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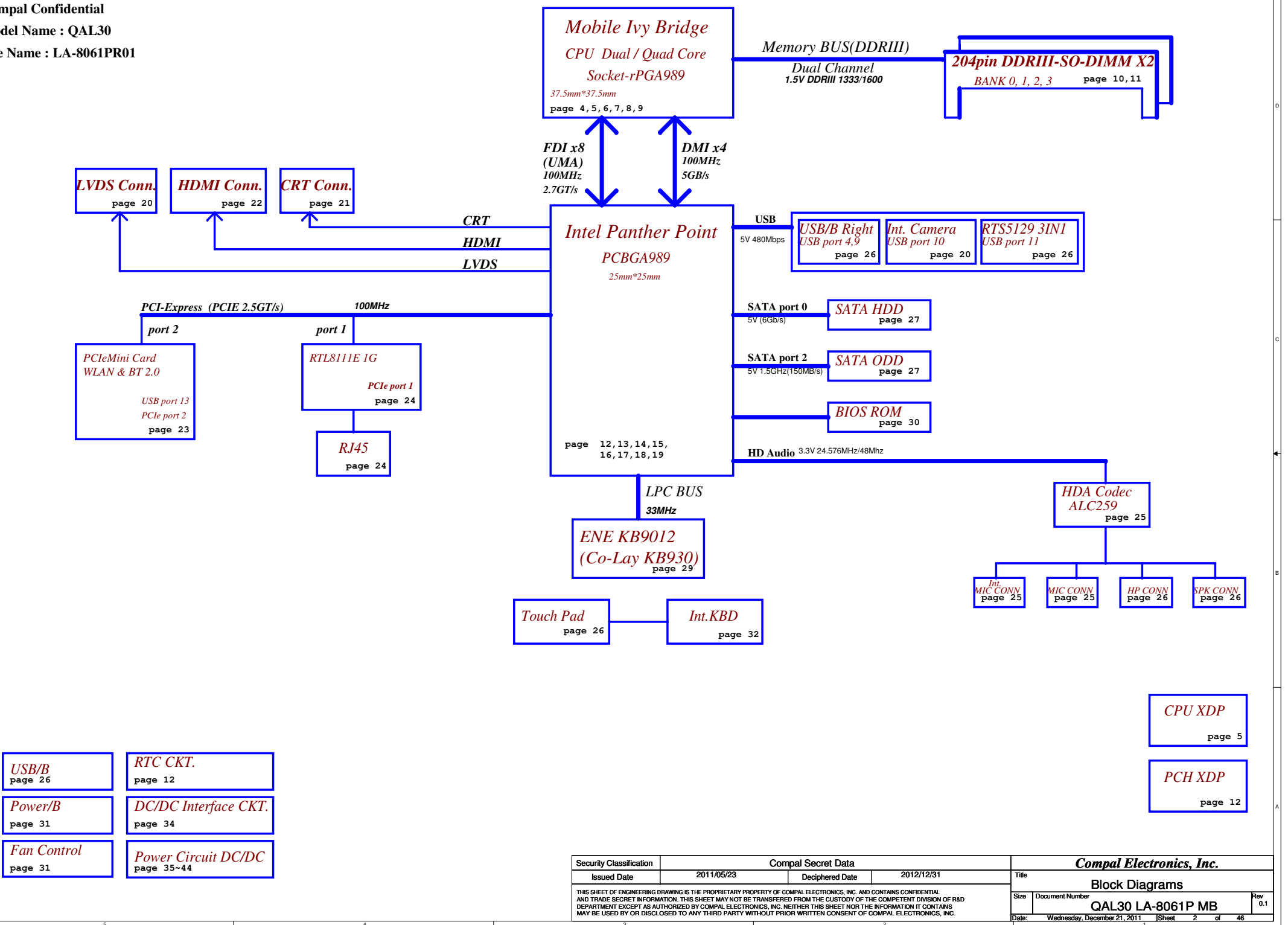
QAL30 Project

LA-8061P REV 1.0 Schematic

Intel Ivy Bridge/Panther Point

2012-02-29 Rev. 1.0

Security Classification		Compal Secret Data		Title	
Issued Date	2011/05/23	Deciphered Date	2012/12/31	Cover Sheet	
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Board ID Table for AD channel

Vcc	3.3V +/- 5%			
Ra	100K +/- 5%			
Board ID	Rb	VAD_BID min	VAD_BID typ	VAD_BID max
0	0	0 V	0 V	0 V
1	8.2K +/- 5%	0.168V	0.250 V	0.362 V
2	18K +/- 5%	0.436 V	0.503 V	0.538 V
3	33K +/- 5%	0.712 V	0.819 V	0.875 V
4	56K +/- 5%	1.036 V	1.185 V	1.264 V
5	100K +/- 5%	1.453 V	1.650 V	1.759 V
6	200K +/- 5%	1.935 V	2.200 V	2.341 V
7	NC	2.500 V	3.300 V	3.300 V

BOARD ID Table

Board ID	PCB Revision
0	QAL30
1	
2	
3	
4	
5	
6	
7	

SMBUS Control Table

	SOURCE	MINI1	BATT 0001 011x b	SODIMM 1001 000x b	SODIMM 1001 010x b	PCH		
EC_SMB_CK1 EC_SMB_DA1	KB930 KB9012	X	V	X	X	X		
EC_SMB_CK2 EC_SMB_DA2	KB930 KB9012	X	X	X	X	V		
PCH_SMBCLK PCH_SMBDATA	PCH	V	X	V	V			
PCH_SML1CLK PCH_SML1DATA	PCH	X	X	X	X			

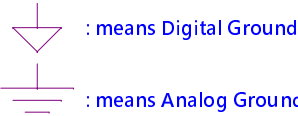
CLKOUT	DESTINATION
PCI0	PCH_LOOPBACK
PCI1	EC
PCI2	TPM
PCI3	None
PCI4	None

PCH	USB PORT#	DESTINATION
	0	USB2/3 (Left Hand disc front)
	1	USB2/3 (Left Hand disc back)
	2	None
	3	None
	4	USB2 (Right Hand side front)
	5	None
	6	None
	7	None
	8	None
	9	USB2 (Left Hand side back)
	10	CAMERA
	11	Card Reader
	12	None
	13	BT Comb

OPTIMUS: XDP@/D@

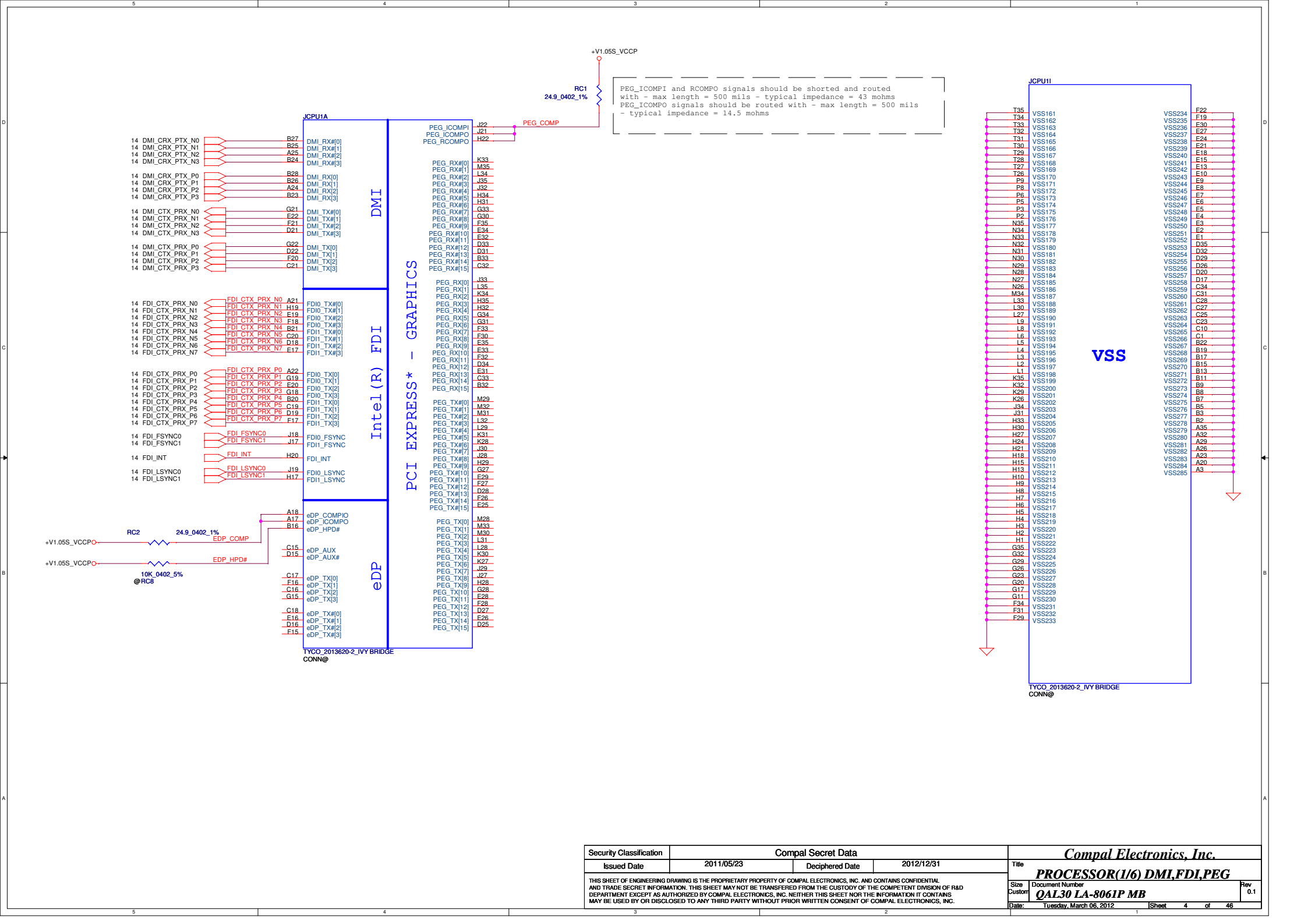
CLK	DIFFERENTIAL	DESTINATION	FLEX CLOCKS	DESTINATION
	CLKOUT_PCIE0	LAN	CLKOUTFLEX0	None
	CLKOUT_PCIE1	WLAN	CLKOUTFLEX1	None
	CLKOUT_PCIE2	None	CLKOUTFLEX2	None
	CLKOUT_PCIE3	None	CLKOUTFLEX3	None
	CLKOUT_PCIE4	None		
	CLKOUT_PCIE5	None		
	CLKOUT_PCIE6	None		
	CLKOUT_PCIE7	None		
	CLKOUT_PEG_A	VGA		
	CLKOUT_PEG_B	None		

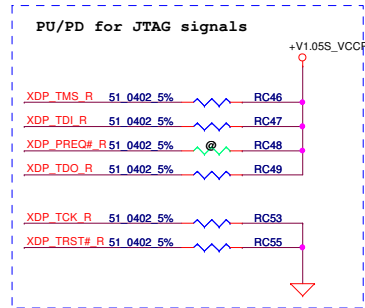
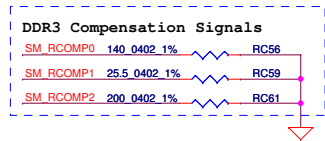
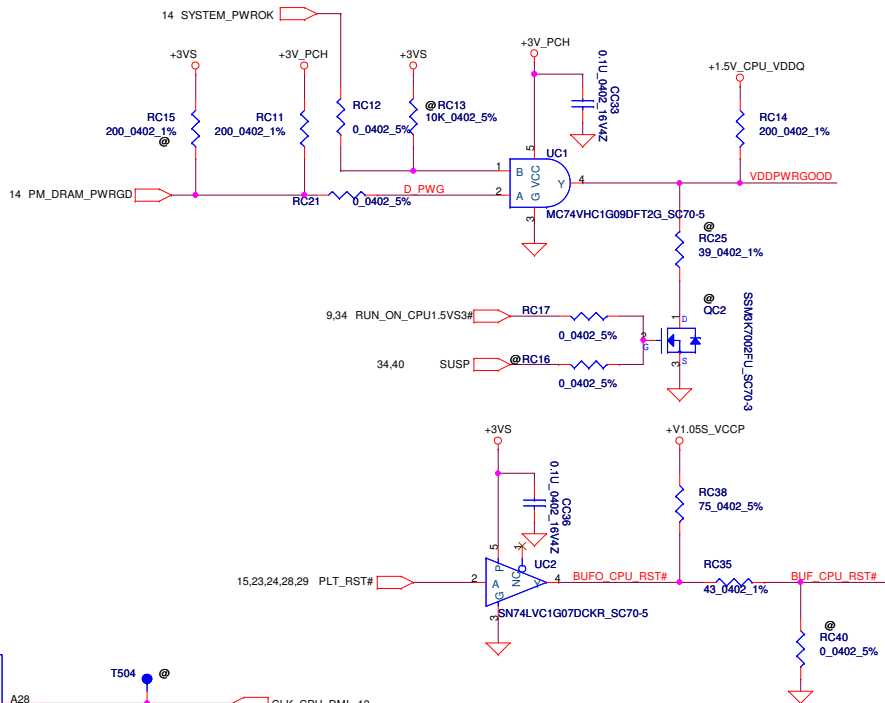
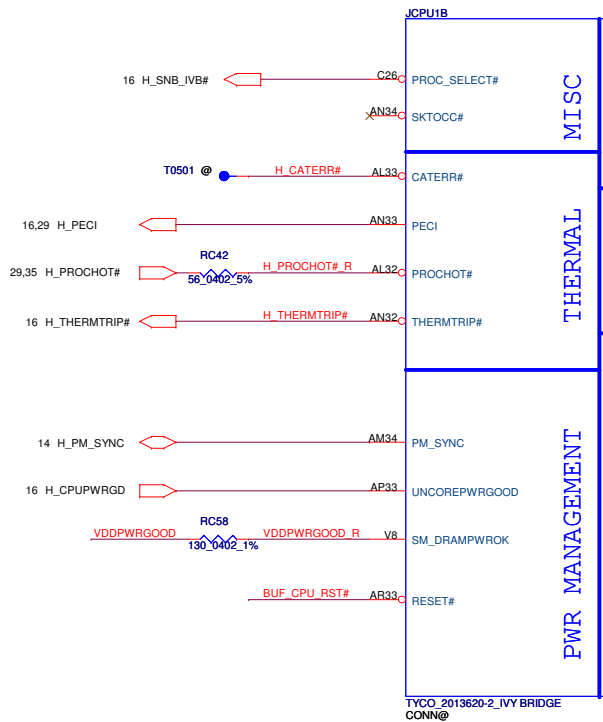
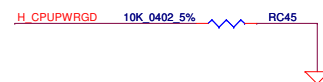
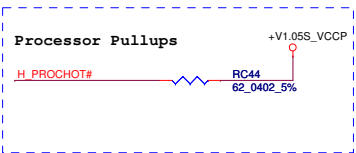
Symbol Note :



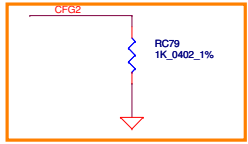
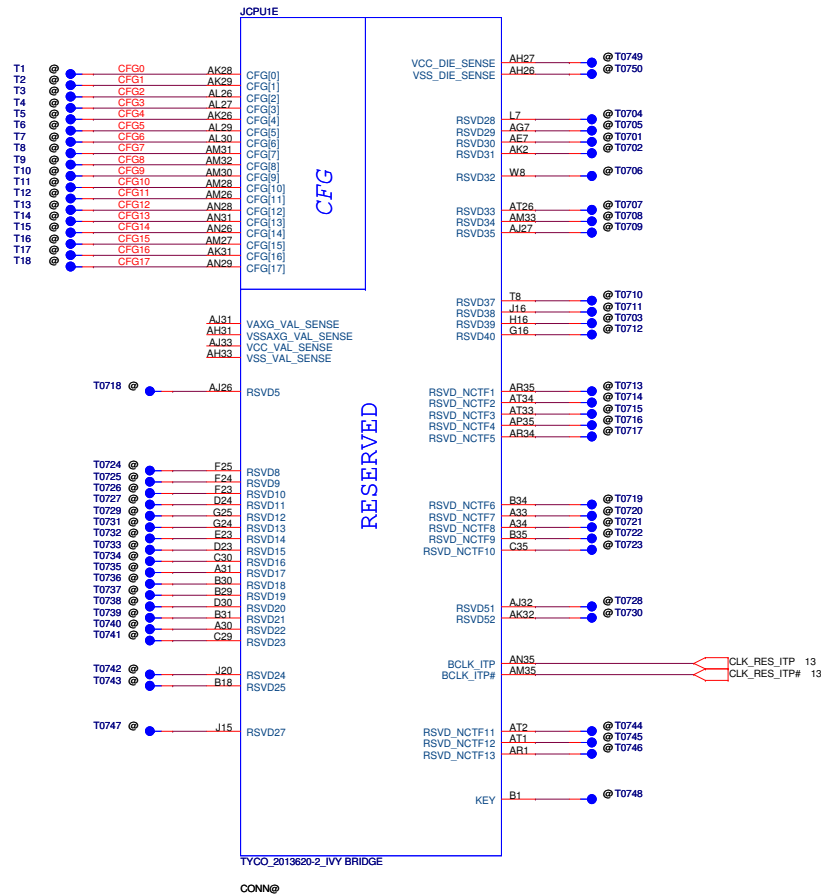
SATA	DESTINATION
SATA0	HDD
SATA1	None
SATA2	ODD
SATA3	None
SATA4	None
SATA5	None

PCI EXPRESS	DESTINATION
Lane 1	LAN
Lane 2	WLAN
Lane 3	None
Lane 4	None
Lane 5	None
Lane 6	None
Lane 7	None
Lane 8	None

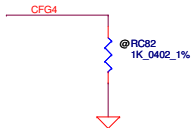




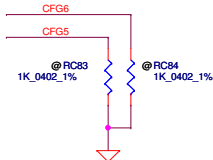
CFG Straps for Processor



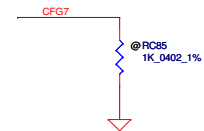
PEG Static Lane Reversal - CFG2 is for the 16x	
CFG2	1: (Default) Normal Operation; Lane # definition matches socket pin map definition 0: Lane Reversed



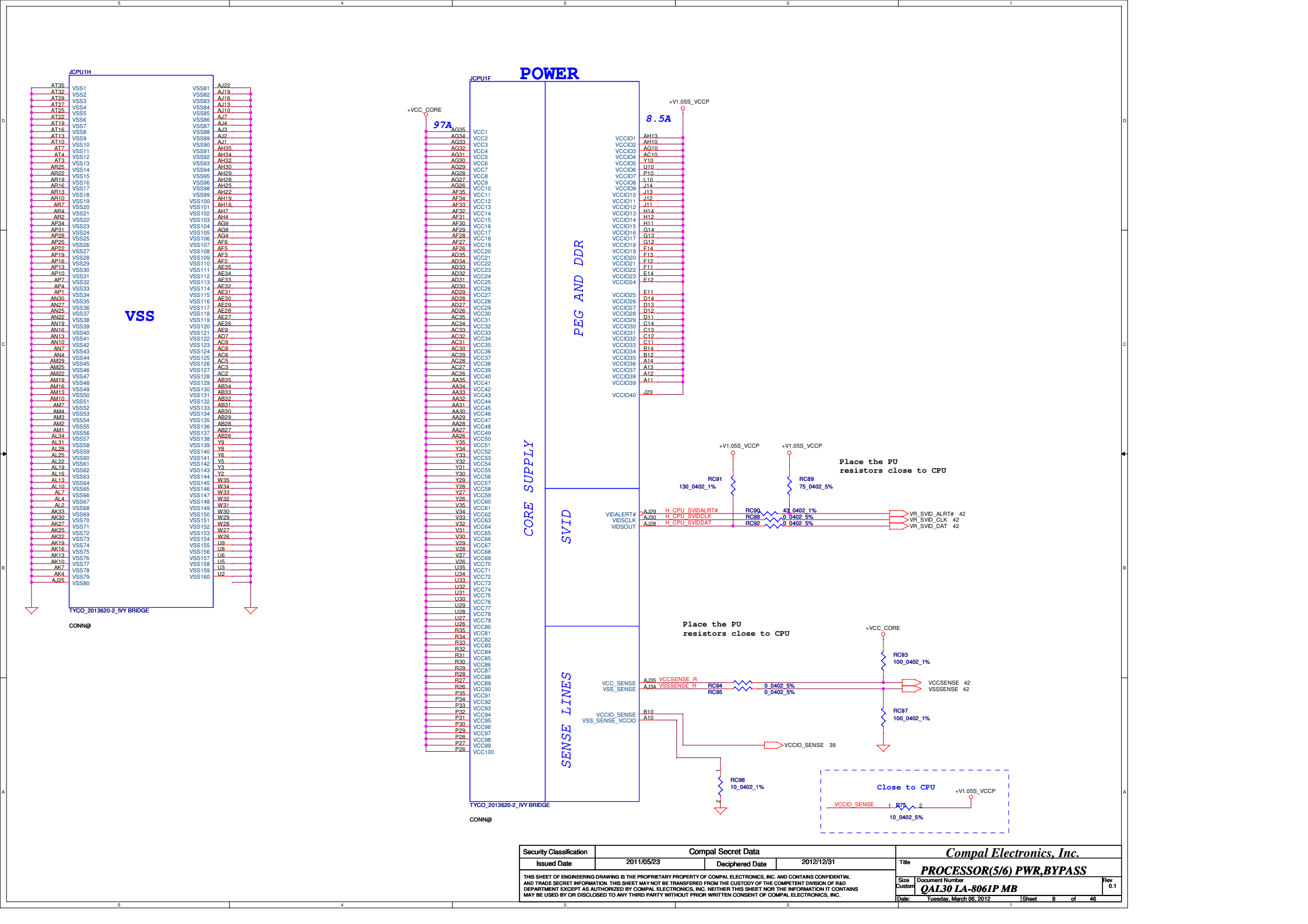
Display Port Presence Strap	
CFG4	1 : Disabled; No Physical Display Port attached to Embedded Display Port 0 : Enabled; An external Display Port device is connected to the Embedded Display Port

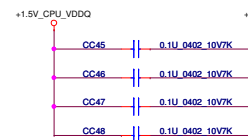


PCIE Port Bifurcation Straps	
CFG[6:5]	11: (Default) x16 - Device 1 functions 1 and 2 disabled 10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled 01: Reserved - (Device 1 function 1 disabled ; function 2 enabled) 00: x8,x4,x4 - Device 1 functions 1 and 2 enabled

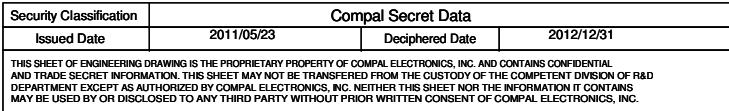


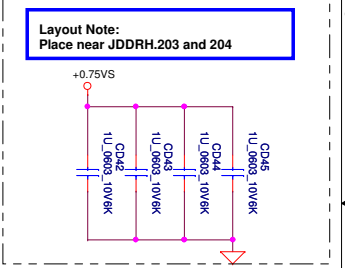
PEG DEFER TRAINING	
CFG7	1: (Default) PEG Train immediately following RESETB de assertion 0: PEG Wait for BIOS for training



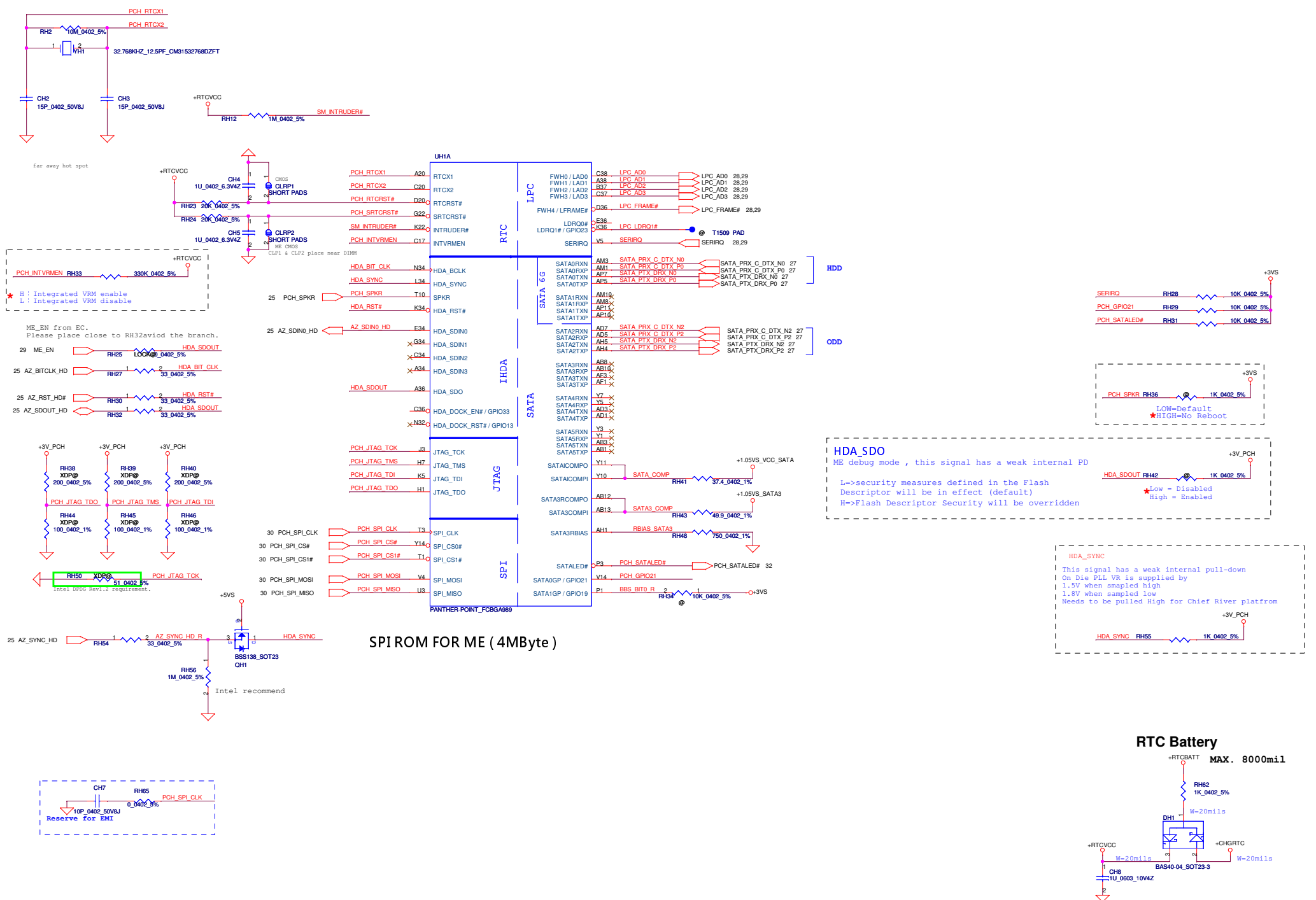


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far away hot spot

ME_EN from EC.
Please place close to RH32 avoid the branch.

★ H : Integrated VRM enable
L : Integrated VRM disable

ME_EN from EC.
Please place close to RH32 avoid the branch.

★ H : Integrated VRM enable
L : Integrated VRM disable

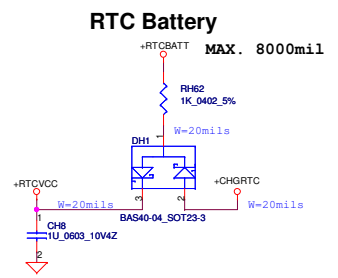
Intel BPOD Rev1.2 requirement.

Intel recommend

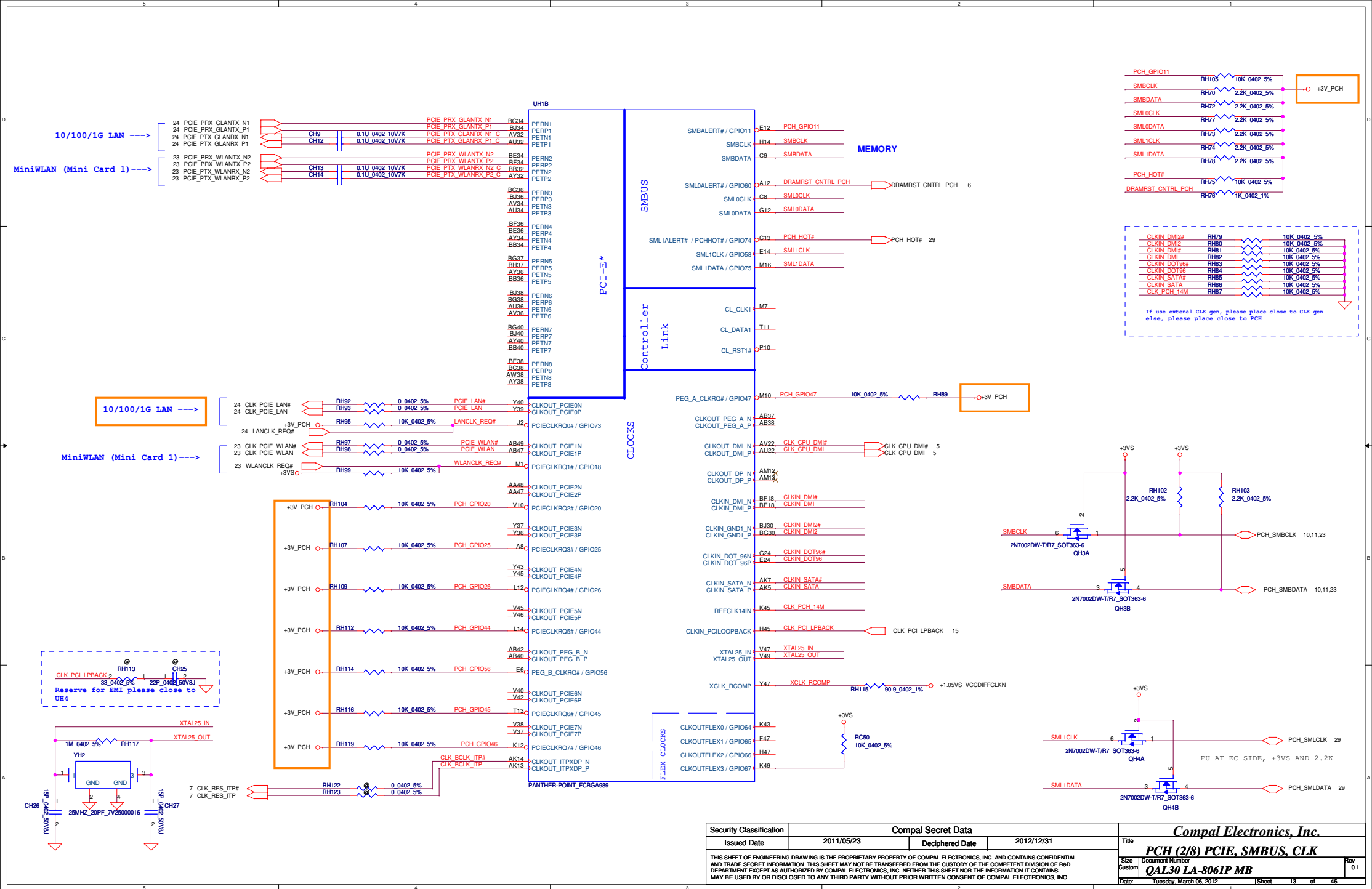
Remove JDBG1

HDA_SDO
ME debug mode, this signal has a weak internal PD
L=>security measures defined in the Flash Descriptor will be in effect (default)
H=>Flash Descriptor Security will be overridden

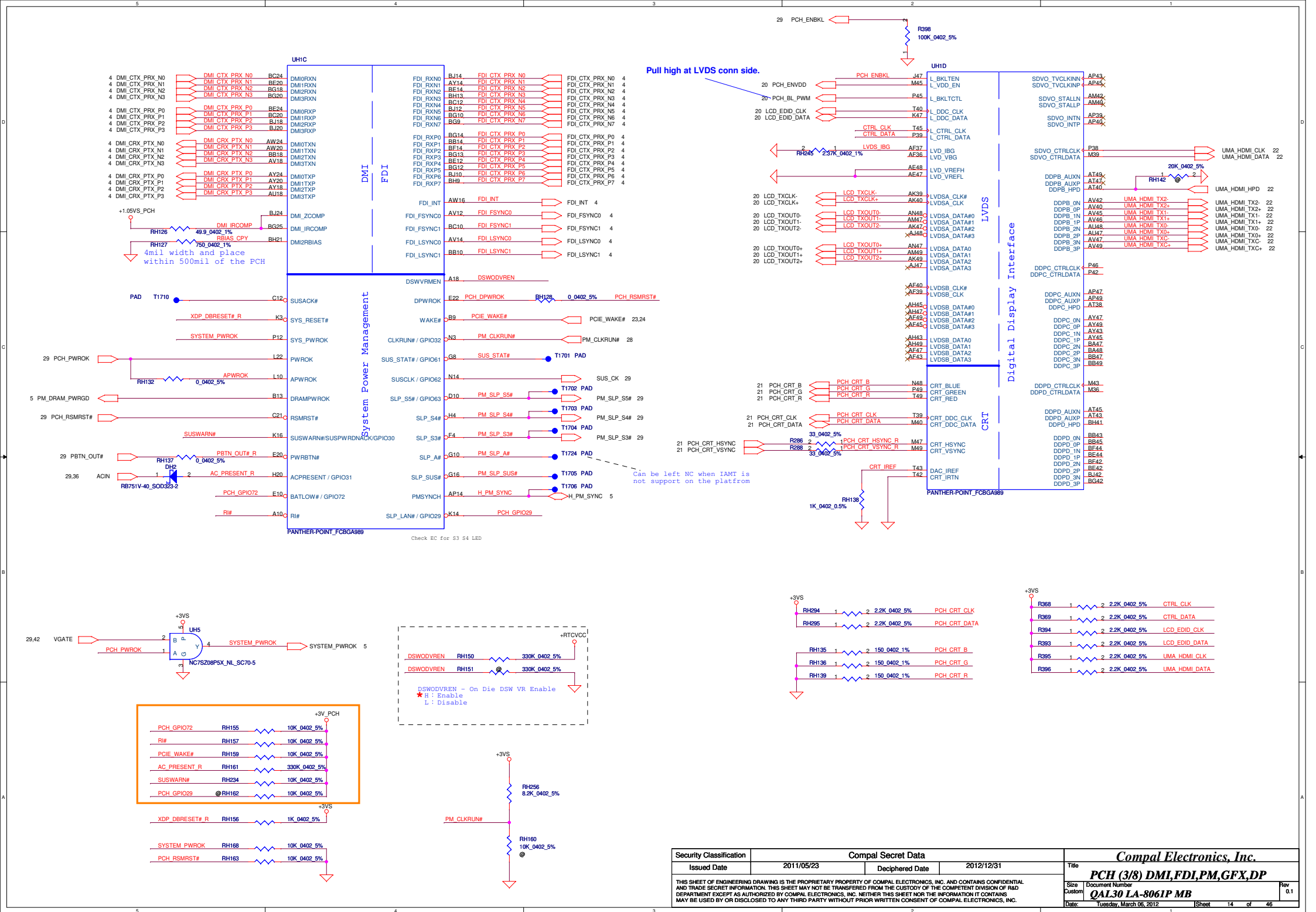
HDA_SYNC
This signal has a weak internal pull-down
On Die PLL VR is supplied by 1.5V when sampled high 1.8V when sampled low
Needs to be pulled High for Chief River platform



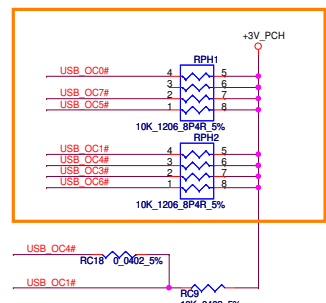
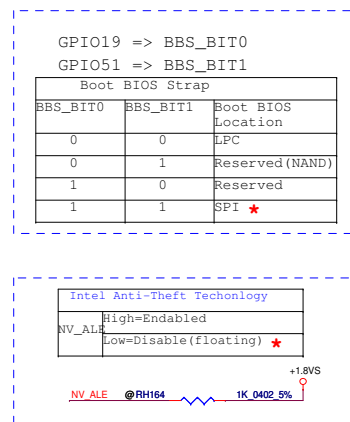
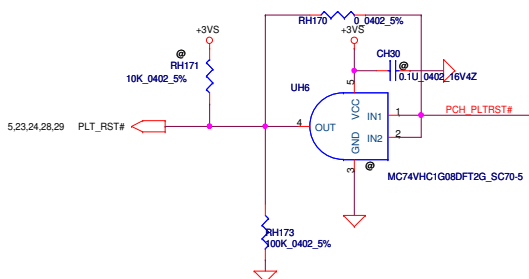
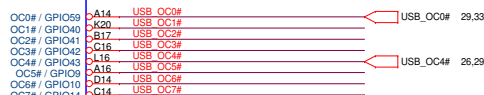
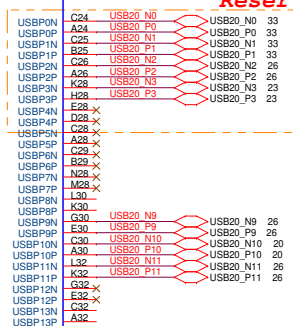
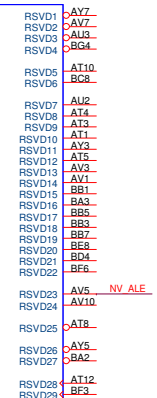
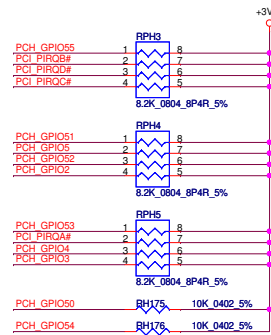
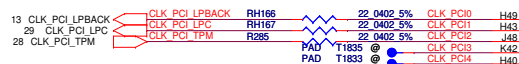
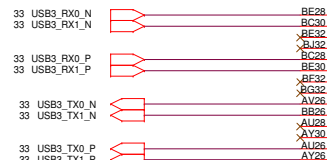
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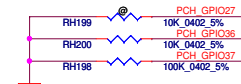
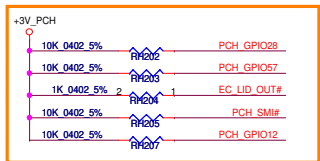
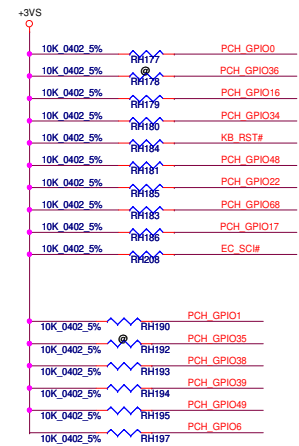
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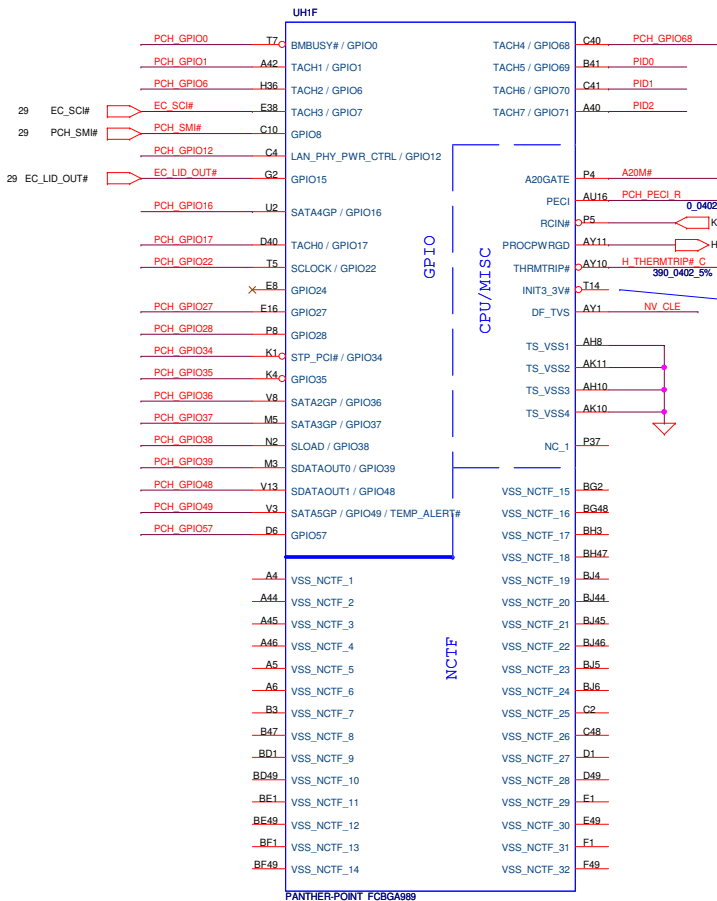
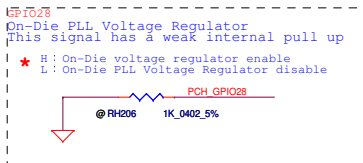
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GPIO36/37
When Unused as GPIO or SATA*GP -
Use 8.2K-10K pull-down to ground.

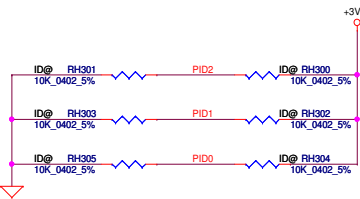
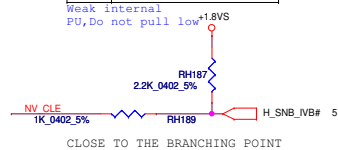


PCH_GPIO28 needs to be connected to XDP_FN8
PCH_GPIO35 needs to be connected to XDP_FN9
PCH_GPIO15 needs to be connected to XDP_FN16

Please refer to Huron River Debug Board DG 1.2

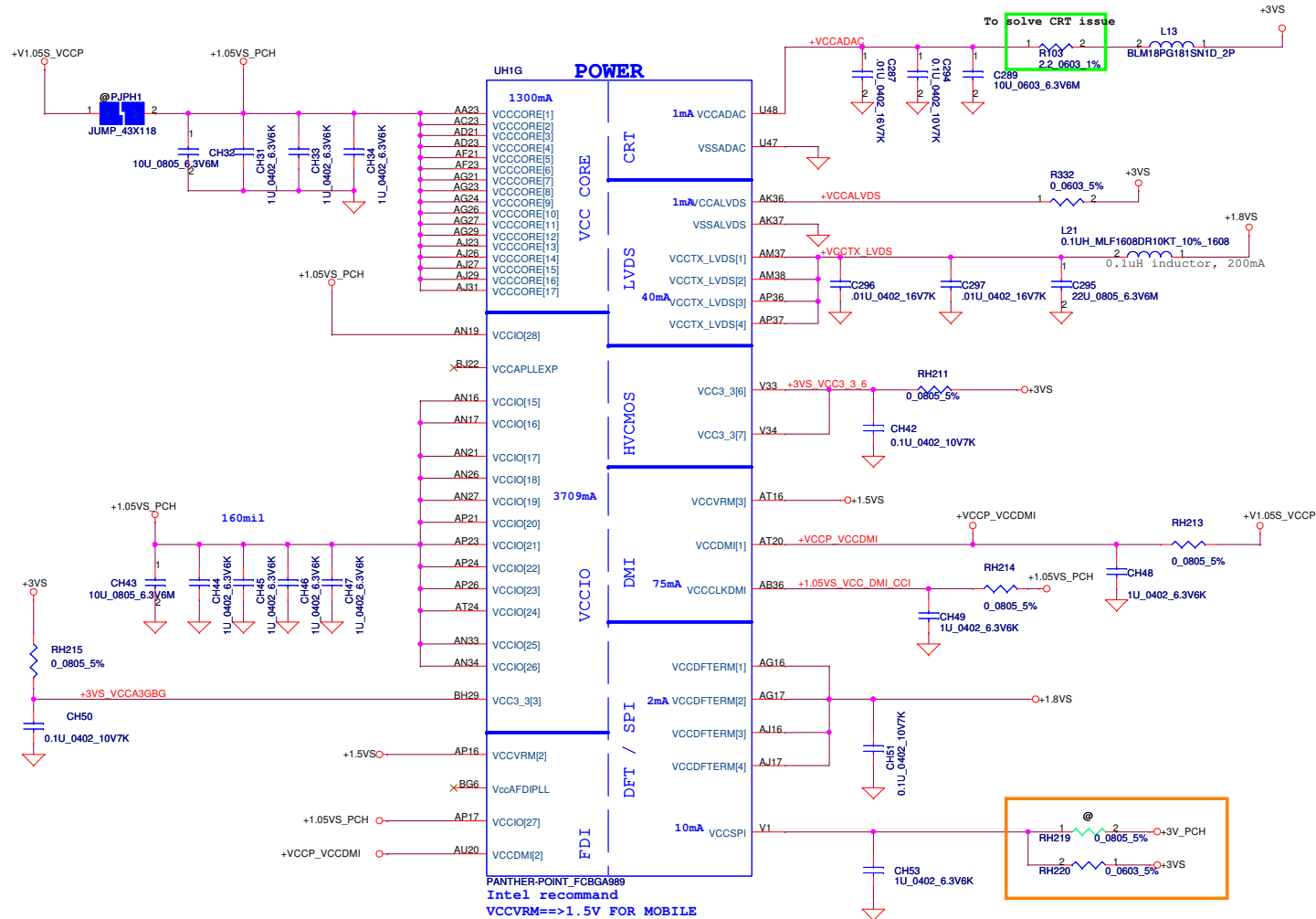
INIT3_3V
This signal has weak internal
PU, can't pull low

DMI Termination Voltage	
NV_CLE	Set to Vcc when HIGH
NV_CLE	Set to Vss when LOW

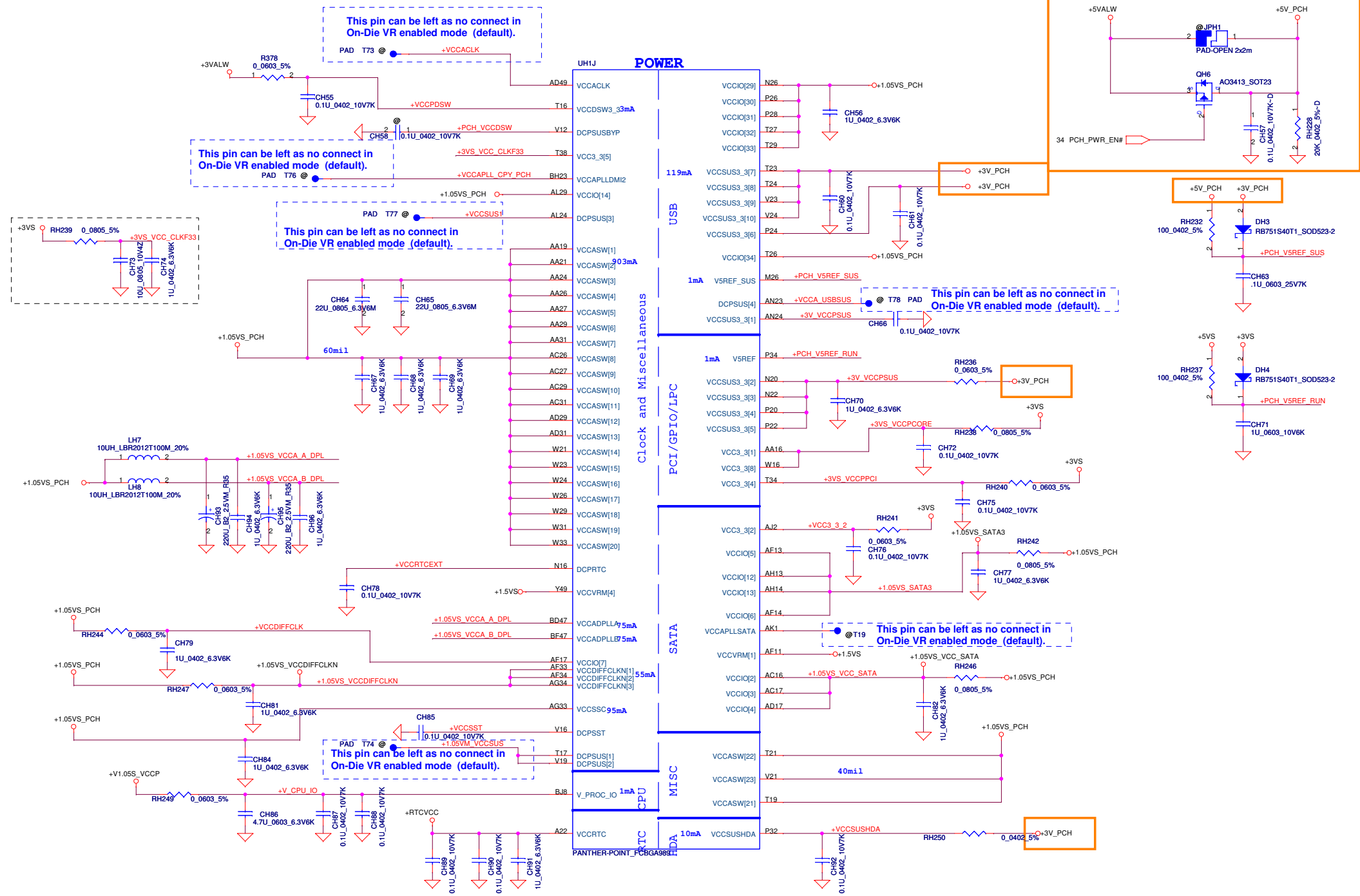


PID :	210	
QAL30_MP10	000	(UMA)
QAL30_MP20	100	(UMA)

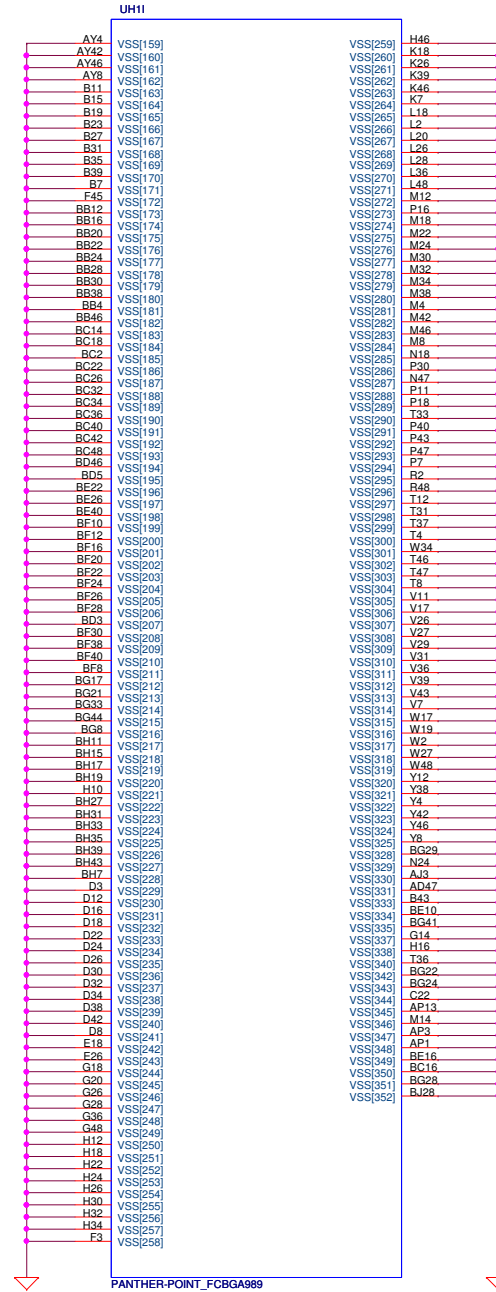
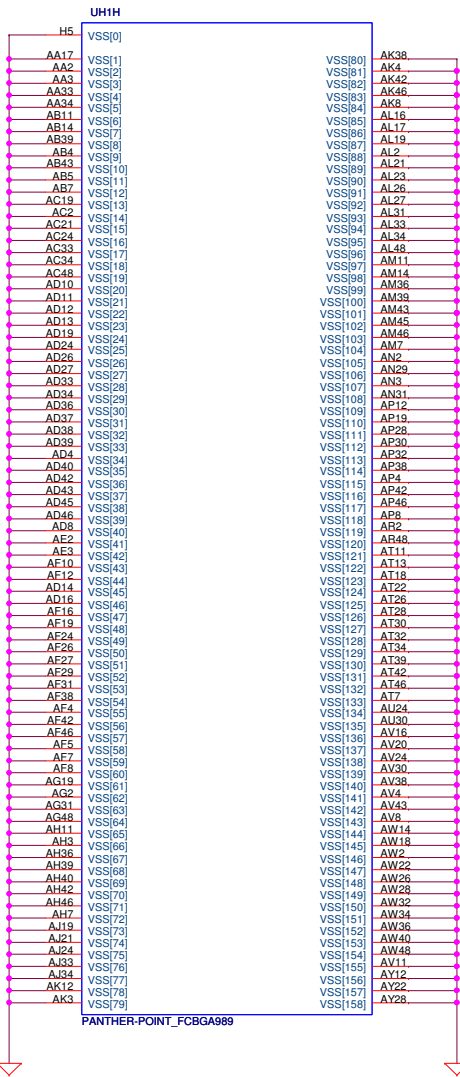
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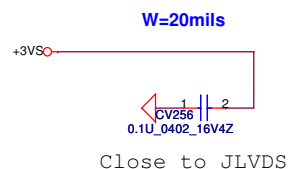
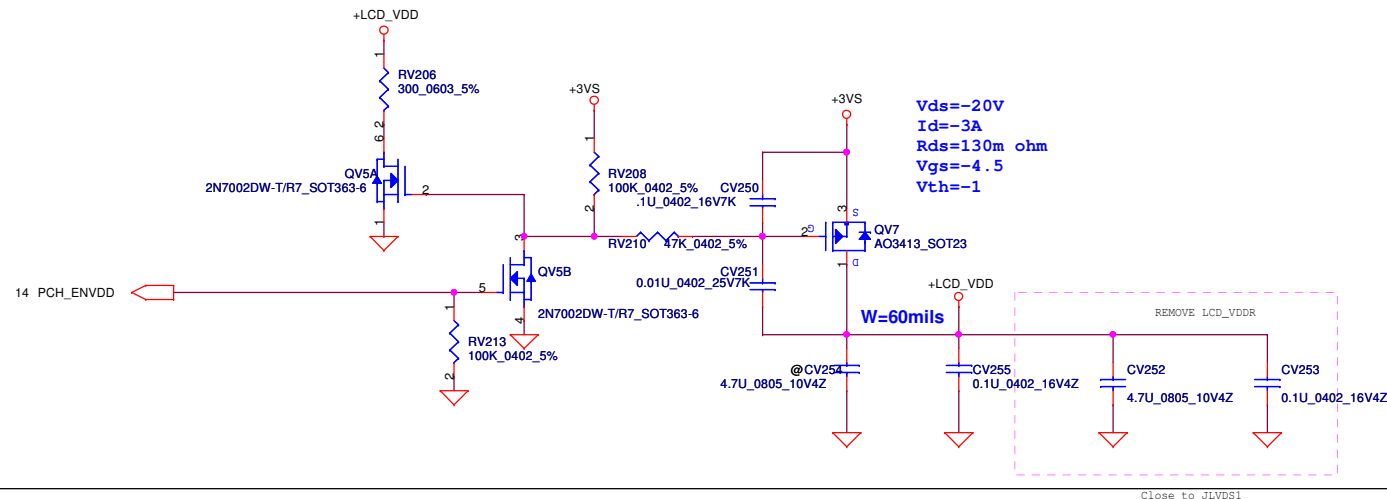
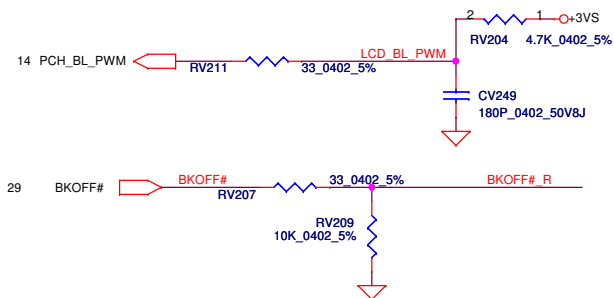
PCH Power Rail Table Refer to CPU EDS R1.5		
Voltage Rail	Voltage	SO Iccmax Current (A)
V_PROC_IO	1.05	0.001
V5REF	5	0.001
V5REF_Sus	5	0.001
Vcc3_3	3.3	0.228
VccADAC	3.3	0.001
VccADPLLA	1.05	0.075
VccADPLLB	1.05	0.075
VccCore	1.05	1.3
VccDMI	1.05	0.042
VccIO	1.05	3.709
VccASW	1.05	0.903
VccSPI	3.3	0.01
VccDSW	3.3	0.001
VccDFTERM	1.8	0.002
VccRTC	3.3	6 uA
VccSus3_3	3.3	0.065
VccSusHDA	3.3 / 1.5	0.01
VccVRM	1.8 / 1.5	0.167
VccCLKDMI	1.05	0.075
VccSSC	1.05	0.095
VccDIFFCLKN	1.05	0.055
VccALVDS	3.3	0.001
VccTX_LVDS	1.8	0.04



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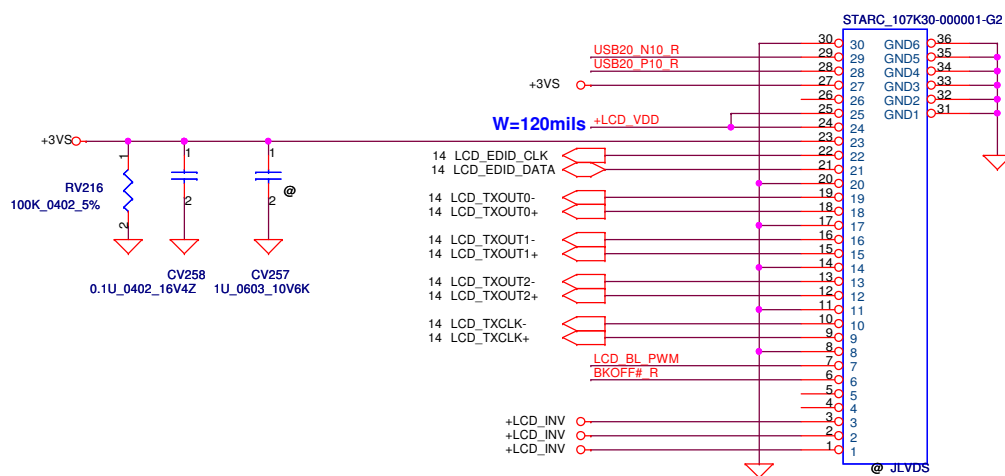


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					PCH (3/8) VSS
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		Date: Friday, October 26, 2011		Sheet 19	of 46

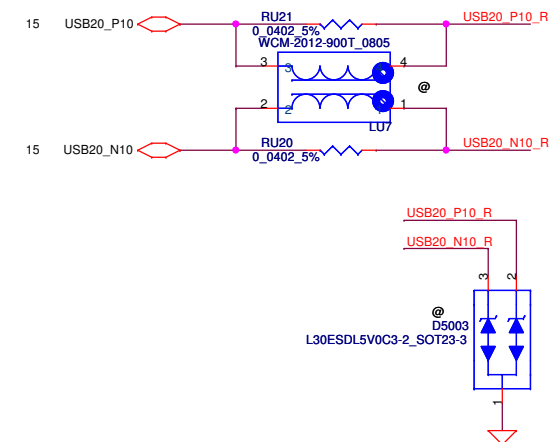
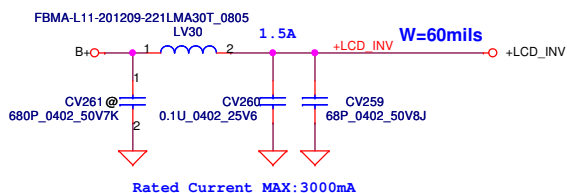


Change to 30 pin.

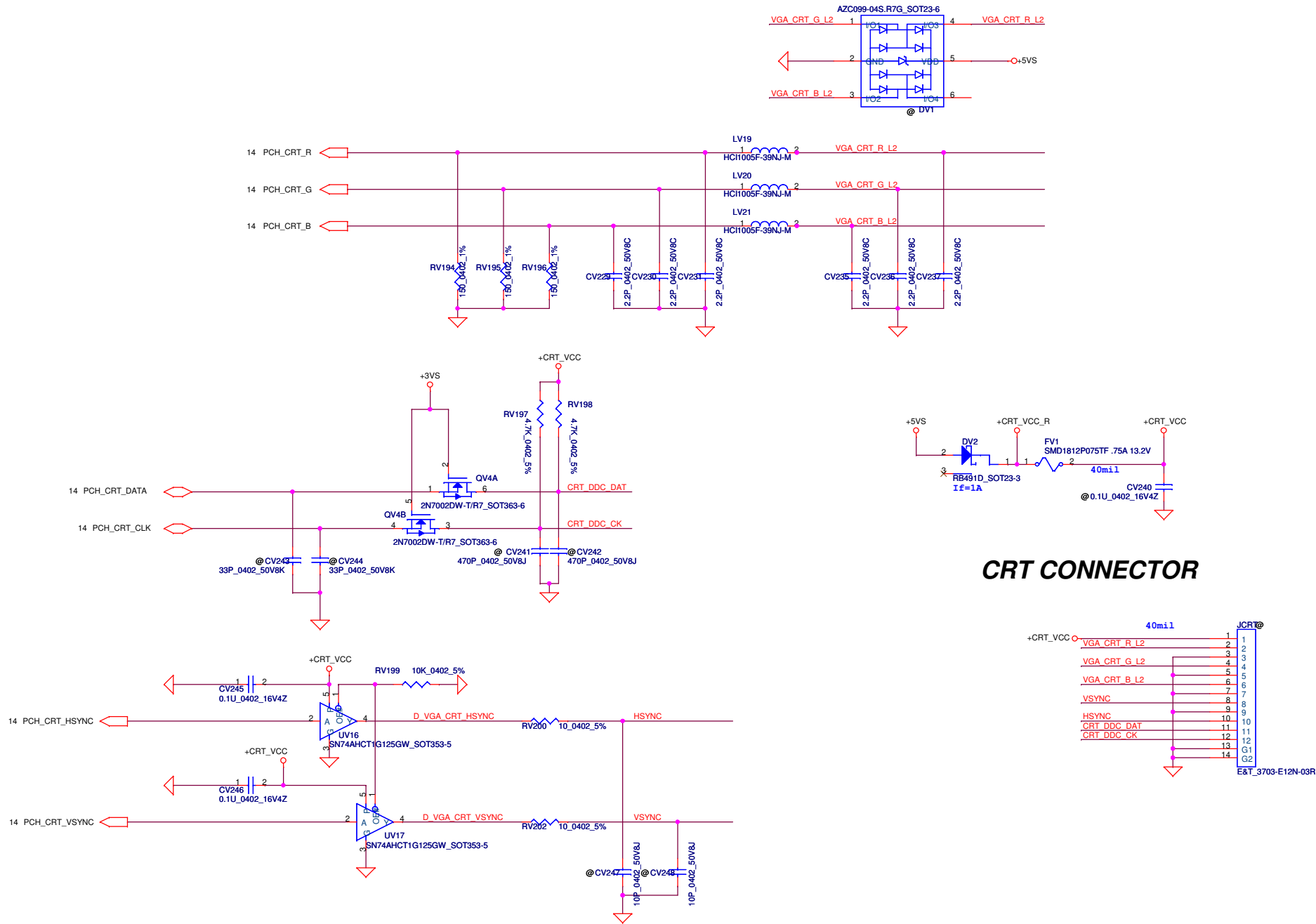
Single Channel LVDS



LCD/PANEL BD. Conn.

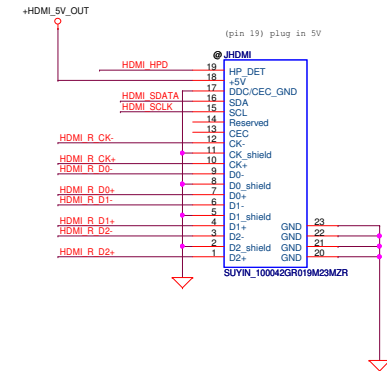
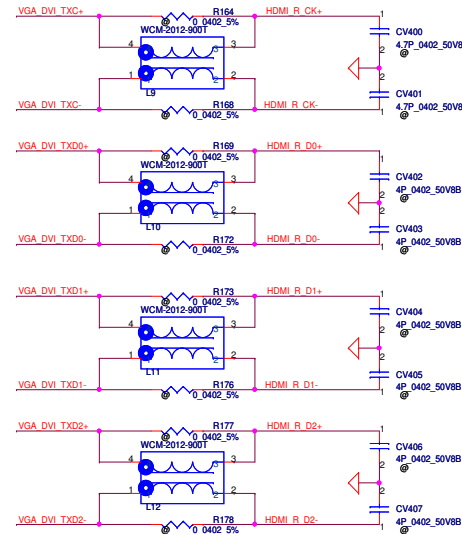
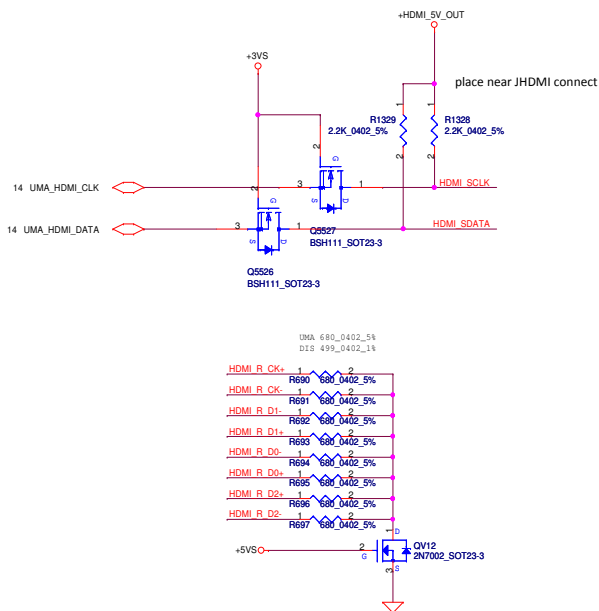
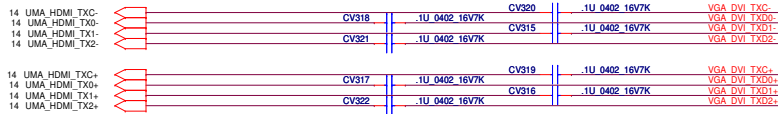
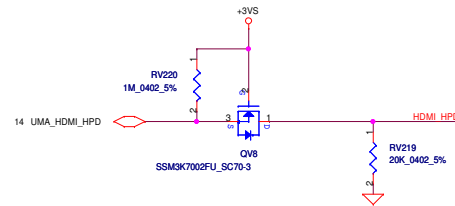
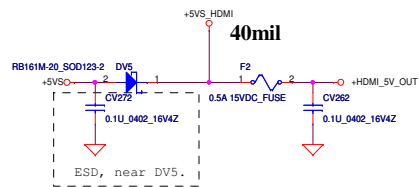


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				QAL30 LA-8061P MB	
				Date:	Tuesday, March 06, 2012
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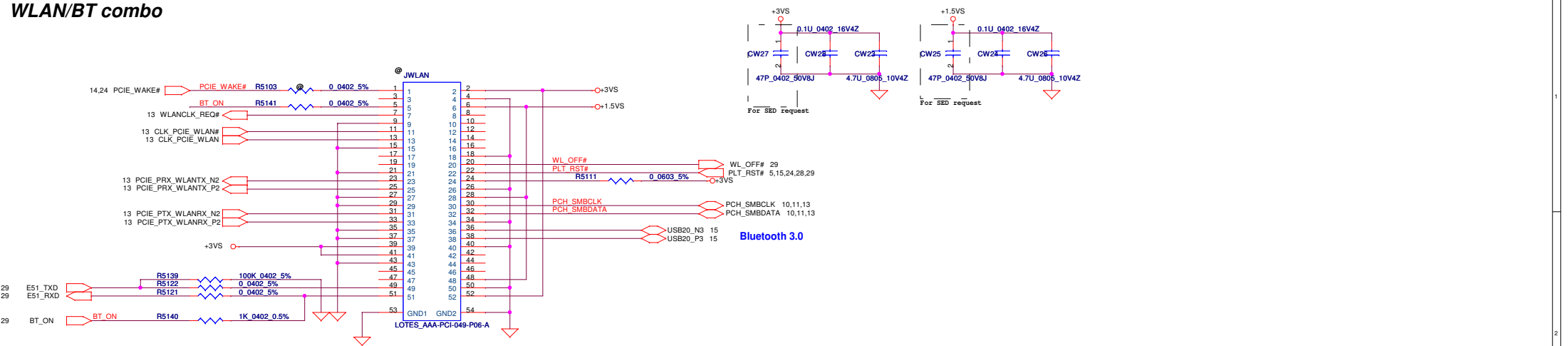


CRT CONNECTOR

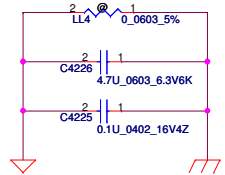
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/05/23	Deciphered Date	2012/12/31	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				CRT	
Size		Document Number		Rev	
		QAL30 LA-8061P MB		0.1	
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		21		of	
		46			



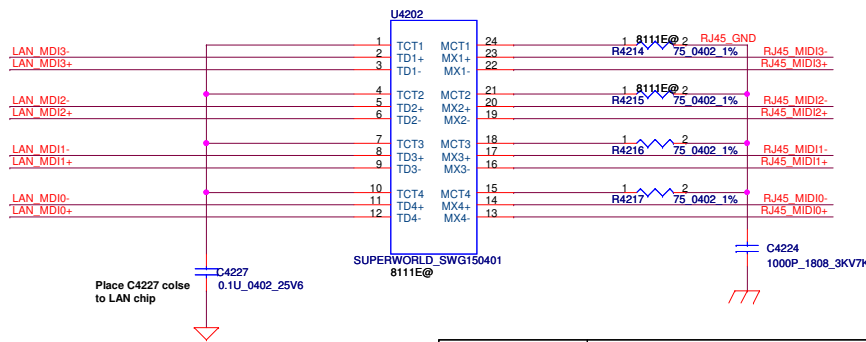
WLAN/BT combo



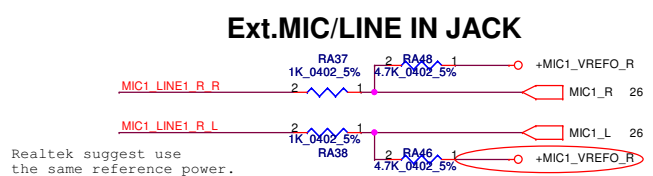
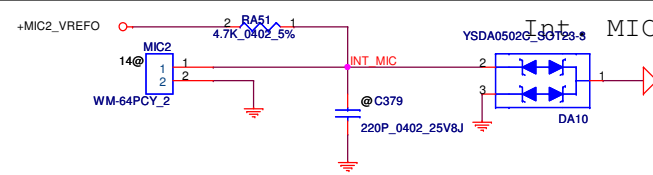
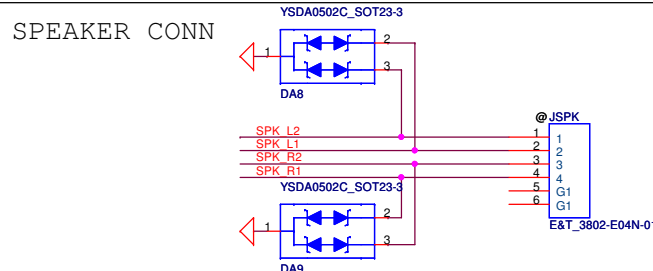
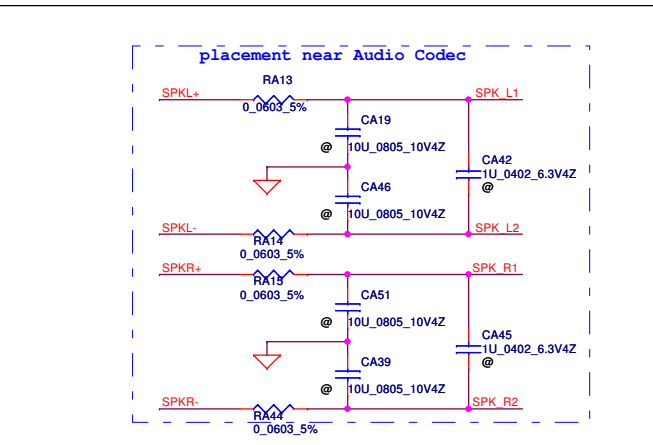
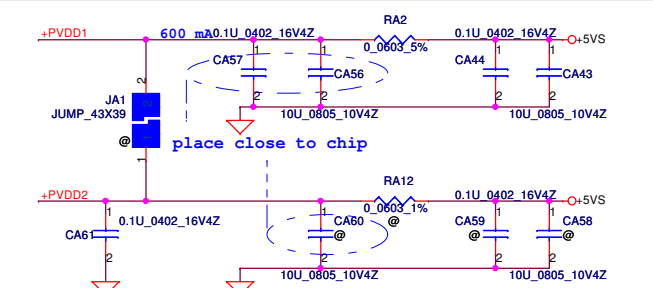
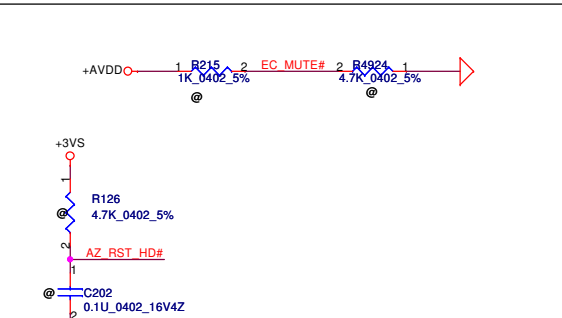
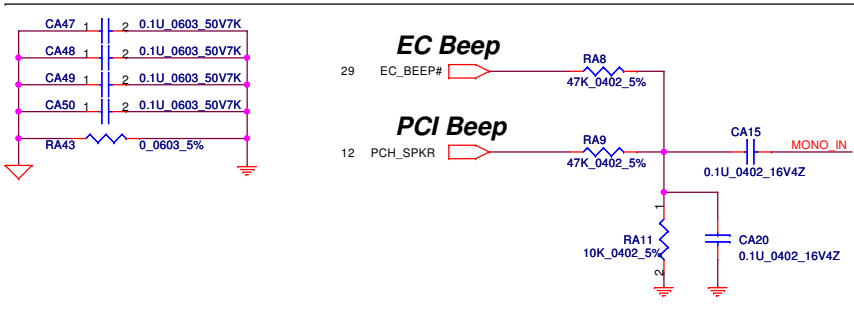
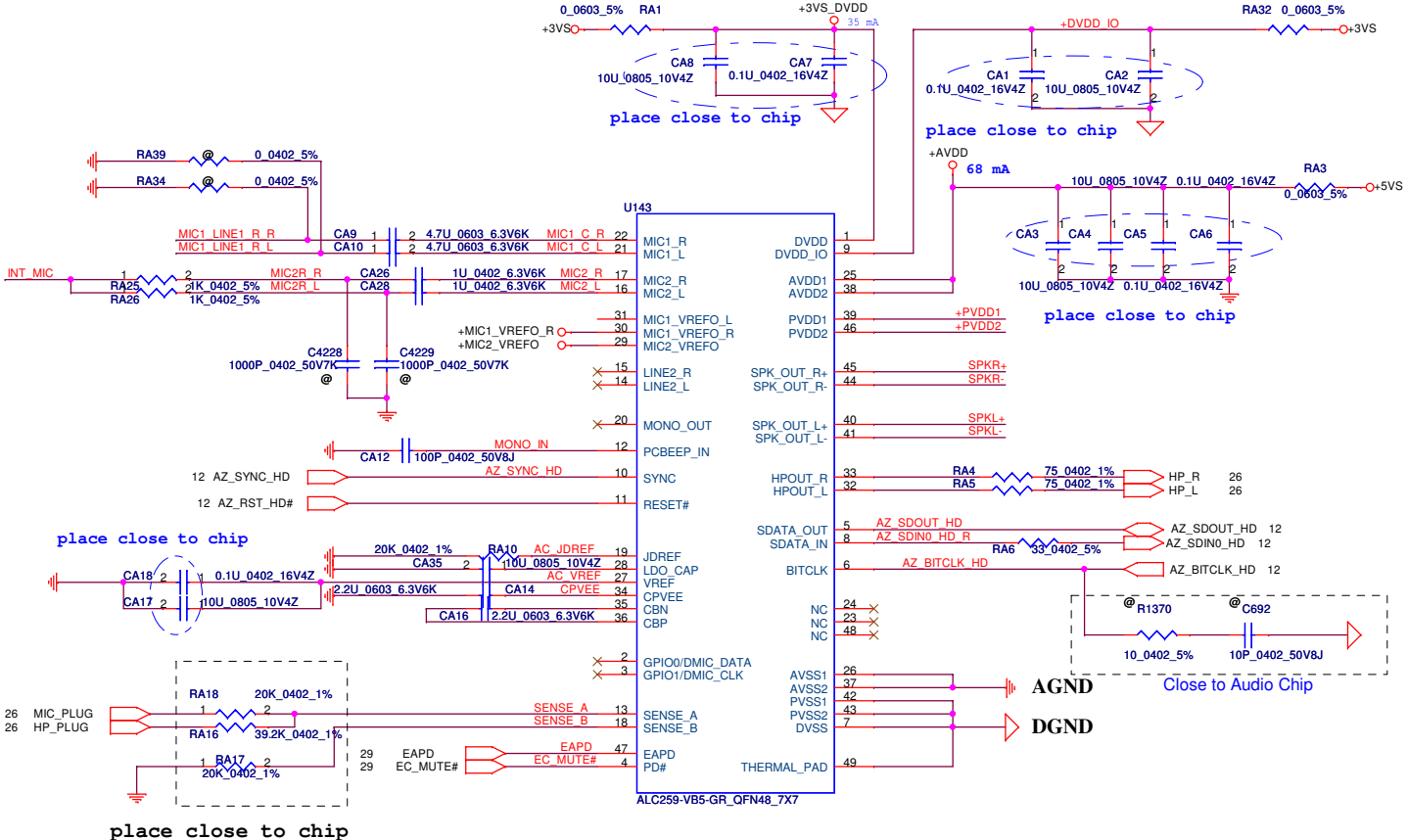
Security Classification	Compal Secret Data			Compal Electronics, Inc.	
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+3VALW TO +3V_LAN



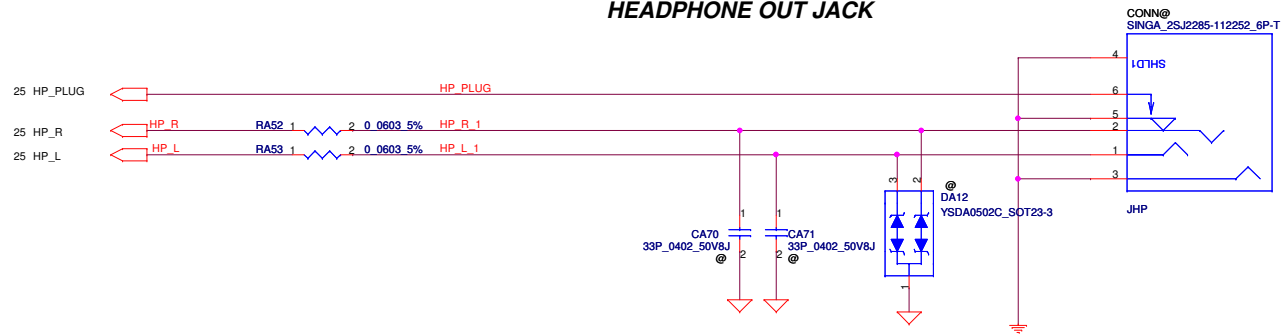
Security Classification		Compal Secret Data		Compal Electronics, Inc. Title: PCle-LAN-RTL8111E	
Issued Date	2011/05/23	Deciphered Date	2012/12/31	Size Custom	Document Number: QAL30 LA-8061P MB Date: Tuesday, March 06, 2012
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C		D		E	



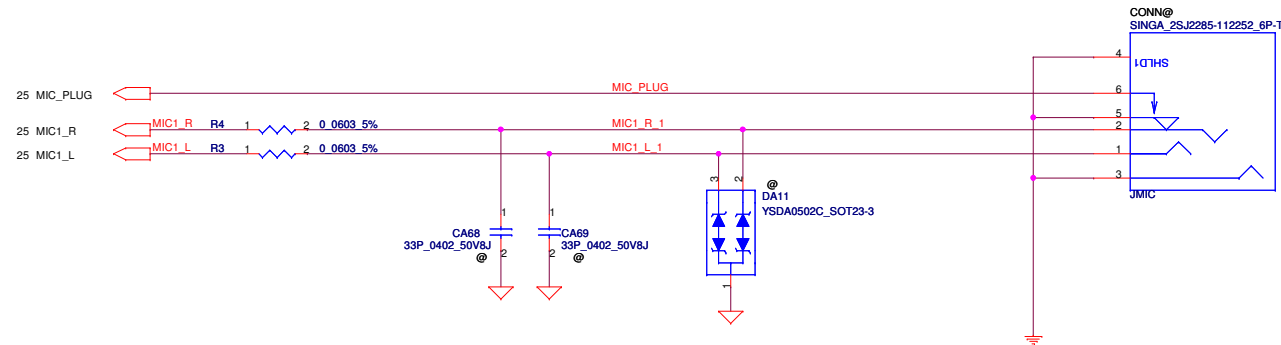
Sense Pin	Impedance	Codec Signals	Function
SENSE A	39.2K	PORT-I (PIN 32, 33)	Headphone out
	20K	PORT-B (PIN 21, 22)	Ext. MIC
SENSE B	20K	PORT-F (PIN 16, 17)	Int. MIC

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				QAL30 LA-8061P MB	
				Date:	Tuesday, March 06, 2012
				Sheet	25 of 46

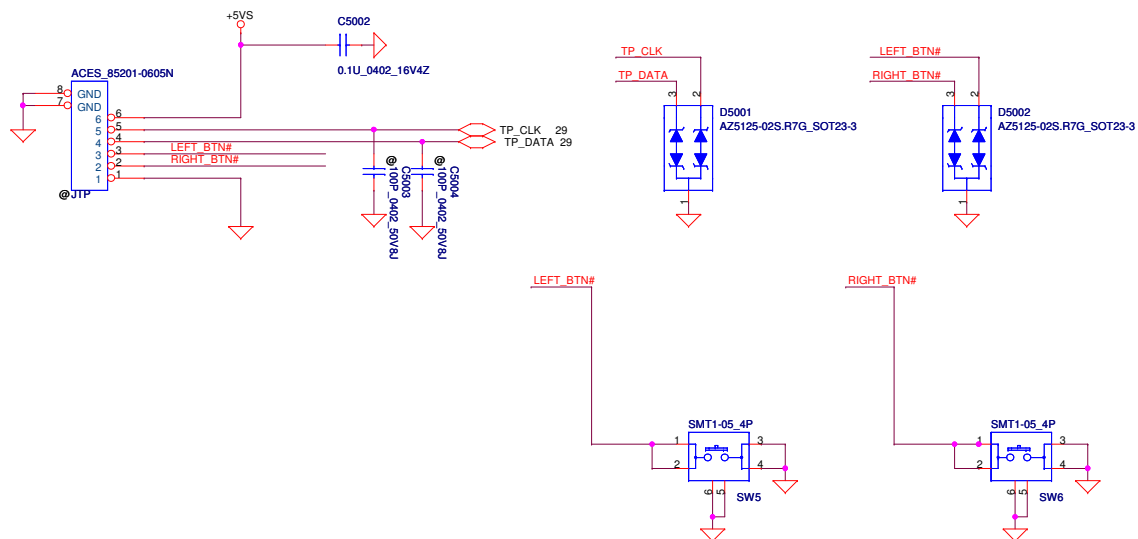
HEADPHONE OUT JACK



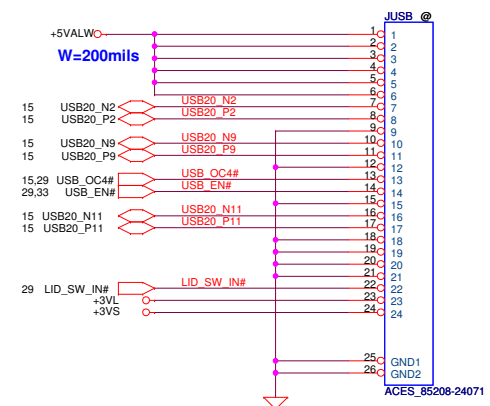
MICROPHONE IN JACK



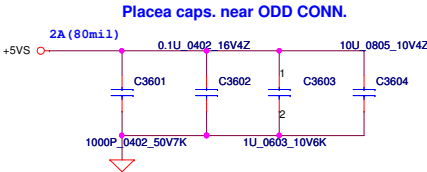
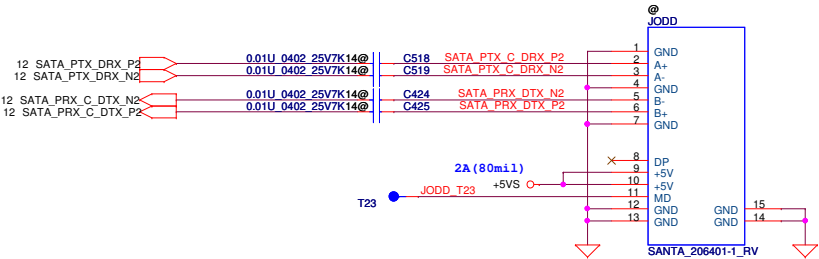
Touch/B Connector



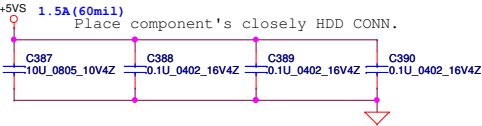
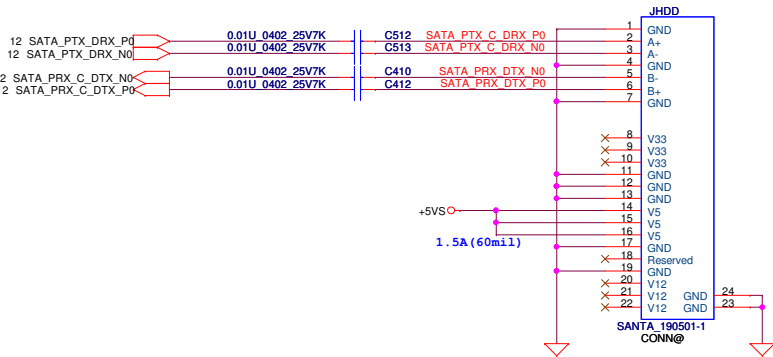
USB + LID SB



SATA ODD Conn.

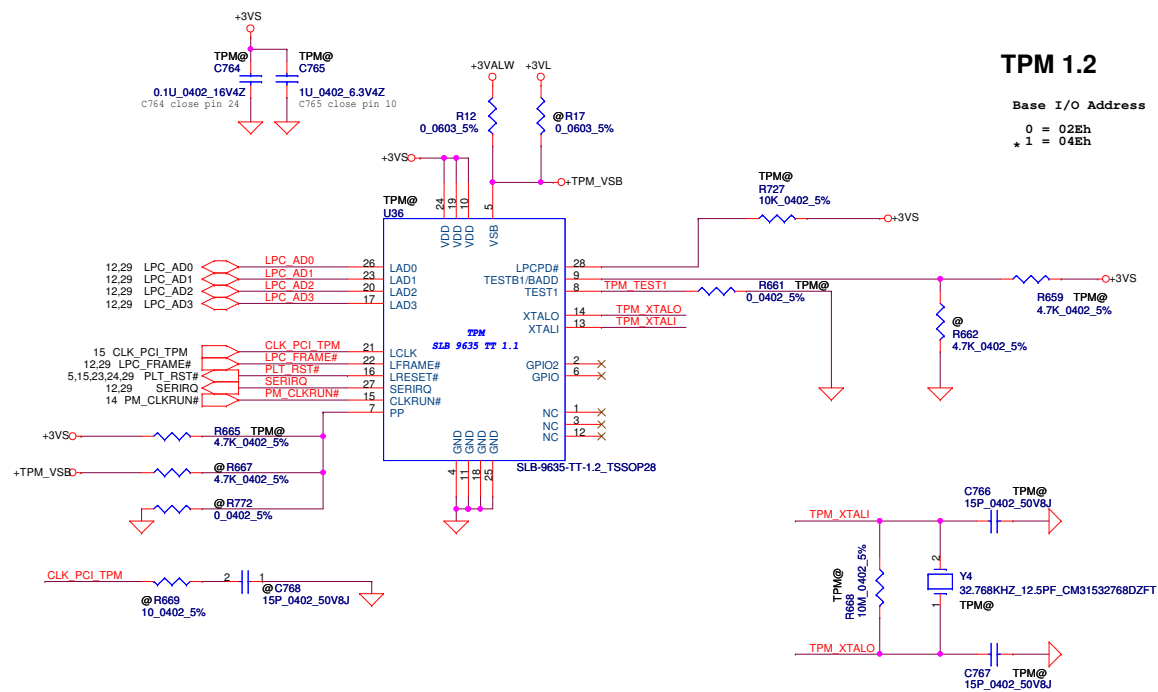


SATA HDD Conn.

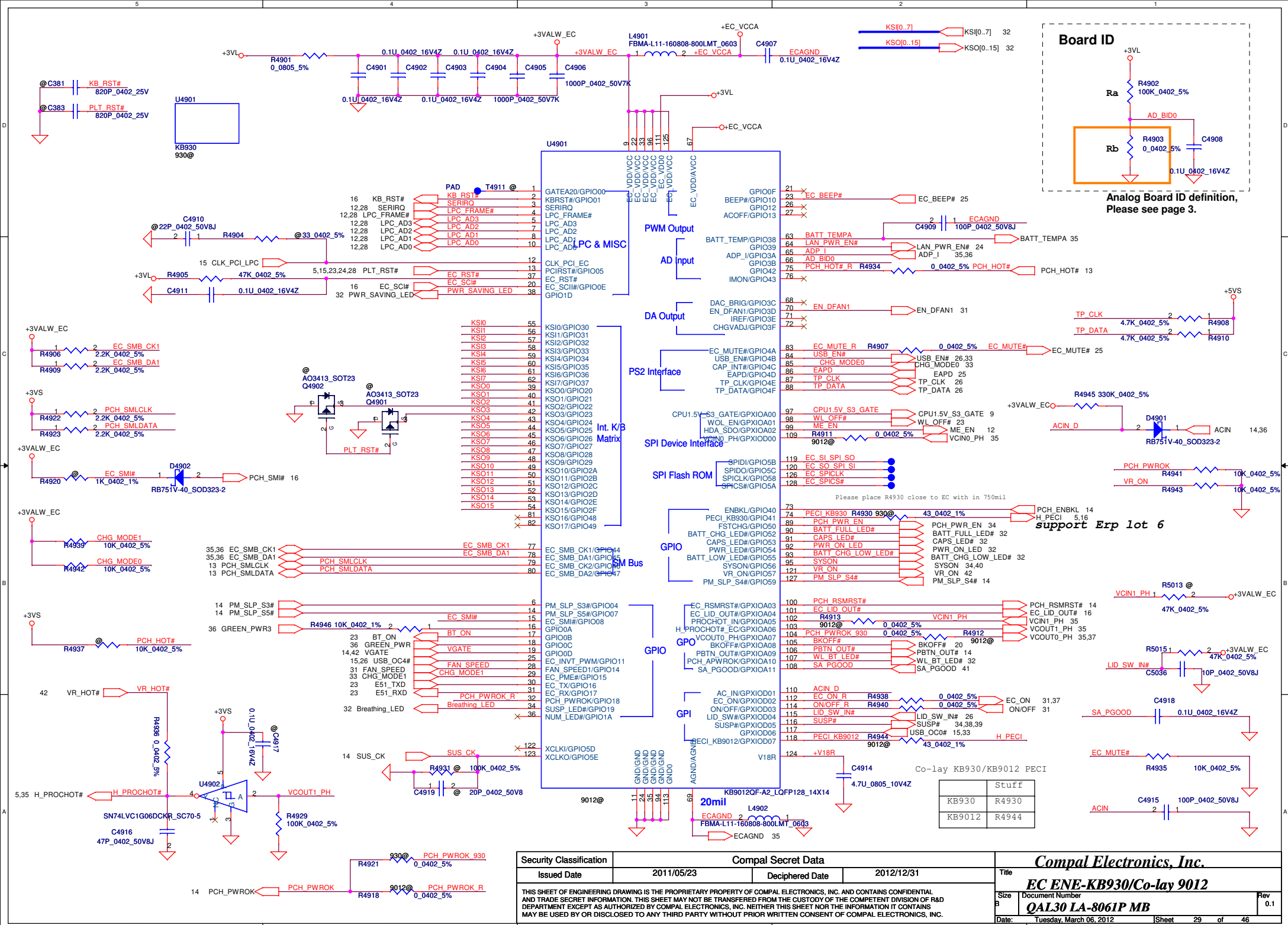


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								Size		Document Number		Rev	
								Custom		QAL30 LA-8061P MB		0.1	
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SPI ROM For Basic ME ROM size
(w/o Braidwood & system BIOS):
4MByte



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BIOS Bus switch

R401

0.0402_5%

NOW8@

R402

0.0402_5%

NOW8@

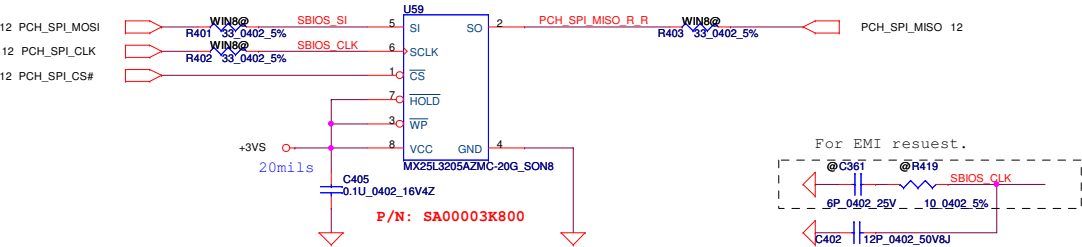
R403

0.0402_5%

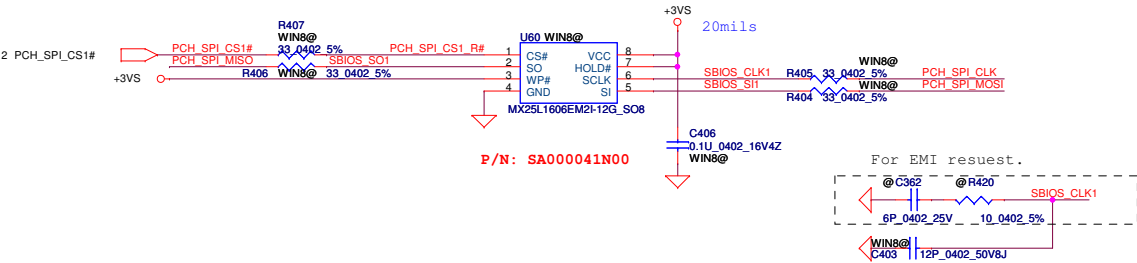
NOW8@

When use single ROM, use 0 ohm.

BIOS SPI Flash (4MByte*1)



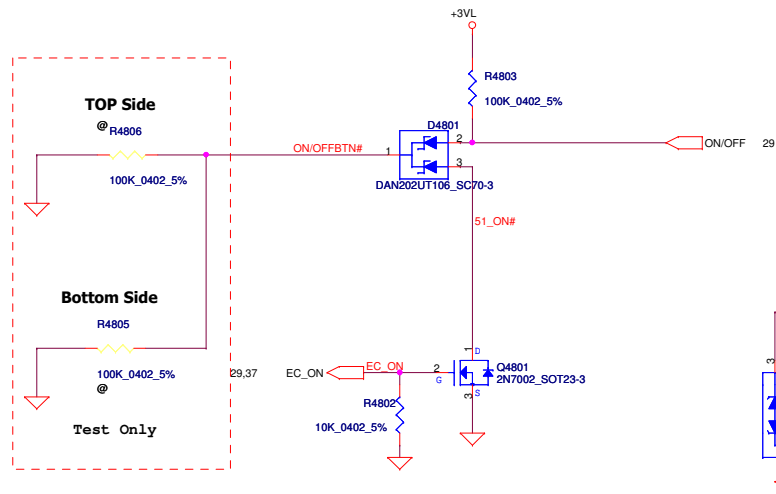
BIOS SPI Flash (2MByte*1) For Win8



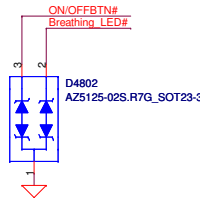
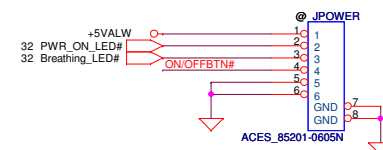
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Power Button

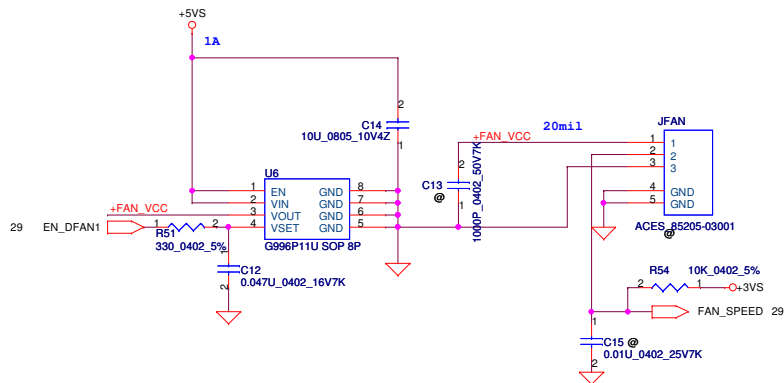
ON/OFF switch



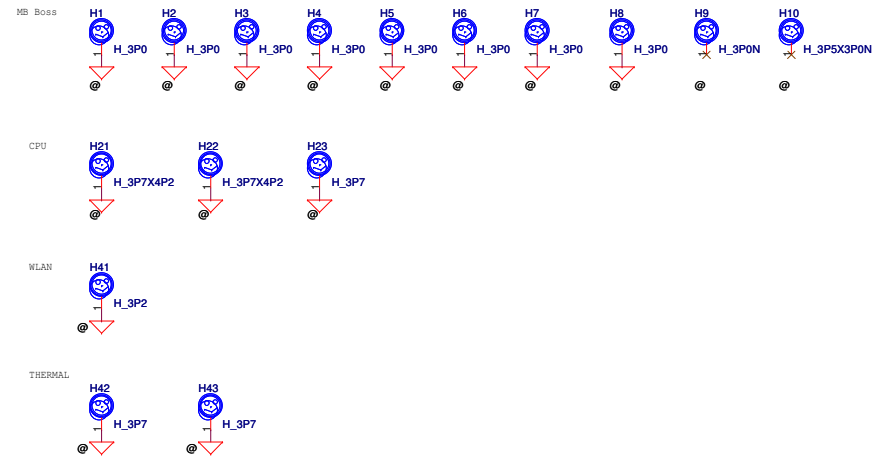
To POWER/B



Fan Control Circuit



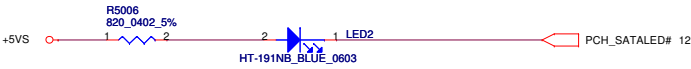
Screw Hole



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LED

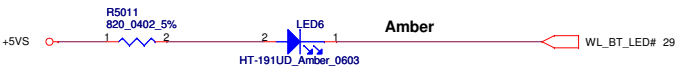
SATA



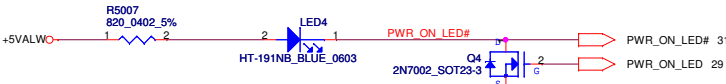
Battery



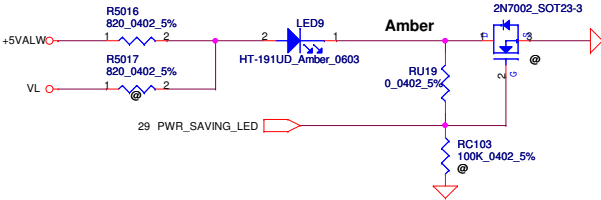
Wireless



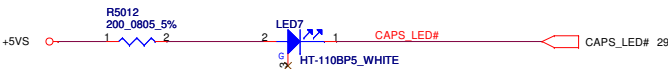
Power



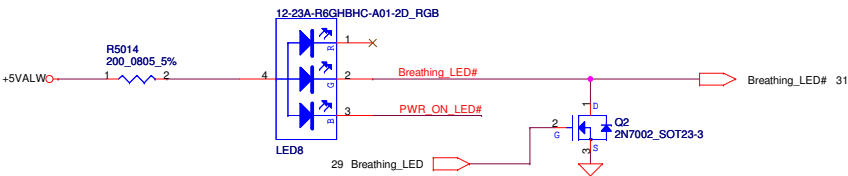
Power Saving



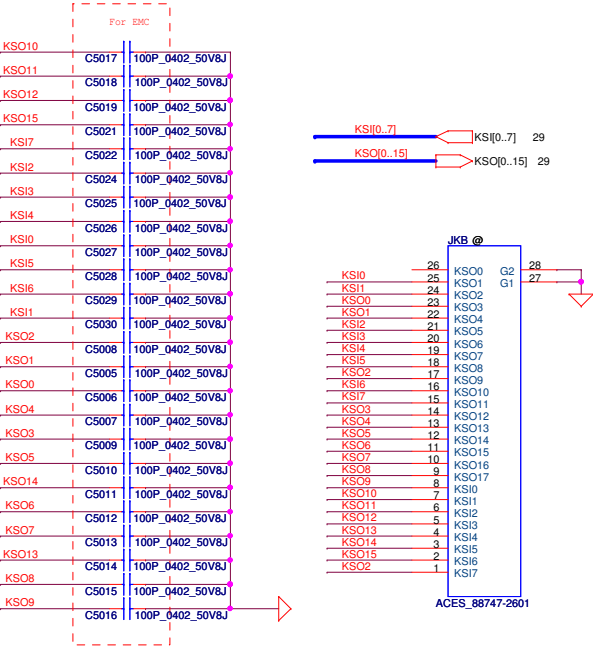
CAP Lock



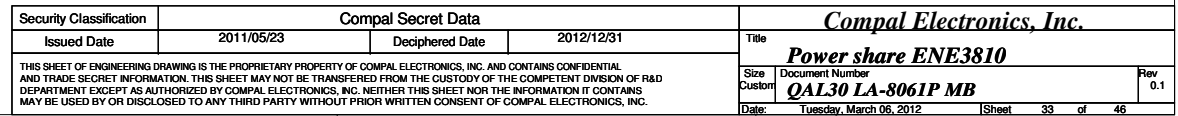
Breathing



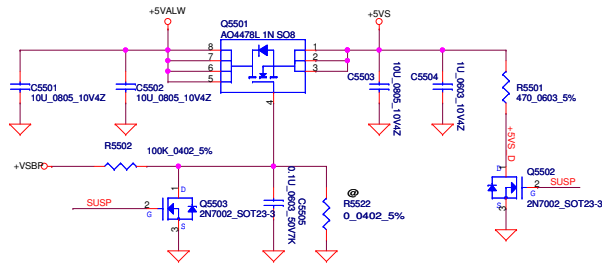
INT_KBD Conn.



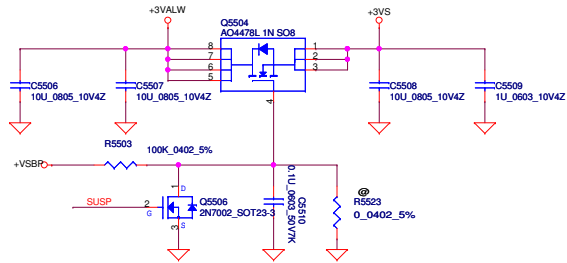
USB3.0 Port0
Port 0 : Left USB3.0



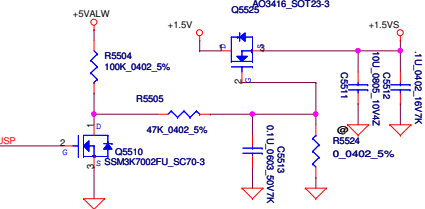
+5VALW to +5VS



+3VALW to +3VS

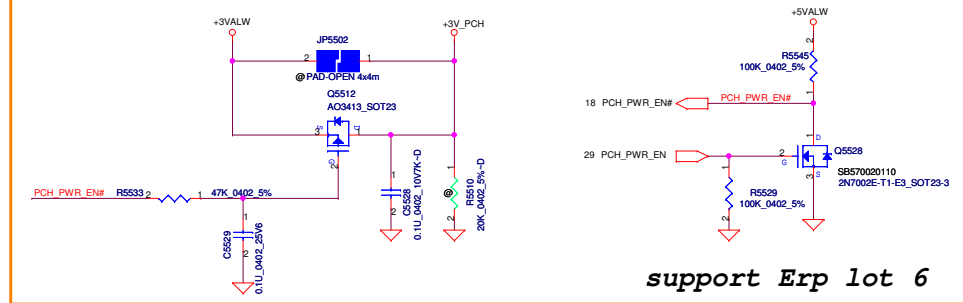


+1.5V To +1.5VS

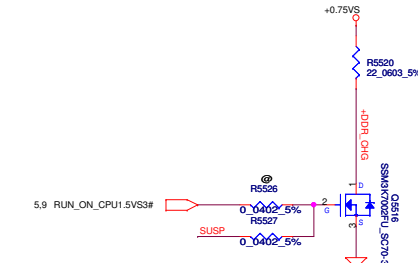
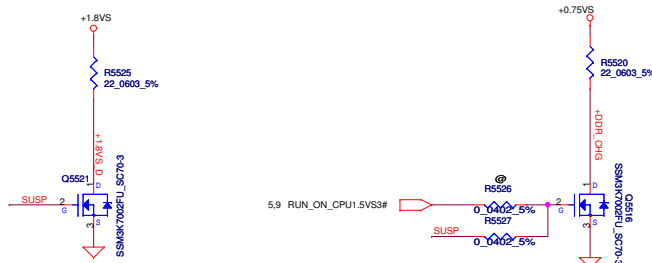
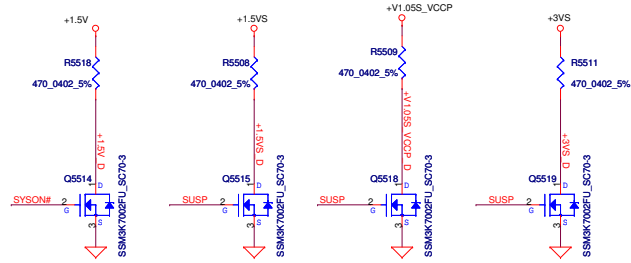


CHECK WITH CPU memory power

+3VALW to +3V_PCH

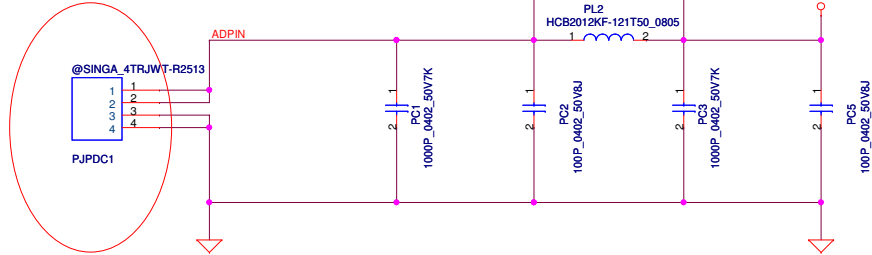


support Exp lot 6



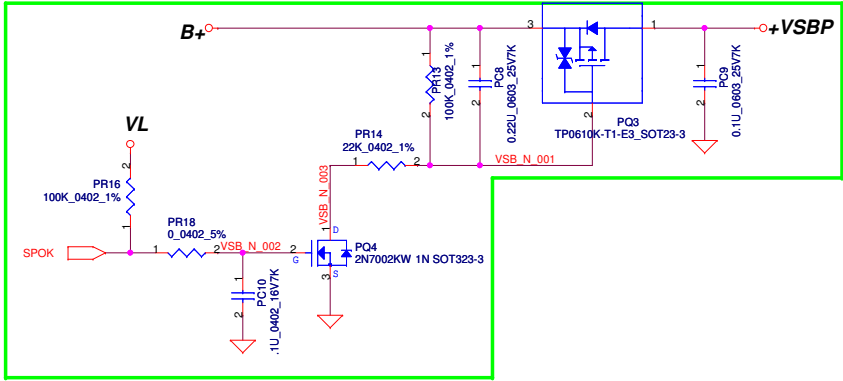
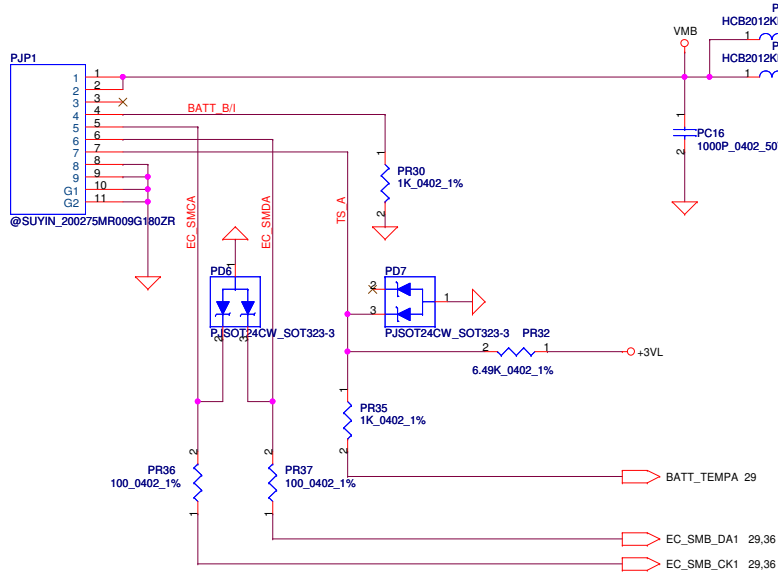
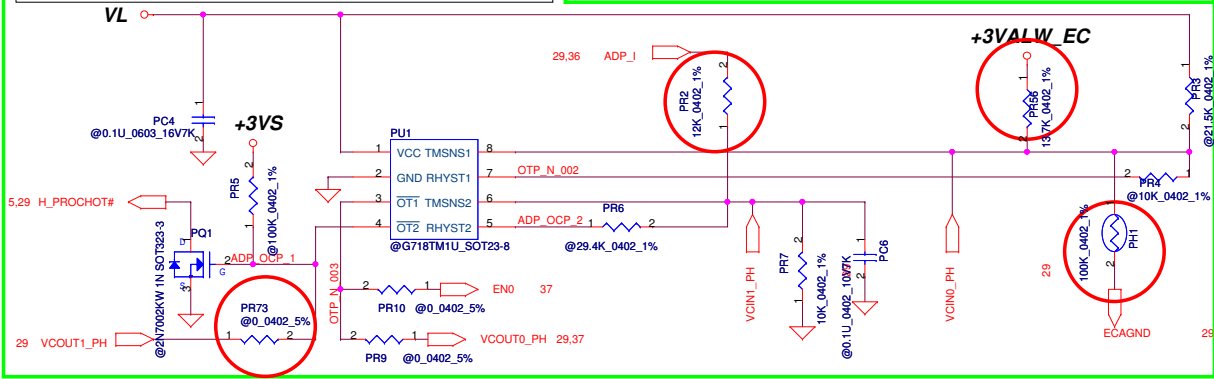
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DCIN jack P/N:DC301008L00,
need doble confirm P/N with ME

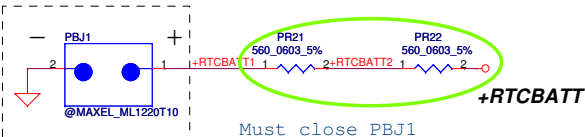


PH1 under CPU bottom side :
CPU thermal protection at 93 +-3 degree C
Recovery at 56 +-3 degree C

For KB930 --> Keep PU1 circuit
(Vth = 0.825V)
For KB9012 (Red square) --> Remove PU1 circuit, but keep PR56
PH1, PR2, PQ1, PR7,PQ15,PR73,PR56

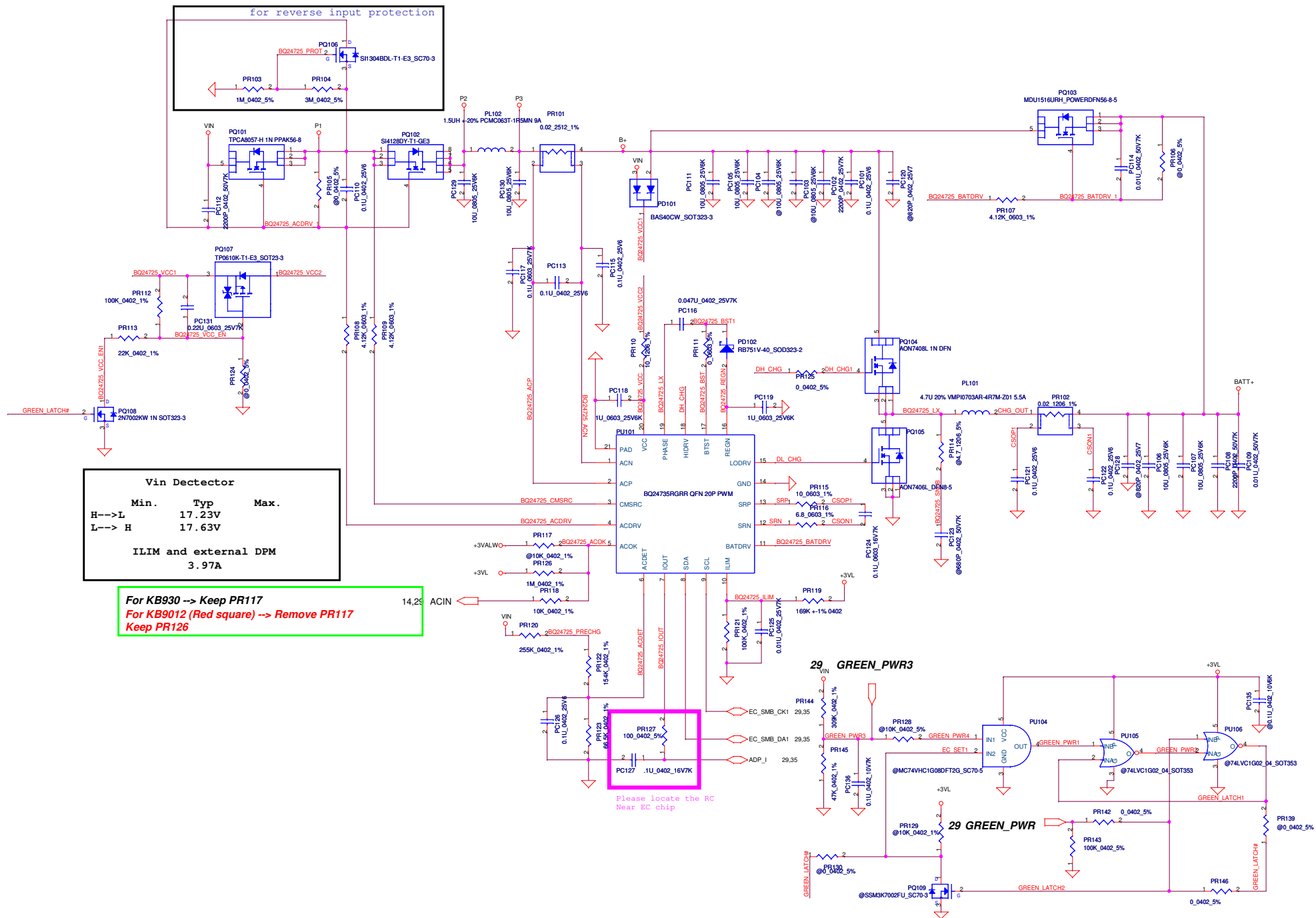


RTC Battery

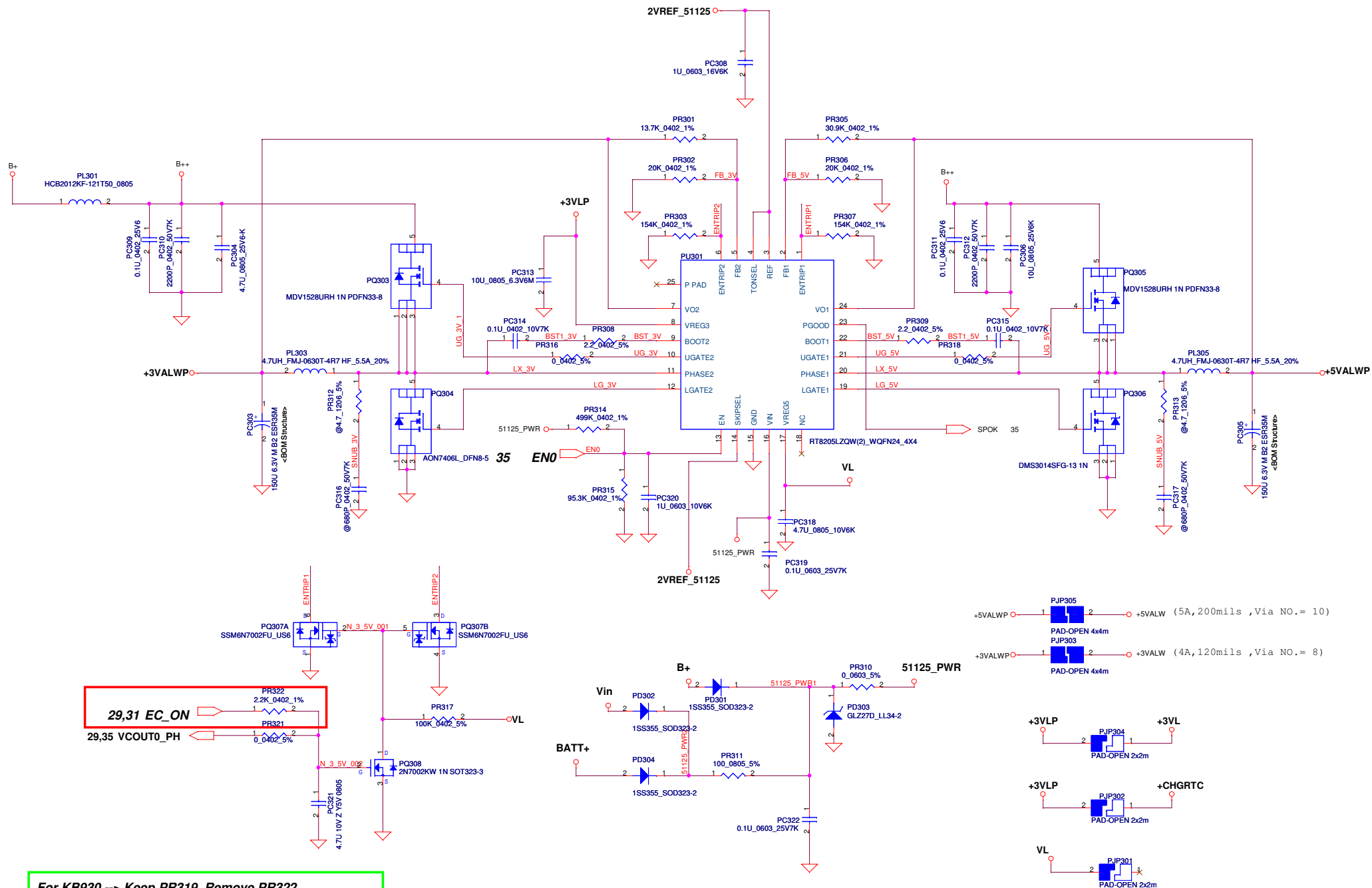


SP093MX0000
Change RTC For Cost Down

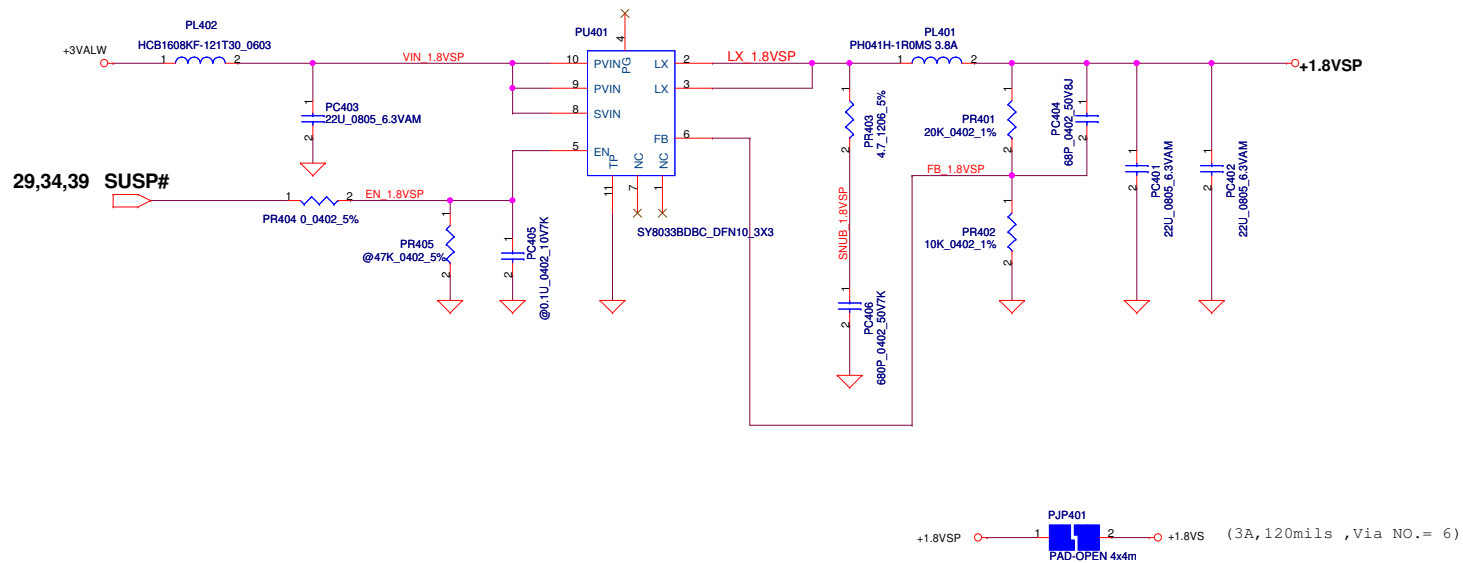
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Issued Date		2011/05/23		PWR-DCIN / BATT CONN / OTP	
Deciphered Date		2012/12/31		PBL22 LA-7391P M/B	
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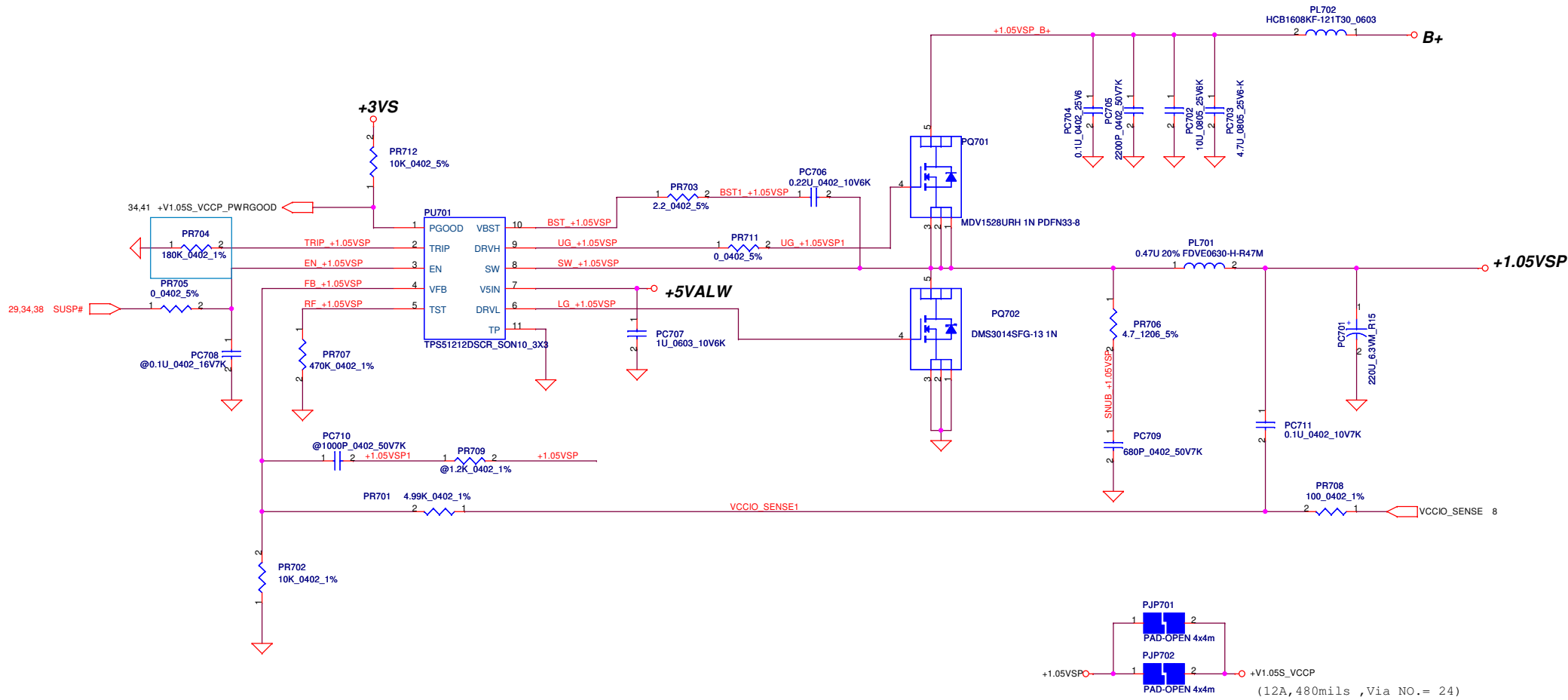
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2011/05/23		2012/12/31		PBL22 LA-7391P M/B	
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Tuesday, March 06, 2012		Sheet		36 of 46	



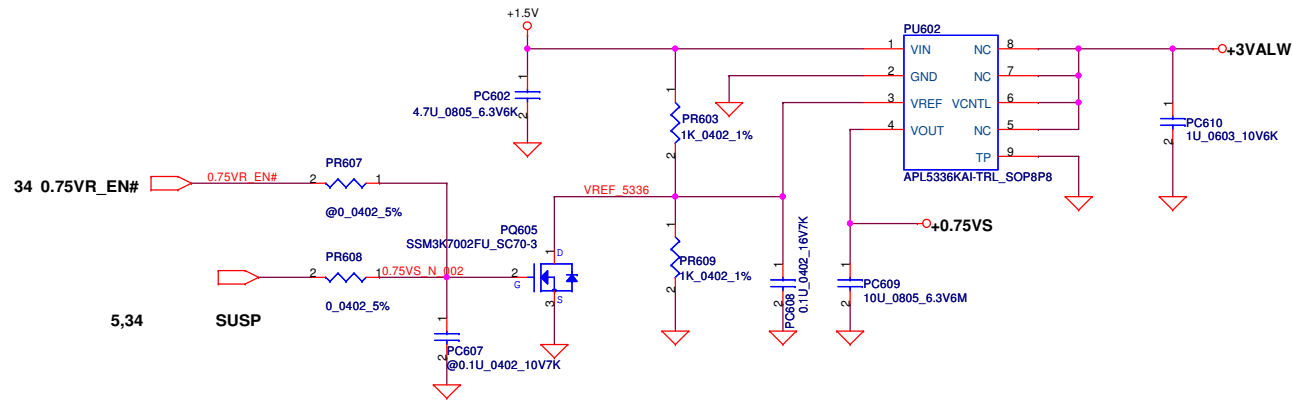
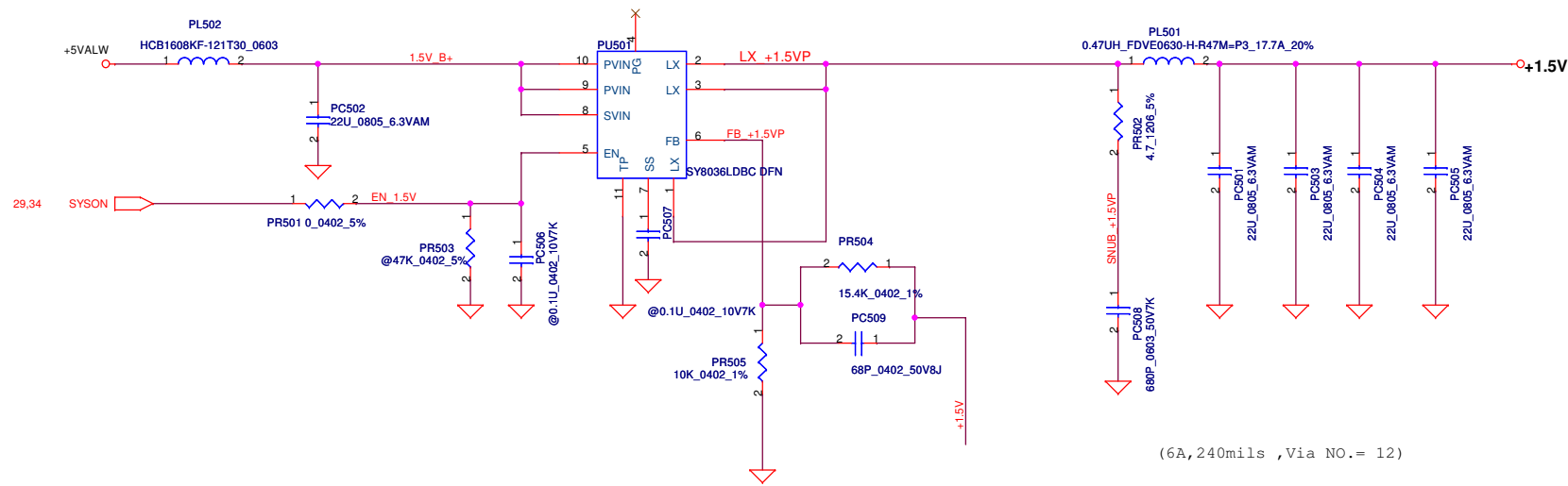
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Issued Date	2011/05/23	Deciphered Date	2012/12/31	Compal Electronics, Inc.	
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				Date:	Tuesday, March 06, 2012
				Sheet	37 of 46
				Rev	0.1



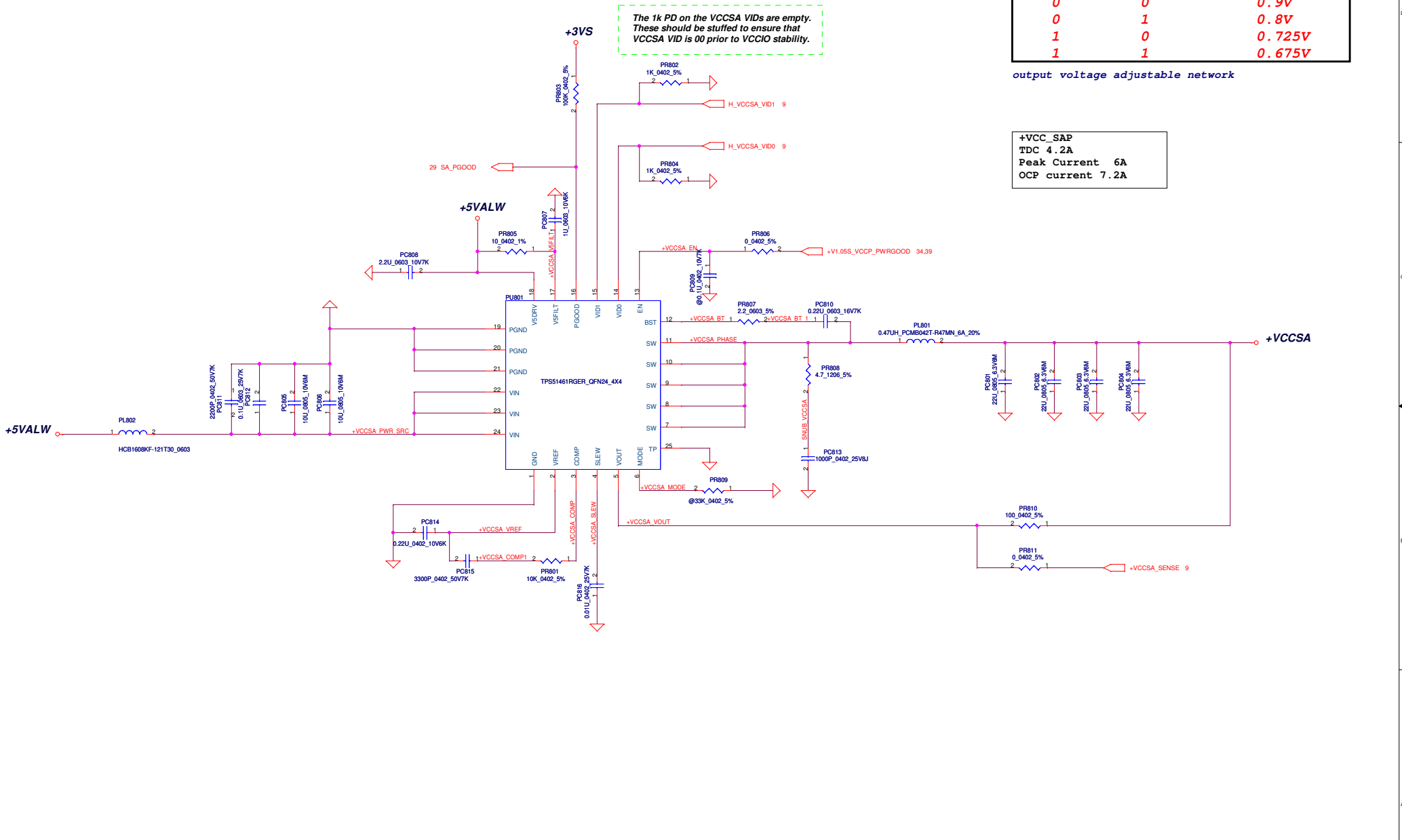
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				Size	Document Number
				Custom	PBL22 LA-7391P M/B
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Size		Document Number		Rev	
Custom		PBL22 LA-7391P M/B		0.1	
Date:		Tuesday, March 06, 2012		Sheet 40 of 46	



The 1k PD on the VCCSA VIDs are empty.
These should be stuffed to ensure that
VCCSA VID is 00 prior to VCCIO stability.

VID [0]	VID[1]	VCCSA Vout
0	0	0.9V
0	1	0.8V
1	0	0.725V
1	1	0.675V

output voltage adjustable network

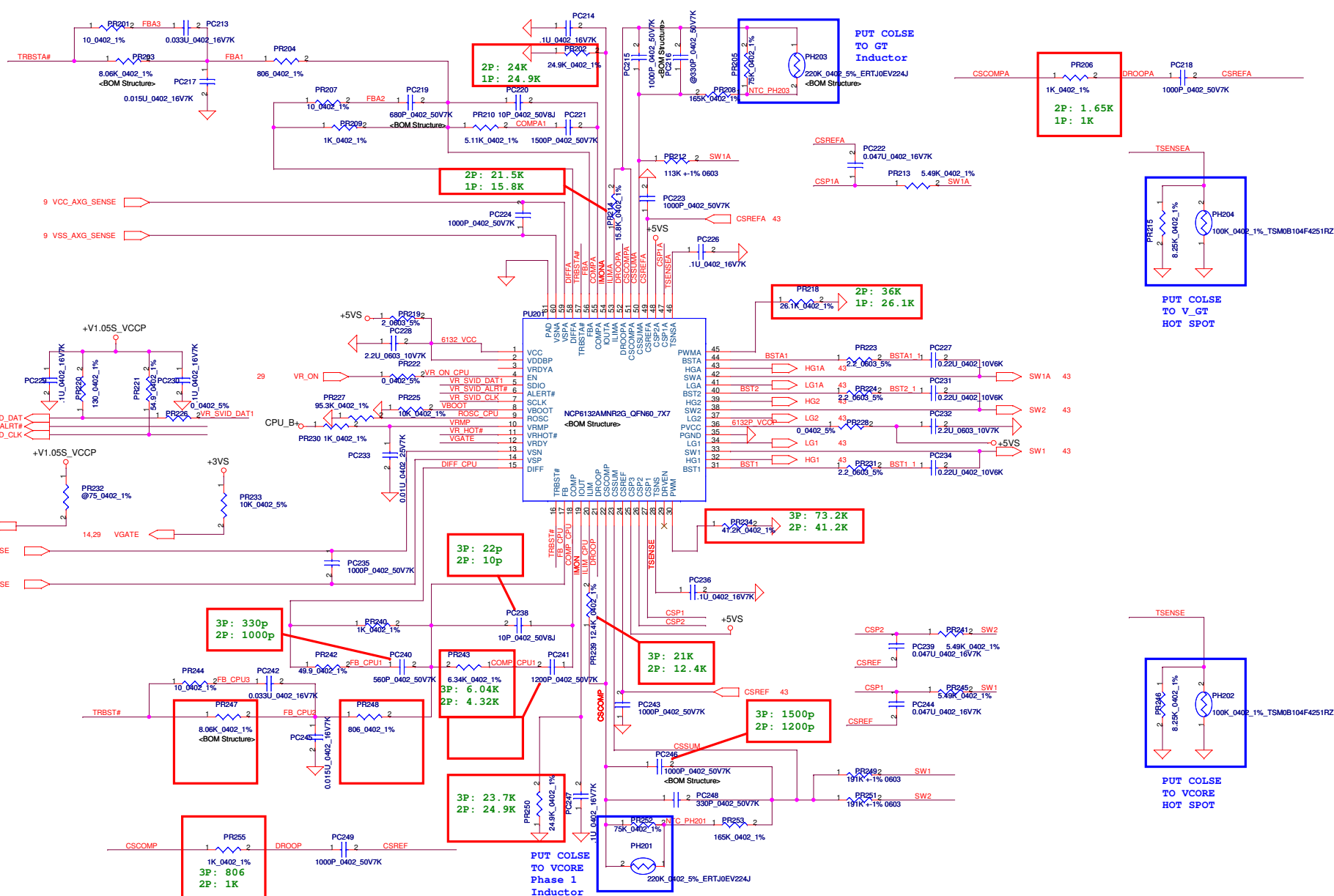
+VCC_SAP
TDC 4.2A
Peak Current 6A
OCP current 7.2A

+5VS ○ 1 PR272 2 @0_0402_5% CSP1A

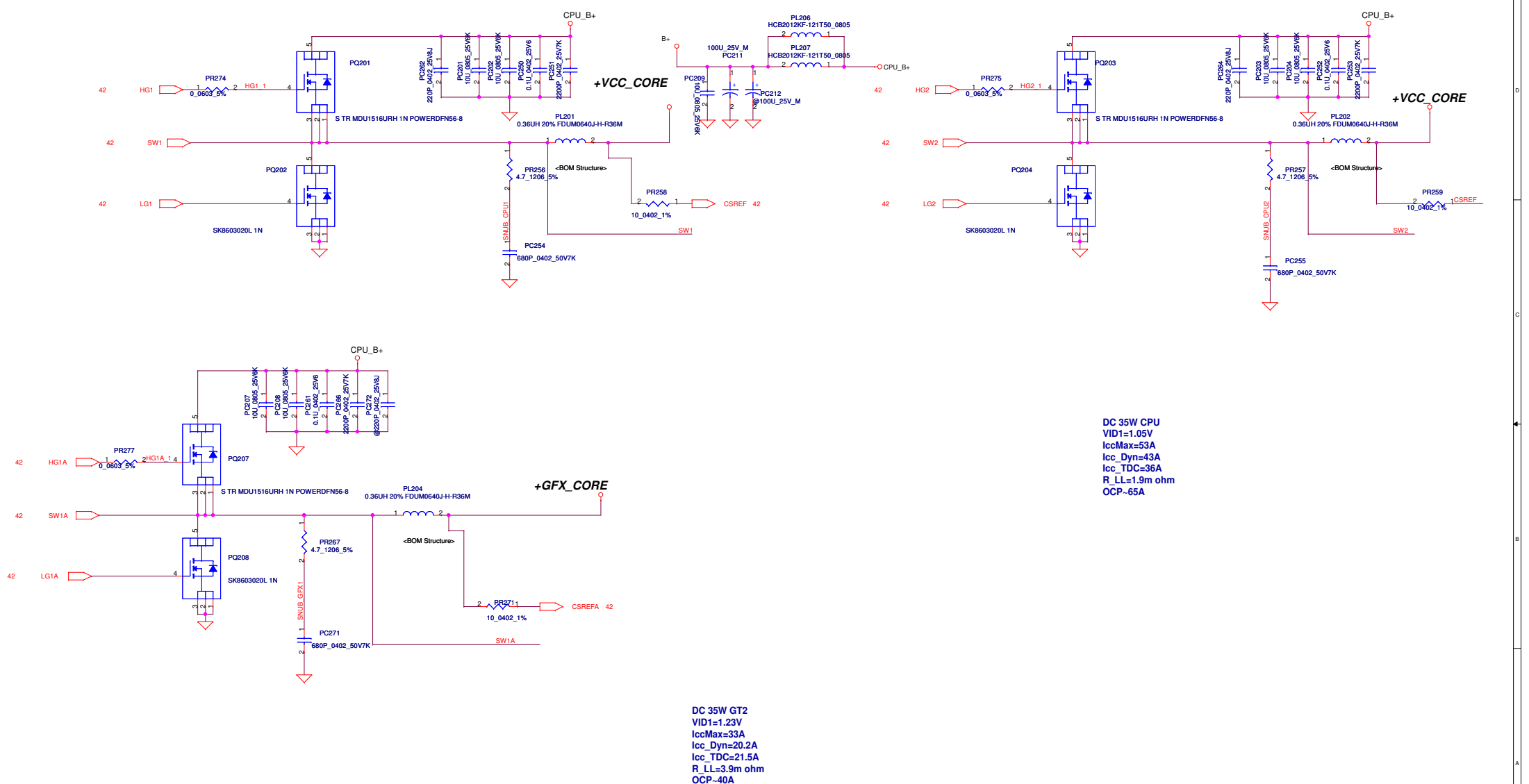
VSPA, VSNA to GND (HW side). FBA and COMPA are short.

VSPA, VSNA to GND (HW side).	FBA and COMPA are short.
CSREFA, TSNSA, IOUTA to GND.	CSCOMPA, CSSUMA, DROOPA are short.

DIS only:
All AXG components are @.
Except
PR272 and PR273 are 0ohm.
PC223, PC226, PR202 are 0ohm.
PC220, PC215, PR206 are 0ohm.



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				PWR-CPU CORE				
				Size Custom	Document Number		Rev	
				PBL22 1A-7391P M/B		0.1		
Date:		Tuesday, March 06, 2012		Sheet	42 of 46			

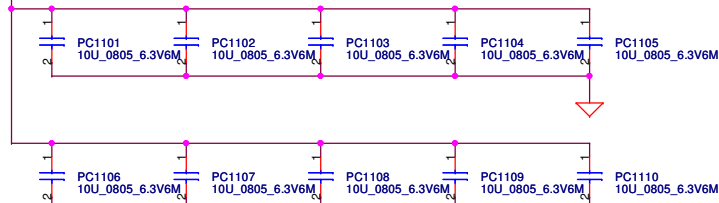


DC 35W CPU
VID1=1.05V
IccMax=53A
Icc_Dyn=43A
Icc_TDC=36A
R_LL=1.9m ohm
OCP=65A

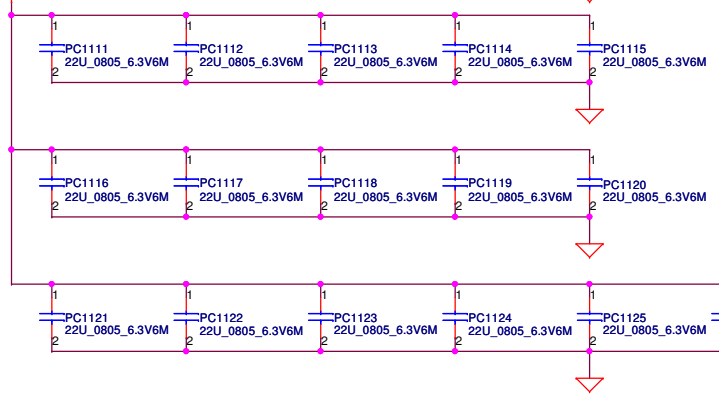
DC 35W GT2
VID1=1.23V
IccMax=33A
Icc_Dyn=20.2A
Icc_TDC=21.5A
R_LL=3.9m ohm
OCP=40A

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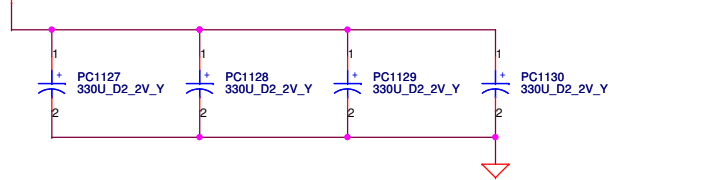
+VCC_CORE



+VCC_CORE



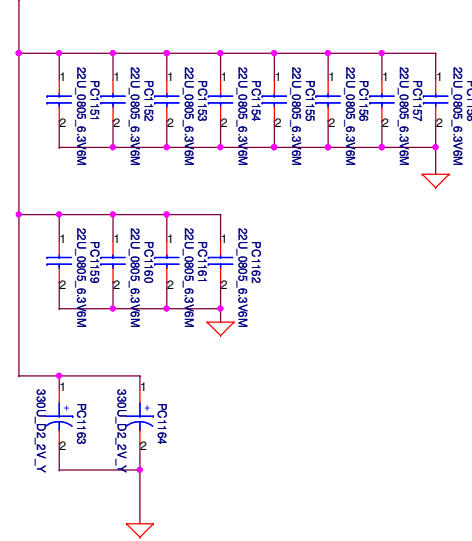
+VCC_CORE



+VCC_CORE

+GFX_CORE

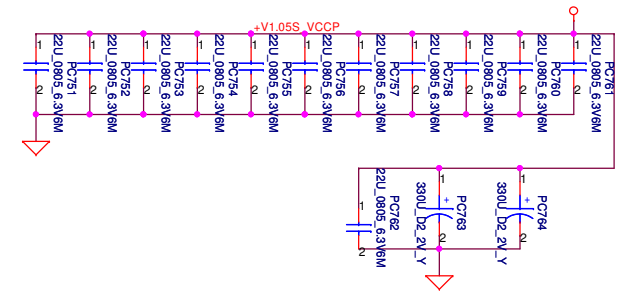
+GFX_CORE



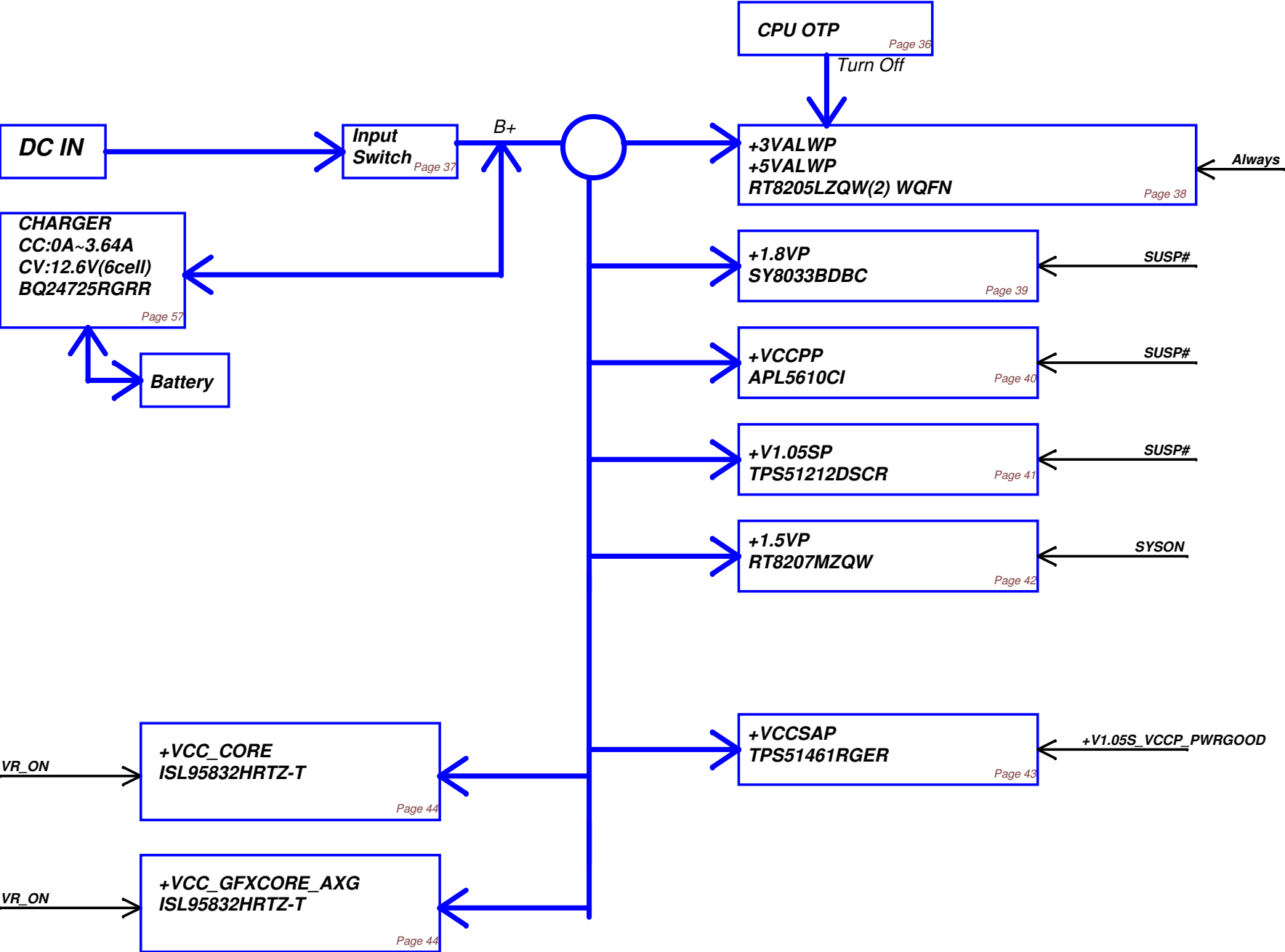
Below is 458544_CRV_PDDG_0.5 Table 5-8.

Socket Bottom	5 x 22 μ F (0805) 5 x (0805) no-stuff sites
Socket Top	7 x 22 μ F (0805) 2 x (0805) no-stuff sites

+V1.05S_VCCP



Power block



Item	Page #	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1					PR504 change from 15K to 15.4K		
2					charger IC change form bq24725A to bq24735		
3					PQ104,PQ303,PQ305,PQ701 charge form SIS412DN to MDW1528URH		
4					PQ306 charge from AON7702L to FDMC7692S		