

關鍵字:

Ken Modified 07/21_**A00
Ken Modified 08/11_**A00
Ken Modified 08/13_**A00
Ken Modified 08/14_**A00
Ken Modified 08/17_**A00
Ken Modified 08/19_**A00

Blackwell-T4 8" Schematic
Cherry Trail - T4
2015-08-20
REV : A00

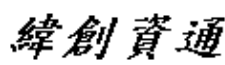
BOM 修改:

Snowfield : WU3701:054.03096.0001
Charger Mosfet (BOM變更)
Old P/N:ZZ.00215.037 Location: PU4603
New P/N: 84.03664.037 Location: PU4603
Second P/N:84.00920.037
TPS65982:65982074.65982.007Z ->074.65982.0B7Z
CPU:071.CHERY.0D0U->57VYD

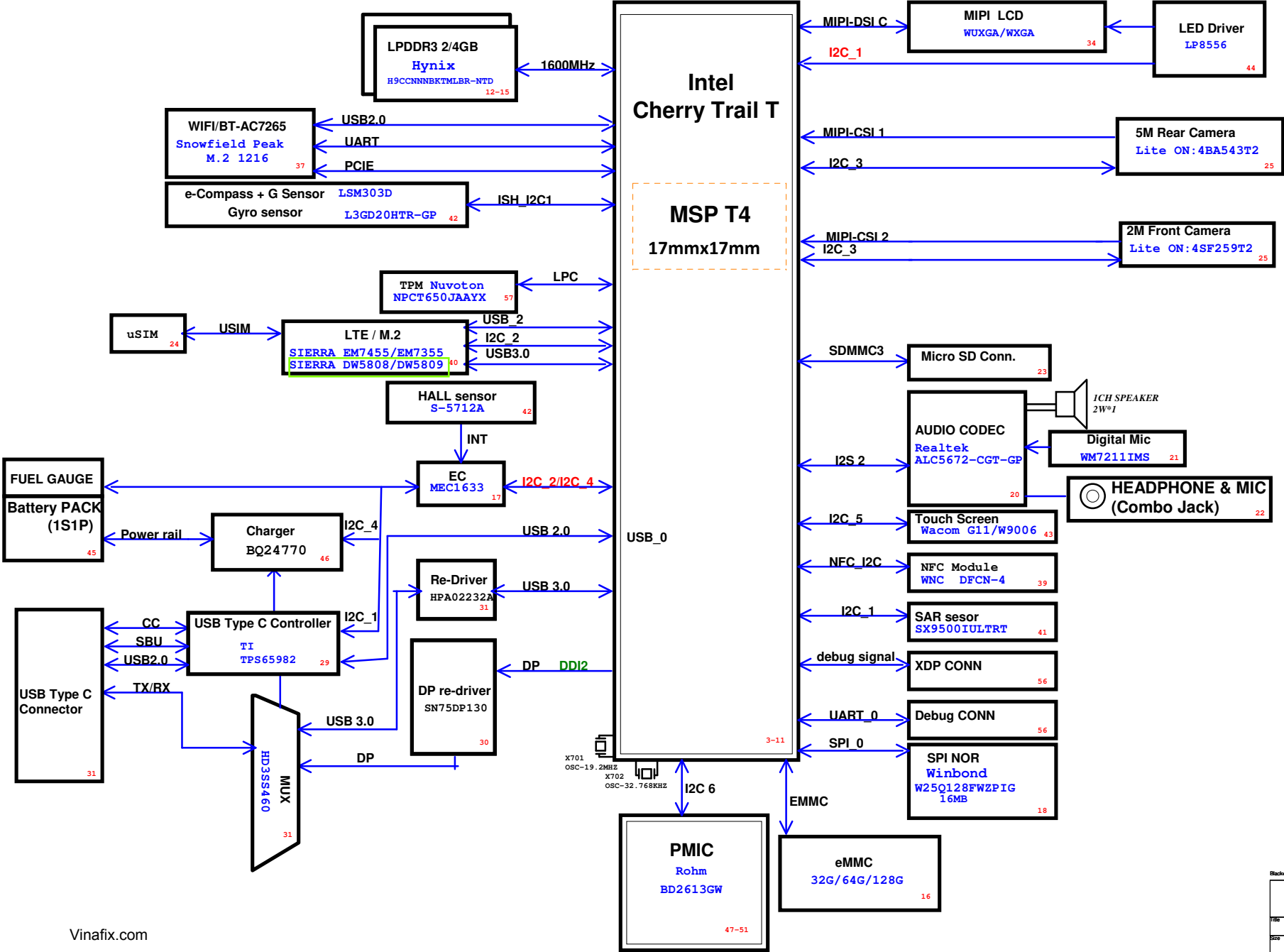
EC U1704 量產料號更改為:071.01633.0A0U
Cap 更改料號 78.10612.5BL->078.10612.05BN
Audio Codec U2001:071.03272.0003
Cancel XDP1,DB2,R735,R736,R740,R751
CAP更改料號 78.2R2B2.1SLRL -> 78.2R2B2.1SL
Vinafix.com 78.68034.1FLLL -> 78.68034.1FL

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<Core Design>

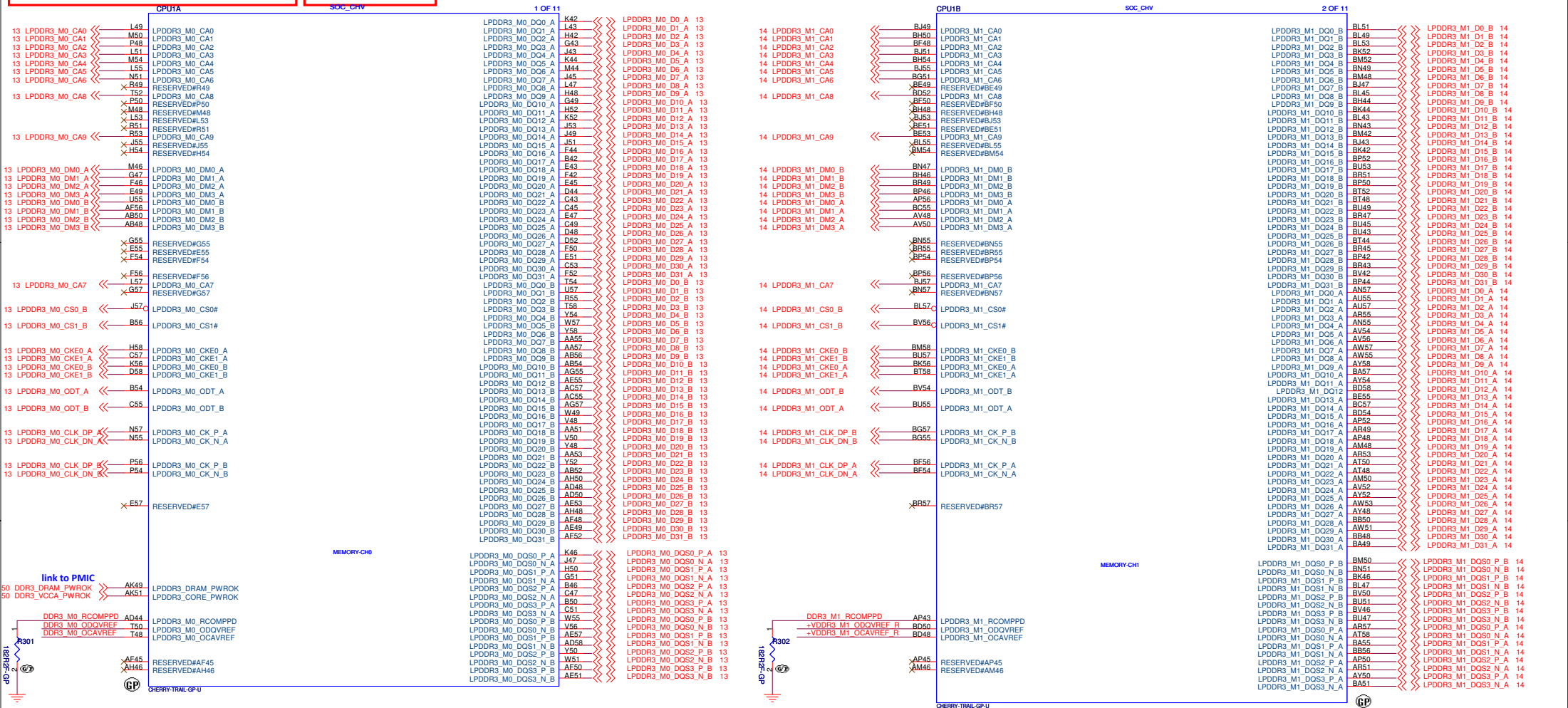
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Title 01_Cover		
Size	Document Number Blackwell T4	Rev -1
Date: Thursday, October 01, 2015 Sheet 1 of 73		

Block Diagram



SOC MEM SECTION : 1&2

SSID=CPU

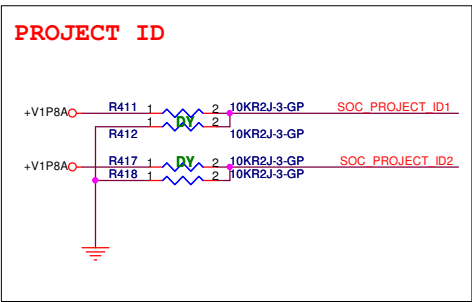


For layout:

3.3.1.1.2 LPDDR3 Bit and Byte Lane Swapping

- Data strobe swapping and data mask swapping **are not allowed**. For all memories, DM[n] must be mapped together with DQ Byte[n] and DQS/DQS#[n].
- Data bit swapping within a byte lane in the same channel is allowed, **except in the lowest two Bytes in each DRAM**. Swapping bits between bytes is not allowed.
- Byte lane swapping for LPDDR3 within same DRAM is allowed, **except the lowest two Bytes in each DRAM**. Byte swap between DRAM A and DRAM B is not recommended.
 - If swapping is used, DQ signals within a channel must match its associate DQS/ DQS# and DM signals.
 - In case customer has to do the Byte swap between DRAM A and DRAM B, ensure length matching for CLKA-CLKB is less than 20-mil.

SSID=CPU



2 R408 1 +V1P8A
20KR2F-L-GP

Add 104P to GND

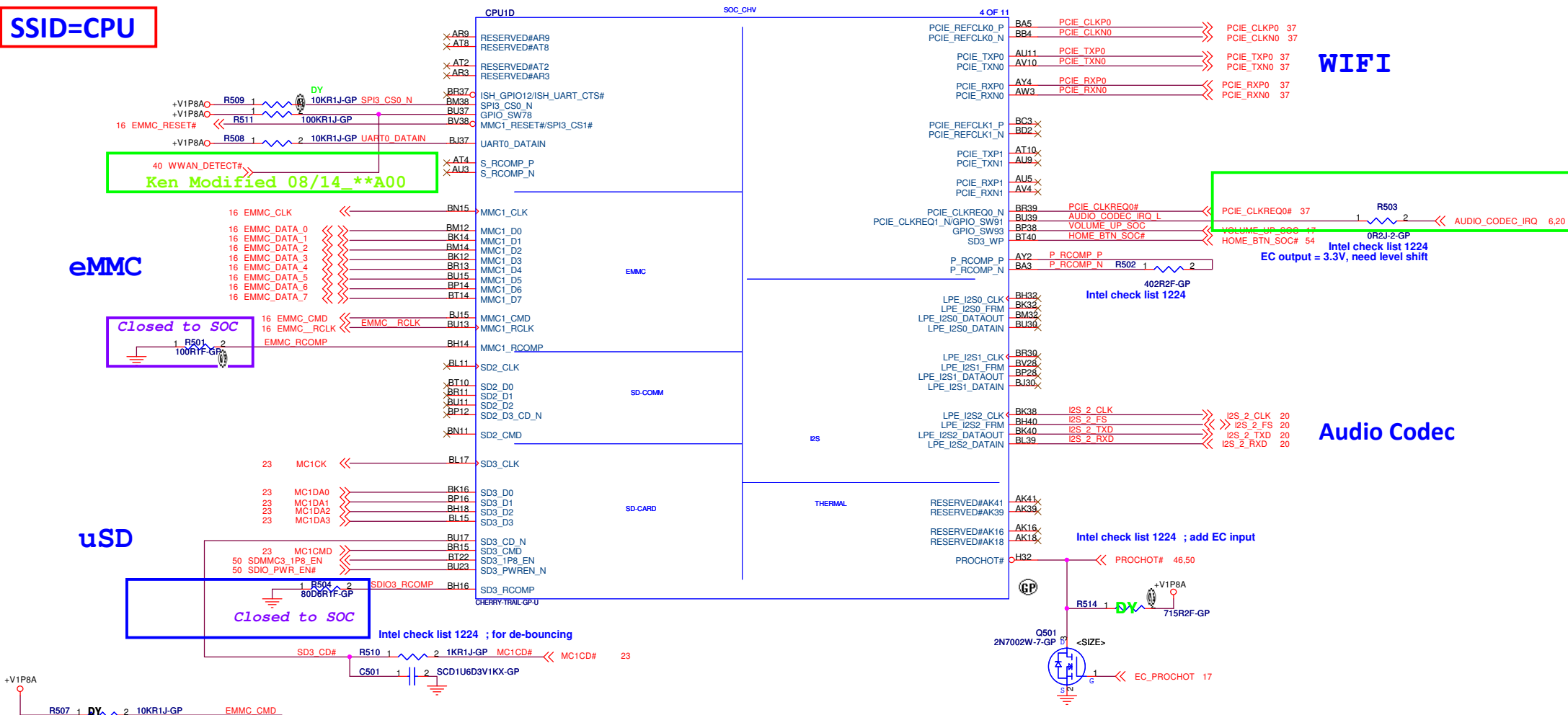
» SOC_VBUSSNS 6

Blackwell T4

Title			
04_SOC (eDP/HDMI/MIPI)			
Size	Document Number	Rev	
	Blackwell T4	-1	
Date:	Thursday, October 01, 2015	Sheet	4 of 73

SOC : eMMC/SD/GPIO/I2S

SSID=CPU



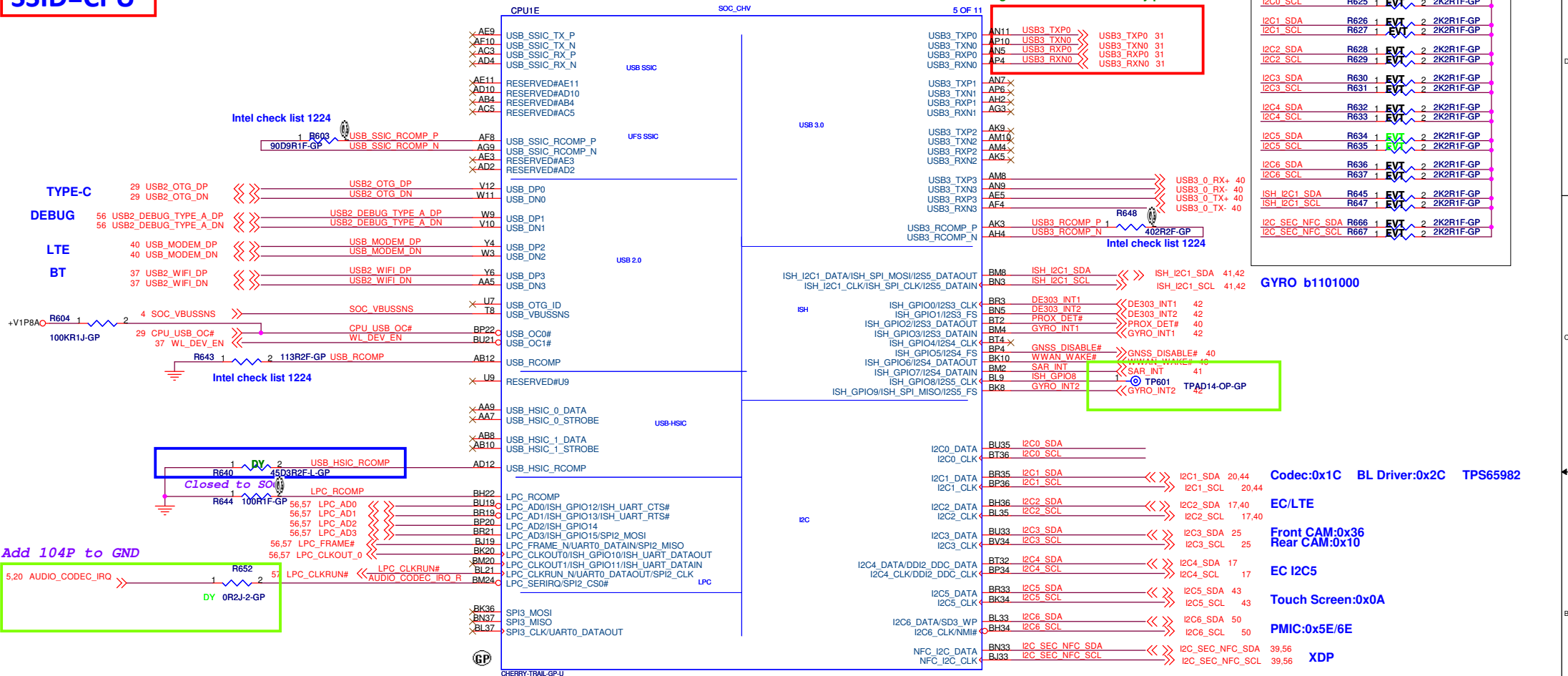
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Title 05_SOC (EMMC/SD/GPIO/I2S)	
Size Document Number	Rev -1
Date: Thursday, October 01, 2015 Sheet 5 of 73	

SOC : USB/ULPI/HSIC/LPC/SMBUS/HSI/I2C

SSID=CPU



SSID=CPU

[illegible][illegible]

Timing diagram for the SPI interface between the STM32F405 and the ADXL345. The diagram shows the relationship between the SPI clock (SPL_CLK), data in (SPL_SOCK_D3), data out (SPL_MISO), and chip select (SPL_CS1) signals. The ADXL345 is connected to the STM32F405 via the SPI interface. The diagram includes a table of signal names and their corresponding pin numbers.

Signal Name	Pin Number
BP24	18
BL25	18
BL26	18
BK26	18
BN25	18
BL25	18
BR23	18
BL24	18
E37	50
K38	50
L37	50
C37	50
G37	50
C38	50
D38	50
K36	50

NFC_HOST_INT_SEC	>>	NFC_HOST_INT_SEC	F36	GPIO_SUS8
39 NFC_DWL_REQ	>>	NFC_DWL_REQ	J35	GPIO_SUS9
39 NFC_EN_SEC	>>	NFC_EN_SEC	K34	GPIO_SUS10

[illegible]

The image contains two circuit diagrams for the SC10P50V2JN-4GP microcontroller. The left diagram shows the connection of the DY RF module to the CLK1, CAM1, CLK2, and MCLK pins. The right diagram shows the connection of the DY RF module to the XDP H TMS, XDP H TDI, XDP H FREQ#, SPI MODE, XDP H TCK, XDP H TRST#, MODEM SLPCLK, and GPIO SUS7 pins. Both diagrams include a +V1P8A power supply and a ground connection.

Left Diagram Connections:

- C712: DY RF to SC10P50V2JN-4GP PLT CLK1 CAM1
- C711: DY RF to SC10P50V2JN-4GP PLT CLK1 CAM2
- C710: DY RF to SC10P50V2JN-4GP CLK I2S MCLK

Right Diagram Connections:

- R735: DY RF to XDP H TMS
- R736: DY RF to XDP H TDI
- R740: DY RF to XDP H FREQ#
- R751: DY RF to XDP H FREQ#
- R753: DY RF to SPI MODE
- R737: DY RF to XDP H TCK
- R738: DY RF to XDP H TRST#
- R754: DY RF to MODEM SLPCLK
- R758: DY RF to GPIO SUS7

Power and Ground Connections:

- +V1P8A: Connected to the top of the DY RF module and the XDP H TMS pin.
- Ground: Connected to the bottom of the DY RF module and the XDP H TMS pin.

Other Labels:

- STRAPS: Labeled in green text below the left diagram.
- Vinafix.com: Watermark at the bottom of the left diagram.

TOUCH_INT# R713 1 2 10KR1J-GP O-V1P8A

EC_SMI# R731 1 2 10KR1J-GP O-V1P8A

FG_ALERT_EC R732 1 2 10KR1J-GP O-V1P8A

RSMRST# R714 1 2 10KR1J-GP

6 OF 11

Check with Intel

EC and SOC 做Handshaking

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Joe modify 0113

2.4 Lane Det

+V1P8A

R733
10KR1J-GP

A

D5412
SD103AWS-2-GP

TPS65982_DEBUG3 29.31

R741
10KR2J-3-GP

+V1P8A

0:Normal, 1:COCO

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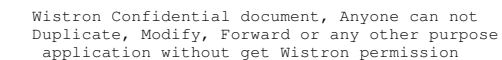
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Title **07 SOC (CLK/ITP/SPI/MISC/PMU)** Blackwell T4

Size	Document Number	Custom	Rev
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SSID=CPU



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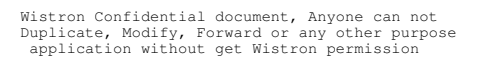
08_SOC (VCCIO)

Blackwell T4

1

of 73

SSID=CPU



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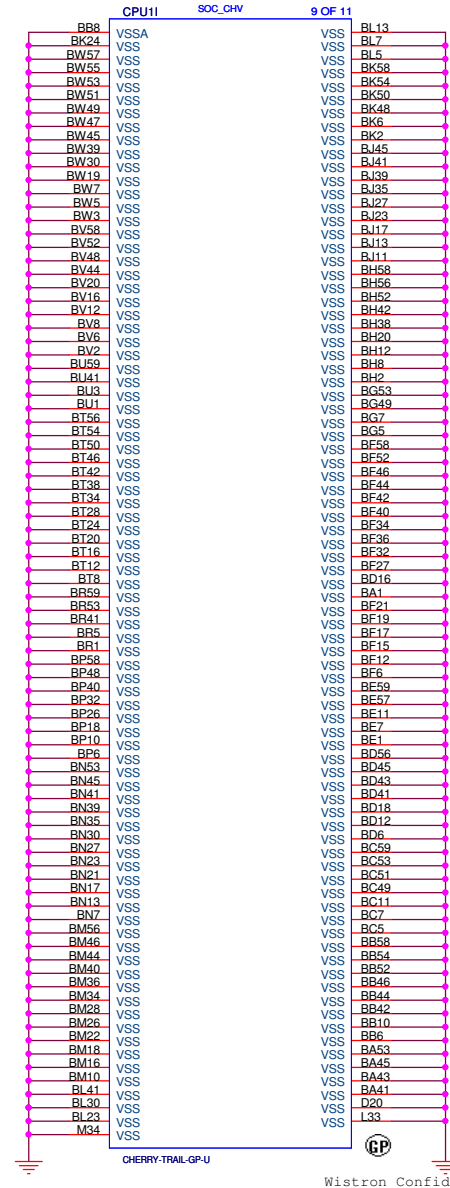
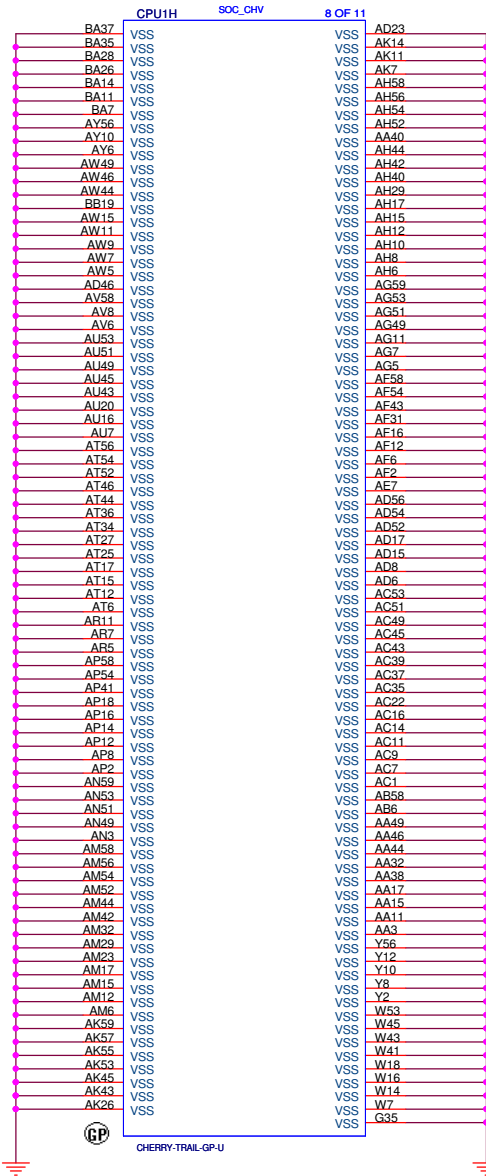
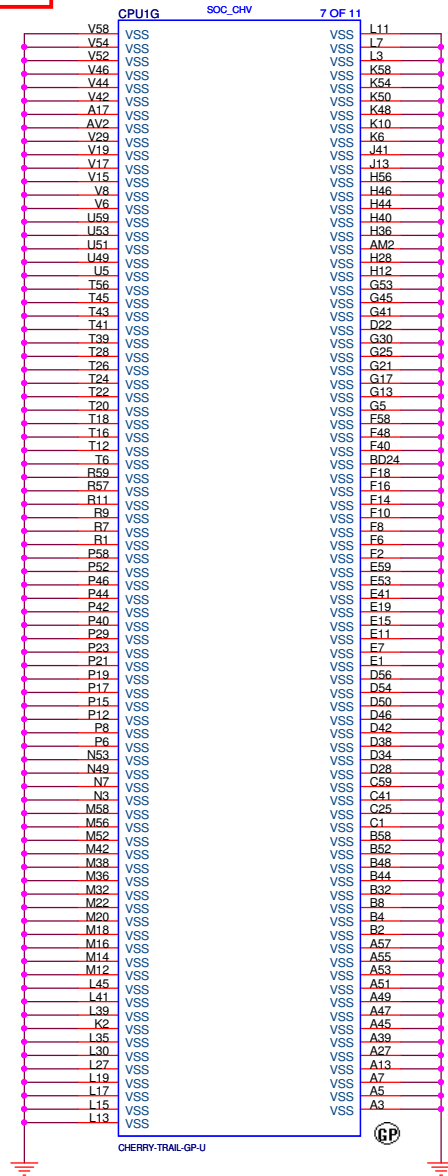
09_SOC (VCC/VNN)

Rev

3

SOC : GROUND

SSID=CPU



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Title			10_SOC (VSS)
Size	Document Number	Rev	
	Blackwell T4	-1	
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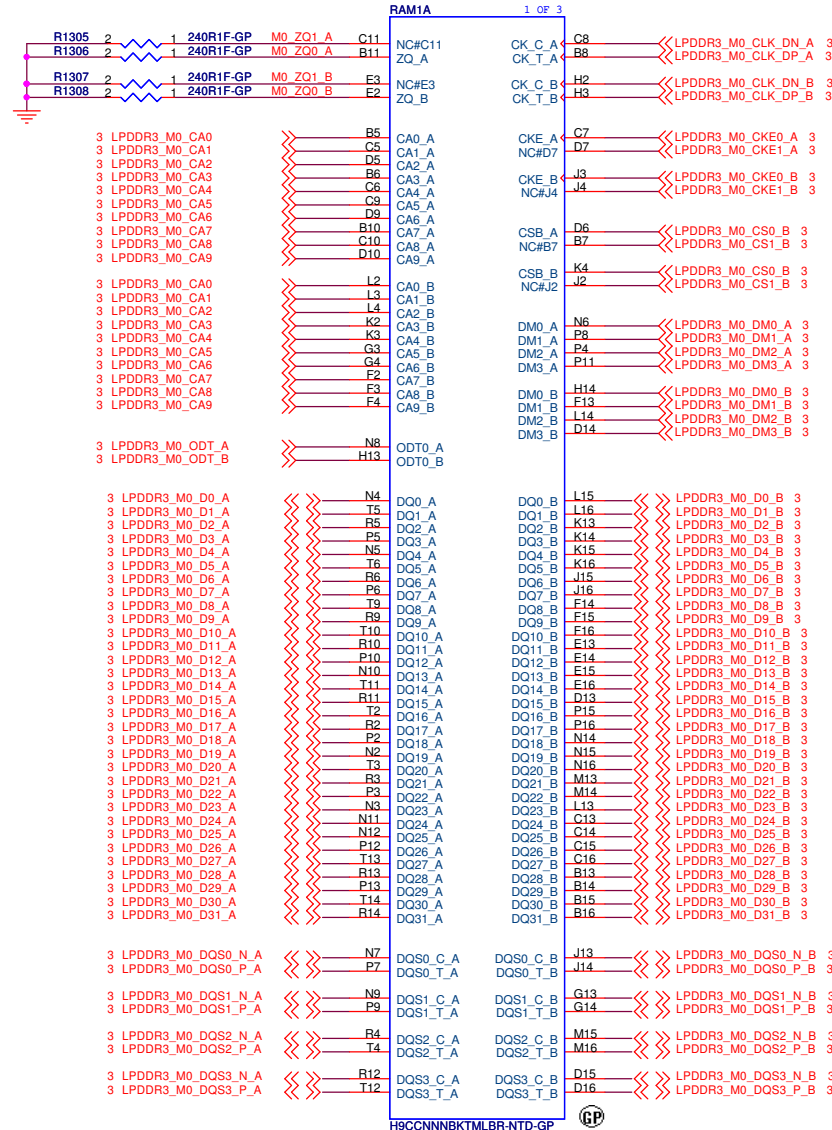
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Size	Document Number				Rev
	Blackwell T4				-1
Date: Thursday, October 01, 2015			Sheet	12	of 73

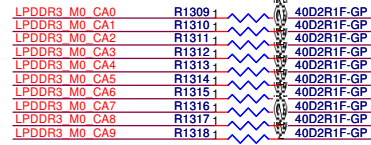
LPDDR3 MEMORY CHANNEL A

SSID=MEMORY

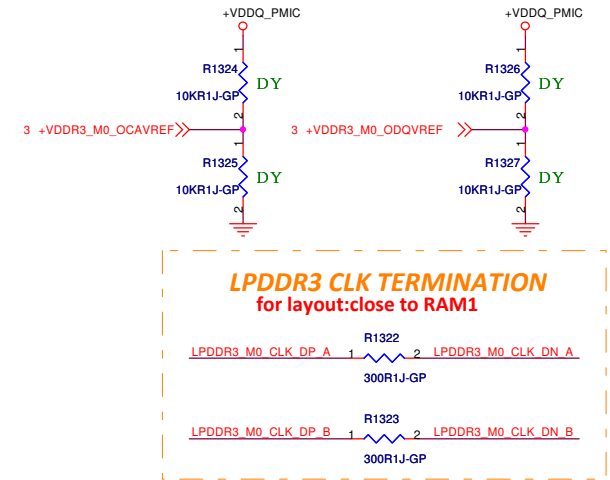
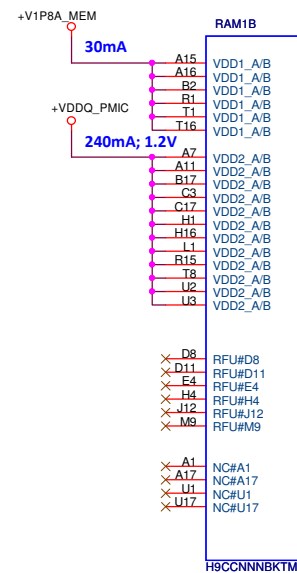
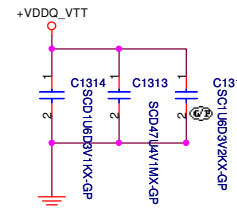
H9CCNNN8KTMBR-NTM-GP



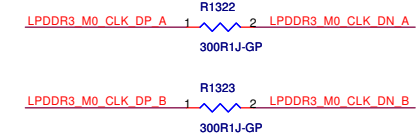
for layout:
colsed to RAM1



LPDDR3 CA TERMINATION



LPDDR3 CLK TERMINATION for layout:close to RAM1



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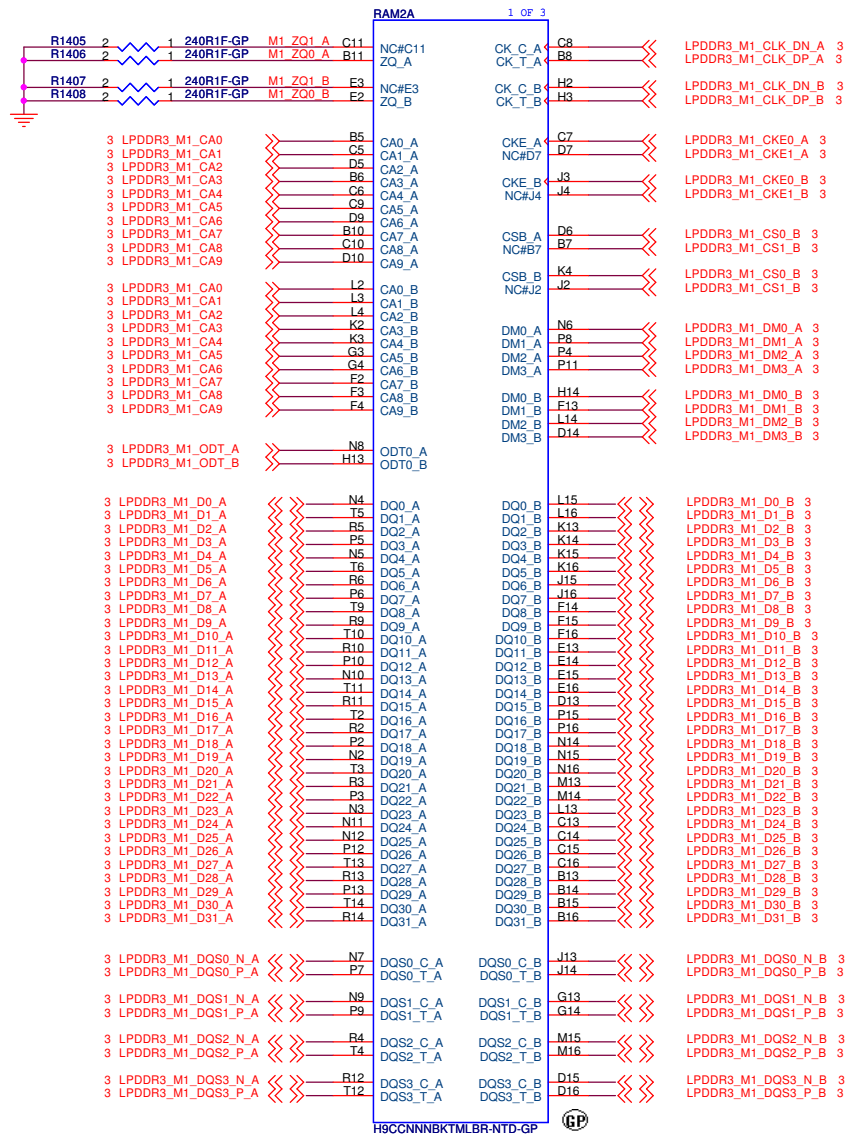
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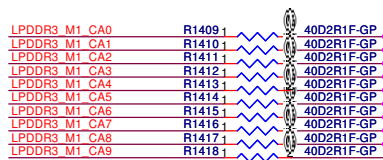
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Size	Document Number	Rev	
	Blackwell T4	-1	
Date:	Thursday, October 01, 2015	Sheet	13 of 73

LPDDR3 MEMORY CHANNEL
H9CCNNN8KTMBR-NTM-GP

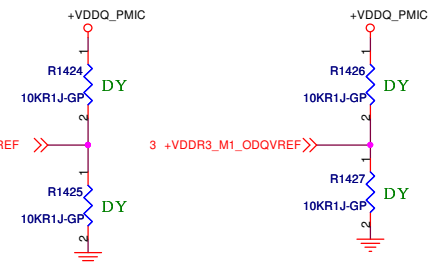
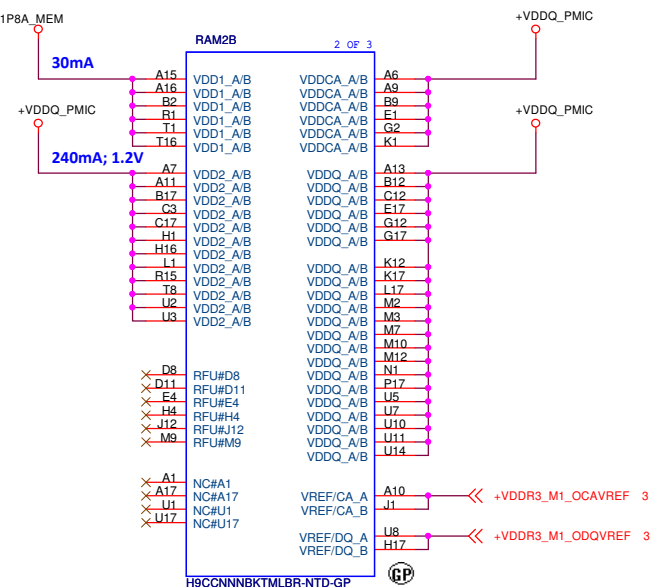
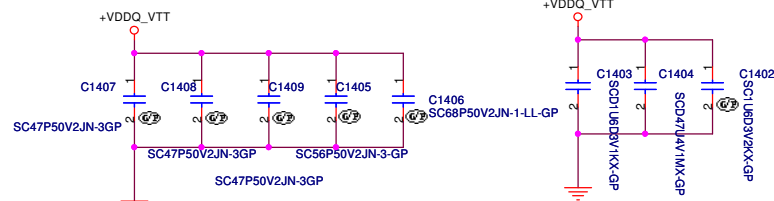
SSID=MEMORY



for layout:
closed to RAM2

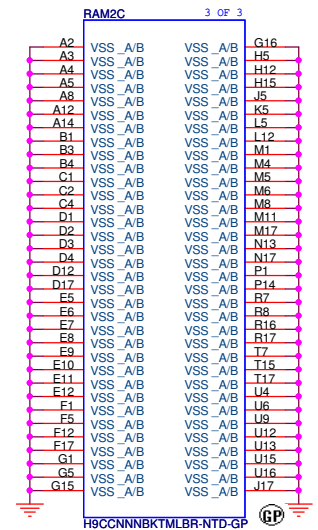
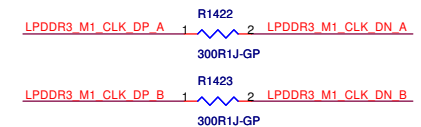


LPDDR3 CA TERMINATION



LPDDR3 CLK TERMINATION

for layout:close to RAM2



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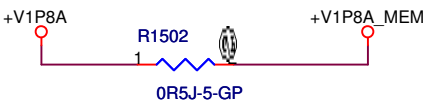
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Size	Document Number Blackwell T4	Rev -1
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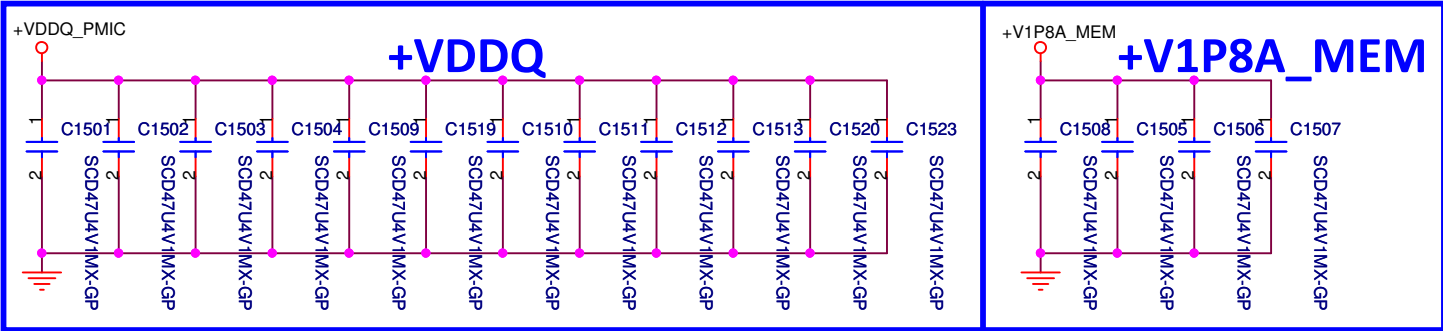
Date: Thursday, October 01, 2015 Sheet 14 of 73

LPDDR3 DECOUPLING CAPACITORS

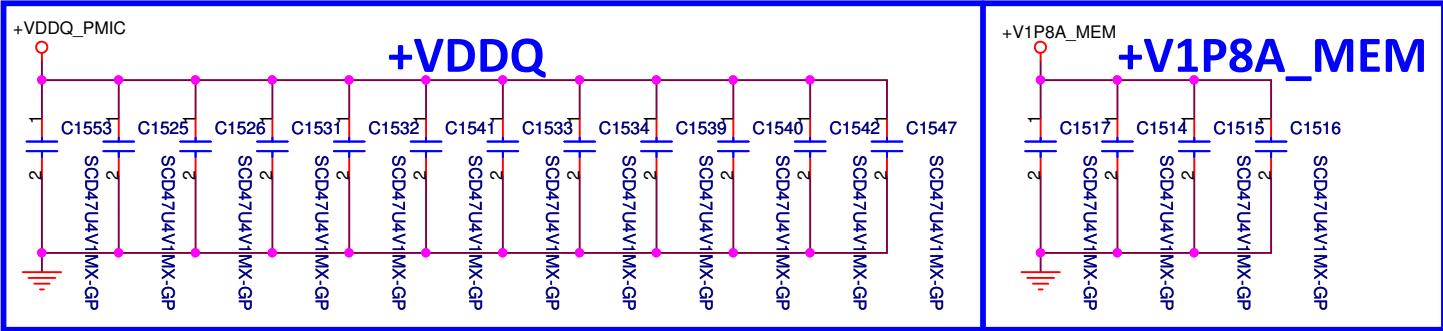
SSID=MEMORY



LPDDR3 MEMORY CHANNEL A



LPDDR3 MEMORY CHANNEL B



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Title 15_LPDDR3_TERMINATIONS

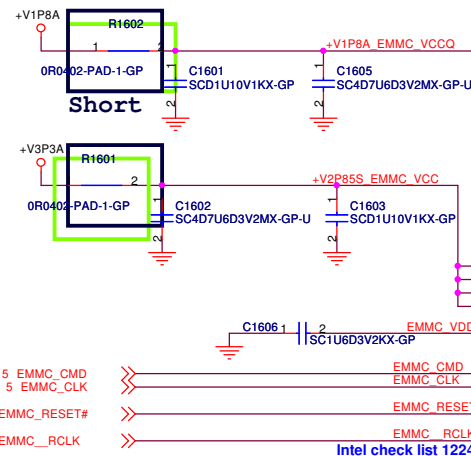
Size	Document Number	Rev
	Blackwell T4	-1

eMMC SSID=EMMC

Samsung - 16GB - KLMAG2GEAC-B031
 PN : 072.KMAG2.0B0U
 Samsung - 32GB - KLMBG4GEAC-B031
 PN : 072.KMBG4.000U



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64GB
 072.KMCG8.0B0U

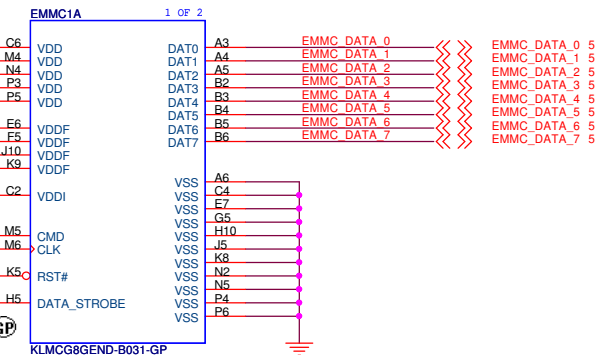
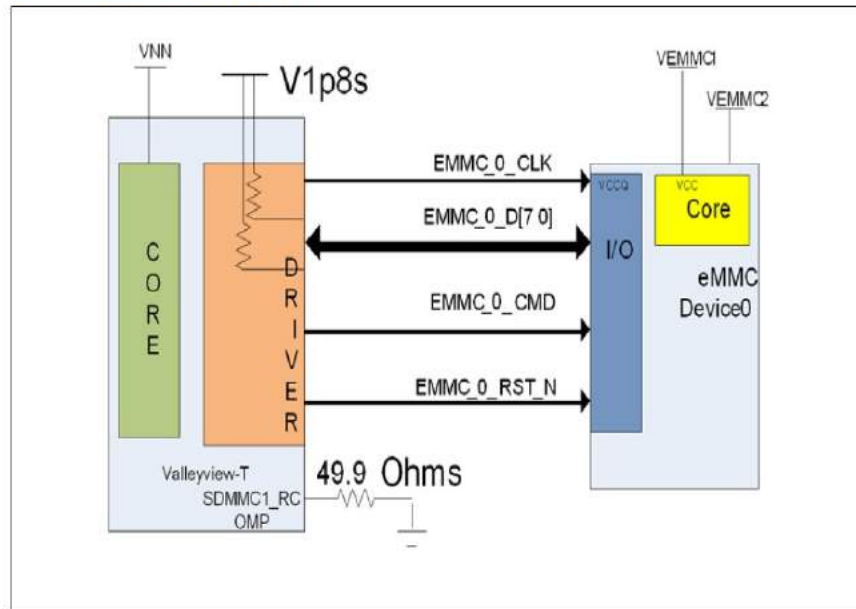


Figure 3-44.eMMC Interface Topology

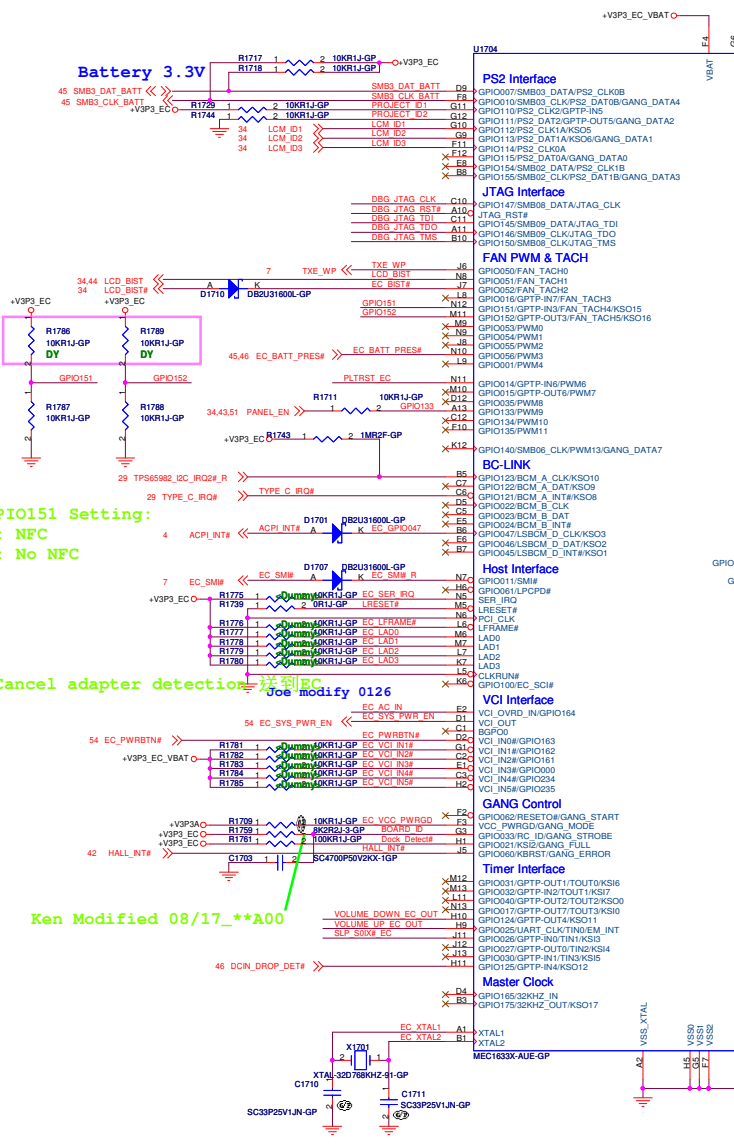


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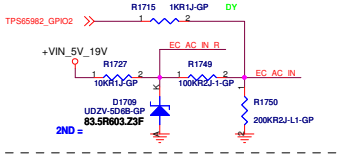
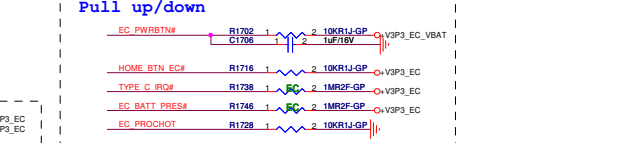
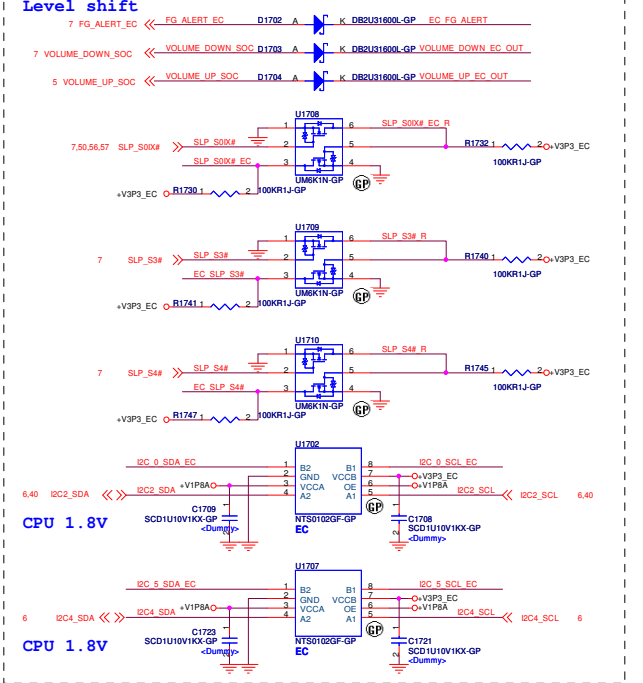
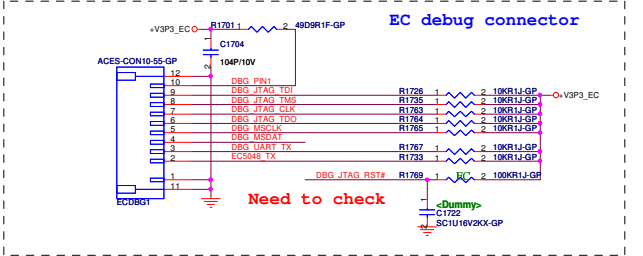
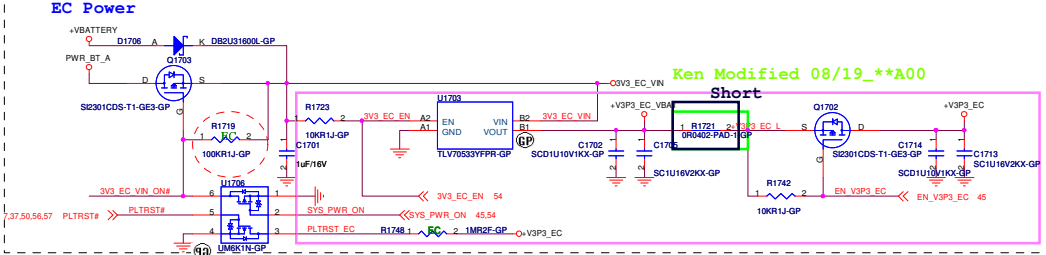
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Title 16_eMMC		
Size	Document Number Blackwell T4	Rev -1
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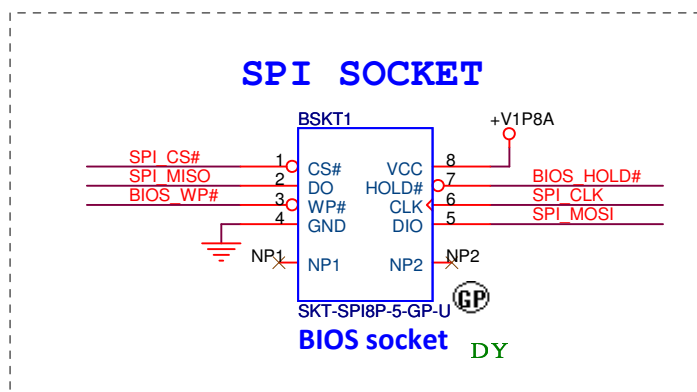
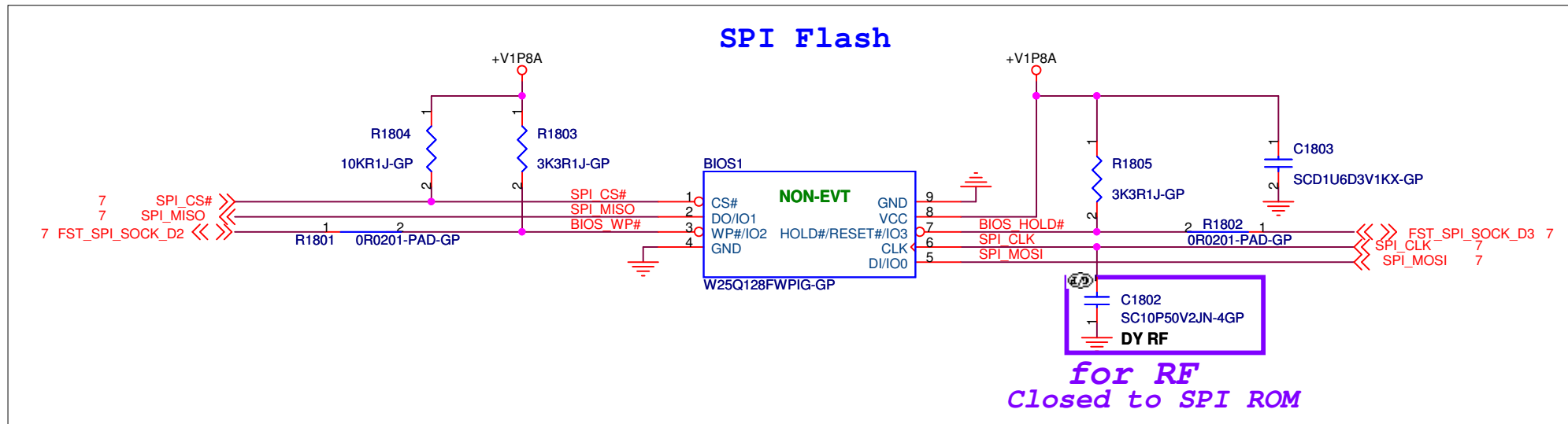
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EVT2	130K	4700p	
DVT1	62K	4700p	
DVT2	33K	4700p	
A00	8.2K	4700p	
MP	4.3K	4700p	
	2K	4700p	
	1K	4700p	

PROJECT ID	PROJECT	PROJECT_ID2	PROJECT_ID1
Blackwell-T3	0	0	
Blackwell-T4	0	1	
Somerset-T3	1	0	
Somerset-T4	1	1	



SPI ROM SSID=Flash.ROM

Need to made FPC for new debug port.



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Title

18_SPI NOR

Size

Document Number

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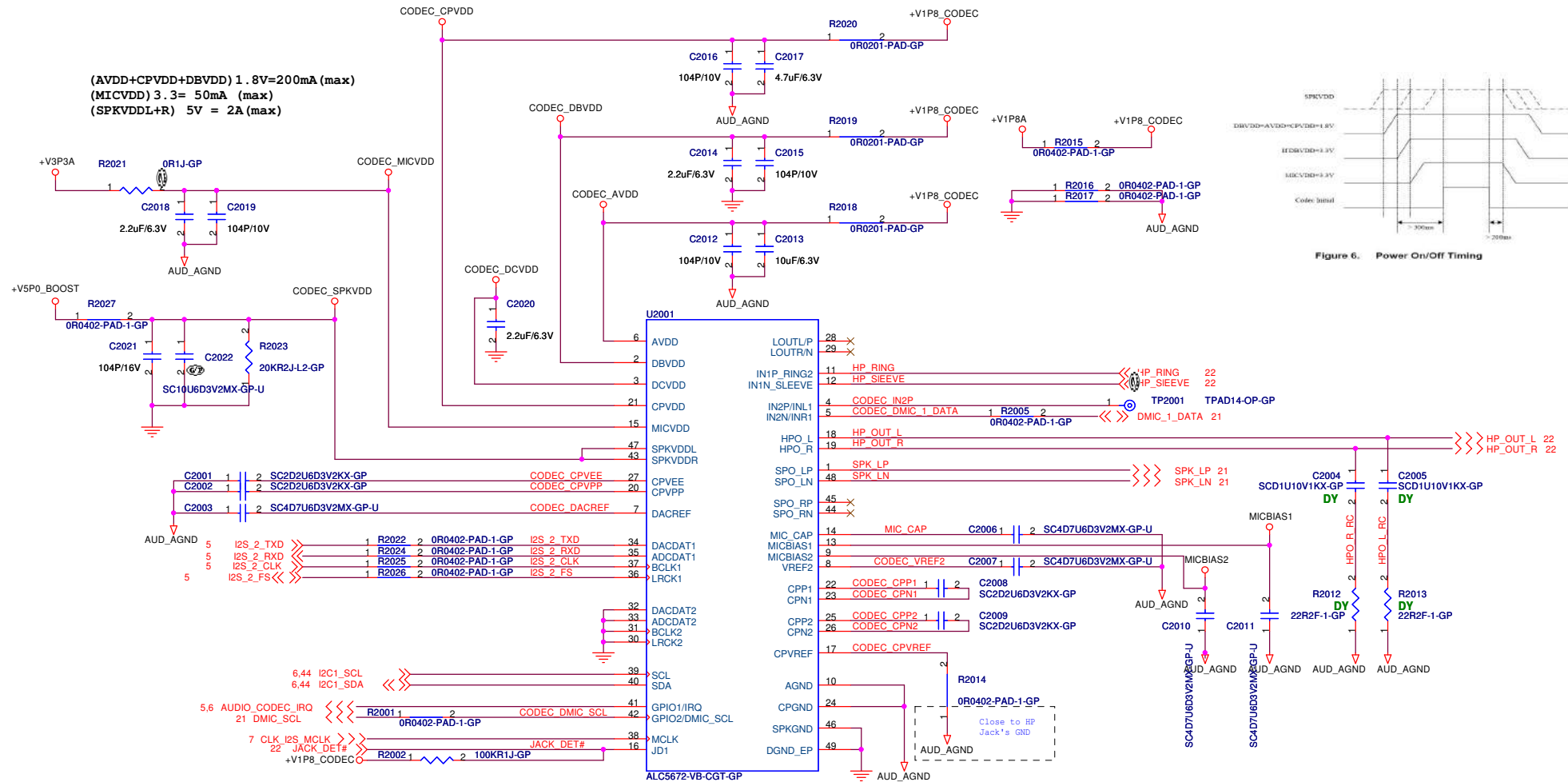
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Title **20_AUDIO CODEC**

Size Document Number

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Date: Thursday, October 01, 2015

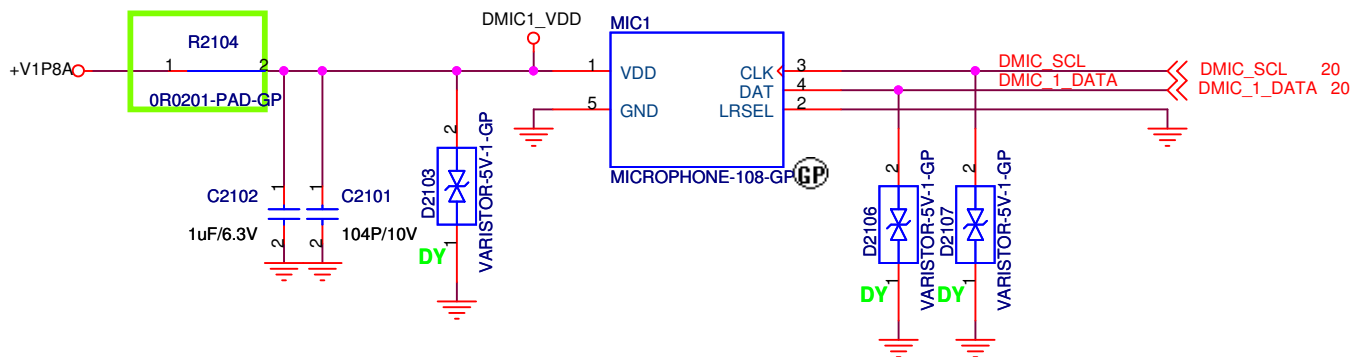
Sheet 20 of 73

Rev

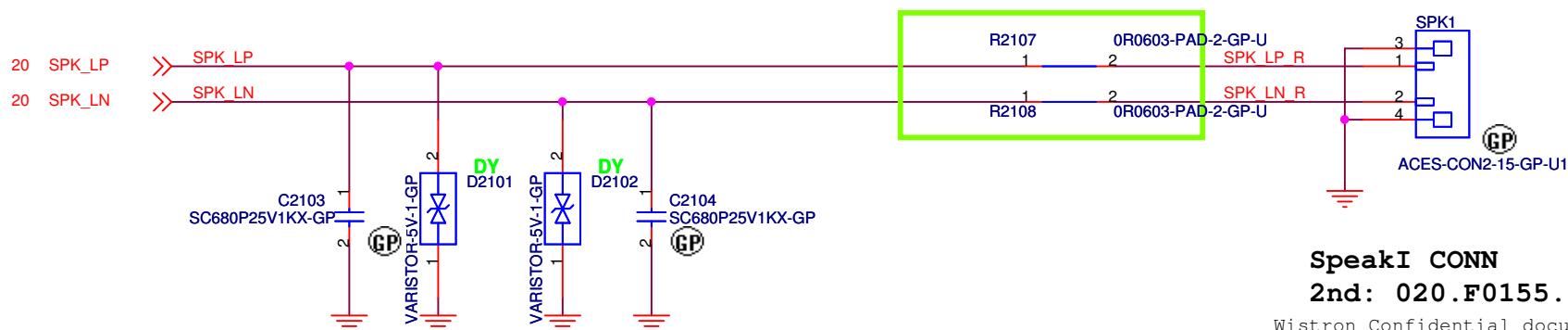
-1

DMIC SSID=AUDIO

need to check DMIC position and SEL pin define



SPEAKER



SpeakI CONN

2nd: 020.F0155.0004

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<Core Design>

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Title **21_AUDIO AMP/DMIC/SPK**

Size Document Number
Blackwell T4

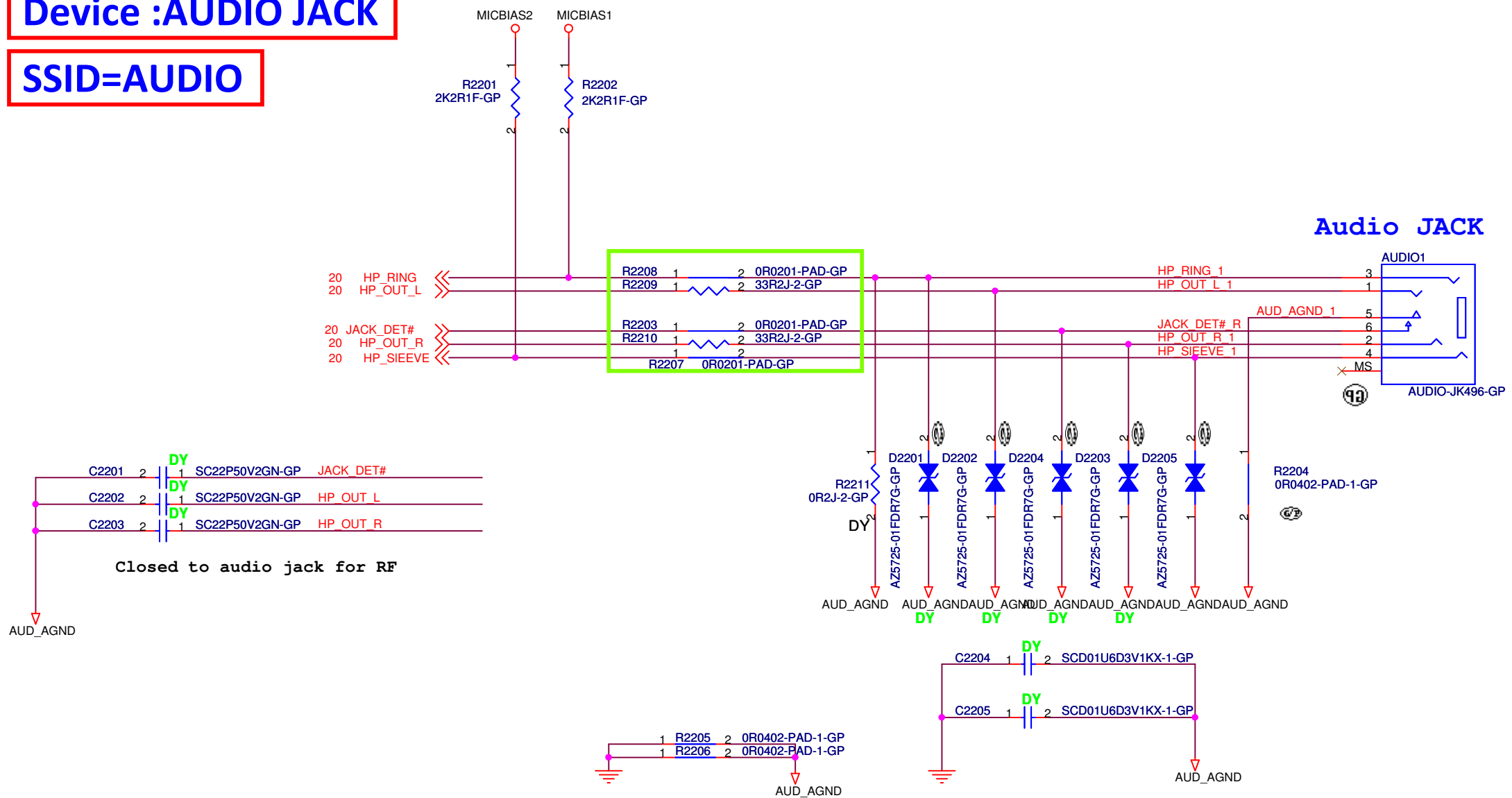
Rev
-1

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Device :AUDIO JACK

SSID=AUDIO



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Title
22_Audio JACK

Size
Document Number
Blackwell T4

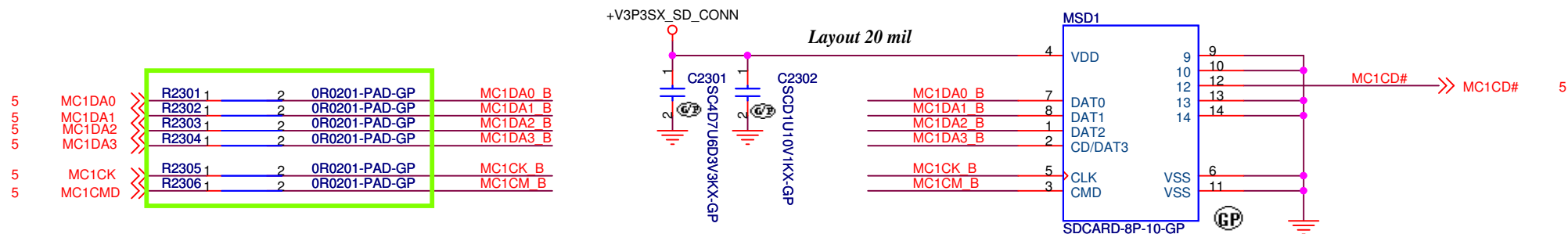
Rev
-1

Date: Thursday, October 01, 2015

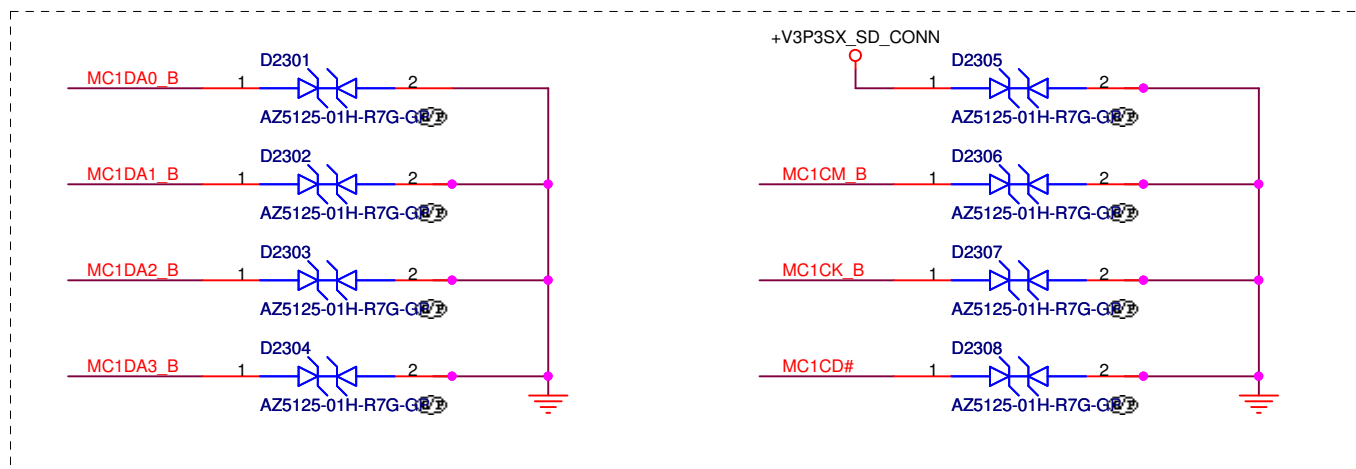
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SD CARD

SSID=SDIO



for ESD/RF Closed to SDC1



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Title 23_uSD Card CONN

Size Document Number Blackwell T4

Rev -1

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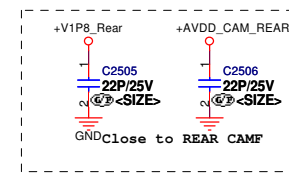
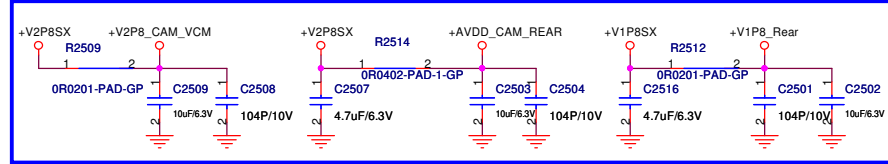
Rear Camera

5M Rear Camera

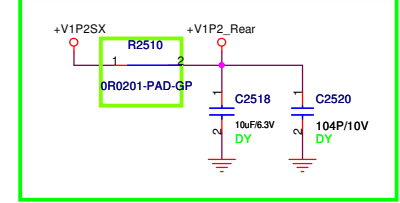
Lite ON:4BA543T2

SSID=CAMERA

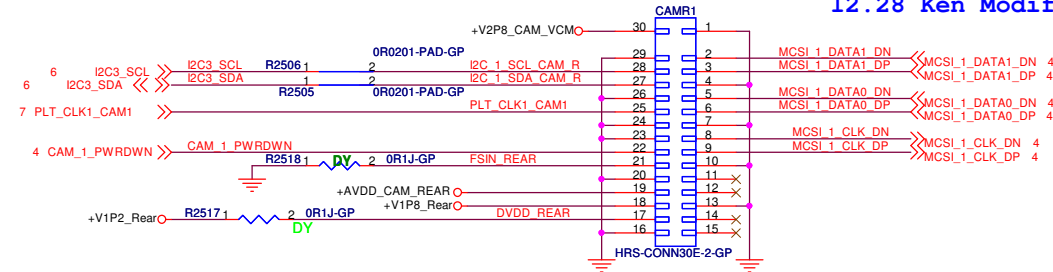
Rear Camera Power



Cammera Team Check List -12.26



12.28 Ken Modified



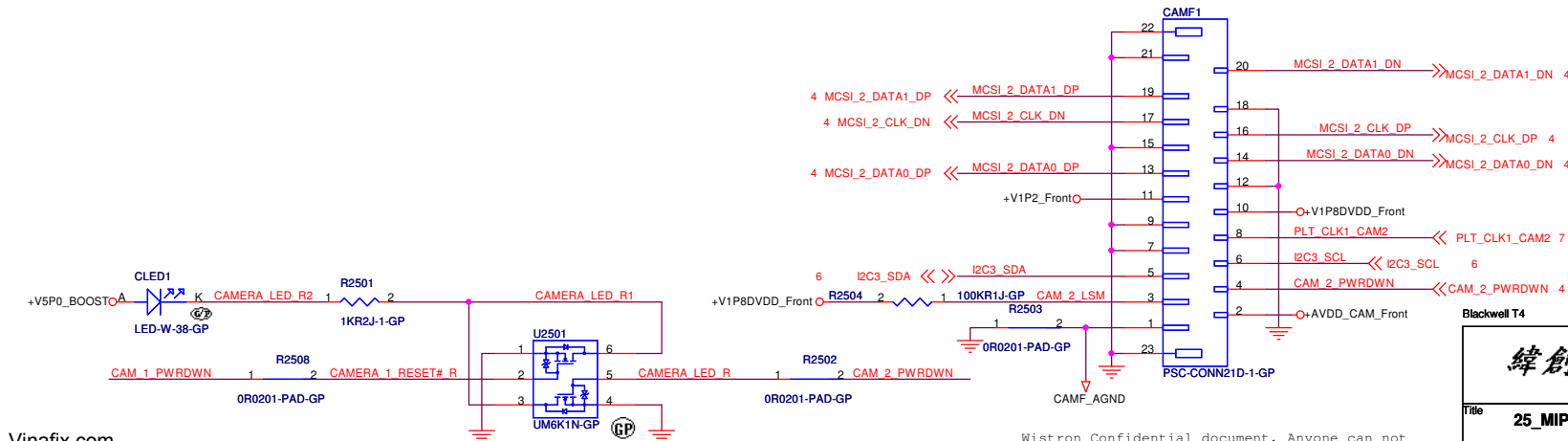
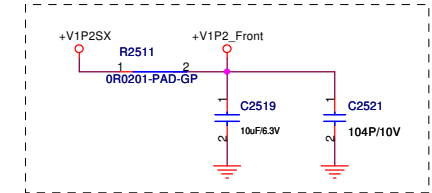
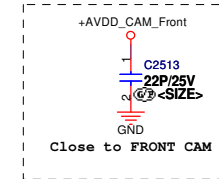
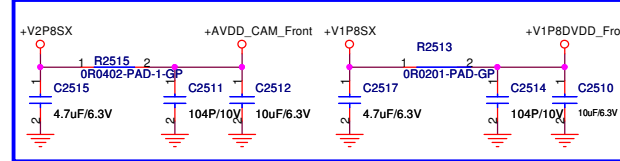
Front Camera

2M Front Camera

Lite ON:4SF259T2

need to check the connector & pin define

Front Camera Power



Blackwell T4

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Title			25_MIPI CAMERA CONN
Size	Document Number	Rev	
	Blackwell T4	-1	
Date:	Thursday, October 01, 2015	Sheet	25 of 73

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Title <div>26_Camera_3D</div>		
Size	Document Number <div>Blackwell T4</div>	Rev <div>-1</div>
Date: Thursday, October 01, 2015		Sheet 26 of 73

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Title <div>27_USBPHY/SW(Reserved)</div>		
Size	Document Number <div>Blackwell T4</div>	Rev <div>-1</div>
Date: Thursday, October 01, 2015		Sheet 27 of 73

Reserved

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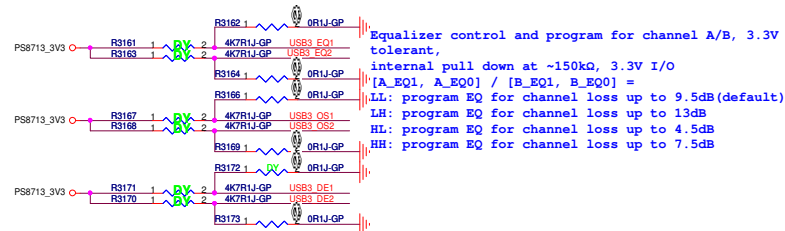
Title
28_Full/MICRO USB CONN(Reserved)

Size	Document Number Blackwell T4	Rev -1
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Date: Thursday, October 01, 2015	Sheet 28 of 73
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SSID=USB

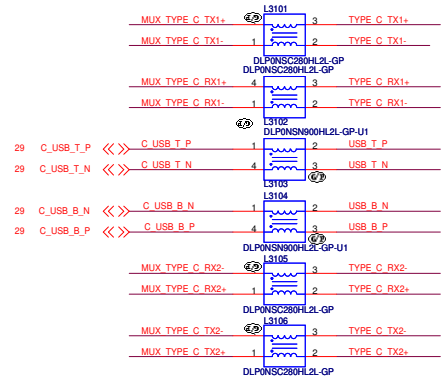
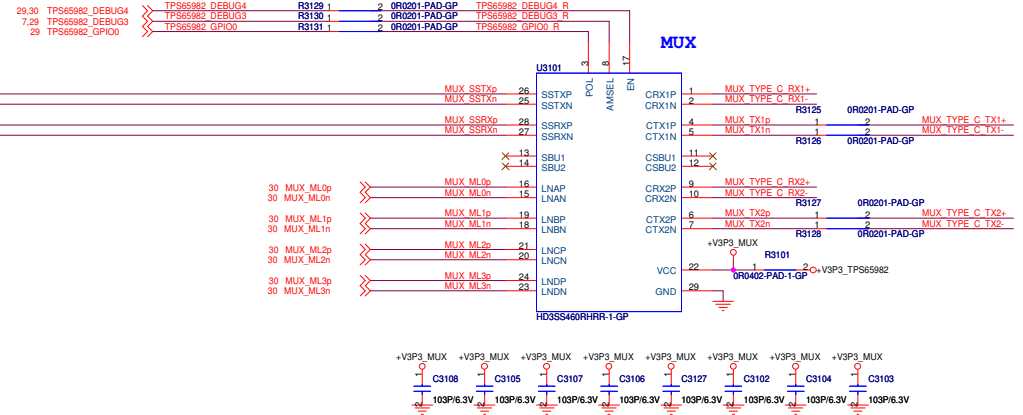
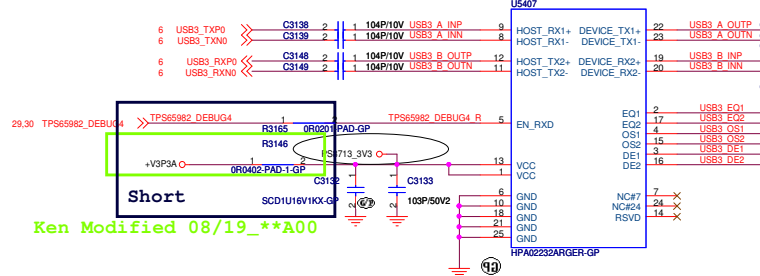




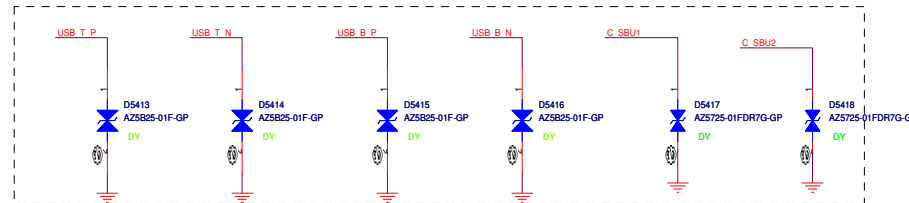
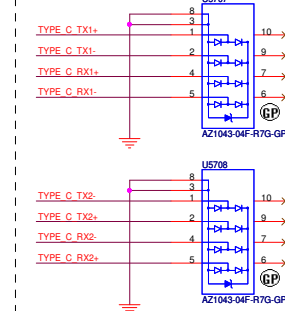
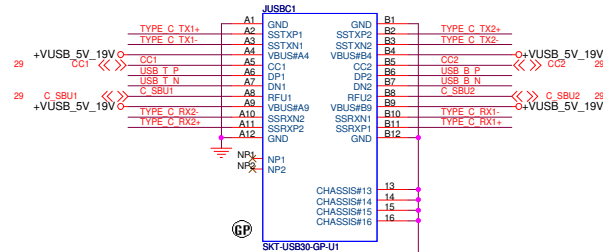
Programmable output pre-emphasis level setting for channel A/B, 3.3V tolerant, internal pull down at ~150kΩ
 $[A_DE1, A_DE0] / [B_DE1, B_DE0] =$
 LL: 3.5dB de-emphasis (default)
 LH: No de-emphasis
 HL: 2.7dB de-emphasis
 HH: 5dB de-emphasis

LFPS swing adjust, 3.3V tolerant, internal pull down at ~150kΩ
 L: normal LFPS swing (default)
 H: tune down LFPS swing

USB3.0 re-Driver



TYPE-C Connector



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Title 31_USB_TYPE_C_3
 Size Document Number Blackwell T4
 Date: Thursday, October 01, 2015 Sheet 31 of 73

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Title 32_ USB HUB(Reserved)	
Size	<div>Document Number</div> <div>Blackwell T4</div>
Date: Thursday, October 01, 2015	Rev -1
Sheet 32 of 73	

Vibrator

Blanking

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Taipei Hsien 221, Taiwan, R.O.C.

Title

33_Vibrator(Reserved)

Size

Document Number

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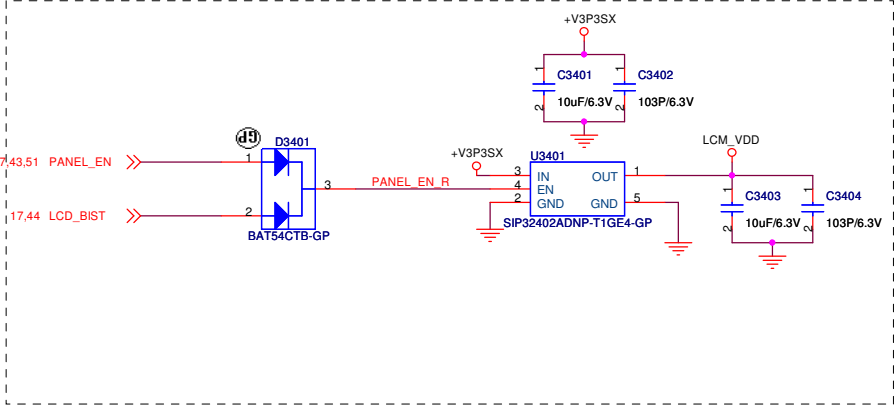
Rev

-1

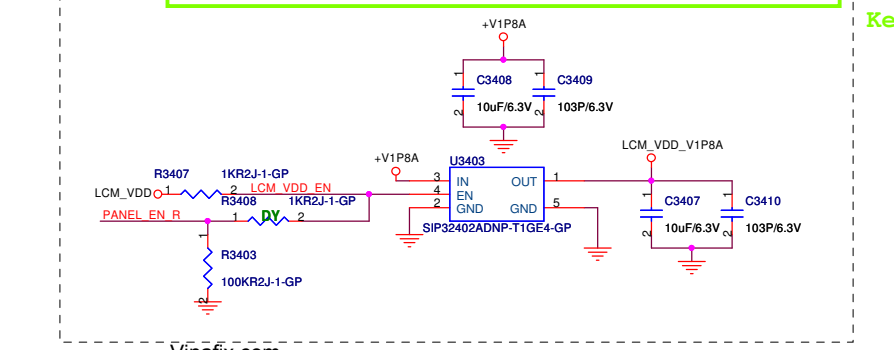
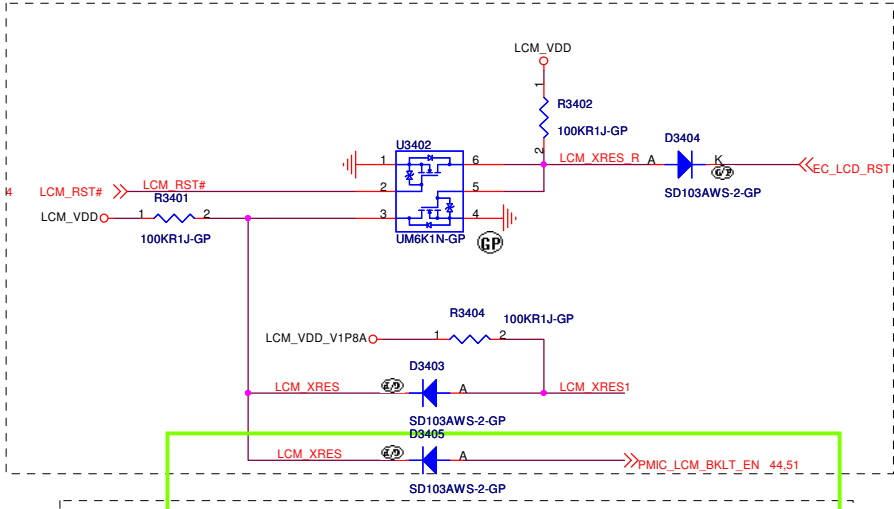
Date: Thursday, October 01, 2015

Sheet 33 of 73

LCM Logic Power

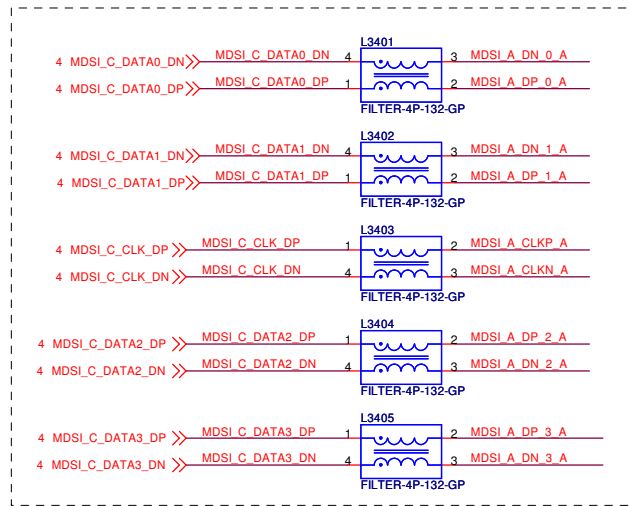


Level Shift



Vinafix.com

For EMI



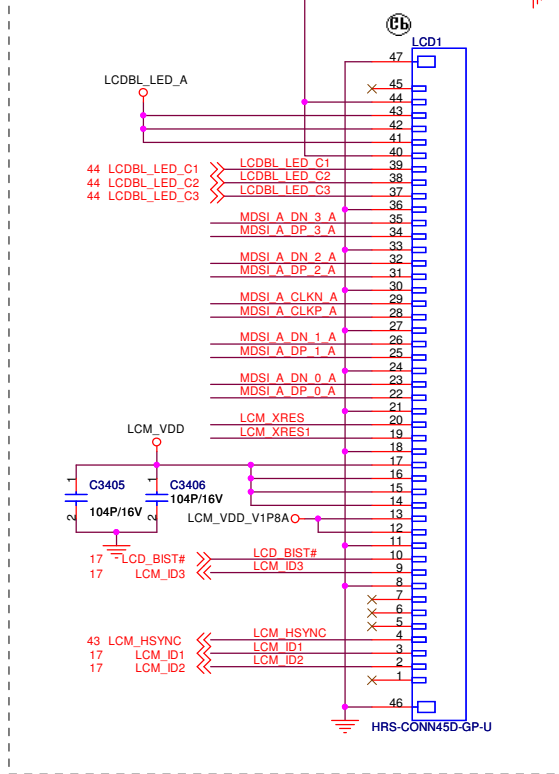
LCM ID 改的目的: 當EC 有電, 就可以偵測LCM是哪家



LCM_ID3	LCM_ID2	LCM_ID1	Vendor
0	0	0	
0	0	1	AUO-WUXGA
0	1	0	BOE-WUXGA
0	1	1	AUO-WUXGA
1	0	0	
1	0	1	
1	1	0	BOE-WXGA
1	1	1	AUO-WXGA

Ken Modified 07/21_**A00

LCM Conector



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Title 34_MIPI_LCM_CONN

Size Document Number
Blackwell T4

Date: Thursday, October 01, 2015

Sheet 34 of 73

Rev
-1

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Blackwell T4			
Title		35_uHDMI CONN(Reserved)	
Size		Document Number	Rev
Date: Thursday, October 01, 2015		Blackwell T4	-1
Sheet 35 of 73		1	

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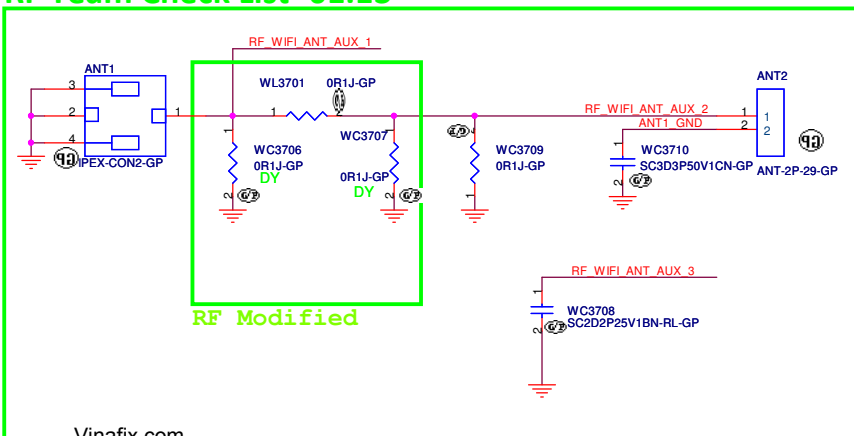
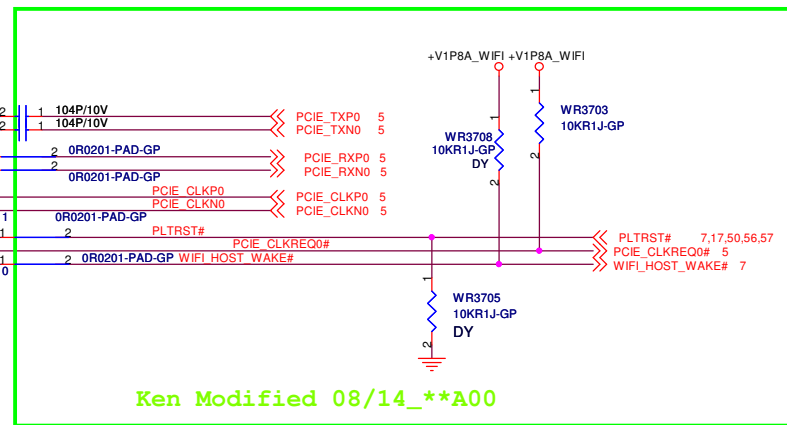
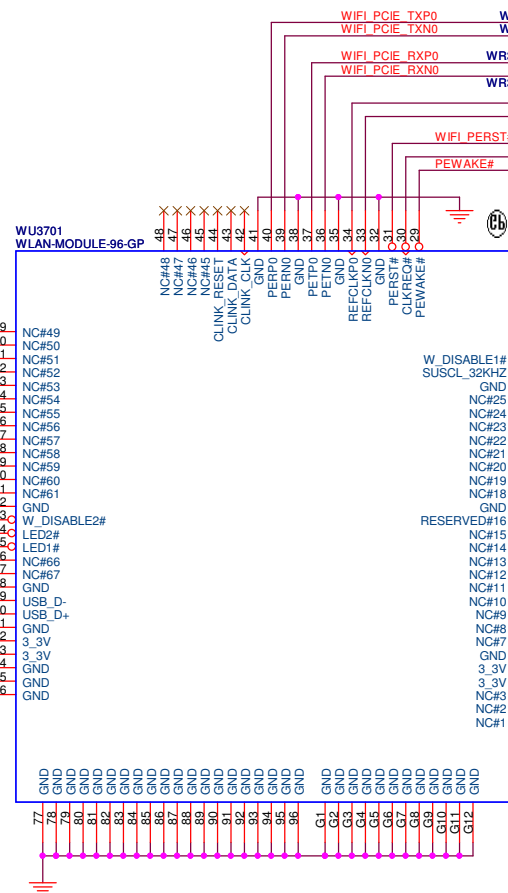
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Title 36_Display Port(Reserved)		
Size	Document Number	Rev
	Blackwell T4	-1
Date: Thursday, October 01, 2015		Sheet 36 of 73

SSID=Wireless



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<Core Design>

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Title	37 WIFI/BT
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Size	Document Number Blackwell T4
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Rev	-1
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Date: Thursday, October 01, 2015

Sheet 37 of 73

Blanking

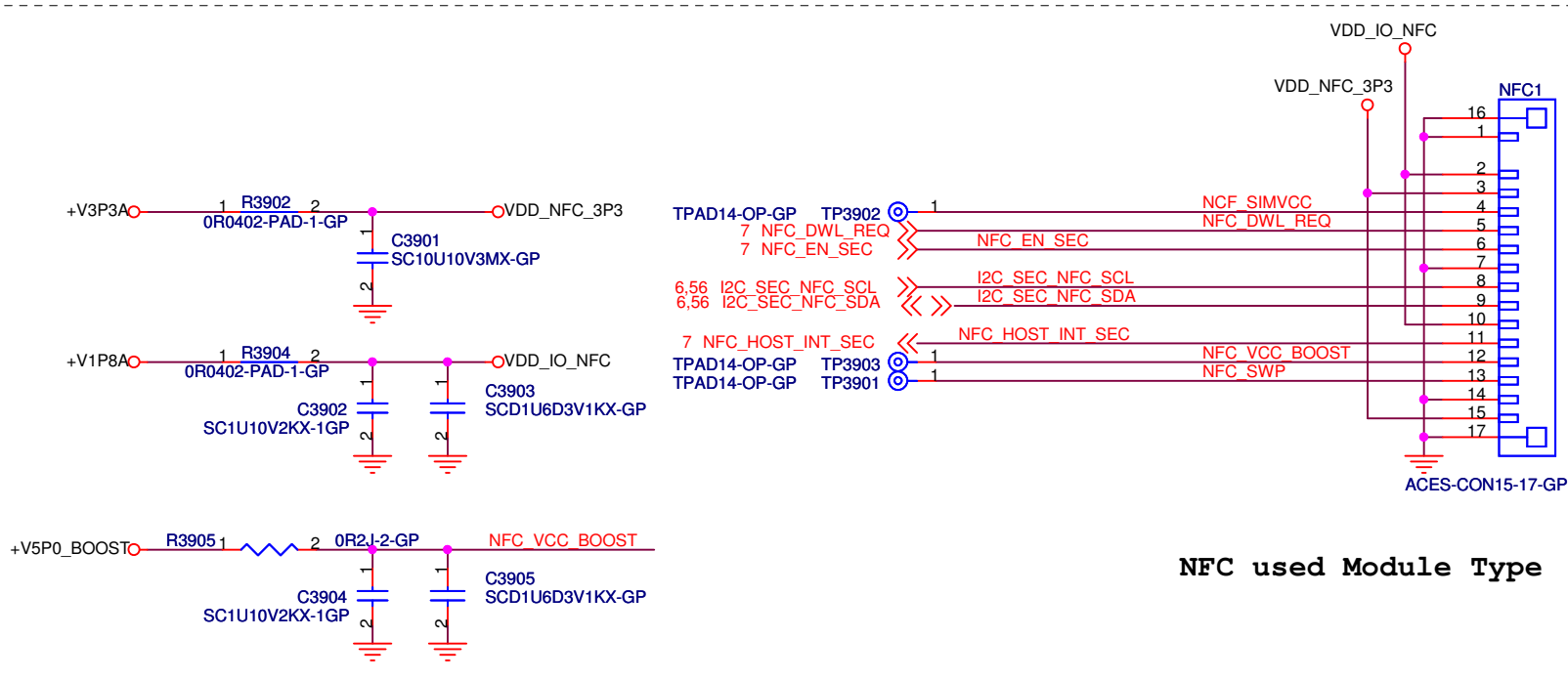
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Title 38_GPS(Reserved)		
Size	Document Number	Rev
	Blackwell T4	-1
Date: Thursday, October 01, 2015		Sheet 38 of 73

NFC

SSID=NFC



Pin number	Name
1	MOD_VDD
2	MOD_GND
3	SWP
4	VCC_BOOST
5	IRQ
6	PMUVCC
7	I ² C_SDA
8	I ² C_SCL
9	MOD_GND
10	Reset/Wakeup
11	DWL_REQ
12	SIMVCC
13	MOD_VDD
14	VDD_IO
15	MOD_GND

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Title
39_NFC

Size Document Number
Blackwell T4

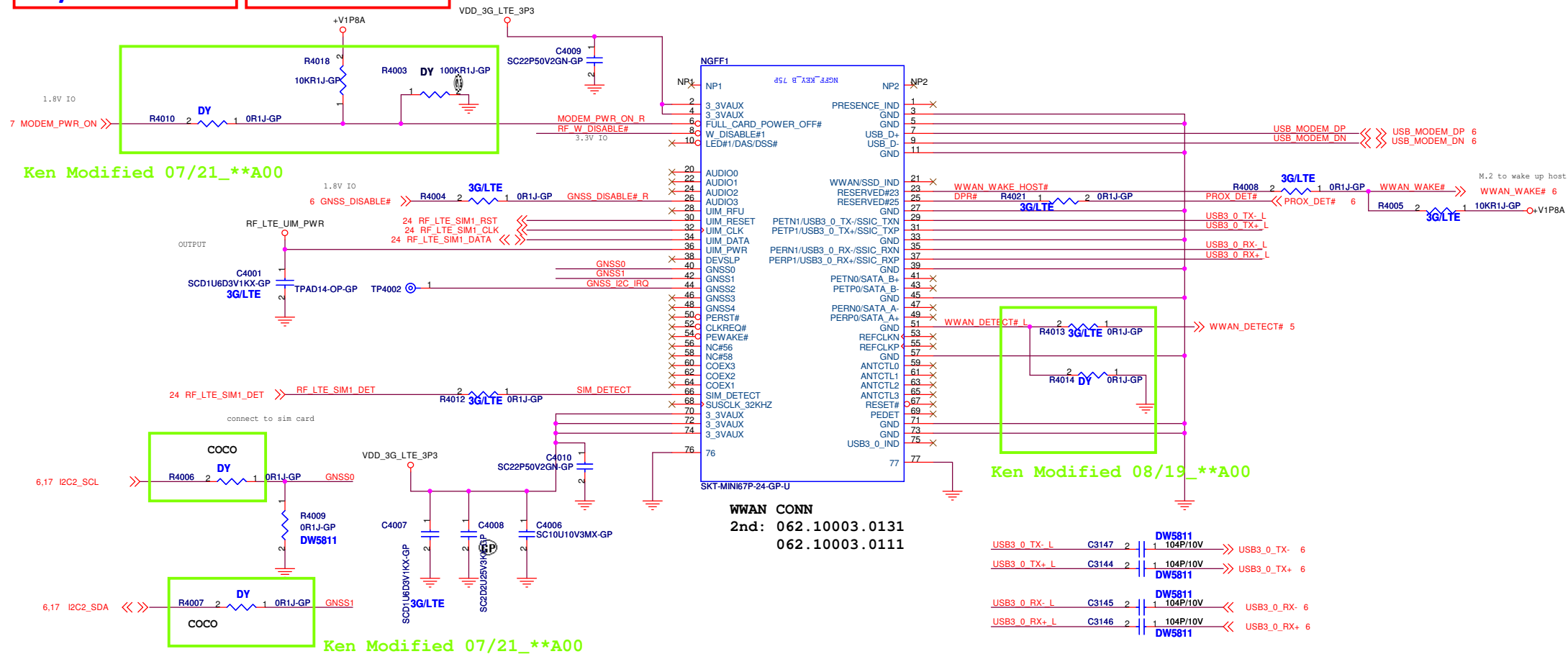
Rev
-1

Date: Thursday, October 01, 2015

Sheet 39 of 73

3G/LTE module

SSID=Wireless

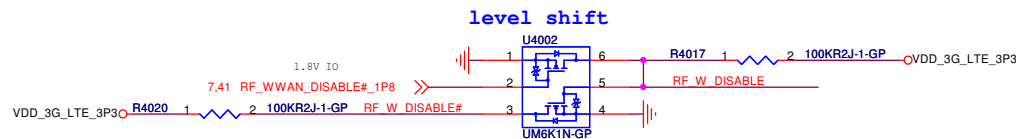
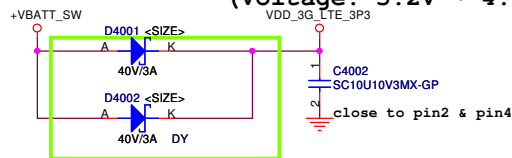


DW5811 EM7455 (Non COCO)

DW5808 EM7355 (COCO)

DW5809, DW5808: R4006, R4007, R4009: DY

(Voltage: 3.2V ~ 4.0V)



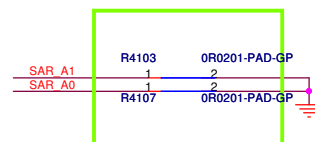
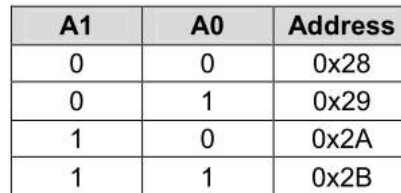
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Title	40 3G/LTE		
Size	Document Number	Rev	
	Blackwell T4	-1	
Date: Thursday, October 01, 2015	Sheet 40	of	73

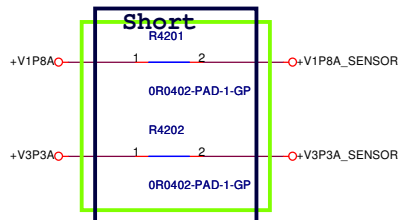
SSID=User.Interface



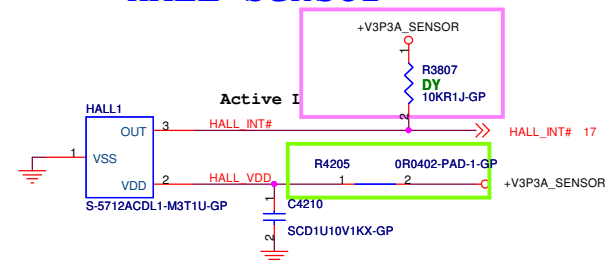
Sheet 41 of 73

SSID=User.Interface

Ken Modified 08/19_**A00

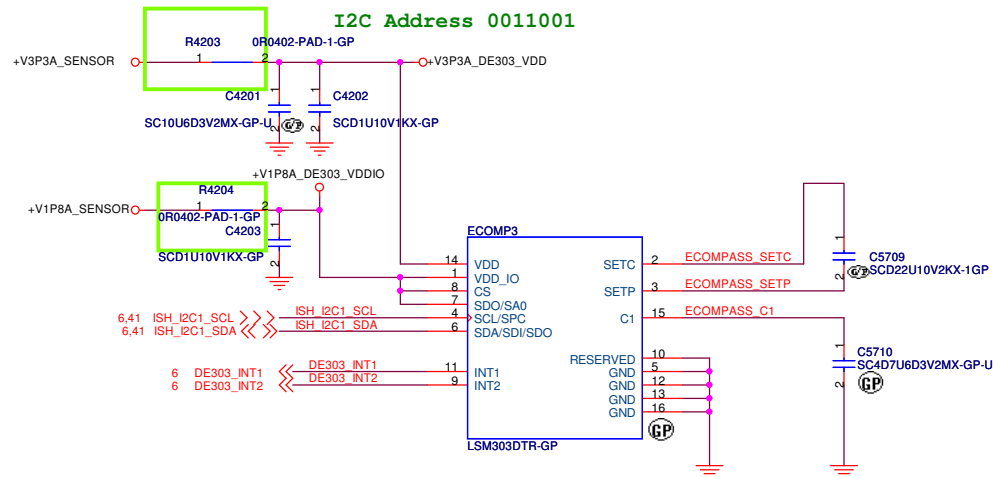


HALL Sensor



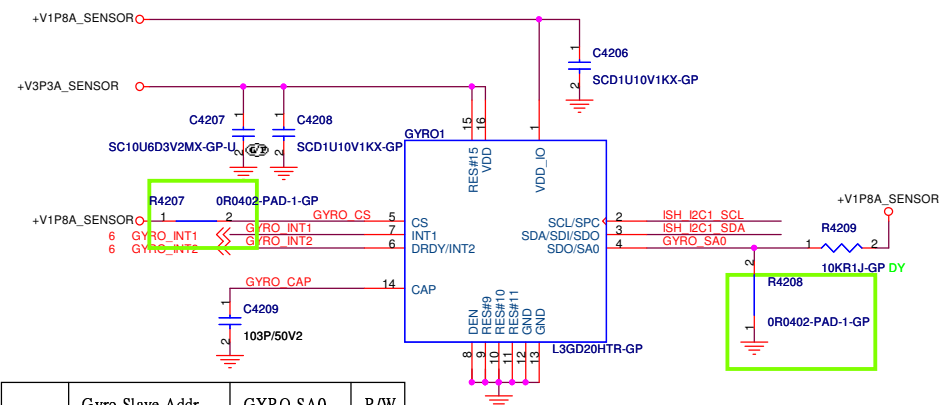
G Sensor + E-Compass

I2C Address 0011001



Gyro Sensor I2C Address 1101010

I2C Address 1101010



		Gyro Slave Addr	GYRO SA0	R/W
D4	Write	110101	0	0
D5	Read	110101	0	1

		G-Sensor Slave Addr	R/W
3A	Write	0011,101	0
3B	Read	0011,101	1

		c-Compass Slave Addr	R/W
3C	Write	0011,110	0
3D	Read	0011,110	1

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Title	42 Sensor
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Size	Document Number Blackwell T4
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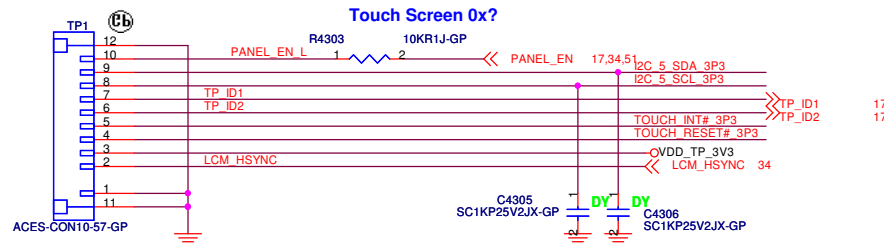
Date: Thursday, October 01, 2015

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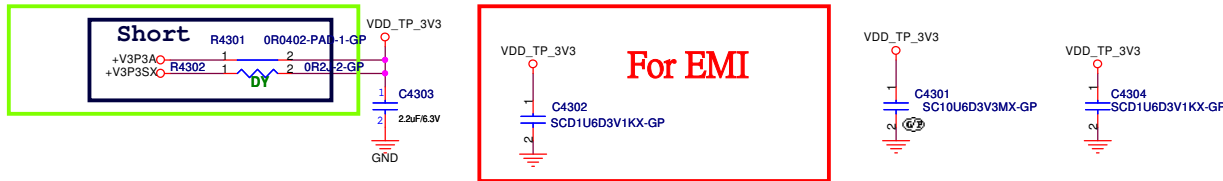
Rev	-1
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Touch Panel

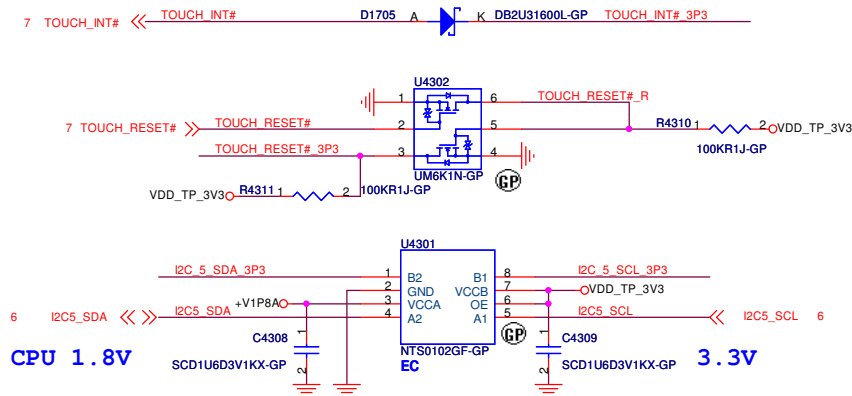
SSID=Touch.Panel



Ken Modified 08/19_**A00



Level shift



CN1 PIN #	Host 接續時	Description
1	NC	Keep Open
2	SDA	IIC Data Open drain; pull-up resistor at Host is needed
3	SCL	IIC Clock Open drain; pull-up resistor at Host is needed
4	ID01	Touch Sensor Identification Pin 01
5	ID02	Touch Sensor Identification Pin 02
6	IRQ	IIC Data Ready Output "LOW" when data ready to send Open drain; pull-up resistor at Host is needed
7	RESET	RESET Stop operation when pull "LOW" Build-in pull-up resistor 100kohm
8	VDD +3.3V	3.3volt power input
9	HSYNC	LCD Hsync input
10	GND	Ground

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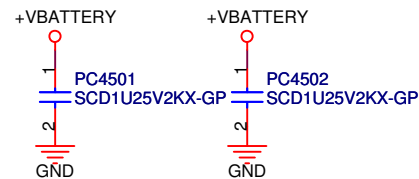
Blackwell T4

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Title 43_Touch Panel			
Size	Document Number Blackwell T4		Rev -1
Date:	Thursday, October 01, 2015	Sheet 43 of 73	

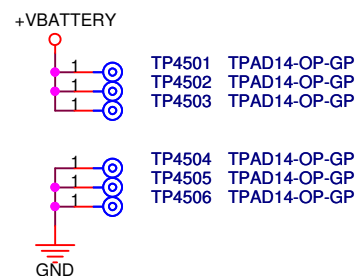
BATTERY CONN

SSID=PWR.Support

For EMI

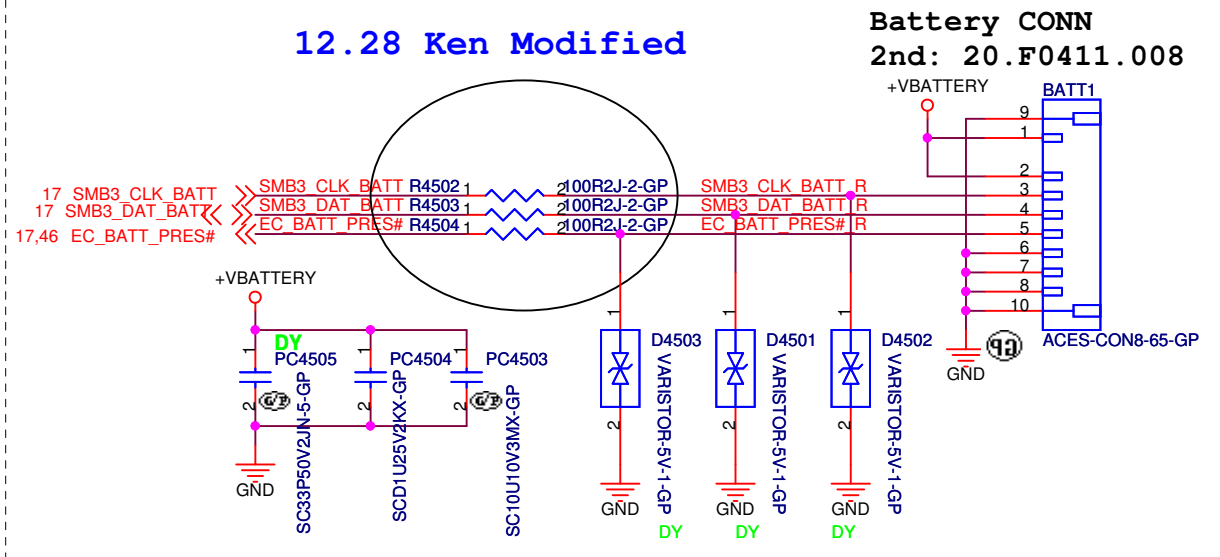


For Test

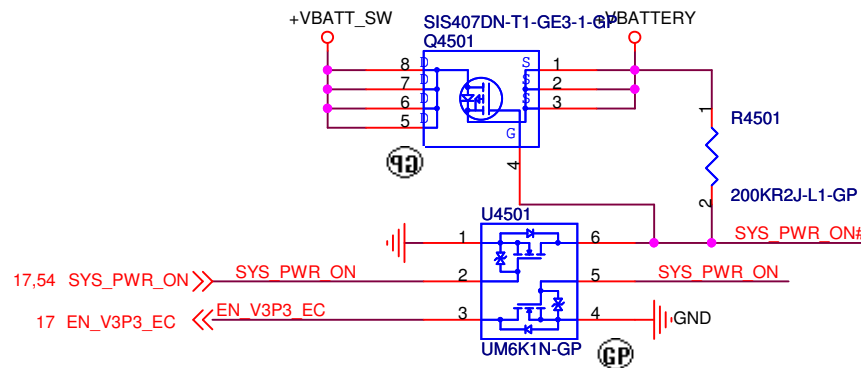


Battery Connector

12.28 Ken Modified



S5/Shipping mode



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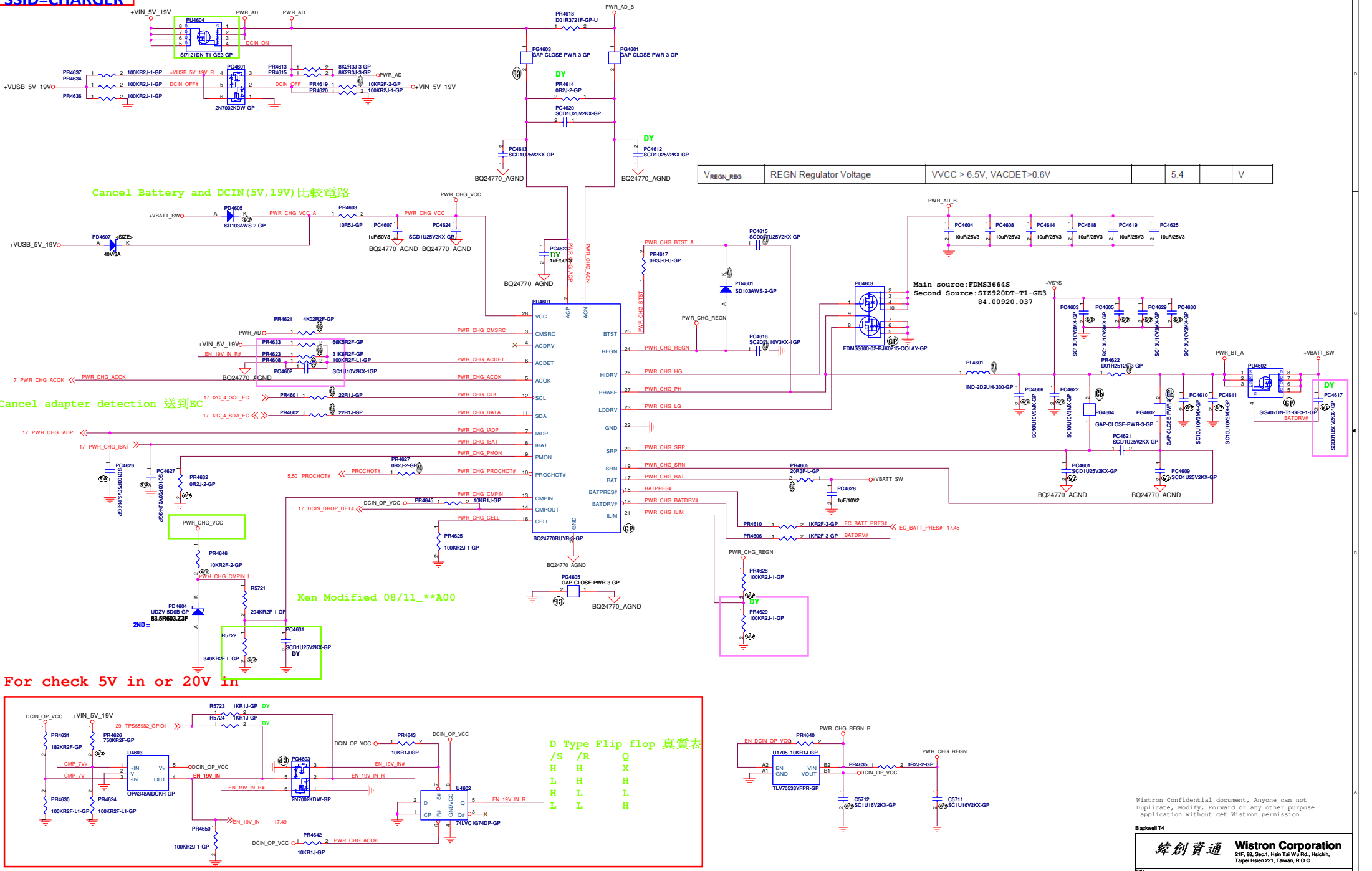
Title **45_BATT CONN**

Size Document Number
Blackwell T4

Rev
-1

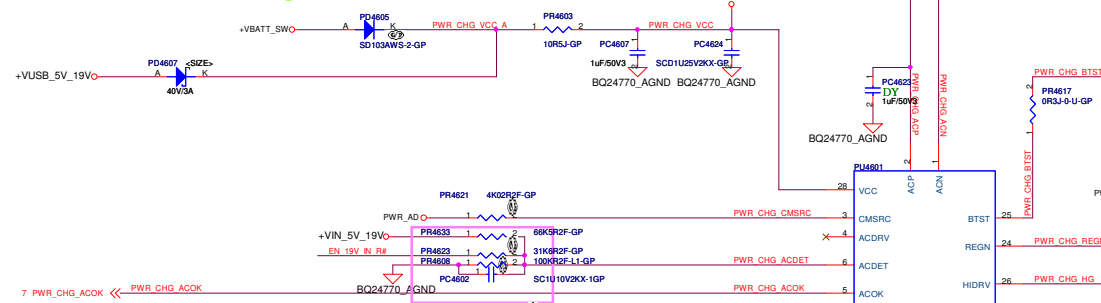
Date: Thursday, October 01, 2015 Sheet 45 of 73

Charger
SSID=CHARGER

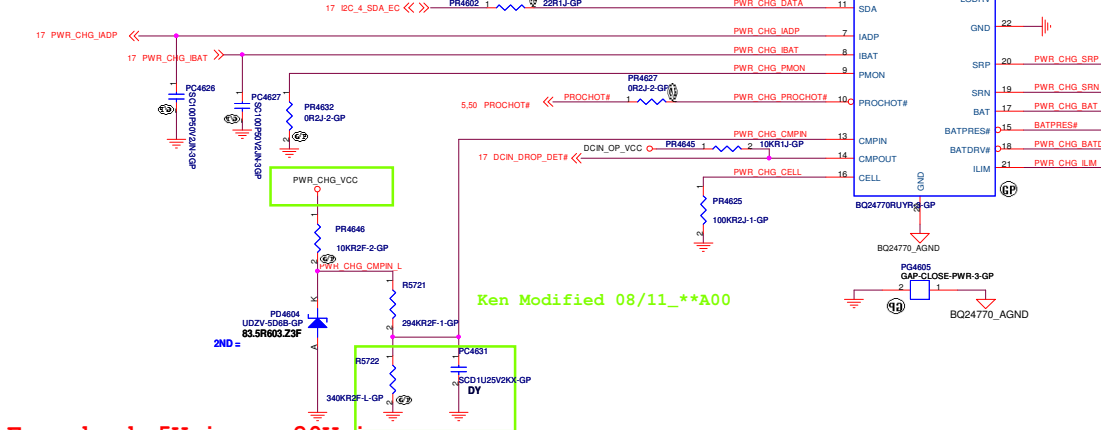


V _{REGN_REG}	REGN Regulator Voltage	V _{VCC} > 6.5V, V _{ACDET} > 0.6V	5.4	V
-----------------------	------------------------	--	-----	---

Cancel Battery and DCIN(5V,19V) 比較電路

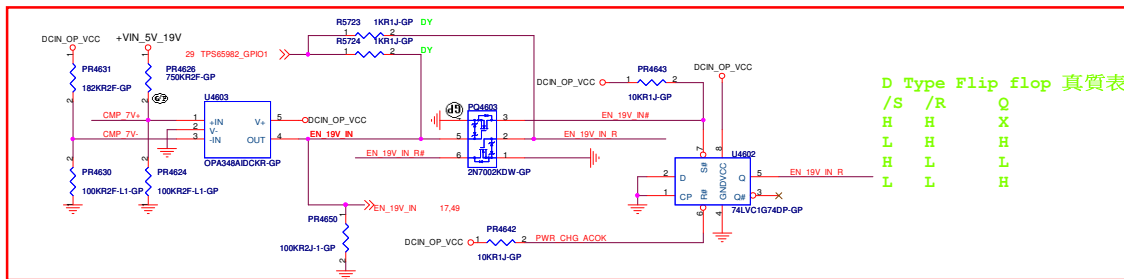


Cancel adapter detection 送到EC



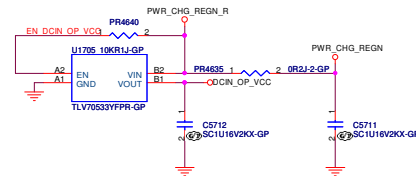
Ken Modified 08/11_**A00

For check 5V in or 20V in



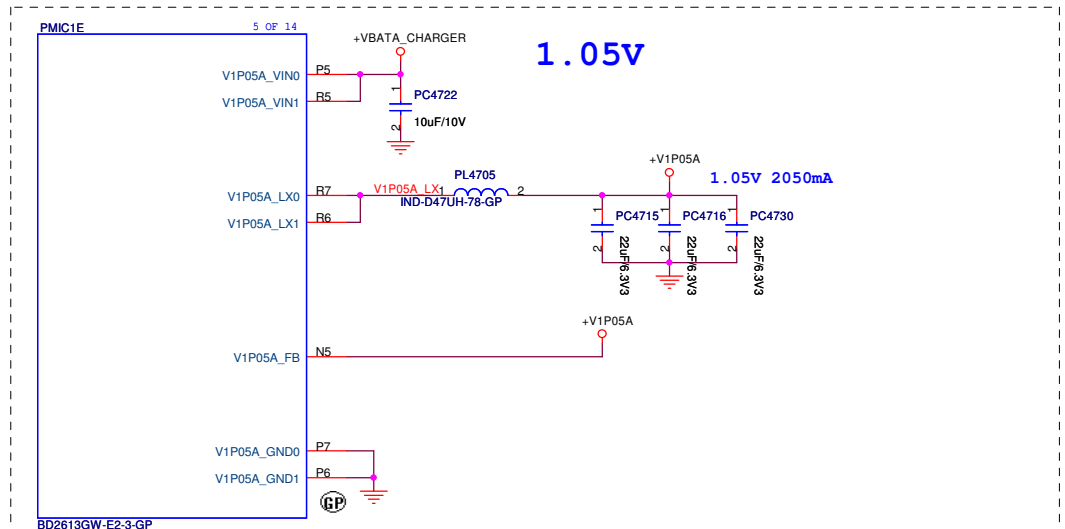
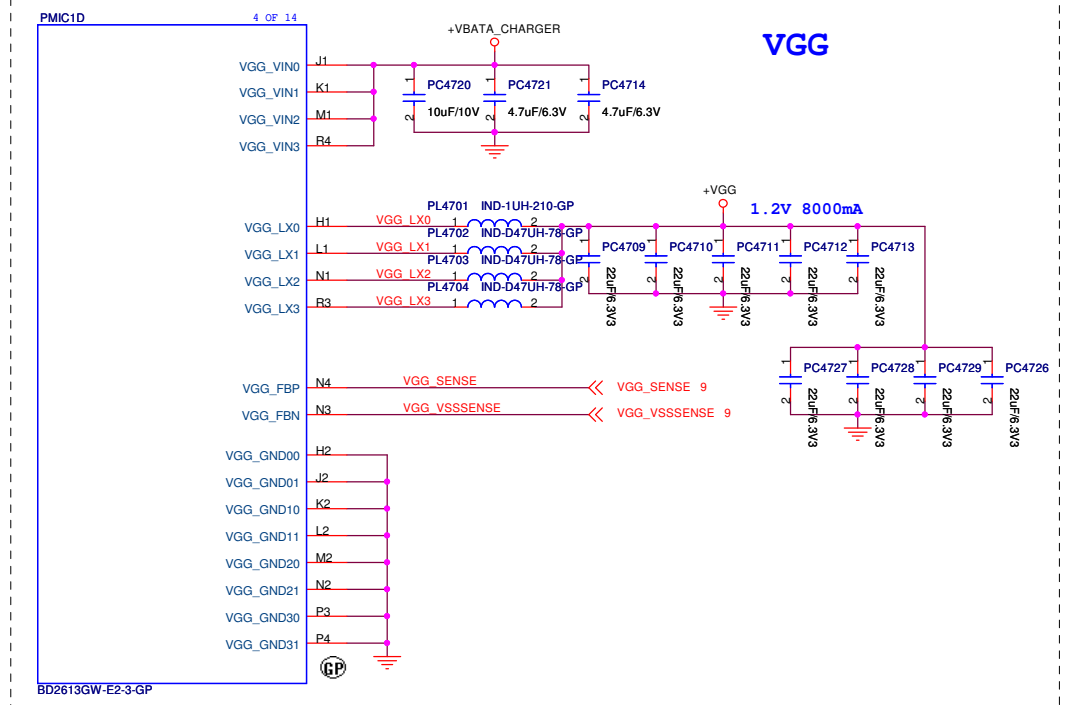
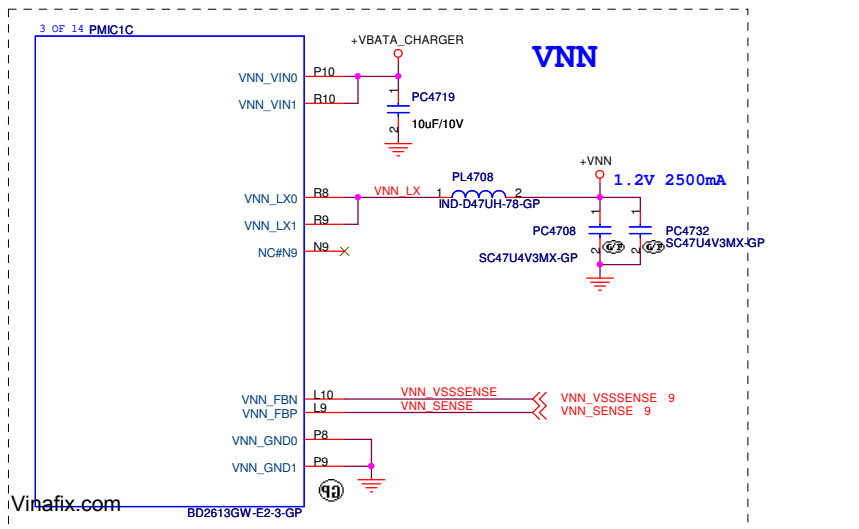
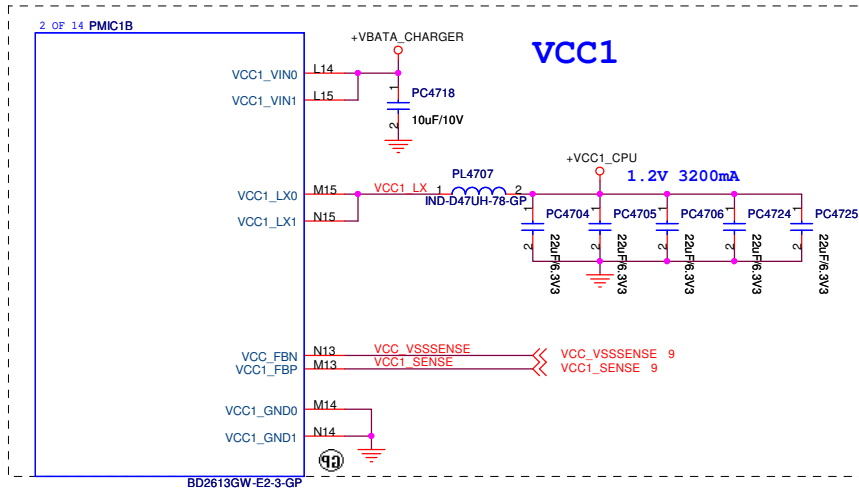
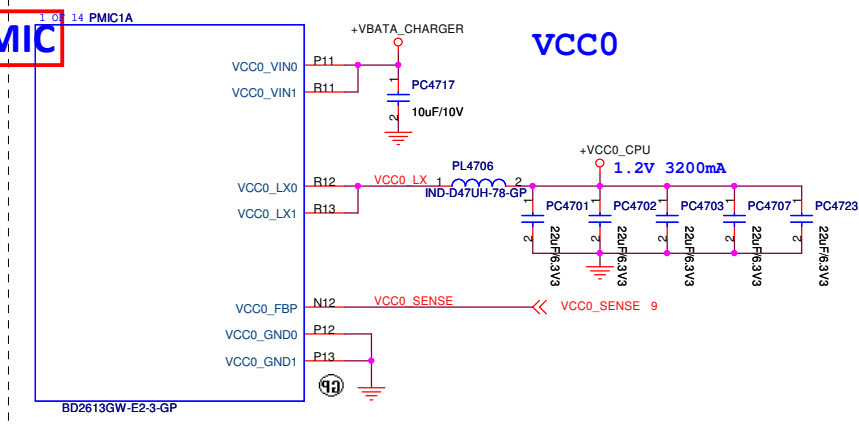
D Type Flip flop 真質表

/S	/R	Q
H	H	X
L	H	H
H	L	L
L	L	H



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SSID=PMIC



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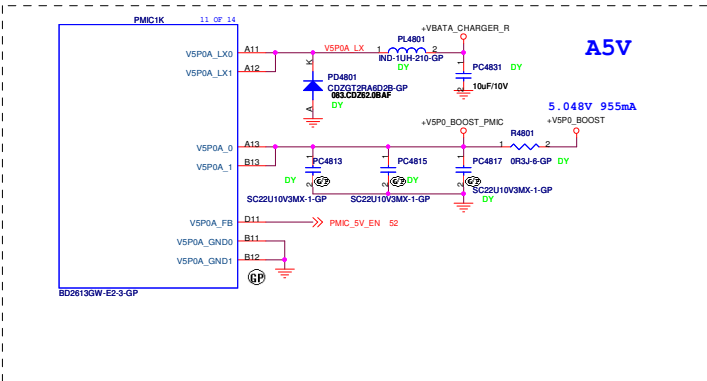
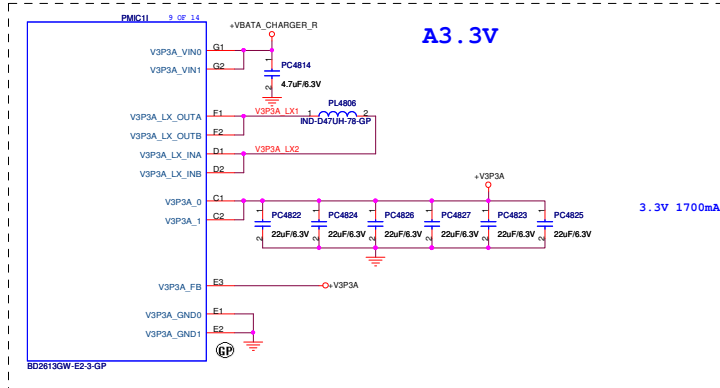
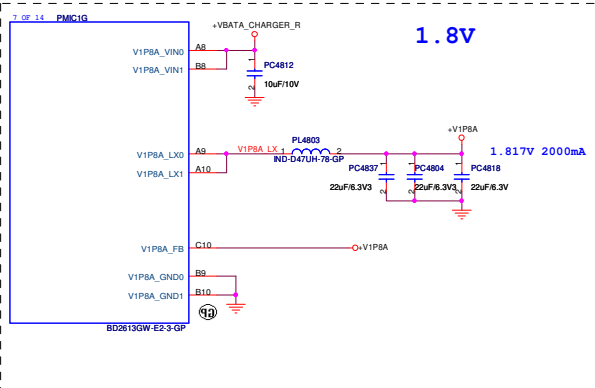
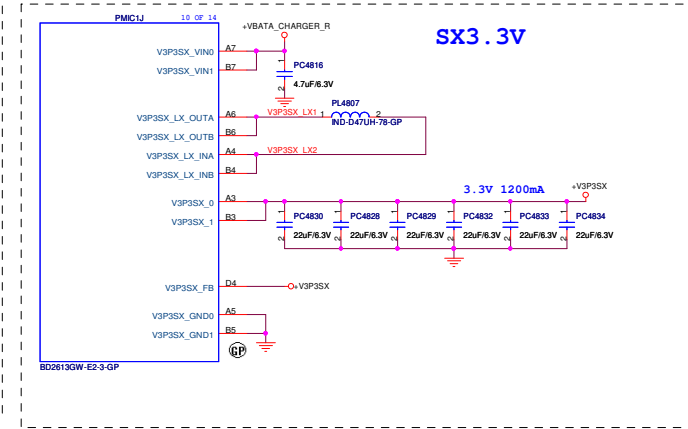
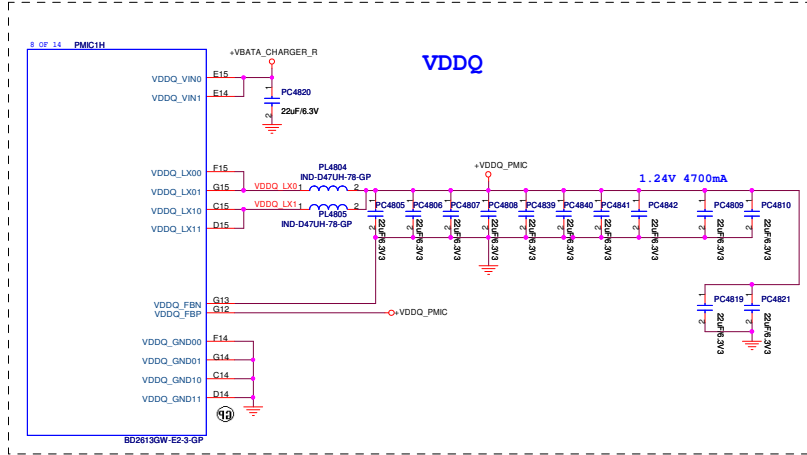
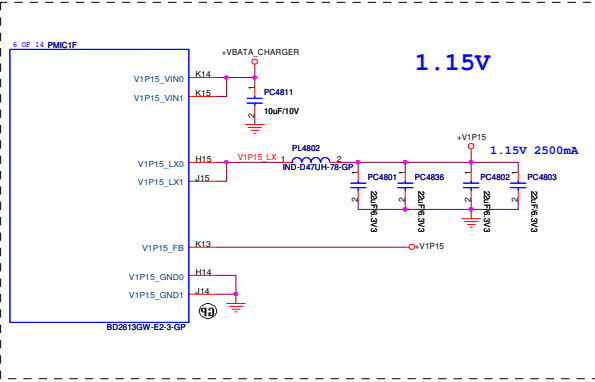
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Title		47 PMIC(1/5) (BD2613)	
Size	Document Number	Blackwell T4	
Date: Thursday, October 01, 2015	Sheet	47	of 73
		Rev	-1

SSID=PMIC



Rohm PMIC decoupling amount target

	A1 Stepping	B0 Stepping
VCC0	5*47uF	3*47uF
VCC1	5*47uF	3*47uF
VNN	4*47uF	2*47uF
VGG	4*47uF	4*47uF
VGG	6*22uF	4*22uF
V1P05A	4*47uF	1*47uF
VIP15	4*47uF	2*47uF
V1P8A	5*22uF	3*22uF
VDDQ	8*47uF	6*47uF
V3P3A	10*47uF	4*47uF
V3P3SX	8*47uF	4*47uF
V5P0A	6*10uF	6*10uF

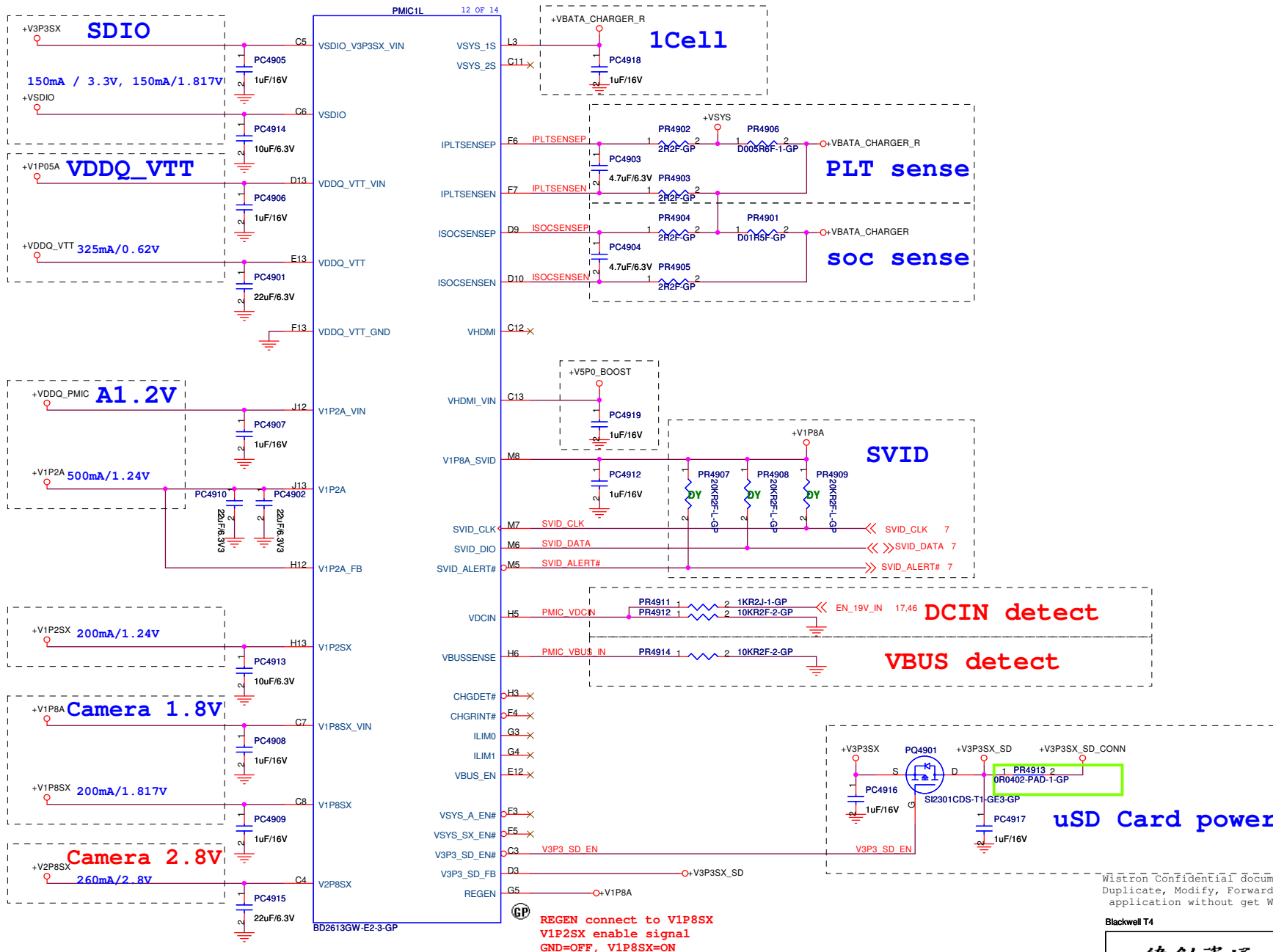
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File: **48 PMIC(2/5) (BD2613)**
Size: **Blackwell T4**
Date: Thursday, October 01, 2015 Sheet: 48 of 73
Rev: **-1**

SSID=PMIC



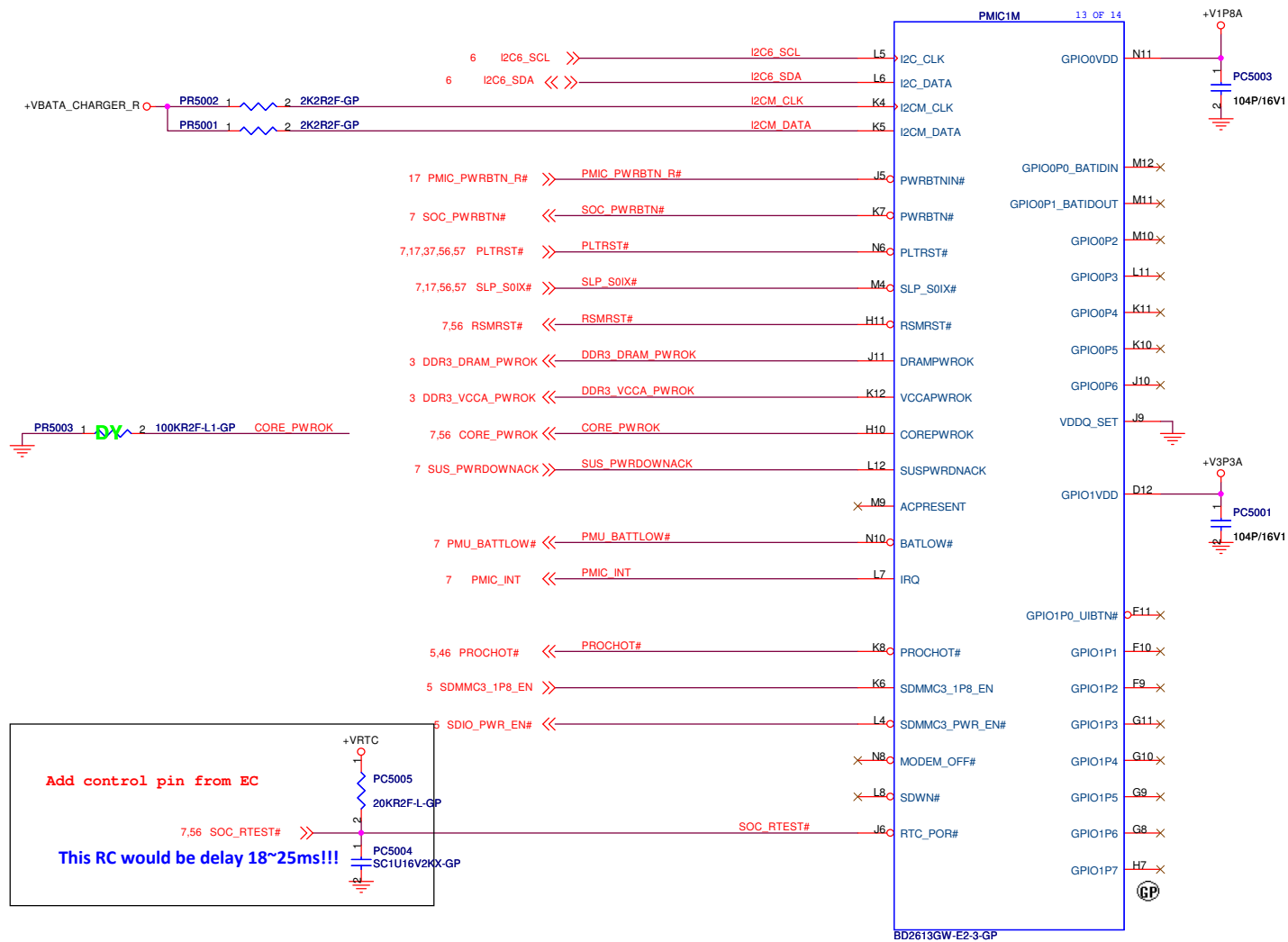
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Title			49 PMIC(3/5) (BD2613)		
Size	Document Number				Rev
	Blackwell T4				-1
Date:	Thursday, October 01, 2015				Sheet 49 of 73

SSID=PMIC



Add control pin from EC

This RC would be delay 18~25ms!!!

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Title			50 PMIC(4/5) (BD2613)
Size	Document Number	Rev	
Blackwell T4			-1
Date:	Thursday, October 01, 2015	Sheet	50 of 73

SSID=PMIC

Check location and value

Analog GND

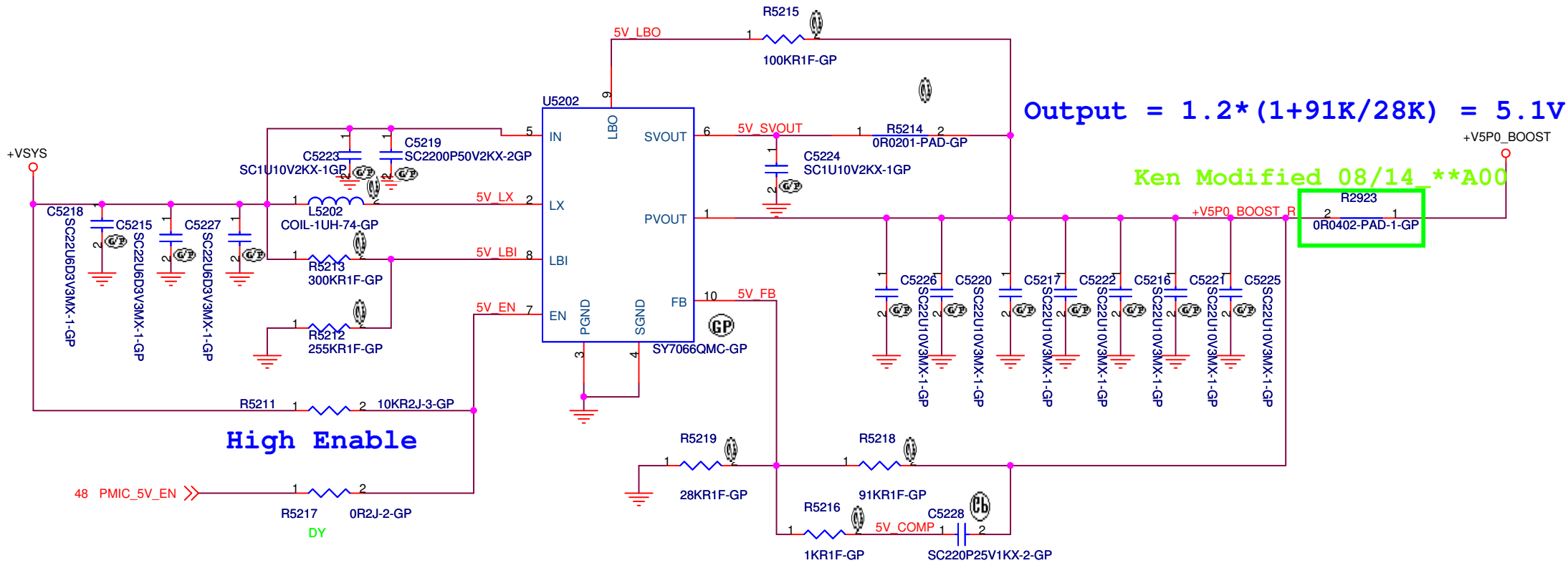
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<Core Design>

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Title 51_PMIC(5/5)_(BD2613)		
Size	Document Number Blackwell T4	Rev -1
Date: Thursday, October 01, 2015 Sheet 51 of 73		

SSID=PWR.Plane.Regulator_5v



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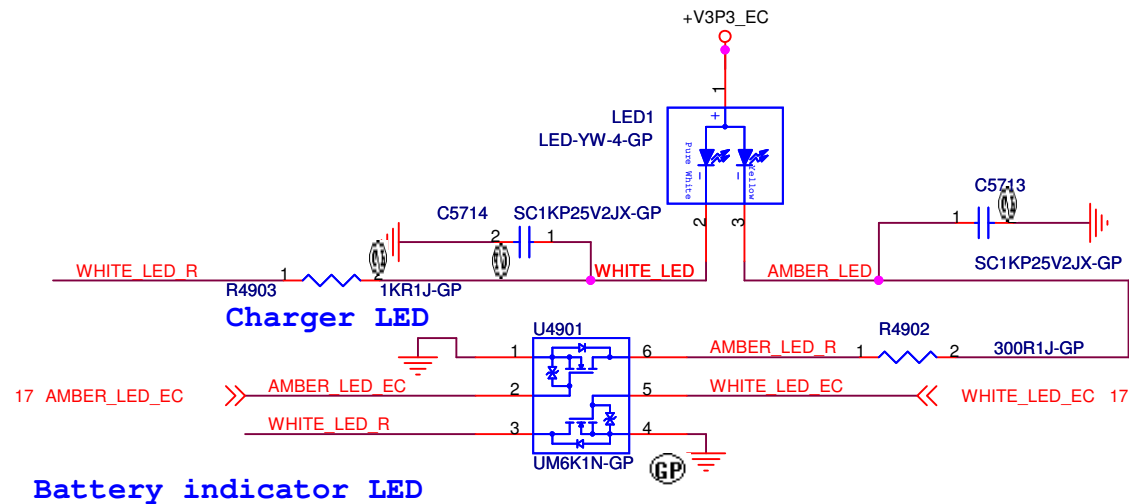
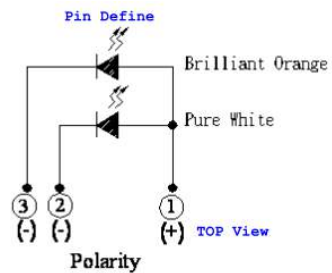
Title **52_5V_BOOST & 3.3V(Reserved)**

Size	Document Number	Rev
	Blackwell T4	-1

Date: Thursday, October 01, 2015 Sheet 52 of 73

POWER/Charger LED

SSID=User.Interface



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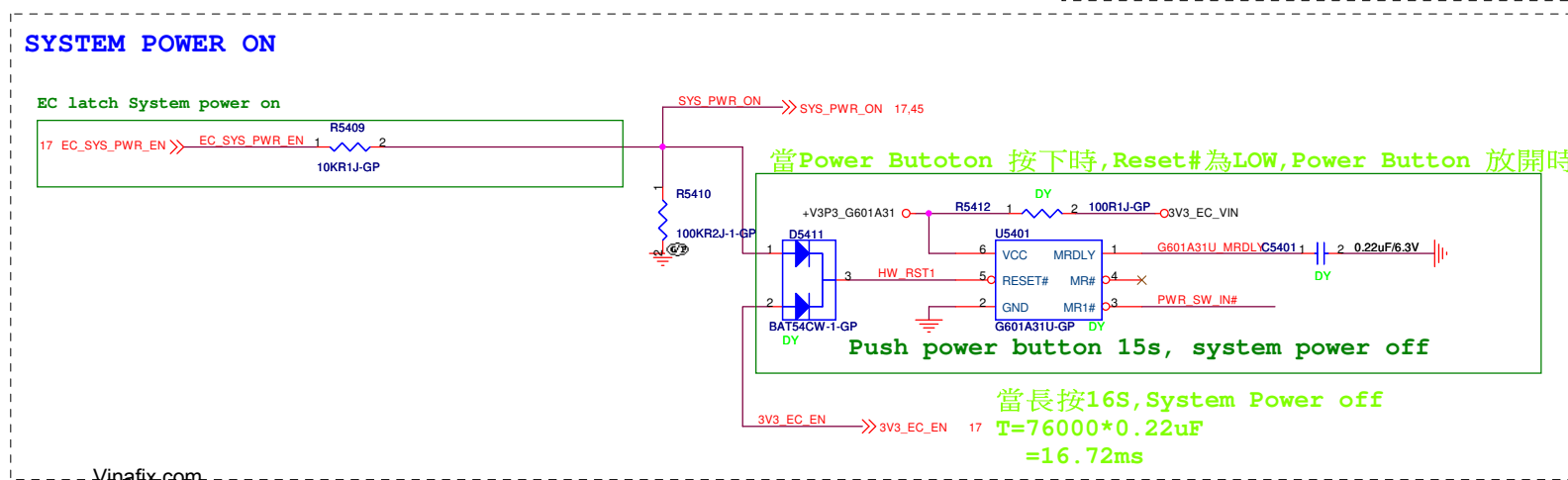
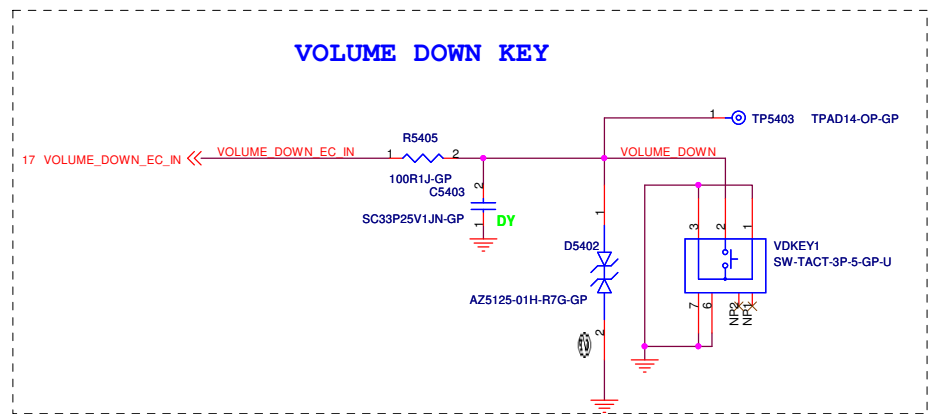
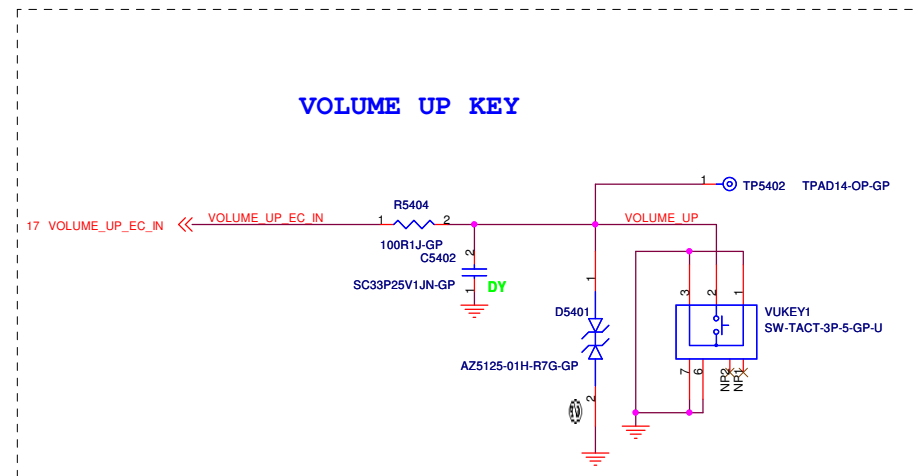
Title **53_POWER LED/DOCK CONN**

Size Document Number
Blackwell T4

Rev
-1

Date: Thursday, October 01, 2015 Sheet 53 of 73

SSID=User.Interface



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Title				54_PWR/Volume/Home Button			
Size	Document Number						Rev
	Blackwell T4						-1
Date:	Thursday, October 01, 2015			Sheet	54	of	73

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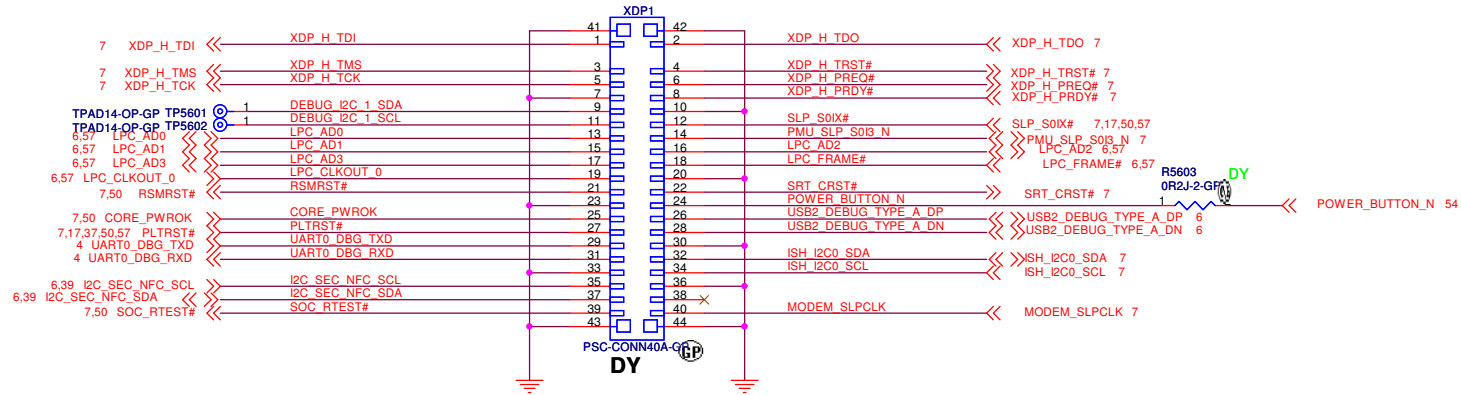
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Title <div>55_IO Board Connector(Reserved)</div>		
Size	Document Number <div>Blackwell T4</div>	Rev <div>-1</div>
Date: Thursday, October 01, 2015		Sheet 55 of 73

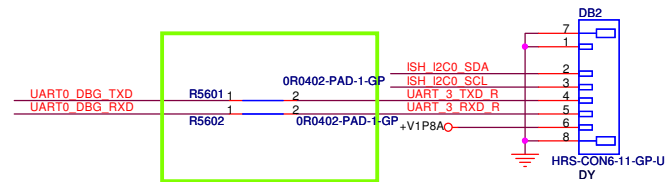
XDP Debug Connector

SSID=XDP

Debug Connector with XDP



SW Debug Connector



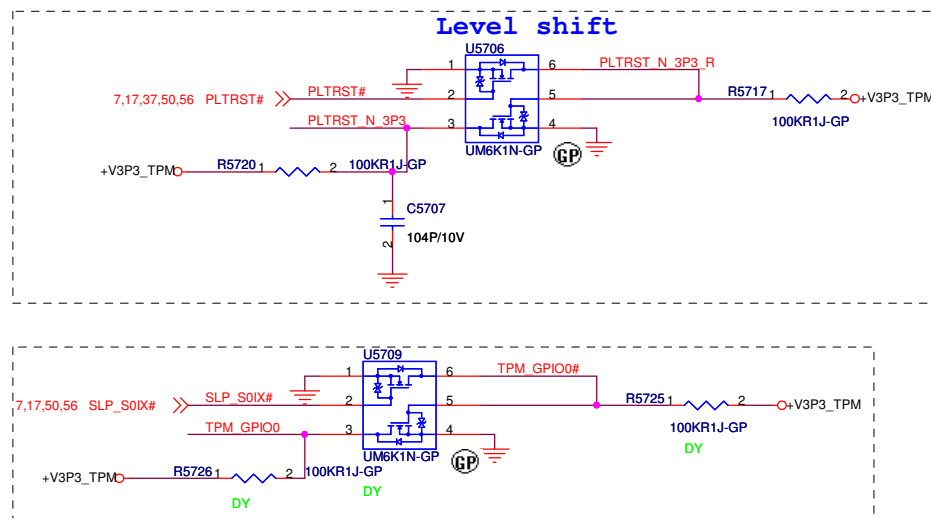
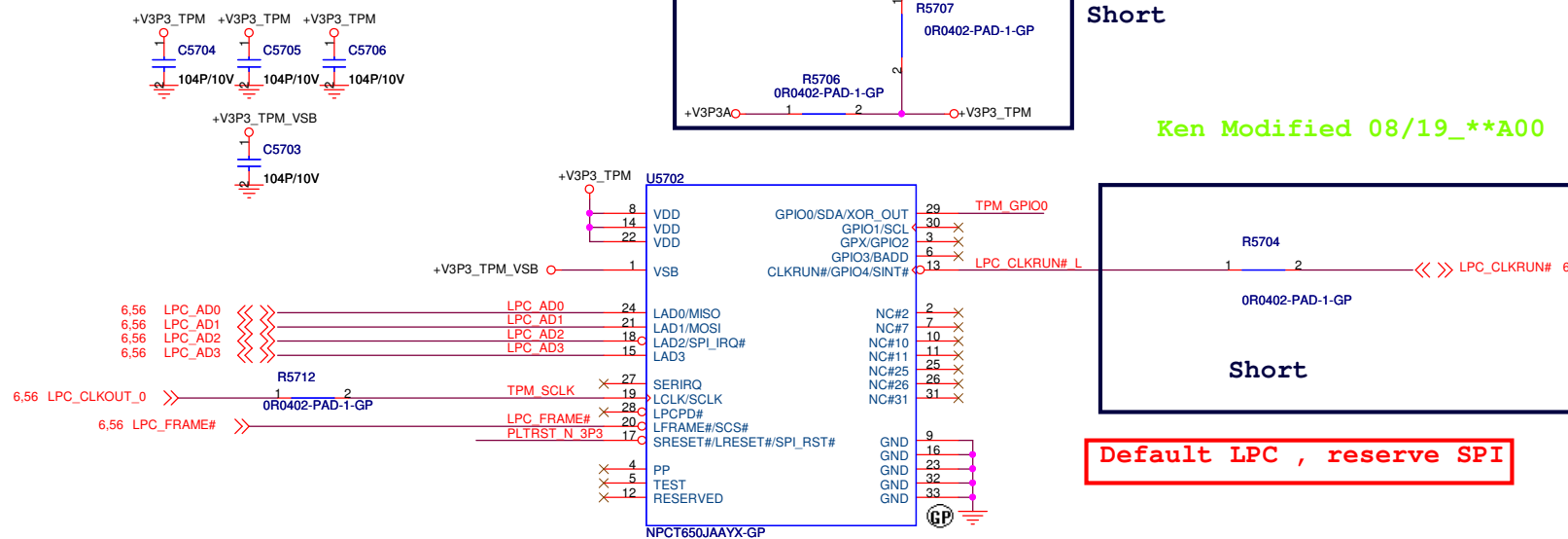
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Title		56_XDP Connector
Size	Document Number	Blackwell T4
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SSID=TPM



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Title			
57_TPM			
Size	Document Number		Rev
	Blackwell T4		-1
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Title		
58_Docking Connector(Reserved)		
Size	Document Number	Rev
	Blackwell T4	-1
Date: Thursday, October 01, 2015		Sheet 58 of 73

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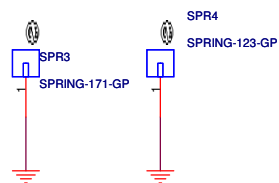
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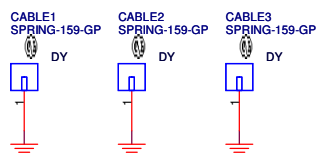
<div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div>		
Title <div>59_CPU_XDP(Reserved)</div>		
Size	Document Number <div>Blackwell T4</div>	Rev <div>-1</div>
Date: Thursday, October 01, 2015		Sheet 59 of 73

Shielding Can

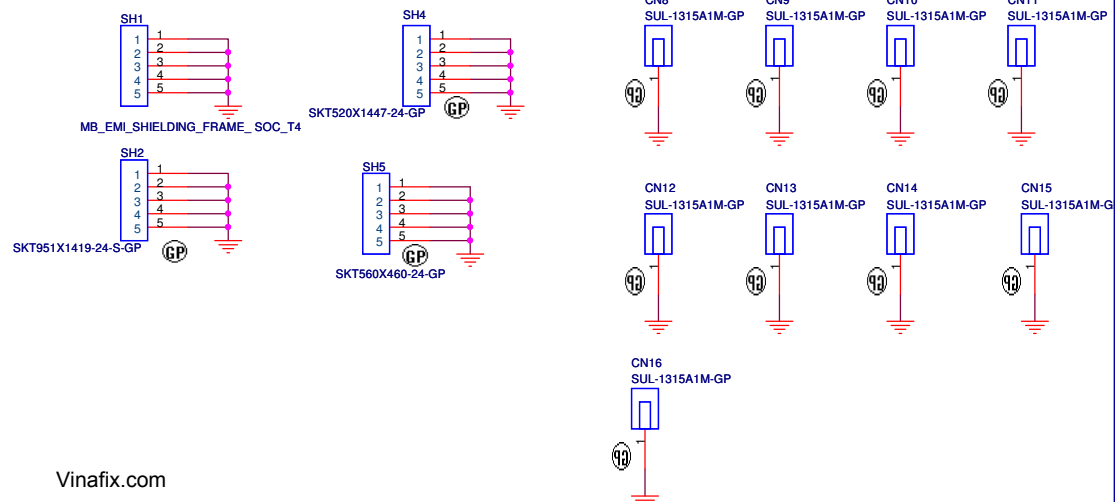
SSID=Mechanical



Joe modify 0114

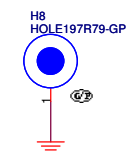
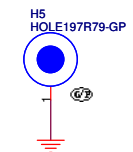
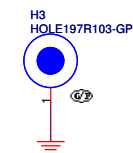


Joe modify 0114



Vinafix.com

Screw Hole



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Title

60_ME/EMI

Size

Document Number
Blackwell T4

Rev

-1

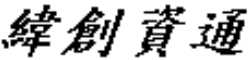
Date: Thursday, October 01, 2015

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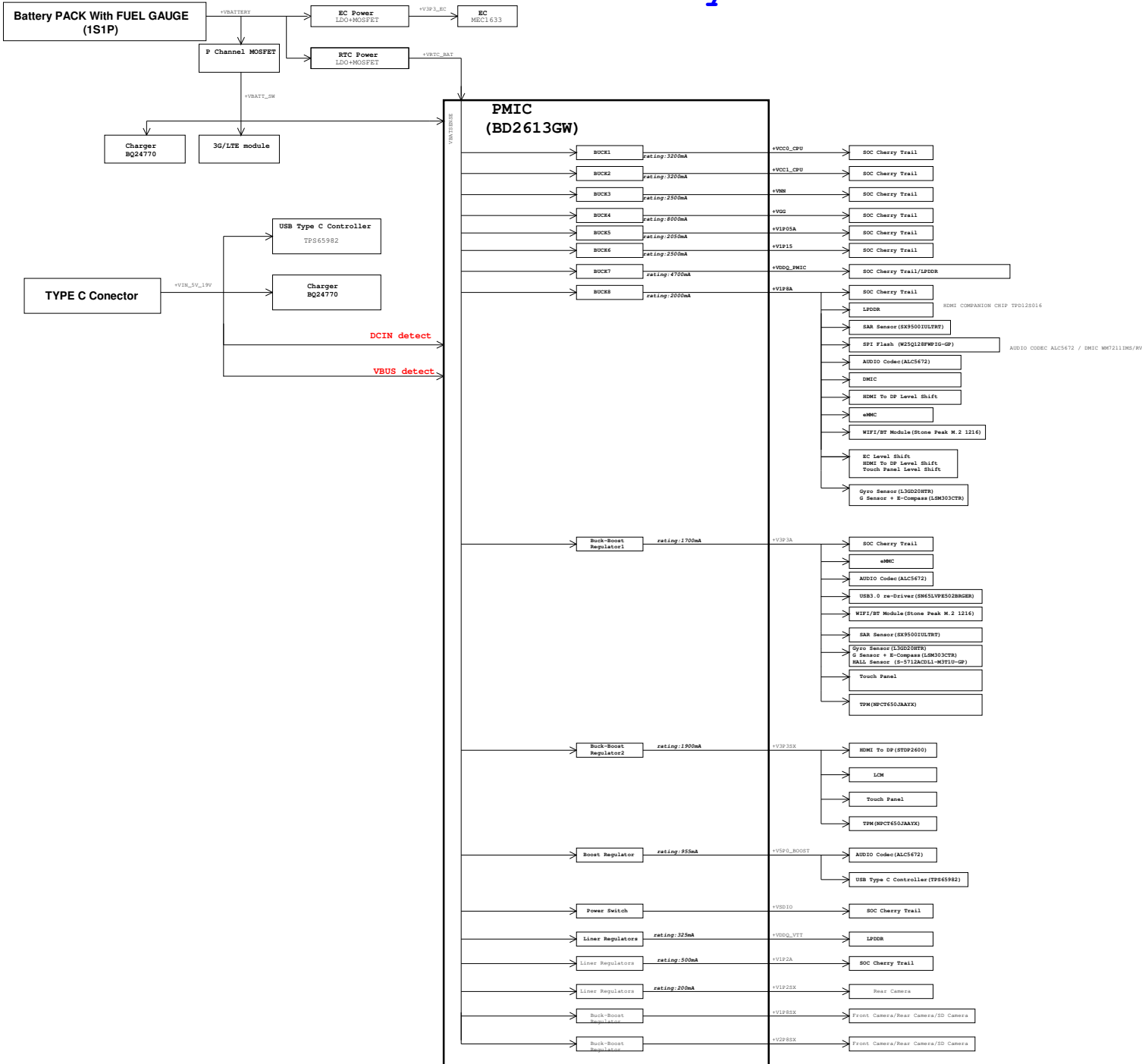
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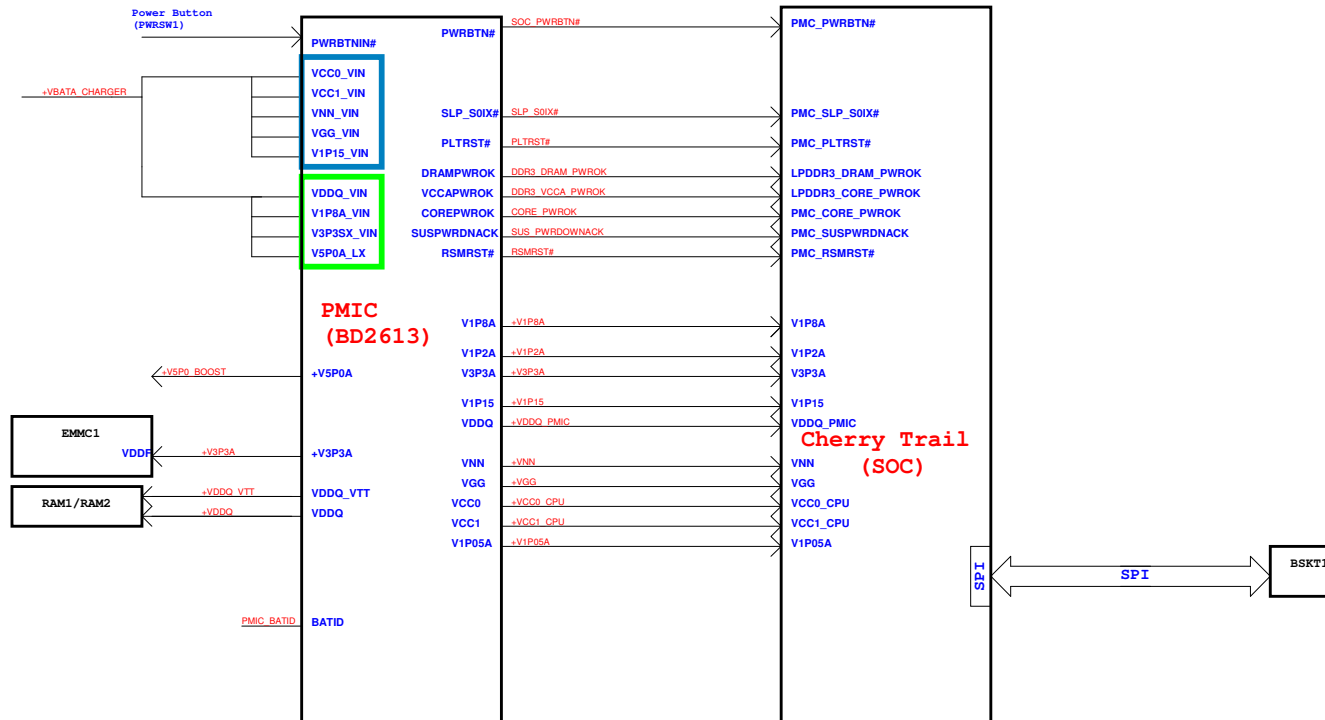
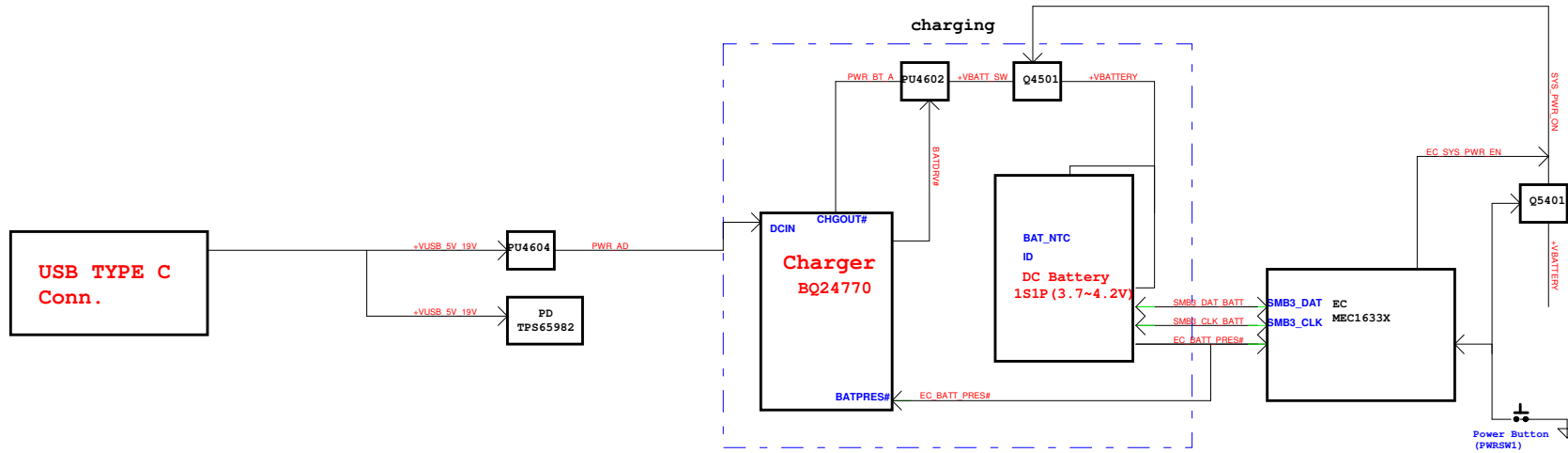
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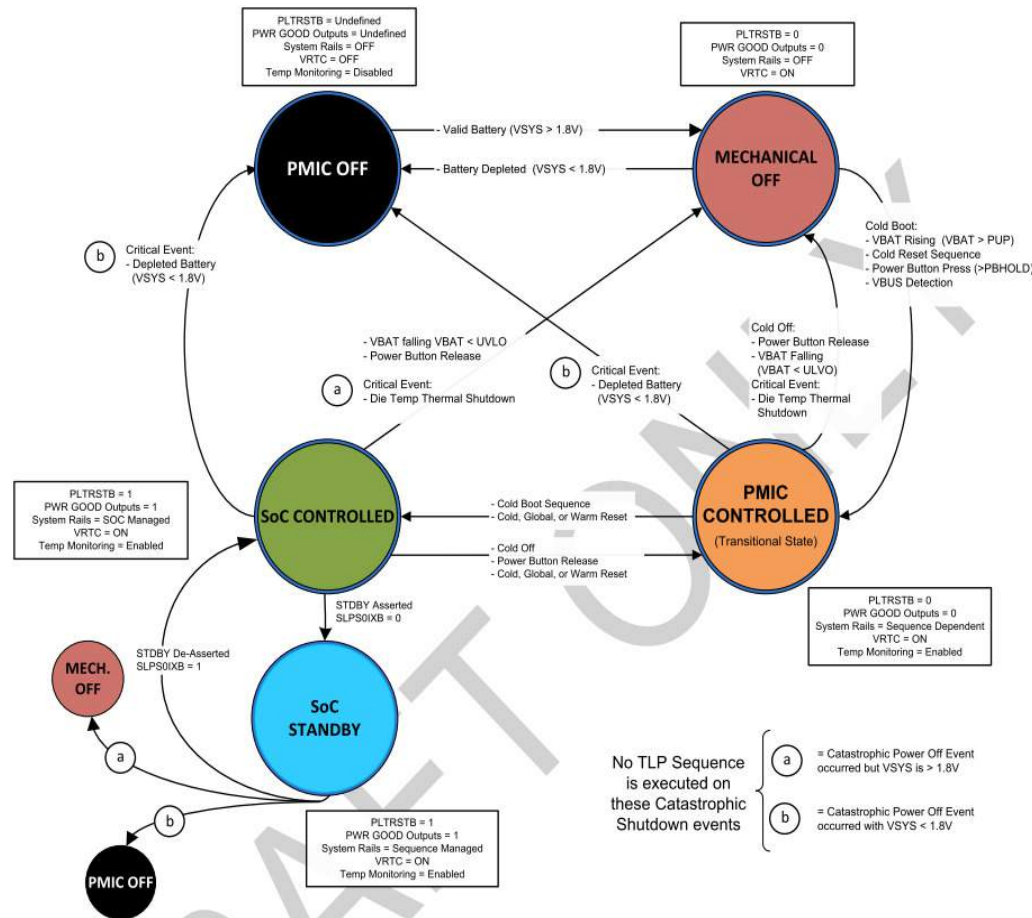
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Title 61_RF(Reserved)			
Size	Document Number Blackwell T4		Rev -1
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SOC Cherry Trail POWERMAP







	PART	BUCK1	BUCK2	BUCK3	BUCK4	BUCK5	BUCK6	LD01	LD02	LD03	VRTC LD04	VREFDQ LD05	LD06	LD07	LD08	LD09	LD010	LD011	LD012	LD013	LD014	Comment
PMIC OFF	B Y T	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
	C H T	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Mechanical Off	B Y T	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
	C H T	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
SoC Control led	B Y T	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	Disabled by default. SoC can enable/disable according to system activity								VREFT can be turned on and off for thermistor and GPADC biasing
	C H T	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	Disabled by default. SoC can enable/disable according to system activity								
SoC Stand- by	B Y T	OFF	OFF	ON	V _{SLEEP}	ON	V _{SLEEP}	ON	ON	ON	ON	ON	ON	Will keep whatever state had before entering standby								I2C is operational VREFT can be turned on and off for thermistor and GPADC biasing
	C H T	OFF	ON	V _{SLEEP}	V _{SLEEP}	ON	OFF	ON	ON	ON	ON	ON	ON	ON	Will keep whatever state had before entering standby							

LDO7-LDO14 will keep whatever state before entering standby, it's up to the user whether to enable/disable. State machine won't enforce the behavior in this case.

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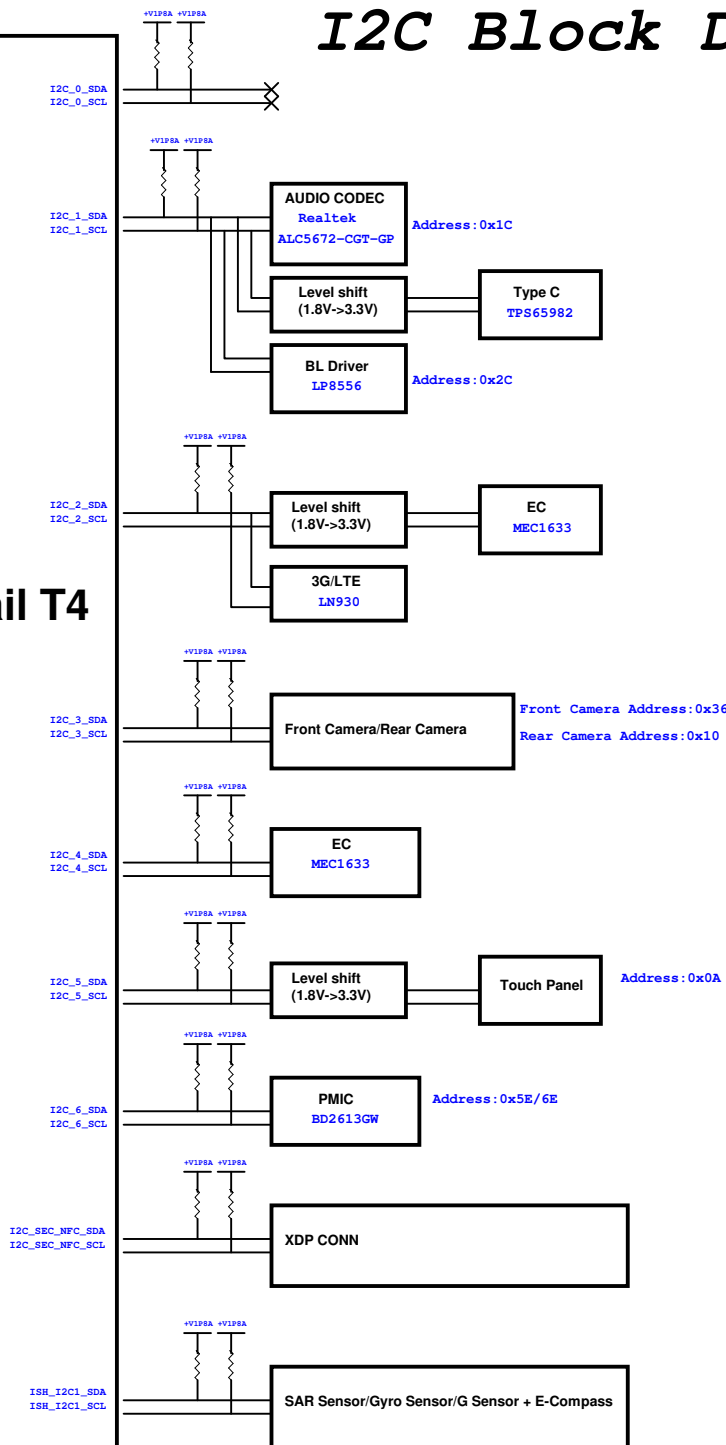
Blackwell T4

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Title	65_Power State		
Size	Document Number	Rev	
	Blackwell T4	-1	
Date:	Thursday, October 01, 2015	Sheet	65 of 73

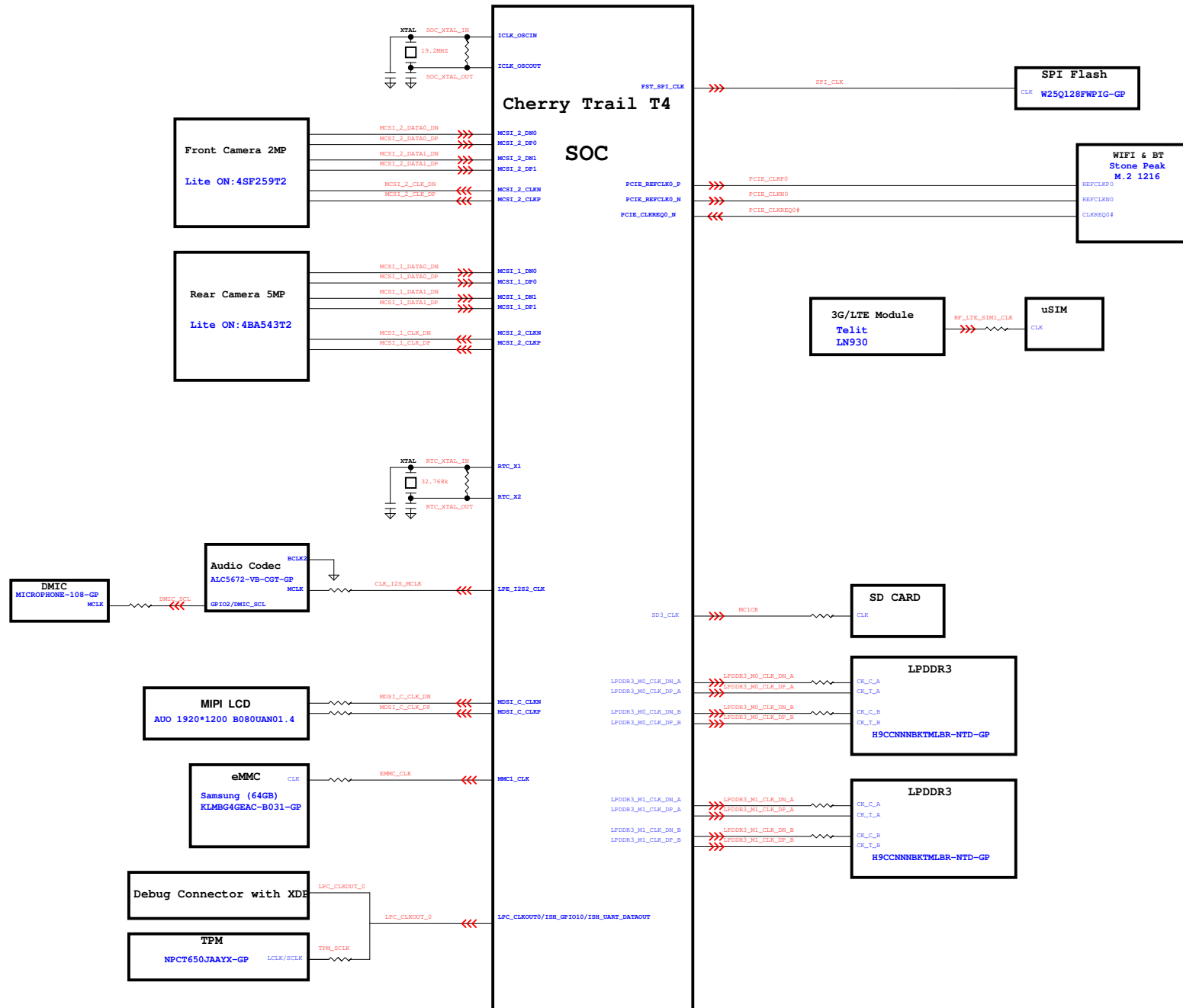
I2C Block Diagram

Intel Cherry Trail T4



Device	Blackwell-T3	Blackwell-T4	Somerset-T4
CODEC	I2C1	I2C1	I2C1
AMP	---	---	I2C1
Type C PD controller	I2C1/EC I2C7	I2C1/EC_I2C7	I2C1/EC_I2C7
3G/LTE	I2C1	I2C2	I2C2
EC (I2C_0)	I2C2	I2C2	I2C2
Front CAMERA	I2C2	I2C3	I2C3
Rear CAMERA	I2C2	I2C3	I2C3
ISP	I2C2	I2C3	I2C3
uHDMI	---	---	DDIO_DDC
NFC	I2C2	NFC_I2C	NFC_I2C
EC (I2C_5)	I2C4	I2C4	I2C4
LCD Backlight Driver	I2C1	I2C1	---
Touch	I2C5	I2C5	I2C5
PMIC	I2C6	I2C6	I2C6
A+Gyro sensor/ Gyro sensor	ISH_I2C	ISH_I2C	ISH_I2C
E sensor/ E+A sensor	ISH_I2C	ISH_I2C	ISH_I2C
Sar Sensor	ISH_I2C	ISH_I2C	ISH_I2C
Battery	EC_SMB3	EC_SMB3	EC_SMB3
Charger	EC_I2C4	EC_I2C4	EC_I2C4

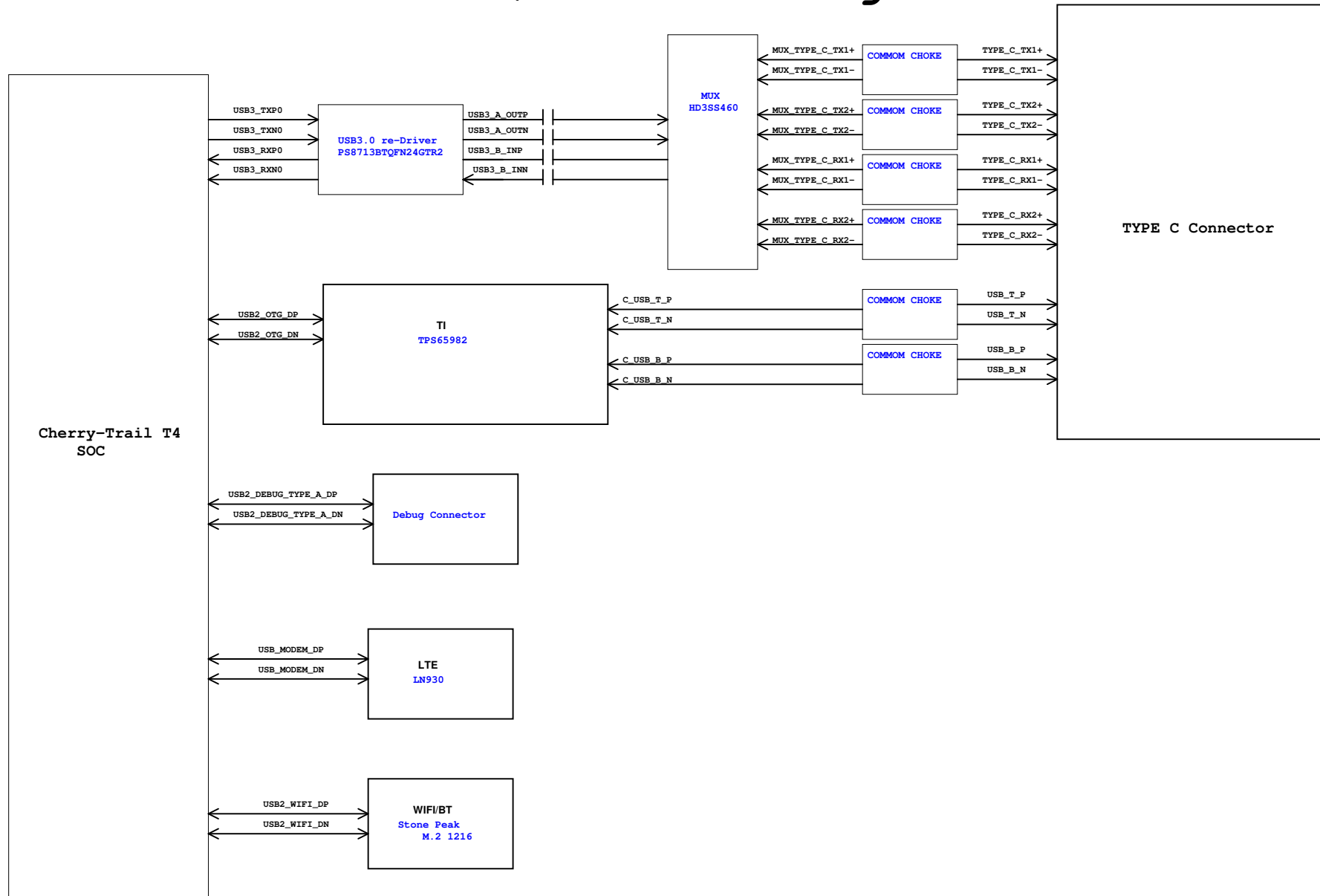
CLOCK Block Diagram



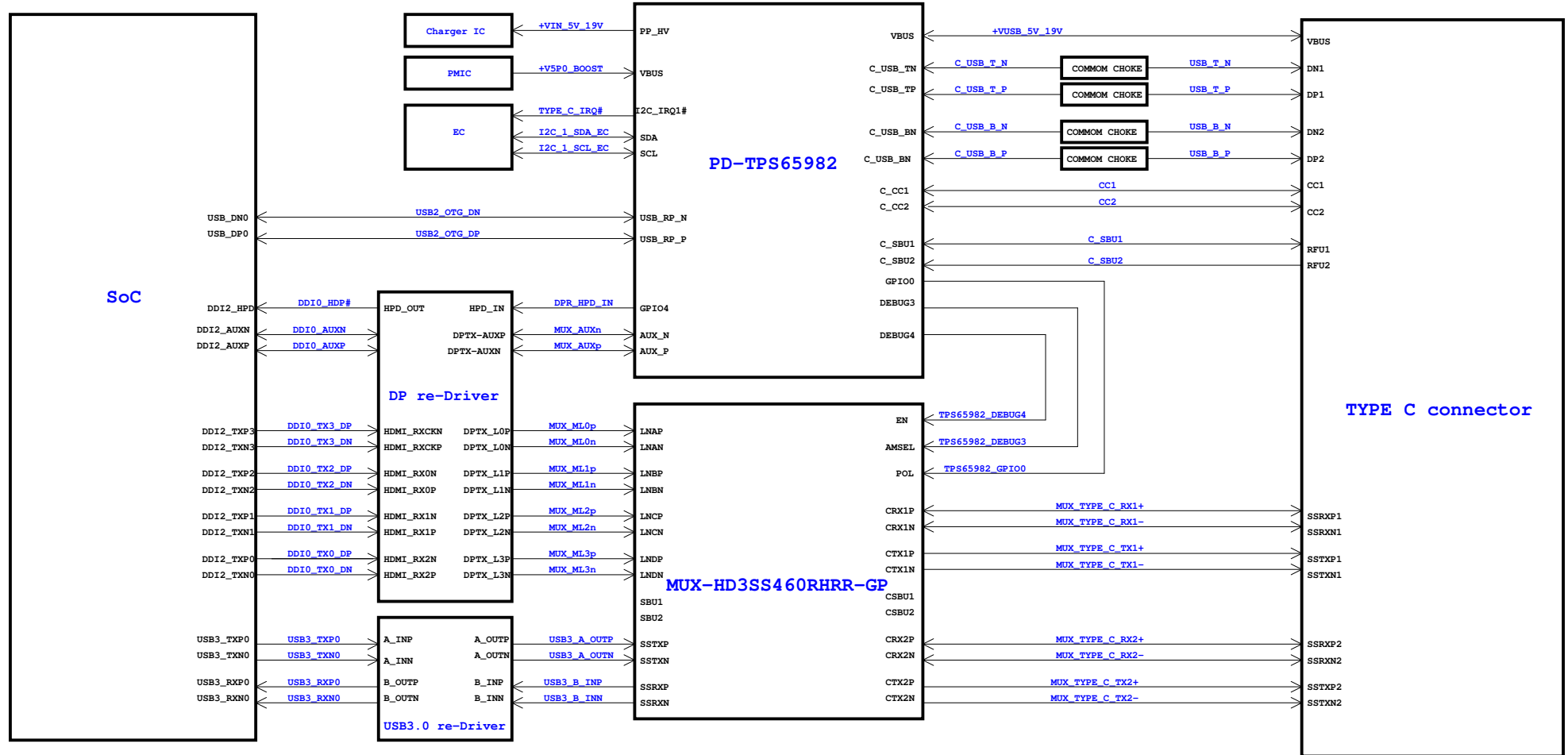
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File 67_CLK BLOCK DIAGRAM			
Size	Document Number		Rev.
	Blackwell T4		
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USB I/O Block Diagram



TYPE C Block Diagram



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Title <div>70_TYPE C BLOCK DIAGRAM(2/2)(Reserved)</div>		
Size	Document Number <div>Blackwell T4</div>	Rev <div>-1</div>
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Title

71_Change History

Size

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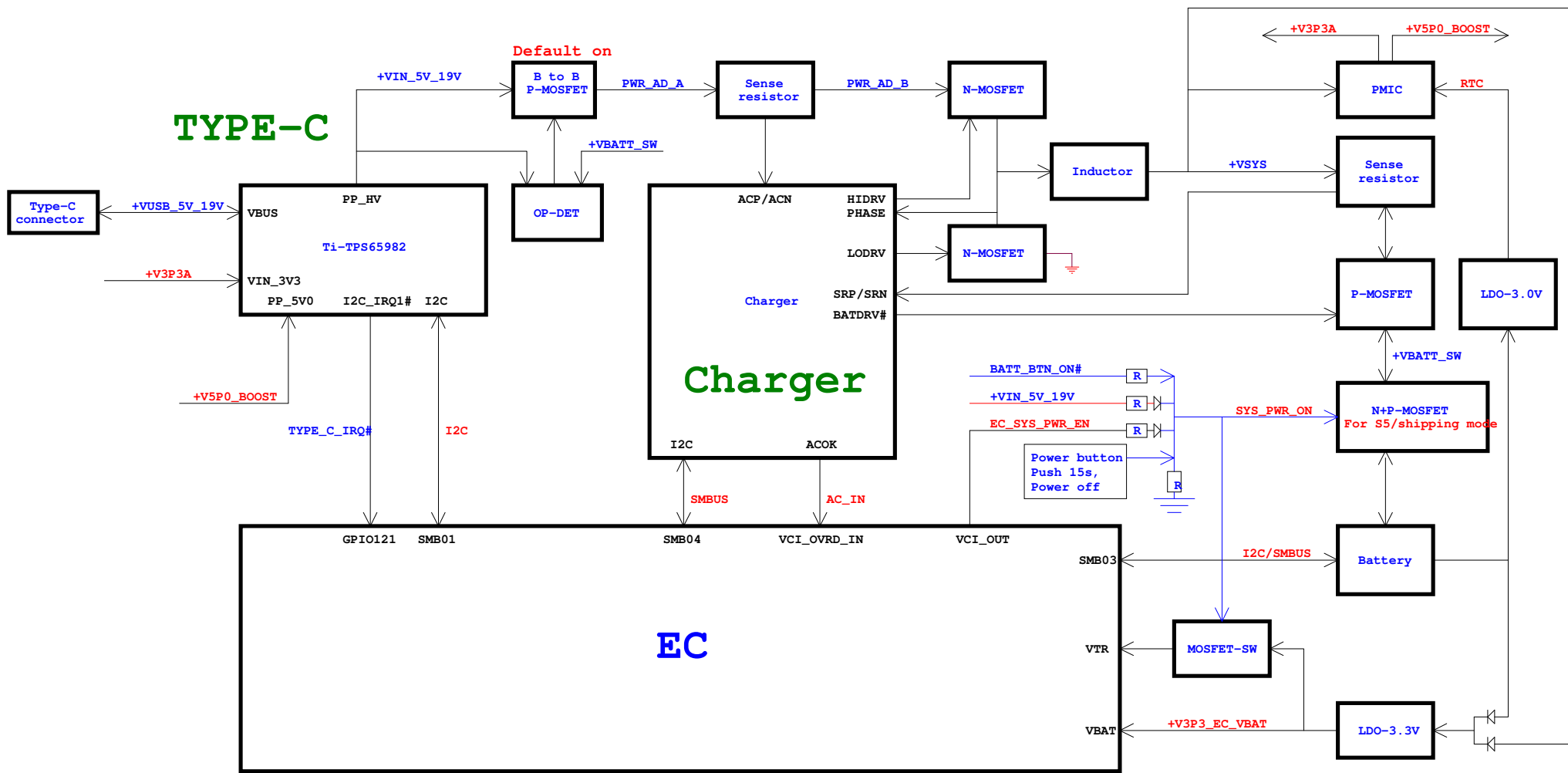
Rev

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Power block diagram



EC/SoC interface

