

Compal Confidential

Model Name : ZIPS1

File Name : LA-A341P

BOM P/N:

Compal Confidential

Stella M/B Schematics Document

Intel Shark Bay ULT Processor with DDR3L

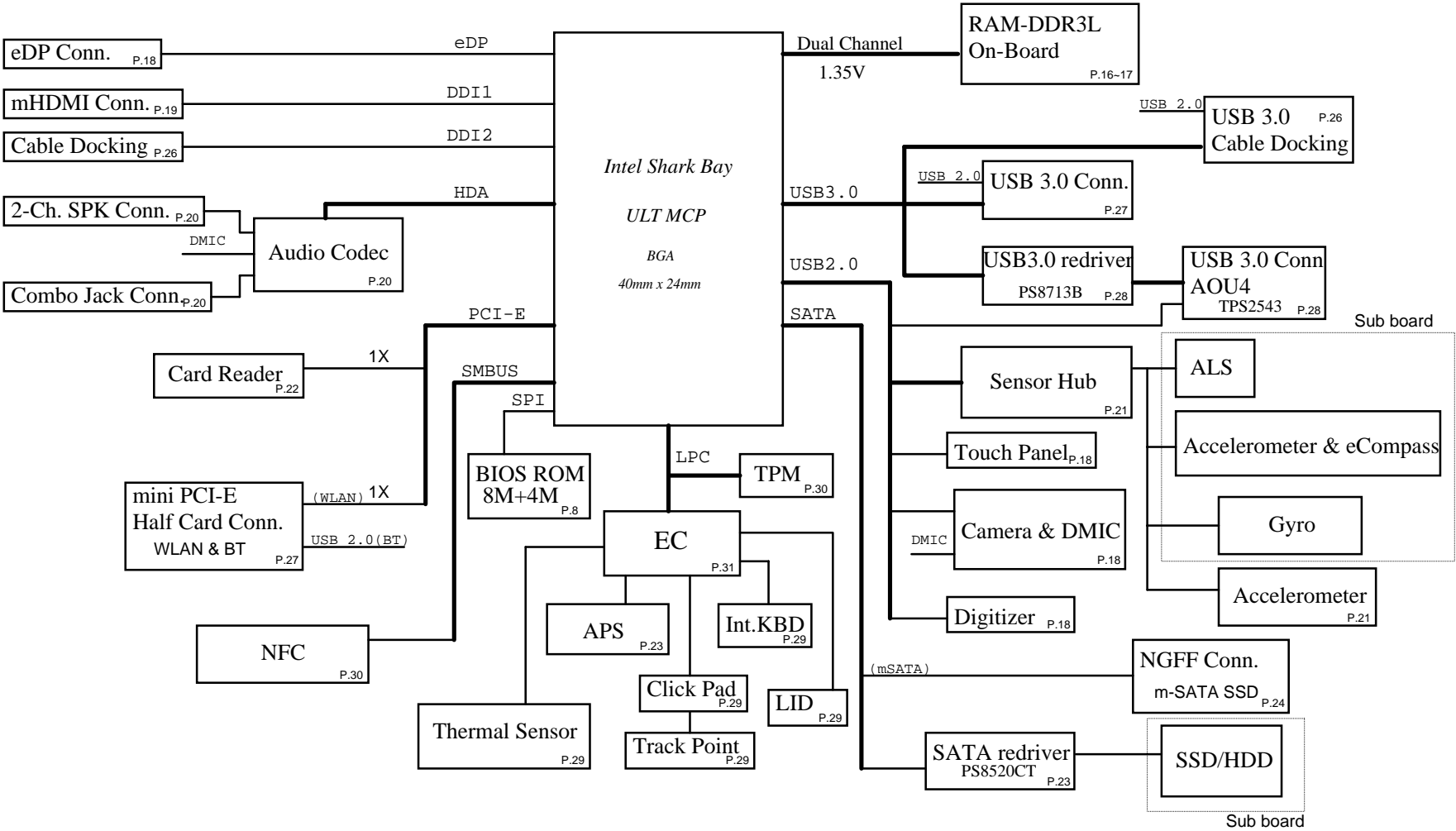
Rev. 1A_20130902A

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Model Name : ST-Note

File Name : Block Diagram



Voltage Rails

<div>power plane</div> <div>State</div>	+B	+5VALW +3VALW	+1.35V	+5VS +3VS +1.5VS +VCCP +CPU_CORE +0.675VS +1.05VS	+3VM +1.05VM
S0	O	O	O	O	<div>O</div> <div>M3 Supported</div>
S3	O	O	O	X	<div>O</div> <div>M3 Supported</div>
S5 S4/AC	O	O	X	X	<div>O</div> <div>M3 Supported</div>
S5 S4/ Battery only (AOU Disable)	X	X	X	X	
S5 S4/AC & Battery don't exist (AOU Disable)	X	X	X	X	

STATE	SIGNAL	SLP_S1#	SLP_S3#	SLP_S4#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON		HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S3 (Suspend to RAM)		LOW	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)		LOW	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 (Soft OFF)		LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF

BOARD ID Table

Board ID	PCB Revision
0	0.1
1	
2	
3	
4	
5	
6	
7	

BOM Structure Table

BTO Item	BOM Structure
Connector	ME@
EMI Mount	EMI@
dGPU	DIS@
Intel UMA	UMA@
AOAC	AOAC@
TPM	TPM@
SBA	SBA@
Non-SBA	NOSBA@
DRAM Option	DDR1@
Unpop	@
EMI Un-Mount	@EMI@

USB 2.0 Port Table

	USB 2.0	Port	3 External USB Port
		0	USB 3.0 Port + AOU (Left)
		1	USB 3.0 Port (Right)
		2	USB 3.0 Port (Docking)
		3	Mini Card (WLAN/BT)
		4	Touch Screen
		5	Camera
		6	Sensor Hub
		7	Digitizer

USB 3.0 Port Table

Port	
1	USB 3.0 Port (Left)
2	USB 3.0 Port (Right)
3	USB 3.0 Port (Docking)
4	

PCIe Port Table

Port	Lane	
1		
2		
3		WLAN
4		Cardreader
	0	
5	1	
	2	
	3	
	0	
6	1	
	2	
	3	

SATA Port Table

Port	
0	HDD
1	NGFF SSD
2	
3	

EC SM Bus1 address

Device	Address	HEX
Smart Battery	0001 011X b	16H
Charger	0001 011X b	12H

EC SM Bus2 address

Device	Address	HEX
Thermal Sensor Fintek F75303M	1001_101xb	9AH
Synaptics Inter Touch Click Pad	0010_110xb	2CH

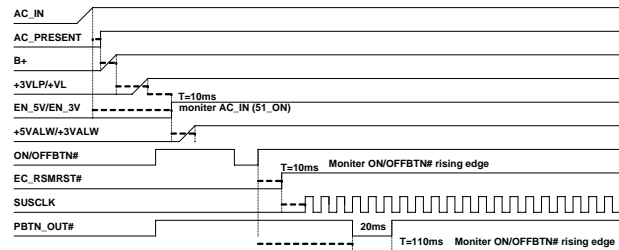
PCH SM Bus address

Device	Address	HEX
Security Rom	1010 100xb	A8H

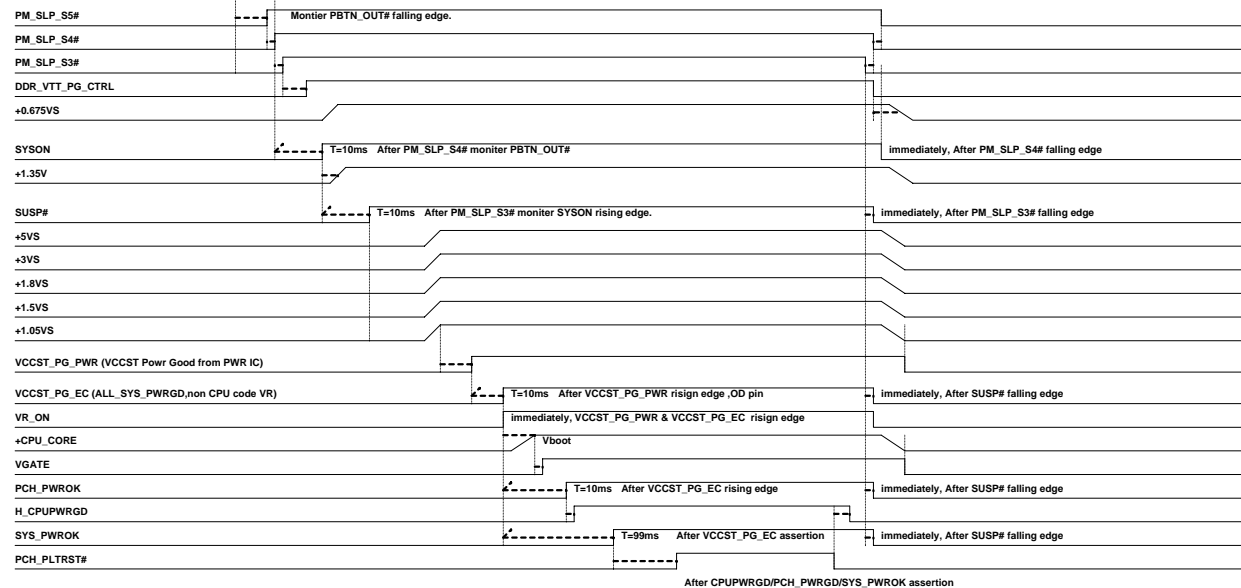
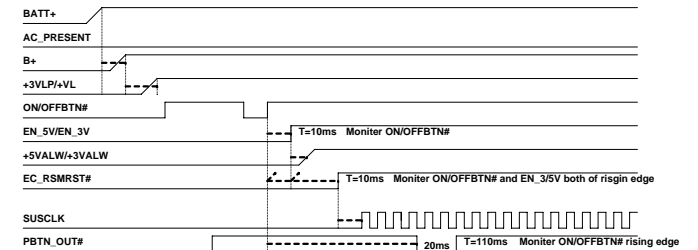
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[AC Mode]

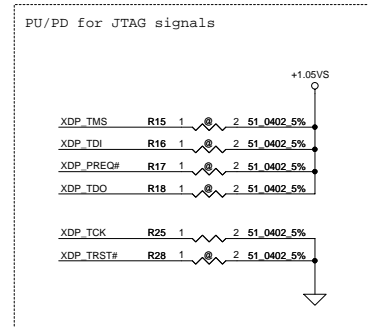
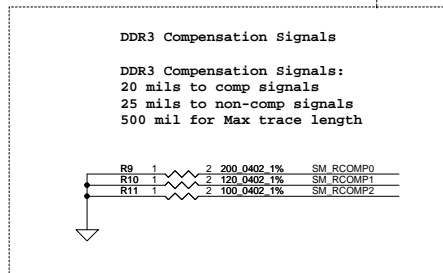
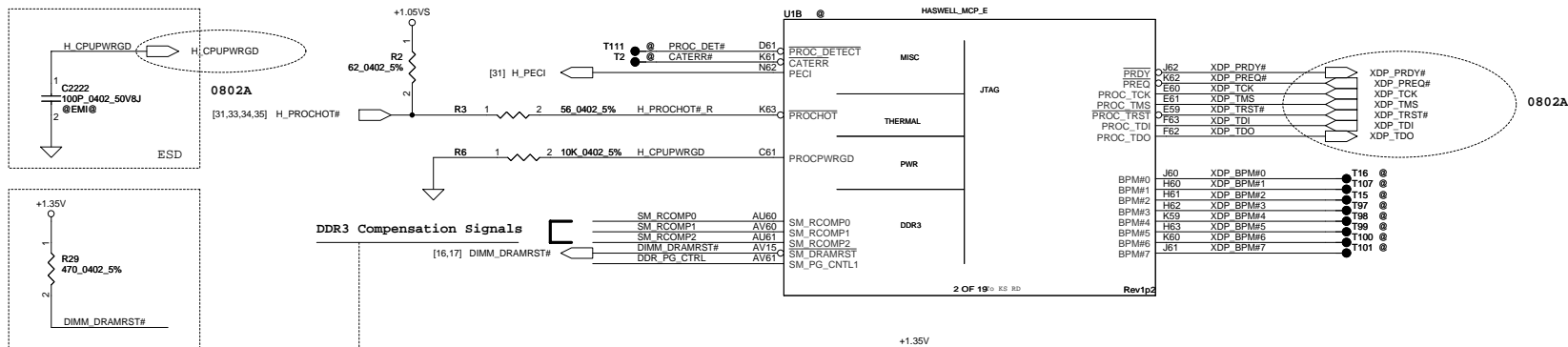
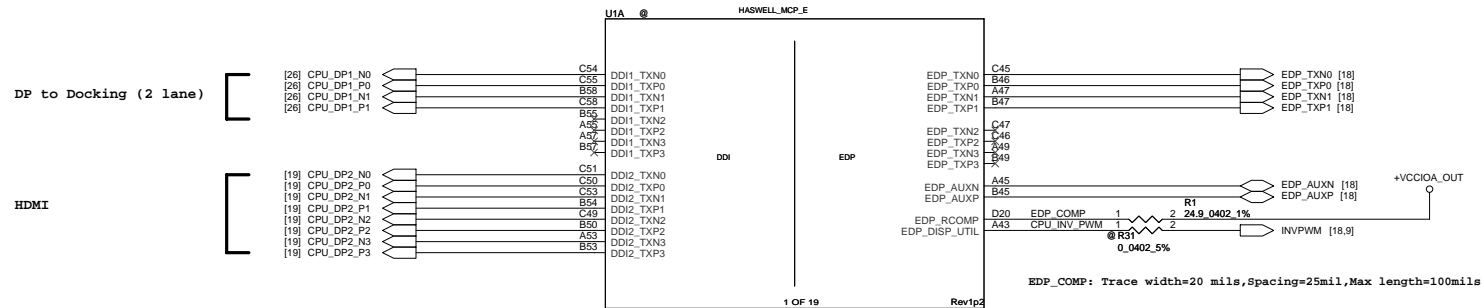


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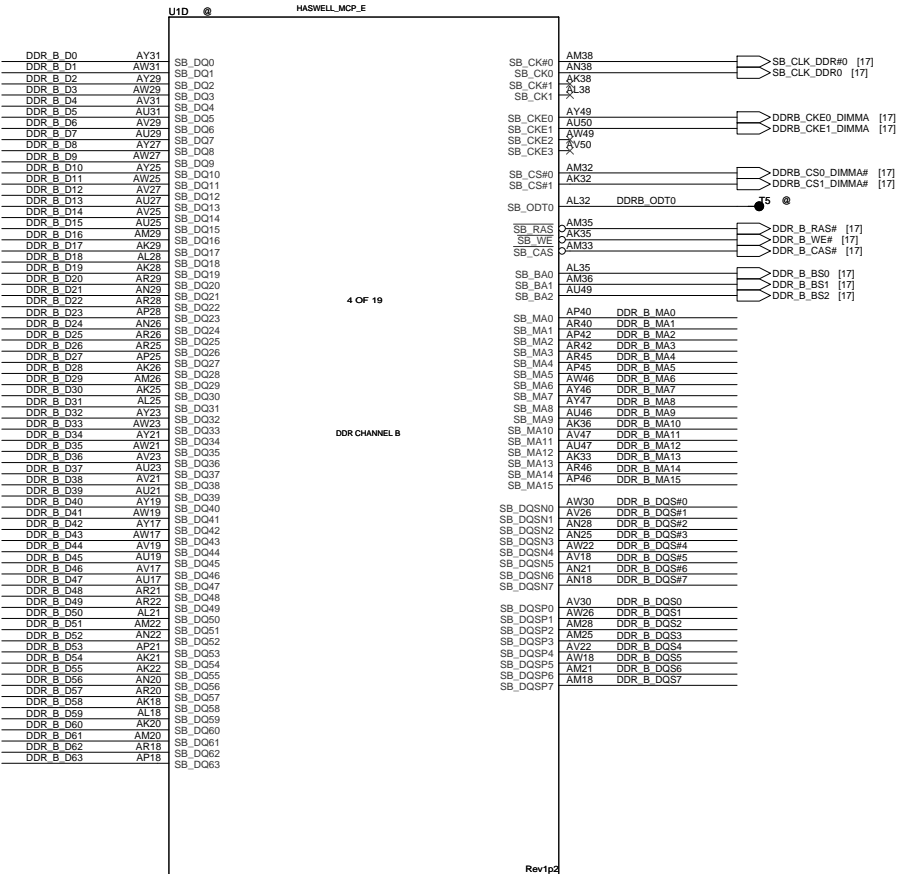
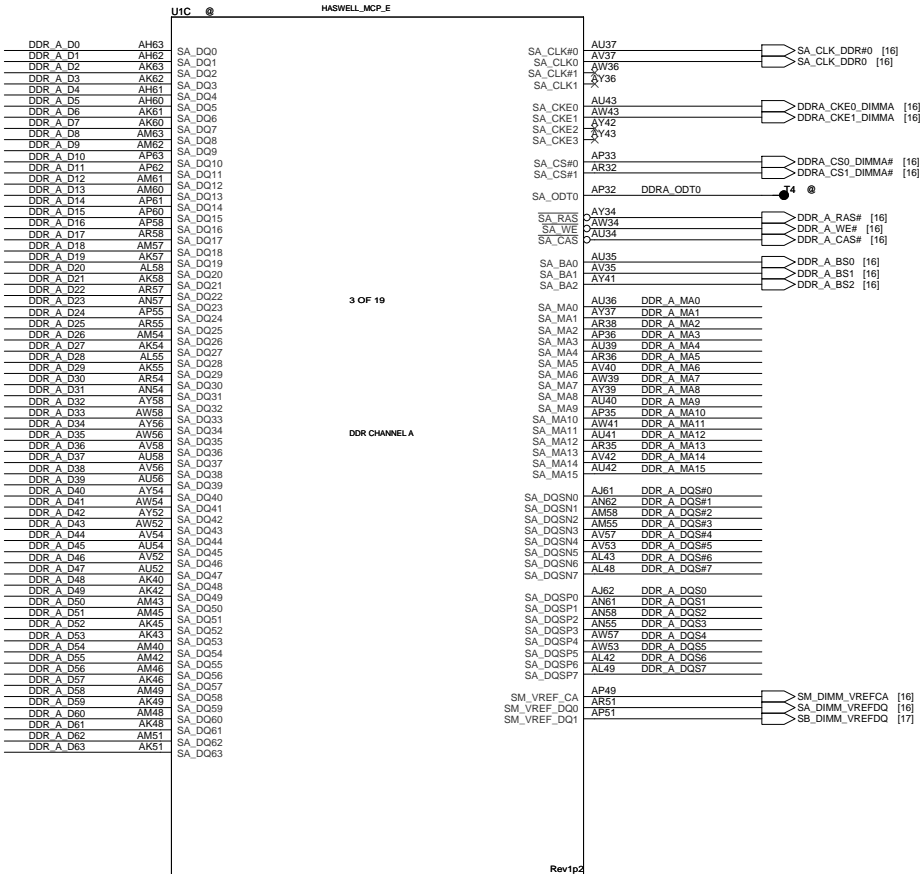
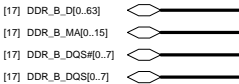
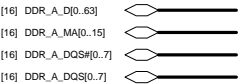
RAM_ID3 GPIO46	RAM_ID2 GPIO47	RAM_ID1 GPIO48	RAM_ID0 GPIO49	RAM
0	0	0	0	HYNIX 4GB
0	0	0	1	SAMSUNG 4GB
0	0	1	0	MICRON 4GB
0	0	1	1	ELPIDA 4GB
0	1	0	0	SAMSUNG 8GB
0	1	0	1	ELPIDA 8GB
0	1	1	0	MICRON 8GB
0	1	1	1	HTNIX 8GB
1	0	0	0	TBD
1	0	0	1	TBD
1	0	1	0	TBD
1	0	1	1	TBD
1	1	0	0	TBD
1	1	0	1	TBD
1	1	1	0	TBD
1	1	1	1	TBD

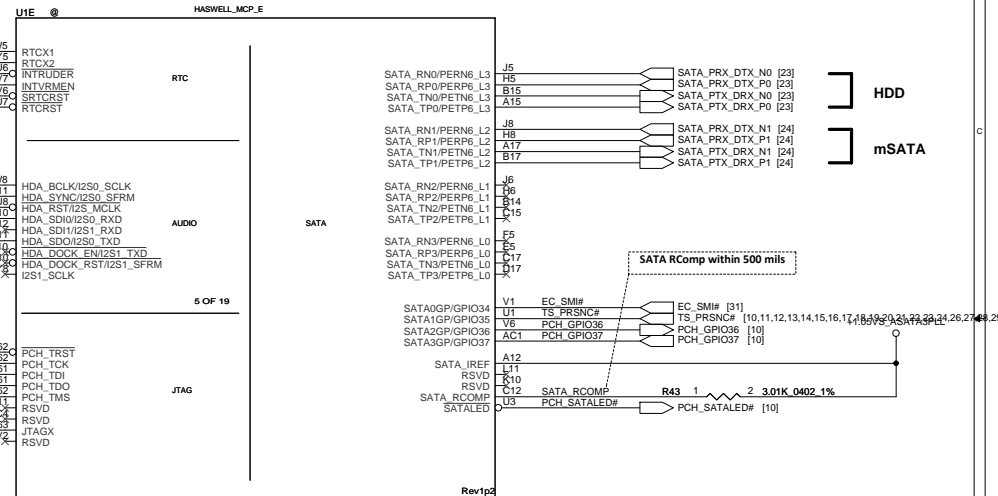
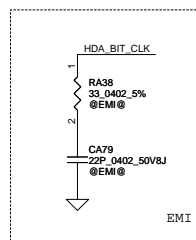
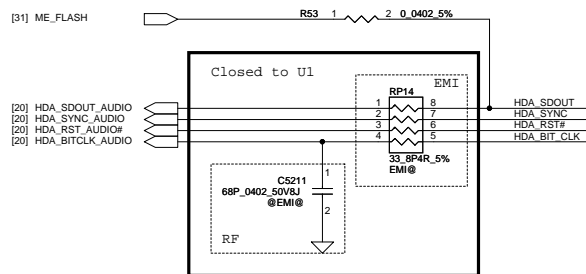
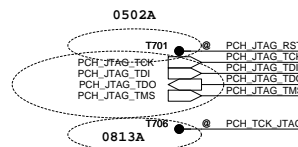
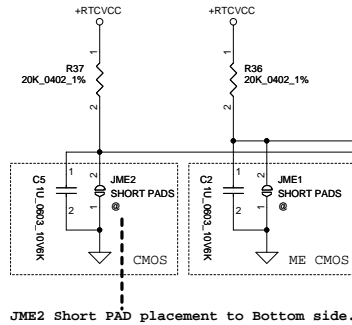
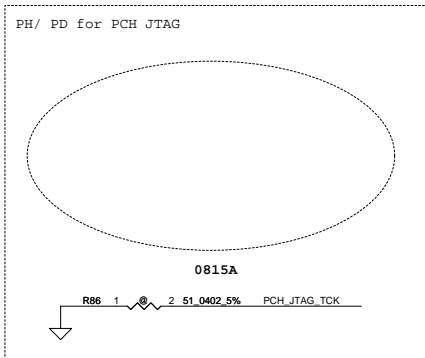
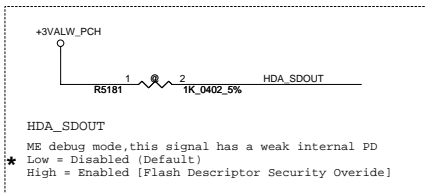
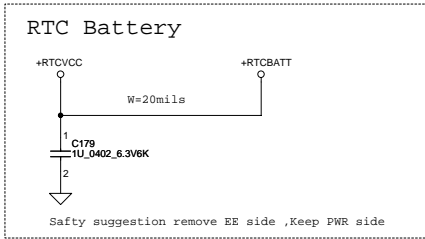
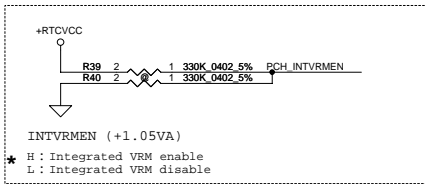
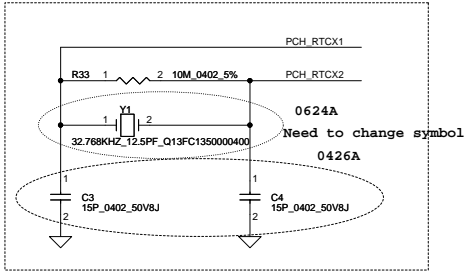
DDI/ MSIC/ XDP



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Memory I/F



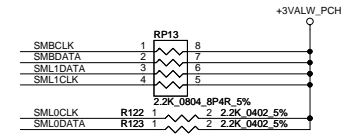
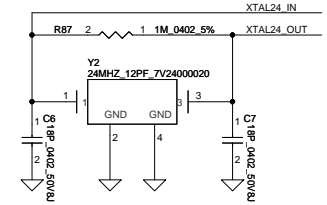
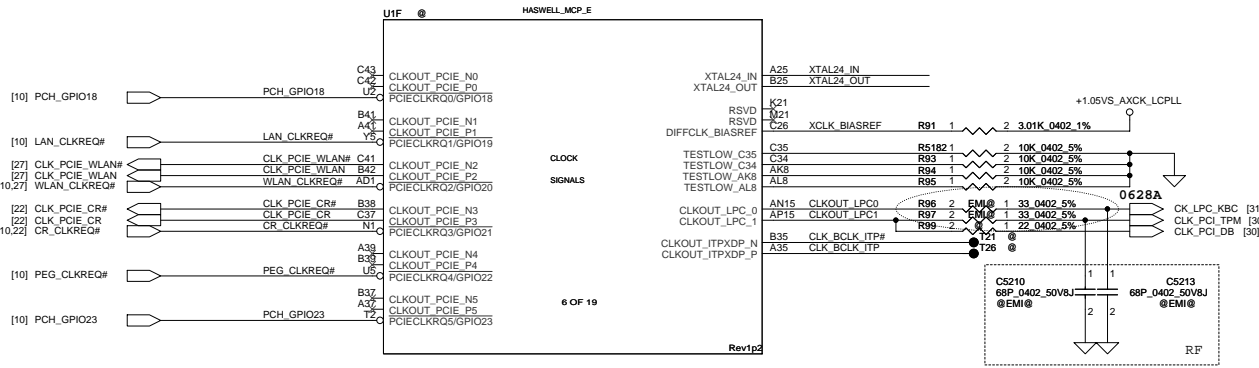


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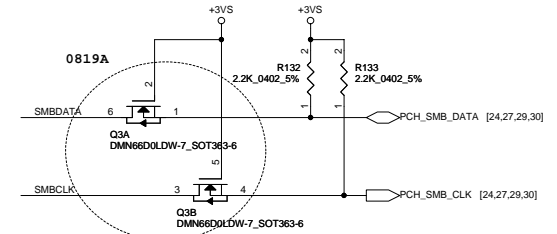
CLK/ SPI/ SMBUS

WLAN

Card Reader

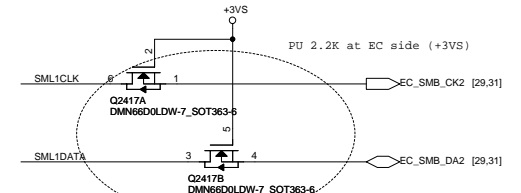


SMBus :SPD/PCIE/Security/TP/NFC



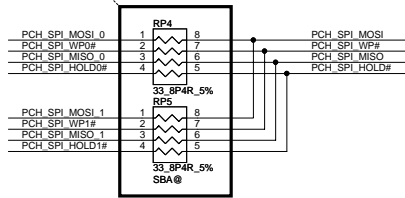
Change Symbol

SML1 Bus :EC/Sensors



Change Symbol 0819A

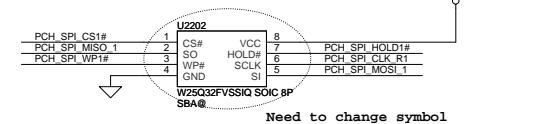
SBA - 2 SPI Device = 33 ohm - P/N: SD309330A80
Non-SBA - 1 SPI Device = 15 ohm - P/N: SD300001P00



SPI ROM (8M)

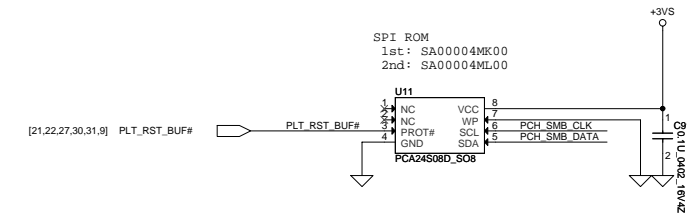
SPI ROM 8MB
1st: SA000039A30 - Winbond
2nd: SA000046400 - E-ON
SPI ROM 4MB
1st: SA00003K820 - Winbond
2nd: SA00004LI00 - E-ON

SPI ROM (4M)



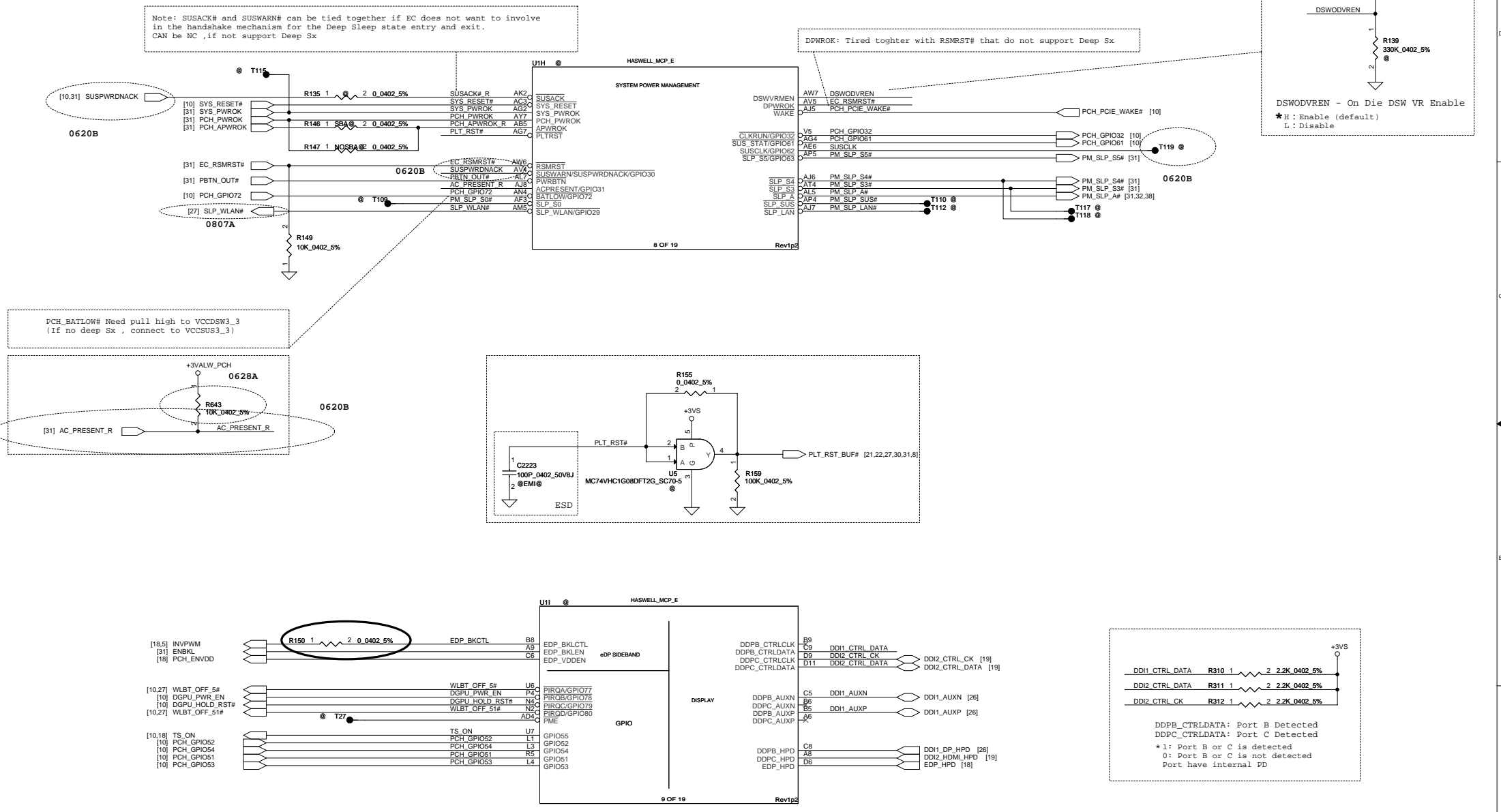
Need to change symbol

Security ROM

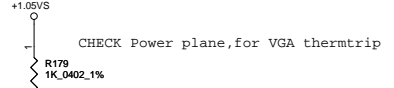
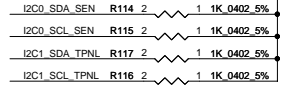


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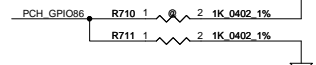
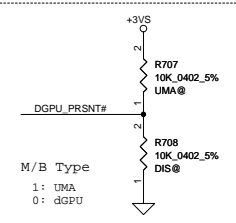
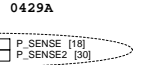
PM/ GPIO/ DDI



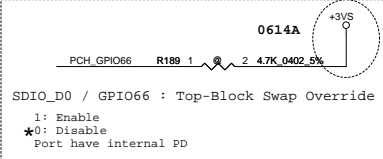
GPIO/ LPIO



CHECK Power plane, for VGA thermtrip



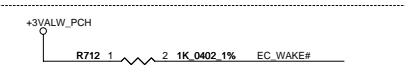
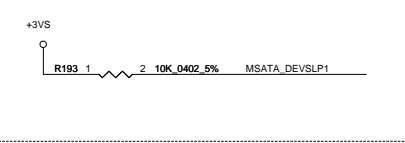
GPIO0_MOSI / GPIO86 : Boot BIOS Strap
1: LPC BUS
*0: SPI BUS (default)
Port have internal PD



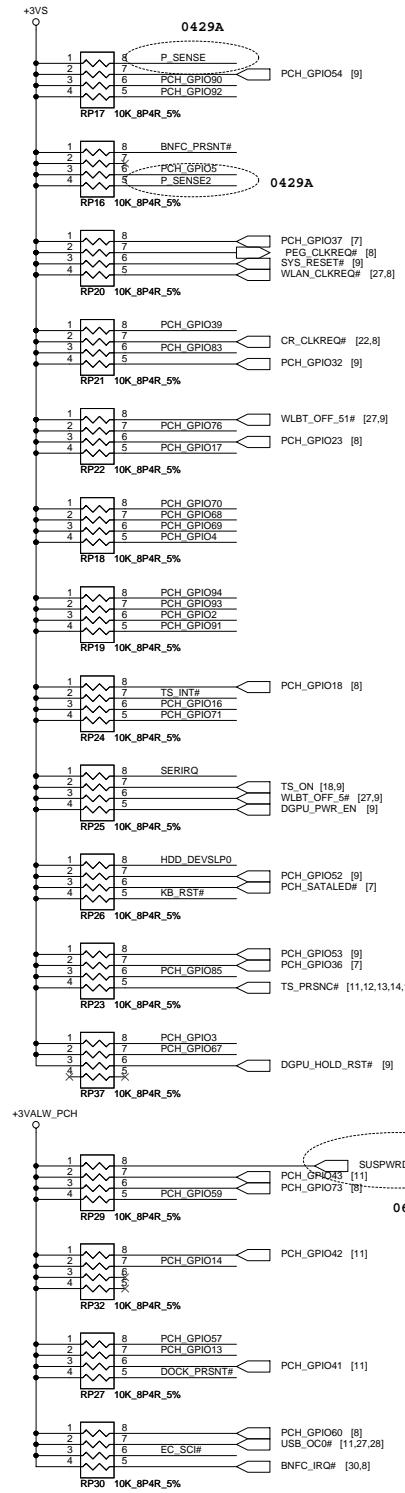
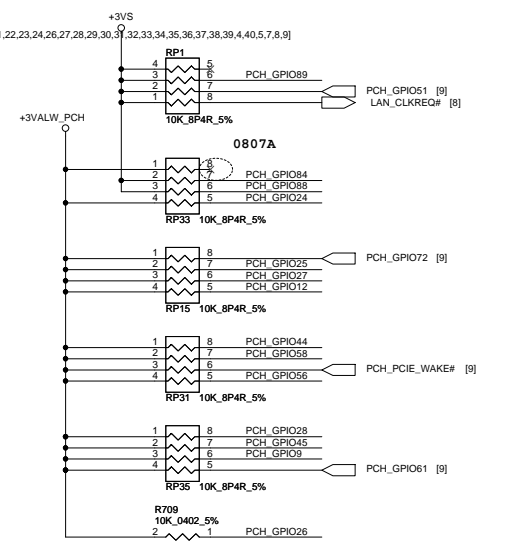
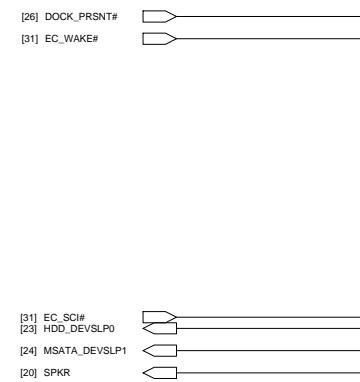
SDIO_D0 / GPIO66 : Top-Block Swap Override
1: Enable
*0: Disable
Port have internal PD

RAM_ID3 GPIO46	RAM_ID2 GPIO47	RAM_ID1 GPIO48	RAM_ID0 GPIO49	RAM
0	0	0	0	HYNIX 4GB
0	0	0	1	SAMSUNG 4GB
0	0	1	0	MICRON 4GB
0	0	1	1	ELPIDA 4GB
0	1	0	0	SAMSUNG 8GB
0	1	0	1	ELPIDA 8GB
0	1	1	0	MICRON 8GB
0	1	1	1	HYNIX 8GB
1	0	0	0	TBD
1	0	0	1	TBD
1	0	1	0	TBD
1	0	1	1	TBD
1	1	0	0	TBD
1	1	0	1	TBD
1	1	1	0	TBD
1	1	1	1	TBD

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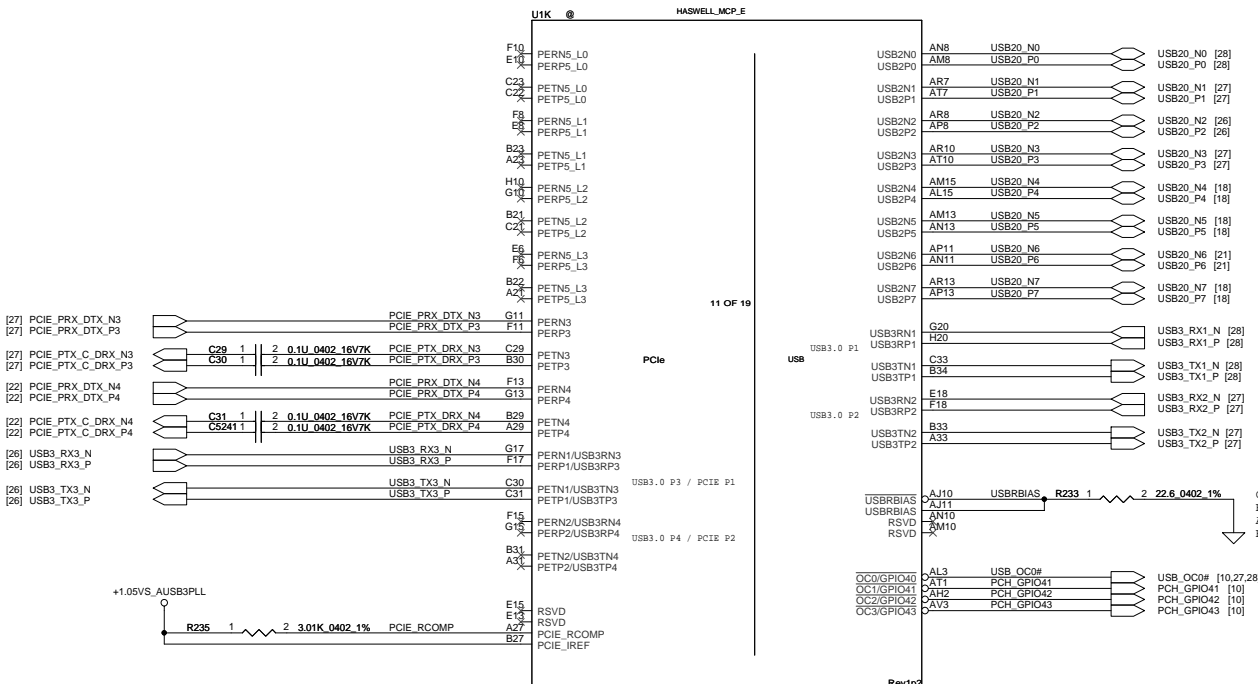
GPIO15 : TLS Confidentiality
1: Intel ME TLS with confidentiality
* 0: Intel ME TLS with no confidentiality
Port have internal PD



WLAN

Card Reader

USB 2/3 (Docking)



USB2/3 (Left)

USB2/3 IO (Right)

USB2/3 IO (Docking)

Mini Card(WLAN+BT)

Touch Screen

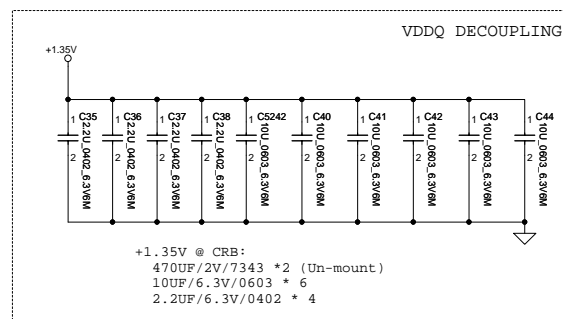
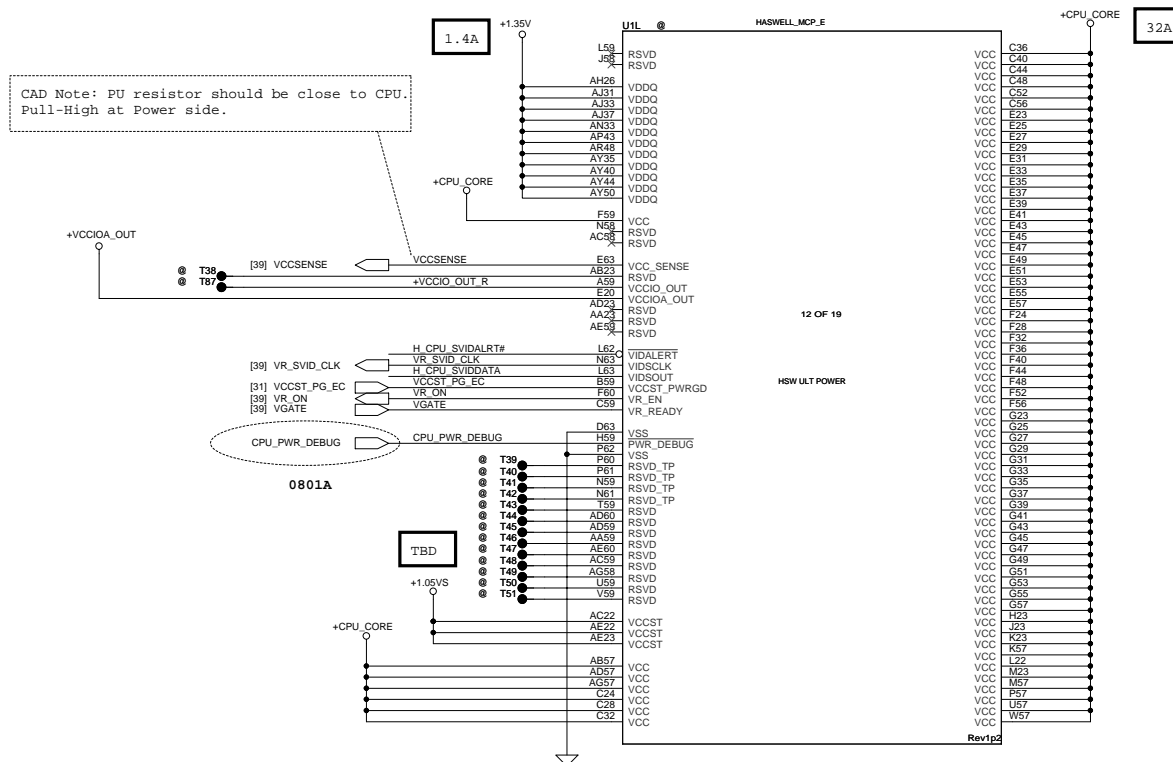
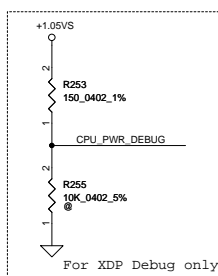
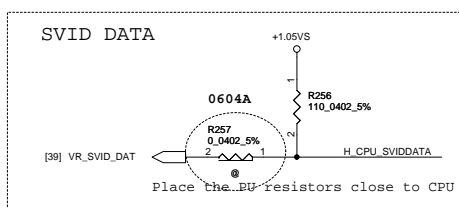
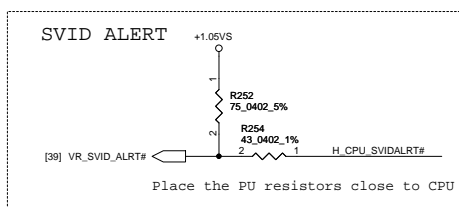
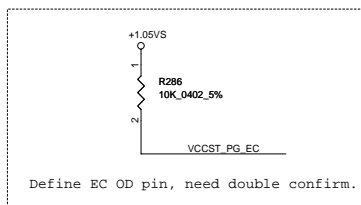
Camera

Sensor Hub

Digitizer

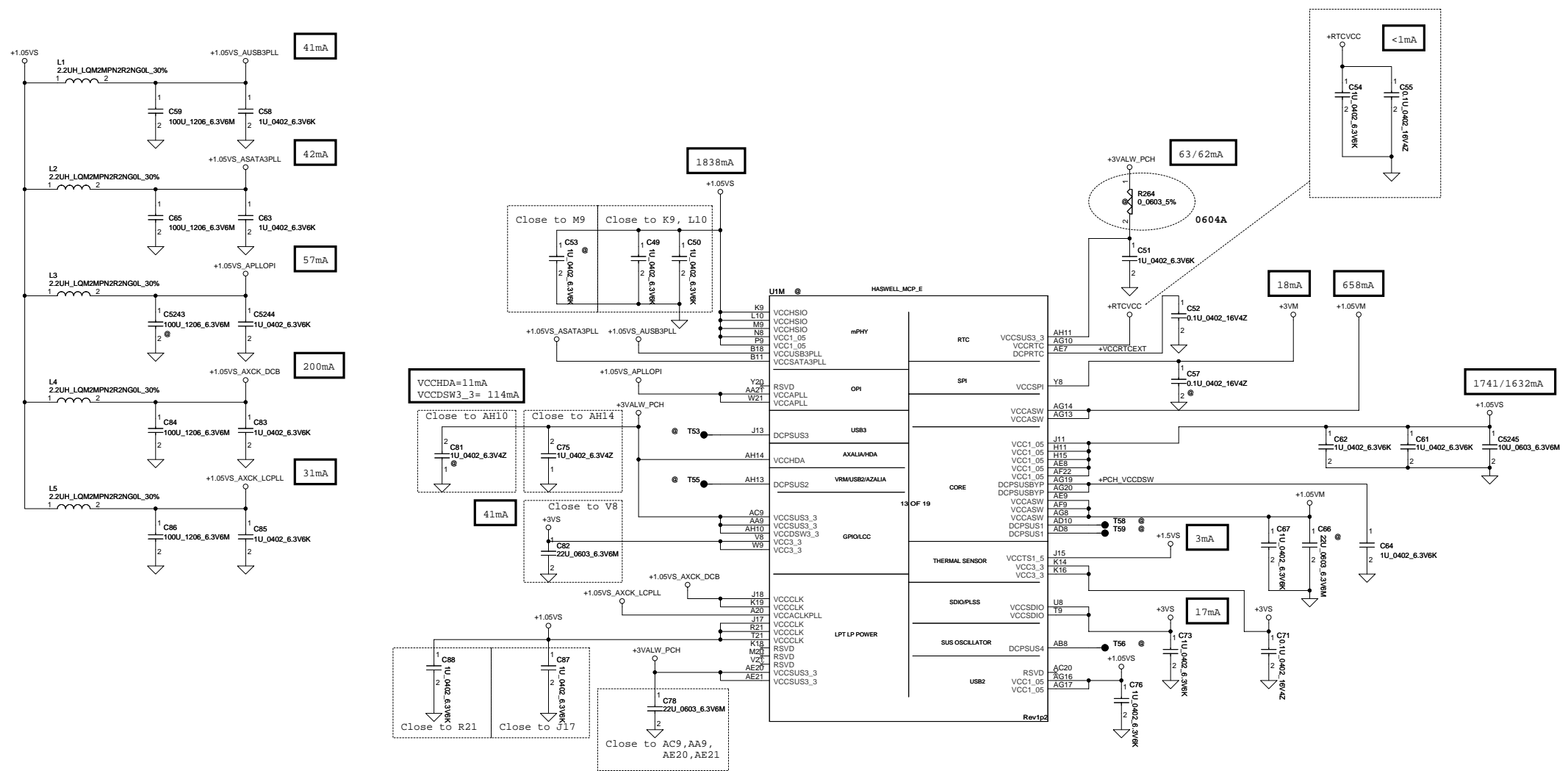
USB2/3 (Left)

USB2/3 (Right)



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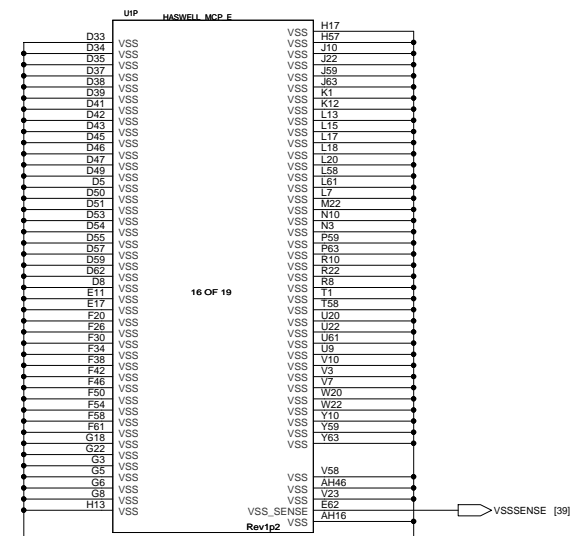
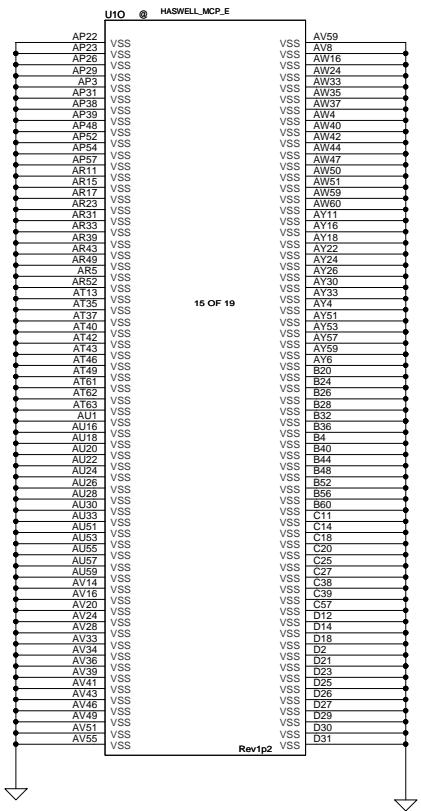
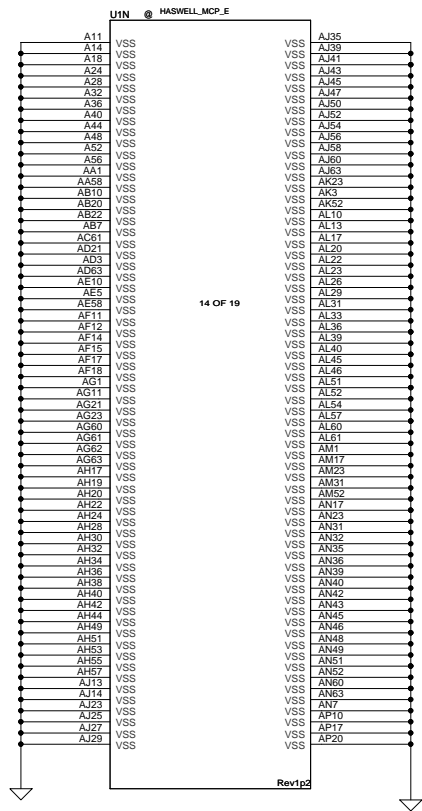
Power

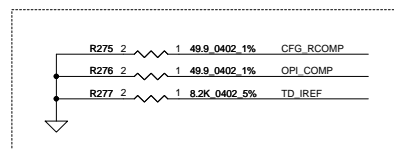
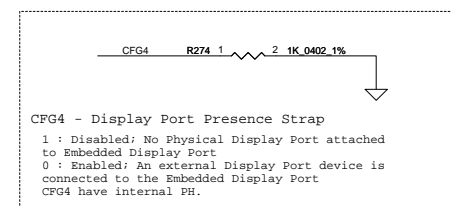
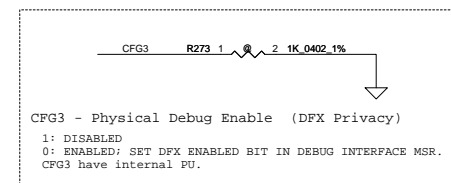
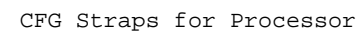
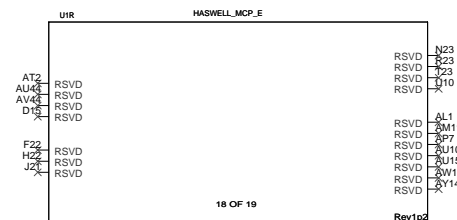


Only available on External Suspend VR powered.
DcpSus1= 109mA
DcpSus2= 25mA
DcpSus3= 10mA
DcpSus4= 1mA

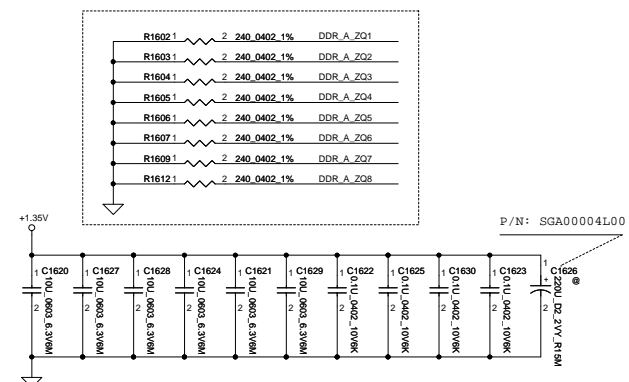
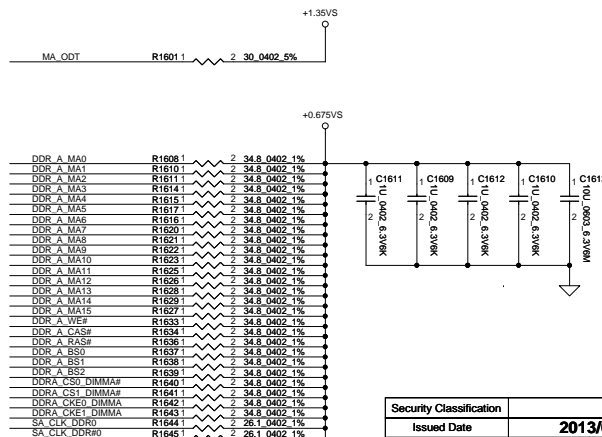
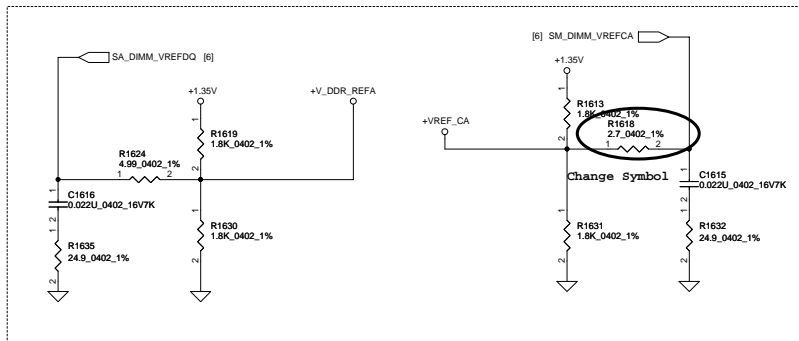
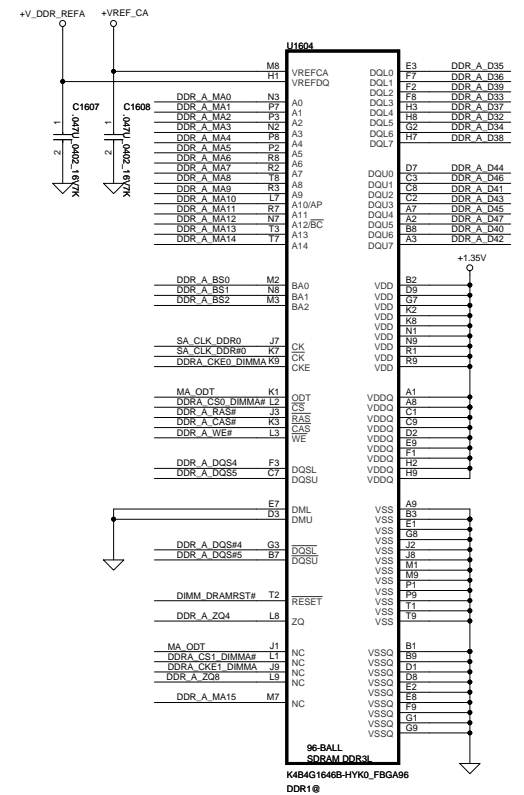
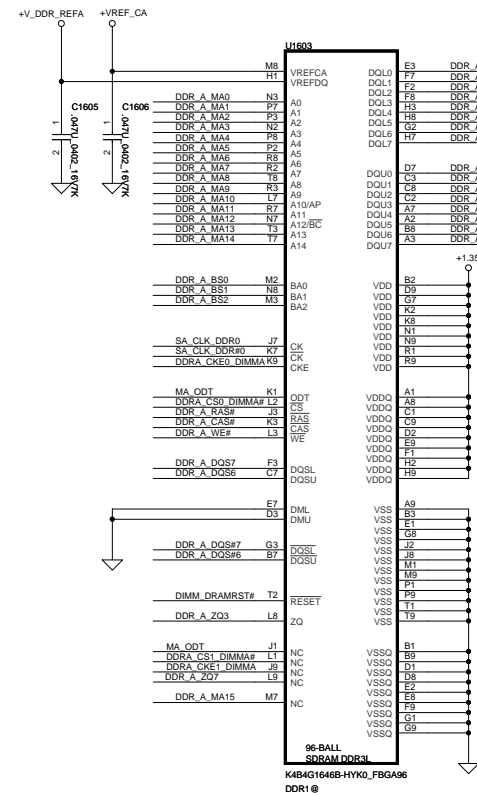
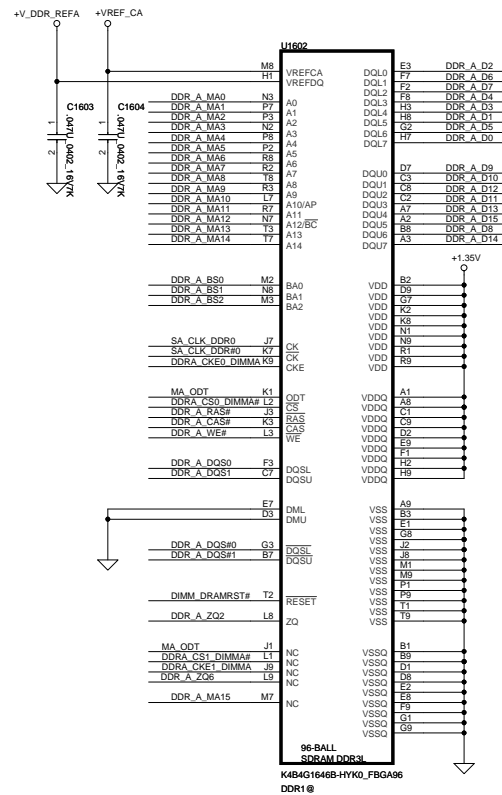
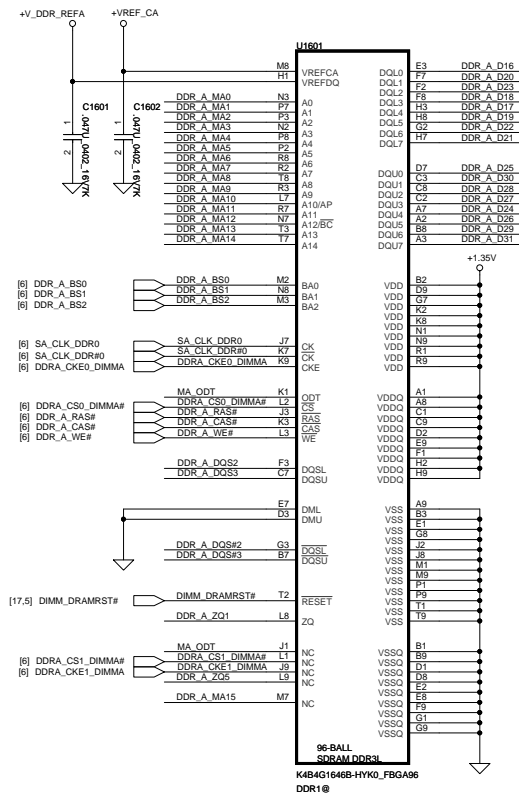
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Size	Custom	Document Number	4019P2	Rev	C
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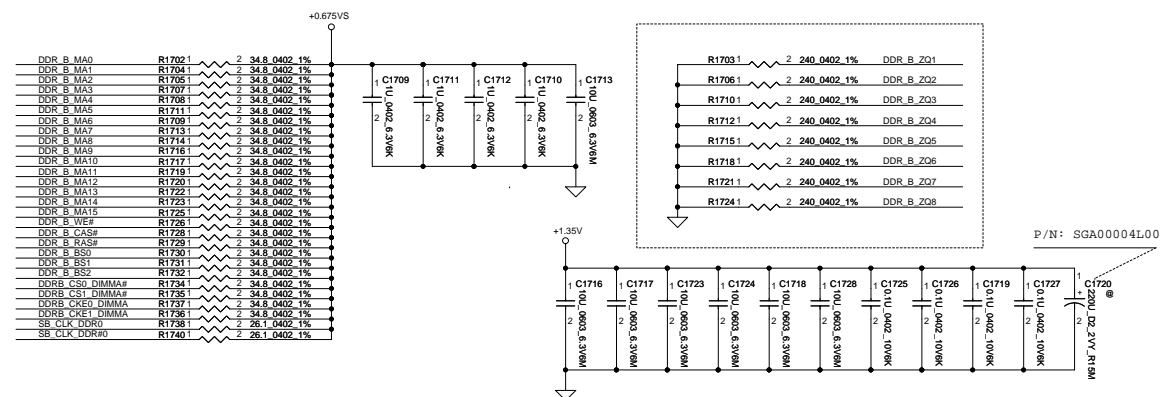
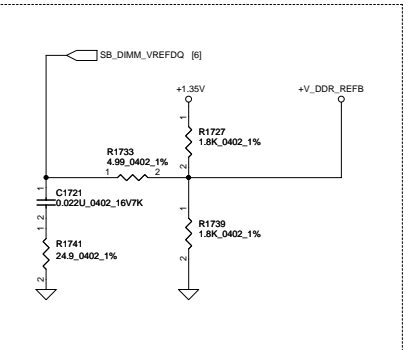
GND





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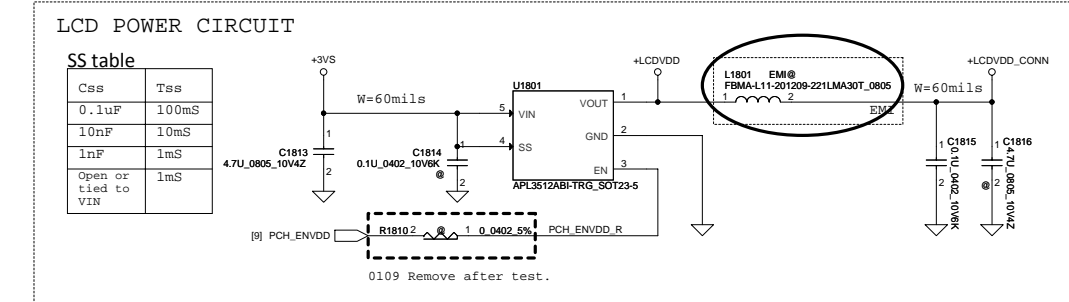
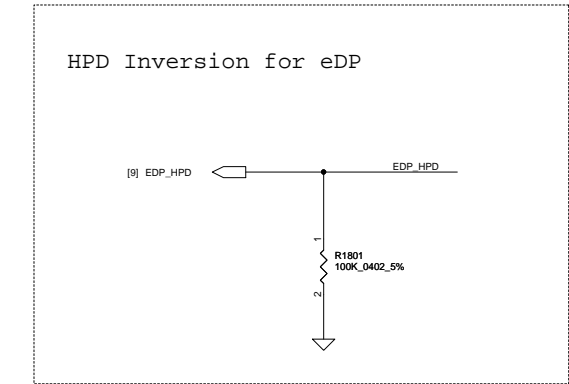
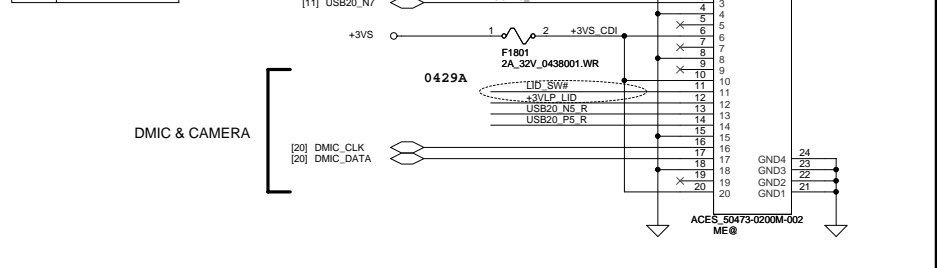


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				Revision		
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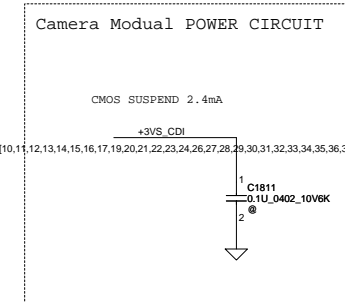
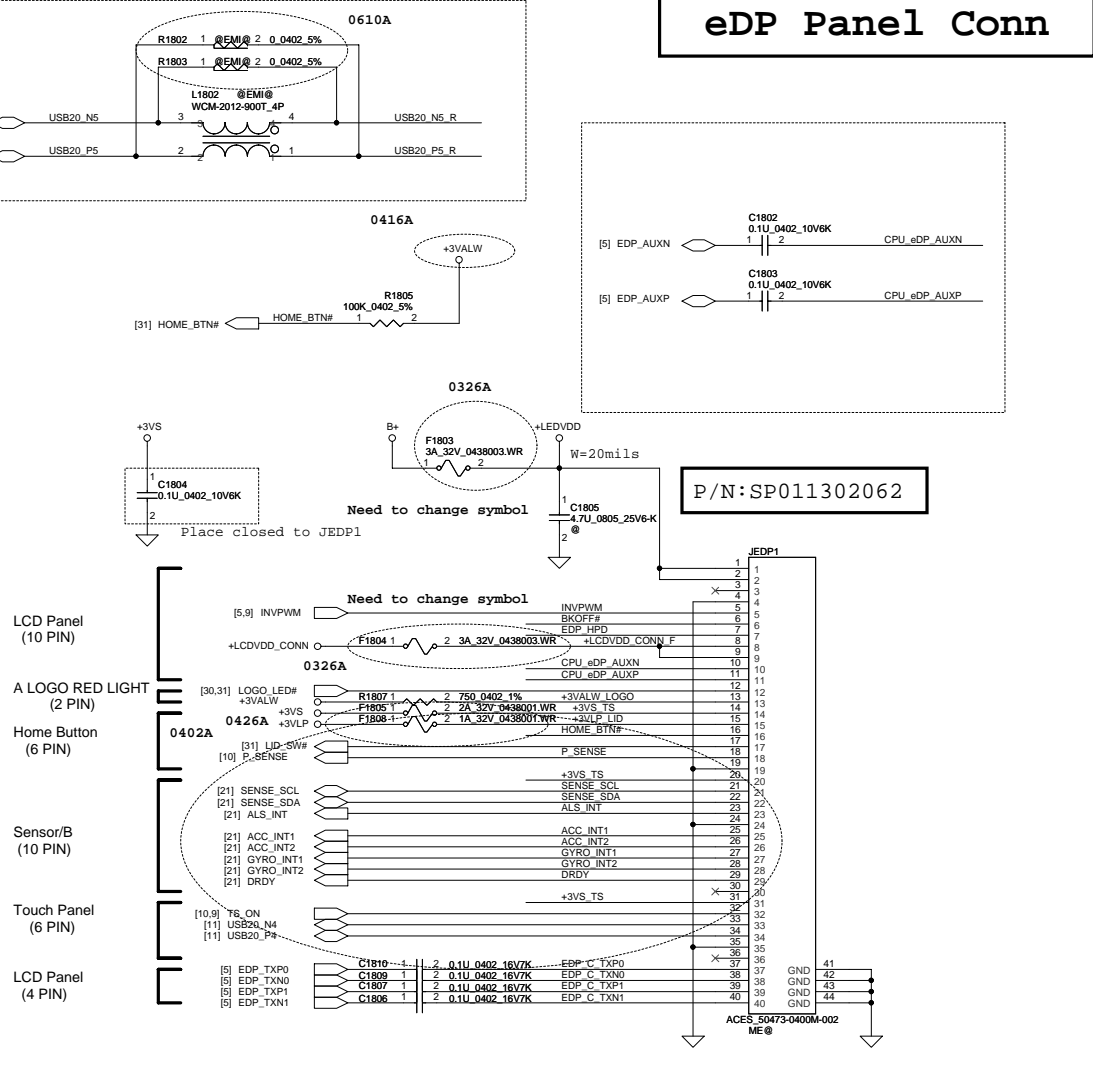
Digitizer & CMOS Conn

DMIC & CAMERA module pin define

No	SIGNAL
1	VCC (3.3V)
2	D-
3	D+
4	GND_CAM
5	GND_DMIC
6	MIC_C
7	MIC_D
8	MIC_VCC



eDP Panel Conn

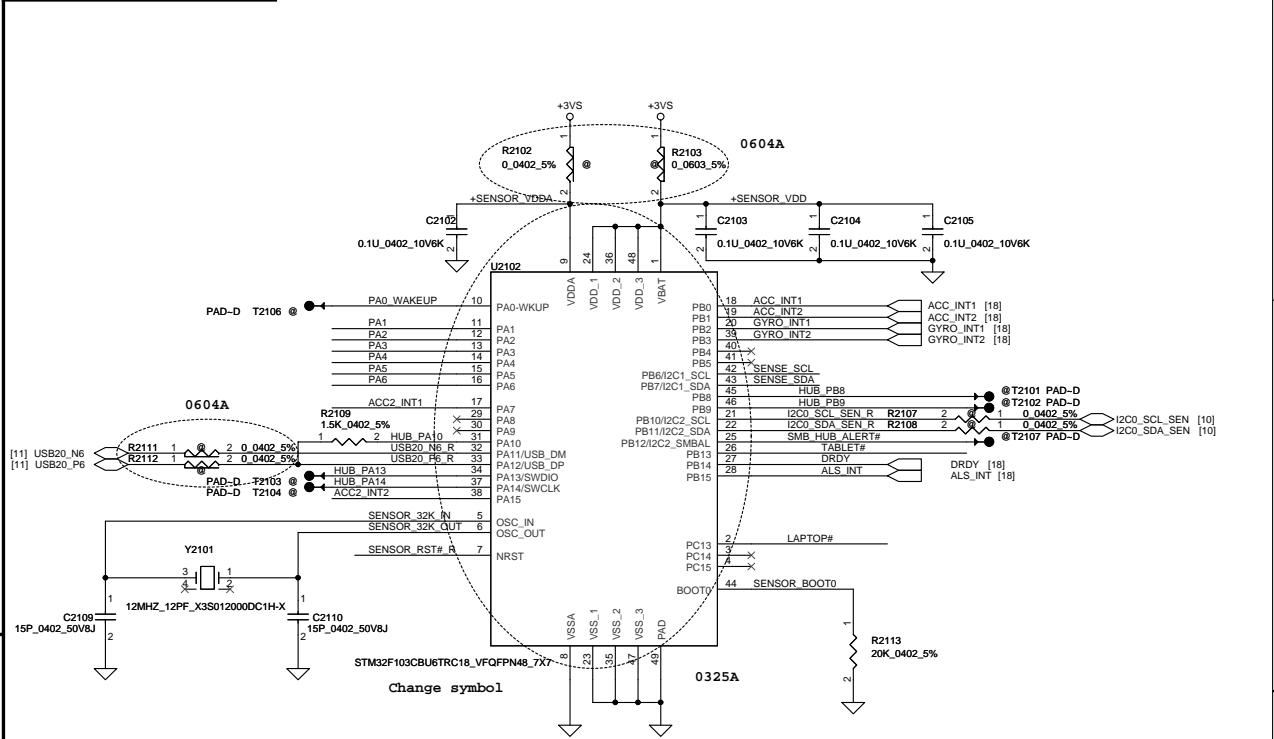


Touch PANEL module pin define

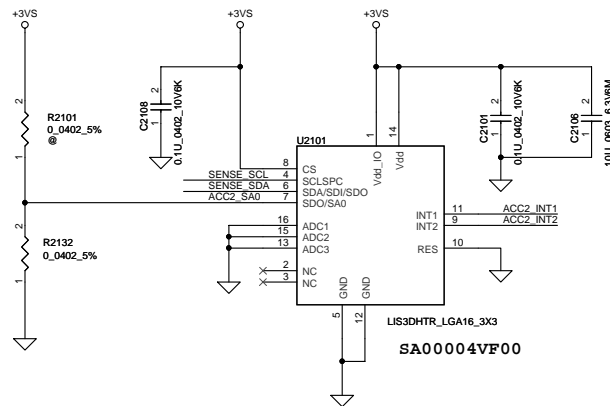
No	USB/I2C
1	VCC (3.3V)
2	Reset
3	GND
4	D-
5	D+
6	GND
7	SCL
8	SDA
9	INT
10	PRSENT

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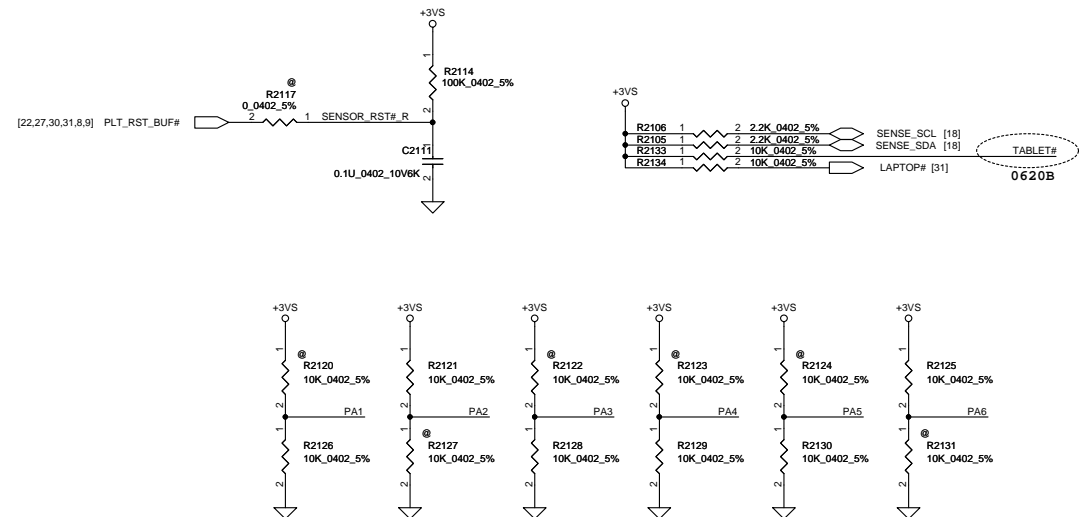
Sensor Hub



2nd G-sensor

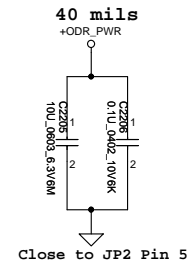
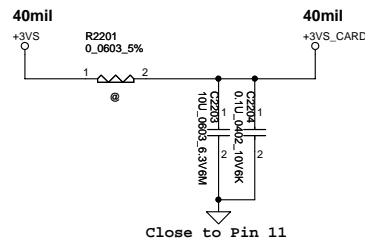
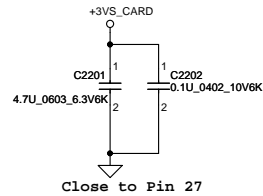


	ACC2_SA0
H	0x33h 0x32h
L	0x31h 0x30h

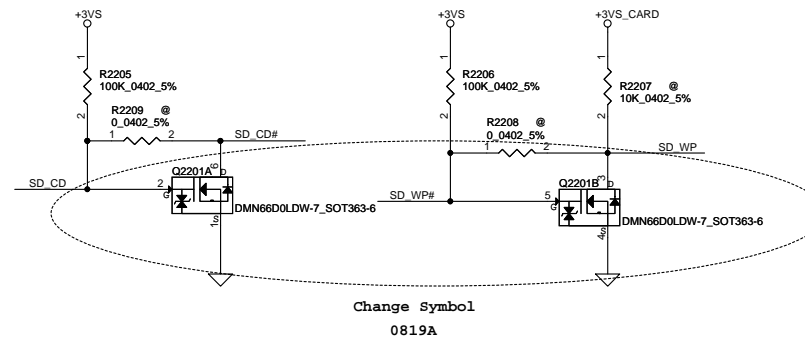
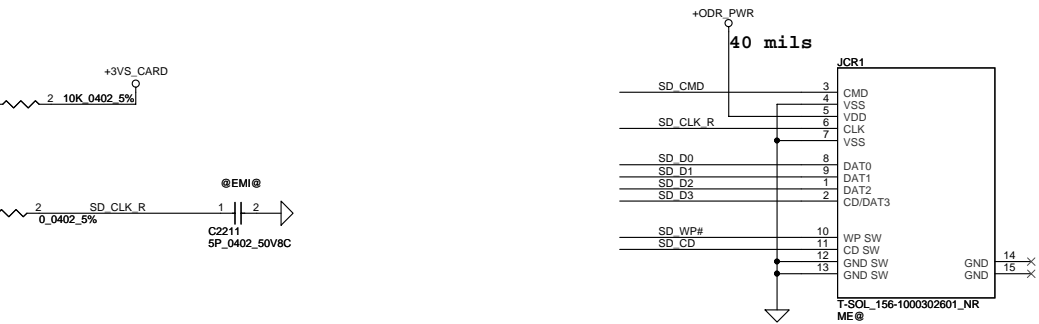
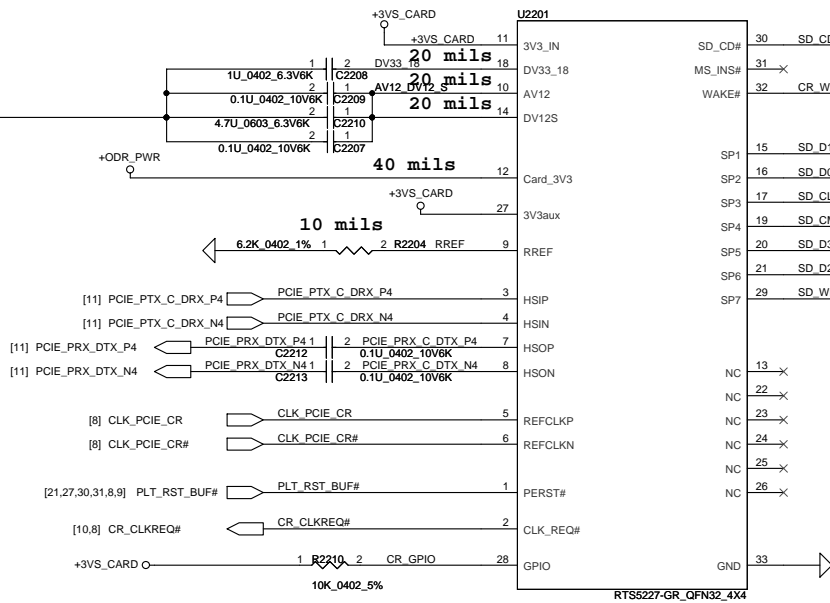


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Card Reader
RTS5227-QFN32

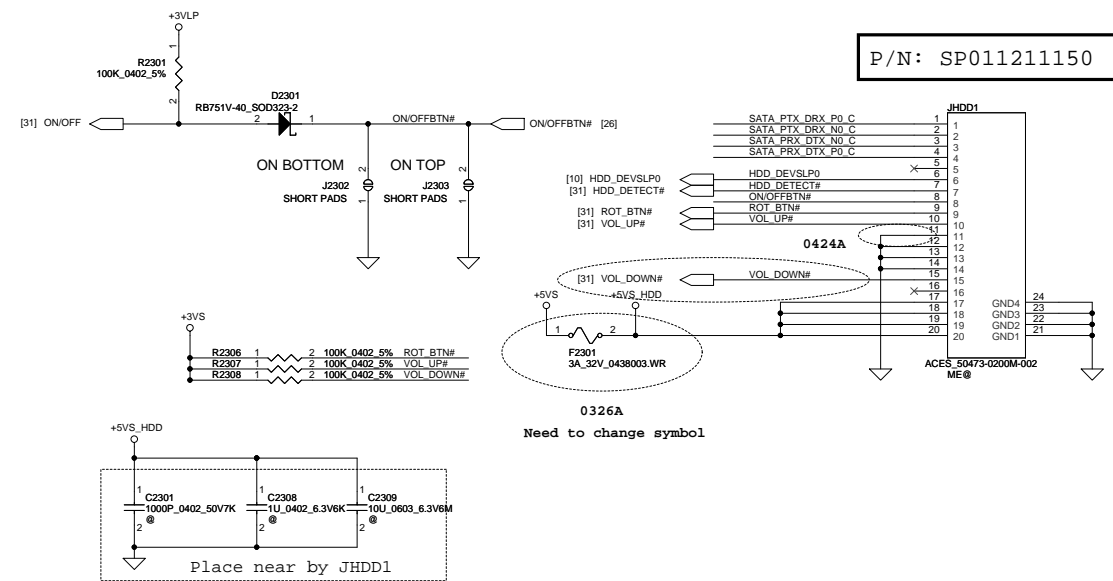


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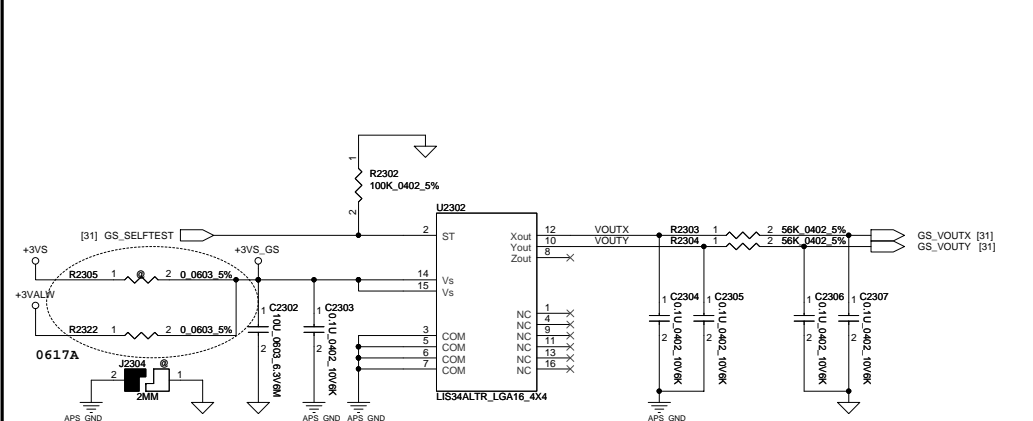


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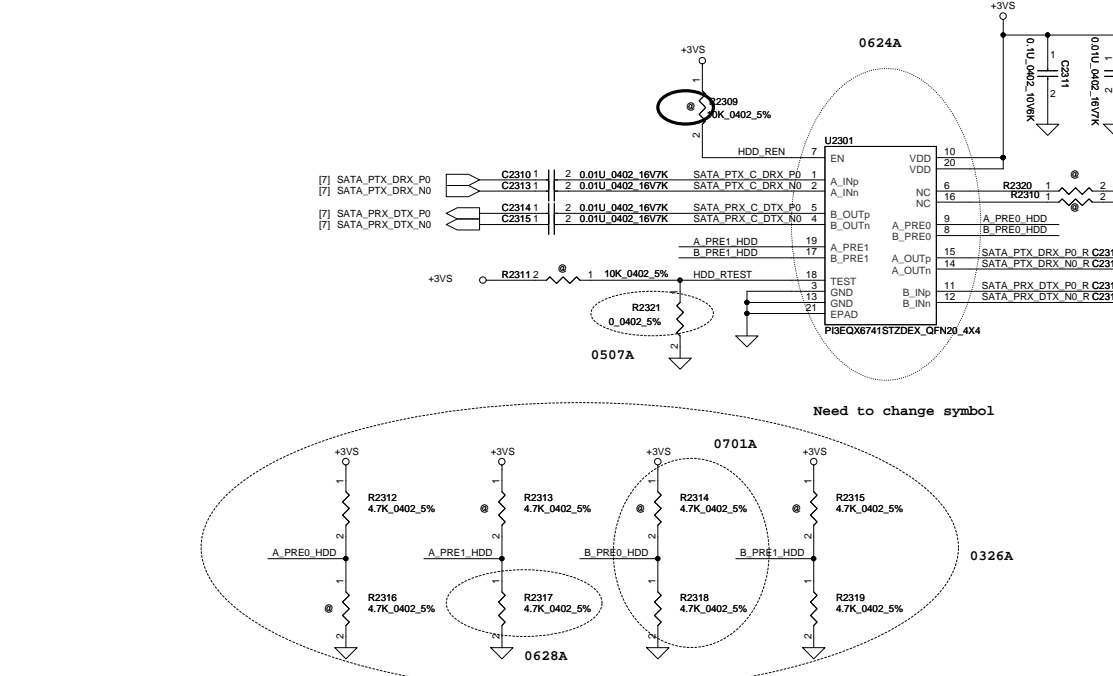
SATA HDD WTB Conn



APS G-Sensor



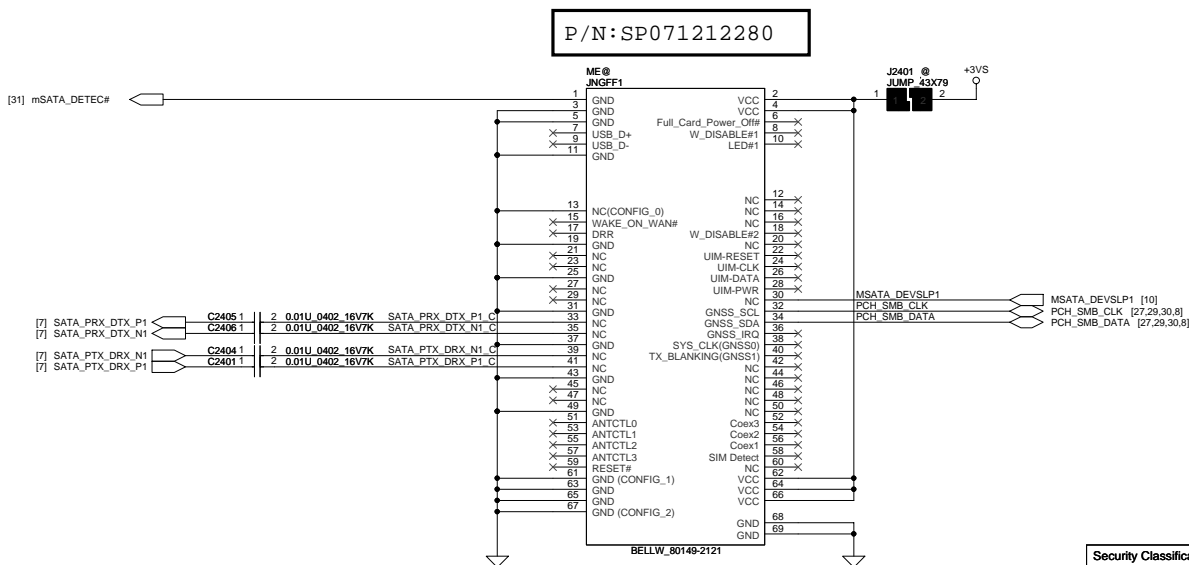
HDD SATA Redriver



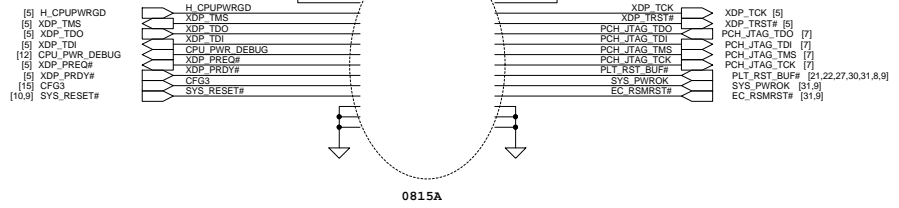
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NGFF SATA Redriver

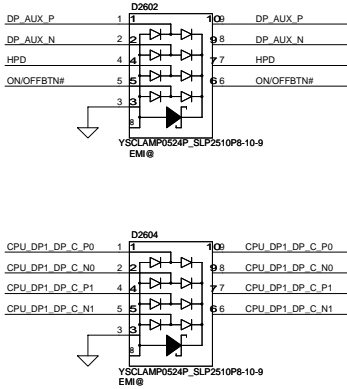
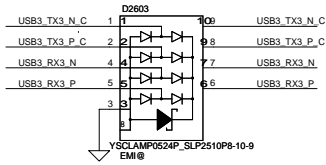
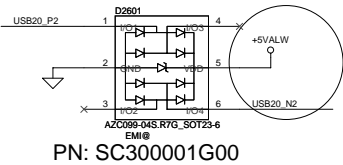
NGFF mSATA Conn



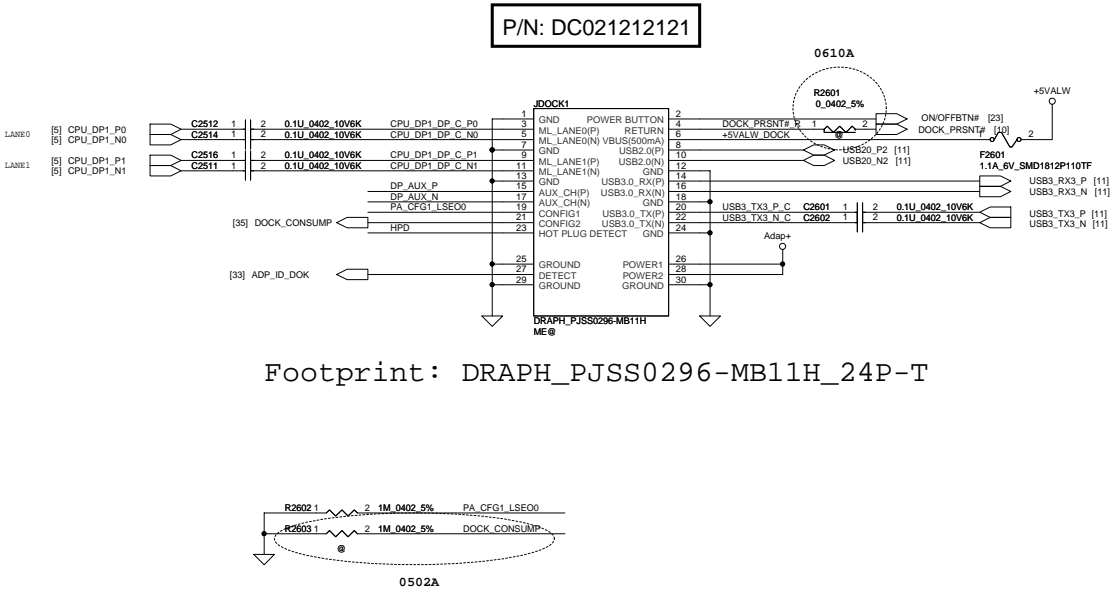
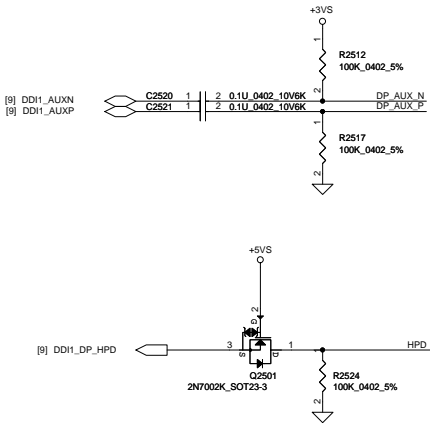
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Docking (USB3.0)

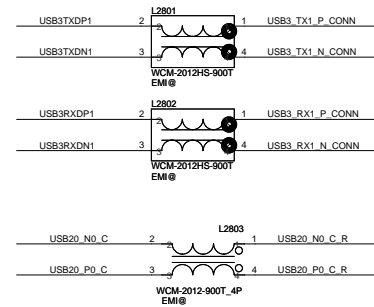
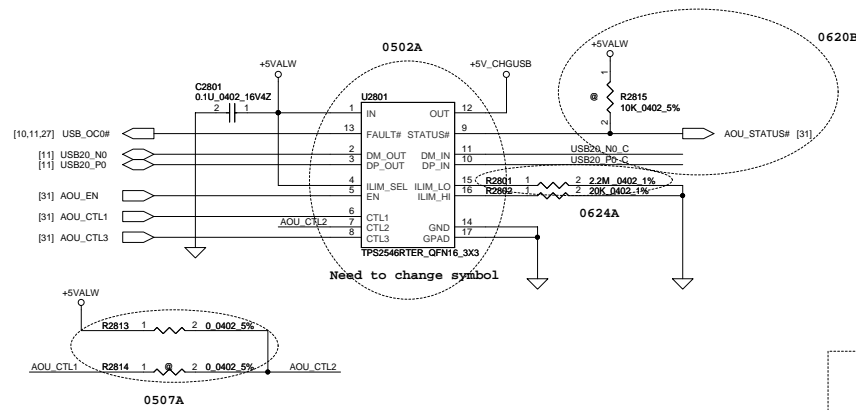


Docking (Display Port)

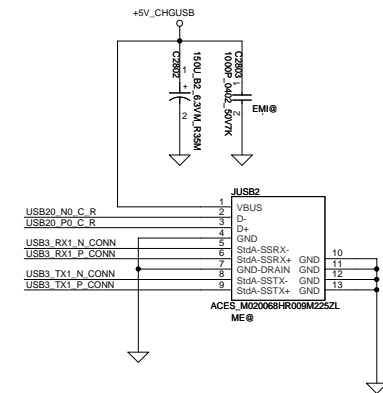


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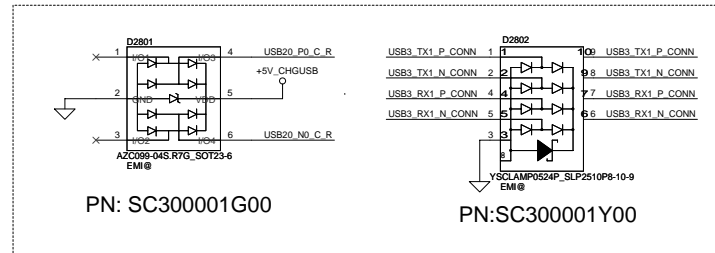
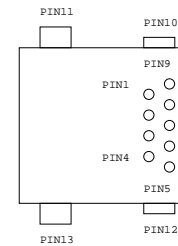
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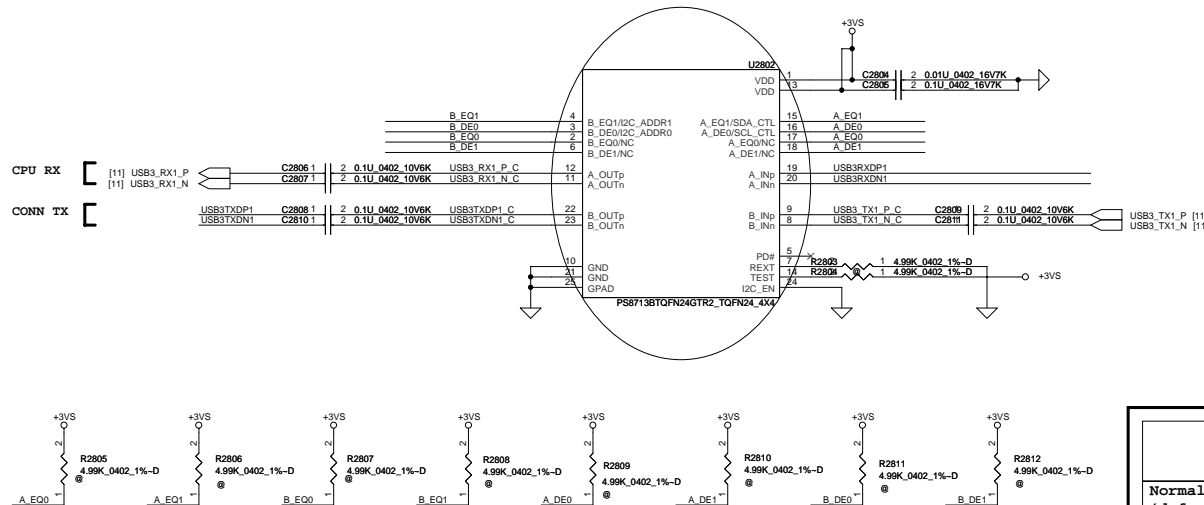
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P/N:SP011302071



SA00005OR20
6/25



	A_EQ1/B_EQ1 (Internal pull Low)	A_EQ0/B_EQ0 (Internal pull Low)
reserved	Low	Low
program EQ for channel loss up to 7dB	Low	High
program EQ for channel loss up to 14.5dB	High	Low
program EQ for channel loss up to 11.5dB	High	High

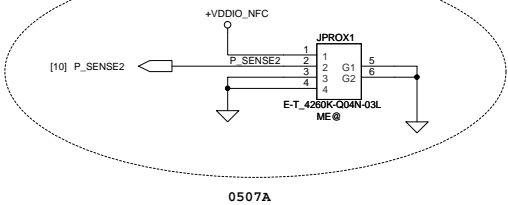
	A_DE1/B_DE1 (Internal pull Low)	A_DE0/B_DE0 (Internal pull Low)
3.5dB de-emphasis	Low	Low
No de-emphasis	Low	High
2.7dB de-emphasis	High	Low
5dB with boost output swing	High	High

	TEST (Internal pull Low)
Normal operation (default)	Low
Test mode enable	High

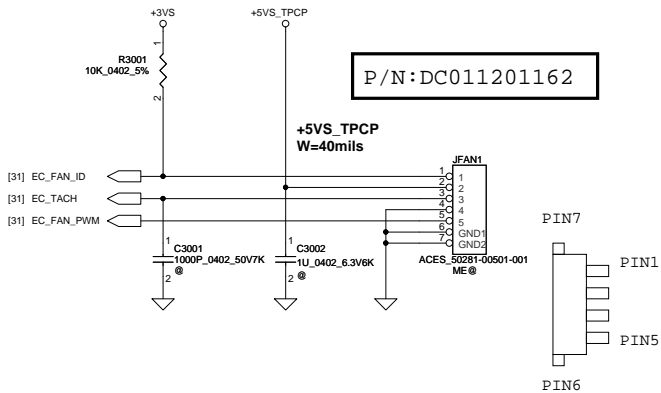
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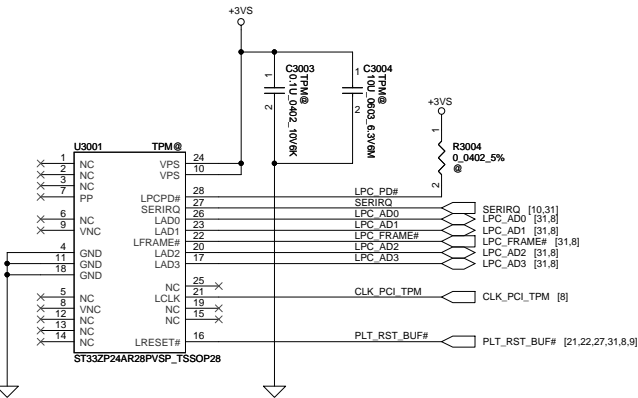
P-Sensor Conn



FAN Conn

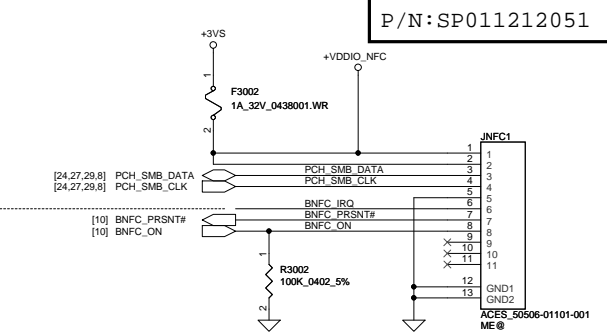
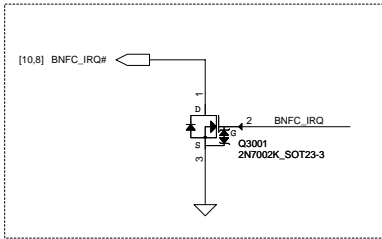


TPM



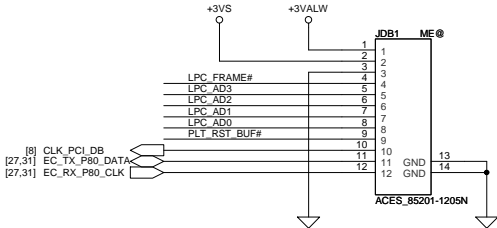
NFC

- Module Pin define
- 1.IP/VBAT
 - 2.IP/VDDIO
 - 3.IO/I2C-SDA
 - 4.I/I2C-SCL
 - 5.G/GND
 - 6.O/IRQ-NFC
 - 7.O/NFC_Presence#
 - 8.I/REG_UP
 - 9.OP/VDD_Ext_SE
 - 10.IP/UIM_PWR
 - 11.IO/SWP

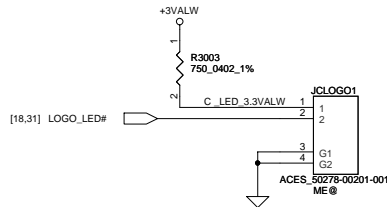


Conn

Debug Conn



C-logo Conn



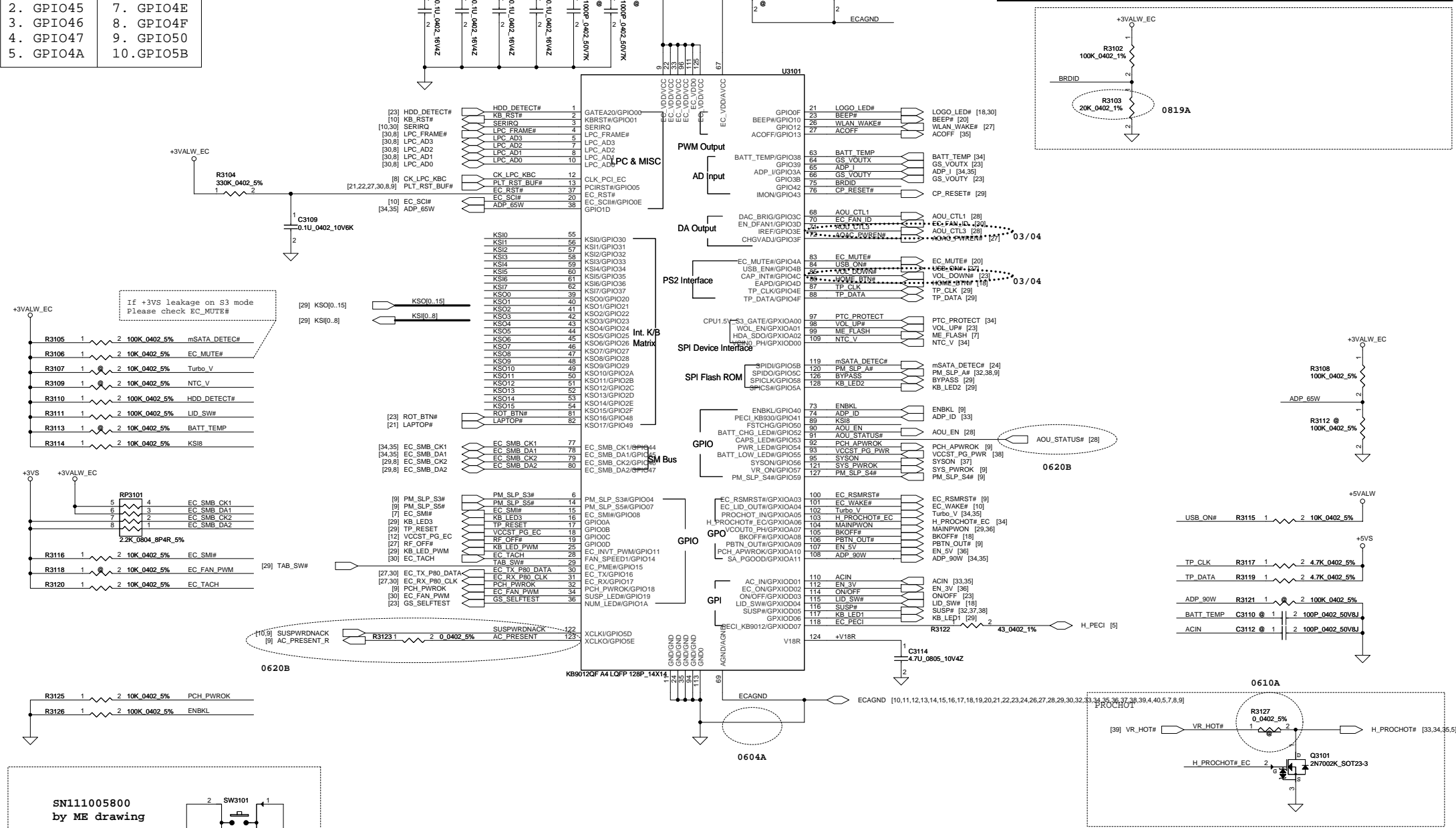
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EC KB9012

KB9012 A4 v.22

GPIO W/O internal-PH:

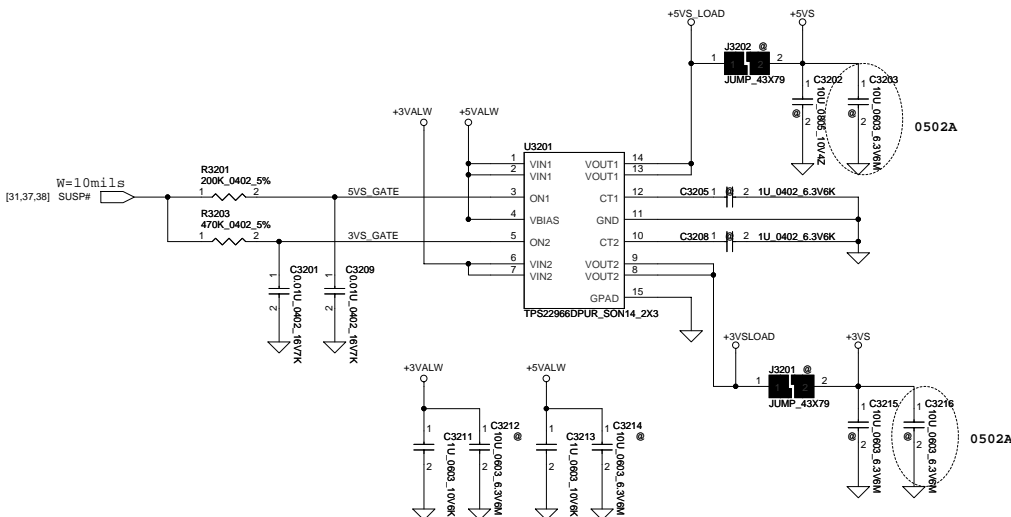
1. GPIO44	6. GPIO4B
2. GPIO45	7. GPIO4E
3. GPIO46	8. GPIO4F
4. GPIO47	9. GPIO50
5. GPIO4A	10. GPIO5B



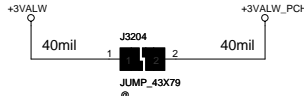
Vcc	3.3V +/- 5%				
R3102	100K +/- 1%				
Board ID	R3103	V _{AD_BID} min	V _{AD_BID} typ	V _{AD_BID} max	EC AD
SDV	0K +/- 5%		0.000V	0.300V	0x00 - 0x0B
FVT	12K +/- 1%	0.347V	0.354V	0.360V	0x0C - 0x1C
SIT	15K +/- 1%	0.423V	0.430V	0.438V	0x1D - 0x26
SVT	20K +/- 1%	0.541V	0.550V	0.559V	0x27 - 0x30

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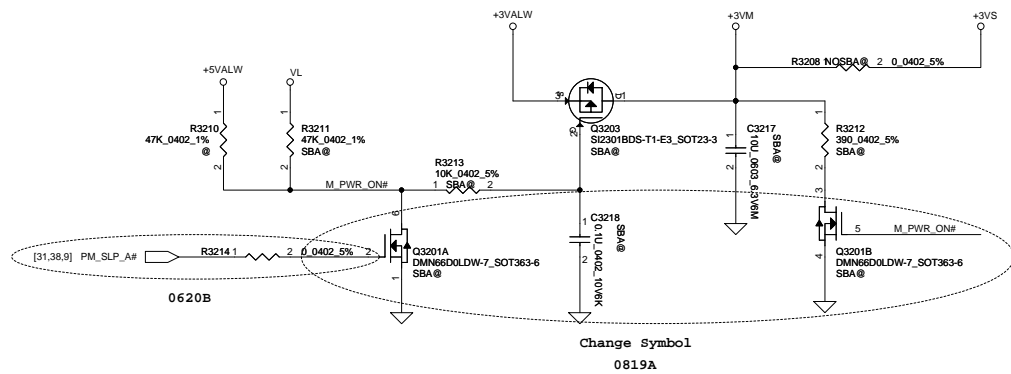
+5VALW TO +5VS
+3VALW TO +3VS



+3VALW TO +3VALW(PCH AUX Power)



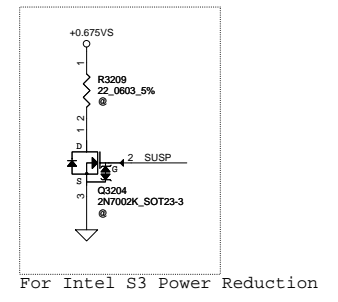
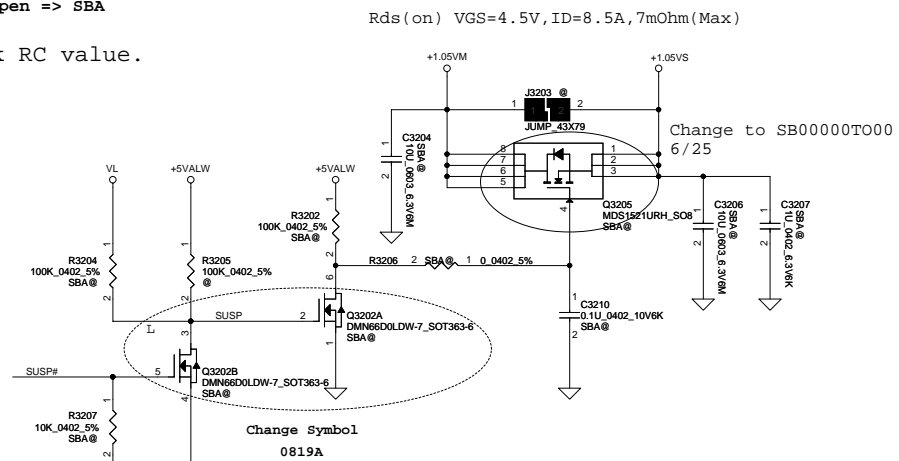
+3VALW TO +3VM (SBA)



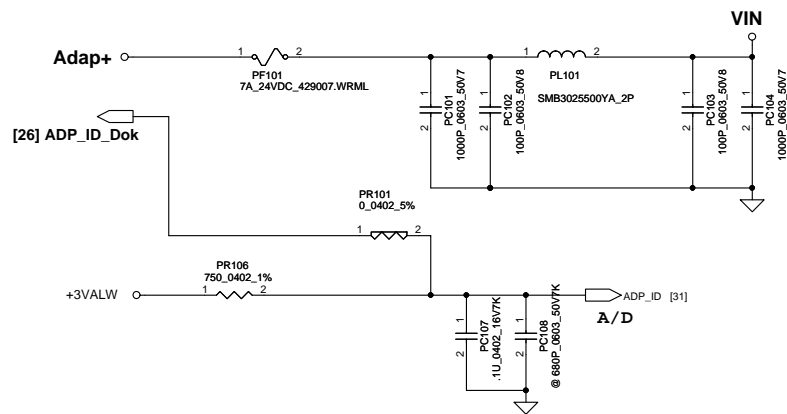
DC/DC I/F

PJ703 Short => NOSBA
PJ703 Open => SBA

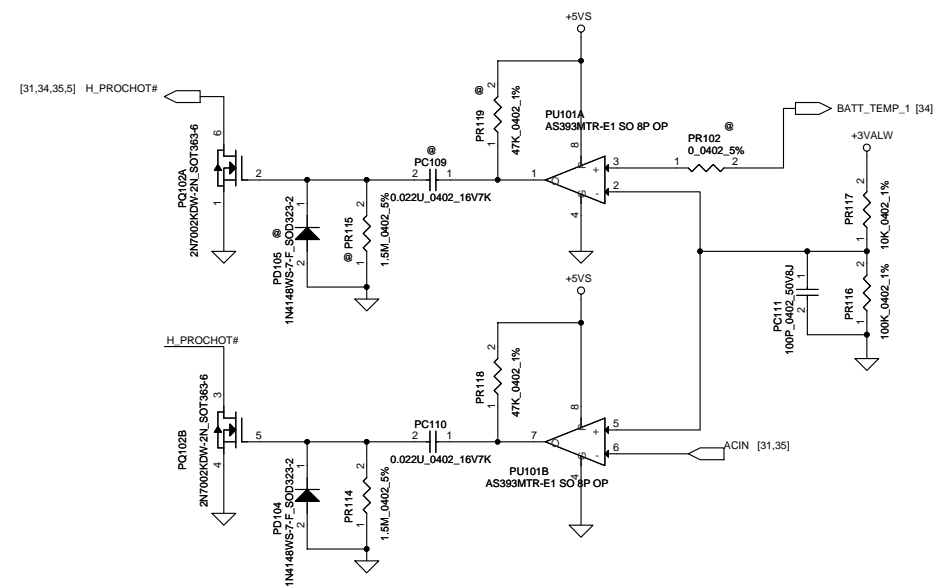
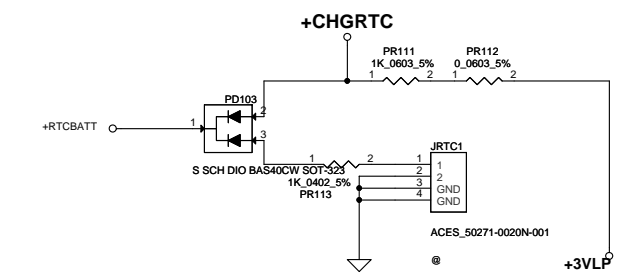
Check RC value.

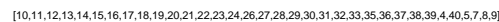
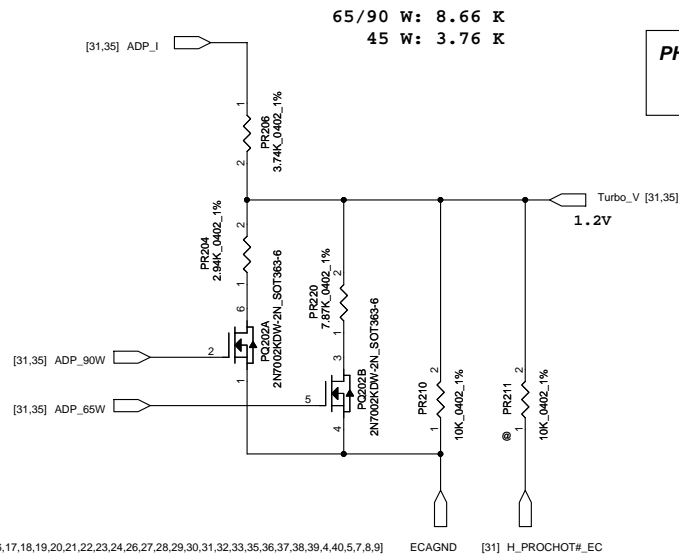


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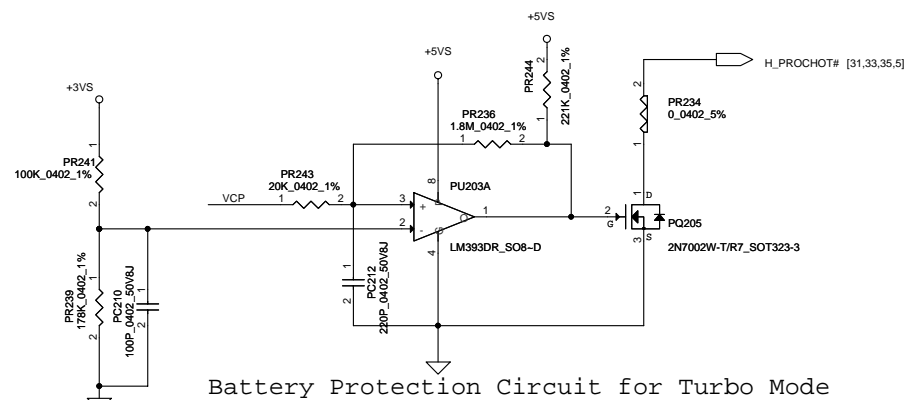
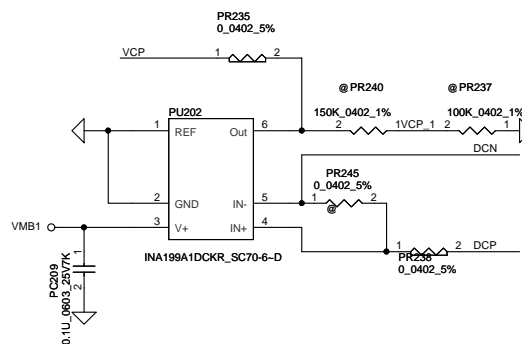


ADP_ID				
AC Adapter	45W	65W	90W	
R(ohm)	118	287	549	
ADP_ID(V)	0.449	0.913	1.395	
Detection	<=0.663,			<=1.134,
-Voltage(V)	>0.234			>0.693
				>1.172





PH201:	Temp.	Rman.	Rnor.	Rmin. (Kohm)
	93	7.3419	7.0792	6.8253

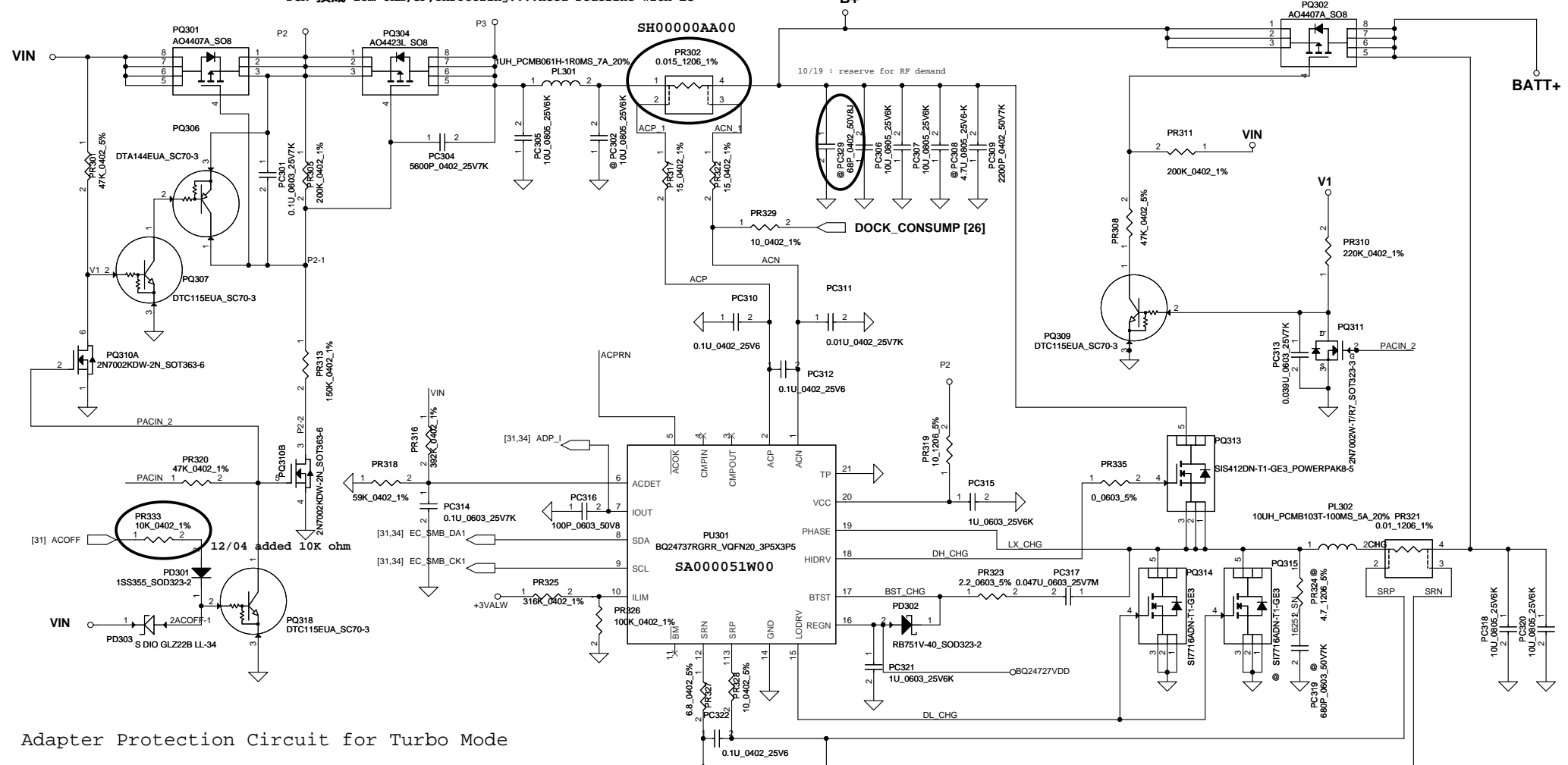


Battery Protection Circuit for Turbo Mode

```
MOS_OTP:
Default:High
Active :Low

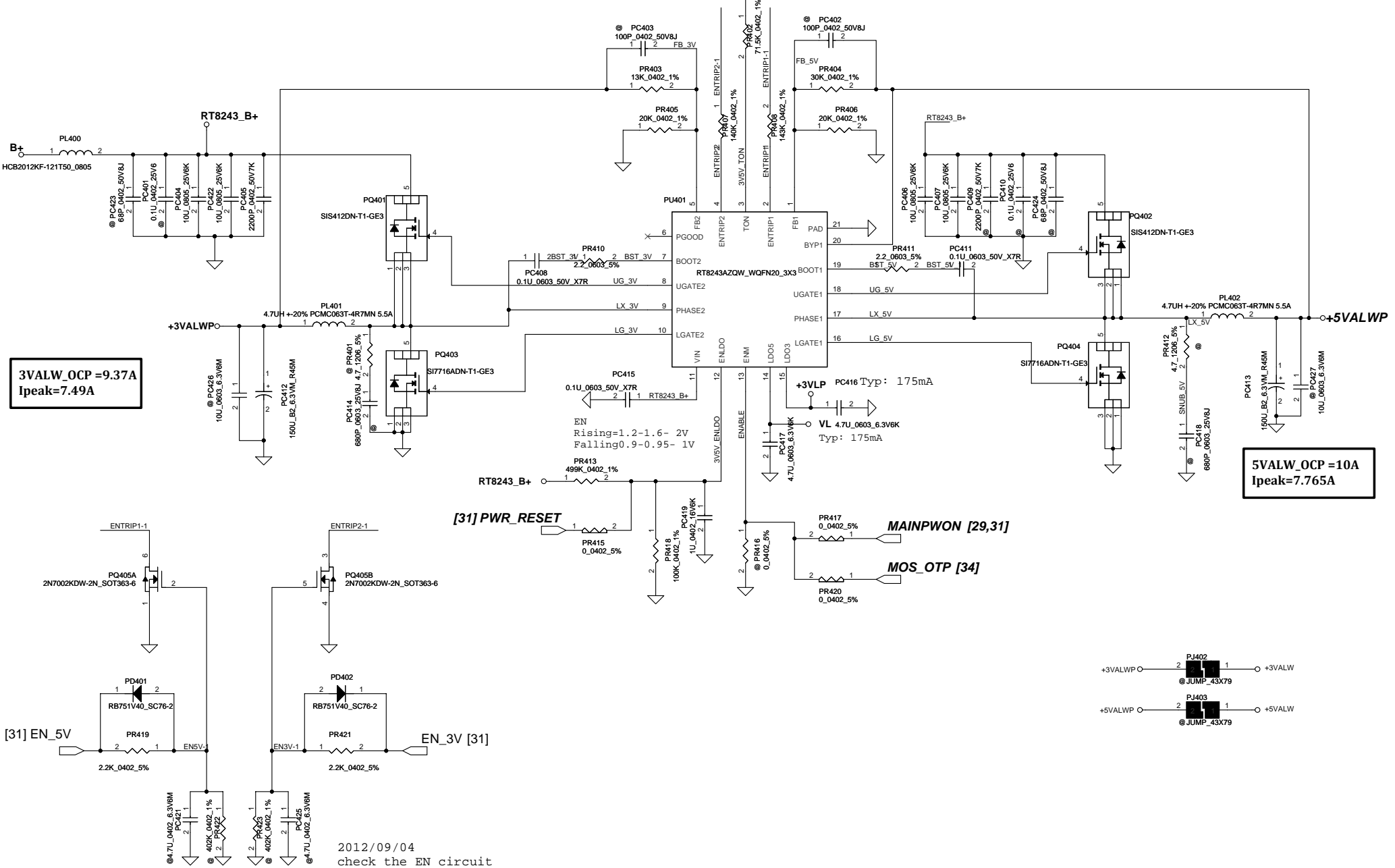
PTC_PROTECT:
Default:Low
Active :High
```

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TON (1)SMPS1=305KHZ (+5VALWP)
(2)SMPS2=357KHZ(+3VALWP)



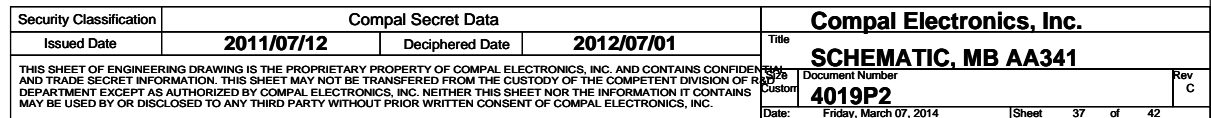
3VALW_OCP=9.37A
Ipeak=7.49A

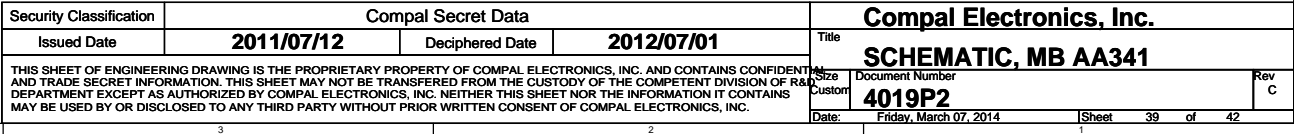
5VALW_OCP=10A
Ipeak=7.765A

[31] EN_5V
2.2K_0402_5%
EN5V-1
2.2K_0402_5%
EN_3V [31]
2.2K_0402_5%

2012/09/04
check the EN circuit

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Item	Reason for change	PG#	Modify List	Date	Phase
1	We just have adpter over-load protection circuit to replace the one-shot circuit, so we can reserve the one-shot circuit.	P33	Un-mount PR119, PC109, PR115, PD105.	2013.04.24	SDV
2	We want to tune the switching ring to meet the derating spec.	P37	Change PC502 from 0.22u to 0.1u.	2013.04.24	SDV
3	For fine tune LL & trainsient of CPU core, we must to change R/C value to meet Intel's spec.	P39	Change PR916 from 47k to 73.2k and PC923 from 560p to 100p, PC1025, PC1028, PC1034 to un-mount.	2013.04.24	SDV
4	For aviod EMI/EMI to damage OP or other components through the loop of BATT_TEMP.	P34	Reserve PD201	2013.04.30	SDV
5					
6					
7					
8					
9					
10					
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12					
13					
14					
15					
16					
17					

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Version Change List (P.I.R. List)

Phase	Date	No.	BOM	Sch	Layout	Description	function

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