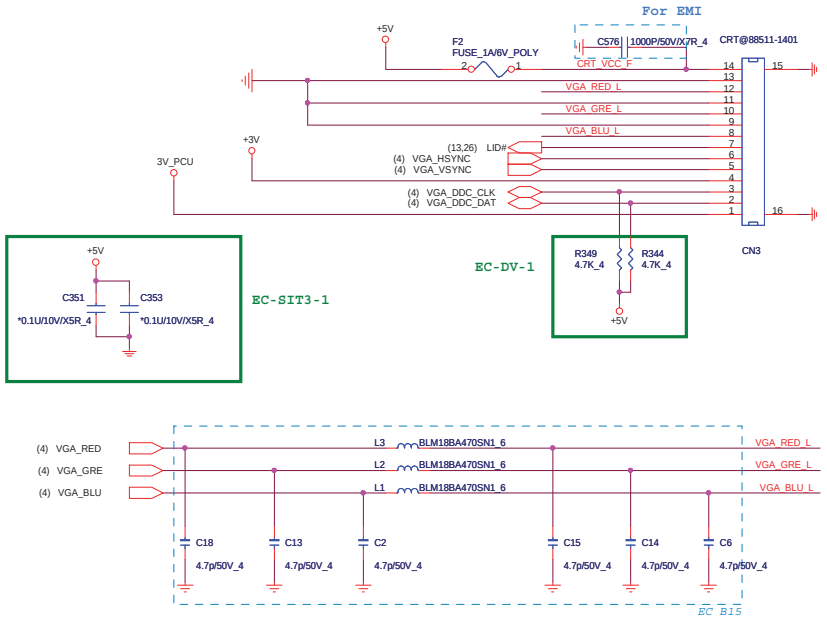
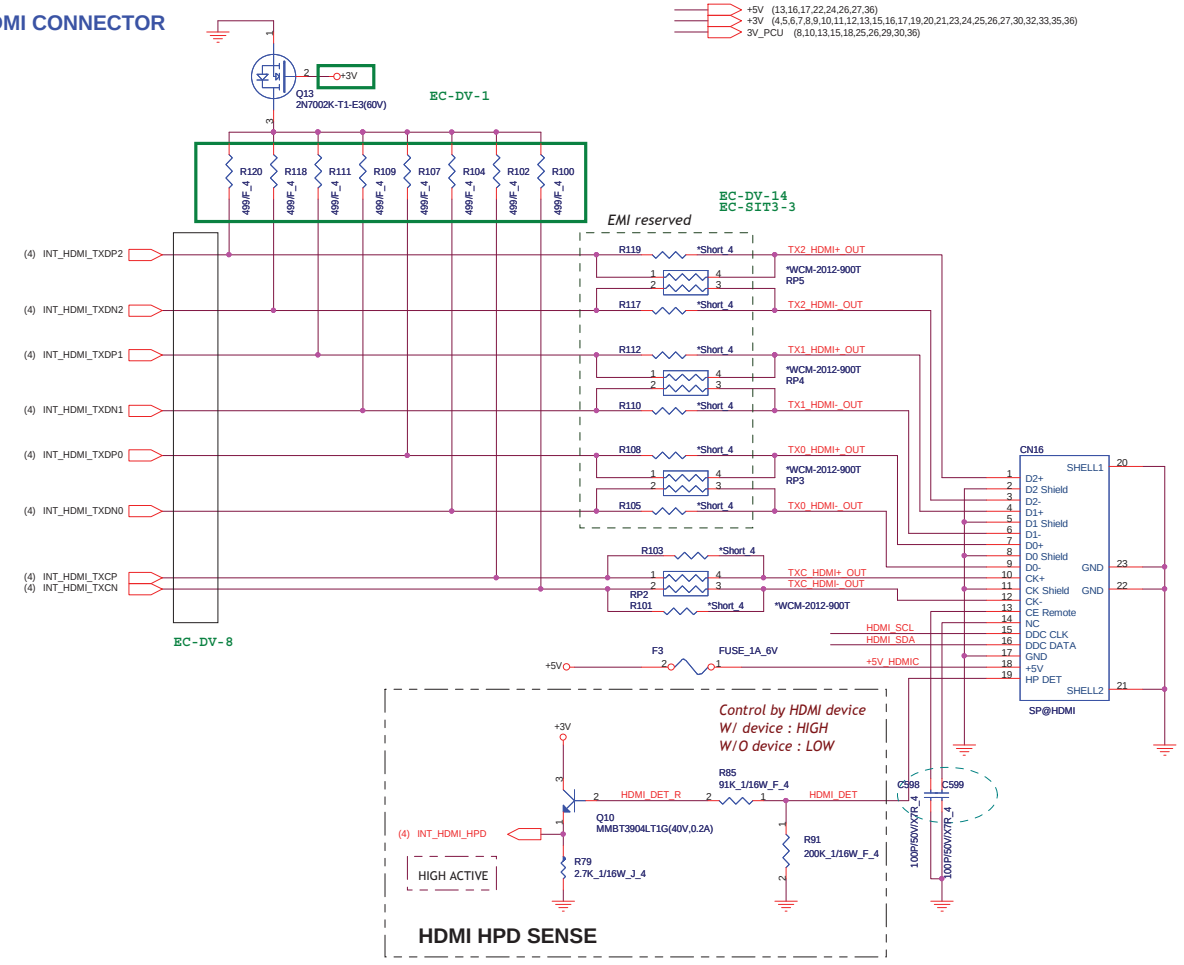
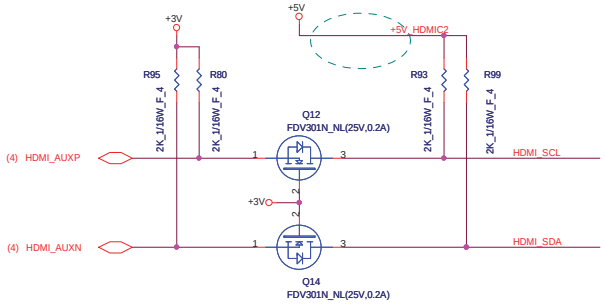
Quanta Computer Inc.		
PROJECT : MK2.0		
Size	Document Number: LCD/CAMERA	Rev: 1A
Date: Friday, October 29, 2010	Sheet 13 of 47	

CRT FFC CONNECTOR

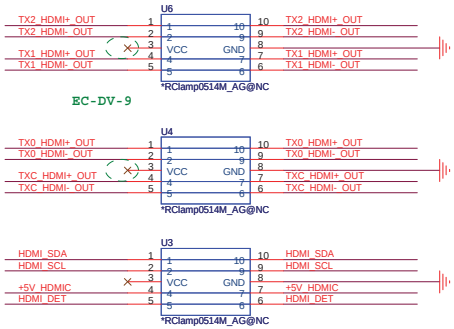


HDMI CONNECTOR





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

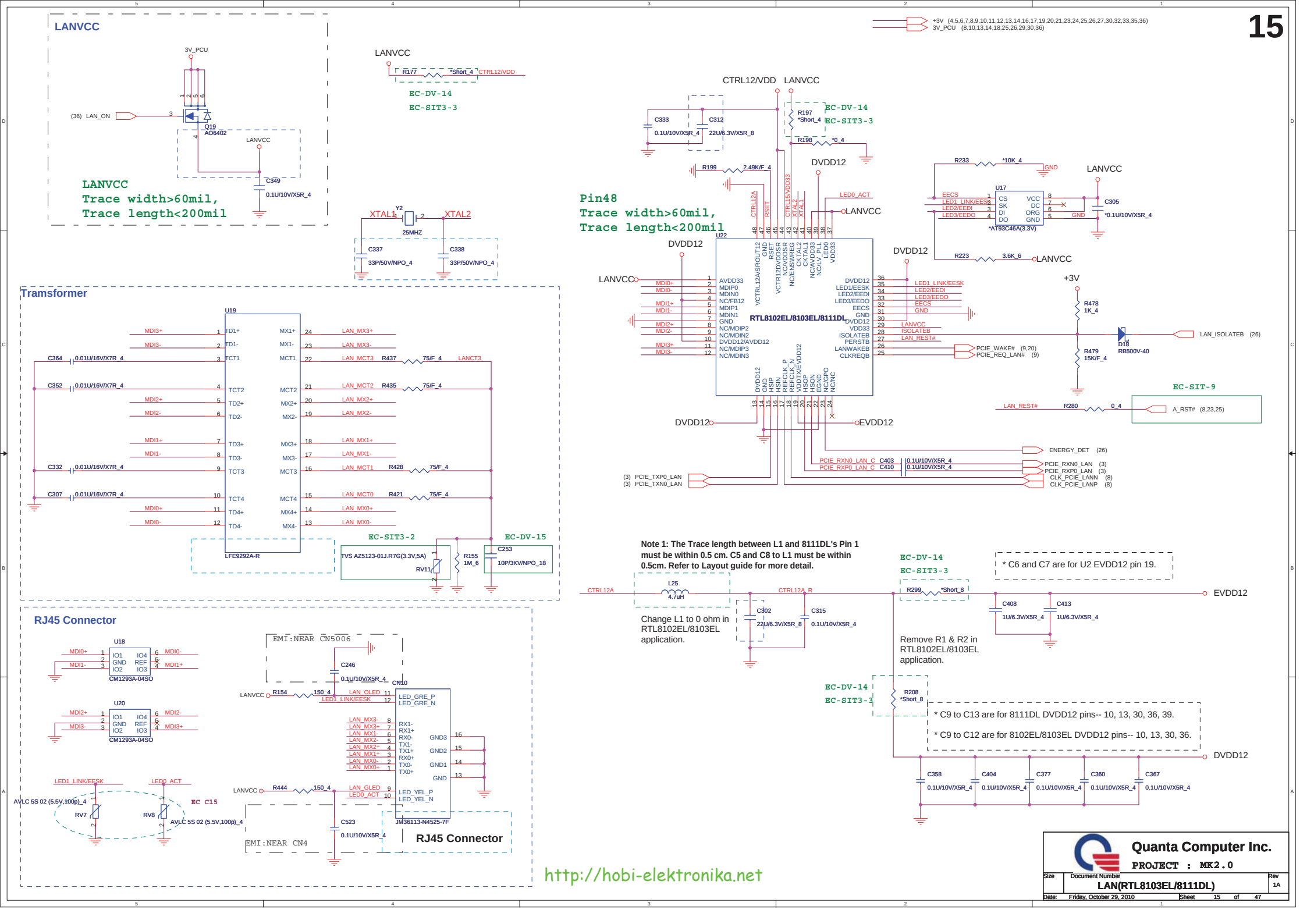


Quanta Computer Inc.

PROJECT : MK2.0

Size	Document Number	Rev
	CRT/HDMI CONN	1A

Date: Wednesday, November 03, 2010 Sheet 14 of 47


LANVCC
3V_PCU
(36) LAN_ON
Q19
AO6402
C349
0.1U/10V/X5R_4
LANVCC
Trace width>60mil,
Trace length<200mil
R177
*Short_4
CTRL12/VDD
EC-DV-14
EC-SIT3-3
Y2
XTAL1
XTAL2
25MHZ
C337
33P/50V/NPO_4
C338
33P/50V/NPO_4
+3V (4,5,6,7,8,9,10,11,12,13,14,16,17,19,20,21,23,24,25,26,27,30,32,33,35,36)
3V_PCU (8,10,13,14,18,25,26,29,30,36)
Pin48
Trace width>60mil,
Trace length<200mil
CTRL12/VDD
LANVCC
C333
0.1U/10V/X5R_4
C312
22U/6.3V/X5R_8
R197
*Short_4
EC-DV-14
EC-SIT3-3
R198
*0_4
R199
2.49K/F_4
DVDD12
LED0_ACT
U22
RTL8102EL/8103EL/8111DL
R233
*10K_4
GND
U17
*AT93C46A(3.3V)
C305
*0.1U/10V/X5R_4
R223
3.6K_6
+3V
R478
1K_4
R479
15K/F_4
D18
RB500V-40
LAN_ISOLATEB (26)
EC-SIT-9
LAN_REST#
R280
0_4
A_RST# (8,23,25)
ENERGY_DET (26)
PCIE_RXN0_LAN_C C403
PCIE_RXP0_LAN_C C410
0.1U/10V/X5R_4
PCIE_RXN0_LAN (3)
PCIE_RXP0_LAN (3)
CLK_PCIE_LANN (8)
CLK_PCIE_LANP (8)
(3) PCIE_TXP0_LAN
(3) PCIE_TXN0_LAN
PCIE_WAKE# (9,20)
PCIE_REQ_LAN# (9)
Tramsformer
U19
LFE9292A-R
C364
C352
C332
C307
0.01U/16V/X7R_4
LAN_MX3+
LAN_MX3-
LAN_MCT3
R437
75/F_4
LANCT3
LAN_MCT2
R435
LAN_MX2+
LAN_MX2-
LAN_MX1+
LAN_MX1-
LAN_MCT1
R428
LAN_MCT0
R421
LAN_MX0+
LAN_MX0-
EC-SIT3-2
TVS AZ5123-01J.R7G(3.3V,5A)
RV11
R155
1M_6
EC-DV-15
C253
10P/3KV/NPO_18
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.
CTRL12A
L25
4.7uH
CTRL12A_R
C302
22U/6.3V/X5R_8
C315
0.1U/10V/X5R_4
Change L1 to 0 ohm in RTL8102EL/8103EL application.
EC-DV-14
EC-SIT3-3
R299
*Short_8
EVDD12
C408
1U/6.3V/X5R_4
C413
1U/6.3V/X5R_4
* C6 and C7 are for U2 EVDD12 pin 19.
Remove R1 & R2 in RTL8102EL/8103EL application.
R208
*Short_8
* C9 to C13 are for 8111DL DVDD12 pins-- 10, 13, 30, 36, 39.
* C9 to C12 are for 8102EL/8103EL DVDD12 pins-- 10, 13, 30, 36.
C358
C404
C377
C360
C367
RJ45 Connector
U18
U20
CM1293A-04SO
EMI:NEAR CN5006
C246
CN10
JM36113-N4525-7F
R154
150_4
R444
C523
EMI:NEAR CN4
AVLC 5S 02 (5.5V,100p)_4
RV7
RV8
EC C15
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Quanta Computer Inc.
PROJECT : MK2.0
Size
Document Number
LAN(RTL8103EL/8111DL)
Rev
1A
Date: Friday, October 29, 2010
Sheet 15 of 47

Note:
To support Wake-on-Jack or Wake-on-Ring, the CODEC VAUX_3.3 pins must be powered by a rail that is not removed unless AC power is removed.

AVDD_3.3 pin is output of internal LDO. Do NOT connect to external supply.

Layout Note: Path from +5V to LPWR_5.0 and RPWR_5.0 must be very low resistance (<0.01 ohms). Place bypass caps very close to device.

+3V (4,5,6,7,8,9,10,11,12,13,14,15,17,19,20,21,23,24,25,26,27,30,32,33,35,36)
+5V (13,14,17,22,24,26,27,36)

EC-DV-14
EC-SIT3-3

HD Audio Bus

DIGITAL_MIC

INT Speaker

PC BEEP CONTROL

EMI Reserved

Internal MIC

Sense For MIC/ Headphone out combo

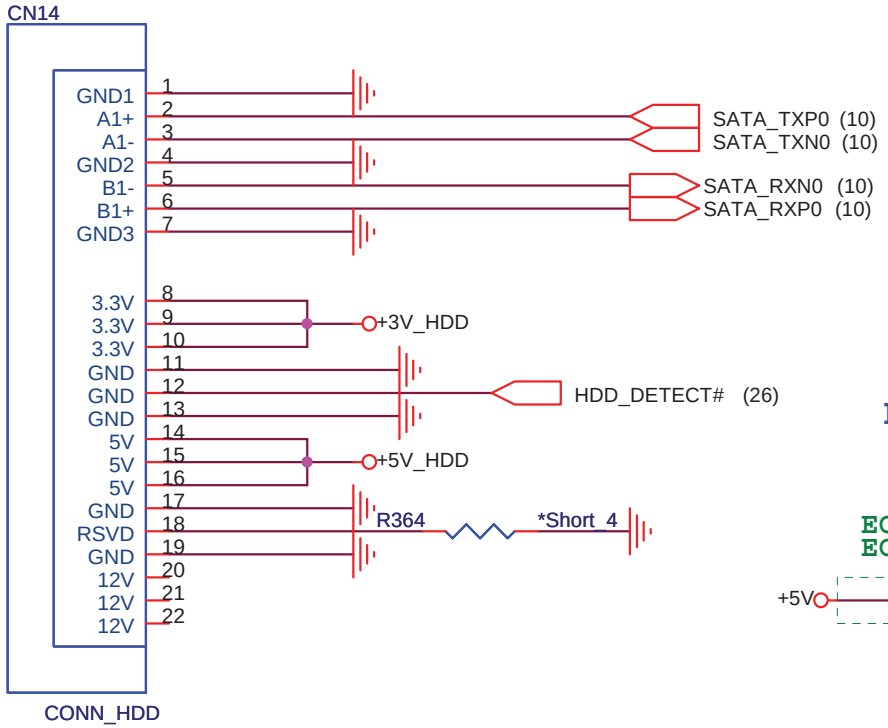
External MIC/ Headphone out combo

Mount R57 (20K)
Vendor suggestion

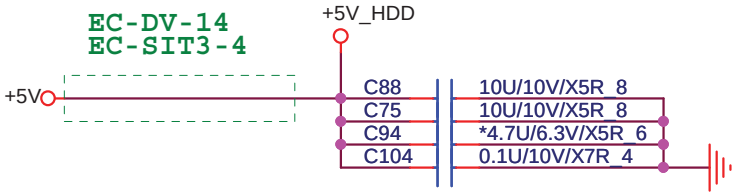
Quanta Computer Inc.		
PROJECT : MK2.0		
Size	Document Number	Rev
	AUDIO (CX20582, SPK)	1A
Date: Friday, October 29, 2010	Sheet 16 of 47	

HDD

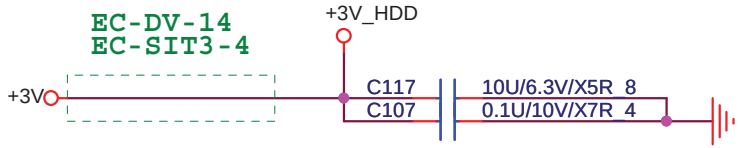
+3V (4,5,6,7,8,9,10,11,12,13,14,15,16,19,20,21,23,24,25,26,27,30,32,33,35,36)
+5V (13,14,16,22,24,26,27,36)



DC Current rating: 2 A (MAX)



DC Current rating: 3 A (MAX)



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Quanta Computer Inc.

PROJECT : MK2.0

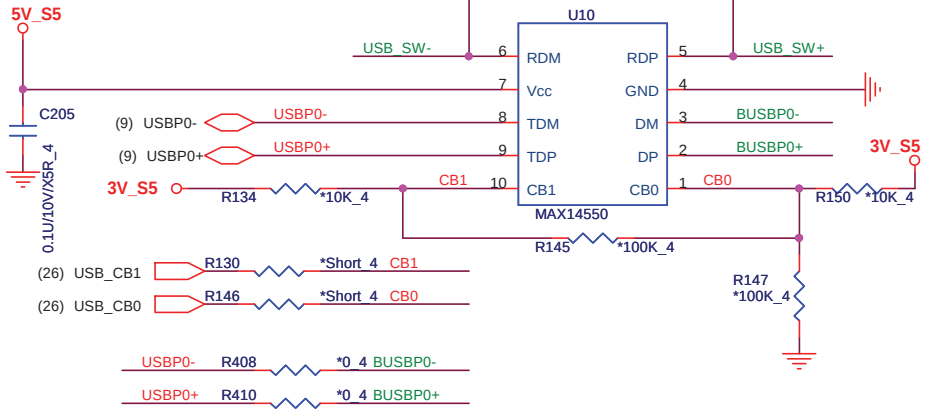
Size	Document Number	Rev
	SATA	1A
Date: Friday, October 29, 2010	Sheet 17 of 47	

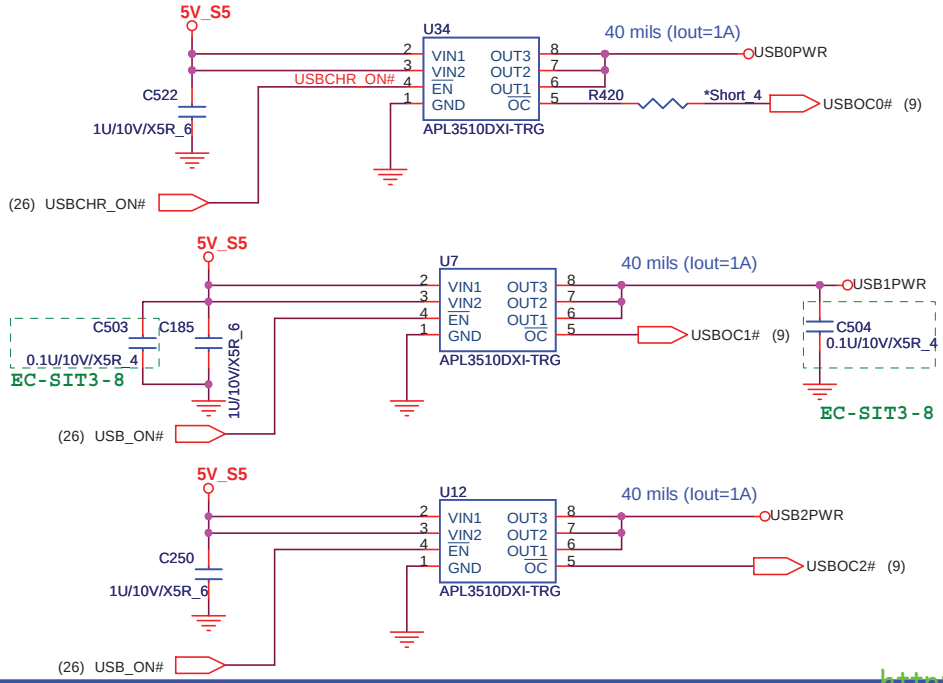
USB SLEEP CHARGE (NEW)

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

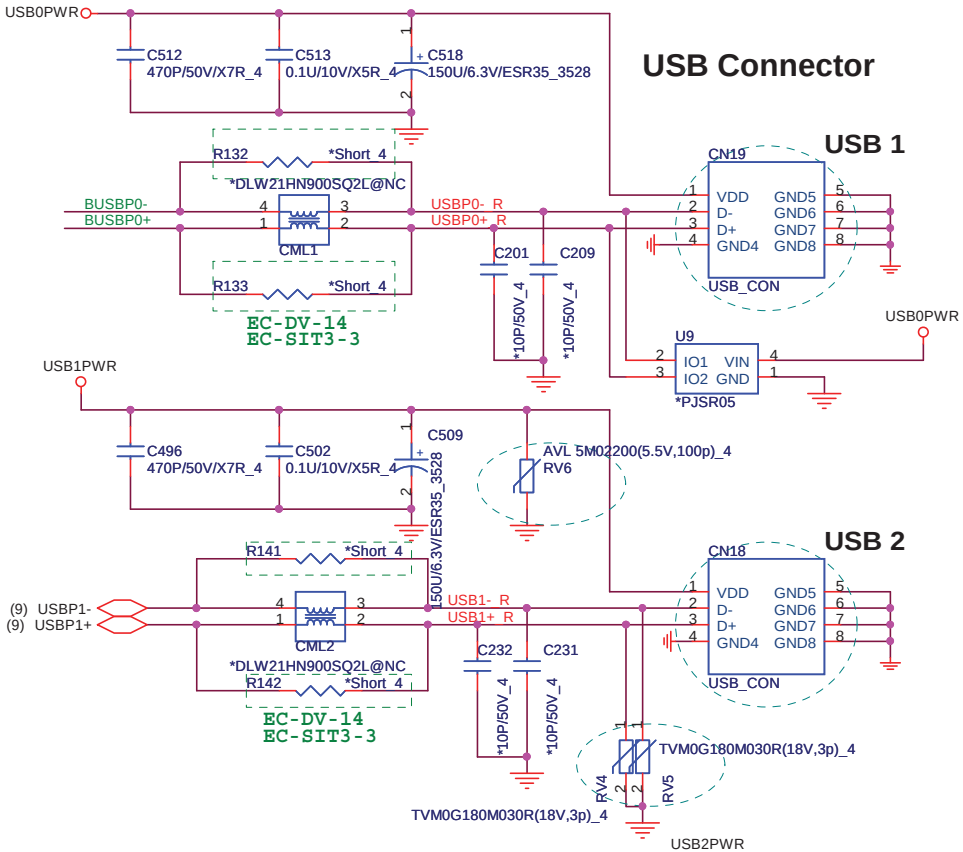
If mount R97, R95, R94.
R102 should mount 49K

Sleep charger notice

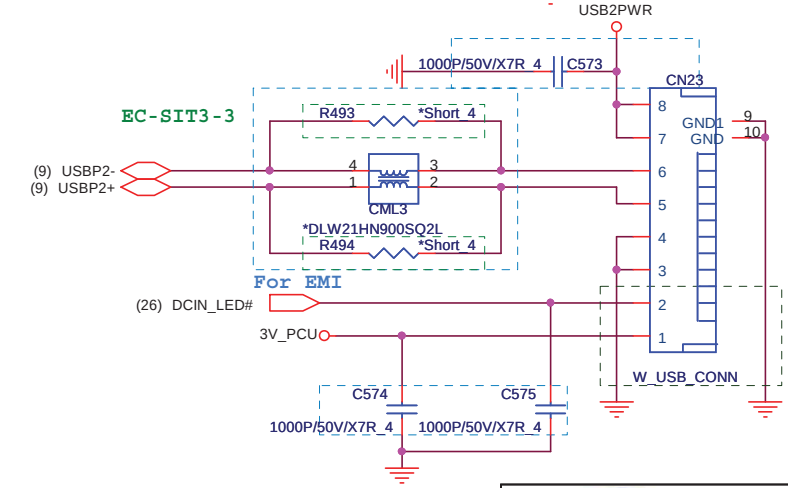




USB Connector



USB BTB connector

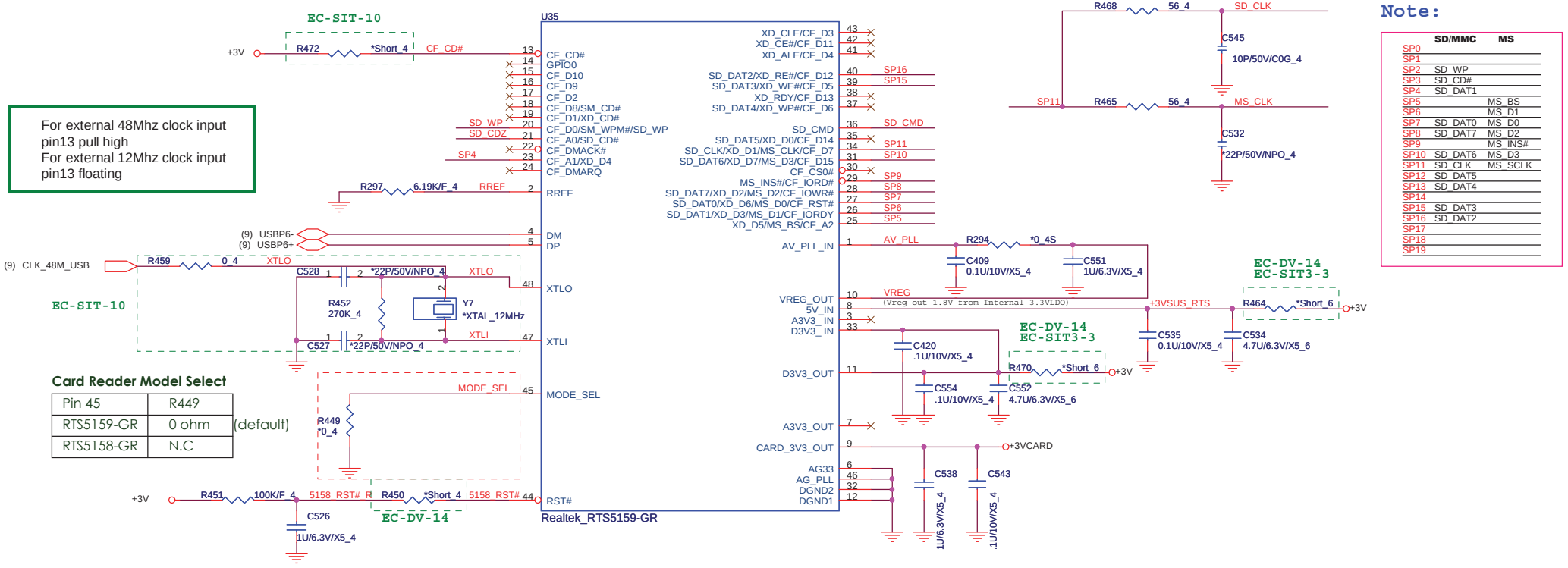


5V_S5 (36)
3V_S5 (8,9,10,11,12,20,23,25,26,36)
5V_SUS (13,25,32,34,35,36)
3V_PCU (8,10,13,14,15,25,26,29,30,36)

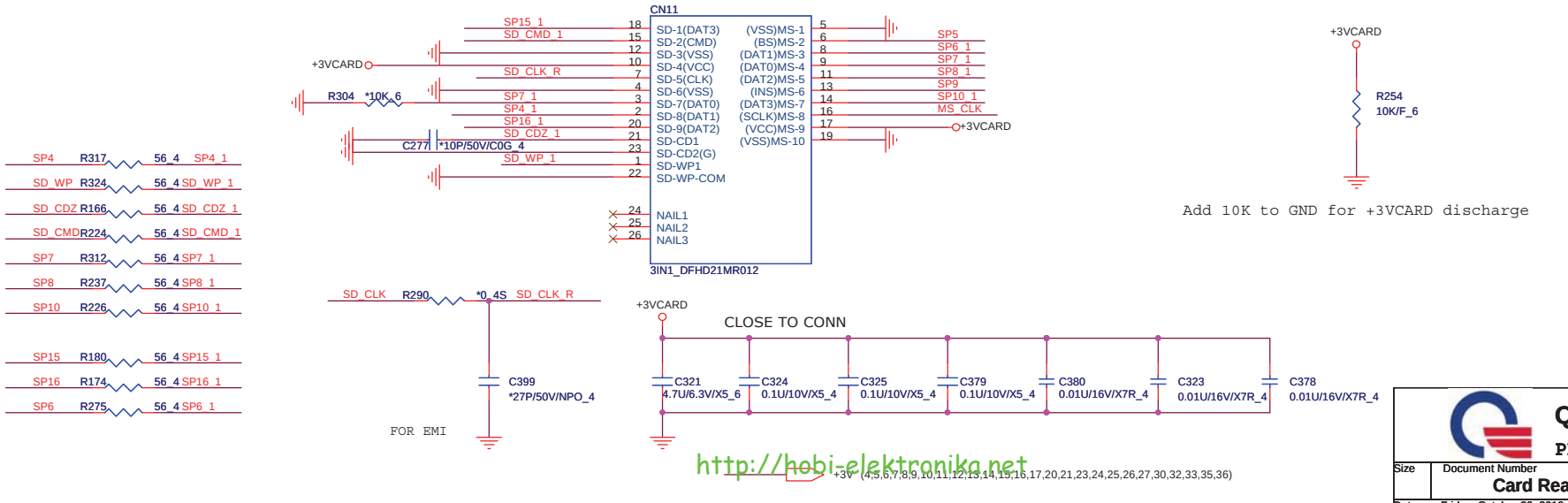
Quanta Computer Inc.
PROJECT : MK2.0

Size	Document Number	Rev
	USB x 3	1A
Date: Friday, October 29, 2010	Sheet 18 of 47	

RTL5159



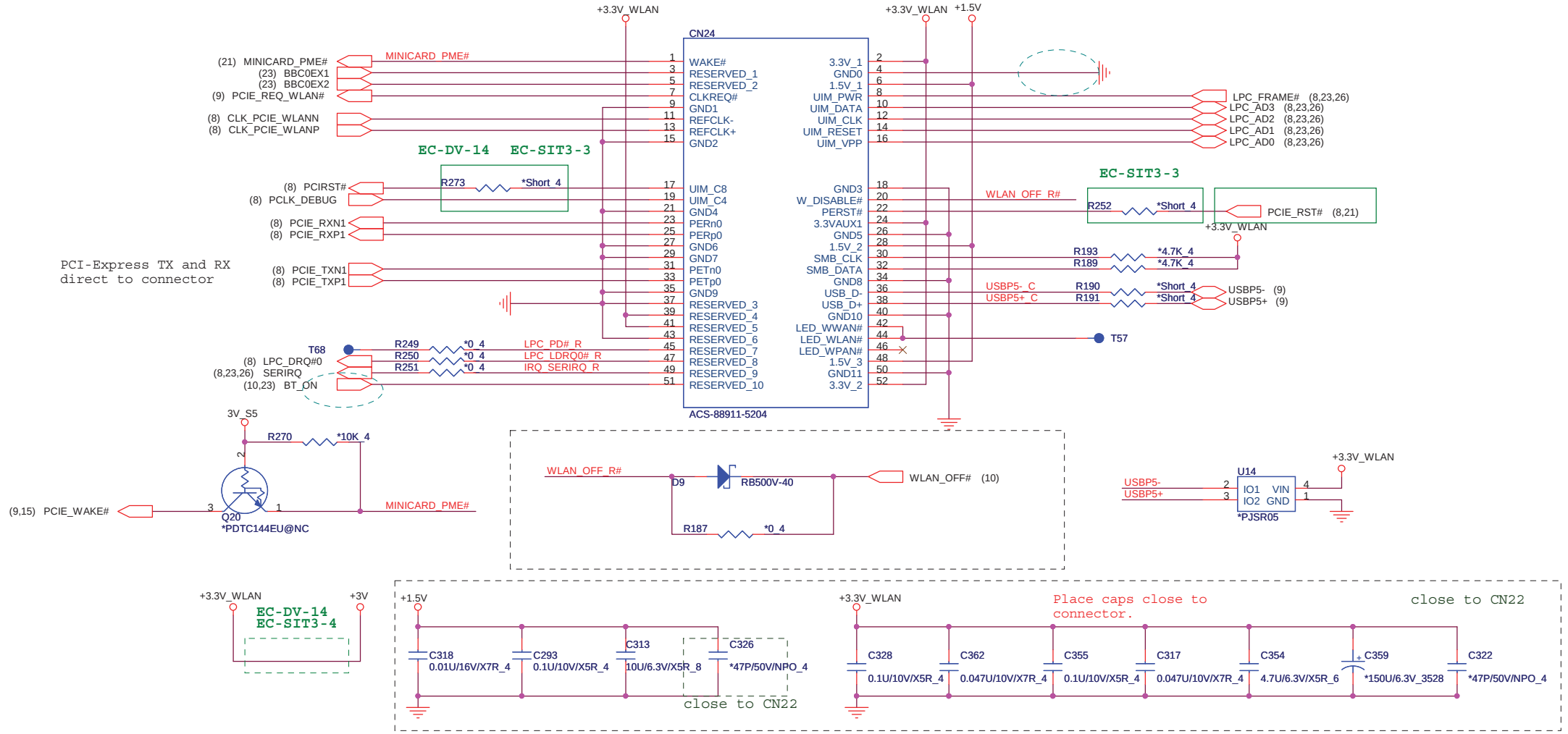
3 IN 1 CARD READER



Quanta Computer Inc.		
PROJECT : MK2.0		
Size	Document Number: Card Reader-RTL5159	Rev: 1A
Date: Friday, October 29, 2010	Sheet 19 of 47	

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)



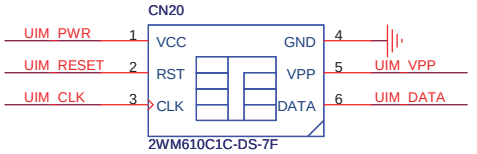
Quanta Computer Inc.
PROJECT : MK2.0

Size	Document Number	Rev
	WLAN	1A

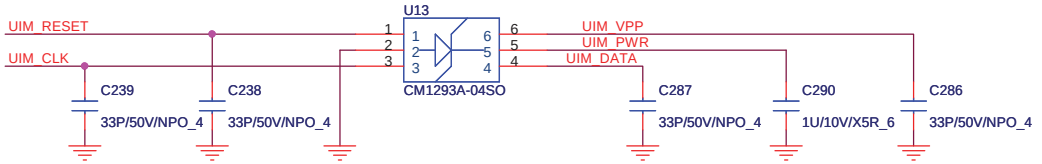
Date: Friday, October 29, 2010 Sheet 20 of 47

SIM Card CONN

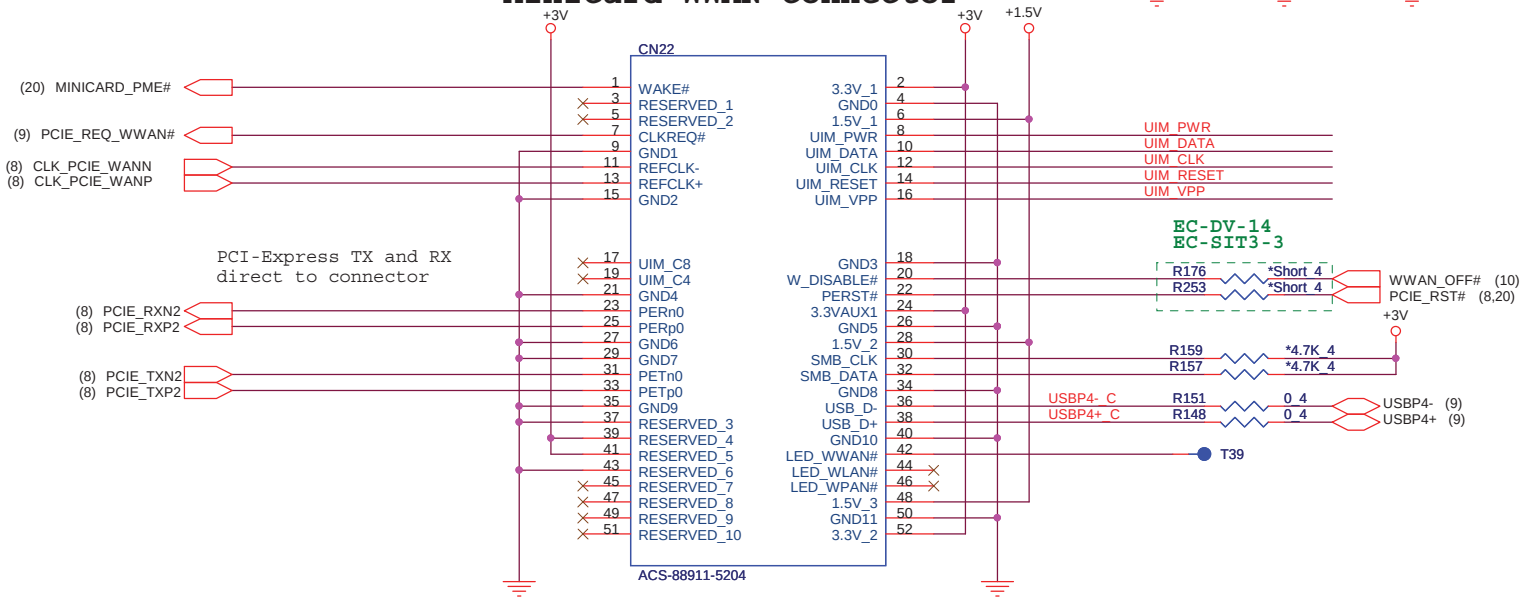
+3V (4,5,6,7,8,9,10,11,12,13,14,15,16,17,19,20,23,24,25,26,27,30,32,33,35,36)
+1.5V (20,36)

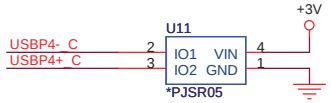


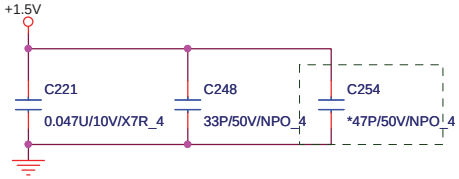
Layout Note:
UIM_RESET,UIM_CLK,UIM_DATA routting as short as possible

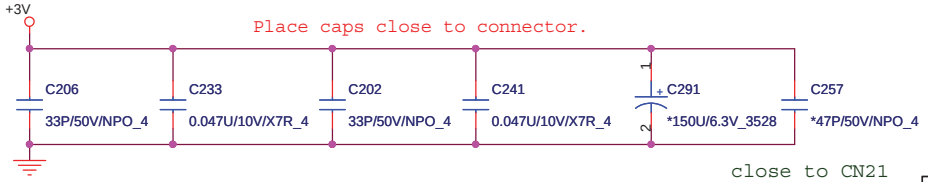


MiniCard WWAN connector





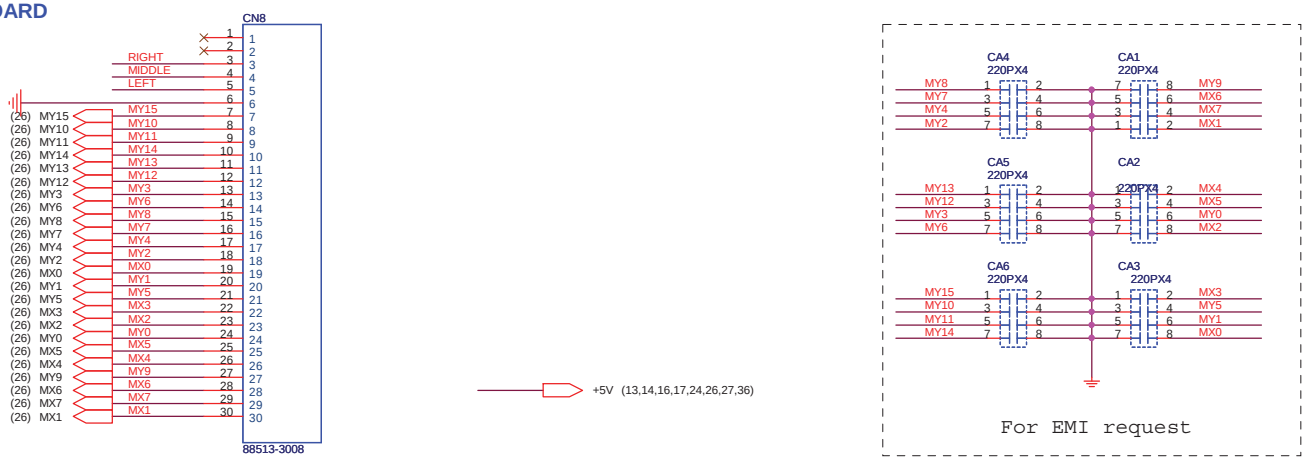




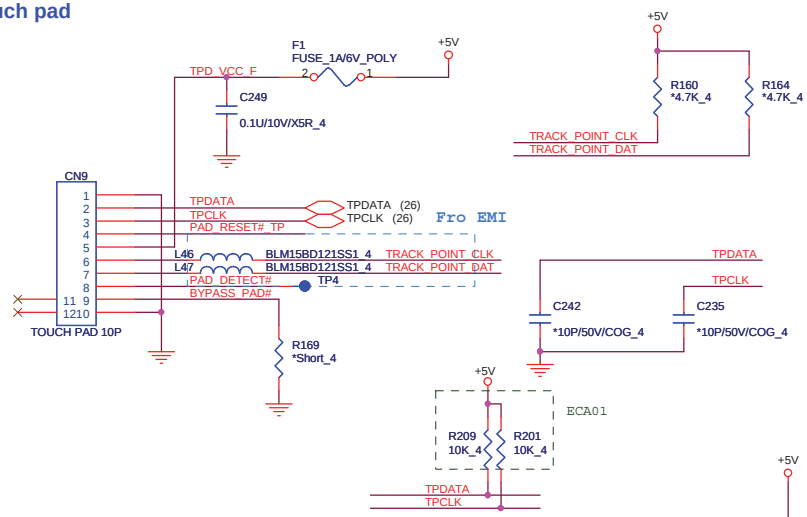
Quanta Computer Inc.
PROJECT : MK2.0

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

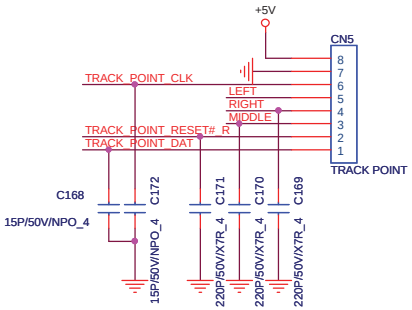
KEYBOARD



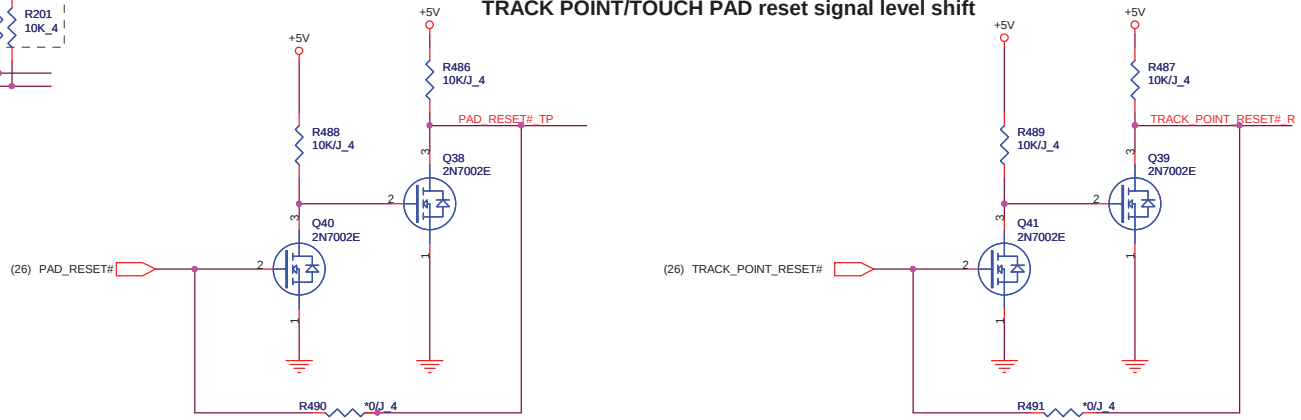
Touch pad



TRACK POINT



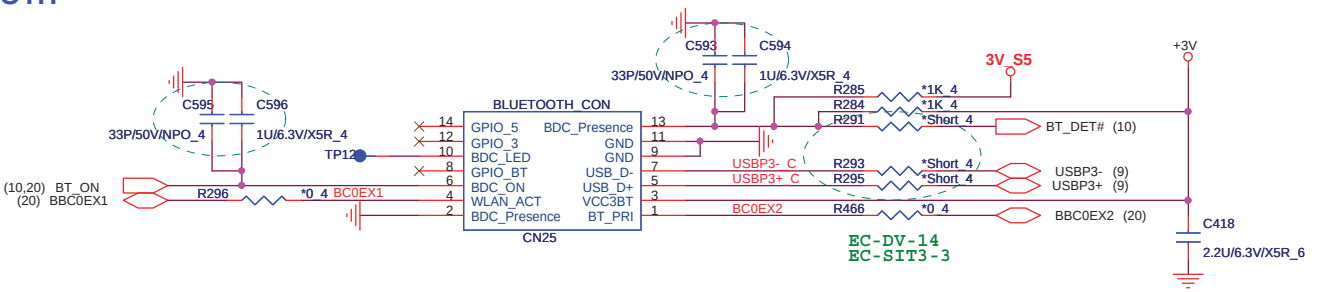
TRACK POINT/TOUCH PAD reset signal level shift



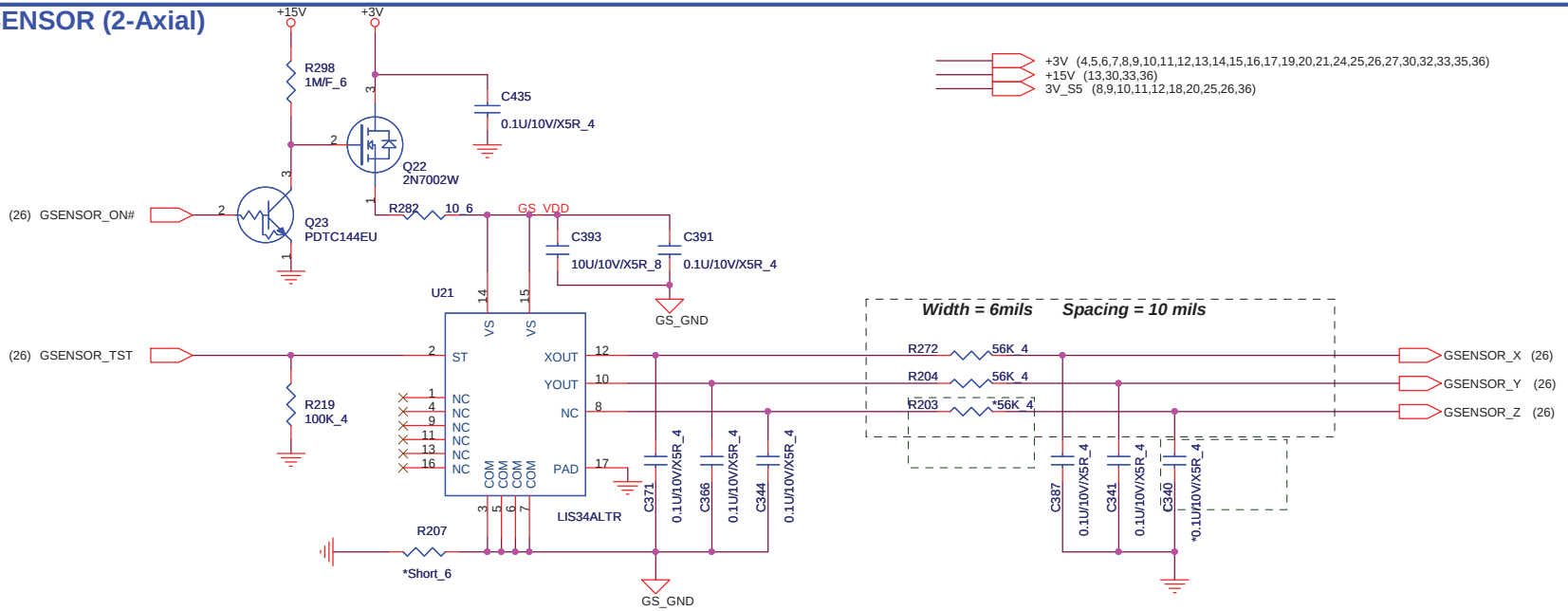
Quanta Computer Inc.
PROJECT : MK2.0

Size	Document Number	Rev
	KB/TP	1A
Date: Friday, October 29, 2010	Sheet 22 of 47	

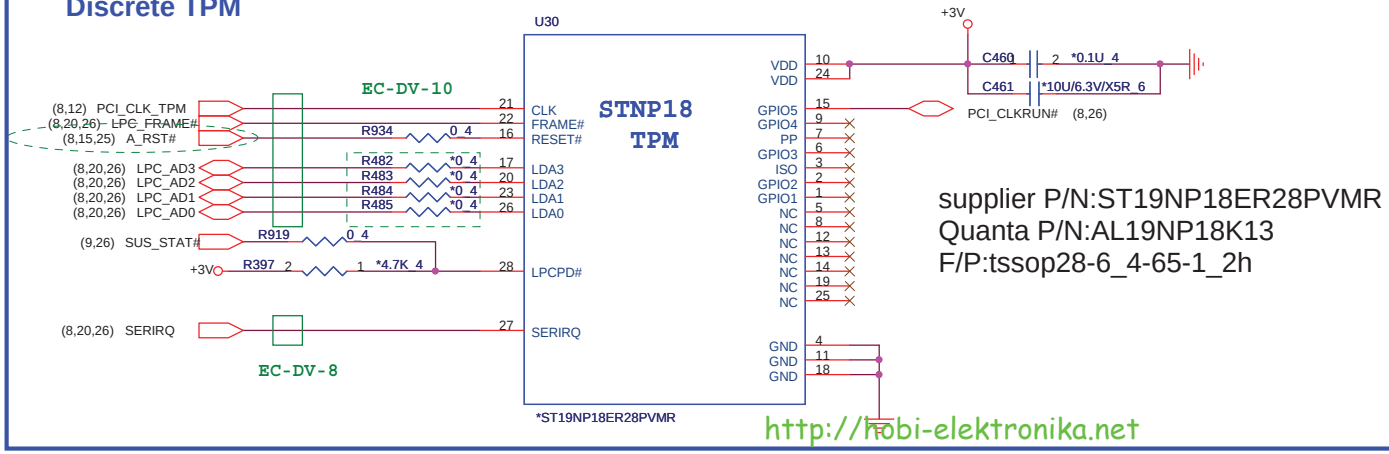
BLUETOOTH



G-SENSOR (2-Axial)



Discrete TPM

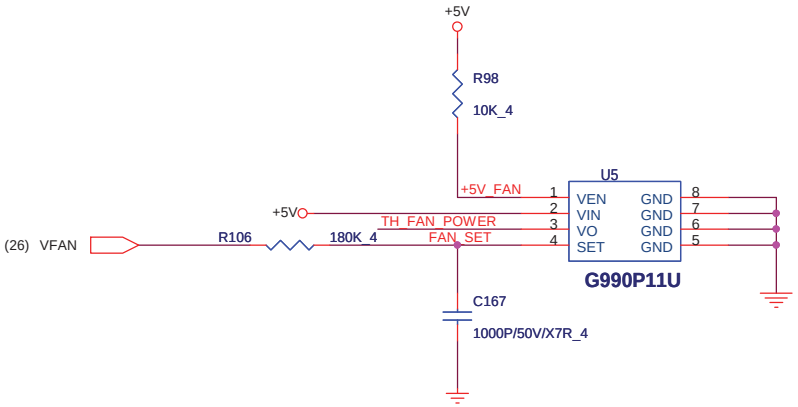


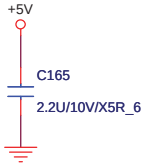
Quanta Computer Inc.
PROJECT : MK2.0

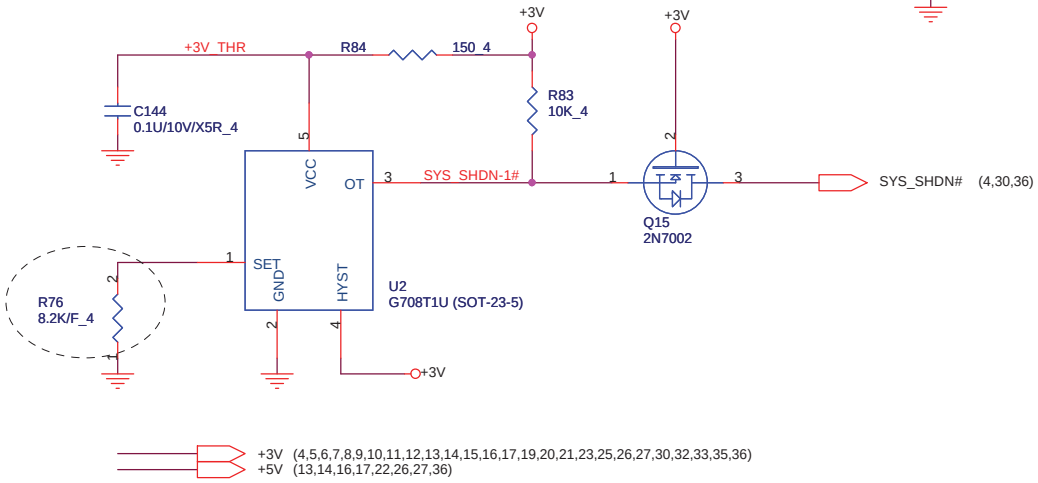
Size	Document Number	Rev
	BT/G-SENSOR/TPM	1A

Date: Friday, October 29, 2010 Sheet 23 of 47

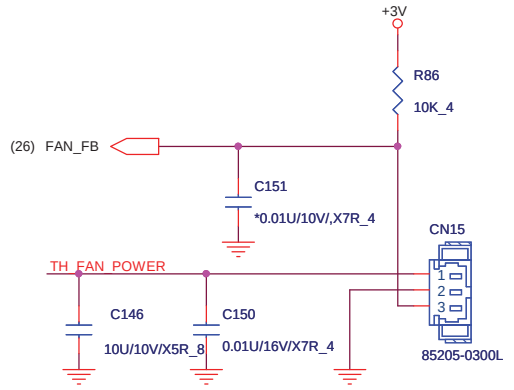
FANPWR = 1.6*VSET

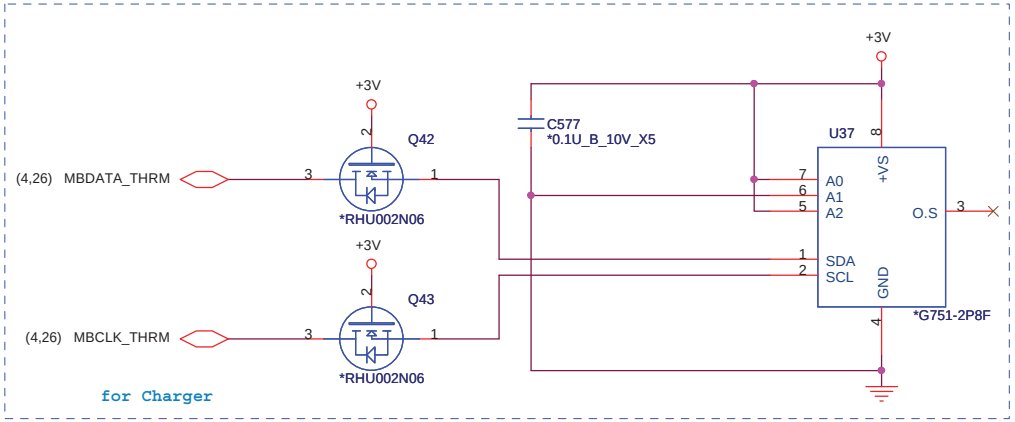






+3V (4,5,6,7,8,9,10,11,12,13,14,15,16,17,19,20,21,23,25,26,27,30,32,33,35,36)
+5V (13,14,16,17,22,26,27,36)





ADDRESS: 9AH

ADDRESS

1	0	0	1	A2	A1	A0	0

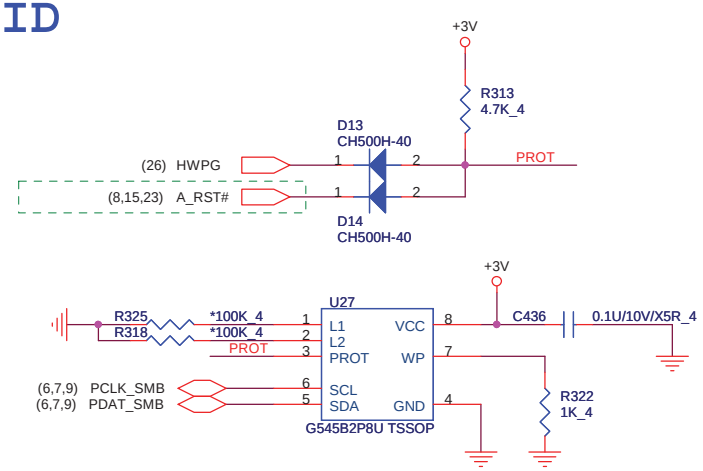
MSB LSB

Quanta Computer Inc.
PROJECT : MK2.0

Size	Document Number	Rev
	FAN/Thermal	1A
Date: Friday, October 29, 2010	Sheet 24 of 47	

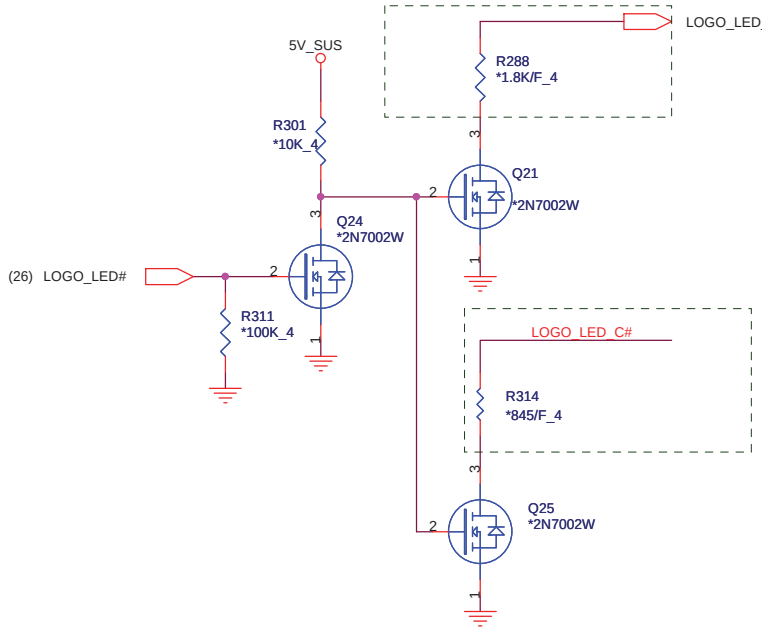
+3V (4,5,6,7,8,9,10,11,12,13,14,15,16,17,19,20,21,23,24,26,27,30,32,33,35,36)
3V_PCU (8,10,13,14,15,18,26,29,30,36)
3V_S5 (8,9,10,11,12,18,20,23,26,36)
5V_SUS (13,32,34,35,36)

RFID

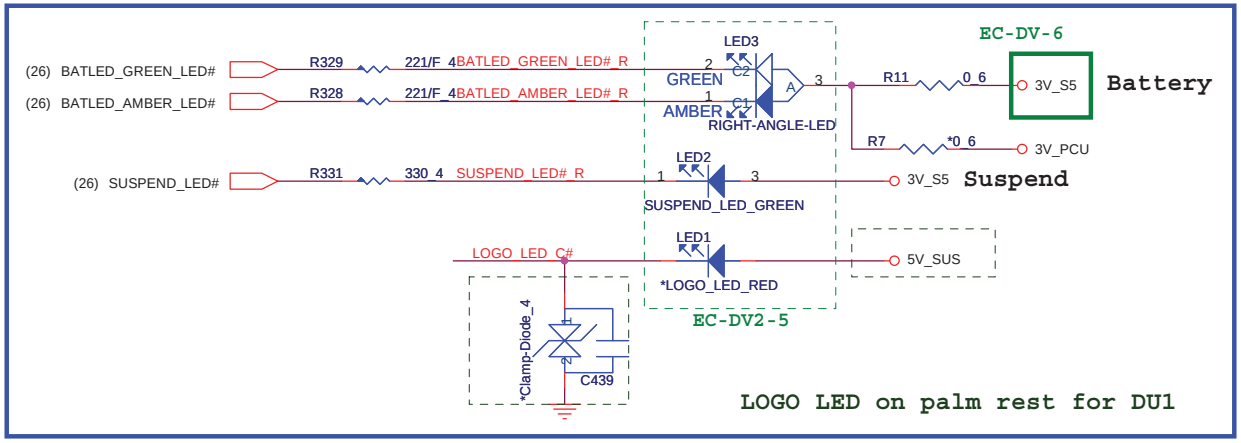


EC-SIT-6

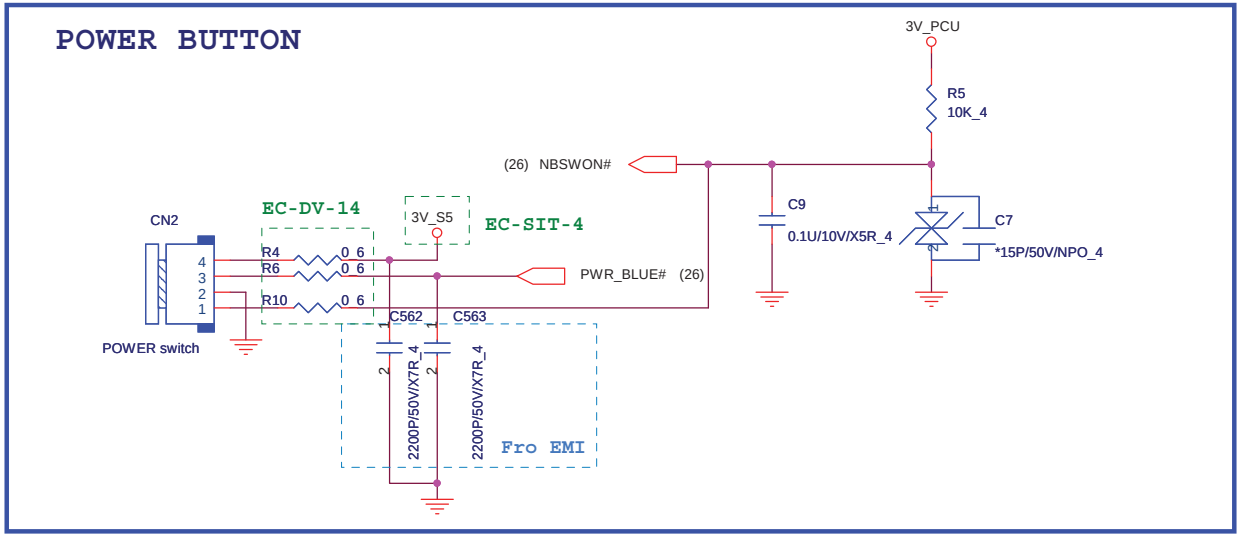
LED Driver



LOGO LED on panel cover for DU1



POWER BUTTON



http://hobi-elektronika.net

Quanta Computer Inc.		
PROJECT : MK2.0		
Size	Document Number: SW/LED/RFID_EEPROM	Rev: 1A
Date: Friday, October 29, 2010	Sheet 25 of 47	

IT8518

+AVBAT
+3VRTC_EC
R192 *0_6
C350 *0.1U/10V/X5R_4
R195 0_6
EC-DV-5

Layout Note:
Place all capacitors close to IT8512.

3V_PCU
C372 0.1U/10V/X5R_4
C374 0.1U/10V/X5R_4
C373 0.1U/10V/X5R_4
C228 0.1U/10V/X5R_4
C348 0.1U/10V/X5R_4
C247 0.1U/10V/X5R_4

(8) PCLK_591
PCLK_591
C294 *15P/50V/NPO_4

Layout Note:
net "3VPCU" and "RTC_VCC"
minimum trace width 12mils.

+3V
+3VRTC_EC
3V_PCU
C303 0.1U/10V/X5_R

IT8512_AVCC
C285 1000P/16V/X7R_4
C284 1U/6.3V/X5R_4
L22 BK1608HS121-T
L21 BK1608HS121-T
L29 BK1608HS121-T
C365 0.1U/10V/X5R_4
3V_PCU
3V_PCU
(For PLL Power)
IT8512_VSTBY

+3V (4,5,6,7,8,9,10,11,12,13,14,15,16,17,19,20,21,23,24,25,27,30,32,33,35,36)
3V_PCU (8,10,13,14,15,18,25,29,30,36)
+5V (13,14,16,17,22,24,27,36)
+AVBAT (8)

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

3V_PCU
MBCLK_THRM R260 4.7K_4
MBDATA_THRM R259 4.7K_4
MBCLK R276 4.7K_4
MBDATA R255 4.7K_4
PAD_RESET# R139 *10K_4
BATLED_AMBER_LED# R256 *10K_4
BATLED_GREEN_LED# R277 *10K_4
BLC# R181 *10K_4
TRACK_POINT_RESET# R182 *10K_4
HDD_DETECT# R175 10K_4
SYS_RST# R506 *10K_4

EC-SIT2-1
EC-SIT3-3
HWPG(KBC)
+3V
R247 10K_4
(30) HWPG_SYS R508 *Short_4 D7006 *BAS316 HWPG
(31) HWPG_1.5V R509 *Short_4 D7007 *BAS316
(32) HWPG_1V R510 *Short_4 D7008 *BAS316
(33) HWPG_1.1V R511 *Short_4 D7009 *BAS316

TRACK_POINT_RESET# → TRACK_POINT_RESET# (22)
LAN_ISOLATEB (15)
PAD_RESET# → PAD_RESET# (22)
ICH_RSMRST# (9)
1.1V_ON (33,36)
ECPWROK (9)
GSENSOR_TST (23)
DCIN_LED# (18)
VR_ON (32,35,36)
USB_ON# (18)
MAIN_ON (31,32,34,36)
SUS_ON (31,36)
S5_ON (33,36)
TP6 TP1
R228 *Short_4 PCI_CLKRUN# (8,23)
+5V

(8,20,23) LPC_AD0
(8,20,23) LPC_AD1
(8,20,23) LPC_AD2
(8,20,23) LPC_AD3
(13,14) LID#
PCLK_591
(8,20,23) LPC_FRAME#
(9,23) SUS_STAT# R920 *0_4 OV_EVENT
(9) GATEA20 D12 RB500V-40 GATEA20_R
(8,20,23) SERIRQ D7 RB500V-40 KBSMI#_D
(9) KBSMI# D6 RB500V-40 SCI#_D
(9) SCI#
WRST_8512#
(9) RCIN# D8 RB500V-40
TP8

LAD0
LAD1
LAD2
LAD3
LPCRST#/WUI4/GPD2
LPCCLK
LFRAME#
LPCPD#/WUI6/GPE6
GA20/GPB5
SERIRQ
ECSMI#/GPD4
ECSCI#/GPD3
WRST#
KBRST#/GPB6
PWUREQ#/GPC7
LPC

SM BUS
SMCLK0/GPB3
SMDAT0/GPB4
SMCLK1/GPC1
SMDAT1/GPC2
SMCLK2/GPF6
SMDAT2/GPF7
MBCLK (29)
MBDATA (29)
MBCLK_THRM (4,24)
MBDATA_THRM (4,24)
TP11
VOLMUTE# (16)
RP8 *10K_8P4R

PS/2
PS2CLK0/GPF0
PS2DAT0/GPF1
PS2CLK1/GPF2
PS2DAT1/GPF3
PS2CLK2/GPF4
PS2DAT2/GPF5
MSCLK
MSDATA
KPCLK
KPDATA
TPCLK (22)
TPDATA (22)

GPIO

(29) D/C#
(36) LAN_POWER
GPC0/CRX
GPB2/CTX
CIR

3V_PCU
R165 470K_4
WRST_8512#
C283 0.1U/10V/X5R_4

3V_PCU
R278 *10K_4
IT8512_TM
R257 100K_4

TMKBC Function
Enable
Disable

Note 1 : Since all GPIO belong to VSTBY power domain, and there are some special considerations below:
(1) If it is output to external VCC derived power domain circuit, this signal should be isolated by a diode such as KBRST# and GA20.
(2) If it is input from external VCC derived power domain circuit, this external circuit must consider not to float the GPIO input.

Note 2 :
(1) Each input pin should be driven or pulled.
(2) Each output-drain output pin should be pulled.

PWM
PWM0/GPA0 PWR_LED
PWM1/GPA1 LOGO_LED# (25)
PWM2/GPA2 VFAN (24)
PWM3/GPA3 SUSPEND_LED# (25)
PWM4/GPA4 GSENSOR_ON# (23)
PWM5/GPA5 PCBEEP_AD (16)
PWM6/GPA6 ENERGY_DET (15)
PWM7/GPA7 BRIGHT_PWM (13)
TACH0/GPD6 FAN_FB (24)
TACH1/GPD7 FAN_SIG TP3
TMR0/WUI2/GPC4 SYS_RST# (9)
TMR1/WUI3/GPC6 R507 0_4 HWPG (25)

WAKE UP
PWRSW/GPE4 NBSWON# (25)
RI1#/WUI0/GPD0 PM_SLP_S3# (9)
RI2#/WUI1/GPD1 ACIN (29)
WUI5/GPE5 TP2
RING#/PWRFAIL#/LPCRST#/GPB7 TP10

UART
TXD/GPB1 BATLED_AMBER_LED# (25)
RXD/GPB0 BATLED_GREEN_LED# (25)

A/D D/A
ADC0/GPI0 TEMP_MBAT (29)
ADC1/GPI1 MBATV (29)
ADC2/GPI2 AD_ID (29)
ADC3/GPI3 GSENSOR_Z (23)
ADC4/GPI4 GSENSOR_X (23)
ADC5/GPI5 GSENSOR_Y (23)
ADC6/GPI6 ACDC_ID (29)
ADC7/GPI7 PM_SLP_S4# (9)
DAC0/GPJ0 HDD_DETECT# (17)
DAC1/GPJ1 BL/C# (29)
DAC2/GPJ2 USB_CB1 (18)
DAC3/GPJ3 PROCHOT# (4,8,35)
DAC4/GPJ4 DNBSWON# (9)
DAC5/GPJ5 USB_CB0 (18)
R512 *0_4
D19 RB500V-40

CLOCK
CK32KE IT8512_CK32KE
CK32K IT8512_CK32K
Y3 *32.768KHZ
C369 0_4
C316 *15P/50V/NPO_4

EC-SIT-3
EC-SIT2-1

EC-DV-2 RF Suggest
8512_SCK
C375 *15P/50V/NPO_4

EC-DV-7 EC-SIT-5
3V_S5
R96 100K_4
PWR_LED
PWR_BLUE# (25)
Q31 *PDTC144EU
R194 68_4
EC-SIT-16

16Mbit (2M Byte), SPI
3V_PCU
Winbond AKE38ZP0N00
SST AKE28FP0K07
MX AKE37FP0Z13
R239 10K_4
R305 10K_4
U25 MX25L1605A
8512_SCE#
8512_SCK R302 47_4 8512_SCK1
8512_SI R303 47_4 8512_SI1
8512_SO R238 15_4 8512_SO1
C422 0.1U/10V/X5R_4
TP7

To avoid glitch during bootup
ICH_RSMRST# R140 *100K/F_4
C230 *0.1U/10V/X5R_4
8512_SCK1 C423 *10P/50V/C0G_4
ECA11
BL/C# C571 68P/50V/C0G_4
For EMI

IT8512_TM
8512_SCK
8512_SO
8512_SI
8512_SCE#
EC_ME_ALERT
(18) USBCHR_ON#
FLRST#/WUI7/GPG0/TM
FLCLK/SCK
FLAD3/GPG6
FLAD2/SO
FLAD1/SI
FLAD0/SCE#
FLFRAME#/GPG2
FLASH

R258 *100K_4

R258	FLASH TYPE SELECT
High	LPC/FWH FLASH ROM
Low	SPI FLASH ROM (Default)

KSO0/PD0
KSO1/PD1
KSO2/PD2
KSO3/PD3
KSO4/PD4
KSO5/PD5
KSO6/PD6
KSO7/PD7
KSO8/ACK#
KSO9/BUSY
KSO10/PE
KSO11/ERR#
KSO12/SLCT
KSO13
KSO14
KSO15
KBMX
(22) MY[0..15]
(22) MX[0..7]

VSS
AVSS
U15 IT8502E
C301 *1U/6.3V/X5R_4
C300 0.1U/10V/X5R_4

Quanta Computer Inc.
PROJECT : MK2.0
Size | Document Number: KBC IT8502E | Rev: 1A
Date: Friday, October 29, 2010 | Sheet 26 of 47

Hole for CPU support

HOLE2 *H-T146B197D146PB
HOLE3 *H-T146B197D146PB
HOLE17 *H-T146B197D146PB
HOLE18 *H-T146B197D146PB

MiniCard WLAN

HOLE15 H-C197D102P2

MiniCard WLAN

HOLE14 h-c197d35p2
HOLE13 h-c197d102p2

EC-DV-13

BLUETOOTH

HOLE16 *hg-c276d91p2

CRT

Spad1 *Spad1

Keyboard

HOLE6 *o-mk-note-1

SB

HOLE20 *H-TC5BC2_6D2_6PT
HOLE19 *H-TC5BC2_6D2_6PT

Boundary Hole

HOLE5 *H-C47D47N
HOLE8 *H-O102X91D102X91N
HOLE9 *hg-c276d91p2

Boundary Hole

HOLE1 *H-C236D91P2
HOLE12 *h-c256d91p2
HOLE4 *H-C259D209P2
HOLE10 *h-tc236bc276d91p2
HOLE11 *h-tc236bc197d91p2
HOLE7 *HG-C197D91P2

EC-DV-13

EMI

1.5V_SUS
C91 C86 C164 C494 C309 C425 C361
2200P/50V/X7R_4

+3V
C457 C20 C128 C412 C432 C200 C400 C163
2200P/50V/X7R_4

+5V
C592 C3 C204 C227 C437 C416 C493
1U/6.3V/X5R_4
2200P/50V/X7R_4

Fro EMI

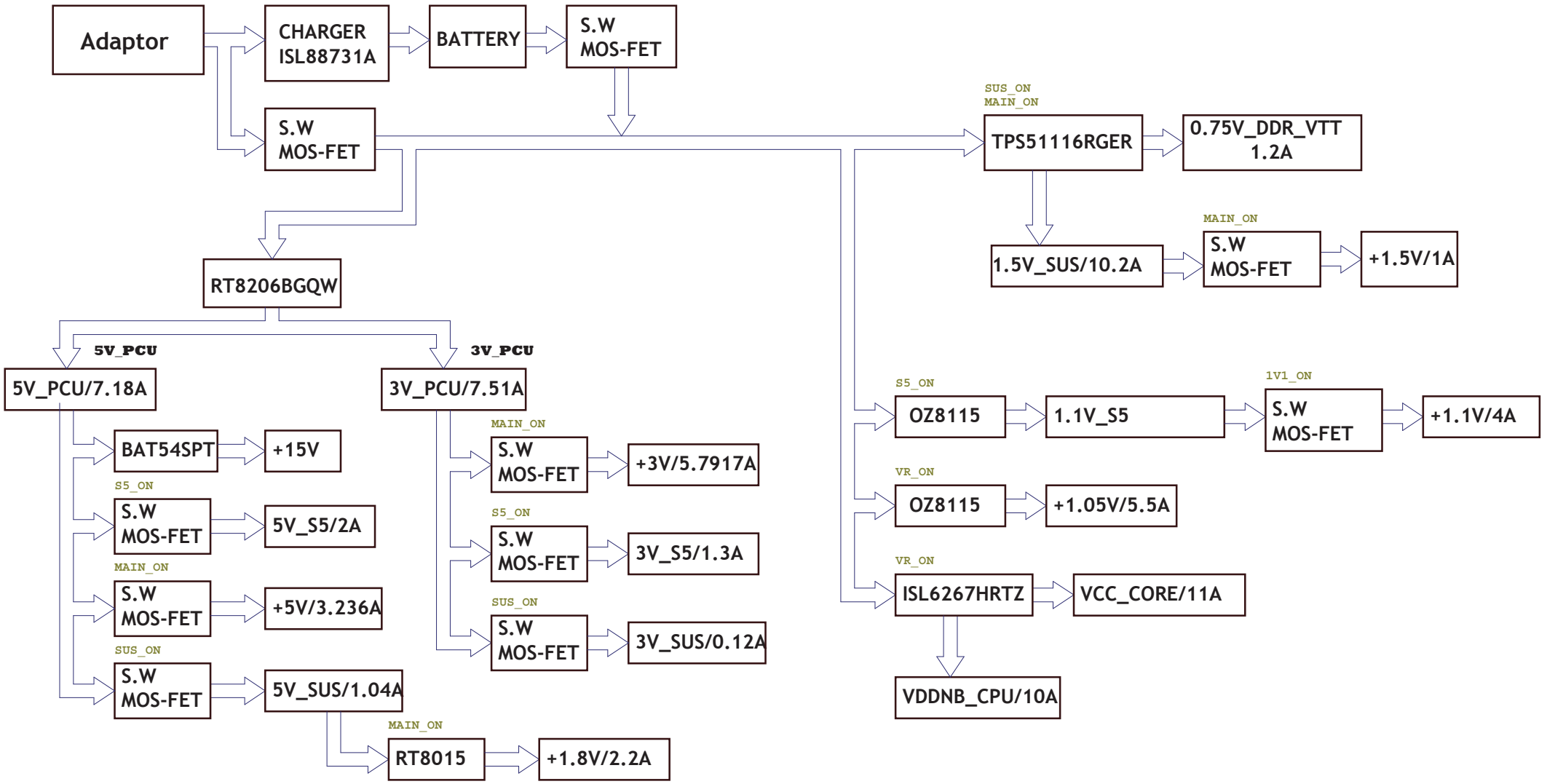
5V_PCU
C572 C566 C567
1000P/50V/X7R_4
1U/6.3V/X5R_4
1U/6.3V/X5R_4

+3V (4,5,6,7,8,9,10,11,12,13,14,15,16,17,19,20,21,23,24,25,26,30,32,33,35,36)
+5V (13,14,16,17,22,24,26,36)
1.5V_SUS (3,5,6,7,31,36)
5V_PCU (13,29,30,31,33,36)

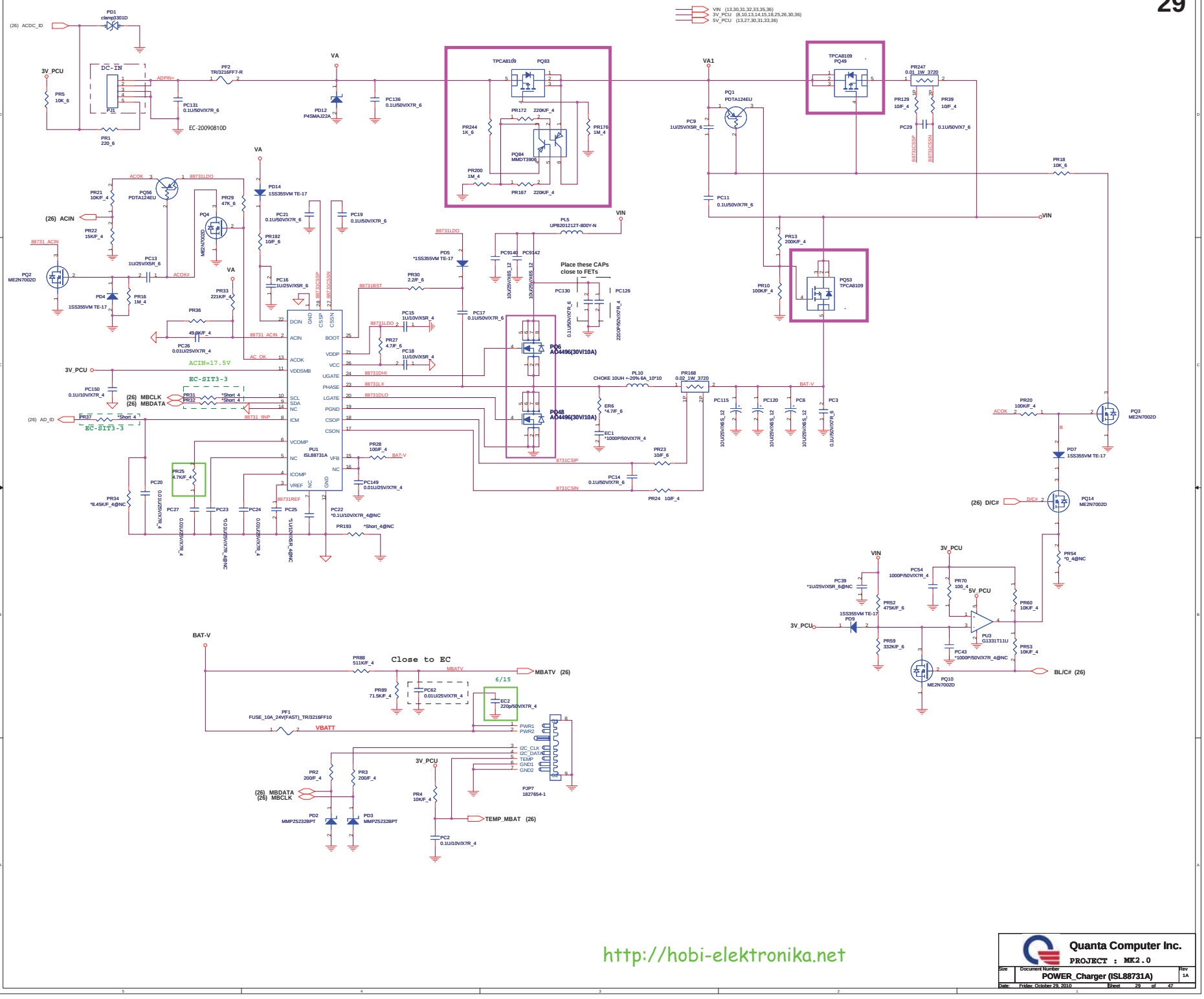
Quanta Computer Inc.
PROJECT : MK2.0

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

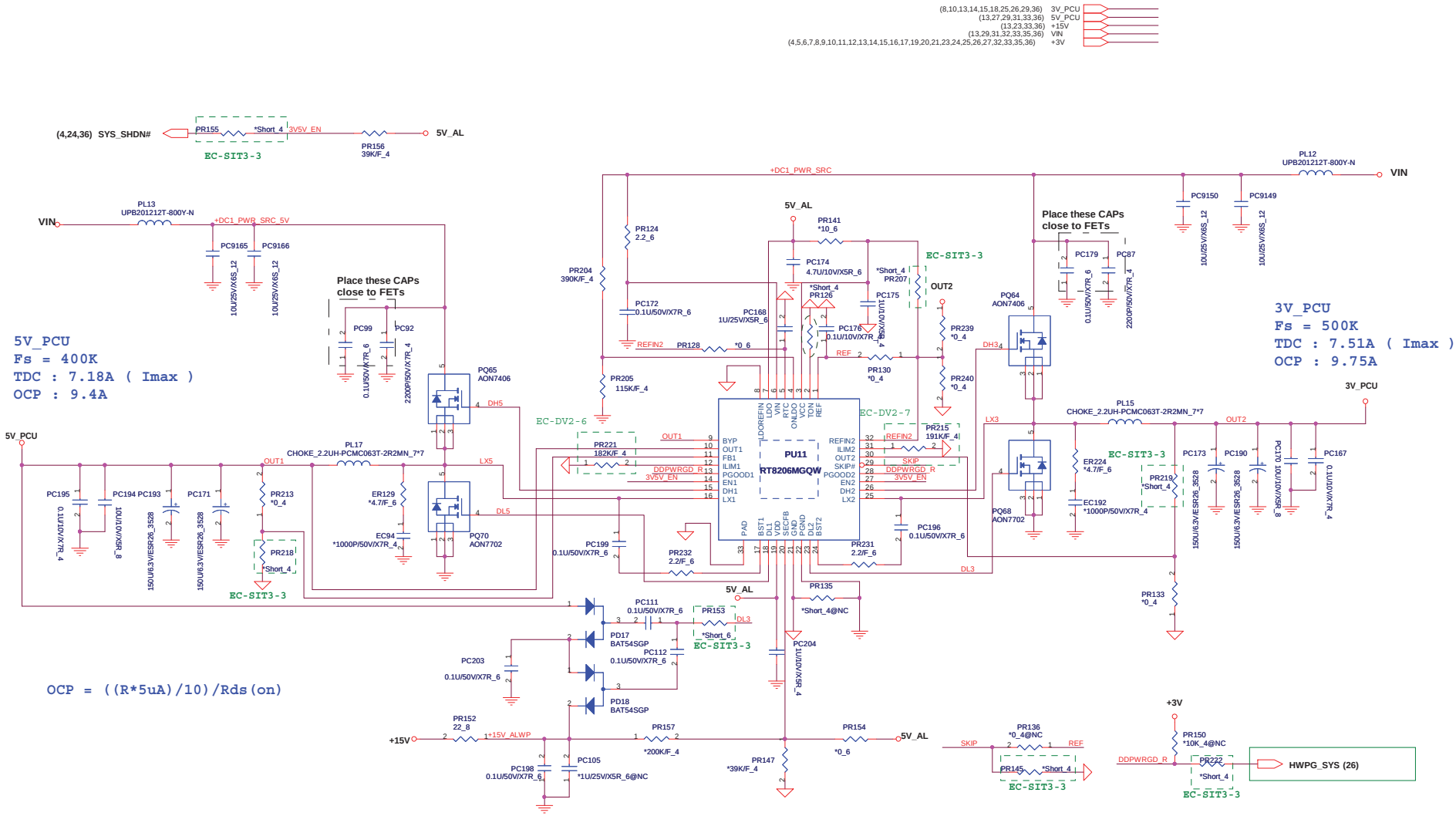
Brazos SYSTEM POWER BLOCK DIAGRAM



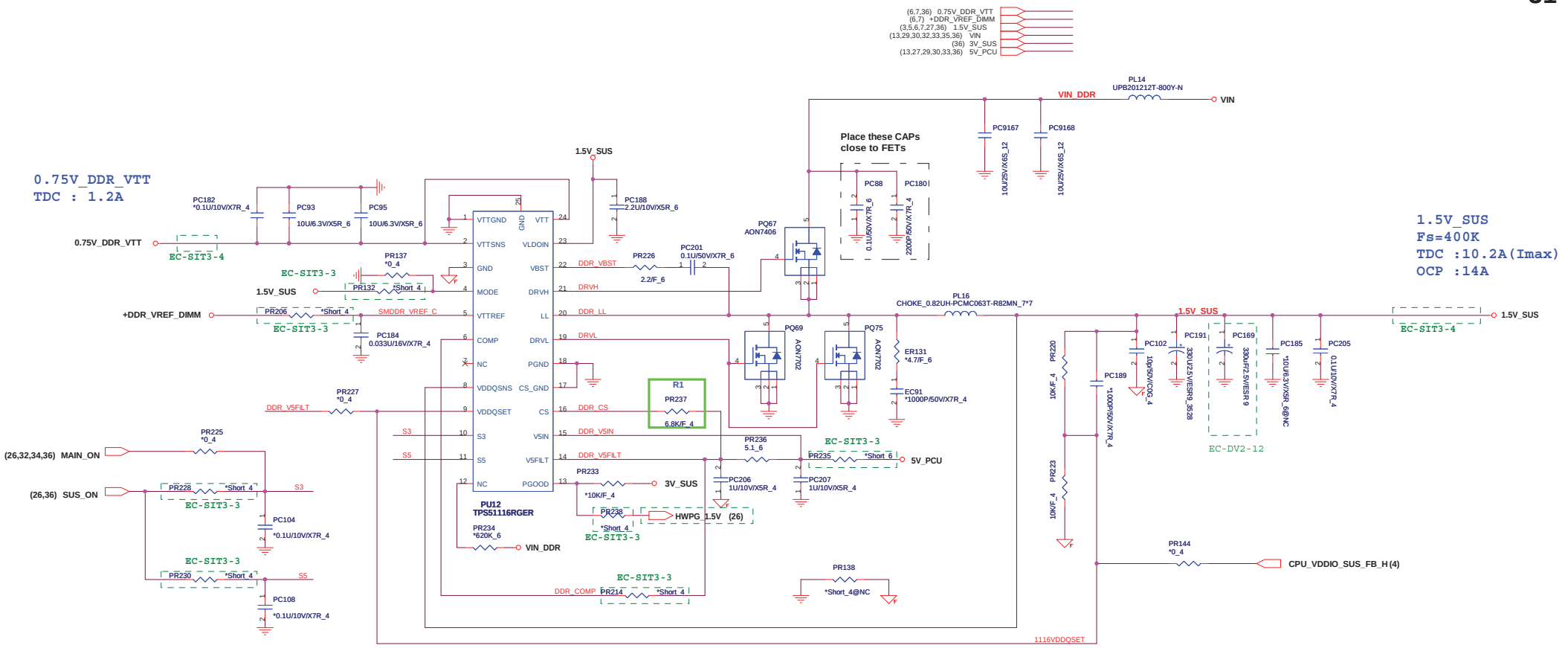
Quanta Computer Inc.
PROJECT : MK2.0
Size | Document Number: Power Diagram | Rev 1A
Date: Friday, October 29, 2010 | Sheet 28 of 47



Quanta Computer Inc.
PROJECT : MK2.0
Size | Document Number: POWER_Charger (ISL88731A) | Rev: 1A
Date: Friday, October 29, 2010 | Sheet 29 of 47



Quanta Computer Inc.		
PROJECT : MK2.0		
Size	Document Number: 3V/5V (RT8206BGQW)	Rev: 1A
Date: Friday, October 29, 2010	Sheet 30 of 47	



Vocset = 10uA * R1
OCP = (Vocset/Rds(on)) + (Iripple/2)

Quanta Computer Inc.		
PROJECT : MK2.0		
Size	Document Number: DDR3 (TPS51116RGER)	Rev: 1A
Date: Friday, October 29, 2010	Sheet 31 of 47	

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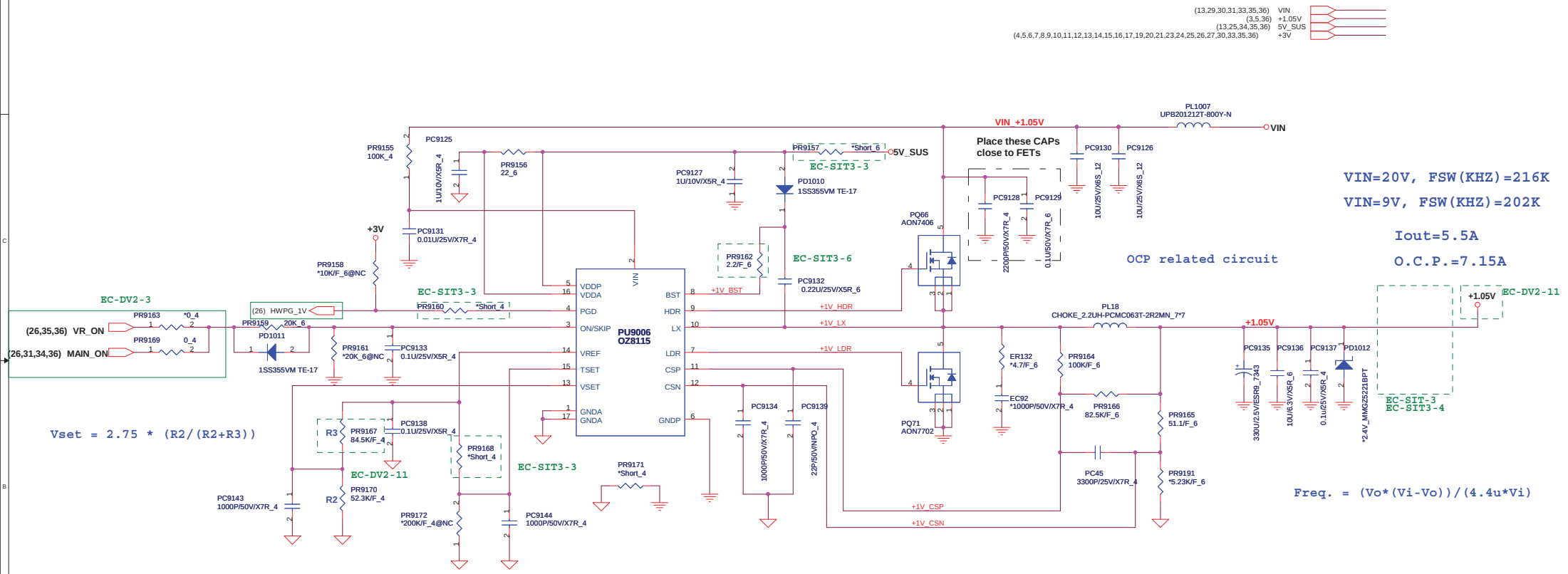

Quanta Computer Inc.

PROJECT : MK2.0

Size	Document Number	Rev
	+1.05V (OZ8115)	1A
Date: Friday, October 29, 2010	Sheet 32 of 47	

(13,29,30,31,32,35,36) VIN
(13,27,29,30,31,36) 5V_PCU
(11,36) 1.1V_S5
(11,36) +1.1V
(4,5,6,7,8,9,10,11,12,13,14,15,16,17,19,20,21,23,24,25,26,27,30,32,35,36) +3V
(18,36) 5V_S5
(13,23,30,36) +15V

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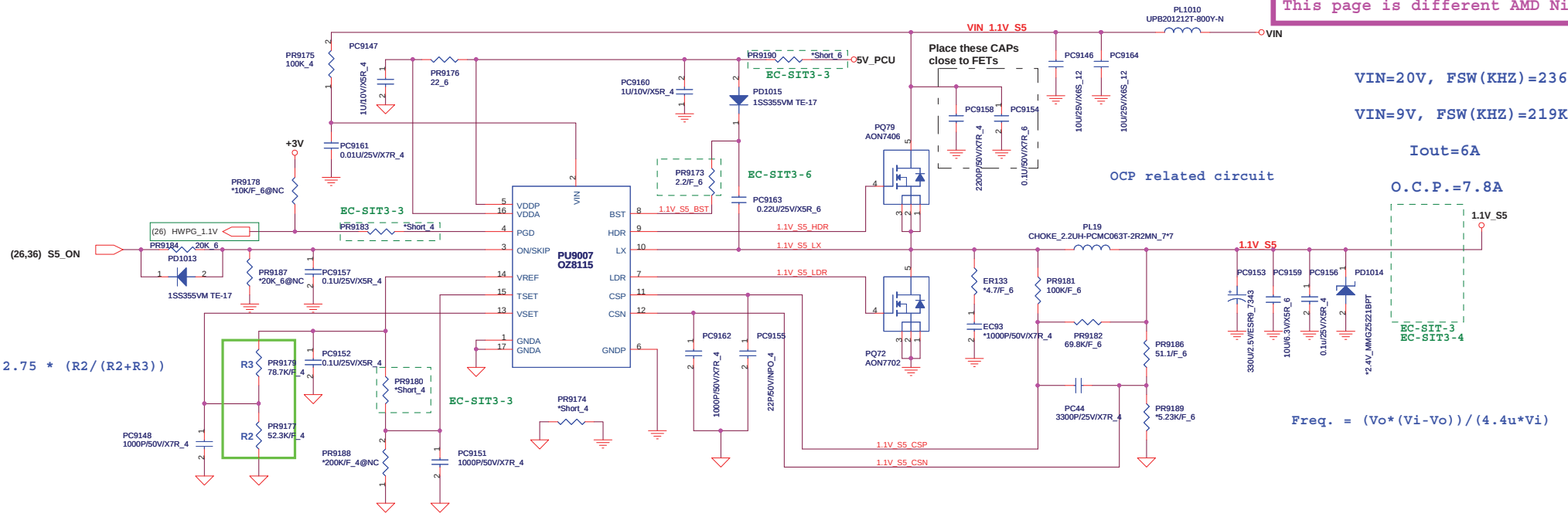

Quanta Computer Inc.			
PROJECT : MK2.0			
Size	Document Number		Rev
	+1.1V (OZ8115)		1A
Date: Friday, October 29, 2010		Sheet 33 of 47	

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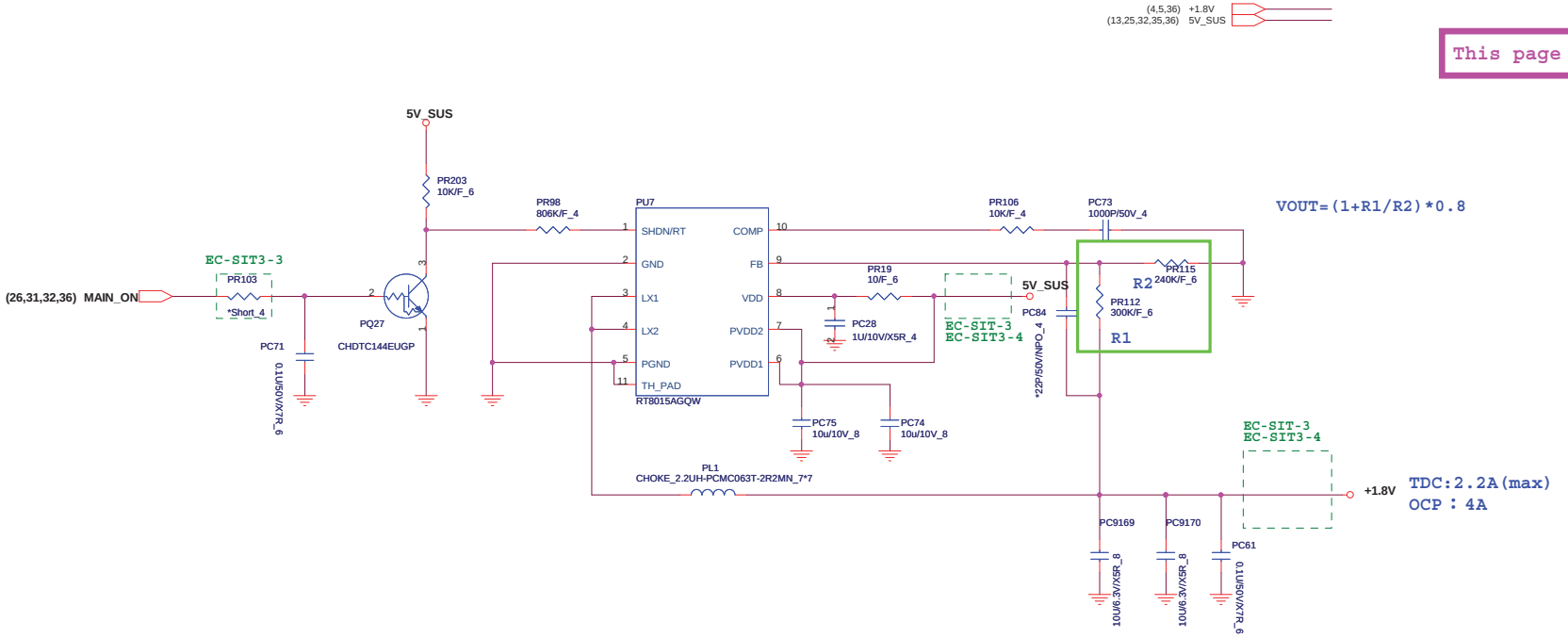
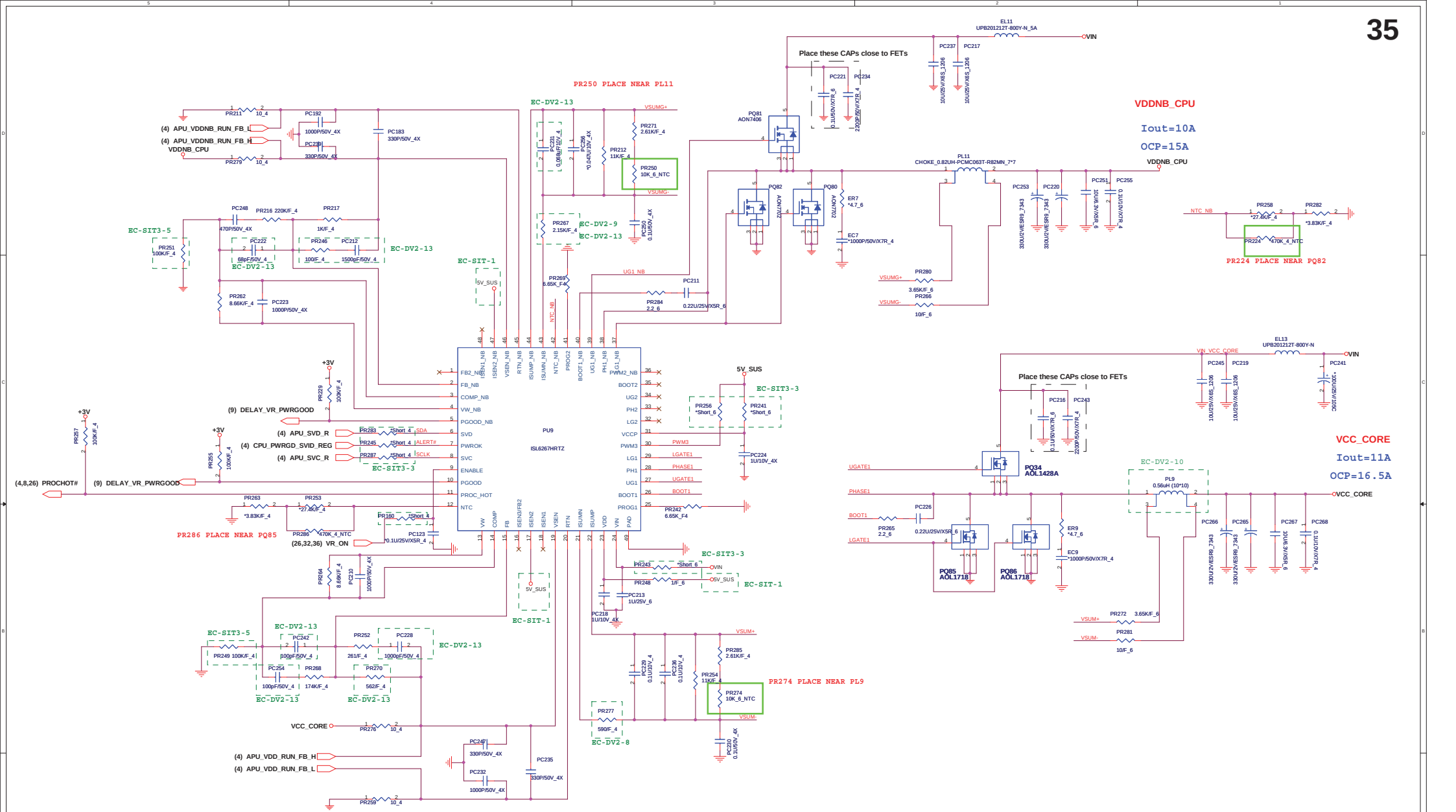


Quanta Computer Inc.		
PROJECT : MK2.0		
Size	Document Number: +1.8V (RT8015AGQW)	Rev: 1A
Date: Friday, October 29, 2010	Sheet 34 of 47	



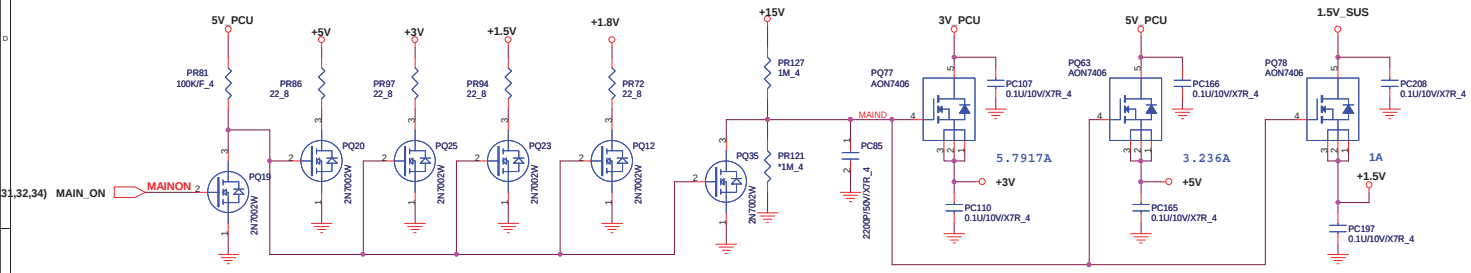
Quanta Computer Inc.
PROJECT : MK2.0

Size	Document Number	Rev
	VCC_CORE (ISL6267)	1A

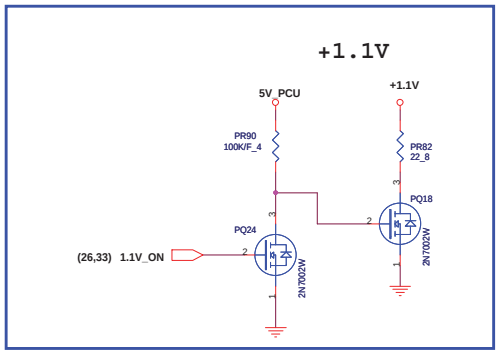
Date: Friday, October 29, 2010 Sheet 35 of 47

DISCHARGE

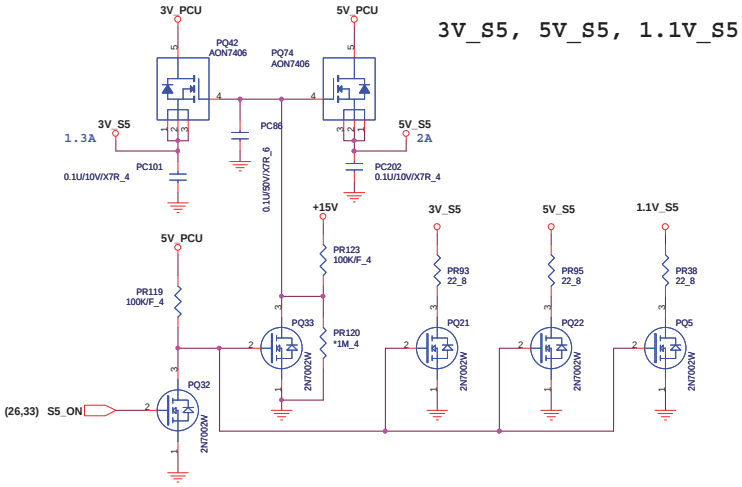
+3V, +5V,+1.8V,+1.5V



+1.1V

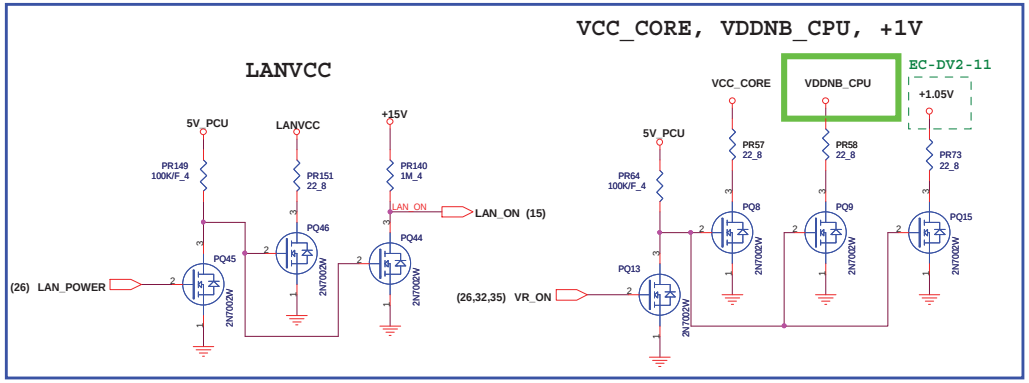


3V_S5, 5V_S5, 1.1V_S5

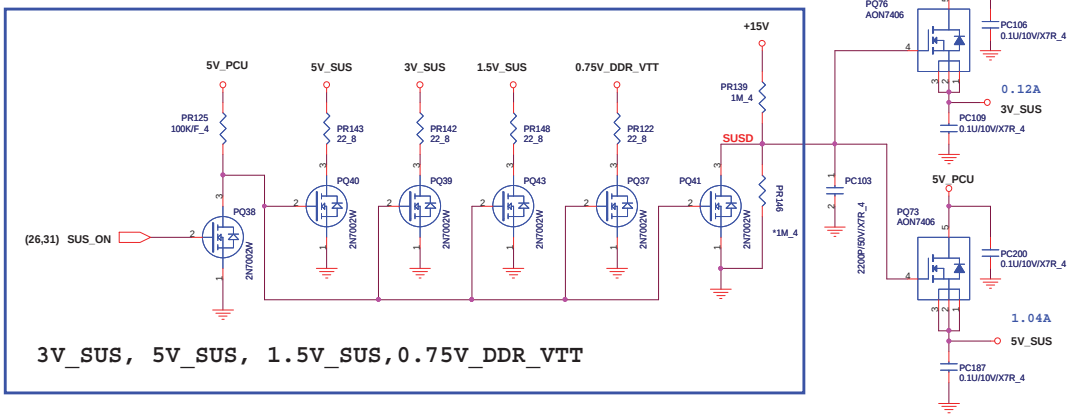


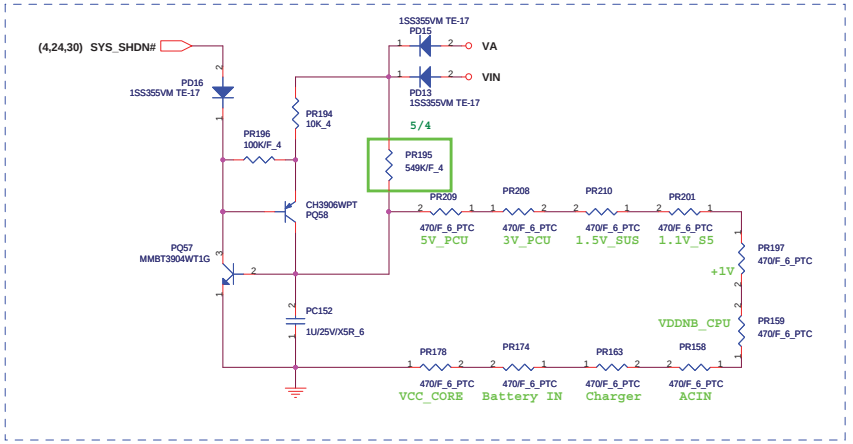
VCC_CORE, VDDNB_CPU, +1V

LANVCC

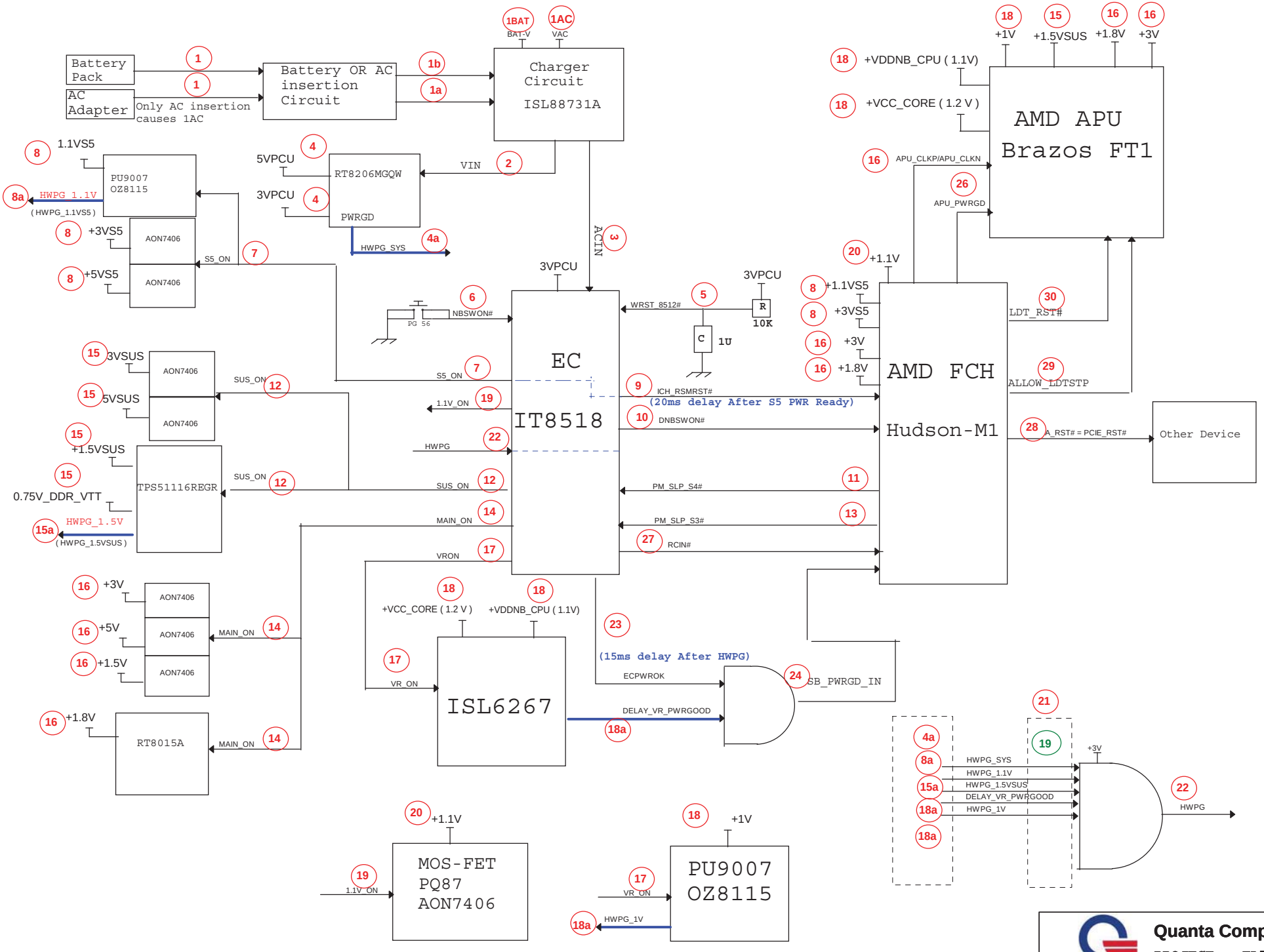


3V_SUS, 5V_SUS, 1.5V_SUS,0.75V_DDR_VTT





Quanta Computer Inc.		
PROJECT : MK2.0		
Size	Document Number: Discharge	Rev: 1A
Date: Friday, October 29, 2010	Sheet 36 of 47	



Quanta Computer Inc.

PROJECT : FL7B

Size	Document Number	Rev
	Power On Sequence	1A
Date: Friday, October 29, 2010	Sheet 37 of 47	

MK2.0 NOTE SKU TABLE

Location					

MK2.0 NOTE SKU TABLE

Location					Page

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

Quanta Computer Inc.
PROJECT : MK2.0

Size	Document Number	Rev
	Schematic Value Descript	1A
Date: Friday, October 29, 2010	Sheet 39 of 47	

EC #	Page	Date	Part Affected	Description
EC-DV-01 (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	"LTDPO_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 9 10 26	10/08/02	C376,C381 C382, C370 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 23	10/08/02		Celete duplicate net.
EC-DV-09	14	10/08/02		Delete GND net of pin3 from U4 and U6

EC #	Page	Date	Part Affected	Description
EC-DV-10	23	10/08/02	R482,R483,R484,R485	Add resistor to improve LPC siganl qulity.
EC-DV-11	4	10/08/02	CN26,R922,R88,R89,R90,R926,R927,R928,R929,R924,R923	Change debug port to HDT+
EC-DV-12	4	10/08/02	Q33,R381	Add lever shift circuit to avoid leakage current
EC-DV-13	27	10/08/02	Hole1,Hole12,Hole4,Hole10,Hole11,Hole24	Change screw footprint for layout
EC-DV-14	14 6 7 13 15 16 17 18 19 20 21 23 25	10/08/02	R119,R117,R112,R110,R108,R105,R103,R101 R124 R158 R342,R348,R347 R177,R197,R208,R299 R477,R306,R323 R38,R72 R132,R133,R141,R142 R470,R464,R450 R200 R176 R291,R293,R295 R4,R6,R10	Change short pad to normal footpint type
EC-DV-15	15	10/08/02	C253	ESD suggest

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 setteing 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, 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

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, 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. 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. 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. Fix ECR72256 from EC team member reguest
EC-SIT-6	25 13	10/09/17	Q24,Q21,Q25,R311,R301,R288,R314 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 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.

EC #	Page	Date	Part Affected	Description
EC-SIT2-1	26	10/10/22	R508,R509,R510,R511,D7006,D7007,D7008,D7009	For power good signal qulity issue. Delete D7006,D7007,D7008,D7009. Add R508,R509,R510,R511.
EC-SIT2-2	26	10/10/22	Y3,C316,C369	Vendor suggest to use internal crystal. Delete Y3,C316. Change C369 from capacitor 15P to resistor 0 ohm.
EC-SIT2-3	24	10/10/22	U37,Q42,Q43,C577	Chagre temperature degree is under 80 degree, thus delete it. Delete U37,Q42,Q43,C577.

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

EC #	Page	Date	Part Affected	Description

Schematic EC Tracking Record DV (for SOVP)XX. XX, 2010

EC #	Page	Date	Part Affected	Description