

A B C D E

MODEL NAME : **QCL00_QCL20**

PCB NO : **LA-8241P**

BOM P/N : **4619GP31L21 Inspiron DIS**
4619GQ31L21 Inspiron UMA
4619GP31L01 Vostro DIS
4619GQ31L01 Vostro UMA

Dell / Compal Confidential

Schematic Document

**Inspiron A5 & Vostro 3560 (Intel Chief River)
Ivy Bridge(rPGA) + Panther Point(mainstream)**

Discrete AMD Thames-XT

46@ : for 46 level

@ : Nopop Component

CONN@ : Connector Component

KB930@ : ENE KB930 Implemented

KB9012@ : ENE KB9012 Implemented

EXP@ : Express Card Implemented

FFS@ : Only for Free Fall Sensor

VOS@ : Only for Vostro

INS@ : Only for Inspiron

UMA@ : Only for UMA

GCLK@ : Green CLK implemented

AMP@ : External Amplifier implemented

KBBL@ : Keyboard Back Light implemented

2012-02-01

Rev: 1.0

MB Type	BOM P/N	Config

X76@ : VRAM Group

CH@ : Chelsea M2

SE@ : Seymour M2

TH@ : Thames-XT

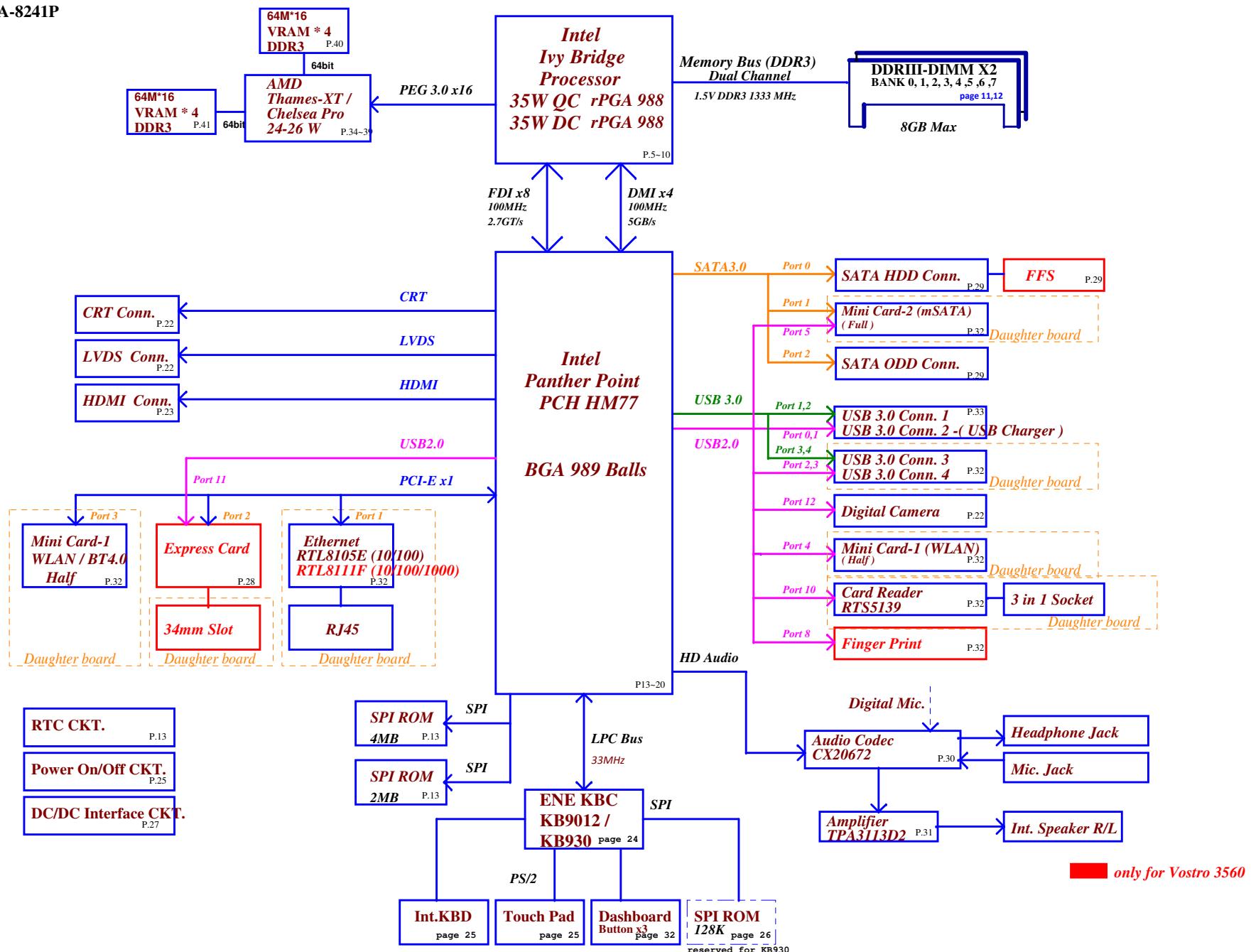
DIS@ : Only for Discrete

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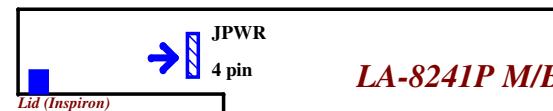
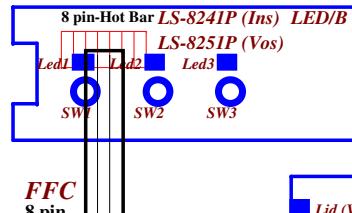
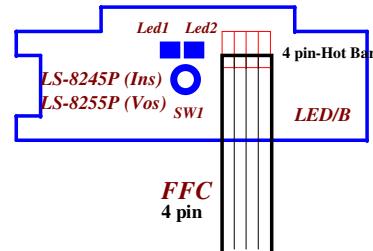


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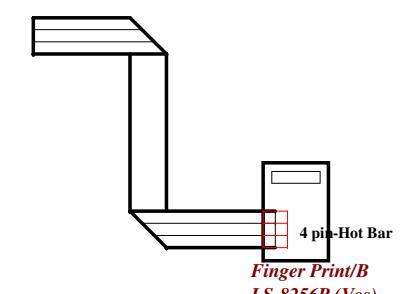
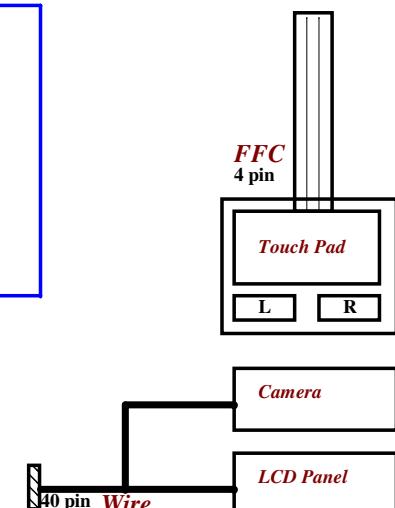
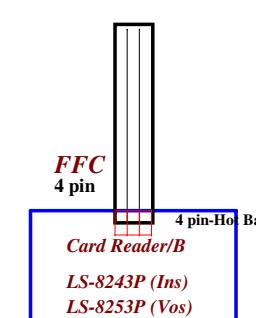
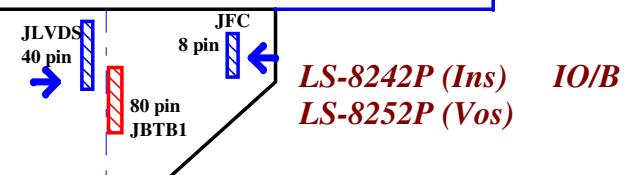
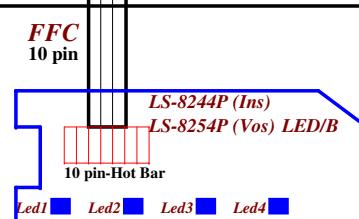
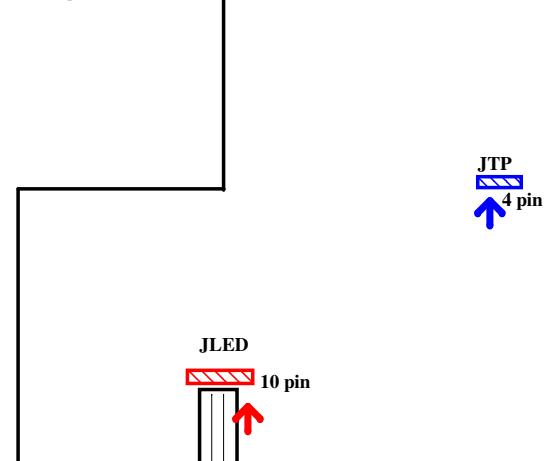
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LA-8241P M/B



Top Side
Bottom Side

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Board ID Table for AD channel

Vcc	3.3V +/- 5%
Ra	100K +/- 5%
Board ID	Rb
0	0
1	8.2K +/- 5%
2	18K +/- 5%
3	33K +/- 5%
4	56K +/- 5%
5	100K +/- 5%
6	200K +/- 5%
7	NC
	2.433 V
	3.300 V
	3.300 V
	0xBC-0xFF

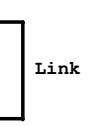
BOARD ID Table

Board ID	PCB Revision		
0	0.1		
1		0.1	
2	0.2		
3		0.2	
4	0.3		0.2
5		0.3	0.3
6	1.0		1.0
7		1.0	

QCL00 QCL20 QCL01

SMBUS Control Table

	SOURCE	MINI1	MINI2	BATT	SODIMM	Express Card	Thermal Sensor	FFS	VGA Thermal Sensor	VGA	XDP	Charger
EC_SMB_CK1 EC_SMB_DA1	KB9012			V								V
EC_SMB_CK2 EC_SMB_DA2	KB9012								V	V		
PCH_SML0CLK PCH_SML0DATA	PCH											
PCH_SML1CLK PCH_SML1DATA	PCH											
MEM_SMBCLK MEM_SMBDATA	PCH	V	V		V	V		V		V		



USB PORT#	DESTINATION
0	USB conn.1
1	USB conn.2 - Power Share
2	USB conn.3
3	USB conn.4
4	MINI CARD-1 (WLAN)
5	NC
6	NC
7	NC
8	Finger Print
9	NC
10	Card Reader
11	Express Card
12	Camera
13	NC

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

CLK	DIFFERENTIAL	DESTINATION	FLEX CLOCKS	DESTINATION
	CLKOUT_PCIE0	10/100/1G LAN	CLKOUTFLEX0	None
	CLKOUT_PCIE1	MINI CARD-1 WLAN	CLKOUTFLEX1	None
	CLKOUT_PCIE2	Express Card	CLKOUTFLEX2	None
	CLKOUT_PCIE3	None	CLKOUTFLEX3	None
	CLKOUT_PCIE4	None		
	CLKOUT_PCIE5	None		
	CLKOUT_PCIE6	None		
	CLKOUT_PCIE7	None		
	CLKOUT_PEG_B	None		

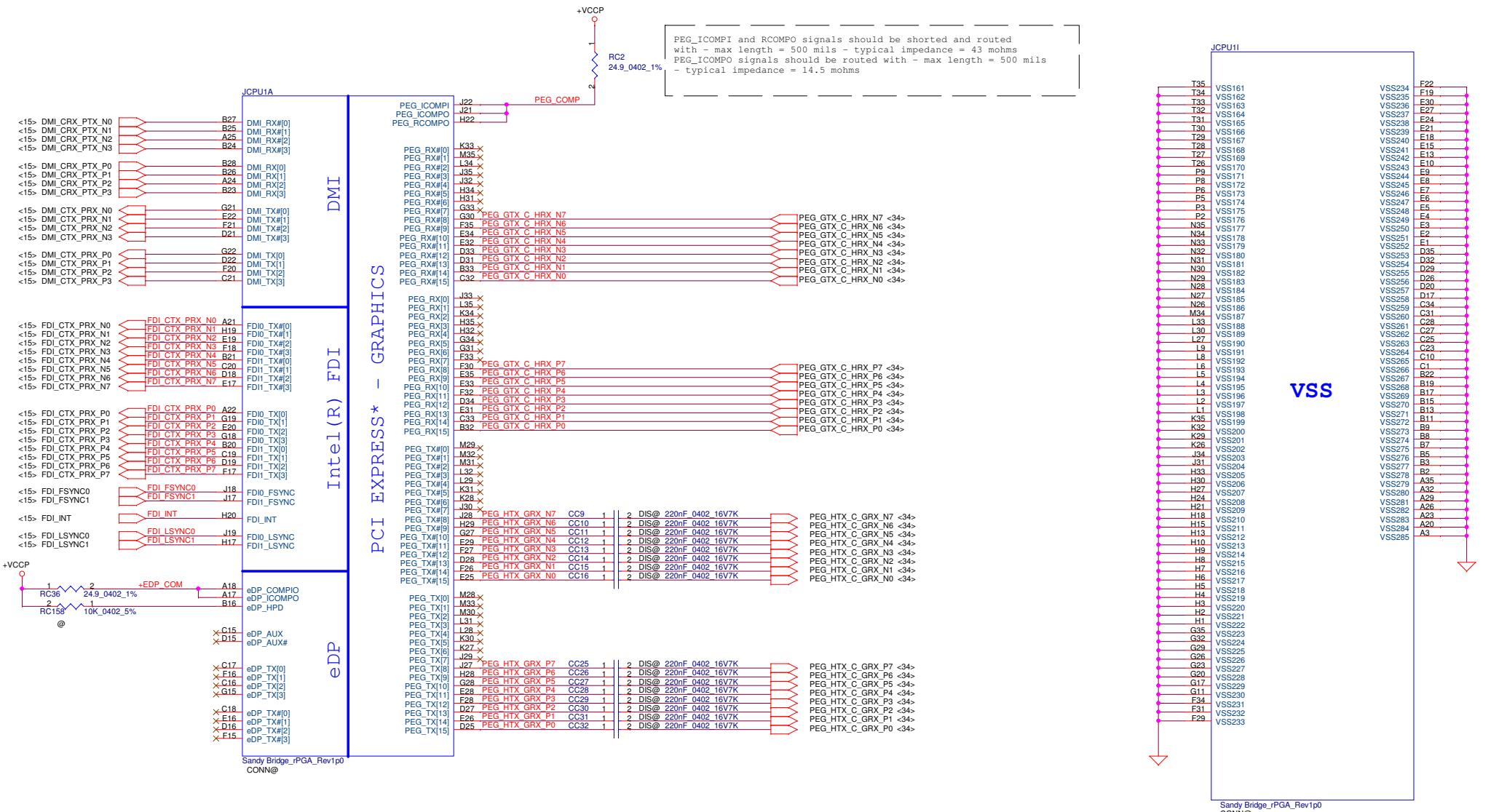
SATA	DESTINATION
SATA0	HDD
SATA1	SSD
SATA2	ODD
SATA3	None
SATA4	None
SATA5	None

Symbol Note :

: means Digital Ground

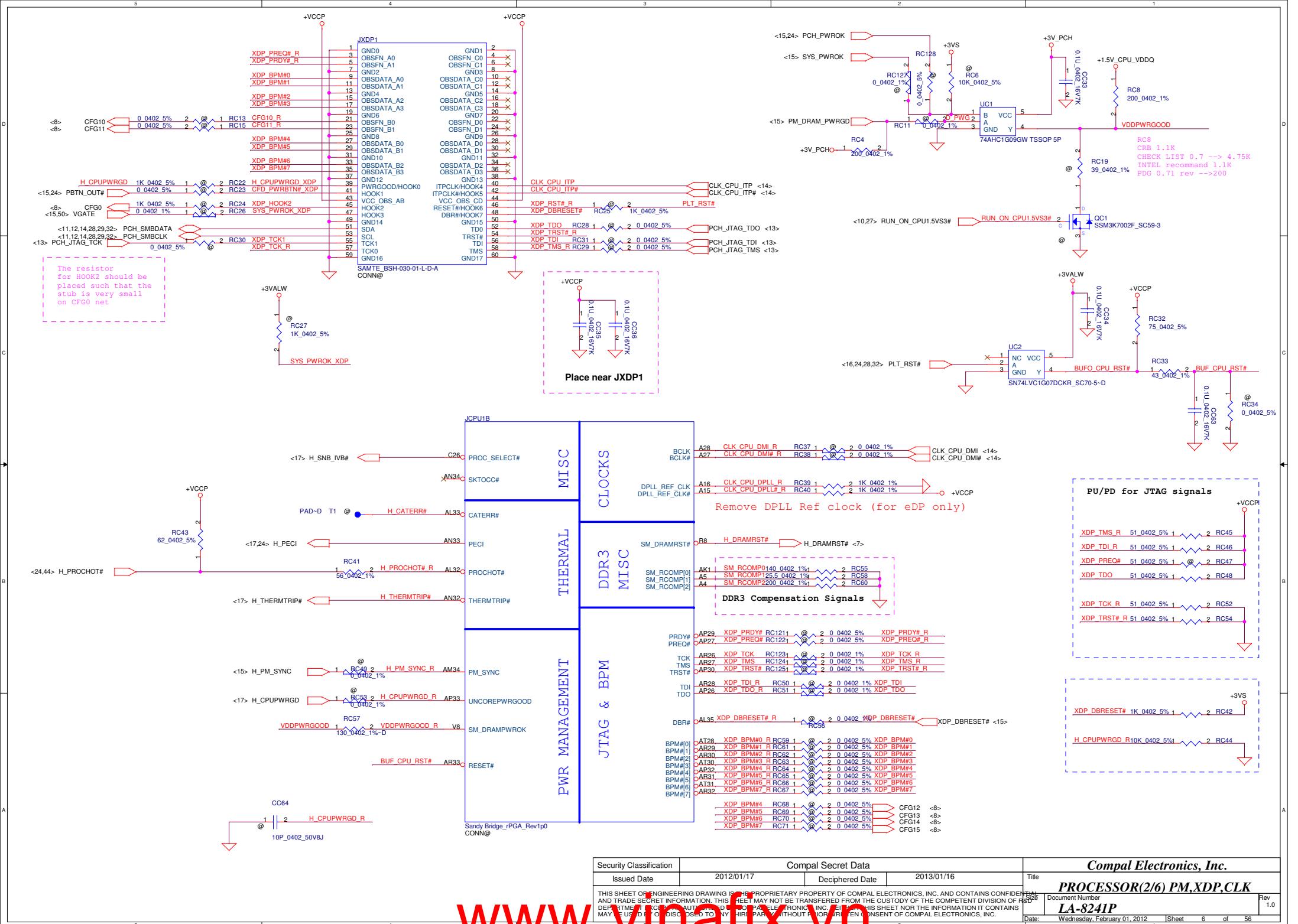
: means Analog Ground

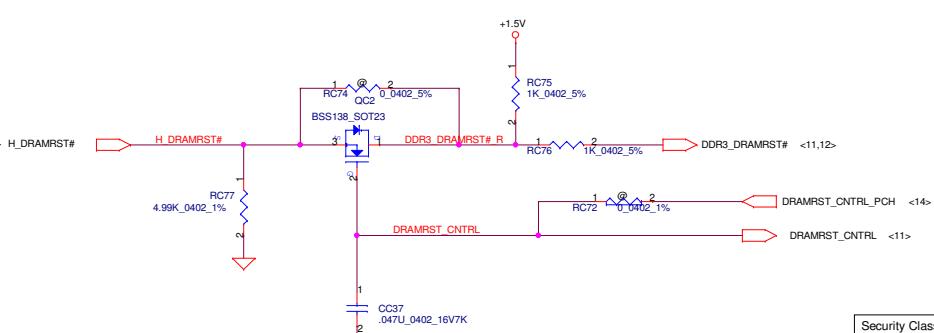
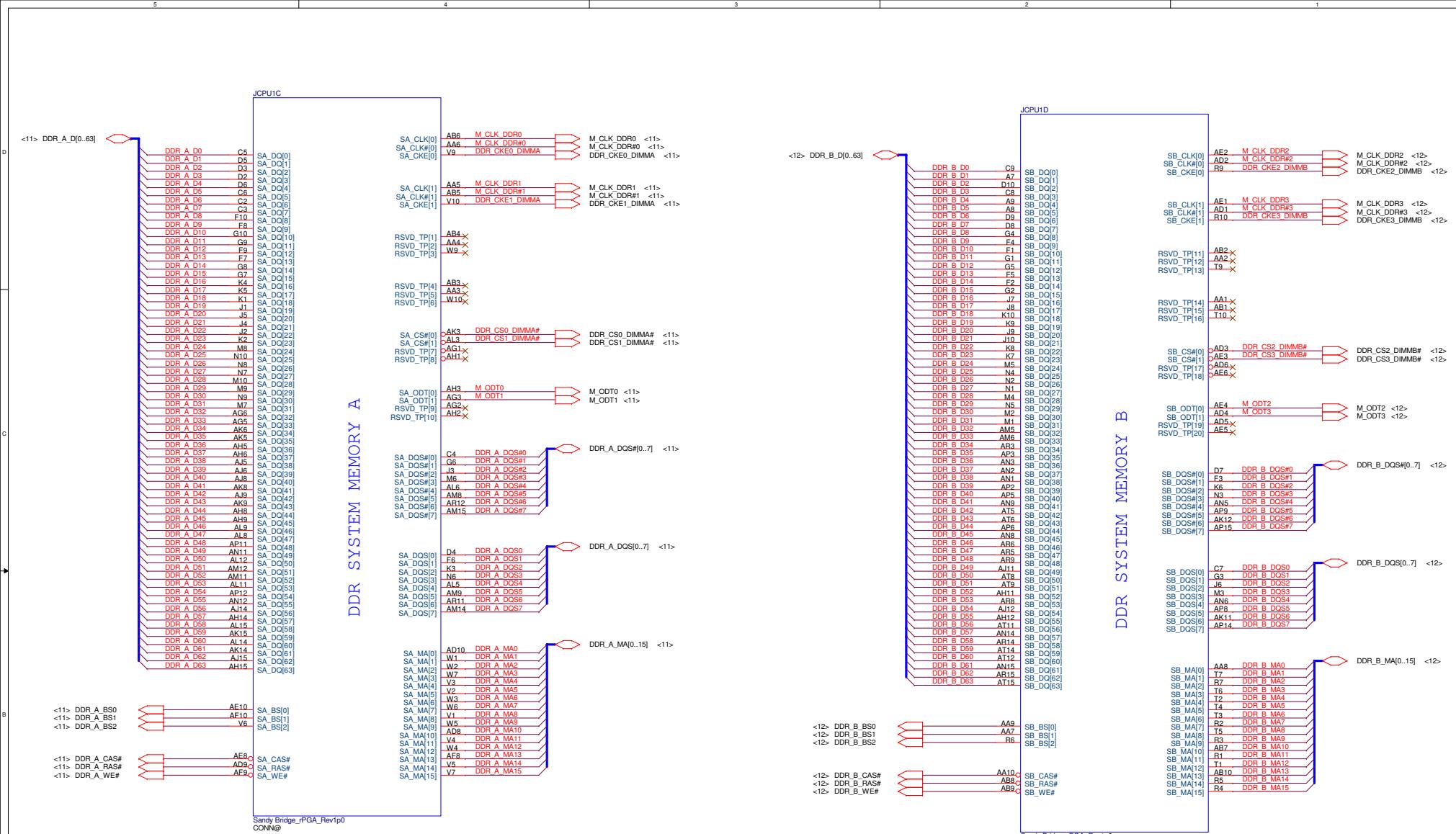
PCI EXPRESS	DESTINATION
Lane 1	10/100/1G LAN
Lane 2	MINI CARD-1 (WLAN)
Lane 3	Express Card
Lane 4	None
Lane 5	None
Lane 6	None
Lane 7	None
Lane 8	None



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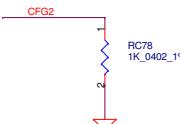
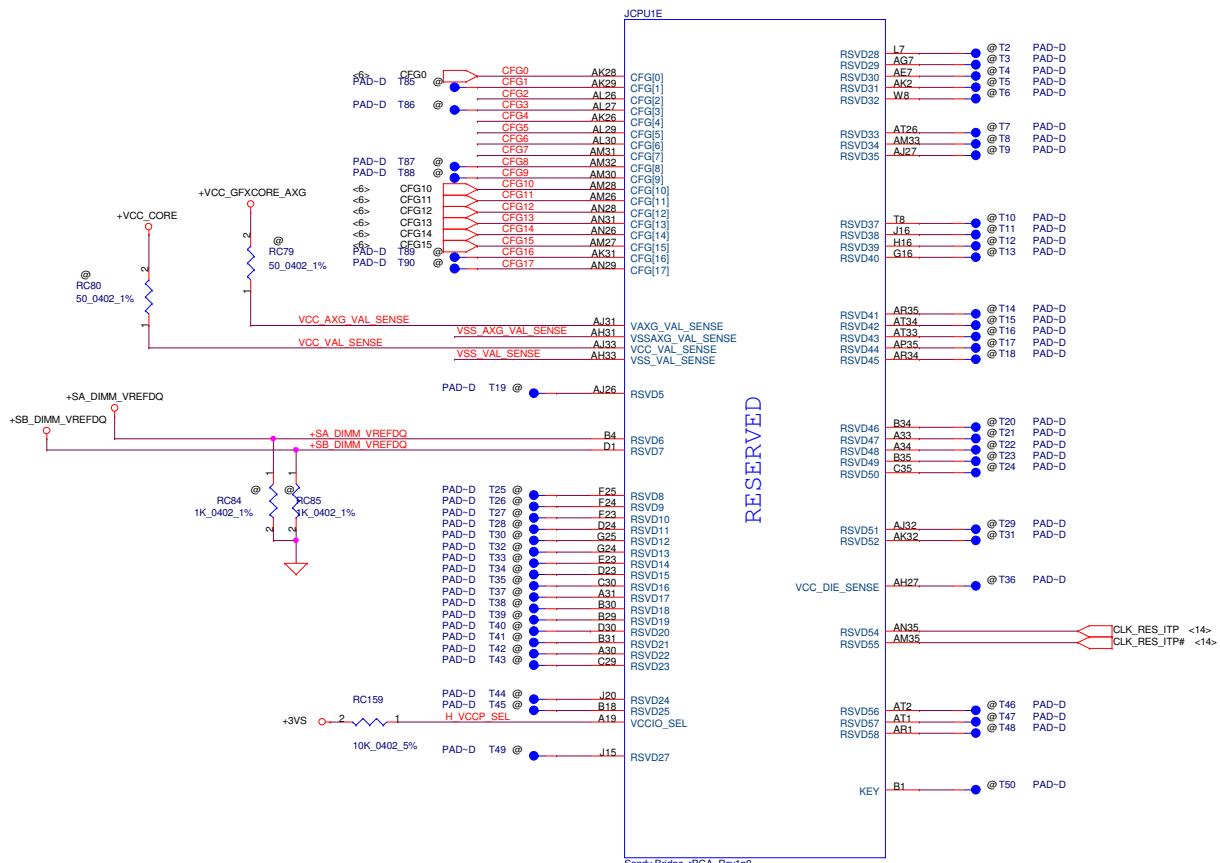




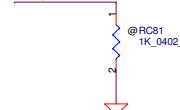
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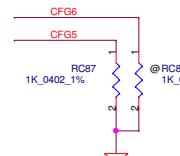
CFG Straps for Processor



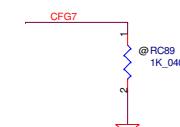
PEG Static Lane Reversal - CFG2 is for the 16x	
CFG2	1:(Default) Normal Operation; Lane # definition matches socket pin map definition ★0:Lane Reversed



Display Port Presence Strap	
CFG4	<ul style="list-style-type: none"> ★ 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



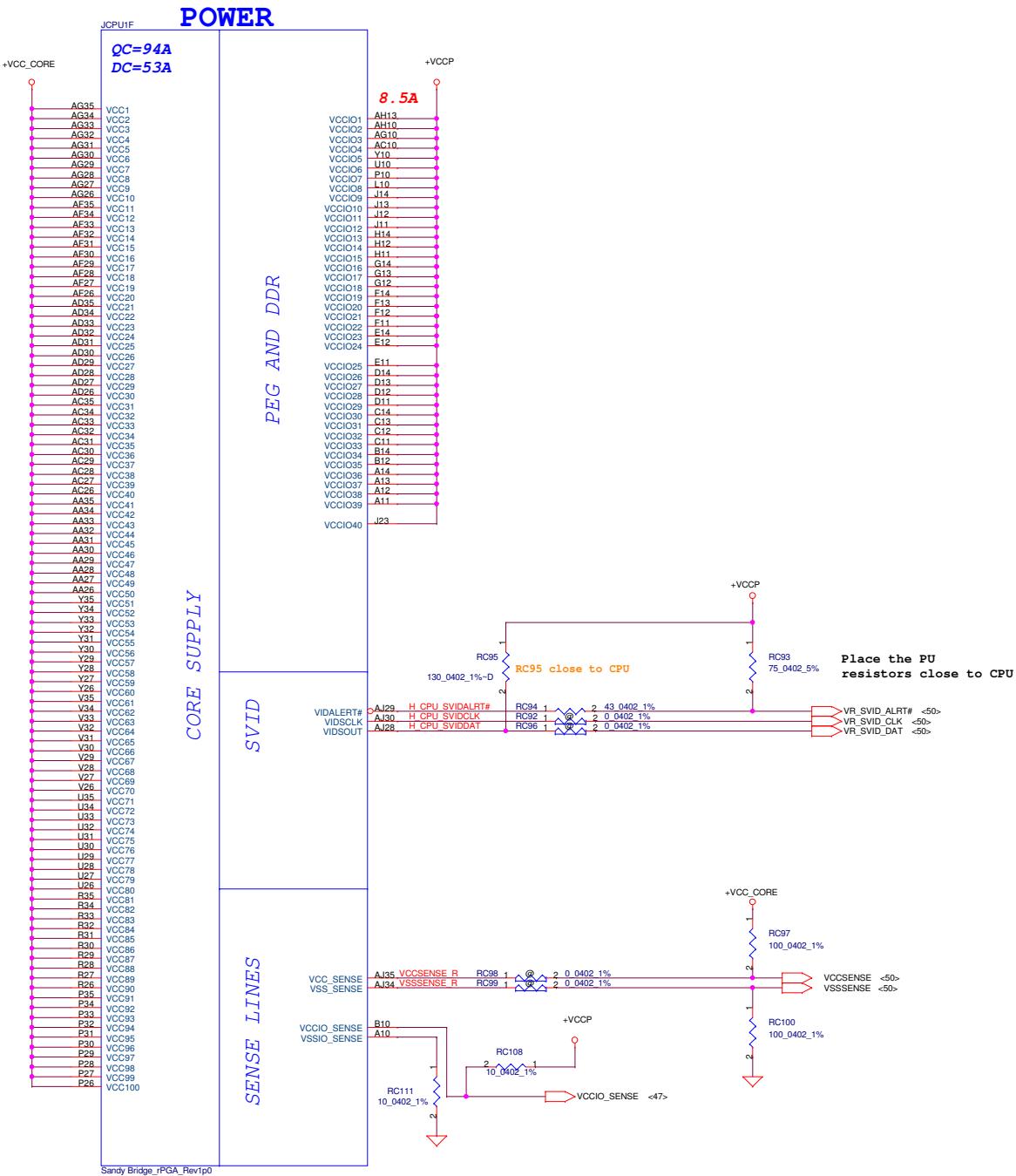
PCIE Port Bifurcation Straps	
CFG[6:5]	11: (Default) x16 - Device 1 functions 1 and 2 disabled
	*10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled
	01: Reserved - (Device 1 function 1 disabled ; function 2 enabled)
	00: x8,x4,x4 - Device 1 functions 1 and 2 enabled



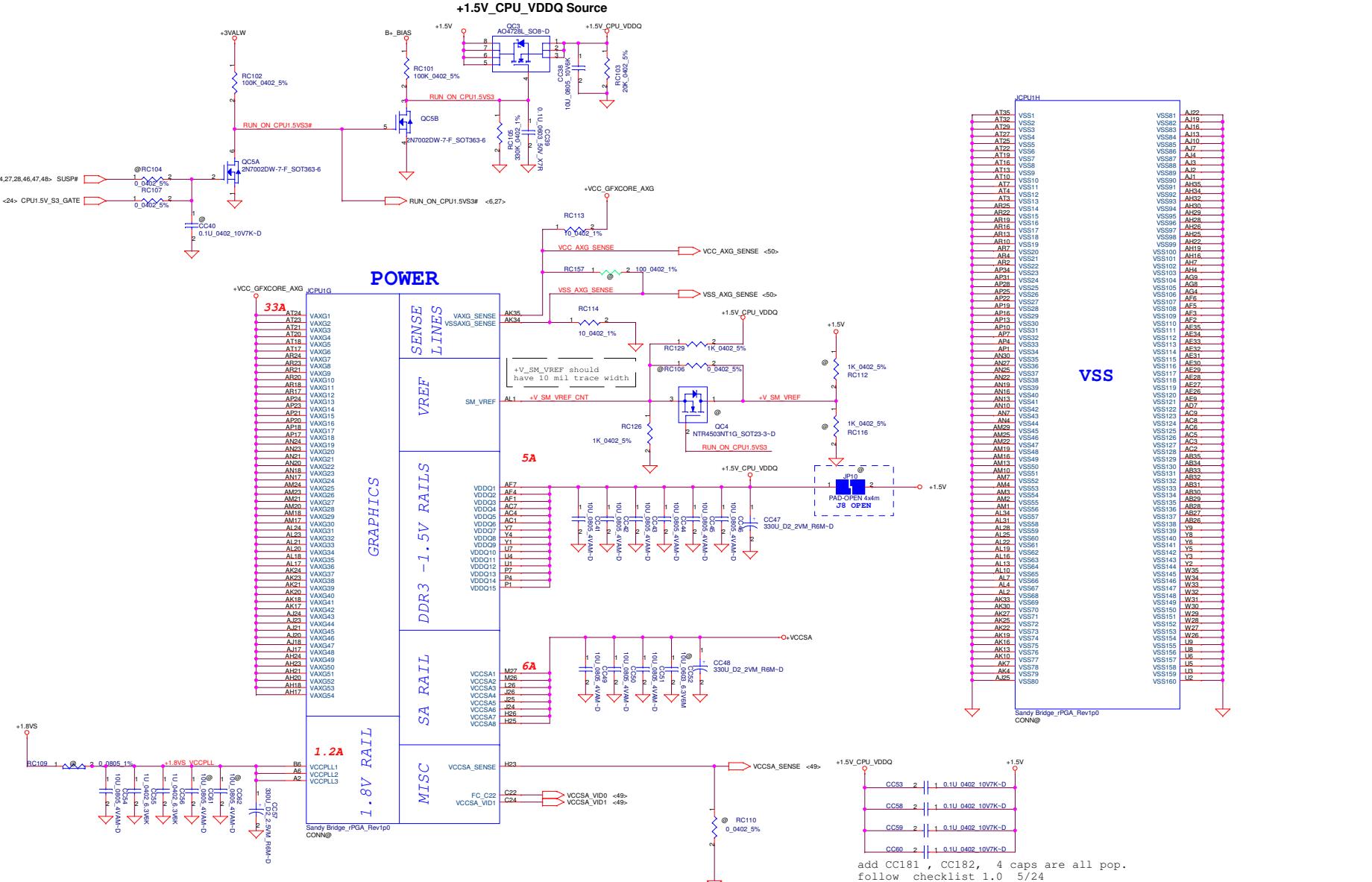
PEG DEFER TRAINING	
CFG7	<ul style="list-style-type: none"> *1: (Default) PEG Train immediately following xxRESETB de assertion 0: PEG Wait for BIOS for training

INTEL 12/28 recommand
to add RC120, RC121, RC122, RC123
Please place as close as JCPU1

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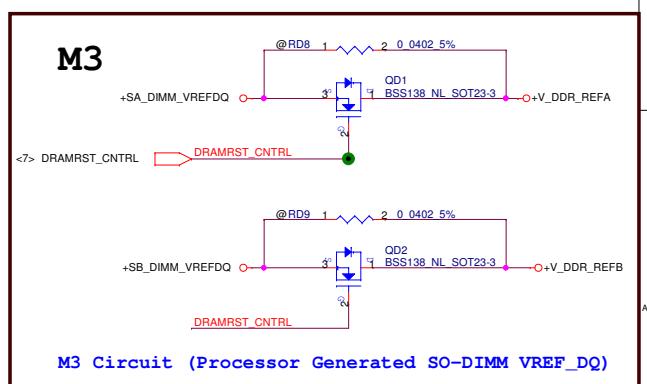
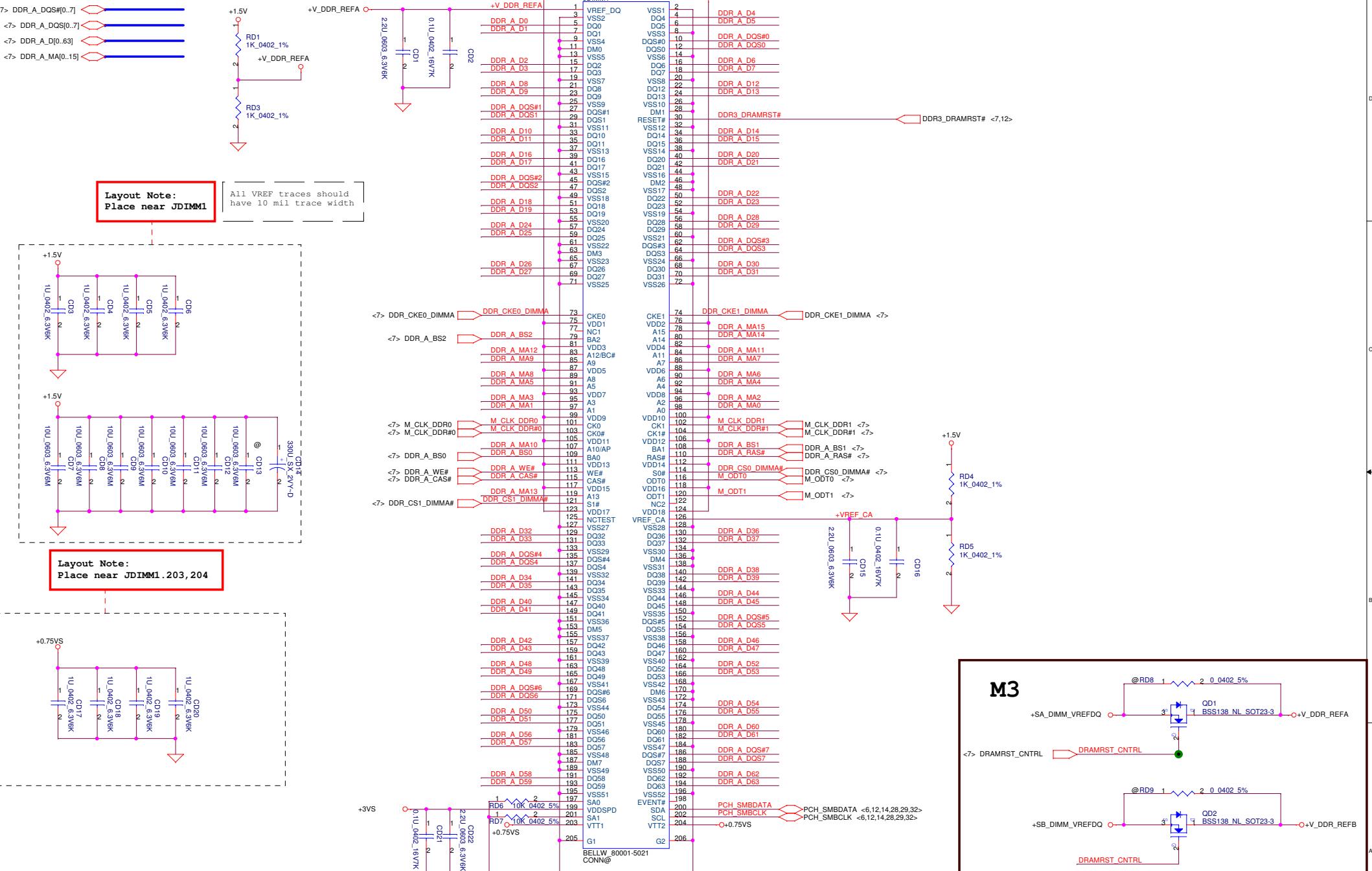


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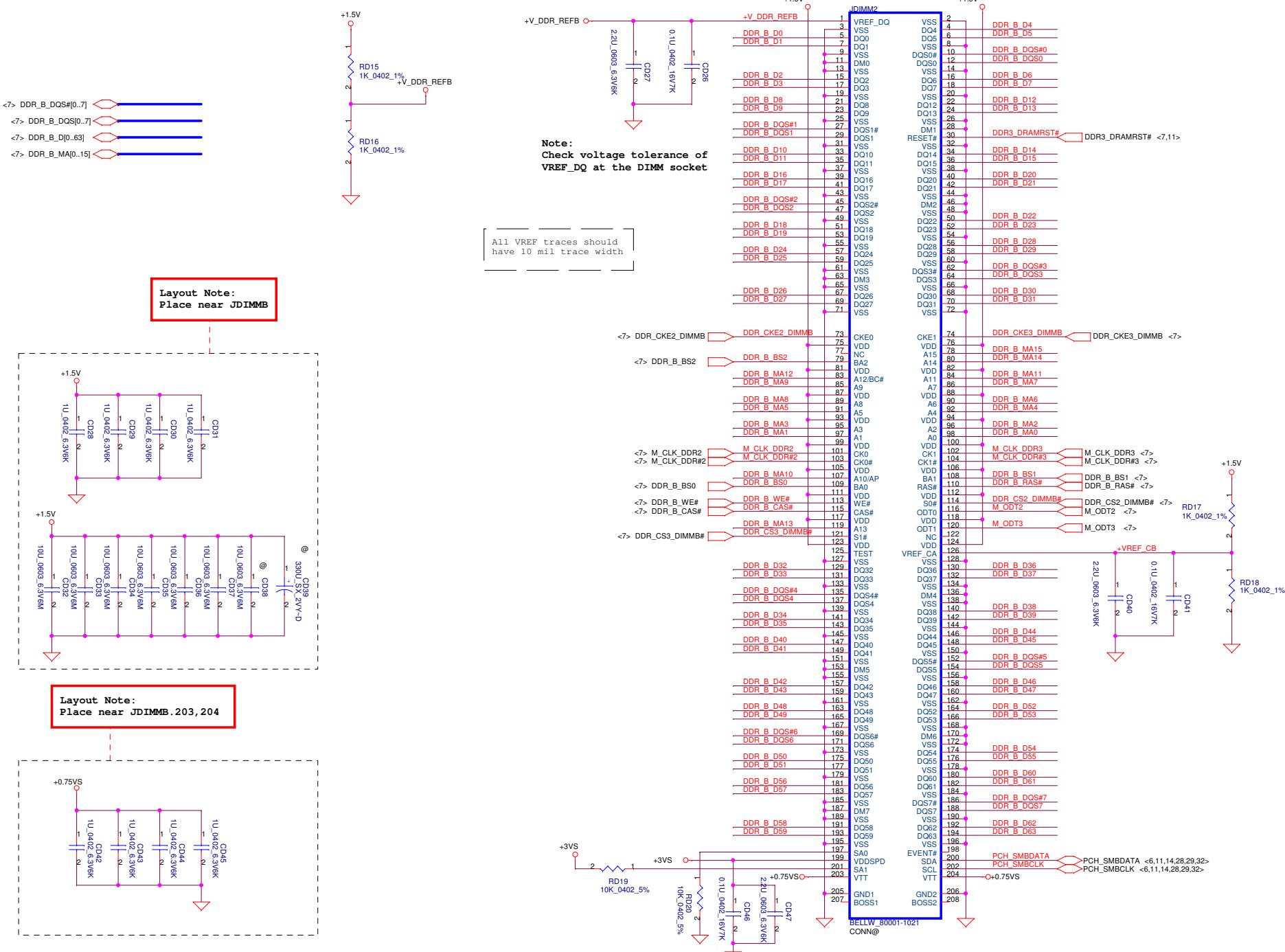


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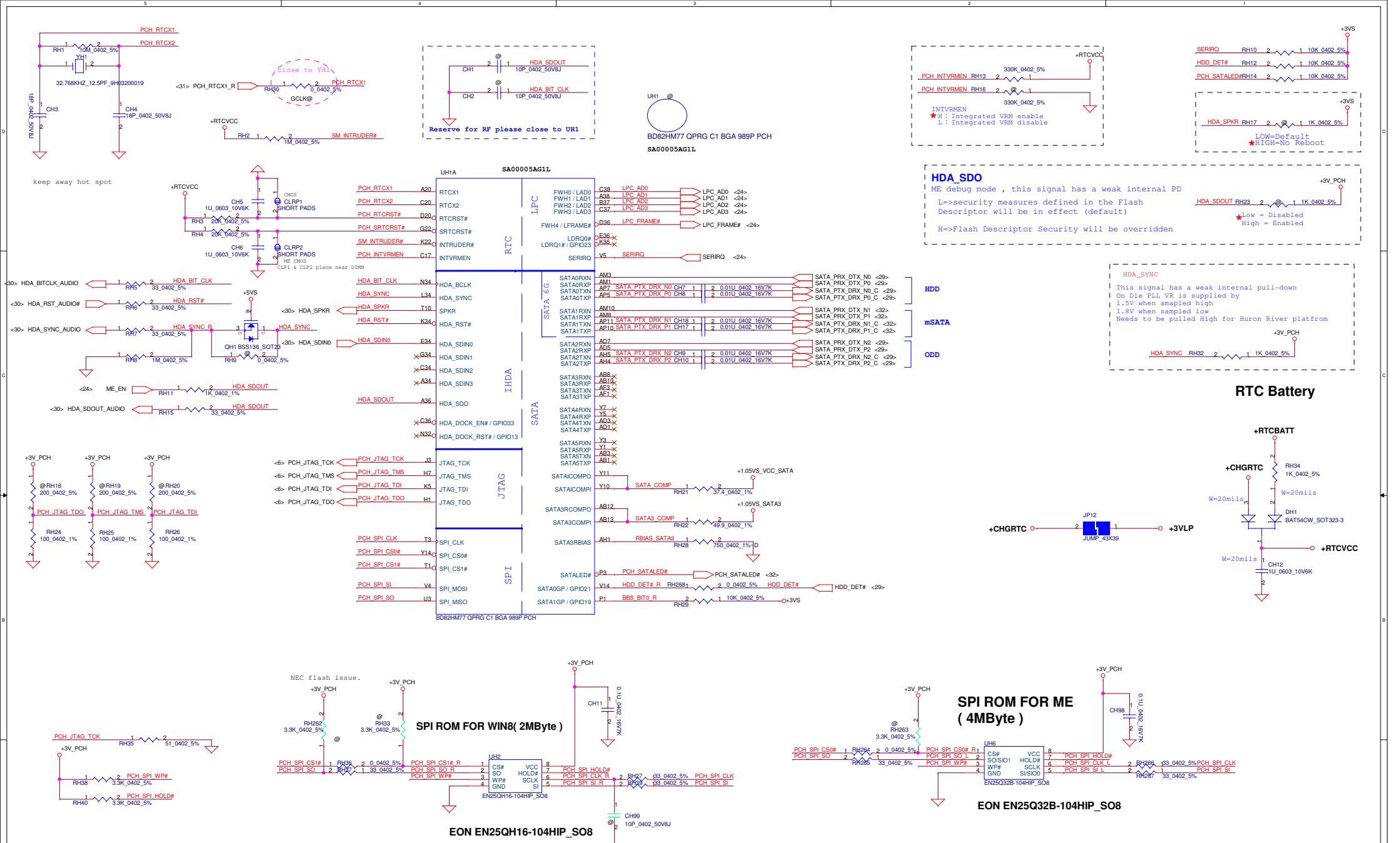
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2012/01/17	2013/01/16	PCH_SMBDATA <6,11,14,28,29,32>	PCH_SMBCLK <6,11,14,28,29,32>	DDRIII DIMMB

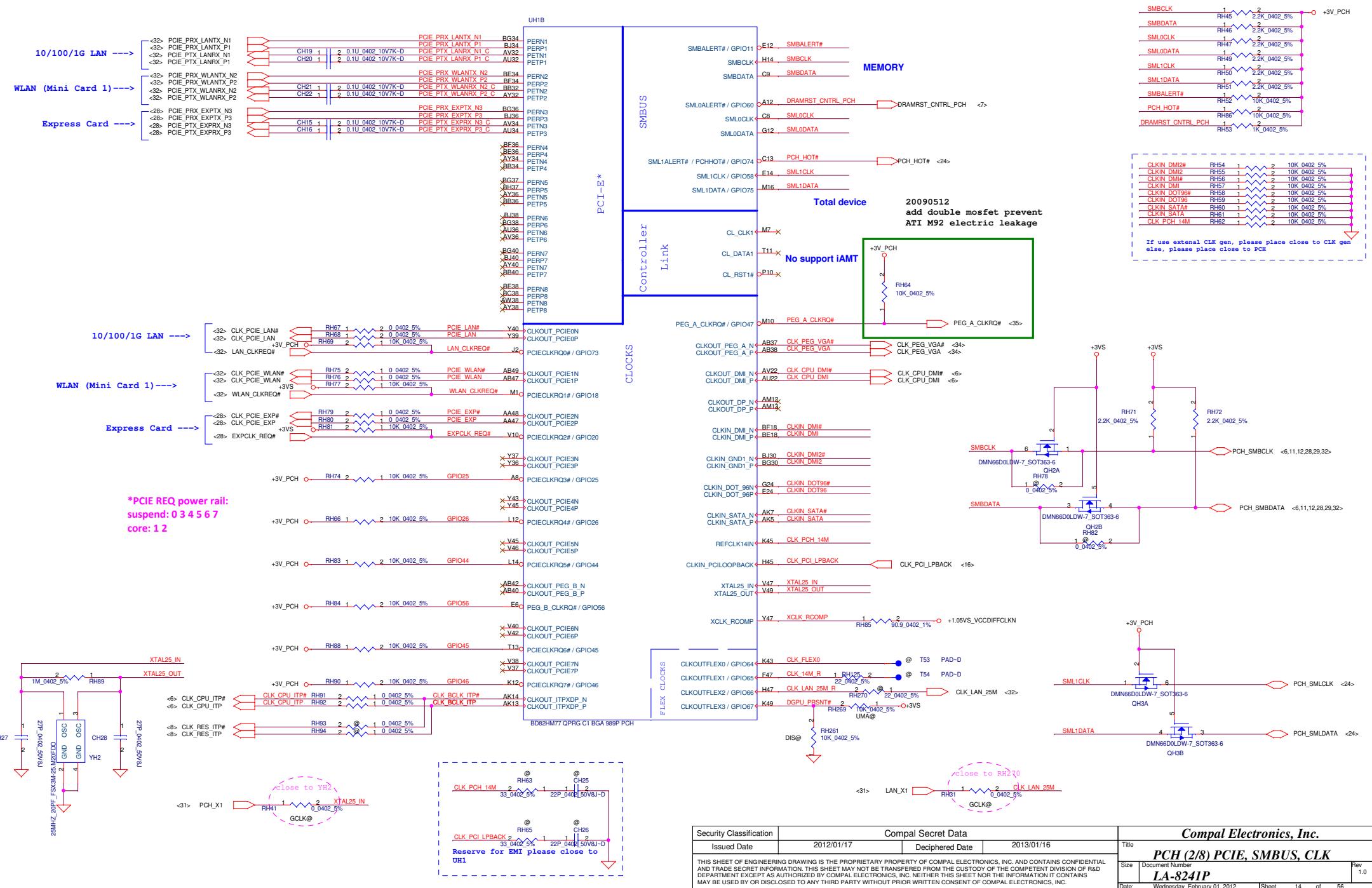
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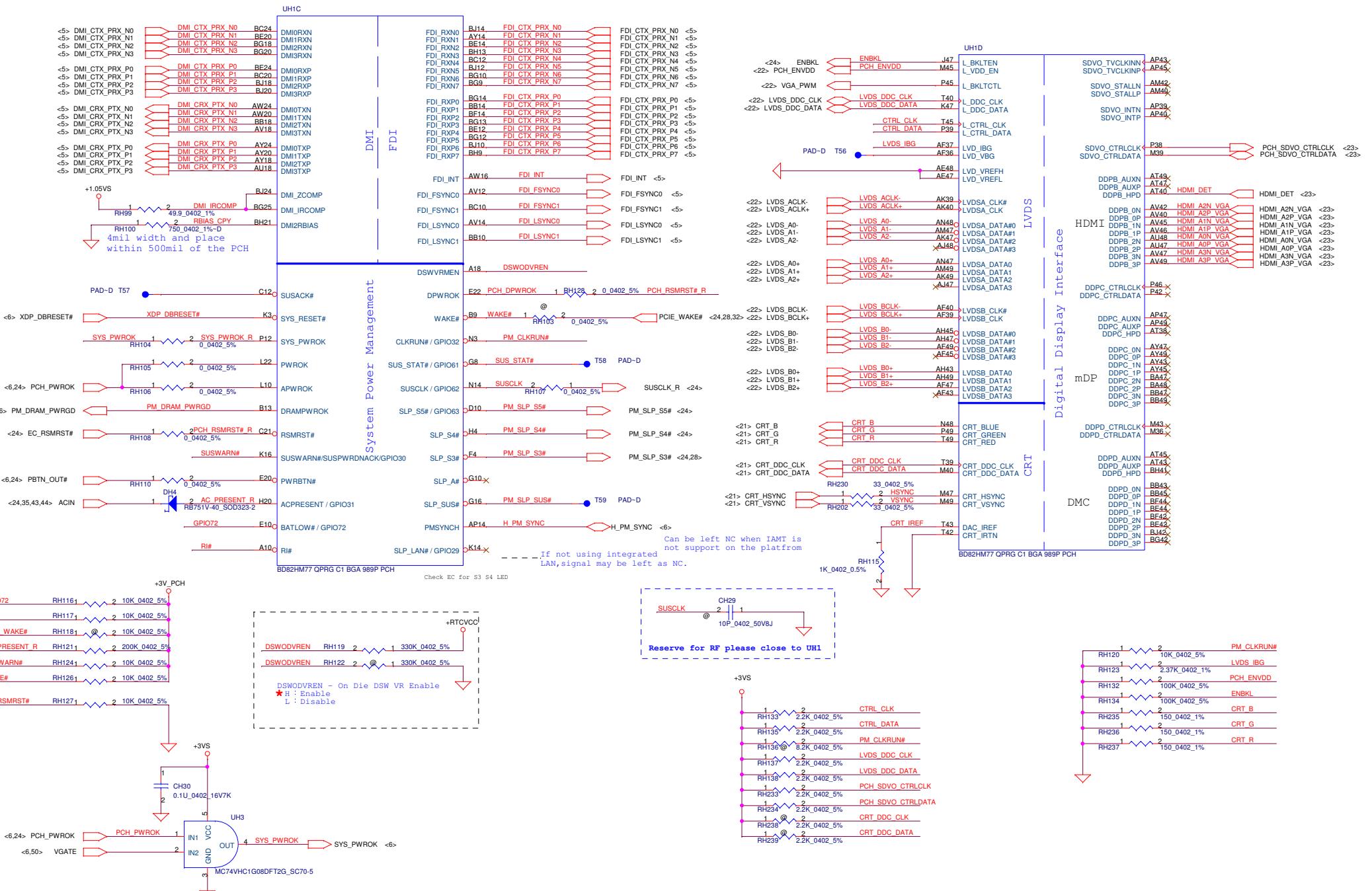
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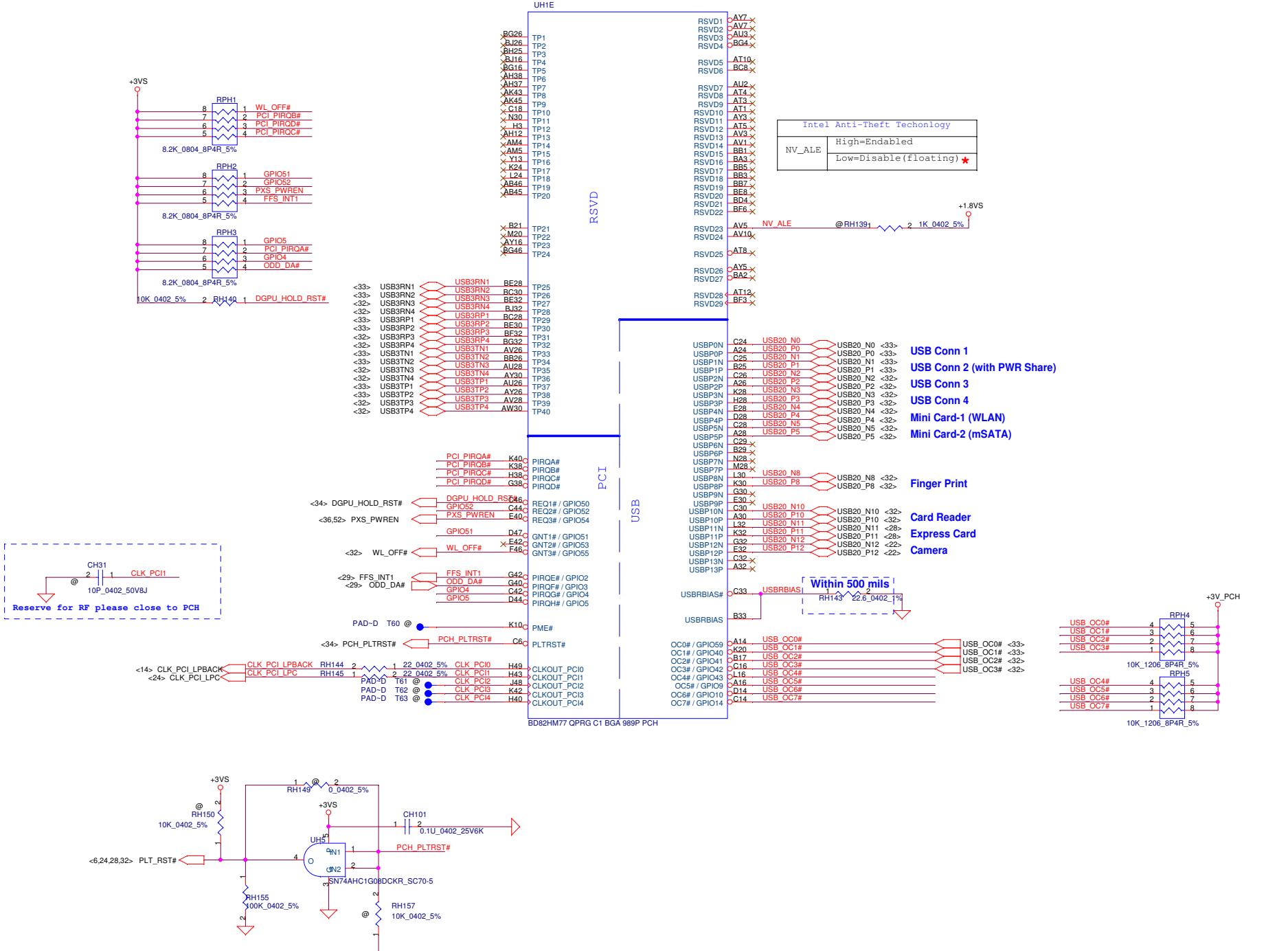
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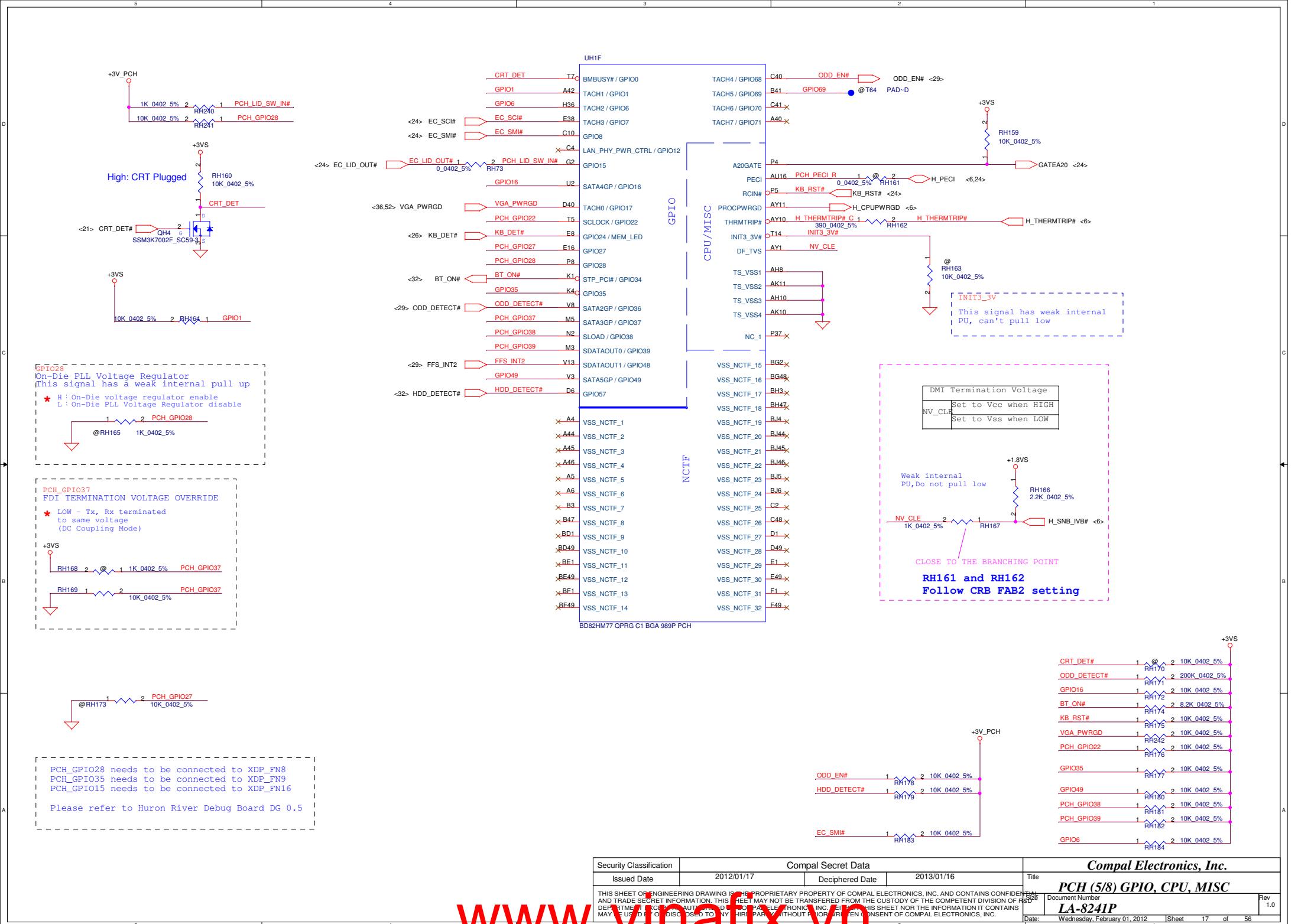


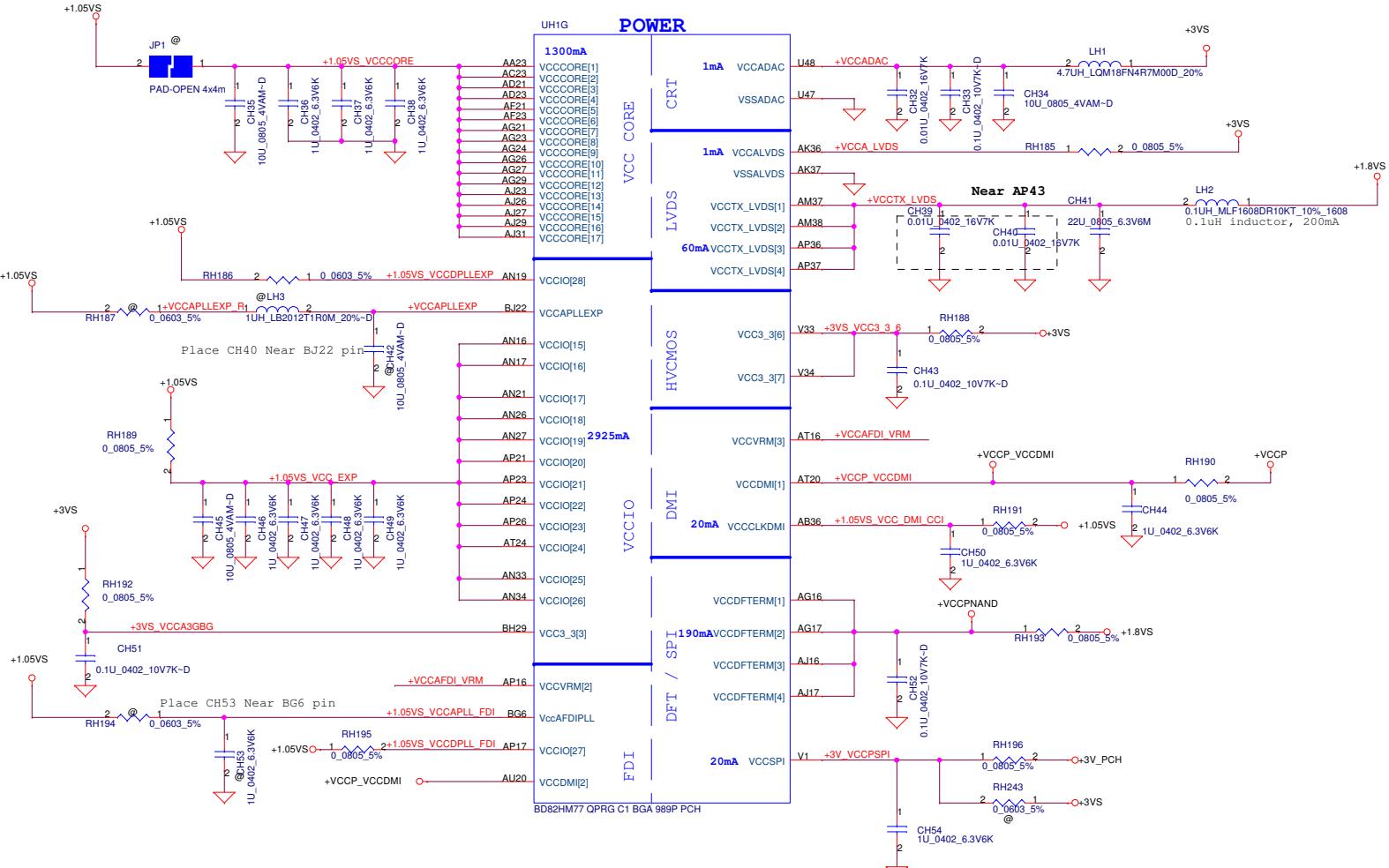
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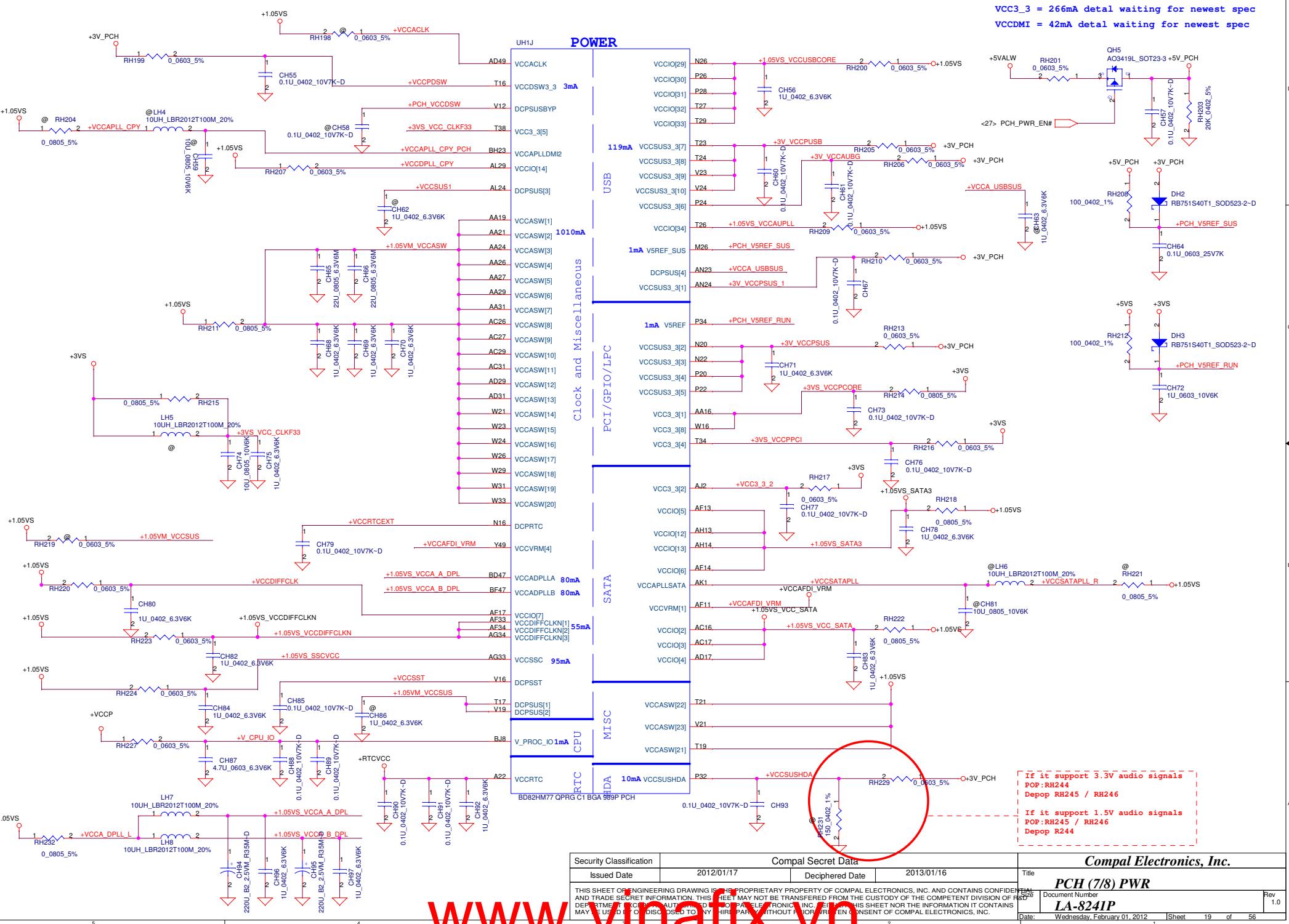
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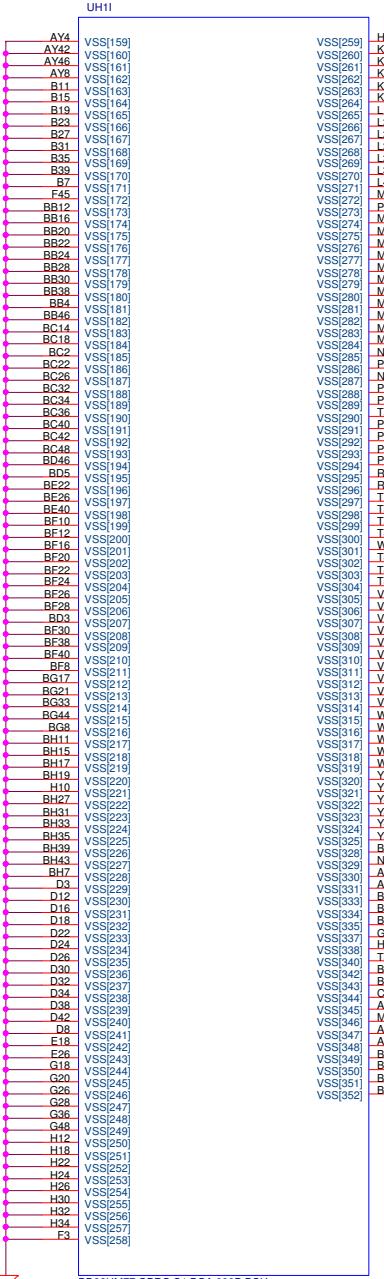
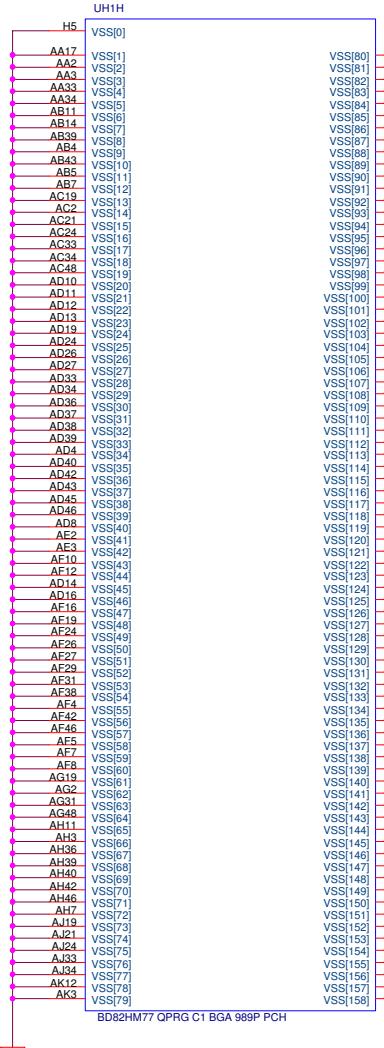


PCH Power Rail Table		
Voltage Rail	Voltage	S0 Iccmax Current (A)
V_Proc_IO	1.05	0.001
V5REF	5	0.001
V5REF_Sus	5	0.001
Vcc3_3	3.3	0.266
VccADAC	3.3	0.001
VccADPLL_A	1.05	0.08
VccADPLL_B	1.05	0.08
VccCore	1.05	1.3
VccDMI	1.05	0.042
VccIO	1.05	2.925
VccASW	1.05	1.01
VccSPI	3.3	0.02
VccDSW	3.3	0.003
VccNAND	1.8	0.19
VccRTC	3.3	6 uA
VccSus3_3	3.3	0.119
VccSusHDA	3.3 / 1.5	0.01
VccVRM	1.8 / 1.5	0.16
VccCLKDMI	1.05	0.02
VccSSC	1.05	0.095
VccDIFFCLKN	1.05	0.055
VccALVDS	3.3	0.001
VccTX_LVDS	1.8	0.06

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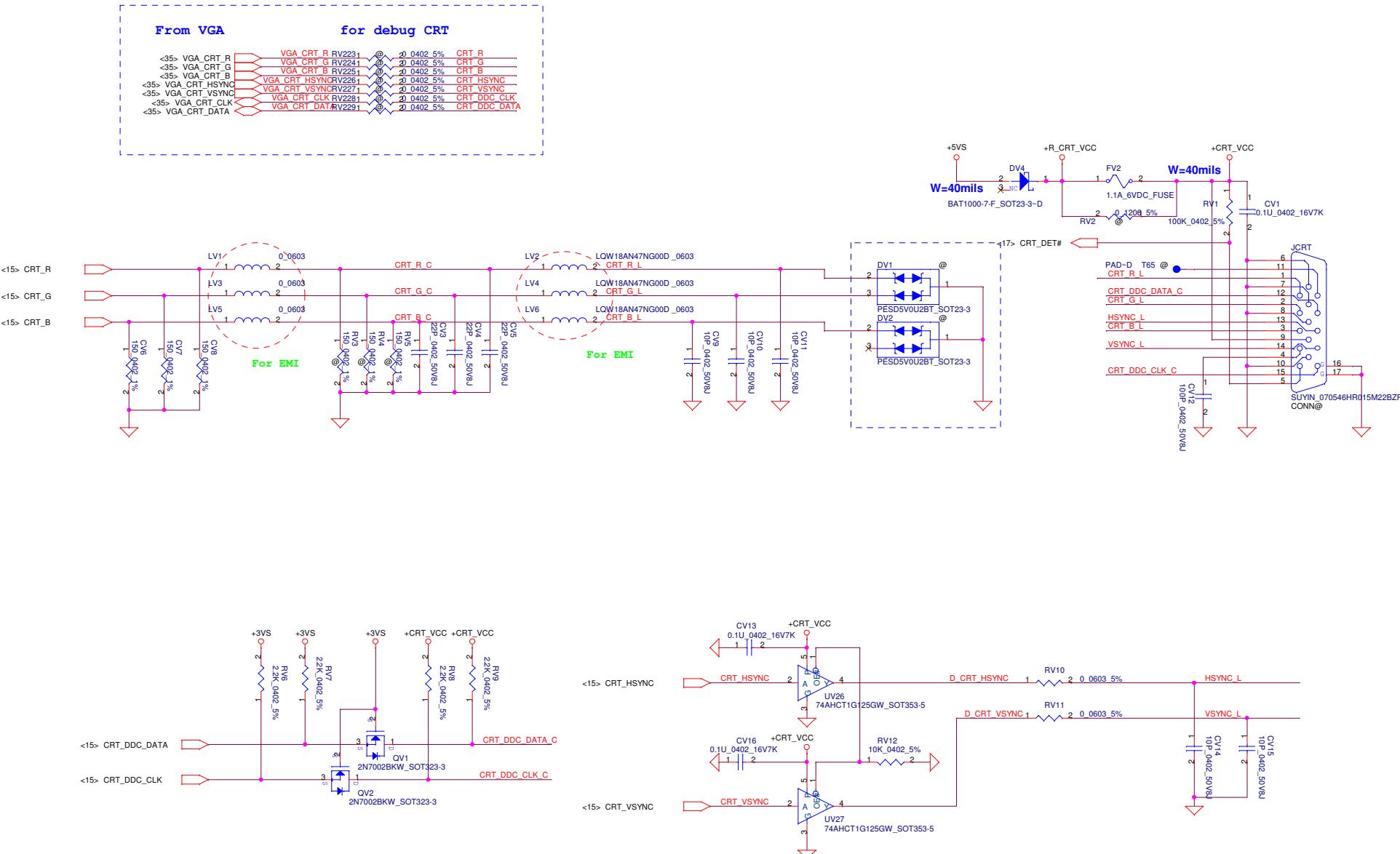


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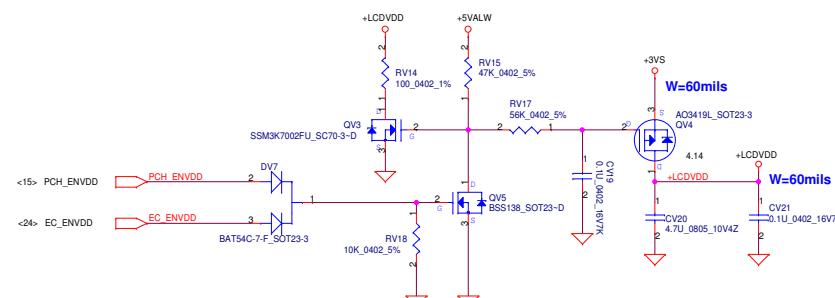
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2012/01/17			Document Number	LA-8241P	
			Rev	1.0	
				Date:	Wednesday, February 01, 2012
				Sheet	1
				of	56

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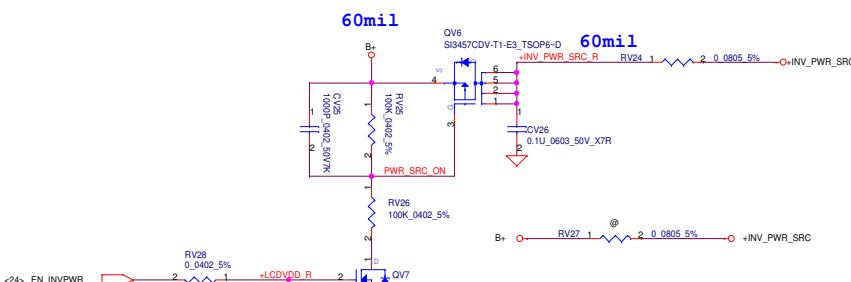


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2012/01/17 <th>Deciphered Date</th> <td>2013/01/16<th>Title</th><td>VGA / LVDS /camera conn.</td></td>	Deciphered Date	2013/01/16 <th>Title</th> <td>VGA / LVDS /camera conn.</td>	Title	VGA / LVDS /camera conn.
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Document Number	LA-8241P	Rev	1.0	Date:	Wednesday, February 01, 2012

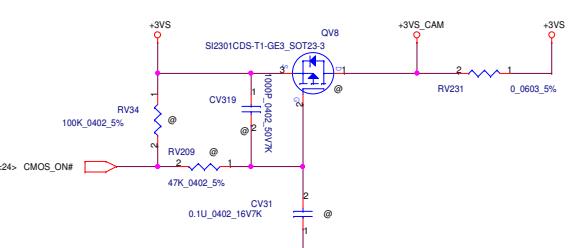
LCD PWR CTRL



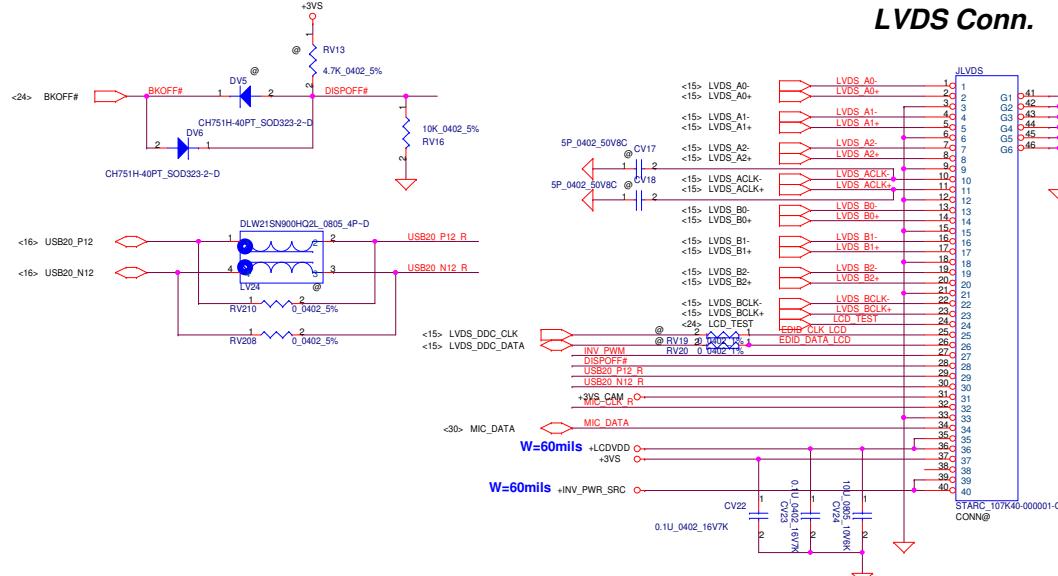
LCD backlight PWR CTRL



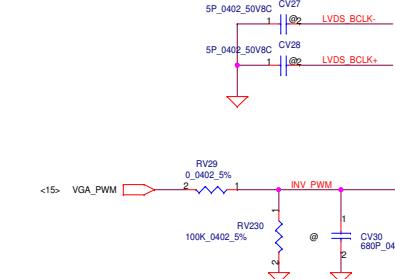
Wedcam PWR CTRL



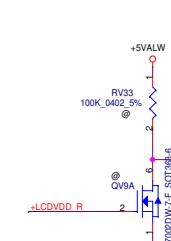
LVDS Conn.



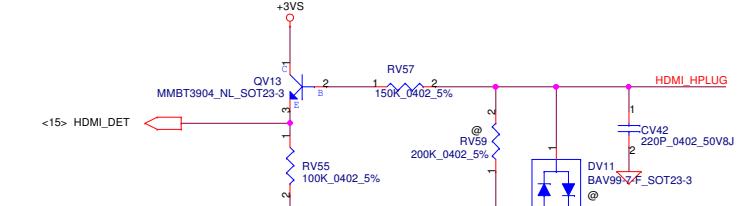
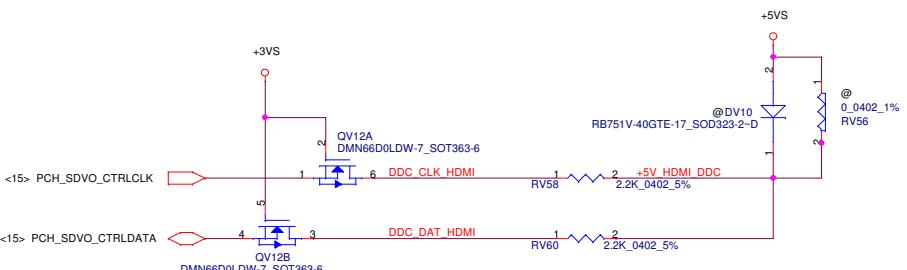
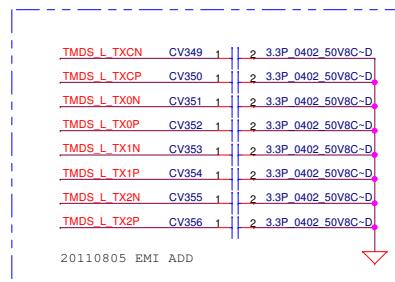
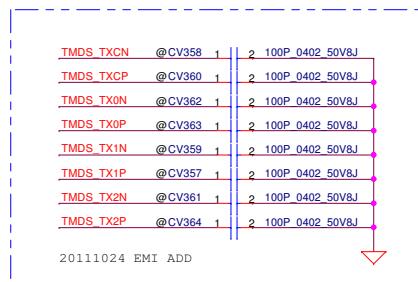
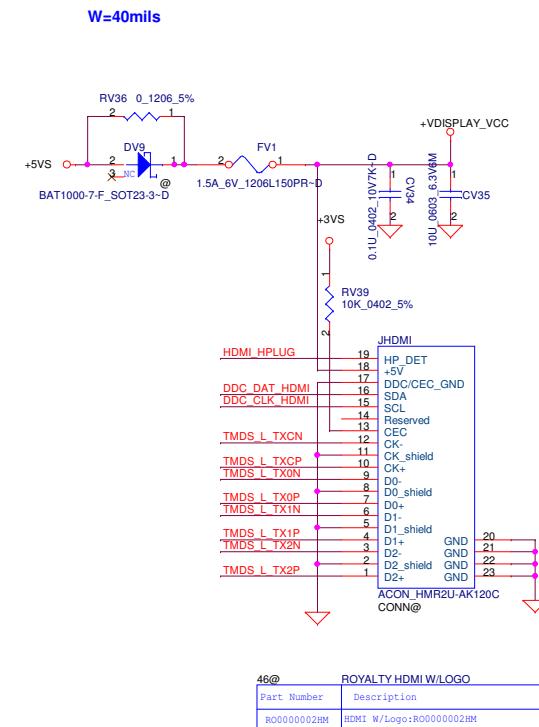
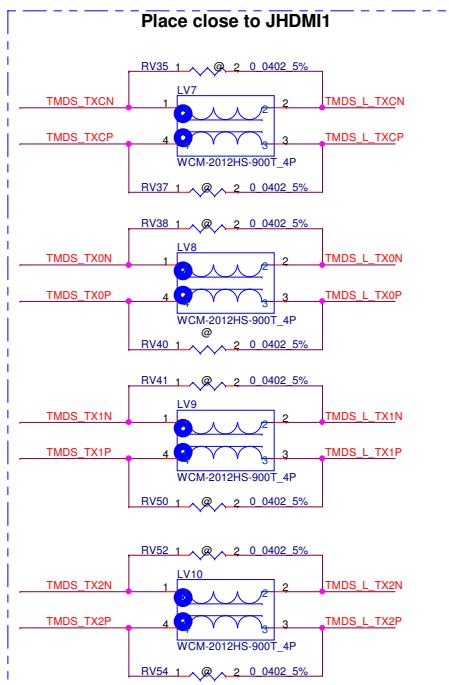
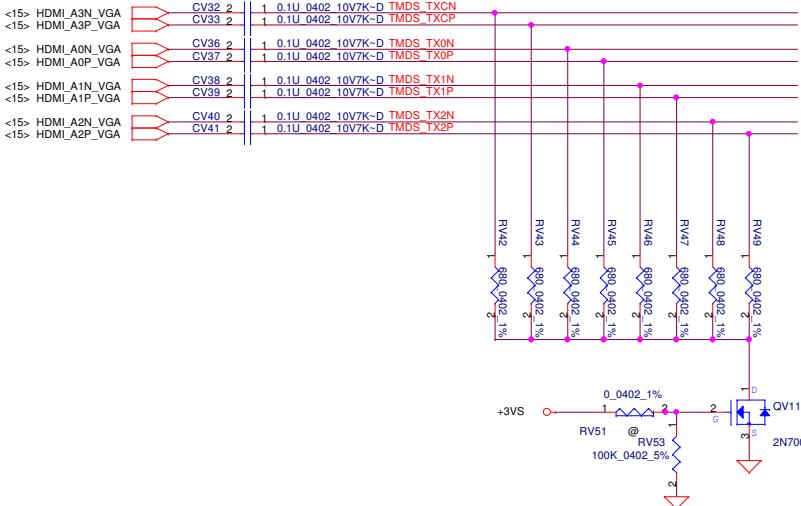
* Reserved for EMI/ESD/RF
need to close to JLVDS



* Reserved for LCD
sequence tuning



Security Classification	Compal Secret Data			Compal Electronics, Inc.
Issued Date	Deciphered Date	2013/01/16		Title
2012/01/17				LVDS /camera conn.
				Size Document Number Rev. 1.0
		LA-8241P		Date: Wednesday, February 01, 2012 Sheet 22 of 56



Compal Electronics, Inc.

HDMI

LA-8241P

Document Number: LA-8241P

Rev. 1.0

Custom

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Deciphered Date: 2013/01/16

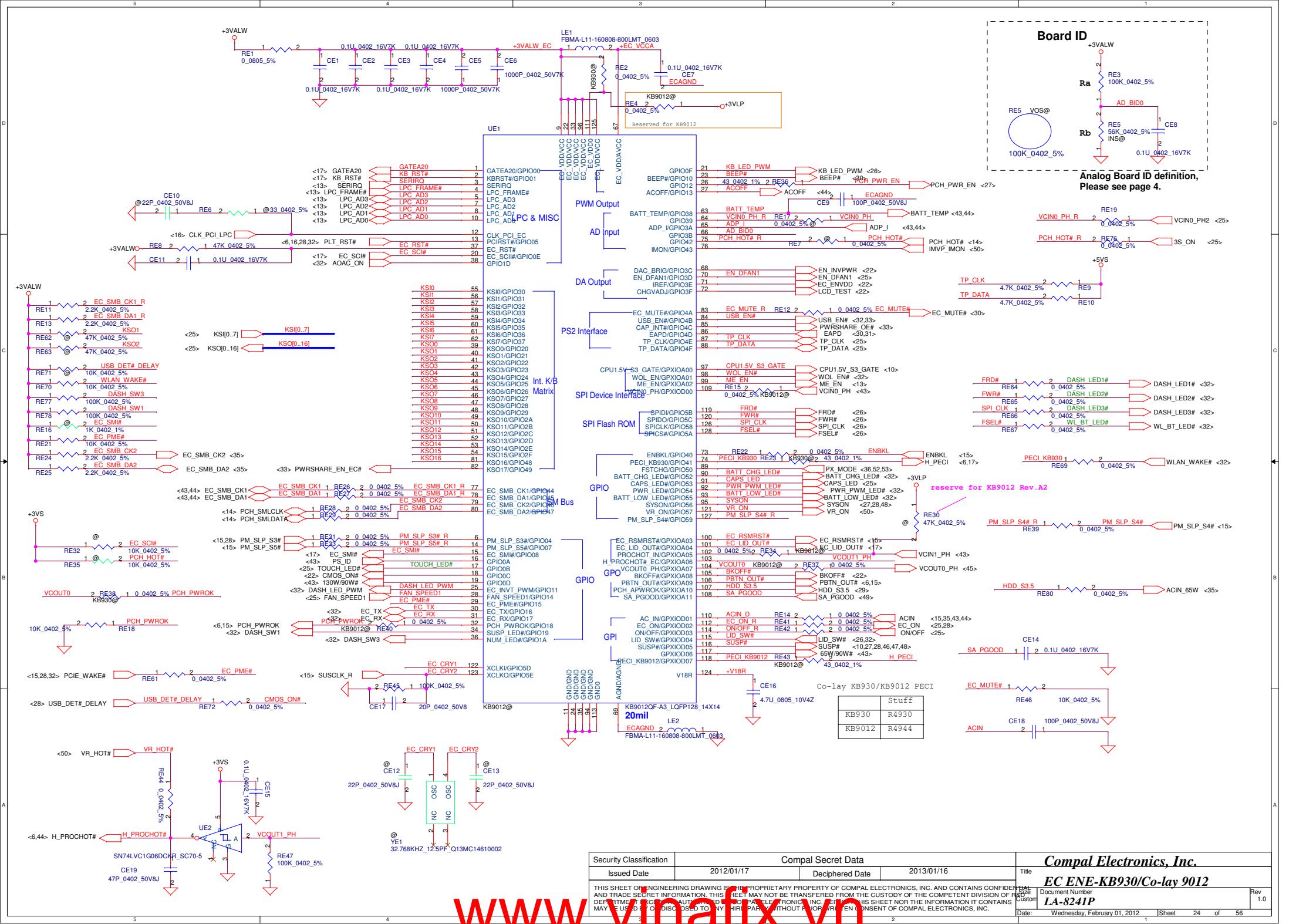
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Date: Wednesday, February 01, 2012

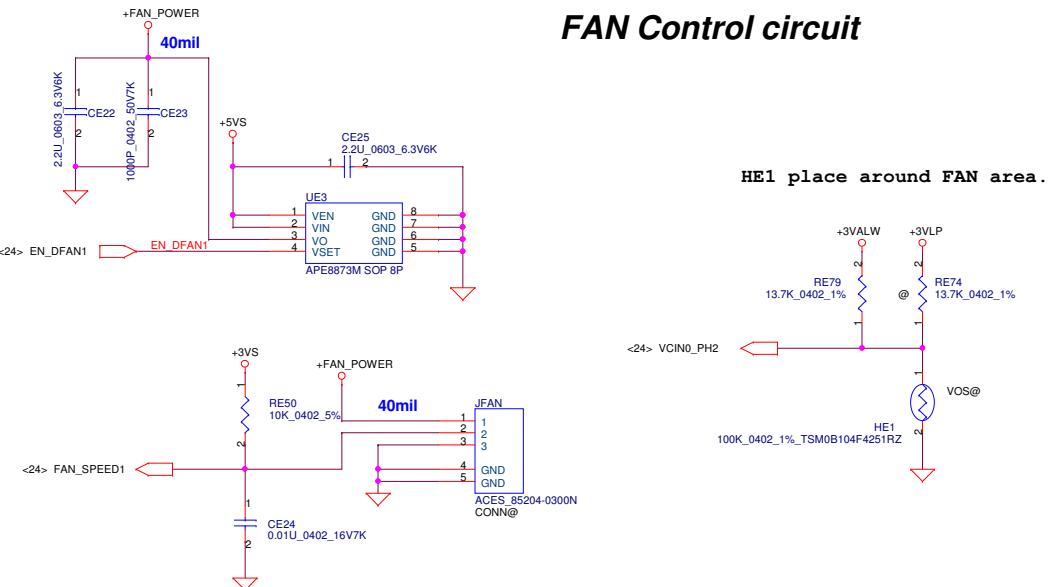
Sheet: 1

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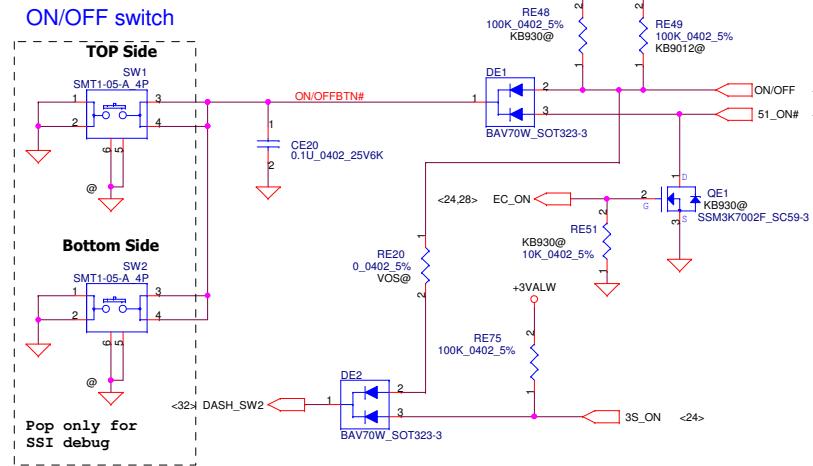
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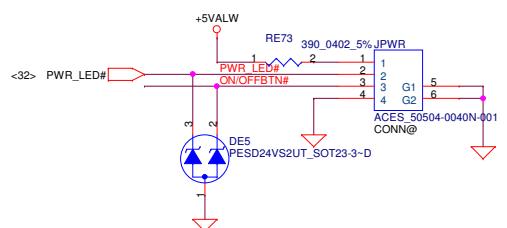
FAN Control circuit



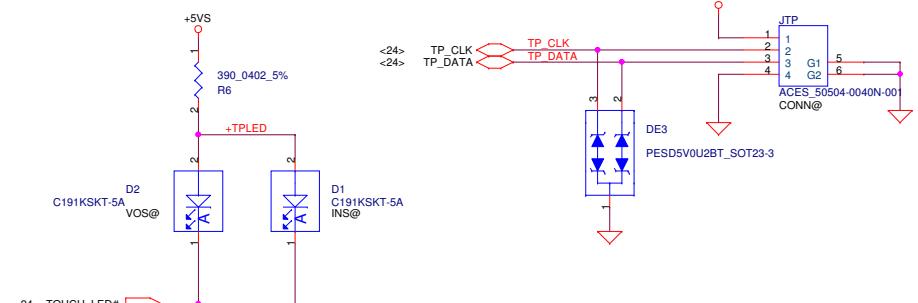
Power ON Circuit



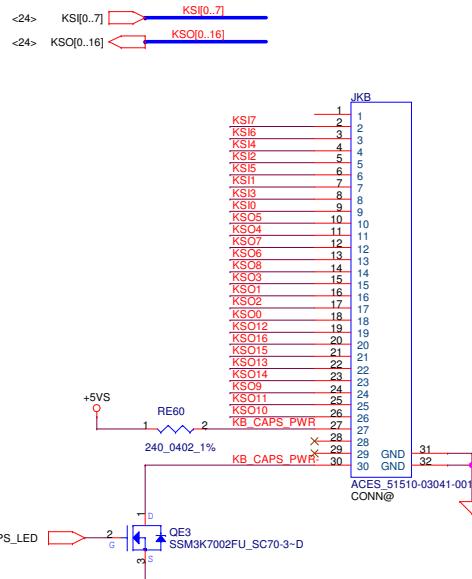
To POWER/B



Touch Pad LED



INT_KBD Conn.



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2013/01/16

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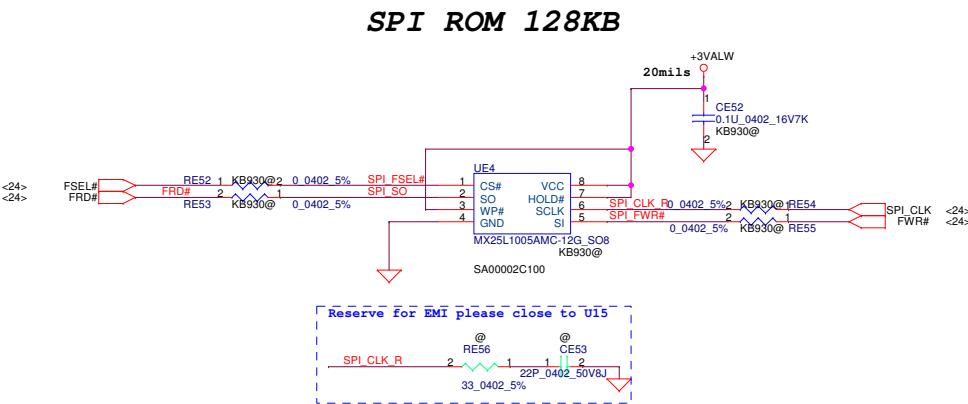
Compal Electronics, Inc.

SW/TP/SCREW

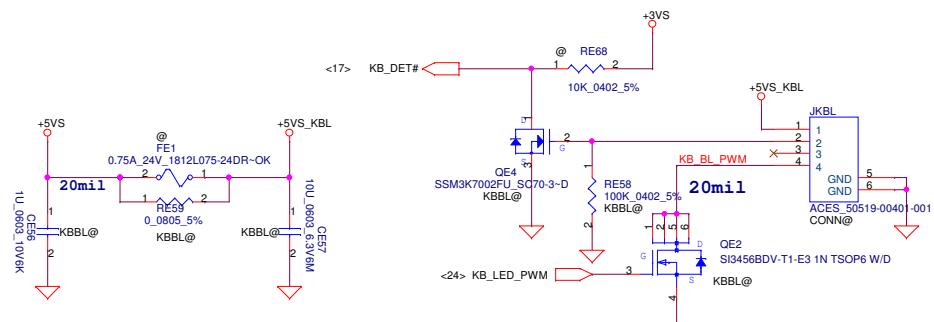
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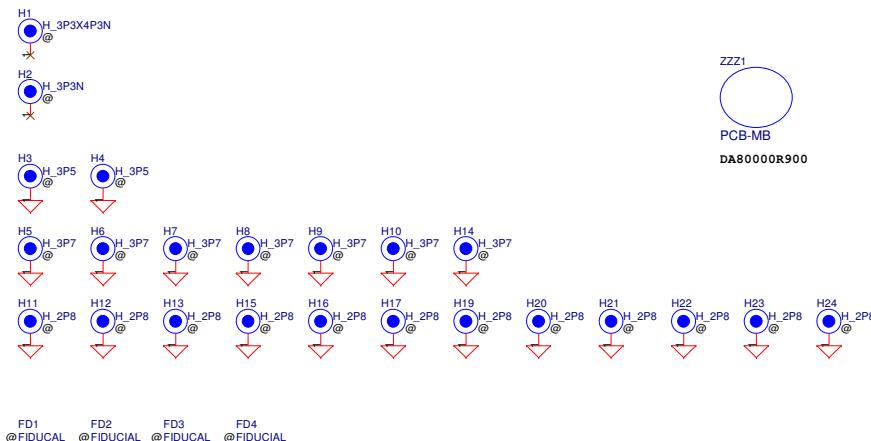
Date: Wednesday, February 01, 2012 | Sheet 25 of 56



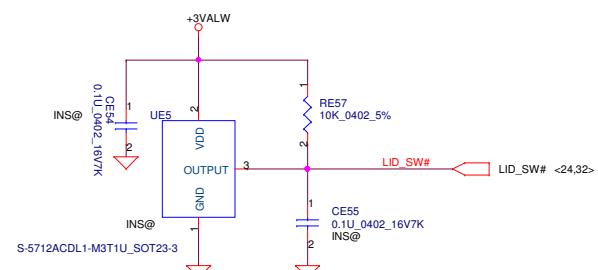
Keyboard back light



Screw Hole



Lid Switch



Security Classification

Compal Secret Data

Compal Electronics, Inc.

Issued Date

Deciphered Date

CONN & LID

Document Number

LA-8241P

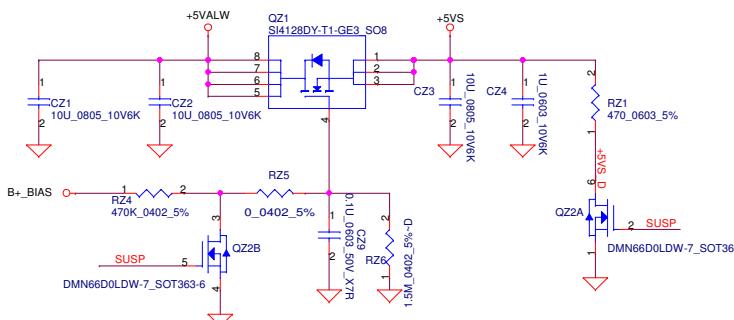
Rev 1.0

Date:

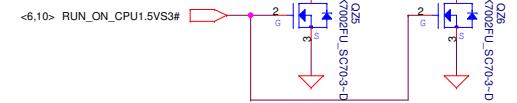
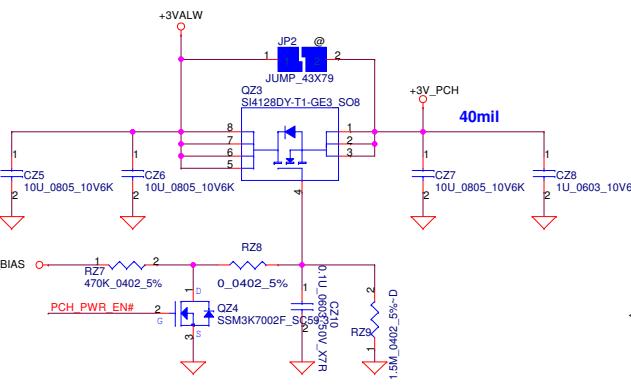
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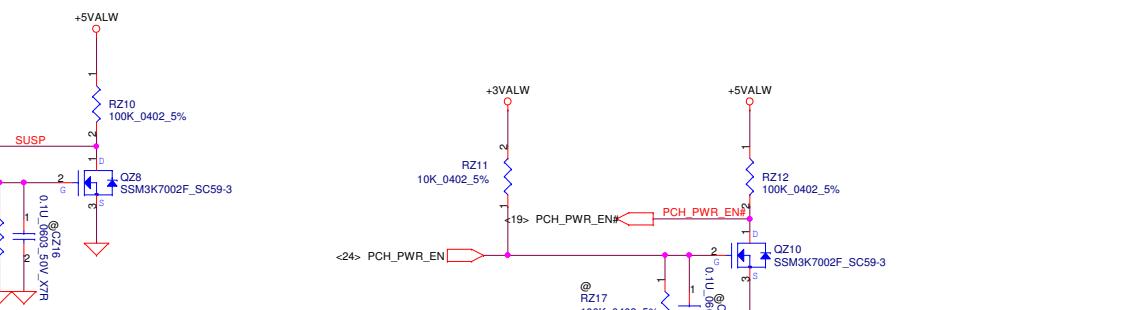
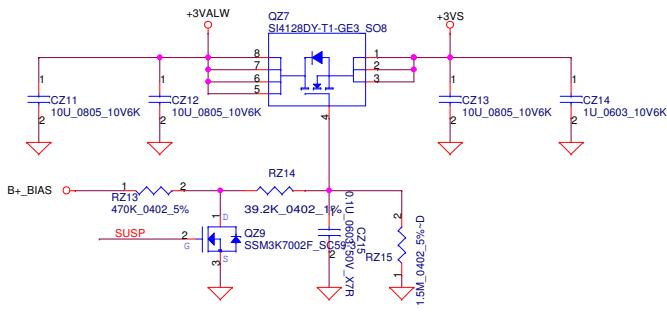
+5VALW to +5VS



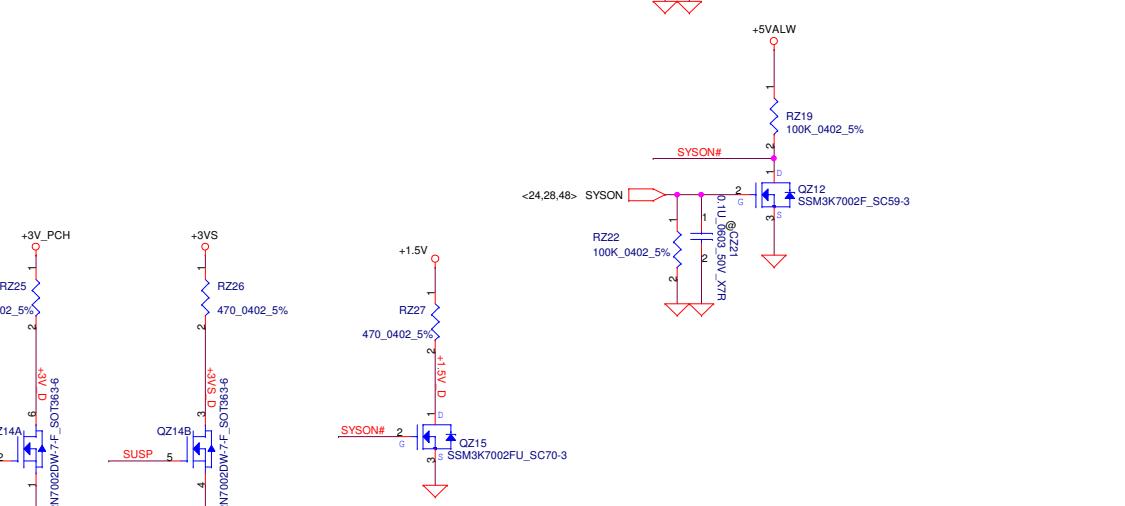
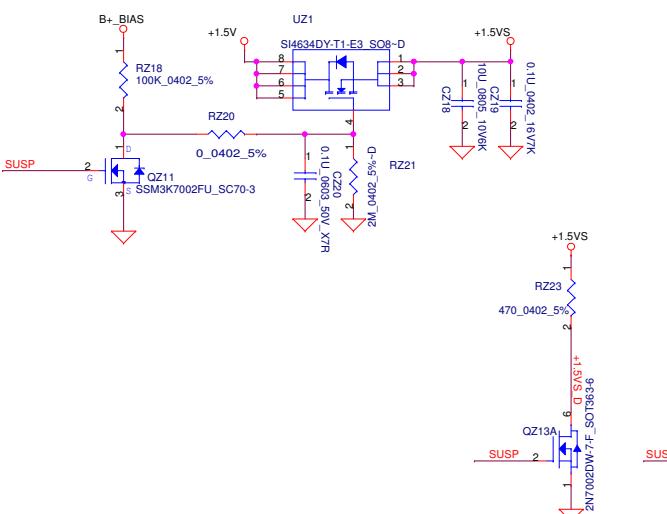
+3VALW to +3V_PCH



+3VALW to +3VS

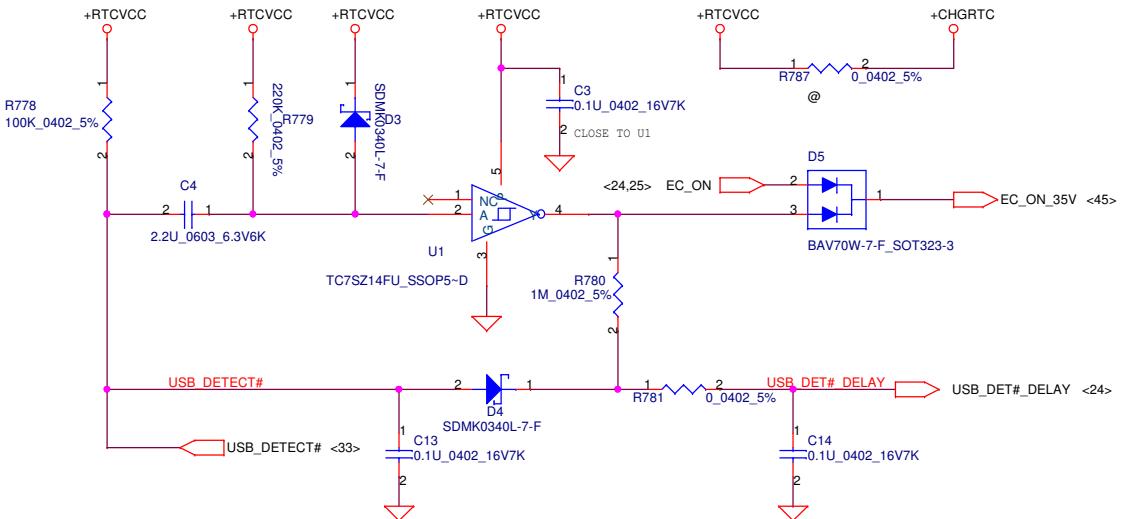


+1.5V To +1.5VS

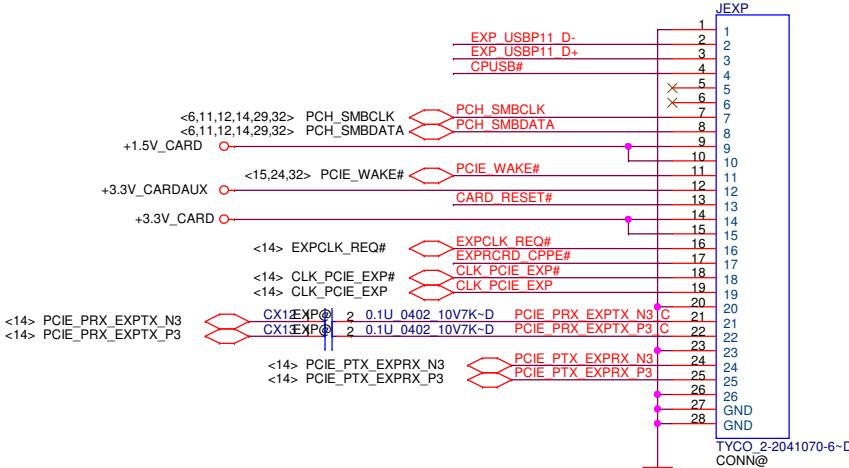


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Issued Date	2012/01/17	Deciphered Date	2013/01/16 <th>Title</th> <td>DC/DC Interface</td>	Title	DC/DC Interface
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Document Number	LA-8241P	Rev. 1.0			
Date:	Wednesday, February 01, 2012	Sheet	27	of	56

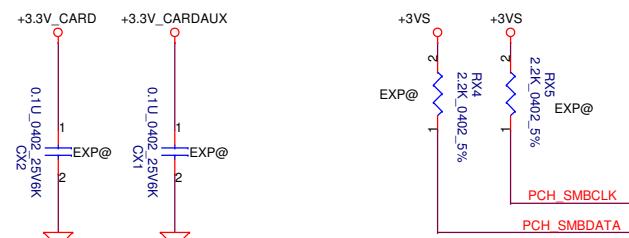
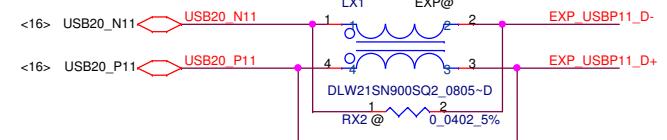
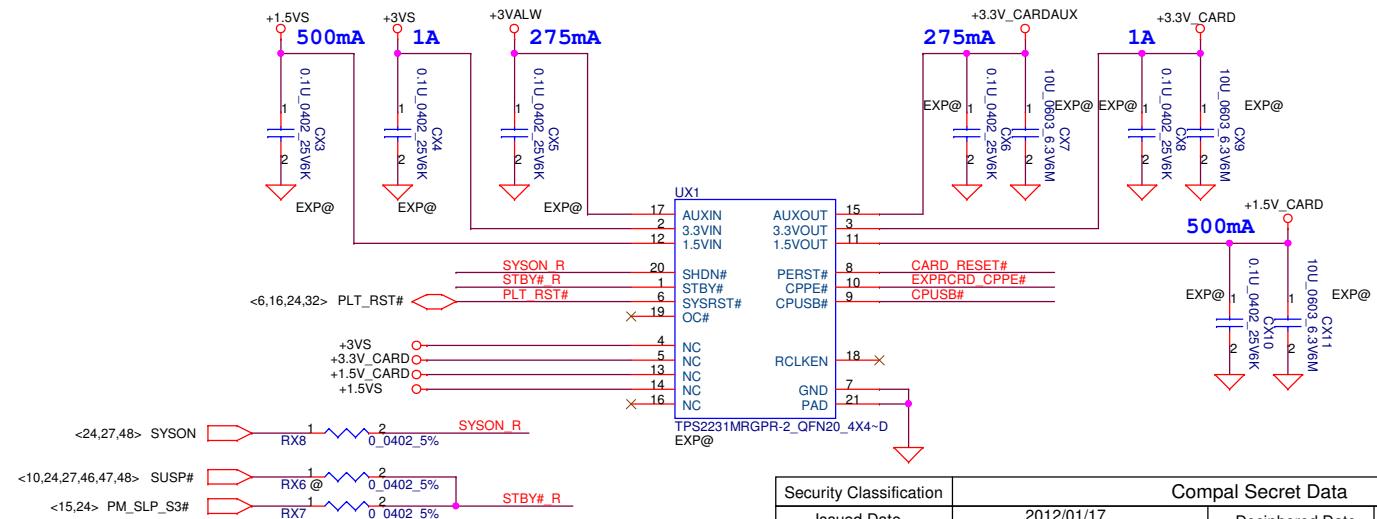
USB Detected for PWR Share



Express Card



Express Card PWR S/W



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Issued Date	2012/01/17	Deciphered Date	2013/01/16

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Compal Electronics, Inc.

Title: PROCESSOR(1/6) DML, FDI, PEG

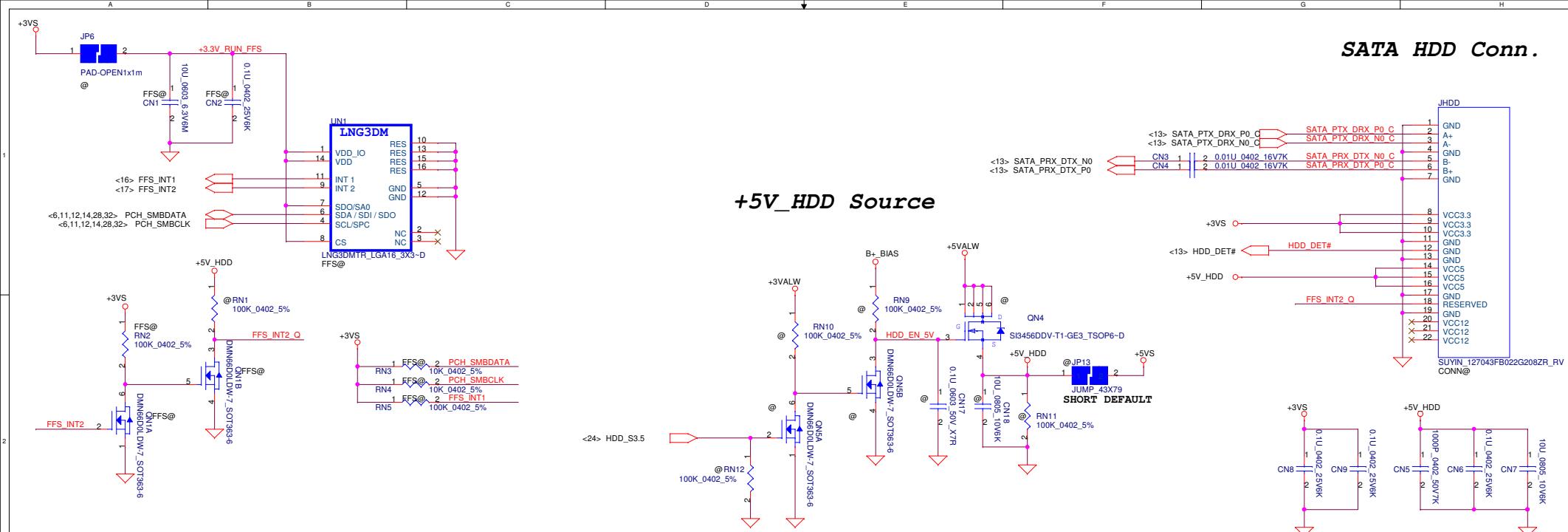
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Rev: 1.0

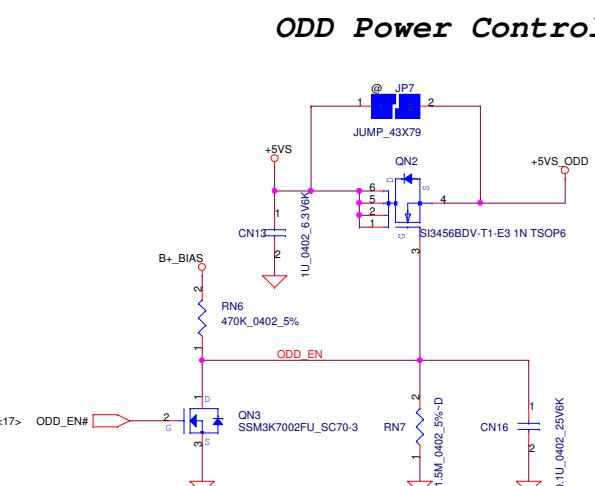
Date: Wednesday, February 01, 2012

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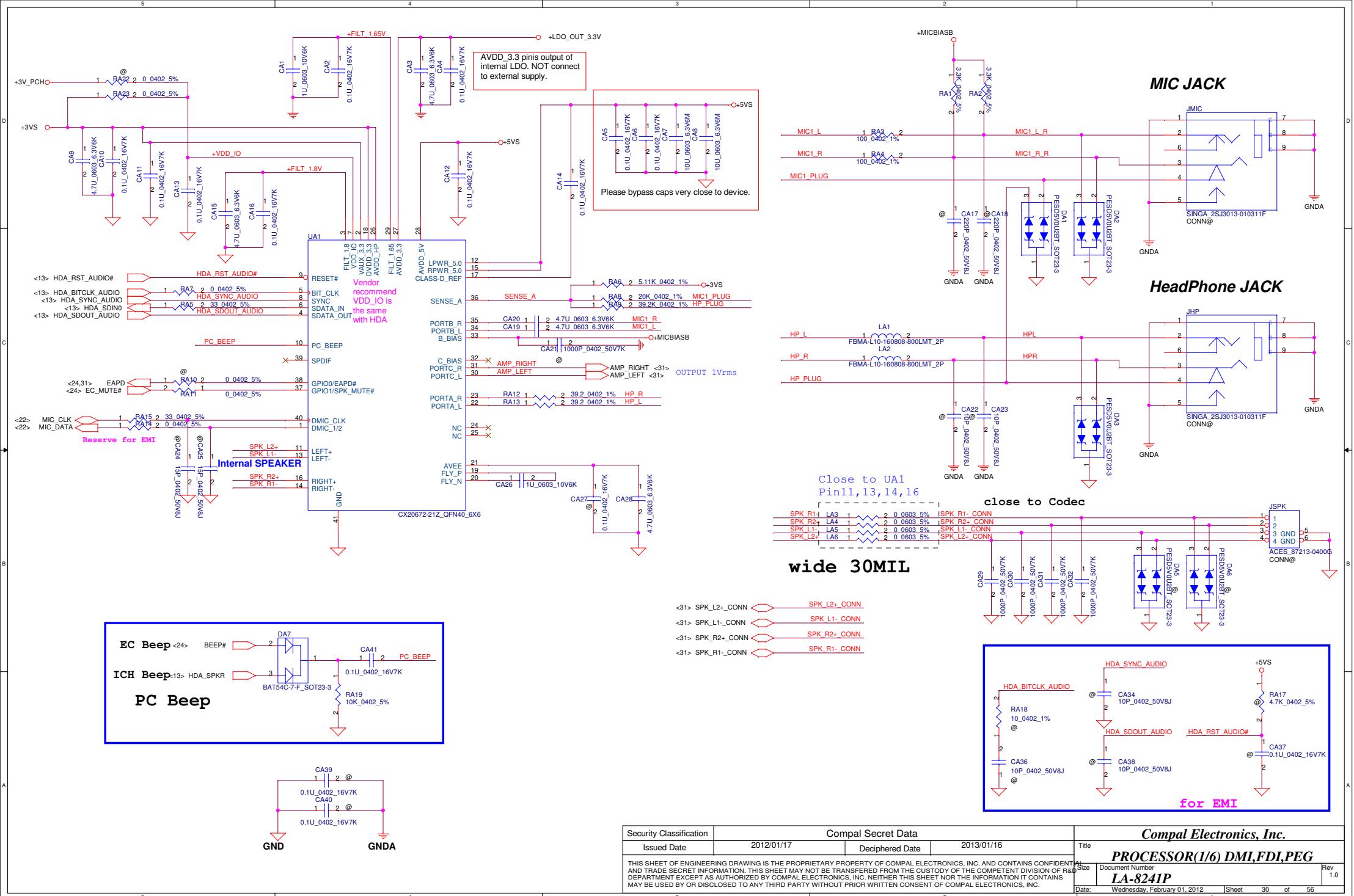
SATA HDD Conn.

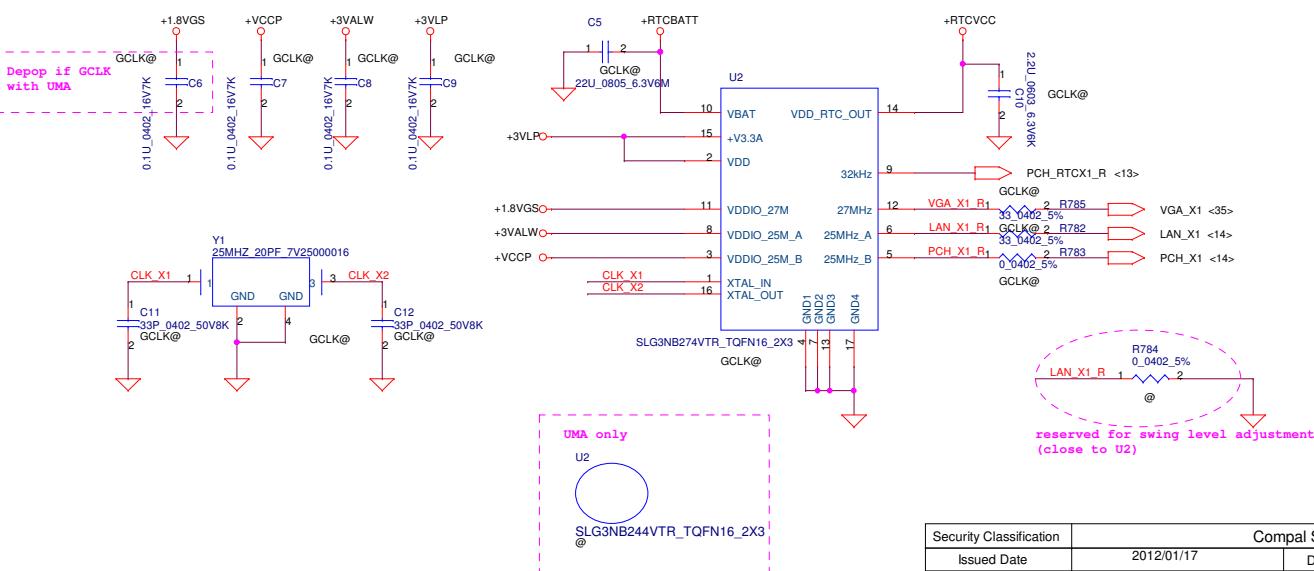
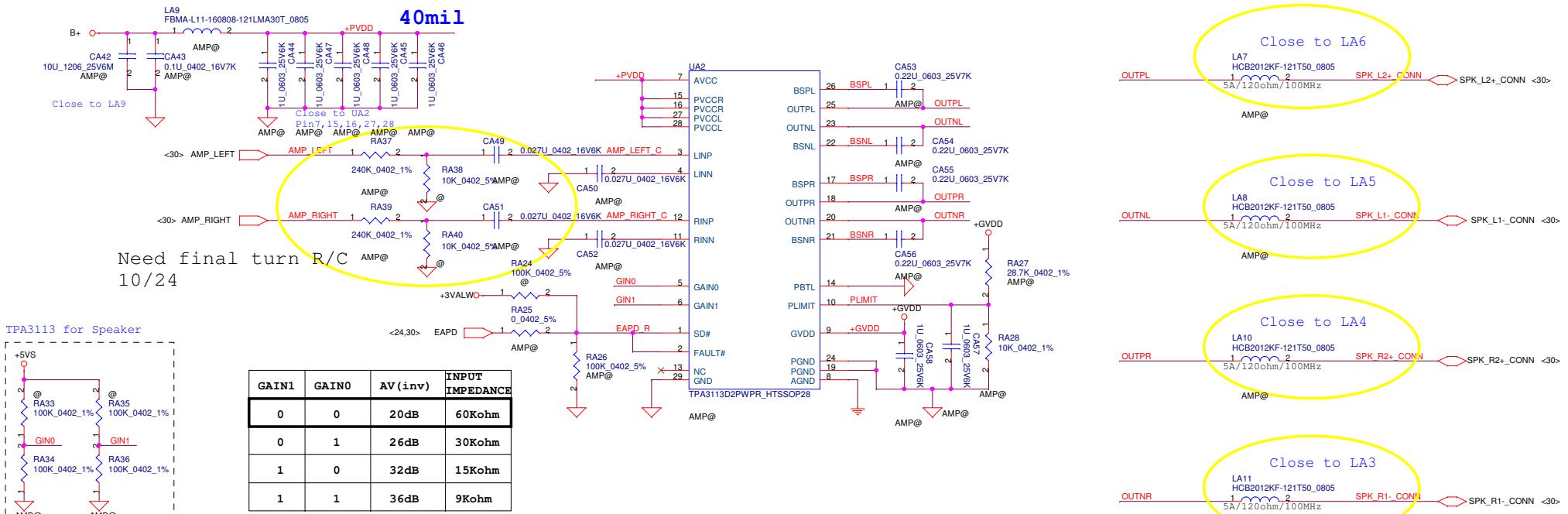


SATA ODD Conn.

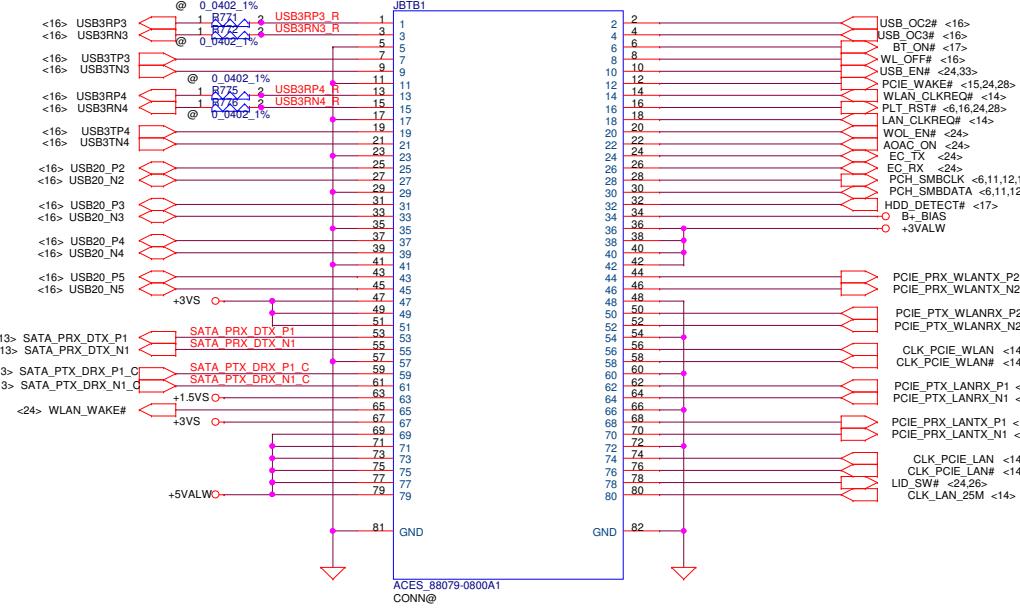


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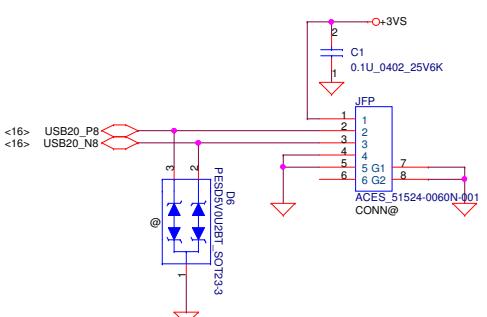
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2	Date:	Wednesday, February 01, 2012	Sheet	31	of	56



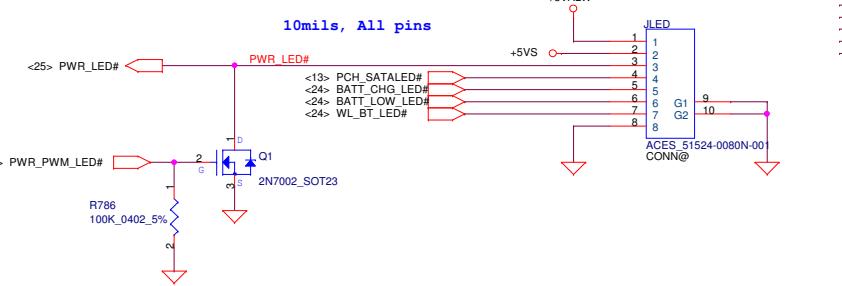
TO Function/B



To Finger Print

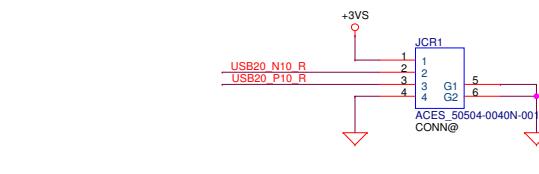


To LED/B



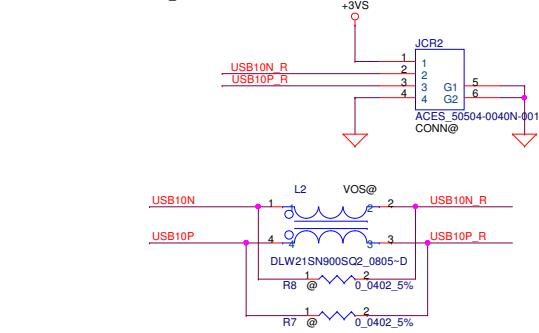
To CardReader/B

* Inspiron only



To CardReader/B

* Vostro only

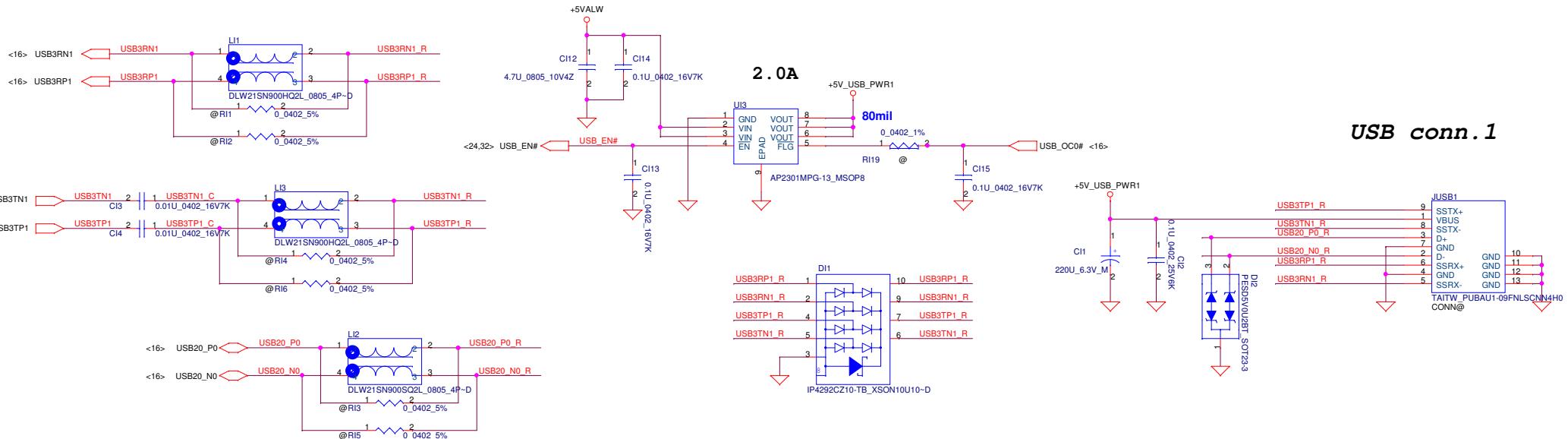


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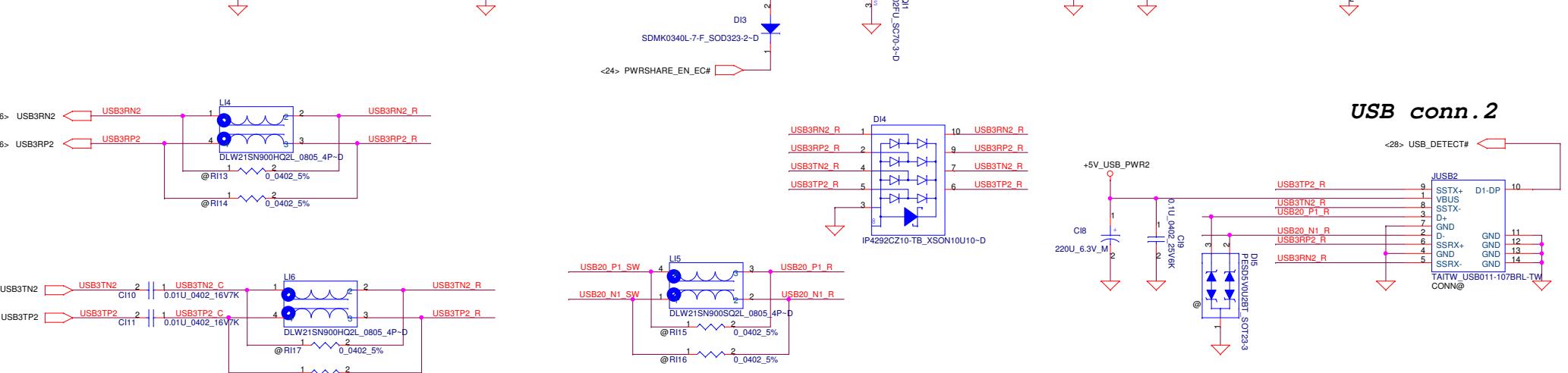
Compal Secret Data

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2012/01/17	2013/01/16	Processor(1/6) DMI, FDI, PEG	LA-8241P	1.0
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USB conn. 1



USB conn. 2



Security Classification

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2013/01/16

Title

Processor(1/6) DMI, FDI, PEG

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Part No.

2

Date:

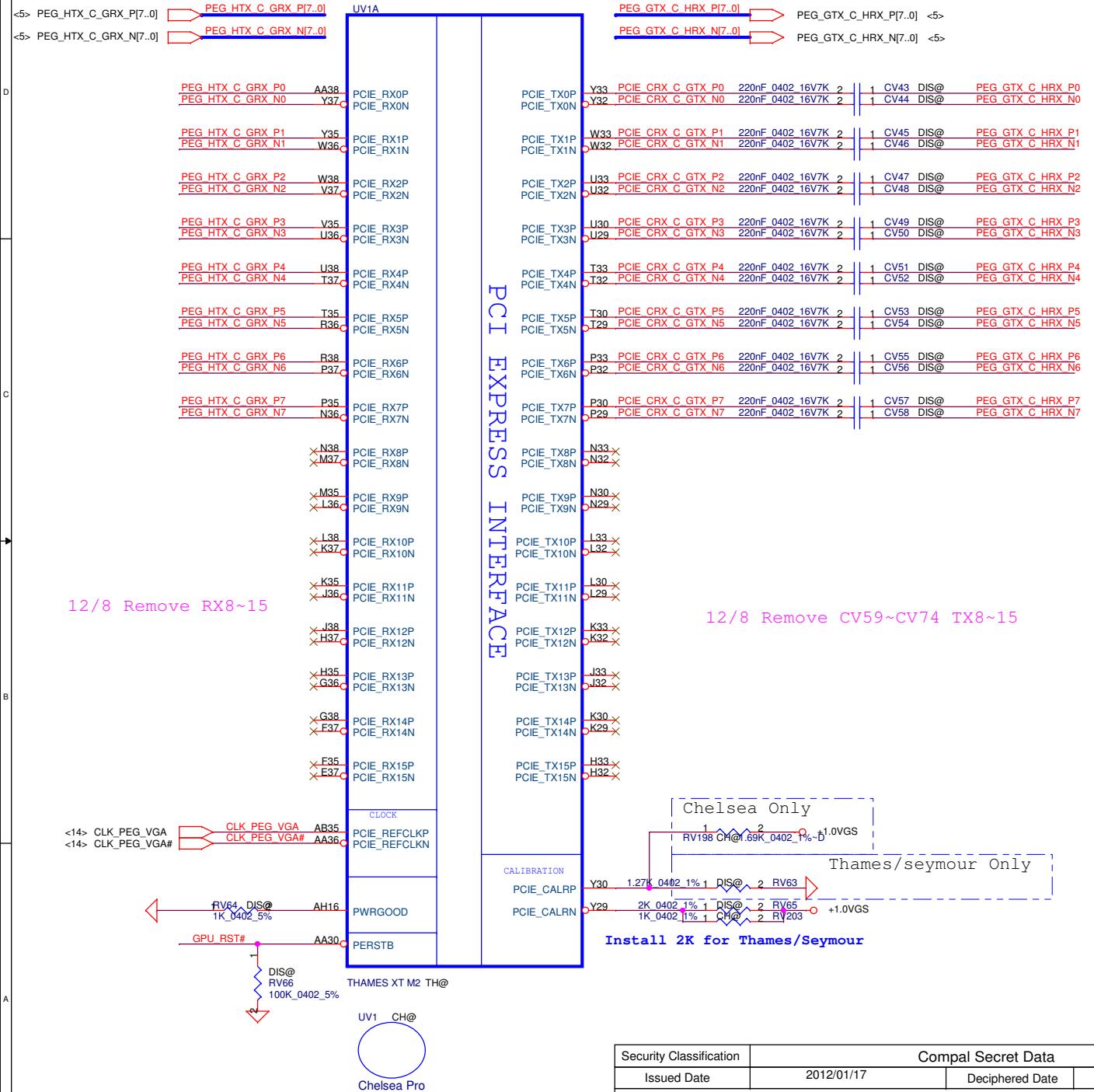
Wednesday, February 01, 2012

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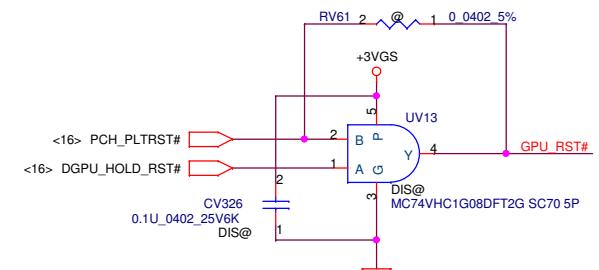
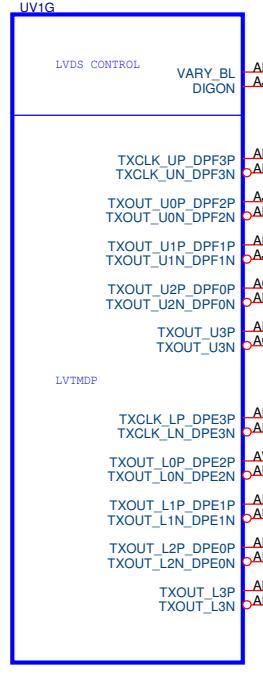
Sheet 33 of 56

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GFX PCIE LANE REVERSAL

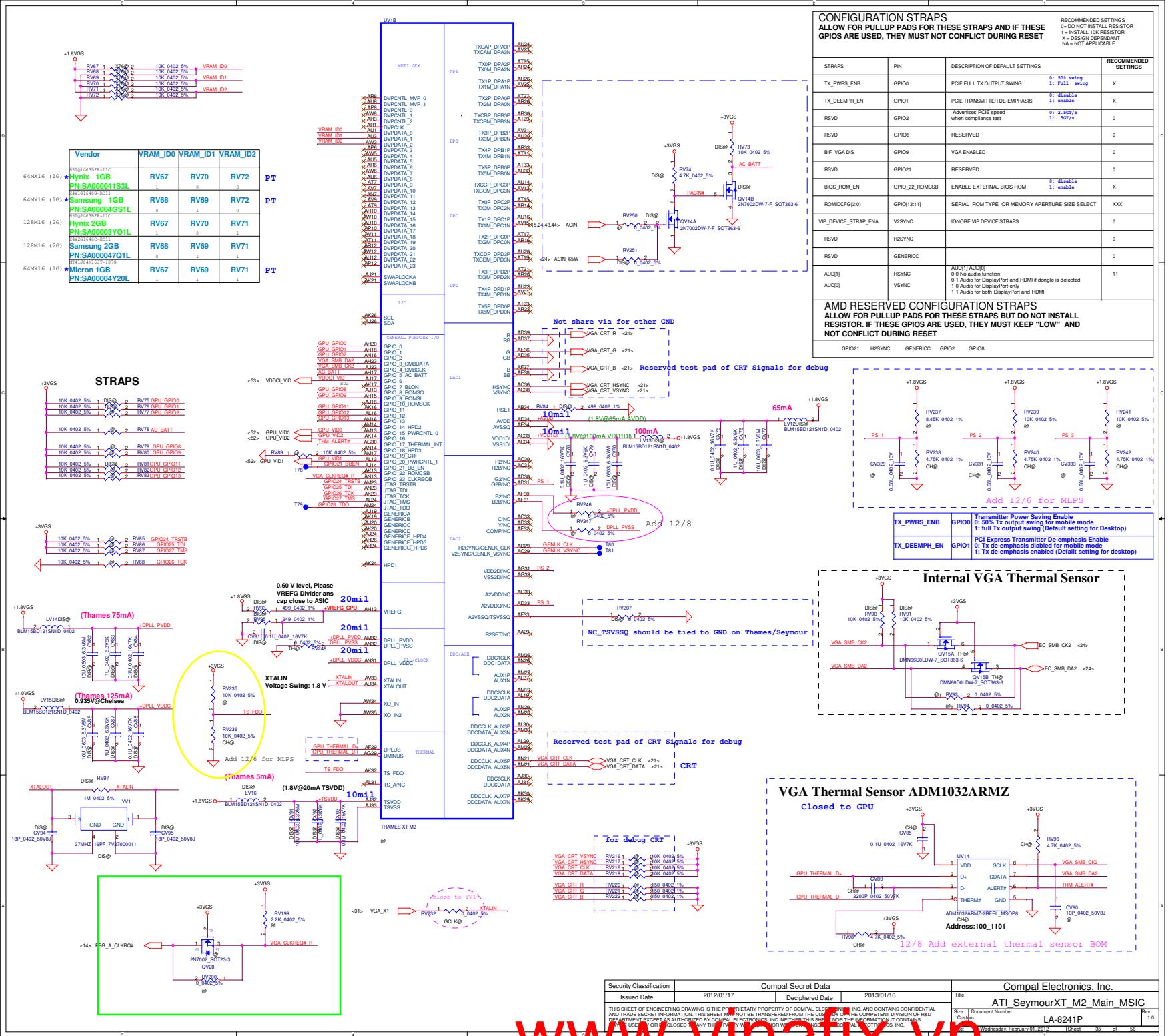


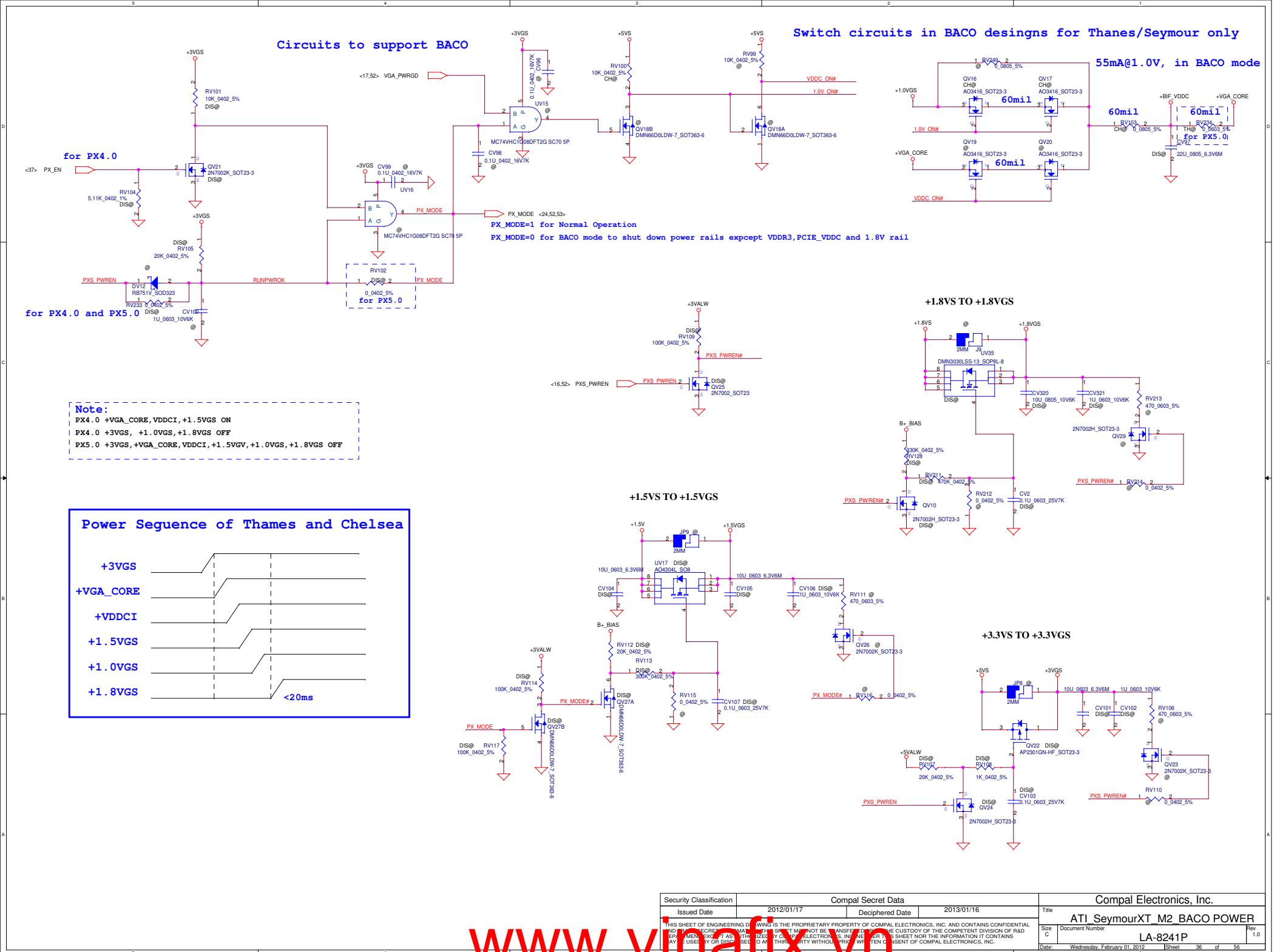
LVDS Interface

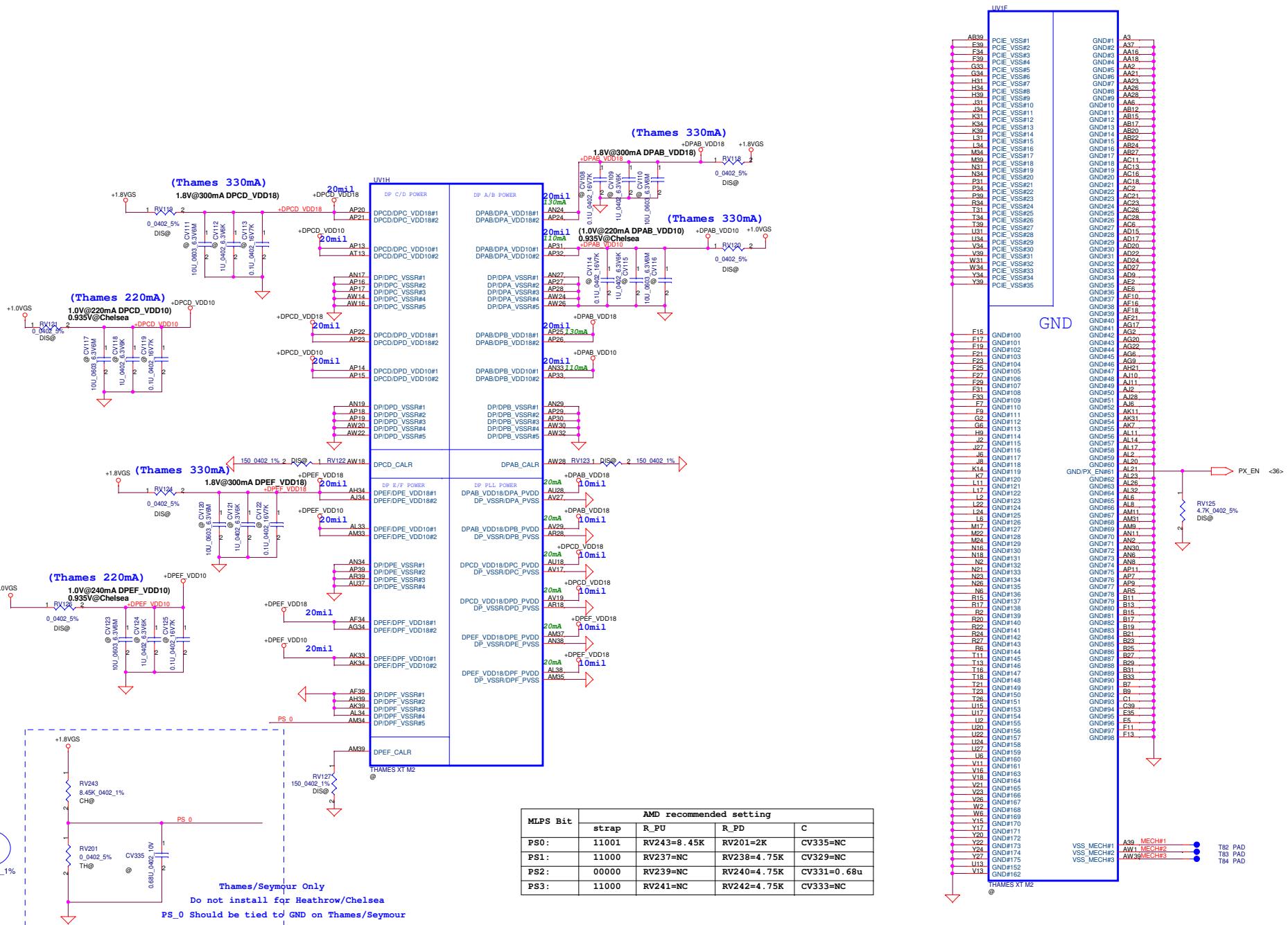


Security Classification	Compal Secret Data			Compal Electronics, Inc.
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				ATI_SeymourXT_M2_PCIE/LVDS
				Document Number Custom Rev 1.0 LA-8241P

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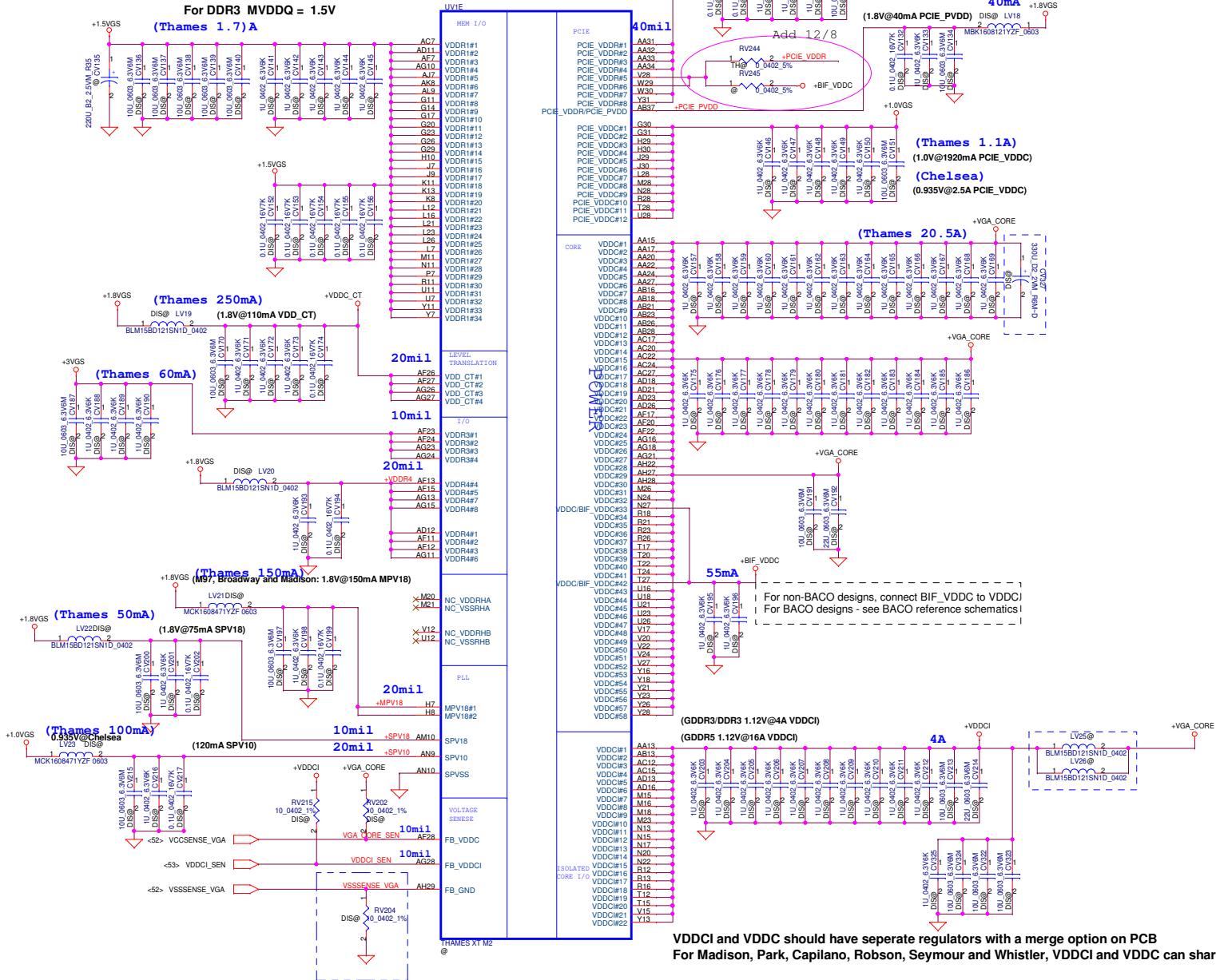






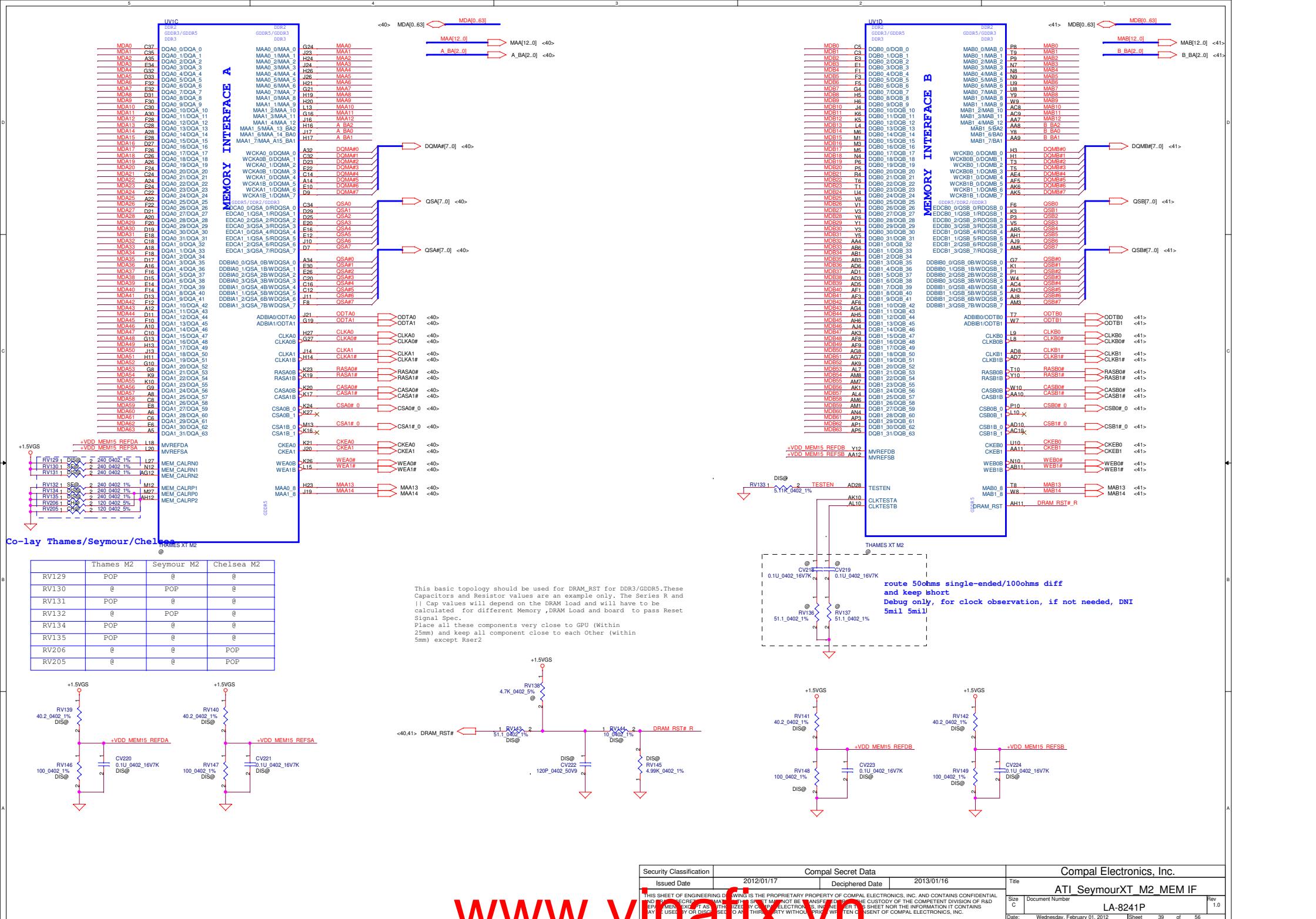
MLPS Bit	AMD recommended setting			
	strap	R_PU	R_PD	C
PS0:	11001	RV243=8.45K	RV201=2K	CV335=NC
PS1:	11000	RV237=NC	RV238=4.75K	CV329=NC
PS2:	00000	RV239=NC	RV240=4.75K	CV331=0.68u
PS3:	11000	RV241=NC	RV242=4.75K	CV333=NC

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Date:	Wednesday, February 01, 2012	Sheet	37	of	

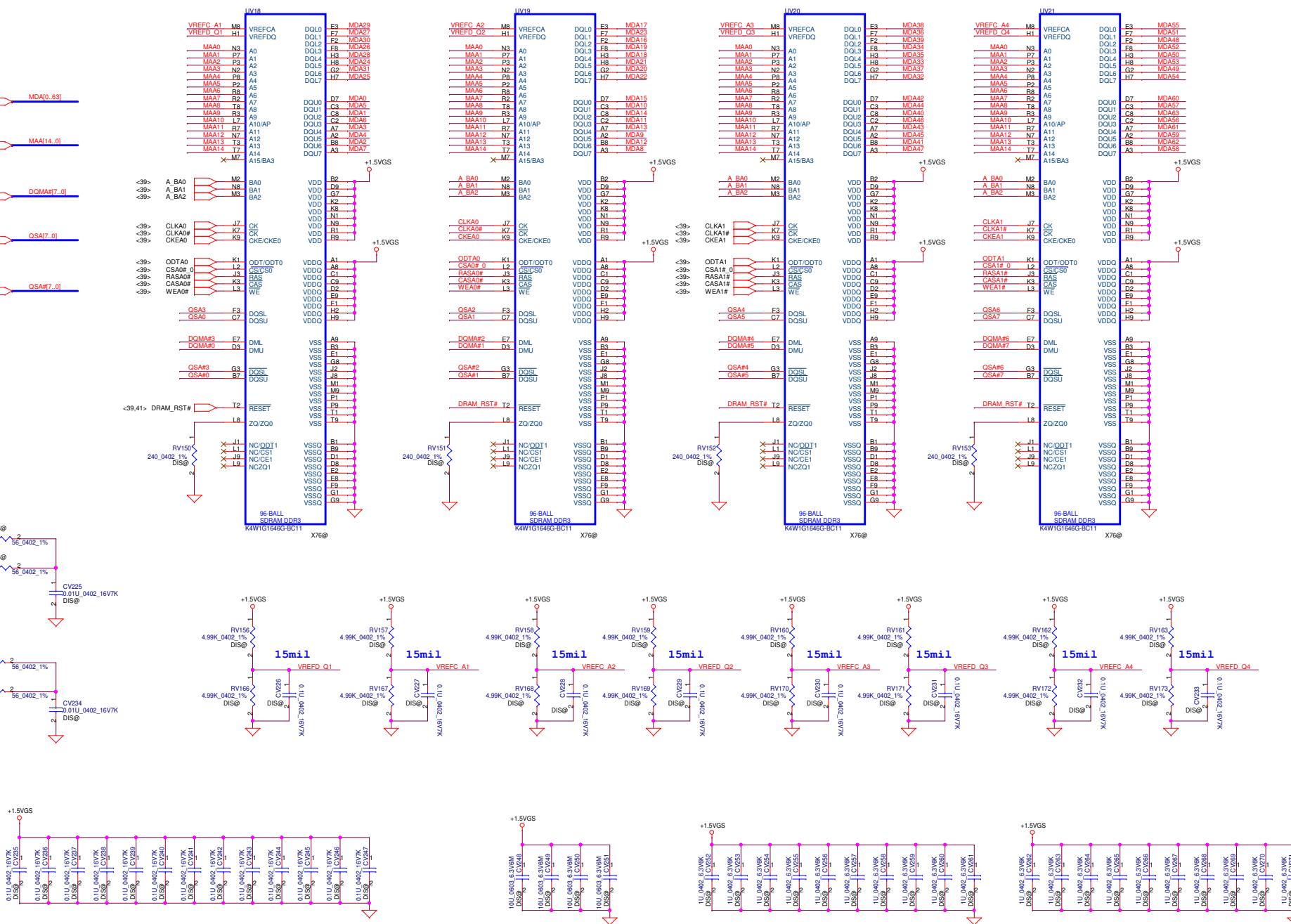


VDDCI and VDDC should have separate regulators with a merge option on PCB
For Madison, Park, Capilano, Robson, Seymour and Whistler, VDDCI and VDDC can share one common regulator

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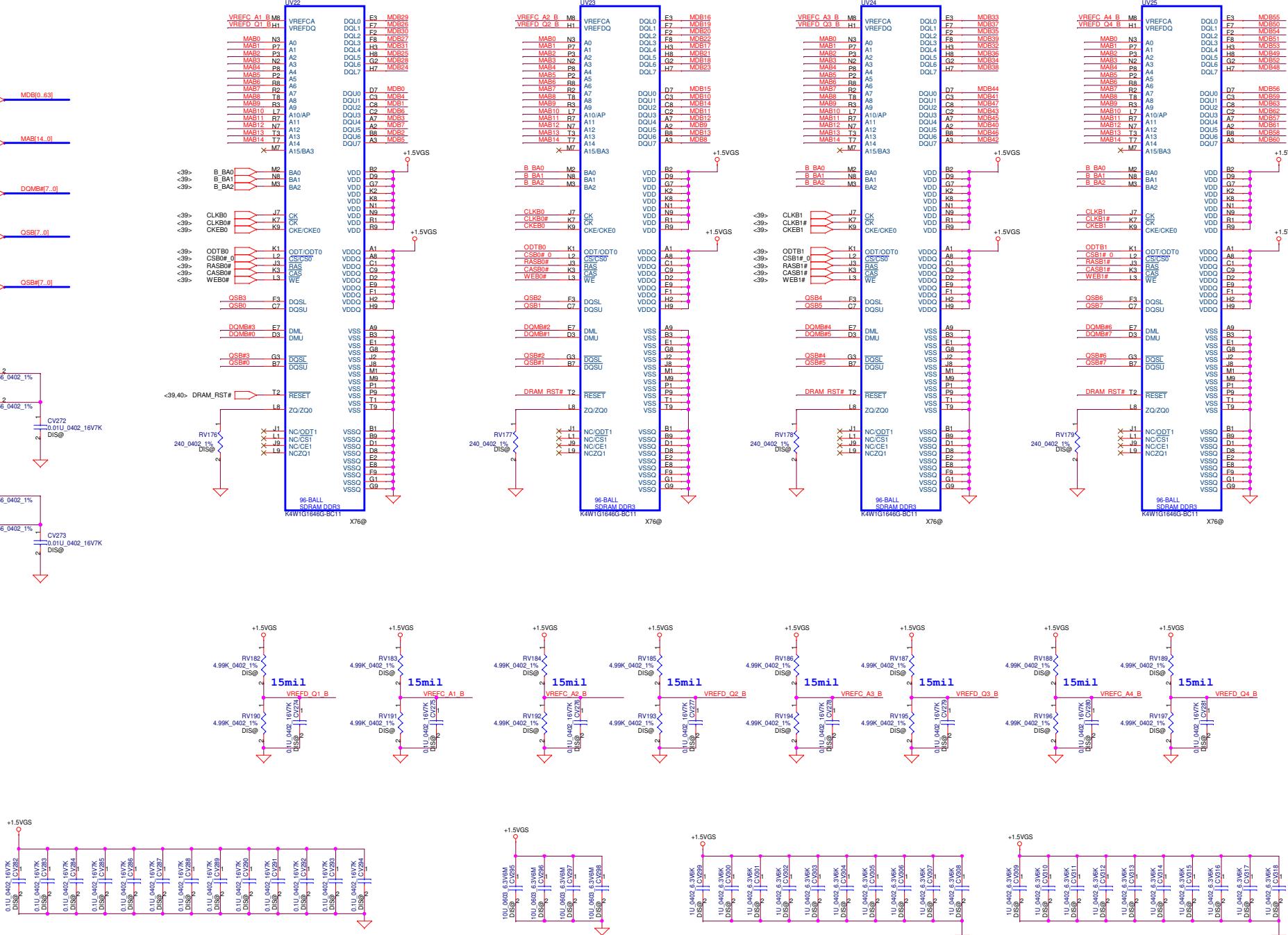


CHANNEL A: 256MB/512MB DDR3



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CHANNEL B: 256MB/512MB DDR3



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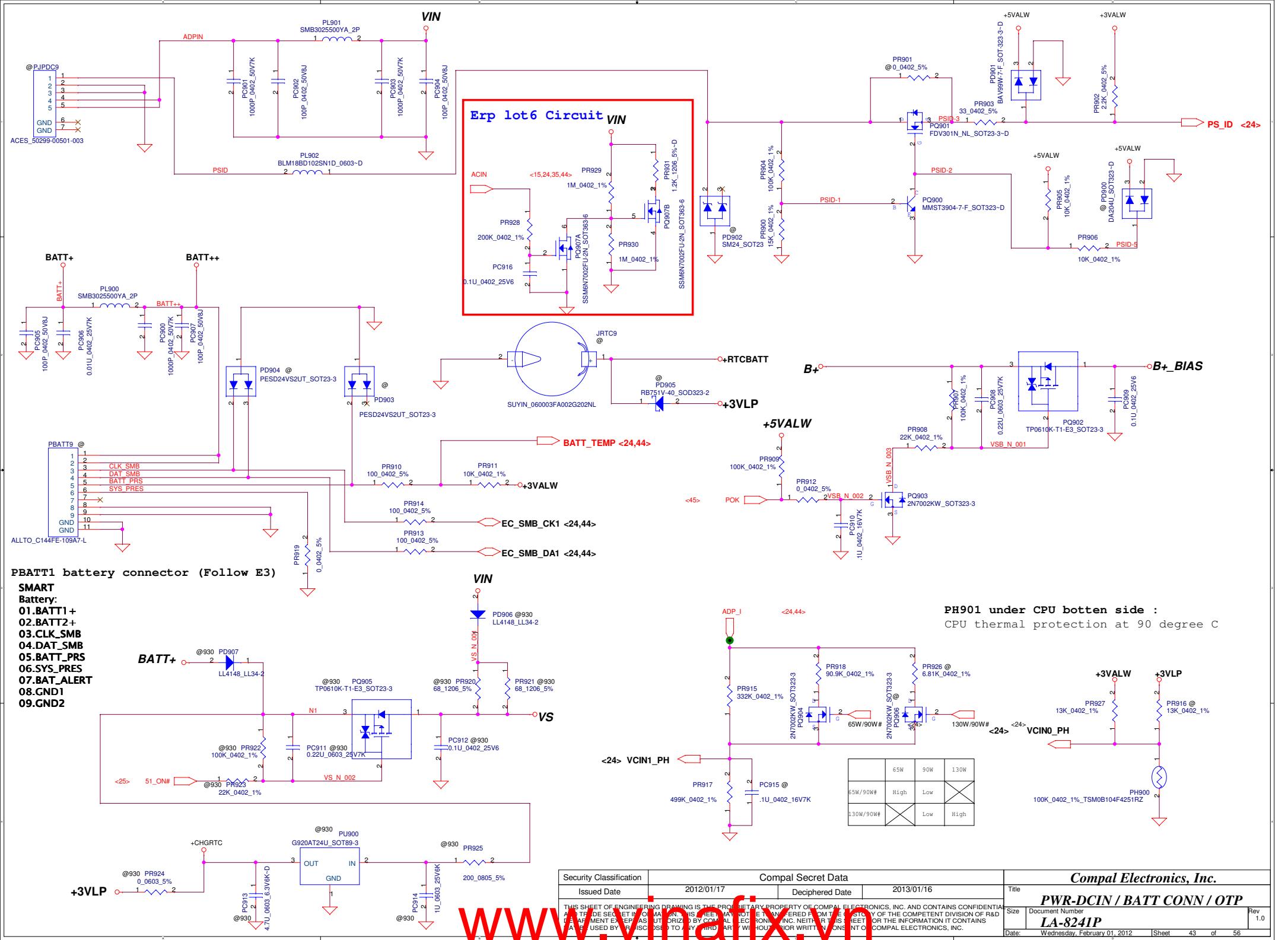
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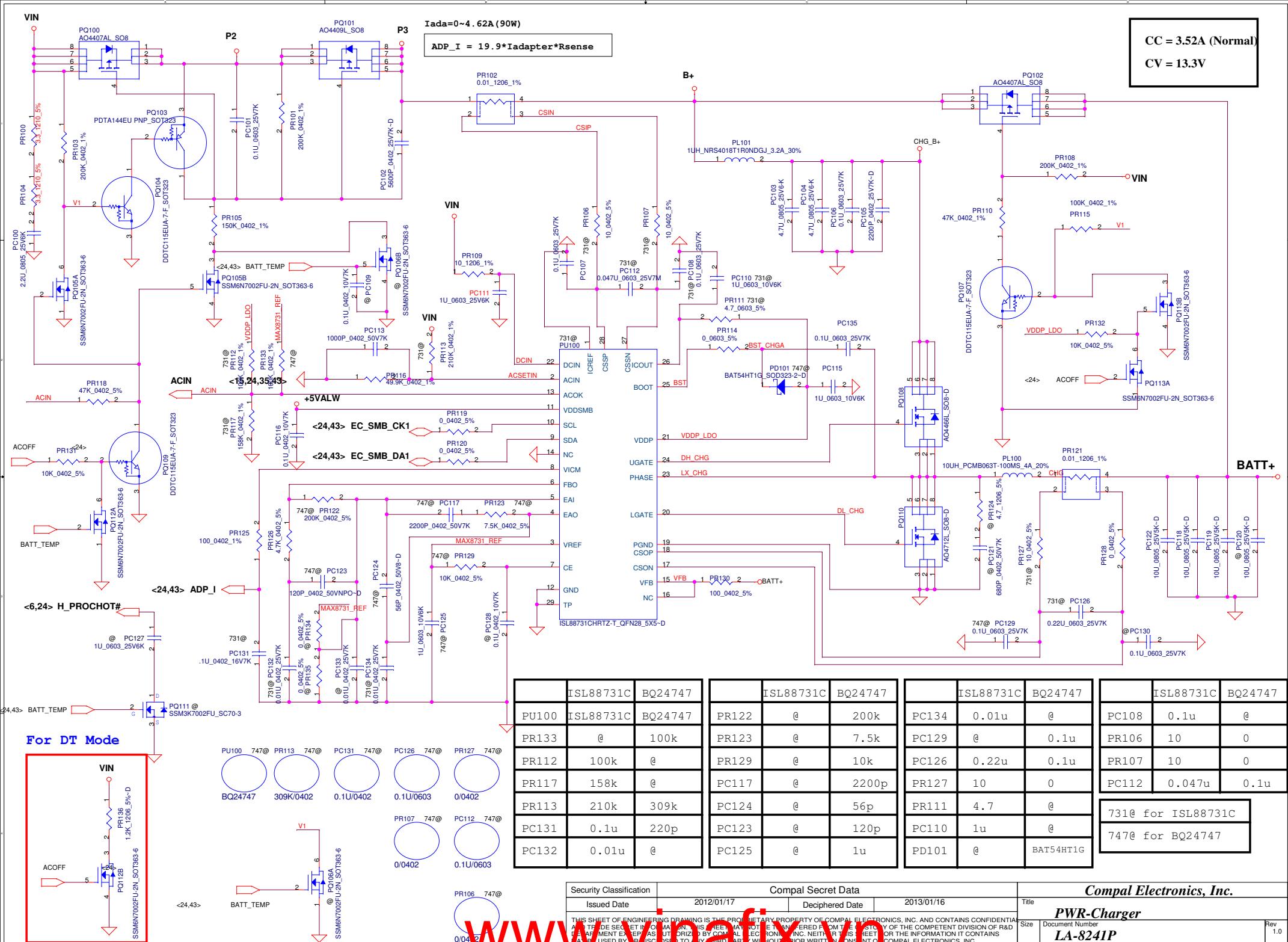
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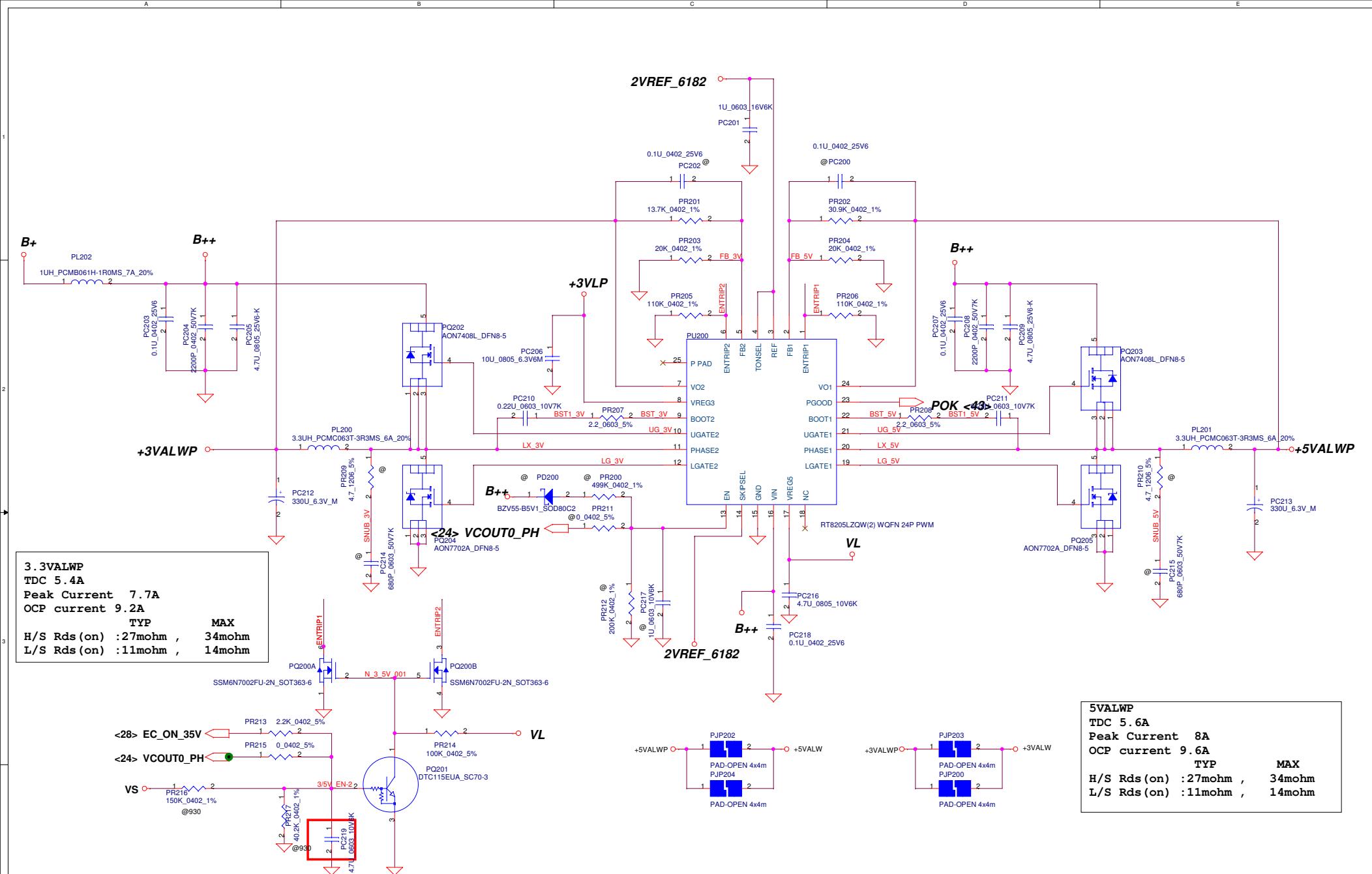
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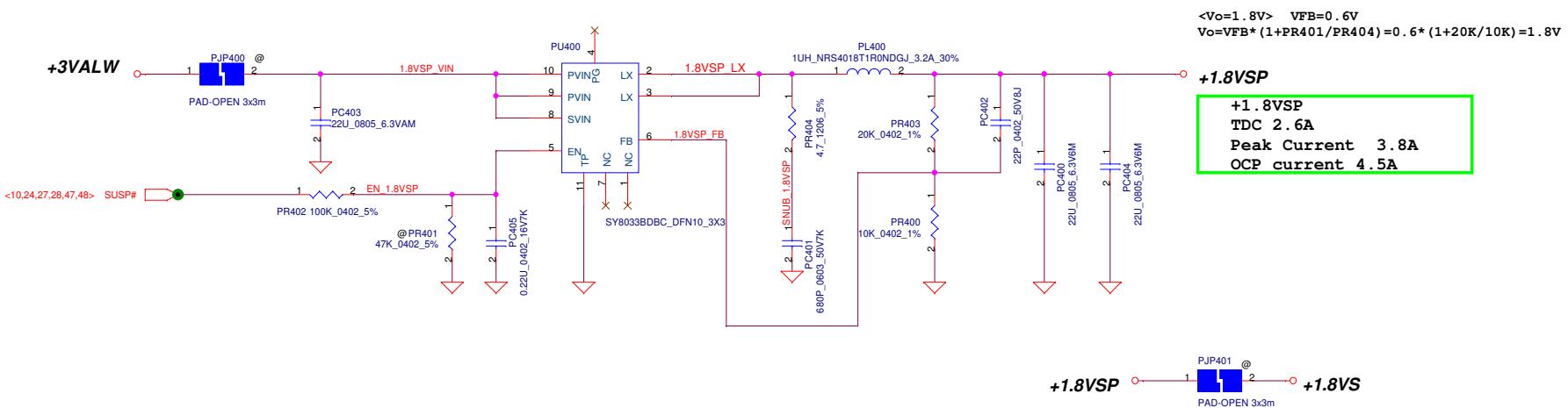
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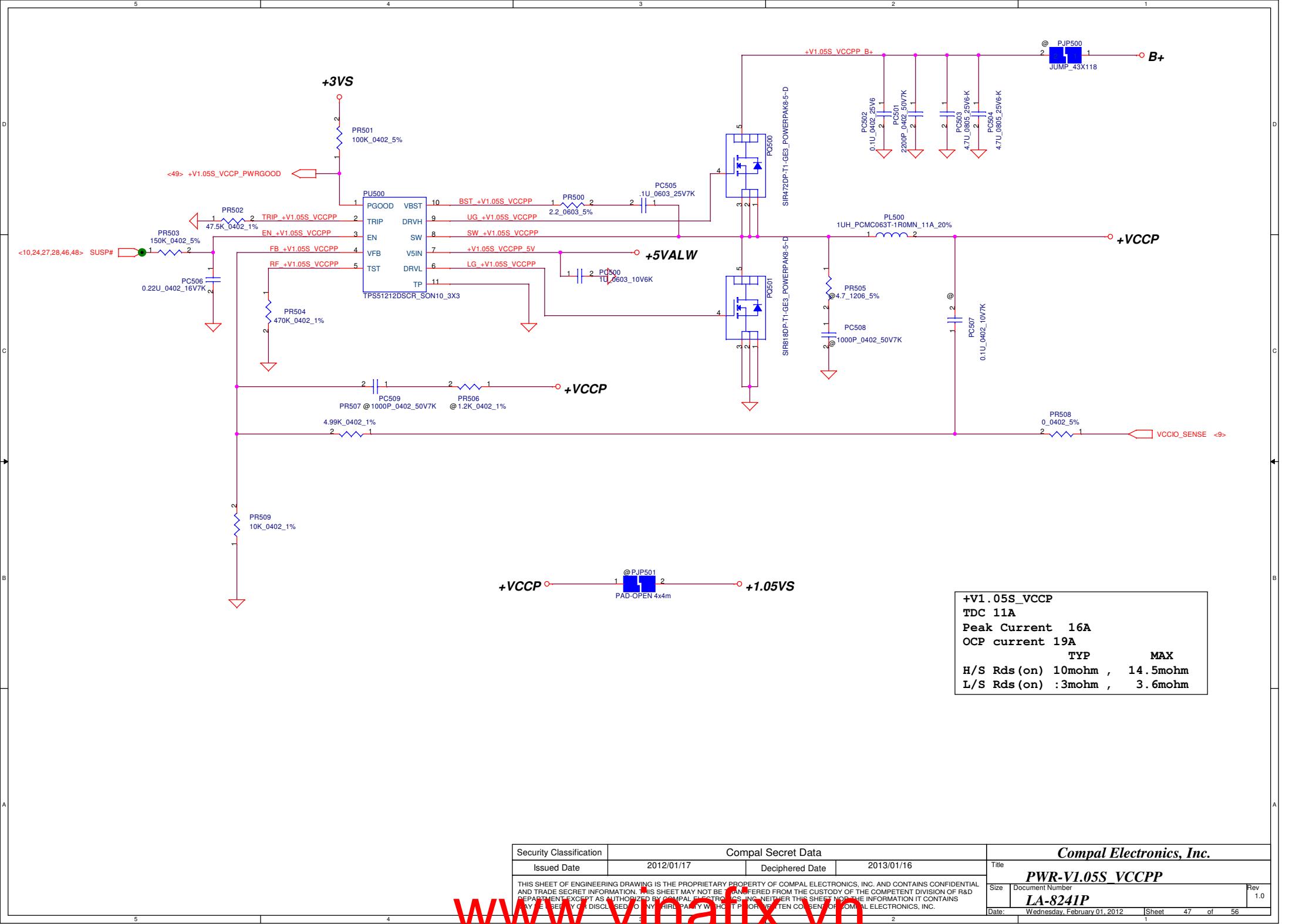


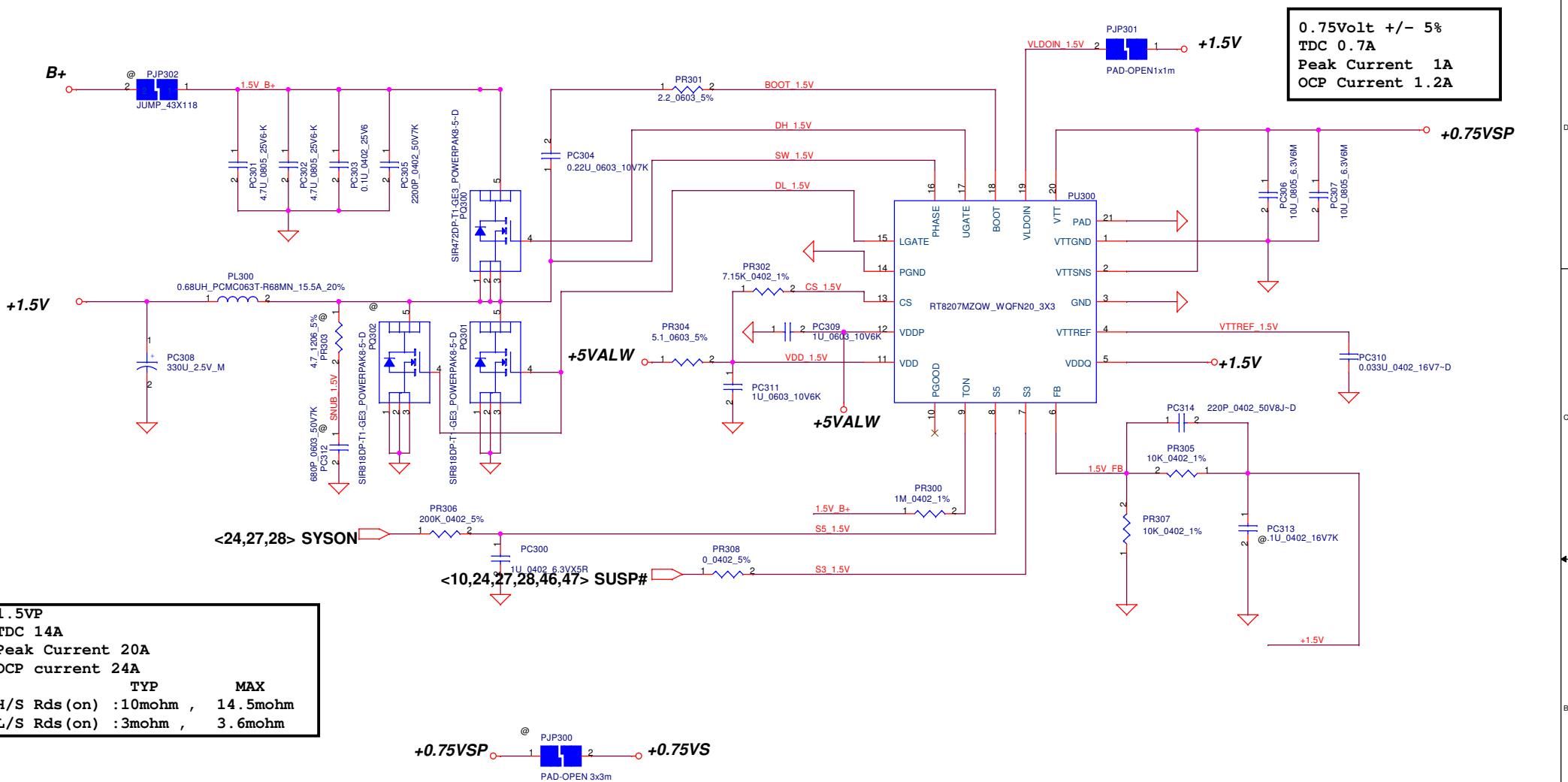
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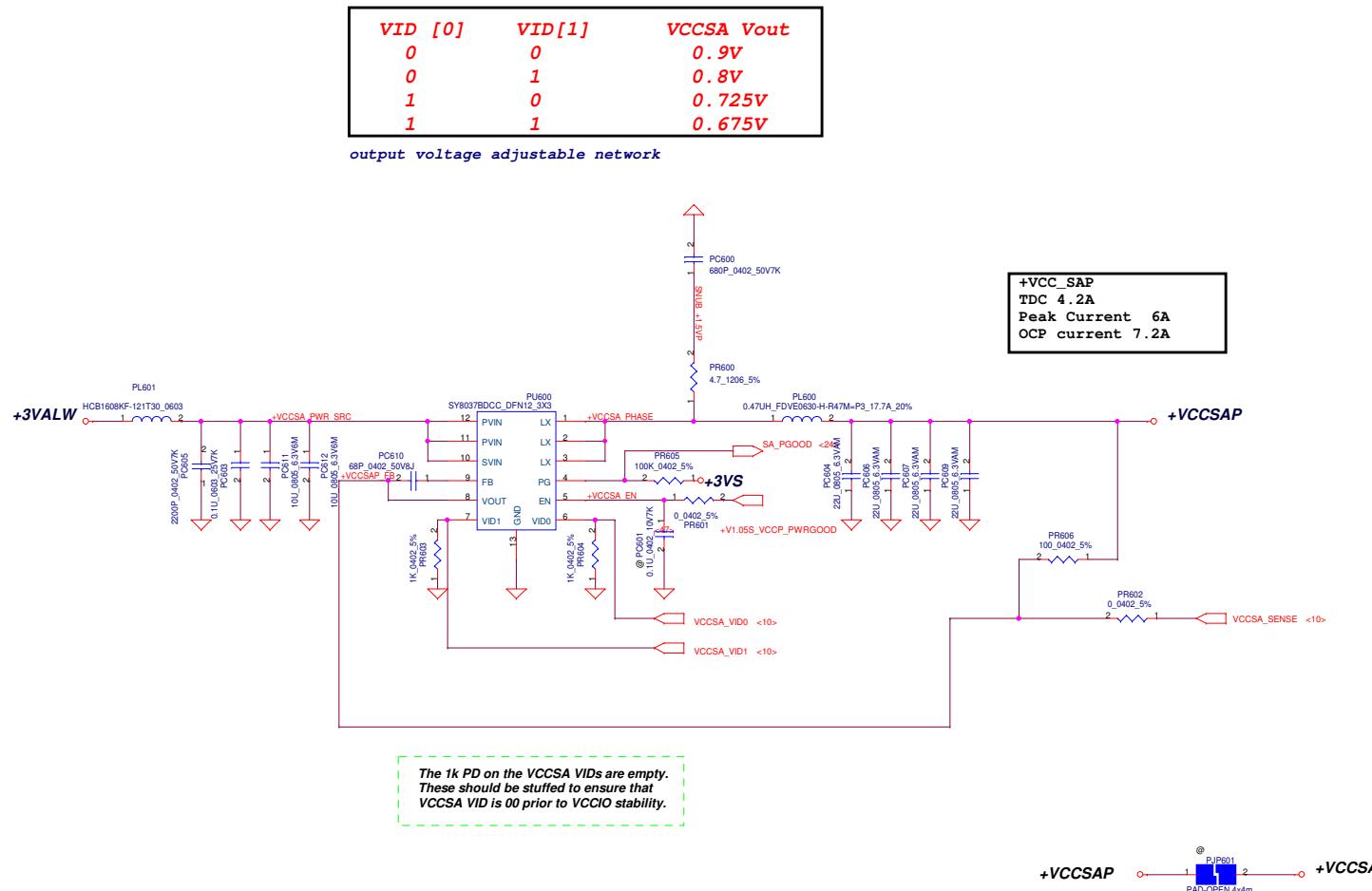
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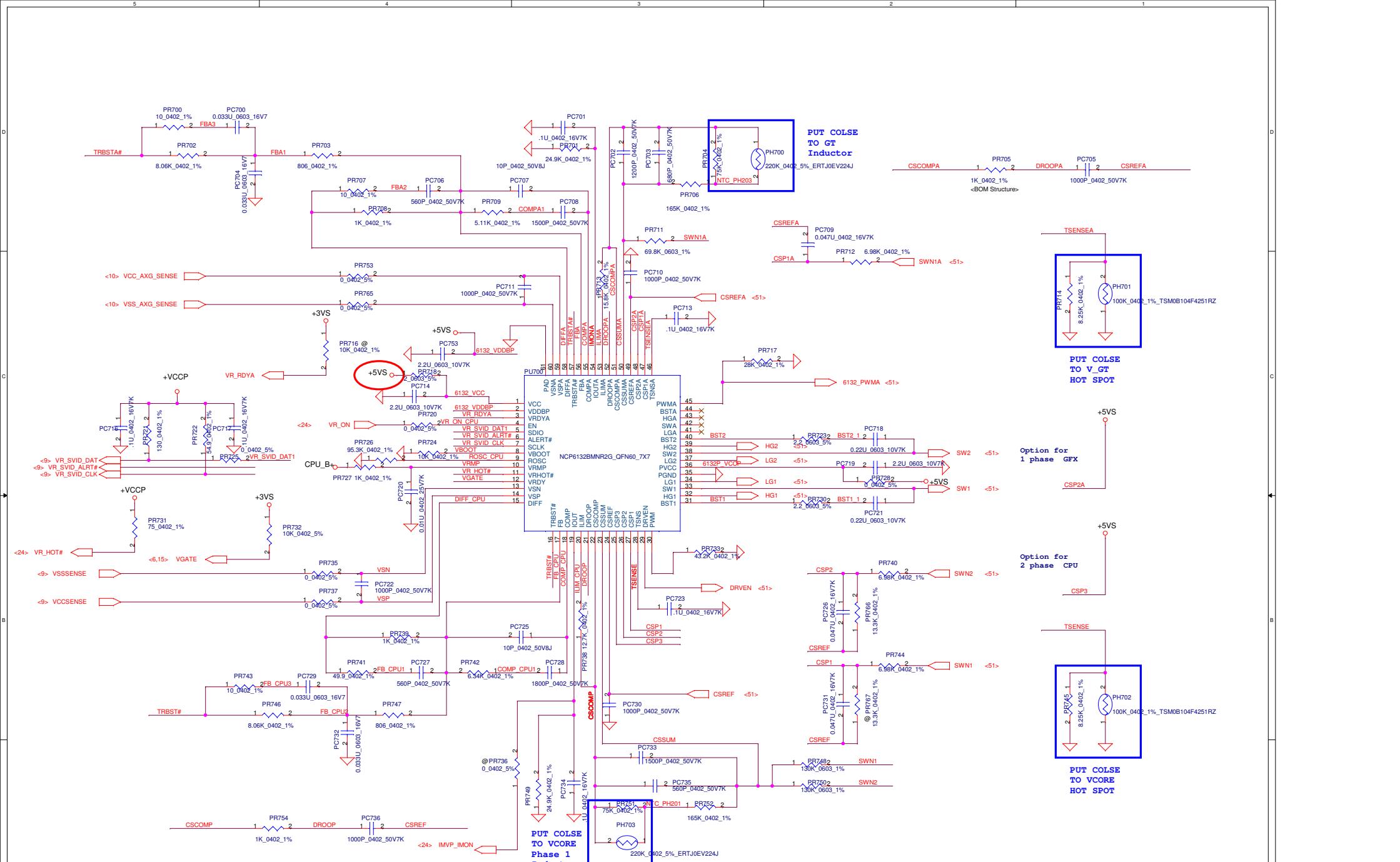
1.5VP
TDC 14A
Peak Current 20A
OCP current 24A
TYP MAX
H/S Rds(on) :10mohm , 14.5mohm
L/S Rds(on) :3mohm , 3.6mohm

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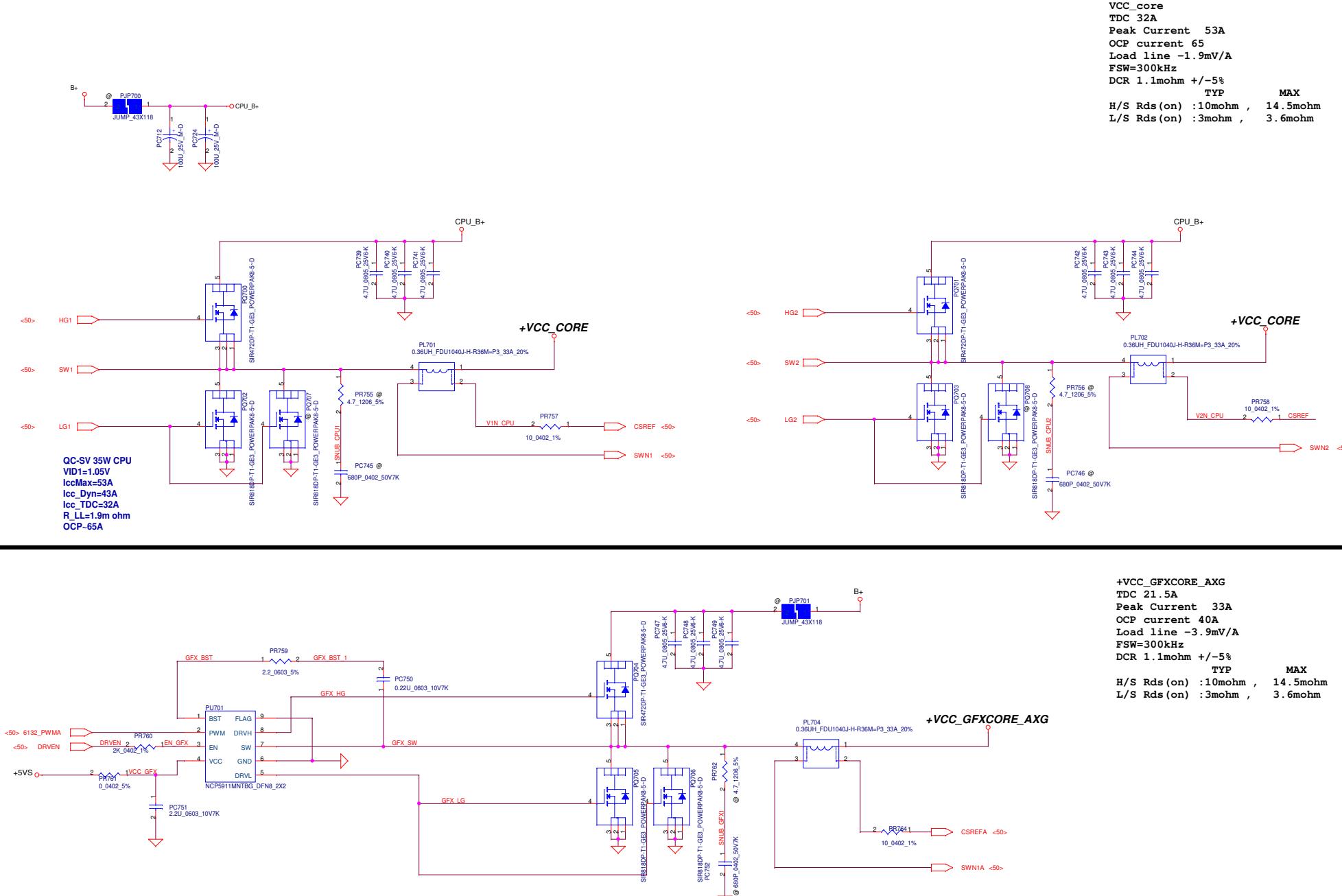


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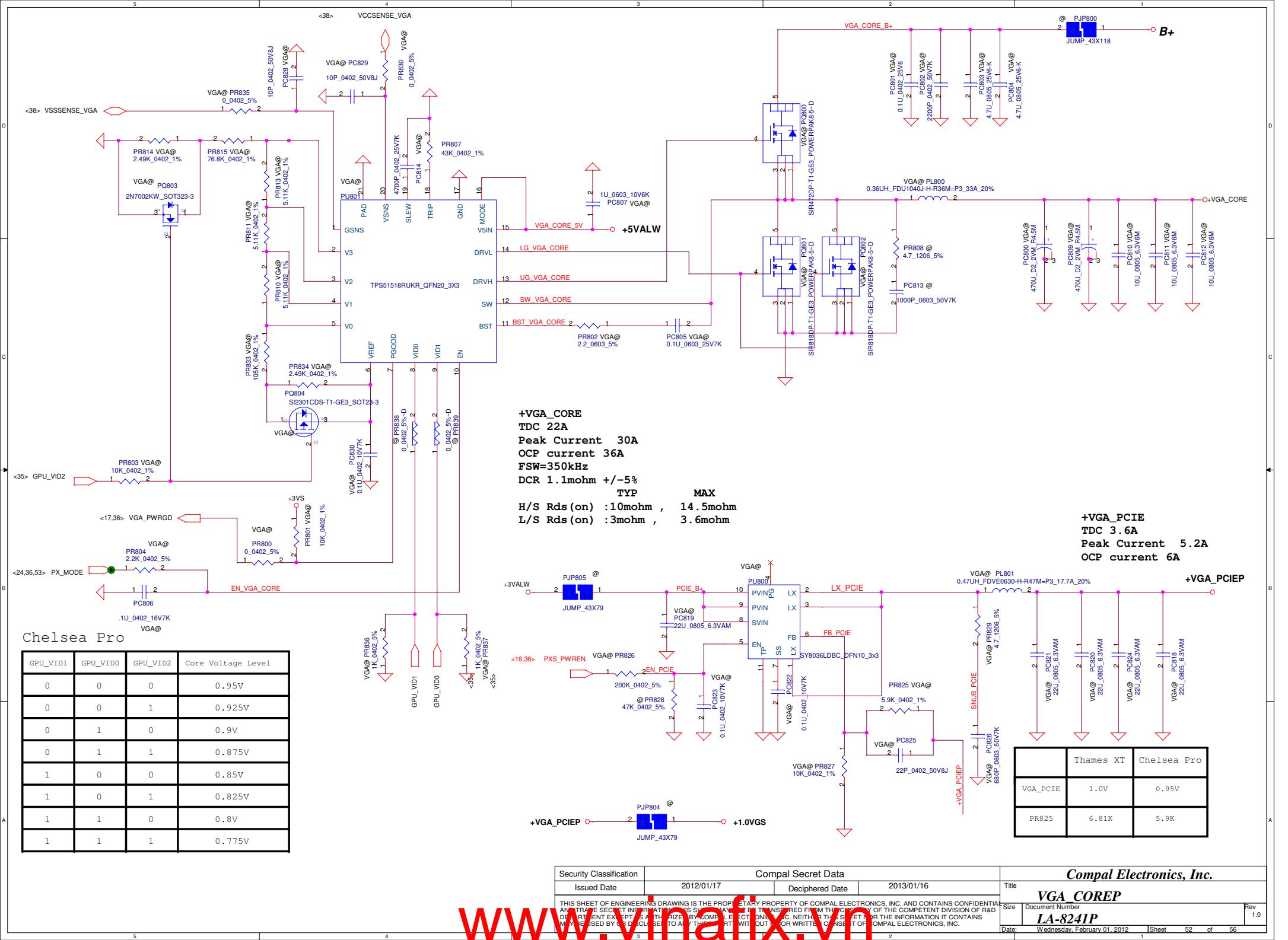


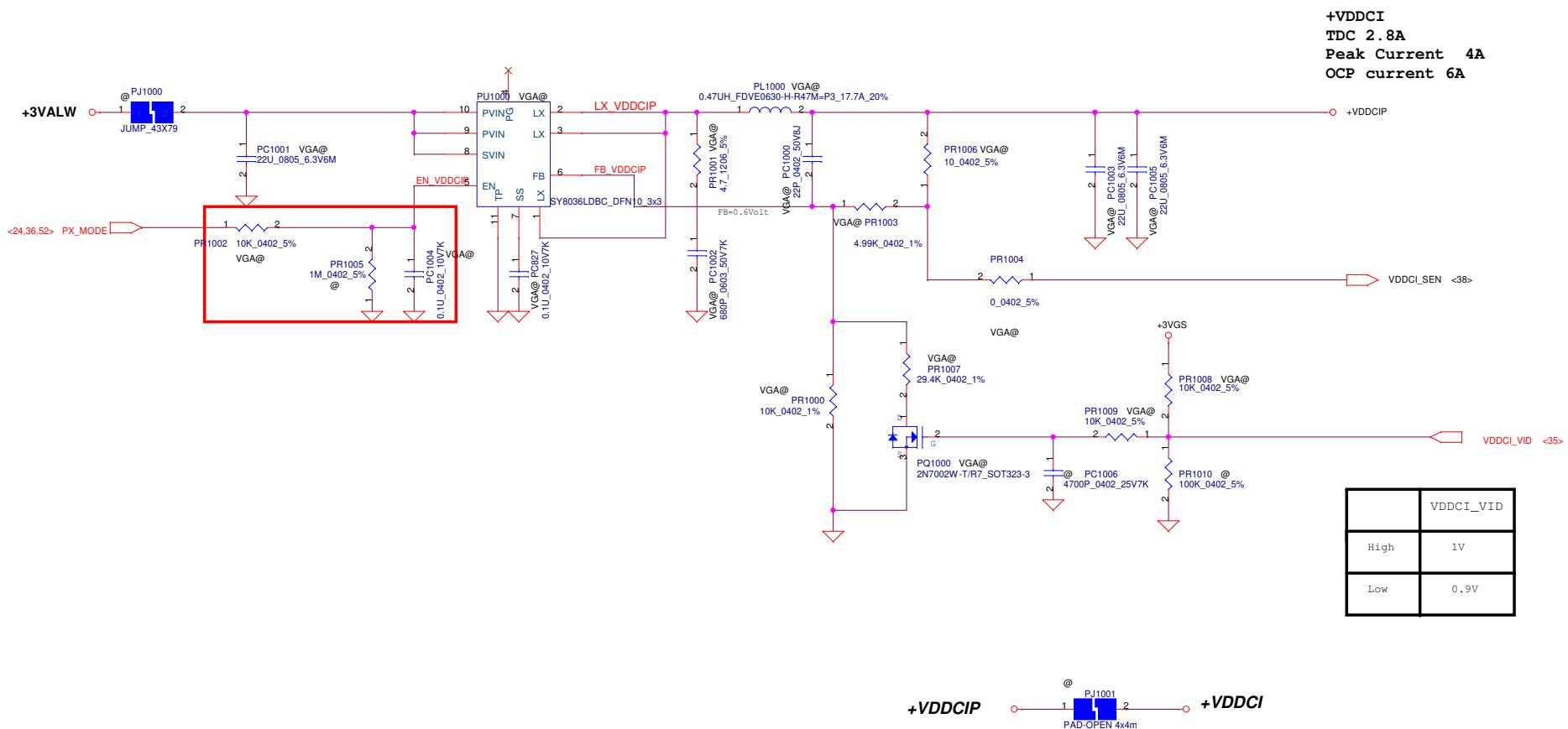
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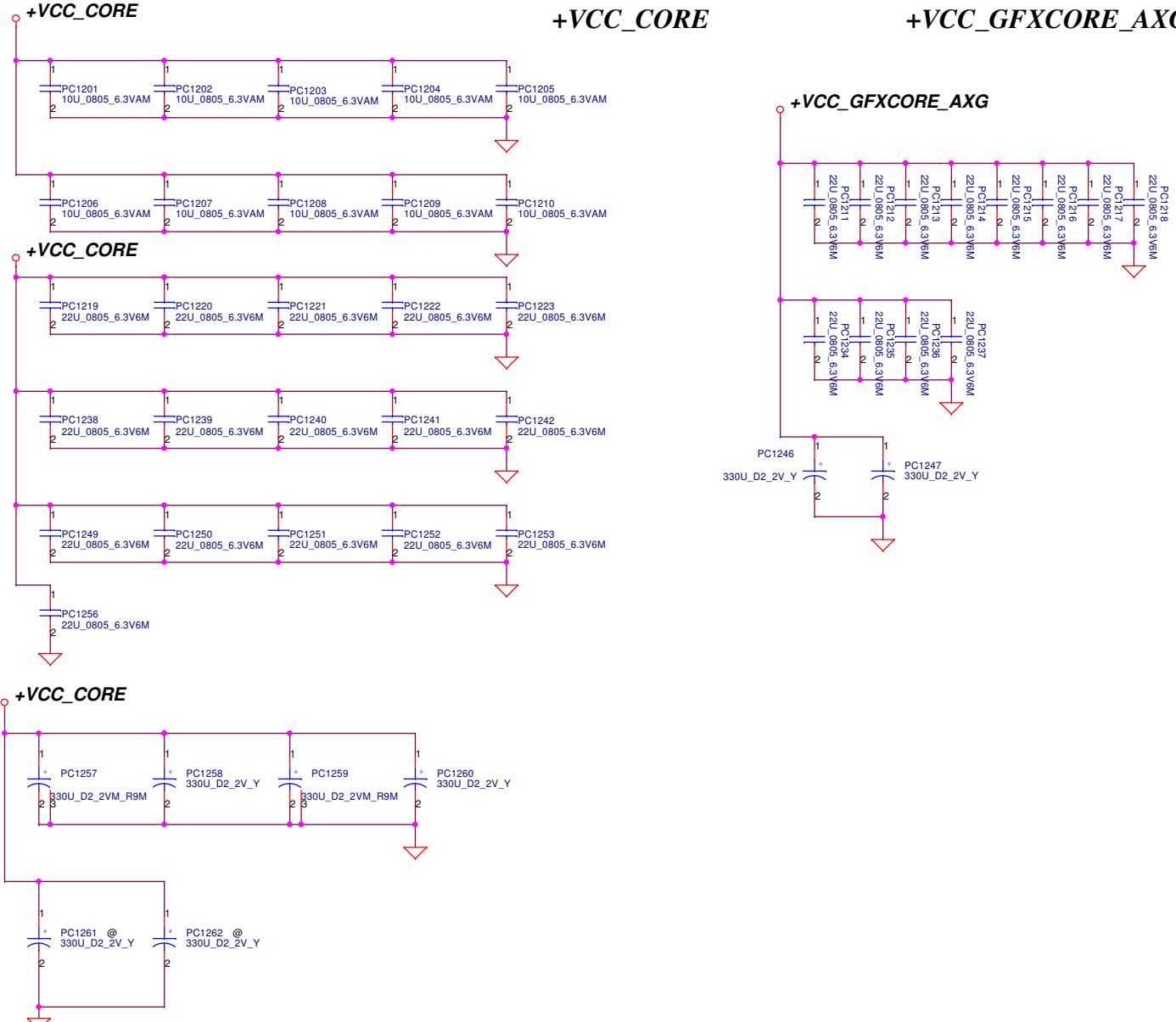
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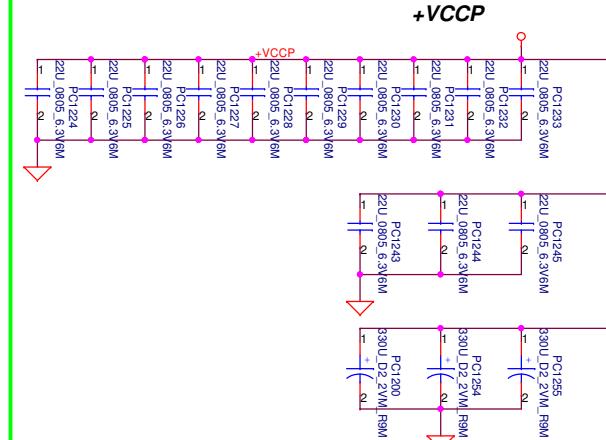
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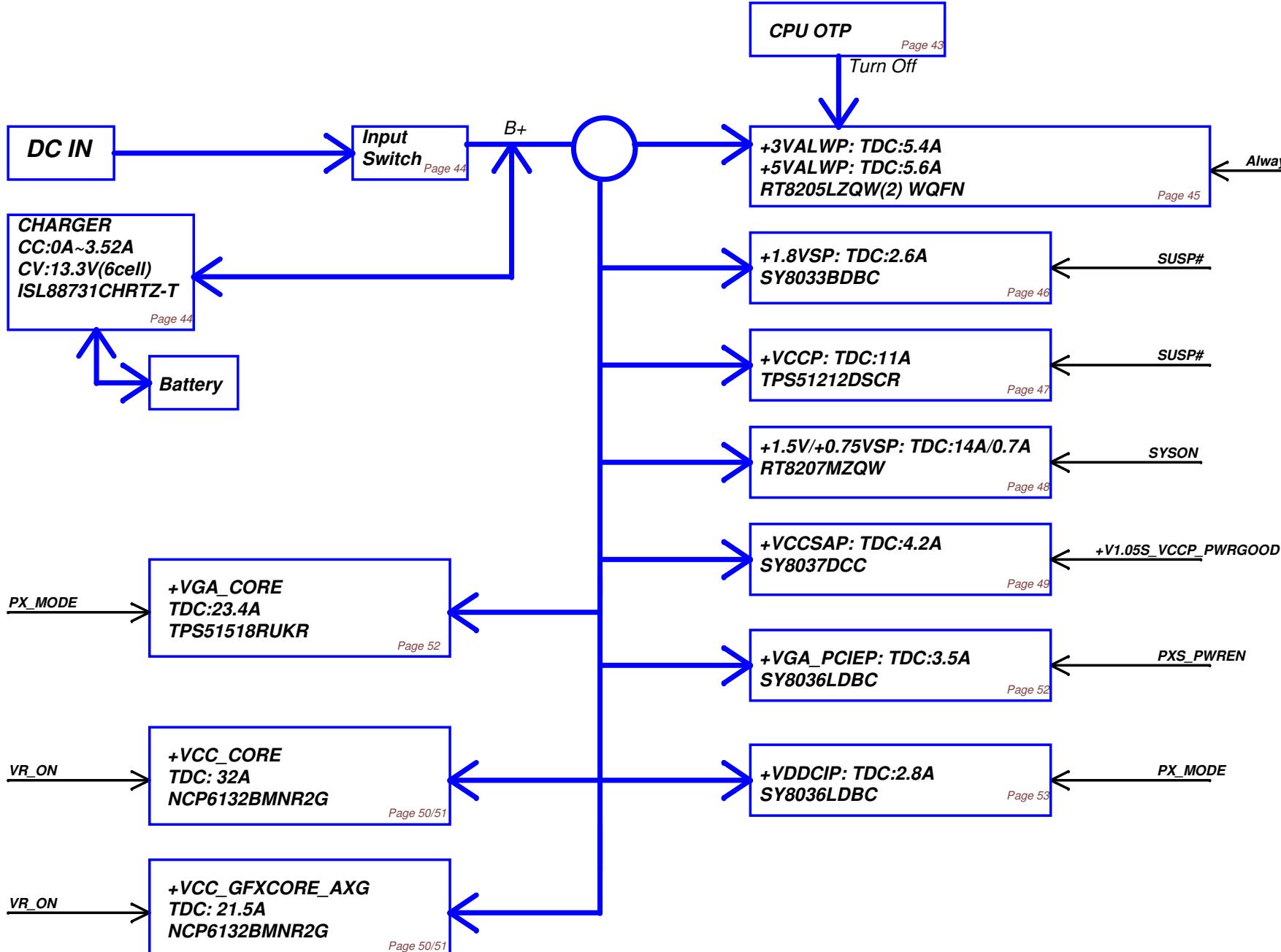


Socket Bottom	5 x 22 μ F (0805) 5 x (0805) no-stuff sites
Socket Top	7 x 22 μ F (0805) 2 x (0805) no-stuff sites



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Power block



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