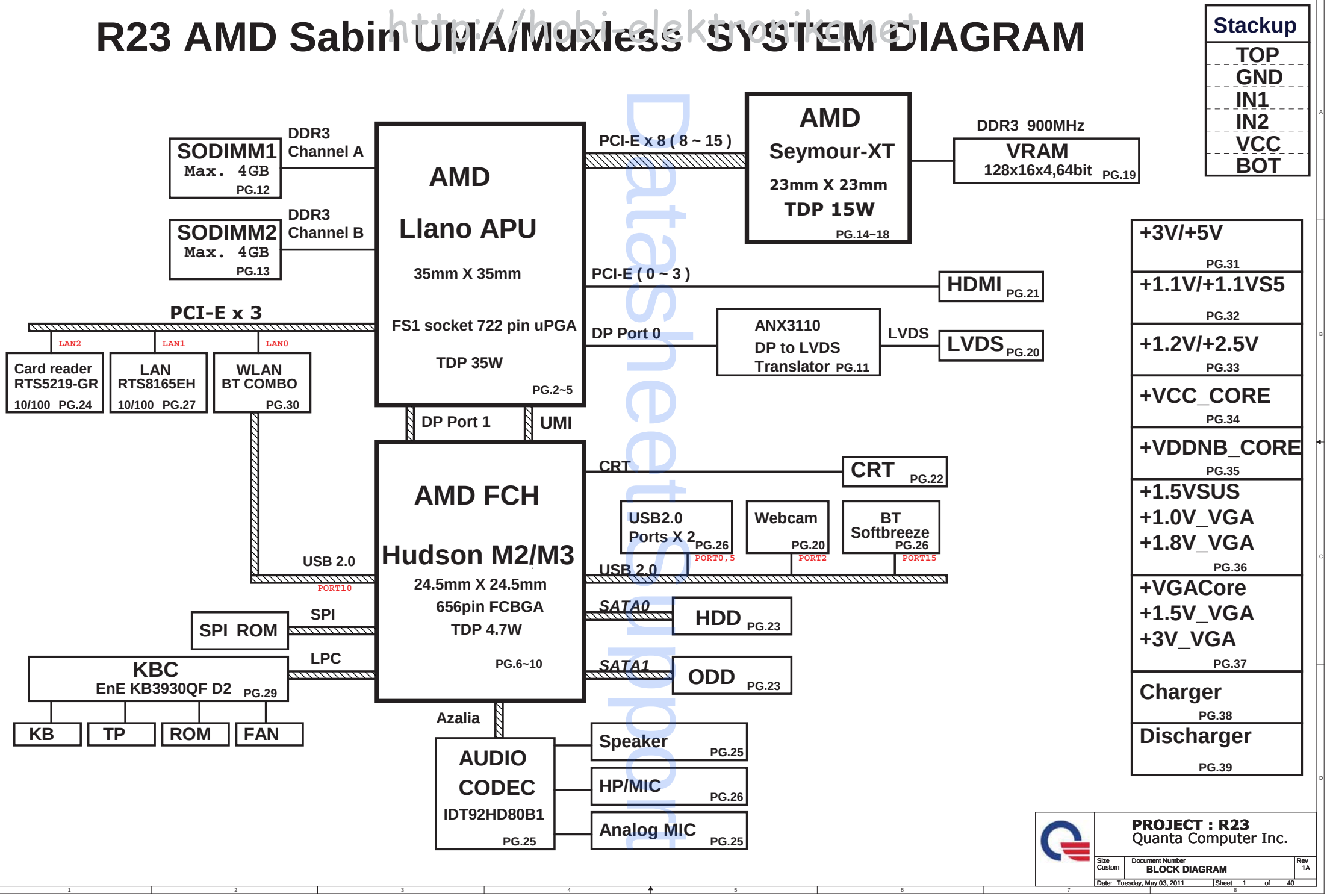
R23 AMD Sabin UMA/Muxless SYSTEM DIAGRAM



PROJECT : R23
Quanta Computer Inc.

Size	Document Number	Rev
Custom	BLOCK DIAGRAM	1A

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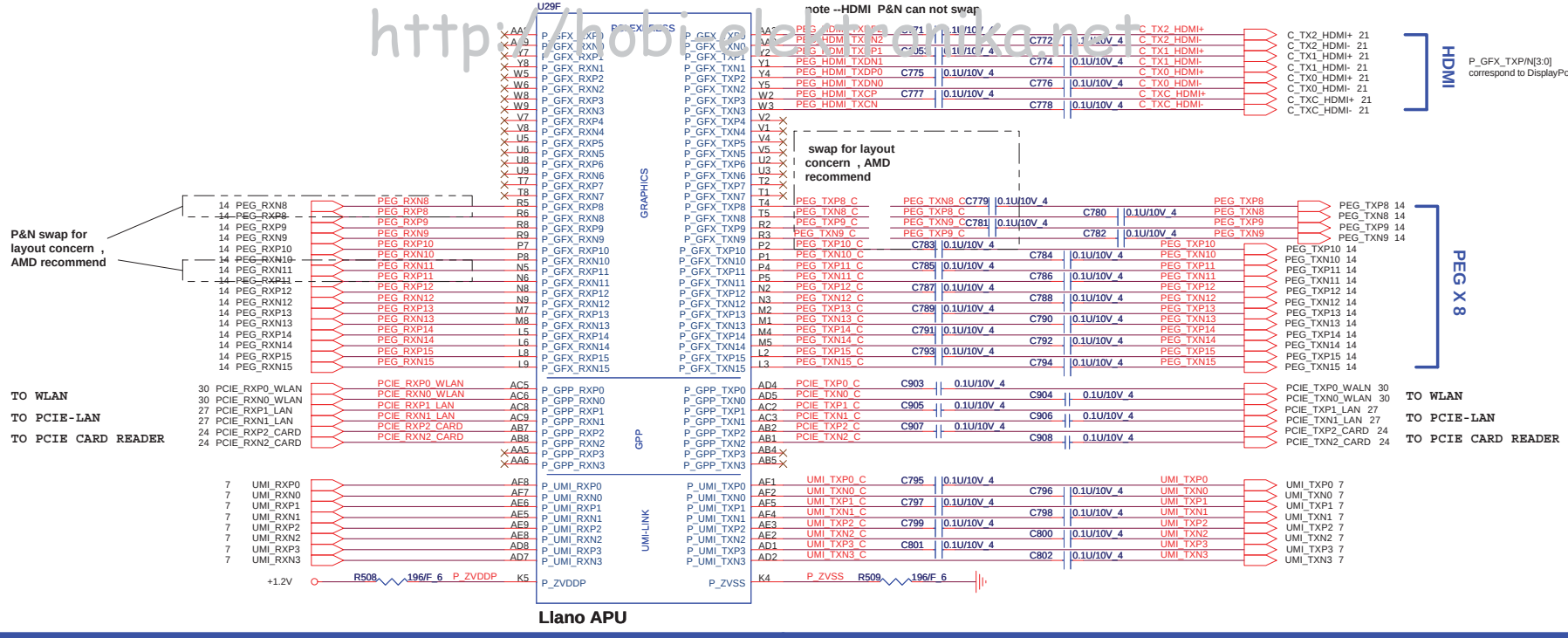
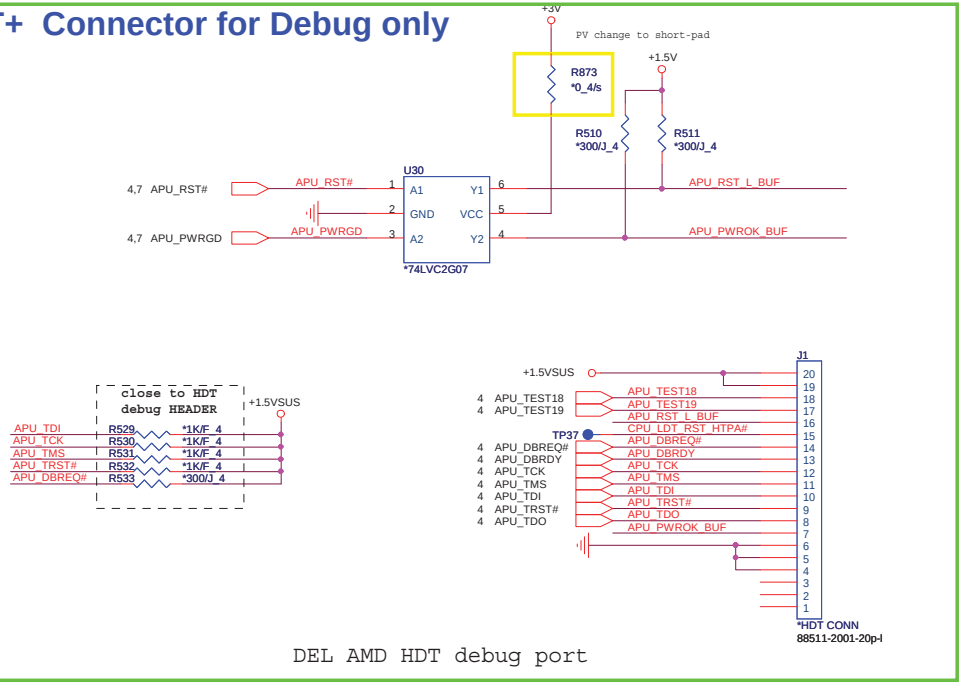


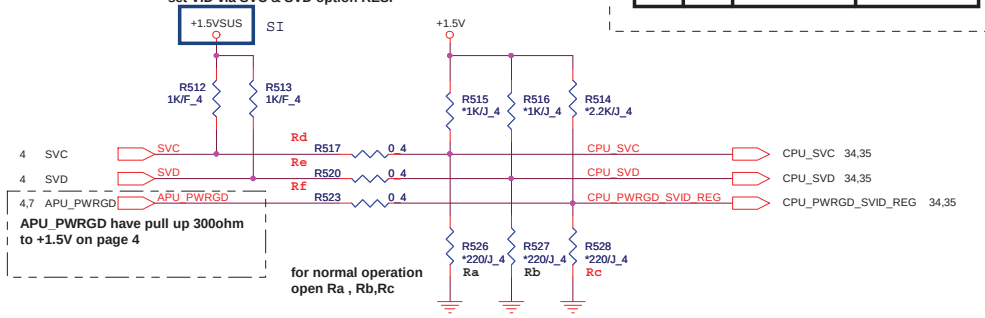
HDT+ Connector for Debug only



VID Override Circuit

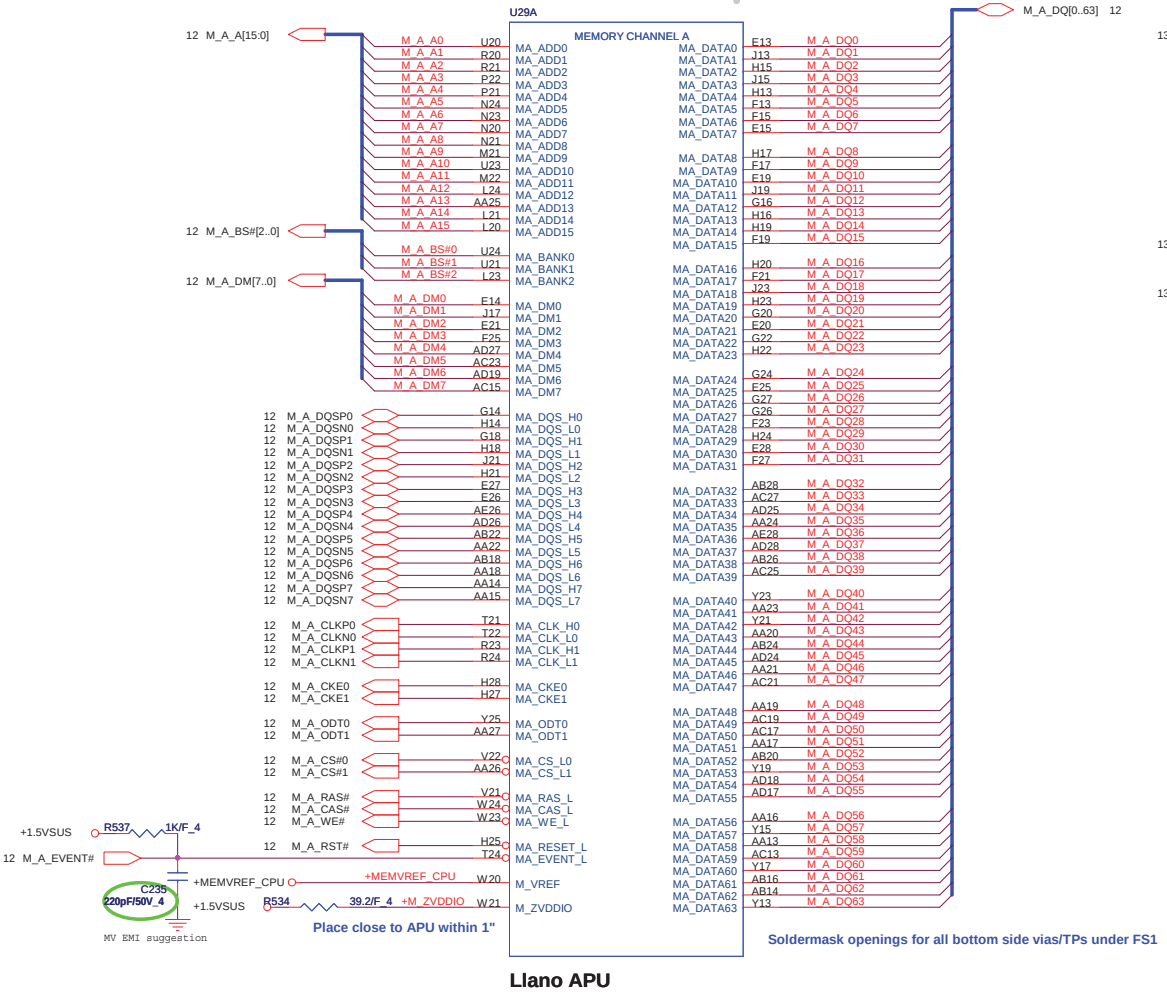
	BOOT VOLTAGE	
SVC	SVD	VFIX_+VDD =VCC/GND	VFIX_+VDD =OPEN
0	0	1.1	1.1
0	1	1.0	1.2
1	0	0.9	1.0
1	1	0.8	0.8

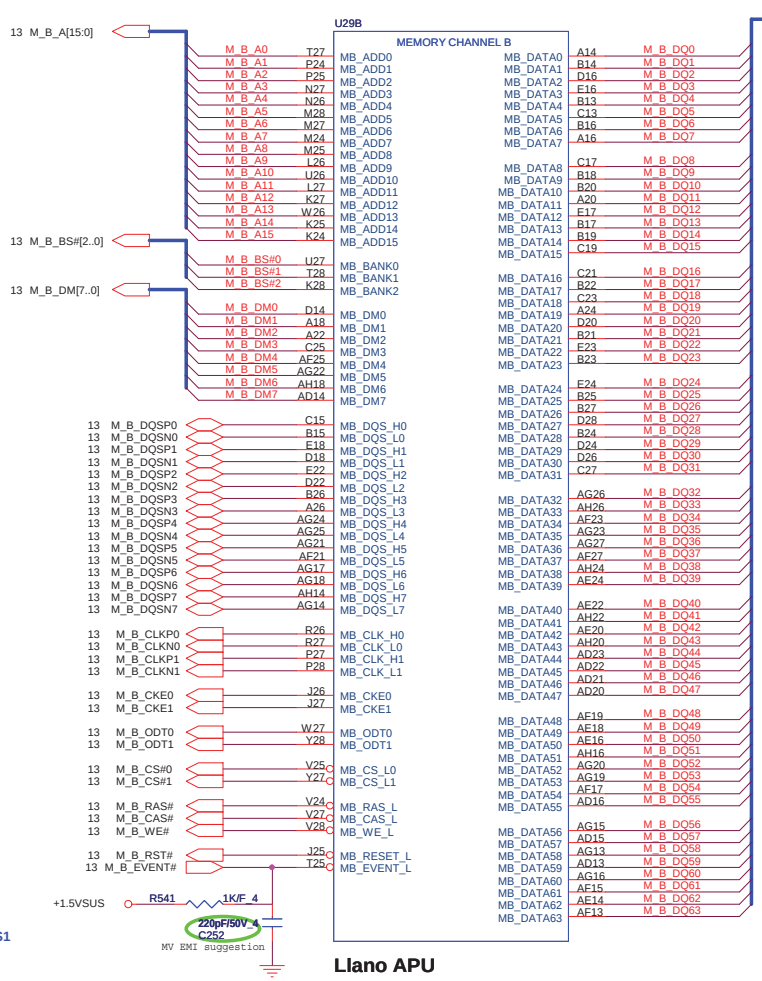
Note:
To override VID,Remove Rd, Re, Rf, install Rc
set VID via SVC & SVD option RES.



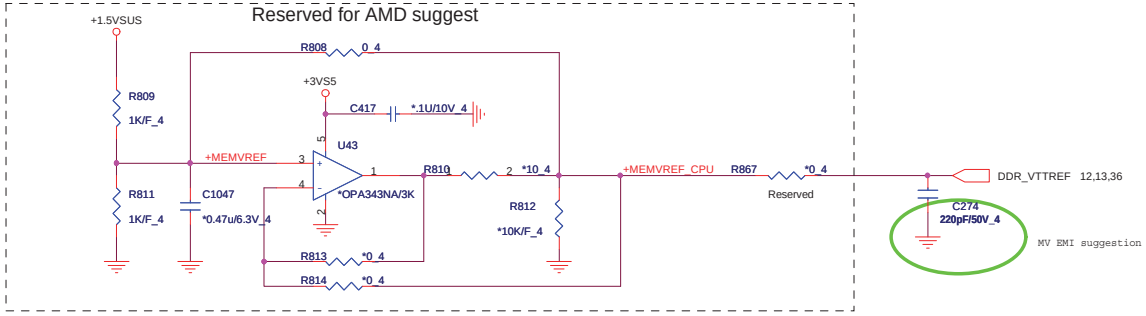
Quanta Computer Inc.
PROJECT : R23

Size	Document Number	Rev
	Llano PCIE/UMI/GPP	1A
Date: Wednesday, May 04, 2011	Sheet 2 of 40	





Soldermask openings for all bottom side vias/TPs under FS1



Quanta Computer Inc.

PROJECT : R23

Size	Document Number	Rev
	Llano DDR3 MEM I/F	1A

Date: Wednesday, May 04, 2011 Sheet 3 of 40

Place caps with APU < 1 inch
route PCIE as 35ohm +/- 10%

DP0 output to
eDP to LVDS converter

DP1 output to Hudson-M2
for VGA translator interface

Note: CLK_APU_HCLKP/N is 100MHZ SSC

Note: CLK_DP_NSSCP/N is 100MHZ non-SSC

Display port power 1.5V min 1.2v max : 1.65v

Display port power 1.5V min 1.2v max : 1.65v

LVDS

VGA

HDMI

To AMD HDT

DMAACTIVE_L controls
entry and exit from the
sleep and power states

AMD internal test only

TEST35 PU FOR INTERNAL
TEST35 PD FOR CUSTOMER

M_TEST CONNECTION TBD

PV change to short-pad

PV inner document ADD R830 for EC request

to EC reserve only

FS1R1 signals is for detect CPU TYPE and protect it.
FS1R1 CPU this pin is N.C
FS1R2 CPU this pin is LOW
can remove it at MP

APU_PROCHOT# 可以當 input or output
當Low 時CPU 會降 P - STATE

THERMTRIP# shutdown temperature 125度C

ADD VGA TEMP_ FAIL function is active Hi

over 120 degree C= Low

When 100K-NTC 100 C=6.164K
Thermal Trip = 120 C

DEL Thermal IC circuit on MV

Llano APU

Thermal

Quanta Computer Inc.	PROJECT : R23
Size	Document Number: Llano Display/Misc
Rev	1A
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SI EMI

APU POWER TABLE

PIN NAME	NET NAME	VOLTAGE
VDD	+VCC_CORE	+1.1V
VDDNB	+VDDNB_CORE	??
VDDIO	+1.5VSUS	+1.5V
VDDP	+1.2V_VDDP	+1.2V
VDDR	+1.2V_VDDR	+1.2V
VDDA	+2.5V_VDDA	+2.5V

+VCC_CORE

C388 470P/50V_4 | C383 *470P/50V_4 | C371 *470P/50V_4

PV ADD 470pF on C388 for EMI suggestion

+VDDNB_CORE

C830 22U/6.3VS_8 | C831 22U/6.3VS_8 | C832 22U/6.3VS_8 | C833 22U/6.3VS_8 | C834 0.22U/6.3V_4

C845 0.22U/6.3V_4 | C842 0.22U/6.3V_4 | C843 180P/50V_4 | C844 180P/50V_4

18A
Maximum IDDNBspike 22.5A

4A Up to DDR3-1333 @ 1.50V VDDIO

+1.5VSUS

C851 0.22U/6.3V_4 | C852 0.22U/6.3V_4 | C853 0.22U/6.3V_4 | C854 0.22U/6.3V_4 | C855 180P/50V_4 | C856 180P/50V_4

EMI reserve

U29D

Llano APU

+VCC_CORE

36A
Maximum IDDspike 50A

C823 22U/6.3VS_8 | C824 22U/6.3VS_8 | C825 22U/6.3VS_8 | C826 22U/6.3VS_8 | C827 22U/6.3VS_8 | C828 22U/6.3VS_8 | C829 22U/6.3VS_8

C835 0.22U/6.3V_4 | C836 0.22U/6.3V_4 | C837 180P/50V_4 | C838 180P/50V_4 | C839 0.01U/25V_4 | C840 0.01U/25V_4 | C841 0.01U/25V_4

DECOUPLING between PROCESSOR and DIMMs
Across VDDIO and VSS split

+1.5VSUS

C846 0.22U/6.3V_4 | C847 0.22U/6.3V_4 | C848 180P/50V_4 | C849 180P/50V_4

+VDDNB_CORE

+1.5VSUS

C857 22U/6.3VS_8 | C858 22U/6.3VS_8 | C859 4.7U/6.3V_6 | C860 4.7U/6.3V_6 | C861 4.7U/6.3V_6 | C862 4.7U/6.3V_6 | C863 0.22U/6.3V_4

If the VSS plane is cut to create a VDDIO plane, ceramic capacitors are connected across the VDDIO and VSS plane split as follows

VDDP_A + VDDP_B = 3.5A

+1.2V — R591 *0_8/S — +1.2V_VDDP_A — **1.75A**

C864 10U/6.3V_8 | C867 0.22U/6.3V_4 | C869 180P/50V_4

+1.2V — R592 *0_8/S — +1.2V_VDDR_A — **1.5A**

C871 1000P/50V_4 | C872 1000P/50V_4 | C875 0.22U/6.3V_4 | C876 0.22U/6.3V_4

C883 4.7U/6.3V_6 | C884 4.7U/6.3V_6 | C887 180P/50V_4 | C888 180P/50V_4

+2.5V — L62 BLM21PG221SN1D(220,100M,2A)_8 — +2.5V_VDDA — **VDDA= 0.75A**

C879 4.7U/6.3V_6 | C880 0.22U/6.3V_4 | C881 3300P/50V_4

1.75A

+1.2V_VDDP_B — R824 *0_8/S — +1.2V

C865 10U/6.3V_8 | C866 10U/6.3V_8 | C868 0.22U/6.3V_4 | C870 180P/50V_4

1.5A

+1.2V_VDDR_B — R825 *0_8/S — +1.2V

C873 1000P/50V_4 | C874 1000P/50V_4 | C877 0.22U/6.3V_4 | C878 0.22U/6.3V_4

C885 4.7U/6.3V_6 | C886 4.7U/6.3V_6 | C889 180P/50V_4 | C890 180P/50V_4

VDDR = 3A (Up to DDR3-1333 @ 1.5V)

U29E

Llano APU

Quanta Computer Inc.

PROJECT : R23

Size	Document Number	Rev
	Llano POWER/GND	1A

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+3VS5 NC,no install by default
R594 *2.2K/J_4 FCH_TEST0
R596 *2.2K/J_4 FCH_TEST1
R598 *2.2K/J_4 FCH_TEST2

+3V
R602 2.2K_4 CGCLK_SMB
R603 2.2K_4 CGDAT_SMB
to DDR3 SMBUS
R604 *1K/J_4
J2 1 2 SYS_RST#
*SOLDERJUMPER-2
SYS_RST# internal 10K pull up

GEVENT0# internal pull Hi 8.2K to +3V
GEVENT1# internal pull Hi 8.2K to +3V
GEVENT23# internal pull Hi 8.2K to +3V
GEVENT5# internal pull Hi 8.2K to +3VS5
PCIE_WAKE# no need to pull Hi resistor from check list

+3VS5
R856 10K/F_4 SCL3
R857 10K/F_4 SDA3
R611 10K/F_4 SCL2
R613 10K/F_4 SDA2
R614 10K/F_4 SCL1
R616 10K/F_4 SDA1
R618 *4.7K/J_4 FCH_THERMTRIP#
C1073 *0.01U/25V_4
R629 10K/F_4 DNBSWON#

CLK_REQ2# internal pull Hi 8.2K to +3V
CLK_REQ3# internal pull Hi 8.2K to +3V
CLK_REQ4# internal pull Hi 8.2K to +3V
GEVENT16# internal pull Hi 8.2K to +3VS5
GEVENT15# internal pull Hi 8.2K to +3VS5

remove PCIE_RST# from AMD recommend
TP153 TP154 PCIE_RST2# RI#
29 SUSB# SUSB#
29 SUSC# SUSC#
29 DNBSWON# DNBSWON#
10 FCH_PWRGD FCH_PWRGD
FCH_TEST0 FCH_TEST1 FCH_TEST2 EC_A20GATE
29 EC_A20GATE
29 EC_RCIN# EC_RCIN#
TP155 FCH_PME#
29 SIO_EXT_SMI# SIO_EXT_SMI#
29 SIO_EXT_SCI# R829 *0_4/s GEVENT5#
SYS_RST#
27,30 PCIE_WAKE# PCIE_WAKE#
C1075 *100P/50V_4 FCH_THERMTRIP#
4 FCH_THERMTRIP# R607 10K/F_4 WD_PWRGD
+3V
PV change to short-pad
SI
29 RSMRST# RSMRST#
24 PCIE_CARD_CLKREQ# PCIE_CARD_CLKREQ#
27 PCIE_LAN_CLKREQ# PCIE_LAN_CLKREQ#
27,29 LAN_DISABLE# R868 *0/J_4 LAN_DISABLE#_FCH
25 ACZ_SPKR R612 *0_4/s FCH_GPIO66
12,13 CGCLK_SMB CGCLK_SMB
12,13 CGDAT_SMB CGDAT_SMB
SCL1 SDA1
30 PCIE_MINI_CLKREQ# PCIE_MINI_CLKREQ#
CLKREQ1#
LLB# Not Implemented ,left unconnected.
LLB# SMARTVOLT2
This pin is used to power down VGA DAC regulators when CRT no connected
9 VGA_POWER_DOWN R619 0_4 VGA_PD
TP160 TP161 GBE_LED0
24 CARD_EECS R904 0_4
SI
TP163
MV
TP165
23 ODD_PLUGIN# ODD_PLUGIN#
23 ODD_DA#_FCH ODD_DA#_FCH
TP168 FCH_JTAG_TCK
TP169 FCH_JTAG_TDI
TP170 FCH_JTAG_RST#
For Zero ODD

HD audio interface is +3V_S5 voltage
R630 *10K/F_4 ACZ_BCLK_R
R631 *10K/F_4 ACZ_SDOUT_R
R632 *10K/F_4 ACZ_SDIN0
R633 *10K/F_4 ACZ_SDIN1
R634 *10K/F_4 ACZ_SDIN2_R
ACZ_SDIN3_R
ACZ_SYNC_R
ACZ_RST#_R
TP171 TP172

HUDSON-M3
Part 4 of 5

PCIE_RST2#/GEVENT4#
RI#/GEVENT22#
SPI_CS3#/GBE_STAT1/GEVENT21#
SLP_S3#
SLP_S5#
PWR_BTN#
PWR_GOOD
TEST0
TEST1/TMS
TEST2
GA20IN/GEVENT0#
KBRST#/GEVENT1#
PME#/GEVENT3#
LPC_SMI#/GEVENT23#
LPC_PD#/GEVENT5#
SYS_RESET#/GEVENT19#
WAKE#/GEVENT8#
IR_RX1/GEVENT20#
THRMTRIP#/SMBALERT#/GEVENT2#
WD_PWRGD
RSMRST#
ACPI / WAKE UP EVENTS
CLK_REQ4#/SATA_IS0#/GPIO64
CLK_REQ3#/SATA_IS1#/GPIO63
SMARTVOLT1/SATA_IS2#/GPIO50
CLK_REQ0#/SATA_IS3#/GPIO60
SATA_IS4#/FANOUT3/GPIO55
SATA_IS5#/FANIN3/GPIO59
SPKR/GPIO66
SCL0/GPIO43
SDA0/GPIO47
SCL1/GPIO227
SDA1/GPIO228
CLK_REQ2#/FANIN4/GPIO62
CLK_REQ1#/FANOUT4/GPIO61
IR_LED#/LLB#/GPIO184
SMARTVOLT2/SHUTDOWN#/GPIO51
DDR3_RST#/GEVENT7#/VGA_PD
GBE_LED0/GPIO183
SPI_HOLD#/GBE_LED1/GEVENT9#
GBE_LED2/GEVENT10#
GBE_STAT0/GEVENT11#
CLK_REQG#/GPIO65/OSCIN/IDLEEXIT#
GPIO
BLINK/USB_OC7#/GEVENT18#
USB_OC6#/IR_TX1/GEVENT6#
USB_OC5#/IR_TX0/GEVENT17#
USB_OC4#/IR_RX0/GEVENT16#
USB_OC3#/AC_PRES/TDO/GEVENT15#
USB_OC2#/TCK/GEVENT14#
USB_OC1#/TDI/GEVENT13#
USB_OC0#/SPI_TPM_CS#/TRST#/GEVENT12#
USB OC
AZ_BITCLK
AZ_SDOUT
AZ_SDIN0/GPIO167
AZ_SDIN1/GPIO168
AZ_SDIN2/GPIO169
AZ_SDIN3/GPIO170
AZ_SYNC
AZ_RST#
PS2_DAT/SDA4/GPIO187
PS2_CLK/CEC/SCL4/GPIO188
SPI_CS2#/GBE_STAT2/GPIO166
HD AUDIO
PS2KB_DAT/GPIO189
PS2KB_CLK/GPIO190
PS2M_DAT/GPIO191
PS2M_CLK/GPIO192
KSO_0/GPIO209
KSO_1/GPIO210
KSO_2/GPIO211
KSO_3/GPIO212
KSO_4/GPIO213
KSO_5/GPIO214
KSO_6/GPIO215
KSO_7/GPIO216
KSO_8/GPIO217
KSO_9/GPIO218
KSO_10/GPIO219
KSO_11/GPIO220
KSO_12/GPIO221
KSO_13/GPIO222
KSO_14/XDB0/GPIO223
KSO_15/XDB1/GPIO224
KSO_16/XDB2/GPIO225
KSO_17/XDB3/GPIO226
EMBEDDED CTRL
USBCLK/14M_25M_48M_OSC
USB_RCOMP
USB_FSD1P/GPIO186
USB_FSD1N
USB_FSD0P/GPIO185
USB_FSD0N
USB MISC
USB 1.1
USB_HSD13P
USB_HSD13N
USB_HSD12P
USB_HSD12N
USB_HSD11P
USB_HSD11N
USB_HSD10P
USB_HSD10N
USB_HSD9P
USB_HSD9N
USB_HSD8P
USB_HSD8N
USB_HSD7P
USB_HSD7N
USB_HSD6P
USB_HSD6N
USB_HSD5P
USB_HSD5N
USB_HSD4P
USB_HSD4N
USB_HSD3P
USB_HSD3N
USB_HSD2P
USB_HSD2N
USB_HSD1P
USB_HSD1N
USB_HSD0P
USB_HSD0N
USB 2.0
USBSS_CALRP
USBSS_CALRN
USB_SS_TX3P
USB_SS_TX3N
USB_SS_RX3P
USB_SS_RX3N
USB_SS_TX2P
USB_SS_TX2N
USB_SS_RX2P
USB_SS_RX2N
USB_SS_TX1P
USB_SS_TX1N
USB_SS_RX1P
USB_SS_RX1N
USB_SS_TX0P
USB_SS_TX0N
USB_SS_RX0P
USB_SS_RX0N
USB 3.0
SCL2/GPIO193
SDA2/GPIO194
SCL3_LV/GPIO195
SDA3_LV/GPIO196
EC_PWM0/EC_TIMER0/GPIO197
EC_PWM1/EC_TIMER1/GPIO198
EC_PWM2/EC_TIMER2/WOL_EN/GPIO199
EC_PWM3/EC_TIMER3/GPIO200
KSI_0/GPIO201
KSI_1/GPIO202
KSI_2/GPIO203
KSI_3/GPIO204
KSI_4/GPIO205
KSI_5/GPIO206
KSI_6/GPIO207
KSI_7/GPIO208

USB_RCOMP_SB R597 11.8K/F_6
USBP15+ 26 USBP15- 26 BLUETOOTH
USBP11+ TP156 USBP11- TP157
USBP10+ 30 USBP10- 30 WLAN Min-Card
USBP7+ TP158 USBP7- TP159
USBP6+ 26 USBP6- 26 USB Connector
USBP5+ 26 USBP5- 26 USB Connector
USBP2+ 20 USBP2- 20 Carama USB
USBP1+ TP164 USBP1- TP166
USBP0+ 26 USBP0- 26 USB Connector
USBSS_CALRP TP151 USBSS_CALRN TP152
USB 3.0 Not Implemented: left unconnected.

SCL2 SDA2 SCL3 SDA3
SCL3 of a TSI-capable APU's thermal bus,Pulled up to APU_VDDIO. Resistor value verified in the relevant APU design guide.
EC_PWM2 EC_PWM2 10
No need for GPIO200

Hudson-M2-A13

To Azalia
ACZ_SDOUT_R R635 33/J_4 ACZ_SDOUT_AUDIO 25
ACZ_SYNC_R R636 33/J_4 ACZ_SYNC_AUDIO 25
ACZ_BCLK_R R637 33/J_4 BIT_CLK_AUDIO 25
ACZ_RST#_R R638 33/J_4 ACZ_RST#_AUDIO 25
ACZ_SDIN0 ACZ_SDIN0 25

Pure UMA can remove
CLK_REQ# already internal pull up 8.2K
37 VGA_REQ D26 RB501V-40 CLKREQ1#

Quanta Computer Inc.			
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Size	Document Number: Hudson-M3 GPIO/USB/AZ/RGMII		Rev 1A
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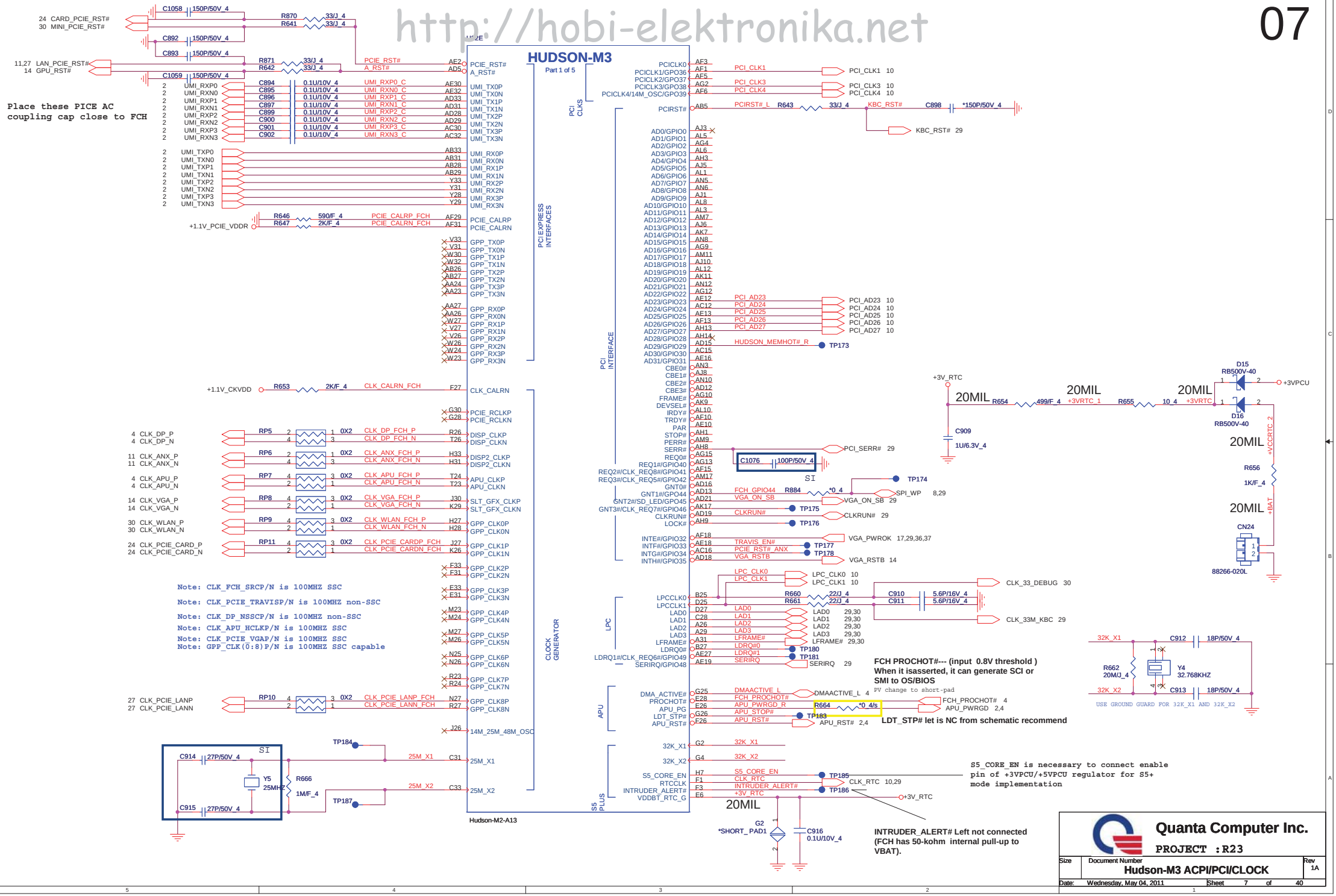

U32D

HUDSON-M3

Part 5 of 5

GROUND

Hudson-M2-A13

U32B

HUDSON-M3

Part 2 of 5

SATA HDD

SATA ODD

PLACE SATA A.C COUPLING CAPS CLOSE TO HUDSON-M2/M3

C921 0.1U/10V_4

U36 TC7SH08FU

SB_SATA_LED#

PLACE SATA_CAL RES VERY CLOSE TO BALL OF HUDSON-M2/M3

Integrated Clock Mode: Leave unconnected.

GPIO52 internal pull Hi 8.2K to +3V
GPIO53 internal pull Hi 8.2K to +3V
GPIO54 internal pull Hi 8.2K to +3V
GPIO56 internal pull Hi 8.2K to +3V
GPIO57 internal pull Hi 8.2K to +3V
GPIO58 internal pull Hi 8.2K to +3V

follow AMD check list to pull UP / LOW

EMI

FCH SPI ROM

*MX25L1605DM2I-12G

R place close to PCH

VGA Hot-plug

Vender	Size	P/N
AMIC	2M	AKE38ZN0801
WINBOND	2M	AKE38FP0N01
Socket		DFHS08FS023

ID4	ID3	ID2	ID1	ID0	CONFIG	31- Level BOM	Item
0	0	0	0	0	UMA		1
0	0	0	1	0			2
0	0	1	0	0			3
0	0	1	1	0			4
0	1	0	1	0			5
0	1	1	1	0			6
1	0	0	1	0			7
1	0	1	1	0			8
0	0	0	0	1	SG / Muxless		9
0	0	1	0	1			10
1	0	0	1	1			11
1	0	1	1	1			12

SIDE_PORT_ID2	SIDE_PORT_ID1	SIDE_PORT_ID0	
0	0	0	Samsung
0	0	1	Hynix
0	1	0	NC
0	1	1	no supprot side port

TEMP(0 - 3)
Temp Monitor Not Implemented
10-KΩ 5% pull-up to +3VS5
or 10-KΩ 5% pull-down

VIN (0 - 7)
Voltage Monitor Not Implemented
10-KΩ 5% pull-up to +3VS5
or 10-KΩ 5% pull-down

PV change to +FCH_VDDAN_33_DAC_R for AMD suggestion

PV DEL R687 for AMD suggestion

Quanta Computer Inc.

PROJECT : R23

Size	Document Number	Rev
	Hudson-M3 SATA/HWM/SPI	1A
Date: Wednesday, May 04, 2011	Sheet 8 of 40	

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

U32C

HUDSON-M3 Part 3 of 5

Hudson-M2-A13

POWER

NOTE : LDO_CAP
A11 stepping : C will install 1nf cap
A12 stepping : C will let it to NC

M2 chipset need to connect to GND

M2 chipset can let it to GND

VDDQ--3.3V I/O power 102mA

VDDCR-- S/B CORE power 1007mA for M3 902mA for M2

VDDAN_11_CLK-- Internal clock Generator I/O power 340mA

VDDAN_11_PCIE --PCIE/UMI analog power 1088mA

VDDAN_11_SATA--SATA PHY analog/IO power 1337mA

VDDPL_11_SYS_S : System Clock Gen PLLs analog power

VDDPL_33_USB_S : USB PHY PLL analog power

VDDAN_33_USB_S : USB PHY I/O analog power 470mA

VDDAN_11_USB_S : USB PHY PLL analog power 140mA

VDDCR_11_USB_S : USB PHY core power 42mA

VDDAN_11_SSUSB_S : USB3.0 PHY PLL analog power 282mA

VDDCR_11_SSUSB_S : USB3.0 PHY core power 424mA

VDDAN_33_HWM_S -- Hardware monitor interface I/O power

VDDIO_33_S-- 3.3v S5 I/O power 59mA

VDDXL_33_S-- 25MHZ XTAL IO power 5mA

VDDCR_1.1_S-- 1.1V S5 Core power 187mA

VDDPL_11_SYS_S 70mA

VDDAN_33_HWM_S 12mA

VDDIO_AZ_S 26mA

if support USB 3.0 wake up should be change pull hi to S5 power

if support Modem wake up should be change pull hi to S5 power

VDDIO_AZ_S -- HD Audio Interface I/O power

next stage should be change to +1.2VS5 from AMD Errta 1.2

This circuit is for switch DAC and UMI analog power 32 mA Max

VGA will power down when CRT no insert

VGA_PD is generated from FCH

233 mA Max

Quanta Computer Inc.		
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Size	Document Number: Hudson-M3 POWER/GND	Rev: 1A
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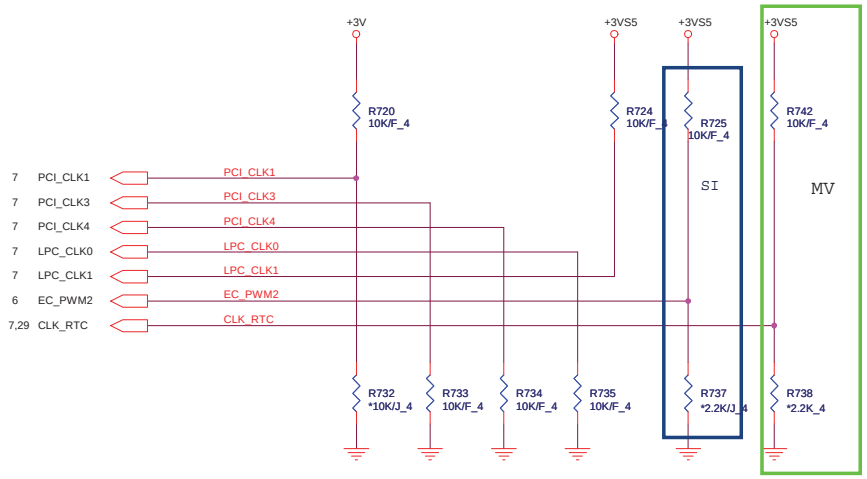
STRAPS PINS

OVERLAP COMMON PADS WHERE POSSIBLE FOR DUAL-OP RESISTORS.



REQUIRED STRAPS

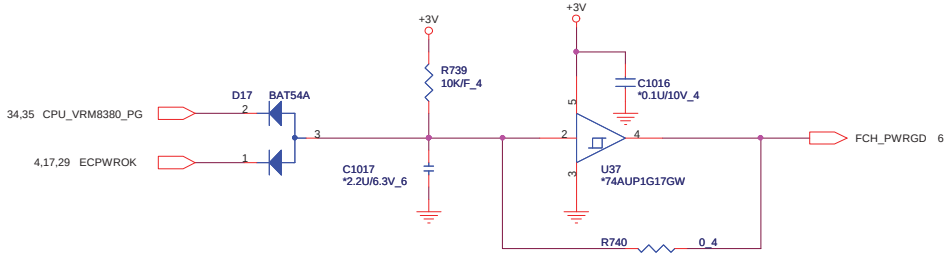
	--------	PCI_CLK1	--------	PCI_CLK3	PCI_CLK4	LPC_CLK0	LPC_CLK1	EC_PWM2	CLK_RTC
PULL HIGH	--------	ALLOW PCIE Gen2 DEFAULT	--------	USE DEBUG STRAP	non_Fusion CLOCK MODE	AMD internal EC ENABLED	CLKGEN ENABLED DEFAULT	LPC ROM DEFAULT	S5 PLUS MODE DISABLED DEFAULT
PULL LOW	--------	FORCE PCIE Gen1	--------	IGNORE DEBUG STRAP DEFAULT	FUSION CLOCK MODE DEFAULT	EC DISABLED DEFAULT	CLKGEN DISABLED	SPI ROM	S5 PLUS MODE ENABLED

DEBUG STRAPS

FCH has 15K Internal Pull Up 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

FCH PWRGD



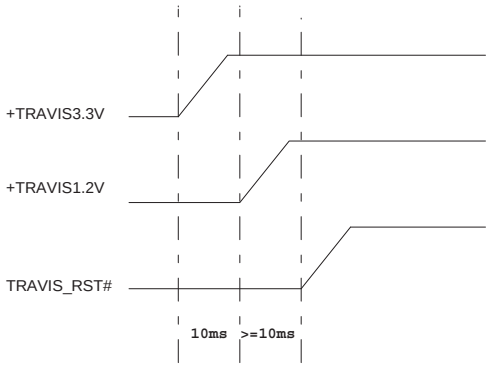
Quanta Computer Inc.

PROJECT : R23

Size	Document Number	Rev
	Hudson-M3 STRAP/PWRGD	1A

Date: Wednesday, May 04, 2011 Sheet 10 of 40

ANX3110 Power Up Sequence



ANALOGIX ANX3110

U38 — ANX3110

GPIO_0 : Define VAR_BL & BL_EN & DIGON H/W or S/W control power up timming
Pull Hi for H/W mode
---chip have defined power up timing
Pull Low for S/W mode -- APU through DPRX port to program it

CLK_SEL:
Pull Hi for 100MHZ clk source input
Pull Low for 27MHZ crystal input

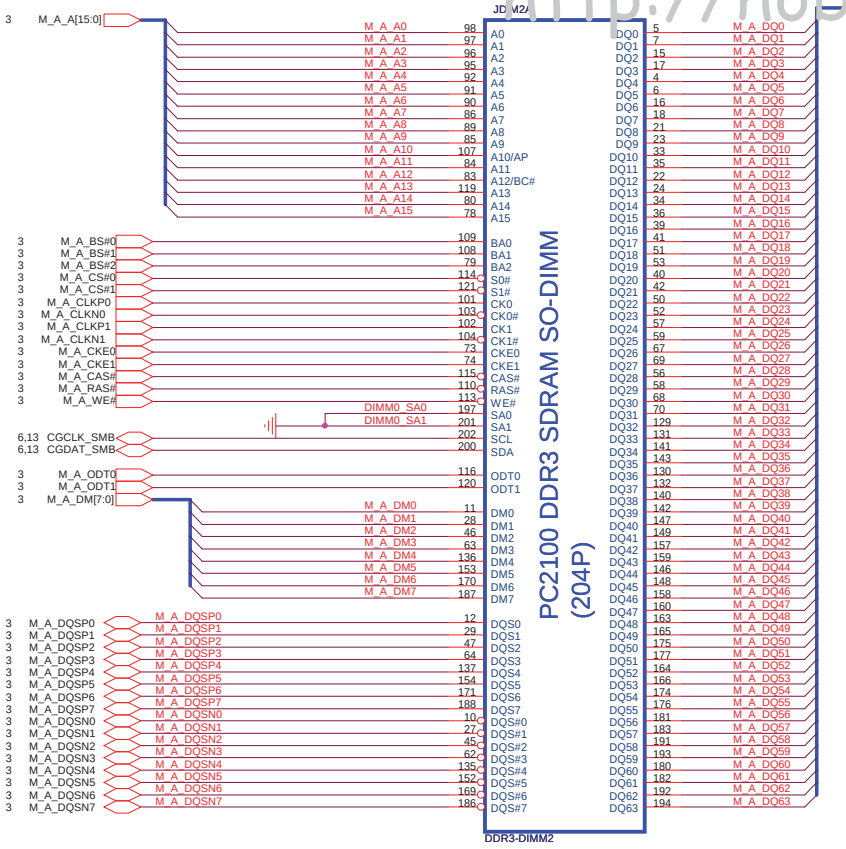
DPRX_HPD :
It will transfer to Hi when power enable

TEST_EN : internal pull low
1:scan test mode
0:normal mode

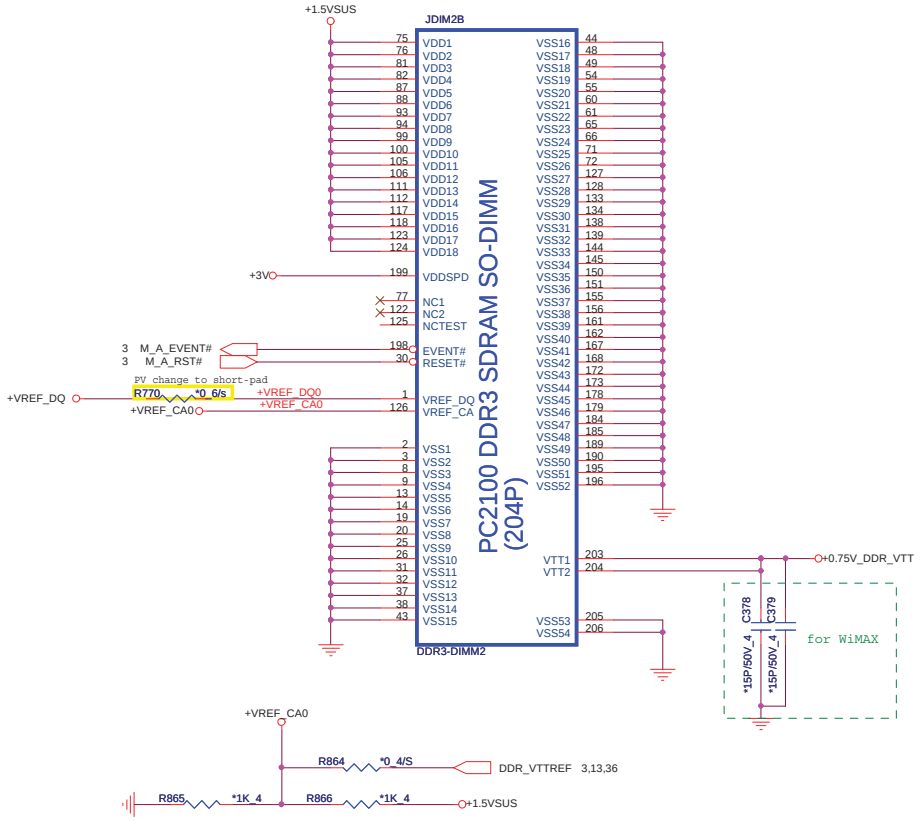
PV change to short-pad

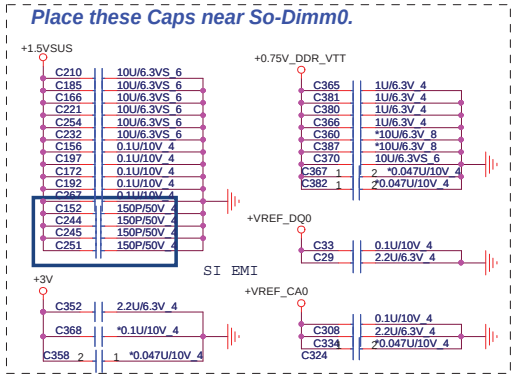
remove level shift

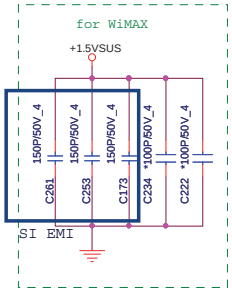
PROJECT : R23	Quanta Computer Inc.
Size: Custom	Document Number: ANX3110
Rev: 1A	
Date: Tuesday, May 03, 2011	Sheet 11 of 40

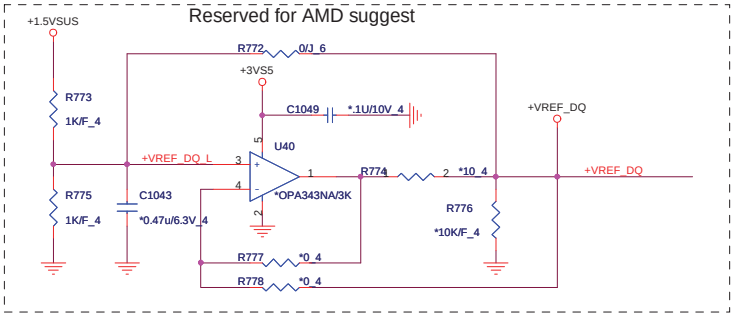


H9.2mm





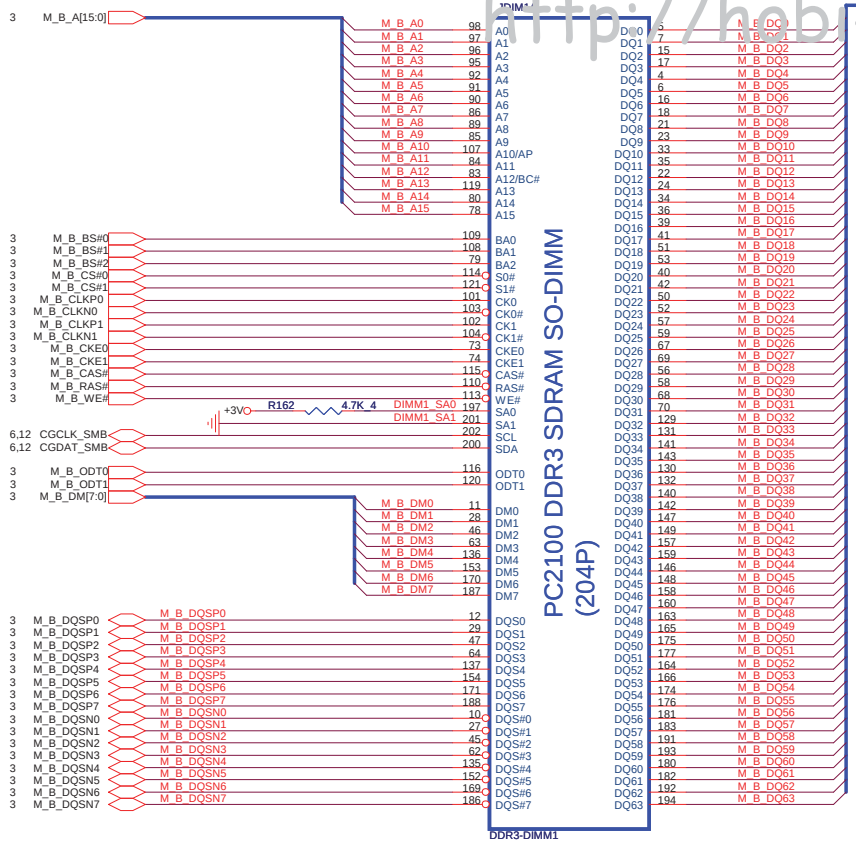




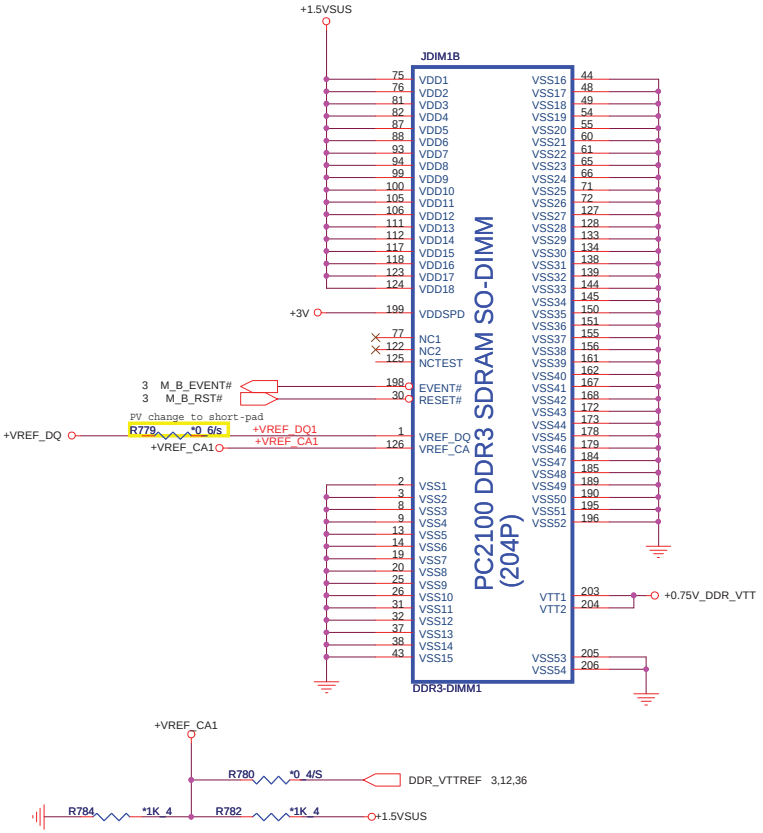
13,36 +0.75V_DDR_VTT
2,3,4,5,13,36,37,39 +1.5VSUS
2,4,6,8,9,10,11,13,14,17,20,22,23,24,25,27,28,29,30,34,37,39 +3V

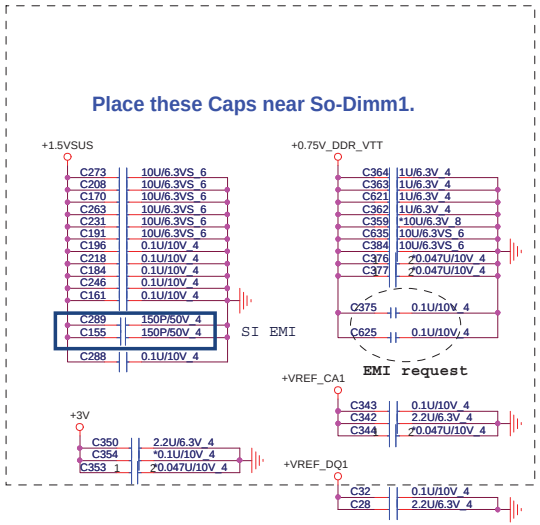
PROJECT : R23
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DDR3 DIMM-0	1A
Date: Tuesday, May 03, 2011	Sheet 12 of 40	



H5.2mm





12,36 +0.75V_DDR_VTT
2,3,4,5,12,36,37,39 +1.5VSUS
2,4,6,8,9,10,11,12,14,17,20,22,23,24,25,27,28,29,30,34,37,39 +3V

PROJECT : R23
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DDR3 DIMM-1	1A

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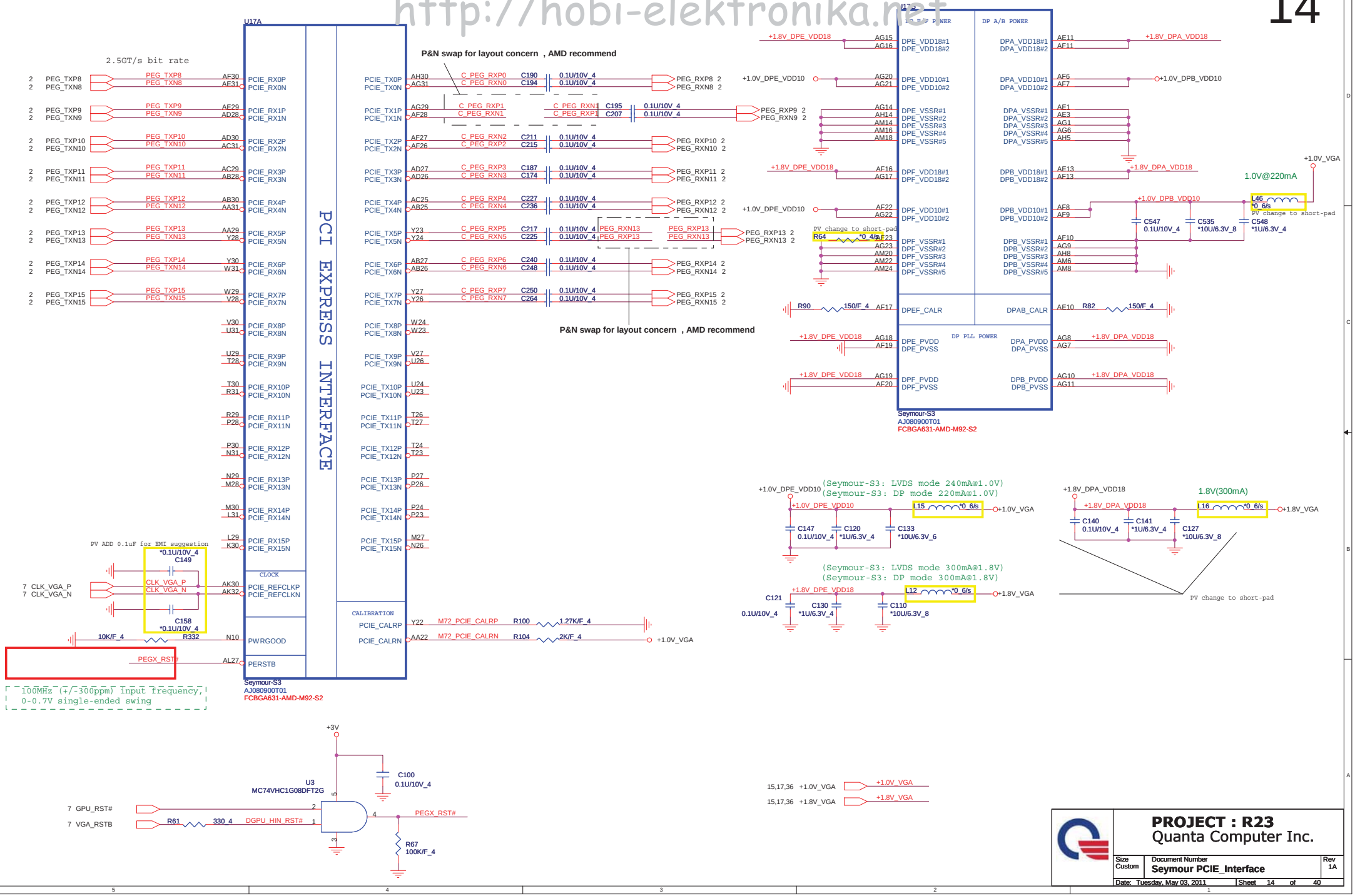


MEM_ID[3:0]	Vendor	Type	Vendor P/N	QUANTA P/N
0000	Samsung- E die	64*16-800MHZ	K4W1G1646E-HC12	Reserved
0001	Hynix- Vega die	64*16-800MHZ	H5TQ1G63DFR-12C	Reserved
0010	Hynix- Vega die	128*16-800MHZ	H5TQ2G63BFR-12C	Reserved
0011	Samsung- C die	128*16-800MHZ	K4W2G1646C-HC12	Reserved
0100	Micron	128*16-800MHZ	MT41J128M16HA-125:D	Reserved
0101	Reserved	Reserved	Reserved	Reserved
0110	Hynix- Vega die	64*16-900MHZ	H5TQ1G63DFR-11C	AKD5LZWTW02
0111	Samsung- E die	64*16-900MHZ	K4W1G1646E-HC11	Reserved
1000	Samsung- G die	64*16-900MHZ	K4W1G1646G-BC11	AKD5BGGT500
1001	Reserved	Reserved	Reserved	Reserved
1010	Hynix- Vega die	128*16-900MHZ	H5TQ2G63BFR-11C	AKD5MGWTW00
1011	Samsung- C die	128*16-900MHZ	K4W2G1646C-HC11	AKD5MGWT500
1100			Reserved	Reserved
1101			Reserved	Reserved
1110			Reserved	Reserved
1111			Reserved	Reserved

AMD request to use Hi voltage enter O.S

GPIO15 GPIO20

Seymour-XT	PWRCNTL0	PWRCNTL1	V-CORE
L	0	0	0.9V
M	0	1	1V
H	1	0	1.1V (Default)
TBD	1	1	NA

Access to SCL and SDA is mandatory on BACO designs for debug purposes

GPIO22(ROMCS#) PD without external VBIOS ROM

If no contact this pin to LVDS need pull low

Seymour uninstall Ra to meet AF24 N/C

Reserve for AMD debug only

Reserve for DB debug only

DAC2 is NC on Seymour

Seymour-S3--NC ROBSON--install

Robson-- Install Seymour- NC BACO mode -- install

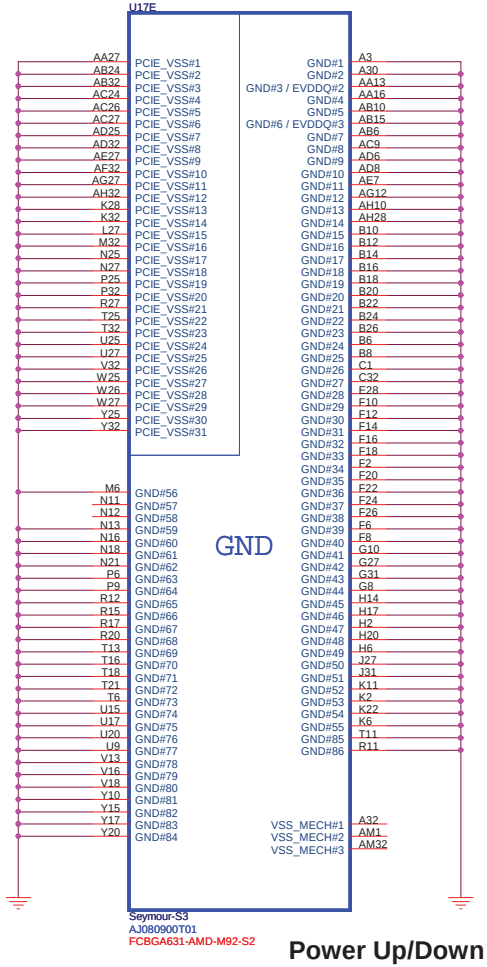
follow AMD checklist change from 10M to 1Mohm

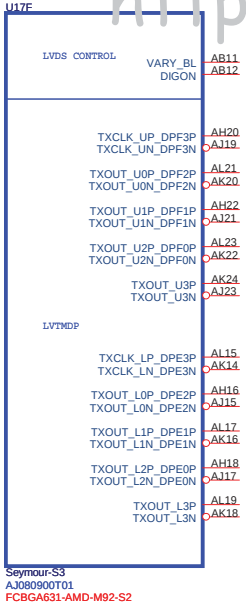
For Int Clk 27Mhz

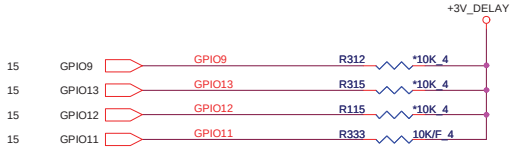
PROJECT : R23
Quanta Computer Inc.

Size: Custom | Document Number: Seymour Main | Rev: 1A

Date: Tuesday, May 03, 2011 | Sheet 15 of 40







CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

RECOMMENDED SETTINGS
0= DO NOT INSTALL RESISTOR
1 = INSTALL 10K RESISTOR
X = DESIGN DEPENDANT
NA = NOT APPLICABLE

STRAPS	PIN	DESCRIPTION OF DEFAULT SETTINGS	
TX_PWRS_ENB	GPIO0	**Transmitter Power Savings Enable** 0: 50% Tx output swing for mobile mode 1: full Tx output swing (Default setting for Desktop)	1
TX_DEEMPH_EN	GPIO1	**PCI Express Transmitter De-emphasis Enable** 0: Tx de-emphasis disabled for mobile mode 1: Tx de-emphasis enabled (Default setting for Desktop)	1
BIF_GEN2_EN_A	GPIO2	Enable CLKREQ# Power Management 0 - CLKREQ# power management capability is disabled 1 - CLKREQ# power management capability is enabled	0
RSVD BIF_VGA_DIS RSVD	GPIO8 GPIO9 GPIO21	VGA ENABLED	0 0 0
BIOS_ROM_EN	GPIO_22_ROMCSB	ENABLE EXTERNAL BIOS ROM	0
ROMIDCFG(2:0)	GPIO[13:11]	SERIAL ROM TYPE OR MEMORY APERTURE SIZE SELECT	0 0 1
VIP_DEVICE_STRAP_ENA	V2SYNC	IGNORE VIP DEVICE STRAPS	0
RSVD AUD[1] AUD[0]	GENERICC HSYNC VSYNC	AUD[1] AUD[0] 0 0 No audio function 0 1 Audio for DisplayPort and HDMI if dongle is detected 1 0 Audio for DisplayPort only 1 1 Audio for both DisplayPort and HDMI	0 0 11

AMD RESERVED CONFIGURATION STRAPS

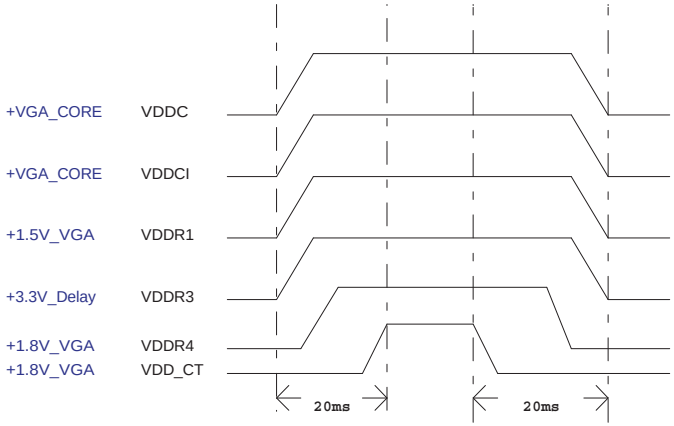
ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

H2SYNC GENERICC

PULLUP PADS ARE NOT REQUIRED FOR THESE STRAPS BUT IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

GPIO21_BB_EN

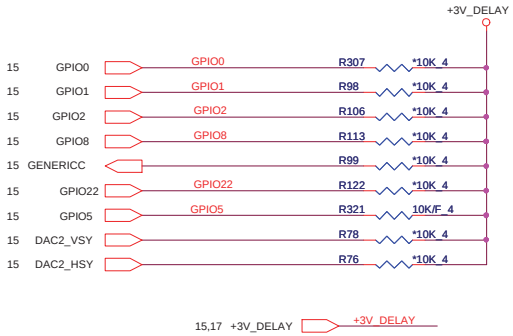
Power Up/Down Sequence



Memory Aperture size

GPIO9 BIOSROM		GPIO13 ROMIDCFG2	GPIO12 ROMIDCFG1	GPIO11 ROMIDCFG0
0	128M	0	0	0
0	256M	0	0	1
0	64M	0	1	0
0	32M	0	1	1
0	512M	1	0	0
0	1G	1	0	1
0	2G	1	1	0
0	4G	1	1	1

It is a shared pin strap with CONFIG[2:0] if BIOS_ROM_EN is set to 0.



PROJECT : R23
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Seymour GND / LVDS/ Straps	1A
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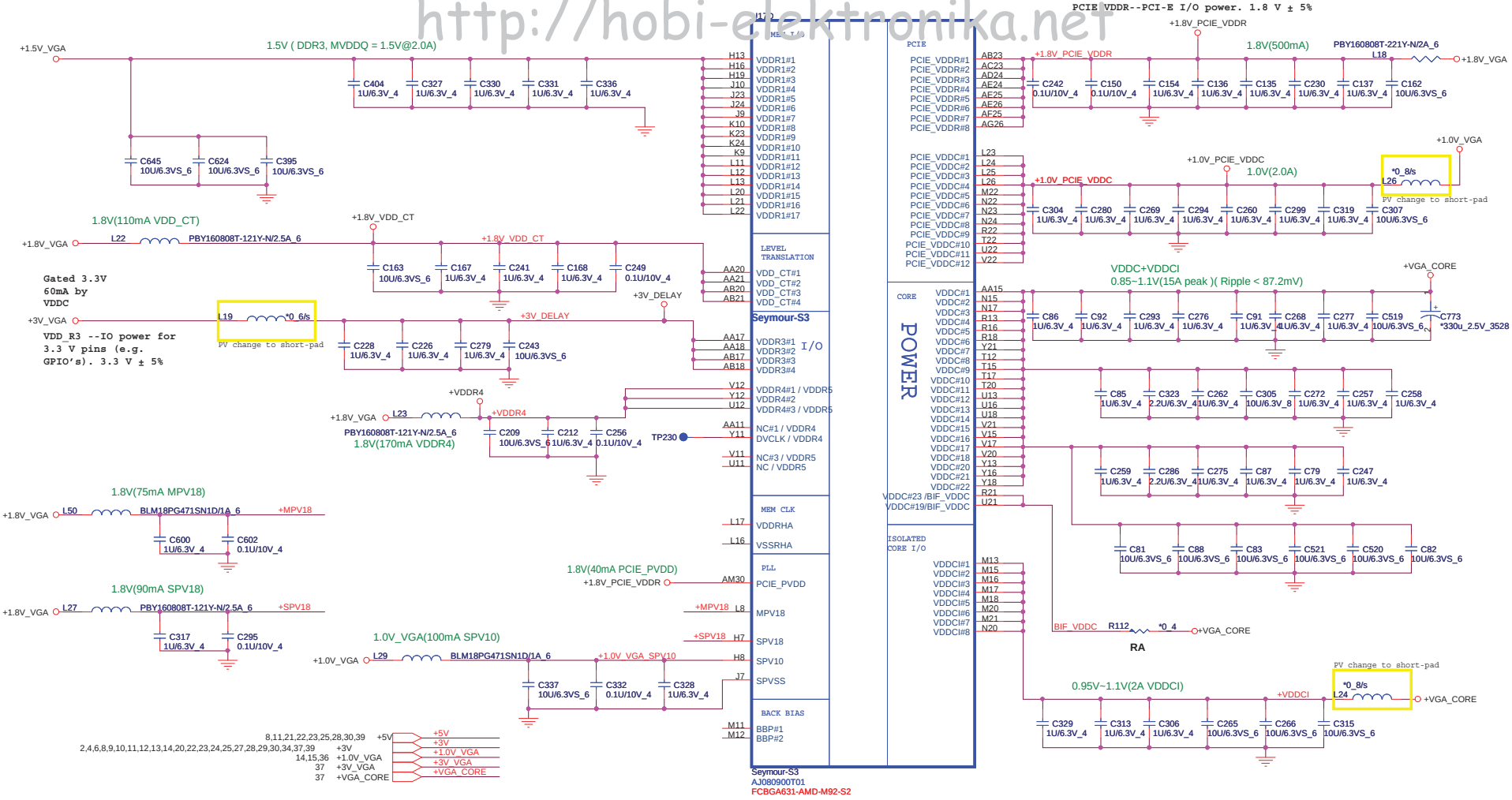
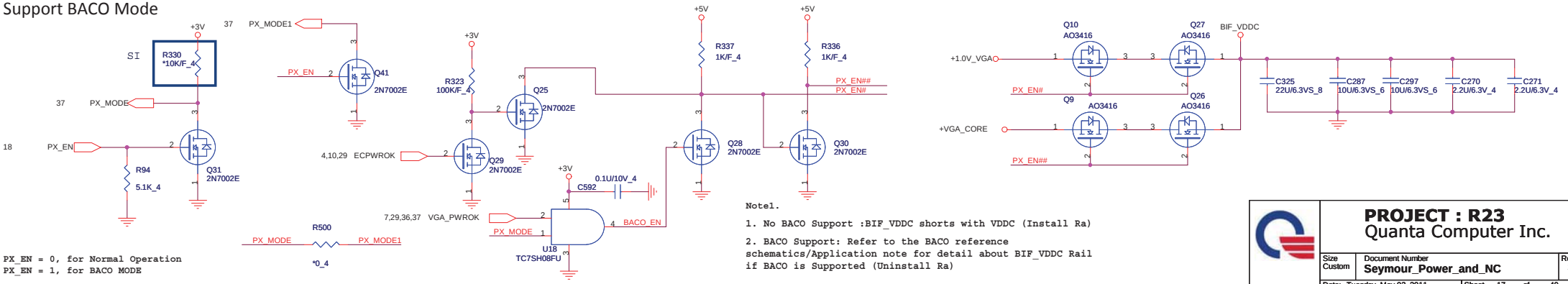


Support BACO Mode



Note1.

1. No BACO Support :BIF_VDDC shorts with VDDC (Install Ra)
2. BACO Support: Refer to the BACO reference schematics/Application note for detail about BIF_VDDC Rail if BACO is Supported (Uninstall Ra)

PROJECT : R23
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Seymour_Power_and_NC	1A

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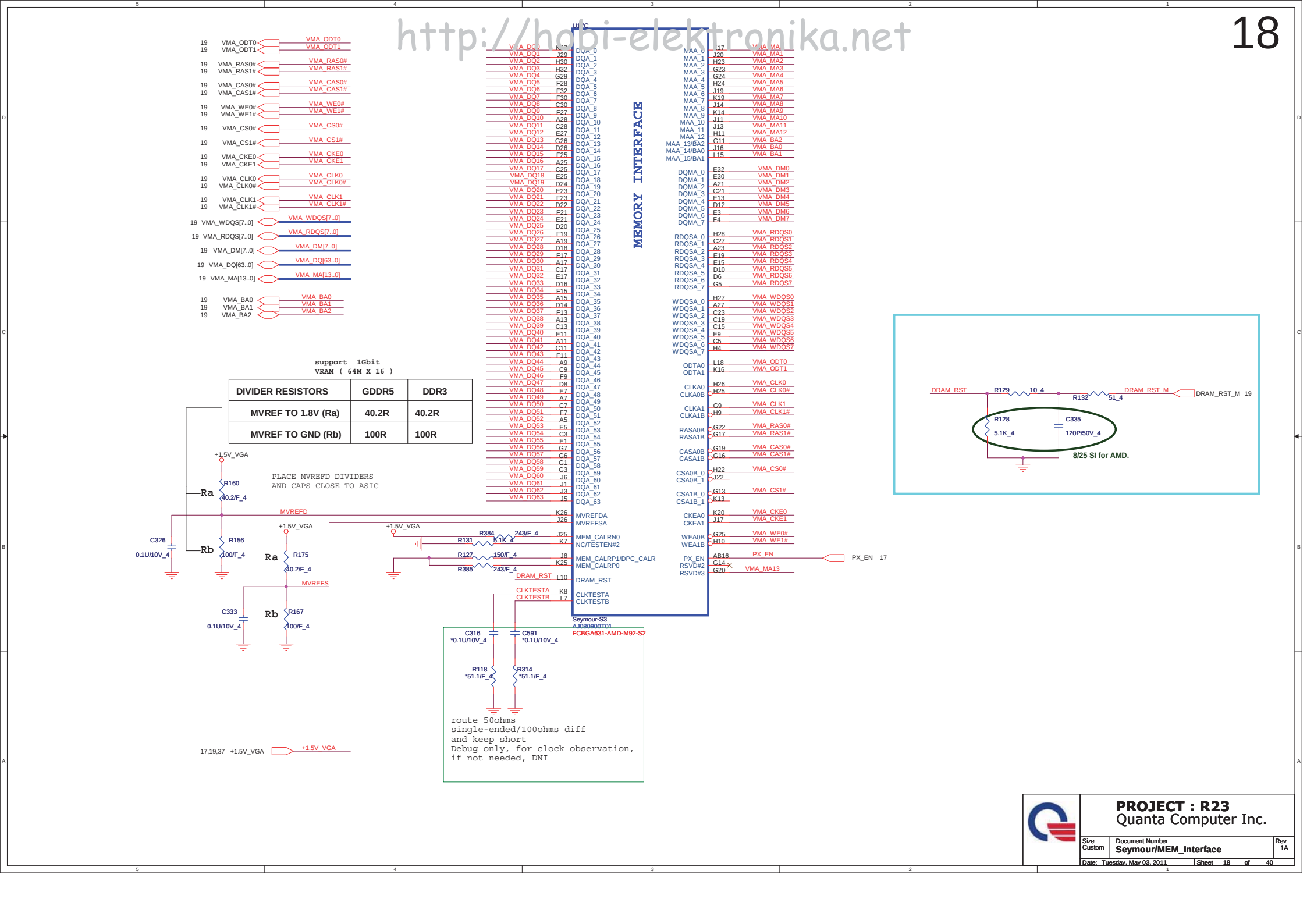

1GB DDR3

18 VMA_MA[13..0] / 18 VMA_DM[7..0] — VMA_MA[13..0]
18 VMA_DQ[63..0] / 18 VMA_WDQS[7..0] / 18 VMA_RDQS[7..0]

U7 / U1 / U6 / U20 — 100-BALL SDRAM DDR3 — K4W2G1646C-HC11

Should be 243 Ohms +-1%: R174 243/F_4 (U7), R389 243/F_4 (U1), R159 243/F_4 (U6), R379 243/F_4 (U20)

+1.5V_VGA

R401 4.99K/F_4 / R400 4.99K/F_4 / C644 0.1U/10V_4 — VREFC_VMA1
R148 4.99K/F_4 / R151 4.99K/F_4 / C372 0.1U/10V_4 — VREFD_VMA1
R392 4.99K/F_4 / R405 4.99K/F_4 / C650 0.1U/10V_4 — VREFC_VMA2
R146 4.99K/F_4 / R153 4.99K/F_4 / C369 0.1U/10V_4 — VREFD_VMA2
R185 4.99K/F_4 / R183 4.99K/F_4 / C402 0.1U/10V_4 — VREFC_VMA3
R165 4.99K/F_4 / R181 4.99K/F_4 / C396 0.1U/10V_4 — VREFD_VMA3
R383 4.99K/F_4 / R388 4.99K/F_4 / C626 0.1U/10V_4 — VREFC_VMA4
R378 4.99K/F_4 / R386 4.99K/F_4 / C623 0.1U/10V_4 — VREFD_VMA4

VMA_CLK0 — R161 56.2/F_4 — VMA_CLK0_COMM — C374 0.01U/25V_4 — R169 56.2/F_4 — VMA_CLK0#
VMA_CLK1 — R154 56.2/F_4 — VMA_CLK1_COMM — C385 0.01U/25V_4 — R158 56.2/F_4 — VMA_CLK1#
17,18,37 +1.5V_VGA — +1.5V_VGA

+1.5V_VGA: C355 1U/6.3V_4, C357 1U/6.3V_4, C406 1U/6.3V_4, C397 1U/6.3V_4, C393 1U/6.3V_4, C349 1U/6.3V_4, C347 1U/6.3V_4, C655 1U/6.3V_4
+1.5V_VGA: C653 1U/6.3V_4, C648 1U/6.3V_4, C637 1U/6.3V_4, C403 1U/6.3V_4, C408 1U/6.3V_4, C345 1U/6.3V_4, C641 1U/6.3V_4, C643 1U/6.3V_4
+1.5V_VGA: C656 10U/6.3VS_6, C633 10U/6.3VS_6, C410 10U/6.3VS_6, C409 10U/6.3VS_6
+1.5V_VGA: C620 0.1U/10V_4, C618 0.1U/10V_4, C651 0.1U/10V_4, C346 0.1U/10V_4, C654 0.1U/10V_4, C636 0.1U/10V_4, C614 0.1U/10V_4, C611 0.1U/10V_4
+1.5V_VGA: C627 0.1U/10V_4, C622 0.1U/10V_4, C628 0.1U/10V_4, C632 0.1U/10V_4, C639 0.1U/10V_4, C642 0.1U/10V_4, C400 0.1U/10V_4, C405 0.1U/10V_4

	QCI PN
SAM 1G	AKD5MGWT500
HYU 1G	AKD5MGWTW00
SAMSUNG	AKD5EGGT500
HYNIX	AKD5LZWTW02

PROJECT : R23
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Seymour VRAM(DDR3 BGA96)	3A

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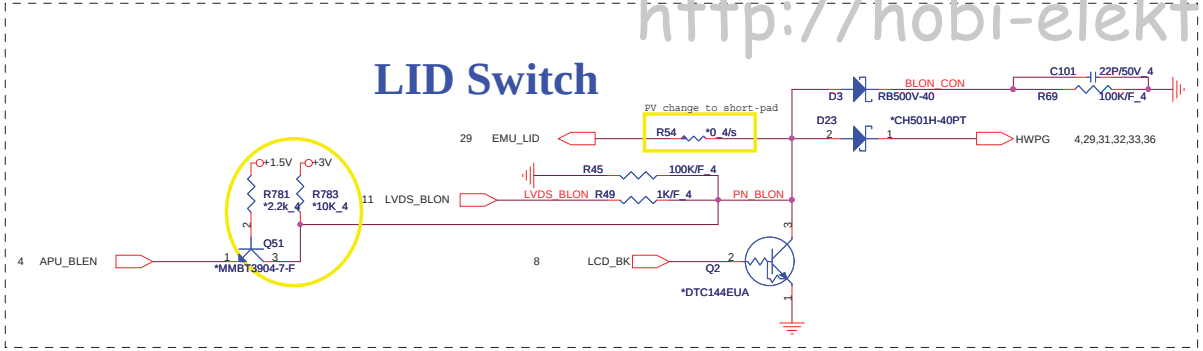
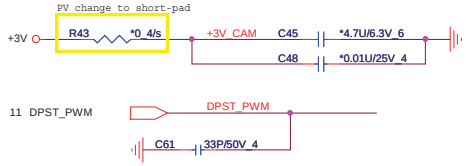
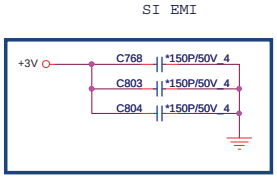
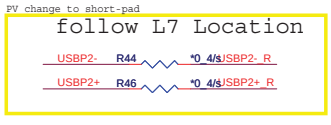
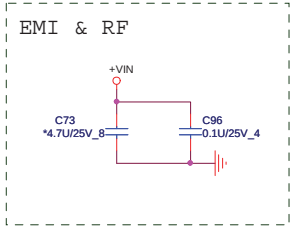
LID Switch

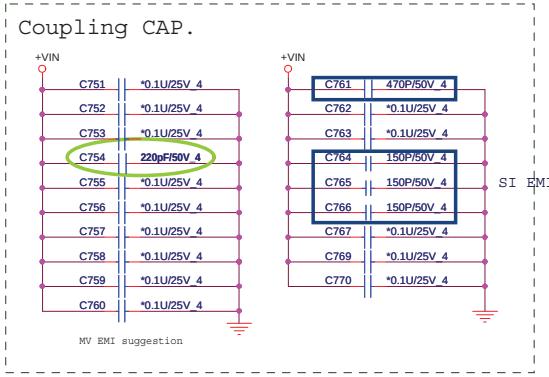


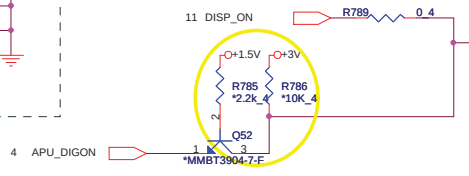


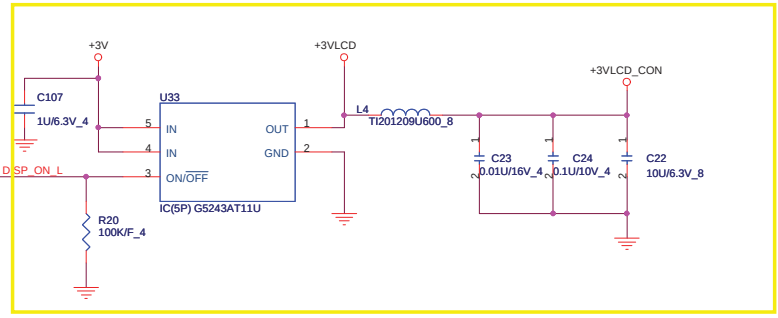


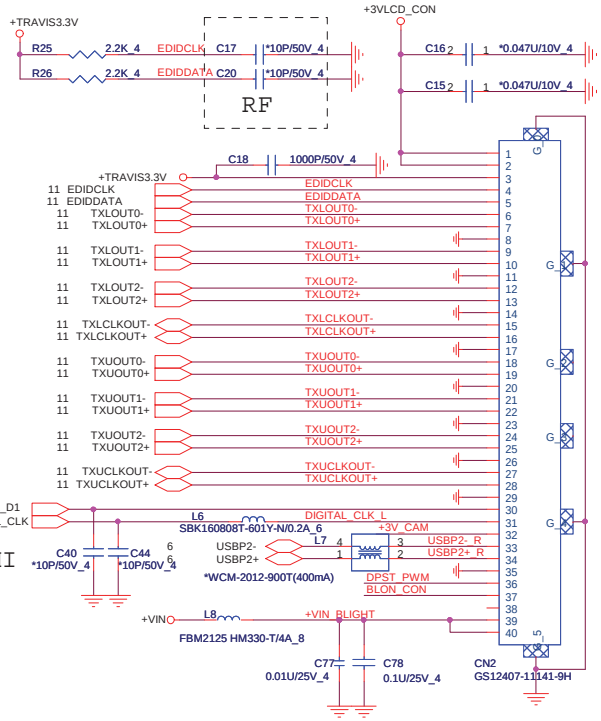












4,7,26,28,29,31,38 +3VPCU
2,4,6,8,9,10,11,12,13,14,17,22,23,24,25,27,28,29,30,34,37,39 +3V
9,37,38,39 +12VALW
31,32,33,34,35,36,37,38,39 +VIN

PROJECT : R23
Quanta Computer Inc.

Size	Document Number	Rev
Custom	LCD CONN/LID/CAM	1A
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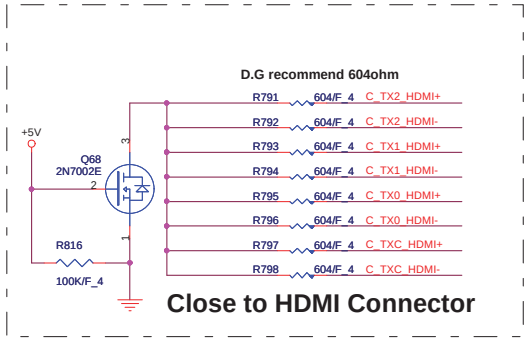
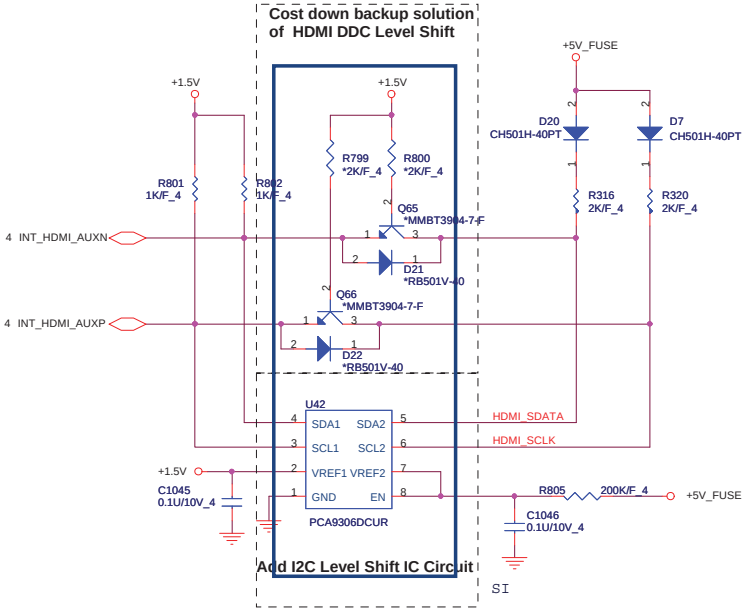
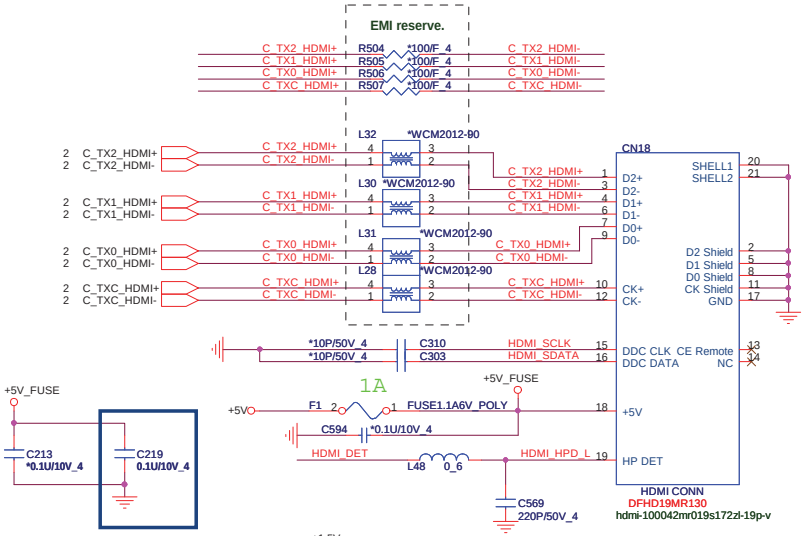
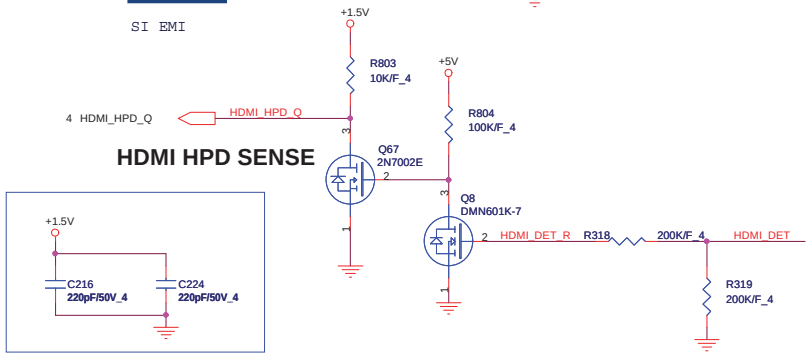
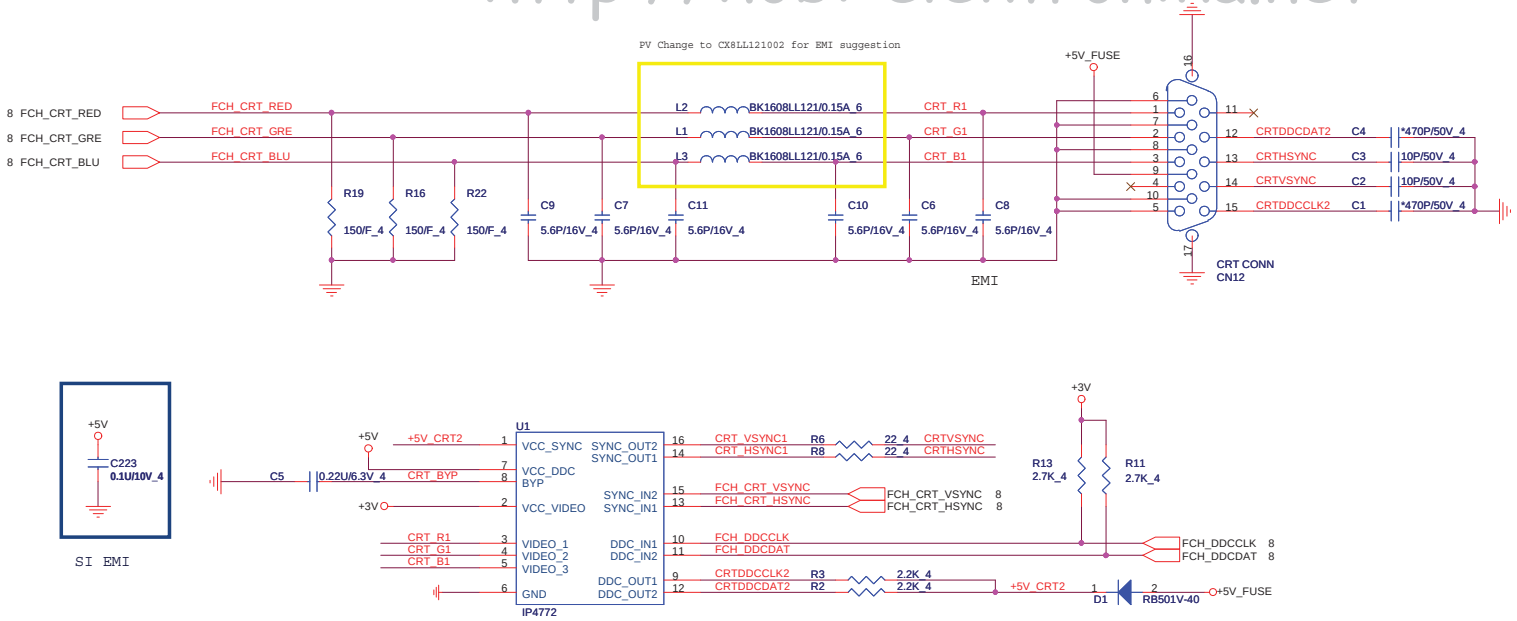








	PROJECT : R23 Quanta Computer Inc.	
Size: Custom	Document Number: **HDMI CONN**	Rev: 1A
Date: Tuesday, May 03, 2011	Sheet 21 of 40	



HOLE

H1 *h-c354d118p2 — h-c354d118p2
H6 *h-c354d118p2 — h-c354d118p2
H14 *h-c354d118p2 — h-c354d118p2
H11 *h-c354d118p2 — h-c354d118p2
H12 *H-C354I158D118P2 — H-C354I158D118P2
H3 *h-c354d118p2 — h-c354d118p2
H8 *H-C354I158D118P2 — H-C354I158D118P2
H4 *H-C354I158D118P2 — H-C354I158D118P2
H2 *h-c236d118p2 — h-c236d118p2
H13 *h-c236d118p2 — H-tc354bc236d118p2
H15 *h-c354d118p2 — h-c354d118p2

PAD2 *EMIPAD
For EMI

CPU

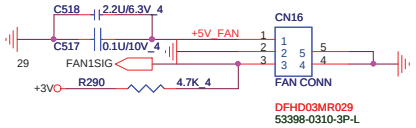
H7 *IINTEL-CPU-BKT2 — INTEL-CPU-BKT2

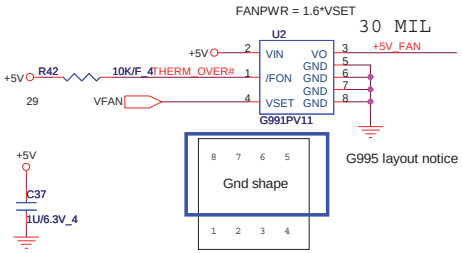
VGA

H10 *h-tc248bc197d150p2 — h-tc248bc197d150p2
H9 *h-tc248bc197d150p2 — h-tc248bc197d150p2
H5 *h-tc248bc197d150p2 — h-tc248bc197d150p2

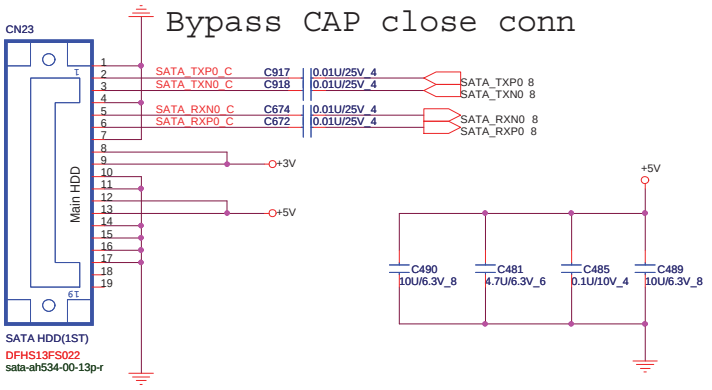
PROJECT : R23 Quanta Computer Inc.		
Size: Custom	Document Number: CRT,Hole	Rev: 1A
Date: Tuesday, May 03, 2011	Sheet 22 of 40	

CPU FAN



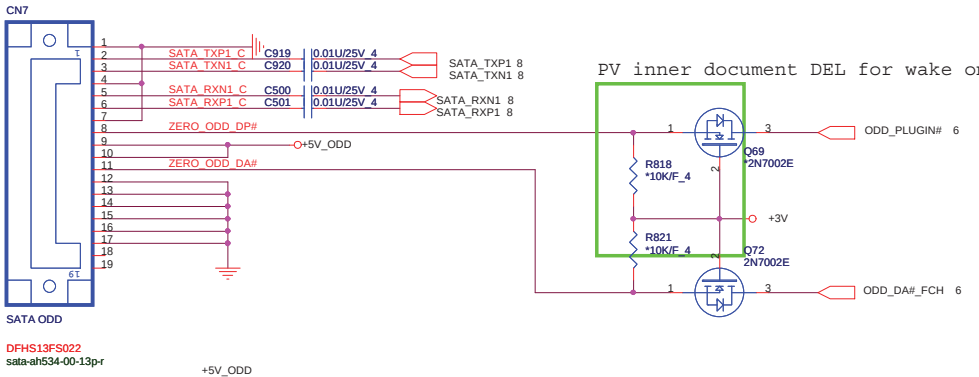


SATA HDD CONNECTOR

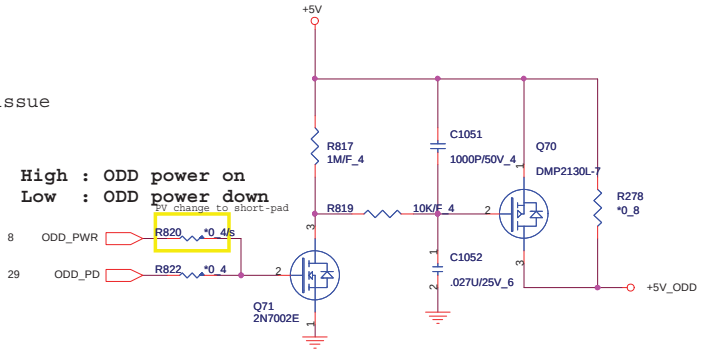


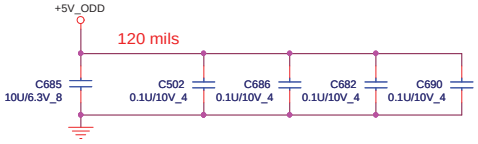
SATA ODD CONNECTOR

SATA ODD



PV inner document DEL for wake on LAN issue

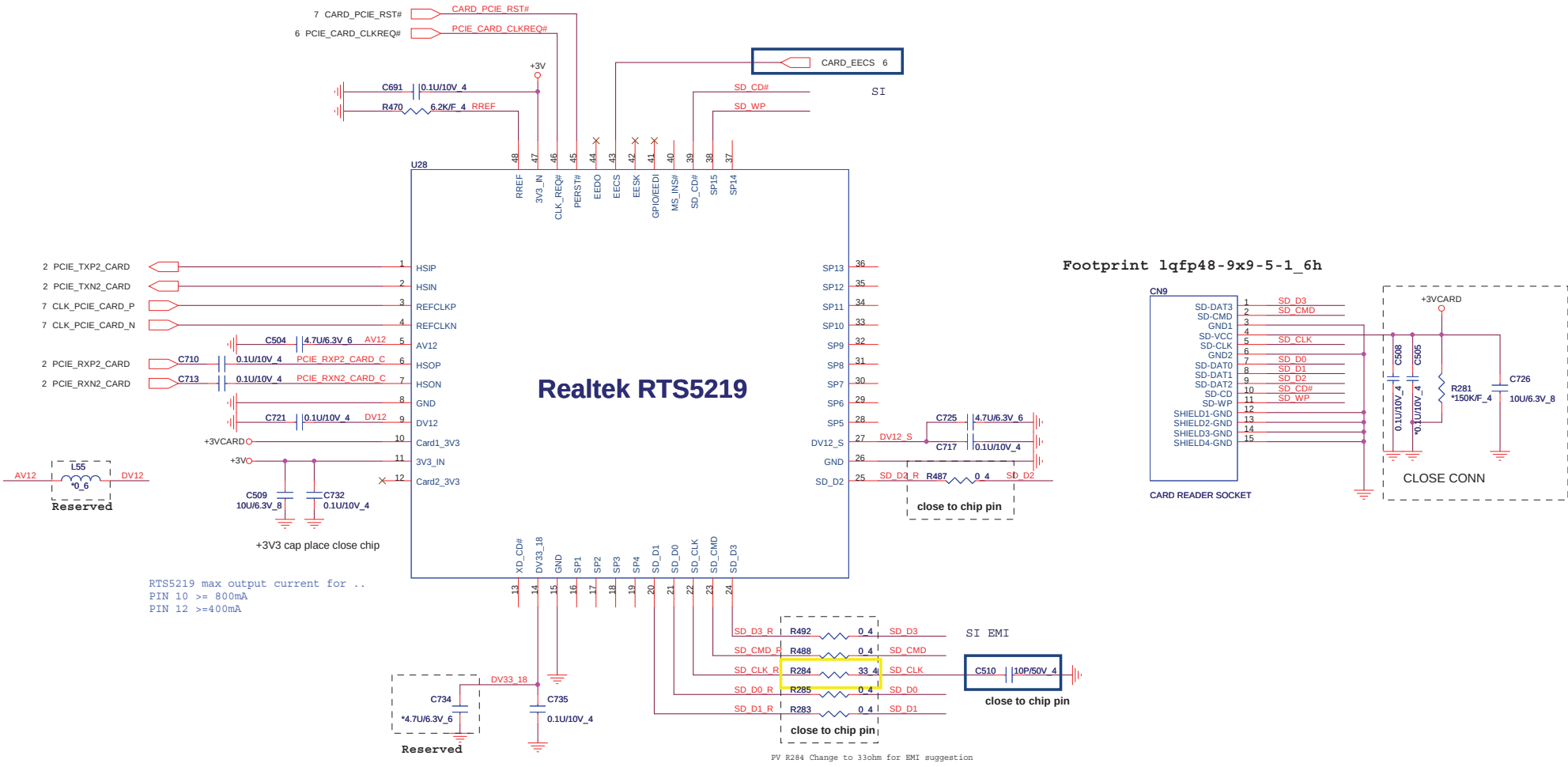




PROJECT : R23
Quanta Computer Inc.

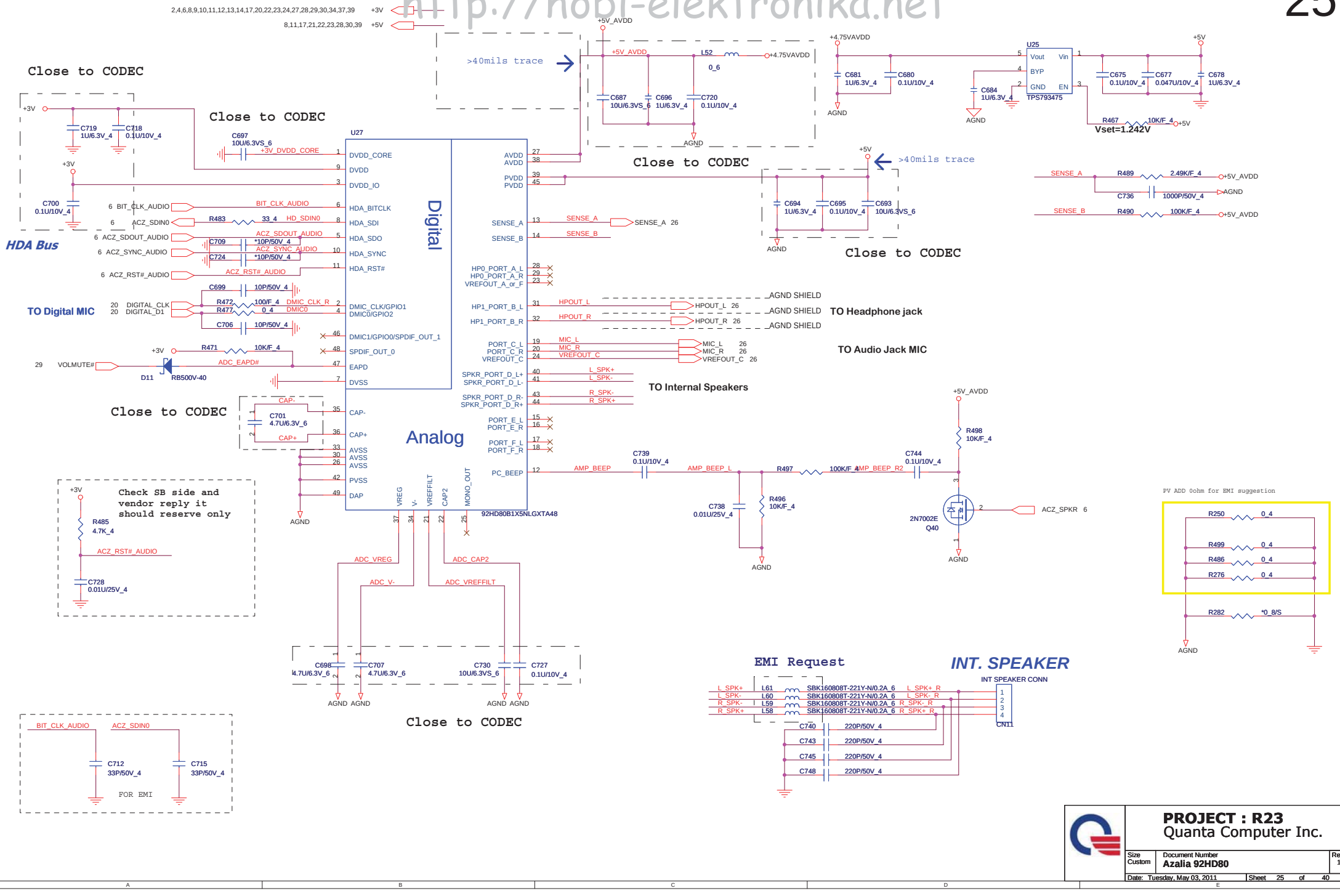
Size	Document Number	Rev
Custom	HDD/ODD/FAN	1A

Date: Wednesday, May 04, 2011 Sheet 23 of 40

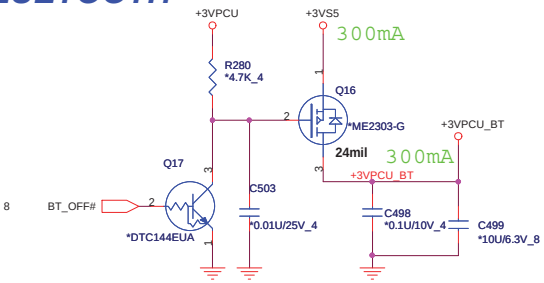


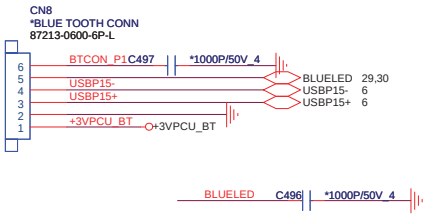
Footprint lqfp48-9x9-5-1_6h

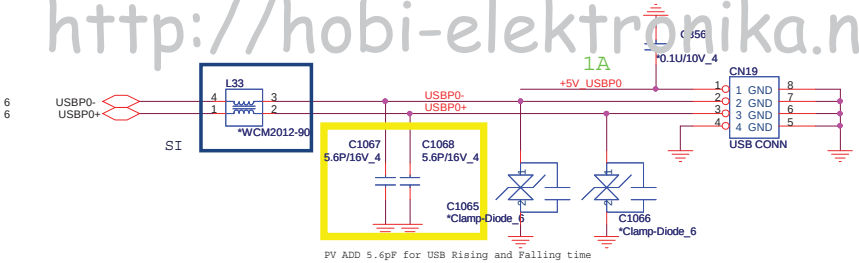
PROJECT : R23 Quanta Computer Inc.		
Size: Custom	Document Number: RTS5219 & CR SOCKET &HOLE	Rev: 1A
Date: Tuesday, May 03, 2011	Sheet 24 of 40	

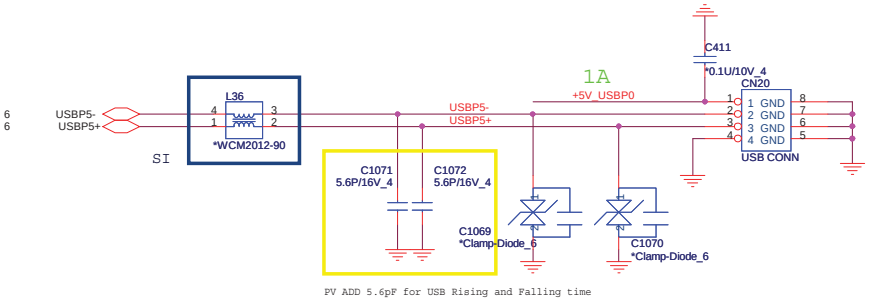


BLUETOOTH

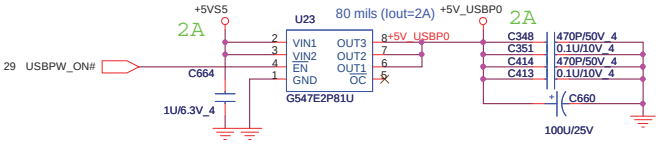




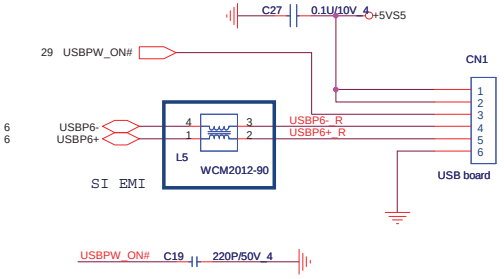




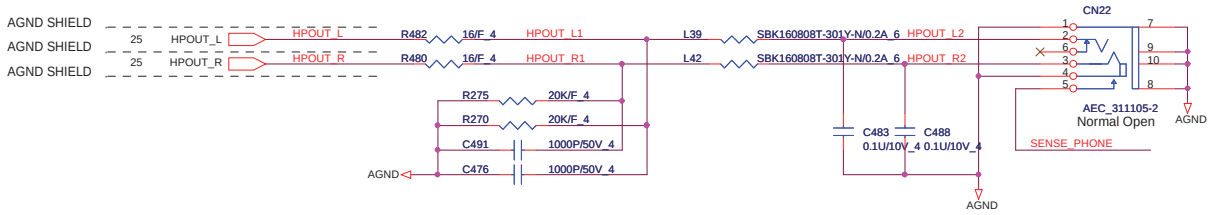
LEFT SIDE USBX2



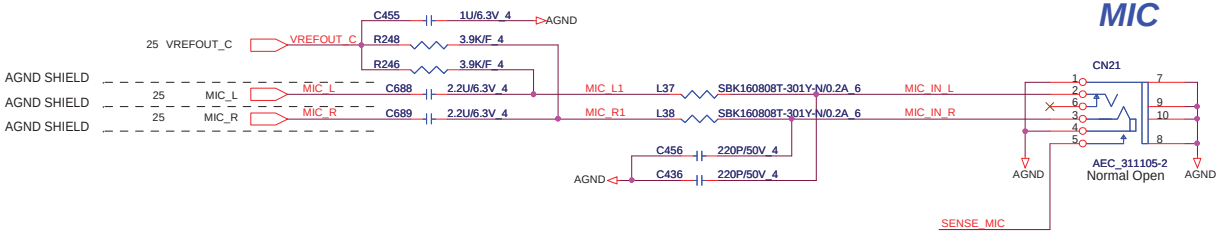
Right SIDE USBX1



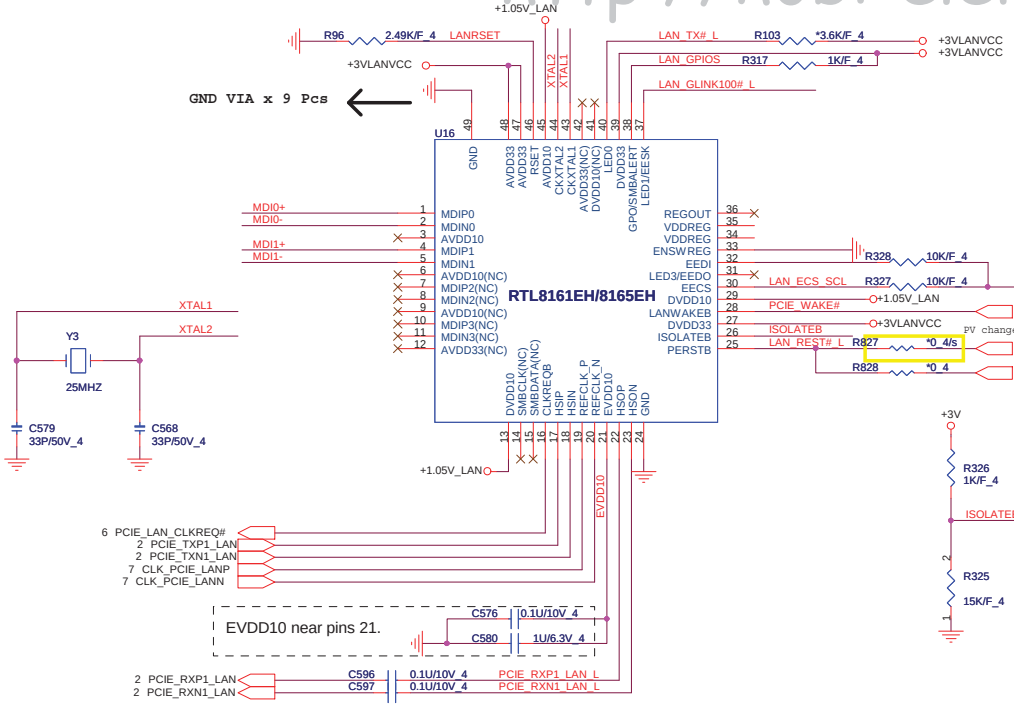
Line out

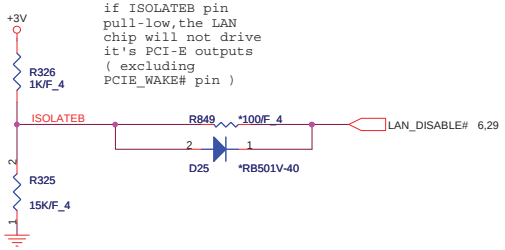


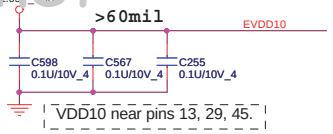
MIC

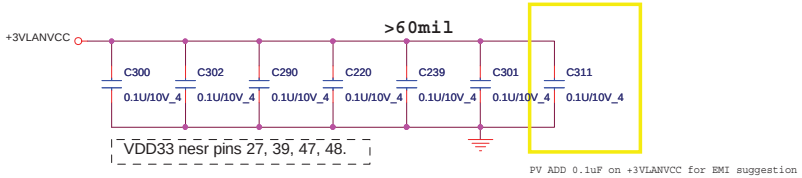


	PROJECT : R23 Quanta Computer Inc.	
Size Custom	Document Number **USB/BT/Audio JacK**	Rev 1A
Date: Tuesday, May 03, 2011	Sheet 26 of 40	

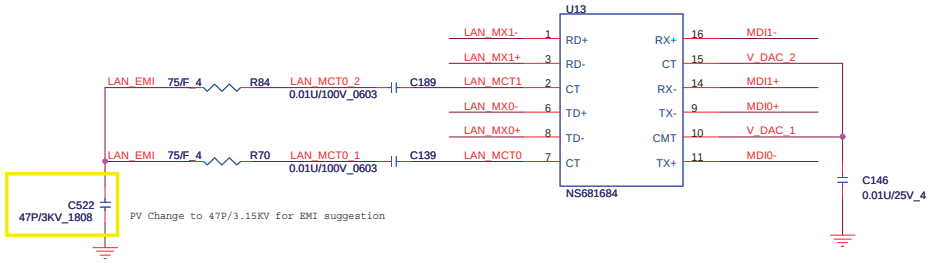




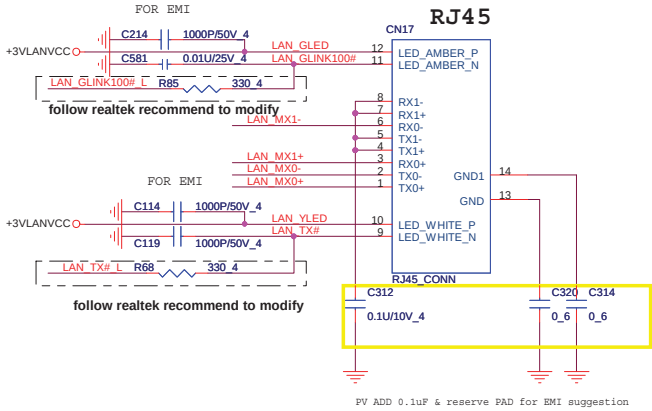




Transformer for 10/100



Lan Con.



39 +3VLANVCC
2,4,6,8,9,10,11,12,13,14,17,20,22,23,24,25,28,29,30,34,37,39 +3V

PROJECT : R23
Quanta Computer Inc.

Size	Document Number	Rev
Custom	RTL8165EH	1A

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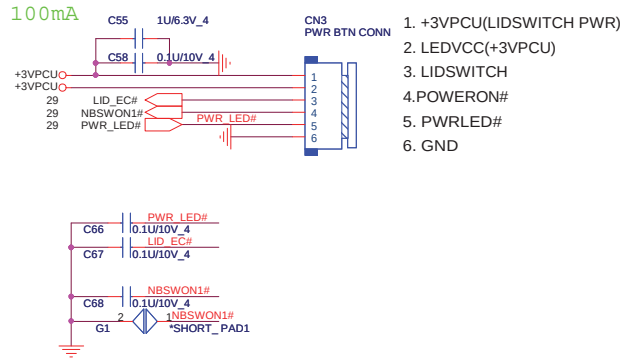
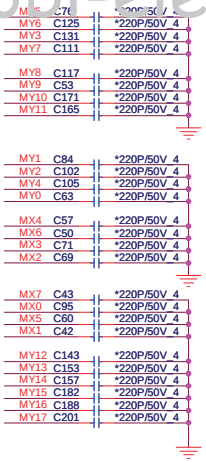
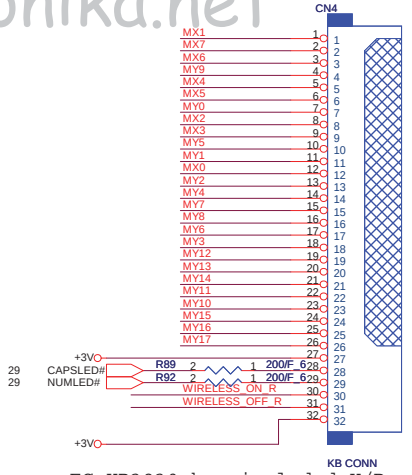
POWER BOTTON CONNECT

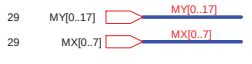


1. +3VPCU(LIDSWITCH PWR)
2. LEDVCC(+3VPCU)
3. LIDSWITCH
4.POWERON#
5. PWRLED#
6. GND

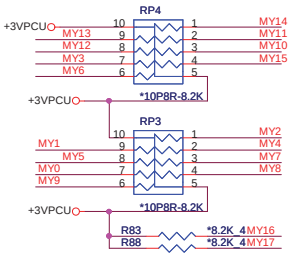
KEYBOARD Con.



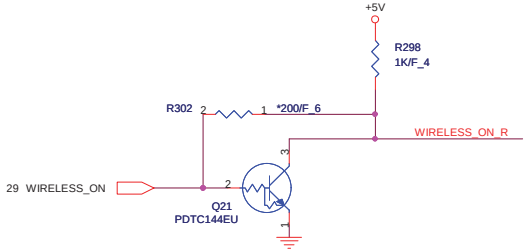


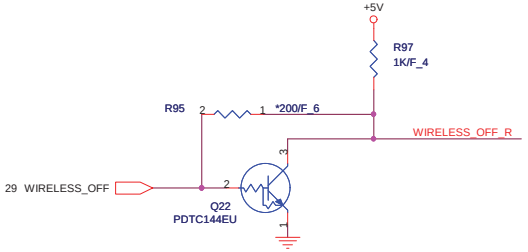


KEYBOARD PULL-UP

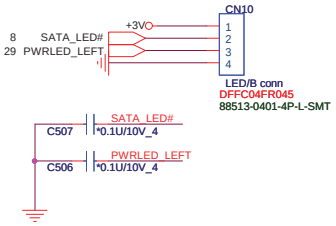


EC KB3930 has included K/B pull-up resistor and function

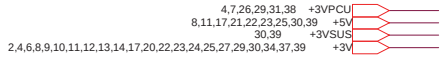




LED Con.

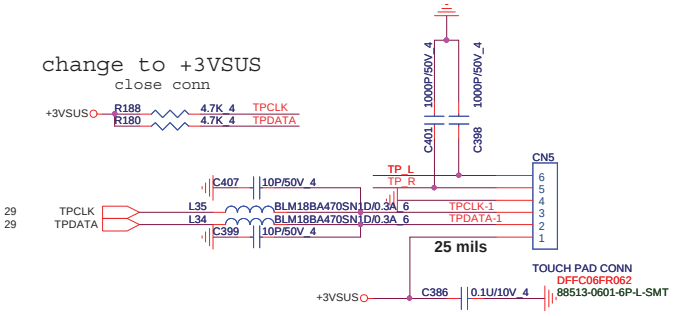


1. +3V
2. SATA_LED#
3. PWR_LED#
4.GND

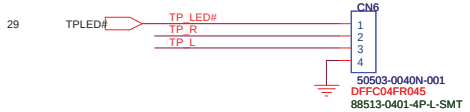


TOUCH PAD Con.

change to +3VSUS
close conn



To TOUCH PAD SW board



PROJECT : R23
Quanta Computer Inc.

Size	Document Number	Rev
Custom	LED/KB/SW/TP	1A

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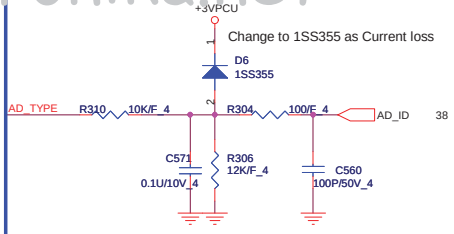
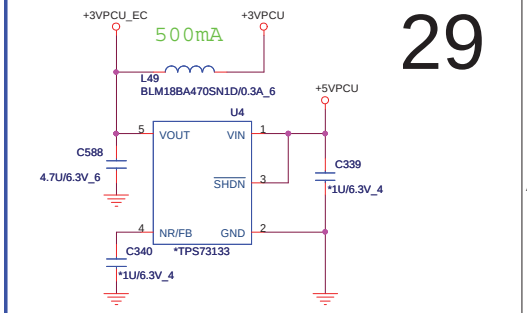
Smart adapter Type check

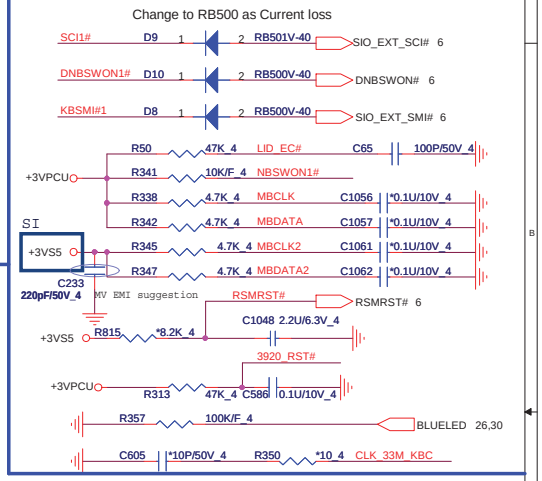


Adapter select

Hi ==> DIS/SG
Low ==>UMA

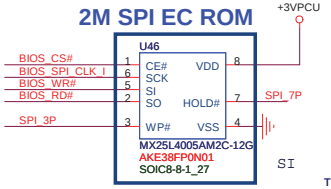
Platform model	GPIO42	adapter
SG/DIS	High	90W
UMA	Low	65W



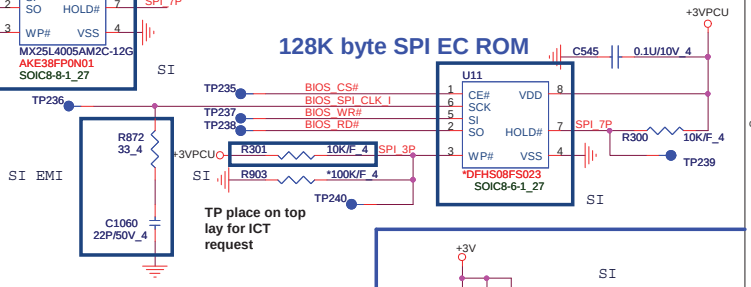


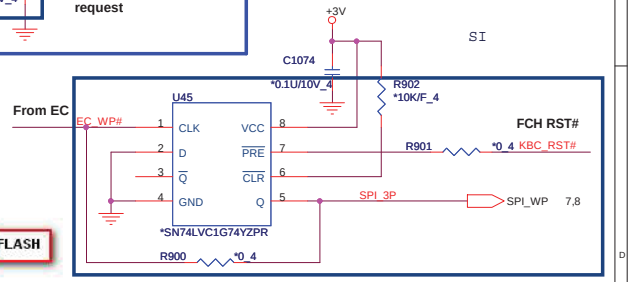
Vender	Size	P/N
AMIC	128K	AKE35ZN0801
EON	128K	AKE35FN0Q00
Socket		DFHS08FS023

2M SPI EC ROM

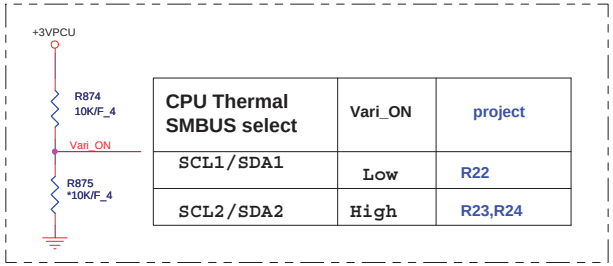


128K byte SPI EC ROM

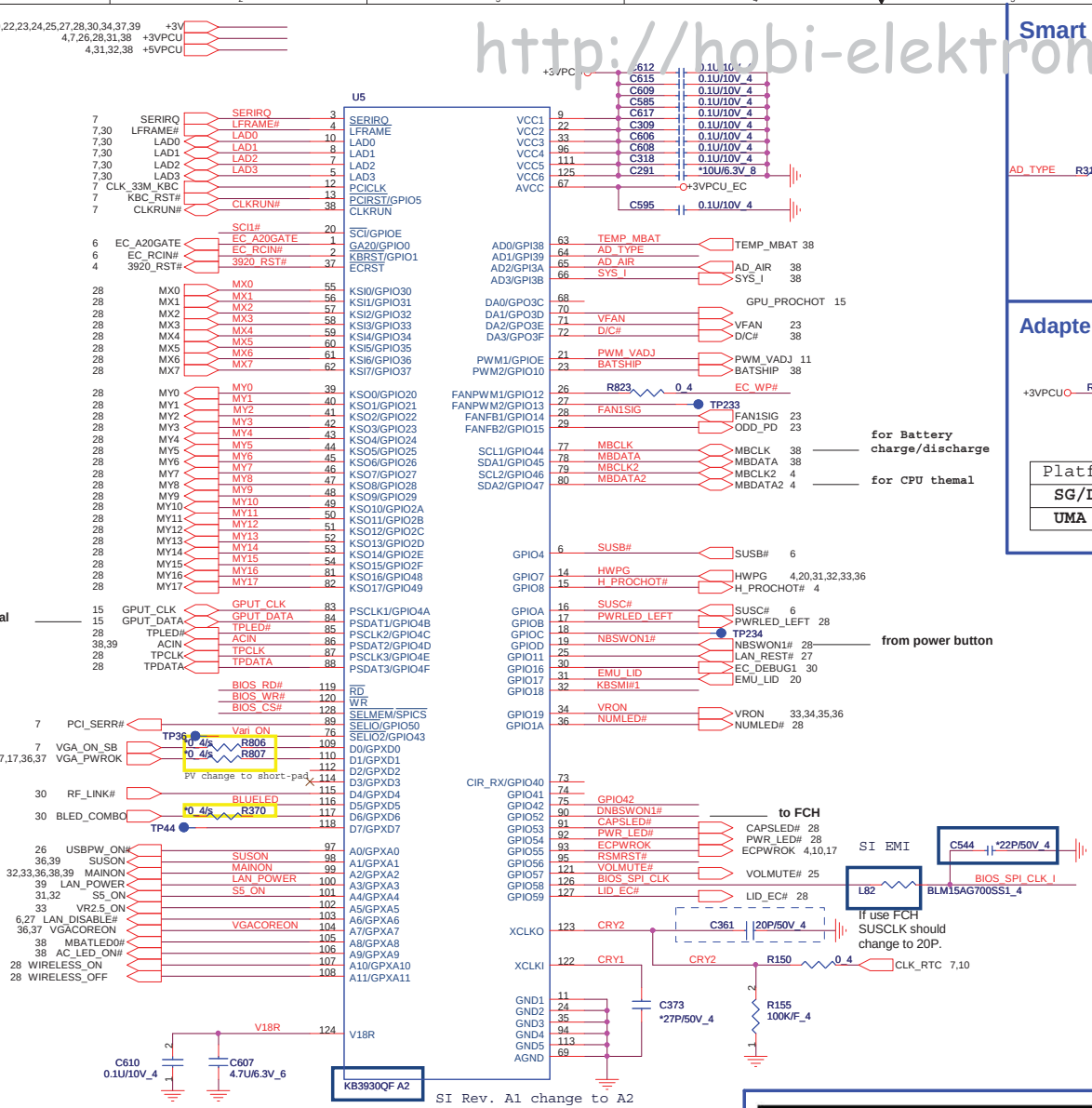




INPUTS				OUTPUTS		
PRE	CLR	CLK	D	Q	Q	
L	H	X	X	H	L	FLASH
H	L	X	X	L	H	
L	L	X	X	H (1)	H (1)	
H	H	↑	H	H	L	
H	H	↑	L	L	H	LOCK
H	H	L	X	Q_0	$\overline{Q_0}$	



CPU Thermal SMBUS select	Vari_ON	project
SCL1/SDA1	Low	R22
SCL2/SDA2	High	R23,R24



C612	0.1U/10V_4		
C615	0.1U/10V_4		
C609	0.1U/10V_4		
C585	0.1U/10V_4		
C617	0.1U/10V_4		
C309	0.1U/10V_4		
C606	0.1U/10V_4		
C608	0.1U/10V_4		
C318	0.1U/10V_4		
C291	*10U/6.3V_8		
C595	0.1U/10V_4		

PROJECT : R23
Quanta Computer Inc.
Size: Custom
Document Number: EC (KB3926)/ROM
Rev: 1A
Date: Tuesday, May 03, 2011
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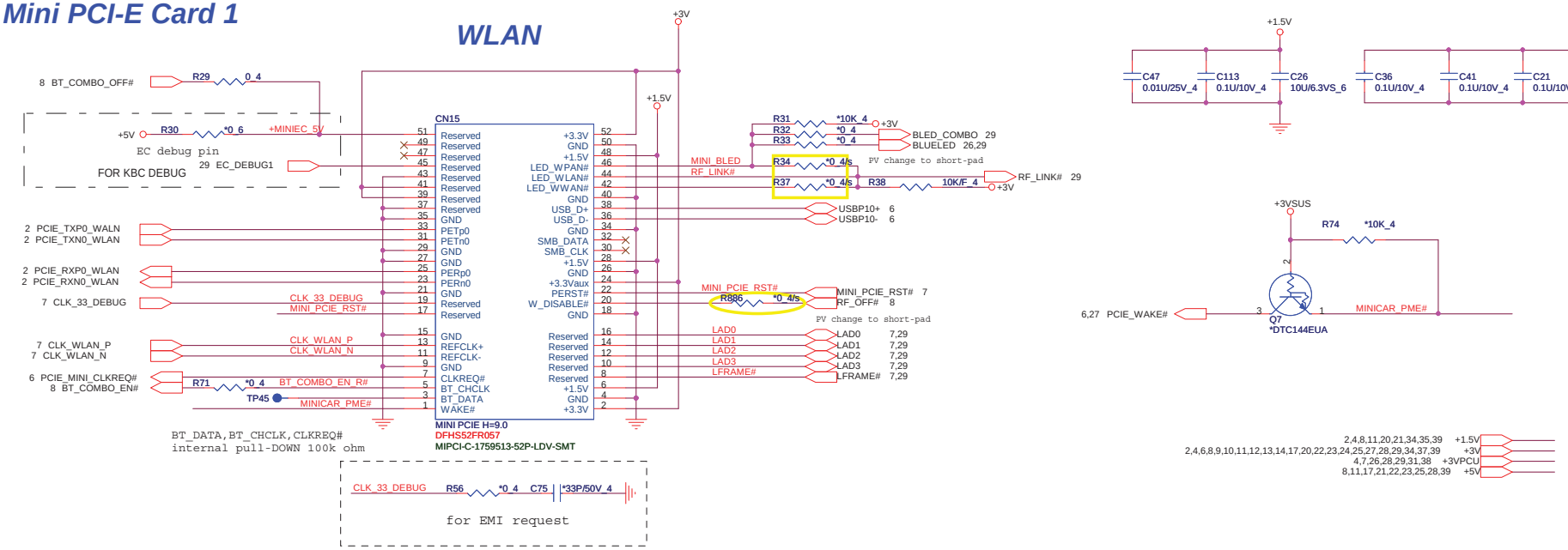
Mini PCI-E Card 1

WLAN



PROJECT : R23
Quanta Computer Inc.

Size	Document Number	Rev
Custom	MINI PCIE CONN X1	1A

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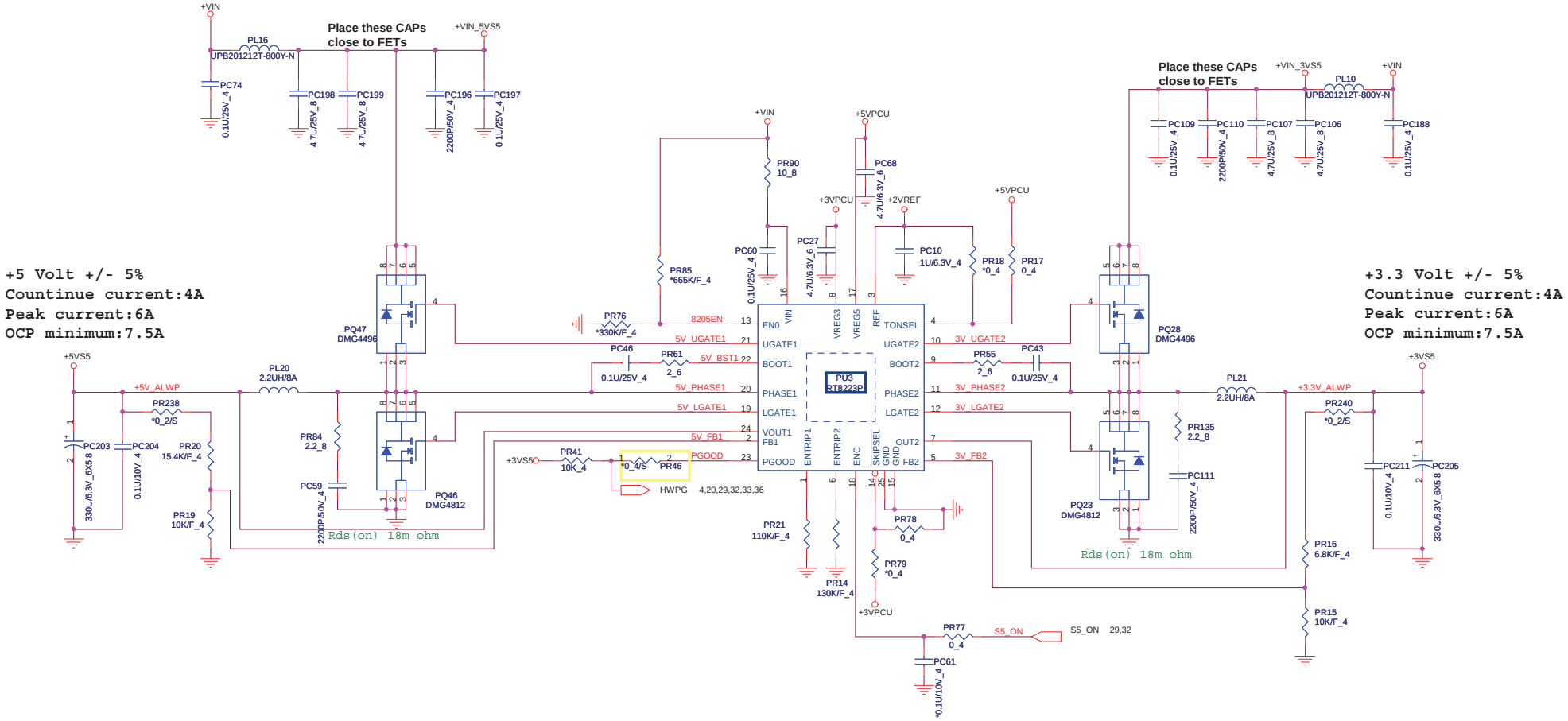
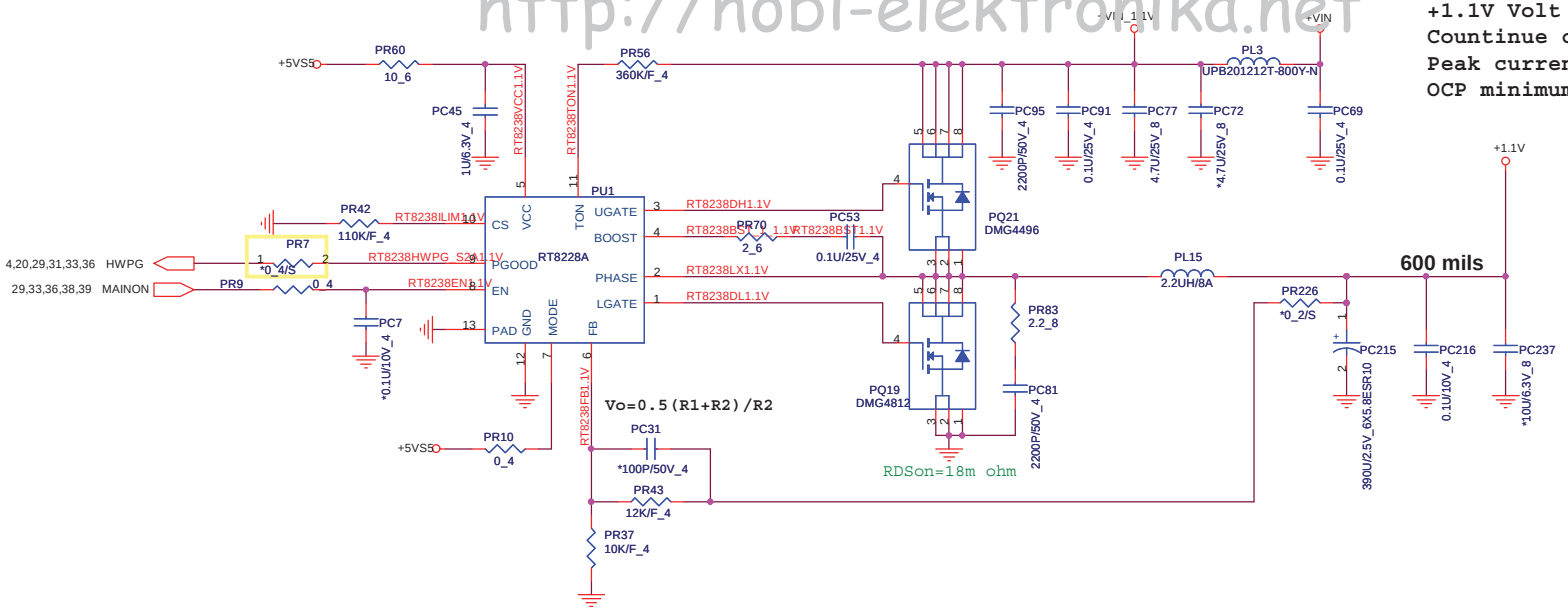


PROJECT : R23
Quanta Computer Inc.

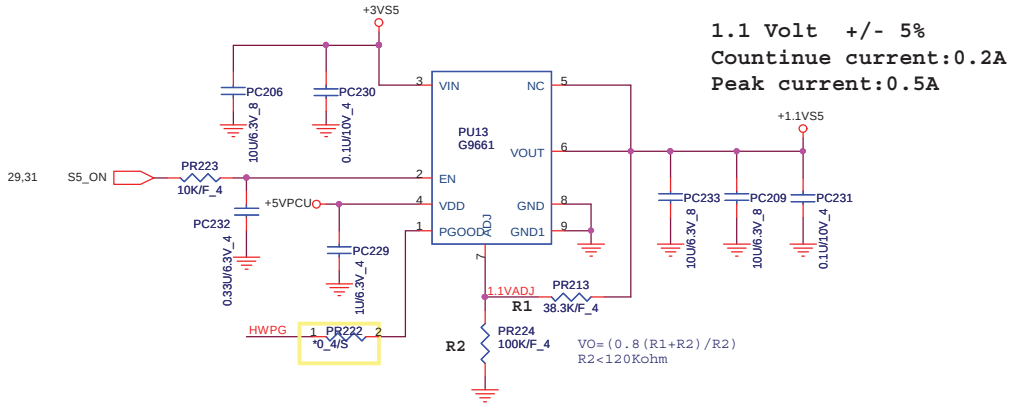
Size	Document Number	Rev
Custom	+5V/+3V (RT8206B)	1A

Date: Tuesday, May 03, 2011 Sheet 31 of 40

+1.1V Volt +/- 5%
Countinue current:3A
Peak current: 4A
OCP minimum:6A



1.1 Volt +/- 5%
Countinue current:0.2A
Peak current:0.5A



NB5/RD2	**PROJECT : R23** Quanta Computer Inc.	
Size: Custom	Document Number: VGA Core/+1.8VGFX/1.0VGFX	Rev: 1A
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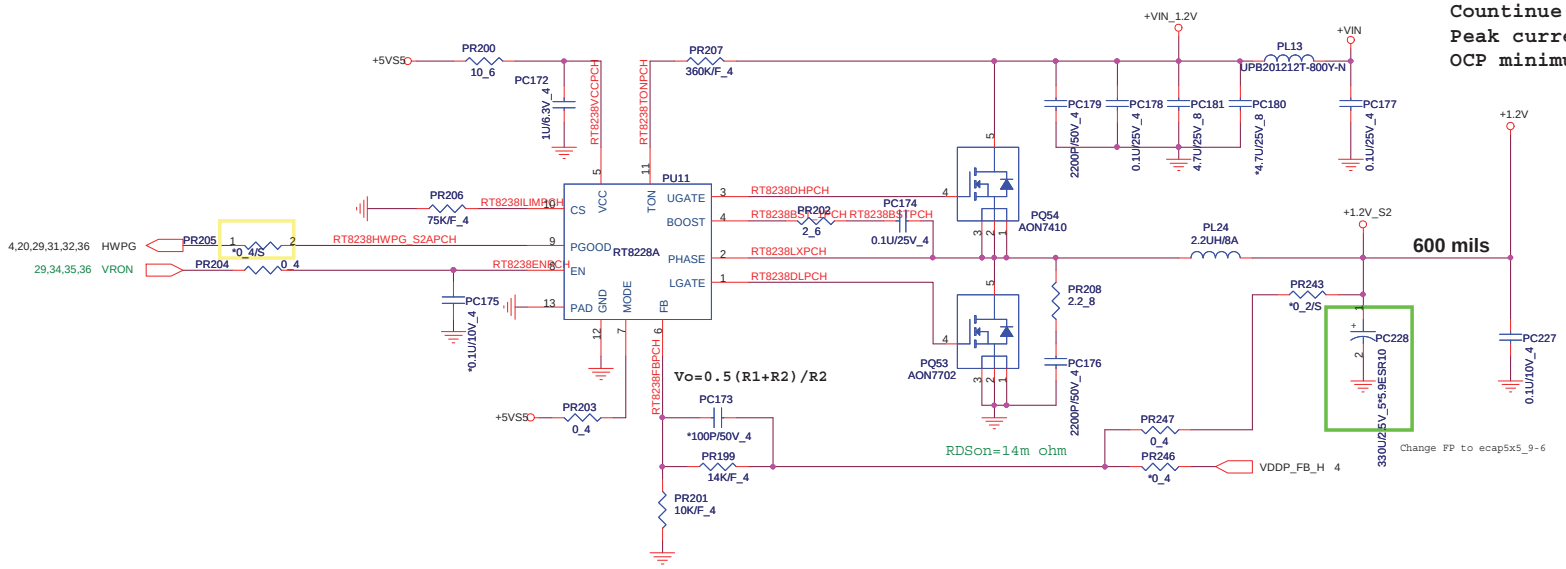
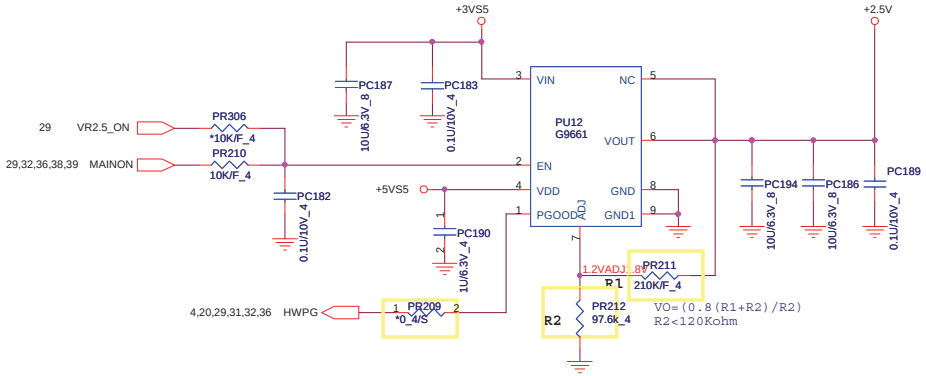
+1.05V PCH Volt +/- 5%
Countinue current:4A
Peak current:6A
OCP minimum:7.5A



+2.5V +/- 5%
Countinue current:0.3A
Peak current:0.75A



PROJECT : R23
Quanta Computer Inc.

Size	Document Number	Rev
Custom	+1.05V (RT8238A)	1A

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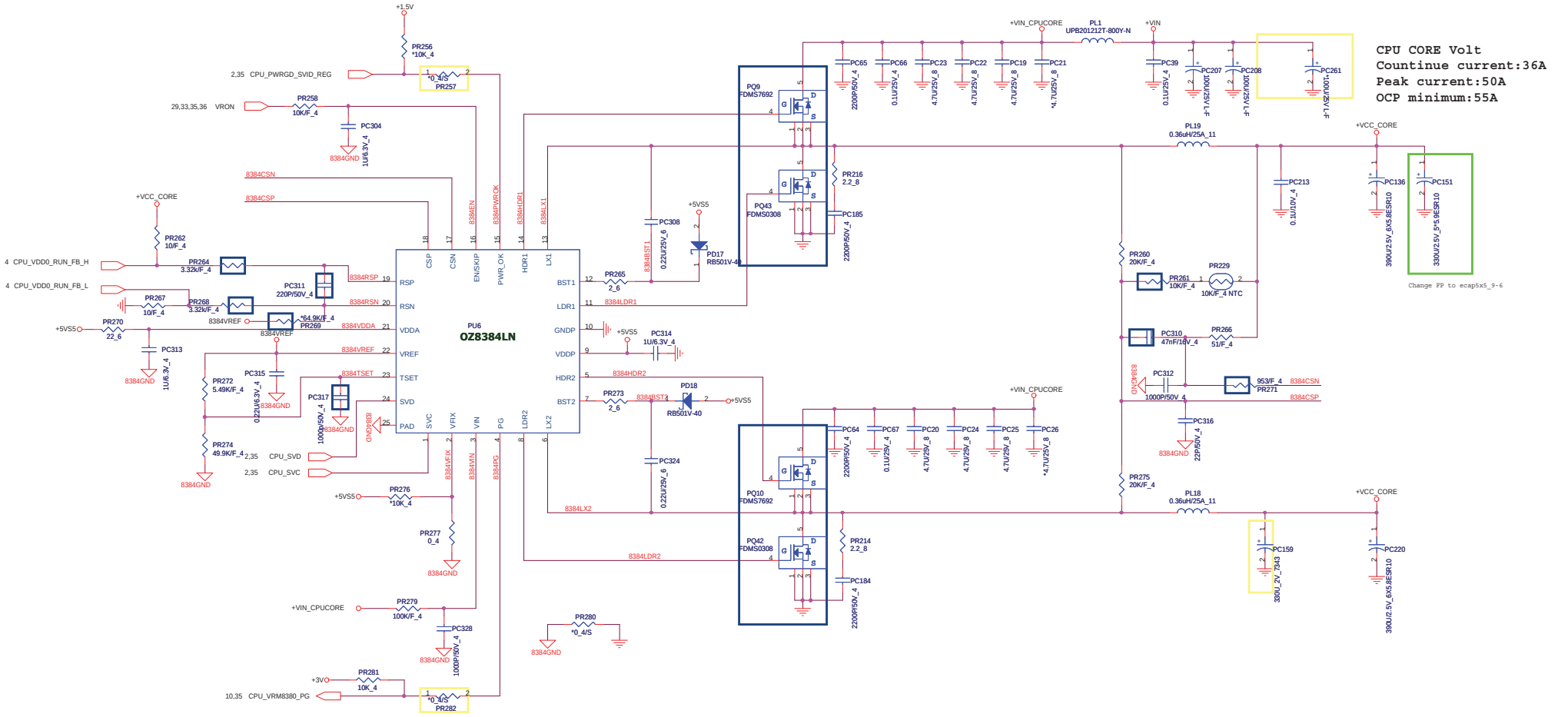

PROJECT : R23 Quanta Computer Inc.			
NB5/RD2	Size C	Document Number +1.1V VTT / PCH	Rev 1A
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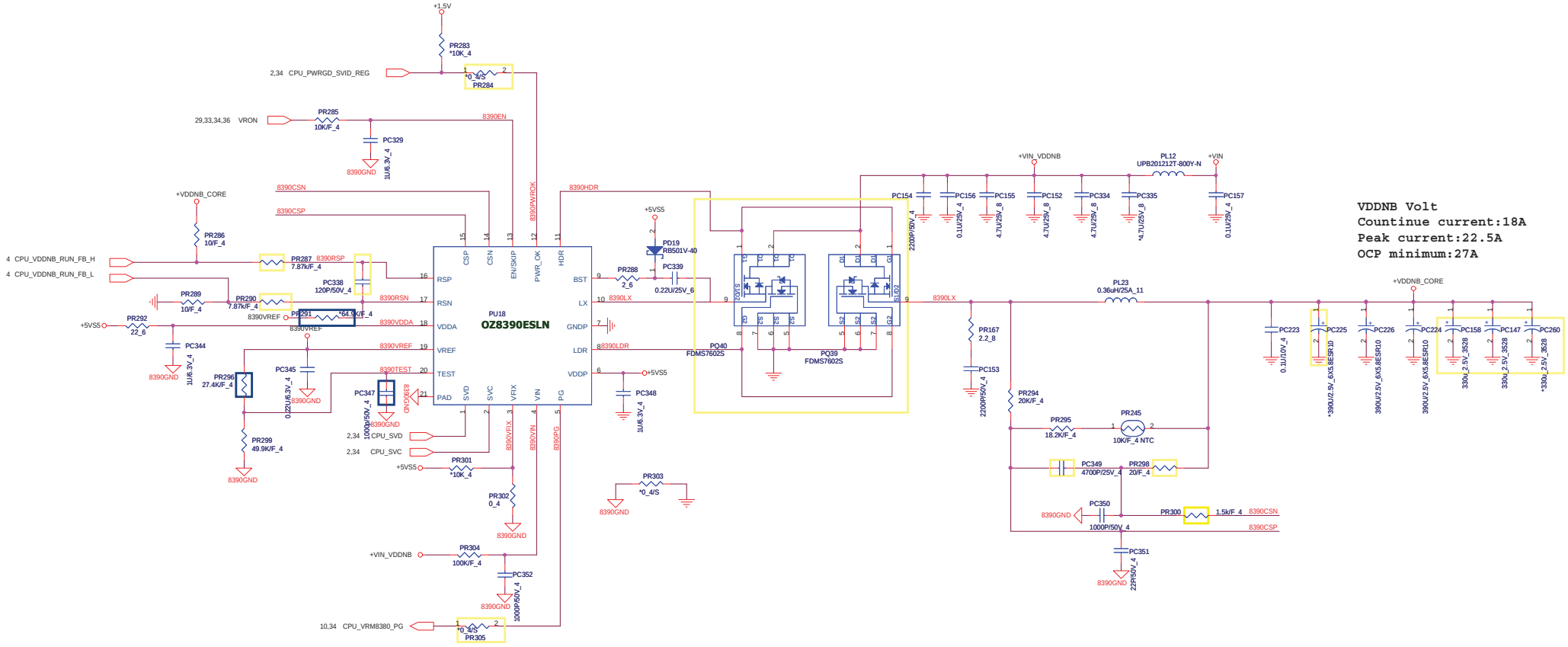

	PROJECT : R23 Quanta Computer Inc.	
NB5/RD2	Size C — Document Number +1.1V VTT / PCH	Rev 1A
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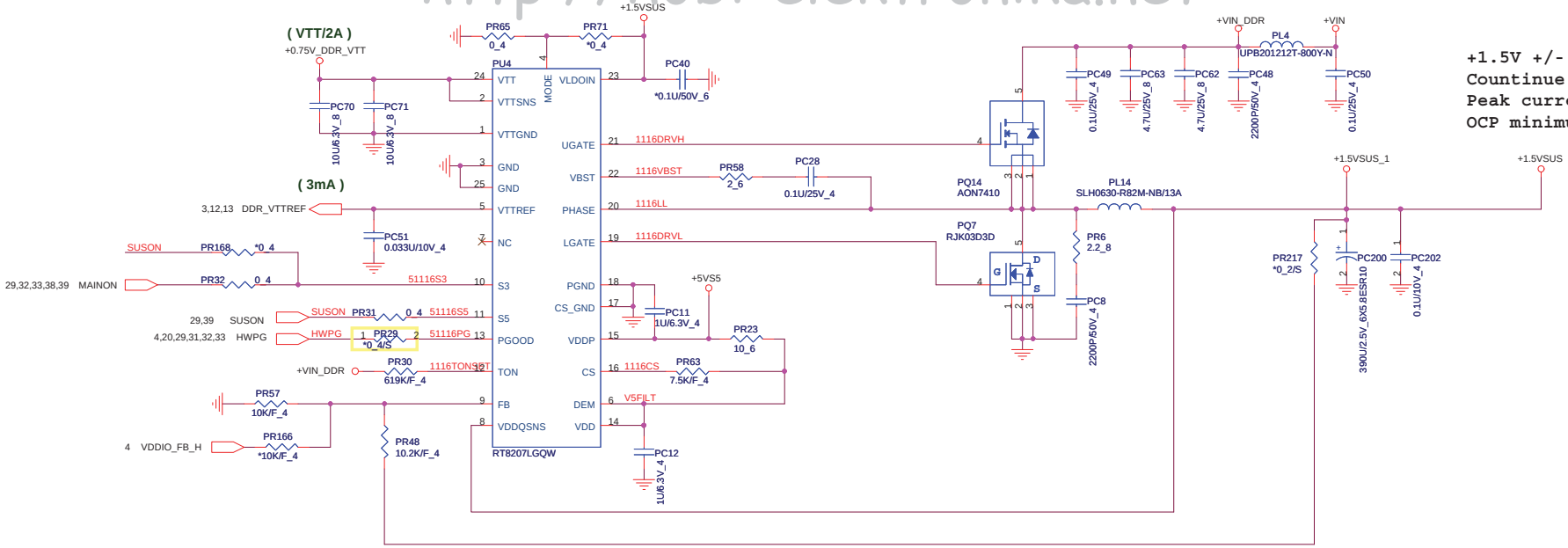
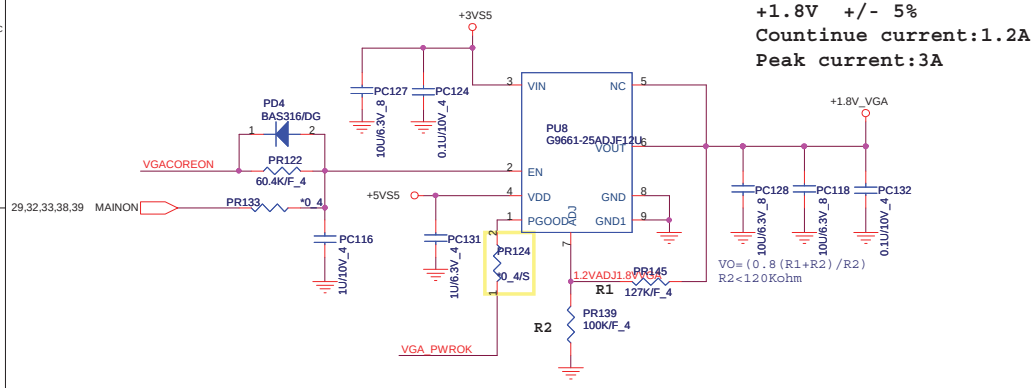
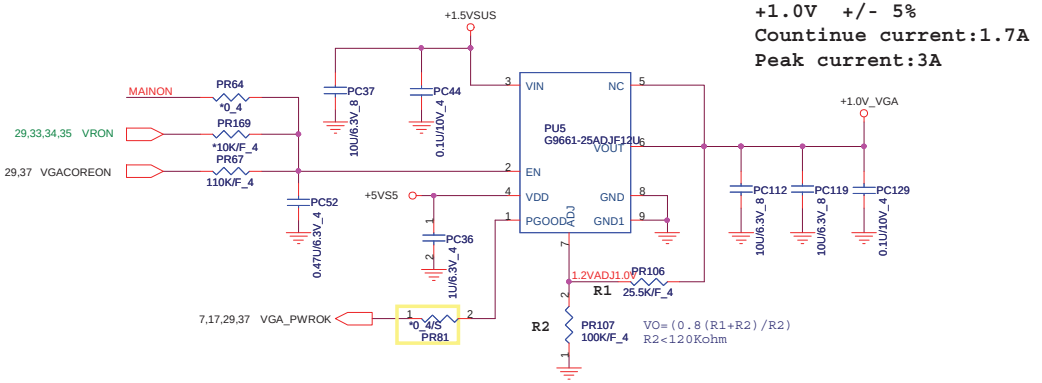


SG & Discrete Only





PROJECT : R23
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Size	Document Number	Rev
Custom	DDR3 (RT8207)	1A
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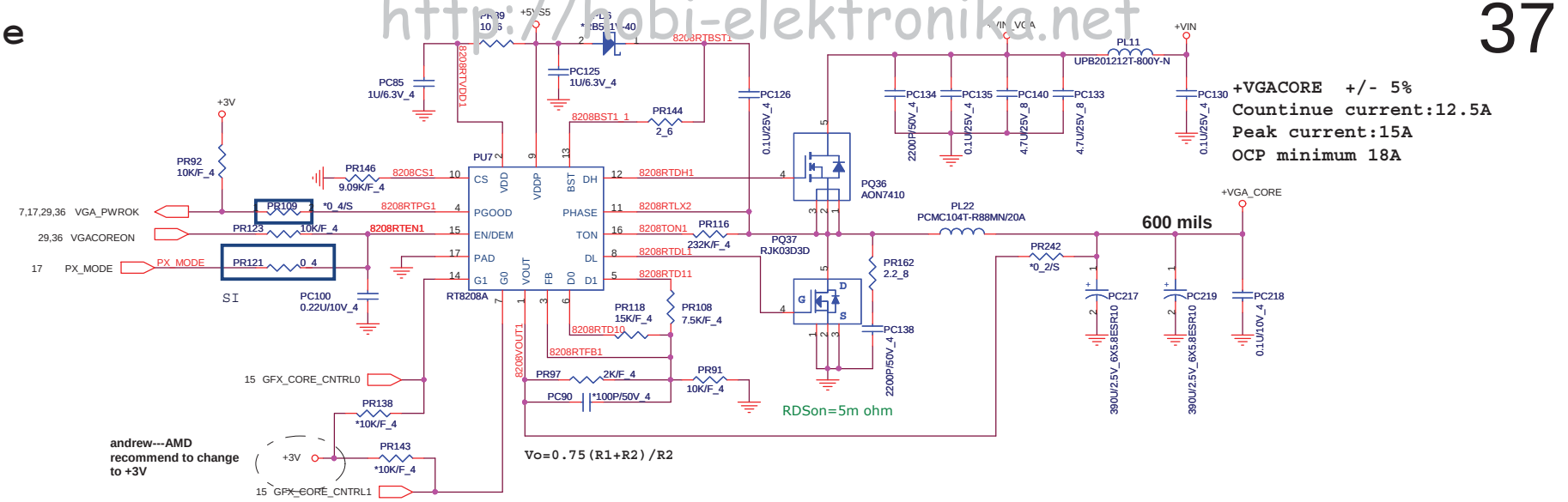
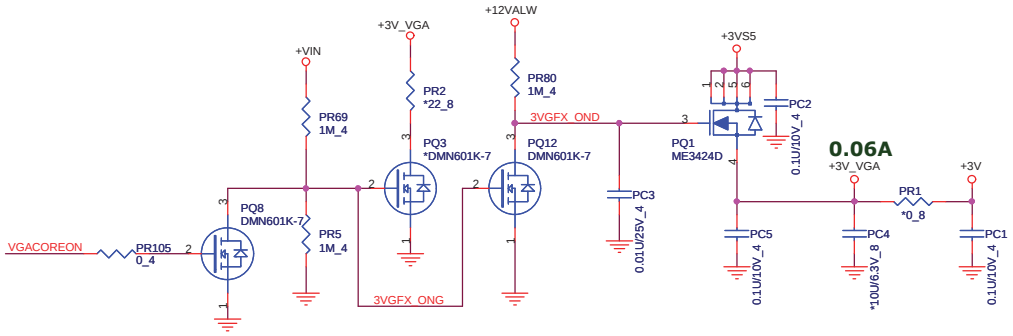
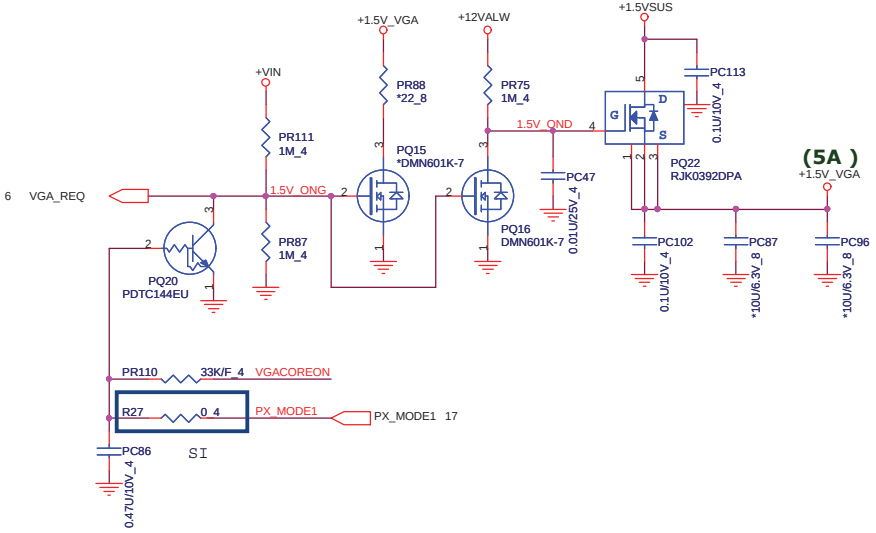
VGA Core



Seymour-XT	PWRCNTL0	PWRCNTL1	V-CORE
L	0	0	0.9V
M	0	1	1V
H	1	0	1.1V (Default)
TBD	1	1	NA





PROJECT : R23 Quanta Computer Inc.		
Size: Custom	Document Number: +VGACORE (RT8208/1.8V)	Rev: 1A
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DC_JACK
90W

Do Not add test pad on BATDIS_G signal

To PWR LED

Place this ZVS close to Diode away +VIN

Place this ZVS close to Far-Far away +VIN

Place this cap close to EC

Place this cap close to EC

Place this cap close to EC

Place this cap close to EC

PU9
OZ8681

+VA
+VH28 39
+VAD_1 39
+3VPCU 4,7,26,28,29,31
+5VPCU 4,29,31,32
+BATCHG

PROJECT : R23
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Size	Document Number	Rev
Custom	Charger (OZ8681)	1A

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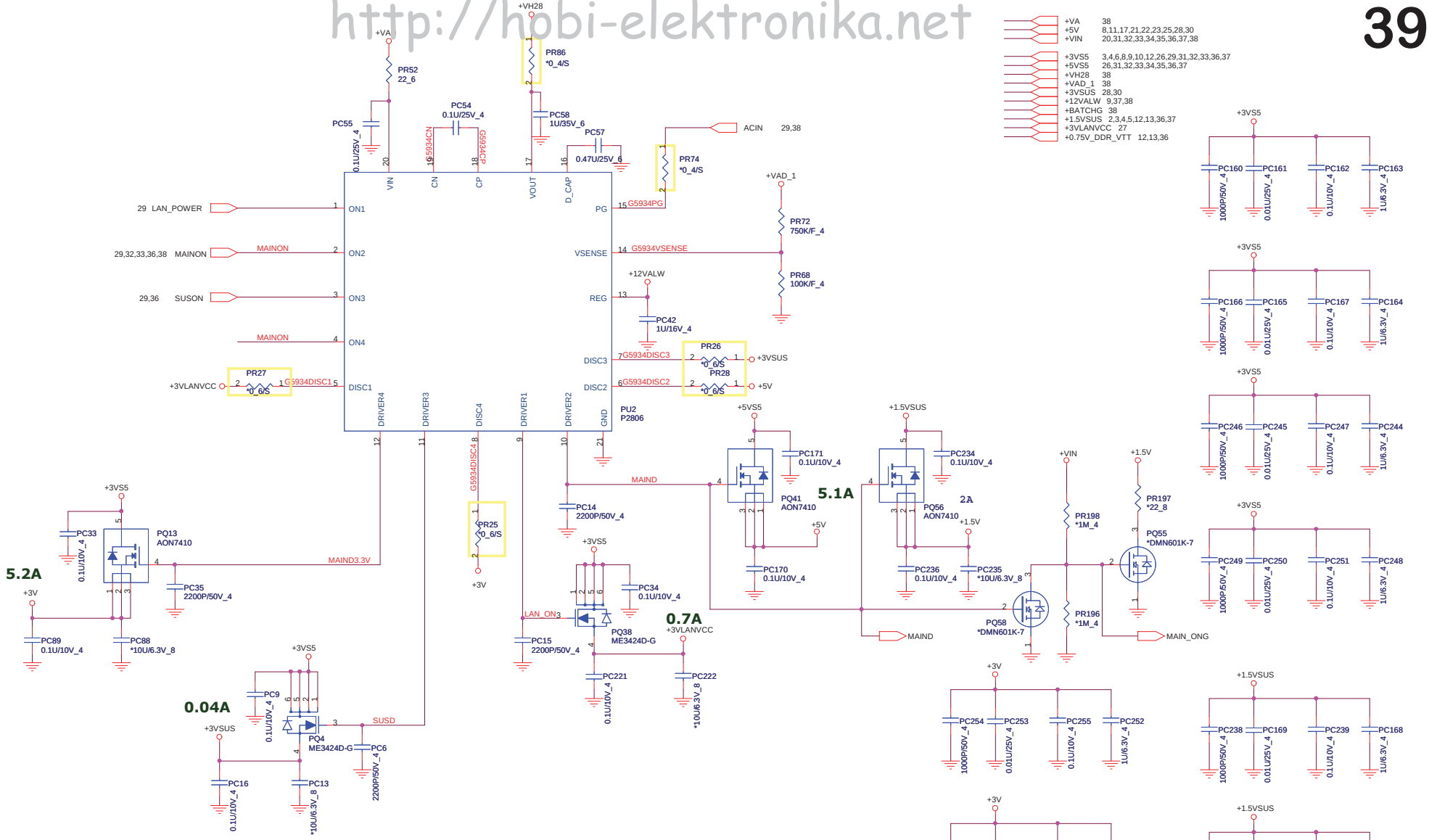

PROJECT : R23
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Dis-charge IC (G5934)	1A

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