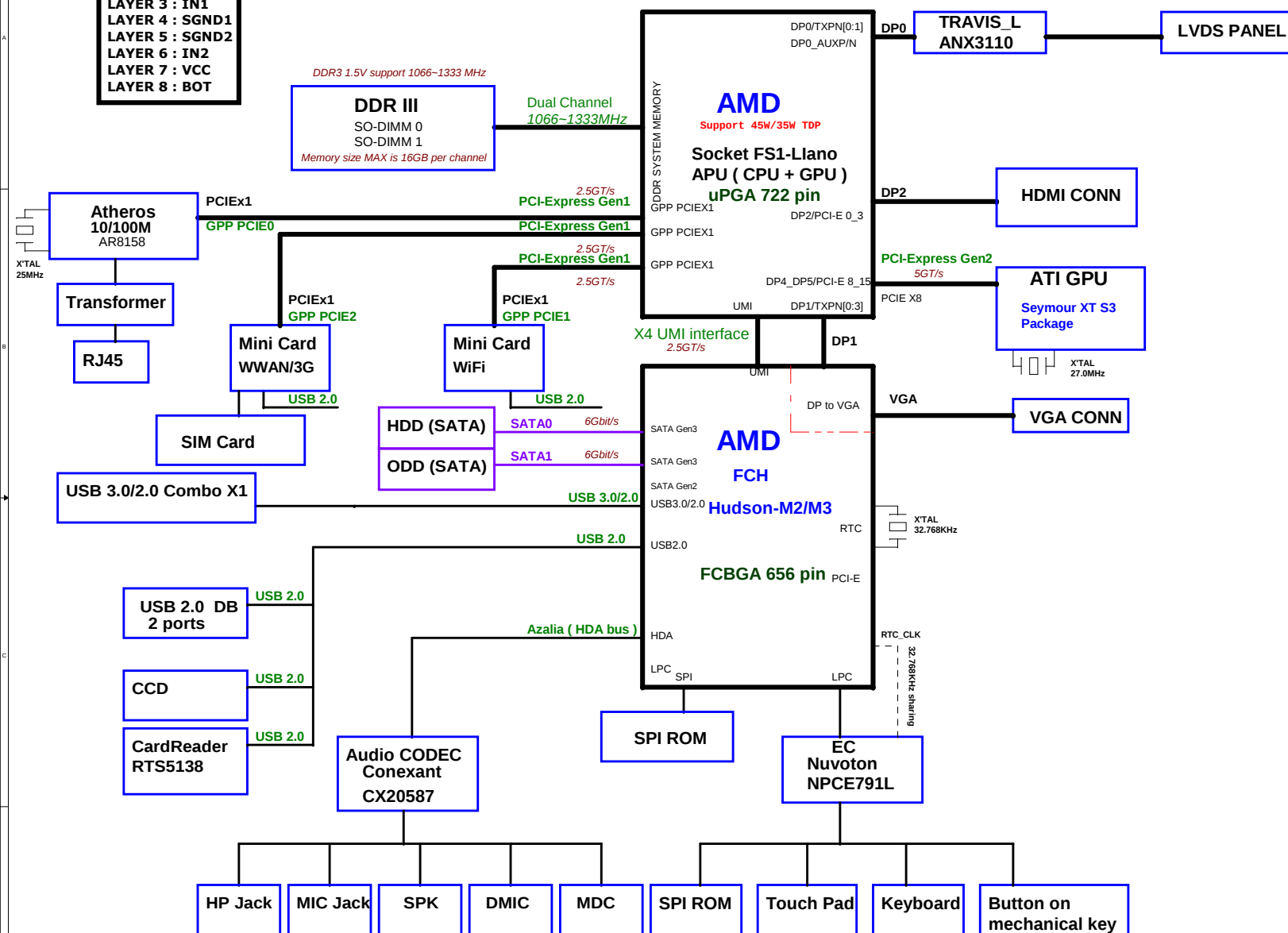
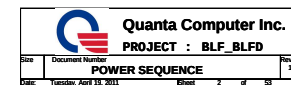


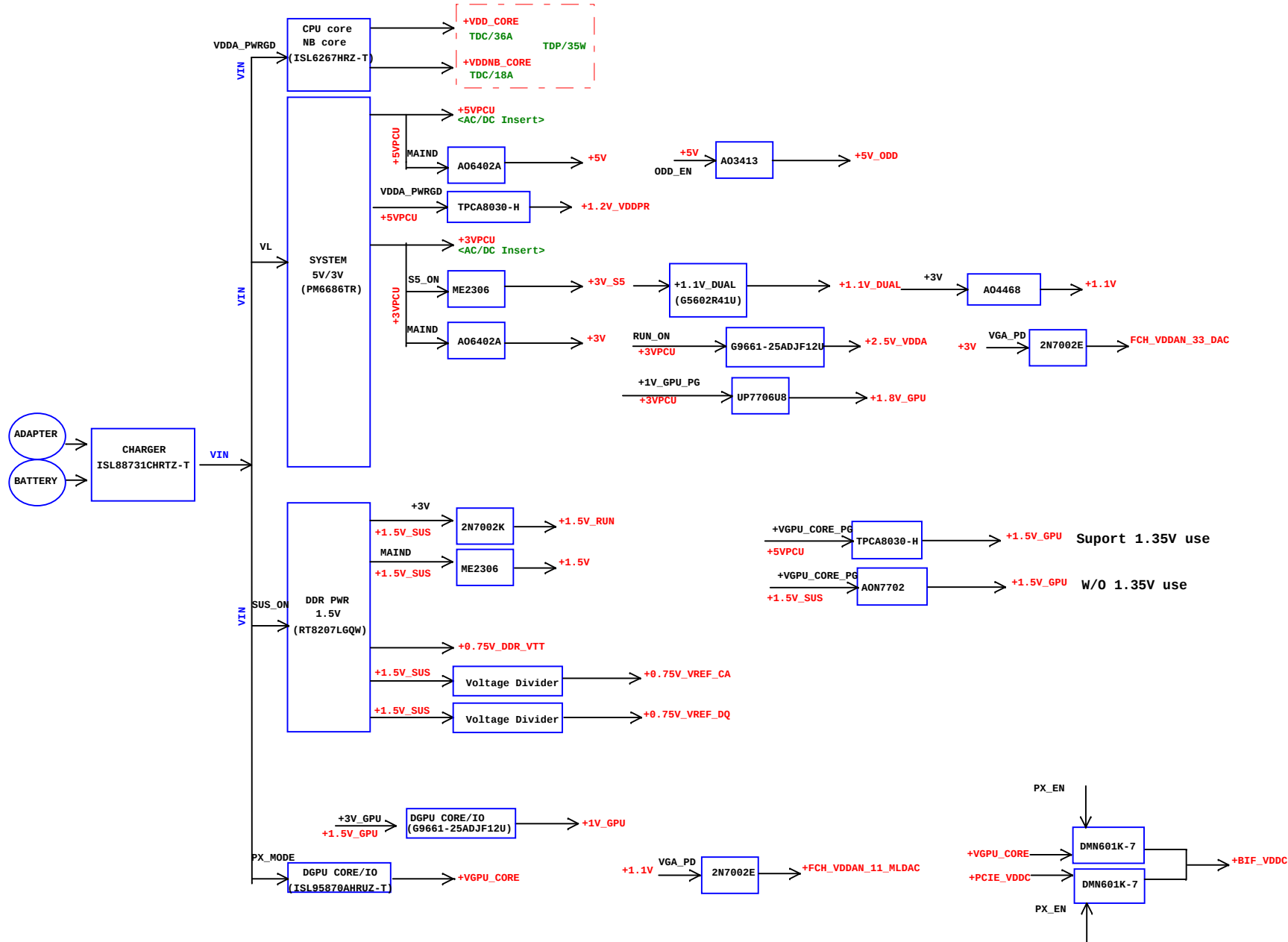
PCB STACK UP

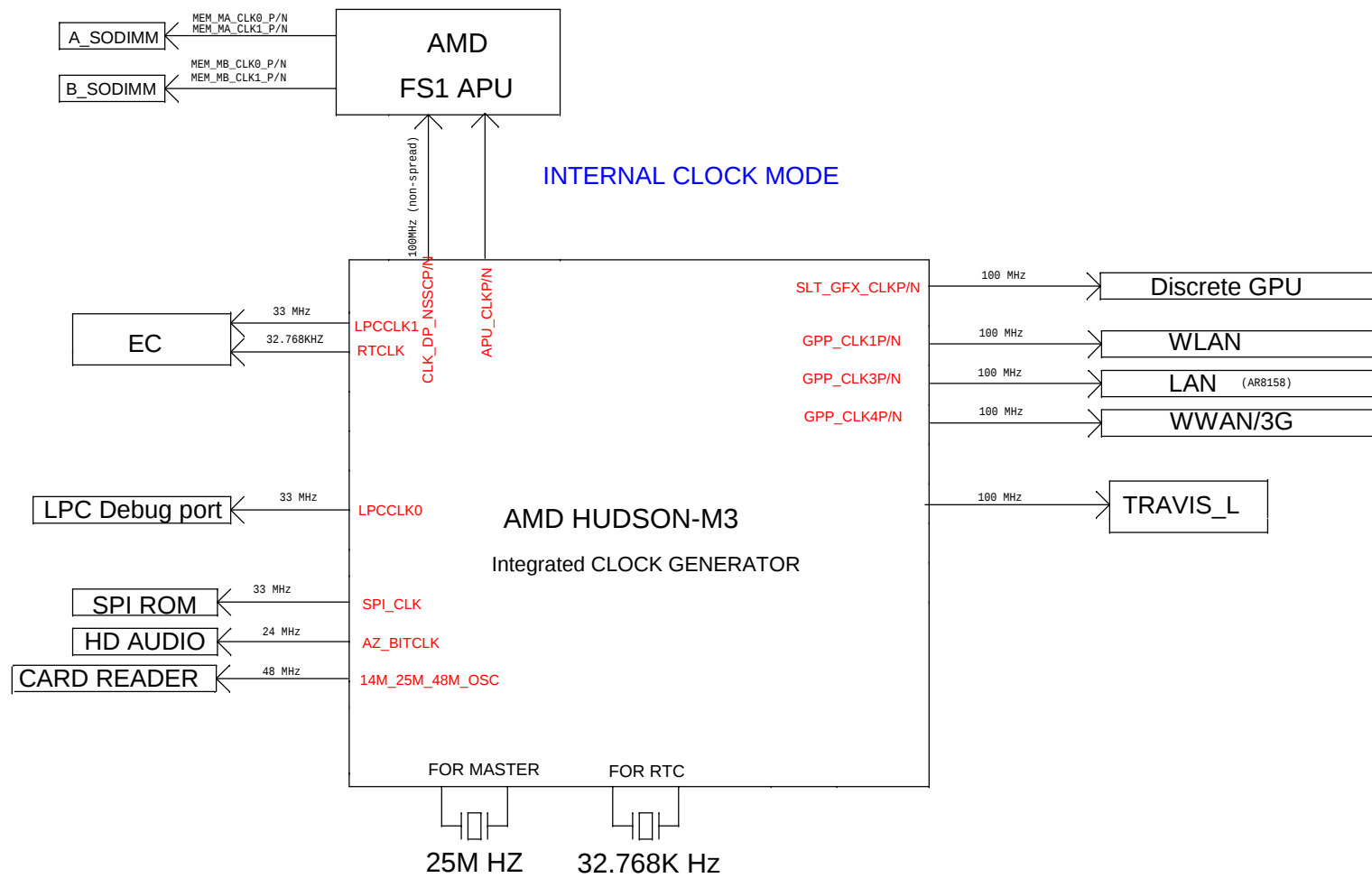
LAYER 1 : TOP
LAYER 2 : GND
LAYER 3 : IN1
LAYER 4 : SGND1
LAYER 5 : SGND2
LAYER 6 : IN2
LAYER 7 : VCC
LAYER 8 : BOT

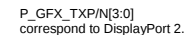
BLOCK DIAGRAM











LAN
WLAN
3G

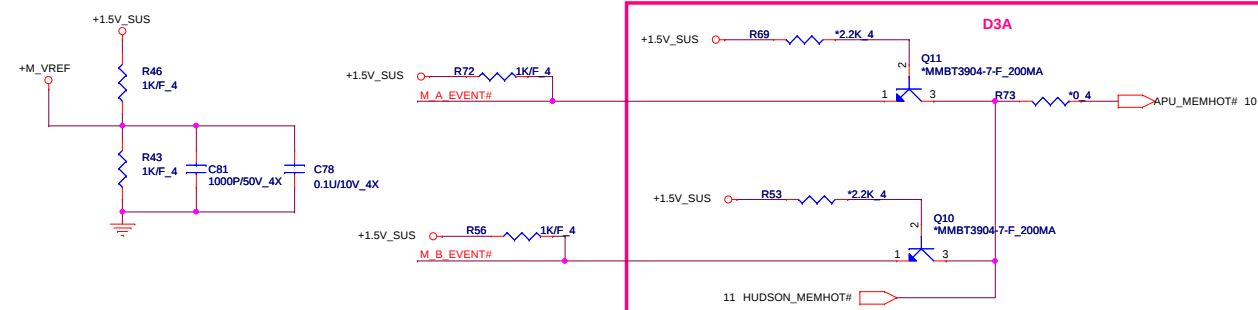


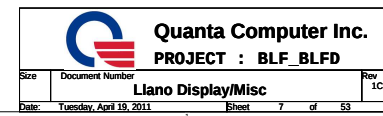
Quanta Computer Inc.
PROJECT : BLF_BLF D

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



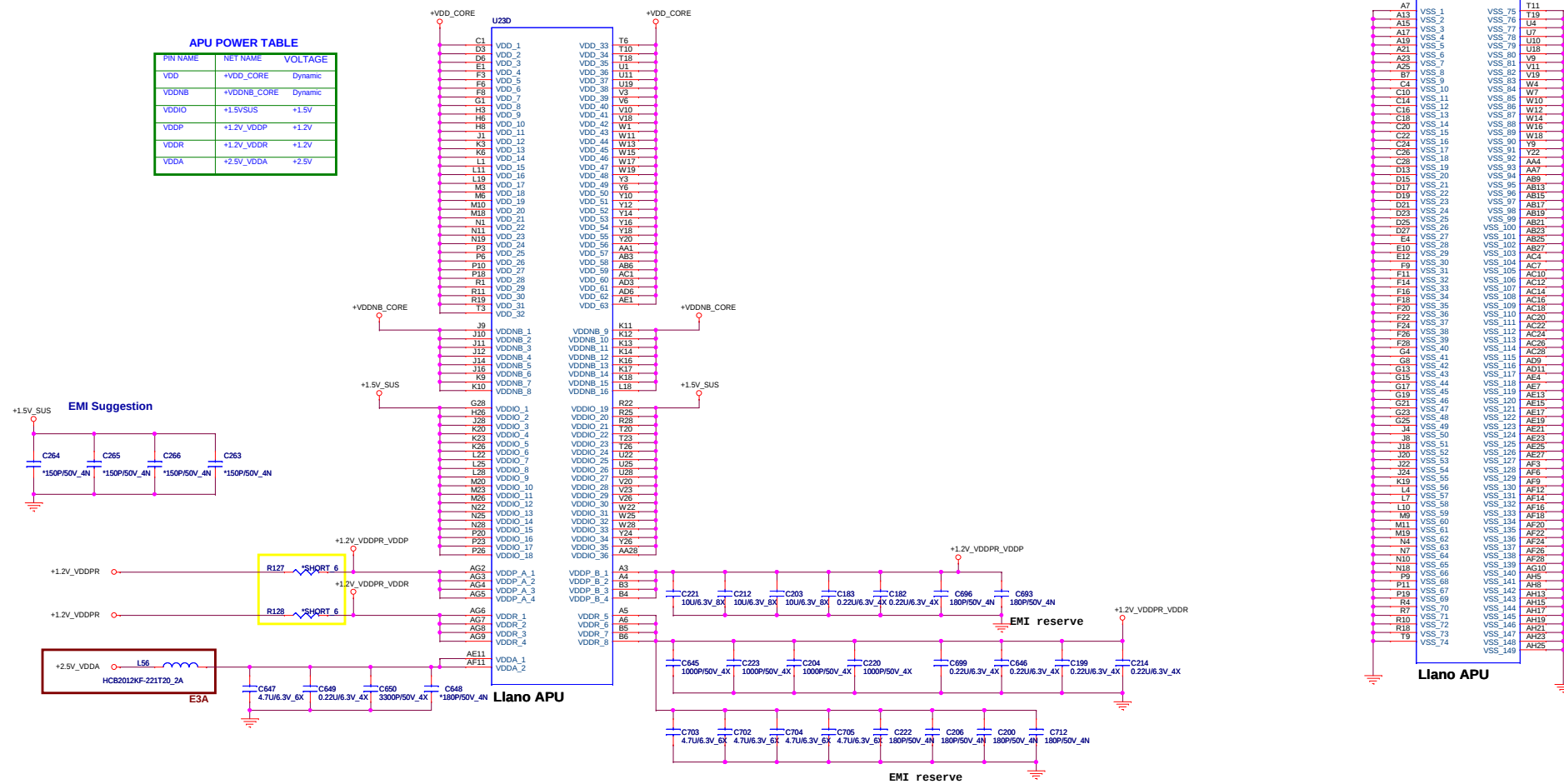
Llano APU



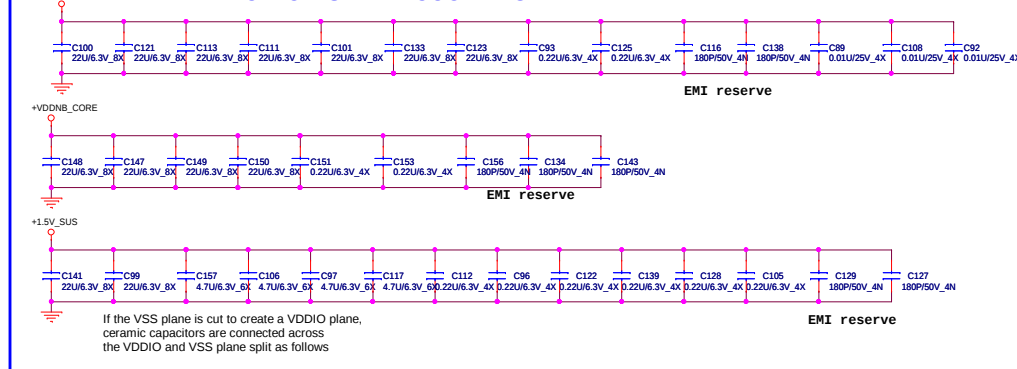


APU POWER TABLE

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



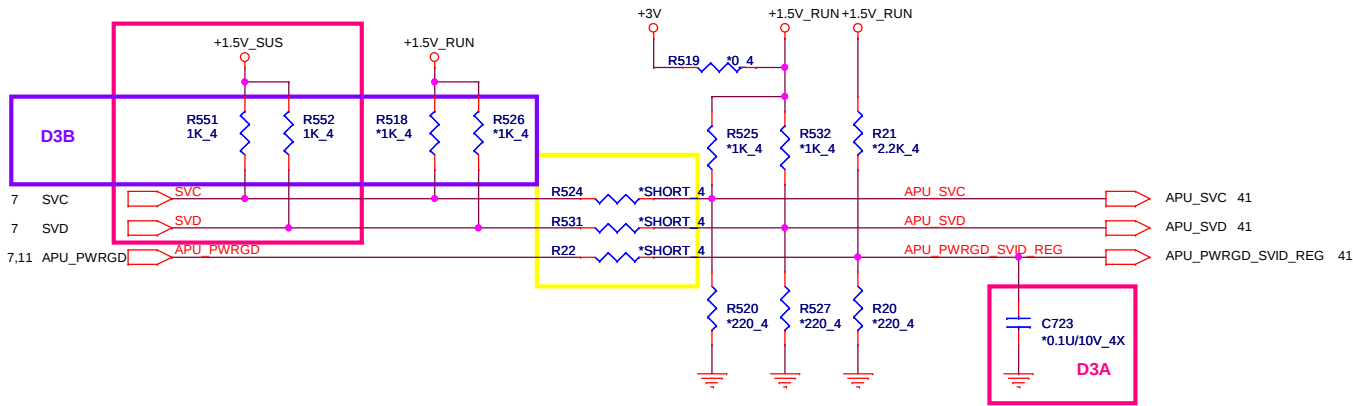
DECOUPLING between PROCESSOR and DIMMs

Across VDDIO and VSS split



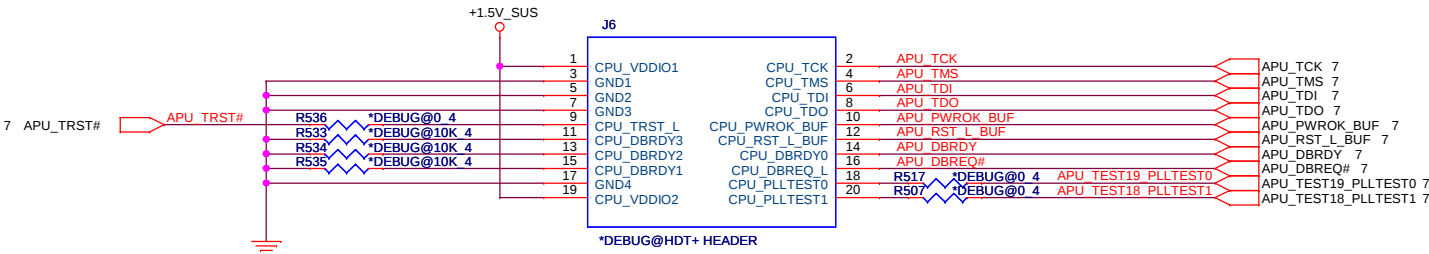
A7			T11
A13	VSS_1	VSS_75	
A15	VSS_2	VSS_76	U4
A16	VSS_3	VSS_77	U7
A17	VSS_4	VSS_78	U10
A21	VSS_5	VSS_79	U18
A23	VSS_6	VSS_80	U19
A24	VSS_7	VSS_81	V1
A25	VSS_8	VSS_82	V19
A26	VSS_9	VSS_83	V2
A27	VSS_10	VSS_84	W4
A28	VSS_11	VSS_85	W10
A29	VSS_12	VSS_86	W14
A34	VSS_13	VSS_87	W14
A36	VSS_14	VSS_88	W16
A37	VSS_15	VSS_89	W16
A38	VSS_16	VSS_90	Y6
A39	VSS_17	VSS_91	Y22
A40	VSS_18	VSS_92	Y44
A43	VSS_19	VSS_93	AB7
A44	VSS_20	VSS_94	AB8
D15	VSS_21	VSS_95	AB13
D19	VSS_22	VSS_96	AB13
D20	VSS_23	VSS_97	AB13
D23	VSS_24	VSS_98	AB19
D24	VSS_25	VSS_99	AB19
D25	VSS_26	VSS_100	AB26
E4	VSS_27	VSS_101	AB27
E10	VSS_28	VSS_102	AB28
F5	VSS_29	VSS_103	AB28
F9	VSS_30	VSS_104	AC1
F10	VSS_31	VSS_105	AC12
F11	VSS_32	VSS_106	AC12
F12	VSS_33	VSS_107	AC12
F16	VSS_34	VSS_108	AC18
F17	VSS_35	VSS_109	AC18
F20	VSS_36	VSS_110	AC18
F22	VSS_37	VSS_111	AC20
F23	VSS_38	VSS_112	AC20
F24	VSS_39	VSS_113	AC20
F44	VSS_40	VSS_114	AD9
G1	VSS_41	VSS_115	AD9
G8	VSS_42	VSS_116	AD9
G15	VSS_43	VSS_117	AE3
G16	VSS_44	VSS_118	AE4
G17	VSS_45	VSS_119	AE4
G21	VSS_46	VSS_120	AE15
G22	VSS_47	VSS_121	AE15
G25	VSS_48	VSS_122	AE15
G26	VSS_49	VSS_123	AE21
J4	VSS_50	VSS_124	AE21
J18	VSS_51	VSS_125	AE21
J19	VSS_52	VSS_126	AE27
J20	VSS_53	VSS_127	AE27
J24	VSS_54	VSS_128	AE27
K7	VSS_55	VSS_129	AF12
K19	VSS_56	VSS_130	AF12
L17	VSS_57	VSS_131	AF12
L4	VSS_58	VSS_132	AF16
M6	VSS_59	VSS_133	AF20
M11	VSS_60	VSS_134	AF20
M19	VSS_61	VSS_135	AF20
N4	VSS_62	VSS_136	AF24
N10	VSS_63	VSS_137	AF24
N17	VSS_64	VSS_138	AF28
N18	VSS_65	VSS_139	AG10
N19	VSS_66	VSS_140	AG10
P11	VSS_67	VSS_141	AG10
P12	VSS_68	VSS_142	AH13
P13	VSS_69	VSS_143	AH13
P17	VSS_70	VSS_144	AH13
R10	VSS_71	VSS_145	AH13
R19	VSS_72	VSS_146	AH21
R30	VSS_73	VSS_147	AH23
R34	VSS_74	VSS_148	AH23

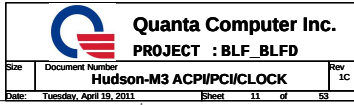
VID Override Circuit

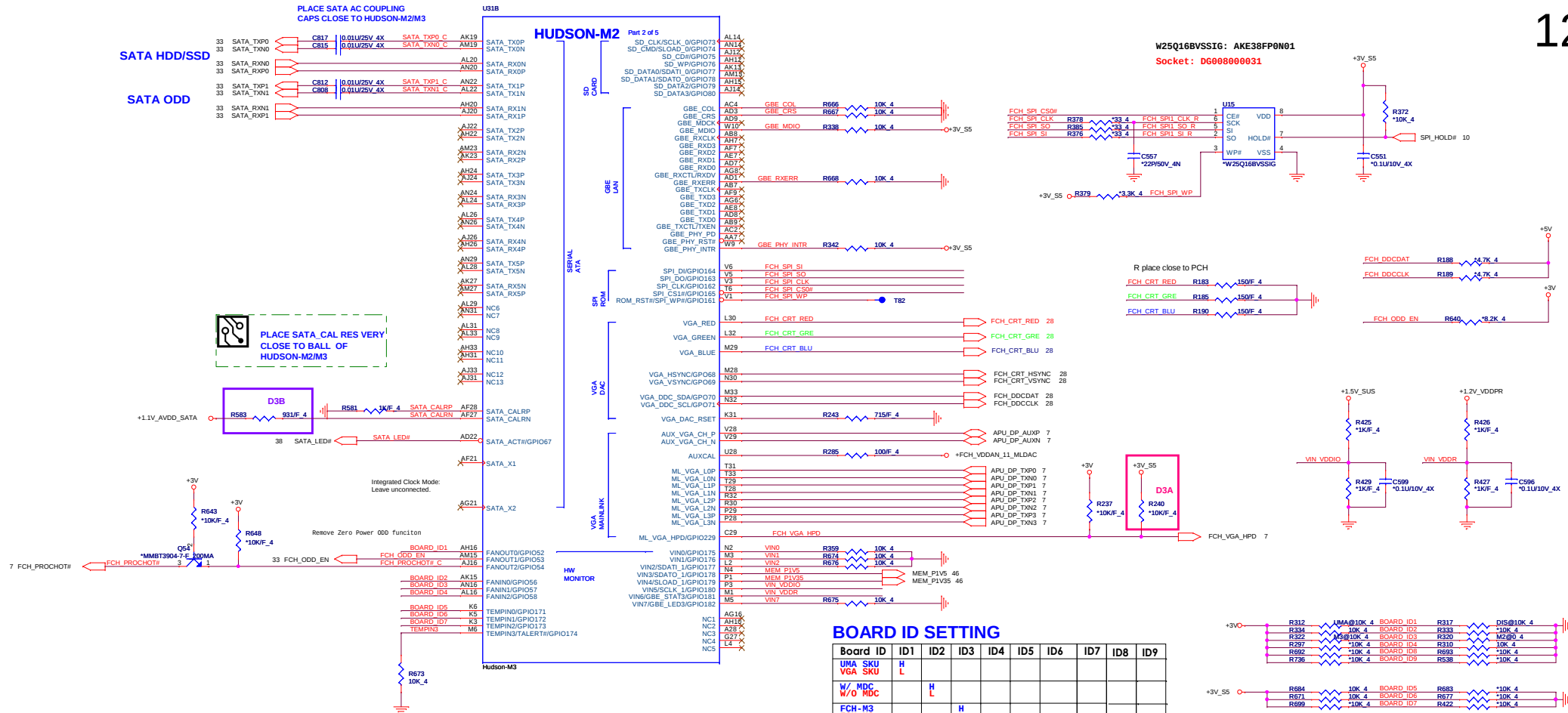


HDT+ Connector

Debug only







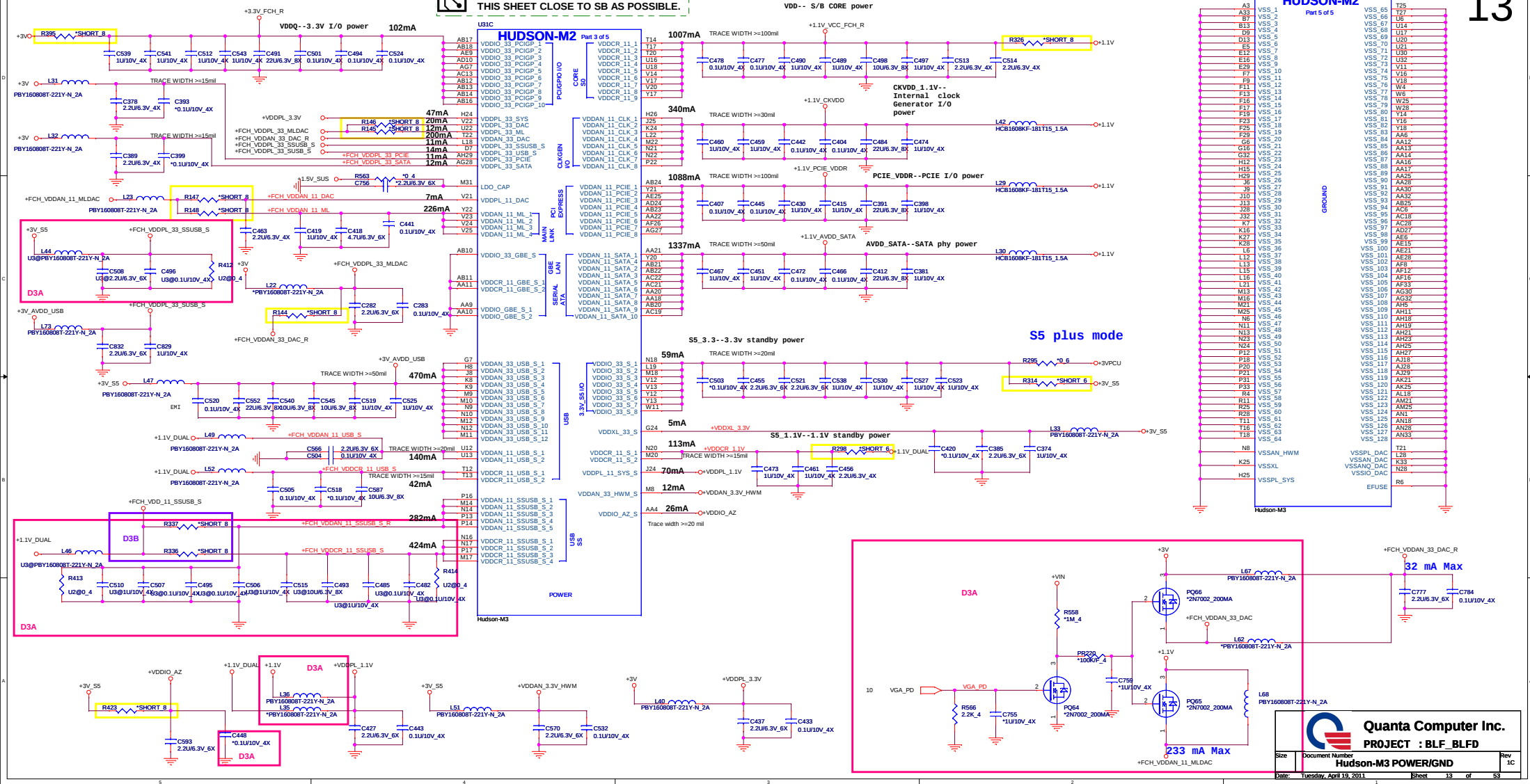


PLACE ALL THE DECOUPLING CAPS ON THIS SHEET CLOSE TO SB AS POSSIBLE.

VDD-- S/B CORE power

HUDSON-M2
Part 5 of 5

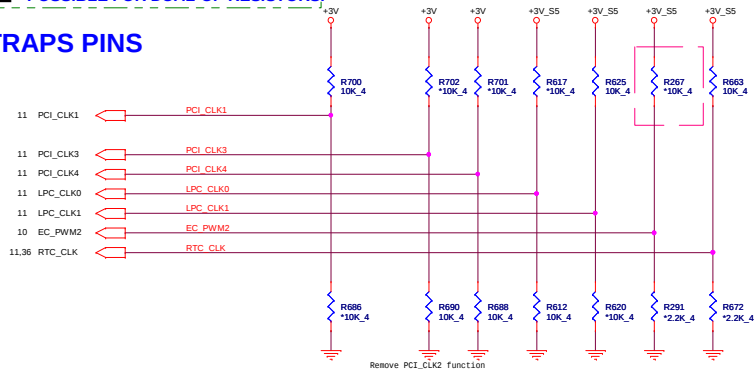
13





OVERLAP COMMON PADS WHERE POSSIBLE FOR DUAL-OP RESISTORS.

STRAPS PINS

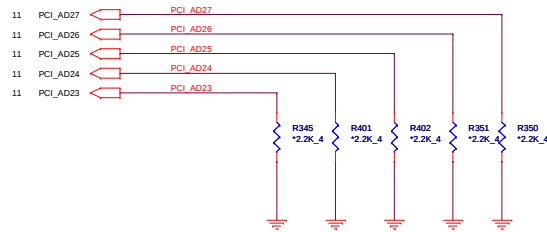


REQUIRED STRAPS

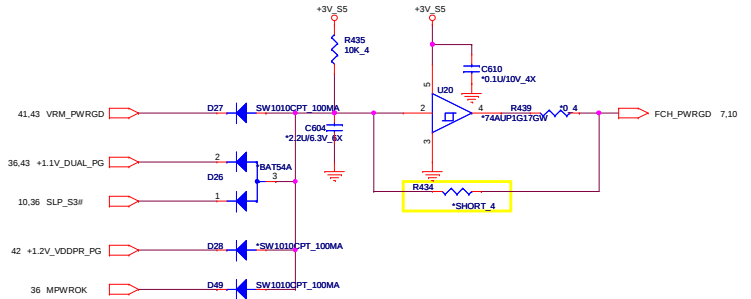
		PCI_CLK1	PCI_CLK2	PCI_CLK3	PCI_CLK4	LPC_CLK0	LPC_CLK1	EC_PWM2	RTC_CLK
PULL HIGH	*****	ALLOW PCIe Gen2 DEFAULT	*****	USE DEBUG STRAP	non_Fusion CLOCK MODE	EC ENABLED	CLKGEN ENABLED DEFAULT	LPC ROM DEFAULT	S5 PLUS MODE DISABLED DEFAULT
PULL LOW	*****	FORCE PCIe Gen1	*****	IGNORE DEBUG STRAP DEFAULT	FUSION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



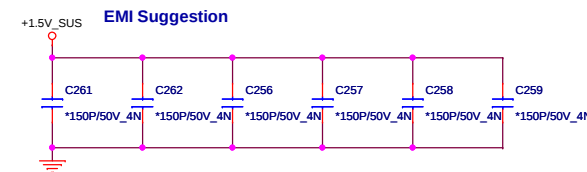
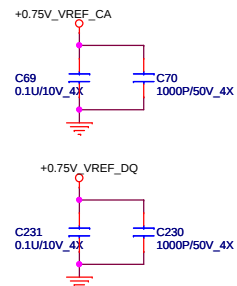
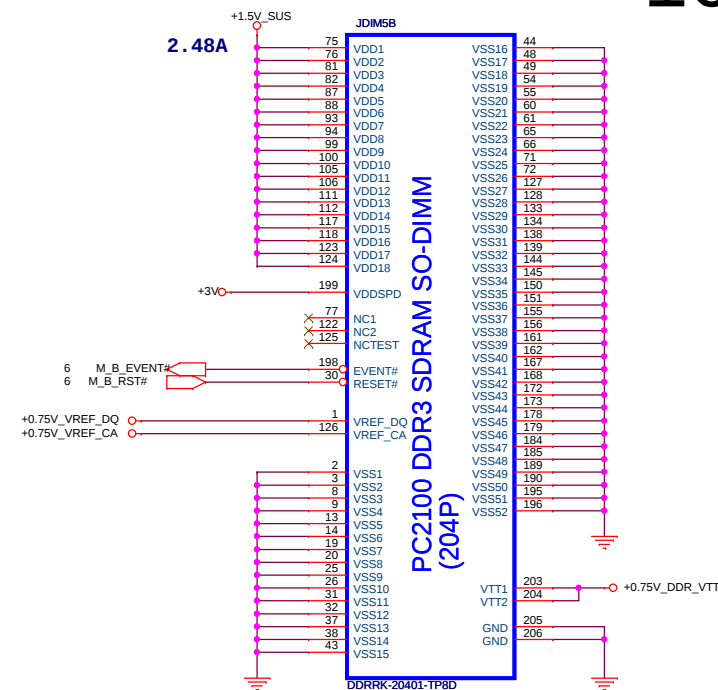
	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE PCI PLL DEFAULT	DISABLE ILA AUTORUN DEFAULT	USE FC PLL DEFAULT	USE DEFAULT PCIe STRAPS DEFAULT	DISABLE PCI MEM BOOT DEFAULT
PULL LOW	BYPASS PCI PLL	ENABLE ILA AUTORUN	BYPASS FC PLL	USE EEPROM PCIe STRAPS	ENABLE PCI MEM BOOT

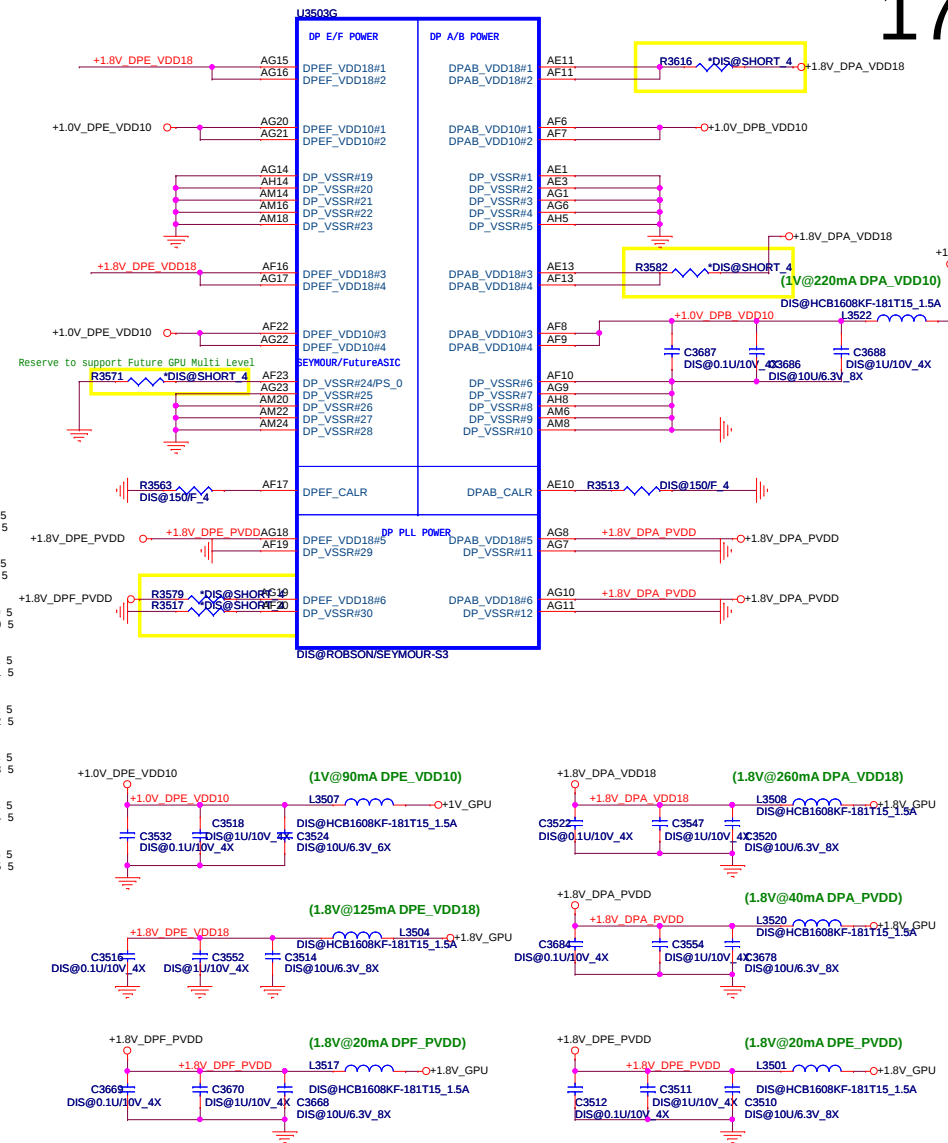
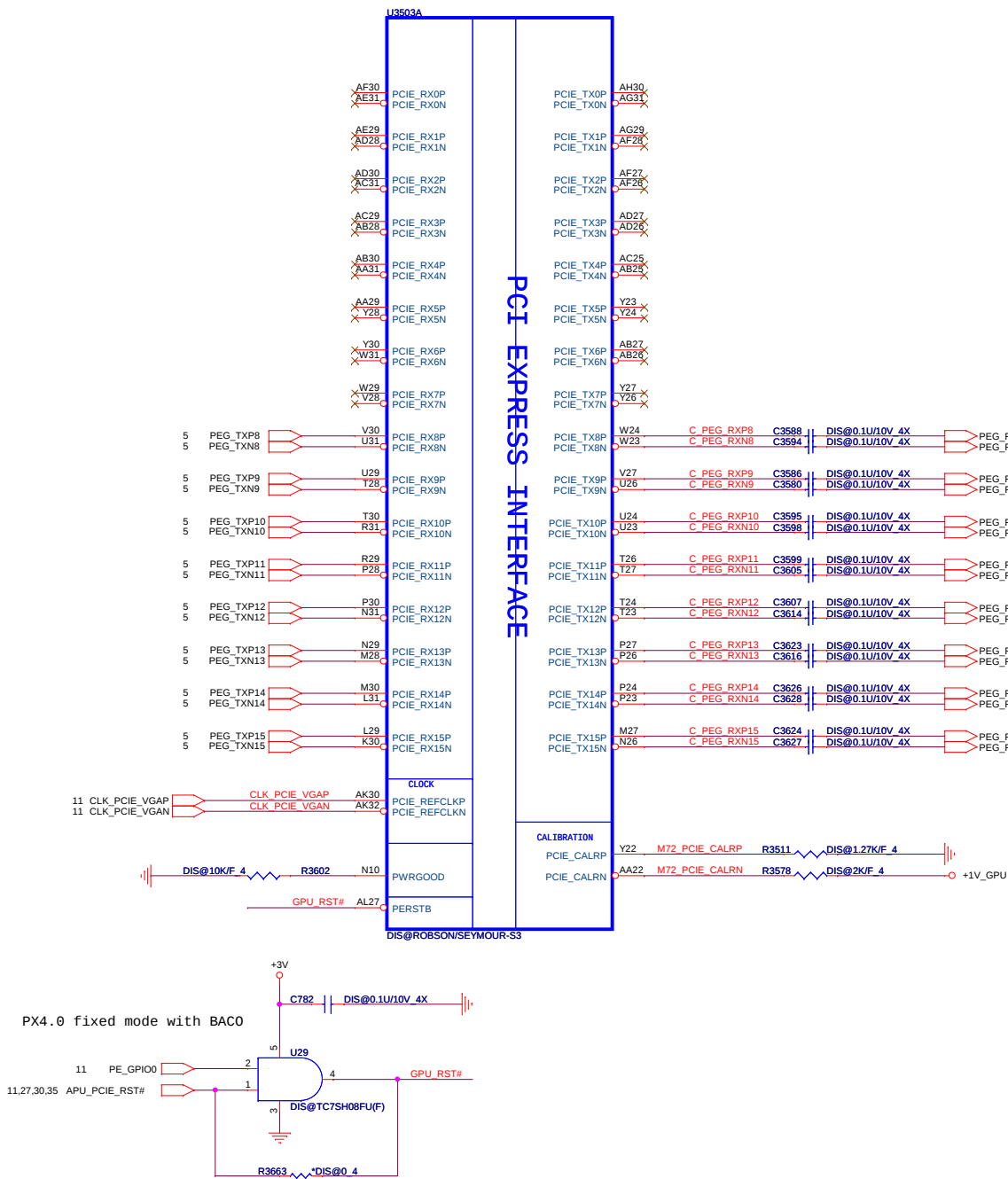


FCH PWRGD CKT

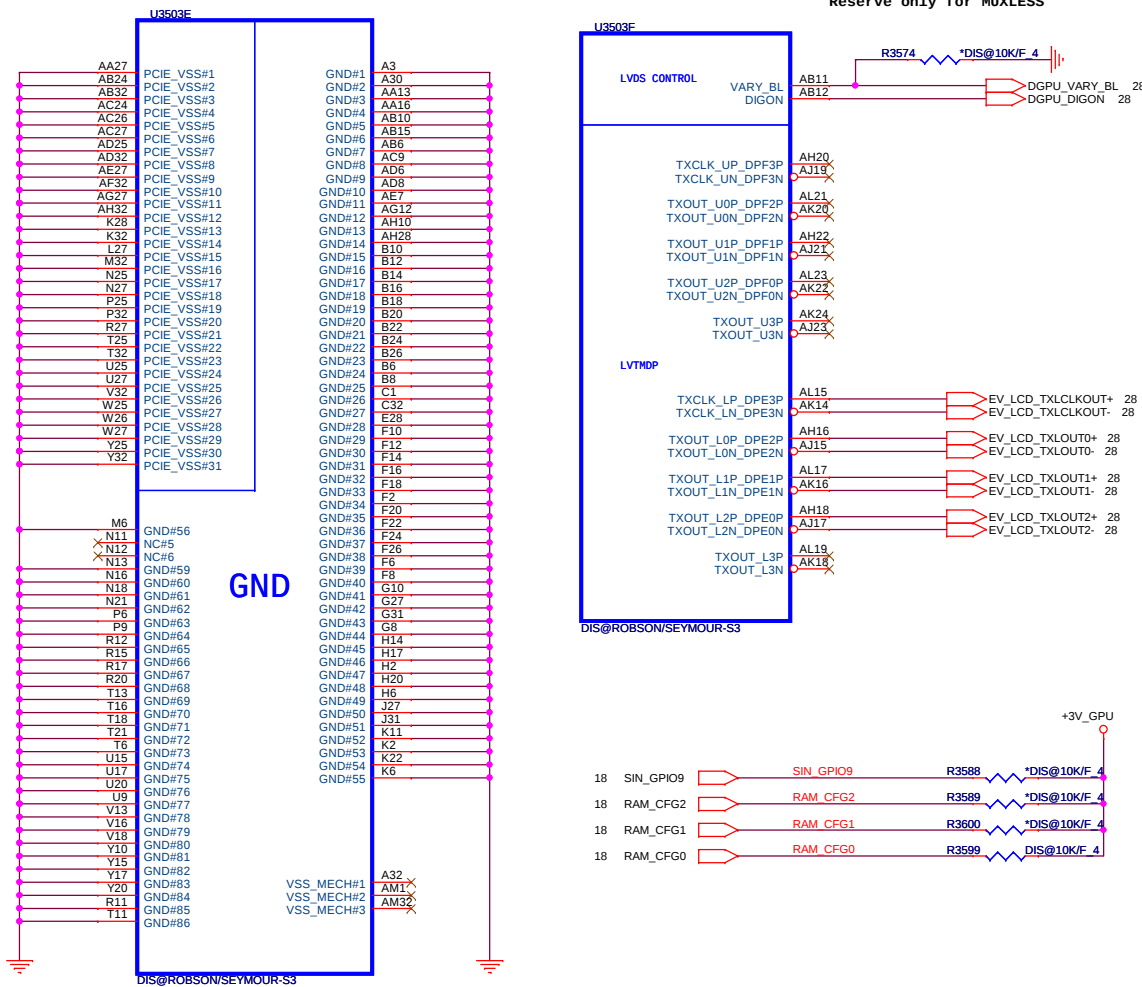
15











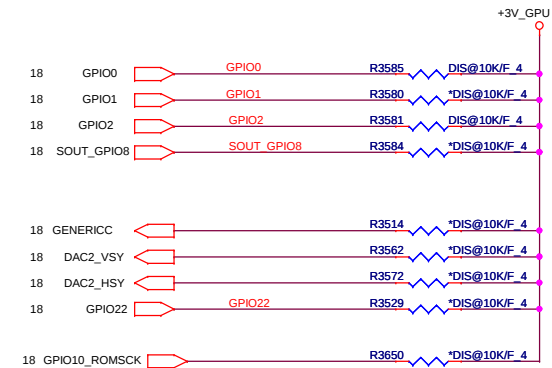
CONFIGURATION STRAPS			RECOMMENDED SETTINGS 0= DO NOT INSTALL RESISTOR 1 = INSTALL 10K RESISTOR X = DESIGN DEPENDANT NA = NOT APPLICABLE
STRAPS	PIN	DESCRIPTION OF DEFAULT SETTINGS	
TX_PWRS_ENB	GPIO0	Transmitter Power Savings Enable 0: 50% Tx output swing for mobile mode 1: full Tx output swing (Default 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

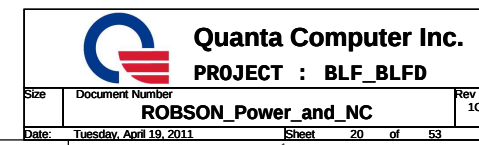
AMD RESERVED CONFIGURATION STRAPS		
ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOs ARE USED, THEY MUST NOT CONFLICT DURING RESET		
H2SYNC	GENERICC	
PULLUP PADS ARE NOT REQUIRED FOR THESE STRAPS BUT IF THESE GPIOs ARE USED, THEY MUST NOT CONFLICT DURING RESET		
GPIO21_BB_EN		

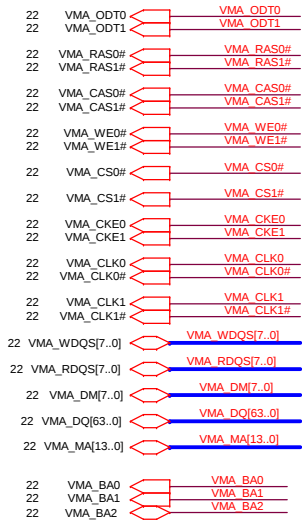
Memory Aperture size

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.

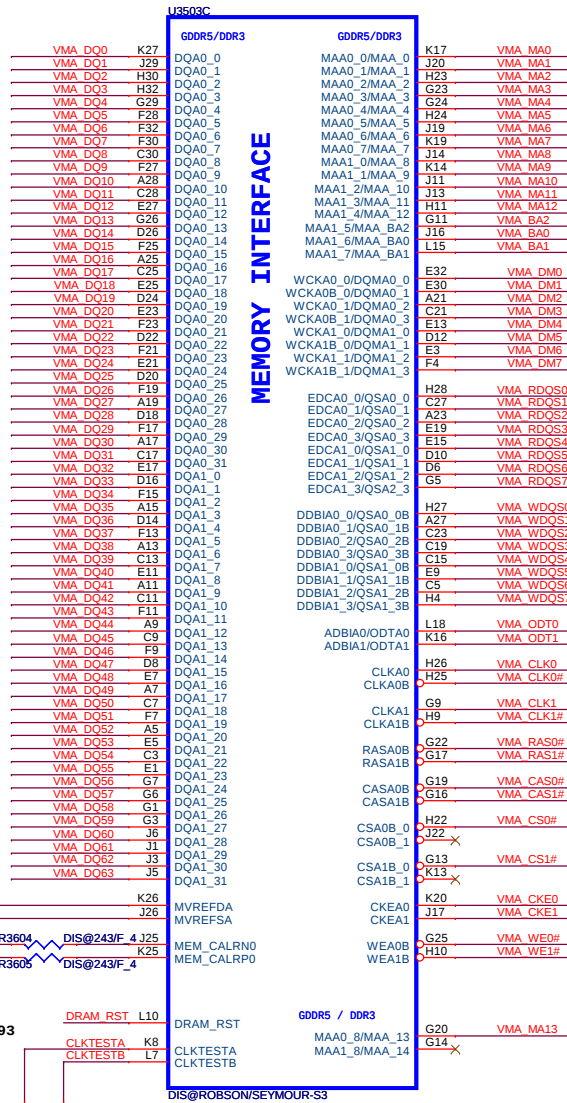
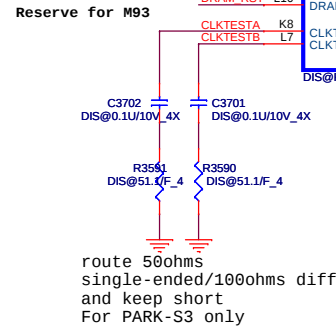
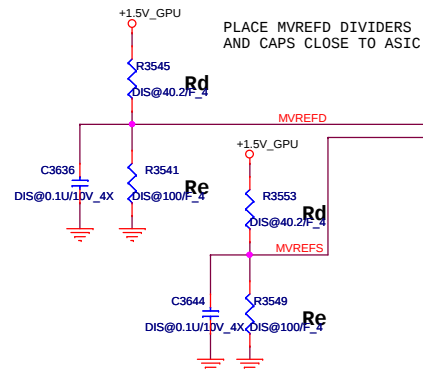




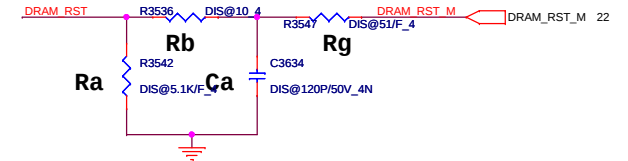


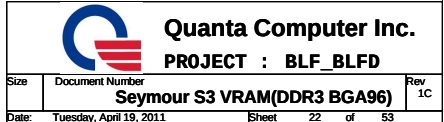
support 16bit
VRAM (64M X 16)

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



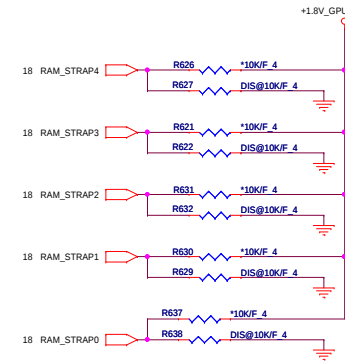
Designator	Robson
Ra	5K
Rb	10R
Ca	120pF
Rg	51R



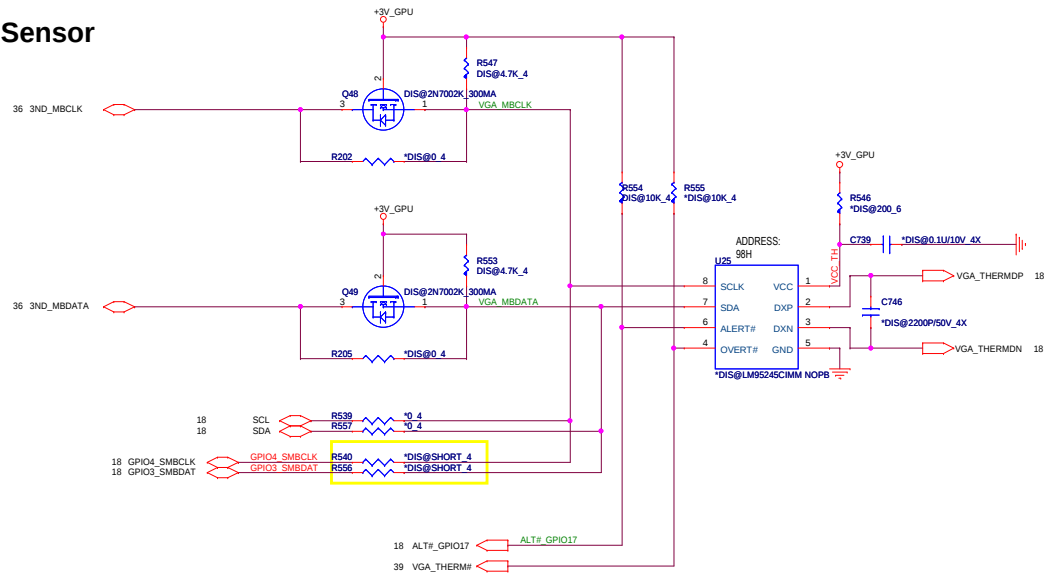


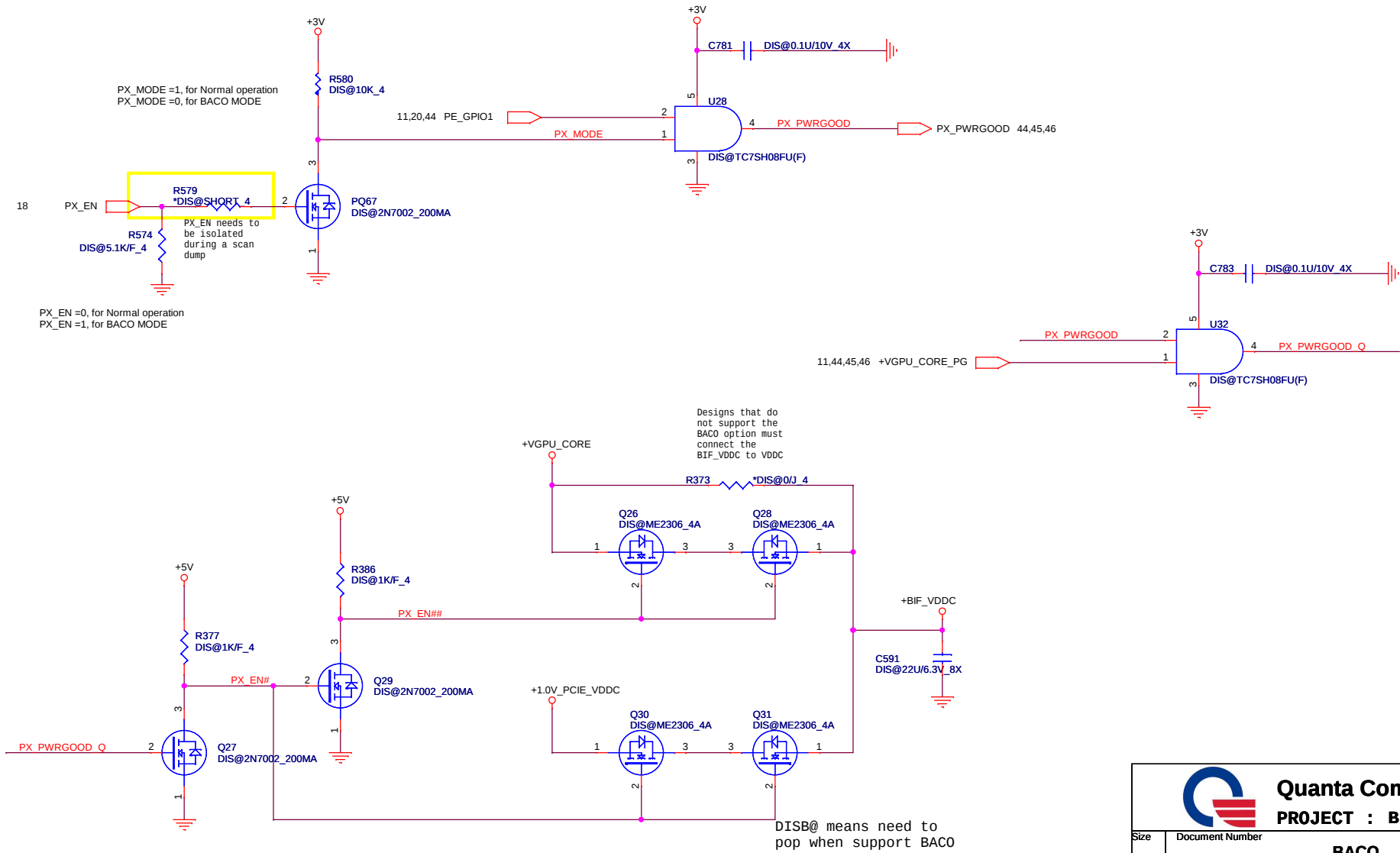
VRAM Memory TYPE

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	AKD5LZWTW02 (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	AKD5MGWT500 (128M*16-2Gb)	1GB	0	0	0	1	0	1



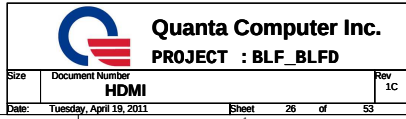
Thermal Sensor

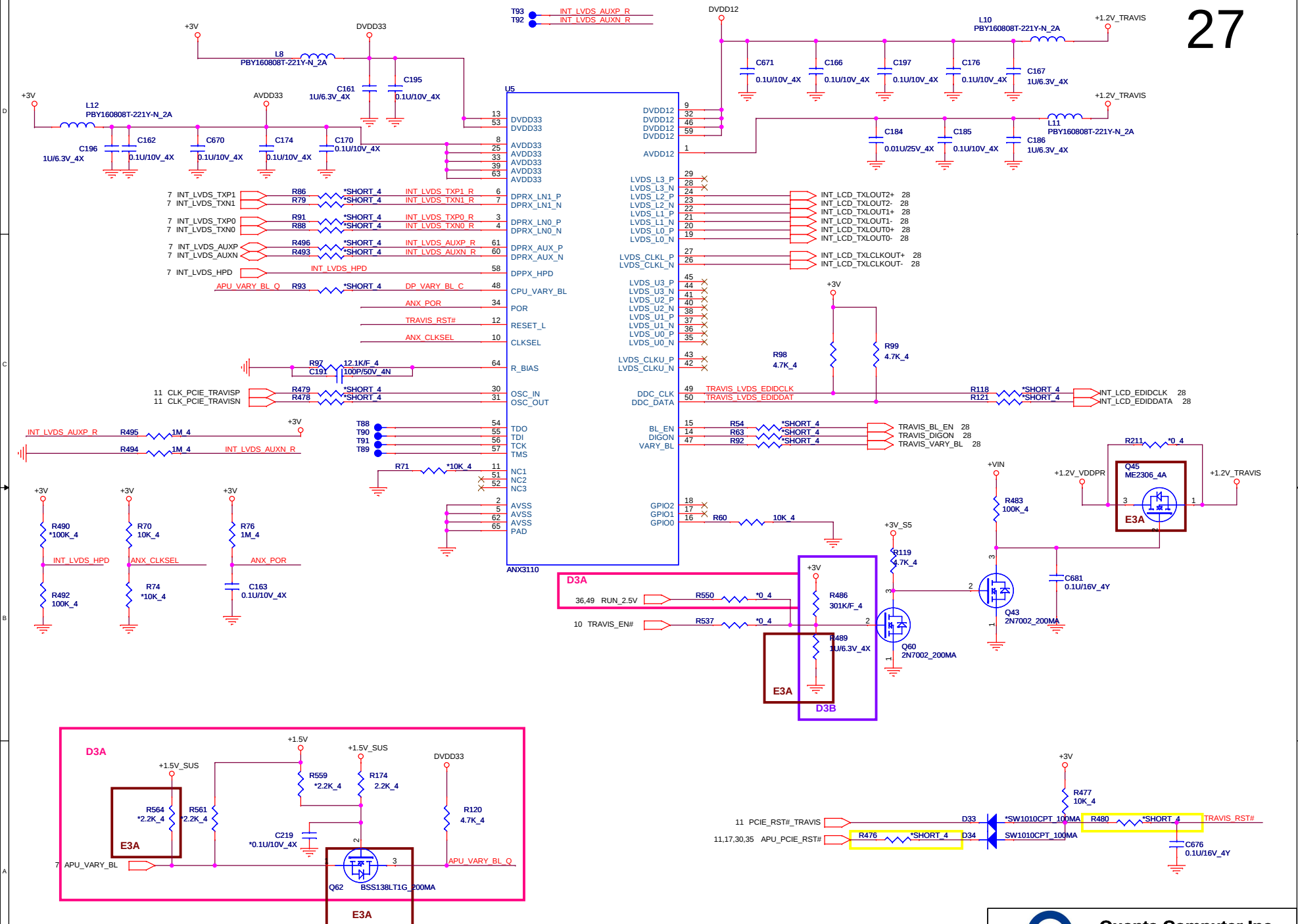




D										D
C										C
B										B
A										A

		Quanta Computer Inc.
PROJECT : BLF_BLFD		
Size	Document Number	Rev
	Blank	1C
Date:	Tuesday, April 19, 2011	Sheet 25 of 53

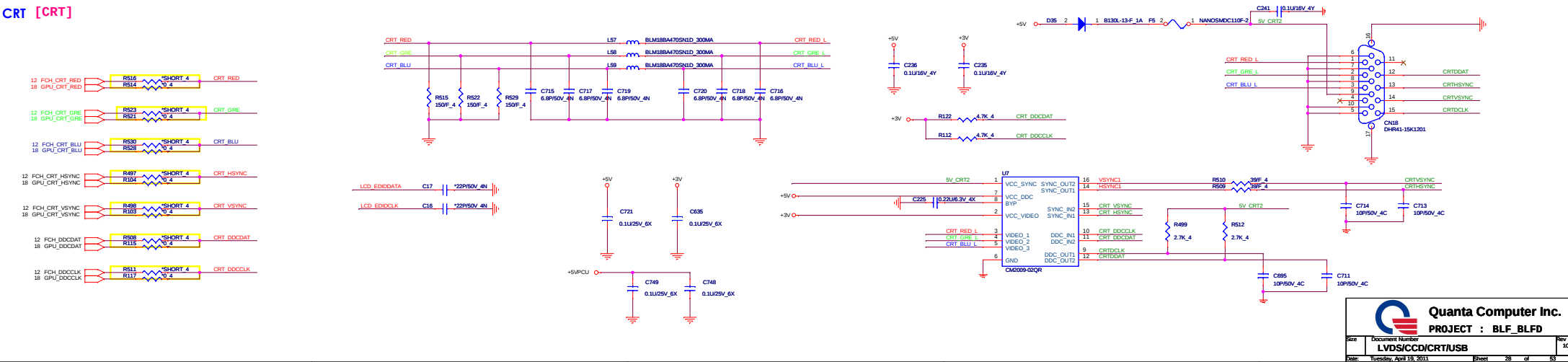
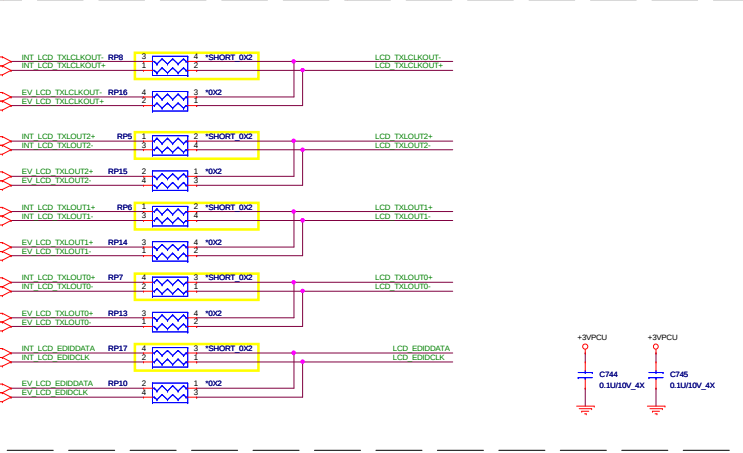
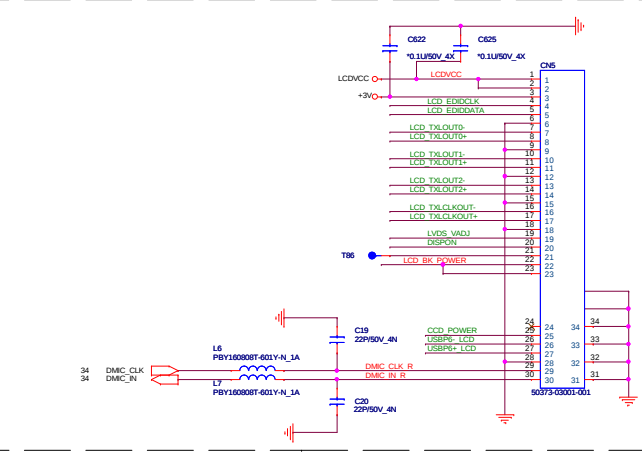
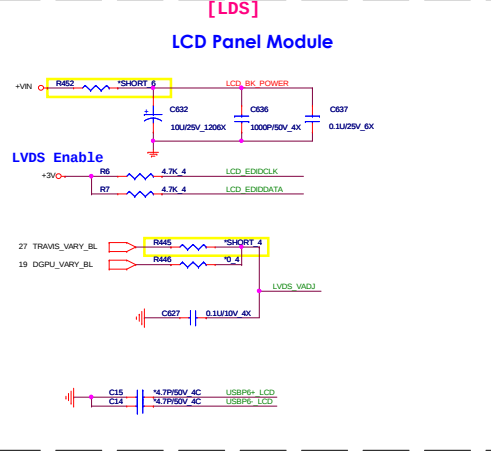




Quanta Computer Inc.
PROJECT : BLF_BLF

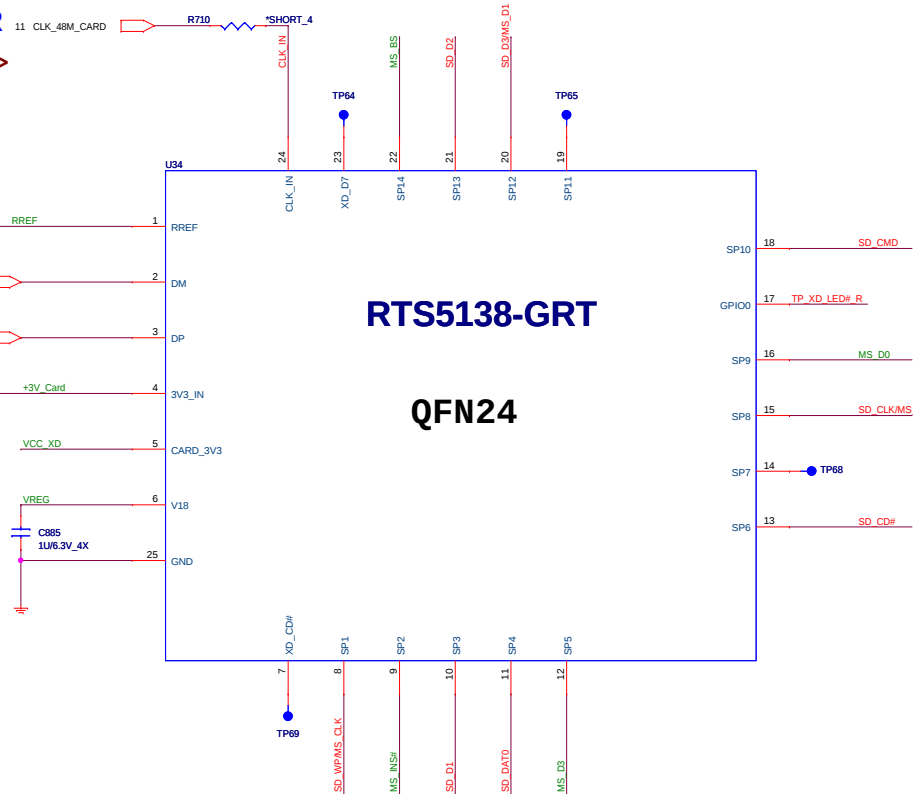
Size Document Number
DP to LVDS (ANX3110)
 Date: Tuesday, April 19, 2011 Sheet 27 of 53 Rev 1C

CRT [CRT]

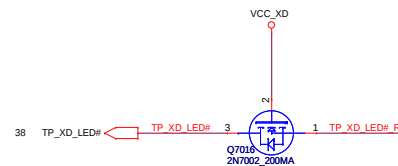
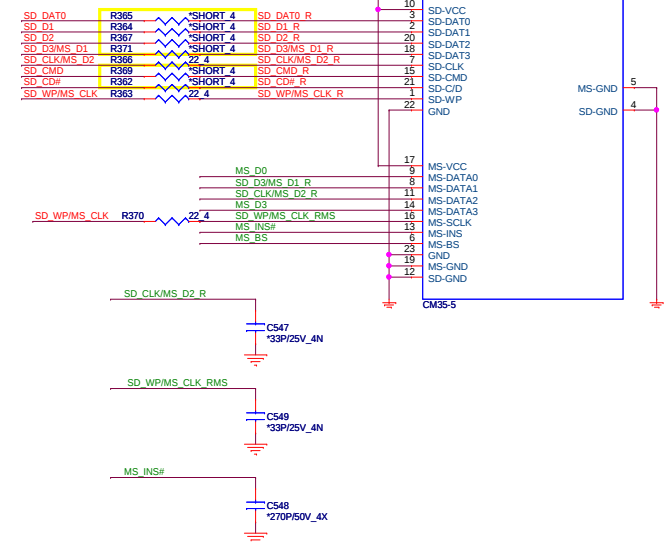


3 IN 1 CARD READER

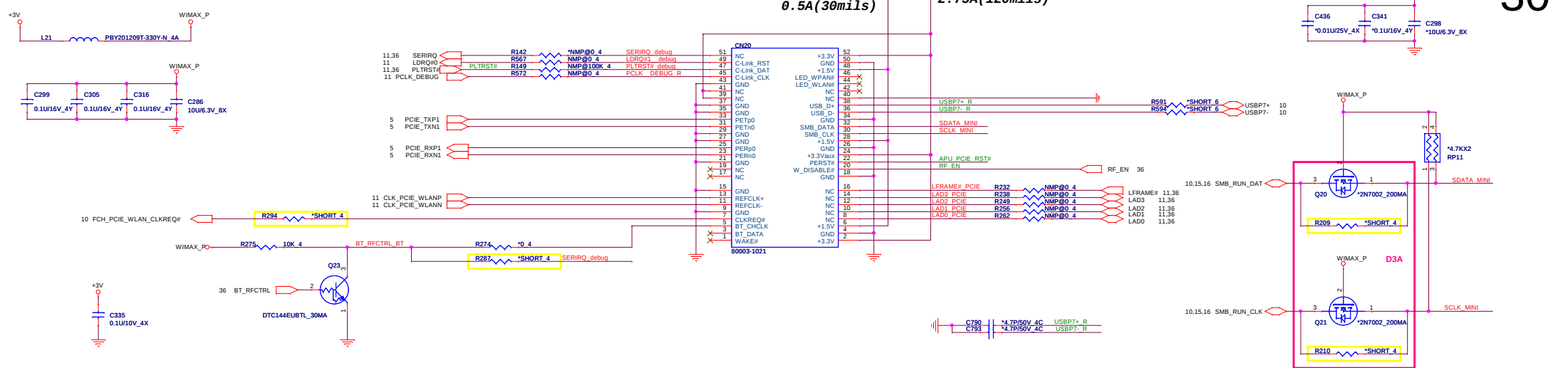
Card reader controller <MMC>



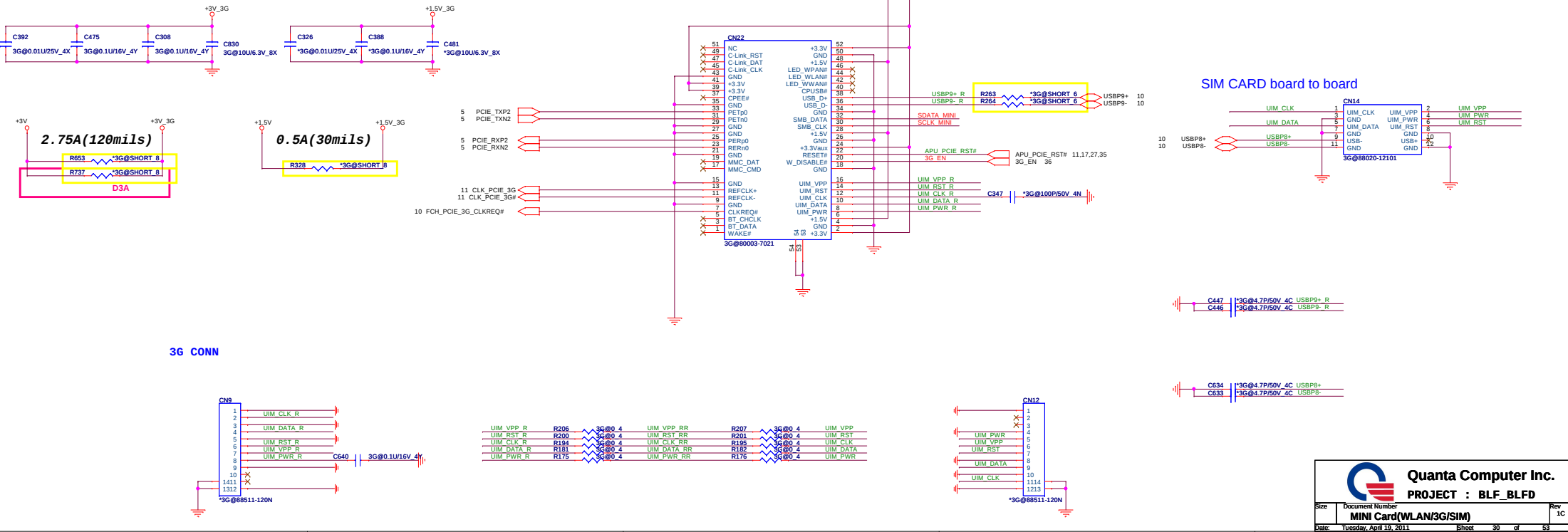
3 IN 1 CARD READER



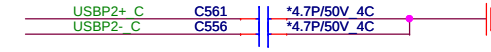
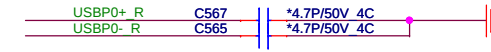
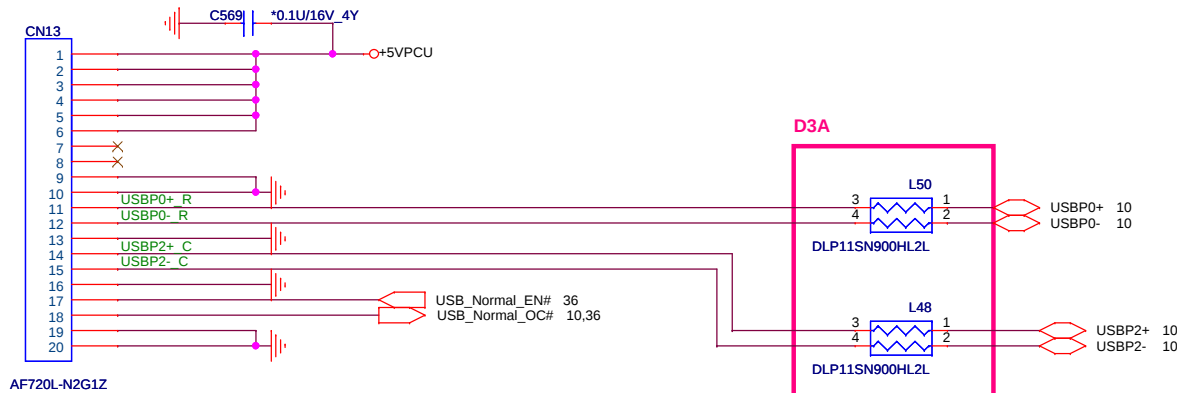
MINI Card Slot#1
(WiFi)



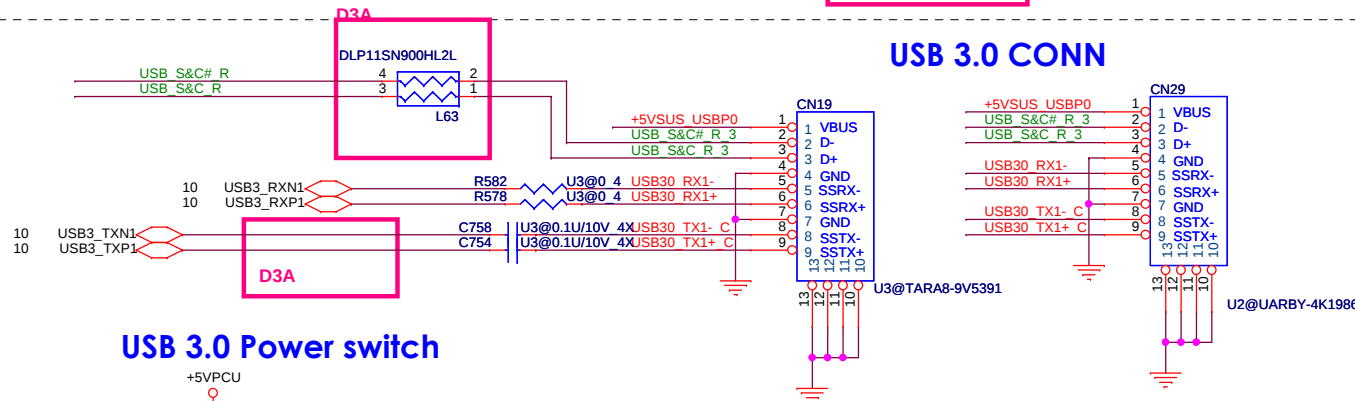
MINI Card Slot#2
3G



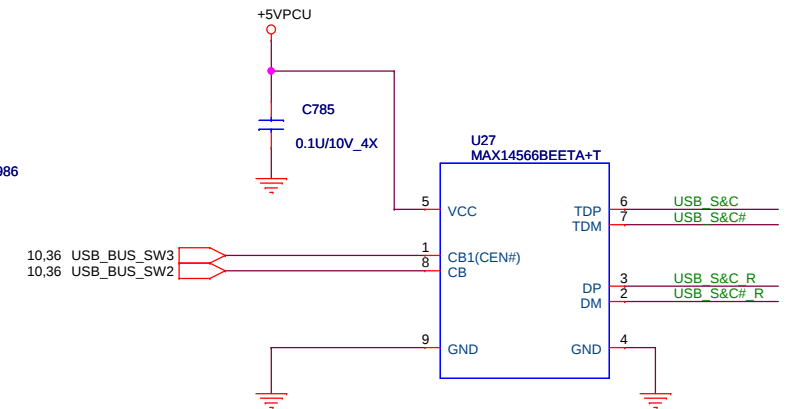
USB board



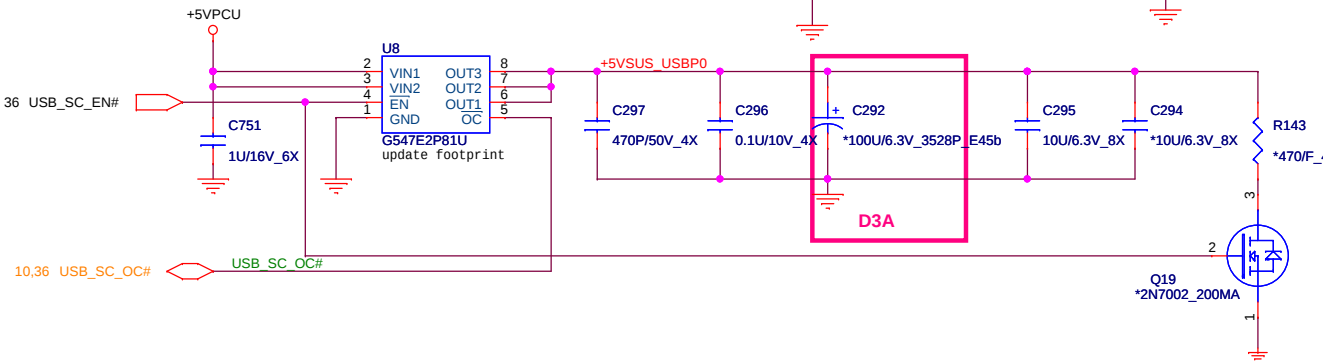
USB 3.0 CONN



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



D

D

C

C

B

B

A

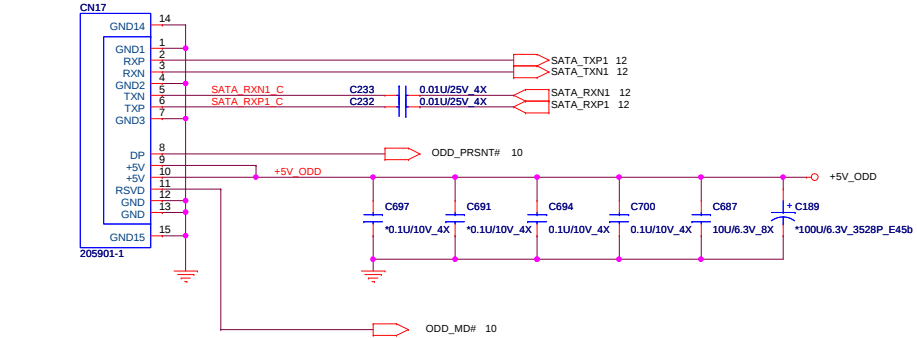
A



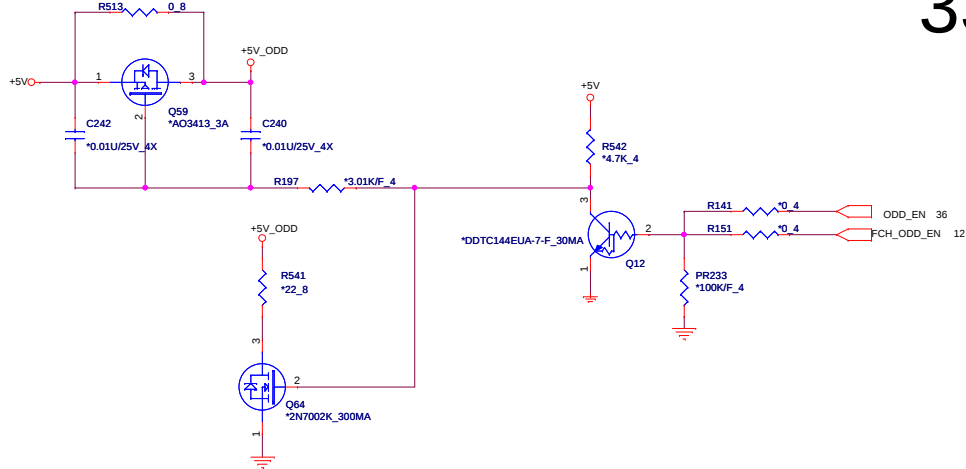
Quanta Computer Inc.
PROJECT : BLF_BLFD

Size	Document Number BLANK	Rev 1C
Date:	Tuesday, April 19, 2011	Sheet 32 of 53

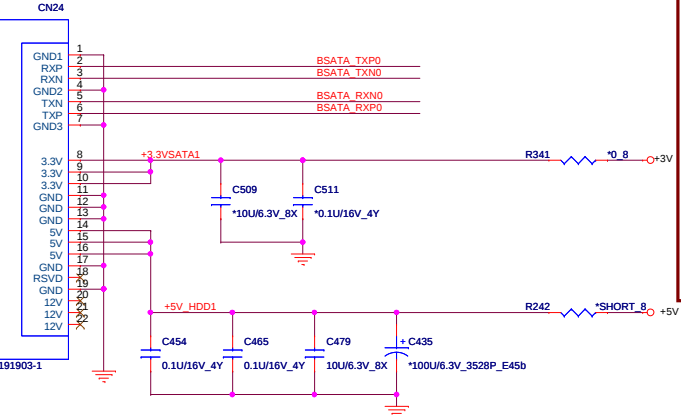
SATA ODD
[ODD]



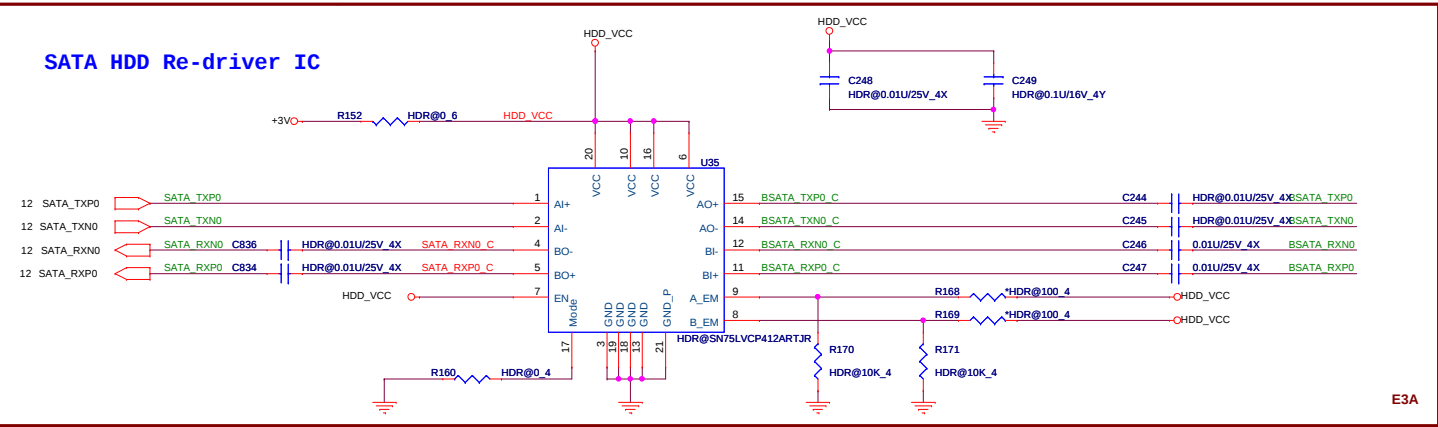
ODD Zero power .



SATA HDD
[HDD]



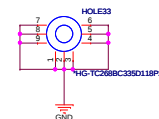
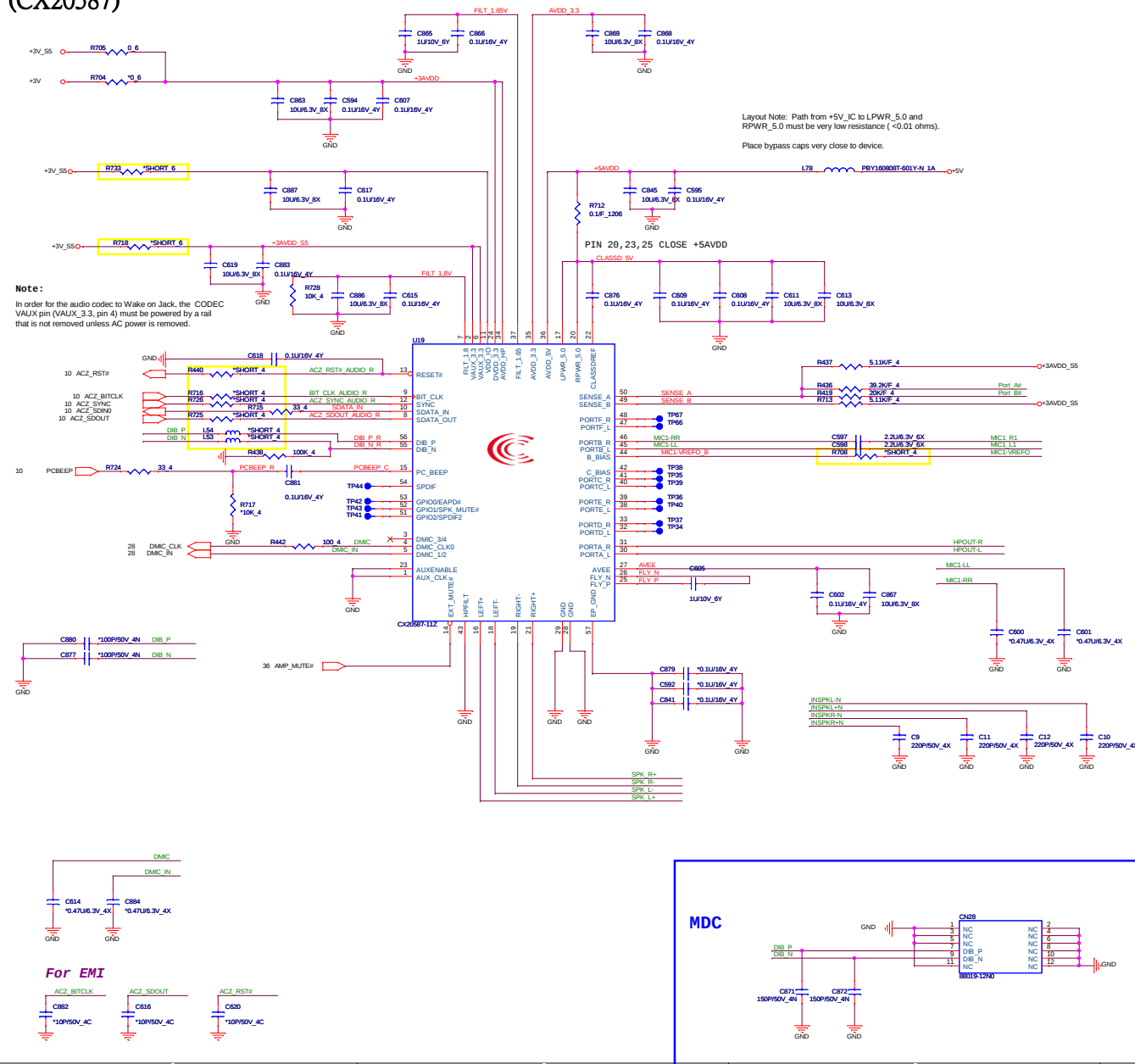
SATA HDD Re-driver IC



Colay with Redriver IC SATA Re-driver Bypass

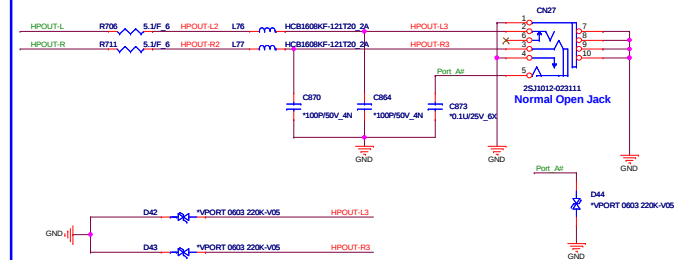


Codec
(CX20587)

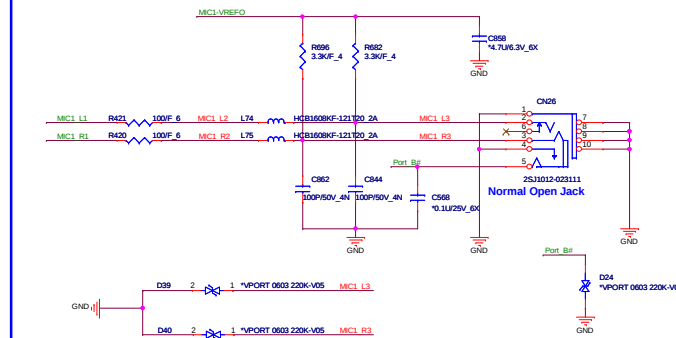


34

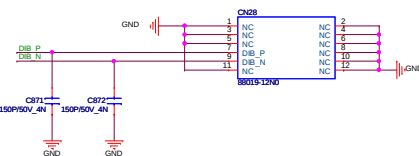
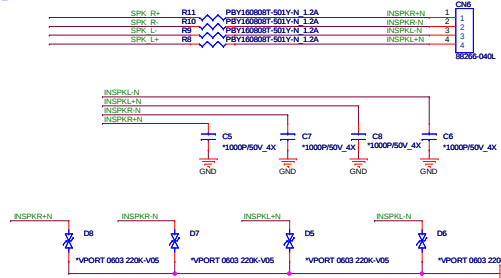
Earphone



External MIC

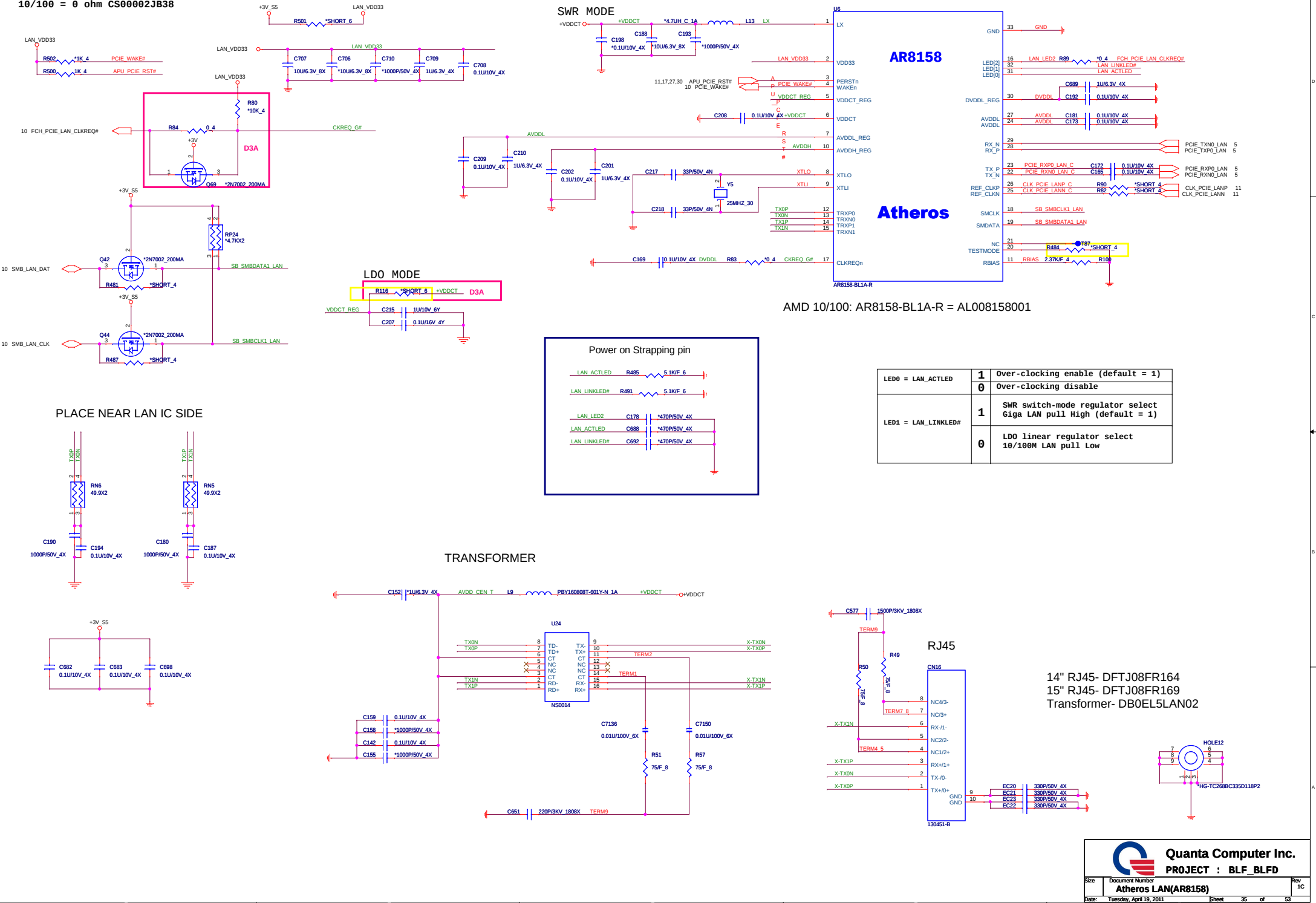


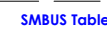
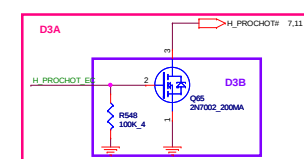
Internal Speaker



Atheros Lan AR8158

10/100 = 0 ohm CS00002JB38

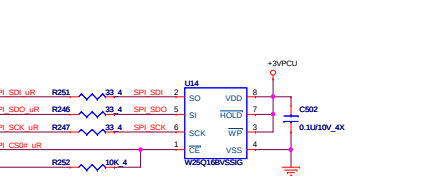
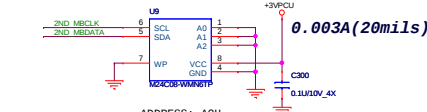




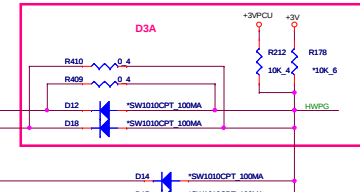
SMBUS	Devices	Address
1	Battery	
2	PCH SML1	
	3D Sensor	32H
	EC EEPROM	A0H
3	VGA Board Thermal Sensor	98H
	Touch Sensor	58H
	HDMI CEC	34H
	Light Sensor	52H



SHBM=0: Enable shared memory with host BIOS
Disabled ('1') if using FWH device on LPC.
Enabled ('0') if using SPI flash for both system BIOS and EC firmware



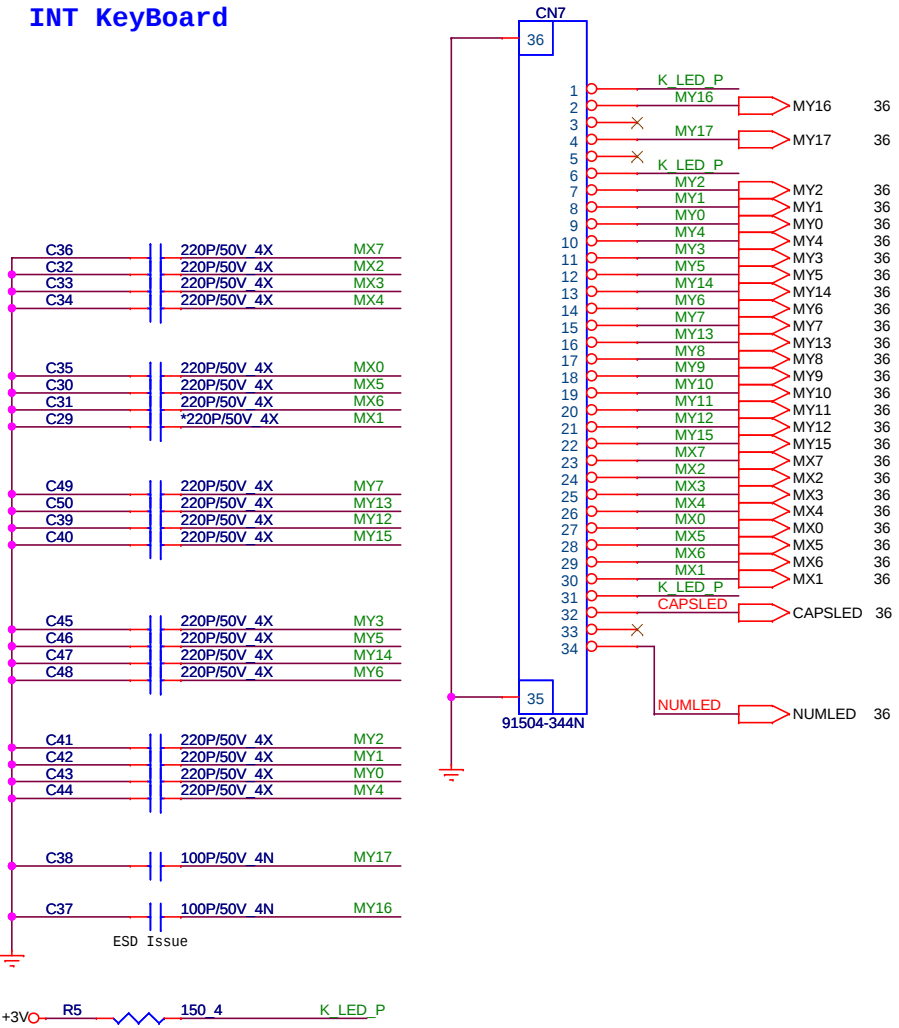
MX25L3205DM2I-12G: AKE39FP0Z00
W25Q16BVSSIG: AKE38FP0N01



AMD

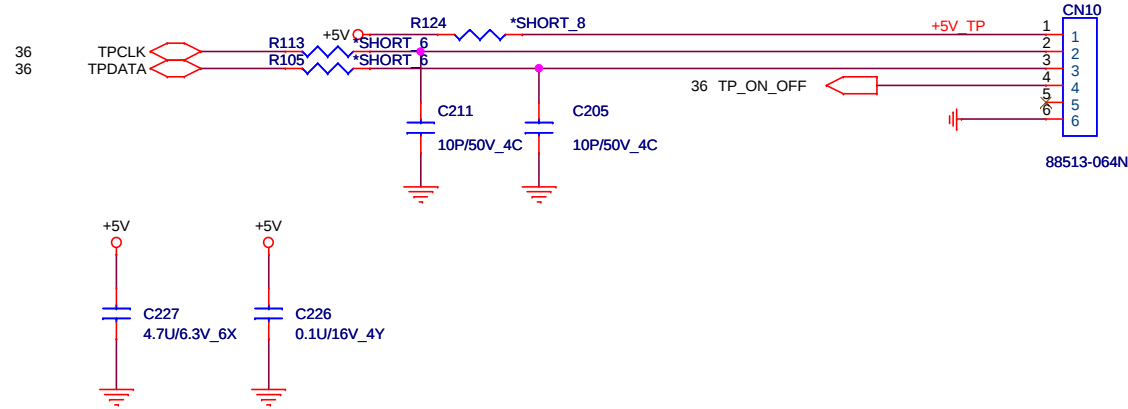
KEY BOARD Connector

INT KeyBoard

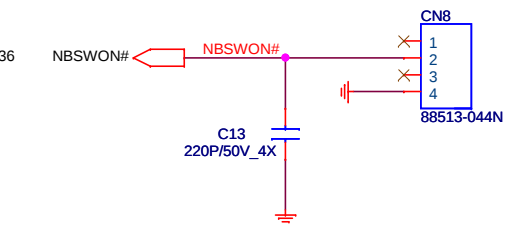


TOUCH PAD BOARD

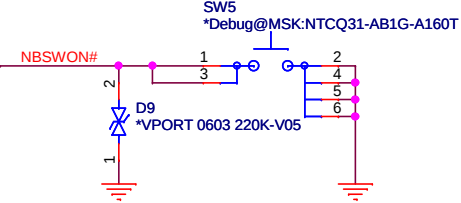
37



Power Board (UIF)



Power Switch (debug only)





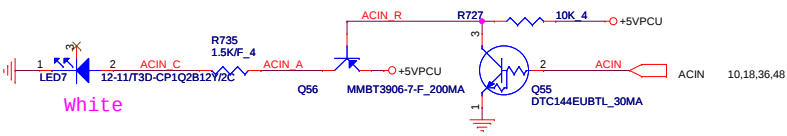
Quanta Computer Inc.

PROJECT : BLF_BLF

Size	Document Number	Rev
	FP/TP/KB Conn	1C
Date:	Tuesday, April 19, 2011	Sheet 37 of 53

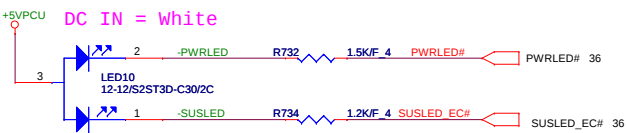
LED

AC-IN



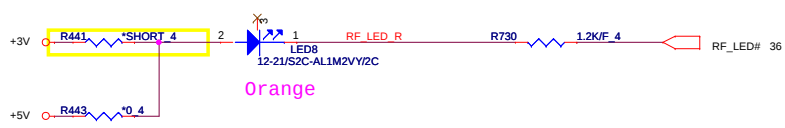
White

POWER



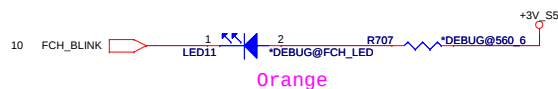
S3 Mode = Orange

RF LED



Orange

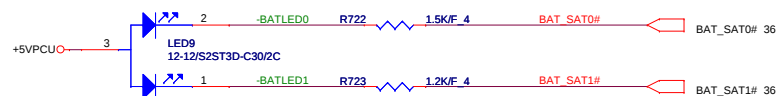
When ON, means in S0
When BLINK, means in S3
When OFF, means in S5



Orange

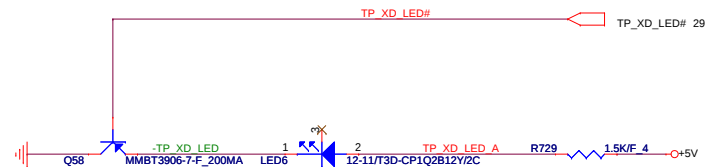
BATTERY

Full Charge = White



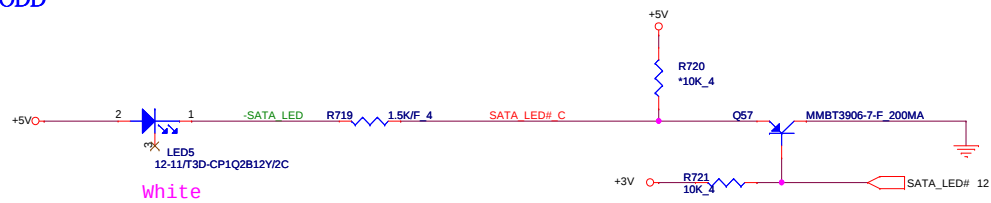
Charging = Orange

CARDREADER

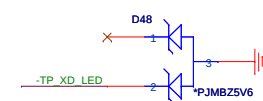
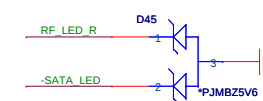
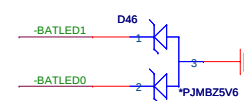
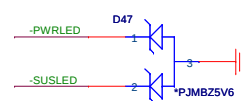


White

HDD/ODD



White



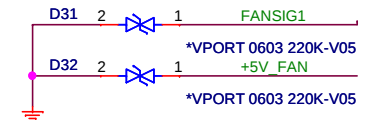
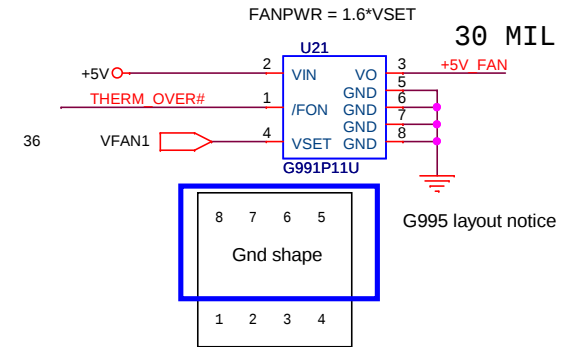
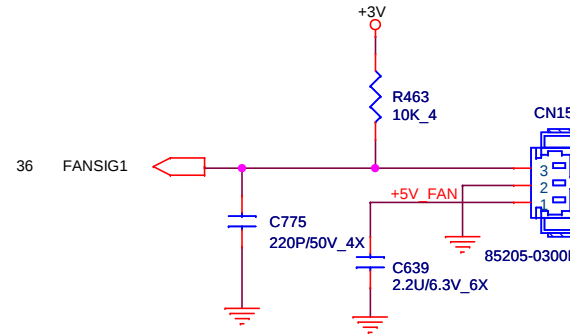
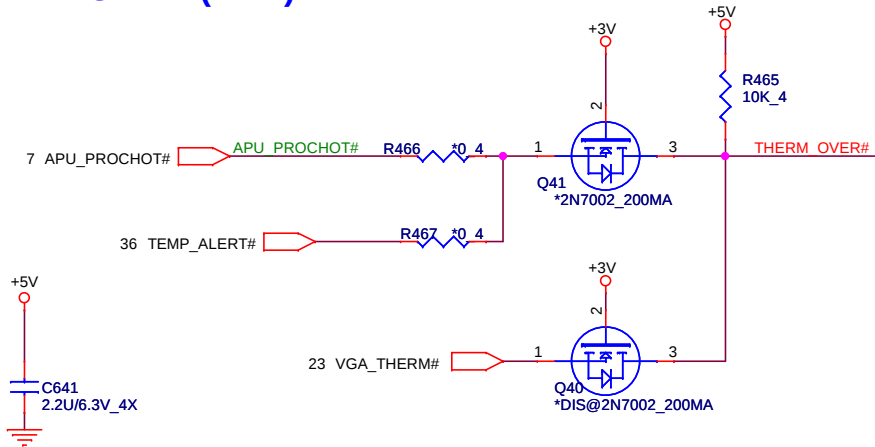
Quanta Computer Inc.
PROJECT : BLF_BLFD

Size	Document Number	Rev
	LED	1C
Date:	Tuesday, April 19, 2011	Sheet 38 of 53

1

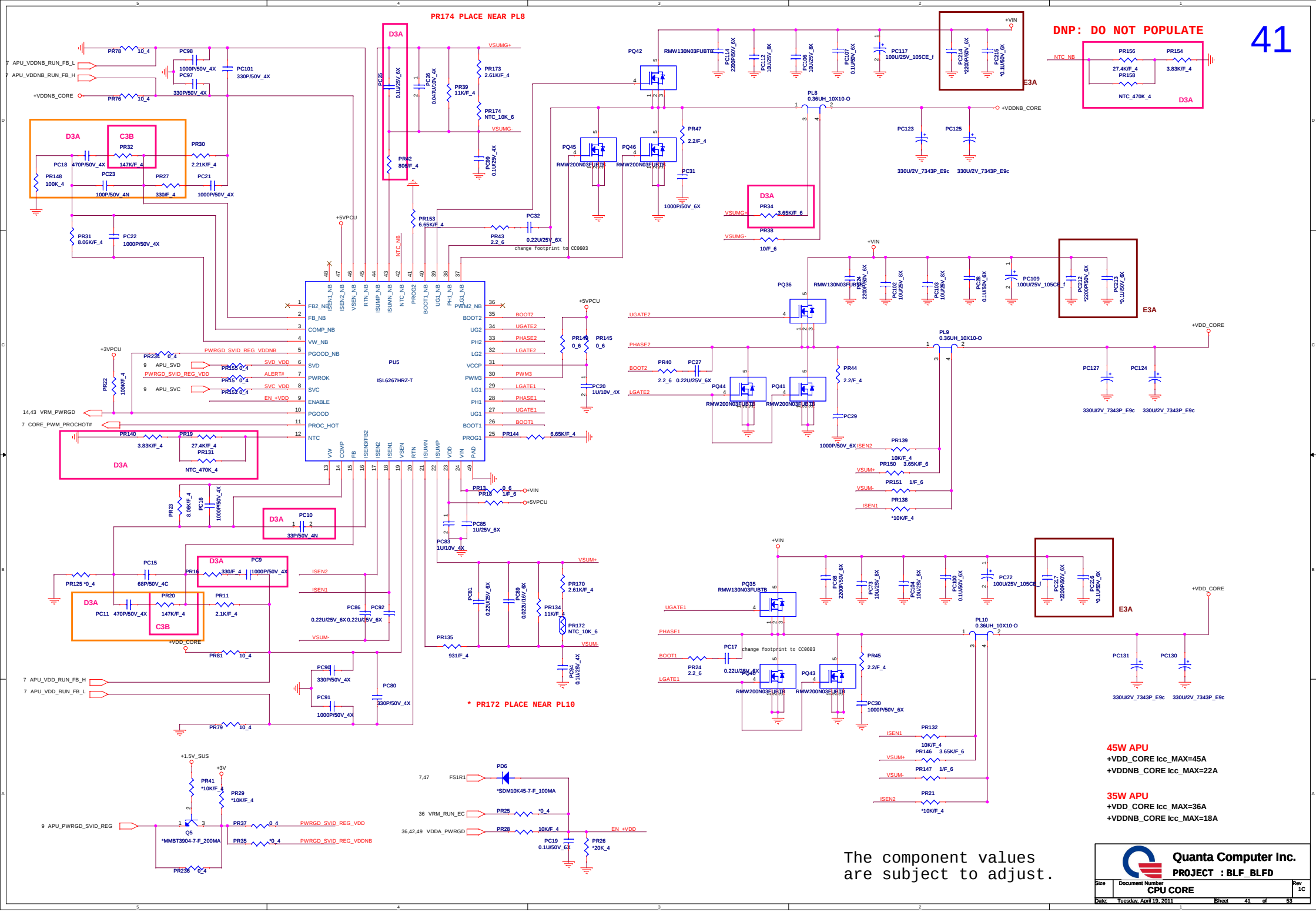
APU FAN (THM)

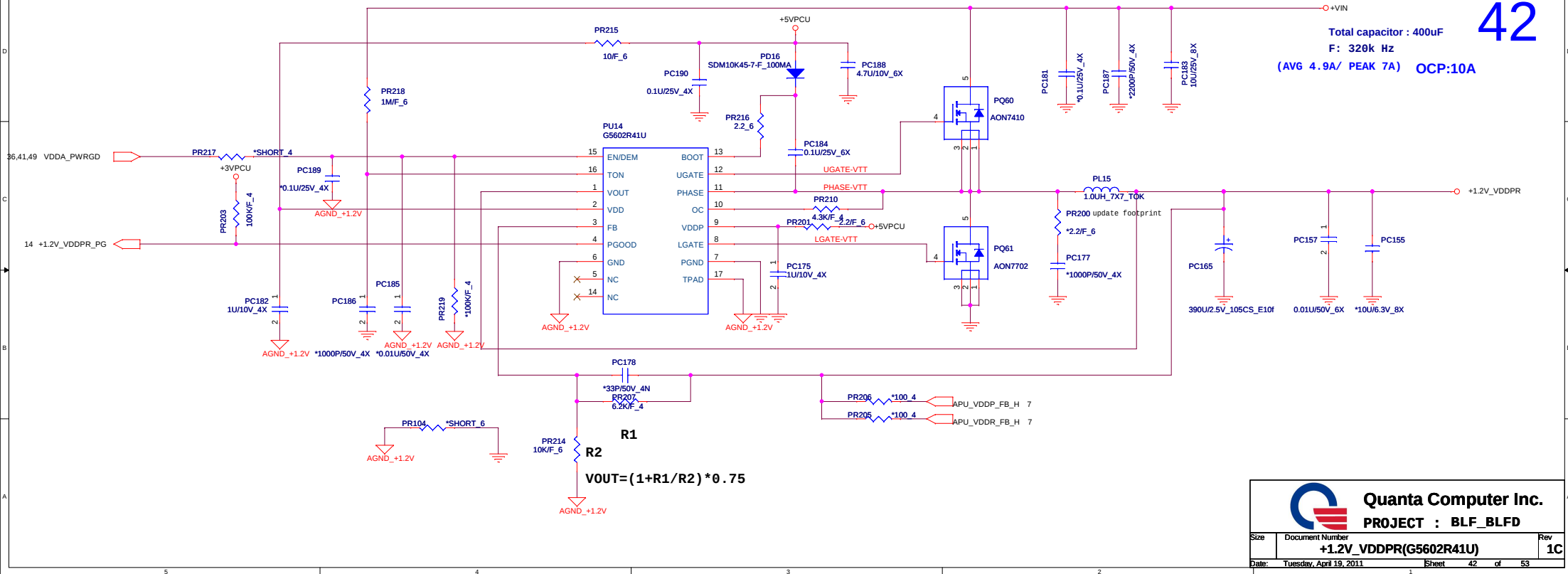
39

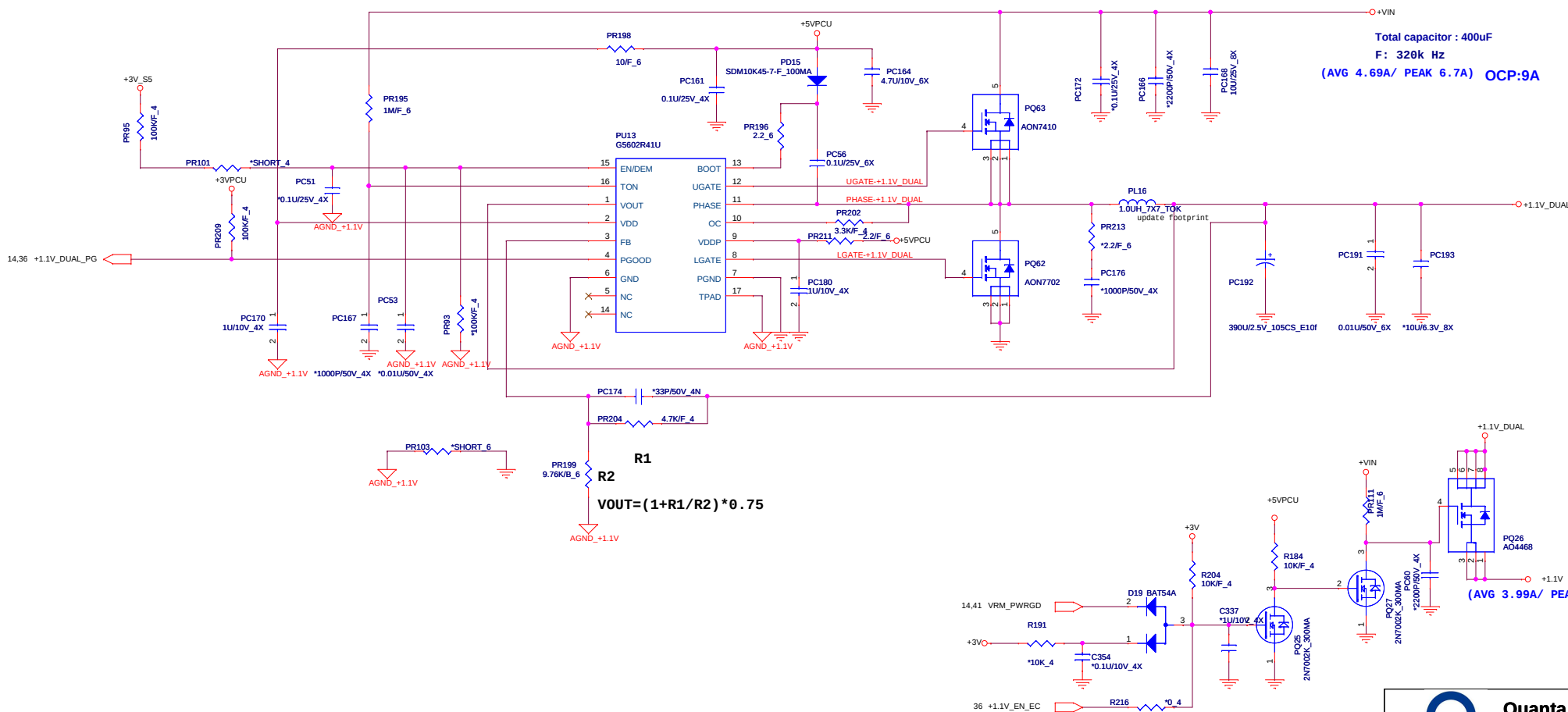


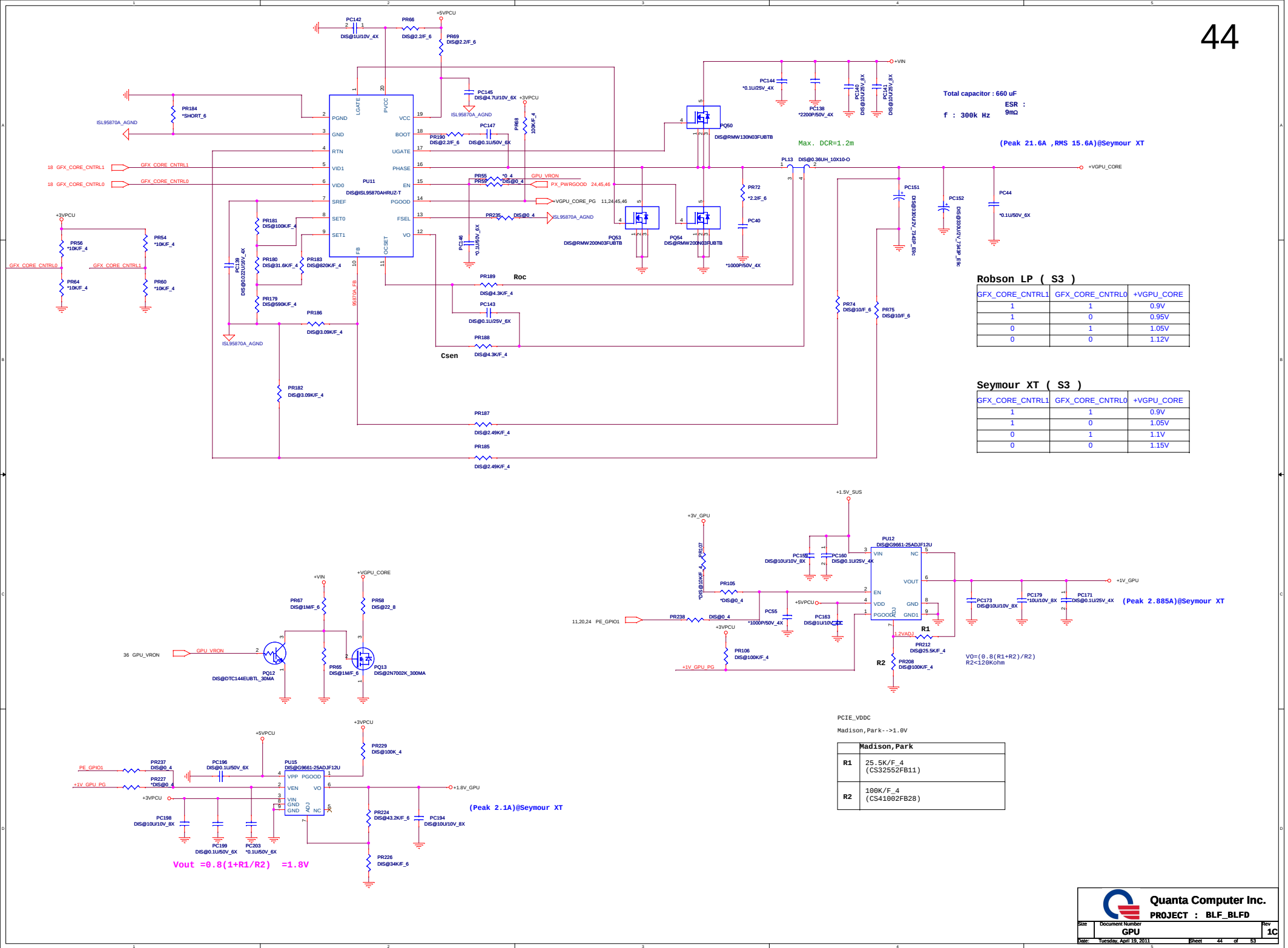
Quanta Computer Inc.
PROJECT : BLF_BLFD

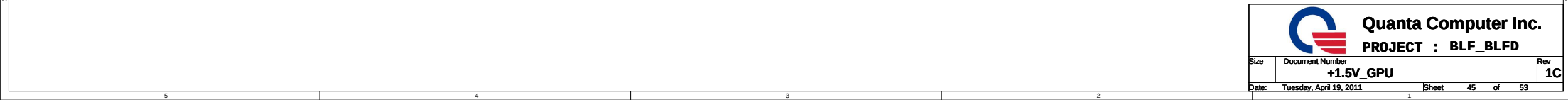
Size	Document Number	Rev
	APU FAN	1C
Date:	Tuesday, April 19, 2011	Sheet 39 of 53

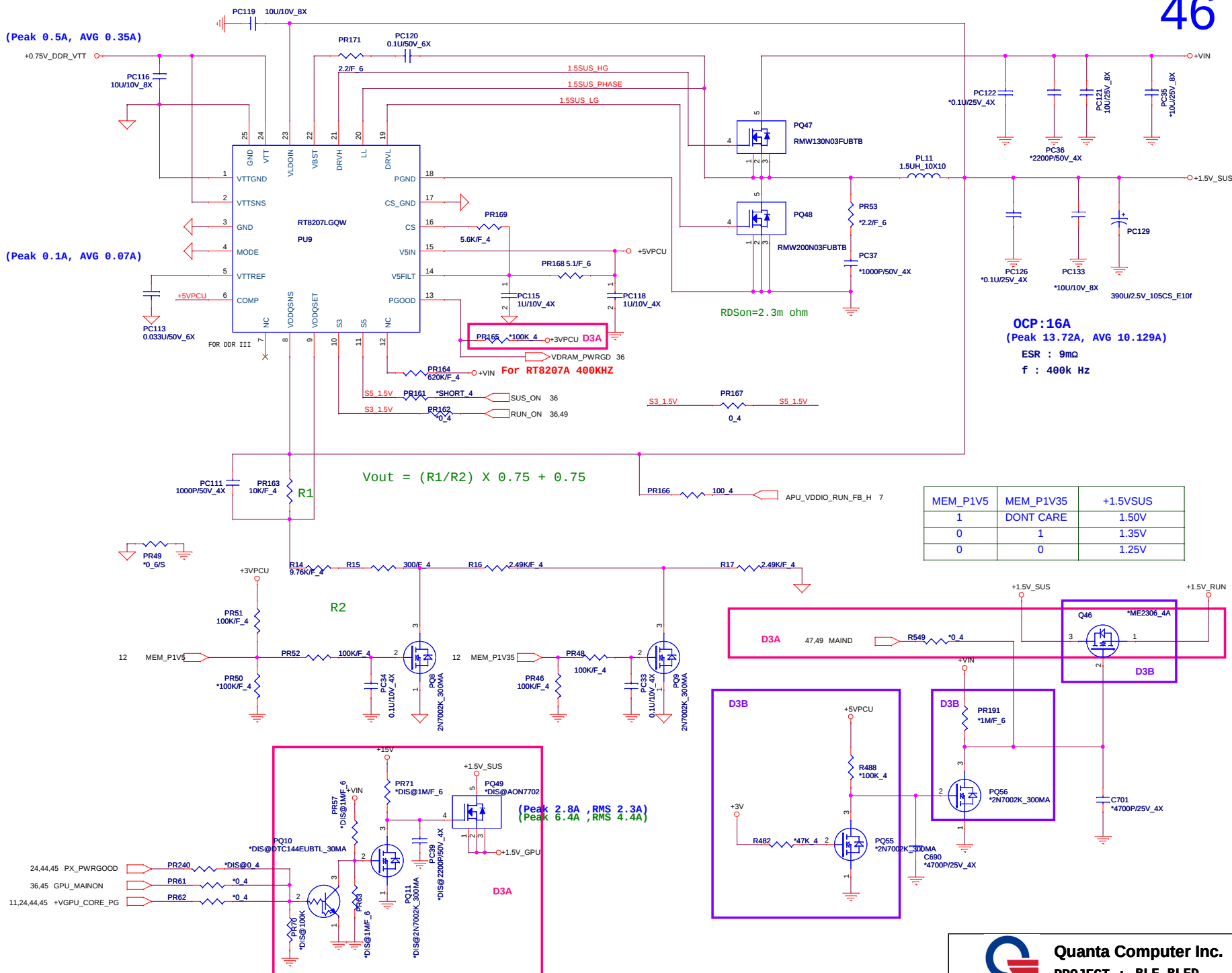


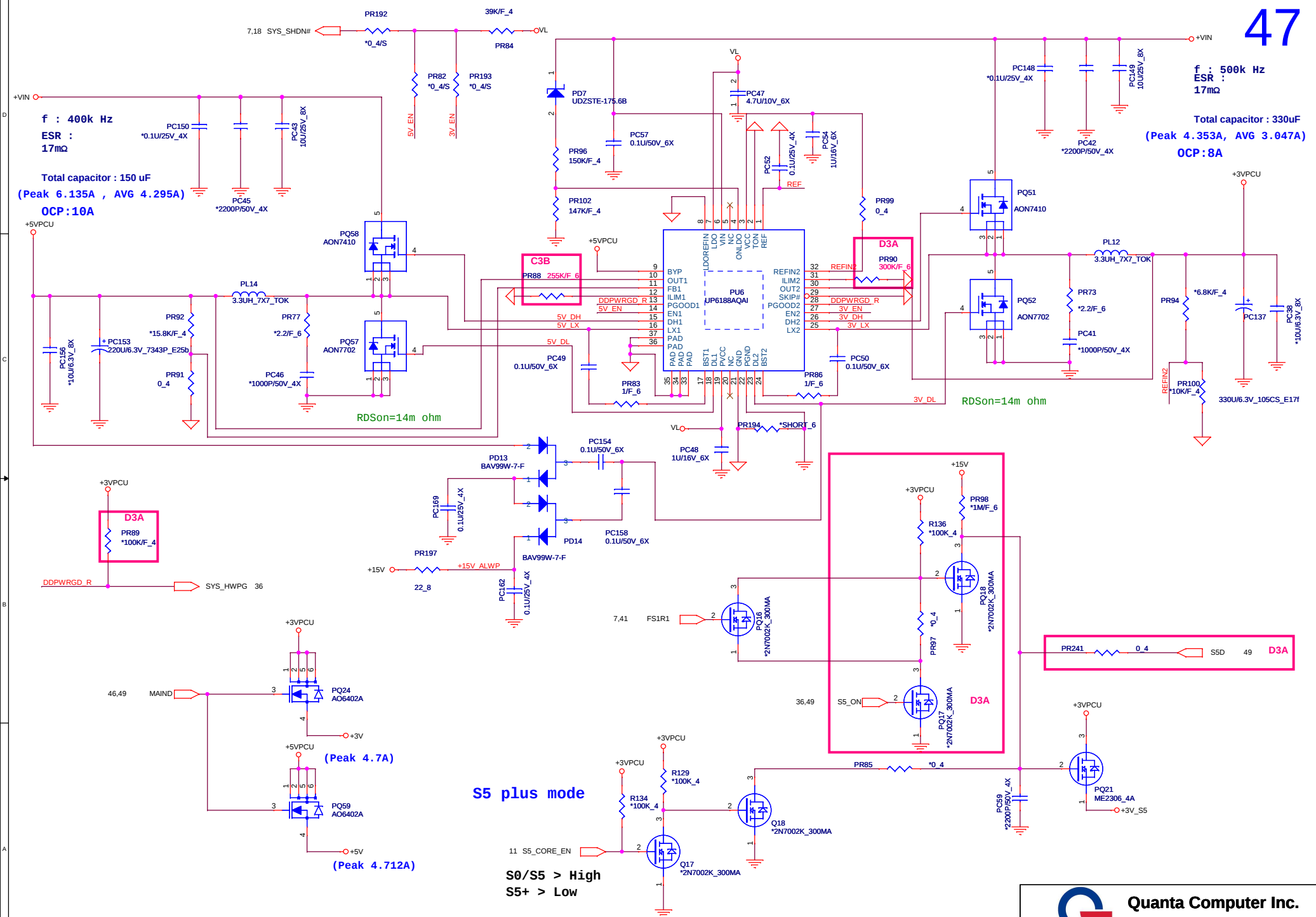


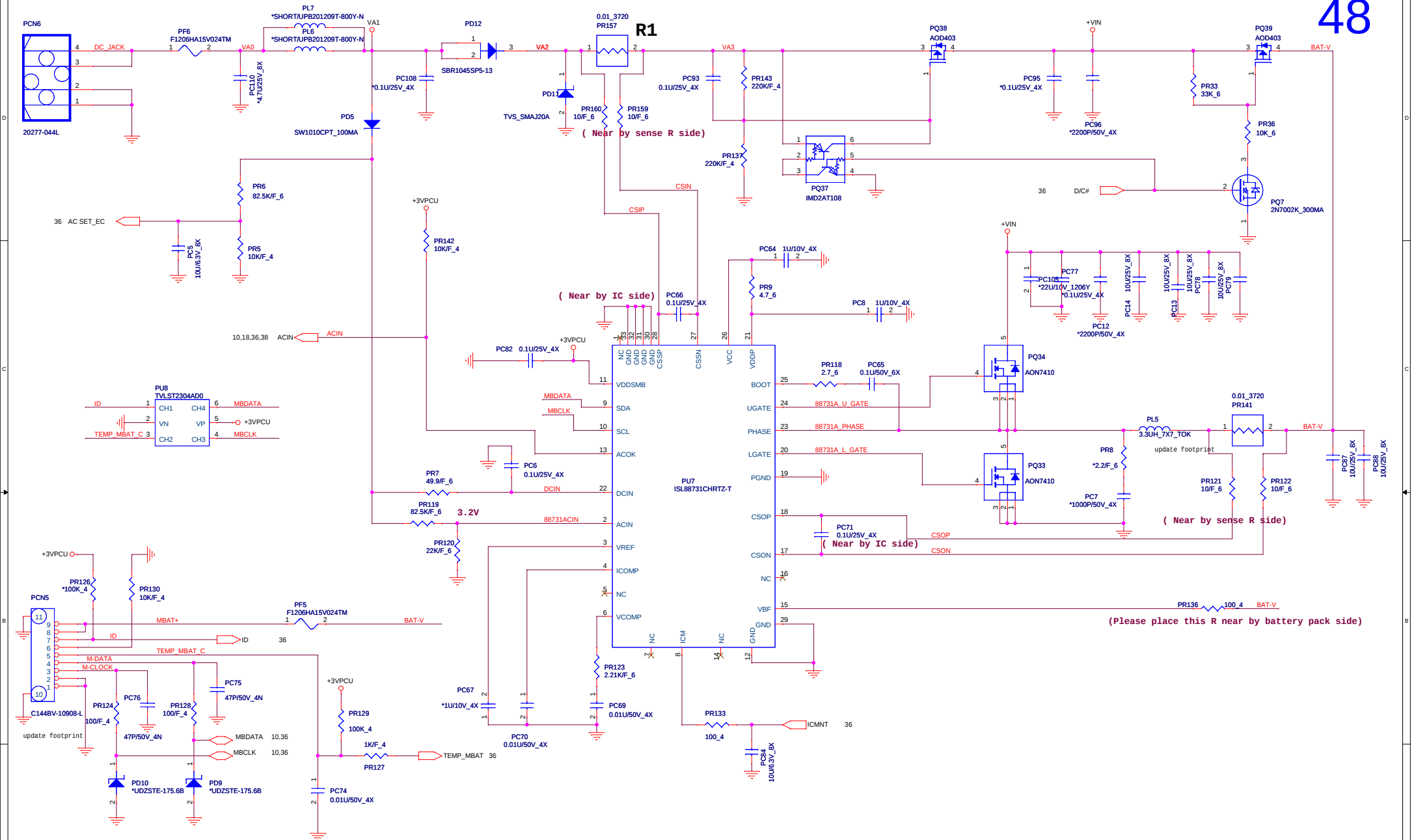


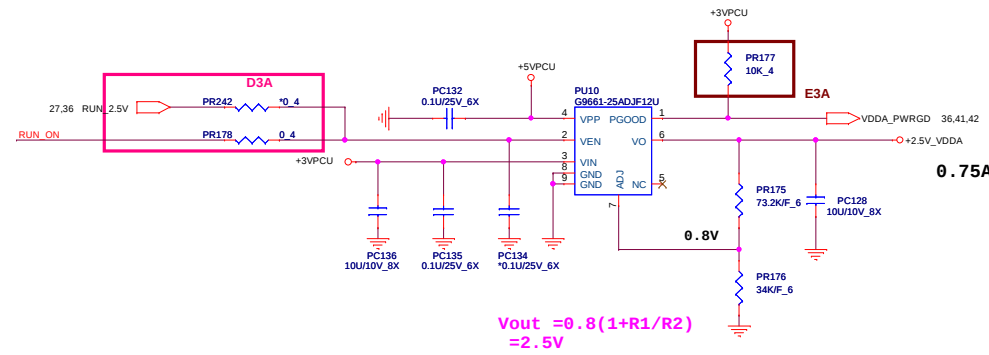
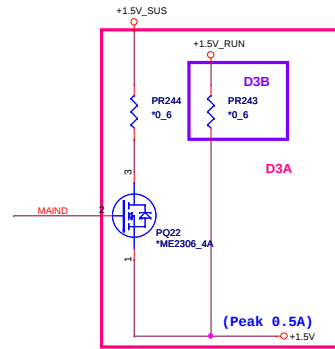






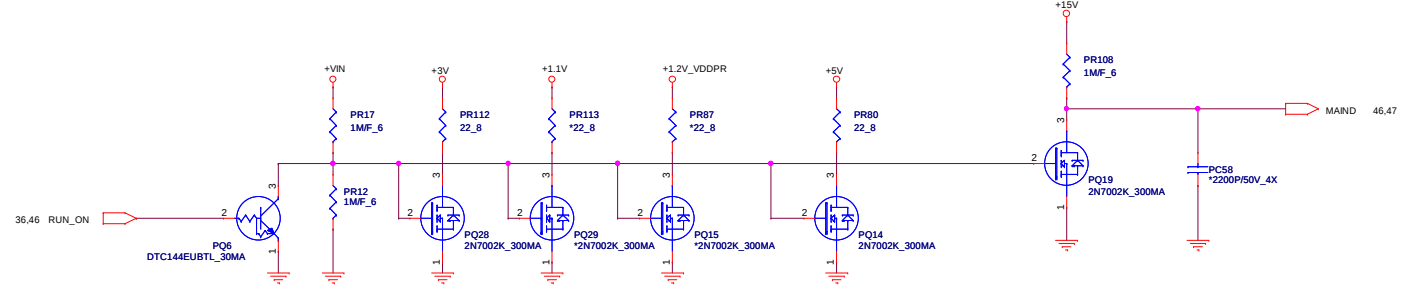
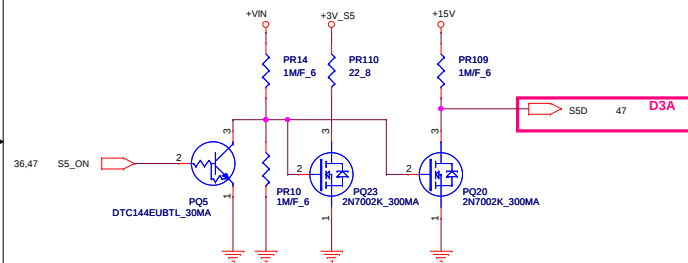






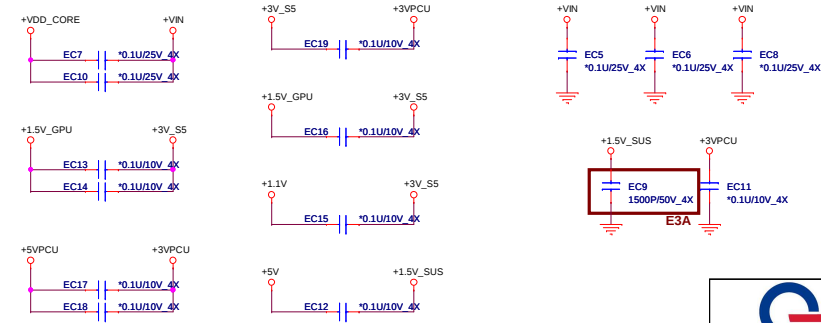
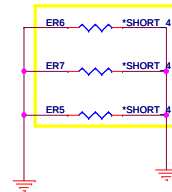
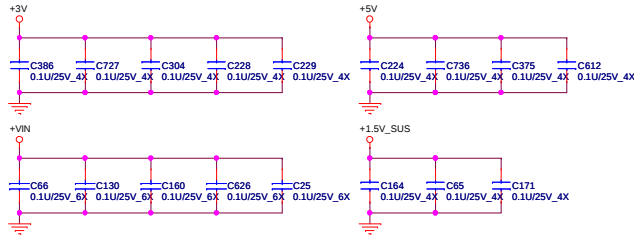
0.75A

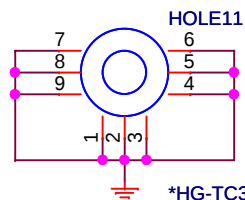
$$V_{out} = 0.8 \cdot (1 + R1/R2) = 2.5V$$



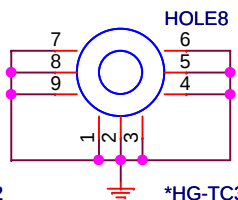
EMI

For EMI

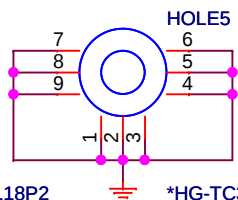




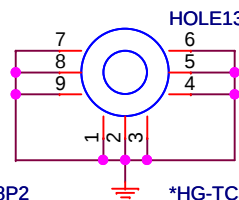
*HG-TC335BC268D118P2



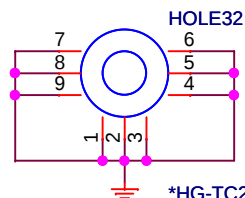
*HG-TC335BC268D118P2



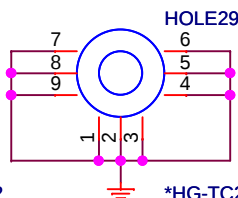
*HG-TC335BC268D118P2



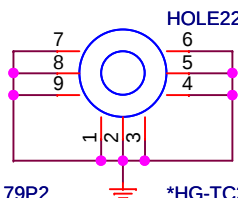
*HG-TC335BC268D118P2



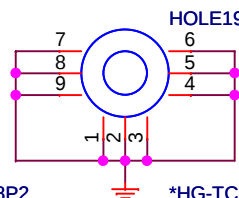
*HG-TC268BC335D118P2



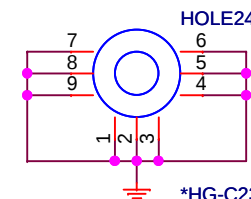
*HG-TC276BC335D179P2



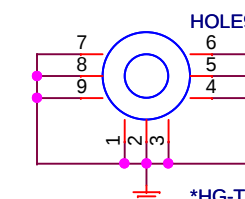
*HG-TC268BC335D118P2



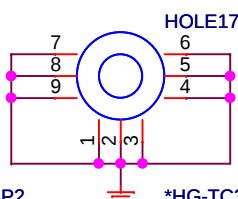
*HG-TC268BC335D118P2



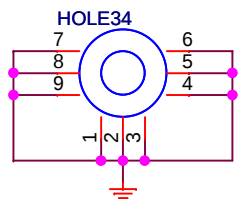
*HG-C236D146P2



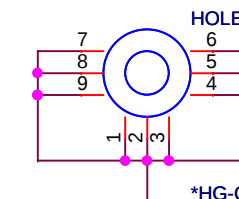
*HG-TC335BC268D118P2



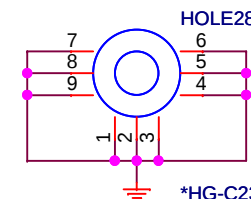
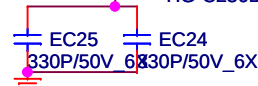
*HG-TC335BC268D118P2



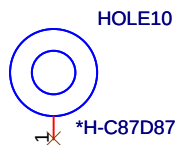
*HG-TC268BC335D118P2



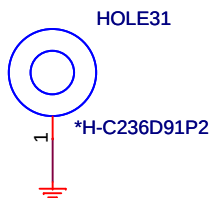
*HG-C236D118P2



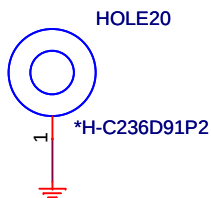
*HG-C236D146P2



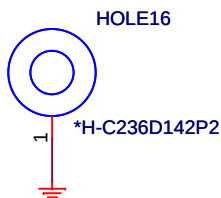
*H-C87D87N



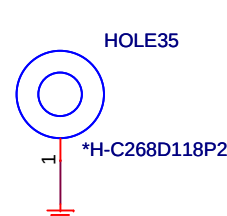
*H-C236D91P2



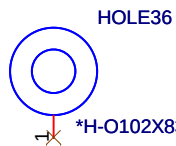
*H-C236D91P2



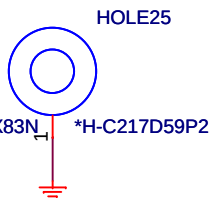
*H-C236D142P2



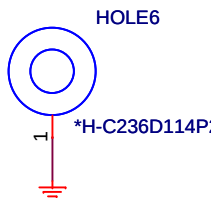
*H-C268D118P2



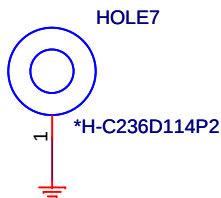
*H-O102X83D102X83N



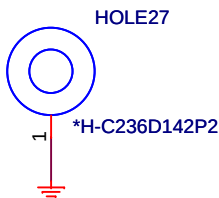
*H-C217D59P2



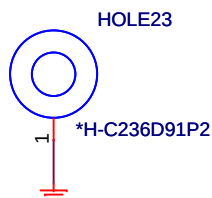
*H-C236D114P2



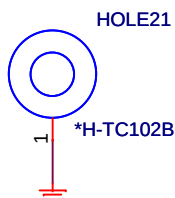
*H-C236D114P2



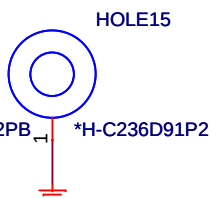
*H-C236D142P2



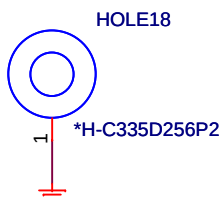
*H-C236D91P2



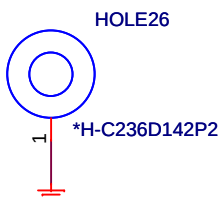
*H-TC102BC217D102PB



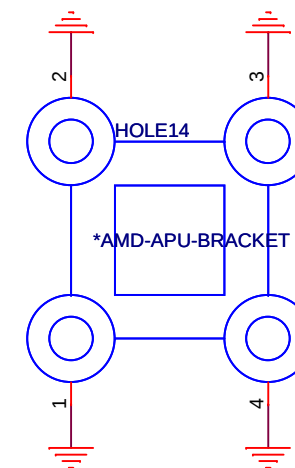
*H-C236D91P2



*H-C335D256P2



*H-C236D142P2



Quanta Computer Inc.
PROJECT : BLF_BLFD

Size	Document Number	Rev
	Screw	1C
Date:	Tuesday, April 19, 2011	Sheet 50 of 53

www.s-manuals.com