LE9E(LE8) BLOCK DIAGRAM

01

PCB STACK UP
8L

PAGE 30

- LAYER 1 : TOP
- LAYER 2 : SGND1
- LAYER 3 : IN1
- LAYER 4 : IN2
- LAYER 5 : VCC
- LAYER 6 : IN3
- LAYER 7 : SGND2
- LAYER 8 : BOT

CPU CORE(ISL6266A) PAGE 43

CPU Penryn
478P (uPGA)/35W
PAGE 4,5

CPU THERMAL SENSOR PAGE 5

FSB 667/800/1066

14.318MHz

CLOCK GEN
ICS9LPRS365BGLFT
PAGE 3

CLK_CPU_BCLK, CLK_CPU_BCLK#
CLK_MCH_BCLK, CLK_MCH_BCLK#
DREFCLK, DREFCLK#
DREFSSCLK, DREFSSCLK#

VCCP +1.5V AND GMCH 1.05V(RT8204) PAGE 41

VGACORE(OZ8118) PAGE 44

NORTH BRIDGE
Cantiga
PAGE 6~10

27MHz

NVIDIA NB9M-NS
PAGE 13~18

DDRIII-SODIMM1 PAGE 11
DDRII 800/1066 MHz

DDRIII-SODIMM2 PAGE 12
DDRII 800/1066 MHz

DDR III (TPS51116REGR)
1.5VSUS/SMDDR_VTERM
/SMDDR_VREF PAGE 39

PCI-Express 16X

CRT PAGE 23

LCD CONN PAGE 24

DMI LINK

32.768KHz

NBSRCCLK, NBSRCCLK#

USB2.0

SOUTH BRIDGE
ICH-9M
PAGE 19,20,21,22

USB2.0 Ports X2

USB+eSATA Port X1 PAGE 30

BlueTooth PAGE 33

Finger Printer CONN PAGE 33

SATA - HDD PAGE 30
SATA0 150MB

SATA - CD-ROM PAGE 30
SATA1 150MB

PCI-E

24.576Hz

Azalia

X2 Mini PCI-E Card X 2 (WLAN/ WWAN) PAGE 35

X1 LAN BROADCOM BCM 5906M/5784 (10/100/1G LAN) PAGE 31,32

X1 Express Card (NEW CARD) PAGE 33

X1 RICOH R5C847 PAGE25,26

SYSTEM POWER(ISL6237) PAGE 42

SYSTEM CHARGER(ISL6251A) PAGE 38

32.768KHz

LPC

NS ITE 8502E-L
PAGE 36

Keyboard Touch Pad PAGE 34

TPM PAGE 34

SIO CONN PAGE 27

FAN PAGE 34

SPI PAGE 36

MDC CONN PAGE 28

RJ11 PAGE 32

microphone PAGE 28

AUDIO CODEC CX20561-12Z PAGE 28

AUDIO Amplifier TPA6017A2 PAGE 29

Audio Jacks (External MIC) PAGE 29

Head-Phone Jack PAGE 29

25MHz

RJ45 PAGE 32

PCMCIA CONN PAGE 26

IEEE1394 on Daughter B PAGE 25

Ultra I/O CardReader PAGE 26

PROJECT : LE8
Quanta Computer Inc.

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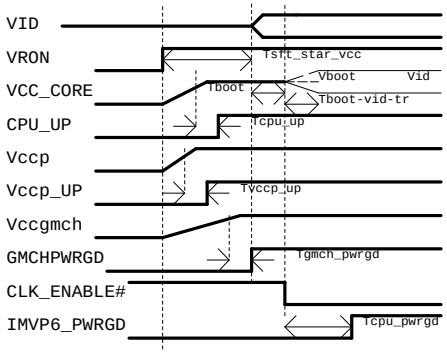
Board Stack up Description

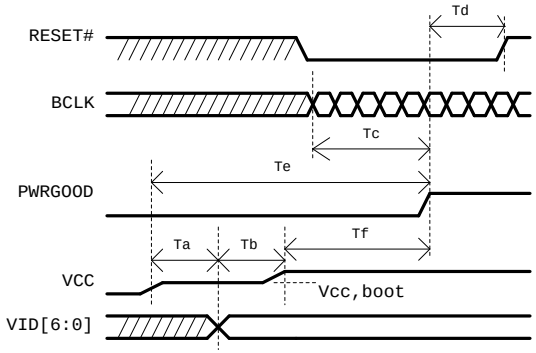
PCB Layers

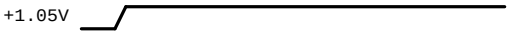
Layer 1		TOP
Layer 2		GND
Layer 3		IN1
Layer 4		IN2
Layer 5		SVCC
Layer 6		IN3
Layer 7		GND
Layer 8		BOTTOM

Power On Sequencing Timing Diagram



MEROM Power-up Timing Specifications



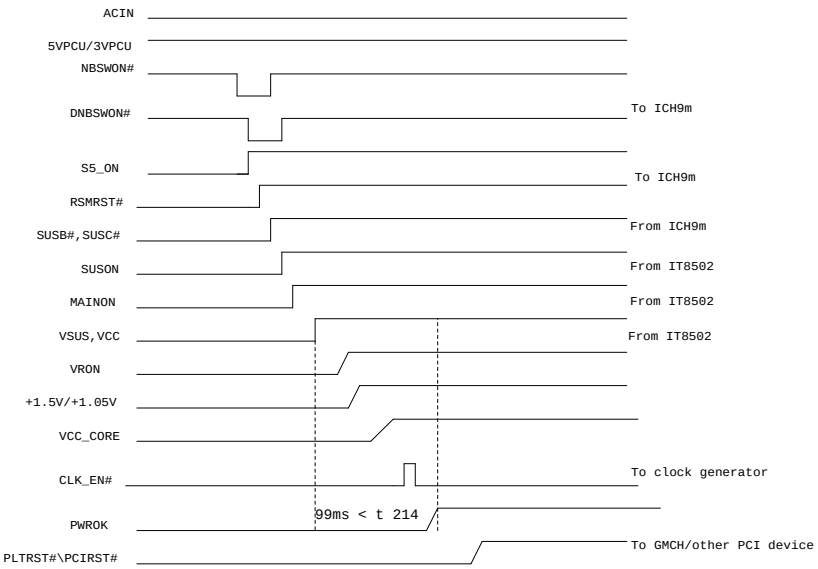


Ta=VCC and VCCP asseration to VID[6:0] vaild
Tb=VID[6:0] stable to VCC vaild
Tc=BCLK stable to PWRGOOD assertion
Td=PWRGOOD to RESET# de-assertion time
Te=Vcc,boot vaild to PWRGOOD assertion time

Voltage Rails

Voltage Rails	ON S0~S2	ON S3	ON S4	ON S5	Control signal
VCC_CORE	X				VRON
+1.5V	X				MAINON
+1.05V	X				MAINON
5V_S5/3V_S5	X	X	X	X	S5_ON
5VSUS/3VSUS/1.5VSUS	X	X			SUSON
SMDDR_VTERM/+3V/+5V/+15V/+1.8V	X				MAINON
+VGACORE/+VGA1.1V	X				MAINON
LANVCC	X	X	X	X	LAN_ON
3VPCU	X	X	X	X	VL
5VPCU	X	X	X	X	VL

ACIN POWER ON TIMING



PROJECT : LE8
Quanta Computer Inc.

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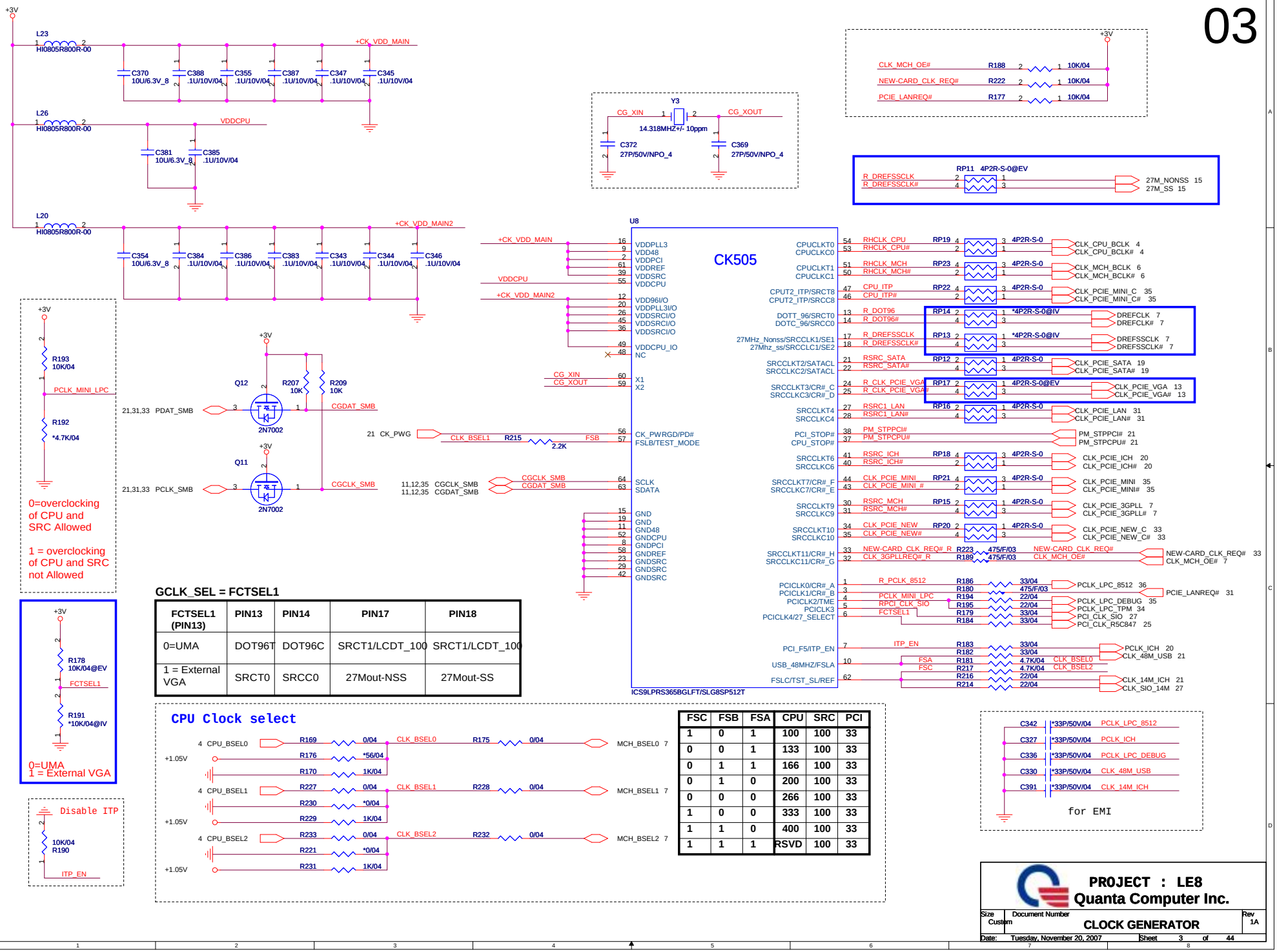
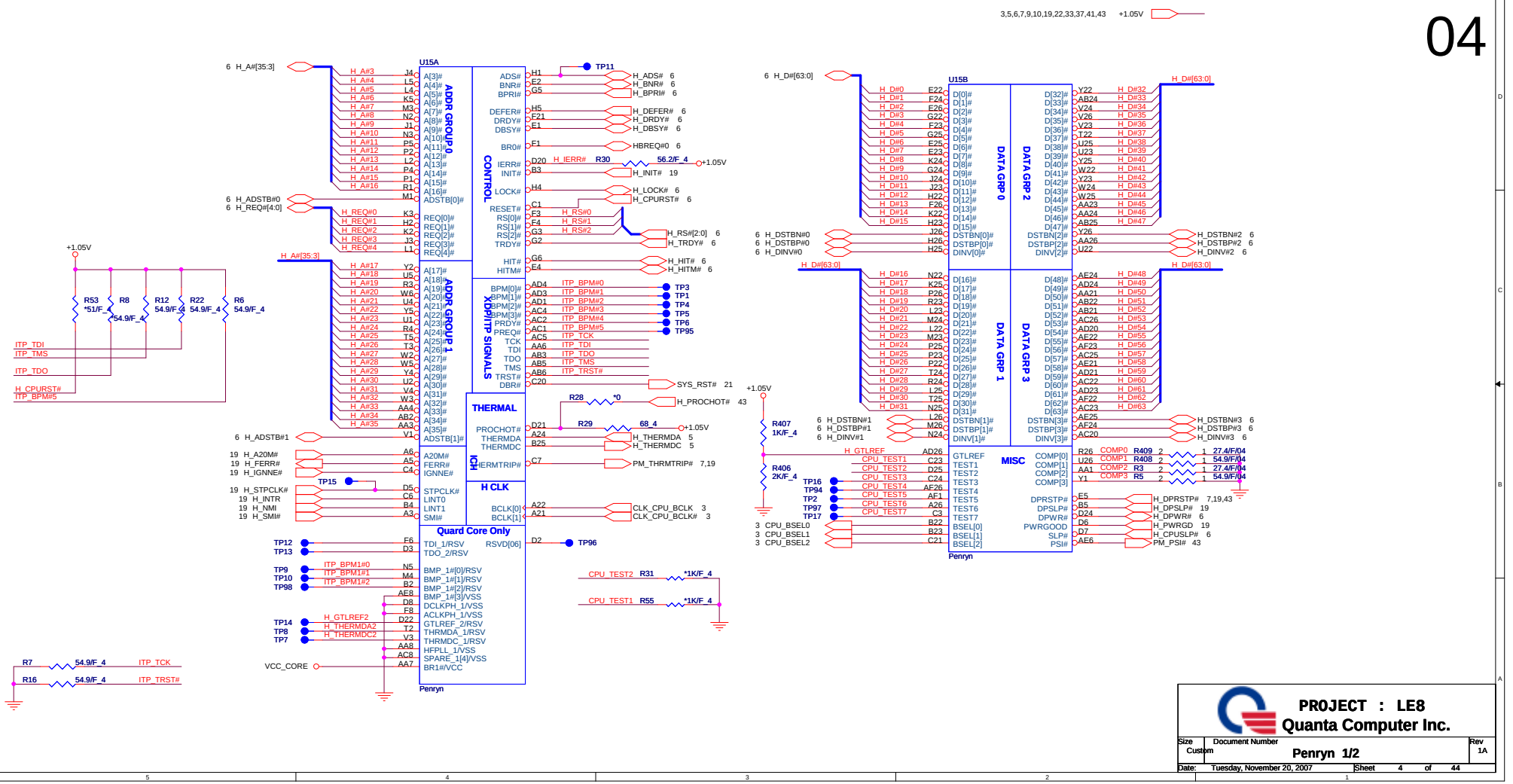
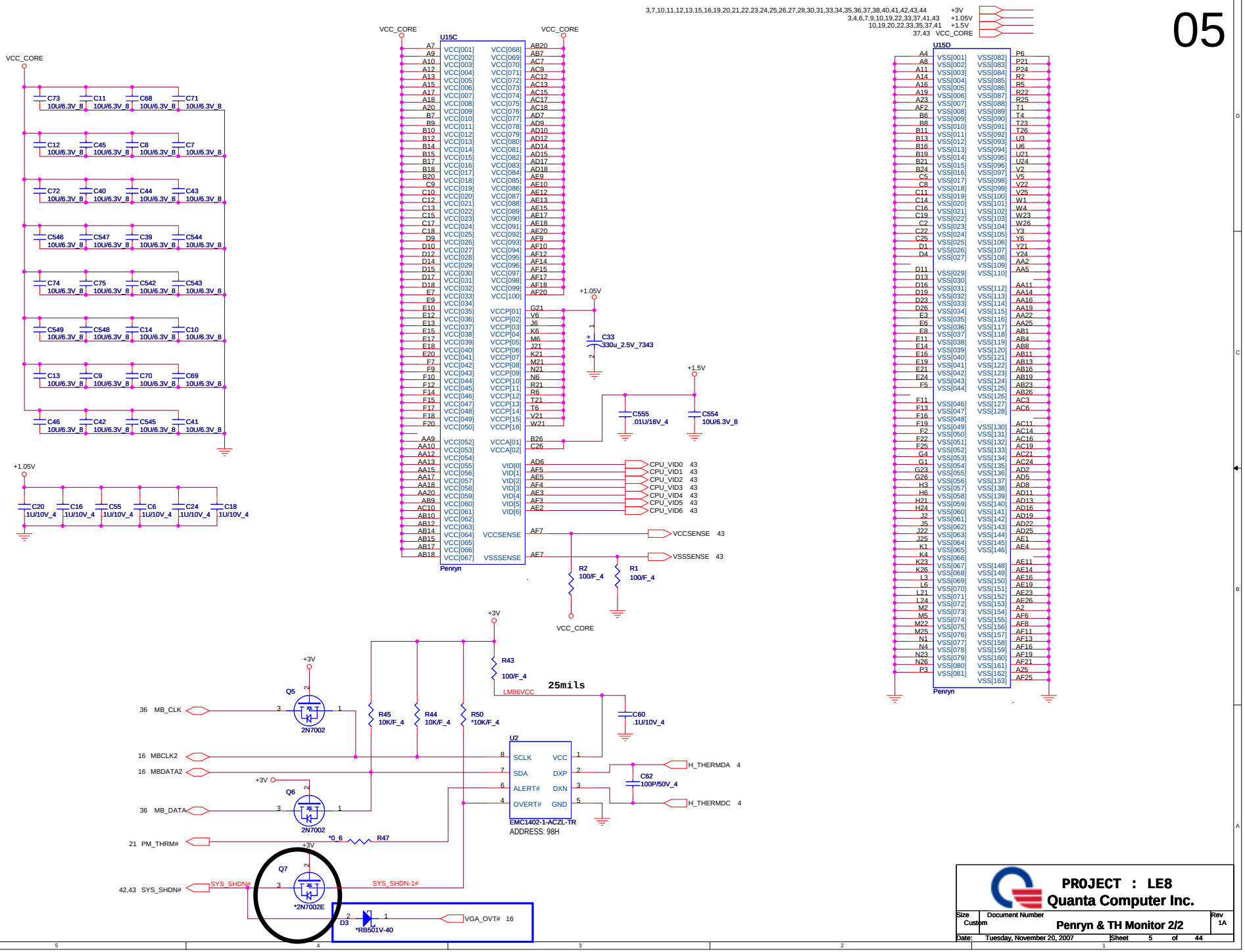
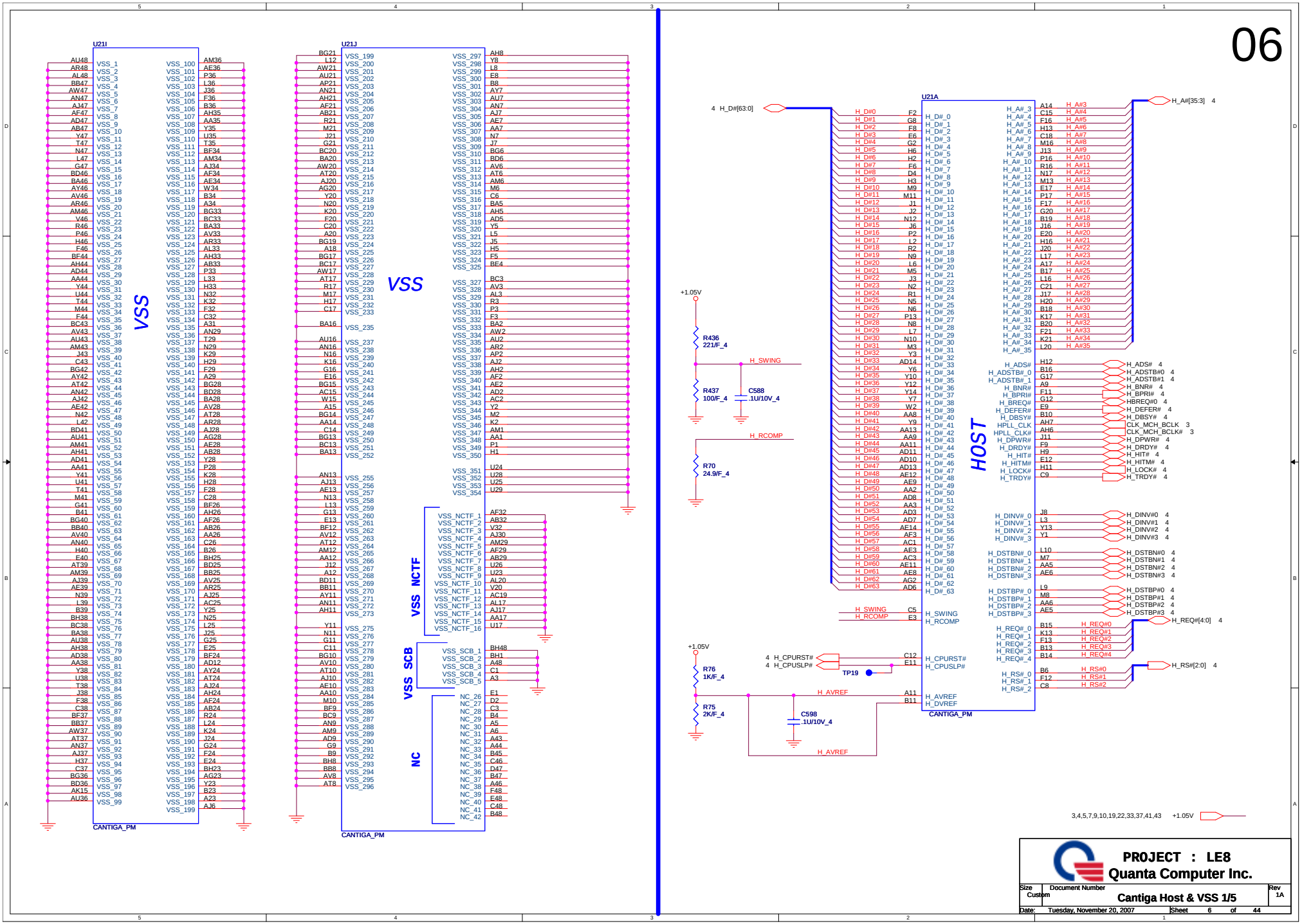



04
3,5,6,7,9,10,19,22,33,37,41,43 +1.05V
U15A
ADDR GROUP 0
ADDR GROUP 1
CONTROL
XDP/ITP SIGNALS
THERMAL
ICH
H CLK
Quard Core Only
Penryn
U15B
DATA GRP 0
DATA GRP 2
DATA GRP 1
DATA GRP 3
MISC
Penryn
PROJECT : LE8
Quanta Computer Inc.
Penryn 1/2
Tuesday, November 20, 2007




06
U21I
VSS
CANTIGA_PM
U21J
VSS
VSS_NCTF
VSS_SCB
NC
CANTIGA_PM
U21A
HOST
CANTIGA_PM
H_D#[63:0]
H_A#[35:3]
H_ADS#
H_ADSTB#_0
H_ADSTB#_1
H_BNR#
H_BPRI#
H_BREQ#
H_DEFER#
H_DBSY#
HPLL_CLK
HPLL_CLK#
H_DPWR#
H_DRDY#
H_HIT#
H_HITM#
H_LOCK#
H_TRDY#
H_DINV#_0
H_DINV#_1
H_DINV#_2
H_DINV#_3
H_DSTBN#_0
H_DSTBN#_1
H_DSTBN#_2
H_DSTBN#_3
H_DSTBP#_0
H_DSTBP#_1
H_DSTBP#_2
H_DSTBP#_3
H_REQ#[4:0]
H_RS#[2:0]
+1.05V
R436 221/F_4
R437 100/F_4
C588 .1U/10V_4
H_SWING
R70 24.9/F_4
H_RCOMP
R76 1K/F_4
R75 2K/F_4
C598 .1U/10V_4
H_AVREF
H_CPURST#
H_CPUSLP#
TP19
C12
E11
C5
E3
A11
B11
3,4,5,7,9,10,19,22,33,37,41,43 +1.05V
PROJECT : LE8
Quanta Computer Inc.
Size Custom
Document Number
Cantiga Host & VSS 1/5
Rev 1A
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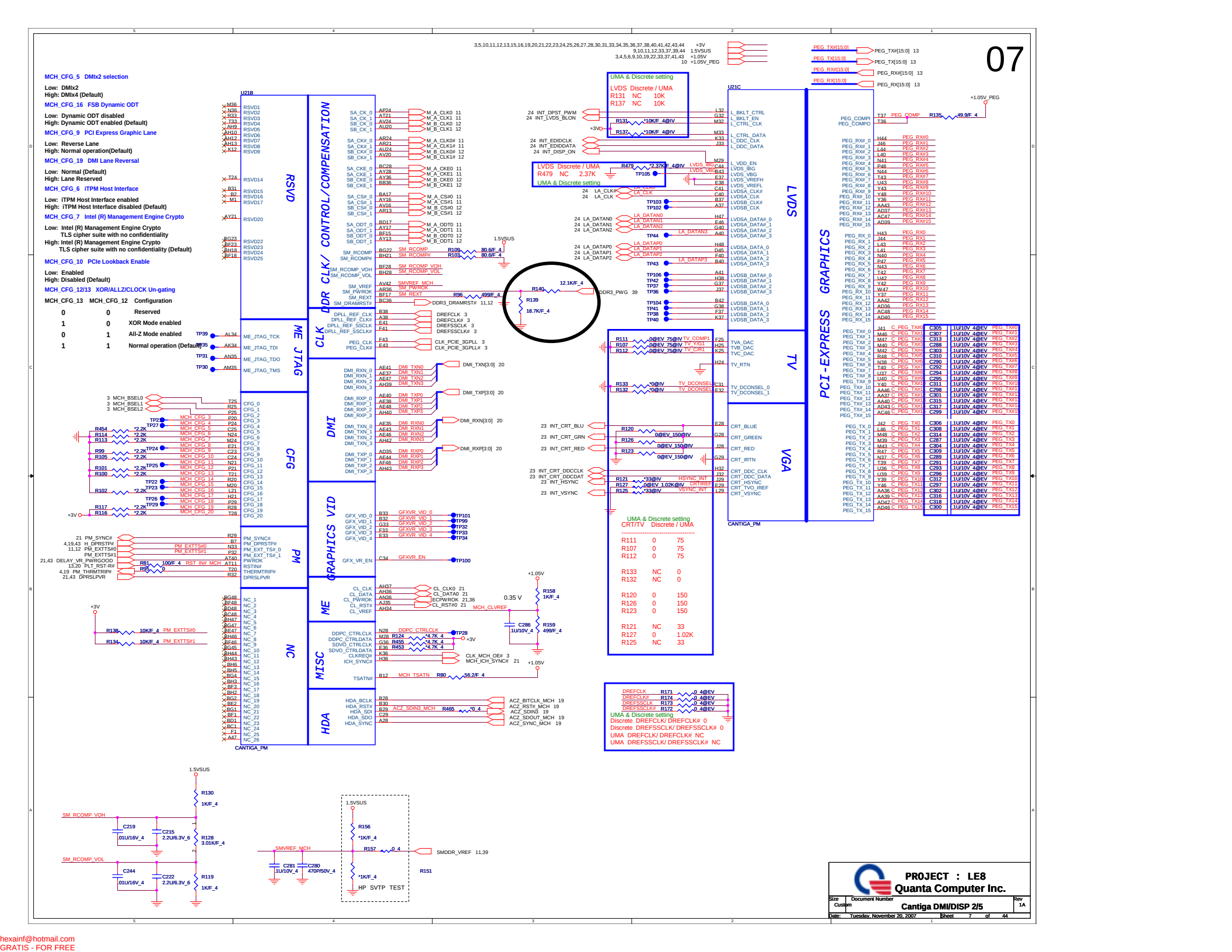

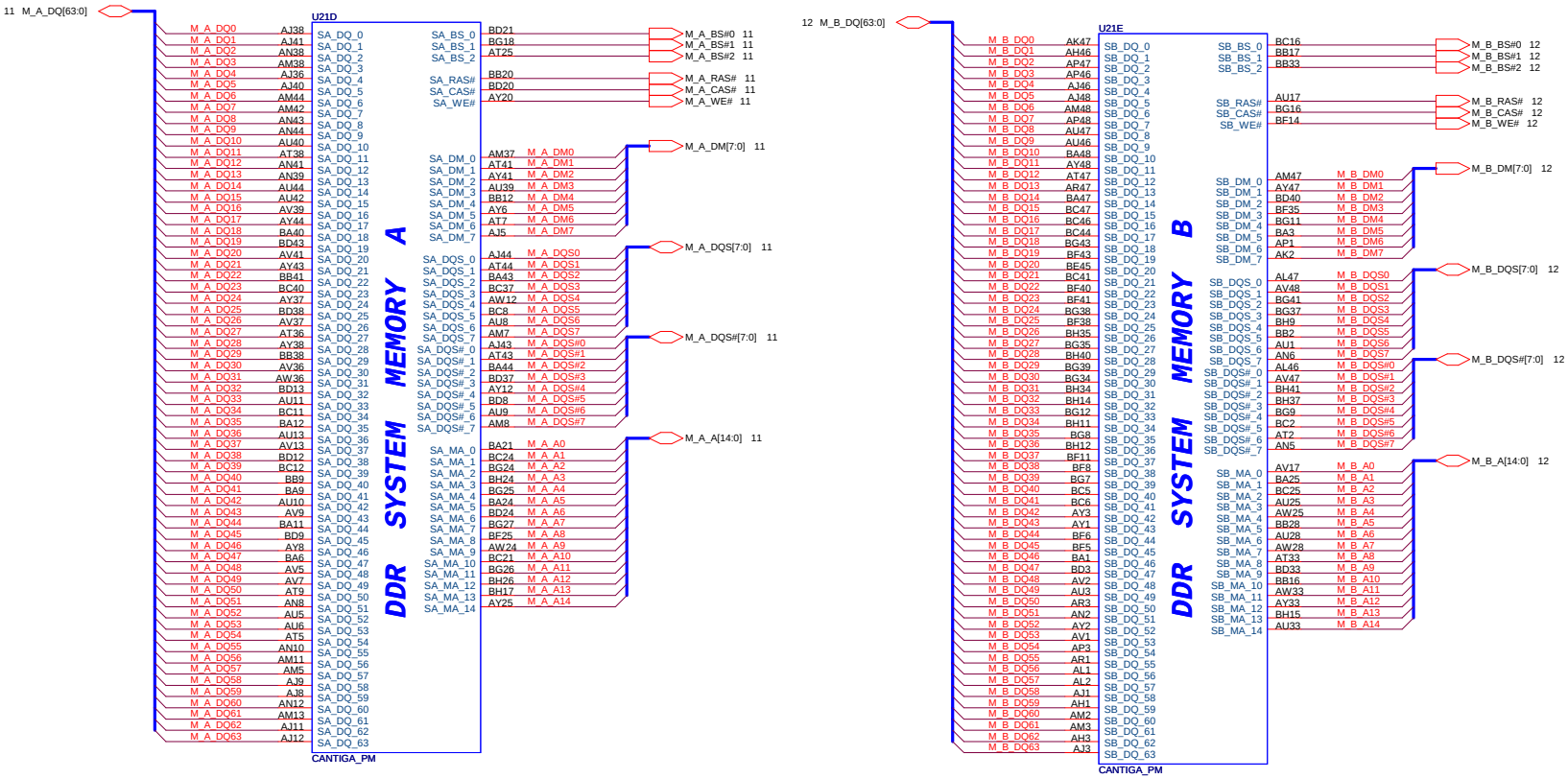

PROJECT : LE8
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Cantiga DDR3 3/5	1A

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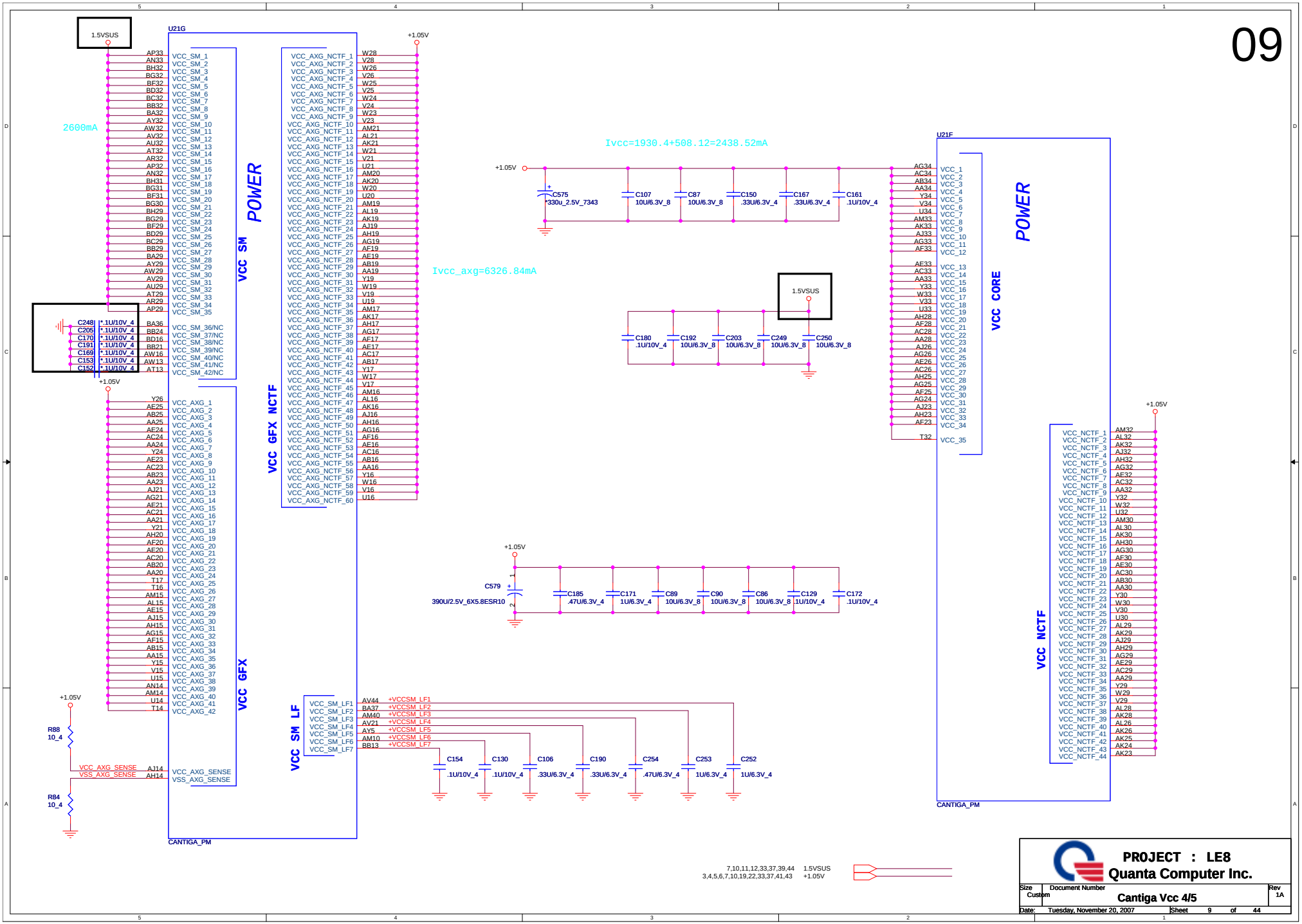

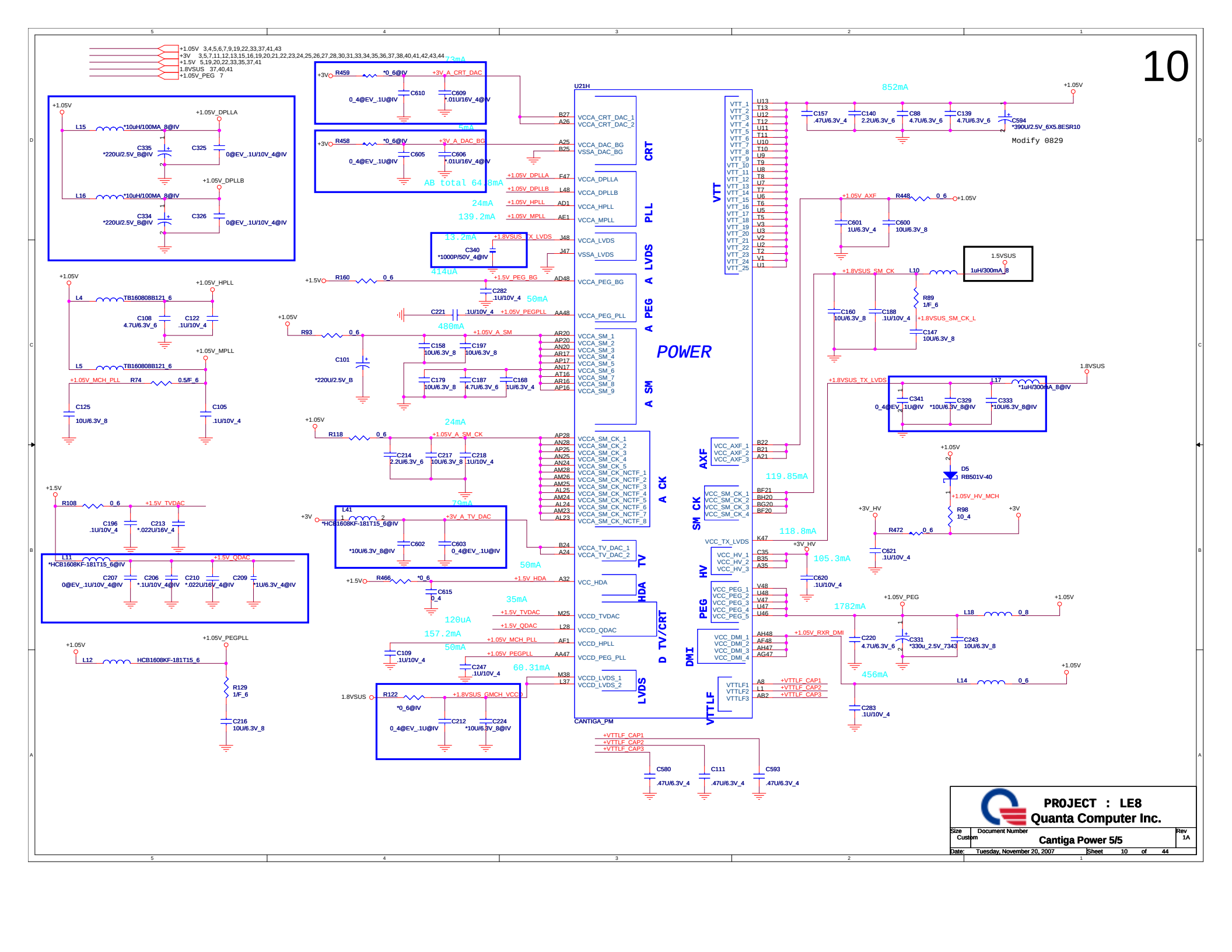
10
+1.05V 3,4,5,6,7,9,19,22,33,37,41,43
+3V 3,5,7,11,12,13,15,16,19,20,21,22,23,24,25,26,27,28,30,31,33,34,35,36,37,38,40,41,42,43,44
+1.5V 5,19,20,22,33,35,37,41
1.8VSUS 37,40,41
+1.05V_PEG 7
U21H
POWER
CRT
PLL
A LVDS
A PEG
A SM
A CK
TV
HDA
D TV/CRT
LVDS
AXF
SM CK
HV
PEG
DMI
VTT
VTTLF
CANTIGA_PM
73mA
5mA
AB total 64.8mA
24mA
139.2mA
13.2mA
414uA
50mA
480mA
24mA
79mA
50mA
35mA
120uA
157.2mA
50mA
60.31mA
852mA
119.85mA
118.8mA
105.3mA
1782mA
456mA
Modify 0829
PROJECT : LE8
Quanta Computer Inc.
Cantiga Power 5/5
Size Custom
Document Number
Rev 1A
Date: Tuesday, November 20, 2007
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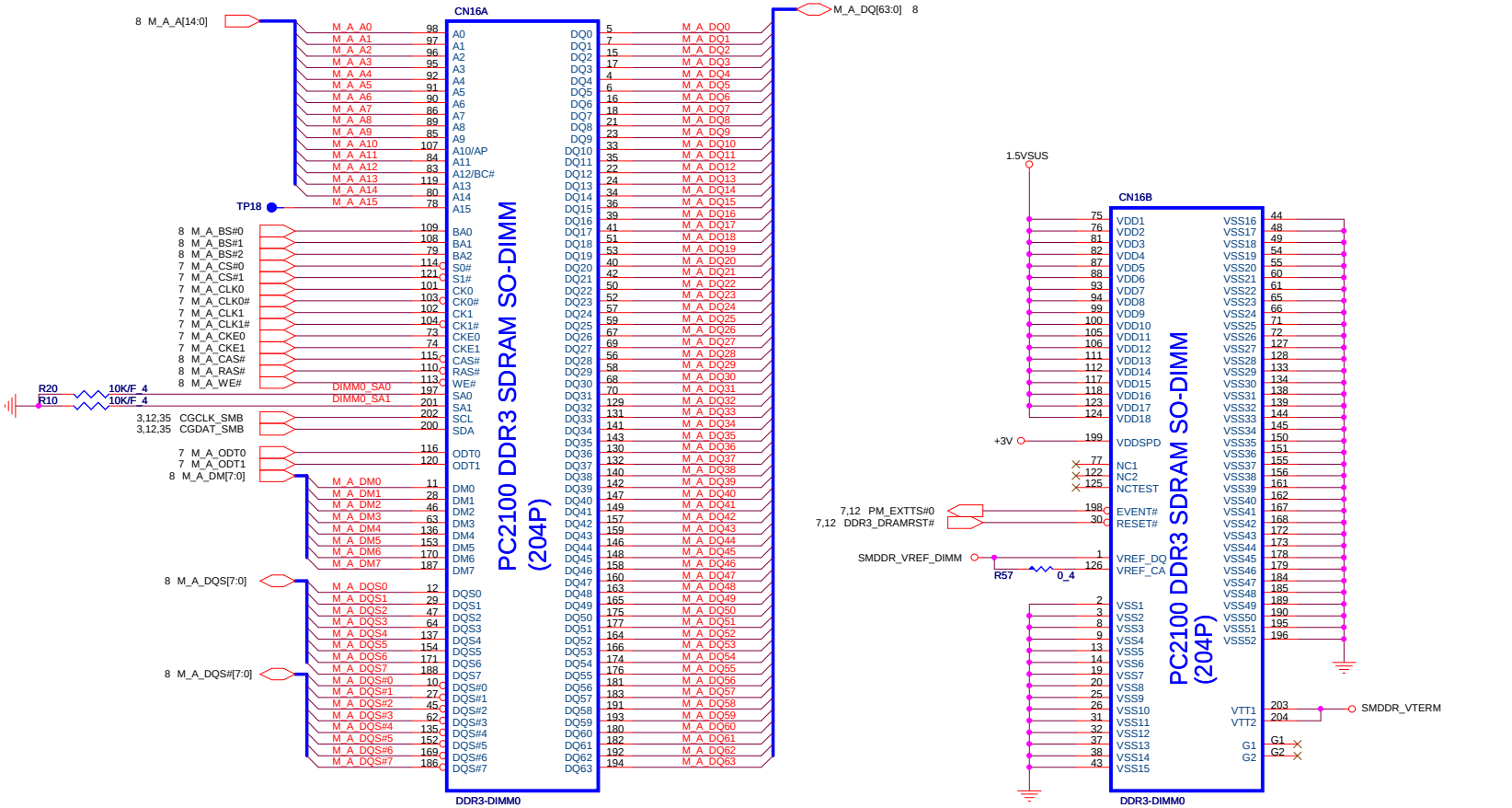

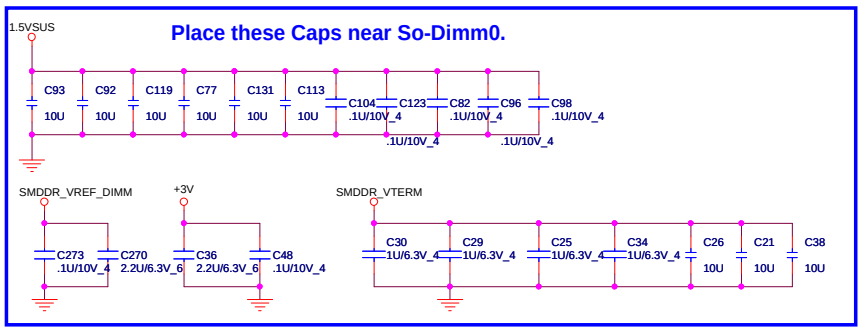

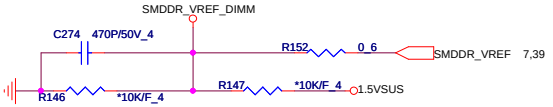

PROJECT : LE8
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DDR3 DIMM-0(H=5.2)	1A
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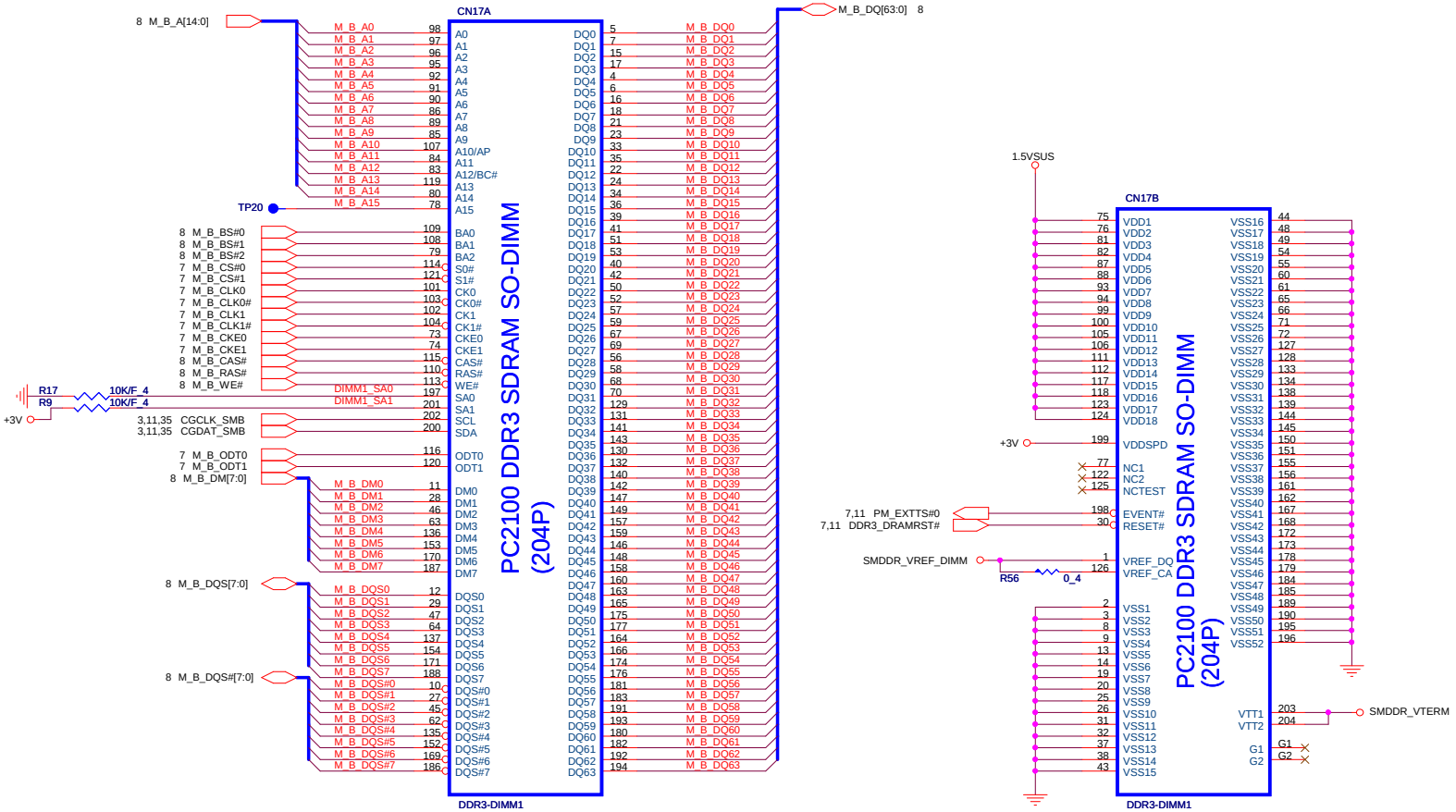

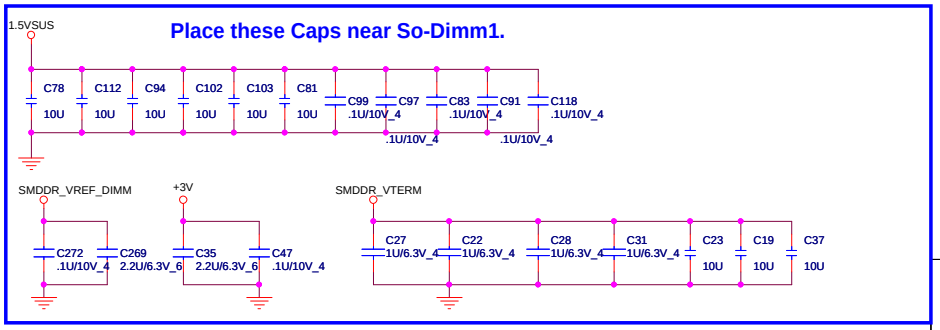

PROJECT : LE8
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DDR3 DIMM-1(H=9.2)	1A
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NB9M-NS (G98)

Part Value have show "@NC" is No Stuff

13

33,37,44 +VGACORE
14,15,33,37,44 +VGA1.1V
3,5,7,10,11,12,15,16,19,20,21,22,23,24,25,26,27,28,30,31,33,34,35,36,37,38,40,41,42,43,44 +3V

U20A

1/13 PCI_EXPRESS

NB9M-NS@EV

+VGA1.1V

C251 10U/6.3V/X5R_8@EV
C268 4.7U/6.3V/X5R_6@EV
C202 1U/6.3V/X5R_4@EV
C208 1U/6.3V/X5R_4@EV
C201 .1U/10V_4@EV
C630 .1U/10V_4@EV

PEX_IOVDD/Q 1400mA

AC9 PEX_IOVDD_01
AD7 PEX_IOVDD_02
AD8 PEX_IOVDD_03
AE7 PEX_IOVDD_04
AF7 PEX_IOVDD_05
AG7 PEX_IOVDD_06

+VGA1.1V

Near BGA

C276 10U/6.3V/X5R_8@EV
C625 4.7U/6.3V/X5R_6@EV
C626 1U/6.3V/X5R_4@EV
C271 1U/6.3V/X5R_4@EV
C199 .1U/10V_4@EV
C629 .1U/10V_4@EV
C204 .1U/10V_4@EV

AB13 PEX_IOVDDQ_01
AB16 PEX_IOVDDQ_02
AB17 PEX_IOVDDQ_03
AB7 PEX_IOVDDQ_04
AB8 PEX_IOVDDQ_05
AB9 PEX_IOVDDQ_06
AC13 PEX_IOVDDQ_07
AC7 PEX_IOVDDQ_08
AD6 PEX_IOVDDQ_09
AE6 PEX_IOVDDQ_10
AF6 PEX_IOVDDQ_11
AG6 PEX_IOVDDQ_12

+VGACORE

PLACE NEAR BALLS

VDD 11.57A

Near BGA

C145 4.7U/6.3V/X5R_6@EV
C159 1U/6.3V/X5R_4@EV
C184 .47U/6.3V_4@EV
C195 .1U/10V_4@EV
C193 .1U/10V_4@EV
C194 .1U/10V_4@EV

C144 4.7U/6.3V/X5R_6@EV
C200 1U/6.3V/X5R_4@EV
C178 .1U/10V_4@EV
C166 .1U/10V_4@EV
C164 .1U/10V_4@EV
C163 .1U/10V_4@EV

C564 4.7U/6.3V/X5R_6@EV
C571 1U/6.3V/X5R_4@EV
C568 .1U/10V_4@EV
C570 .1U/10V_4@EV
C165 .1U/10V_4@EV
C567 .1U/10V_4@EV

C558 *100U/10V_7343@NC
C569 .1U/10V_4@EV
C186 .1U/10V_4@EV
C156 .1U/10V_4@EV

J10 VDD_01
J12 VDD_02
J13 VDD_03
J9 VDD_04
L9 VDD_05
M11 VDD_06
M17 VDD_07
M9 VDD_08
N11 VDD_09
N12 VDD_10
N13 VDD_11
N14 VDD_12
N15 VDD_13
N16 VDD_14
N17 VDD_15
N19 VDD_16
N9 VDD_17
P11 VDD_18
P12 VDD_19
P13 VDD_20
P14 VDD_21
P15 VDD_22
P16 VDD_23
P17 VDD_24
R11 VDD_25
R12 VDD_26
R13 VDD_27
R14 VDD_28
R15 VDD_29
R16 VDD_30
R17 VDD_31
R9 VDD_32
T11 VDD_33
T17 VDD_34
T9 VDD_35
U19 VDD_36
U9 VDD_37
W10 VDD_38
W12 VDD_39
W13 VDD_40
W18 VDD_41
W19 VDD_42
W9 VDD_43

T10
T9
W15 VDD_SENSE
W16 GND_SENSE

+3V

C577 1U/6.3V/X5R_4@EV
C578 .1U/10V_4@EV
C120 .1U/10V_4@EV

A12 VDD33_01
B12 VDD33_02
C12 VDD33_03
D12 VDD33_04
E12 VDD33_05
F12 VDD33_06

+VGA1.1V

L43 10nH_6@EV

+PEX_PLLVDD

+PEX_PLLVDD 110mA

C622 4.7U/6.3V/X5R_6@EV
C619 4.7U/6.3V/X5R_6@EV
C279 1U/6.3V/X5R_4@EV
C277 .1U/10V_4@EV
C278 .01U/16V_4@EV

AF9 PEX_PLLVDD

R136 *200/F_4@NC

AE10 PEX_TSTCLK_OUT*
AF10 PEX_TSTCLK_OUT

T32

AG9 RFU_5

R467 2.49K/F_4@EV

PEX_TERMP

AG10 PEX_TERMP

AE9 RFU_6 — T8
AD9 PEX_RST* — VGA_RST#

R478 0_4@EV
D11 *RB501V-40@NC
R477 *100K/F_4@NC

PLT_RST-R# — PLT_RST-R# 7,20

AB10 PEX_REFCLK — CLK_PCIE_VGA — CLK_PCIE_VGA 3
AC10 PEX_REFCLK* — CLK_PCIE_VGA# — CLK_PCIE_VGA# 3

AD10	PEX_TX0	C_PEG_RX0	C238	.1U/10V_4@EV	PEG_RX0 7
AD11	PEX_TX0*	C_PEG_RX#0	C237	.1U/10V_4@EV	PEG_RX#0 7
AD12	PEX_TX1	C_PEG_RX1	C239	.1U/10V_4@EV	PEG_RX1 7
AC12	PEX_TX1*	C_PEG_RX#1	C240	.1U/10V_4@EV	PEG_RX#1 7
AB11	PEX_TX2	C_PEG_RX2	C266	.1U/10V_4@EV	PEG_RX2 7
AB12	PEX_TX2*	C_PEG_RX#2	C265	.1U/10V_4@EV	PEG_RX#2 7
AD13	PEX_TX3	C_PEG_RX3	C236	.1U/10V_4@EV	PEG_RX3 7
AD14	PEX_TX3*	C_PEG_RX#3	C235	.1U/10V_4@EV	PEG_RX#3 7
AD15	PEX_TX4	C_PEG_RX4	C242	.1U/10V_4@EV	PEG_RX4 7
AC15	PEX_TX4*	C_PEG_RX#4	C241	.1U/10V_4@EV	PEG_RX#4 7
AB14	PEX_TX5	C_PEG_RX5	C263	.1U/10V_4@EV	PEG_RX5 7
AB15	PEX_TX5*	C_PEG_RX#5	C264	.1U/10V_4@EV	PEG_RX#5 7
AC16	PEX_TX6	C_PEG_RX6	C262	.1U/10V_4@EV	PEG_RX6 7
AD16	PEX_TX6*	C_PEG_RX#6	C261	.1U/10V_4@EV	PEG_RX#6 7
AD17	PEX_TX7	C_PEG_RX7	C246	.1U/10V_4@EV	PEG_RX7 7
AD18	PEX_TX7*	C_PEG_RX#7	C245	.1U/10V_4@EV	PEG_RX#7 7
AC18	PEX_TX8	C_PEG_RX8	C260	.1U/10V_4@EV	PEG_RX8 7
AB18	PEX_TX8*	C_PEG_RX#8	C259	.1U/10V_4@EV	PEG_RX#8 7
AB19	PEX_TX9	C_PEG_RX9	C234	.1U/10V_4@EV	PEG_RX9 7
AB20	PEX_TX9*	C_PEG_RX#9	C233	.1U/10V_4@EV	PEG_RX#9 7
AD19	PEX_TX10	C_PEG_RX10	C232	.1U/10V_4@EV	PEG_RX10 7
AD20	PEX_TX10*	C_PEG_RX#10	C231	.1U/10V_4@EV	PEG_RX#10 7
AD21	PEX_TX11	C_PEG_RX11	C230	.1U/10V_4@EV	PEG_RX11 7
AC21	PEX_TX11*	C_PEG_RX#11	C229	.1U/10V_4@EV	PEG_RX#11 7
AB21	PEX_TX12	C_PEG_RX12	C258	.1U/10V_4@EV	PEG_RX12 7
AB22	PEX_TX12*	C_PEG_RX#12	C257	.1U/10V_4@EV	PEG_RX#12 7
AC22	PEX_TX13	C_PEG_RX13	C256	.1U/10V_4@EV	PEG_RX13 7
AD22	PEX_TX13*	C_PEG_RX#13	C255	.1U/10V_4@EV	PEG_RX#13 7
AD23	PEX_TX14	C_PEG_RX14	C228	.1U/10V_4@EV	PEG_RX14 7
AD24	PEX_TX14*	C_PEG_RX#14	C227	.1U/10V_4@EV	PEG_RX#14 7
AE25	PEX_TX15	C_PEG_RX15	C226	.1U/10V_4@EV	PEG_RX15 7
AE26	PEX_TX15*	C_PEG_RX#15	C225	.1U/10V_4@EV	PEG_RX#15 7

AE12	PEX_RX0	PEG_TX0 7
AF12	PEX_RX0*	PEG_TX#0 7
AG12	PEX_RX1	PEG_TX1 7
AG13	PEX_RX1*	PEG_TX#1 7
AF13	PEX_RX2	PEG_TX2 7
AE13	PEX_RX2*	PEG_TX#2 7
AE15	PEX_RX3	PEG_TX3 7
AF15	PEX_RX3*	PEG_TX#3 7
AG15	PEX_RX4	PEG_TX4 7
AG16	PEX_RX4*	PEG_TX#4 7
AF16	PEX_RX5	PEG_TX5 7
AE16	PEX_RX5*	PEG_TX#5 7
AE18	PEX_RX6	PEG_TX6 7
AF18	PEX_RX6*	PEG_TX#6 7
AG18	PEX_RX7	PEG_TX7 7
AG19	PEX_RX7*	PEG_TX#7 7
AF19	PEX_RX8	PEG_TX8 7
AE19	PEX_RX8*	PEG_TX#8 7
AE21	PEX_RX9	PEG_TX9 7
AF21	PEX_RX9*	PEG_TX#9 7
AG21	PEX_RX10	PEG_TX10 7
AG22	PEX_RX10*	PEG_TX#10 7
AF22	PEX_RX11	PEG_TX11 7
AE22	PEX_RX11*	PEG_TX#11 7
AE24	PEX_RX12	PEG_TX12 7
AF24	PEX_RX12*	PEG_TX#12 7
AG24	PEX_RX13	PEG_TX13 7
AF25	PEX_RX13*	PEG_TX#13 7
AG25	PEX_RX14	PEG_TX14 7
AG26	PEX_RX14*	PEG_TX#14 7
AE27	PEX_RX15	PEG_TX15 7
AF27	PEX_RX15*	PEG_TX#15 7

PROJECT : LE8
Quanta Computer Inc.

Size	Document Number	Rev
Custom	NV9X (PCIE I/F) 1/5	1A

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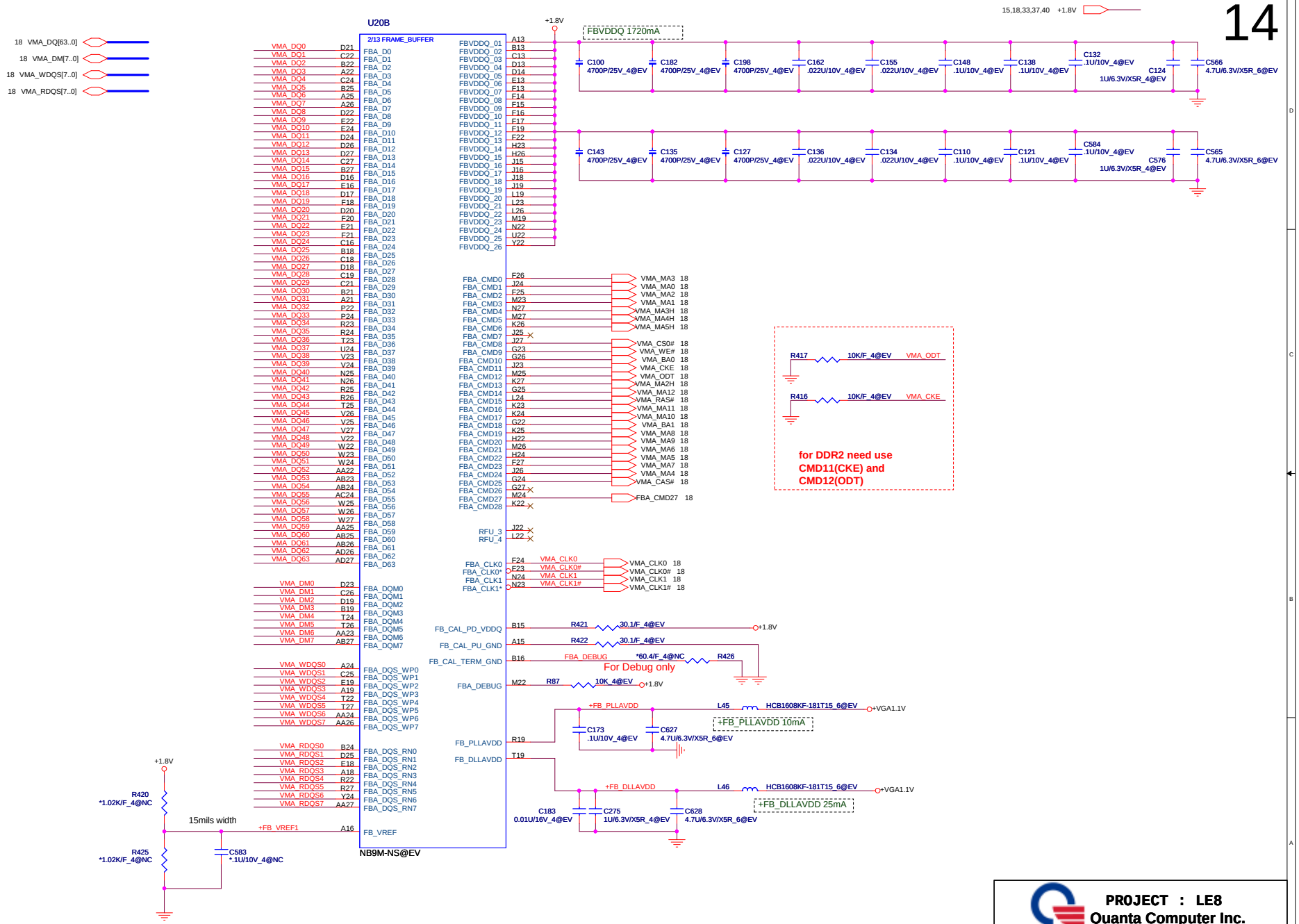
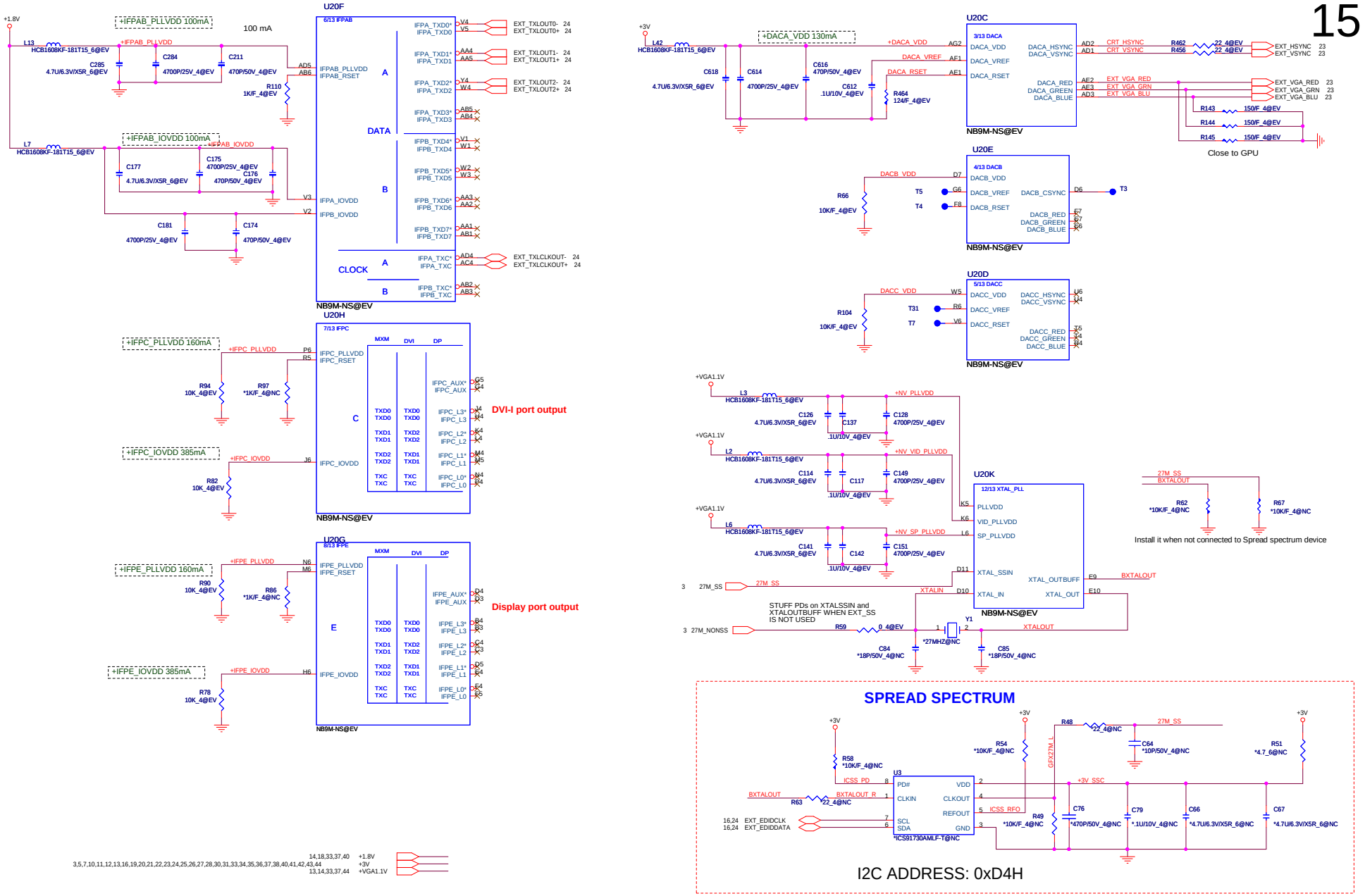


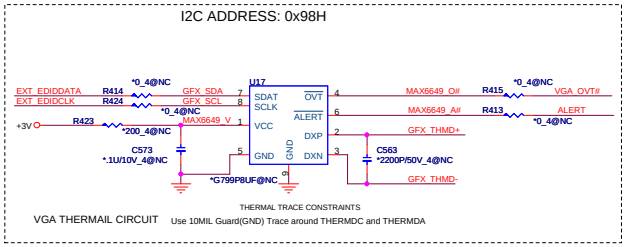
PROJECT : LE8
Quanta Computer Inc.

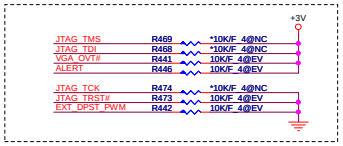
Size	Document Number	Rev
Custom	NV9X (MEMORY I/F) 2/5	1A

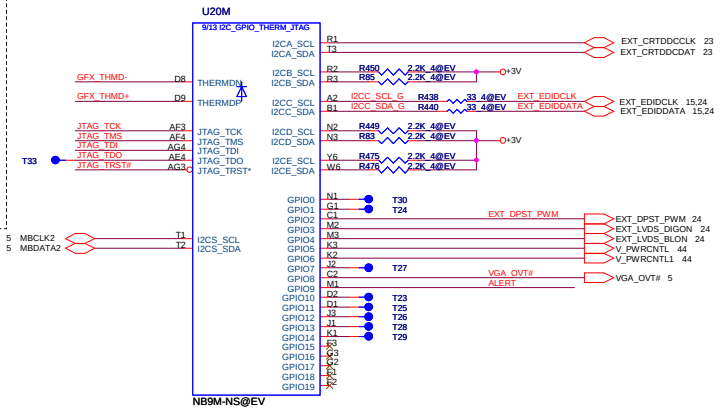
Date: Tuesday, November 20, 2007 Sheet 14 of 44



PROJECT : LE8			
Quanta Computer Inc.			
Size: Custom	Document Number: NV9X (DISPLAY) 3/5		Rev: 1A
Date: Tuesday, November 20, 2007		Sheet 15 of 44	



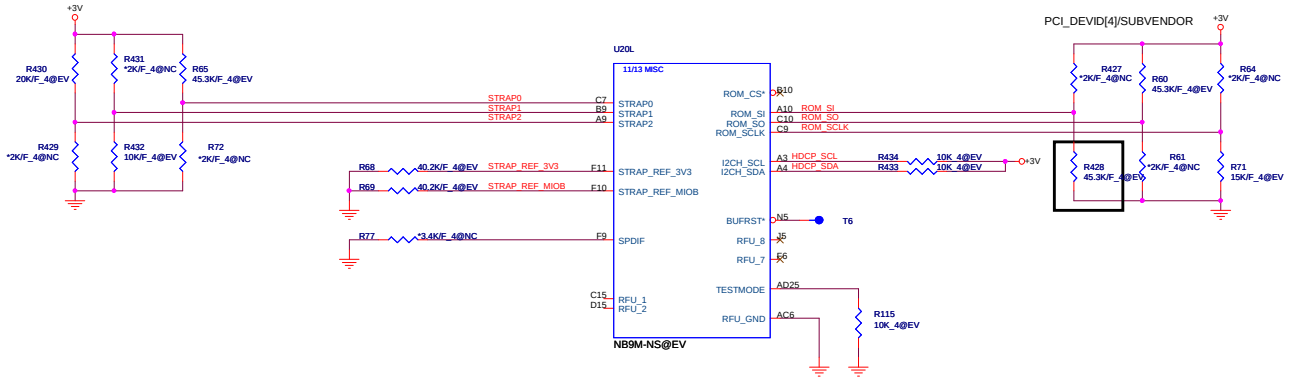




GPIO ASSIGNMENTS

SEE Datasheet for details on G9x Straps!

GPIO	I/O	ACTIVE	USAGE
0	IN	N/A	NVGEM HOTPLUG DETECT
1	IN	N/A	DVI/HDMI LINKC HOTPLUG DETECT
2	OUT	HIGH	PANEL BACKLIGHT PWM
3	OUT	HIGH	PANEL POWER ENABLE
4	OUT	HIGH	PANEL BACKLIGHT ENABLE
5	OUT	HIGH	NVVDD ALTV0
6	OUT	HIGH	NVVDD ALTV1
7	OUT	HIGH	FBVDD VID0
8	IN	LOW	OVERTEMP ALERT
9	OUT	LOW	THERMAL ALERT
10	OUT	HIGH	DYNAMIC FB VREF GDDR3(not used for DDR2)
11	OUT	HIGH	SLI SYNC0(not used for GB1-64)
12	IN	N/A	AC DETECT
13	OUT	LOW	POWER SUPPLY CONTROL0
14	OUT	HIGH	POWER SUPPLY CONTROL1
15	IN	N/A	HPD_E
16	IN	N/A	DVI_E
17	IN	N/A	HDMI_E
18	IN	N/A	DVI_F(not used)
19	IN	N/A	HDMI_F(not used)

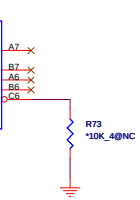


NB9M-NS Straps

NB9M-NS VRAM Configuration Table

ROM_SI VRAM CONFIG SET

STRAP	VALUE		MEMORY Vendor
0	5K	PD	NOT USED
1	10K	PD	Samsung DDR2 16Mx16
2	15K	PD	Qmnd DDR2 16Mx16
3	20K	PD	HYNX DDR2 16Mx16
4	25K	PD	NOT USED
5	30K	PD	Samsung DDR2 32Mx16
6	35K	PD	Qmnd DDR2 32Mx16
7	45K	PD	HYNX DDR2 32Mx16



3,5,7,10,11,12,13,15,19,20,21,22,23,24,25,26,27,28,30,31,33,34,35,36,37,38,40,41,42,43,44 +3V

PROJECT : LE8
Quanta Computer Inc.

Size	Document Number	Rev
C	NV9X (GPIO & STRRAPS) 4/5	1A

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U20J

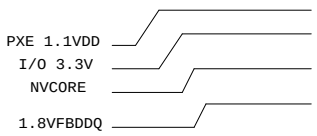
13/13 GND_NC

		NC_01	AA6
		NC_02	AC19
		NC_03	E15
		NC_04	T6
AC11	GND_01		
AC14	GND_02		
AC17	GND_03		
AC2	GND_04		
AC20	GND_05		
AC23	GND_06		
AC26	GND_07		
AC5	GND_08		
AC8	GND_09		
AE11	GND_10		
AE14	GND_11		
AE17	GND_12		
AE2	GND_13		
AE20	GND_14		
AE23	GND_15		
AE26	GND_16		
AE5	GND_17		
AE8	GND_18		
B11	GND_19		
B14	GND_20		
B17	GND_21		
B2	GND_22		
B20	GND_23		
B23	GND_24		
B26	GND_25		
B5	GND_26		
B8	GND_27		
E11	GND_28		
E14	GND_29		
E17	GND_30		
E2	GND_31		
E20	GND_32		
E23	GND_33		
E26	GND_34		
E5	GND_35		
E8	GND_36		
H2	GND_37		
H5	GND_38		
J11	GND_39		
J14	GND_40		
J17	GND_41		
K19	GND_42		
K9	GND_43		
L11	GND_44		
L12	GND_45		
L13	GND_46		
L14	GND_47		
L15	GND_48		
L16	GND_49		
L17	GND_50		
L2	GND_51		
L5	GND_52		
M12	GND_53		
M13	GND_54		
M14	GND_55		
M15	GND_56		
M16	GND_57		
P19	GND_58		
P2	GND_59		
P23	GND_60		
P26	GND_61		
P5	GND_62		
P9	GND_63		
T12	GND_64		
T13	GND_65		
T14	GND_66		
T15	GND_67		
T16	GND_68		
U11	GND_69		
U12	GND_70		
U13	GND_71		
U14	GND_72		
U15	GND_73		
U16	GND_74		
U17	GND_75		
U2	GND_76		
U23	GND_77		
U26	GND_78		
U5	GND_79		
V19	GND_80		
V9	GND_81		
W11	GND_82		
W14	GND_83		
W17	GND_84		
Y2	GND_85		
Y23	GND_86		
Y26	GND_87		
Y5	GND_88		

NB9M-NS@EV

NB9M: VGACORE +0.9V ~ +1.0V

power up sequence



PROJECT : LE8
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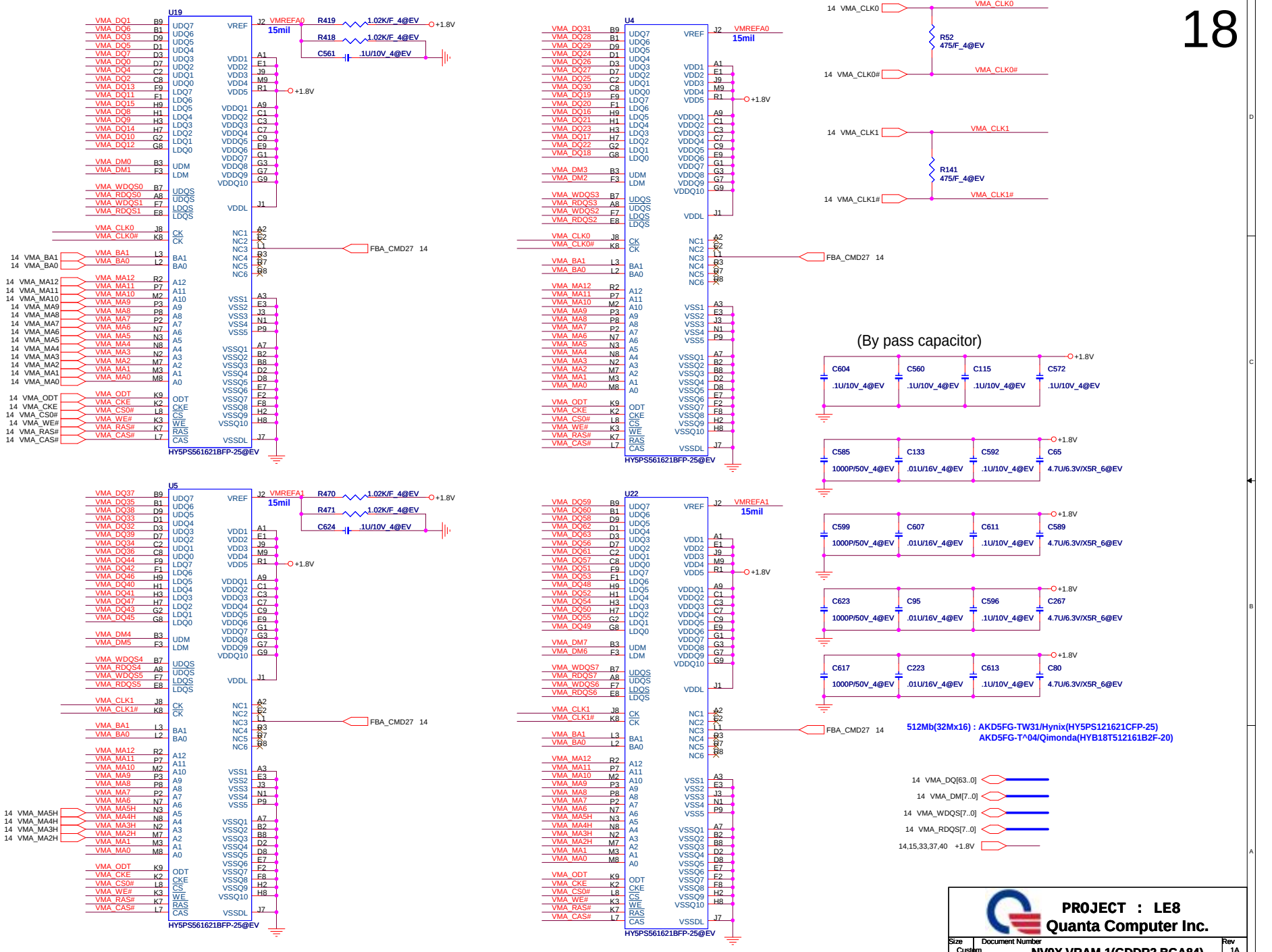
Size	Document Number	Rev
Custom	NV9X GND 5/5	1A
Date: Tuesday, November 20, 2007	Sheet 17 of 44	



PROJECT : LE8
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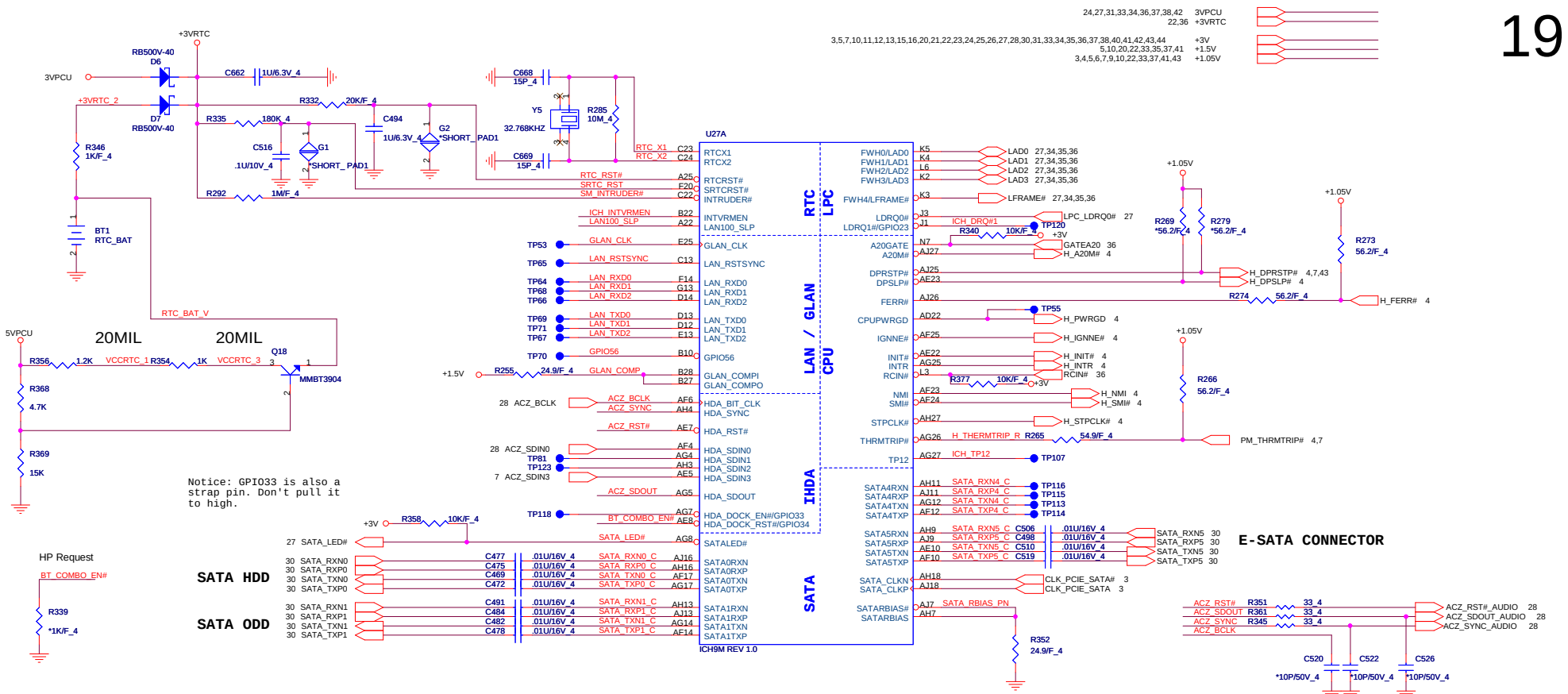
Size	Document Number	Rev
Custom	NV9X VRAM-1(GDDR2 BGA84)	1A
Date: Tuesday, November 20, 2007	Sheet 18 of 44	



SB Strap

ICH9-M Internal VR Enable strap (Internal VR for Vccsus1_05,VccSus1_5 and VccCL1_5)

INTVRMEN	Low = Internal VR disable High = Internal VR enable(Default)

ICH9-M LAN100_SLP Strap (Internal VR for VccLAN1_05 and VccCL1.05)

LAN100_SLP	Low = Internal VR disable High = Internal VR enable(Default)

XOR Chain Entrance Strap

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

ICH9 Boot BIOS select

STRAP	PCI_GNT0#	SPI_CS#1
SPI	0	1
PCI	1	0
LPC	1	1

(default)

A16 swap override strap	
PCI_GNT#3	Low = A16 swap override enabled Hi = Default

No Reboot Strap	
ACZ_SPKR	Low: Default Hi: No reboot

TPM physical presence	
ICH_GPIO57	Low: Default

PROJECT : LE8
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Custom	ICH9-M Host 1/4	1A

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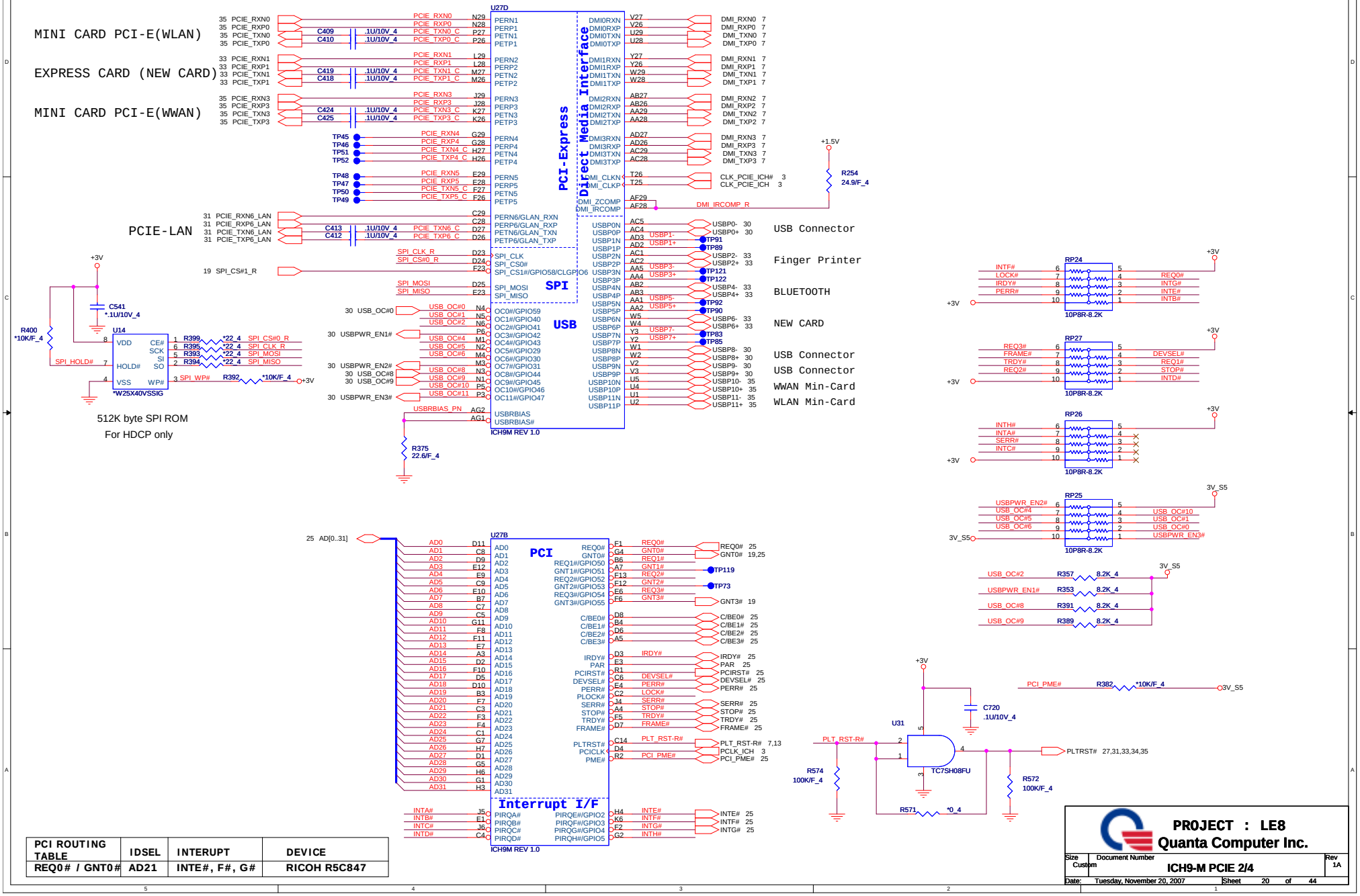
MINI CARD PCI-E(WLAN)

EXPRESS CARD (NEW CARD)

MINI CARD PCI-E(WWAN)

PCIE-LAN



PCI ROUTING TABLE	IDSEL	INTERUPT	DEVICE
REQ0# / GNT0#	AD21	INTE#, F#, G#	RICOH R5C847

PROJECT : LE8
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Size	Document Number	Rev
Custom	ICH9-M PCIE 2/4	1A

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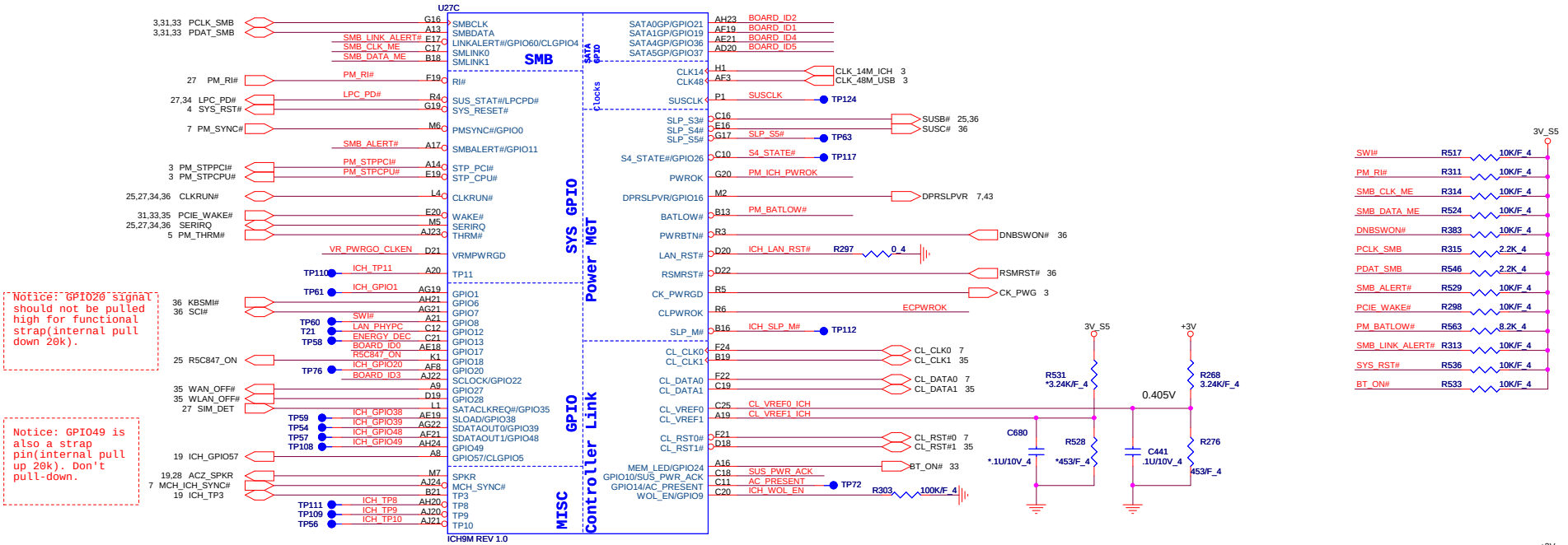
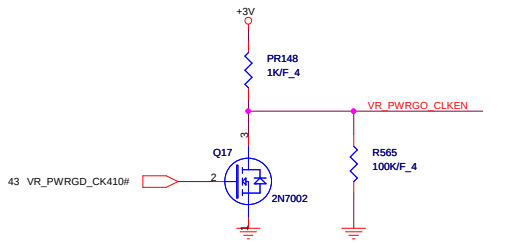
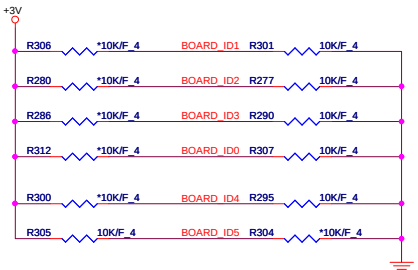
5,10,19,20,22,33,35,37,41 +1.5V
3,5,7,10,11,12,13,15,16,19,20,22,23,24,25,26,27,28,30,31,33,34,35,36,37,38,40,41,42,43,44 +3V
19,20,22,37 3V_S5
25,26,28,33,34,35,37,39,43 3VSUS

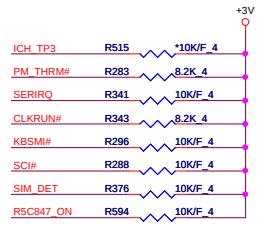




Board ID For Function	ID3 GPIO22	ID2 GPIO21	ID1 GPIO19	ID0 GPIO17
Default	0	0	0	0
	0	0	0	1
	0	0	1	0
	0	0	1	1
	0	1	0	0
	0	1	0	1
	0	1	1	0
	0	1	1	1
	1	0	0	0
	1	0	0	1
	1	0	1	0
	1	0	1	1
	1	1	0	0
	1	1	0	1
	1	1	1	0
	1	1	1	1

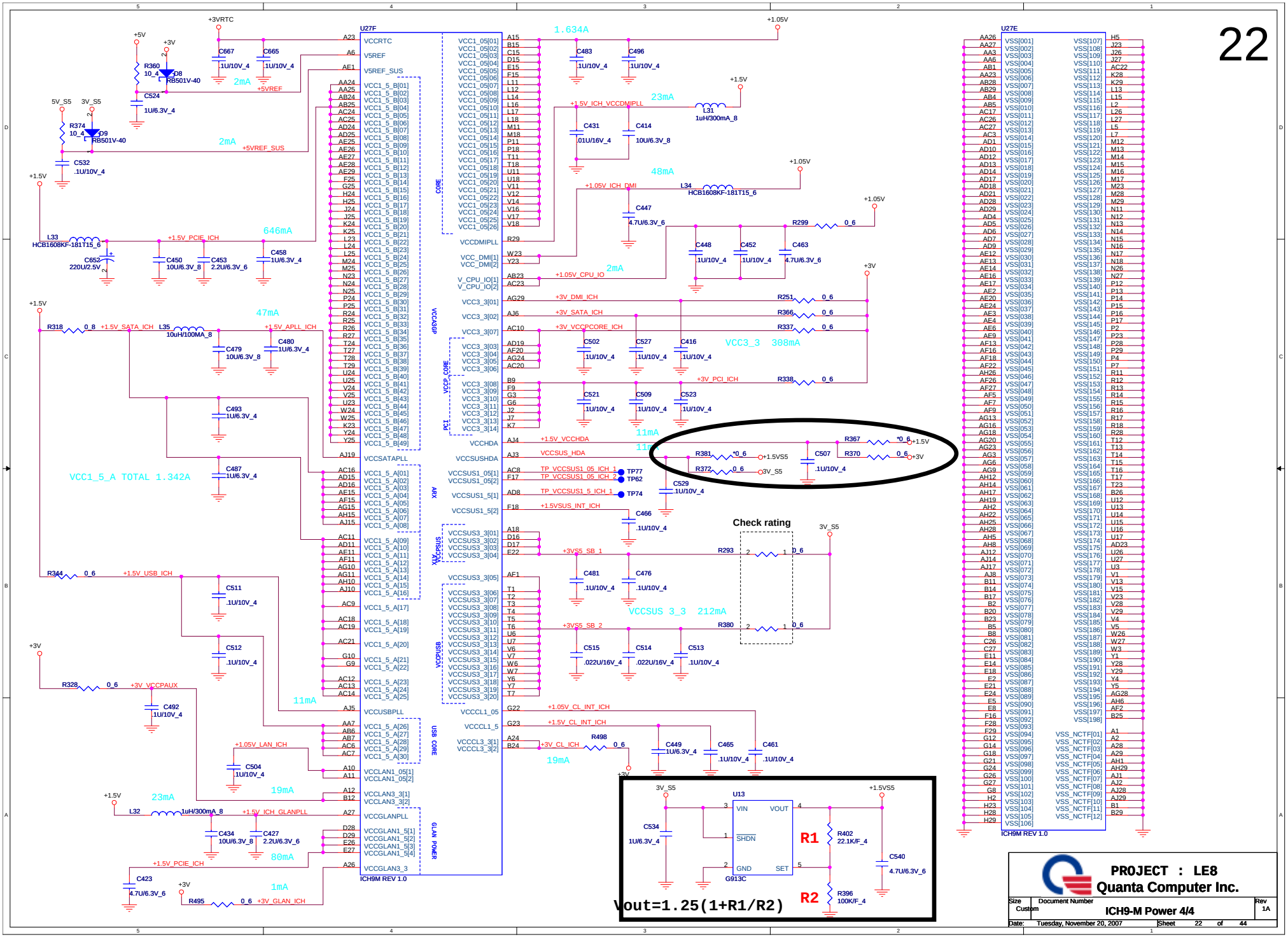


Board ID For Model	ID5 GPIO37	ID4 GPIO36
LE6	0	0
LE7	0	1
LE8	1	0
LE9	1	1



PROJECT : LE8
Quanta Computer Inc.

Size	Document Number	Rev
Custom	ICH9-M GPIO 3/4	1A
Date: Tuesday, November 20, 2007	Sheet 21 of 44	


22
U27F
ICH9M REV 1.0
U27E
ICH9M REV 1.0
VCC1_5_A TOTAL 1.342A
VCCUSUS 3_3 212mA
VCC3_3 308mA
Check rating
Vout=1.25(1+R1/R2)
PROJECT : LE8
Quanta Computer Inc.
ICH9-M Power 4/4
Size Custom
Document Number
Rev 1A
Date: Tuesday, November 20, 2007
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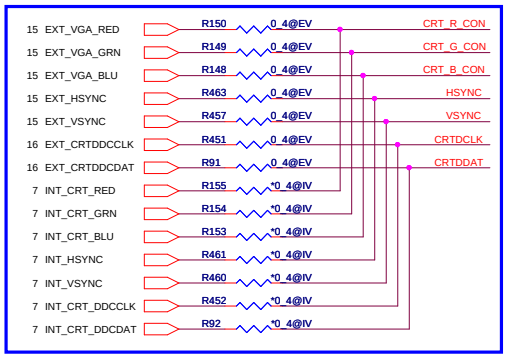
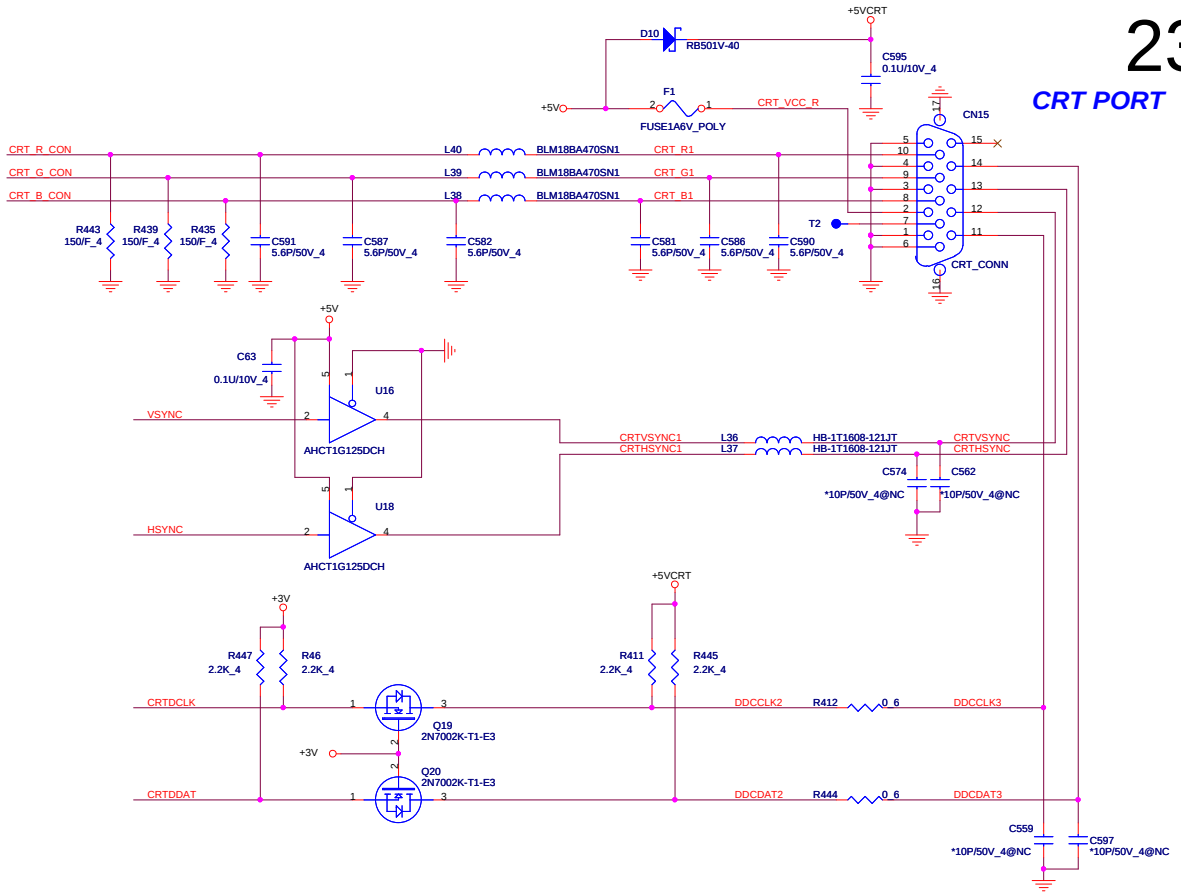
CRT PORT

CRT SWITCH



UMA & Discrete setting

	LVDS	Discrete / UMA
R150	0	NC
R149	0	NC
R148	0	NC
R463	0	NC
R457	0	NC
R451	0	NC
R91	0	NC
R155	NC	0
R154	NC	0
R153	NC	0
R461	NC	0
R460	NC	0
R452	NC	0
R92	NC	0



PROJECT : LE8
Quanta Computer Inc.

Size	Document Number	Rev
Custom	CRT_CON	1A

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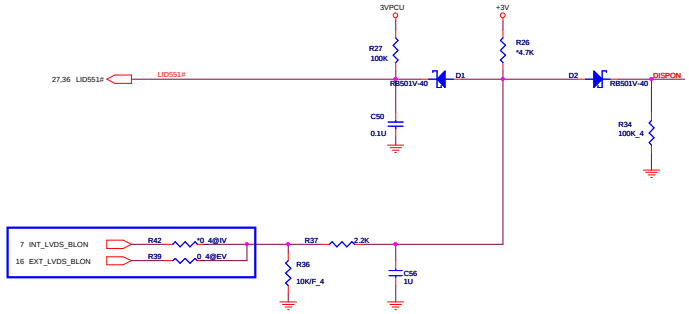

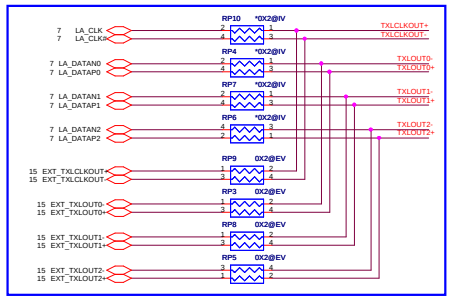

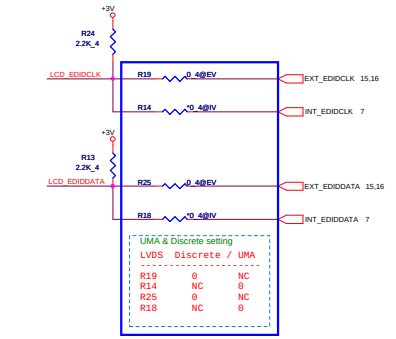

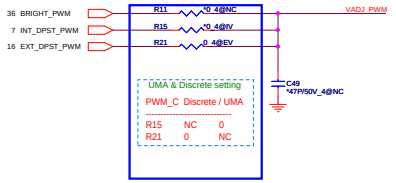

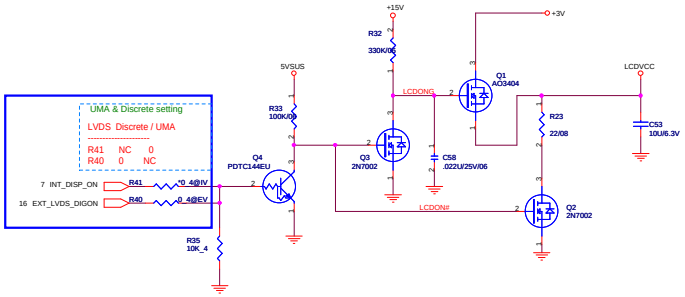

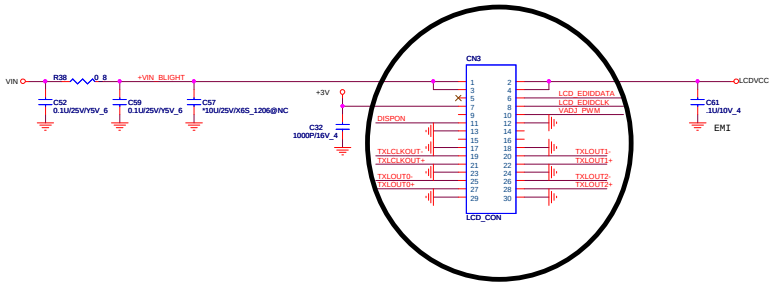

PROJECT : LE8
Quanta Computer Inc.

Size	Document Number	Rev
Custom	LCD & LID CON	1A

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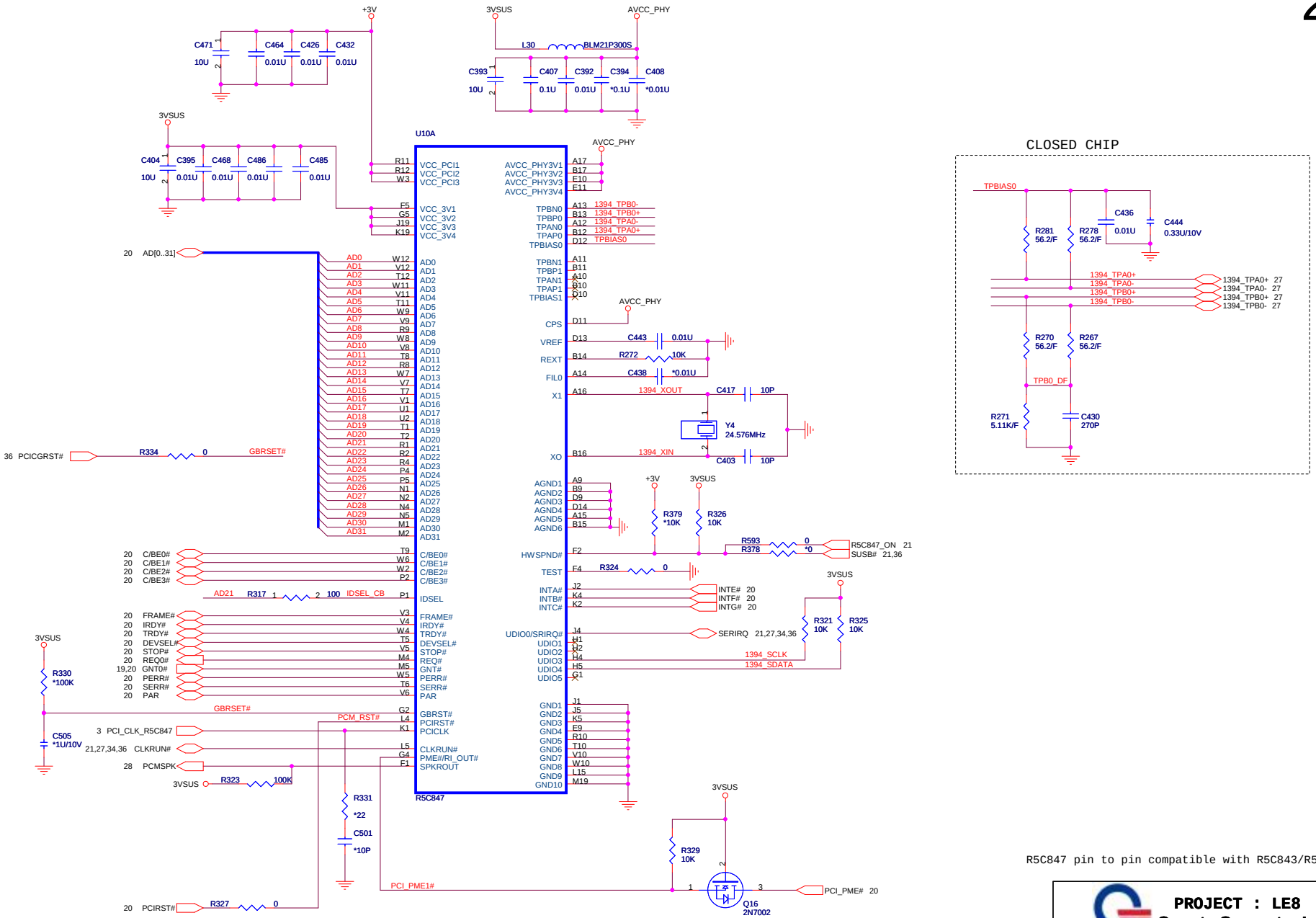

R5C847 pin to pin compatible with R5C843/R5C841

PROJECT : LE8 Quanta Computer Inc.		
Size: Custom	Document Number: R5C847 PCI/1394	Rev: 1A
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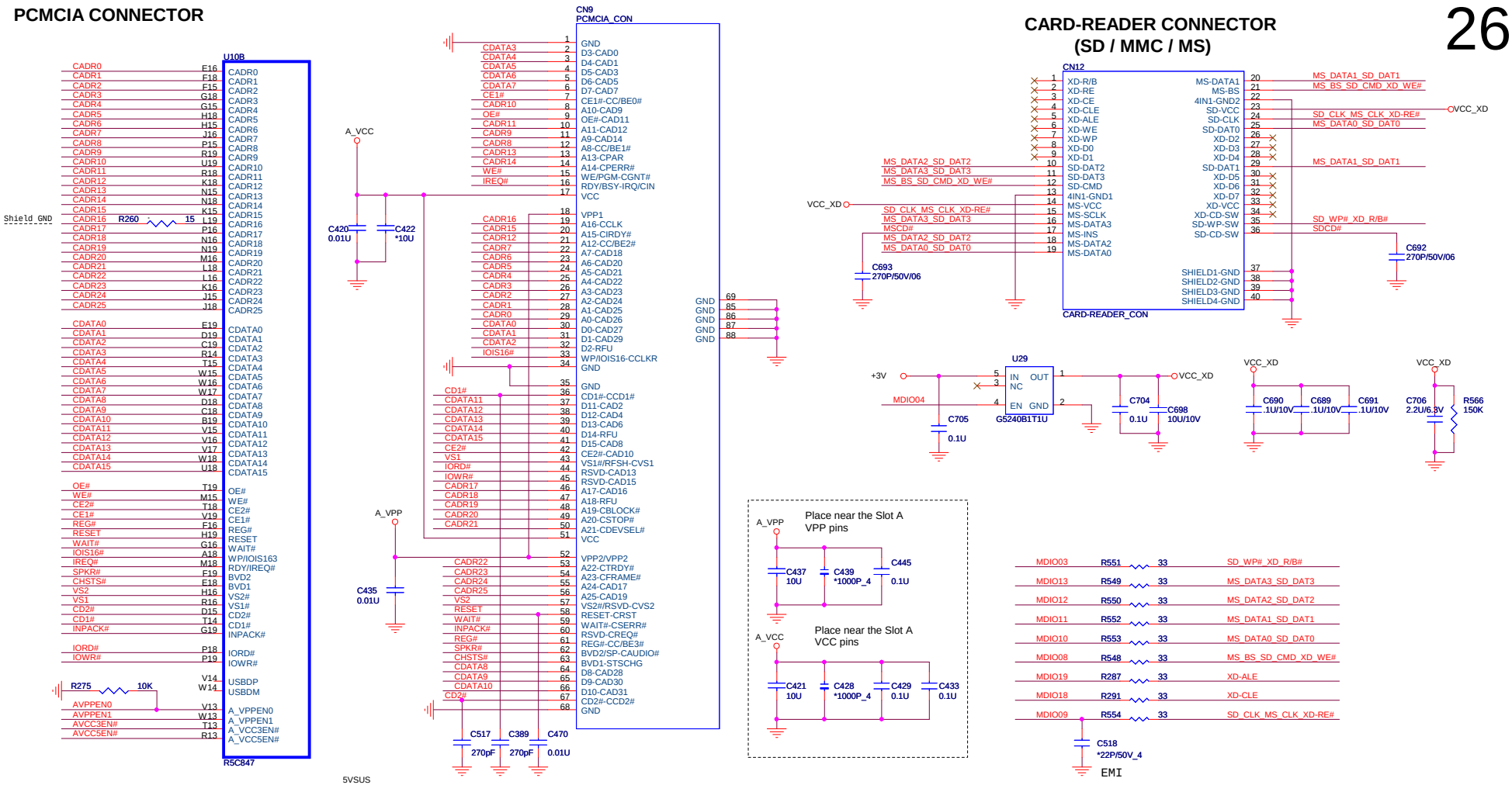
PCMCIA CONNECTOR



PROJECT :	LE8
Quanta Computer Inc.	
Size: Custom	Document Number: R5C847 PCMCIA/ 3-IN-1 CON
Rev: 1A	
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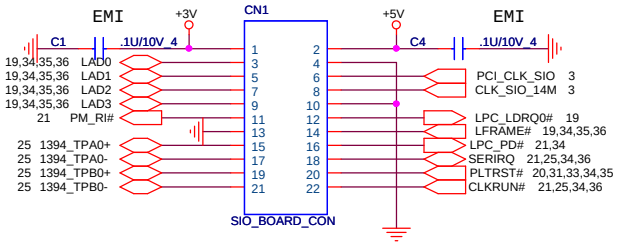
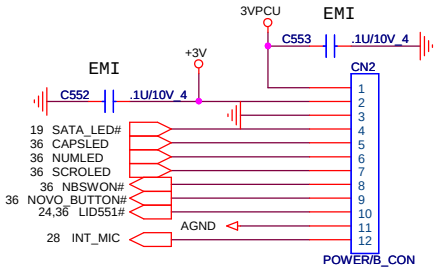
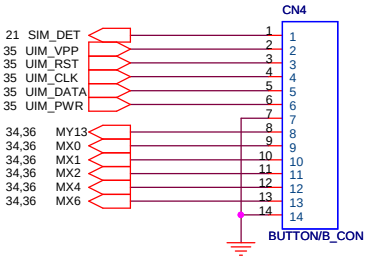
SIO BOARD



POWER BOARD

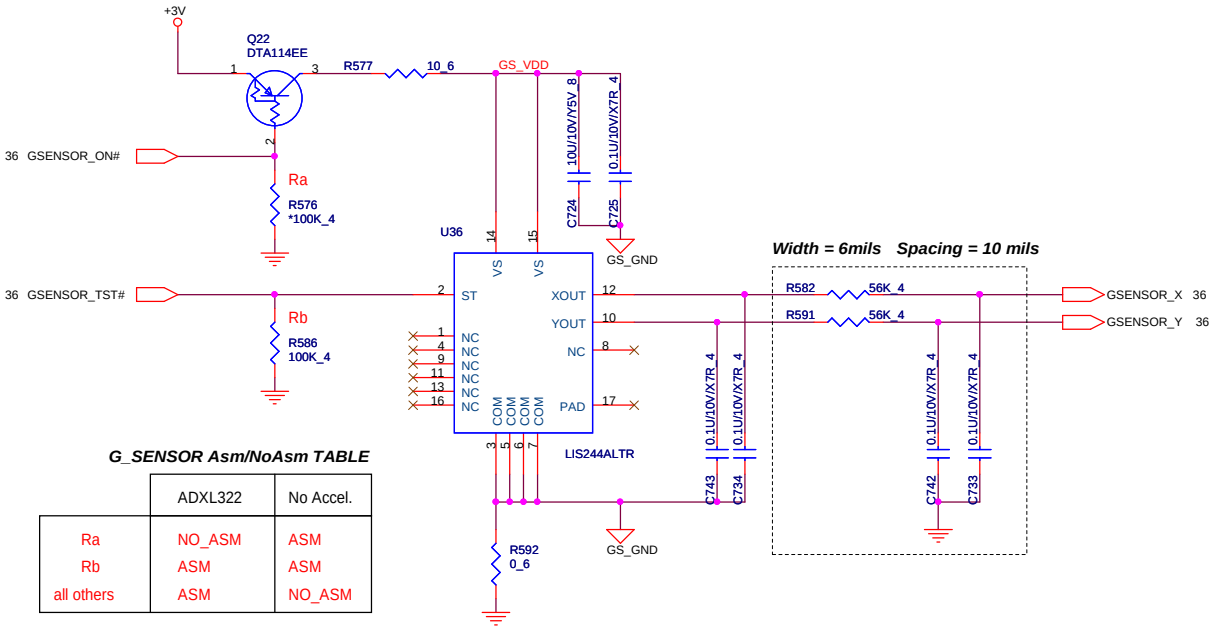


BUTTON BOARD



27

G-SENSOR



G_SENSOR Asm/NoAsm TABLE

	ADXL322	No Accel.
Ra	NO_ASM	ASM
Rb	ASM	ASM
all others	ASM	NO_ASM

PROJECT : LE8
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Size	Document Number	Rev
Custom	T/Bs & G-SENSOR	1A
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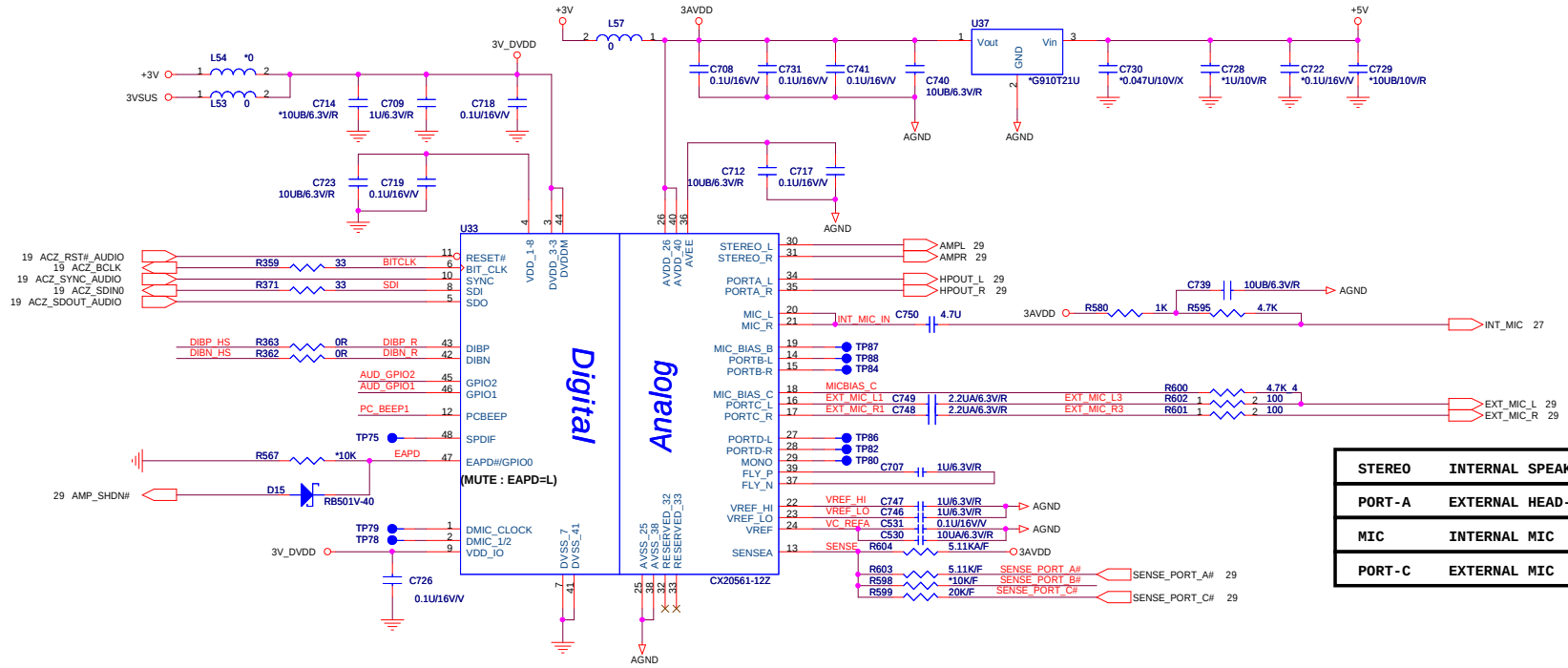
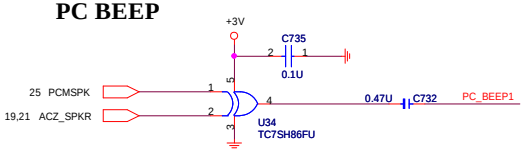


STEREO	INTERNAL SPEAKERS
PORT-A	EXTERNAL HEAD-PHONE
MIC	INTERNAL MIC
PORT-C	EXTERNAL MIC

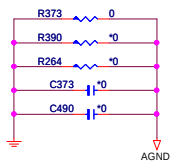
GAIN	10K GPIO RESISTORS GPIO1	GPIO2
0dB	Populate	Populate
-6dB	Omit	Omit
-12dB	Populate	Omit
-16dB	Omit	Populate

Default gain is -6dB without populating the 10K ohm pull down resistors going to GPIO1 and GPIO2

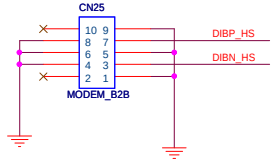
PC BEEP



FOR EMI SOLUTION



MODEM/B CONN.



PROJECT : LE8
Quanta Computer Inc.

Size	Document Number	Rev
Custom	AUDIO CODEC+MODEM	1A

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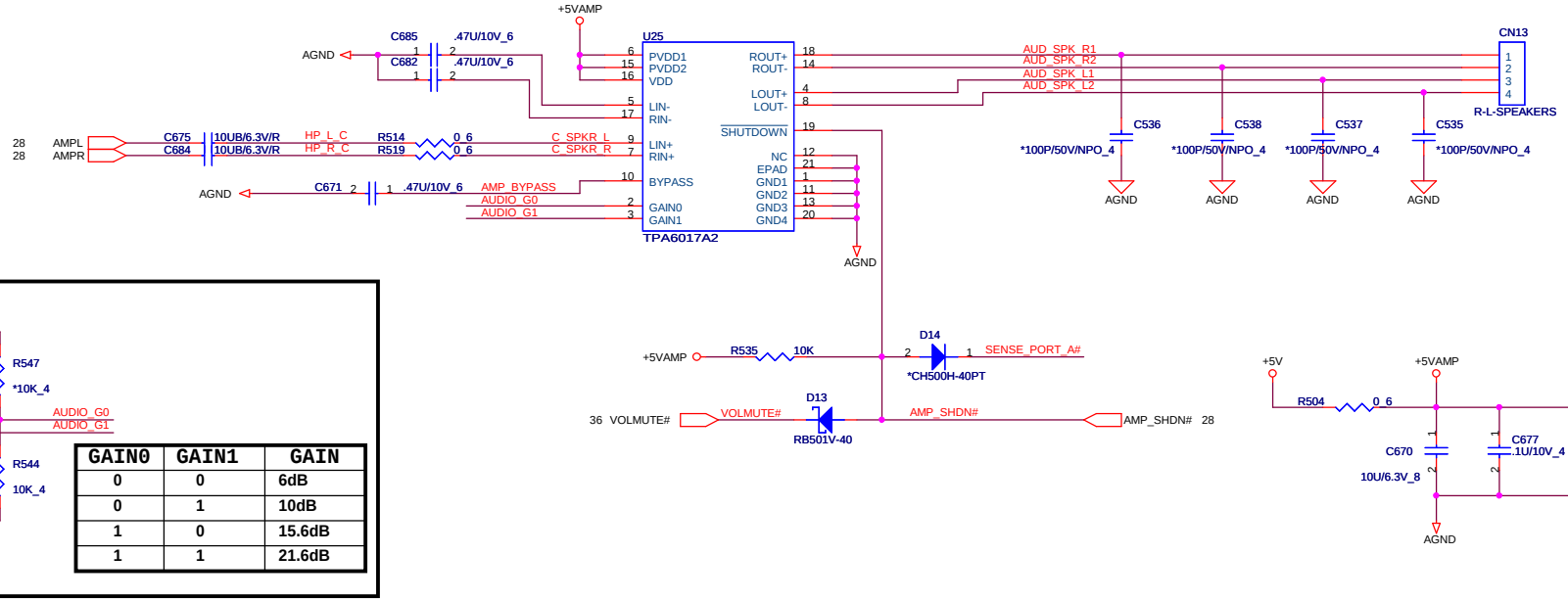
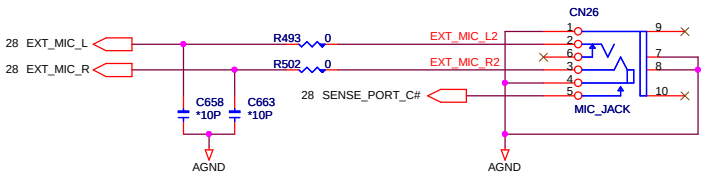
INTERNAL SPEAKER AMPLIFIER

29

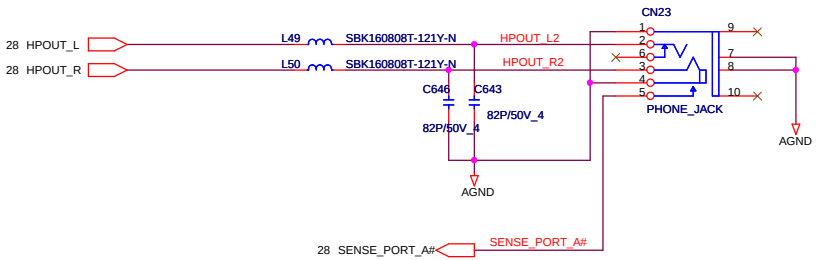


GAIN0	GAIN1	GAIN
0	0	6dB
0	1	10dB
1	0	15.6dB
1	1	21.6dB

MIC-IN JACK



HEADPHONE



PROJECT : LE8
Quanta Computer Inc.

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Custom	AMP_TPA6017 & JACKS	1A
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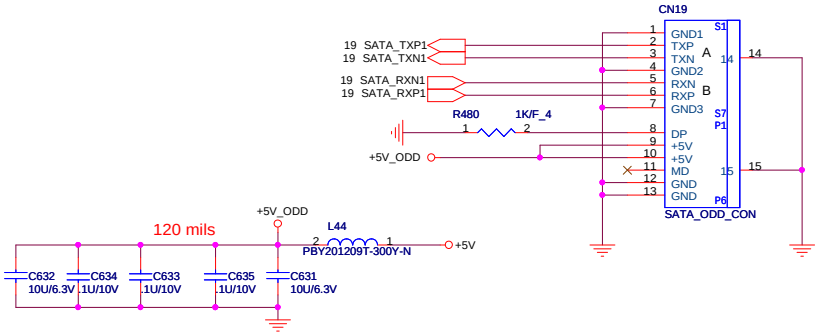
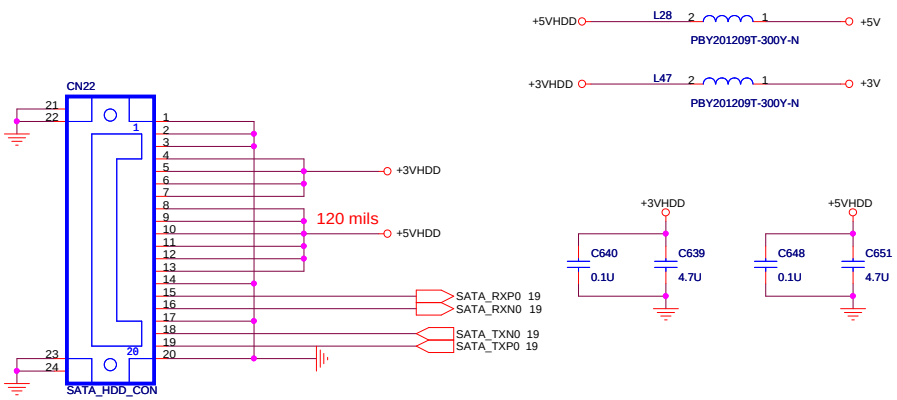
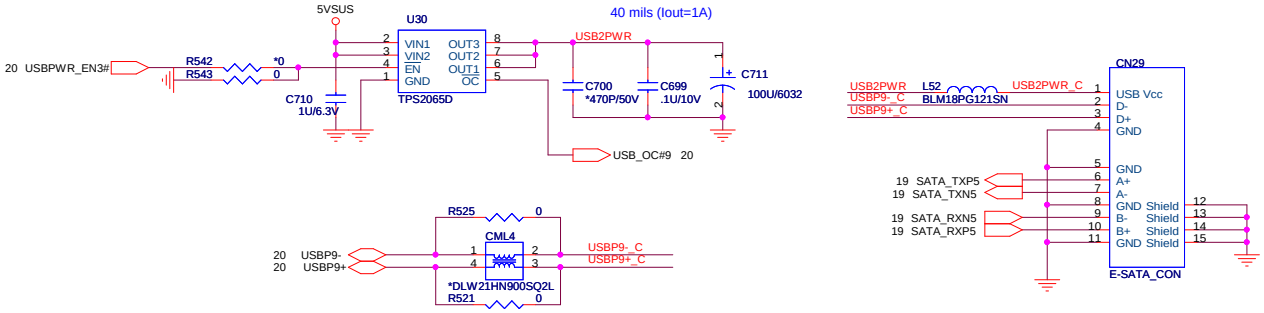
SATA CD-ROM



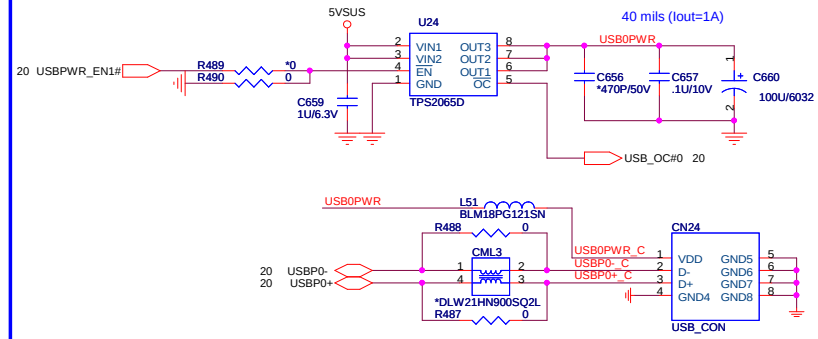
SATA-HDD CONNECTOR

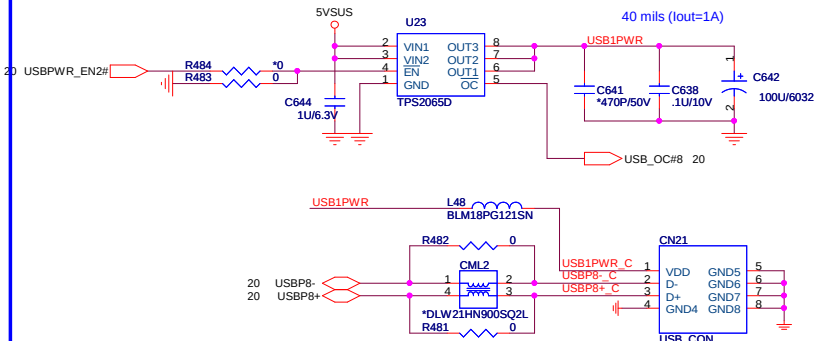


USB + eSATA CONNECTOR



USBX2





PROJECT : LE8		
Quanta Computer Inc.		
Size: Custom	Document Number: SATA HDD/CD-ROM/USB/ESATA	Rev: 1A
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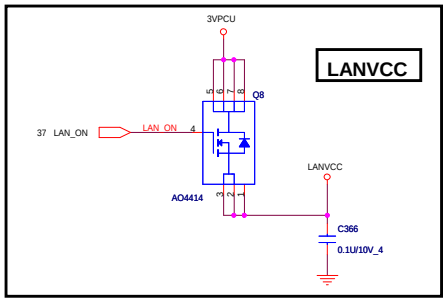
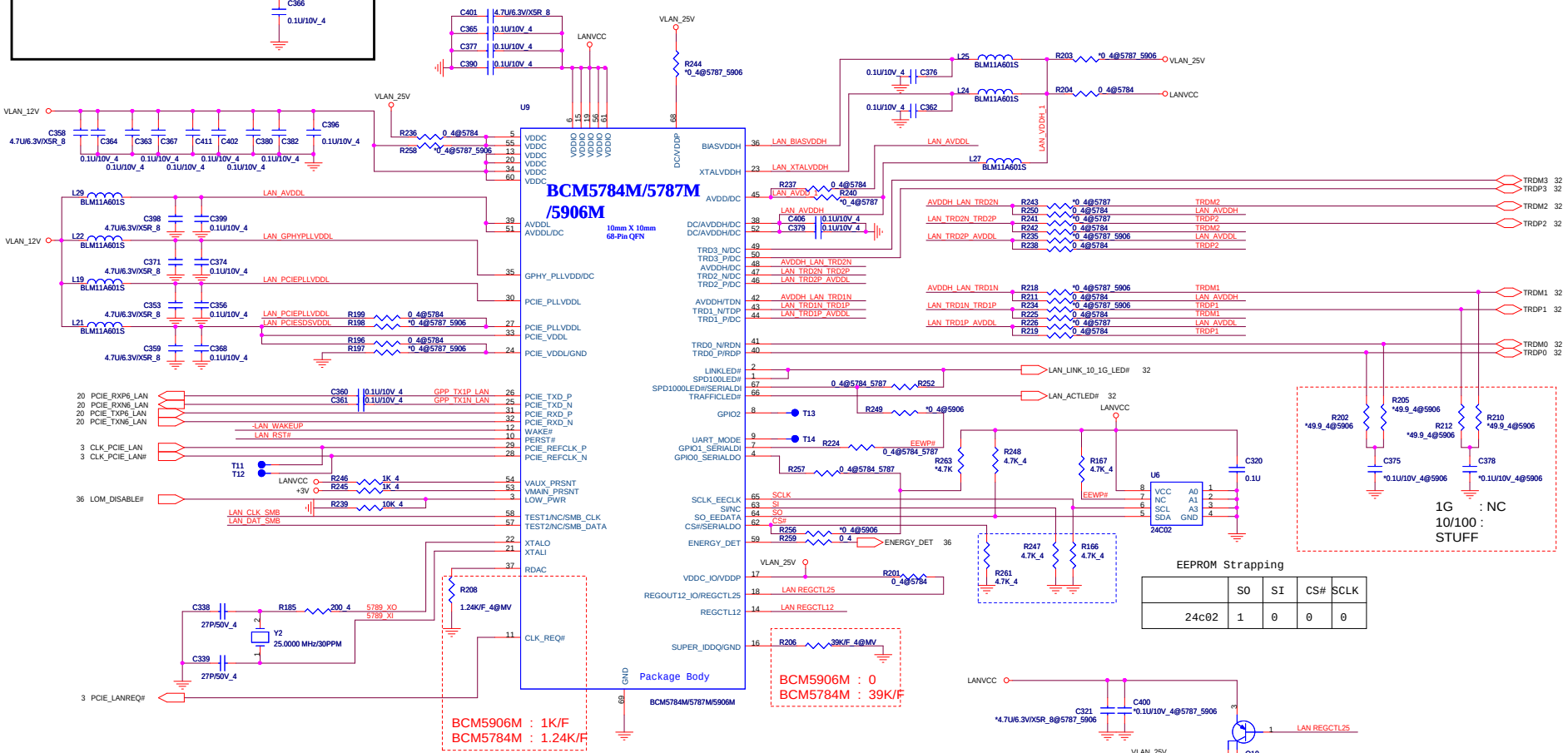


BCM5784M(LAN 10/ 100/ 1G) ==>AJ057840000
BCM5906M(LAN 10/ 100) ==> AJ059060000



PROJECT : LE8
Quanta Computer Inc.

Size	Document Number	Rev
Custom	LAN-BCM5906M/5784M/5787M	1A

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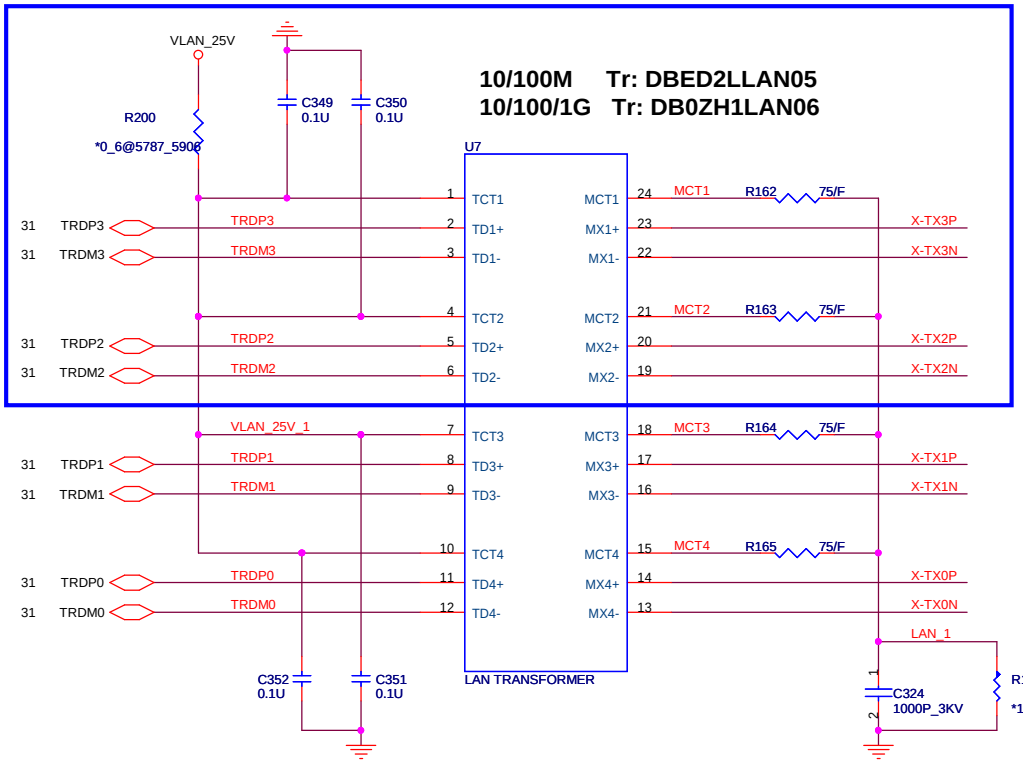

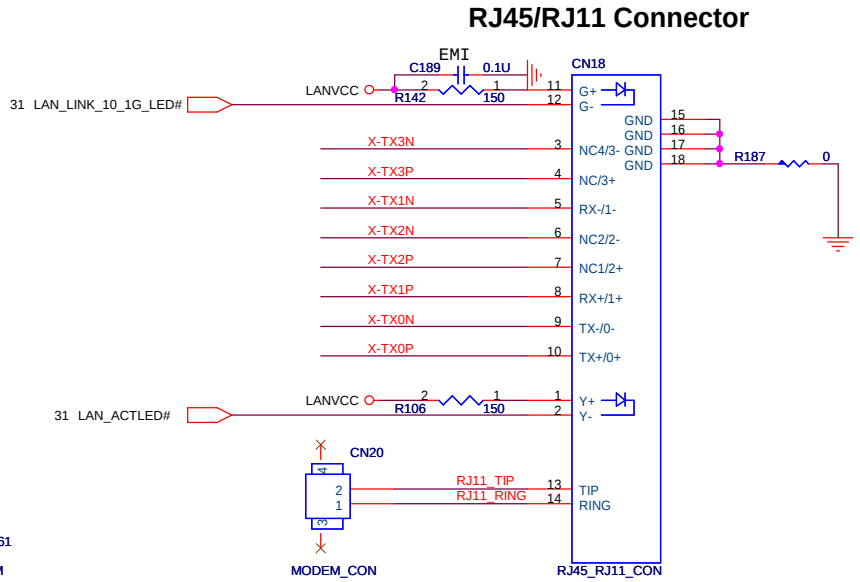

PROJECT : LE8
Quanta Computer Inc.

Size	Document Number	Rev
Custom	RJ11/RJ45 CONNECTOR	1A
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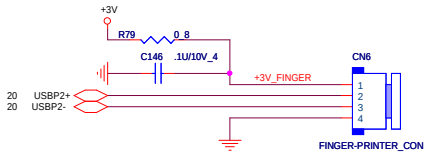
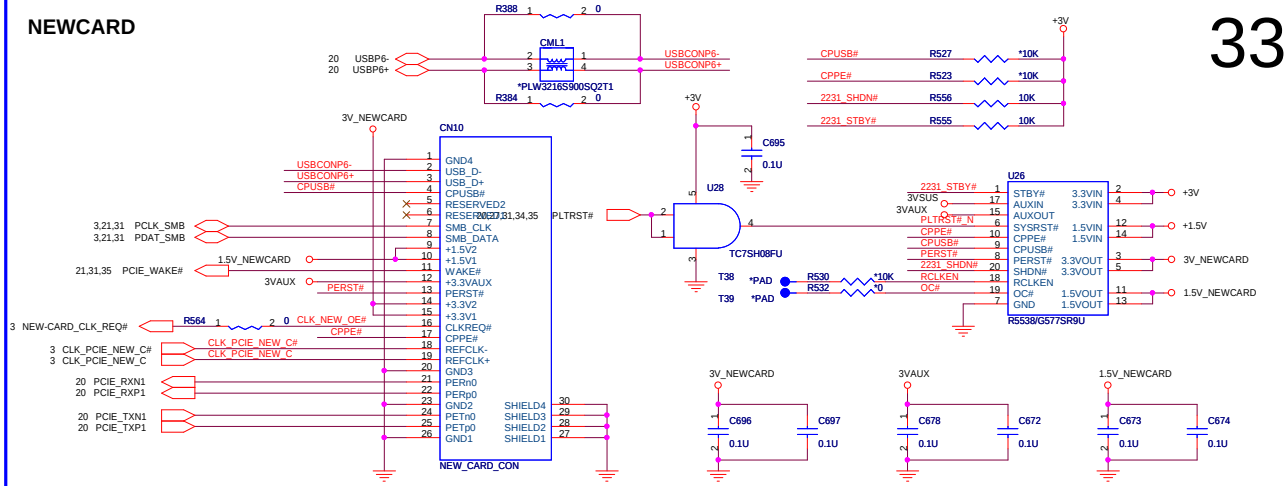
FINGER PRINTER

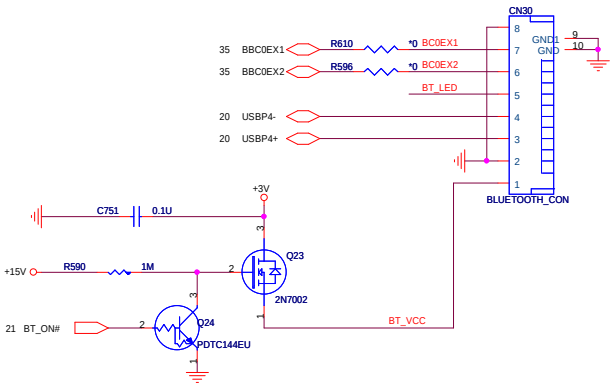


NEWCARD

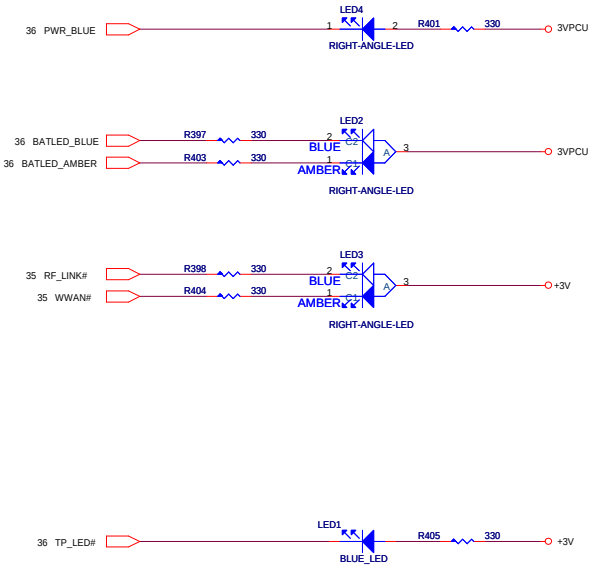


33

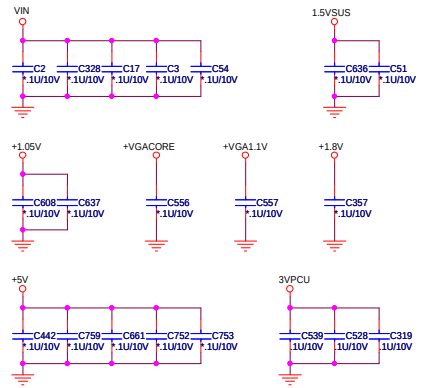
BLUETOOTH



LED



EMI CAPACITORS



PROJECT : LE8
Quanta Computer Inc.

Size	Document Number	Rev
Custom	F/P, NEW CARD, B/T, LED	1A

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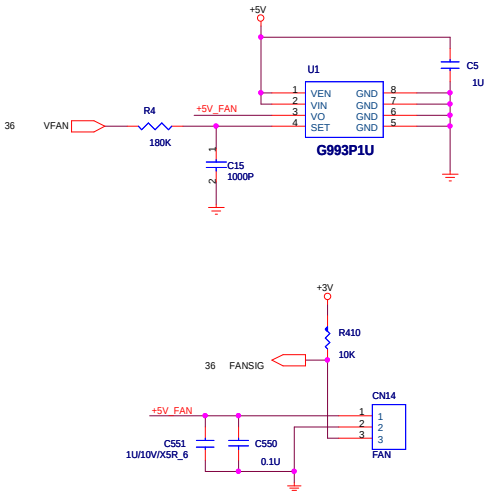
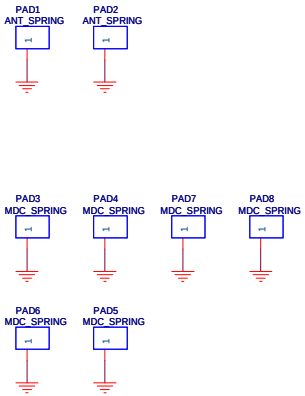
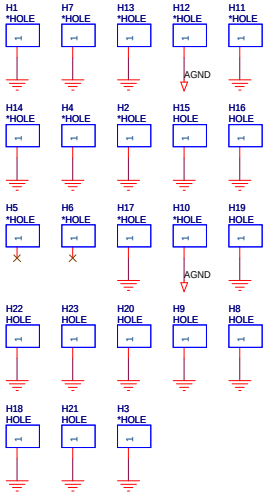
FAN CONTROL



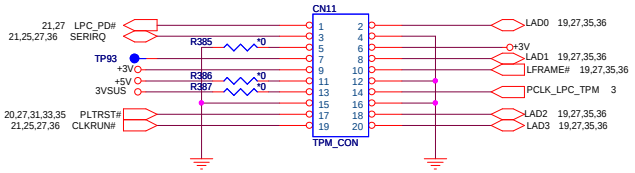
EMI PAD



HOLES



Board TO Board TPM MODULE



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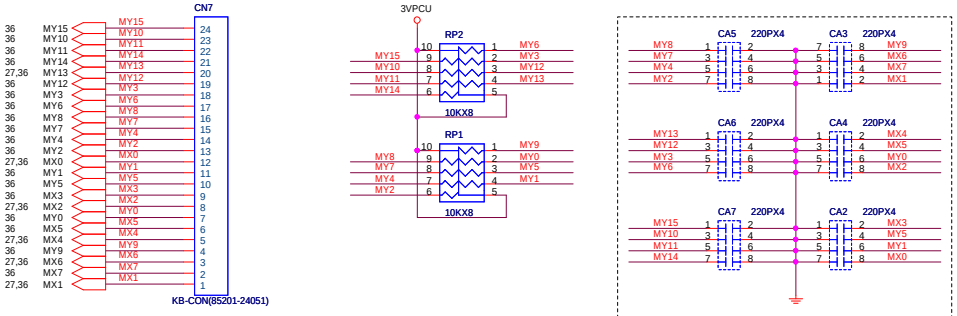
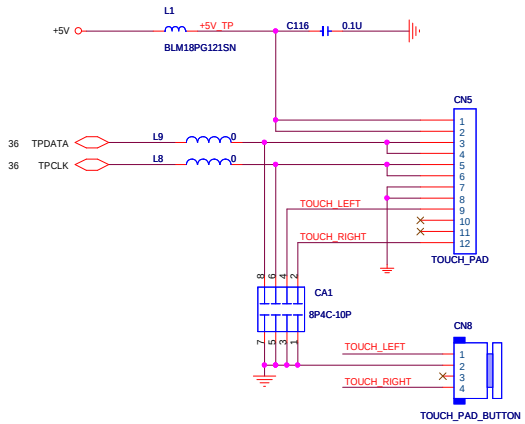
KEYBOARD



For EMI request

TOUCH PAD



PROJECT : LE8
Quanta Computer Inc.

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

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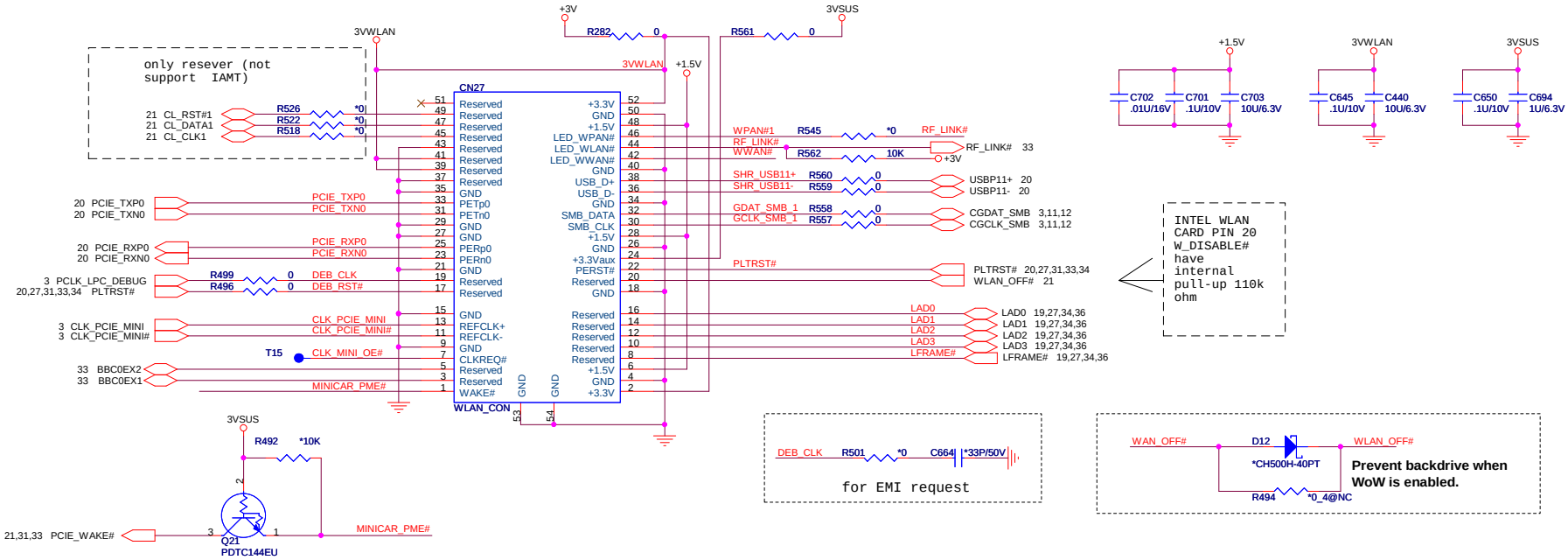
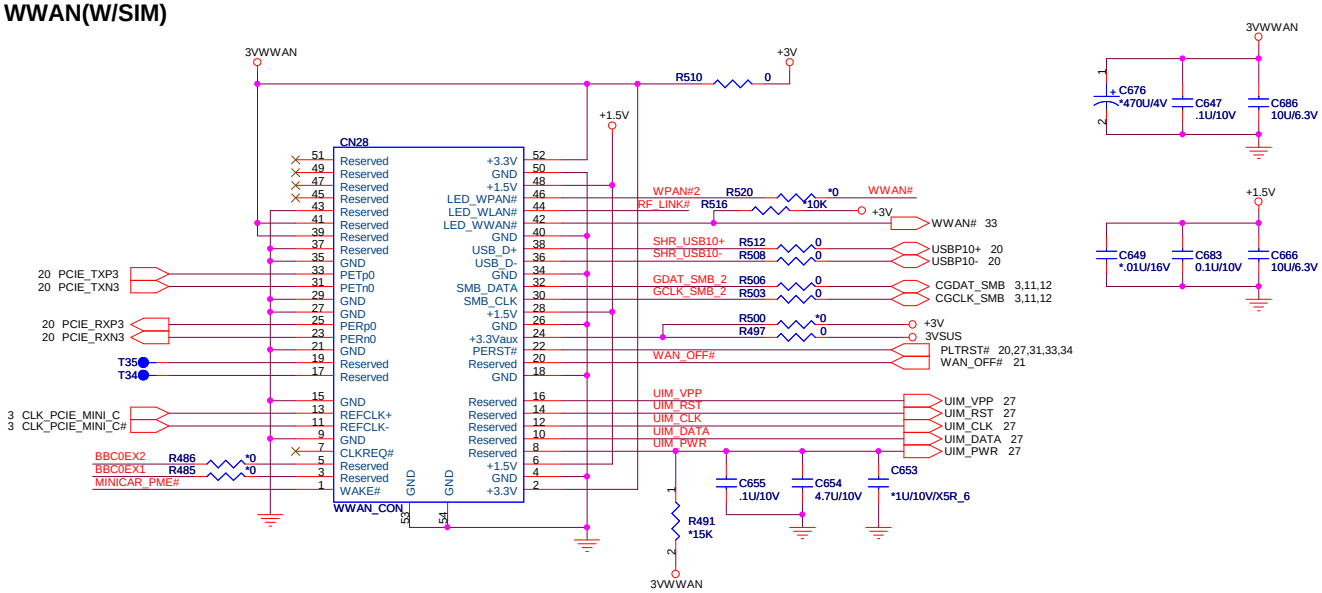
Mini PCI-E Card 1
WLAN



Mini PCI-E Card 2
WWAN(W/SIM)



PROJECT : LE8 Quanta Computer Inc.		
Size: Custom	Document Number: WLAN & WWAN CON	Rev: 1A
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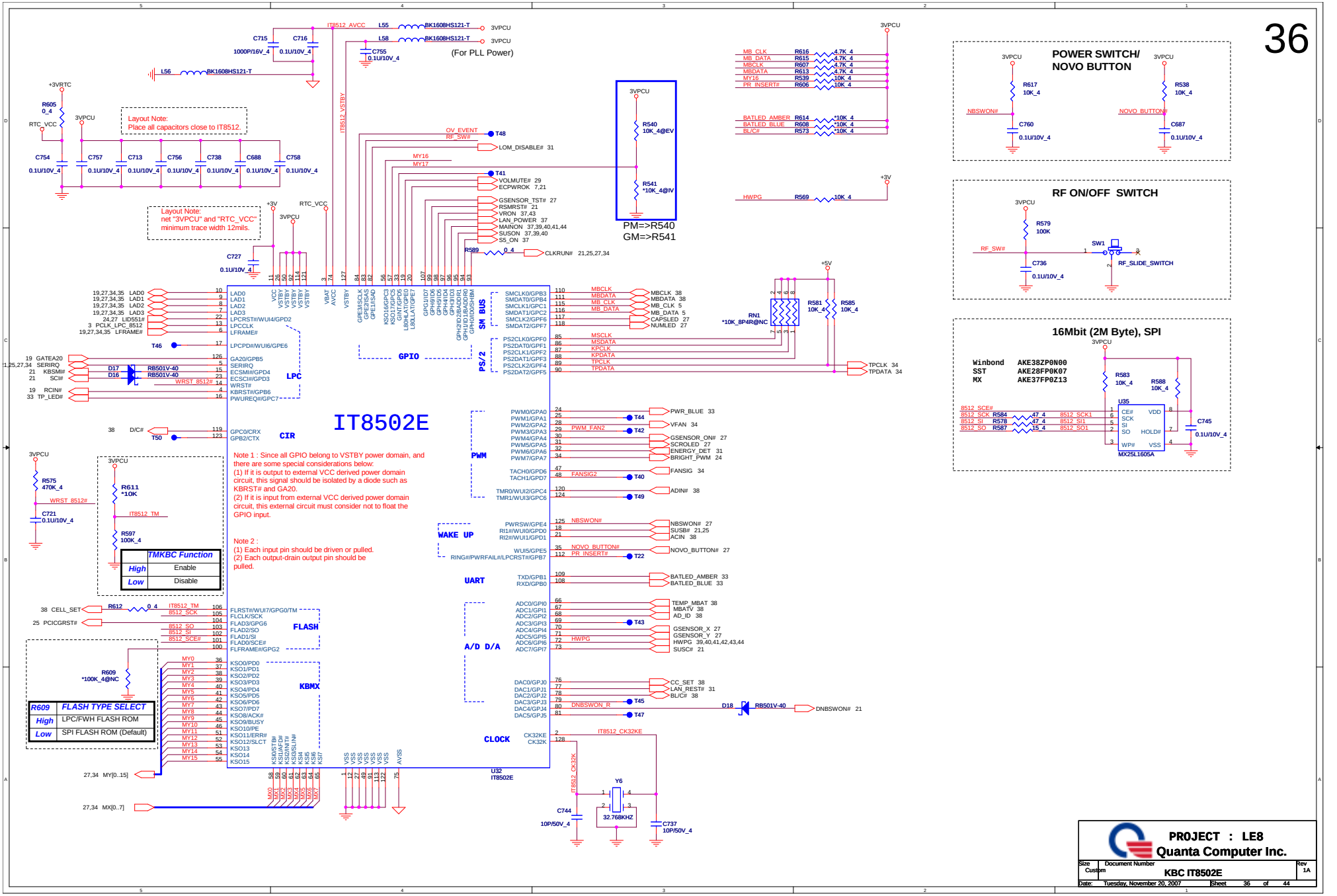
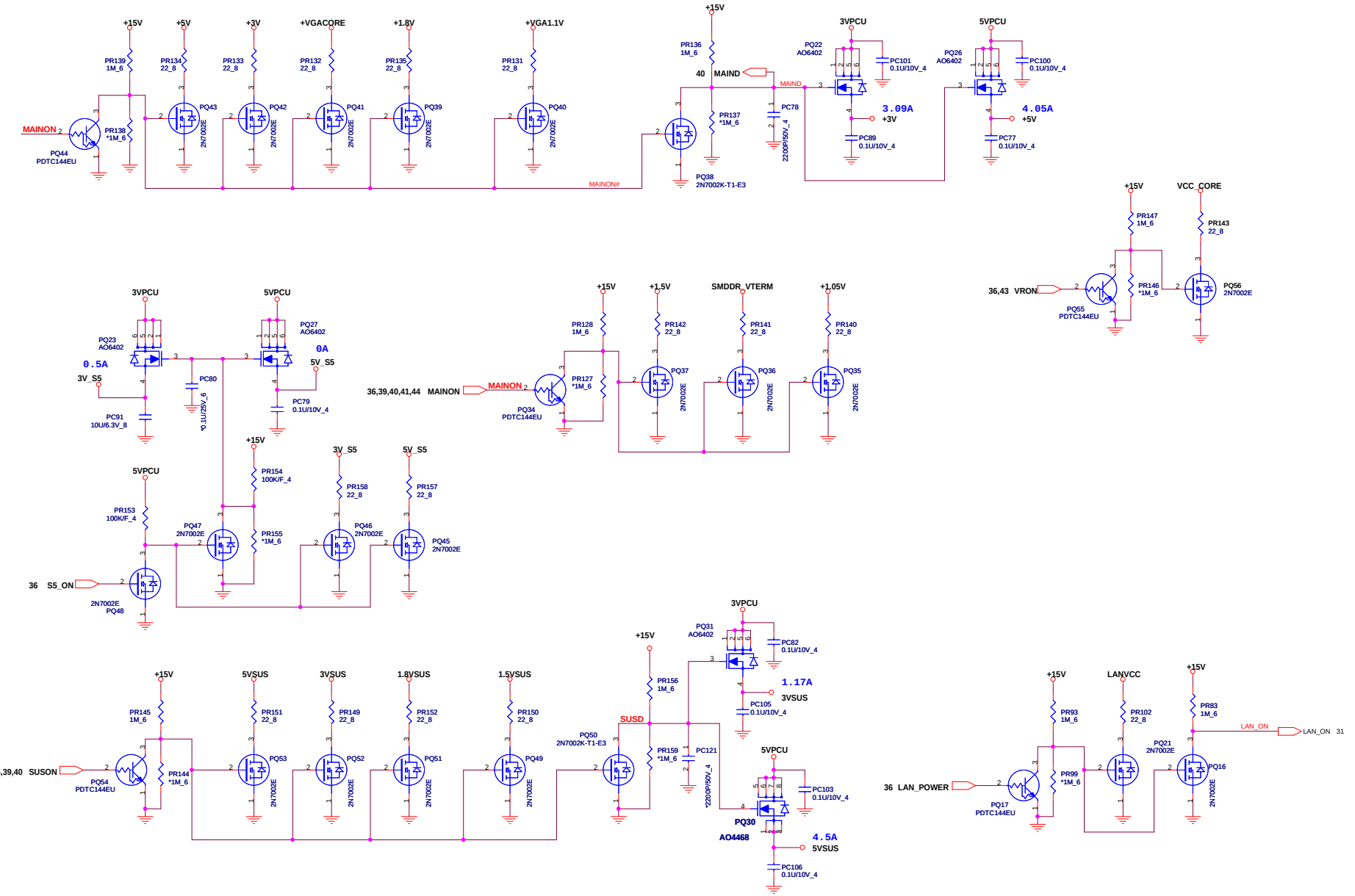

IT8502E
(For PLL Power)
Layout Note:
Place all capacitors close to IT8512.
Layout Note:
net "3VPCU" and "RTC_VCC"
minimum trace width 12mils.
PM=>R540
GM=>R541
Note 1 : Since all GPIO belong to VSTBY power domain, and there are some special considerations below:
(1) If it is output to external VCC derived 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.
TMKBC Function
High Enable
Low Disable
R609 FLASH TYPE SELECT
High LPC/FWH FLASH ROM
Low SPI FLASH ROM (Default)
POWER SWITCH/
NOVO BUTTON
RF ON/OFF SWITCH
16Mbit (2M Byte), SPI
Winbond AKE38ZP0N00
SST AKE28FP0K07
MX AKE37FP0Z13
MX25L1605A
PROJECT : LE8
Quanta Computer Inc.
KBC IT8502E
Tuesday, November 20, 2007

DISCHARGE



PROJECT : LE8
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Discharge	1A
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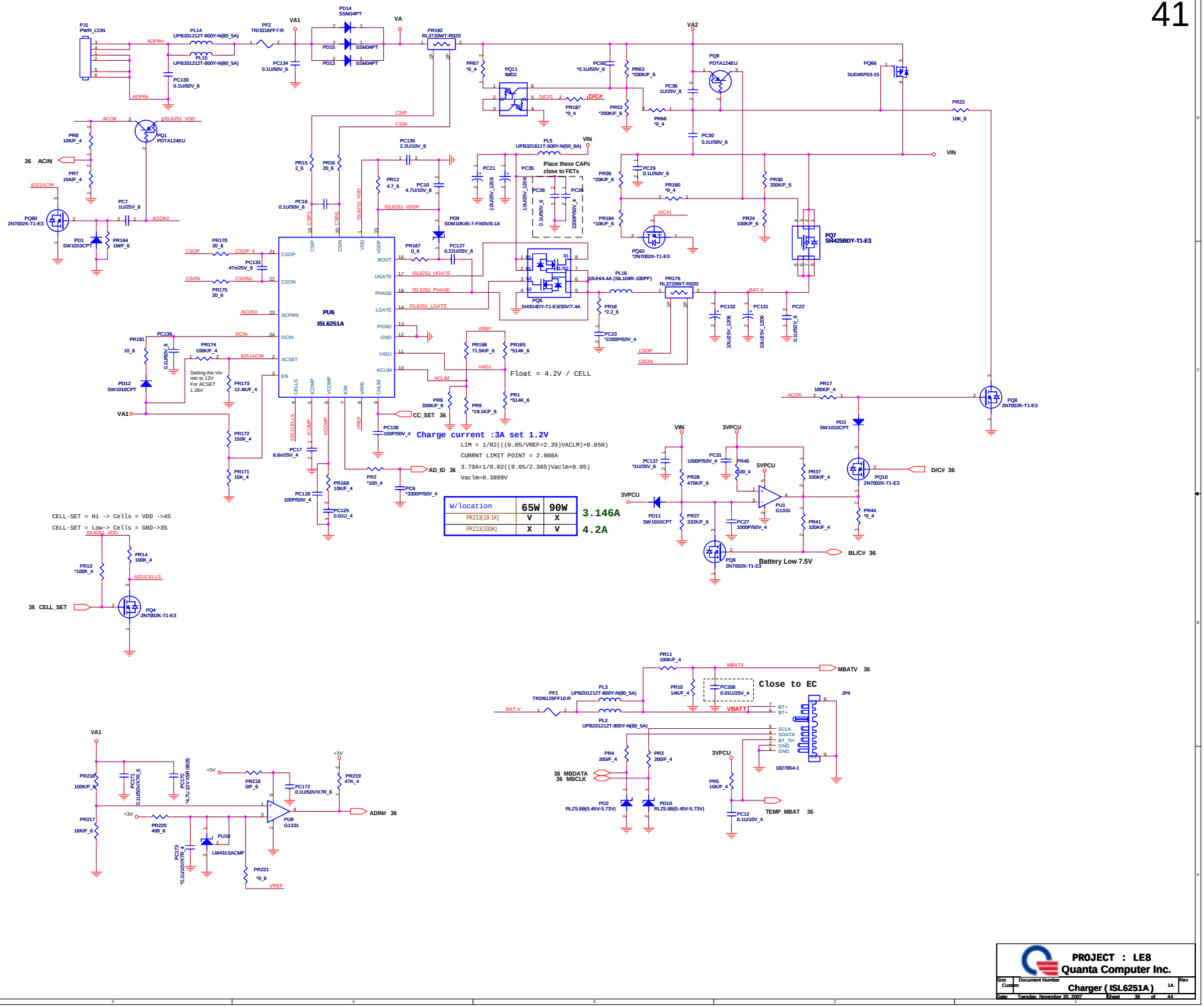
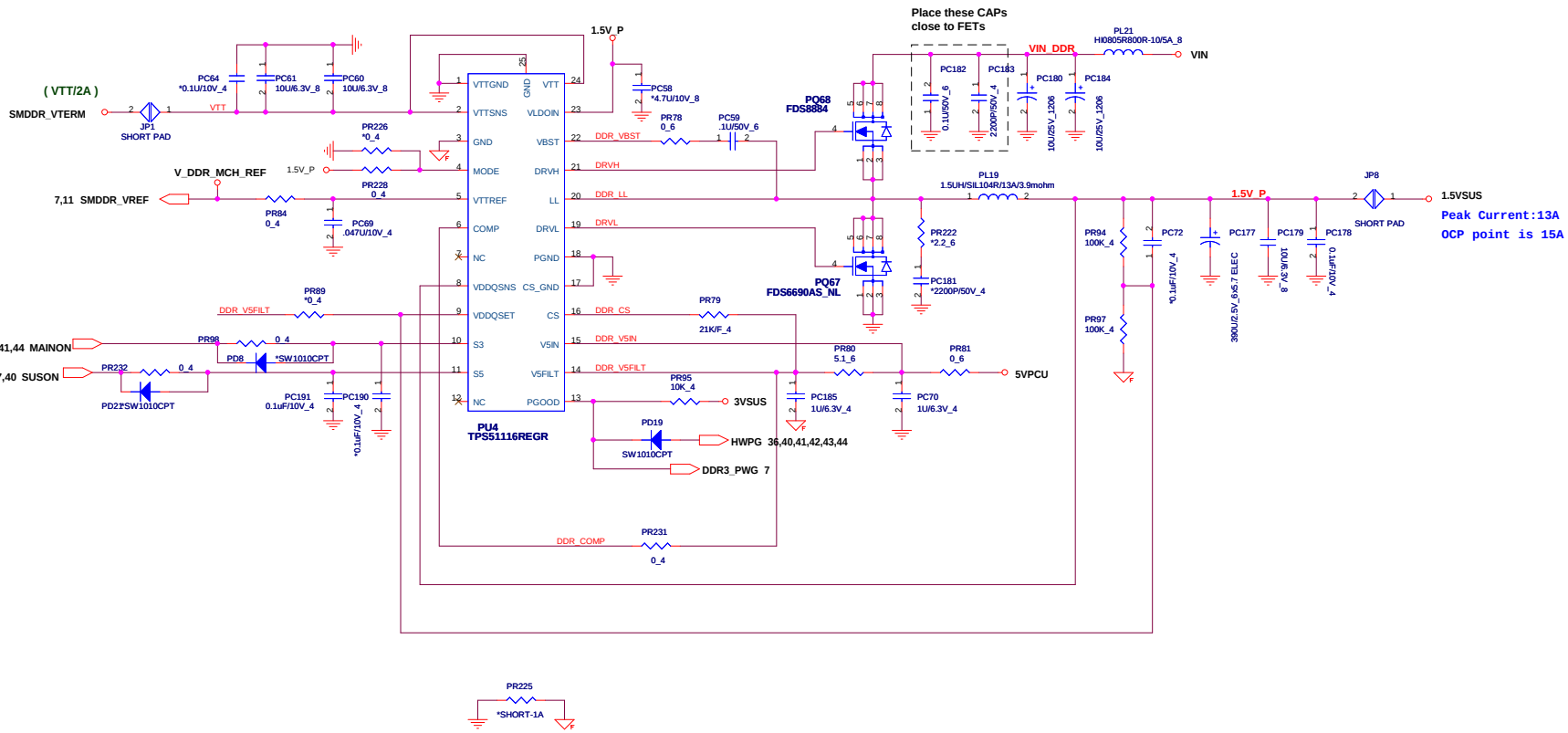

PU6
ISL6251A
Float = 4.2V / CELL
Charge current :3A set 1.2V
LIM = 1/R2(((0.05/VREF=2.39)VACLM)+0.050)
CURRNT LIMIT POINT = 2.908A
3.79A=1/0.02((0.05/2.365)Vaclm+0.05)
Vaclm=0.8899V
W/location | 65W | 90W
PR213(19.1K) | V | X
PR213(330K) | X | V
3.146A
4.2A
CELL-SET = Hi -> Cells = VDD ->4S
CELL-SET = Low-> Cells = GND->3S
Close to EC
Battery Low 7.5V
Place these CAPs close to FETs
PROJECT : LE8
Quanta Computer Inc.
Charger (ISL6251A)



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Quanta Computer Inc.

Size	Document Number	Rev
Custom	DDR3(TPS51116PEGR)	1A
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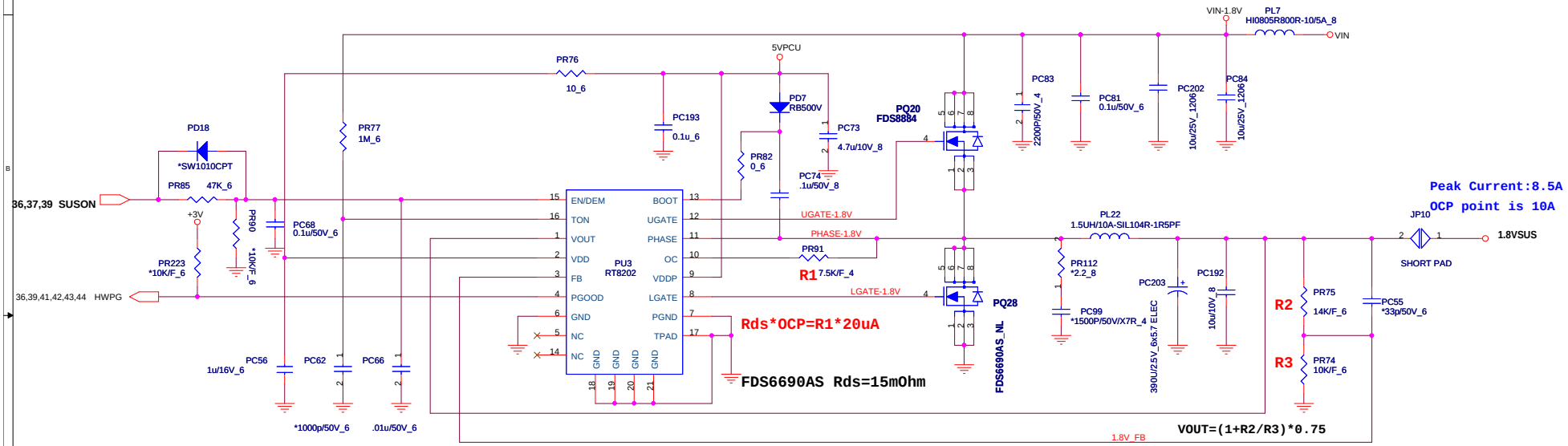
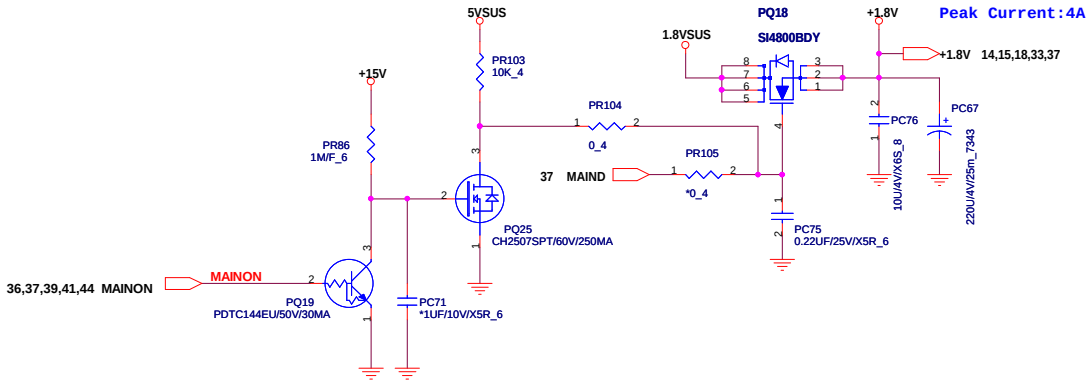


TON=3.85p*RTON*Vout/(Vin-0.5)

Frequency=Vout/(Vin*TON)

+1.8VRUN



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Quanta Computer Inc.

Size	Document Number	Rev
Custom	1.8VSUS(RT8202)	1A
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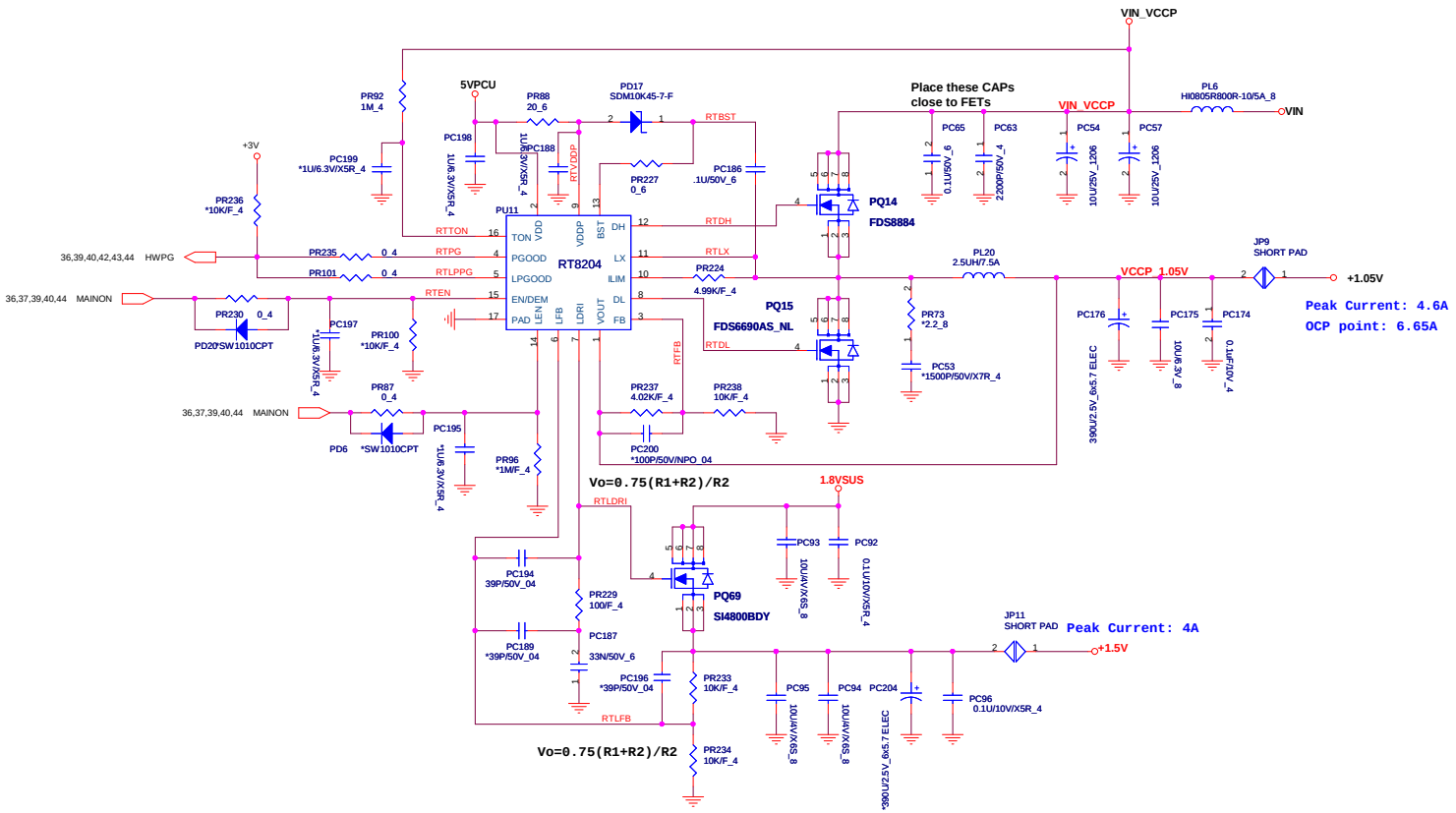

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Quanta Computer Inc.			
Size: Custom	Document Number: 1.05V/1.5V (RT8204)		Rev: 1A
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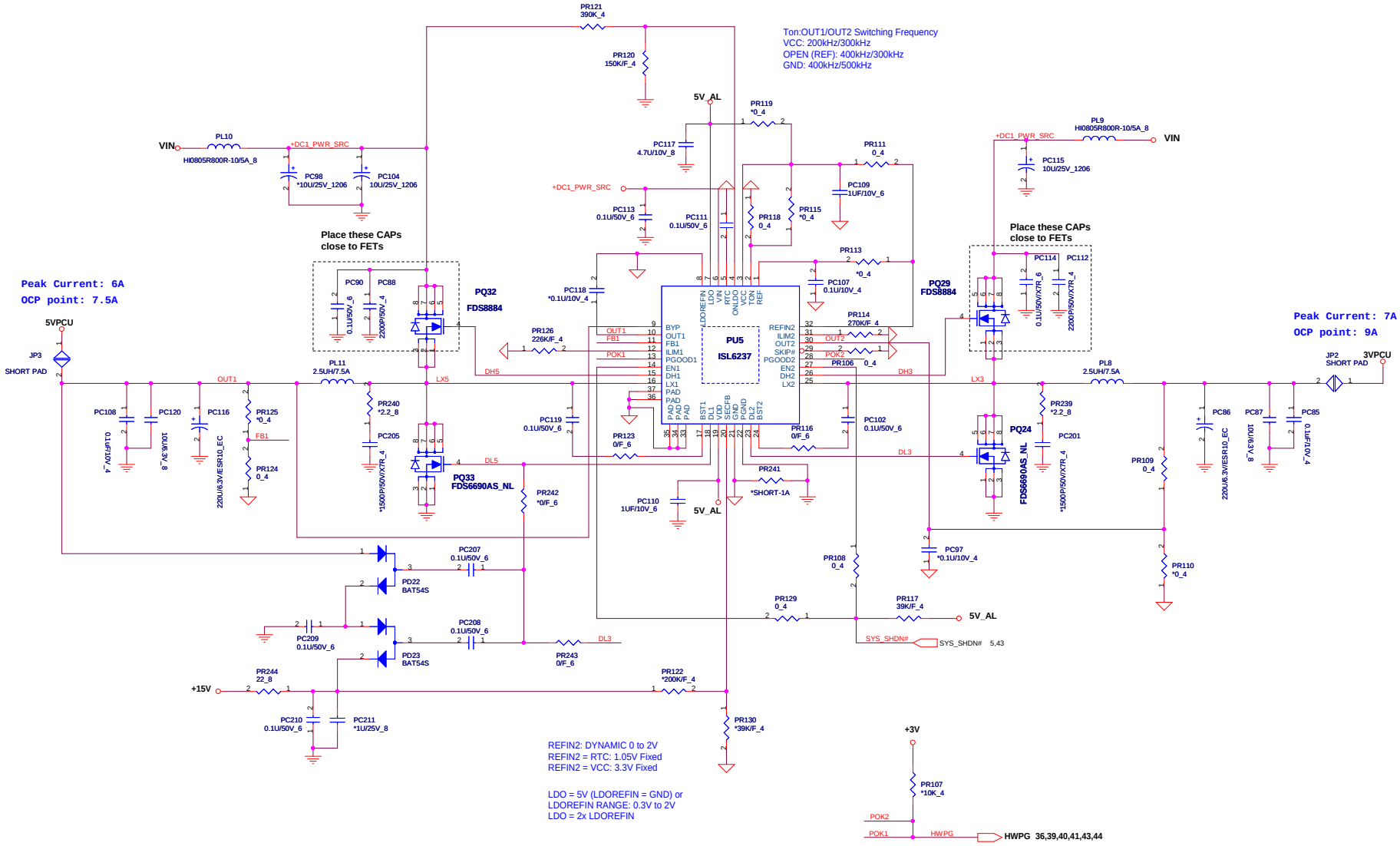
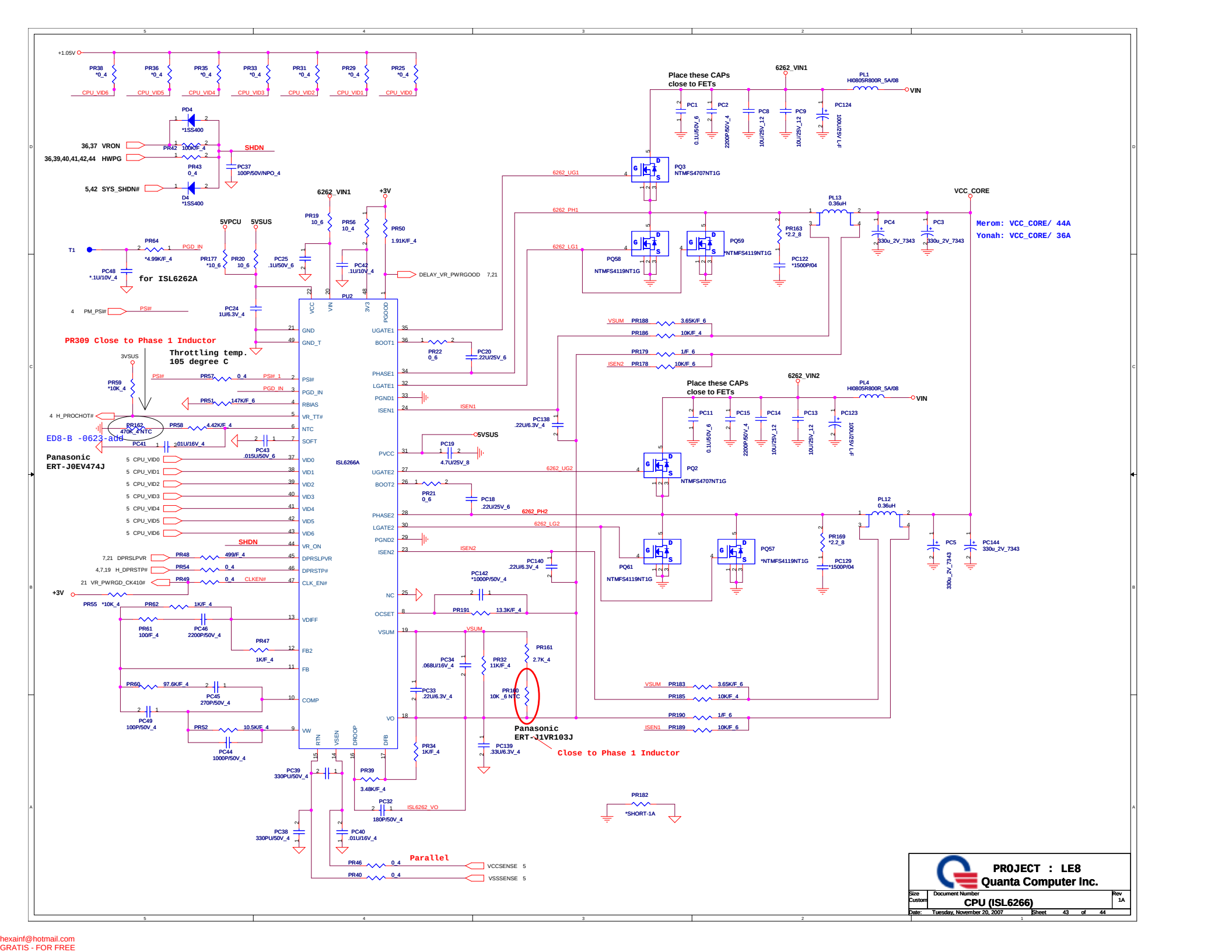
DC/DC 3VPCU/5VPCU/+15V

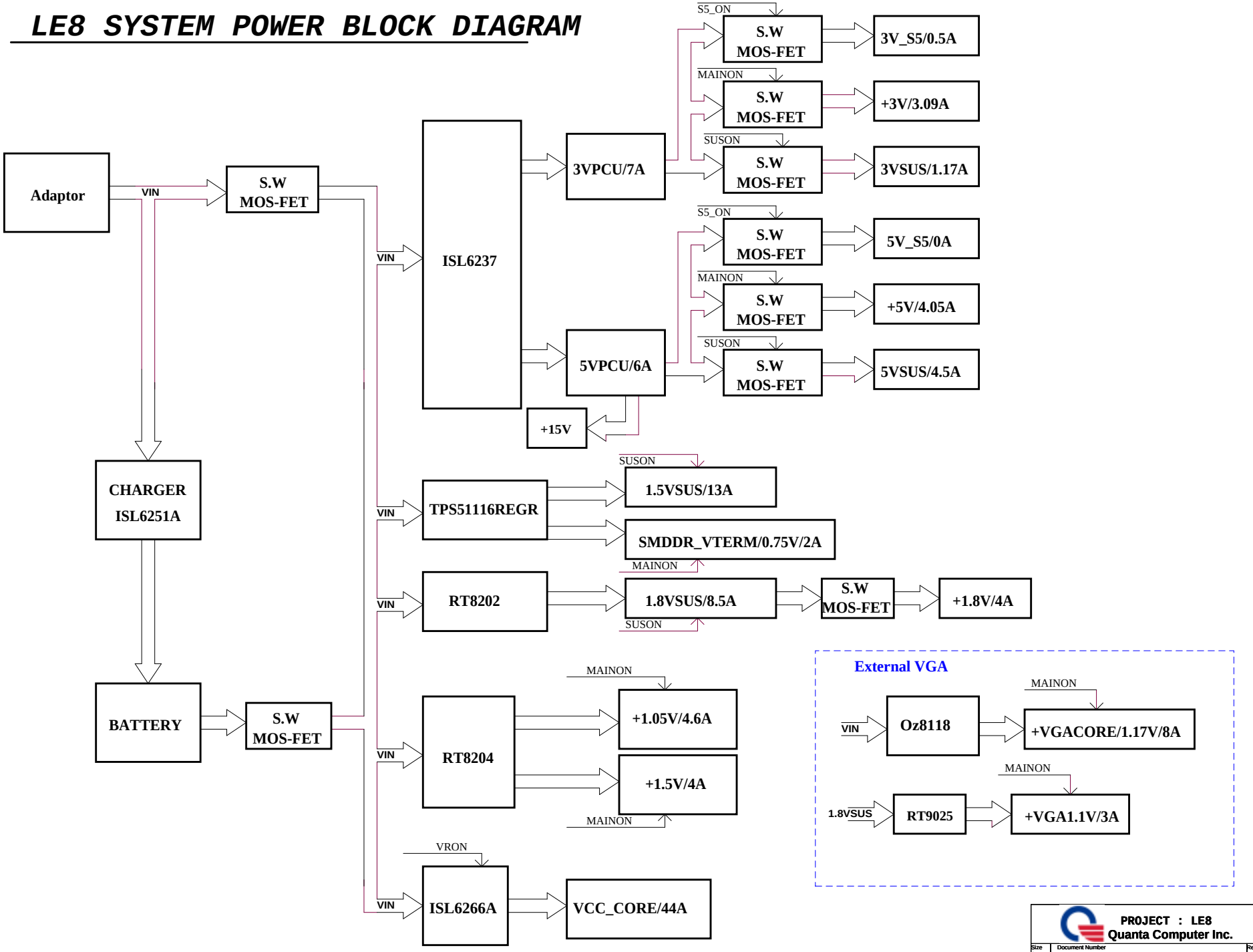


PROJECT : LE8
Quanta Computer Inc.

Size	Document Number	Rev
Custom	3V/5V (ISL6237)	1A
Date: Tuesday, November 20, 2007	Sheet 42 of 44	



LE8 SYSTEM POWER BLOCK DIAGRAM



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Quanta Computer Inc.

Size	Document Number	Rev
C	SYSTEM POWER BLOCK	1A

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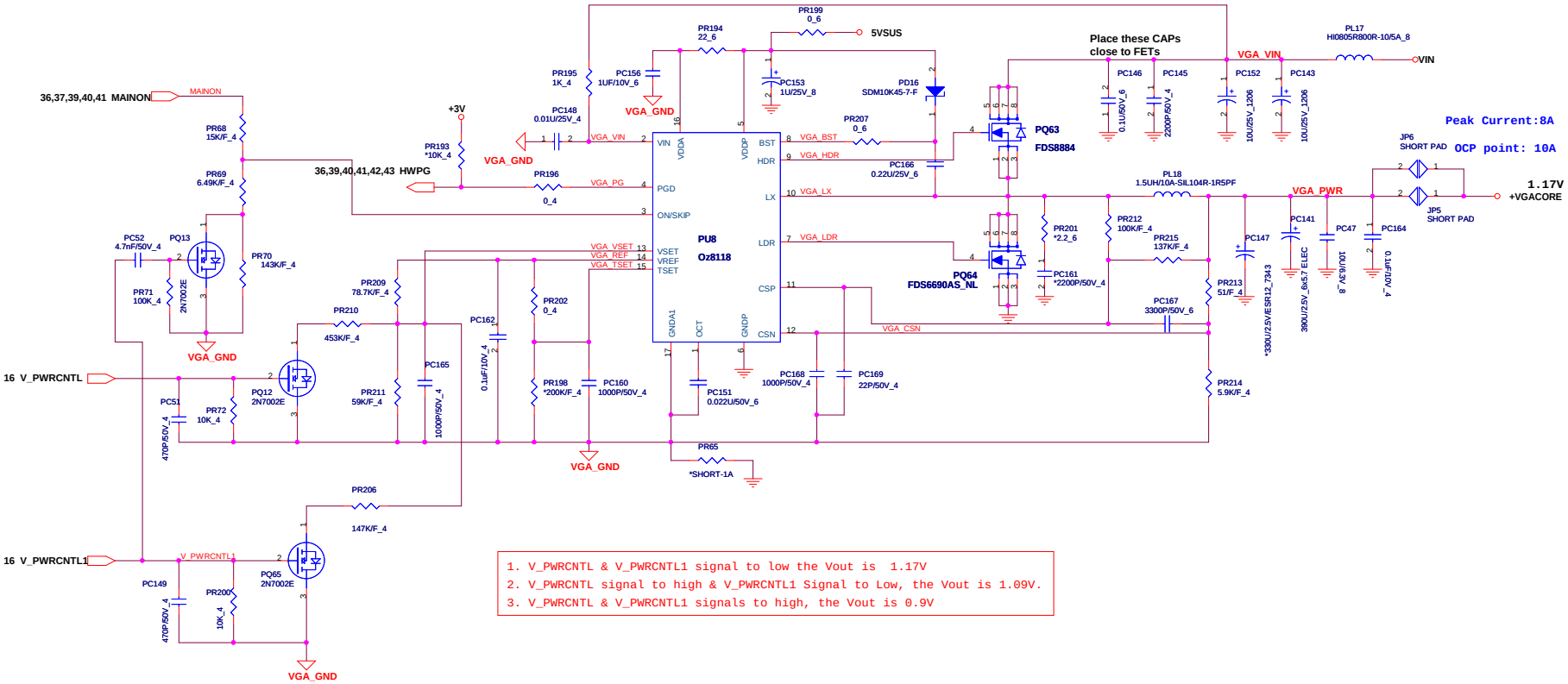
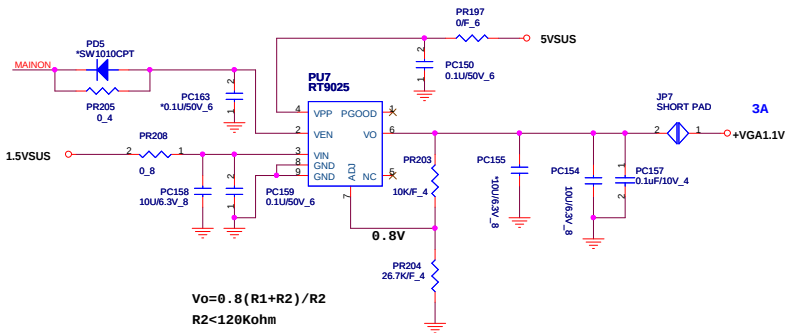


1. V_PWRCNTL & V_PWRCNTL1 signal to low the Vout is 1.17V
2. V_PWRCNTL signal to high & V_PWRCNTL1 Signal to Low, the Vout is 1.09V.
3. V_PWRCNTL & V_PWRCNTL1 signals to high, the Vout is 0.9V

V_PWRCNTL1	V_PWRCNTL	Vout(spec)
0	0	1.17V
0	1	1.09V.
1	0	0.95V
1	1	0.9V



Vo=0.8(R1+R2)/R2
R2<120Kohm

PROJECT : LE8		
Quanta Computer Inc.		
Size: Custom	Document Number: VGA (Oz8118)	Rev: 1A
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