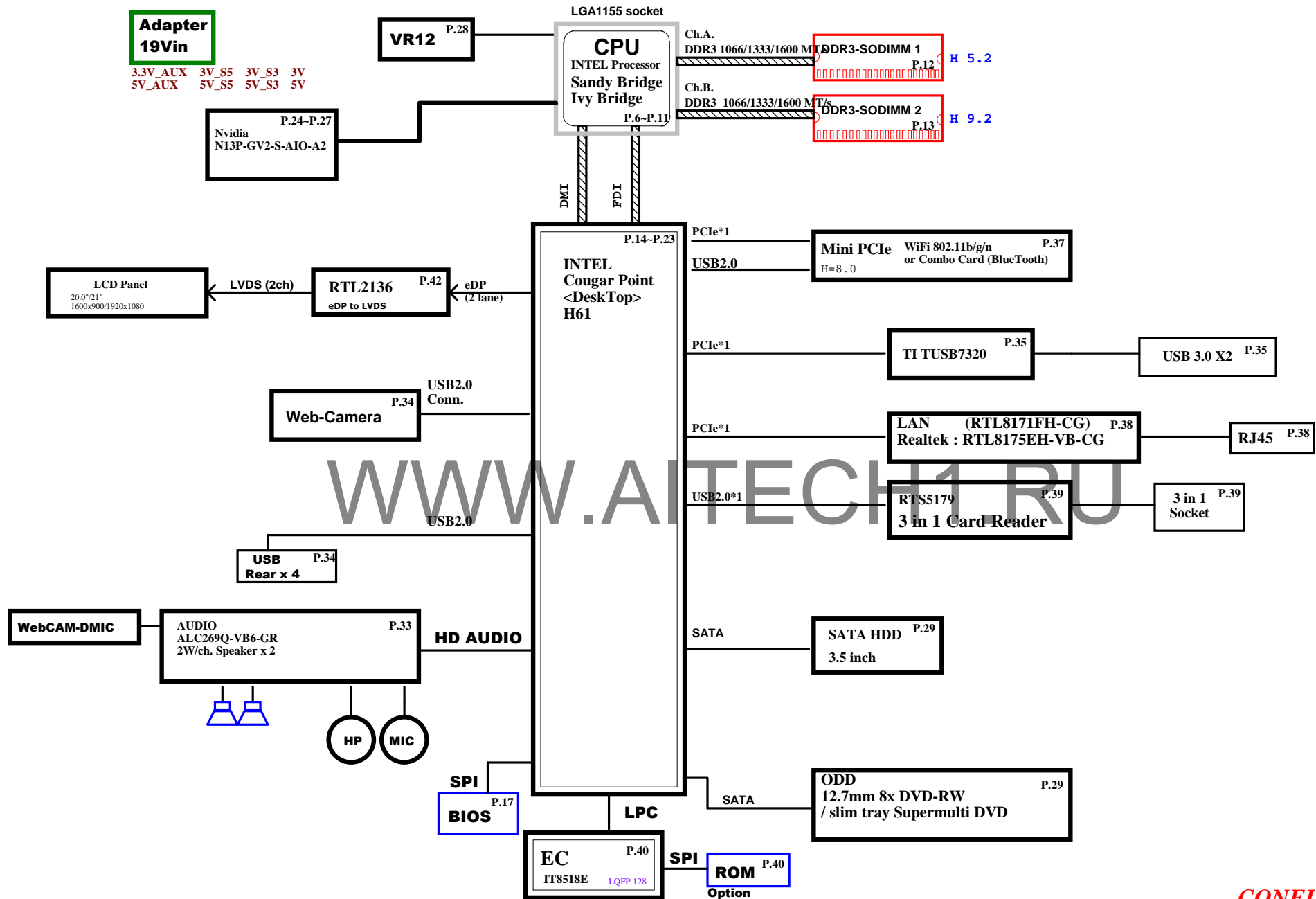
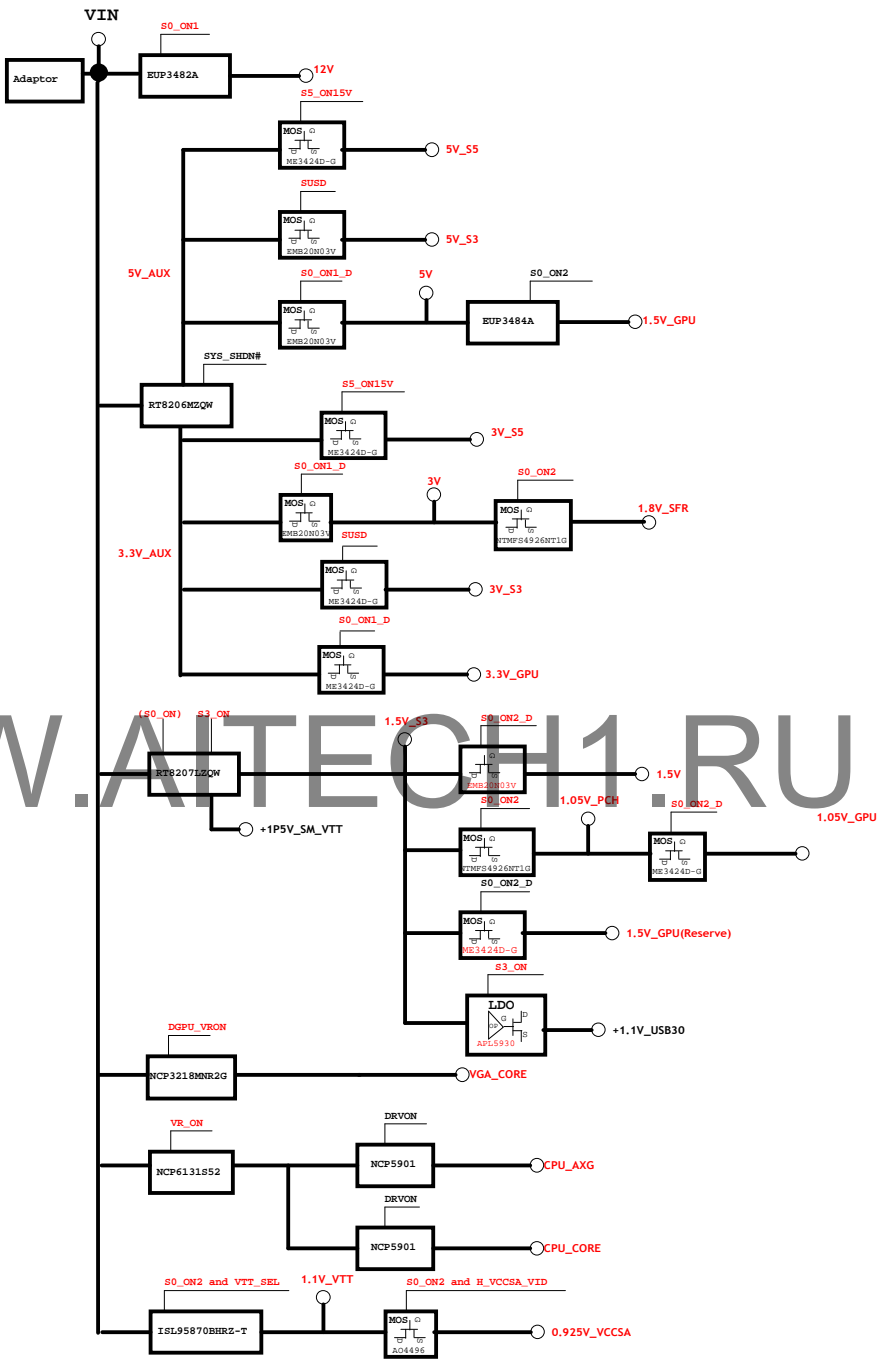


Xiamen System Block Diagram



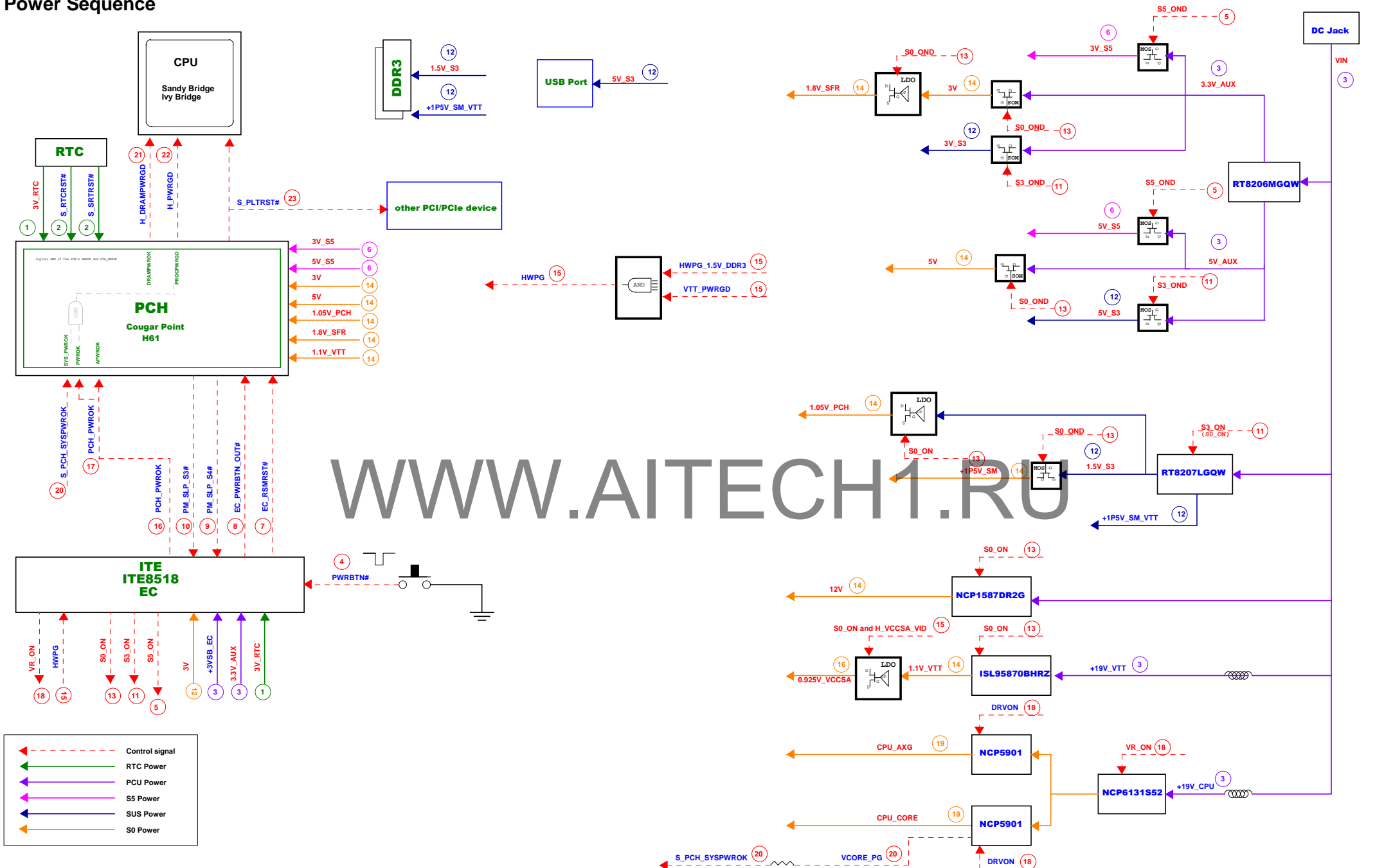
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Power Rail	Destination	Voltage	S0 Current
CPU_CORE	Sandy Bridge: CPU core 65W	0.65V-1.3V	75A
CPU_AXG	Sandy Bridge: CPU AXG	0.5 V-1.3V	35A
0.925V_VCCSA	System Agent	0.925 V/0.85 V	8.8A
1.1V_VTT	Sandy Bridge : Memory controller PCH: DMI PCH : CPU_IO	Hi-->1.05V 1.1V 1.05V-1.1V-1.16V	8.5A (TDC) 0.065A 0.001A
1.8V_SFR	Sandy Bridge: Internal processor PLL	1.71V-1.8V-1.89V	1.6A
1.5V_S3	Sandy Bridge: CPU I/O Voltage for DDRIII DIMM :	1.425V-1.5V-1.575V	4.75A
+1P5V_SM_VTT	DDRIII Terminator:	0.75V	2A
1.05V_PCH	PCH : PCH_1.05V PCH : Vcc core I/O buffer PCH : DMI buffer voltage PCH : Display PLL A power PCH : Display PLL B power	0.998V-1.05V-1.1V 0.998V-1.05V-1.1V 0.998V-1.05V-1.1V 0.998V-1.05V-1.1V 0.998V-1.05V-1.1V	1.31A 2.1+4.35A 0.057A 0.08A 0.08A
+1P5V_SM	Mini PCIE : +1.5V(WLAN)	1.425V-1.5V-1.575V	0.5A
VIN	CONVERTER	17V-19V-21V	1.6A
3V_S3	WebCam	3.0V-3.3V-3.6V	0.12A
3V	PCH: I/O buffer voltage PCH: Display DAC Analog power ALC269 : DVDD Mini PCIE : +3.3V(WLAN)	3.14V-3.3V-3.47V 3.135V-3.3V-3.465V 3.135V-3.3V-3.465V	0.267A 0.068A 0.0228A 2.75A
	FAN_RAM RTS2136S RTL8175EH RTS5179	3.0V-3.3V-3.6V 3.0V-3.3V-3.6V 3.0V-3.3V-3.6V 3.0V-3.3V-3.6V	0.23A 0.11A 0.070A 0.045A
5V	PCH: Core well Ref. voltage SATA ODD SATA HDD(3.5" x HDD) LCD Panel (SAMSUNG) 5V Audio	4.75V-5V-5.25V 4.75V-5V-5.25V 4.75V-5V-5.25V 4.5V-5V-5.5V 4.75V-5V-5.25V	0.001A 1.5A 0.4A 1.08A 0.040A
5V_S3	USB: *4 ports	5V	2A
12V	HDD FAN_CPU	11.4V-12V-12.6V 12V	0.85A 0.44A
3V_S5	PCH : Intel Management Engine PCH : Suspend well I/O Buffer PCH : HD Audio controller EC(IT8518) : VSTBY SPI FLASH ROM	3.14V-3.3V-3.47V 3.14V-3.3V-3.47V 3.14V-3.3V-3.47V 3.0V-3.3V-3.6V	0.097A 0.168A 0.010A 0.020A
5V_S5 (+REF5V_S0B)	PCH : Suspend well Ref. Voltage	4.75V-5V-5.25V	0.001A
3.3V_AUX (+3VSB_EC)	EC(IT8518) : VPCU	3.0V-3.3V-3.6V	



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Power Sequence

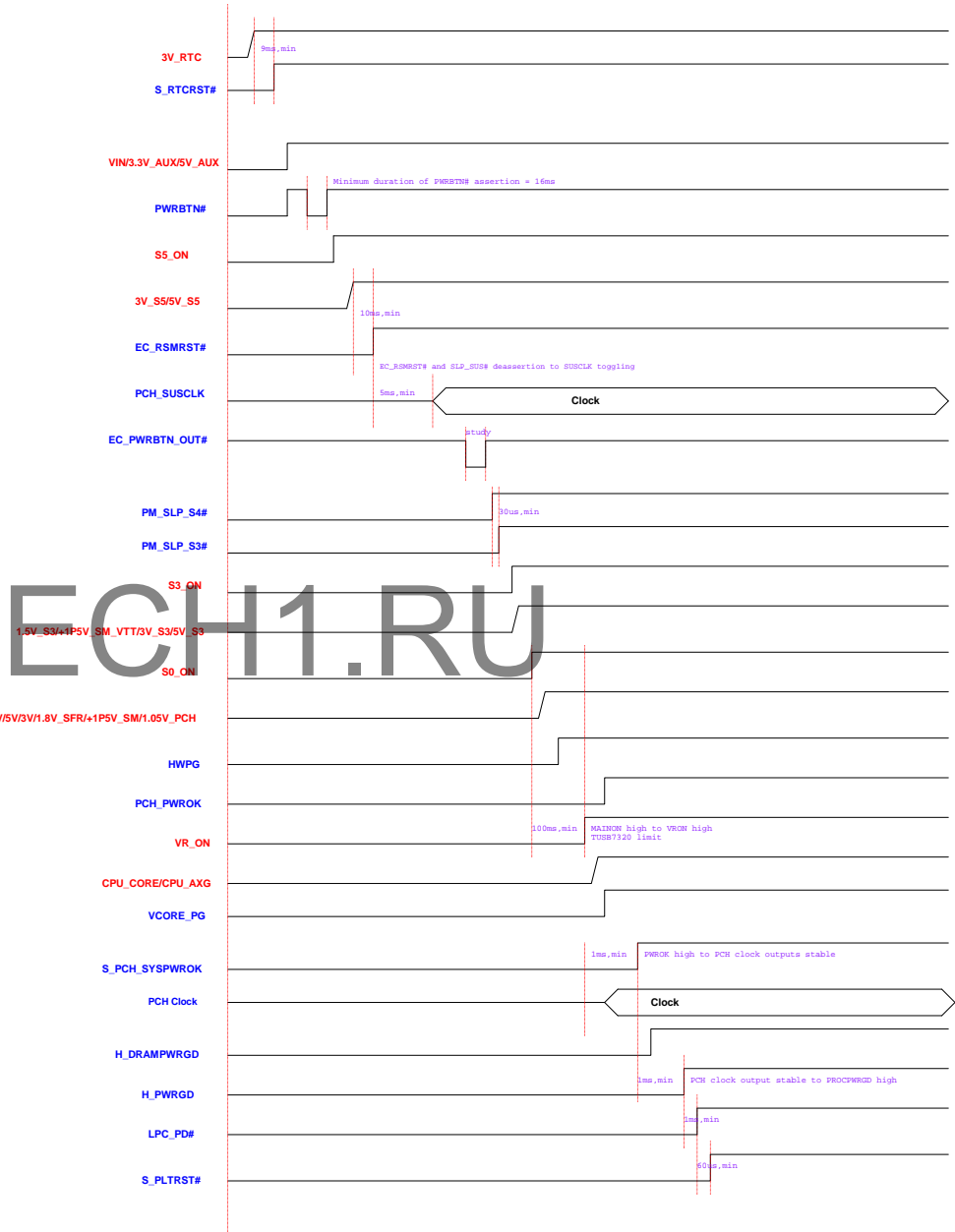


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POWER SEQUENCE

Voltage Rails

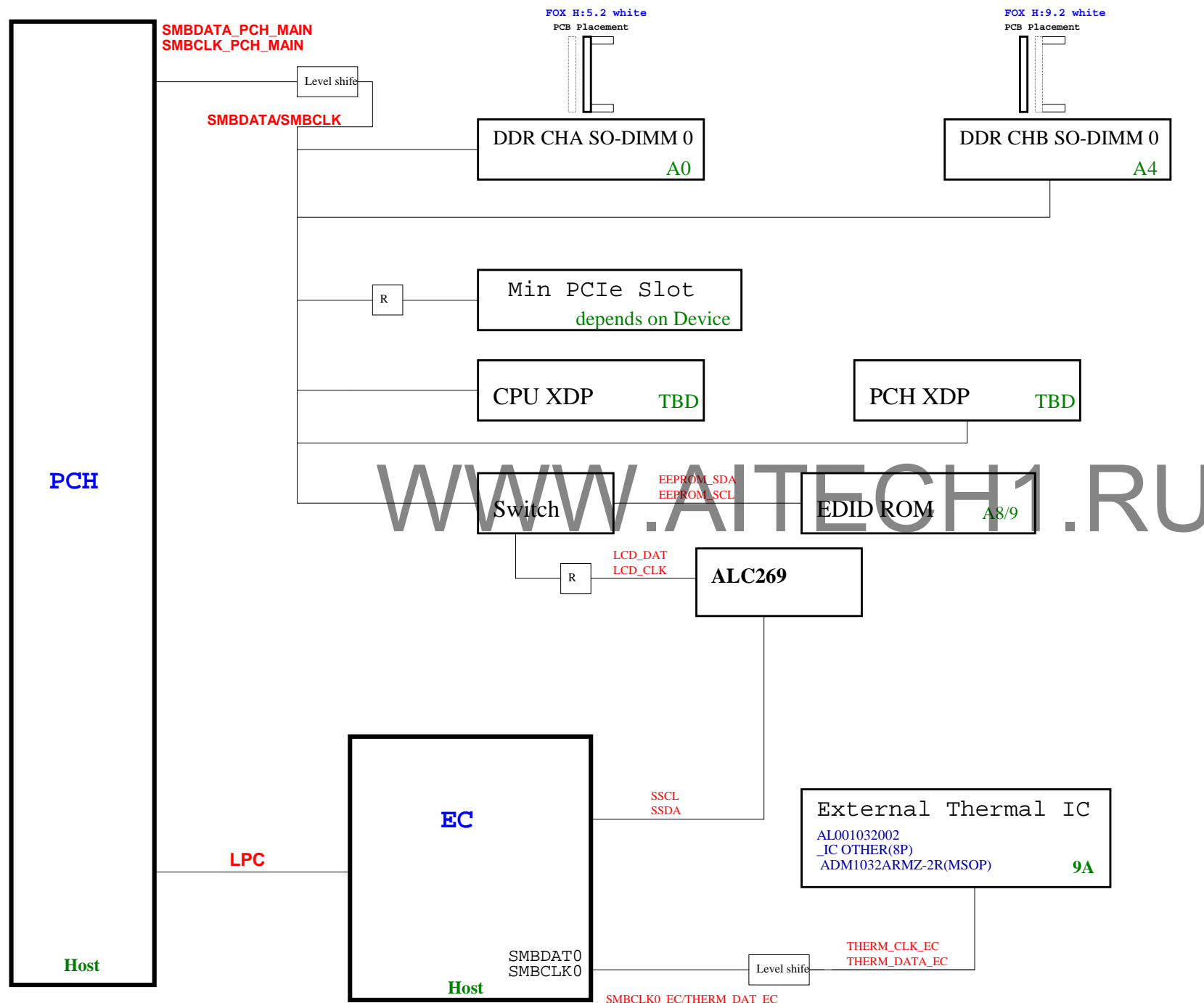
Power	Voltage	S0	S3	S4	S5	PCU	G3	Ctrl Signal	
3V_RTC	3V	ON	ON	ON	ON	ON	ON		RTC, PCH
1W	19V	ON	ON	ON	ON	ON	OFF	Adaptor in	
5V_AUX	5V	ON	ON	ON	ON	ON	OFF	Adaptor in	
3.3V_AUX	3.3V	ON	ON	ON	ON	ON	OFF	Adaptor in	EC, Flash
5V_S5	5V	ON	ON	ON	ON	OFF	OFF	S5_ON15V	PCH, AMP
3V_S5	3.3V	ON	ON	ON	ON	OFF	OFF	S5_ON15V	PCH, XDP, SPI flash ROM
5V_S3	5V	ON	ON	OFF	OFF	OFF	OFF	SUS0	USB2.0
3V_S3	3.3V	ON	ON	OFF	OFF	OFF	OFF	SUS0	WEBCAM
1.5V_S3	1.5V	ON	ON	OFF	OFF	OFF	OFF	S3_ON	DDR3, CPU DDR3 I/O
+1PSV_SM_VTT	0.75V	ON	ON	OFF	OFF	OFF	OFF	S3_ON	DDR3
+1.1V_USB30	1.1V	ON	ON	OFF	OFF	OFF	OFF	S3_ON	USB3.0
12V	12V	ON	OFF	OFF	OFF	OFF	OFF	S0_ON1	FAN, CPU, Panel, HDD,
5V	5V	ON	OFF	OFF	OFF	OFF	OFF	S0_ON1_D	PCH, CRT, ODD, HDD, Panel
3V	3.3V	ON	OFF	OFF	OFF	OFF	OFF	S0_ON1_D	WL, RTS21365, RTL8175EH, RTS5179 , Codec, PCH, DDR3, Flash, EEPROM, FAN, RAM
3.3V_GPU	3.3V	ON	OFF	OFF	OFF	OFF	OFF	S0_ON1_D	TUSB3230
1.05V_PCH	1.05V	ON	OFF	OFF	OFF	OFF	OFF	S0_ON2	PCH_I/O, PCH_CLK, PCH_PLL, PCH_CORE
1.8V_SFR	1.8V	ON	OFF	OFF	OFF	OFF	OFF	S0_ON2	PCH, CPU_PLL
1.5V_GPU	1.5V	ON	OFF	OFF	OFF	OFF	OFF	S0_ON2	GPU
1.5V	1.5V	ON	OFF	OFF	OFF	OFF	OFF	S0_ON2_D	WL
1.5V_GPU	1.5V	ON	OFF	OFF	OFF	OFF	OFF	S0_ON2_D	GPU
1.05V_GPU	1.05V	ON	OFF	OFF	OFF	OFF	OFF	S0_ON2_D	GPU
1.1V_VTT	1.05V	ON	OFF	OFF	OFF	OFF	OFF	S0_ON2	XDP, PCH_DM, PCH_PROIO, CPU_I/O
0.925V_VCCSA	0.925 /0.85 V	ON	OFF	OFF	OFF	OFF	OFF	S0_ON2	CPU_SA
CPU_AXG	0.5-1.3V	ON	OFF	OFF	OFF	OFF	OFF	DRVON	CPU_AXG
CPU_CORE	0.65-1.3V	ON	OFF	OFF	OFF	OFF	OFF	DRVON	CPU_Core

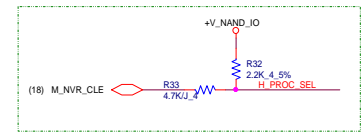
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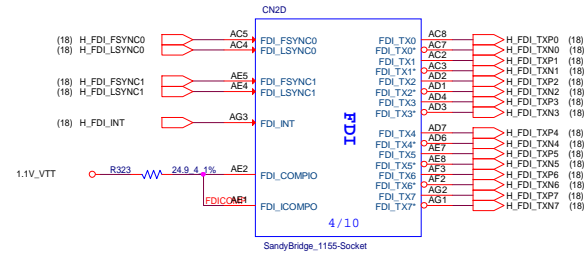
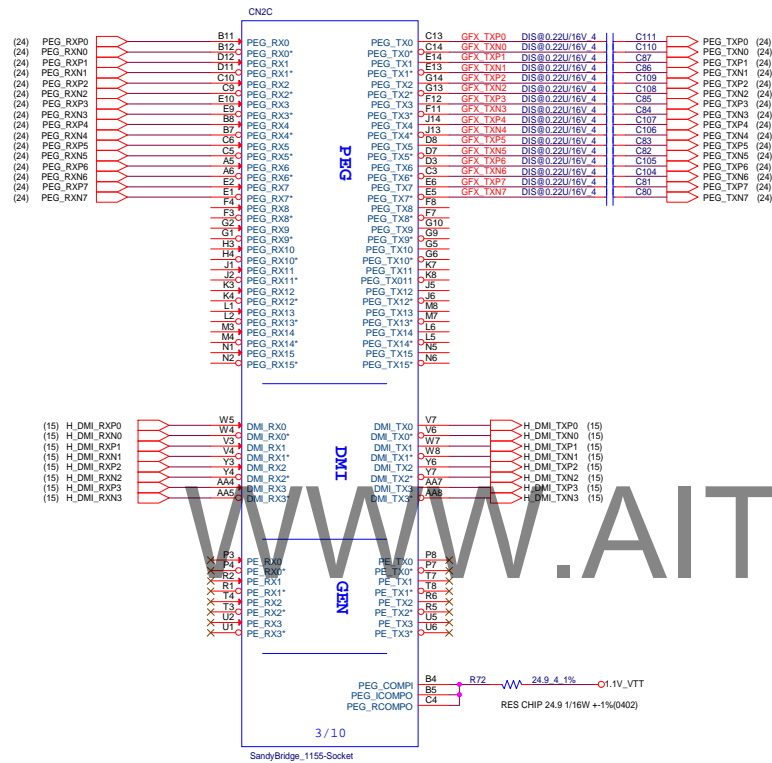
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SMBus Block Diagram

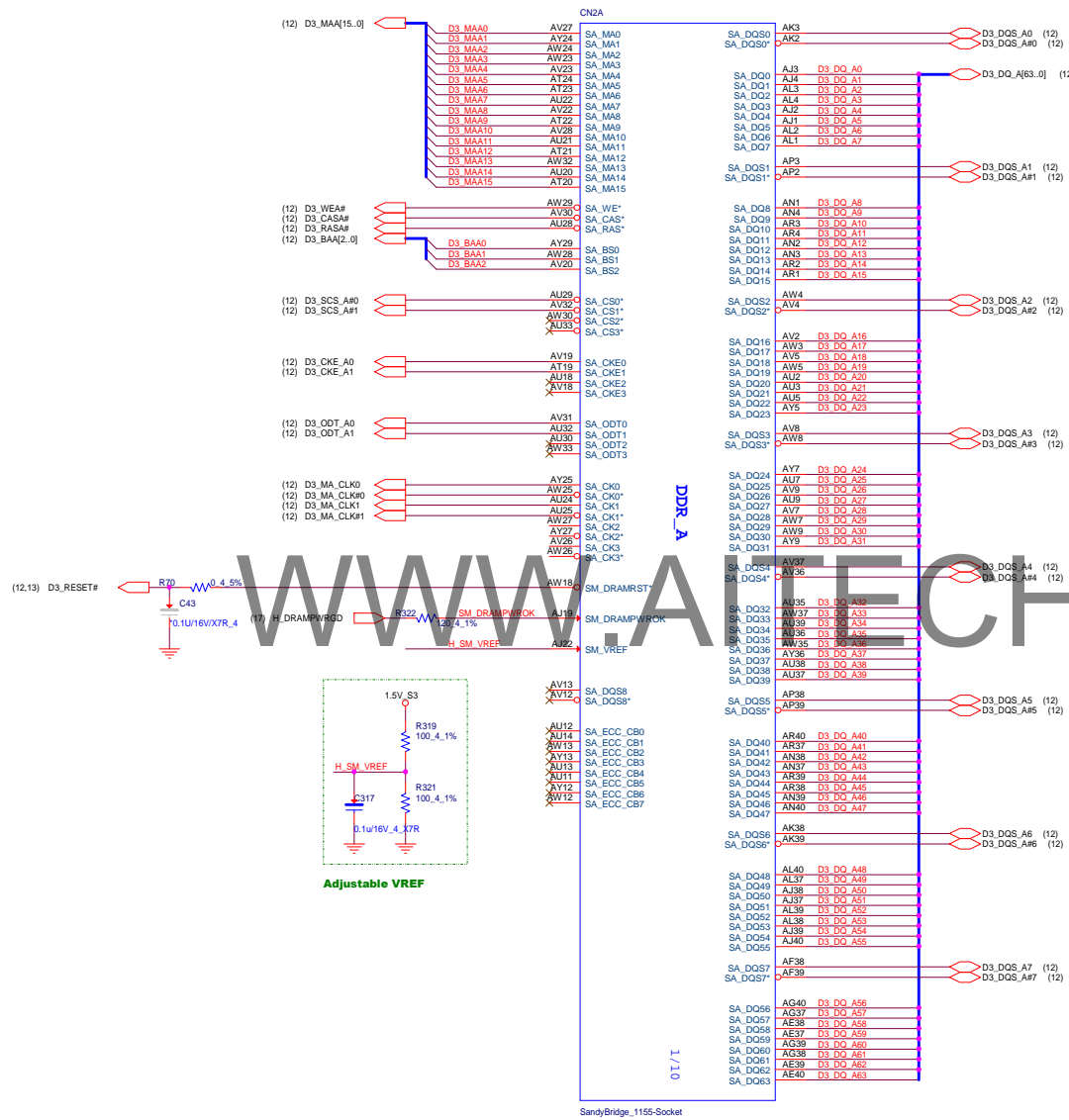




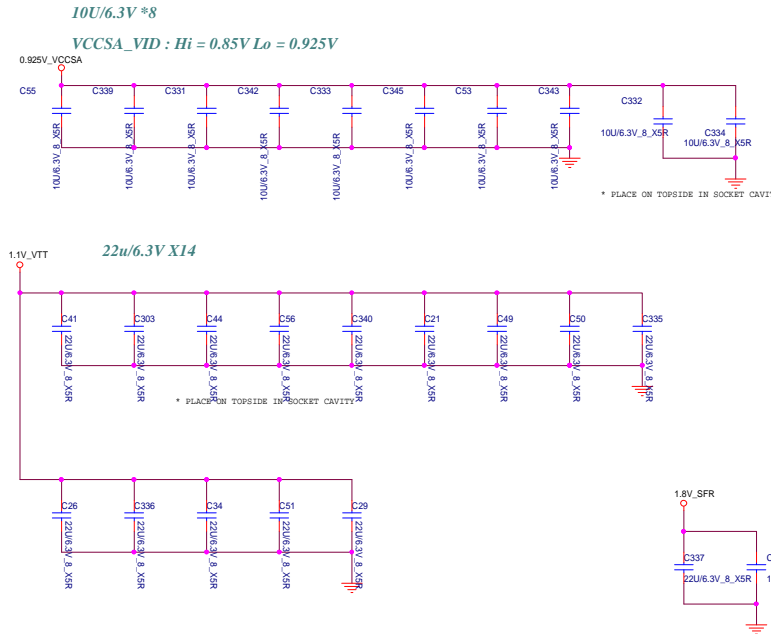
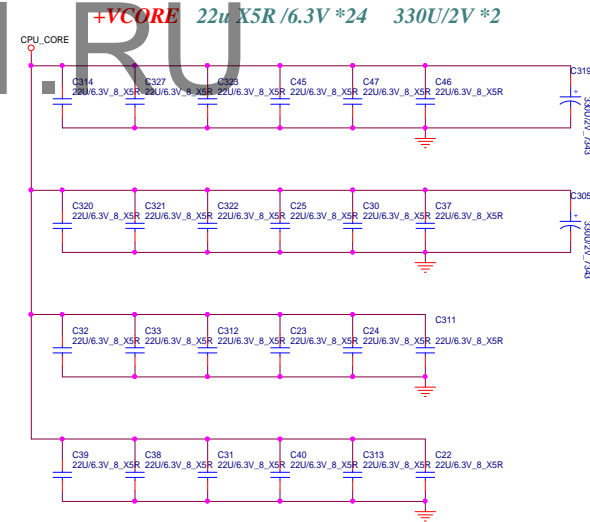
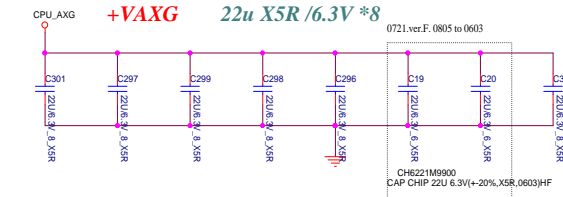
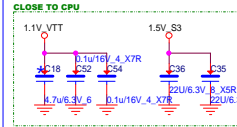
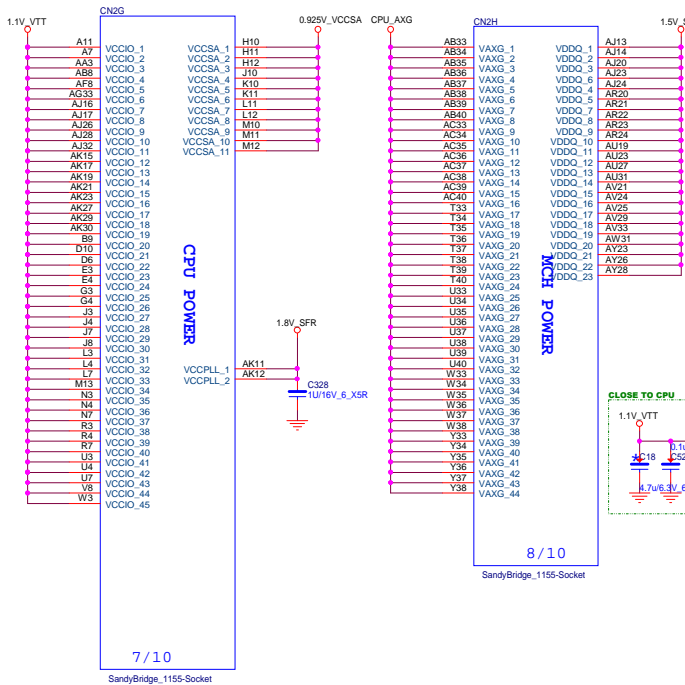
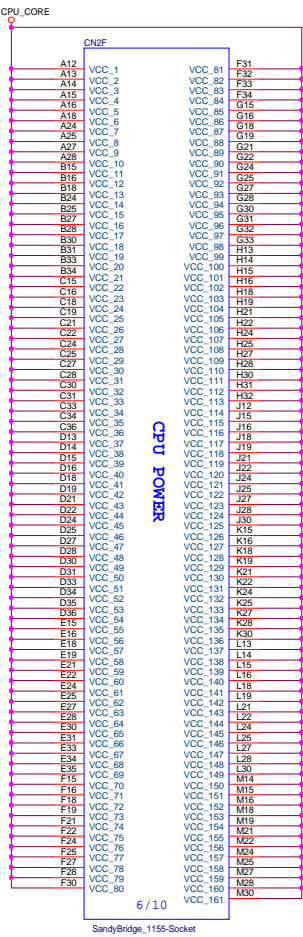
Size	Document Number	Rev
	CPU-1 : MISC	1A
Date:	Tuesday, June 05 2012	Sheet 6 of 53



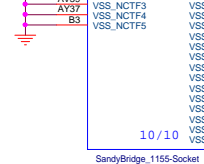
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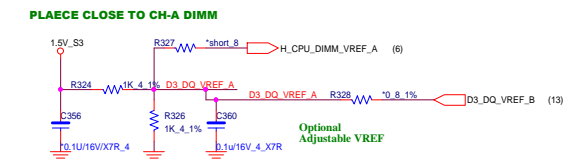
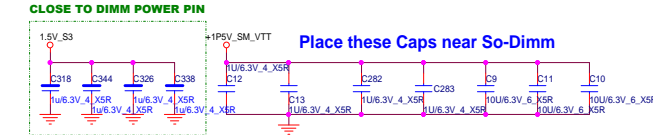
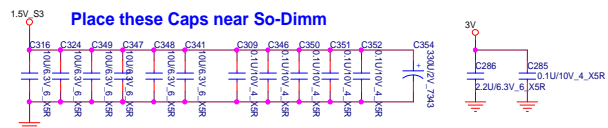
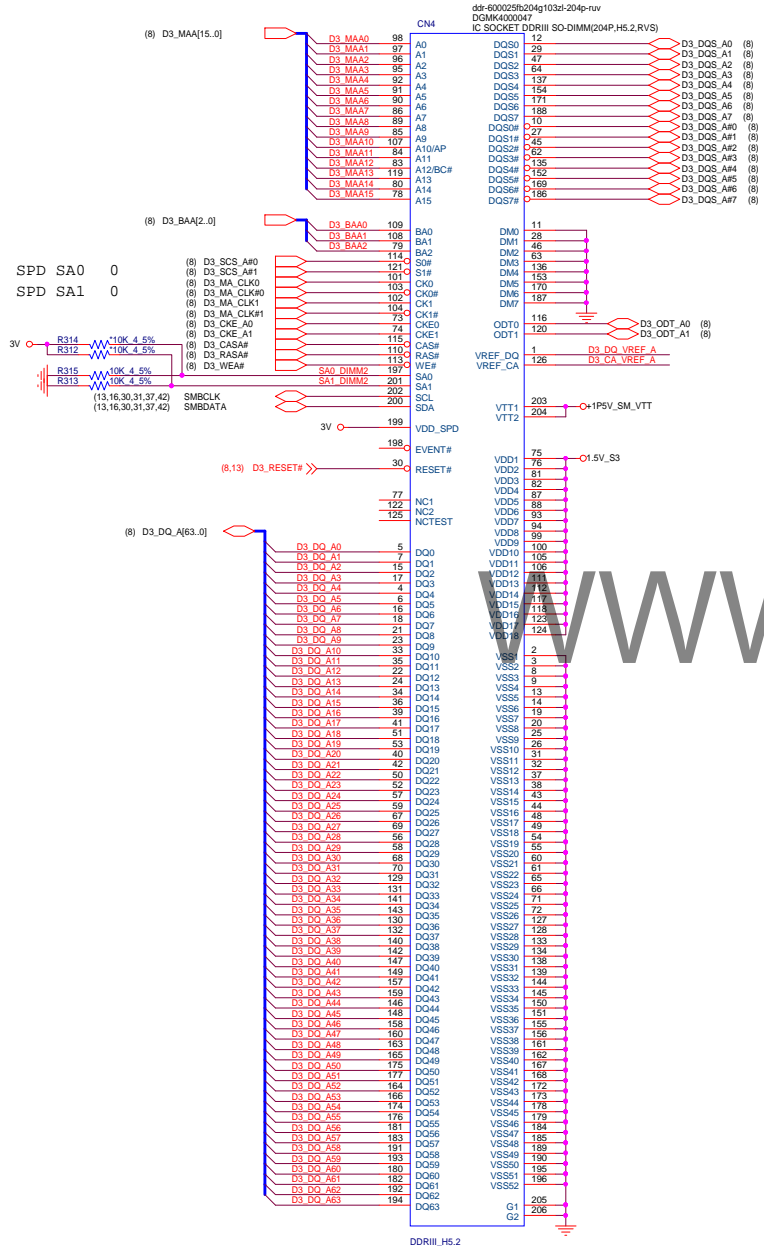
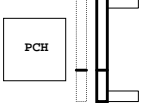
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CHANNEL A
SMB ADDRESS:000

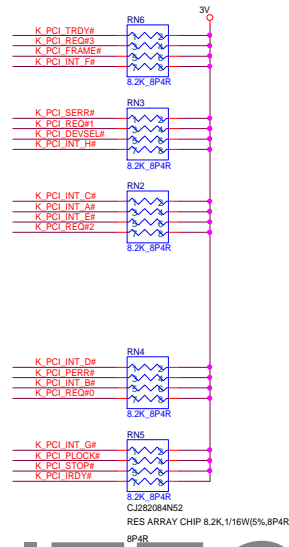
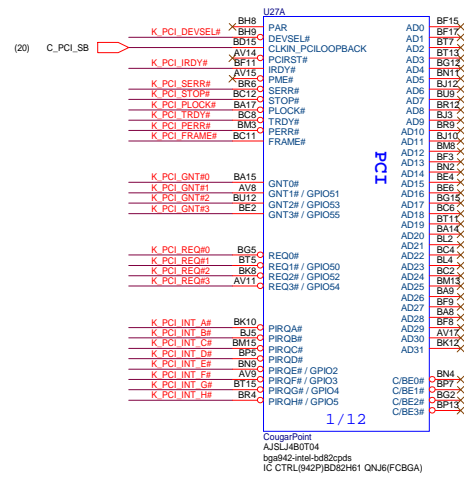
H:5.2 RVS Black
PCB Placement



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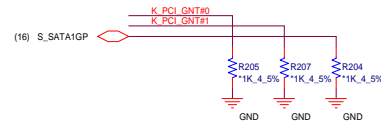
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No PCI Device



Boot BIOS Select

Boot Device	K_PCI_GNT#0	K_SATA1GP
LPC	0	0
PCI	1	0
Hard	0	1
SPI	1	1

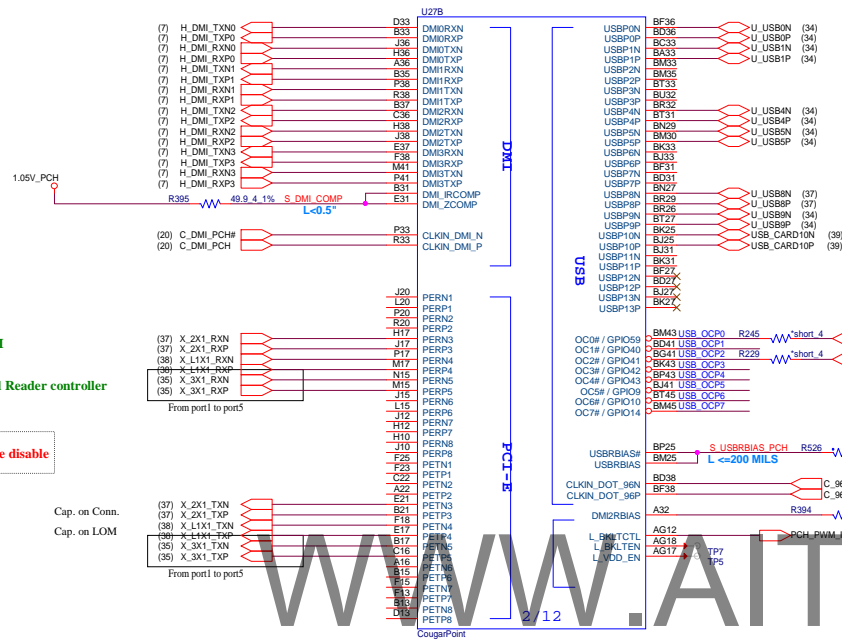


GNT3# internal pull-up.



GNT2#/GPIO53:ESI strap for server platform ONLY,Do not pull low.

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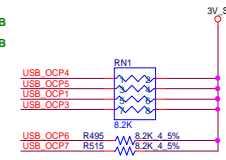


USB 0.1.4.5 : 4 Rear

USB 3 : :x
 USB 6 : :x
 USB 7 : :x
 USB 8 : :1 Mini PCIe - WIFI BlueTooth
 USB 9 : :1 Intergrated Webcam
 USB 10 : :Card Reader
 USB 11 : :x
 USB 12 : :x
 USB 13 : :x

H61 only support 10 USB ports.
 USBP6, USBP7, USBP12, USBP13 disable

OC 0, 1 --> Rear USB
 OC 4, 5 --> Rear USB

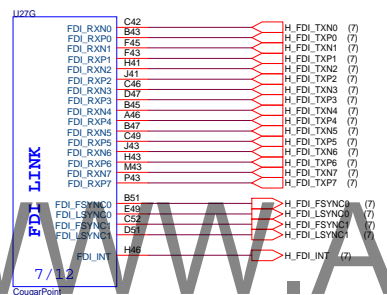
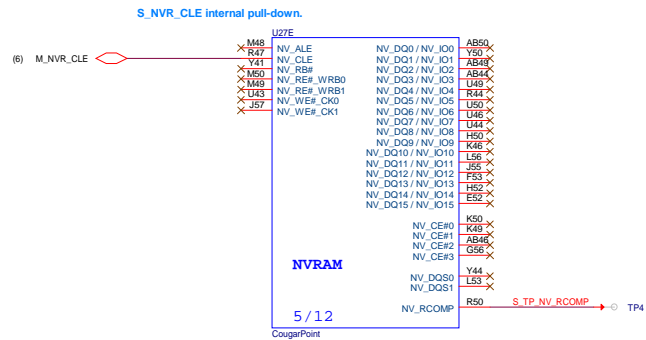


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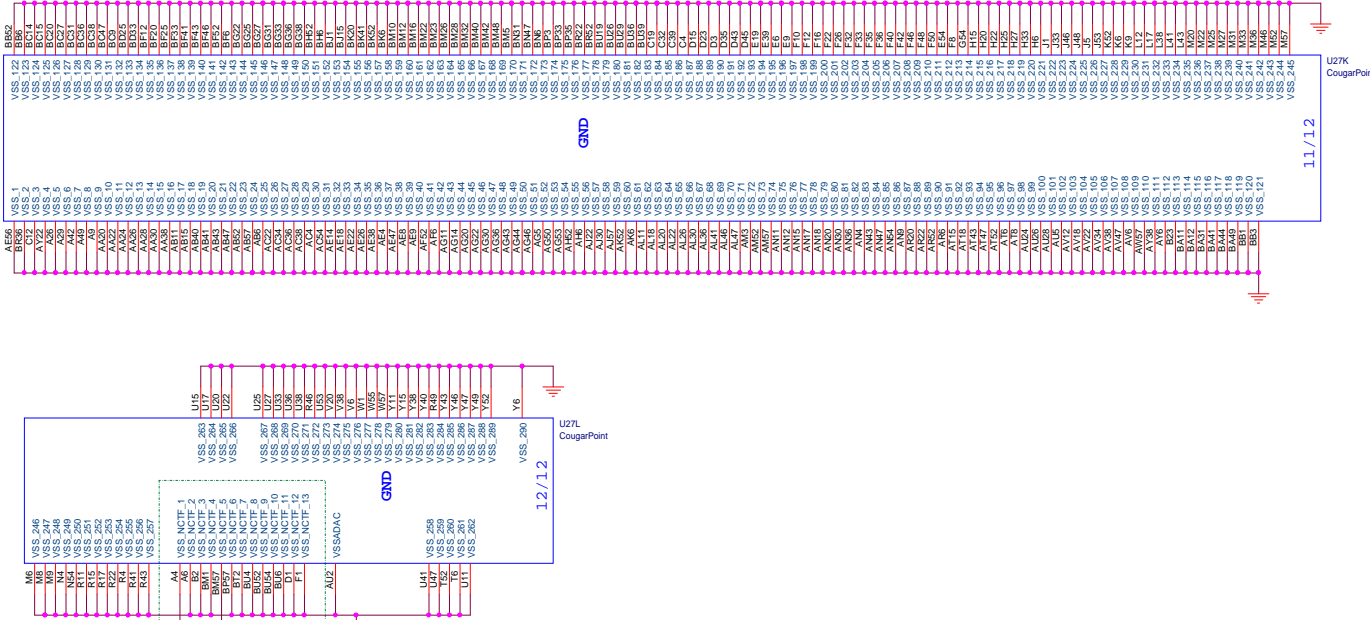


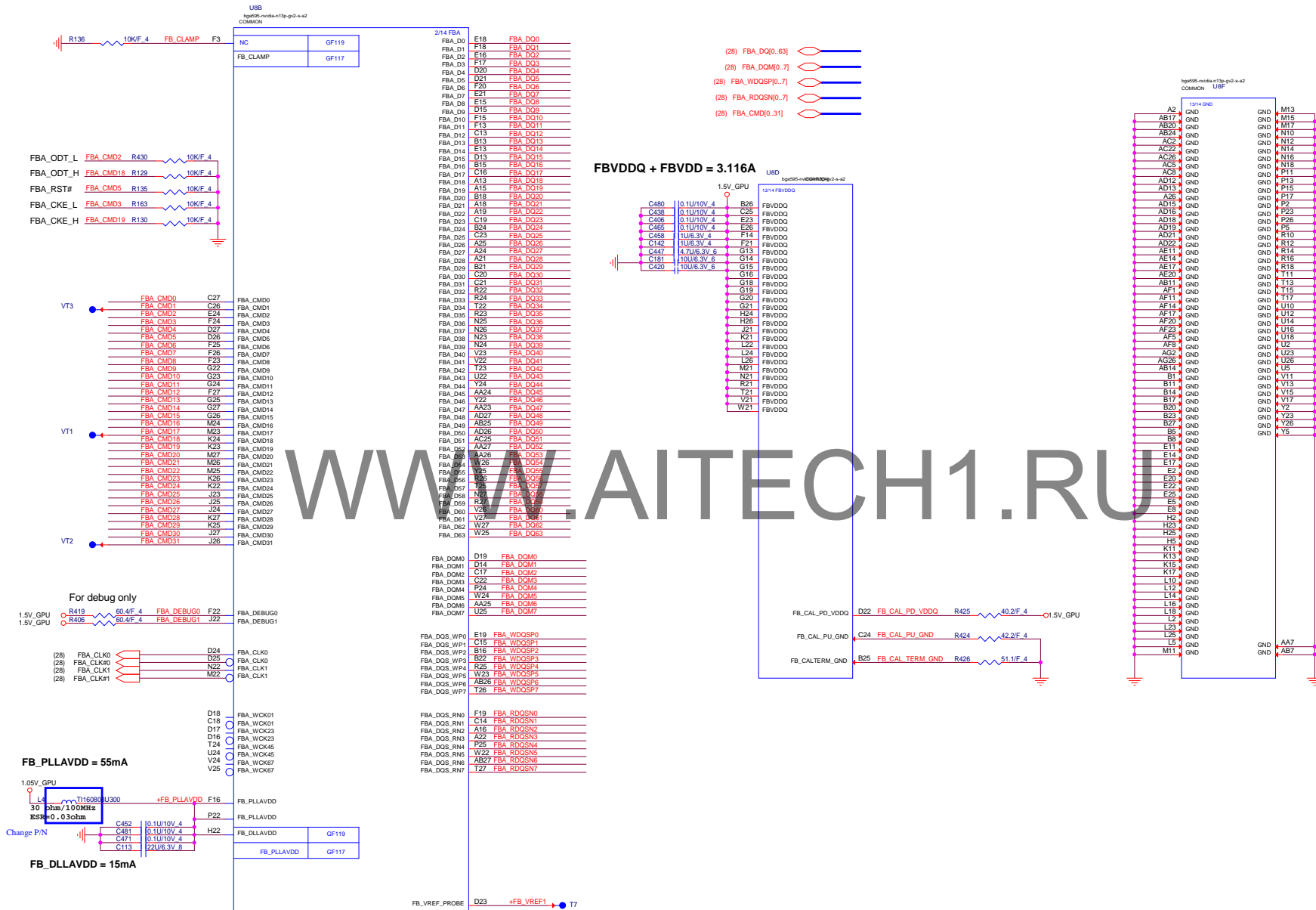
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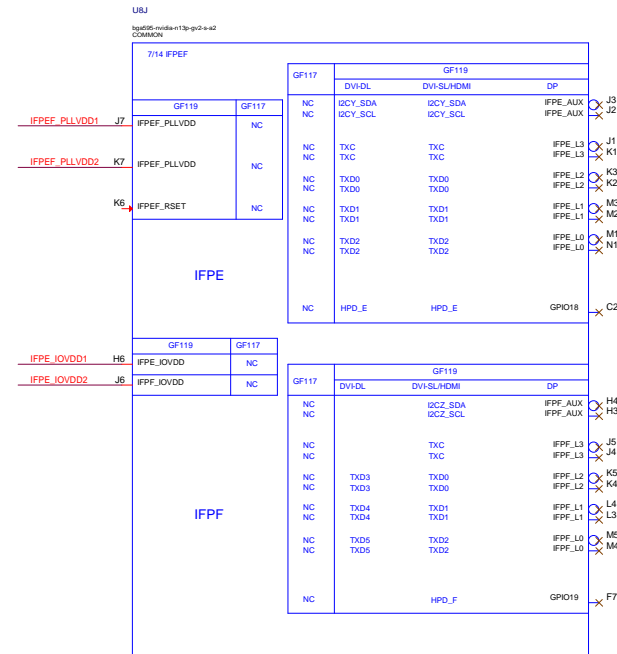
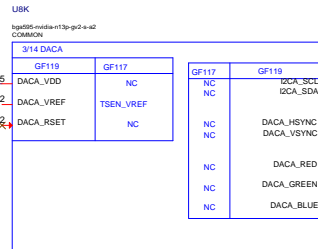
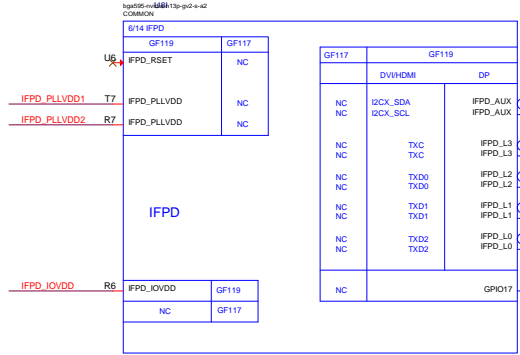
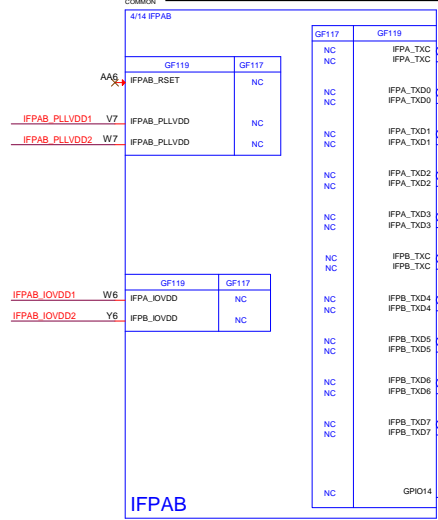
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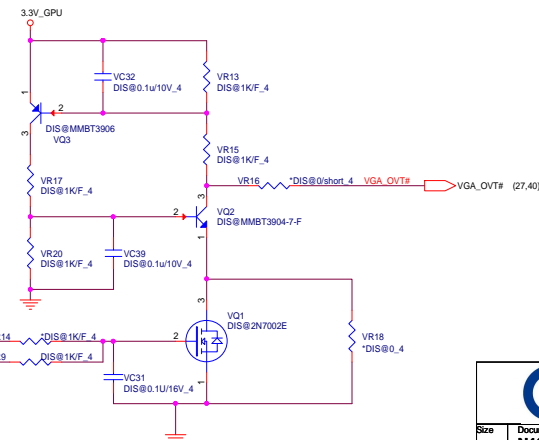
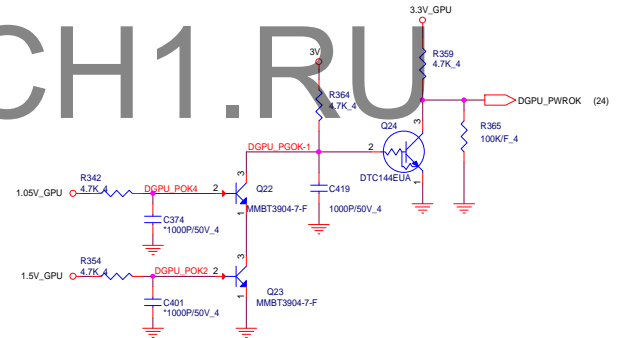
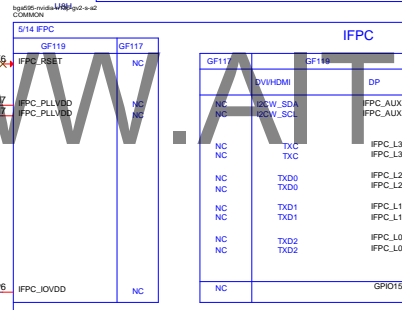


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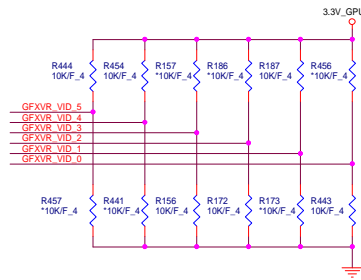
Optimus:
All unstuff , one Cap stuff 10K ohm



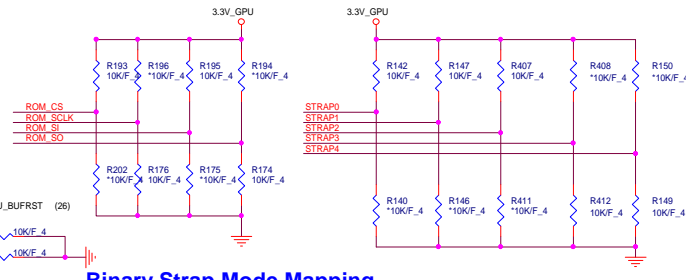
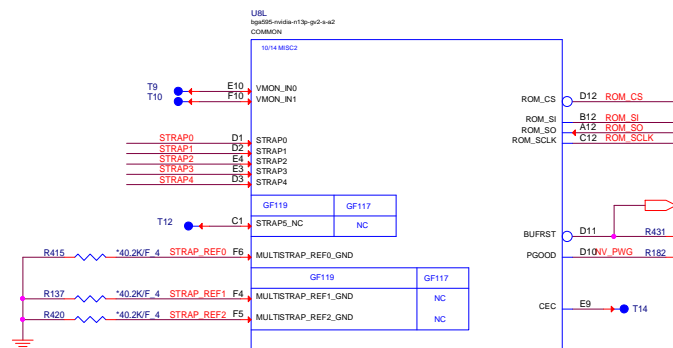
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N13P-GV2 NVDD HW BOOT Voltage = 0.875V
VID = 0110010



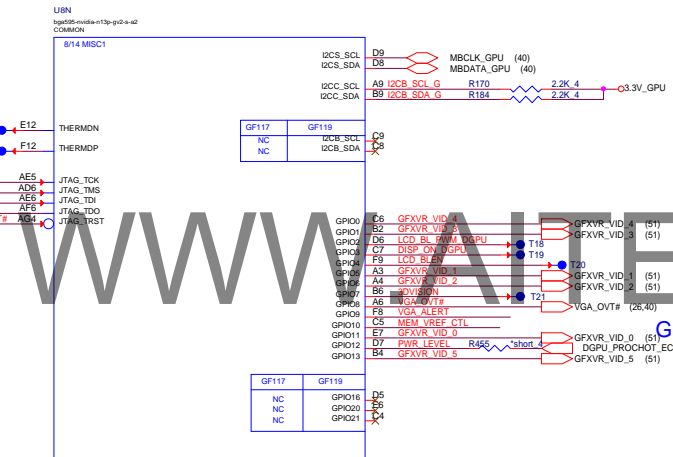
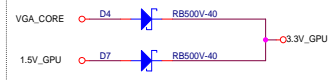
Binary Strap Mode Mapping

Strap Pin name	Strap Mapping	Resistance	Polarity
ROM_SCLK	SMB_ALT_ADDR	10Kohm	Pull-down to GND
ROM_SI	SUB_VENDOR	10Kohm	Pull-UP to 3V3 if VBIOS ROM Exists Pull-down to GND if no VBIOS ROM
ROM_SO	VGA_DEVICE	10Kohm	Pull-down to GND (no disply)
STRAP0	RAMCFG[0]	10Kohm	USER defined
STRAP1	RAMCFG[1]	10Kohm	USER defined
STRAP2	RAMCFG[2]	10Kohm	USER defined
STRAP3	RAMCFG[3]	10Kohm	USER defined
STRAP4	PCIE_MAX_SPEED	10Kohm	Pull-down to GND

VRAM Configuration Table

RAMCFG [3:0]	DESCRIPTION	Vendor	Vendor P/N	QC1 P/N
0000	Reserved			
0010	DDR3 64Mx16x8, 128bit, 1GB, 800MHz	Hynix		
0011	DDR3 64Mx16x8, 128bit, 1GB, 800MHz	Samsung		
0110	DDR3 128Mx16x4, 128bit, 1GB, 900MHz	Hynix	H5TQ2G63BFR-11C	AKD5MGWTW07
0111	DDR3 128Mx16x4, 128bit, 1GB, 900MHz	Samsung	K4W2G1646C-HC11	AKD5MGWTW08
XXXX				
XXXX				

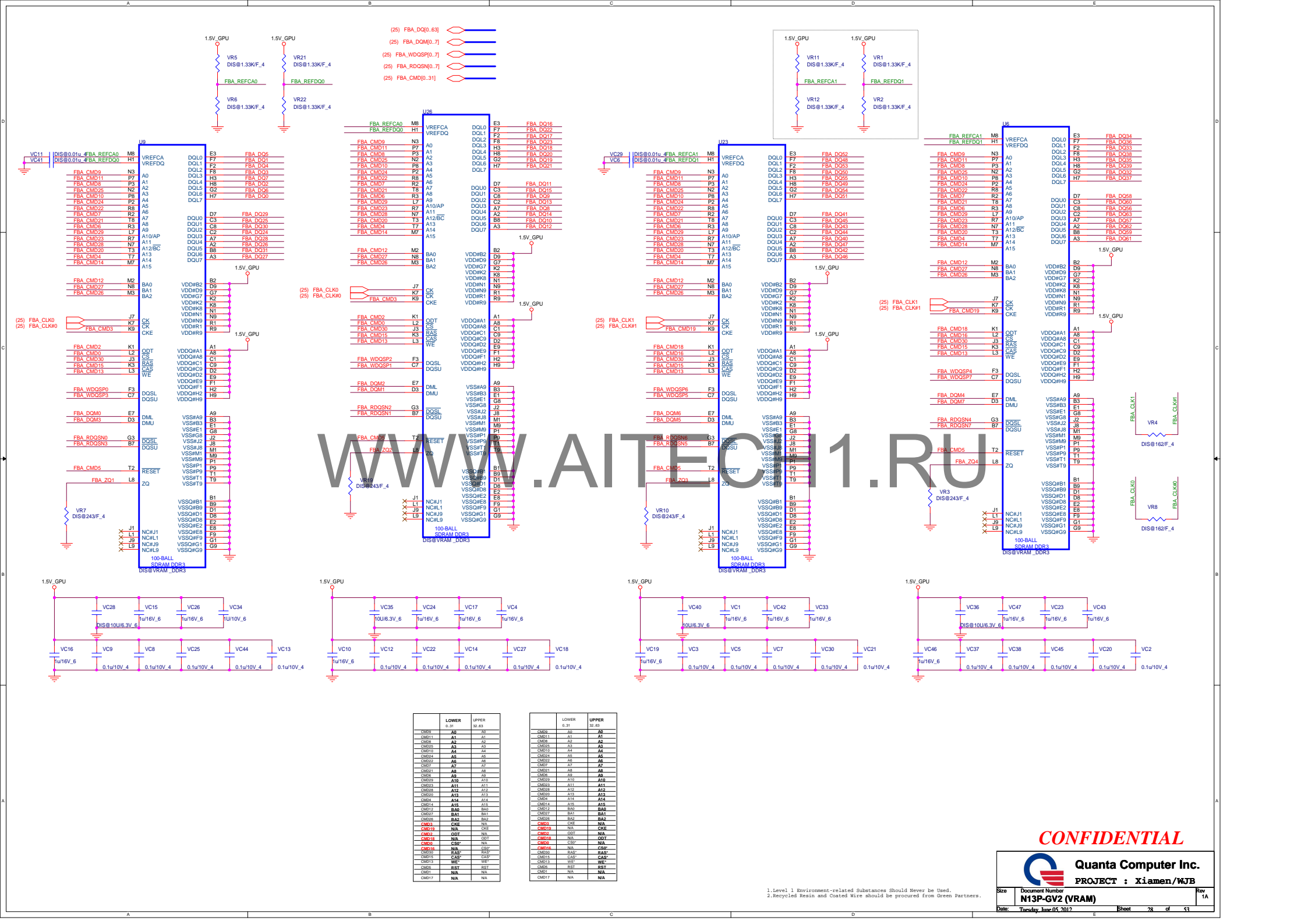
for meet Power down sequence.
Nvidia request for optimum




GB2-64 and GB4-128 GPIO Desdription

GPIO pin Name	Normal Function	I/O	Functional Description	Recommended Default Pull-up or Pull-down
GPIO0	GPU_VID4	O	GPU Core VDD VID4	Strap to boot NVVDD
GPIO1	GPU_VID3	O	GPU Core VDD VID3	Strap to boot NVVDD
GPIO2	LCD_BL_PWM	O	Panel Backlight PWM Brightness Control	100 K pull-down
GPIO3	LCD_VCC or PSI	O	Panel Power Enable or Phase Shedding	LCD_VCC: 100k pull-down PSI: 10k pull-up or pull-down; stuff as needed to disable phase shedding by default
GPIO4	LCD_BLEH	O	Panel Backlight Enable	100 K pull-down
GPIO5	GPU_VID1	O	GPU Core VDD VID1	Strap to boot NVVDD
GPIO6	GPU_VID2	O	GPU Core VDD VID2	Strap to boot NVVDD
GPIO7	3DVision	O	3D Vision Left/Right signal	100 K pull-down
GPIO8	OVERT	I/O	Active Low Thermal Catastrophic Over Temperature	100 K pull-up
GPIO9	ALERT	I/O	Active Low Thermal Alert	100 K pull-up
GPIO10	MEM_VREF_CTL	O	Memory VREF Control	100 K pull-down
GPIO11	GPU_VID0	O	GPU Core VDD VID0	Strap to boot NVVDD
GPIO12	PWR_LEVEL	I	AC power detect or power supply overdraw input	100 K pull-up
GPIO13	GPU_VID5	O	GPU Core VDD VID5	Strap to boot NVVDD
GPIO14	HFD_AB	I	Hot Plug Detect for IFPAB	See Figure 76
GPIO15	HFD_C	I	Hot Plug Detect for IFPC	See Figure 76
GPIO16	PSI or MEM_VDD_CTL	O	Phase Shedding or Memory VDD VID	PSI: 10k pull-up or pull-down; stuff as needed to disable phase shedding by default MEM_VDD_CTL: Strap to boot FBVDD/Q
GPIO17	HFD_D	I	Hot Plug Detect for IFPD	See Figure 76
GPIO18	HFD_E	I	Hot Plug Detect for IFPE	See Figure 76
GPIO19	HFD_F	I	Hot Plug Detect for IFPF	See Figure 76
GPIO20	Reserved			
GPIO21	Reserved			

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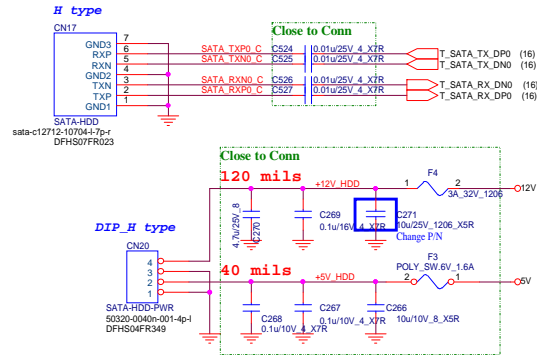


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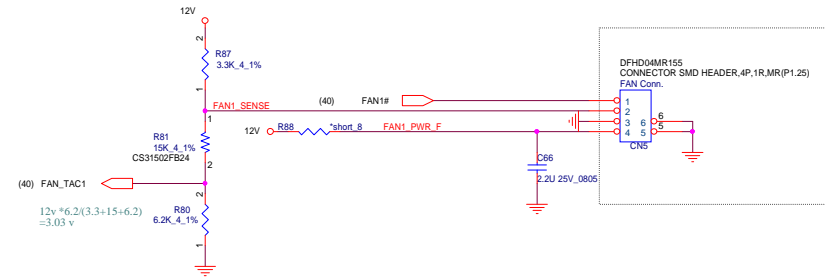
Size	Document Number	Rev
	N13P-GV2 (VRAM)	1A
Date:	Tuesday, June 05, 2012	Sheet 28 of 51

1. Level 1 Environment-related Substances Should Never be Used.
2. Recycled Resin and Coated Wire should be procured from Green Partners.

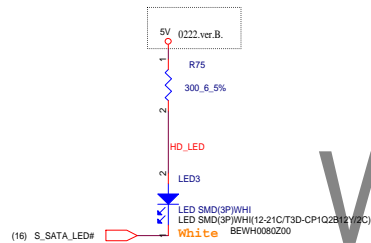
HDD SATA CONNECTOR



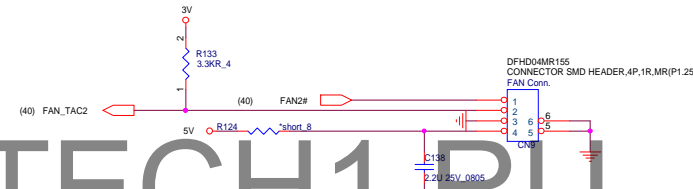
FAN1



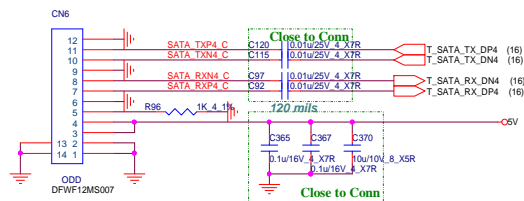
HDD LED



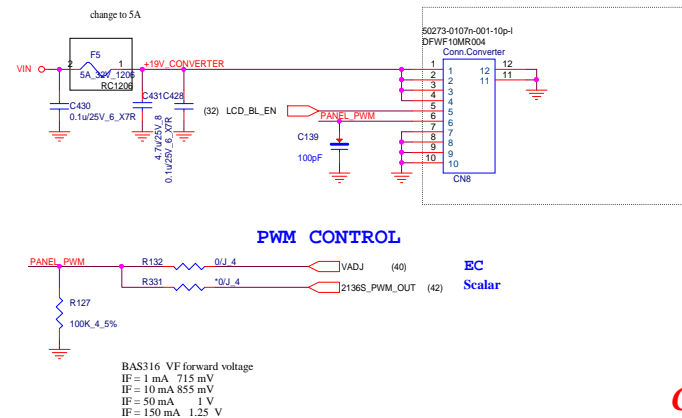
FAN2



ODD SATA Conn.

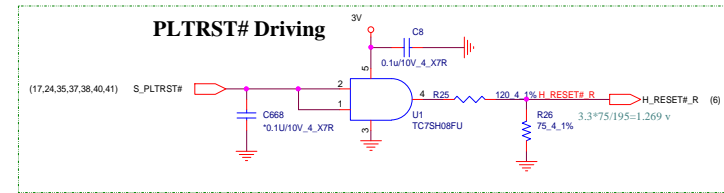
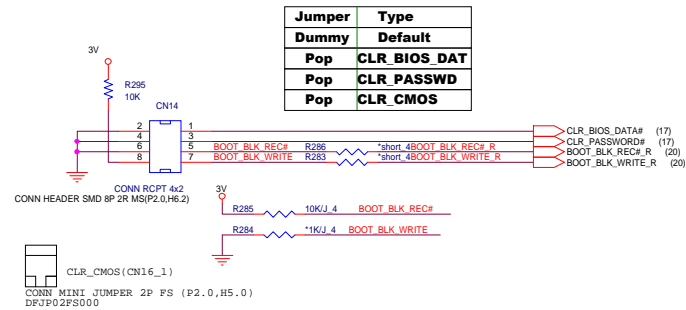


TO CONVERTER CONNECT

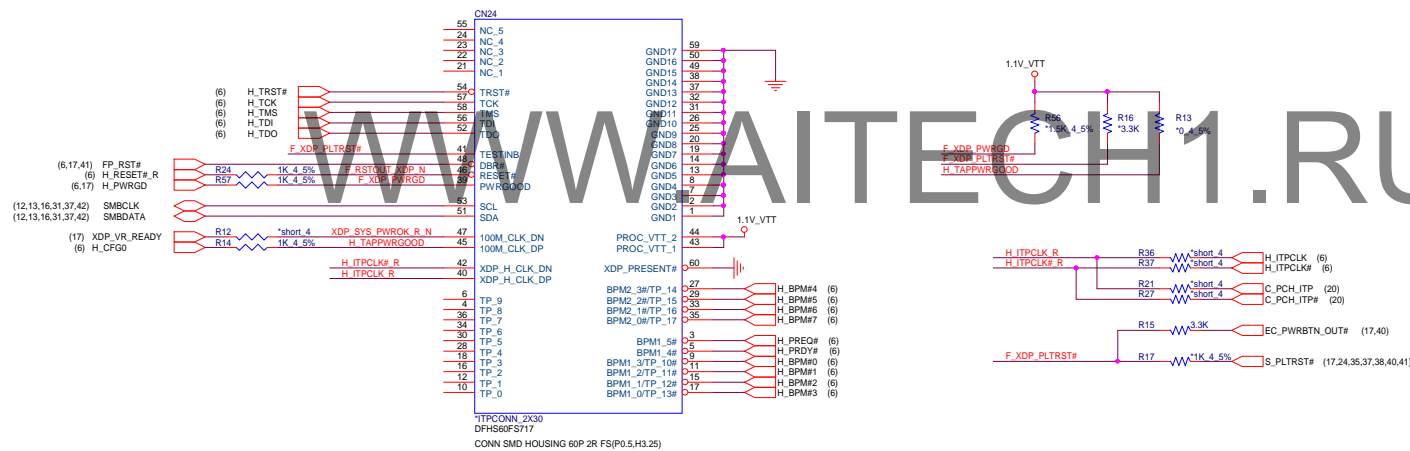


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CLR_CMOS



XDP Connector - CPU

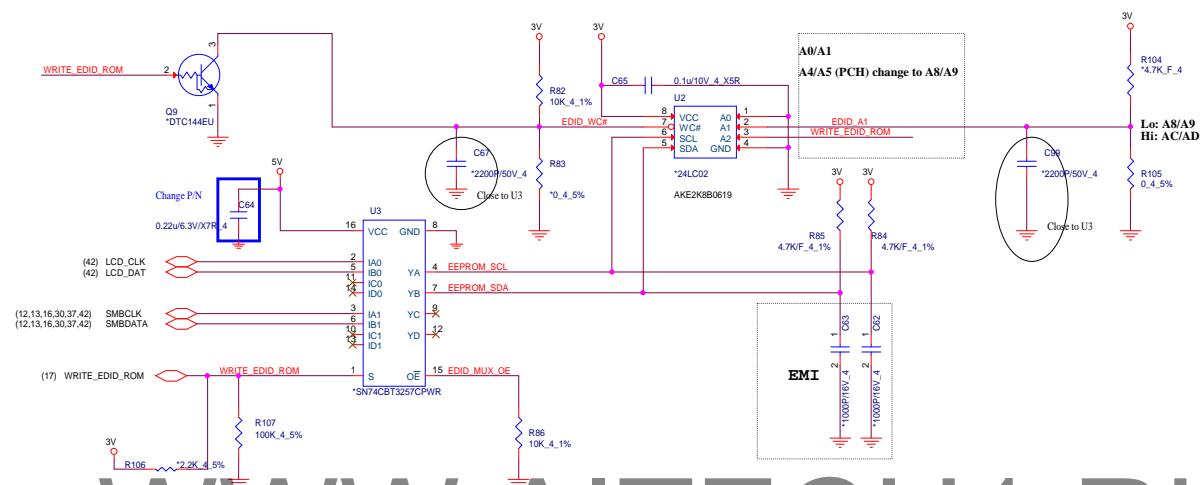


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PANEL EDID DATA



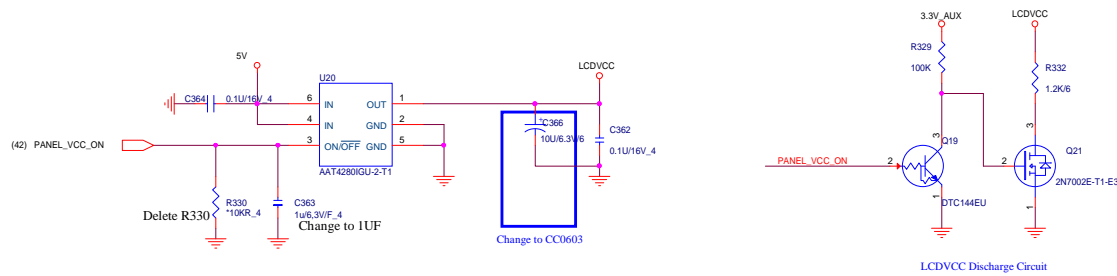
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Quanta Computer Inc.
PROJECT : Xiamen/WJB

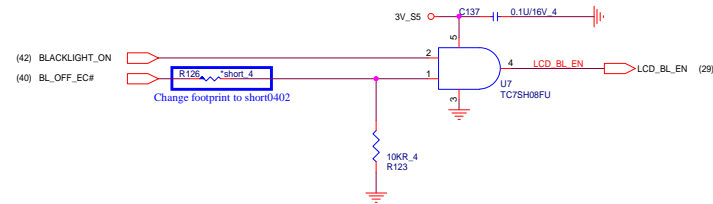
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	EDID	
Date:	Tuesday, June 05 2012	Sheet 31 of 53

PANEL VCC CONTROL

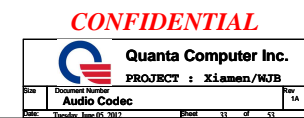
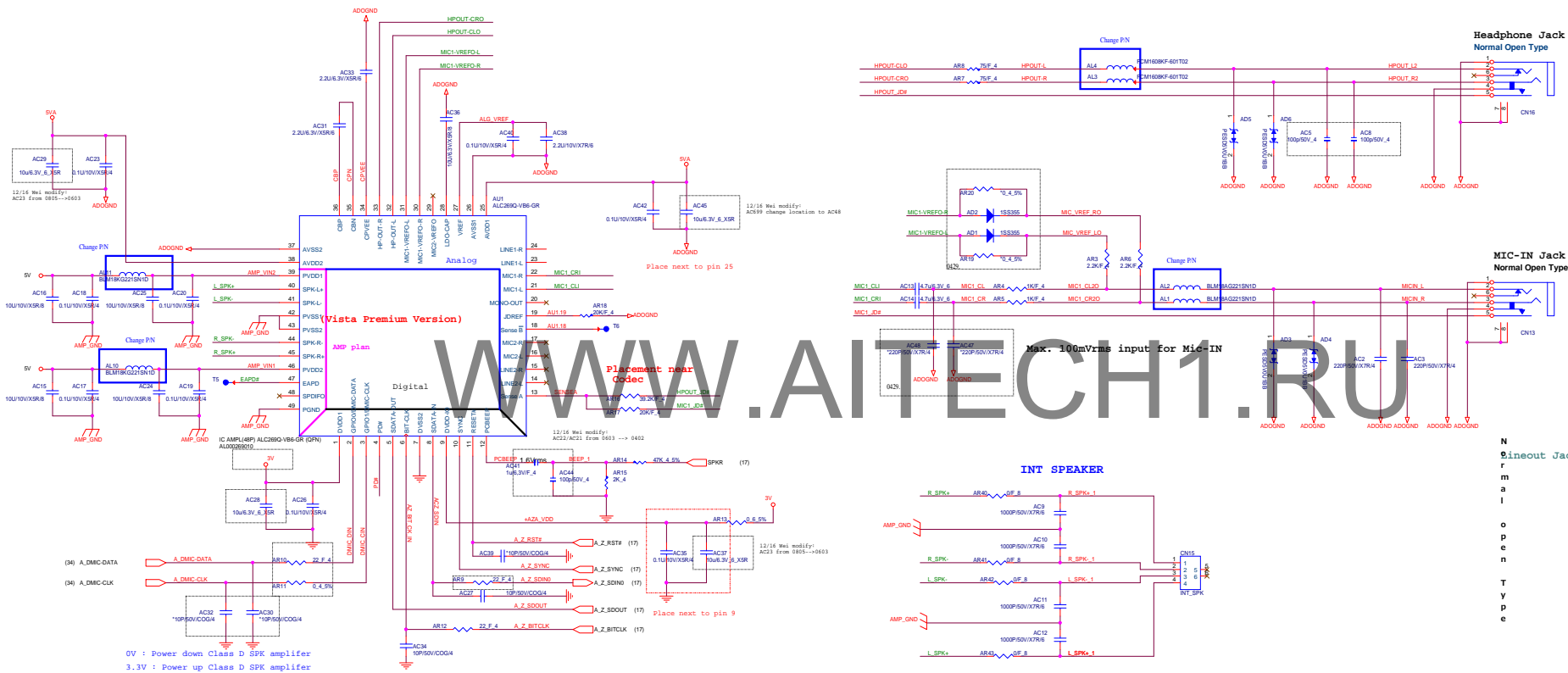


BackLight Enable

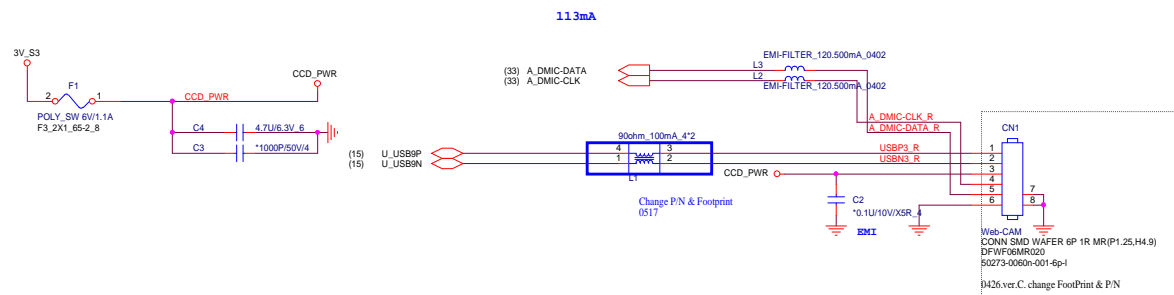
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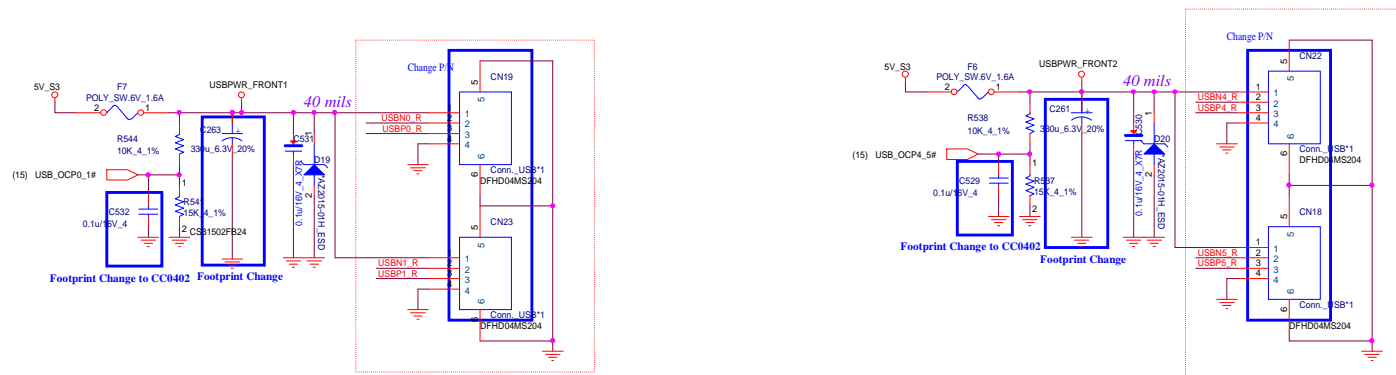
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WEBCAM

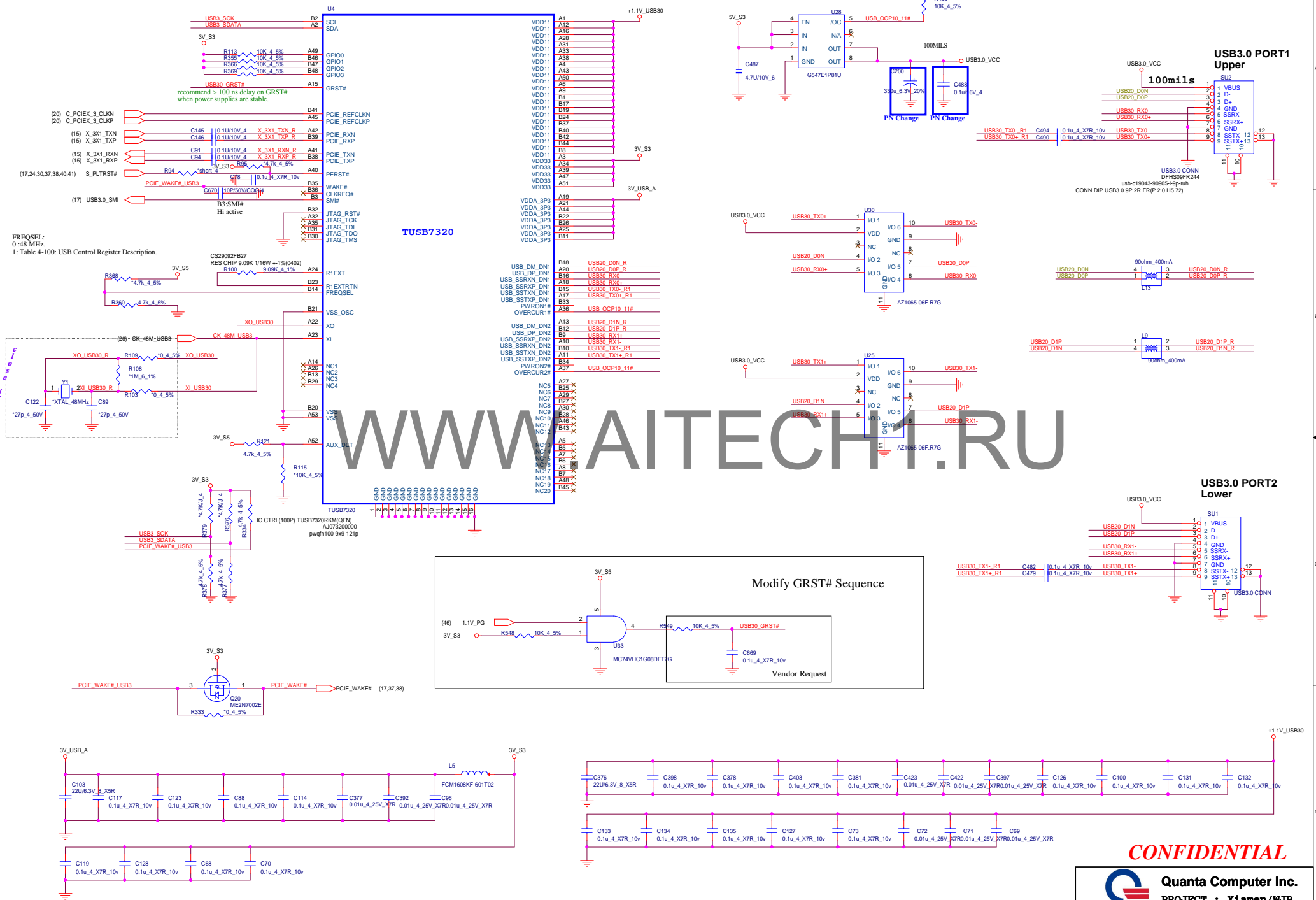


4 Rear(USB2.3.4.5.) - Vertical Type



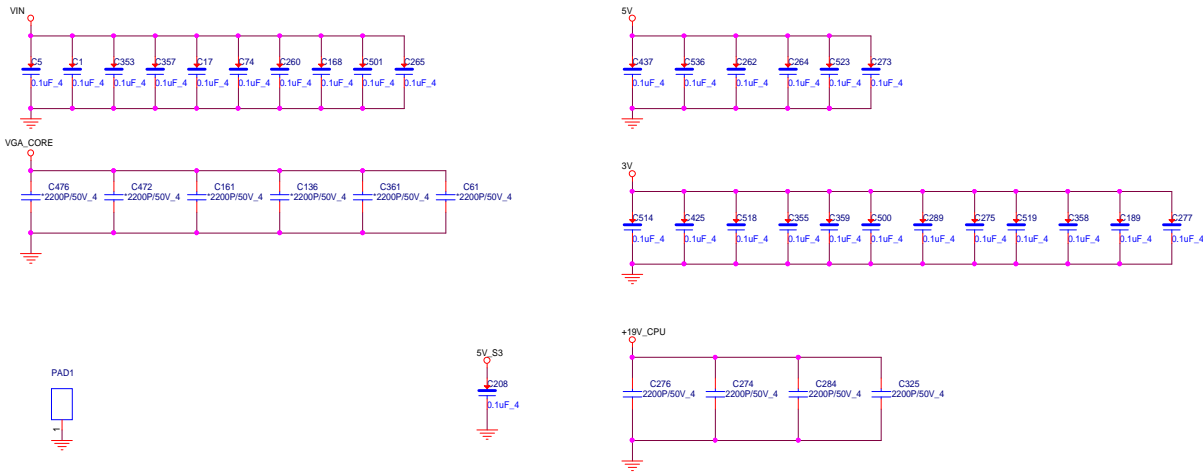
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TUSB7320 in D0 state with two SS hubs connected (both SS and HS active):
VDD11 = 793 mW, VDD33 = 20 mW, VDDA_3P3 = 478 mW



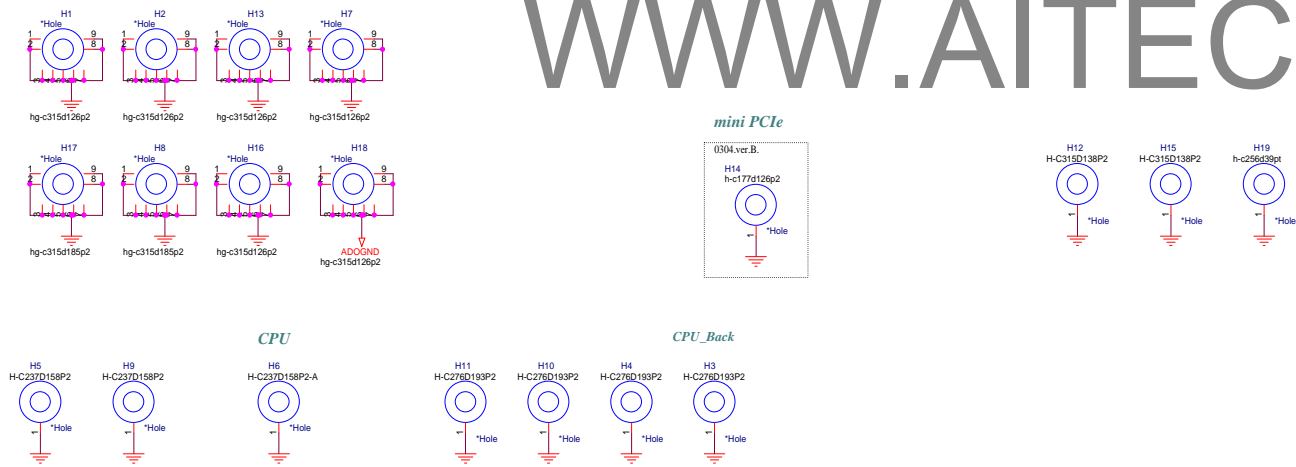
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EMI Cap.



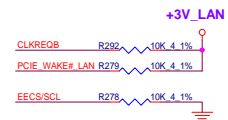
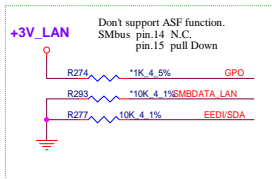
Hole.

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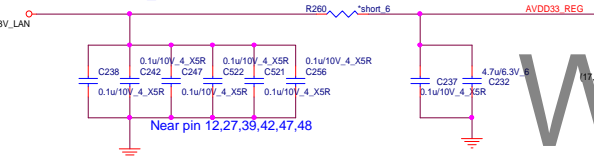


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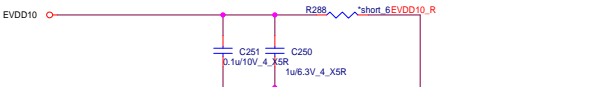
GLAN RTL8111E-GR/RJ45= IC CTRL(48P) RTL8171EH-CG(QFN)



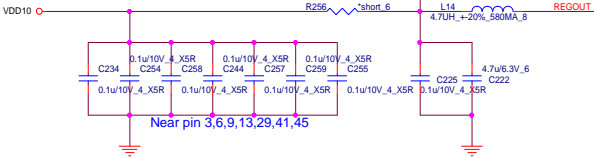
EVDD10/AVDD33_REG trace width >60mils



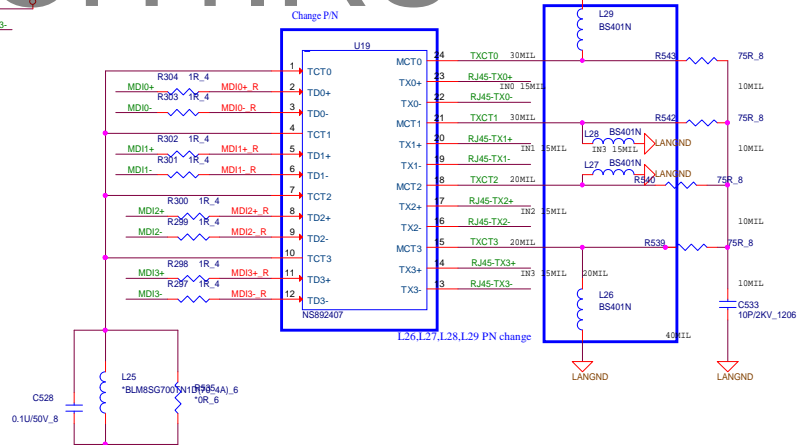
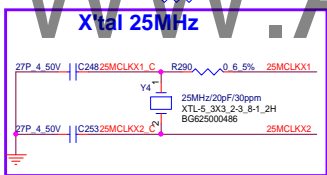
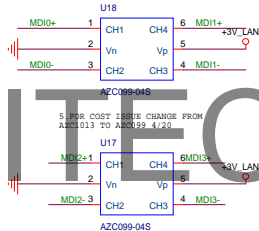
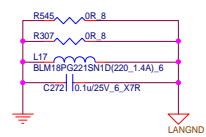
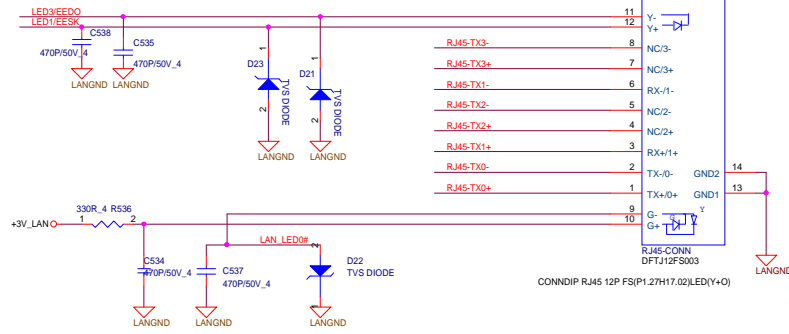
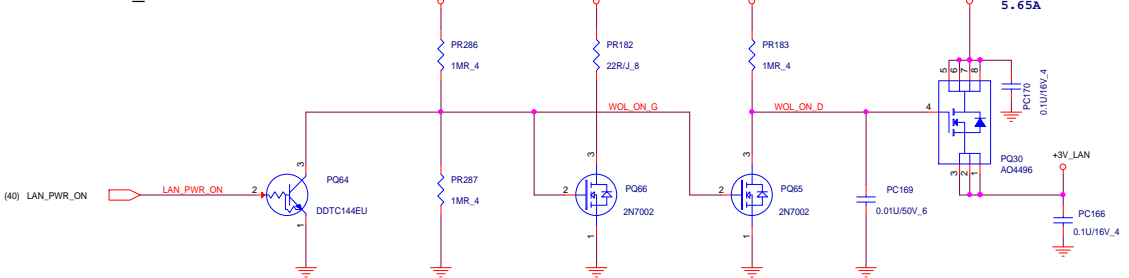
EVDD10 trace width >60mils C647,C648 close to U3-PIN21



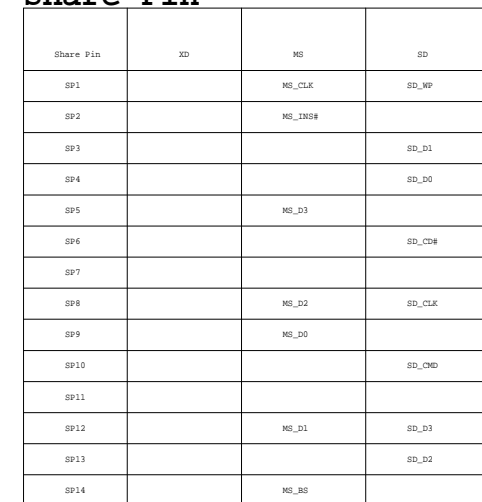
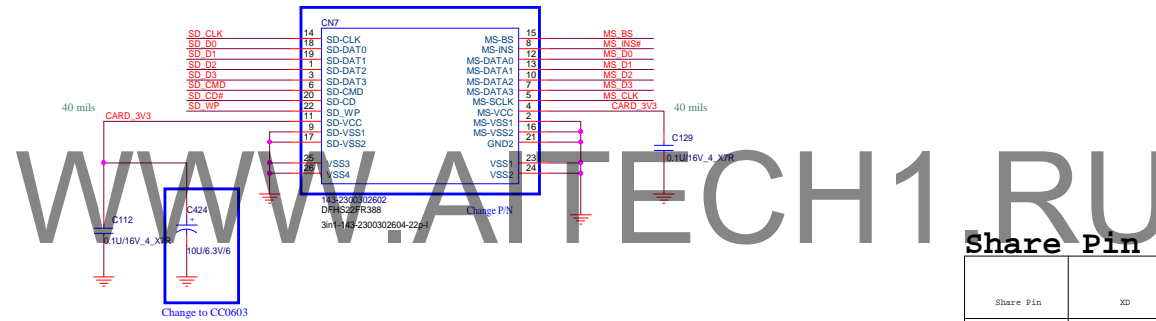
EVDD10/N780946/REGOUT trace width >60mils



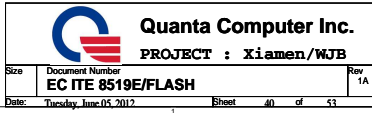
+3V_LAN



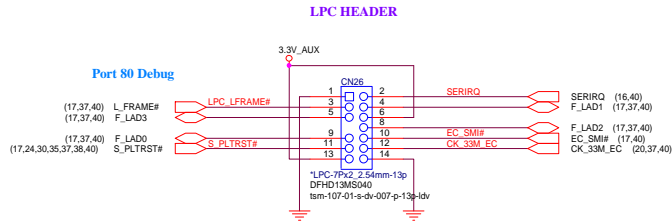
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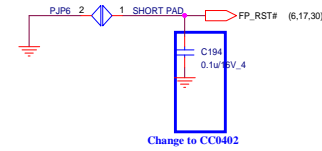
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LEDs/LPC HEADER



Reset Button (For Debug only)

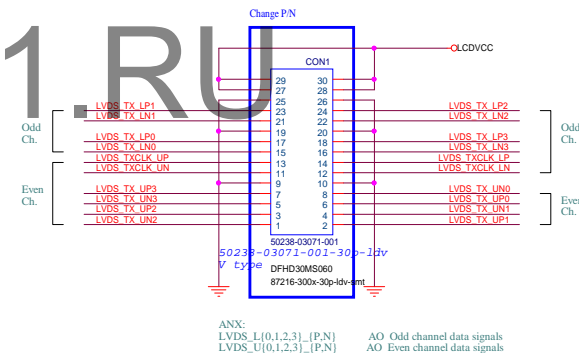
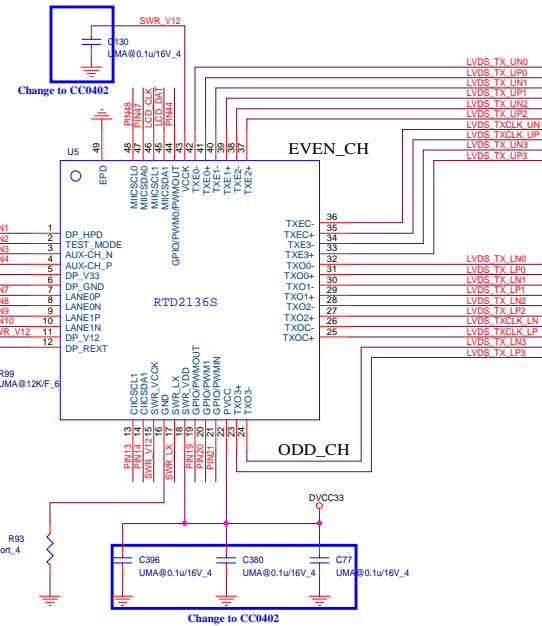
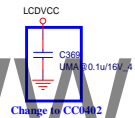
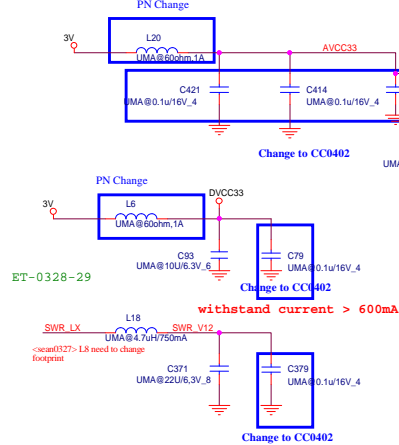
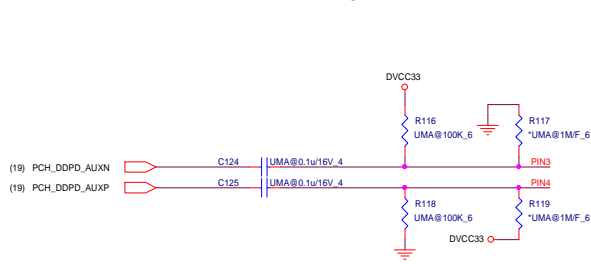
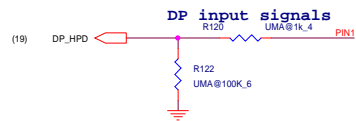


PCA debug LED requirement:

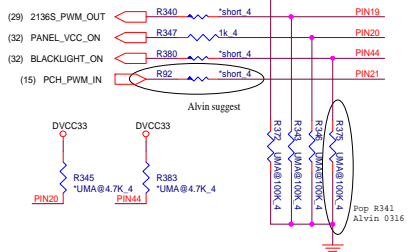


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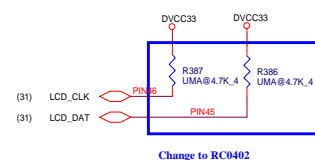
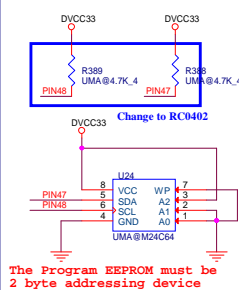
GPIO & TESTING signals



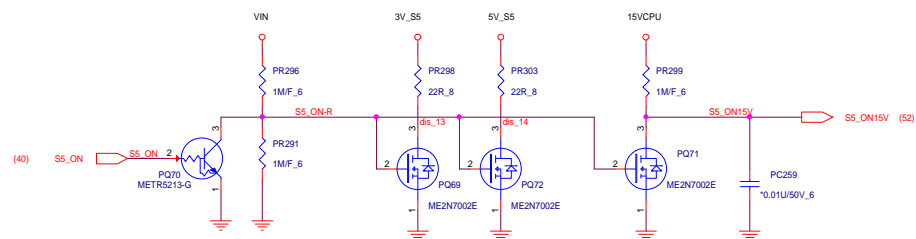
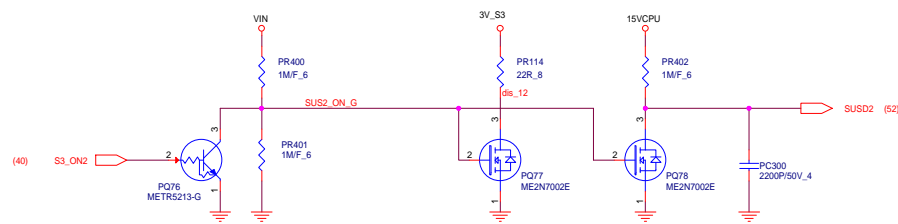
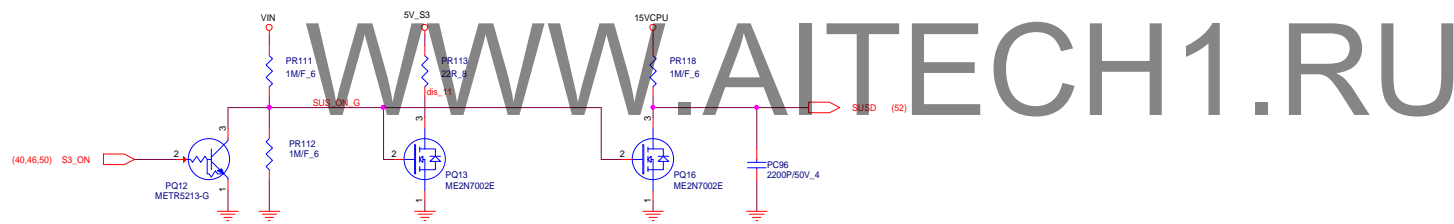
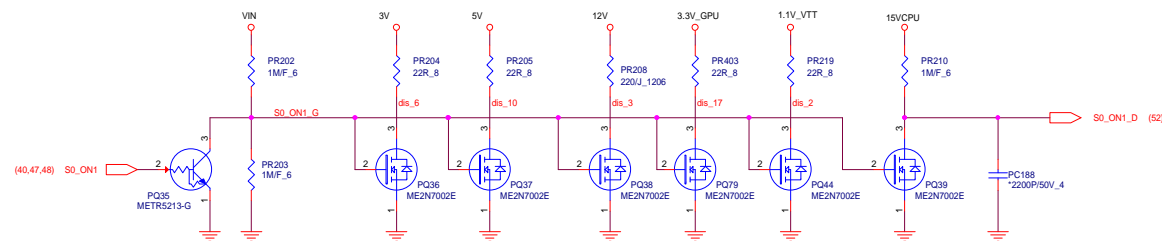
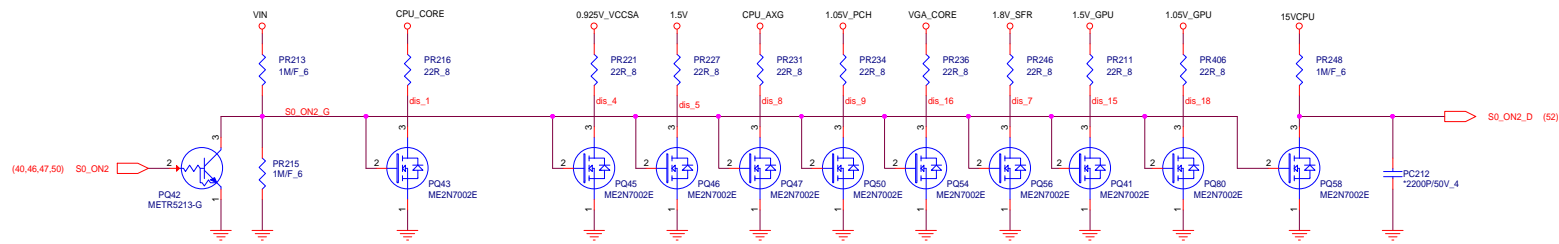
In System Programming




Program EEPROM, slave address=0xA8



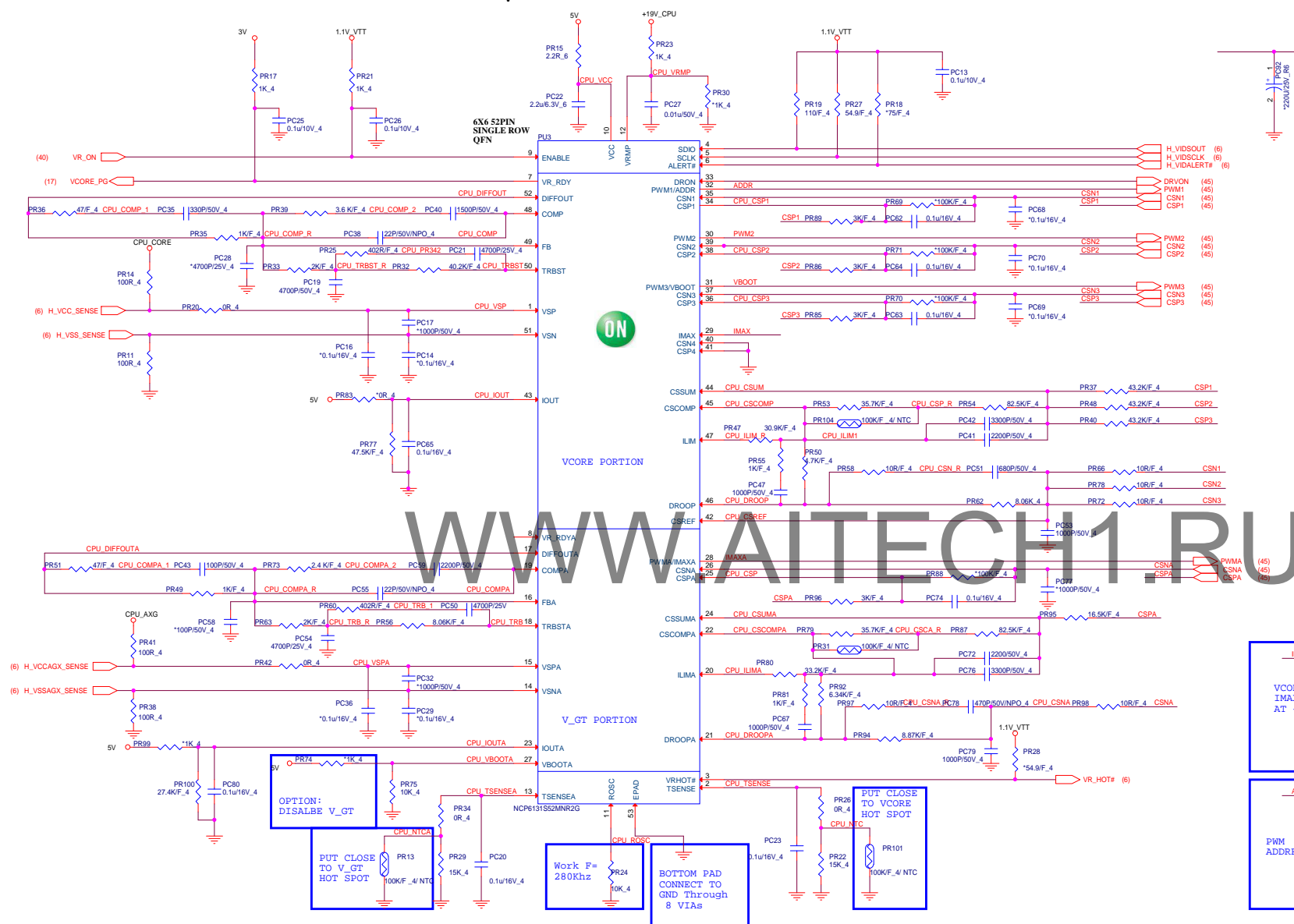
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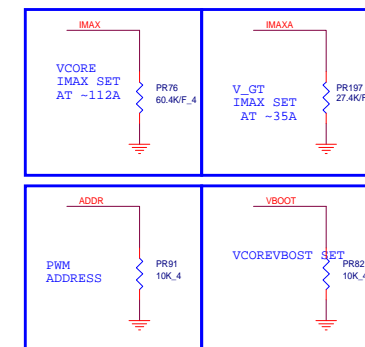
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		1A
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NCP6131(52pin SR) VR12 POWER CKT - 3+1 PHASE



PWM ADDRESS		
RESISTOR VALUE	SVID ADDRESS FOR VCOE RAIL	SVID ADDRESS FOR V_GT RAIL
10K	0000	0001
25K	0010	0011
45K	0100	0101
70K	0110	0111
95K	1000	1001
125K	1010	1011
165K	1100	1101

BOOT VOLTAGE	
RESISTOR VALUE	BOOT VOLTAGE
10K	0V
25K	0.85V
45K	0.9V
70K	0.95V
95K	1V
125K	1.1V
165K	1.5V



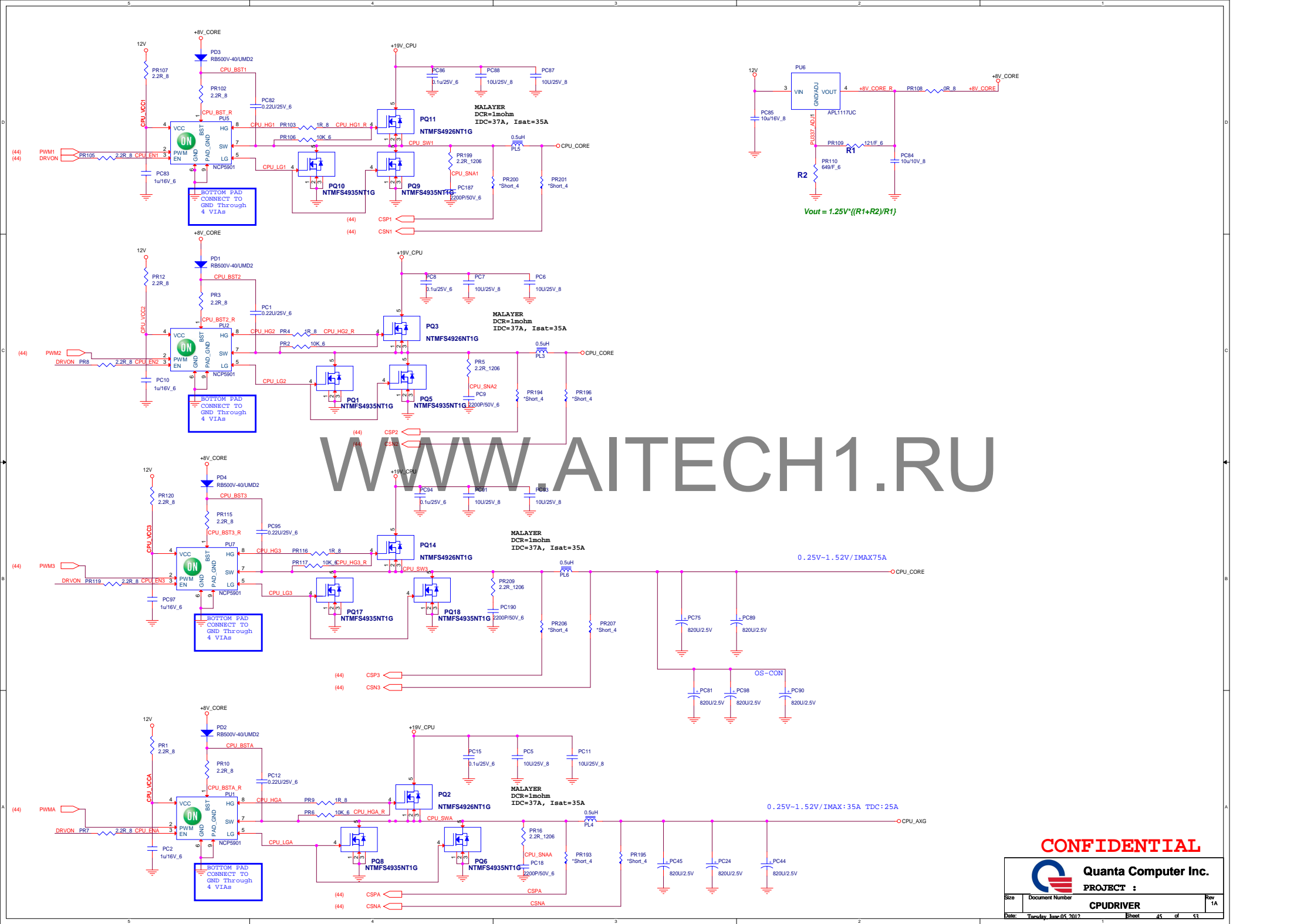
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Quanta Computer Inc.

PROJECT :
CPU(NCP613)

Rev	1
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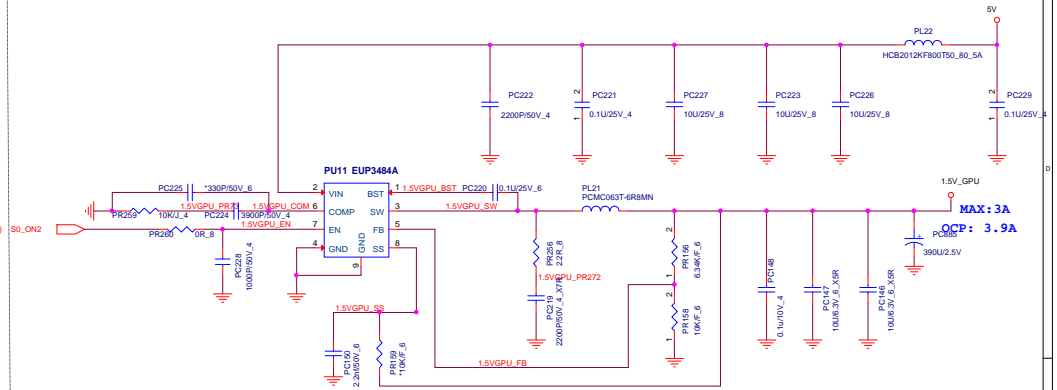
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Quanta Computer Inc.

PROJECT :

CPUDRIVER




The schematic diagram illustrates the AITEC board's internal circuitry. It features three main power rails: 5V_S5, 3V_S5, and 1.5V_S3. The 5V_S5 rail is connected to a 5V pin and a 5V_50 pin, with a 5.0K_6 resistor (PR149) and a 100nF/5V_4_X7R capacitor (PC130) connected to ground. The 3V_S5 rail is connected to a 3V pin and a 3V_50 pin, with a 21K/6_1% resistor (PR150) and a 100nF/5V_4_X7R capacitor (PC131) connected to ground. The 1.5V_S3 rail is connected to a 1.5V pin and a 1.5V_50 pin, with a 100nF/5V_4_X7R capacitor (PC132) and a 100nF/5V_4_X7R capacitor (PC133) connected to ground. A microcontroller (PQ22, METRS213-G) is connected to the 5V_S5 rail and a 100nF/5V_4_X7R capacitor (PC130) connected to ground. A voltage detector (PQ24, NTMFS922NT1G) is connected to the 1.5V_S3 rail and a 100nF/5V_4_X7R capacitor (PC137) connected to ground. A red dashed box labeled 'Short' is present on the 1.5V_S3 rail, indicating a short circuit. The board also includes several other components, including resistors (PR148, PR149, PR150, PR151, PR152, PR153, PR154, PR155, PR156, PR157, PR158, PR159, PR160, PR161, PR162, PR163, PR164, PR165, PR166, PR167, PR168, PR169, PR170, PR171, PR172, PR173, PR174, PR175, PR176, PR177, PR178, PR179, PR180, PR181, PR182, PR183, PR184, PR185, PR186, PR187, PR188, PR189, PR190, PR191, PR192, PR193, PR194, PR195, PR196, PR197, PR198, PR199, PR200, PR201, PR202, PR203, PR204, PR205, PR206, PR207, PR208, PR209, PR210, PR211, PR212, PR213, PR214, PR215, PR216, PR217, PR218, PR219, PR220, PR221, PR222, PR223, PR224, PR225, PR226, PR227, PR228, PR229, PR230, PR231, PR232, PR233, PR234, PR235, PR236, PR237, PR238, PR239, PR240, PR241, PR242, PR243, PR244, PR245, PR246, PR247, PR248, PR249, PR250, PR251, PR252, PR253, PR254, PR255, PR256, PR257, PR258, PR259, PR260, PR261, PR262, PR263, PR264, PR265, PR266, PR267, PR268, PR269, PR270, PR271, PR272, PR273, PR274, PR275, PR276, PR277, PR278, PR279, 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Short for Non-M3 support

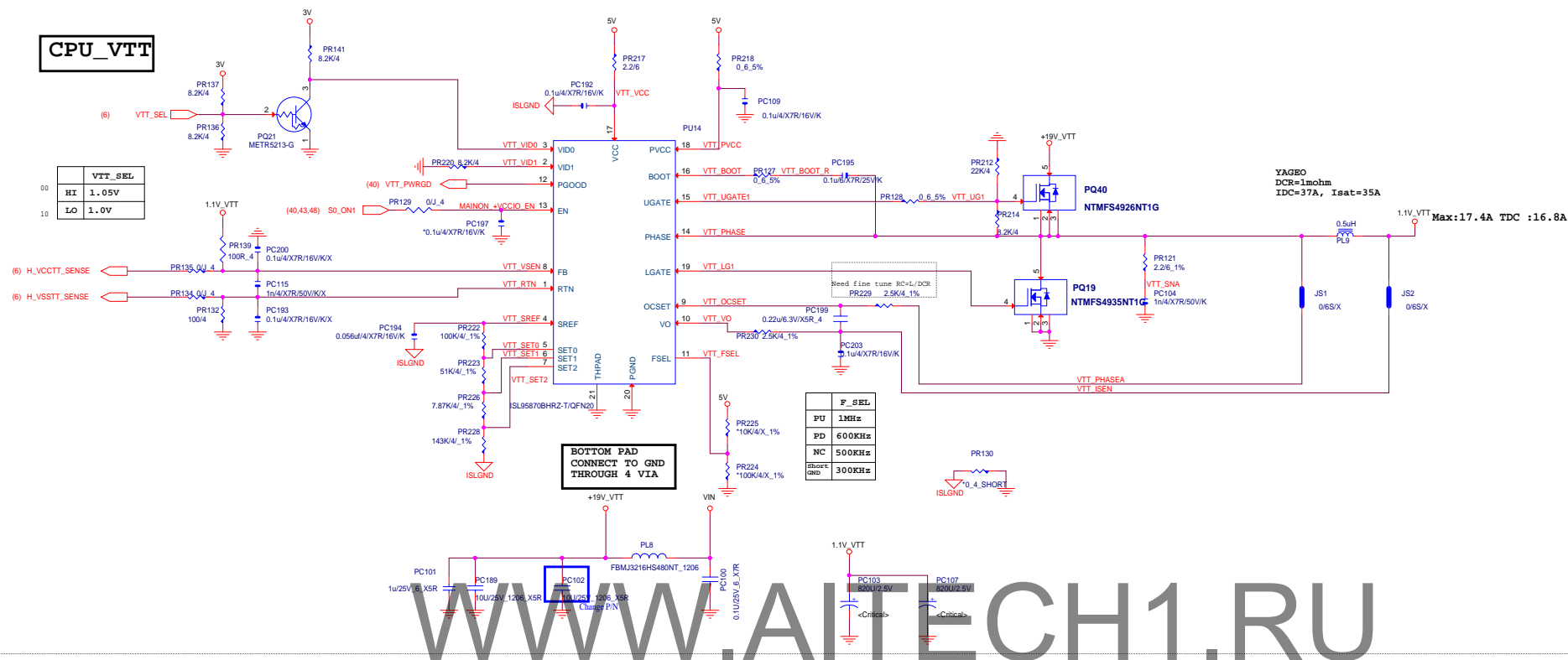
1.05V_PCH 1.05V
IMAX:8A TDC:5.6A
1.8W

[illegible]

X7R Short for Non-M3 support

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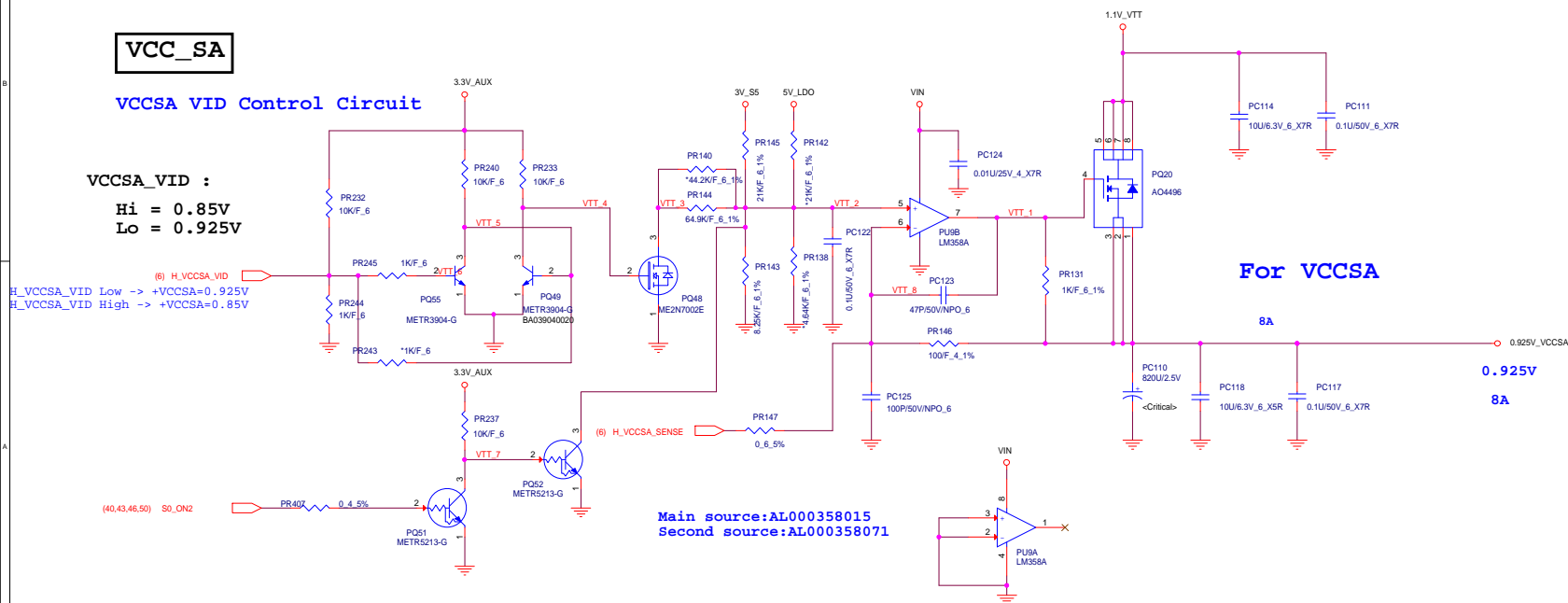
CPU_VTT



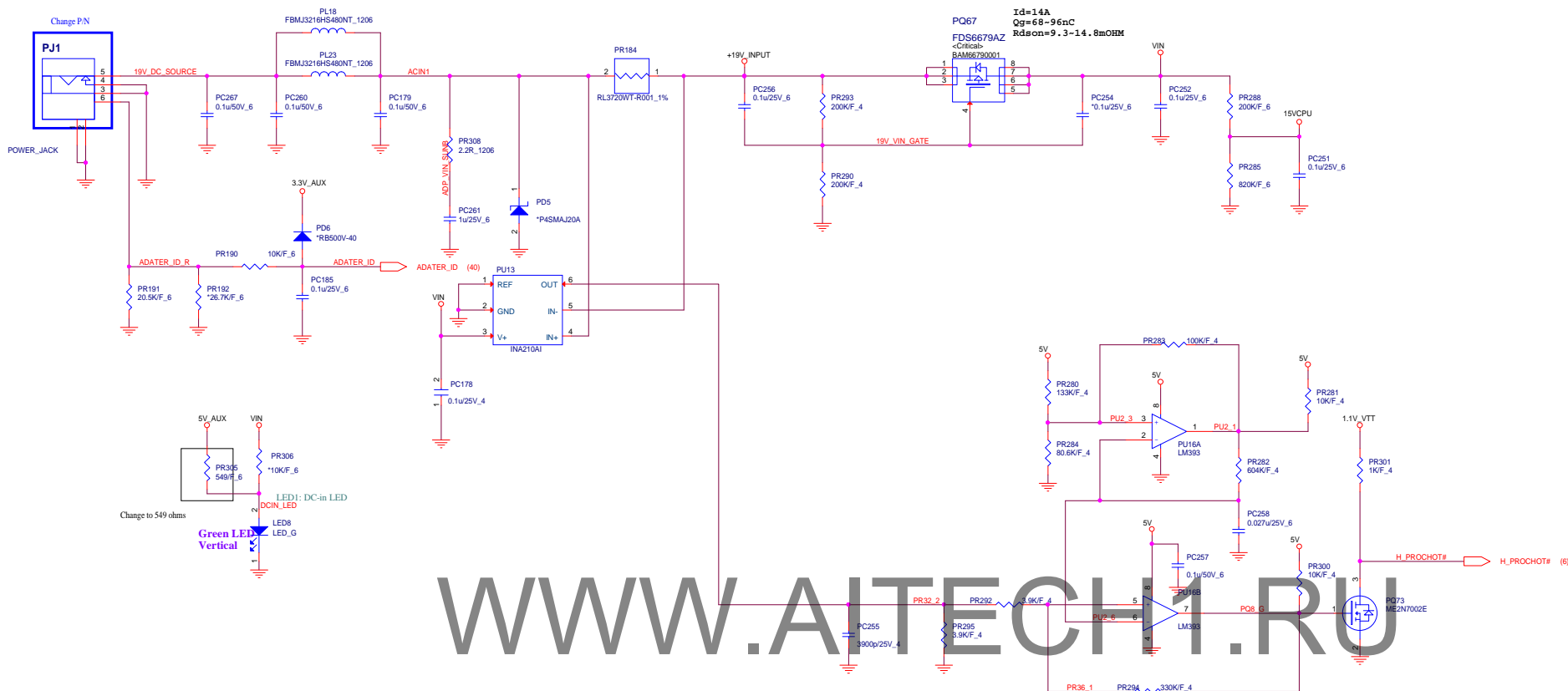
VCC_SA

VCCSA VID Control Circuit

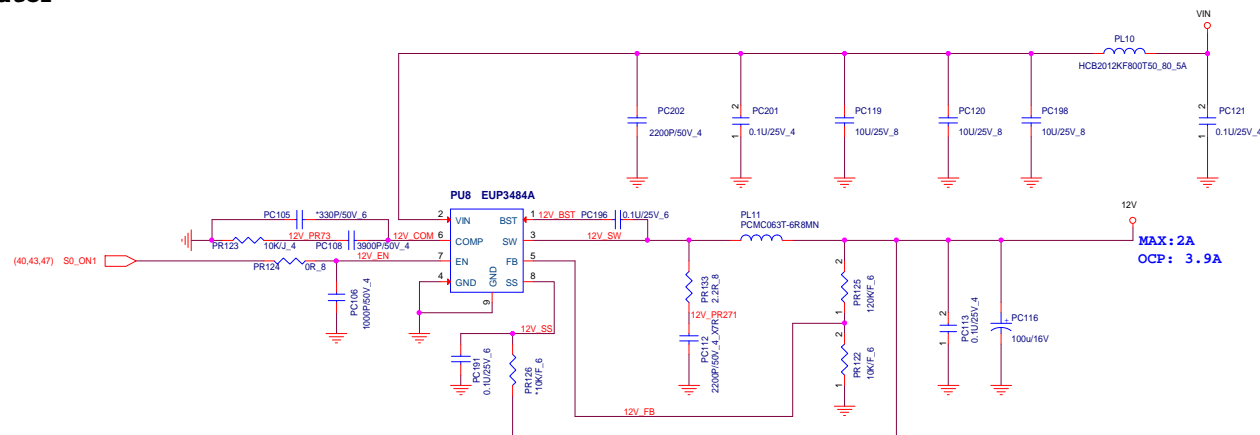
VCCSA_VID :
Hi = 0.85V
Lo = 0.925V



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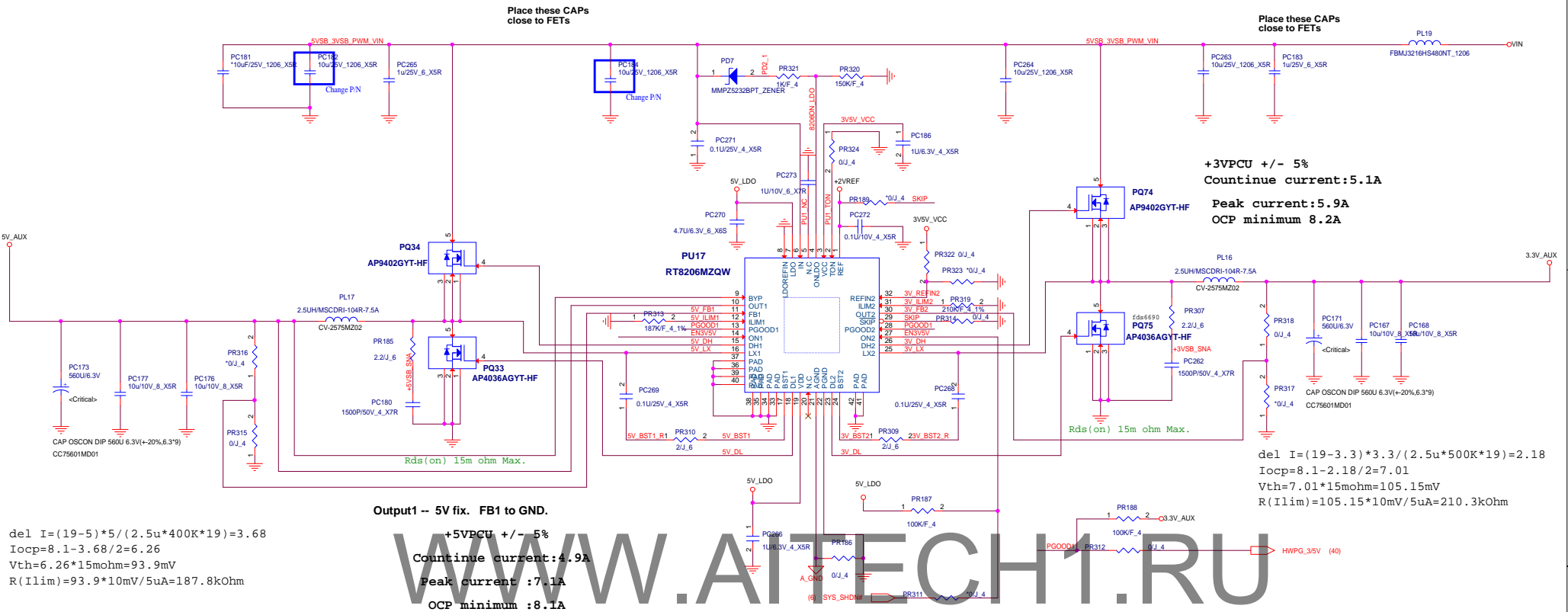


+12V Regulator




$$V_{out} = 0.923 * ((R1 + R2) / R2)$$

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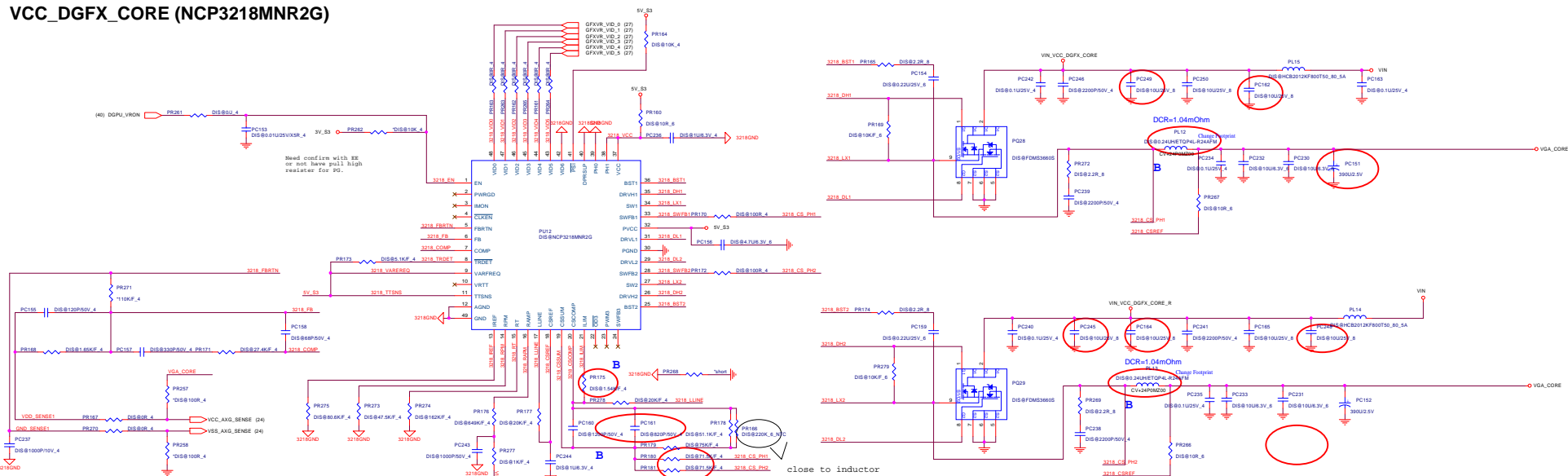


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VCC_DGFX_CORE (NCP3218MNR2G)



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Load Switch

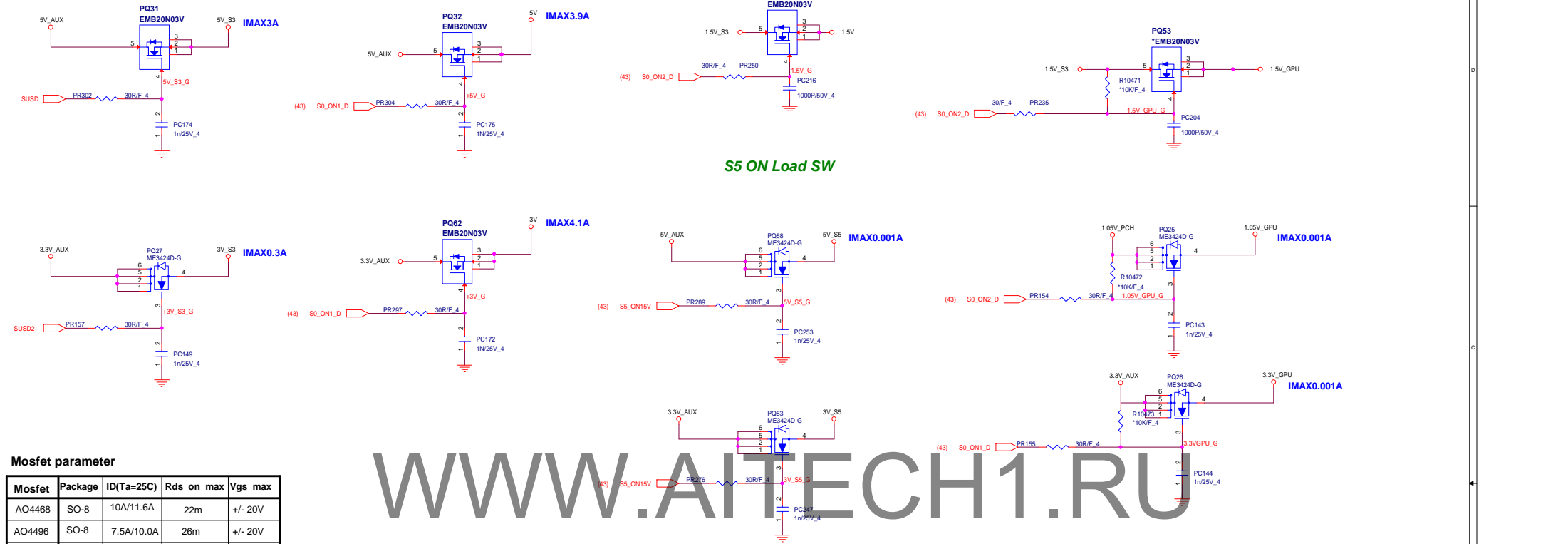
S3 ON Load SW

S0 ON_1 Load SW

S0 ON_2 Load SW

GPU ON_1 Load SW

GPU ON_2 Load SW



Mosfet parameter

Mosfet	Package	ID(Ta=25C)	Rds_on_max	Vgs_max
AO4468	SO-8	10A/11.6A	22m	+/- 20V
AO4496	SO-8	7.5A/10.0A	26m	+/- 20V
Si4128DY	SO-8	7.0A/10.9A	30m	+/- 20V
Si4134DY	SO-8	7.0A/14A	17.5m	+/- 20V
AO3404	SOT-23	5.0A/5.8A	43m	+/- 20V
ME3424D	TSOP-6	5.0A/6.7A	42m	+/- 20V

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