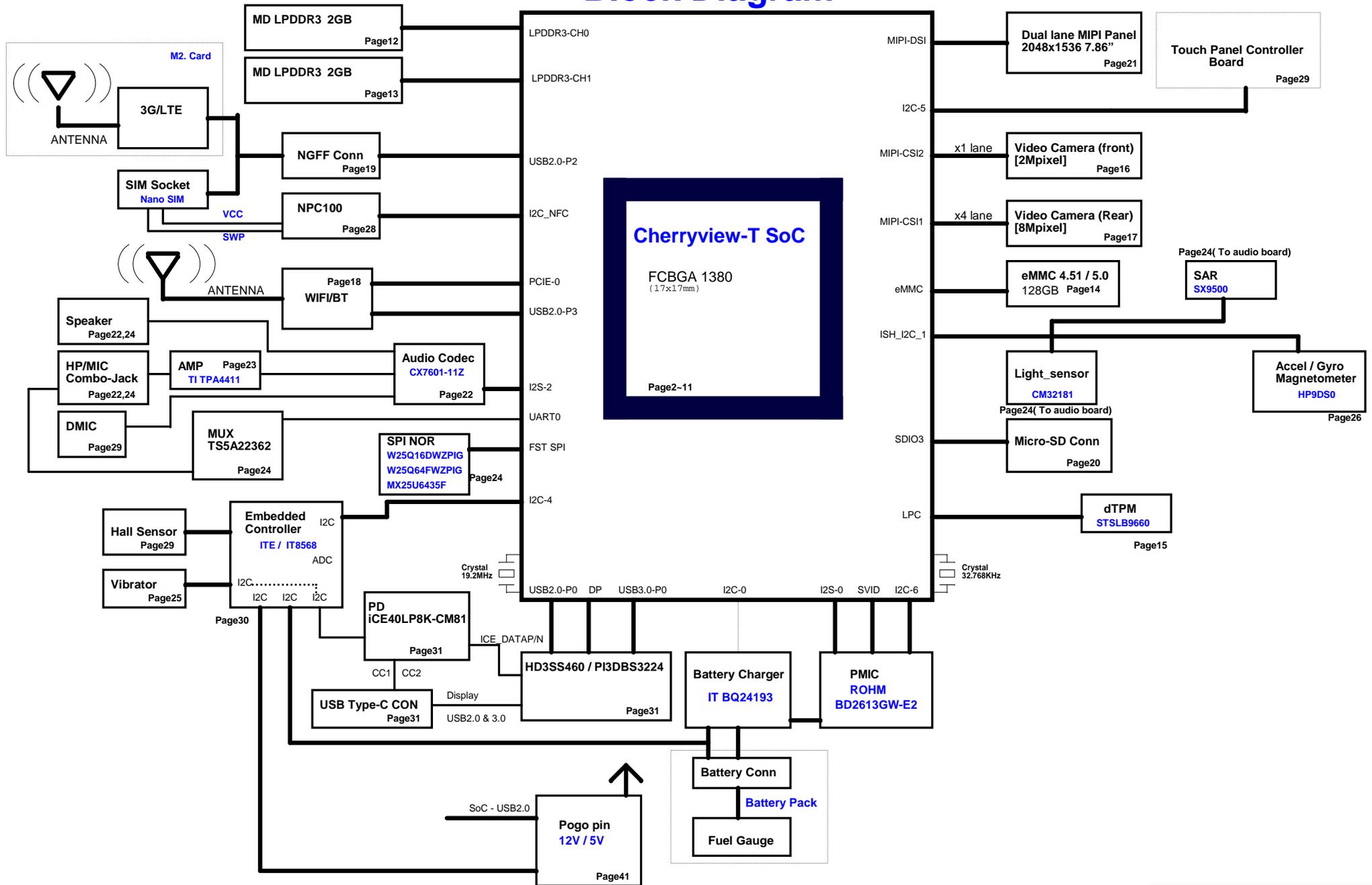
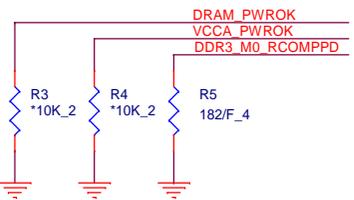
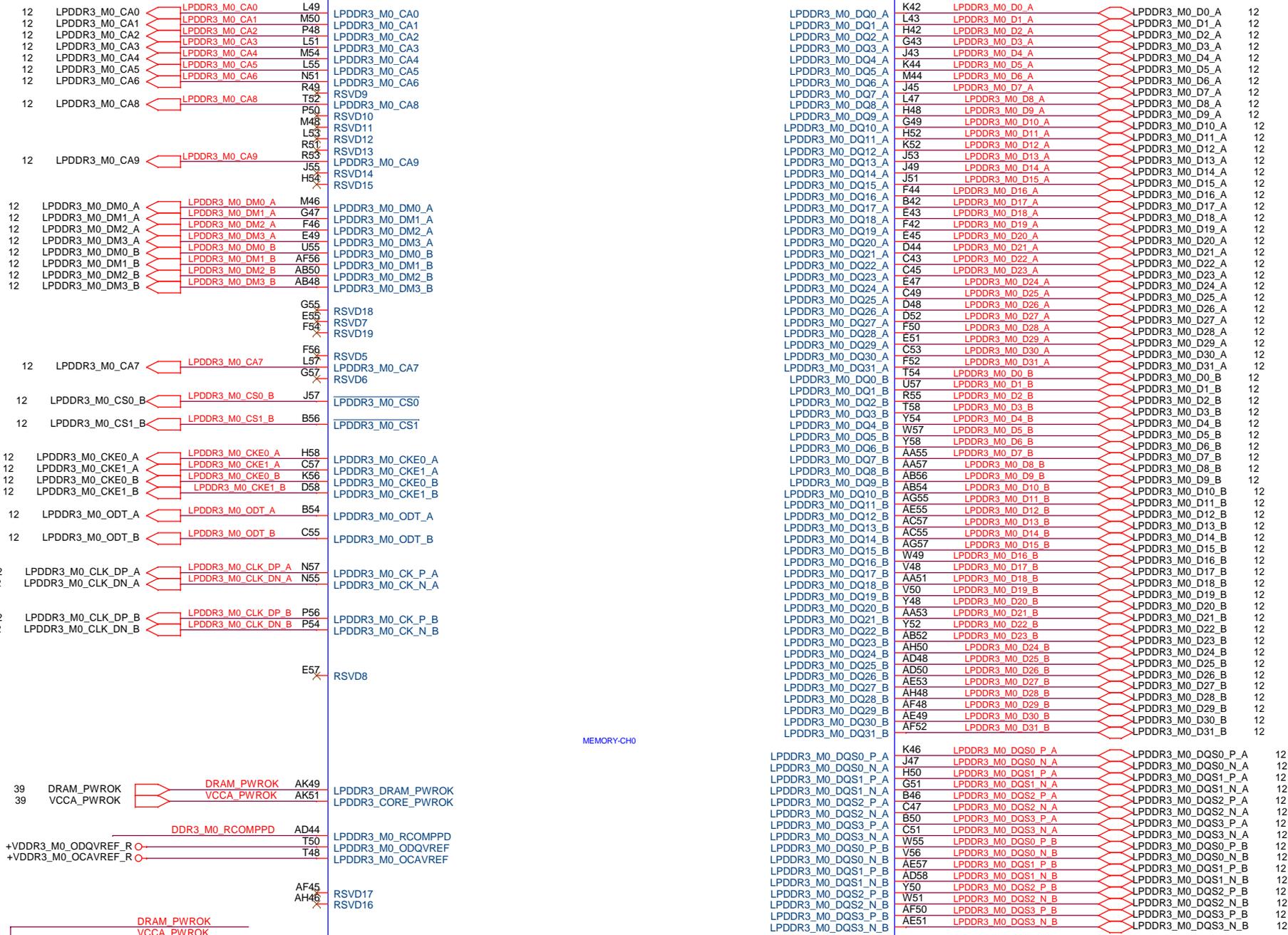


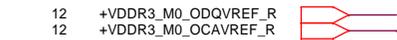
Intel Cherry Trail-T Platform Block Diagram



U1A soc_cnv



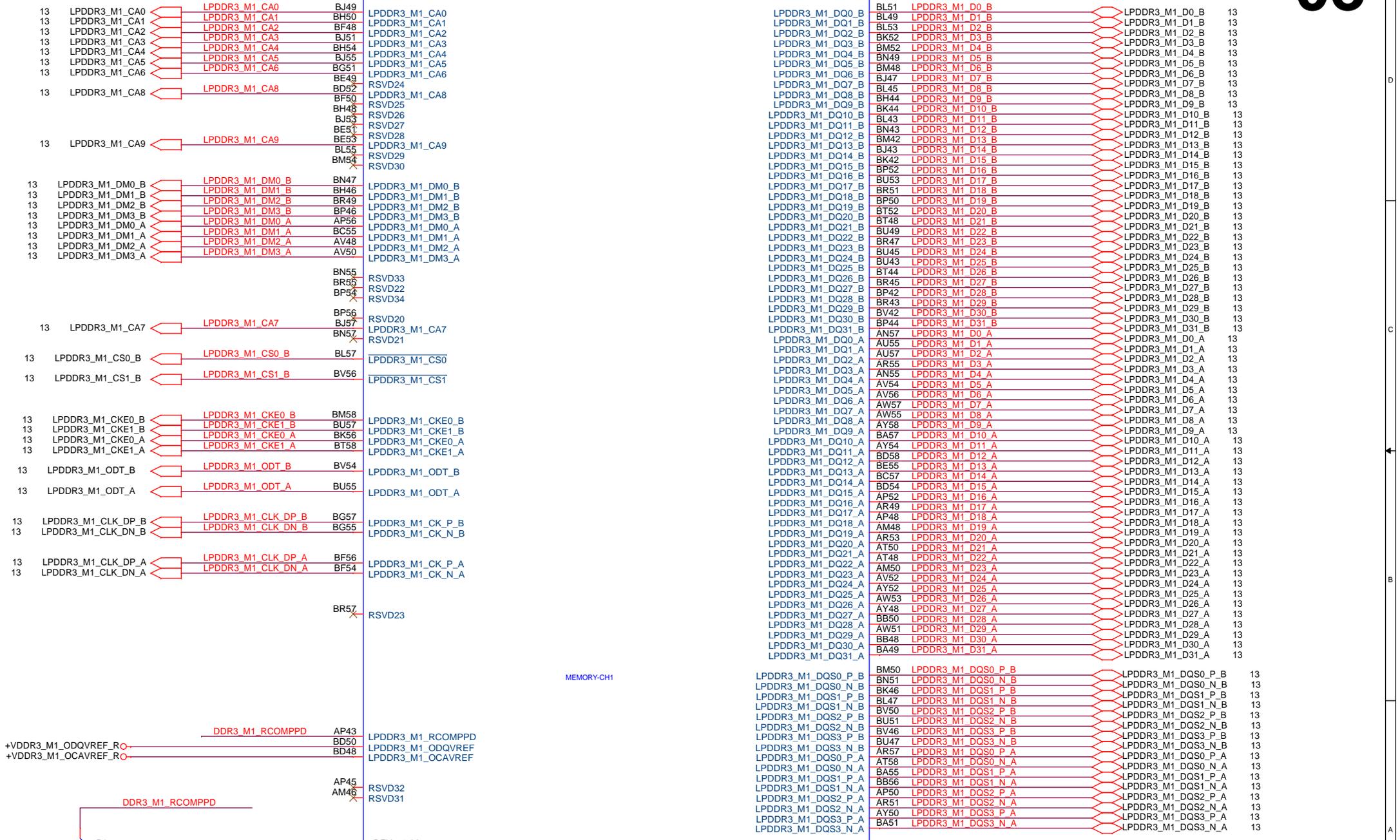
REV = 1.0A
SOC_CNV/BGA 1 OF 11



PROJECT : Eagle
Quanta Computer Inc.

Size	Document Number	Rev
	Cherryview-T (Memory 0,1)	1A
Date:	Wednesday, January 14, 2015	Sheet 2 of 44

U1B SOC_CHV

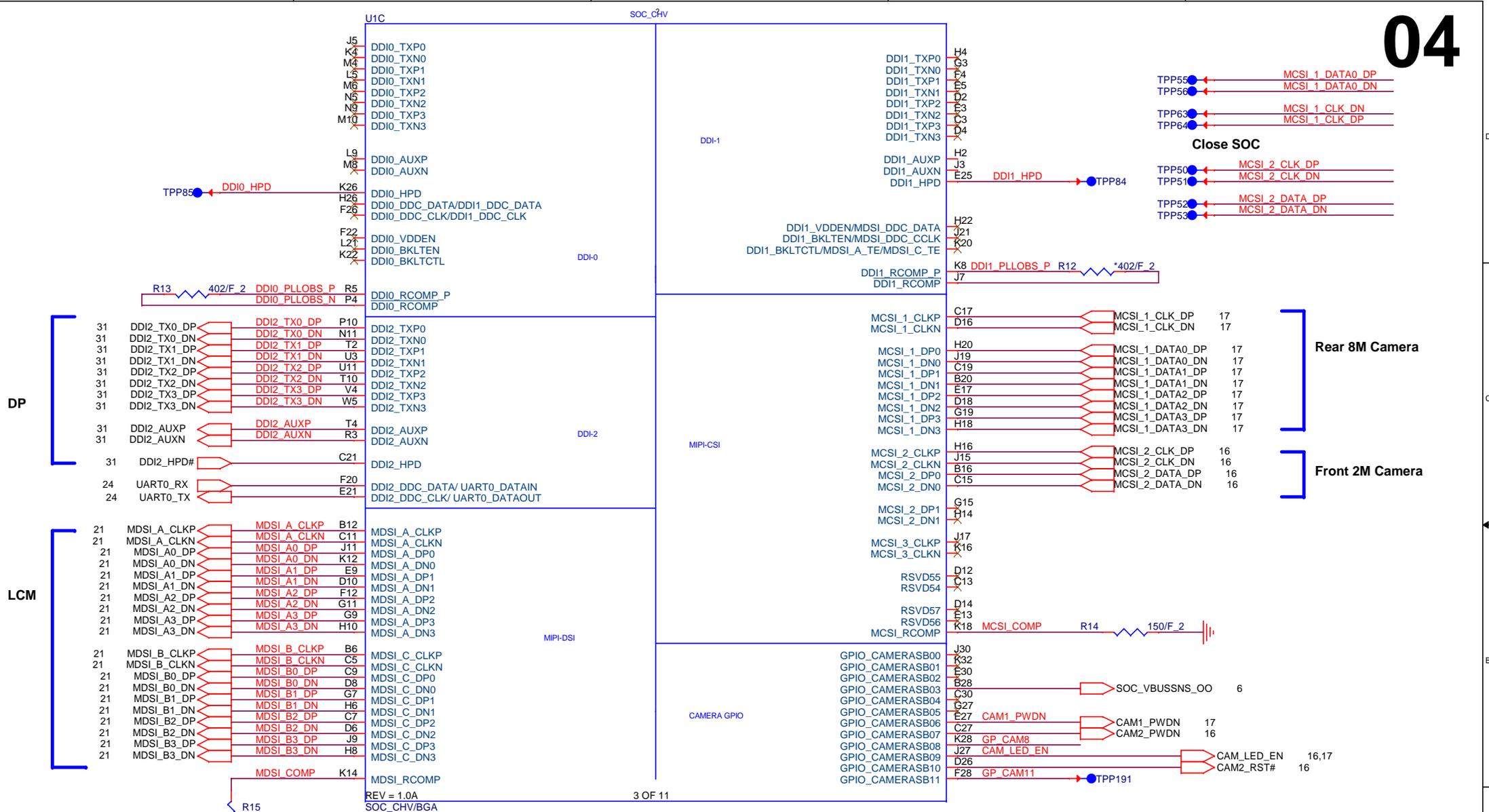


REV = 1.0A SOC_CHV/BGA 2 OF 11 IC

PROJECT : Eagle
Quanta Computer Inc.

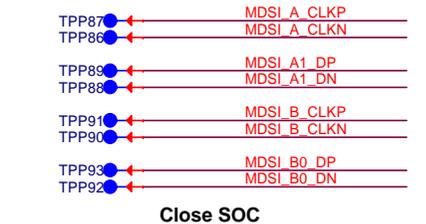
Size: NBS/HW Document Number: Cherryview-T (Memory 0,1) Rev 1A

Date: Wednesday, January 14, 2015 Sheet 3 of 44

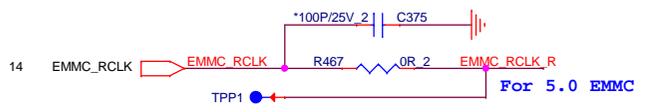
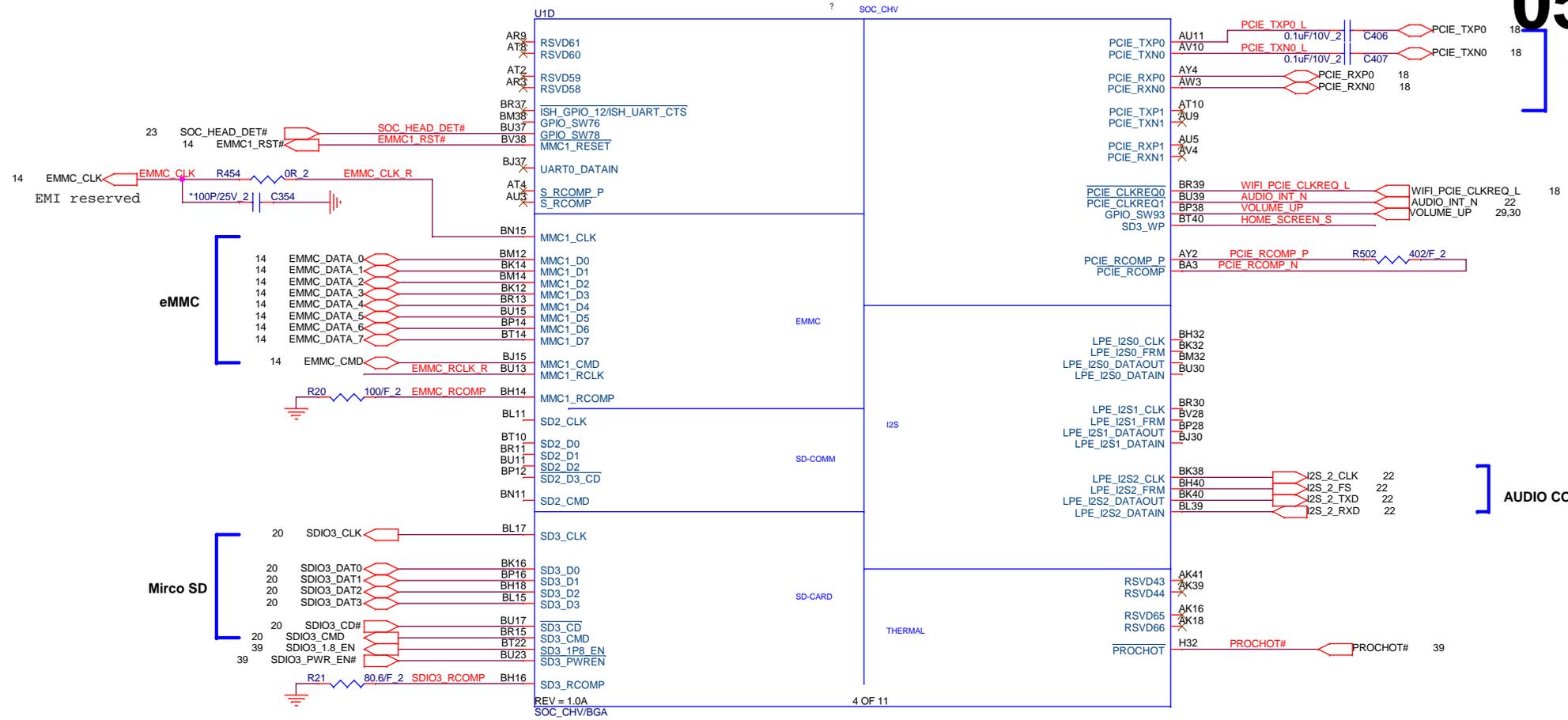


Hardware Strap

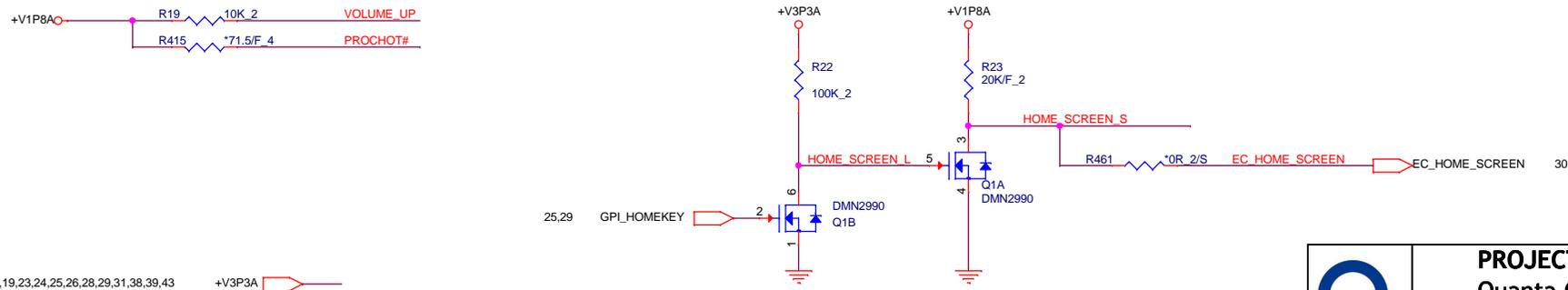
Pin Name	Purpose	Polarity	Internal PU/PD	
GPIO_CAMERAB08	ICLK Xtal OSC Bypass	0 = No Bypass 1 = Bypass	PD	+V1P8A \rightarrow R16 \rightarrow *1K 2 GP_CAM8
GPIO_CAMERAB09	CCU SUS RO Bypass	0 = No Bypass 1 = Bypass	PD	+V1P8A \rightarrow R17 \rightarrow *1K 2 CAM_LED_EN
GPIO_CAMERAB11	RTC OSC Bypass	0 = No Bypass 1 = Bypass	PD	+V1P8A \rightarrow R18 \rightarrow *1K 2 GP_CAM11



PROJECT : Eagle
Quanta Computer Inc.

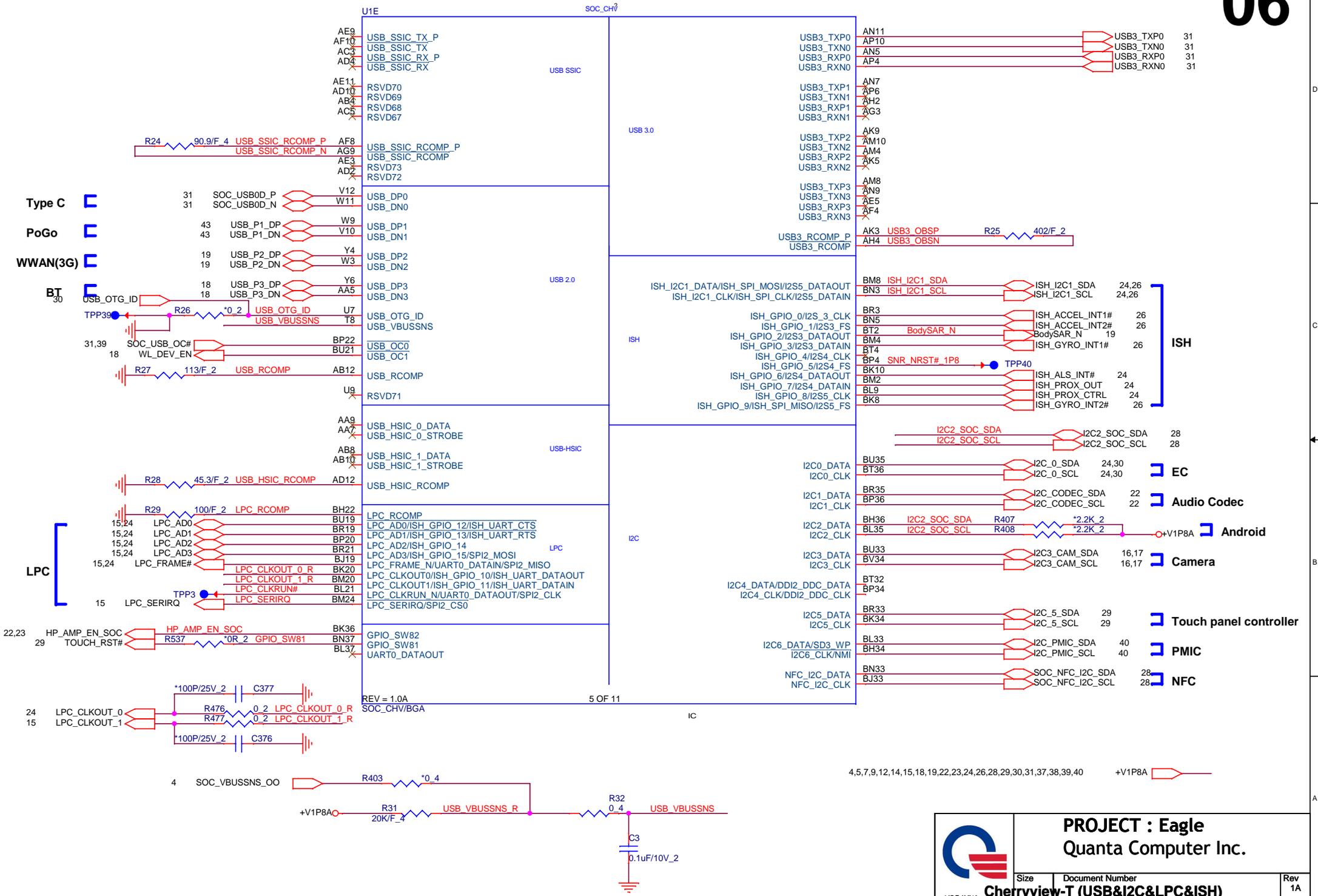


Home Screen Level Shifter

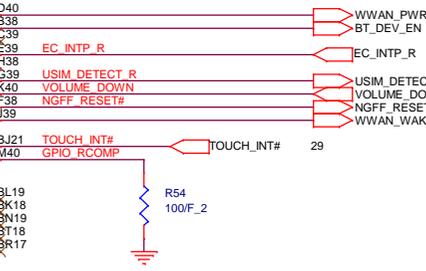
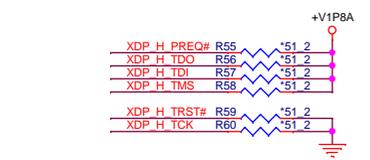
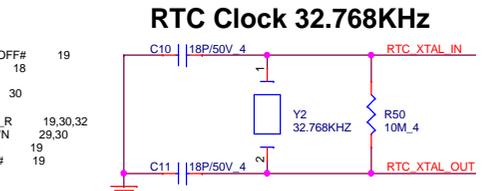
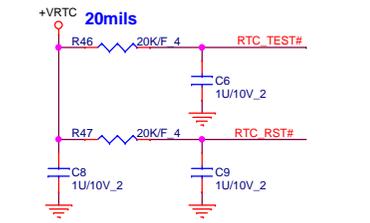
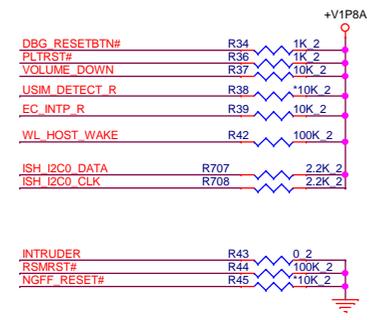
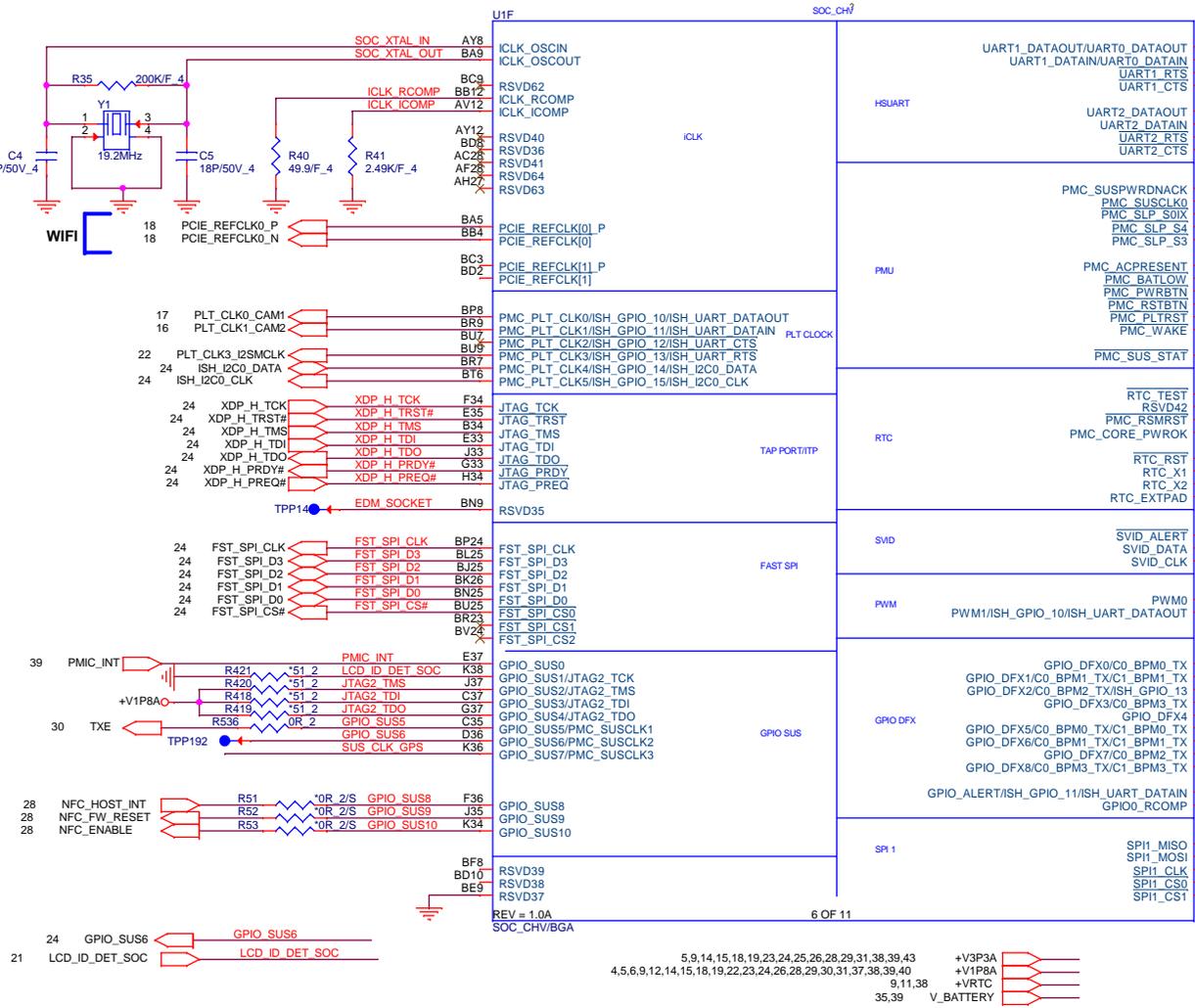


- 9,14,15,18,19,23,24,25,26,28,29,31,38,39,43 → +V3P3A
- 4,6,7,9,12,14,15,18,19,22,23,24,26,28,29,30,31,37,38,39,40 → +V1P8A

	PROJECT : Eagle		Size Document Number Date: Wednesday, January 14, 2015 Sheet 5 of 44	Rev 1A
	Quanta Computer Inc.			
	EAGLE			
Cherryview-T (EMMC&SDIO&I2S)				

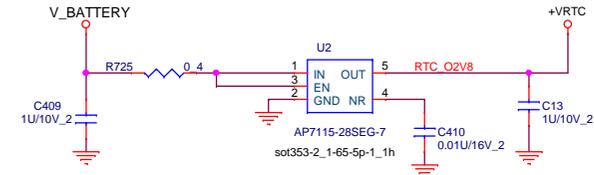


 NB5/HW	PROJECT : Eagle		Rev 1A
	Quanta Computer Inc.		
	Size Cherryview-T (USB&I2C&LPC&ISH)	Document Number	
Date: Wednesday, January 14, 2015		Sheet 6 of 44	



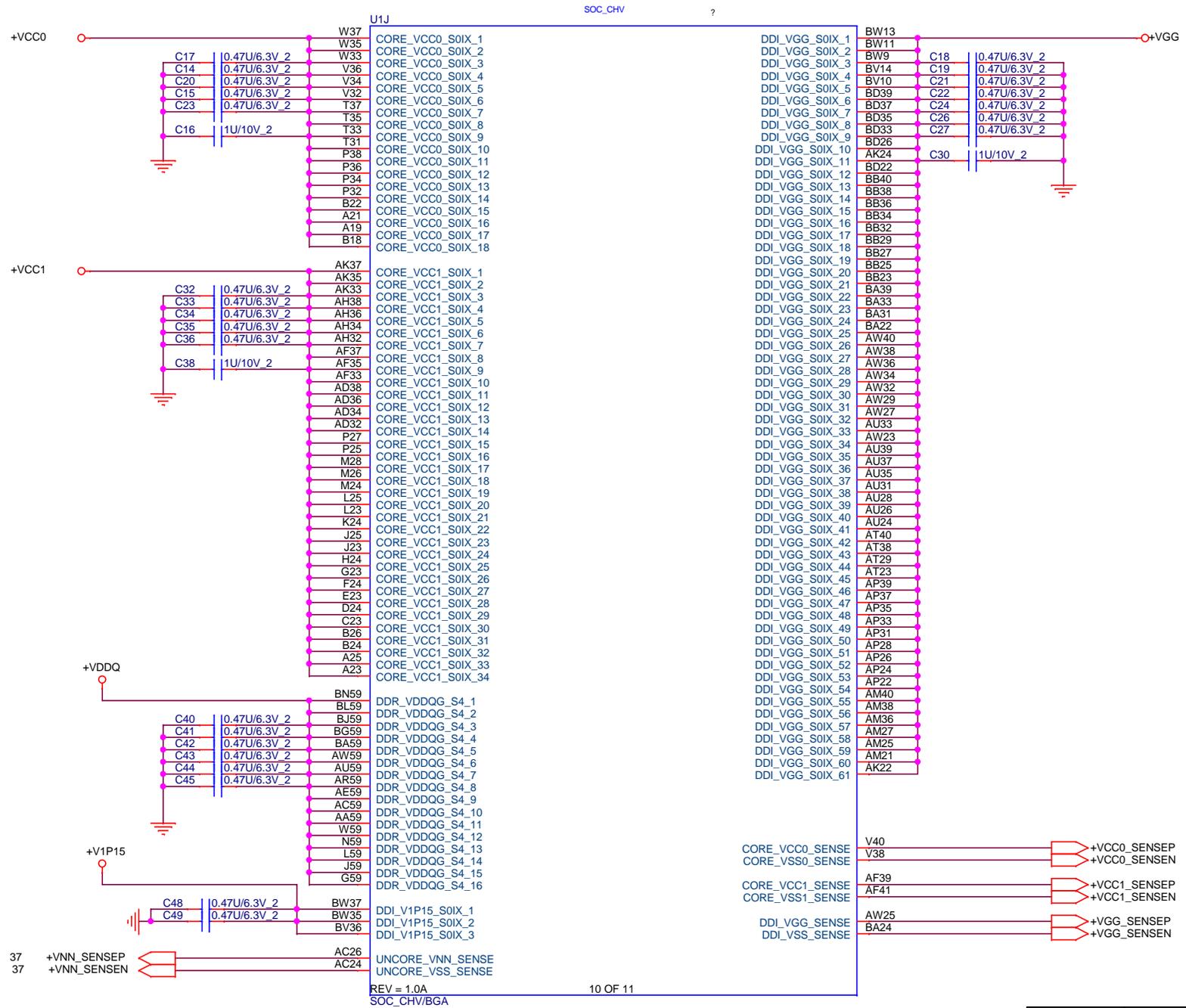
Hardware Strap (EDS1P0)

Pin Name	Purpose	Polarity	Internal PU/PD
GPIO_SUS0	DDI0 Detected	0 = Port DDI0 is not detected 1 = Port DDI0 is detected	PD
GPIO_SUS5	Flash Descriptor Security Override	0 = Override 1 = Normal Operation	PU
GPIO_SUS7	DFX Sus Debug Strap	0 = SUS Debug 1 = No SUS Debug	PU
GPIO_SUS8	SFR Supply Select	0 = Supply is 1.25V 1 = Supply is 1.35V	PD
GPIO_SUS9	ICLK, USB2, DDI SFR Bypass	0 = Use LDOs 1 = Bypass LDOs (supply 1.05V on power pins)	PD
GPIO_SUS10	POSIM Select	0 = Fuse Controller 1 = PMC	PD

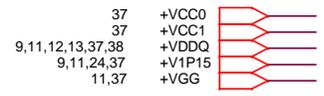


PROJECT : Eagle
Quanta Computer Inc.

Size	Document Number Cherryview-T (CLK/UART/SPI/PMU)	Rev 1A
Date:	Wednesday, January 14, 2015	Sheet 7 of 44

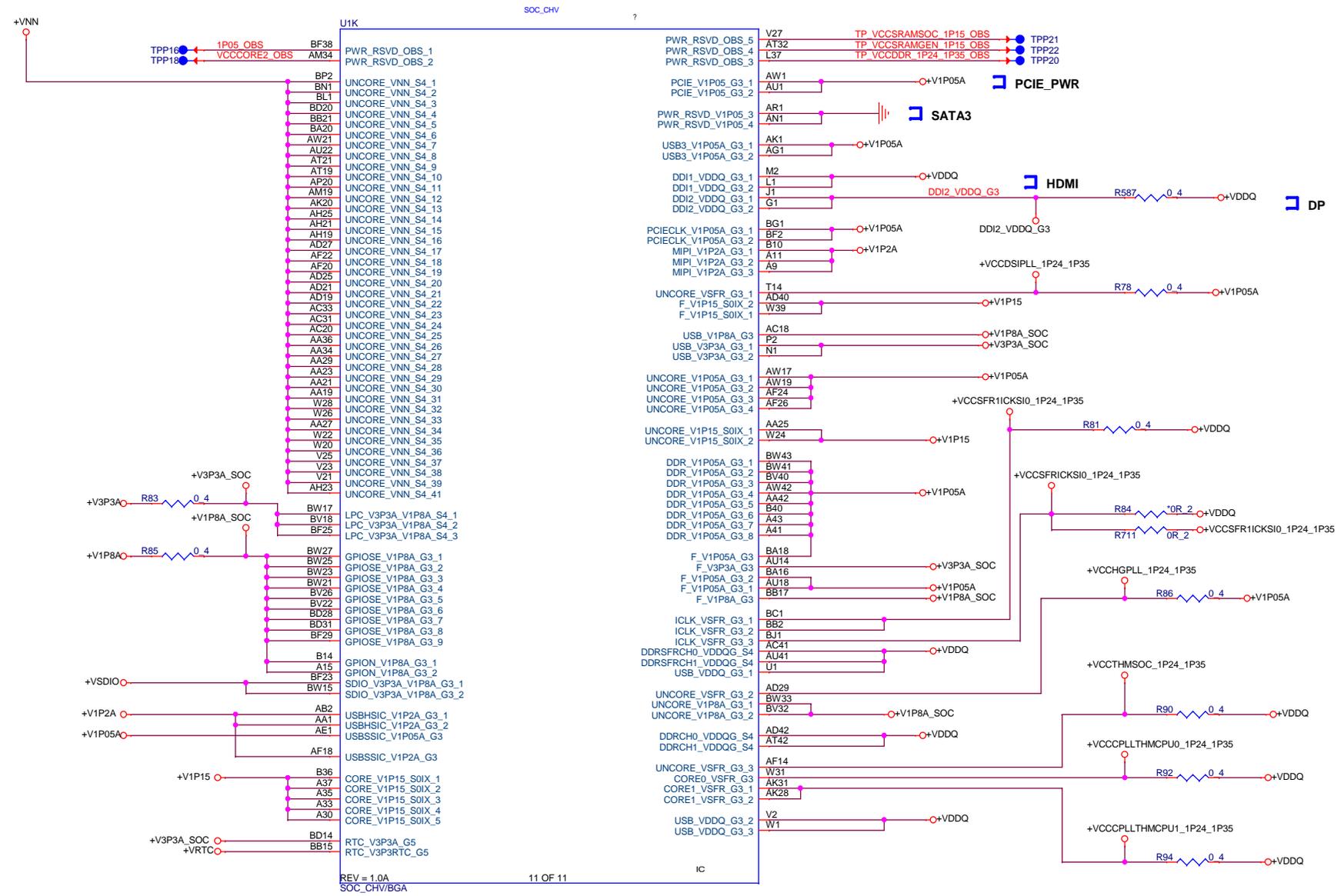


REV = 1.0A
SOC_CHV/BGA 10 OF 11



PROJECT : Eagle
Quanta Computer Inc.
EAGLE

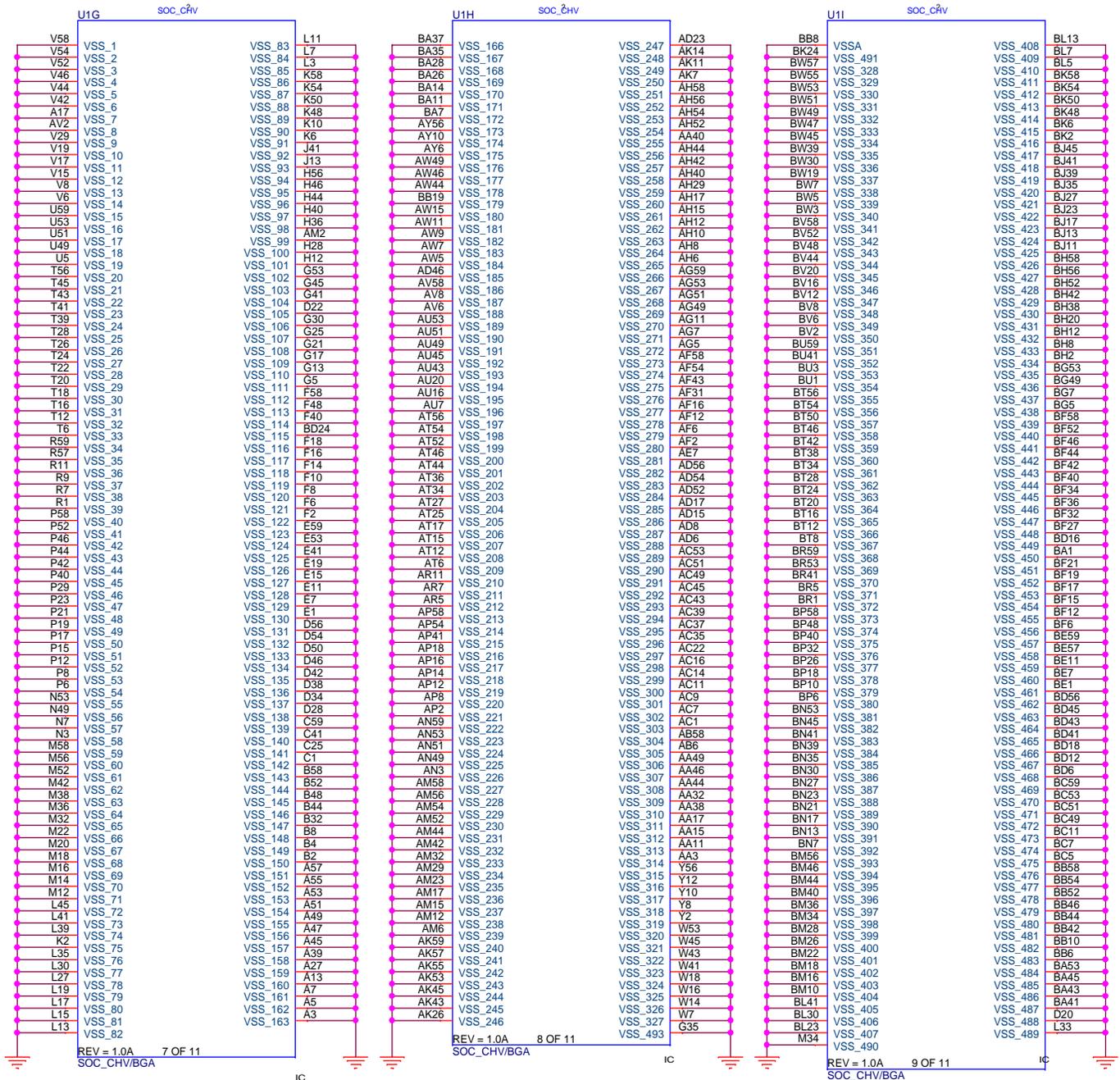
Size	Document Number	Rev
	Cherryview-T (POWER 1/2)	1A
Date:	Wednesday, January 14, 2015	Sheet 8 of 44



11,37	+VNN
5,14,15,18,19,23,24,25,26,28,29,31,38,39,43	+V3P3A
4,5,6,7,12,14,15,18,19,22,23,24,26,28,29,30,31,37,38,39,40	+V1P8A
11,38	+VSDIO
11,38	+V1P2A
11,37,38	+V1P05A
8,11,24,37	+V1P15
7,11,38	+VRTC
8,11,12,13,37,38	+VDDQ

PROJECT : Eagle
Quanta Computer Inc.

Size	Document Number	Rev
	Cherryview-T (POWER 2/2)	1A
Date:	Wednesday, January 14, 2015	Sheet 9 of 44

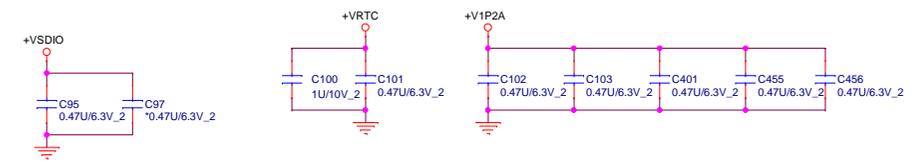
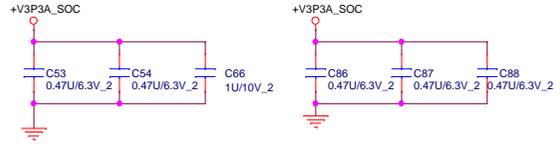
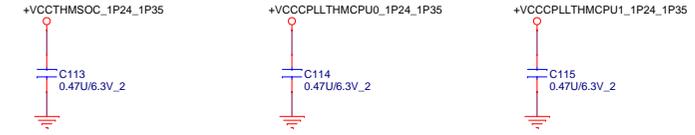
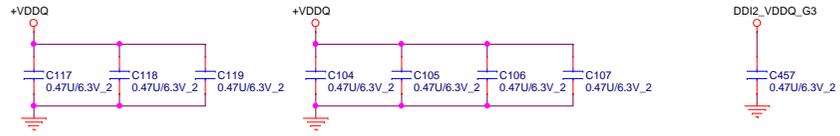
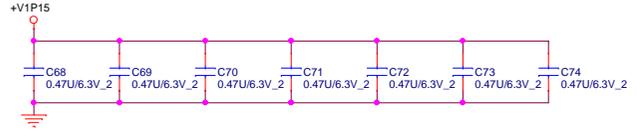
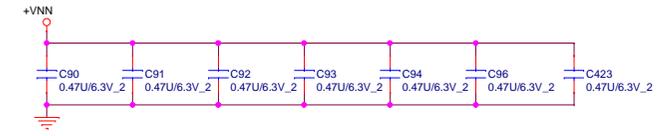
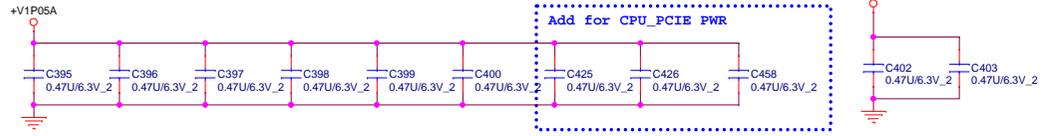
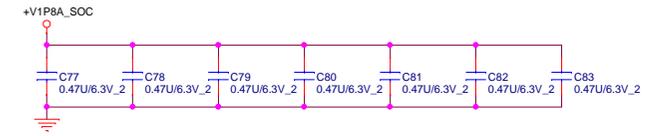
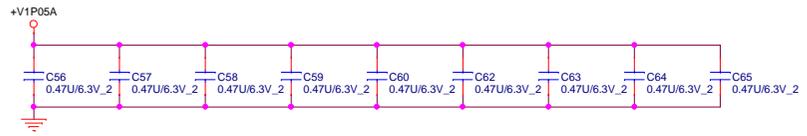


QBCON	TOPB/S	Vender PN
AJ0QH7BUT01	AJ0QH7BUT00	2.0G QH7B
AJ0QH7CUT01	AJ0QH7CUT00	2.0G QH7C
AJ0QHAUUT01	AJ0QHAUUT00	2.16G QHAU



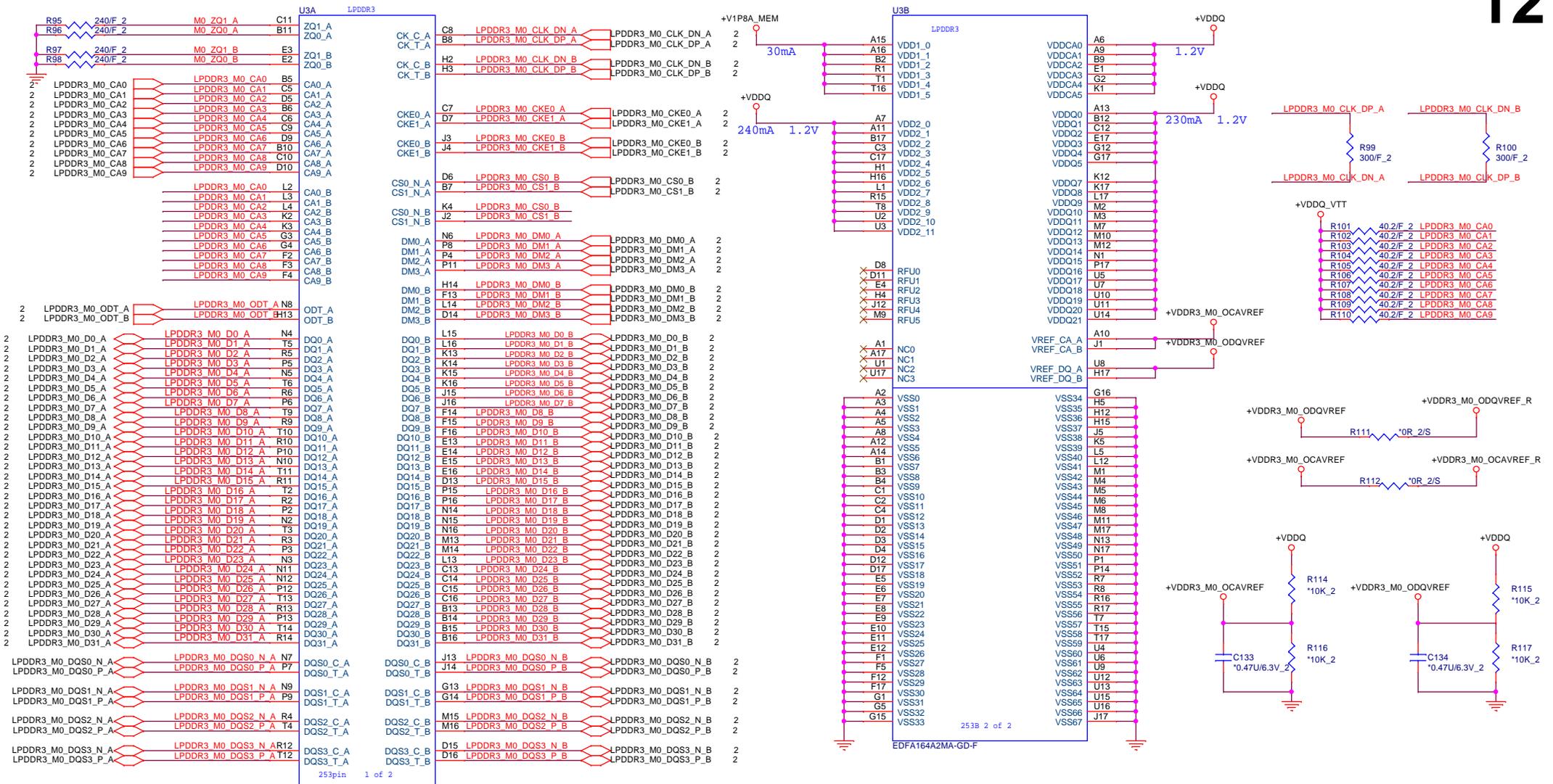
PROJECT : Eagle
Quanta Computer Inc.

Size	Document Number	Rev
	Valleyview-T (GND)	1A
Date: Wednesday, January 14, 2015		Sheet 10 of 44



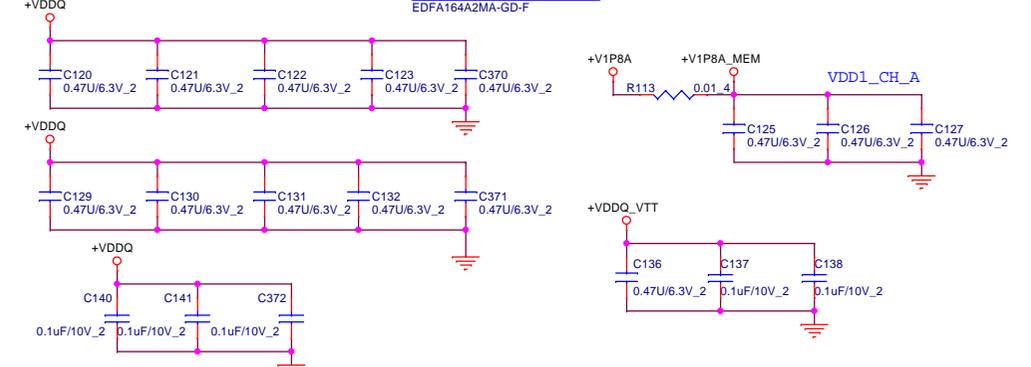
9,37,38	+V1P05A	
8,9,24,37	+V1P15	
8,9,12,13,37,38	+VDDQ	
9	+V1P8A_SOC	
9	+V3P3A_SOC	
9,38	+V1P2A	
7,9,38	+VRTC	
9	+VCCSFR1ICKSI0_1P24_1P35	
9	+VCCDSIPLL_1P24_1P35	
9	+VCCTHMSOC_1P24_1P35	
9	+VCCCLLTHMCPU0_1P24_1P35	
9	+VCCCLLTHMCPU1_1P24_1P35	
9	+VCCHGPLL_1P24_1P35	

<p>NBS/HW</p>	<p>PROJECT : Eagle Quanta Computer Inc.</p>		
	<p>Size</p>	<p>Document Number Valleyview-T (GND)</p>	<p>Rev 1A</p>
	<p>Date:</p>	<p>Wednesday, January 14, 2015</p>	<p>Sheet 11 of 44</p>



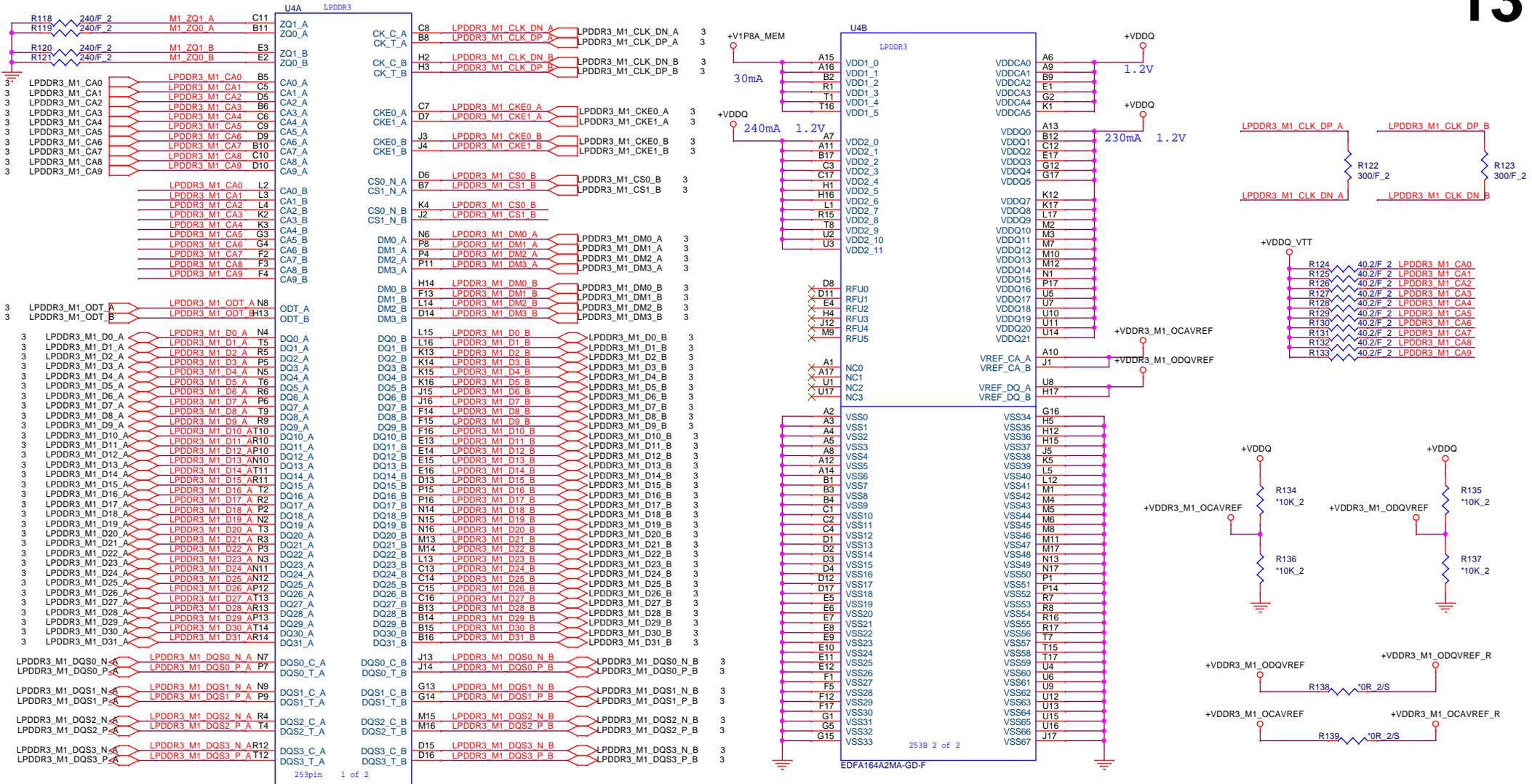
8Gb/16Gb 1600MHz 1.2v LPDDR3 128Mx32x2 & 128Mx32x4 FBGA253 Memory IC

QBCON	TOPB/S	Vender PN	SIZE	
AKD5QYGTL01	AKD5QYGTL00	EDF8164A3MA-GD-F	8Gb	Elpida
AKE3TZPT516	AKE3TZPT515	EDFA164A2MA-GD-F	16Gb	Elpida
AKD5QWSTW02	AKD5QWSTW01	H9CCNNN8KTALBR-NTD	8Gb	Hynix
AKD5RWSTW01	AKD5RWSTW00	H9CCNNNBPTALBR-NTD	16Gb	Hynix
AKD5PWST508	AKD5PWST507	K3QF1F10DM-AGCE	8Gb	Samsung
AKD5RWST514	AKD5RWST513	K3QF2F20DM-AGCE	16Gb	Samsung



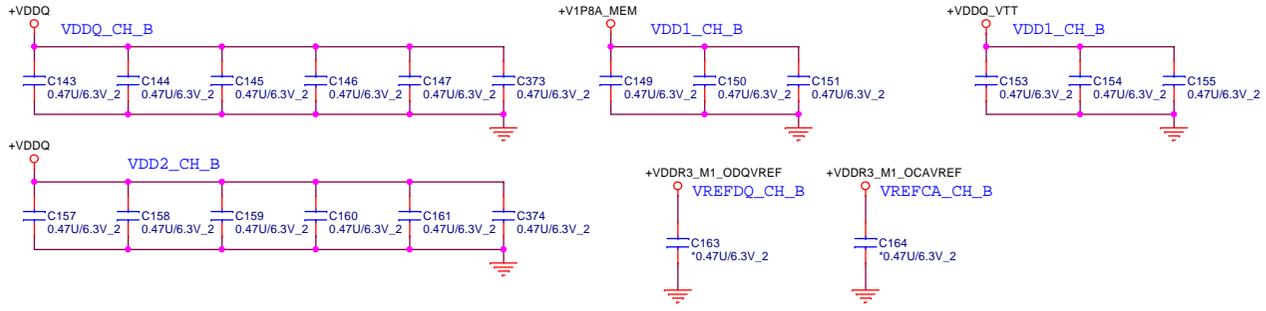
PROJECT : Eagle
Quanta Computer Inc.

Size	Document Number	Rev
	ON BOARD_LPDDR3_0	1A
Date: Wednesday, January 14, 2015 Sheet 12 of 44		



8Gb/16Gb 1600MHz 1.2v LPDDR3 128Mx32x2 & 128Mx32x4 FBGA253 Memory IC

QBCON	TOPP/S	Vender PN	SIZE	
AKD5QYGTL01	AKD5QYGTL00	EDF8164A3MA-GD-F	8Gb	Elpida
AKE3TZPT516	AKE3TZPT515	EDFA164A2MA-GD-F	16Gb	Elpida
AKD5QWSTW02	AKD5QWSTW01	H9CCNNN8KTALBR-NTD	8Gb	Hynix
AKD5RWSTW01	AKD5RWSTW00	H9CCNNNBPTALBR-NTD	16Gb	Hynix
AKD5PWST508	AKD5PWST507	K3QF1F10DM-AGCE	8Gb	Samsung
AKD5RWST514	AKD5RWST513	K3QF2F20DM-AGCE	16Gb	Samsung

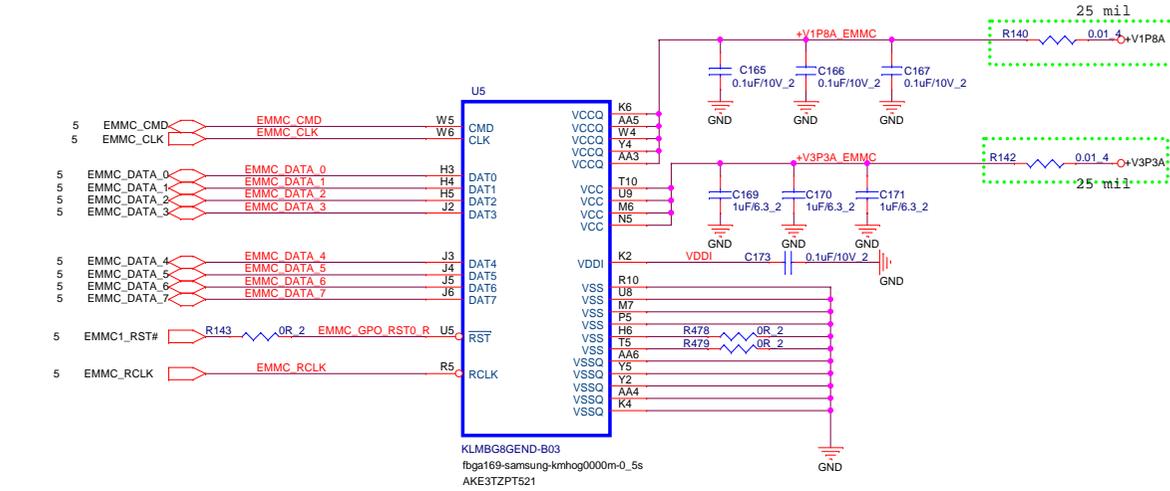


PROJECT : Eagle

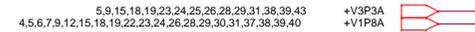
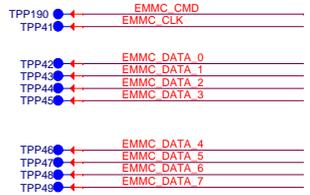
Quanta Computer Inc.

Size	Document Number	Rev
	ON BOARD_LPDDR3_1	1A
Date: Wednesday, January 14, 2015		Sheet 13 of 44

EMMC



footprint : BGA 169 - BGA 153 co-lay
 BGA 169 PIN : 14mmX18mm
 BGA 169 PIN : 12mmX16mm
 BGA 153 PIN : 11.5mmX13mm



iNAND (eMMC 5.0)

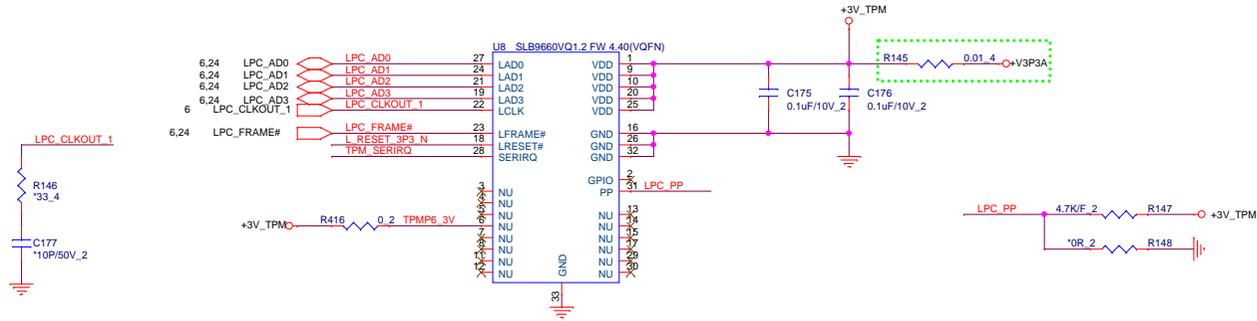
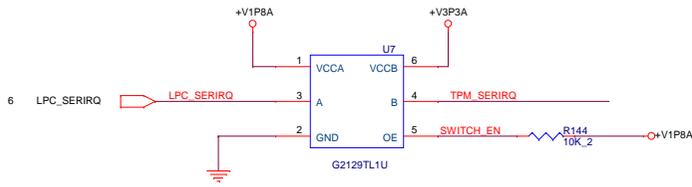
QBCON	TOPP/S	Vender PN	SIZE	
AKE5SZ0T507	AKE5SZ0T506	KLMBG4GEAC-B031	32G	Samsung
AKE3TZPT516	AKE3TZPT515	KLMBG8GEAC-B031	64G	Samsung
AKE3SZ-TW02	AKE3SZ-TW01	H26M64103EMR	32G	Hynix
AKE3TG-TW02	AKE3TG-TW01	H26M78103CCR	64G	Hynix
AKE3UFPT103	AKE3UFPT102	SDIN8CE4-128G	128G	Sandisk
AKE3SFUT001	AKE3SFUT000	SDIN9DW4-32G	32G	Sandisk
AKE3TFUT102	AKE3TFUT101	SDIN9DW4-64G	64G	Sandisk

eMMC 4.51

PROJECT : Eagle
Quanta Computer Inc.

Size Custom	Document Number eMMC/ SD	Rev 1A
Date: Wednesday, January 14, 2015 Sheet 14 of 44		

NB5/HW

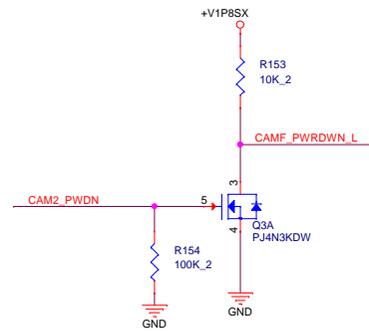
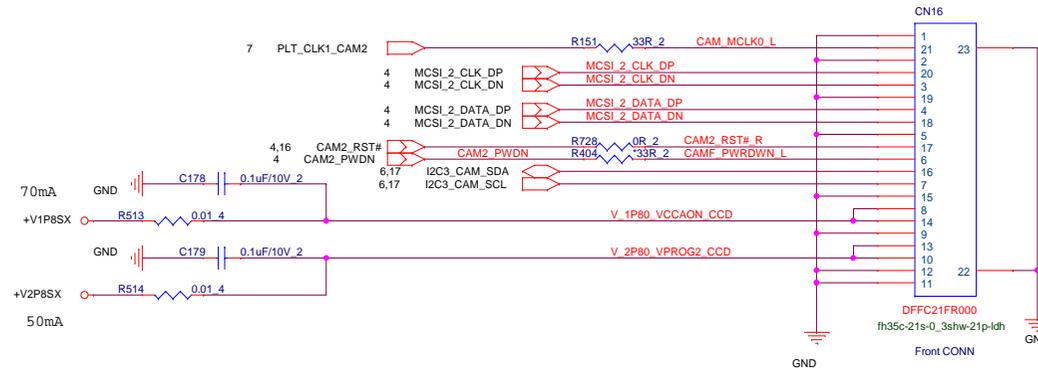


5, 9, 14, 18, 19, 23, 24, 25, 26, 28, 29, 31, 38, 39, 43
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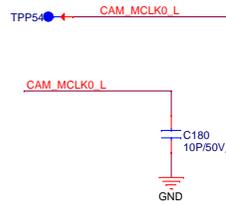
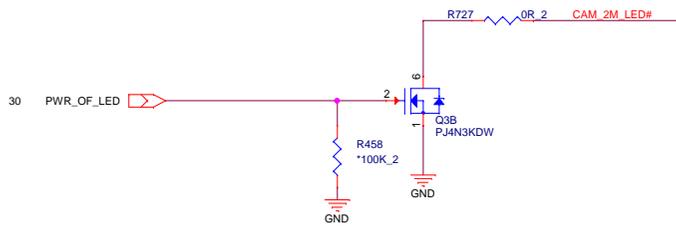
+V3P3A
 +V1P8A

 NBS/HW	PROJECT : Eagle Quanta Computer Inc.		Rev 1A
	Size Custom	Document Number TPM	

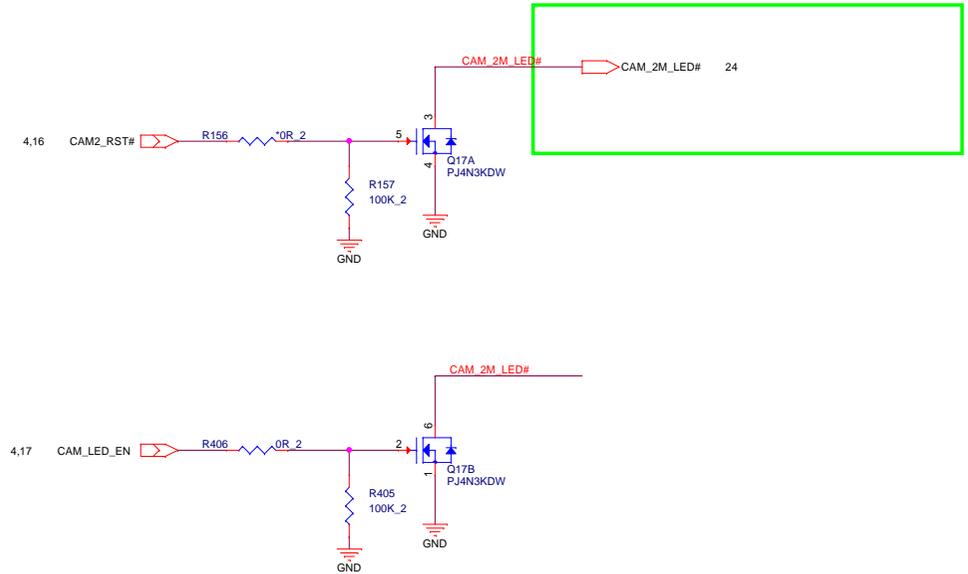
Front Camera Module Connector



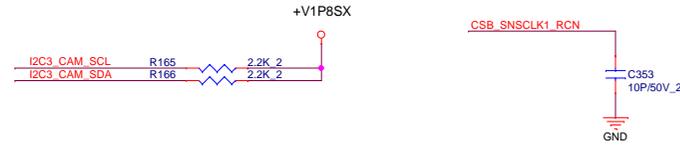
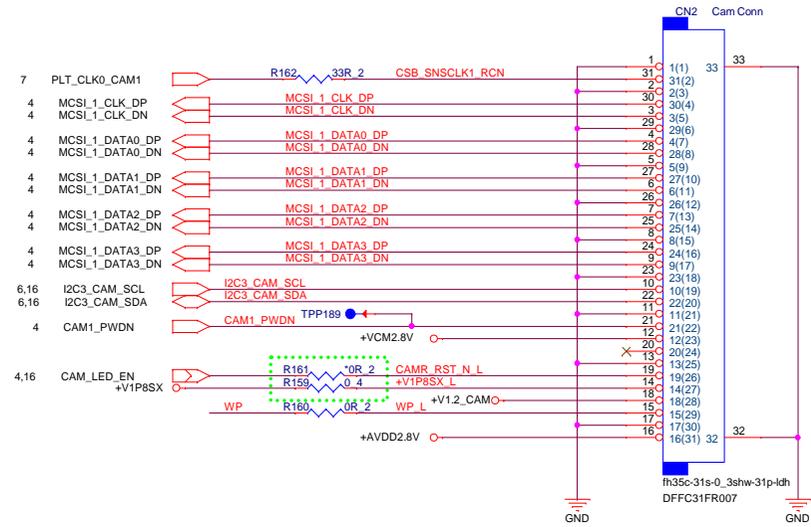
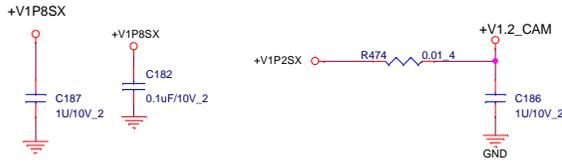
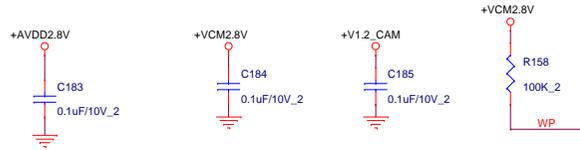
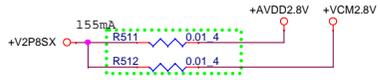
CAM_1_PWRDWN_L High --> power down



Camera 2M LED control



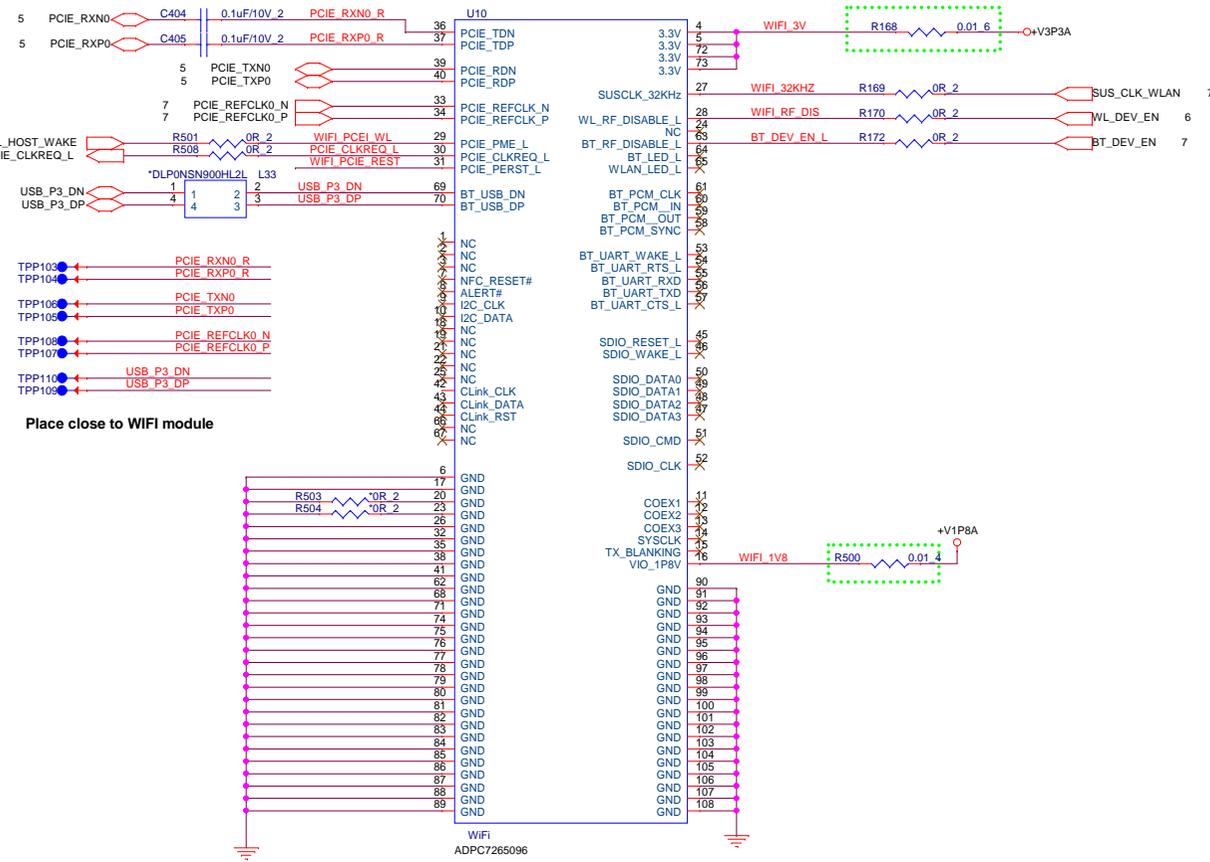
WEBCAM LED + CCD_8M CONNECTOR



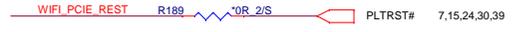
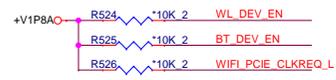
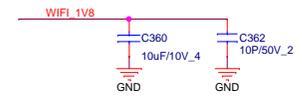
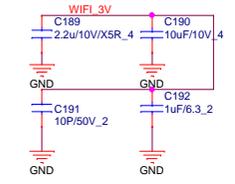
<p>NBS/HW</p>	<p>PROJECT : Eagle Quanta Computer Inc.</p>		<p>Rev 1A</p>
	<p>Size Custom</p>	<p>Document Number Rear Camera & Senseo board</p>	
	<p>Date: Wednesday, January 14, 2015 Sheet 17 of 44</p>		

5,9,14,15,19,23,24,25,26,28,29,31,38,39,43

+V3P3A

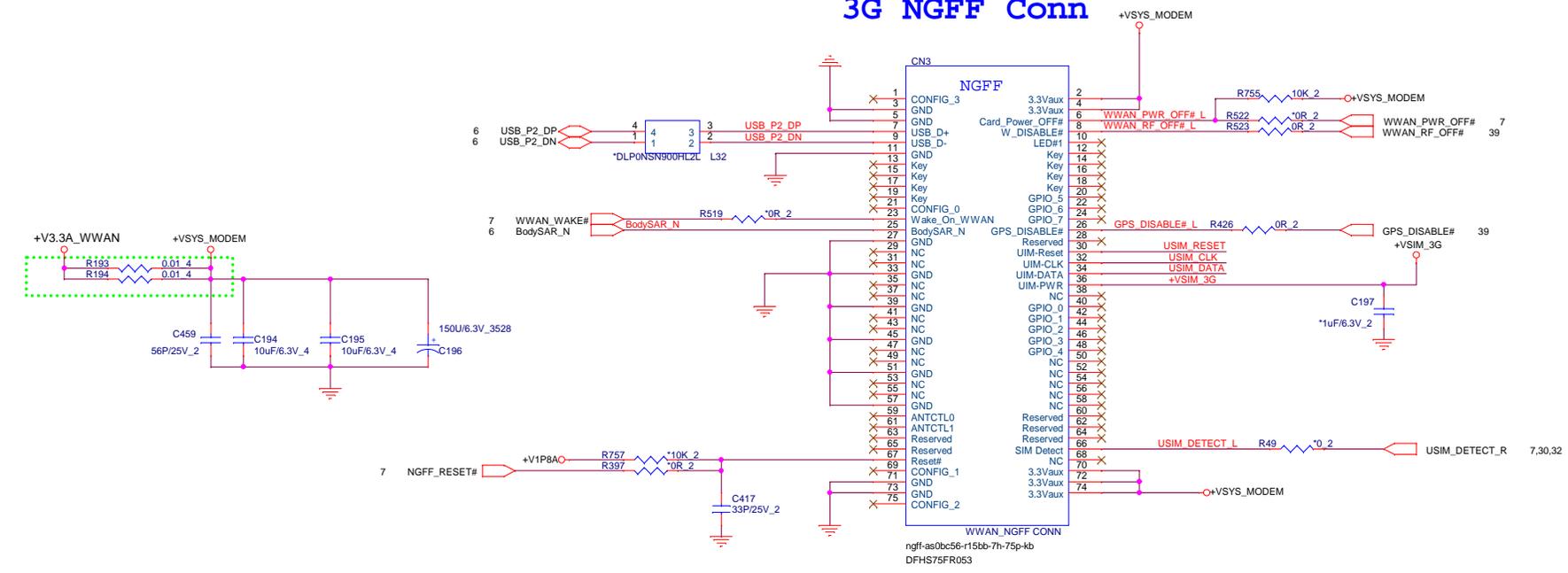


Place close to WIFI module

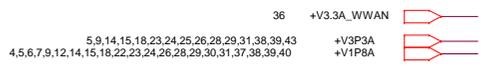
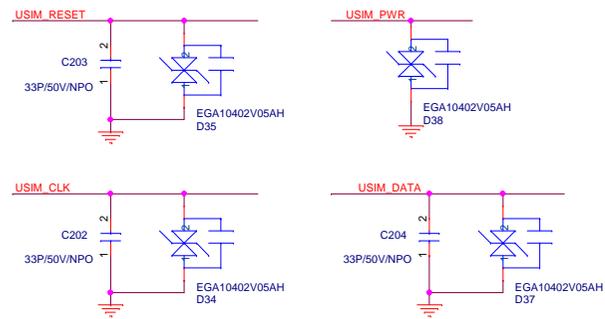
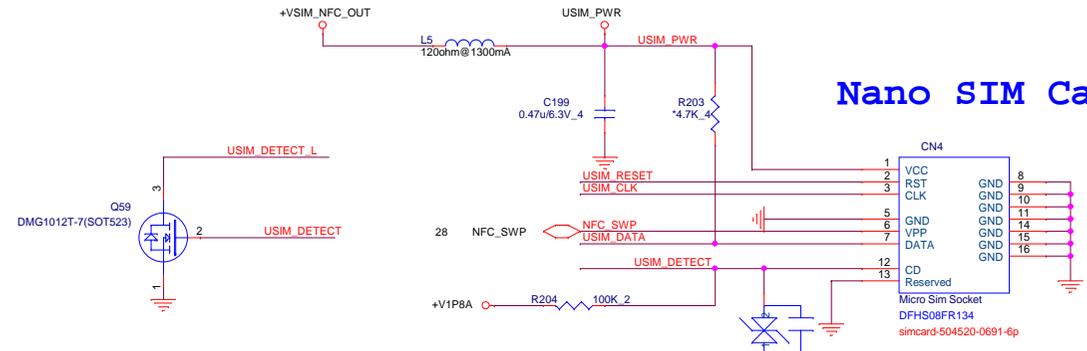


 NBS/HW	PROJECT : Eagle Quanta Computer Inc.		Rev 1A
	Size Custom	Document Number WIFI +BT module	Date: Wednesday, January 14, 2015 Sheet 18 of 44

3G NGFF Conn

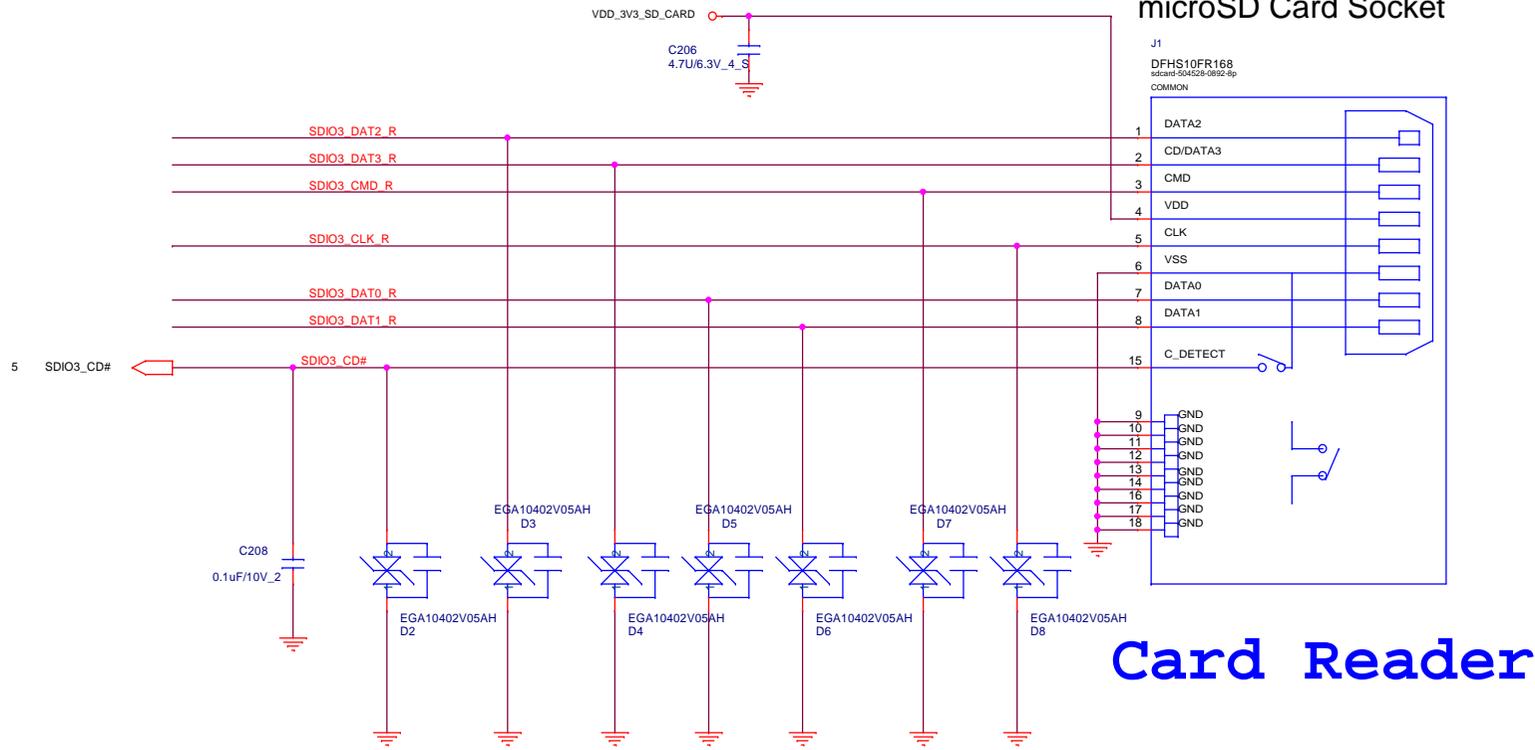


Nano SIM Card

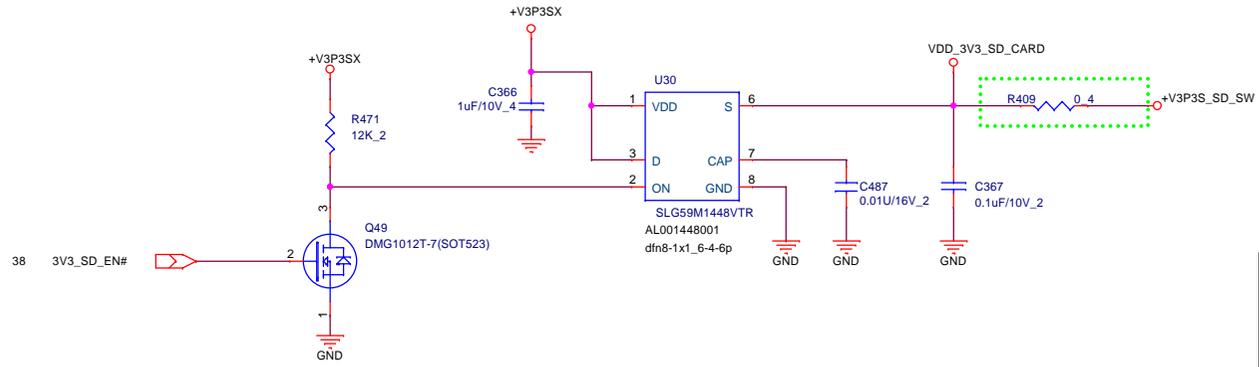
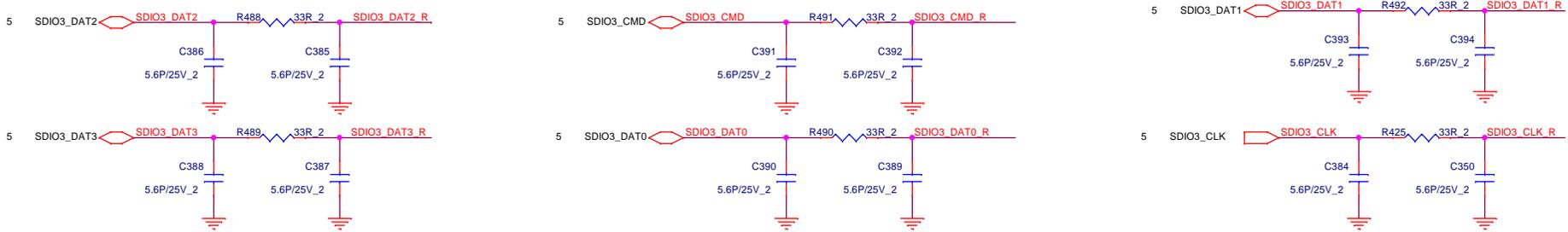


	PROJECT : Eagle Quanta Computer Inc.	
	Size	Document Number
	Date: Wednesday, January 14, 2015	3G NGFF Conn/SIM Conn
Rev	1A	Sheet 19 of 44

Place close to J3

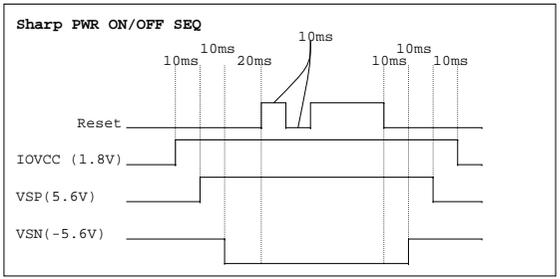
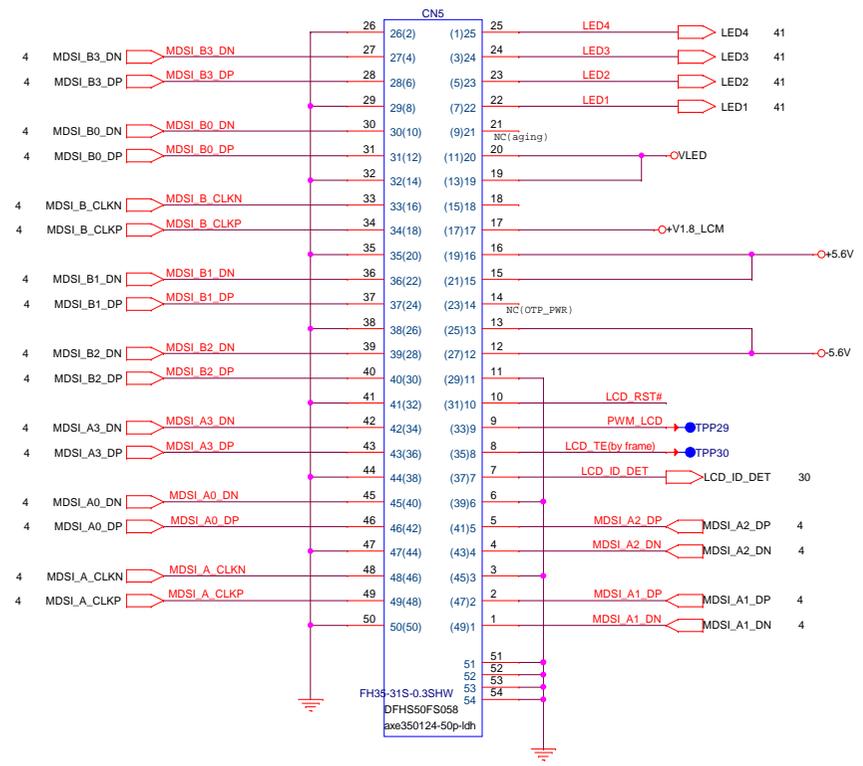
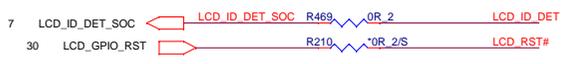
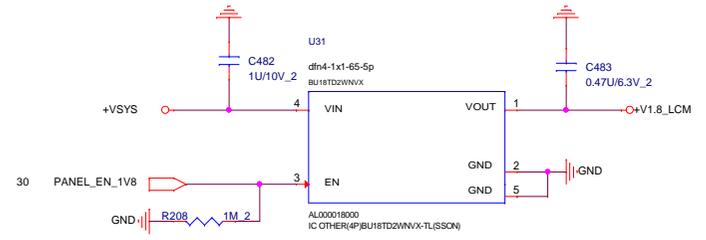
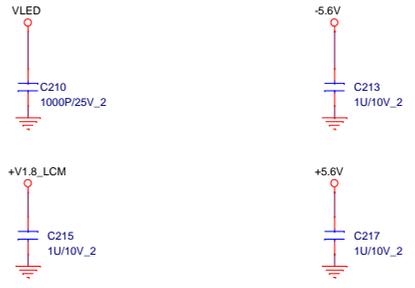


Card Reader

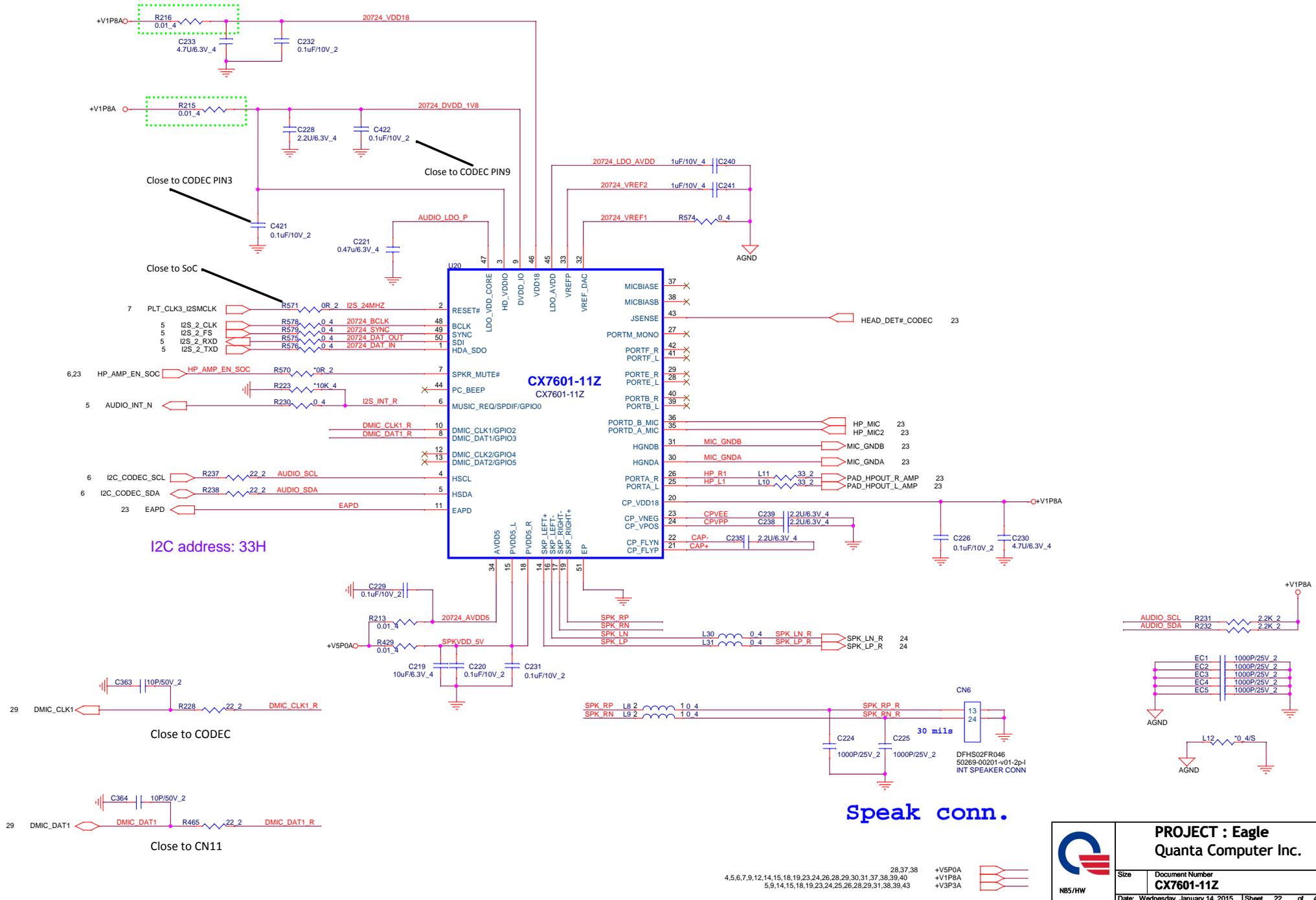


- 38 +V3P3SX
- 38 +V3P3S_SW

	PROJECT : Eagle Quanta Computer Inc.	
	Size	Document Number
	NBS/HW	MicroSD Card
Date: Wednesday, January 14, 2015		Rev 1A
Sheet 20		of 44



	PROJECT : Eagle Quanta Computer Inc.	
	Size Custom	Document Number MIPI LCD
	Date: Wednesday, January 14, 2015	Sheet 21 of 44

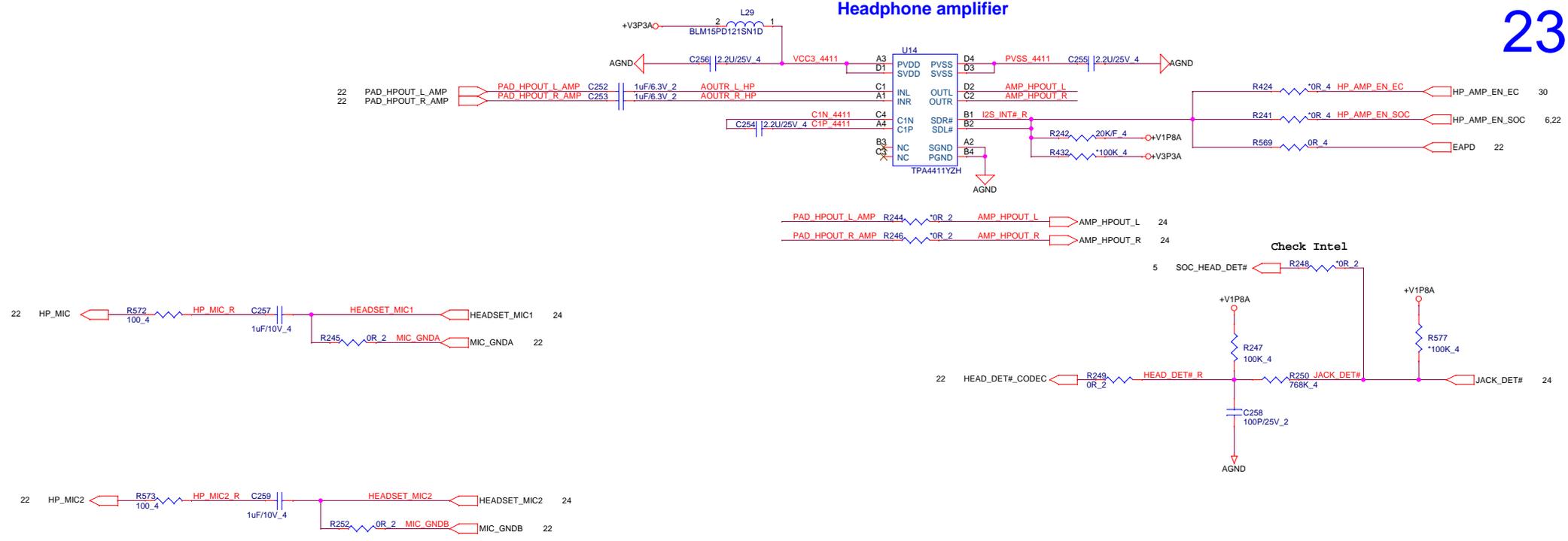


Speak conn.

28,37,38 +V5P0A
4,5,6,7,9,12,14,15,18,19,23,24,26,28,29,30,31,37,38,39,40 +V1P8A
5,9,14,15,18,19,23,24,25,26,28,29,31,38,39,43 +V3P3A

	PROJECT : Eagle Quanta Computer Inc.	
	Size Document Number CX7601-11Z	Rev 1A
Date: Wednesday, January 14, 2015 Sheet 22 of 44		

Headphone amplifier

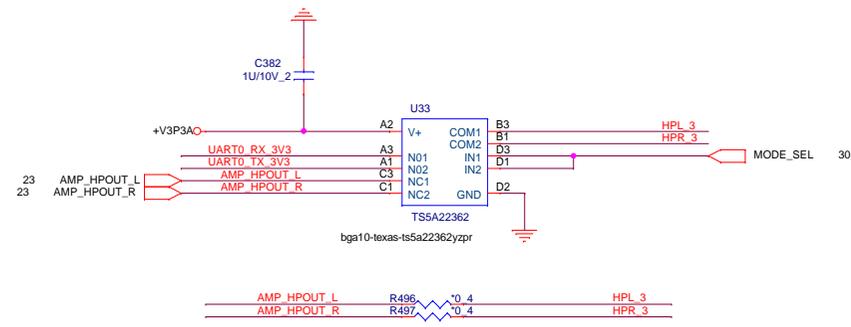
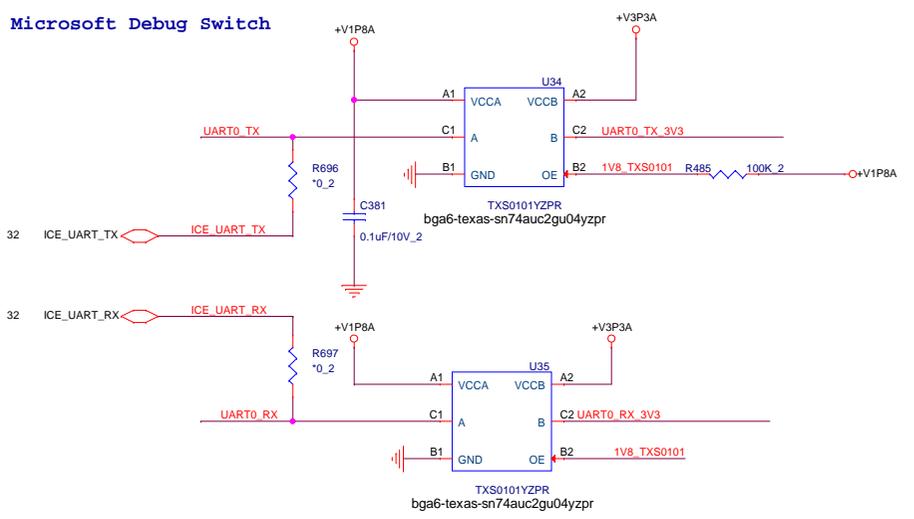
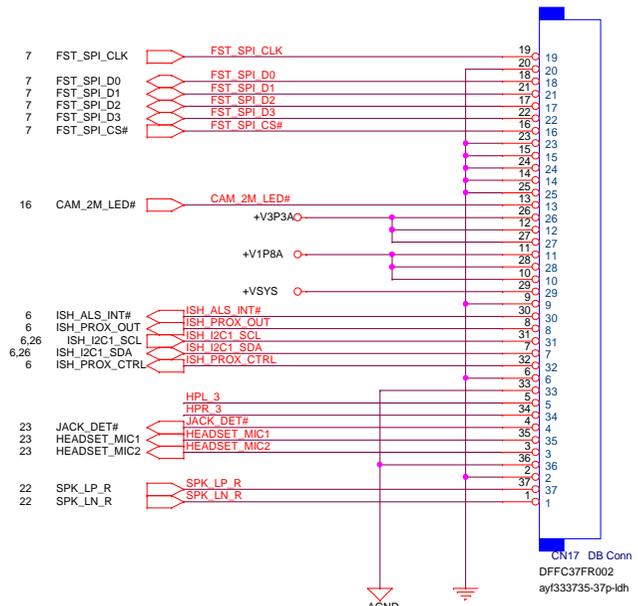
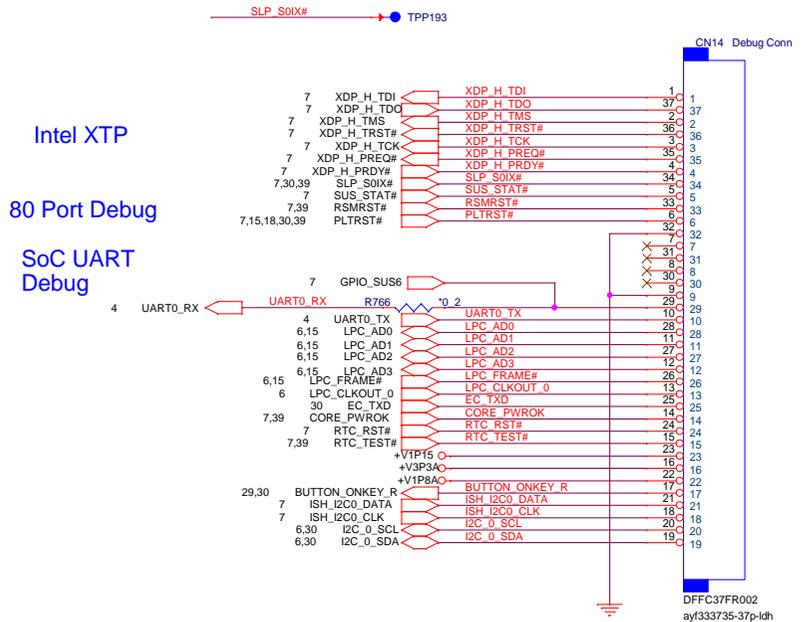


4,5,6,7,9,12,14,15,18,19,22,24,26,28,29,30,31,37,38,39,40
 5,9,14,15,18,19,24,25,26,28,29,31,38,39,43

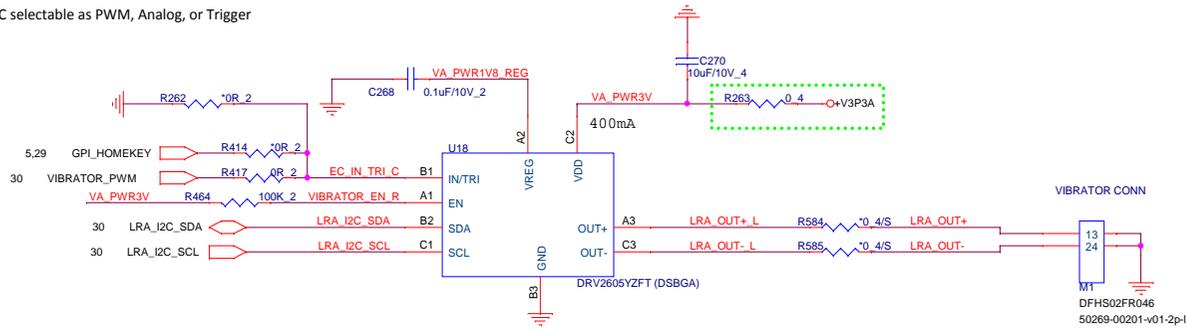
+V1P8A
 +V3P3A

 NBS/HW	PROJECT : Eagle Quanta Computer Inc.		Rev 1A
	Size Custom	Document Number Audio AMP	Date: Wednesday, January 14, 2015 Sheet 23 of 44

Daughter Board / Debug Con



Multi-mode Input. I2C selectable as PWM, Analog, or Trigger



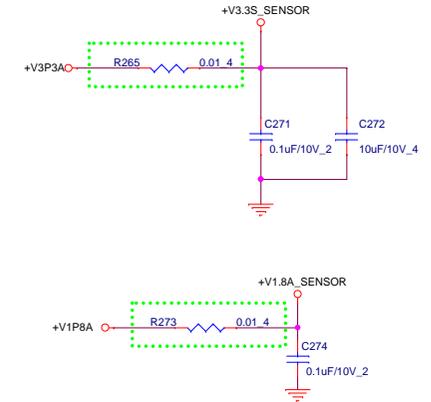
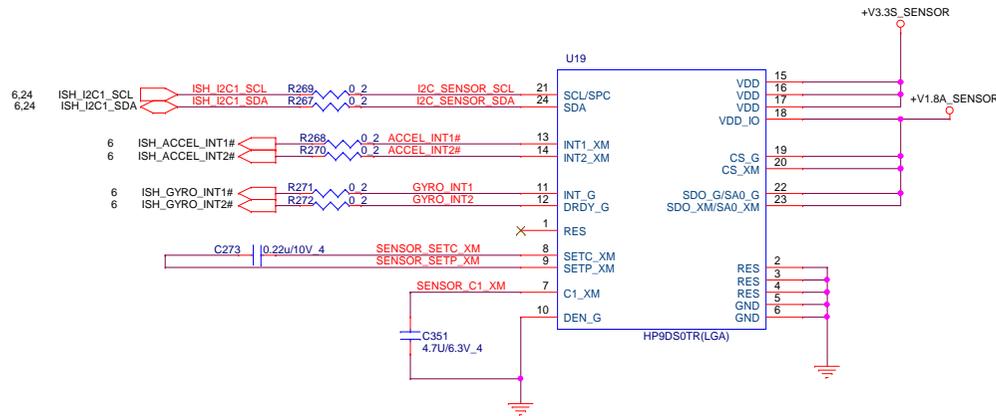
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5,9,14,15,18,19,23,24,26,28,29,31,38,39,43

+V1P8A
+V3P3A



 NBS/HW	PROJECT : Eagle Quanta Computer Inc.	
	Size Custom	Document Number Vibrator
	Date: Wednesday, January 14, 2015	Sheet 25 of 44

3D accelerometer, 3D gyroscope, 3D magnetometer



4,5,6,7,9,12,14,15,18,19,22,23,24,28,29,30,31,37,38,39,40
5,9,14,15,18,19,23,24,25,28,29,31,38,39,43

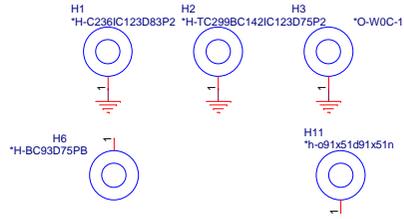
+V1P8A
+V3P3A



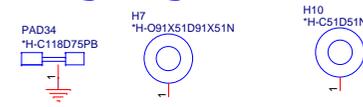
	PROJECT : Eagle Quanta Computer Inc.		
	Size Custom	Document Number G-Sensor	Rev 1A
	Date: Wednesday, January 14, 2015 Sheet 26 of 44		

Top Shielding Can using

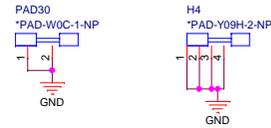
Hole



Aligning hole



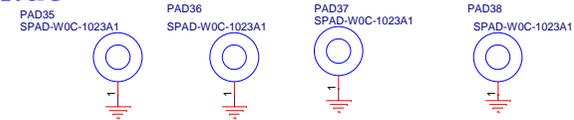
BOT SHIELDING PAD



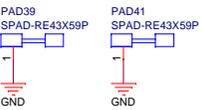
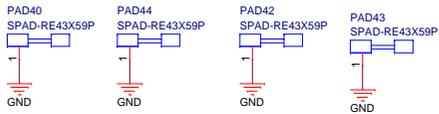
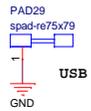
TOP SHIELDING PAD



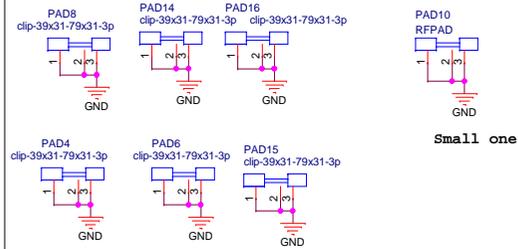
Nut



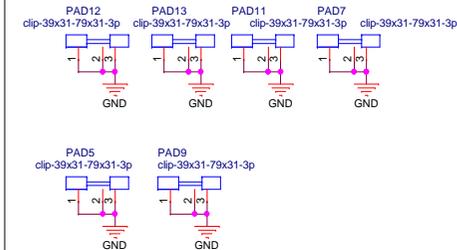
ME WIRE PAD



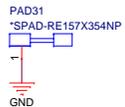
BOT shielding: Up



BOT shielding: Down

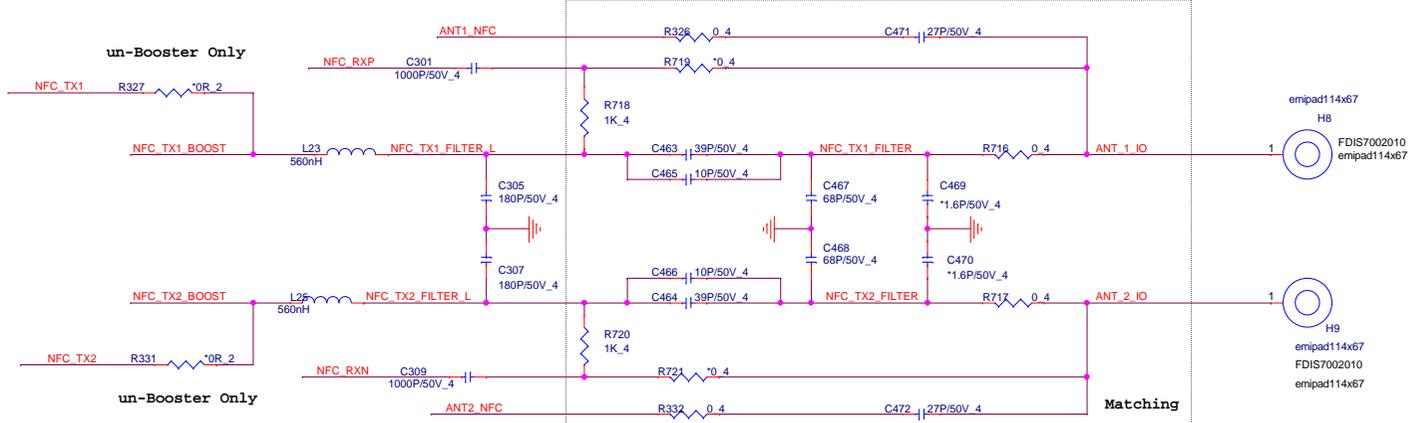
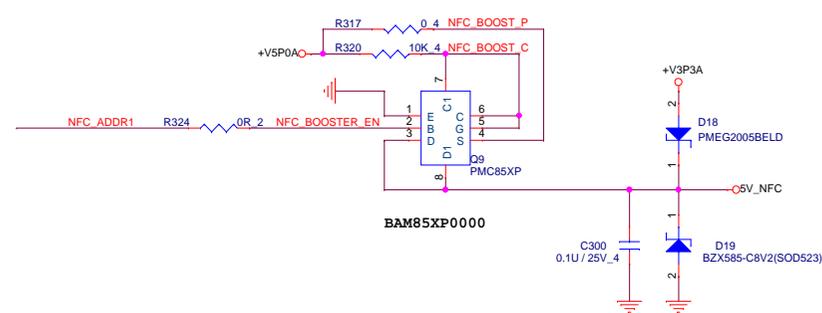
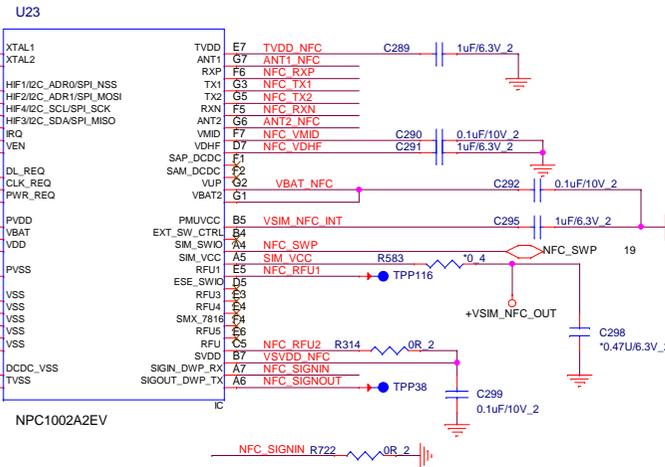
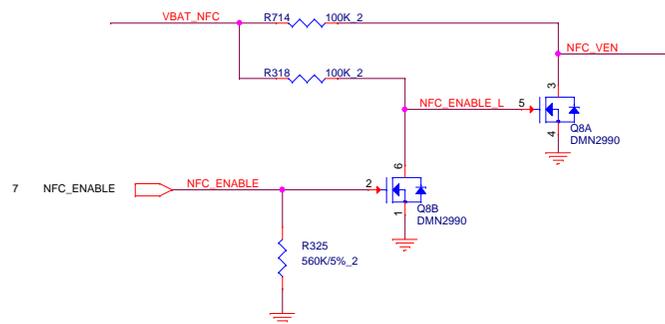
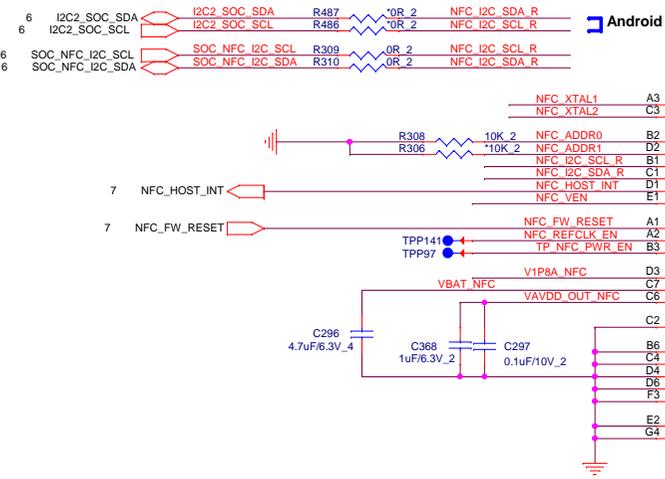
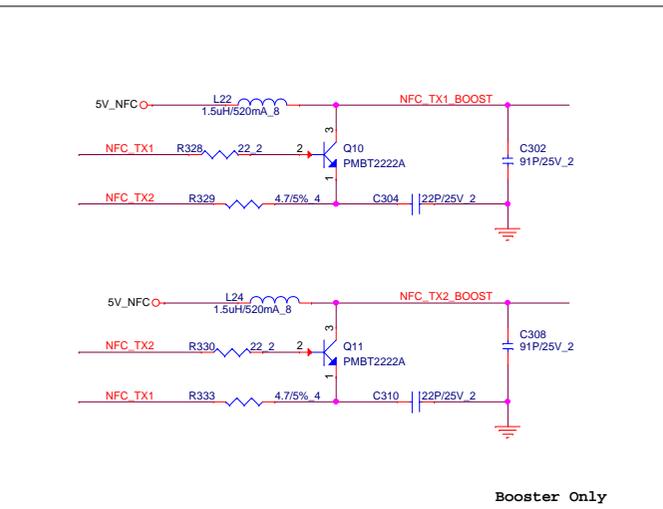
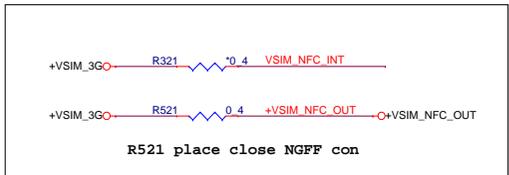
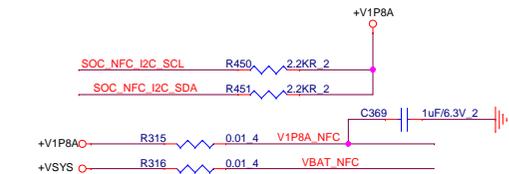
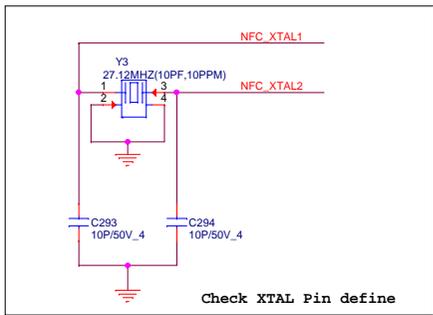


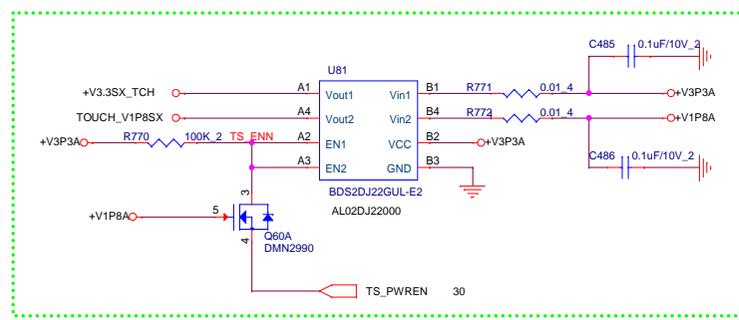
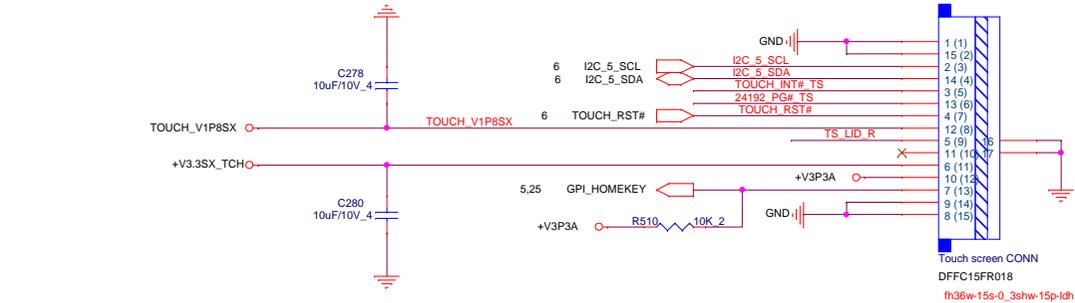
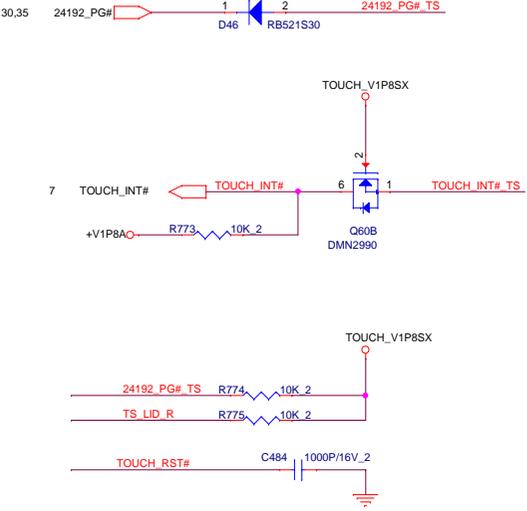
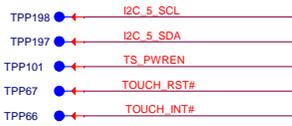
TS GND PAD



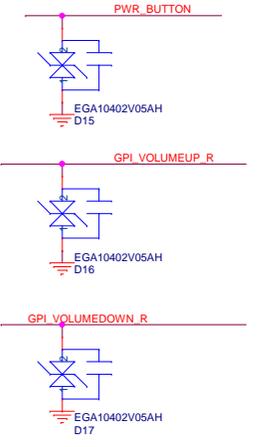
USB3 SHIELDING



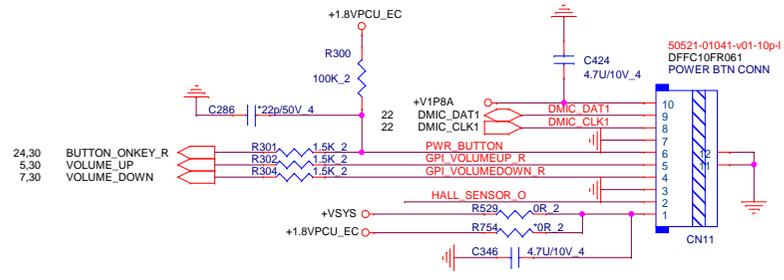
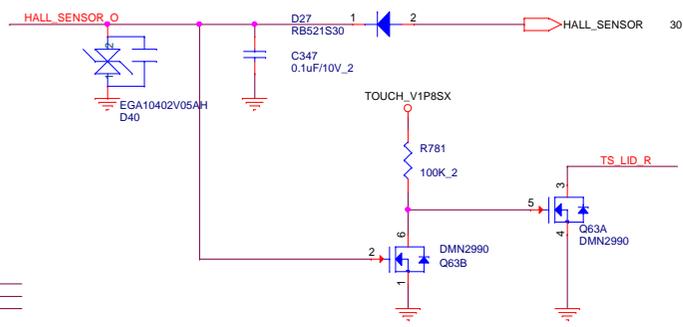




SLP_S0IX#	PANEL_EN_EC	TS_PWREN	Notes
0	0	0	TS_LID's behavior is as AND gate with SLP_S0IX# & PANEL_EN_EC
0	1	X	X
1	0	X	X
1	1	1	TS_LID's behavior is as AND gate with SLP_S0IX# & PANEL_EN_EC



Hall Sensor

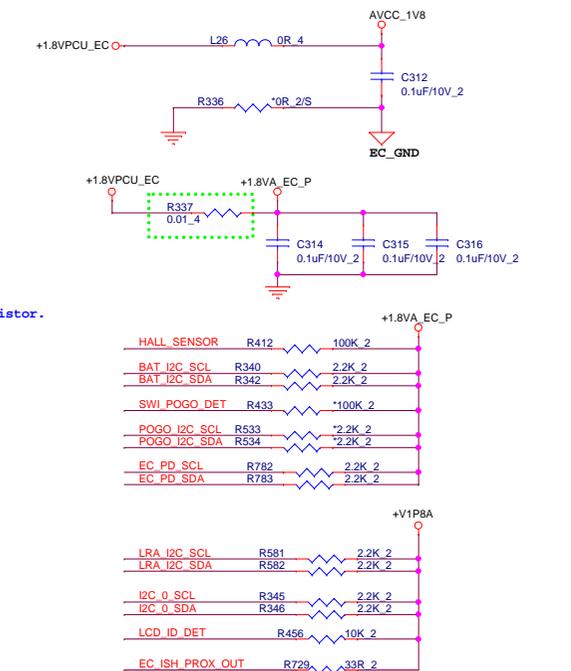
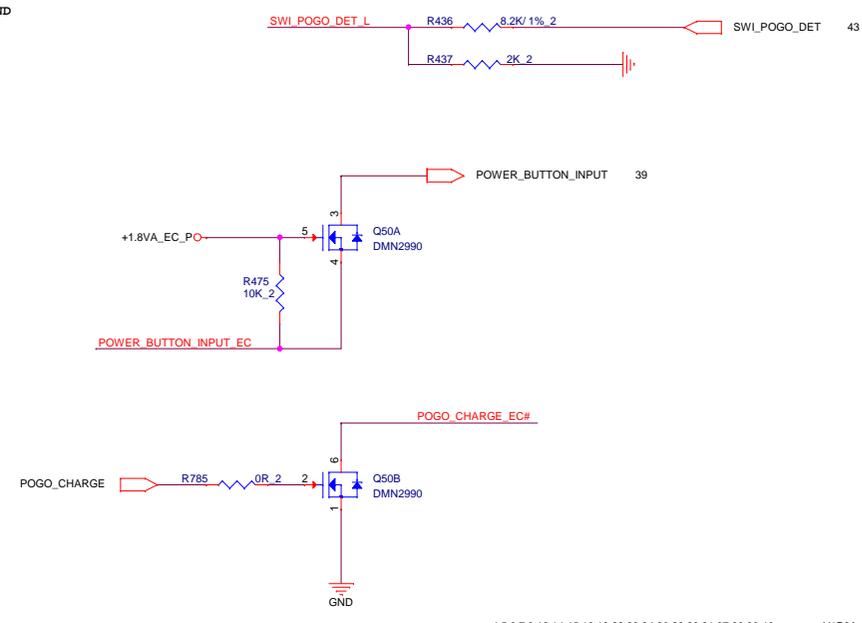
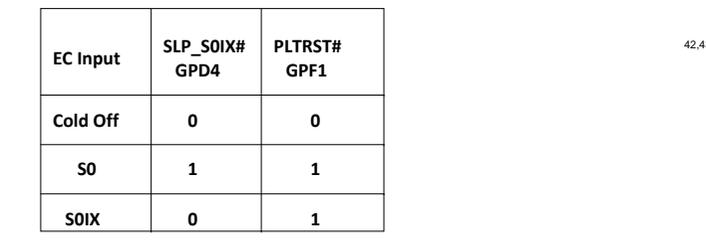
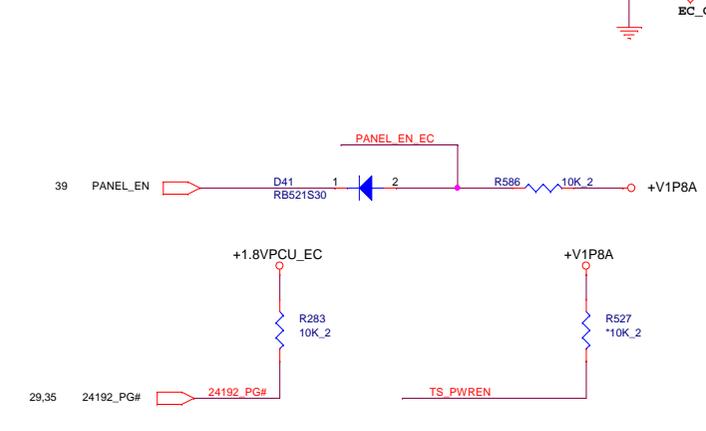
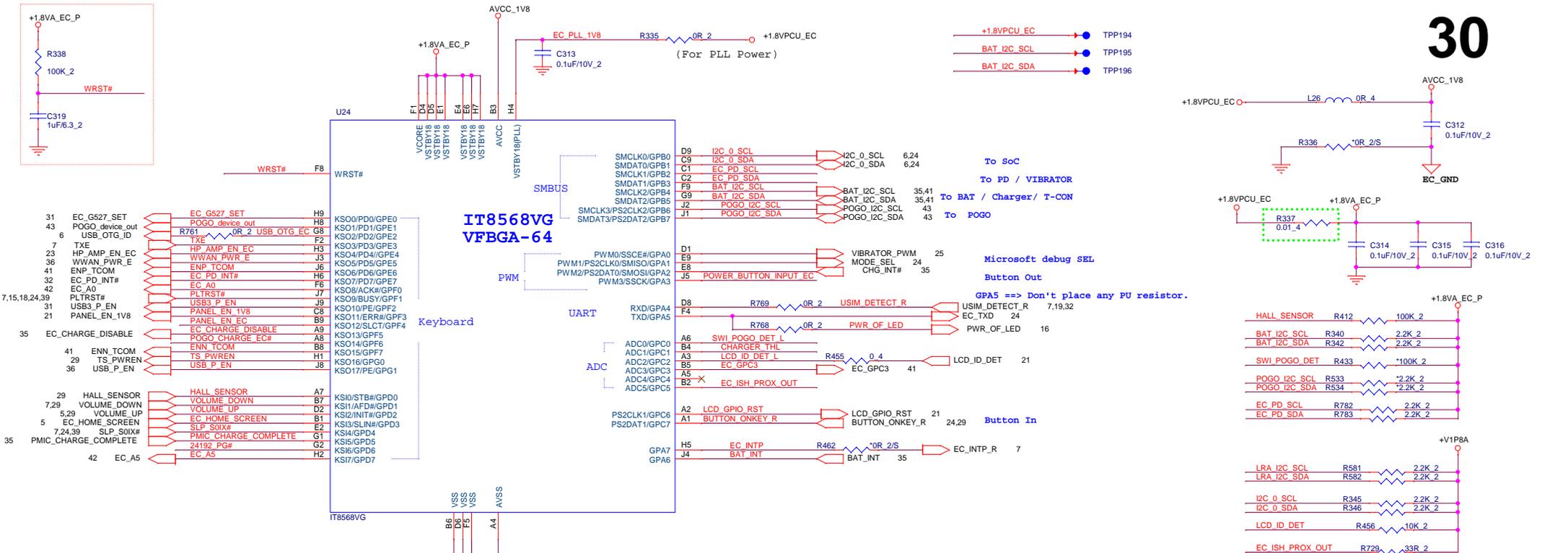
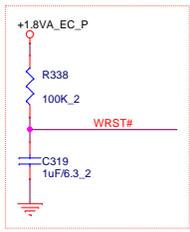


PWR & Vol Conn

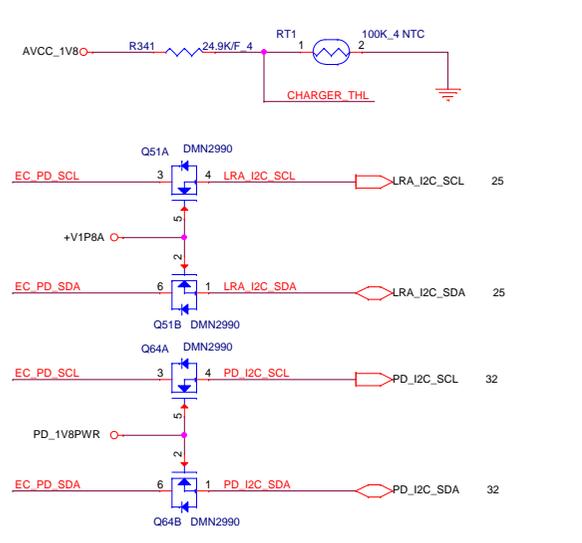


PROJECT : Eagle
Quanta Computer Inc.

Size Custom	Document Number Touch / PWR BUT	Rev 1A
Date: Wednesday, January 14, 2015 Sheet 29 of 44		



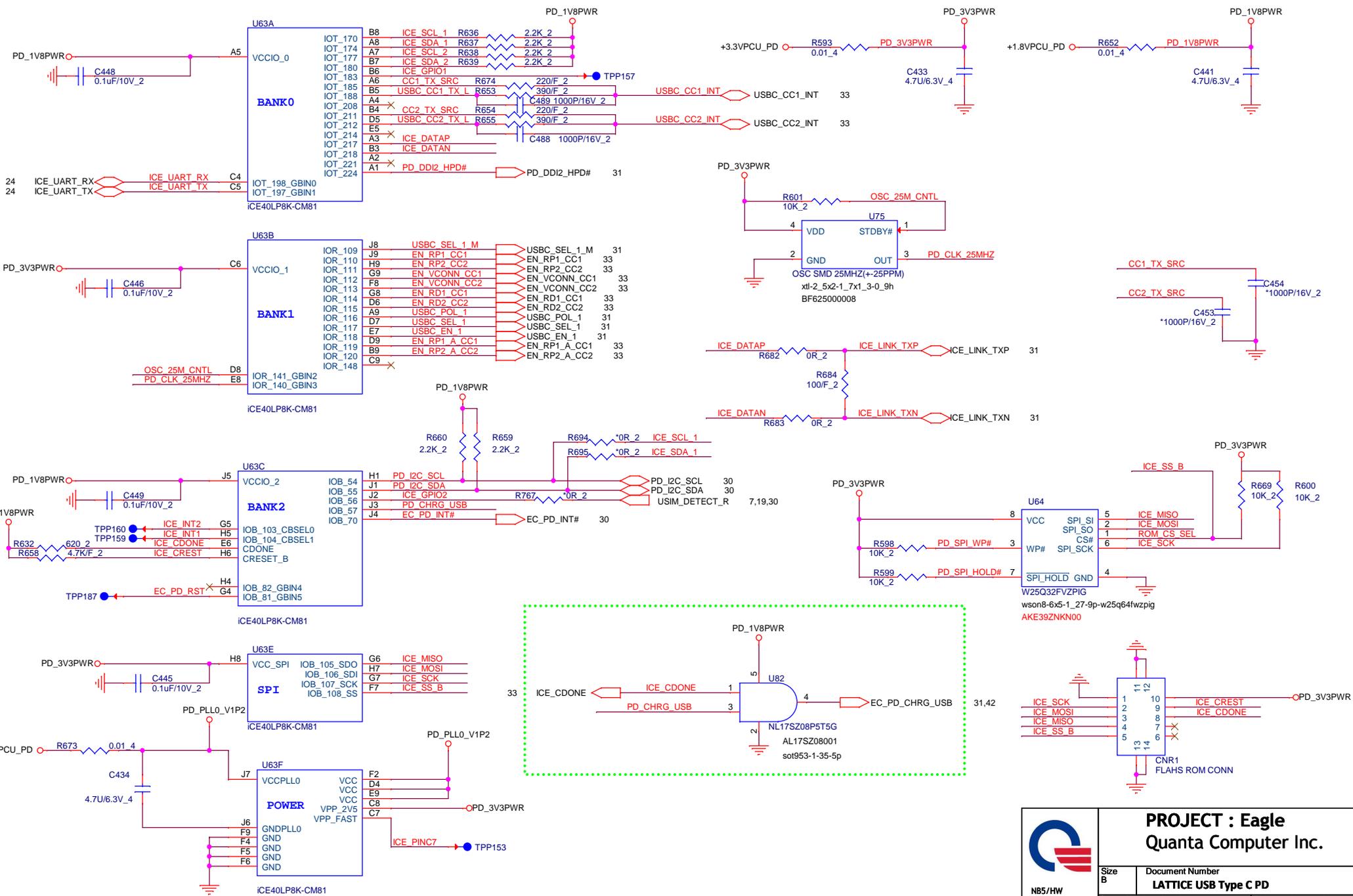
EC Input	SLP_SOIX# GPD4	PLTRST# GPF1
Cold Off	0	0
S0	1	1
SOIX	0	1



4.5,6,7,9,12,14,15,18,19,22,23,24,26,28,29,31,37,38,39,40
29,31,35,42 +V1P8A
+1.8VPCU_EC

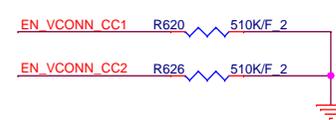
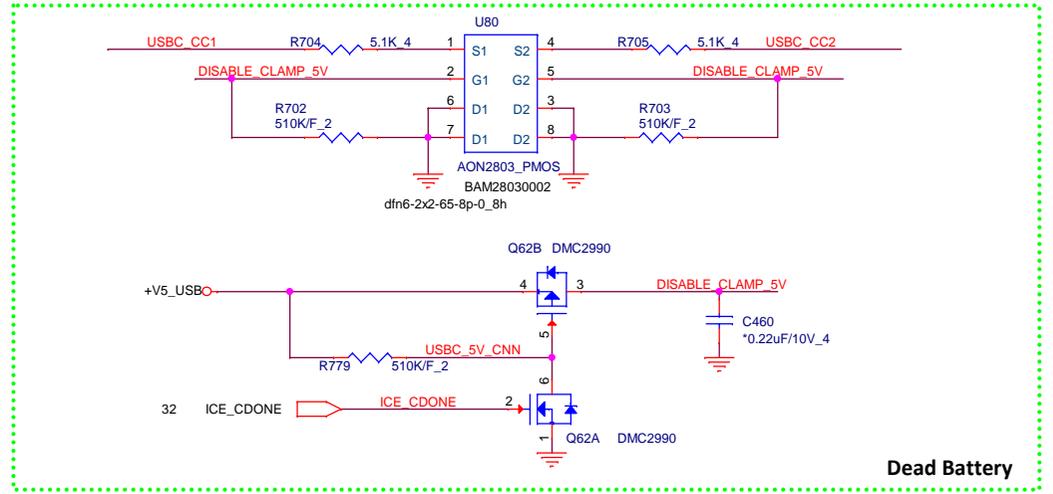
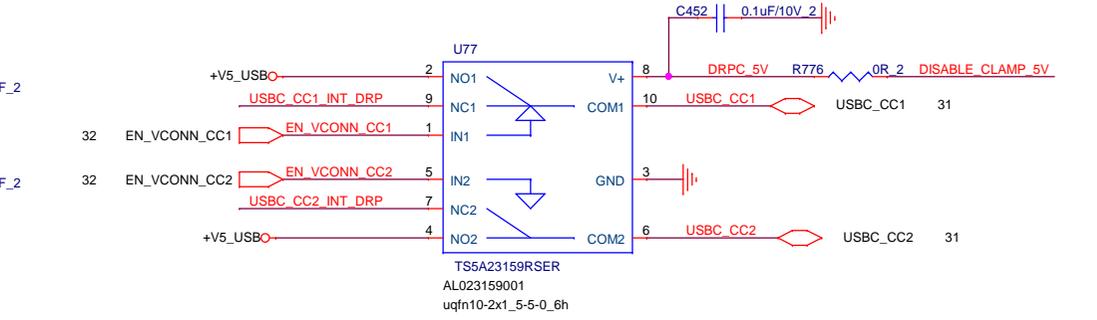
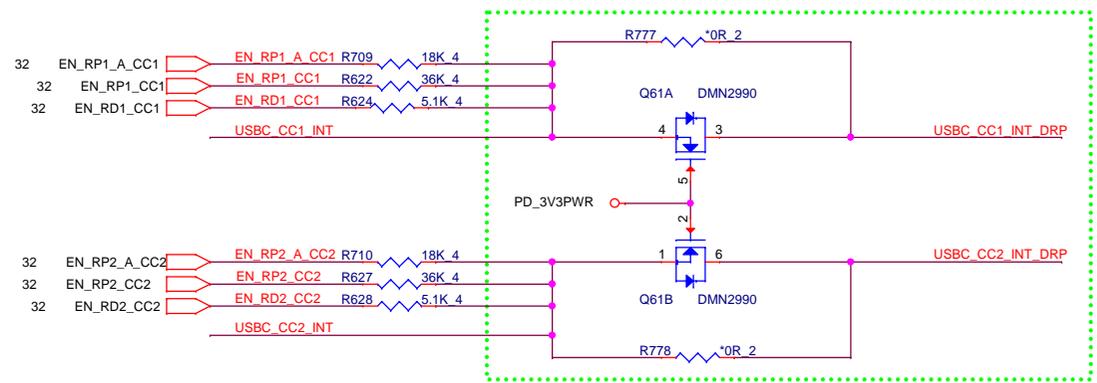
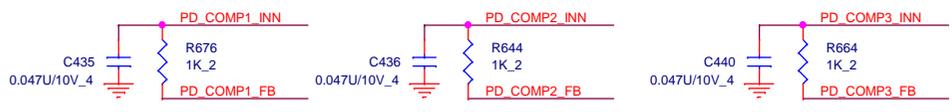
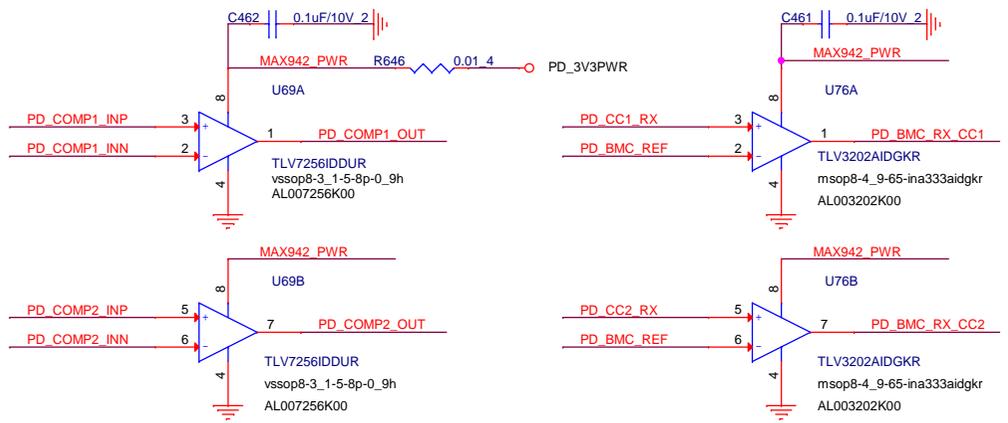
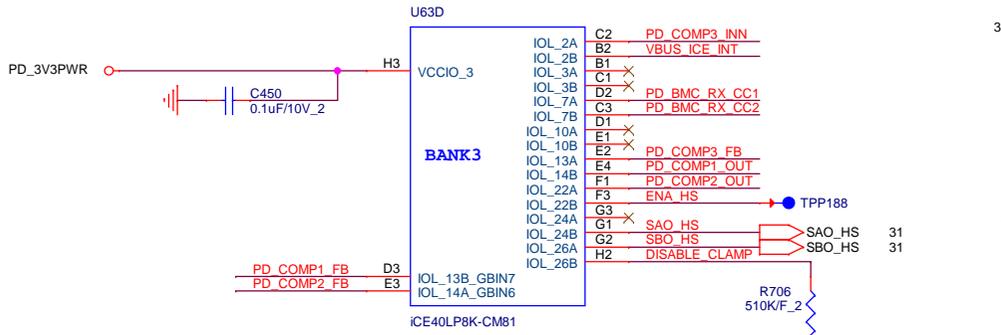
PROJECT : Eagle
Quanta Computer Inc.

Size Custom	Document Number EC IT8568	Rev 1A
Date: Wednesday, January 14, 2015 Sheet 30 of 44		



PROJECT : Eagle Quanta Computer Inc.

Size B	Document Number LATTICE USB Type C PD	Rev 1A
Date: Wednesday, January 14, 2015 Sheet 32 of 44		



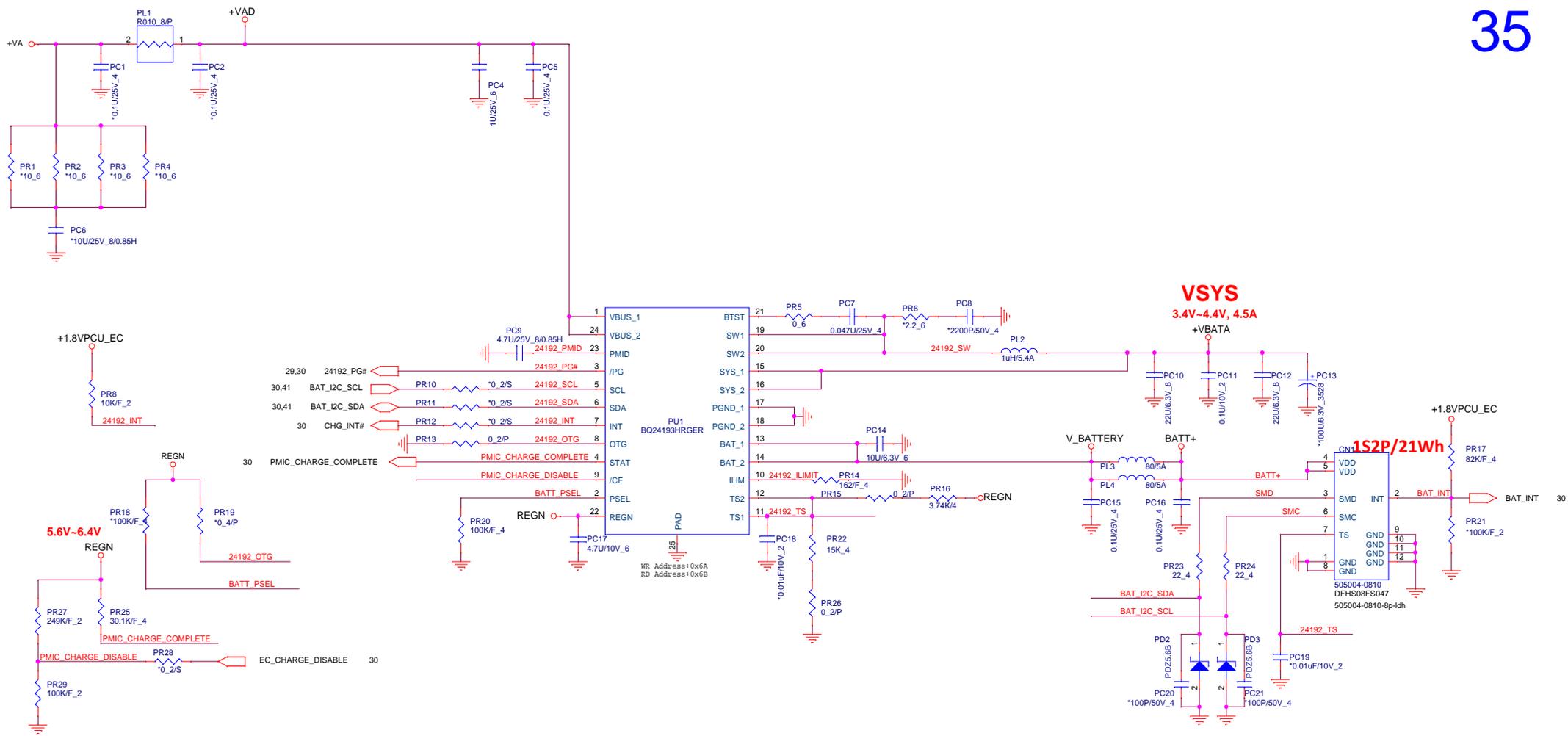
PROJECT : Eagle
Quanta Computer Inc.

Size B	Document Number LATTICE USB Type C PD	Rev 1A
Date: Wednesday, January 14, 2015 Sheet 33 of 44		

Dead Battery

SoC I2C	Function	Address	Speed
0	EC	ACPI / WMI : 0x76 (7bit) 0xEC (8bit) Flash : 0x5B (7bit) 0xB6 (8bit)	400k Hz
1	Audio	33h	400k Hz
3	Camera	8M-->IMX219 0x20/0x21 (8bit) 2m-->OV2724 SID=0, 0x6C (8bit)	400k Hz
4	HDMI	NA	NA
5	Touch Screen	0X4B	400k Hz
6	PMIC	0x5E (8bit) 0x6E (8bit)	HS mode (3.4 MHz)
7 (NFC)	NFC	0 X 28 (7 bit)	HS mode (3.4 MHz)
ISH	Combo Sensor	acceleration and magnetic (8bit) Read 0x3B Write 0x3A Angular--> Read 0xD7 Write 0xD6	400k Hz
ISH	ALS	Ra PD: 0x10 (default) Ra PU: 0x48	400k Hz
ISH	SAR	0 x 28 (Check table 8) (7bit)	400k Hz

EC I2C	Function	Address	Speed
0	SoC		HS-mode
2	TPS65132	W: 0x7C R: 0x7D (8bit)	
	Battery		
3	Charger	W: 0x6A R: 0x6B (8bit)	400k Hz
	POGO		
1	PD		
	DOCK		
	Moto Driver	W:0xB4 R: 0xB5 (8bit)	400k Hz

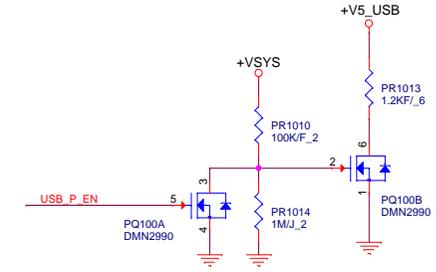
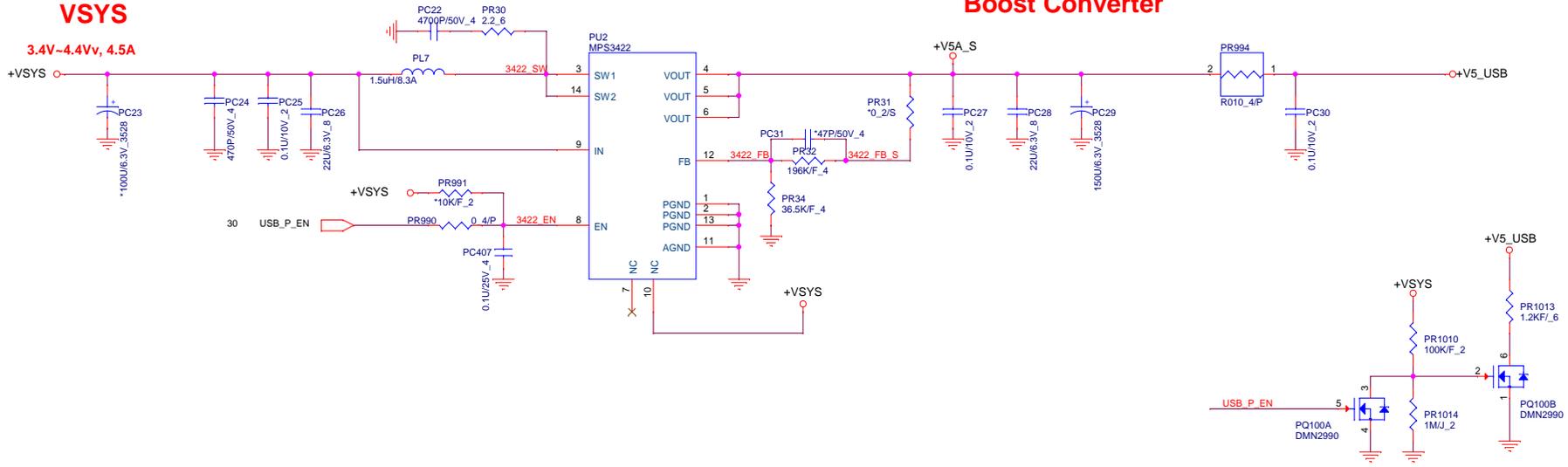


 NBS/HW	PROJECT : Eagle Quanta Computer Inc.	
	Size Document Number Charger BQ24193	Rev 1A
	Date: Wednesday, January 14, 2015 Sheet 35 of 44	

5V/2A
OCP: 3A
Boost Converter

VSYS

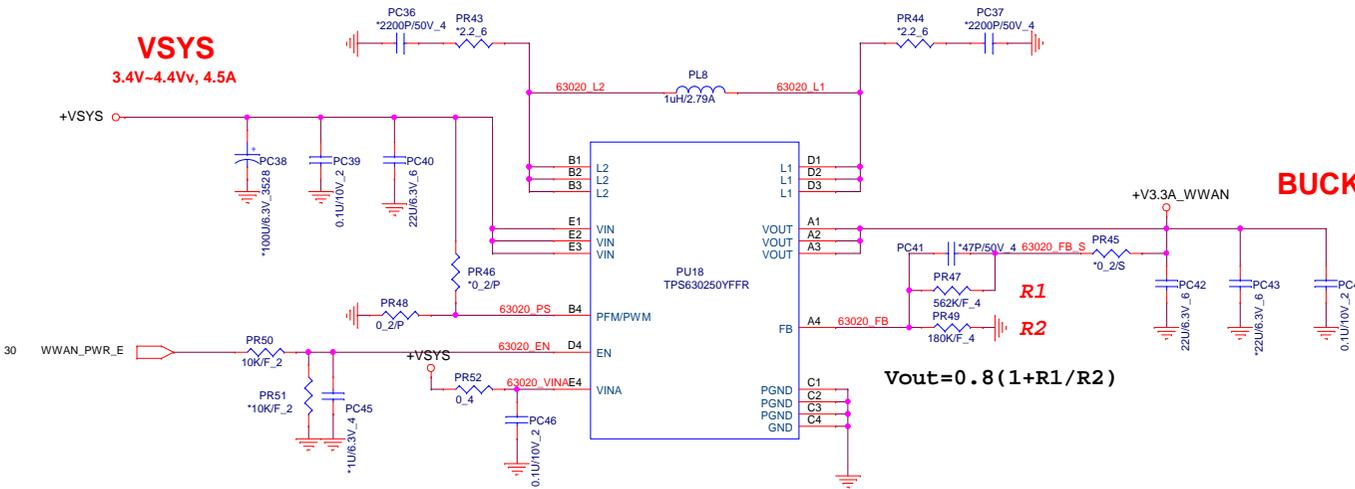
3.4V-4.4V, 4.5A



3.3V/1A
BUCK-BOOST Converter

VSYS

3.4V-4.4V, 4.5A



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

 NBS/HW	PROJECT : Eagle Quanta Computer Inc.		
	Size	Document Number +3V /+5V	Rev 1A
	Date: Wednesday, January 14, 2015 Sheet 36 of 44		

Voltage = 1.2V
I max = 3.2A

Voltage = 1.2V
I max = 3.2A

Voltage = 1.2V
I max = 2.5A

Voltage = 1.05V
I max = 2.05A

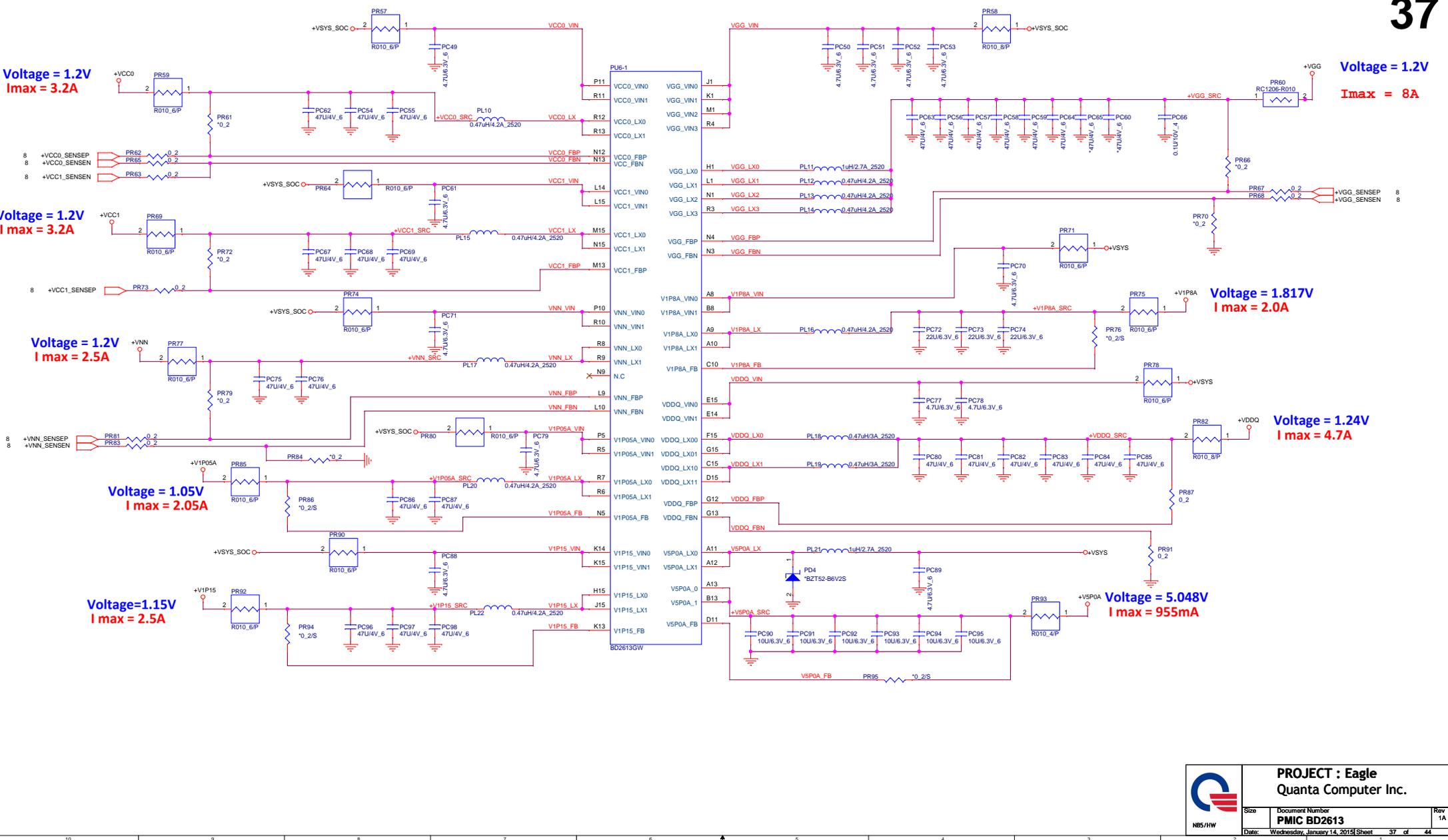
Voltage = 1.15V
I max = 2.5A

Voltage = 1.2V
I max = 8A

Voltage = 1.817V
I max = 2.0A

Voltage = 1.24V
I max = 4.7A

Voltage = 5.048V
I max = 955mA



	PROJECT : Eagle Quanta Computer Inc.	
	Size	Document Number
NBS/HW	PMIC BD2613	Rev 1A
Date:	Wednesday, January 14, 2013	Sheet 37 of 44

Voltage = 3.3V
I_{max} = 1.9A

Voltage = 3.3V
I_{max} = 1.7A

3.3V/150mA
1.817V/150mA

0.62V/325mA

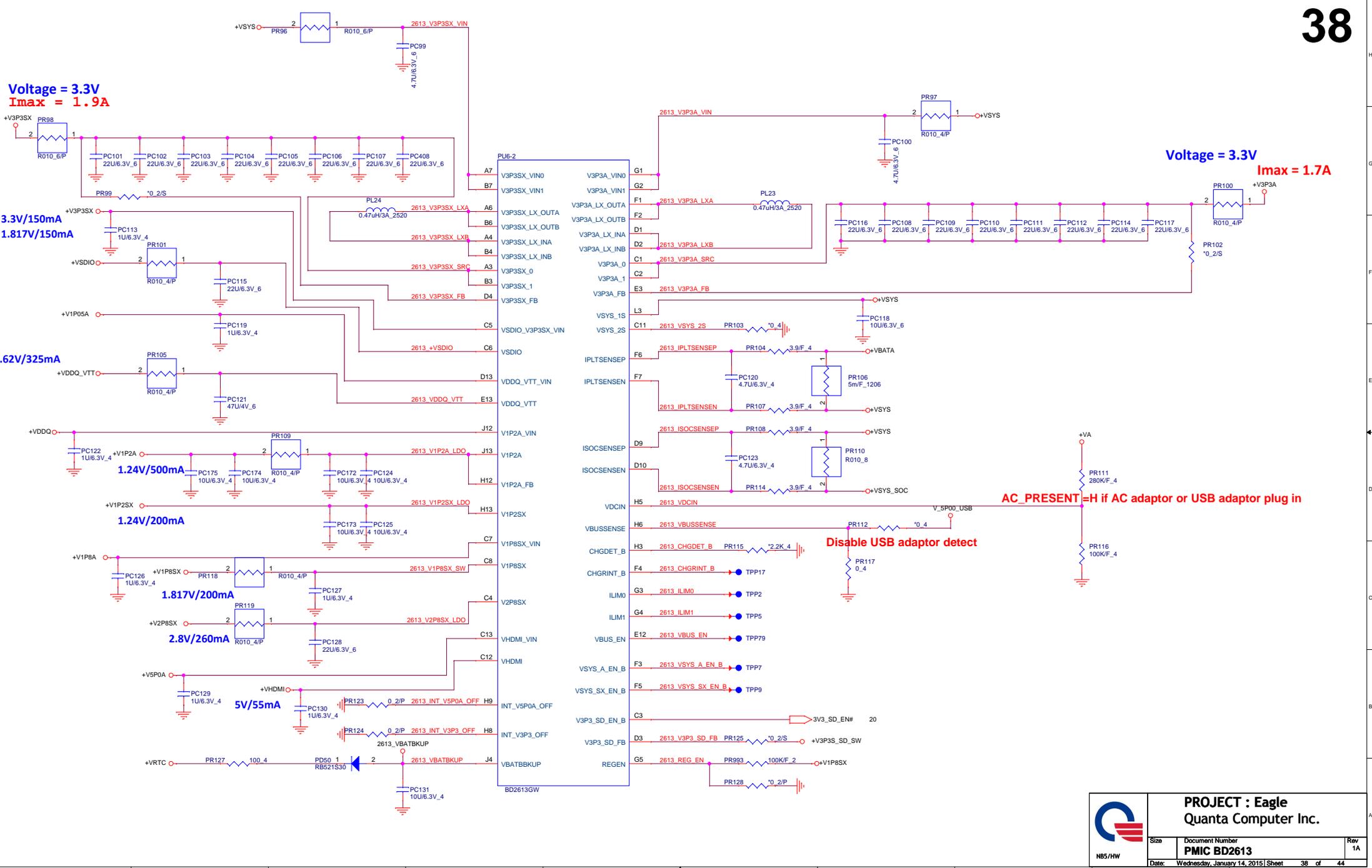
1.24V/500mA

1.24V/200mA

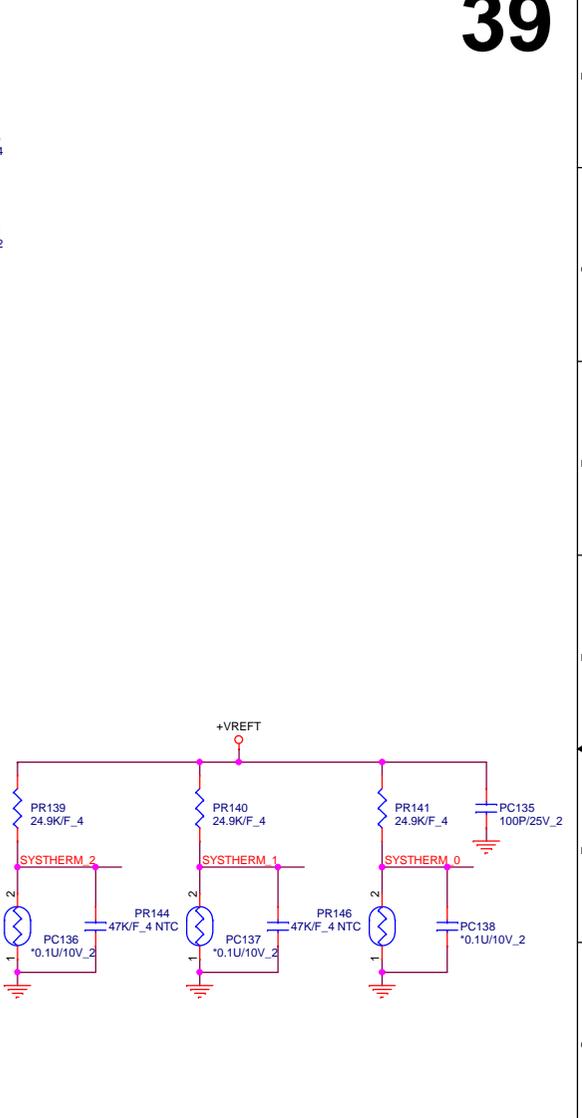
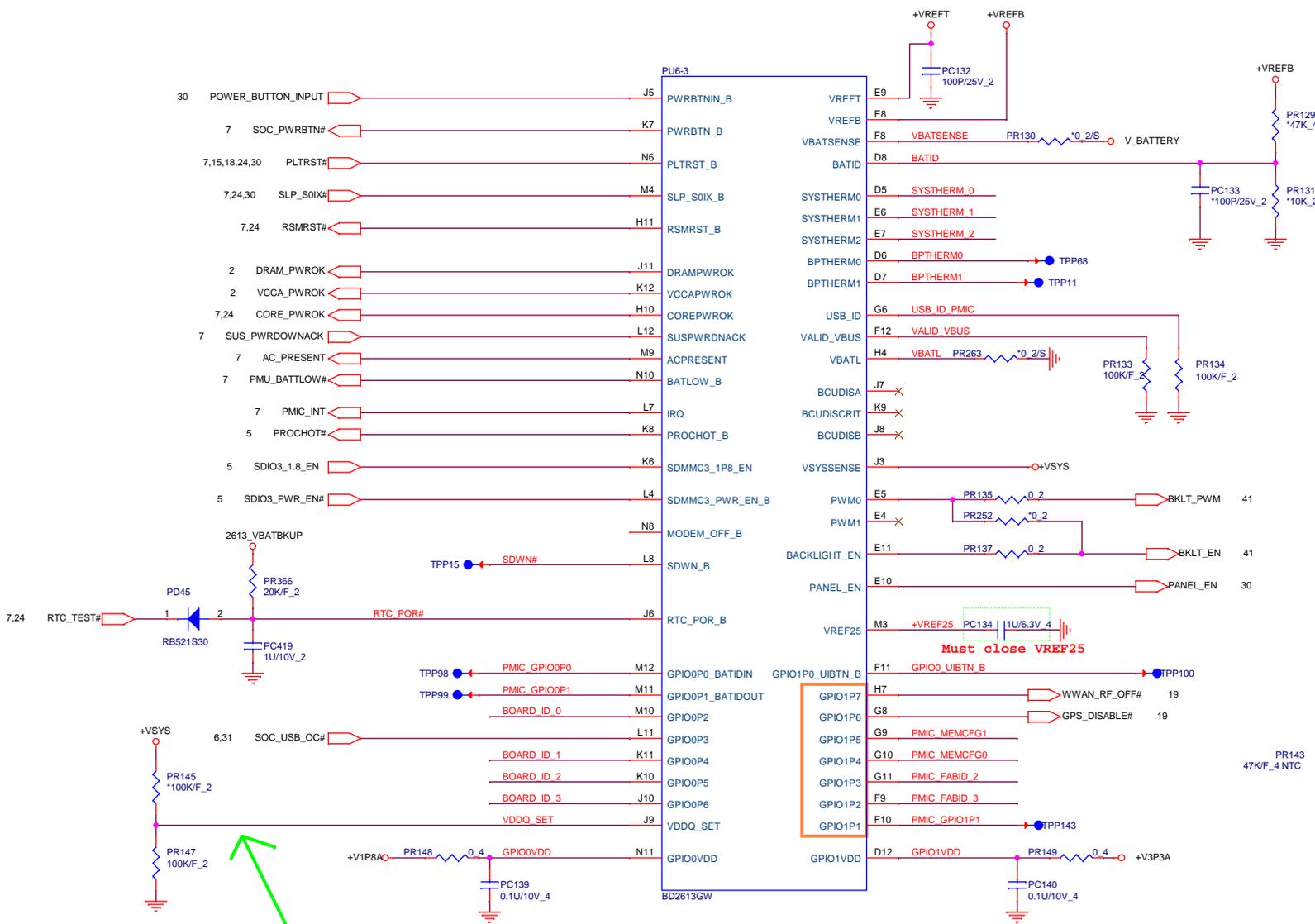
1.817V/200mA

2.8V/260mA

5V/55mA

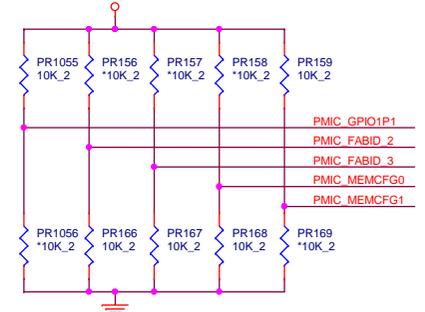
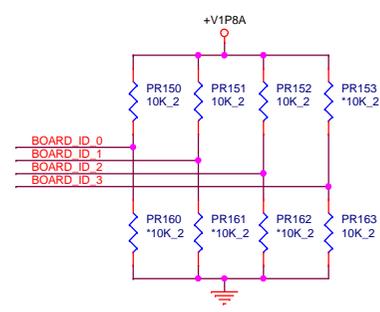


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VDDQ_SET	LPDDR3	DDR3L
GND	GND	VSYS

Board ID	ID 2	ID 3	SKU	ID 1	ID 0
DB	1	1	WO-WAN ; WO-NFC	0	0
SI 1	0	1	WO-WAN ; W-NFC	0	1
SI 2	1	0	W-WAN ; WO-NFC	1	0
PV / MV	0	0	W-WAN ; W-NFC	1	1

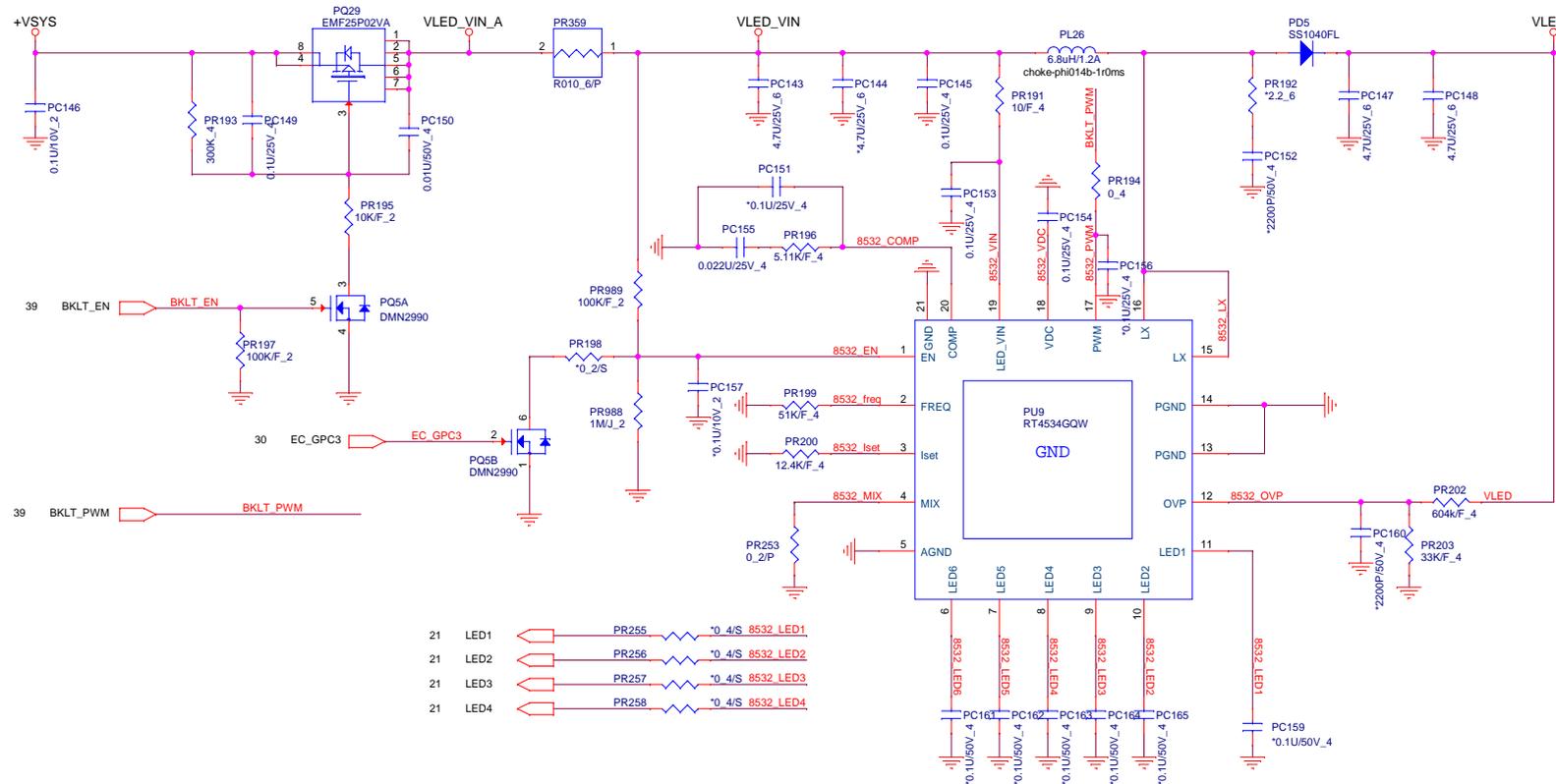


Board ID	FABID_2	LPDDR3 SIZE	GPIO1P1	LPDDR3 VENDOR	MEMCFG1	MEMCFG0
Eagle	0	2G	0	SAMSUNG	0	0
Cedar 2	1	4G	1	Hynix	0	1
				Elpida	1	0
					1	1

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Quanta Computer Inc.

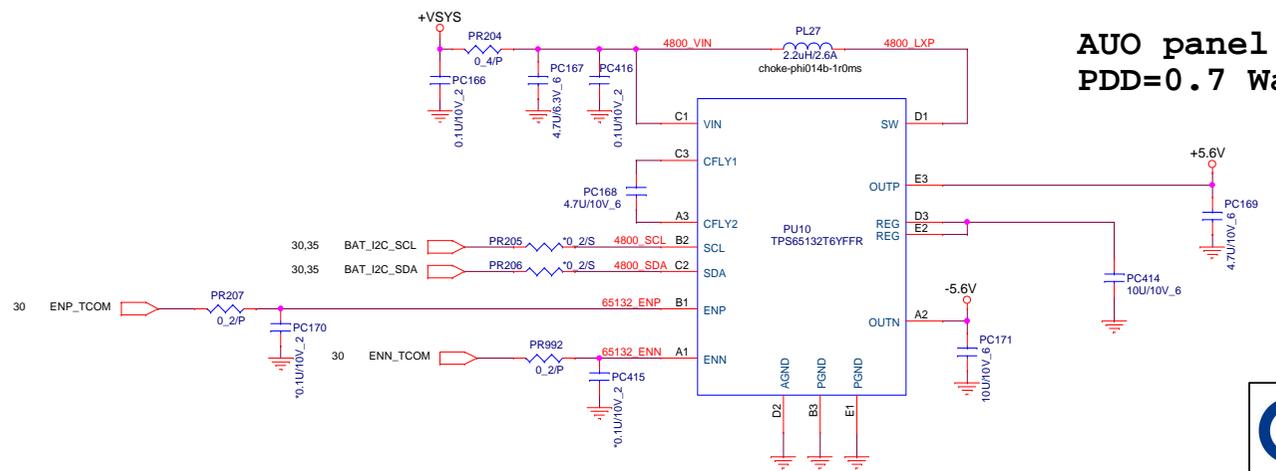
Size	Document Number	Rev
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AUO panel
LED: 6S4P
Vf=3.2V, If=20mA
PLED=1.48Watt
OVP=23.2V



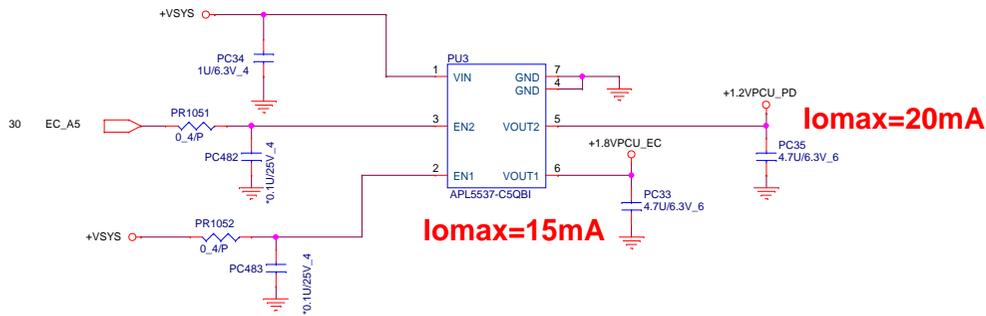
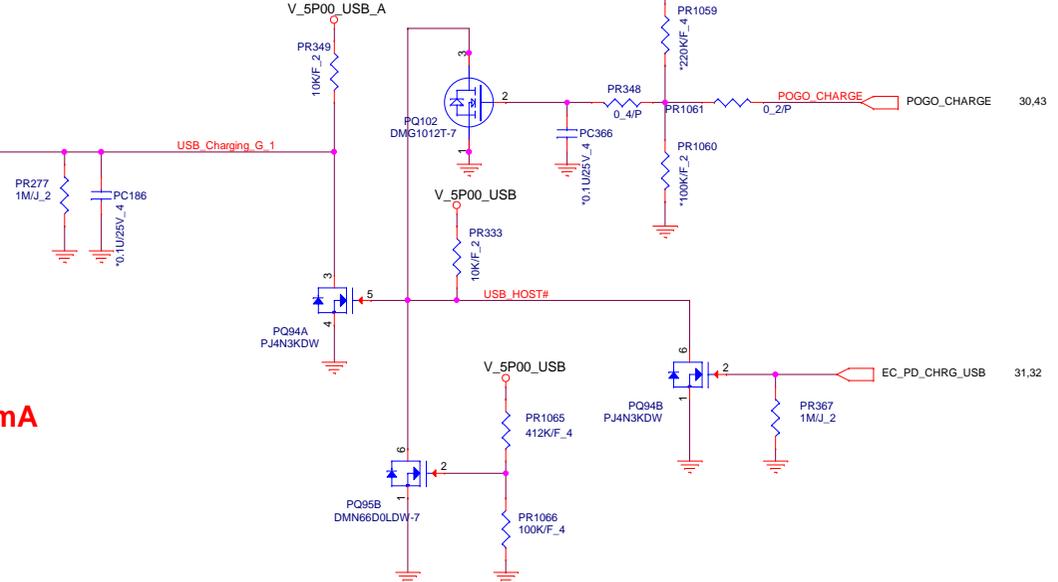
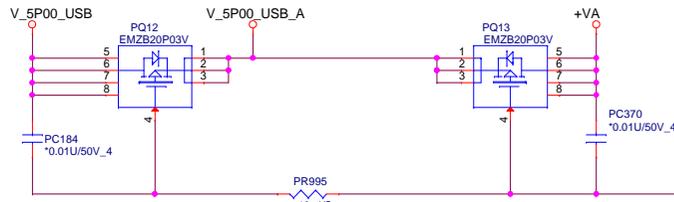
- 21 LED1 PR255 0.4/S 8532 LED1
- 21 LED2 PR256 0.4/S 8532 LED2
- 21 LED3 PR257 0.4/S 8532 LED3
- 21 LED4 PR258 0.4/S 8532 LED4

AUO panel
PDD=0.7 Watt

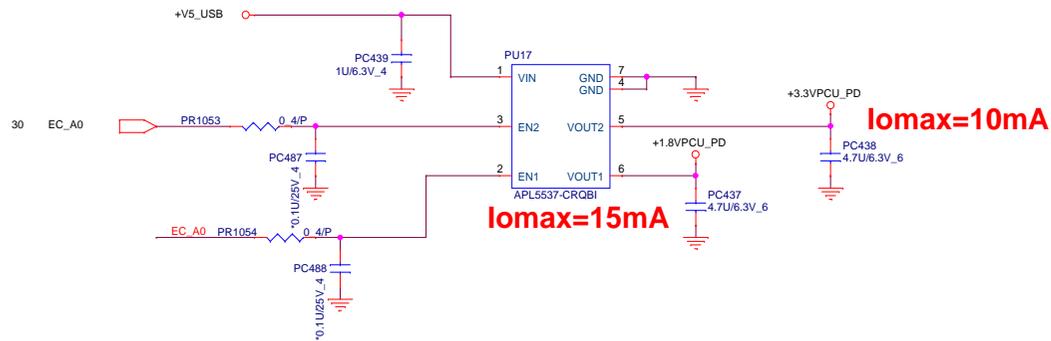


 NBS/HW	PROJECT : Eagle	
	Quanta Computer Inc.	
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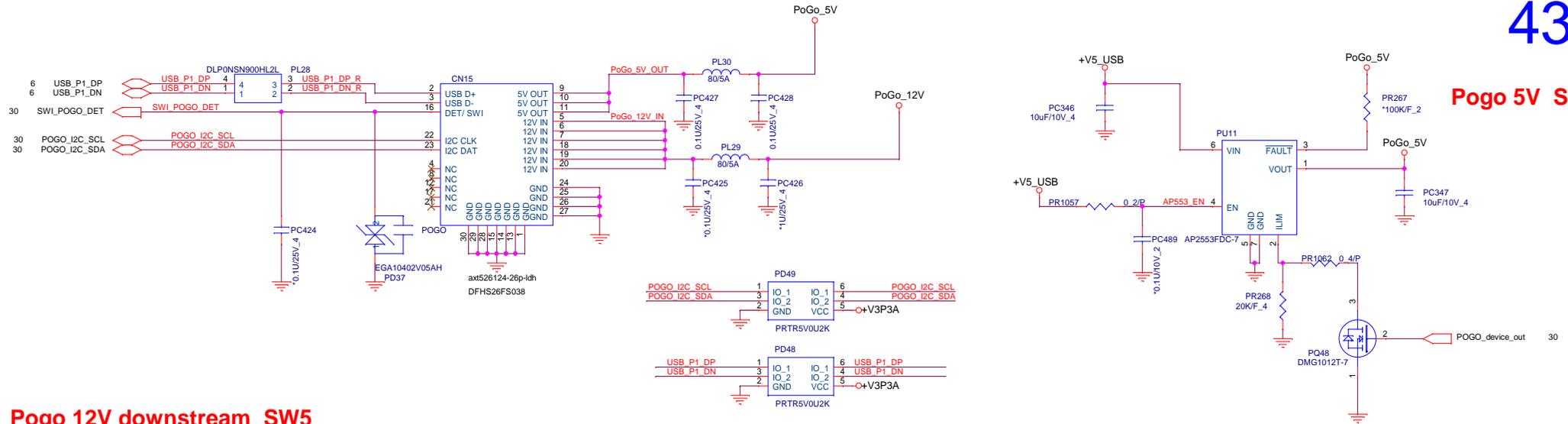
PQ102 Vgs:0.5~1V
PoGo_12 > 5.12V PQ95A turn on
PoGo_12 < 2.56V PQ95A turn off



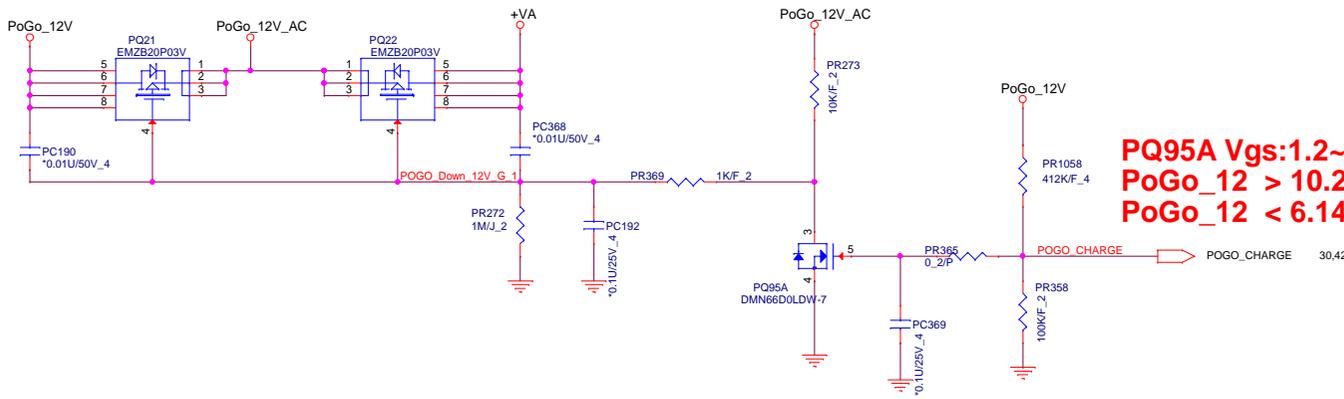
PQ95B Vgs:1.2~2V
V_5P00_USB > 6.144V PQ95B turn on (OVP)



Pogo 5V SW4



Pogo 12V downstream SW5



PQ95A Vgs:1.2~2V
PoGo_12 > 10.24V PQ95A turn on
PoGo_12 < 6.144V PQ95A turn off

SWI_POGO_DET=1V~3V **SW5 on**

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