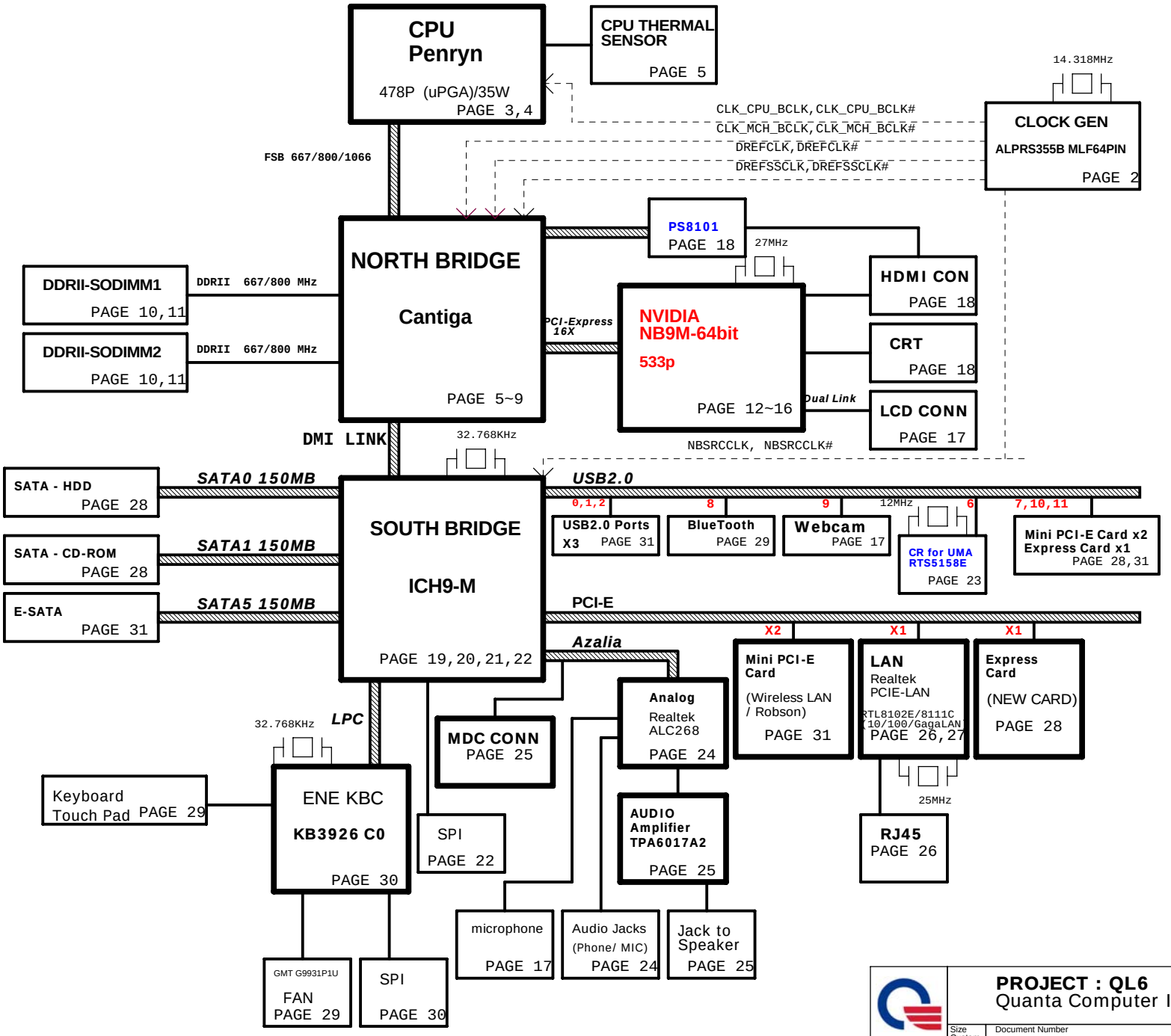
QL6 BLOCK DIAGRAM

01

PCB STACK UP

8L

- LAYER 1 : TOP
- LAYER 2 : SGND
- LAYER 3 : IN1
- LAYER 4 : SGND
- LAYER 5 : SVCC
- LAYER 6 : IN2
- LAYER 7 : SGND
- LAYER 8 : BOT

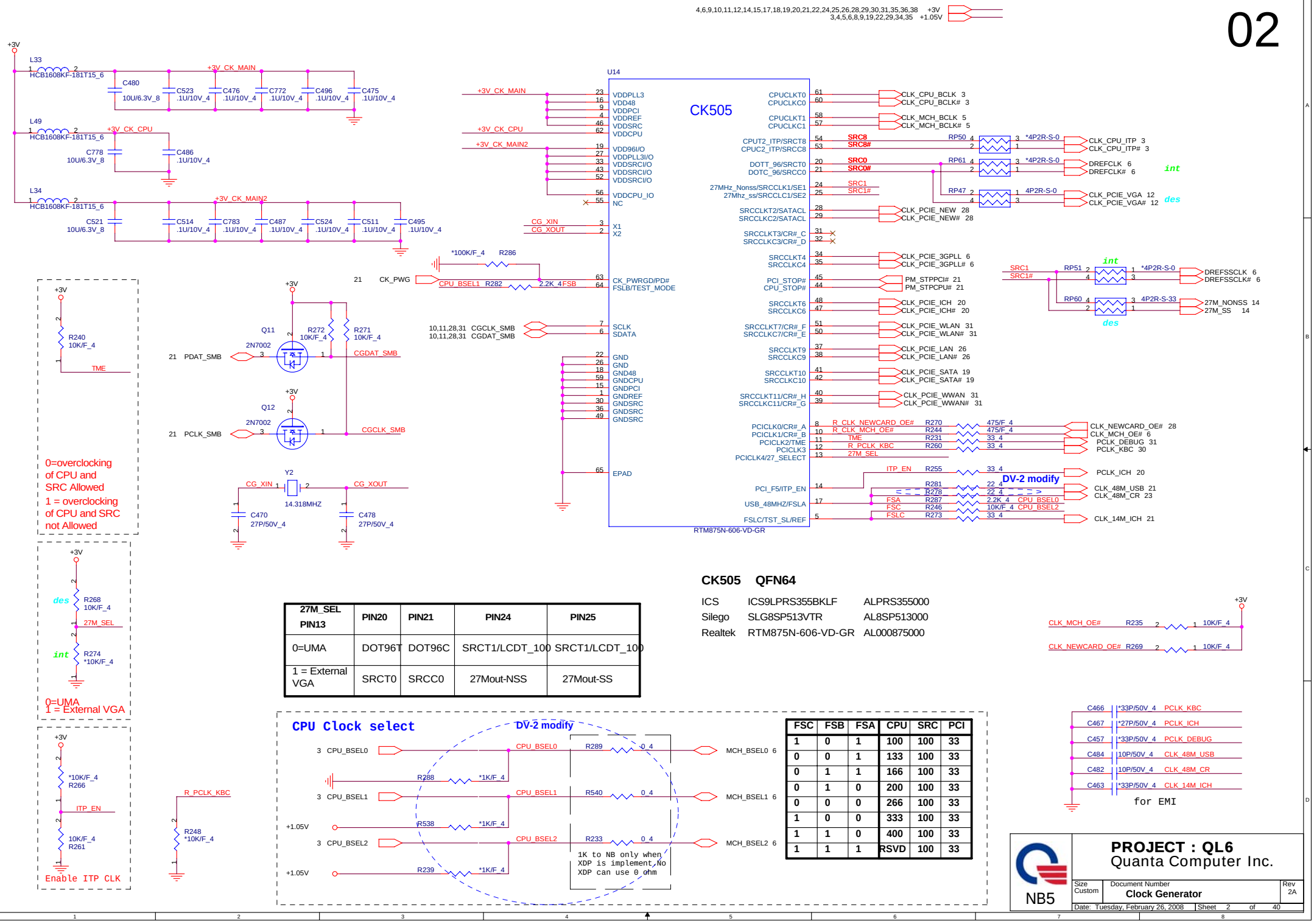


NB5

PROJECT : QL6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Block Diagram	2A

Date: Tuesday, February 26, 2008 Sheet 1 of 40



27M_SEL PIN13	PIN20	PIN21	PIN24	PIN25
0=UMA	DOT96T	DOT96C	SRCT1/LCDT_100	SRCT1/LCDT_100
1 = External VGA	SRCT0	SRCC0	27Mout-NSS	27Mout-SS

CK505 QFN64

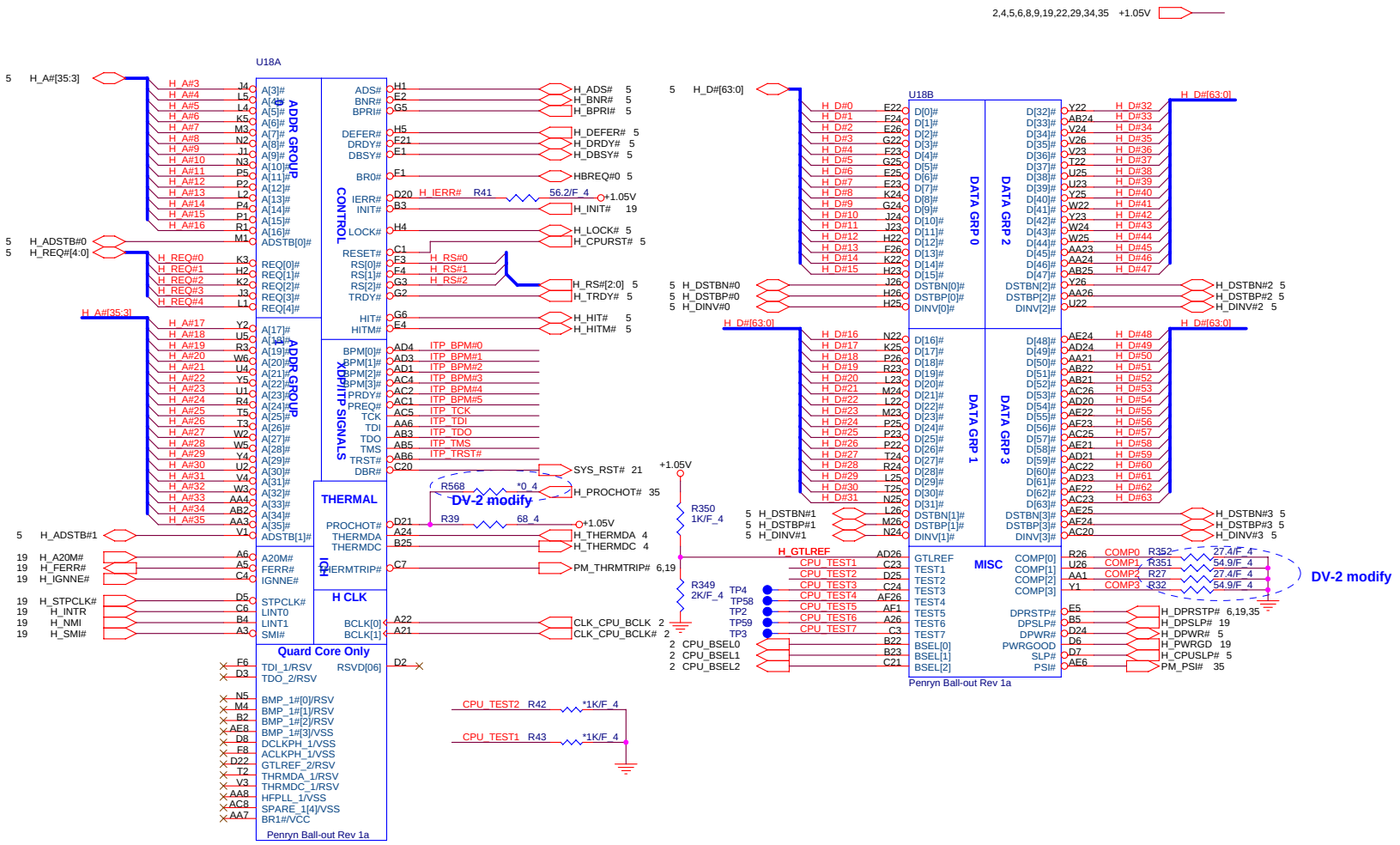
ICS	ICS9LPRS355BKLF	ALPRS355000
Silego	SLG8SP513VTR	AL8SP513000
Realtek	RTM875N-606-VD-GR	AL000875000

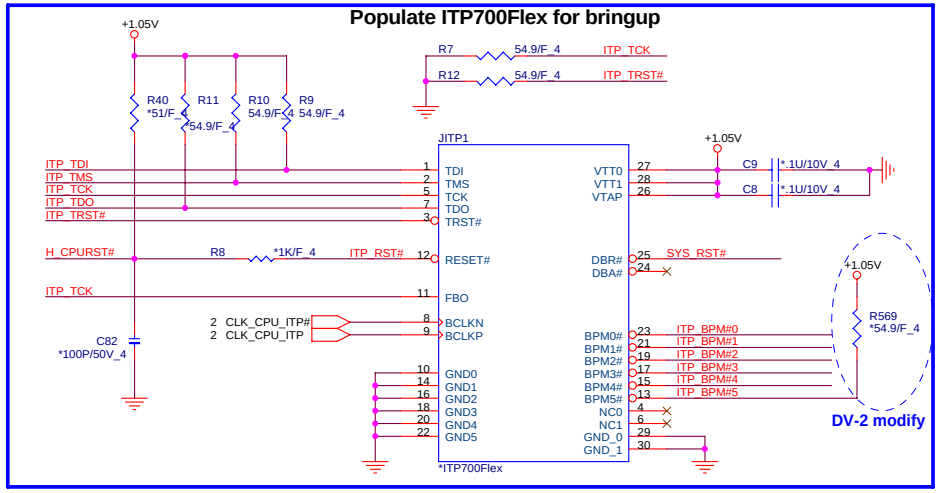
FSC	FSB	FSA	CPU	SRC	PCI
1	0	1	100	100	33
0	0	1	133	100	33
0	1	1	166	100	33
0	1	0	200	100	33
0	0	0	266	100	33
1	0	0	333	100	33
1	1	0	400	100	33
1	1	1	RSVD	100	33

PROJECT : QL6
Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	Clock Generator	2A
Date: Tuesday, February 26, 2008	Sheet 2 of 40	



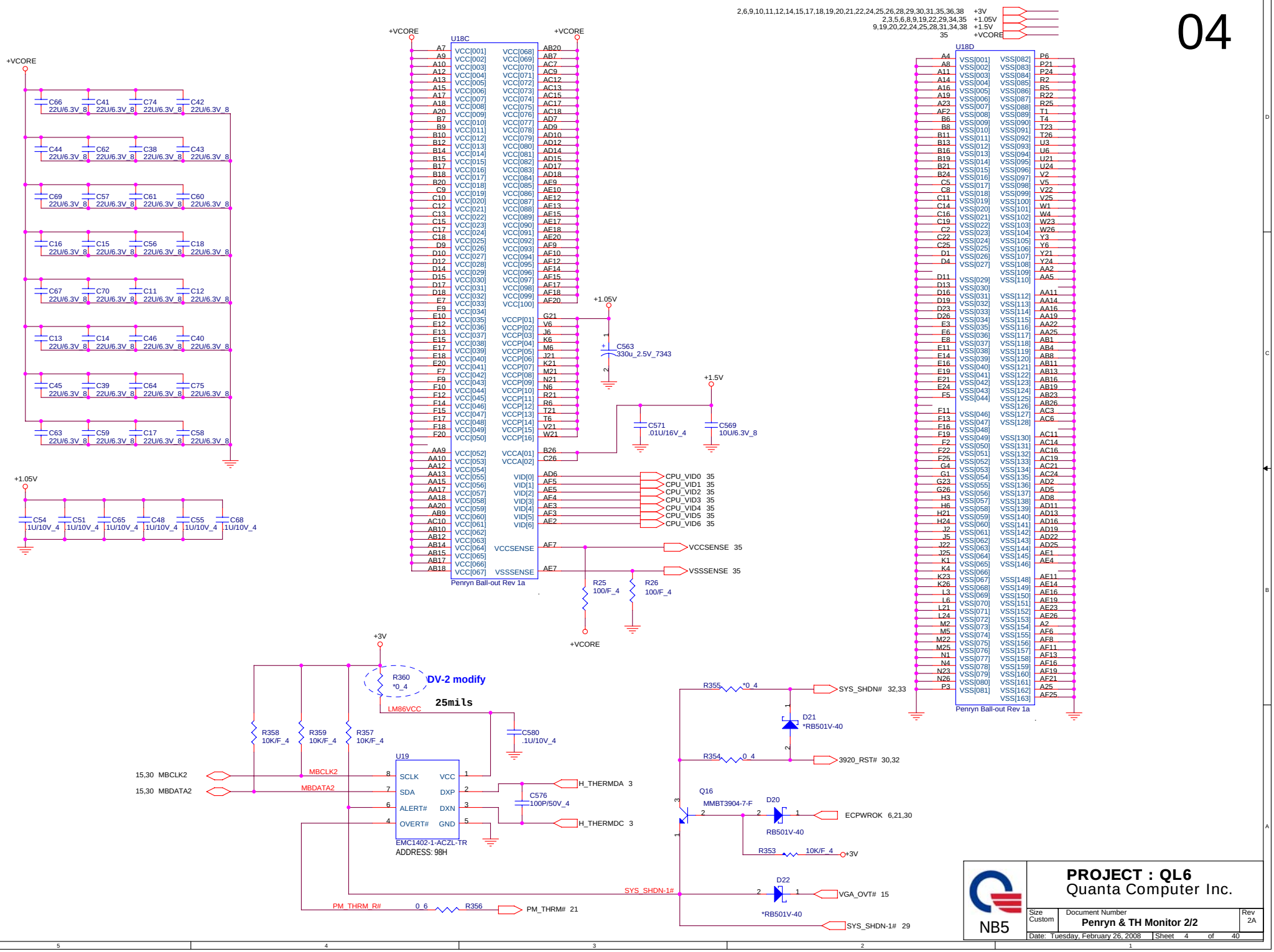


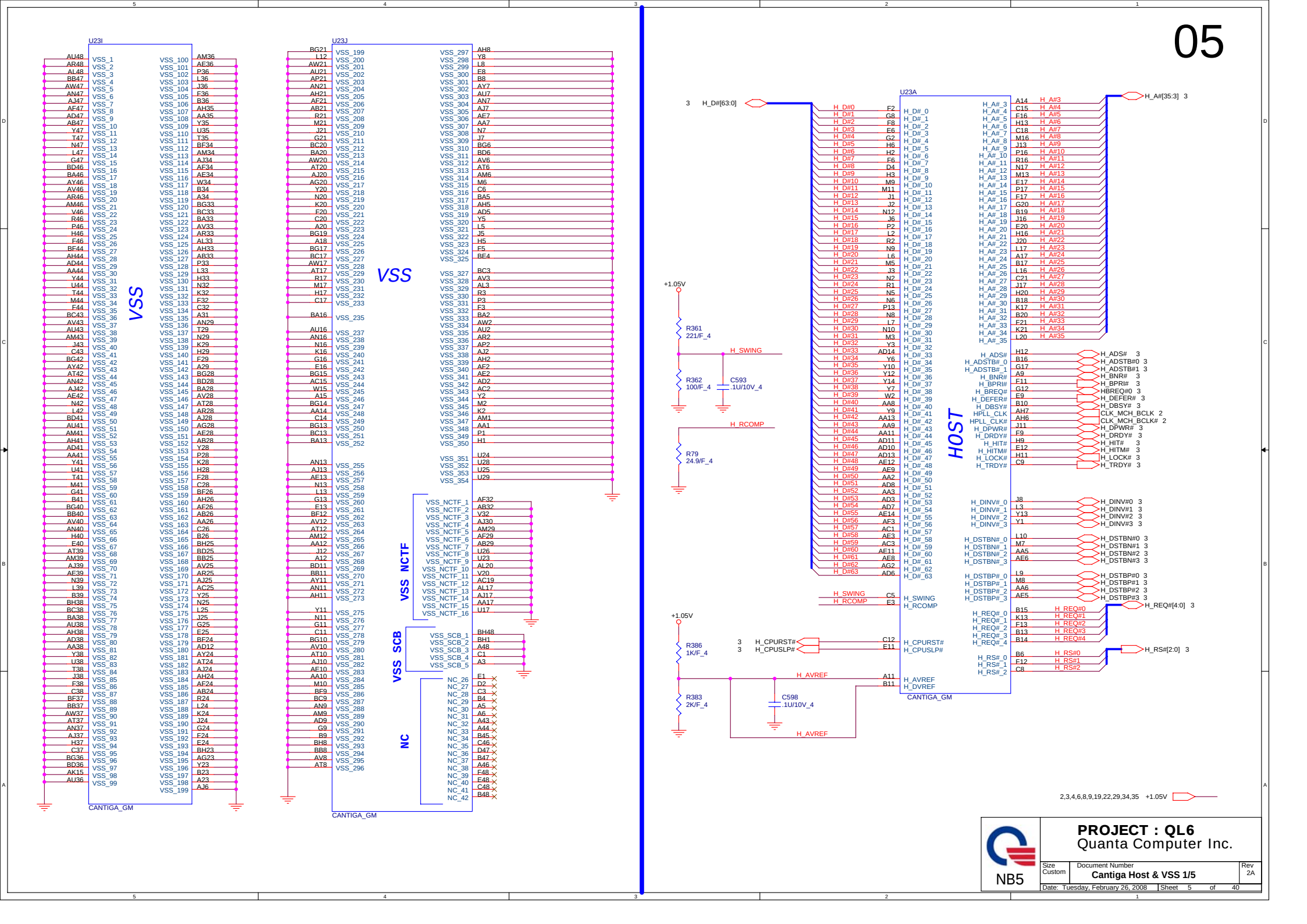
PROJECT : QL6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Penryn 1/2	2A

NB5

Date: Tuesday, February 26, 2008 | Sheet 3 of 40


04
+VCORE
C66 22U/6.3V_8
C41 22U/6.3V_8
C74 22U/6.3V_8
C42 22U/6.3V_8
C44 22U/6.3V_8
C62 22U/6.3V_8
C38 22U/6.3V_8
C43 22U/6.3V_8
C69 22U/6.3V_8
C57 22U/6.3V_8
C61 22U/6.3V_8
C60 22U/6.3V_8
C16 22U/6.3V_8
C15 22U/6.3V_8
C56 22U/6.3V_8
C18 22U/6.3V_8
C67 22U/6.3V_8
C70 22U/6.3V_8
C11 22U/6.3V_8
C12 22U/6.3V_8
C13 22U/6.3V_8
C14 22U/6.3V_8
C46 22U/6.3V_8
C40 22U/6.3V_8
C45 22U/6.3V_8
C39 22U/6.3V_8
C64 22U/6.3V_8
C75 22U/6.3V_8
C63 22U/6.3V_8
C59 22U/6.3V_8
C17 22U/6.3V_8
C58 22U/6.3V_8
+1.05V
C54 1U/10V_4
C51 1U/10V_4
C65 1U/10V_4
C48 1U/10V_4
C55 1U/10V_4
C68 1U/10V_4
U18C
Penryn Ball-out Rev 1a
+1.05V
C563 330u_2.5V_7343
+1.5V
C571 .01U/16V_4
C569 10U/6.3V_8
VID[0] CPU_VID0 35
VID[1] CPU_VID1 35
VID[2] CPU_VID2 35
VID[3] CPU_VID3 35
VID[4] CPU_VID4 35
VID[5] CPU_VID5 35
VID[6] CPU_VID6 35
VCCSENSE VCCSENSE 35
VSSSENSE VSSSENSE 35
R25 100/F_4
R26 100/F_4
+VCORE
2,6,9,10,11,12,14,15,17,18,19,20,21,22,24,25,26,28,29,30,31,35,36,38 +3V
2,3,5,6,8,9,19,22,29,34,35 +1.05V
9,19,20,22,24,25,28,31,34,38 +1.5V
35 +VCORE
U18D
Penryn Ball-out Rev 1a
+3V
R360 *0_4
DV-2 modify
25mils
LM86VCC
C580 .1U/10V_4
R358 10K/F_4
R359 10K/F_4
R357 10K/F_4
U19
SCLK VCC
SDA DXP
ALERT# DXN
OVERT# GND
EMC1402-1-ACZL-TR
ADDRESS: 98H
15,30 MBCLK2
15,30 MBDATA2
MBCLK2
MBDATA2
C576 100P/50V_4
H_THERMDA 3
H_THERMDC 3
R355 *0_4
SYS_SHDN# 32,33
D21 *RB501V-40
R354 0_4
3920_RST# 30,32
Q16 MMBT3904-7-F
D20 RB501V-40
ECPWROK 6,21,30
R353 10K/F_4
+3V
SYS_SHDN-1#
D22 *RB501V-40
VGA_OVT# 15
SYS_SHDN-1# 29
PM_THRM_R#
0_6
R356
PM_THRM# 21
NB5
PROJECT : QL6
Quanta Computer Inc.
Size Custom
Document Number
Penryn & TH Monitor 2/2
Rev 2A
Date: Tuesday, February 26, 2008
Sheet 4 of 40


05
U23I
VSS
CANTIGA_GM
U23J
VSS
VSS NCTF
VSS SCB
NC
CANTIGA_GM
U23A
HOST
CANTIGA_GM
H_A#[35:3] 3
H_D#[63:0] 3
+1.05V
R361
221/F_4
H_SWING
R362
100/F_4
C593
.1U/10V_4
H_RCOMP
R79
24.9/F_4
R386
1K/F_4
R383
2K/F_4
C598
.1U/10V_4
H_AVREF
H_CPURST# 3
H_CPUSLP# 3
H_SWING
H_RCOMP
H_CPURST#
H_CPUSLP#
H_AVREF
H_DVREF
H_ADS# 3
H_ADSTB#0 3
H_ADSTB#1 3
H_BNR# 3
H_BPRI# 3
HBREQ#0 3
H_DEFER# 3
H_DBSY# 3
CLK_MCH_BCLK 2
CLK_MCH_BCLK# 2
H_DPWR# 3
H_DRDY# 3
H_HIT# 3
H_HITM# 3
H_LOCK# 3
H_TRDY# 3
H_DINV#0 3
H_DINV#1 3
H_DINV#2 3
H_DINV#3 3
H_DSTBN#0 3
H_DSTBN#1 3
H_DSTBN#2 3
H_DSTBN#3 3
H_DSTBP#0 3
H_DSTBP#1 3
H_DSTBP#2 3
H_DSTBP#3 3
H_REQ#[4:0] 3
H_RS#[2:0] 3
2,3,4,6,8,9,19,22,29,34,35 +1.05V
PROJECT : QL6
Quanta Computer Inc.
NB5
Size Custom
Document Number
Cantiga Host & VSS 1/5
Rev 2A
Date: Tuesday, February 26, 2008
Sheet 5 of 40

MCH_CFG_5 DMIx2 selection

Low: DMIx2
High: DMIx4 (Default)

MCH_CFG_16 FSB Dynamic ODT

Low: Dynamic ODT disabled
High: Dynamic ODT enabled (Default)

MCH_CFG_9 PCI Express Graphic Lane

Low: Reverse Lane
High: Normal operation(Default)

MCH_CFG_19 DMI Lane Reversal

MCH_CFG_6 iTPM Host Interface

Low: iTPM Host Interface enabled
High: iTPM Host Interface disabled (Default)

MCH_CFG_7 Intel (R) Management Engine Crypto

Low: Intel (R) Management Engine Crypto
TLS cipher suite with no confidentiality
High: Intel (R) Management Engine Crypto
TLS cipher suite with no confidentiality (Default)

MCH_CFG_10 PCIe Lookback Enable

Low: Enabled
High: Disabled (Default)

MCH_CFG_12/13 XOR/ALLZ/CLOCK Un-gating

MCH_CFG_13	MCH_CFG_12	Configuration
0	0	Reserved
1	0	XOR Mode enabled
0	1	All-Z Mode enabled
1	1	Normal operation (Default)

For iTPM

For UMA HDMI Function

C416,C423,C440,C431
C419,C418,C430,C424
Need to install for GM

HPD# Inverting Level Shifting Circuit

HP SVTP TEST

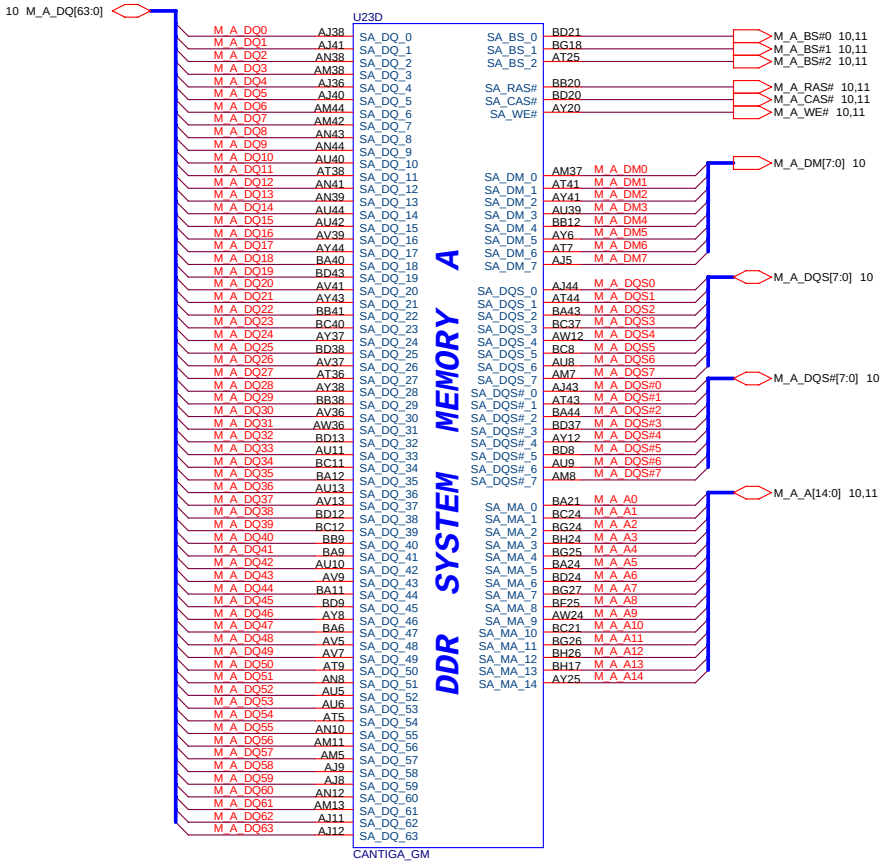
Disable UMA TV function

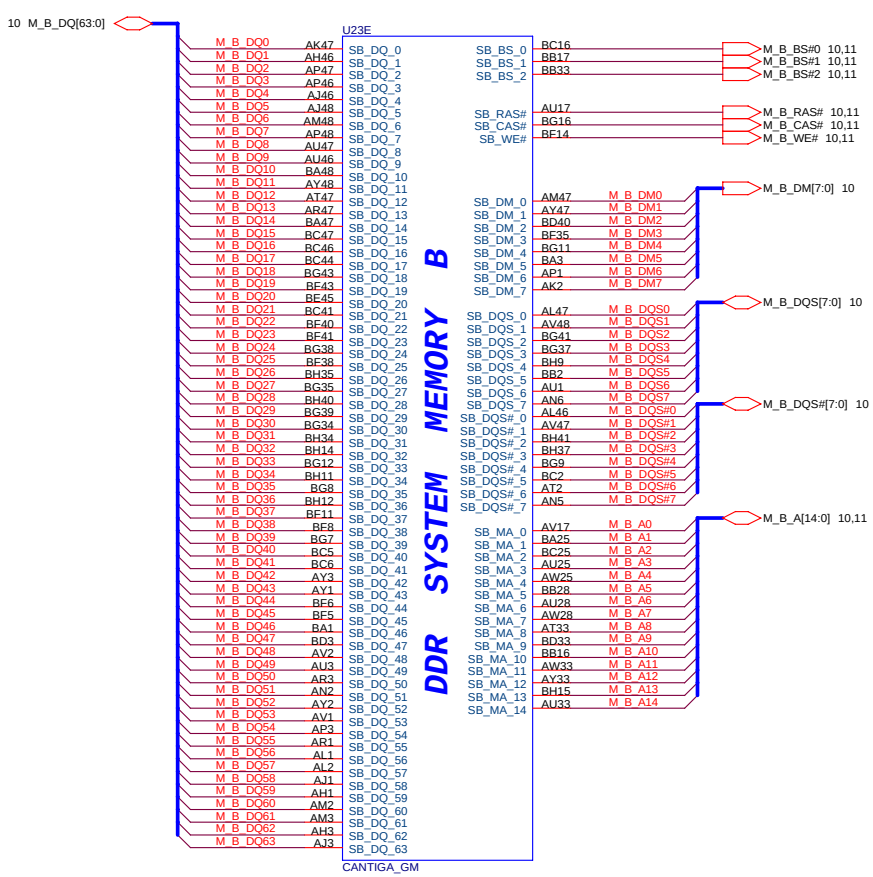
PROJECT : QL6
Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	Cantiga DMI/DISP 2/5	2A

Date: Tuesday, February 26, 2008 Sheet 6 of 40

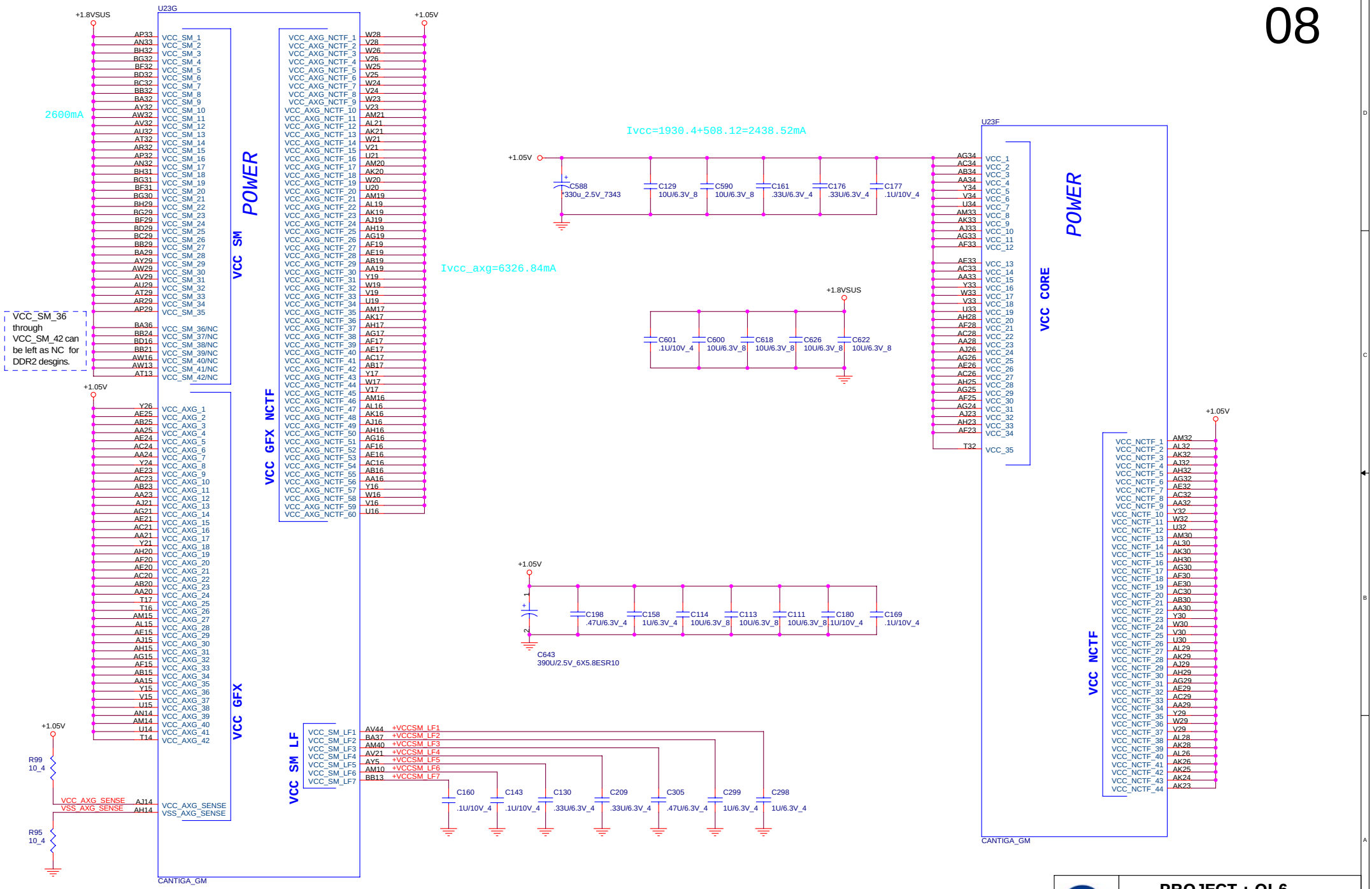




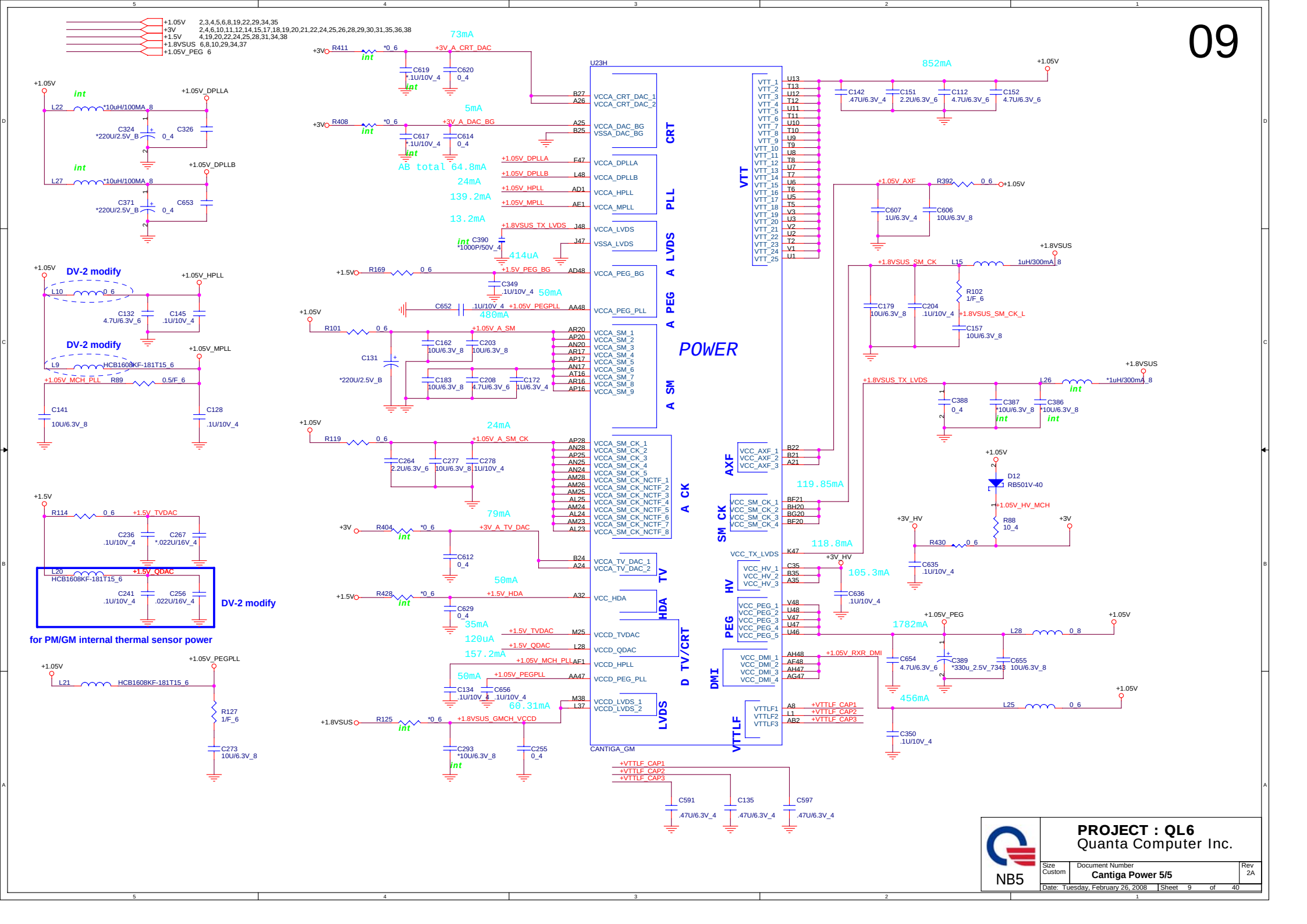
NB5

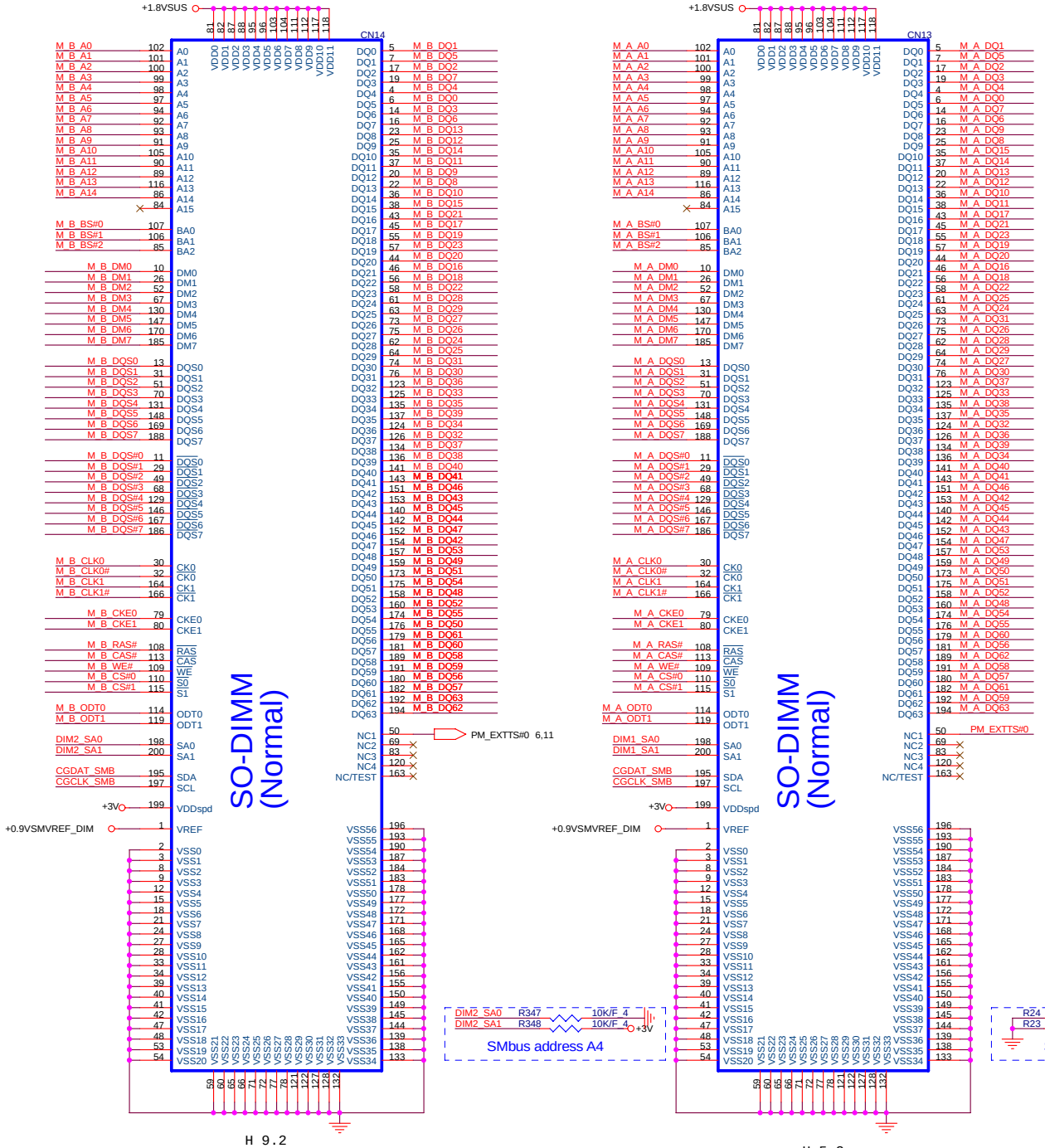
PROJECT : QL6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	**Cantiga DDR2 3/5**	2A
Date: Tuesday, February 26, 2008	Sheet 7 of 40	



NB5	**PROJECT : QL6** Quanta Computer Inc.	
Size: Custom	Document Number: **Cantiga Vcc 4/5**	Rev: 2A
Date: Tuesday, February 26, 2008	Sheet 8 of 40	

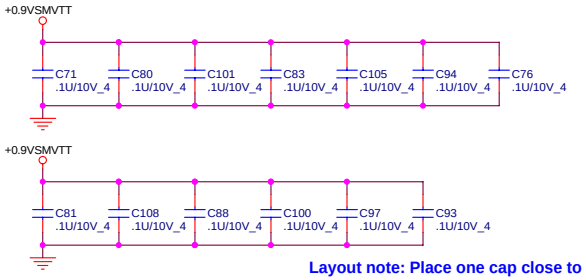

09
+1.05V 2,3,4,5,6,8,19,22,29,34,35
+3V 2,4,6,10,11,12,14,15,17,18,19,20,21,22,24,25,26,28,29,30,31,35,36,38
+1.5V 4,19,20,22,24,25,28,31,34,38
+1.8VSUS 6,8,10,29,34,37
+1.05V_PEG 6
U23H
CANTIGA_GM
POWER
CRT
PLL
A LVDS
A PEG
A SM
A CK
TV
HDA
D TV/CRT
LVDS
VTT
AXF
SM CK
HV
PEG
DMI
VTTLF
+1.05V_DPLLA
+1.05V_DPLLB
+1.05V_HPLL
+1.05V_MPLL
+1.05V_PEGPLL
DV-2 modify
for PM/GM internal thermal sensor power
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
+VTTLF_CAP1
+VTTLF_CAP2
+VTTLF_CAP3
NB5
PROJECT : QL6
Quanta Computer Inc.
Size Custom
Document Number
Cantiga Power 5/5
Rev 2A
Date: Tuesday, February 26, 2008
Sheet 9 of 40



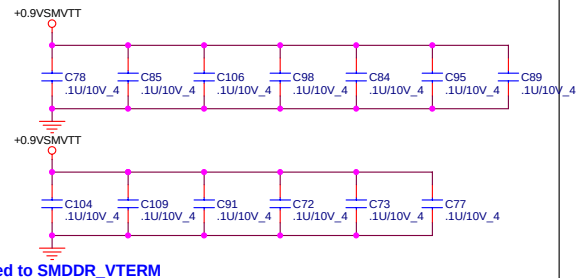
NB5	PROJECT : QL6 Quanta Computer Inc.		
	Size: Custom	Document Number: DDR2 DIMM	Rev: 2A
	Date: Tuesday, February 26, 2008	Sheet 10 of 40	

DDRII DUAL CHANNEL A,B.

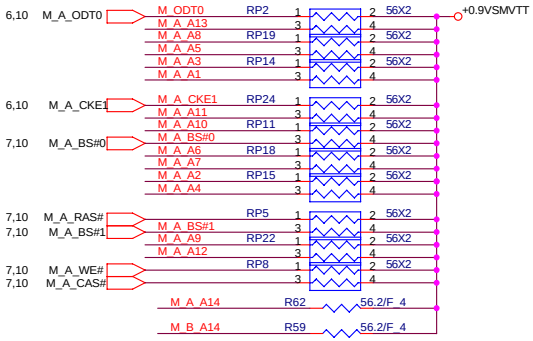
DDRII A CHANNEL

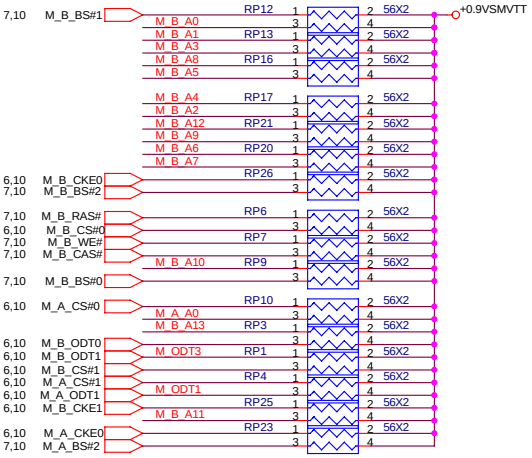


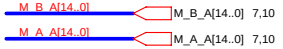
DDRII B CHANNEL

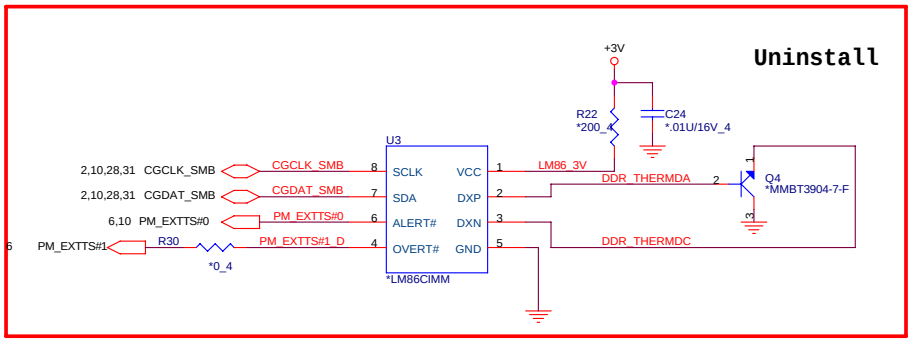


Layout note: Place one cap close to every 2 pullup resistors terminated to SMDDR_VTERM









+0.9VSMVTT 37

+3V 2,4,6,9,10,12,14,15,17,18,19,20,21,22,24,25,26,28,29,30,31,35,36,38

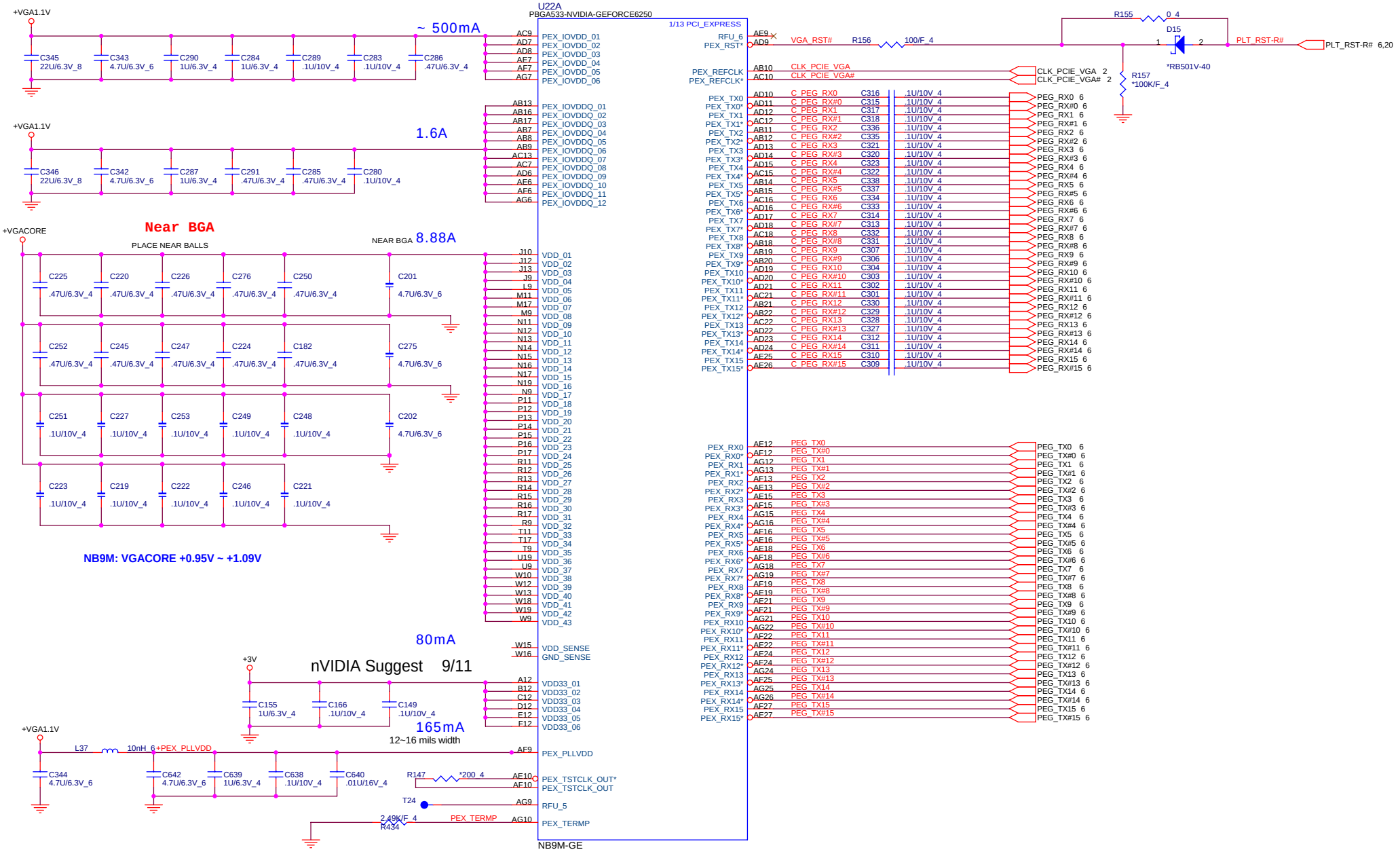
PROJECT : QL6
Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	DDR2 termination	2A

Date: Tuesday, February 26, 2008 | Sheet 11 of 40

NB9M-GE (G98)



Company	Quanta Computer Inc.
Project	QL6
Size	Custom
Document Number	NV9X (PCIE I/F) 1/5
Rev	2A
Date	Tuesday, February 26, 2008
Sheet	12 of 40

U22B
PBGA533-NVIDIA-GEFORCE6250
2/13 FRAME_BUFFER

1.63A

+1.8V

FBVDDQ_01 A13
FBVDDQ_02 B13
FBVDDQ_03 C13
FBVDDQ_04 D13
FBVDDQ_05 D14
FBVDDQ_06 E13
FBVDDQ_07 F13
FBVDDQ_08 F14
FBVDDQ_09 F15
FBVDDQ_10 F16
FBVDDQ_11 F17
FBVDDQ_12 F19
FBVDDQ_13 F22
FBVDDQ_14 H23
FBVDDQ_15 H26
FBVDDQ_16 J15
FBVDDQ_17 J16
FBVDDQ_18 J18
FBVDDQ_19 J19
FBVDDQ_20 L19
FBVDDQ_21 L23
FBVDDQ_22 L26
FBVDDQ_23 M19
FBVDDQ_24 N22
FBVDDQ_25 U22
FBVDDQ_26 Y22

16 VMA_DQ[63..0]
16 VMA_DM[7..0]
16 VMA_WDQS[7..0]
16 VMA_RDQS[7..0]

FBA_D0 D21 VMA_DQ0
FBA_D1 C22 VMA_DQ1
FBA_D2 B22 VMA_DQ2
FBA_D3 A22 VMA_DQ3
FBA_D4 C24 VMA_DQ4
FBA_D5 B25 VMA_DQ5
FBA_D6 A25 VMA_DQ6
FBA_D7 A26 VMA_DQ7
FBA_D8 D22 VMA_DQ8
FBA_D9 E22 VMA_DQ9
FBA_D10 F24 VMA_DQ10
FBA_D11 D24 VMA_DQ11
FBA_D12 D26 VMA_DQ12
FBA_D13 D27 VMA_DQ13
FBA_D14 C27 VMA_DQ14
FBA_D15 B27 VMA_DQ15
FBA_D16 D16 VMA_DQ16
FBA_D17 E16 VMA_DQ17
FBA_D18 D17 VMA_DQ18
FBA_D19 F18 VMA_DQ19
FBA_D20 D20 VMA_DQ20
FBA_D21 F20 VMA_DQ21
FBA_D22 E21 VMA_DQ22
FBA_D23 F21 VMA_DQ23
FBA_D24 C16 VMA_DQ24
FBA_D25 B18 VMA_DQ25
FBA_D26 C18 VMA_DQ26
FBA_D27 D18 VMA_DQ27
FBA_D28 C19 VMA_DQ28
FBA_D29 C21 VMA_DQ29
FBA_D30 B21 VMA_DQ30
FBA_D31 A21 VMA_DQ31
FBA_D32 P22 VMA_DQ32
FBA_D33 P24 VMA_DQ33
FBA_D34 R23 VMA_DQ34
FBA_D35 R24 VMA_DQ35
FBA_D36 T23 VMA_DQ36
FBA_D37 U24 VMA_DQ37
FBA_D38 V23 VMA_DQ38
FBA_D39 V24 VMA_DQ39
FBA_D40 N25 VMA_DQ40
FBA_D41 N26 VMA_DQ41
FBA_D42 R25 VMA_DQ42
FBA_D43 R26 VMA_DQ43
FBA_D44 T25 VMA_DQ44
FBA_D45 V26 VMA_DQ45
FBA_D46 V25 VMA_DQ46
FBA_D47 V27 VMA_DQ47
FBA_D48 V22 VMA_DQ48
FBA_D49 W22 VMA_DQ49
FBA_D50 W23 VMA_DQ50
FBA_D51 W24 VMA_DQ51
FBA_D52 AA22 VMA_DQ52
FBA_D53 AB23 VMA_DQ53
FBA_D54 AB24 VMA_DQ54
FBA_D55 AC24 VMA_DQ55
FBA_D56 W25 VMA_DQ56
FBA_D57 W26 VMA_DQ57
FBA_D58 W27 VMA_DQ58
FBA_D59 AA25 VMA_DQ59
FBA_D60 AB25 VMA_DQ60
FBA_D61 AB26 VMA_DQ61
FBA_D62 AD26 VMA_DQ62
FBA_D63 AD27 VMA_DQ63

16 VMA_MA3 F26 FBA_CMD0
16 VMA_MA0 J24 FBA_CMD1
16 VMA_MA2 F25 FBA_CMD2
16 VMA_MA1 M23 FBA_CMD3
16 VMA_MA3H N27 FBA_CMD4
16 VMA_MA4H M27 FBA_CMD5
16 VMA_MA5H K26 FBA_CMD6
J25 FBA_CMD7
16 VMA_CS0# J27 FBA_CMD8
16 VMA_WE# G23 FBA_CMD9
16 VMA_BA0 G26 FBA_CMD10
16 VMA_CKE J23 FBA_CMD11
16 VMA_ODT M25 FBA_CMD12
16 VMA_MA2H K27 FBA_CMD13
16 VMA_MA12 G25 FBA_CMD14
16 VMA_RAS# L24 FBA_CMD15
16 VMA_MA11 K23 FBA_CMD16
16 VMA_MA10 K24 FBA_CMD17
16 VMA_BA1 G22 FBA_CMD18
16 VMA_MA8 K25 FBA_CMD19
16 VMA_MA9 H22 FBA_CMD20
16 VMA_MA6 M26 FBA_CMD21
16 VMA_MA5 H24 FBA_CMD22
16 VMA_MA7 F27 FBA_CMD23
16 VMA_MA4 J26 FBA_CMD24
16 VMA_CAS# G24 FBA_CMD25
G27 FBA_CMD26
16 VMA_BA2 M24 FBA_CMD27
K22 FBA_CMD28

J22 RFU_3
L22 RFU_4

16 VMA_CLK0 VMA_CLK0 F24 FBA_CLK0
16 VMA_CLK0# VMA_CLK0# F23 FBA_CLK0*
16 VMA_CLK1 VMA_CLK1 N24 FBA_CLK1
16 VMA_CLK1# VMA_CLK1# N23 FBA_CLK1*

FBA_DQM0 D23 VMA_DM0
FBA_DQM1 C26 VMA_DM1
FBA_DQM2 D19 VMA_DM2
FBA_DQM3 B19 VMA_DM3
FBA_DQM4 T24 VMA_DM4
FBA_DQM5 T26 VMA_DM5
FBA_DQM6 AA23 VMA_DM6
FBA_DQM7 AB27 VMA_DM7

FBA_DQS_WP0 A24 VMA_WDQS0
FBA_DQS_WP1 C25 VMA_WDQS1
FBA_DQS_WP2 E19 VMA_WDQS2
FBA_DQS_WP3 A19 VMA_WDQS3
FBA_DQS_WP4 T22 VMA_WDQS4
FBA_DQS_WP5 T27 VMA_WDQS5
FBA_DQS_WP6 AA24 VMA_WDQS6
FBA_DQS_WP7 AA26 VMA_WDQS7

FBA_DQS_RN0 B24 VMA_RDQS0
FBA_DQS_RN1 D25 VMA_RDQS1
FBA_DQS_RN2 E18 VMA_RDQS2
FBA_DQS_RN3 A18 VMA_RDQS3
FBA_DQS_RN4 R22 VMA_RDQS4
FBA_DQS_RN5 R27 VMA_RDQS5
FBA_DQS_RN6 Y24 VMA_RDQS6
FBA_DQS_RN7 AA27 VMA_RDQS7

FB_VREF A16 +FB_VREF1

NB9M-GE:stuff 30/F
CS03012FB21
+1.8V R82 30/F_4 FB_CAL_PD_VDDQ B15 FB_CAL_PD_VDDQ
R75 30/F_4 FB_CAL_PU_GND A15 FB_CAL_PU_GND
R80 *40.2/F_4 FB_CAL_TERM_GND B16 FB_CAL_TERM_GND
R192 Install for DDR3
+1.8V *60.4/F_4 R108 FB_DEBUG M22 FB_DEBUG
For Debug only

+VGA1.1V
L24 HCB1608KF-181T15_6
15mils width
+FB_PLLAVDD
R19 FB_PLLAVDD
T19 FB_DLLAVDD
10mA
C353
C244 4.7U/6.3V_6
C218 .1U/10V_4
C352 1U/6.3V_4
25mA

R385 10K/F_4 VMA_ODT
R67 10K/F_4 VMA_CKE
for DDR2 need use CMD11(CKE) and CMD12(ODT)

power up sequence
+VGA1.1V
+3V
+VGACORE
+1.8V

+1.8V
R81 1K/F_4
15mils width
C140 .1U/10V_4
R74 1K/F_4

NB9M-GE

U22J
PBGA533-NVIDIA-GEFORCE6250
13/13 GND_NC

NC_01 AA6
NC_02 AC19
NC_03 E15
NC_04 Y6

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-GE

+1.8V
C148 4.7U/6.3V_6
C168 .47U/6.3V_4
C189 .47U/6.3V_4
C282 .1U/10V_4
C641 4.7U/6.3V_6
C178 .47U/6.3V_4
C123 .47U/6.3V_4
C190 .1U/10V_4
C294 .1U/10V_4
C150 .1U/10V_4
C171 .1U/10V_4
C627 .1U/10V_4
C625 .1U/10V_4
C646 .1U/10V_4

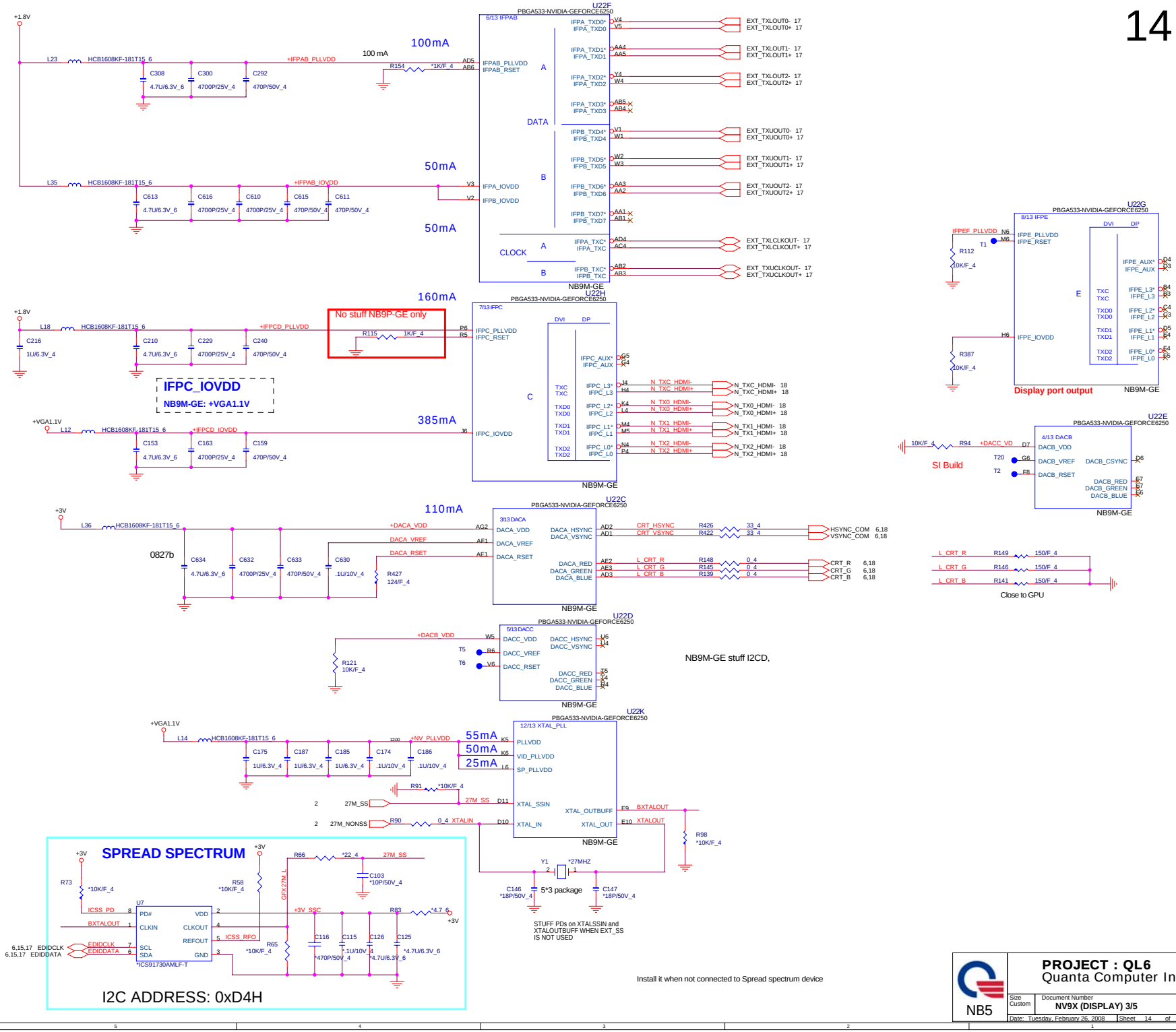
+1.8V
C645 4.7U/6.3V_6
C156 .47U/6.3V_4
C191 .47U/6.3V_4
C271 .1U/10V_4
C325 4.7U/6.3V_6
C200 .47U/6.3V_4
C242 .47U/6.3V_4
C621 .1U/10V_4
C217 .1U/10V_4
C243 .1U/10V_4
C188 .1U/10V_4
C167 .1U/10V_4
C170 .1U/10V_4
C288 .1U/10V_4

NB5

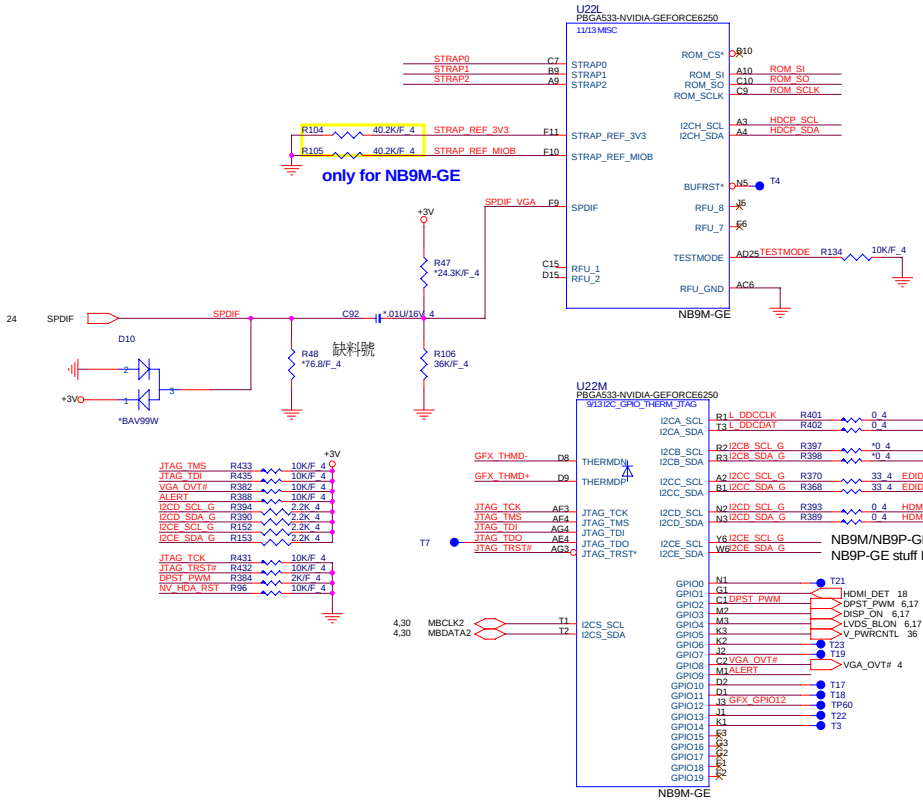
PROJECT : QL6
Quanta Computer Inc.

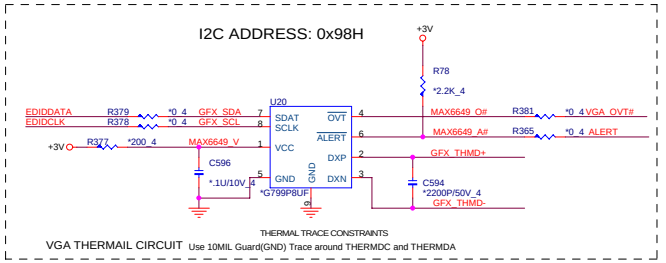
Size	Document Number	Rev
Custom	NV9X (MEMORY I/F) 2/5	2A

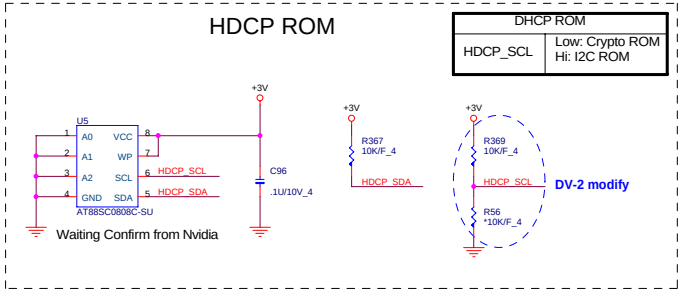
Date: Tuesday, February 26, 2008 Sheet 13 of 40



PROJECT : QL6	Quanta Computer Inc.		
NB5	Size: Custom	Document Number: NV9X (DISPLAY) 3/5	Rev: 2A
	Date: Tuesday, February 26, 2008	Sheet 14 of 40	







NB9M-GE (G98) Strraps

GPIO ASSIGNMENTS

GPIO	I/O	ACTIVE	USAGE
0	IN	N/A	PRIMARY DVI HOTPLUG
1	IN	N/A	SECONDARY DVI HOTPLUG
2	OUT	HIGH	PANEL BACKLIGHT PWM
3	OUT	HIGH	PANEL POWER ENABLE
4	OUT	HIGH	PANEL BACKLIGHT ENABLE
5	OUT	N/A	NVVDD VID0
6	OUT	N/A	NVVDD VID1
7	OUT	N/A	FBVDD VID0
8	IN	LOW	THERMAL ALERT
9	OUT	LOW	FAN PWM
10	OUT	N/A	FBVREF SELECT
11	OUT	N/A	SLI SYNC0
12	IN	N/A	AC DETECT
13	OUT	LOW	PS CONTROL OR HDMI_CEC
14	OUT	HIGH	PS CONTROL

PCI_DEVID[4]/SUBVENDOR

SEE Datasheet for details on G9x Straps!

VRAM ID	
ROM_SI	PD 30K: Samsung PD 35K: Qimonda PD 45K: Hynix

Logical Strap Bit Mapping

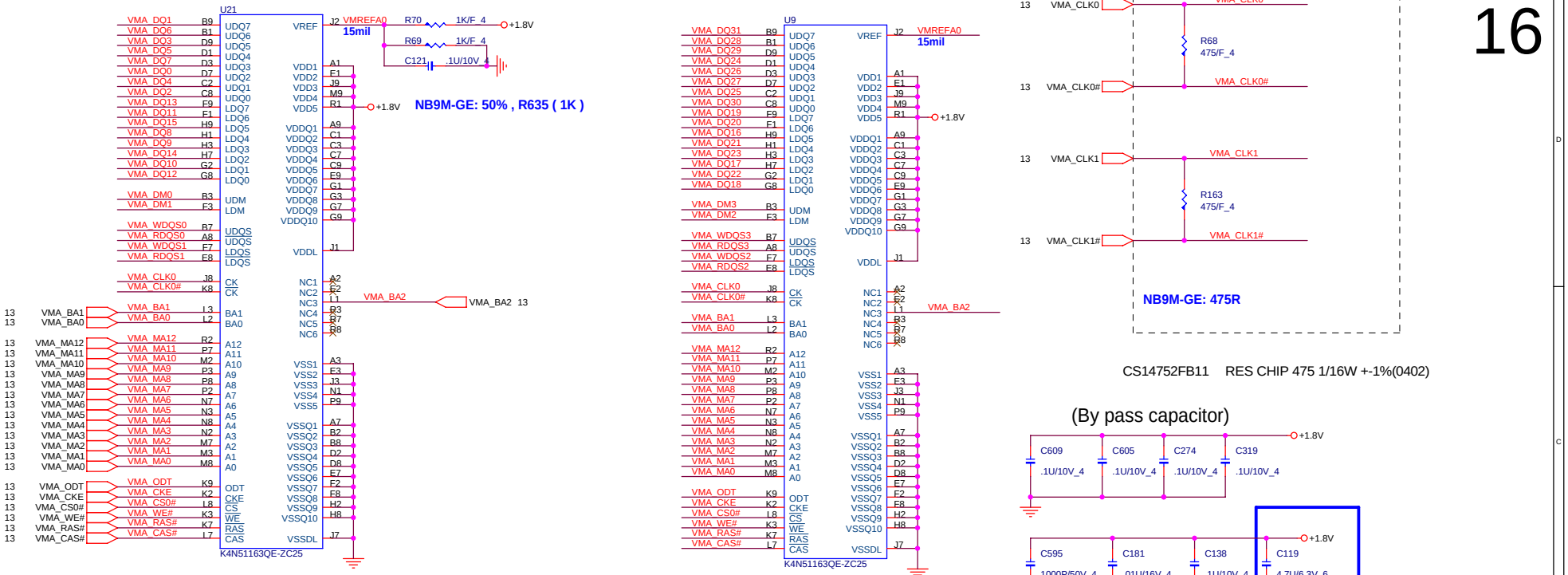
	PU-VDD	PD
5K	1000	0000
10K	1001	0001
15K	1010	0010
20K	1011	0011
25K	1100	0100
30K	1101	0101
35K	1110	0110
45K	1111	0111

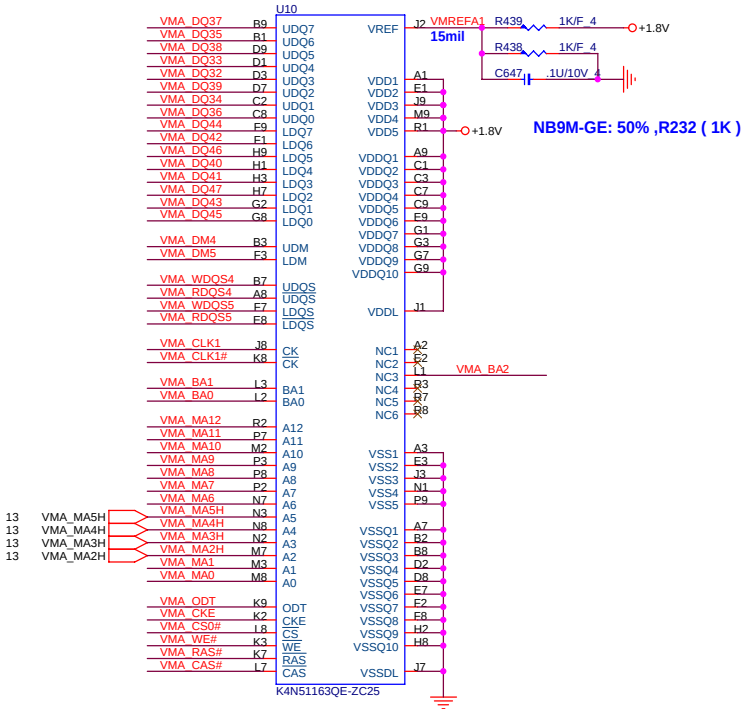
PROJECT : QL6
Quanta Computer Inc.

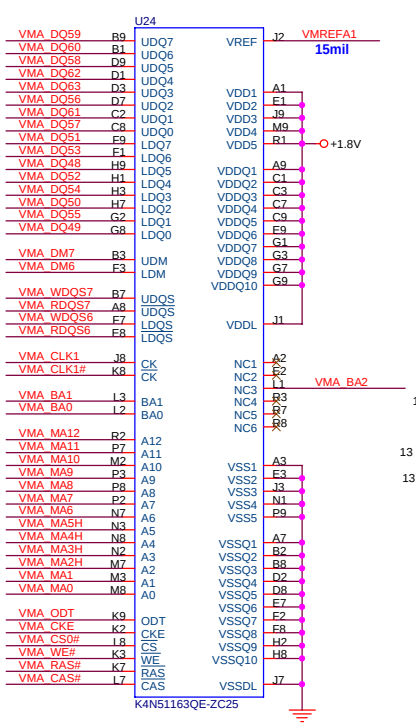
NB5

Size	Document Number	Rev
C	NV9X (GPIO & STRRAPS) 4/5	2A

Date: Tuesday, February 26, 2008 Sheet 15 of 40

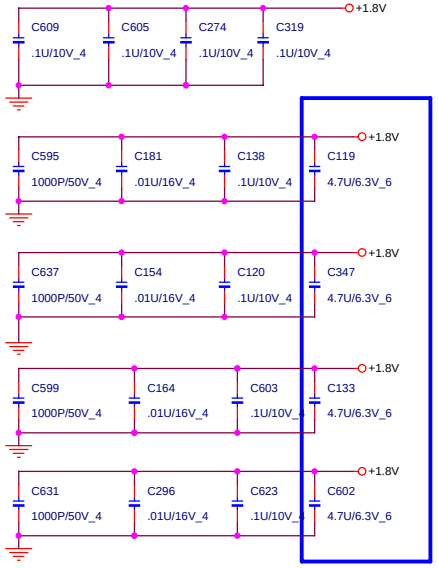






CS14752FB11 RES CHIP 475 1/16W +-1%(0402)

(By pass capacitor)



13 VMA_DQ[63..0]
13 VMA_DM[7..0]
13 VMA_WDQS[7..0]
13 VMA_RDQS[7..0]

256Mb : AKD5JGAT^05
512Mb : AKD59G-T^01

NB9M : AKD5FG-TW31(Hynix,32M*16)
AKD5FG-T^03(Qimonda 32M*16)

NB5

PROJECT : QL6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	**NV9X VRAM-1(GDDR2) 5/5**	2A

Date: Tuesday, February 26, 2008 Sheet 16 of 40

LCD / USB CAMERA / DIGITAL MIC CONNECTOR

1. If LCD connector near GPU, then place these series Resistors near GPU
2. If LCD connector near N/B, then place these series Resistors near N/B

OPTION SIGNAL FROM NB FOR UMA VGA

6	LA_CLK	RP40	*4P2R-S-0	TXLCLKOUT+	
6	LA_CLK#			TXLCLKOUT-	
6	LA_DATAP0	RP34	*4P2R-S-0	TXLOUT0+	
6	LA_DATAN0			TXLOUT0-	
6	LA_DATAP1	RP38	*4P2R-S-0	TXLOUT1+	
6	LA_DATAN1			TXLOUT1-	
6	LA_DATAP2	RP35	*4P2R-S-0	TXLOUT2+	
6	LA_DATAN2			TXLOUT2-	
6	LB_CLK#	RP59	*4P2R-S-0	TXUCLKOUT-	
6	LB_CLK			TXUCLKOUT+	
6	LB_DATAP0	RP52	*4P2R-S-0	TXUOUT0+	
6	LB_DATAN0			TXUOUT0-	
6	LB_DATAP1	RP55	*4P2R-S-0	TXUOUT1+	
6	LB_DATAN1			TXUOUT1-	
6	LB_DATAP2	RP57	*4P2R-S-0	TXUOUT2-	
6	LB_DATAN2			TXUOUT2+	

OPTION SIGNAL FROM Nvidia to VGA

14	EXT_TXLCLKOUT+	RP39	4P2R-S-0	TXLCLKOUT+	
14	EXT_TXLCLKOUT-			TXLCLKOUT-	
14	EXT_TXLOUT0-	RP33	4P2R-S-0	TXLOUT0-	
14	EXT_TXLOUT0+			TXLOUT0+	
14	EXT_TXLOUT1+	RP37	4P2R-S-0	TXLOUT1+	
14	EXT_TXLOUT1-			TXLOUT1-	
14	EXT_TXLOUT2+	RP36	4P2R-S-0	TXLOUT2+	
14	EXT_TXLOUT2-			TXLOUT2-	
14	EXT_TXUCLKOUT+	RP58	4P2R-S-0	TXUCLKOUT+	
14	EXT_TXUCLKOUT-			TXUCLKOUT-	
14	EXT_TXUOUT0+	RP53	4P2R-S-0	TXUOUT0+	
14	EXT_TXUOUT0-			TXUOUT0-	
14	EXT_TXUOUT1-	RP54	4P2R-S-0	TXUOUT1-	
14	EXT_TXUOUT1+			TXUOUT1+	
14	EXT_TXUOUT2-	RP56	4P2R-S-0	TXUOUT2-	
14	EXT_TXUOUT2+			TXUOUT2+	

+3V — R28 2.2K_4 EDIDCLK — R29 2.2K_4 EDIDDATA

2,4,6,9,10,11,12,14,15,18,19,20,21,22,24,25,26,28,29,30,31,35,36,38 +3V
18,22,24,25,28,29,31,38 +5V
32,33,34,35,36,37,38 +VIN
19,29,30,32,33,38 +3VPCU
33,38 +12VALW

DV-2 modify

+VIN_BLIGHT
+VIN — L4 FBM2125 HM330-T — C50 .1U/50V_6, C36 .01U/50V_4, C32 .1U/50V_6, C52 *10U/25V_12
+3V — R21 0_4 — +3VLCD_CON
C27 1000P/50V_4
+3.6V_CAM — C23 *4.7U/6.3V_6, C22 .01U/16V_4
6,14,15 EDIDDATA
6,14,15 EDIDCLK
20 USBP9+
20 USBP9-
24 DIGITAL_CLK
24 DIGITAL_D1

CN2 — BLON_CON, VADJ1

TXLCLKOUT+ / TXLCLKOUT-
TXLOUT0+ / TXLOUT0-
TXLOUT1+ / TXLOUT1-
TXLOUT2+ / TXLOUT2-
TXUCLKOUT+ / TXUCLKOUT-
TXUOUT0+ / TXUOUT0-
TXUOUT1+ / TXUOUT1-
TXUOUT2+ / TXUOUT2-

LCD_CON40
GS13407-11270-7F-40P-L

DIGITAL_CLK — C801 10P/50V_4 close with CN2

DV-2 modify

+5V — R33 0_6 — +3.6V_CAM
U4 *IC(5P) G913C (SOT23-5)EP: VIN, VOUT, SHDN, GND, SET
C53 1U/6.3V_4
R1
R34 *215K/F_4
C37 4.7U/6.3V_6
R2
R35 *100K/F_4

SI-2 modified for fix camera power fail

Vout=1.25(1+R1/R2)

DISP_ON R38 100K/F_4
LVDS_BLON R15 100K/F_4

+3VPCU — R16 36K/F_4 — D9 BAT54A — Close to EC — LID_EC# 29,30
6,15 LVDS_BLON — R17 1K/F_4 — PN_BLON — BLON_CON
21 LCD_BK — Q3 DTC144EUA — R18 100K/F_4 — C19 22P/50V_4

6,15 DPST_PWM — DPST_PWM R19 *0_4
30 PWM_VADJ — PWM_VADJ R20 0_4 — VADJ1
C20 *4.7U/6.3V_6
C21 .1U/10V_4

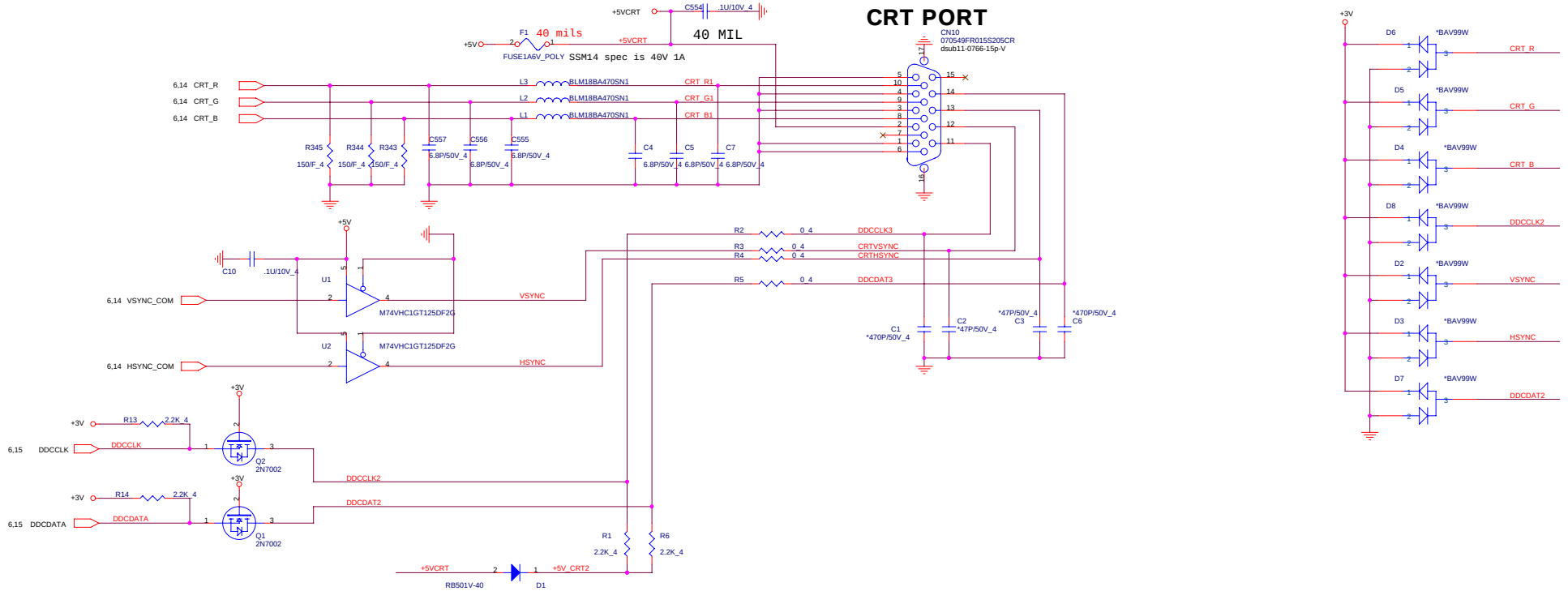
+12VALW — R31 330K_4 — AO3404 ID current 5.8A — Q5 AO3404 — LCDONG — +3VLCD
+5VSUS — R37 100K/F_4 — Q6 2N7002 — C34 .022U/16V_4
Q8 DTC144EUA — 6,15 DISP_ON
LCDON# — Q7 2N7002
+3V — C35 .1U/10V_4
+3VLCD — L5 PBY201209T-4A/08 — +3VLCD_CON
R36 22_8 — LCDDISCHG
C28 .01U/16V_4, C31 .1U/10V_4, C49 10U/6.3V_8

NB5

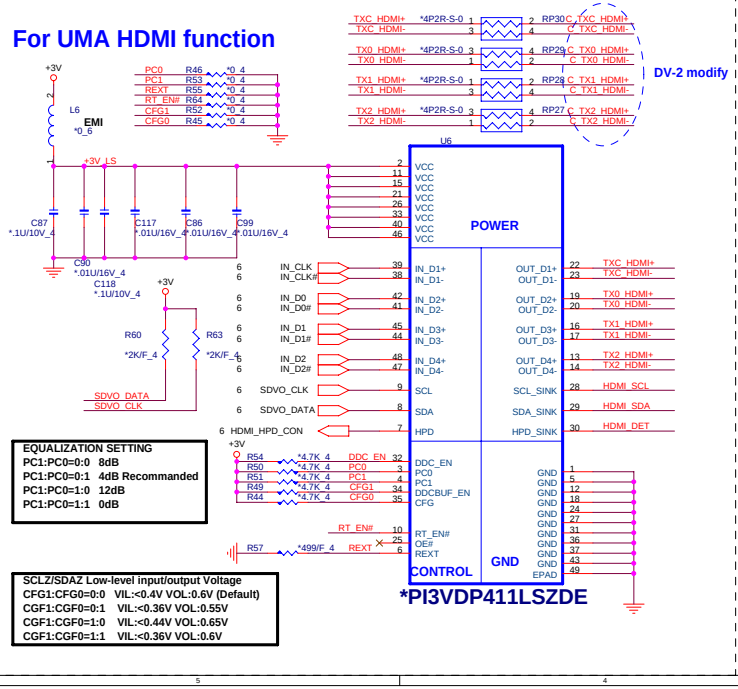
PROJECT : QL6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	LCD CONN(WC/MIC)/LID	2A
Date: Tuesday, February 26, 2008	Sheet 17 of 40	

CRT PORT

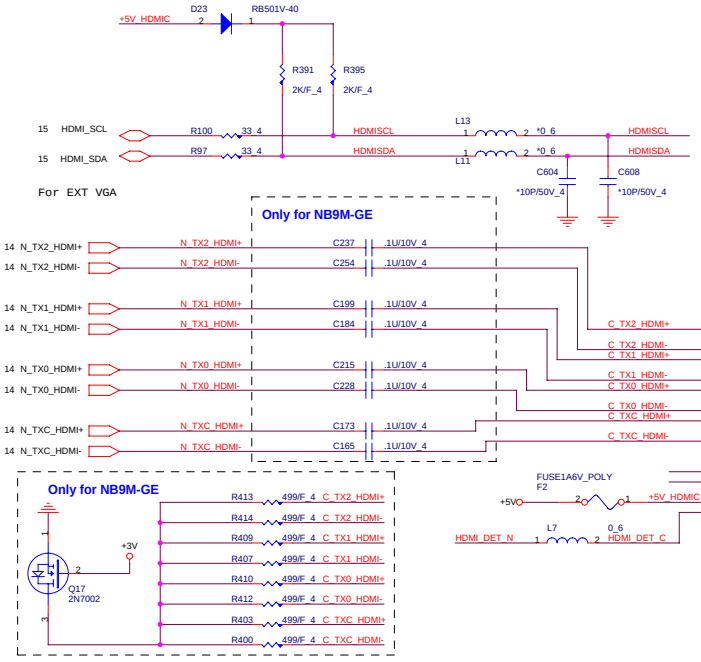


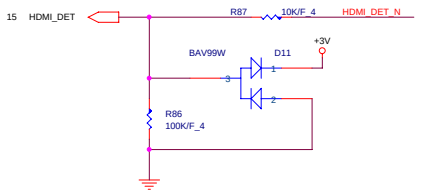
For UMA HDMI function



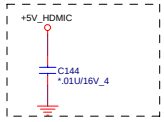
EQUALIZATION SETTING
PC1:PC0=0:0 8dB
PC1:PC0=0:1 4dB Recommanded
PC1:PC0=1:0 12dB
PC1:PC0=1:1 0dB

SCLZ/SDAZ Low-level input/output Voltage
CFG1:CFG0=0:0 VIL:<0.4V VOL:0.6V (Default)
CFG1:CFG0=0:1 VIL:<0.36V VOL:0.55V
CFG1:CFG0=1:0 VIL:<0.44V VOL:0.65V
CFG1:CFG0=1:1 VIL:<0.36V VOL:0.6V

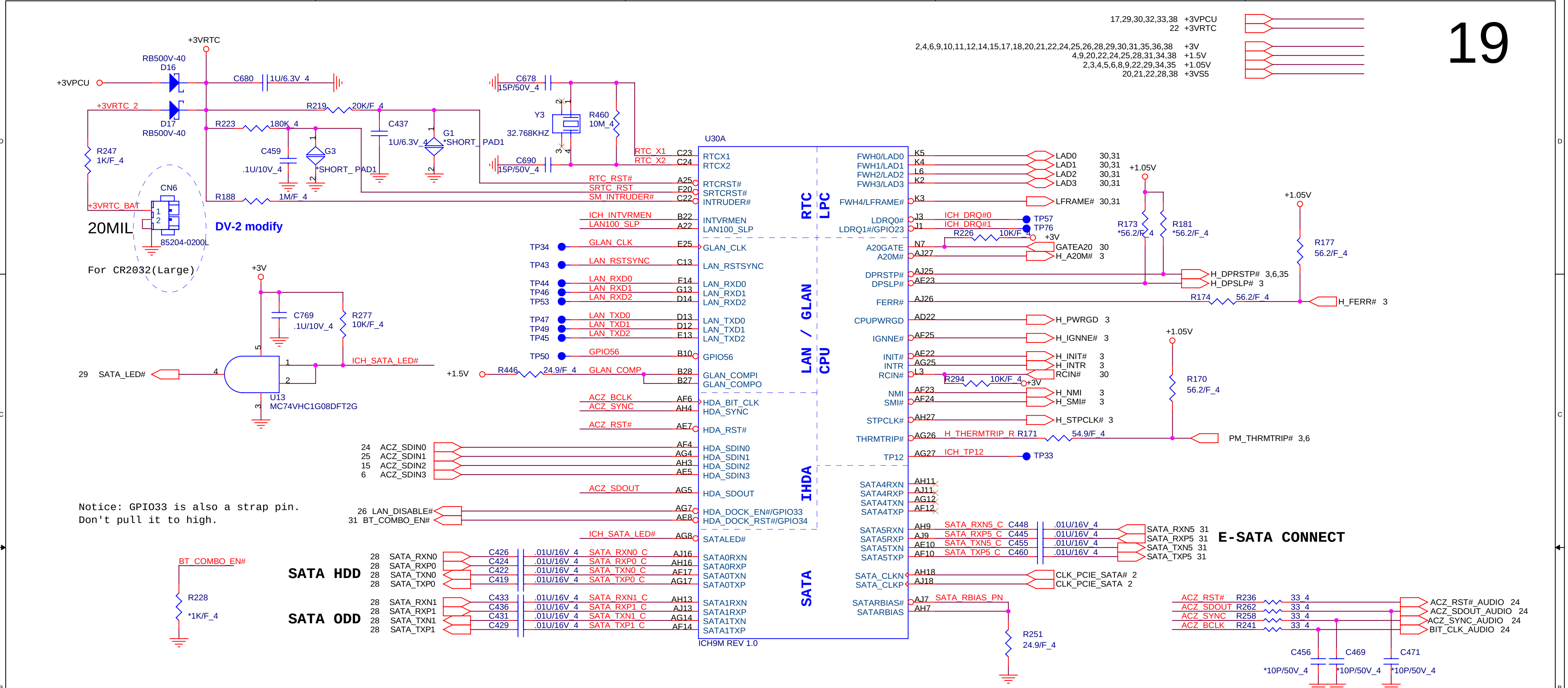




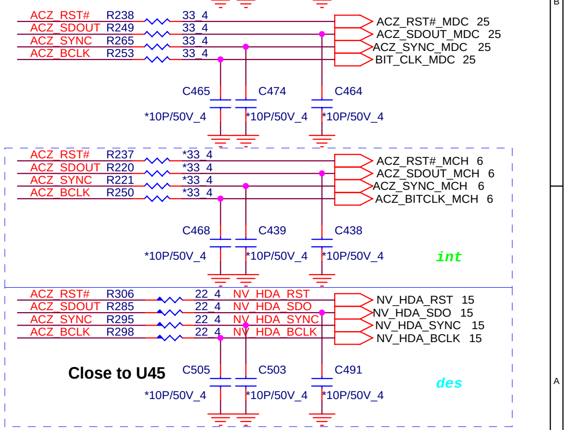
HDMI PORT



NB5	PROJECT : QL6 Quanta Computer Inc.	
Size C	Document Number CRT/PS8101 HDMI Conn	Rev 2A
Date: Tuesday, February 26, 2008	Sheet 18 of 40	



17,29,30,32,33,38 +3VPCU
22 +3VRTC
2,4,6,9,10,11,12,14,15,17,18,20,21,22,24,25,26,28,29,30,31,35,36,38 +3V
4,9,20,22,24,25,28,31,34,38 +1.5V
2,3,4,5,6,8,9,22,29,34,35 +1.05V
20,21,22,28,38 +3VS5
+3VRTC
RB500V-40
D16
+3VPCU
C680 1U/6.3V_4
+3VRTC_2
D17
RB500V-40
R219 20K/F_4
R223 180K_4
C437 1U/6.3V_4
G1 *SHORT_PAD1
R247 1K/F_4
C459 .1U/10V_4
G3 *SHORT_PAD1
CN6
85204-0200L
+3VRTC_BAT
20MIL
DV-2 modify
For CR2032(Large)
R188 1M/F_4
C678 15P/50V_4
Y3 32.768KHZ
R460 10M_4
C690 15P/50V_4
RTC_X1
RTC_X2
RTC_RST#
SRTC_RST
SM_INTRUDER#
ICH_INTVRMEN
LAN100_SLP
U30A
RTCX1
RTCX2
RTCRST#
SRTCRST#
INTRUDER#
INTVRMEN
LAN100_SLP
RTC
LPC
FWH0/LAD0
FWH1/LAD1
FWH2/LAD2
FWH3/LAD3
FWH4/LFRAME#
LDRQ0#
LDRQ1#/GPIO23
LAD0 30,31
LAD1 30,31
LAD2 30,31
LAD3 30,31
LFRAME# 30,31
ICH_DRQ#0
ICH_DRQ#1
TP57
TP76
R226 10K/F_4
+3V
+1.05V
R173 *56.2/F_4
R181 *56.2/F_4
+1.05V
R177 56.2/F_4
A20GATE
A20M#
GATEA20 30
H_A20M# 3
DPRSTP#
DPSLP#
H_DPRSTP# 3,6,35
H_DPSLP# 3
FERR#
R174 56.2/F_4
H_FERR# 3
CPUPWRGD
H_PWRGD 3
IGNNE#
H_IGNNE# 3
INIT#
INTR
RCIN#
H_INIT# 3
H_INTR 3
RCIN# 30
R294 10K/F_4
+3V
NMI
SMI#
H_NMI 3
H_SMI# 3
STPCLK#
H_STPCLK# 3
+1.05V
R170 56.2/F_4
THRMTRIP#
H_THERMTRIP_R
R171 54.9/F_4
PM_THRMTRIP# 3,6
TP12
ICH_TP12
TP33
TP34 GLAN_CLK
TP43 LAN_RSTSYNC
TP44 TP46 TP53 LAN_RXD0 LAN_RXD1 LAN_RXD2
TP47 TP49 TP45 LAN_TXD0 LAN_TXD1 LAN_TXD2
TP50 GPIO56
GLAN_CLK
LAN_RSTSYNC
LAN_RXD0
LAN_RXD1
LAN_RXD2
LAN_TXD0
LAN_TXD1
LAN_TXD2
GPIO56
GLAN_COMPI
GLAN_COMPO
LAN / GLAN
CPU
+3V
C769 .1U/10V_4
R277 10K/F_4
ICH_SATA_LED#
29 SATA_LED#
U13
MC74VHC1G08DFT2G
+1.5V
R446 24.9/F_4
GLAN_COMP
ACZ_BCLK
ACZ_SYNC
ACZ_RST#
HDA_BIT_CLK
HDA_SYNC
HDA_RST#
24 ACZ_SDIN0
25 ACZ_SDIN1
15 ACZ_SDIN2
6 ACZ_SDIN3
HDA_SDIN0
HDA_SDIN1
HDA_SDIN2
HDA_SDIN3
ACZ_SDOUT
HDA_SDOUT
IHDA
Notice: GPIO33 is also a strap pin.
Don't pull it to high.
26 LAN_DISABLE#
31 BT_COMBO_EN#
HDA_DOCK_EN#/GPIO33
HDA_DOCK_RST#/GPIO34
ICH_SATA_LED#
SATALED#
SATA4RXN
SATA4RXP
SATA4TXN
SATA4TXP
SATA5RXN
SATA5RXP
SATA5TXN
SATA5TXP
SATA_RXN5_C C448 .01U/16V_4
SATA_RXP5_C C445 .01U/16V_4
SATA_TXN5_C C455 .01U/16V_4
SATA_TXP5_C C460 .01U/16V_4
SATA_RXN5 31
SATA_RXP5 31
SATA_TXN5 31
SATA_TXP5 31
E-SATA CONNECT
BT_COMBO_EN#
R228 *1K/F_4
SATA HDD
28 SATA_RXN0
28 SATA_RXP0
28 SATA_TXN0
28 SATA_TXP0
C426 C424 C422 C419 .01U/16V_4
SATA_RXN0_C
SATA_RXP0_C
SATA_TXN0_C
SATA_TXP0_C
SATA0RXN
SATA0RXP
SATA0TXN
SATA0TXP
SATA ODD
28 SATA_RXN1
28 SATA_RXP1
28 SATA_TXN1
28 SATA_TXP1
C433 C436 C431 C429 .01U/16V_4
SATA_RXN1_C
SATA_RXP1_C
SATA_TXN1_C
SATA_TXP1_C
SATA1RXN
SATA1RXP
SATA1TXN
SATA1TXP
SATA
SATA_CLKN
SATA_CLKP
CLK_PCIE_SATA# 2
CLK_PCIE_SATA 2
SATARBIAS#
SATARBIAS
SATA_RBIAS_PN
R251 24.9/F_4
ICH9M REV 1.0
ACZ_RST# R236 33_4
ACZ_SDOUT R262 33_4
ACZ_SYNC R258 33_4
ACZ_BCLK R241 33_4
ACZ_RST#_AUDIO 24
ACZ_SDOUT_AUDIO 24
ACZ_SYNC_AUDIO 24
BIT_CLK_AUDIO 24
C456 *10P/50V_4
C469 *10P/50V_4
C471 *10P/50V_4



ACZ_RST# R238 33_4
ACZ_SDOUT R249 33_4
ACZ_SYNC R265 33_4
ACZ_BCLK R253 33_4
ACZ_RST#_MDC 25
ACZ_SDOUT_MDC 25
ACZ_SYNC_MDC 25
BIT_CLK_MDC 25
C465 *10P/50V_4
C474 *10P/50V_4
C464 *10P/50V_4
ACZ_RST# R237 *33_4
ACZ_SDOUT R220 *33_4
ACZ_SYNC R221 *33_4
ACZ_BCLK R250 *33_4
ACZ_RST#_MCH 6
ACZ_SDOUT_MCH 6
ACZ_SYNC_MCH 6
ACZ_BITCLK_MCH 6
C468 *10P/50V_4
C439 *10P/50V_4
C438 *10P/50V_4
int
ACZ_RST# R306 22_4 NV_HDA_RST
ACZ_SDOUT R285 22_4 NV_HDA_SDO
ACZ_SYNC R295 22_4 NV_HDA_SYNC
ACZ_BCLK R298 22_4 NV_HDA_BCLK
NV_HDA_RST 15
NV_HDA_SDO 15
NV_HDA_SYNC 15
NV_HDA_BCLK 15
Close to U45
C505 *10P/50V_4
C503 *10P/50V_4
C491 *10P/50V_4
des

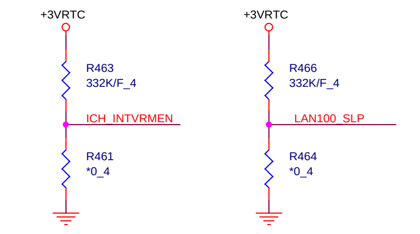
SB Strap

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)

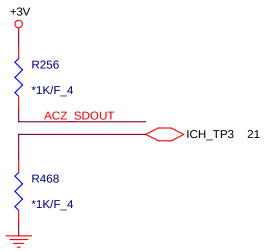
ICH9-M LAN100_SLP Strap (Internal VR for VccLAN1_05 and VccCL1.05)

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



XOR Chain Entrance Strap

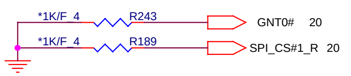
ICH_TP3	HDA_SDOUT	Description
0	0	RSVD
0	1	Enter XOR Chain
1	0	Normal opration(Default)
1	1	Set PCIE port config bit 1



ICH9 Boot BIOS select

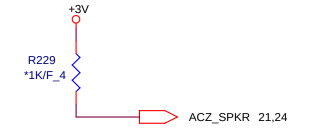
STRAP	PCI_GNT0#	SPI_CS#1
SPI	0	1
PCI	1	0
LPC	1	1

(default)

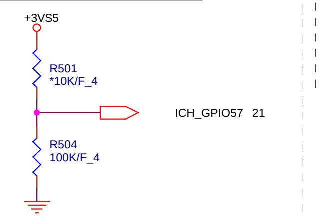


A16 swap override strap	
PCI_GNT#3	Low = A16 swap override enabled Hi = Default

No Reboot Strap	
ACZ_SPKR	Low: Default Hi: No reboot



TPM physical presence	
ICH_GPIO57	Low: Default



NB5

PROJECT : QL6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	ICH9-M Host 1/4	2A

Date: Tuesday, February 26, 2008 Sheet 19 of 40

4,9,19,22,24,25,28,31,34,38 +1.5V
2,4,6,9,10,11,12,14,15,17,18,19,21,22,24,25,26,28,29,30,31,35,36,38 +3V
21,23,29,31,34,35,36,38 +3VSUS

MINI CARD PCI-E(WLAN)

EXPRESS CARD (NEW CARD)

MINI CARD PCI-E(Robson)

PCIE-LAN

U30D

PCI-Express Direct Media Interface

SPI

USB

ICH9M REV 1.0

E-SATA and USB Connector
USB Connector
USB Connector
DV-2 modify
Card Reader
NEW CARD
BLUETOOTH
Carama USB
Wireless Mini-Card
Robson Mini-Card
DV-2 modify

512K byte SPI ROM
For HDCP only
For GM HDCP

EMI 0828

For iTPM

U30B

PCI

Interrupt I/F

ICH9M REV 1.0

U31 *MC74VHC1G08DFT2G

PROJECT : QL6
Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	ICH9-M PCIE 2/4	2A

Date: Tuesday, February 26, 2008 Sheet 20 of 40

4,9,19,20,22,24,25,28,31,34,38 +1.5V
2,4,6,9,10,11,12,14,15,17,18,19,20,22,24,25,26,28,29,30,31,35,36,38 +3V
19,20,22,28,38 +3VS5
23,29,31,34,35,36,38 +3VSUS

U30C

SMB
SYS GPIO
Power MGT
GPIO
Controller Link
MISC
SATA GPIO
Clocks

2 PCLK_SMB
2 PDAT_SMB
SMB_LINK_ALERT#
SMB_CLK_ME
SMB_DATA_ME
PM_RI#
TP56 PM_SUS_STAT#
3 SYS_RST#
6 PM_SYNC#
SMB_ALERT#
2 PM_STPPCI#
2 PM_STPCPU#
30 CLKRUN#
26,28,31 PCIE_WAKE#
30 SERIRQ
4 PM_THRM#
VR_PWRGO_CLKEN
TP70
TP40
30 KBSMI#
30 SCI#
30 SWI#
T11 LAN_PHYPC
ENERGY_DET
TP39 BOARD_ID5
17 LCD_BK
BOARD_ID2
31 WAN_OFF#
TP77 ICH_GPIO35
TP38 ICH_GPIO33
TP36 MFG_MODE
TP37 CRB_SV_DET_R
TP35 DMI_TERM_SEL
19 ICH_GPIO57
19,24 ACZ_SPKR
6 MCH_ICH_SYNC#
19 ICH_TP3
TP71 ICH_TP8
TP69 ICH_TP9
TP68 ICH_TP10

SMBCLK
SMBDATA
LINKALERT#/GPIO60/CLGPIO4
SMLINK0
SMLINK1
RI#
SUS_STAT#/LPCPD#
SYS_RESET#
PMSYNC#/GPIO0
SMBALERT#/GPIO11
STP_PCI#
STP_CPU#
CLKRUN#
WAKE#
SERIRQ
THRM#
VRMPWRGD
TP11
GPIO1
GPIO6
GPIO7
GPIO8
GPIO12
GPIO13
GPIO17
GPIO18
GPIO20
SCLOCK/GPIO22
GPIO27
GPIO28
SATACLKREQ#/GPIO35
SLOAD/GPIO38
SDATAOUT0/GPIO39
SDATAOUT1/GPIO48
GPIO49
GPIO57/CLGPIO5
SPKR
MCH_SYNC#
TP3
TP8
TP9
TP10

SATA0GP/GPIO21 AH23 BOARD_ID1
SATA1GP/GPIO19 AE19 BOARD_ID0
SATA4GP/GPIO36 AE21 BOARD_ID3
SATA5GP/GPIO37 AD20 BOARD_ID4
CLK14 H1
CLK48 AF3 R279 33_4 CLK_14M_ICH 2 CLK_48M_USB 2
SUSCLK P1 SUSCLK TP75
SLP_S3# C16 SUSB# 30
SLP_S4# E16 SUSC# 30
SLP_S5# G17 SLP_S5# TP42
S4_STATE#/GPIO26 C10 S4_STATE# TP73
PWROK G20 PM_ICH_PWROK
DPRSLPVR/GPIO16 M2 DPRSLPVR 6,35
BATLOW# B13 PM_BATLOW# 30
PWRBTN# R3 DNBSWON# 30
LAN_RST# D20 LAN_RST#
RSMRST# D22 RSMRST# 30
CK_PWRGD R5 CK_PWG 2
CLPWROK R6 ECPWROK
SLP_M# B16 ICH_SLP_M# TP72
CL_CLK0 F24 CL_CLK0 6
CL_CLK1 B19 CL_CLK1 31
CL_DATA0 F22 CL_DATA0 6
CL_DATA1 C19 CL_DATA1 31
CL_VREF0 C25 CL_VREF0_ICH
CL_VREF1 A19 CL_VREF1_ICH
CL_RST0# F21 CL_RST#0 6
CL_RST1# D18 CL_RST#1 31
MEM_LED/GPIO24 A16 SUS_PWR_ACK TP78
GPIO10/SUS_PWR_ACK C18
GPIO14/AC_PRESENT C11 AC_PRESENT TP52
WOL_EN/GPIO9 C20 ICH_WOL_EN R202 100K/F_4

ICH9M REV 1.0

BIOS_REC:BOARD_ID2
Default is PH
For Bios recovery PD

+3VS5
SWI# R471 10K/F_4
PM_RI# R207 10K/F_4
SMB_CLK_ME R212 10K/F_4
SMB_DATA_ME R473 10K/F_4
DNBSWON# R301 10K/F_4
PCLK_SMB R213 2.2K_4
PDAT_SMB R493 2.2K_4
SMB_ALERT# R480 10K/F_4
PCIE_WAKE# R199 10K/F_4
PM_BATLOW# R496 8.25K/F_4
SMB_LINK_ALERT# R210 10K/F_4
SYS_RST# R487 10K/F_4

+3VS5 R483 3.24K/F_4
+3V R176 3.24K/F_4
0.405V
C704 .1U/10V_4
R478 453/F_4
C408 .1U/10V_4
R179 453/F_4

+3V PR101 1K/F_4
VR_PWRGO_CLKEN
Q10 BS870-7-F
R506 100K/F_4
35 VR_PWRGD_CK410#

+3V
R201 *10K/F_4 BOARD_ID0 R195 10K/F_4
R182 *10K/F_4 BOARD_ID1 R180 10K/F_4
R184 10K/F_4 BOARD_ID2 R186 *10K/F_4
R196 *10K/F_4 BOARD_ID3 R190 10K/F_4
R203 *10K/F_4 BOARD_ID4 R197 10K/F_4
R209 *10K/F_4 BOARD_ID5 R205 10K/F_4

+3V
ICH_TP3 R469 *10K/F_4
PM_THRM# R183 8.25K/F_4
SERIRQ R227 10K/F_4
CLKRUN# R230 8.25K/F_4
KBSMI# R191 10K/F_4
SCI# R185 10K/F_4
ICH_GPIO35 R293 *10K/F_4

SUS_PWR_ACK R204 10K/F_4
RSMRST# R193 10K/F_4

Board ID 4/5 pull low

Model	Board ID 3	Board ID 2	Board ID 1	Board ID 0
QL8/GM	0	0	0	0
QL8/9M	0	0	0	1
QL8/9P	0	0	1	0
QL6/GM	0	0	1	1
QL6/9M	0	1	0	0
TW8/GM	0	1	0	1
TW8/9M	0	1	1	0
TW8/9P	0	1	1	1
SW8/GM	1	0	0	0
SW8/9M	1	0	0	1
DW8/GM	1	0	1	0

+3V +3VSUS
R214 *2K/F_4
C497 *.1U/10V_4
6,35 DELAY_VR_PWRGOOD
4,6,30 ECPWROK
U11 *MC74VHC1G08DFT2G
PM_ICH_PWROK
R198 10K/F_4
R206 0_4

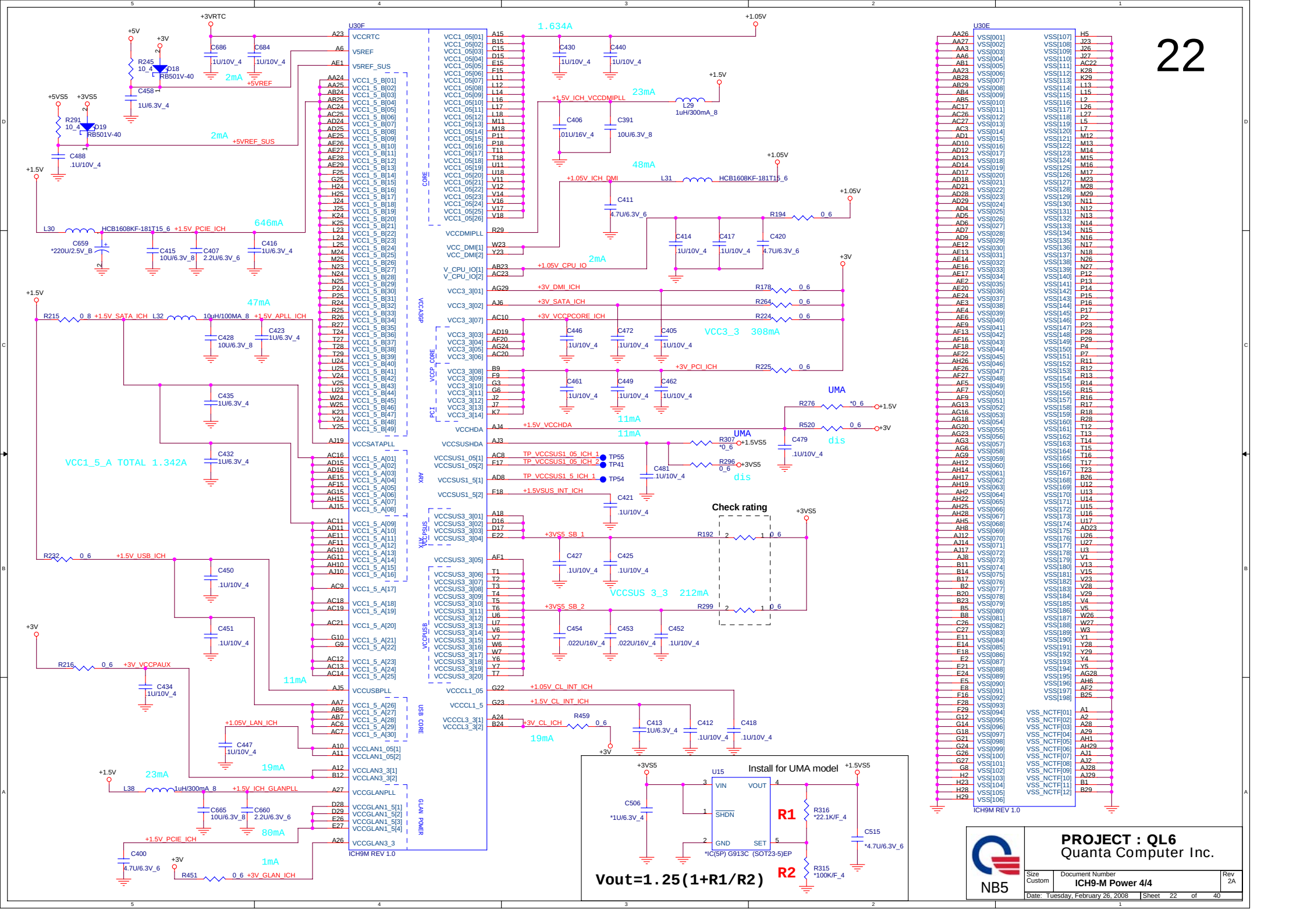
CLK_48M_USB
CLK_14M_ICH
R292 *10_4
R302 *33_4
C489 *10P/50V_4
C493 *10P/50V_4

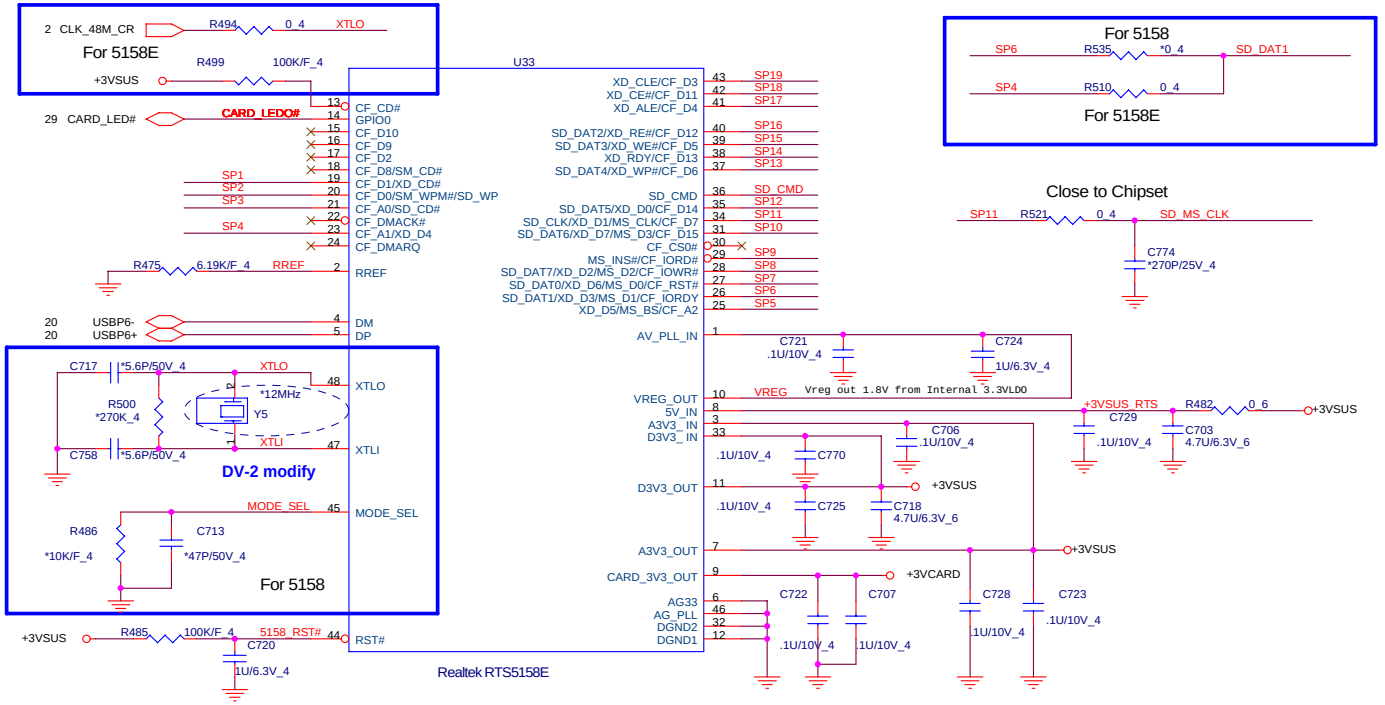
NB5

PROJECT : QL6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	ICH9-M GPIO 3/4	2A

Date: Tuesday, February 26, 2008 Sheet 21 of 40

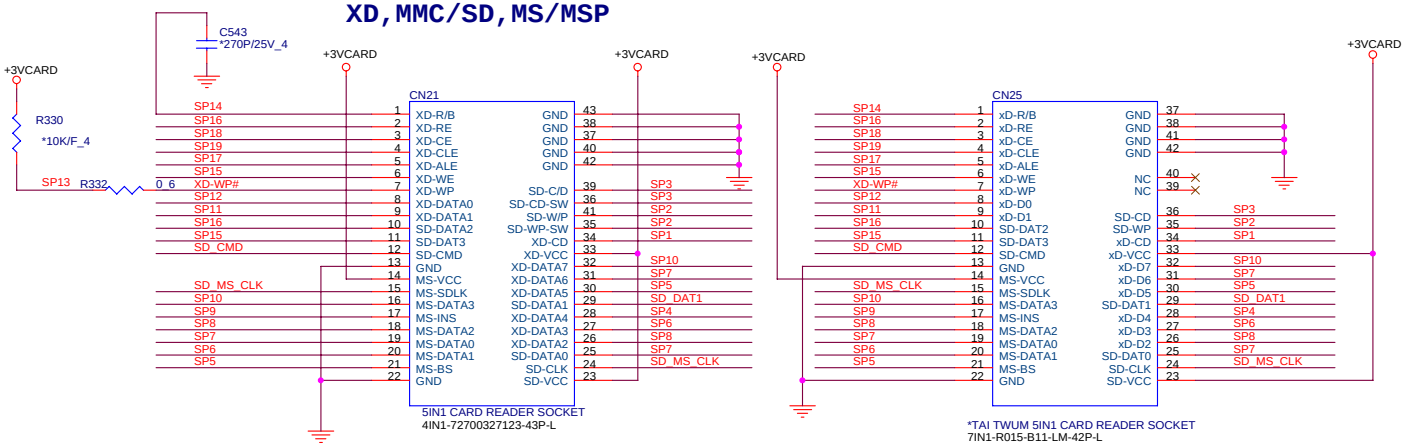

22
U30F
U30E
VCC1_5_A TOTAL 1.342A
VCCSUS 3_3 212mA
Check rating
UMA
Install for UMA model
Vout=1.25(1+R1/R2)
*IC(5P) G913C (SOT23-5)EP
ICH9M REV 1.0
PROJECT : QL6
Quanta Computer Inc.
ICH9-M Power 4/4
NB5
Size Custom
Document Number
Rev 2A
Date: Tuesday, February 26, 2008
Sheet 22 of 40



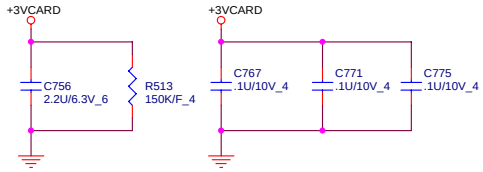
Note:

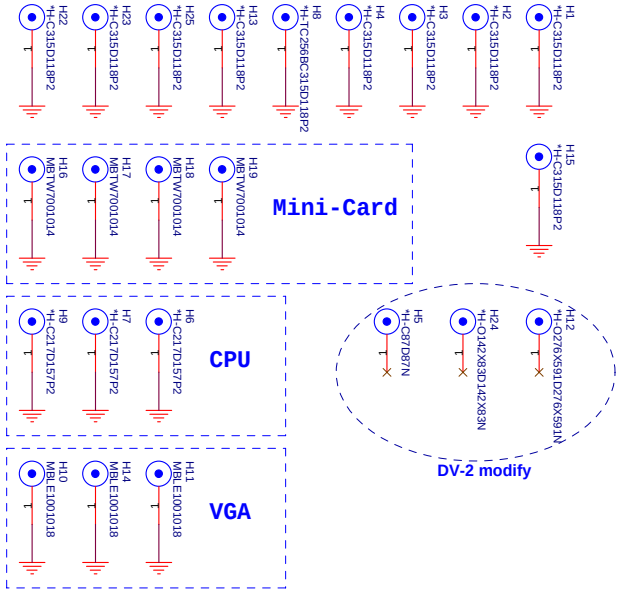
	SD/MMC	MS	XD
SP0			
SP1			XD_CD#
SP2	SD_WP		
SP3	SD_CD#		
SP4	SD_DAT1		XD_D4
SP5		MS_BS	XD_D5
SP6	SD_DAT1	MS_D1	XD_D3
SP7	SD_DAT0	MS_D0	XD_D6
SP8	SD_DAT7	MS_D2	XD_D2
SP9		MS_INS#	
SP10	SD_DAT6	MS_D3	XD_D7
SP11	SD_CLK	MS_SCLK	XD_D1
SP12	SD_DAT5		XD_D0
SP13	SD_DAT4		XD_WP#
SP14			XD_R/B#
SP15	SD_DAT3		XD_WE#
SP16	SD_DAT2		XD_RE#
SP17			XD_ALE
SP18			XD_CE#
SP19			XD_CLE

5 IN1 CARD READER
XD,MMC/SD,MS/MSP



CLOSE CONN

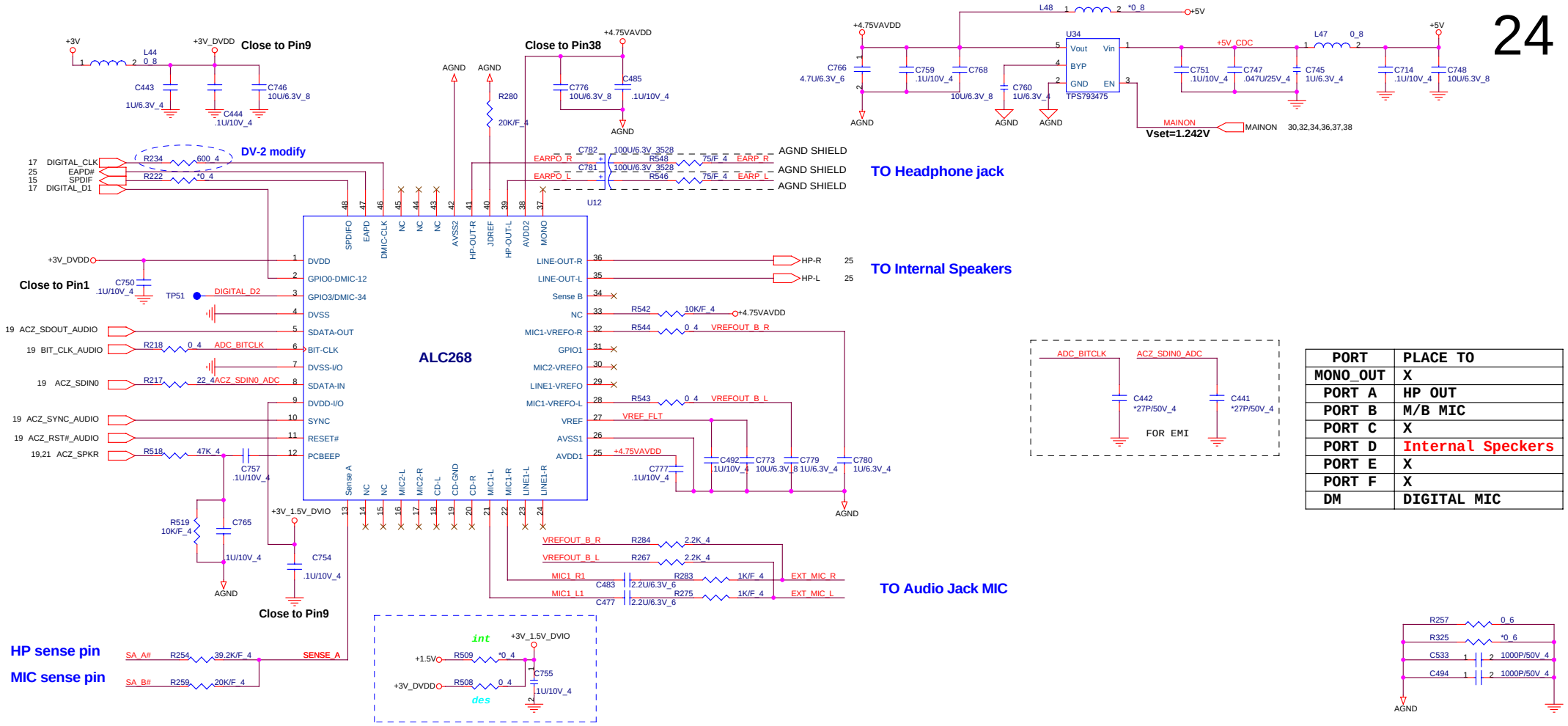




NB5

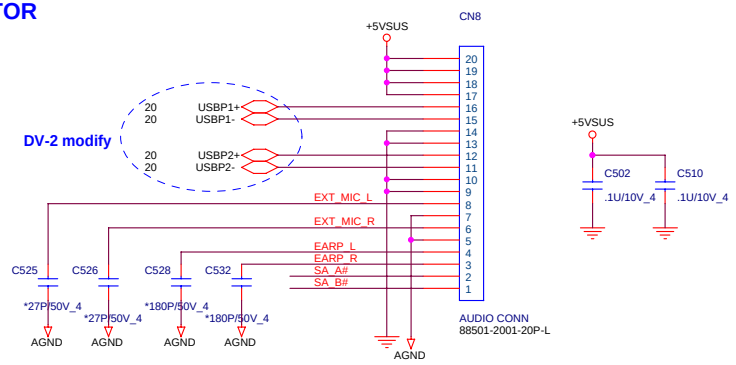
PROJECT : QL6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	RTS5158 & CR SOCKET &HOLE	2A
Date: Tuesday, February 26, 2008	Sheet 23 of 40	



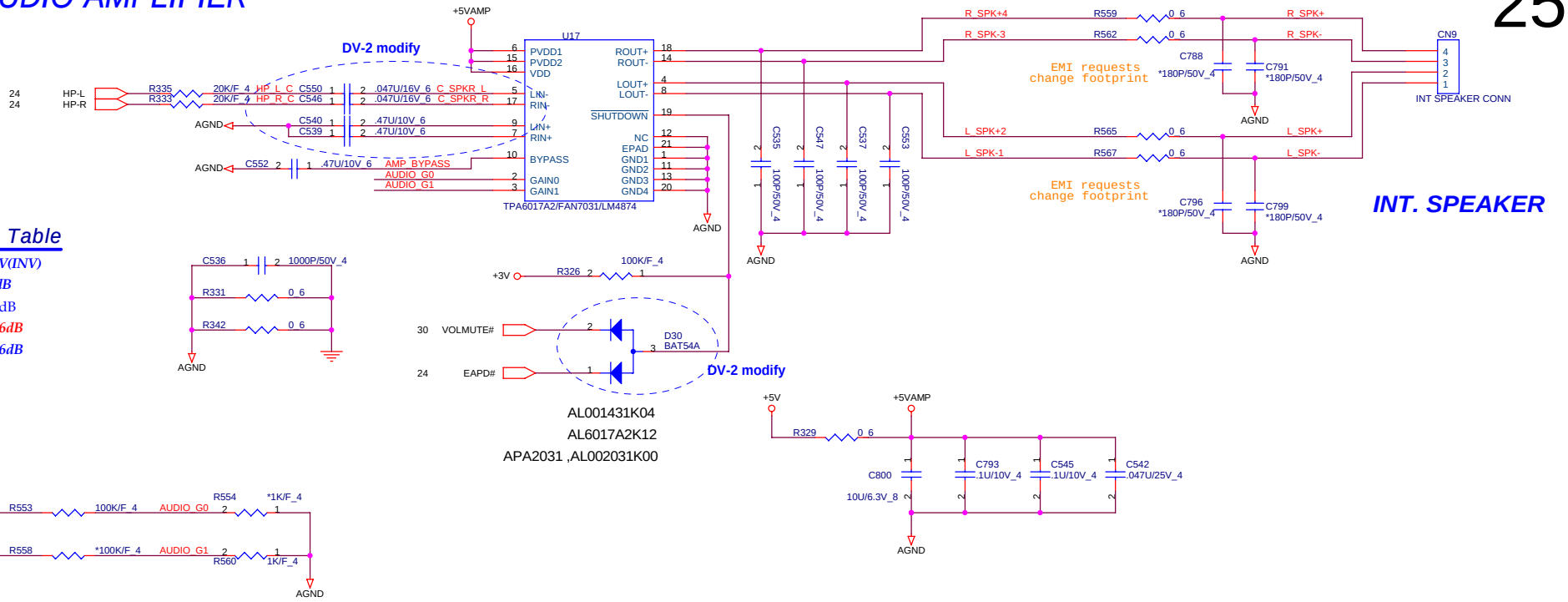
PORT	PLACE TO
MONO_OUT	X
PORT A	HP OUT
PORT B	M/B MIC
PORT C	X
PORT D	Internal Speckers
PORT E	X
PORT F	X
DM	DIGITAL MIC

AUDIO/USB BOARD CONNECTOR



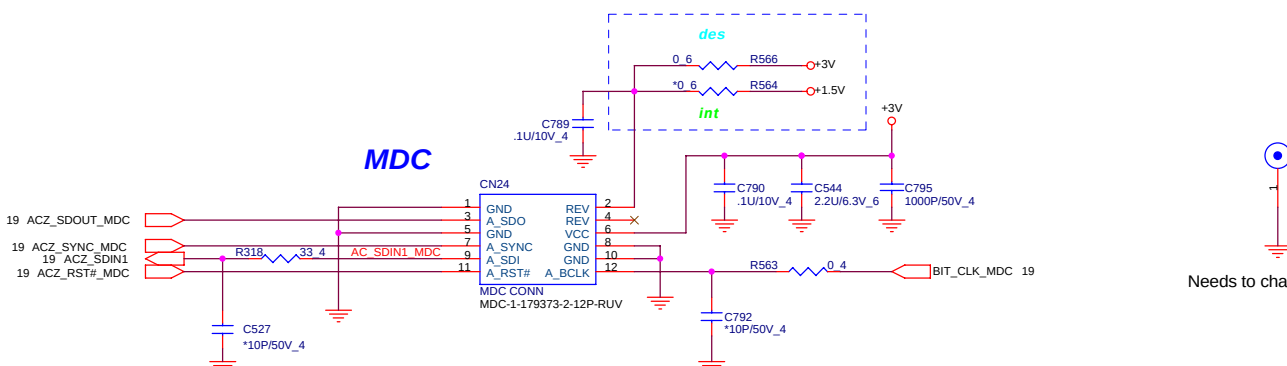
Project	PROJECT : QL6
Company	Quanta Computer Inc.
Size	Custom
Document Number	Azalia IDT92HD71B7
Rev	2A
Date	Tuesday, February 26, 2008
Sheet	24 of 40
NB5	

AUDIO AMPLIFIER



6017A2 Gain Table

GAIN0	GAIN1	AV(INV)
0	0	6dB
0	1	10dB
1	0	15.6dB
1	1	21.6dB



Needs to change Library as ME request

NB5

PROJECT : QL6
Quanta Computer Inc.

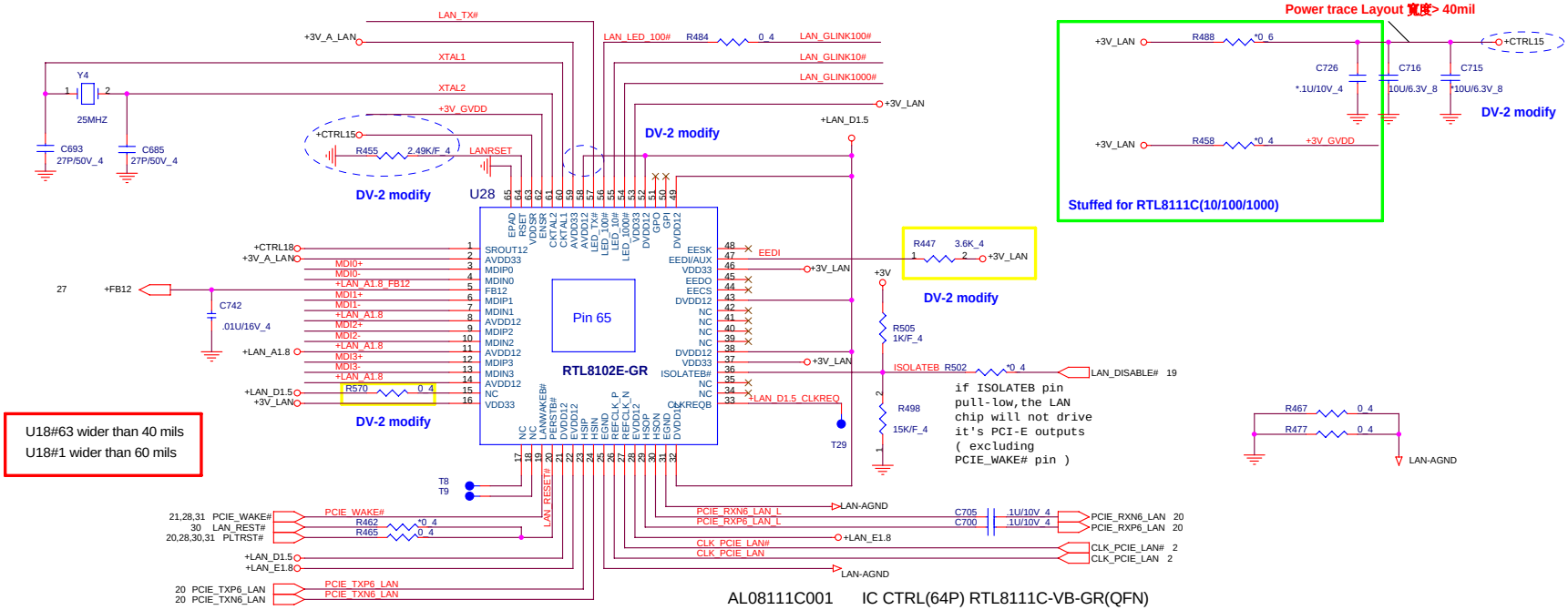
Size	Document Number	Rev
Custom	AMP_TPA6017/MDC	2A

Date: Tuesday, February 26, 2008 Sheet 25 of 40

T : Stuffed for RTL8111C(10/100/1000)

E : Stuffed for 8102E(10/100)

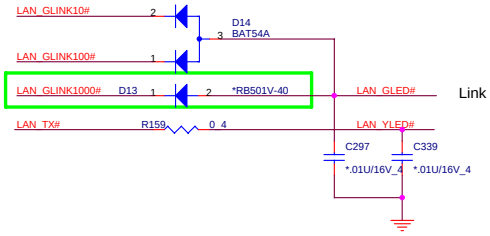
27 +3V_LAN
27 +3V_A_LAN
27 +CTRL15
27 +LAN_D1.5
27 +CTRL18
27 +LAN_A1.8
27 +LAN_E1.8

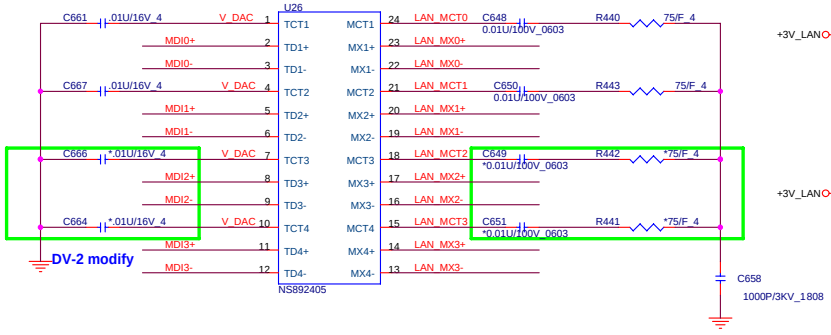


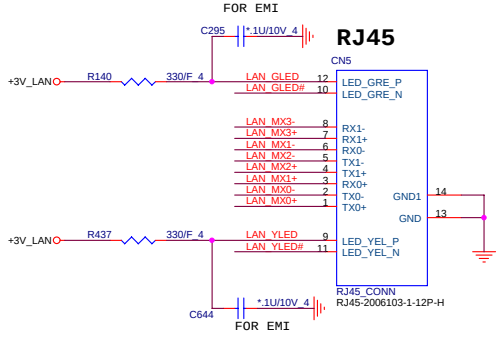
U18#63 wider than 40 mils
U18#1 wider than 60 mils

AL08111C001 IC CTRL(64P) RTL8111C-VB-GR(QFN)

AL08102E001 IC CTRL(64P) RTL8102E-GR(QFN)







NS892402:GIGABIT DB0AT9LAN05

NS892405:10/100 DB0ZB1LAN04

NB5

PROJECT : QL6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	RTL8111C/8101E/RJ45	2A

Date: Tuesday, February 26, 2008 Sheet 26 of 40

T : Stuffed for RTL8111C(10/100/1000)

E : Stuffed for 8102E(10/100)

other

Power trace Layout 寬度> 30mil

LANVCC
1.2W
364mA

+3VLANVCC — L46 0_8 — +3V_LAN

C681 4.7U/6.3V_6
C736 .1U/10V_4

C735 .1U/10V_4
C682 .1U/10V_4
C699 .1U/10V_4
C683 .1U/10V_4

these CAP are for LAN CHIP LANVCC pins--16, 37, 46 and 53.placement close lan chip

L45 0_8 — +3V_A_LAN

C732 .1U/10V_4
C743 *.1U/10V_4

these CAP are for LAN CHIP LAN_A3.3 pins-- 2 and 59.placement close lan chip

8111C CV-4706MN00
8102E CS00004JA40

For Giga must change L65 to Inductor (Chipset include switch power)
+CTRL18 will become to switch power phase

placement close to lan chipset

L43 for Gaga lan use 4.7uH power choke
A>500mA tolerance ±15%

DV-2 modify

+CTRL18 — L43 0_8

C688 *10U/6.3V_8
C691 10U/6.3V_8

Power trace Layout 寬度> 30mil

+FB12 26 — L41 *0_8 — +LAN_A1.8

DV-2 modify

C674 *.1U/10V_4
C676 *.1U/10V_4
C675 *.1U/10V_4

these cap are for lan chip LAN_A1.8 pins-- 8, 11 and 14. placement close chip

+LAN_E1.8

R470 *HCB1608KF-181T15_6

DV-2 modify

C697 *.1U/10V_4
C695 *.1U/10V_4

these cap are for lan chip LAN_D1.8 pins, such as 22 and 28. placement close lan chip

LAN-AGND

L40 *0_8

Power trace Layout 寬度> 30mil

+LAN_D1.5

DV-2 modify

+CTRL15 — L39 0_8

C687 .1U/10V_4

DV-2 modify

C677 .1U/10V_4
C702 *.1U/10V_4
C734 *.1U/10V_4
C712 *.1U/10V_4
C733 .1U/10V_4
C710 .1U/10V_4
C711 .1U/10V_4
C692 .1U/10V_4

these cap are for lan chip LAN_D1.5 pins-- 15, 21, 32, 38, 43, 49, 52 and 58.placement close lan chip

Power domain chart

	RTL8111C / RTL8102E
LANVCC	3.3V
LAN_D1.8	1.2V
LAN_A1.8	1.2V
LAN_D1.5	1.2V

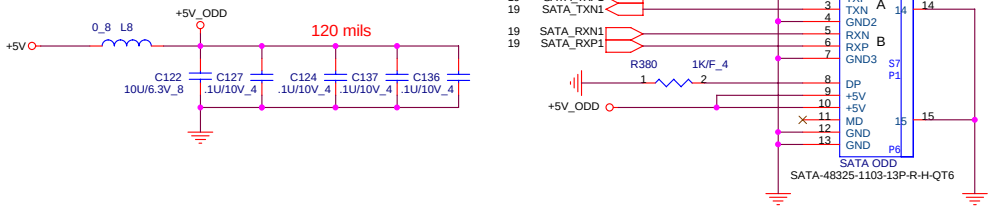
NB5

PROJECT : QL6
Quanta Computer Inc.

Size	Document Number	Rev
A3	LAN Power	2A

Date: Tuesday, February 26, 2008 Sheet 27 of 40

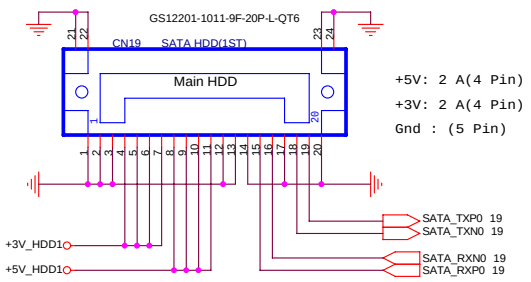
SATA ODD CONECTOR



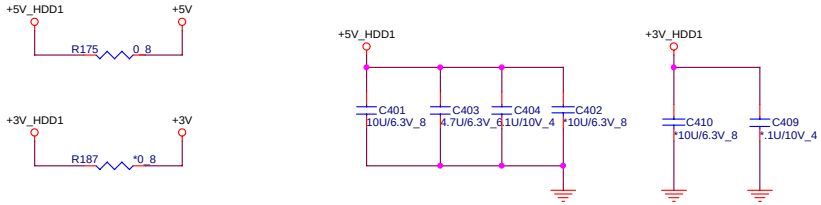
DV-2 modify footprint

SATA HDD CONNECTOR

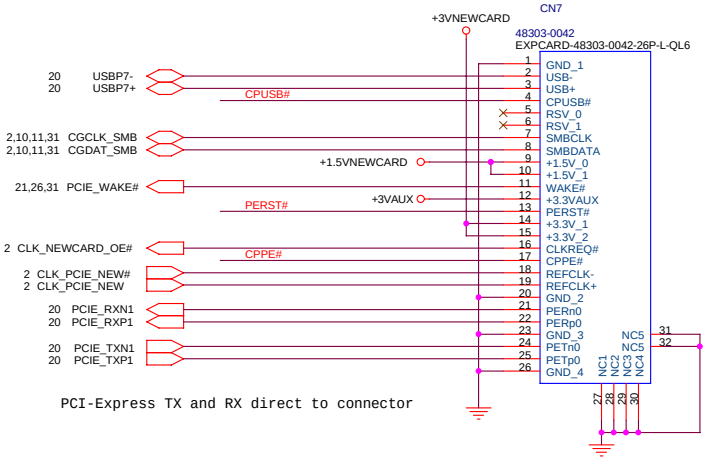
DC Current rating: 0.5 A



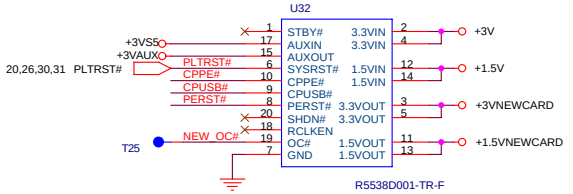
DV-2 modify footprint



NEWCARD

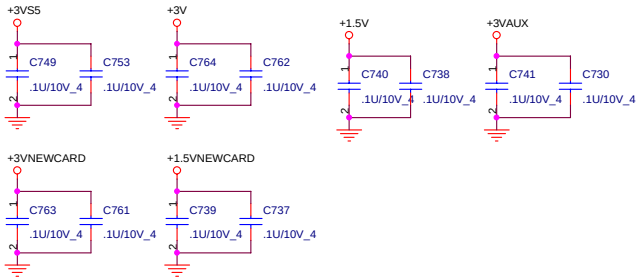


EXPCARD-48303-0042-26P-L-QT6 as ME modify Pad size(pin31,32) **DV-2 modify**



add Pin 21~25 as U32 Thermal pad tied to Gnd

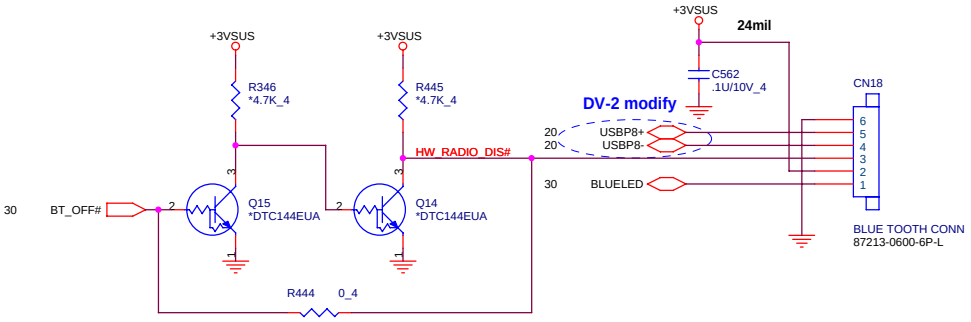
DV-2 modify



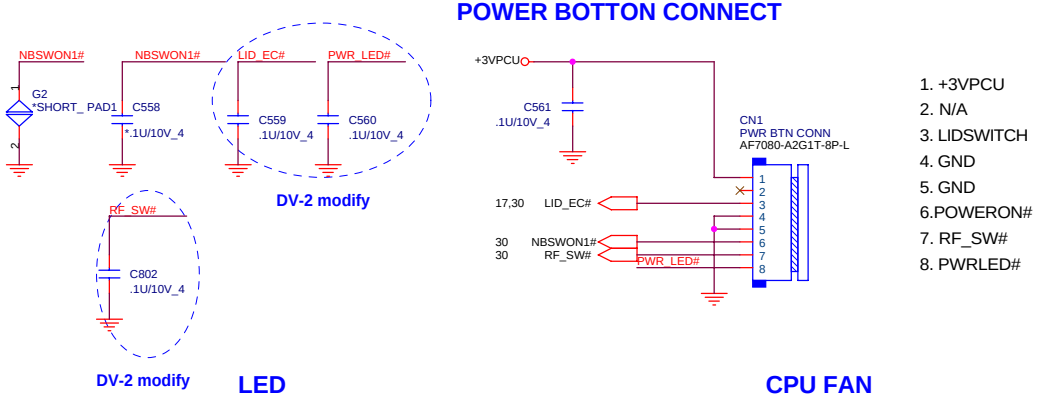
PROJECT : QL6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	ODD/HDD/NEW CARD	2A
NB5	Date: Tuesday, February 26, 2008	Sheet 28 of 40

BLUETOOTH POWER

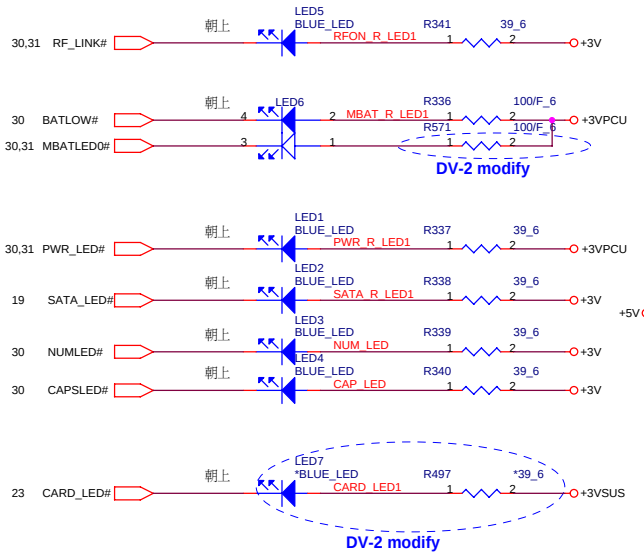


POWER BOTTON CONNECT

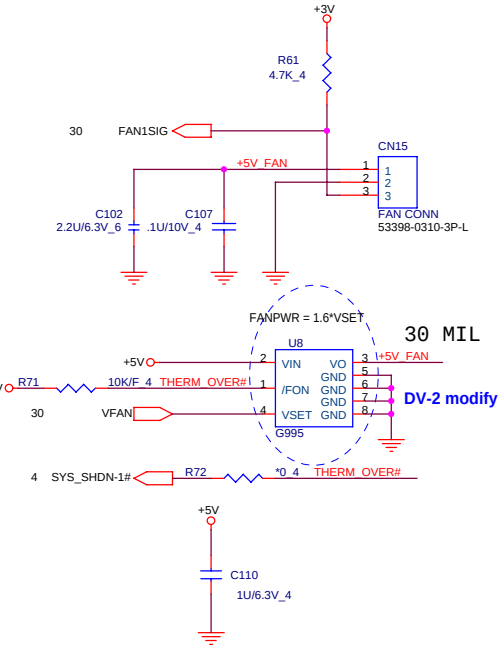


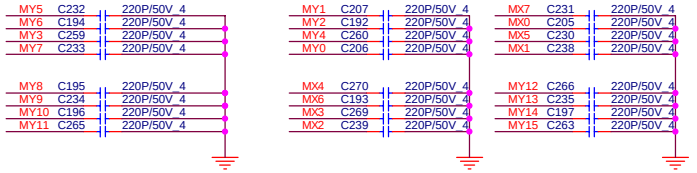
1. +3VPCU
2. N/A
3. LIDSWITCH
4. GND
5. GND
6. POWERON#
7. RF_SW#
8. PWRLED#

LED

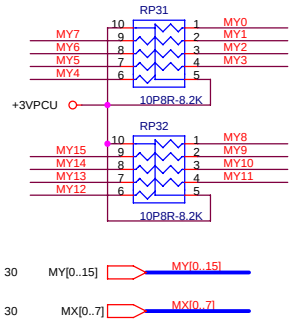


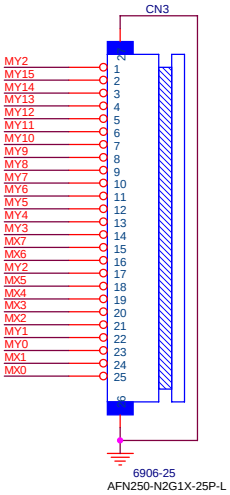
CPU FAN

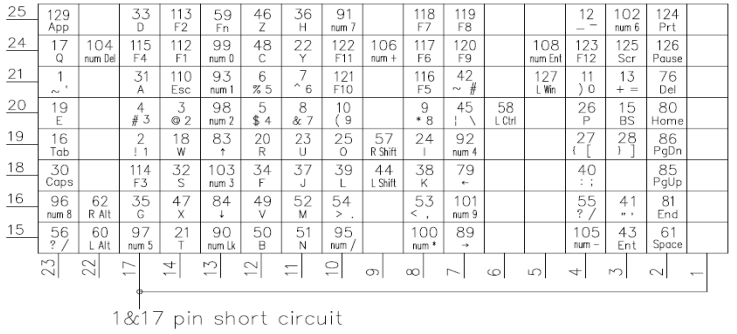


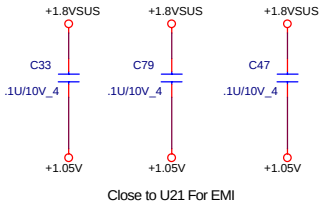


KEYBOARD PULL-UP









PROJECT : QL6
Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	KB/FAN/POWER CONN/LED	2A

Date: Tuesday, February 26, 2008 Sheet 29 of 40

TOUCH PAD CONNECTOR

25 mils

+5VSUS — 0_6 — L19 — +5V_TP — C214 .1U/10V_4 — C212 .1U/10V_4

+3V

TPCLK — L17 — BK1608HS470 — TPCLK-1

TPDATA — L16 — BK1608HS470 — TPDATA-1

TP_LED0#

TP_LED1#

C213 *10P/50V_4 — C211 *10P/50V_4

TP_L

TP_R

CN4
TOUCH PAD CONN
BL121-12R-12P-L-QT6

+5VSUS — R111 4.7K_4 — TPCLK

close conn

R109 4.7K_4 — TPDATA

TOUCH PAD L/R

TP_L — R319 1K/F_4 — TP_L_CONN — SW1 — TMG-533-S-V-TR

C529 .1U/10V_4

TP_R — R310 1K/F_4 — TP_R_CONN — SW2 — TMG-533-S-V-TR

C517 .1U/10V_4

U16 — KB3926 C0

+3VPCU

C798 .1U/10V_4
C501 .1U/10V_4
C538 .1U/10V_4
C551 .1U/10V_4
C786 .1U/10V_4
C541 .1U/10V_4
C473 10U/6.3V_8
+3VPCU_EC
C785 .1U/10V_4

VCC1 VCC2 VCC3 VCC4 VCC5 VCC6 AVCC

SERIRQ
LFRAME#
LAD0
LAD1
LAD2
LAD3
PCICLK
PCIRST#/GPIO5
CLKRUN
SCI1#/GPIOE
GA20/GPIO0
KBRST/GPIO1
ECRST

KSI0/GPIO30
KSI1/GPIO31
KSI2/GPIO32
KSI3/GPIO33
KSI4/GPIO34
KSI5/GPIO35
KSI6/GPIO36
KSI7/GPIO37

KSO0/GPIO20
KSO1/GPIO21
KSO2/GPIO22
KSO3/GPIO23
KSO4/GPIO24
KSO5/GPIO25
KSO6/GPIO26
KSO7/GPIO27
KSO8/GPIO28
KSO9/GPIO29
KSO10/GPIO2A
KSO11/GPIO2B
KSO12/GPIO2C
KSO13/GPIO2D
KSO14/GPIO2E
KSO15/GPIO2F
KSO16/GPIO48
KSO17/GPIO49

PSCLK1/GPIO4A
PSDAT1/GPIO4B
PSCLK2/GPIO4C
PSDAT2/GPIO4D
PSCLK3/GPIO4E
PSDAT3/GPIO4F

RD
WR
SELMEM/SPICS
SELIO/GPIO50
SELIO2/GPIO43
D0/GPXD0
D1/GPXD1
D2/GPXD2
D3/GPXD3
D4/GPXD4
D5/GPXD5
D6/GPXD6
D7/GPXD7

A0/GPXA0
A1/GPXA1
A2/GPXA2
A3/GPXA3
A4/GPXA4
A5/GPXA5
A6/GPXA6
A7/GPXA7
A8/GPXA8
A9/GPXA9
A10/GPXA10
A11/GPXA11

V18R

AD0/GPI38
AD1/GPI39
AD2/GPI3A
AD3/GPI3B

DA0/GPO3C
DA1/GPO3D
DA2/GPO3E
DA3/GPO3F

PWM1/GPIOE
PWM2/GPIO10

FANPWM1/GPIO12
FANPWM2/GPIO13
FANFB1/GPIO14
FANFB2/GPIO15

SCL1/GPIO44
SDA1/GPIO45
SCL2/GPIO46
SDA2/GPIO47

GPIO4
GPIO7
GPIO8

GPIOA
GPIOB
GPIOC
GPIOD
GPIO11
GPIO16
GPIO17
GPIO18

GPIO19
GPIO1A

CIR_RX/GPIO40
GPIO41
GPIO42
GPIO52
GPIO53
GPIO54
GPIO55
GPIO56
GPIO57
GPIO58
GPIO59

XCLKO
XCLKI

GND1 GND2 GND3 GND4 GND5 AGND

TEMP_MBAT — TEMP_MBAT 32
AD_AIR — AD_AIR 32, SYS_I 32
CC-SET — CC-SET 32, CELL_SLT 32
VFAN — VFAN 29, D/C# 32
PWM_VADJ — PWM_VADJ 17
FAN2ON — T14, FAN1SIG 29
MBCLK — MBCLK 32
MBDATA — MBDATA 32
MBCLK2 — MBCLK2 4,15
MBDATA2 — MBDATA2 4,15
SUSB# — SUSB# 21
HWPG — HWPG 33,34,36,37
SUSC# — SUSC# 21, LAN_REST# 26
SWI#1 — T28
NBSWON1# — NBSWON1# 29
BL/C# — T15
EC-GPIO16 — T13
EC-GPIO17 — T12
KBSMI#1
VRON — VRON 35
NUMLED# — NUMLED# 29
LAN_REST# — T27
DNBSWON#1
CAPSLED# — CAPSLED# 29
PWR_LED# — PWR_LED# 29,31
ECPWROK — ECPWROK 4,6,21
RSMRST# — RSMRST# 21
VOLMUTE# — VOLMUTE# 25
SPI_CLK
LID_EC# — LID_EC# 17,29

CRY2 — C549 18P/50V_4
CRY1 — Y6 32.768KHZ — C548 18P/50V_4

SERIRQ 21
LFRAME# 19,31
LAD0 19,31
LAD1 19,31
LAD2 19,31
LAD3 19,31
PCLK_KBC 2
PLTRST# 20,26,28,31 — R550 0_4 — PLTRST1#
CLKRUN# 21
SCI1#
GATEA20 19
RCIN# 19
3920_RST#

MX0 29
MX1 29
MX2 29
MX3 29
MX4 29
MX5 29
MX6 29
MX7 29

MY0 29
MY1 29
MY2 29
MY3 29
MY4 29
MY5 29
MY6 29
MY7 29
MY8 29
MY9 29
MY10 29
MY11 29
MY12 29
MY13 29
MY14 29
MY15 29

EC_GPIO4C
ACIN 32
TPCLK
TPDATA

BIOS_RD#
BIOS_WR#
BIOS_CS#
SERR# 20
CLIENT_ID

RF_LINK# 29,31
RF_SW# 29
SIM_DETECT — T16

R323 remove for KB3926 C version
R334 *4.7K_4 — BIOS_A0

SUSON 37,38
MAINON 24,32,34,36,37,38
LAN_POWER 38
S5_ON 38
RF_OFF# 31
ACOK# 32
BT_OFF# 29
MBATLED0# 29,31
BATLOW# 29
TP_LED0#
TP_LED1#

For KB3926 B, C version
C797 .1U/10V_4 — C794 4.7U/6.3V_6

DV-2 modify footprint

+3VPCU_EC — U35 *GMT_G910T21U (Vout, GND, Vin) — +5VPCU
C784 *.1U/10V_4
BK1608HS470 L50 — +3VPCU

+3V — R328 *10K/F_4 — HWPG

+3VPCU — R545 10K/F_4 — NBSWON1#
R547 4.7K_4 — MBCLK
R549 4.7K_4 — MBDATA
R327 *8.2K_4 — PM_BATLOW#
R556 10K/F_4 — EC_GPIO4C

+3VPCU — R304 47K_4 — 3920_RST# 4,32
C500 .1U/10V_4

29 BLUELED — Q18 DTC144EUA — RF_LINK#

+3VPCU
C787 .1U/10V_4

Socket: DG008000031

U36 (MX25L8005)
BIOS_CS# — CE#
SPI_CLK — SCK — R557 33_4
BIOS_WR# — SI — R561 0_4
BIOS_RD# — SO — R551 0_4
HOLD# — SPI_7P
+3VPCU — R555 10K/F_4 SPI_3P — WP#
VSS
R552 10K/F_4

1M byte
SPI
BIOS

SCI1# — D25 RB501V-40 — SCI# 21
PM_BATLOW1# — D27 RB501V-40 — PM_BATLOW# 21
DNBSWON#1 — D29 RB501V-40 — DNBSWON# 21
KBSMI#1 — D24 RB501V-40 — KBSMI# 21
SWI#1 — D26 RB501V-40 — SWI# 21

+3VPCU — R572 10K/F_4 — CLIENT_ID
R573 *10K/F_4

CLIENT_ID HI ==>LG
LOW==>CB

DV-2 modify

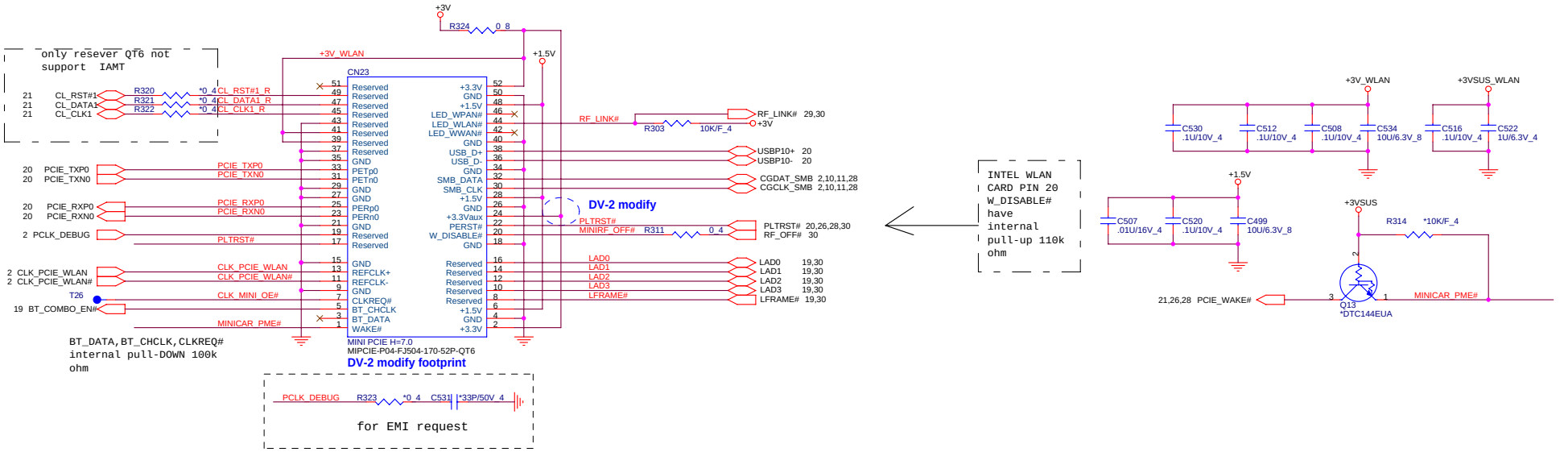
NB5

PROJECT : QL6
Quanta Computer Inc.

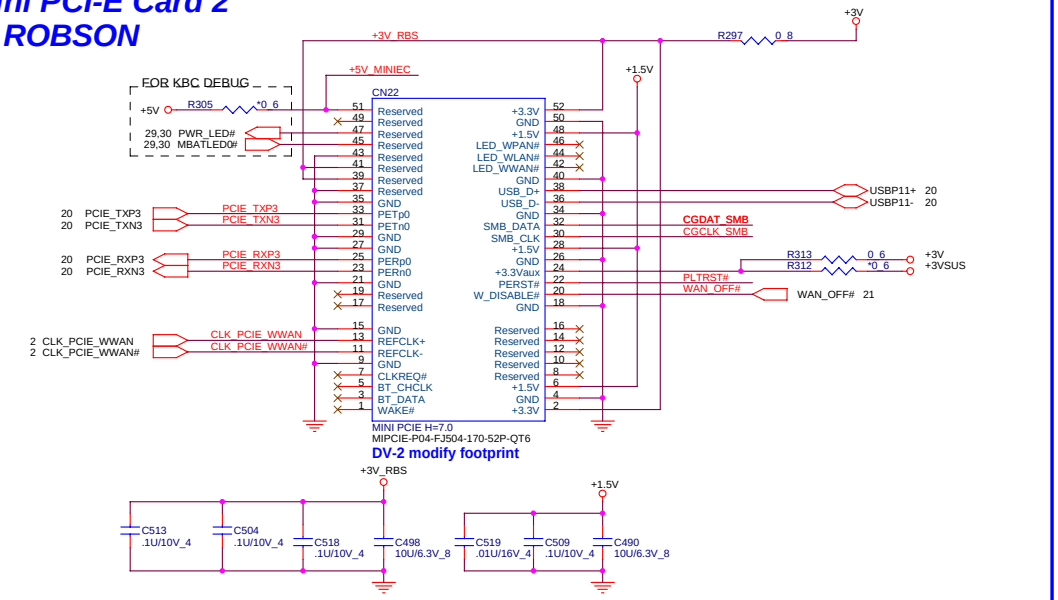
Size	Document Number	Rev
Custom	KB3926/ROM/TP	2A

Date: Tuesday, February 26, 2008 — Sheet 30 of 40

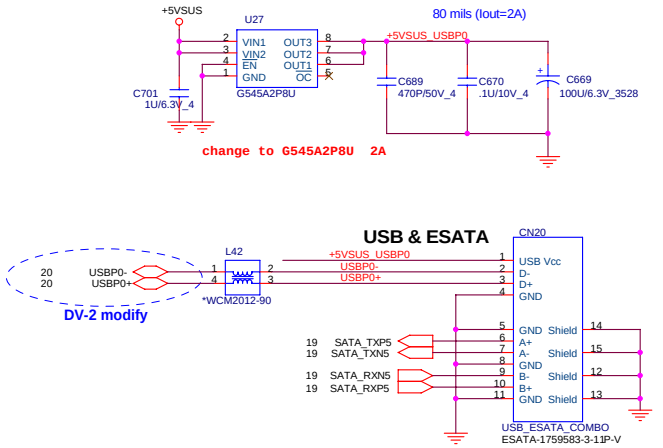
Mini PCI-E Card 1
WLAN



Mini PCI-E Card 2
ROBSON



E-SATA/USB COMBO



PROJECT : QL6
Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	MINI PCIE CONN X2/E-SATA	2A

Date: Tuesday, February 26, 2008 Sheet 31 of 40

TOP DC JACK
60W/90W

DV-2 modify

Close to N-CH MOSFET

close with PQ2

DV-2 modify

close to PQ30.

B: for ME issue.

Setting the Vin min to 12V
For ACSET 1.26V

Setting the Vin min to 17V
For EN = 1.06V

CELL_SLT = 1 -- 3 S (Cells = GND 3S)
CELL_SLT = 0 -- 4 S (Cells = VDD 4S)

Charging Curret setting =
I chg = 165mV / Rsense * (Vchlim / 3.3V)

Input Current monitor
V icm = 19.9 * (Vcsip - Vcsin)

V ACLIM = VREF *
(Rl // 152K) / (Rhi // 152K + Rlow// 152K)
Input curretn = 2.9A (71.5K , 10K)
(0.05/Vref * Vaclim + 0.05) / Rsense

VADJ =
VERF >> 4.2V +5%
Float >> 4.2V
GND >> 4.2 -5%

ADP TYPE	PR66 VALUE	P/N
60W	73.2K/F	CS37322FB14
90W	2.61K/F	CS22612FB15

PROJECT : QL6
Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	Charger (ISL6251)	2A

Date: Tuesday, February 26, 2008 | Sheet 32 of 40

DC/DC +3V_ALW/+5V_ALW/+5V_ALW2 /+12V_ALW

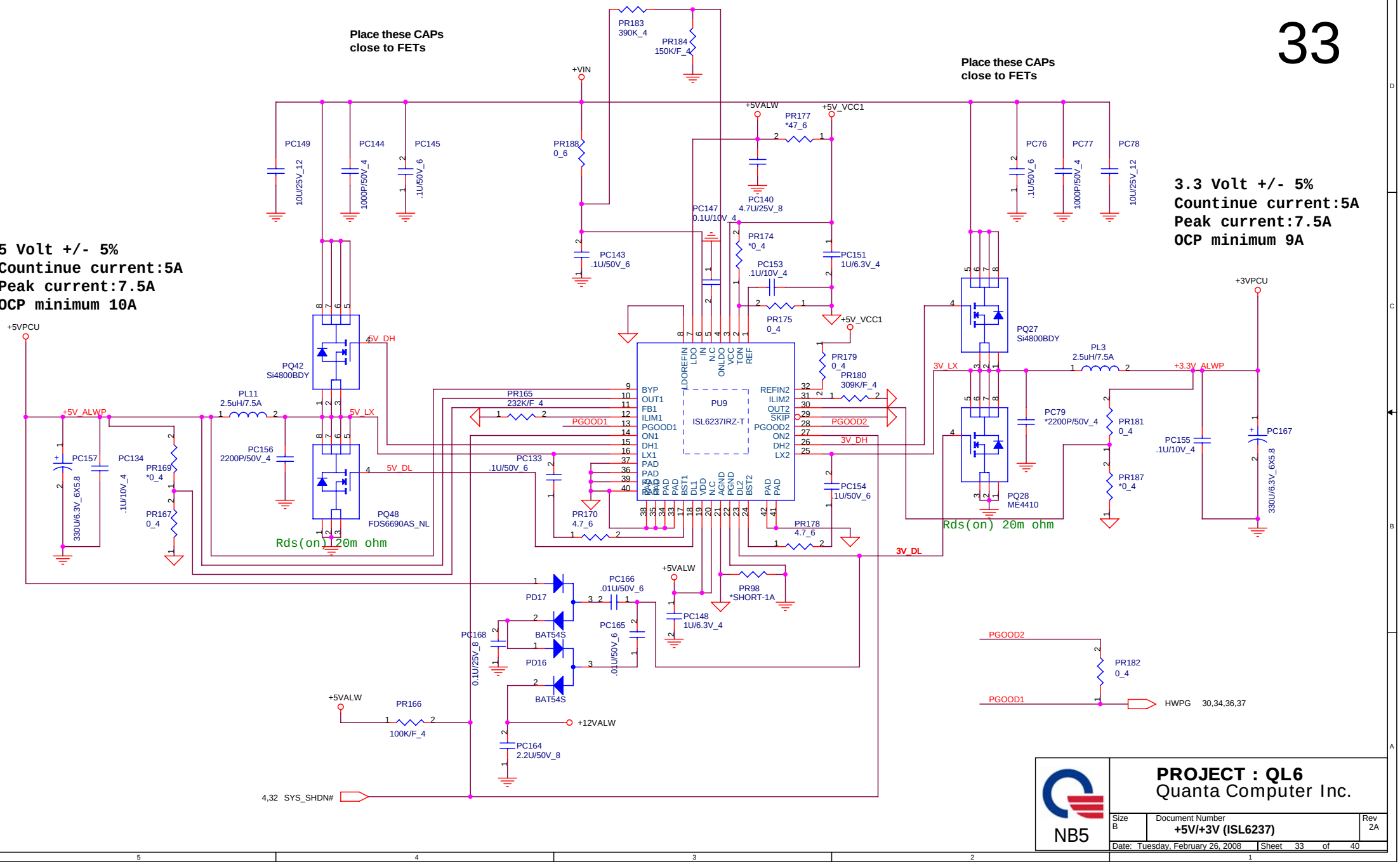
33

Place these CAPs close to FETs

Place these CAPs close to FETs

5 Volt +/- 5%
Countinue current:5A
Peak current:7.5A
OCP minimum 10A

3.3 Volt +/- 5%
Countinue current:5A
Peak current:7.5A
OCP minimum 9A

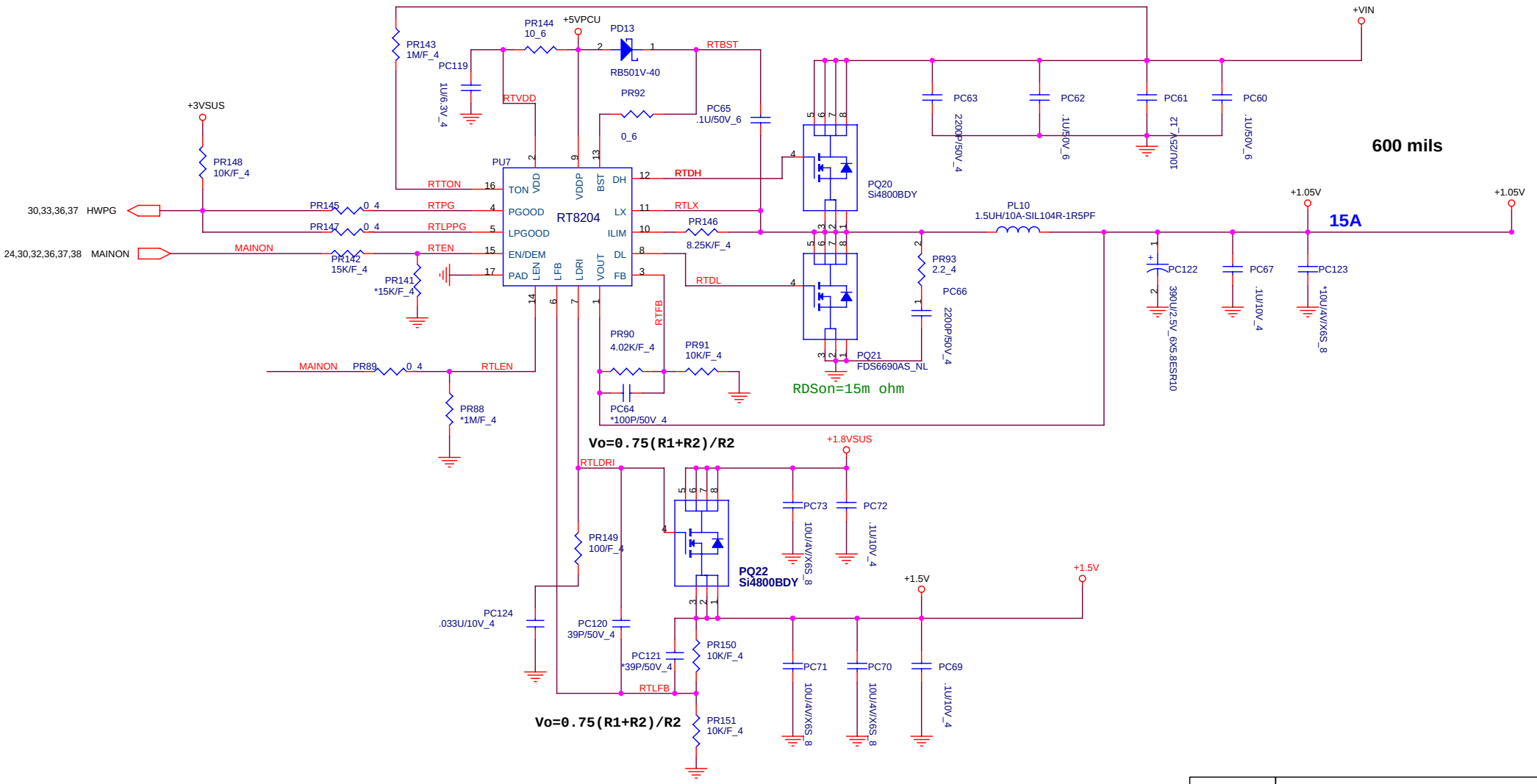


NB5	**PROJECT : QL6** Quanta Computer Inc.	
Size B	Document Number **+5V/+3V (ISL6237)**	Rev 2A
Date: Tuesday, February 26, 2008	Sheet 33 of 40	

VCCP1.05V & +1.5V

+1.05Volt +/- 5%
Countinue current:7.5A
Peak current:10A
OCP minimum 15A

34

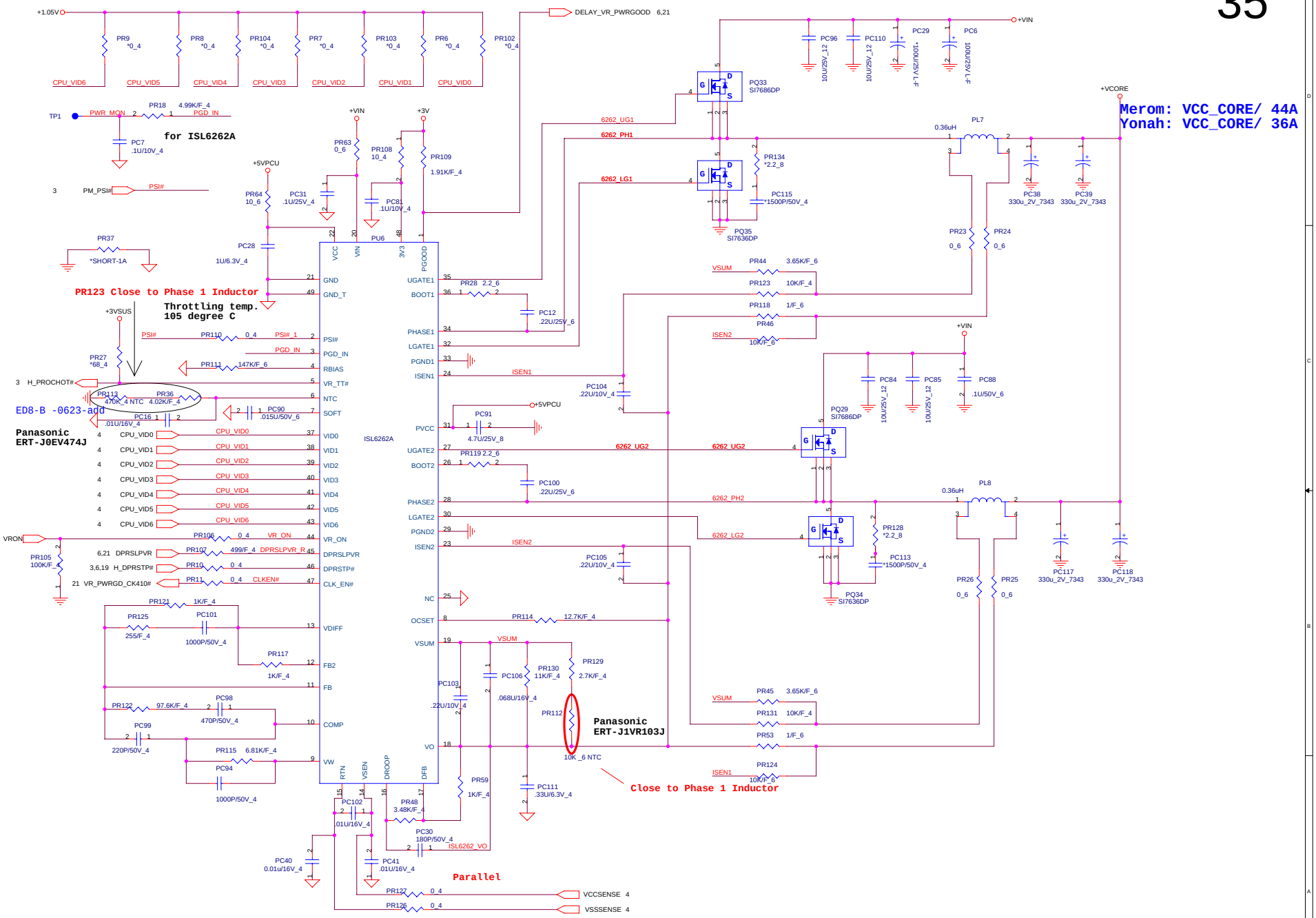


NB5

PROJECT : QL6
Quanta Computer Inc.

Size	Document Number	Rev
B	+1.05V/+1.5V (RT8204)	2A

Date: Tuesday, February 26, 2008 Sheet 34 of 40

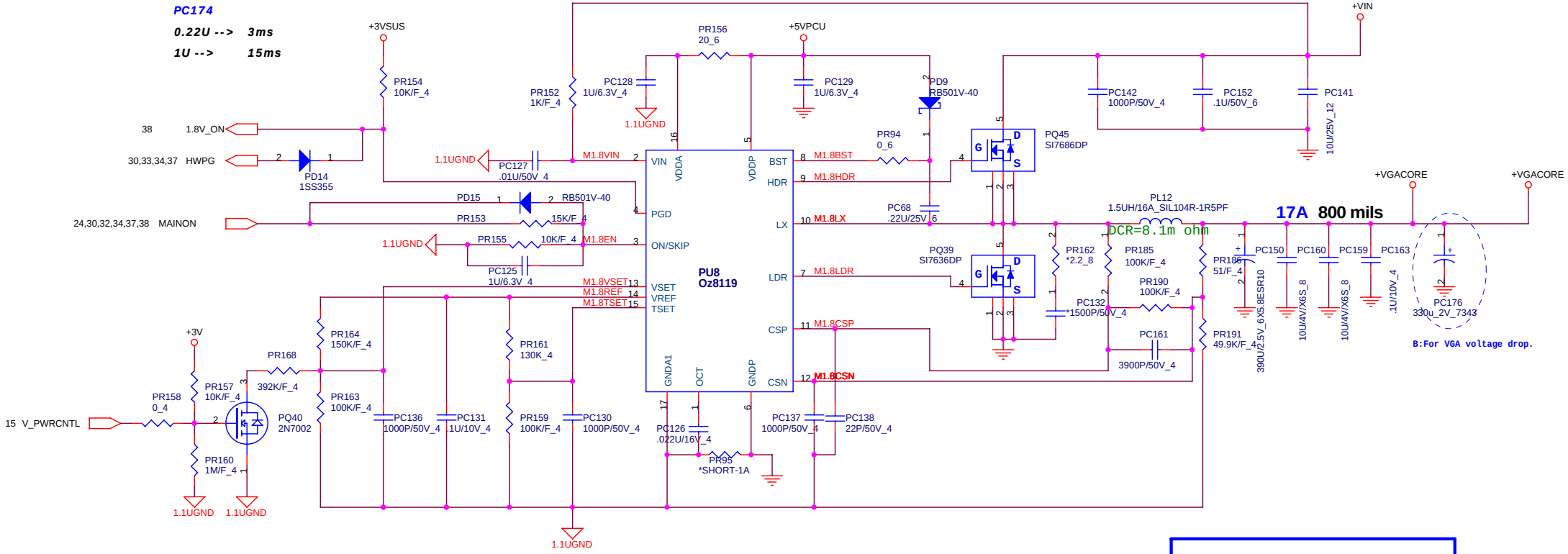


PROJECT : QL6	
Quanta Computer Inc.	
NB5	Size: Custom; Document Number: CPU Core (ISL6266A); Rev: 2A
Date: Tuesday, February 26, 2008	Sheet 35 of 40

VGA Core & VCC1.1

+1.1Volt +/- 5%
Countinue current:15A
Peak current:17A
OCP minimum 22A

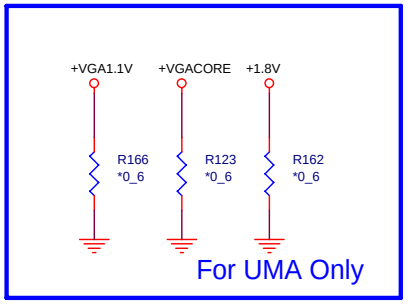
36



V_PWRCNTL	NVDIA NB9M	Resistor Value
HI	0.90V	PR67_392K_CS43922FB17
LO	1.09V	PR55_150K_CS41502FB18

V_PWRCNTL	nVDIA NB9P-GE2	Resistor Value
HI	1.15V	PR67_1.43M_CS51432FB10
LO	1.2V	PR55_130K_CS41302FB00

V_PWRCNTL	NVDIA NB9M-GE	Resistor Value
HI	0.95V	PR67_402K_CS44022FB25
LO	1.09V	PR55_150K_CS41502FB18

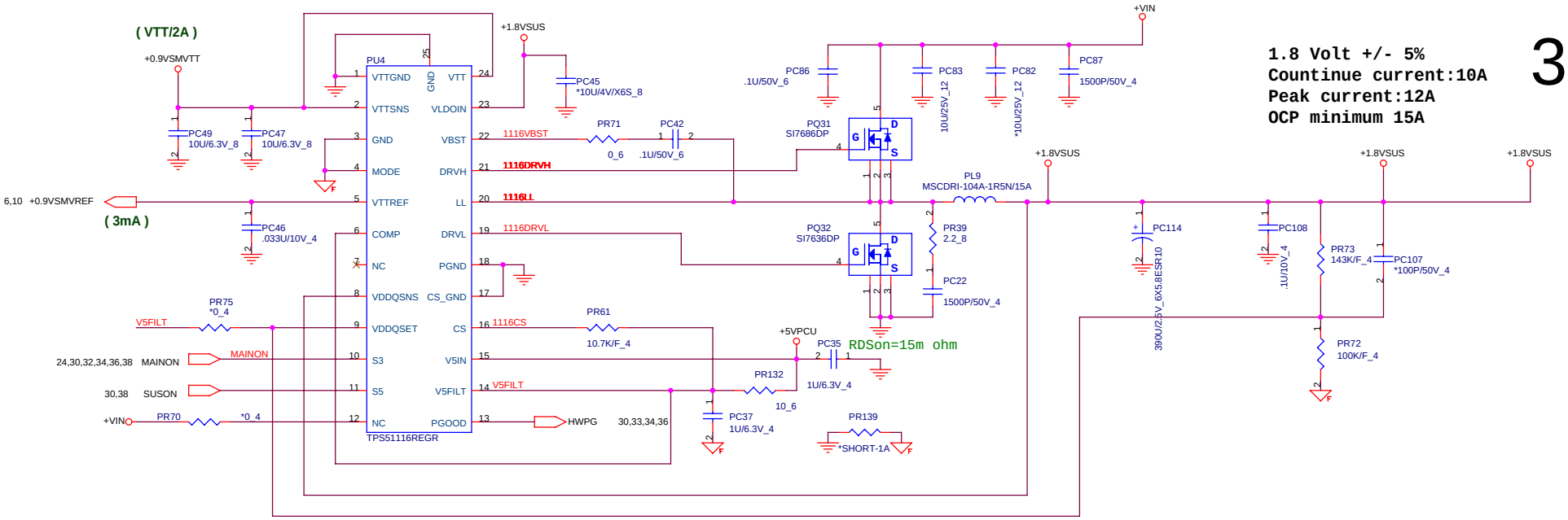


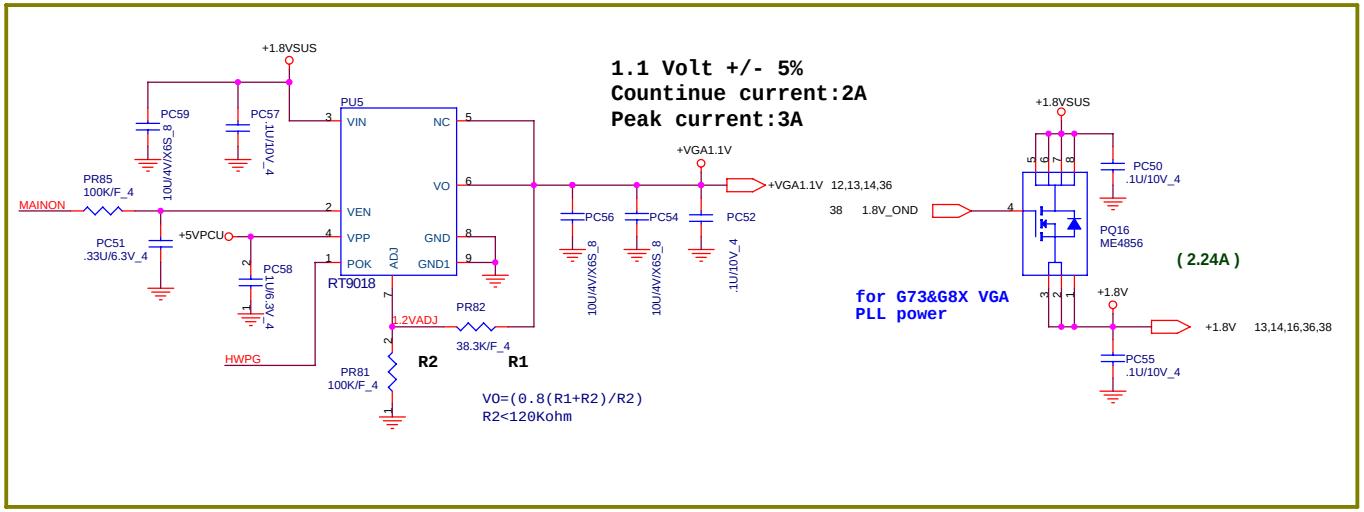
PROJECT : QL6
Quanta Computer Inc.

Size	Document Number	Rev
B	VGA CORE OZ8118	2A

NB5

Date: Tuesday, February 26, 2008 Sheet 36 of 40



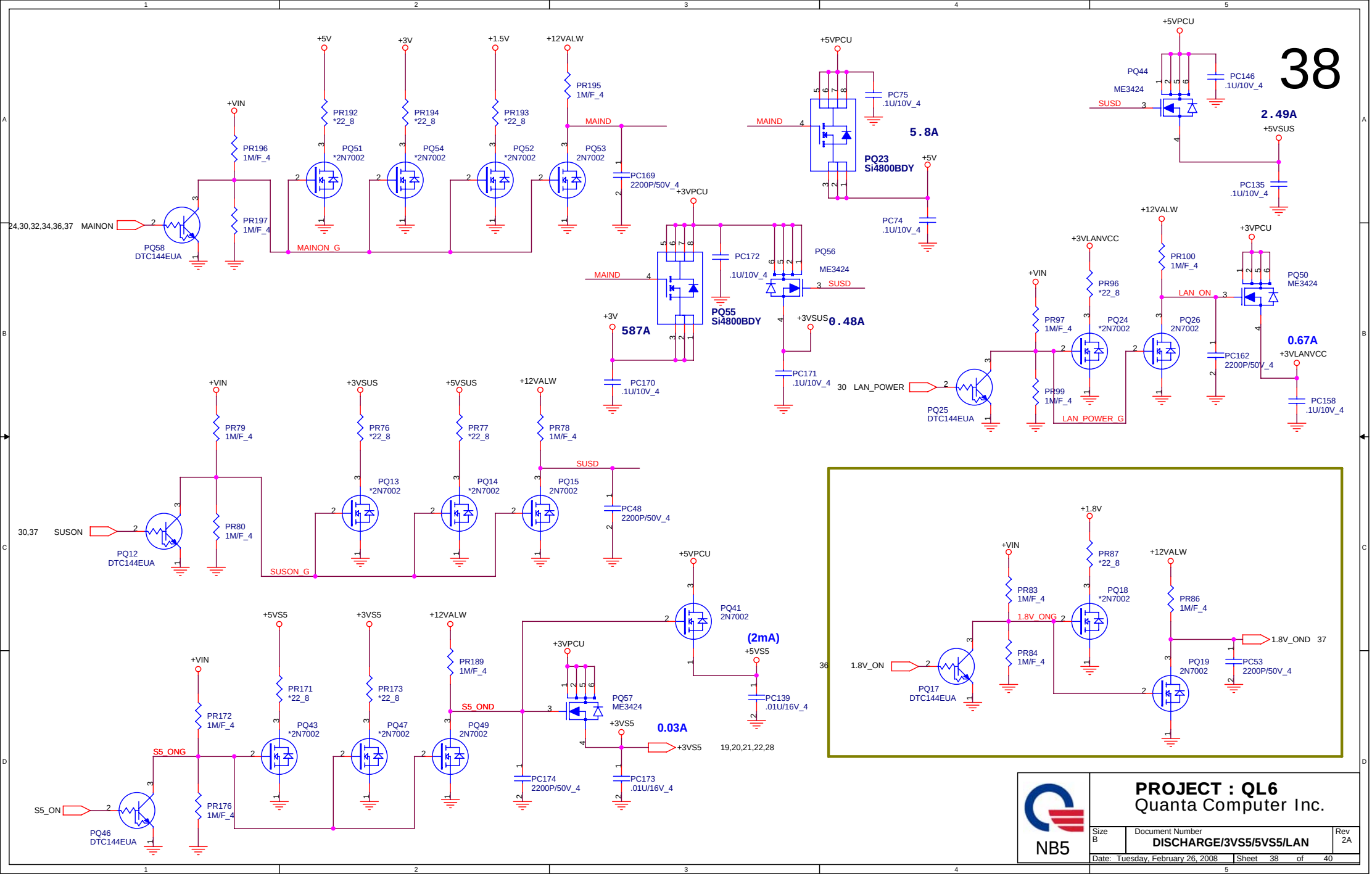


PROJECT : QL6
Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	1.8V/DDR_VTER/+1.8v/+1.1V	2A

Date: Tuesday, February 26, 2008 Sheet 37 of 40



PROJECT : QL6
Quanta Computer Inc.

NB5

Size	Document Number	Rev
B	DISCHARGE/3VS5/5VS5/LAN	2A

Date: Tuesday, February 26, 2008 Sheet 38 of 40

		AC MODE				DC MODE			
	Voltage level	S0	S3	S4	S5	S0	S3	S4	S5
+3VPCU	3.3V +/- 5%	V	V	V	V	V	V	V	V
+5VPCU	5V +/- 5%	V	V	V	V	V	V	V	V
+3VRTC	3.3V +/- 5%	V	V	V	V	V	V	V	V
+3VS5	3.3V +/- 5%	V	V	V	V	V	V		
+5VS5	5V +/- 5%	V	V	V	V	V	V		
+3VSUS	3.3V +/- 5%	V	V			V	V		
+5VSUS	5V +/- 5%	V	V			V	V		
+1.8VSUS	1.8V +/- 5%	V	V			V	V		
+0.9VSMVTT	0.9V +/- 5%	V	V			V	V		
+1.5V	1.5V +/- 5%	V				V			
+1.05V	1.05V +/- 5%	V				V			
+VCORE	0.9~1.15V	V				V			
+VGA_CORE	0.9~1.2V	V				V			
+VGA1.1V	1.1V +/- 5%	V				V			
+1.8V	1.8V +/- 5%	V				V			
+3VLANVCC	3.3V +/- 5%	V				V			