

AT3U BLOCK DIAGRAM

01

<http://hobi-elektronika.net>

PCB STACK UP

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

- 04-- 0402 footprint
- 06-- 0603 footprint
- 08-- 0805 footprint
- 12-- 1206 footprint
- F-- 1% tolerance

Cable Docking

- TV_OUT
- VGA
- RJ-45
- CIR/Pwr btn
- Stereo MIC
- Headphone Jack
- USB Port
- VOL Cntr

PAG 31

SYSTEM CHARGER(MAX8724)

PAG 33

SYSTEM POWER MAX8778

PAG 34

VCCP +1.5V AND GMCH 1.05V(MAX8717)

PAG 35

CPU CORE MAX8771

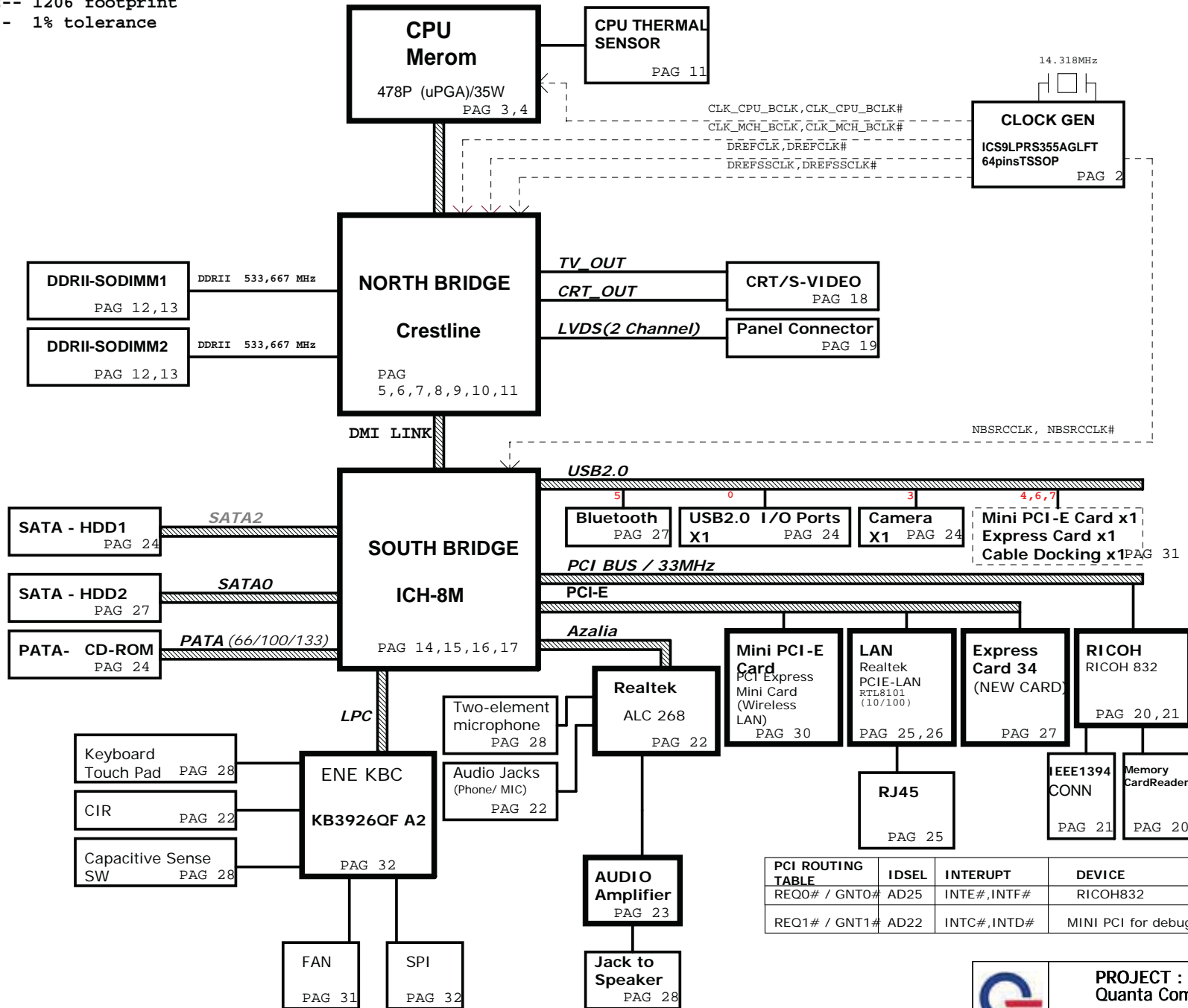
PAG 36

DDR II SMD DR_VTERM 1.8V/1.8VSUS(TPS51116REGR)

PAG 37

DISCHARGE/3VS/5VS/LANVCC

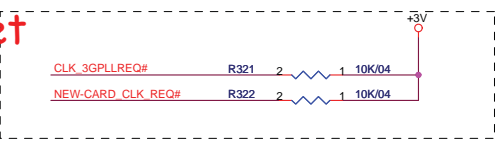
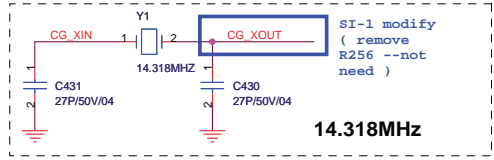
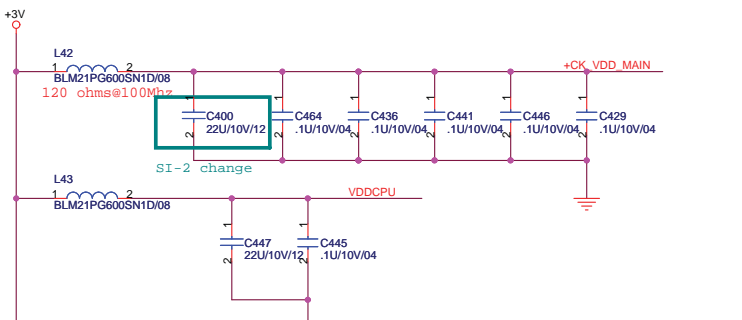
PAG 38



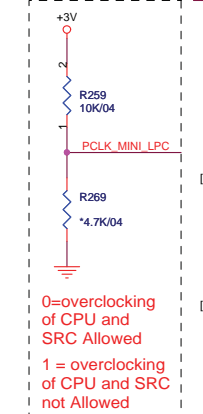
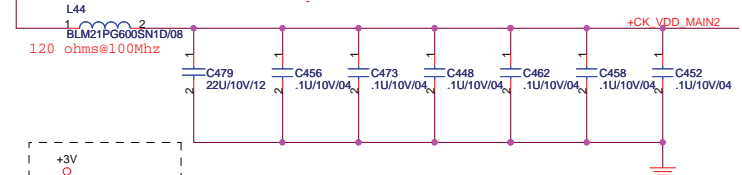
PCI ROUTING TABLE	IDSEL	INTERUPT	DEVICE
REQ0# / GNT0#	AD25	INTE#,INTF#	RICOH832
REQ1# / GNT1#	AD22	INTC#,INTD#	MINI PCI for debug

PROJECT : AT3U
Quanta Computer Inc.

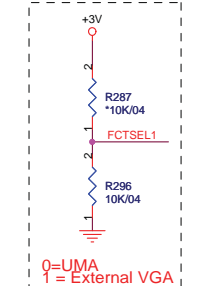
Size Custom Document Number BLOCK DIAGRAM Rev 2A
 Date: Monday, April 30, 2007 Sheet 1 of 37



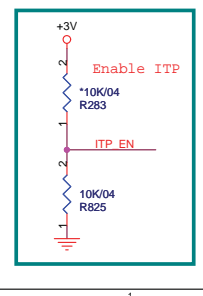
internal have already build-in 33ohm damping resistor



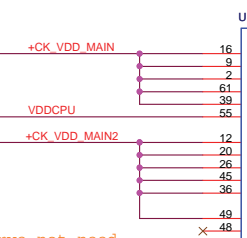
0=overclocking of CPU and SRC Allowed
1 = overclocking of CPU and SRC not Allowed



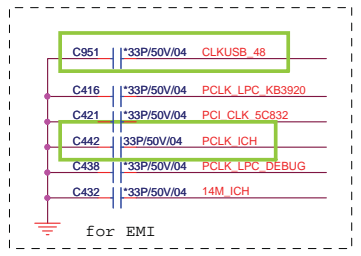
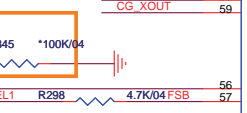
0=UMA
1 = External VGA



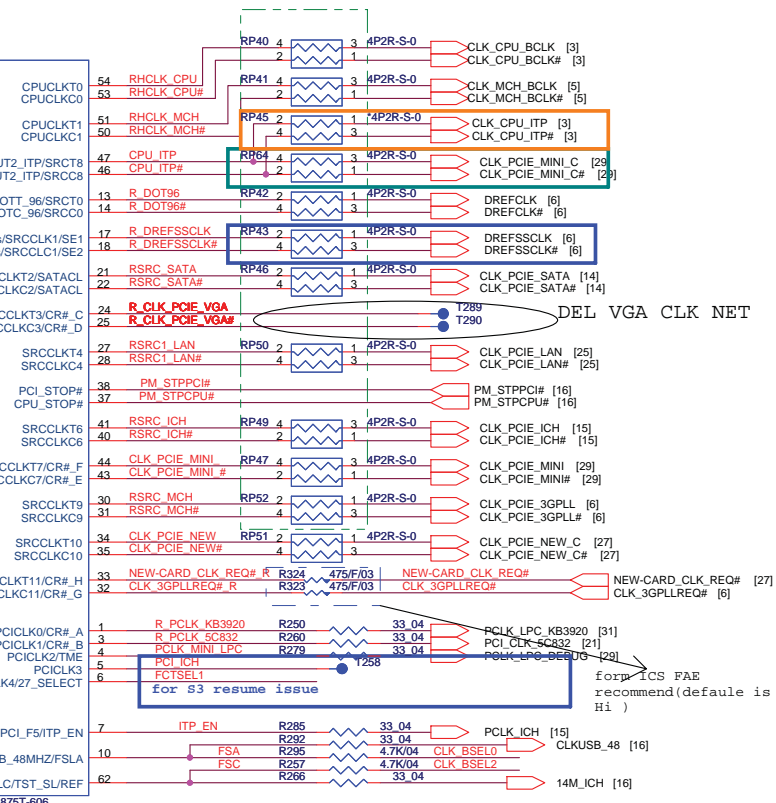
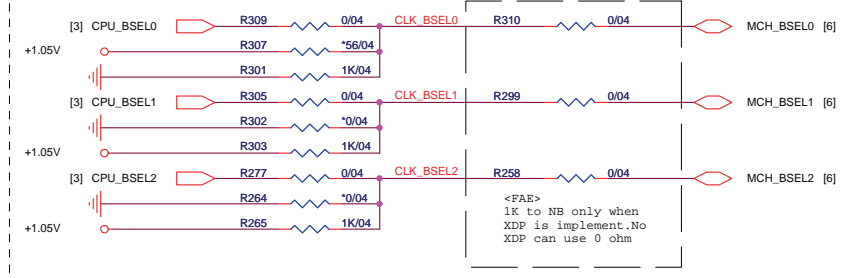
Enable ITP



SI-2 add -- reserve not need



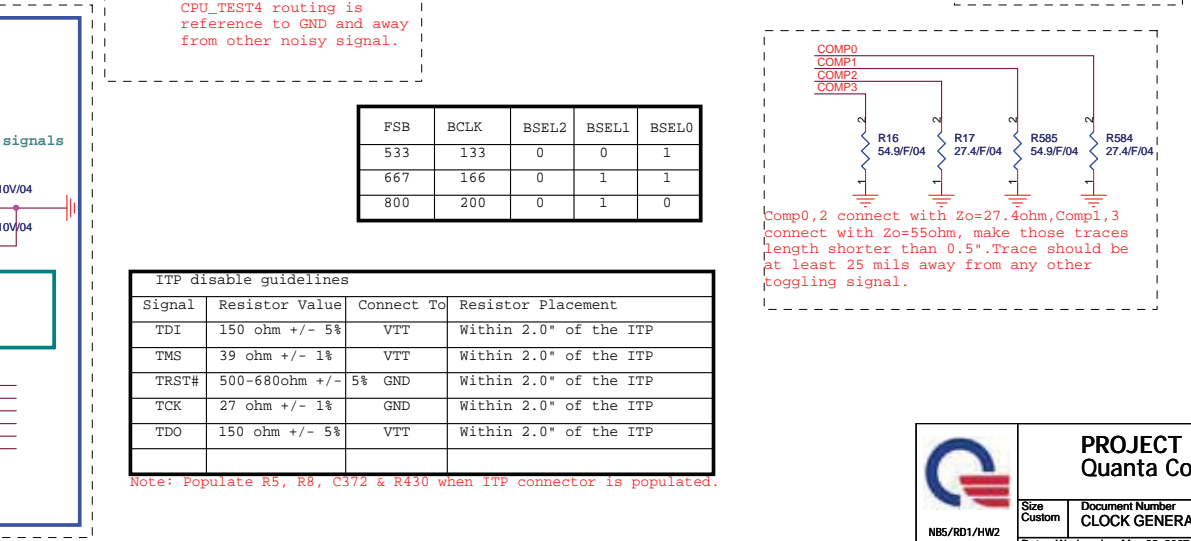
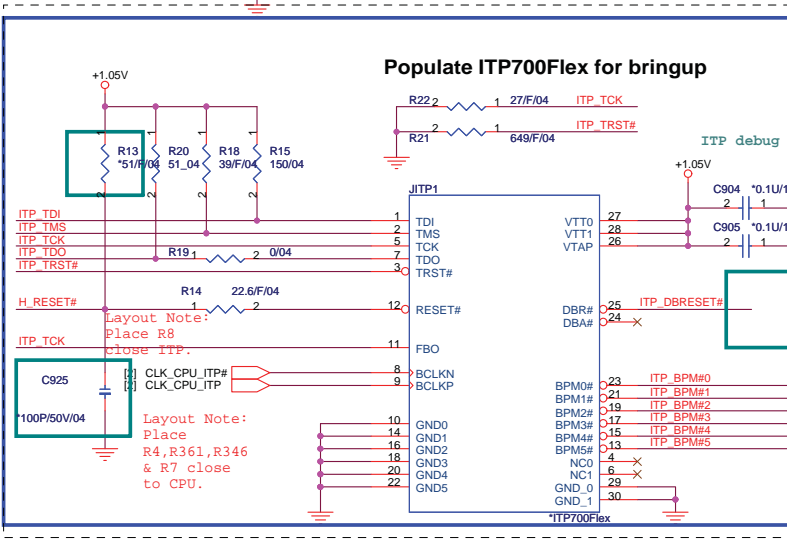
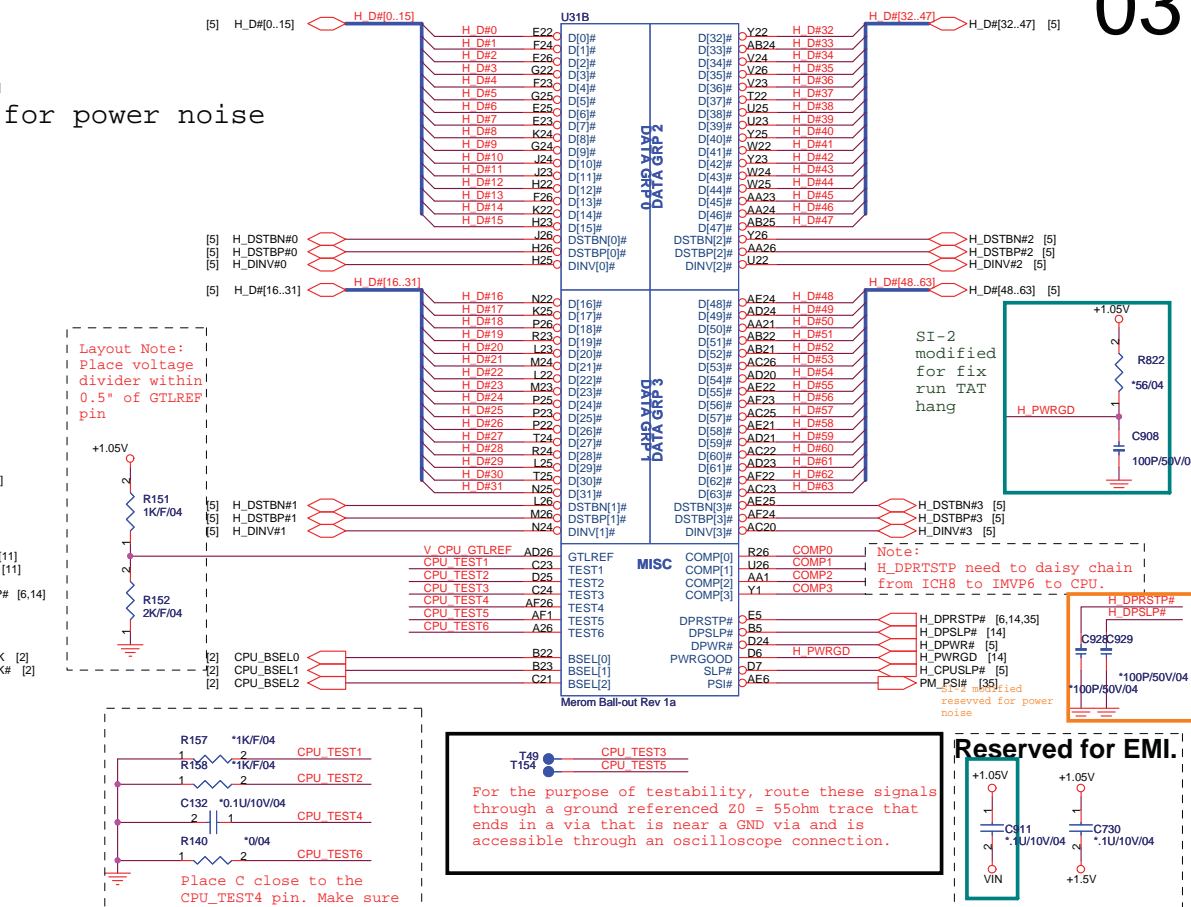
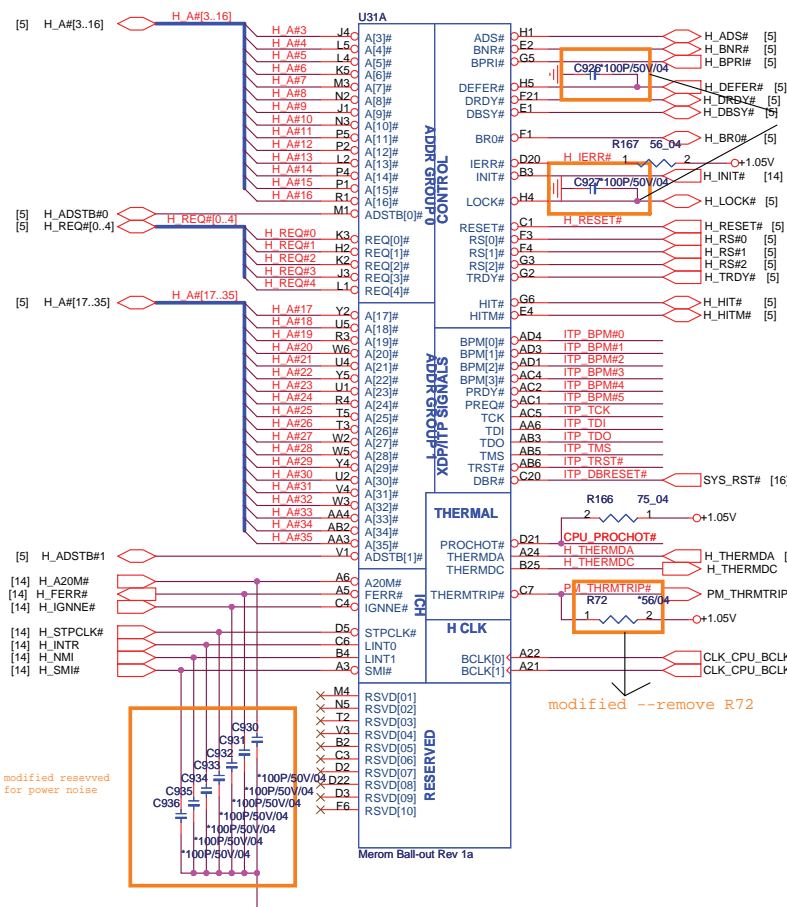
CPU Clock select



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

GLCK_SEL = FCTSEL1

FCTSEL1 (PIN13)	PIN20	PIN21	PIN24	PIN25
0=UMA	DOT96T	DOT96C	SRCT1/LCDT_100	SRCT1/LCDT_100
1 = External VGA	SRCT0	SRCC0	27Mout-NSS	27Mout-SS

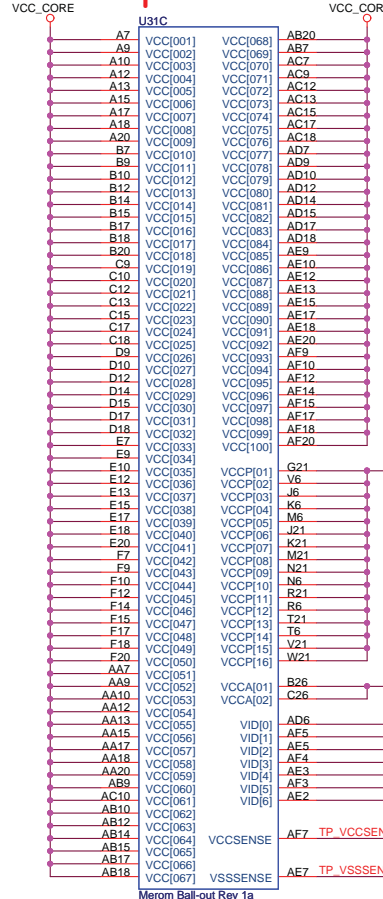
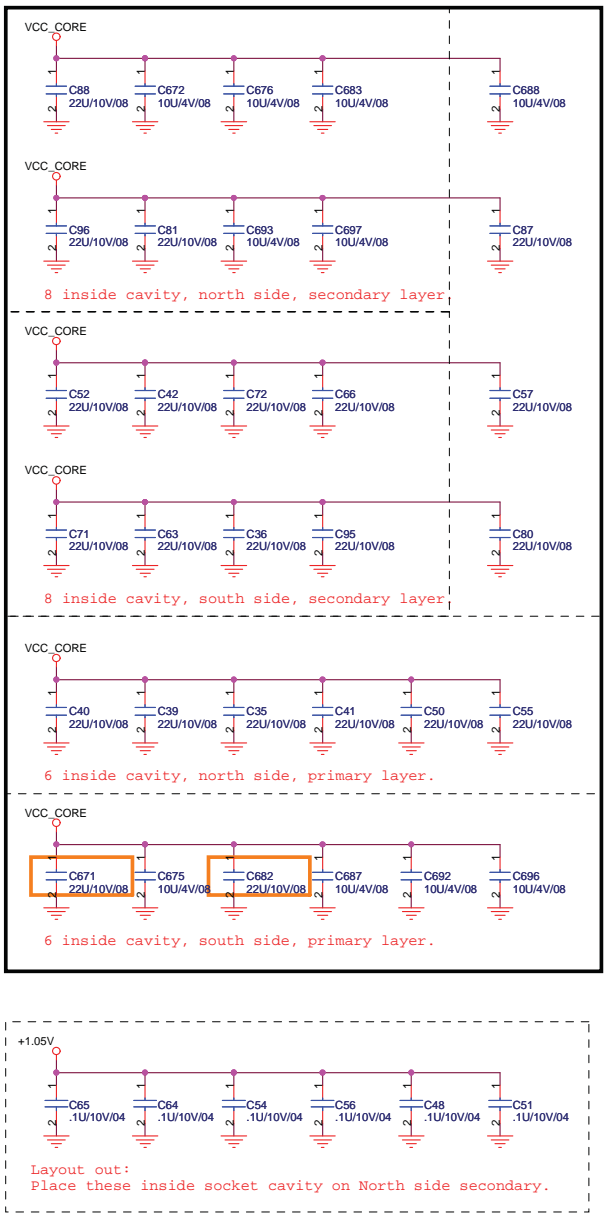


FSB	BCLK	BSEL2	BSEL1	BSEL0
533	133	0	0	1
667	166	0	1	1
800	200	0	1	0

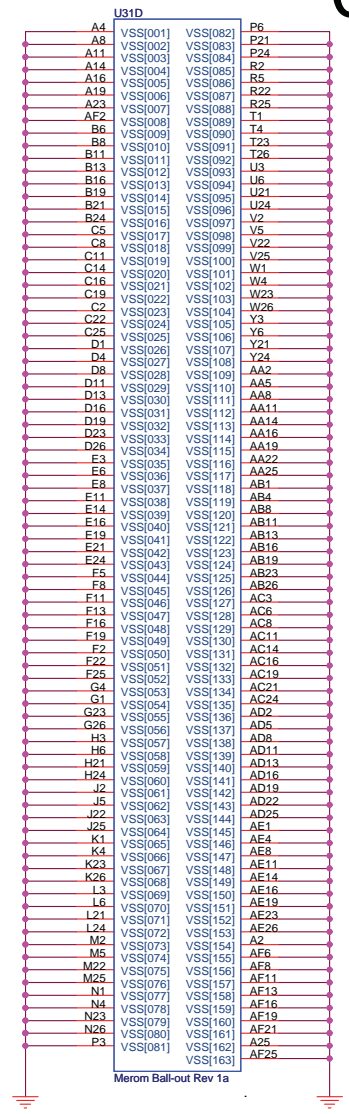
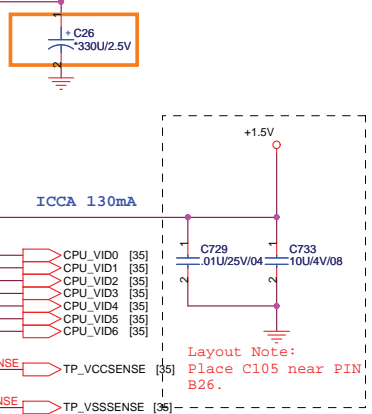
Signal	Resistor Value	Connect To	Resistor Placement
TDI	150 ohm +/- 5%	VTT	Within 2.0" of the ITP
TMS	39 ohm +/- 1%	VTT	Within 2.0" of the ITP
TRST#	500-680ohm +/- 5%	GND	Within 2.0" of the ITP
TCK	27 ohm +/- 1%	GND	Within 2.0" of the ITP
TDO	150 ohm +/- 5%	VTT	Within 2.0" of the ITP

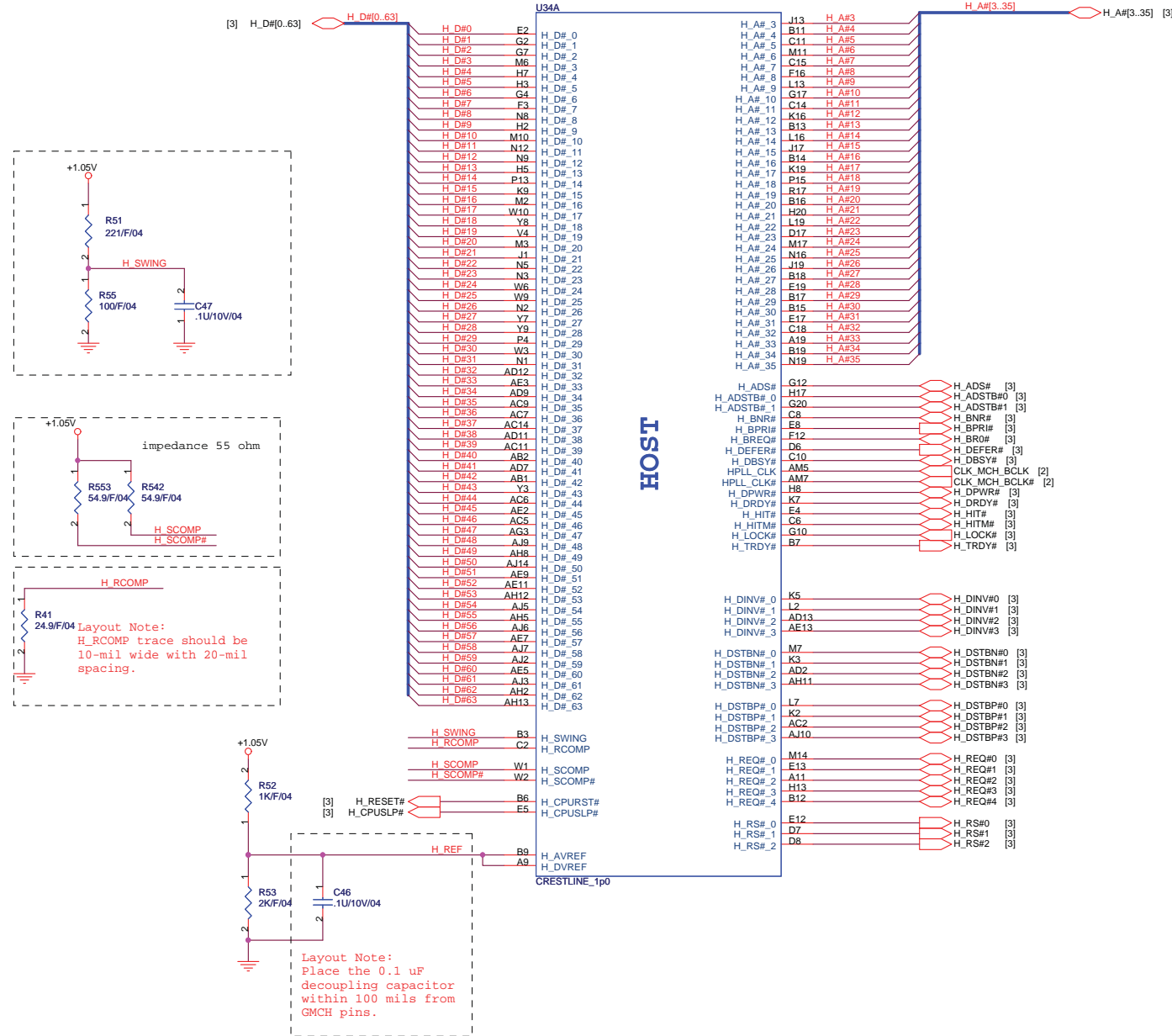
Note: Populate R5, R8, C372 & R430 when ITP connector is populated.

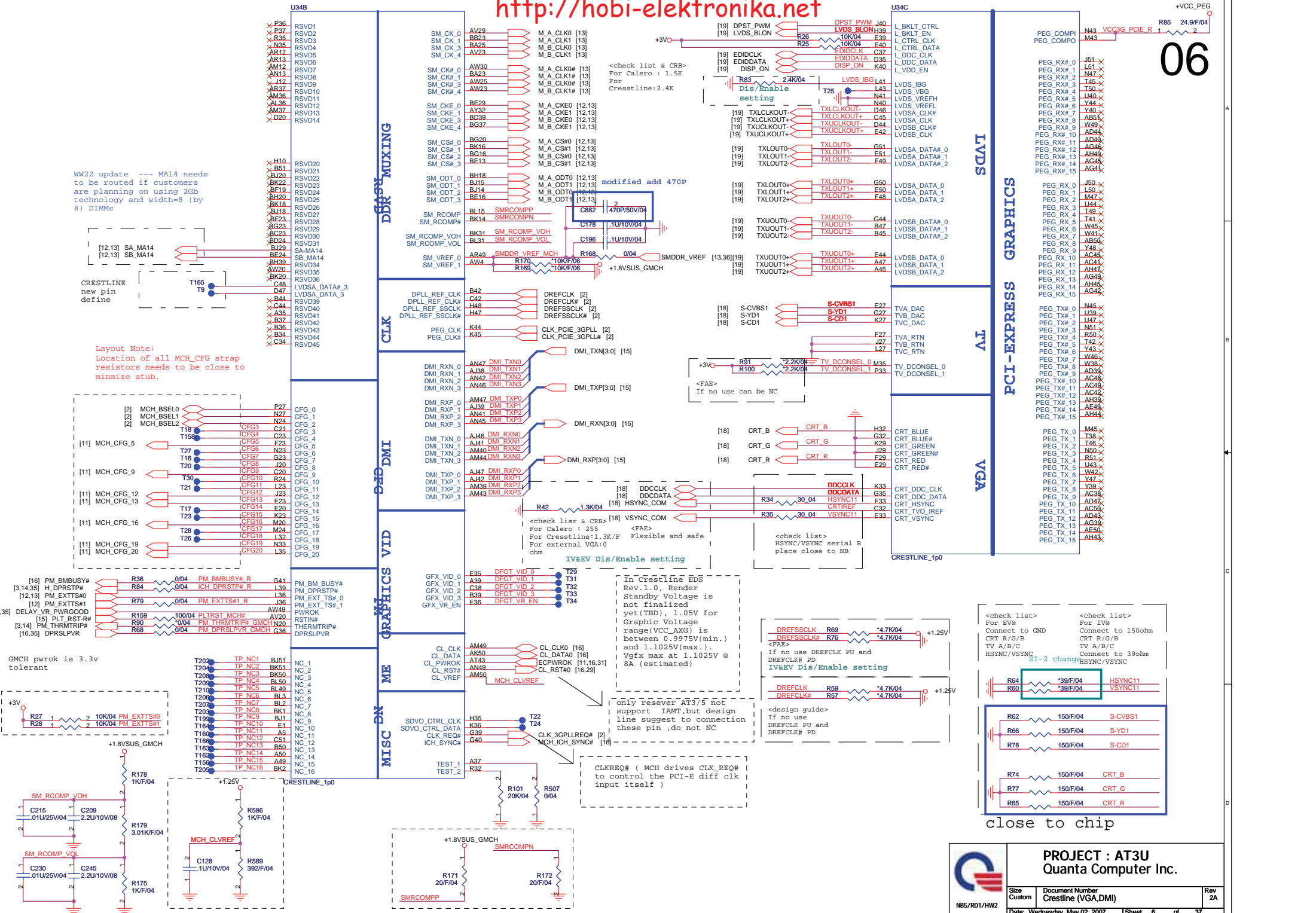
for Merom processors
recommended design
target is 44A



ICCP:
1.before vccore stable
peak current is 4.5A
2.after vccore stable
current is 2.5A



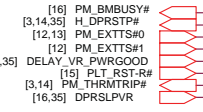
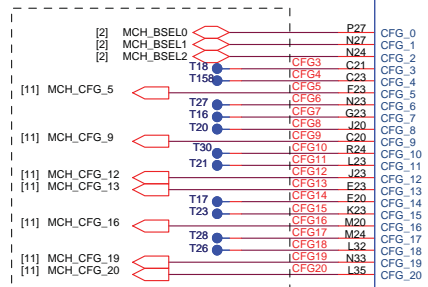




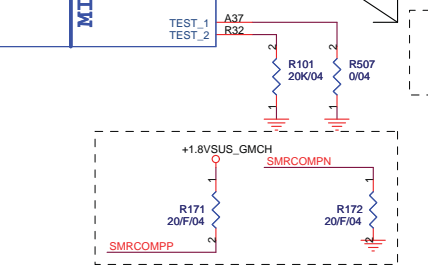
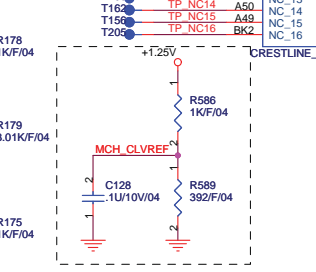
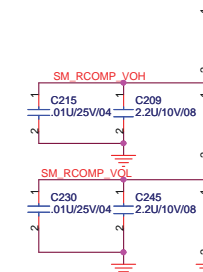
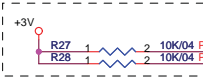
WV22 update --- MA14 needs to be routed if customers are planning on using 2Gb technology and width=8 (by 8) DIMMs

CRESTLINE new pin define

Layout Note: Location of all MCH_CFG strap resistors needs to be close to minimize stub.



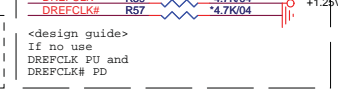
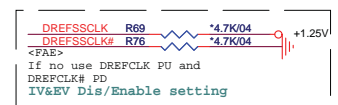
GMCH pwrok is 3.3v tolerant



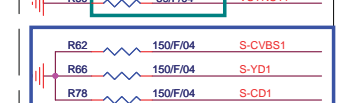
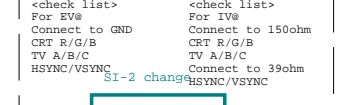
In Crestline EDS Rev.1.0, Render Standby Voltage is not finalized yet(TBD), 1.05V for Graphic Voltage range(VCC_AGX) is between 0.9975V(min.) and 1.1025V(max.) Vgfx max at 1.1025V @ 8A (estimated)

only reserve AT3/5 noF support IAMT, but design line suggest to connection these pin , do not NC

CLKREQ# (MCH drives CLK_REQ# to control the PCI-E diff clk input itself)

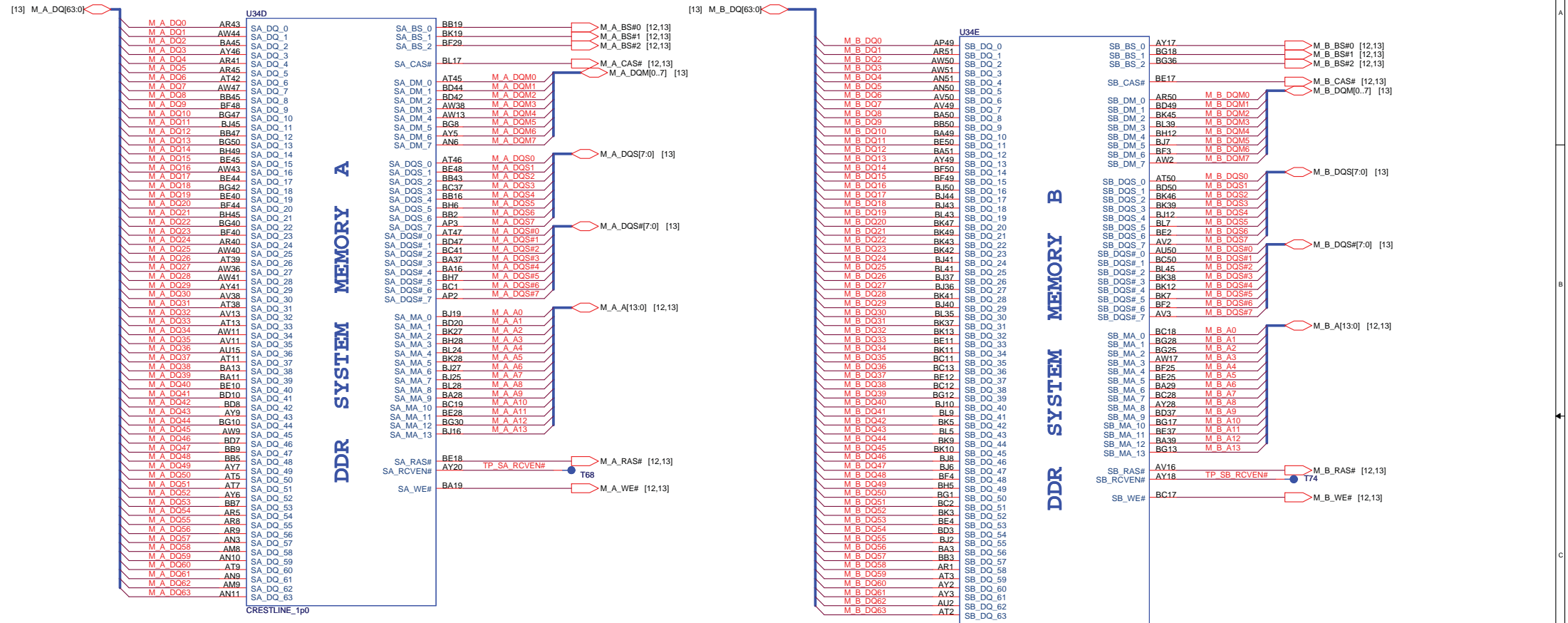


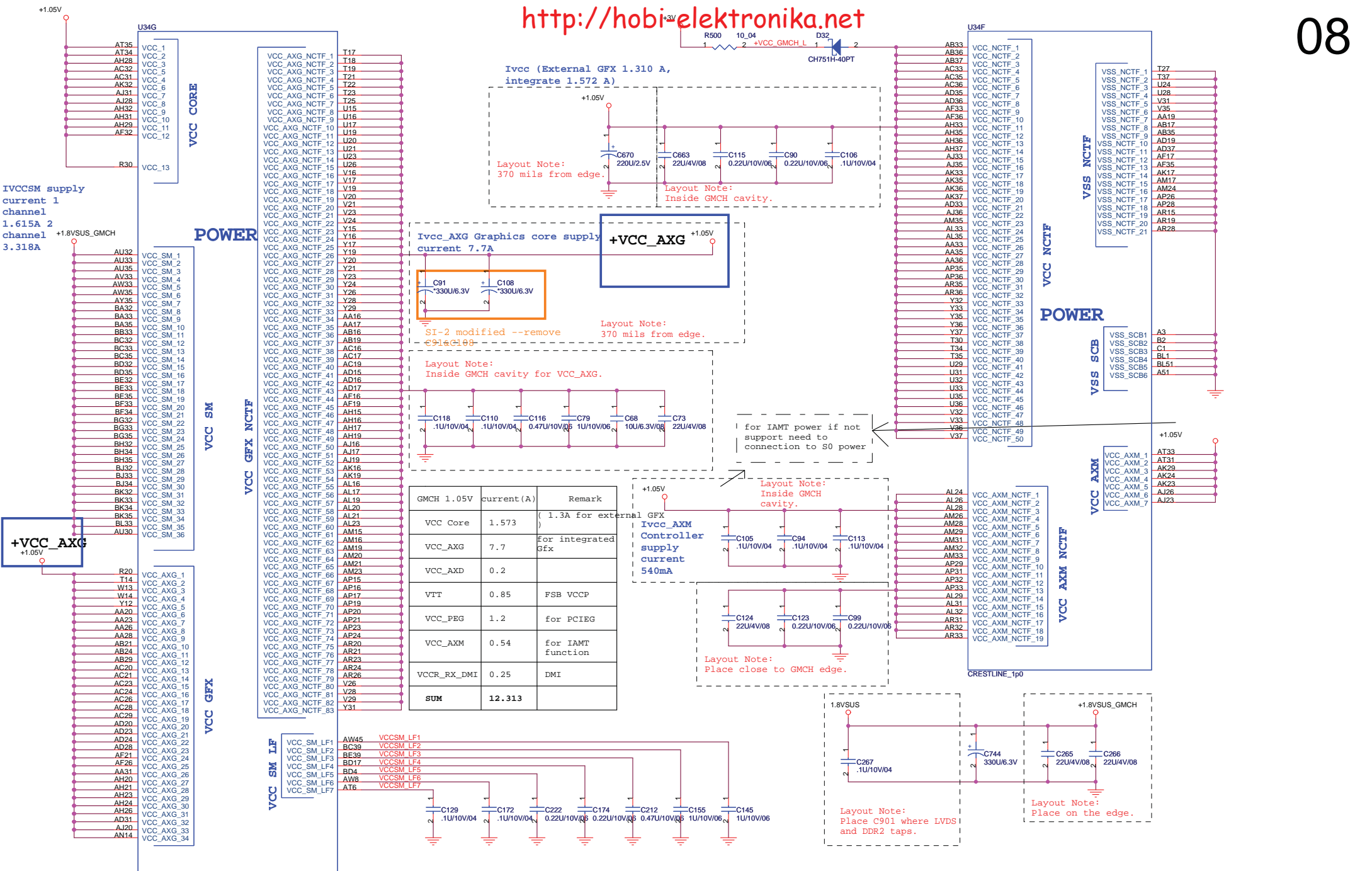
<design guide> If no use DREFCLK PU and DREFCLK# PD



close to chip

PROJECT : AT3U Quanta Computer Inc.
Size Custom Document Number Crestline (VGA,DMI) Rev 2A
Date: Wednesday, May 02, 2007 Sheet 6 of 37



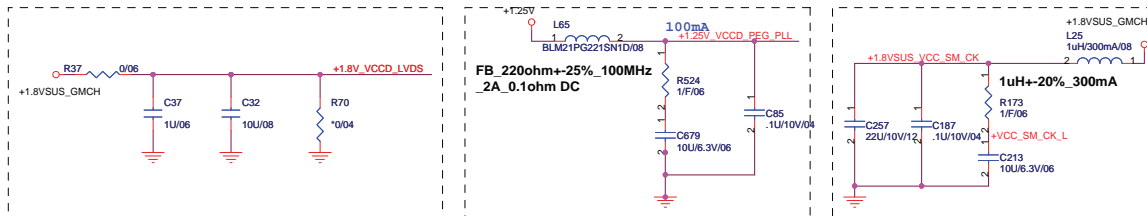
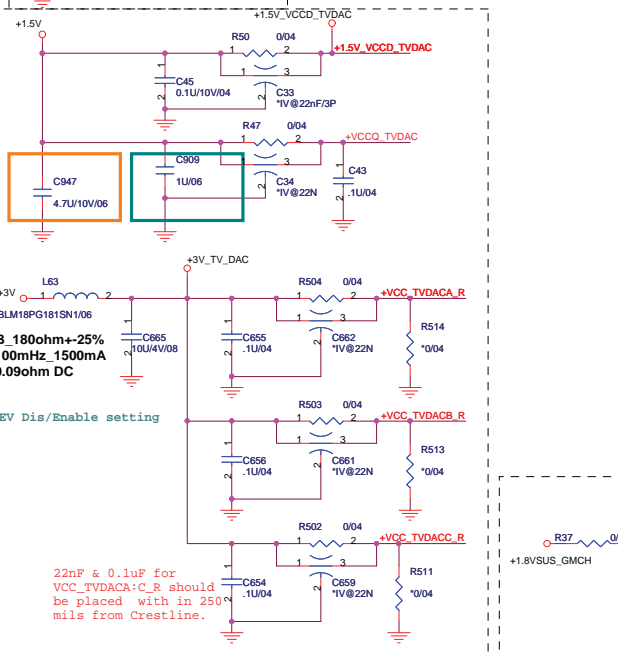
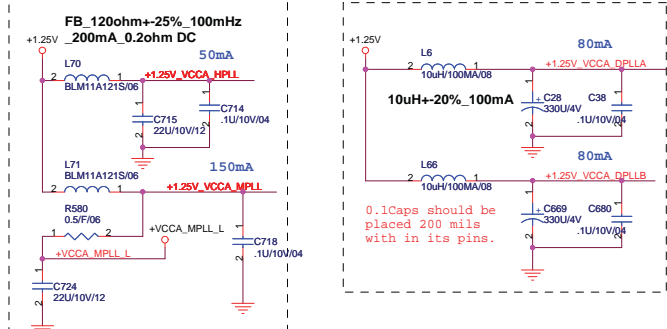
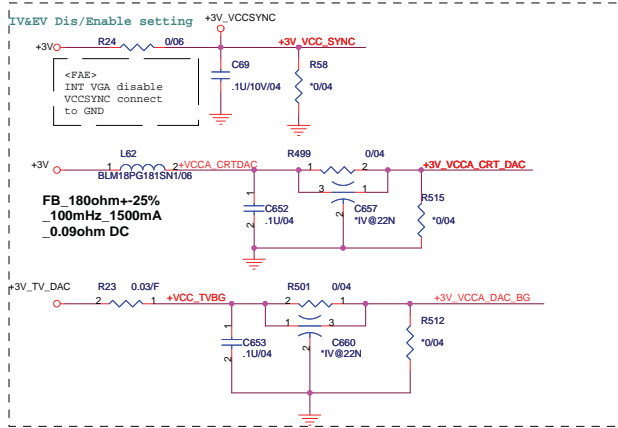


IVCCSM supply current 1 channel 1.615A 2 channel 3.318A

POWER

POWER

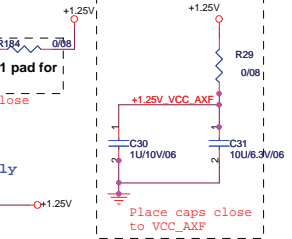
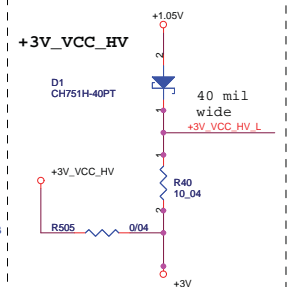
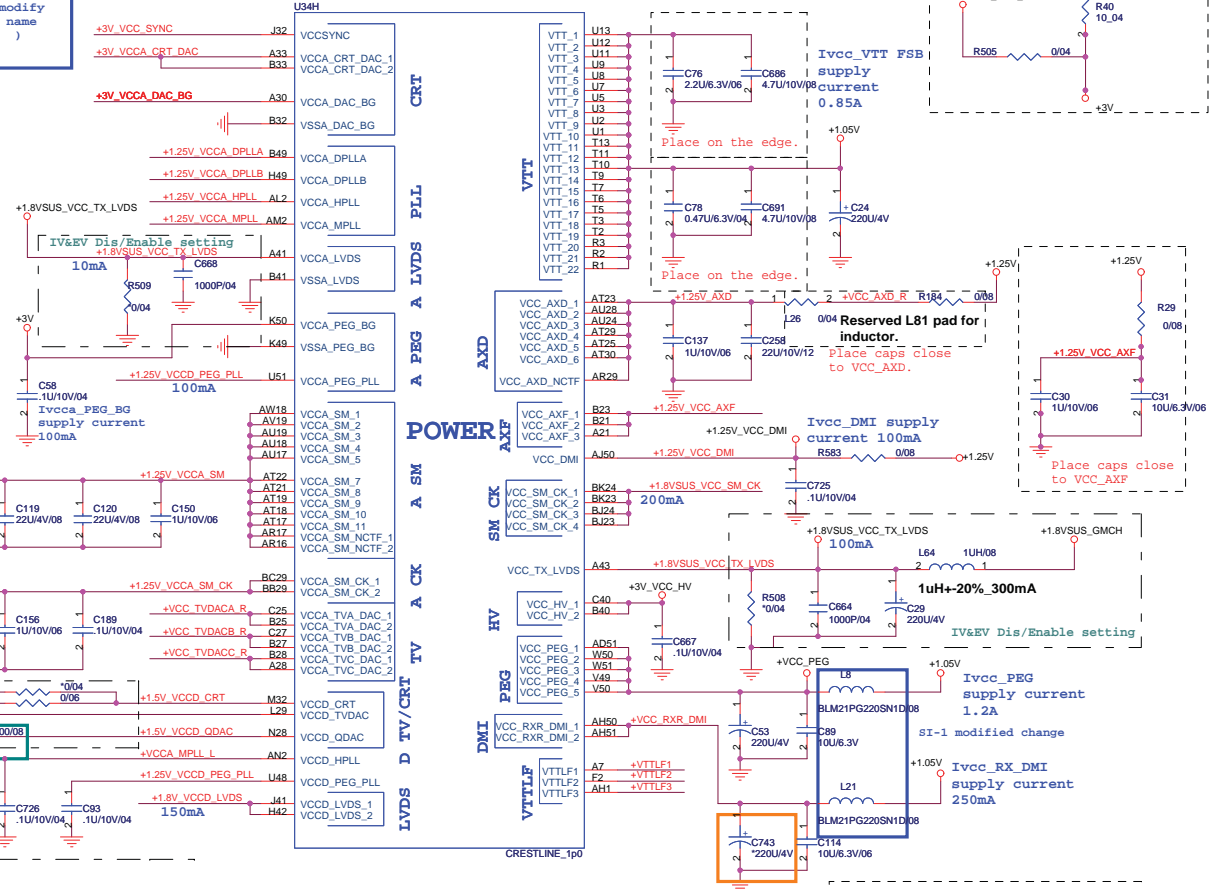
GMCH 1.05V	current (A)	Remark
VCC Core	1.573	(1.3A for external GFX)
VCC_AXG	7.7	for integrated Gfx
VCC_AXD	0.2	
VTT	0.85	FSB VCCP
VCC_PEG	1.2	for PCIEG
VCC_AXM	0.54	for IAMT function
VCCR_RX_DMI	0.25	DMI
SUM	12.313	

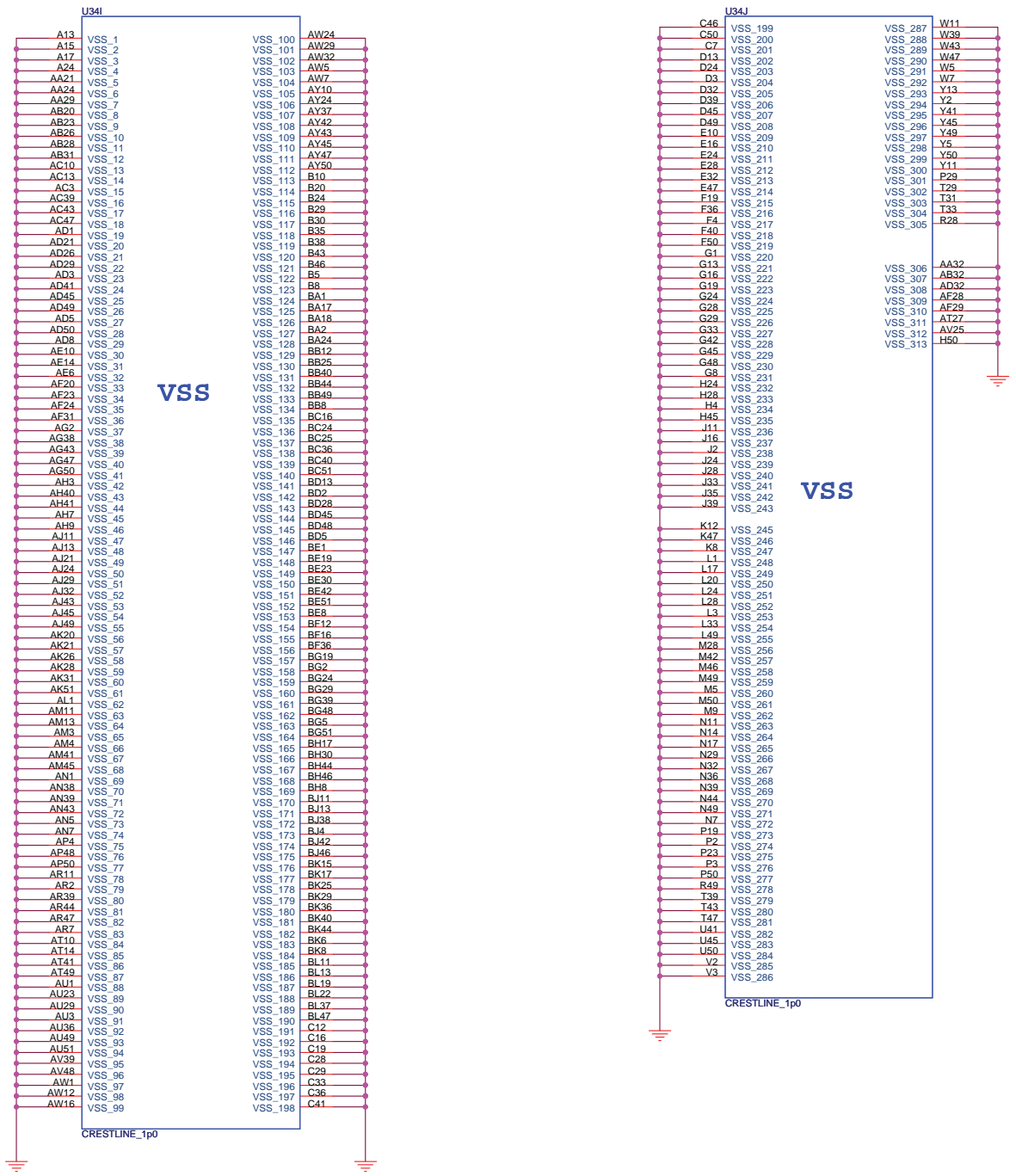



SI-1 modify (NET name wrong)

CRT/TV Disable/Enable guideline
External VGA with EV@part, Internal VGA with IV@ part

Ball	Enable	Disable	Ball	Enable	Disable
VCCA_CRT_DAC	3.3V	GND	VCCA_TV_DAC	3.3V	GND
VCCD_CRT	1.5V	GND	VCCD_TV_DAC	1.5V	1.5V
VCCD_QDAC	1.5V	GND	VCCA_DAC_BG	3.3V	GND
VCCA_TVA_DAC	3.3V	GND	VSS_DAC_BG	GND	GND
VCCA_TV_DAC	3.3V	GND	VCCSYNCS	3.3V	GND



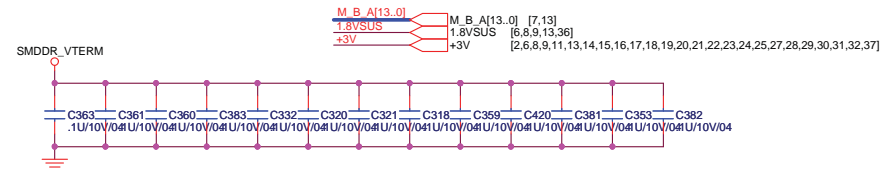
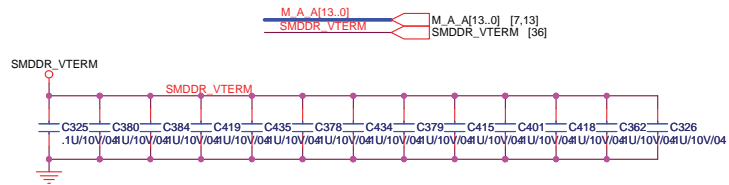


 NB5/RD1/HW2	PROJECT : AT3U Quanta Computer Inc.		
	Size Custom	Document Number Crestline (VSS)	Rev 2A
	Date: Monday, April 30, 2007		Sheet 10 of 37

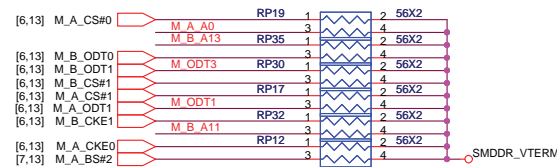
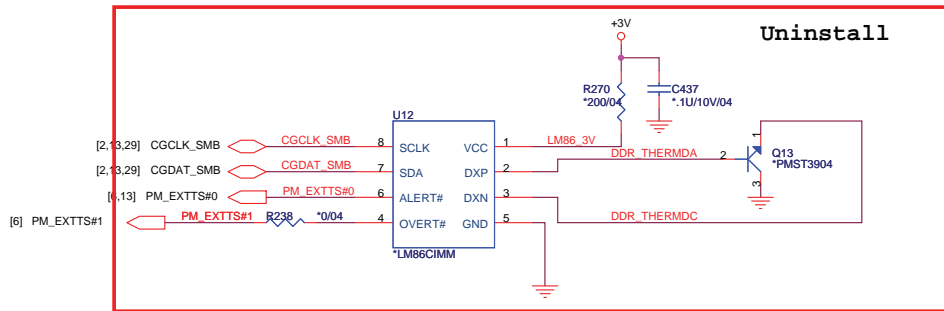
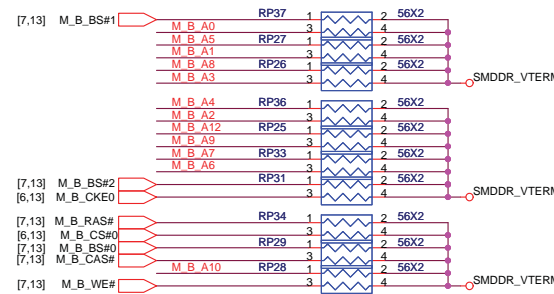
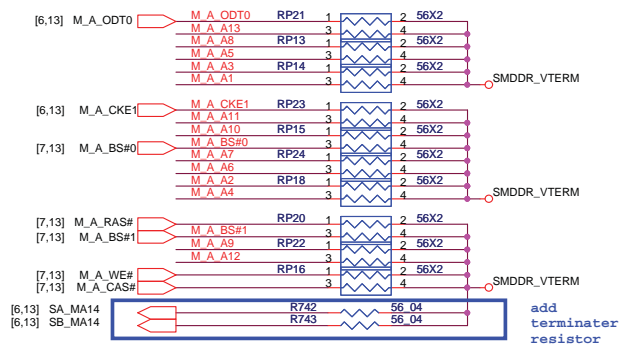
DDRII DUAL CHANNEL A,B.

DDRII A CHANNEL

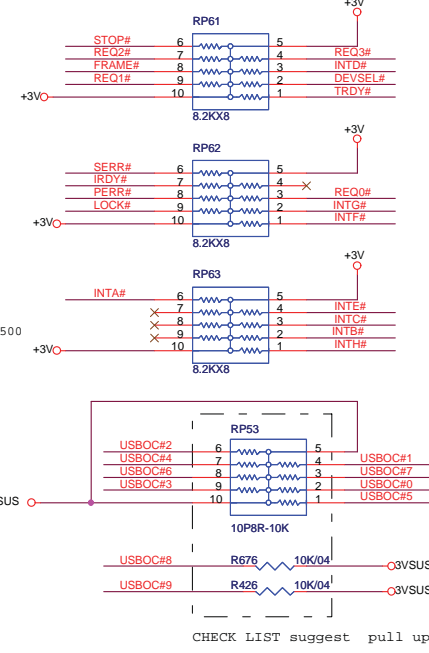
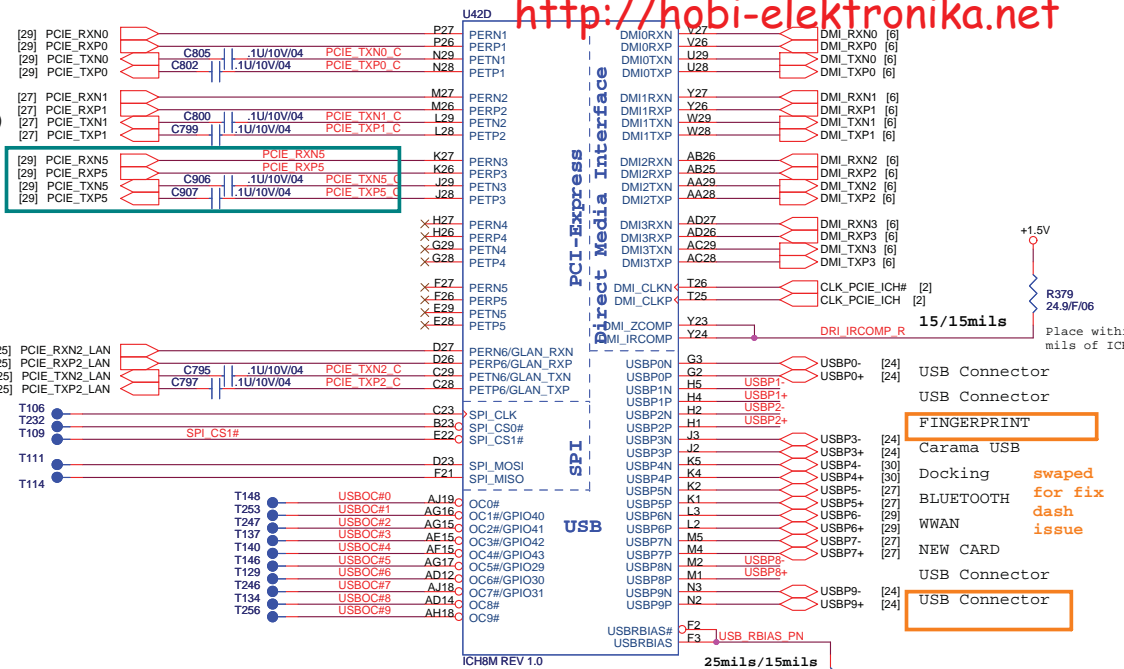
DDRII B CHANNEL



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

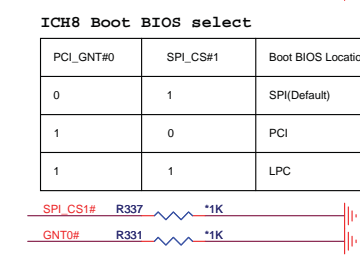
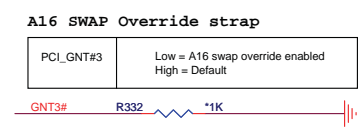


MINI CARD PCI-E
EXPRESS CARD (NEW CARD)

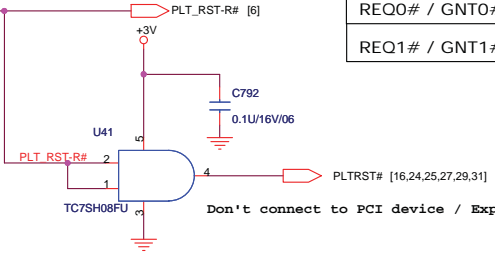
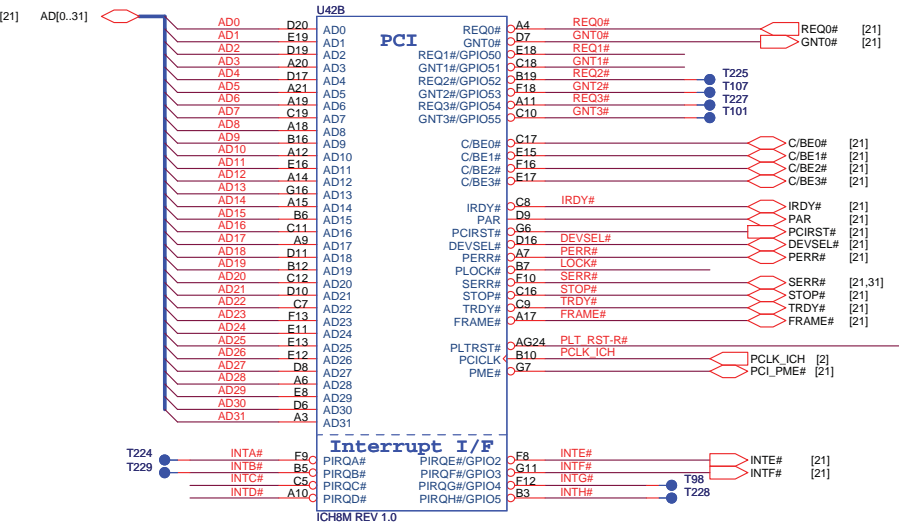


+1.5V
R379 24.9/F/06
Place within 500 mils of ICH7

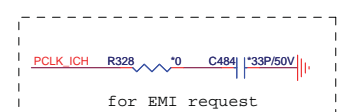
FINGERPRINT
Carama USB
Docking swapped for fix dash issue
BLUETOOTH
WWAN
NEW CARD
USB Connector
USB Connector

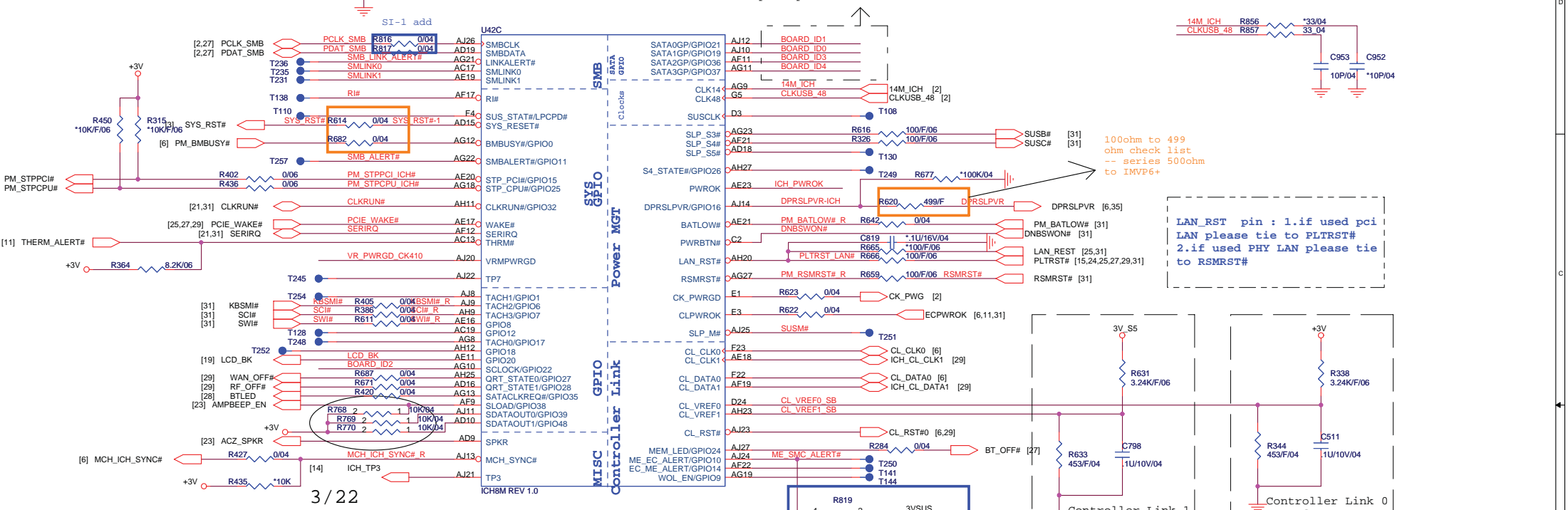
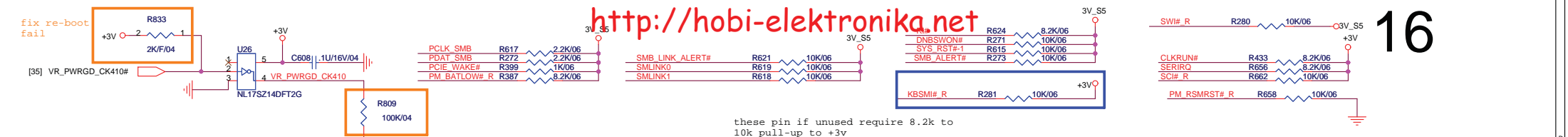


PCI ROUTING TABLE	IDSEL	INTERUPT	DEVICE
REQ0# / GNT0#	AD25	INTE#,INTF#	RICOH832
REQ1# / GNT1#	AD22	INTC#,INTD#	MINI PCI for debug

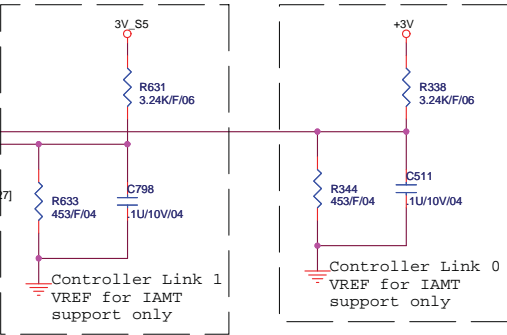


Don't connect to PCI device / Express card



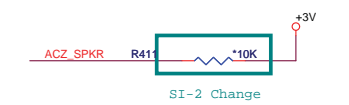


LAN_RST pin : 1.if used pci
LAN please tie to PLTRST#
2.if used PHY LAN please tie
to RSMRST#

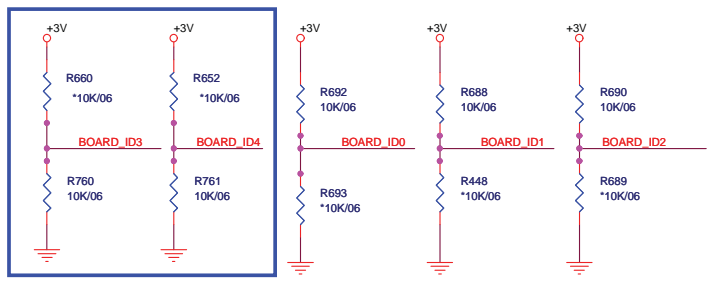


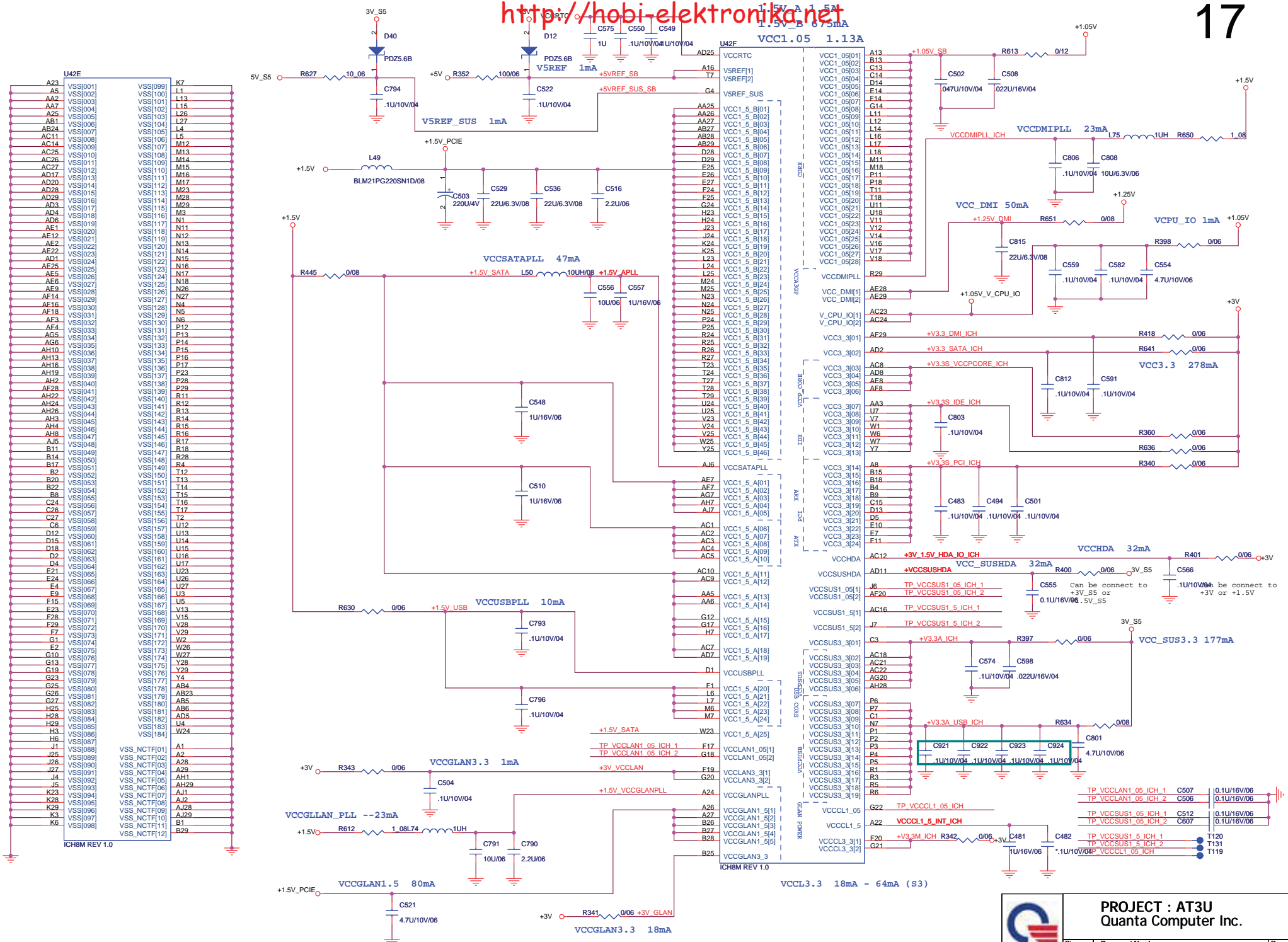
No Reboot strap

HDA_SPKR	Low = Default High = No Reboot
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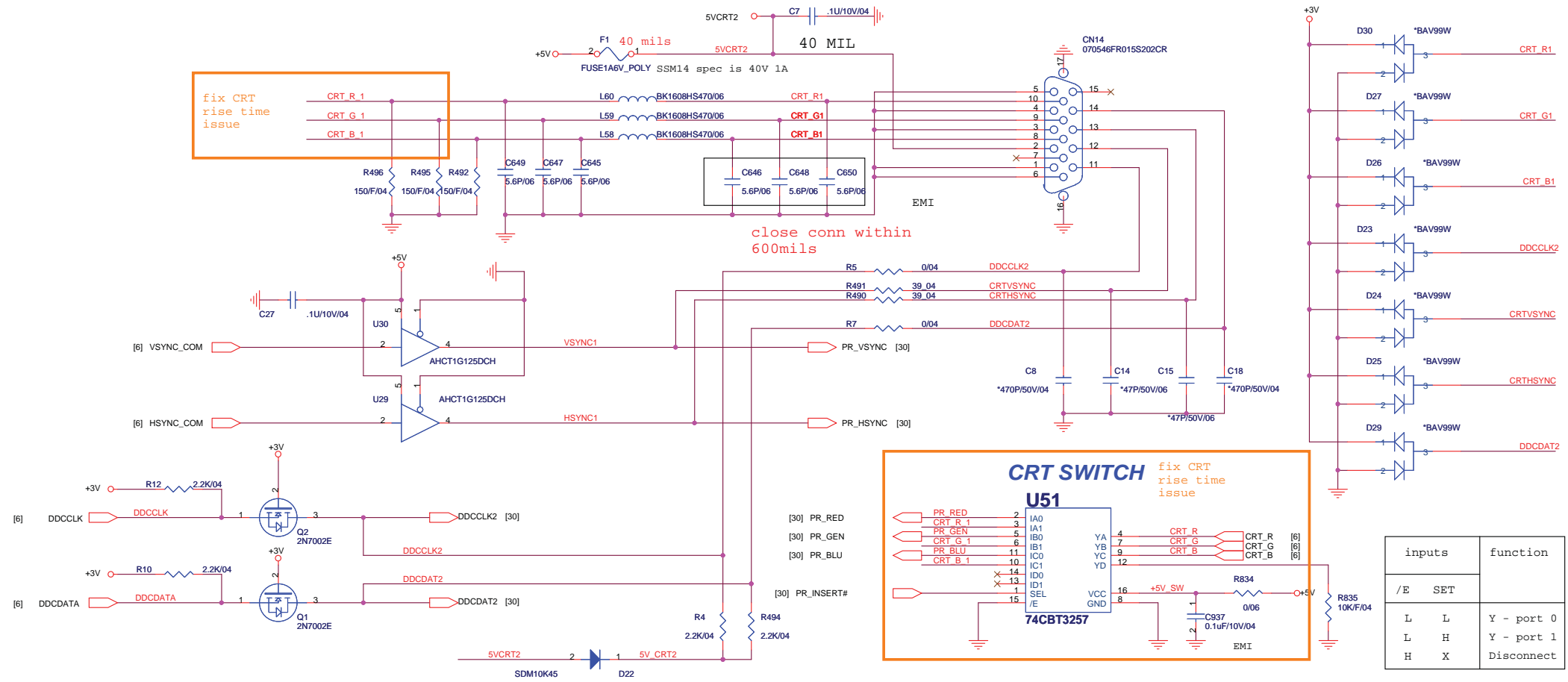
Board ID	15 " AT3U 965GM DUAL HDD (0:0:1:1:1) BOARD ID 7	
ID0	R692 Stuff	R693 not Stuff
ID1	R688 Stuff	R448 not Stuff
ID2	R690 Stuff	R689 not Stuff
ID3	R760 Stuff	R660 not Stuff
ID4	R761 Stuff	R652 not Stuff



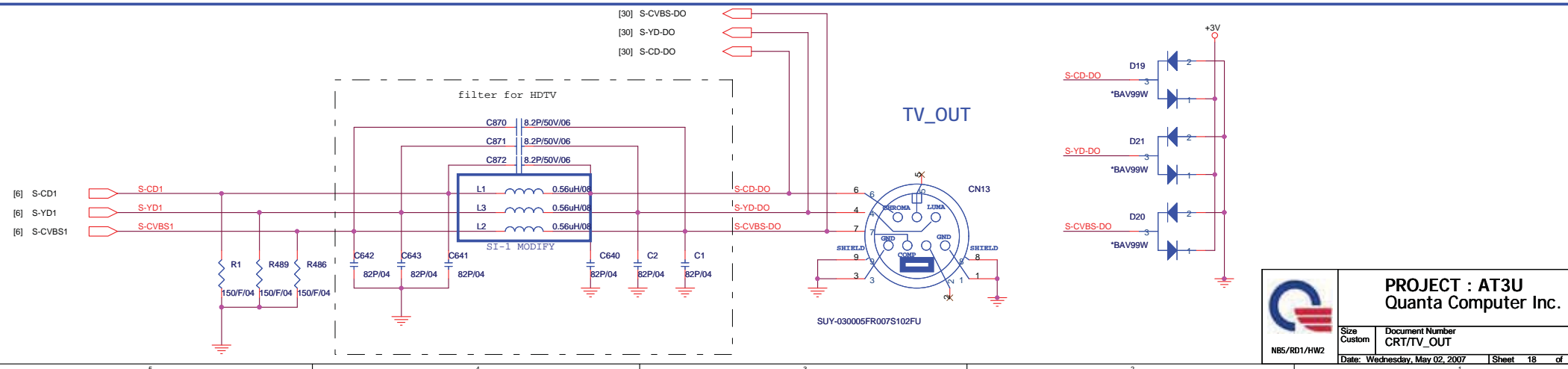


PROJECT : AT3U Quanta Computer Inc.

Size Custom	Document Number ICH7-M POWER(4/4)	Rev 2A
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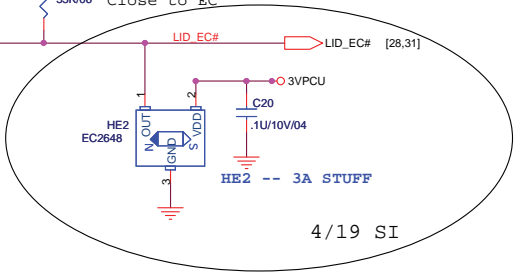
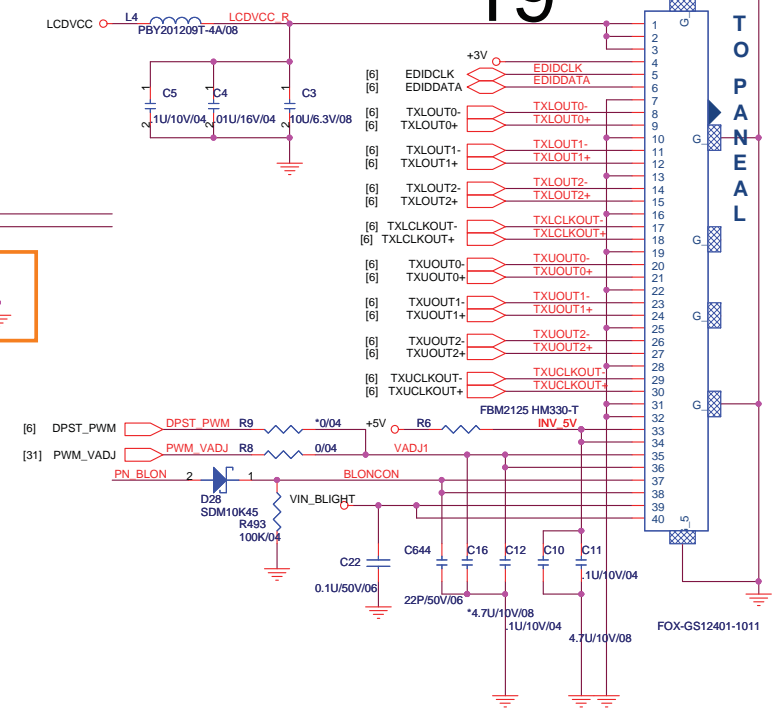
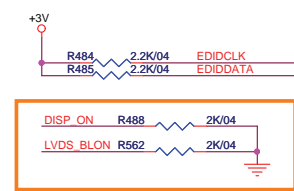
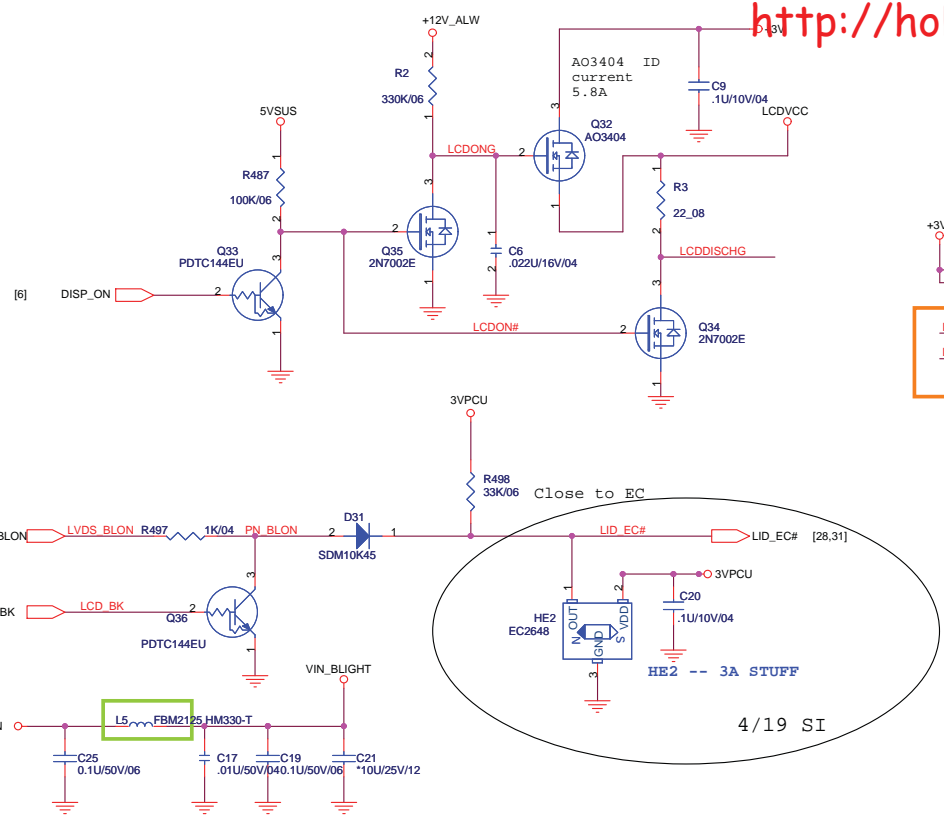


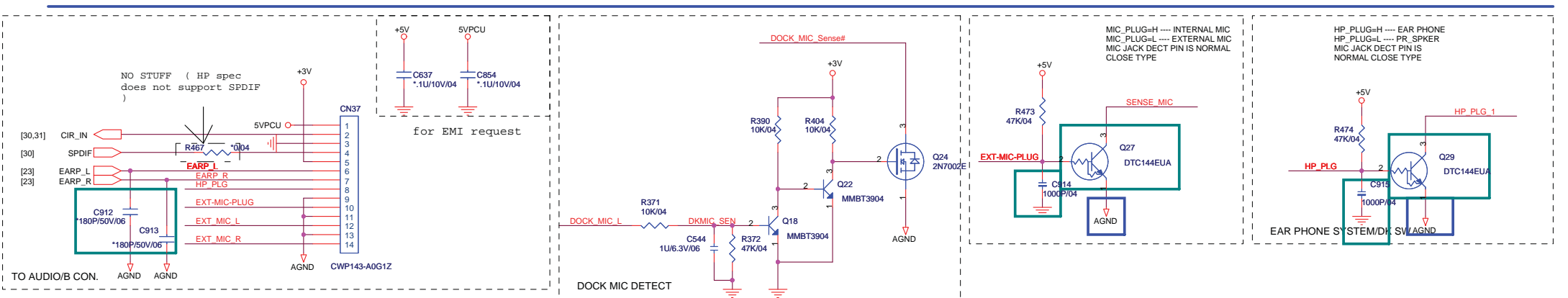
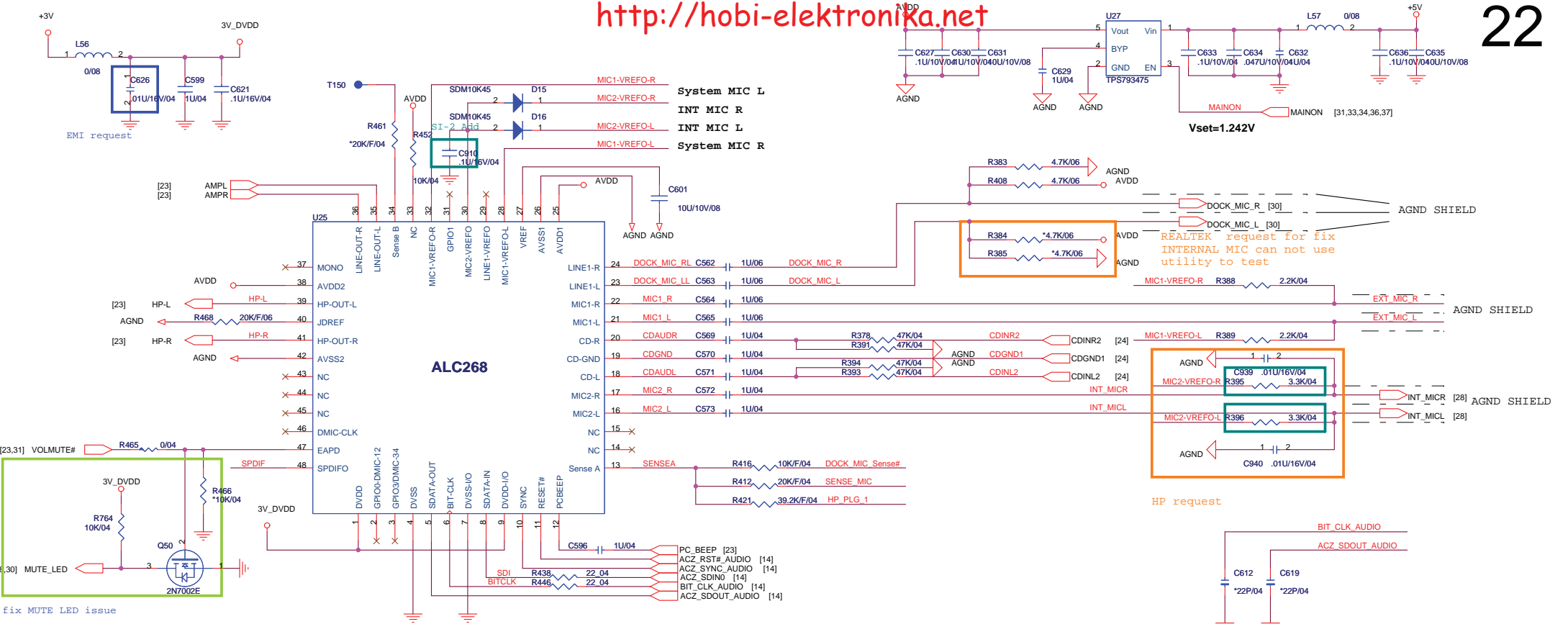
inputs	function
/E	SET
L	L
L	H
H	X
	Y - port 0
	Y - port 1
	Disconnect

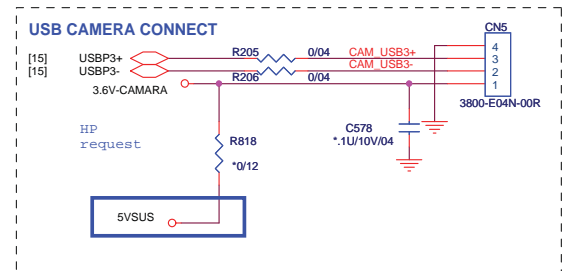
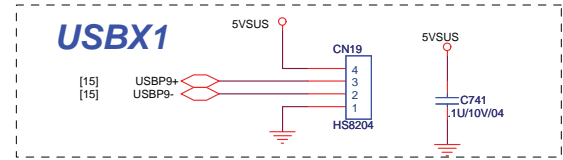
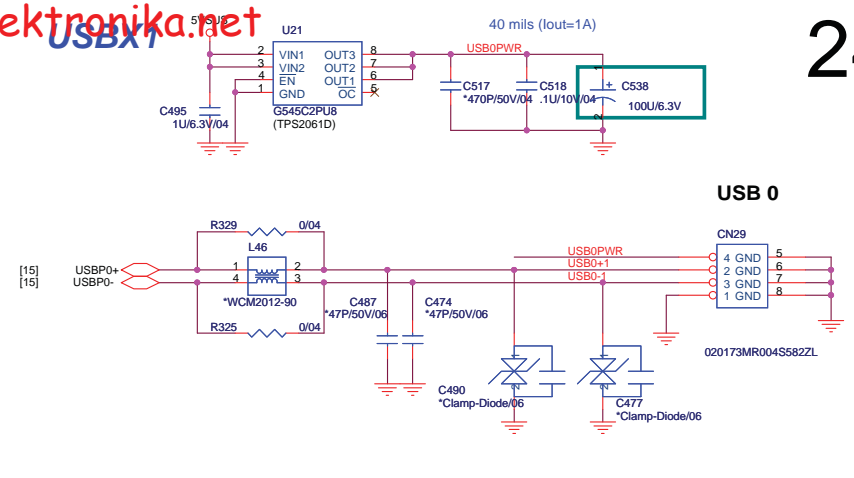
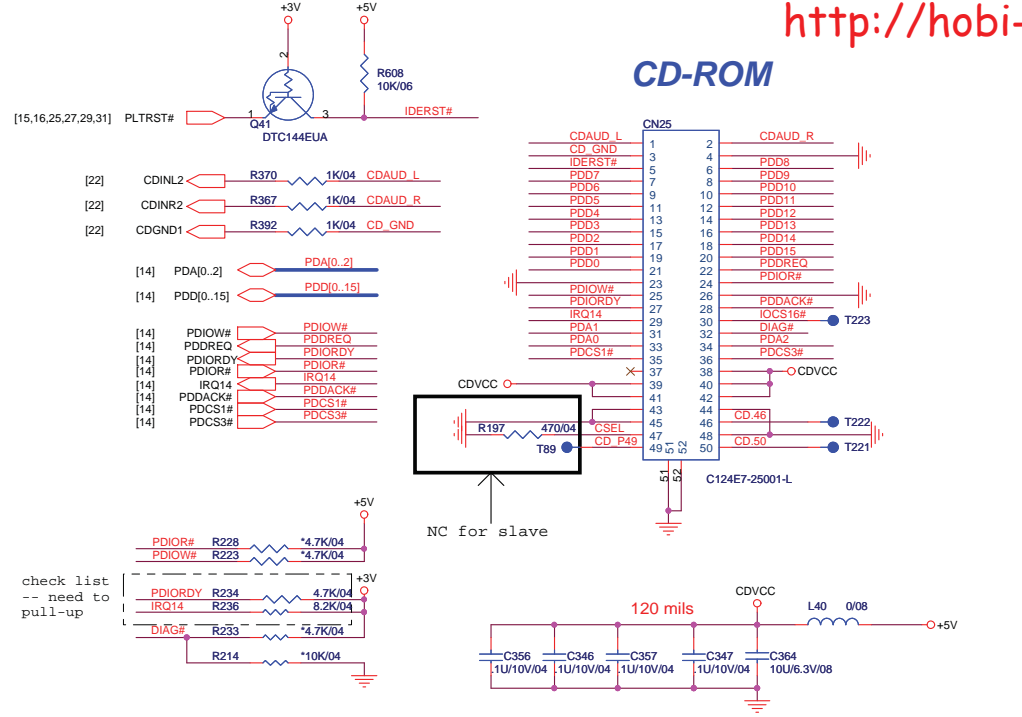


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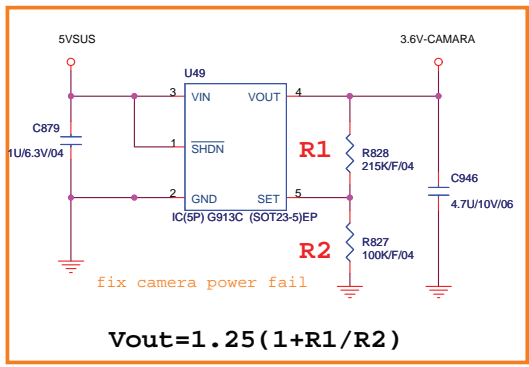
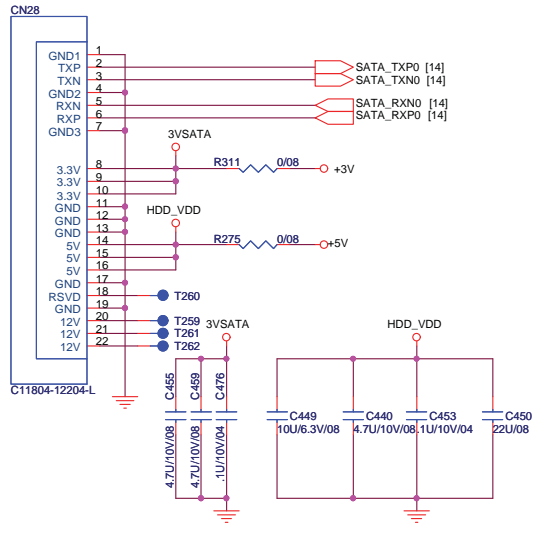
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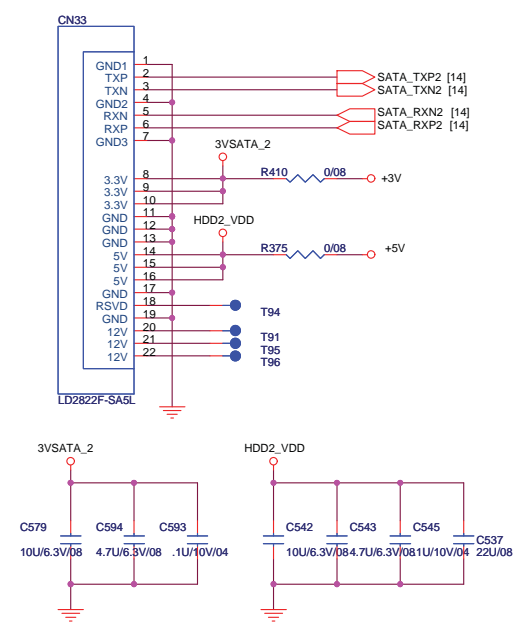




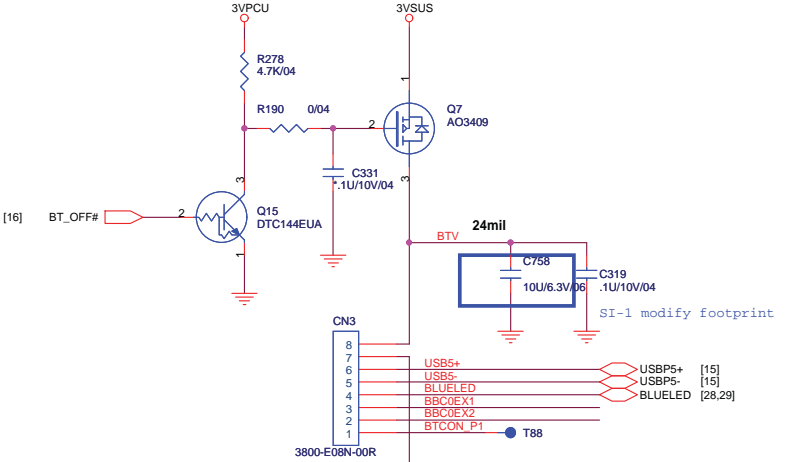
SATA_2 CONNECTOR



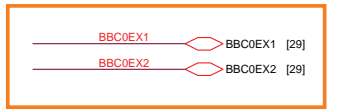
SATA_1 CONNECTOR



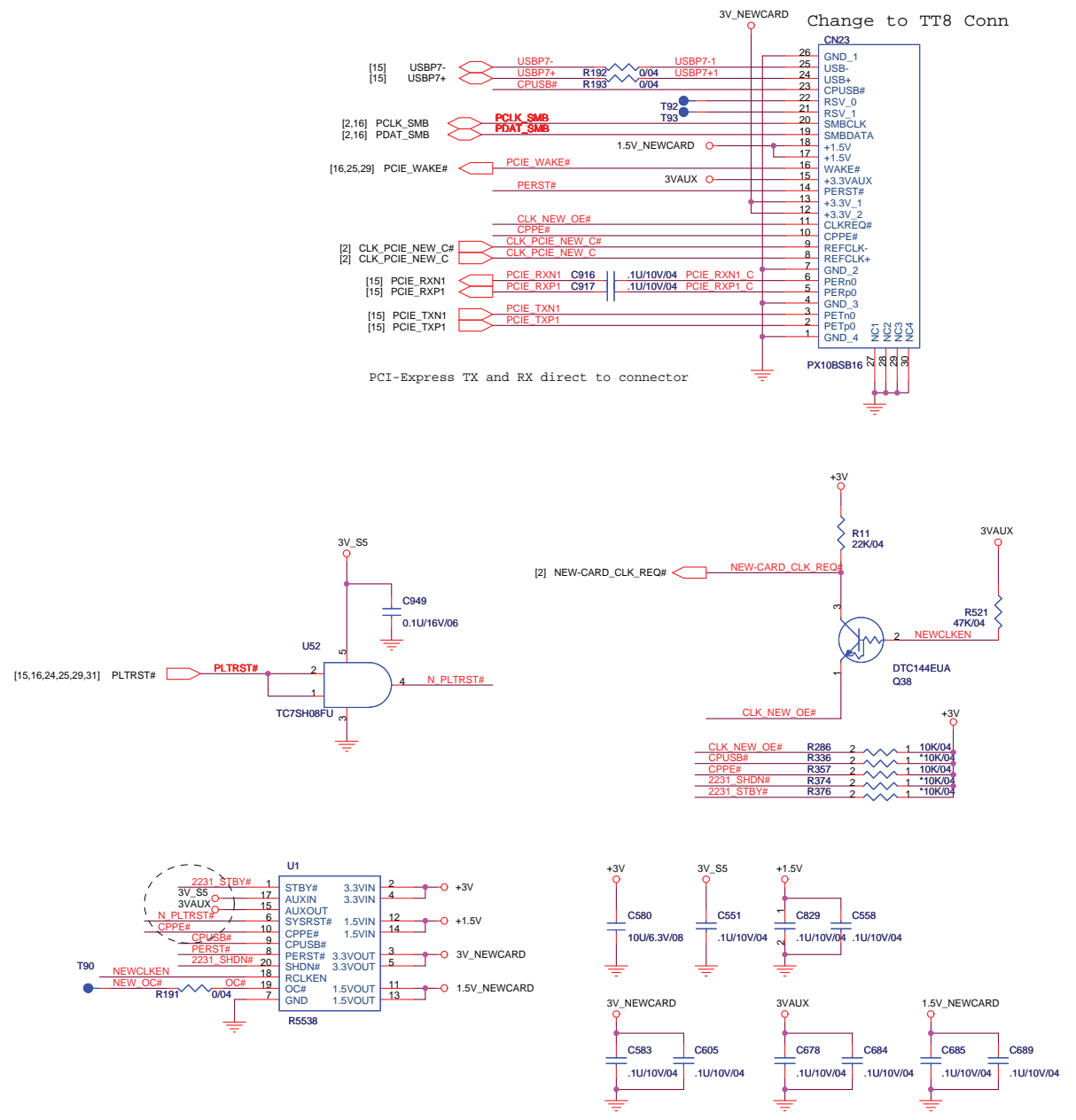
BLUETOOTH

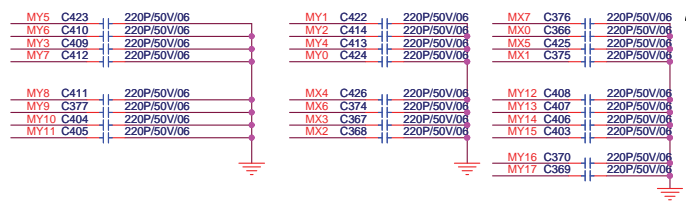
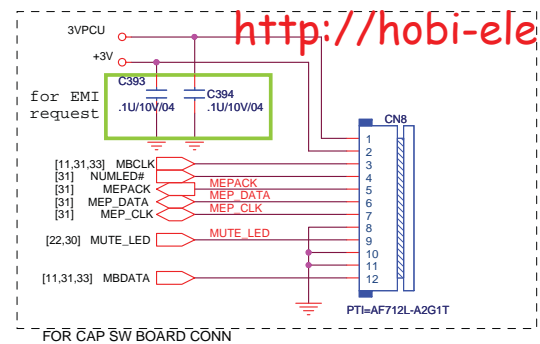


SI-2 modified (remove serial resistors) from HP recommend

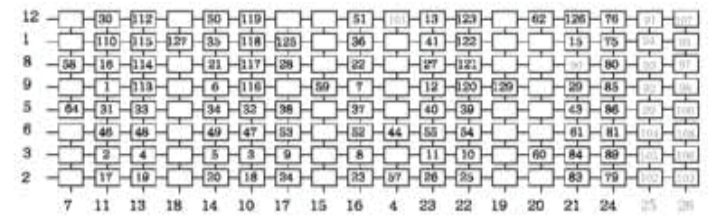
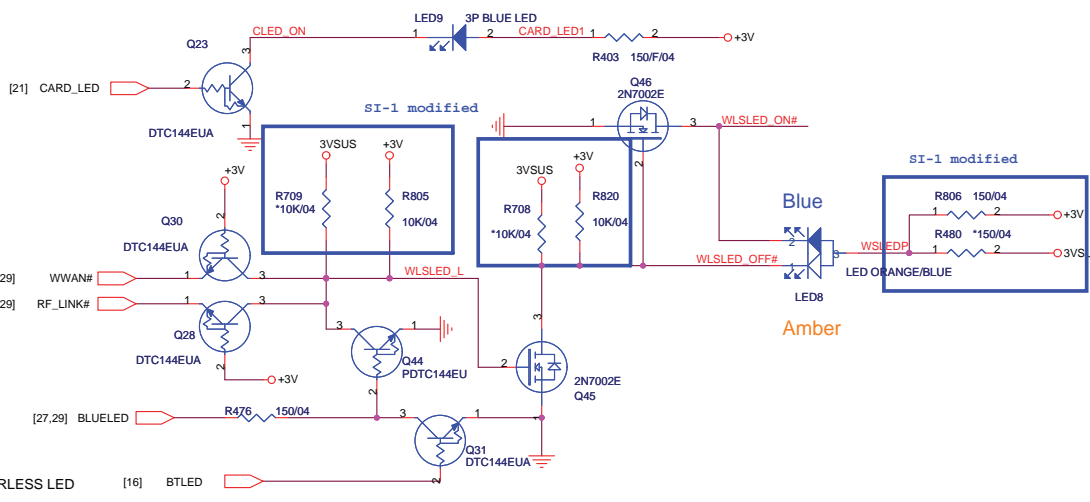
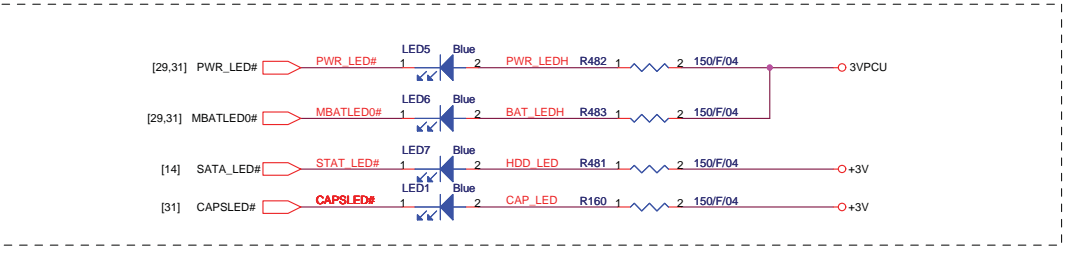
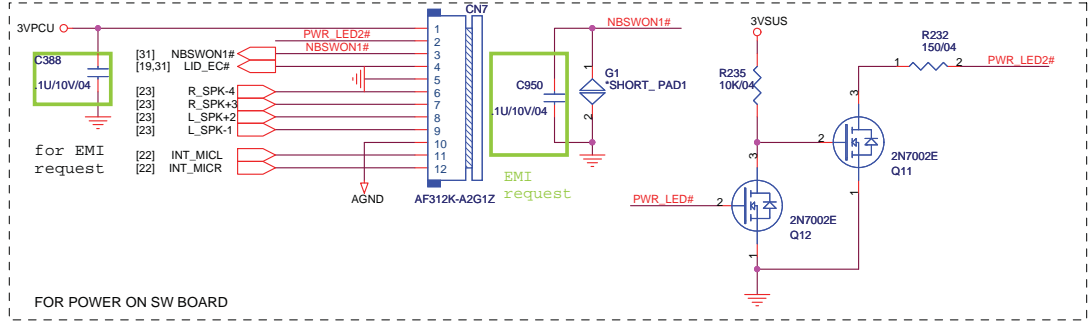
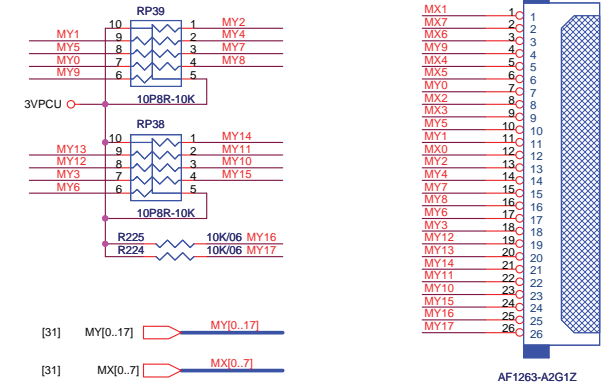


NEWCARD

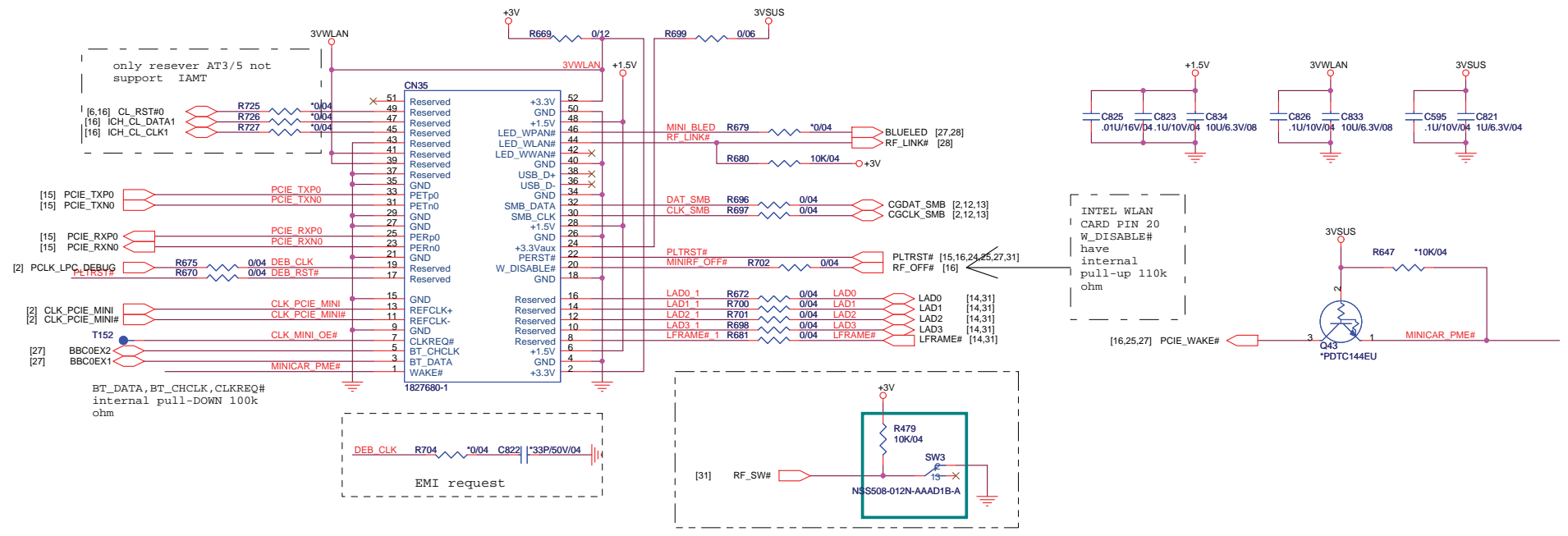




KEYBOARD PULL-UP

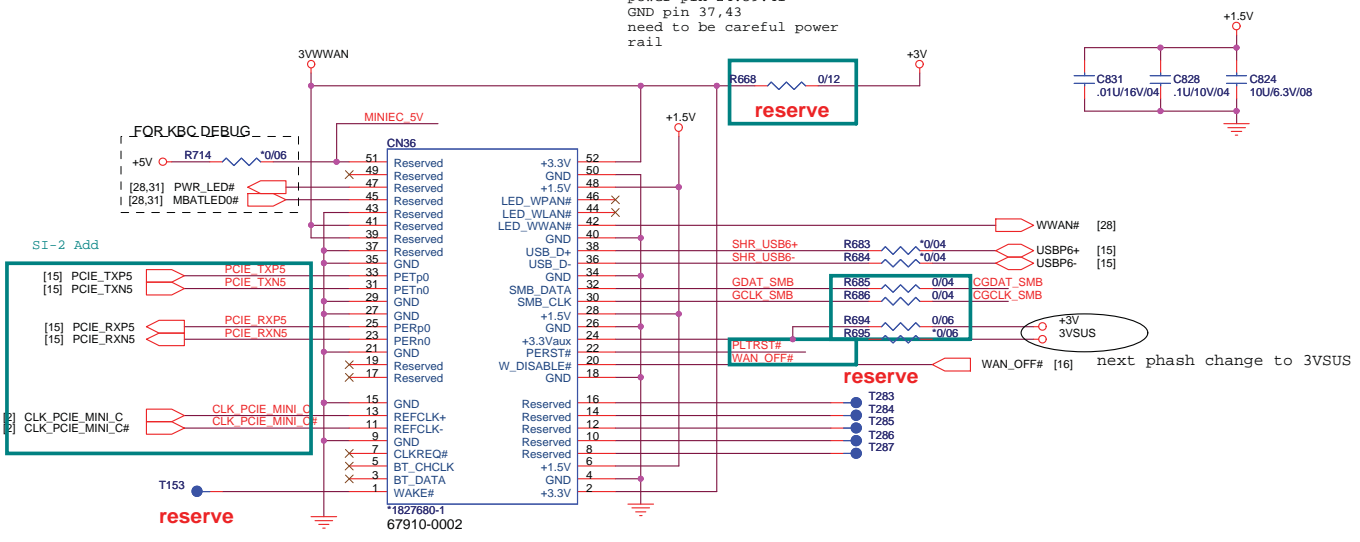


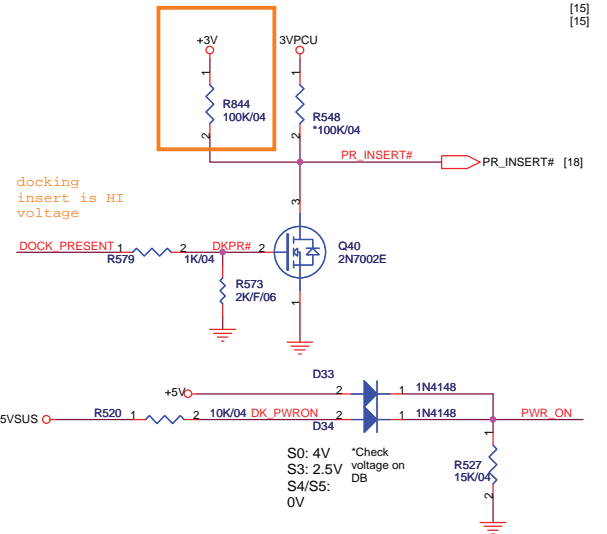
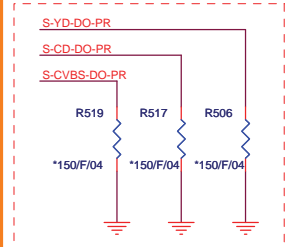
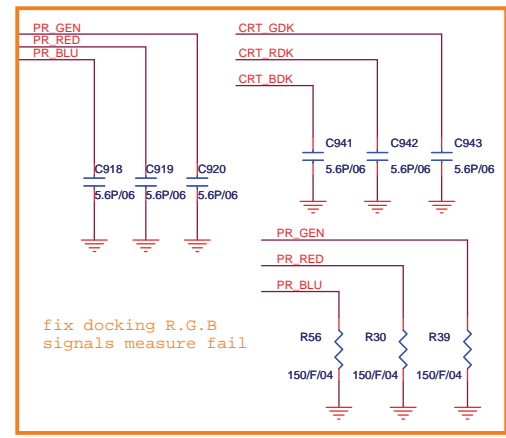
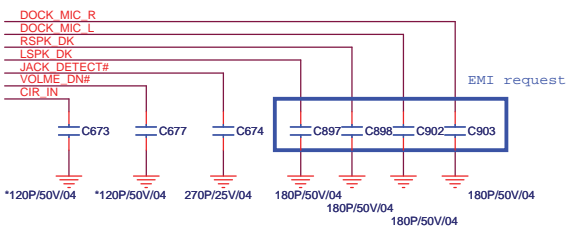
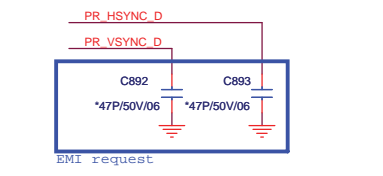
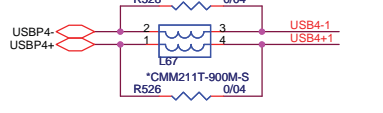
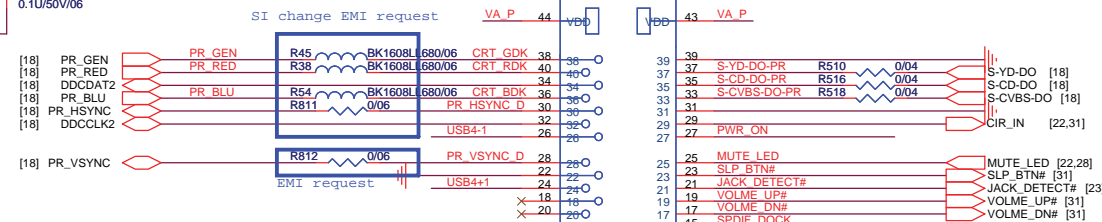
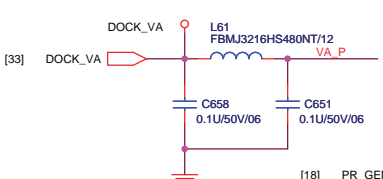
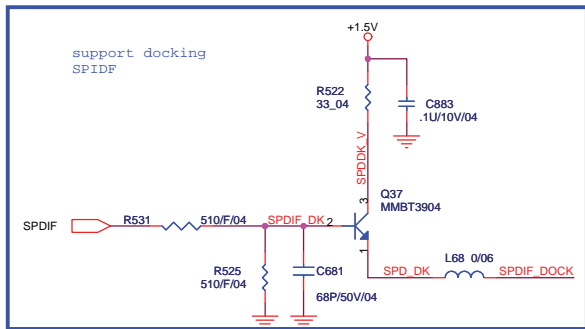
Mini PCI-E Card 1 WLAN



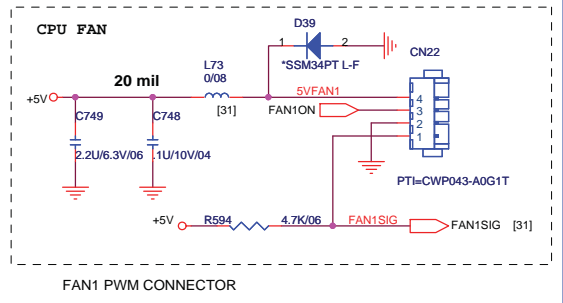
Mini PCI-E Card 2

WWAN -- have 2.8A 7W power consumption
 power pin 24.39.41
 GND pin 37,43
 need to be careful power rail

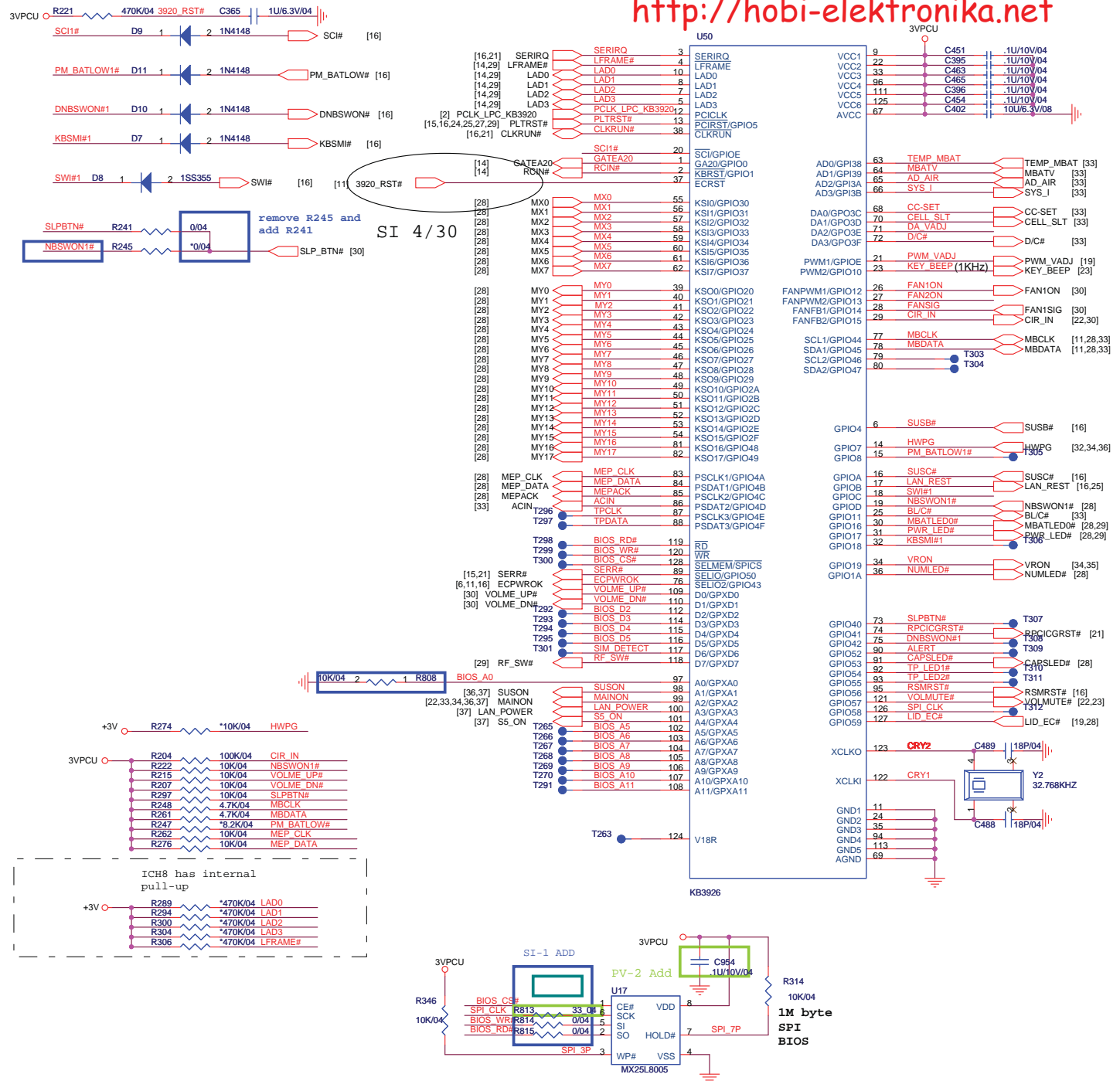




FAN

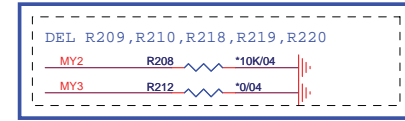


<p>NBS/RD1/HW2</p>	<p>PROJECT : AT3U Quanta Computer Inc.</p>	
	<p>Size Custom</p>	<p>Document Number CABLE DOCKING/FAN</p>
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STRAP PIN

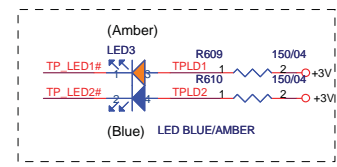
MY2	49	TP_SPI: Default flash access Low: Boot from SPI flash part HIGH: Boot from ISA flash part
MY3	50	TP_ISP: In System Programming Mode Low: ISP mode HIGH: Normal Mode



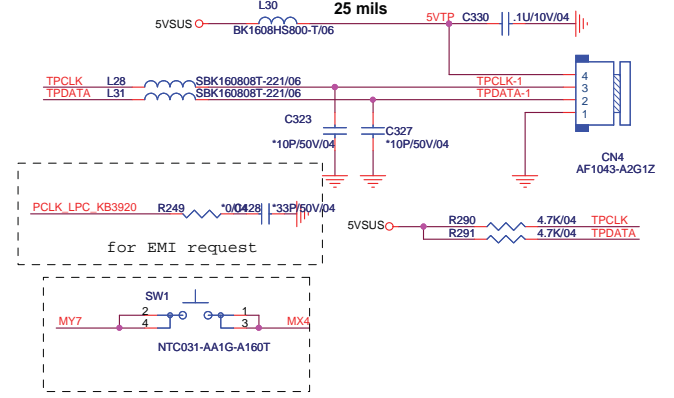
All hardware straps default internal pull-up, so don't need pull-UP outside. A TEST need try --andrew ????

SELECT KBC TPYE

PIN NAME	USE KBC3920	USE KBC3926
MY2	R208	REMOVE R208
BIOS_A0	REMOVE R808	R808



TOUCH PAD CONNECTOR

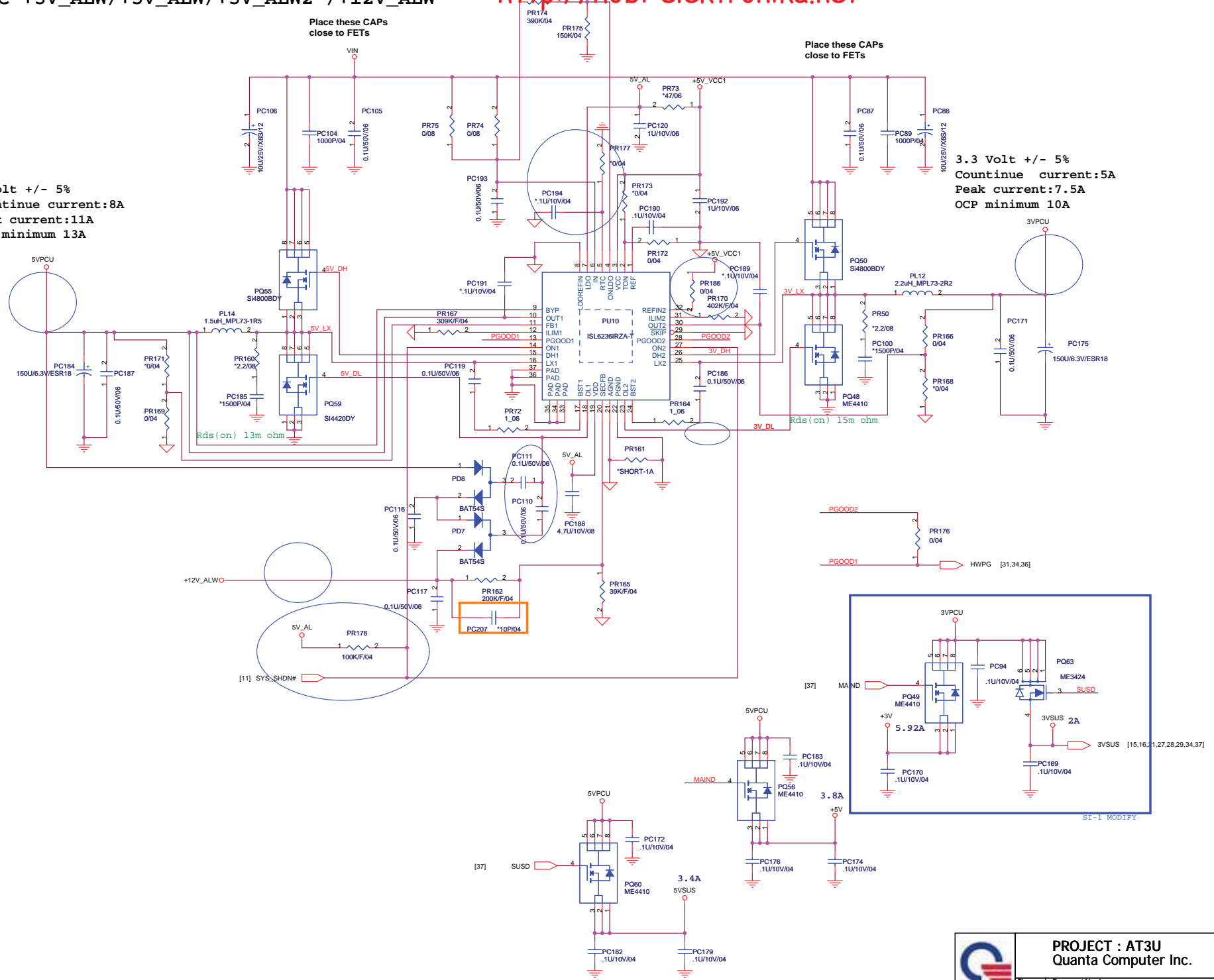


5 Volt +/- 5%
Countinue current:8A
Peak current:11A
OCP minimum 13A

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

Place these CAPs close to FETs

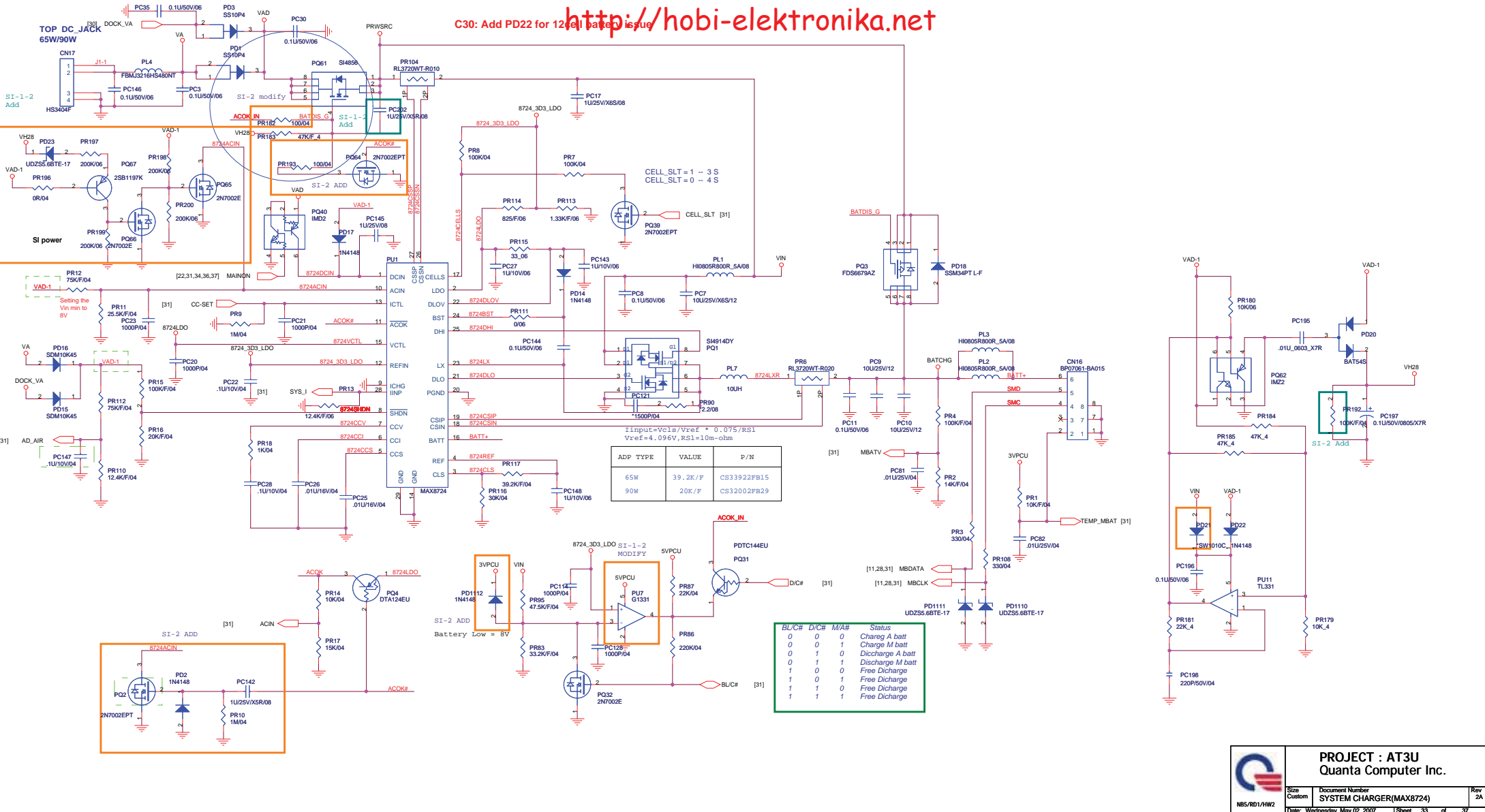
Place these CAPs close to FETs



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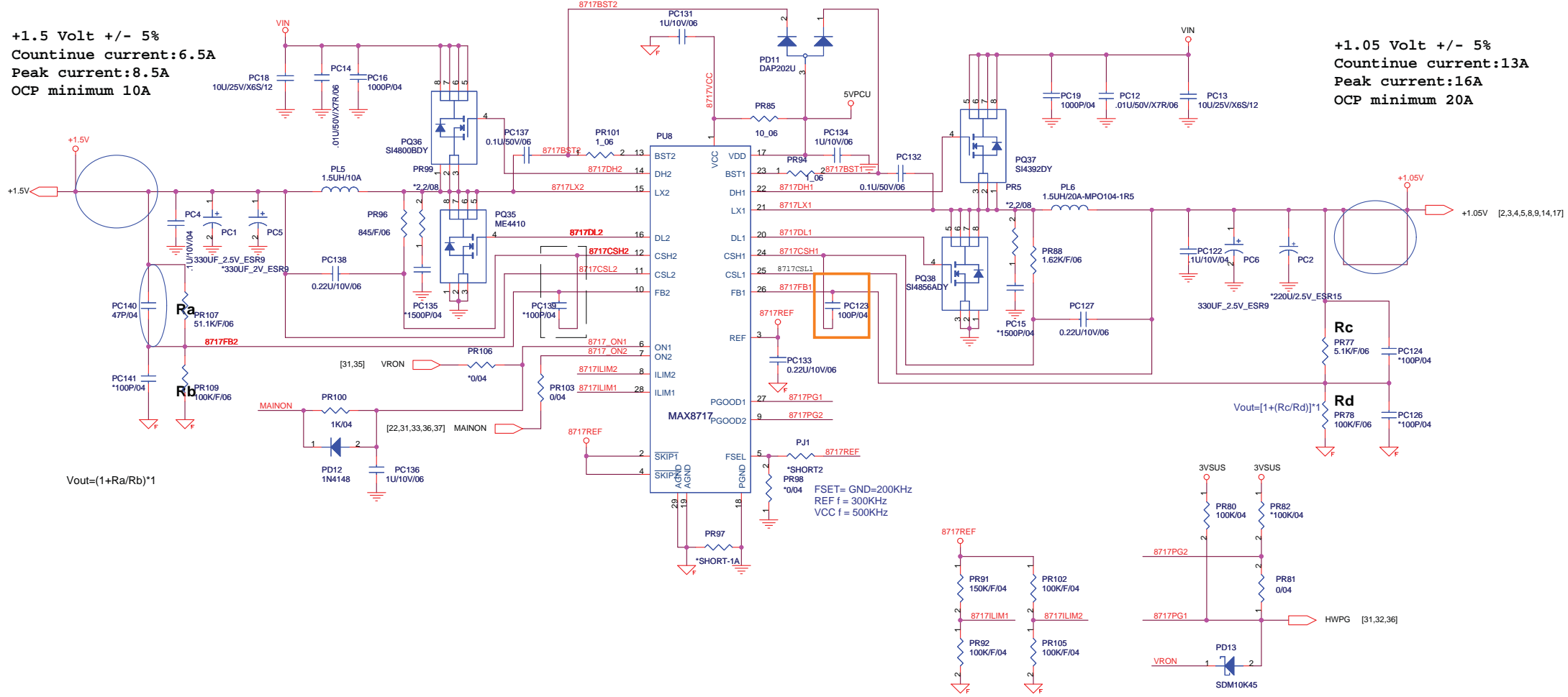
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NBS/R01/HW2



+1.5 Volt +/- 5%
Countinue current:6.5A
Peak current:8.5A
OCP minimum 10A

+1.05 Volt +/- 5%
Countinue current:13A
Peak current:16A
OCP minimum 20A

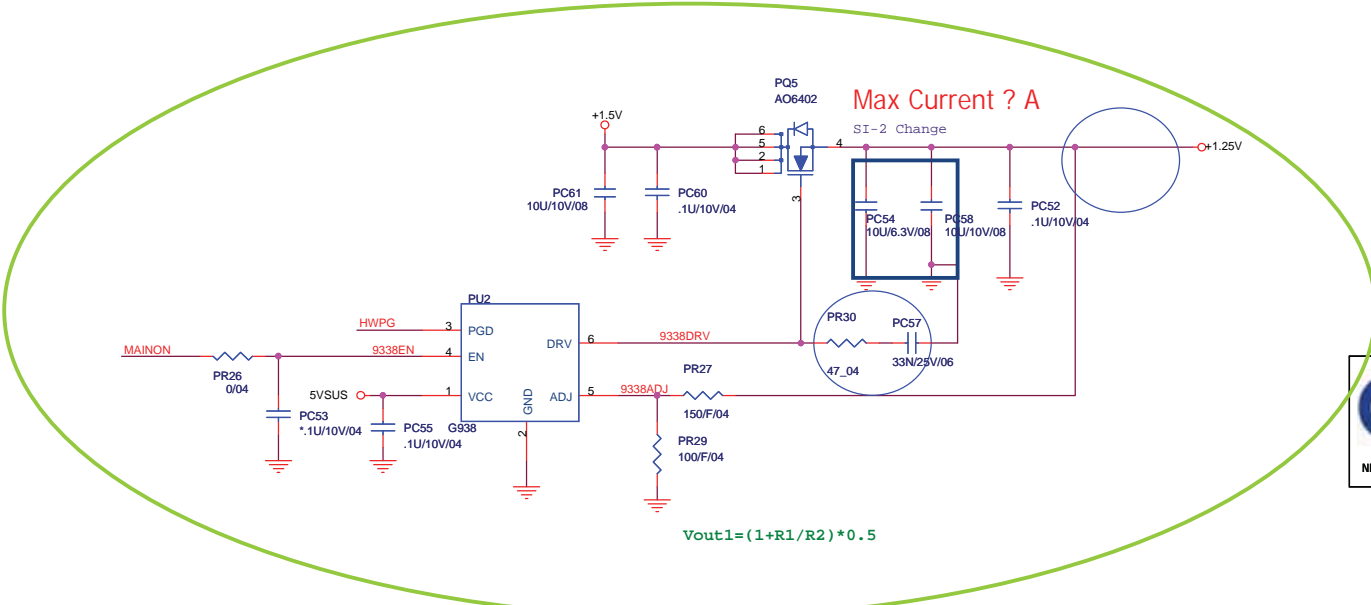
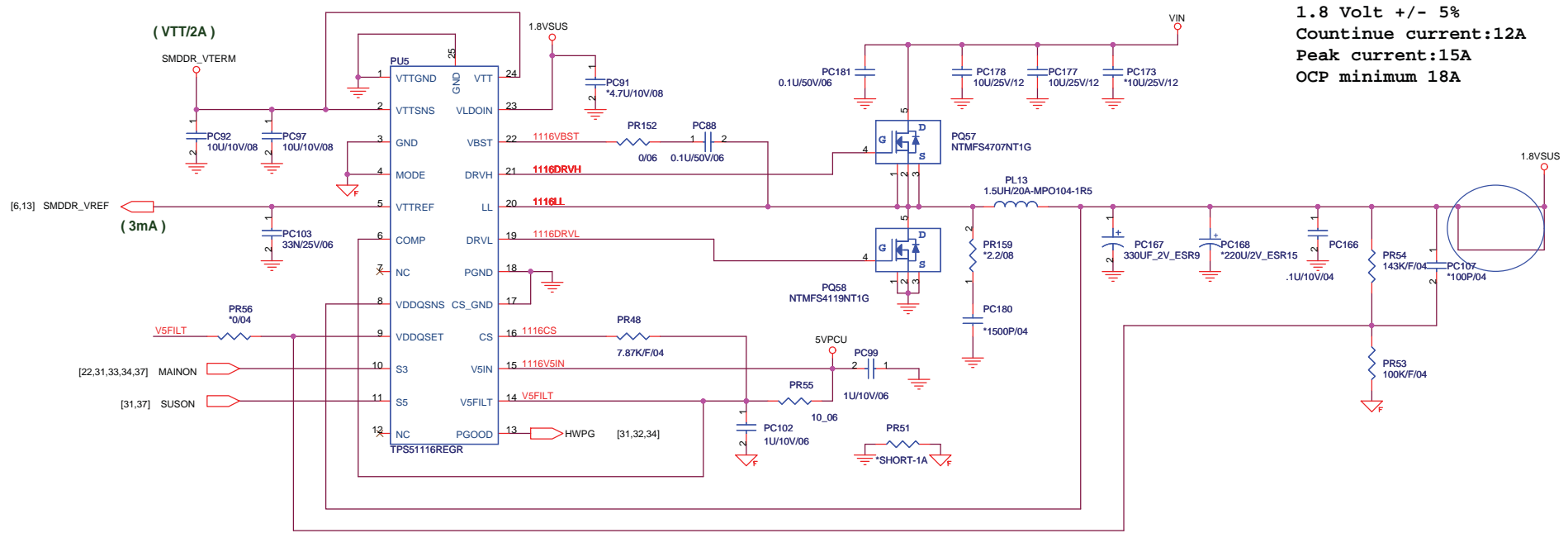



$V_{out} = (1 + R_a/R_b) \cdot 1.5V$



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