

01

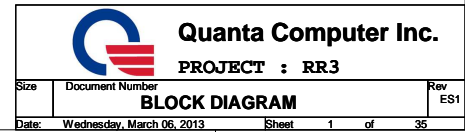


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27	3VPCU&RVCC5(PM6686)
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30	+VCC_CORE(ISL95836)
31	+1.05V(G5602R41U)
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34	CHARGER(BD8617MUV-E2)
35	Power Tree

RR3 Power Rails

Power	Voltage	S0	S3	S4	S5	Ctl Signal
+3VPCU	3.3V	V	V	V	V	51427ALDO5
+5VPCU	5V	V	V	V	V	51427ALDO5
+15VPCU	15V	V	V	V	V	51427ALDO5
+3V_LAN	3.3V	V	NOTE 1	NOTE 1	NOTE 1	LAN_ON_D
+3V_S5	3.3V	V	V	NOTE 2	NOTE 2	S5_ON
+5V_S5	5V	V	V	NOTE 2	NOTE 2	S5_ON
+1.5V_SUS	1.5V	V	V			SLP_S4#
+VDDR_REF_CPU	0.75V	V				+1.5V
+0.75V_DDR_VTT	0.75V	V				SLP_S3#
+5V_RUN	5V	V				RUN_ON
+3V_RUN	3.3V	V				RUN_ON
+1.5V	1.5V	V				SLP_S3#
+1.05V	1.05V	V				+3V_RUN
+1.8V	1.8V	V				1.05V_PCH_PWRGD
+VCCSA	By VID	V				VCCSA_EN
+VCC_CORE	By VID	V				IMVP_VR_ON

NOTE 1:ON/OFF ACCORDING TO WOL FUNCTION SETTING

NOTE 2:ON FOR WAKE UP FUNCTION ENABLE DURING S4/S5

Reference data sheet

02

Design Guide

471984_471984_Chief_River_DG_Rev_2.0.pdf

CPU

473716_473716_IVB_EDS_Mobile_Rev2_1.pdf

PCH

474146_474146_PPT_EDS_Rev2_1.pdf

Audio

ALC282_DataSheet_0.82

Card Bus

R5U242A -datasheet

LAN

RTL8111F-CG_Datasheet_1.7

EC

NPCE985x_995x_Rev0.7_DS_Quanta

Check list

460603_CR_SCH_CHKLIST_Rev2p0

Super IO

NCT5577D Datasheet V1_2

USB Re-driver

PS8713_DS_Ver1.0_20120511_Quanta



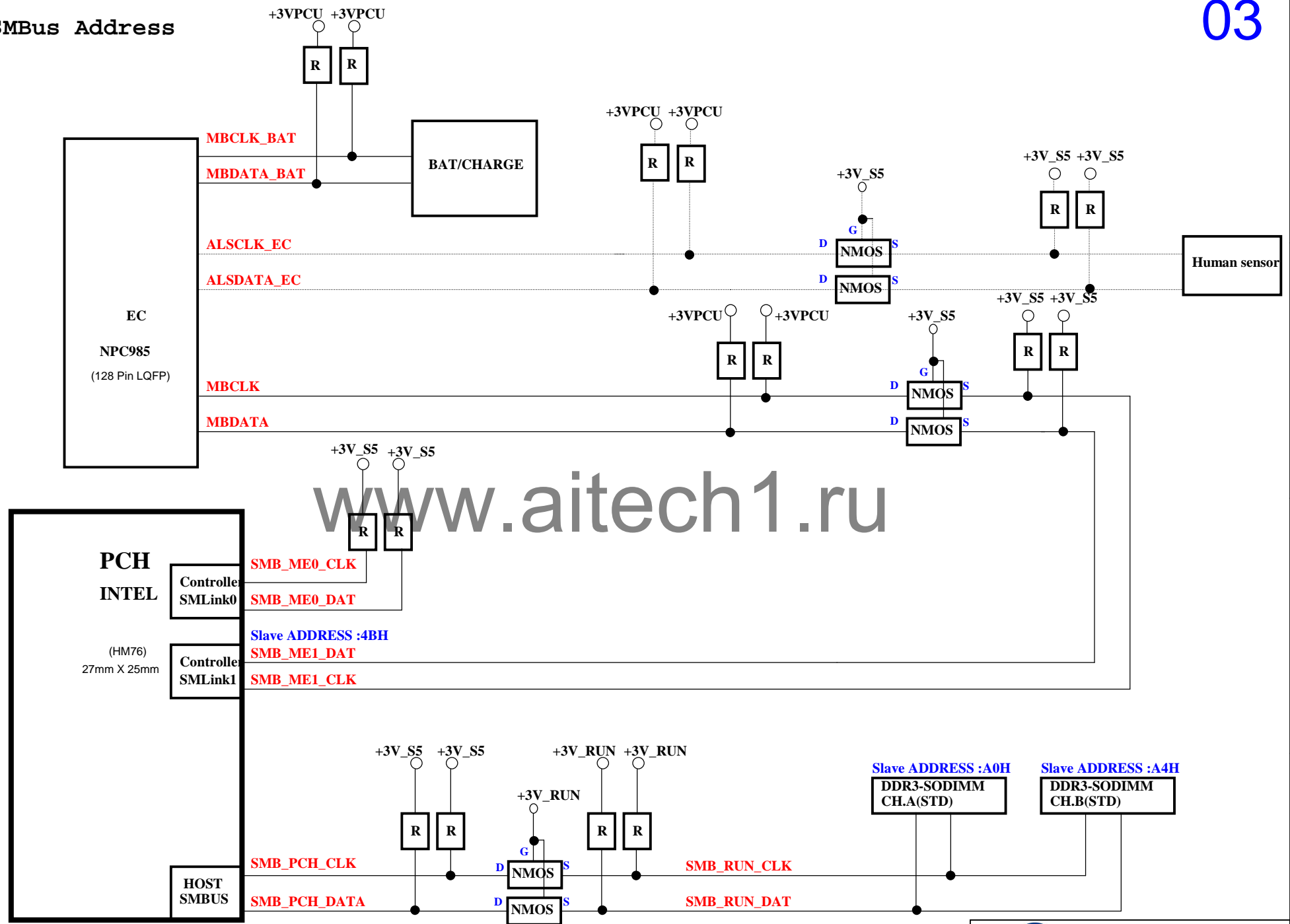
Quanta Computer Inc.

PROJECT : RR3

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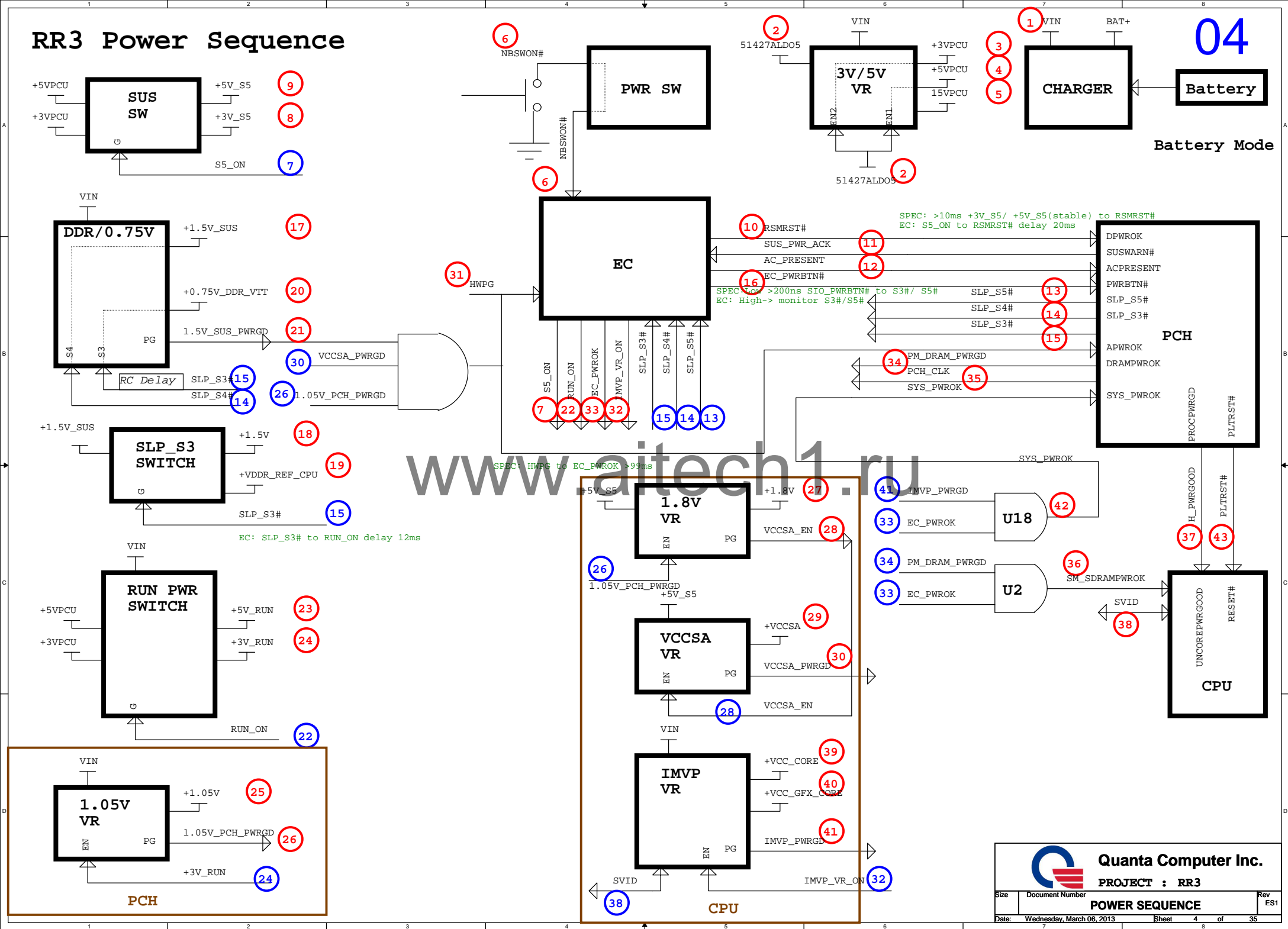
RR3 SMBus Address

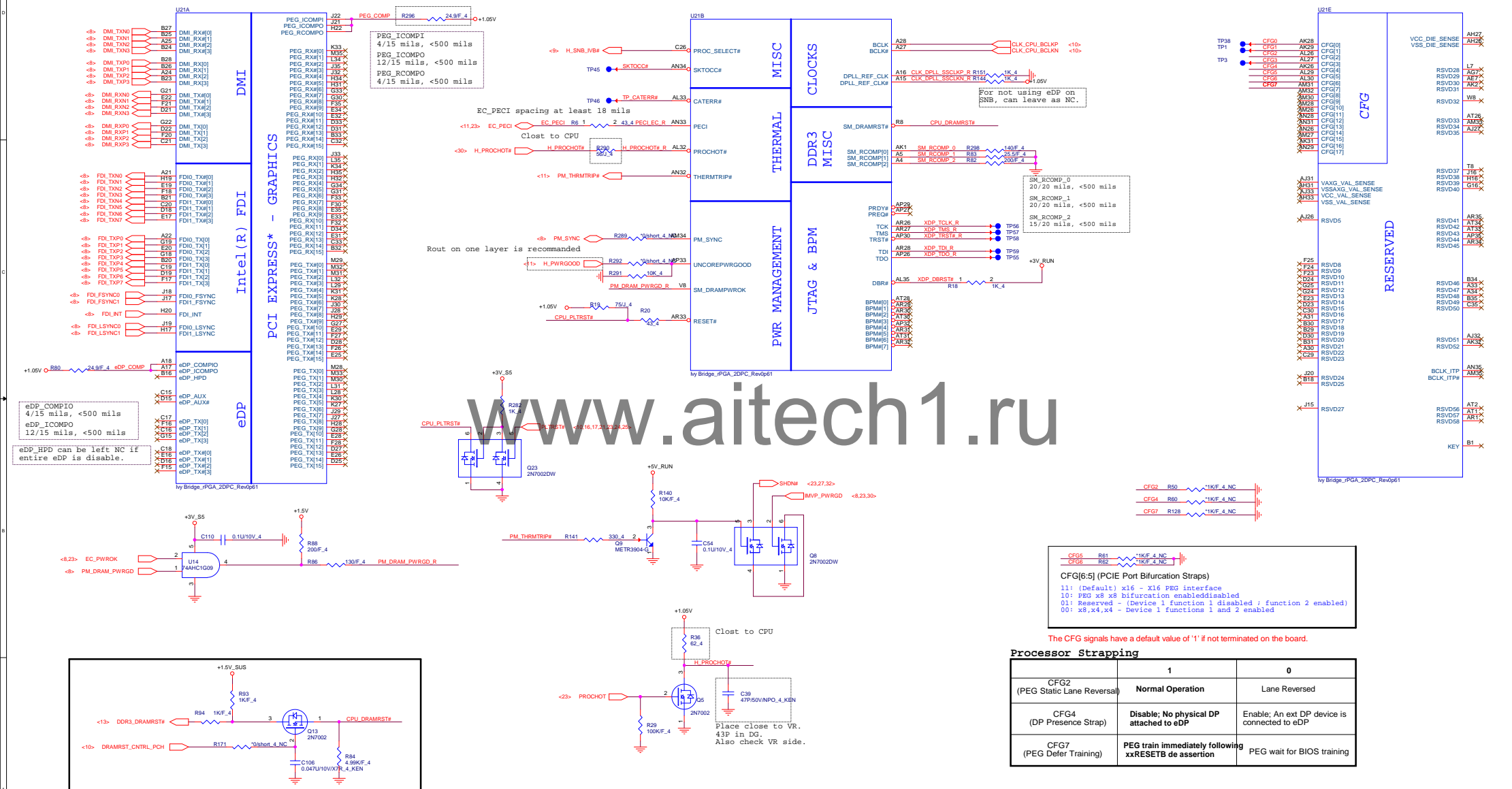
03



Quanta Computer Inc.
PROJECT : RR3

RR3 Power Sequence

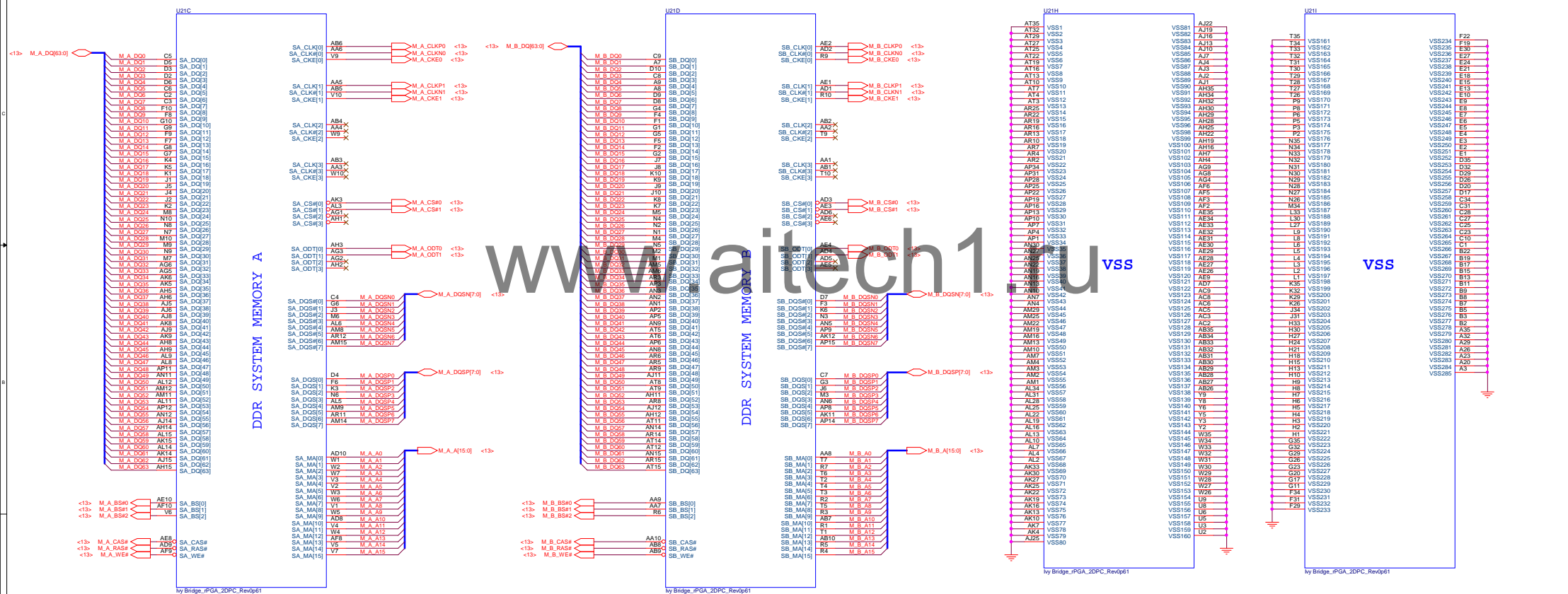




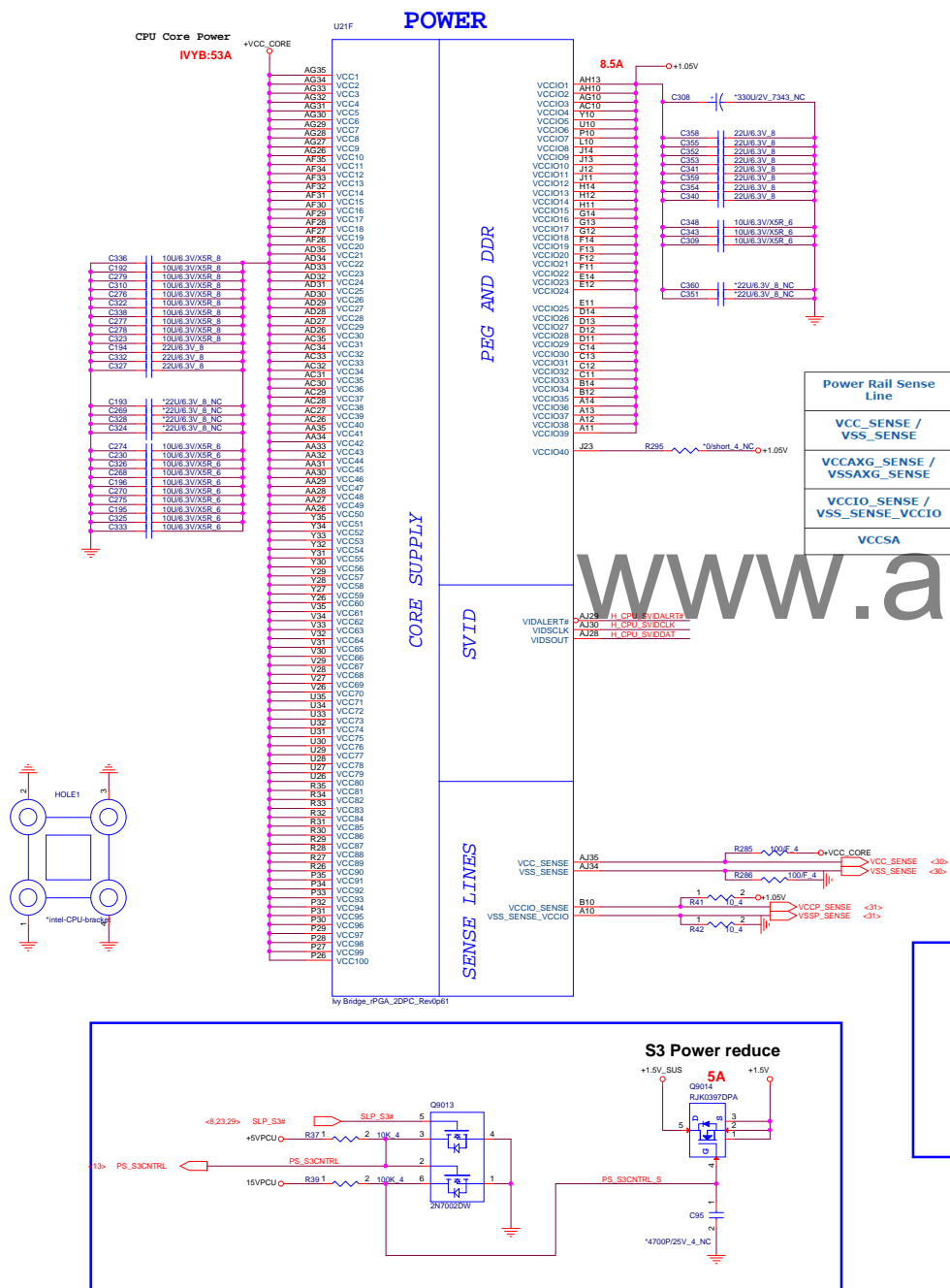
IVYB 2/3(DDR3 I/F&GND)

Ivy Bridge Processor (DDR3)

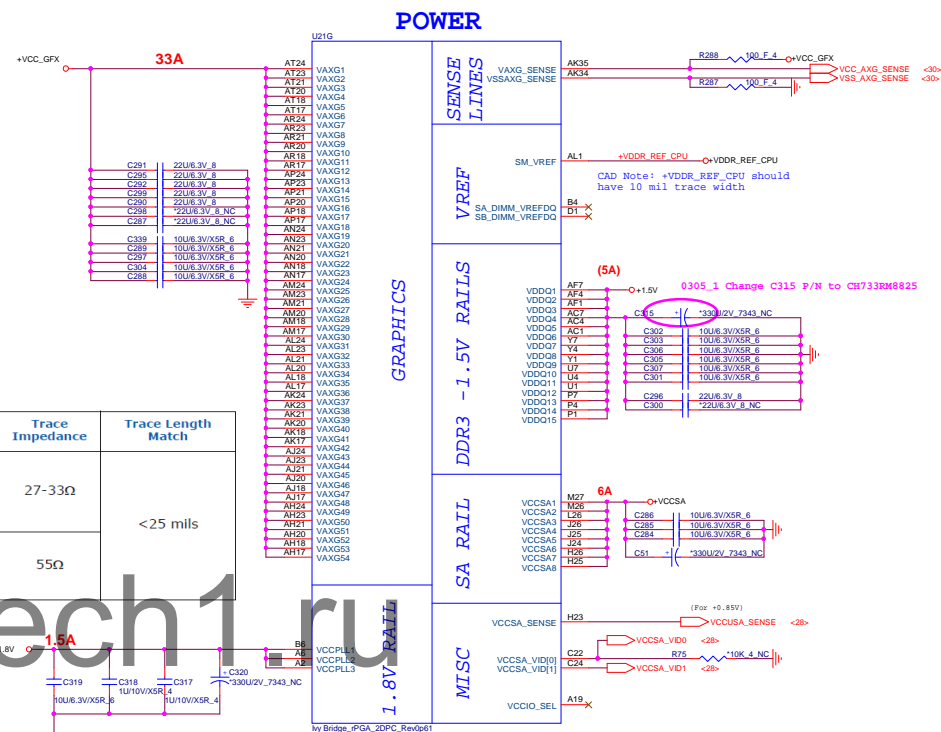
Ivy Bridge Processor (GND)



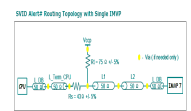
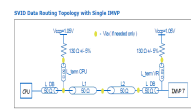
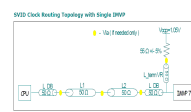
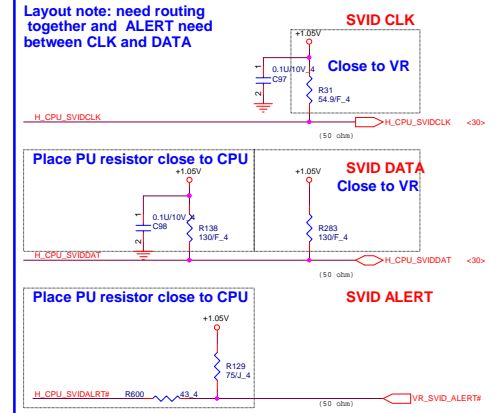
Ivy Bridge Processor (POWER)



Ivy Bridge Processor (GRAPHIC POWER)

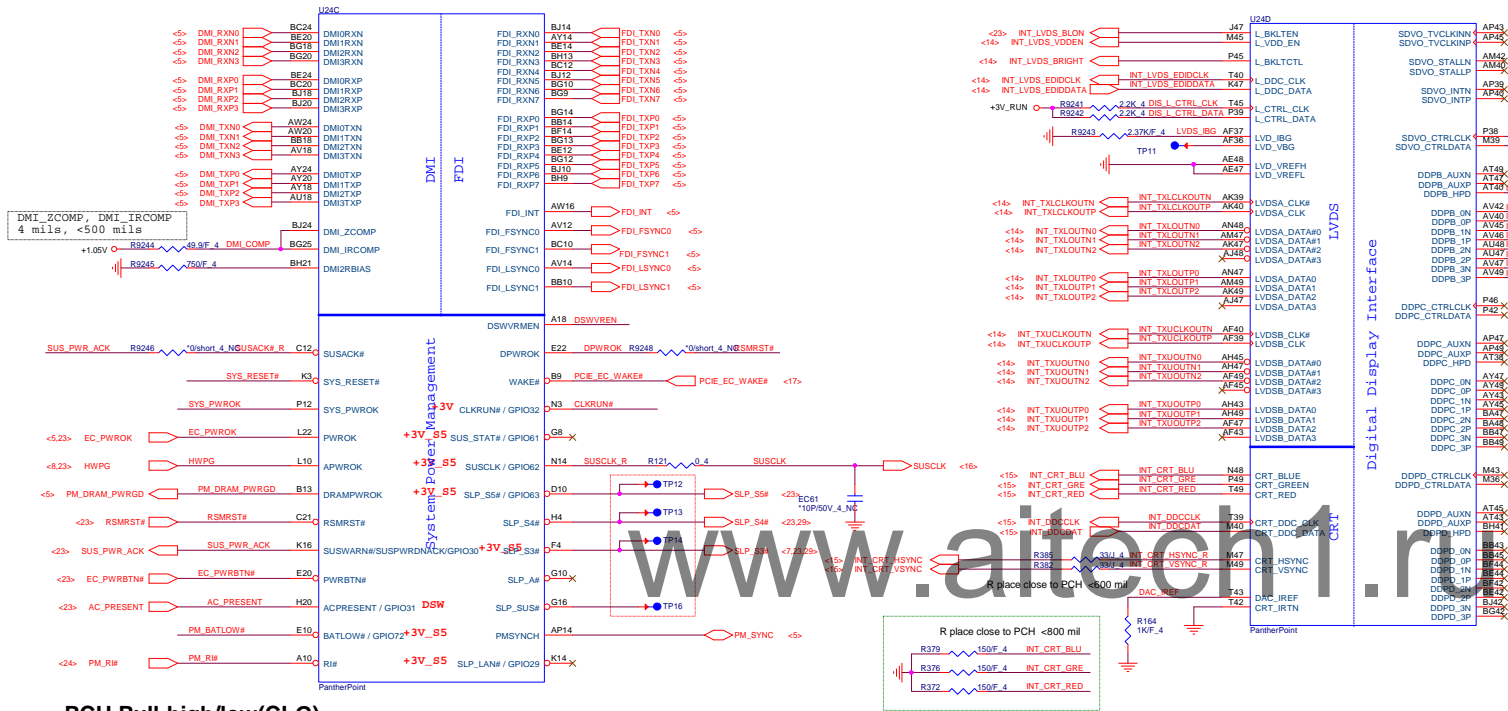


Layout note: need routing together and ALERT need between CLK and DATA

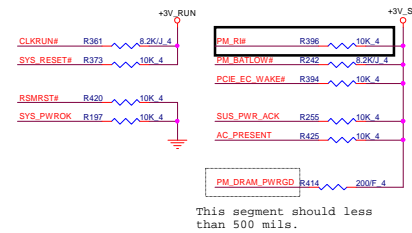


Panther Point (DMI,FDI,PM)

Panther Point (LVDS,DDI)

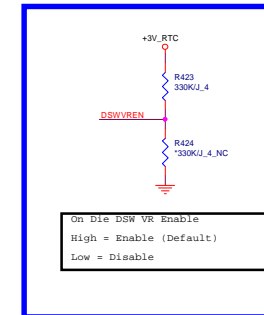
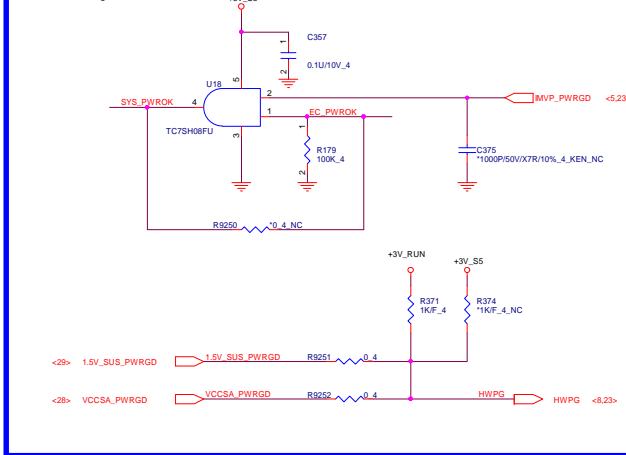


PCH Pull-high/low(CLG)

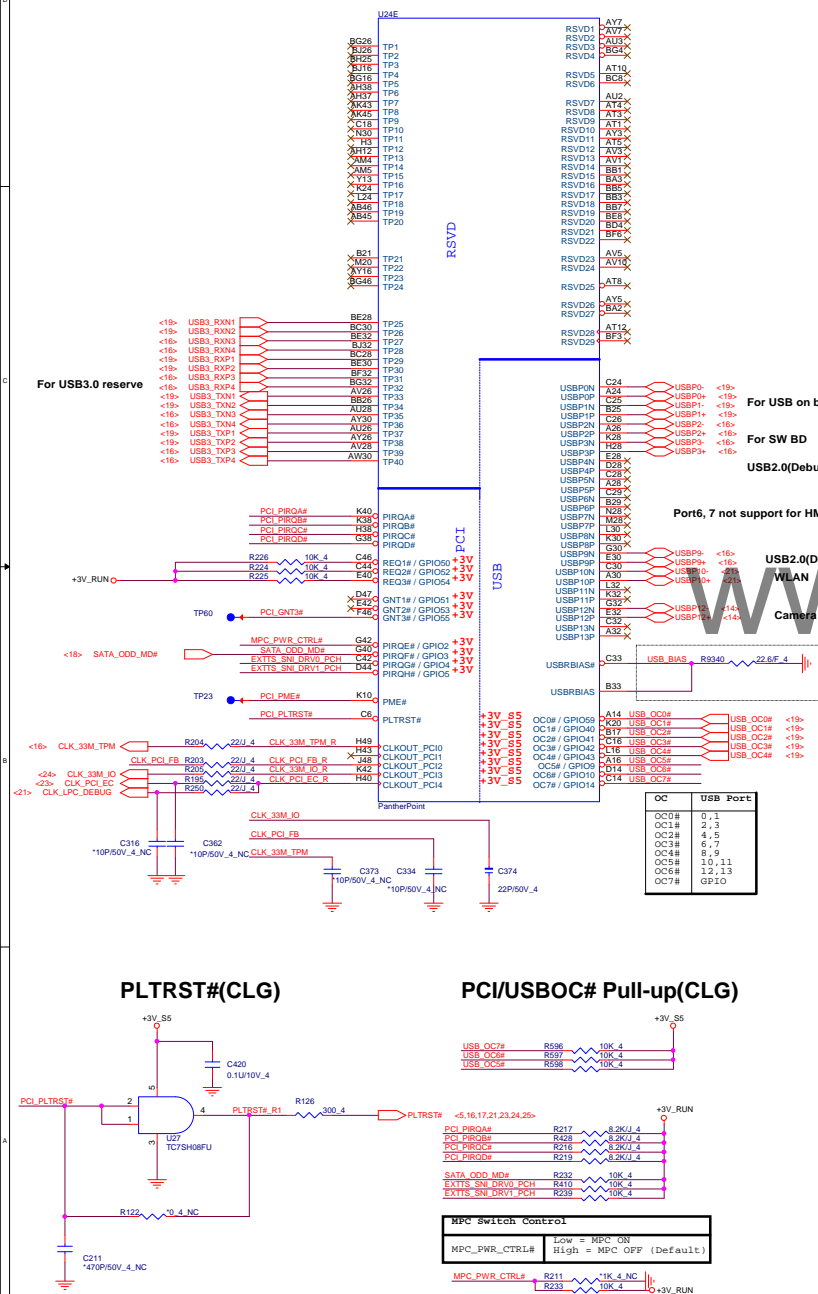


This segment should less than 500 mils.

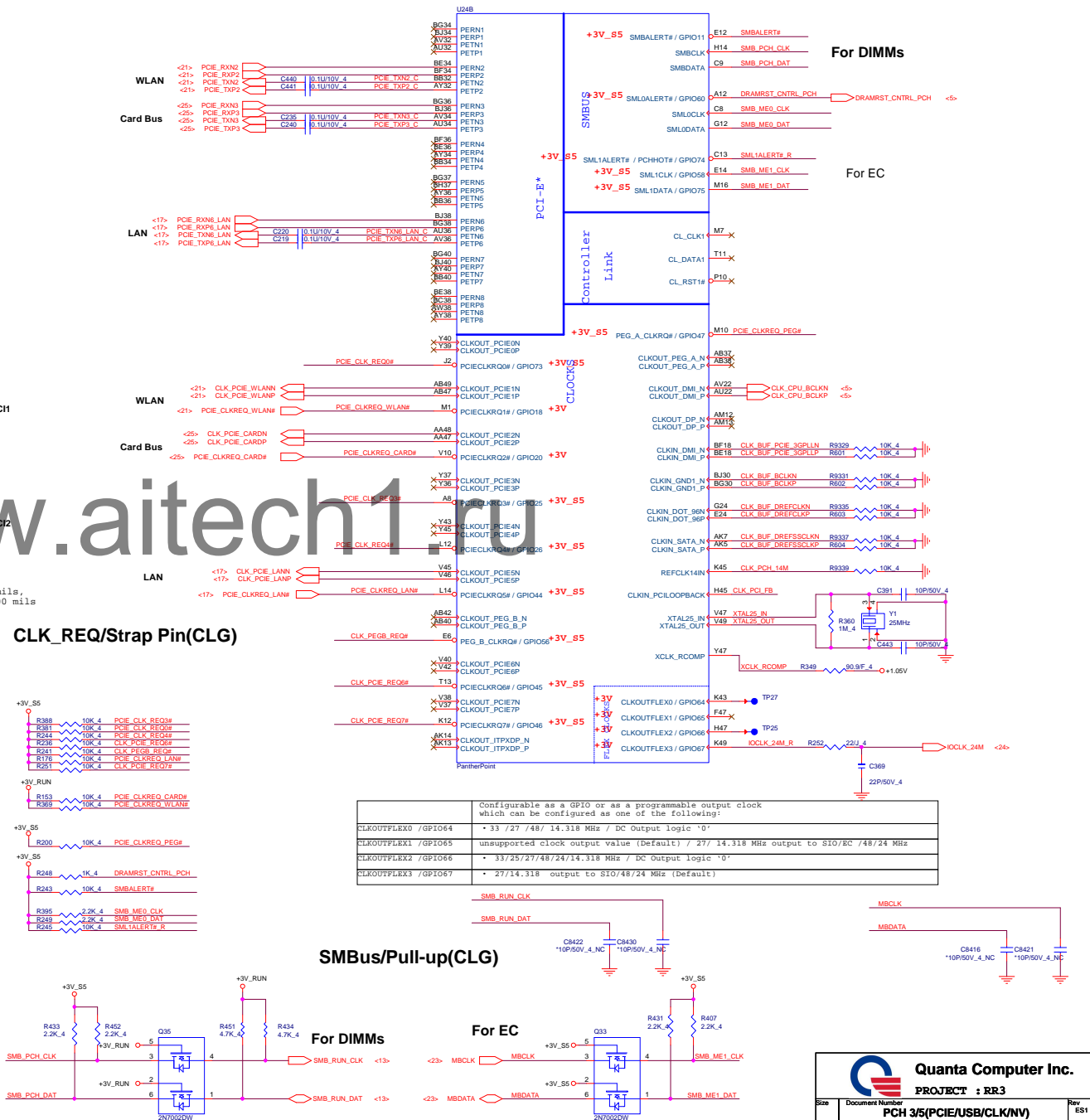
Intel sequence



Panther Point-M (PCI,USB,NVRAM)



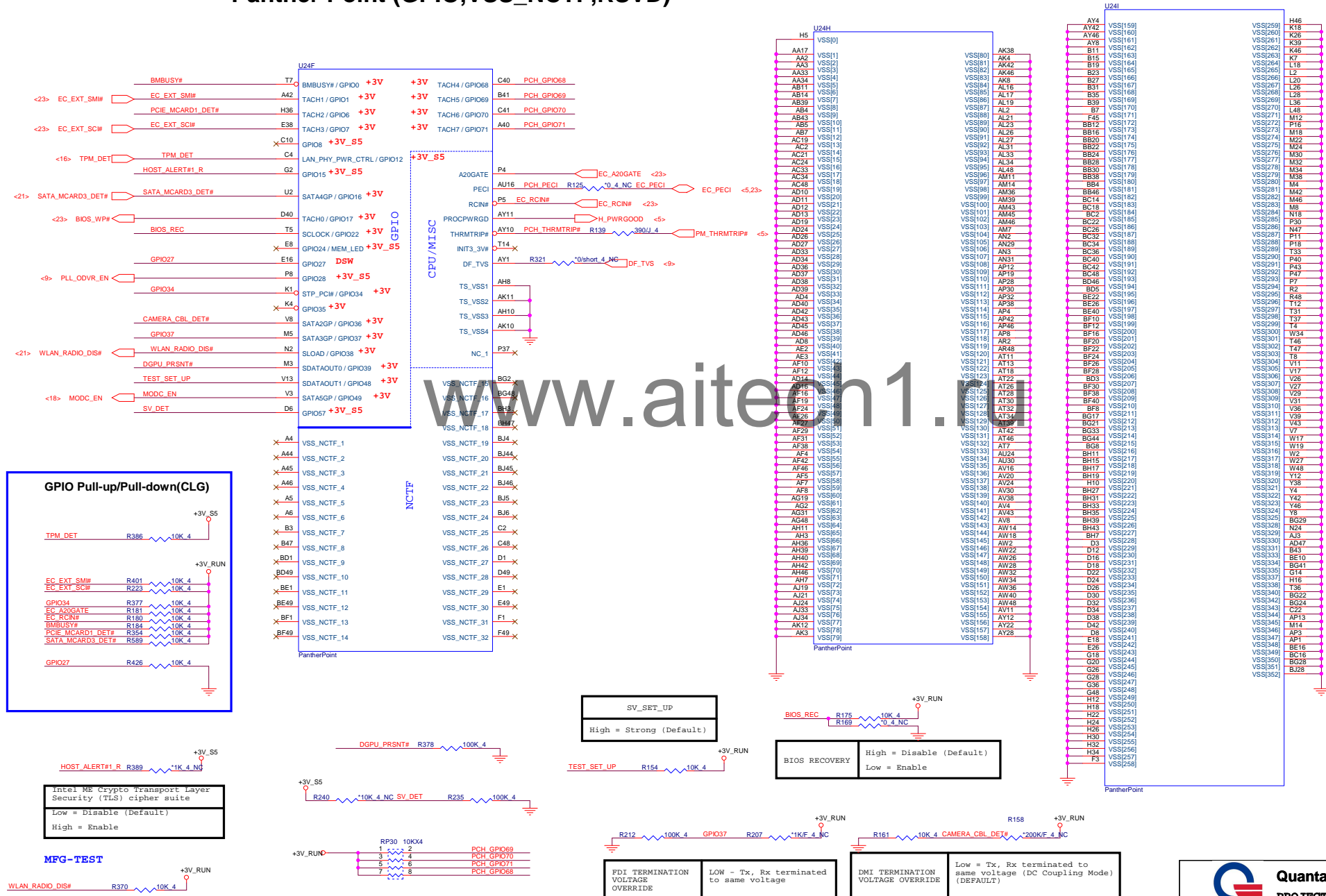
Panther Point-M (PCI-E,SMBUS,CLK)



PCH 4/5(GPIO/CPU/STRAP/GND)

Panther Point (GND)

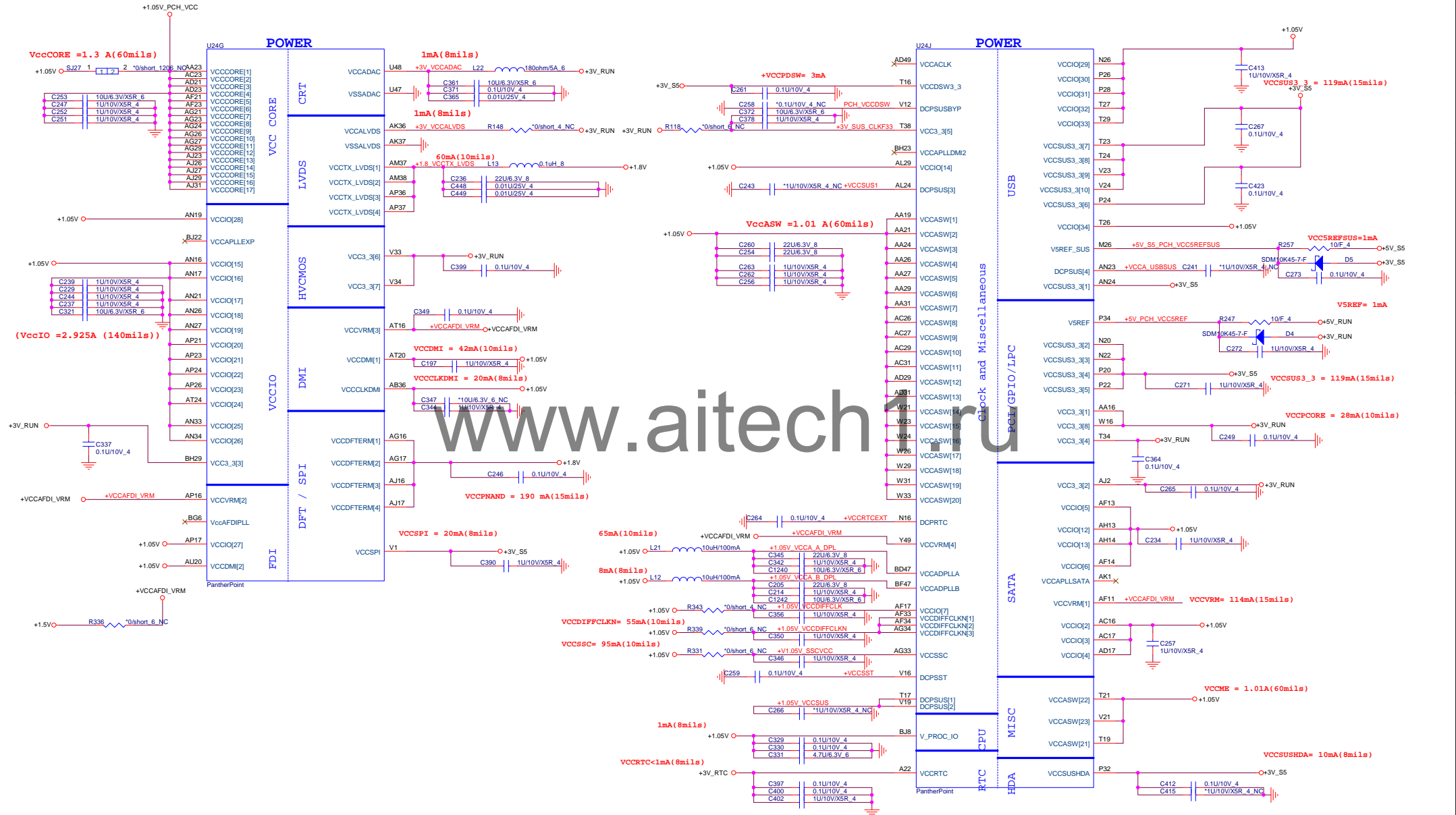
Panther Point (GPIO,VSS_NCTF,RSVD)



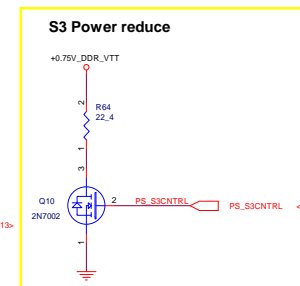
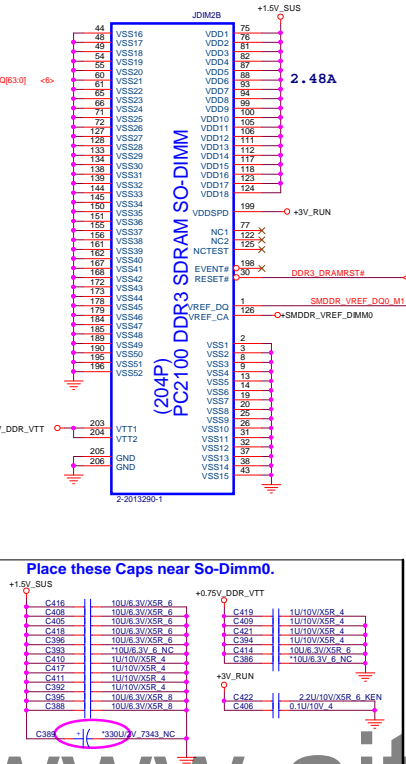
Panther POINT (POWER)

Panther Point-M (POWER)

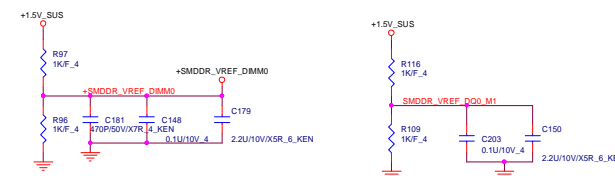
12



13



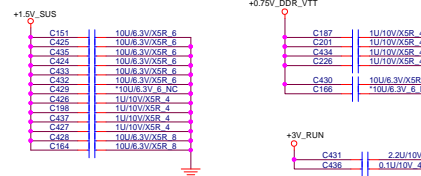
VREF DQ0 M1 Solution

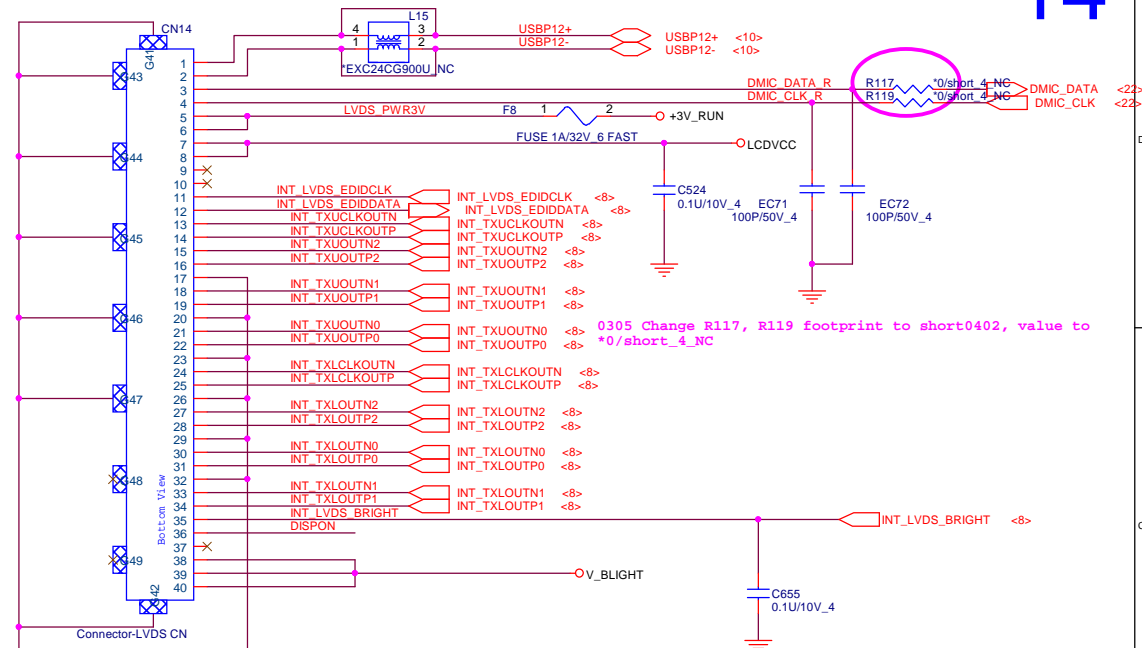


VREF DQ1 M1 Solution



Place these Caps near So-Dimm1



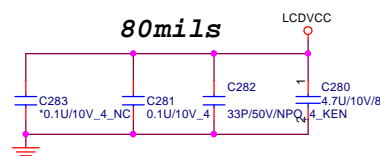


Backlight Enable

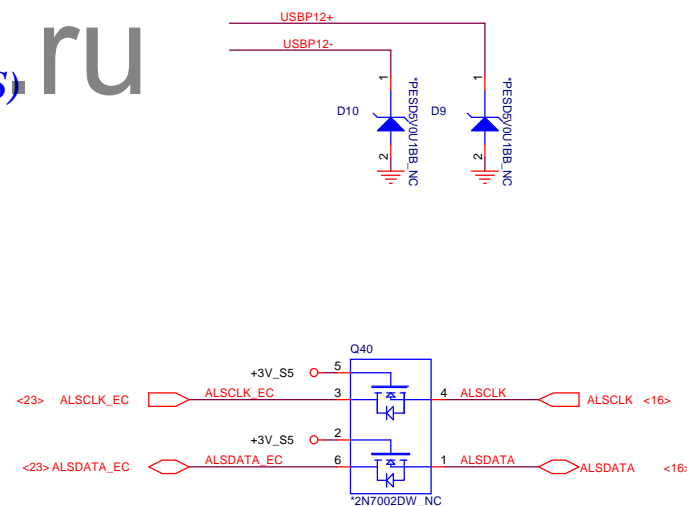
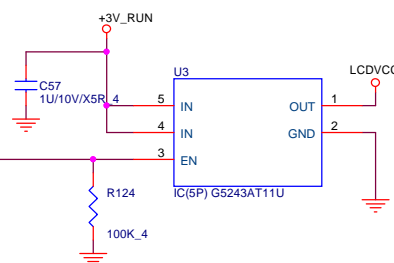
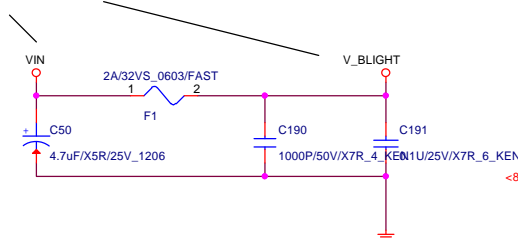


LCD Panel POWER SWITCH(LVDS)

80mils



80mils

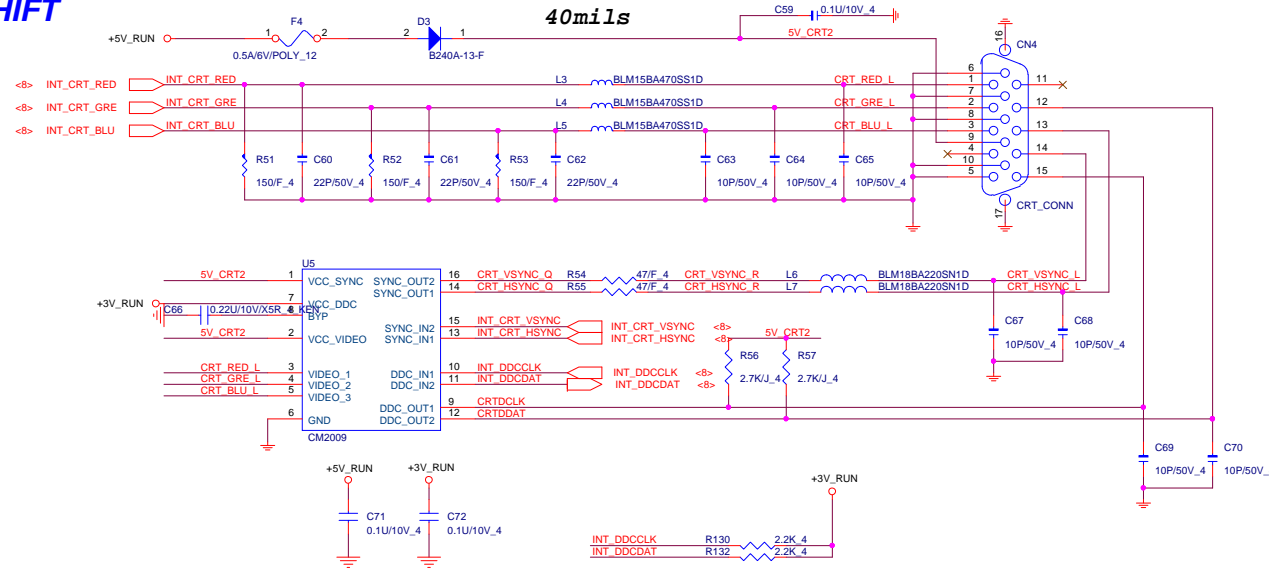


CRT CONN/DDC LEVEL SHIFT

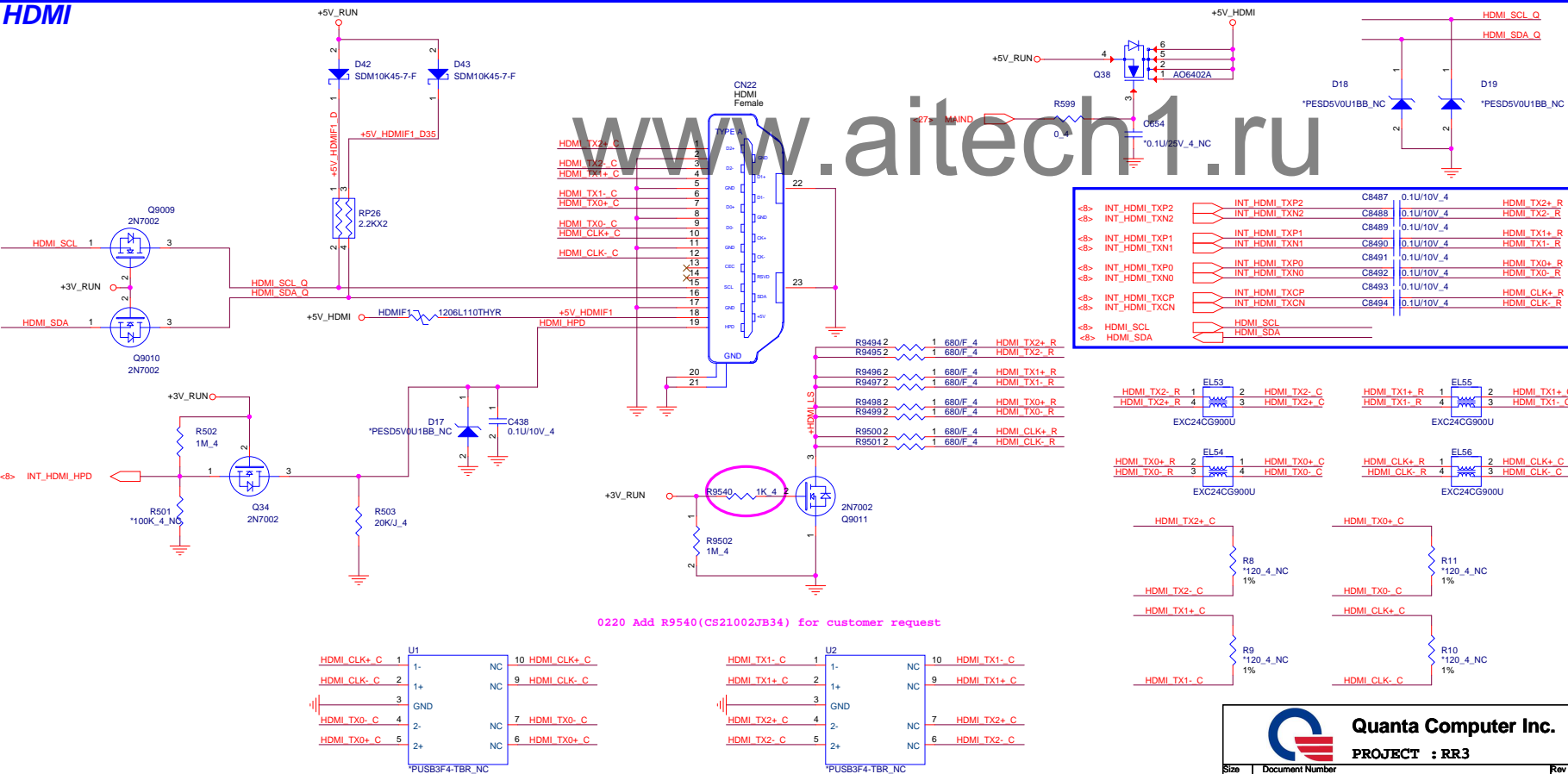
$$\text{Fuse Rating} = \frac{\text{IR(max)}}{(0.75 \times 0.75)} = \frac{0.05A}{0.5625} = 0.089A$$

40mils

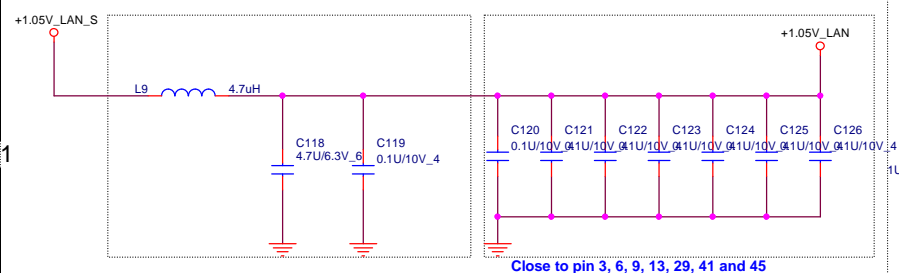
15



HDMI



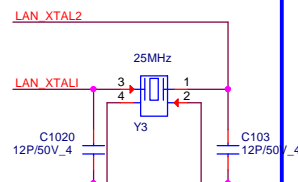
LAN Power



Place connect to Pin21

Place Close to LAN chip, pin 12, 27, 39, 42, 47 48

X'tal 25MHz

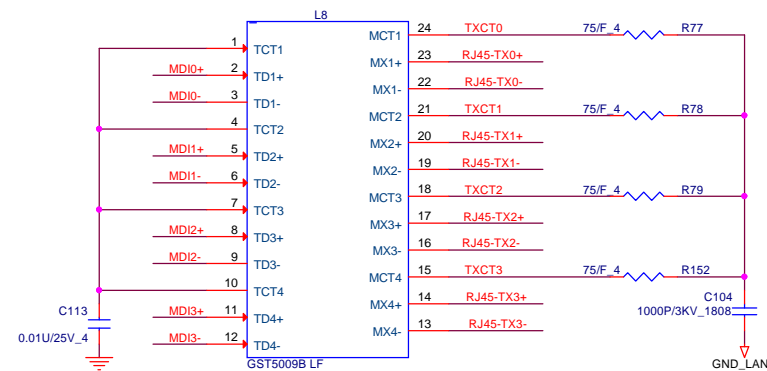


Ra For Enable Switch Regulator.
Rb For Disable Switch Regulator.

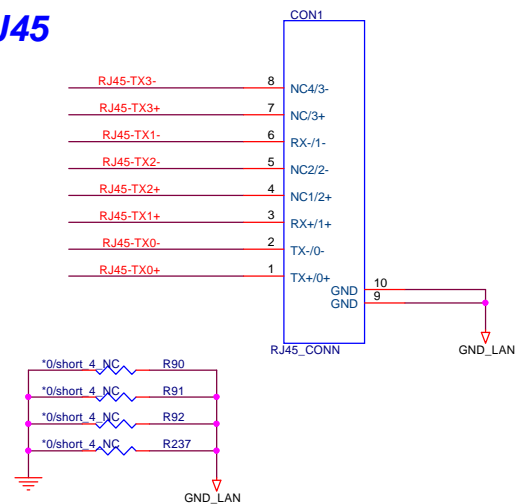
Check point:
1. LOM_CLK_REQ# and PCIE_WAKE# needsto be pull up by SB side
2. PCIE_TX must have AC cap at PCH side

Isolate# is for power saving.
It needs to pull low when system state in S3, S4, and S5.
pull high when system at S0 state

10/100/1000 Transformer



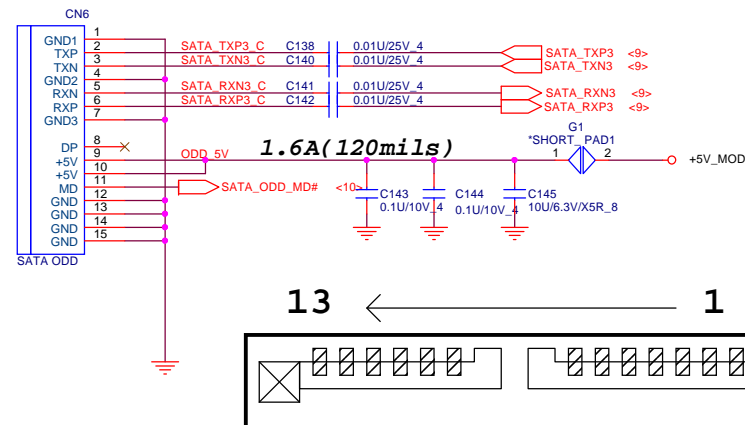
RJ45



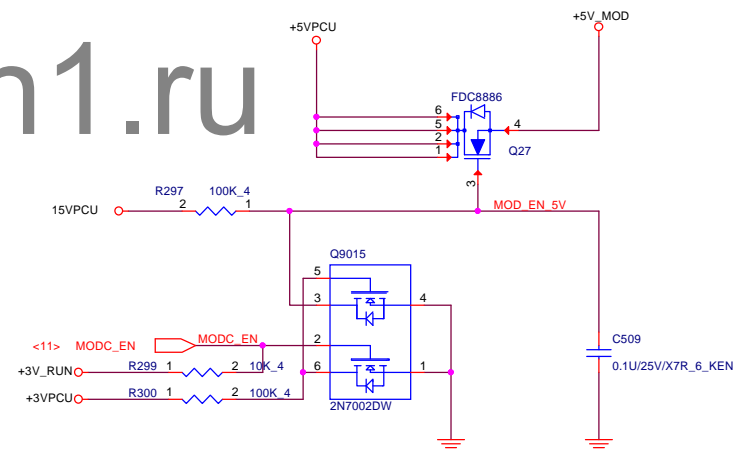
Quanta Computer Inc.
PROJECT : RR3

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LAN_RTL8111E-GR/RJ45
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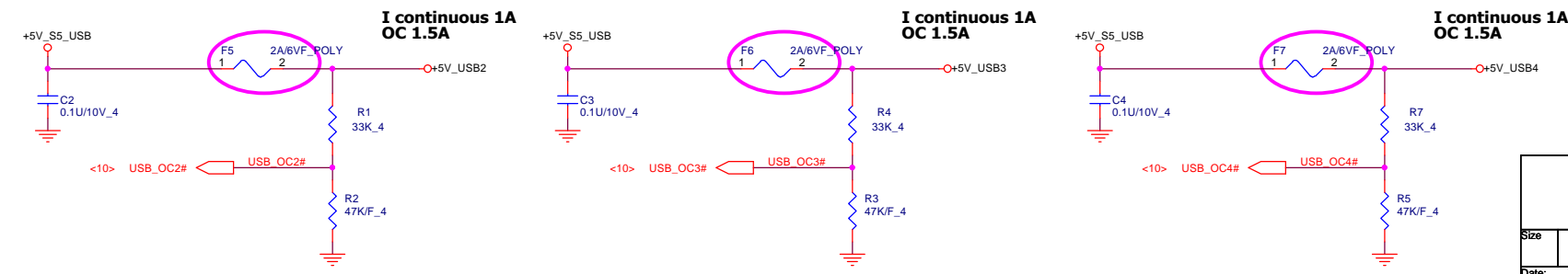
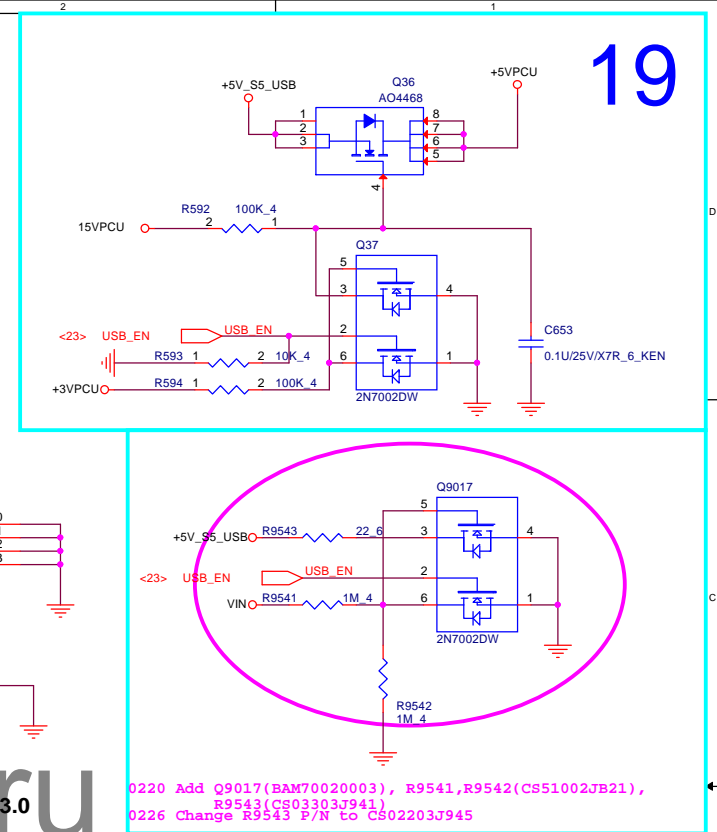
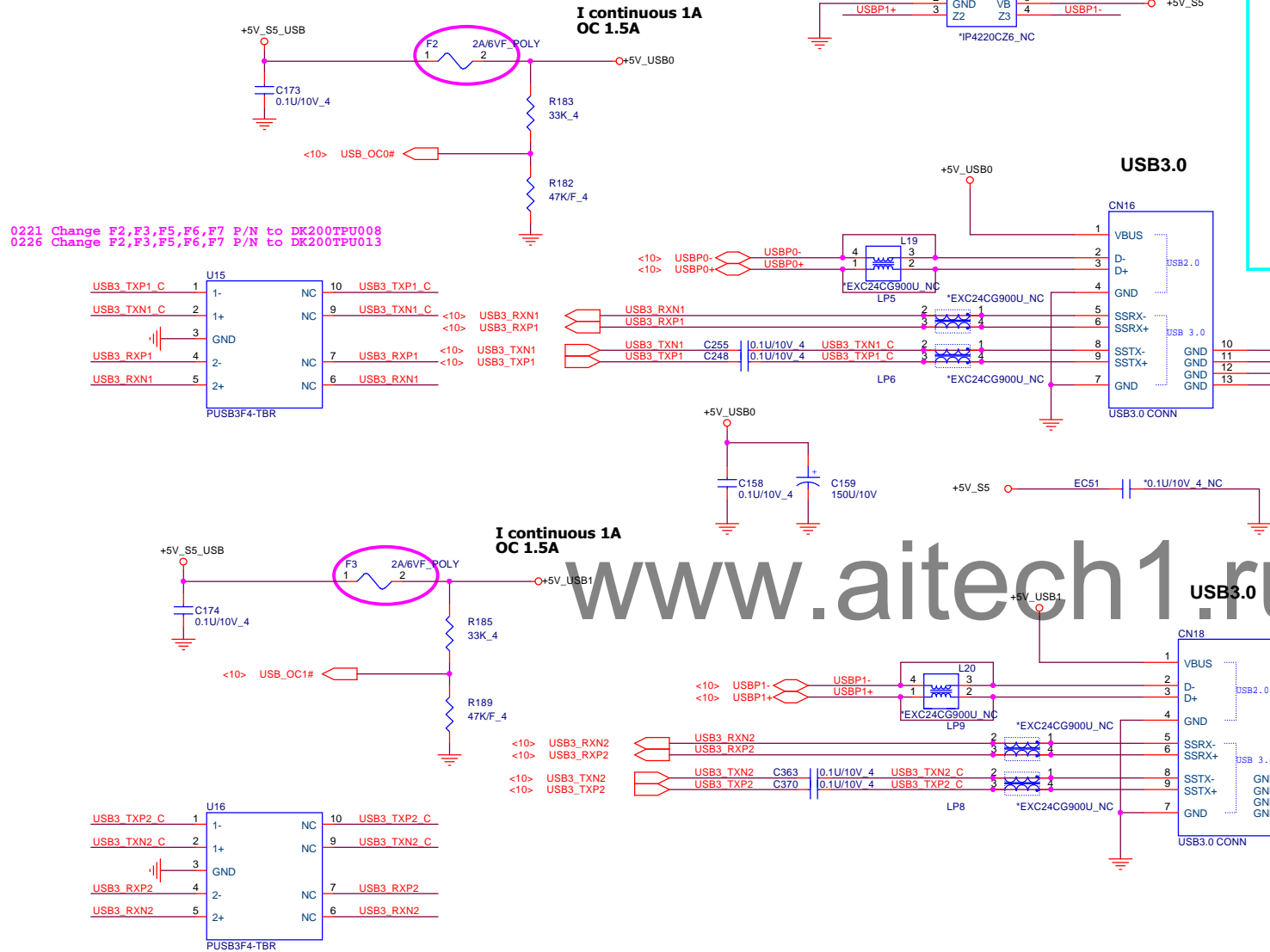
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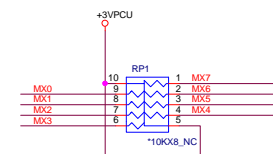
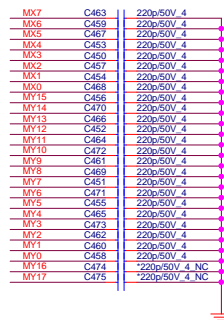
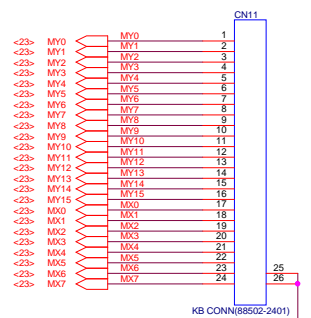
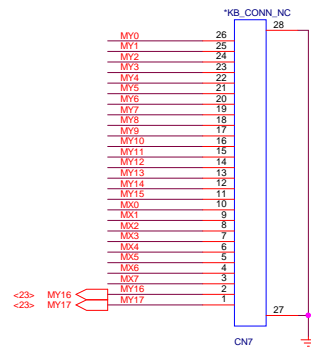


Support Zero power ODD

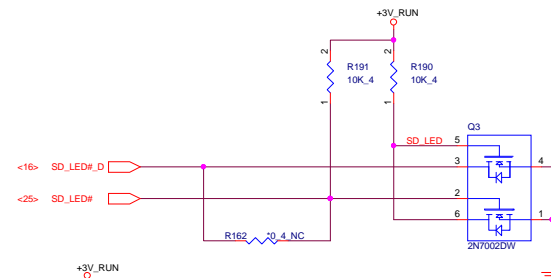
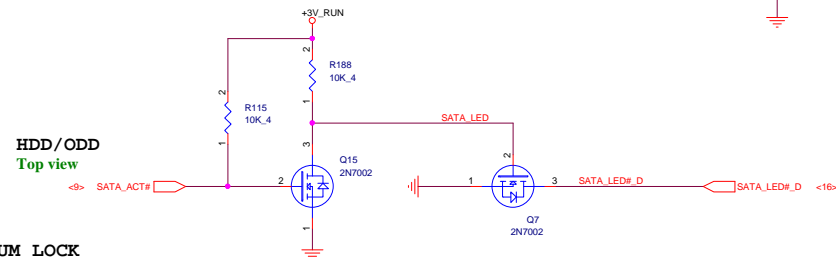


USB 3.0 on board x2

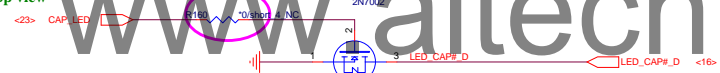
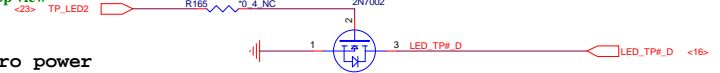
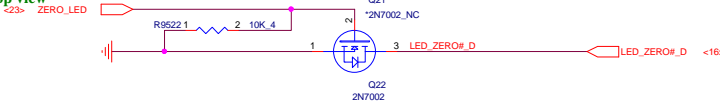
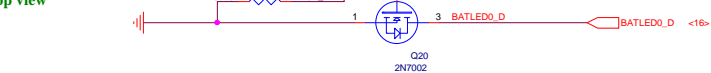
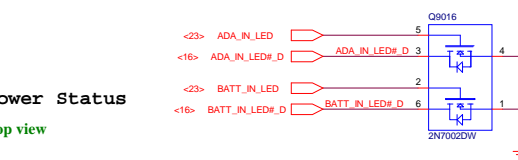




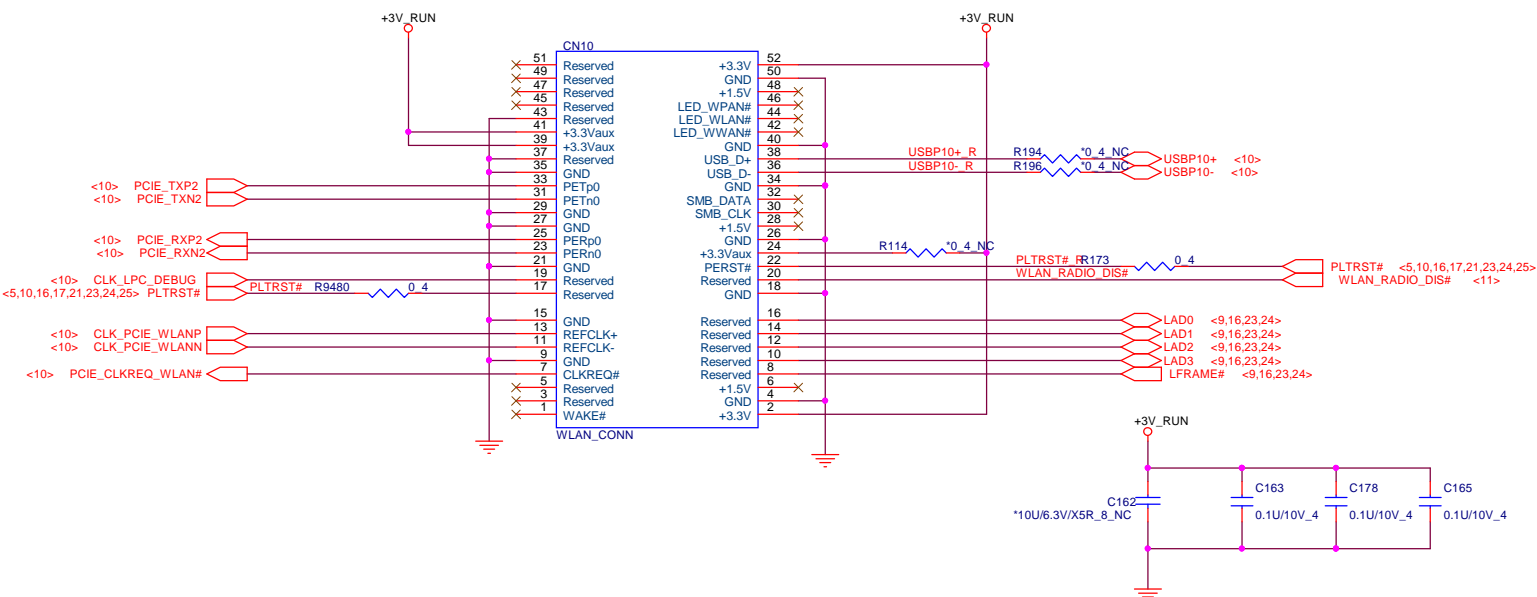
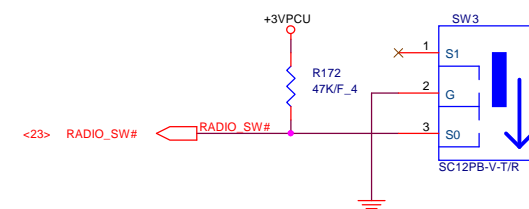
SD LED

HDD/ODD
Top viewNUM LOCK
Top view

0305 Change R160, R186 footprint to short0402, value to *0/short_4_NC

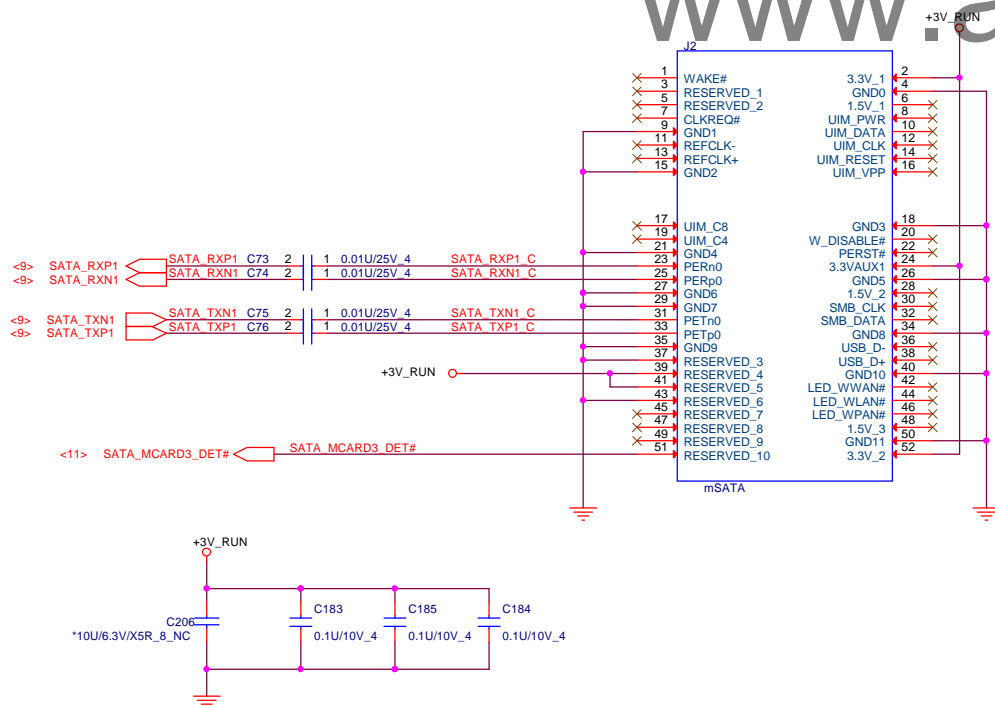
CAP LOCK
Top viewTouch Pad
Top viewZero power
Top viewECO button
Top viewBattery Status
Top viewPower Status
Top view

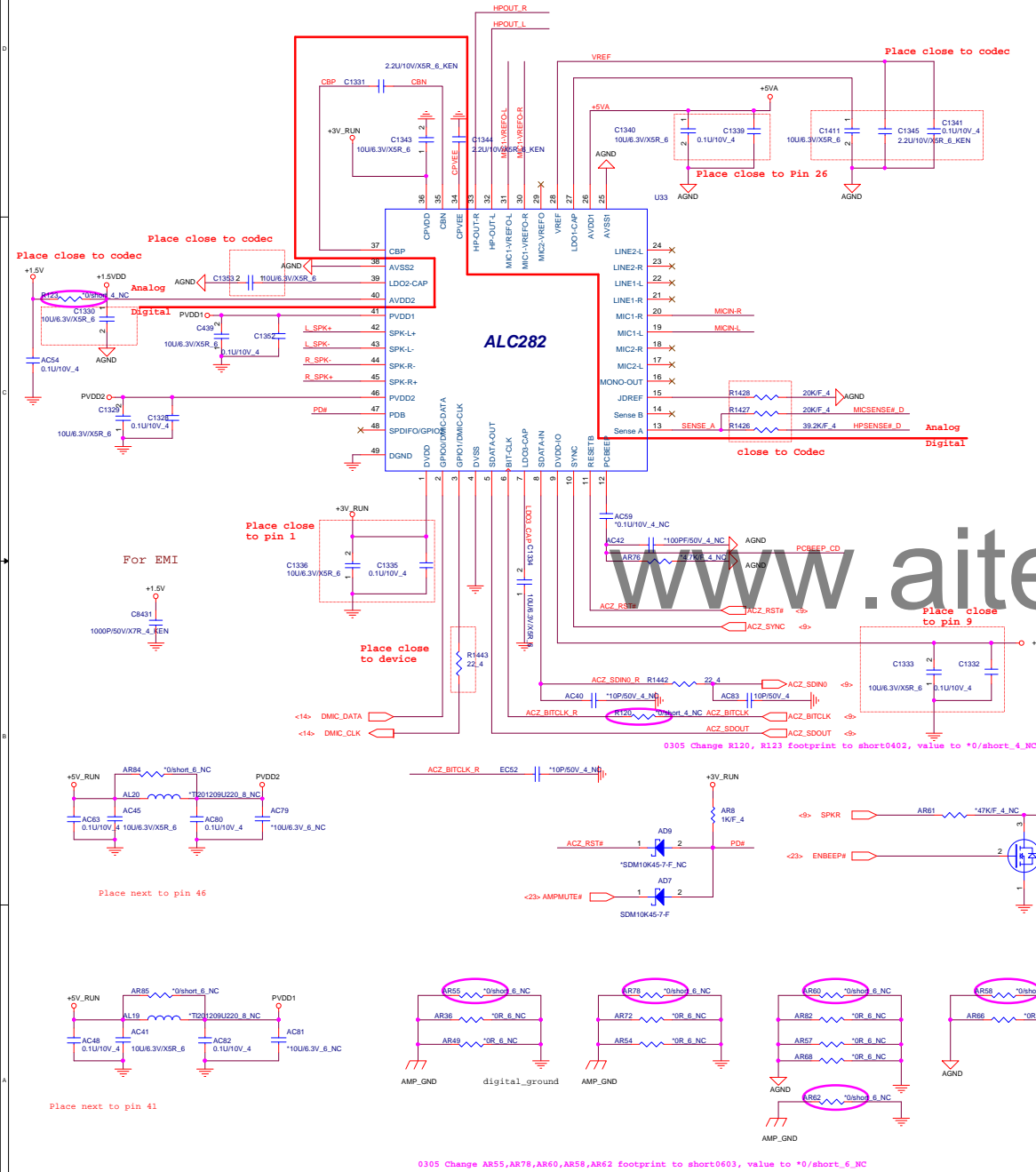
Radio wave SW



mSATA Connector

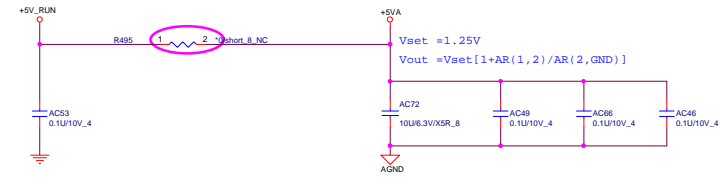
www.aitech1.ru





Demodulation Filter

Place close to Codec

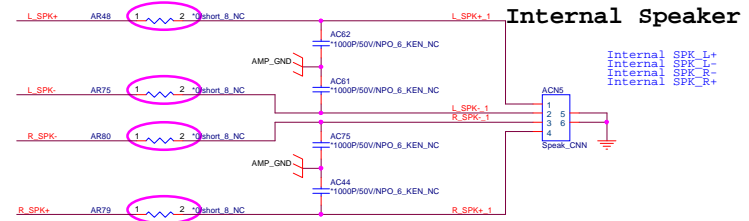


Digital Plane

Analog Plane

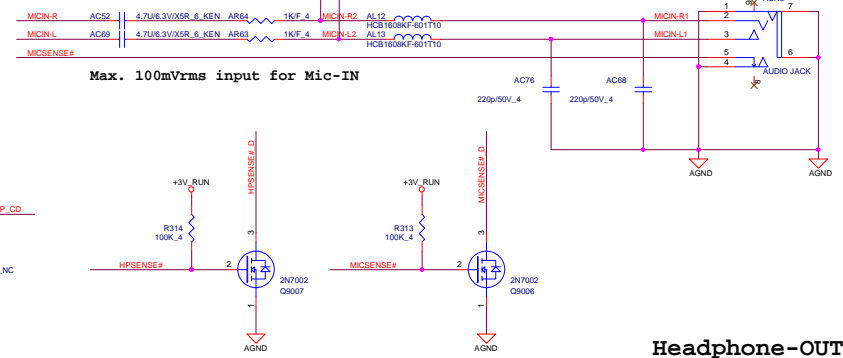
0305 Change AR48,AR75,AR80,AR79,AR95 footprint to short0805, value to *0/short_8_NC

Trace width for L_SPK+_1, L_SPK-_1, R_SPK+_1, R_SPK-_1
 Speaker 8 ohm : 20mil



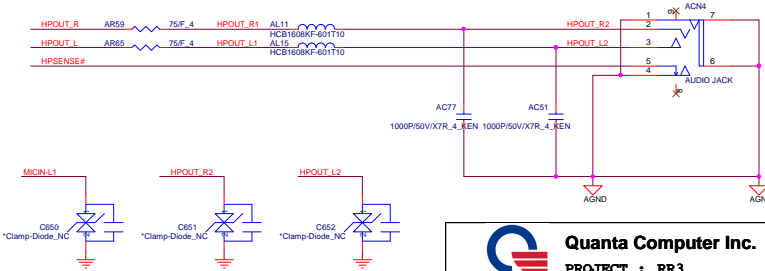
MIC-IN Jack

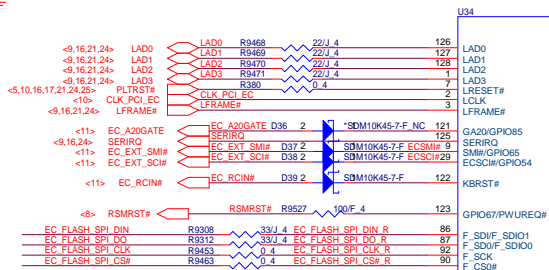
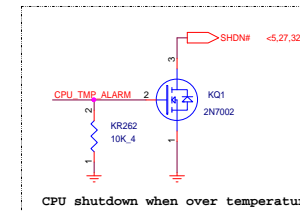
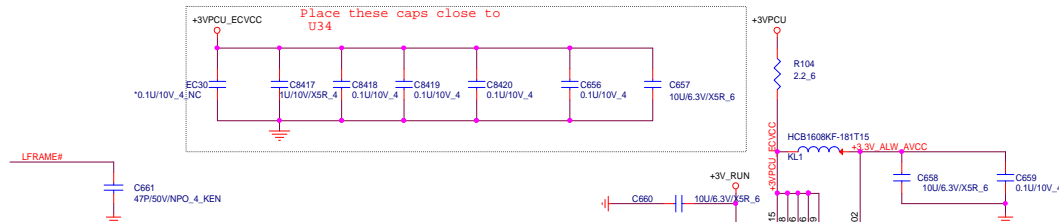
Normal Close Type



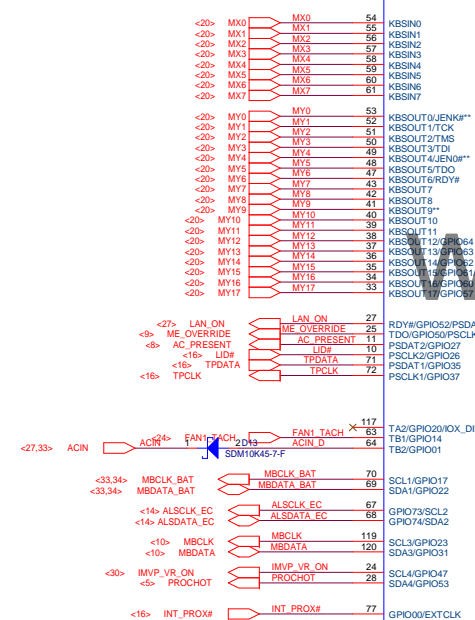
Headphone-OUT

Normal Close Type

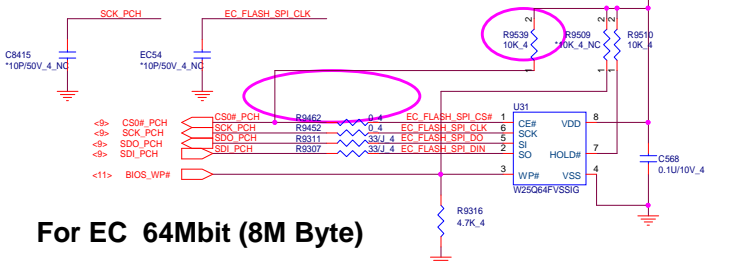




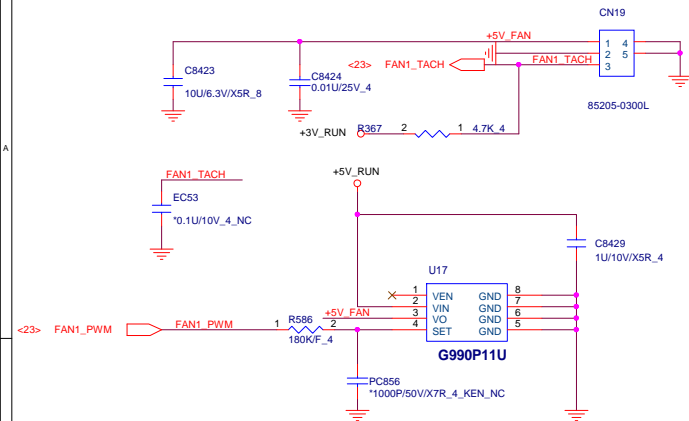
NPC985L



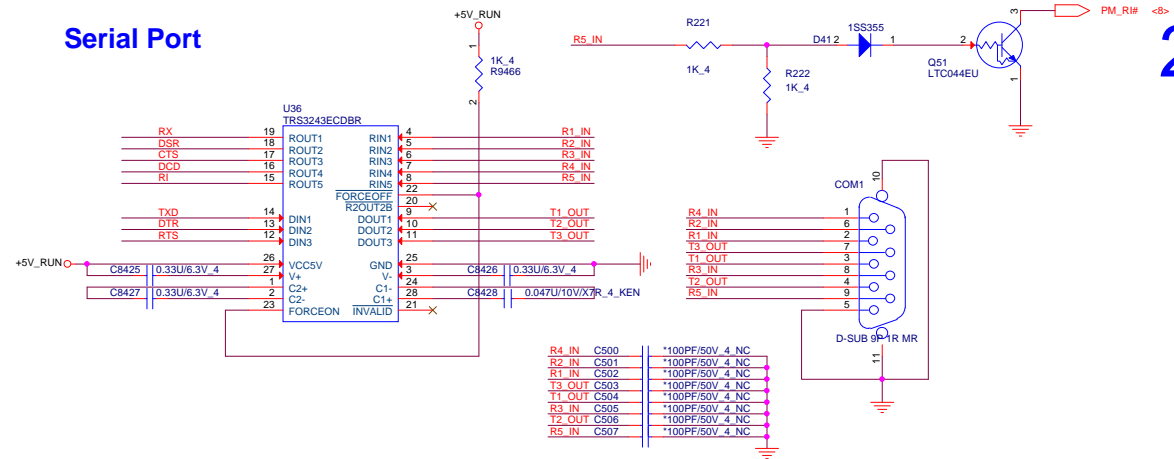
0220 Add R9539(CS31002FB28) for customer request
0227 Change net from EC_FLASH_SPI_CS# to CS0#_PCH



CPU FAN CTRL



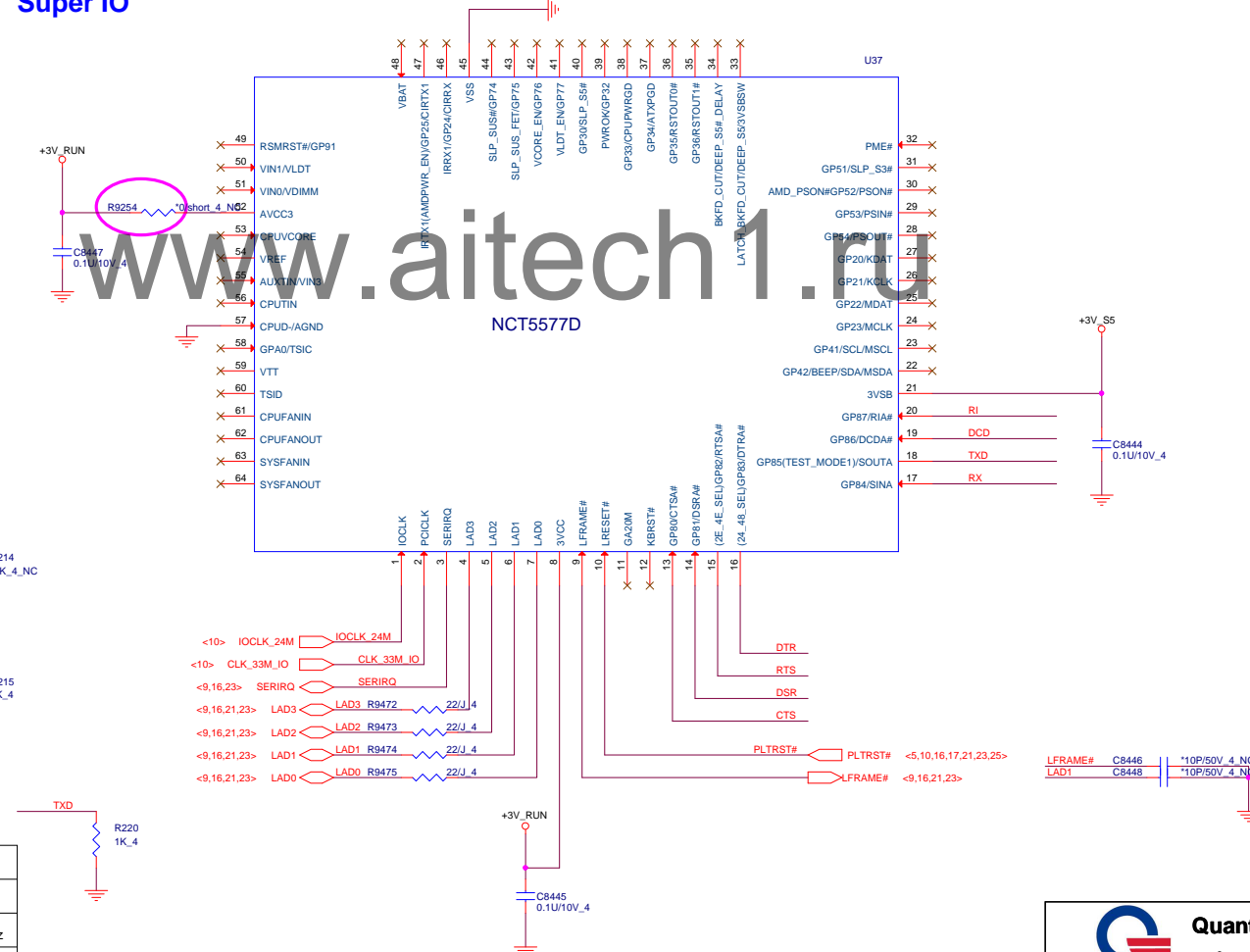
Serial Port



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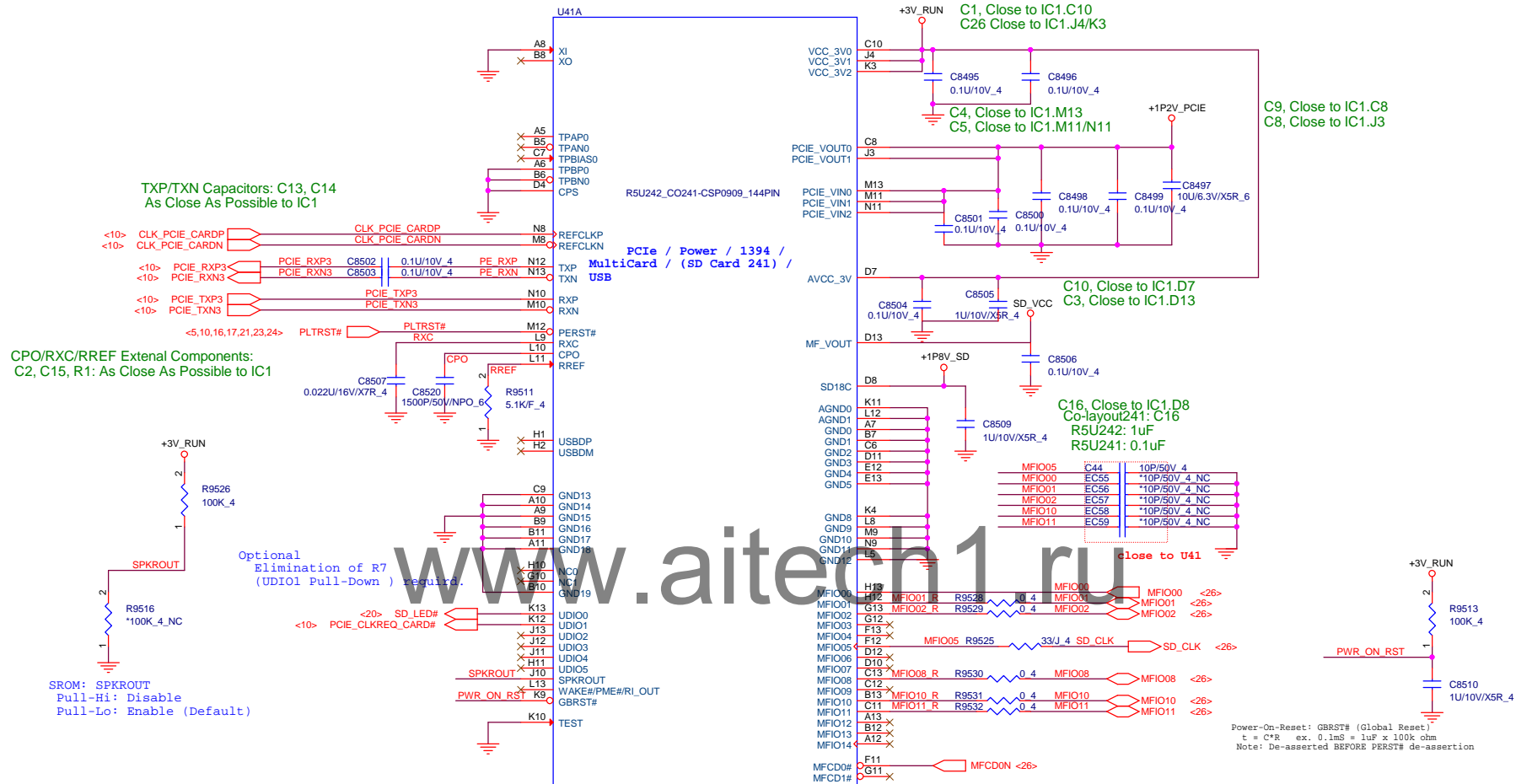
Super IO

0305 Change R9254 footprint to short0402, value to *0/short_4_NC



PIN	Name	0	1
15	RTS	2E	4E
16	DTR	24MHz	48MHz
18	TXD	DISABLE	ENABLE

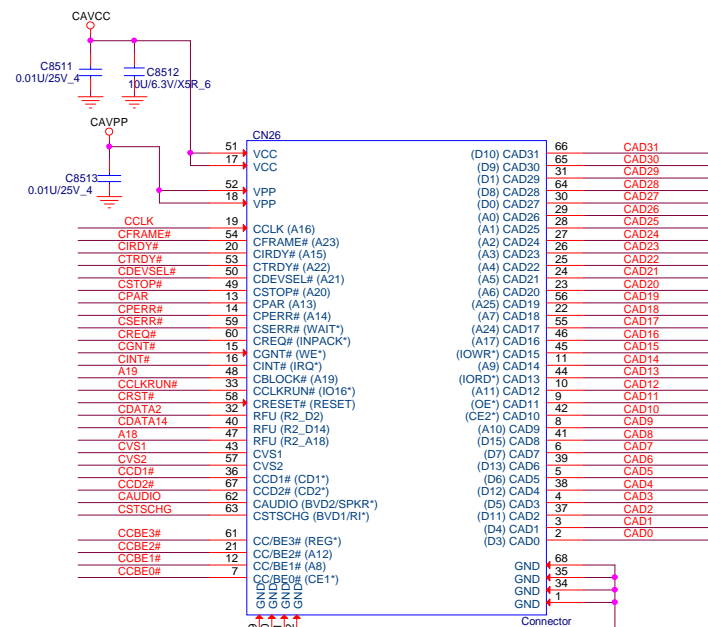
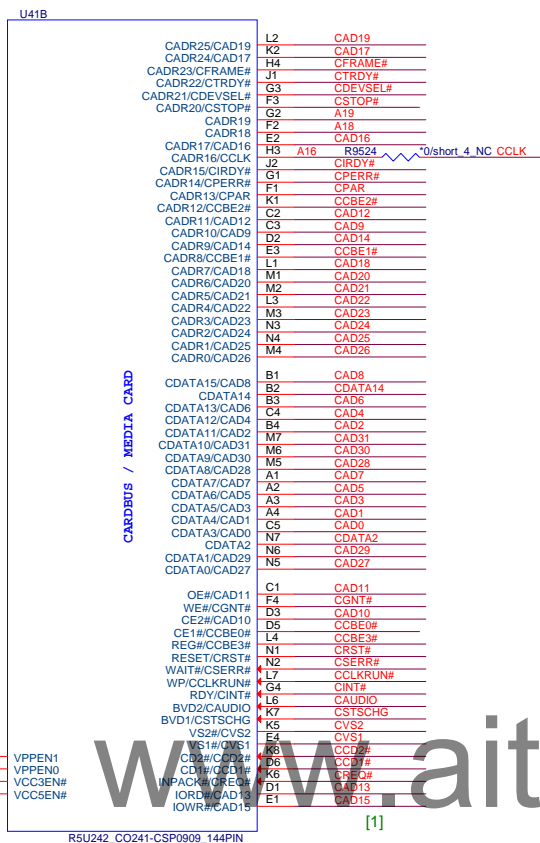
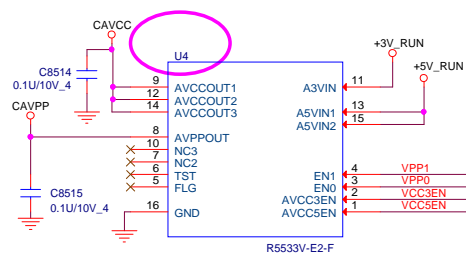
Card Bus



Quanta Computer Inc.

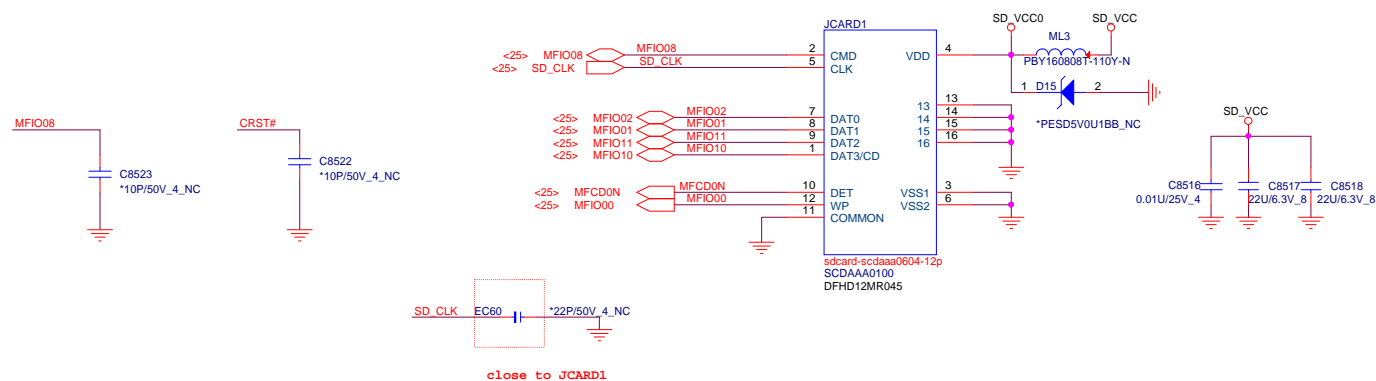
PROJECT : RR3

Size	Document Number	Rev
	CARD BUS 1/2(R5U242)	ES1
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[1]: USB DP/DM PAIR: 90 ohm Differential Impedance
[2] R28: Close to IC1, CLK Series Termination Resistor
[3] C34,C36: Close to PCCARD_SLOT


U1.9 (SD_CLK): Mount at trace end to avoid signal refraction.



MFIO Pin Assignment Table

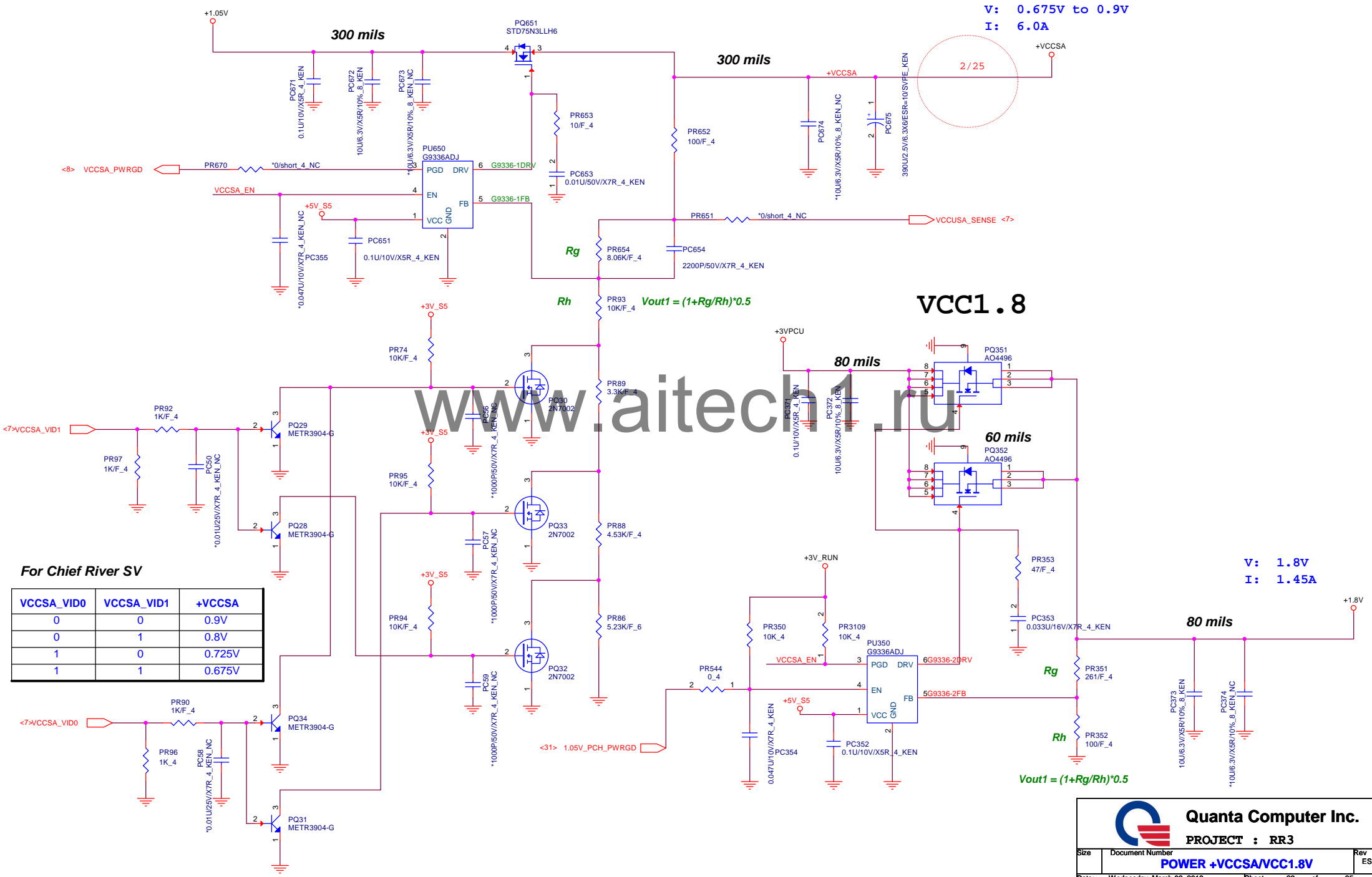
MFIO	SD8	XD	MS8
00	WP	D7	BS
01	D1	D6	-
02	D0	D5	D1
03	D7	D4	-
04	D6	D3	D5
05	CLK	D2	D0
06	-	D1	-
07	D5	D0	D4
08	CMD	WP#	D2
09	D4	WE#	D6
10	D3	ALE	D3
11	D2	CLE	-
12	-	CE#	-
13	-	RE#	D7
14	-	R/B#	CLK

$$\text{Fuse Rating} = \text{IR(max)} / (0.75 * 0.75) = (3.3\text{V} * 4.5\text{A} / 0.9 / 7.5\text{V}) / 0.5625 = 3.91\text{A}$$
$$\text{Fuse Rating} = \text{IR(max)} / (0.75 * 0.75) = (5\text{V} * 7.5\text{A} / 0.9 / 7.5\text{V}) / 0.5625 = 9.88\text{A}$$


 Quanta Computer Inc. PROJECT : RR3		Rev
Size	Document Number	ES
3VPCU&5VPCU(PM6686TR)		
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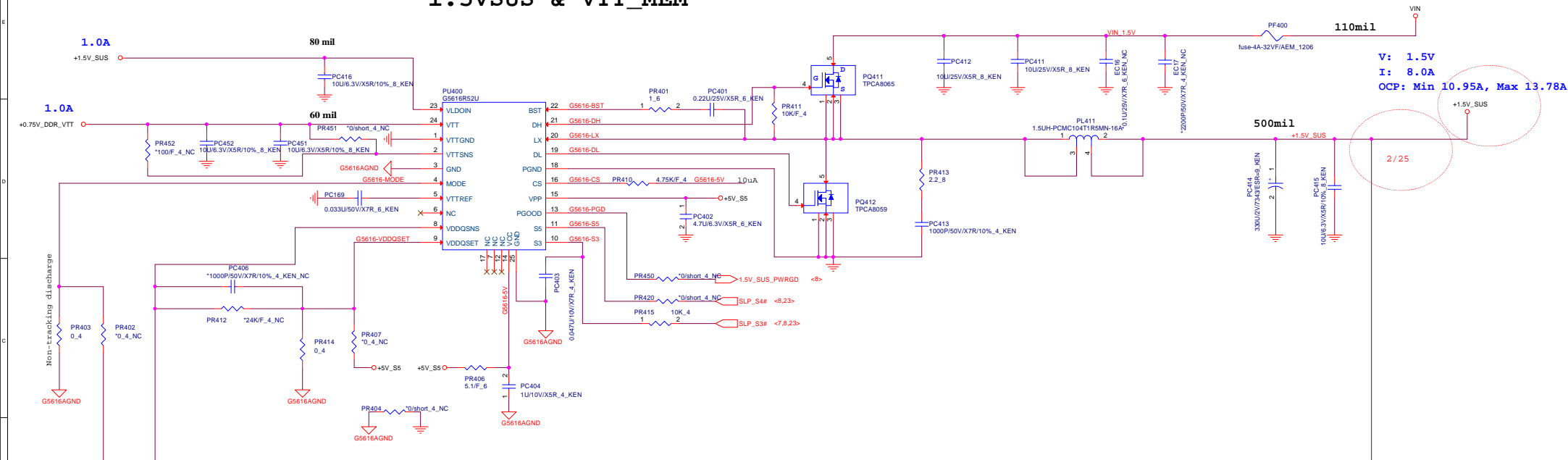
+VCCSA

V: 0.675V to 0.9V
I: 6.0A



Quanta Computer Inc.
PROJECT : RR3

1.5VSUS & VTT_MEM



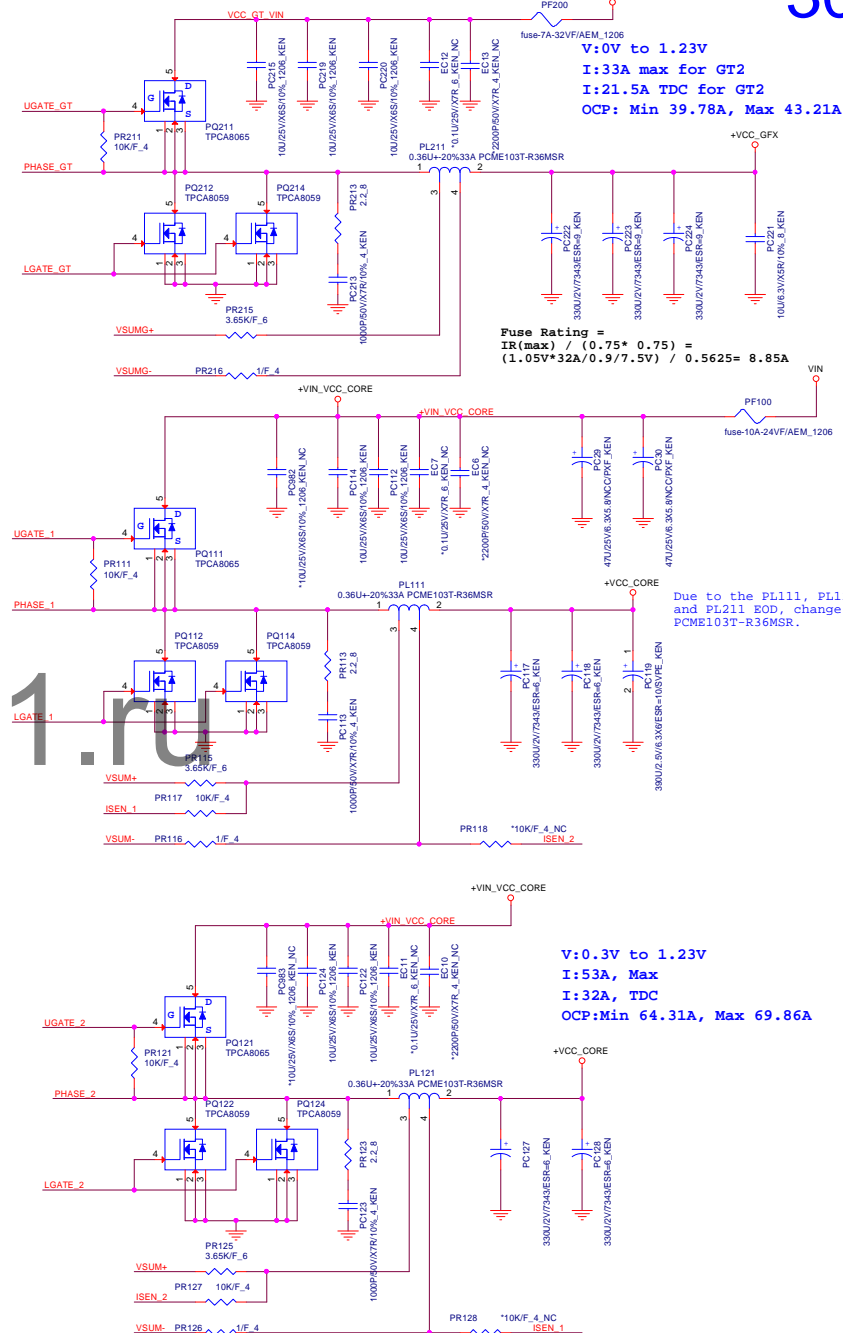
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MODE	DISCHARGE MODE
+5V	No discharge
+1.35V	Tracking discharge
GND	Non-tracking discharge

VDDQSET	VDDQ(V)	VTTREF & VTT	NOTE
GND	1.5 fixed	VDDQSNS/2	DDR3
5V	1.8 fixed	VDDQSNS/2	DDR2
FB-Resistor	Adjustable	VDDQSNS/2	1.2V<VDDQ<3V

$$V_{TT} = V_{TREF} = V_{DDQSNS}/2 = 0.675V$$

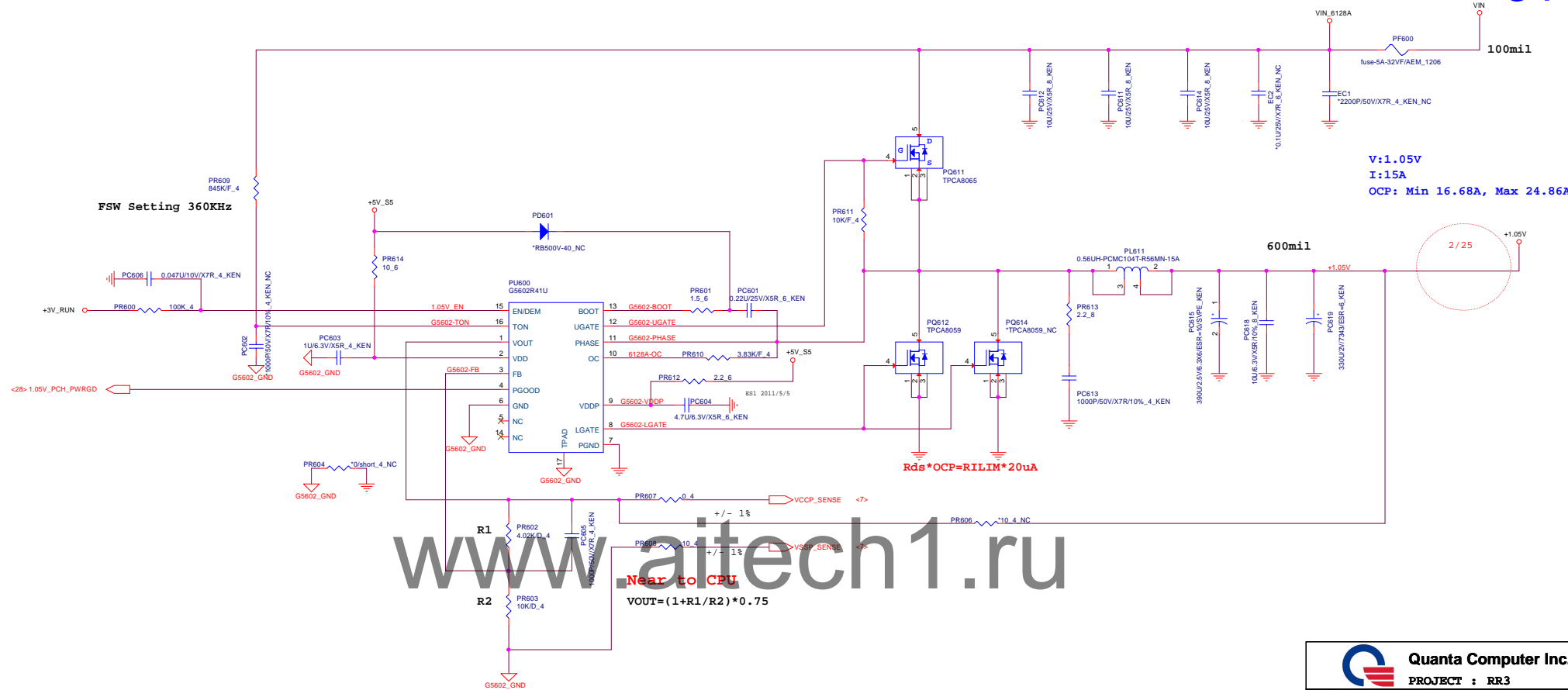
STATE	S3	S5	1.5VSUS	VTTREF	VTT
S0	1	1	on	on	on
S3	0	1	on	on	off
S4/S5	0	0	off	off	off



+1.05V / 15.0A


Fuse Rating =
 $IR(max) / (0.75 * 0.75) = (1.05V * 15 / 0.9 / 7.5V) / 0.5625$
= 4.15A

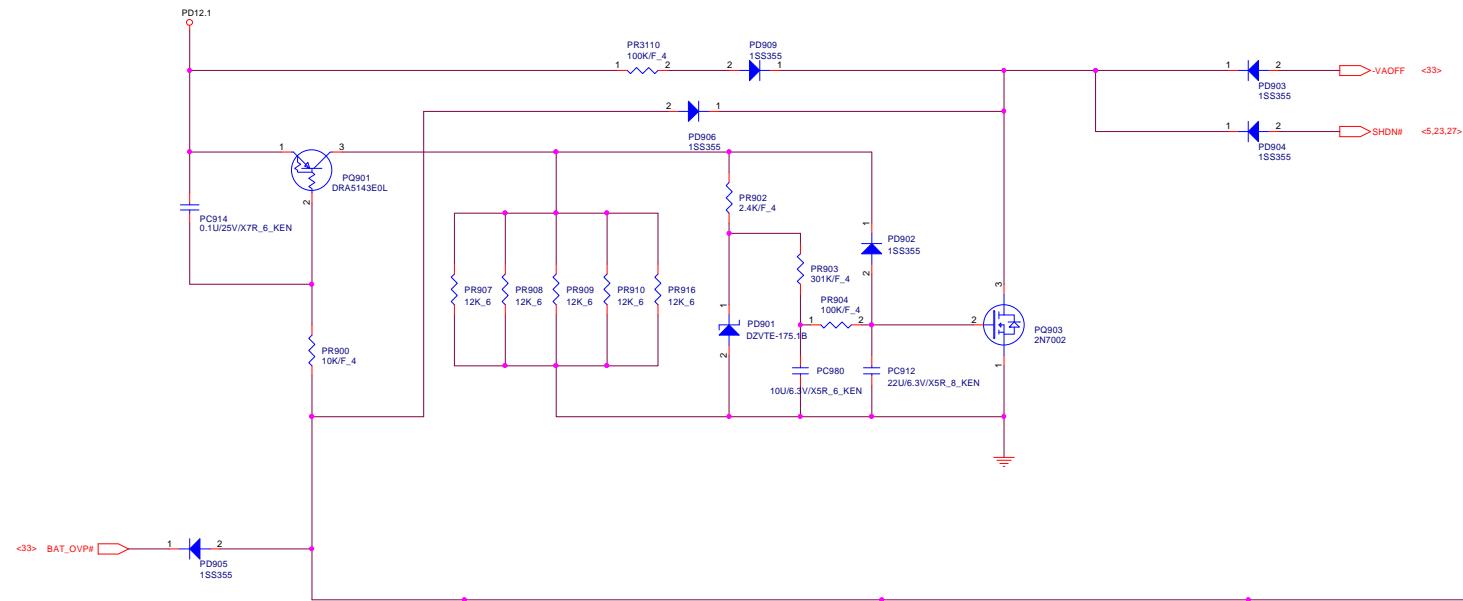
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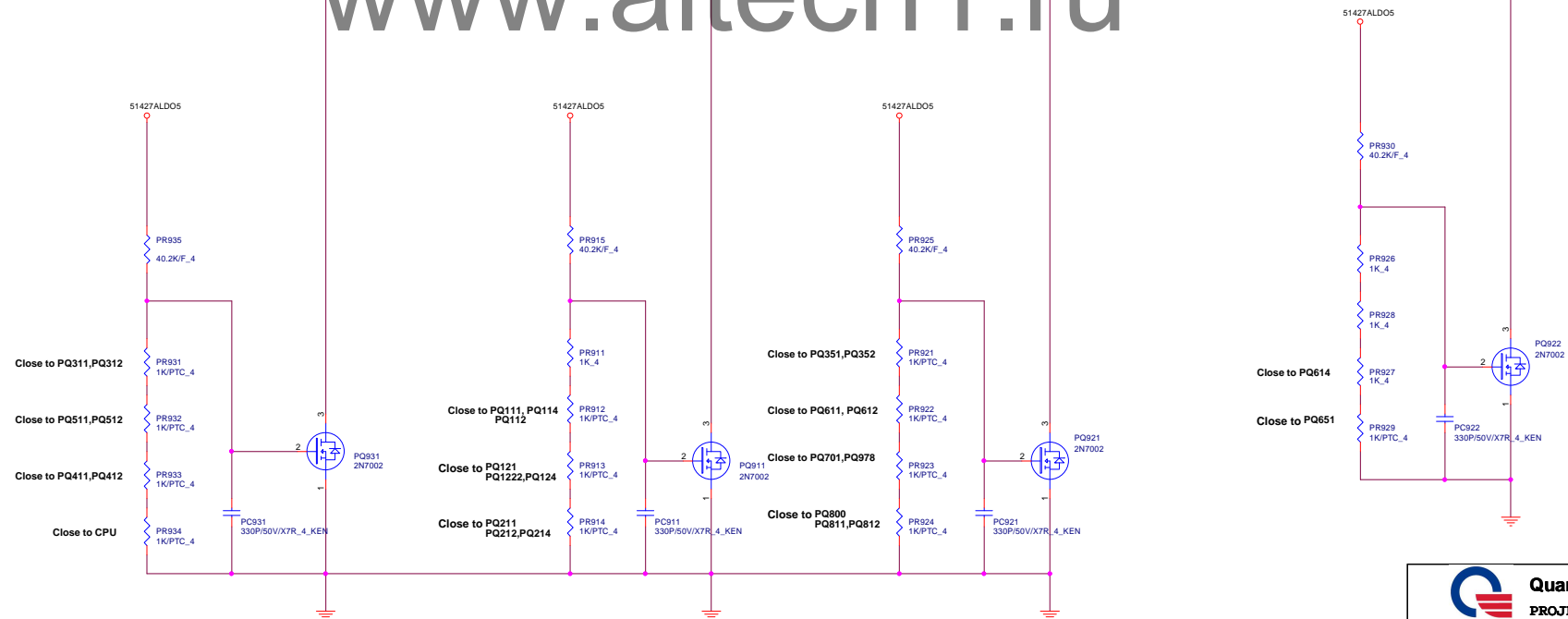
www.aitech1.ru

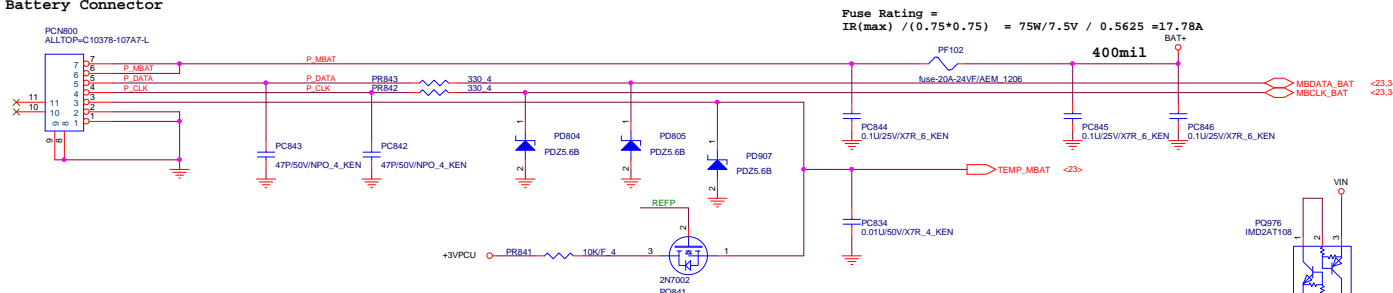
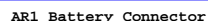
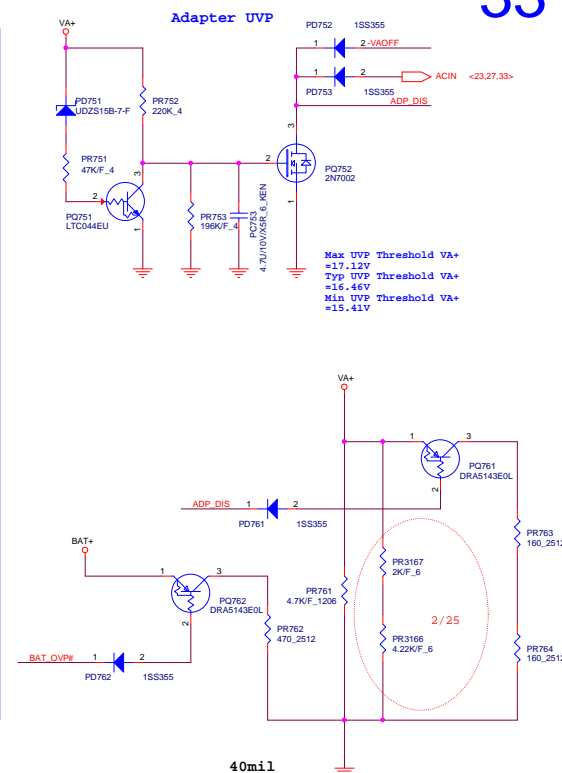
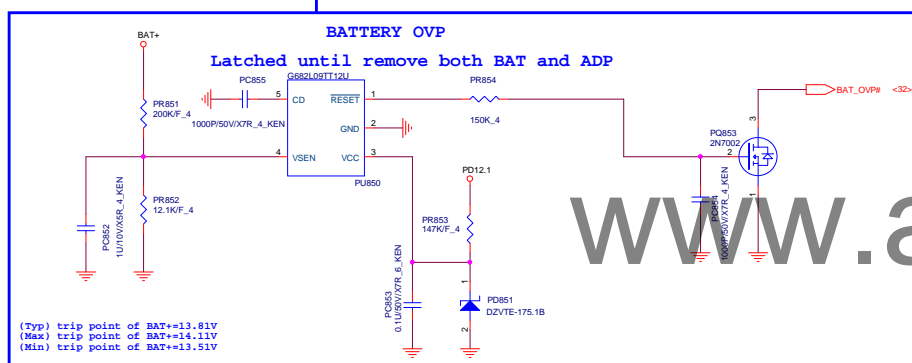
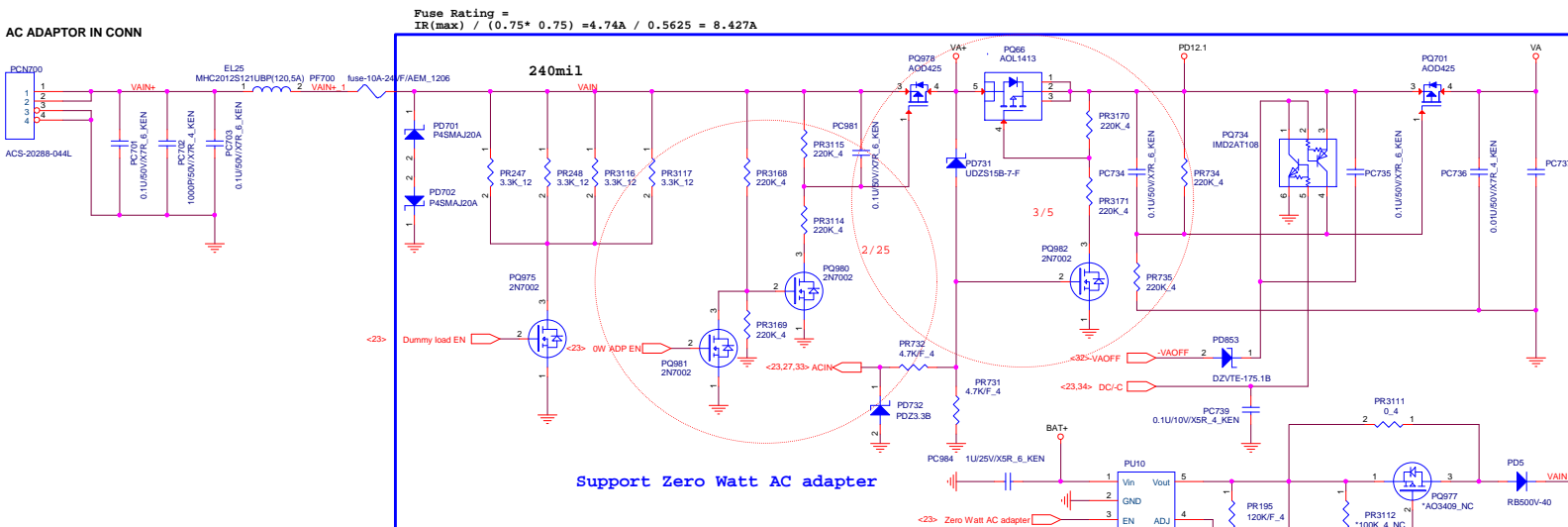
Near to CPU
 $VOUT = (1 + R1/R2) * 0.75$

		Quanta Computer Inc.	
		PROJECT : RR3	
Size	Document Number		Rev
	POWER +1.05V(G5602R41U_15A)		ES1
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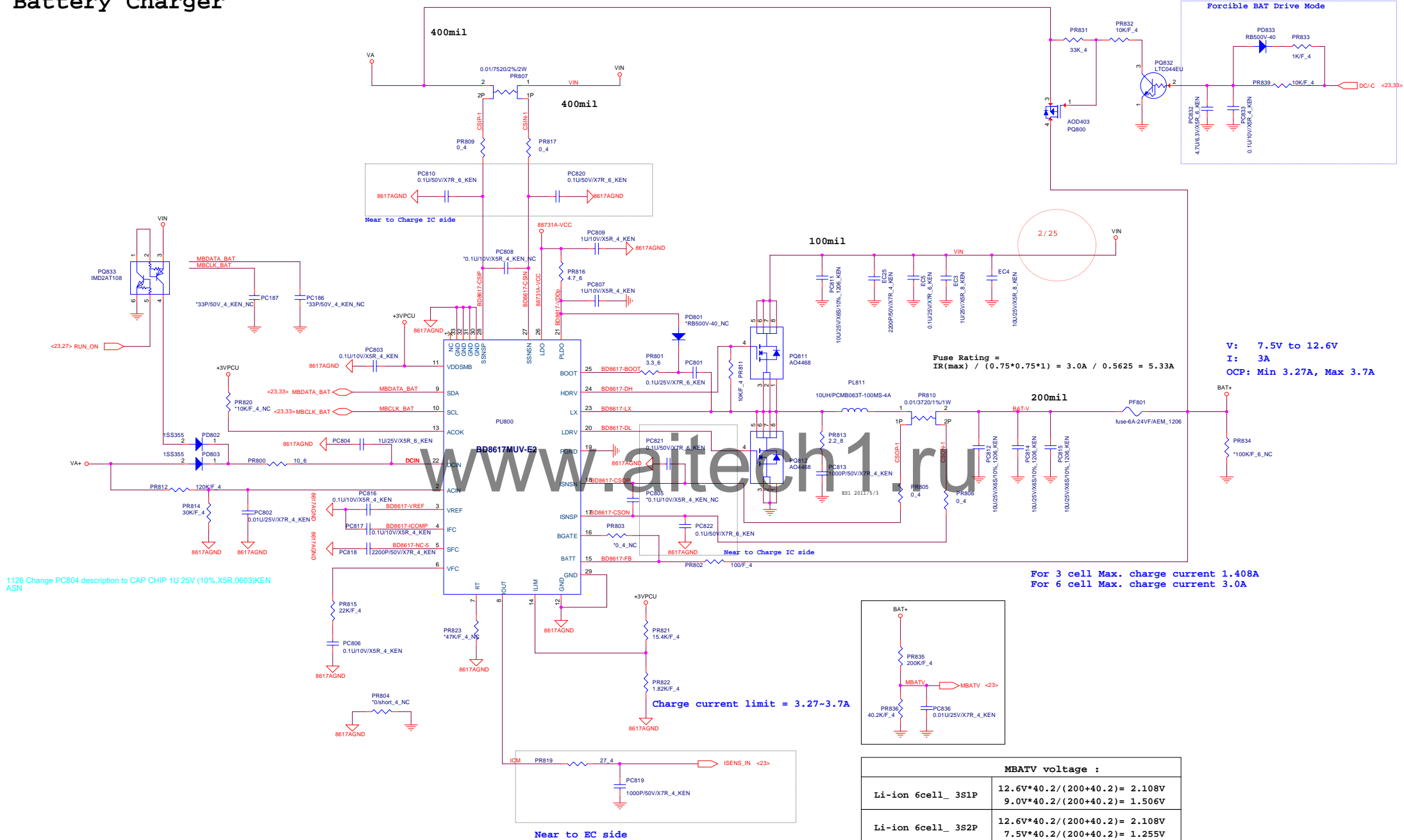




TEMP_MBAT voltage :		
	System Off	System On
Battery	0V	1.6V
Adapter	3.3V	3.3V
Battery+Adapter	1.6V	1.6V

	REFON Status
Adapter Only	HI
Adapter+Battery	HI
Battery+Power On	HI

Battery Charger



	MBATV voltage :
Li-ion 6cell_ 3S1P	$12.6V \times 40.2 / (200 + 40.2) = 2.108V$ $9.0V \times 40.2 / (200 + 40.2) = 1.506V$
Li-ion 6cell_ 3S2P	$12.6V \times 40.2 / (200 + 40.2) = 2.108V$ $7.5V \times 40.2 / (200 + 40.2) = 1.255V$

Power Tree Table

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