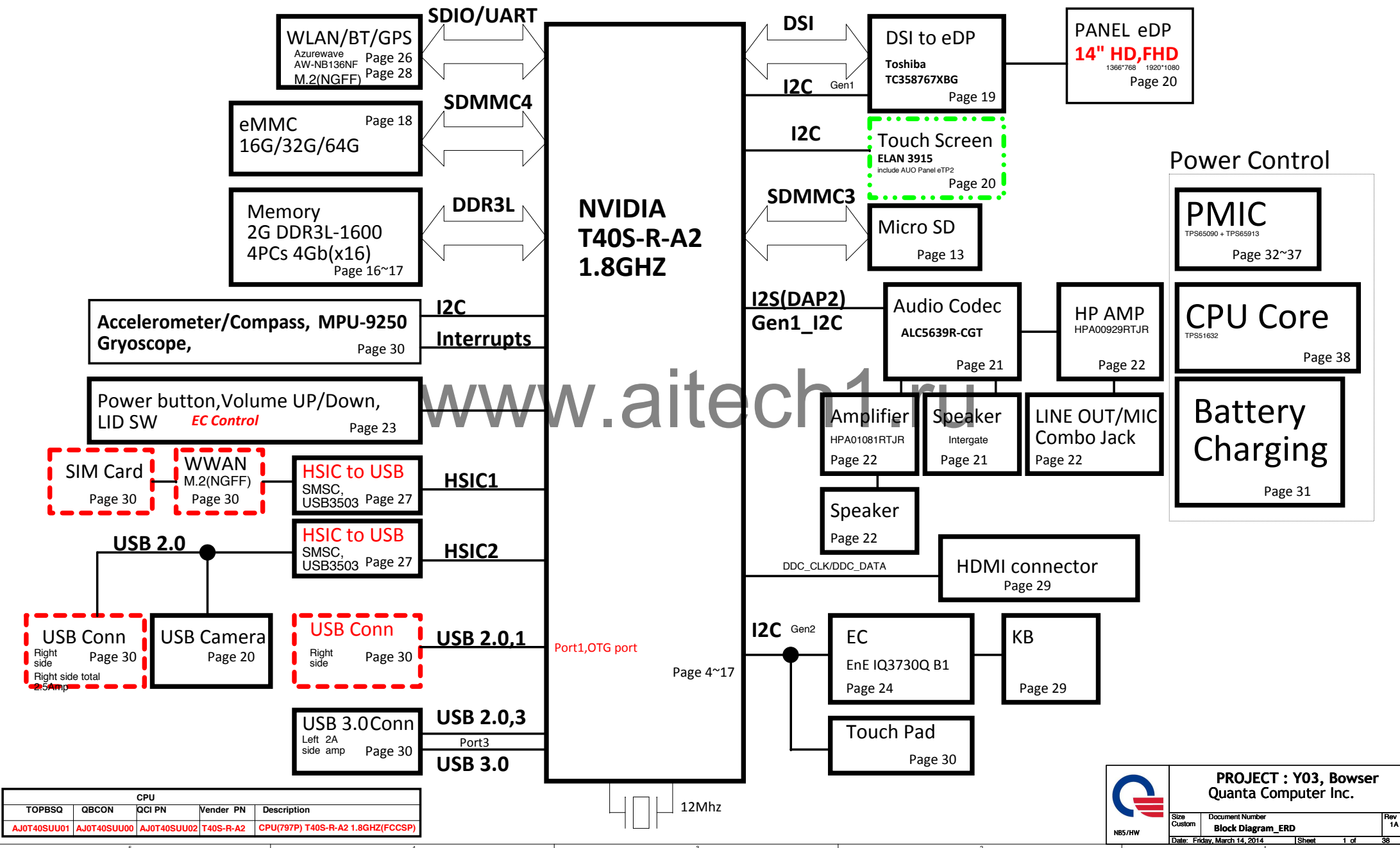


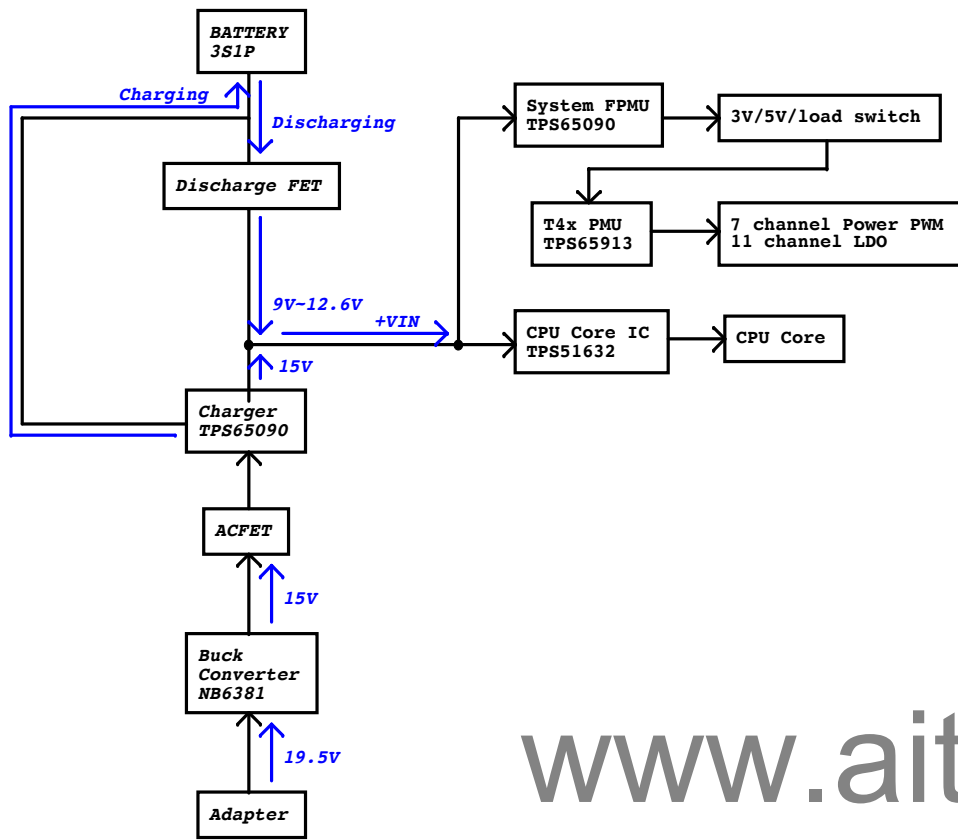
Bowser Y03 Tegra4 (T40S) Platform Block Diagram

1

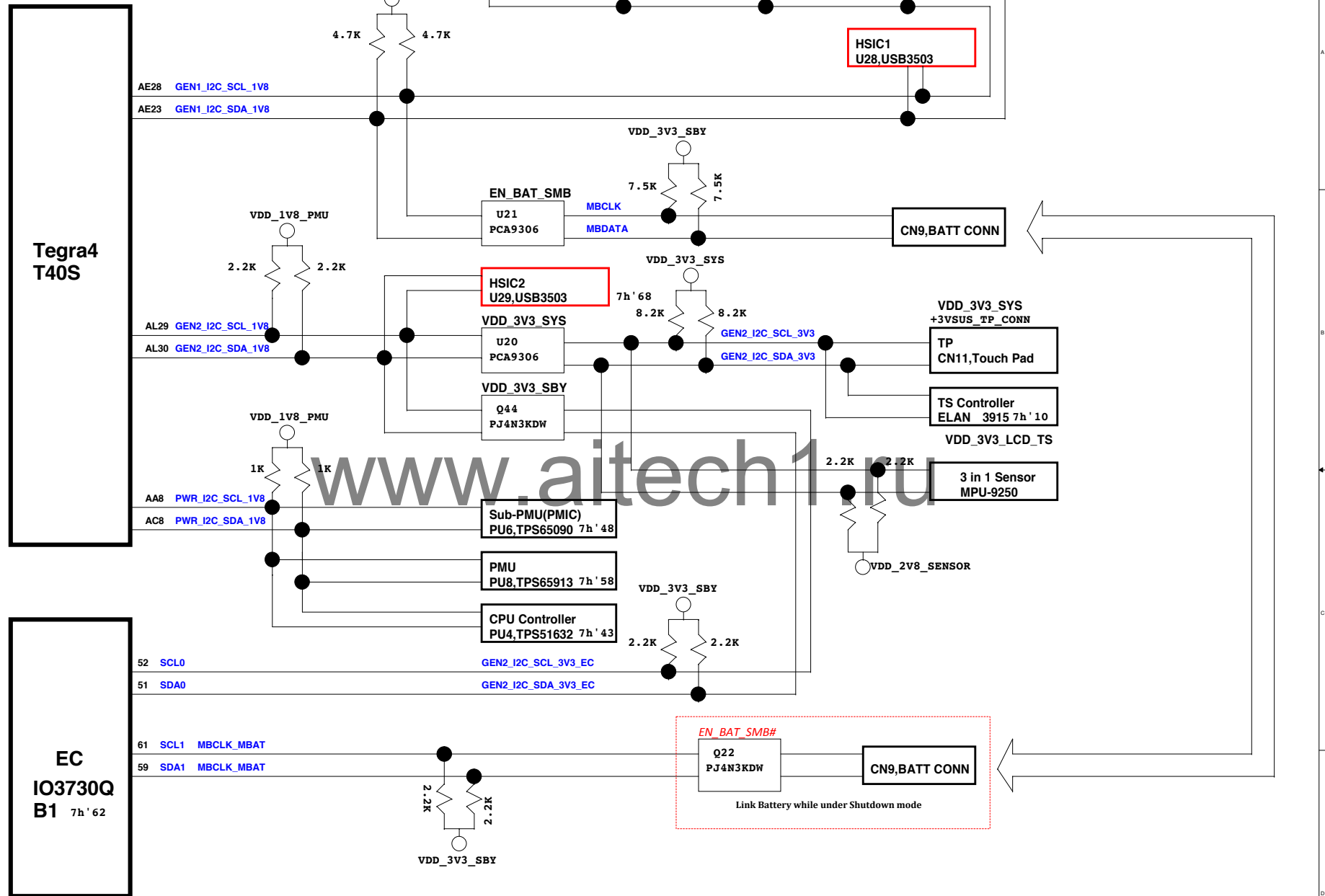


Bowser POWER PLAN

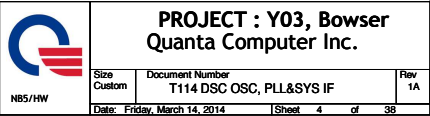
2



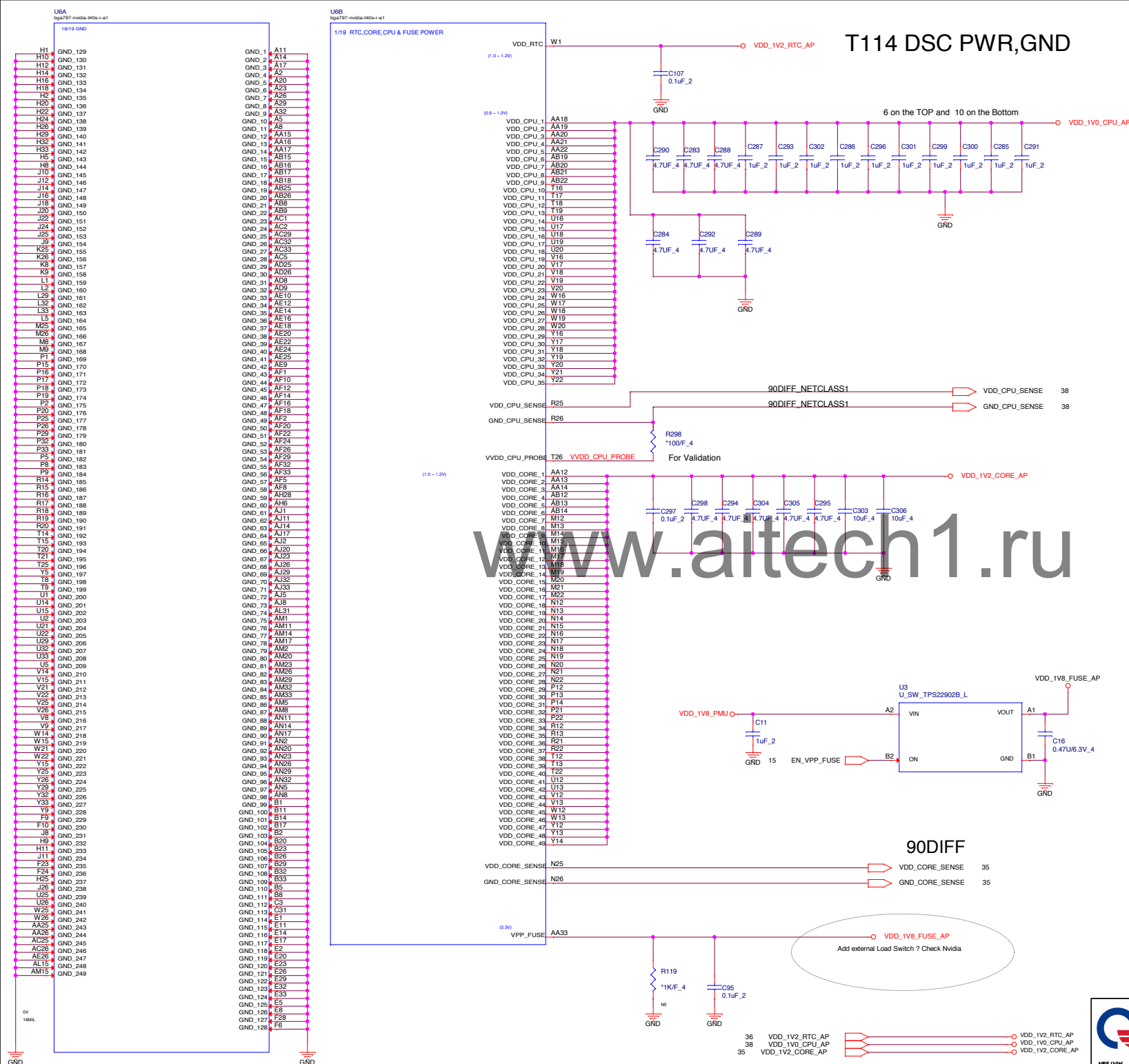
www.aitech1.ru



4



T114 DSC PWR,GND



PROJECT : Y03, Bowser
Quanta Computer Inc.

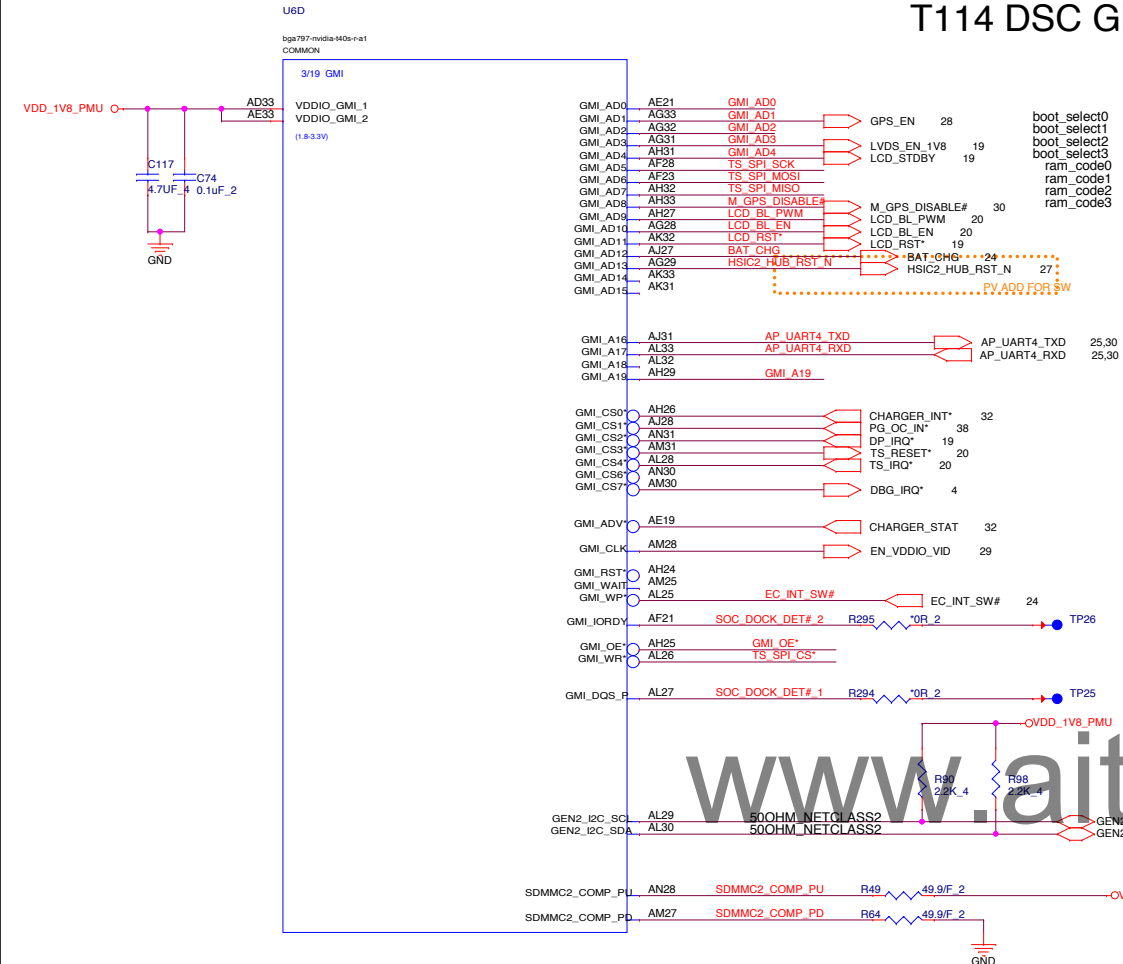
Size
Custom

Document Number
T114 DSC PWR,GND

Rev
1A

Date: Friday, March 14, 2014

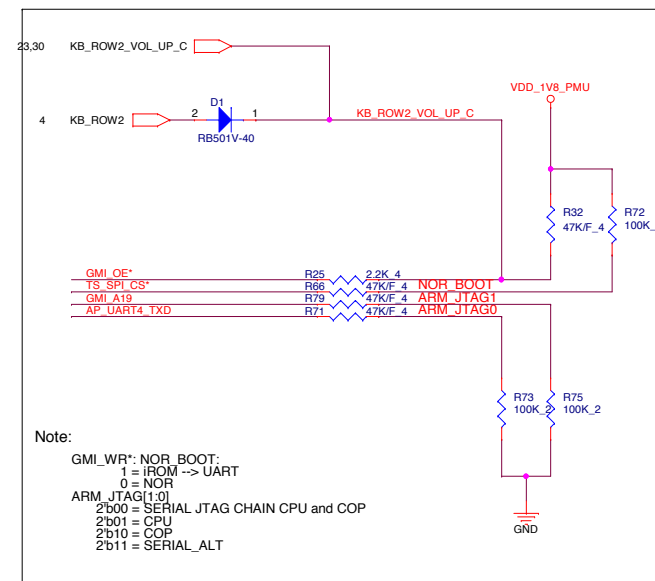
Sheet 5 of 38



GPIO

DEBUG

GPIO



TOPBSQ	QBCON	QCI PN	Vender PN	Description	
AKD5JGETW07	AKD5JGETW08	AKD5JGETW00	H5TC4G63AFR-PBA	IC SDRAM(96P)H5TC4G63AFR-PBA(FBGA)	Hynix (default)
AKD5JGST412	AKD5JGST413	AKD5JGST403	EDJ4216EFBG-GN-F	IC SDRAM (96P) EDJ4216EFBG-GN-F(FBGA)	Elpida
AKD5JGSTL06	AKD5JGSTL07	AKD5JGSTL02	MT41K256M16HA-125:E	IC SDRAM(96P) MT41K256M16HA-125:E (FBGA)	Micron
AKD5PGST508	AKD5PGST509	AKD5PGST500	K4B4G1646Q-HYK0	IC SDRAM(96P)K4B4G1646Q-HYK0(FBGA)	Samsung

Memory Strap pin :

Hynix : Default

Hynix : H5TC4G63AFR-PBA (A-Die) (default)

RAM_CODE0 : 1

RAM_CODE1 : 1

Samsung :

Samsung : K4B4G1646Q-HYK0 (Q-Die)

RAM_CODE0 : 0

RAM_CODE1 : 0

Micron :

Micron : MT41K256M16HA-125:E

RAM_CODE0 : 1

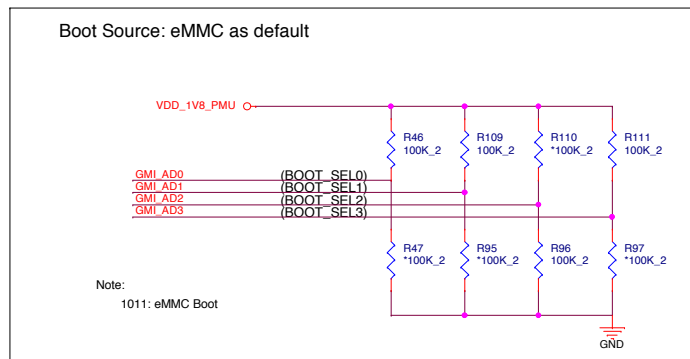
RAM_CODE1 : 0

Elpida :

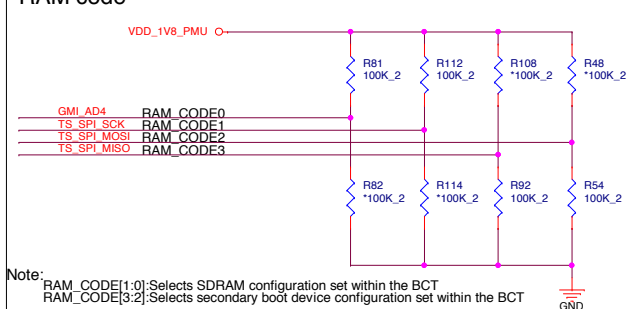
Elpida : EDJ4216EFBG-GN-F

RAM_CODE0 : 0

RAM_CODE1 : 1



RAM code



4,5,9,10,11,12,13,14,15,18,19,20,21,22,23,24,25,26,27,28,29,30,32,35,36,37,38

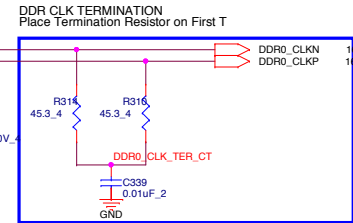
VDD_1V8_PMU

VDD_1V8_PMU

Size
CustomPROJECT : Y03, Bowser
Quanta Computer Inc.Document Number
T114 DSC GMI & BOOT STRAPRev
1A

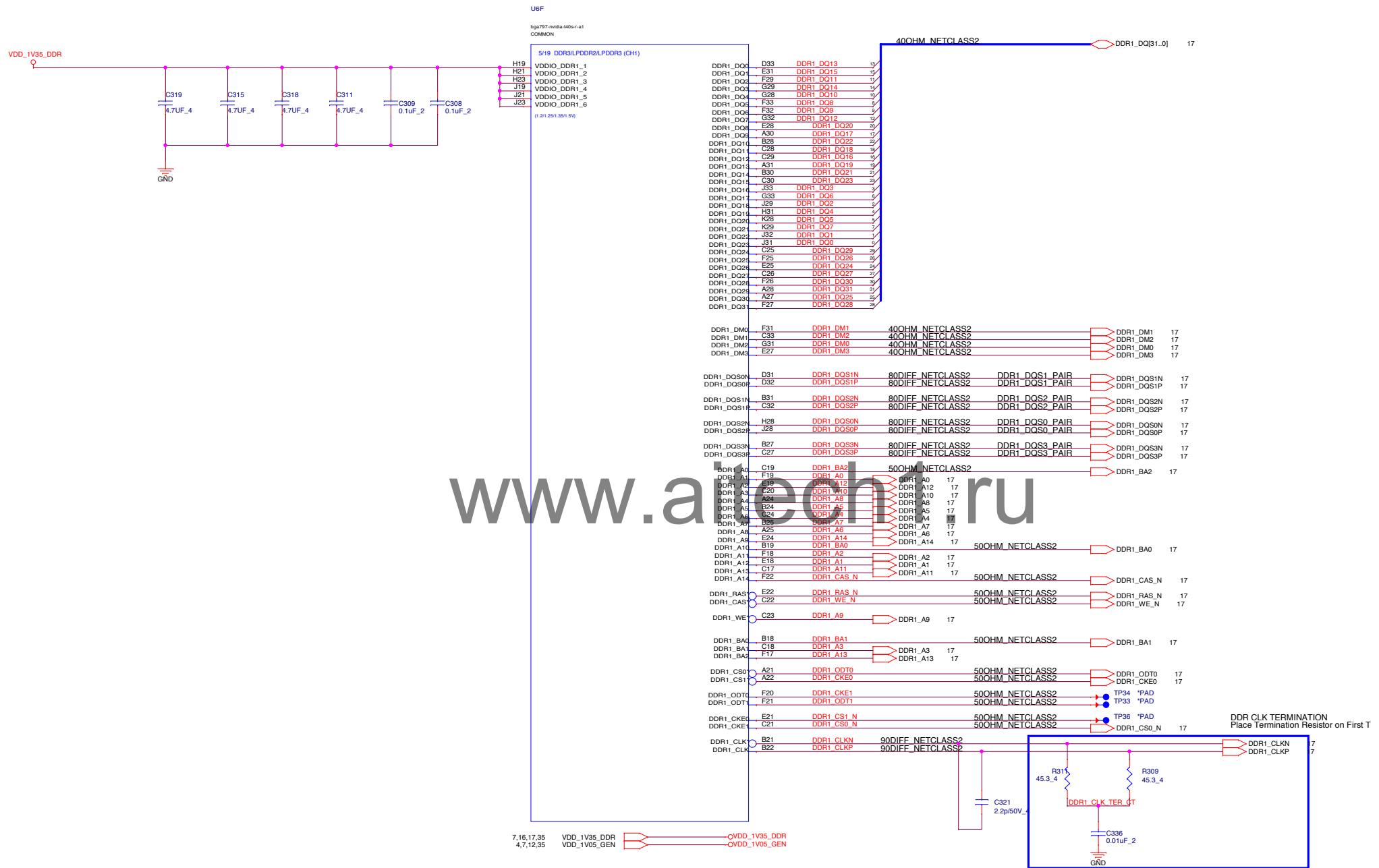
Date: Friday, March 14, 2014 | Sheet 6 of 38

7

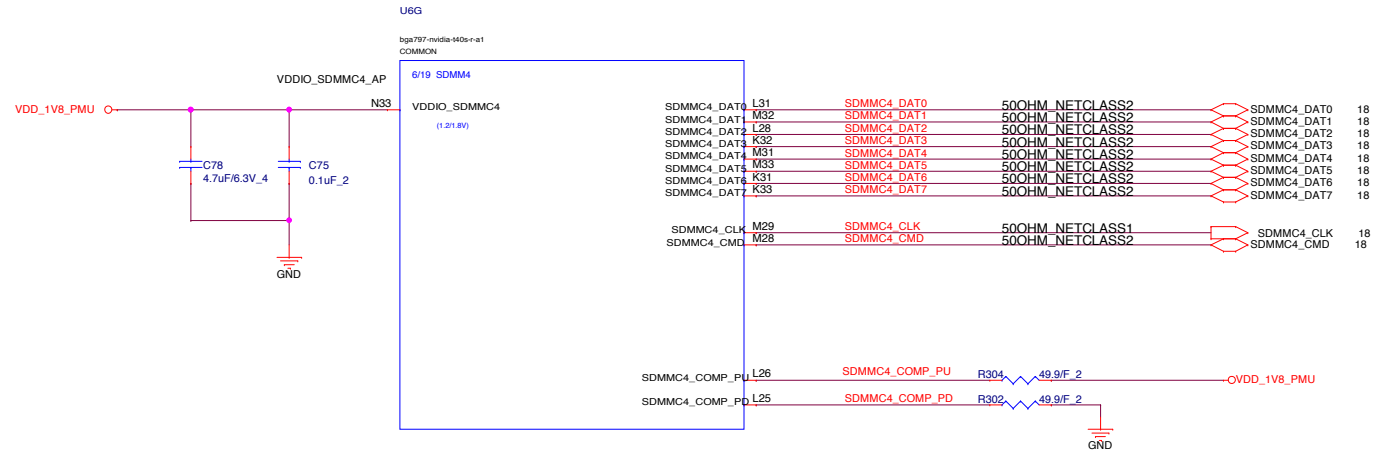
bga797-nvidia-140s-r-a
COMMON

T114 DSC DDR3L INTERFACE (CHANNEL1)

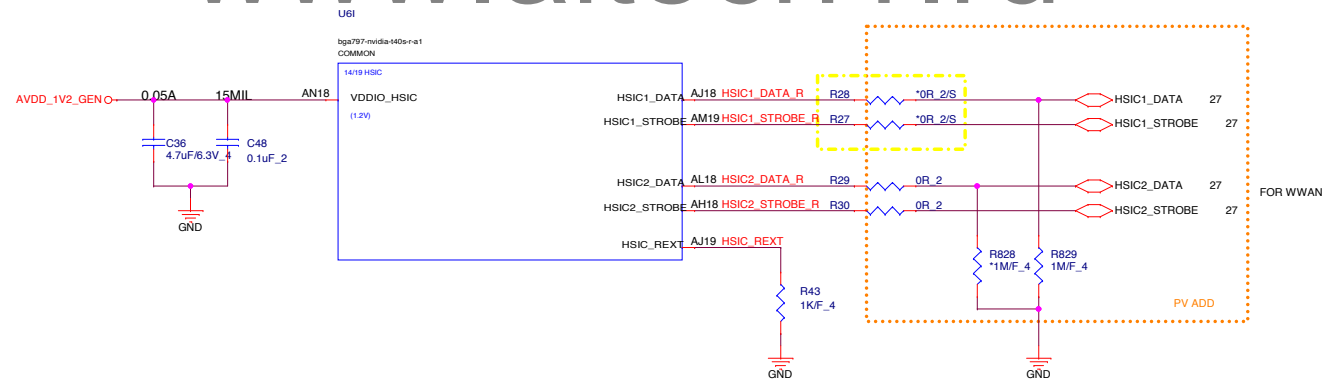
8



T114 DSC SDMMC4 INTERFACE

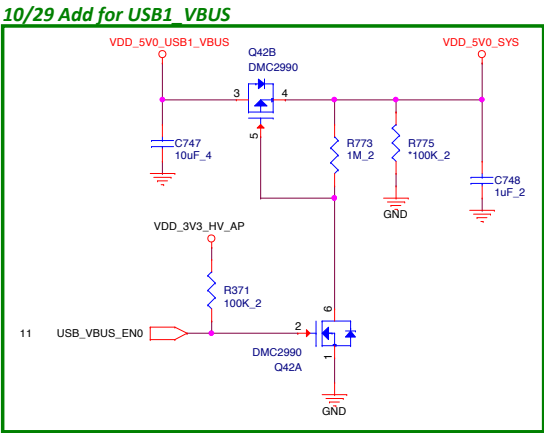


T114 DSC HIGH SPEED INTERCHIP

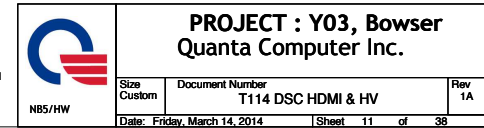
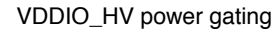


11,12,36 AVDD_1V2_GEN

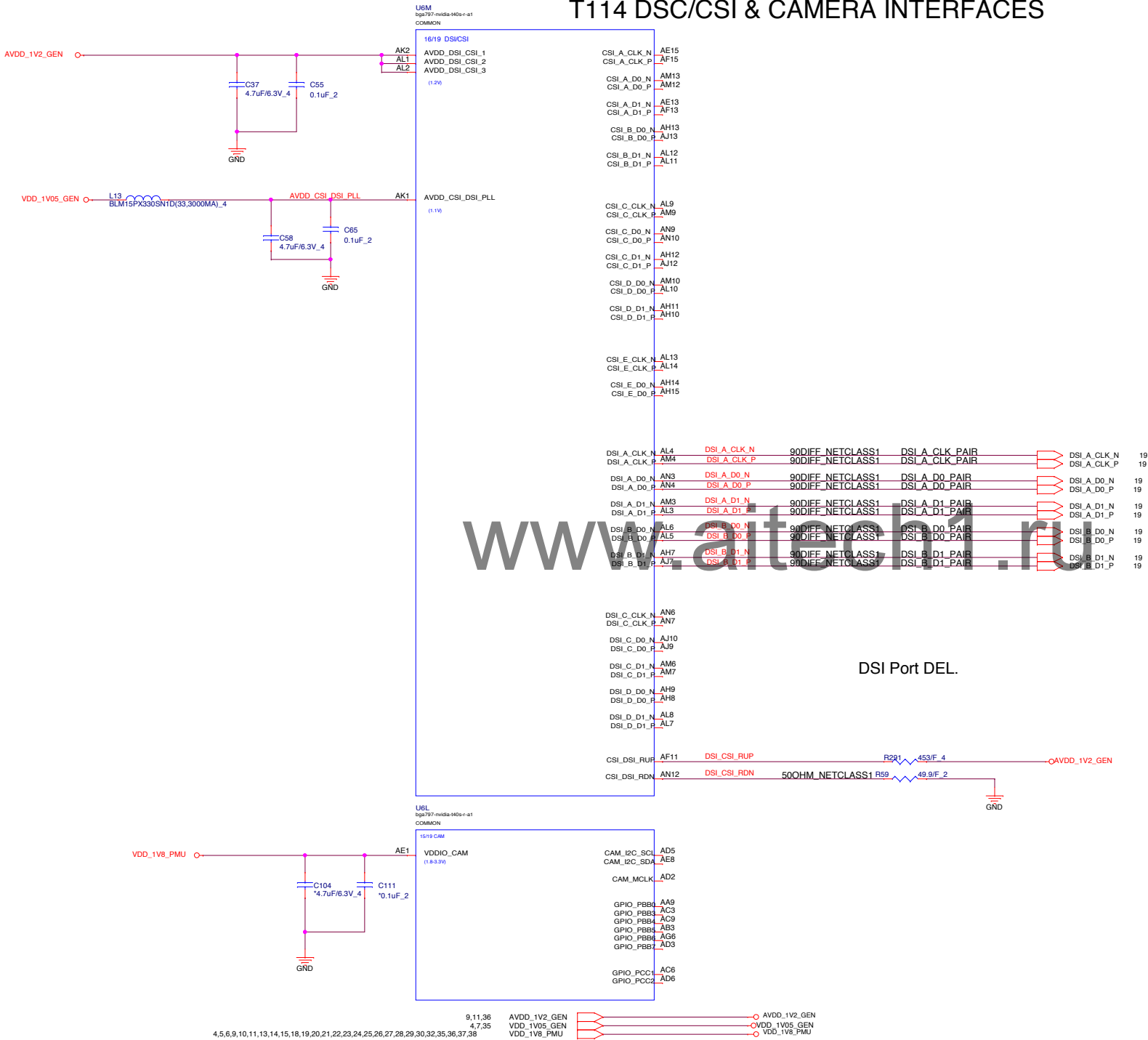
4,5,6,10,11,12,13,14,15,18,19,20,21,22,23,24,25,26,27,28,29,30,32,35,36,37,38 VDD_1V8_PMU



11



T114 DSC/CSI & CAMERA INTERFACES



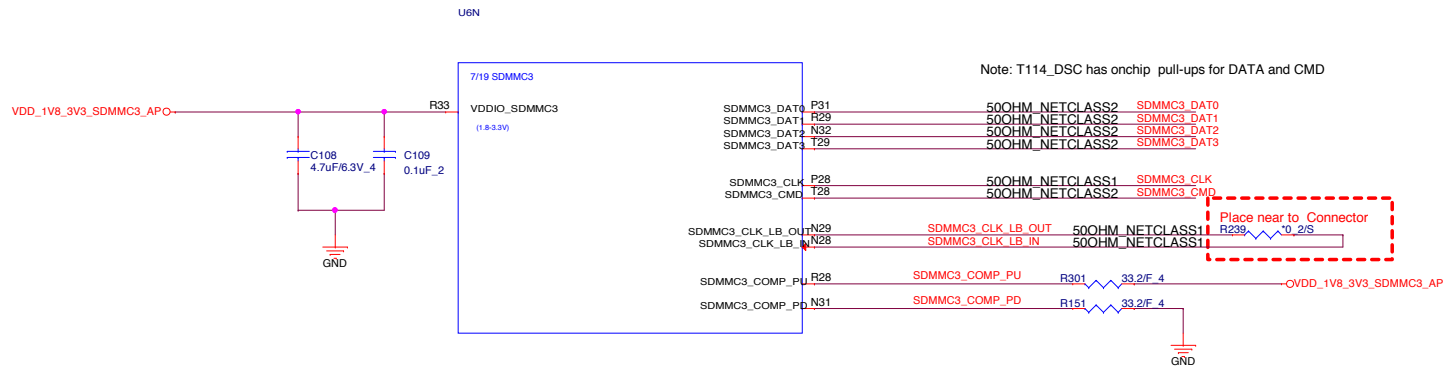
DSI

DSI Port DEL.



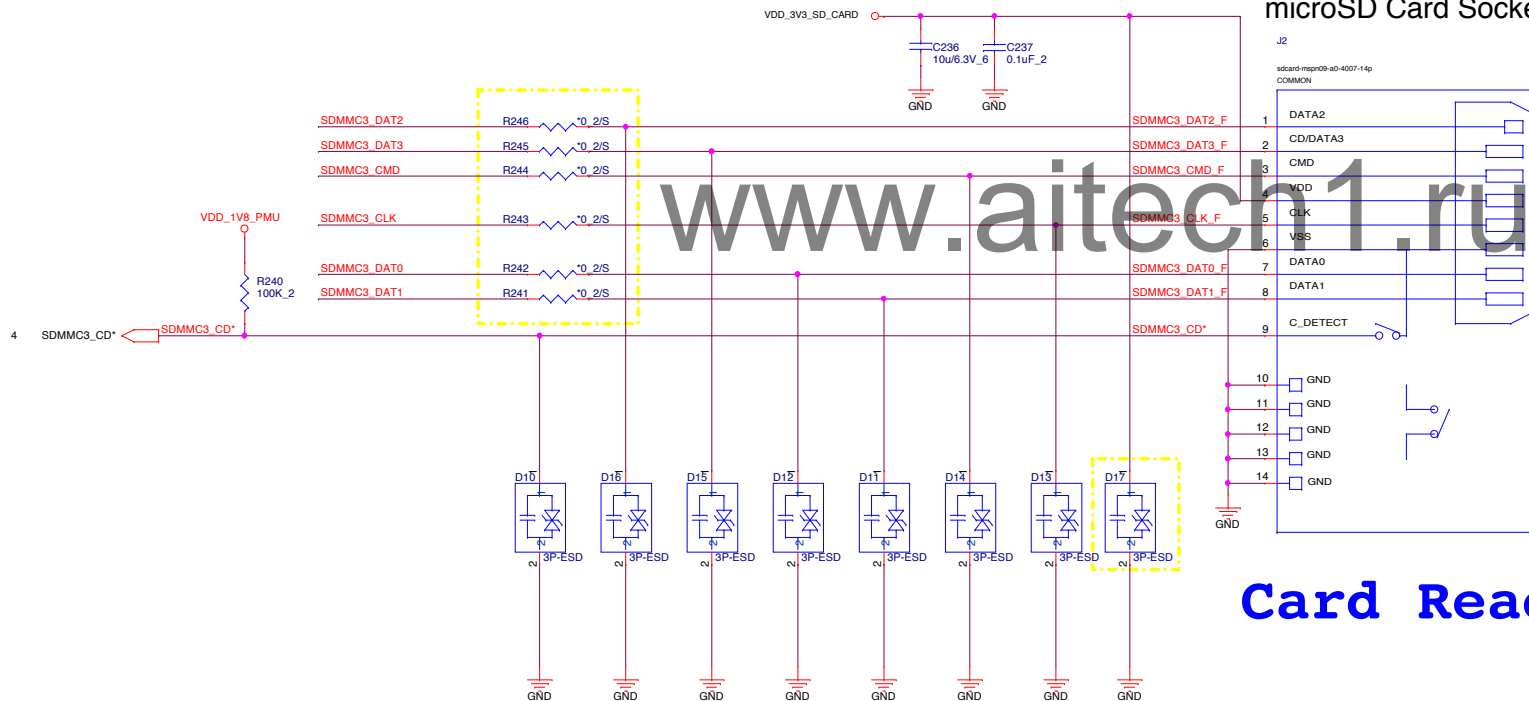
PROJECT : Y03, Bowser
Quanta Computer Inc.

Size Custom	Document Number T114 DSC/CSI & CAMERA	Rev 1A
Date: Friday, March 14, 2014	Sheet 12 of 38	



Place close to J1

microSD Card Socket



Card Reader

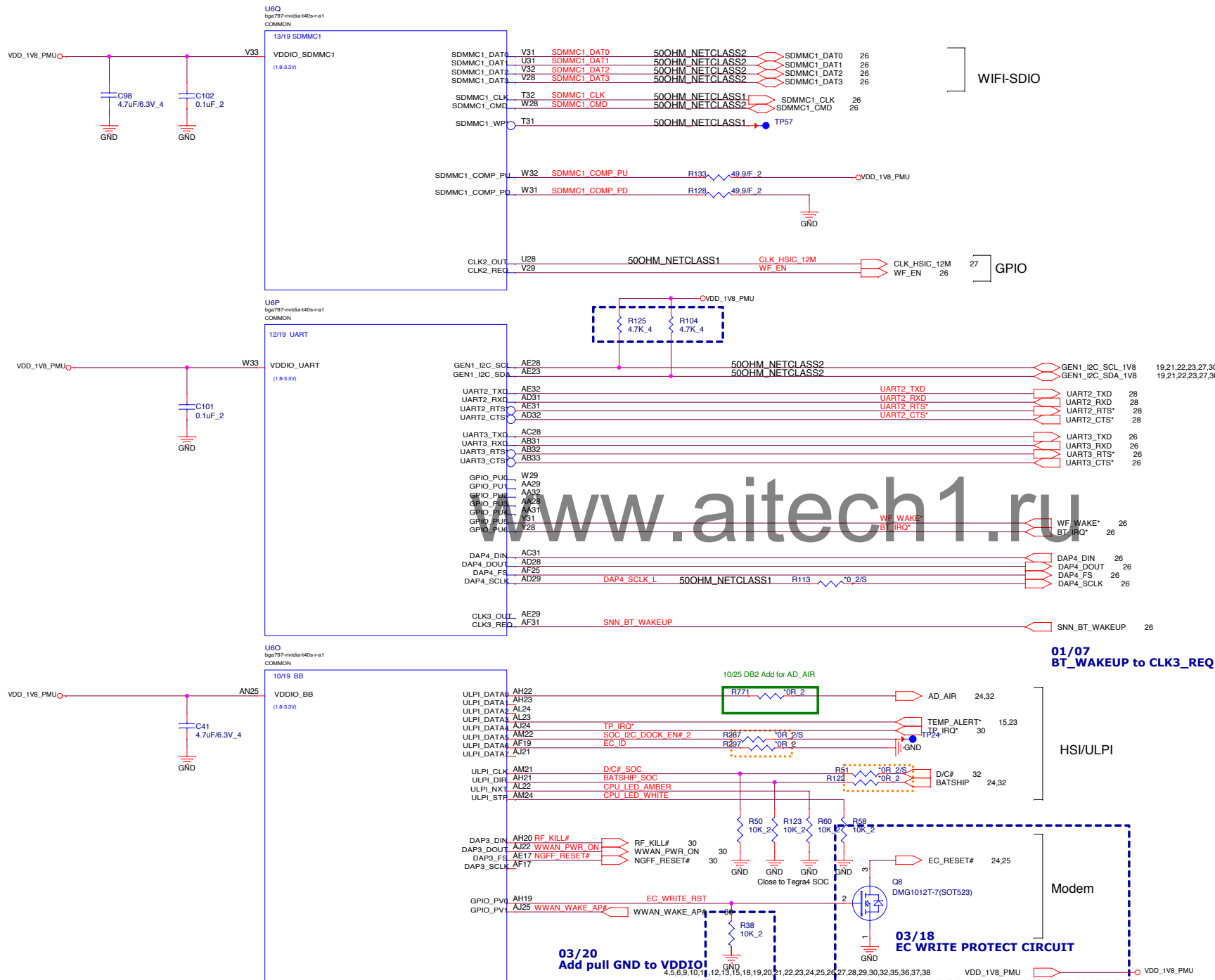
Note: Place those diodes close to the SD socket

36 VDD_1V8_3V3_SDMMC3_AP

34 VDD_3V3_SD_CARD

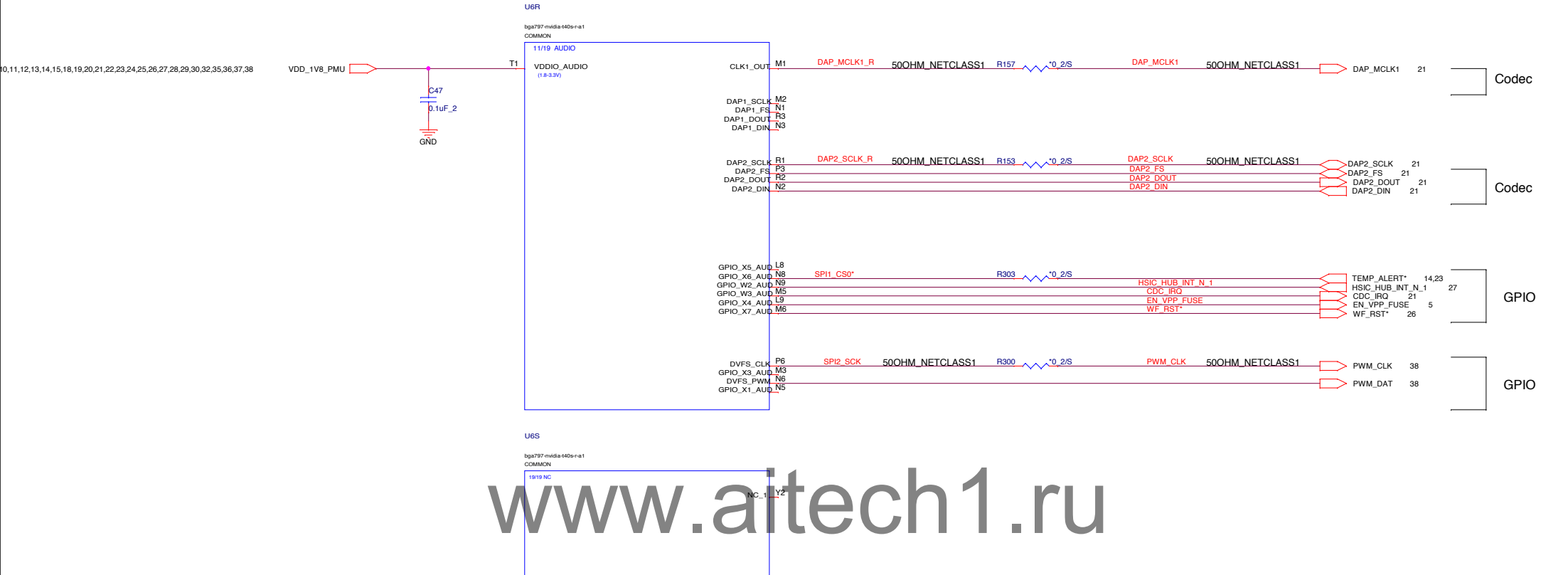
OVDD_1V8_3V3_SDMMC3_AP

OVDD_3V3_SD_CARD




T114 DSC AUDIO INTERFACE

15

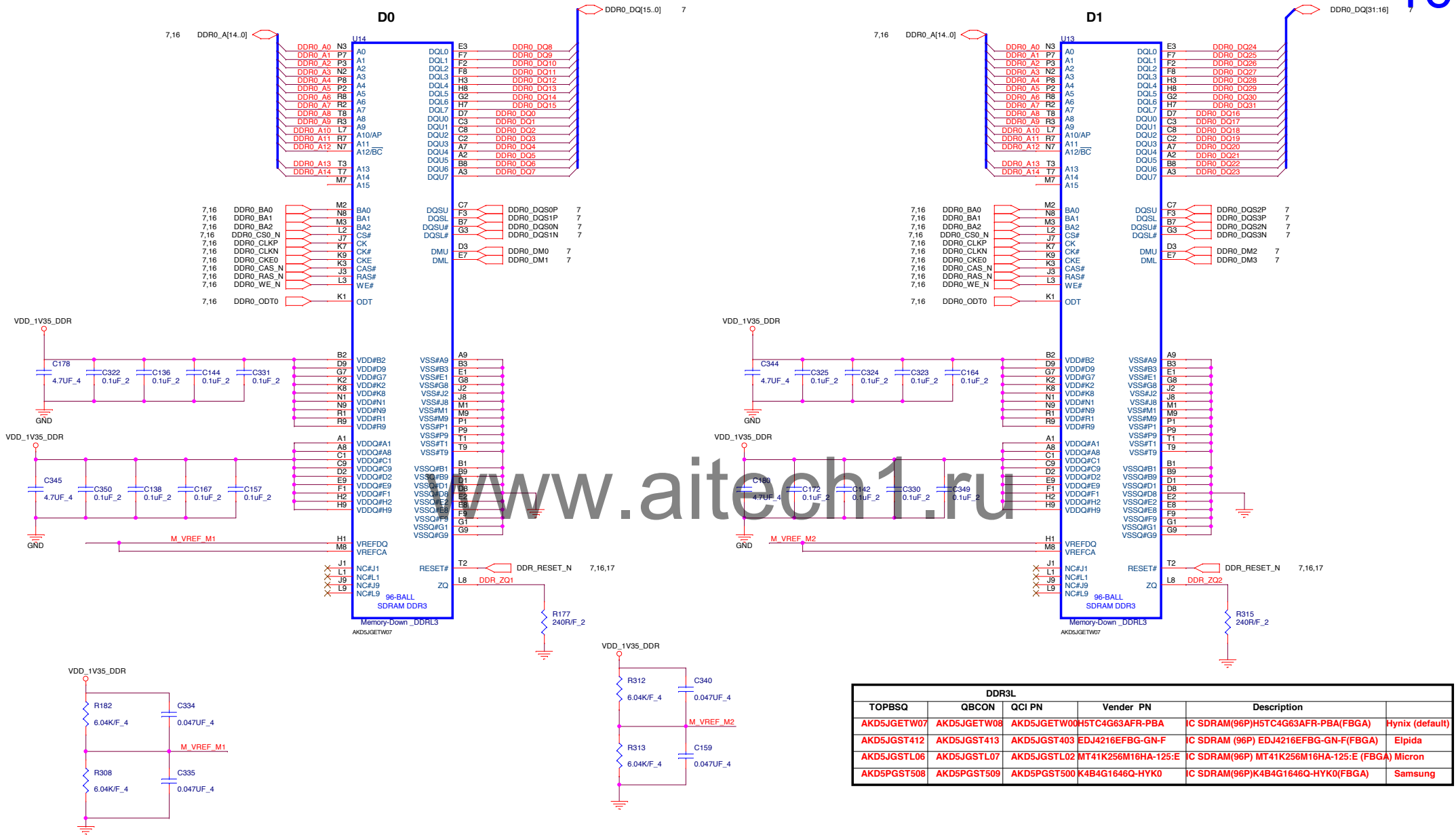


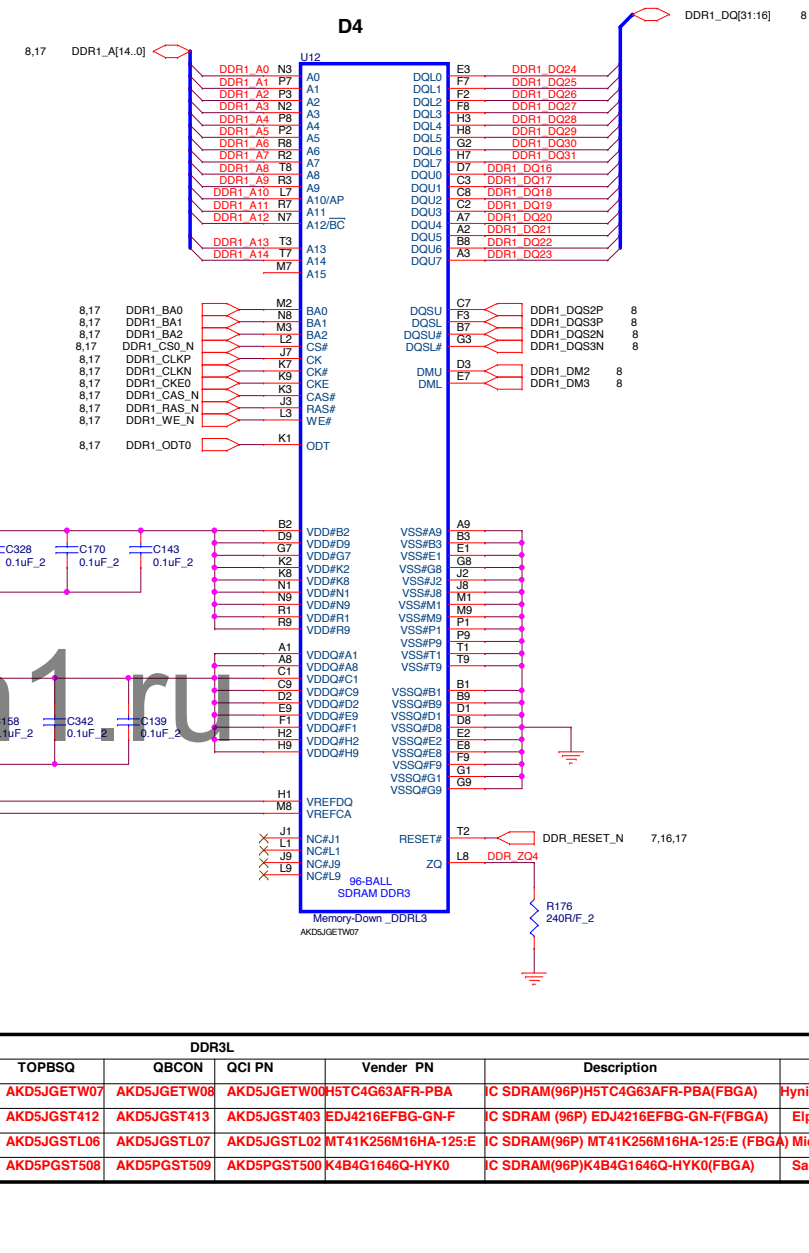
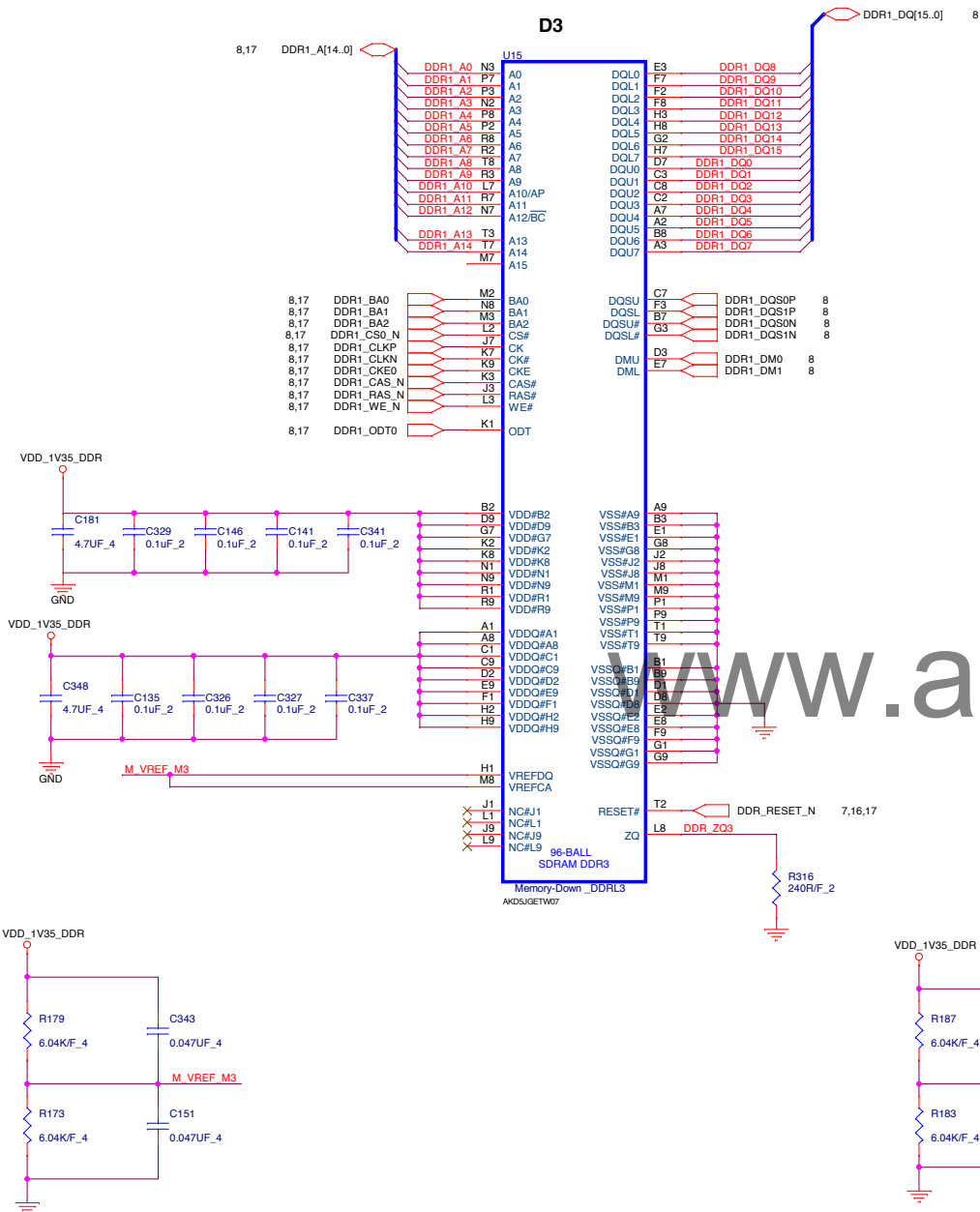
www.aitech1.ru

			PROJECT : Y03, Bowser Quanta Computer Inc.		
Size Custom	Document Number T114 DSC AUDIO		Rev 1A		
Date: Friday, March 14, 2014	Sheet 15 of 38				


4,5,6,9,10,11,12,13,14,15,18,19,20,21,22,23,24,25,26,27,28,29,30,32,35,36,37,38

VDD_1V8_PMU



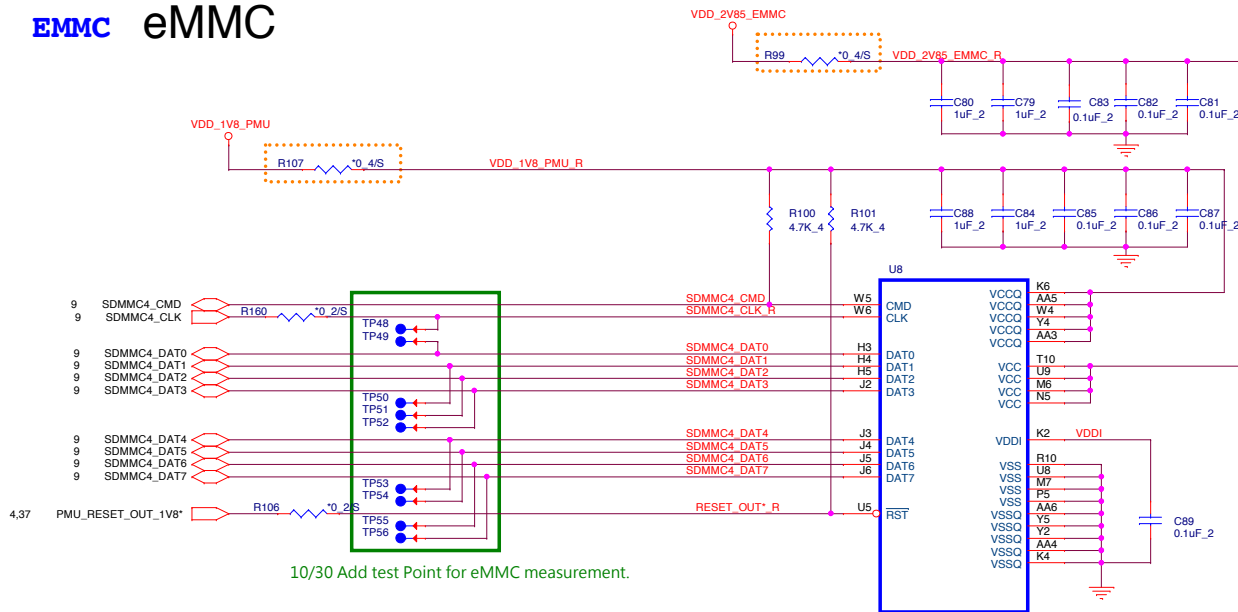


DDR3L					
TOPBSQ	QBCON	QCI PN	Vender PN	Description	
AKD5JGETW07	AKD5JGETW08	AKD5JGETW00	H5TC4G63AFR-PBA	IC SDRAM(96P)H5TC4G63AFR-PBA(FBGA)	Hynix (default)
AKD5JGST412	AKD5JGST413	AKD5JGST403	EDJ4216EFBG-GN-F	IC SDRAM (96P) EDJ4216EFBG-GN-F(FBGA)	Elpida
AKD5JGSTL06	AKD5JGSTL07	AKD5JGSTL02	MT41K256M16HA-125-E	IC SDRAM(96P) MT41K256M16HA-125-E (FBGA)	Micron
AKD5PGST508	AKD5PGST509	AKD5PGST500	K4B4G1646Q-HYK0	IC SDRAM(96P)K4B4G1646Q-HYK0(FBGA)	Samsung

	PROJECT : Y03, Bowser Quanta Computer Inc.		
	Size	Document Number	Rev
NB5/HW		DDR3 (A) On Board_A,2Rank	
	Date: Friday, March 14, 2014	Sheet	17 of 38

7,8,16,35 VDD_1V35_DDR VDD_1V35_DDR

EMMC eMMC



SDIN8DE4-32G
fbga169-samsung-kmhog0000m-0_5s
AKE3SZ-T100
footprint : BGA 169 - BGA 153 co-lay
BGA 169 PIN : 14mmX18mm
BGA 169 PIN : 12mmX16mm
BGA 153 PIN : 11.5mmX13mm

www.aitech1.ru

INAND (eMMC) V4.41

Default

iNAND (eMMC) V4.51			Description	
TOPBSQ	QBCON		SIZE	
AKE3RZPT101	AKE3RZPT102	IC FLASH(169P) SDIN5C4-16G-1014L TOP BSQ	16G/*X*mm	Sandisk
AKE3SZ-T100	AKE3SZ-T101	IC FLASH(153P) SDIN8DE4-32G(BGA)TOPBSQ	32G/*X*mm	Sandisk
AKE3TZ-T100	AKE3TZ-T101	IC FLASH(153P) SDIN8DE4-64G(BGA)TOPBSQ	64G/*X*mm	Sandisk
AKE5RF0T501	AKE5RF0T500	IC FLASH(153P)KLMAG2GEAC-B001 TOPBSQ	16G/*X*mm	Samsung
AKE5SZ0T503	AKE5SZ0T500	IC FLASH(153P)KLMBG4GEAC-B001 TOPBSQ	32G/*X*mm	Samsung
AKE3TZPT507	AKE3TZPT508	IC FLASH(153P)KLMCG8GEAC-B001(FBGA)TOPBSQ	64G/*X*mm	Samsung
AKE3RZPTW06	AKE3RZPTW07	IC FLASH(169P) H26M52003EQR TOP BSQ	16G/*X*mm	Hynix
AKE3SZPTW09	AKE3SZPTW10	IC FLASH(169P) H26M64003DQR TOP BSQ	32G/*X*mm	Hynix
AKE34GPTW01	AKE34GPTW02	IC FLASH(169P) H26M78003BFR TOP BSQ	64G/*X*mm	Hynix

35

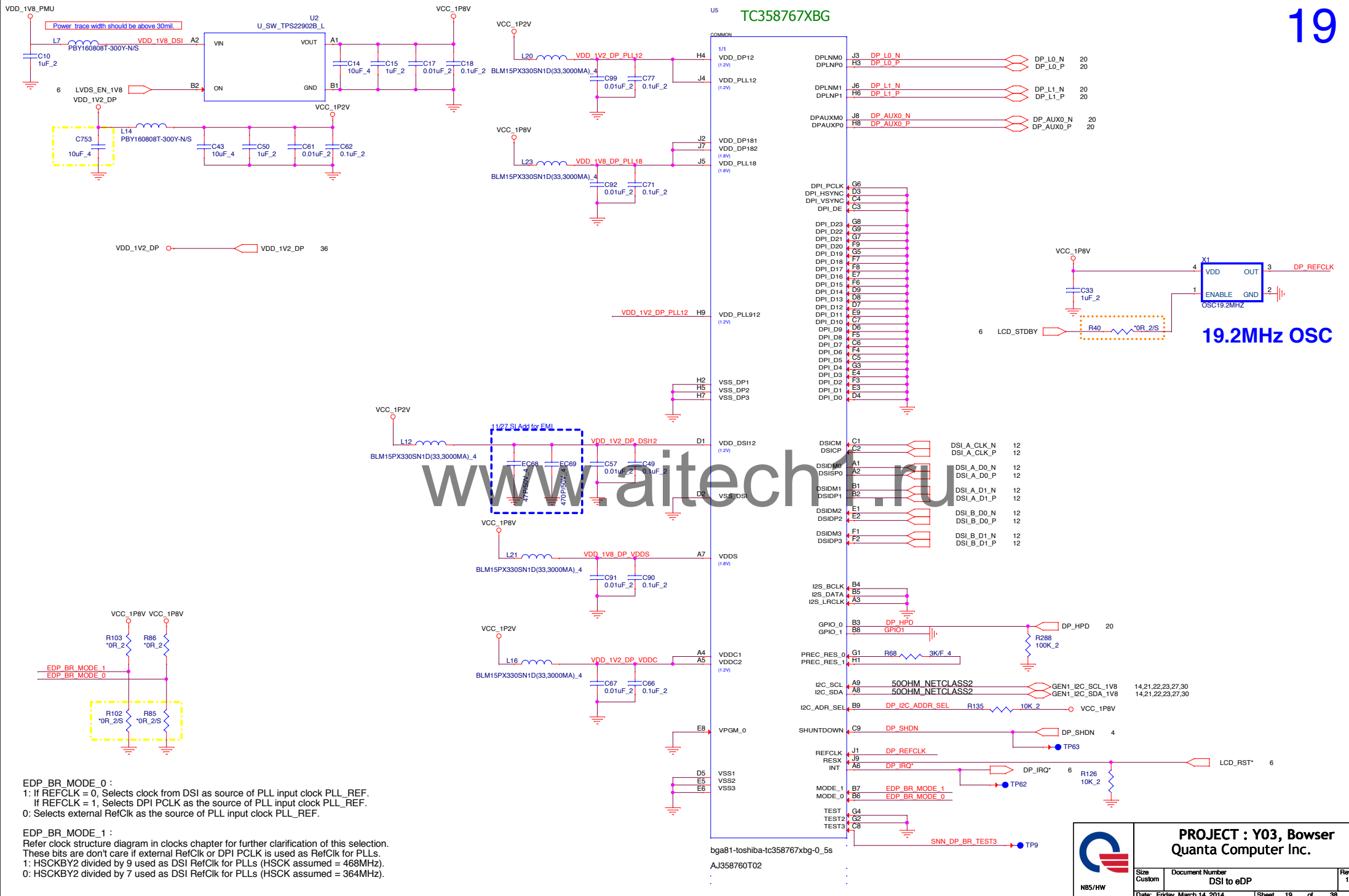
VDD_2V85_EMMC

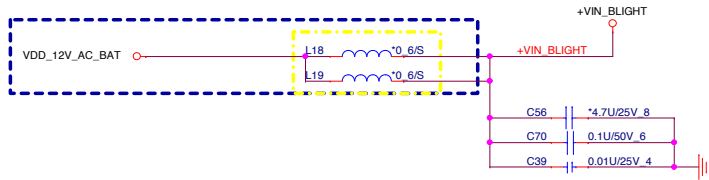
VDD_1V8_PMU



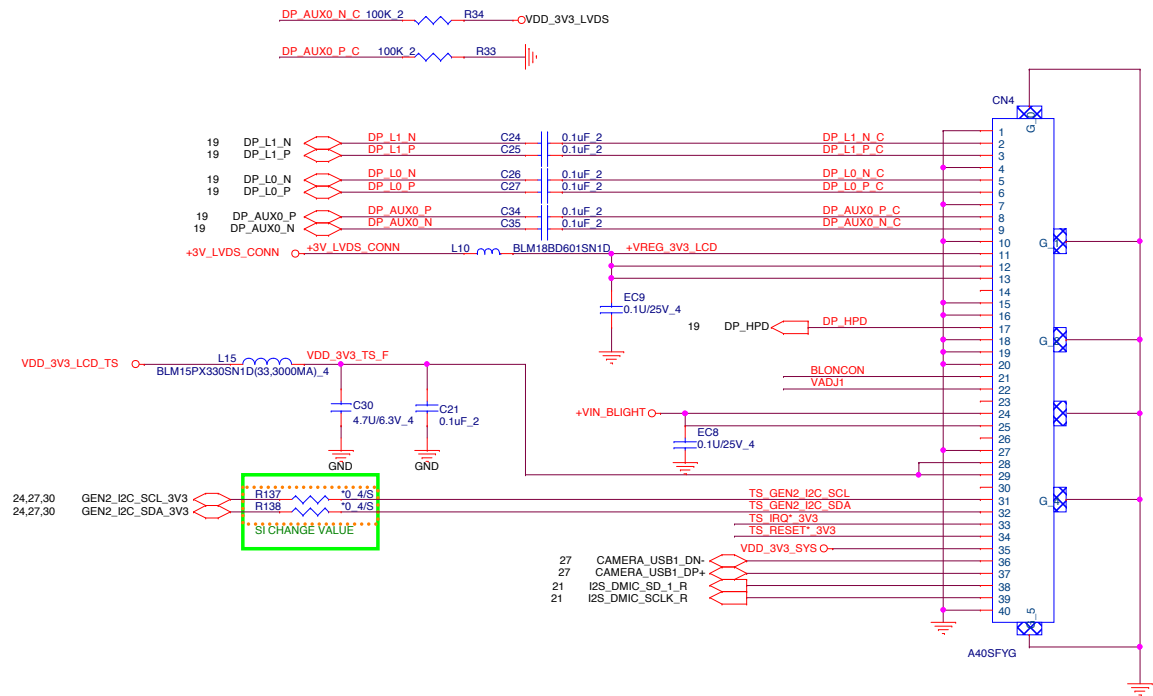
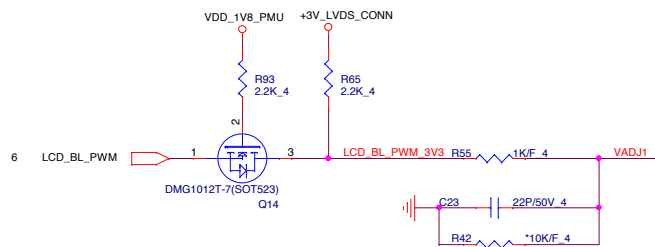
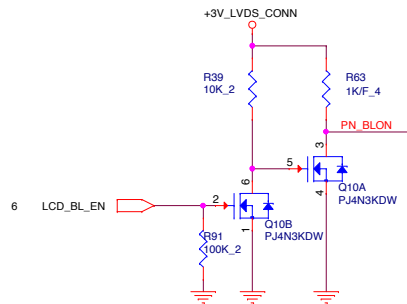
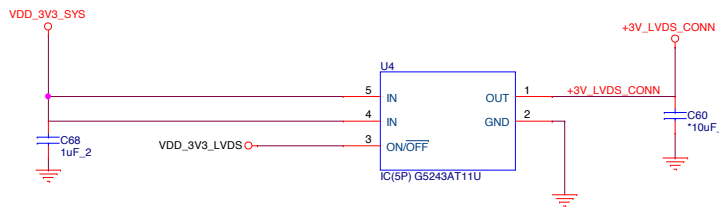
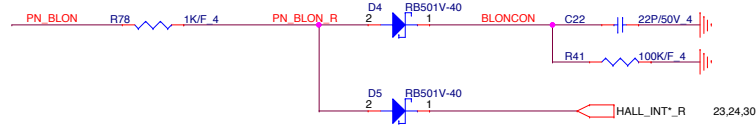
PROJECT : Y03, Bowser
Quanta Computer Inc.

Size	Document Number	Rev
Custom	eMMC	1A
Date: Friday, March 14, 2014 Sheet 18 of 38		

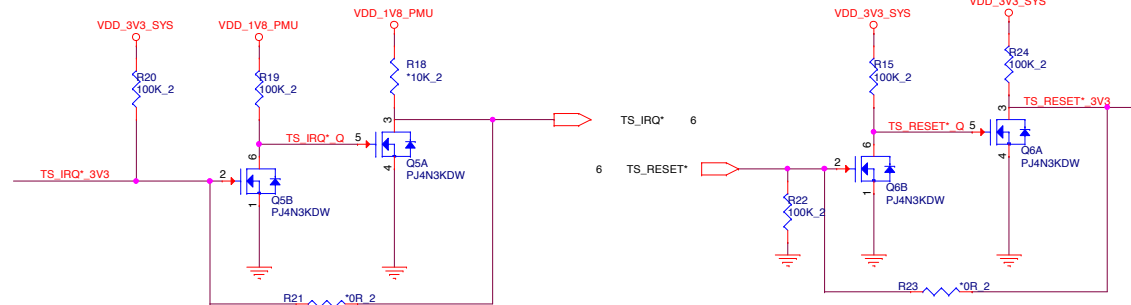




Backlight Control

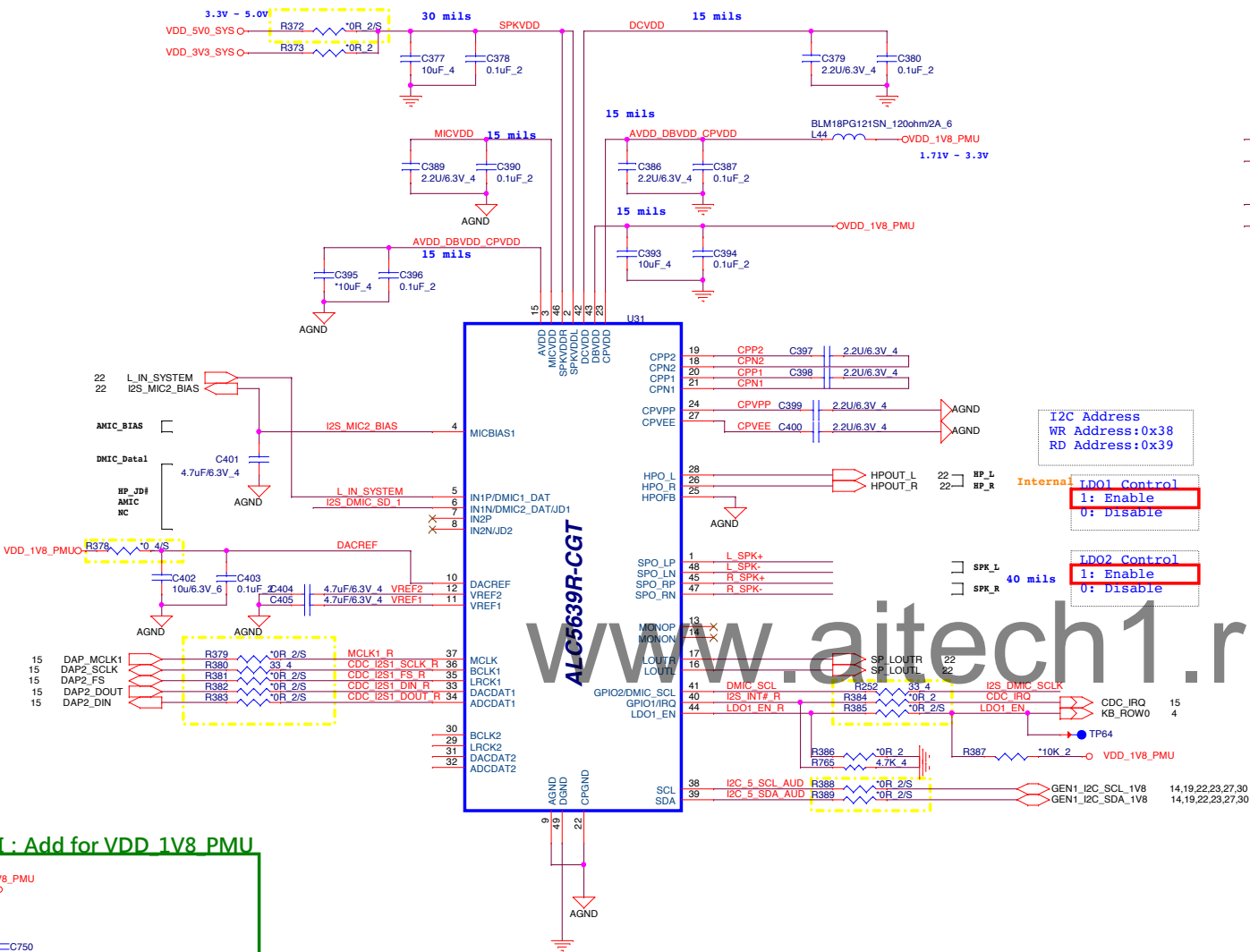


www.aitech1.ru



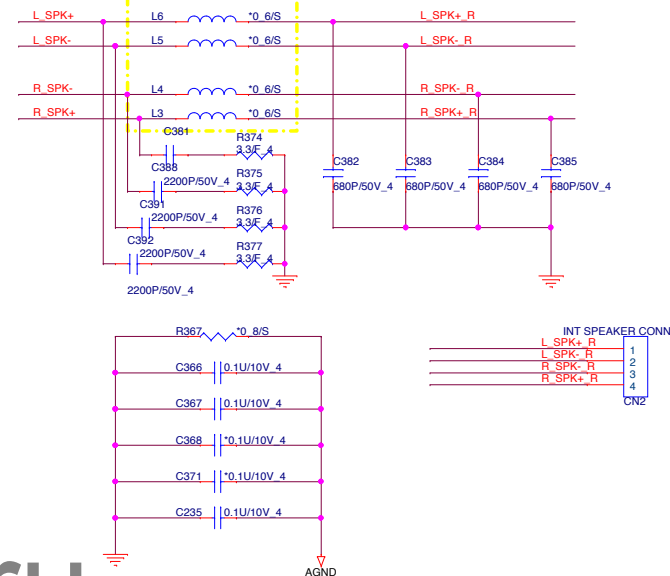
PROJECT : Y03, Bowser
Quanta Computer Inc.

Size Custom	Document Number eDP CONN	Rev 1A
Date: Friday, March 14, 2014	Sheet 20 of 38	



Rear Speaker

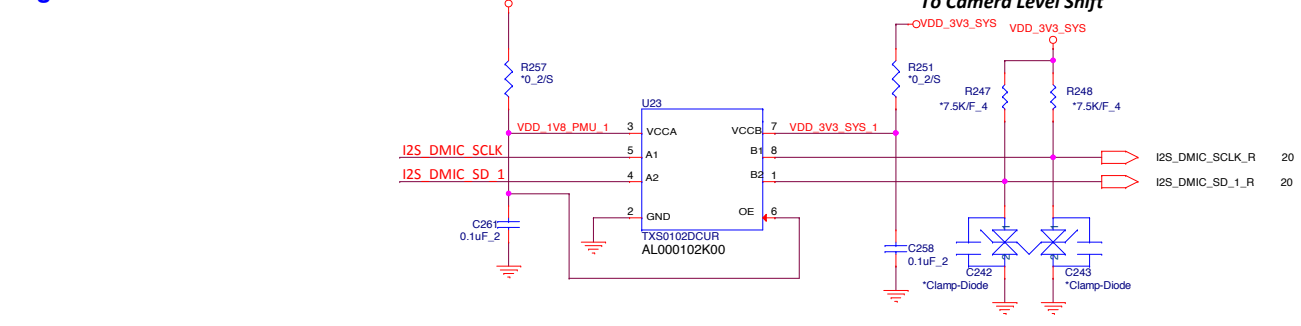
SPK trace width Speaker 4 ohm: 40mils Close to CODEC



11/26 SI: Add for VDD 1V8 PMU

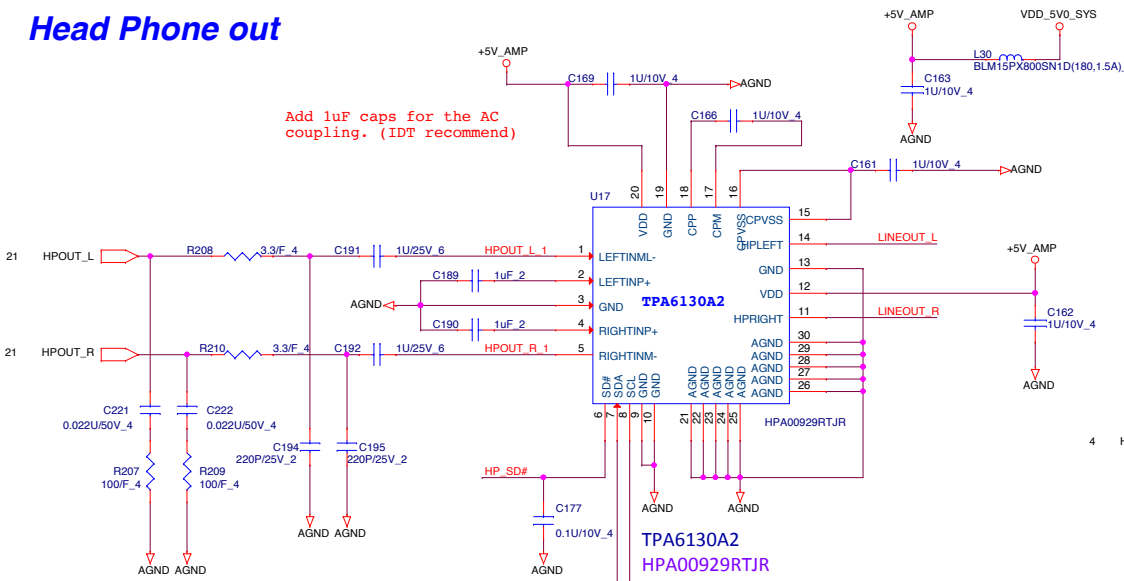


Digital MIC

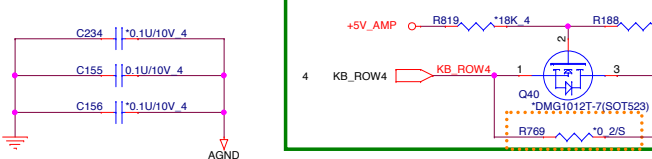


Head Phone out

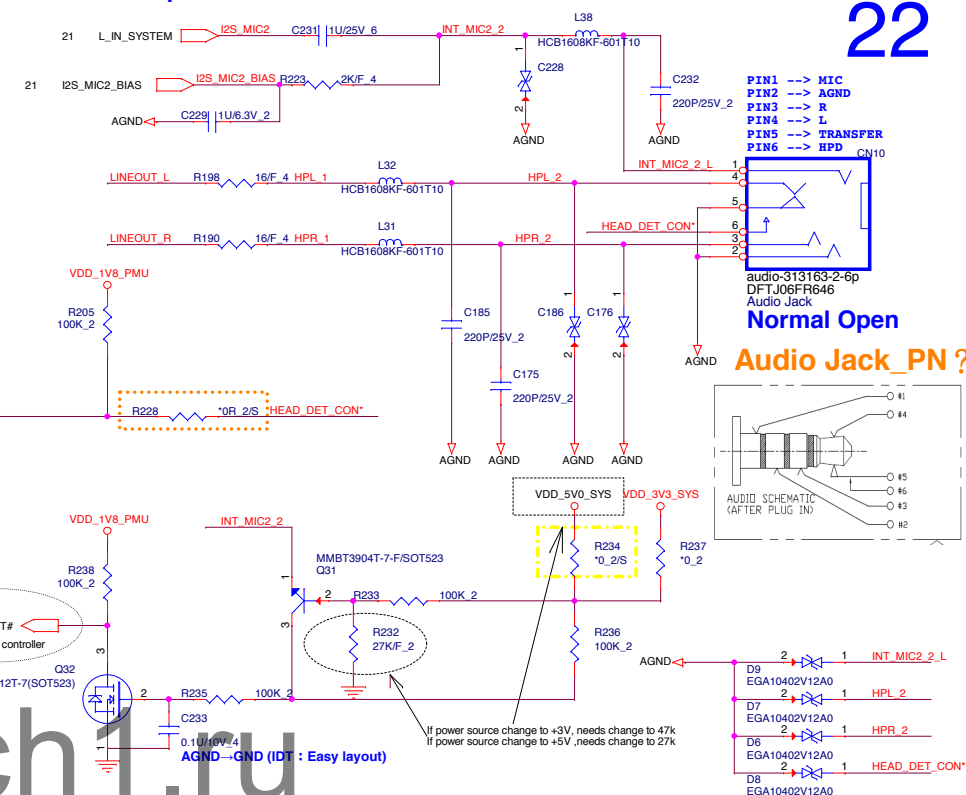
Add 1uF caps for the AC coupling. (IDT recommend)



Close to HPA00929RTJR 12/02 SI Add for Audio

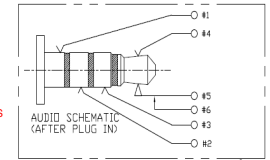


Headphone and Mic Jack

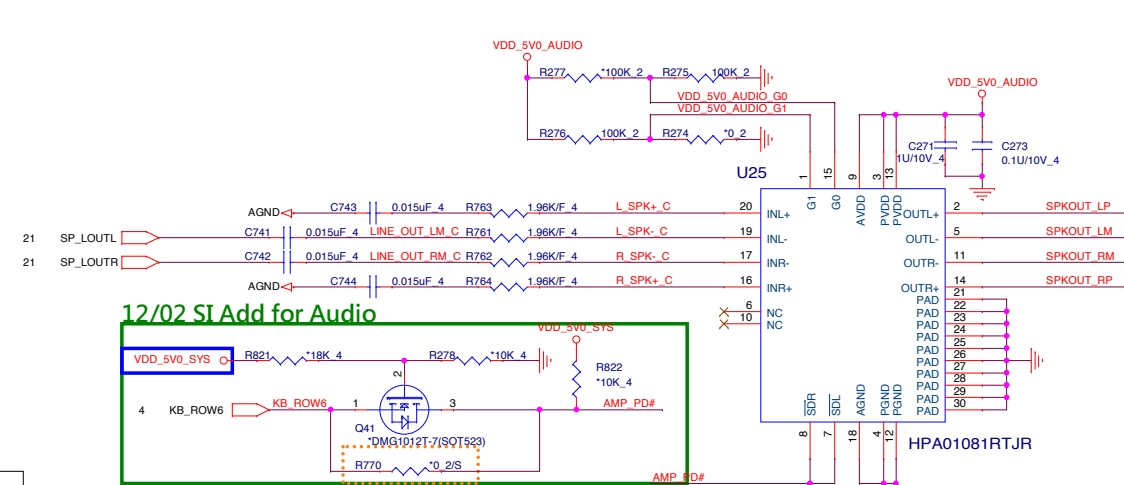


22

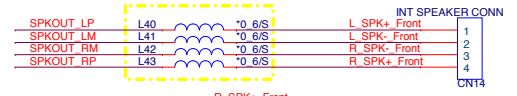
Normal Open Audio Jack_PN?



www.aitech1.ru



Front Speaker Conn

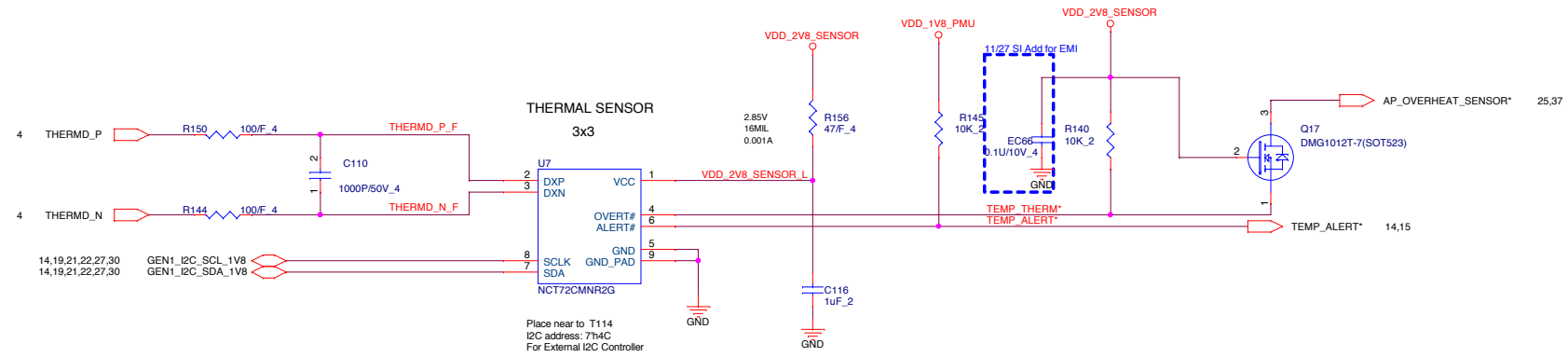


SPK AMP reference to DGND
Caps must be X5R or better.
Rated at 2X application Vol.

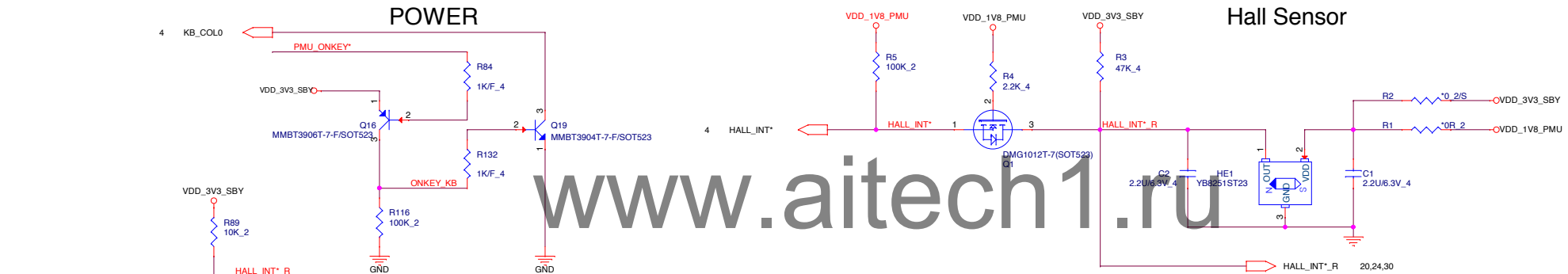
GAIN1	GAIN0	Amplifier Gain Setting (typ)	
		V/V	dB
0	0	2	6
0	1	4	12
1	0	8	18
1	1	16	24

FRONT SPEAKER CLASS D AMP.

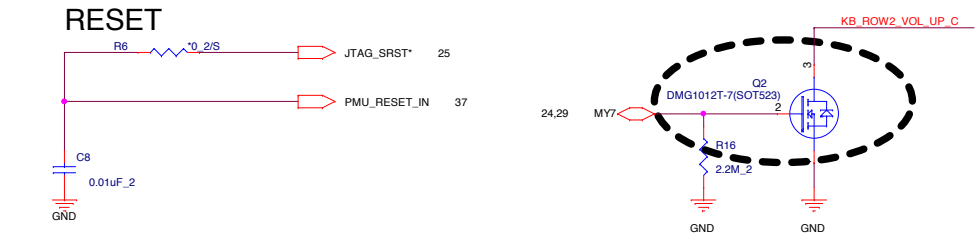
30,36 VDD_2V8_SENSOR
4,5,6,9,10,11,12,13,14,15,18,19,20,21,22,24,25,26,27,28,29,30,32,35,36,37,38 VDD_1V8_PMU



Hall Sensor

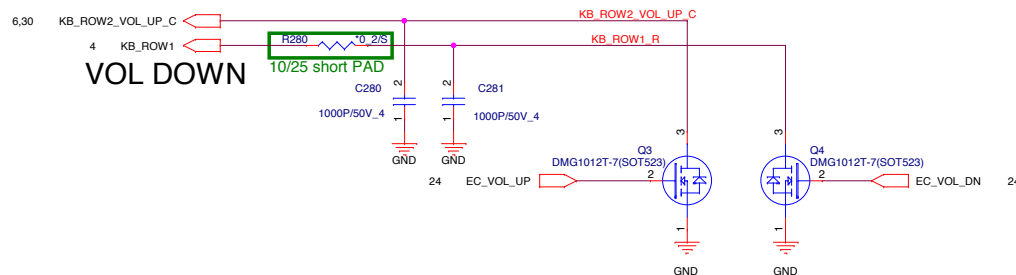


RESET

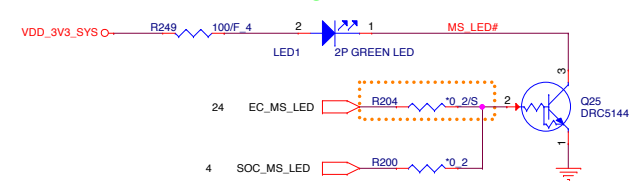


VOL UP

VOL DOWN



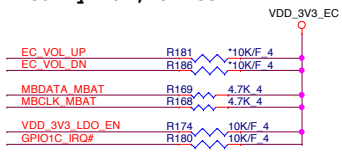
MS LED



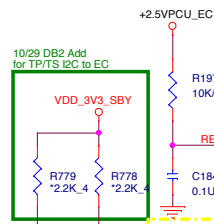
PROJECT : Y03, Bowser
Quanta Computer Inc.

Size	Document Number	Rev
Custom	THERMAL SENSOR,KB MATRIX&BTNs	1A
Date: Friday, March 14, 2014	Sheet 23 of 38	

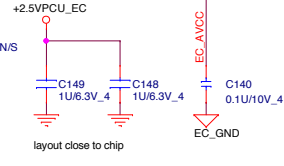
0503 modify R71,R72 to 1K



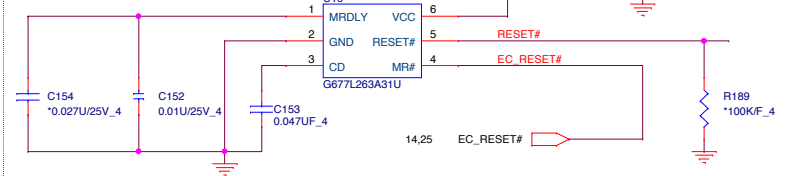
0321 Add L6



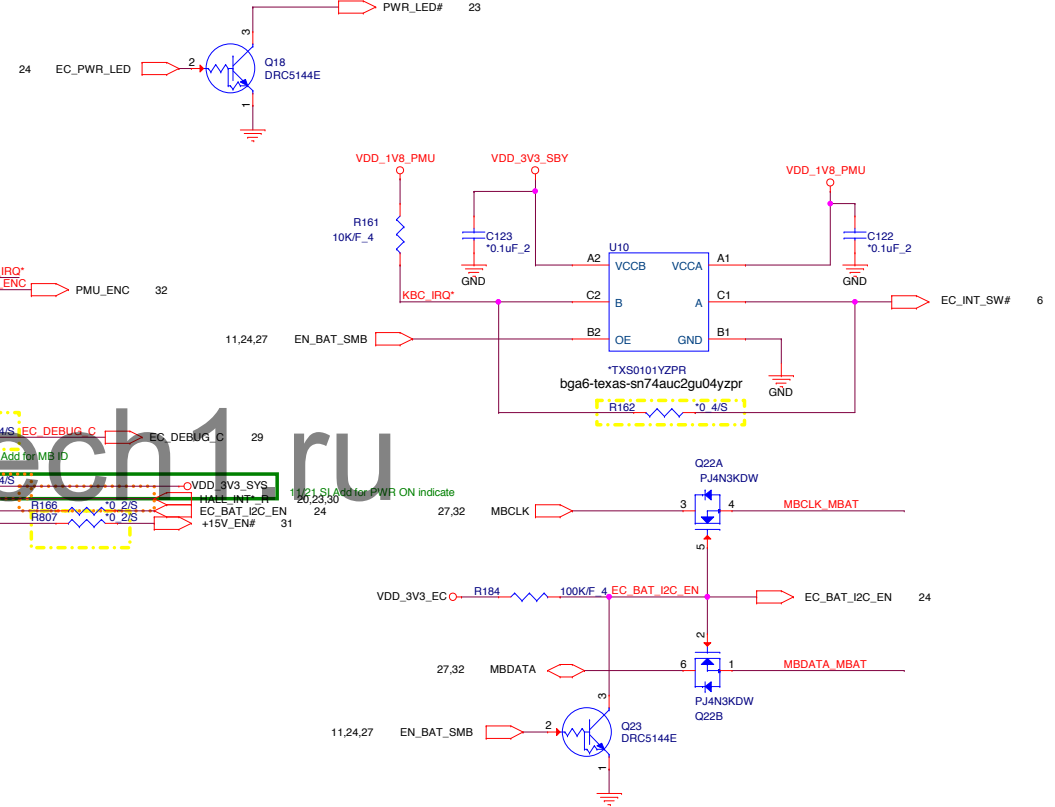
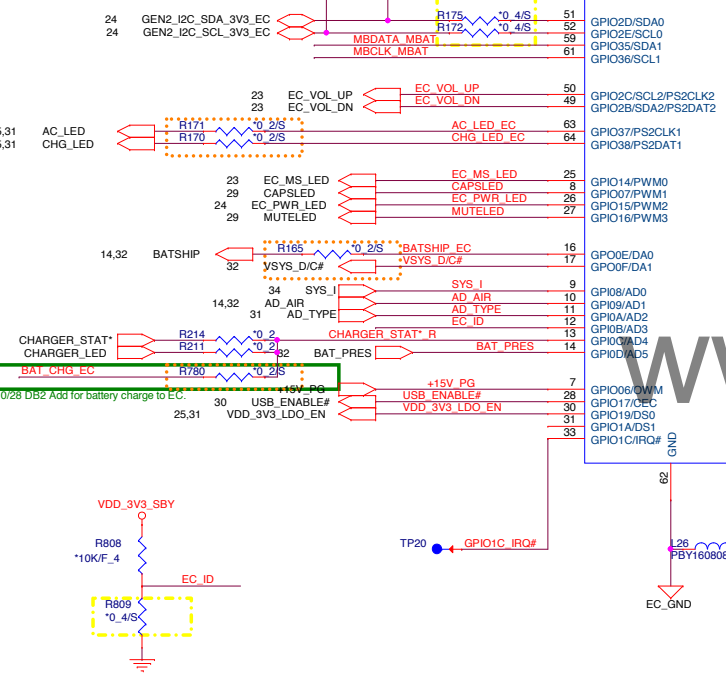
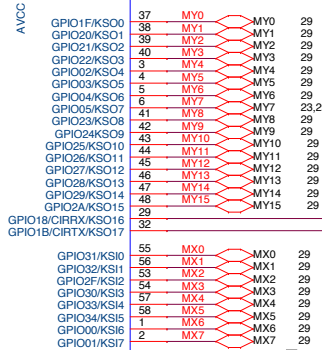
Decoupling



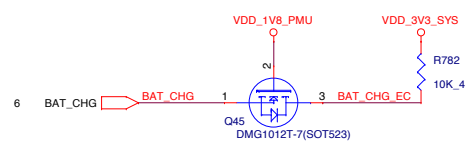
0111 modify C80 & C77



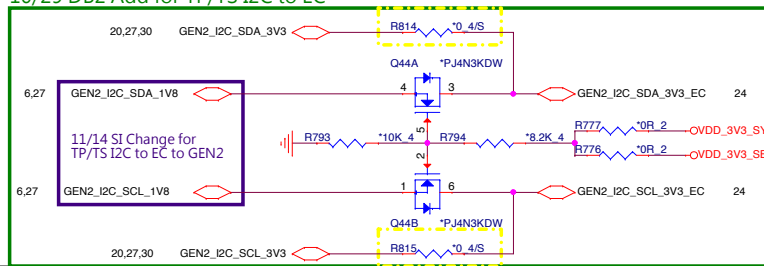
IO3730Q B1



11/26 SI : Charge LED



10/29 DB2 Add for TP/TS I2C to EC



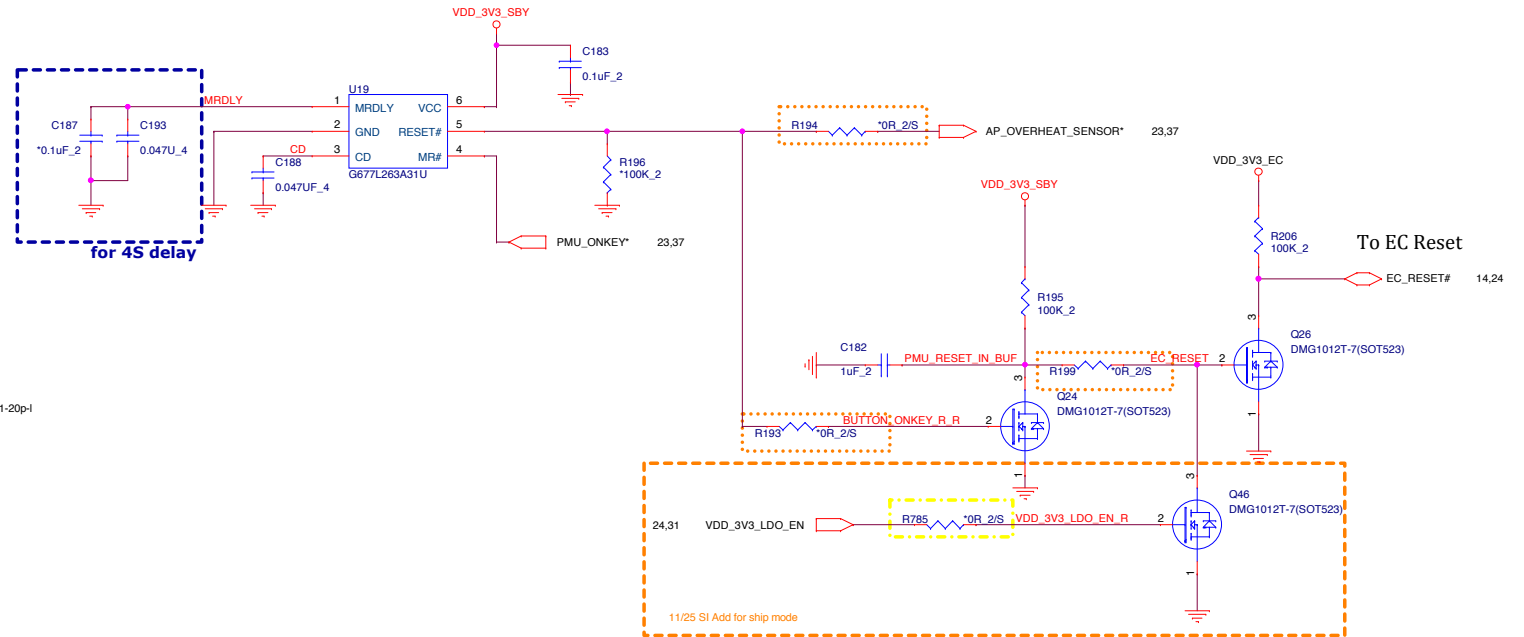
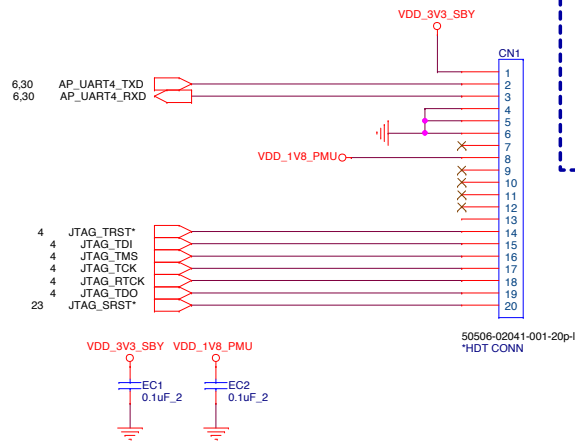
PROJECT : Y03, Bowser
Quanta Computer Inc.

Size	Document Number	Rev
Custom	EC ENE IO3730Q	1A
Date: Friday, March 14, 2014	Sheet 24 of 38	

OPTIONAL DEBUGGER CONNECTOR

$$\text{TMR(ms)} = 88000 \times \text{CMR} (\mu\text{F})$$

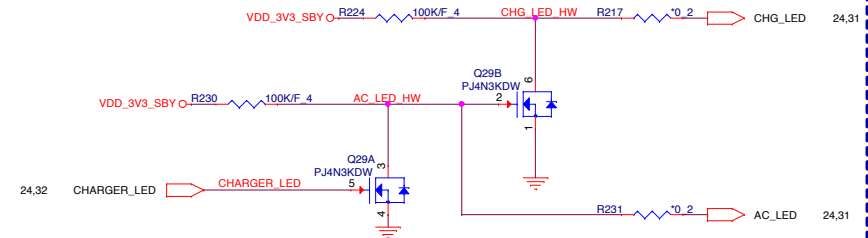
MB to JTAG/UART BOARD

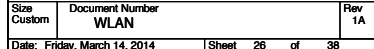


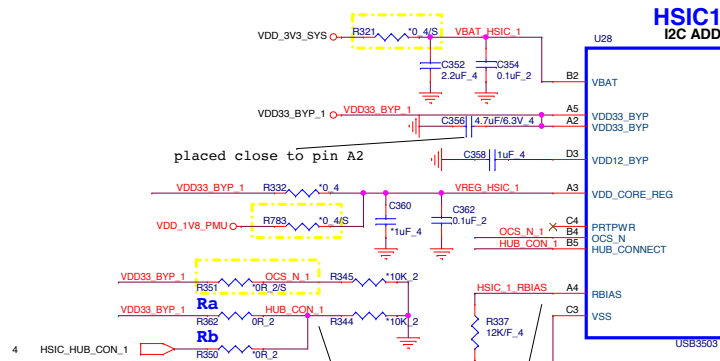
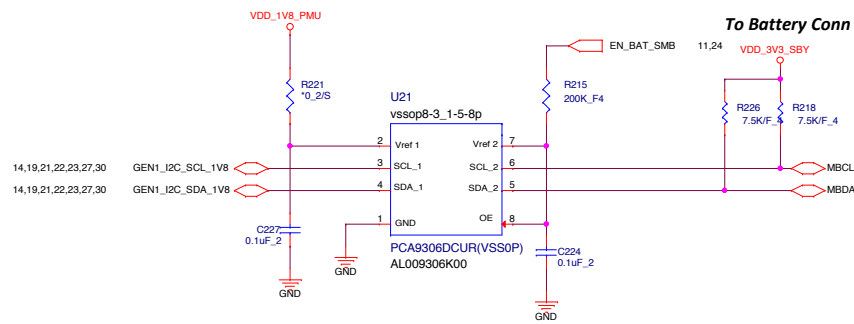
www.aitech1.ru

SLATE Adaptor LED

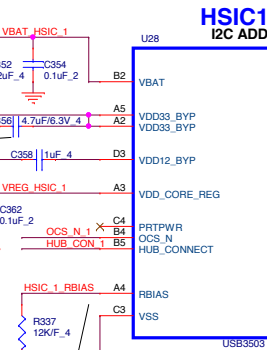
Adaptor LED circuit when system shut down



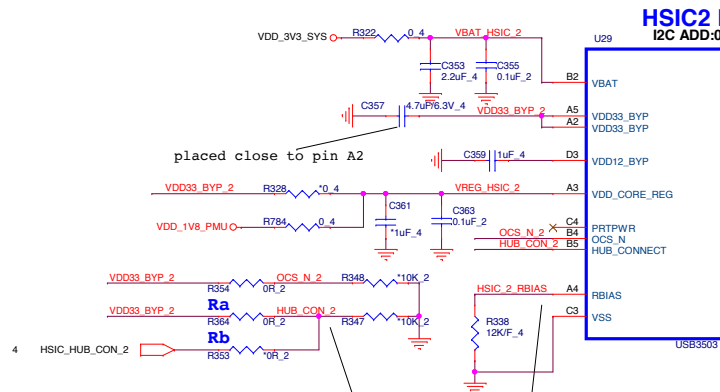




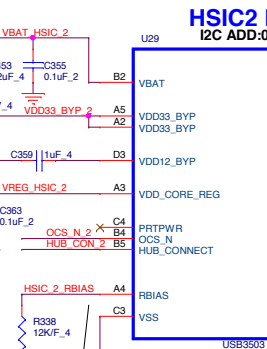
1. Stuff Ra USB3503 default.
2. Stuff Rb HUB_CONNECT control by SOC:
USB3503 setting by I2C.



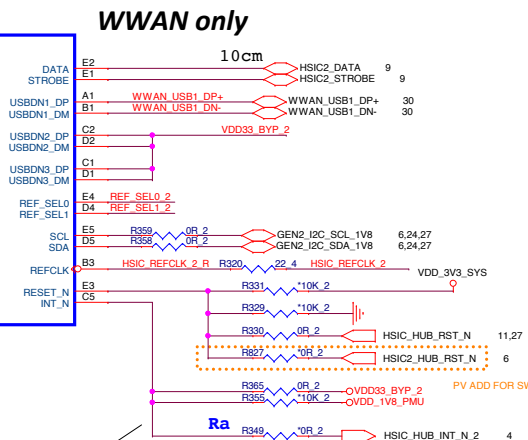
1. placed close to pin A4
2. HSIC_1_RBIAS width 10 mil



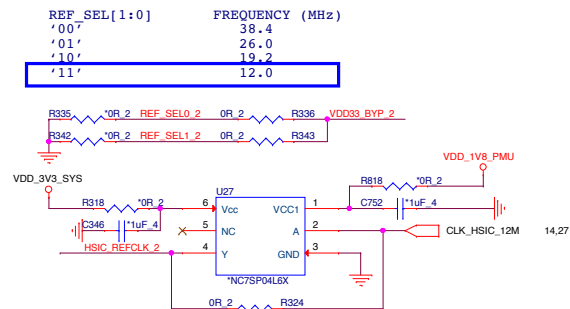
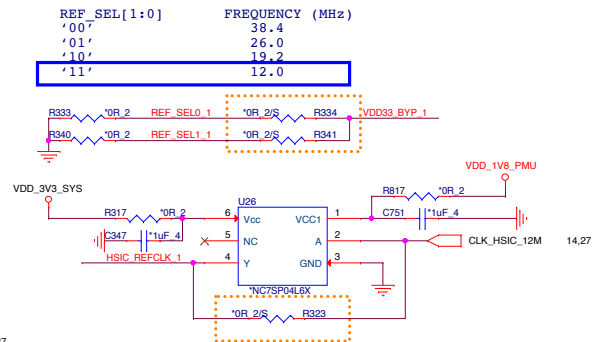
1. Stuff Ra USB3503 default.
2. Stuff Rb HUB_CONNECT control by SOC:
USB3503 setting by I2C.

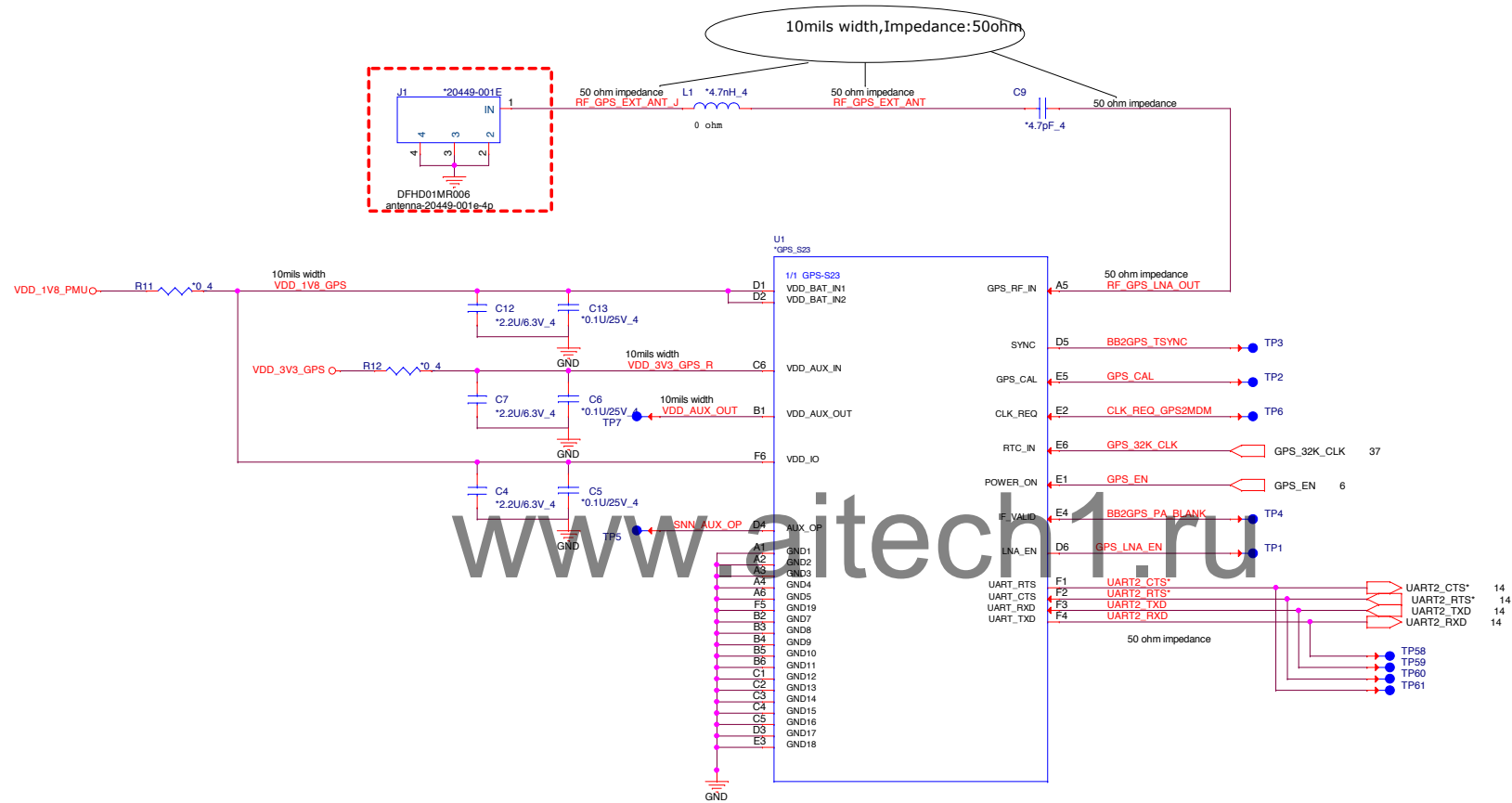


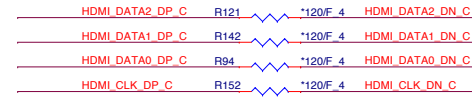
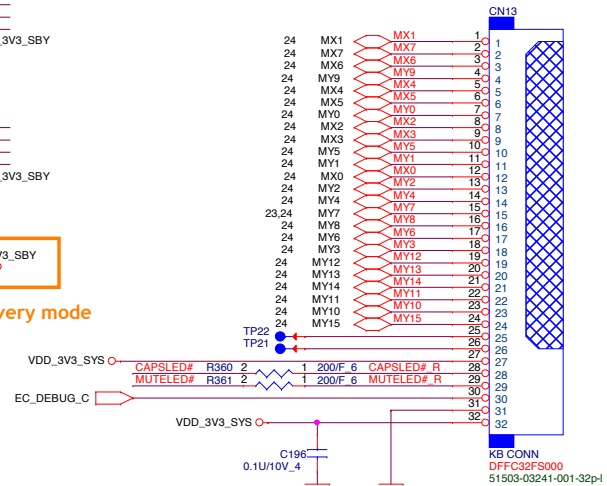
1. placed close to pin A4
2. HSIC 2 RBIAS width 10 mil

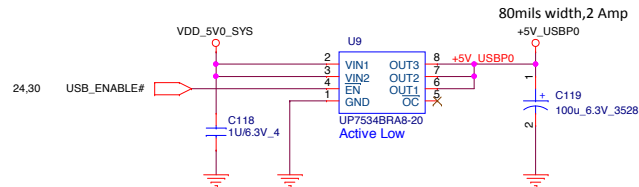
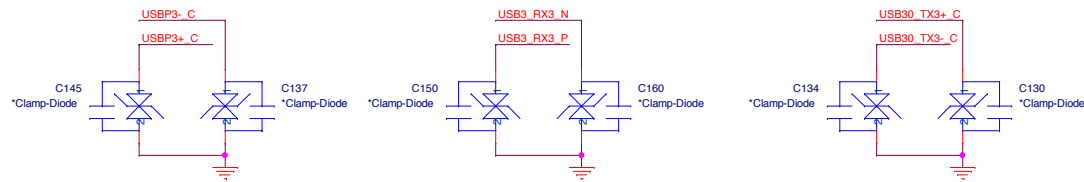


1. If not use INT_N, please keep high for control REFCLK.
2. If use INT_N, please stuff Ra for contact SOC.

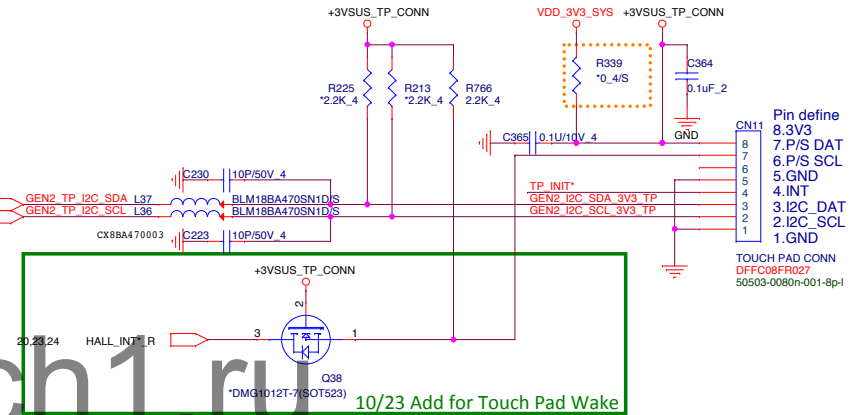
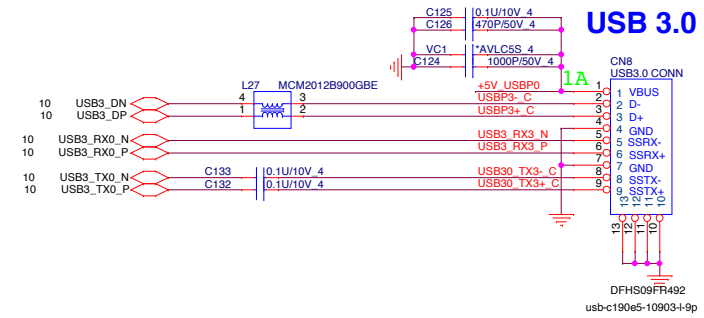
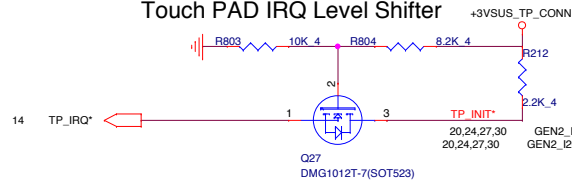




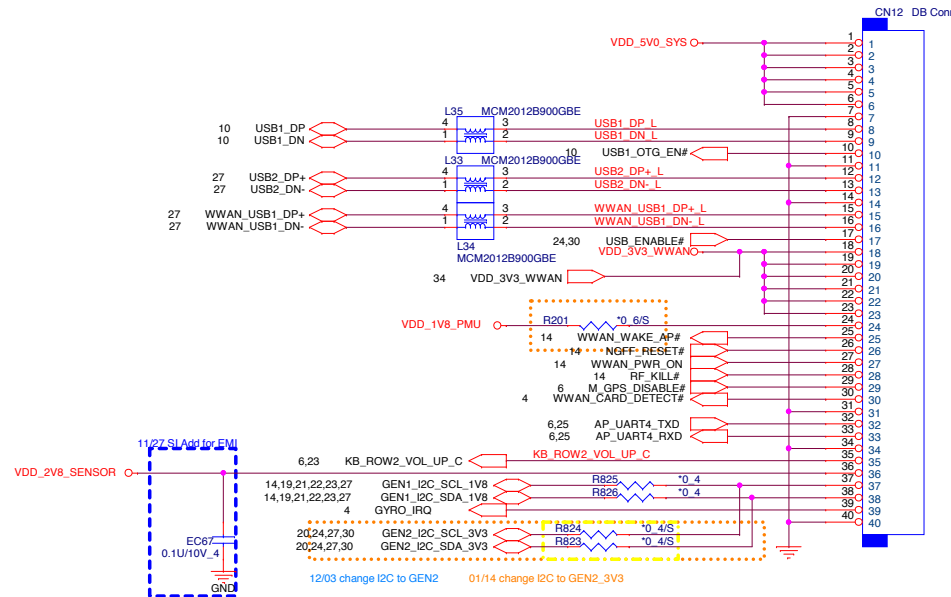
[illegible]



Touch PAD IRQ Level Shifter



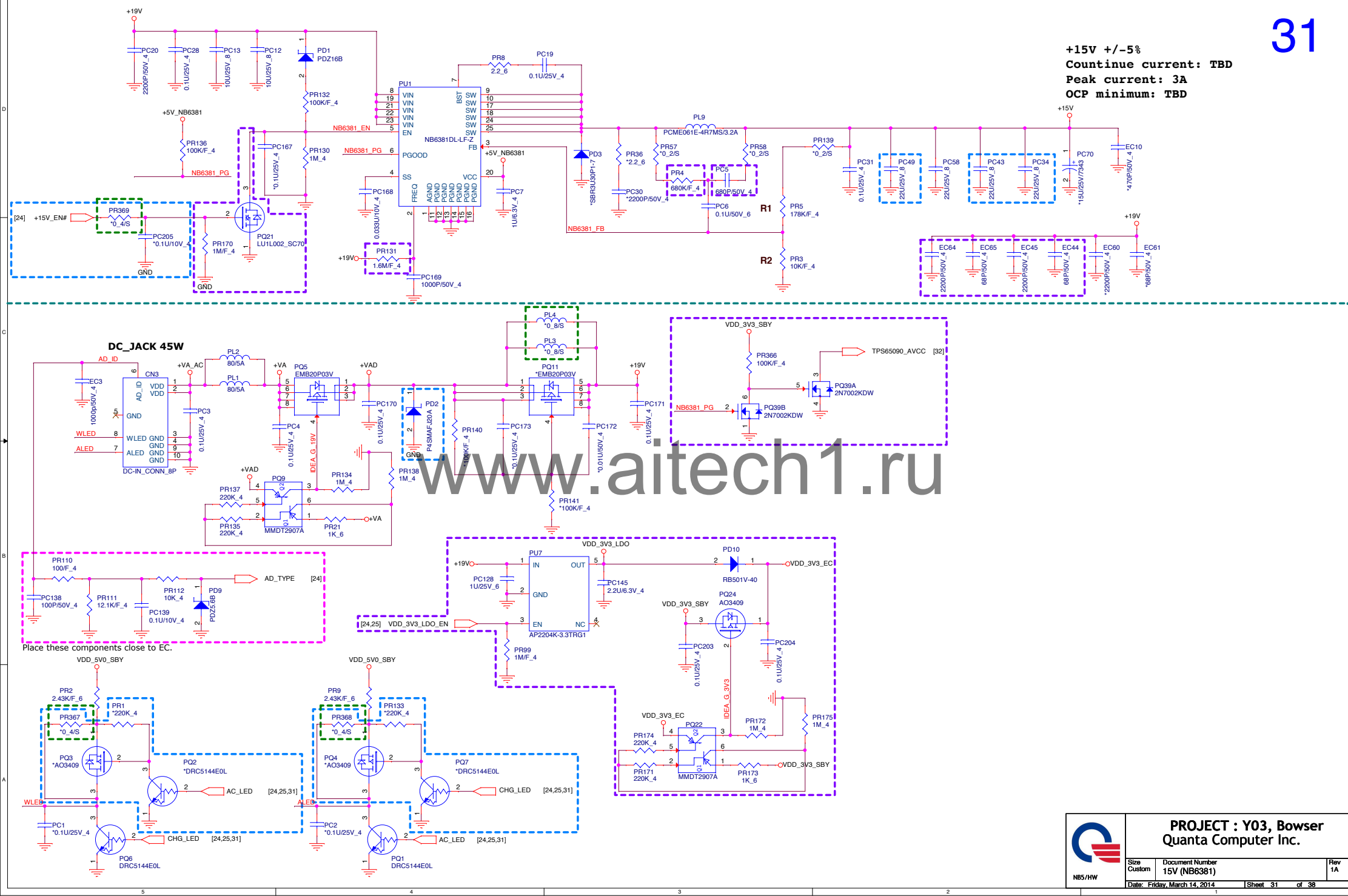
www.aitech1.ru



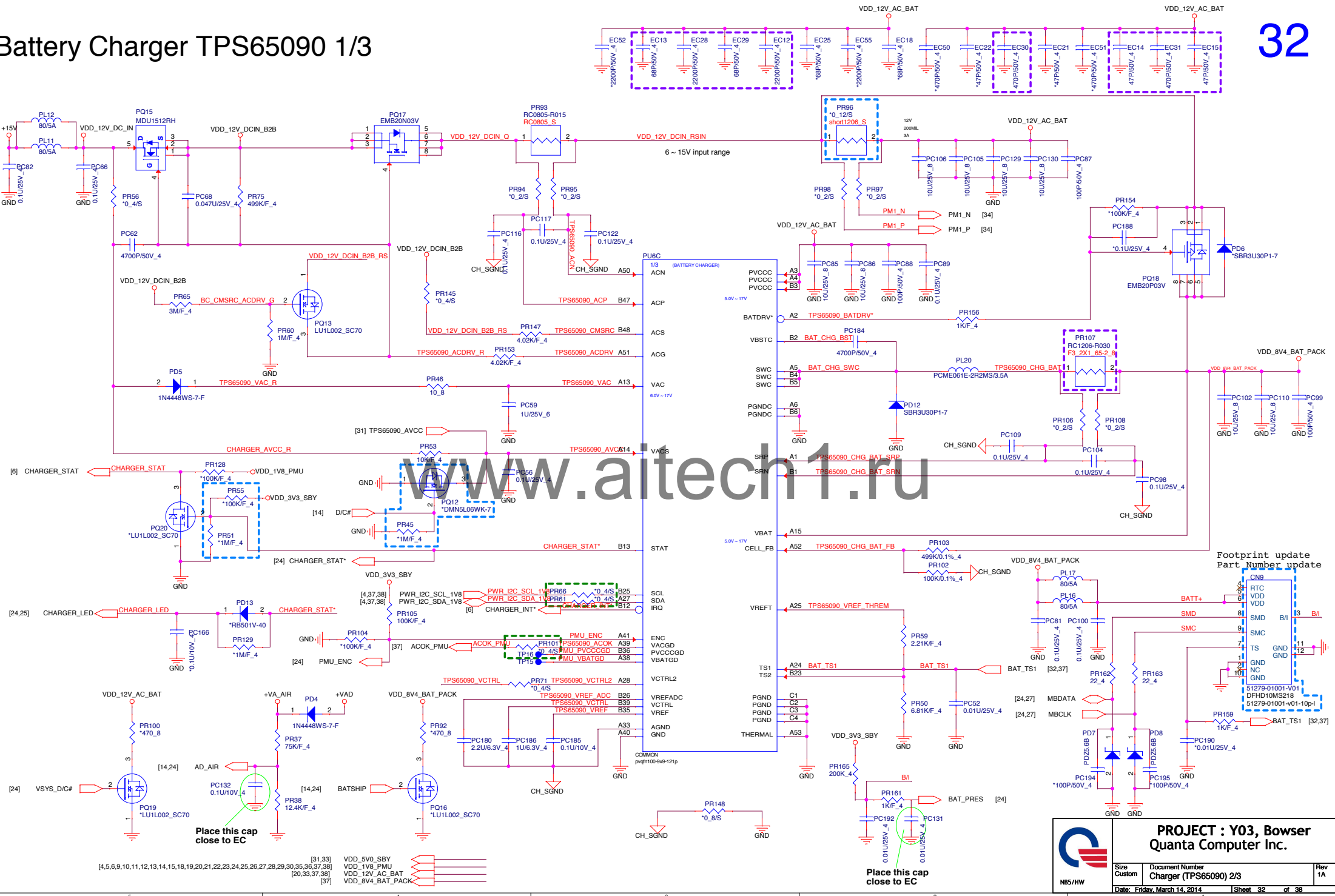
**PROJECT : Y03, Bowser
Quanta Computer Inc.**

Size	Document Number	Rev
Custom	DB/TP/USB3.0	1A
Date: Friday, March 14, 2014	Sheet 30 of 38	

+15V +/-5%
Countinue current: TBD
Peak current: 3A
OCp minimum: TBD

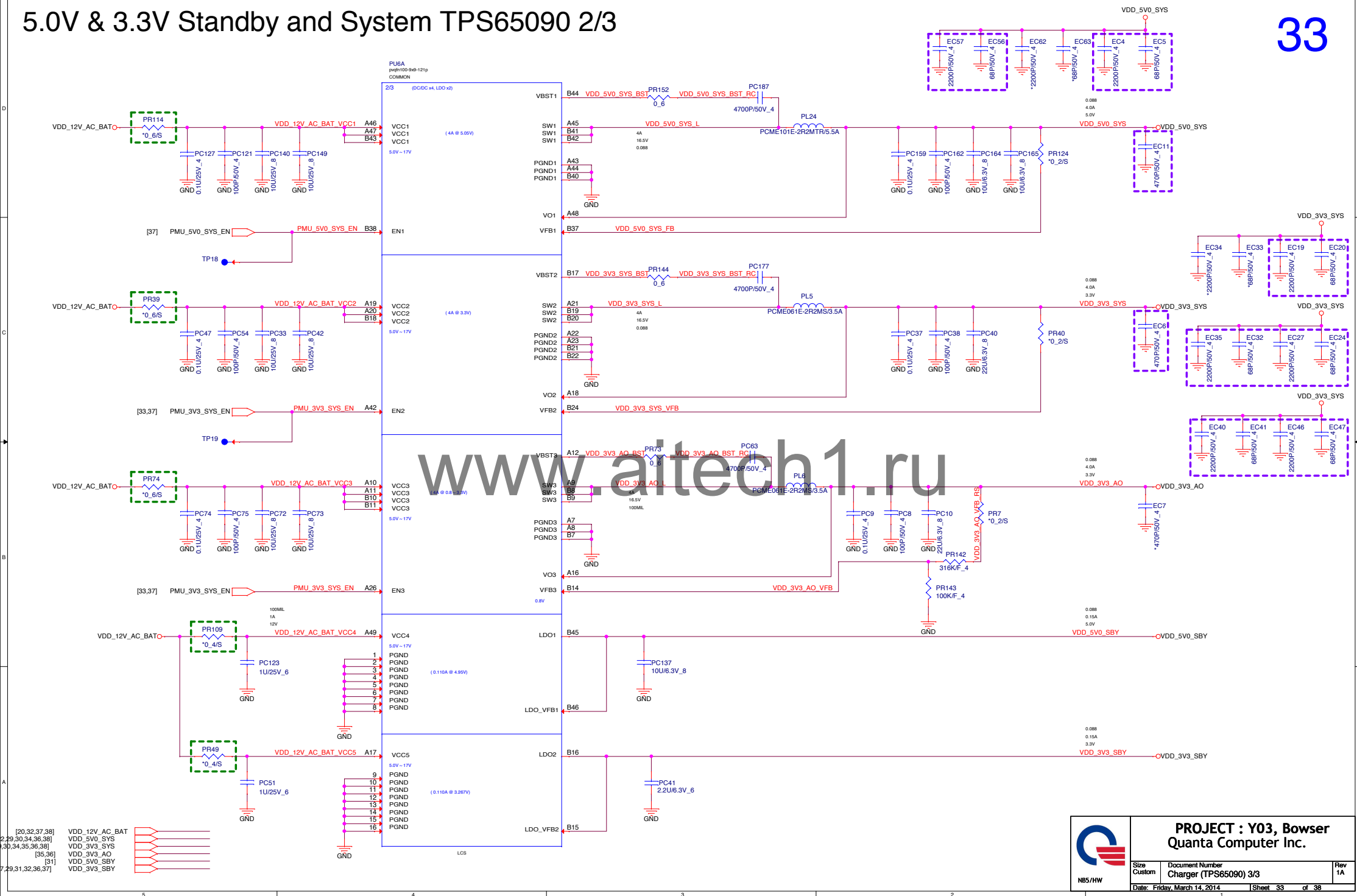


Battery Charger TPS65090 1/3

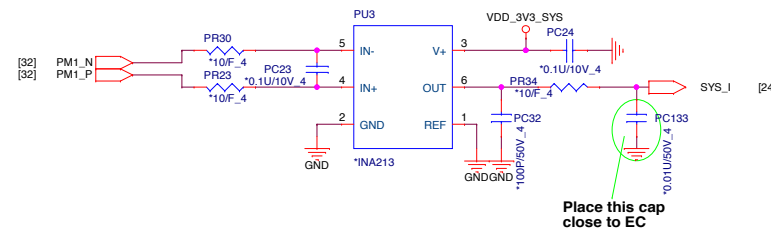
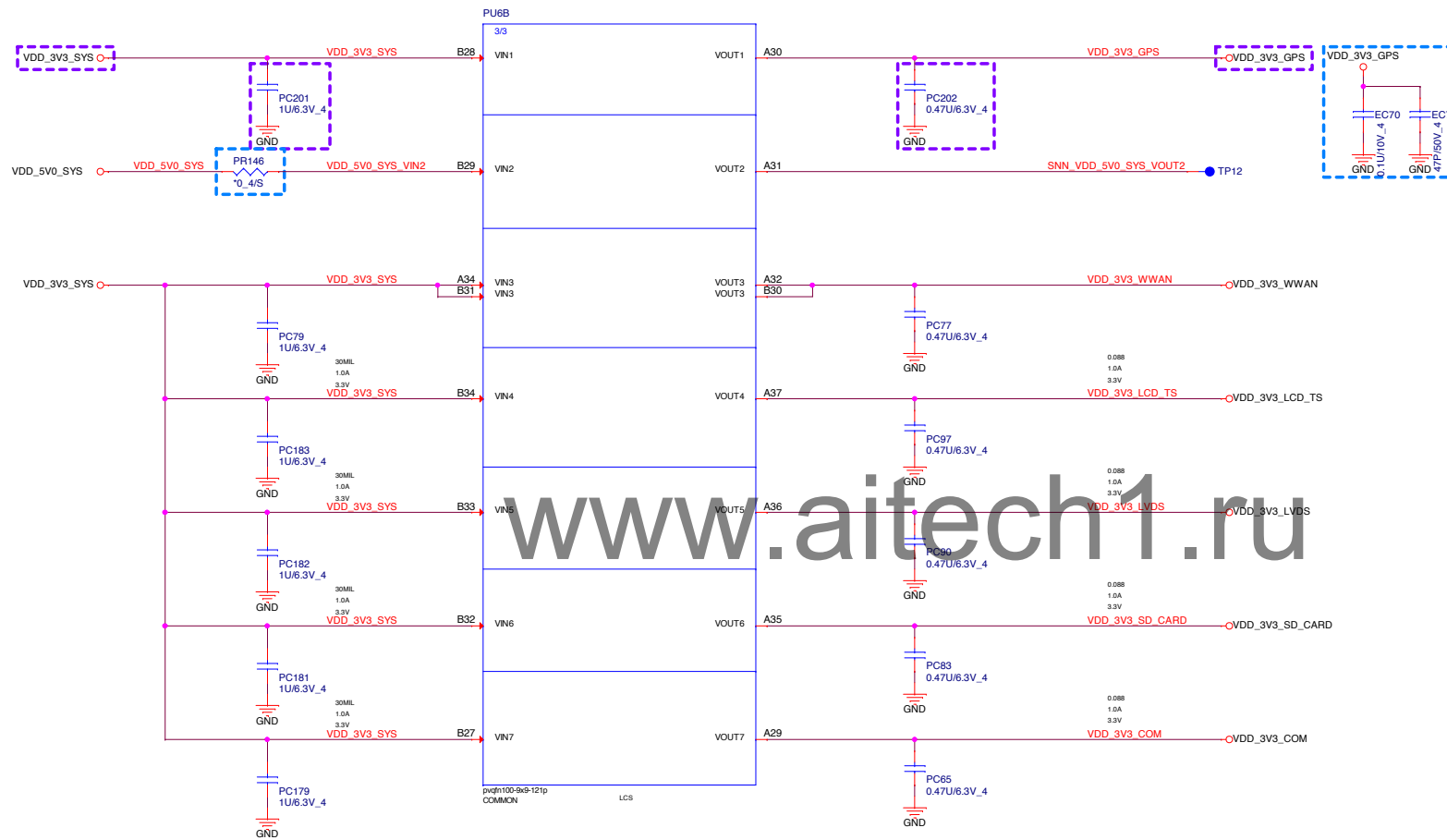


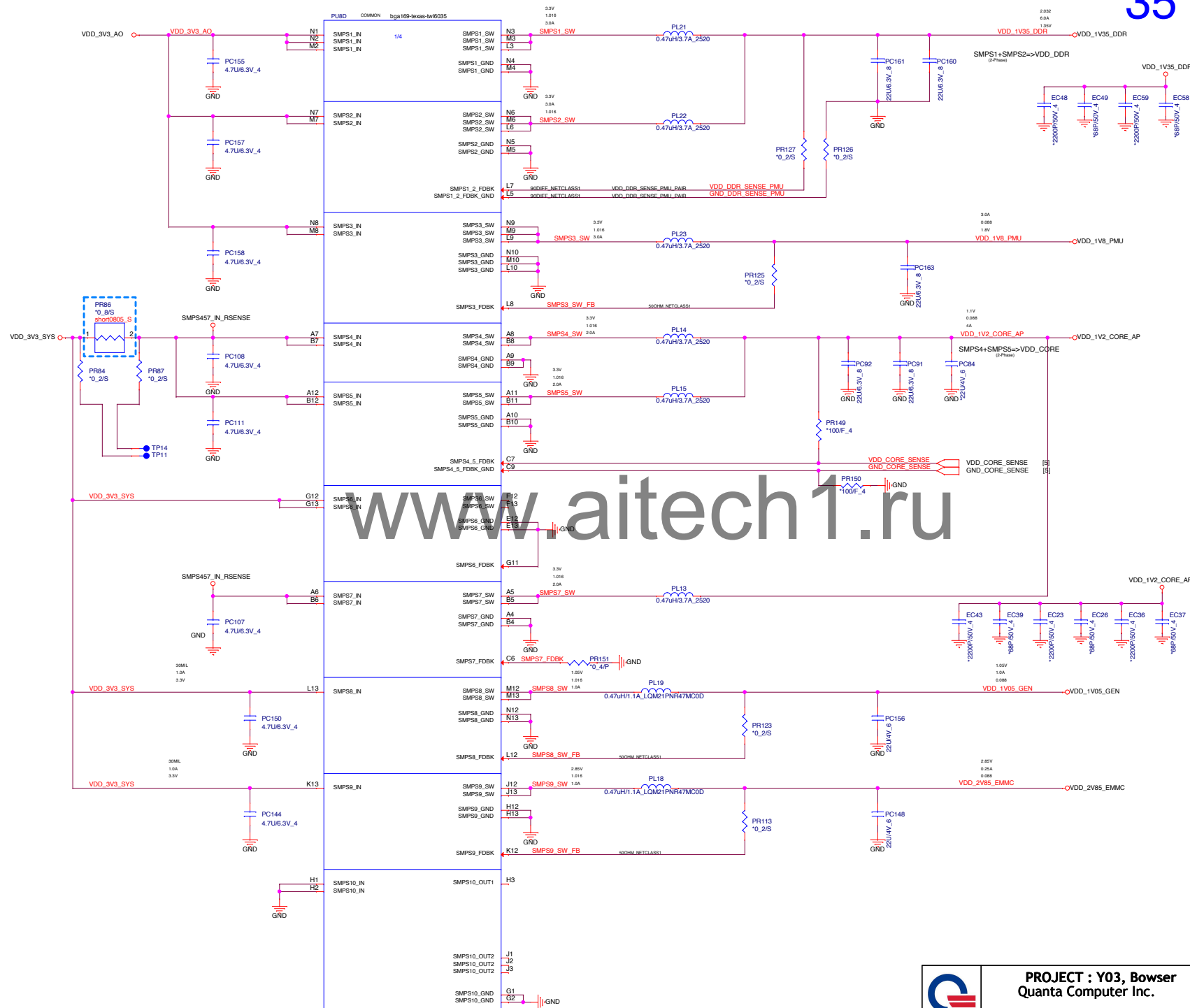
5.0V & 3.3V Standby and System TPS65090 2/3

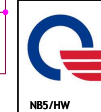
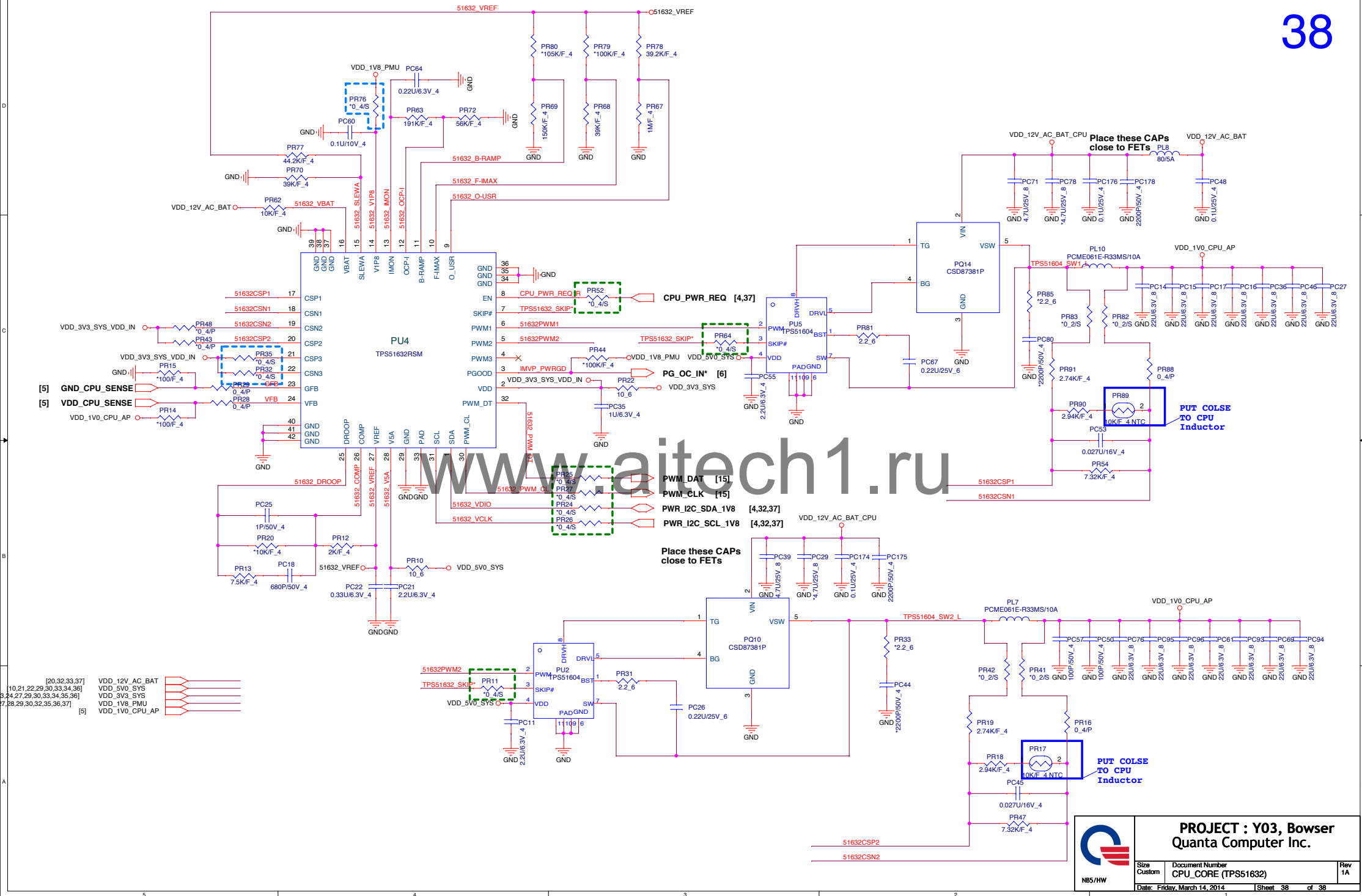
33



LOAD SWITCHES TPS65090 3/3







**PROJECT : Y03, Bowser
Quanta Computer Inc.**

Size	Document Number	Rev
Custom	CPU_CORE (TPS51632)	1A
Date: Friday, March 14, 2014	Sheet 38	of 38