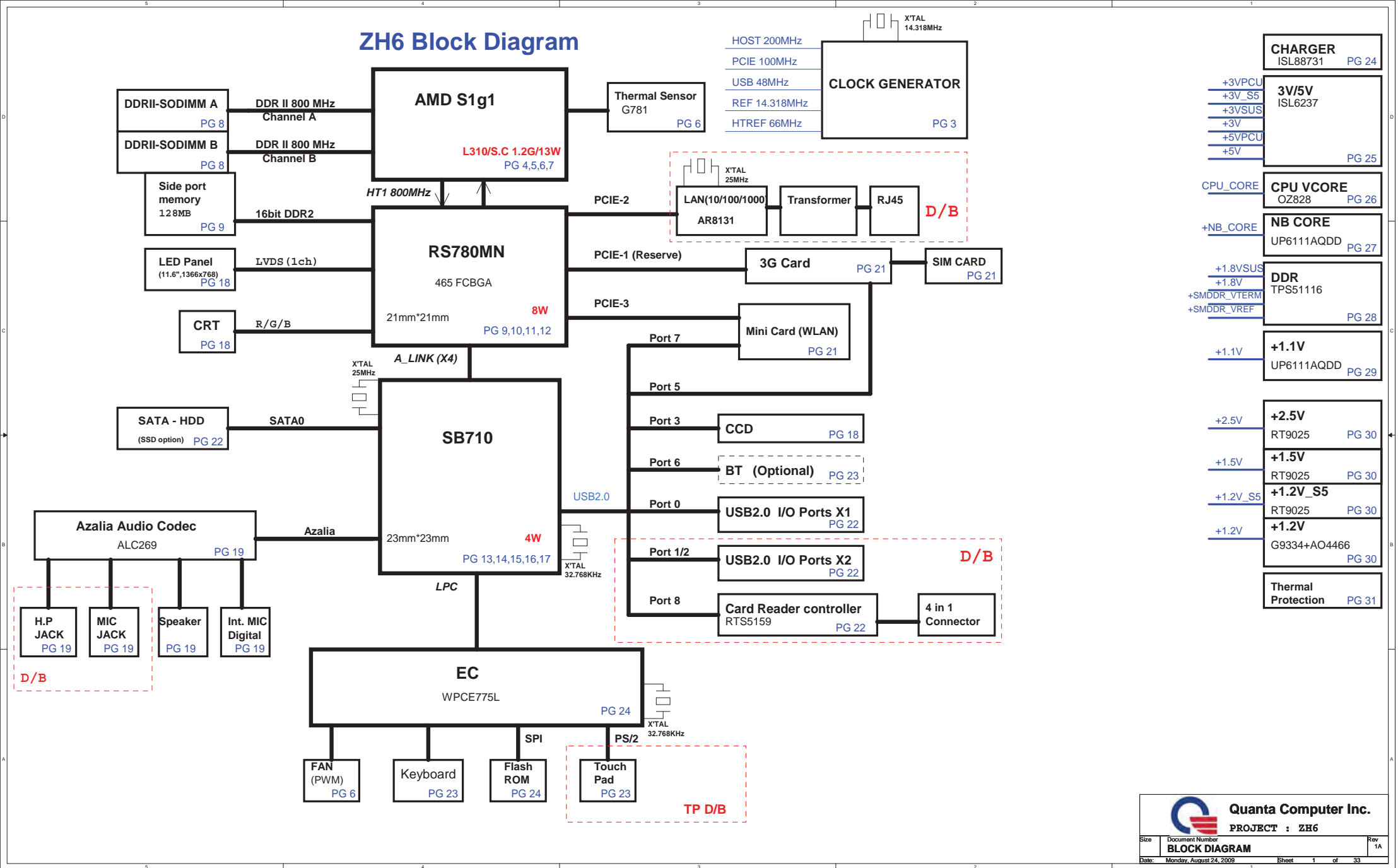
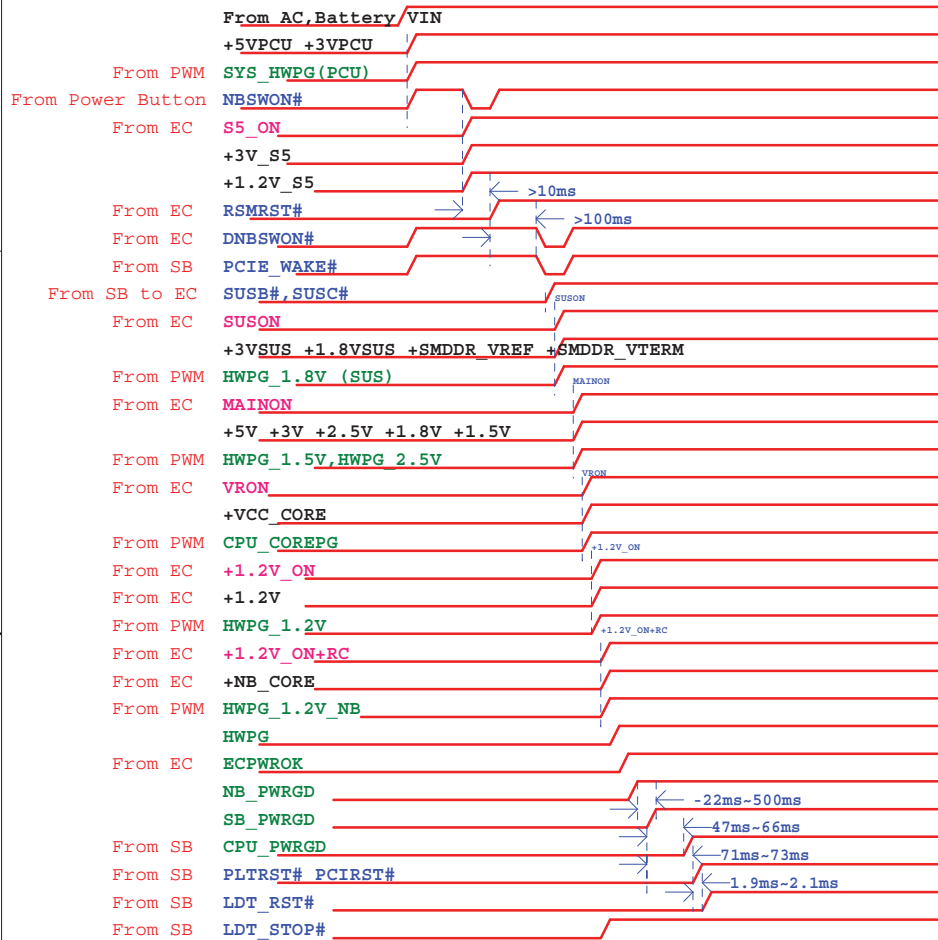


ZH6 Block Diagram



ZH6 Power On Sequence



*Note: EC will sampling SUSB# & SUSC# every 5ms.

AMD SB710 SMBUS Table

	CLK GEN	RAM	Mini Card (WLAN)
SB710 SDATA0/SCLK0(+3V)	V	V	V
SB710 SDATA1/SCLK1(+3V_S5)			
Power Plane	+3V	+3V	+3V
MOS CKT	Reserve	Reserve	Reserve

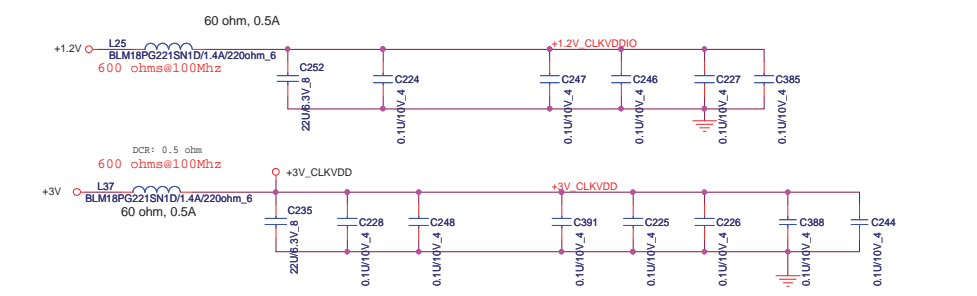
BOM naming rule

Items	Function	Name	Description
1	3G Module	3G@	
2	HDT debug function	HDT@	
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

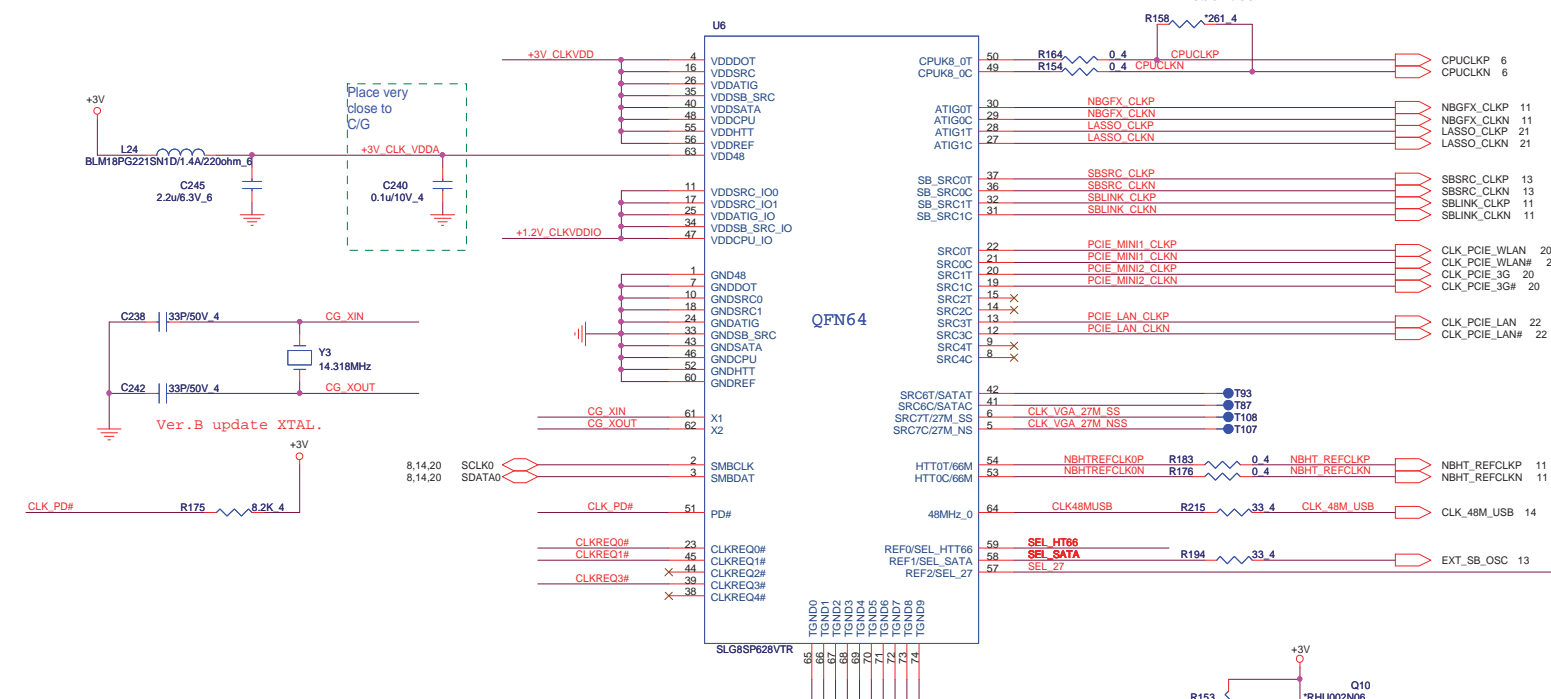
EC SMBUS Table

	Battery	CPU thermal Sensor	EC EEPROM
EC775 SDATA1/SCLK1(+3VPCU)	V		
EC775 SDATA2/SCLK2(+3VPCU)		V	
EC775 SDATA3/SCLK3(+3VPCU)			V
EC775 SDATA4/SCLK4(+3VPCU)			
Power Plane	+3VPCU	+3V	+3VPCU
MOS CKT	X	X	X

Clock Generator(CLK)

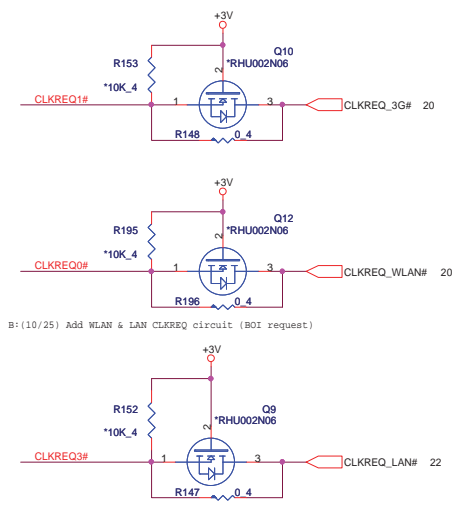
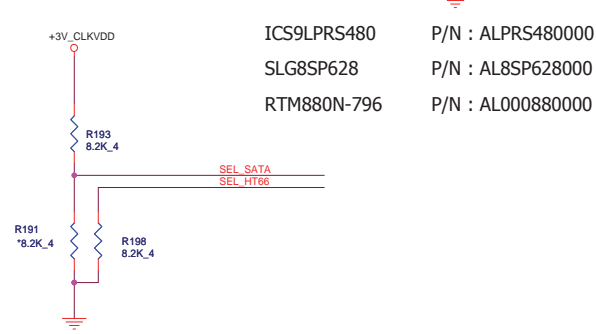


CLOCKS name	UMA	DISCRETE	Clock pin function
NBGF_X_CLKP NBGF_X_CLKN	RP49 STUFF	RP49 STUFF	to NB for VGA reference clock
EXT GFX_CLKP EXT GFX_CLKN	RP48 NC	RP48 STUFF	to M86-M external reference clock
NBGP_X_CLKP NBGP_X_CLKN	RP43 NC	RP43 NC	to NB for RX780 for PCIe2 interface reference clock only RS780 is internal share with AC-LINK clock, RS780 not need
SBLINK_CLKP SBLINK_CLKN	RP51 STUFF	RP51 STUFF	to NB for AC-LINK reference clock



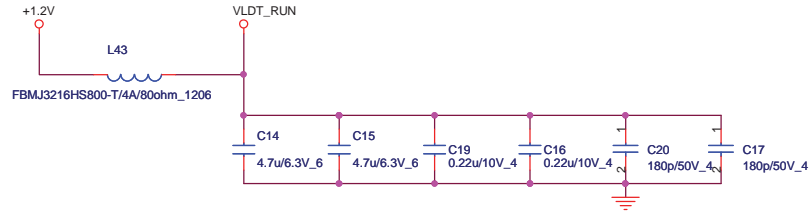
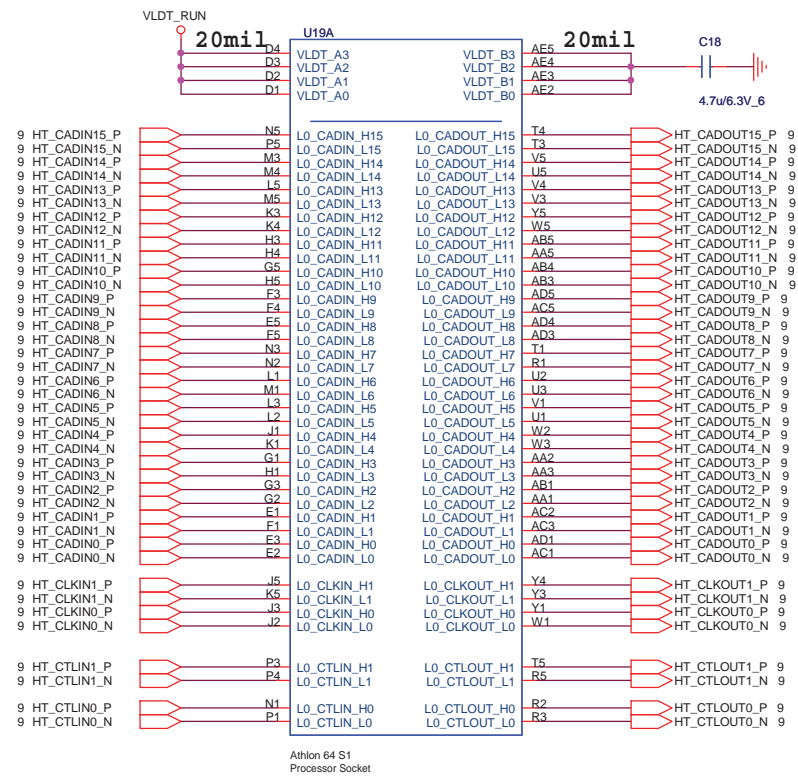
Clock chip has internal serial terminations for differential pairs, external resistors are reserved for debug purpose.

SEL_HTT66	1	66 MHz 3.3V single ended HTT clock
	0*	100 MHz differential HTT clock
SEL_SATA	1*	100 MHz non-spreading differential SRC clock
	0	100 MHz spreading differential SRC clock



RES CHIP 130 1/16W +1%(0402)L-F -->CS11302FB15
RES CHIP 158 1/16W +1%(0402) -->CS11582FB00
RES CHIP 90.9 1/16W +1%(0402) -->CS09092FB15
RES CHIP 82.5 1/16W +1%(0402) -->CS08252FB11

	RX780	RS780
	1.8V	1.1V
Ra	82.5R	158R
Rb	130R	90.9R

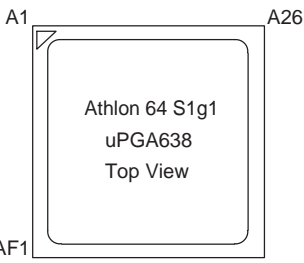
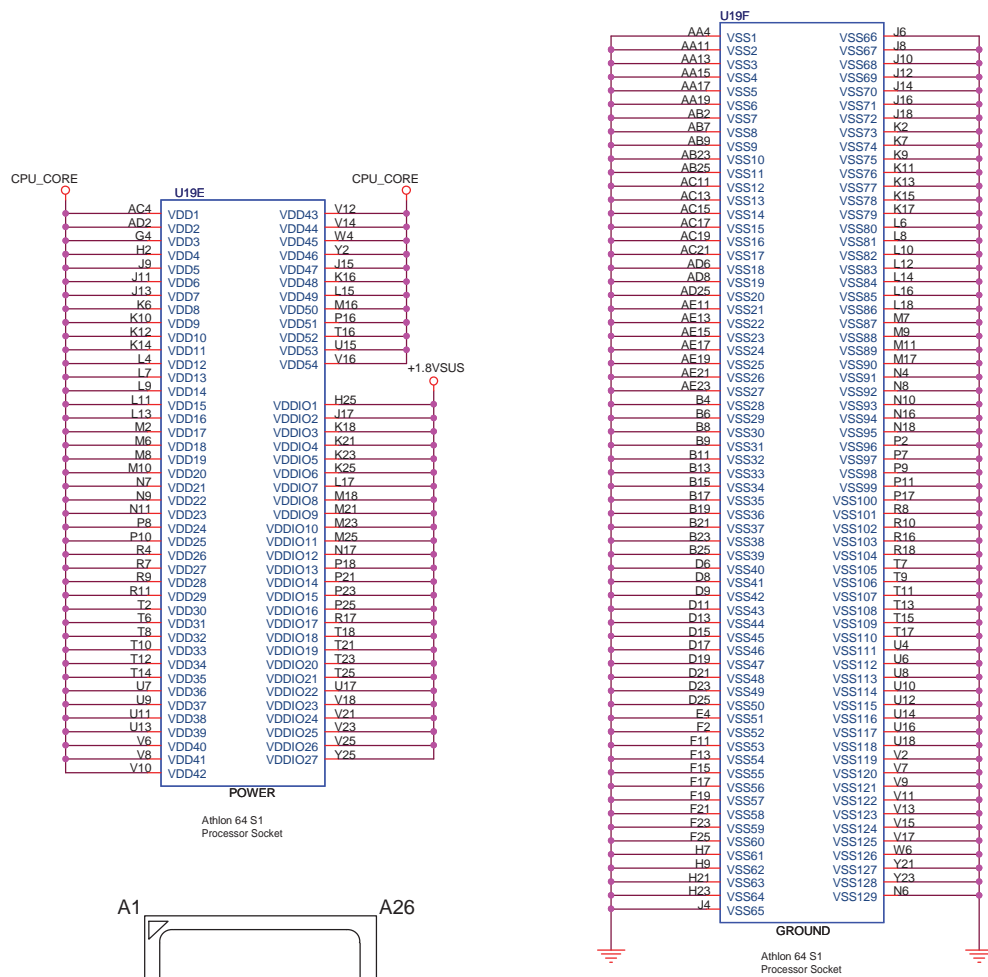


Processor DDR2 Memory Interface

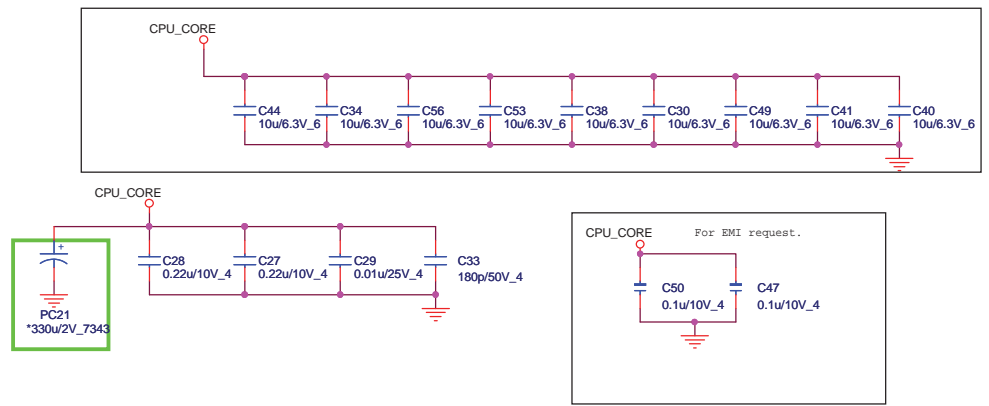


Power name	Description	Voltage
VTT	VTT Power	0.9V

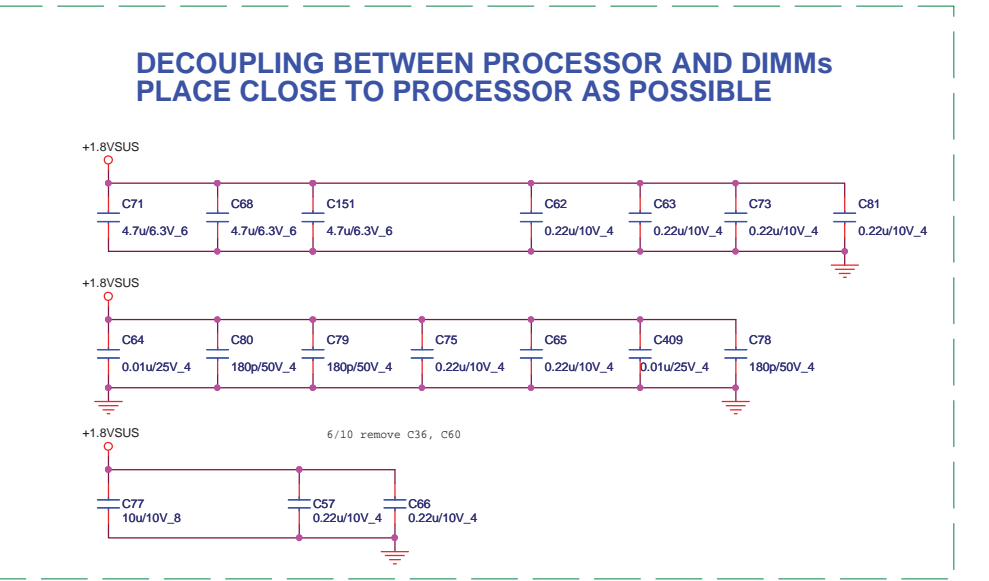
PROCESSOR POWER AND GROUND(CPU)




BOTTOMSIDE DECOUPLING



DECOUPLING BETWEEN PROCESSOR AND DIMMs
PLACE CLOSE TO PROCESSOR AS POSSIBLE



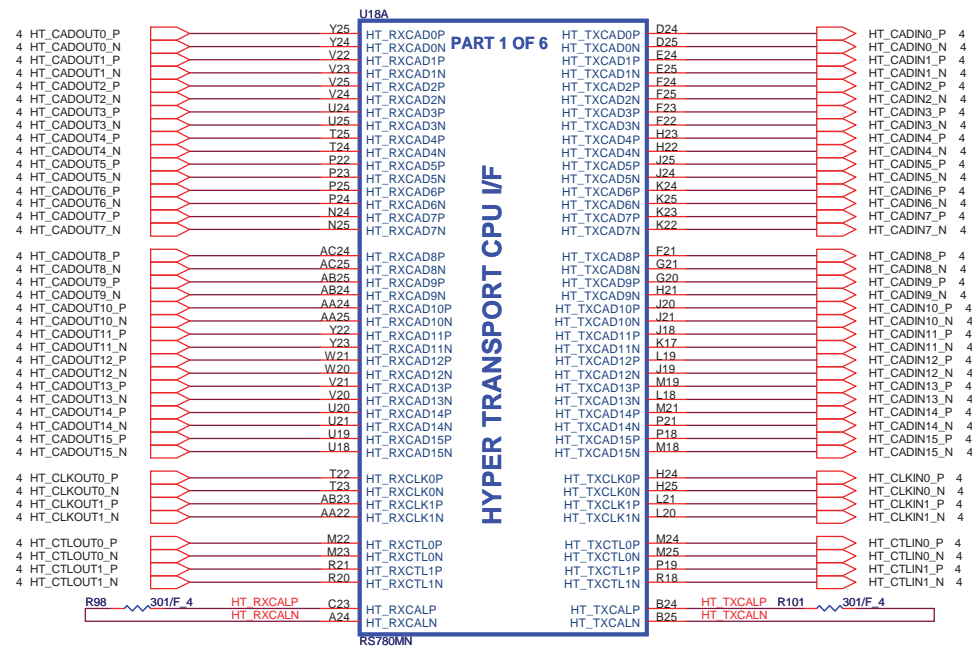
Power name	Description	Voltage
VDD	Core power supply	1.05V
VDDIO	DDR SDRAM I/O ring power supply	1.8V



Quanta Computer Inc.
PROJECT : ZH6
TURION 64 PWR & GND

Size	Document Number	Rev
Date: Monday, August 24, 2009	Sheet 7 of 33	1A

RS780(CLG)



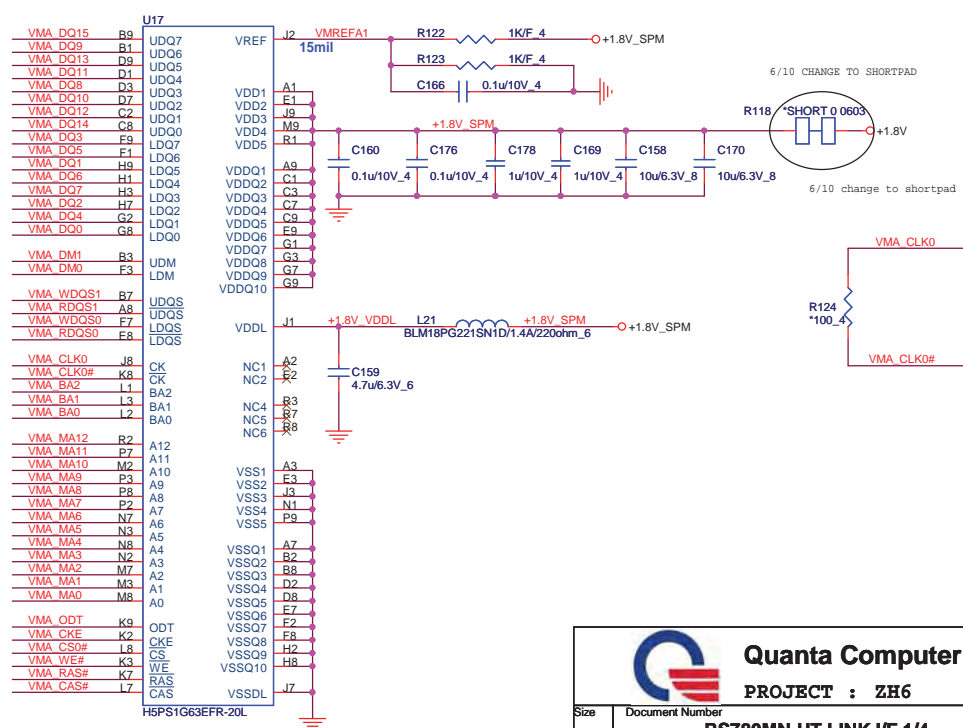
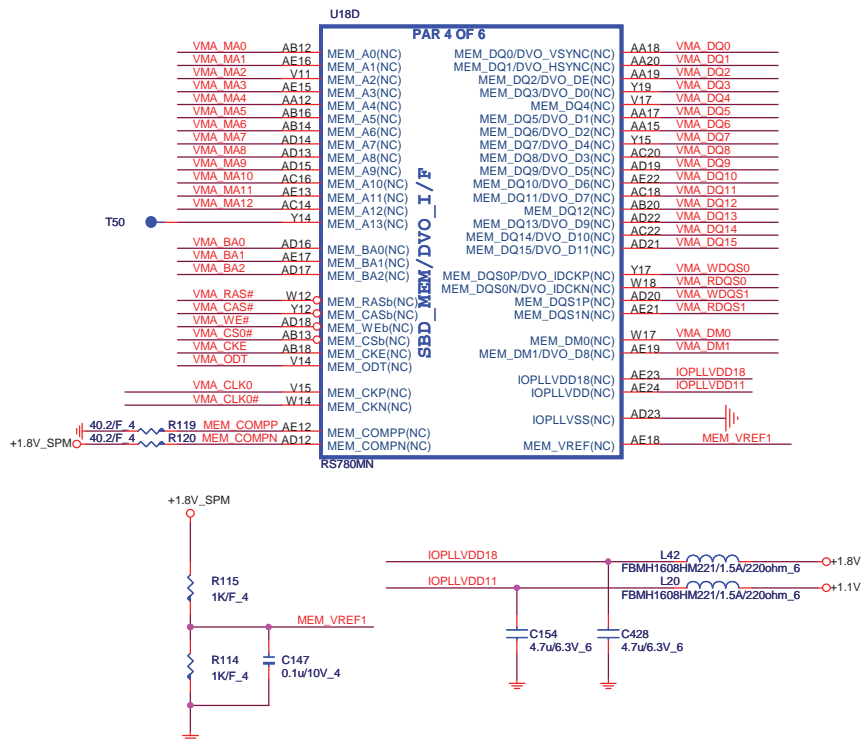
signals	RS780	RX780
HT_TXCALP	R2364 301 ohm 1%	R2364 1.21k ohm 1%
HT_TXCALN		
HT_RXCALP	R2365 301 ohm 1%	R2365 1.21k ohm 1%
HT_RXCALN		

RS780(CLG)

SIDE-PORT Reserved

This block is for UMA RS780 only , RX780 NC

SPM(CLG)



Quanta Computer Inc.

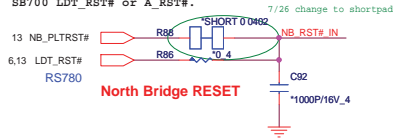
PROJECT : ZH6

Size	Document Number	Rev
	RS780MN-HT LINK I/F 1/4	1A
Date:	Monday, August 24, 2009	Sheet 9 of 33

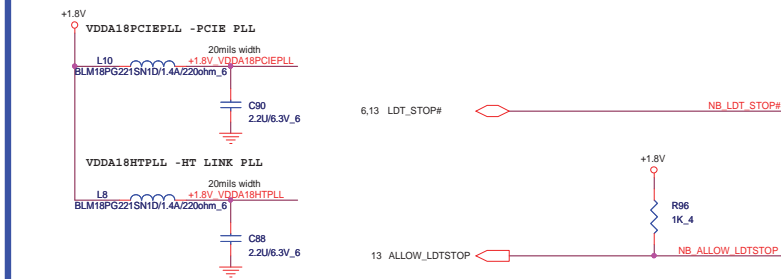
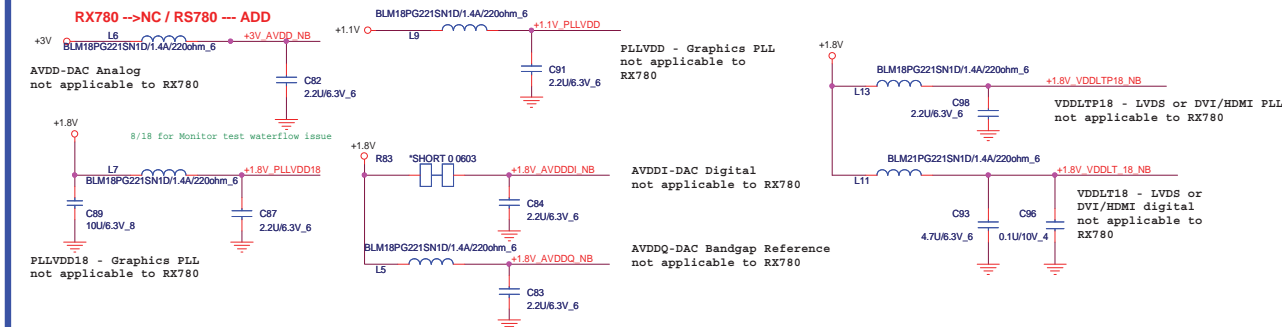
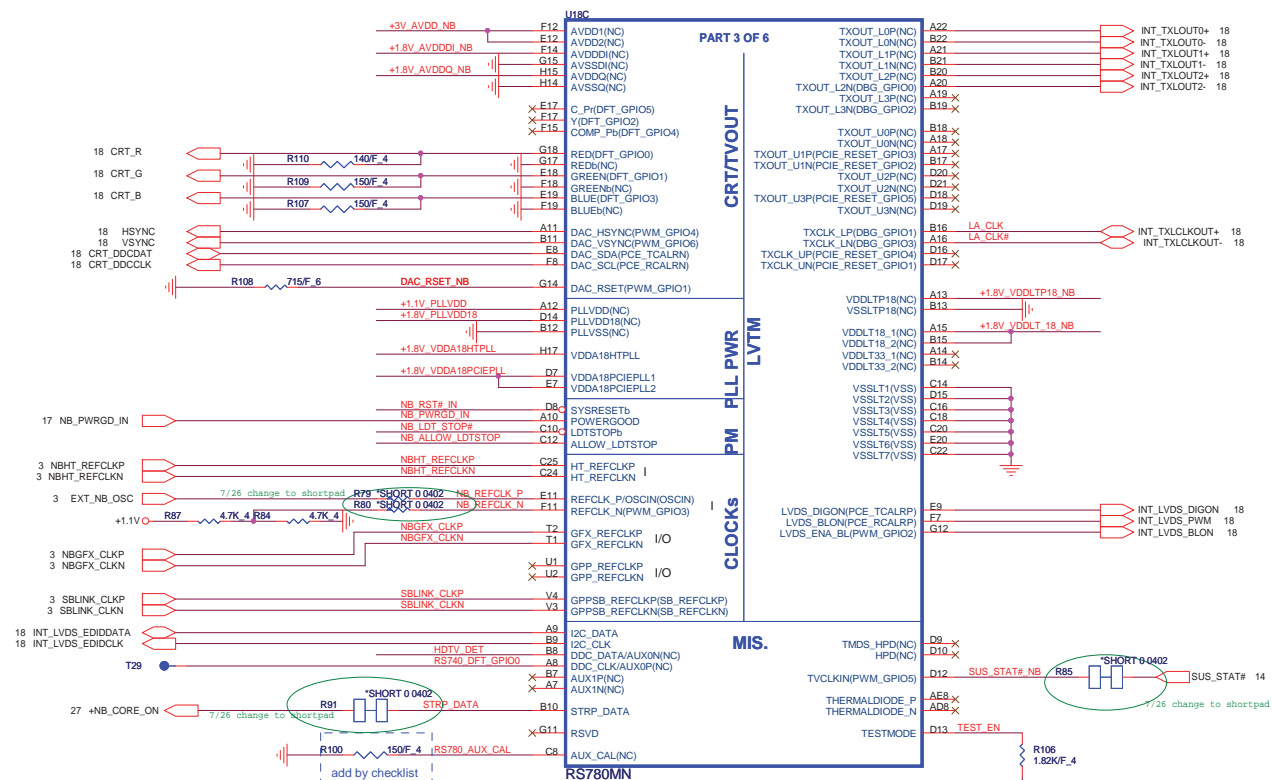
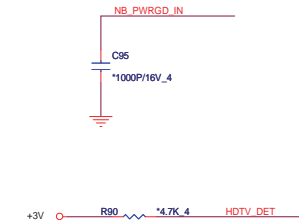
RS780(CLG)

RX780: Powered from the 1.8-V rail and driven by SB600 LDT_RST#, or SB700 LDT_RST# or A_RST#.

RS780: Powered from the 3.3-V rail and driven by SB600 LDT_RST#, or SB700 LDT_RST# or A_RST#.



ESD Reserved



```
| Enables Debug Bus access
| through memory T/O pads and GPIO.
| 0 : Enable RS780 , Default
| 1 : Disable RS780
| (RS780 use VSYNC#)
```

```
| Indicates if memory Side port  
| is available or not  
0: available RS780 , Default  
1: Not available RS780  
| ( RS780 use HSYNC#)
```

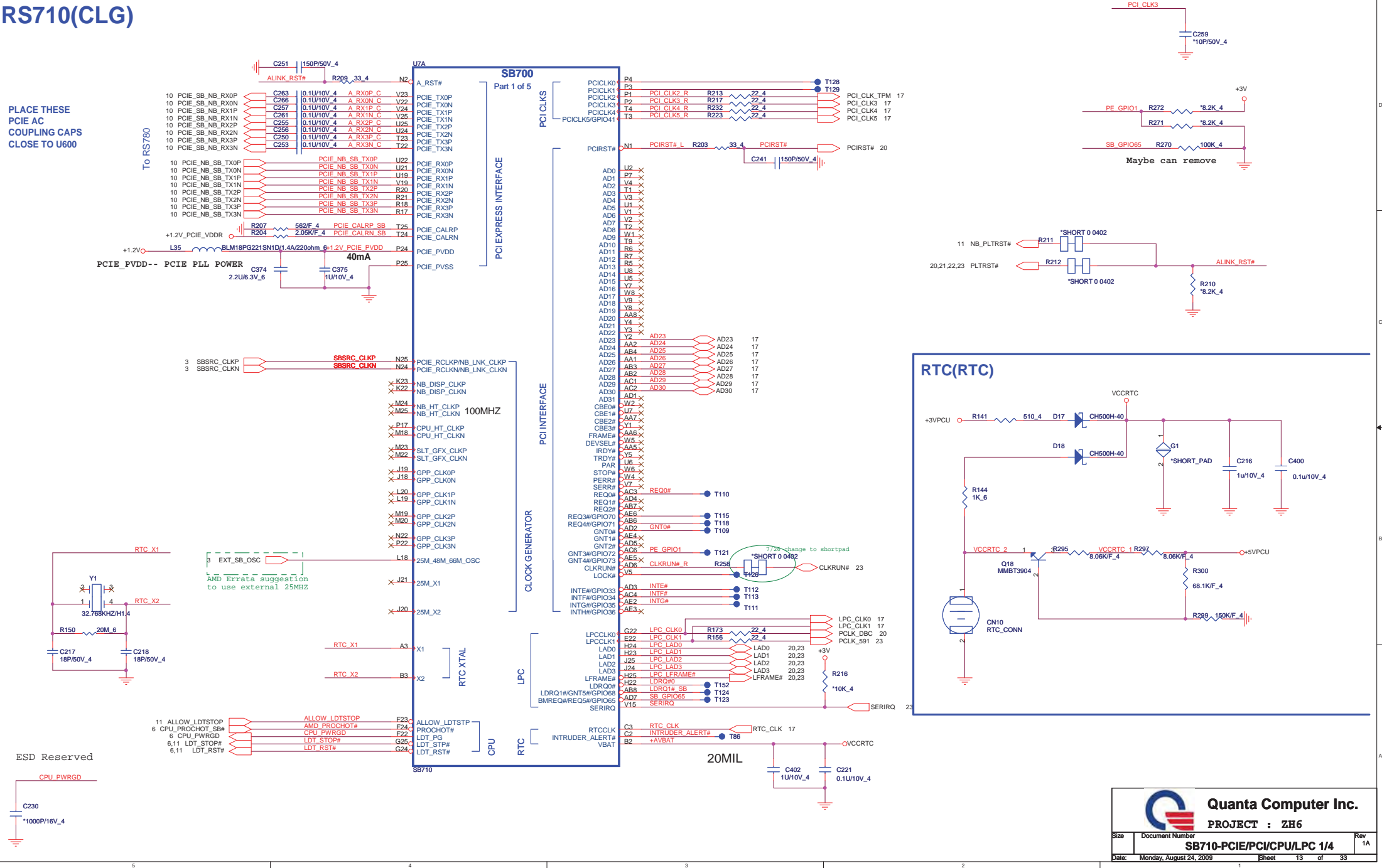
For external EEPROM Debug only

RS780/RX780

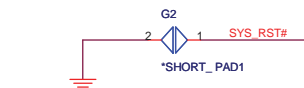
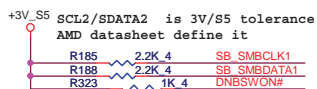
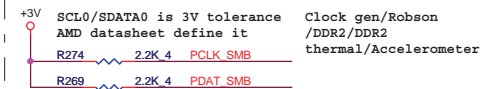
The diagram shows a circuit for the RS780/RX780. A signal line labeled **STRP_DATA** in red is connected to a junction point. From this junction, one path goes through resistor **R95** to a terminal labeled **+3V**. The other path goes through resistor **R94** to ground, represented by a battery symbol. Both resistors are labeled ***10K/F 4**.

RS710(CLG)

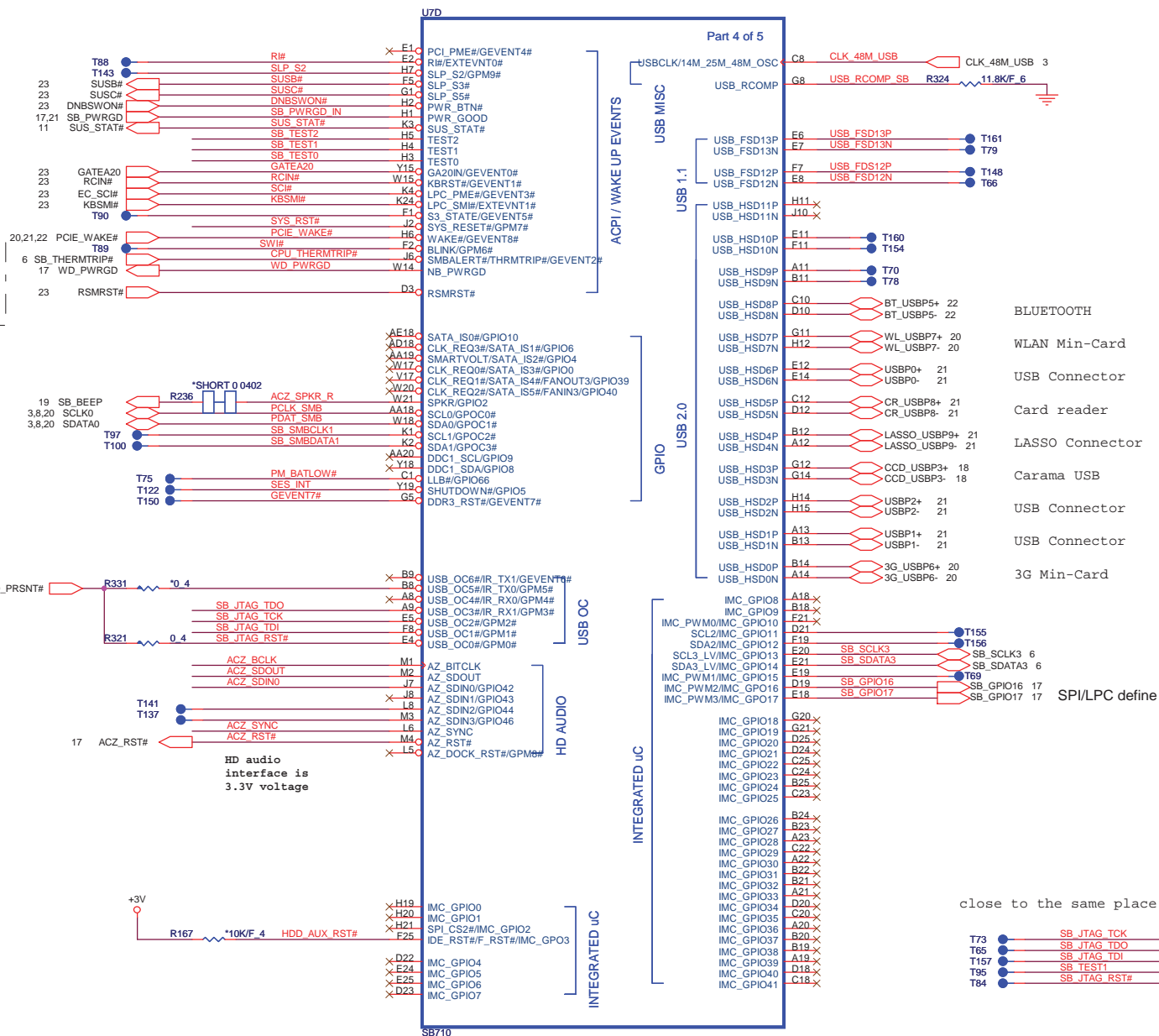
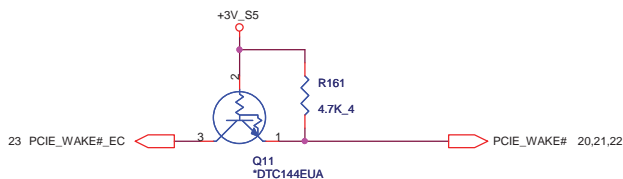
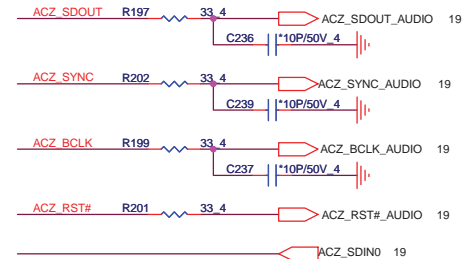
PLACE THESE
PCIE AC
COUPLING CAPS
CLOSE TO U600



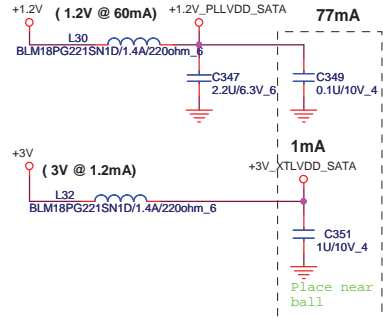
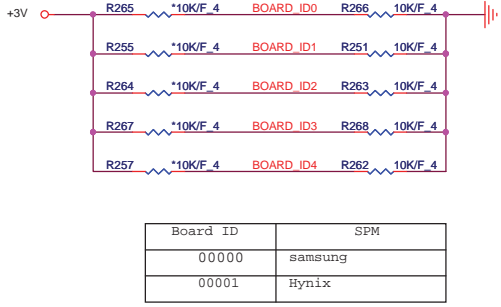
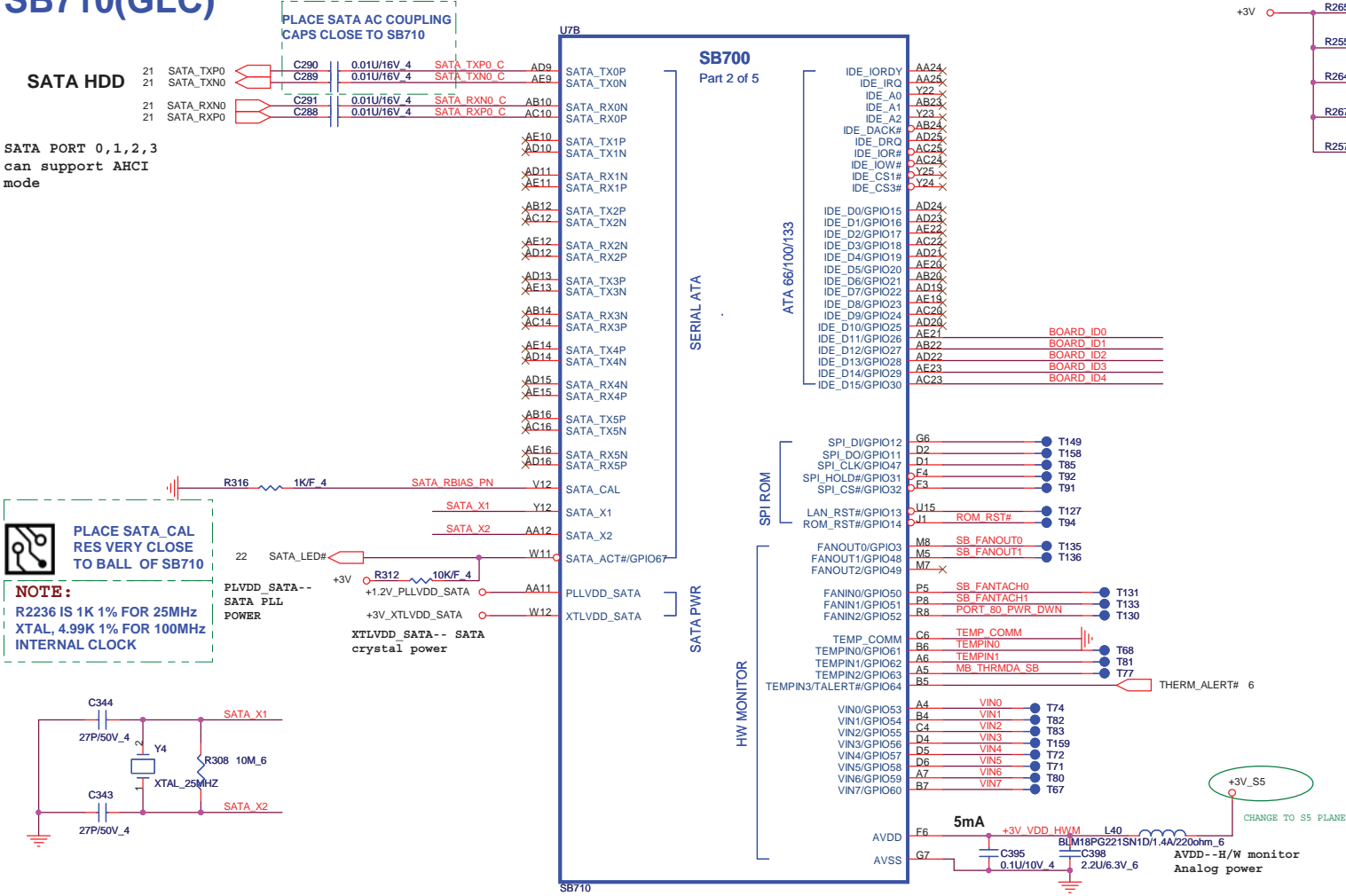
SB710(GLC)

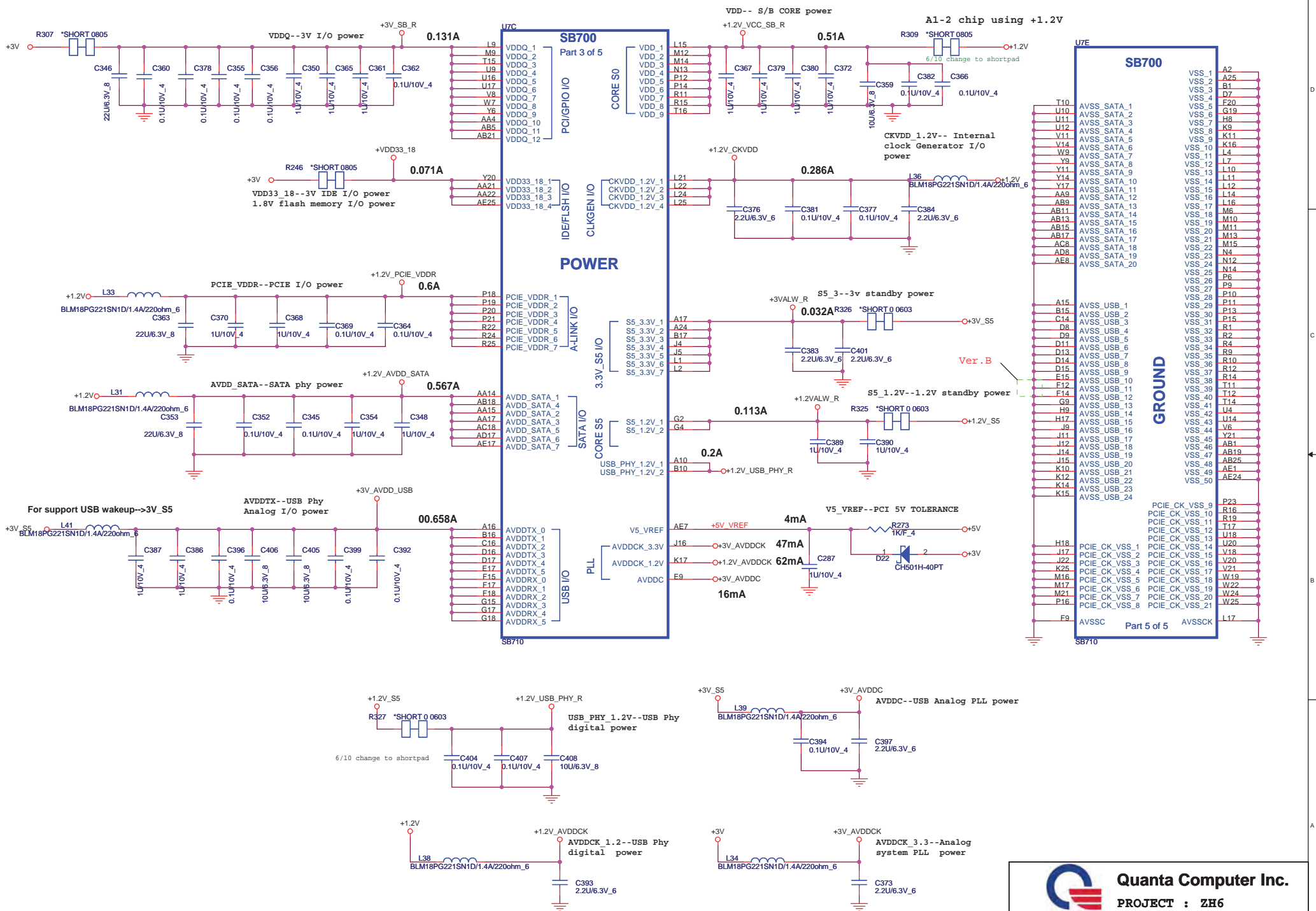


To Azalia



SB710(GLC)

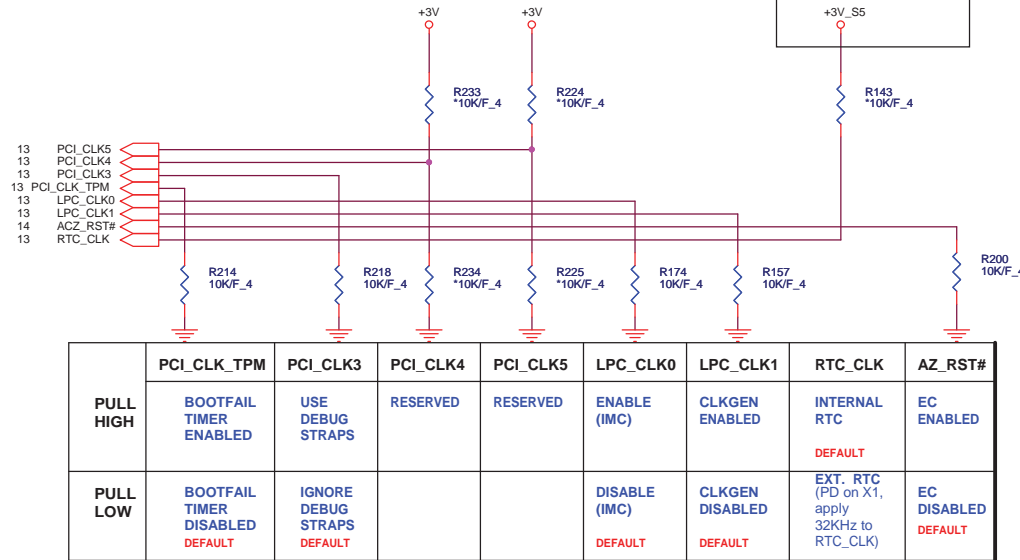




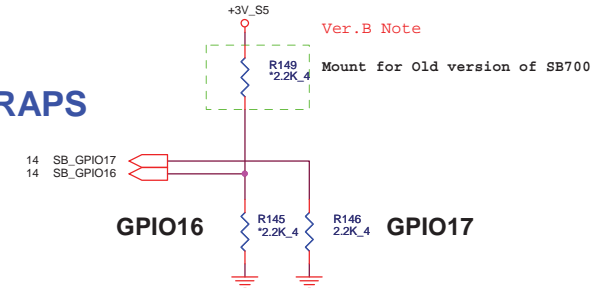


OVERLAP COMMON PADS WHERE
POSSIBLE FOR DUAL-OP RESISTORS.

It must ready
refofe RSMRST#



REQUIRED STRAPS



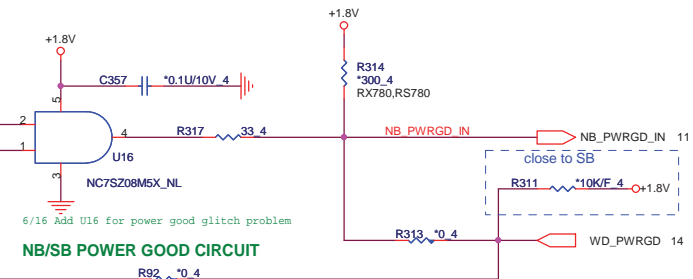
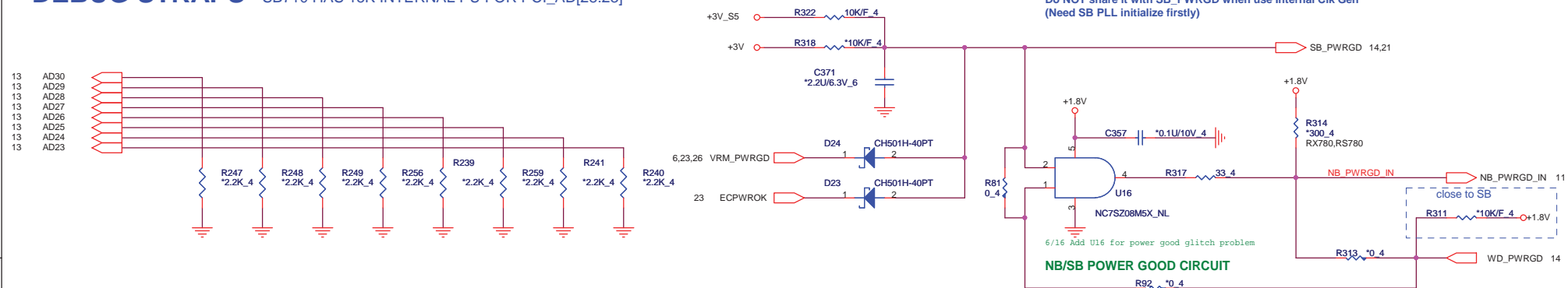
GPIO16 GPIO17

TYPE	GPIO16	GPIO17
FWH	L : 2.2K pull down	L : 2.2K pull down
LPC	NC	L : 2.2K pull down
SPI	L : 2.2K pull down	NC
RSVD	NC	NC

DEBUG STRAPS

SB710 HAS 15K INTERNAL PU FOR PCI_AD[28:23]

NB_PWRGD_IN:
RS780/RX780 = 1.8V; RS740 = 3.3V
Do NOT share it with SB_PWRGD when use Internal Clk Gen
(Need SB PLL initialize firstly)



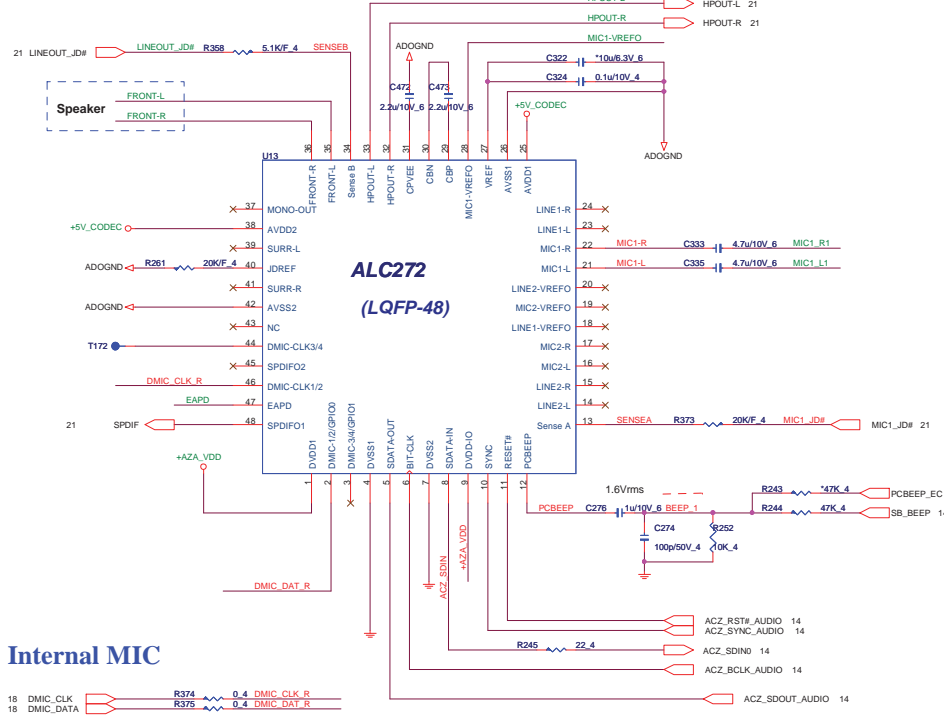
	PCI_AD28	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23	PCI_AD29	PCI_AD30
PULL HIGH	USE LONG RESET DEFAULT	USE PCI PLL DEFAULT	USE ACPI BCLK DEFAULT	USE IDE PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	RESERVED		
PULL LOW	USE SHORT RESET	BYPASS PCI PLL	BYPASS ACPI BCLK	BYPASS IDE PLL	USE EEPROM PCIE STRAPS		RESERVED	RESERVED

AL17SZ17000 IC(5P) NL17SZ17DFT2G(SOT-353) SOT-353
ALUC1G17000 IC OTHER(5P) SN74AUC1G17DBVR(SOT23-5) SOT23-5



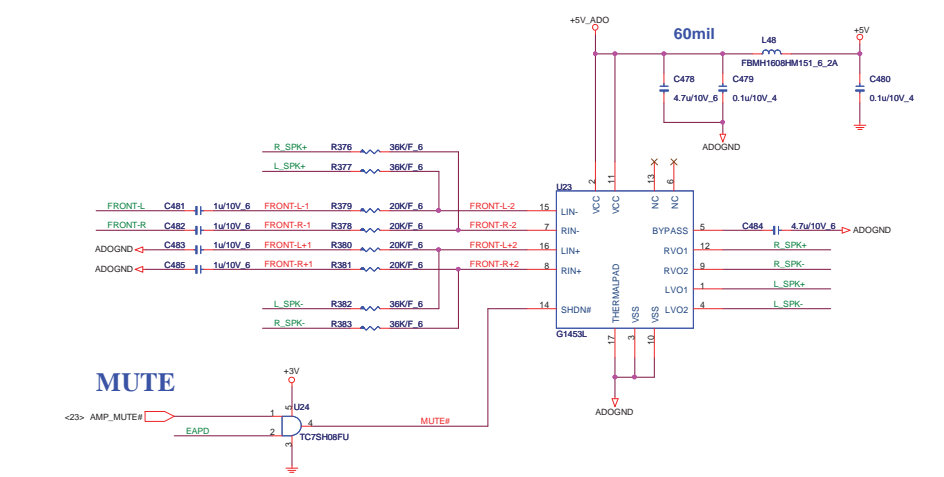
Quanta Computer Inc.
PROJECT : ZH6

CODEC(ADO)

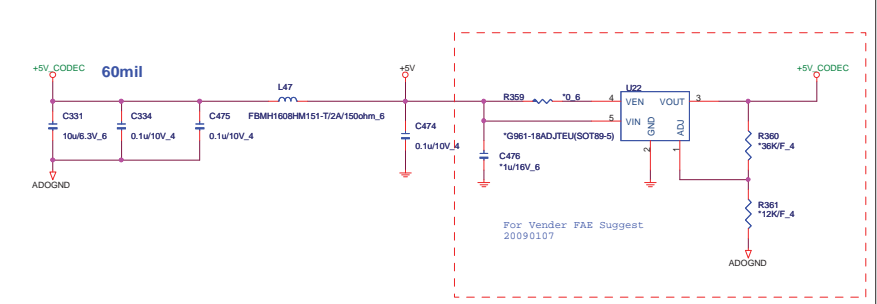


Internal MIC

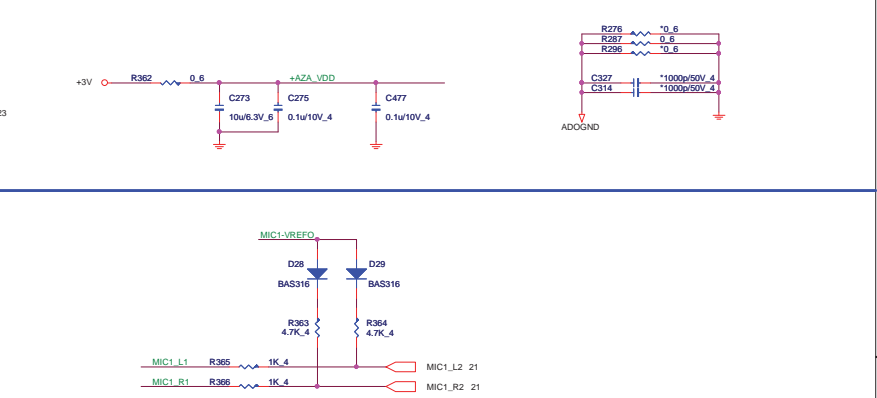
Speaker Amplifier(AMP)



Codec Power(ADO)



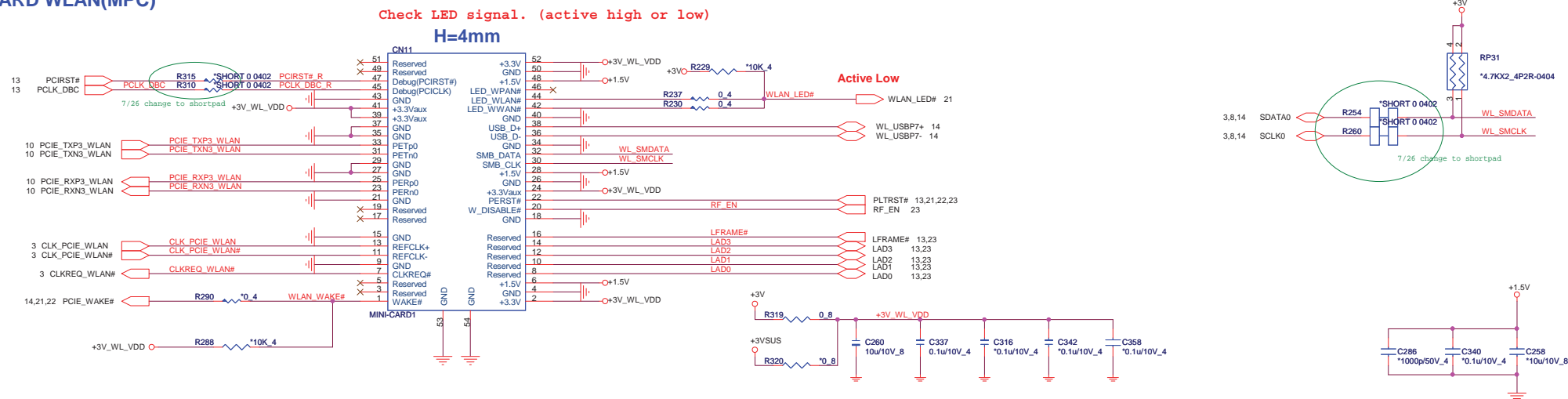
HDA Power(ADO)



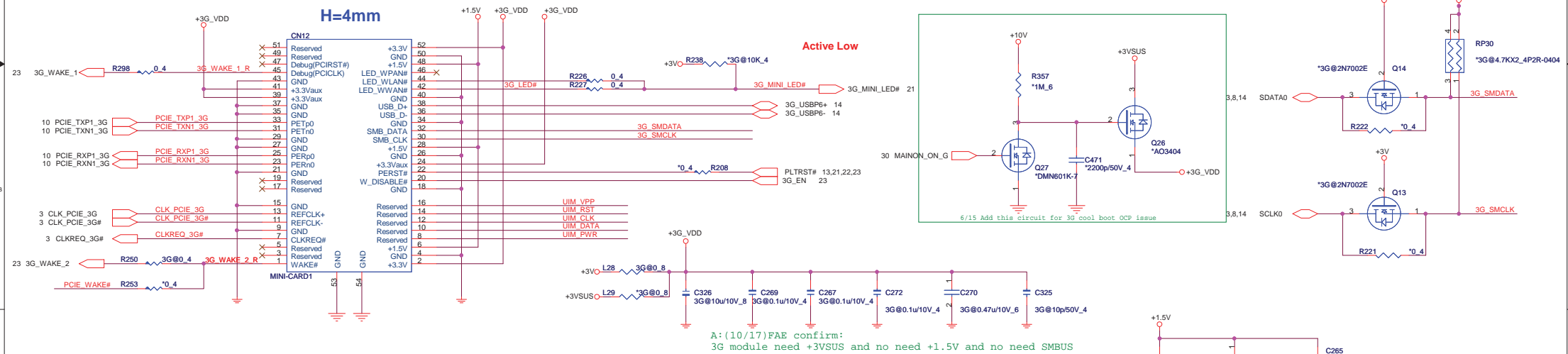
Speaker(AMP)



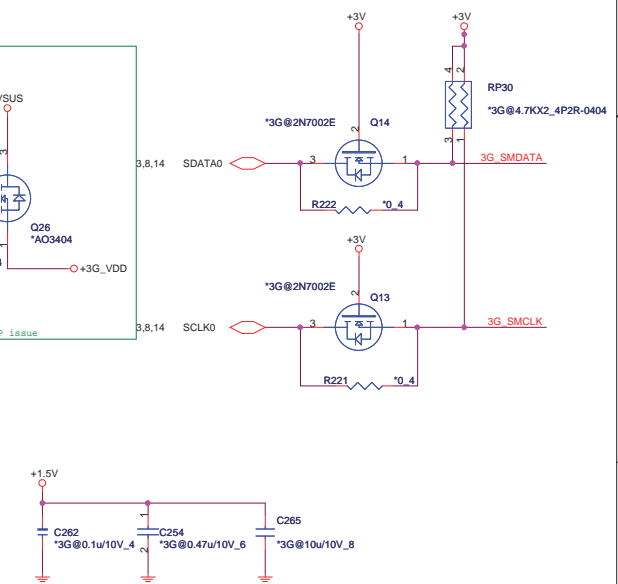
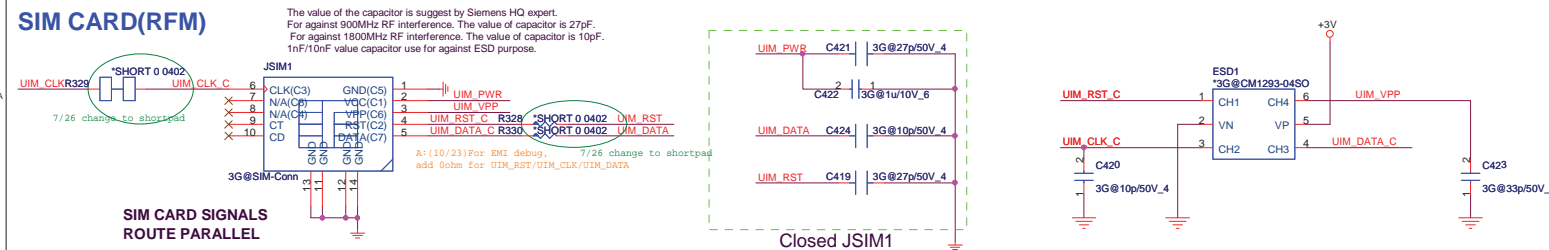
MINI-CARD WLAN(MPC)




MINI-CARD 3G(MNC)



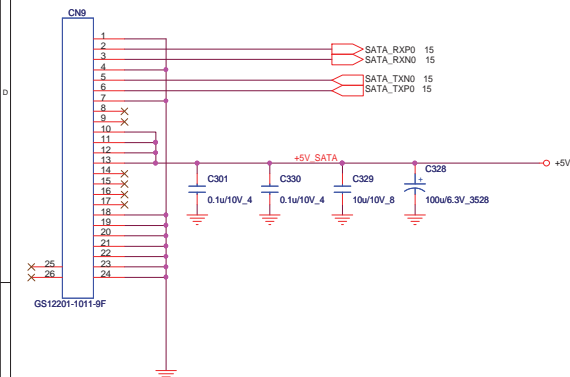
SIM CARD(RFM)



 Quanta Computer Inc. PROJECT : ZH6		
Size	Document Number	Rev
	Mini-Card/WL/3G/SIM	1A
Date:	Monday, August 24, 2009	Sheet 20 of 33

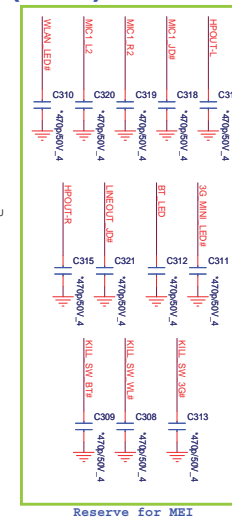
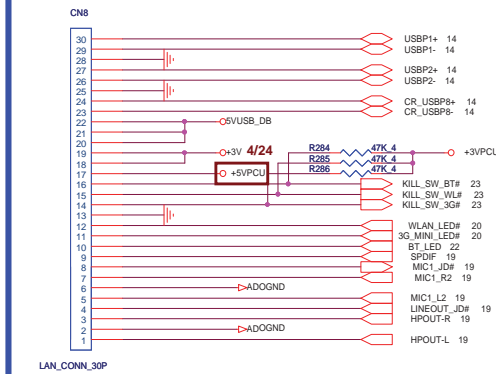
2.5" SATA HDD OR SSD(HDD)

Check SATA HDD in AVL for +3V

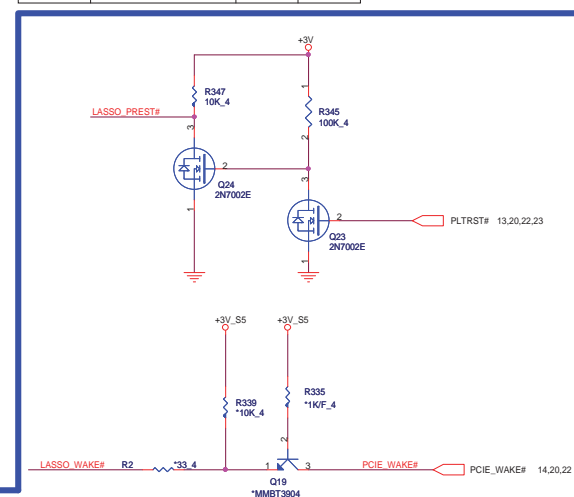


Audio, Cardreader ,Kill SW DB (AMP)

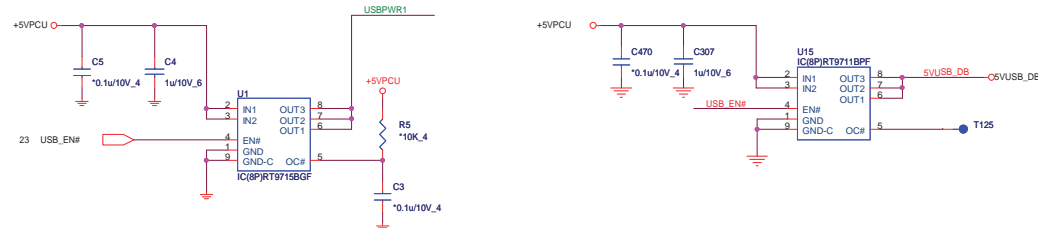
$I_{pin}=0.5A$ (ACES)



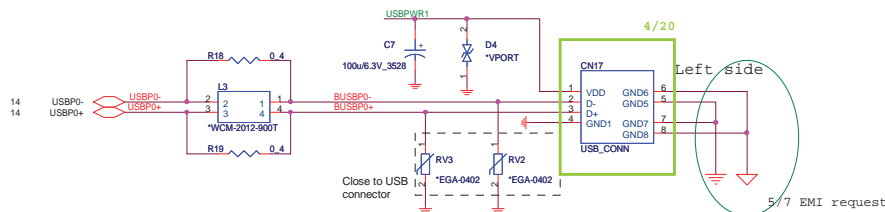
5VUSB_DB	USB PWR	2A	2A
+3V	Card reader	250mA	275mA



(USB)

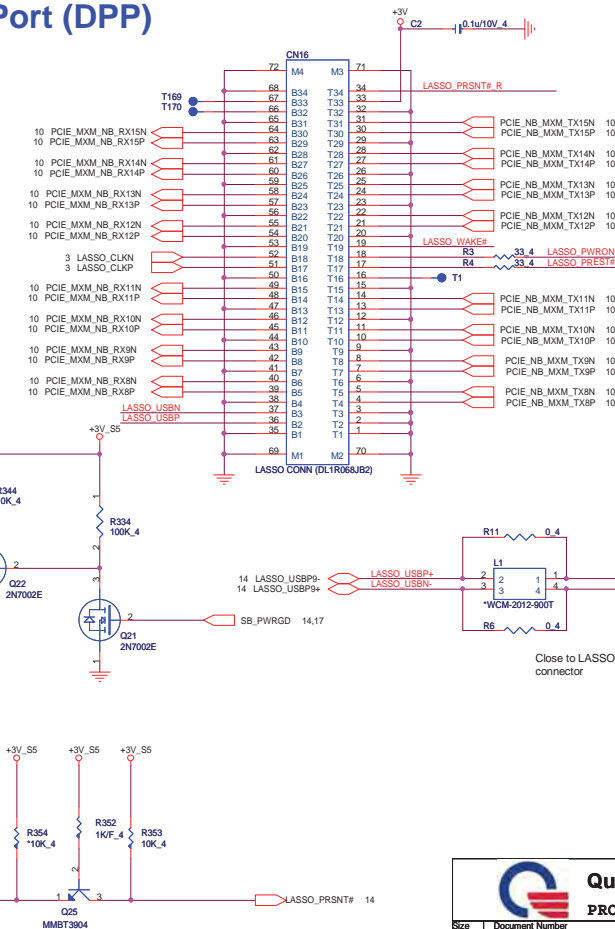


Please reserve Cin = 1uF(stuff), Cout = 10uF(don't stuff) for Richtek RT9711BPF
Please reserve Cin = 4.7uF(stuff), Cout = 10uF(don't stuff) for GMT solution

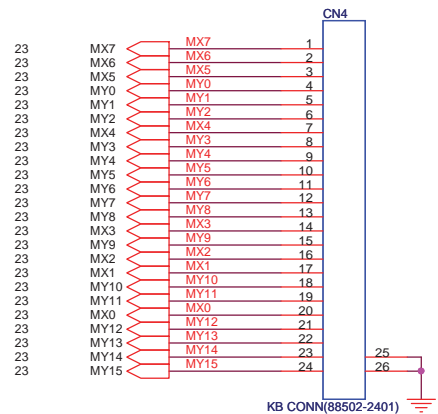


Placed common mode chokes within 1.0" of the USB connectors

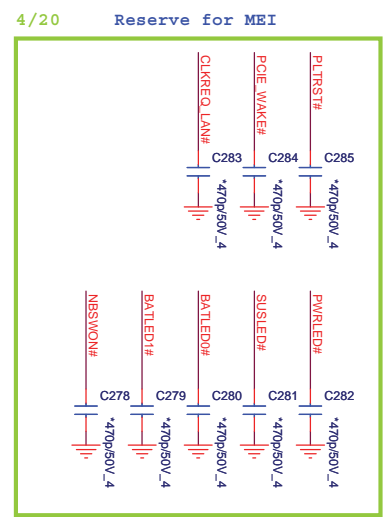
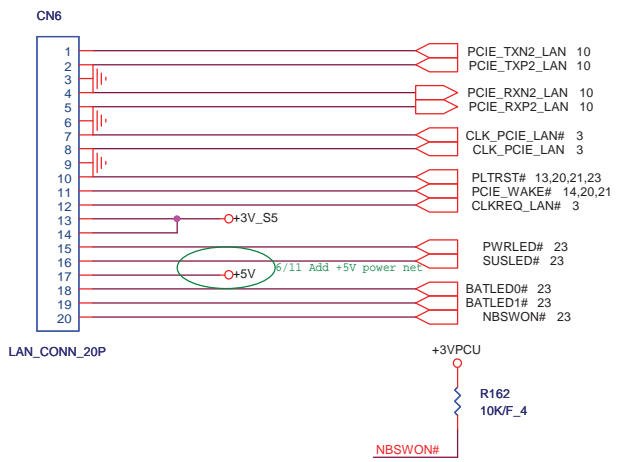
Display Port (DPP)



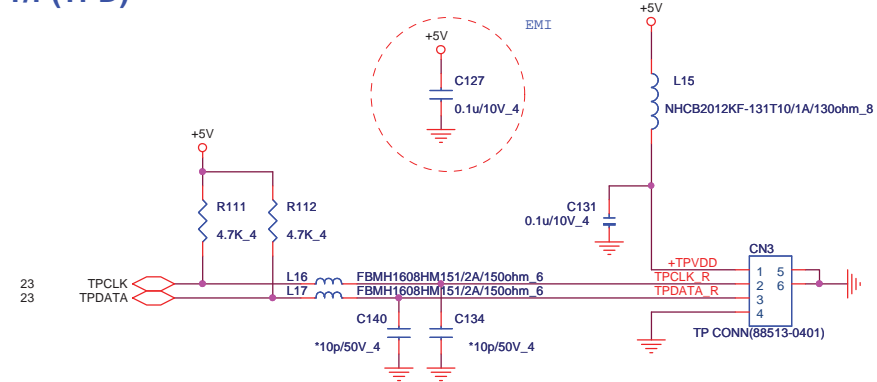
Keyboard(KBC)



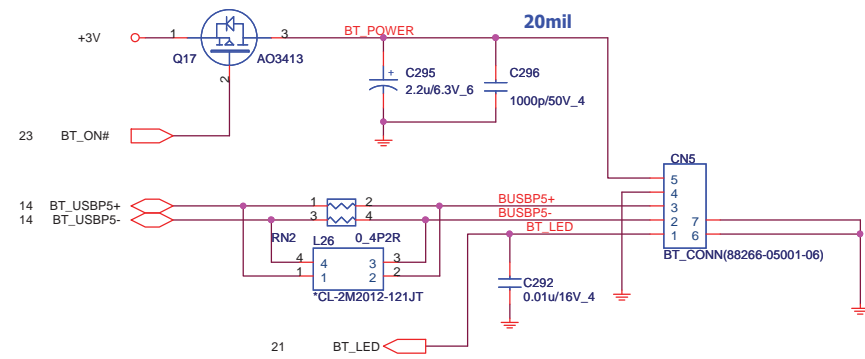
LAN , USBx2 D/B CONNECTER(LAN)



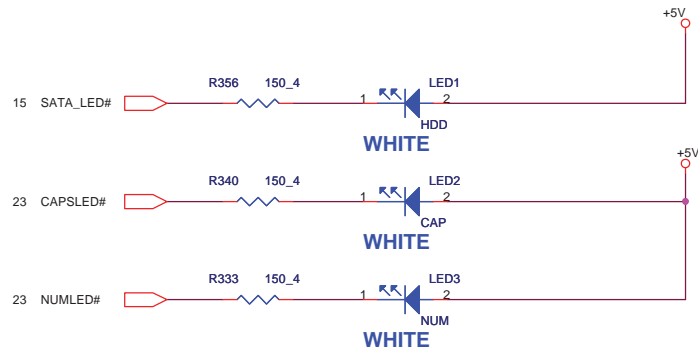
T/P(TPD)




BT(BTM)



LED(UIF)

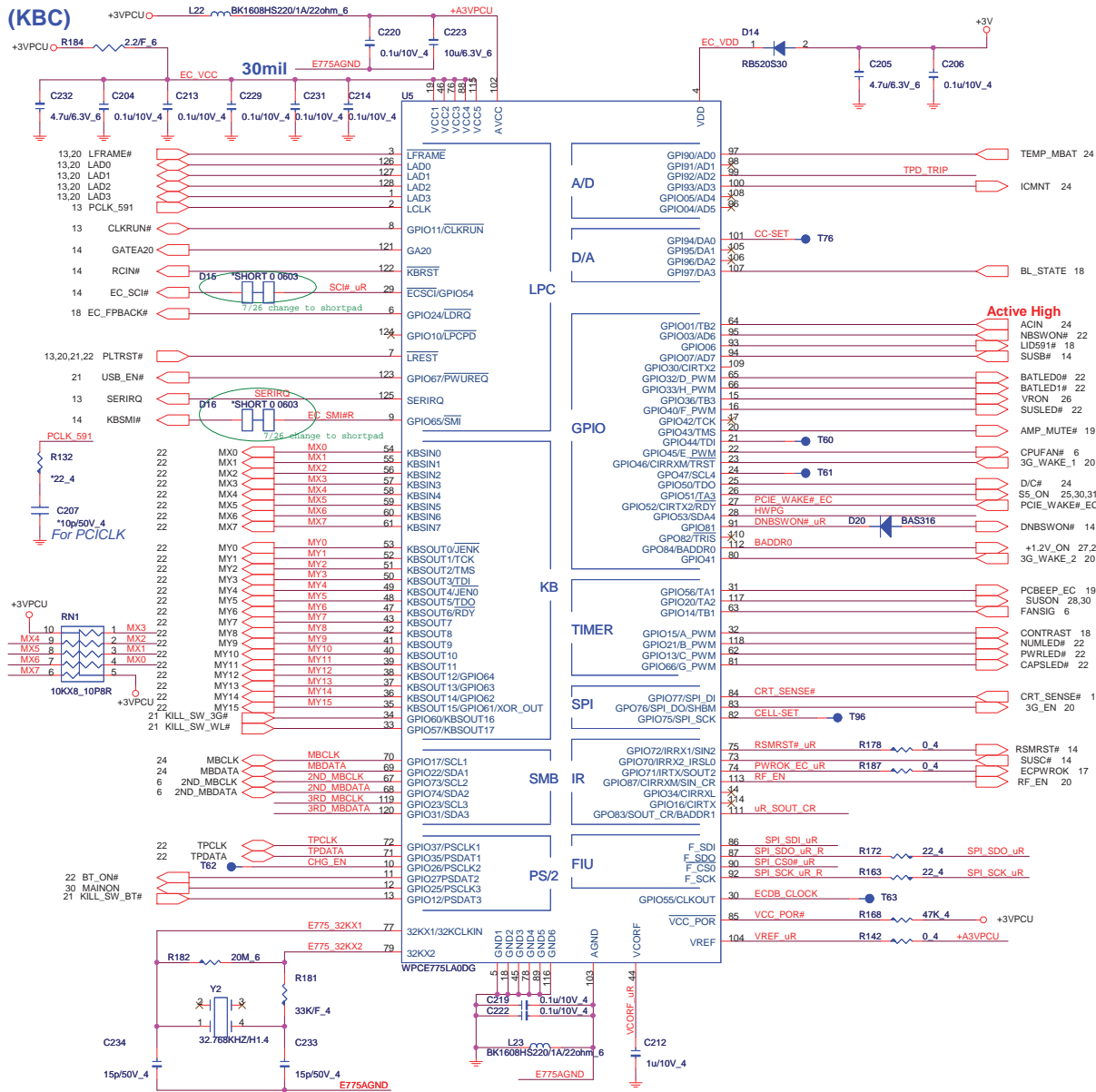




Quanta Computer Inc.
PROJECT : ZH6
TP/ USB/ KB / LED

Size	Document Number	Rev
Date: Monday, August 24, 2009	Sheet 22 of 33	1A

(KBC)



I/O ADDRESS SETTING(KBC)

	I/O Address	
BADDR1-0	Index	Data
0 0	XOR TREE TEST MODE	
0 1	CORE DEFINED	
1 0	2Eh	2Fh
1 1	164Eh	164Fh

SHBM=0: Enable shared memory with host BIOS

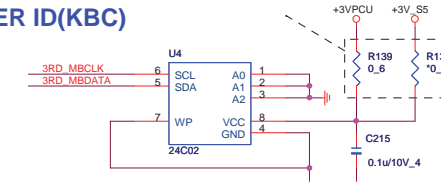


1/13 Confirm by vendor mail :
Disabled ('1') if using FWH device on LPC.
Enabled ('0') if using SPI flash for both system BIOS and EC firmware

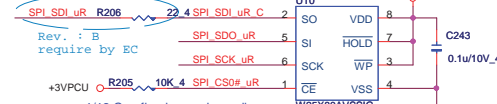
SM BUS PU(KBC)



ACER ID(KBC)

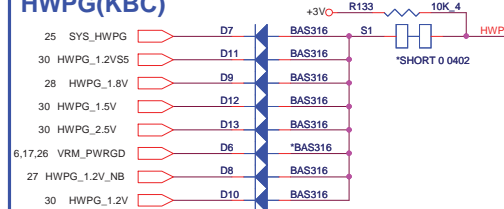


SPI FLASH(KBC)



1/13 Confirm by vendor mail : W25X80AVSSIG
If the Southbridge enables 'Long Wait Abort' by default, the
flash device should be 50MHz (or faster)

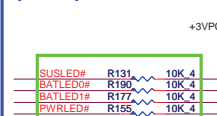
HWPG(KBC)



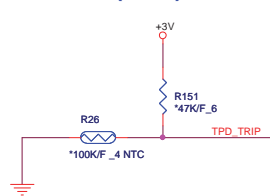
INTERNAL KEYBOARD STRIP SET(KBC)



(KBC)




Thermistor (THM)

**Quanta Computer Inc.**

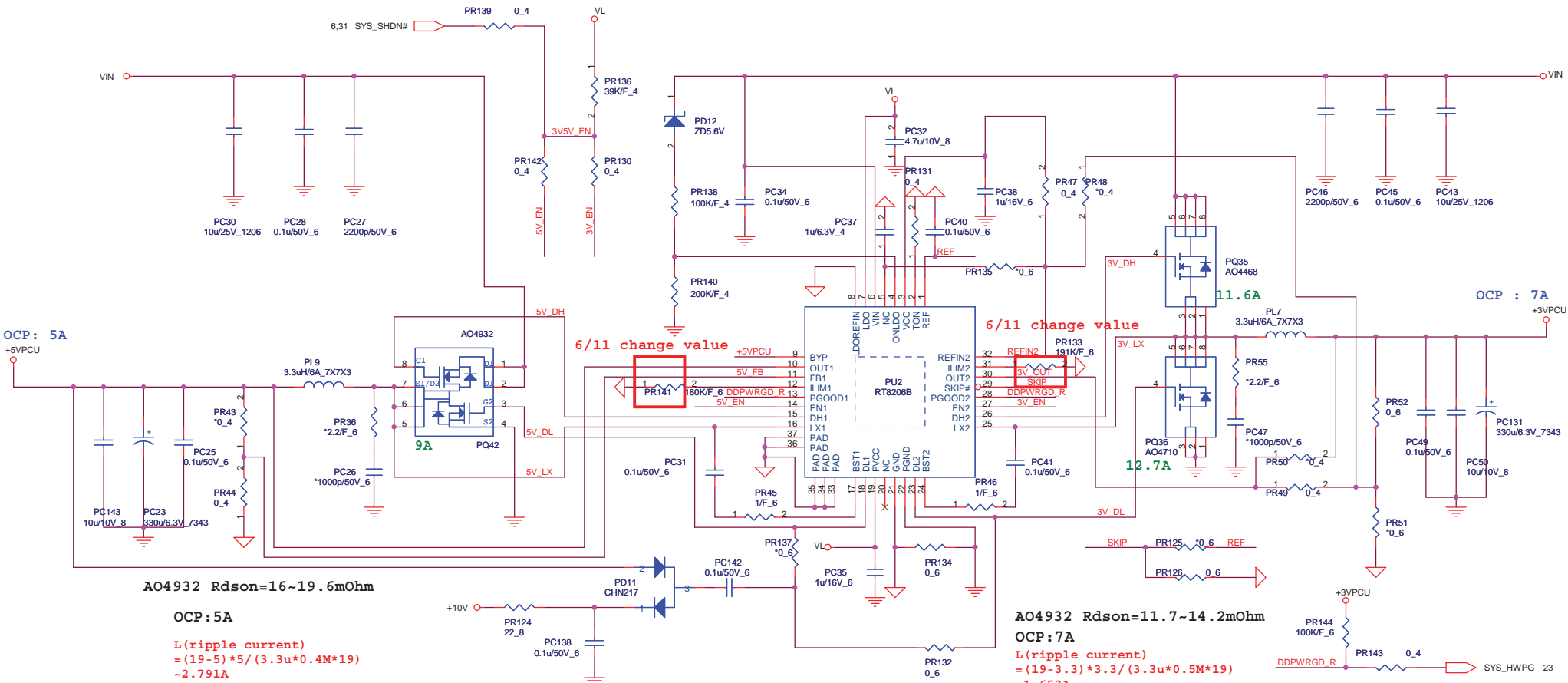
PROJECT : ZH6

Size	Document Number WPCE775L & FLASH		
Date:	Monday, August 24, 2009	Sheet	23 of 33

65W Yellow DFPJ05MR007

 Quanta Computer Inc. PROJECT : ZH6		
Size	Document Number CHARGER (ISL88731A)	Rev 1A
Date:	Tuesday, August 25, 2009	Sheet 24 of 33

MAIND 28,30
SUSD 30



OCP: 5A

AO4932 Rdson=16~19.6mOhm

OCP:5A

$I(ripple\ current)$
 $= (19-5) * 5 / (3.3u * 0.4M * 19)$
 $\sim 2.791A$

$I_{ocp} = 5 - (2.791/2) = 3.6045A$

$V_{th} = 3.6045A * 14.2mOhm = 70.6482mV$

$R(I_{lim}) = (70.6482mV * 10) / 5uA$
 $\sim 141K (143K)$

AO4932 Rdson=11.7~14.2mOhm

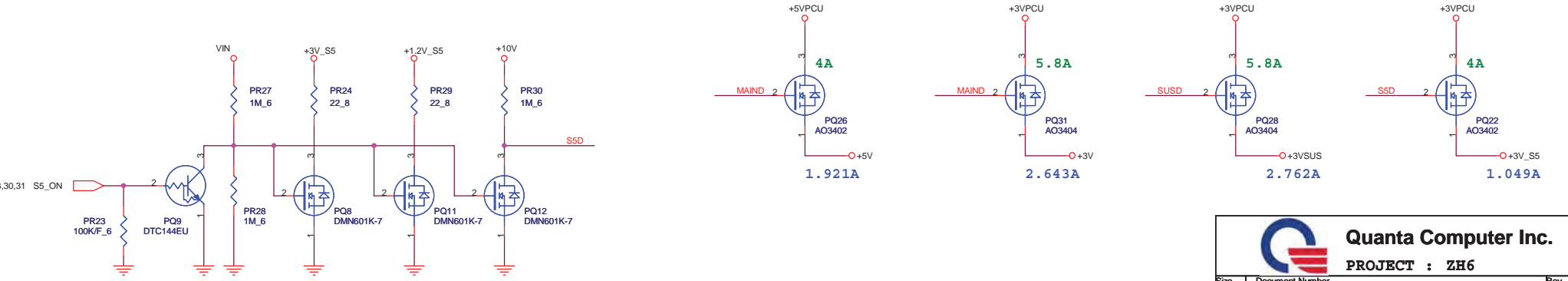
OCP:7A

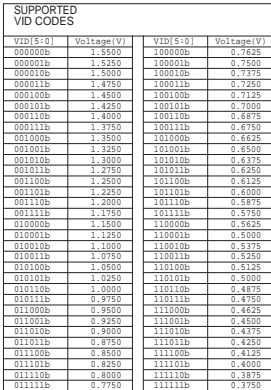
$I(ripple\ current)$
 $= (19-3.3) * 3.3 / (3.3u * 0.5M * 19)$
 $\sim 1.653A$

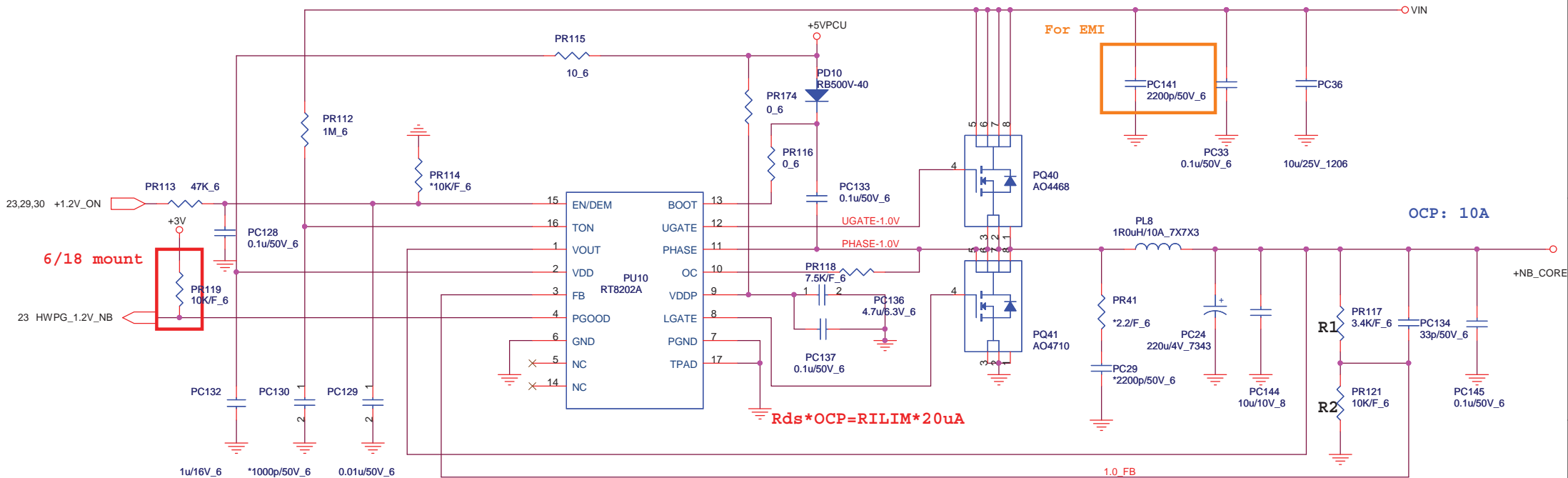
$I_{ocp} = 7 - (1.653/2) = 6.1735A$

$V_{th} = 6.1735A * 14.2mOhm = 87.6637mV$

$R(I_{lim}) = (87.6637mV * 10) / 5uA$
 $\sim 175K (178K)$







$$TON = 3.85p \cdot RTON \cdot Vout / (Vin - 0.5)$$

$$Frequency = Vout / (Vin \cdot TON)$$

$$TON = 3.85p \cdot 1M \cdot 1 / (Vin - 0.5)$$

$$Frequency = 1 / (0.0036767) = 272K$$

AO4710 $R_{dson} = 11.7 \sim 14.2m\Omega$

L (ripple current)

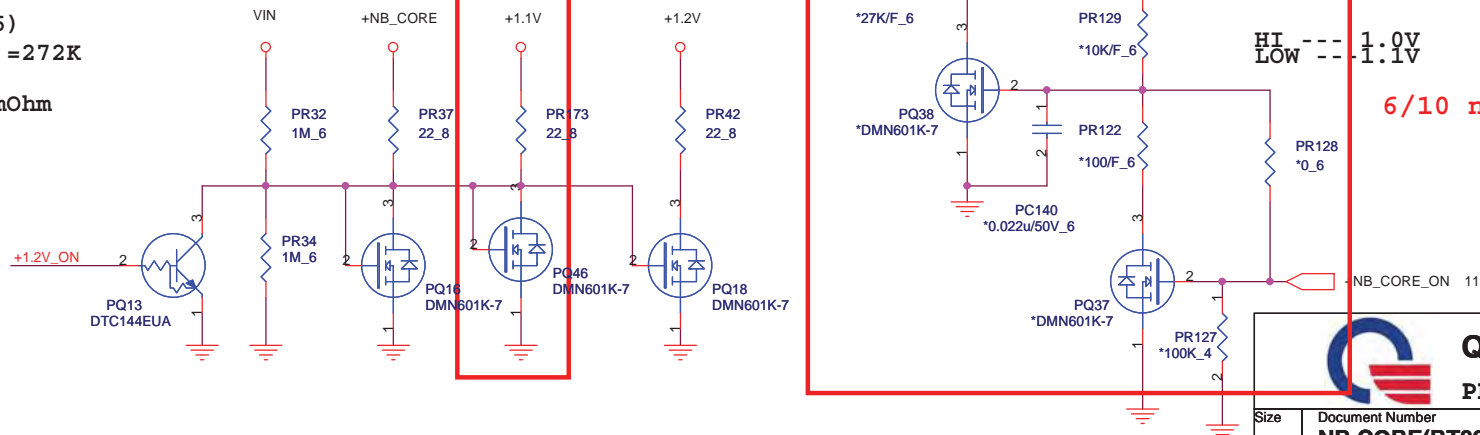
$$= (19-1) \cdot 1 / (1\mu \cdot 272k \cdot 19)$$

$$\sim 3.483A$$

$$14.2m \cdot 10 = R_{ILIM} \cdot 20\mu A$$

$$R_{ILIM} = 7.1K (7.5K)$$

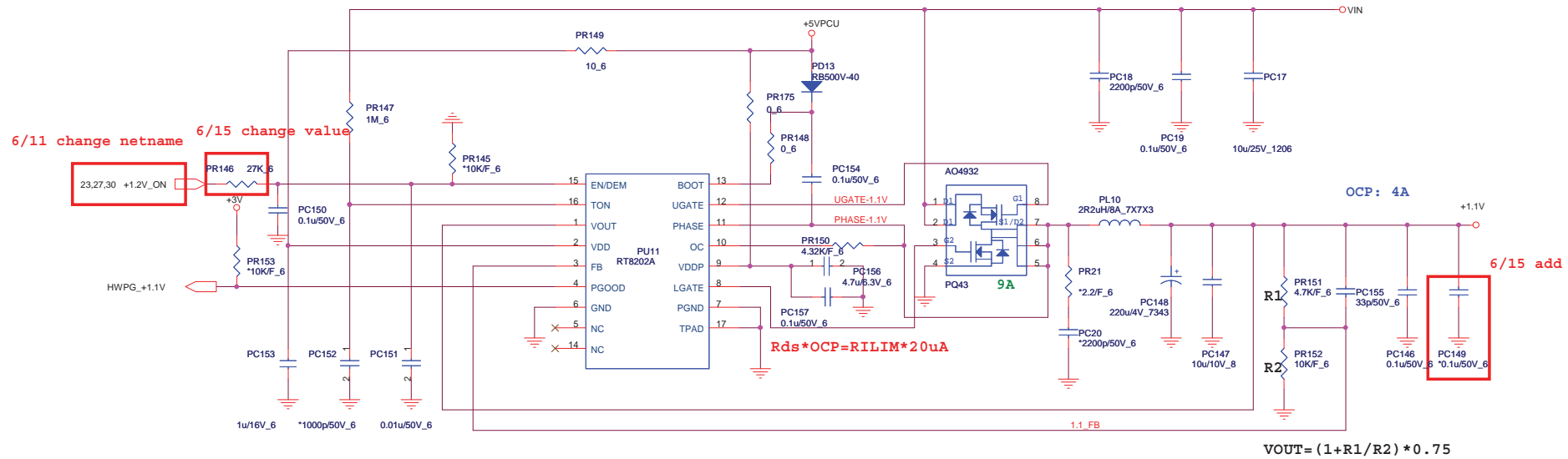
$$VOUT = (1 + R1/R2) \cdot 0.75$$



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PROJECT : ZH6

Size	Document Number	Rev
	NB CORE(RT8202A)	1A
Date:	Wednesday, August 26, 2009	Sheet 27 of 33



$$TON = 3.85p * 1M * 1 / (Vin - 0.5)$$

$$Frequency = 1 / (0.0036767) = 272K$$

AO4932 $R_{ds(on)} = 16 \sim 19.6m\Omega$

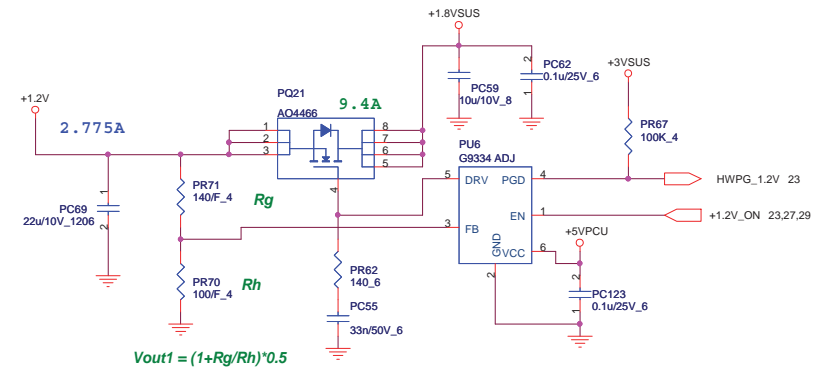
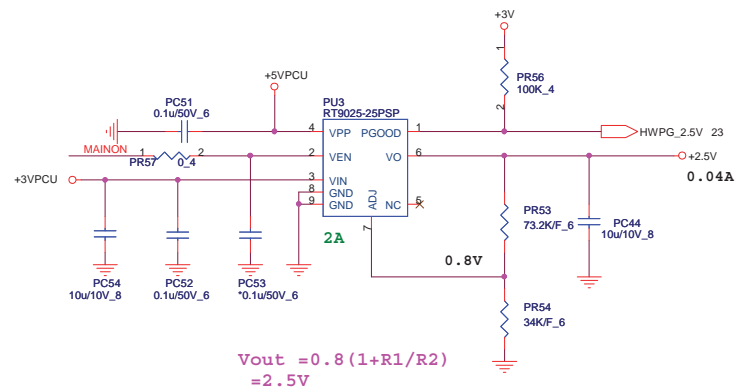
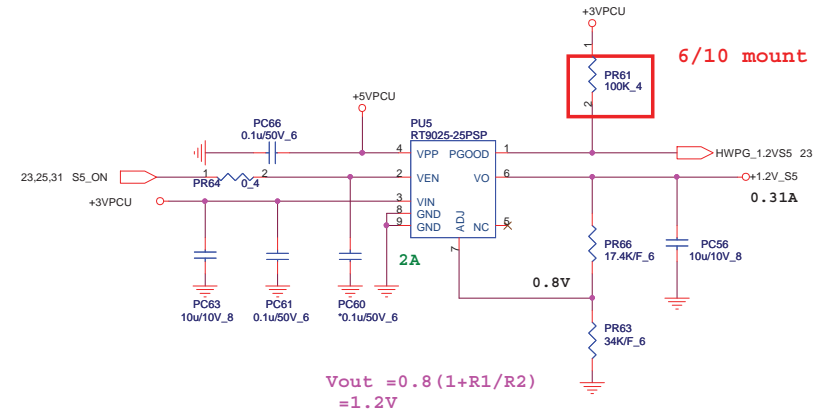
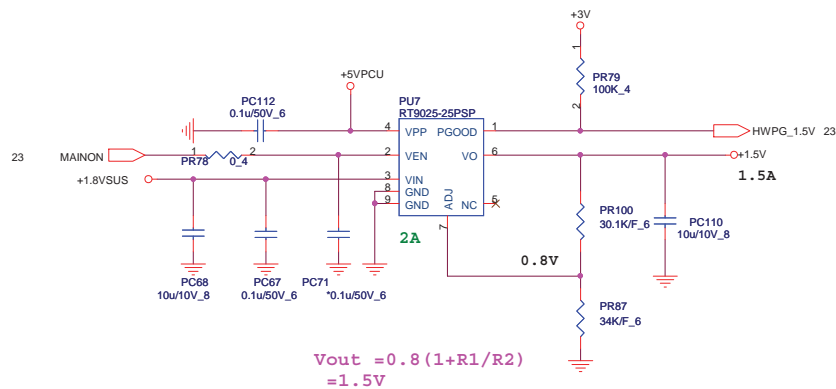
L(ripple current)

$$= (19 - 1.1) * 1.1 / (2.2u * 272k * 19)$$

$$\sim 1.732A$$

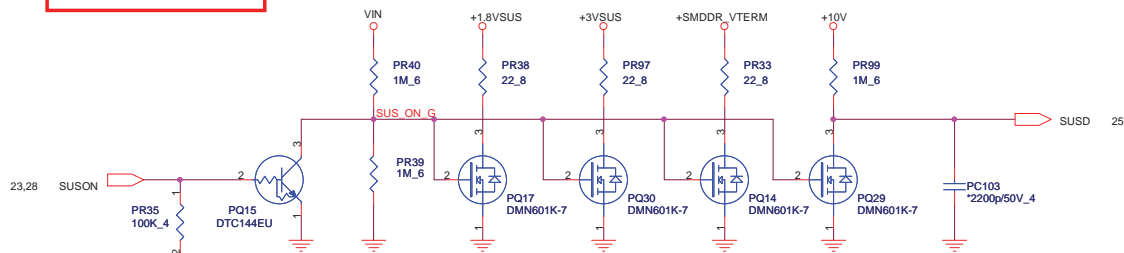
$$19.6m * 4 = RILIM * 20uA$$

$$RILIM = 3.92K (4.32K)$$

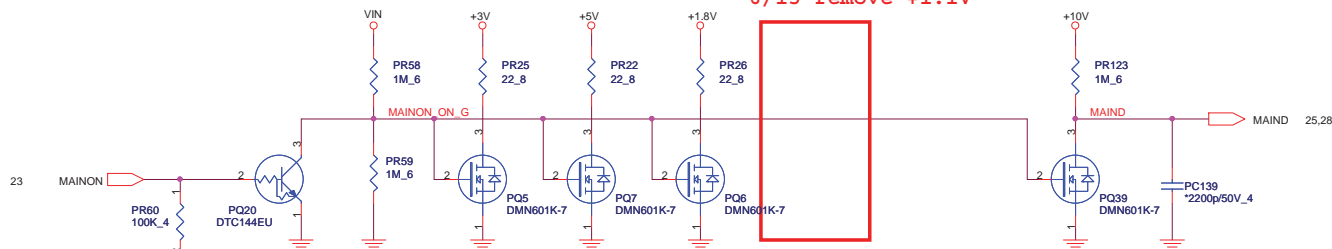


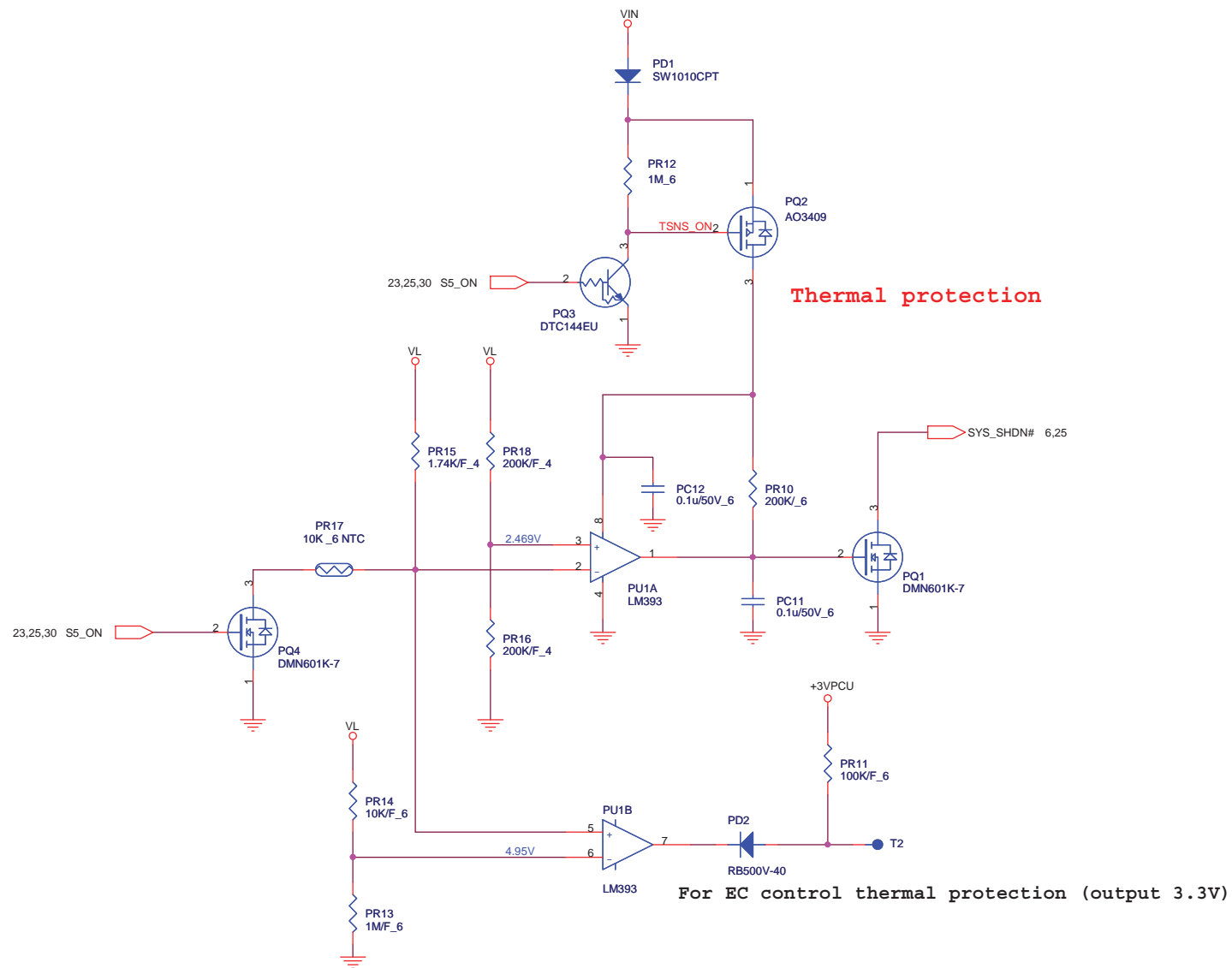
6/18 Add

20 MAINON_ON_G



6/15 remove +1.1V

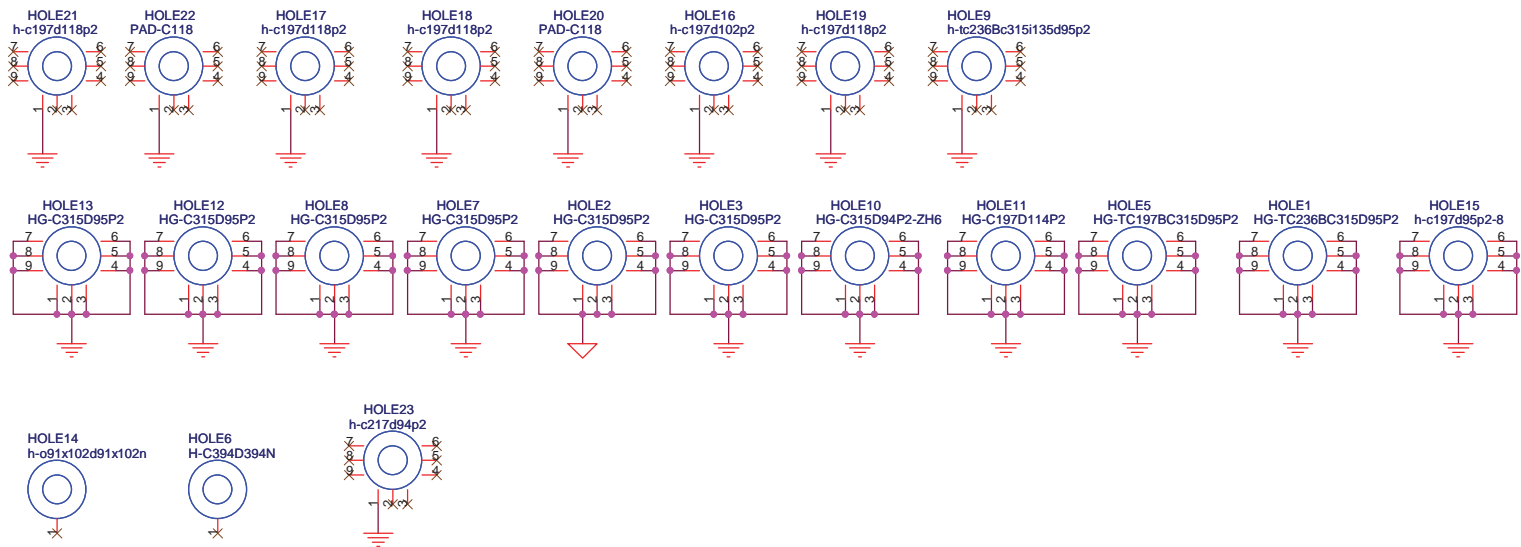




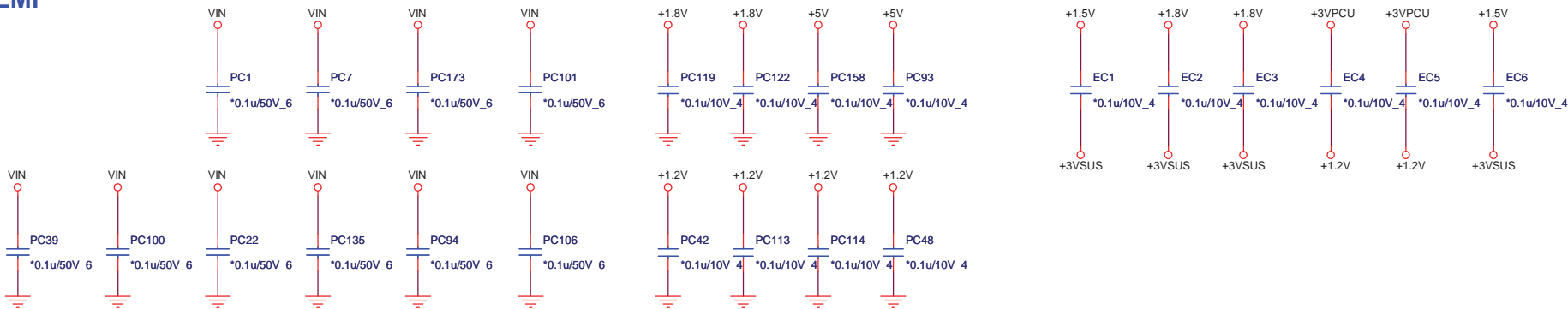
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PROJECT : ZH6

Size	Document Number	Rev
		1A
Date:	Tuesday, August 25, 2009	Sheet 31 of 33



EMI



Quanta Computer Inc.
PROJECT : ZH6

Size	Document Number	Rev
	HOLE /EMI	1A
Date:	Tuesday, August 25, 2009	Sheet 32 of 33

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