

AT5 BLOCK DIAGRAM

01

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
SPDIF Out
Stereo MIC
Headphone Jack
USB Port
VOL Cntr

PAG 38

SYSTEM CHARGER(MAX8724)
PAG 41

SYSTEM POWER MAX8778
PAG 42

DDR II SMDDR_VTERM
1.8V/1.8VSUS(TPS51116REGR)
PAG 46

VCCP +1.5V AND GMCH
1.05V(MAX8717)
PAG 43

VGACORE(1.025V)MAX1992
PAG 45

CPU CORE MAX8771
PAG 44

CPU
Merom

478P (uPGA)/35W
PAG 3, 4

CPU THERMAL
SENSOR

PAG 5

NORTH BRIDGE

Crestline

PAG 7, 8, 9, 10, 11, 12

NVIDIA G3-64 for 15.4"
NVIDIA G3-128 for 17"

820p FCBGA
PAG 15, 16, 17, 18, 19, 20

CLOCK GEN
ICS9LPRS355AGLFT
64pinsTSSOP

PAG 2

14.318MHz

HDMI CON

PAG 26

DDRII-SODIMM1

PAG 13, 14

DDRII 533,667 MHz

DDRII-SODIMM2

PAG 13, 14

DDRII 533,667 MHz

DMI LINK

SOUTH BRIDGE

ICH-8M

PAG 21, 22, 23, 24

Option for 17" only

SATA - HDD

PAG 35

SATA2

SATA - HDD

PAG 32

SATA0 150MB

PATA- CD-ROM

PAG 32

PATA (66/100/133)

USB2.0

Bluetooth
PAG 35

USB2.0 I/O Ports
X3
PAG 32

Camera
X1
PAG 32

Mini PCI-E Card x1
Express Card x1
Cable Docking x1

PCI BUS / 33MHz

PCI-E

Azalia

Realtek
ALC 268

PAG 29

Mini PCI-E Card
PCI Express
Mini Card
(Wireless
LAN/WAN)
PAG 39

LAN
Realtek
PCI-E-LAN
RTL8101E/8111B
10/100/GigaLAN
PAG 33, 34

Express Card
(NEW CARD)
PAG 35

RICOH
RICOH 832
PAG 27, 28

Keyboard
Touch Pad

PAG 36

CIR

PAG 36

Capacitive Sense
SW

PAG 36

ENE KBC
KB3920 Bx
KB3926 Bx

PAG 37, 48

FAN

PAG 38

Flash

PAG 37

SPI

PAG 37

Two-element
microphone

PAG 29

Audio Jacks
(Phone/ MIC)

PAG 29

AUDIO Amplifier

PAG 30

Jack to
Speaker

PAG 30

MDC DAA
SI3080

PAG 31

MODEM RJ 11

PAG 33

PCI ROUTING
TABLE
REQ0# / GNT0#
REQ1# / GNT1#

IDSEL
AD25
AD22

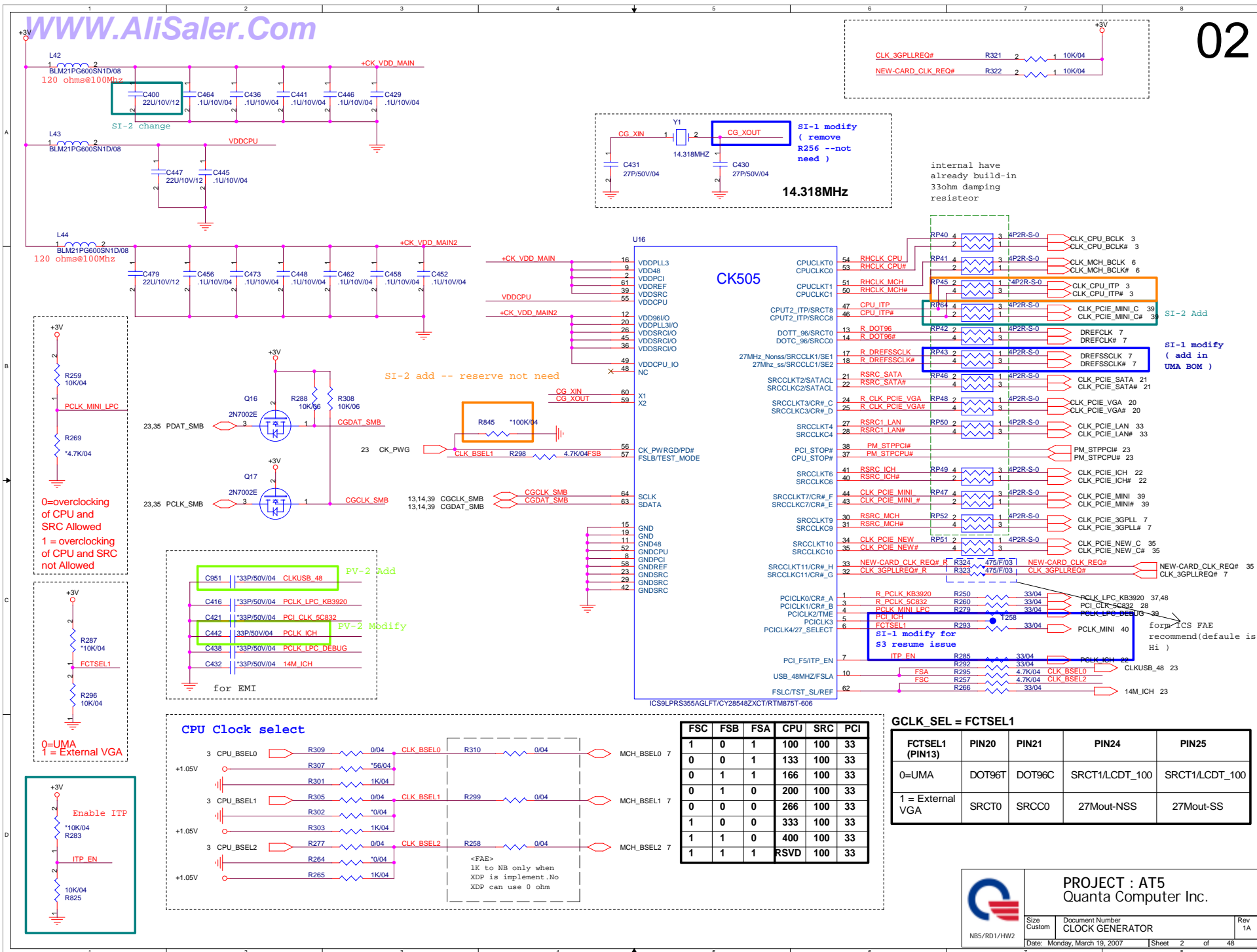
INTERUPT
INTE#,INTF#
INTC#,INTD#

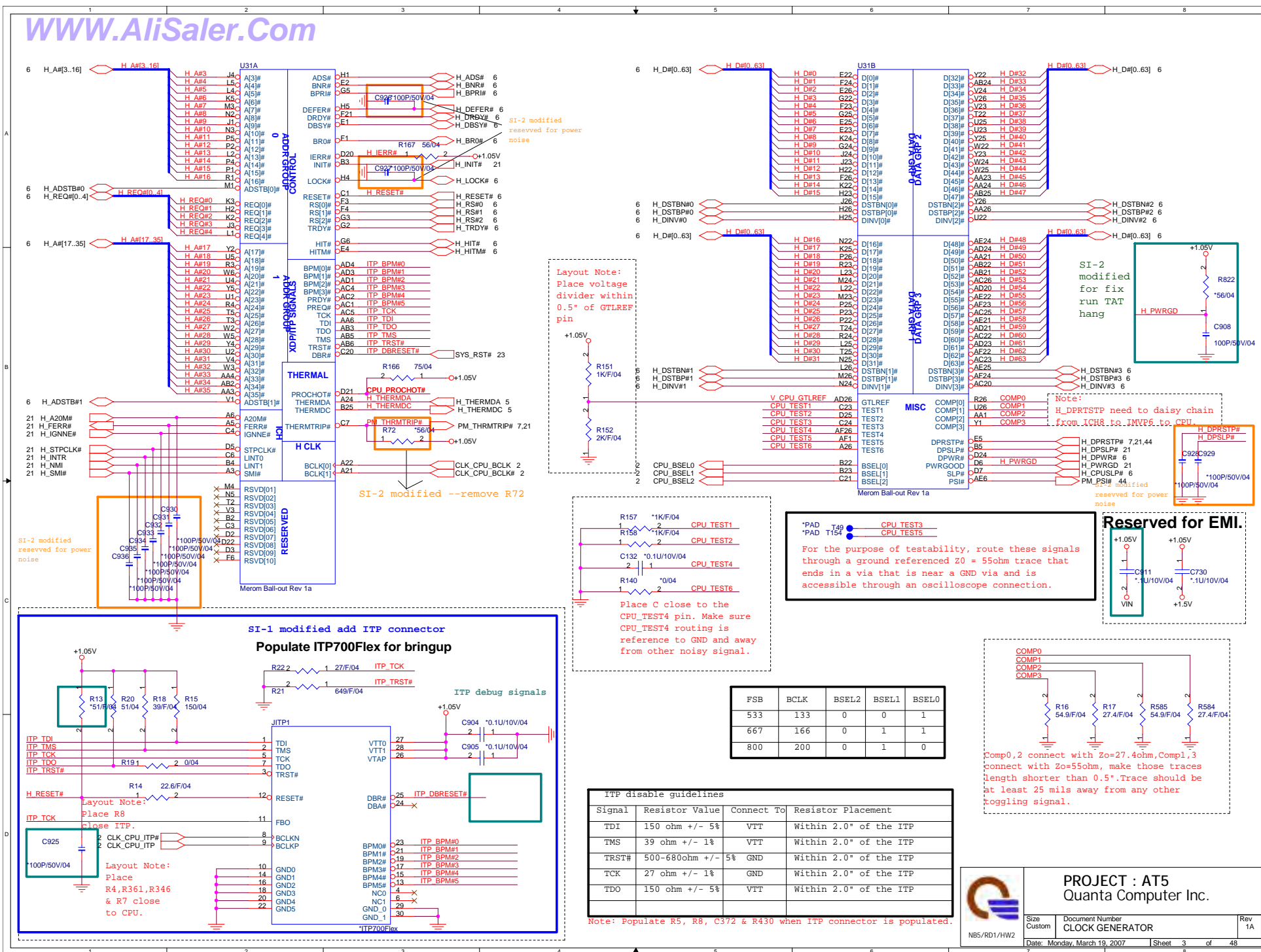
DEVICE
RICOH832
MINI PCI for debug

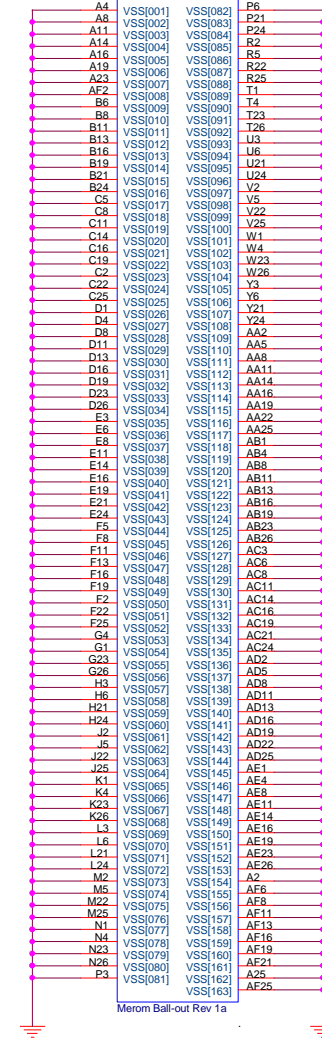
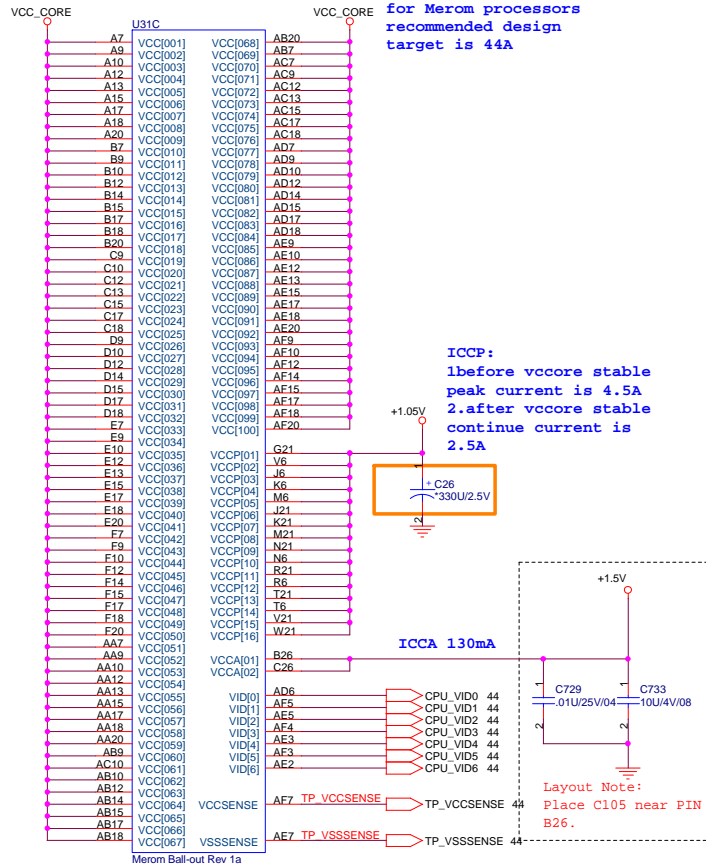
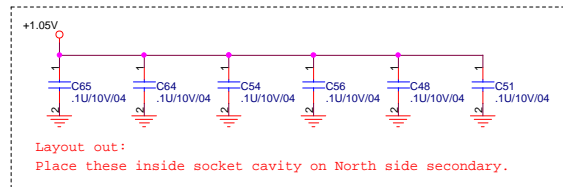
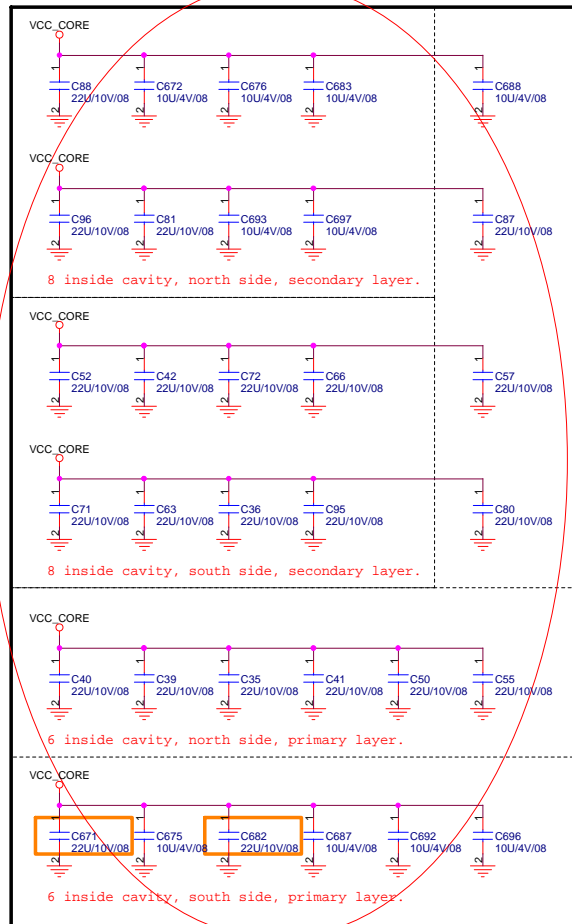


PROJECT : AT5
Quanta Computer Inc.

Size Custom Document Number BLOCK DIAGRAM Rev 1A
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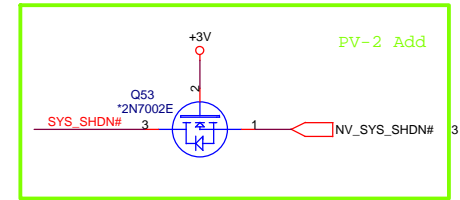
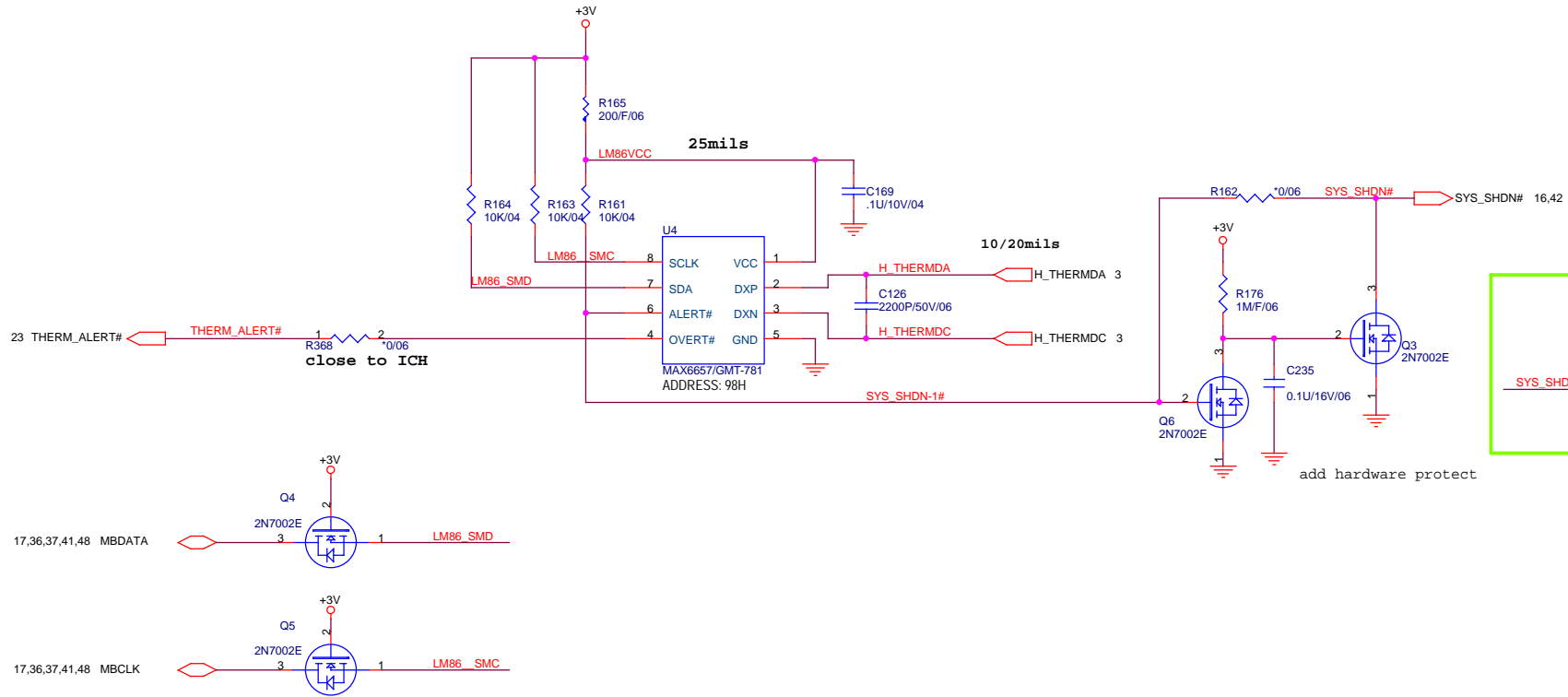






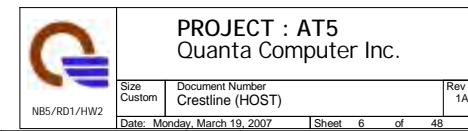
PROJECT : AT5
Quanta Computer Inc.

Size Custom	Document Number Merom Processor (POWER)	Rev 1A
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PROJECT : AT5
Quanta Computer Inc.

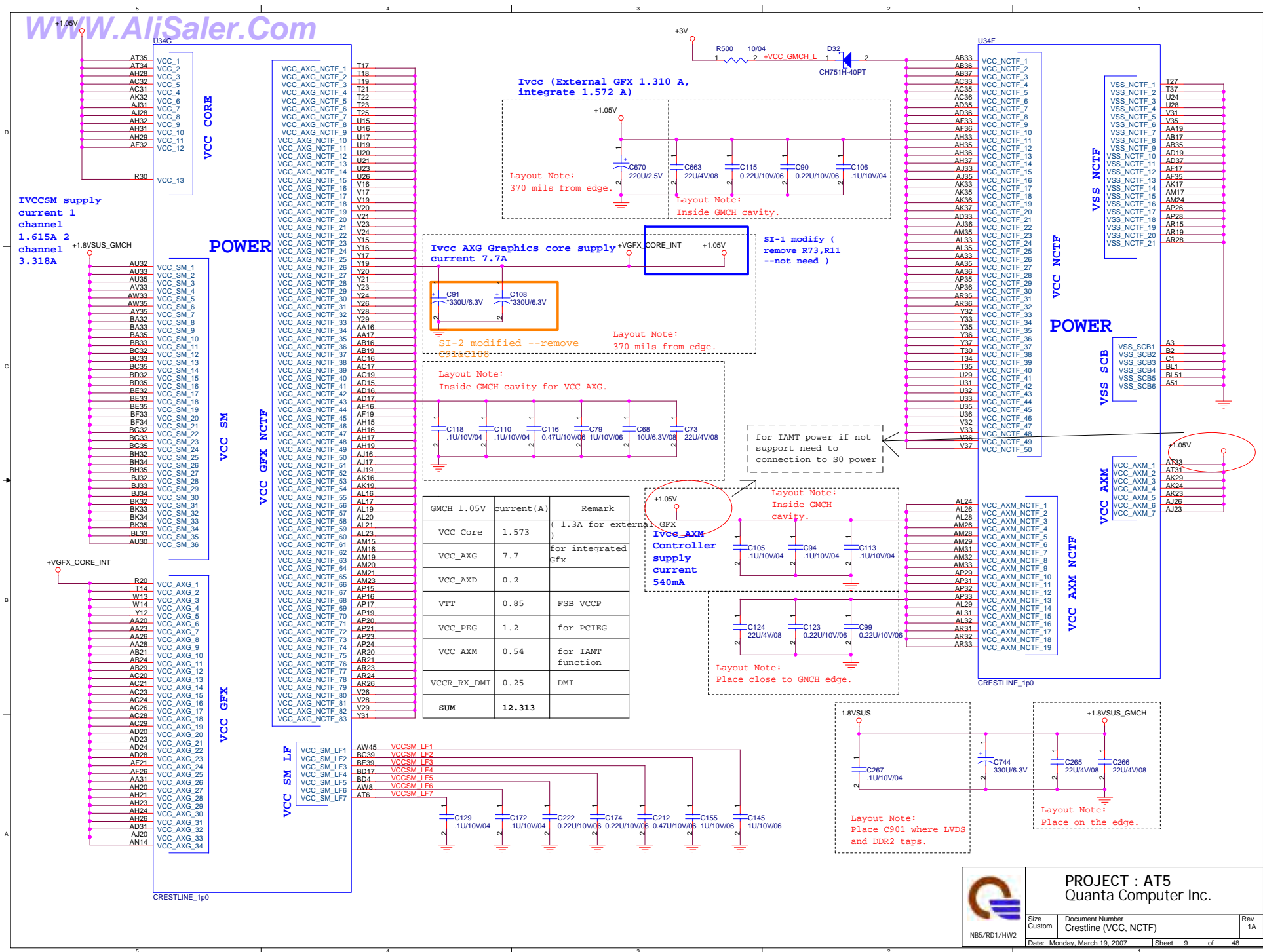
Size B	Document Number THERMAL LM86	Rev 1A
Date: Monday, March 19, 2007		Sheet 5 of 48

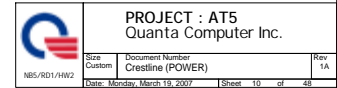


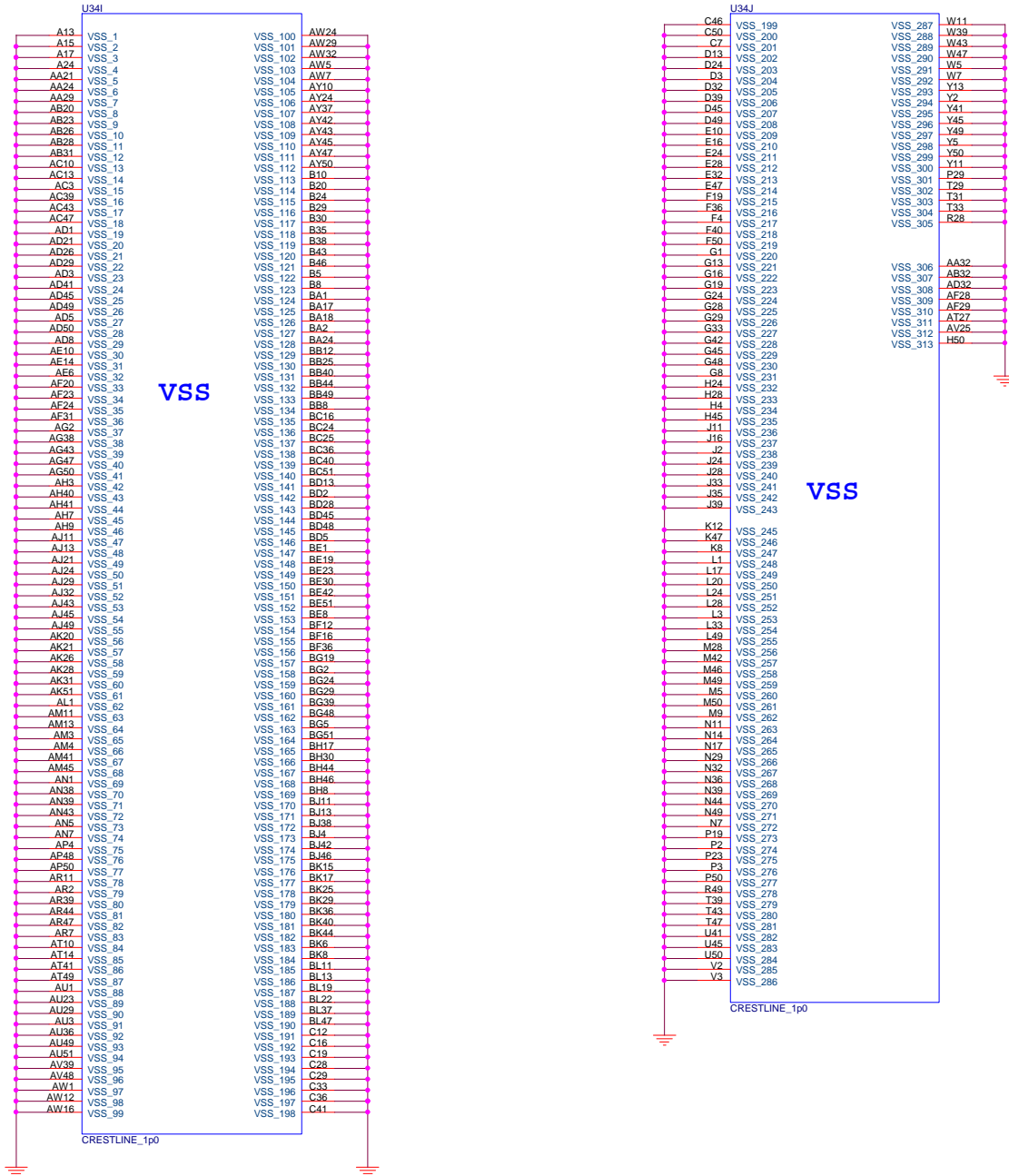


Size Custom	Document Number Crestline (VGA,DMI)
Date: Monday, March 19, 2007	Sheet 7 of 48









All strap are sampled with respect to the leading edge of the GMCH Power OK(PWROK) Signal
CFG[17:3] Have internal Pull-up
CFG[18:19] Have internal Pull-down
Any CFG signal strapping option not list below should be left NC Pin

Pin Name	Strap description	Configuration
CFG[2:0]	FSB Frequency Select	010 = FSB 800MHz 011 = FSB 667MHz
CFG[4:3]	Reserved	
CFG5	DMI X2 Select	0 = DMI X2 1 = DMI X4(Default)
CFG6	Reserved	
CFG7	CPU Strap	0 = Reserved 1 = Mobile CPU(Default)
CFG8	Low power PCI Express	0 = Normal mode 1 = Low Power mode
CFG9	PCI Express Graphics Lane Reversal	0 = Reverse Lanes 1 = Normal operation(Default)
CFG[11:10]	Reserved	
CFG[13:12]	XOR/ALLZ	00 = Reserved 01 = XOR Mode Enable 10 = All-Z Mode Enabled 11 = Normal operation(Default)
CFG[15:14]	Reserved	
CFG16	FSB Dynamic ODT	0 = Dynamic ODT disable 1 = Dynamic ODT Enable(Default)
CFG[18:17]	Reserved	
SDVO_CTRLDATA	SDVO Present	0 = No SDVO Card present(Default) 1 = SDVO Card Present
CFG19	DMI Lane Reversal	0 = Normal operation(Default) 1 = Reverse Lanes
CFG20	SDVO/PCIE concurrent	0 = Only SDVO or PCIE x1 is operation(Default) 1 = SDVO and PCIE x1 are operating simultaneously via the PEG port

DMI X2 Select

MCH_CFG_5	Low = DMIX2 High = IDMX4(Default)
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DMI Lane Reversal

MCH_CFG_19	Low = Normal operation(Default) High = Reverse Lane
------------	--

XOR /ALLz /Clock Un-gating

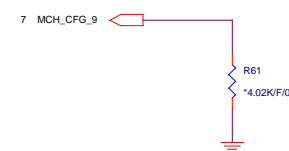
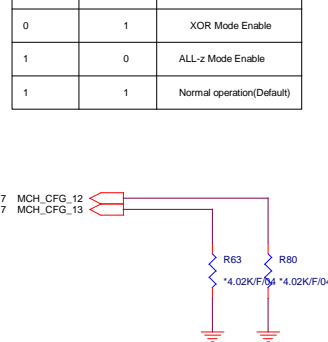
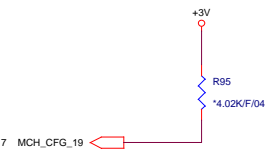
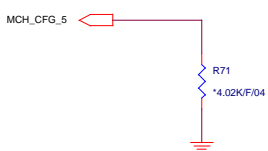
MCH_CFG_12	MCH_CFG_13	Configuration
0	0	Clock gating disable
0	1	XOR Mode Enable
1	0	ALL-z Mode Enable
1	1	Normal operation(Default)

PCI Express Graphics

MCH_CFG_9	Low = Reverse Lane High = Normal operation(Default)
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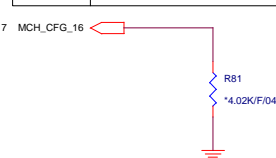
SDVO Present

Strap define at External DVI control page



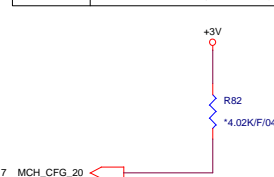
FSB Dynamic ODT

MCH_CFG_16	Low = ODT Disable High = ODT Enable(Default)
------------	---



SDVO/PCIE Concurrent operation

MCH_CFG_20	Low = Only SDVO or PCIE X1 is operational(Default) High = SDVO and PCIE X1 are operating simultaneously via the PEG port
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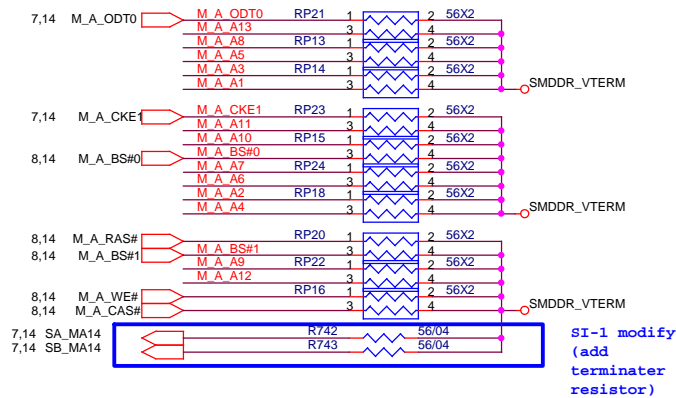
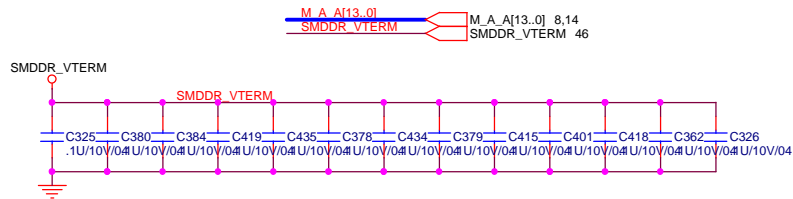
PROJECT : AT5
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Size Custom	Document Number 10 -- GMCH STRAP-3(6 of 6)	Rev 1A
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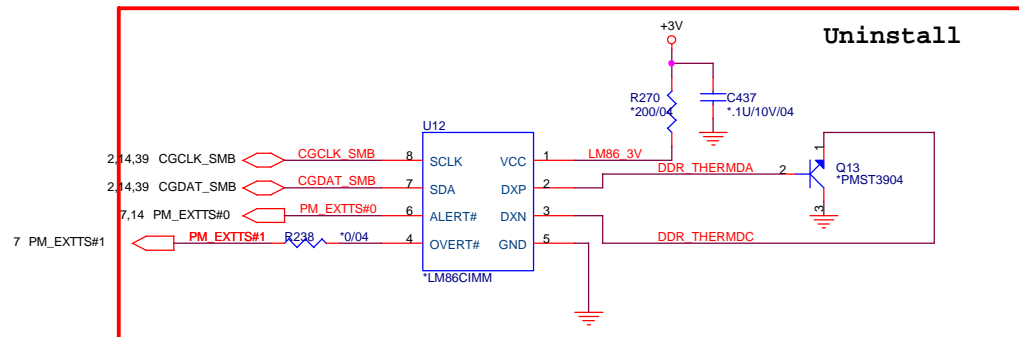
DDRII DUAL CHANNEL A,B.

13

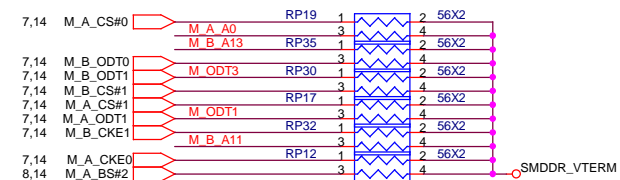
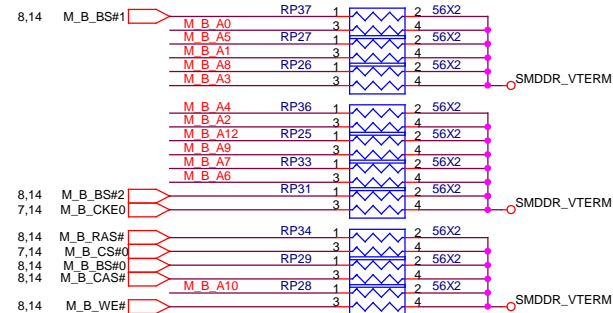
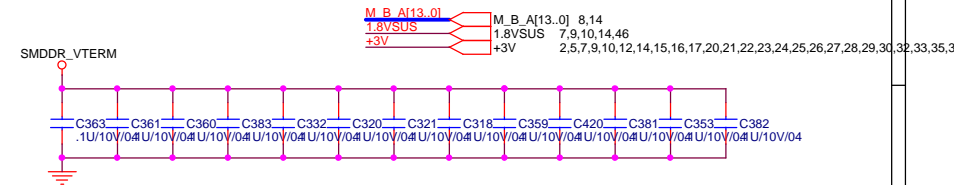
DDRII A CHANNEL



Uninstall



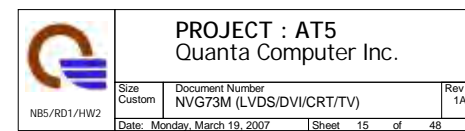
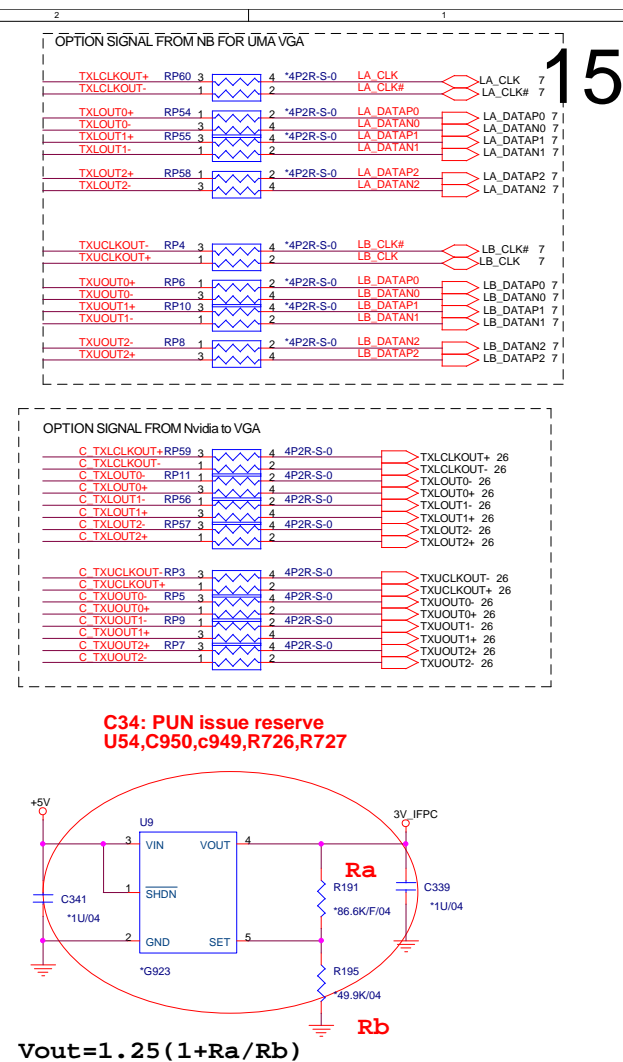
DDRII B CHANNEL

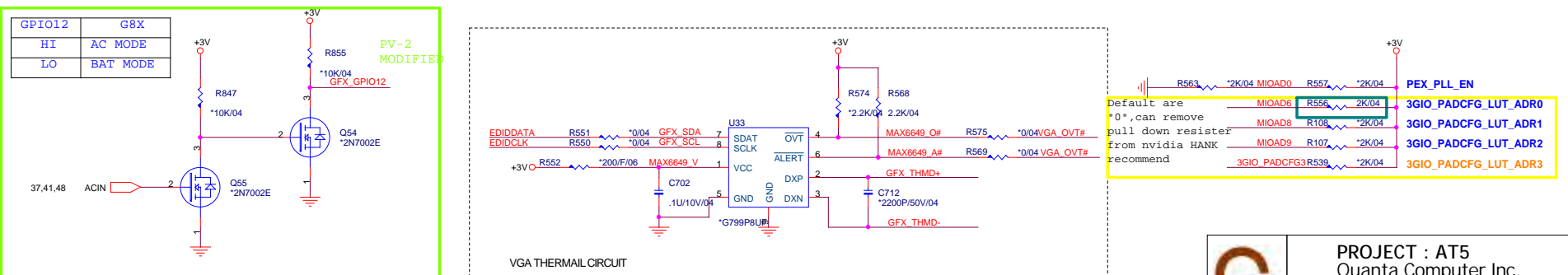


PROJECT : AT5
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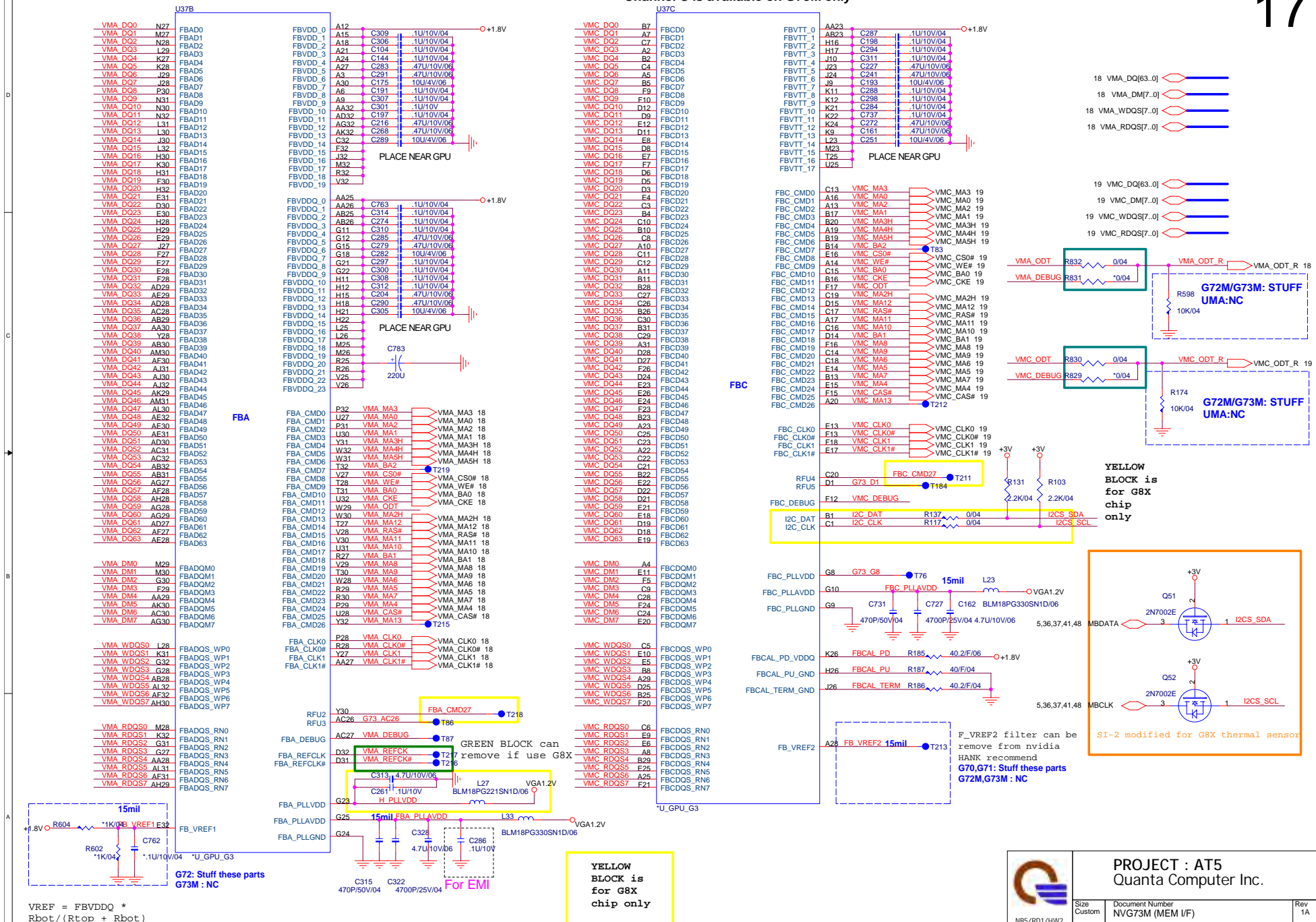
Size	Document Number	Rev
B	DDRII RES.ARRAY	1A
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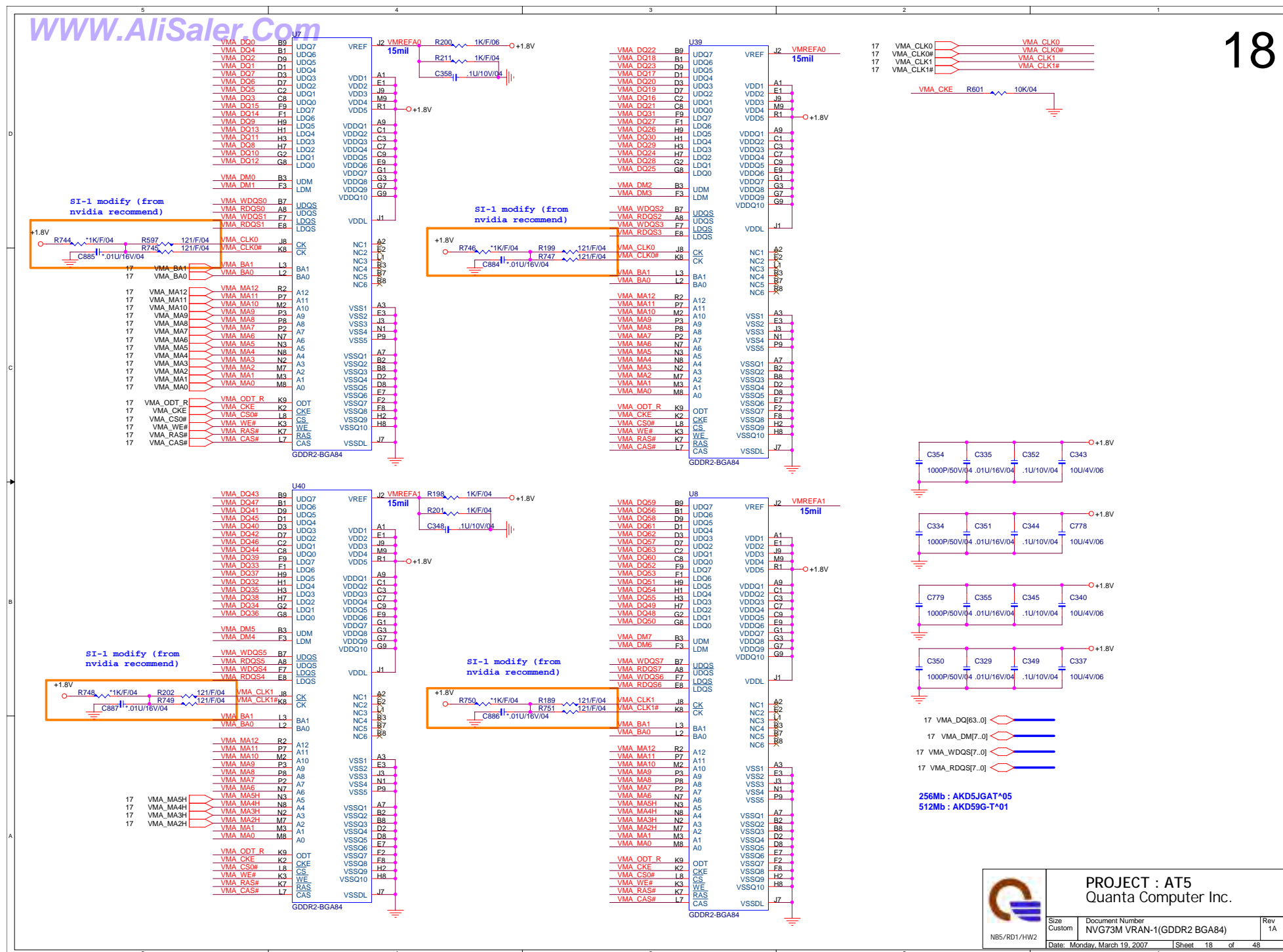


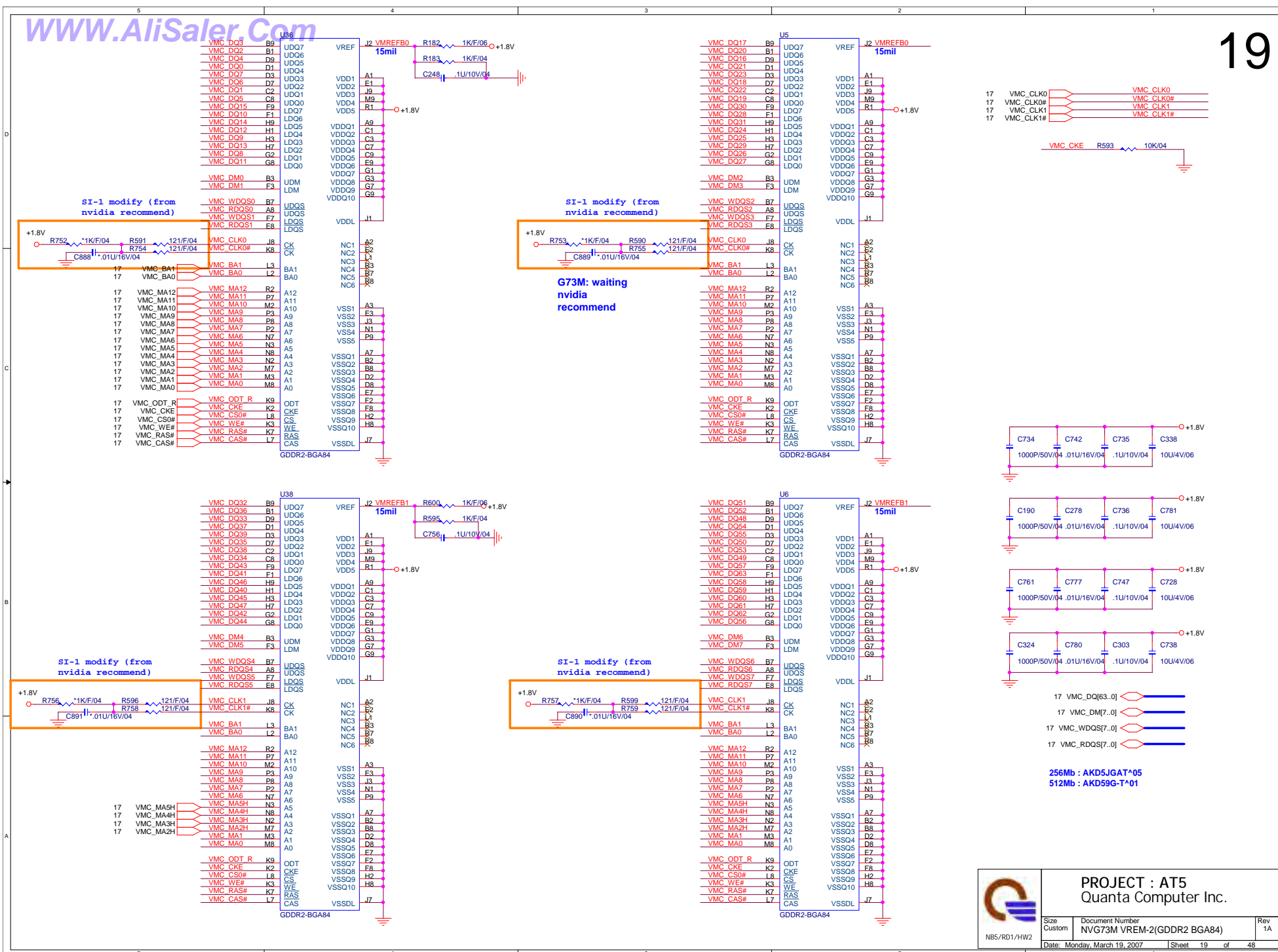


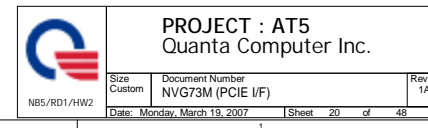


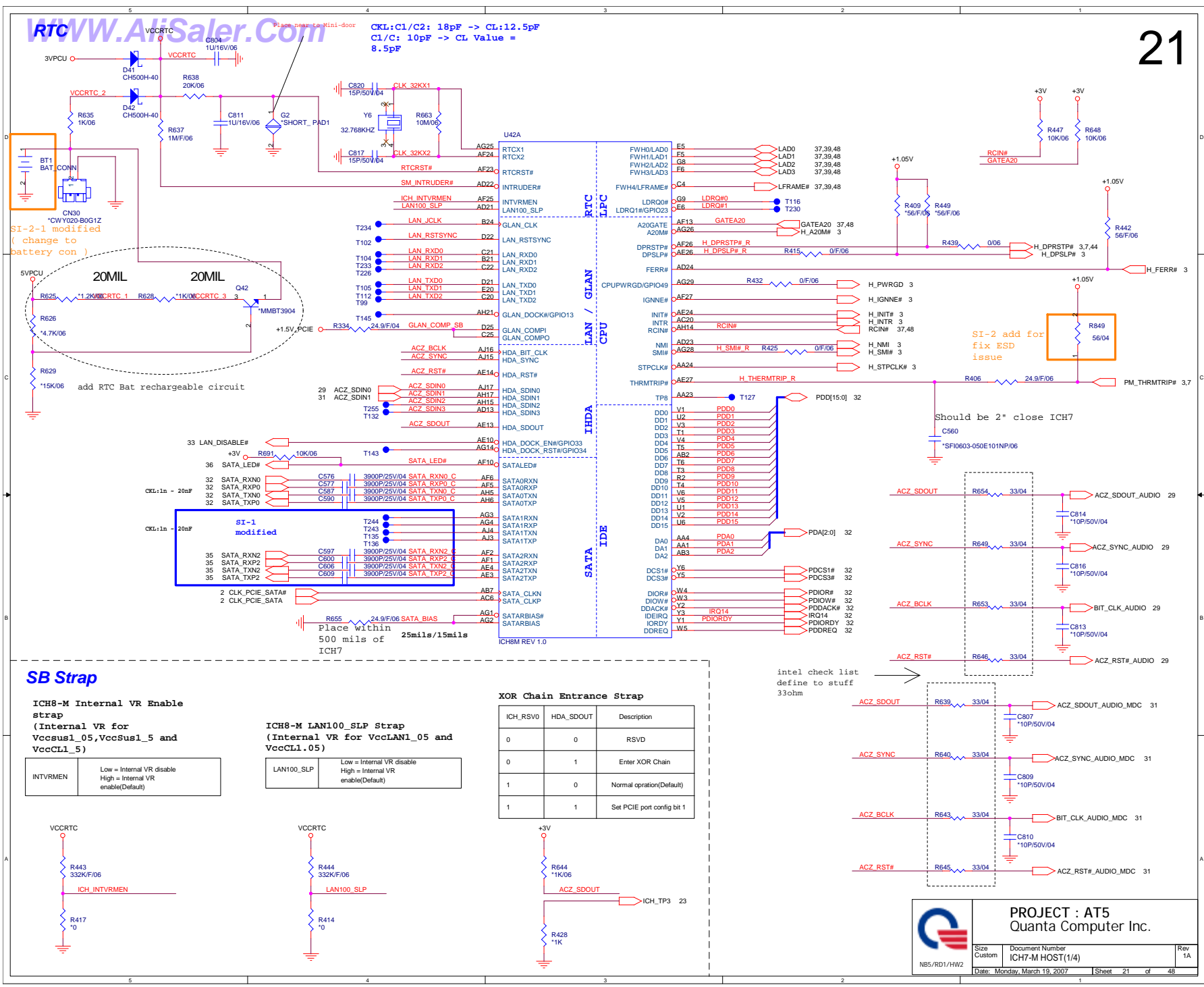
FOR BATTERY MODE throttling
FUNCTION











MINI CARD PCI-E
EXPRESS CARD (NEW CARD)

SI-2 Add
for
support
RBSON
card

PCI-E-LAN

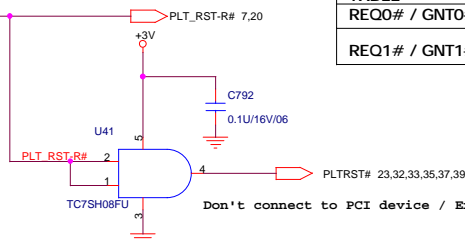
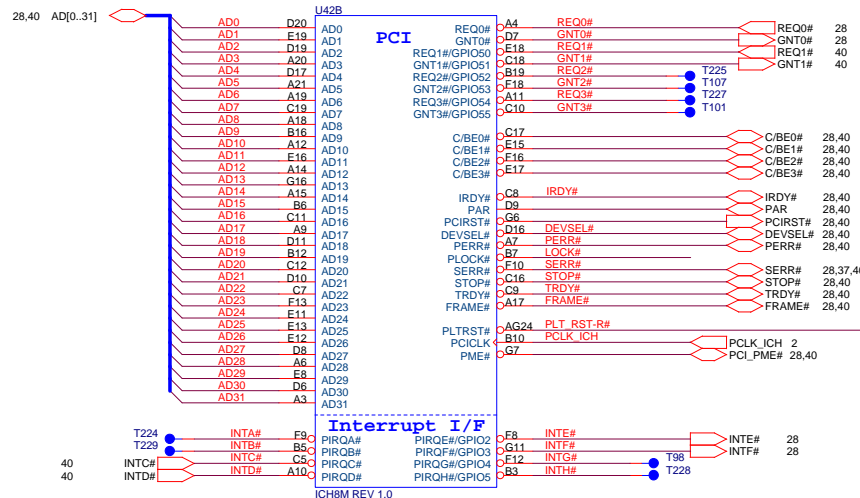
PCI-Express
Direct Media Interface

SPI

USB

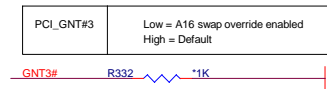
ICH8M REV 1.0

25mils/15mils
Place within 500
mils of ICH8



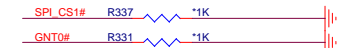
Don't connect to PCI device / Express card

A16 SWAP Override strap



ICH8 Boot BIOS select

PCI_GNT#0	SPI_CS#1	Boot BIOS Location
0	1	SPI(Default)
1	0	PCI
1	1	LPC

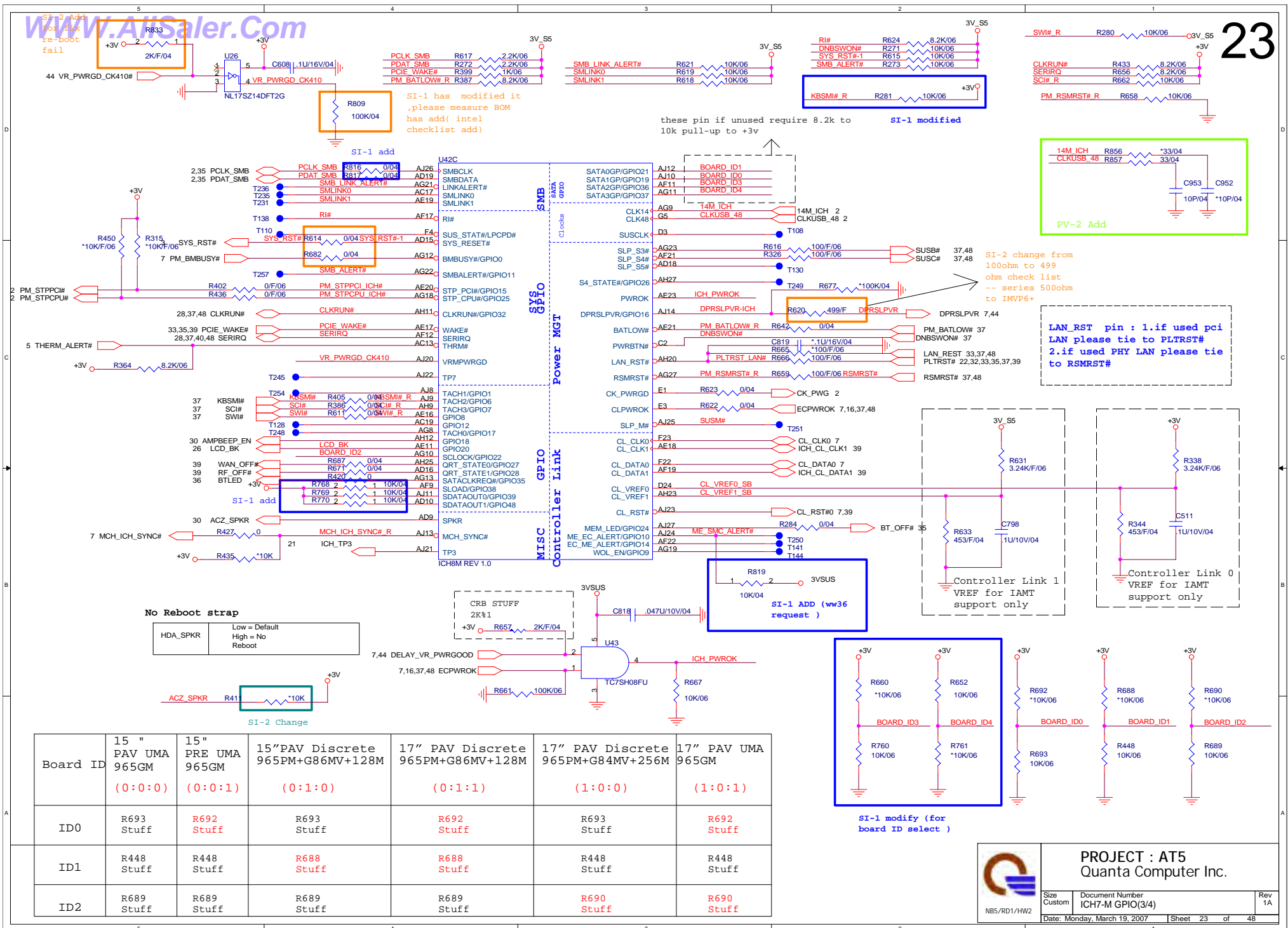


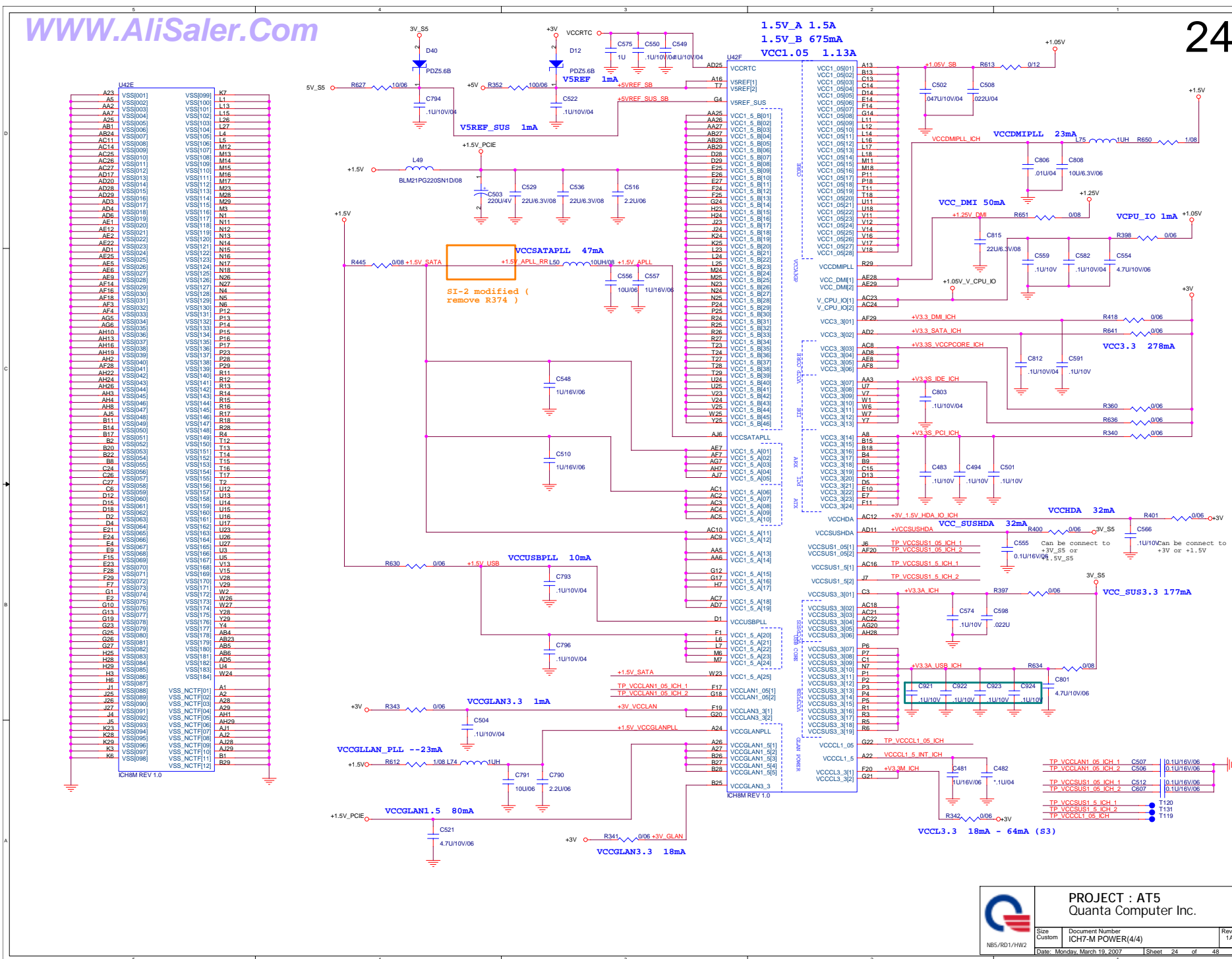
PCI ROUTING TABLE	IDSEL	INTERUPT	DEVICE
REQ0# / GNT0#	AD25	INTE#,INTF#	RICOH832
REQ1# / GNT1#	AD22	INTC#,INTD#	MINI PCI for debug

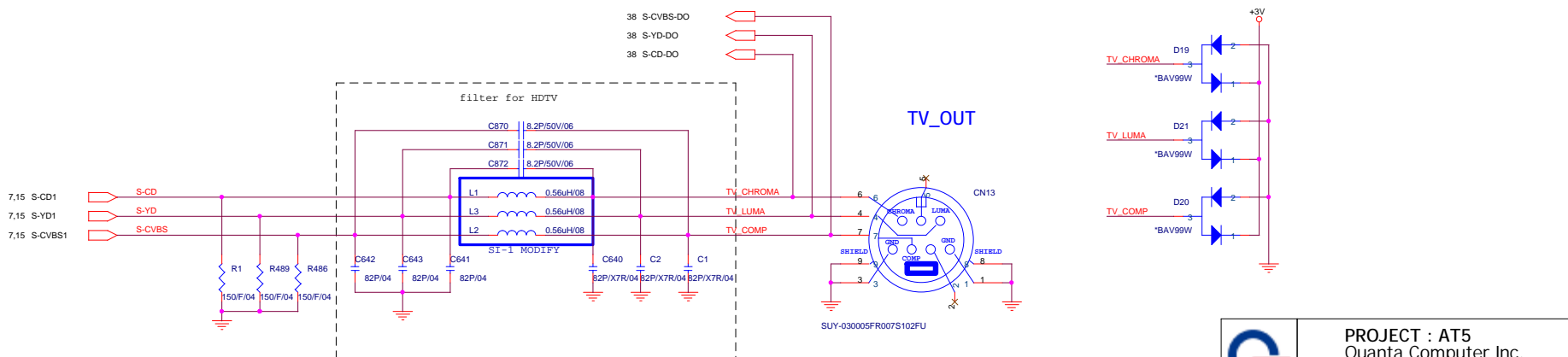
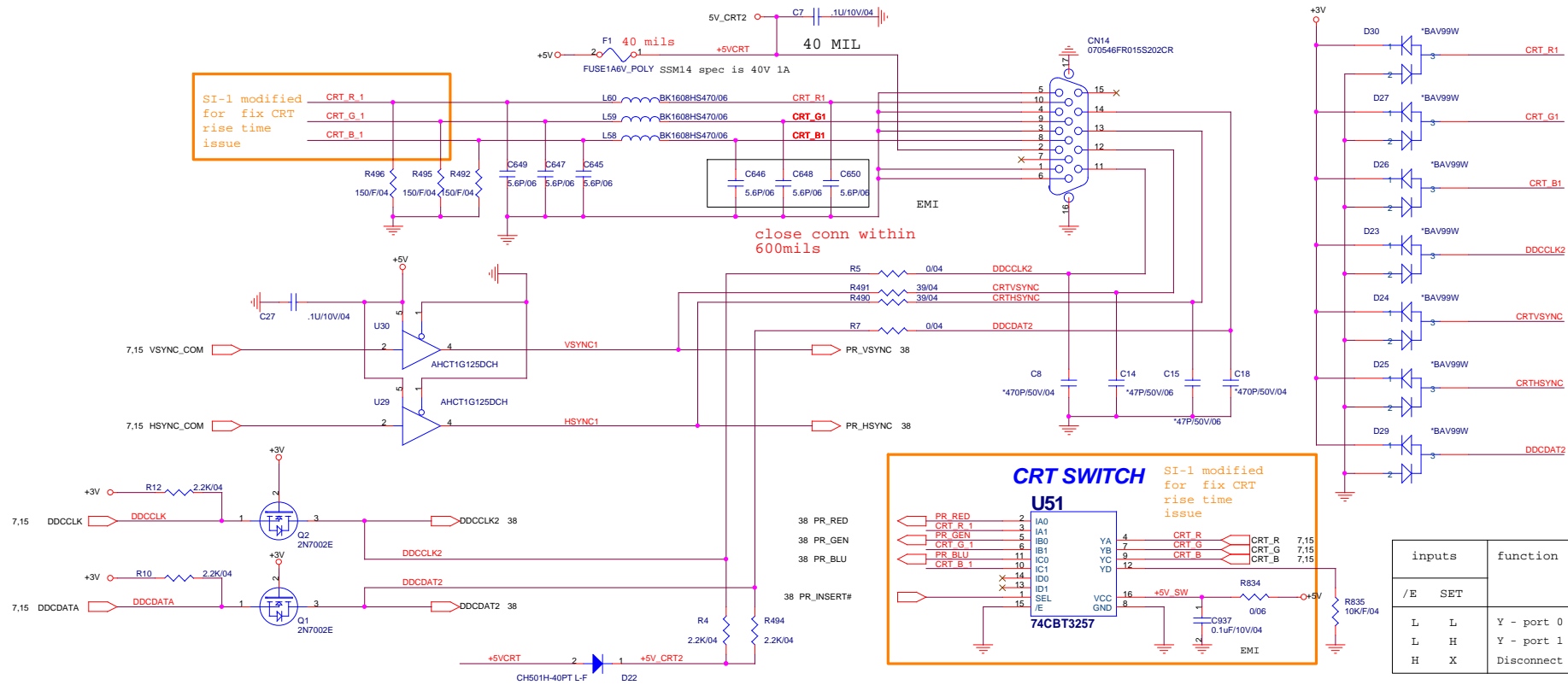


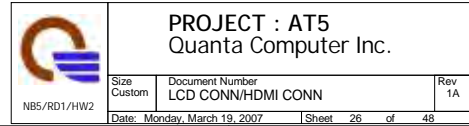
PROJECT : AT5
Quanta Computer Inc.

Size Custom	Document Number ICH7-M M PCI E(2/4)	Rev 1A
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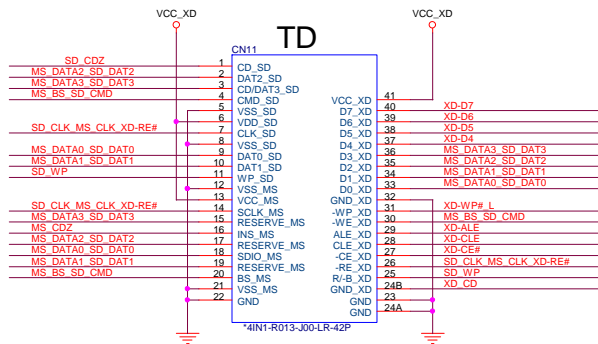
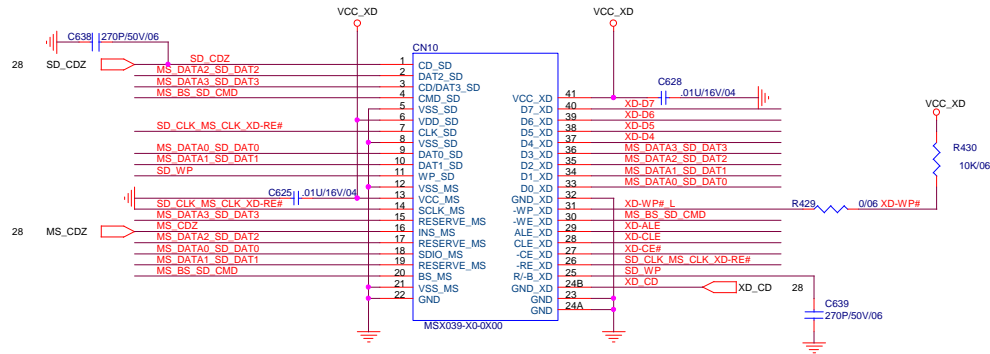




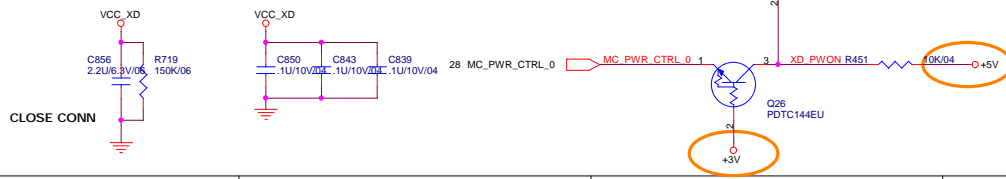
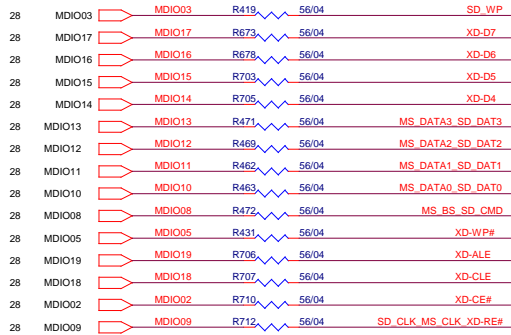


5 IN1 CARD READER

XD, MMC/SD, MS/MSP

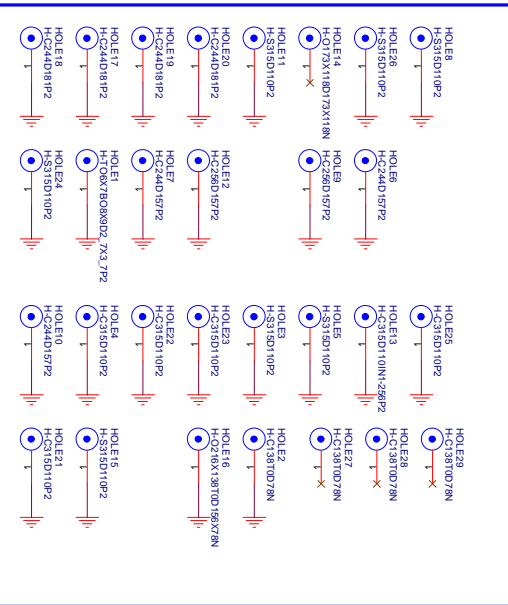


bom create 2'nd source

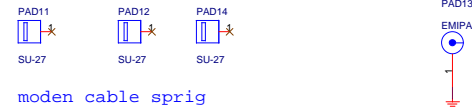
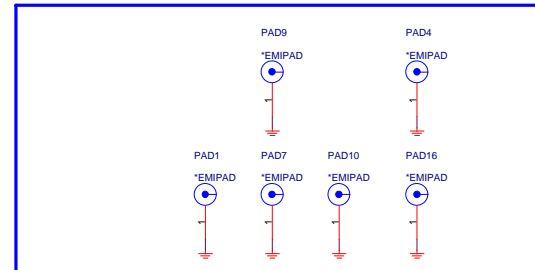


27

SCREW HOLE



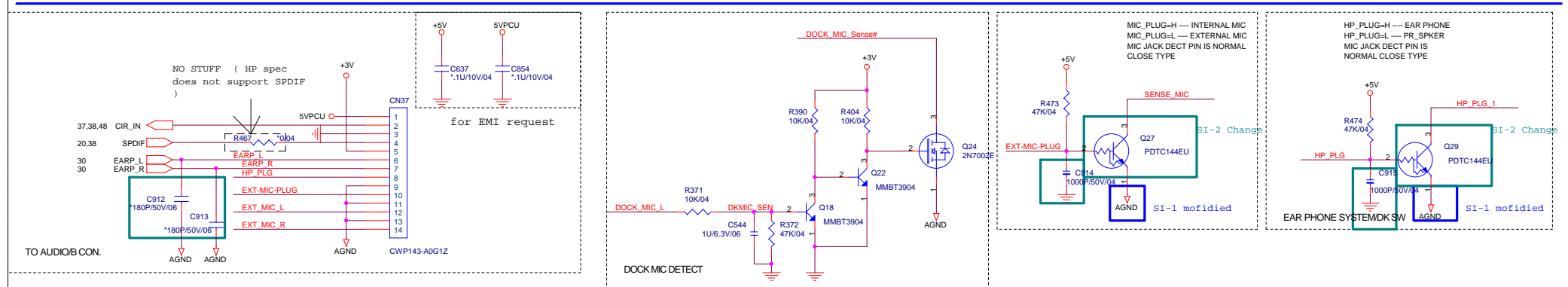
EMI PAD

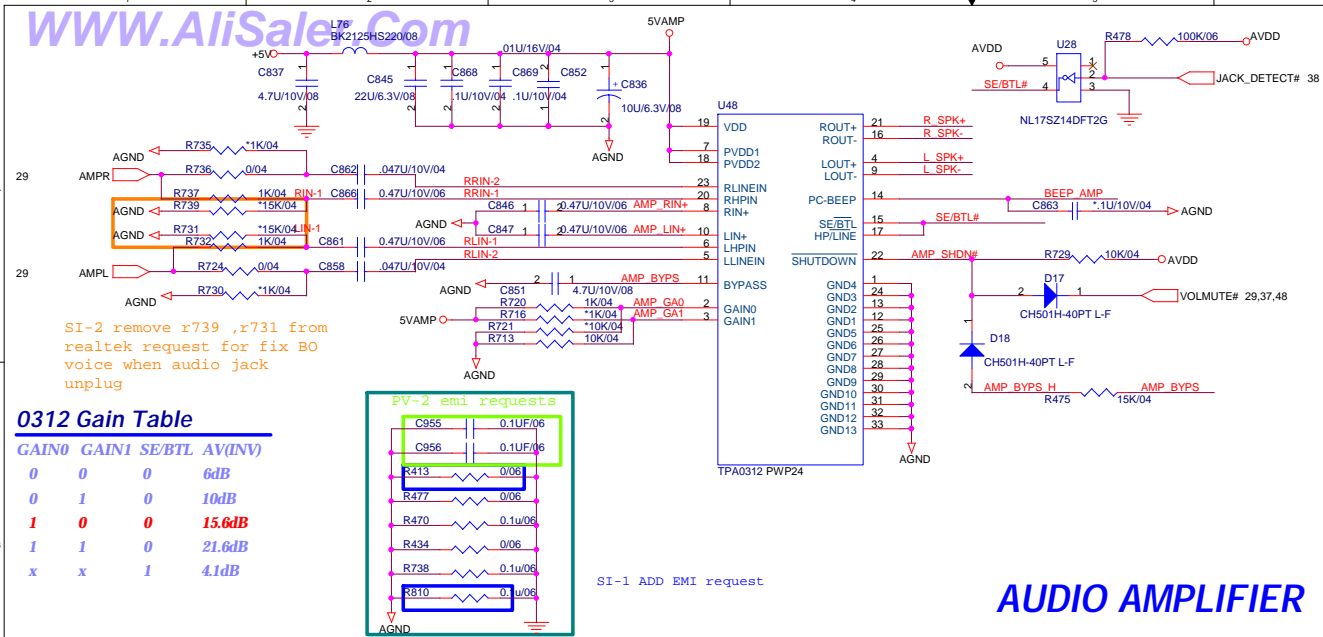


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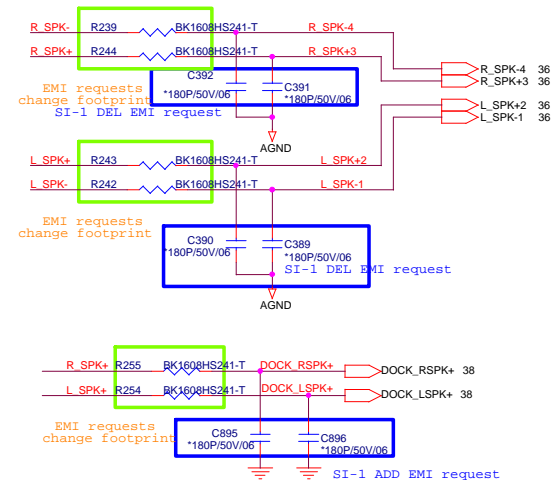
Size Custom	Document Number CARD READER/HOLE	Rev 1A
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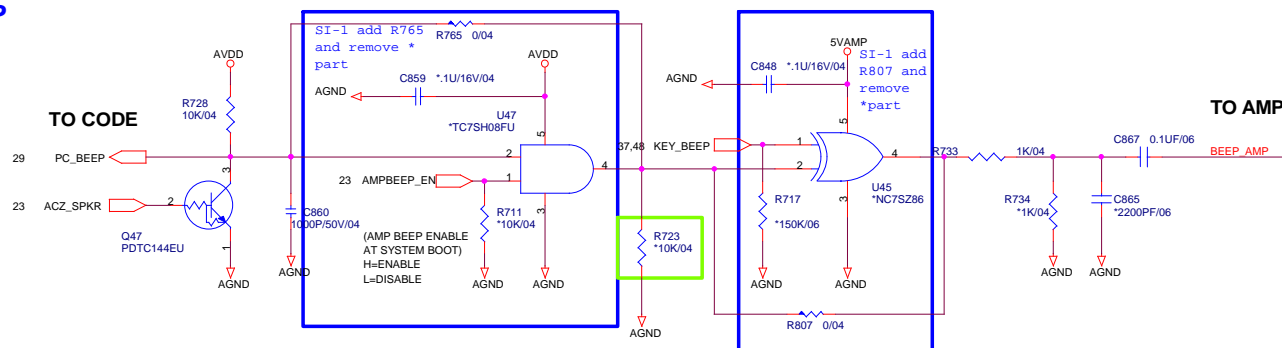
INT. SPEAKER



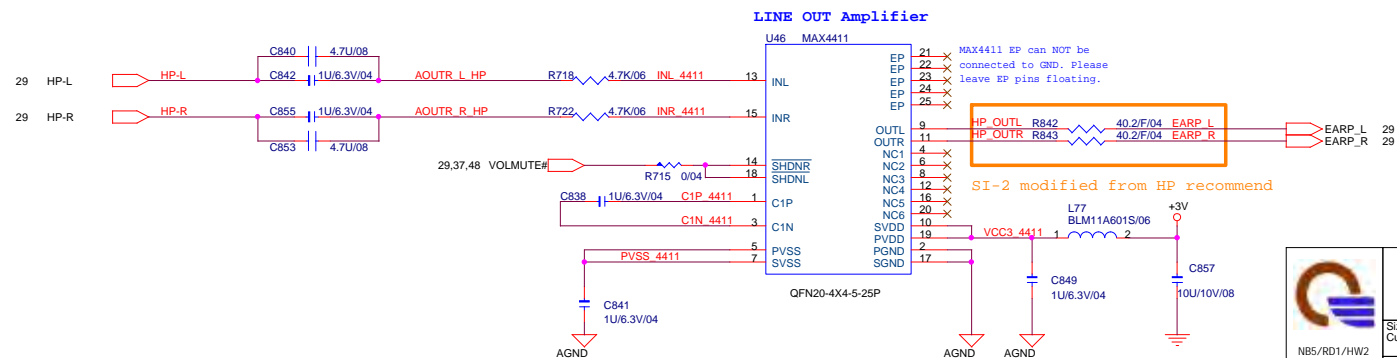
0312 Gain Table

GAIN0	GAIN1	SE/BTL	AV(INV)
0	0	0	6dB
0	1	0	10dB
1	0	0	15.6dB
1	1	0	21.6dB
x	x	1	4.1dB

PCSPK BEEP

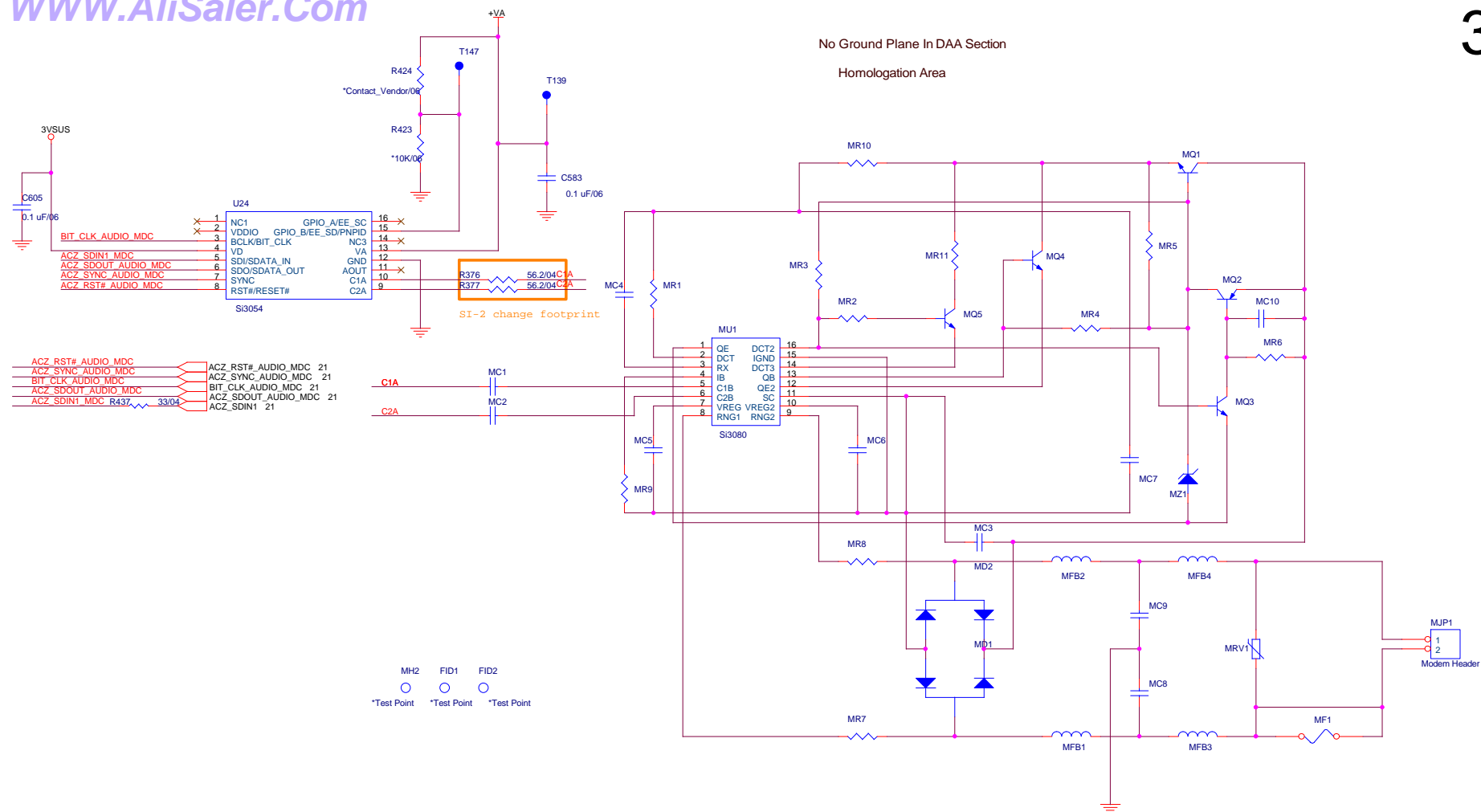


LINE OUT Amplifier



PROJECT : AT5
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Size Custom	Document Number JACK/AMP_TAP0312	Rev 1A
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DESIGN SUBJECT TO CHANGE

SILICON LABORATORIES CONFIDENTIAL

USB2

32

22,23,33,35,37,39 PLTRST# 1 O41 DTC144EUA 3 +3V +5V R608 10K/06 IDERST#

29 CDINL2 R370 1K/04 CDAUD_L
29 CDINR2 R367 1K/04 CDAUD_R
29 CDGND1 R392 1K/04 CD_GND

21 PDA[0..2] PDA0_21

21 PDD[0..15] PDD0_151

21 PDIOW# PDIOW#

21 PDDREQ# PDDREQ#

21 PDIORDY# PDIORDY#

21 PDIOR# PDIOR#

21 IRQ14 PDDACK#

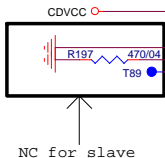
21 PDCS1# PDCS1#

21 PDCS3# PDCS3#

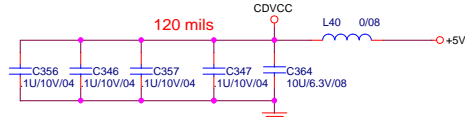
check list
-- need to
pull-up

PDIOR# R228 4.7K/04
PDIOW# R223 4.7K/04
PDIORDY# R234 4.7K/04
IRQ14 R236 8.2K/04
DIAG# R233 4.7K/04
R214 10K/04

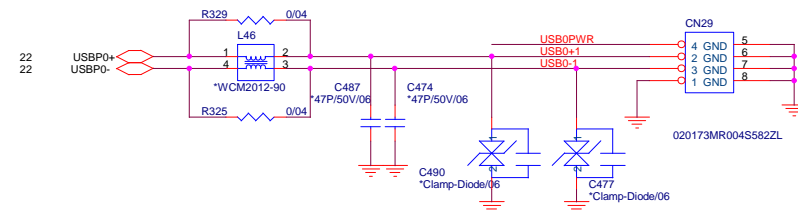
CD-ROM



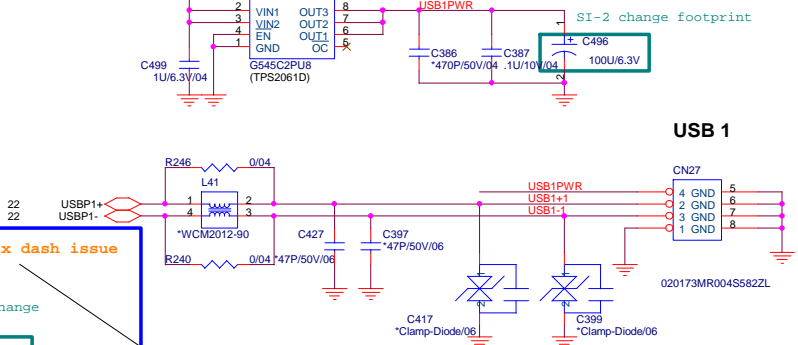
NC for slave



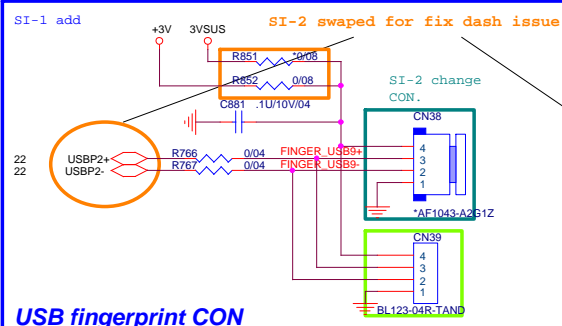
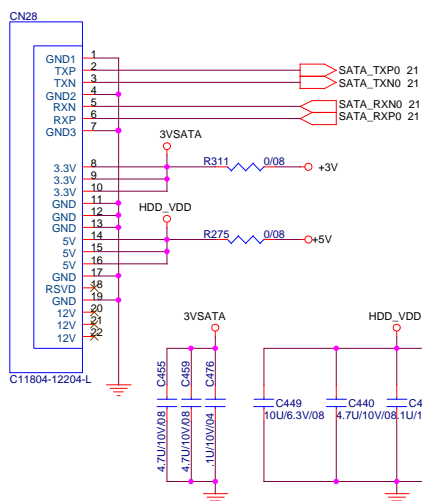
USB 0



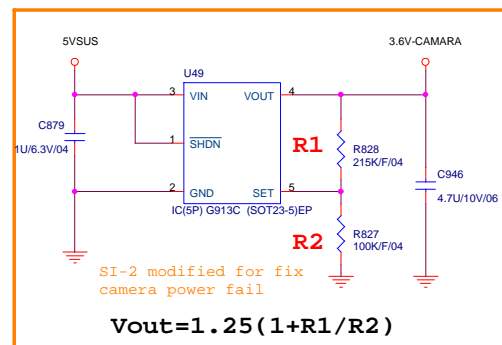
USB 1



SATA_1 CONNECTOR



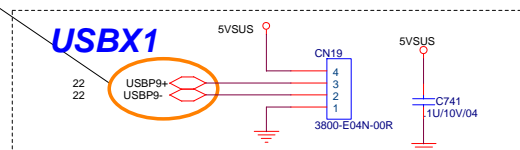
USB fingerprint CON



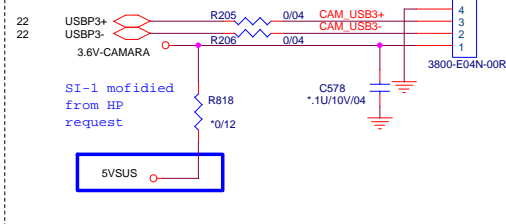
SI-2 modified for fix
camera power fail

$$V_{out} = 1.25(1 + R1/R2)$$

USBX1



USB CAMERA CONNECT

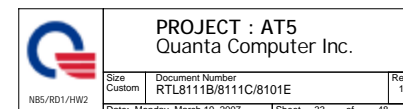


SI-1 modified
from HP
request



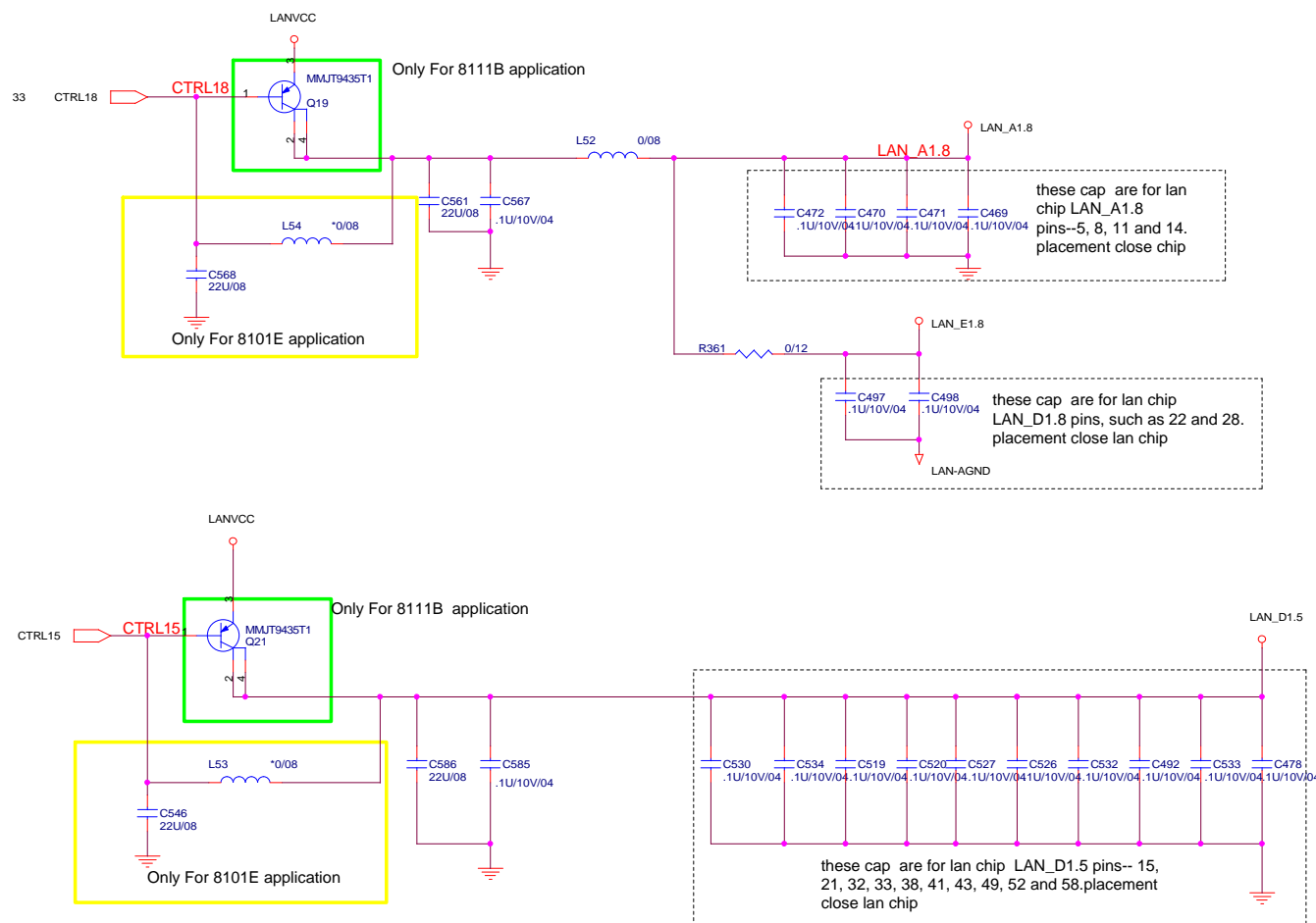
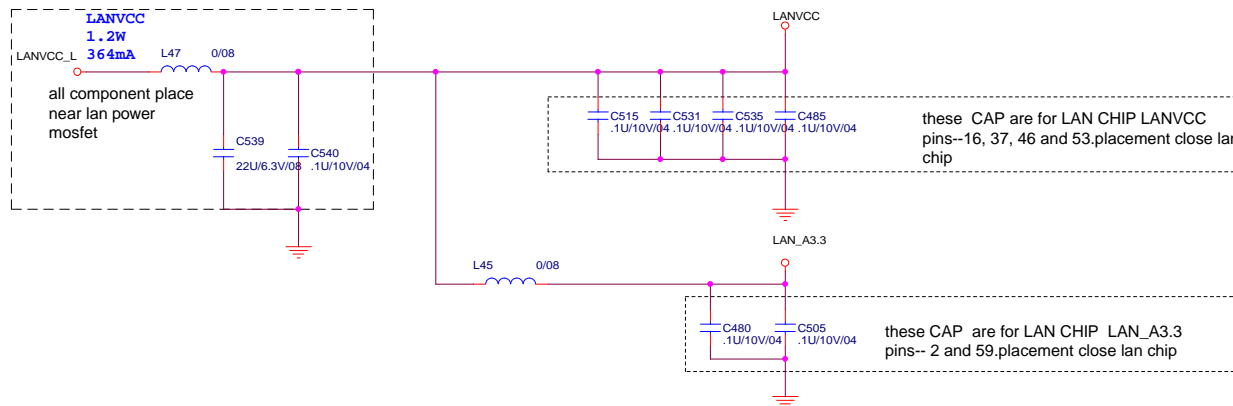
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Quanta Computer Inc.

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T : Stuffed for RTL8111B(10/100/1000)

E : Stuffed for 8101E(10/100)



Power domain chart

	RTL8111B / RTL8101E
LANVCC	3.3V
LAN_D1.8	1.8V
LAN_A1.8	1.8V
LAN_D1.5	1.5V

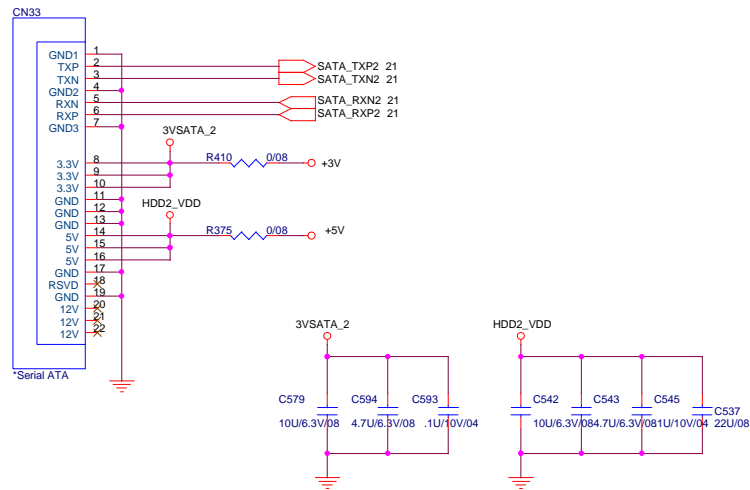
	Q1	Q3
RTL8111B	Need	Need
RTL8101E	N/A	N/A



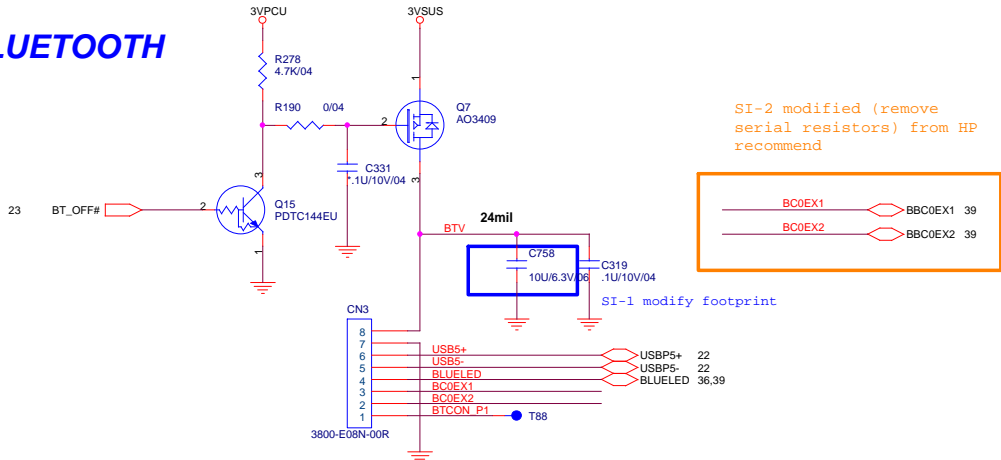
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SATA_2 CONNECTOR For 17"W Second HDD



BLUETOOTH

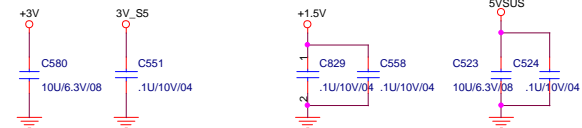
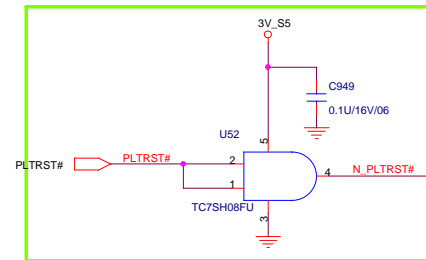
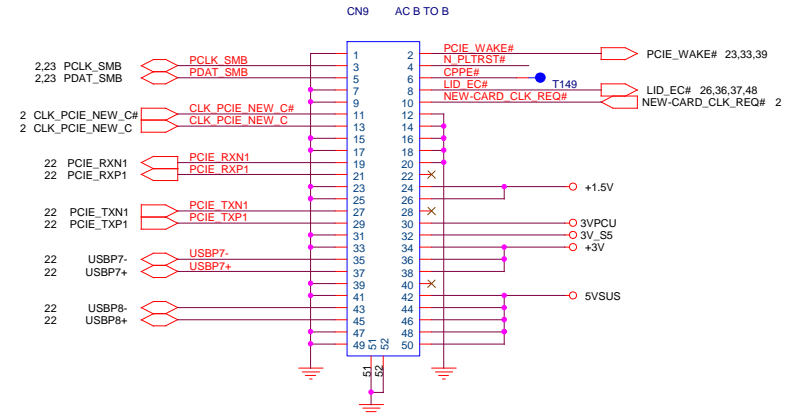



SI-2 modified (remove
serial resistors) from HP
recommend

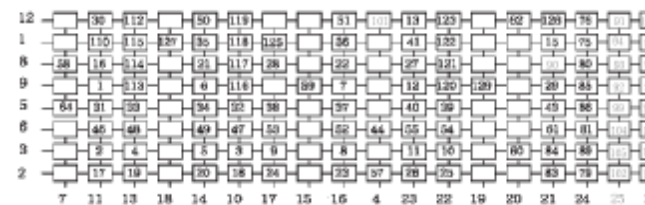
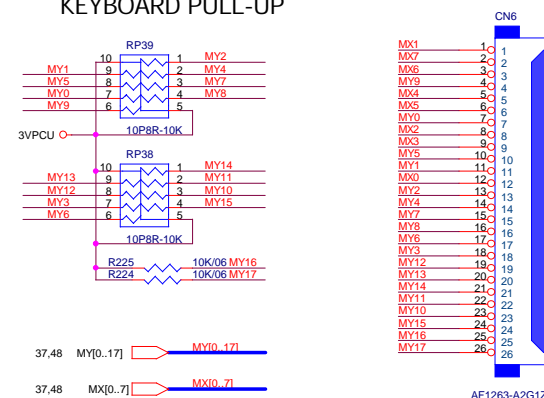
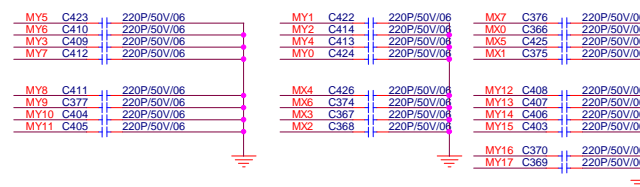
SI-1 modify footprint

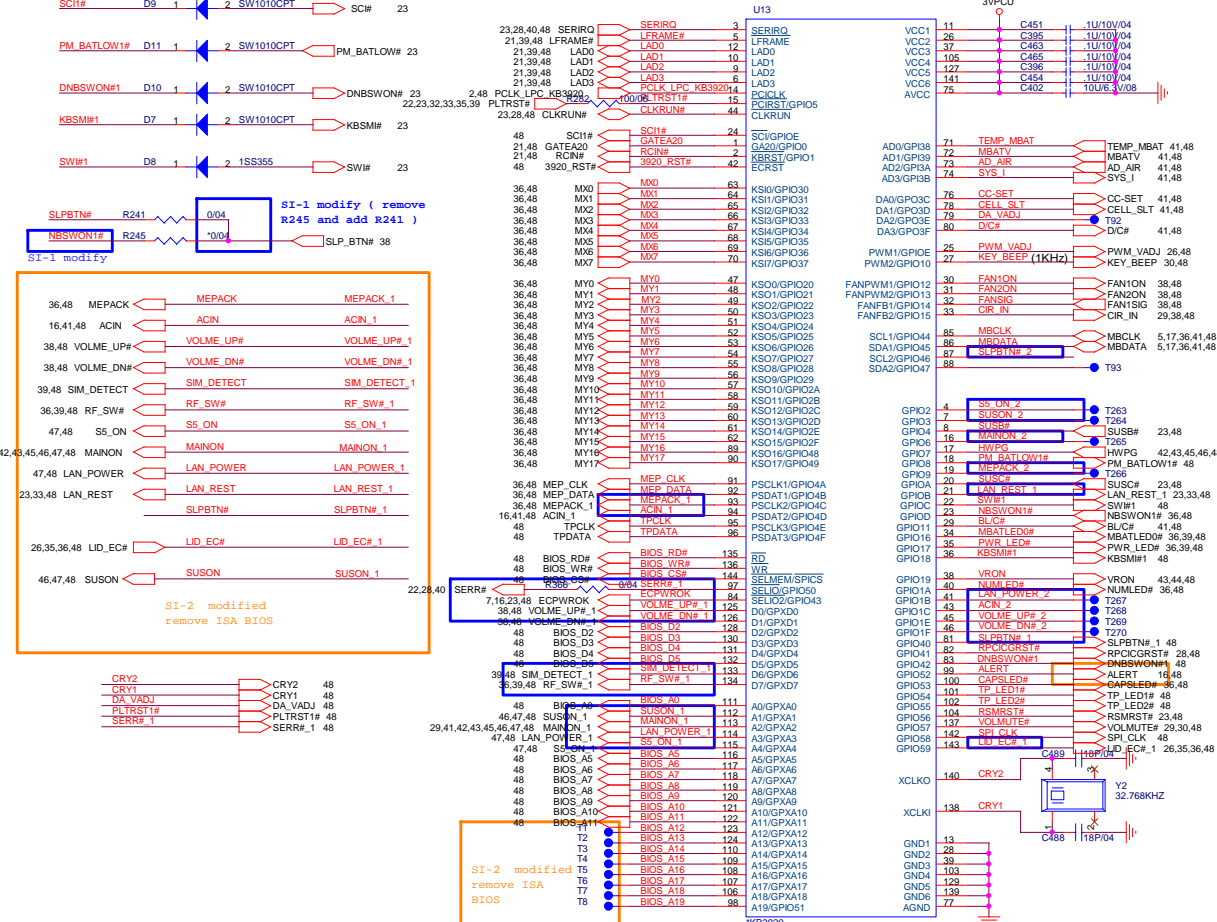
NEWCARD

35



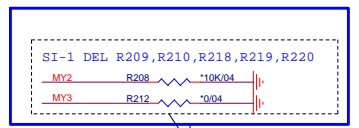
	PROJECT : AT5 Quanta Computer Inc.		
	Size Custom	Document Number NEW CARD/BT	Rev 1A
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STRAP PIN

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

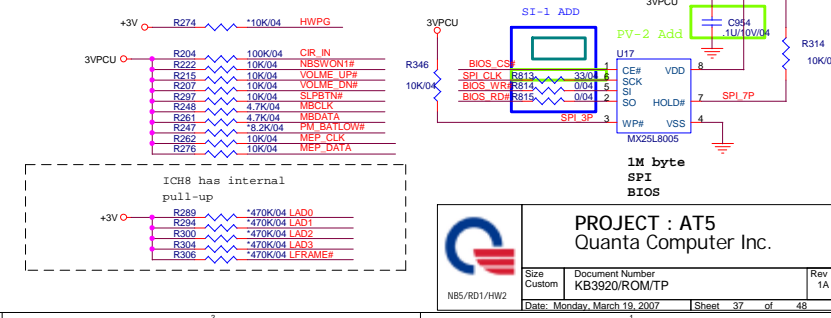
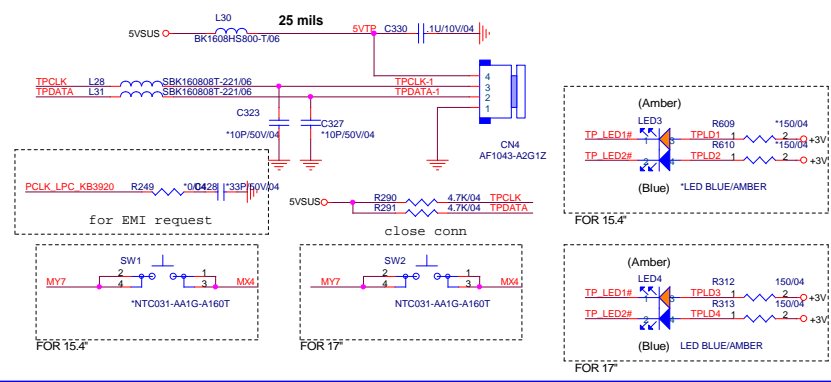


SELECT KBC TYPE

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

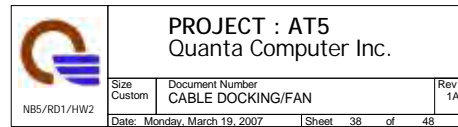
SI-2 modified
remove ISA
BIOS

TOUCH PAD CONNECTOR



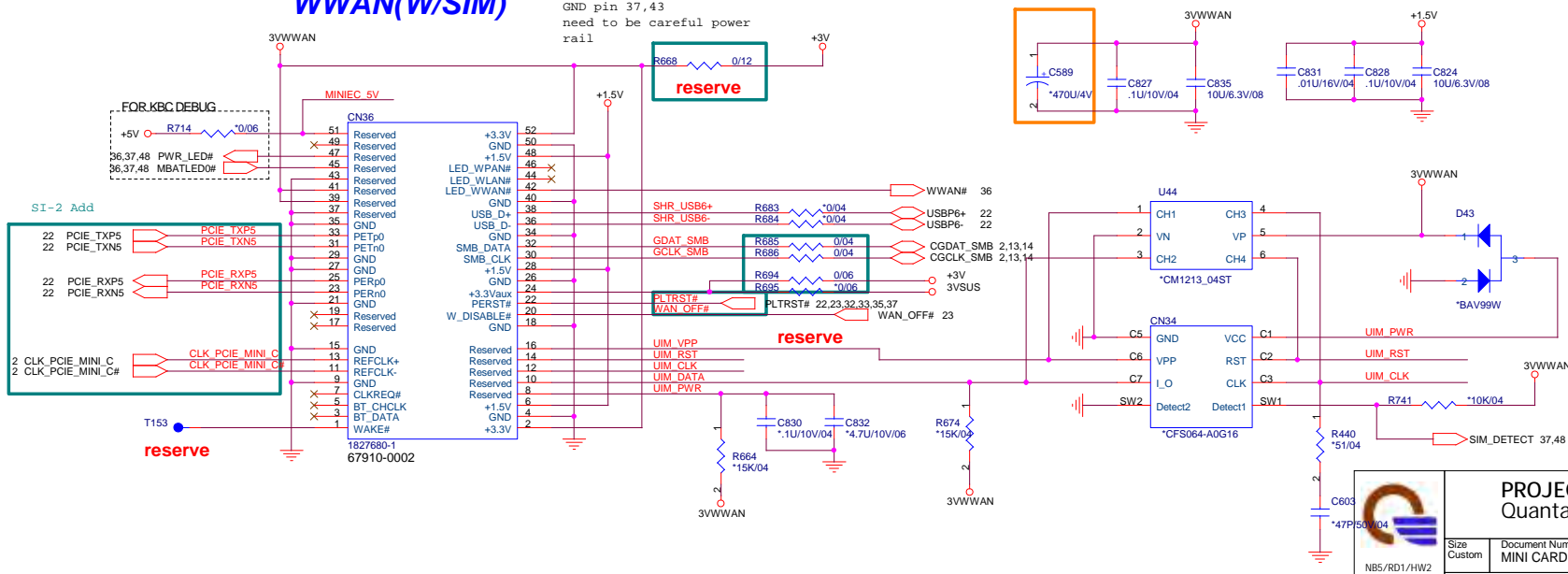
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Size Custom	Document Number KB3920/ROM/TP	Rev 1A
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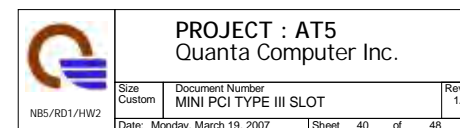




SI-2 modified
(BOM remove C589
)

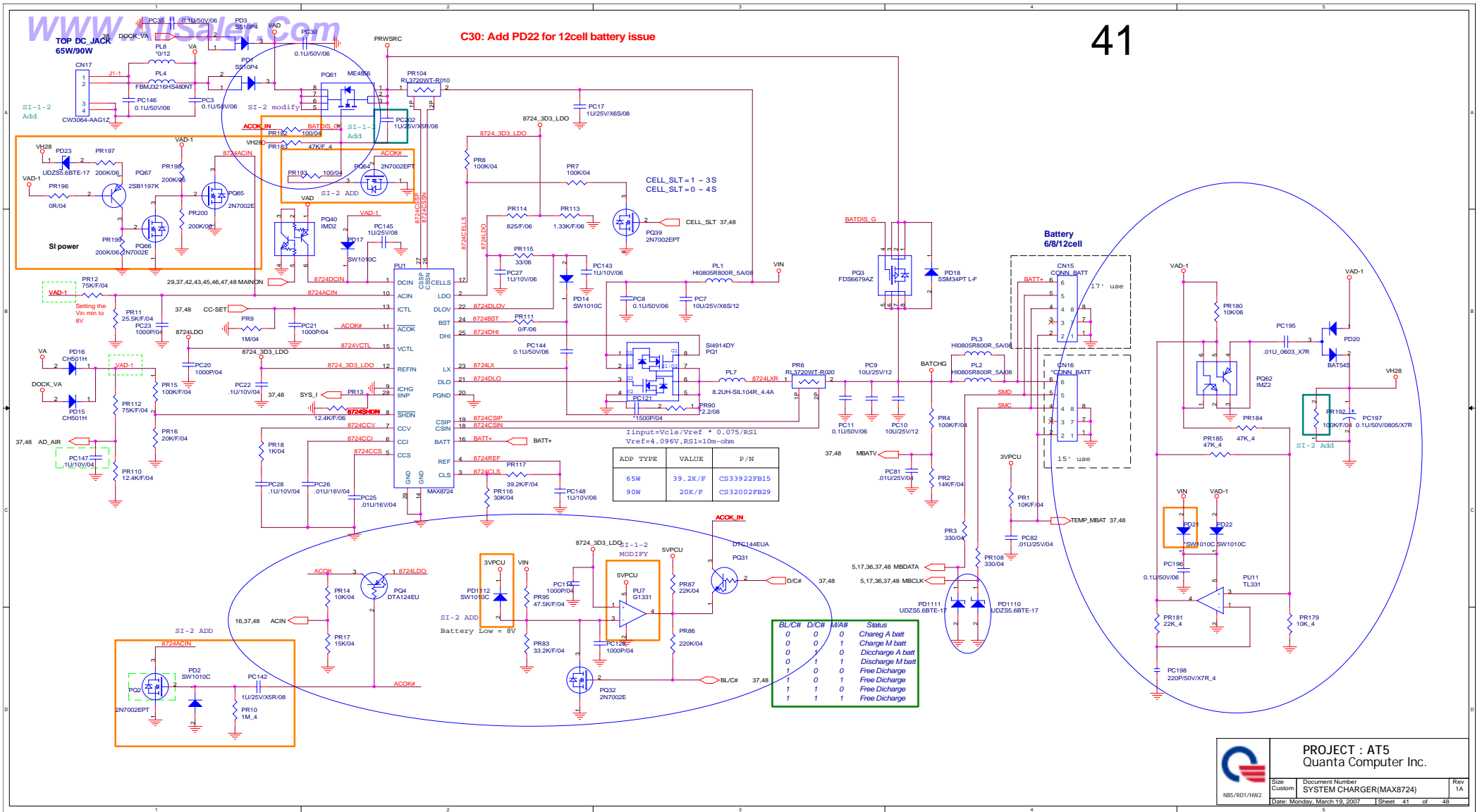


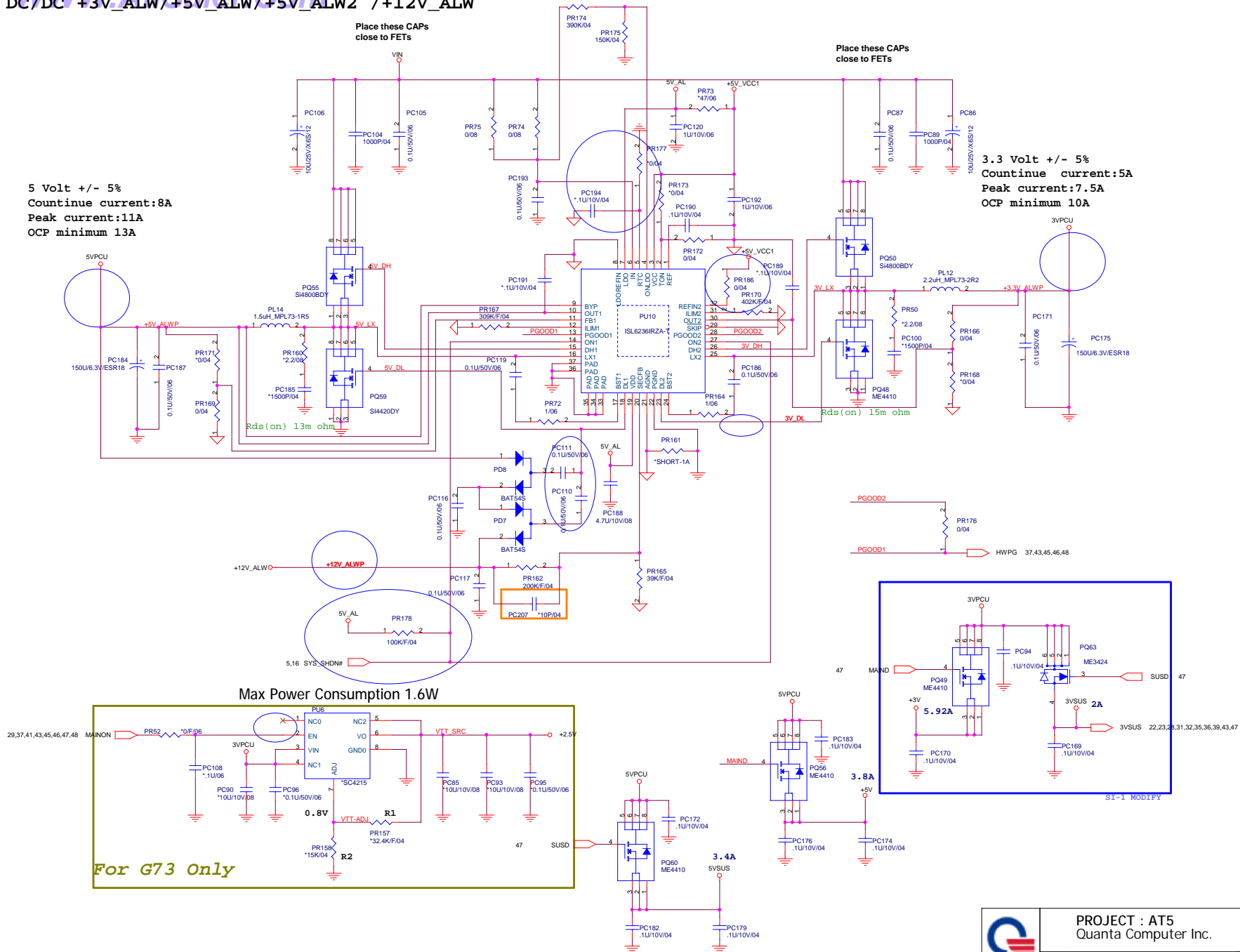
Size Custom	Document Number MINI CARD X2	Re
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C30: Add PD22 for 12cell battery issue

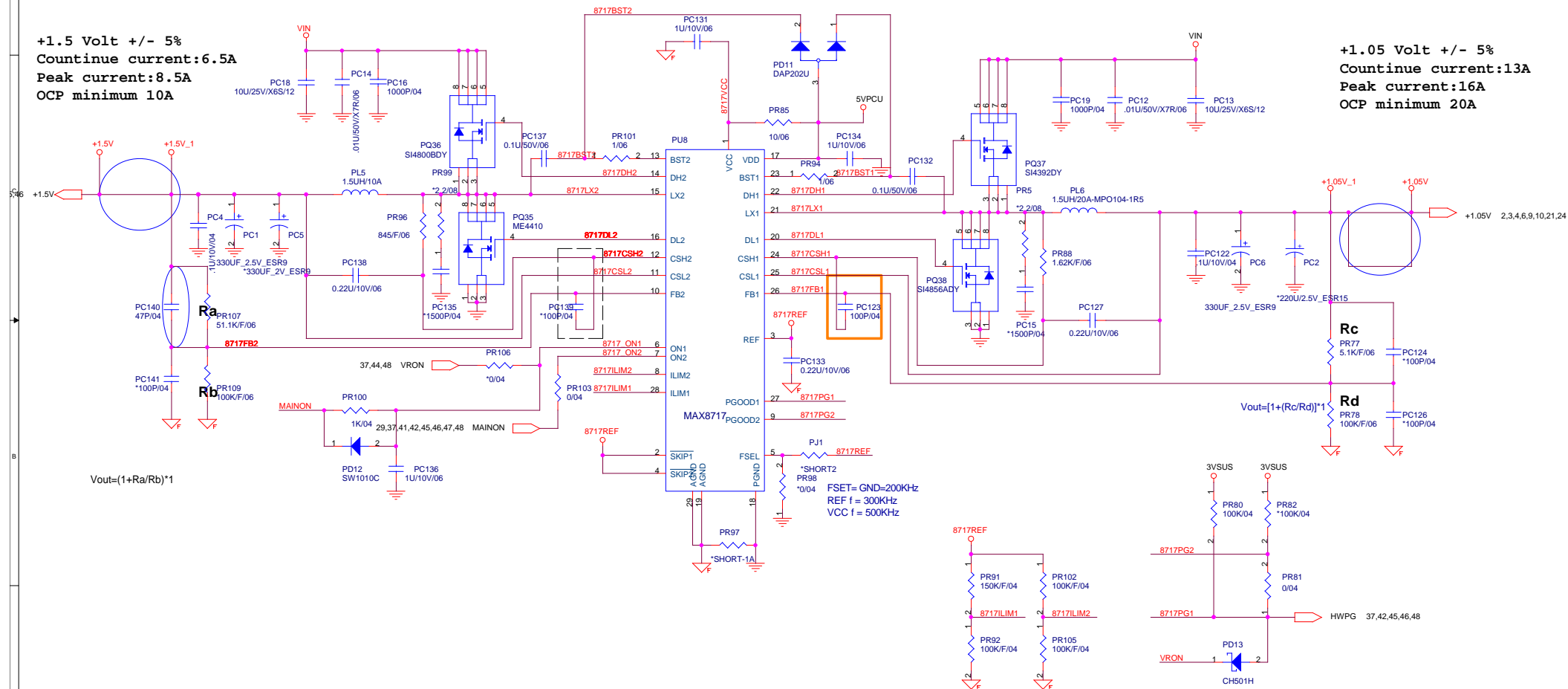
41





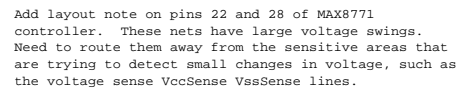
+1.5 Volt +/- 5%
Countinue current:6.5A
Peak current:8.5A
OCP minimum 10A

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



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Quanta Computer Inc.

Size	Document Number	Rev
Custom	+1.5V & VCCP+1.05V(MAX8743)	1A
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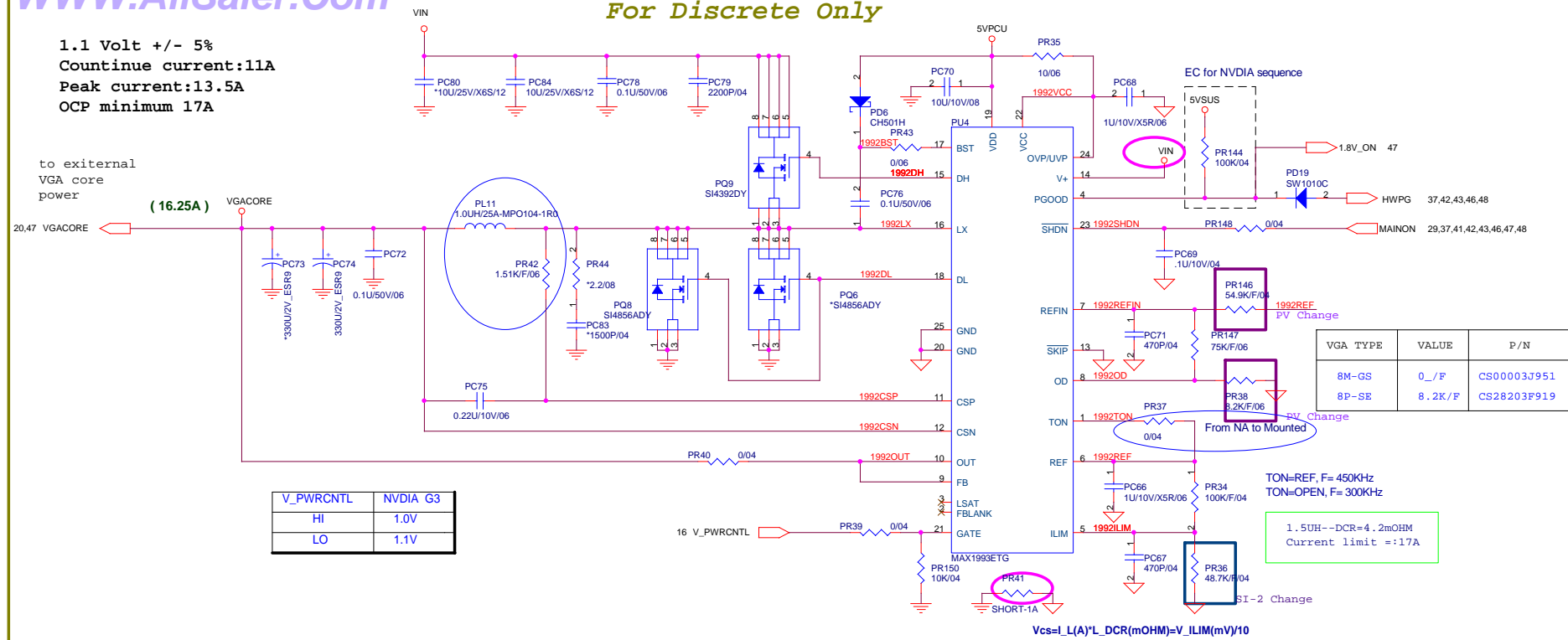
```

/06distribute evenly between N side and S
side, preferably on secondary side.
Use differential routing away from switch nodes
8771LX1 and 8771LX2

```


1.1 Volt +/- 5%
Continue current:11A
Peak current:13.5A
OCP minimum 17A

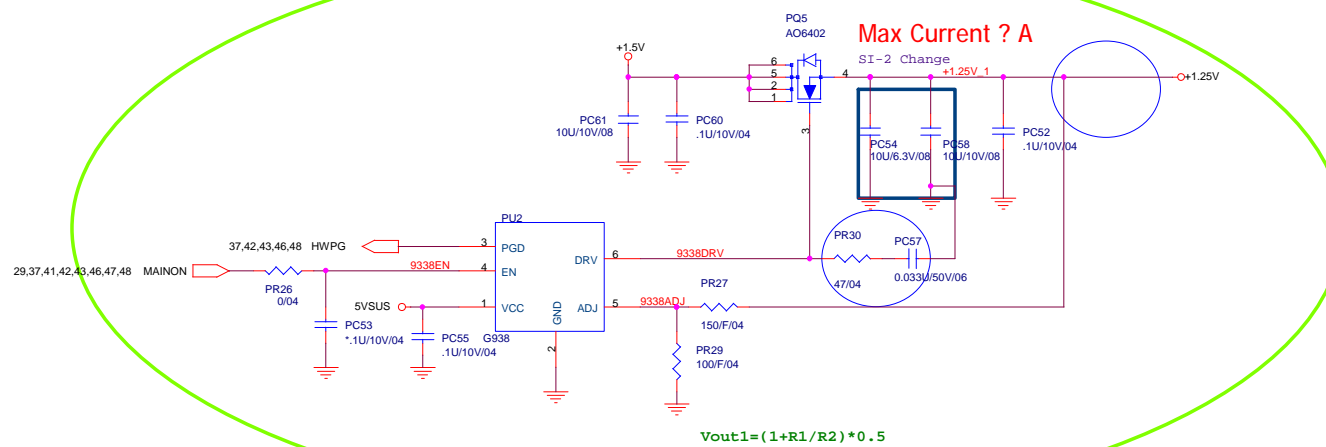
```
to external
VGA core
power
```



VGA TYPE	VALUE	P/N
8M-GS	0_/F	CS00003J951
8P-SE	8.2K/F	CS28203F919

TON=REF, F= 450KHz
TON=OPEN, F= 300KHz

1.5UH--DCR=4.2mOHM
Current limit =:17A

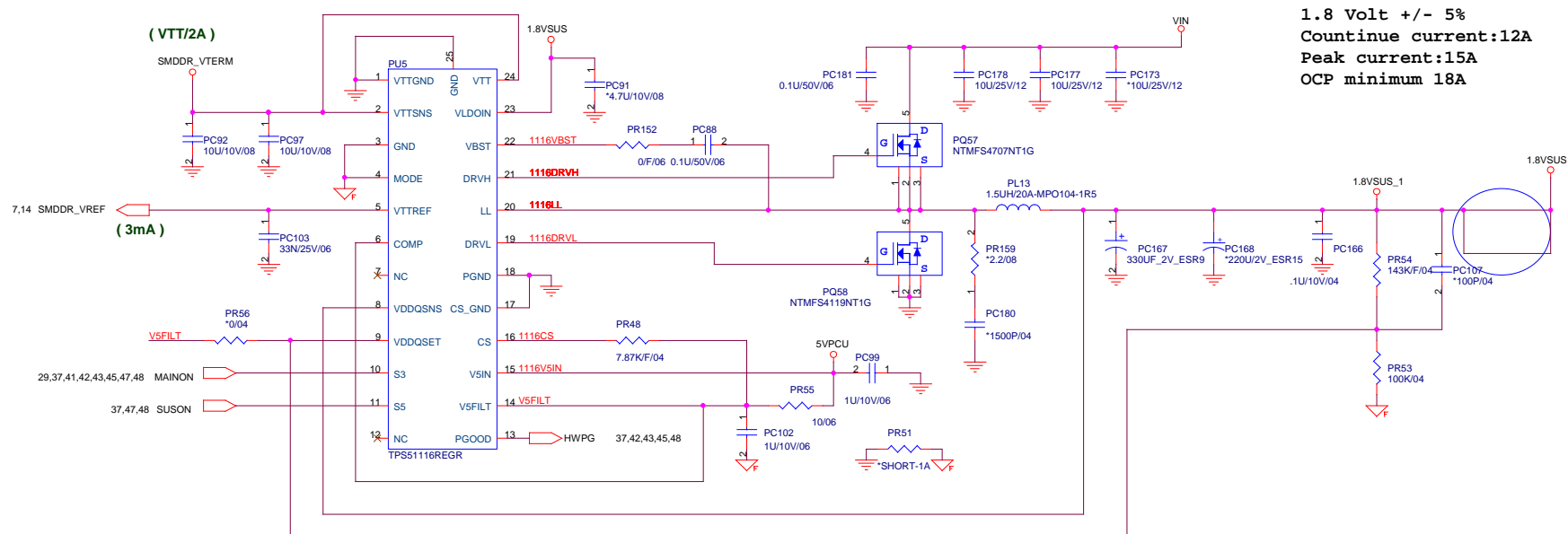
$$V_{cs}=I_L(A)*L_{DCR}(m\Omega)=V_{ILIM}(mV)/10$$


$$V_{out1} = (1 + R1/R2) * 0.5$$

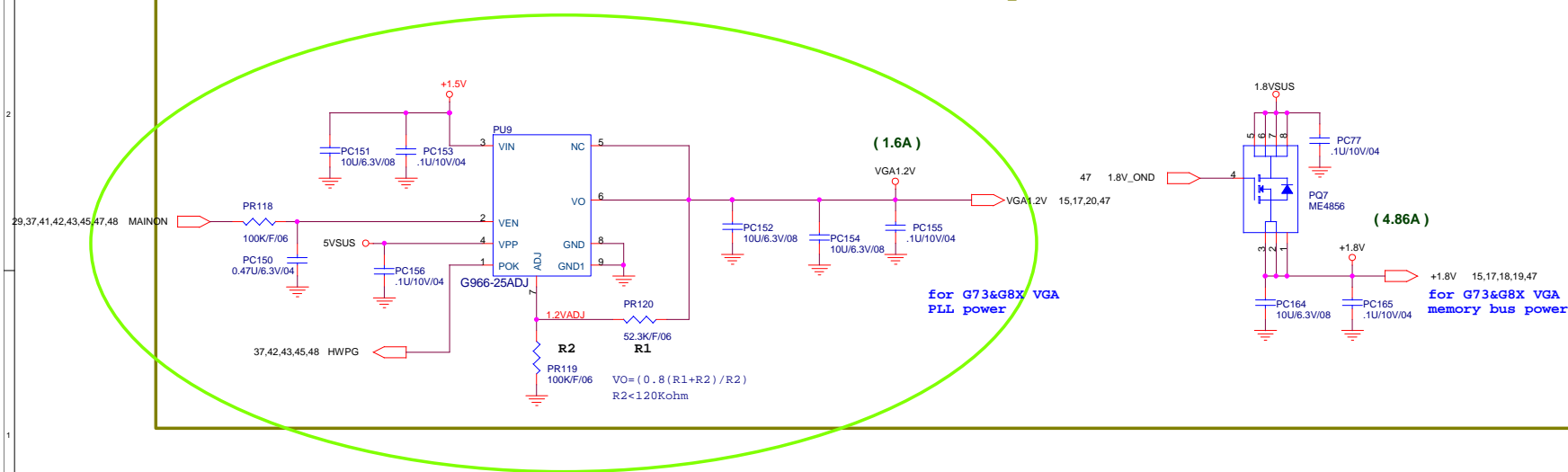



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Quanta Computer Inc.

Size Custom	Document Number VGACORE (MAX1993)	Rev 1A
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For Discrete Only



			PROJECT : AT5	
			Quanta Computer Inc.	
Size	Document Number	Rev		
Custom	DDR11 1.8VSUS/SMDDR_VTERM	1A		
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