BU3 Block Diagram

PCB STACK UP

- LAYER 1 : TOP
- LAYER 2 : GND1
- LAYER 3 : IN1
- LAYER 4 : GND
- LAYER 5 : VCC
- LAYER 6 : IN2
- LAYER 7 : GND2
- LAYER 8 : BOT

PENRYN-SFF
Micro-FCBGA956/10W
FSB P3,4

FSB(667/800/1066MHZ)

CANTIGA-SFF
NB
P5,6,7,8,9,10,11
FSB
DMI
PCI-E
DDR SYSTEM MEMORY
Graphics Interfaces

DDRIII-SODIMM1
DDRIII-SODIMM2
P16
Dual Channel DDR III
800/1066 MHZ

INT_LVDS → USB-3 → LCD/CCD Con. P17
INT_CRT → CRT Con. P17
PCI-Ex16 → USB-5 → HDMI/USB Con. P18

DMI(x2/x4)

Intel I/O Controller Hub 9
(ICH9M-SFF)
SB
P12, 13, 14, 15
SATA
DMI
PCI-E
SATA
USB
RTC
IHDA
LPC

Main SATA - HDD P22
11.6" SATA HDD P22
SATA 0

SATA - ODD P22
SATA 1

Bluetooth Con. P21
USB-2
USB 2.0 (Port0~9)

USB SW P18
USB-9

PCI-Express
PCIE-3 → USB-6 → 3G P20 → USB-7 → Sim Con. P20
PCIE-6 → USB-10 → WiFi or WiMAX P20

Atheros
10/100 Lan
P23
PCIE-5

Azalia

BATTERY P12

LPC

LAN CON.&Audio&Card Reader&USB*2/B P26
- LAN Con.
- USB-0 / USB-1 → USB*2 Con.
- Audio Codec (Port-B, Port-A) → MIC JACK, HP/SPDIF, SPK Con.
- Card Reader → USB-4

EC P22
- FAN P3
- K/B Con. P21
- SPI Flash P22
- TP/LED/Hall Sensor Con. P19
- G-Sensor P19
- P21
- Kill SW P21
- Power /B Con. P21

CK505 P2

POWER SYSTEM
- ISL88731 P24
- ISL6237 P25
- RT8152B P26
- TPS51116REGR P27
- UP6111AQDD P28
- RT9205 P29
- ISL6263A P30

VCC_CORE

+1.8V

+1.05V

+1.5VSUS
+1.5V

+3VPCU
+3V_S5
+3VSUS
+3V
+5VPCU
+5V
+SMDDR_VTERM
+SMDDR_VREF

Quanta Computer Inc.
PROJECT : BU3

Size	Document Number	Rev
	Block Diagram	D3B

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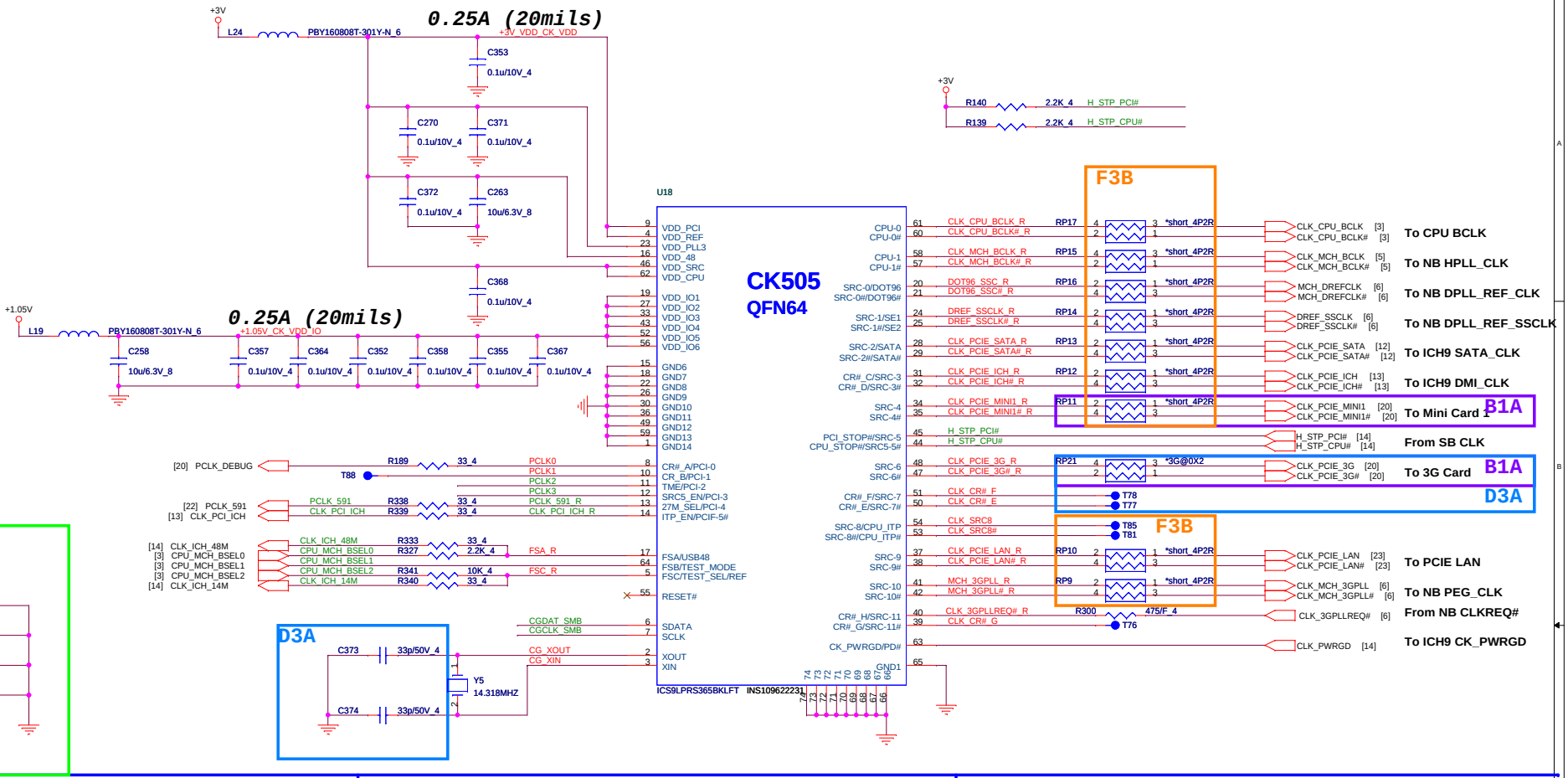
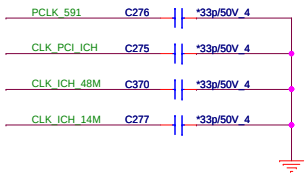
CLOCK GEN

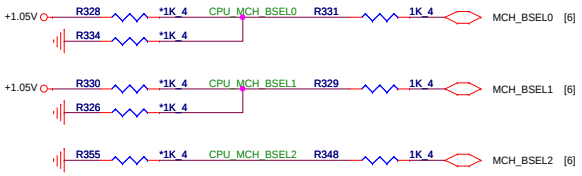


EMI RESERVE



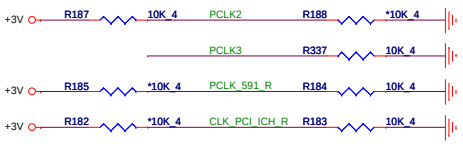
BSEL Frequency Select Table

FSC	FSB	FSA	CPU	SRC	PCI
1	0	1	100	100	33
0	0	1	133	100	33
0	1	1	166	100	33
0	1	0	200	100	33
0	0	0	266	100	33
1	0	0	333	100	33
1	1	0	400	100	33
1	1	1	RSVD	100	33

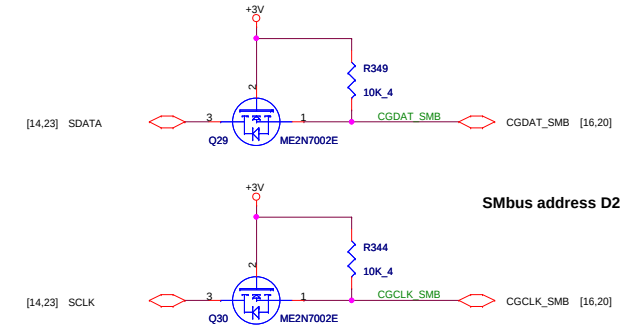


Clock Gen Strap

	SLG8SP513	PULL HIGH	PULL DOWN
PIN11	PCI2/TME	NO OVERCLOCKING (default)	NORMAL RUN
PIN12	PCI-3	PIN44/45 IS SRC5	PIN44/45 IS PCI_STOP/CPU_STOP (default)
PIN13	PCI-4/27M_SEL	PIN 24/25 IS 27MHz	PIN 21/20 IS SRC/DOT (default)
PIN14	PCIF-5/ITP_EN	PIN 53/54 IS CPUITP	PIN 53/54 IS SRC (default)

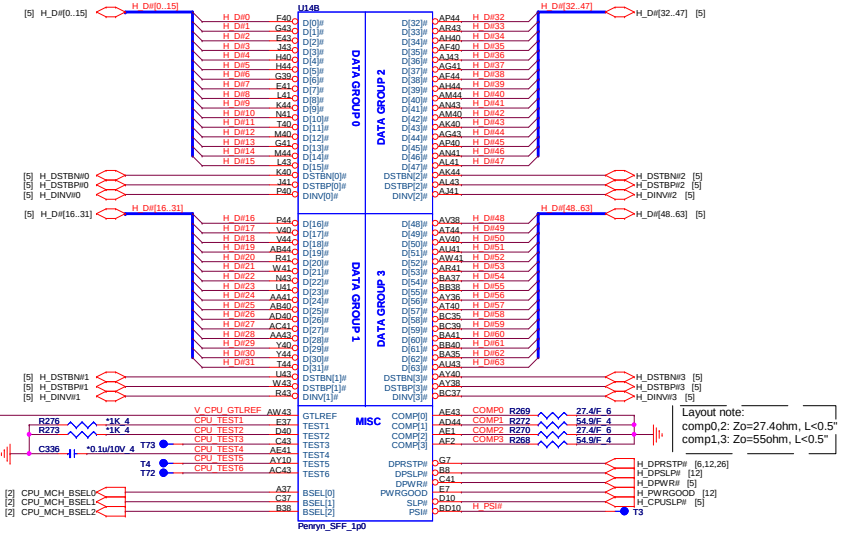


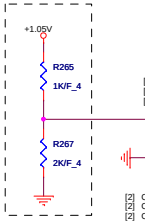
Clock Gen I2C



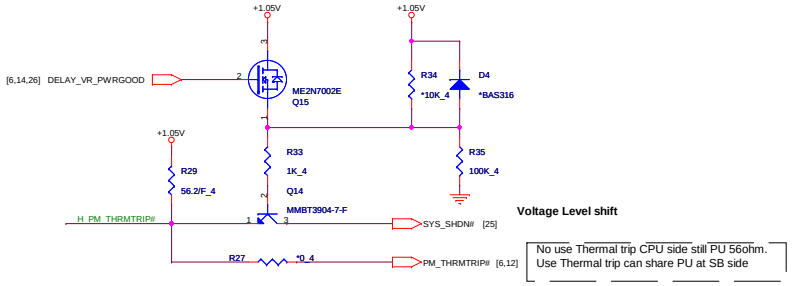
NB7	PROJECT : BU3 Quanta Computer Inc.	
Size: Custom	Document Number: CLOCK GEN_9LPRS365BKLFT	Rev: D3B
Date: Monday, August 10, 2009	Sheet 2 of 34	

CPU

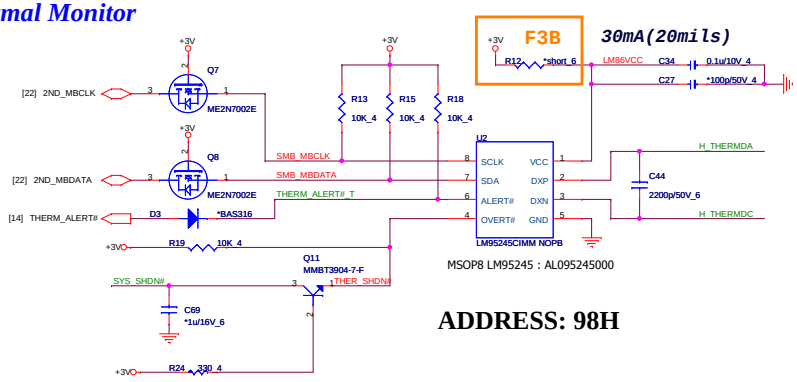




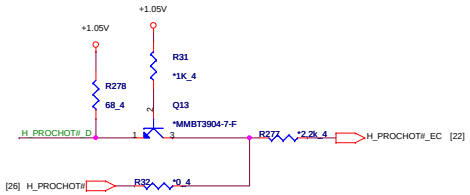
Thermal Trip



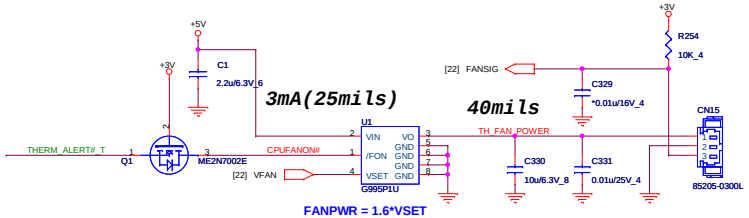
CPU Thermal Monitor



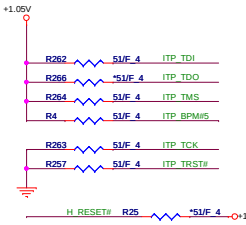
Processor Hot



CPU FAN CTRL



XDP



N87	PROJECT : BU3 Quanta Computer Inc.	
Size: Custom	Document Number: Penryn (HOST BUS)	Rev: D3B
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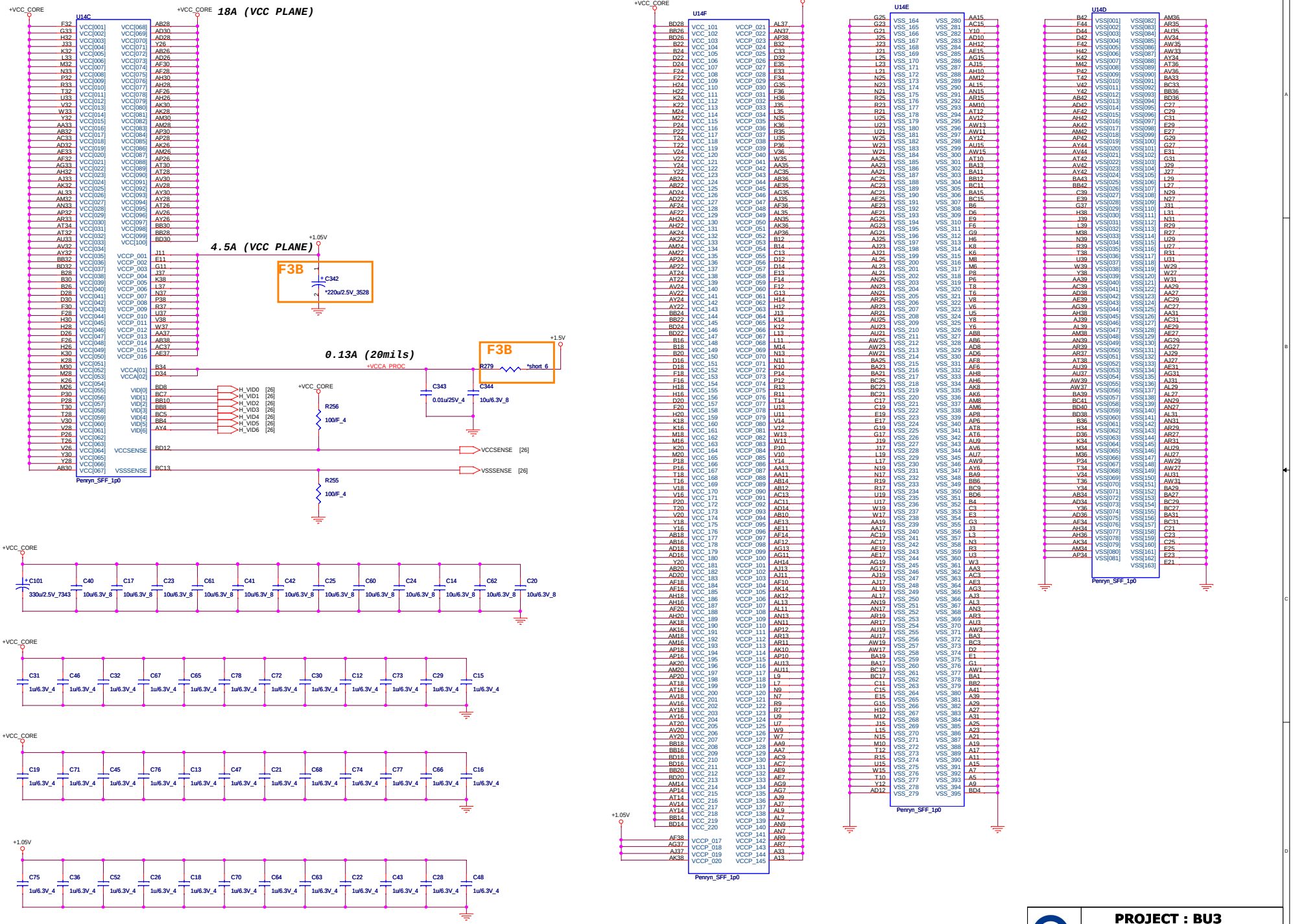
CPU



PROJECT : BU3			
Quanta Computer Inc.			
NB7	Size: Custom	Document Number: Penryn (POWER/NC)	Rev: D3B
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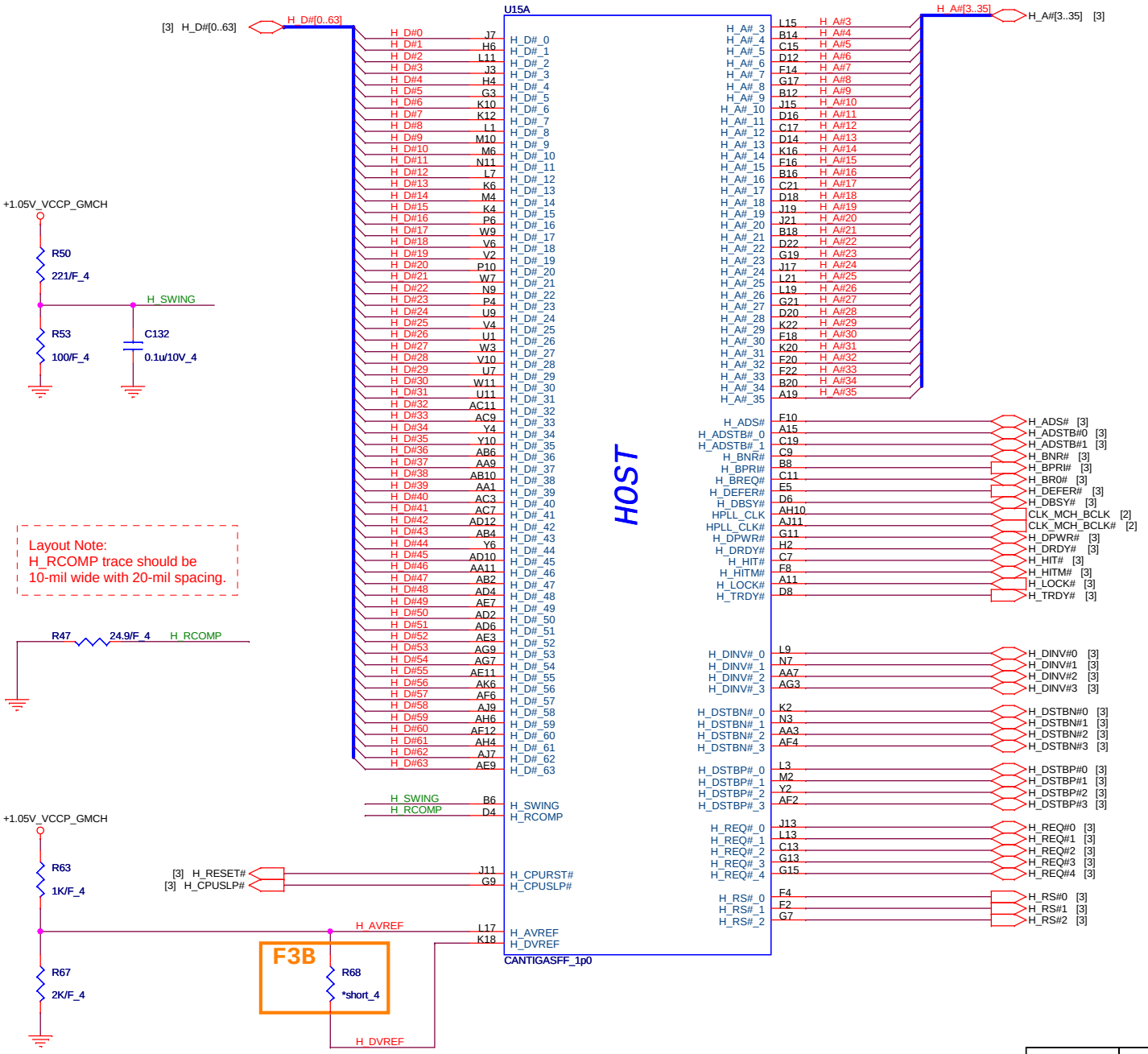
GS45



H_D#0	J7	H_D#_0	
H_D#1	H6	H_D#_1	
H_D#2	L11	H_D#_2	
H_D#3	J3	H_D#_3	
H_D#4	H4	H_D#_4	
H_D#5	G3	H_D#_5	
H_D#6	K10	H_D#_6	
H_D#7	K12	H_D#_7	
H_D#8	L1	H_D#_8	
H_D#9	M10	H_D#_9	
H_D#10	M6	H_D#_10	
H_D#11	N11	H_D#_11	
H_D#12	L7	H_D#_12	
H_D#13	K6	H_D#_13	
H_D#14	M4	H_D#_14	
H_D#15	K4	H_D#_15	
H_D#16	P6	H_D#_16	
H_D#17	W9	H_D#_17	
H_D#18	V6	H_D#_18	
H_D#19	V2	H_D#_19	
H_D#20	P10	H_D#_20	
H_D#21	W7	H_D#_21	
H_D#22	N9	H_D#_22	
H_D#23	P4	H_D#_23	
H_D#24	U9	H_D#_24	
H_D#25	V4	H_D#_25	
H_D#26	U1	H_D#_26	
H_D#27	W3	H_D#_27	
H_D#28	V10	H_D#_28	
H_D#29	U7	H_D#_29	
H_D#30	W11	H_D#_30	
H_D#31	U11	H_D#_31	
H_D#32	AC11	H_D#_32	
H_D#33	AC9	H_D#_33	
H_D#34	Y4	H_D#_34	
H_D#35	Y10	H_D#_35	
H_D#36	AB6	H_D#_36	
H_D#37	AA9	H_D#_37	
H_D#38	AB10	H_D#_38	
H_D#39	AA1	H_D#_39	
H_D#40	AC3	H_D#_40	
H_D#41	AC7	H_D#_41	
H_D#42	AD12	H_D#_42	
H_D#43	AB4	H_D#_43	
H_D#44	Y6	H_D#_44	
H_D#45	AD10	H_D#_45	
H_D#46	AA11	H_D#_46	
H_D#47	AB2	H_D#_47	
H_D#48	AD4	H_D#_48	
H_D#49	AE7	H_D#_49	
H_D#50	AD2	H_D#_50	
H_D#51	AD6	H_D#_51	
H_D#52	AE3	H_D#_52	
H_D#53	AG9	H_D#_53	
H_D#54	AG7	H_D#_54	
H_D#55	AE11	H_D#_55	
H_D#56	AK6	H_D#_56	
H_D#57	AF6	H_D#_57	
H_D#58	AJ9	H_D#_58	
H_D#59	AH6	H_D#_59	
H_D#60	AF12	H_D#_60	
H_D#61	AH4	H_D#_61	
H_D#62	AJ7	H_D#_62	
H_D#63	AE9	H_D#_63	
H_SWING	B6	H_SWING	
H_RCOMP	D4	H_RCOMP	
H_CPURST#	J11	H_CPURST#	
H_CPUSLP#	G9	H_CPUSLP#	
H_AVREF	L17	H_AVREF	
H_DVREF	K18	H_DVREF	

H_A#_3	L15	H_A#3	
H_A#_4	B14	H_A#4	
H_A#_5	C15	H_A#5	
H_A#_6	D12	H_A#6	
H_A#_7	F14	H_A#7	
H_A#_8	G17	H_A#8	
H_A#_9	B12	H_A#9	
H_A#_10	J15	H_A#10	
H_A#_11	D16	H_A#11	
H_A#_12	C17	H_A#12	
H_A#_13	D14	H_A#13	
H_A#_14	K16	H_A#14	
H_A#_15	F16	H_A#15	
H_A#_16	B16	H_A#16	
H_A#_17	C21	H_A#17	
H_A#_18	D18	H_A#18	
H_A#_19	J19	H_A#19	
H_A#_20	J21	H_A#20	
H_A#_21	B18	H_A#21	
H_A#_22	D22	H_A#22	
H_A#_23	G19	H_A#23	
H_A#_24	J17	H_A#24	
H_A#_25	L21	H_A#25	
H_A#_26	L19	H_A#26	
H_A#_27	G21	H_A#27	
H_A#_28	D20	H_A#28	
H_A#_29	K22	H_A#29	
H_A#_30	F18	H_A#30	
H_A#_31	K20	H_A#31	
H_A#_32	F20	H_A#32	
H_A#_33	F22	H_A#33	
H_A#_34	B20	H_A#34	
H_A#_35	A19	H_A#35	
H_ADS#	F10		
H_ADSTB#_0	A15		
H_ADSTB#_1	C19		
H_BNR#	C9		
H_BPRI#	B8		
H_BREQ#	C11		
H_DEFER#	E5		
H_DBSY#	D6		
HPLL_CLK	AH10		
HPLL_CLK#	AJ11		
H_DPWR#	G11		
H_DRDY#	H2		
H_HIT#	C7		
H_HITM#	F8		
H_LOCK#	A11		
H_TRDY#	D8		
H_DINV#_0	L9		
H_DINV#_1	N7		
H_DINV#_2	AA7		
H_DINV#_3	AG3		
H_DSTBN#_0	K2		
H_DSTBN#_1	N3		
H_DSTBN#_2	AA3		
H_DSTBN#_3	AF4		
H_DSTBP#_0	L3		
H_DSTBP#_1	M2		
H_DSTBP#_2	Y2		
H_DSTBP#_3	AF2		
H_REQ#_0	J13		
H_REQ#_1	L13		
H_REQ#_2	C13		
H_REQ#_3	G13		
H_REQ#_4	G15		
H_RS#_0	F4		
H_RS#_1	F2		
H_RS#_2	G7		

PROJECT : BU3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	GANTIGA HOST(1/6)	D3B
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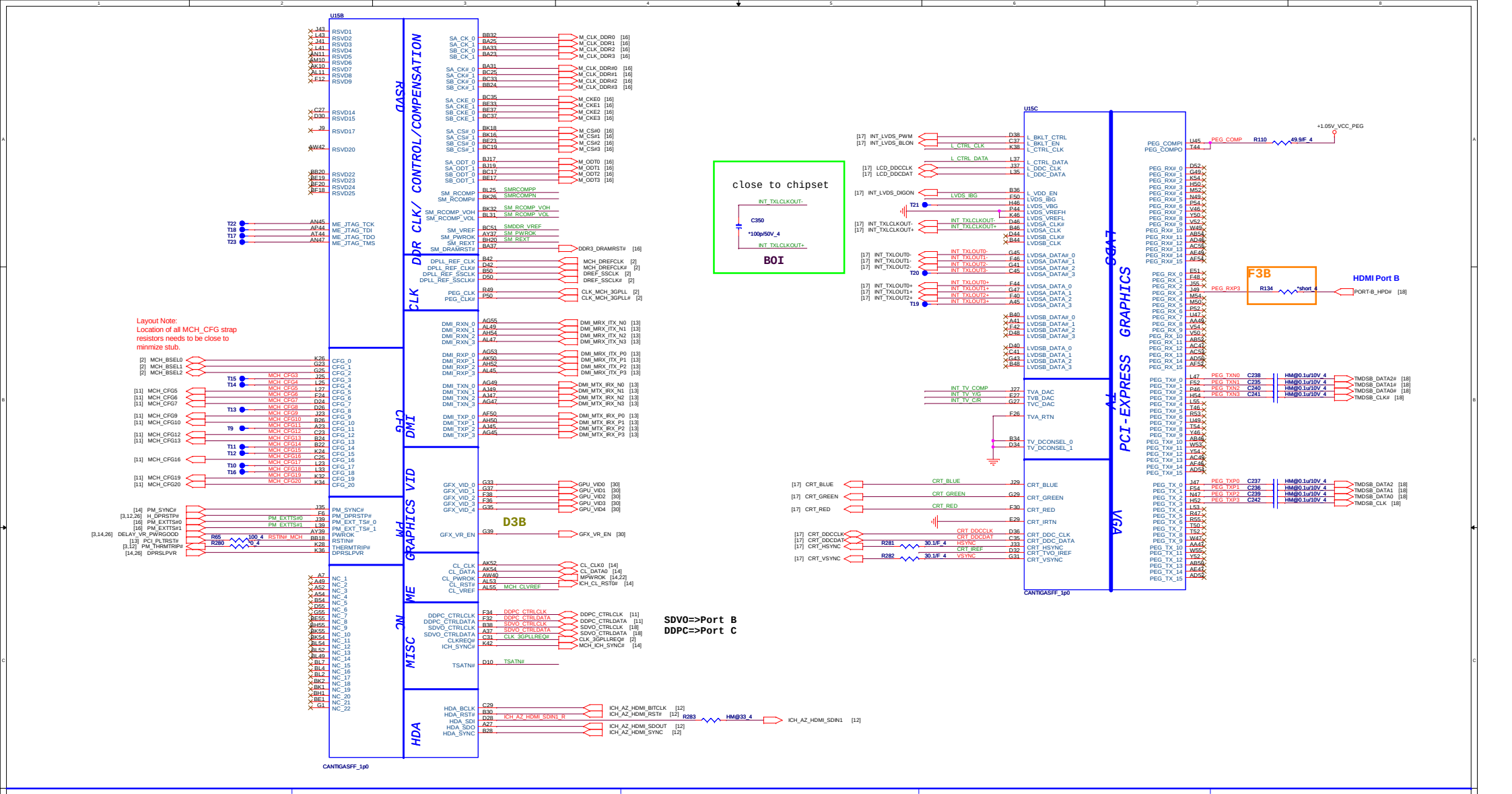
N87


U15B
RSVD
CLK
DDR CLK/ CONTROL/COMPENSATION
CFG
DMI
GRAPHICS VID
PM
ME
MISC
HDA
NC
RSVD1
RSVD2
RSVD3
RSVD4
RSVD5
RSVD6
RSVD7
RSVD8
RSVD9
RSVD14
RSVD15
RSVD17
RSVD20
RSVD22
RSVD23
RSVD24
RSVD25
ME_JTAG_TCK
ME_JTAG_TDI
ME_JTAG_TDO
ME_JTAG_TMS
SA_CK_0
SA_CK_1
SB_CK_0
SB_CK_1
SA_CK#_0
SA_CK#_1
SB_CK#_0
SB_CK#_1
SA_CKE_0
SA_CKE_1
SB_CKE_0
SB_CKE_1
SA_CS#_0
SA_CS#_1
SB_CS#_0
SB_CS#_1
SA_ODT_0
SA_ODT_1
SB_ODT_0
SB_ODT_1
SM_RCOMP
SM_RCOMP#
SM_RCOMP_VOH
SM_RCOMP_VOL
SM_VREF
SM_PWROK
SM_REXT
SM_DRAMRST#
DPLL_REF_CLK
DPLL_REF_CLK#
DPLL_REF_SSCLK
DPLL_REF_SSCLK#
PEG_CLK
PEG_CLK#
DMI_RXN_0
DMI_RXN_1
DMI_RXN_2
DMI_RXN_3
DMI_RXP_0
DMI_RXP_1
DMI_RXP_2
DMI_RXP_3
DMI_TXN_0
DMI_TXN_1
DMI_TXN_2
DMI_TXN_3
DMI_TXP_0
DMI_TXP_1
DMI_TXP_2
DMI_TXP_3
GFX_VID_0
GFX_VID_1
GFX_VID_2
GFX_VID_3
GFX_VID_4
GFX_VR_EN
CL_CLK
CL_DATA
CL_PWROK
CL_RST#
CL_VREF
DDPC_CTRLCLK
DDPC_CTRLDATA
SDVO_CTRLCLK
SDVO_CTRLDATA
CLKREQ#
ICH_SYNC#
TSATN#
HDA_BCLK
HDA_RST#
HDA_SDI
HDA_SDO
HDA_SYNC
CFG_0
CFG_1
CFG_2
CFG_3
CFG_4
CFG_5
CFG_6
CFG_7
CFG_8
CFG_9
CFG_10
CFG_11
CFG_12
CFG_13
CFG_14
CFG_15
CFG_16
CFG_17
CFG_18
CFG_19
CFG_20
MCH_CFG3
MCH_CFG4
MCH_CFG5
MCH_CFG6
MCH_CFG7
MCH_CFG8
MCH_CFG9
MCH_CFG10
MCH_CFG11
MCH_CFG12
MCH_CFG13
MCH_CFG14
MCH_CFG15
MCH_CFG16
MCH_CFG17
MCH_CFG18
MCH_CFG19
MCH_CFG20
PM_SYNC#
PM_DPRSTP#
PM_EXTTS#0
PM_EXTTS#1
PM_EXT_TS#_0
PM_EXT_TS#_1
PWROK
RSTIN#
THERMTRIP#
DPRSLPVR
NC_1
NC_2
NC_3
NC_4
NC_5
NC_6
NC_7
NC_8
NC_9
NC_10
NC_11
NC_12
NC_13
NC_14
NC_15
NC_16
NC_17
NC_18
NC_19
NC_20
NC_21
NC_22
CANTIGASFF_1p0
Layout Note:
Location of all MCH_CFG strap
resistors needs to be close to
minimize stub.
D3B
SDVO=>Port B
DDPC=>Port C
close to chipset
C350
*100p/50V_4
B0I
U15C
L_BKLT_CTRL
L_BKLT_EN
L_CTRL_CLK
L_CTRL_DATA
L_DDC_CLK
L_DDC_DATA
L_VDD_EN
LVDS_IBG
LVDS_VBG
LVDS_VREFH
LVDS_VREFL
LVDSA_CLK#
LVDSA_CLK
LVDSB_CLK#
LVDSB_CLK
LVDSA_DATA#_0
LVDSA_DATA#_1
LVDSA_DATA#_2
LVDSA_DATA#_3
LVDSA_DATA_0
LVDSA_DATA_1
LVDSA_DATA_2
LVDSA_DATA_3
LVDSB_DATA#_0
LVDSB_DATA#_1
LVDSB_DATA#_2
LVDSB_DATA#_3
LVDSB_DATA_0
LVDSB_DATA_1
LVDSB_DATA_2
LVDSB_DATA_3
TVA_DAC
TVB_DAC
TVC_DAC
TVA_RTN
TV_DCONSEL_0
TV_DCONSEL_1
CRT_BLUE
CRT_GREEN
CRT_RED
CRT_IRTN
CRT_DDC_CLK
CRT_DDC_DATA
CRT_HSYNC
CRT_TVO_IREF
CRT_VSYNC
CANTIGASFF_1p0
PEG_COMPI
PEG_COMPO
PEG_RX#_0
PEG_RX#_1
PEG_RX#_2
PEG_RX#_3
PEG_RX#_4
PEG_RX#_5
PEG_RX#_6
PEG_RX#_7
PEG_RX#_8
PEG_RX#_9
PEG_RX#_10
PEG_RX#_11
PEG_RX#_12
PEG_RX#_13
PEG_RX#_14
PEG_RX#_15
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PEG_RX_2
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PEG_RX_4
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PEG_RX_6
PEG_RX_7
PEG_RX_8
PEG_RX_9
PEG_RX_10
PEG_RX_11
PEG_RX_12
PEG_RX_13
PEG_RX_14
PEG_RX_15
PEG_TX#_0
PEG_TX#_1
PEG_TX#_2
PEG_TX#_3
PEG_TX#_4
PEG_TX#_5
PEG_TX#_6
PEG_TX#_7
PEG_TX#_8
PEG_TX#_9
PEG_TX#_10
PEG_TX#_11
PEG_TX#_12
PEG_TX#_13
PEG_TX#_14
PEG_TX#_15
PEG_TX_0
PEG_TX_1
PEG_TX_2
PEG_TX_3
PEG_TX_4
PEG_TX_5
PEG_TX_6
PEG_TX_7
PEG_TX_8
PEG_TX_9
PEG_TX_10
PEG_TX_11
PEG_TX_12
PEG_TX_13
PEG_TX_14
PEG_TX_15
PCI-EXPRESS GRAPHICS
TVA
VGA
+1.05V_VCC_PEG
F3B
HDMI Port B
PORT-B_HPD#
TMDSB_DATA2#
TMDSB_DATA1#
TMDSB_DATA0#
TMDSB_CLK#
Check list note : CL_REF=0.35V
(15mils)
SM_VREF.Default use voltage divider for poor layout cause +SMDDR_VREF not meet spec.And Intel circuit PU/PD is 1K,But Check list PU/PD is 10K.
(20mils)
<Checklist ver0.8>
If TSATN# is not used, then it must be terminated with a 56-Ω pull-up resistor to VCCP.
CRT setting
LVDS setting
SM_PWROK only for DDR3.(DDR2 PD only)
B1A
TC7SH08FU(F)
PROJECT : BU3
Quanta Computer Inc.
GANTIGA VGA/DMI(2/6)
Size Custom
Rev D3B
Date: Monday, August 10, 2009
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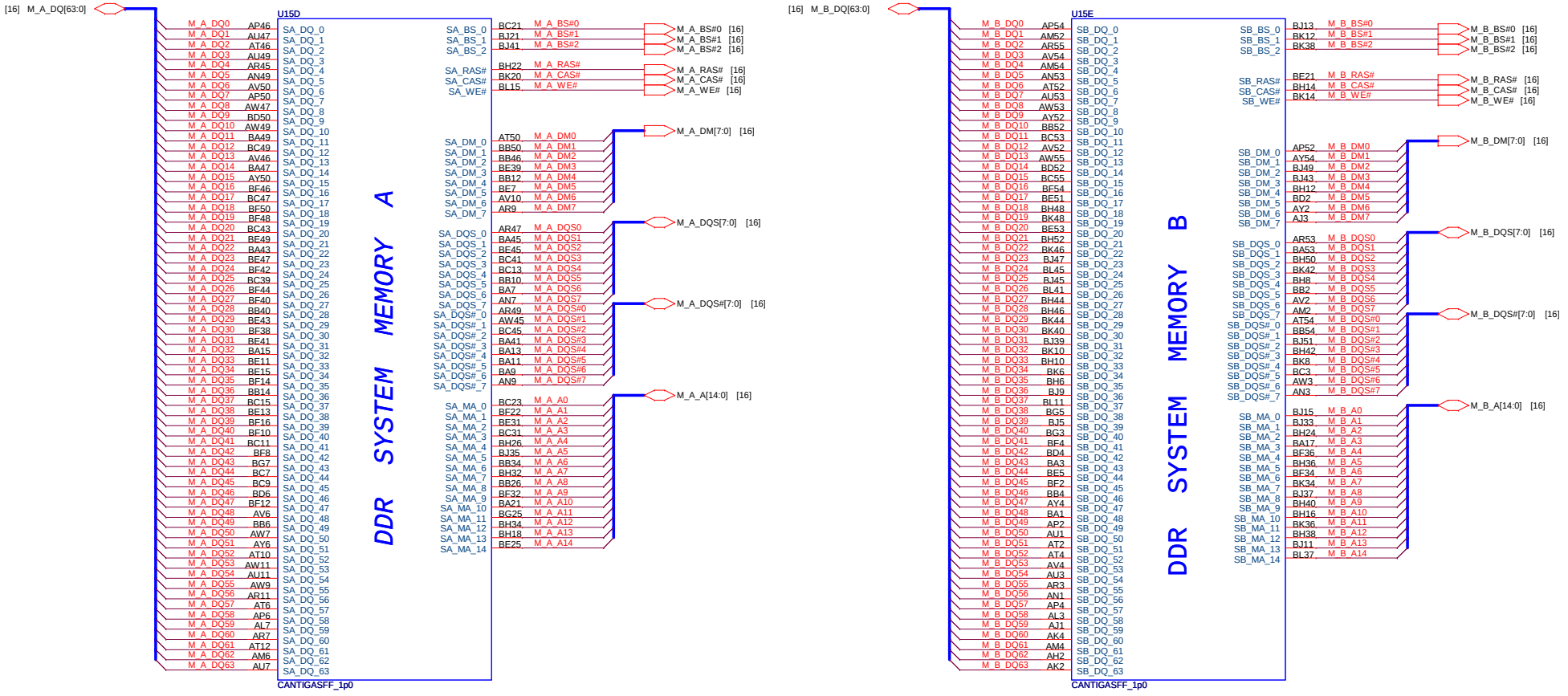

NB7

PROJECT : BU3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	GANTIGA DDRII(3/6)	D3B

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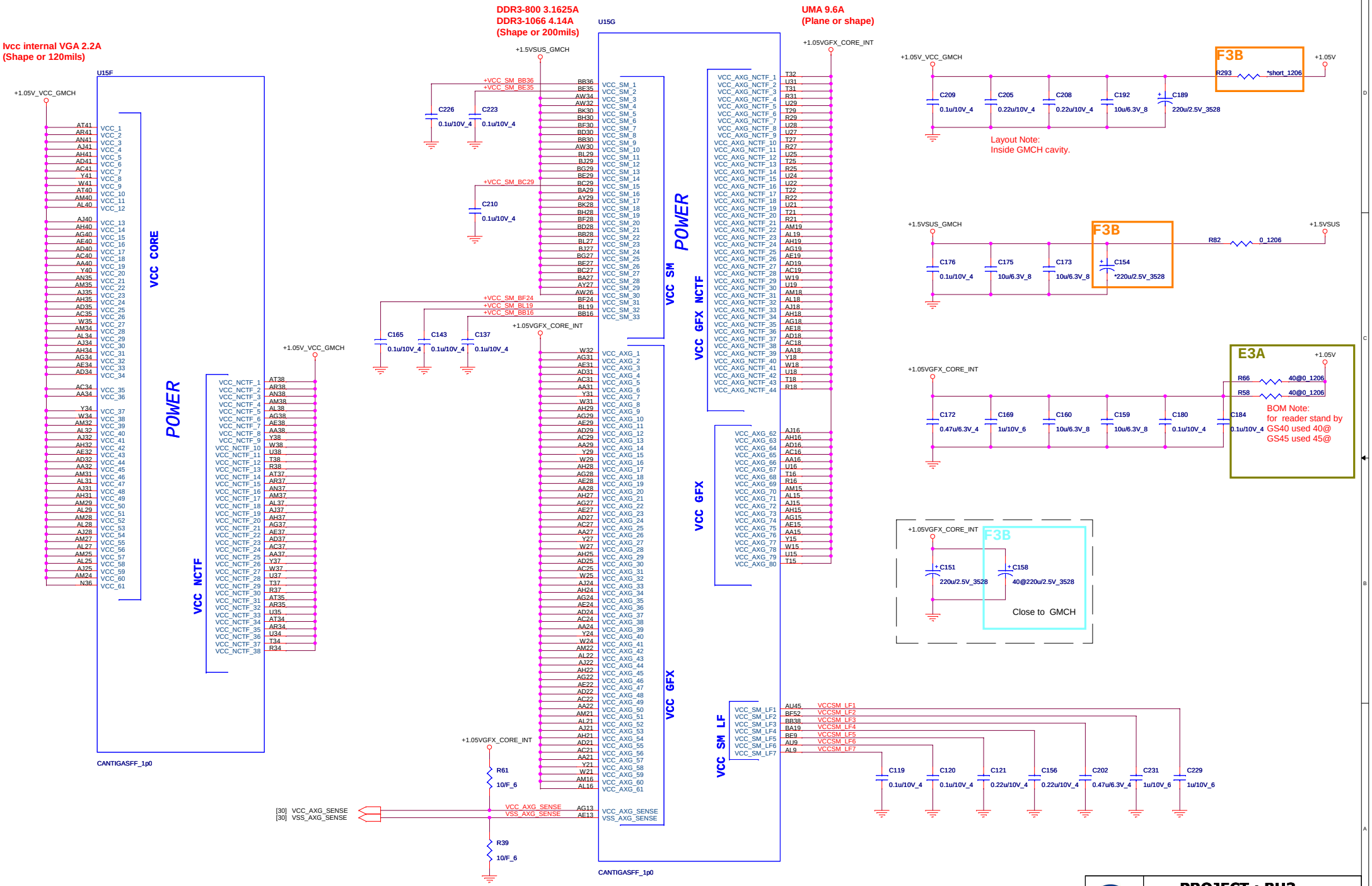
Ivcc internal VGA 2.2A
(Shape or 120mils)

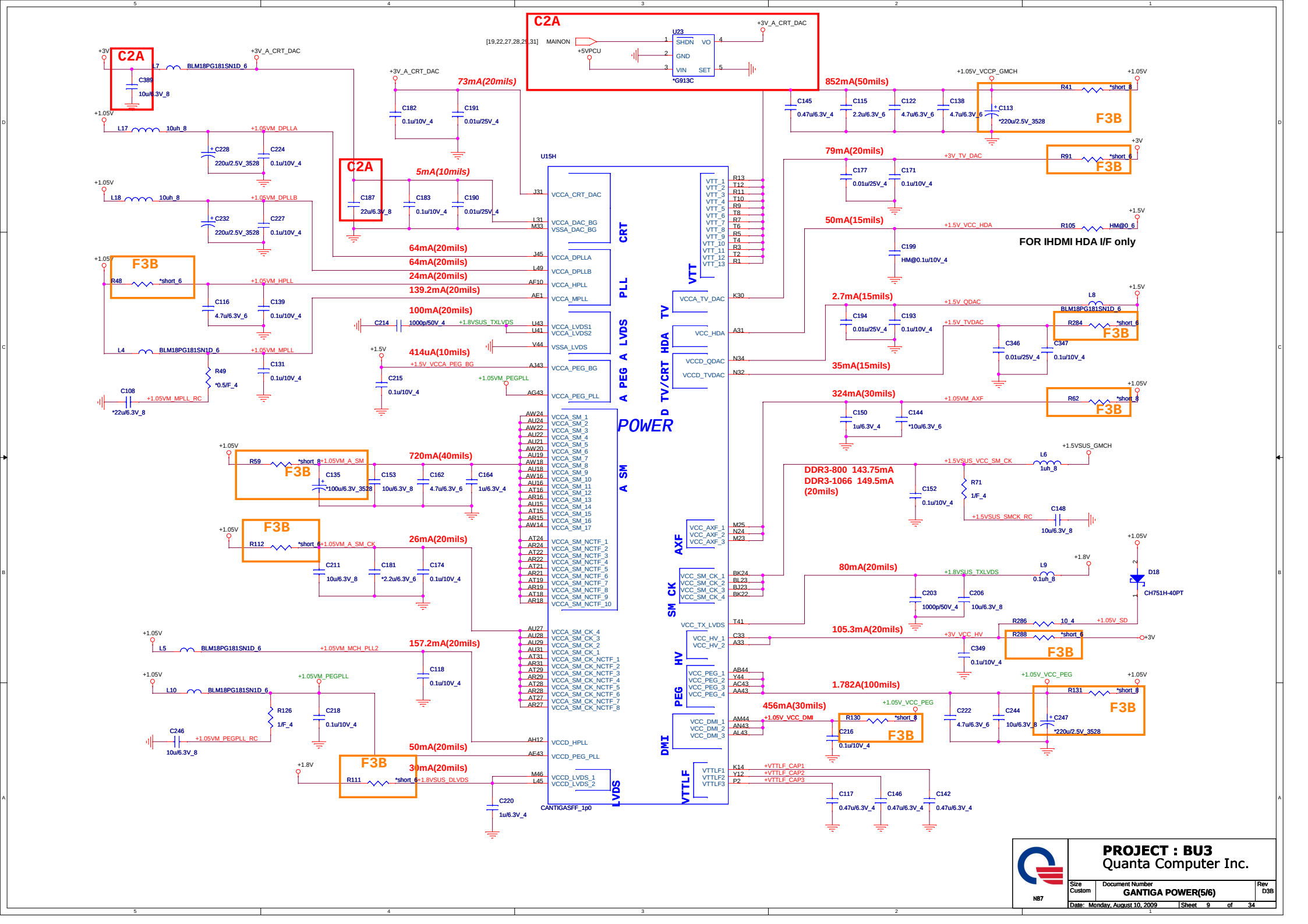
DDR3-800 3.1625A
DDR3-1066 4.14A
(Shape or 200mils)

UMA 9.6A
(Plane or shape)



UMA: Places R721, R726 to 10 ohm.

NB7	PROJECT : BU3 Quanta Computer Inc.		
	Size: Custom	Document Number: GANTIGA VCC/NCTF(4/6)	Rev: D3B
	Date: Monday, August 10, 2009	Sheet 8 of 34	


C2A
U23
SHDN
VO
GND
VIN
SET
*G913C
+3V_A_CRT_DAC
+5VPCU
MAINON
73mA(20mils)
852mA(50mils)
+1.05V_VCCP_GMCH
F3B
*short_8
79mA(20mils)
+3V_TV_DAC
*short_6
50mA(15mils)
+1.5V_VCC_HDA
FOR IHDMI HDA I/F only
HM@0_6
2.7mA(15mils)
+1.5V_QDAC
+1.5V_TVDAC
BLM18PG181SN1D_6
35mA(15mils)
324mA(30mils)
+1.05VM_AXF
DDR3-800 143.75mA
DDR3-1066 149.5mA
(20mils)
+1.5VSUS_VCC_SM_CK
+1.5VSUS_SMCK_RC
+1.5VSUS_GMCH
80mA(20mils)
+1.8VSUS_TXLVDS
CH751H-40PT
105.3mA(20mils)
+3V_VCC_HV
+1.05V_SD
1.782A(100mils)
+1.05V_VCC_PEG
456mA(30mils)
+1.05V_VCC_DMI
5mA(10mils)
64mA(20mils)
24mA(20mils)
139.2mA(20mils)
100mA(20mils)
414uA(10mils)
720mA(40mils)
26mA(20mils)
157.2mA(20mils)
50mA(20mils)
30mA(20mils)
U15H
CRT
PLL
LVDS
TV
HDA
TV/CRT
PEG
A LVDS
A PEG
A SM
POWER
SM CK
AXF
HV
PEG
DMI
VTTLF
VTT
CANTIGASFF_1p0
PROJECT : BU3
Quanta Computer Inc.
Size
Custom
Document Number
GANTIGA POWER(5/6)
Rev
D3B
Date: Monday, August 10, 2009
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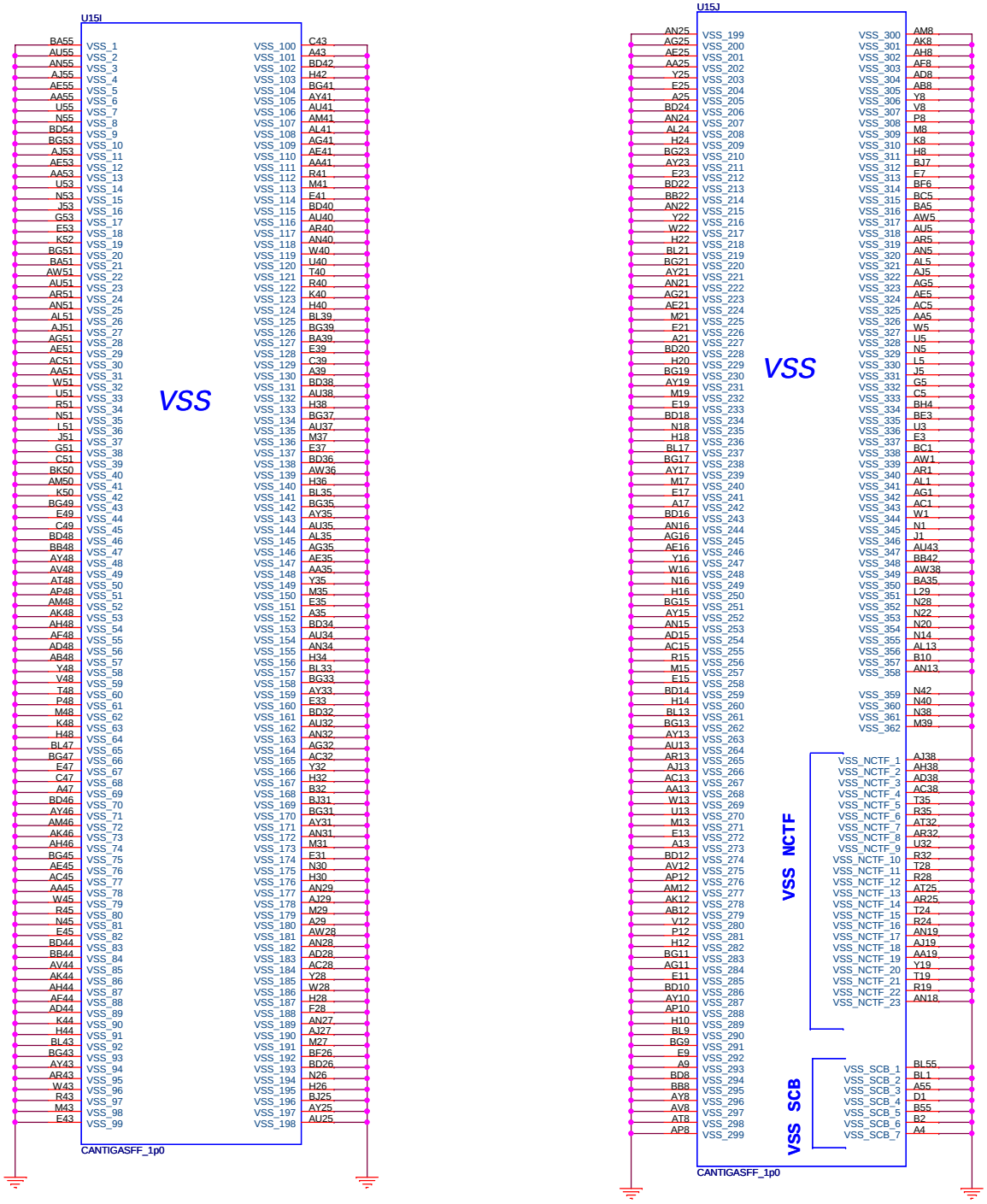
N87



PROJECT : BU3	
Quanta Computer Inc.	
Size: Custom	Document Number: GANTIGA VSS(6/6)
Rev: D3B	
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NB7	

North Bridge Strap Pin Configuration Table

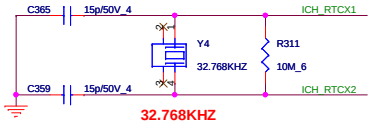
(See DG 2.0 P306 Table 187)
(See NB EDS 1.0 P187 Table 74)

Pin Name	Strap description	Configuration	PU<4.02K> PD <2.21K>	Note
CFG[2:0]	FSB Frequency Select	[000]= FSB 1066MHz [010] = FSB 800MHz [011] = FSB 667MHz	See Page 2 FSB selection table	
CFG[4:3]	Reserved			
CFG5	DMI X2 Select	0 = DMI X2 1 = DMI X4(Default)	[6] MCH_CFG5 R97 *2.2K_4	
CFG6	iTPM Host Interface	0 = iTPM Host Interface is enabled 1 = iTPM Host Interface is disabled(Default)	[6] MCH_CFG6 R70 *2.2K/F_4	
CFG7	ME TLS Confidentiality	0 = AMT Firmware will use TLS cipher suite with no confidentiality 1 = AMT Firmware will use TLS cipher suite with confidentiality(Default)	[6] MCH_CFG7 R72 *2.2K/F_4	
CFG8	Reserved			
CFG9	PCI Express Graphics Lane Reversal	0 = Reverse Lanes 1 = Normal operation(Default)	[6] MCH_CFG9 R73 *2.2K_4	
CFG10	PCIE Loopback enable	0 = Enabled 1 = Disabled (Default)	[6] MCH_CFG10 R75 *2.2K/F_4	
CFG11	Reserved			
CFG12	ALLZ	0 = ALLZ mode enable 1 = disable(Default)	[6] MCH_CFG12 R64 *2.2K/F_4	
CFG13	XOR	0 = XOR mode enable 1 = disable(Default)	[6] MCH_CFG13 R77 *2.2K/F_4	
CFG[15:14]	Reserved			
CFG16	FSB Dynamic ODT	0 = Dynamic ODT disable 1 = Dynamic ODT Enable(Default)	[6] MCH_CFG16 R81 *2.2K_4	
CFG[18:17]	Reserved			
CFG19	DMI Lane Reversal	0 = Normal (Default) 1 = Lanes Reversed	[6] MCH_CFG19 R93 *4.02K/F_4 +3V	
CFG20	Digital Display Port (SDVO/DP/iHDMI) Concurrent with PCIE	0 = Only Digital Display port (SDVO/DP/iHDMI) or PCIE is operational (Default) 1 = Digital Display port (SDVO/DP/iHDMI) and PCIE are operating simultaneously via PEG port	[6] MCH_CFG20 R92 *4.02K/F_4 +3V	
SDVO_CTRLDATA	SDVO Present	0 = No SDVO/HDMI/DP Device Present(Default) 1 = SDVO/HDMI/DP Device present	*Strap on P18* *SDVO_CTRLDATA*	
L_DDC_DATA	Local Flat Panel(LFP) Present	0 = LFP Disable(Default) 1 = LFP Card Present;PCIE disable	*Strap on P17* *INT_LVDS_EDIDDATA*	
DDPC_CTRLDATA	Digital Display Present	0 = Digital display(HDMI/DP) device absent(Default) 1 = Digital display(HDMI/DP) device present	[6] DDPC_CTRLDATA R109 *1.5K/F_4 +3V [6] DDPC_CTRLCLK R114 *1.5K/F_4 +3V	

Enable iTPM Table

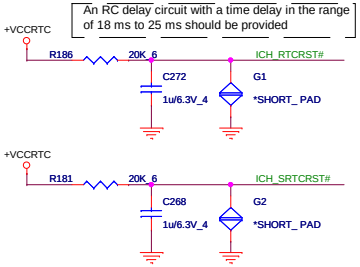
PAGE	Net Name	PU & PD	NOTE
11	MCH_CFG_6	PD 10K to GND	NB Strap pin
13	SPI_MOSI	PU 20K to +3V_S5	SB Strap pin
14	CLGPIO5	PU 10K to +3V_S5	SB Strap pin

RTC CRYSTAL

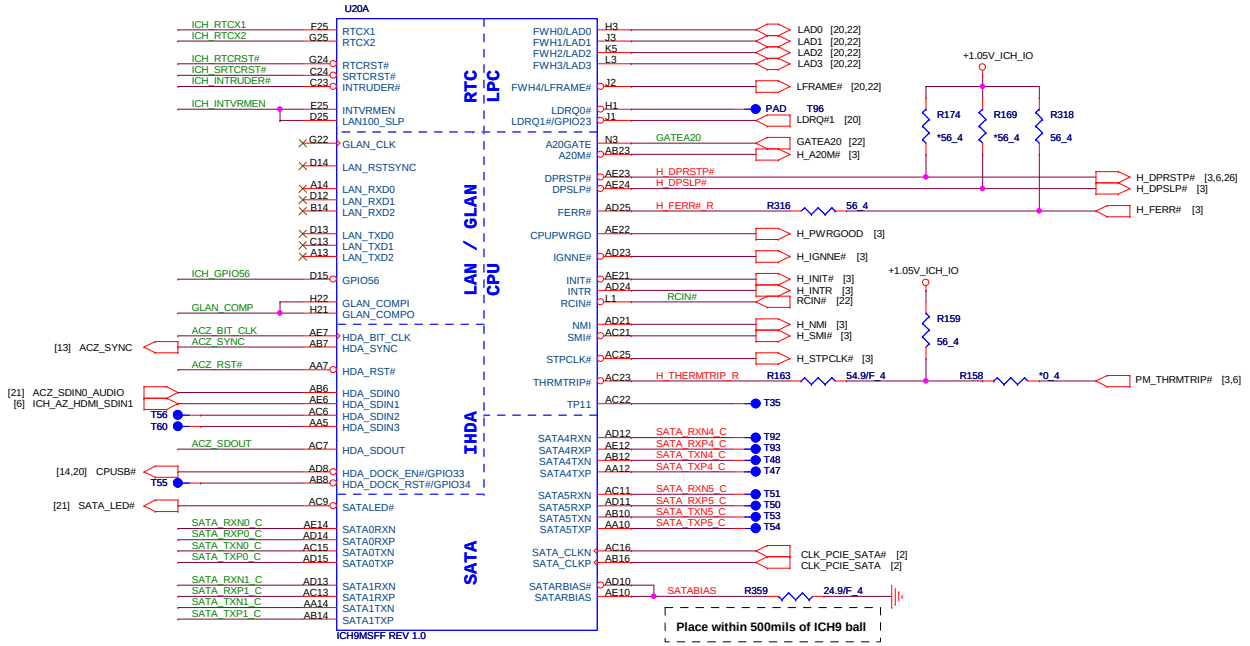


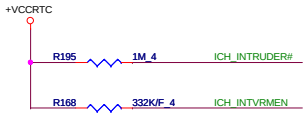
RESET JUMP

An RC delay circuit with a time delay in the range of 18 ms to 25 ms should be provided



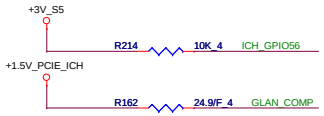
ICH_SATA_LED#	
0	PCIe Lane Reversed
1	PCIe Straight(default)



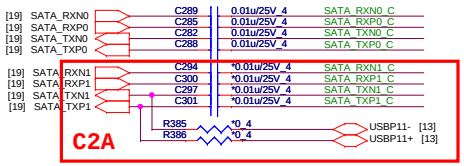


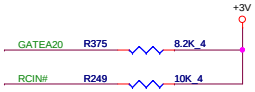
(DG 1.0 Table-292)

Internal VRM enabled for VccSus1_05, VccSus1_5, VccCL1_5, VccLAN1_05 and VccCL1_05.

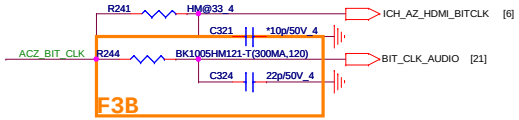


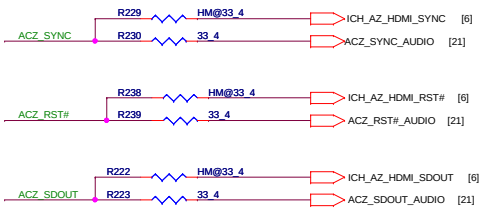
24.9 Ohm pull up to 1.5V for GLAN_COMPI/O is required, no matter intel LAN is used or not.





HD Audio Interface

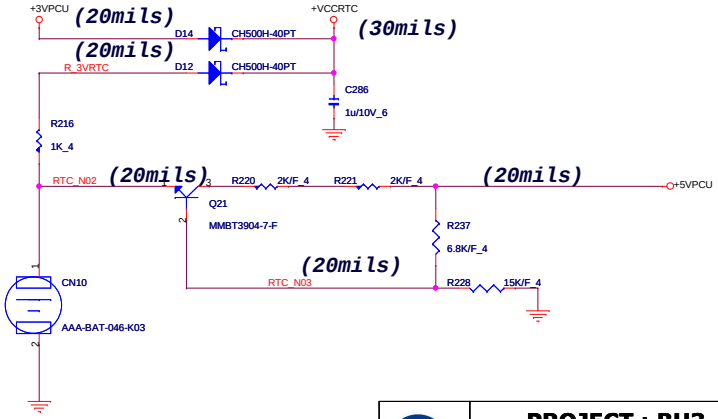


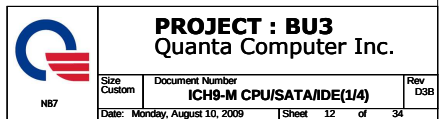


South Bridge Strap Pin (1/3)

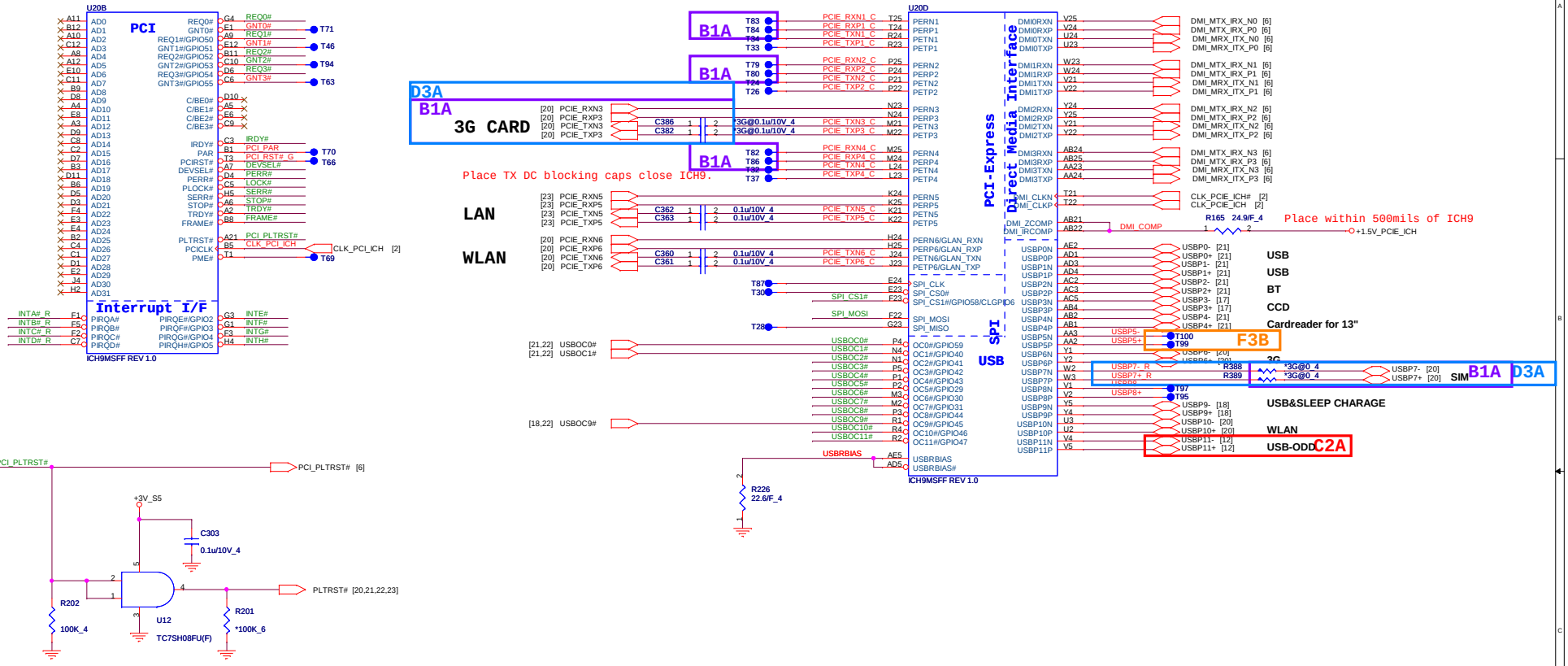
Pin Name	Strap description	Sampled	Configuration	PU/PD
HDA_DOCK_EN/ GPIO33	Flash Descriptor Security Override Strap	PWROK	0 = The Flash Descriptor Security will be overridden. 1 = The security measures defined in the Flash Descriptor will be in effect	This strap should only be enabled in manufacturing environments using an external pull-up resistor.
SATALED#	PCI Express Lane Reversal (Lanes 1-4)	PWROK	Internal PU	
	XOR Chain Entrance	PWROK	ICH_TP3 / HDA_SDOUT / Description 0 / 0 / RSVD 0 / 1 / Enter XOR Chain 1 / 0 / Normal opration(Default) 1 / 1 / Set PCIE port config bit 1	[14] ICH_TP3 — ICH_TP3 — R196 — *1K_4
HDA_SDOUT	XOR Chain Entrance /PCI Express* Port Config 1 bit 1(Port 1-4)	PWROK		+1.5V_HDA_IO_ICH — R224 — *1K_4 — ACZ_SDOUT

RTC BATTERY





ICH9

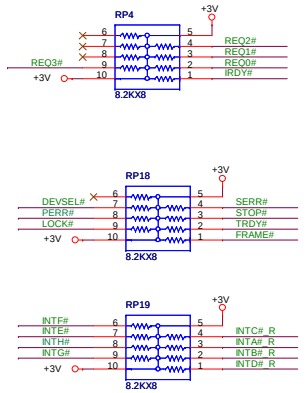


South Bridge Strap Pin (2/3)

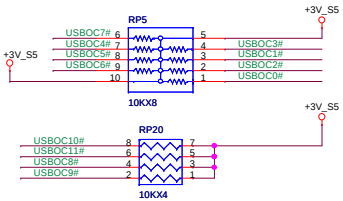
Pin Name	Strap description	Sampled	Configuration	PU/PD
HDA_SYNC	PCI Express Port Config 1 bit 0 (Port 1-4)	PWROK	0 = Default 1 = Setting bit 0	+1.5V_HDA_IO_ICH — R231 *1K_4 — ACZ_SYNC [12]
GNT2# / GPIO53	PCI Express Port Config 2 bit 2 (Port 5-6)	PWROK	0 = Setting bit 2 1 = Default	GNT2# — R370 *1K_4
GNT1# / GPIO51	ESI Strap(Server Only)	PWROK	0 = DMI for ESI-compatible 1 = Default	
GNT3# / GPIO55	Top-Block Swap Override	PWROK	0 = "top-block swap" mode 1 = Default	GNT3# — R218 *1K_4
SPI_MOSI	Integrated TPM Enable	CLPWROK	0 = INT TPM disable(Default) 1 = INT TPM enable	SPI_MOSI — R314 *20K_4
GNT0#	Boot BIOS Selection 0	PWROK		GNT0# — R246 *1K_4
SPI_CS1# / GPIO58 / CLGPIO6	Boot BIOS Selection 1	CLPWROK		SPI_CS1# — R164 *1K_4

PCI_GNT#0	SPI_CS#1	Boot Location
0	1	SPI(Default)
1	0	PCI

PCI PULL-UP



USBOC# PULL-UP



PROJECT : BU3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	ICH9-M (USB/PCIE/DMI)	D3B

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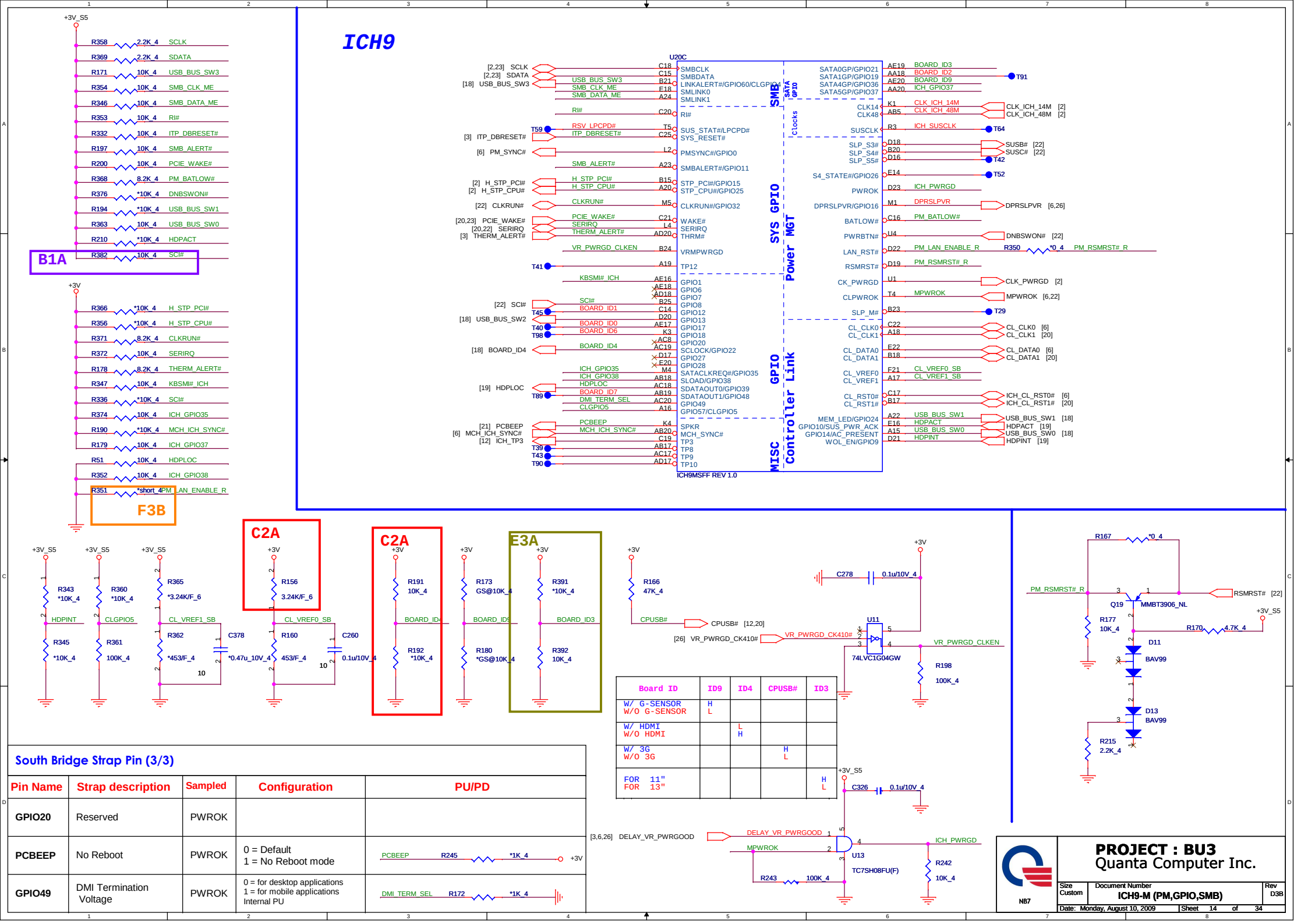
ICH9
B1A
F3B
C2A
C2A
E3A
U20C
ICH9MSFF REV 1.0
SMB
SATA GPIO
Clocks
SYS GPIO
Power MGT
GPIO
Controller Link
MISC
South Bridge Strap Pin (3/3)
Pin Name
Strap description
Sampled
Configuration
PU/PD
GPIO20
Reserved
PWROK
PCBEEP
No Reboot
PWROK
0 = Default
1 = No Reboot mode
GPIO49
DMI Termination Voltage
PWROK
0 = for desktop applications
1 = for mobile applications
Internal PU
Board ID
ID9
ID4
CPUSB#
ID3
W/ G-SENSOR
W/O G-SENSOR
W/ HDMI
W/O HDMI
W/ 3G
W/O 3G
FOR 11"
FOR 13"
74LVC1G04GW
TC7SH08FU(F)
PROJECT : BU3
Quanta Computer Inc.
Document Number
ICH9-M (PM,GPIO,SMB)
Size
Custom
Rev
D3B
Date: Monday, August 10, 2009
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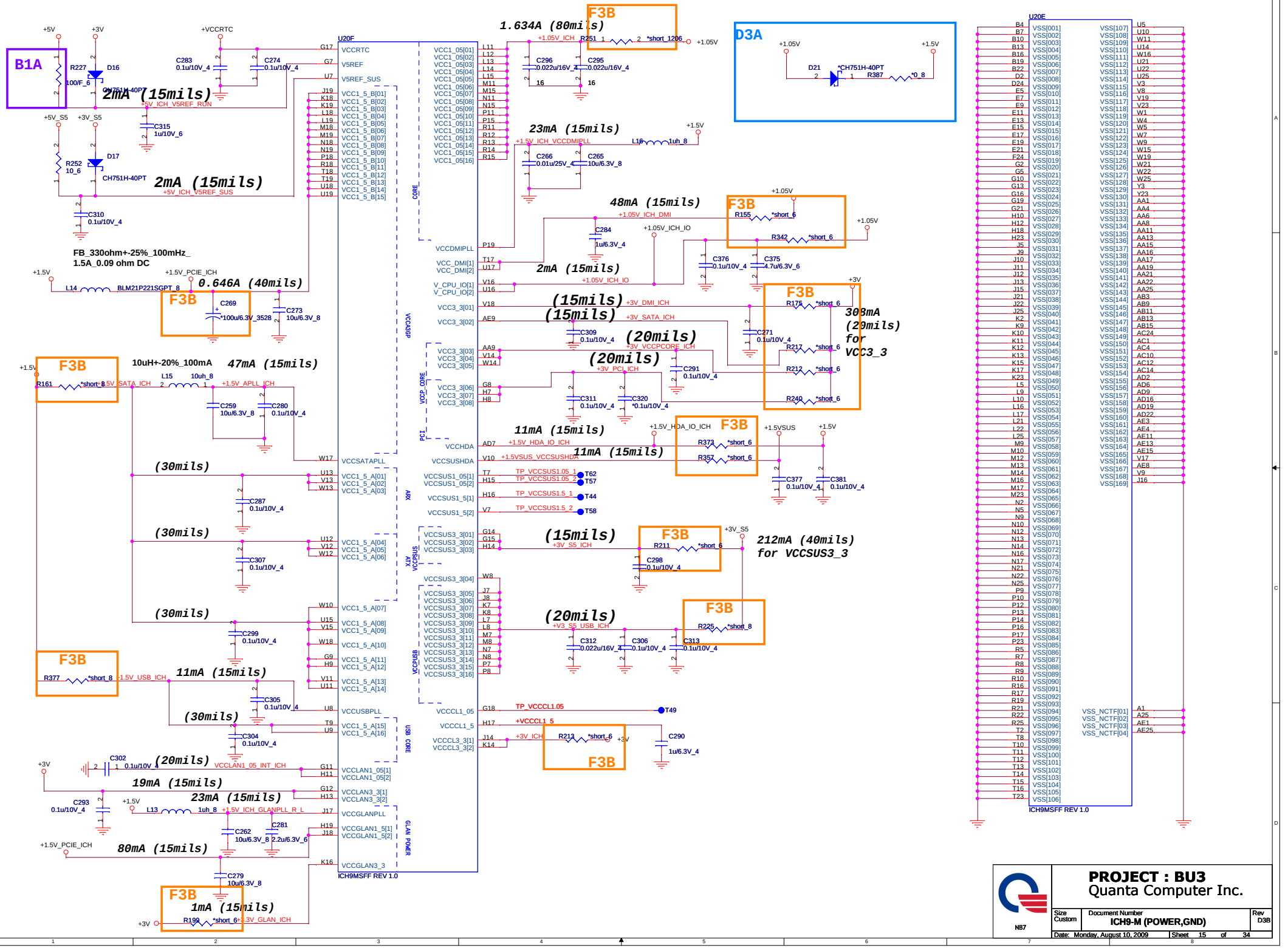
B1A
2mA (15mils)
+5V_ICH_V5REF_RUN
2mA (15mils)
+5V_ICH_V5REF_SUS
FB_330ohm+-25%_100mHz_
1.5A_0.09 ohm DC
0.646A (40mils)
F3B
10uH+-20%_100mA
47mA (15mils)
(30mils)
(30mils)
(30mils)
11mA (15mils)
(30mils)
(20mils)
19mA (15mils)
23mA (15mils)
80mA (15mils)
1mA (15mils)
1.634A (80mils)
23mA (15mils)
48mA (15mils)
2mA (15mils)
(15mils)
(15mils)
(20mils)
(20mils)
11mA (15mils)
11mA (15mils)
(15mils)
(20mils)
308mA
(20mils)
for
VCC3_3
212mA (40mils)
for VCCSUS3_3
D3A
U20F
U20E
ICH9MSFF REV 1.0
PROJECT : BU3
Quanta Computer Inc.
ICH9-M (POWER,GND)
Size Custom
Rev D3B
Date: Monday, August 10, 2009
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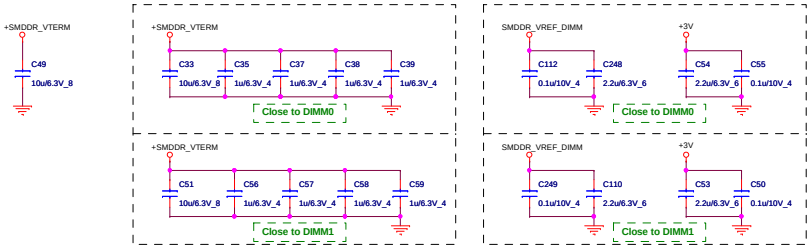
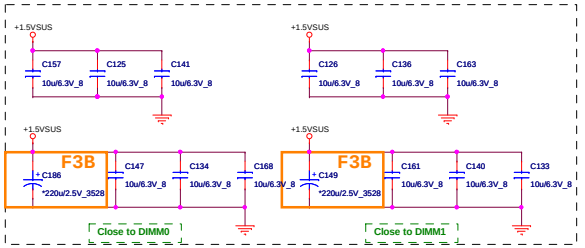
N87

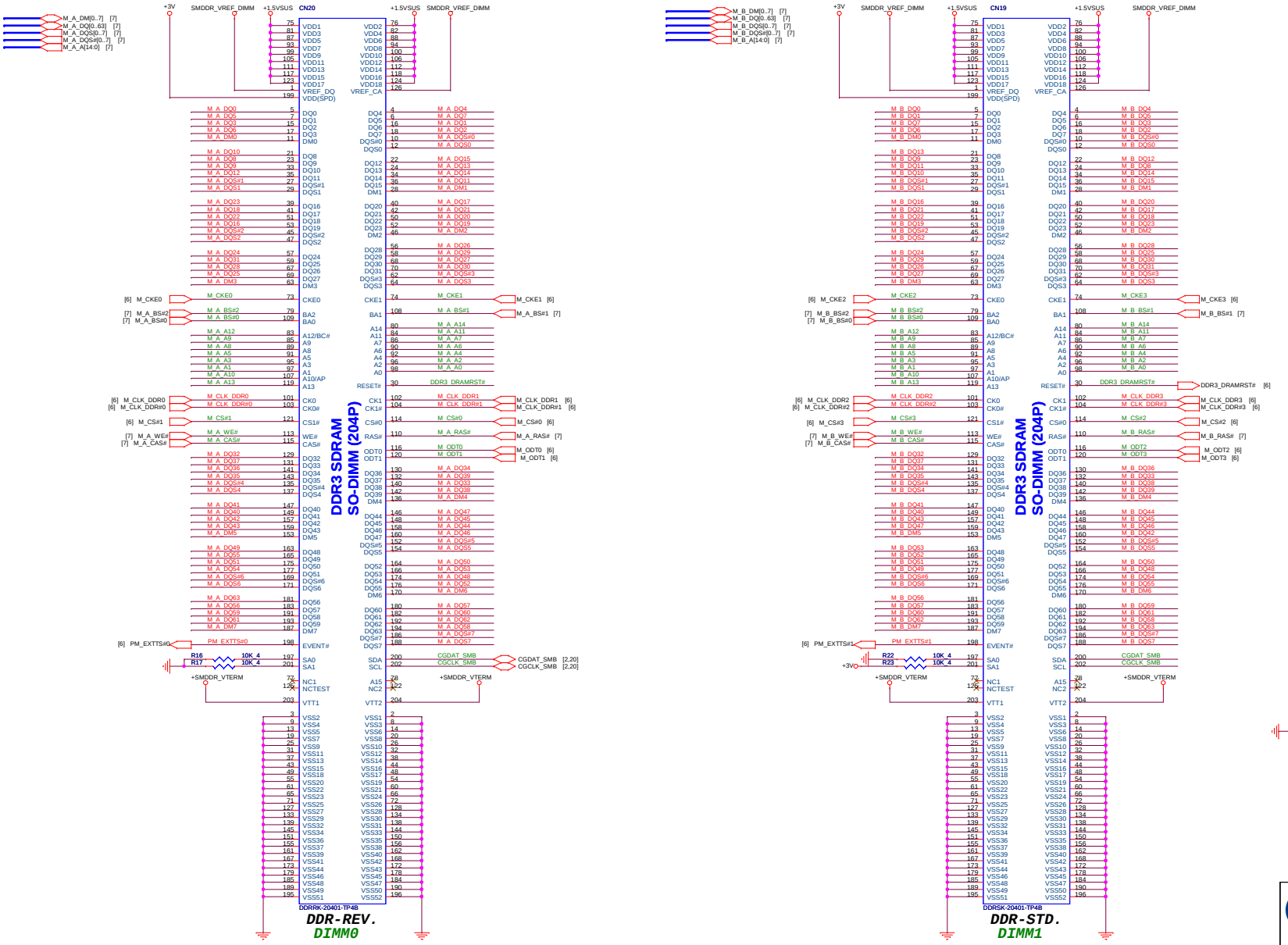
DDRIII

TERMINATOR DECOUPLING CAPACITOR



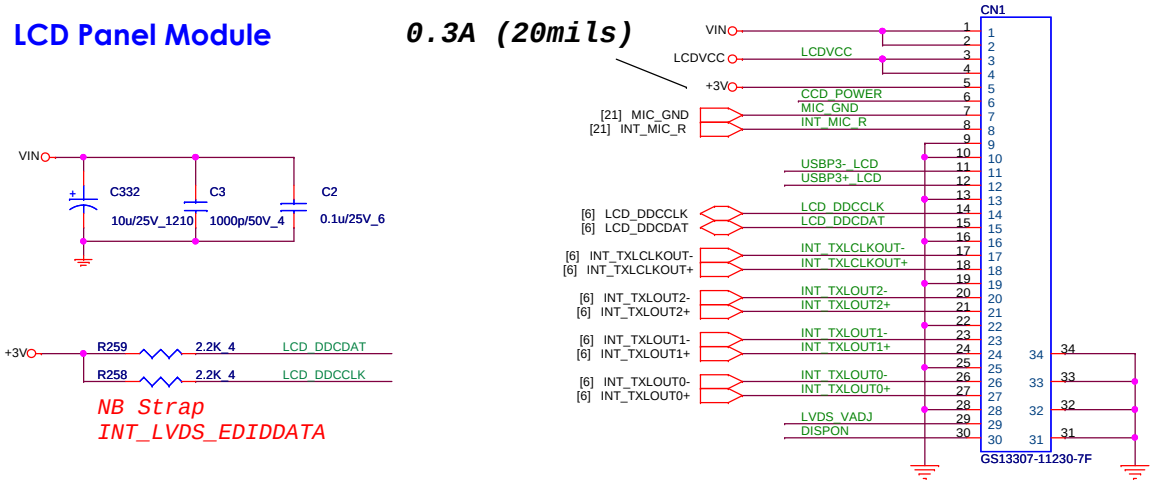
9.12A(VCC plane from source)



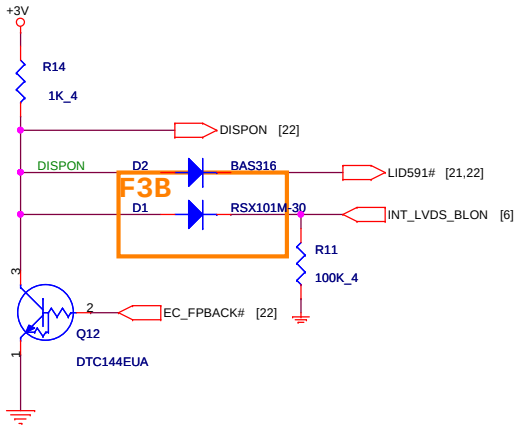


LCD Panel Module

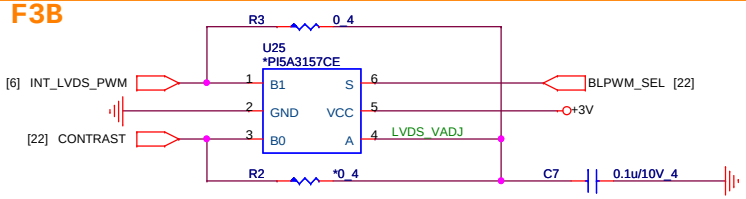
0.3A (20mils)



HALL SENSOR&BACK LIGHT SWITCH

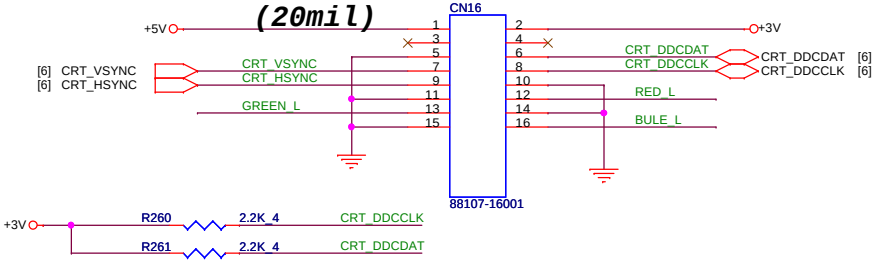


F3B



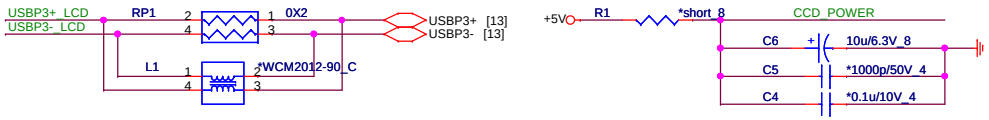
input S / output A	S	S
INT_LVDS_PWM	H	
CONTRAST		L

CRT CON.

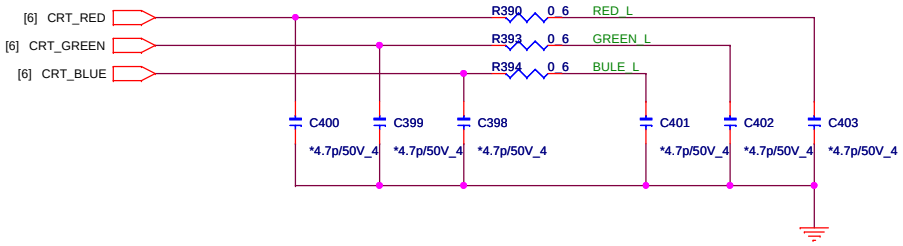


CCD

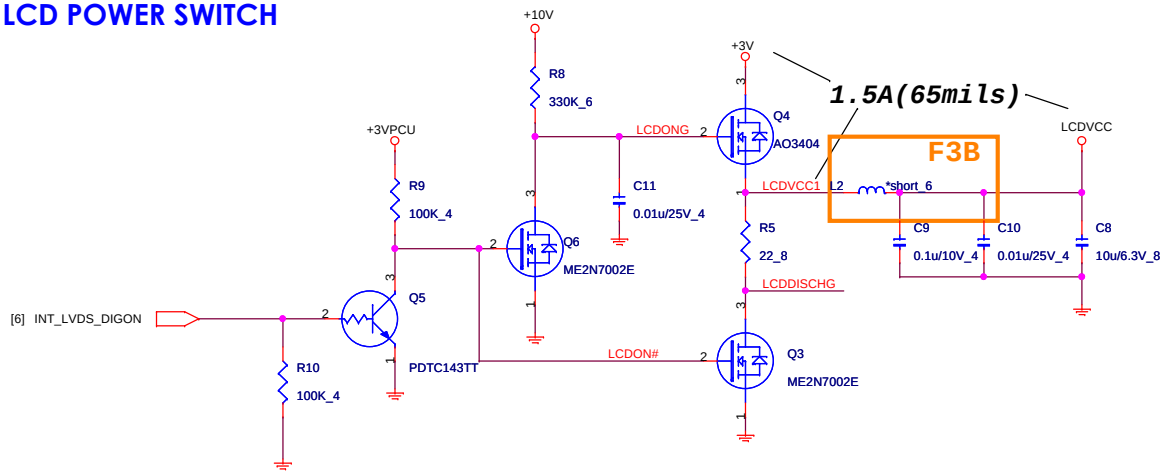
0.2A(20mils)



E3A



LCD POWER SWITCH



CRT CON. co-lay

E3A

Quanta Computer Inc.

PROJECT : BU3

Size	Document Number	Rev
	LCD/LED Panel/CCD	D3B

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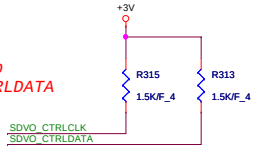
HDMI IC

B1A

NB Strap
SDVO_CTRLDATA



B1A

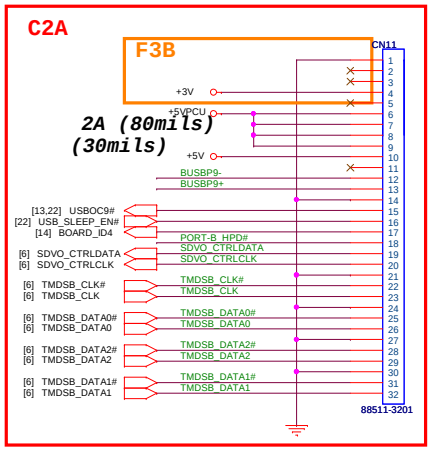
HDMI HPD

HDMI CON.

C2A

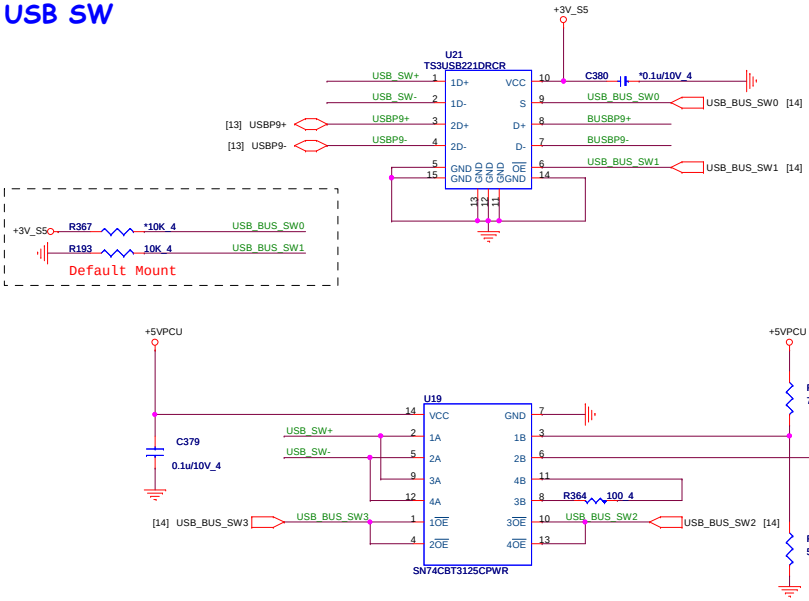
F3B

2A (80mils)
(30mils)



EMI

USB SW



S	OE#	Function
X	H	Disconnect
L	L	D=1D
H	L	D=2D

OE#	Function
H	Disconnect
L	A port= B port

OE#	1OE#	2OE#	3OE#	4OE#
Mode3	High	High	Low	Low
Mode4	Low	Low	High	High

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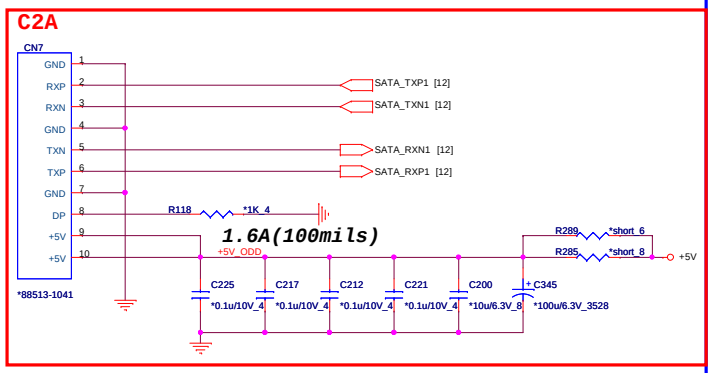
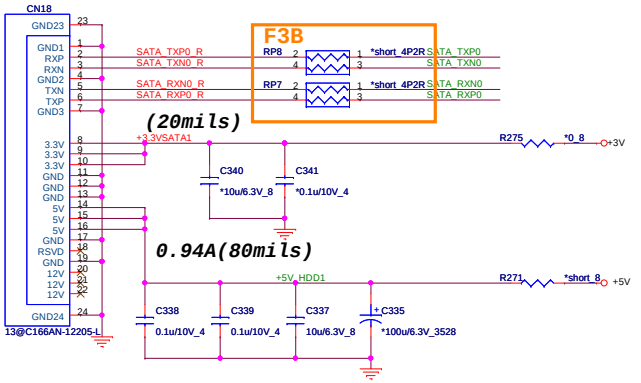
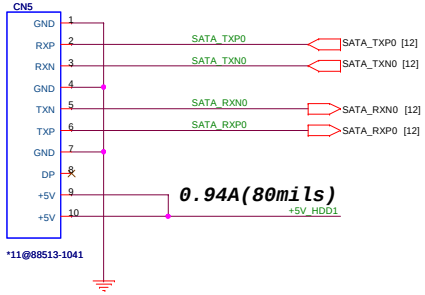
SATA ODD



Main SATA HDD

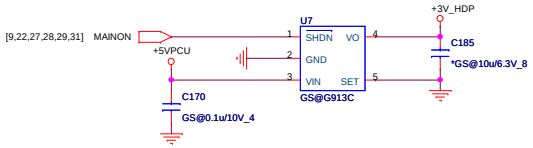


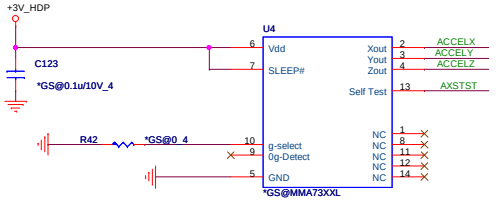
Main SATA HDD (For 11.6")



CO-LAYOUT With MAIN SATA HDD

G-sensor





FS (Full Scale) selection

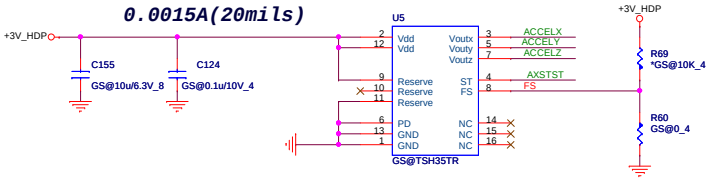
FS	0	1
	2g Full-Scale	6g Full-Scale

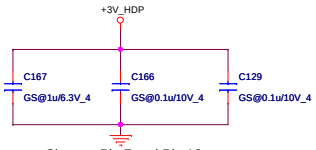
PD (Power Down) selection

PD	0	1
	Normal Mode	Power-down mode

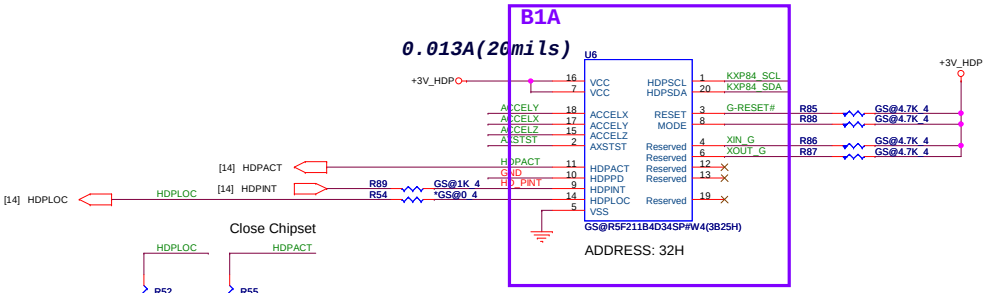
HDPPD selection

HDPPD	0	1
	Normal Mode	Power-down mode

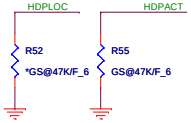


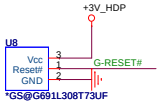


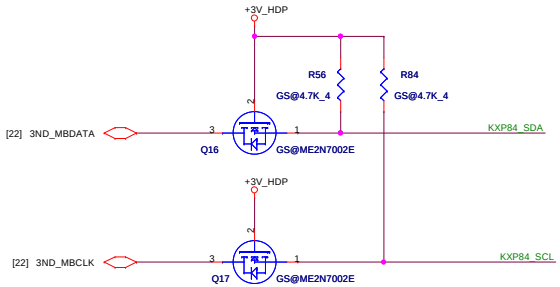
Close to Pin 7 and Pin 16



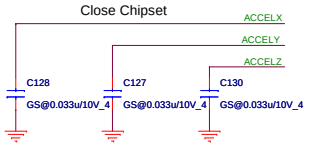
Close Chipset







Close Chipset



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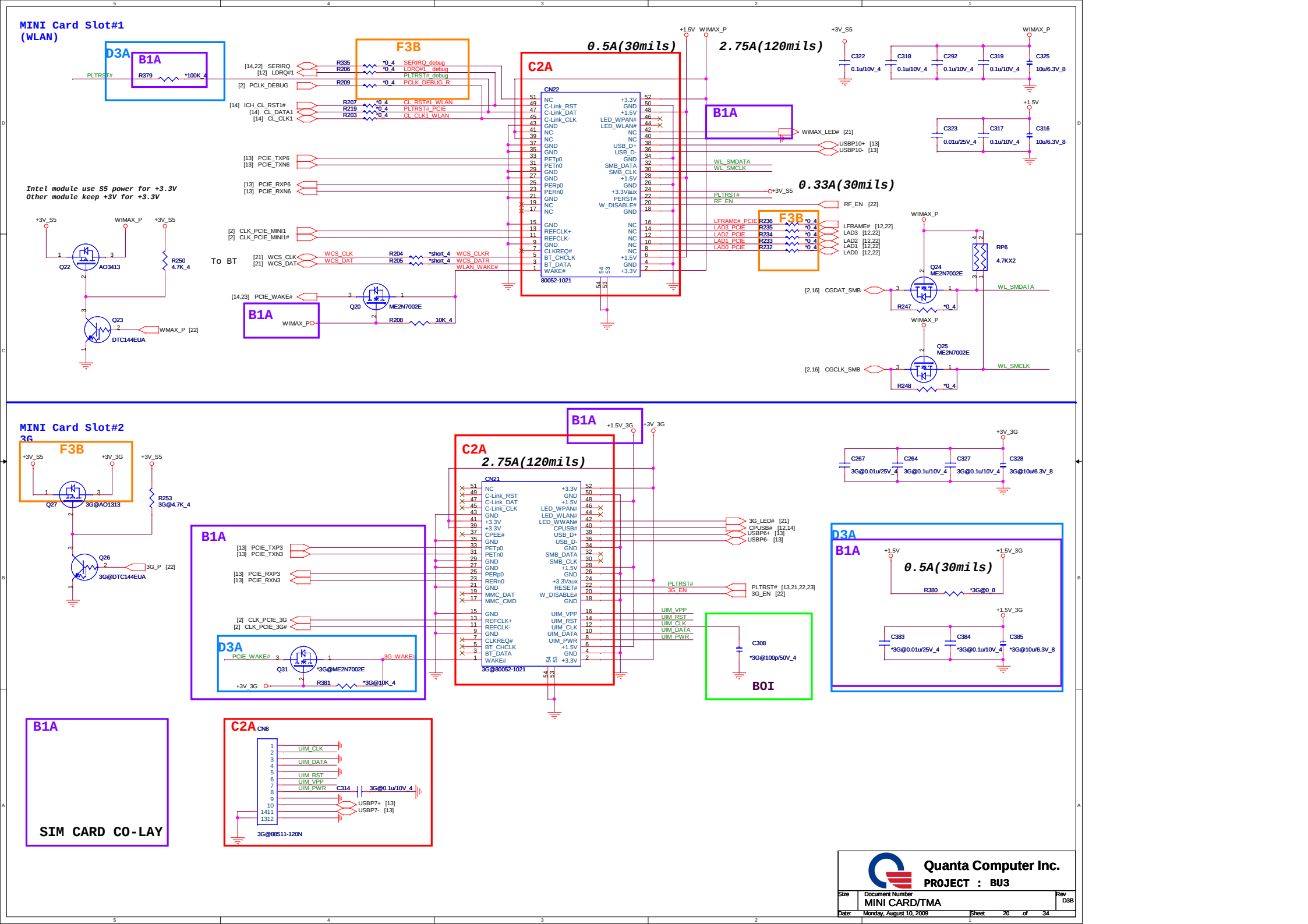
MINI Card Slot#1
(WLAN)
D3A
B1A
F3B
C2A
CN22
0.5A(30mils)
2.75A(120mils)
0.33A(30mils)
Intel module use S5 power for +3.3V
Other module keep +3V for +3.3V
To BT
Q22 AO3413
Q23 DTC144EUA
Q20 ME2N7002E
Q24 ME2N7002E
Q25 ME2N7002E
RP6 4.7KX2
80052-1021
MINI Card Slot#2
3G
F3B
B1A
C2A
2.75A(120mils)
CN21
D3A
B1A
0.5A(30mils)
Q27 3G@AO1313
Q26 3G@DTC144EUA
Q31 *3G@ME2N7002E
3G@80052-1021
BOI
C308 *3G@100p/50V_4
B1A
SIM CARD CO-LAY
C2A CN8
3G@88511-120N
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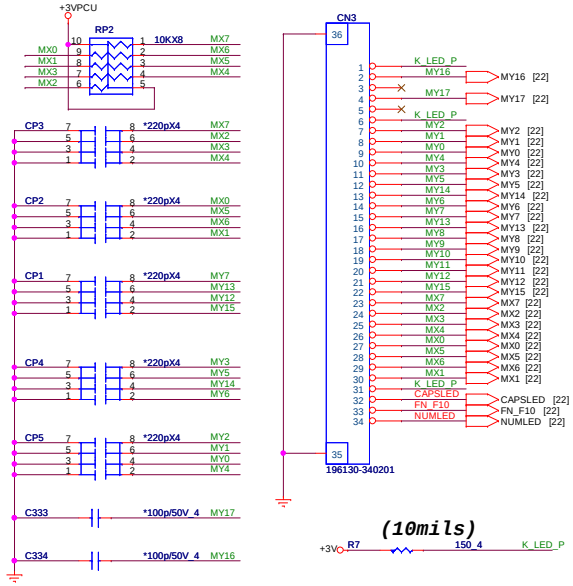
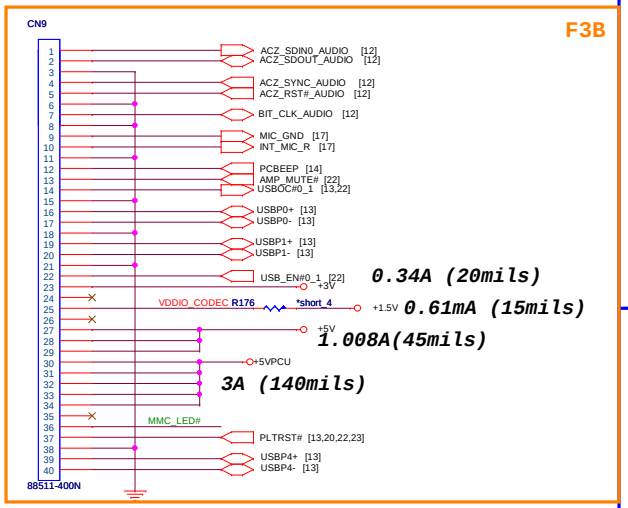
INT KeyBoard



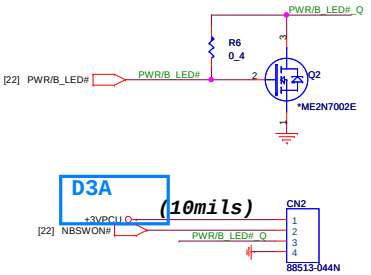
USB&FPC&CARDERAD CONNECTOR

C2A

F3B

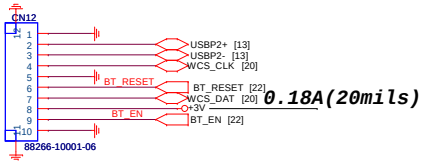


Power board



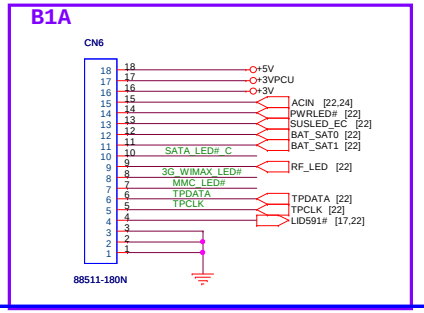
B1A

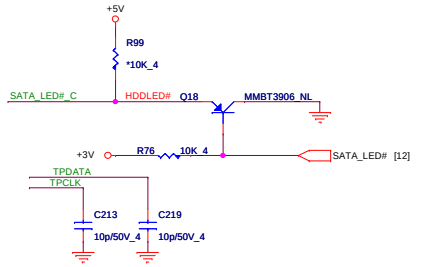
Bluetooth



LED/TP/Hall Sensor Con.

B1A

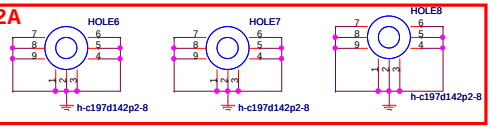


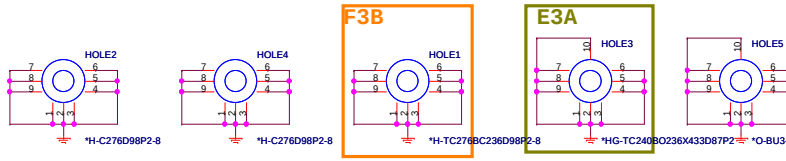


HOLE

CPU FAN

C2A

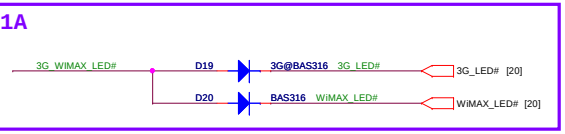




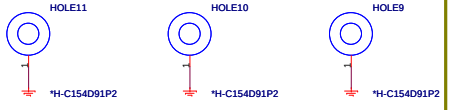
F3B

E3A

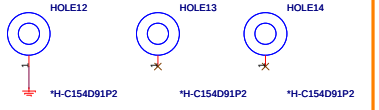
B1A



E3A

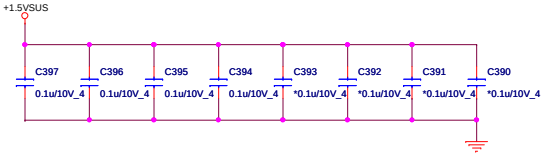


F3B



EMI

E3A



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EC

D3A

+3VPCU — D22 *VPORT 0603 220K-V05

SM BUS PU

+3VPCU

MBCLK	R148	4.7K_4
MBDATA	R147	4.7K_4
2ND_MBCLK	R146	4.7K_4
2ND_MBDATA	R152	4.7K_4
3ND_MBCLK	R122	4.7K_4
3ND_MBDATA	R121	4.7K_4

I/O Base Address

	I/O Address	
BADDR1-0	Index	Data
0 0	XOR TREE TEST MODE	
0 1	CORE DEFINED	
1 0	2Eh	2Fh
1 1	164Eh	164Fh

SHBM=0: Enable shared memory with host BIOS

BADDR0 — BADDR0 — R124 *10K_4
BADDR1 — BT_EN — R129 10K_4
SHBM — RF_EN — R142 10K_4

Disabled ('1') if using FWH device on LPC.
Enabled ('0') if using SPI flash for both system BIOS and EC firmware

ID

+3VPCU — U10 AF24BC08-SI-TE1(DCEF) — C261 0.1u/10V_4

2ND_MBCLK, 2ND_MBDATA — SCL, SDA — A0, A1, A2, WP, VCC, GND

0.003A(20mils)

ADDRESS: A0H

SPI FLASH

+3VPCU — U16 W25X16AVSSIG — C351 0.1u/10V_4

SPI_SDI_uR	R294	33_4	SPI_SDI
SPI_SDO_uR	R291	33_4	SPI_SDO
SPI_SCK_uR	R292	33_4	SPI_SCK
SPI_CS0#_uR	R295	10K_4	+3VPCU

0.025A(20mils)

INTERNAL KEYBOARD STRIP SET

+3VPCU — MY0 — R132 10K_4

HWPG

+3V — R107 10K_4

[25] SYS_HWPG	D8	BAS316
[28] HWPG_1.05V	D7	BAS316
[29] HWPG_1.8V	D6	BAS316
[6,27] HWPG_1.5V	D5	BAS316

HWPG

LED

+3VPCU — PWRLED# — R145 10K_4, R137 *10K_4

+3VPCU — PWR/B_LED# — R151 10K_4, R154 *10K_4

BAT_SAT0 — R141 10K_4
BAT_SAT1 — R106 10K_4

SMBUS Table

SMBUS	Devices	Address
1	Battery	
2	CPU Thermal Sensor1	98H
	EC EEPROM	A0H
3	3D Sensor	40H

Power

+3VPCU — L11 BLM18AG601SN1D_6 — +A3VPCU
0.03A(30mils)
C348 10u/6.3V_8, C207 0.1u/10V_4, C234 0.1u/10V_4, C233 0.1u/10V_4, C252 0.1u/10V_4, C253 0.1u/10V_4
C245 0.1u/10V_4, C251 10u/6.3V_8
8769AGND

0.01A(20mils)
+3V_VDD_EC — R102 *short_6 — +3V
C201 0.1u/10V_4, C188 10u/6.3V_8

+5V — R150 10K_4 TPCLK, R149 10K_4 TPDATA

PCLK_591 — R108 *22_4 — C197 *10p/50V_4

U9 WPCE775CA0DG

H=1.6mm

R393 must close to C315 and close to EC Pin100/102. Routing 20/10/20

C2A — R135 100K/F_4 — +3VPCU

LPC

[12,20] LFRAME#	3	LFRAME
[12,20] LAD0	126	LAD0
[12,20] LAD1	127	LAD1
[12,20] LAD2	128	LAD2
[12,20] LAD3	1	LAD3
[2] PCLK_591	2	LCLK
[14] CLKRUN#	8	CLKRUN/GPIO11
[12] GATEA20	121	GA20
[12] RCIN#	122	KBRST
[14] SCI#	29	ECSCI/GPIO54
[17] EC_FPBACK#	6	LDRQ/GPIO24
	124	LPCPD/GPIO10
[13,20,21,23] PLTRST#	7	LRESET
[21] USB_EN#0_1	123	PWUREQ/GPIO67
[14,20] SERIRQ	125	SERIRQ
[21] BAT_SAT1	9	SMI/GPIO65

D9 BAS316 SCI# uR

A/D

	97	AD0/GPI90
ICMNT	98	AD1/GPI91
ACSET_EC	99	AD2/GPI92
	100	AD3/GPI93
H_PROCHOT#_EC [3]	108	AD4/GPIO05
USBOC0# [13,18]	96	AD5/GPIO04
NBSWON# [21]	95	AD6/GPIO03
SUSB# [14]	94	AD7/GPIO07

MTEMP [24], ICMNT [24], ACSET_EC [24] — F3B

D/A

	101	DA0/GPI94
	105	DA1/GPI95
	106	DA2/GPI96
	107	DA3/GPI97

VFAN [3], SUSLED_EC [21]

GPIO

	80	GPIO41(VBAT)
	17	GPIO42/TCK
	20	GPIO43/TMS
	21	GPIO44/TDI
	25	GPIO50/TDO
	27	CIRTX2/GPIO52/RDY

BAT_SAT0 [21], RF_LED [21], AMP_MUTE# [21], ID [24], D/C# [24], DISPON [17]

wake-up capability

no wake-up capability

	110	GPO82/TRIS
BADDR0	112	GPO84/BADDR0

SER

BT_EN	111	SOUT_CR/GPO83/BADDR1
	113	SIN_CR/CIRRX/GPIO87
	93	GPIO06

BT_EN [21], USB_SLEEP_EN# [18], LID591# [17,21]

PWM

	32	A_PWM/GPIO15
	118	B_PWM/GPIO21
USBOC#0_1	62	C_PWM/GPIO13
	66	D_PWM/GPIO32
	22	E_PWM/GPIO45
	16	F_PWM/GPIO40/CLKIN48
PWR/B_LED#	81	G_PWM/GPIO66
PWRLED#	66	H_PWM/GPIO33

CONTRAST [17], USBOC#0_1 [13,21], SUSON [27,31], MAINON [9,19,27,28,29,31], PWR/B_LED# [21], PWRLED# [21]

TIMER

	31	TA1/GPIO56
	63	TB1/GPIO14
	117	TA2/GPIO20
	64	TB2/GPIO01
	26	TA3/GPIO51
	15	TB3/GPIO36

3G_P [20], FANSIG [3], WMAX_P [20], ACIN [21,24], S5_ON [25], VRON [26]

Pin 117 AMD PWM 1.2V INTEL WiMAX_P

SPI

	84	SPI_DI/GPIO77
RF_EN	83	SPI_DO/GPO76/SHBM
	82	SPI_SCK/GPIO75
DNBSWON# uR — D10 BAS316	91	GPIO81

BT_RESET [21], RF_EN [20], DNBSWON# [14]

FIR

RSMRST#	75	IRRX1/GPIO72/SIN2
MPWROK	73	IRRX2_IRSL0/GPIO70
	74	IRTX/GPIO71/SOUT2
	88	CIRRXM/GPIO46/TRST

RSMRST# [14], SUSC# [14], MPWROK [6,14]

CIR

	89	GPIO34/CIRRXL
	114	CIRTX1/GPIO16
	109	CIRTX2/GPIO30

NUMLED [21], CAPSLED [21]

FIU

SPI_SDI_uR	86	F_SDI/F_SDIO1
SPI_SDO_uR	87	F_SDO/SDIO0
SPI_CS0#_uR	90	F_CS0
SPI_SCK_uR	92	F_SCK

SMB

[24] MBCLK	70	SCL1/GPIO17
[24] MBDATA	69	SDA1/GPIO22
[3] 2ND_MBCLK	67	SCL2/GPIO26
[3] 2ND_MBDATA	68	SDA2/GPIO74
[19] 3ND_MBCLK	119	SCL3/GPIO23
[19] 3ND_MBDATA	120	SDA3/GPIO31
[20] 3G_EN	24	SCL4/GPO47
HWPG	28	SDA4/GPIO53

PS/2

[21] TPCLK	72	PSCLK1/GPIO37
[21] TPDATA	71	PSDAT1/GPIO35
	10	PSCLK2/GPIO26
	23	PSDAT2/GPIO27
[21] FN_F10	12	PSCLK3/GPIO25
F3B [17] BLPWM_SEL	13	PSDAT3/GPIO12

TPCLK, TPDATA

	30	CLKOUT/GPIO55
VCC_POR# R143 4.7K_4 +3VPCU	85	VCC_POR
VREF_uR R133 0_4 +A3VPCU	104	VREF

LAN_P [23] — C2A

	77	32KX1/32KCLKIN
	79	32KX2

R144 20M_6, R153 33K/F_4, Y3 32.768KHZ, C255 15p/50V_4, C257 15p/50V_4 — C2A — 8769AGND

GND1 5, GND2 18, GND3 45, GND4 78, GND5 89, GND6 116, AGND 103, VCORF 44

L12 0_6 — 8769AGND

C230 1u/10V_6 — VCORF_uR

C2A

close to u9

ACSET_EC, ICMNT — C254 *10u/6.3V_8, C256 *10u/6.3V_8 — 8769AGND

DNBSWON# uR — C250 *0.47u/10V_4
NBSWON# — SW1 *SHORT_PAD

[13,21] USBOC0# — USBOC#0_1
[13,21] USBOC1# — USBOC#0_1
[21] USB_EN#0 — USB_EN#0_1
[21] USB_EN#1 — USB_EN#0_1

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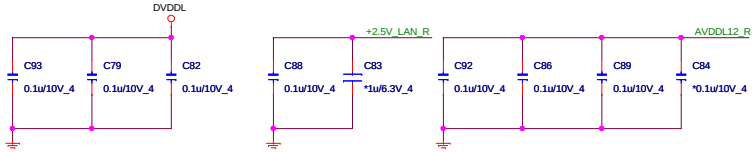
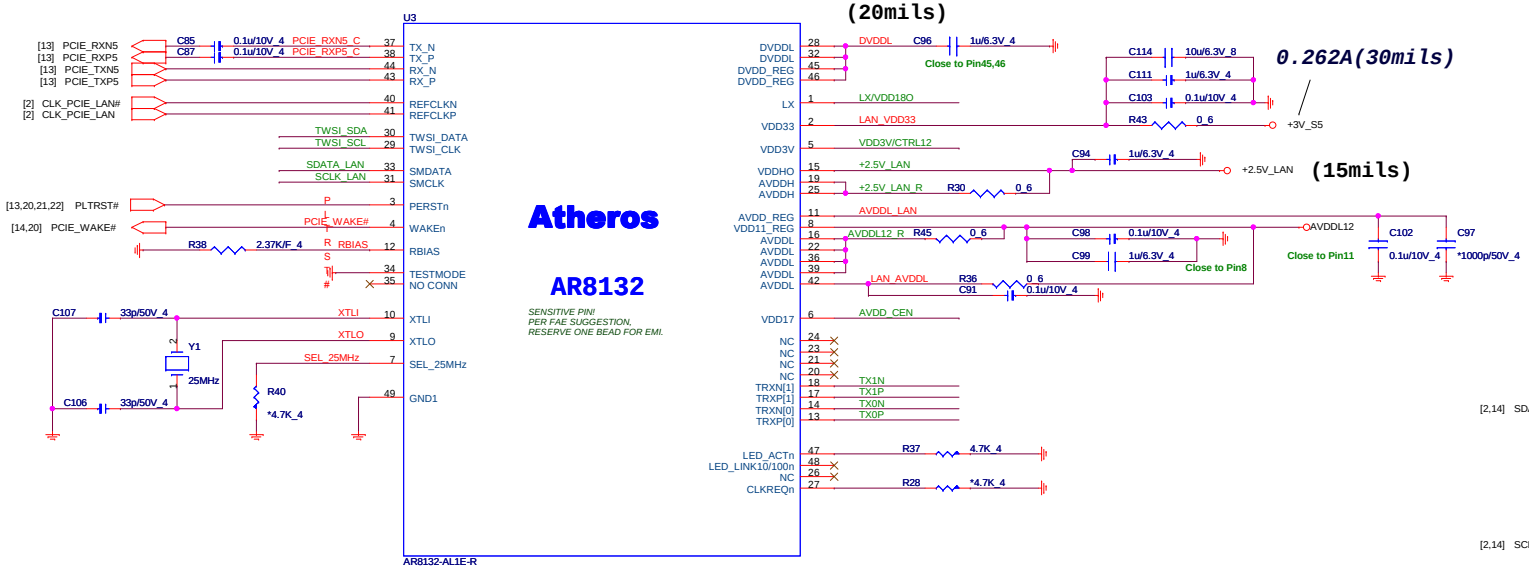
Atheros Lan

Decoupling CAP

Close to U3

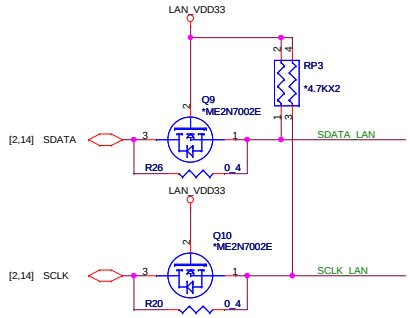


(20mils)



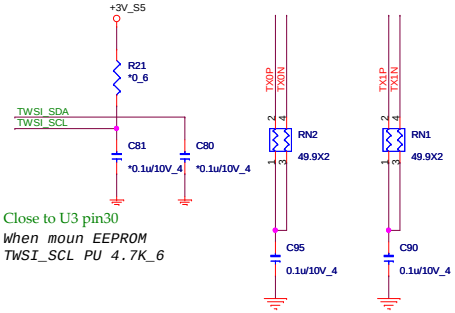
0.262A(30mils)

(15mils)



EEPROM

PLACE NEAR LAN IC SIDE



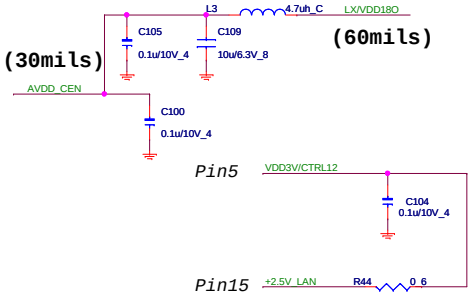
Close to U3 pin30

When moun EEPROM
TWSI_SCL PU 4.7K_6

Close to U3

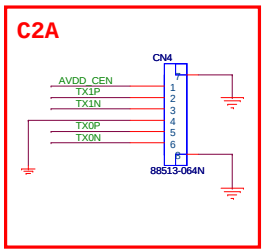
(30mils)

(60mils)

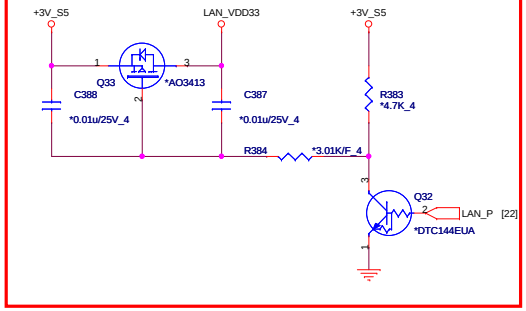


LAN CONNECTOR

C2A



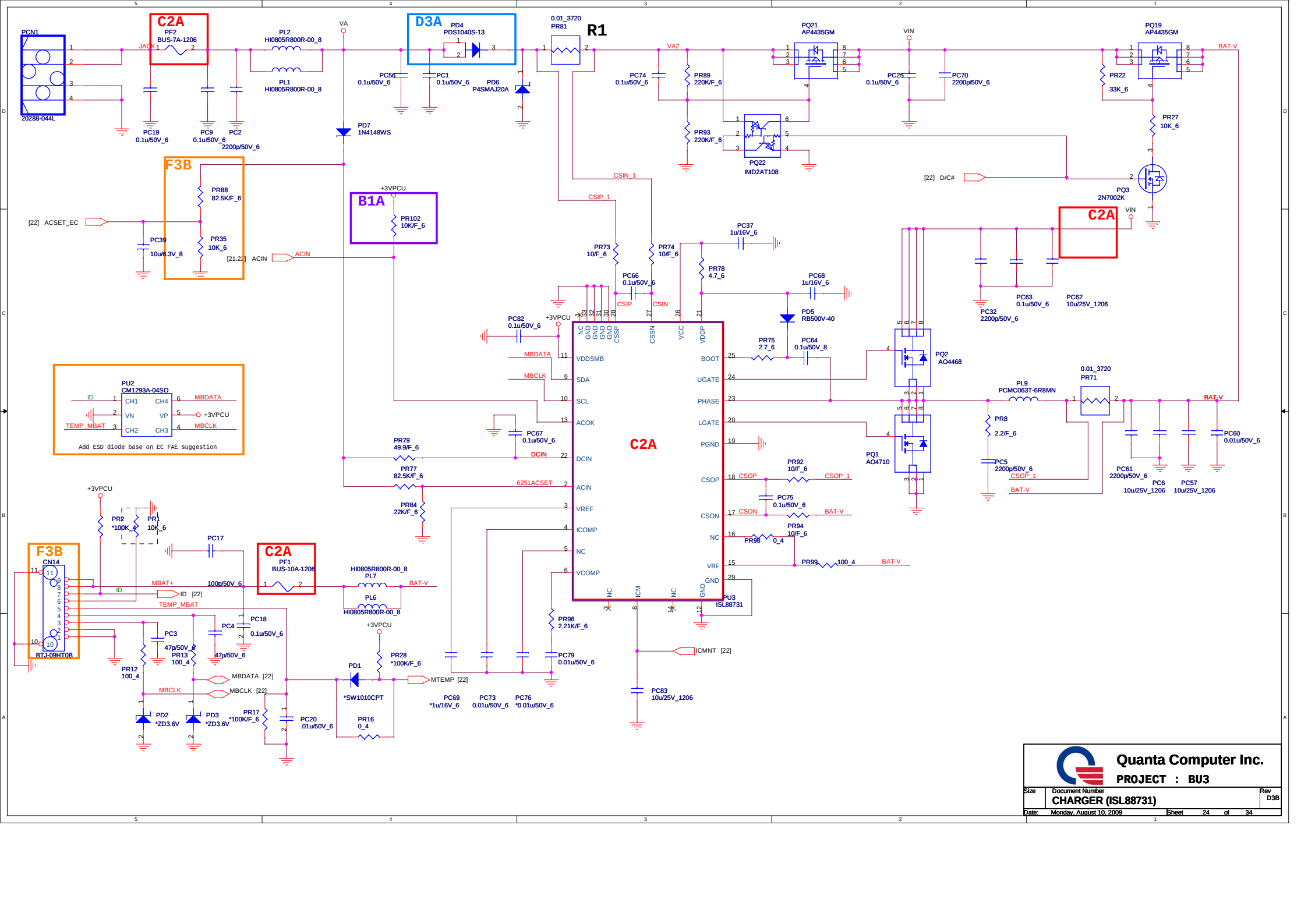
C2A



Quanta Computer Inc.

PROJECT : BU3

Size	Document Number	Rev
	Atheros Lan	D3B
Date: Monday, August 10, 2009	Sheet 23 of 34	


C2A
PF2
BUS-7A-1206
PCN1
20288-044L
PL2
HI0805R800R-00_8
PL1
HI0805R800R-00_8
VA
D3A
PD4
PDS1040S-13
PD6
P4SMAJ20A
PD7
1N4148WS
0.01_3720
PR81
R1
VA2
PQ21
AP4435GM
VIN
PQ19
AP4435GM
BAT-V
PR22
33K_6
PR27
10K_6
PQ3
2N7002K
[22] D/C#
PR89
220K/F_6
PR93
220K/F_6
PQ22
IMD2AT108
PC74
0.1u/50V_6
PC25
0.1u/50V_6
PC70
2200p/50V_6
PC56
0.1u/50V_6
PC1
0.1u/50V_6
PC19
0.1u/50V_6
PC9
0.1u/50V_6
PC2
2200p/50V_6
F3B
PR88
82.5K/F_6
PC39
10u/6.3V_8
PR35
10K_6
[22] ACSET_EC
[21,22] ACIN
ACIN
B1A
+3VPCU
PR102
10K/F_6
CSIN_1
CSIP_1
PR73
10/F_6
PR74
10/F_6
PC37
1u/16V_6
PR78
4.7_6
PC66
0.1u/50V_6
PC68
1u/16V_6
CSIP
CSIN
PD5
RB500V-40
PC82
0.1u/50V_6
+3VPCU
C2A
NC
GND
GND
GND
GND
CSSP
CSSN
VCC
VDDP
MBDATA
MBCLK
VDDSMB
SDA
SCL
ACOK
DCIN
ACIN
VREF
ICOMP
NC
VCOMP
BOOT
UGATE
PHASE
LGATE
PGND
CSOP
CSON
NC
VBF
GND
PU3
ISL88731
PR75
2.7_6
PC64
0.1u/50V_8
PQ2
AO4468
PQ1
AO4710
PC67
0.1u/50V_6
DCIN
PR79
49.9/F_6
PR77
82.5K/F_6
PR84
22K/F_6
6251ACSET
PR92
10/F_6
CSOP
CSOP_1
PC75
0.1u/50V_6
CSON
BAT-V
PR94
10/F_6
PR98
0_4
PR99
100_4
BAT-V
PR96
2.21K/F_6
PC79
0.01u/50V_6
ICMNT [22]
PC83
10u/25V_1206
PC69
*1u/16V_6
PC73
0.01u/50V_6
PC76
*0.01u/50V_6
PU2
CM1293A-04SO
ID
TEMP_MBAT
CH1
CH4
VN
VP
CH2
CH3
MBDATA
+3VPCU
MBCLK
Add ESD diode base on EC FAE suggestion
+3VPCU
PR2
*100K_4
PR1
10K_6
PC17
100p/50V_6
F3B
CN14
BTJ-09HT0B
MBAT+
ID
ID [22]
TEMP_MBAT
C2A
PF1
BUS-10A-1206
HI0805R800R-00_8
PL7
PL6
HI0805R800R-00_8
BAT-V
PC18
0.1u/50V_6
PC3
47p/50V_8
PC4
47p/50V_6
PR13
100_4
PR12
100_4
MBDATA [22]
MBCLK
MBCLK [22]
PD2
*ZD3.6V
PD3
*ZD3.6V
PR17
*100K/F_6
PC20
.01u/50V_6
+3VPCU
PR28
*100K/F_6
PD1
*SW1010CPT
PR16
0_4
MTEMP [22]
PL9
PCMC063T-6R8MN
0.01_3720
PR71
PR8
2.2/F_6
PC5
2200p/50V_6
PC32
2200p/50V_6
PC63
0.1u/50V_6
PC62
10u/25V_1206
PC61
2200p/50V_6
PC6
10u/25V_1206
PC57
10u/25V_1206
PC60
0.01u/50V_6
CSOP_1
BAT-V
Quanta Computer Inc.
PROJECT : BU3
Size
Document Number
CHARGER (ISL88731)
Rev
D3B
Date: Monday, August 10, 2009
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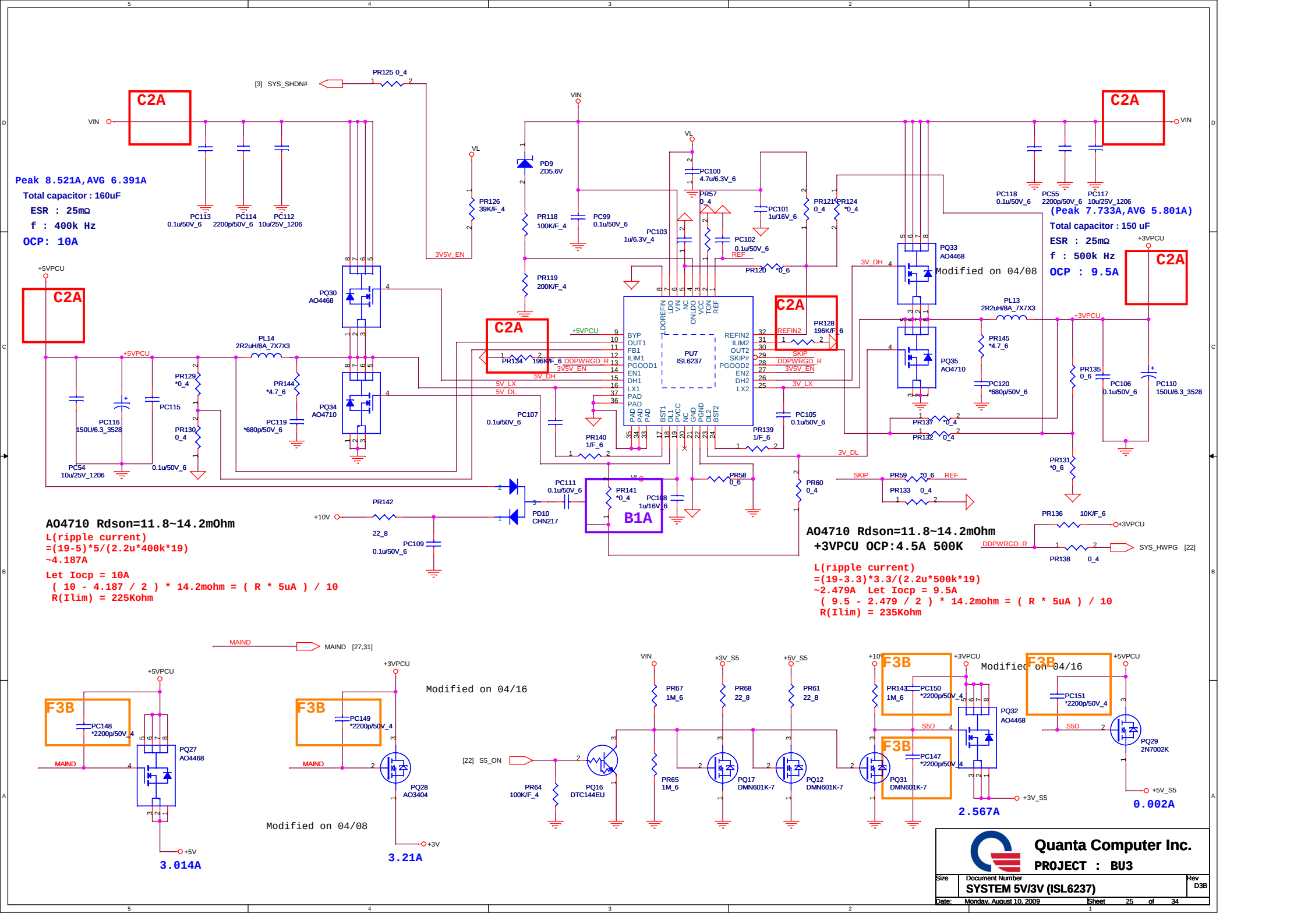
C2A
Peak 8.521A,AVG 6.391A
Total capacitor : 160uF
ESR : 25mΩ
f : 400k Hz
OCP: 10A
VIN
[3] SYS_SHDN#
PR125 0_4
PR126 39K/F_4
3V5V_EN
PD9 ZD5.6V
PR118 100K/F_4
PC99 0.1u/50V_6
PC103 1u/6.3V_4
PR119 200K/F_4
PC100 4.7u/6.3V_6
PR57 0_4
PC101 1u/16V_6
PR121 0_4
PR124 *0_4
PC102 0.1u/50V_6
PR120 *0_6
REF
PC113 0.1u/50V_6
PC114 2200p/50V_6
PC112 10u/25V_1206
+5VPCU
PQ30 AO4468
PL14 2R2uH/8A_7X7X3
PR129 *0_4
PR130 0_4
PC115
PC116 150U/6.3_3528
PC54 10u/25V_1206
0.1u/50V_6
PR144 *4.7_6
PC119 *680p/50V_6
PQ34 AO4710
PR134 196K/F_6
DDPWRGD_R
3V5V_EN
5V_DH
5V_LX
5V_DL
PU7 ISL6237
LDOREFIN LDO VIN NC ONLDO VCC TON REF
BYP OUT1 FB1 ILIM1 PGOOD1 EN1 DH1 LX1 PAD PAD PAD
REFIN2 ILIM2 OUT2 SKIP# PGOOD2 EN2 DH2 LX2
PC107 0.1u/50V_6
PR140 1/F_6
PC105 0.1u/50V_6
PR139 1/F_6
3V_LX
3V_DL
PC111 0.1u/50V_6
PD10 CHN217
PR141 *0_4
PC108 1u/16V_6
B1A
PR58 0_6
PR60 0_4
PR142 22_8
PC109 0.1u/50V_6
+10V
AO4710 Rdson=11.8~14.2mOhm
L(ripple current)
=(19-5)*5/(2.2u*400k*19)
~4.187A
Let Iocp = 10A
(10 - 4.187 / 2) * 14.2mohm = (R * 5uA) / 10
R(Ilim) = 225Kohm
PQ33 AO4468
Modified on 04/08
PC118 0.1u/50V_6
PC55 2200p/50V_6
PC117 10u/25V_1206
(Peak 7.733A,AVG 5.801A)
Total capacitor : 150 uF
ESR : 25mΩ
f : 500k Hz
OCP : 9.5A
+3VPCU
PL13 2R2uH/8A_7X7X3
PR145 *4.7_6
PC120 *680p/50V_6
PQ35 AO4710
PR135 0_6
PC106 0.1u/50V_6
PC110 150U/6.3_3528
PR137 *0_4
PR132 0_4
PR131 *0_6
PR128 196K/F_6
REFIN2
SKIP
PR59 *0_6
PR133 0_4
PR136 10K/F_6
PR138 0_4
SYS_HWPG [22]
AO4710 Rdson=11.8~14.2mOhm
+3VPCU OCP:4.5A 500K
L(ripple current)
=(19-3.3)*3.3/(2.2u*500k*19)
~2.479A Let Iocp = 9.5A
(9.5 - 2.479 / 2) * 14.2mohm = (R * 5uA) / 10
R(Ilim) = 235Kohm
MAIND
MAIND [27,31]
F3B
PC148 *2200p/50V_4
PQ27 AO4468
+5V
3.014A
PC149 *2200p/50V_4
PQ28 AO3404
+3V
3.21A
Modified on 04/16
Modified on 04/08
[22] S5_ON
PR67 1M_6
PR68 22_8
PR61 22_8
PR64 100K/F_4
PQ16 DTC144EU
PR65 1M_6
PQ17 DMN601K-7
PQ12 DMN601K-7
PR143 1M_6
PC150 *2200p/50V_4
PC147 *2200p/50V_4
PQ31 DMN601K-7
PQ32 AO4468
S5D
+3V_S5
2.567A
PC151 *2200p/50V_4
PQ29 2N7002K
+5V_S5
0.002A
Quanta Computer Inc.
PROJECT : BU3
Size
Document Number
SYSTEM 5V/3V (ISL6237)
Rev D3B
Date: Monday, August 10, 2009
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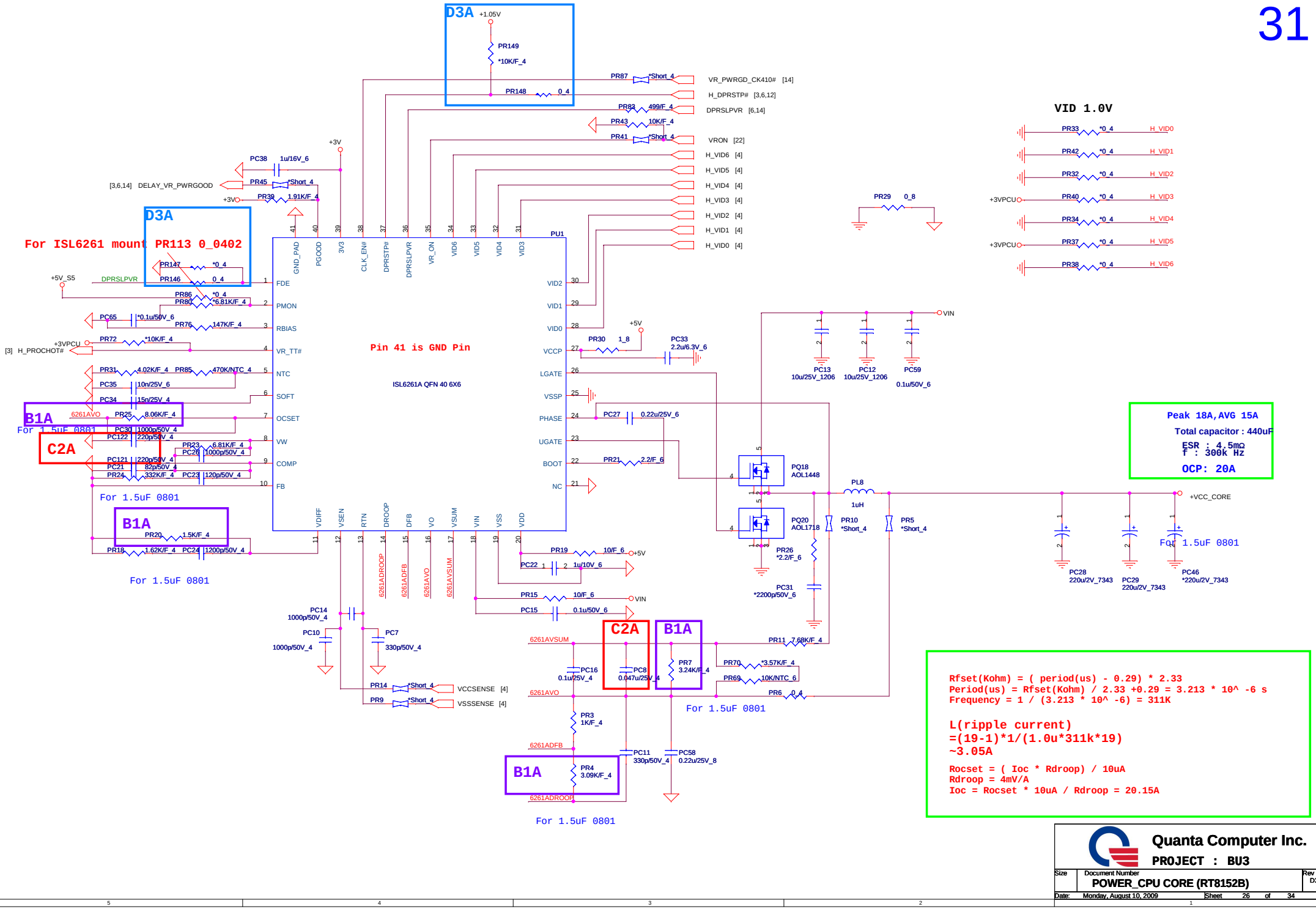
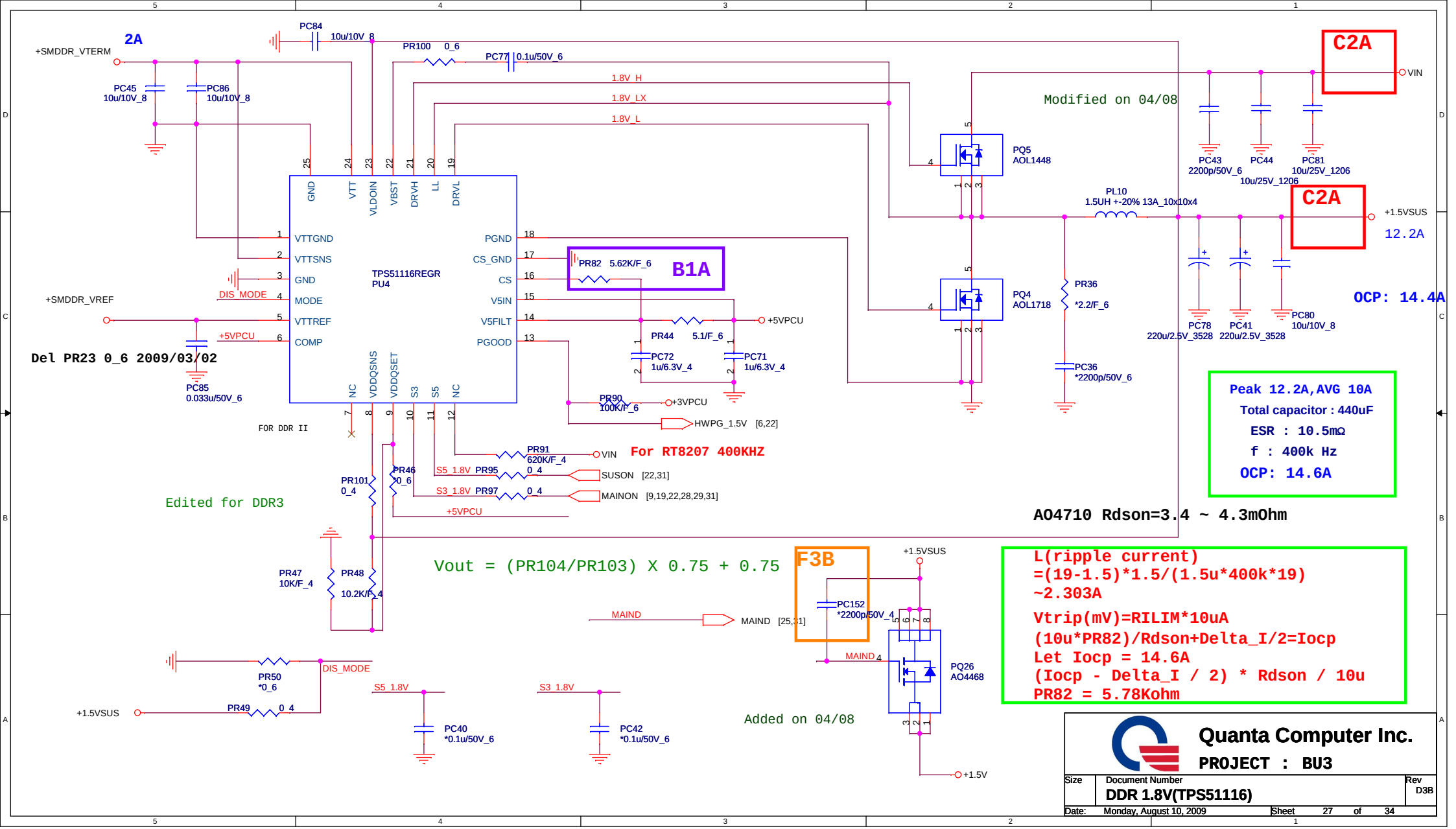
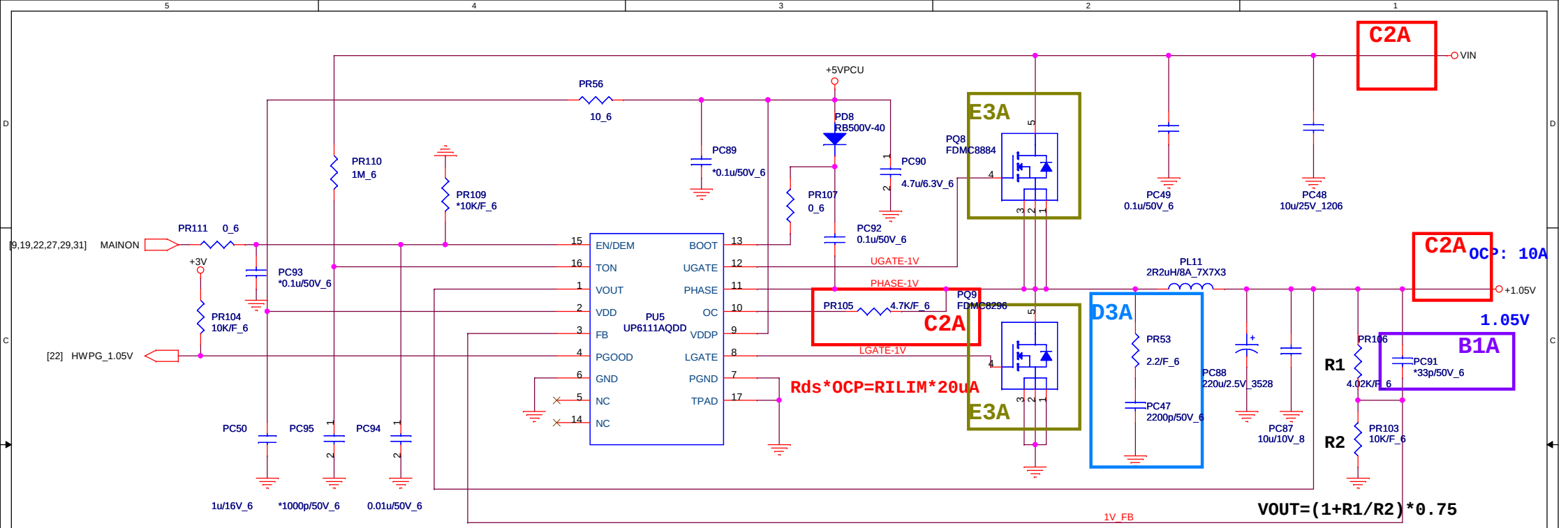


Quanta Computer Inc.		
PROJECT : BU3		
Size	Document Number: POWER_CPU CORE (RT8152B)	Rev: D3B
Date: Monday, August 10, 2009	Sheet 26 of 34	


2A
+SMDDR_VTERM
PC84
10u/10V_8
PR100 0_6
PC77 0.1u/50V_6
1.8V_H
1.8V_LX
1.8V_L
PC45 10u/10V_8
PC86 10u/10V_8
Modified on 04/08
C2A
VIN
PQ5 AOL1448
PC43 2200p/50V_6
PC44 10u/25V_1206
PC81 10u/25V_1206
PL10 1.5UH +-20% 13A_10x10x4
C2A
+1.5VSUS
12.2A
OCP: 14.4A
PQ4 AOL1718
PR36 *2.2/F_6
PC78 220u/2.5V_3528
PC41 220u/2.5V_3528
PC80 10u/10V_8
PC36 *2200p/50V_6
GND
VTT
VLDOIN
VBST
DRVH
LL
DRVL
VTTGND
VTTSNS
GND
MODE
VTTREF
COMP
PGND
CS_GND
CS
V5IN
V5FILT
PGOOD
TPS51116REGR
PU4
PR82 5.62K/F_6
B1A
DIS_MODE
+SMDDR_VREF
+5VPCU
PR44 5.1/F_6
PC72 1u/6.3V_4
PC71 1u/6.3V_4
Del PR23 0_6 2009/03/02
PC85 0.033u/50V_6
PR90 100K/F_6
+3VPCU
HWPG_1.5V [6,22]
NC
VDDQSNS
VDDQSET
S3
S5
NC
FOR DDR II
PR91 620K/F_4
VIN
For RT8207 400KHZ
PR46 0_6
S5_1.8V PR95 0_4
SUSON [22,31]
PR101 0_4
S3_1.8V PR97 0_4
MAINON [9,19,22,28,29,31]
+5VPCU
Edited for DDR3
Peak 12.2A,AVG 10A
Total capacitor : 440uF
ESR : 10.5mΩ
f : 400k Hz
OCP: 14.6A
AO4710 Rdson=3.4 ~ 4.3mOhm
PR47 10K/F_4
PR48 10.2K/F_4
Vout = (PR104/PR103) X 0.75 + 0.75
F3B
+1.5VSUS
PC152 *2200p/50V_4
MAIND
MAIND [25,31]
MAIND
PQ26 AO4468
L(ripple current)
=(19-1.5)*1.5/(1.5u*400k*19)
~2.303A
Vtrip(mV)=RILIM*10uA
(10u*PR82)/Rdson+Delta_I/2=Iocp
Let Iocp = 14.6A
(Iocp - Delta_I / 2) * Rdson / 10u
PR82 = 5.78Kohm
PR50 *0_6
DIS_MODE
+1.5VSUS
PR49 0_4
S5_1.8V
S3_1.8V
PC40 *0.1u/50V_6
PC42 *0.1u/50V_6
Added on 04/08
+1.5V
Quanta Computer Inc.
PROJECT : BU3
Size
Document Number
DDR 1.8V(TPS51116)
Rev D3B
Date: Monday, August 10, 2009
Sheet 27 of 34



TON=3.85p*RTON*Vout/(Vin-0.5)
TOFF = (Vin / Vout -1)* Ton
TON = 2.185* 10^ -7
TOFF = 3.736 * 10 ^ -6
Frequency = 1 / (Ton + Toff) ~ 253K

FDMC8296 Rdson= 8 mOhm

L(ripple current)
=(19-1.05)*1.05/(2.2u*253k*19)
~1.78A

Let Iocp = 10A
Iocp - Iripple / 2 = RILIM * 20u /Rdson
10 - 1.78 / 2 = RILIM * 20u / 8mohm
RILIM = 3.644Kohm

(Peak 21.199A,AVG 8A)
Total capacitor : 230 uF
ESR : 21mΩ
f : 253k Hz
OCP :10A

Quanta Computer Inc.
PROJECT : BU3

Size	Document Number	Rev
	VCCP 1.05V(UP6111AQDD)	D3B
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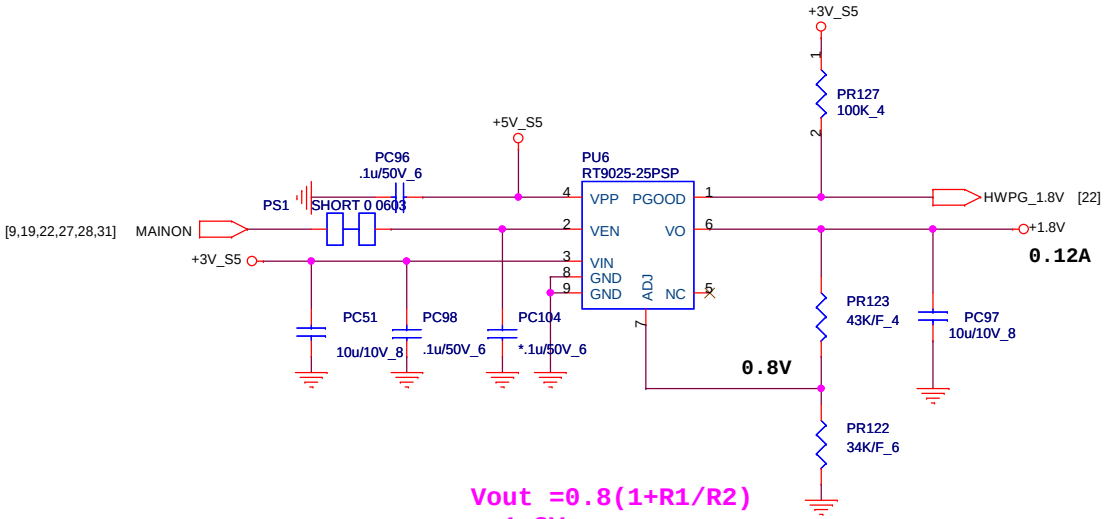
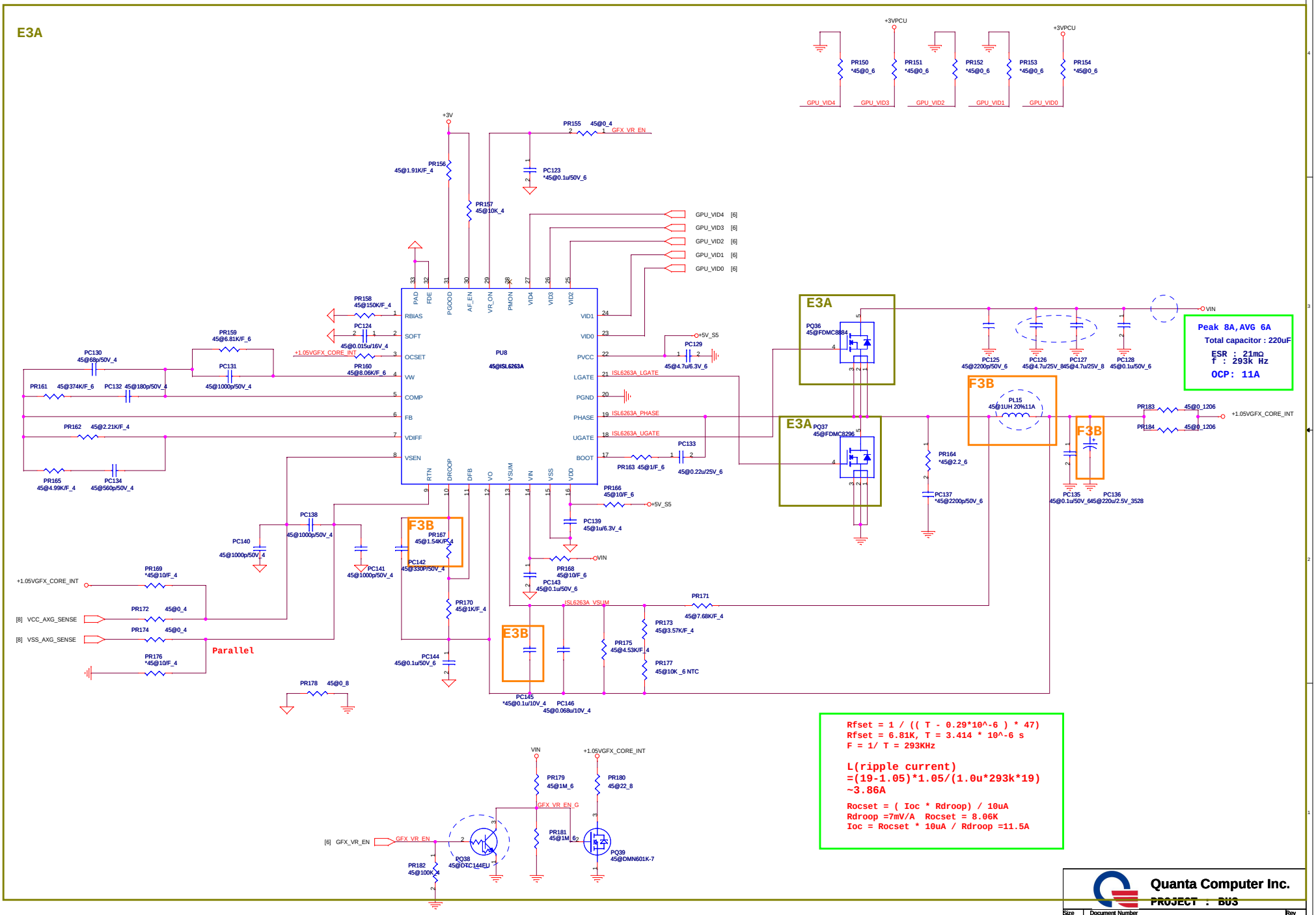
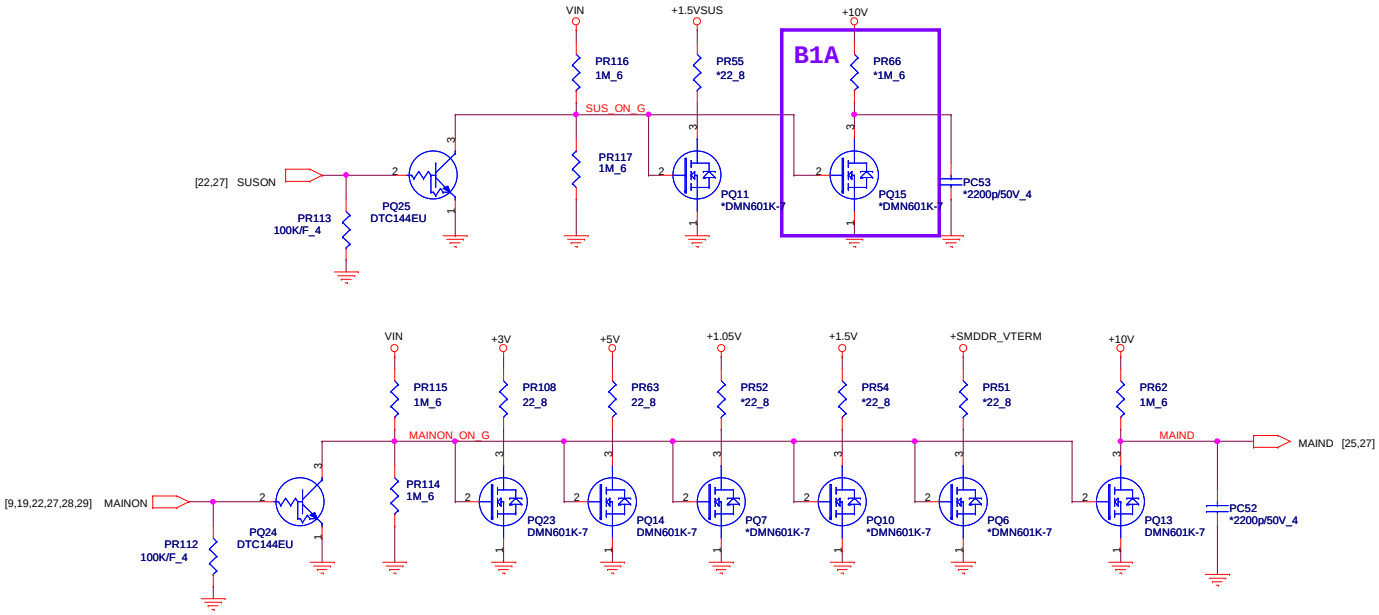


Quanta Computer Inc.		
PROJECT : BU3		
Size	Document Number: VCCP 1.05V(UP6111AQDD)	Rev: D3B
Date: Monday, August 10, 2009	Sheet 29 of 34	


E3A
+3VPCU
PR150 *45@0_6
PR151 *45@0_6
PR152 *45@0_6
PR153 *45@0_6
PR154 *45@0_6
GPU_VID4
GPU_VID3
GPU_VID2
GPU_VID1
GPU_VID0
+3V
PR155 45@0_4
GFX_VR_EN
PR156 45@1.91K/F_4
PC123 *45@0.1u/50V_6
PR157 45@10K_4
GPU_VID4 [6]
GPU_VID3 [6]
GPU_VID2 [6]
GPU_VID1 [6]
GPU_VID0 [6]
PU8
45@ISL6263A
PAD
FDE
PGOOD
AF_EN
VR_ON
PMON
VID4
VID3
VID2
VID1
VID0
PVCC
LGATE
PGND
PHASE
UGATE
BOOT
RBIAS
SOFT
OCSET
VW
COMP
FB
VDIFF
VSEN
RTN
DROOP
DFB
VO
VSUM
VIN
VSS
VDD
PR158 45@150K/F_4
PC124 45@0.015u/16V_4
+1.05VGFX_CORE_INT
PR159 45@6.81K/F_6
PC130 45@68p/50V_4
PC131 45@1000p/50V_4
PR160 45@8.06K/F_6
PR161 45@374K/F_6
PC132 45@180p/50V_4
PR162 45@2.21K/F_4
PR165 45@4.99K/F_4
PC134 45@560p/50V_4
+5V_S5
PC129 45@4.7u/6.3V_6
ISL6263A_LGATE
ISL6263A_PHASE
ISL6263A_UGATE
PC133 45@0.22u/25V_6
PR163 45@1/F_6
PR166 45@10/F_6
PC139 45@1u/6.3V_4
PC138 45@1000p/50V_4
PC140 45@1000p/50V_4
PC141 45@1000p/50V_4
F3B
PR167 45@1.54K/F_4
PC142 45@330P/50V_4
PR170 45@1K/F_4
PC144 45@0.1u/50V_6
VIN
PR168 45@10/F_6
PC143 45@0.1u/50V_6
ISL6263A_VSUM
PR171 45@7.68K/F_4
PR173 45@3.57K/F_4
PR175 45@4.53K/F_4
PR177 45@10K_6 NTC
E3B
PC145 *45@0.1u/10V_4
PC146 45@0.068u/10V_4
PR178 45@0_8
+1.05VGFX_CORE_INT
PR169 *45@10/F_4
[8] VCC_AXG_SENSE
PR172 45@0_4
[8] VSS_AXG_SENSE
PR174 45@0_4
PR176 *45@10/F_4
Parallel
E3A
PQ36 45@FDMC8884
PC125 45@2200p/50V_6
PC126 45@4.7u/25V_8
PC127 45@4.7u/25V_8
PC128 45@0.1u/50V_6
VIN
Peak 8A, AVG 6A
Total capacitor : 220uF
ESR : 21mΩ
f : 293k Hz
OCP: 11A
F3B
PL15 45@1UH 20%11A
E3A
PQ37 45@FDMC8296
PR164 *45@2.2_6
PC137 *45@2200p/50V_6
F3B
PC135 45@0.1u/50V_6
PC136 45@220u/2.5V_3528
PR183 45@0_1206
PR184 45@0_1206
+1.05VGFX_CORE_INT
Rfset = 1 / ((T - 0.29*10^-6) * 47)
Rfset = 6.81K, T = 3.414 * 10^-6 s
F = 1/ T = 293KHz
L(ripple current)
=(19-1.05)*1.05/(1.0u*293k*19)
~3.86A
Rocset = (Ioc * Rdroop) / 10uA
Rdroop =7mV/A Rocset = 8.06K
Ioc = Rocset * 10uA / Rdroop =11.5A
VIN
+1.05VGFX_CORE_INT
PR179 45@1M_6
PR180 45@22_8
GFX_VR_EN_G
[6] GFX_VR_EN
GFX_VR_EN
PR181 45@1M_6
PR182 45@100K
PQ38 45@DTC144EU
PQ39 45@DMN601K-7
Quanta Computer Inc.
PROJECT : B03
Size
Document Number
1.05V_GFX (ISL6263A)
Rev D3B
Date: Monday, August 10, 2009
Sheet 30 of 34



Quanta Computer Inc.

PROJECT : BU3

Size	Document Number	Rev
	Discharge/1.5/2.5V	D3B
Date: Monday, August 10, 2009	Sheet 31 of 34	

Model	REV	CHANGE LIST
BU3 MB	B1B	PAGE 2: add RP21 value 3G@0X2 ,add net name CLK_PCIE_3G to 3G Card pin13 & CLK_PCIE_3G# to 3G Card pin11
		PAGE 13: Add net name PCIE_RXN3,PCIE_RXP3,PCIE_TXN3,PCIE_TXP3 to 3G connector
		PAGE 13: Add C386,C382 both value 3G@0.1u/10V_4
		PAGE 13: del USB5-,USB5+ net
		PAGE 13: add USB7-,USB7+ net to sim connector
		PAGE 18: del HDMI function U17,R298,R299,R303,R305,R307,R309,R320,R323,R308,R306,R304,R310,R319,R317,R302,R297,R296,R312,R157
		PAGE 18: del HDMI function C365,C369,C356,C354,Q28,RN,4,RN5,RNN6,RN3,L20.L21.L22.L23,Q28
		PAGE 20: change Q20 PIN 2 net neme +3V_S5 to WIMAX_P
		PAGE 20: change Q22,Q27 PIN 1 net neme +3V_S5 to +3VPCU
		PAGE 20: Add R380 value 0_8 between net +1.5V and net +1.5V_3G.
		PAGE 20: Add C383 value 0.01V/25_4,C384 value 0.1/10V_4,C385 value 10u/3.6V_8 between net +1.5V_3G and GND
		PAGE 20: change R253,R250 power source +3V_S5 to +3VPCU
		PAGE 20: Connect CN21 PIN 48,PIN 28,PIN 6 to +1.5V_3G
		PAGE 20: Add CN23 value 3G@88266-10001-06 for co-lay SIM card
		PAGE 20: CN21 Connect PIN 33 to PCIE_TXP3,Connect PIN 31 to PCIE_TXN3,Connect PIN 25 to RCIE_RXP3,Connect PIN 23 to PCIE_RXN3
		PAGE 20: Add Q31 value 3G@ME2N7002E,R296 value 3G@10K_4 for PCIE_WAKE to CN21 PIN 1
		PAGE 18: Change CN11 pin define to PORT-B_HPD#
		PAGE 21: Change CN6 footprint and pin define
		PAGE 2: Change CLOCK GEN SRC6 net CLK_PCIE_3G and CLK_PCIE_3G# for 3G card
		PAGE 2: Change CLOCK GEN SRC4 net CLK_PCIE_MINI1 and CLK_PCIE_MINI1# for mini card 1
		PAGE 20: Change D15 to R297 value 0805 ohm
		PAGE 21: Remove CN13
		PAGE 7: Change R116 value to 12.1K ohm, Add U17 for DDR3_POWER_OK
		PAGE 25: Change PR134 value to 169K ohm, change PR128 value to 174K phm . NC PR141
		PAGE 26: Change PR25 value to 8.06k ohm ,change PR20 value to 1.5K ohm ,change PR4 value to 3.09K ohm ,change PR7 value to 3.24k ohm.
		PAGE 27: Change PR82 value to 5.9k ohm
		PAGE 27: Change PR105 value 9.31K ohm , NC PC91
		PAGE 27: NC PR66,PQ15
		PAGE 20: Change CN22 footprint to minipci-80019-1021-52p-ruv-v ,chabge CN23 footprint to minipci-80052-1021-52p-ldv-v
		PAGE 21: Change HOLE 4 module
		PAGE 6: Change R116 value 12.1K/F_4 , add R378 & U22 for DDR3_POWER_OK
		PAGE 6: Change CN6 pin define.
		PAGE 27: Change PR82 value to 5.62K ohm
		PAGE 2: Swap vertical RP11,RP21
		PAGE 15 : Change R227 value to 100/F_6
		PAGE 19 : Change U6 value to GS@R5F211B4D31SP#W4(0217H)
		PAGE 14 : Add R382 to +3V_S5 for ICHP SCI#
		PAGE 17 : Change T79,T80,T82,T84,T83,T86, footprint to TP3050
		PAGE 20 : Add D19,D20 for 3G_LED# & WiMAX_LED# between CN6 PIN 8 3G_WIMAX_LED#
		PAGE 21 : Change CN9 PIN 33 DEFINE for MMC_LED#,change CN6 footprint 18pin
		PAGE 22 : Add R135 for battery state issue.
	C2A	PAGE 23 : Add Q33 Q32 C388 R383 R384 for LAN_P soft start, change CN4 pin define.
		PAGE 20 : change CN21 CN22 footprint
		PAGE 20 : remove CN13 and change CN8 connector module
		PAGE 14 : R191 always pull high for HDMI & USB BOI-FUNCTION
		PAGE 18 : Change CN11 PIN11 net to BOARD_ID4
		PAGE 28 : remove PL5 ,remove JP3, short by trace.
		PAGE 27 : remove PL4 ,remove JP2&JP1 , short by trace.
		PAGE 25 : remove PL12 &PL15,remove JP5 & JP4, short by trace.
		PAGE 24 : remove PL3 ,short by trace.
		PAGE 26 : PC8 change to CH3474K1B04 CAP CHIP 0.047U 25V(+-10% X7R 0402)
		PAGE 21 : Change CN9 PIN 24 net to 1.5V
		PAGE 22 : Add R135 for battery leakage current
		PAGE 26 : Add PU1 PIN8 & PIN9 PC121,PC122 CAP CHIP 220P 50V(+-10%,X7R,0402) to GND SINGAL
		PAGE 9 : Add C389 value 10u/6.3V_8, and change C187 value to 22u/6.3V_8 for CRT power noise issue,(reserve U23)
		PAGE 24 : Change PU3 Part number to AL088731001
		PAGE 22 : Change C255 and C257 value to 15p/50V_4
		PAGE 14 : Change R156 Part Number to CS23243F930
		PAGE 12 : Add R385 ,R386 for USB-ODD CO-LAY.(reserve)
	D3A	PAGE 24 : Change PD4 Footprint to d-5_375-3_975 for OPEN issue
		PAGE 21 : Change CN2 PIN1 NET from +5VPCU to +3VPCU
		PAGE 20 : Change R379 value to 100K_4 for WIFI INTEL module issue
		PAGE 13 : Add R388,R389 for reserve gemalto 3G sim card
		PAGE 18 : Reserve D21 and R387 to keep voltage 0.4 V

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PAGE	FROM	To
1	1A	1B
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7	1A	1B
8	1A	1B
9	1A	1B
10	1A	1B
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25	1A	1B
26	1A	1B
27	1A	1B
28	1A	1B
29	1A	1B
30	1A	1B

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PART NUMBER:	31BU3MB0000	DRAWING BY:	Mosy Li	REVISON:	1B

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CHANGE LIST

Model	REV	
BU3 MB	D3A	PAGE 26: Add PR146,PR147,PR148 value 0_4 ,PR149 value 10K/F_4 for power suggest
		PAGE 22: Add D22 for ESD/EOS suggestion - Power pin EOS
		PAGE 22: C386,C382,RP21不上件
		PAGE 02: change C373,C374 value to 33p/50V_4 for XTAL report
		PAGE 20: reserve Q31,R381,R380,C383,C384,C385
	E3A	PAGE 17: reserve CRT FILTER R390,R393,R394,C398,C399,C400,C401,C402,C403 for EMI requirement.
		PAGE 21: add C390,C391,C392,C393,C394,C395,C396,C397 for EMI requirement .
		PAGE 30: add 1.05v_GFX SCHEMATIC for reader stand by function (GS45 only)
		PAGE 28: change PQ8 and PQ9 value and footprint .
		PAGE 17: Add R3,R2 BOI-OPTION for GS40.
		PAGE 17: Add R392 ,R391 for Board ID3
		PAGE 21: Add HOLE 9,HOLE 11, HOLE 10.
	F3A	PAGE (12) :Change R244 to bead 120ohm, C324 to 22PF for EMI requirement.
		PAGE (24) : Add PR88, PR35 for Adapter Voltage monitor
		PAGE (17) : Reserve U25 for LVDS_VADJ option (support XP function key).
		PAGE (25) : Reserve PC147,PC148,PC149,PC150,PC151,PC152 for power soft start
		PAGE (21) : Change CN9 connector pin define to 40 pin
		PAGE (17) : Change D1 footprint
		PAGE (18) : Change HDMI CN11 connector PIN DEFINE
		PAGE (22) : R176,RP7,RP8,L2,R138,R161,R377,R199,R251,R351,R213,R225,R211,R373,R357,R240,R212,R217,R175,R342,R155,R48,R59,R112,R111,R130,R131,R288,R284,R62,R91,R41,R134 replace by short pad
		PAGE (22) : R378,R68,R279,R12,RP17,RP15,RP16,RP14,RP13,RP12,RP11,RP10,RP9,R293,R8 replace by short pad
		PAGE (22) : Change CN9 pin define. 40PINS
		PAGE (30) : Change PL15 from 2.2uH to 1uH , PC145 change to unmounted , PR167 change to 1.54K , PC136 should be mounted for 3D hang up issue.
		PAGE (09) : reserve C186,C149,C269,C247,C113,C342,C154,C135 for cost down

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PAGE	FROM	To
1	1A	1B
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8	1A	1B
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29	1A	1B
30	1A	1B

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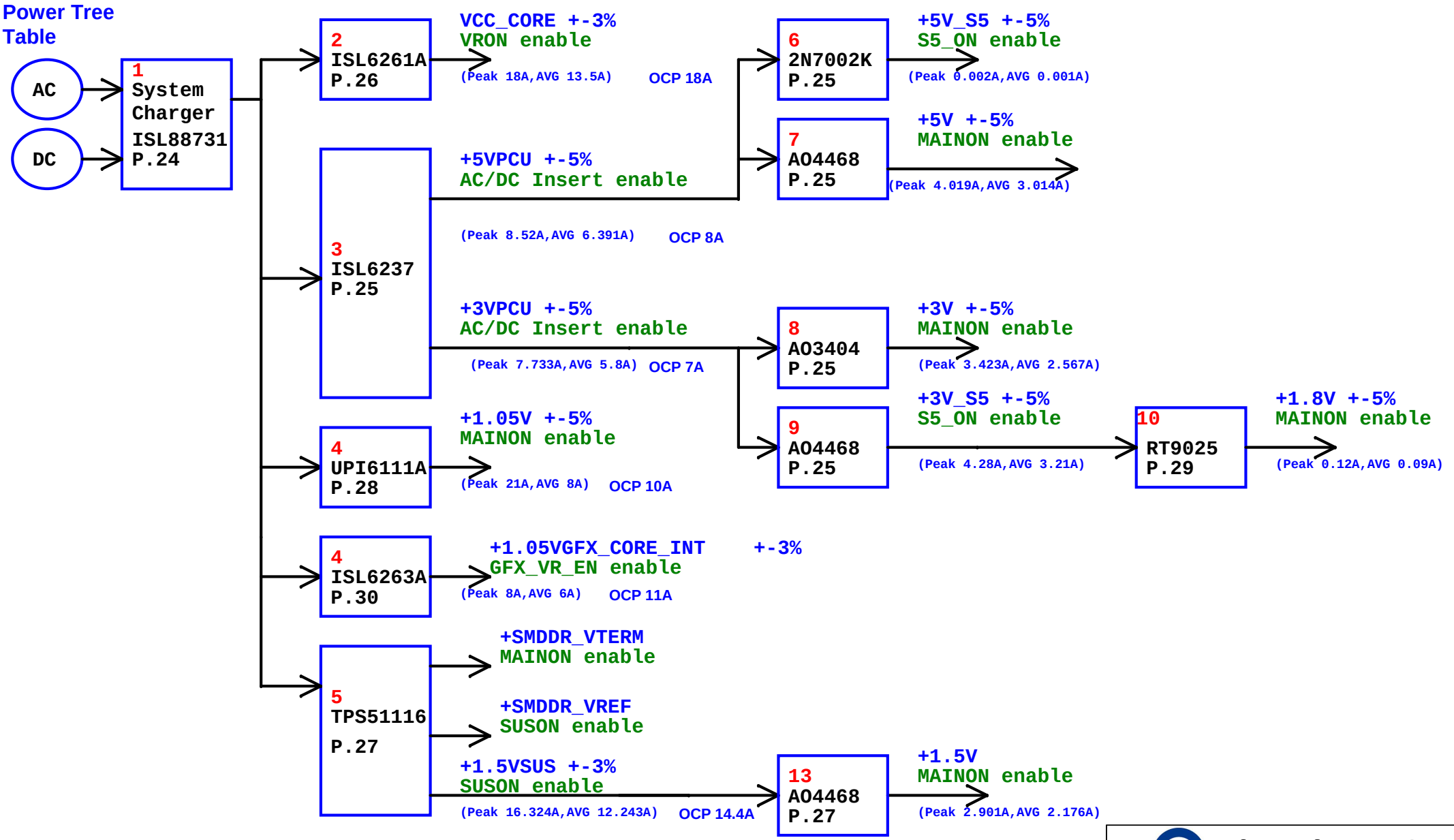
Power Tree Table



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