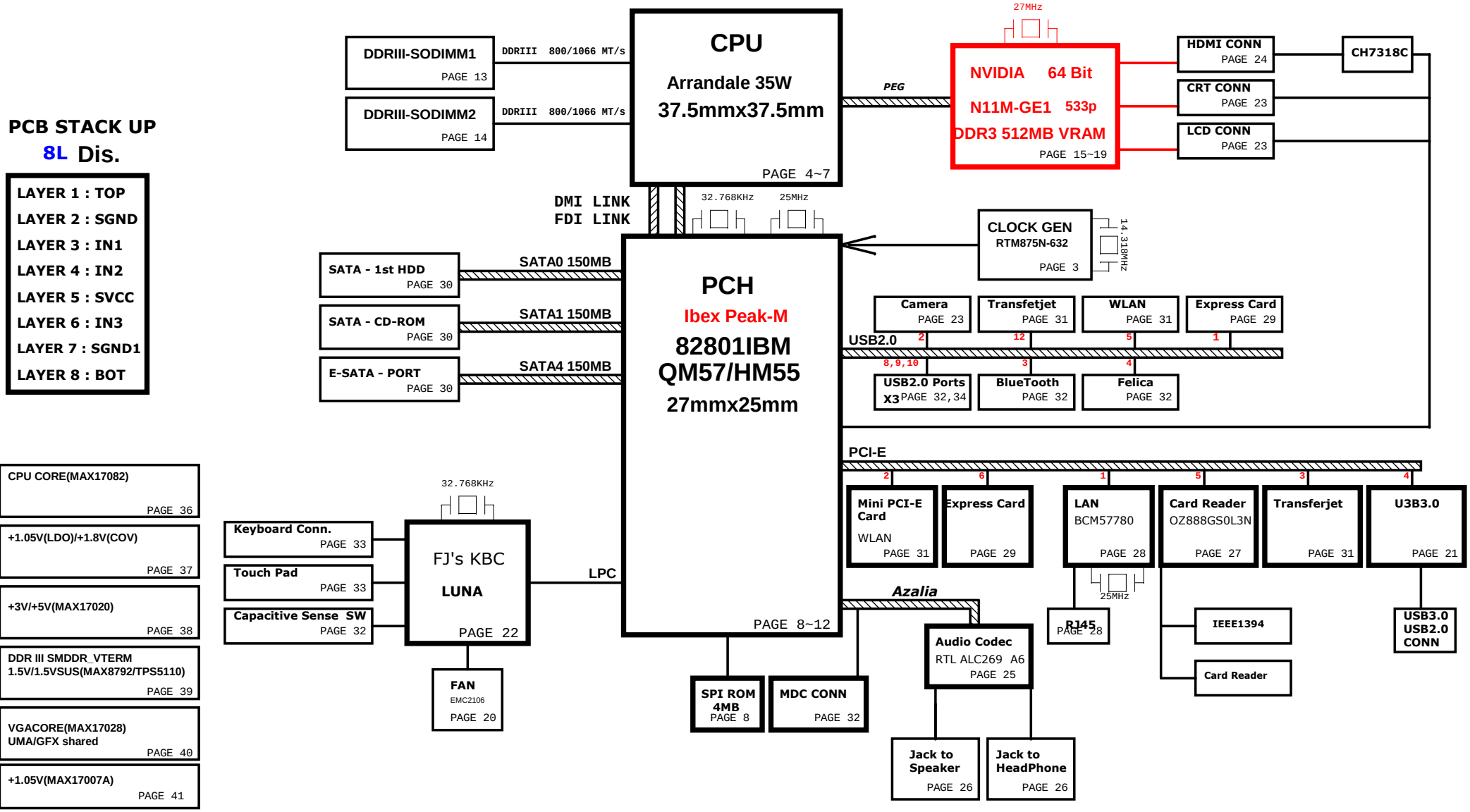
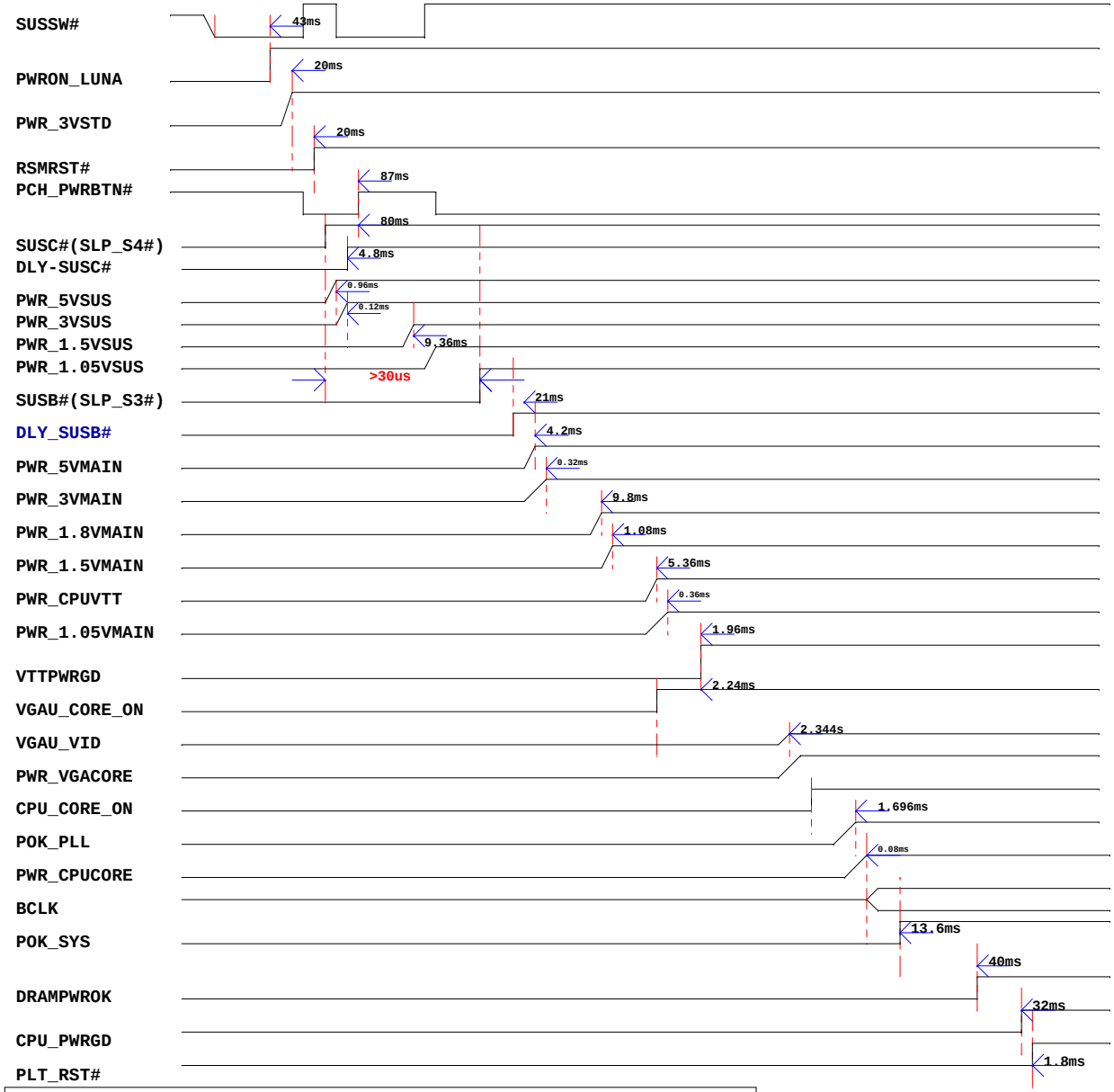
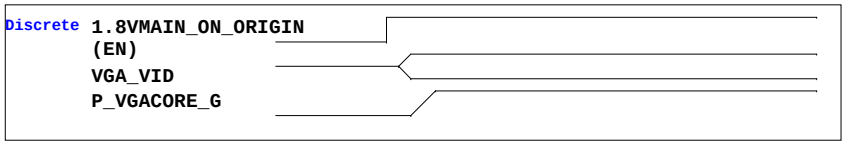
FJ5 BLOCK DIAGRAM

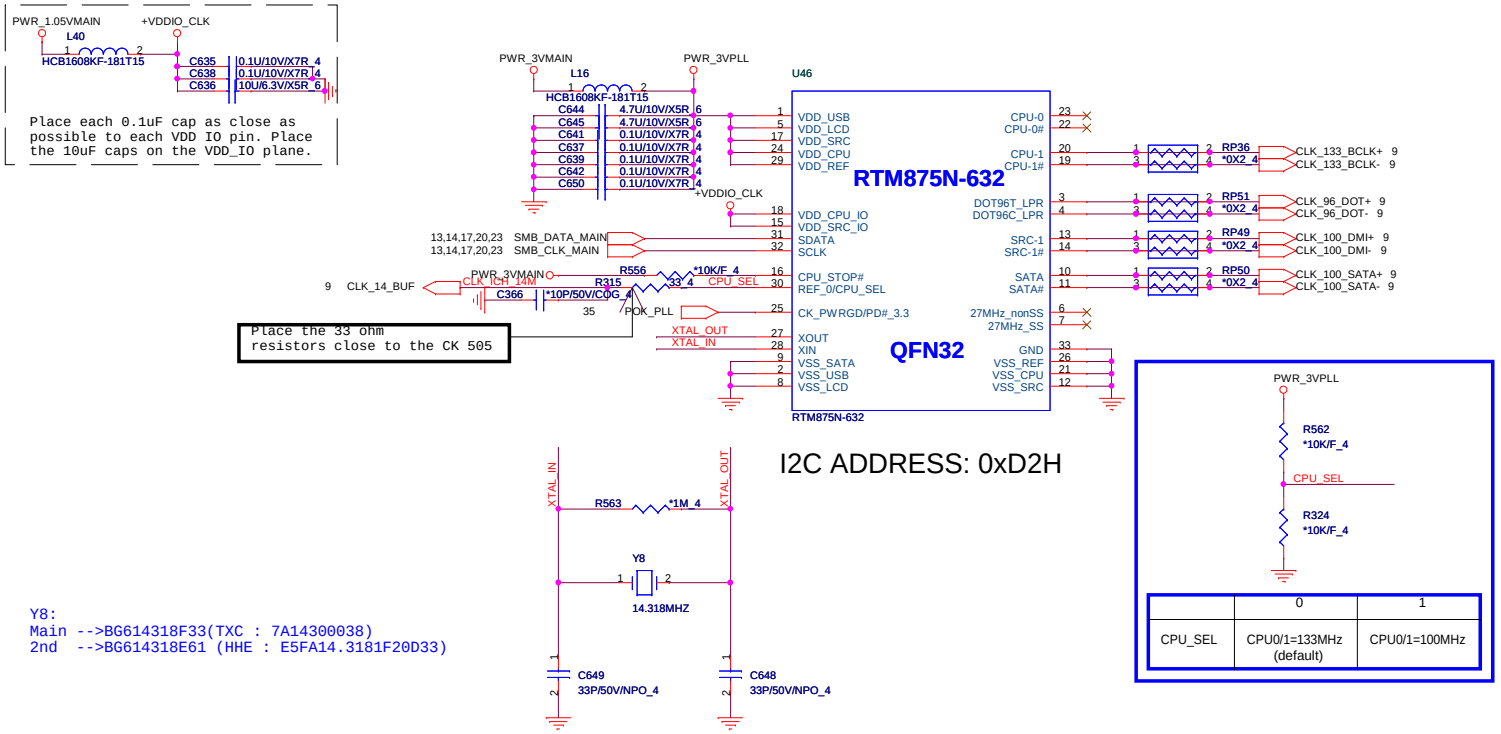






QUANTA COMPUTER

Title: Power Sequence			
Size: Custom	Document Number: Samba(V) MAIN BOARD		Rev: A
Date: Friday, December 11, 2009	Sheet 2 of 44		



I2C ADDRESS: 0xD2H

	0	1
CPU_SEL	CPU0/1=133MHz (default)	CPU0/1=100MHz

Y8:
Main -->BG614318F33(TXC : 7A14300038)
2nd -->BG614318E61 (HHE : E5FA14.3181F20D33)

QUANTA COMPUTER

Title: Clock Gen (RTM875N-632)

Size: Custom | Document Number: Samba(V) MAIN BOARD | Rev: A

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U40A

DMI_TXN0 A24 DMI_RX#[0]
DMI_TXN1 C23 DMI_RX#[1]
DMI_TXN2 B22 DMI_RX#[2]
DMI_TXN3 A21 DMI_RX#[3]

DMI_TXP0 B24 DMI_RX[0]
DMI_TXP1 D23 DMI_RX[1]
DMI_TXP2 B23 DMI_RX[2]
DMI_TXP3 A22 DMI_RX[3]

DMI_RXN0 D24 DMI_TX#[0]
DMI_RXN1 G24 DMI_TX#[1]
DMI_RXN2 F23 DMI_TX#[2]
DMI_RXN3 H23 DMI_TX#[3]

DMI_RXP0 D25 DMI_TX[0]
DMI_RXP1 F24 DMI_TX[1]
DMI_RXP2 E23 DMI_TX[2]
DMI_RXP3 G23 DMI_TX[3]

DMI

10 FDI_TXN[7:0]
FDI_TXN0 E22 FDI_TX#[0]
FDI_TXN1 D21 FDI_TX#[1]
FDI_TXN2 D19 FDI_TX#[2]
FDI_TXN3 D18 FDI_TX#[3]
FDI_TXN4 G21 FDI_TX#[4]
FDI_TXN5 E19 FDI_TX#[5]
FDI_TXN6 F21 FDI_TX#[6]
FDI_TXN7 G18 FDI_TX#[7]

2.7GT/s data rate

10 FDI_TXP[7:0]
FDI_TXP0 D22 FDI_TX[0]
FDI_TXP1 C21 FDI_TX[1]
FDI_TXP2 D20 FDI_TX[2]
FDI_TXP3 C18 FDI_TX[3]
FDI_TXP4 G22 FDI_TX[4]
FDI_TXP5 E20 FDI_TX[5]
FDI_TXP6 F20 FDI_TX[6]
FDI_TXP7 G19 FDI_TX[7]

Intel(R) FDI

10 FDI_FSYNC0 FDI_FSYNC0 F17 FDI_FSYNC[0]
10 FDI_FSYNC1 FDI_FSYNC1 E17 FDI_FSYNC[1]
10 FDI_INT FDI_INT C17 FDI_INT
10 FDI_LSYNC0 FDI_LSYNC0 F18 FDI_LSYNC[0]
10 FDI_LSYNC1 FDI_LSYNC1 D17 FDI_LSYNC[1]

FDI_FSYNC can gang all these 4 signals together and tie them with only one 1K resistor to GND (Check list 1.0).

RN4 1KX4-0402
1 2 FDI_LSYNC1
3 4 FDI_FSYNC1
5 6 FDI_FSYNC0
7 8 FDI_LSYNC0
R169 1K/F_4 FDI_INT

UMA: Reserve
GFX: Mount

IC,AUB_CFD_rPGA,R1P0

PCI EXPRESS -- GRAPHICS

PEG_ICOMPI
PEG_ICOMPO
PEG_RCOMPO
PEG_RBIAS B26 PEG_COMP R157 49.9/F_4
A26
B27
A25 PEG_RBIAS R158 750/F_4

PEG_RX#[0..15] 15
PEG_RX#0 K35 PEG_RX#[0]
PEG_RX#1 J34 PEG_RX#[1]
PEG_RX#2 J33 PEG_RX#[2]
PEG_RX#3 G35 PEG_RX#[3]
PEG_RX#4 G32 PEG_RX#[4]
PEG_RX#5 F34 PEG_RX#[5]
PEG_RX#6 F31 PEG_RX#[6]
PEG_RX#7 D35 PEG_RX#[7]
PEG_RX#8 E33 PEG_RX#[8]
PEG_RX#9 C33 PEG_RX#[9]
PEG_RX#10 D32 PEG_RX#[10]
PEG_RX#11 B32 PEG_RX#[11]
PEG_RX#12 C31 PEG_RX#[12]
PEG_RX#13 B28 PEG_RX#[13]
PEG_RX#14 B30 PEG_RX#[14]
PEG_RX#15 A31 PEG_RX#[15]

PEG_RX[0..15] 15
PEG_RX0 J35 PEG_RX[0]
PEG_RX1 H34 PEG_RX[1]
PEG_RX2 H33 PEG_RX[2]
PEG_RX3 F35 PEG_RX[3]
PEG_RX4 G33 PEG_RX[4]
PEG_RX5 E34 PEG_RX[5]
PEG_RX6 F32 PEG_RX[6]
PEG_RX7 D34 PEG_RX[7]
PEG_RX8 F33 PEG_RX[8]
PEG_RX9 B33 PEG_RX[9]
PEG_RX10 D31 PEG_RX[10]
PEG_RX11 A32 PEG_RX[11]
PEG_RX12 C30 PEG_RX[12]
PEG_RX13 A28 PEG_RX[13]
PEG_RX14 B29 PEG_RX[14]
PEG_RX15 A30 PEG_RX[15]

PEG_TX#[0..15] 15
L33 C_PEG_TX#0 C526 0.1U/10V_4 PEG_TX#0
M35 C_PEG_TX#1 C545 0.1U/10V_4 PEG_TX#1
M33 C_PEG_TX#2 C524 0.1U/10V_4 PEG_TX#2
M30 C_PEG_TX#3 C522 0.1U/10V_4 PEG_TX#3
L31 C_PEG_TX#4 C543 0.1U/10V_4 PEG_TX#4
K32 C_PEG_TX#5 C541 0.1U/10V_4 PEG_TX#5
M29 C_PEG_TX#6 C520 0.1U/10V_4 PEG_TX#6
J31 C_PEG_TX#7 C539 0.1U/10V_4 PEG_TX#7
K29 C_PEG_TX#8 C518 0.1U/10V_4 PEG_TX#8
H30 C_PEG_TX#9 C537 0.1U/10V_4 PEG_TX#9
H29 C_PEG_TX#10 C516 0.1U/10V_4 PEG_TX#10
F29 C_PEG_TX#11 C535 0.1U/10V_4 PEG_TX#11
E28 C_PEG_TX#12 C514 0.1U/10V_4 PEG_TX#12
D29 C_PEG_TX#13 C533 0.1U/10V_4 PEG_TX#13
D27 C_PEG_TX#14 C512 0.1U/10V_4 PEG_TX#14
C26 C_PEG_TX#15 C510 0.1U/10V_4 PEG_TX#15

PEG_TX[0..15] 15
L34 C_PEG_TX0 C525 0.1U/10V_4 PEG_TX0
M34 C_PEG_TX1 C544 0.1U/10V_4 PEG_TX1
M32 C_PEG_TX2 C523 0.1U/10V_4 PEG_TX2
L30 C_PEG_TX3 C521 0.1U/10V_4 PEG_TX3
M31 C_PEG_TX4 C542 0.1U/10V_4 PEG_TX4
K31 C_PEG_TX5 C540 0.1U/10V_4 PEG_TX5
M28 C_PEG_TX6 C519 0.1U/10V_4 PEG_TX6
H31 C_PEG_TX7 C538 0.1U/10V_4 PEG_TX7
K28 C_PEG_TX8 C517 0.1U/10V_4 PEG_TX8
G30 C_PEG_TX9 C536 0.1U/10V_4 PEG_TX9
G29 C_PEG_TX10 C515 0.1U/10V_4 PEG_TX10
F28 C_PEG_TX11 C534 0.1U/10V_4 PEG_TX11
E27 C_PEG_TX12 C513 0.1U/10V_4 PEG_TX12
D28 C_PEG_TX13 C532 0.1U/10V_4 PEG_TX13
C27 C_PEG_TX14 C511 0.1U/10V_4 PEG_TX14
C25 C_PEG_TX15 C509 0.1U/10V_4 PEG_TX15

U40B

PWR_3VMAIN
R487 20/F_4 H_COMP3 AT23 COMP3
R486 20/F_4 H_COMP2 AT24 COMP2
R159 49.9/F_4 H_COMP1 G16 COMP1
R484 49.9/F_4 H_COMP0 AT26 COMP0
R146 *10K/F_4 AH24 SKTOCC#

MISC

11 PECI AT15 PECI
36 PROCHOT# AN26 PROCHOT#
11 THRMTRIP# AK15 THERMTRIP#
H_CATERR# AK14 CATERR#

THERMAL

10 PM_SYNC AL15 PM_SYNC
11 CPU_PWRGD AN27 VCCPWRGOOD_1
10 PM_DRAM_PWRGD AK13 VCCPWRGOOD_0
XDP_RESET_OBS# AP26 RESET_OBS#
T88 AN14 SM_DRAMPWROK
T38 AM26 TAPPWRGOOD
34 VTTPWRGD AM15 VTTPWRGOOD
10,11,15,21,22,27,28,29,31 PLT_RST# R180 1.5K/F_4 AL14 RSTIN#
R204 750/F_4

PWR MANAGEMENT

T37 XDP_OBS0 AJ22 BPM#[0]
T36 XDP_OBS1 AK22 BPM#[1]
T32 XDP_OBS2 AK24 BPM#[2]
T28 XDP_OBS3 AJ24 BPM#[3]
T35 XDP_OBS4 AJ25 BPM#[4]
T29 XDP_OBS5 AH22 BPM#[5]
T33 XDP_OBS6 AK23 BPM#[6]
T30 XDP_OBS7 AH23 BPM#[7]

JTAG & BPM

IC,AUB_CFD_rPGA,R1P0

BCLK A16 CLK_133_CPU+ 11
BCLK# B16 CLK_133_CPU- 11
BCLK_ITP AR30 T74
BCLK_ITP# AT30 T75
For ITP CLK

CLOCKS

PEG_CLK E16 CLK_100_CPU+ 9
PEG_CLK# D16 CLK_100_CPU- 9
DPLL_REF_SSCLK A18 T40
DPLL_REF_SSCLK# A17 T42

A+ F6 CPU_DRAMRST# R161 0_4 R166 0_4

DDR3 MISC

SM_DRAMRST#
SM_RCOMP[0] AL1 SM_RCOMP_0 R205 100/F_4
SM_RCOMP[1] AM1 SM_RCOMP_1 R206 24.9/F_4
SM_RCOMP[2] AN1 SM_RCOMP_2 R207 130/F_4
R177 10K
PM_EXT_TS#[0] AN15 PM_EXT_TS#0 R178 *0/short_4 PM_EXTTS#0 13
PM_EXT_TS#[1] AP15 PM_EXT_TS#1 R174 *0/short_4 PM_EXTTS#1 14
R176 10K/F_4 PWR_CPUVTT

PRDY# AT28 T79
PREQ# AP27 T82
TCK AN28 T34
TMS AP28 T77
TRST# AT27 XDP_TRST# T81
TDI AT29 XDP_TDI_R T78
TDO AR27 XDP_TDO_R T80
TDI_M AR29 XDP_TDI_M T76
TDO_M AP29 XDP_TDO_M T26
DBR# AN25 R149 51_4 XDP_DBRESET# 11

R178,R174: short pad

PWR_CPUVTT
XDP_TDO_R R482 51_4
H_CATERR# R173 49.9/F_4
PROCHOT# R480 68_4
CPU_PLTRST# R182 *68
XDP_TDI_R R481 *51
XDP_RESET_OBS# R153 *68

JTAG MAPPING
XDP_TDI_M R479 0_4 XDP_TDO_M
XDP_TRST# R483 51_4

PWR_3VMAIN PWR_CPUVTT
R211 *10K_4 R181 *1K_4
CPU_PLTRST#
Q16 Q15 *2N7002E
10,11,15,21,22,27,28,29,31 PLT_RST#
Reserve for ESD
Place near the CPU

PWR_CPUVTT
R377 1K_4 PM_DRAM_PWRGD
Q54
11,34,39 VTTOK_PMU# 2N7002E

PWR_1.5VMAIN PWR_1.5VSUS
R321 *1.1K/F_4 R183 *1.1K/F_4
PM_DRAM_PWRGD
R186 *3K/F_4

Schematic check kist ver1.2
Intel suggest 1.1K/3K ohm

Use a voltage divider with VDDQ (1.5V) rail (ON in S3) and resistor combination of 4.75K (to VDDQ)/12K(to GND) to generate the required voltage.
Note: CRB uses a 3.3V (always ON) rail with 2K and 1K combination.

DDR3_DRAMRST# DDR3_DRAMRST# 13,14
11 DRAMRST_GATE Q51 2N7002
CPU_DRAMRST#
PWR_1.5VSUS R323 1K_4 DDR3_DRAMRST#
C673 100P/50V/X7R

QUANTA COMPUTER

Title: PROCESSOR 1/4(HOST/PEG)
Size: Custom | Document Number: Samba(V) MAIN BOARD | Rev: A
Date: Friday, December 11, 2009 | Sheet 4 of 45

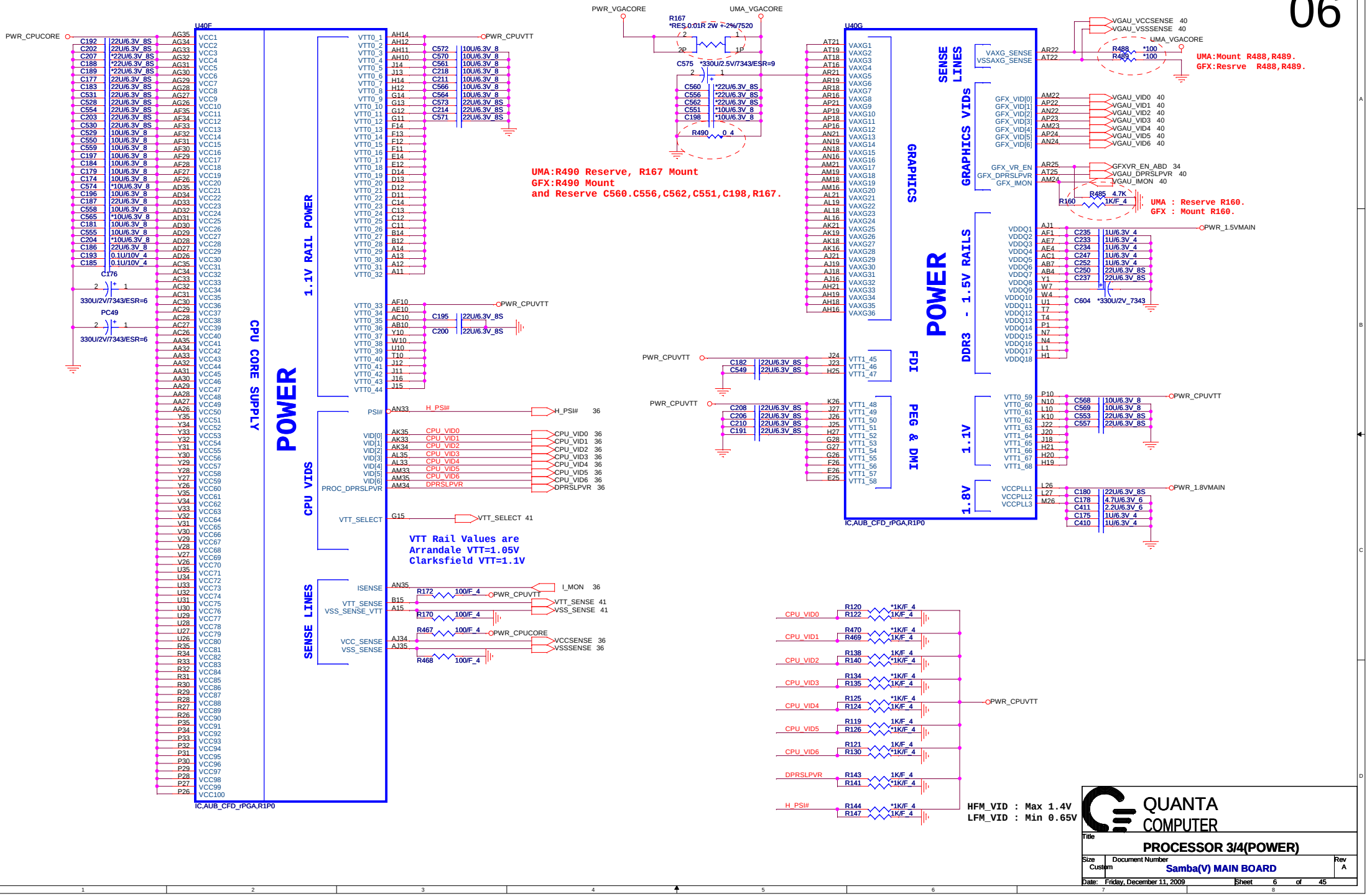
ARRANDALE PROCESSOR (DDR3)

QUANTA COMPUTER

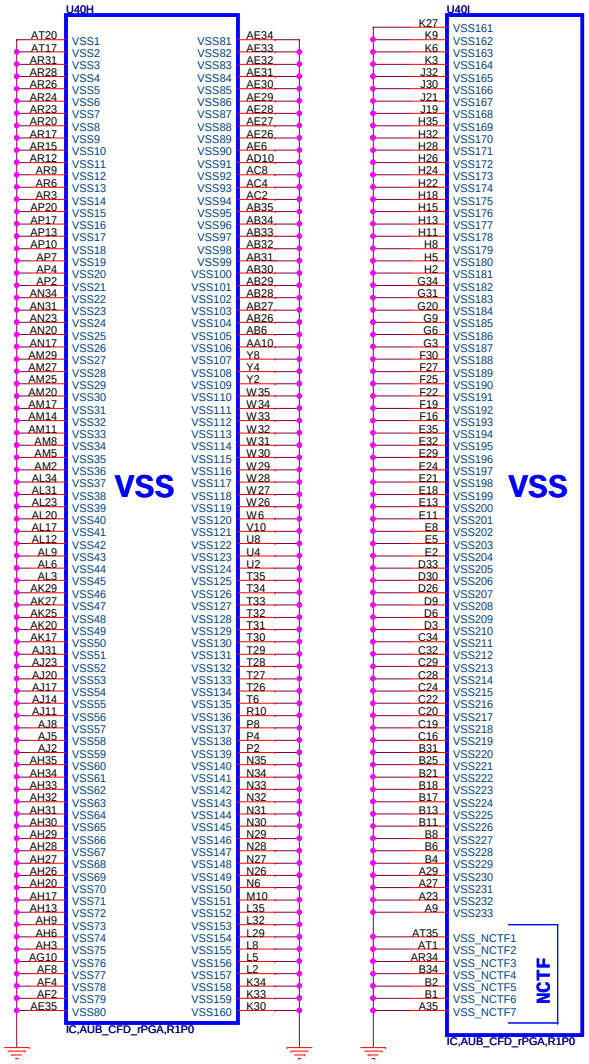
Title: **PROCESSOR 2/4(DDR)**

Size: Custom | Document Number: **Samba(V) MAIN BOARD** | Rev: A

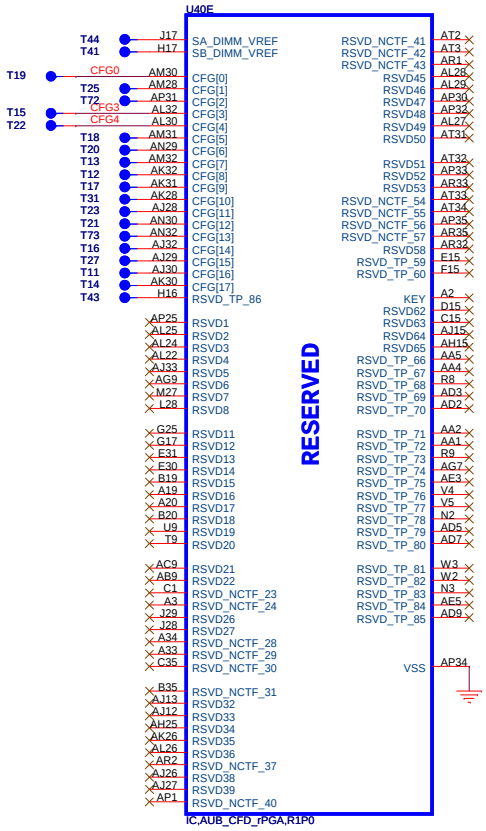
Date: Friday, December 11, 2009 | Sheet 5 of 45


U40F
POWER
CPU CORE SUPPLY
1.1V RAIL POWER
CPU VIDS
SENSE LINES
IC,AUB_CFD_rPGA,R1P0
PWR_CPUCORE
C192 22U/6.3V_8S
C202 22U/6.3V_8S
C207 *22U/6.3V_8S
C188 *22U/6.3V_8S
C189 *22U/6.3V_8S
C177 22U/6.3V_8S
C183 22U/6.3V_8S
C531 22U/6.3V_8S
C528 22U/6.3V_8S
C554 22U/6.3V_8S
C203 22U/6.3V_8S
C530 22U/6.3V_8S
C529 10U/6.3V_8
C550 10U/6.3V_8
C559 10U/6.3V_8
C197 10U/6.3V_8
C184 10U/6.3V_8
C179 10U/6.3V_8
C174 10U/6.3V_8
C574 *10U/6.3V_8
C196 10U/6.3V_8
C187 10U/6.3V_8
C558 10U/6.3V_8
C565 *10U/6.3V_8
C181 10U/6.3V_8
C555 10U/6.3V_8
C204 *10U/6.3V_8
C186 22U/6.3V_8
C193 0.1U/10V_4
C185 0.1U/10V_4
C176
330U/2V/7343/ESR=6
PC49
330U/2V/7343/ESR=6
VTT0_1 VTT0_2 VTT0_3 VTT0_4 VTT0_5 VTT0_6 VTT0_7 VTT0_8 VTT0_9 VTT0_10 VTT0_11 VTT0_12 VTT0_13 VTT0_14 VTT0_15 VTT0_16 VTT0_17 VTT0_18 VTT0_19 VTT0_20 VTT0_21 VTT0_22 VTT0_23 VTT0_24 VTT0_25 VTT0_26 VTT0_27 VTT0_28 VTT0_29 VTT0_30 VTT0_31 VTT0_32
AH14 AH12 AH11 AH10 J14 J13 H14 H12 G14 G13 G12 G11 F14 F13 F12 F11 E14 E12 D14 D13 D12 D11 C14 C13 C12 C11 B14 B12 A14 A13 A12 A11
PWR_CPUVTT
C572 10U/6.3V_8
C570 10U/6.3V_8
C561 10U/6.3V_8
C218 10U/6.3V_8
C211 10U/6.3V_8
C566 10U/6.3V_8
C564 10U/6.3V_8
C573 22U/6.3V_8S
C214 22U/6.3V_8S
C571 22U/6.3V_8S
VTT0_33 VTT0_34 VTT0_35 VTT0_36 VTT0_37 VTT0_38 VTT0_39 VTT0_40 VTT0_41 VTT0_42 VTT0_43 VTT0_44
AF10 AE10 AC10 AB10 Y10 W10 U10 T10 J12 J11 J16 J15
PWR_CPUVTT
C195 22U/6.3V_8S
C200 22U/6.3V_8S
PSI#
AN33 H_PSI#
H_PSI# 36
VID[0] VID[1] VID[2] VID[3] VID[4] VID[5] VID[6] PROC_DPRSLPVR
AK35 CPU_VID0
AK33 CPU_VID1
AK34 CPU_VID2
AL35 CPU_VID3
AL33 CPU_VID4
AM33 CPU_VID5
AM35 CPU_VID6
AM34 DPRSLPVR
CPU_VID0 36
CPU_VID1 36
CPU_VID2 36
CPU_VID3 36
CPU_VID4 36
CPU_VID5 36
CPU_VID6 36
DPRSLPVR 36
VTT_SELECT
G15
VTT_SELECT 41
VTT Rail Values are
Arrandale VTT=1.05V
Clarksfield VTT=1.1V
ISENSE
AN35
R172 100/F_4
PWR_CPUVTT
I_MON 36
VTT_SENSE
VSS_SENSE_VTT
B15
A15
R170 100/F_4
VTT_SENSE 41
VSS_SENSE 41
R467 100/F_4
PWR_CPUCORE
VCC_SENSE
VSS_SENSE
AJ34
AJ35
R468 100/F_4
VCCSENSE 36
VSSSENSE 36
PWR_VGACORE
UMA_VGACORE
R167
*RES 0.01R 2W +-2%/7520
C575 *330U/2.5V/7343/ESR=9
C560 *22U/6.3V_8S
C556 *22U/6.3V_8S
C562 *22U/6.3V_8S
C551 *10U/6.3V_8
C198 *10U/6.3V_8
R490 0_4
UMA:R490 Reserve, R167 Mount
GFX:R490 Mount
and Reserve C560.C556,C562,C551,C198,R167.
U40G
POWER
GRAPHICS
SENSE LINES
GRAPHICS VIDS
DDR3 - 1.5V RAILS
FDI
PEG & DMI
1.1V
1.8V
IC,AUB_CFD_rPGA,R1P0
AT21 AT19 AT18 AT16 AR21 AR19 AR18 AR16 AP21 AP19 AP18 AP16 AN21 AN19 AN18 AN16 AM21 AM19 AM18 AM16 AL21 AL19 AL18 AL16 AK21 AK19 AK18 AK16 AJ21 AJ19 AJ18 AH21 AH19 AH18 AH16
VAXG1 VAXG2 VAXG3 VAXG4 VAXG5 VAXG6 VAXG7 VAXG8 VAXG9 VAXG10 VAXG11 VAXG12 VAXG13 VAXG14 VAXG15 VAXG16 VAXG17 VAXG18 VAXG19 VAXG20 VAXG21 VAXG22 VAXG23 VAXG24 VAXG25 VAXG26 VAXG27 VAXG28 VAXG29 VAXG30 VAXG31 VAXG32 VAXG33 VAXG34 VAXG35 VAXG36
VAXG_SENSE
VSSAXG_SENSE
AR22
AT22
R488 *100
R489 *100
VGAU_VCCSENSE 40
VGAU_VSSSENSE 40
UMA_VGACORE
UMA:Mount R488,R489.
GFX:Resrve R488,R489.
GFX_VID[0] GFX_VID[1] GFX_VID[2] GFX_VID[3] GFX_VID[4] GFX_VID[5] GFX_VID[6]
AM22 AP22 AN22 AP23 AM23 AP24 AN24
VGAU_VID0 40
VGAU_VID1 40
VGAU_VID2 40
VGAU_VID3 40
VGAU_VID4 40
VGAU_VID5 40
VGAU_VID6 40
GFX_VR_EN
GFX_DPRSLPVR
GFX_IMON
AR25 AT25 AM24
GFXVR_EN_ABD 34
VGAU_DPRSLPVR 40
VGAU_IMON 40
R160
R485 4.7K
1K/F_4
UMA : Reserve R160.
GFX : Mount R160.
VDDQ1 VDDQ2 VDDQ3 VDDQ4 VDDQ5 VDDQ6 VDDQ7 VDDQ8 VDDQ9 VDDQ10 VDDQ11 VDDQ12 VDDQ13 VDDQ14 VDDQ15 VDDQ16 VDDQ17 VDDQ18
AJ1 AF1 AE7 AE4 AC1 AB7 AB4 Y1 W7 W4 U1 T7 T4 P1 N7 N4 L1 H1
PWR_1.5VMAIN
C235 1U/6.3V_4
C233 1U/6.3V_4
C234 1U/6.3V_4
C247 1U/6.3V_4
C252 1U/6.3V_4
C250 22U/6.3V_8S
C237 22U/6.3V_8S
C604 *330U/2V_7343
PWR_CPUVTT
C182 22U/6.3V_8S
C549 22U/6.3V_8S
J24 J23 H25
VTT1_45 VTT1_46 VTT1_47
PWR_CPUVTT
C208 22U/6.3V_8S
C206 22U/6.3V_8S
C210 22U/6.3V_8S
C191 22U/6.3V_8S
K26 J27 J26 J25 H27 G28 G27 G26 F26 E26 E25
VTT1_48 VTT1_49 VTT1_50 VTT1_51 VTT1_52 VTT1_53 VTT1_54 VTT1_55 VTT1_56 VTT1_57 VTT1_58
VTT0_59 VTT0_60 VTT0_61 VTT0_62 VTT1_63 VTT1_64 VTT1_65 VTT1_66 VTT1_67 VTT1_68
P10 N10 L10 K10 J22 J20 J18 H21 H20 H19
C568 10U/6.3V_8
C569 10U/6.3V_8
C553 22U/6.3V_8S
C557 22U/6.3V_8S
PWR_CPUVTT
VCCPLL1 VCCPLL2 VCCPLL3
L26 L27 M26
C180 22U/6.3V_8S
C178 4.7U/6.3V_6
C411 2.2U/6.3V_6
C175 1U/6.3V_4
C410 1U/6.3V_4
PWR_1.8VMAIN
CPU_VID0 R120 *1K/F_4 R122 1K/F_4
CPU_VID1 R470 *1K/F_4 R469 1K/F_4
CPU_VID2 R138 1K/F_4 R140 *1K/F_4
CPU_VID3 R134 *1K/F_4 R135 1K/F_4
CPU_VID4 R125 *1K/F_4 R124 1K/F_4
CPU_VID5 R119 1K/F_4 R126 *1K/F_4
CPU_VID6 R121 1K/F_4 R130 *1K/F_4
DPRSLPVR R143 1K/F_4 R141 *1K/F_4
H_PSI# R144 *1K/F_4 R147 1K/F_4
PWR_CPUVTT
HFM_VID : Max 1.4V
LFM_VID : Min 0.65V
QUANTA COMPUTER
Title
PROCESSOR 3/4(POWER)
Size Custom
Document Number
Samba(V) MAIN BOARD
Rev A
Date: Friday, December 11, 2009
Sheet 6 of 45

ARRANDALE PROCESSOR (GND)



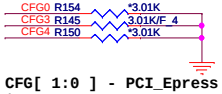
ARRANDALE PROCESSOR(RESERVED, CFG)



	1	0
CFG4 (Display Port Presence)	Disabled; No Physical Display Port attached to Embedded Diplay Port	Enabled; An external Display port device is connected to the Embedded Display port
CFG0 (PCI-Epress Configuration Select)	Single PEG	Bifurcation enabled
CFG3 (PCI-Epress Static Lane Reversal)	Normal Operation	Lane Numbers Reversed 15 -> 0 , 14 -> 1

B

For discrete only



UMA: Reserve R145.
GFX:Mount R145.

CFG[1:0] - PCI_Epress Configuration Select
*** 11= 1 x 16 PEG**
*** 10= 2 x 8 PEG**

QUANTA COMPUTER

Title: **PROCESSOR 4/4(GND)**

Size: Custom | Document Number: **Samba(V) MAIN BOARD** | Rev: A

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INTVRMEN - Integrated SUS 1.1V VRM Enable
High - Enable Internal VRs

IBEX PEAK-M (HDA/JTAG/SATA)

IBEX PEAK-M (LVDS/DDI)

08

RTC

4M byte SPI ROM for ME & Bios

must add test point.

For INTEL ME DEBUG ONLY

UMA ONLY

C -->Delete R216,R222

C -->Delete R194,R199

SATA#2,3
HM55 no support

CNN P/N: 1st --> DFWF02MS118
2nd --> DFWF02MS000

BAT P/N: AHL03002008 / AHL03002006

1st : W25Q32BVSSIG
2nd :PN-MX25L3205DM2I-12G

QUANTA COMPUTER

Title	PCH 1/5(SATA/HDA/LPC)	
Size: Custom	Document Number: Samba(V) MAIN BOARD	Rev: A
Date: Friday, December 11, 2009	Sheet 8 of 45	

IBEX PEAK-M (GND)

U44I

AY7	VSS[159]	VSS[259]	H49
B11	VSS[160]	VSS[260]	H5
B15	VSS[161]	VSS[261]	J24
B19	VSS[162]	VSS[262]	K11
B23	VSS[163]	VSS[263]	K43
B31	VSS[164]	VSS[264]	K47
B35	VSS[165]	VSS[265]	K7
B39	VSS[166]	VSS[266]	L14
B43	VSS[167]	VSS[267]	L18
B47	VSS[168]	VSS[268]	L2
B7	VSS[169]	VSS[269]	L22
BG12	VSS[170]	VSS[270]	L32
BB12	VSS[171]	VSS[271]	L36
BB16	VSS[172]	VSS[272]	L40
BB20	VSS[173]	VSS[273]	L52
BB24	VSS[174]	VSS[274]	M12
BB30	VSS[175]	VSS[275]	M16
BB34	VSS[176]	VSS[276]	M20
BB38	VSS[177]	VSS[277]	N38
BB42	VSS[178]	VSS[278]	M34
BB49	VSS[179]	VSS[279]	M38
BB5	VSS[180]	VSS[280]	M42
BC10	VSS[181]	VSS[281]	M46
BC14	VSS[182]	VSS[282]	M49
BC18	VSS[183]	VSS[283]	M5
BC2	VSS[184]	VSS[284]	M8
BC22	VSS[185]	VSS[285]	N24
BC32	VSS[186]	VSS[286]	P11
BC36	VSS[187]	VSS[287]	AD15
BC40	VSS[188]	VSS[288]	P22
BC44	VSS[189]	VSS[289]	P30
BC52	VSS[190]	VSS[290]	P32
BH9	VSS[191]	VSS[291]	P34
BD48	VSS[192]	VSS[292]	P42
BD49	VSS[193]	VSS[293]	P45
BD5	VSS[194]	VSS[294]	P47
BE12	VSS[195]	VSS[295]	R2
BE16	VSS[196]	VSS[296]	R52
BE20	VSS[197]	VSS[297]	T12
BE24	VSS[198]	VSS[298]	T41
BE30	VSS[199]	VSS[299]	T46
BE34	VSS[200]	VSS[300]	T49
BE38	VSS[201]	VSS[301]	T5
BE42	VSS[202]	VSS[302]	T8
BE46	VSS[203]	VSS[303]	U30
BE48	VSS[204]	VSS[304]	U31
BE50	VSS[205]	VSS[305]	U32
BE6	VSS[206]	VSS[306]	U34
BE8	VSS[207]	VSS[307]	P38
BF3	VSS[208]	VSS[308]	V11
BF49	VSS[209]	VSS[309]	P16
BF51	VSS[210]	VSS[310]	V19
BG18	VSS[211]	VSS[311]	V20
BG24	VSS[212]	VSS[312]	V22
BG4	VSS[213]	VSS[313]	V30
BG50	VSS[214]	VSS[314]	V31
BH11	VSS[215]	VSS[315]	V32
BH15	VSS[216]	VSS[316]	V34
BH19	VSS[217]	VSS[317]	V35
BH23	VSS[218]	VSS[318]	V38
BH31	VSS[219]	VSS[319]	V43
BH35	VSS[220]	VSS[320]	V45
BH39	VSS[221]	VSS[321]	V46
BH43	VSS[222]	VSS[322]	V47
BH47	VSS[223]	VSS[323]	V49
BH7	VSS[224]	VSS[324]	V5
C12	VSS[225]	VSS[325]	V7
C50	VSS[226]	VSS[326]	V8
D51	VSS[227]	VSS[327]	W2
E12	VSS[228]	VSS[328]	W52
E16	VSS[229]	VSS[329]	Y11
E20	VSS[230]	VSS[330]	Y12
E24	VSS[231]	VSS[331]	Y15
E30	VSS[232]	VSS[332]	Y19
E34	VSS[233]	VSS[333]	Y23
E38	VSS[234]	VSS[334]	Y28
E42	VSS[235]	VSS[335]	Y30
E46	VSS[236]	VSS[336]	Y31
E48	VSS[237]	VSS[337]	Y32
E6	VSS[238]	VSS[338]	Y38
E8	VSS[239]	VSS[339]	Y43
F49	VSS[240]	VSS[340]	Y46
F5	VSS[241]	VSS[341]	P49
G10	VSS[242]	VSS[342]	Y5
G14	VSS[243]	VSS[343]	Y6
G18	VSS[244]	VSS[344]	Y8
G2	VSS[245]	VSS[345]	P24
G22	VSS[246]	VSS[346]	T49
G32	VSS[247]	VSS[347]	AD51
G36	VSS[248]	VSS[348]	AT8
G40	VSS[249]	VSS[349]	AD47
G44	VSS[250]	VSS[350]	Y47
G52	VSS[251]	VSS[351]	AT12
AF39	VSS[252]	VSS[352]	AM6
H16	VSS[253]	VSS[353]	AT13
H20	VSS[254]	VSS[354]	AM5
H30	VSS[255]	VSS[355]	AK45
H34	VSS[256]	VSS[356]	AK39
H38	VSS[257]	VSS[366]	AV14
H42	VSS[258]		

IbexPeak-M_Rev1_0

IBEX PEAK-M (PCI-E/SMBUS/CLK)

U44B

Ibex-M 2 OF 10

Broadcom LAN
28 PCIE_RX1- / 28 PCIE_RX1+ / 28 PCIE_TX1- / 28 PCIE_TX1+
C618 0.1U/10V/X7R_4 PCIE_TXN1_C
C616 0.1U/10V/X7R_4 PCIE_TXP1_C

WLAN
31 PCIE_RX2- / 31 PCIE_RX2+ / 31 PCIE_TX2- / 31 PCIE_TX2+
C262 0.1U/10V/X7R_4 PCIE_TXN2_C
C266 0.1U/10V/X7R_4 PCIE_TXP2_C

TransferJet
31 PCIE_RX3- / 31 PCIE_RX3+ / 31 PCIE_TX3- / 31 PCIE_TX3+
C240 *0.1U/10V/X7R_4 PCIE_TXN3_C
C229 *0.1U/10V/X7R_4 PCIE_TXP3_C

USB30
21 PCIE_RX4- / 21 PCIE_RX4+ / 21 PCIE_TX4- / 21 PCIE_TX4+
C612 *0.1U/10V/X7R_4 PCIE_TXN4_C
C611 *0.1U/10V/X7R_4 PCIE_TXP4_C

OZ888GS0L3N
27 PCIE_RX5- / 27 PCIE_RX5+ / 27 PCIE_TX5- / 27 PCIE_TX5+
C609 0.1U/10V/X7R_4 PCIE_TXN5_C
C605 0.1U/10V/X7R_4 PCIE_TXP5_C

Express Card
29 PCIE_RX6- / 29 PCIE_RX6+ / 29 PCIE_TX6- / 29 PCIE_TX6+
C243 0.1U/10V/X7R_4 PCIE_TXN6_C
C246 0.1U/10V/X7R_4 PCIE_TXP6_C

PERN1 BG30 / PERP1 BJ30 / PETN1 BF29 / PETP1 BH29
PERN2 AW30 / PERP2 BA30 / PETN2 BC30 / PETP2 BD30
PERN3 AU30 / PERP3 AT30 / PETN3 AU32 / PETP3 AV32
PERN4 BA32 / PERP4 BB32 / PETN4 BD32 / PETP4 BE32
PERN5 BF33 / PERP5 BH33 / PETN5 BG32 / PETP5 BJ32
PERN6 BA34 / PERP6 AW34 / PETN6 BC34 / PETP6 BD34
PERN7 AT34 / PERP7 AU34 / PETN7 AU36 / PETP7 AV36
PERN8 BG34 / PERP8 BJ34 / PETN8 BG36 / PETP8 BJ36

PCI-E*

PCIE7,PCIE8 HM55 no support

CLKOUT_PCIE0N AK48 / CLKOUT_PCIE0P AK47

WLAN
31 CLK_100_MINIC1- / 31 CLK_100_MINIC1+
CLKREQ#_LAN R230 0_4 / R227 0_4 → PCIECLKRQ0# / GPIO73 P9 (+3V_S5)
CLKOUT_PCIE1N AM43 / CLKOUT_PCIE1P AM45
31 CLKREQ#_MINIC1 — CLKREQ#_MINIC1 R538 0_4 → PCIECLKRQ1# / GPIO18 U4 (+3V)

CLKOUT_PCIE2N AM47 / CLKOUT_PCIE2P AM48
CLKREQ#_MINIC3 R535 0_4 → PCIECLKRQ2# / GPIO20 N4 (+3V)

TransferJet
31 CLK_100_MINIC2- / 31 CLK_100_MINIC2+
R217 *0_4 / R221 *0_4
31 CLKREQ#_MINIC2 — CLKREQ#_MINIC2 R529 *0_4 → PCIECLKRQ3# / GPIO25 A8 (+3V_S5)

USB30
21 CLK_100_USB30- / 21 CLK_100_USB30+
R495 *0_4 / R497 *0_4
CLKOUT_PCIE4N AM51 / CLKOUT_PCIE4P AM53
21 CLKREQ#_USB30 — CLKREQ#_USB30 R270 *0_4 → PCIECLKRQ4# / GPIO26 M9 (+3V_S5)

NEW CARD
29 CLK_100_PECARD- / 29 CLK_100_PECARD+
R494 0_4 / R493 0_4
CLKOUT_PCIE5N AJ50 / CLKOUT_PCIE5P AJ52
29 CLKREQ#_EXC — CLKREQ#_EXC R285 0_4 → PCIECLKRQ5# / GPIO44 H6 (+3V_S5)

CLKOUT_PEG_B_N AK53 / CLKOUT_PEG_B_P AK51
GPIO56_PCH → PEG_B_CLKRQ# / GPIO56 P13 (+3V_S5)

IbexPeak-M_Rev1_0

SMBus
(+3V_S5) SMBALERT# / GPIO11 B9 — SMB_ALERT# 22
SMBCLK H14 — SMB_CLK_PCH — SMB_CLK_PCH 20
SMBDATA C8 — SMB_DATA_PCH — SMB_DATA_PCH 20
(+3V_S5) SML0ALERT# / GPIO60 J14 — LAN_PON2 — LAN_PON2 42
SML0CLK C6 — SML0_CLK
SML0DATA G8 — SML0_DATA
(+3V_S5) SML1ALERT# / GPIO74 M14
(+3V_S5) SML1CLK / GPIO58 E10 — SML1_CLK — SML1_CLK 20
(+3V_S5) SML1DATA / GPIO75 G12 — SML1_DATA — SML1_DATA 20

Controller Link
CL_CLK1 T13
CL_DATA1 T11
CL_RST1# T9

PEG
(+3V_S5) PEG_A_CLKRQ# / GPIO47 H1 — CLKREQ#_PEG — CLKREQ#_PEG 15
CLKOUT_PEG_A_N AD43 — CLK_100_PEGA- — R195 0_4 — CLK_100_PEG- 15
CLKOUT_PEG_A_P AD45 — CLK_100_PEGA+ — R190 0_4 — CLK_100_PEG+ 15
CLKOUT_DMI_N AN4 — CLK_100_CPU_P- — R547 0_4 — CLK_100_CPU- 4
CLKOUT_DMI_P AN2 — CLK_100_CPU_P+ — R548 0_4 — CLK_100_CPU+ 4

From CLK BUFFER
CLKOUT_DP_N / CLKOUT_BCLK1_N AT1
CLKOUT_DP_P / CLKOUT_BCLK1_P AT3
CLKIN_DMI_N AW24 — CLK_100_DMI- 3
CLKIN_DMI_P BA24 — CLK_100_DMI+ 3
CLKIN_BCLK_N AP3 — CLK_133_BCLK- 3
CLKIN_BCLK_P AP1 — CLK_133_BCLK+ 3
CLKIN_DOT_96N F18 — CLK_96_DOT- 3
CLKIN_DOT_96P E18 — CLK_96_DOT+ 3
CLKIN_SATA_N / CKSSCD_N AH13 — CLK_100_SATA- 3
CLKIN_SATA_P / CKSSCD_P AH12 — CLK_100_SATA+ 3
REFCLK14IN P41 — CLK_14_BUF 3
CLKIN_PCILOOPBACK J42 — CLK_33_PCIFB 10
XTAL25_IN AH51 XTAL25_IN
XTAL25_OUT AH53 XTAL25_OUT
XCLK_RCOMP AF38 — R218 90.9/F_4 — PWR_1.05VMAIN

Clock Flex
(+3V) CLKOUTFLEX0 / GPIO64 T45 — TP1
(+3V) CLKOUTFLEX1 / GPIO65 P43 — TP2
(+3V) CLKOUTFLEX2 / GPIO66 T42
(+3V) CLKOUTFLEX3 / GPIO67 N50 — TP18

C -->Delete R209,C225

PWR_3VSTD
CLKREQ#_LAN R263 10K/F_4 / CLKREQ#_MINIC2 R528 *10K/F_4 / CLKREQ#_USB30 R273 *10K/F_4 / CLKREQ#_EXC R284 10K/F_4

PWR_3VMAIN
CLKREQ#_MINIC1 R550 10K/F_4 / CLKREQ#_MINIC3 R551 10K/F_4

PWR_3VSTD
SMB_CLK_PCH R269 10K/F_4 / SMB_DATA_PCH R271 10K/F_4
SML0_CLK R276 2.2K_4 / SML0_DATA R277 2.2K_4
SML1_CLK R274 10K_4 / SML1_DATA R272 10K_4 / GPIO56_PCH R261 10K/F_4

CLKREQ#_PEG R533 *10K/F_4 / LAN_PON2 R260 10K/F_4

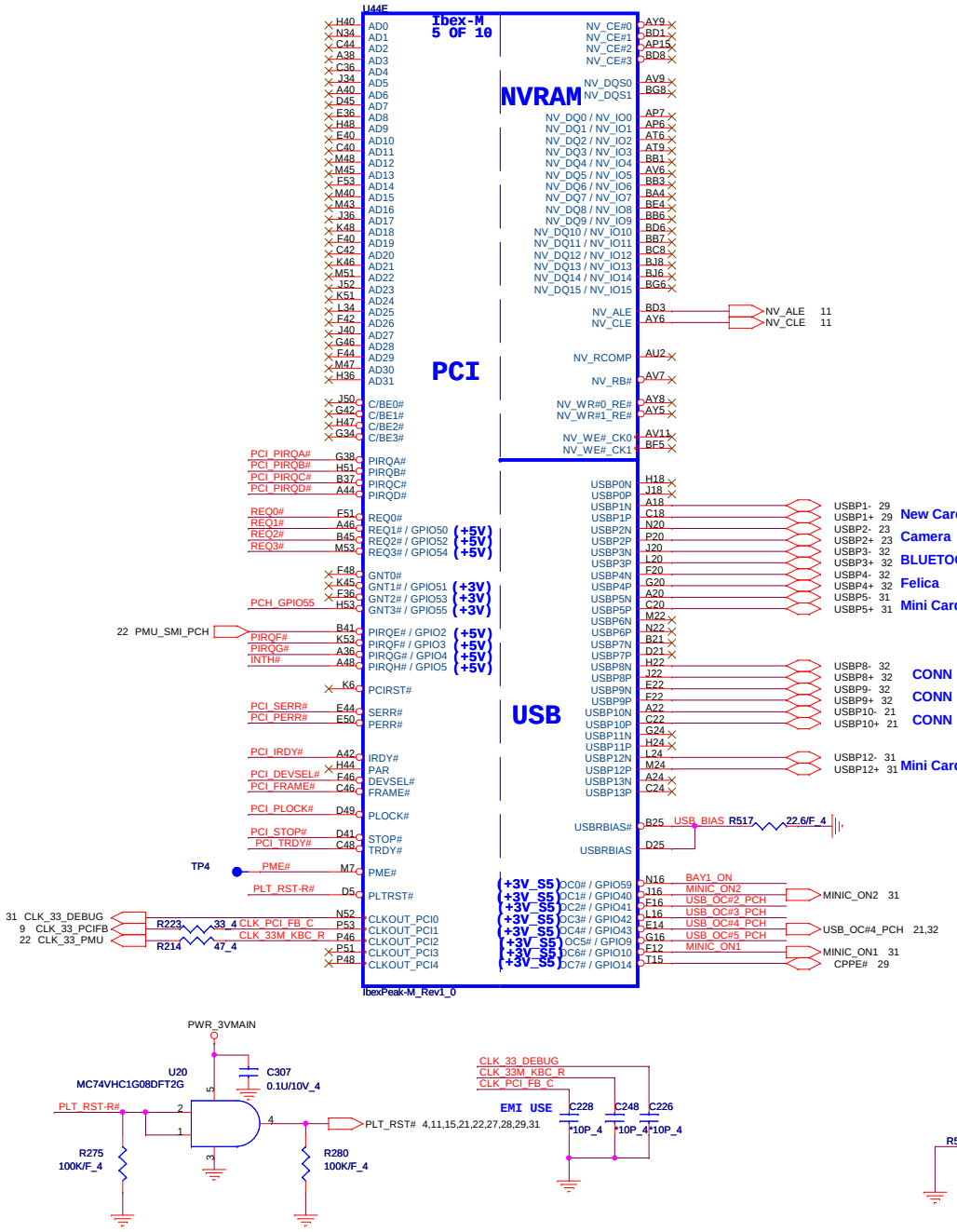
MP
XTAL25_IN — C584 0_4 — 2 — 1 — Y6 *25MHZ — C585 *33P/50V_4 — XTAL25_OUT
R500 *1M
VGA: C584 mount with 0 ohm
UMA: C584 mount with 27pF

Y6:
Main -->BG625000737 (TXC : 7A25000058)

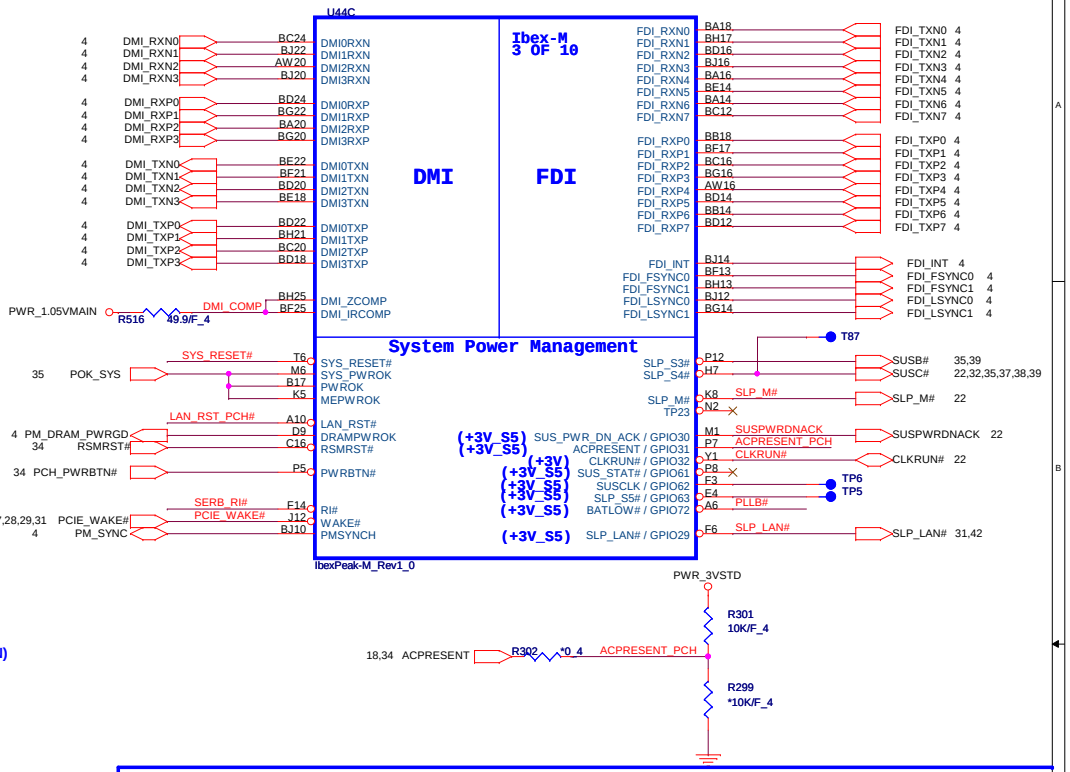
QUANTA COMPUTER

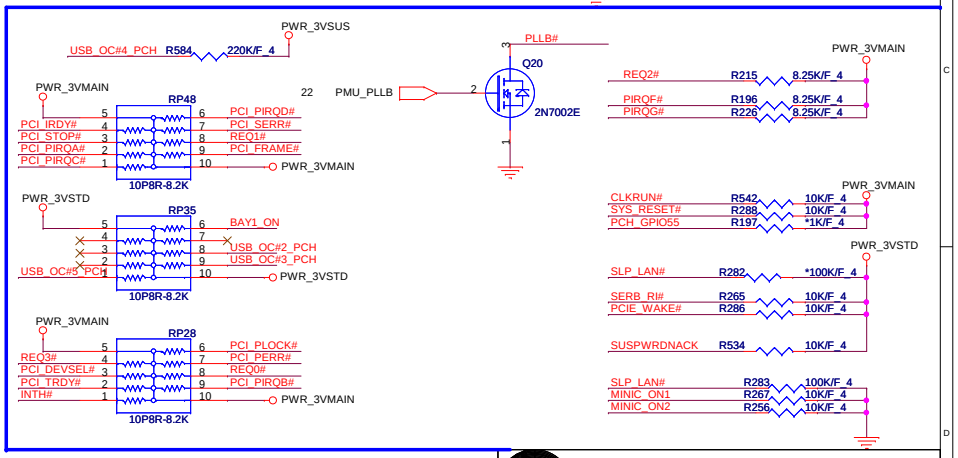
Title: PCH 2/3(PCIE/SMBUS/CLK)
Size: Custom | Document Number: Samba(V) MAIN BOARD | Rev: A
Date: Friday, December 11, 2009 | Sheet 9 of 45

IBEX PEAK-M (PCI/USB/NVRAM)



IBEX PEAK-M (DMI/FDI/GPIO)





R526 10K/F_4 LAN_RST_PCH#

If not use INTEL LAN
LAN_RST Pull down.

QUANTA COMPUTER

Title	PCH 3/6(PCI/FDI/CRT/DMI)	
Size: Custom	Document Number: Samba(V) MAIN BOARD	Rev: A
Date: Friday, December 11, 2009	Sheet 10 of 45	

IBEX PEAK-M (GPIO/VSS_NCTF/RSVD)

IBEX PEAK-M (GND)

U44F

Ibex-M
6 OF 10

GPIO MISC

CPU

RSVD

NCTF

IbexPeak-M_Rev1_0

Delete D33

Put around DIMM-CN

CN2

PCH XDP

*DEBUG MOLEX

U44H

IbexPeak-M_Rev1_0

Danbury Technology Enabled

NV_ALE	High = Enable Low = Disable

DMI Termination Voltage

NV_CLE	Set to Vcc when LOW Set to Vcc/2 when HIGH

No Reboot Strap

QUANTA COMPUTER

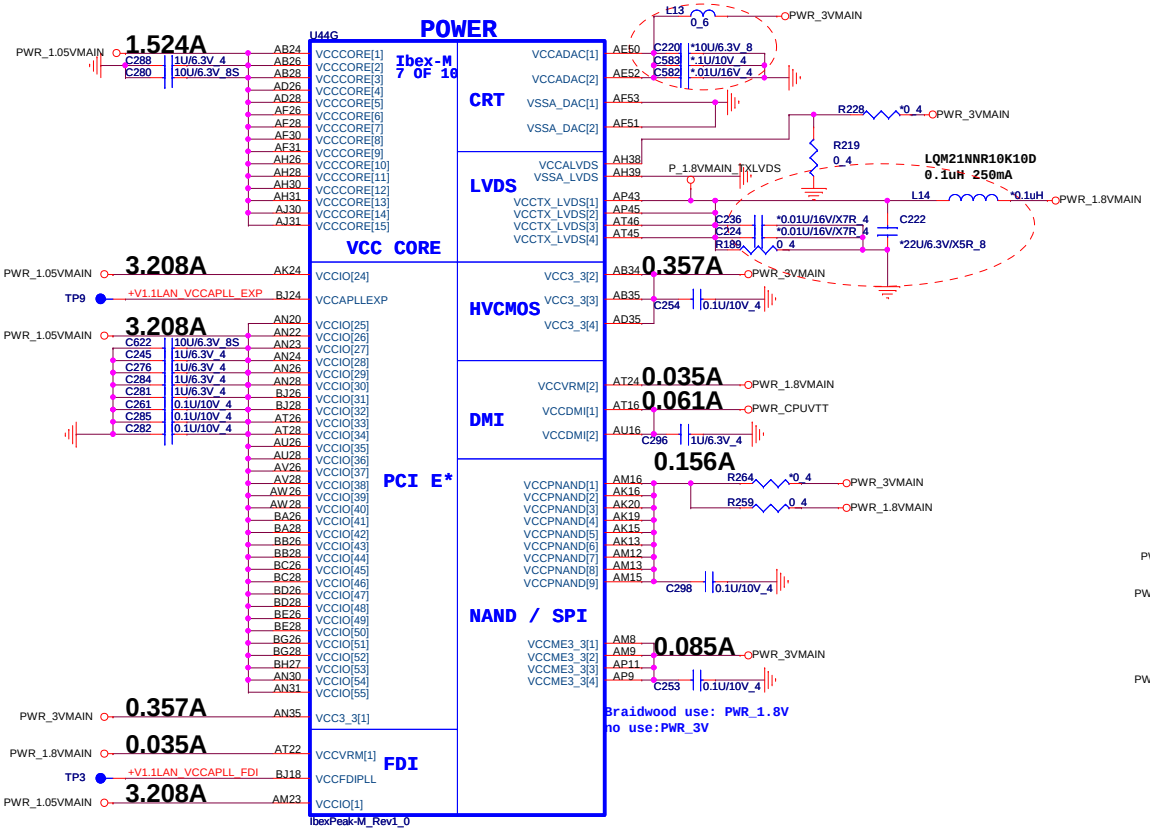
Title: PCH 4/5(GPIO/STRAP/PCH)

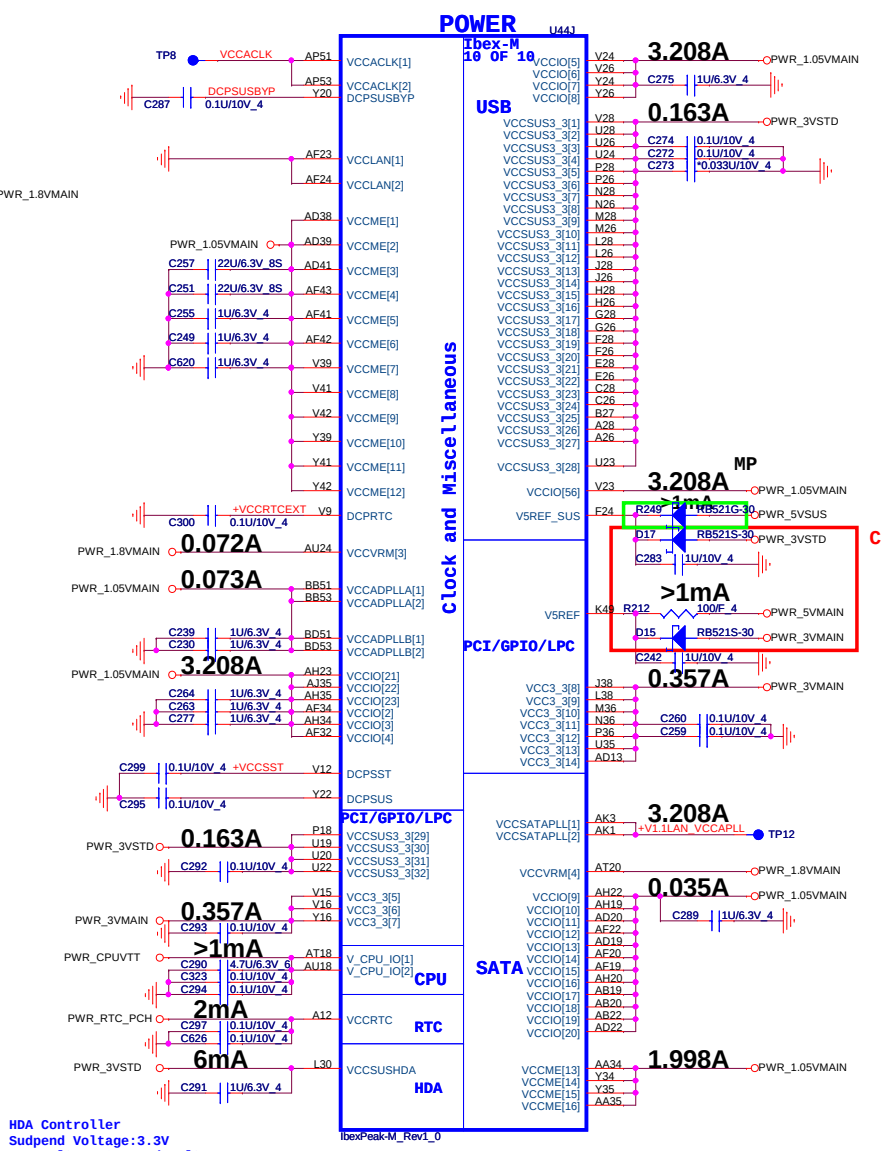
Size: Custom | Document Number: Samba(V) MAIN BOARD | Rev: A

Date: Friday, December 11, 2009 | Sheet 11 of 45

UMA: Mount L13,C220,C583,C582,R228,L14,C236,C224,C222
Reserve R189,R219.

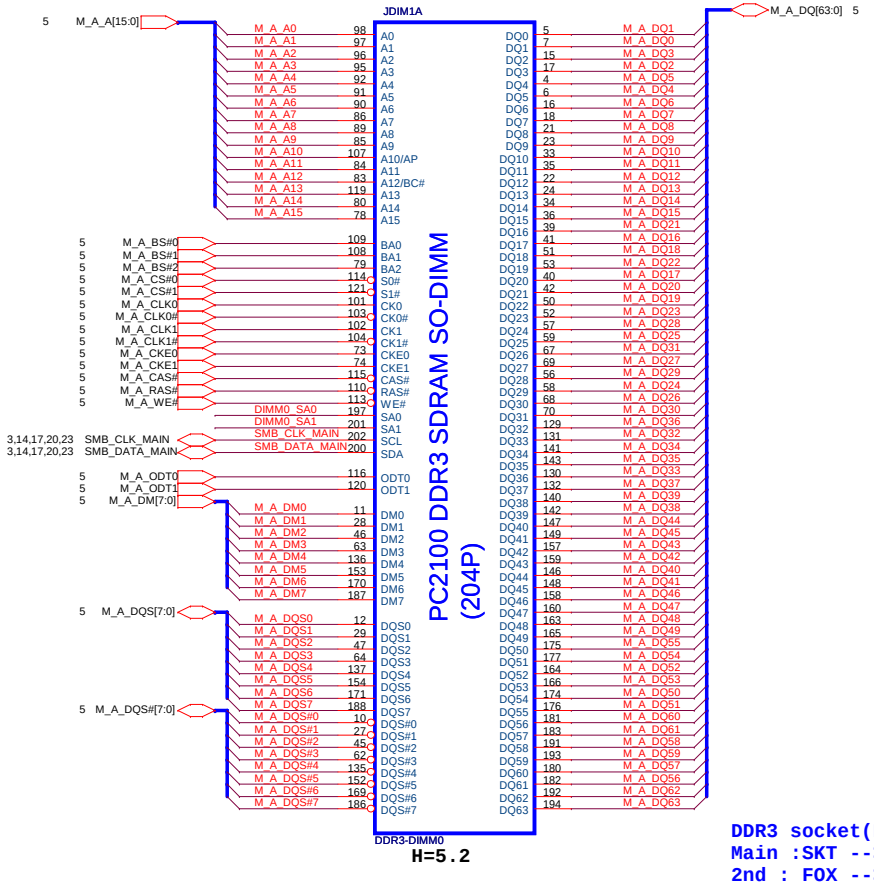
GFX: Reserve L13,C220,C583,C582,R228,L14,C236,C224,C222
Mount R189,R219.

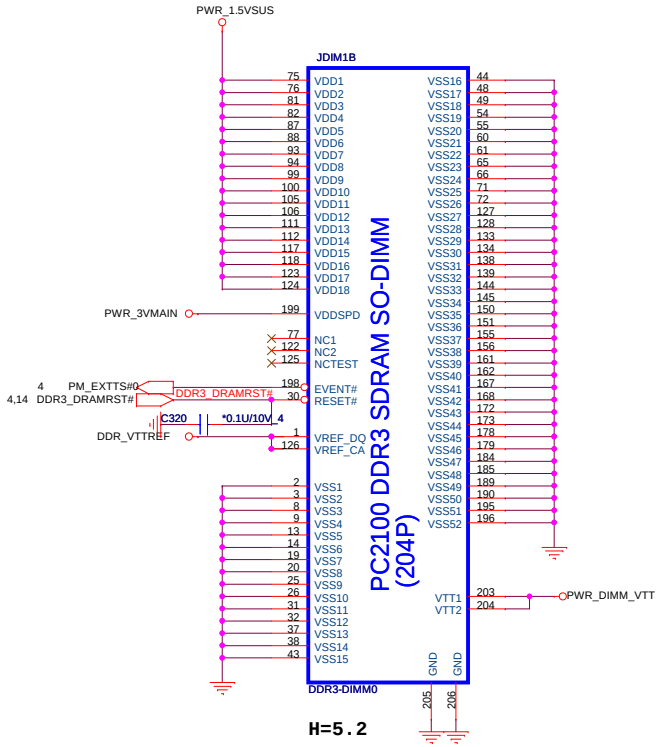




QUANTA COMPUTER

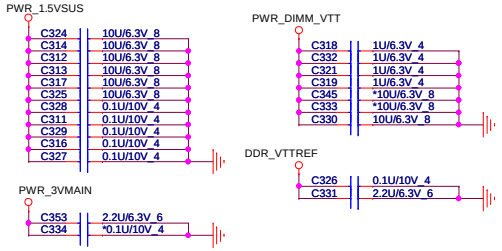
Title	PCH 5/5(POWER)	
Size: Custom	Document Number: Samba(V) MAIN BOARD	Rev: A
Date: Friday, December 11, 2009	Sheet 12 of 45	

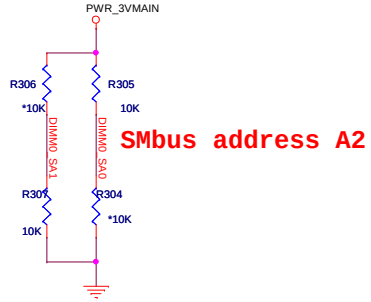




DDR3 socket(H 5.2):
Main :SKT -->DGMK4000109 / 91-93469-175
2nd : FOX -->DGMK4000083 / AS0A626-U2SN-7F

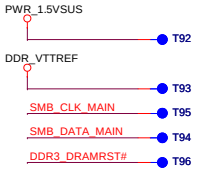
Place these Caps near So-Dimm0





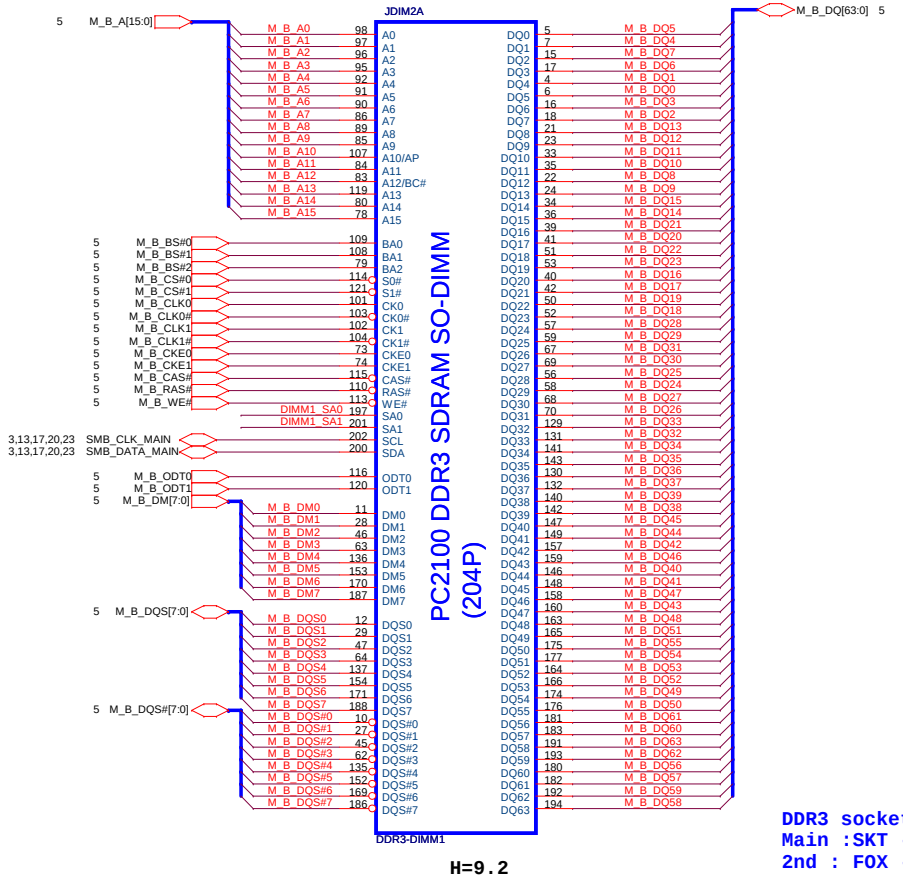
SMbus address A2

Place these Test Pad near So-Dimm

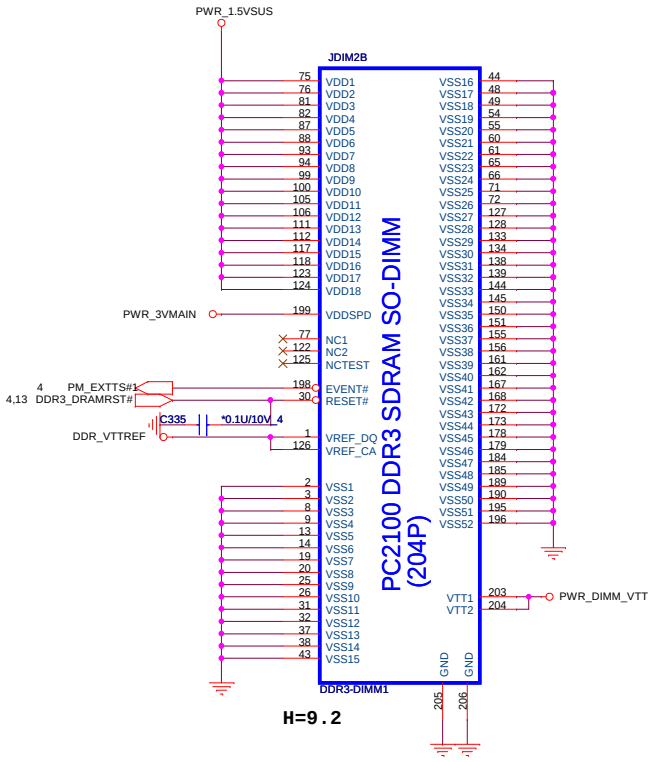


QUANTA COMPUTER

Title: DDR3 DIMM0		
Size: Custom	Document Number: Samba(V) MAIN BOARD	Rev: A
Date: Friday, December 11, 2009	Sheet 13 of 45	



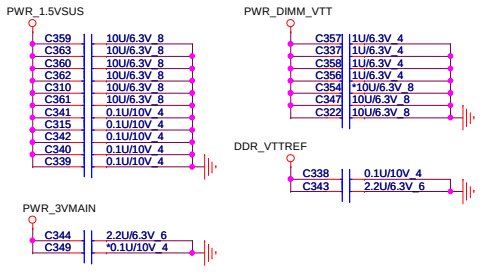
H=9.2

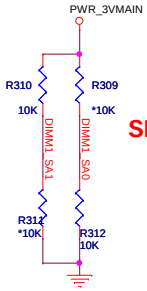


H=9.2

DDR3 socket(H 9.2):
Main :SKT -->DGMK4000116 / 91-93469-173
2nd : FOX -->DGMK4000046 / AS0A626-UASN-7F

Place these Caps near So-Dimm1.

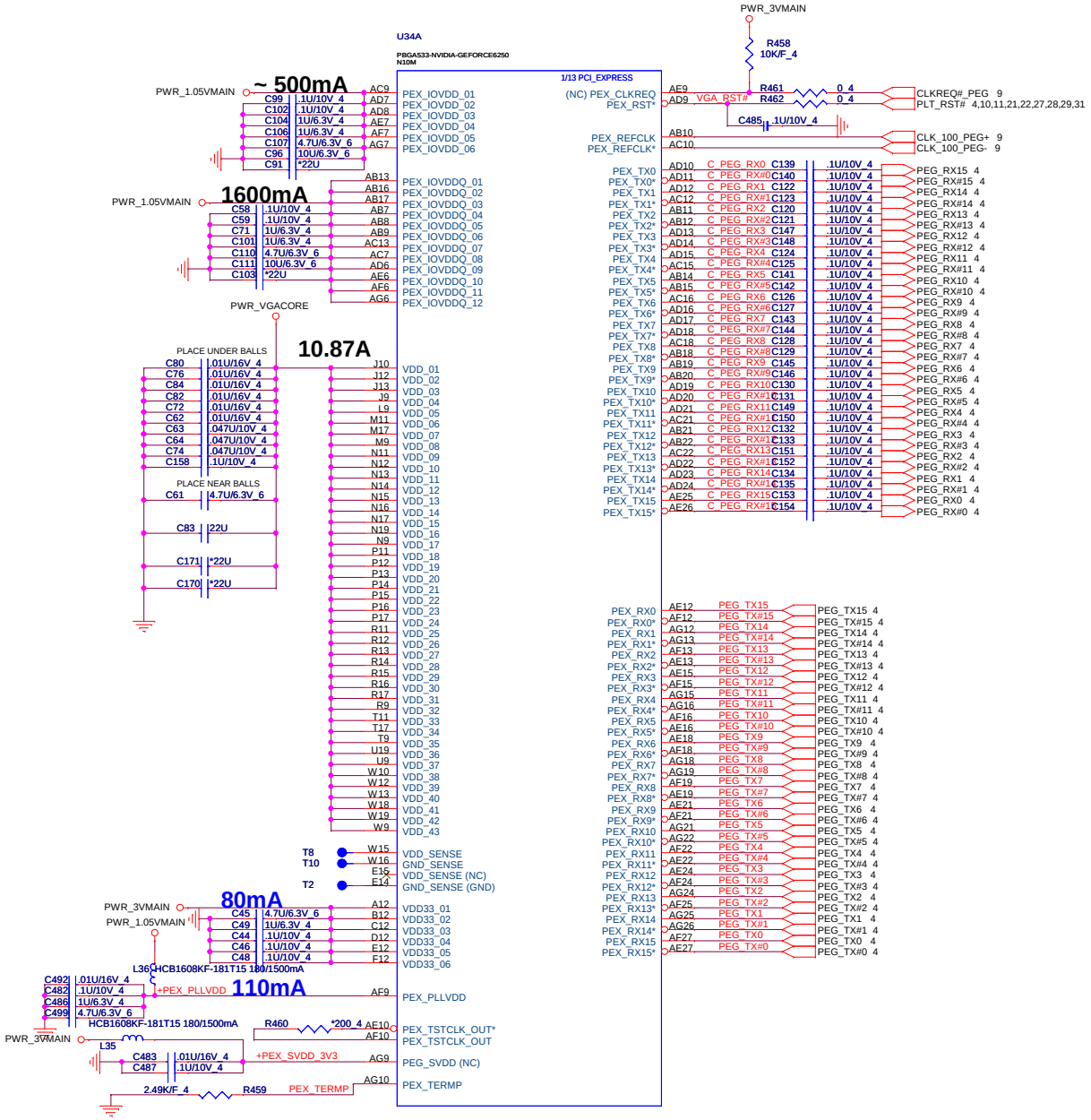




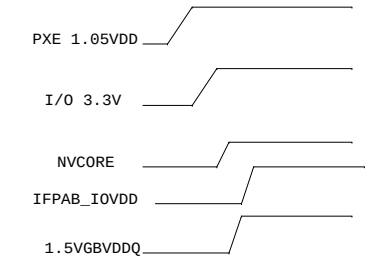
SMbus address A4

QUANTA COMPUTER

Title	DDR3 DIMM1	
Size: Custom	Document Number: Samba(V) MAIN BOARD	Rev: A
Date: Friday, December 11, 2009	Sheet 14 of 45	

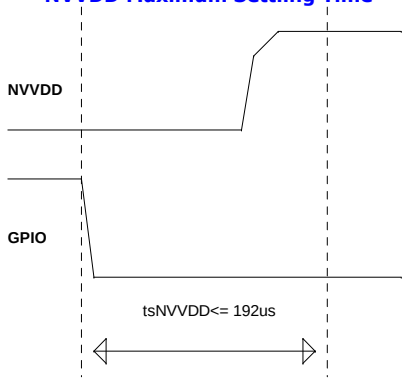


power up sequence

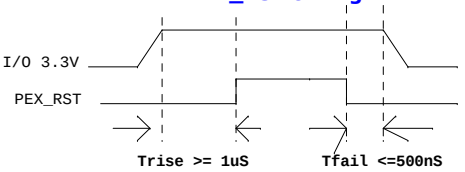


NB9M: VGACORE +0.90V (Normal) , +1.09V

NVVDD Maximum Settling Time



PEX_RST timing



QUANTA COMPUTER

Title	N11M-GE1(PCIEI/F)	
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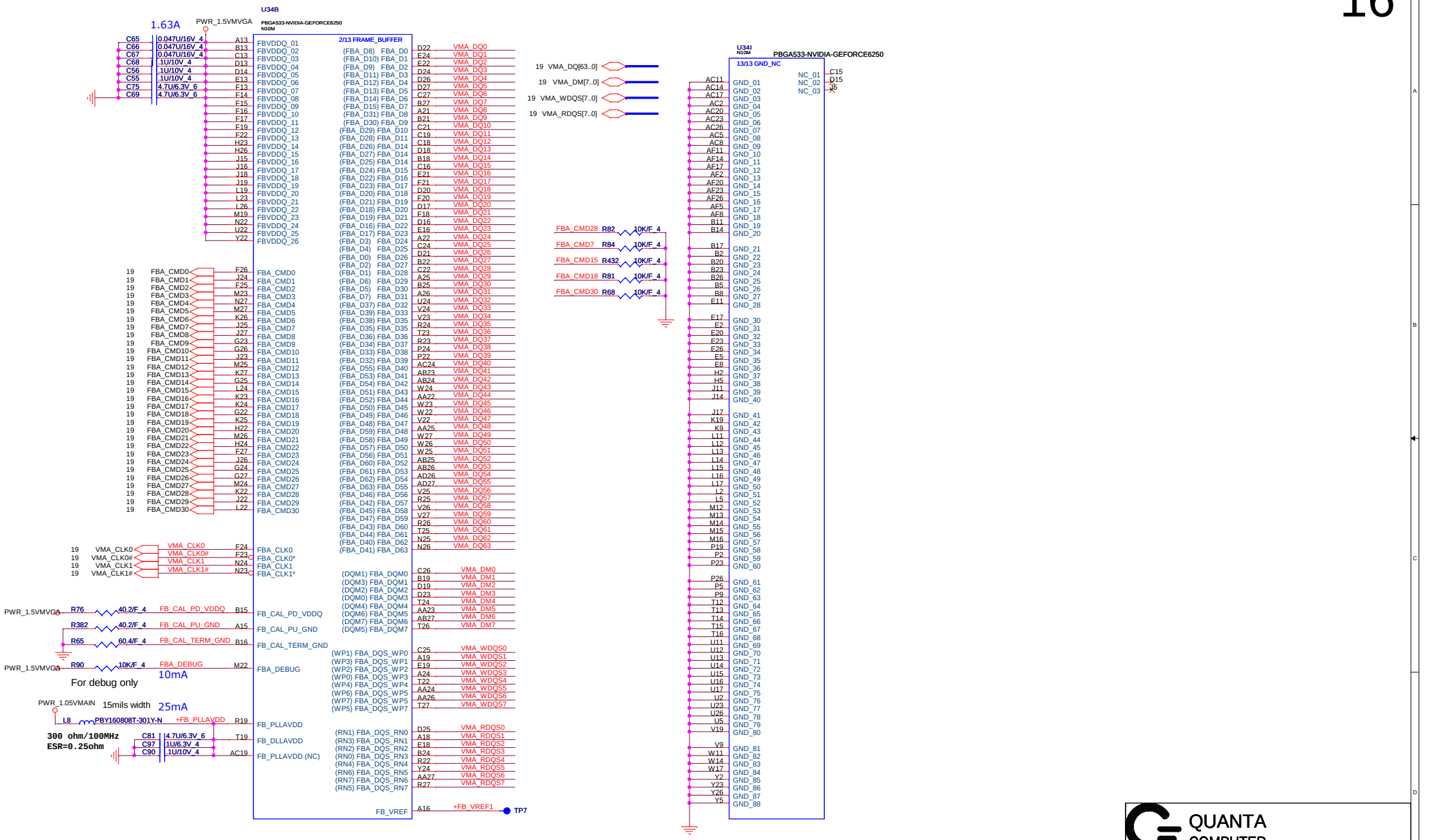

QUANTA COMPUTER

Title	N11M-GE1(MEMORY/GND)	
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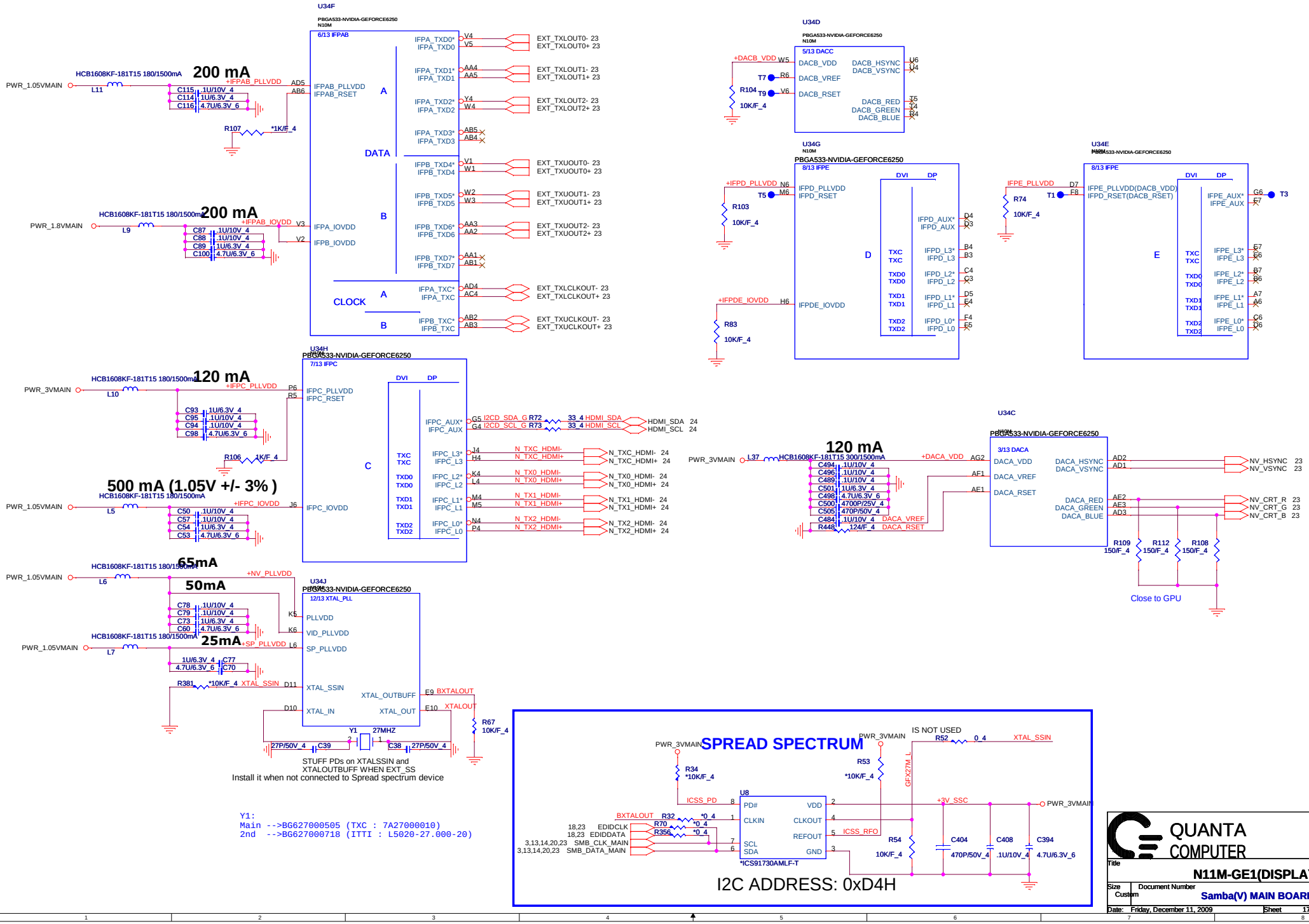
U34F
PBGA533-NVIDIA-GEFORCE6250
N10M
6/13 IFPAB
200 mA
HCB1608KF-181T15 180/1500mA
PWR_1.05VMAIN
+IFPAB_PLLVDD
IFPAB_PLLVDD
IFPAB_RSET
IFPA_IOVDD
IFPB_IOVDD
DATA
CLOCK
200 mA
HCB1608KF-181T15 180/1500mA
PWR_1.8VMAIN
+IFPAB_IOVDD
U34D
5/13 DACC
DACB_VDD
DACB_VREF
DACB_RSET
DACB_HSYNC
DACB_VSYNC
DACB_RED
DACB_GREEN
DACB_BLUE
+DACB_VDD
R104
10K/F_4
U34G
8/13 IFPE
PBGA533-NVIDIA-GEFORCE6250
IFPD_PLLVDD
IFPD_RSET
IFPDE_IOVDD
+IFPD_PLLVDD
+IFPDE_IOVDD
R103
R83
10K/F_4
DVI
DP
D
U34E
8/13 IFPE
IFPE_PLLVDD
IFPE_PLLVDD(DACB_VDD)
IFPD_RSET(DACB_RSET)
R74
10K/F_4
E
120 mA
HCB1608KF-181T15 180/1500mA
PWR_3VMAIN
+IFPC_PLLVDD
U34H
7/13 IFPC
IFPC_PLLVDD
IFPC_RSET
IFPC_IOVDD
500 mA (1.05V +/- 3%)
HCB1608KF-181T15 180/1500mA
PWR_1.05VMAIN
+IFPC_IOVDD
C
I2C_SDA_G
I2C_SCL_G
33_4 HDMI_SDA
33_4 HDMI_SCL
HDMI_SDA 24
HDMI_SCL 24
N_TXC_HDMI- 24
N_TXC_HDMI+ 24
N_TX0_HDMI- 24
N_TX0_HDMI+ 24
N_TX1_HDMI- 24
N_TX1_HDMI+ 24
N_TX2_HDMI- 24
N_TX2_HDMI+ 24
U34C
PBGA533-NVIDIA-GEFORCE6250
3/13 DACA
DACA_VDD
DACA_VREF
DACA_RSET
DACA_HSYNC
DACA_VSYNC
DACA_RED
DACA_GREEN
DACA_BLUE
120 mA
HCB1608KF-181T15 300/1500mA
+DACA_VDD
NV_HSYNC 23
NV_VSYNC 23
NV_CRT_R 23
NV_CRT_G 23
NV_CRT_B 23
R109 150/F_4
R112 150/F_4
R108 150/F_4
Close to GPU
65mA
HCB1608KF-181T15 180/1500mA
PWR_1.05VMAIN
+NV_PLLVDD
50mA
25mA
+SP_PLLVDD
U34J
PBGA533-NVIDIA-GEFORCE6250
12/13 XTAL_PLL
PLLVDD
VID_PLLVDD
SP_PLLVDD
XTAL_SSIN
XTAL_IN
XTAL_OUTBUFF
XTAL_OUT
R381 *10K/F_4 XTAL_SSIN
BXTALOUT
XTALOUT
Y1 27MHZ
R67 10K/F_4
27P/50V_4 C39
C38 27P/50V_4
STUFF PDs on XTALSSIN and
XTALOUTBUFF WHEN EXT_SS
Install it when not connected to Spread spectrum device
Y1:
Main -->BG627000505 (TXC : 7A27000010)
2nd -->BG627000718 (ITTI : L5020-27.000-20)
SPREAD SPECTRUM
PWR_3VMAIN
IS NOT USED
R52 0_4 XTAL_SSIN
R53 *10K/F_4
R34 *10K/F_4
ICSS_PD
U8
PD#
CLKIN
SCL
SDA
VDD
CLKOUT
REFOUT
GND
ICSS_RFO
GFX27M_L
+3V_SSC
R32 *0_4
R70 *0_4
R356 *0_4
18,23 EDIDCLK
18,23 EDIDDATA
3,13,14,20,23 SMB_CLK_MAIN
3,13,14,20,23 SMB_DATA_MAIN
R54 10K/F_4
C404 470P/50V_4
C408 .1U/10V_4
C394 4.7U/6.3V_6
*ICS91730AMLF-T
I2C ADDRESS: 0xD4H
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N11M-GE1(DISPLAY)
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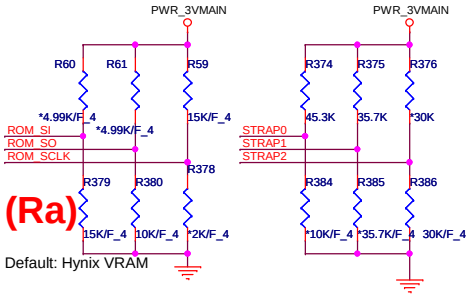
N11M Device ID: 0X7AD(0X0111 1011)

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

PCI_DEVID[4]/SUBVENDOR



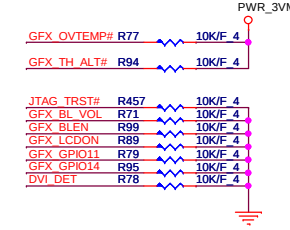
4.99K/F_4: CS24992FB26 [RES CHIP 4.99K 1/16W +1%(0402)]
10K/F_4: CS31002FB26 [RES CHIP 10K 1/16W +1% (0402)]
15K/F_4: CS31502FB24 [RES CHIP 15K 1/16W +1% (0402)]
30.1K/F_4: CS33012FB18 [RES CHIP 30.1K 1/16W +-1%(0402)]
35.7K/F_4: CS33572FB13 [RES CHIP 35.7K 1/16W +-1%(0402)]
45.3K/F_4: CS34532FB18 [RES CHIP 45.3K 1/16W +-1% (0402)]

	Logical Strapping Bit3	Logical Strapping Bit2	Logical Strapping Bit1	Logical Strapping Bit0	
ROM_SO NB10X	XCLK_417	FB_0_BAR_SIZE	SMB_ALT_ADDR	VGA_DEVICE	0001
ROM_SCLK	PCI_DEVIDE[4]	SUB_VENDOR	SLOT_CLK_CFG	PEX_PLL_EN_TERM	0010
ROM_SI	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]	XXXX
STRAP2	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]	1000
STRAP1	3GIO_PADCFG[3]	3GIO_PADCFG[2]	3GIO_PADCFG[1]	3GIO_PADCFG[0]	0001
STRAP0	USER[3]	USER[2]	USER[1]	USER[0]	1111

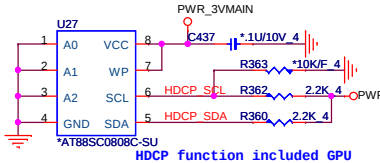
VRAM Configuration Table

(Ra)

	RAMCFG [3:0]	DESCRIPTION	Vendor	Vendor P/N	ROM_SI
	0000		Reserved		
AKD58GGT^01	0001	DDR3 64Mx16x8, 128bit, 1GB,800MHz	Qimonda	IDGH1G-04A1F1C-16X	PD 10K
AKD5LZGTW00	0010	DDR3 64Mx16x8, 128bit, 1GB,800MHz	Hynix	H5TQ1G63BFR-12C	PD 15K
AKD5LGGT502	0011	DDR3 64Mx16x8, 128bit, 1GB,800MHz	Samsung	K4W1G1646E-EC12	PD 20K
	0101		Reserved		
	0110				
	XXXX	DDR3 64Mx16x8, 128bit, 1GB,667MHz	Hynix	H5TQ1G63AFR-14C	
	XXXX	DDR3 64Mx16x8, 128bit, 1GB,667MHz	Samsung	K4W1G1646D-EC12	



HDCP ROM

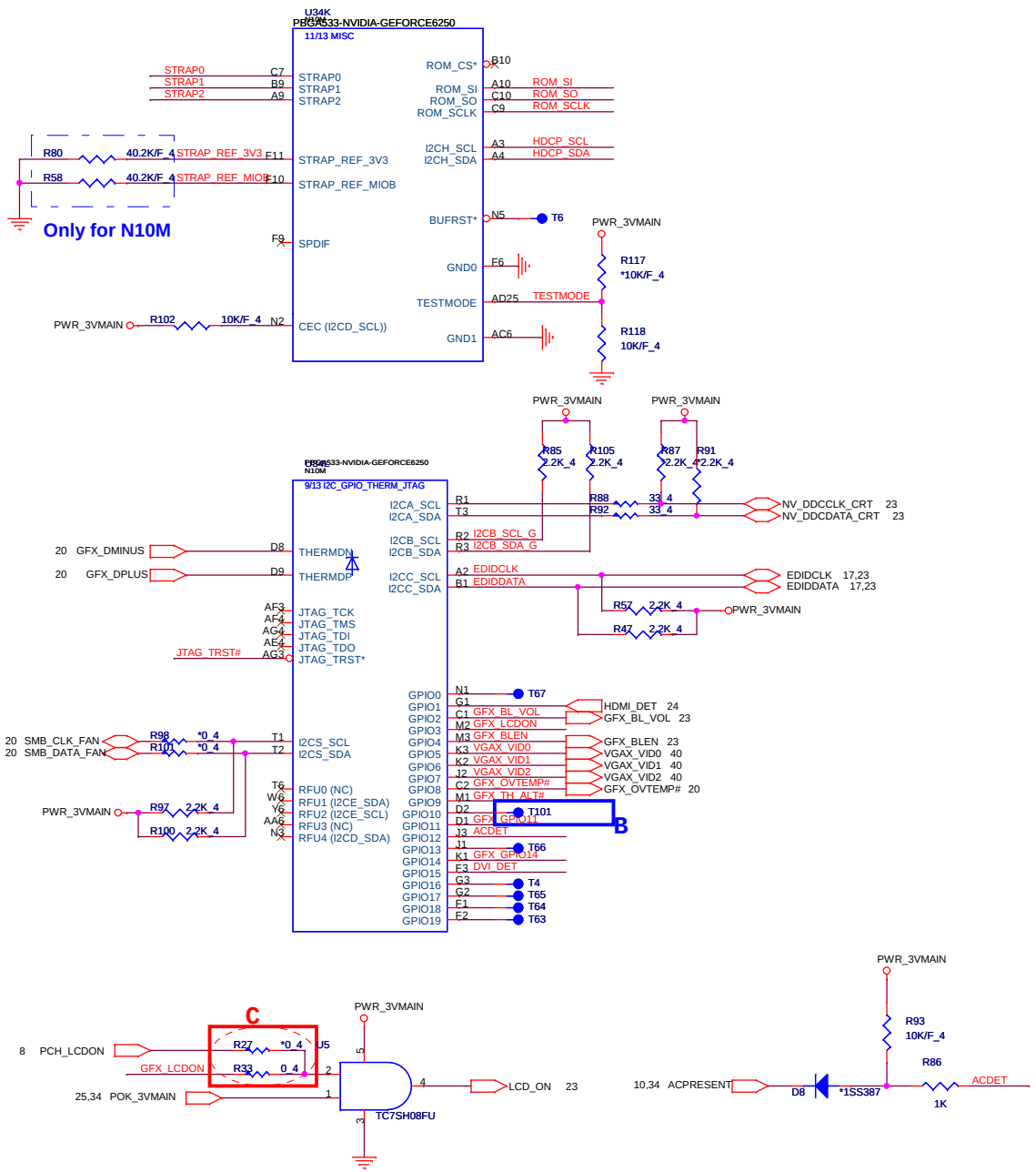


HDCP function included GPU

DHCP ROM	
HDCP_SCL	Low: Crypto ROM Hi: I2C ROM

GPIO ASSIGNMENTS

GPIO	I/O	ACTIVE	USAGE
0	N/A	N/A	
1	IN	N/A	Hot plug detect for IFP link C
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	NVVDD VID2
8	I/O	LOW	OVERT
9	I/O	LOW	ALERT
10	OUT	N/A	FBVREF SELECT
11	OUT	N/A	SLI SYNC0
12	IN	N/A	PWR_LEVEL
13	OUT	N/A	MEM_VID or power supply control
14	OUT	N/A	PS CONTROL



UMA : Mount R27, Rverse R33.
GFX : Mount R33, Rverse R27.

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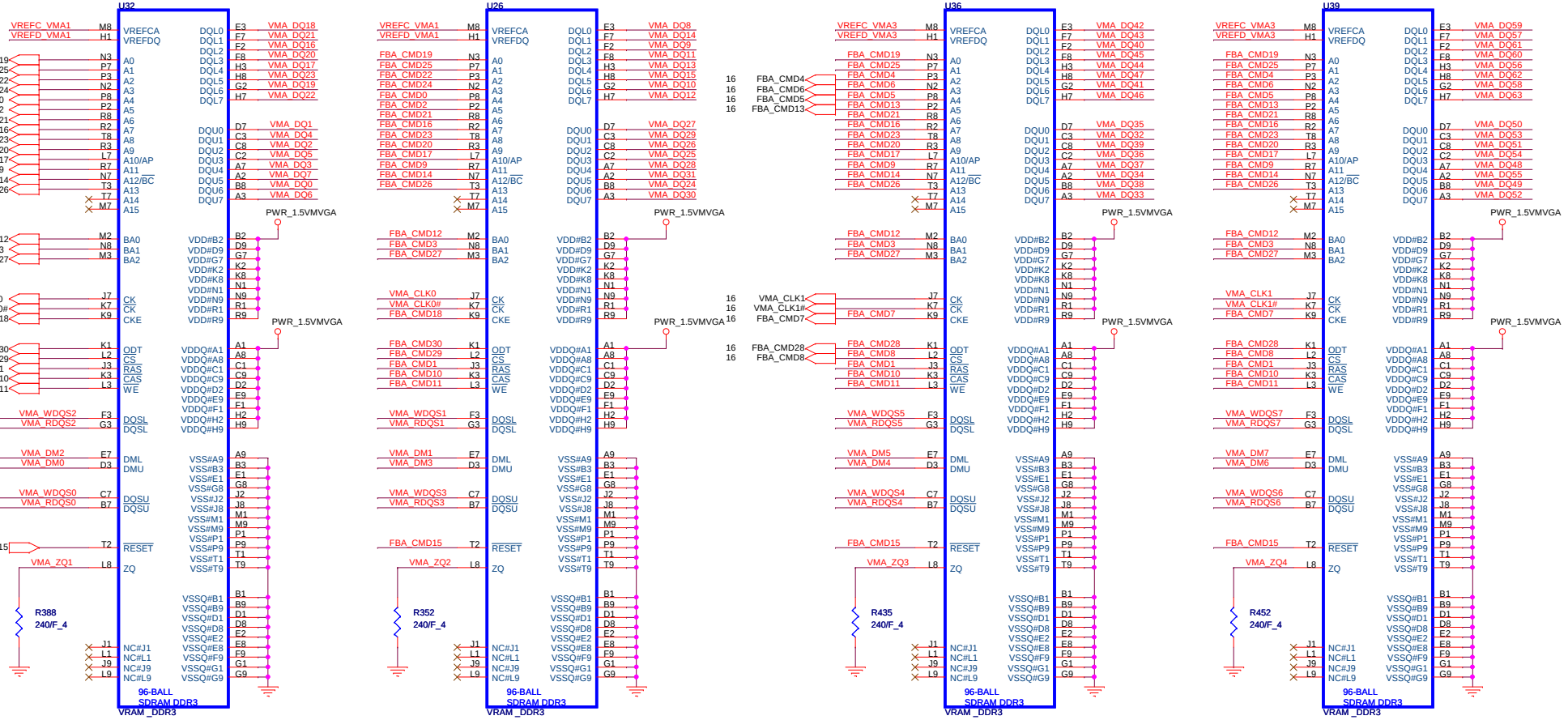
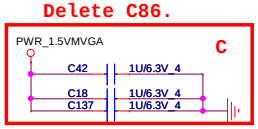
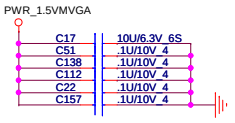
CHANNEL A: 256MB/512MB DDR3

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



Delete C86.





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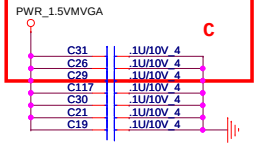

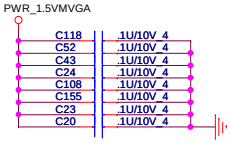

QUANTA COMPUTER

Title	DDR3 VRAM(BGA96)	
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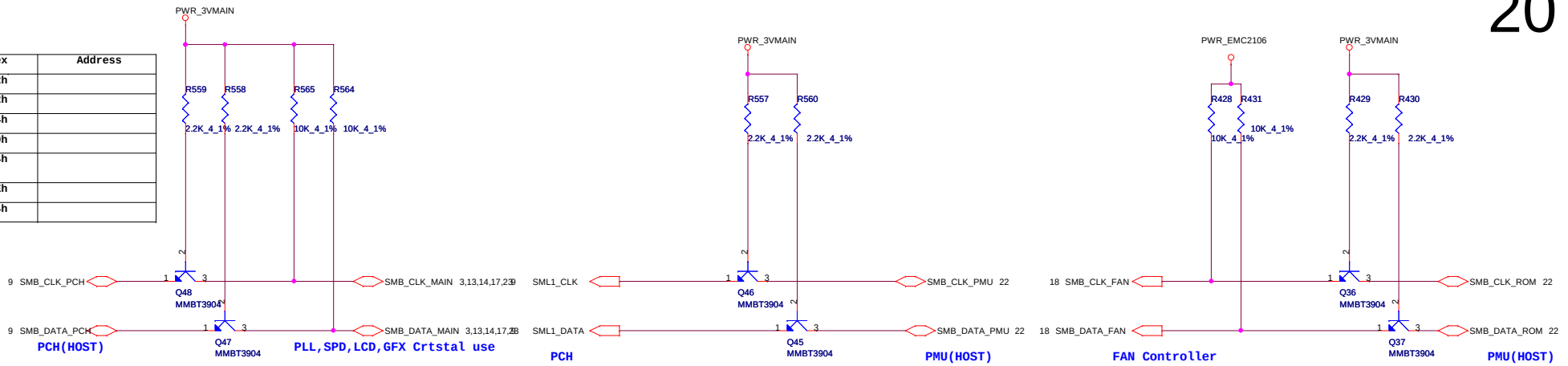
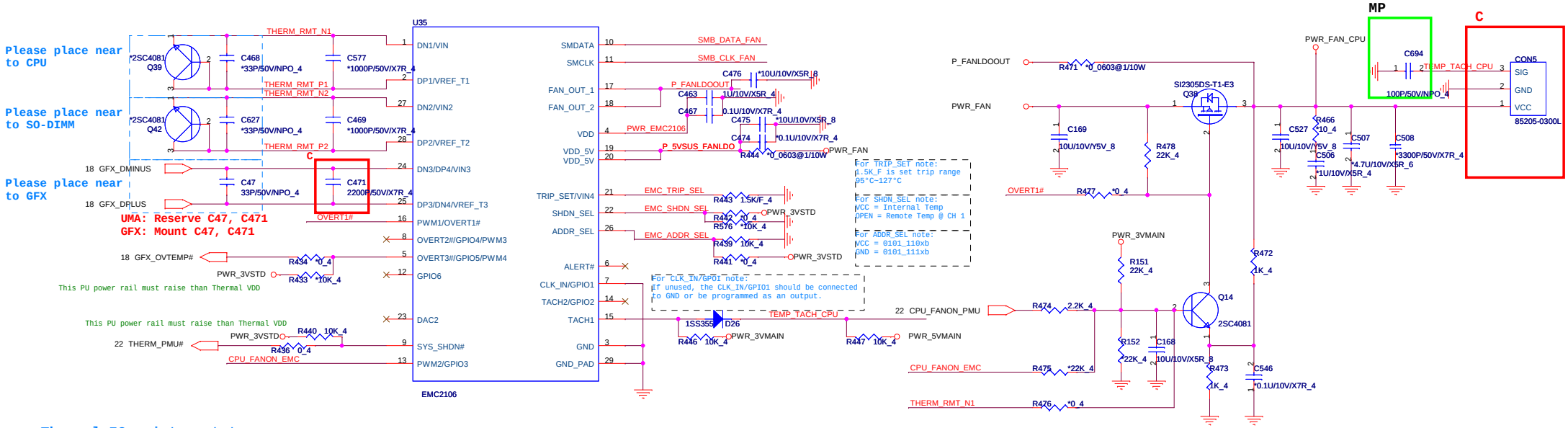
Device	Hex	Address
RTM875N	D2h	
MEM slot0	A2h	
MEM slot1	A4h	
LCD(SPWG)	A0h	
ICS91730 (For NVIDIA)	D4h	
EMC2106	5Eh	
PCH	44h	

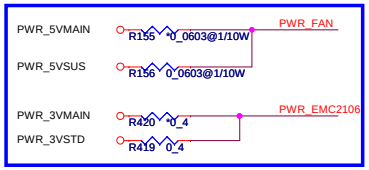


Thermal Sensor

FAN CONN



Thermal IC mointor state
S0 state: Mount R158 and R163
S0~S4 state:Mount R156 and R159 --> By customer request



QUANTA COMPUTER

Title: SMBUS/Thermal Sensor

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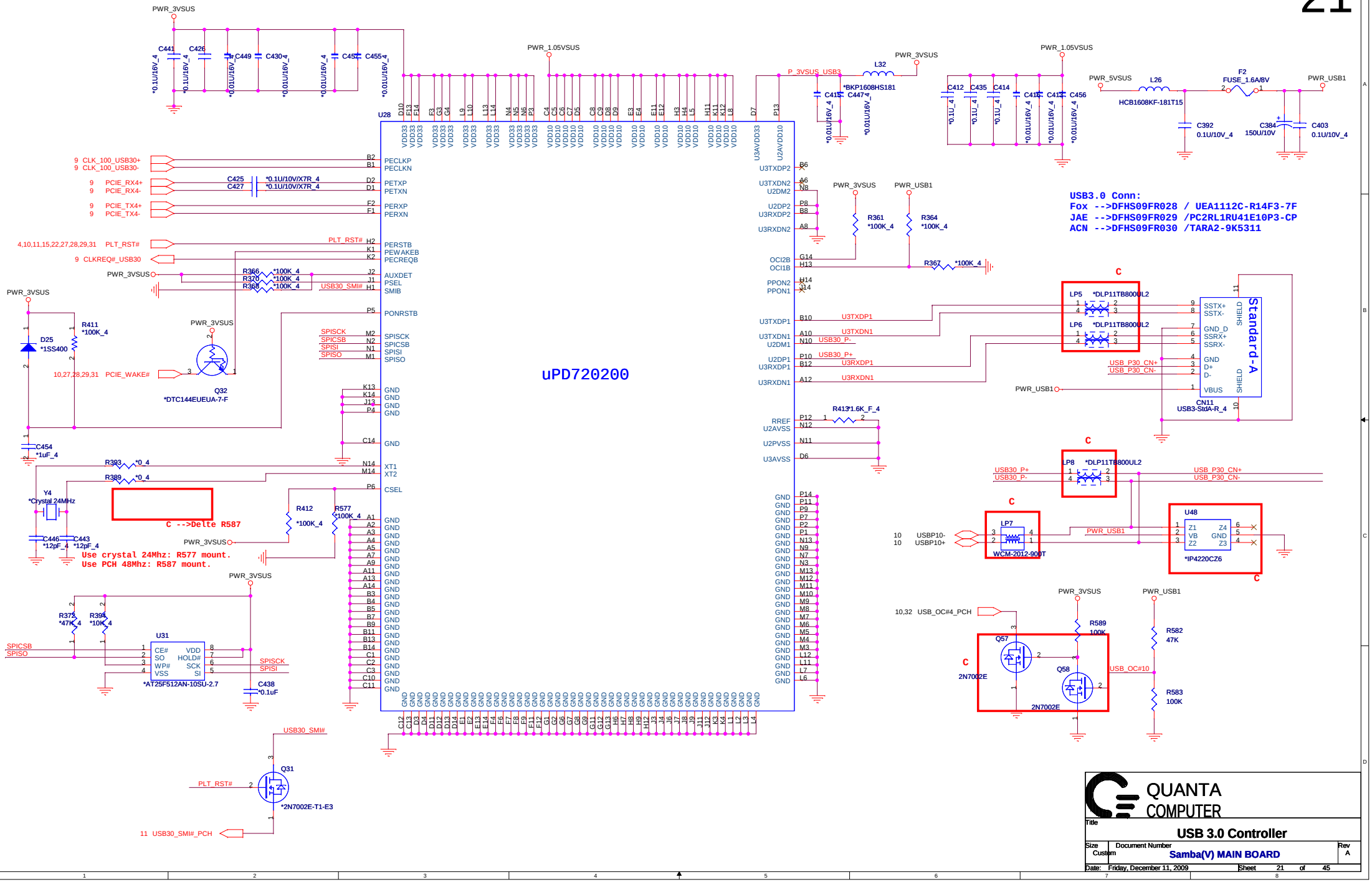
USB 3.0


uPD720200
U28
PWR_3VSUS
PWR_1.05VSUS
PWR_5VSUS
PWR_USB1
USB3.0 Conn:
Fox -->DFHS09FR028 / UEA1112C-R14F3-7F
JAE -->DFHS09FR029 /PC2RL1RU41E10P3-CP
ACN -->DFHS09FR030 /TARA2-9K5311
C --> Delte R587
Use crystal 24Mhz: R577 mount.
Use PCH 48Mhz: R587 mount.
*AT25F512AN-10SU-2.7
*DTC144EUEUA-7-F
*DLP11TB8000UL2
WCM-2012-900T
*IP4220CZ6
2N7002E
Standard-A
CN11
USB3-StdA-R_4
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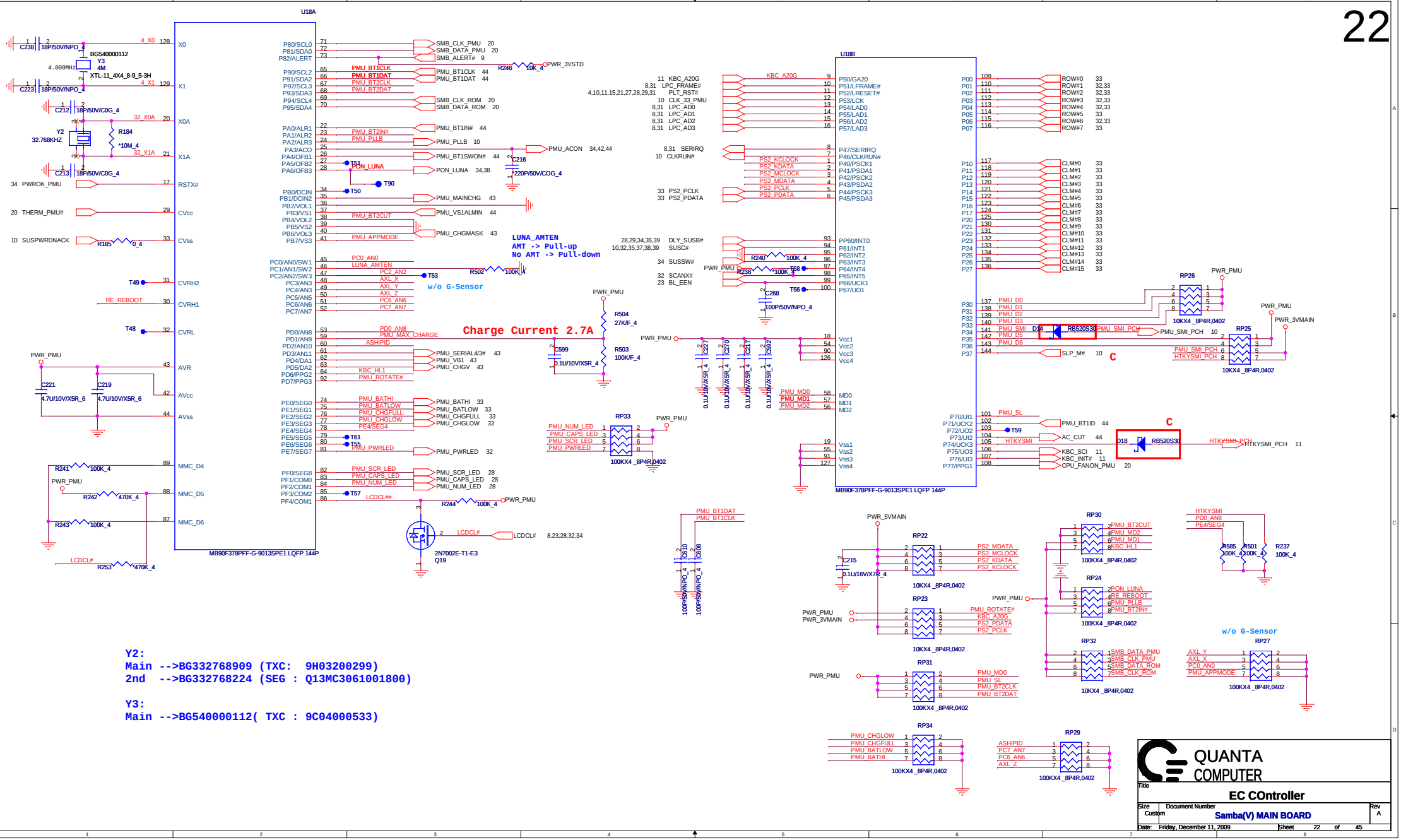
U18A
MB90F378PFF-G-9013SPE1 LQFP 144P
U18B
MB90F378PFF-G-9013SPE1 LQFP 144P
LUNA_AMTEN
AMT -> Pull-up
No AMT -> Pull-down
w/o G-Sensor
Charge Current 2.7A
C
w/o G-Sensor
Y2:
Main -->BG332768909 (TXC: 9H03200299)
2nd -->BG332768224 (SEG : Q13MC3061001800)
Y3:
Main -->BG540000112(TXC : 9C04000533)
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EC COntroller
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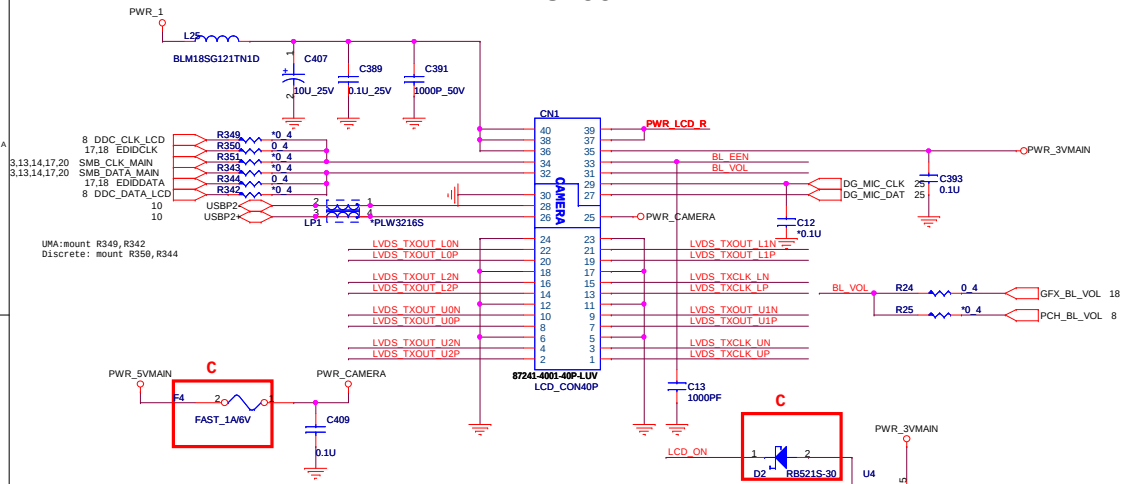
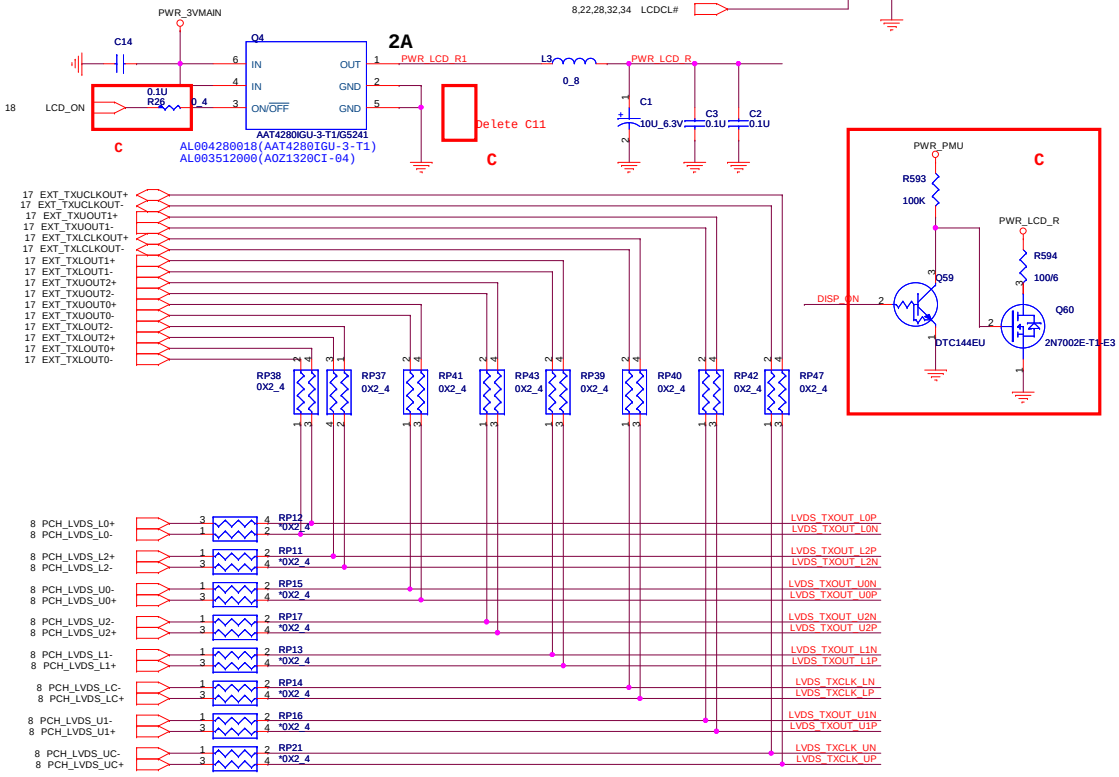
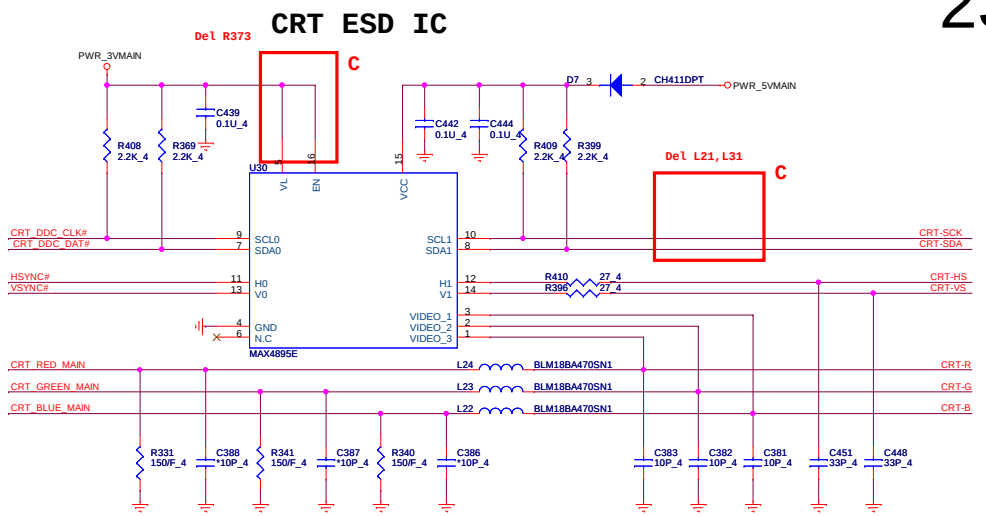
LVDS CONN



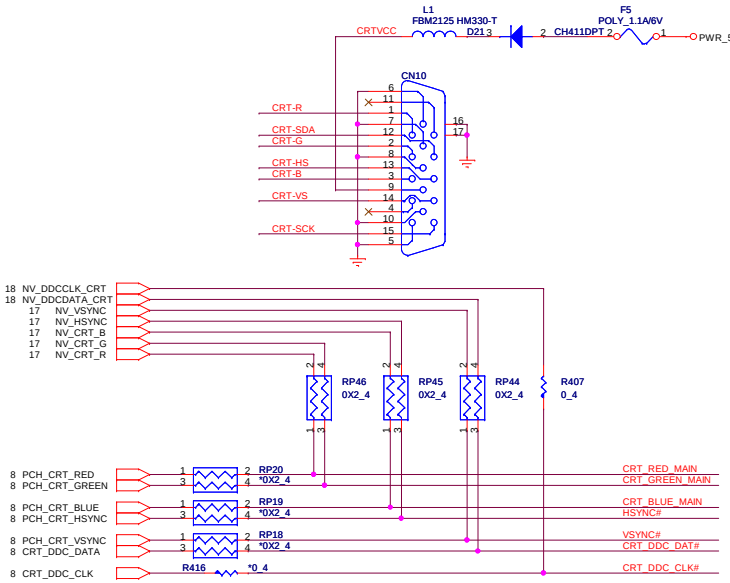
PANEL VCC CONTROL



CRT ESD IC



CRT CONN



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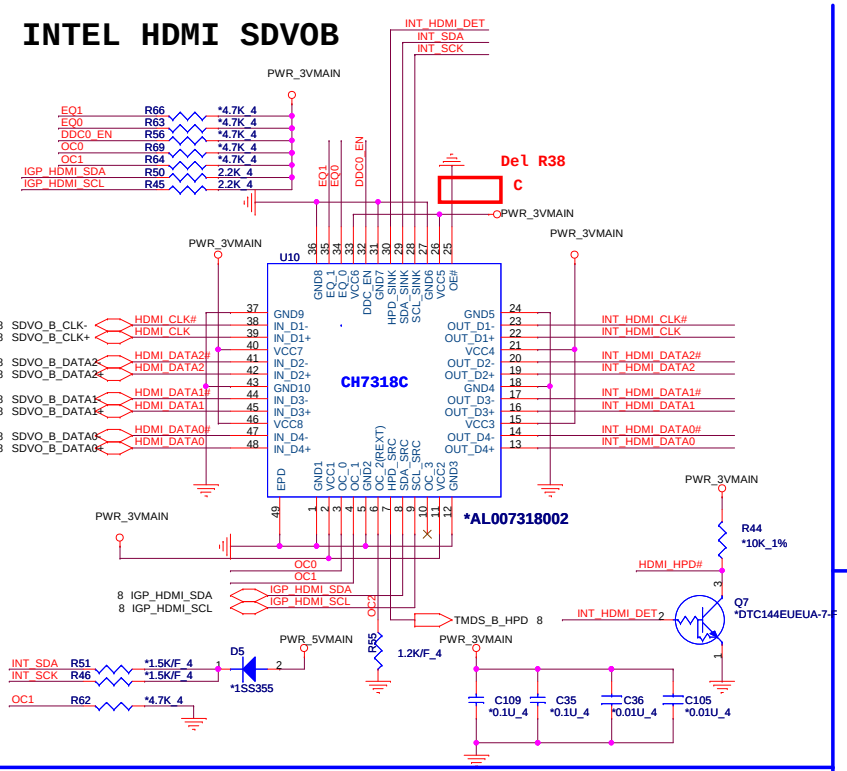
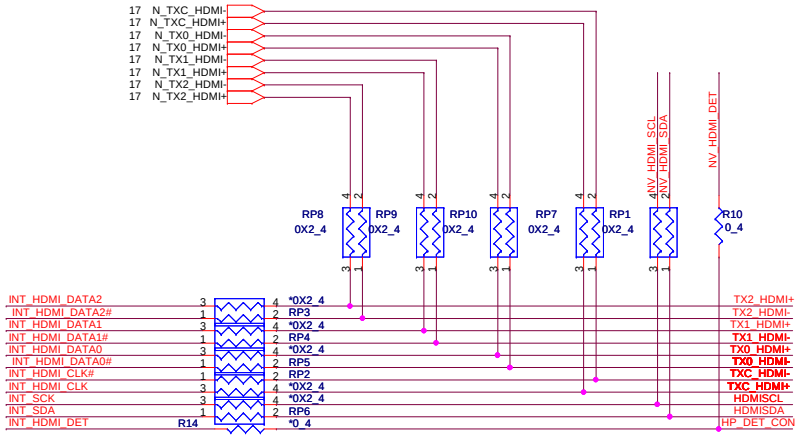
LVDS/CRT PORT

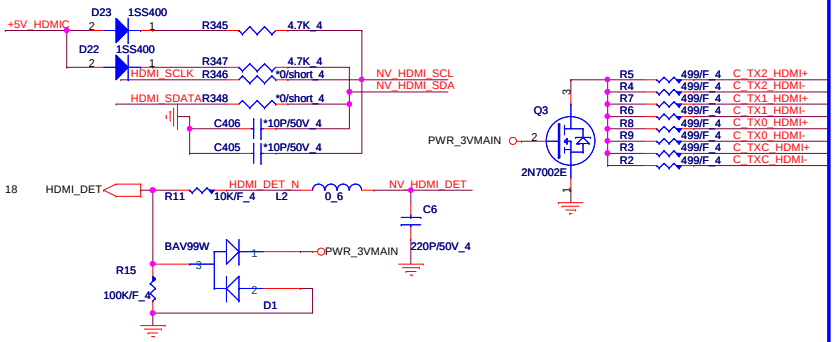
INTEL HDMI SDVOB



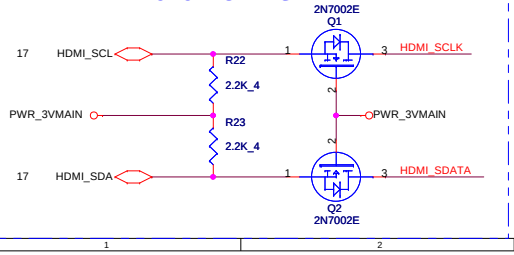
HDMI Switch



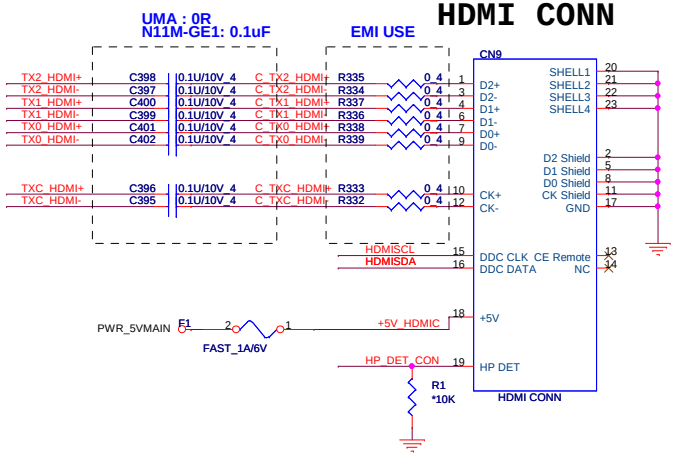
HDMI (Form Nvidia)



Level Shift



HDMI CONN



QUANTA COMPUTER

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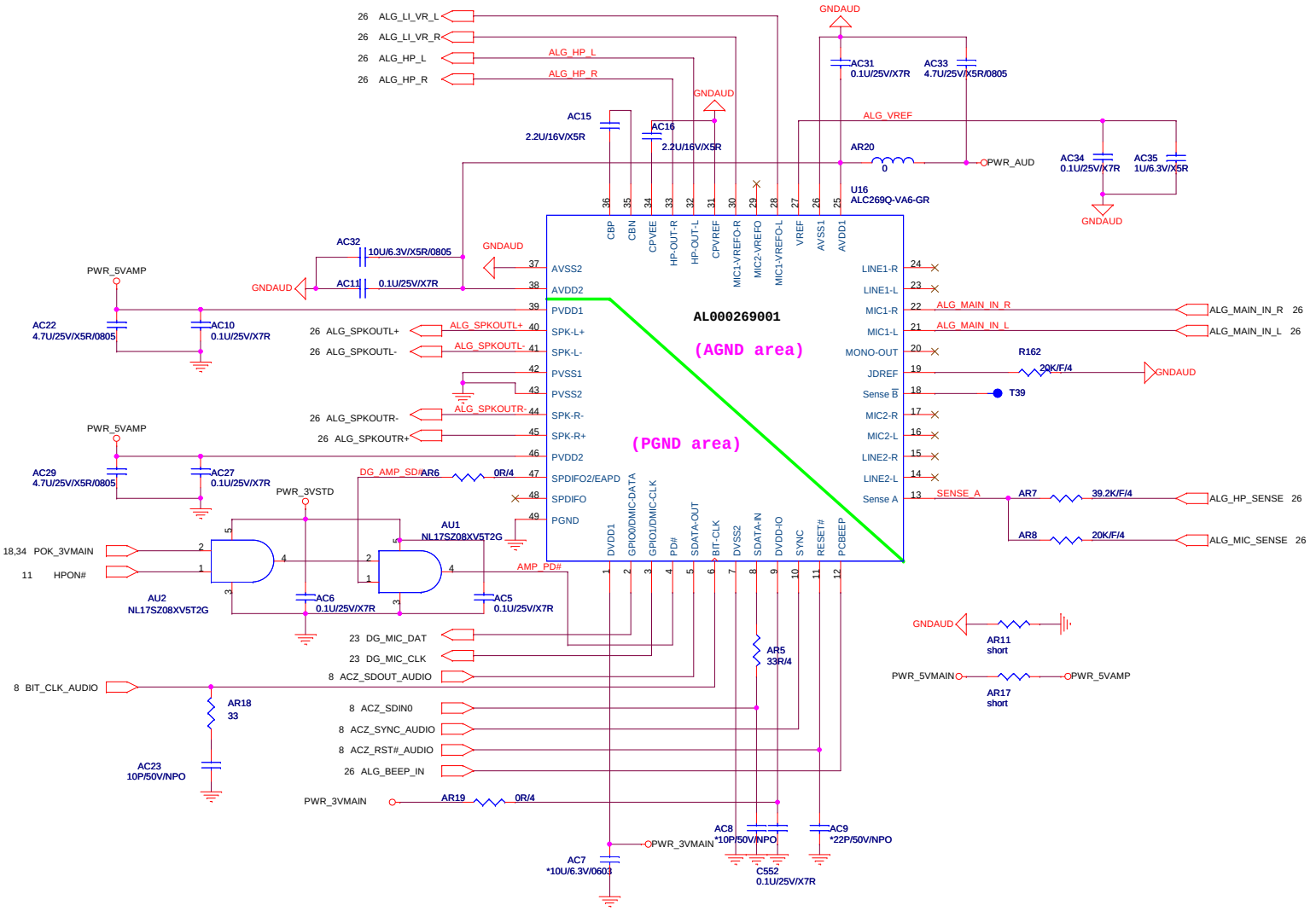

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Title: ALC269 CODEC(ALC269)1/2

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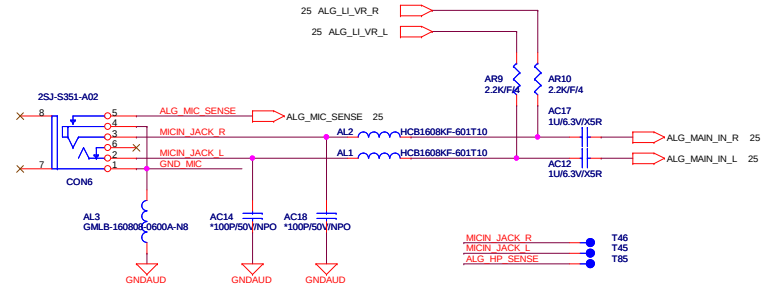

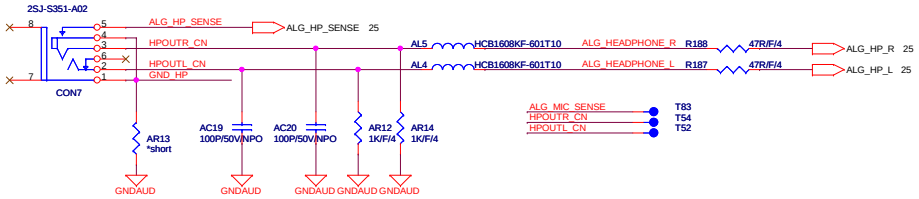

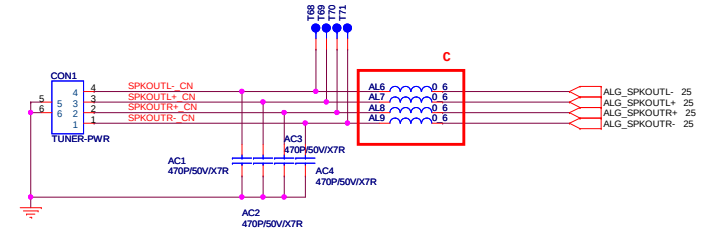

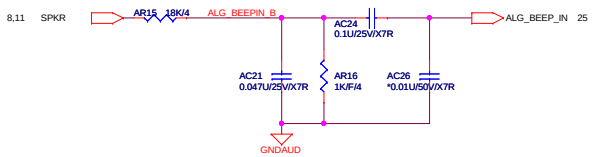

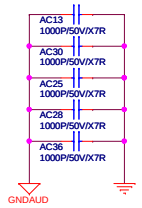

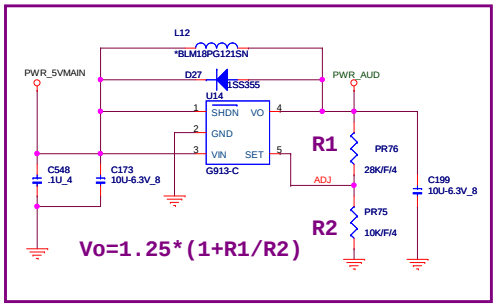

QUANTA COMPUTER			
Title: AUDIO ALC269(Audio Codec)2/2			
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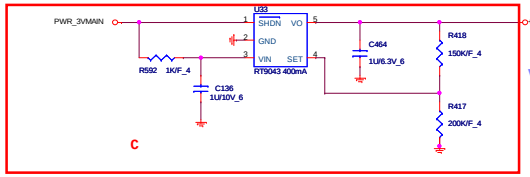
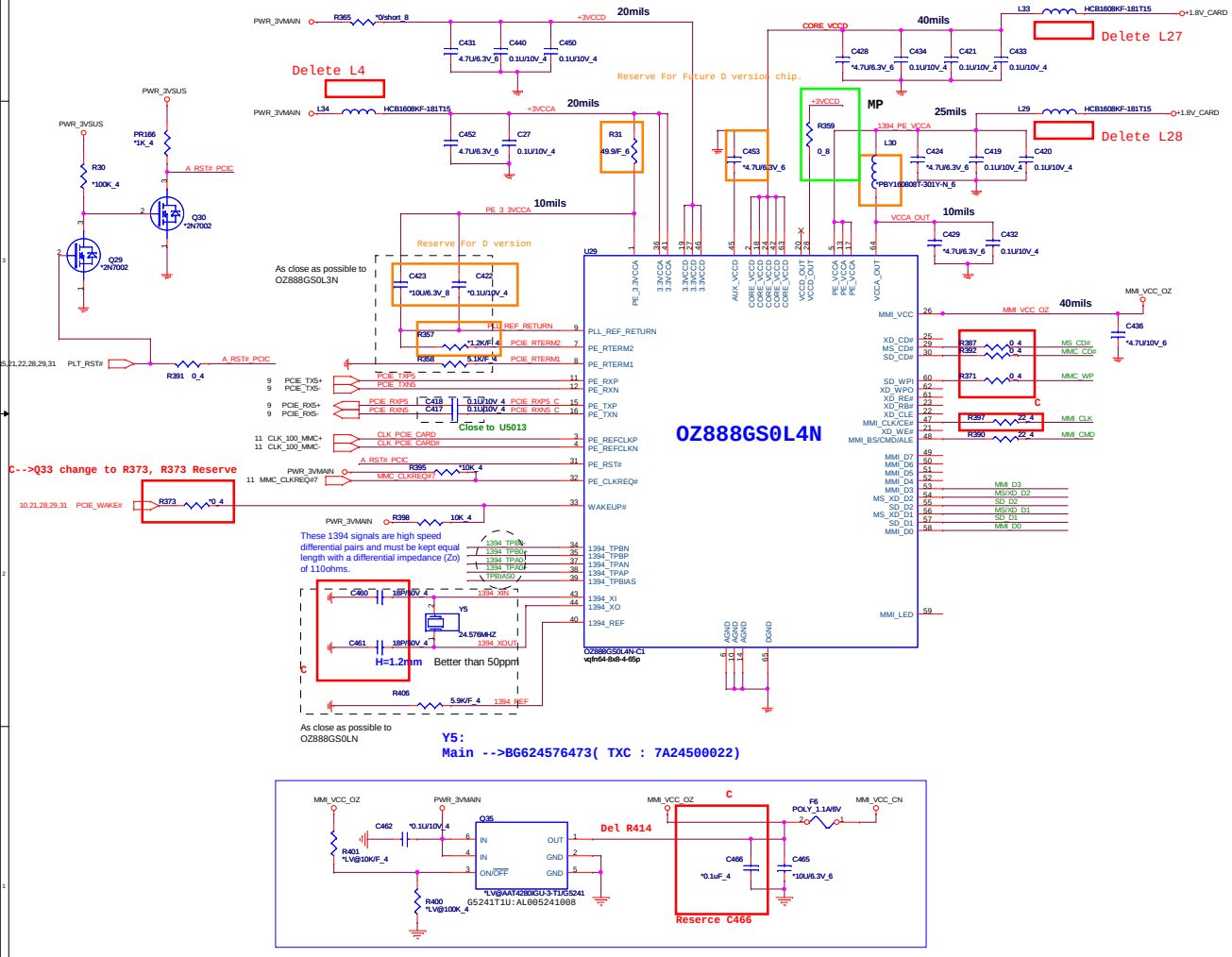


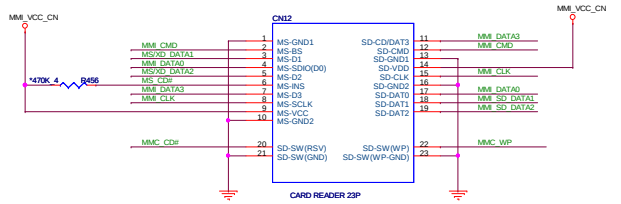
VOut= 1.2*(1+ R418/R417) = 2.1V

Each power pin is 100mA



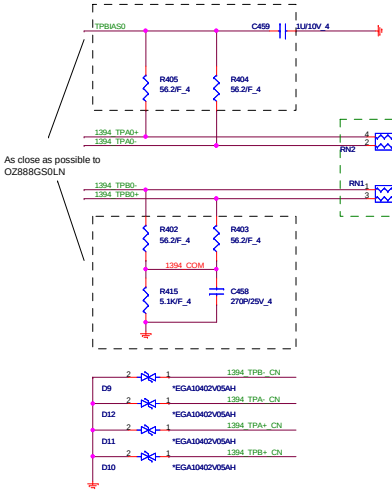
As close as possible to CN2500 pin13

3 in 1 Conn:
PLA -->DFHD23MS002 / CM35-5
TTN -->DFHD23MS0A8 / R009-120-LR



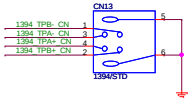
C -->Delete C472,C473,C477,C504,C488

1394
[FIW]



As close as possible to OZ888GS0LN

1394 Conn:
SUY -->DFHS04FR196 / 020204FR004S518ZL
OTK -->DFHS04FR190 / MIE-04RH4G



These 1394 signals are high speed differential pairs and must be kept equal length with a differential impedance (Zo) of 110ohms.

QUANTA COMPUTER

Title	Card Reader/1394(OZ888GS0)	
Size: Custom	Document Number: Samba(V) MAIN BOARD	Rev: A
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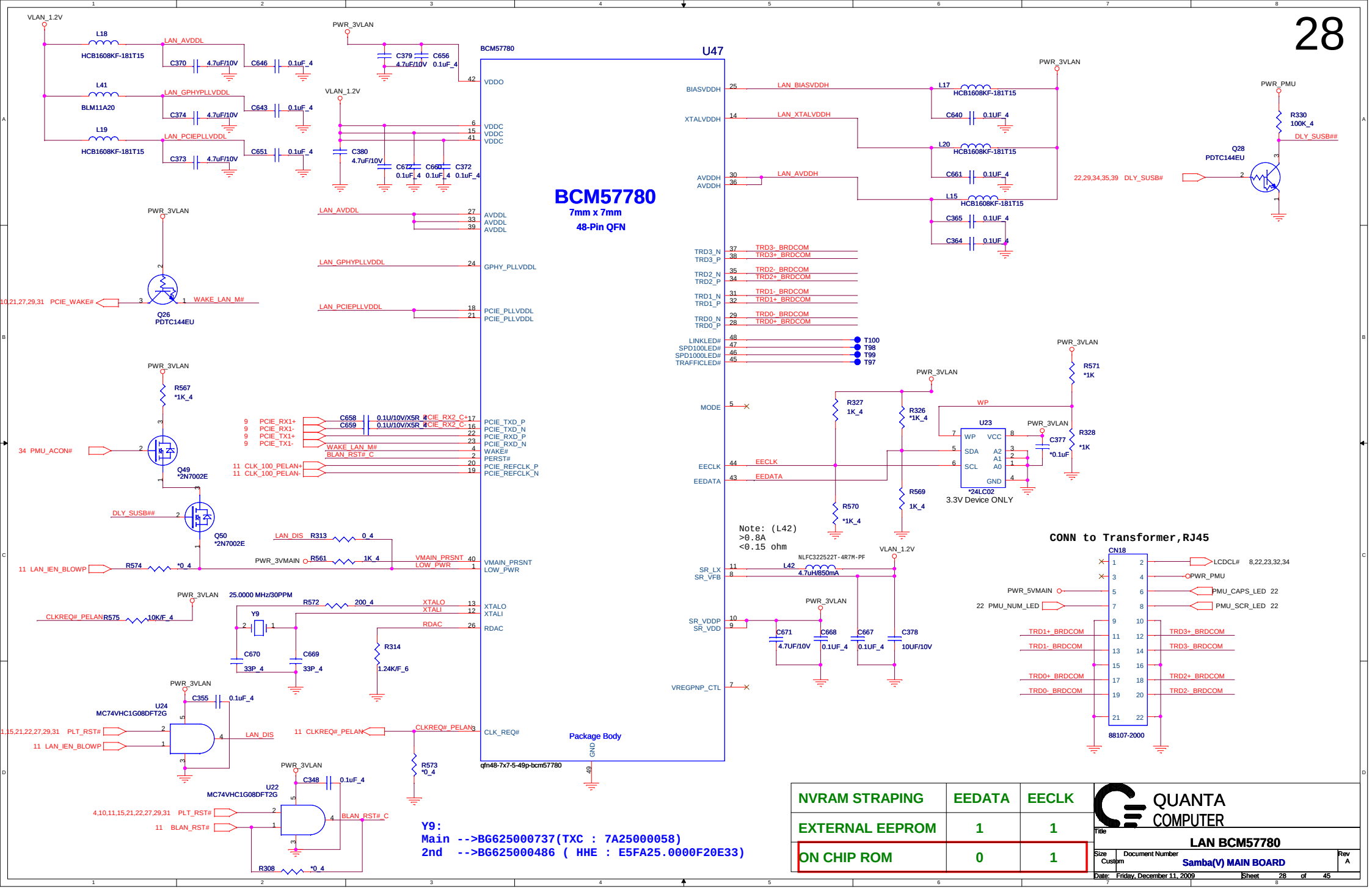

NVRAM STRAPING	EEDATA	EECLK
EXTERNAL EEPROM	1	1
ON CHIP ROM	0	1

QUANTA COMPUTER

Title: LAN BCM57780

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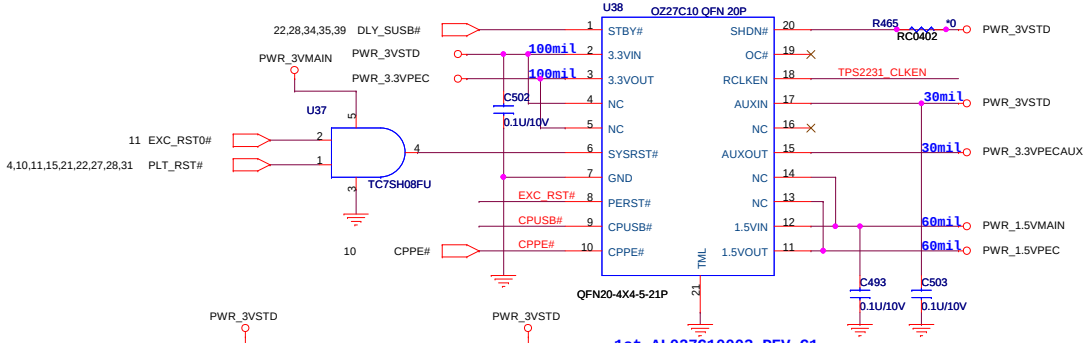
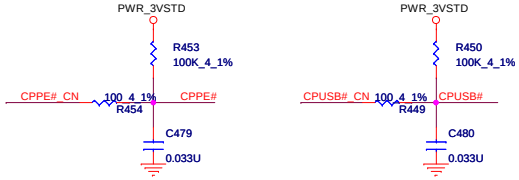
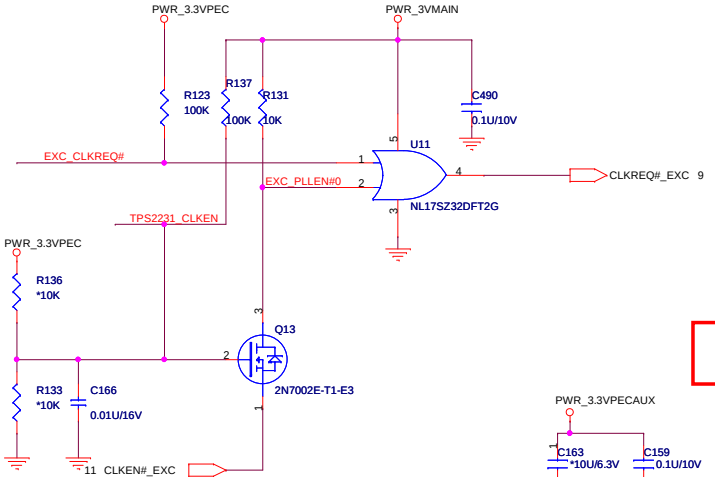
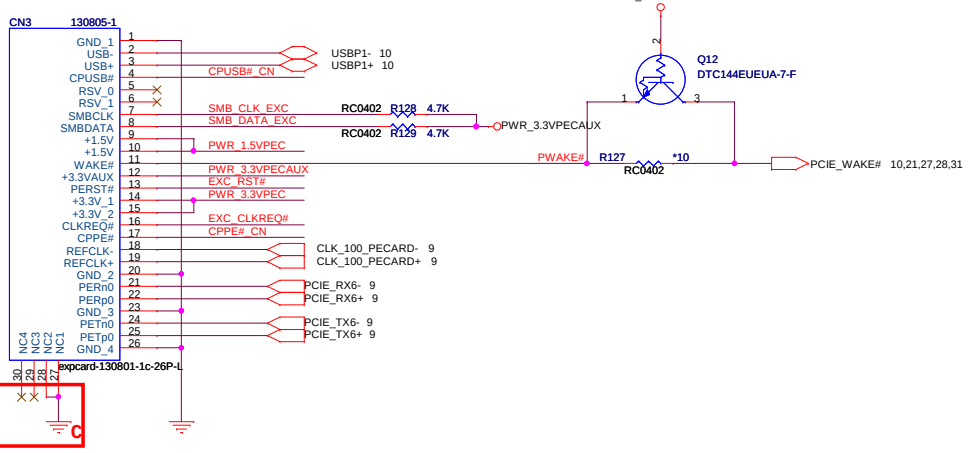


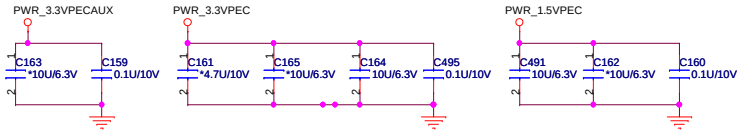


1st AL027C10003 REV.C1
2nd AL000577003 G577DSR91U

NEW CARD







QUANTA COMPUTER

Title	EXPRESS CARD	
Size: Custom	Document Number: Samba(V) MAIN BOARD	Rev: A
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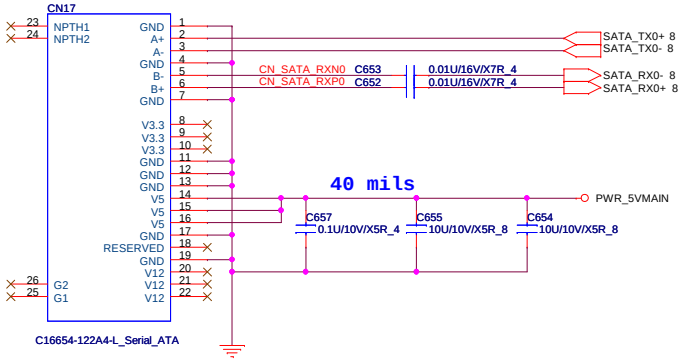
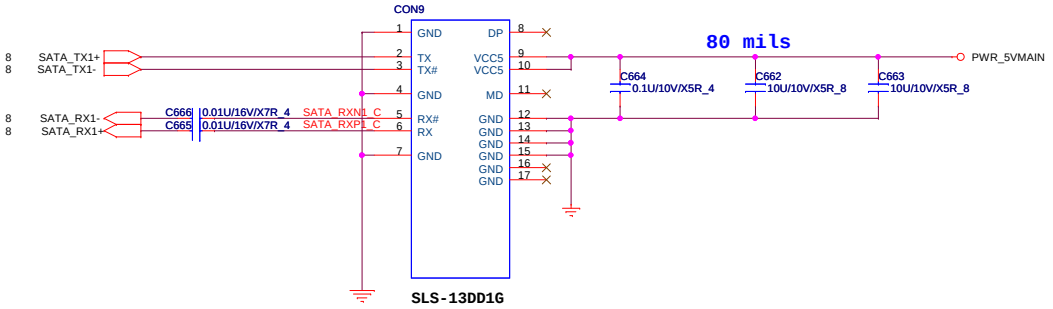
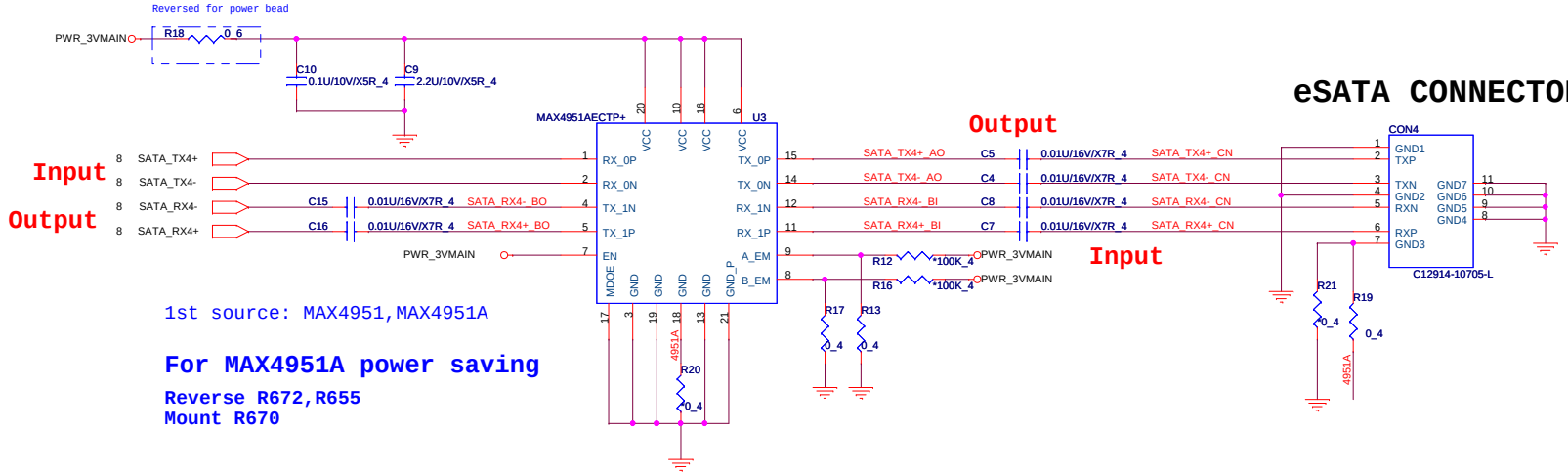
SATA CONN

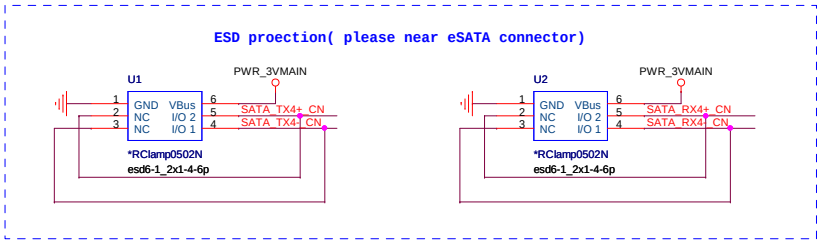


ODD CONN



ESATA





QUANTA COMPUTER

Title	HDD/ODD/ESATA	
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Minipcie(H 8.0):
ACS -->DFHD52MS057 /88914-5204
LTS -->DFHD52MS065 / AAA-PCI-041-K01

WLAN

Delete R568

CN16 MINI PCIE 52P

	WAKE#	+3.3V_1	PWR_3VMINIC1
	RSVD1	GND	
	RSVD2	+1.5V	PWR_1.5VMAIN
9 CLKREQ#_MINIC1	CLKREQ#	RSVD13	SB_LPC_FRAME# R316 33_4 LPC_FRAME# 8,22
	GND	RSVD14	SB_LPC_AD3# R318 33_4 LPC_AD3 8,22
9 CLK_100_MINIC1-	REFCLK-	RSVD15	SB_LPC_AD2# R317 33_4 LPC_AD2 8,22
9 CLK_100_MINIC1+	REFCLK+	RSVD16	SB_LPC_AD1# R320 33_4 LPC_AD1 8,22
	GND	RSVD17	SB_LPC_AD0# R319 33_4 LPC_AD0 8,22
	RSVD3	GND	
10 CLK_33_DEBUG	RSVD4	RSVD18	RFON_MINIC1
	GND	PERST#	
9 PCIE_RX2-	PERn0	+3.3Vaux	
9 PCIE_RX2+	PERp0	GND	PLT_RST# 4,10,11,15,21,22,27,28,29
	GND	+1.5V	
	GND	SMB_CLK	C632
9 PCIE_TX2-	PETn0	SMB_DATA	*2200P/50V
9 PCIE_TX2+	PETp0	GND	
	GND	USB_D-	USBP5- 10
8,22 SERIRQ R566 *0_4	RSVD5	USB_D+	USBP5+ 10
	RSVD6	GND	
PWR_3VMINIC1	RSVD7	LED_WWAN#	
	RSVD8	LED_WLAN#	
	RSVD9	LED_WPAN#	
	RSVD10	+1.5V	
	RSVD11	GND	
	RSVD12	+3.3V_2	

MIPCI-C-1759513-52P-LDV

Half SIZE H=8mm

PWR_1.5VMAIN
30 mils
C350 0.1U/10V C351 0.1U/10V C352 4.7U/10V

C

PWR_3VMAIN
R139 10K_4
U12
SW1 RF_SW(MH-1210-04T-1)
RF_ON_SW R142 1K
WLAN_SW# C167 0.22U/10V
TC7PA17FU SSOP 6P
WLAN_SW 6 → WLAN_SW 10

PWR_3VMINIC1 L39 GMLB-201209-0030P-N8 PWR_3VMAIN
C631 0.1U/10V C633 0.1U/10V C634 0.1U/10V C647 4.7U/10V
Close to CN20

C -->Delete PR143,PC97,PR144,PQ54,PQ52,PQ50,PR140 for delete wake on WLAN function

PWR_3VSTD
U13 MC74VHC1G08DFT2G
C172 0.1U/10V
10 MINIC_ON1
WLAN_SW
RFON_MINIC1

TransferJet

CN15 *MINI PCIE 52P

	WAKE#	+3.3V_1	PWR_3VMINIC2
	RSVD1	GND	
	RSVD2	+1.5V	PWR_1.5VMAIN
9 CLKREQ#_MINIC2	CLKREQ#	RSVD13	
	GND	RSVD14	
9 CLK_100_MINIC2-	REFCLK-	RSVD15	
9 CLK_100_MINIC2+	REFCLK+	RSVD16	
	GND	RSVD17	
	RSVD3	GND	
	RSVD4	RSVD18	RFON_MINIC2
	GND	PERST#	
9 PCIE_RX3-	PERn0	+3.3Vaux	
9 PCIE_RX3+	PERp0	GND	
	GND	+1.5V	C601
9 PCIE_TX3-	GND	SMB_CLK	*2200P/50V
9 PCIE_TX3+	PETn0	SMB_DATA	PLT_RST# 4,10,11,15,21,22,27,28,29
	PETp0	GND	
	GND	USB_D-	USBP12- 10
	RSVD5	USB_D+	USBP12+ 10
	RSVD6	GND	
PWR_3VMINIC2	RSVD7	LED_WWAN#	
	RSVD8	LED_WLAN#	
	RSVD9	LED_WPAN#	
	RSVD10	+1.5V	
	RSVD11	GND	
	RSVD12	+3.3V_2	

MIPCI-C-1759513-52P-LDV

Half SIZE =8mm

PWR_1.5VMAIN
30 mils
C595 *0.1U/10V C594 0.1U/10V C597 4.7U/10V

PWR_3VMINIC2
C602 *0.1U/10V C593 *0.1U/10V C596 *0.1U/10V C580 *4.7U/10V C600 *4.7U/10V

L38 *HCB1608KF-181T15

PWR_3VMAIN
C578 *4.7U/10V C579 *0.1U/10V

Close to CN21

C

PWR_3VSTD
U42 *MC74VHC1G08DFT2G
C607 *0.1U/10V
10 MINIC_ON2
WLAN_SW
RFON_MINIC2

QUANTA COMPUTER

Title: WLAN/TransferJet

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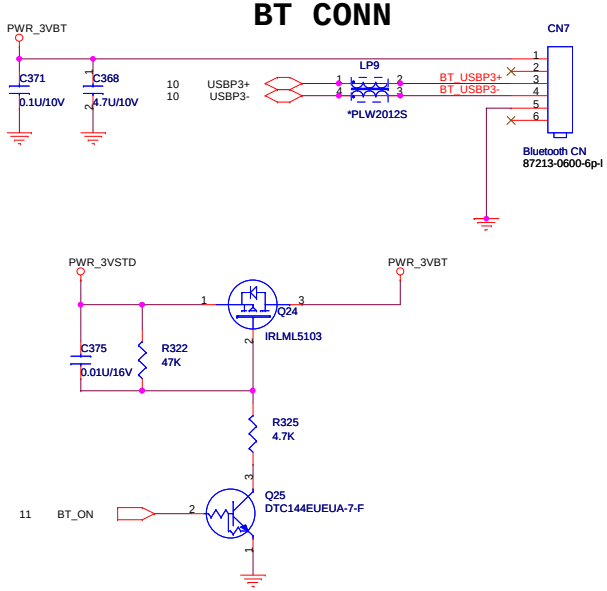
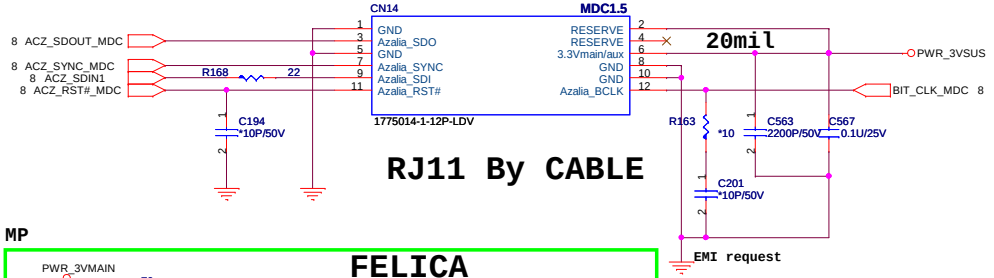
BT CONN



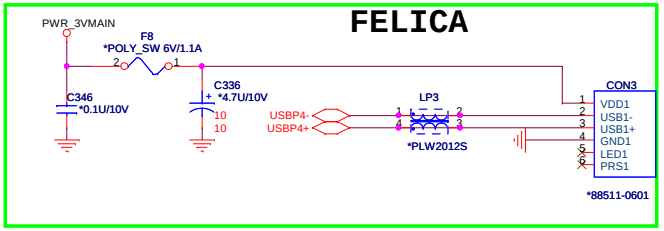
MDC CONN



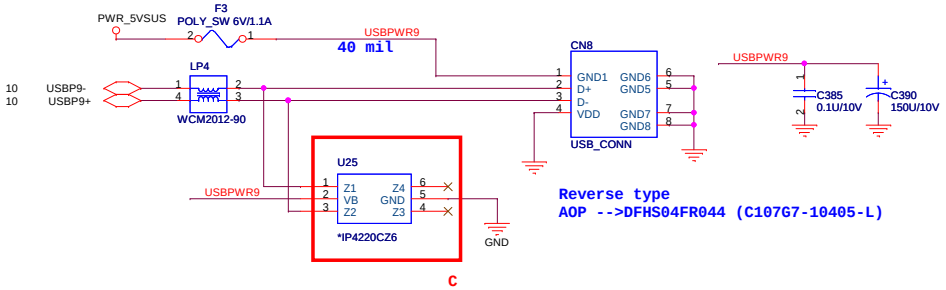
RJ11 By CABLE

MP

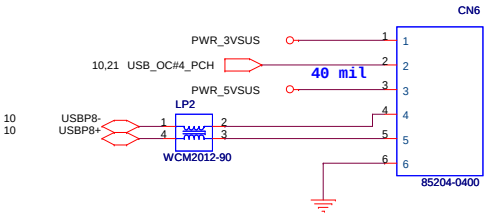
FELICA

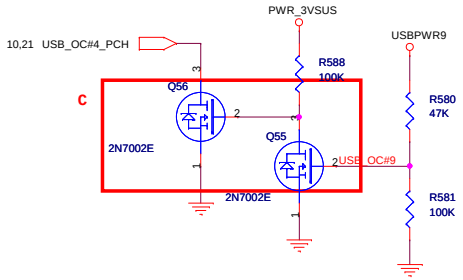


USB CONN

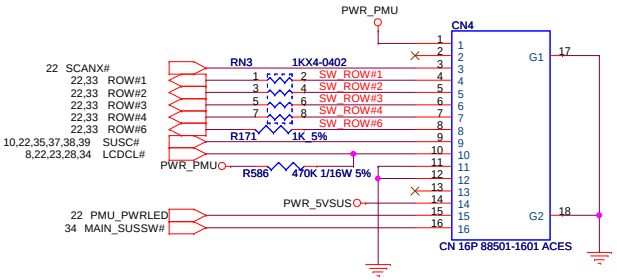


CONN to USB board



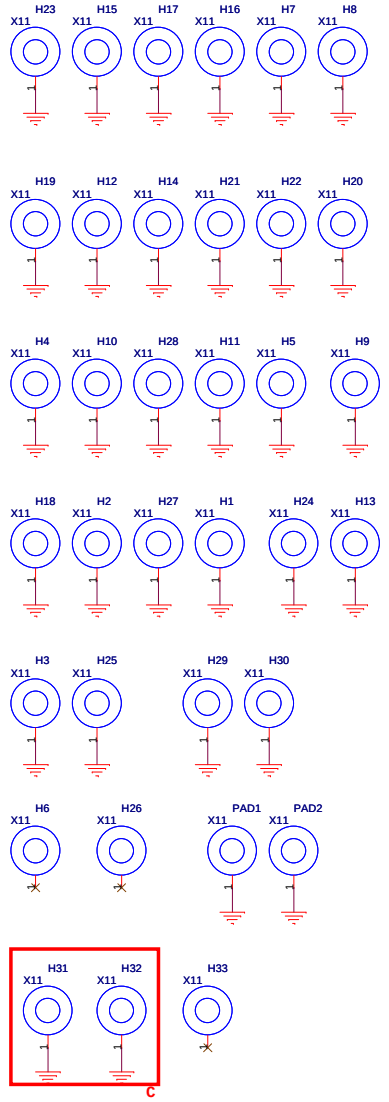


MMB BOARD CONN



SCREW HOLE

32



QUANTA COMPUTER

Title: BT/MDC/FELICA

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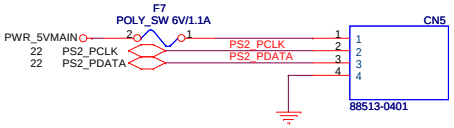
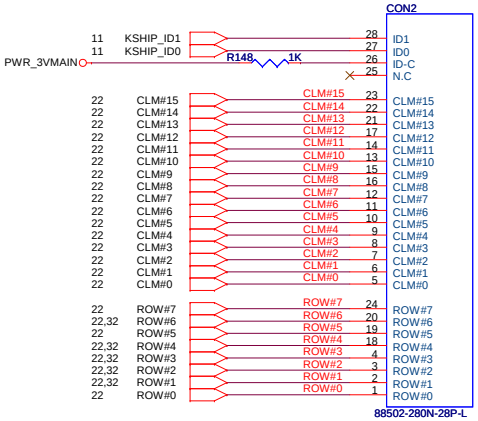
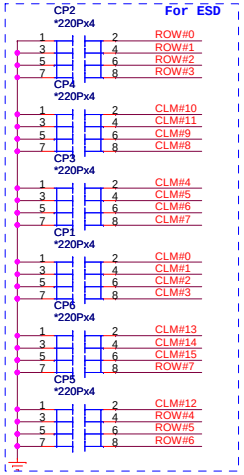
GLIDE PAD CONN



Keyboard CONN

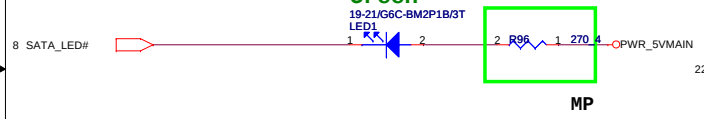




Location 4

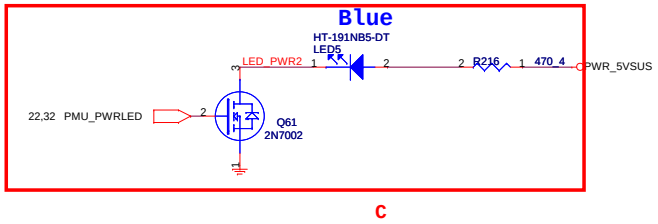
HDD/ODD LED

Green



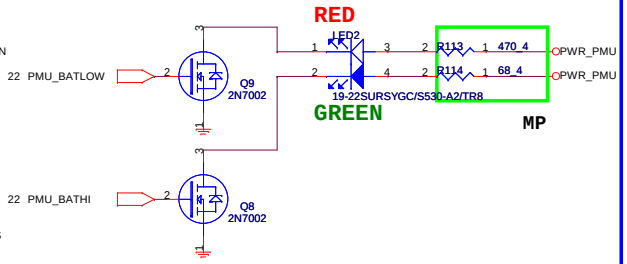
PWR LED Location 1

Blue



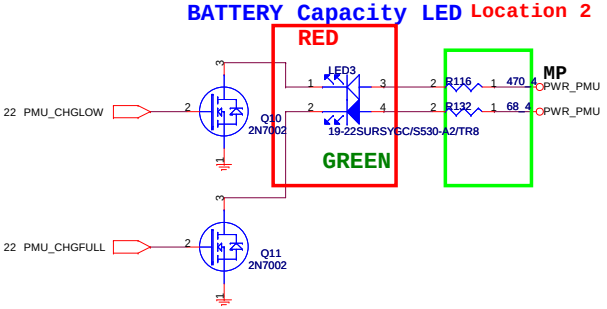
BATTERY Capacity LED Location 3

RED

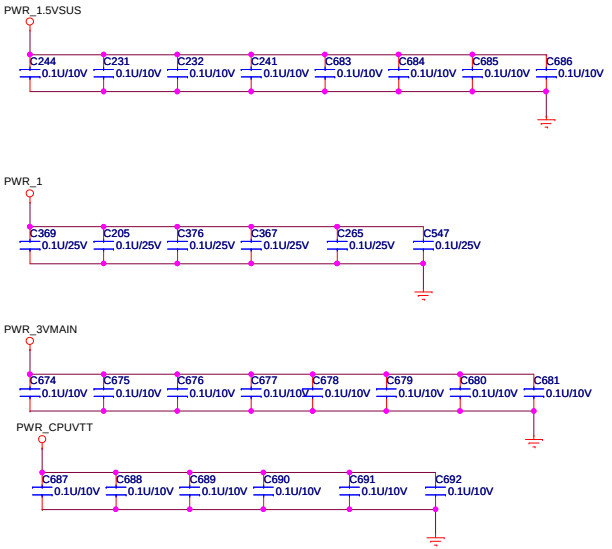


BATTERY Capacity LED Location 2

RED



EMI CAP.



QUANTA COMPUTER

Title: KB/Touch Pad/LED/EMI CAP

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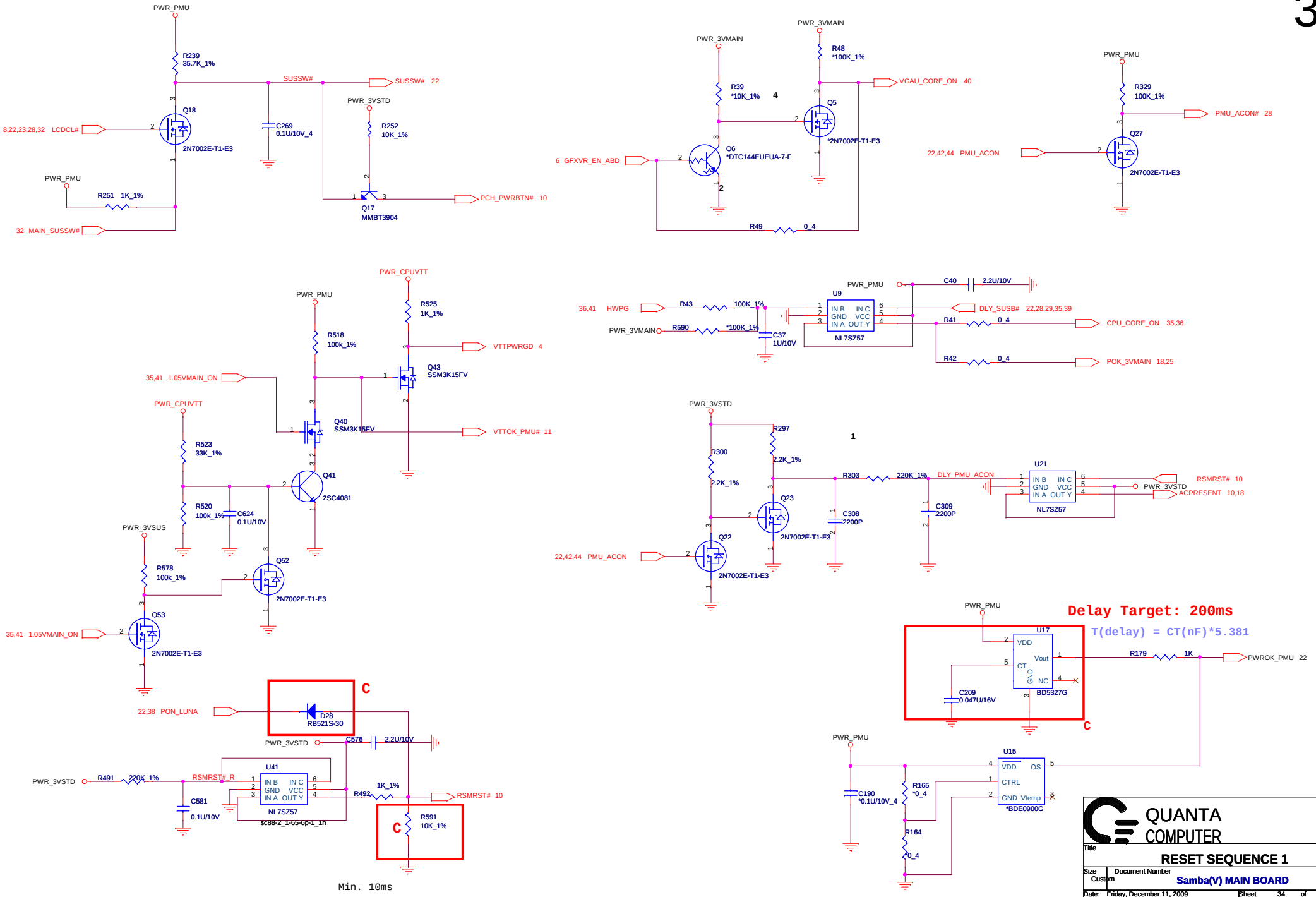

QUANTA COMPUTER

Title: RESET SEQUENCE 1

Size: Custom | Document Number: Samba(V) MAIN BOARD | Rev: A

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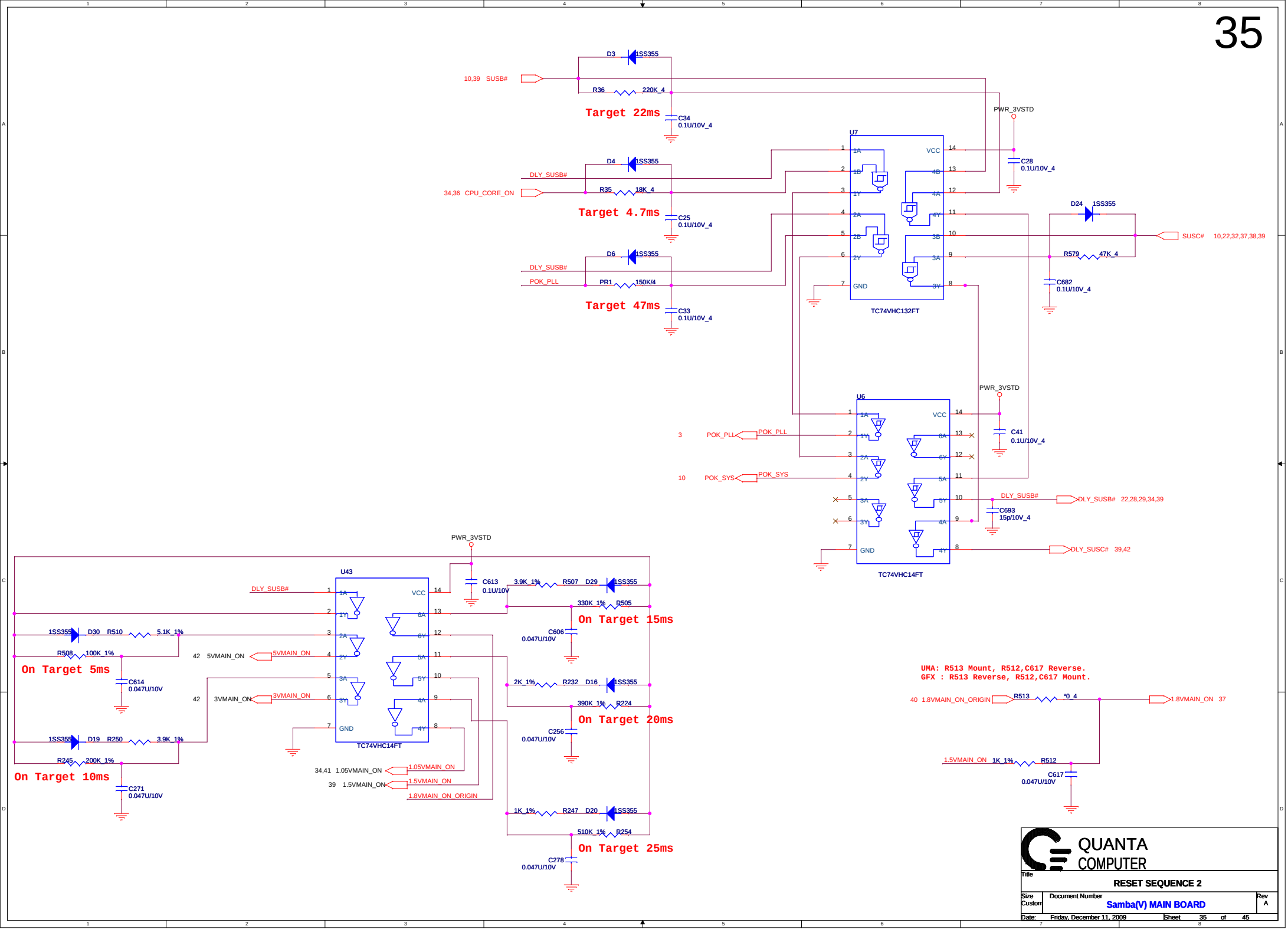

QUANTA COMPUTER

Title	RESET SEQUENCE 2	
Size: Custom	Document Number: Samba(V) MAIN BOARD	Rev: A
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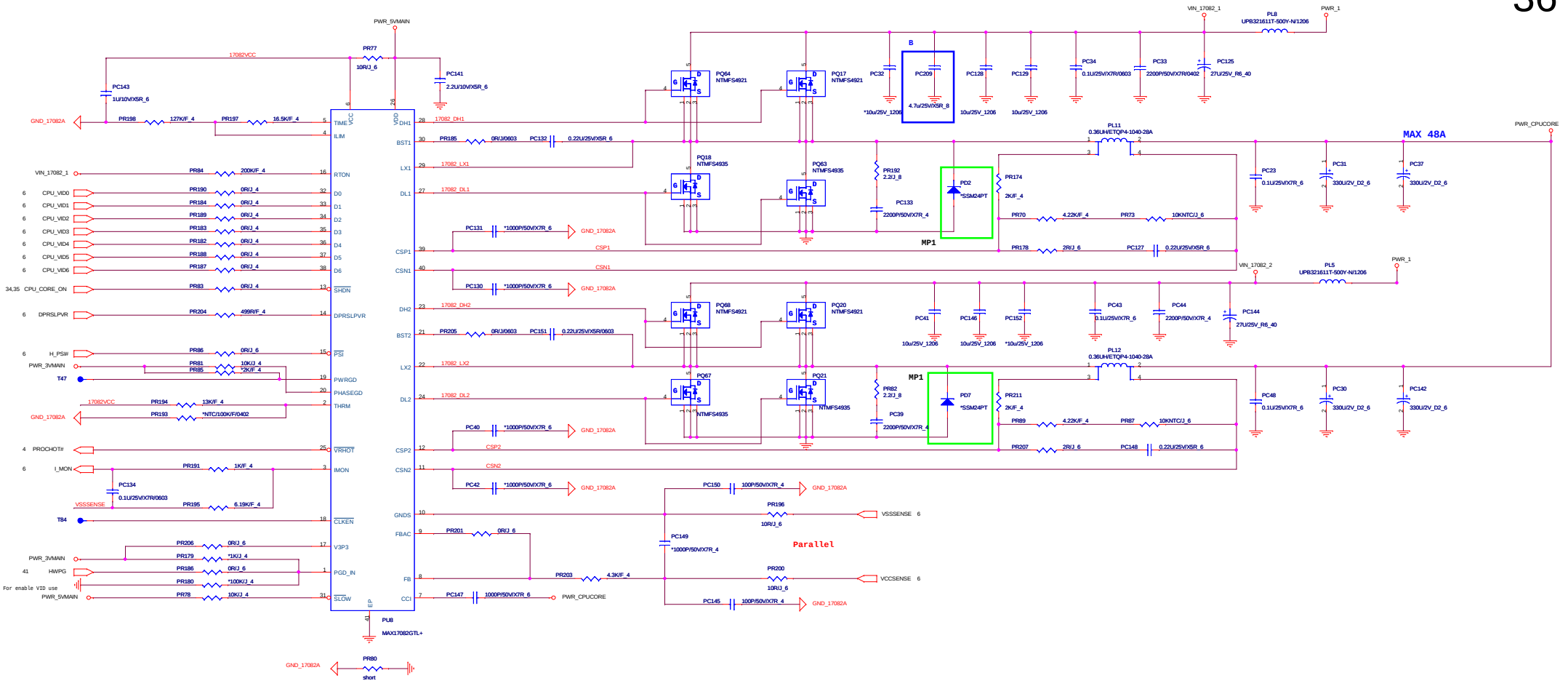

QUANTA COMPUTER

Title	CPU CORE	
Size: Custom	Document Number: Samba(V) MAIN BOARD	Rev: A
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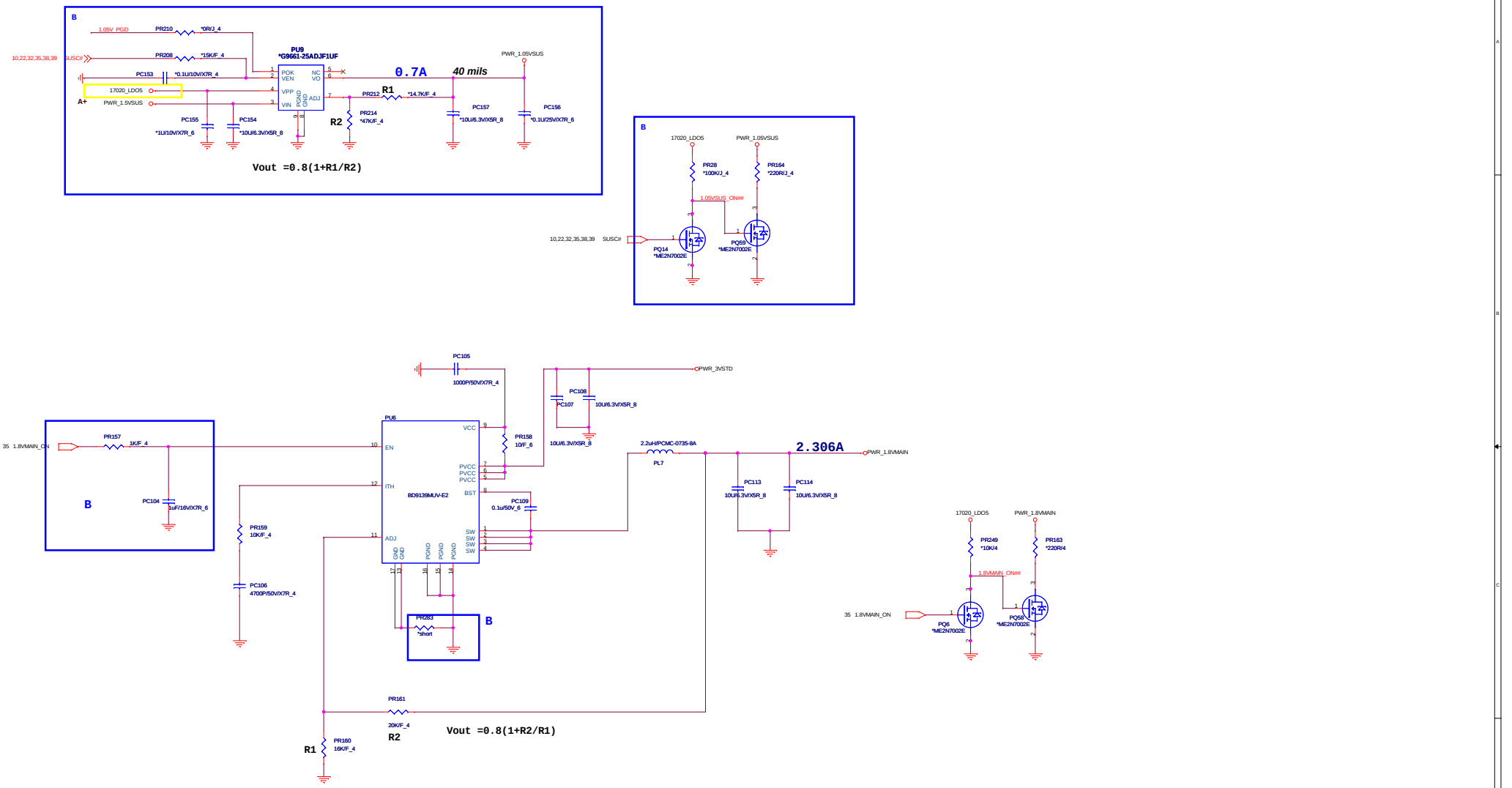

QUANTA COMPUTER

Title	1.05V	
Size: Custom	Document Number: FJ5 MAIN BOARD	Rev: A
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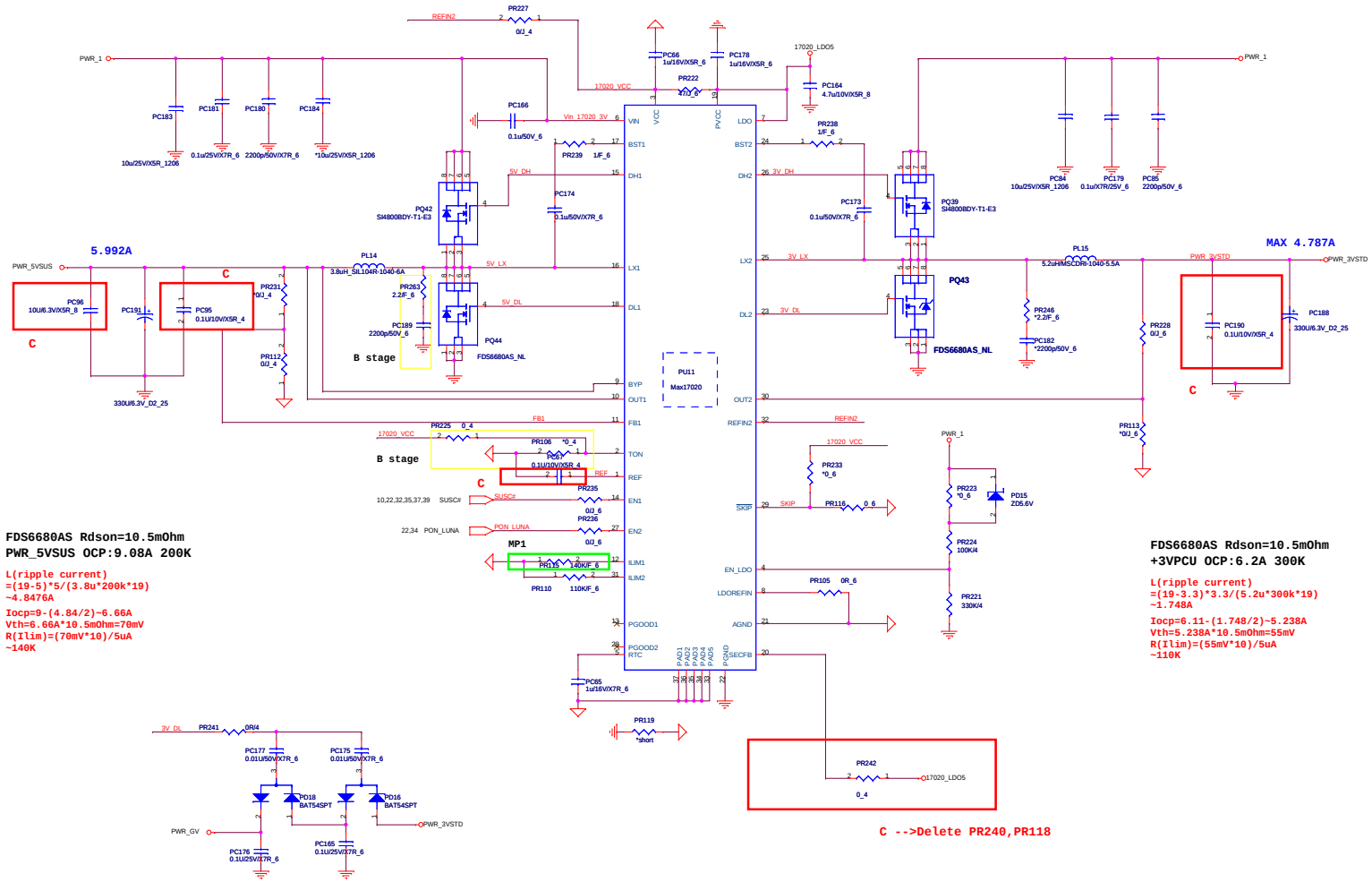

QUANTA COMPUTER	
Title	3V/5V(MAX17020)
Size: Custom	Document Number: Samba(V) MAIN BOARD
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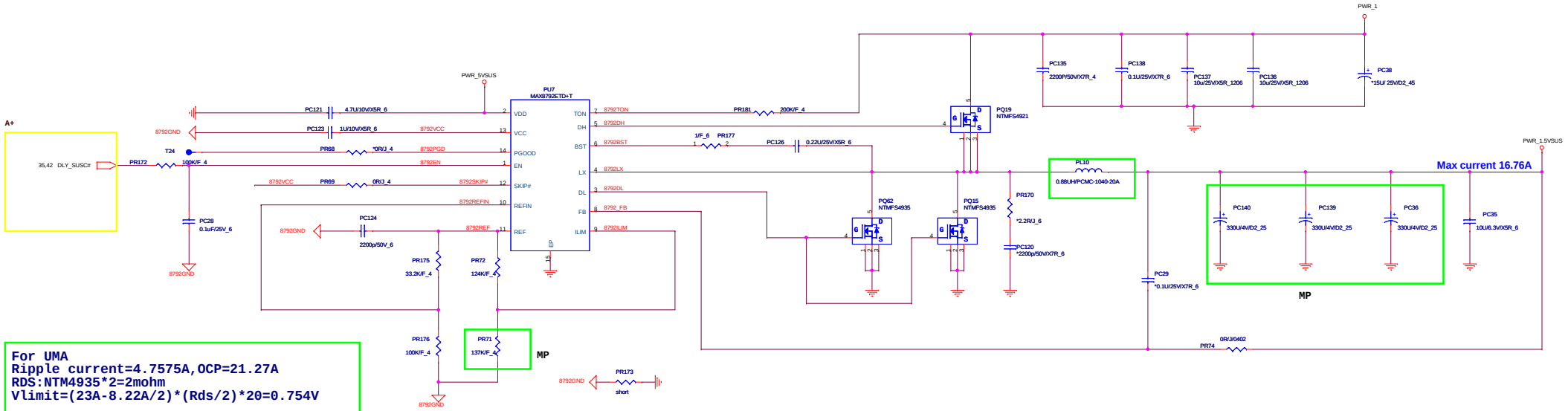
1.5VSUS & 0.75V_DDR_VTT & DDR_VTTREF & 1.5V



For UMA
Ripple current=4.7575A,OCP=21.27A
RDS:NTM4935*2=2mohm
Vlimit=(23A-8.22A/2)*(Rds/2)*20=0.754V

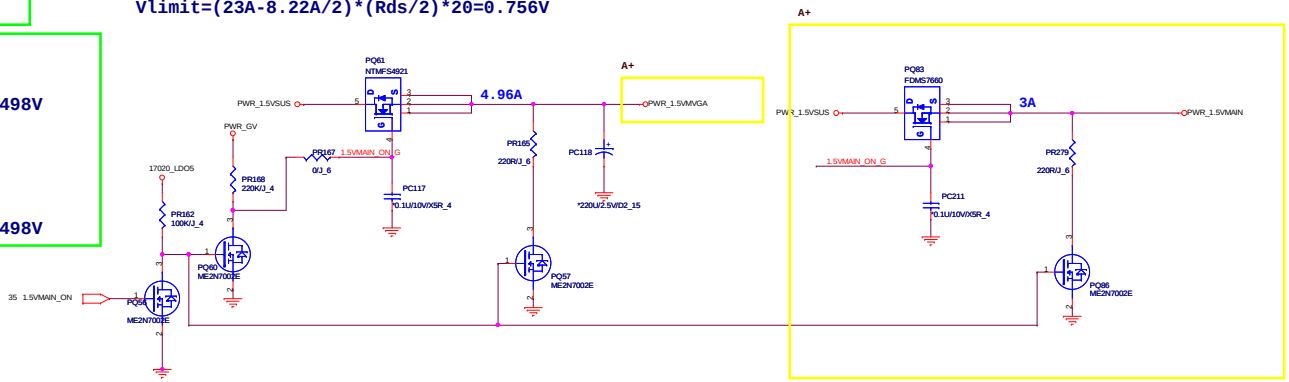
For UMA
Ripple current=4.7575A,OCP=16.92A
RDS:FDMS0310*2=2.6mohm
Vlimit=(23A-8.22A/2)*(Rds/2)*20=0.754V

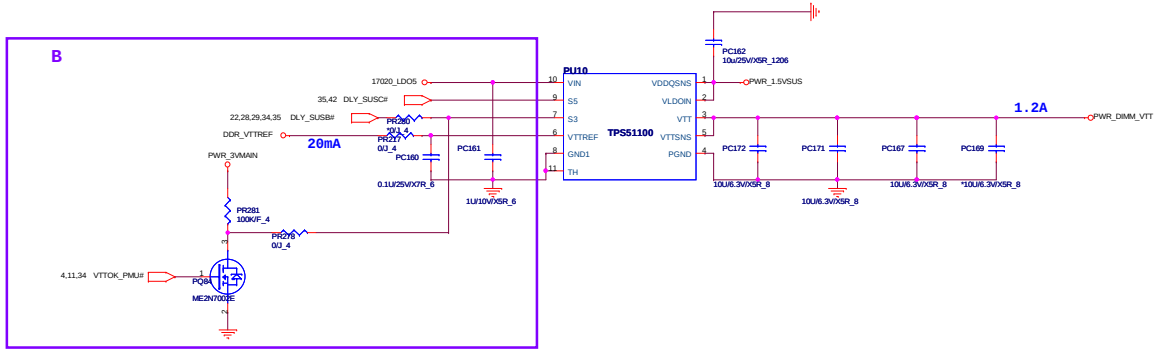
Ripple current=8.22A,OCP=23A
NTM4935*2=2mohm
Vlimit=(23A-8.22A/2)*(Rds/2)*20=0.756V

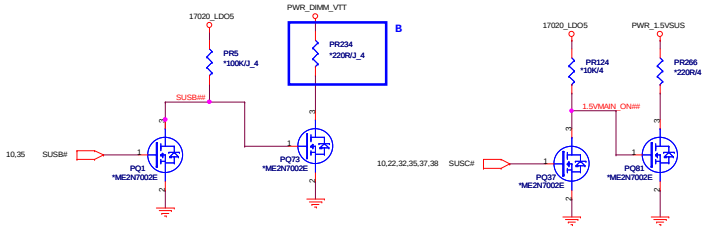
For descrete(PR71=137K)
Ripple current=4.7575A,OCP=28.625A
RDS:NTM4935*2=2mohm
Vlimit=(28.625A-4.7575A/2)*(Rds/2)*20=1.0498V

For descrete
Ripple current=4.7575A,OCP=22.56A
RDS:FDMS0310*2=2.6mohm
RDS:NTM4935*2=2mohm
Vlimit=(28.625A-4.7575A/2)*(Rds/2)*20=1.0498V

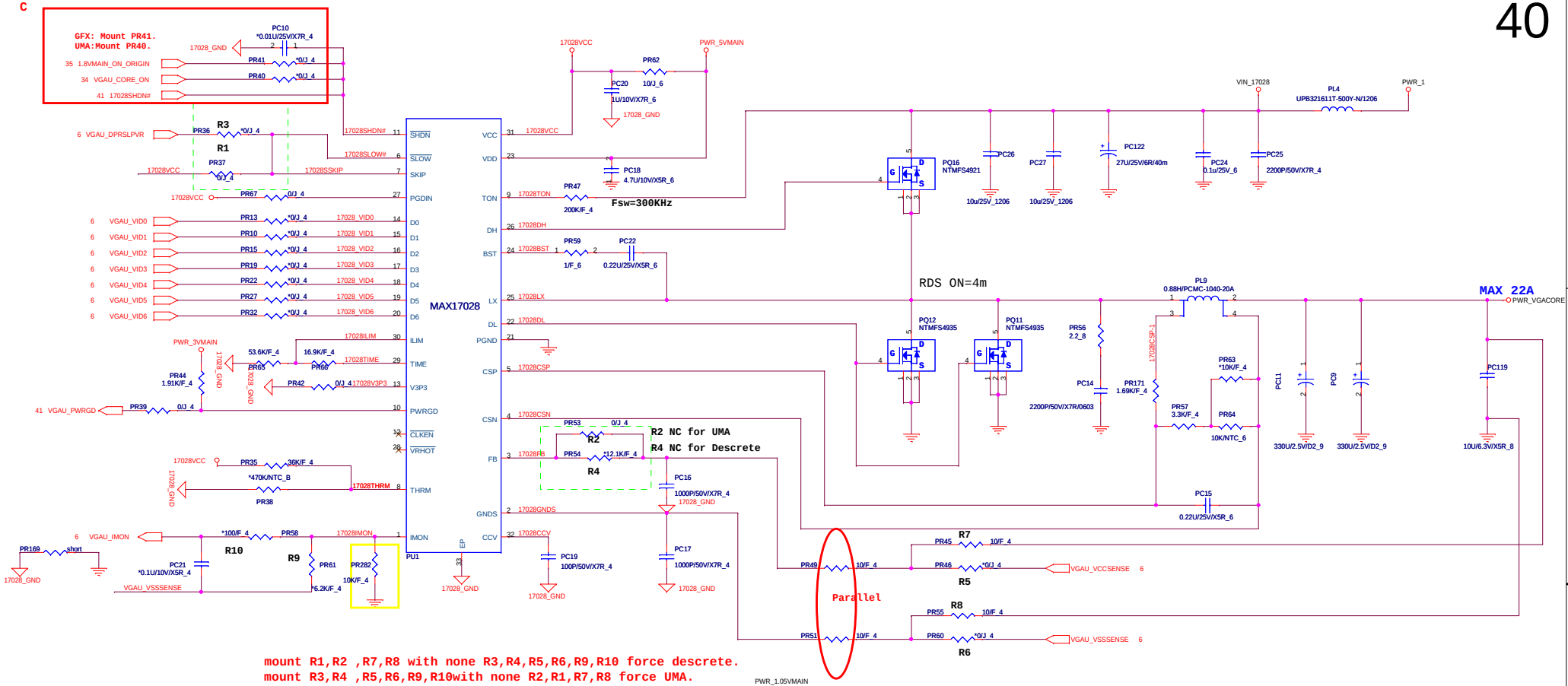
MP

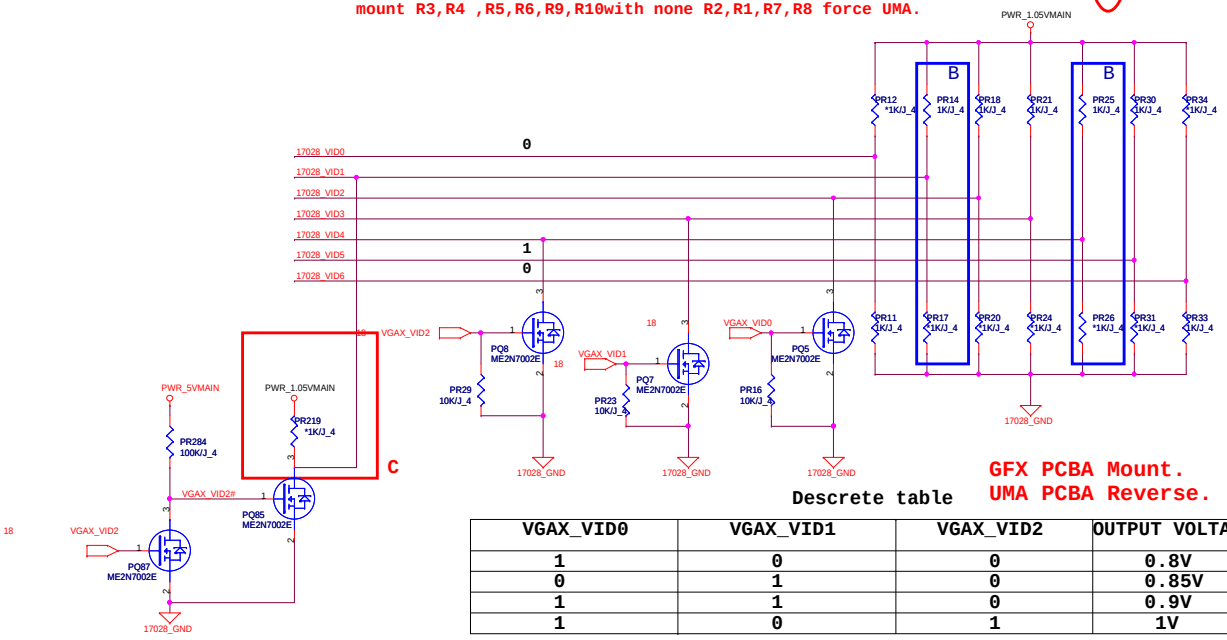






QUANTA COMPUTER			
Title: 1.5VSUS/DIMM_VTT			
Size: Custom	Document Number: Samba(V) MAIN BOARD		Rev: A
Date: Friday, December 11, 2009	Sheet 39 of 45		





Descrete table

VGAX_VID0	VGAX_VID1	VGAX_VID2	OUTPUT VOLTAGE
1	0	0	0.8V
0	1	0	0.85V
1	1	0	0.9V
1	0	1	1V

QUANTA COMPUTER

Title: UMA POWER

Size: C | Document Number: Samba(V) MAIN BOARD | Rev: A

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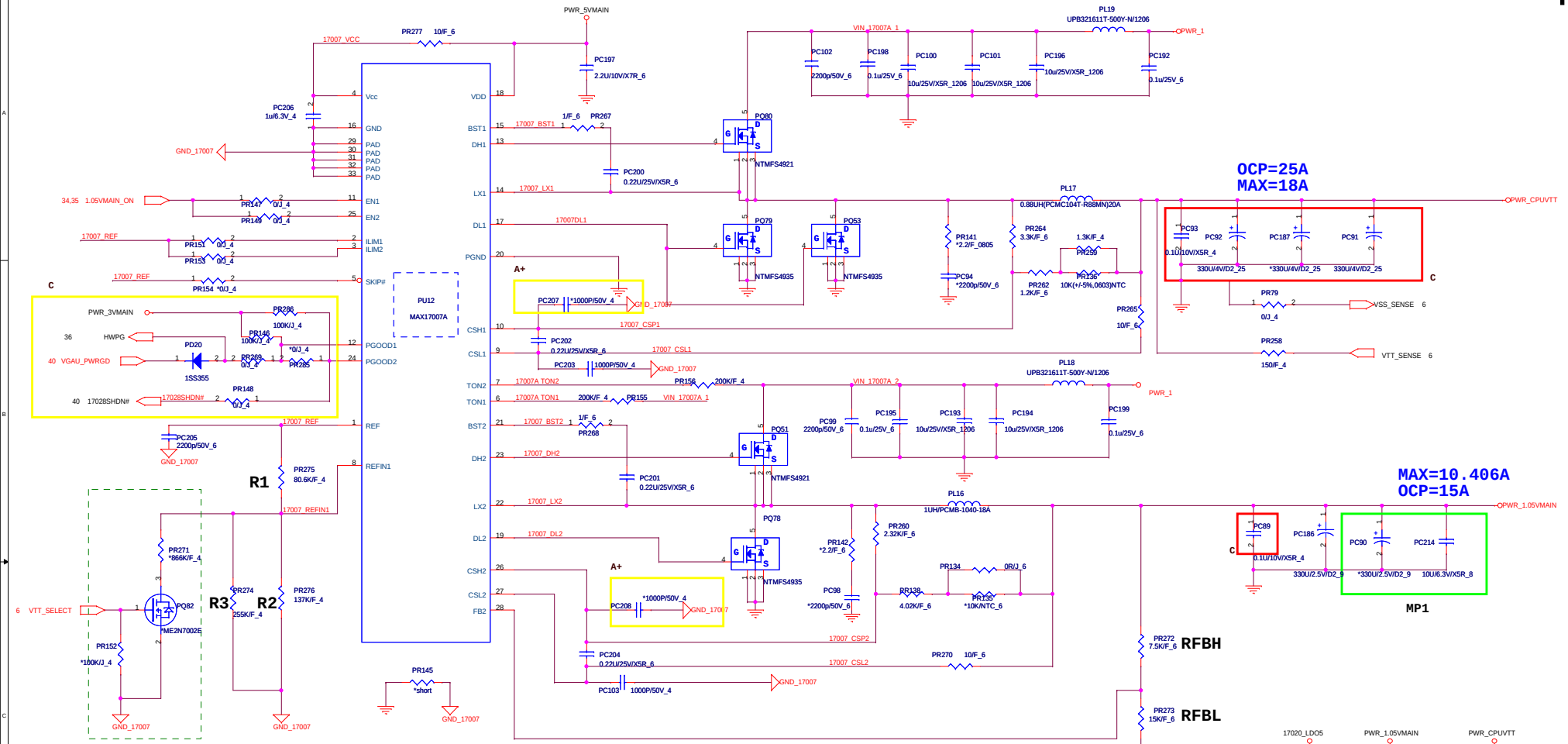
POWER_1.05VMAIN



The Voltage of CPUVTT could regulator by this stage

VTT_SELECT=H for 1V CPUVTT

VTT_SELECT=L for 1.05V CPUVTT

PWR_CPUVTT=2*R1/(R2//R3)=1.05V

PWR_1.05VMAIN=0.7*(RFBH/RFBL+1)=1.05V

QUANTA COMPUTER

Title	PWR_1.05VMAIN(MAX17007A)	
Size C	Document Number Samba(V) MAIN BOARD	Rev A
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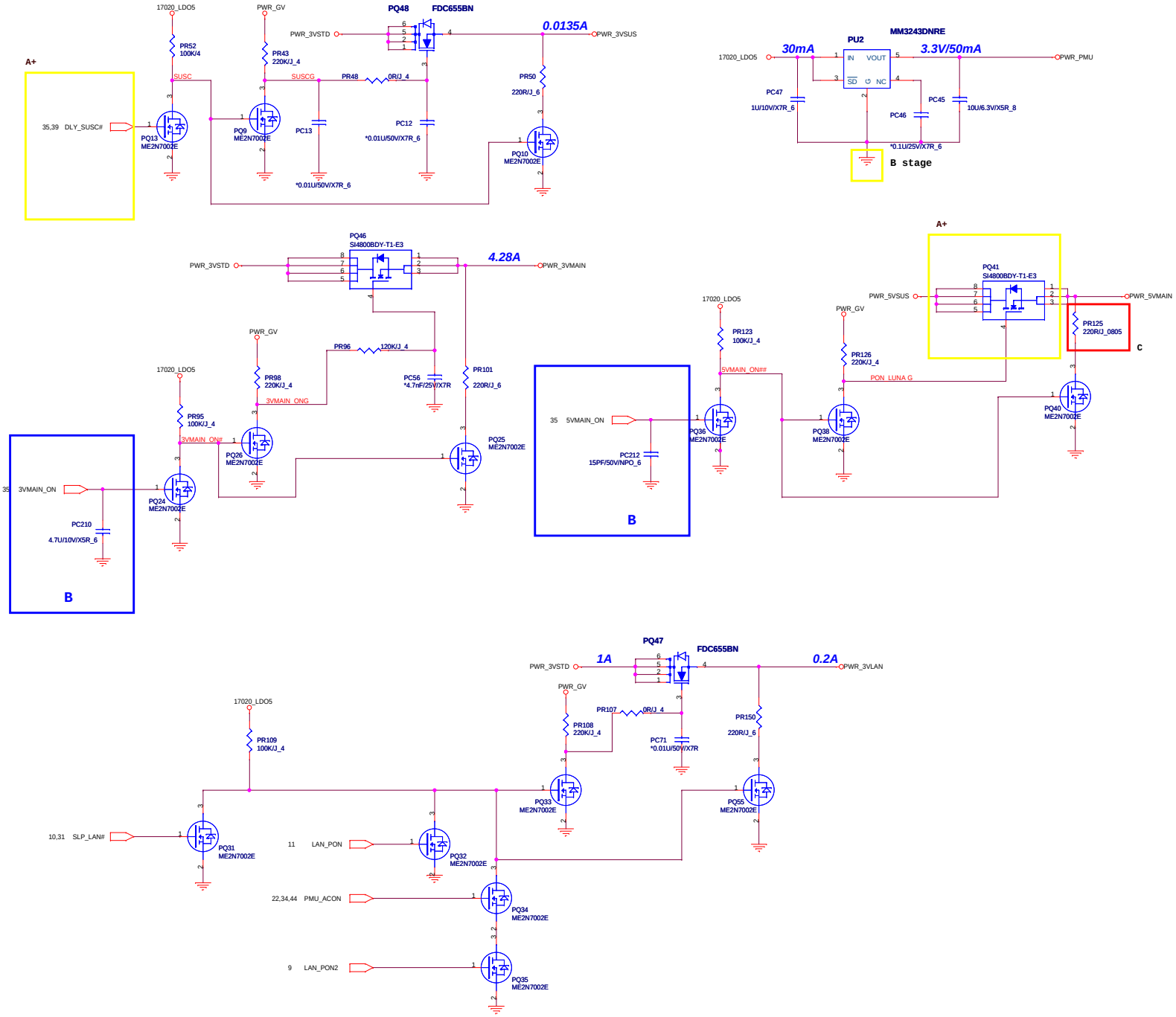
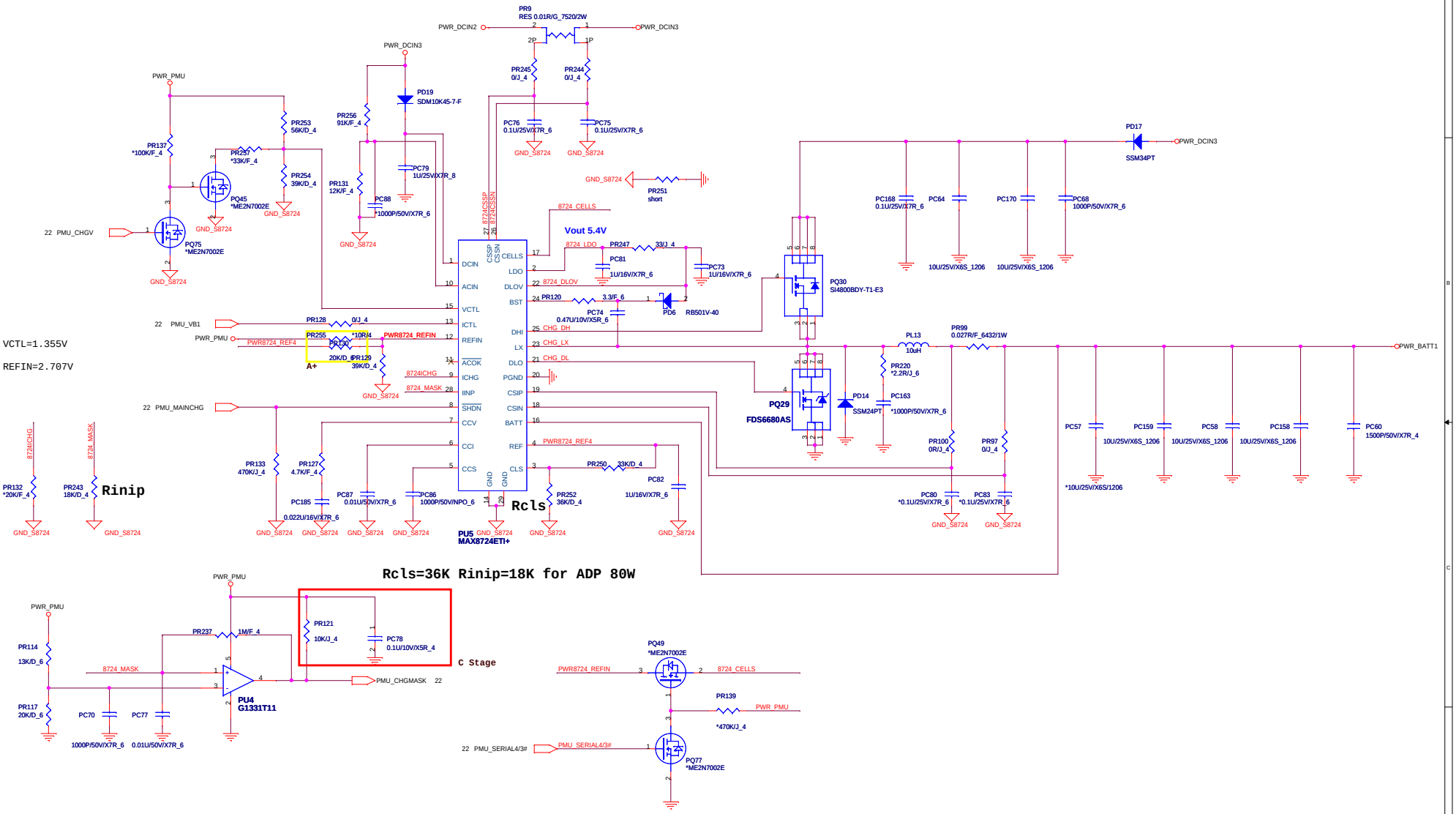


QUANTA COMPUTER

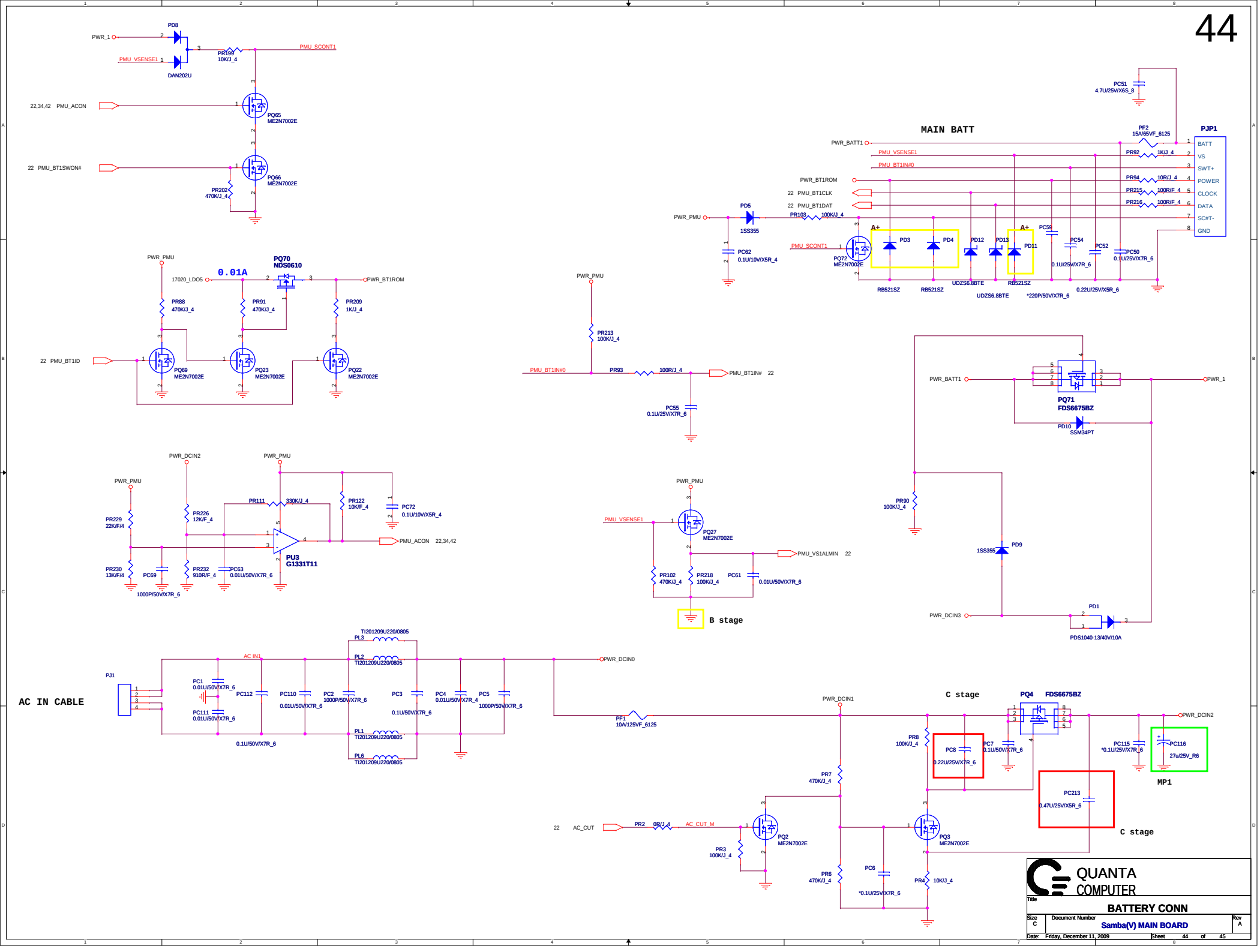
Title: SWITCH

Size	Document Number	Rev
C	Samba(V) MAIN BOARD	A

Date: Friday, December 11, 2009 Sheet 42 of 45



QUANTA COMPUTER			
Title	CHARGER		
Size C	Document Number Samba(V) MAIN BOARD		Rev A
Date: Friday, December 11, 2009	Sheet 43 of 45		



Title	BATTERY CONN		
Size C	Document Number Samba(V) MAIN BOARD		Rev A
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MP change list

12/9

46. Change Card Reader to OZ888GS0L4N;Pin28 connect to +3VCCD page 27

47. Add R359 to BOM for Card reader OZ888GS0L4N page 27

48. Add C694 for Fan page 20

12/9

49. Delete C346,F8,C336,CON3 for remove Felica function page 32

Power Jeff-

layout modify

50.ADD PC214/10UF 6.3V

BOM change

51.PR115 change to 140K to increse OCP set point page 38

52.delete PD2,PD7 BOM for clear DL noise. page 36

53.Delete PC186 page 41

54.Delete PC140 and Change PC36,PC39 to 330uf/ESR 25 page 39

55.Change PL10 to 0.88uH

12/11

57. Remove R500,Y6,C585 for DIS no need 25MHz Crystal ;change C584 to 0 ohm for Intel DG page 9

58. Change R96 to 270 ohm;R113 and R116 to 470 ohm;R114 and R132 to 68 ohm for fine tune LED brightness. page 33

59. Change R249 to diode RB521G-30. page 12

QUANTA COMPUTER

Title: Change List		
Size: B	Document Number: Samba(V) MAIN BOARD	Rev: A
Date: Friday, December 11, 2009	Sheet 45 of 45	