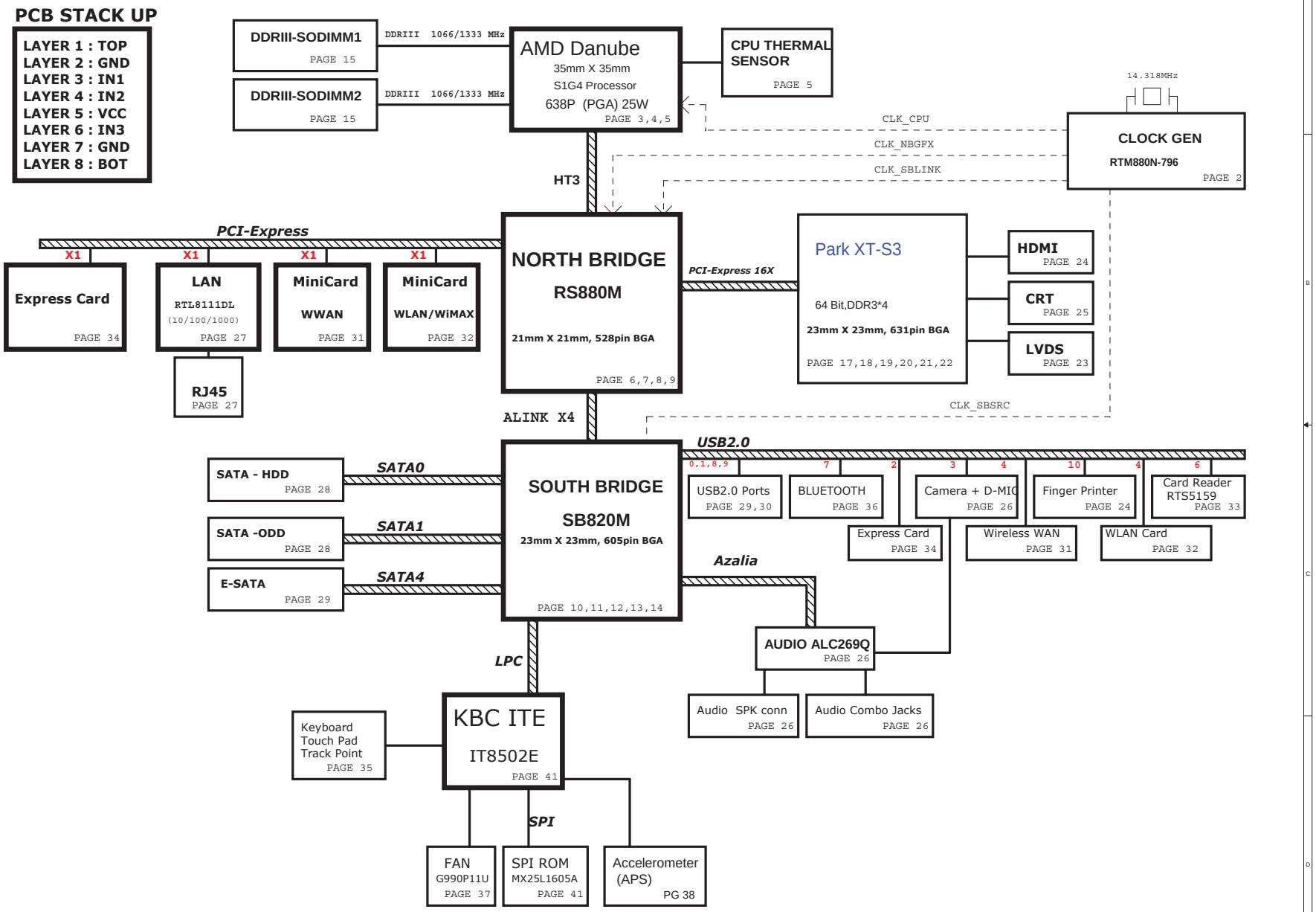
LD-Note Block Diagram -- AMD Danube



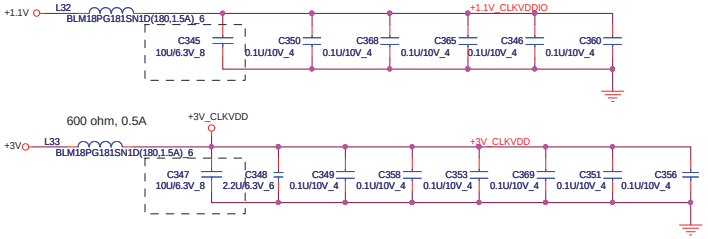
Quanta Computer Inc.

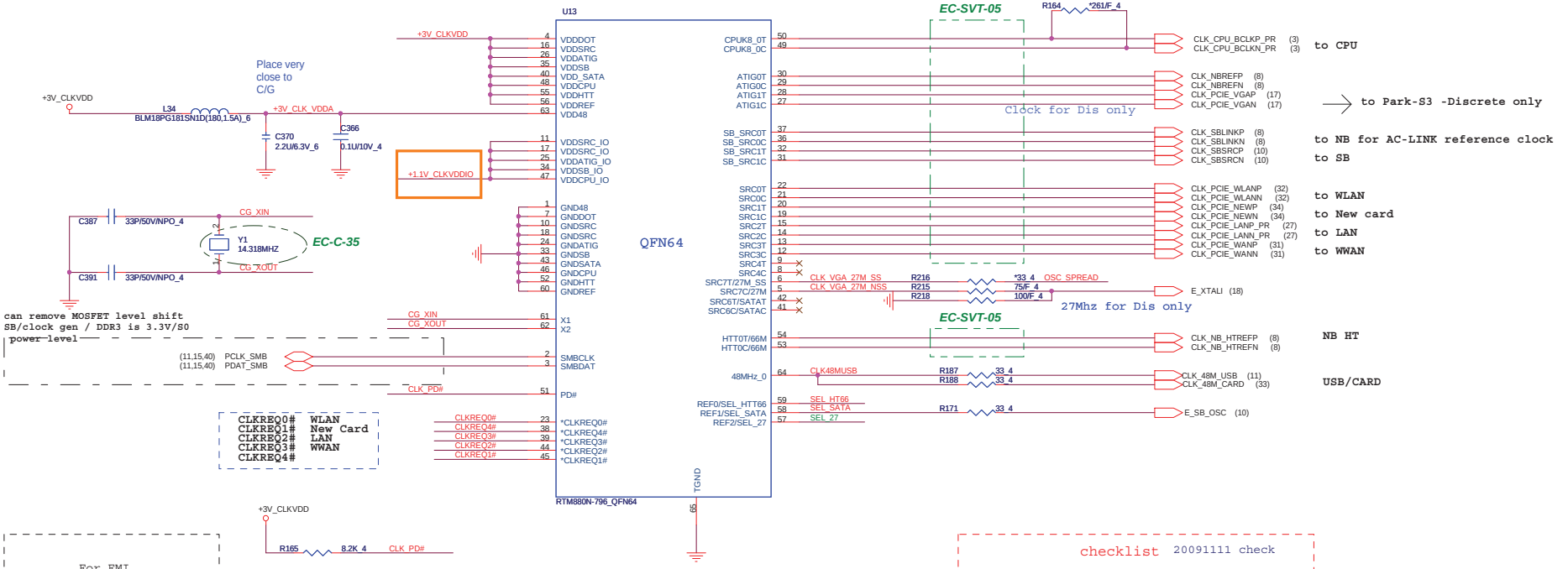
PROJECT : LD-Note AMD DIS

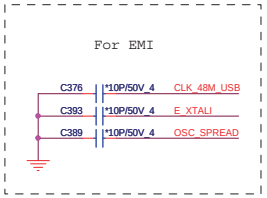
Size	Document Number	Rev
	Block Diagram	1A

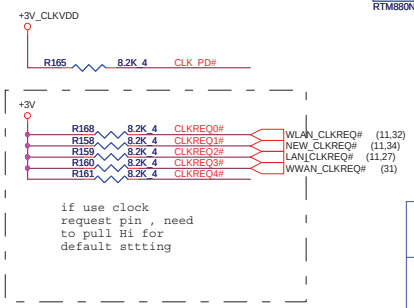
Date: Wednesday, June 09, 2010 Sheet 1 of 55

CLOCKS name	Discrete	Clock description
EXT_GFX_CLKP EXT_GFX_CLKN	RP47 STUFF	to Park-S3 external reference clock -Discrete only
SBLINK_CLKP SBLINK_CLKN	RP43 STUFF	to NB for AC-LINK reference clock
CLK_VGA_27M_NSS CLK_VGA_27M_SS	R213,R215 STUFF	To Park-S3 27Mhz - Discrete only





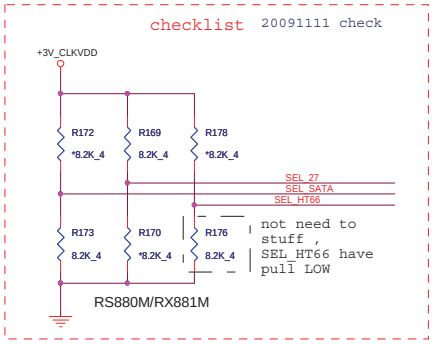




IDT ICS9LPRS476AKLFT
SLG SLG8SP628VTR--AL8SP628000
RTL RTM880N-796-- AL000880001

* default

SEL_HTT66	1	66 MHz 3.3V single ended HTT clock
	0*	100 MHz differential HTT clock
SEL_SATA	1	100 MHz non-spreading differential SRC clock
	0*	100 MHz spreading differential SRC clock
SEL_27	1*	27MHz non-spreading singled clock
	0	100 MHz spreading differential SRC clock



Clock chip has internal serial terminations for differential pairs, external resistors are reserved for debug purpose.

Quanta Computer Inc.
PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	Clock Generator	1A
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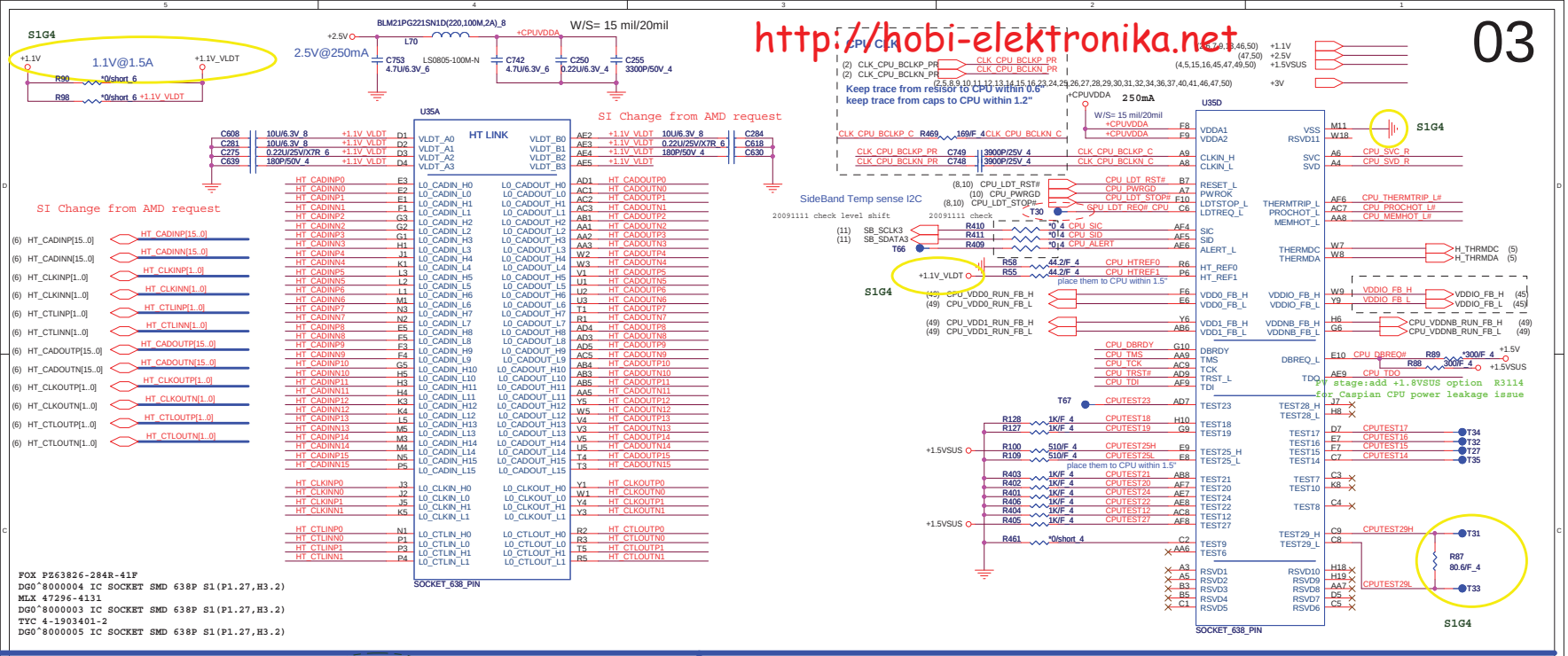
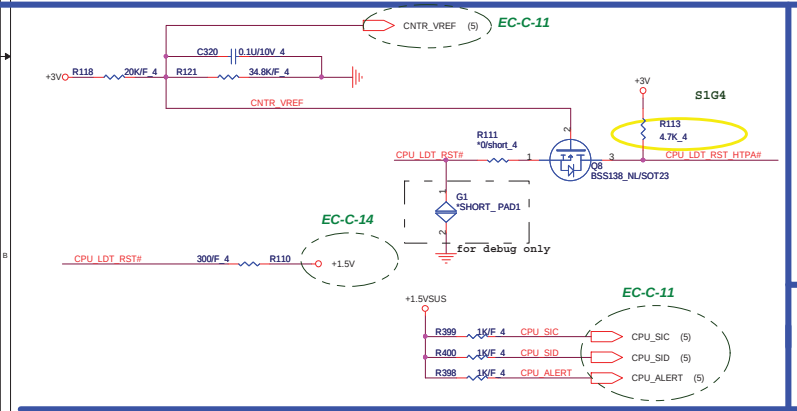
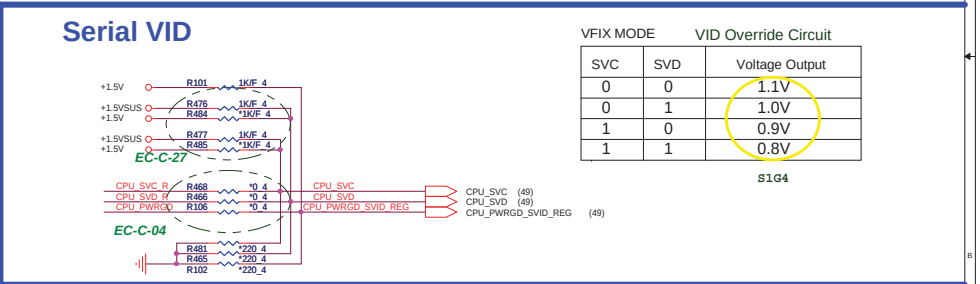
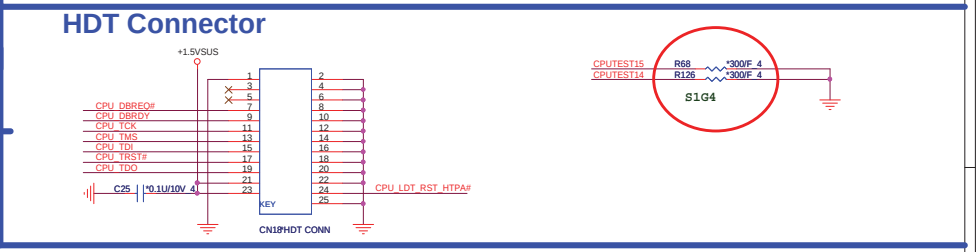
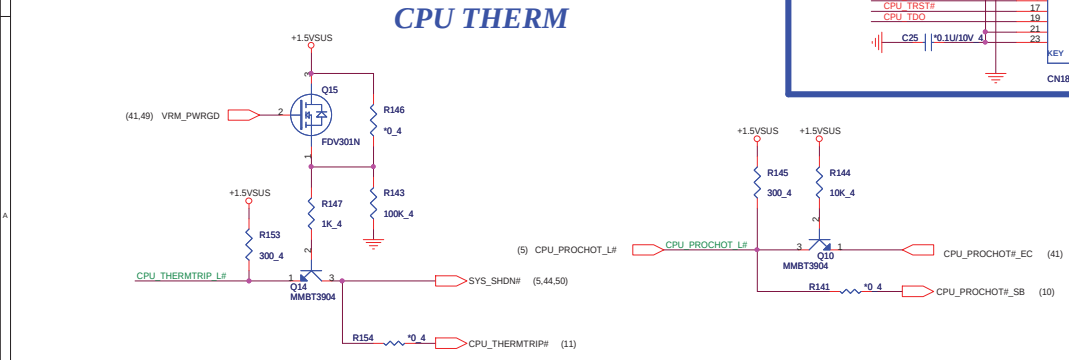
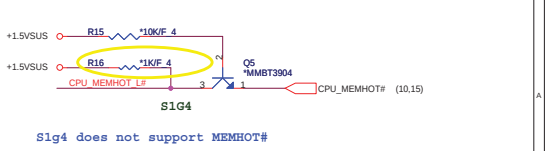




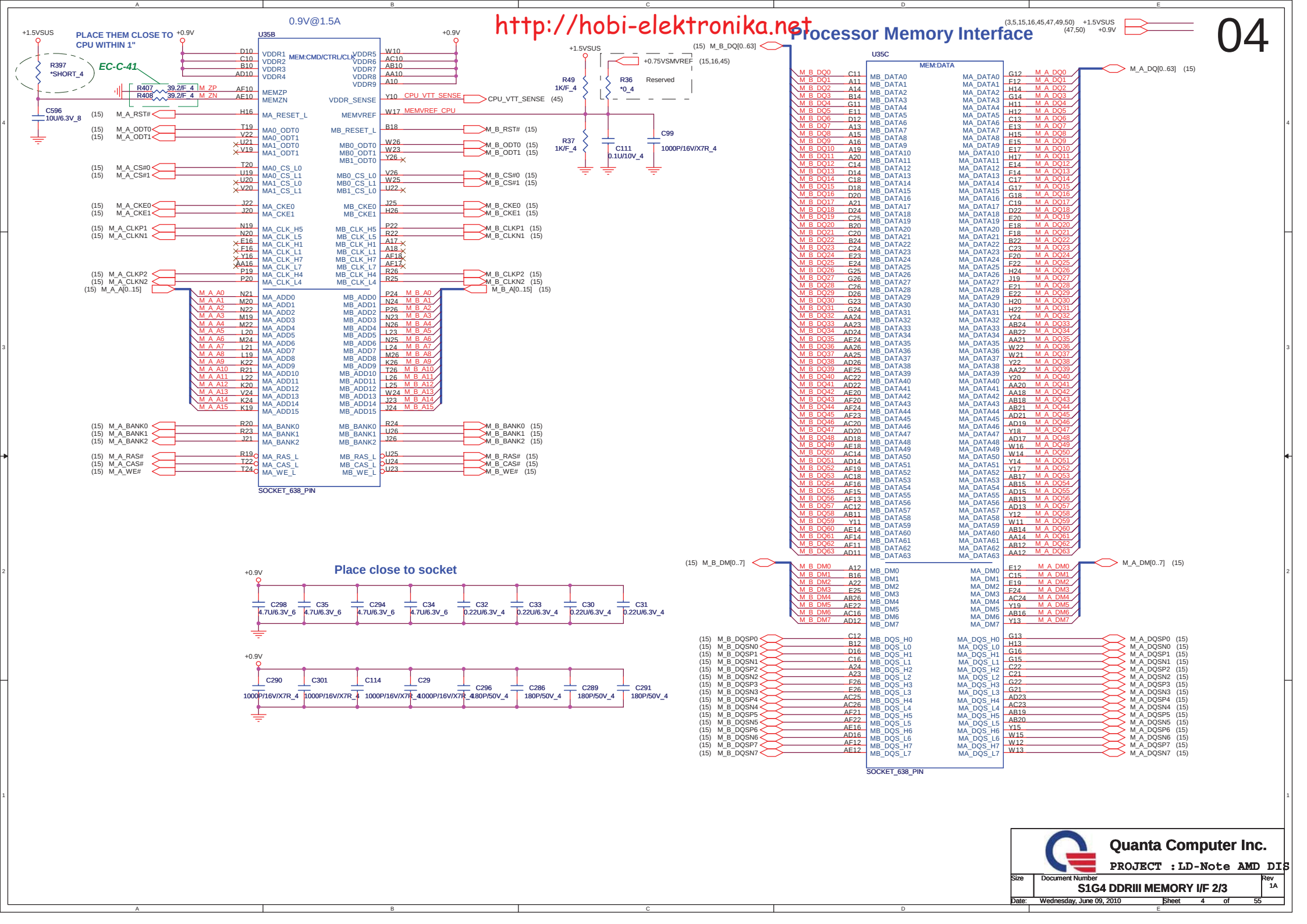








Quanta Computer Inc.	PROJECT : LD-Note AMD DIS
Size	Document Number: S1G4 HT,CTL I/F 1/3
Rev	1A
Date: Wednesday, June 09, 2010	Sheet 3 of 55


0.9V@1.5A
http://hobi-elektronika.net
Processor Memory Interface
04
PLACE THEM CLOSE TO CPU WITHIN 1"
EC-C-41
U35B
MEM:CMD/CTRL/CLK
SOCKET_638_PIN
U35C
MEM:DATA
SOCKET_638_PIN
Place close to socket
Quanta Computer Inc.
PROJECT : LD-Note AMD DIS
S1G4 DDRIII MEMORY I/F 2/3
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Rev
1A
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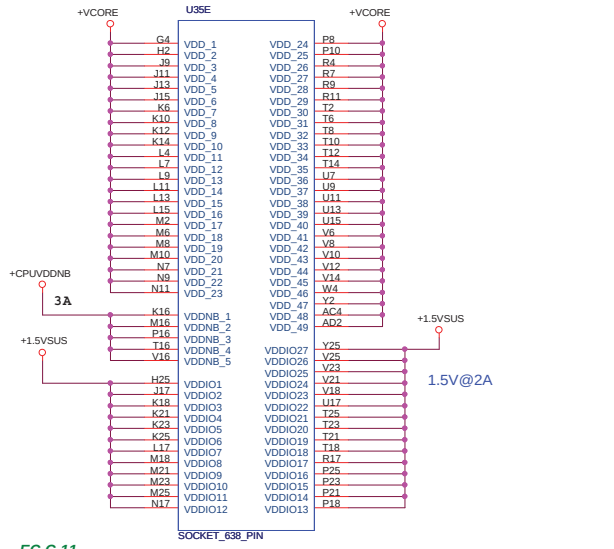
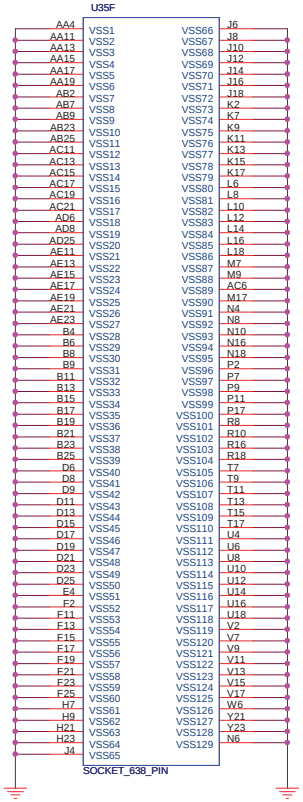
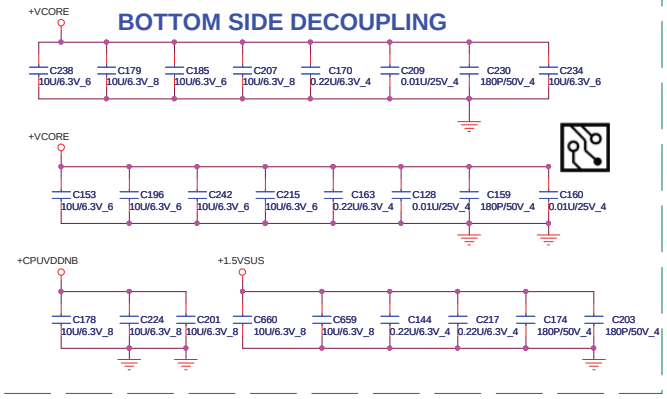
PROCESSOR POWER AND GROUND

(49,50) +VCORE
(49,50) +CPUVDDNB
(3,4,15,16,45,47,49,50) +1.5VSUS
(2,3,8,9,10,11,12,13,14,15,16,23,24,25,26,27,28,29,30,31,32,34,36,37,40,41,46,47,50) +3V

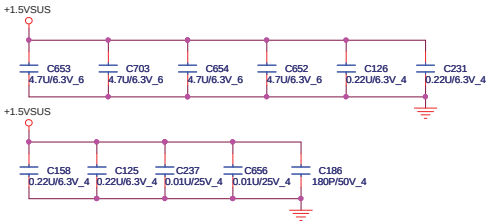




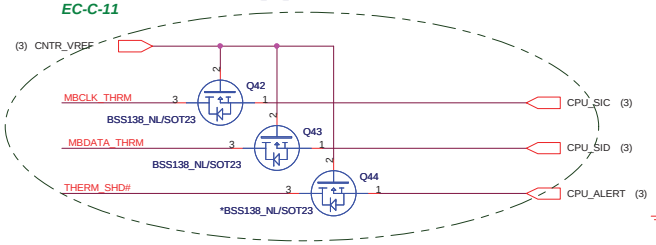
BOTTOM SIDE DECOUPLING



DECOUPLING BETWEEN PROCESSOR AND DIMMs
PLACE CLOSE TO PROCESSOR AS POSSIBLE



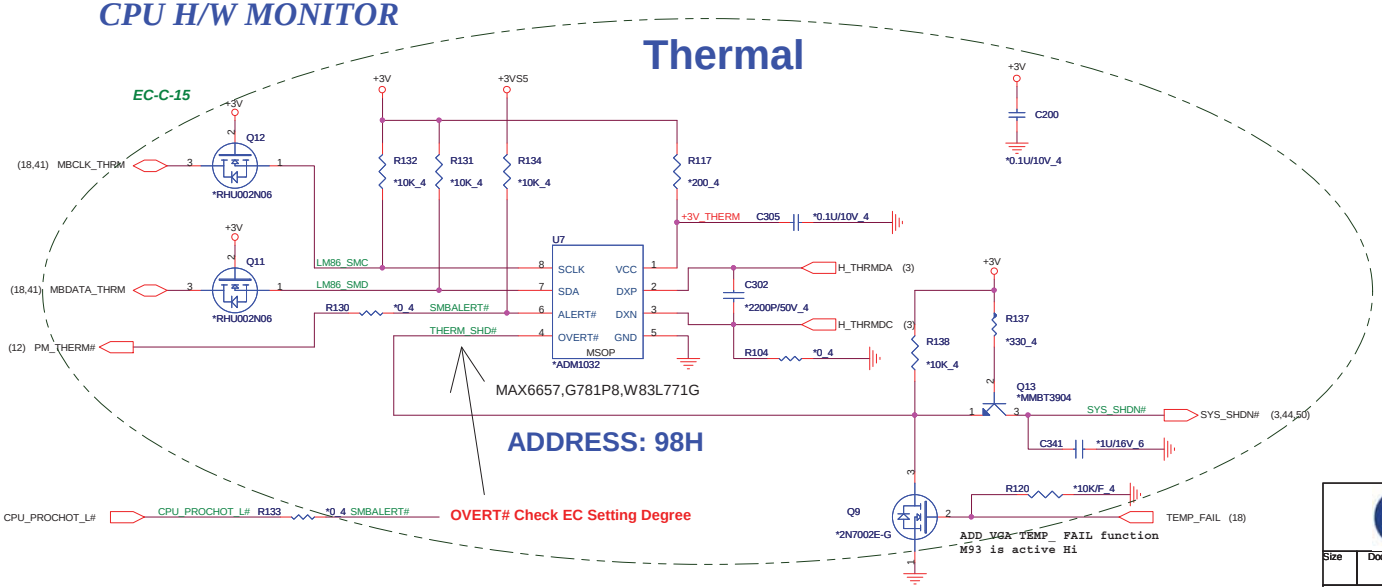
EC-C-11



CPU H/W MONITOR

Thermal

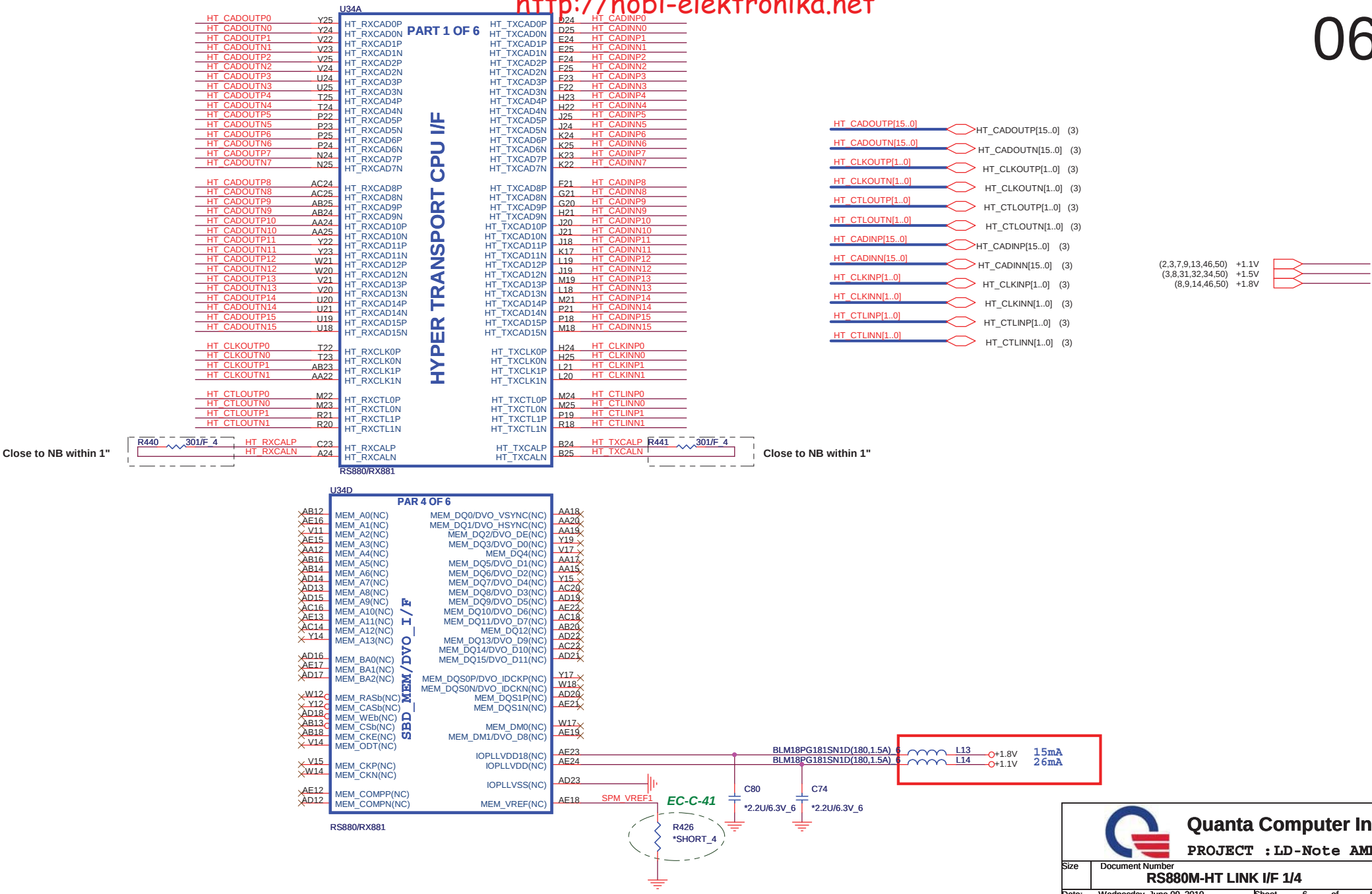
EC-C-15



Quanta Computer Inc.

PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	S1G4 PWR & GND & THERMAL 3/3	1A
Date: Wednesday, June 09, 2010	Sheet 5 of 55	



Quanta Computer Inc.			
PROJECT : LD-Note AMD DIS			
Size	Document Number		Rev
	RS880M-HT LINK I/F 1/4		1A
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(2,3,6,9,13,46,50) +1.1V

(17) PEG_RXN[0..15]

PEG_RXN0 PEG_RXN1 PEG_RXN2 PEG_RXN3 PEG_RXN4 PEG_RXN5 PEG_RXN6 PEG_RXN7 PEG_RXN8 PEG_RXN9 PEG_RXN10 PEG_RXN11 PEG_RXN12 PEG_RXN13 PEG_RXN14 PEG_RXN15

(17) PEG_RXP[15..0]

PEG_RXP15 PEG_RXP14 PEG_RXP13 PEG_RXP12 PEG_RXP11 PEG_RXP10 PEG_RXP9 PEG_RXP8 PEG_RXP7 PEG_RXP6 PEG_RXP5 PEG_RXP4 PEG_RXP3 PEG_RXP2 PEG_RXP1 PEG_RXP0

U34B

PART 2 OF 6

PCIE I/F GFX

PEG_RXP15	D4	GFX_RX0P	GFX_TX0P	A5	PEG_C_TXP15
PEG_RXN15	C4	GFX_RX0N	GFX_TX0N	B5	PEG_C_TXN15
PEG_RXN14	A3	GFX_RX1P	GFX_TX1P	A4	PEG_C_TXP14
PEG_RXP14	B3	GFX_RX1N	GFX_TX1N	B4	PEG_C_TXN14
PEG_RXP13	C2	GFX_RX2P	GFX_TX2P	C3	PEG_C_TXP13
PEG_RXN13	C1	GFX_RX2N	GFX_TX2N	B2	PEG_C_TXN13
PEG_RXP12	E5	GFX_RX3P	GFX_TX3P	D1	PEG_C_TXP12
PEG_RXN12	E5	GFX_RX3N	GFX_TX3N	D2	PEG_C_TXN12
PEG_RXP11	G5	GFX_RX4P	GFX_TX4P	F2	PEG_C_TXP11
PEG_RXN11	G6	GFX_RX4N	GFX_TX4N	E1	PEG_C_TXN11
PEG_RXP10	H5	GFX_RX5P	GFX_TX5P	F4	PEG_C_TXP10
PEG_RXN10	H6	GFX_RX5N	GFX_TX5N	F3	PEG_C_TXN10
PEG_RXP9	J6	GFX_RX6P	GFX_TX6P	F1	PEG_C_TXP9
PEG_RXN9	J5	GFX_RX6N	GFX_TX6N	F2	PEG_C_TXN9
PEG_RXP8	J7	GFX_RX7P	GFX_TX7P	H4	PEG_C_TXP8
PEG_RXN8	J8	GFX_RX7N	GFX_TX7N	H3	PEG_C_TXN8
PEG_RXP7	L5	GFX_RX8P	GFX_TX8P	H1	PEG_C_TXP7
PEG_RXN7	L6	GFX_RX8N	GFX_TX8N	H2	PEG_C_TXN7
PEG_RXP6	M8	GFX_RX9P	GFX_TX9P	J2	PEG_C_TXP6
PEG_RXN6	L8	GFX_RX9N	GFX_TX9N	J1	PEG_C_TXN6
PEG_RXP5	P7	GFX_RX10P	GFX_TX10P	K4	PEG_C_TXP5
PEG_RXN5	M7	GFX_RX10N	GFX_TX10N	K3	PEG_C_TXN5
PEG_RXP4	P5	GFX_RX11P	GFX_TX11P	K1	PEG_C_TXP4
PEG_RXN4	M5	GFX_RX11N	GFX_TX11N	K2	PEG_C_TXN4
PEG_RXP3	R8	GFX_RX12P	GFX_TX12P	M4	PEG_C_TXP3
PEG_RXN3	P8	GFX_RX12N	GFX_TX12N	M3	PEG_C_TXN3
PEG_RXP2	R6	GFX_RX13P	GFX_TX13P	M1	PEG_C_TXP2
PEG_RXN2	R5	GFX_RX13N	GFX_TX13N	M2	PEG_C_TXN2
PEG_RXP1	P4	GFX_RX14P	GFX_TX14P	N2	PEG_C_TXP1
PEG_RXN1	P3	GFX_RX14N	GFX_TX14N	N1	PEG_C_TXN1
PEG_RXP0	T4	GFX_RX15P	GFX_TX15P	P1	PEG_C_TXP0
PEG_RXN0	T3	GFX_RX15N	GFX_TX15N	P2	PEG_C_TXN0

PEG_C_TXP15 C712 0.1U/10V/X7R_4 PEG_TXP15
PEG_C_TXP14 C708 0.1U/10V/X7R_4 PEG_TXP14
PEG_C_TXP13 C704 0.1U/10V/X7R_4 PEG_TXP13
PEG_C_TXP12 C687 0.1U/10V/X7R_4 PEG_TXP12
PEG_C_TXP11 C685 0.1U/10V/X7R_4 PEG_TXP11
PEG_C_TXP10 C681 0.1U/10V/X7R_4 PEG_TXP10
PEG_C_TXP9 C678 0.1U/10V/X7R_4 PEG_TXP9
PEG_C_TXP8 C673 0.1U/10V/X7R_4 PEG_TXP8
PEG_C_TXP7 C672 0.1U/10V/X7R_4 PEG_TXP7
PEG_C_TXP6 C669 0.1U/10V/X7R_4 PEG_TXP6
PEG_C_TXP5 C141 0.1U/10V/X7R_4 PEG_TXP5
PEG_C_TXP4 C667 0.1U/10V/X7R_4 PEG_TXP4
PEG_C_TXP3 C664 0.1U/10V/X7R_4 PEG_TXP3
PEG_C_TXP2 C662 0.1U/10V/X7R_4 PEG_TXP2
PEG_C_TXP1 C657 0.1U/10V/X7R_4 PEG_TXP1
PEG_C_TXP0 C650 0.1U/10V/X7R_4 PEG_TXP0

PEG_TXP[15..0] (17)

PEG_C_TXN15 C715 0.1U/10V/X7R_4 PEG_TXN15
PEG_C_TXN14 C710 0.1U/10V/X7R_4 PEG_TXN14
PEG_C_TXN13 C706 0.1U/10V/X7R_4 PEG_TXN13
PEG_C_TXN12 C691 0.1U/10V/X7R_4 PEG_TXN12
PEG_C_TXN11 C686 0.1U/10V/X7R_4 PEG_TXN11
PEG_C_TXN10 C684 0.1U/10V/X7R_4 PEG_TXN10
PEG_C_TXN9 C680 0.1U/10V/X7R_4 PEG_TXN9
PEG_C_TXN8 C676 0.1U/10V/X7R_4 PEG_TXN8
PEG_C_TXN7 C674 0.1U/10V/X7R_4 PEG_TXN7
PEG_C_TXN6 C671 0.1U/10V/X7R_4 PEG_TXN6
PEG_C_TXN5 C151 0.1U/10V/X7R_4 PEG_TXN5
PEG_C_TXN4 C668 0.1U/10V/X7R_4 PEG_TXN4
PEG_C_TXN3 C666 0.1U/10V/X7R_4 PEG_TXN3
PEG_C_TXN2 C663 0.1U/10V/X7R_4 PEG_TXN2
PEG_C_TXN1 C661 0.1U/10V/X7R_4 PEG_TXN1
PEG_C_TXN0 C658 0.1U/10V/X7R_4 PEG_TXN0

PEG_TXN[0..15] (17)

(34) PCIE_RXP0
(34) PCIE_RXN0
(27) PCIE_RXP1_LAN
(27) PCIE_RXN1_LAN
(32) PCIE_RXP2
(32) PCIE_RXN2
(31) PCIE_RXP3
(31) PCIE_RXN3

PCIE_RXP0 AE3
PCIE_RXN0 AD4
PCIE_RXP1_LAN AE2
PCIE_RXN1_LAN AD3
PCIE_RXP2 AD1
PCIE_RXN2 AD2
PCIE_RXP3 V5
PCIE_RXN3 W6
U5
U6
U8
U7

PCIE I/F GPP

GPP_RX0P		GPP_TX0P	AC1	PCIE_TXP0_C	C628
GPP_RX0N		GPP_TX0N	AC2	PCIE_TXN0_C	C627
GPP_RX1P		GPP_TX1P	AB4	PCIE_TXP1_LAN_C	C625
GPP_RX1N		GPP_TX1N	AB3	PCIE_TXN1_LAN_C	C626
GPP_RX2P		GPP_TX2P	AA2	PCIE_TXP2_C	C643
GPP_RX2N		GPP_TX2N	AA1	PCIE_TXN2_C	C641
GPP_RX3P		GPP_TX3P	Y1	PCIE_TXP3_C	C647
GPP_RX3N		GPP_TX3N	Y2	PCIE_TXN3_C	C646
GPP_RX4P		GPP_TX4P	Y4		
GPP_RX4N		GPP_TX4N	Y3		
GPP_RX5P		GPP_TX5P	V1		
GPP_RX5N		GPP_TX5N	V2		

0.1U/10V/X7R_4

PCIE_TXP0 (34)
PCIE_TXN0 (34)
PCIE_TXP1_LAN (27)
PCIE_TXN1_LAN (27)
PCIE_TXP2 (32)
PCIE_TXN2 (32)
PCIE_TXP3 (31)
PCIE_TXN3 (31)

TO NEW CARD
TO PCIE-LAN
TO WLAN
TO WWAN

(10) A_RXP0
(10) A_RXN0
(10) A_RXP1
(10) A_RXN1
(10) A_RXP2
(10) A_RXN2
(10) A_RXP3
(10) A_RXN3

AA8
Y8
AA7
Y7
AA5
AA6
W5
Y5

PCIE I/F SB

SB_RX0P		SB_TX0P	AD7	A_TXP0_C	C636
SB_RX0N		SB_TX0N	AE7	A_TXN0_C	C635
SB_RX1P		SB_TX1P	AE6	A_TXP1_C	C612
SB_RX1N		SB_TX1N	AD6	A_TXN1_C	C613
SB_RX2P		SB_TX2P	AB6	A_TXP2_C	C633
SB_RX2N		SB_TX2N	AC6	A_TXN2_C	C634
SB_RX3P		SB_TX3P	AD5	A_TXP3_C	C631
SB_RX3N		SB_TX3N	AE5	A_TXN3_C	C632

0.1U/10V/X7R_4

A_TXP0 (10)
A_TXN0 (10)
A_TXP1 (10)
A_TXN1 (10)
A_TXP2 (10)
A_TXN2 (10)
A_TXP3 (10)
A_TXN3 (10)

PCE_CALRP(PCE_BCALRP)
PCE_CALRN(PCE_BCALRN)

AC8 NB_PCIECALRP R43 1.27K/F_4
AB8 NB_PCIECALRN R425 2K/F_4
+1.1V

RS880/RX881

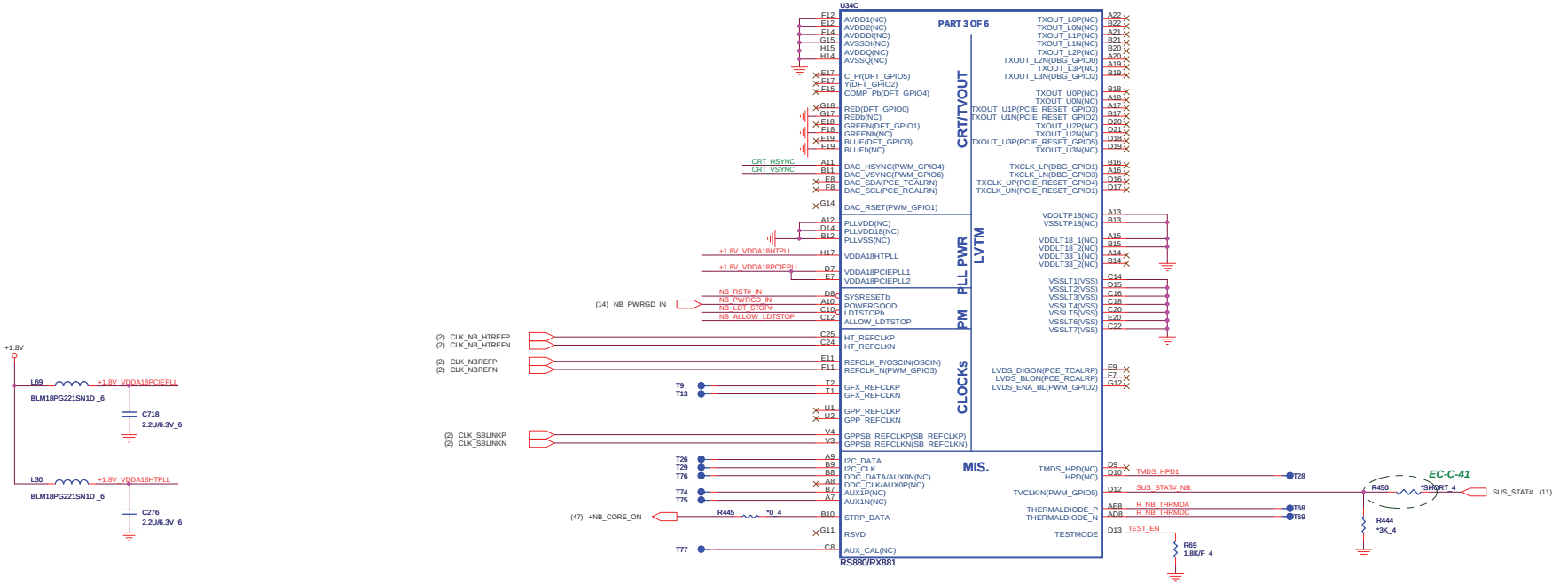
Keep the impendance of PCIE lane to 85ohm +/-15%
Including the A-link

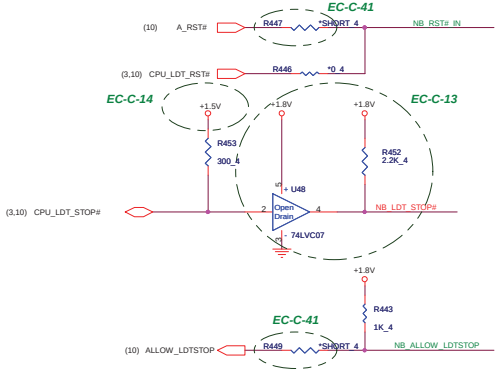
All PCIe lane shou route 8" max for Gen2 connector and max 12" for Gen2 on board devices
Guam has the Lasso lane over 8" due to the large board, should use shorter lasso calbe for Guam.
Customer need to follow the MBDG.

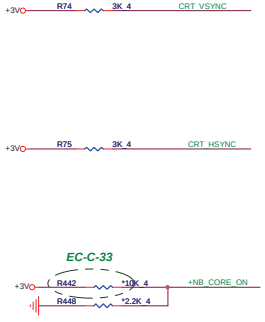
Quanta Computer Inc.
PROJECT :LD-Note AMD DIS

Size	Document Number	Rev
	RS880M-PCIE I/F 2/4	1A
Date: Wednesday, June 09, 2010	Sheet 7 of 55	

(2,3,6,7,9,13,46,50) +1.1V
(6,9,14,46,50) +1.8V
(2,3,5,9,10,11,12,13,14,15,16,23,24,25,26,27,28,29,30,31,32,34,36,37,40,41,46,47,50) +3V
(23,44,45,48,50) +15V







Quanta Computer Inc.		
PROJECT : LD-Note AMD DIS		
Size	Document Number: RS880M-SYSTEM I/F 3/4	Rev: 1A
Date: Wednesday, June 09, 2010	Sheet 8 of 55	

http://hobi-elektronika.net

RX881/RS880 POWER DIFFERENCE TABLE

PIN NAME	RX881	RS880	PIN NAME	RX881	RS880
VDDHT	+1.1V	+1.1V	AVDDDI	GND	GND
VDDHTRX	+1.1V	+1.1V	AVDDQ	GND	GND
VDDHTTX	+1.2V	+1.1V	PLLVDD	GND	GND
VDDA18PCIE	+1.8V	+1.8V	PLLVDD18	GND	GND
VDDG18	+1.8V	+1.8V	VDDA18PCIEPLL	GND	GND
VDD18_MEM	GND	GND	VDDA18HTPLL	GND	GND
VDDPCIE	+1.1V	+1.1V	VDDLTP18	GND	GND
VDDC	+1.1V	+NB_CORE	VDDLT18	GND	GND
VDD_MEM	GND	GND	VDDLT33	NC	NC
VDDG33	+3.3V	+3.3V			
AVDD	GND	GND			

(47,50) +NB_CORE
(2,3,6,7,13,46,50) +1.1V
(3,8,31,32,34,50) +1.5V
(6,8,14,46,50) +1.8V
(2,3,5,8,10,11,12,13,14,15,16,23,24,25,26,27,28,29,30,31,32,34,36,37,40,41,46,47,50) +3V

U34F — PART 6/6 — GROUND

U34E — PART 5/6 — POWER — RS880/RX881

+1.1V 1.3A for RX881

0.6A: L20 (0 8) → +1.1V_VDDHT → C149 4.7U/6.3V_6, C152 0.1U/10V_4, C190 0.1U/10V_4, C175 0.1U/10V_4

0.7A: L23 (0 8) → +1.1V_VDDHTRX → C225 4.7U/6.3V_6, C259 0.1U/10V_4, C253 0.1U/10V_4, C227 0.1U/10V_4

+1.1V 0.4A for Rx881

+1.1V — L17 (0 6) 0.4A → +1.1V_VDDHTTX → C90 4.7U/6.3V_6, C142 0.1U/10V_4, C134 0.1U/10V_4, C83 0.1U/10V_4, C96 0.1U/10V_4

+1.8V 1A for RX881

+1.8V — L16 — BLM21PG221SN1D(220,100M,2A)_8 — 1.8V@0.7A → +1.8V_VDDA18PCIE → C94 4.7U/6.3V_6, C86 4.7U/6.3V_6, C188 0.1U/10V_4, C133 0.1U/10V_4, C100 0.1U/10V_4, C116 0.1U/10V_4

+1.8V — L29 (0 6) 25mA → +1.8V_VDDG18_NB → C272 1U/10V_4

1.1V@2.5A — VDDPCIE - PCIE-E Main power

+1.1V_VDD_PCIE → C226 0.1U/10V_4, C146 0.1U/10V_4, C127 1U/10V_4, C137 1U/10V_4, C268 4.7U/6.3V_6 — L26 (0 8) → +1.1V

VDDC - Core Logic power 1.1V

0.95~1.25V@7A → +NB_CORE

C208 0.1U/10V_4, C161 0.1U/10V_4, C176 0.1U/10V_4, C191 0.1U/10V_4, C63 10U/6.3V_8

C145 0.1U/10V_4, C147 0.1U/10V_4, C167 0.1U/10V_4, C64 10U/6.3V_8

VDD_MEM For UMA RS780 only
Not applicable to RX780
memory I/O transform

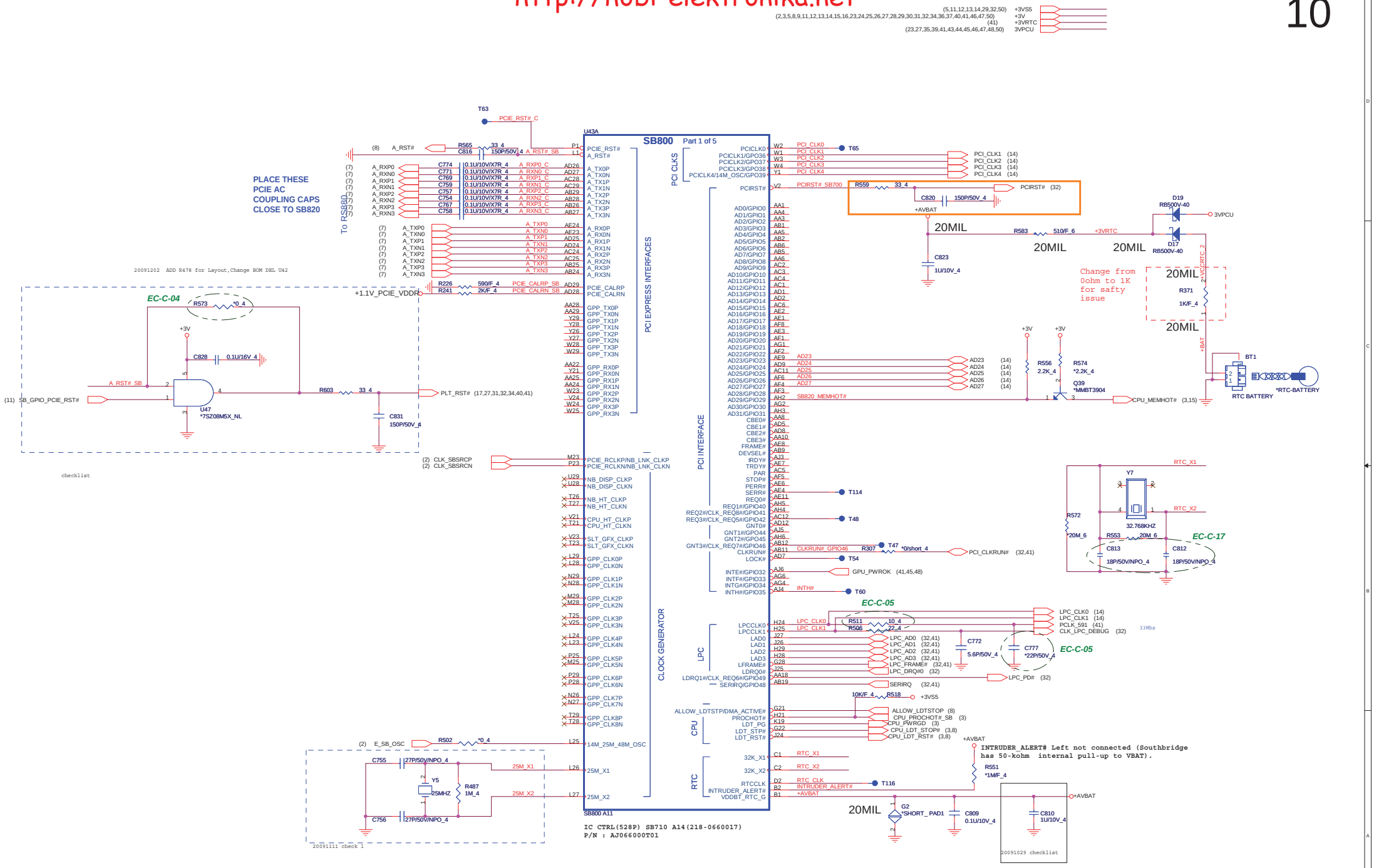
+3V_VDDG33 — C211 0.1U/10V_4, C212 0.1U/10V_4 — L21 (0 6) 60mA → +3V

VDD33 - 3.3V I/O
Not applicable to RX780

Quanta Computer Inc.
PROJECT :LD-Note AMD DIS

Size	Document Number	Rev
	RS880M-POWER5 4/4	1A

Date: Wednesday, June 09, 2010 Sheet 9 of 55



NC only ,Can't be install
R548 *2.2K_4 SB_TEST0
R550 *2.2K_4 SB_TEST1
R324 *2.2K_4 SB_TEST2

Clock gen/Robson/TV tuner /DDR2/DDR2 thermal/Accelerometer
SCL0/SDATA0 is 3V tolerance AMD datasheet define it
R258 2.2K_4 PCLK_SMB
R245 2.2K_4 PDAT_SMB

SCL1/SDATA1 is 3V/S5 tolerance AMD datasheet define it
R579 2.2K_4 SB_SMBCLK1
R590 2.2K_4 SB_SMBDATA1

SCL2/SDATA2 is 3V/S5 tolerance AMD datasheet define it
R513 2.2K_4 SB_SCLK2
R516 2.2K_4 SB_SDATA2

SCL3/SDATA3 is 3V/S5 tolerance AMD datasheet define it
R508 2.2K_4 SB_SCLK3
R505 2.2K_4 SB_SDATA3

R319 4.7K_4 SUS_STAT#

EC-C-25
R606 *10K/F_4 WAKE#

EC-C-23 EC-C-04 EC-C-41 EC-C-24

R567 *0_4 SYS_RST#
EC-C-12
10K_4 R360 CPU_THERMTRIP#

To Azalia
ACZ_SDOUT R593 33_4 ICH_AZ_CODEC_SDOUT (26)
ACZ_SYNC R560 33_4 ICH_AZ_CODEC_SYNC (26)
ACZ_BCLK R589 33_4 ICH_AZ_CODEC_BITCLK (26)
ACZ_RST# R587 33_4 ICH_AZ_CODEC_RST# (26)
ACZ_SDIN0 R564 33_4 ICH_AZ_CODEC_SDIN0 (26)
Modified for EMI suggestion

*10K_4 R335 ACZ_SDIN1
*10K_4 R342 ACZ_SDIN2
*10K_4 R336 ACZ_SDIN3
T56 USB_OC8#
T53 USB_OC1#
T52 USB_OC0#

HD audio interface is +3VS5 voltage

U43D SB800 Part 4 of 5

ACPI / WAKE UP EVENTS: PCI_PME#/GEVENT4# RI#/GEVENT22# SPI_CS3#/GBE_STAT1/GEVENT21# SLP_S3# SLP_S5# PWR_BTN# PWR_GOOD SUS_STAT# TEST0 TEST1/TMS TEST2 GA20IN/GEVENT0# KBRST#/GEVENT1# LPC_PME#/GEVENT3# LPC_SMI#/GEVENT23# GEVENT5# SYS_RESET#/GEVENT19# WAKE#/GEVENT8# IR_RX1/GEVENT20# THRMTRIP#/SMBALERT#/GEVENT2# NB_PWRGD RSMRST#

USB 1.1 USB MISC: USBCLK/14M_25M_48M_OSC USB_RCOMP USB_FSD1P/GPIO186 USB_FSD1N USB_FSD0P/GPIO185 USB_FSD0N

GPIO: 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#/LBA#/GPIO184 SMARTVOLT2/SHUTDOWN#/GPIO51 DDR3_RST#/GEVENT7# GBE_LED0/GPIO183 GBE_LED1/GEVENT9# GBE_LED2/GEVENT10# GBE_STAT0/GEVENT11# CLK_REQG#/GPIO65/OSCIN

USB 2.0: 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 OC: 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#/TRST#/GEVENT12#

HD AUDIO: AZ_BITCLK AZ_SDOUT AZ_SDIN0/GPIO167 AZ_SDIN1/GPIO168 AZ_SDIN2/GPIO169 AZ_SDIN3/GPIO170 AZ_SYNC AZ_RST#

GBE LAN: GBE_COL GBE_CRS GBE_MDCK GBE_MDIO GBE_RXCLK GBE_RXD3 GBE_RXD2 GBE_RXD1 GBE_RXD0 GBE_RXCTL/RXDV GBE_RXERR GBE_TXCLK GBE_TXD3 GBE_TXD2 GBE_TXD1 GBE_TXD0 GBE_TXCTL/TXEN GBE_PHY_PD GBE_PHY_RST# GBE_PHY_INTR

EMBEDDED CTRL: PS2_DAT/SDA4/GPIO187 PS2_CLK/SCL4/GPIO188 SPI_CS2#/GBE_STAT2/GPIO166 FC_RST#/GPIO160 PS2KB_DAT/GPIO189 PS2KB_CLK/GPIO190 PS2M_DAT/GPIO191 PS2M_CLK/GPIO192

EMBEDDED CTRL: SCL2/GPIO193 SDA2/GPIO194 SCL3_LV/GPIO195 SDA3_LV/GPIO196 EC_PWM0/EC_TIMER0/GPIO197 EC_PWM1/EC_TIMER1/GPIO198 EC_PWM2/EC_TIMER2/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 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/GPIO223 KSO_15/GPIO224 KSO_16/GPIO225 KSO_17/GPIO226

SB800 A11

Finger Printer
USB_FDS12P R266 11.8K/F_6 USB_FDS1N USB_FDS2N

for EMI
CLK_48M_USB
C793 *2.2P/50V_4

FINGER PRINTER
USB2
USB3
BLUETOOTH
CARD-READER
Mini Card (WWAN)
Mini Card (WLAN)
Camera
Express Card
USB1
USB0 (E-STAT)

SPI/LPC define

Quanta Computer Inc.
PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	SB820-ACPI/GPIO/USB 2/5	1A
Date: Wednesday, June 09, 2010	Sheet 11 of 55	

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

SATA HDD

SATA ODD

E-SATA

U43B

SB800
Part 2 of 5

SB800 A11

SERIAL ATA

FLASH

HW MONITOR

SPI ROM

IF THERE IS NO IDE, TEST POINTS FOR DEBUG BUS IS MANDATORY

PLACE SATA_CAL RES VERY CLOSE TO BALL OF SB820

EC-C-34

EC-SVT-06

EC-SVT-03

EC-C-29
EC-C-44

EC_ID1	ID3	ID2	ID1	ID0	
	0	X	X	X	BL GC5C UMA(14")
	1	X	X	X	LD GC6C UMA(15")
0	X	0	0	0	SDV
0	X	0	0	1	SIT
0	X	0	1	0	SIT-R2
0	X	0	1	1	SVT
0	X	1	0	0	SOVP
	X	1	1	1	USB HW solution implementation

Quanta Computer Inc.
PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	SB820-SATA/IDE/HWM/SPI 3/5	1A

Date: Monday, June 14, 2010 Sheet 12 of 55

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

(5,10,11,12,14,29,32,50) +3VS5
(2,3,6,7,9,46,50) +1.1V
(46,50) +1.1VS5

VDD-- S/B CORE power
(2,3,5,8,9,10,11,12,14,15,16,23,24,25,26,27,28,29,30,31,32,34,36,37,40,41,46,47,50) +3V

VDDQ--3.3V I/O power

U43C

SB800 Part 3 of 5

SB820 without GBE: Connected to GND plane.

20091203 Modify Layout

U43E

SB800 GROUND Part 5 of 5

SB800 A11

For support USB wakeup-->3V_S5

checklist

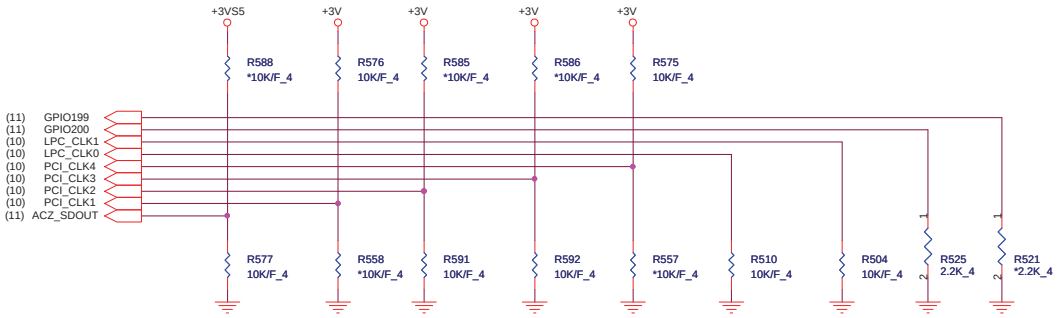
Quanta Computer Inc.
PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	SB820-PWR/DECOUPLING 4/5	1A
Date: Wednesday, June 09, 2010	Sheet 13 of 55	

REQUIRED STRAPS

(2,3,5,8,9,10,11,12,13,15,16,23,24,25,26,27,28,29,30,31,32,34,36,37,40,41,46,47,50) +3VS5
(5,10,11,12,13,29,32,50) +3V

OVERLAP COMMON PADS WHERE POSSIBLE FOR DUAL-OP RESISTORS.



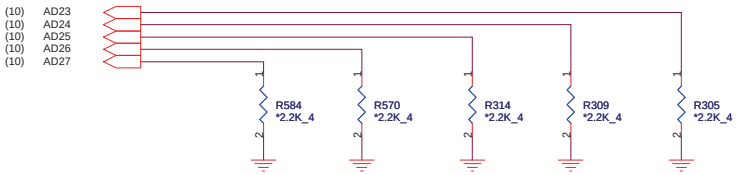
	AZ_SDOUT	PCI_CLK1	PCI_CLK2	PCI_CLK3	PCI_CLK4	LPC_CLK0	LPC_CLK1	GPIO200 GPIO199
PULL HIGH	LOW POWER MODE	ALLOW PCIE Gen2 DEFAULT	Watchdog Timer Enable	USE DEBUG STRAPS	non_Fusion CLOCK MODE DEFAULT	EC ENABLED	CLKGEN ENABLED	H, H=Reserved H, L=SPI ROM
PULL LOW	PERFORMANCE MODE DEFAULT	FORCE PCIE Gen1	Watchdog Timer Disable DEFAULT	IGNORE DEBUG STRAPS DEFAULT	Fusion CLOCK MODE	EC DISABLED DEFAULT	CLKGEN DISABLED DEFAULT	L, H=LPC ROM DEFAULT L, L=FWH ROM

internal have
pull Hi 10K

NB_PWRGD_IN:
RS880/RX881 = 1.8V;
Do NOT share it with SB_PWRGD when use Internal Clk Gen (Need SB PLL initialize firstly)

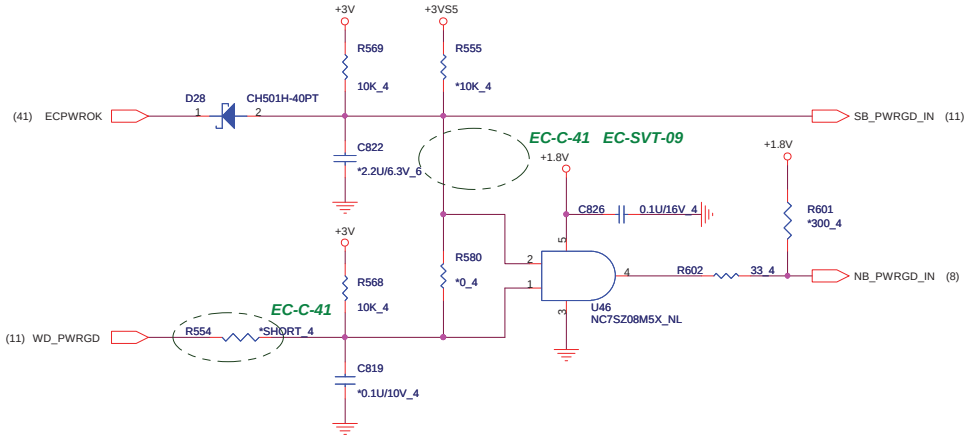
DEBUG STRAPS

SB800 HAS 15K INTERNAL PU FOR PCI_AD[27:23]



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

NB/SB POWER GOOD CIRCUIT



AL17SZ17000	IC(5P) NL17SZ17DFT2G(SOT-353)	SOT-353
ALUC1G17000	IC OTHER(5P) SN74AUC1G17DBVR(SOT23-5)	SOT23-5

Quanta Computer Inc.

PROJECT : LD-Note AMD DIS

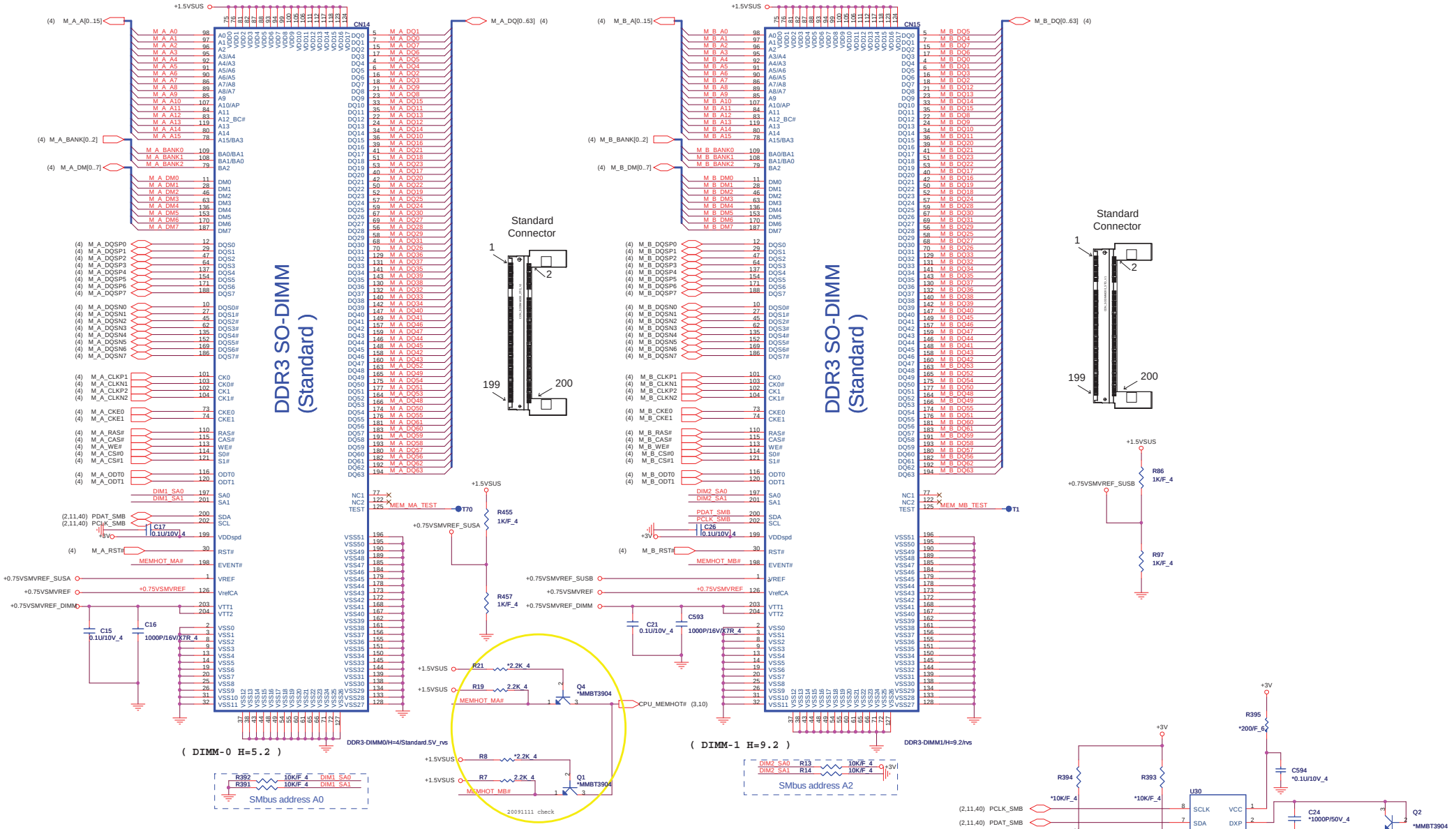
Size	Document Number	Rev
	SB820-STRAPS 5/5	1A

Date: Monday, June 14, 2010 Sheet 14 of 55

Place these Caps near So-Dimm0.

Place these Caps near So-Dimm1.

(4,16,45) +0.75VSMVREF
(3,4,5,16,45,47,49,50) +1.5VSUS
(16,45,50) +0.75VSMVREF_DIMM
(2,3,5,8,9,10,11,12,13,14,16,23,24,25,26,27,28,29,30,31,32,34,36,37,40,41,46,47,50) +3V

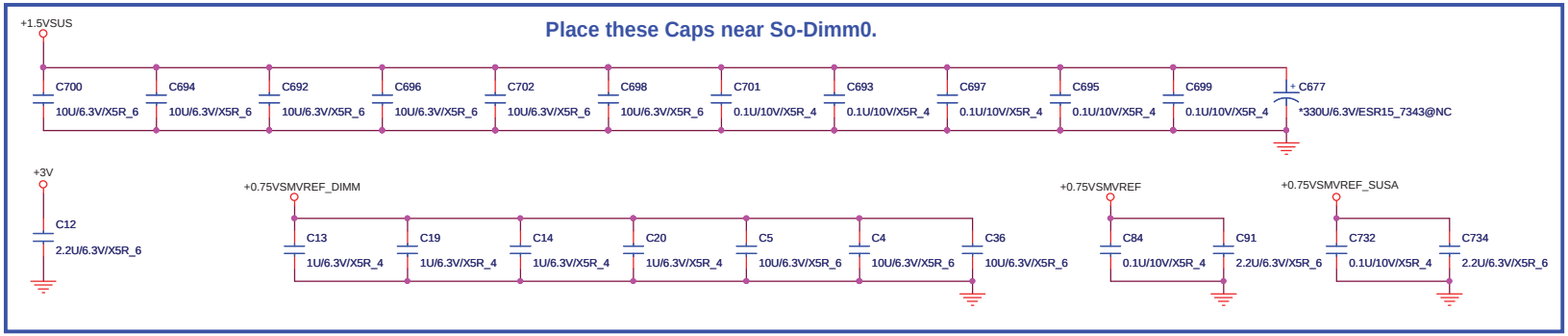


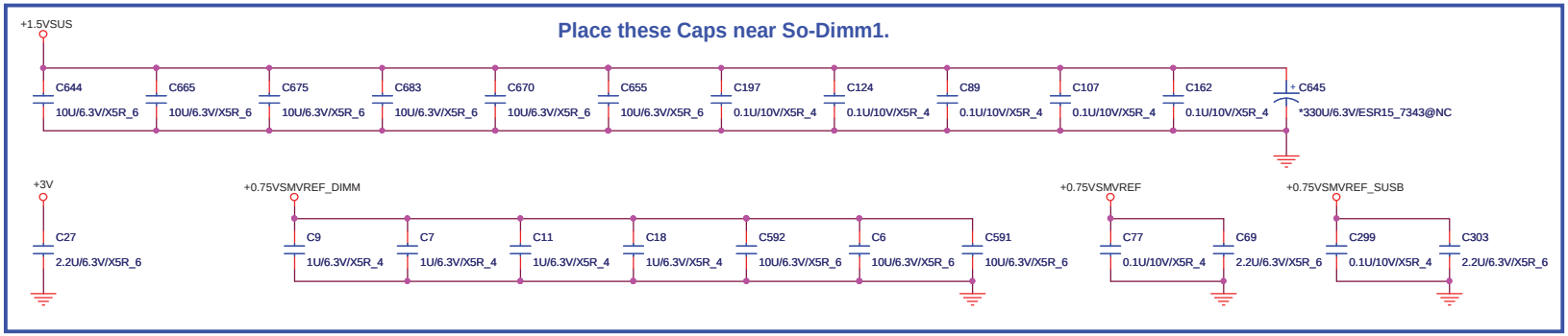
Quanta Computer Inc.

PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	DDR3 SODIMMS: A/B CHANNEL	1A

Date: Wednesday, June 09, 2010 Sheet 15 of 55





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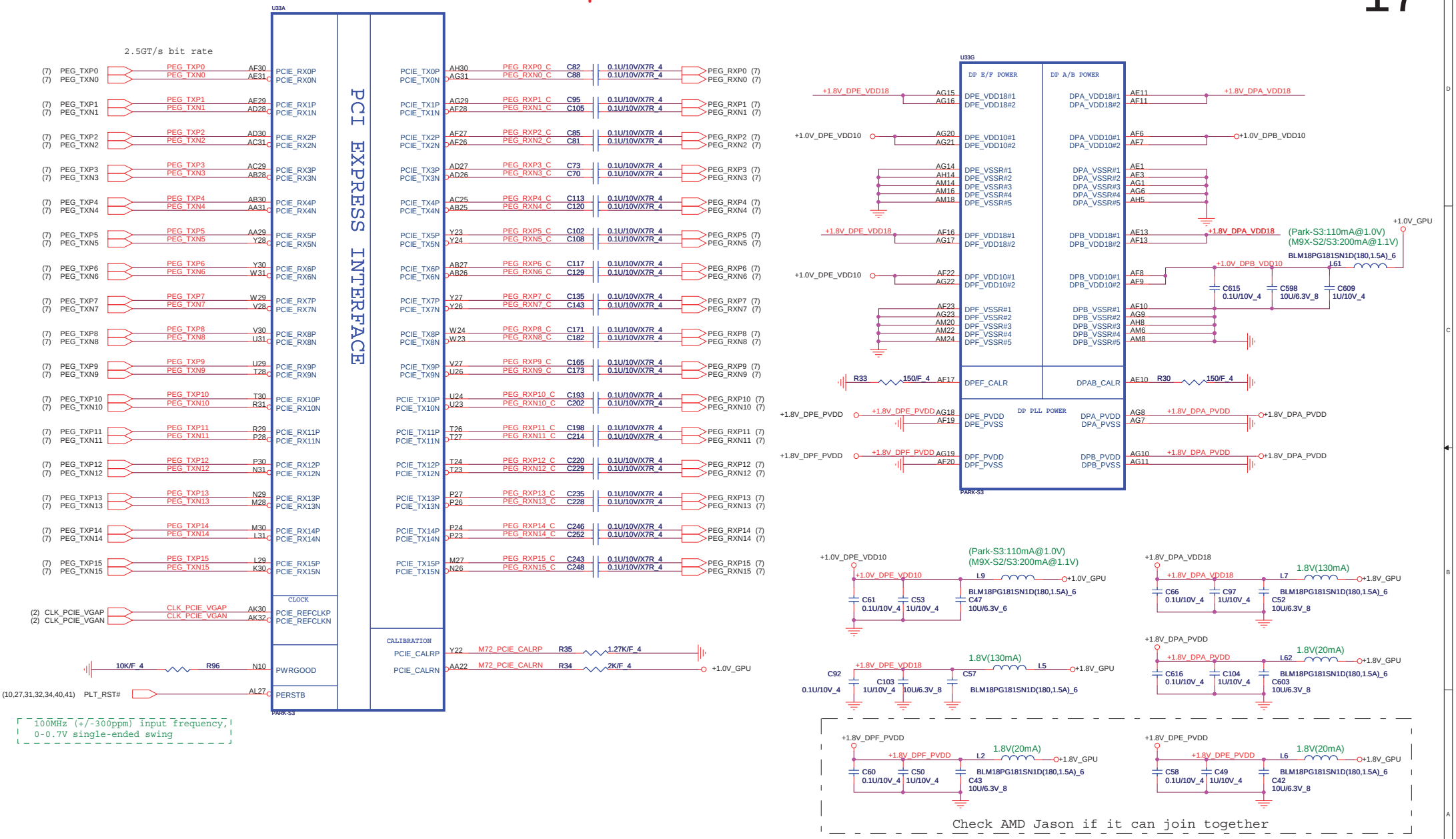
PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	DDR3 SODIMMS TERMINATIONS	1A
Date: Wednesday, June 09, 2010	Sheet 16 of 55	

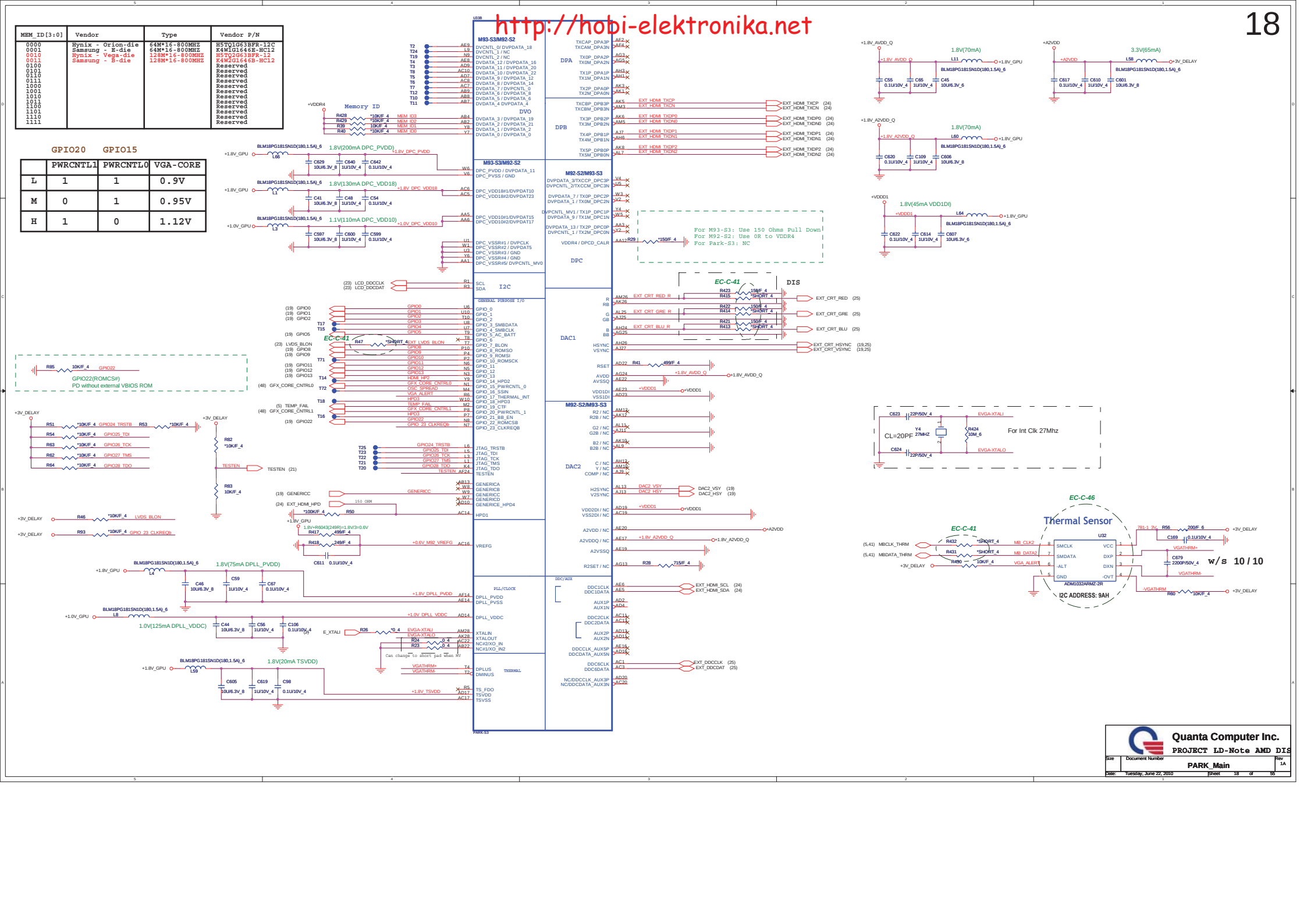


Quanta Computer Inc.	PROJECT LD-Note AMD DIS
Size	Document Number: PARK_PCIE_Interface — Rev 1A
Date: Wednesday, June 09, 2010	Sheet 17 of 55

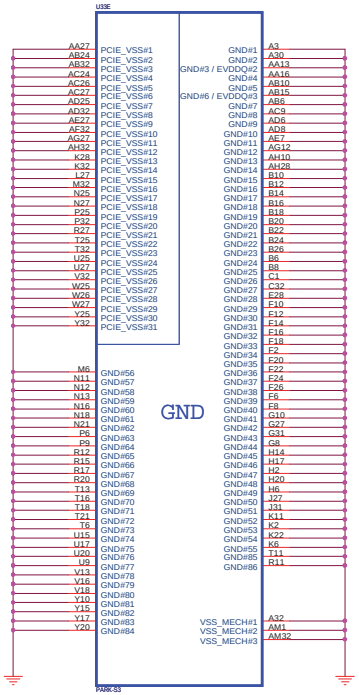
MEM_ID[3:0]	Vendor	Type	Vendor P/N
0000	Hynix - Orion-die	64M*16-800MHZ	H5TQ1G63BFR-12C
0001	Samsung - E-die	64M*16-800MHZ	K4W1G1646E-HC12
0010	Hynix - Vega-die	128M*16-800MHZ	H5TQ2G63BFR-12
0011	Samsung - B-die	128M*16-800MHZ	K4W2G1646B-HC12
0100			Reserved
0101			Reserved
0110			Reserved
0111			Reserved
1000			Reserved
1001			Reserved
1010			Reserved
1011			Reserved
1100			Reserved
1101			Reserved
1110			Reserved
1111			Reserved

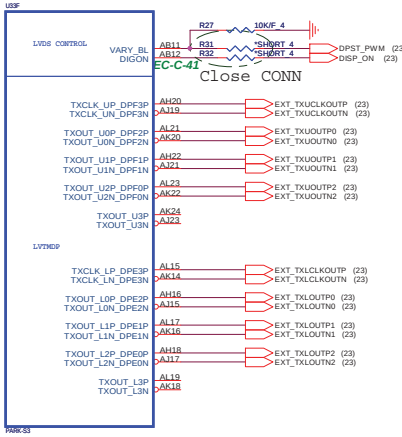
GPIO20 GPIO15

	PWRCNTL1	PWRCNTL0	VGA-CORE
L	1	1	0.9V
M	0	1	0.95V
H	1	0	1.12V



Quanta Computer Inc.	PROJECT LD-Note AMD DIS	
Size	Document Number: PARK_Main	Rev: 1A
Date: Tuesday, June 22, 2010	Sheet 18 of 55	





CONFIGURATION STRAPS

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

STRAPS	PIN	DESCRIPTION OF DEFAULT SETTINGS	RECOMMENDED SETTINGS 0= DO NOT INSTALL RESISTOR 1 = INSTALL 10K RESISTOR X = DESIGN DEPENDANT NA = NOT APPLICABLE
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

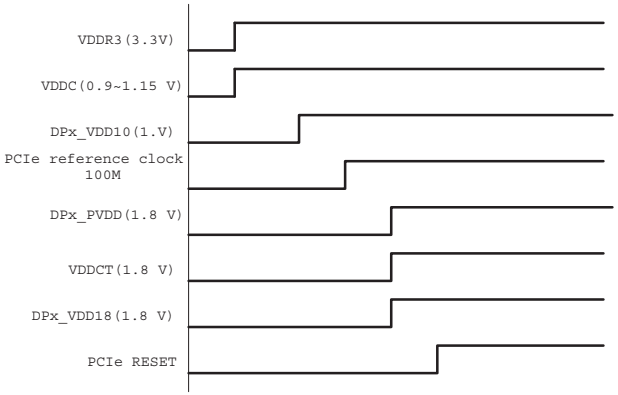
ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

H2SYNC	GENERICC

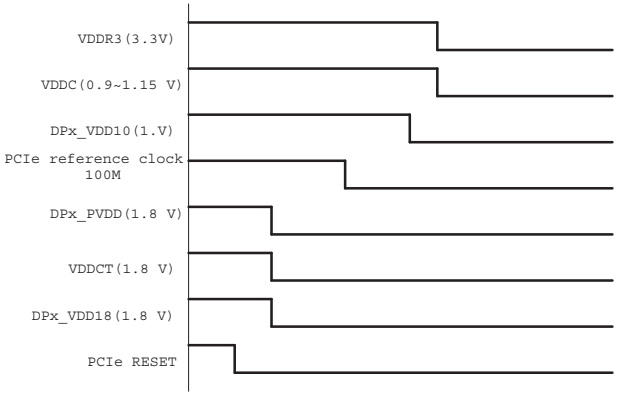
PULLUP PADS ARE NOT REQUIRED FOR THESE STRAPS BUT IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

GPIO21_BB_EN

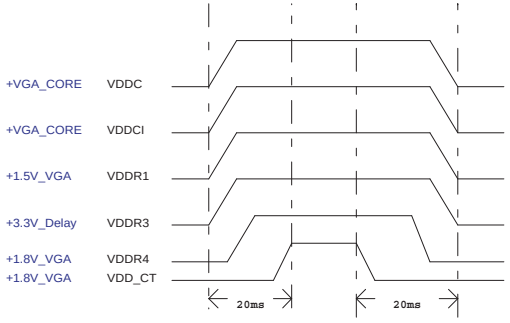
Power-Up Sequance



Power-down Sequance



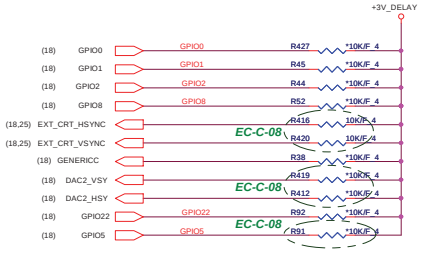
Power Up/Down Sequence



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.



Quanta Computer Inc.

PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	PARK_GND / LVDS/ Straps	1A

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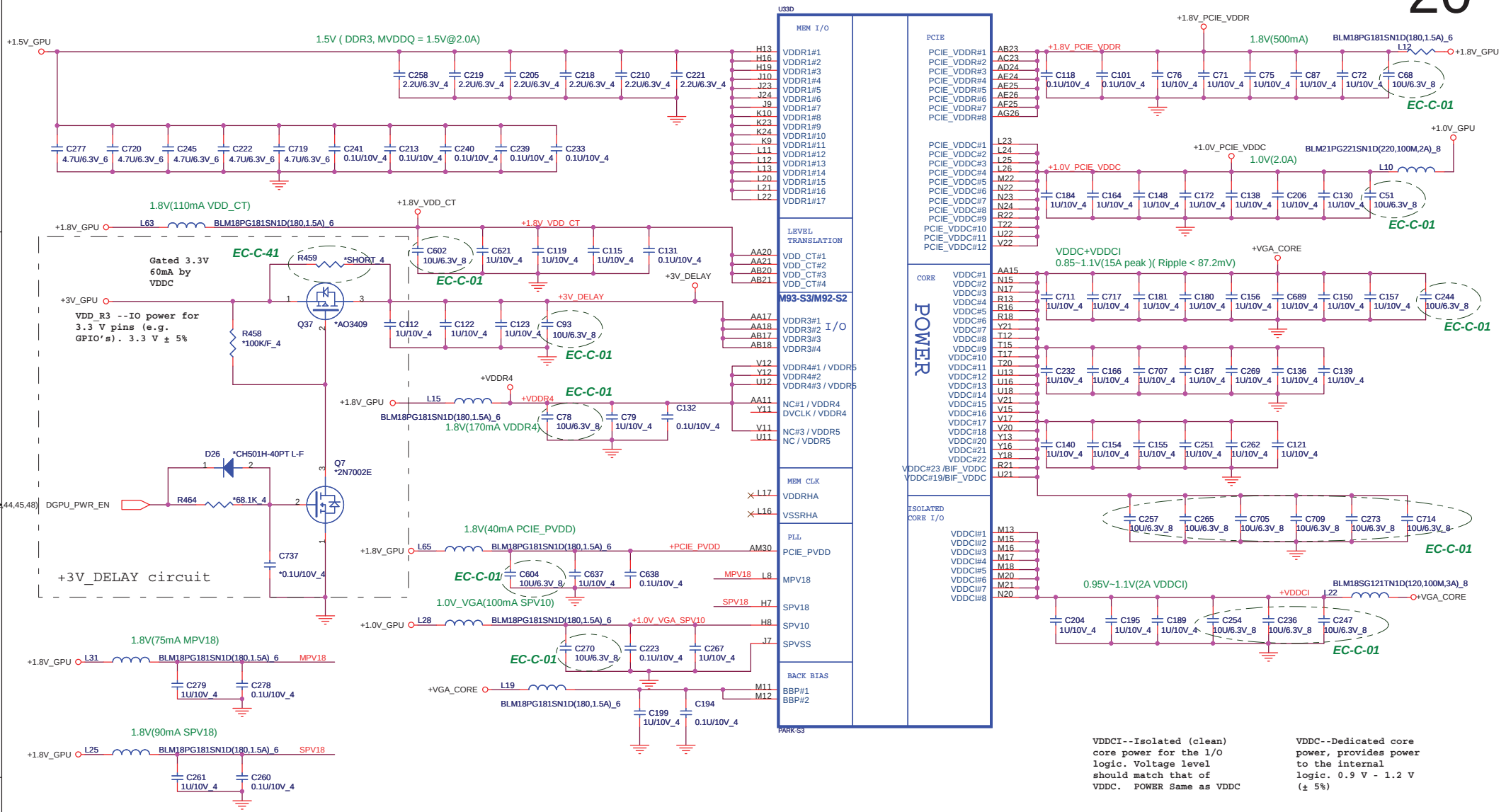
PCIE_VDDR--PCI-E I/O power. 1.8 V ± 5%



VDDRH_1 & VDDRH_2 --Dedicated power pins for memory clock pads for each channel. Should have the same voltage level as VDDR1.

VDDCI--Isolated (clean) core power for the I/O logic. Voltage level should match that of VDDC. POWER Same as VDDC

VDDC--Dedicated core power, provides power to the internal logic. 0.9 V - 1.2 V (± 5%)

PCIE_VDDC--PCI-E Digital Power Supply (Either 1.0 V or 1.1 V) 1.0 V -5% to 1.1 V +5%

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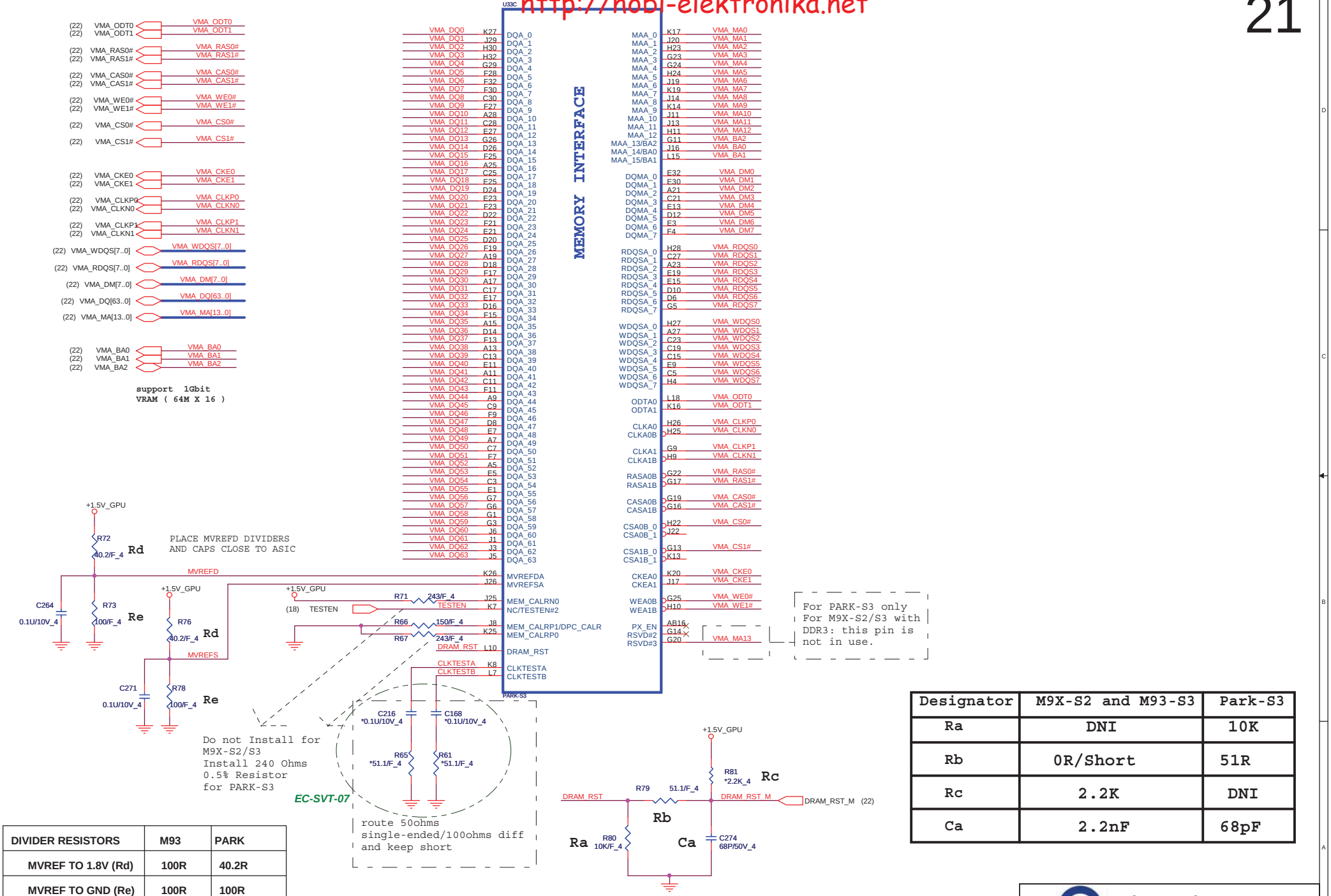
PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	PARK_Power_and_NC	1A
Date: Wednesday, June 09, 2010	Sheet 20 of 55	



DIVIDER RESISTORS	M93	PARK
MVREF TO 1.8V (Rd)	100R	40.2R
MVREF TO GND (Re)	100R	100R

Designator	M9X-S2 and M93-S3	Park-S3
Ra	DNI	10K
Rb	0R/Short	51R
Rc	2.2K	DNI
Ca	2.2nF	68pF

Quanta Computer Inc.

PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	PARK/MEM_Interface	1A

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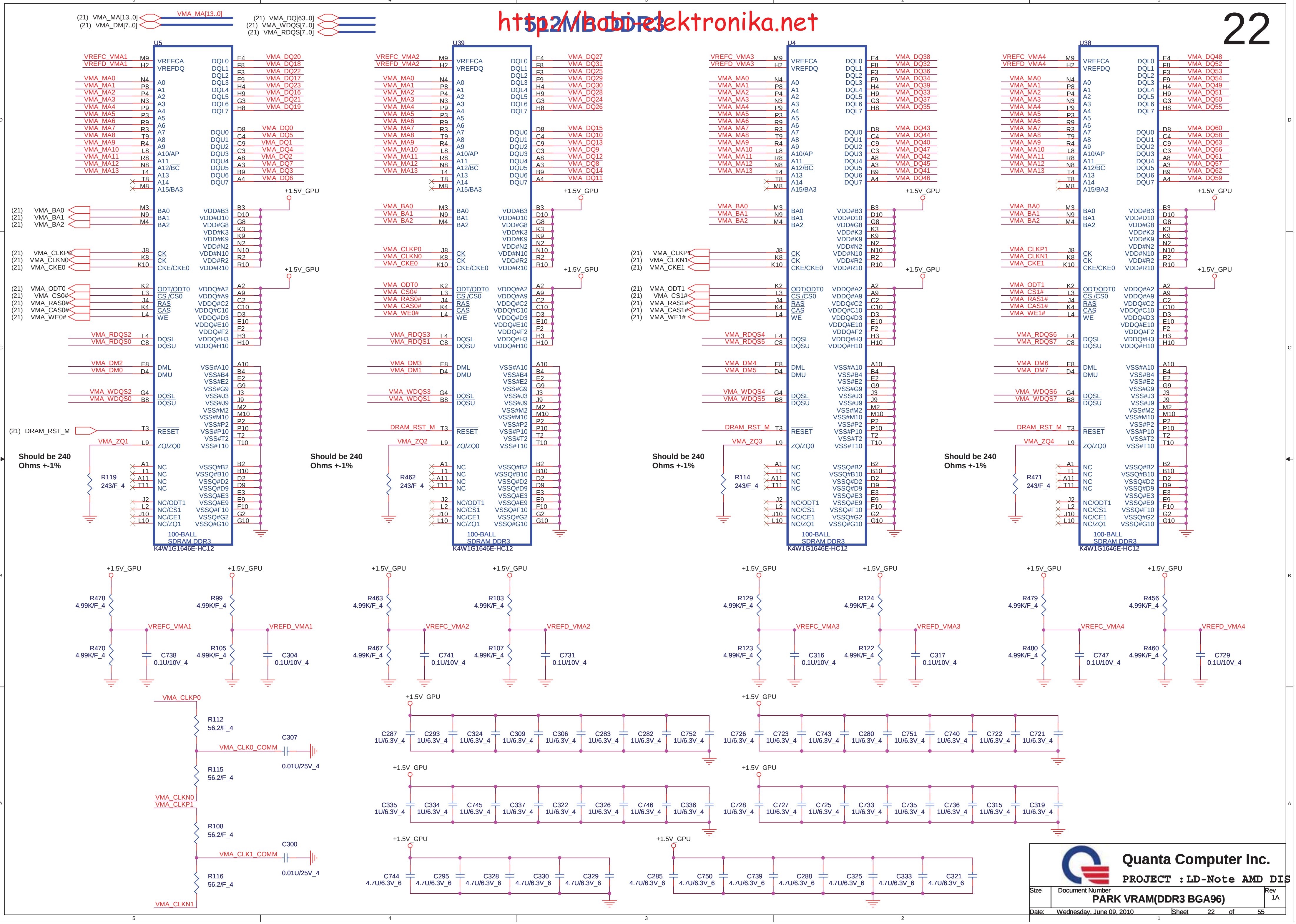
http://bobi-elektronika.net
512MB DDR3
(21) VMA_MA[13..0]
(21) VMA_DM[7..0]
(21) VMA_DQ[63..0]
(21) VMA_WDQS[7..0]
(21) VMA_RDQS[7..0]
U5
U39
U4
U38
VREFCA
VREFDQ
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10/AP
A11
A12/BC
A13
A14
A15/BA3
BA0
BA1
BA2
CK
CKE/CKE0
ODT/ODT0
CS/CS0
RAS
CAS
WE
DQSL
DQSU
DML
DMU
RESET
ZQ/ZQ0
NC
NC/ODT1
NC/CS1
NC/CE1
NC/ZQ1
DQL0
DQL1
DQL2
DQL3
DQL4
DQL5
DQL6
DQL7
DQU0
DQU1
DQU2
DQU3
DQU4
DQU5
DQU6
DQU7
+1.5V_GPU
100-BALL
SDRAM DDR3
K4W1G1646E-HC12
Should be 240
Ohms +-1%
R119 243/F_4
R462 243/F_4
R114 243/F_4
R471 243/F_4
(21) DRAM_RST_M
R478 4.99K/F_4
R470 4.99K/F_4
R99 4.99K/F_4
R105 4.99K/F_4
C738 0.1U/10V_4
C304 0.1U/10V_4
VREFC_VMA1
VREFD_VMA1
R463 4.99K/F_4
R467 4.99K/F_4
R103 4.99K/F_4
R107 4.99K/F_4
C741 0.1U/10V_4
C731 0.1U/10V_4
VREFC_VMA2
VREFD_VMA2
R129 4.99K/F_4
R123 4.99K/F_4
R124 4.99K/F_4
R122 4.99K/F_4
C316 0.1U/10V_4
C317 0.1U/10V_4
VREFC_VMA3
VREFD_VMA3
R479 4.99K/F_4
R480 4.99K/F_4
R456 4.99K/F_4
R460 4.99K/F_4
C747 0.1U/10V_4
C729 0.1U/10V_4
VREFC_VMA4
VREFD_VMA4
VMA_CLKP0
R112 56.2/F_4
VMA_CLK0_COMM
C307 0.01U/25V_4
R115 56.2/F_4
VMA_CLKN0
VMA_CLKP1
R108 56.2/F_4
VMA_CLK1_COMM
C300 0.01U/25V_4
R116 56.2/F_4
VMA_CLKN1
C287 C293 C324 C309 C306 C283 C282 C752 1U/6.3V_4
C726 C723 C743 C280 C751 C740 C722 C721 1U/6.3V_4
C335 C334 C745 C337 C322 C326 C746 C336 1U/6.3V_4
C728 C727 C725 C733 C735 C736 C315 C319 1U/6.3V_4
C744 C295 C328 C330 C329 4.7U/6.3V_6
C285 C750 C739 C288 C325 C333 C321 4.7U/6.3V_6
Quanta Computer Inc.
PROJECT : LD-Note AMD DIS
Size
Document Number
PARK VRAM(DDR3 BGA96)
Rev 1A
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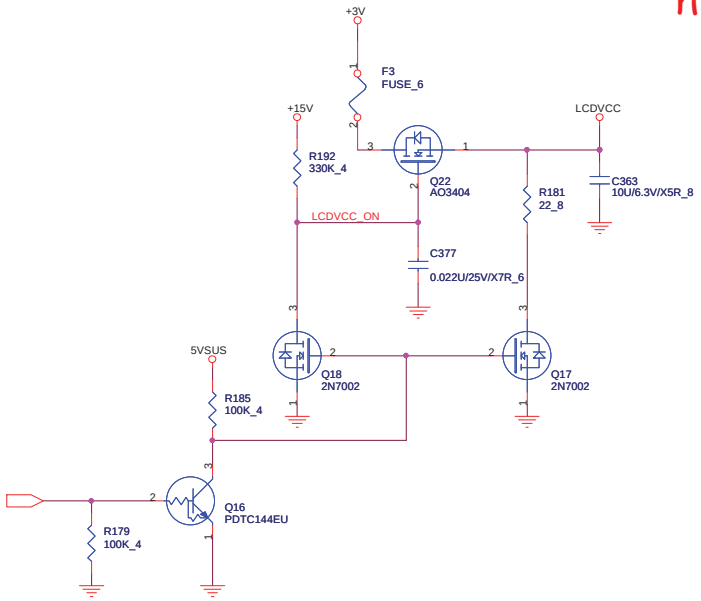
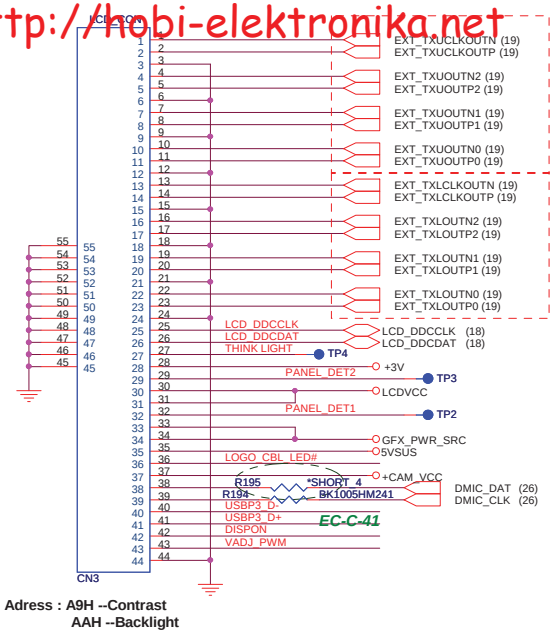
LCDVCC





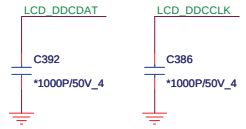
EC-C-41

Adress : A9H --Contrast
AAH --Backlight

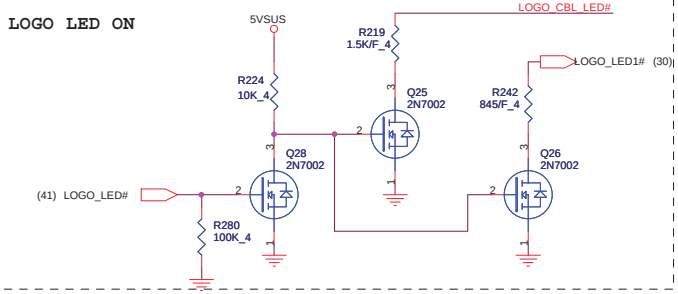
(2,3,5,8,9,10,11,12,13,14,15,16,24,25,26,27,28,29,30,31,32,34,36,37,40,41,46,47,50) +3V
(44,45,48,50) +15V
(46,47,49,50) 5VSUS
(10,27,35,39,41,43,44,45,46,47,48,50) 3VPCU
(43,44,45,46,47,48,49,50) VIN
(24,25,26,28,35,37,38,39,41,50) +5V

LCD_DDCCLK R212 4.7K_4
LCD_DDCDAT R217 4.7K_4 +3V

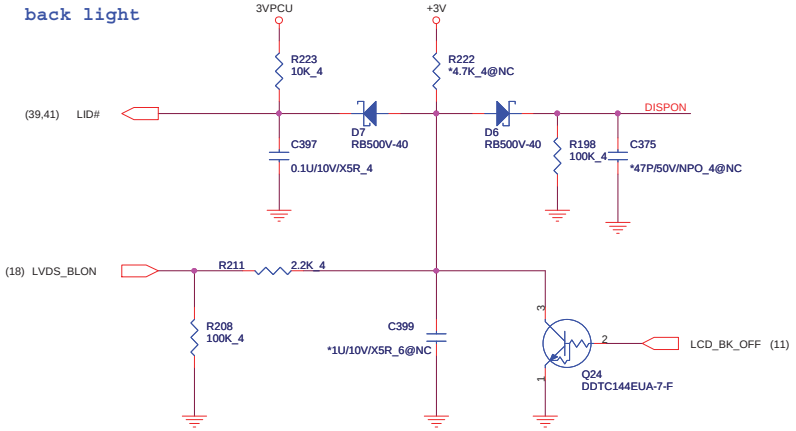
For EMI

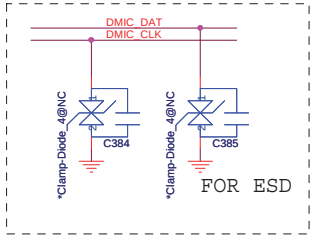


LOGO LED ON

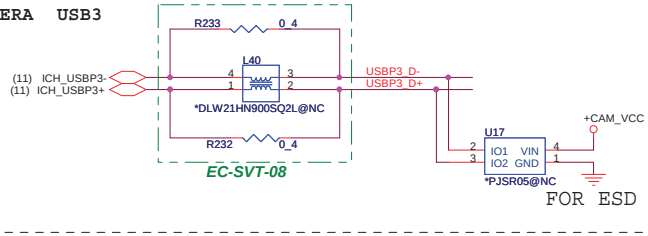


back light

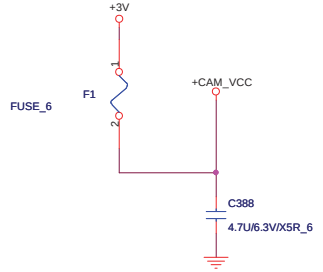


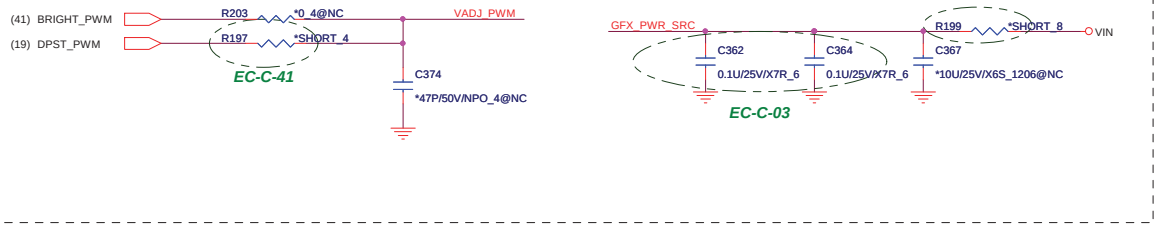


CAMERA USB3



CAMERA VCC Control





Quanta Computer Inc.		
PROJECT : LD-Note AMD DIS		
Size	Document Number	Rev
	LCD + CAMERA CONN	1A
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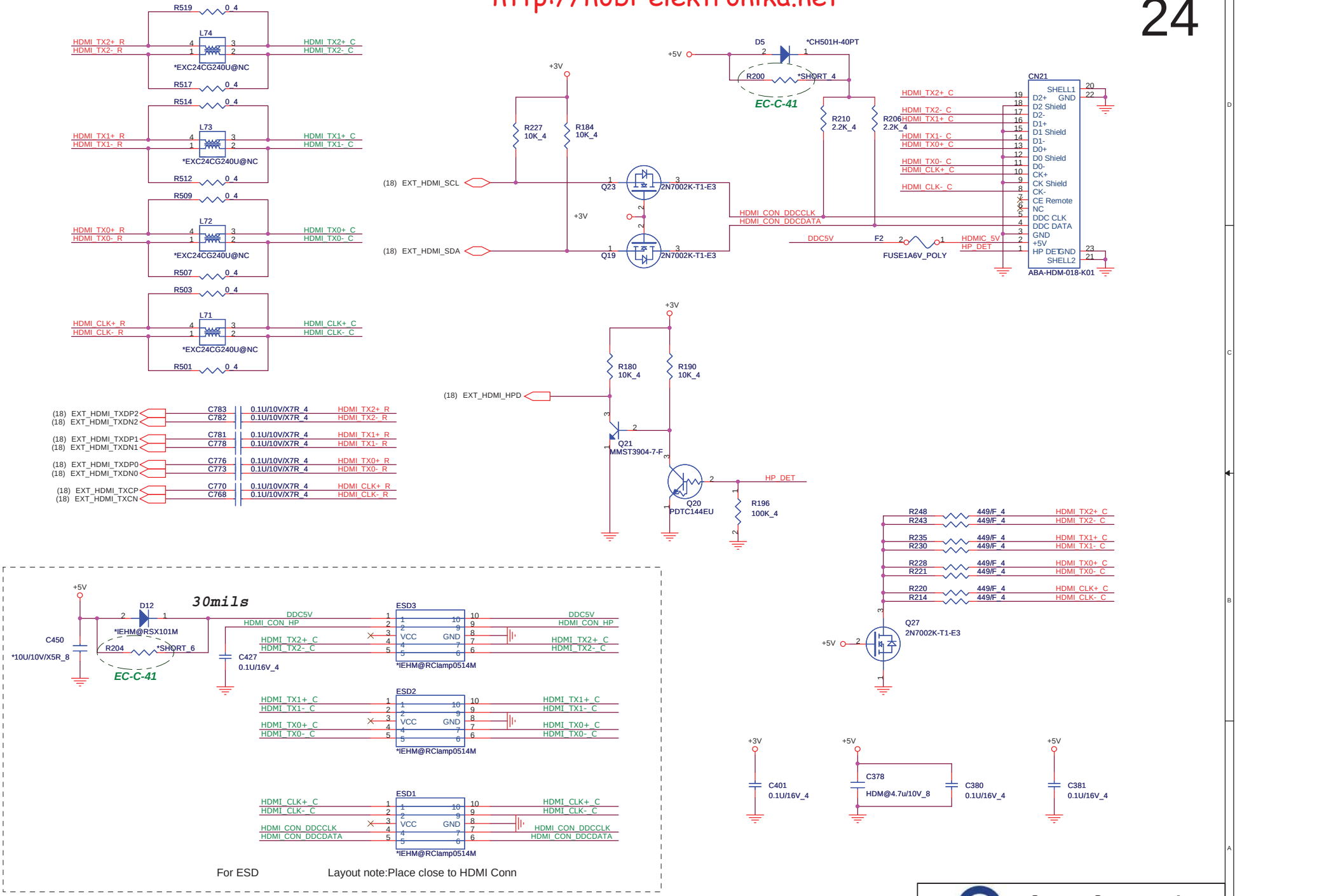
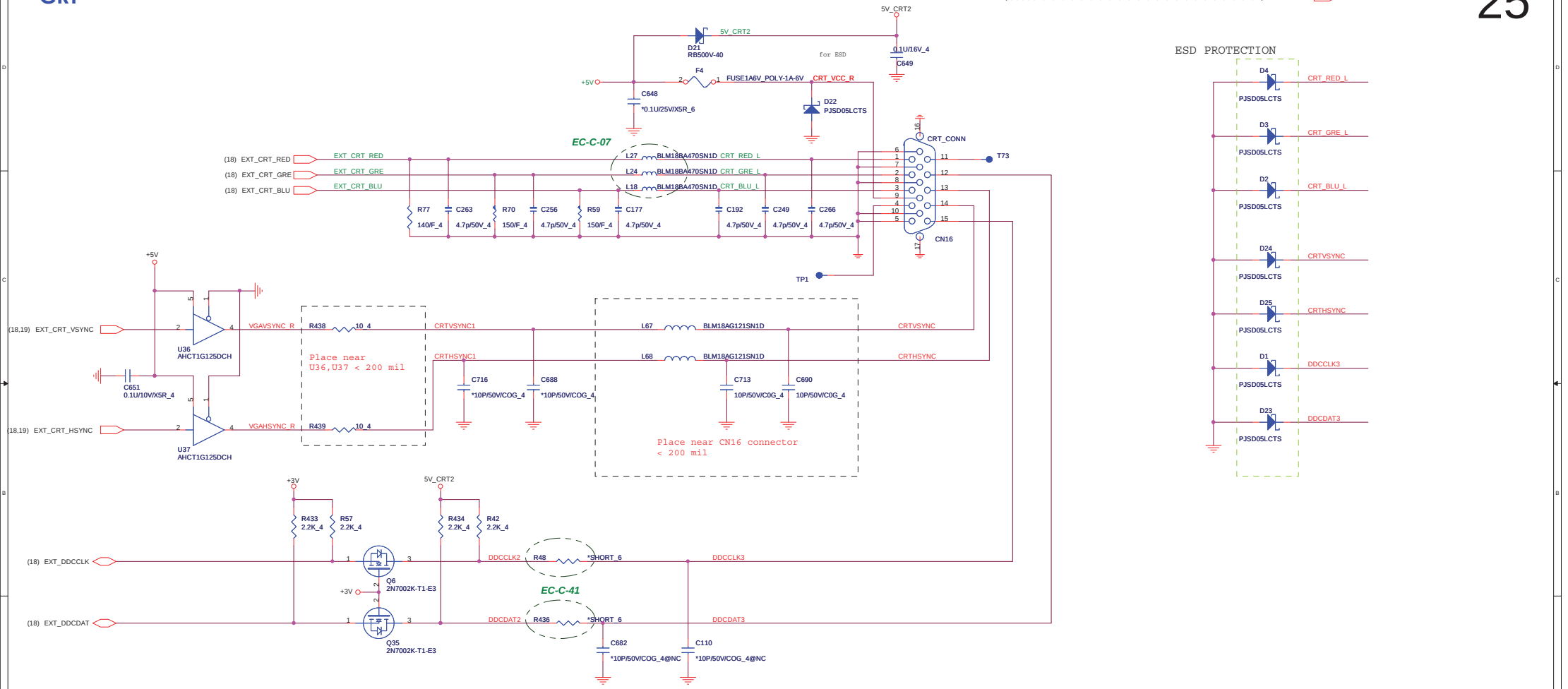


Quanta Computer Inc.		
PROJECT : LD-Note AMD DIS		
Size	Document Number: HDMI CONN	Rev: 1A
Date: Wednesday, June 09, 2010	Sheet 24 of 55	



ESD PROTECTION

Quanta Computer Inc.

PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	CRT	1A
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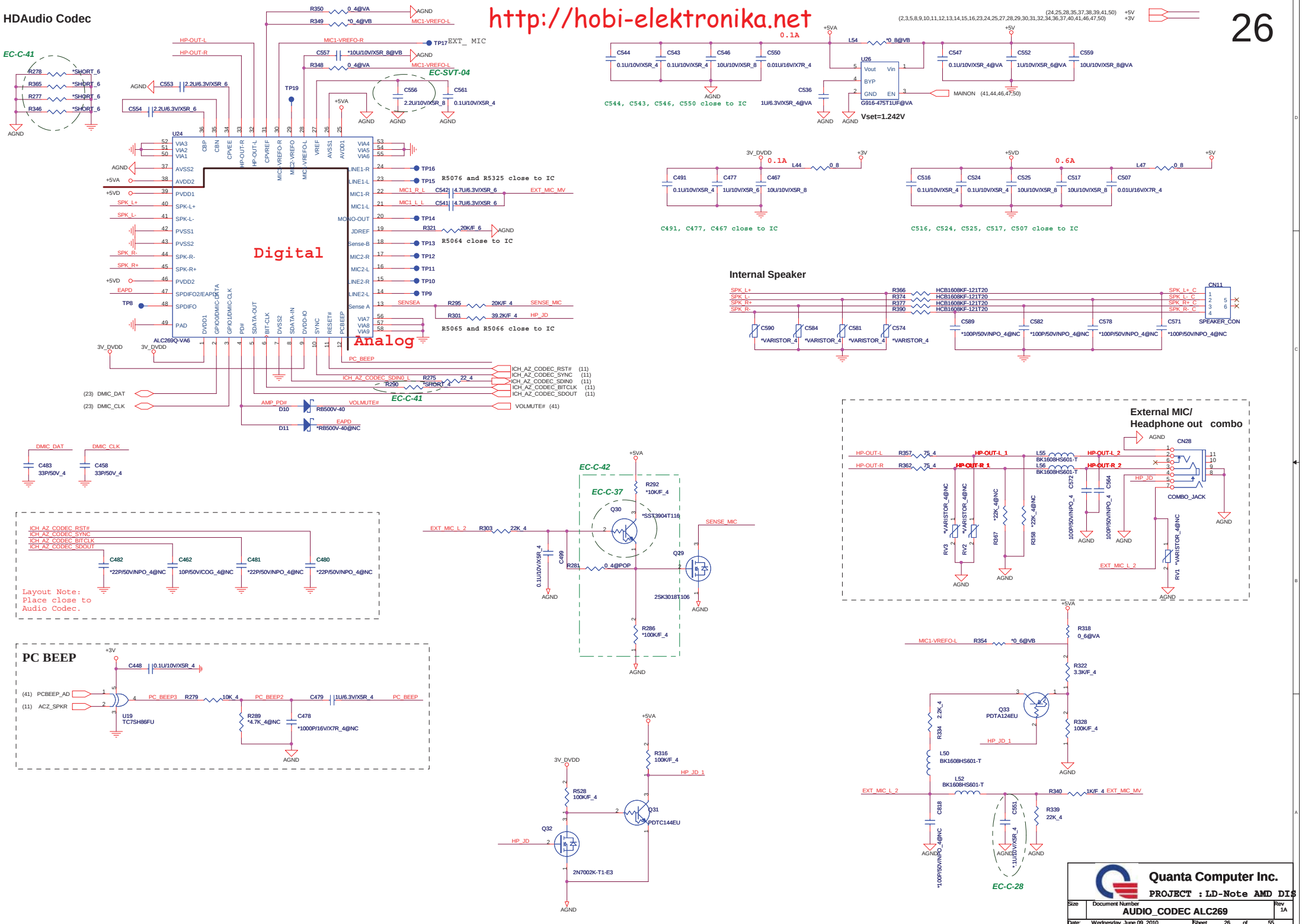
HDAudio Codec



(50) LANVCC
(2,3,5,8,9,10,11,12,13,14,15,16,23,24,25,26,28,29,30,31,32,34,36,37,40,41,46,47,50) +3V
(10,23,35,39,41,43,44,45,46,47,48,50) 3VPCU

LANVCC

3VPCU
(50) LAN_ON
Q34 AO6402
C558 0.1U/10V/X5R_4

EEPROM

R332 *10K_4@NC
U28 *AT93C46A(3.3V)@NC
EECS
LED1_LINK/EESK
LED2/EEDI
LED3/EEDO
R330 3.6K_6
C563 *0.1U/10V/X5R_4@NC

RTL8111DL

U23 RTL8111DL
CTRL12/VDD
LAN_DVDD12
CTRL15/VDD33
XTAL2
XTAL1
R306 *SHORT_4
Y3 25MHZ
LED0_ACT
C511 33P/50V/NPO_4
C502 33P/50V/NPO_4
R282 2.49K/F_4 RSET
CTRL12A
寬>60mils ,長<200mils
LANVCC
MDI0+ MDI0- MDI1+ MDI1- MDI2+ MDI2- MDI3+ MDI3-
AVDD33 MDIP0 MDIN0 NC/FB12 MDIP1 MDIN1 GND NC/MDIP2 NC/MDIN2 DVDD12/AVDD12 NC/MDIP3 NC/MDIN3
VCTRL12A/SROUT12 GND RSET VCTRL12/VDDSR AVDD33 NC/ENSWREG CKTAL2 CKTAL1 NC/AVDD NC/LV_PLL LED0 VDD33
DVDD12 LED1/EESK LED2/EEDI LED3/EEDO EECS GND DVDD12 VDD33 ISOLATEB PERSTB LANWAKEB CLKREQB
LED1_LINK/EESK LED2/EEDI LED3/EEDO EECS ISOLATEB LAN_REST# LAN_WAKE# LAN_REQ#
DVDD12 GND HSIP HSIN REFCLK_P REFCLK_N EVDD12 HSOP HSON GND NC/GPO NC/NC
EC-C-41 EC-C-26 EC-C-36

LAN_ISOLATEB (41)
R331 1K_4
R327 15K_4
D15 RB500V-40
LAN_REST# R320 *SHORT_4 PLT_RST# (10,17,31,32,34,40,41)
ENERGY_DET (41)
GPP_TX1N_LAN C513 0.1U/10V/X7R_4
GPP_TX1P_LAN C508 0.1U/10V/X7R_4
PCIE_RXN1_LAN (7)
PCIE_RXP1_LAN (7)
(7) PCIE_TXP1_LAN
(7) PCIE_TXN1_LAN
CLK_PCIE_LANN_PR (2)
CLK_PCIE_LANP_PR (2)

R287 *SHORT_4
R297 *0_4@NC
3.3V : Enable switching regulator
0V : Disable switching regulator

WAKE / CLKREQ

LANVCC
R337 10K_4
(2,11) LAN_CLKREQ#
Q45 DMN601K-7
LAN_REQ#
R451 *0_4
Q46 PDTC144EU
LAN_WAKE#
WAKE# (11,32,34,41)

* C497 and C424 are for U23 EVDD12 pin 19.

Power Inductor

寬>40mils ,長<200mils
C537 0.1U/10V/X5R_4
C441 0.1U/10V/X5R_4
C534 0.1U/10V/X5R_4
C512 0.1U/10V/X5R_4
R267 *SHORT_8
C473 0.1U/10V/X5R_4
C447 22U/6.3V/X5R_8

寬>60mils ,長<200mils
CTRL12A
L42 4.7uH
CTRL12A_R
寬>60mils ,長<200mils
C446 22U/6.3V/X5R_8
C431 0.1U/10V/X5R_4
R252 *SHORT_8
R253 *SHORT_8
C497 1U/6.3V/X5R_4
C424 1U/6.3V/X5R_4
LAN_EVDD12

Power Inductor(choke):
建議4.7uH Power choke,
tolerance < 20%耐電流
>600mA, efficiency > 75%

C440 C439 C538 C475 C539 0.1U/10V/X5R_4
LAN_DVDD12

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

* C537,C441,C534,C512 are for U23 VDD33 pins-- 1, 29, 37 and 40.
Place C473 ,C447 closed to U23 pins44,45.
* C440,C439,C538,C475,C539 are for U23 VDD12 pins-- 10, 13, 30, 36, 39.

Tramsformer

U11 9276A_R
MDI0- MDI0+ MDI1- MDI1+ MDI2- MDI2+ MDI3- MDI3+
TD4- TD4+ TCT4 TD3- TD3+ TCT3 TD2- TD2+ TCT2 TD1- TD1+ TCT1
MX4- MX4+ MCT4 MX3- MX3+ MCT3 MX2- MX2+ MCT2 MX1- MX1+ MCT1
LAN_MX0- LAN_MX0+ LAN_MCT0 LAN_MX1- LAN_MX1+ LAN_MCT1 LAN_MX2- LAN_MX2+ LAN_MCT2 LAN_MX3- LAN_MX3+ LAN_MCT3
C344 C352 C354 C357 0.01U/16V/X7R_4
R157 R162 R163 R166 75/F_8
LANCT3
R156 1M_8
C342 1000P/3KV/NPO_18

RJ45 Connector

U10 U12 CM1293A-04SO
MDI0+ MDI0- MDI1+ MDI1- MDI2+ MDI2- MDI3+ MDI3-
EMI:NEAR CN20
C343 *0.1U/10V/X5R_4@NC
CN20
R155 330_4
LAN_OLED
LED1_LINK/EESK
LAN_MX0+ LAN_MX0- LAN_MX1+ LAN_MX2+ LAN_MX2- LAN_MX1- LAN_MX3+ LAN_MX3-
R174 330_4
LAN_GLED
LED0_ACT
C361 *0.1U/10V/X5R_4@NC
RJ45

RJ45 Connector

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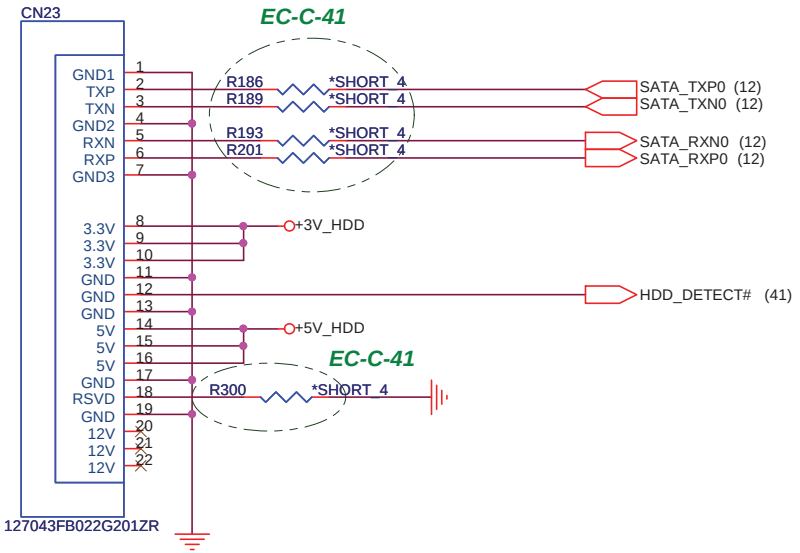
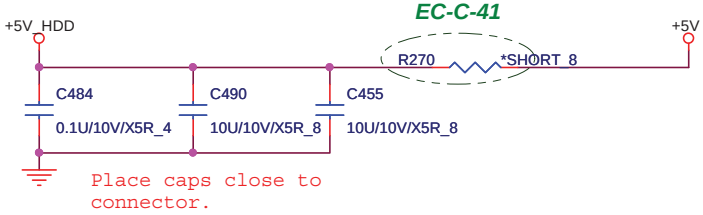
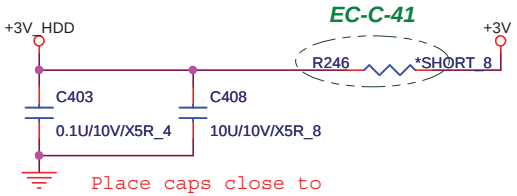
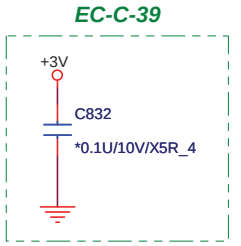
SATA HDD Connector.

(24,25,26,35,37,38,39,41,50) +5V
(2,3,5,8,9,10,11,12,13,14,15,16,23,24,25,26,27,29,30,31,32,34,36,37,40,41,46,47,50) +3V

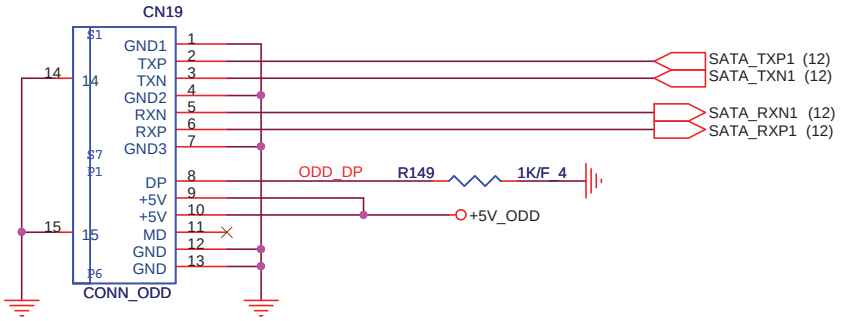


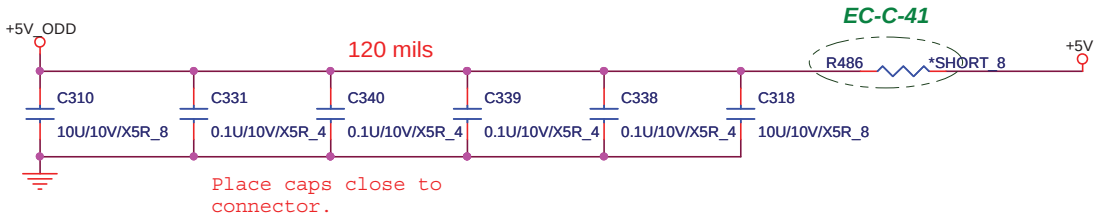






ODD Connector





Quanta Computer Inc.
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	SATA (HDD&CD_ROM)	1A
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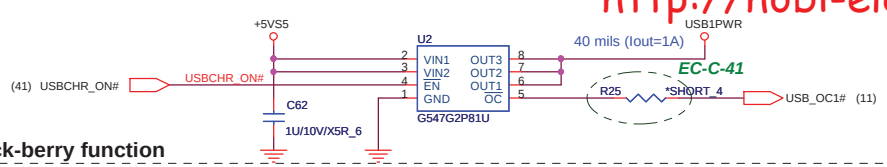
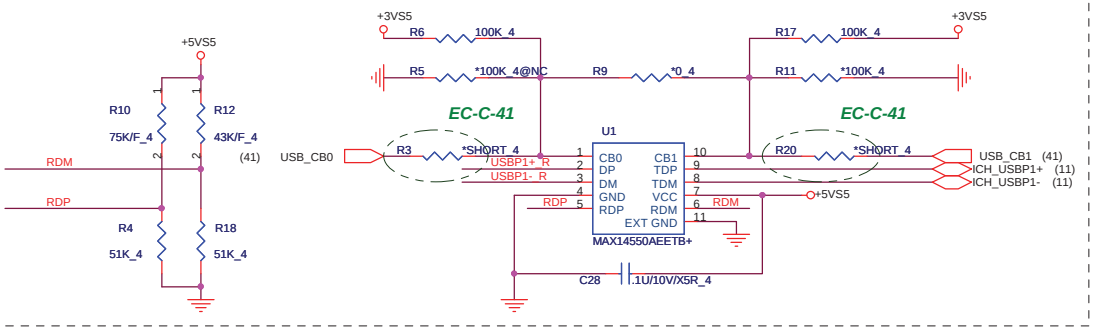
USBX1

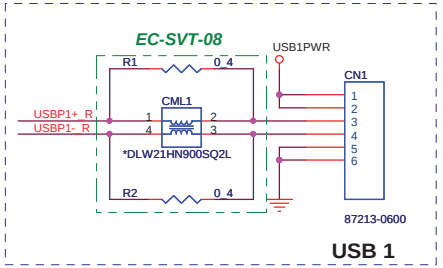


(30,50) +5VS5
(2,3,5,8,9,10,11,12,13,14,15,16,23,24,25,26,27,28,30,31,32,34,36,37,40,41,46,47,50) +3V
(5,10,11,12,13,14,32,50) +3VS5

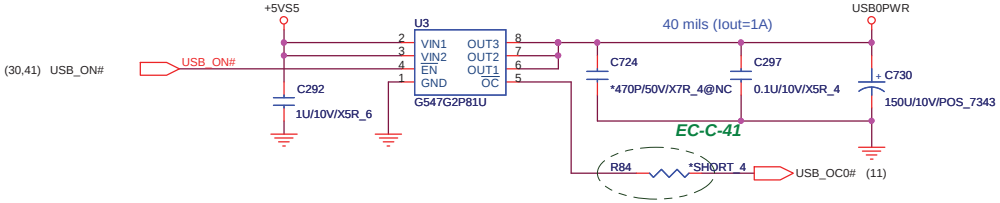
Support Black-berry function

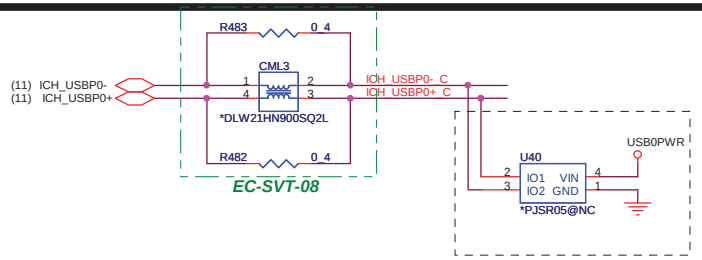


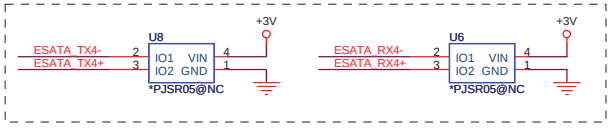
USB X1---> Wire to board conn



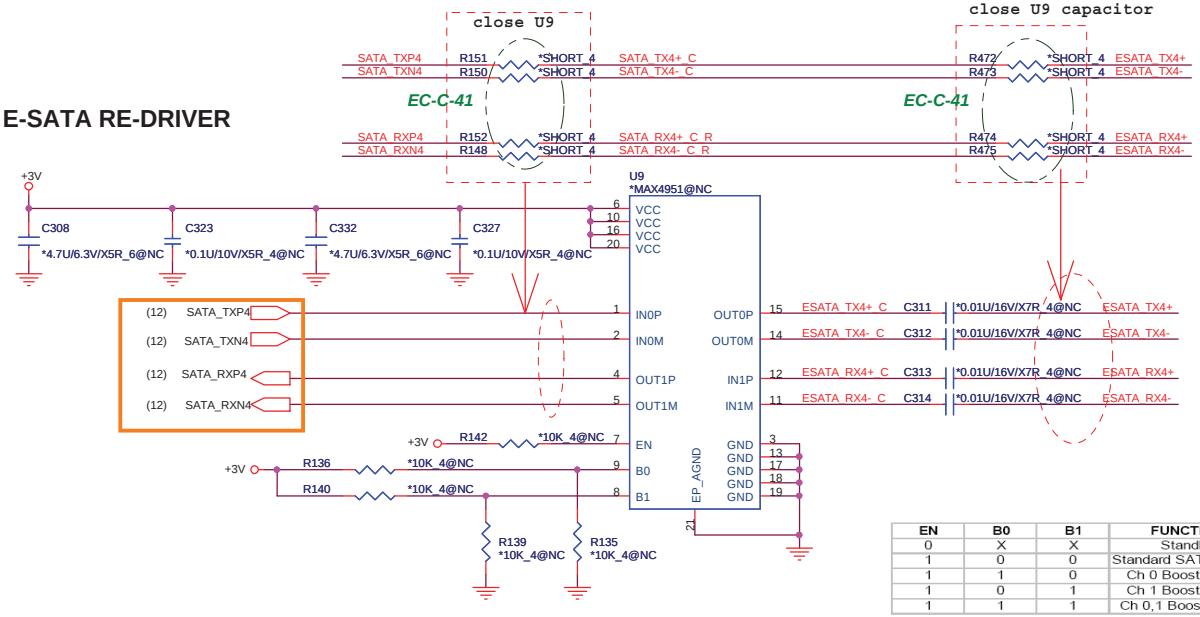
USB + E-SATA



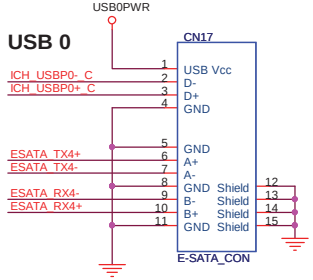




E-SATA RE-DRIVER



EN	B0	B1	FUNCTION
0	X	X	Standby
1	0	0	Standard SATA Output
1	1	0	Ch 0 Boost Output
1	0	1	Ch 1 Boost Output
1	1	1	Ch 0,1 Boost Output



Quanta Computer Inc.

PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	USB X1/USB+ESATA	1A
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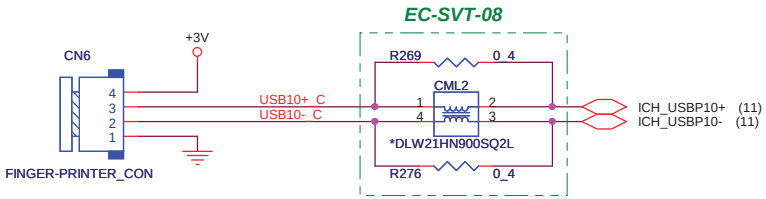
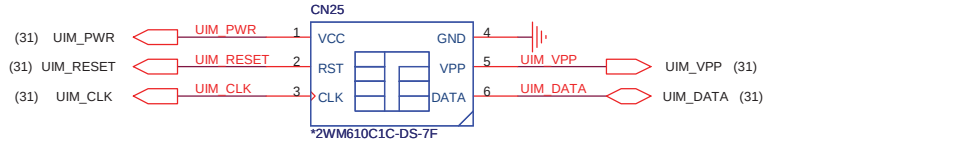
(2,3,4,5,6,10,11,12,13,14,15,16,23,24,25,26,27,28,29,31,32,34,36,37,40,41,46,47,50)
(29,50) +5VS5
+3V
(33,34,41,46,47,49,50) 3VSUS

Finger Print

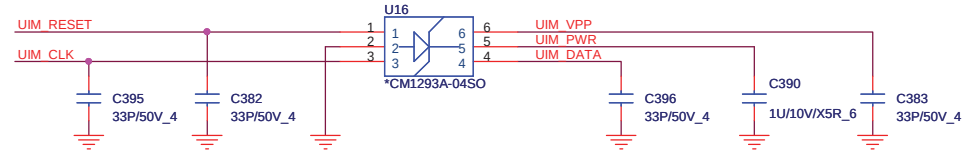


EC-C-30

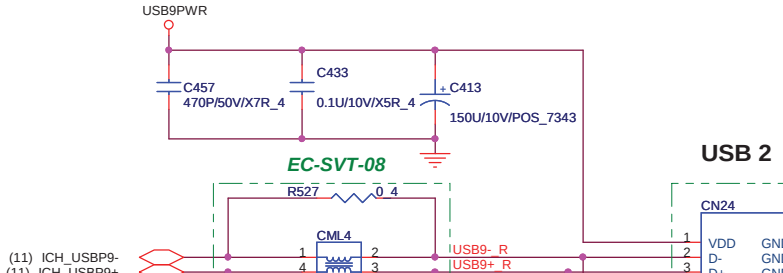
SIM Card CONN

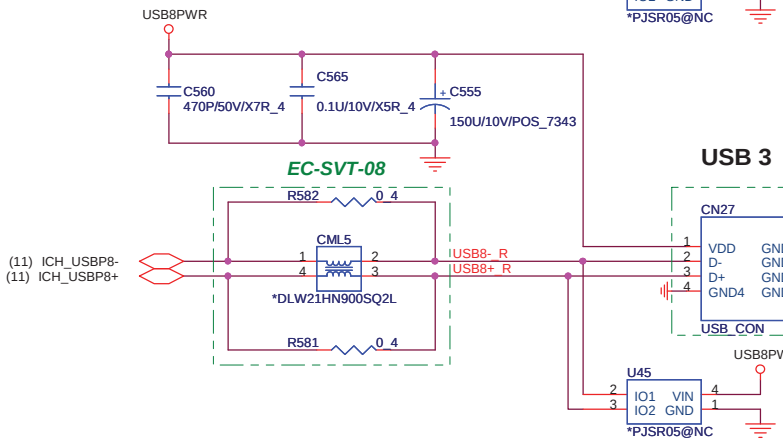


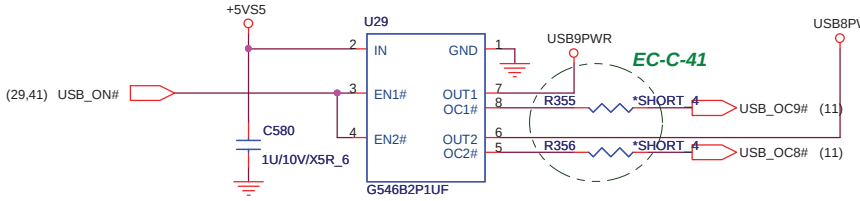
Layout Note:
UIM_RESET,UIM_CLK,UIM_DATA routting as short as possible



FRONT LEDs







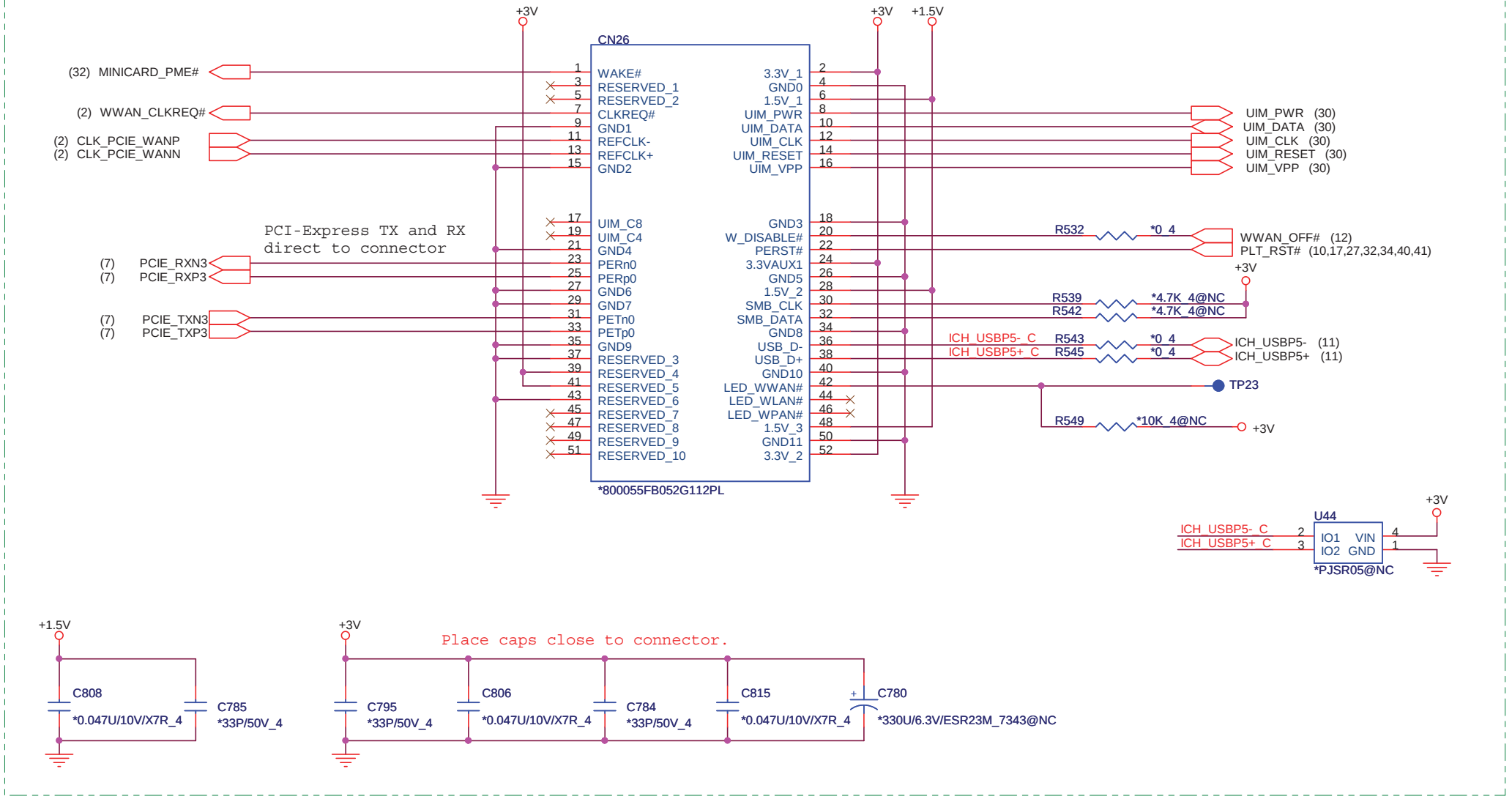
Quanta Computer Inc.
PROJECT :LD-Note AMD DIS

Size	Document Number	Rev
	USB X2/SIM_CARD/LEDs/RF	1A
Date: Wednesday, June 09, 2010	Sheet 30 of 55	

(2,15,8,9,11,12,13,14,15,16,23,24,25,26,27,28,29,30,32,34,36,37,40,41,46,47,50) +3V
(3,8,32,34,50) +1.5V

MiniCard WWAN connector

EC-C-30



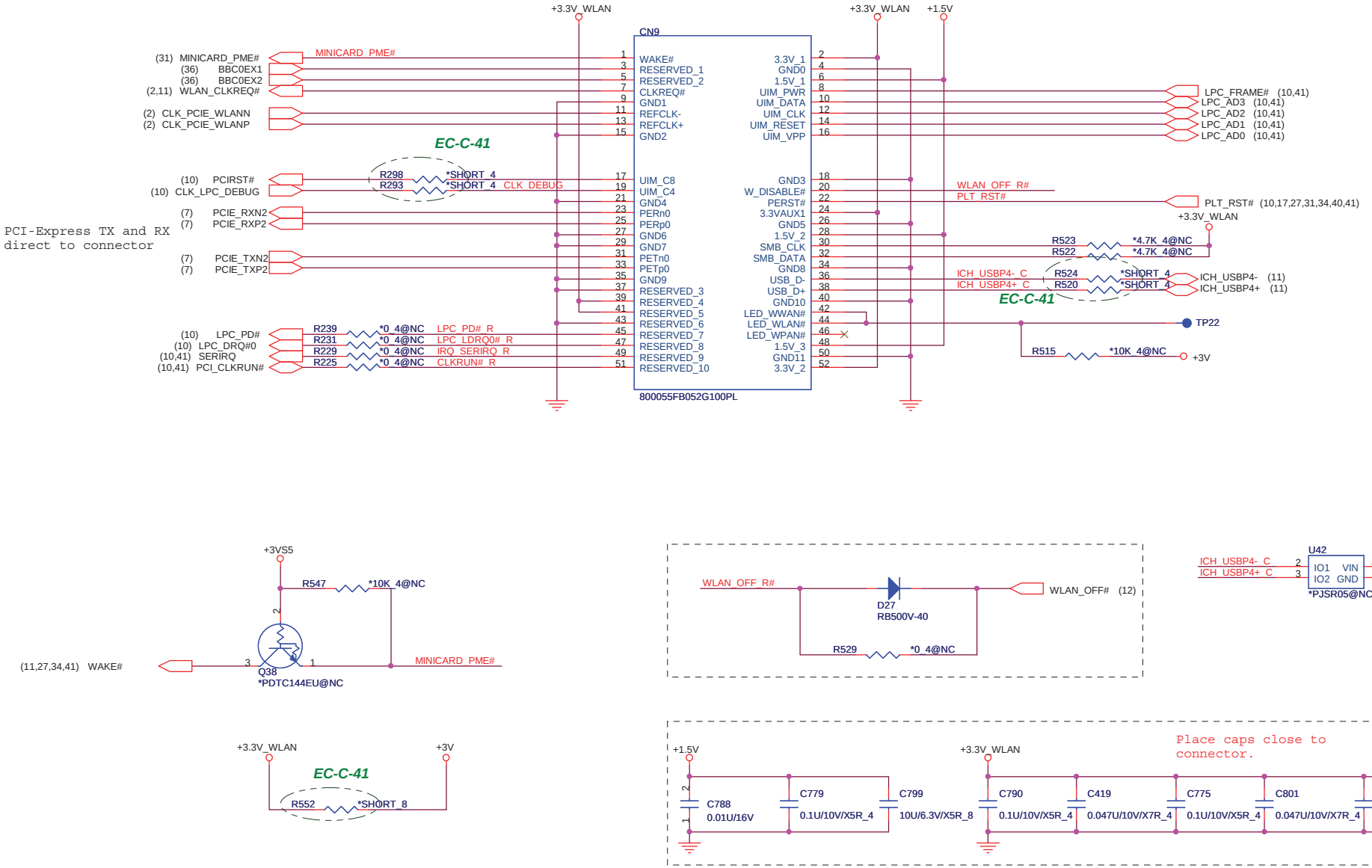
Quanta Computer Inc.

PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	MINI-Card (UWB, WWAN)	1A
Date: Wednesday, June 09, 2010	Sheet 31 of 55	

MiniCard WLAN/WiMAX connector

(2,3,9,10,11,12,13,14,15,16,23,24,25,26,27,28,29,30,31,34,36,37,40,41,46,47,50) +3V
(5,10,11,12,13,14,29,50) +3VS5
(3,8,31,34,50) +1.5V



Quanta Computer Inc.

PROJECT :LD-Note AMD DIS

Size	Document Number	Rev
	MINI-Card (WLAN)	1A
Date: Wednesday, June 09, 2010	Sheet 32 of 55	

CARD READER

EC-C-41

Left NC if Pin23
connected to XD-D4

(2) CLK_48M_CARD

For external 12Mhz clock input
pin13 floating
For external 48Mhz clock input
pin13 pull high

Card Reader Model Select

Pin 45	R20
RTS5159-GR	0 ohm (default)
RTS5158-GR	N.C

U21 — Realtek_RTS5159-GR

0515 EMI Changes

(30,34,41,46,47,49,50) 3VSUS

Note:

	SD/MMC	MS	XD
SP0			
SP1			XD_CD#
SP2	SD_WP		
SP3	SD_CD#		
SP4			XD_D4
SP5		MS_BS	XD_D5
SP6		MS_D1	XD_D3
SP7	SD_DAT0	MS_D0	XD_D6
SP8	SD_DAT7	MS_D2	XD_D2
SP9		MS_INS#	
SP10	SD_DAT6	MS_D3	XD_D7
SP11	SD_CLK	MS_SCLK	XD_D1
SP12	SD_DAT5		XD_D0
SP13	SD_DAT4		XD_WP#
SP14			XD_R/B#
SP15	SD_DAT3		XD_WE#
SP16	SD_DAT2		XD_RE#
SP17			XD_ALE
SP18			XD_CE#
SP19			XD_CLE

7 in 1 Socket(MS, MS PRO,SD, MMC, xD)

CN22 — CONN_CARDREADER

0505 EMI added

0616 Add 10K to GND for +3VCARD discharge in Ver.B

CLOSE TO CONN

Quanta Computer Inc.	
PROJECT : LD-Note AMD DIS	
Size	Document Number: Card Reader-RTS5195-GR — Rev: 1A
Date: Wednesday, June 09, 2010	Sheet 33 of 55

Express Card

(2,3,5,6,9,10,13,16,23,24,25,26,27,28,29,30,31,32,36,37,40,41,46,47,50) +3V
(3,8,31,32,50) +1.5V
(30,33,41,46,47,49,50) 3VSUS

+1.5V_CARD Max. 650mA, Average 500mA.
+3V_CARD Max. 1300mA, Average 1000mA.

(11) ICH_USBP2+
(11) ICH_USBP2-
R207 0_4
R202 0_4
L35
*DLW21HN900SQ2L@NC
USBP2_D+
USBP2_D-
U14
IO1 VIN
IO2 GND
*PJSR05@NC
+3.3V_CARD
FOR ESD

+1.5V +3V 3VSUS
+3.3V_CARDAUX +3.3V_CARD +1.5V_CARD
U18
AUXIN AUXOUT
3.3VIN_0 3.3VOUT_0
3.3VIN_1 3.3VOUT_1
1.5VIN_0 1.5VOUT_0
1.5VIN_1 1.5VOUT_1
ExpressSwitch
SHDN# PERST#
STBY# CPPE#
SYSRST# CPUSB#
OC#
NC
GND0 RCLKEN
G577BSR91U/RT9716AGQW

3VSUS
R254 *100K_4@NC 2231_SHDN#
R265 *100K_4@NC 2231_STBY#
EC-C-10
Q41
2N7002
(10,17,27,31,32,40,41) PLT_RST#
+3V
CARD_RESET#
EXPRCRD_PWREN#
CPUSB#
R238 R244 *100K_4@NC *100K_4@NC
3VSUS
TP7
TP6

CN8
USBP2_D-
USBP2_D+
CPUSB#
+3.3V_CARDAUX
R240 10K_4
R247 10K_4
+1.5V_CARD
(11,27,32,41) WAKE#
+3.3V_CARDAUX
CARD_RESET#
+3.3V_CARD
(2,11) NEW_CLKREQ#
(11) EXPRCRD_PWREN#
(2) CLK_PCIE_NEWN
(2) CLK_PCIE_NEWP
(7) PCIE_RXN0
(7) PCIE_RXP0
(7) PCIE_TXN0
(7) PCIE_TXP0
1 GND_1
2 USB-
3 USB+
4 CPUSB#
5 RSV_0
6 RSV_1
7 SMBCLK
8 SMBDATA
9 +1.5V_0
10 +1.5V_1
11 WAKE#
12 +3.3VAUX
13 PERST#
14 +3.3V_1
15 +3.3V_2
16 CLKREQ#
17 CPPE#
18 REFCLK-
19 REFCLK+
20 GND_2
21 PERn0
22 PERp0
23 GND_3
24 PETn0
25 PETp0
26 GND_4
NC1 NC2 NC3 NC4 NC5
27 28 29 30 31
48303-0033
JAE PX10FS16PH-26P
PCI-Express TX and RX direct to connector.
PDC del

+1.5V C400 0.1U/10V/X5R_4
Please the cap near pin 12 & 14(1.5VIN).

+3V C452 0.1U/10V/X5R_4
Please the cap near pin 2 & 4 (3.3VIN).

3VSUS C412 0.1U/10V/X5R_4
Please the cap near pin 17 (AUXIN).

+3.3V_CARDAUX C406 0.1U/10V/X5R_4
Please the cap near pin 15 (AUXOUT).

+3.3V_CARD C454 0.1U/10V/X5R_4
Please the cap near pin 3 & 5 (3.3VOUT).

+1.5V_CARD C398 0.1U/10V/X5R_4
Please the cap near pin 11 & 13(1.5VOUT).

+1.5V_CARD C443 0.1U/10V/X5R_4 C432 0.1U/10V/X5R_4
Please the cap near connector.

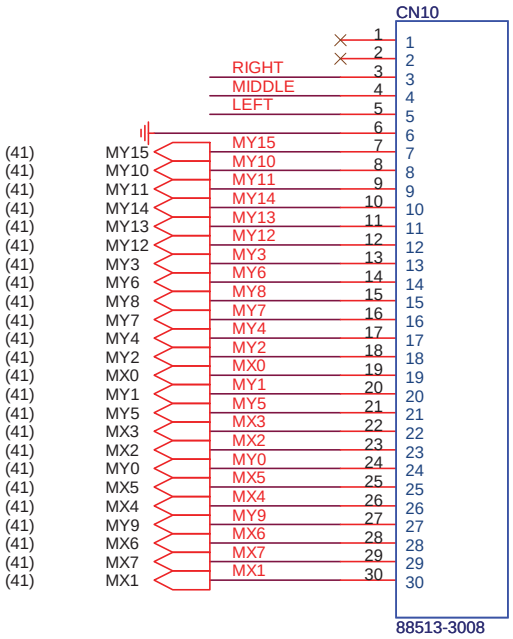
+3.3V_CARD C453 0.1U/10V/X5R_4 C474 0.1U/10V/X5R_4 C468 10U/6.3V/X5R_6
Please the cap near connector.

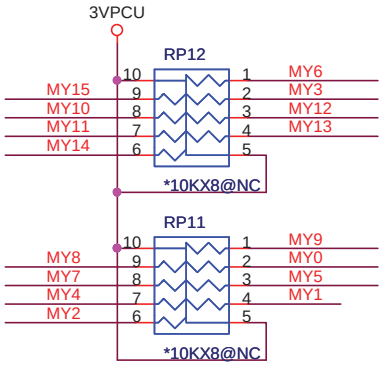
Quanta Computer Inc.
PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	Express Card	1A
Date: Wednesday, June 09, 2010	Sheet 34 of 55	

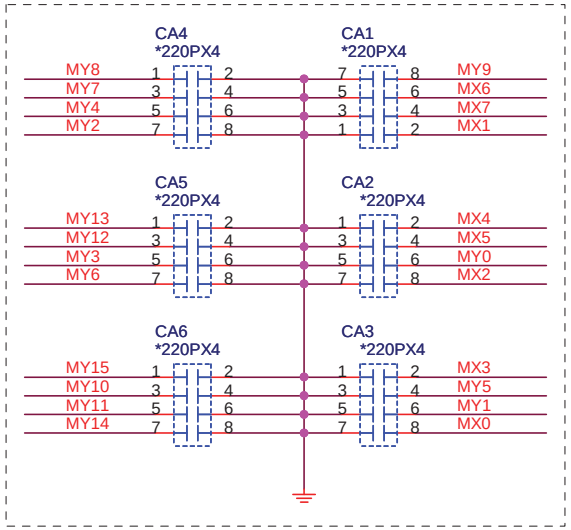
KEYBOARD

KEYBOARD connector



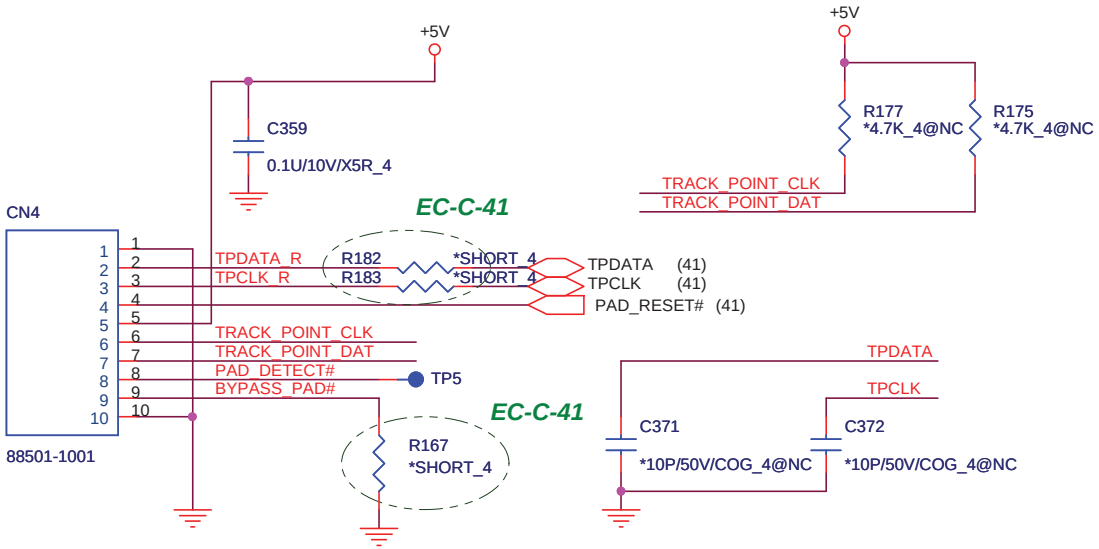


(24,25,26,28,37,38,39,41,50) +5V
(10,23,27,39,41,43,44,45,46,47,48,50) 3VPCU



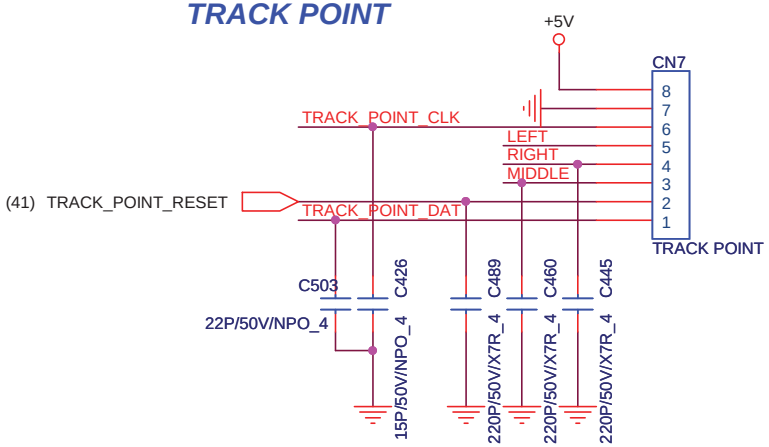
For EMI request

Touch pad



Place C371 ,C372 closed to CN4

TRACK POINT



Quanta Computer Inc.

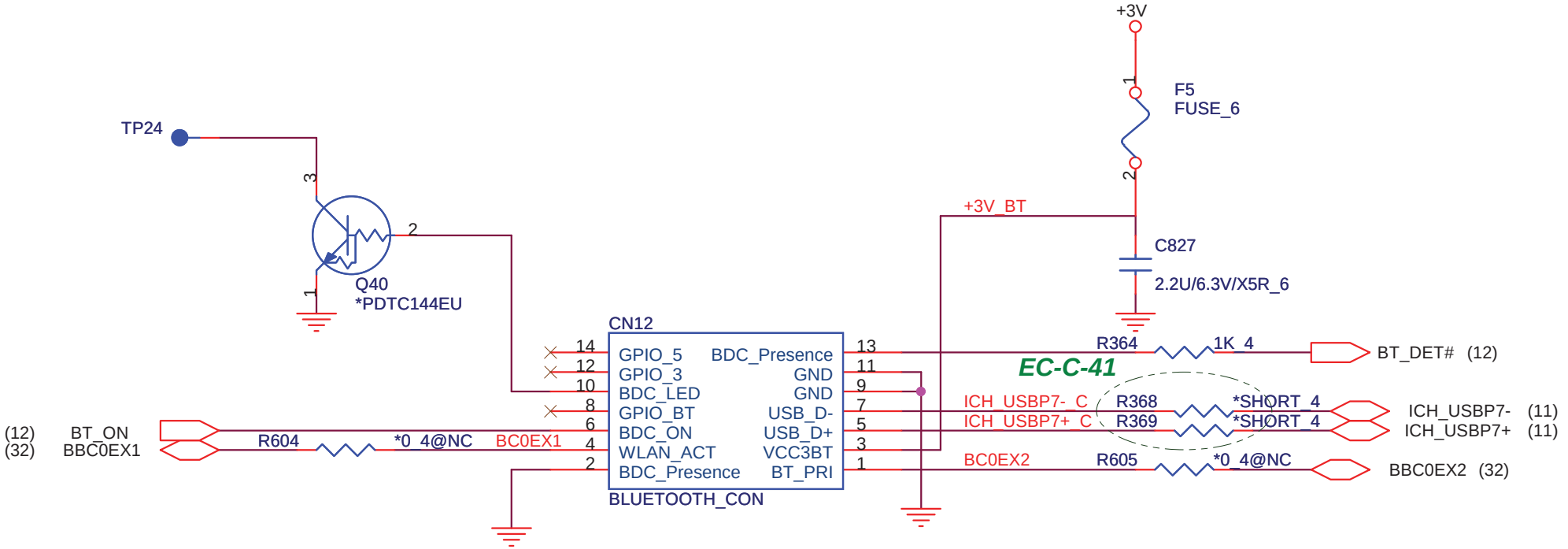
PROJECT :LD-Note AMD DIS

Size	Document Number	Rev
	K/B, T/P	1A

Date: Wednesday, June 09, 2010 Sheet 35 of 55

BLUETOOTH

(2,3,5,8,9,10,11,12,13,14,15,16,23,24,25,26,27,28,29,30,31,32,34,37,40,41,46,47,50) +3V



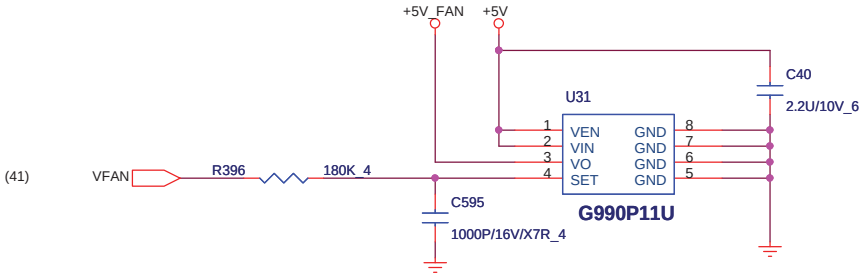
Quanta Computer Inc.

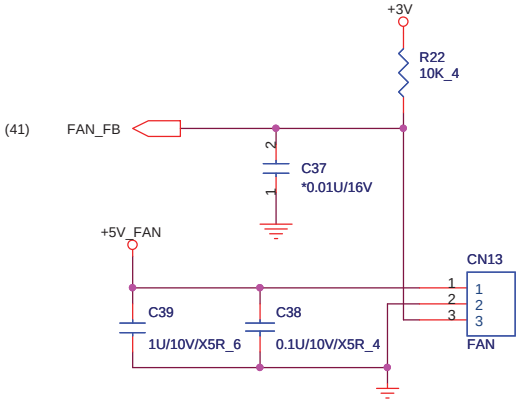
PROJECT :LD-Note AMD DIS

Size	Document Number	Rev
	B/T	1A
Date: Wednesday, June 09, 2010	Sheet 36 of 55	

FAN CONTROL

(1,2,3,4,9,10,11,12,13,14,15,16,23,24,25,26,27,28,29,30,31,32,34,36,40,41,46,47,50) +3V
(24,25,26,28,35,38,39,41,50) +5V



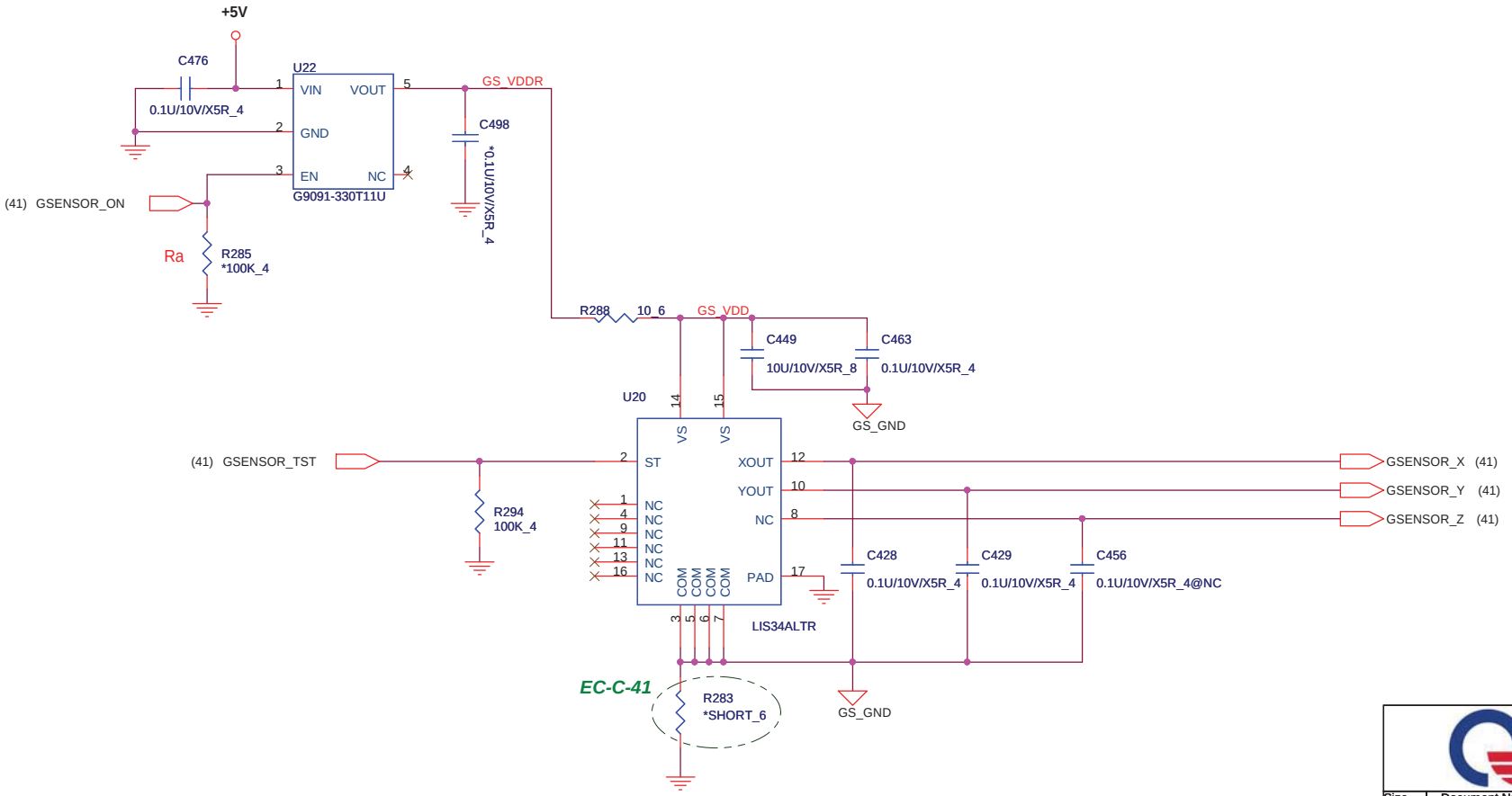


Quanta Computer Inc.

PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	FAN & THERMAL	1A
Date: Wednesday, June 09, 2010	Sheet 37 of 55	

G-SENSOR (3-Axial)



Quanta Computer Inc.

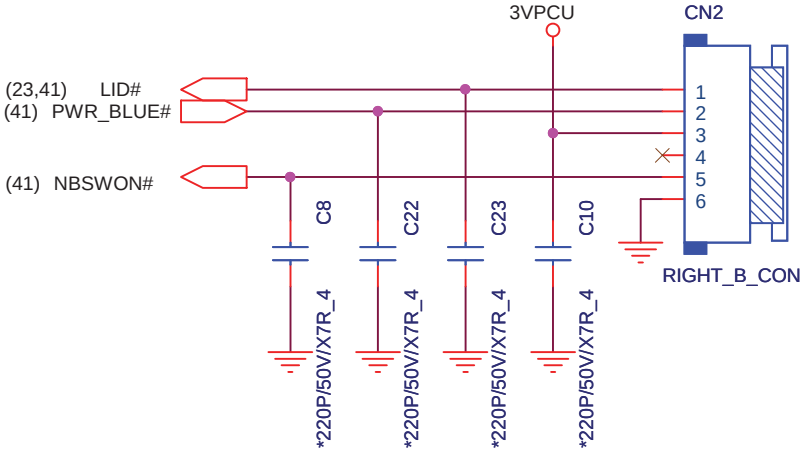
PROJECT : LD-Note AMD DIS

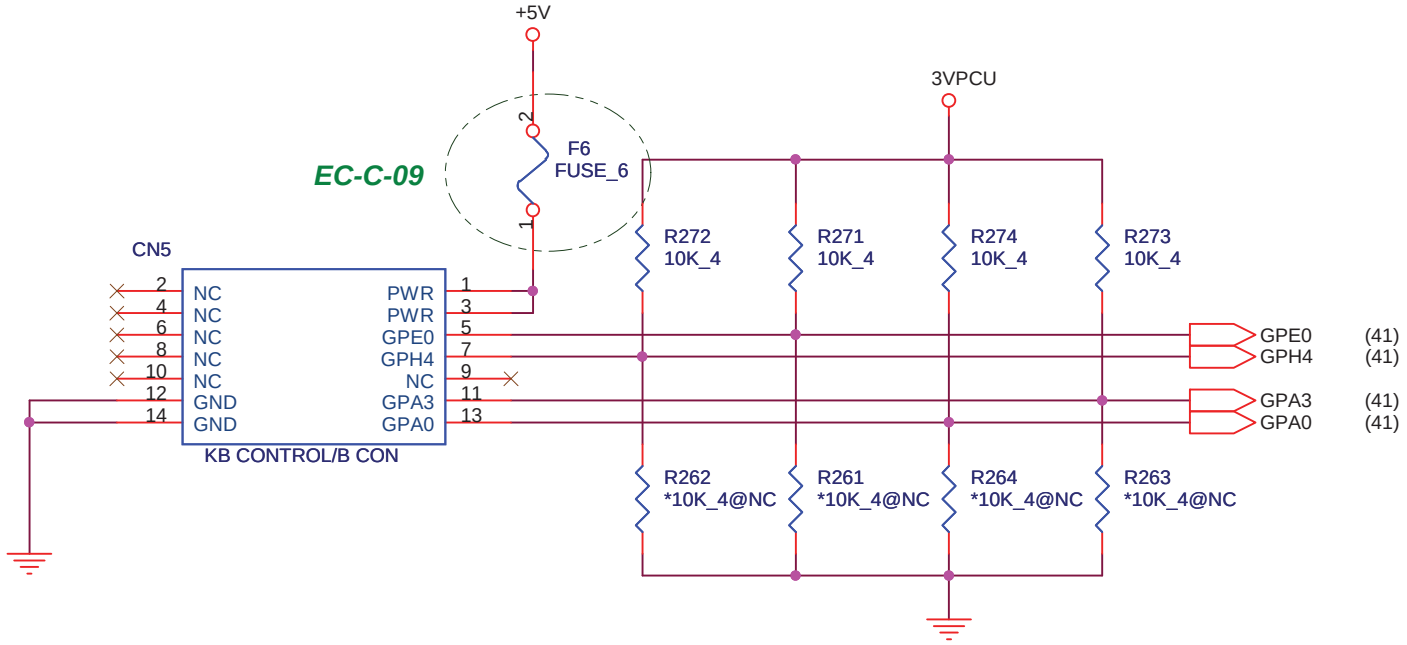
Size	Document Number	Rev
	G-SENSOR	1A

Date: Wednesday, June 09, 2010 Sheet 38 of 55

FFC TO B LED RIGHT SIDE CONNECTOR

(10,23,27,35,41,43,44,45,46,47,48,50) 3VPCU





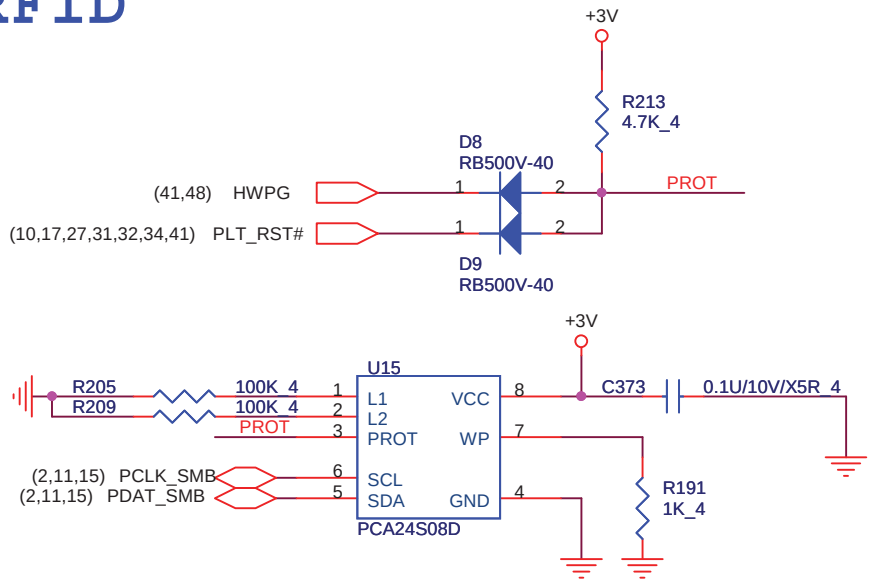
Quanta Computer Inc.

PROJECT :LD-Note AMD DIS

Size	Document Number	Rev
	B TO B CON	1A
Date: Wednesday, June 09, 2010	Sheet 39 of 55	

(2,3,5,8,9,10,11,12,13,14,15,16,23,24,25,26,27,28,29,30,31,32,34,36,37,41,46,47,50) +3V

RFID



Quanta Computer Inc.

PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	RFID EEPROM	1A
Date: Wednesday, June 09, 2010	Sheet 40 of 55	

IT8502E

HWPG

(For PLL Power)

Layout Note:
Place all capacitors close to IT8512.

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

EMI suggestion:
Add a 15p bypass CAP on CLK_PCI_8512

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

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

EC_ID Select	ID1	ID0
SDV	0	0
SIT	0	1

R609	FLASH TYPE SELECT
High	LPC/FWH FLASH ROM
Low	SPI FLASH ROM (Default)

VGA Select	RF_SW#
DIS	0
UMA	1

POWER SWITCH

RF ON/OFF SWITCH

16Mbit (2M Byte), SPI

Winbond AKE38ZP0N00
SST AKE28FP0K07
MX AKE37FP0213

Width = 6mils Spacing = 10 mils

MiniCard WLAN

HOLE18 H-TC197BC142D102P2
HOLE19 H-TC197BC142D102P2

MiniCard WWAN

HOLE31 H-TC236BC102D64P2
HOLE32 H-TC236BC102D64P2

Hole for SB support

HOLE30 H-C197D118P2
HOLE33 H-C197D118P2

Bluetooth nut

HOLE20 H-TC197BC158D118P2

E/L KB nut

HOLE17 H-TC197BC158D118P2

VGA NUT

HOLE28 H-TC197BC158D122P2
HOLE26 H-TC197BC158D122P2
HOLE27 H-TC197BC158D122P2
HOLE29 H-TC197BC158D122P2

Hole for CPU support

HOLE5 *H-C150D150N
HOLE9 *H-C150D150N
HOLE10 *H-C150D150N

Boundary Hole

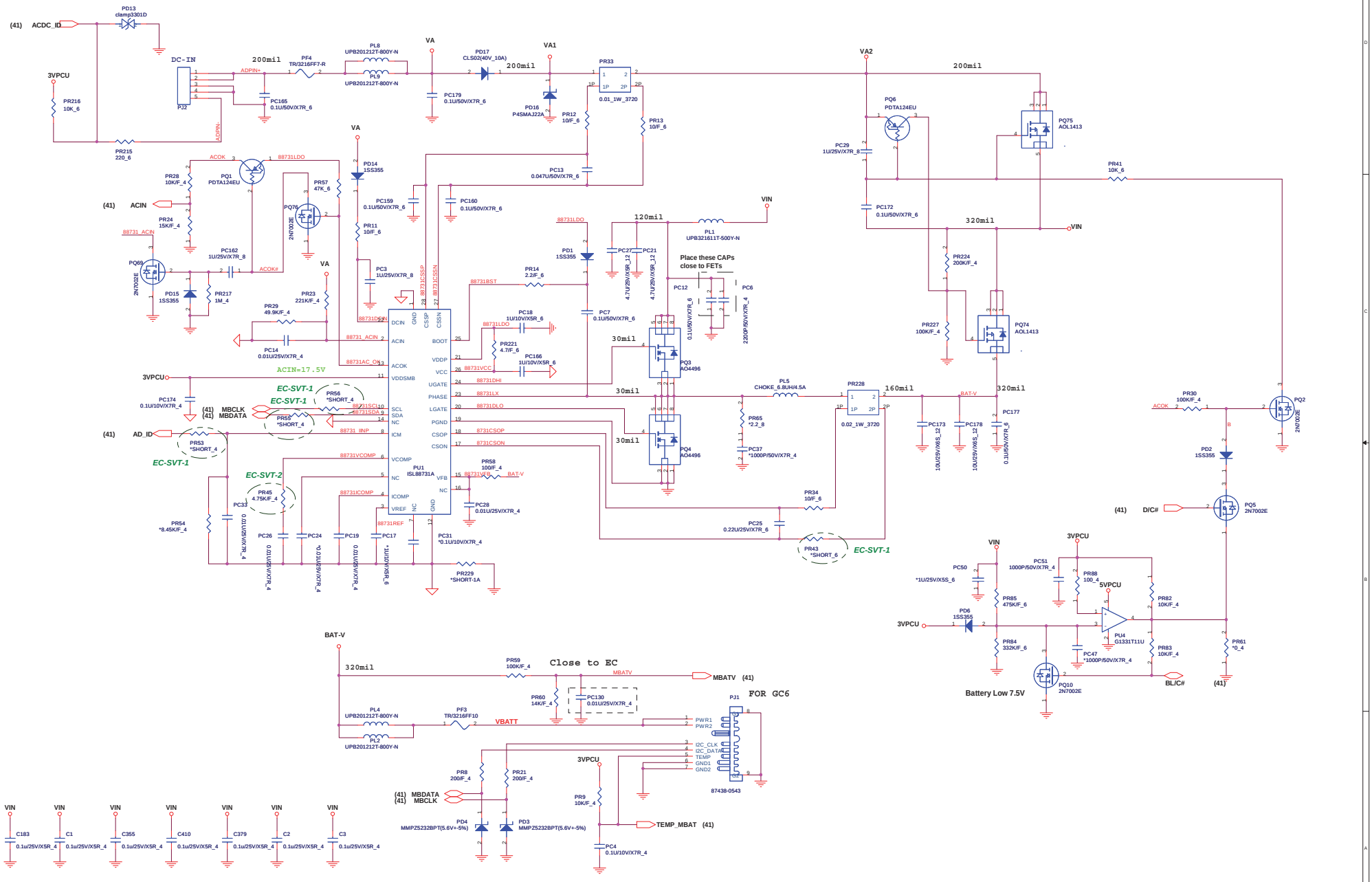
HOLE1 *H-C276D91P2
HOLE2 *H-C86D86N
HOLE3 *H-C276D91P2
HOLE4 *H-C276D91P2
HOLE6 *H-C315D284P2
HOLE7 *H-C276D91P2
HOLE8 *H-C276D91P2
HOLE11 *H-C315D284P2
HOLE12 *H-C276D91P2
HOLE13 *H-C276D91P2
HOLE14 *H-C276D91P2
HOLE15 *H-C91D91N
HOLE16 *H-C354D354N
HOLE21 *H-C276D91P2
HOLE22 *H-C276D91P2
HOLE23 *H-C276D91P2
HOLE24 *H-C91D91N
HOLE25 *H-C276D91P2

PAD

GP1 *RE270X220NP
GP2 *RE236X494NP
GP3 *RE197X217NP
GP4 *SPAD-SPE1NP
GP5 *SPAD-RE270X320NP
GP6 *SPAD-RE270X320NP
GP7 *SPAD-RE420X165NP
GP8 *SPAD-RE420X165NP

Quanta Computer Inc.
PROJECT :LD-Note AMD DIS

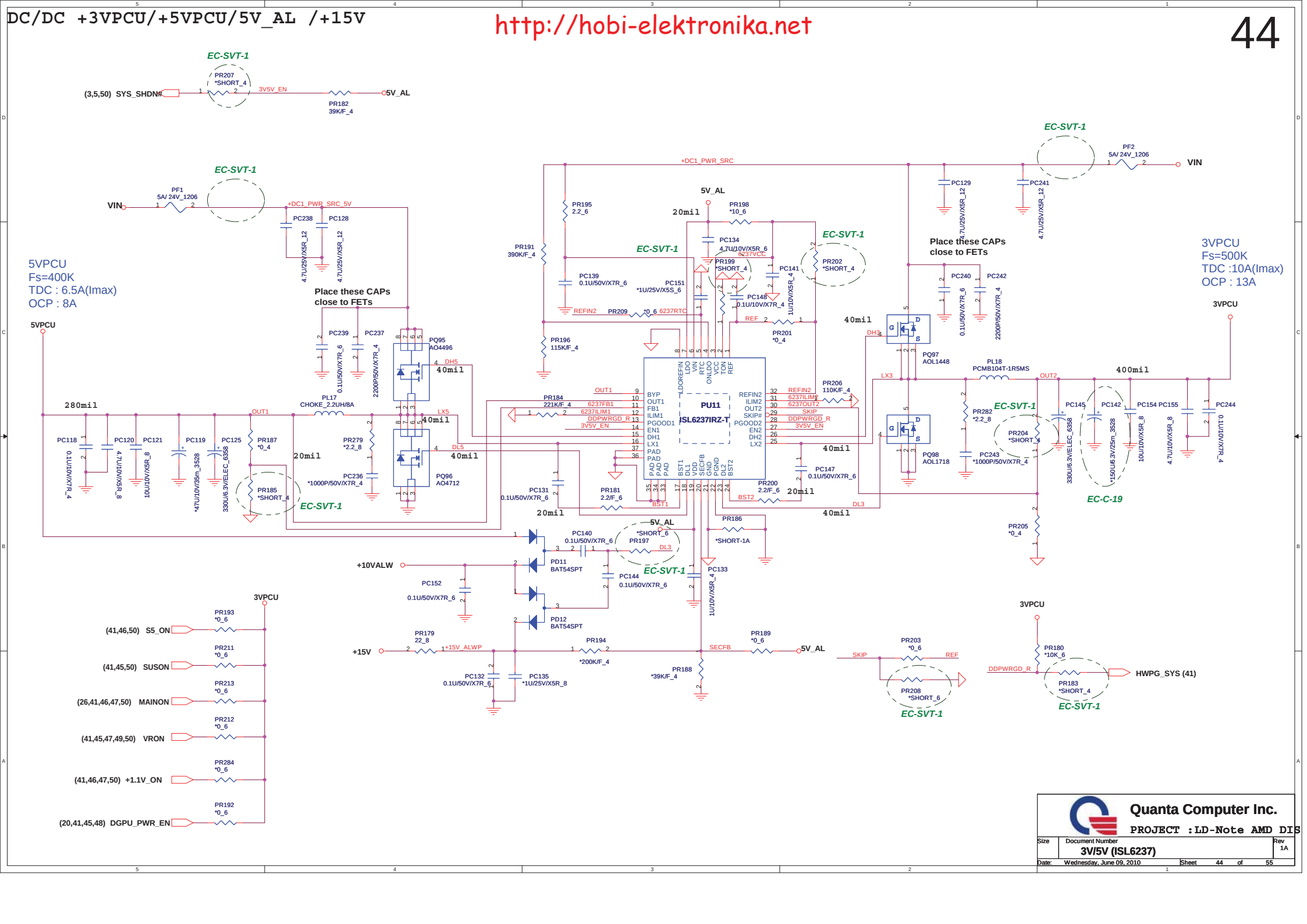
Size	Document Number	Rev
	HOLD & SKEW	1A
Date: Wednesday, June 09, 2010	Sheet 42 of 55	



Quanta Computer Inc.

PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	Charger (ISL88731A)	1A
Date: Wednesday, June 09, 2010	Sheet 43 of 55	

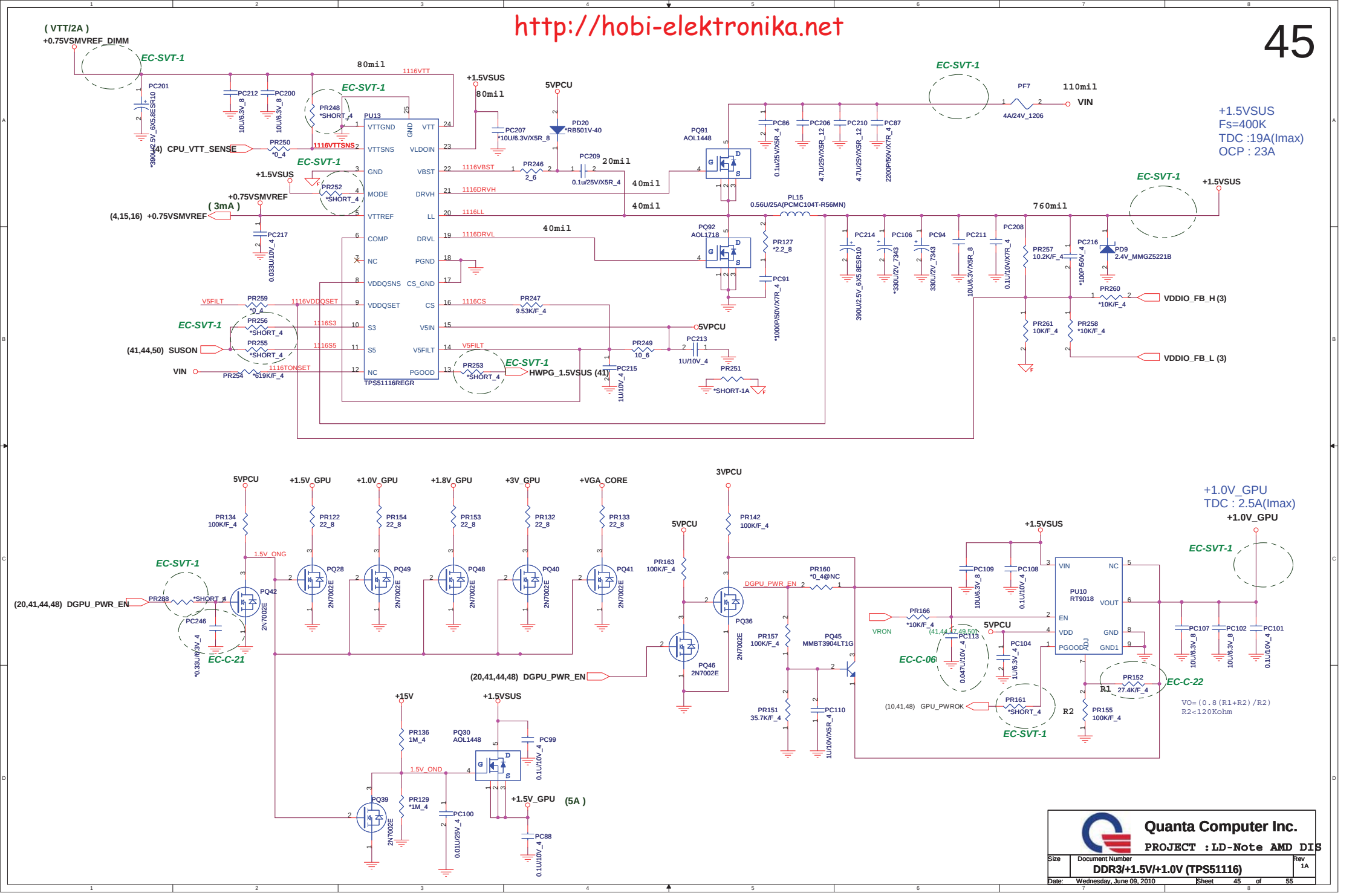


Quanta Computer Inc.

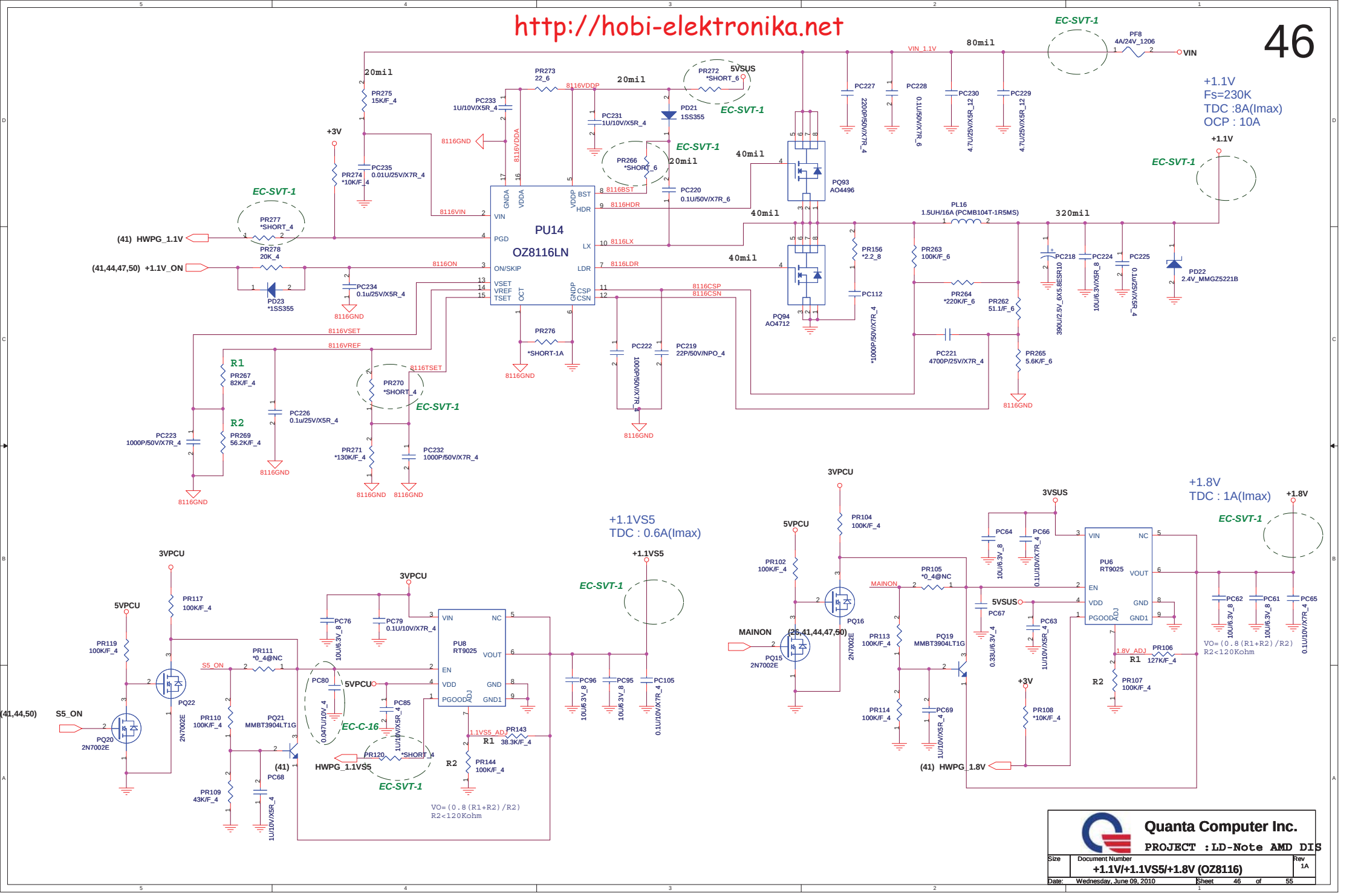
PROJECT :LD-Note AMD DIS

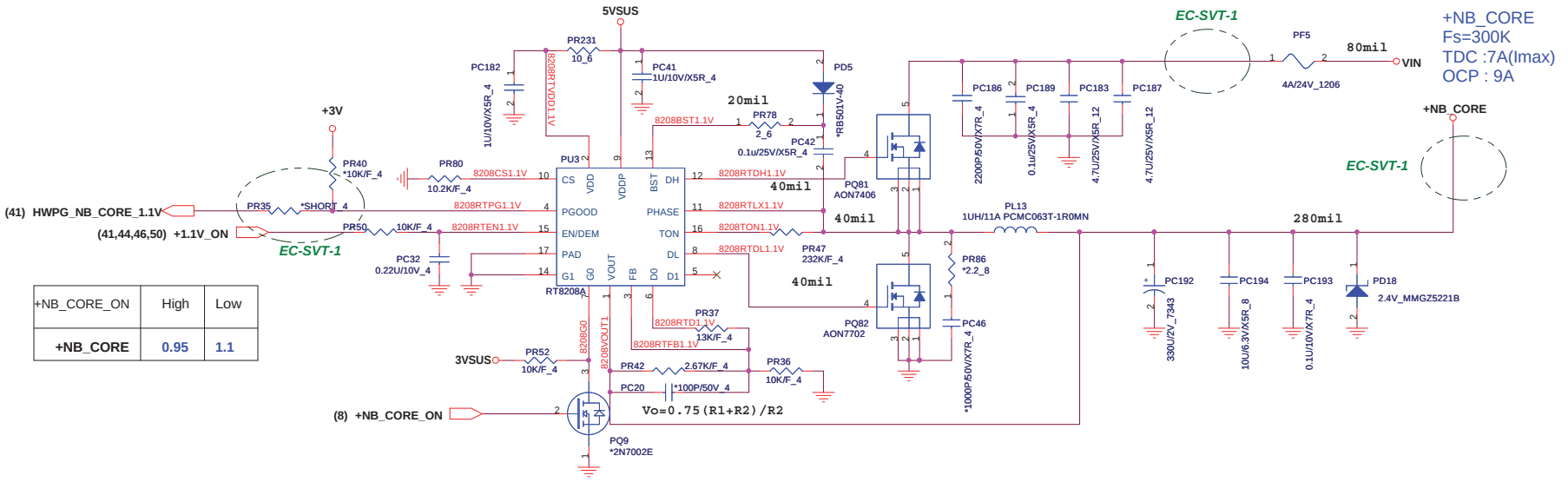
Size	Document Number	Rev
	3V/5V (ISL6237)	1A

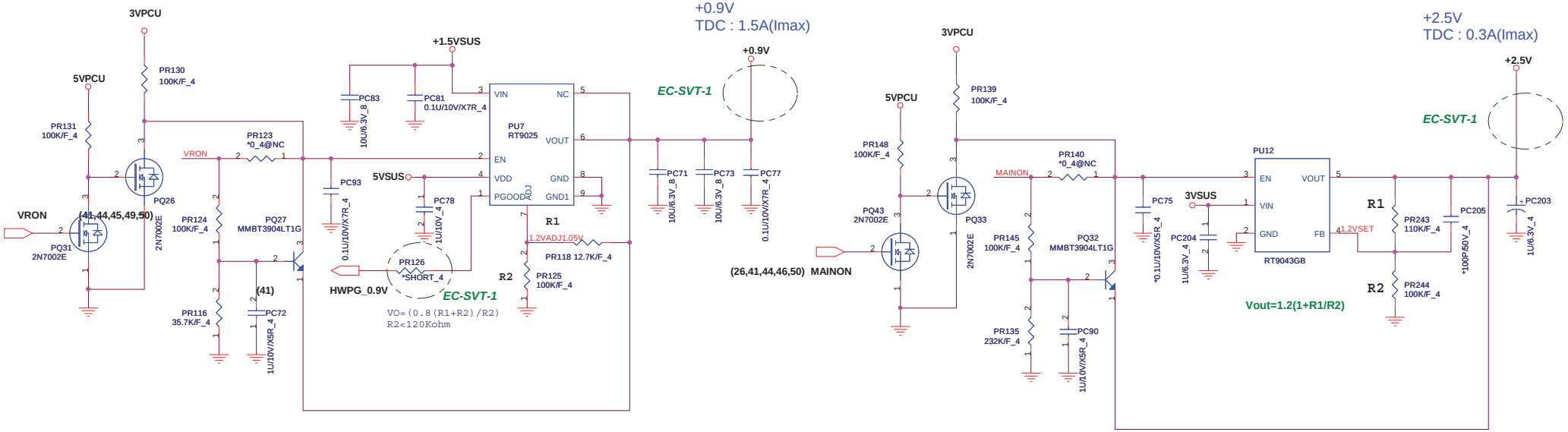
Date: Wednesday, June 09, 2010 Sheet 44 of 55



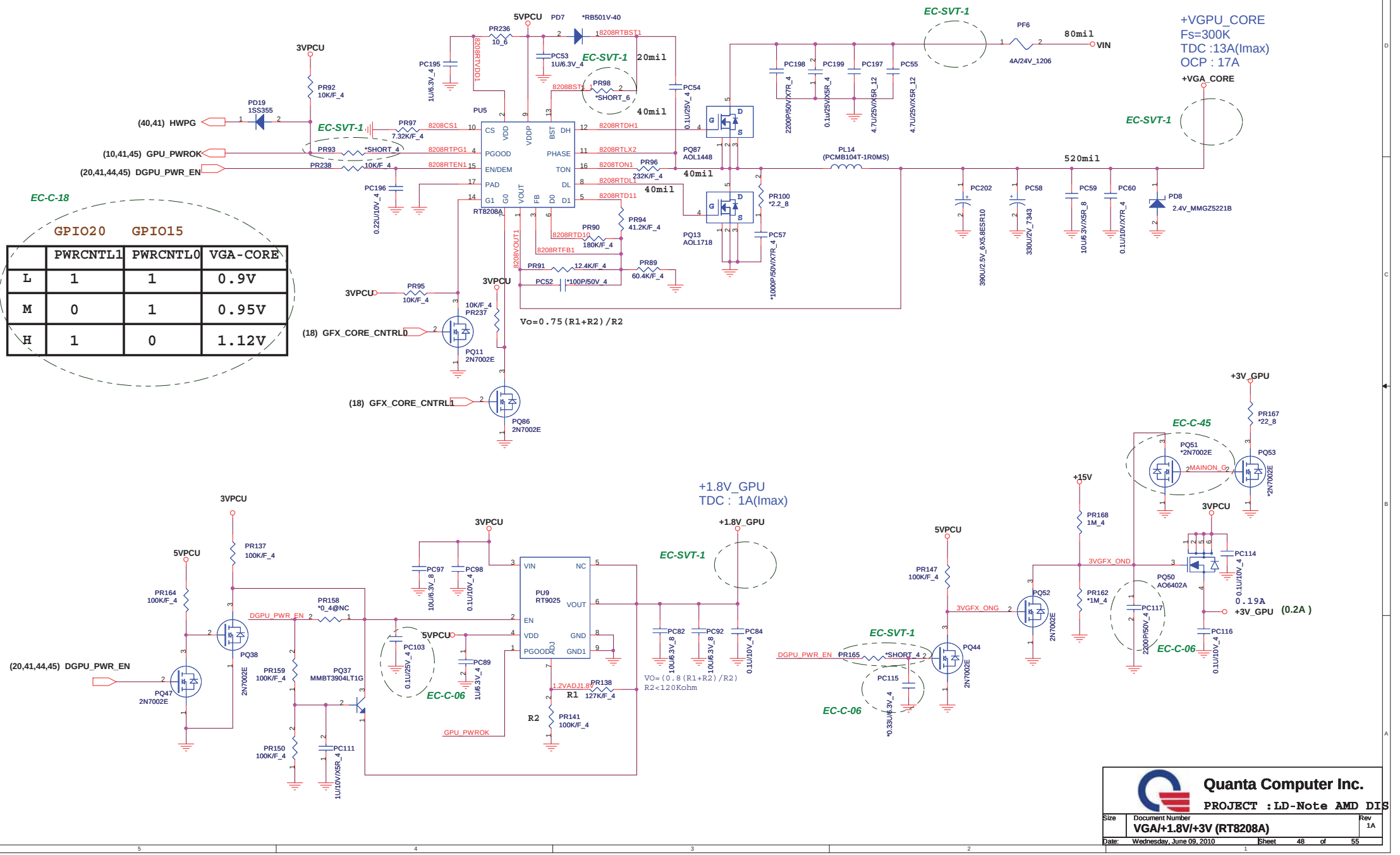
Quanta Computer Inc.	PROJECT : LD-Note AMD DIS	
Size	Document Number: DDR3/+1.5V/+1.0V (TPS51116)	Rev: 1A
Date: Wednesday, June 09, 2010	Sheet 45 of 55	







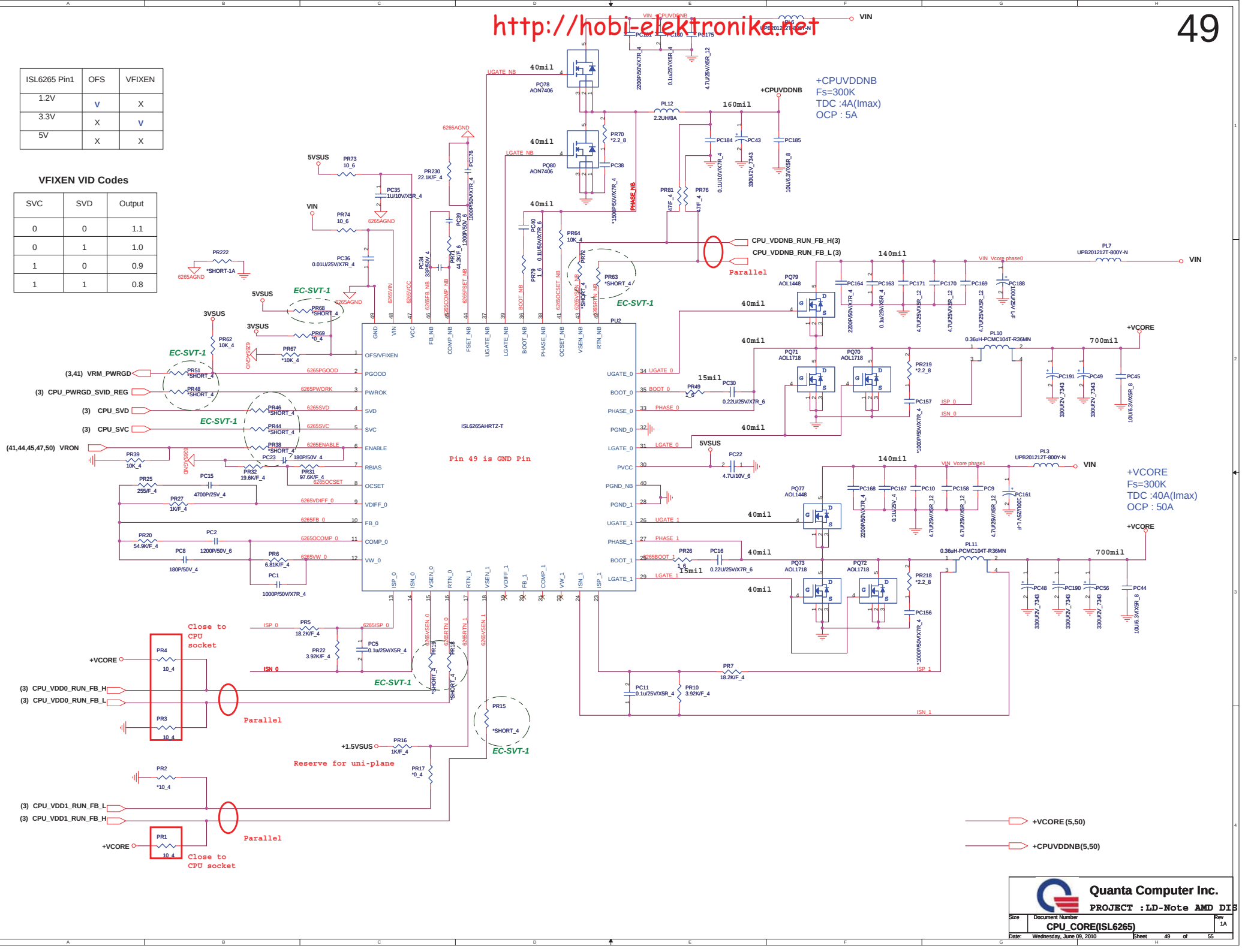
Quanta Computer Inc.	PROJECT : LD-Note AMD DIS	
Size	Document Number: +NB_CORE/+0.9V/+2.5V(RT8208A)	Rev: 1A
Date: Wednesday, June 09, 2010	Sheet 47 of 55	



ISL6265 Pin1	OFS	VFIXEN
1.2V	V	X
3.3V	X	V
5V	X	X

VFIXEN VID Codes

SVC	SVD	Output
0	0	1.1
0	1	1.0
1	0	0.9
1	1	0.8

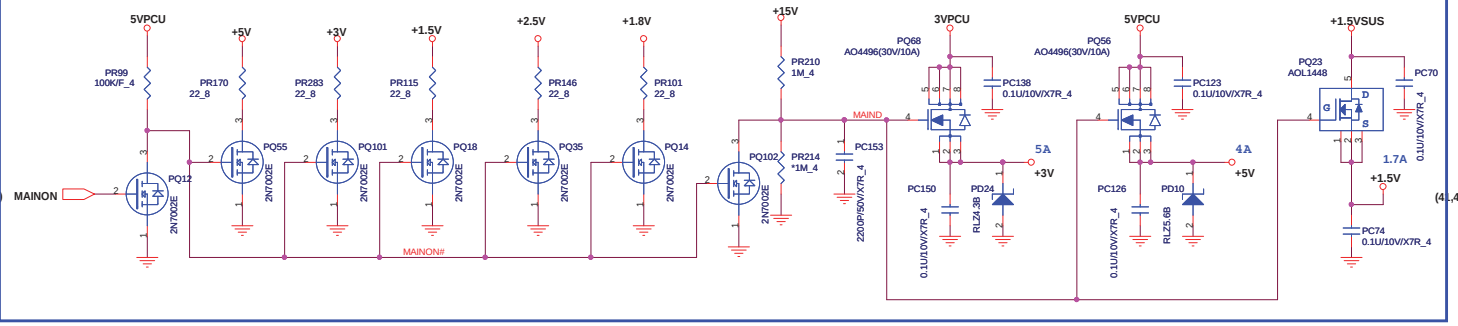


Quanta Computer Inc.
PROJECT : LD-Note AMD DIS

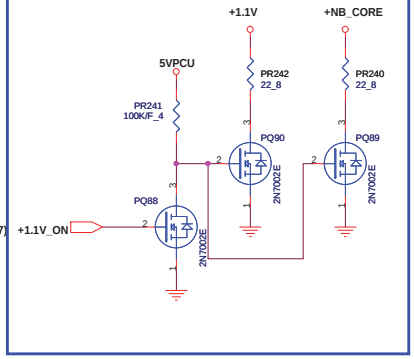
Size	Document Number	Rev
	CPU_CORE(ISL6265)	1A

Date: Wednesday, June 09, 2010 Sheet 49 of 55

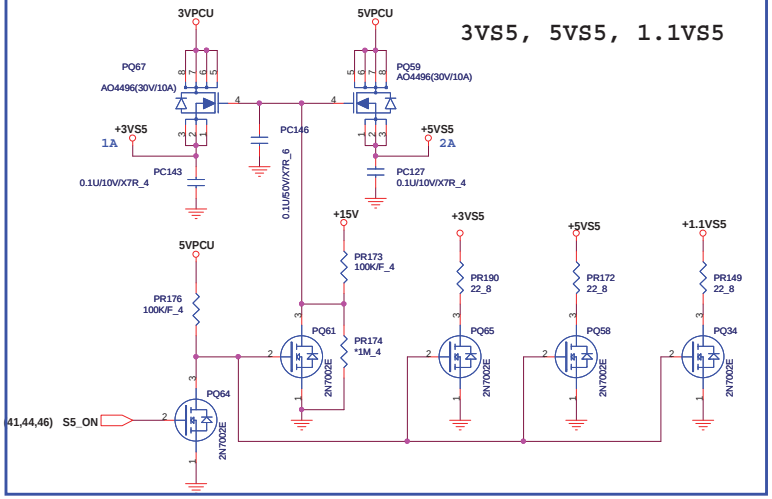
+3V, +5V,+2.5V,+1.8V,+1.5V



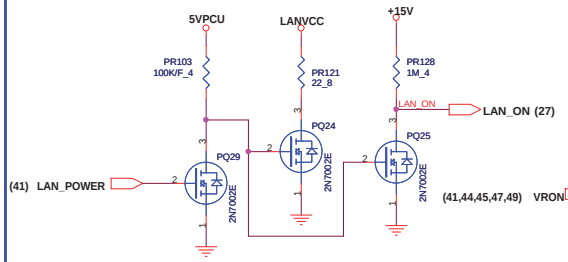
+1.1V,+NB_CORE



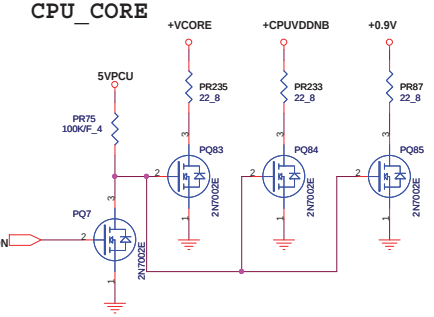
3VS5, 5VS5, 1.1VS5



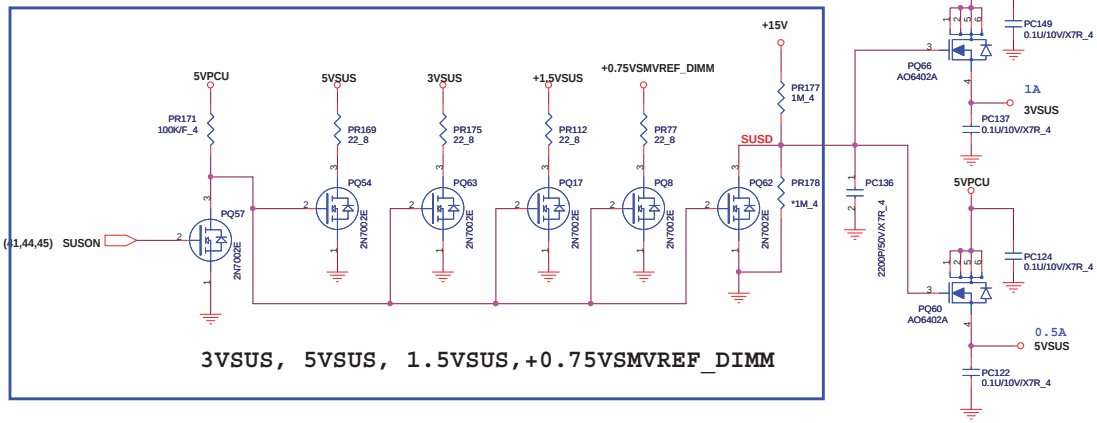
LANVCC

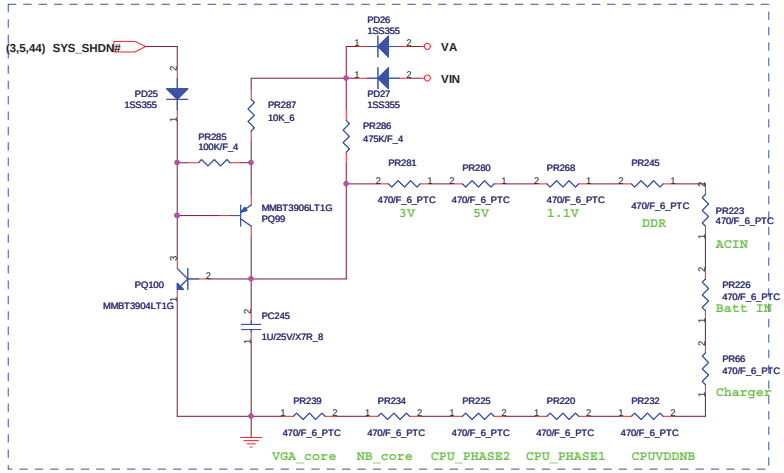


CPU_CORE



3VSUS, 5VSUS, 1.5VSUS,+0.75VSMVREF_DIMM





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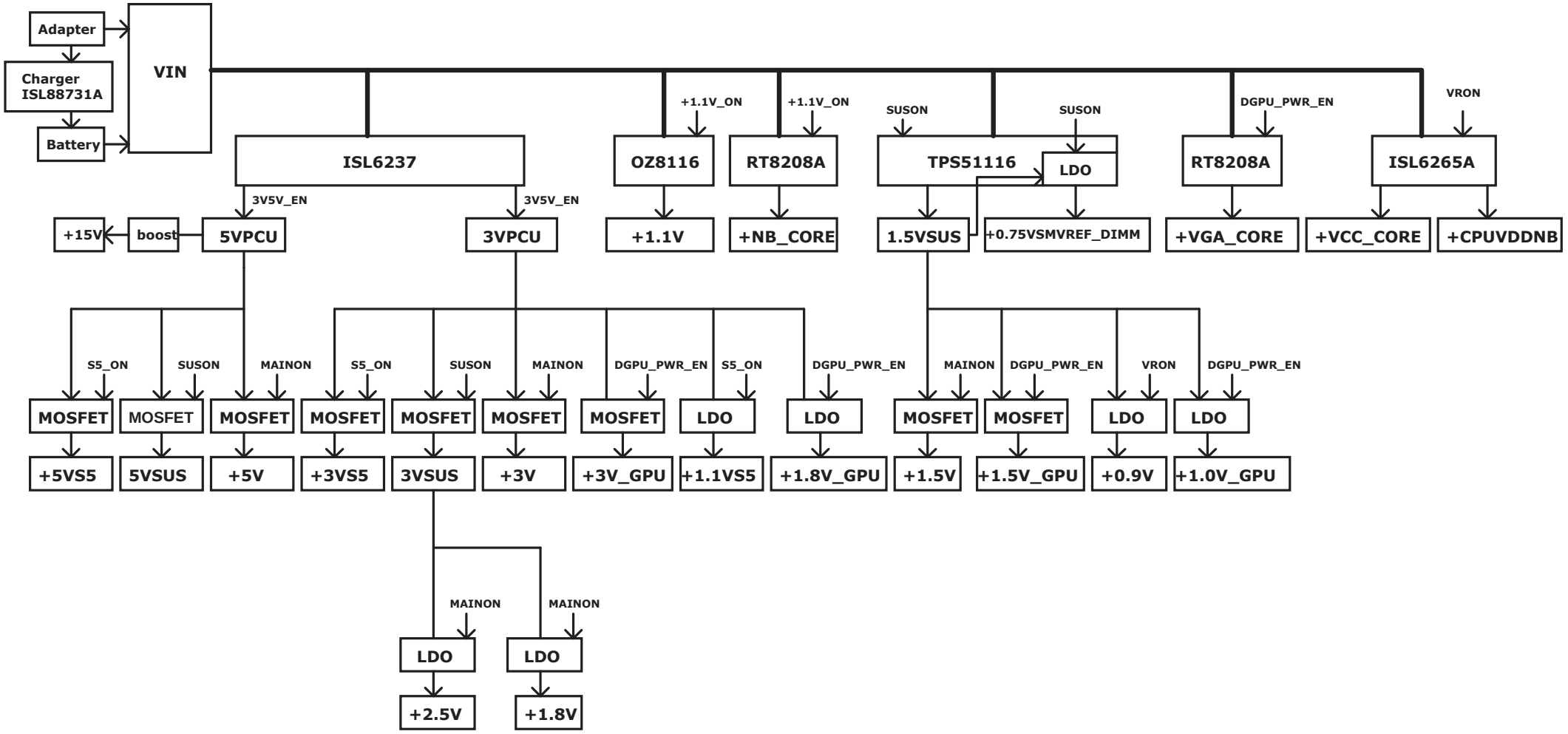
PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	DisCharge	1A
Date: Wednesday, June 09, 2010	Sheet 50 of 55	

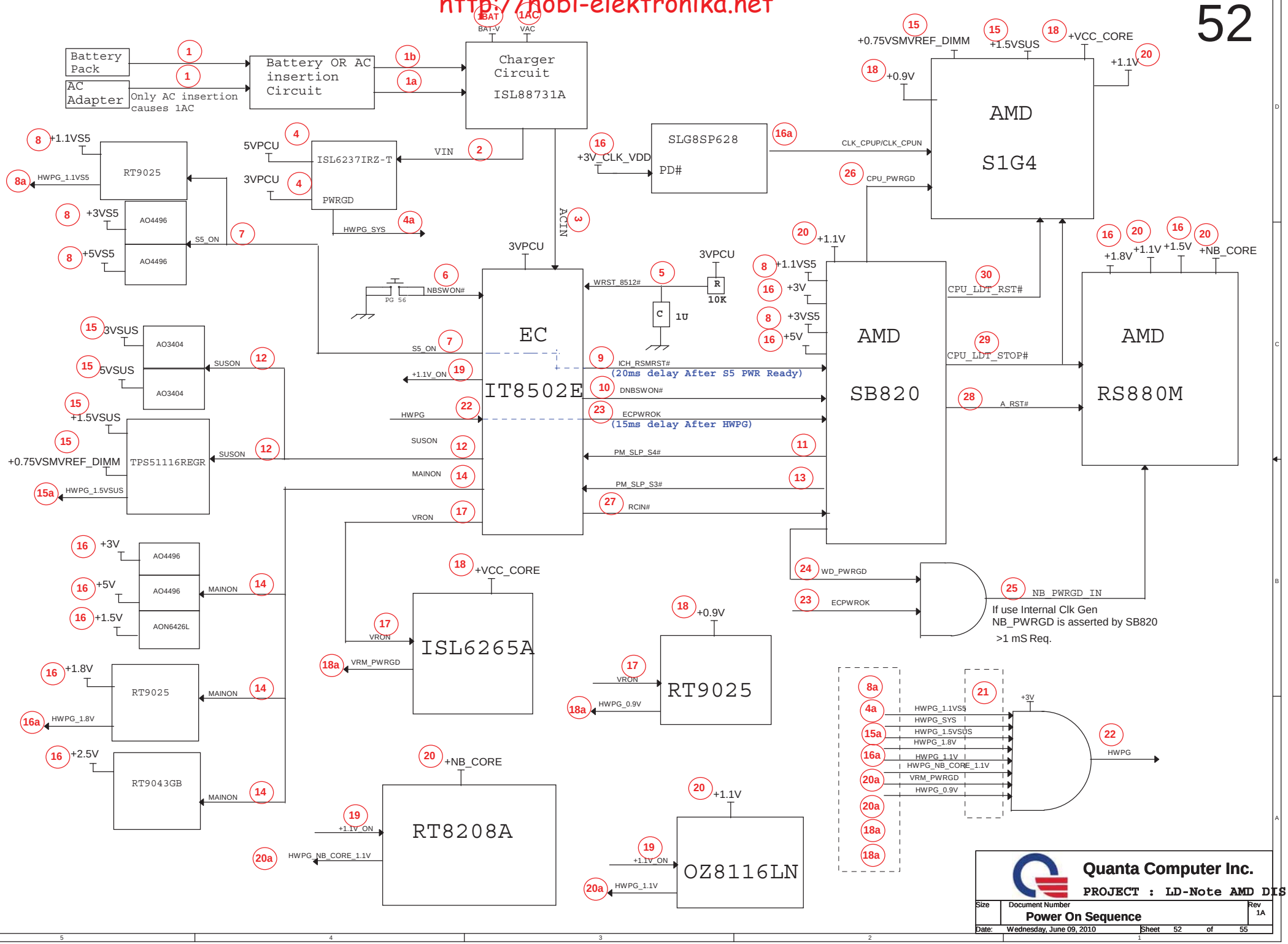


Quanta Computer Inc.

PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	Power BLOCK DIAGRAM	1A

Date: Wednesday, June 09, 2010 Sheet 51 of 55



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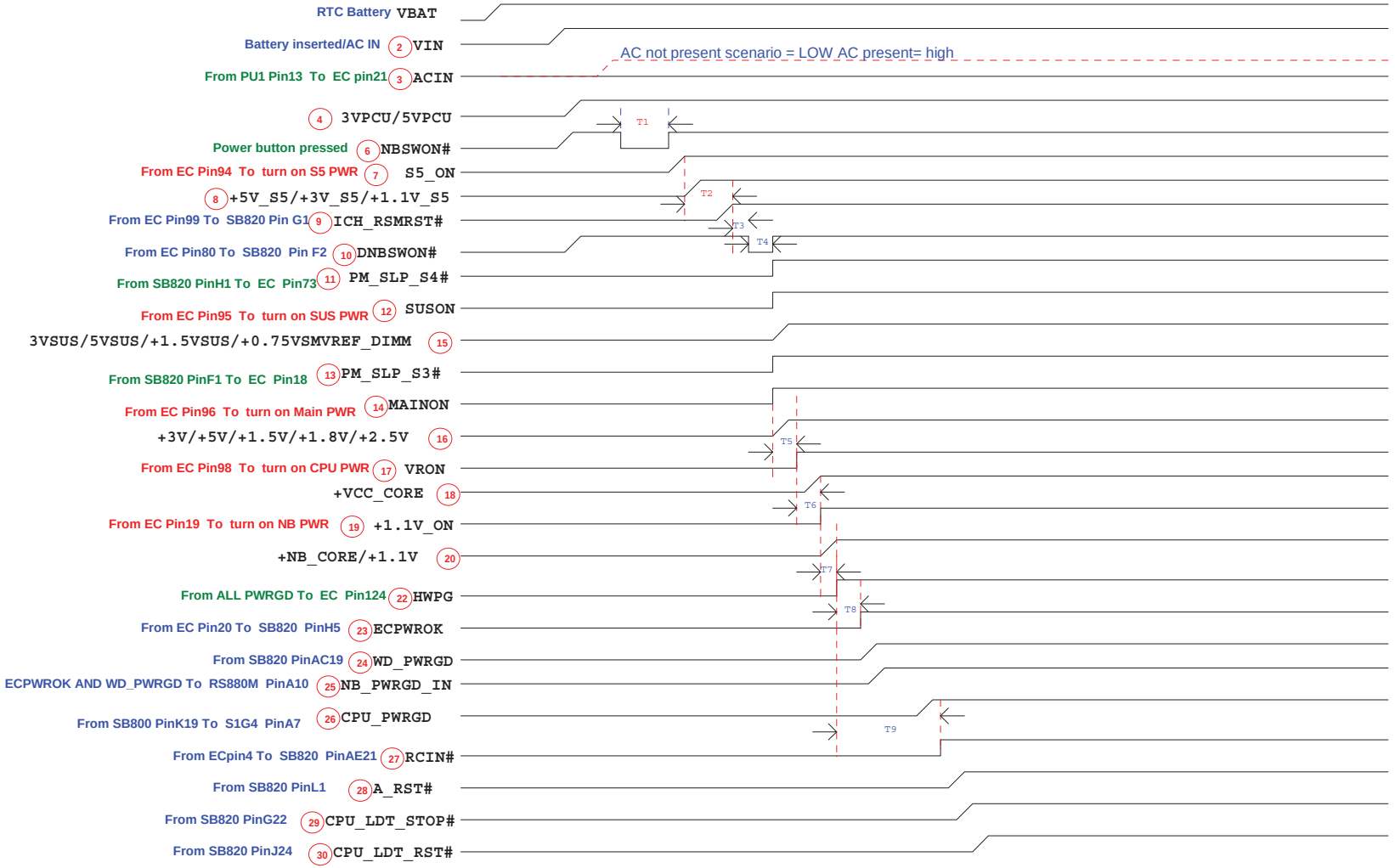
PROJECT : LD-Note AMD DIS

Size	Document Number	Rev
	Power On Sequence	1A
Date: Wednesday, June 09, 2010	Sheet 52 of 55	



T1	>16ms
T2	20ms
T3	5ms
T4	1ms
T5	15ms
T6	5ms
T7	5ms
T8	15ms
T9	108ms

Quanta Computer Inc.
PROJECT LD-Note AMD DIS
Size | Document Number: Power Sequence Timing | Rev 1A
Date: Wednesday, June 09, 2010 | Sheet 53 of 55

EC #	Page	Description	Part Affected
EC-C-01	20	Change error 10u footprint from 0603 to 0805	C51,C68,C78,C93,C236,C244,C247,C254,C257,C265,C270,C273,C602,C604,C705,C709,C714
EC-C-02		Layout change: Change TEST PAD size from 30mil to 20mil to increase ICT percentage	T1~T116,TP1~TP24
EC-C-03	23	Change X5R to X7R due to X5R stock is EOL	C362,C364
EC-C-04	3 10 11	Add value with " * " due to it is a short pad originally	R106,R466,R468 R573 R268,R566
EC-C-05	10	Un-stuff 22P coupling CAP & change RES from 22ohm to 10ohm to fix LPC_CLK rising time issue	C777,R511
EC-C-06	 48 45	Modify some RC value to meet VGA power up sequence From 10K to 0 ohm From 0.33U to NA From 0.01U to 2200P From 0.33U to 0.1U From 0.33U to 0.047U	 PR165 PC115 PC117 PC103 PC113
EC-C-07	25	Change RGB bead value to fix EA rising time issue	L18,L24,L27
EC-C-08	19	AMD suggest remove pull high RES AMD suggest add pull high RES	R91,R412,R419 R416,R420
EC-C-09	39	Add fuse for EL keyboard UL suggestion	F6
EC-C-10	34	Add 2N7002 to reduce leakage current	Q41
EC-C-11	5	Add transistors for EC to monitor thermal of CPU (SB_TSI mode)	Q42,Q43,Q44
EC-C-12	11	Stuff the RES due to BOM error	R360
EC-C-13	8	Change BOM to meet "CPU_LDT_STOP#" power sequence Replace Q36 with U48,delete R454,R451,change R452 from 4.7K to 2.2K	Q36,U48,R454,R451,R452
EC-C-14	3,8	AMD suggest "CPU_LDT_RST#" & "CPU_LDT_STOP#"connect to +1.5V power for prevent current leakge	R110,R453
EC-C-15	5	Delete thermal sensor schematic due to AMD suggest that don't use external thermal IC to prevent thermal shut down issue.	Q11,Q12,U7,R131,R132,R117,C302,C305,R138,R137,C341,Q13,R120
EC-C-16	46	To improve +1.1VS5 rise time waveform. Modify CAP value.	PC80
EC-C-17	10	For RTC test accurately, modify 32.768KHz XTAL coupling CAP	C812,C813
EC-C-18	48	AMD fine tune VBIOS to meet VGA_CORE table	
EC-C-19	44	BOM error,remove the component	PC142
EC-C-20		Change the power jump to short pad	PJP1~PJP18
EC-C-21	45	Reserve RC circuit to modify power sequence	PR288,PC246
EC-C-22	45	Change RES value to fine tune +1.0_GPU prevent from voltage drop issue	PR152
EC-C-23	11	Add NEW_CLKREQ#, LAN_CLKREQ#, WLAN_CLKREQ# function at BIOS side	U38D pin AA16,AC18,AH21
EC-C-24	11	Delete single net SP_DDR3_RST# & 0 ohm RES	R337
EC-C-25	11	Add WAKE# net with +3VS5 pull high	R606
EC-C-26	27	Add thansistor to avoide leakage current of CLK request and wake up function of LAN. Delete 0 ohm RES	Q45,Q46,R337 R317
EC-C-27	3	Un-stuff RES for leakage issue Stuff RES for leakage issue	R484,R485 R476,R477
EC-C-28	26	Vendor suggest reserve it,BOM not mount	C551
EC-C-29	12	Update board ID table for BIOS to verify PCB version	
EC-C-30	30 31	Because sku in't build WWAN, reserve all of components about WWAN function	CN25,U16,C395,C382,C396,C390,C383 CN26,R532,R543,R545,C808,C785,C795,C806,C784,C815
EC-C-31	41	Because we add LDO circuit to control G-Sensor power and we change GSENSOR_ON to high enable. We need to verify EC version	R381,R382
EC-C-32		Layout modify: modify SB & NB footprint due to customer request	U34,U43
EC-C-33	8	AMD comment DIS only supply 1.1V for NB_CORE,no need to stuff strap pin RES	R442
EC-C-34	12	AMD comment unstuff SB SATA 25MHz XTAL if we had stuff 25MHz internal XTAL	Y6,C794,C796,R536
EC-C-35	2	Follow up GC5C design to change 14.318 XTAL from 30ppm to 10ppm	Y1
EC-C-36	27	Change LAN chip version to reduce power sonsumption	U23
EC-C-37	26	Follow up GC5 design to change sense MIC switch from BJT to MOSFET	Q30
EC-C-38	41	ESD solution	D28,D29
EC-C-39	28	Reserve 0.1u CAP due to ESD solution	C832
EC-C-40	30	Modify USB CONN footprint due to SMT request	CN24,CN27
EC-C-41		Change 0 ohm RES footprint from 0402 to short pad	R397,R431,R432,R459,R197,R200,R370,R372,R379,R250,R259,R563,R287,R306,R320,R182,R183 R426,R290,R186,R189,R193,R201,R148,R150,R151,R152,R20,R25,R3,R472,R473,R474,R475, R84,R355,R356,R293,R298,R520,R524,R167,R376,R594,R595,R596,R597,R598,R599,R600, R313,R300,R341,R195,R302,R368,R369,R413,R414,R415,R31,R32,R47,R447,R449,R450,R554, R571,R283,R436,R48,R227,R278,R346,R365,R204,R199,R252,R253,R267,R246,R270,R486,R552
EC-C-42	26	For MIC not be found issue, stuff R281,un-stuff R292,Q30,R286	R281,R292,Q30,R286
EC-C-43	41	Modify EC ID table for EC setting	R381,R382
EC-C-44	12	Modify board ID table for BIOS setting	R537,R538
EC-C-45	48	Remove 2N7002 due to BOM error	PQ51
EC-C-46	19	Change VGA thermal IC to ADM1032-2 in order to change address to 4D	U32
EC-C-47	41	BIOS set RF_SW# GPIO pull down to detect UMA & DISCRETE planer	R373,C575

EC #	Page	Description	Part Affected
EC-SVT-01		Delete all 0 ohm RES & jump for power portion schematic	
EC-SVT-02	**43**	Vendor suggest change RES value from 10K to 4.75K to fix 4 cell battery CC to CV ripple issue	**PR45**
EC-SVT-03	**12**	Change board ID for SVT planer revision	**R540,R541,R533**
EC-SVT-04	**26**	From vendor suggestion, change CAP value from 10u to 2.2u to fix beep sound issue	**C556**
EC-SVT-05	**02**	Delete all RP for CLKGEN output side	**RP4,RP3,RP5,RP1,RP2,RP7,RP8,RP10,RP9,RP6**
EC-SVT-06	**12**	Reserve GPIO pin for BIOS setting	**R607,R608**
EC-SVT-07	**21**	AMD suggest to un-stuff them due to CLKTESTA/B pin is for test	**C216,C168,R65,R61**
EC-SVT-08	**23** **29** **29**	Follow GC5C design to remove all common choke and fix EA test USB fail item at the same time	**L40,R232,R233** **CML1,R1,R2,CML3,R482,R483** **CML2,R269,R276,CML4,R527,R526,CML5,R582,R581**
EC-SVT-09	**14**	Delete R571 and short it directly to add test point for ICT fixture	**R571**