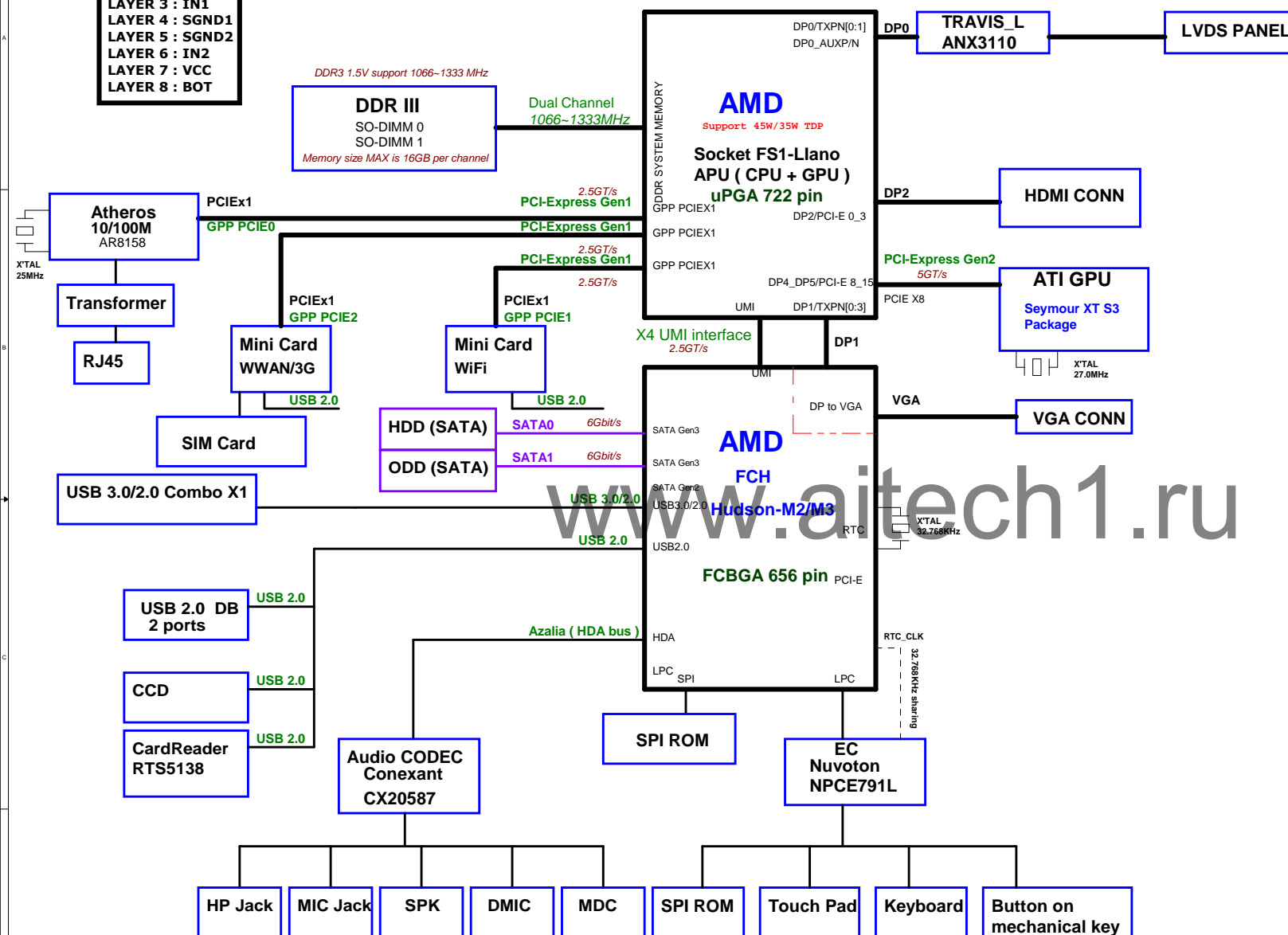


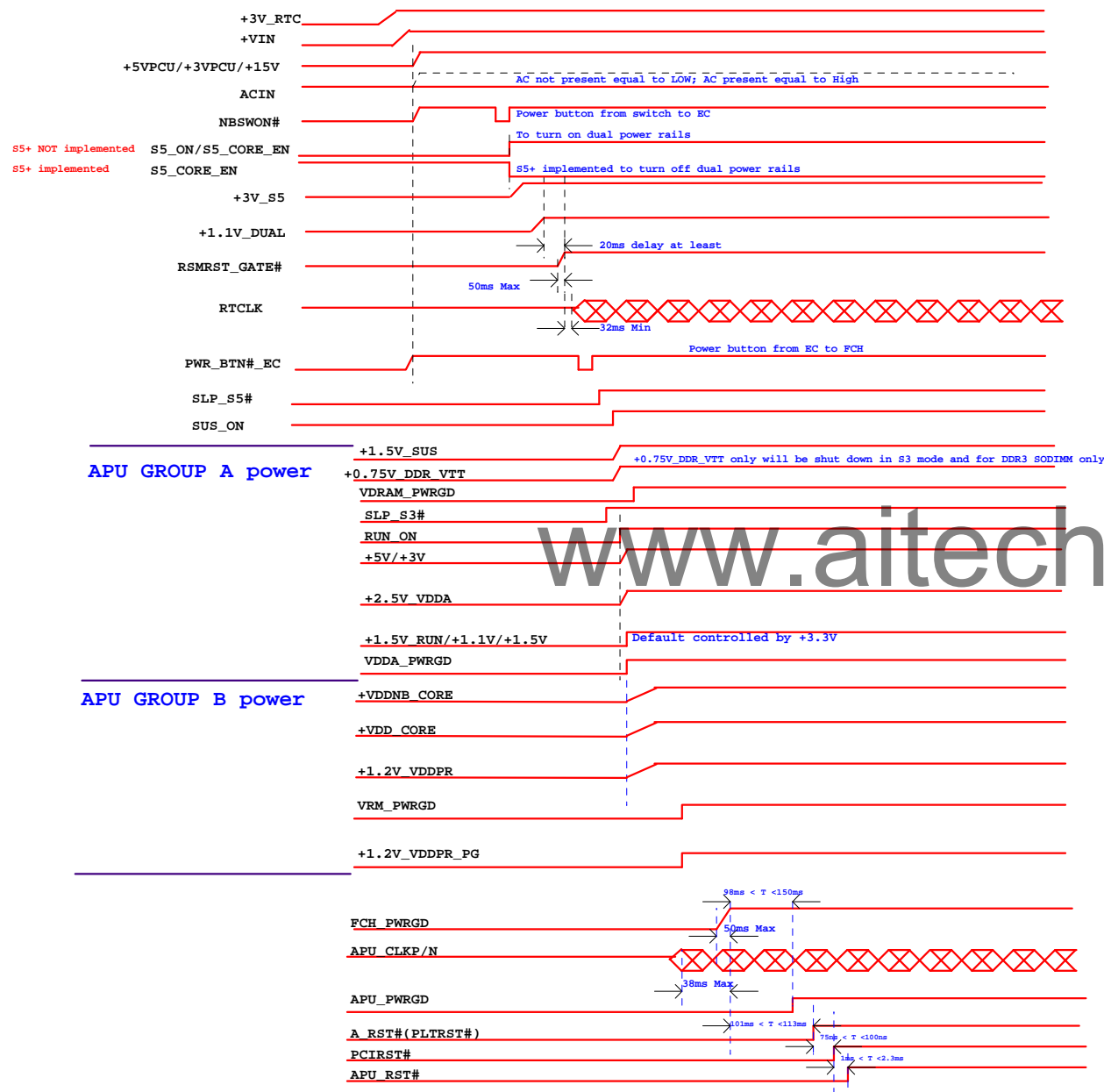
PCB STACK UP

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

BLOCK DIAGRAM



BLF/BLFD Power On Sequence: S5 > S0



APU Power on sequence required:

Llano APU:

1.Group A (+1.5V_SUS, +2.5V_VDDA) ramp before Group B
(+VDD_CORE, +VDDNB_CORE, +1.2V_VDDPR)

HUDSON-M2/M3:

1.+3V_S5 ramp before +1.1V_DUAL
2.+3V ramp before +1.1V
3.+3V_RTC must ramp at least 5 secs before the +3V_S5

Seymour XT S3 package Power-on sequence

All power rails reach nominal within 20ms

1=> +3V_GPU
2=> +VGPU_CORE/+1V_GPU
3=> +VGPU_CORE PWRGD to enable +1.5V_GPU
4=> +1V_GPU PWRGD to enable +1.8V_GPU

NOTE

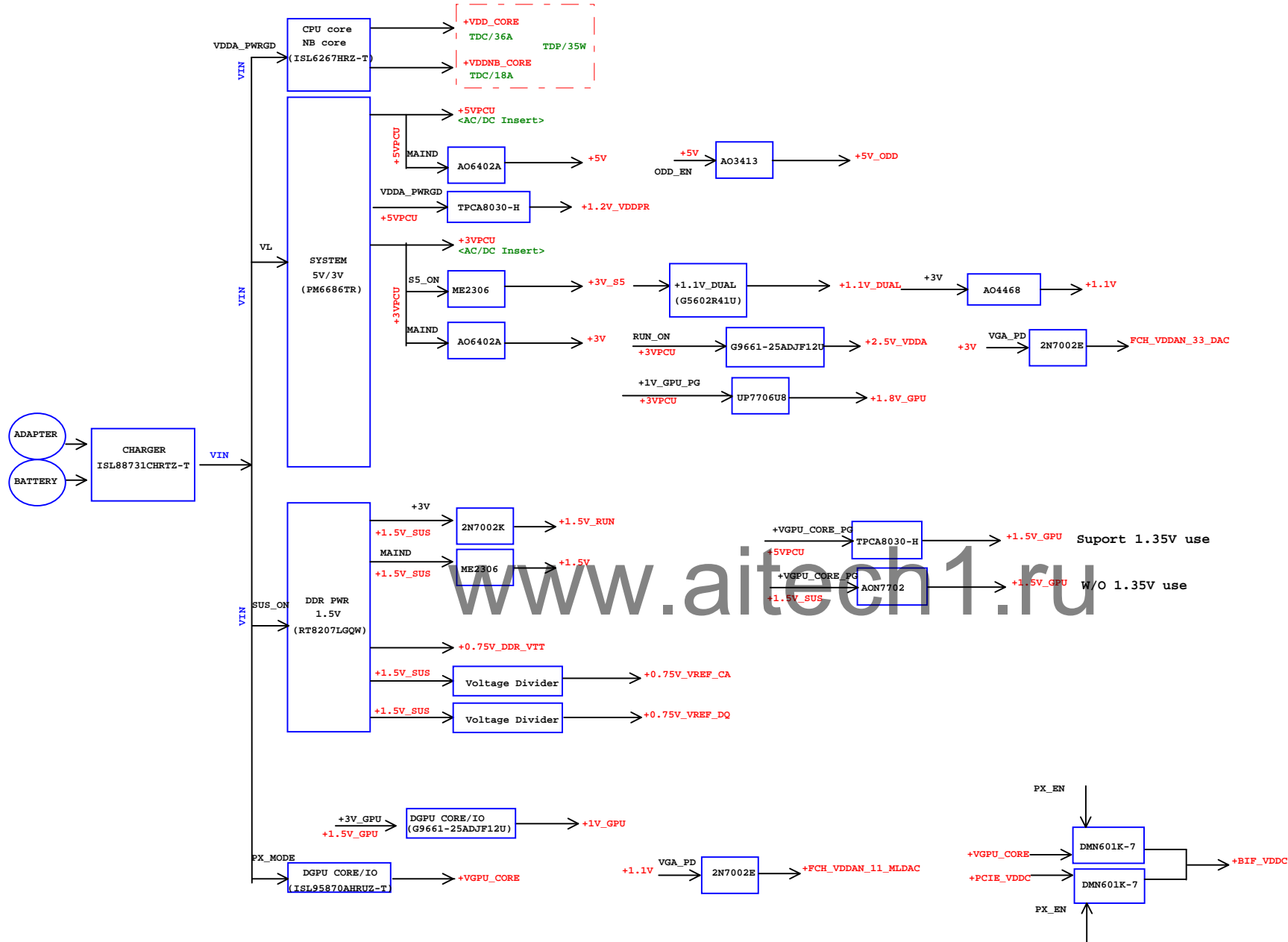
1.+3V to turn on +3V_GPU
2.+3V_GPU ready to enable +VGPU_CORE/+1V_GPU
(+1V_GPU will ramp up before +VGPU_CORE)
3.+VGPU_CORE PWRGD to enable +1.5V_GPU
3.+1V_GPU PWRGD to enable +1.8V_GPU

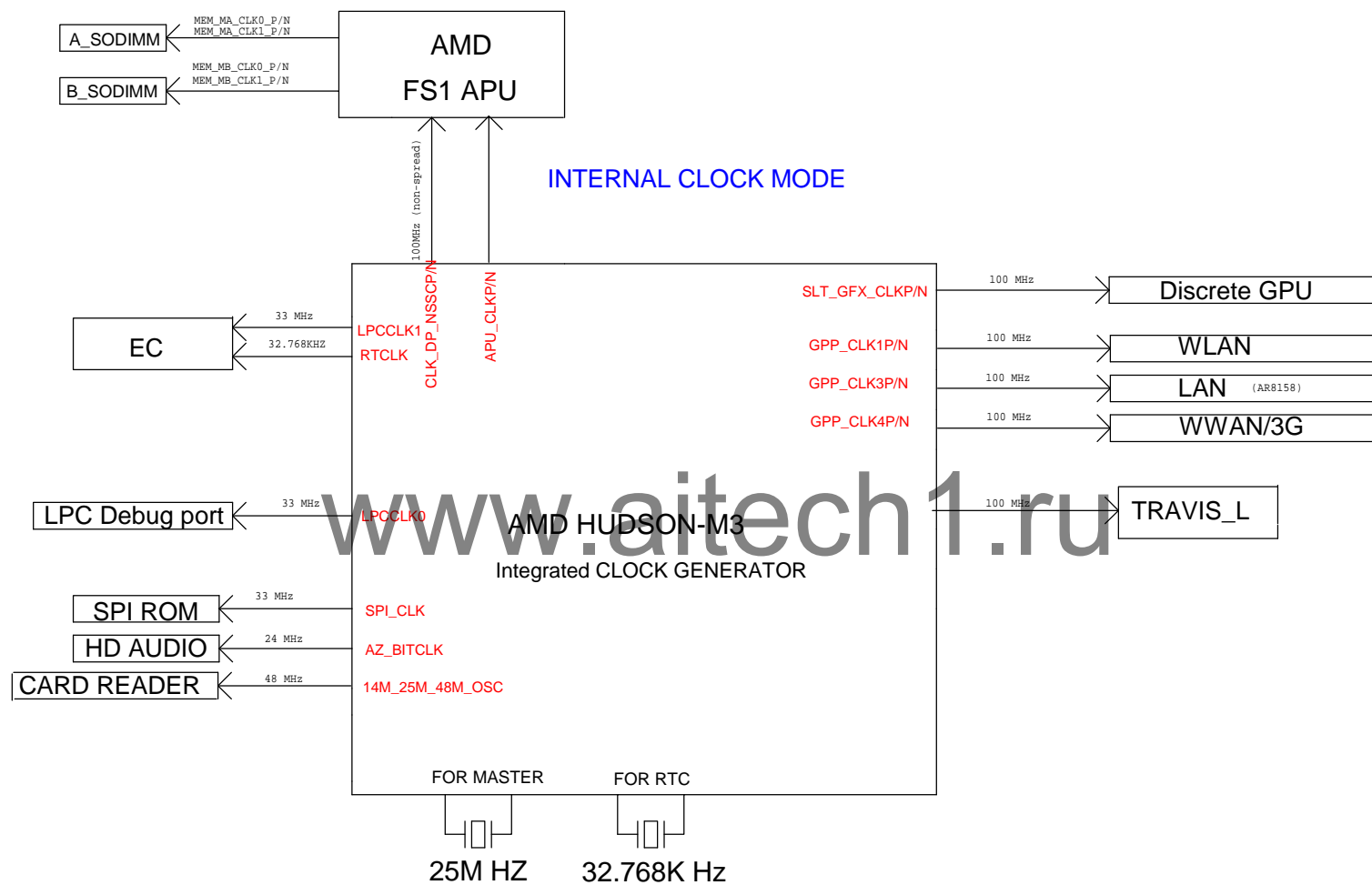
TRAVIS_L ANX3110 power on sequence

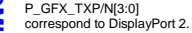
1.+3V must lead +1.2V_TRAVIS

2.+1.2V_TRAVIS must lead TRAVIS_RST#

NOTE: FCH must output PCIE_RST#_TRAVIS or
APU_PCIE_RST# after +1.2V_TRAVIS ready







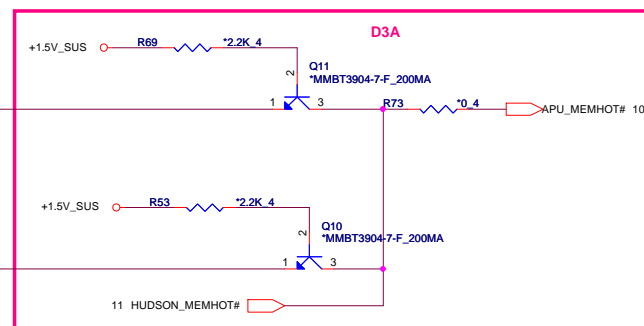
1

Quanta Computer Inc.
PROJECT : BLF_BLFD

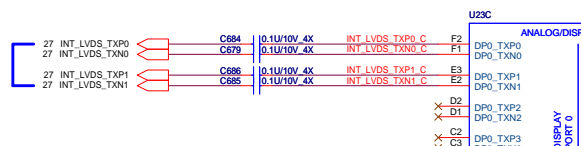
Size	Document Number	Rev
	Llano PCIE/UMI/GPP	1C
Date:	Tuesday, April 19, 2011	Sheet 5 of 53



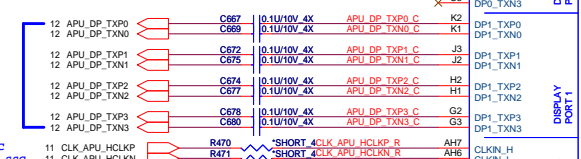
Llano APU



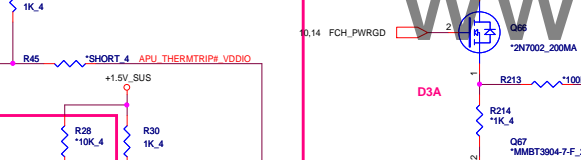
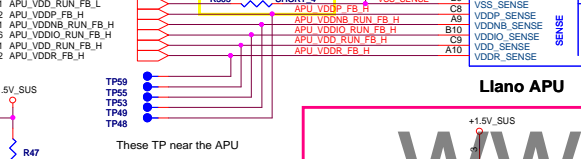
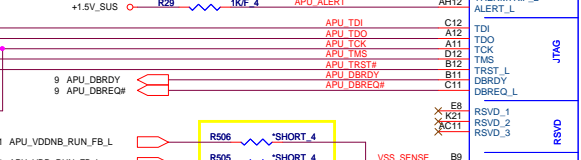
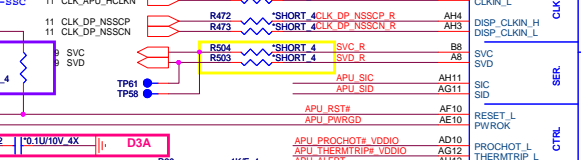
DP0 to LVDS



DPI to Hudson-M3 VGA output

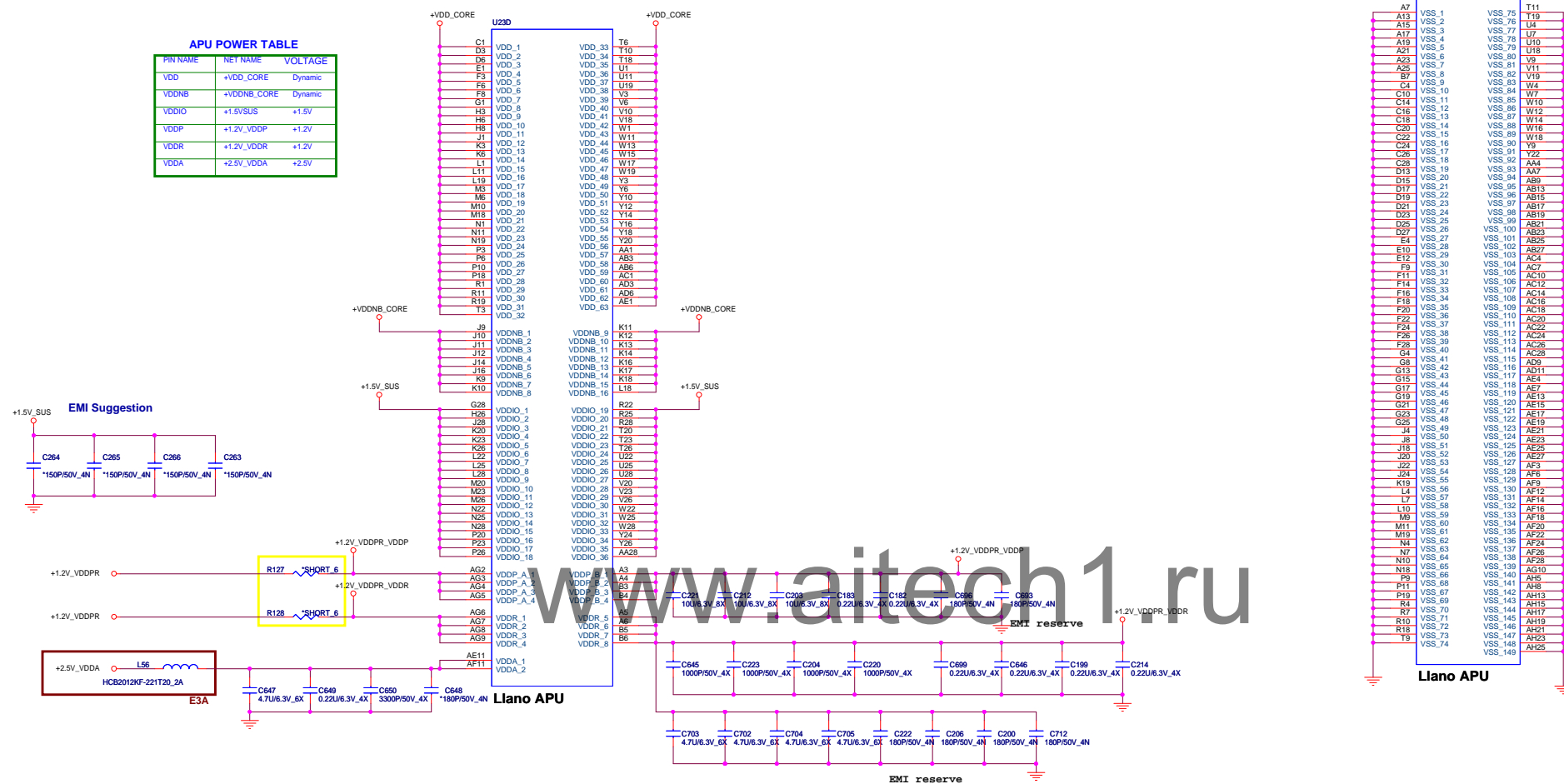


Note: CLK_APU_HCLKP/N is 100MHz SSC
Note: CLK_DP_NSSCP/N is 100MHz non-SSC

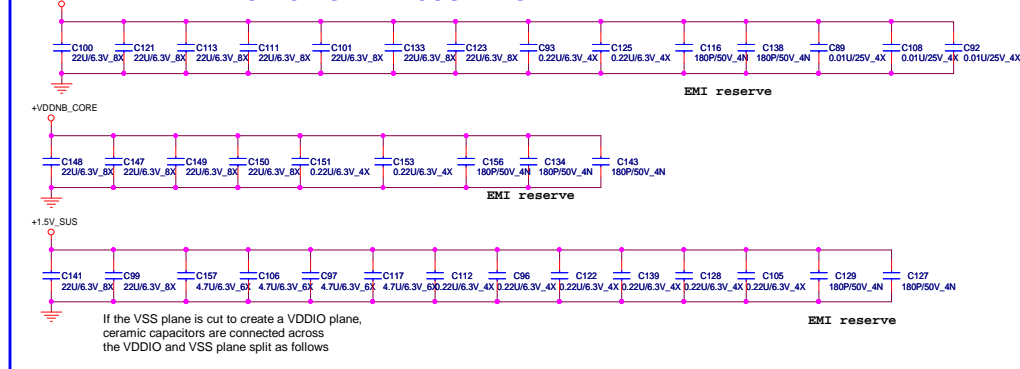


APU POWER TABLE

PIN NAME	NET NAME	VOLTAGE
VDD	+VDD_CORE	Dynamic
VDDNB	+VDDNB_CORE	Dynamic
VDDIO	+1.5V_SUS	+1.5V
VDDP	+1.2V_VDDP	+1.2V
VDDR	+1.2V_VDDR	+1.2V
VDDA	+2.5V_VDDA	+2.5V



BOTTOM SIDE DECOUPLING



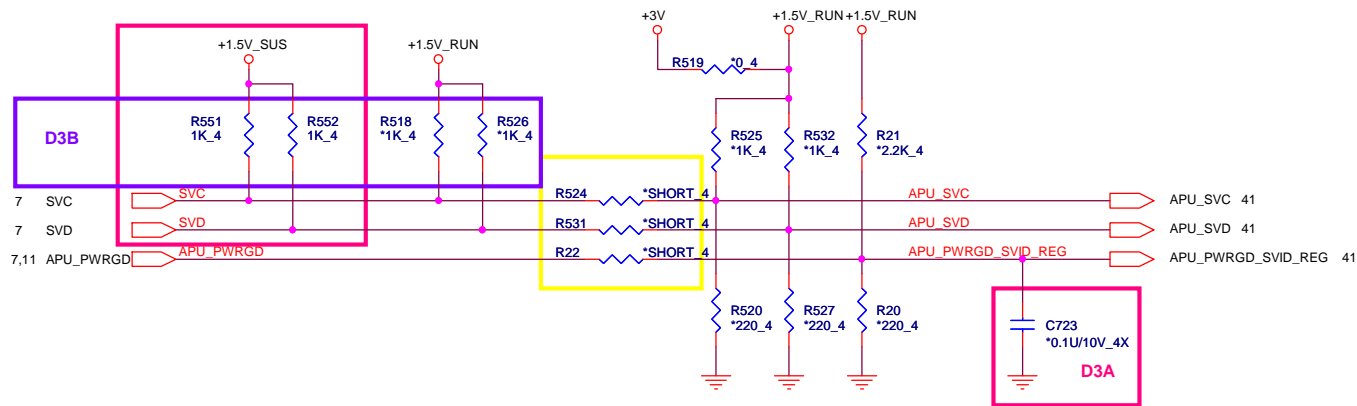
If the VSS plane is cut to create a VDDIO plane, ceramic capacitors are connected across the VDDIO and VSS plane split as follows

DECOUPLING between PROCESSOR and DIMMs

Across VDDIO and VSS split

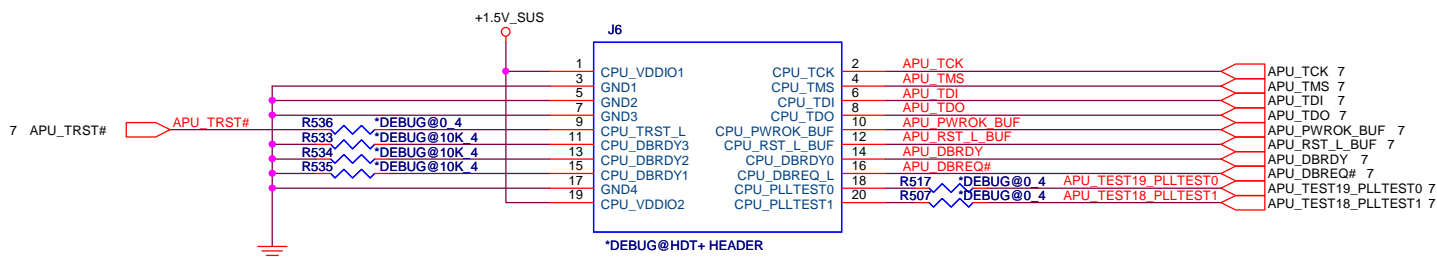


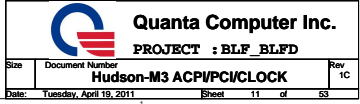
VID Override Circuit

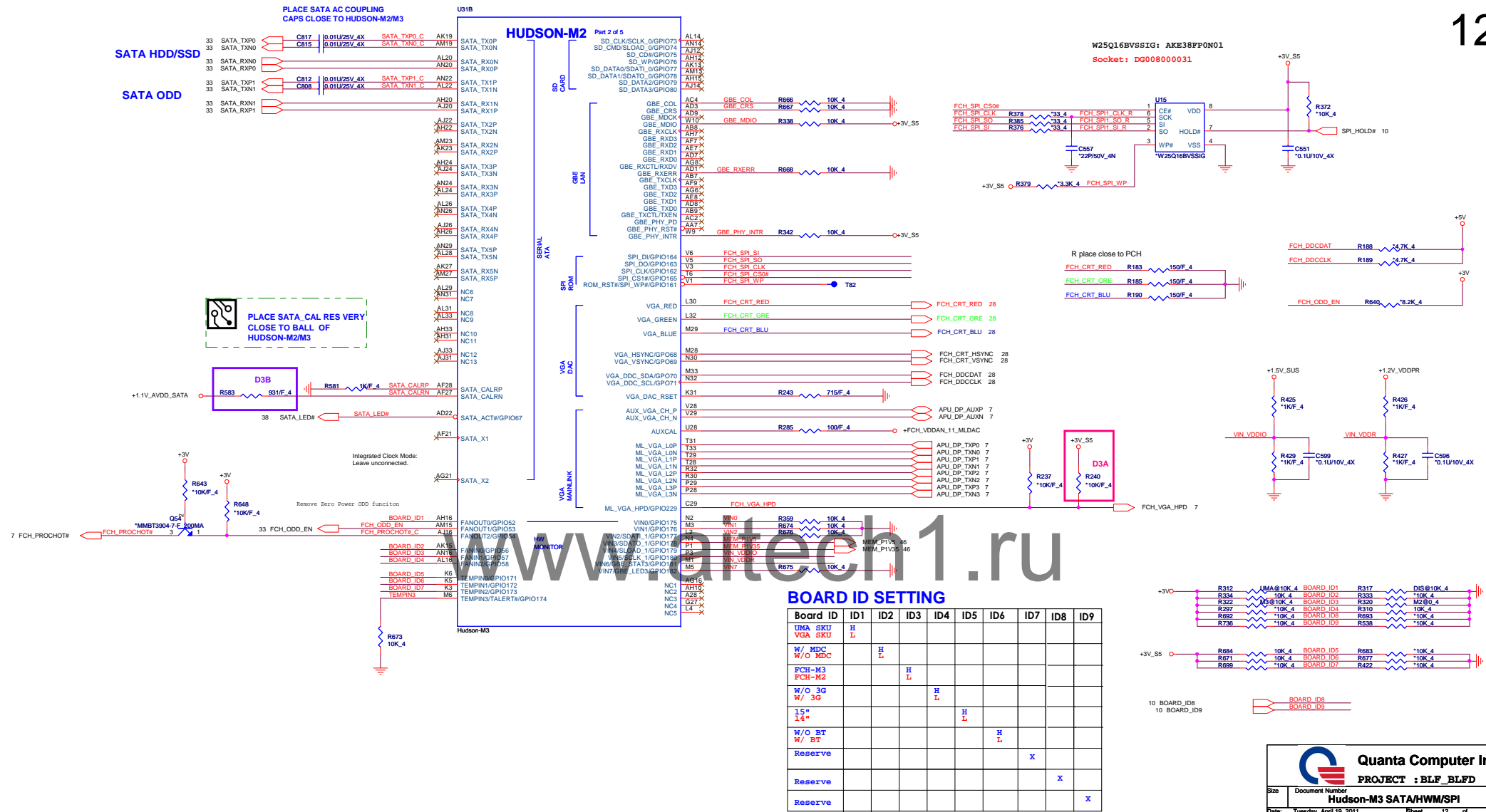


HDT+ Connector
Debug only

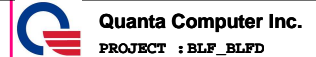
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VDD-- S/B CORE power

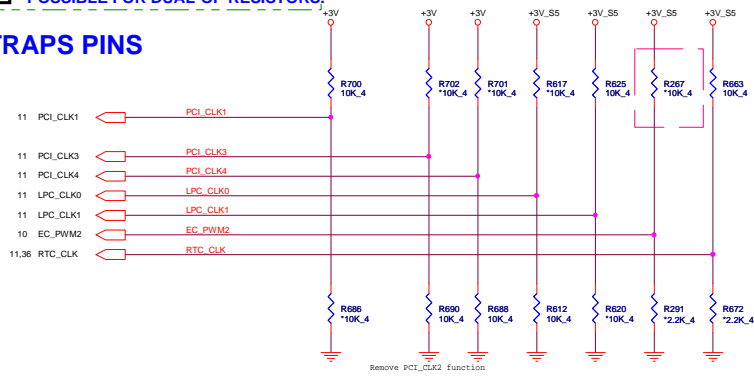


Size	Document Number Hudson-M3 POWER/GND	Rev 1C
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OVERLAP COMMON PADS WHERE POSSIBLE FOR DUAL-OP RESISTORS.

STRAPS PINS



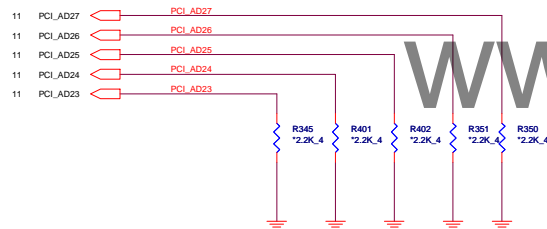
EC_PWM2-->
SPI ROM: 2.2-KΩ 5k pull-down
LPC ROM: Pull-up to 3.3V_S5.
External pull-up resistor is not required as FCH has integrated 10-KΩ pull-up to 3.3V_S5.

REQUIRED STRAPS

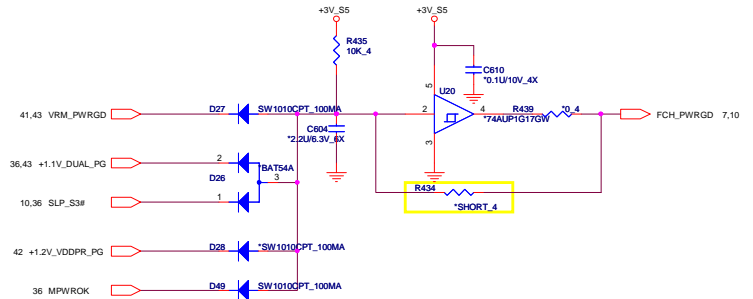
		PCI_CLK1	PCI_CLK2	PCI_CLK3	PCI_CLK4	LPC_CLK0	LPC_CLK1	EC_PWM2	RTC_CLK
PULL HIGH	*****	ALLOW PCIe Gen2 DEFAULT	*****	USE DEBUG STRAP	non_Fusion CLOCK MODE	EC ENABLED	CLKGEN ENABLED DEFAULT	LPC ROM DEFAULT	S5 PLUS MODE DISABLED DEFAULT
PULL LOW	*****	FORCE PCIe Gen1	*****	IGNORE DEBUG STRAP DEFAULT	FUSION CLOCK MODE DEFAULT	EC DISABLED DEFAULT	CLKGEN DISABLED	SPI ROM	S5 PLUS MODE ENABLED

DEBUG STRAPS

FCH HAS 15K INTERNAL PU FOR PCI_AD[27:23]



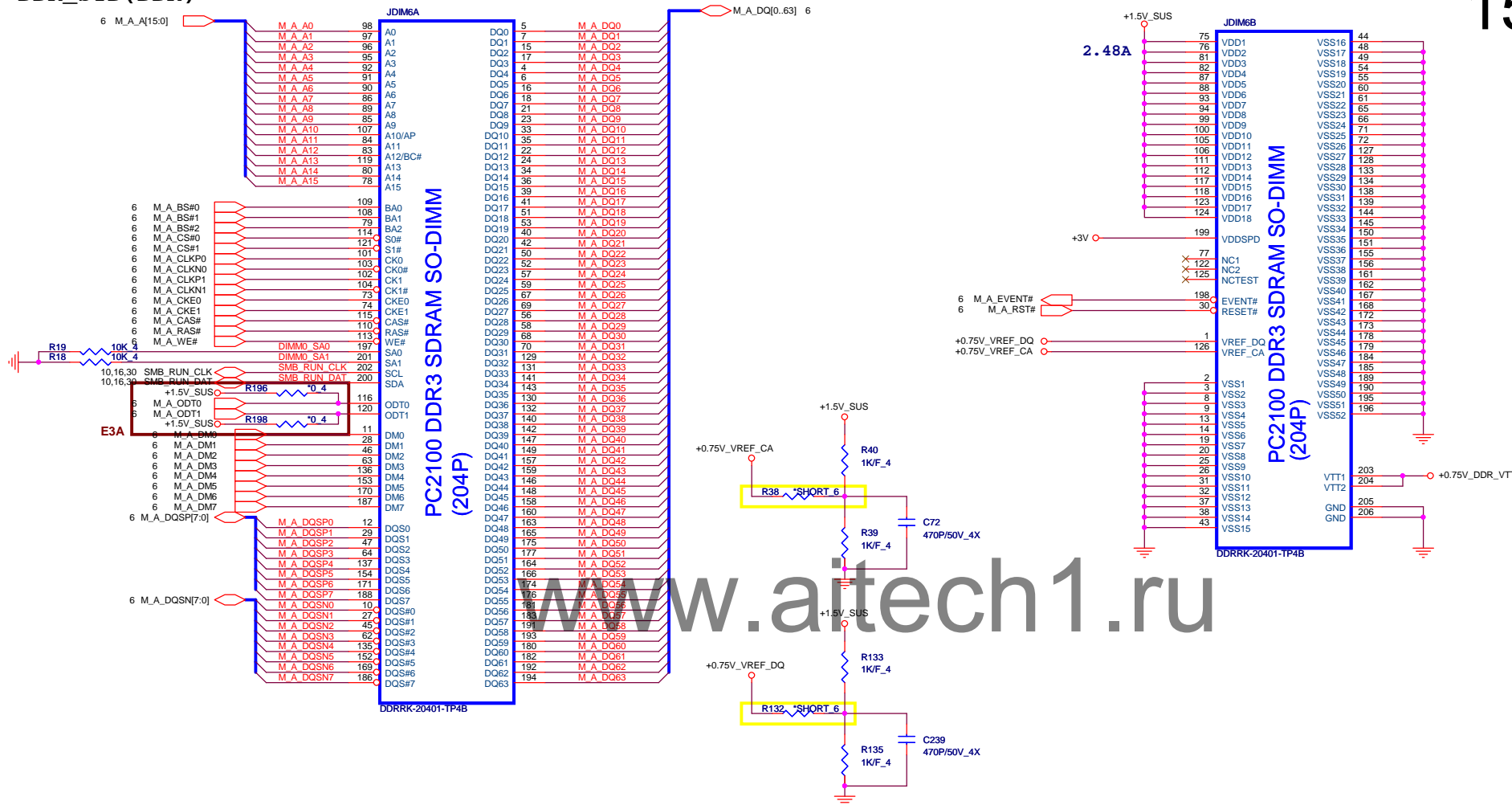
	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE PCI PLL DEFAULT	DISABLE ILA AUTORUN DEFAULT	USE FC PLL DEFAULT	USE DEFAULT PCIe STRAPS DEFAULT	DISABLE PCI MEM BOOT DEFAULT
PULL LOW	BYPASS PCI PLL	ENABLE ILA AUTORUN	BYPASS FC PLL	USE EEPROM PCIe STRAPS	ENABLE PCI MEM BOOT

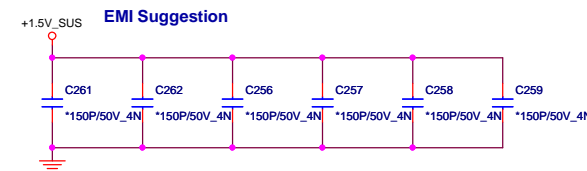
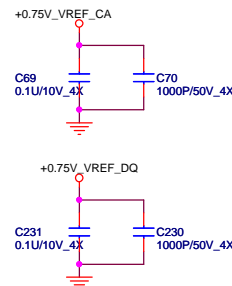
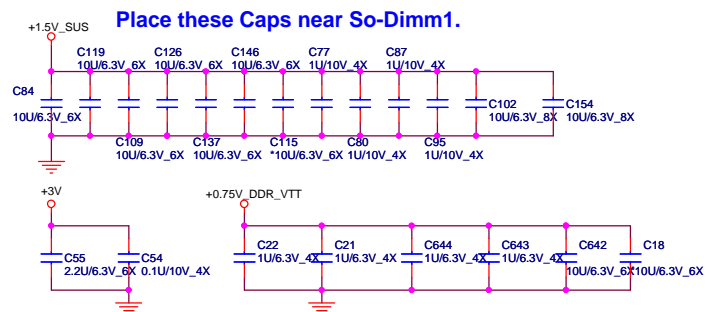
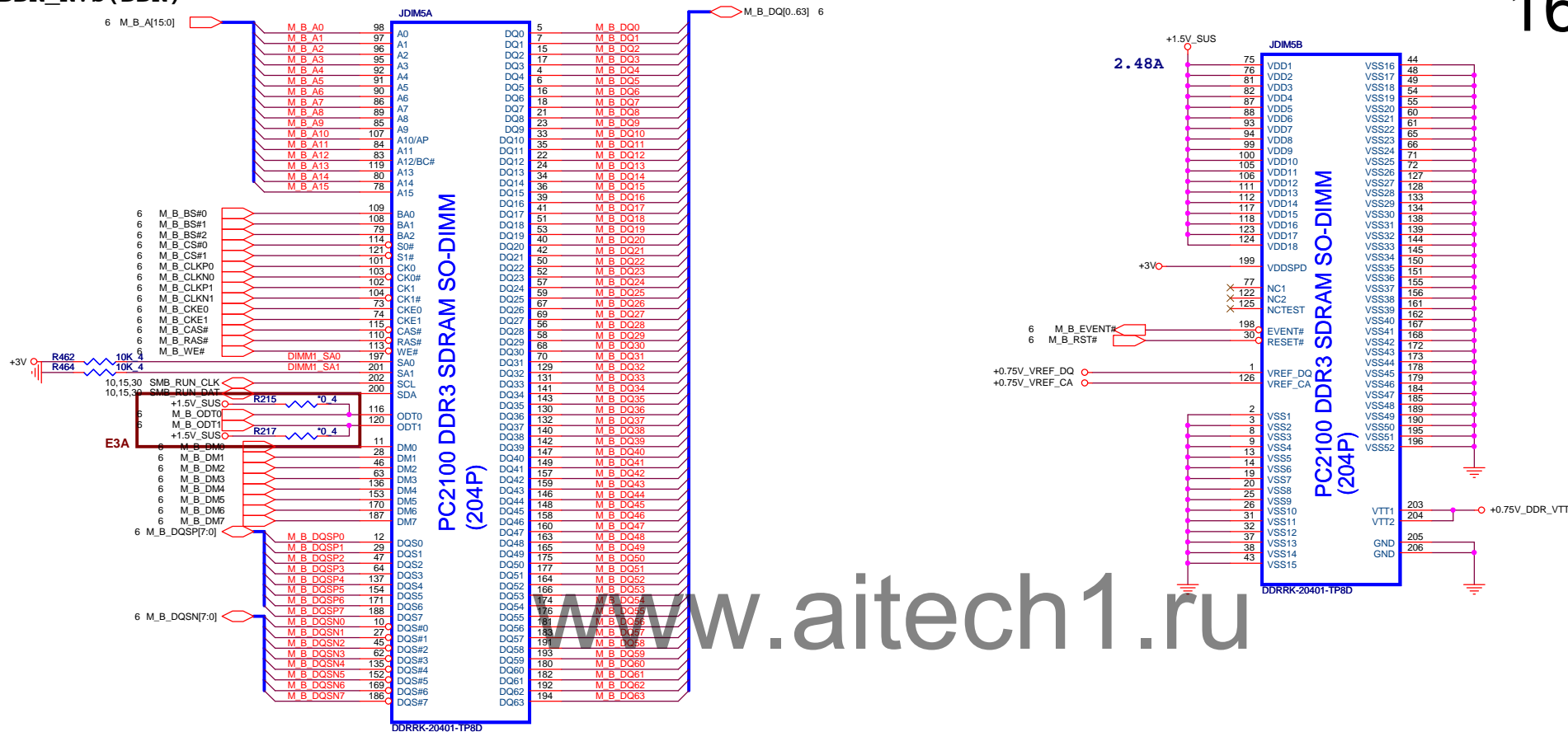


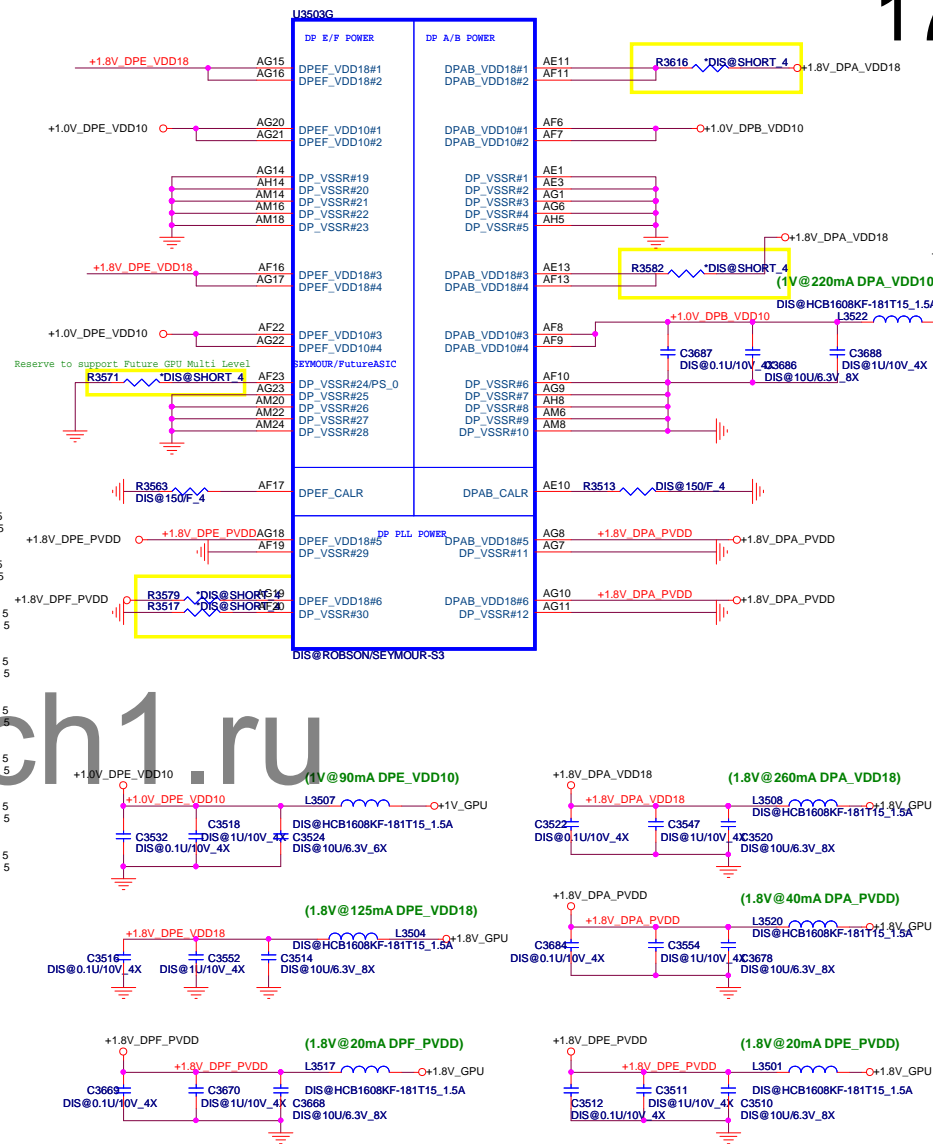
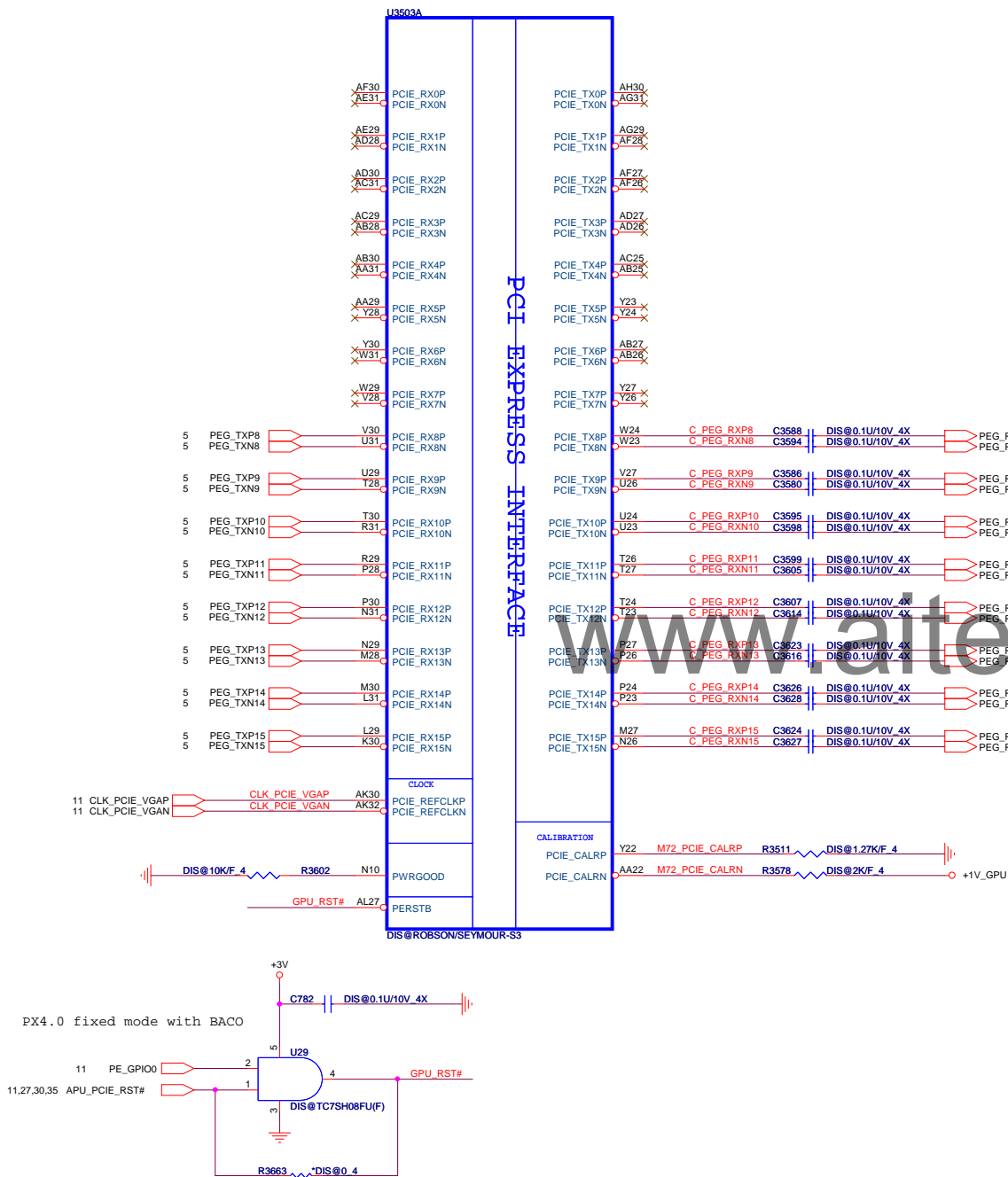
FCH PWRGD CKT

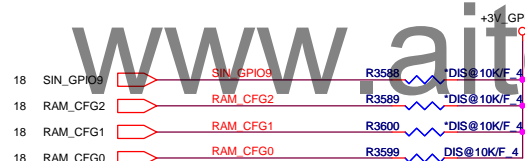
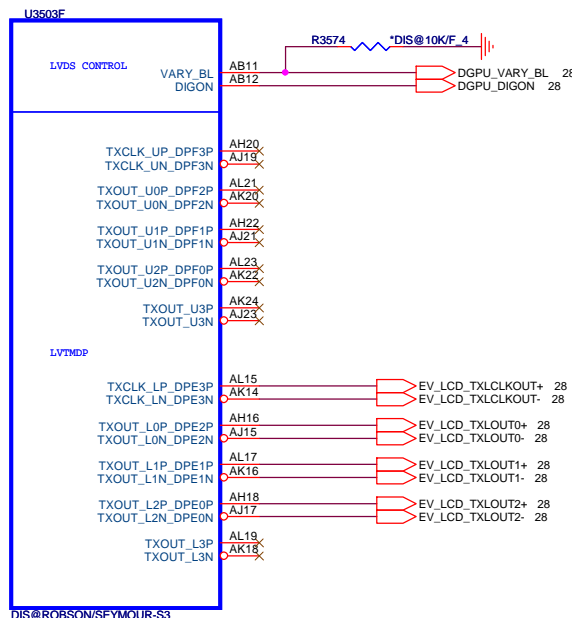
DDR_STD (DDR)

15









CONFIGURATION STRAPS			RECOMMENDED SETTINGS 0= DO NOT INSTALL RESISTOR 1 = INSTALL 10K RESISTOR X = DESIGN DEPENDANT NA = NOT APPLICABLE
ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOs ARE USED, THEY MUST NOT CONFLICT DURING RESET			
STRAPS	PIN	DESCRIPTION OF DEFAULT SETTINGS	
TX_PWRS_ENB	GPIO0	Transmitter Power Savings Enable 0: 50% Tx output swing for mobile mode 1: full Tx output swing (Default setting for Desktop)	1
TX_DEEMPH_EN	GPIO1	PCI Express Transmitter De-emphasis Enable 0: Tx de-emphasis disabled for mobile mode 1: Tx de-emphasis enabled (Default setting for Desktop)	1
BIF_GEN2_EN_A	GPIO2	Enable CLKREQ# Power Management 0 - CLKREQ# power management capability is disabled 1 - CLKREQ# power management capability is enabled	0
RSVD BIF_VGA_DIS RSVD	GPIO8 GPIO9 GPIO21	VGA ENABLED	0 0 0
BIOS_ROM_EN	GPIO_22_ROMCSB	ENABLE EXTERNAL BIOS ROM	0
ROMIDCFG(2:0)	GPIO{13:11}	SERIAL ROM TYPE OR MEMORY APERTURE SIZE SELECT	0 0 1
VIP_DEVICE_STRAP_ENA	V2SYNC	IGNORE VIP DEVICE STRAPS	0
RSVD AUD[1] AUD[0]	GENERICC HSYNC VSYNC	AUD[1] AUD[0] 0 0 No audio function 0 1 Audio for DisplayPort and HDMI if dongle is detected 1 0 Audio for DisplayPort only 1 1 Audio for both DisplayPort and HDMI	0 0 11

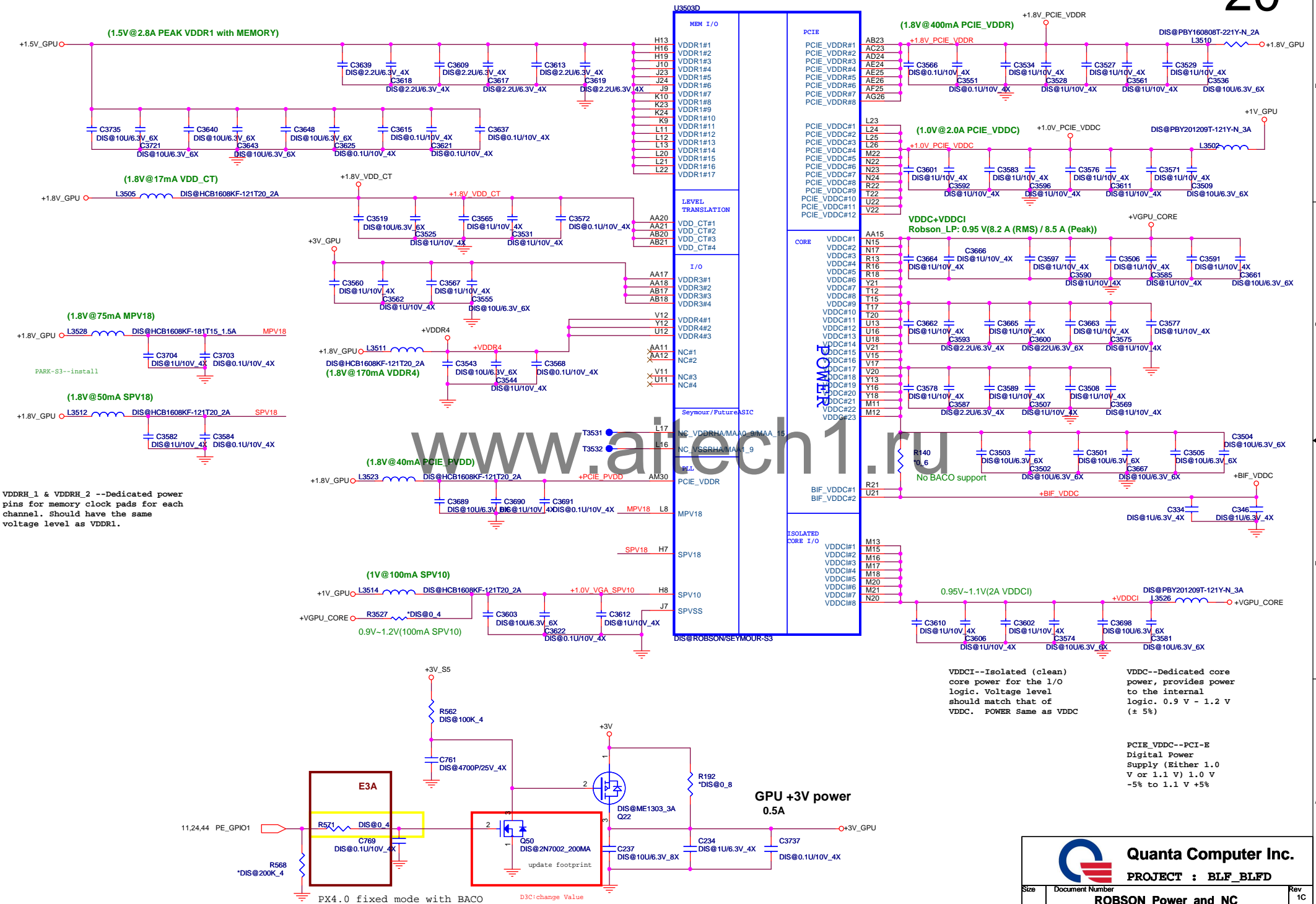
<p>AMD RESERVED CONFIGURATION STRAPS</p> <p>ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOs ARE USED, THEY MUST NOT CONFLICT DURING RESET</p>	
H2SYNC	GENERICC
<p>PULLUP PADS ARE NOT REQUIRED FOR THESE STRAPS BUT IF THESE GPIOs ARE USED, THEY MUST NOT CONFLICT DURING RESET</p>	
GPIO21_BB_EN	

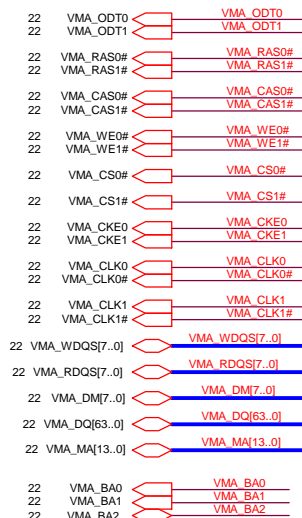
The diagram illustrates the pin configuration for the STM32F769I-DT microcontroller. It shows various pins connected to different components, including pull-up and pull-down resistors. The connections are as follows:

- GPIO0**: Connected to **R3585**, which has a pull-up resistor to **+3V_GPI**. Pin label: ***DIS@10K/F_4**.
- GPIO1**: Connected to **R3580**, which has a pull-up resistor to **+3V_GPI**. Pin label: ***DIS@10K/F_4**.
- GPIO2**: Connected to **R3581**, which has a pull-up resistor to **+3V_GPI**. Pin label: ***DIS@10K/F_4**.
- SOUT_GPIO8**: Connected to **R3584**, which has a pull-up resistor to **+3V_GPI**. Pin label: ***DIS@10K/F_4**.
- GENERICC**: Connected to **R3514**, which has a pull-up resistor to **+3V_GPI**. Pin label: ***DIS@10K/F_4**.
- DAC2_VSY**: Connected to **R3562**, which has a pull-up resistor to **+3V_GPI**. Pin label: ***DIS@10K/F_4**.
- DAC2_HSY**: Connected to **R3572**, which has a pull-up resistor to **+3V_GPI**. Pin label: ***DIS@10K/F_4**.
- GPIO22**: Connected to **R3529**, which has a pull-up resistor to **+3V_GPI**. Pin label: ***DIS@10K/F_4**.
- GPIO10_ROMSCK**: Connected to **R3650**, which has a pull-up resistor to **+3V_GPI**. Pin label: ***DIS@10K/F_4**.

GPIO9 BIOSROM		GPIO13 ROMIDCFG2	GPIO12 ROMIDCFG1	GPIO11 ROMIDCFG0
0	128M	0	0	0
0	256M	0	0	1
0	64M	0	1	0
0	32M	0	1	1
0	512M	1	0	0
0	1G	1	0	1
0	2G	1	1	0
0	4G	1	1	1

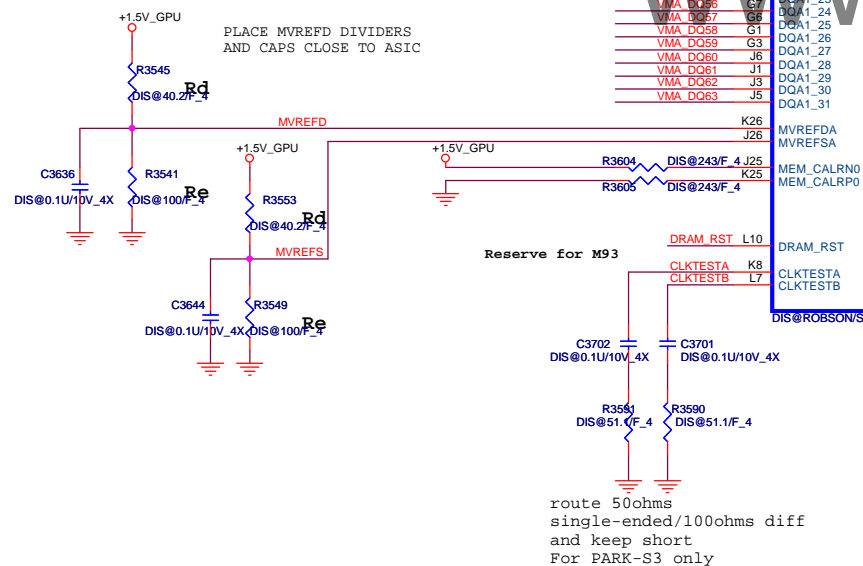
It is a shared pin strap with CONFIG[2:0] if BIOS_ROM_EN is set to 0.



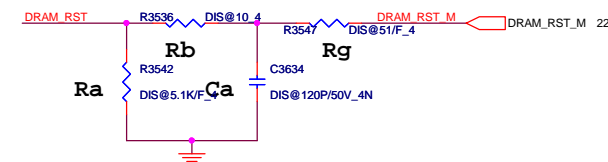


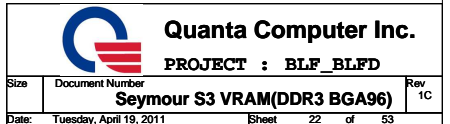
support 1gbt
VRAM (64M X 16)

DIVIDER RESISTORS	M93	PARK
MVREF TO 1.8V (Rd)	100R	40.2R
MVREF TO GND (Re)	100R	100R



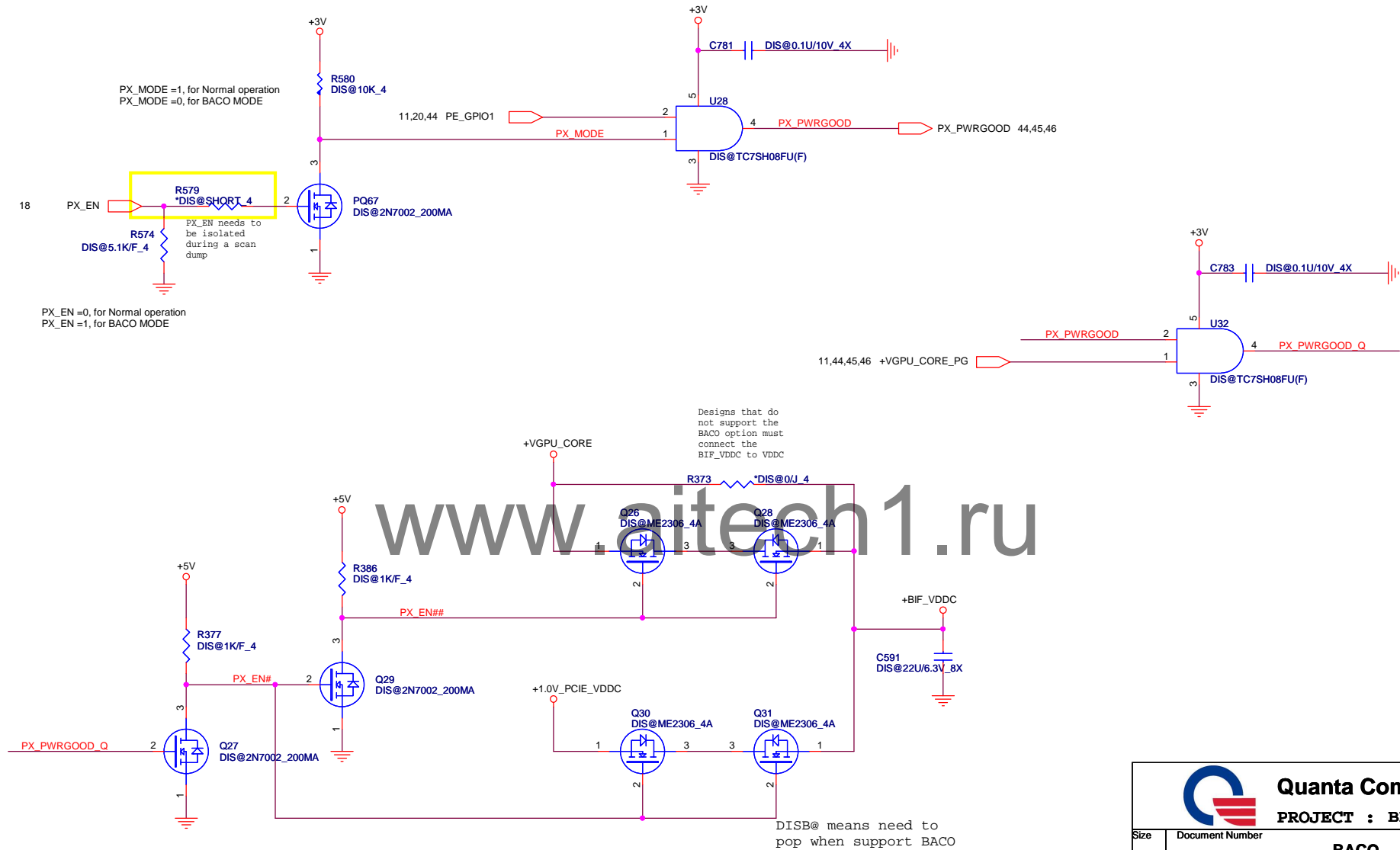
Designator	Robson
Ra	5K
Rb	10R
Ca	120pF
Rg	51R







Vendor	Vendor P/N	STN B/S P/N	Size	RAM_STRAP3	RAM_STRAP2	RAM_STRAP1	RAM_STRAP0	RAM_STRAP4	
				DVPDATA_3	DVPDATA_2	DVPDATA_1	DVPDATA_0	15"	14"
Hynix	H5TQ1G63DFR-11C	AKD5LZWWTW02 (64M*16-1Gb)	512MB	0	1	0	0	0	1
	H5TQ2G63BFR-11C	AKD5MGWTW00 (128M*16-2Gb)	1GB	0	0	0	0	0	1
Samsung	K4W1G1646G-BC11	AKD5EGGT500 (64M*16-1Gb)	512MB	0	1	0	1	0	1
	K4W2G1646C-HC11	AKD5MGWWT500 (128M*16-2Gb)	1GB	0	0	0	1	0	1

[illegible]



 Quanta Computer Inc. PROJECT : BLF_BLFD		Size	Document Number	Rev
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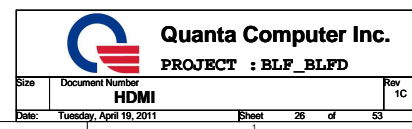
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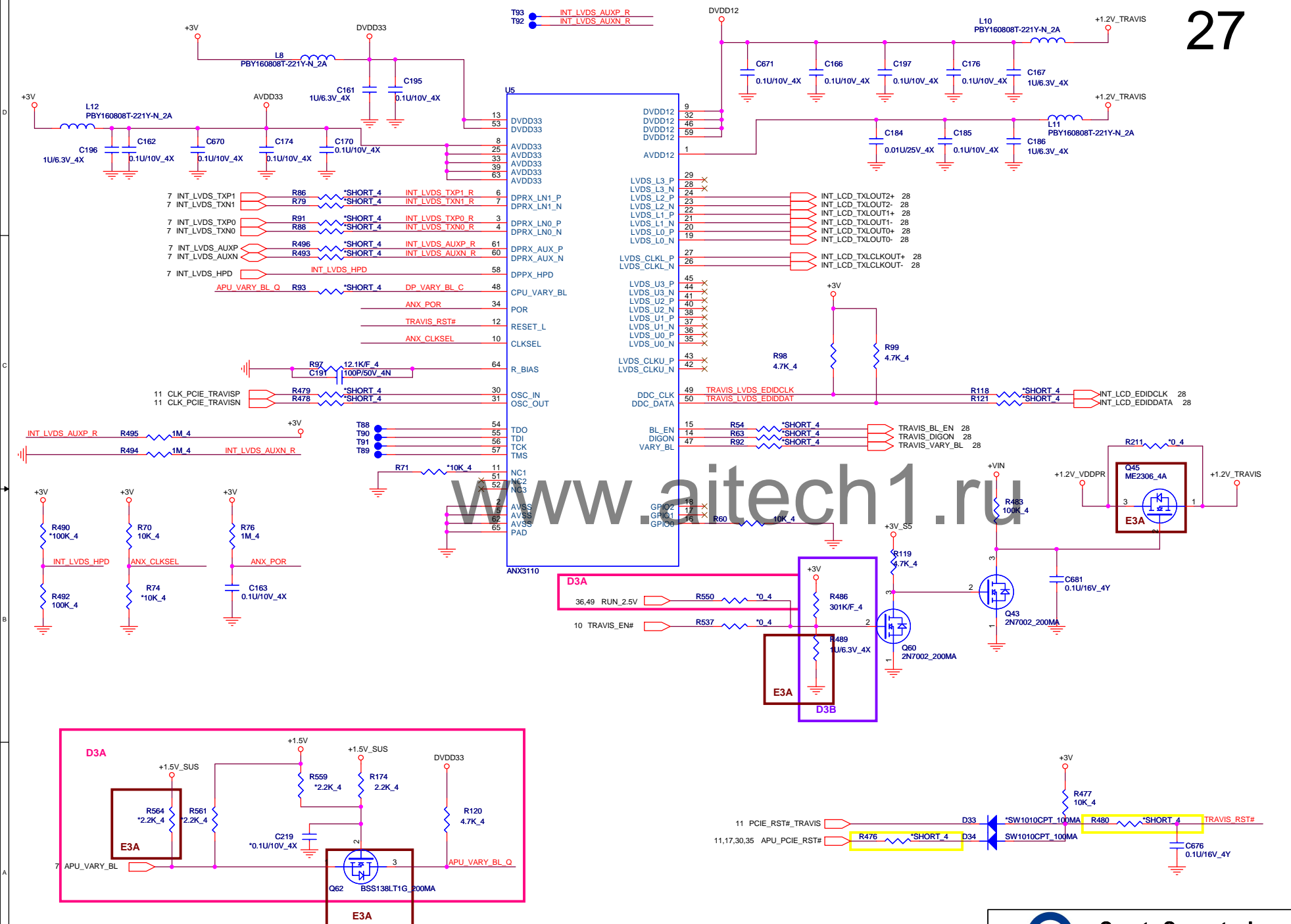


Quanta Computer Inc.

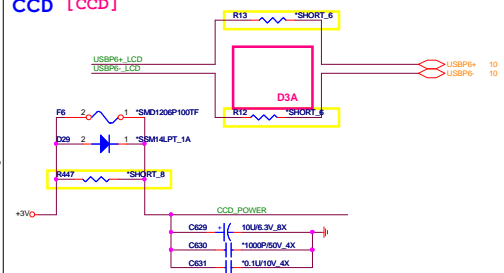
PROJECT : BLF_BLFD

Size	Document Number	Rev
	Blank	1C
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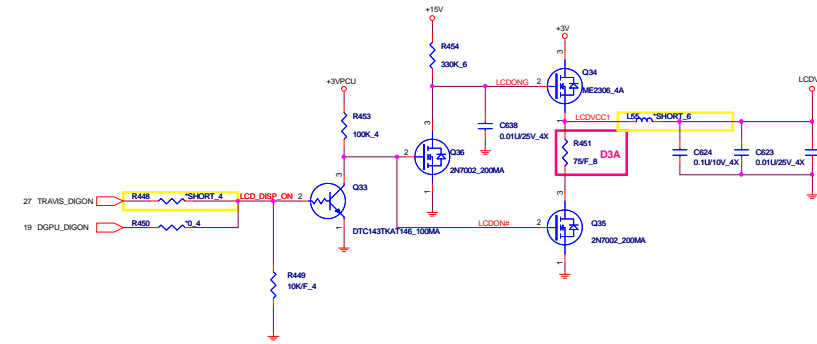


CCD [CCD]



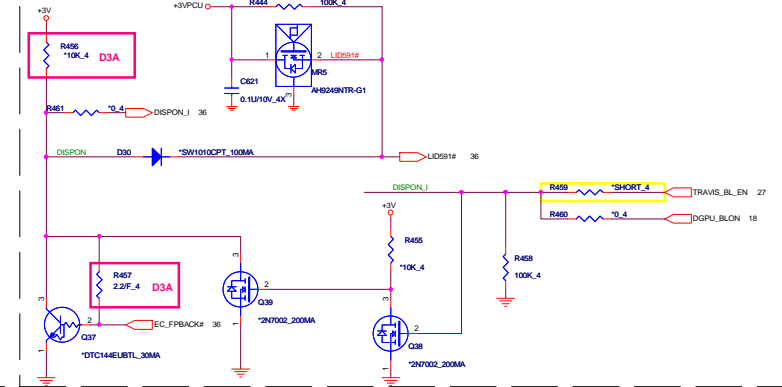
LCD POWER SWITCH

[LDS]



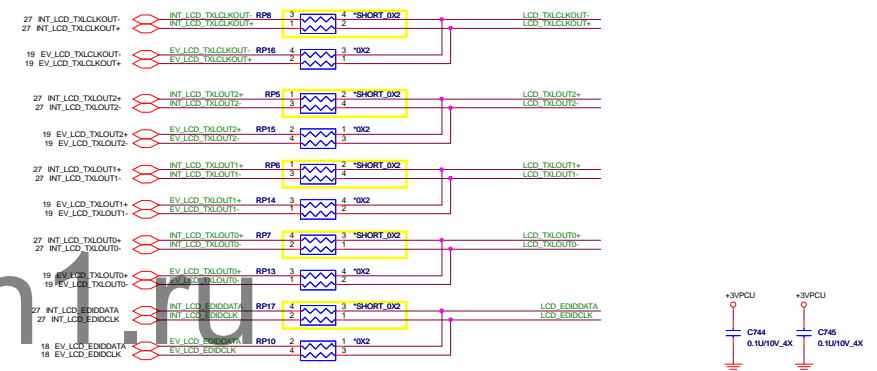
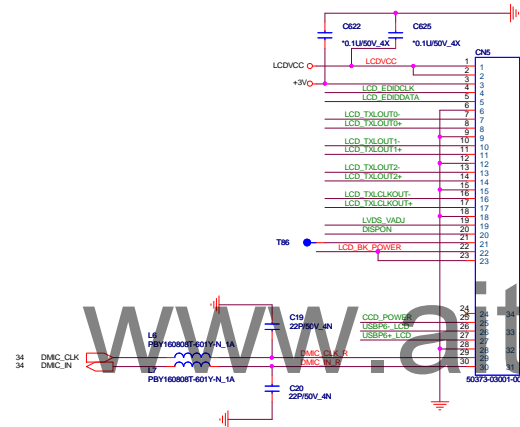
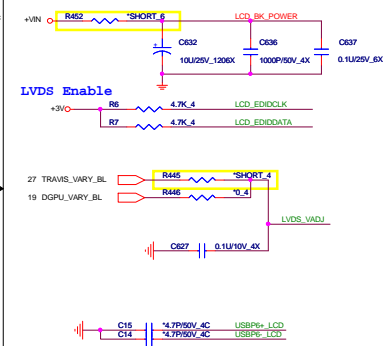
HALL SENSOR&BACK LIGHT SWITCH

[HSR]

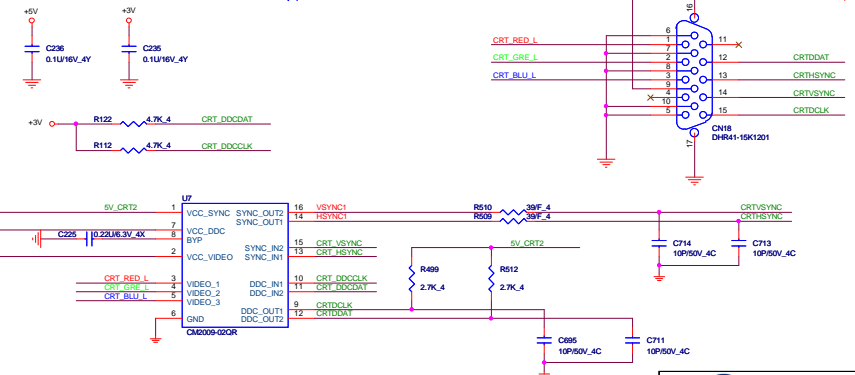
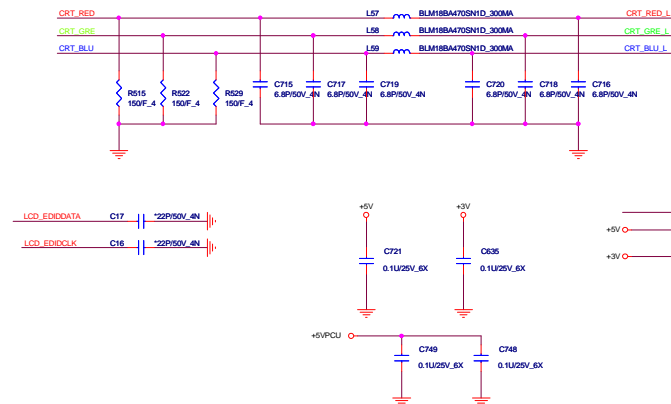
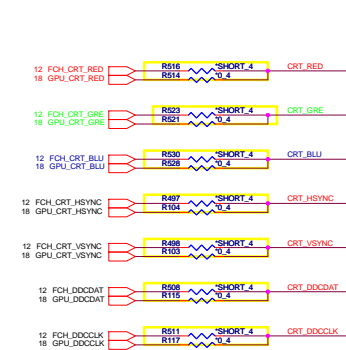


[LDS]

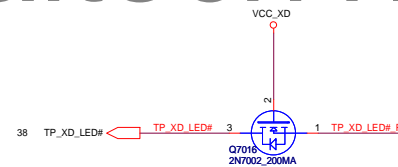
LCD Panel Module



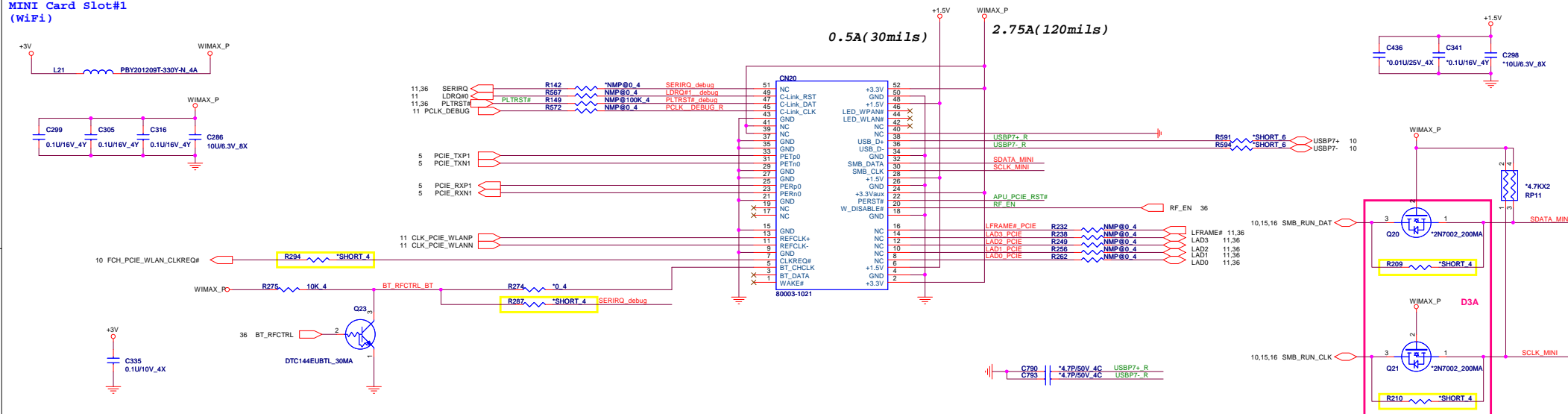
CRT [CRT]



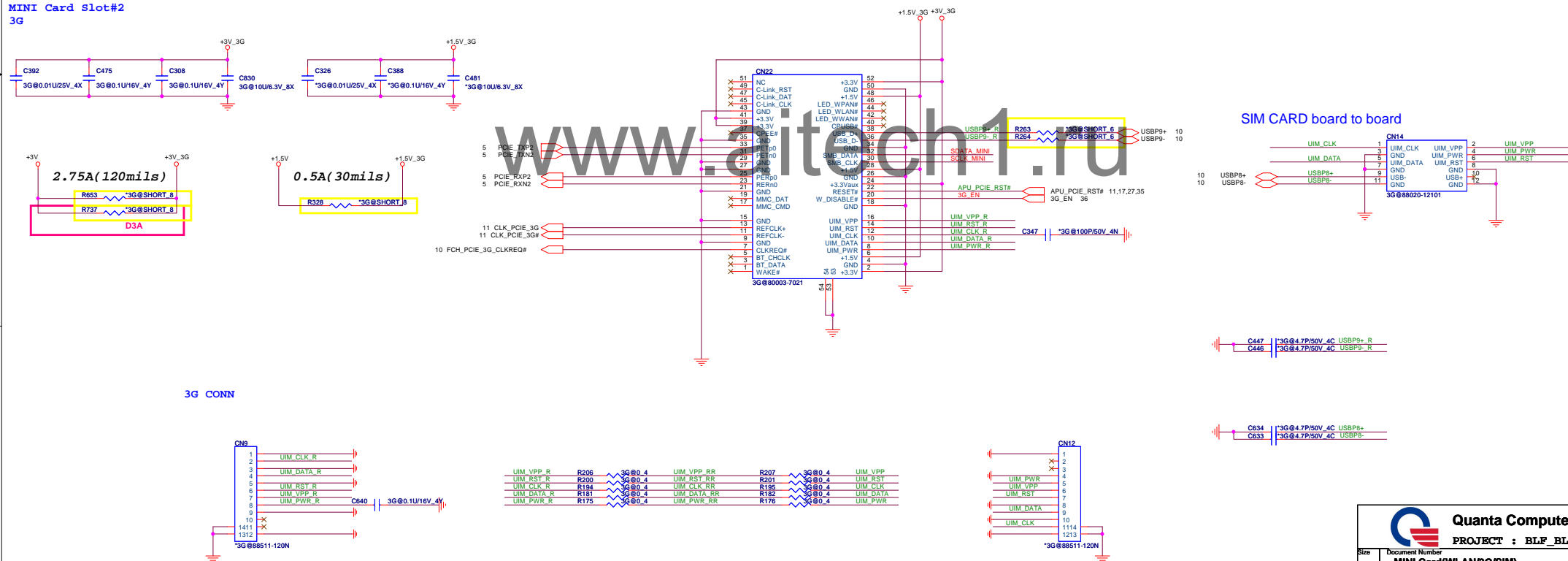
Card reader controller <MMC>



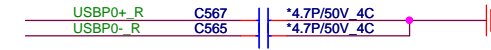
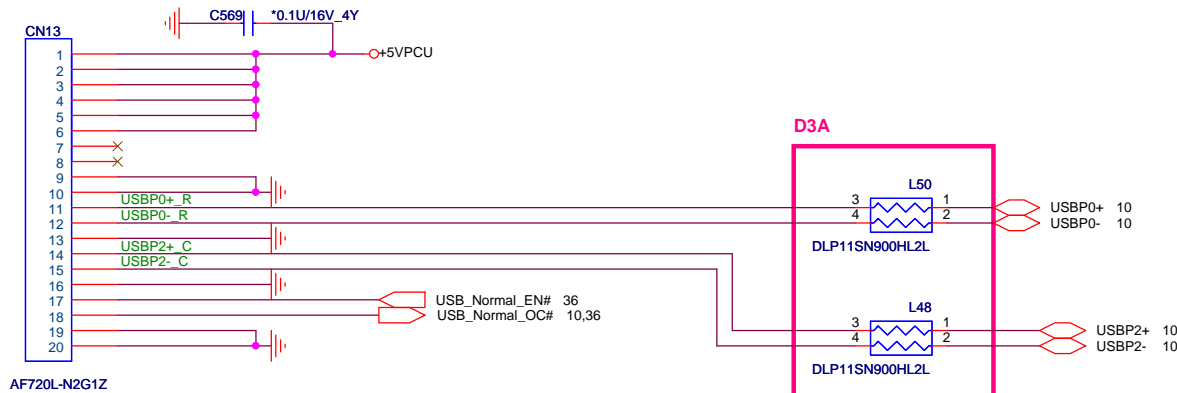
MINI Card Slot#1
(WiFi)



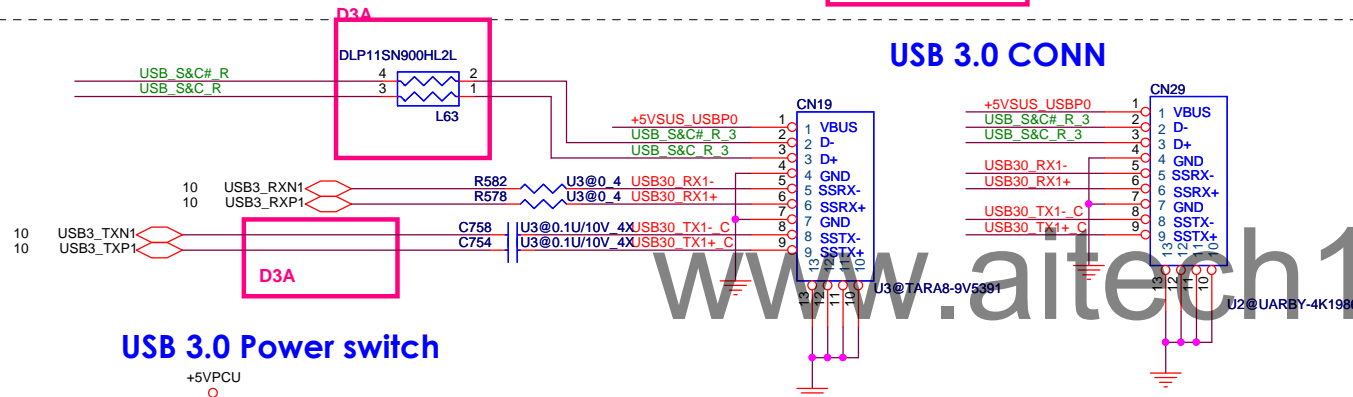
MINI Card Slot#2
3G



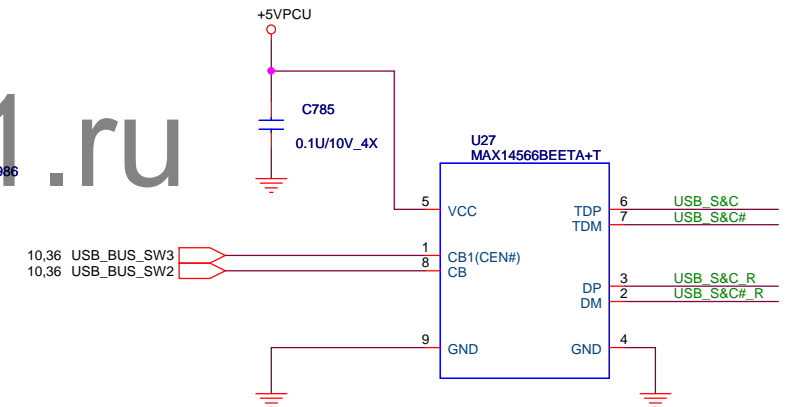
USB board



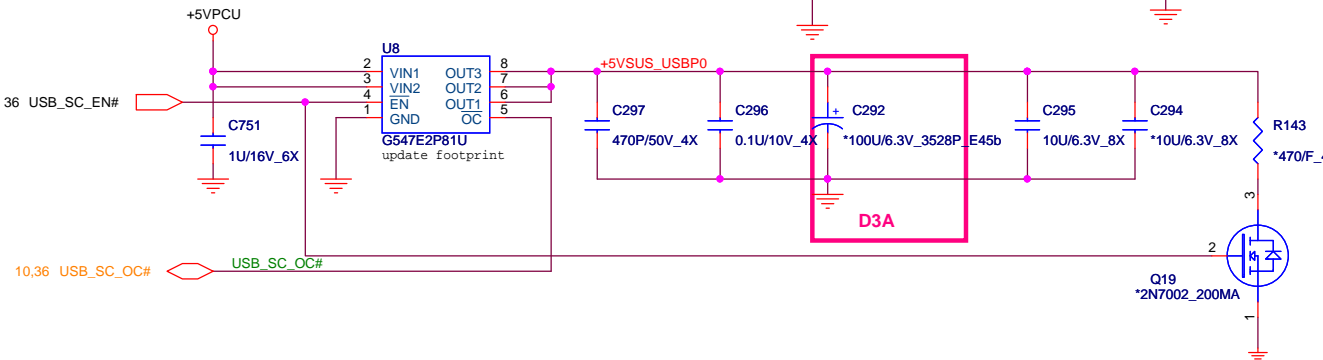
USB 3.0 CONN



USB Sleep & Charge MAXIM solution



USB 3.0 Power switch



CB0	CB1	Status
0	0	Auto mode
0	1	Force dedicated charger mode
1	X	Pass-Through(USB) mode: Connect DP/DM to TDP/TDM



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Size Document Number

USB2.0X1+USB3.0X1

Rev 1C

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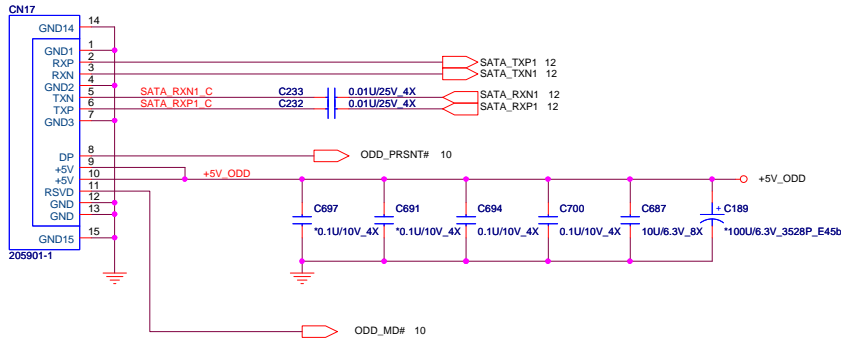
Quanta Computer Inc.

PROJECT : BLF_BLFD

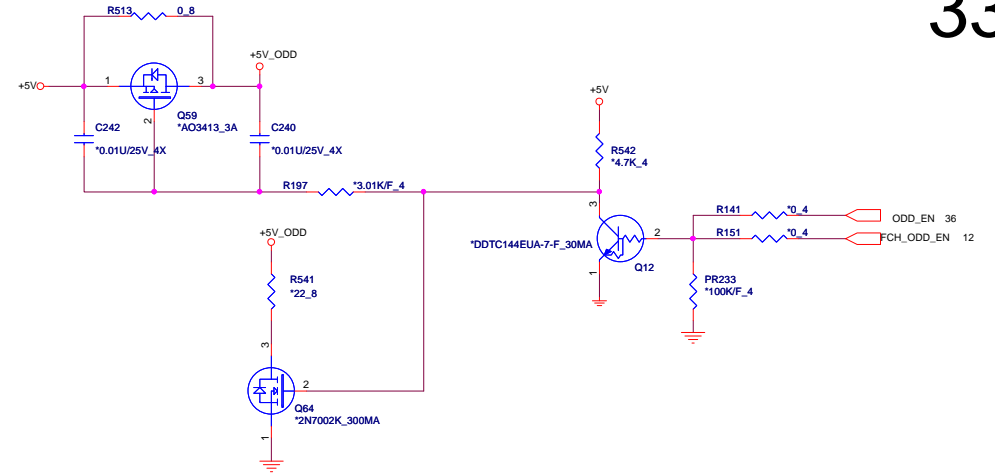
Size	Document Number	Rev
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SATA ODD

[ODD]

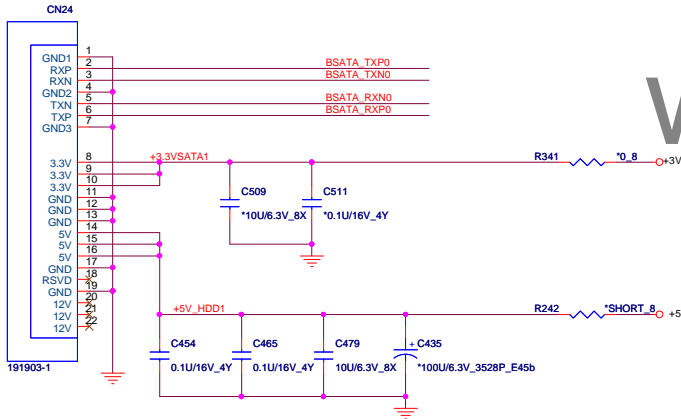


ODD Zero power .

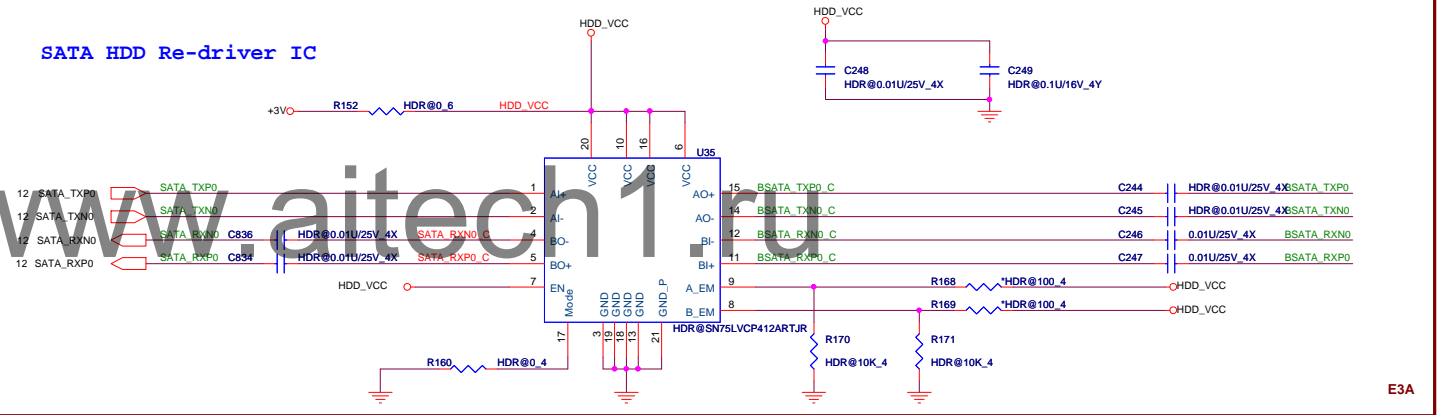


SATA HDD

[HDD]



SATA HDD Re-driver IC

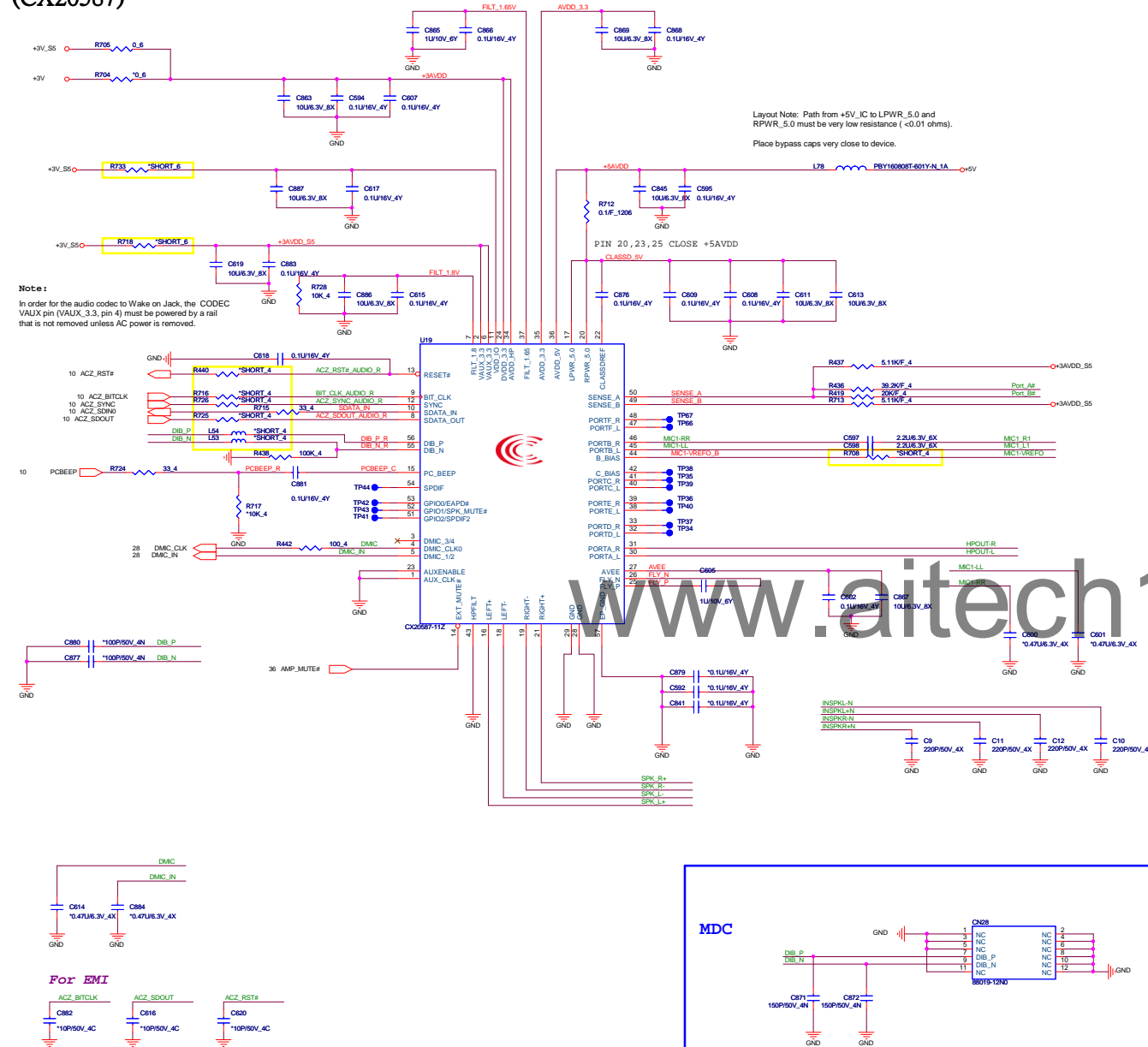


Colay with Redriver IC SATA Re-driver Bypass

SATA_TXP0	R164	*0.4	BSATA_TXP0
SATA_TXN0	R165	*0.4	BSATA_TXN0
SATA_RXN0	R166	*0.4	BSATA_RXN0_C
SATA_RXP0	R167	*0.4	BSATA_RXP0_C

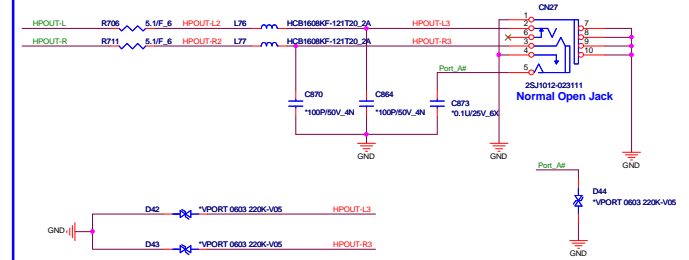
E3A

Codec (CX20587)

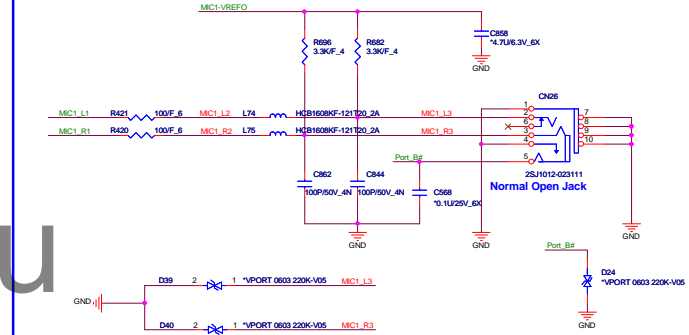


34

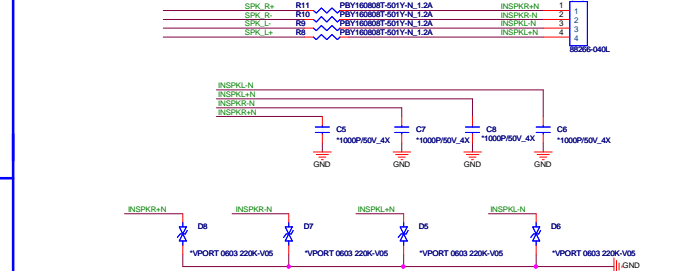
Earphone



External MIC

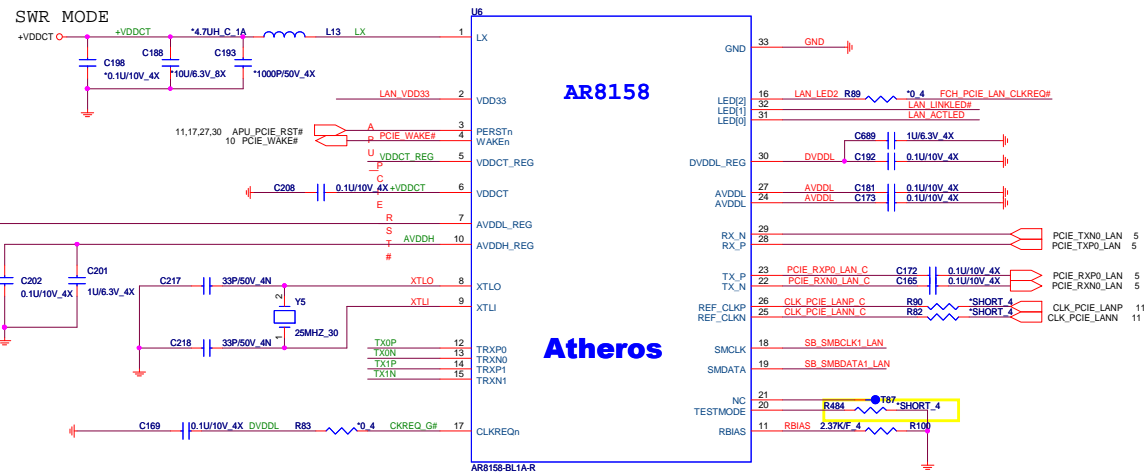
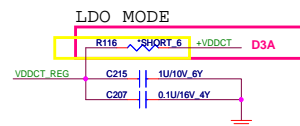
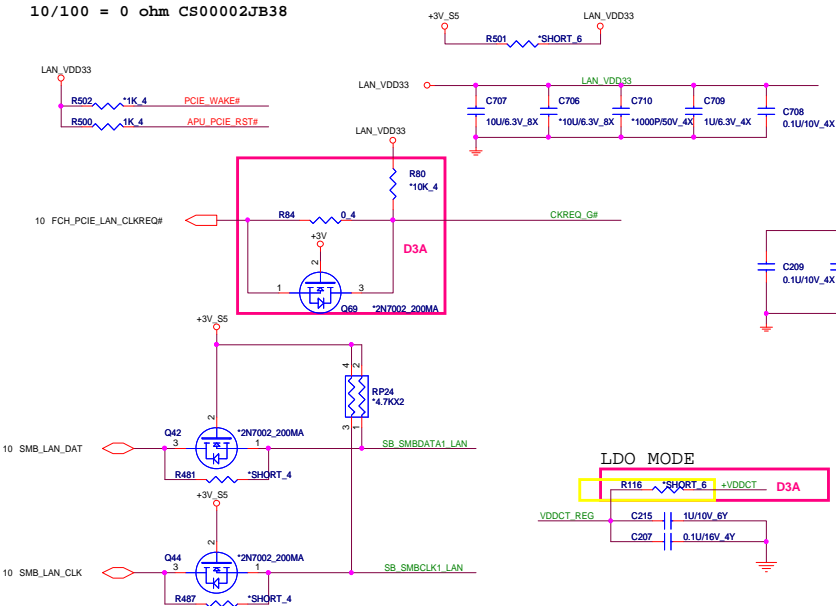


Internal Speaker

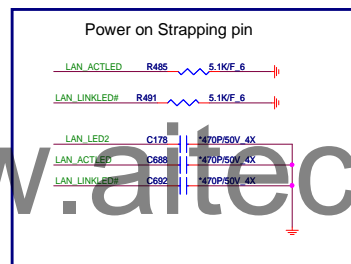


Atheros Lan AR8158

10/100 = 0 ohm CS00002JB38

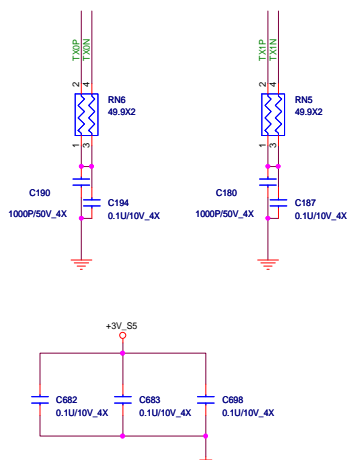


AMD 10/100: AR8158-BL1A-R = AL008158001

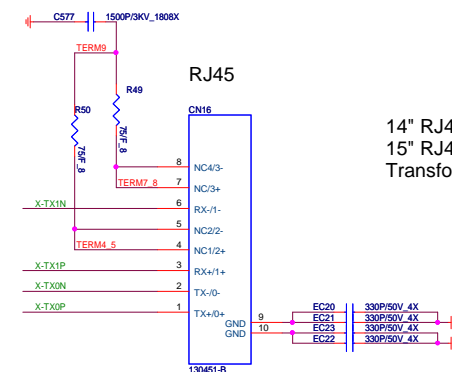
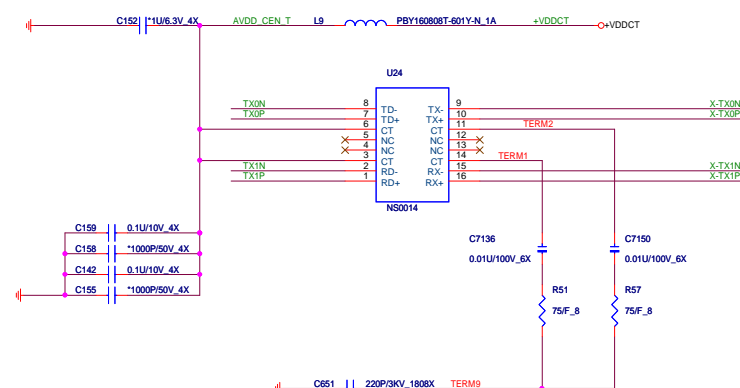


LED0 = LAN_ACTLED	1	Over-clocking enable (default = 1)
	0	Over-clocking disable
	1	SWR switch-mode regulator select Giga LAN pull High (default = 1)
LED1 = LAN_LINKLED	0	LDO linear regulator select 10/100M LAN pull Low

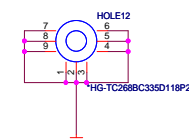
PLACE NEAR LAN IC SIDE

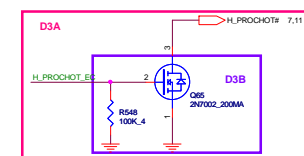


TRANSFORMER



14" RJ45- DFTJ08FR164
15" RJ45- DFTJ08FR169
Transformer- DB0EL5LAN02



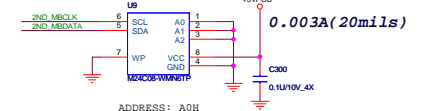


SMBUS Table

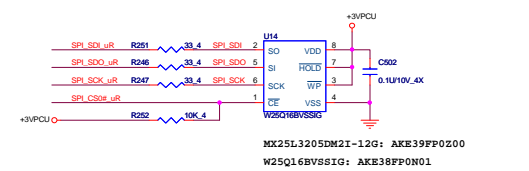
SMBUS	Devices	Address
1	Battery	
2	PCH SML1	
	3D Sensor	32H
	EC EEPROM	A0H
3	VGA Board Thermal Sensor	98H
	Touch Sensor	58H
	HDMI CEC	34H
	Light Sensor	52H



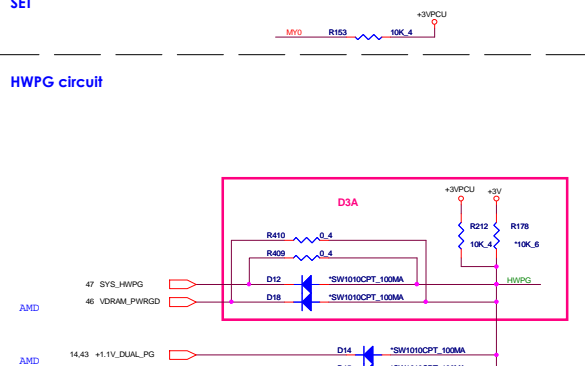
0.003A(20mils)



FLASH

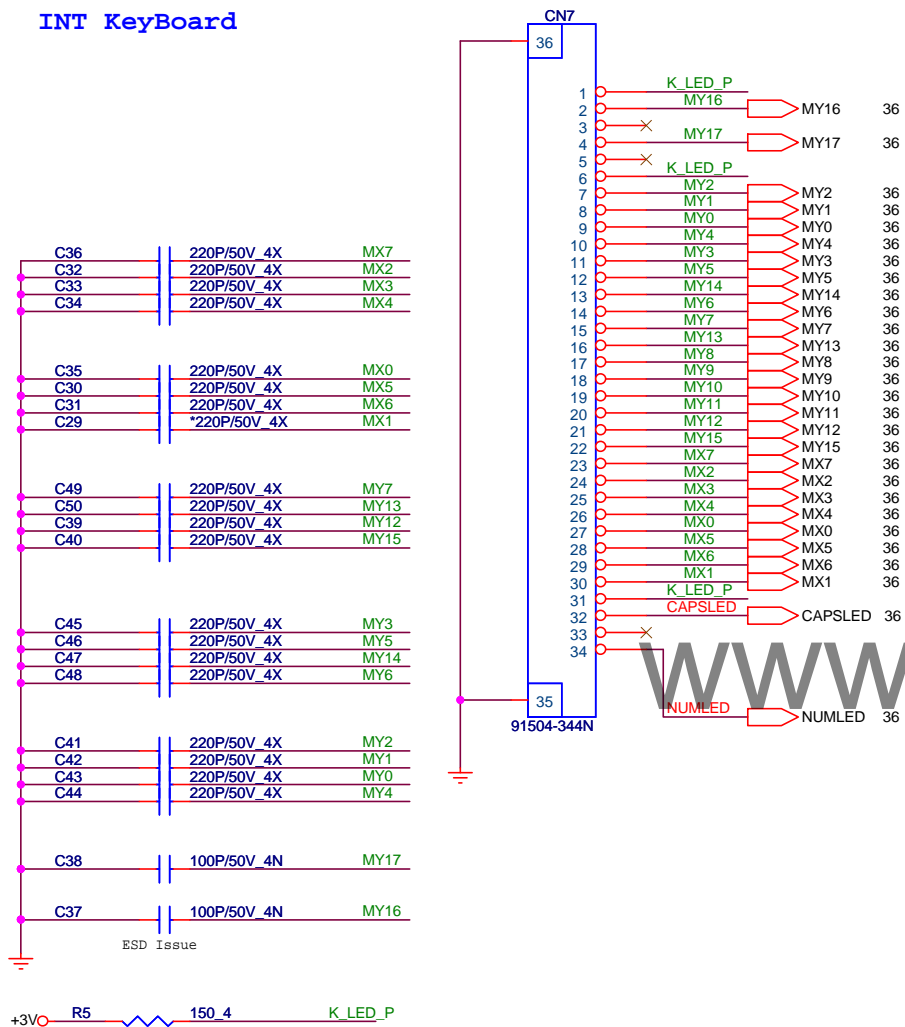


HWPG circuit



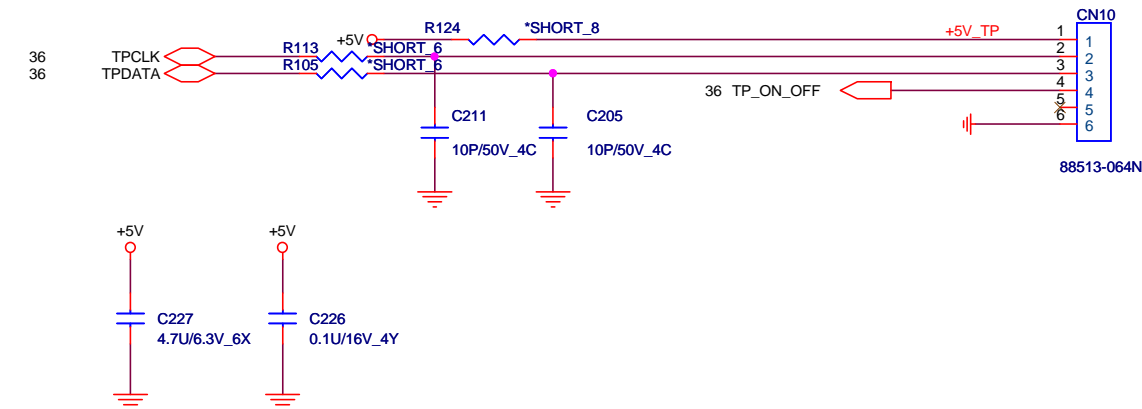
KEY BOARD Connector

INT KeyBoard

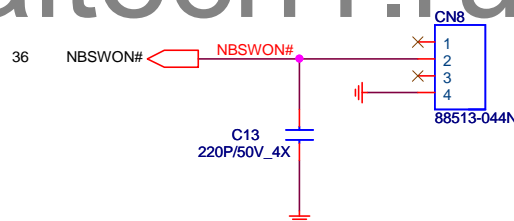


TOUCH PAD BOARD

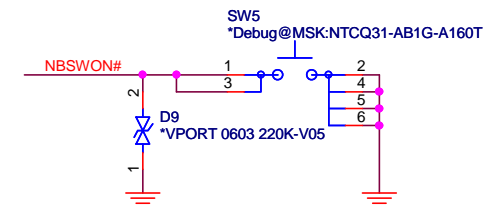
37



Power Board (UIF)



Power Switch (debug only)



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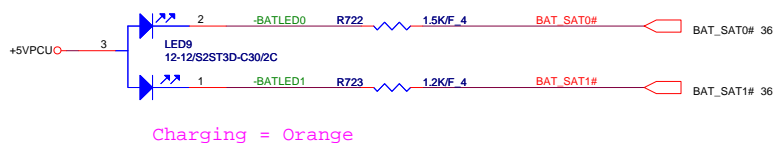
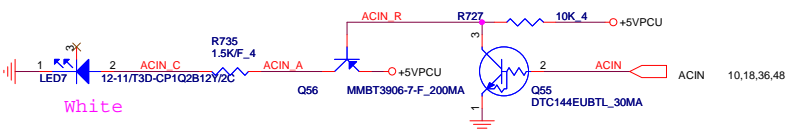
PROJECT : BLF_BLFD

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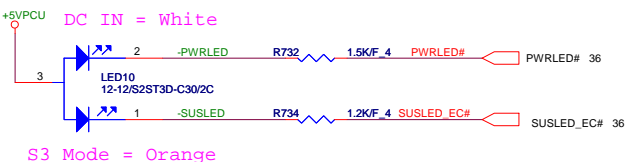
BATTERY

Full Charge = White

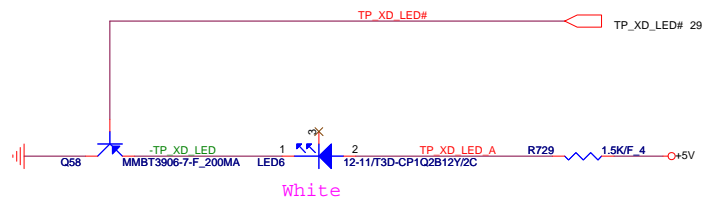
38



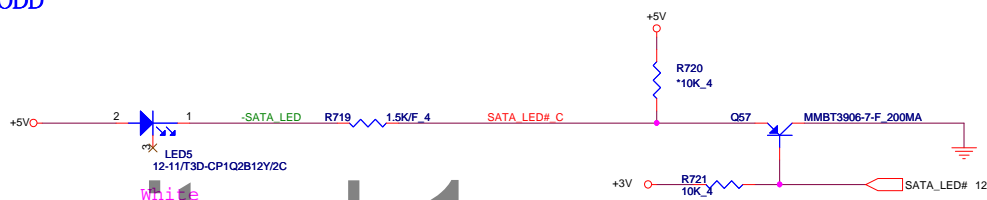
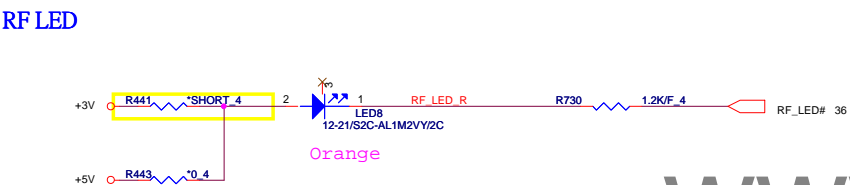
POWER



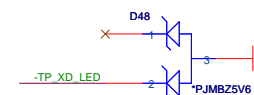
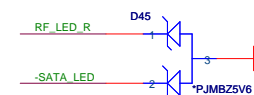
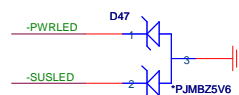
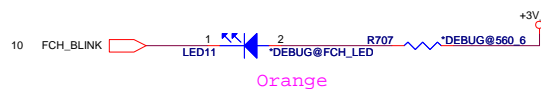
CARDREADER



HDD/ODD

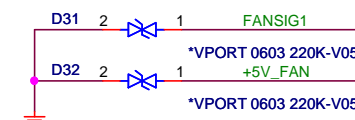
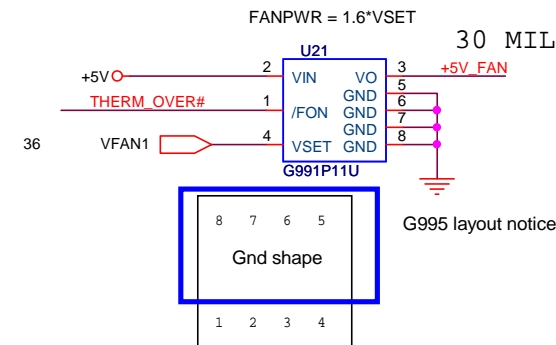
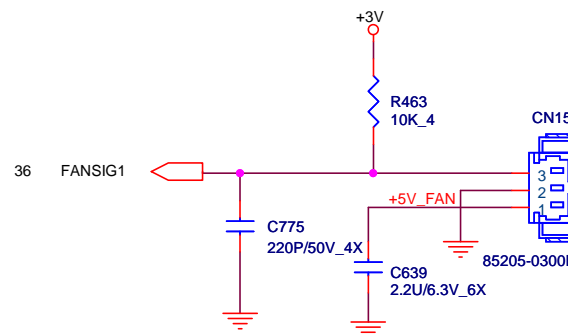
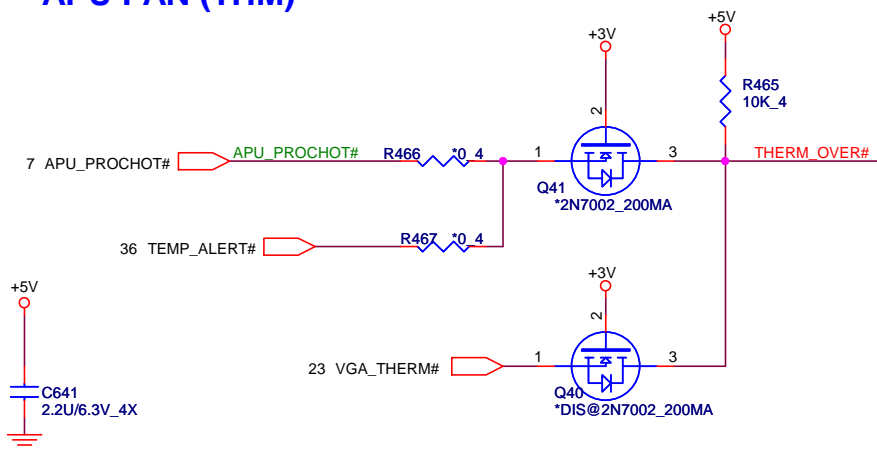


When ON, means in S0
When BLINK, means in S3
When OFF, means in S5



APU FAN (THM)

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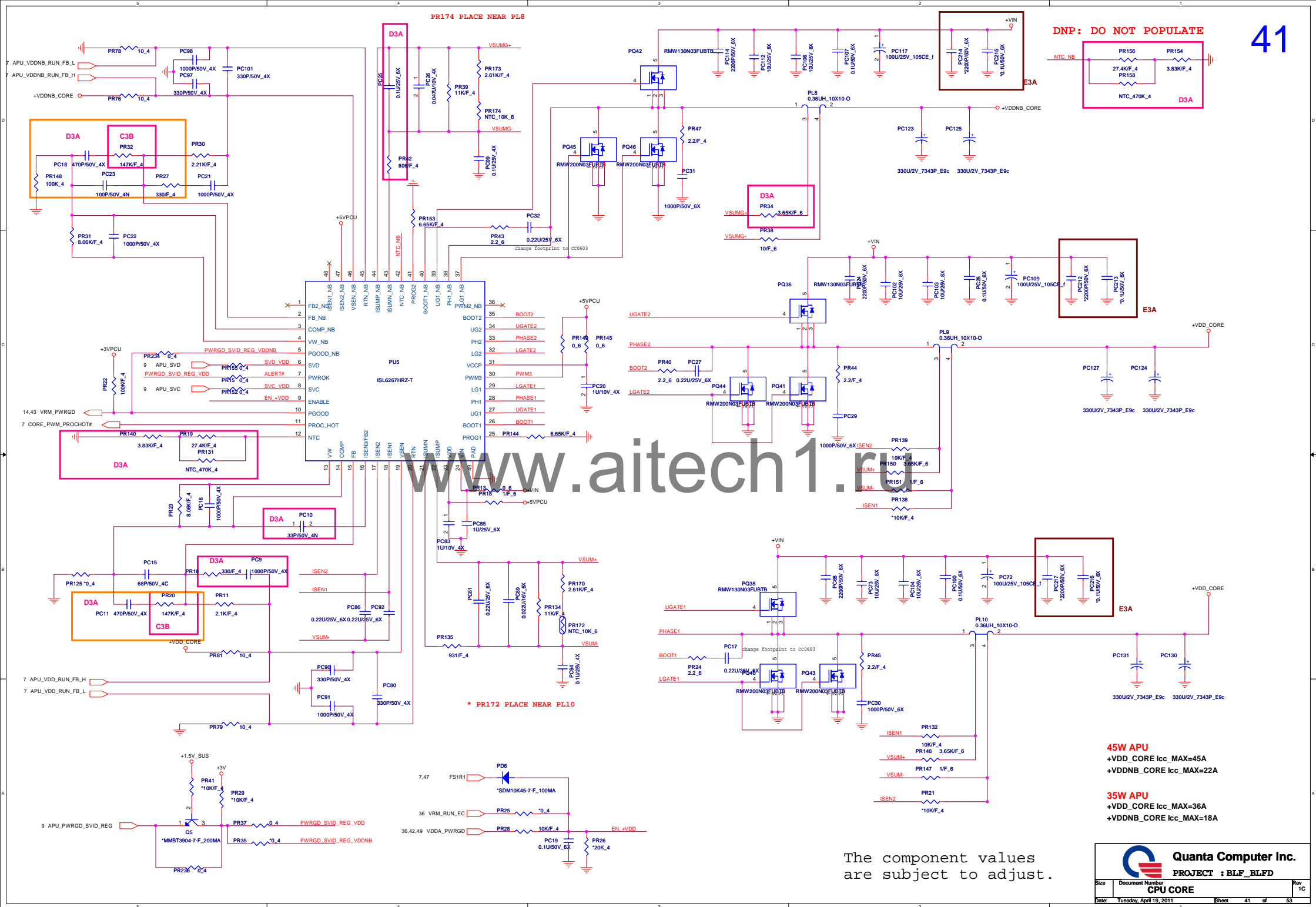
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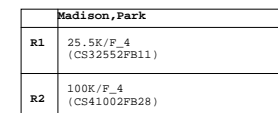
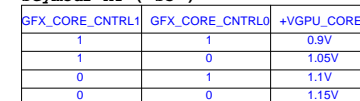
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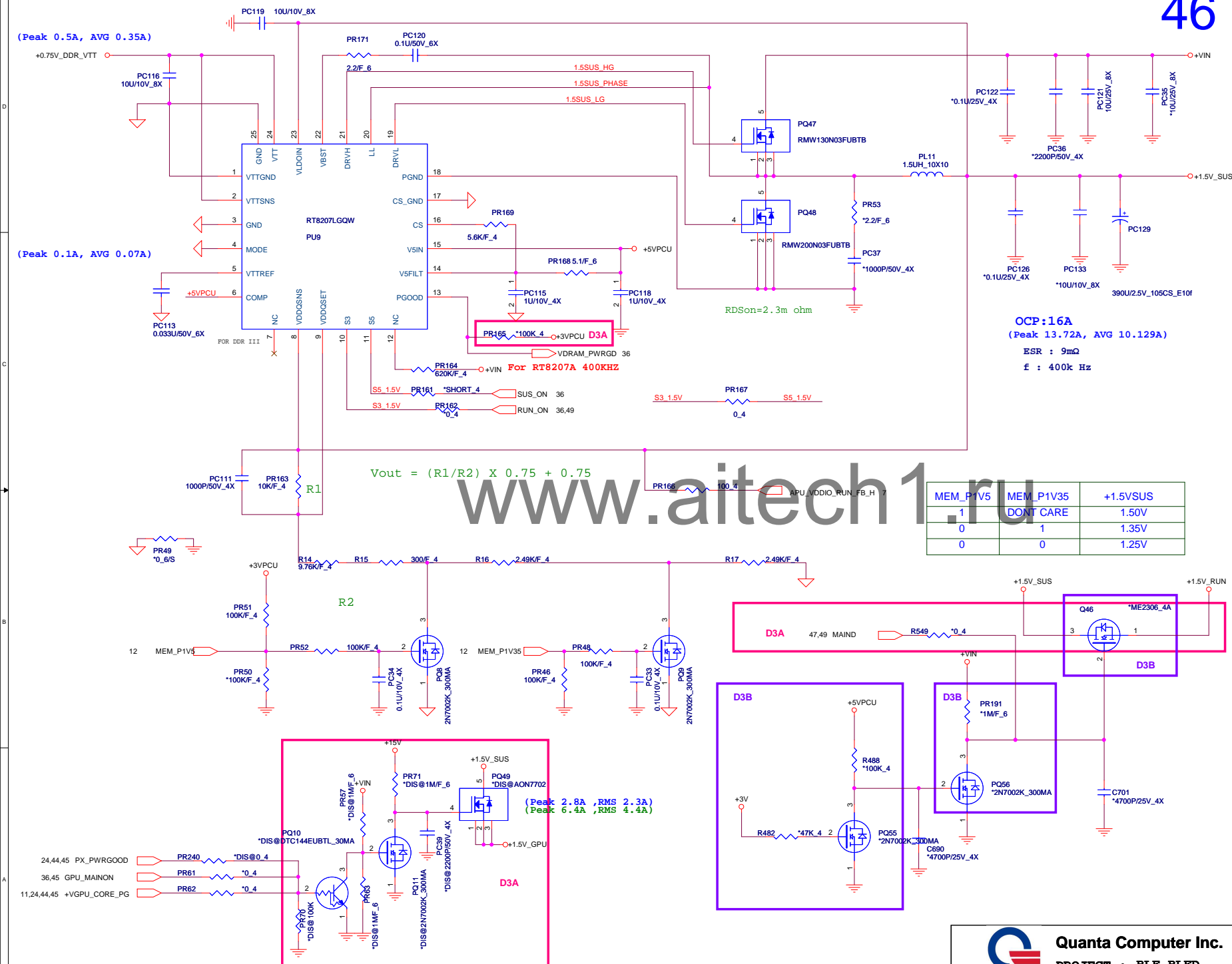


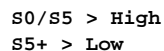


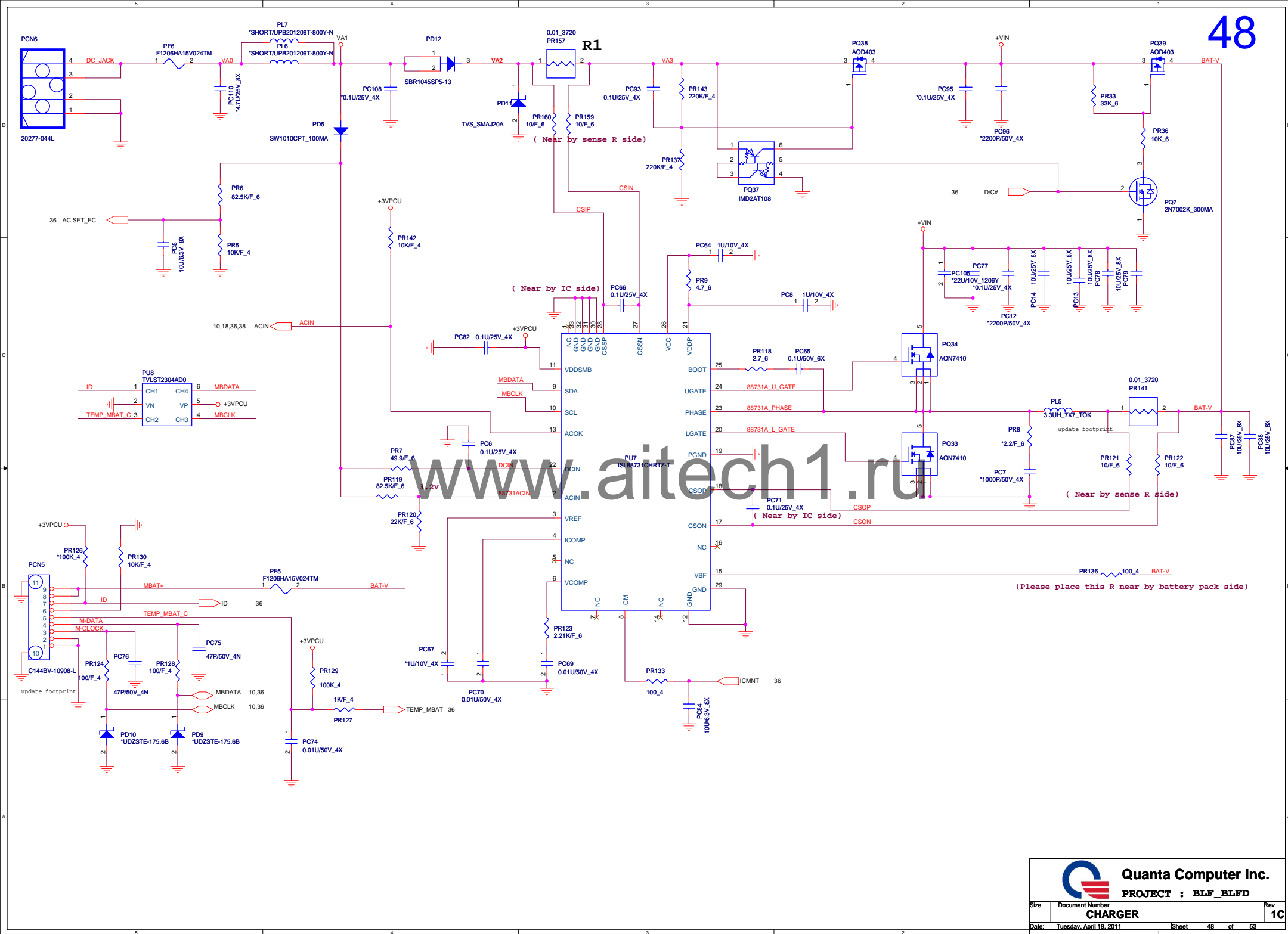


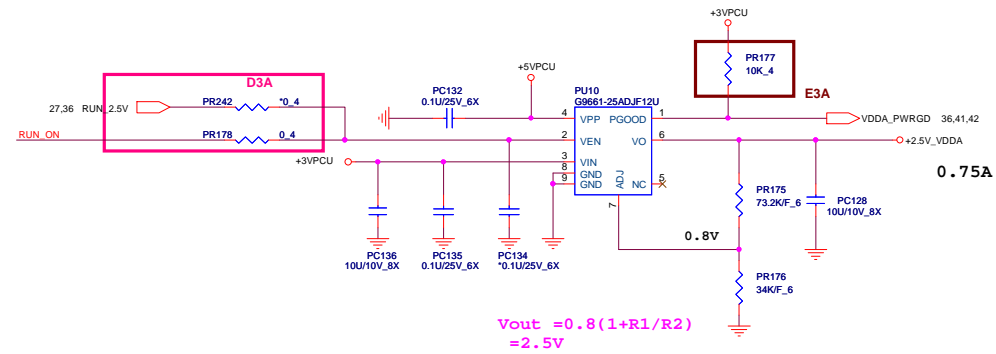
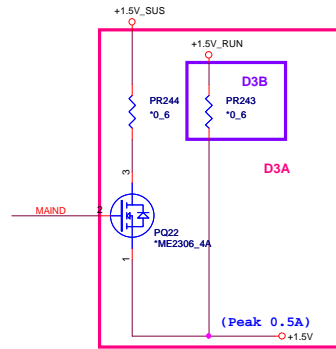
+1.5V_GPU
Fsw=300KHz
Iout=4A
O.C.P.=7A

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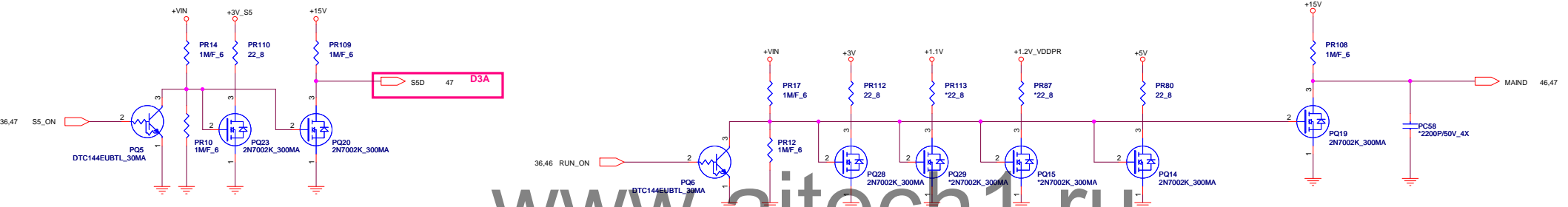






$$V_{out} = 0.8(1 + R1/R2) = 2.5V$$

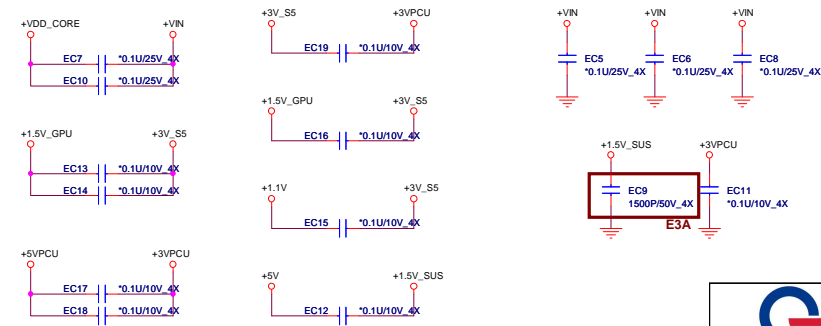
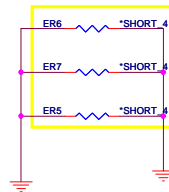
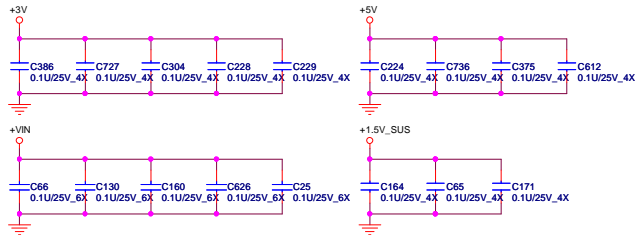
0.75A

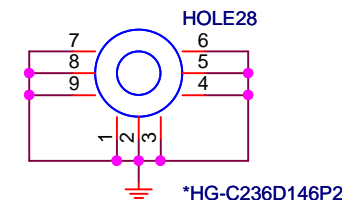
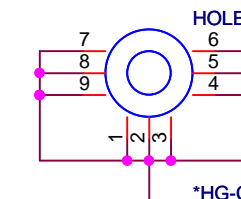
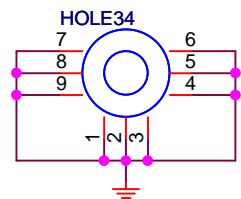
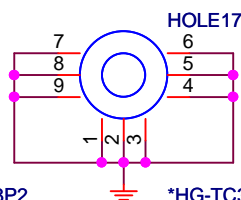
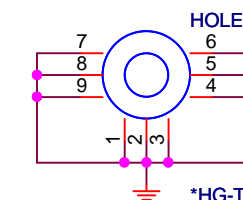
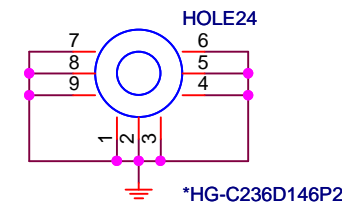
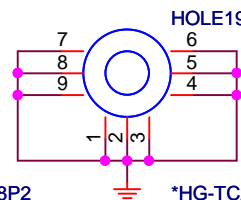
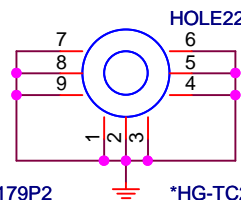
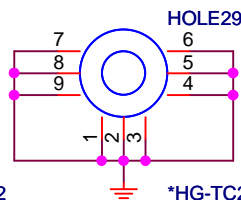
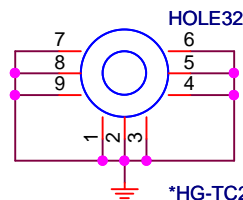
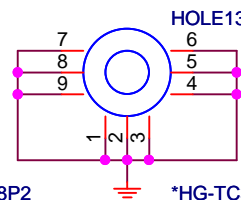
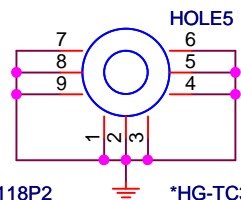
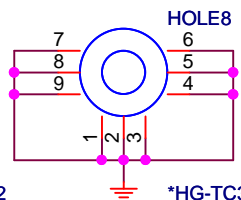
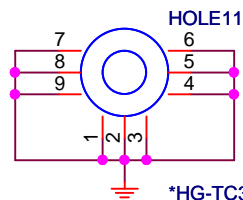


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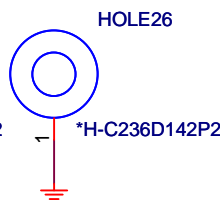
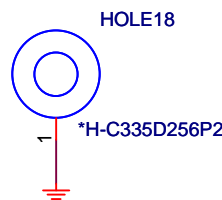
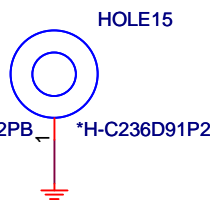
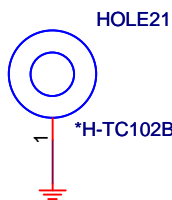
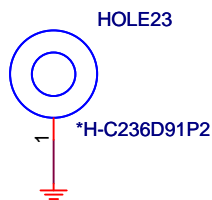
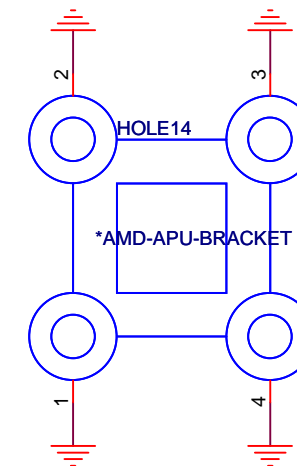
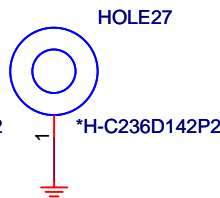
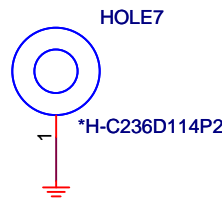
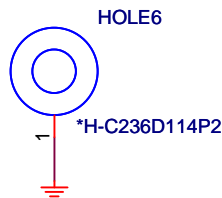
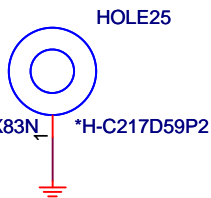
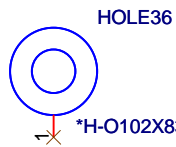
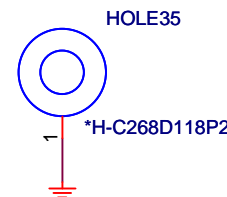
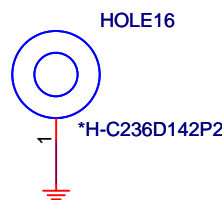
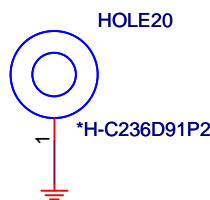
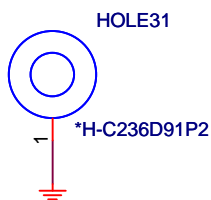
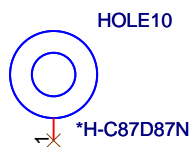
EMI


For EMI





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