

Compal Confidential

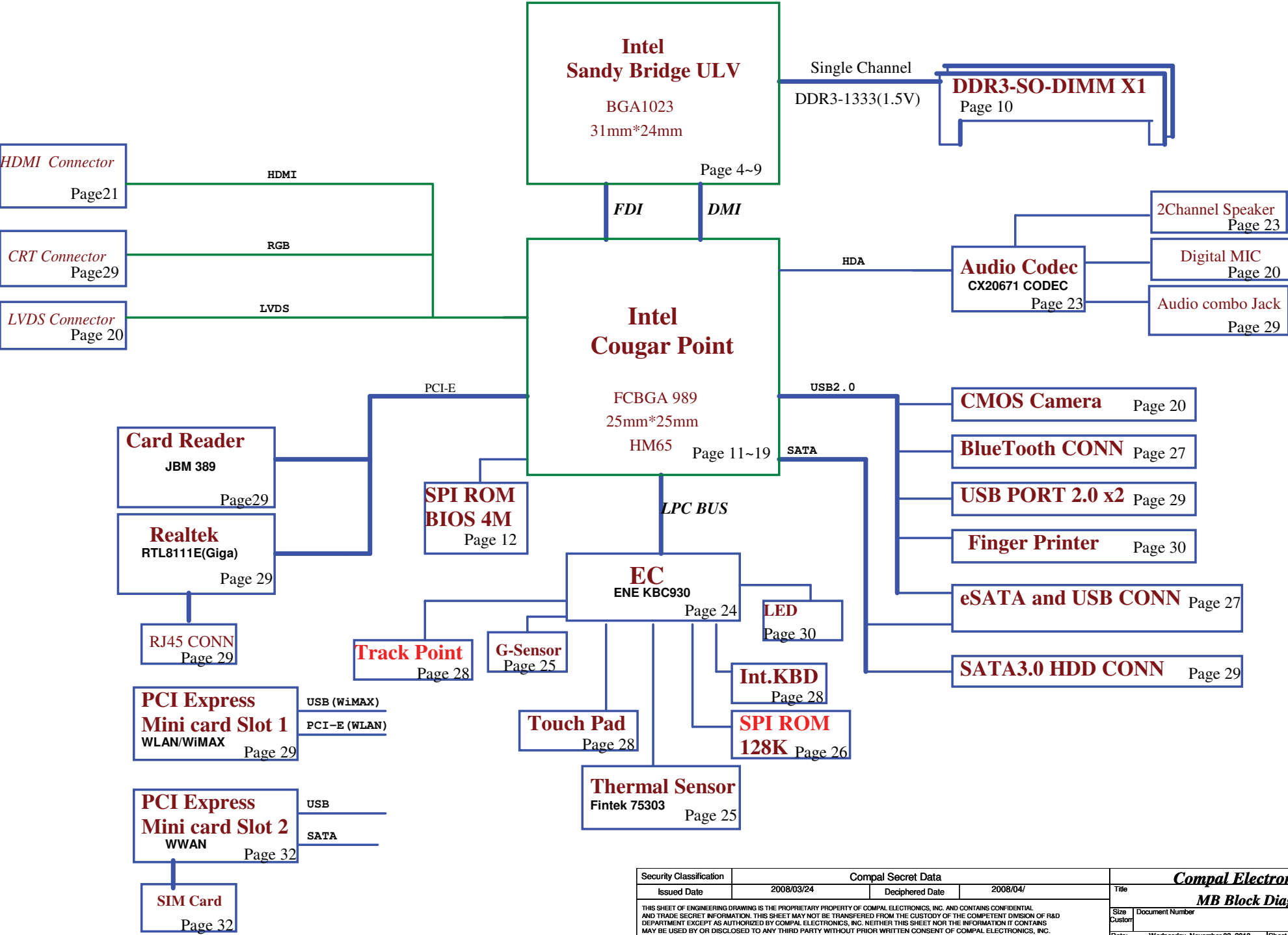
LA7041- Edge Schematics Document

Intel Sandy Bridge Processor with DDRIII + Cougar Point PCH

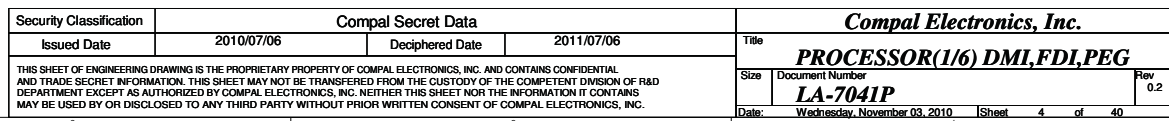
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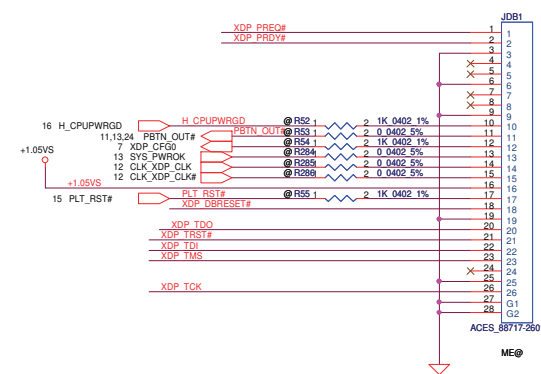
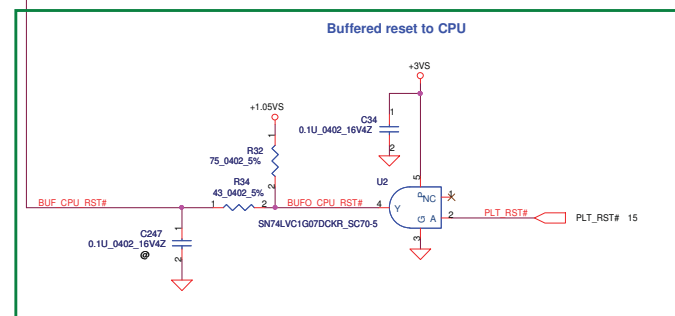
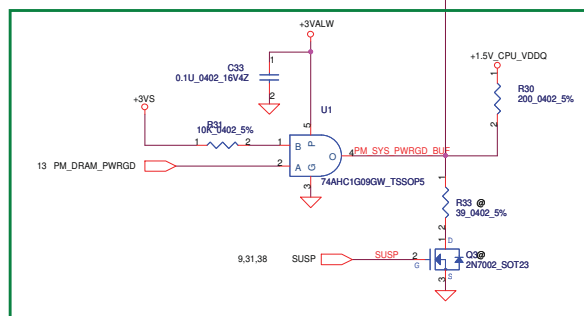
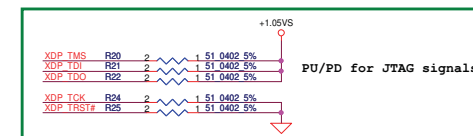
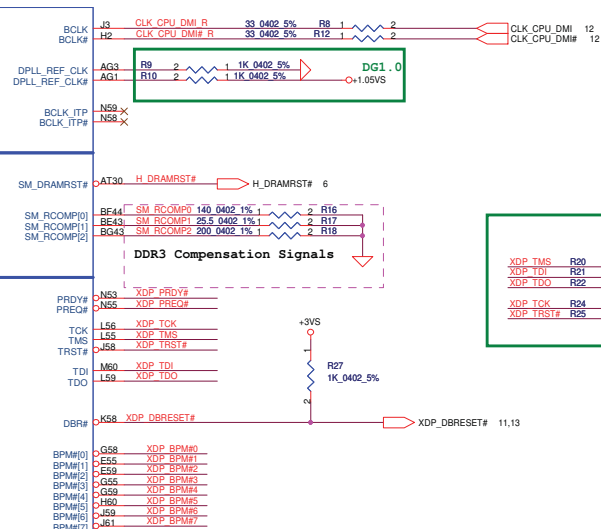
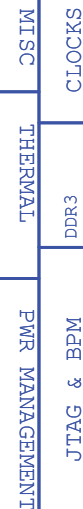
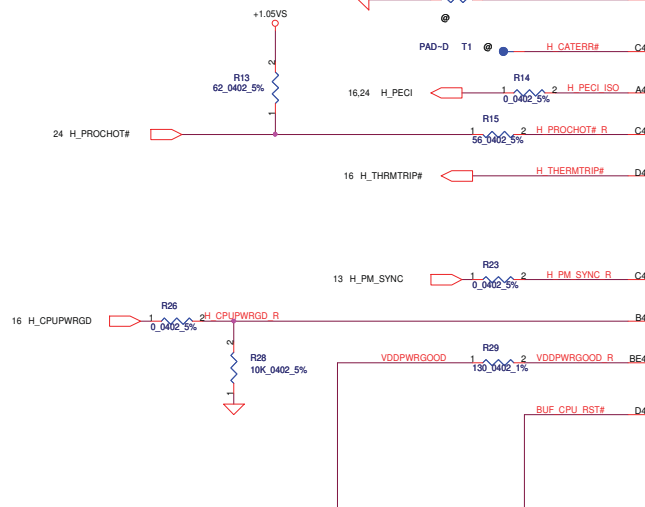
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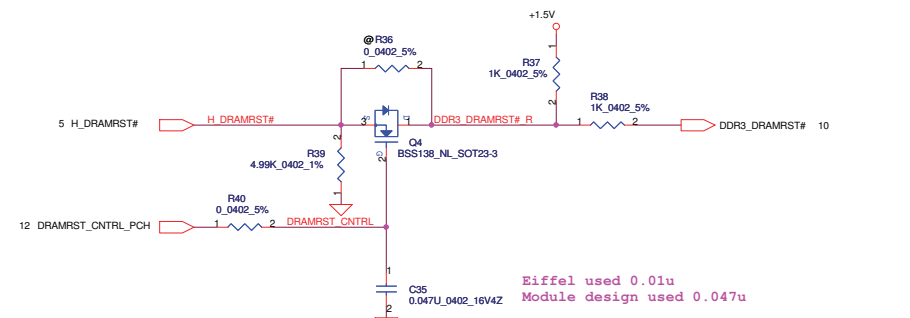
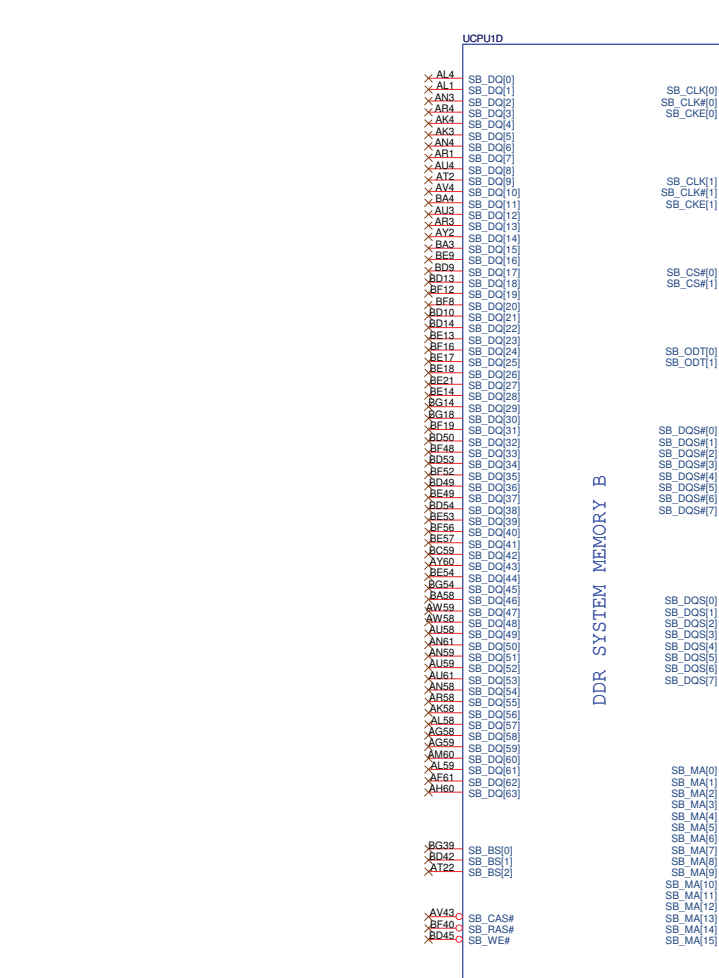
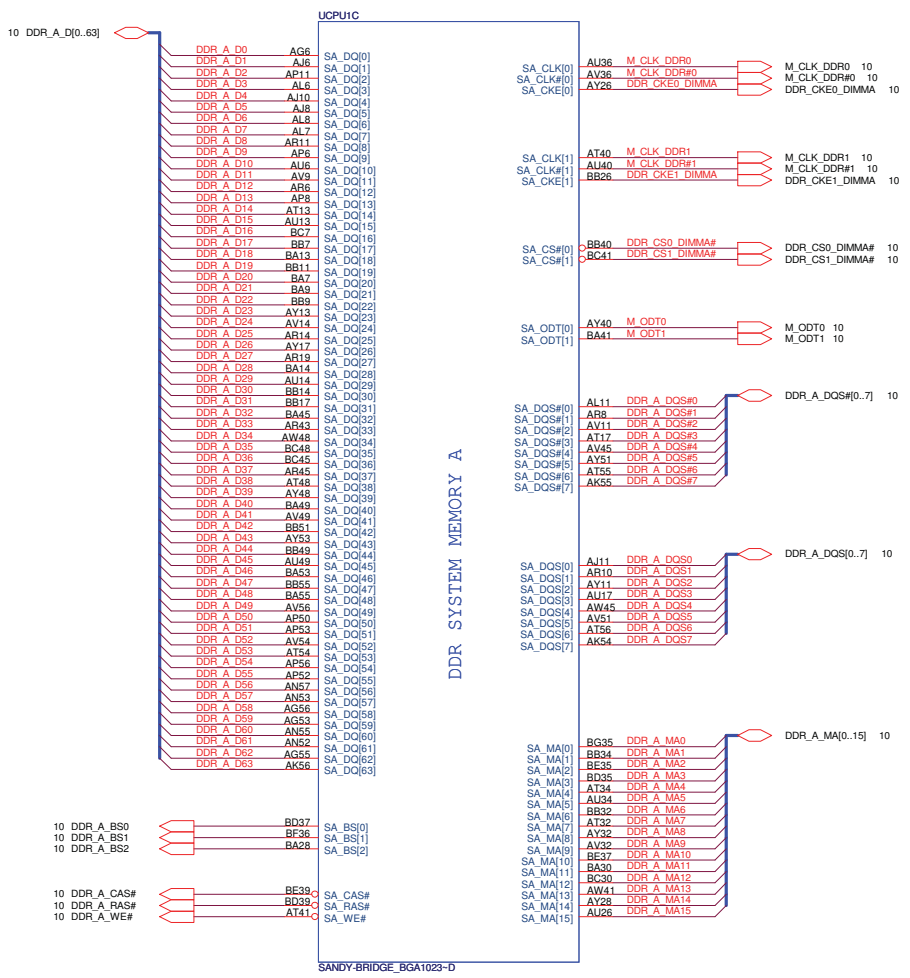
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Date: Wednesday, November 03, 2010				Sheet	1 of 40	



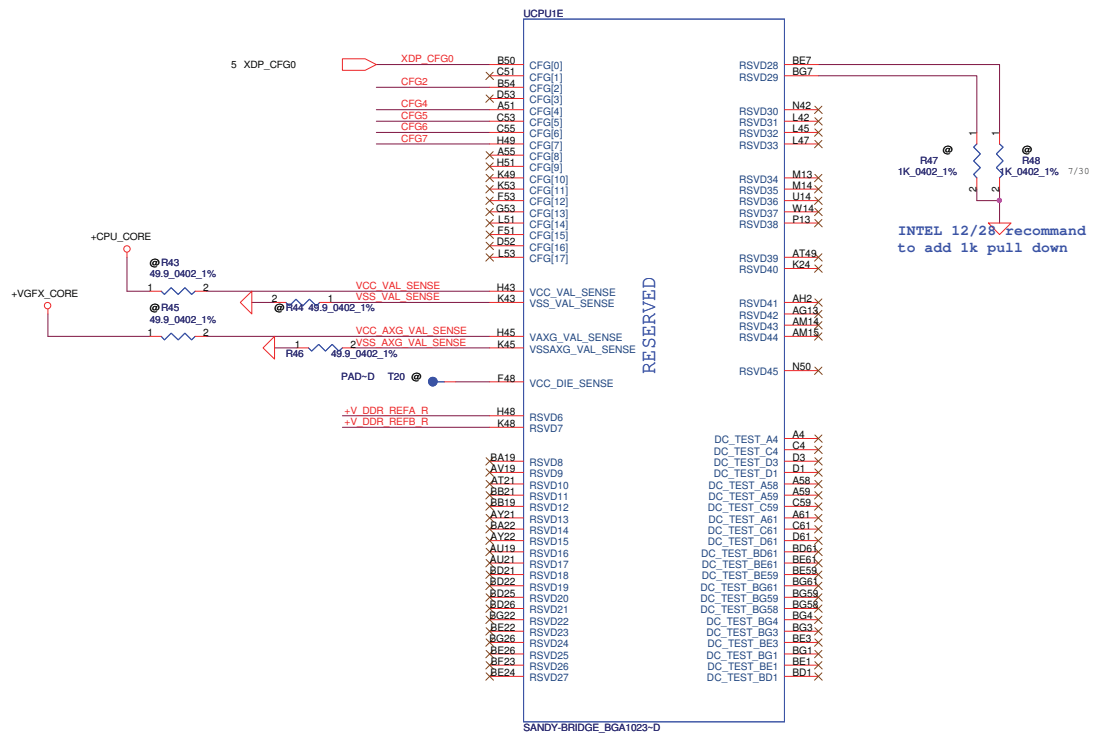
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				Custom	Rev
				Date: Wednesday, November 03, 2010	Sheet 2 of 40
				MB Block Diagram	
				0.2	







CFG Straps for Processor



CFG2

PEG Static Lane Reversal - CFG2 is for the 16x

*1: (Default) Normal Operation; Lane # definition matches socket pin map definition
0: Lane Reversed

CFG4

Display Port Presence Strap

*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

CFG6

CFG5

PCIE Port Bifurcation Straps

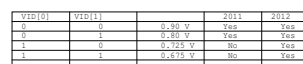
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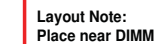
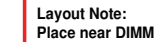
*11: (Default) x16 - Device 1 functions 1 and 2 disabled
10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled
01: Reserved - (Device 1 function 1 disabled ; function 2 enabled)
00: x8,x4,x4 - Device 1 functions 1 and 2 enabled

CFG7

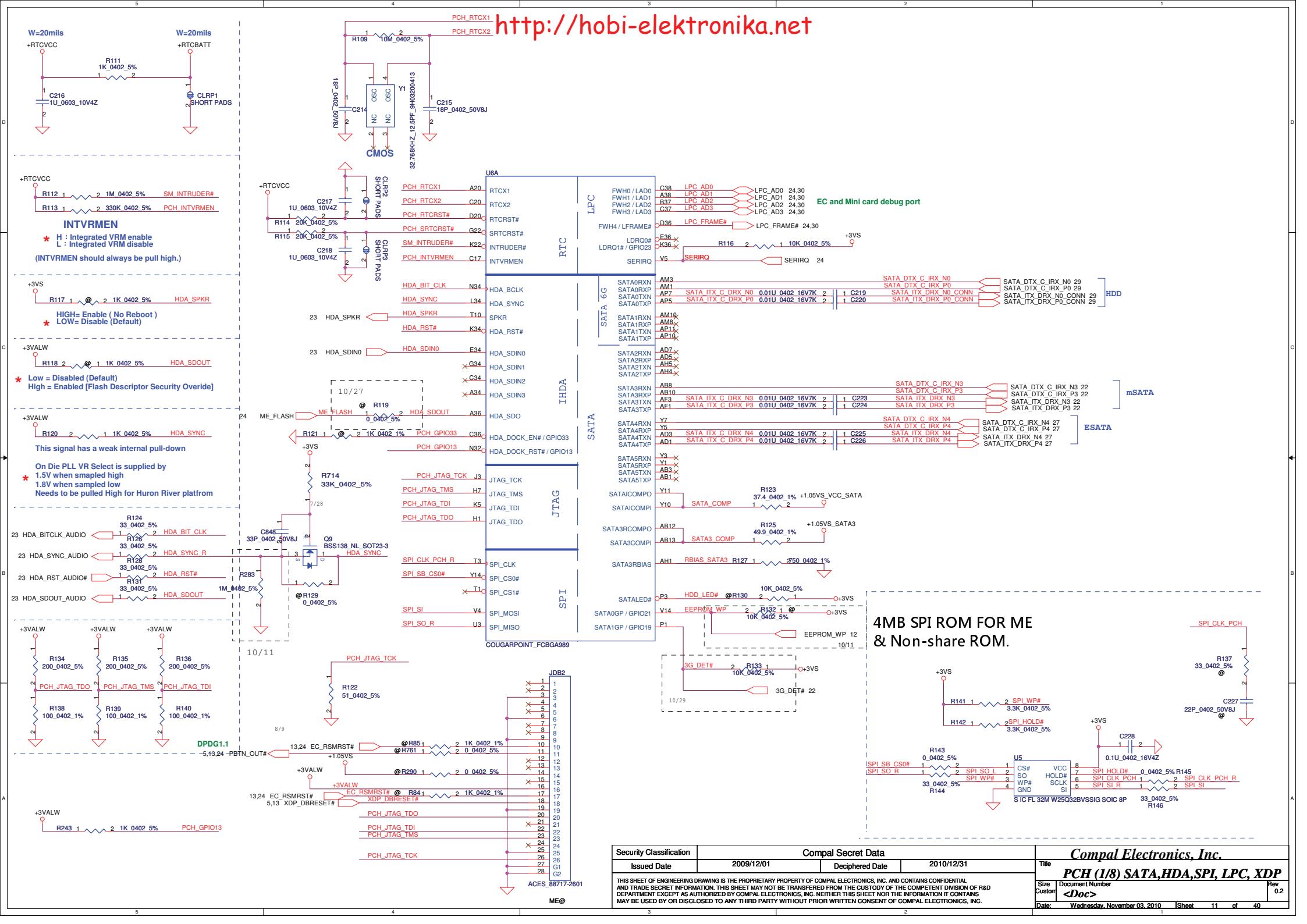
PEG DEFER TRAINING

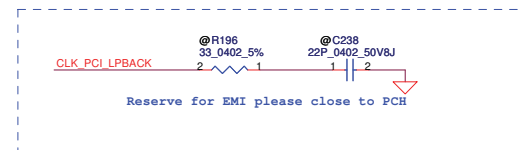
*1: (Default) PEG Train immediately following xxRESETB de assertion
0: PEG Wait for BIOS for training



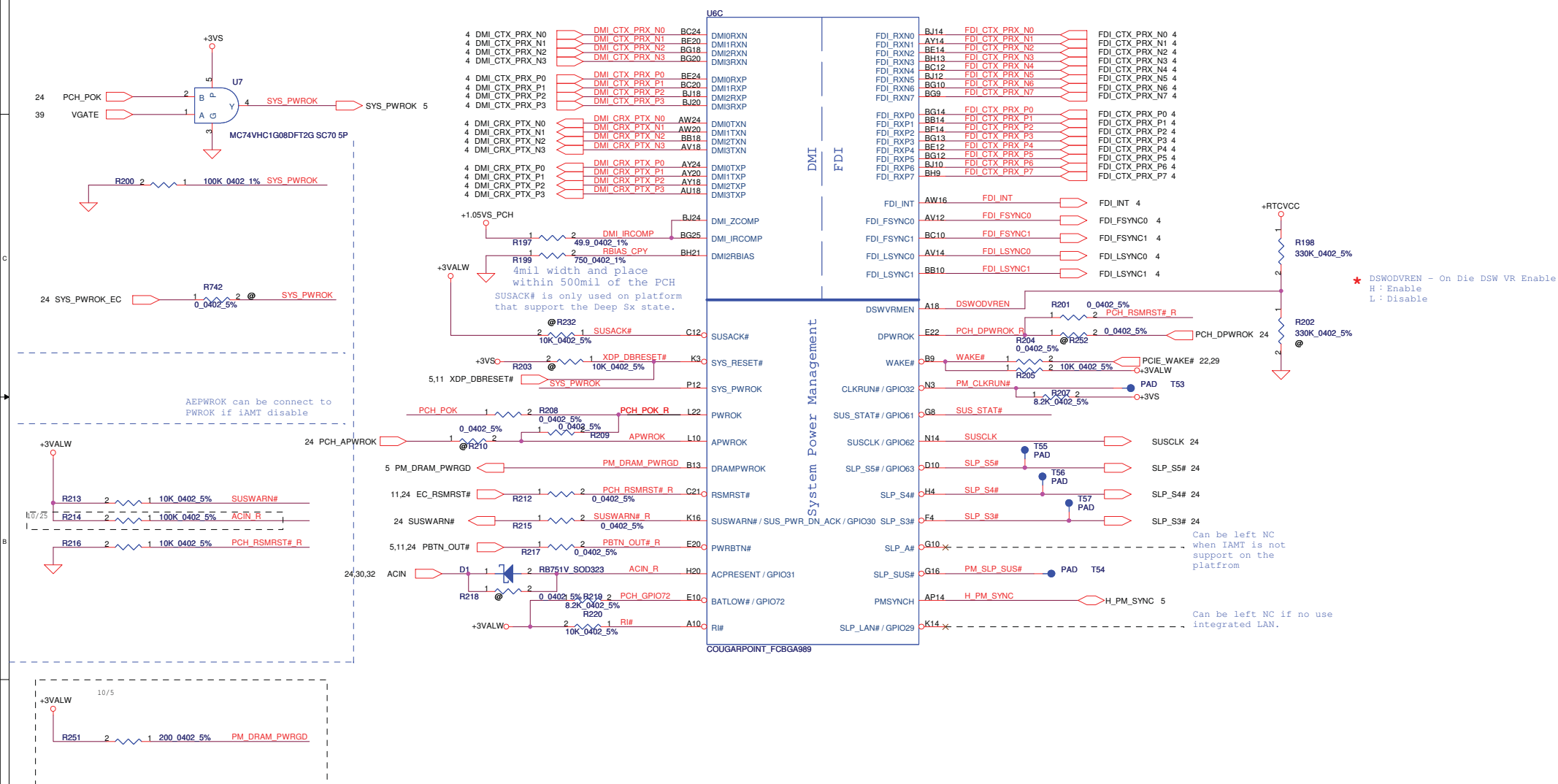


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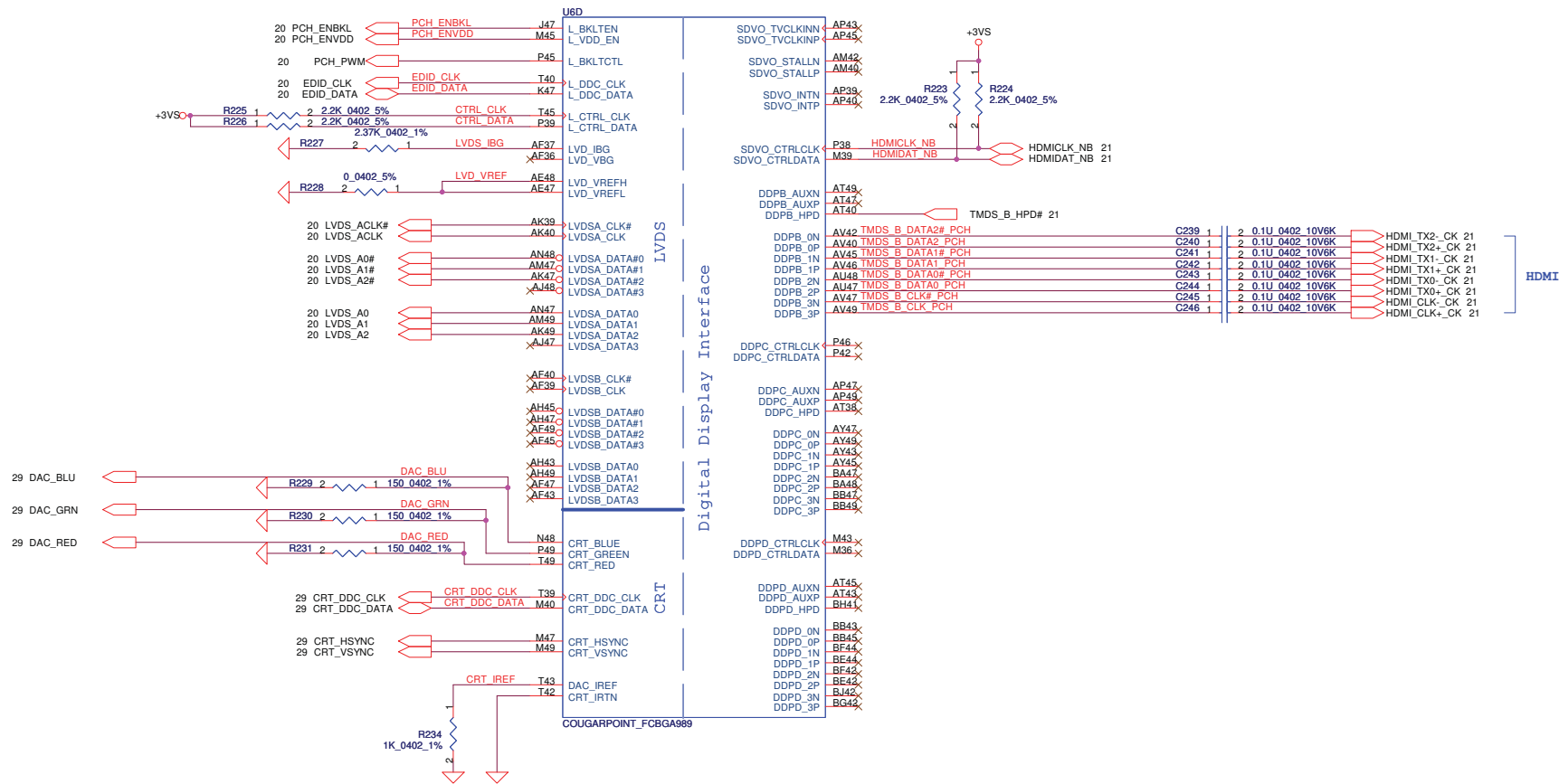


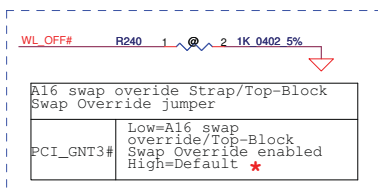
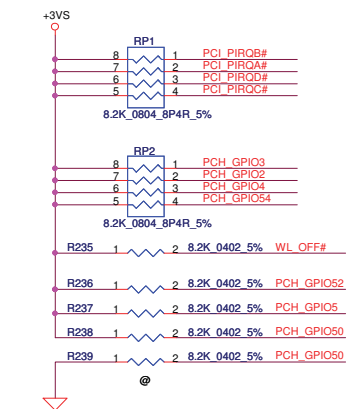


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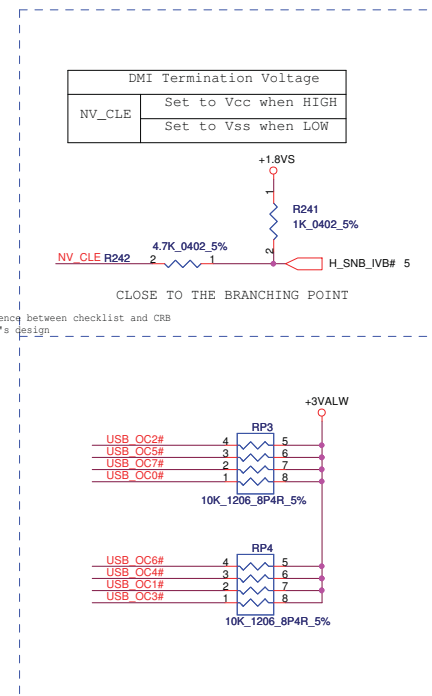
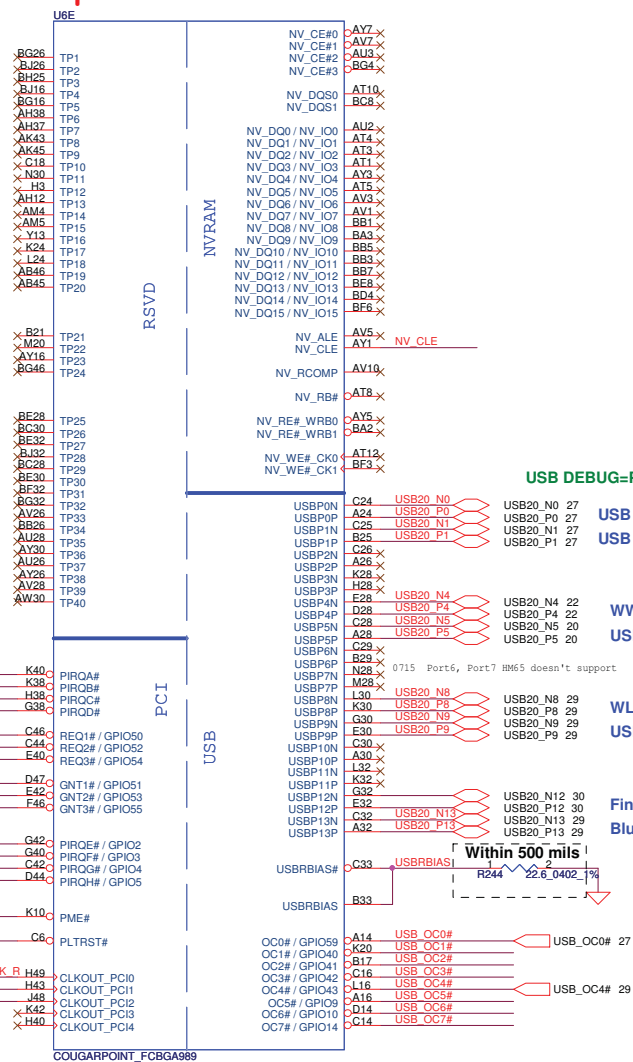
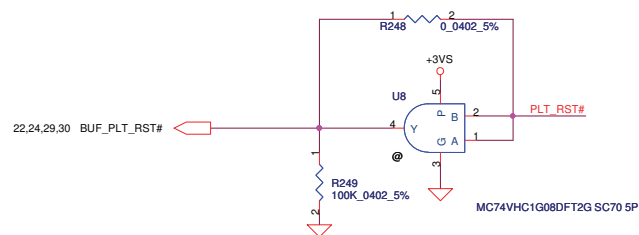
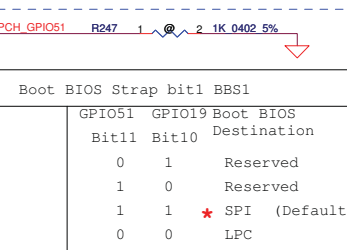
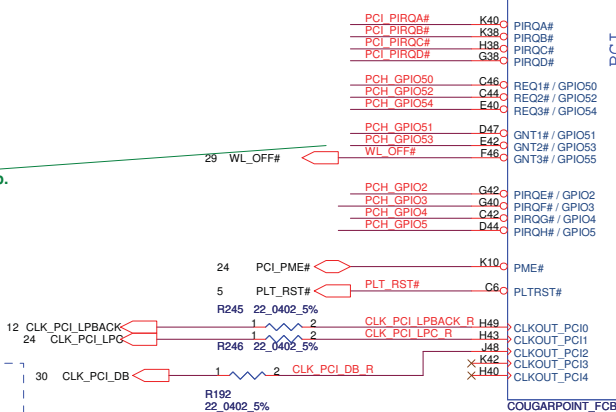


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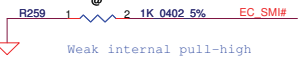
GPIO53=This Signal has a weak internal pull-up.
NOTE: The internal pull-up is disabled after PLTRST# deasserts.



6/24 Change to @ follow module design and double check on module design meeting

ICC_EN#
Integrated Clock Chip Enable

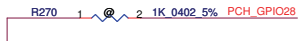
H ; Disable
L ; Enable



Weak internal pull-high

GPIO28
On-Die PLL Voltage Regulator

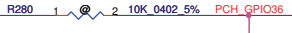
This signal has a weak internal pull up
* H : On-Die voltage regulator enable
L : On-Die PLL Voltage Regulator disable



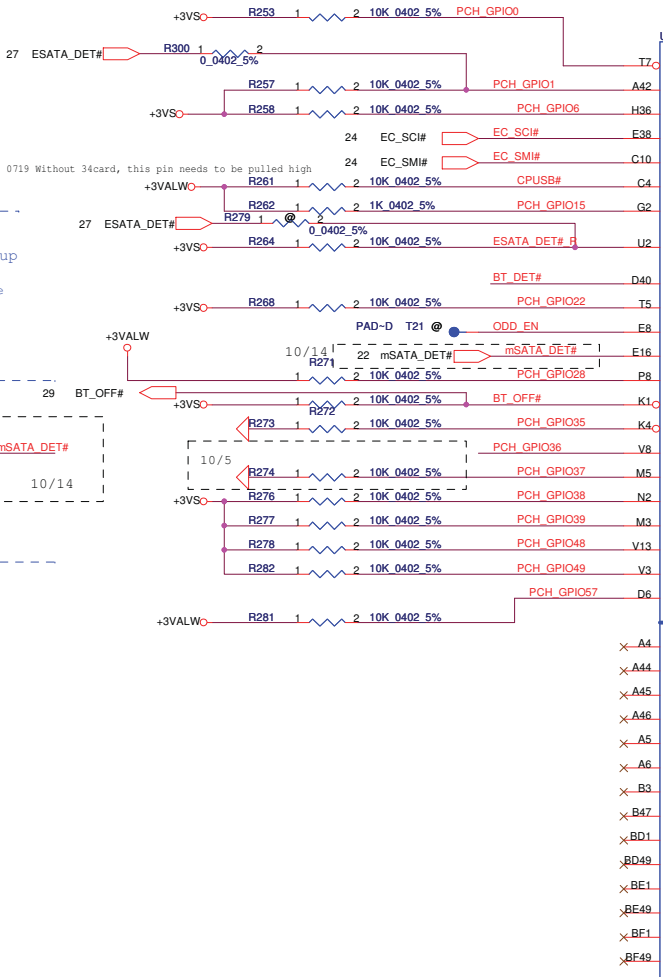
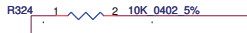
24 mSATA_PH



PCH_GPIO36



PCH_GPIO36

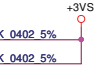


U6F
BMBUS# / GPIO0
TACH1 / GPIO1
TACH2 / GPIO6
TACH3 / GPIO7
GPIO8
C10
LAN_PHY_PWR_CTRL / GPIO12
GPIO15
SATA4GP / GPIO16
U2
TACH0 / GPIO17
SCLOCK / GPIO22
GPIO27
GPIO28
STP_PCI# / GPIO34
GPIO35
SATA2GP / GPIO36
SATA3GP / GPIO37
SLOAD / GPIO38
SDATAOUT0 / GPIO39
SDATAOUT1 / GPIO48
V3
SATA5GP / GPIO49
GPIO57
D6
VSS_NCTF_1
VSS_NCTF_2
VSS_NCTF_3
VSS_NCTF_4
VSS_NCTF_5
VSS_NCTF_6
VSS_NCTF_7
VSS_NCTF_8
VSS_NCTF_9
VSS_NCTF_10
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VSS_NCTF_13
VSS_NCTF_14
COUGARPOINT_FCBGA989

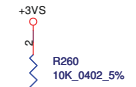
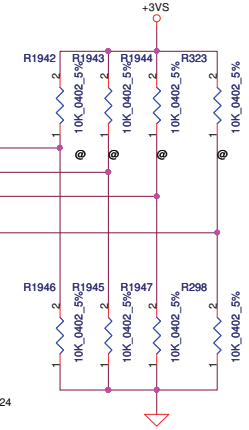
GPIO

NCTF

CPU/MISC
TACH4 / GPIO68
TACH5 / GPIO69
TACH6 / GPIO70
TACH7 / GPIO71
A40
A20GATE
PECI
RCIN#
PROC_PWRGD
THRMTRIP#
INIT3_3V#
NC_1
NC_2
NC_3
NC_4
NC_5
VSS_NCTF_15
VSS_NCTF_16
VSS_NCTF_17
VSS_NCTF_18
VSS_NCTF_19
VSS_NCTF_20
VSS_NCTF_21
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VSS_NCTF_31
VSS_NCTF_32

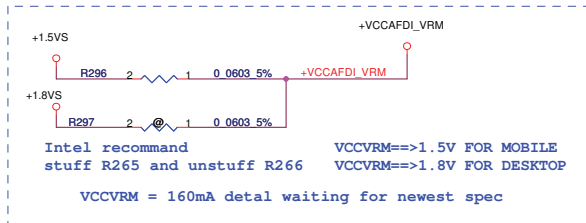


PCH_GPIO68
PCH_GPIO69
PCH_GPIO70
PCH_GPIO71



INIT3_3V
This signal has weak internal PU, can't pull low
Intel schematic review recommend.

PCH_GPIO69	PCH_GPIO70	PCH_GPIO71	Function
0	0	0	UMA

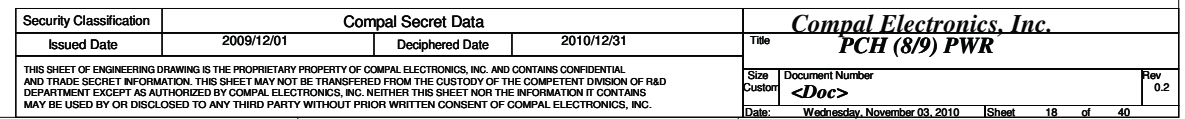


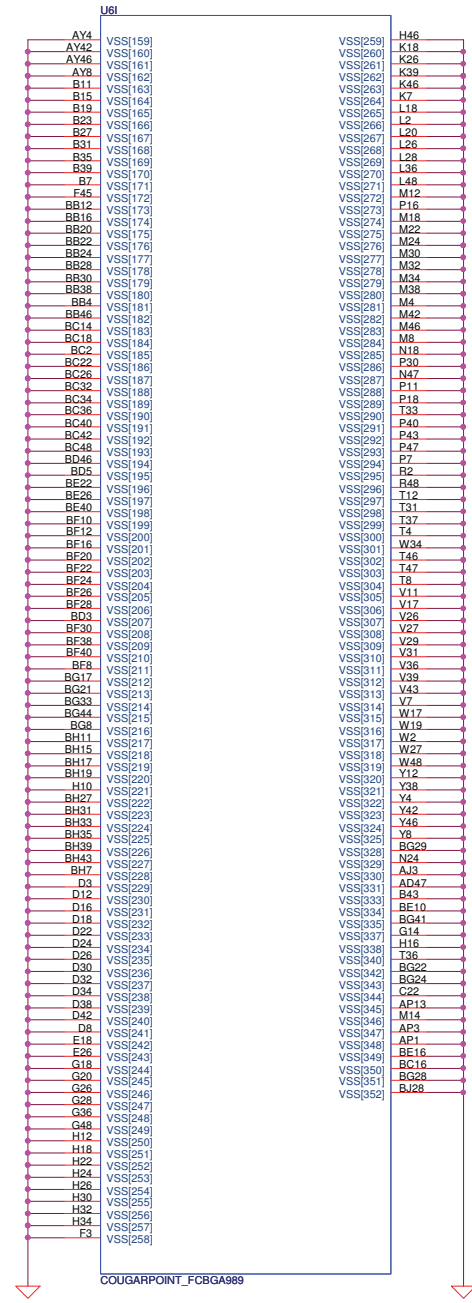
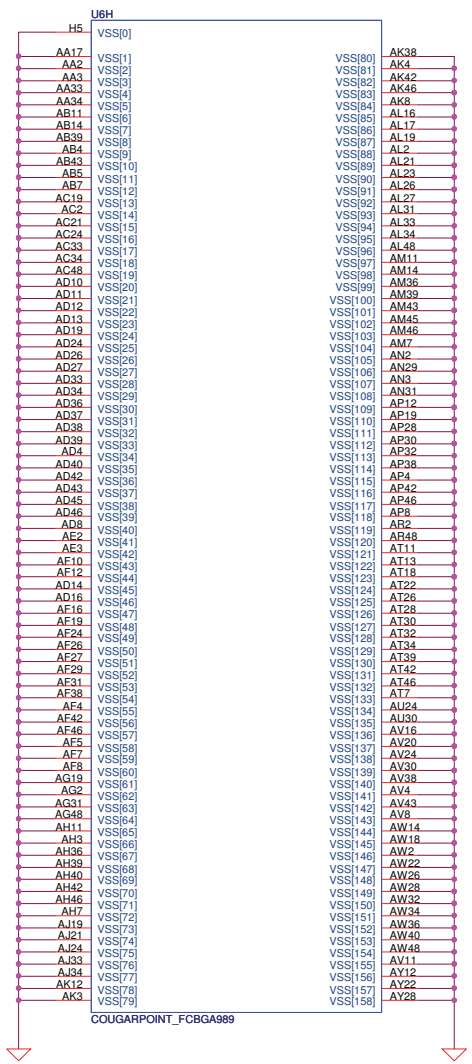
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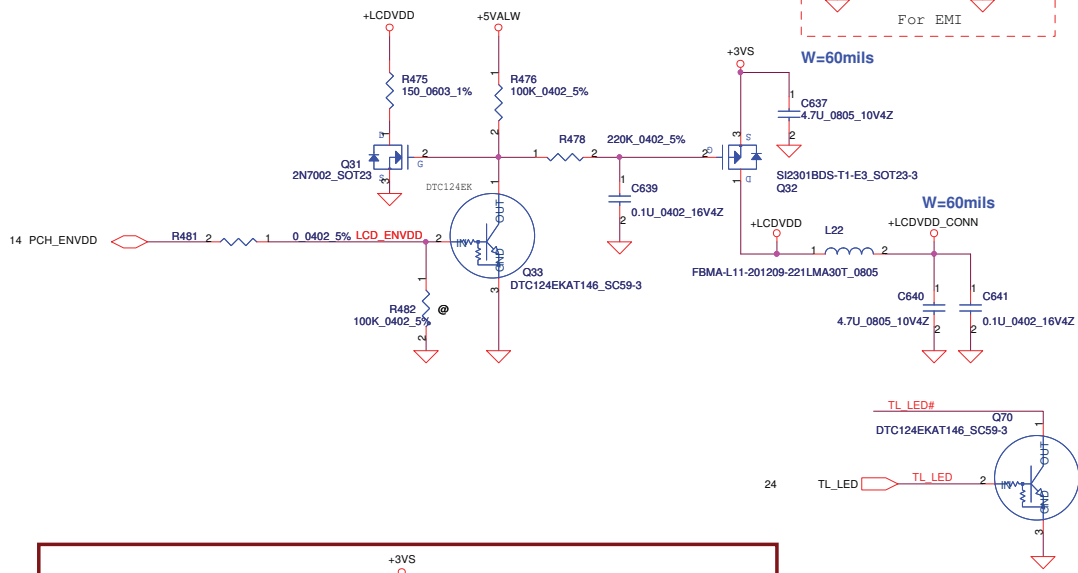
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```
VCC3_3 = 266mA detal waiting for newest spec
VCCDMI = 42mA detal waiting for newest spec
```

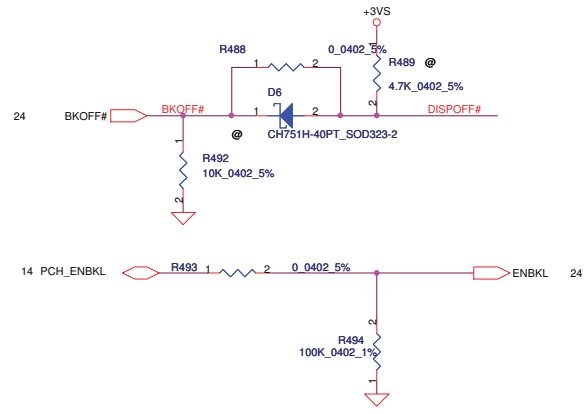
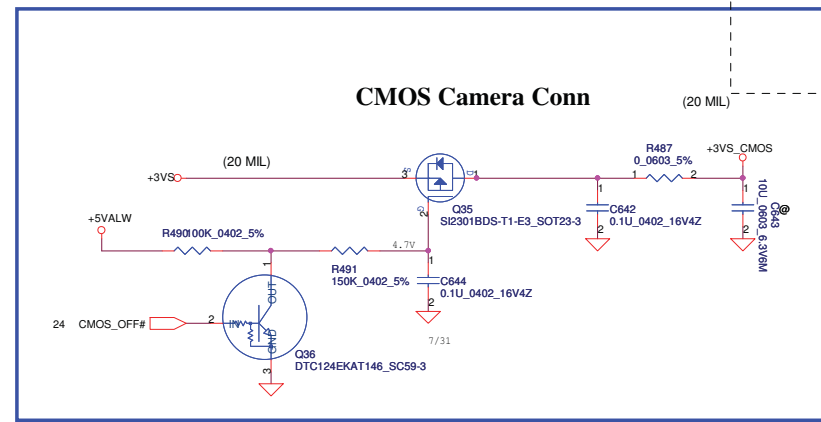
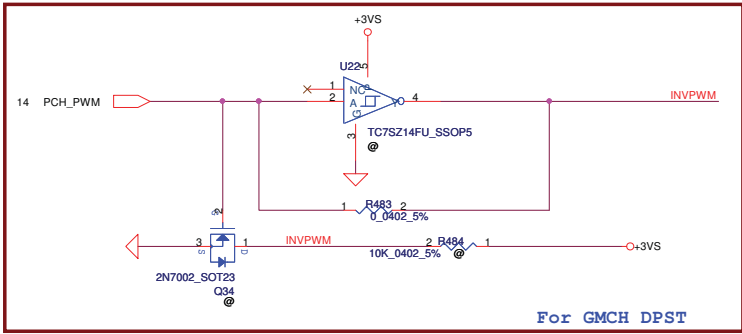
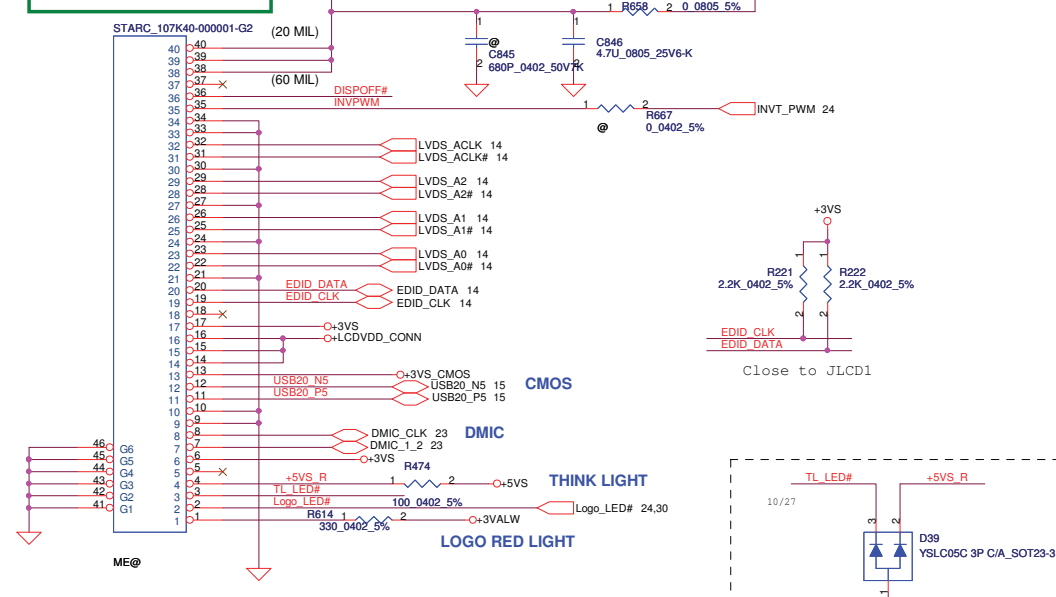


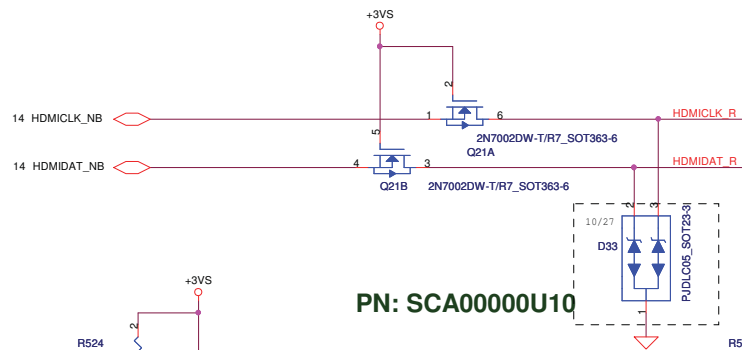
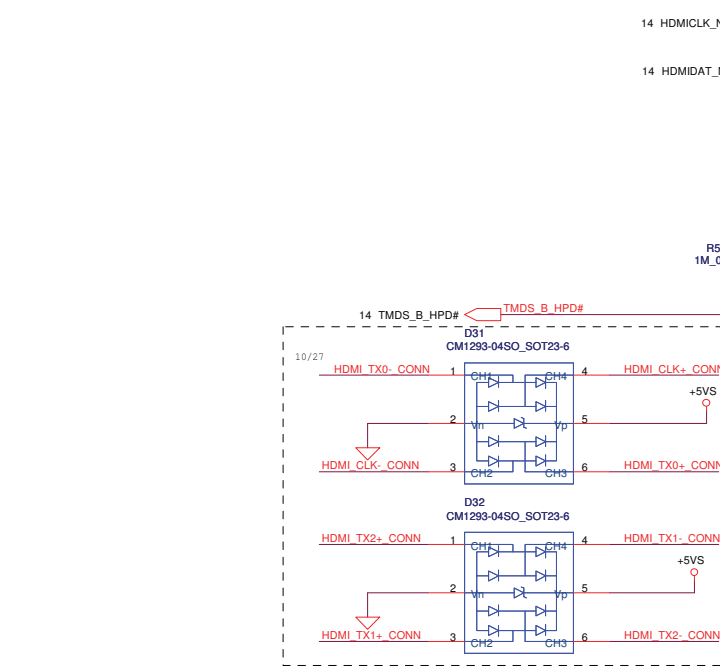
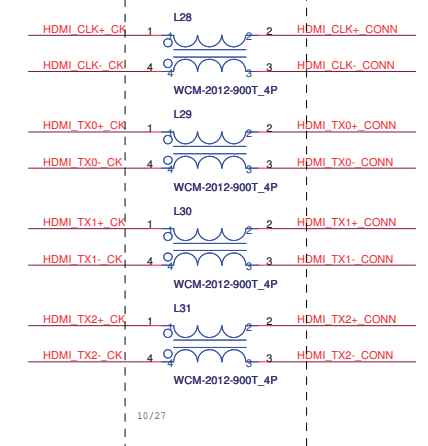
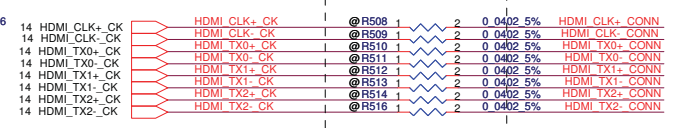
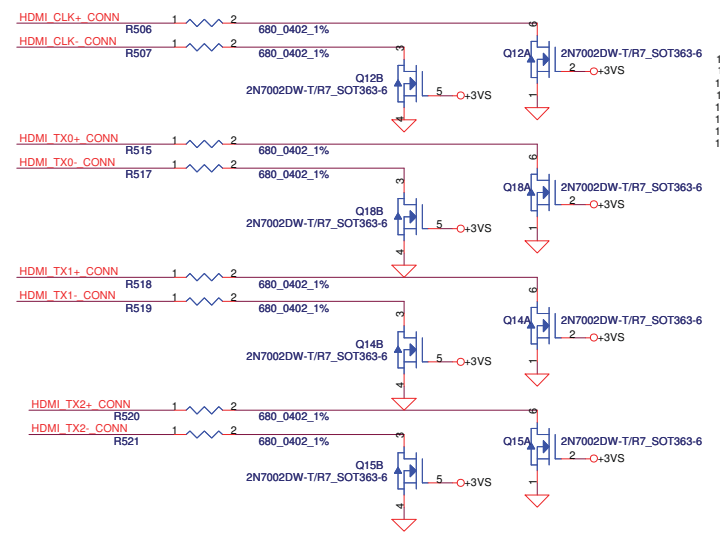


LCD POWER CIRCUIT

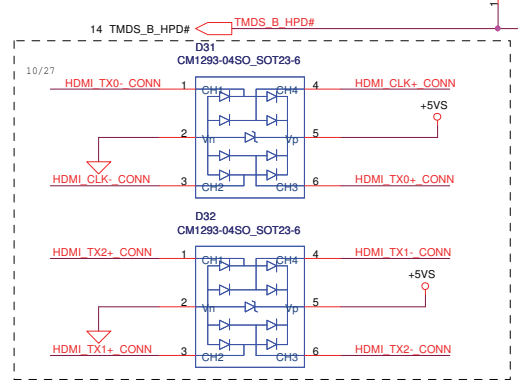


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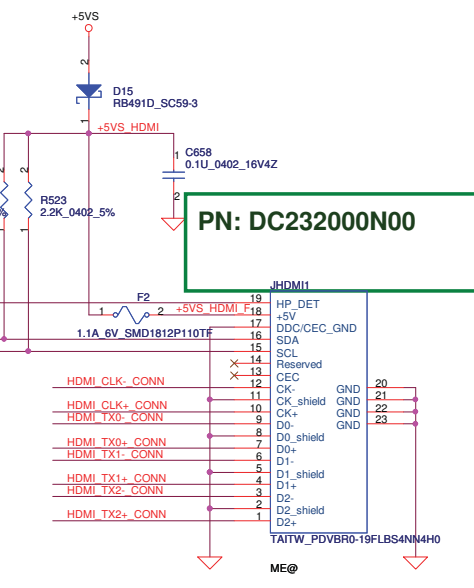




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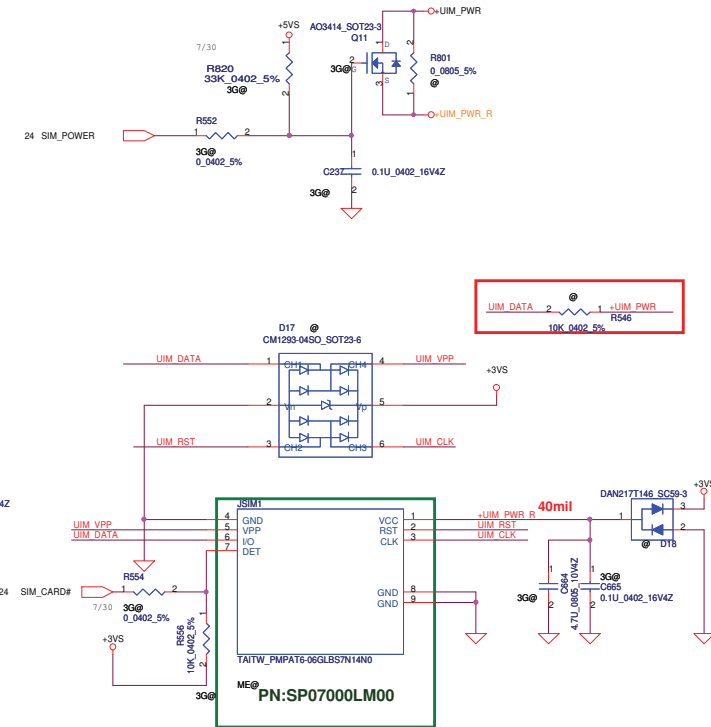
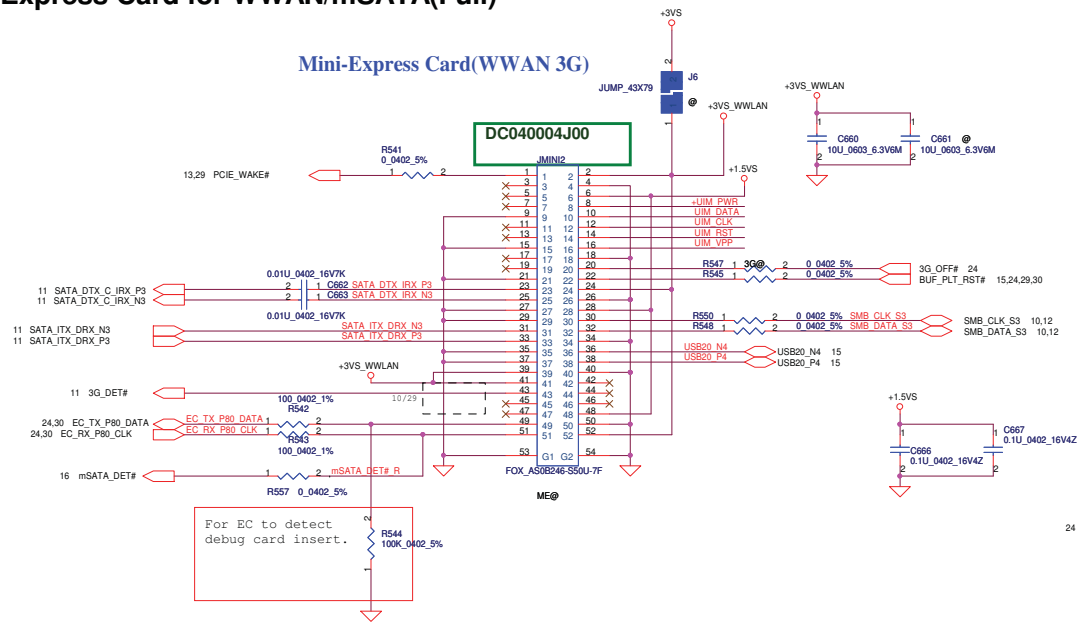
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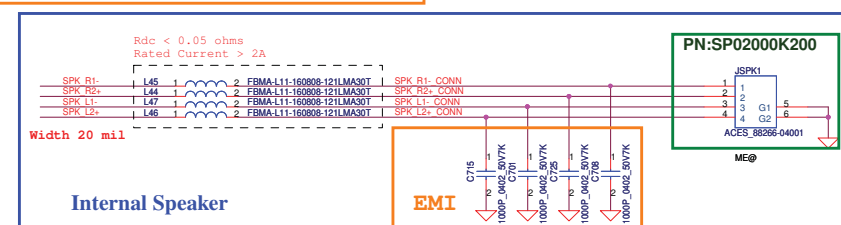
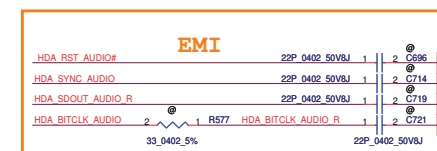
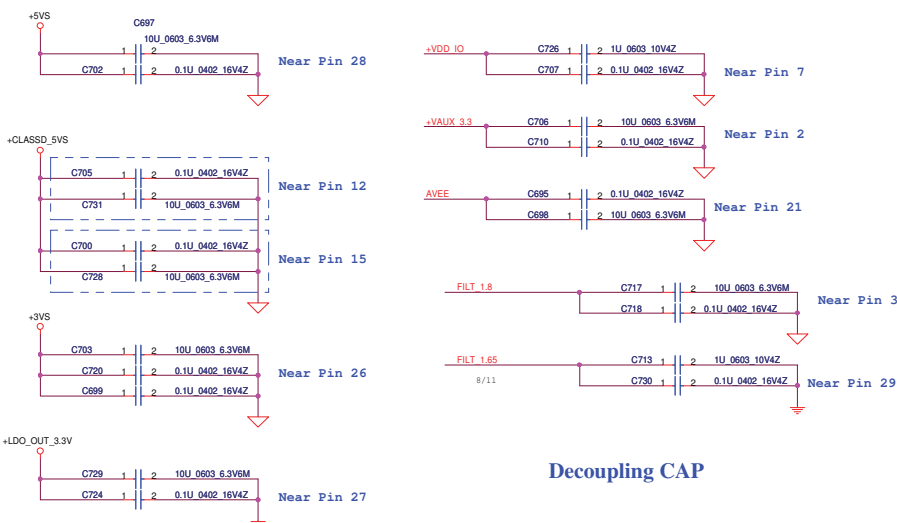
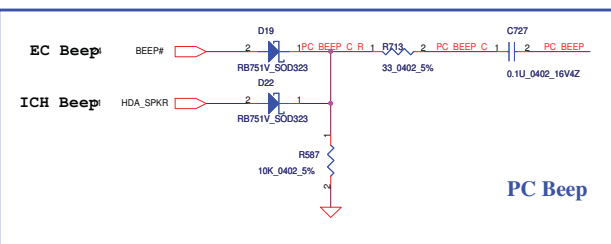
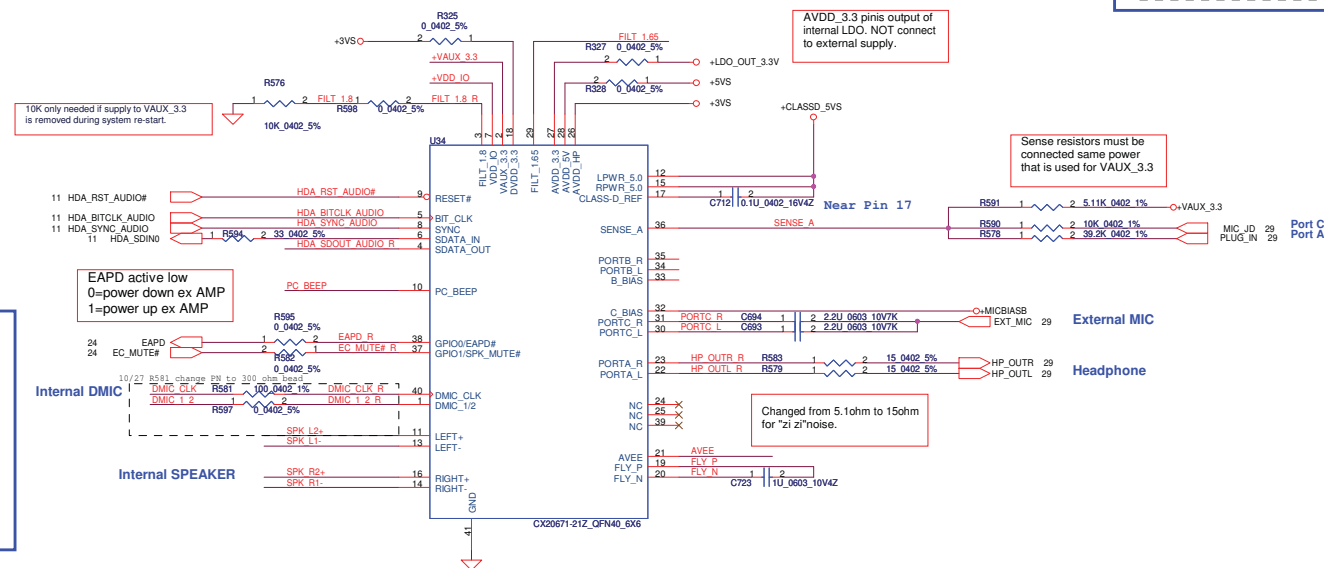
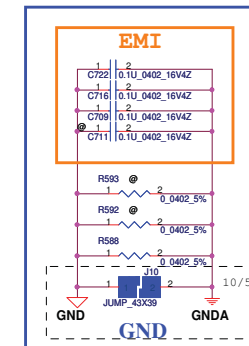


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Mini-Express Card for WWAN/mSATA(Full)

Mini-Express Card(WWAN 3G)

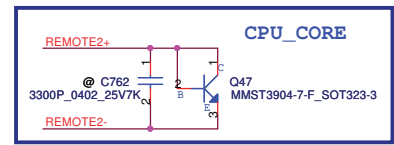
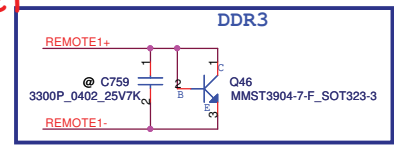
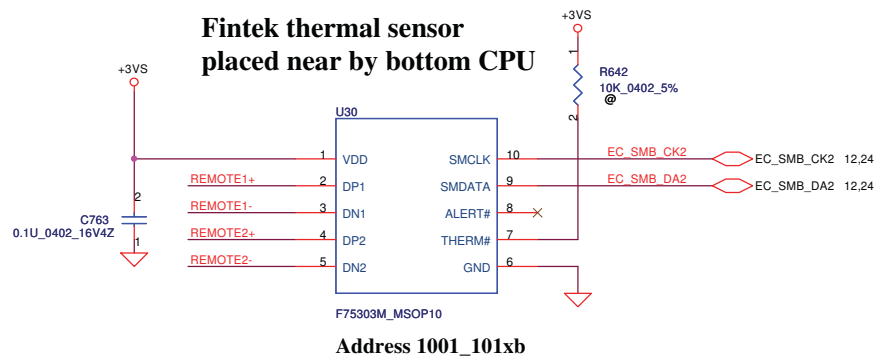
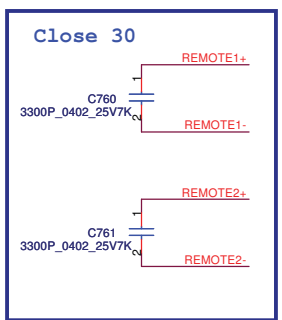




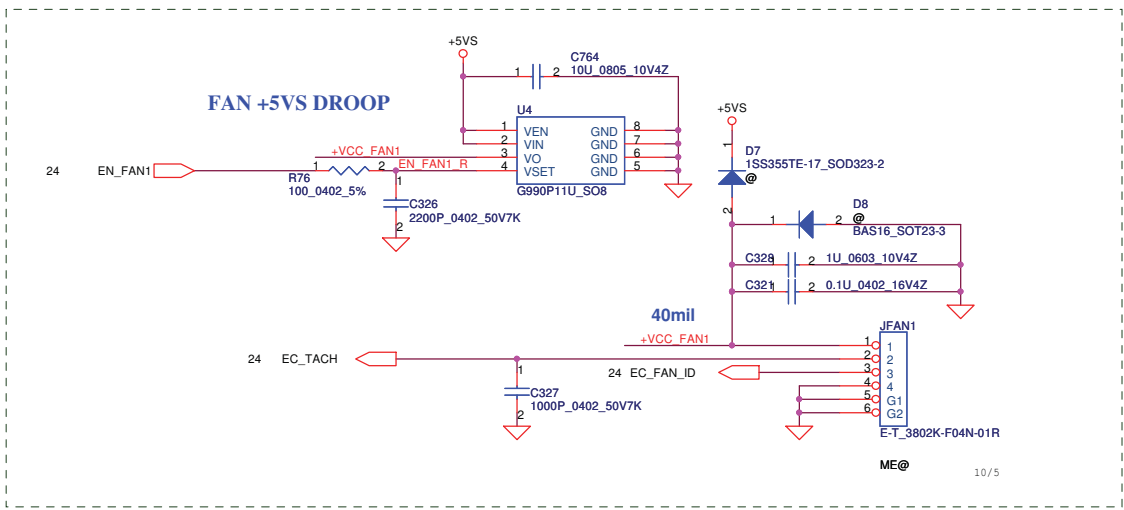
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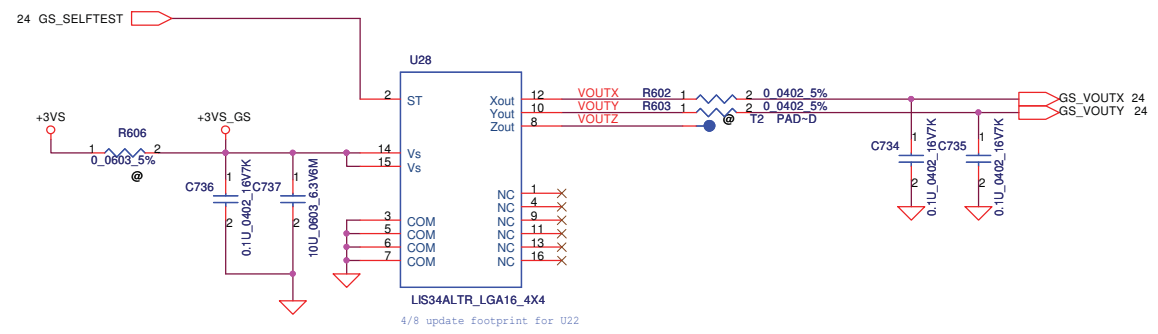
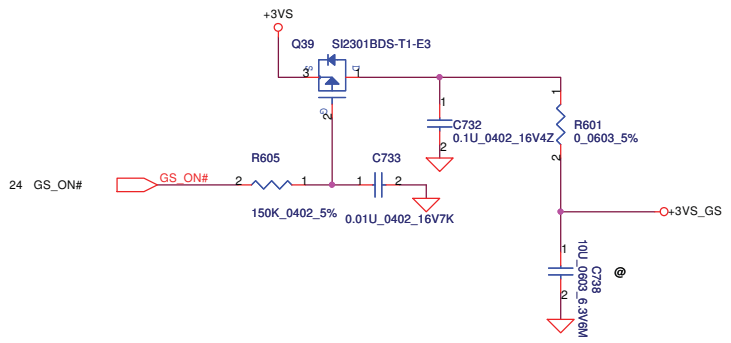
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Issued Date	2007/10/15	Deciphered Date	2008/10/15	BIOS & EC I/O Port Title		
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				Date:	Wednesday, November 03 2010	Sheet 24 of 40



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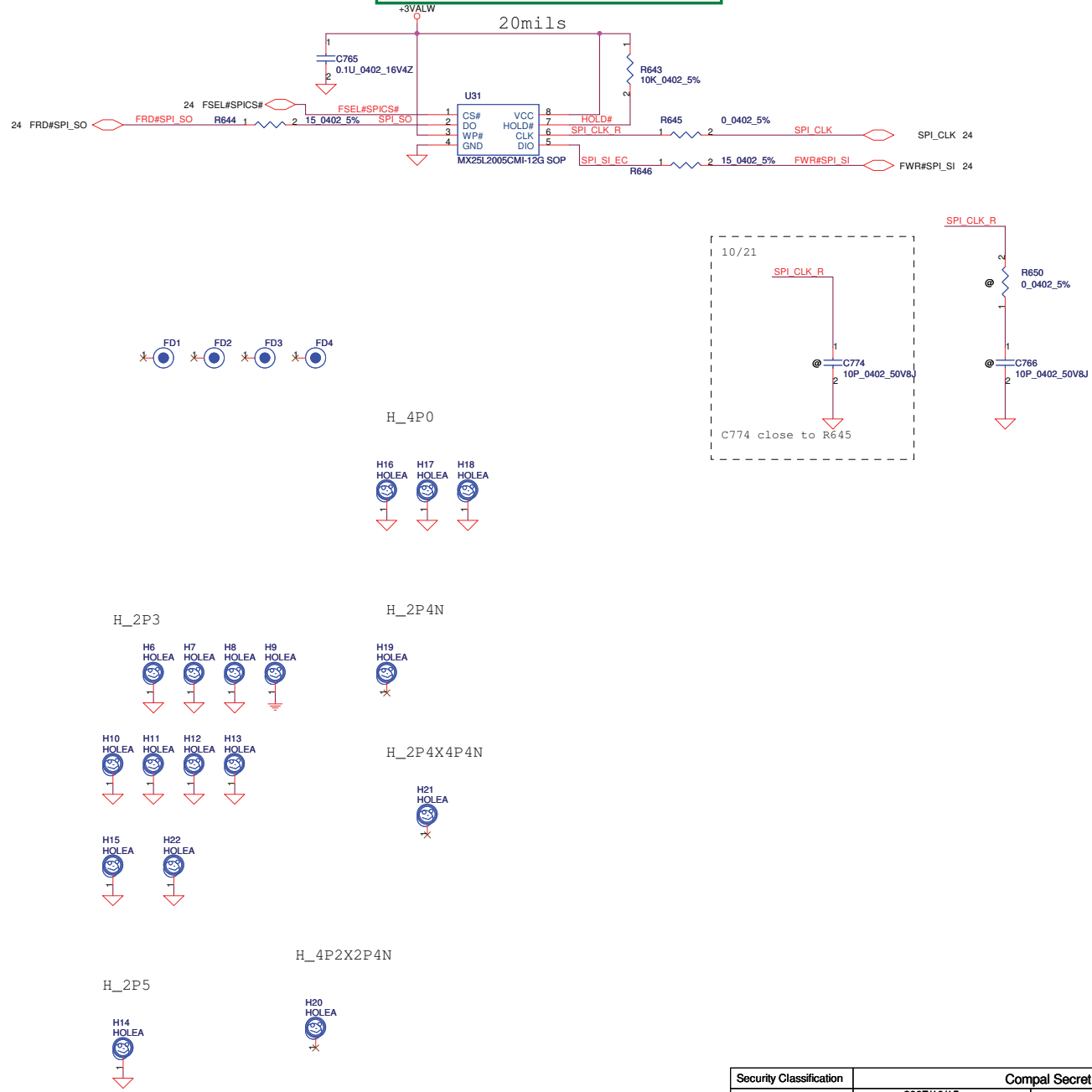


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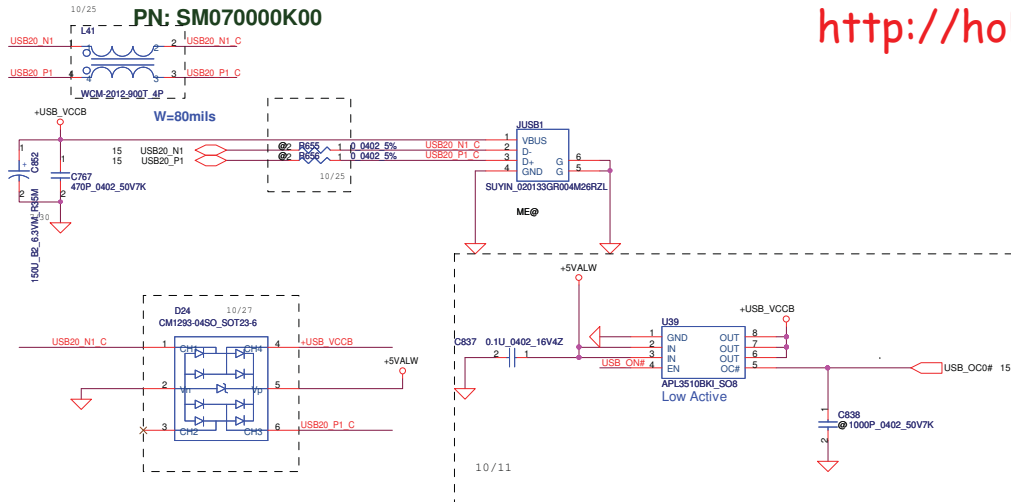


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Issued Date	2008/03/25	Deciphered Date	2008/04/	Title	FintekF57303_Thermal sensor/FAN
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				Date: Wednesday, November 03, 2010	Sheet 25 of 40

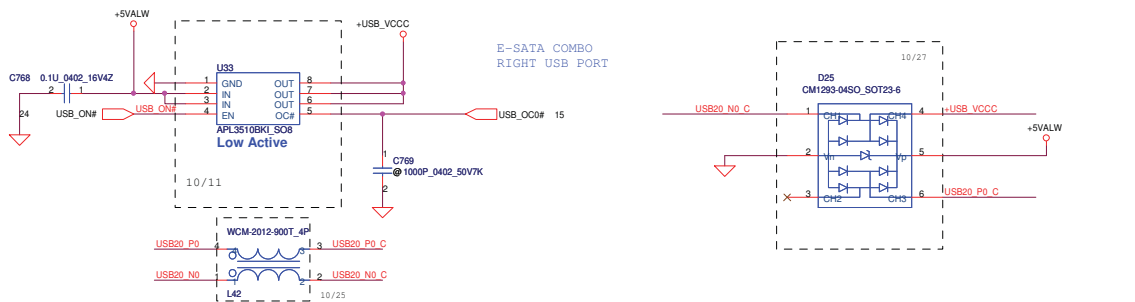
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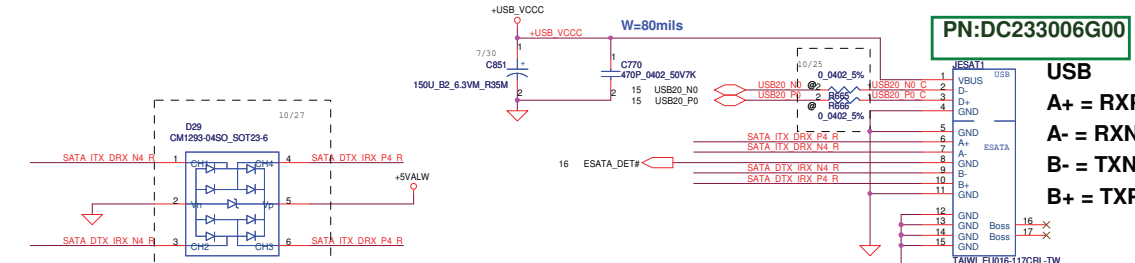
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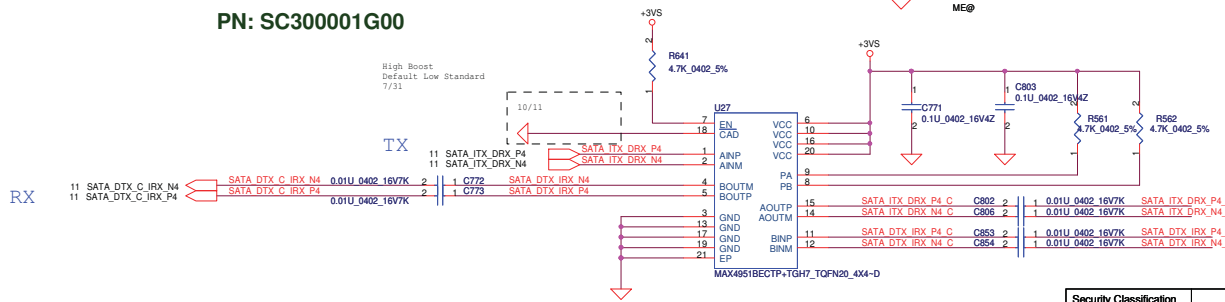
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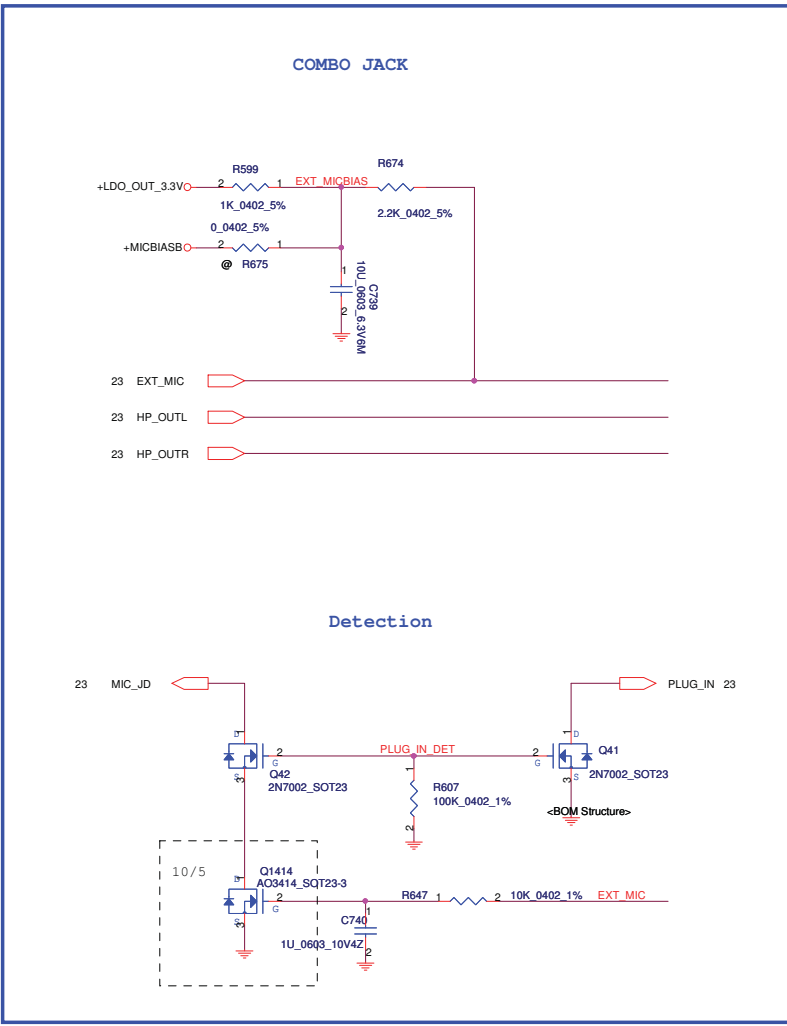
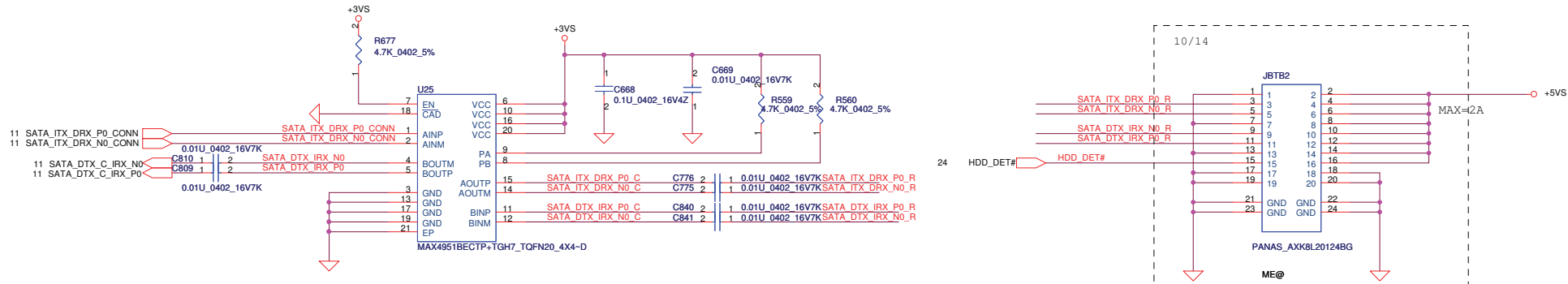
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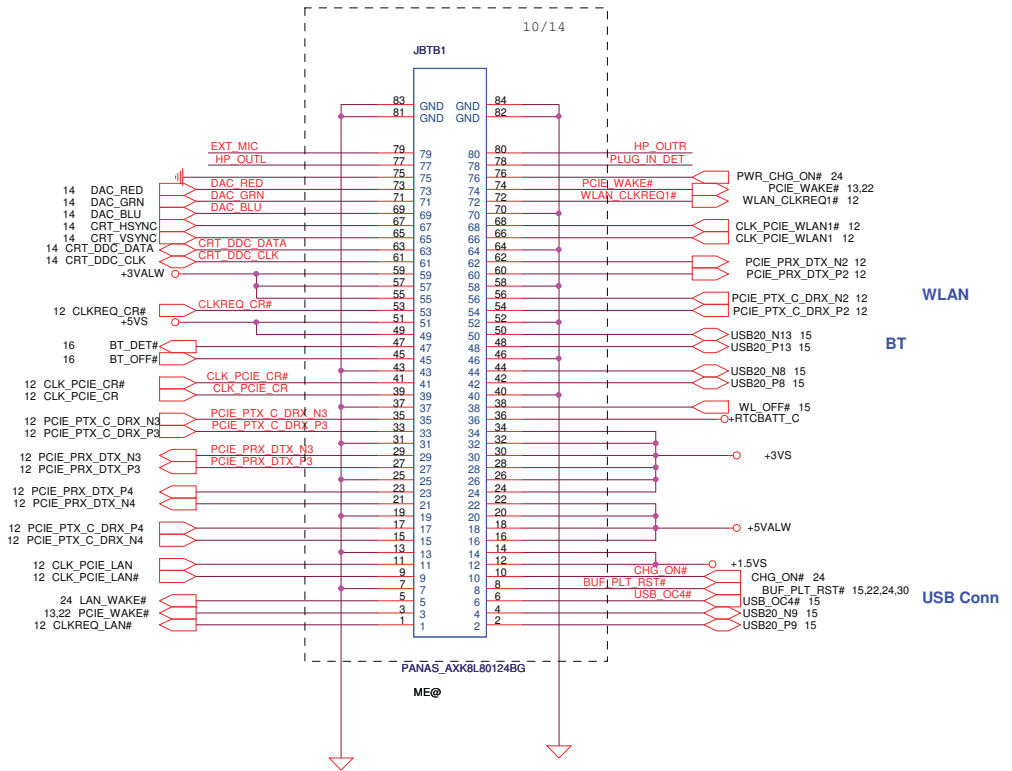


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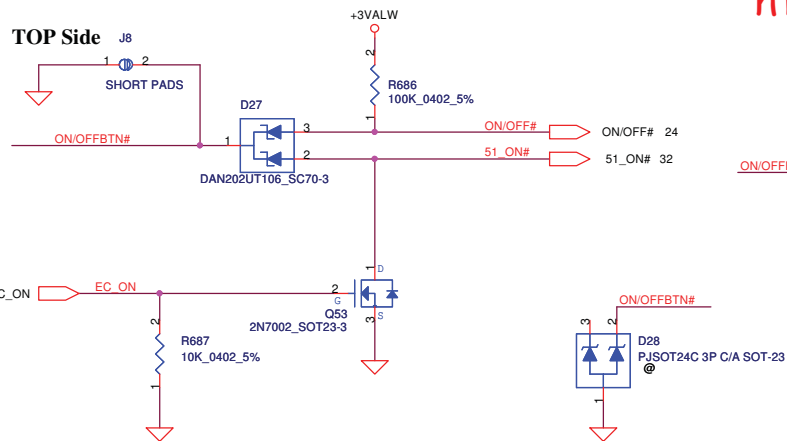
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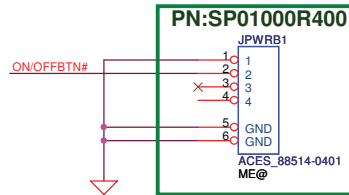
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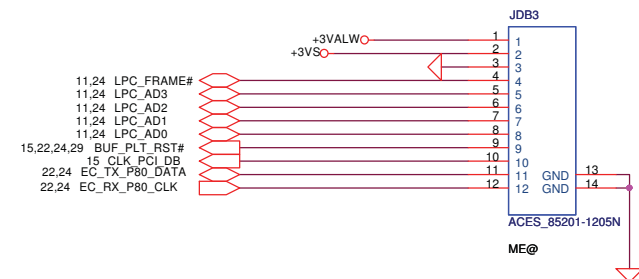
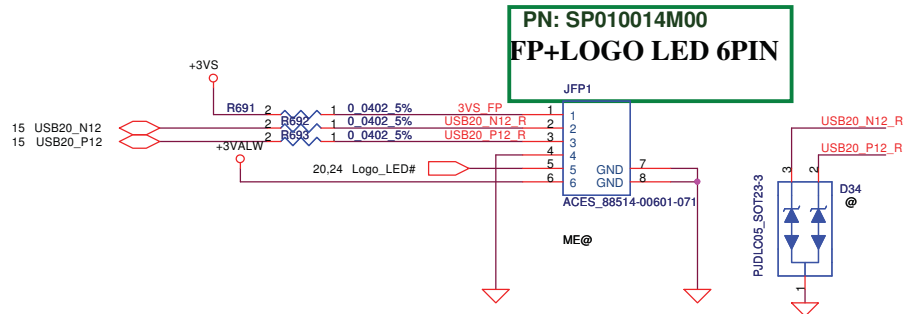
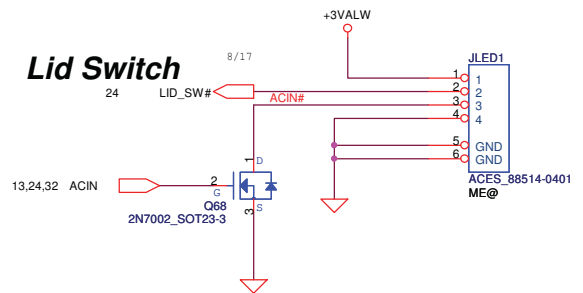
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Power Bottom Board Conn. 4pin

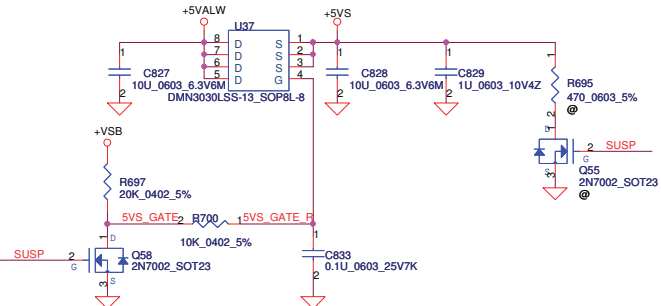


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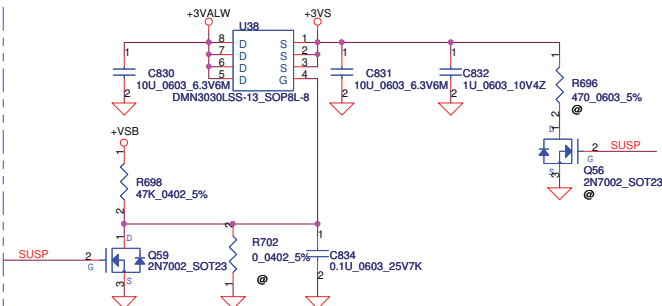


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Size Custom	Document Number	<Doc>			Rev 0.2
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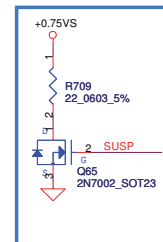
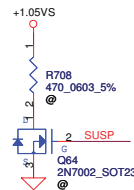
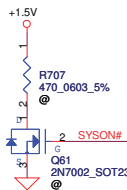
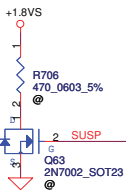
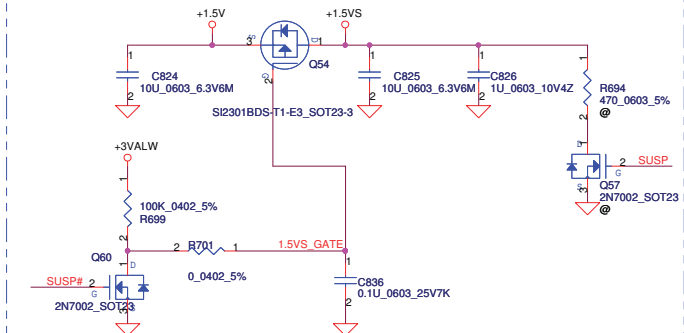
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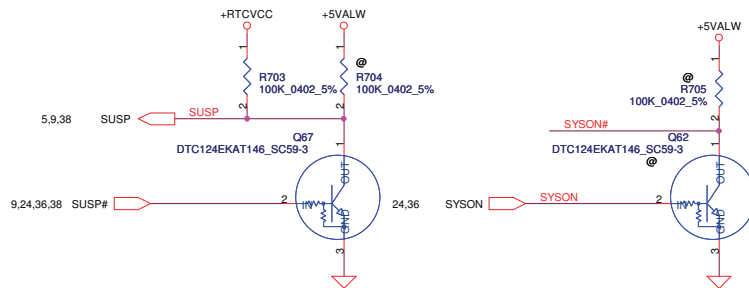
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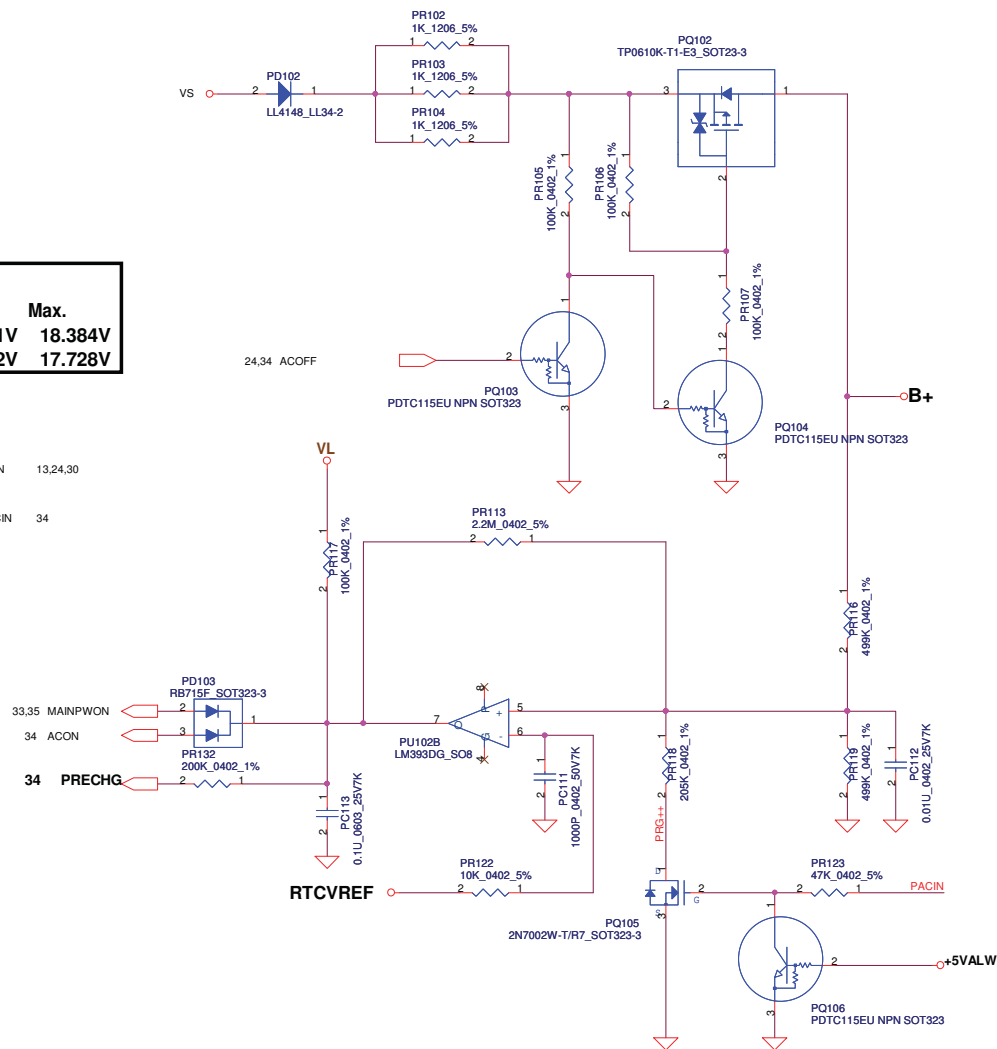
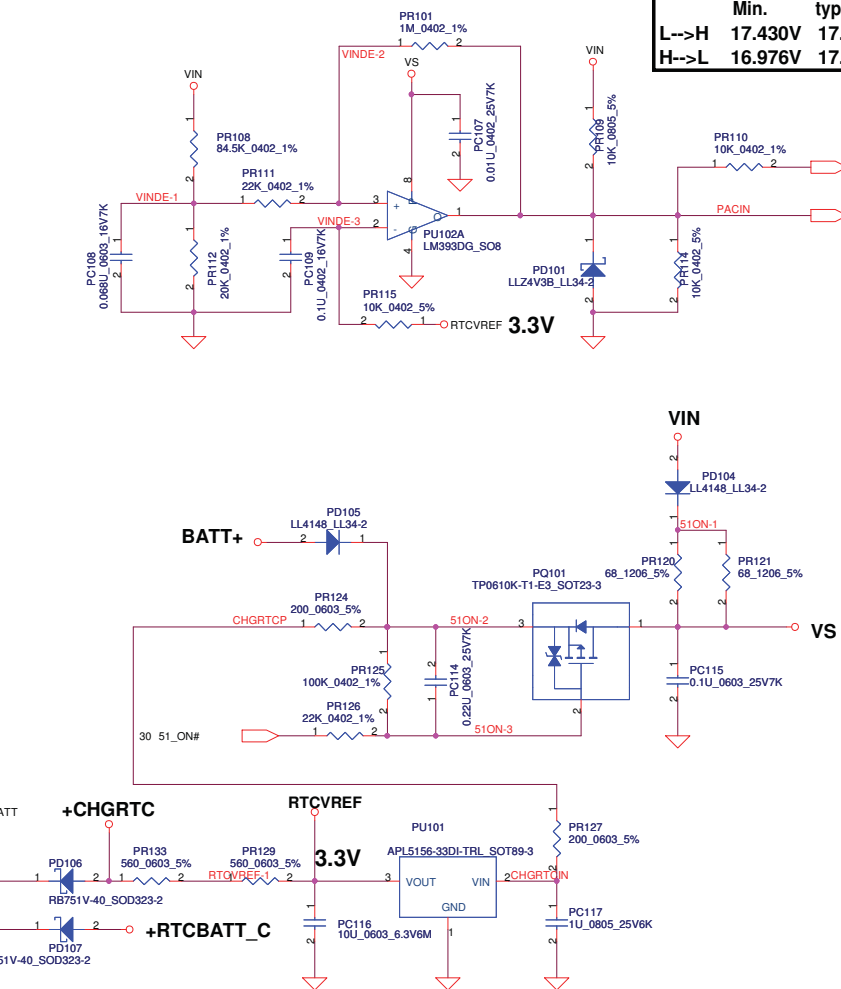
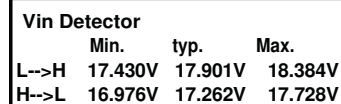
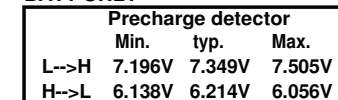
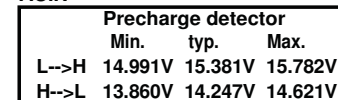
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For Intel S3 Power Reduction.



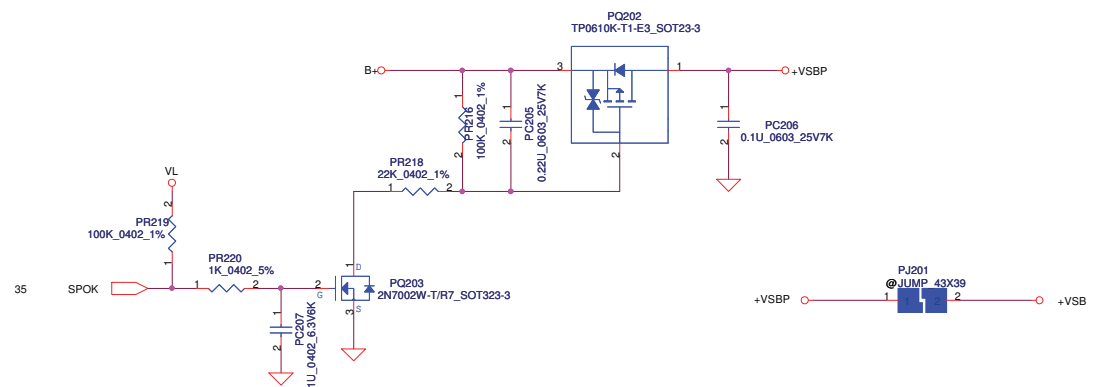
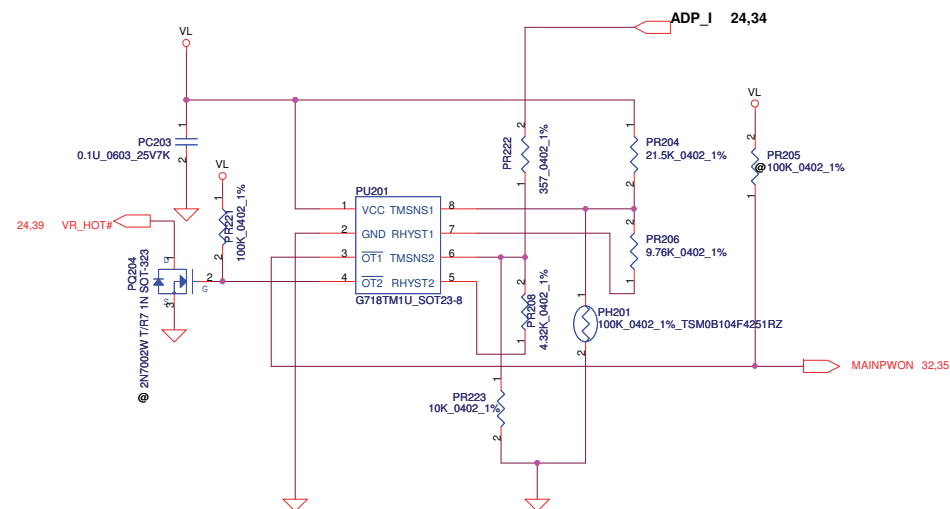
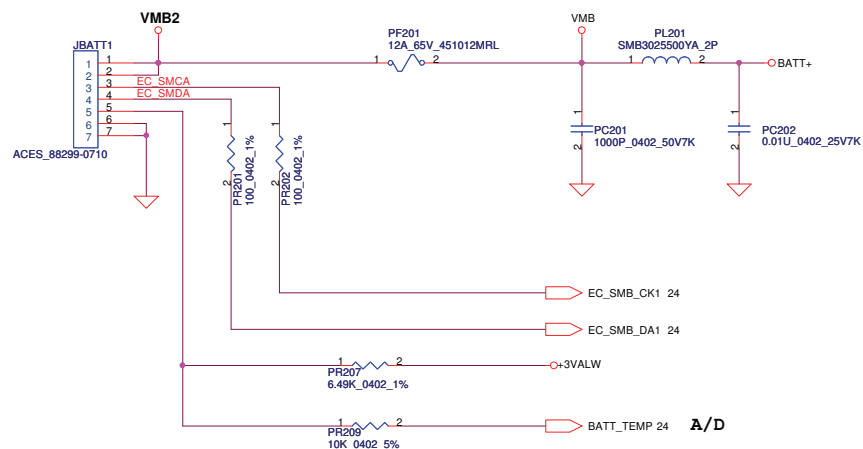
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				Rev				0.2			



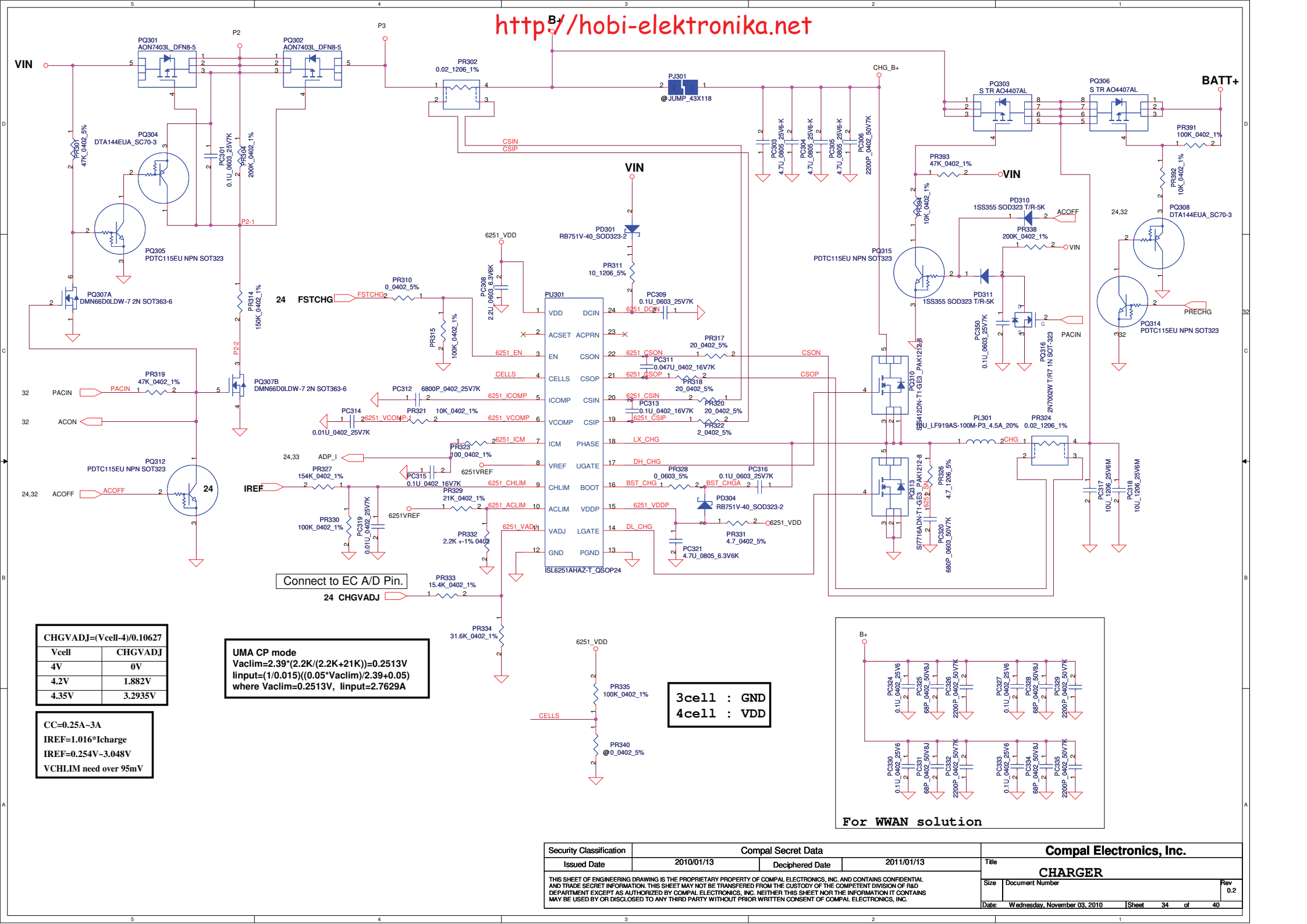
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Title		
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CPU thermal protection at 92 degree C
Recovery at 56 degree C
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CHGVADJ = (V_{cell} - 4) / 0.10627

V _{cell}	CHGVADJ
4V	0V
4.2V	1.882V
4.35V	3.2935V

UMA CP mode
 $V_{acim} = 2.39 \times (2.2K / (2.2K + 21K)) = 0.2513V$
 $I_{nput} = (1 / 0.015) \times ((0.05 \times V_{acim}) / (2.39 + 0.05))$
 where $V_{acim} = 0.2513V$, $I_{nput} = 2.7629A$

CC=0.25A-3A
 $I_{REF} = 1.016 \times I_{charge}$
 $I_{REF} = 0.254V - 3.048V$
 V_{CHLIM} need over 95mV

3cell : GND
4cell : VDD

For WWAN solution

Security Classification
 Issued Date: 2010/01/13
 Deciphered Date: 2011/01/13

Compal Secret Data

Compal Electronics, Inc.

Title: CHARGER

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CHGVADJ = (V_{cell} - 4) / 0.10627

V _{cell}	CHGVADJ
4V	0V
4.2V	1.882V
4.35V	3.2935V

UMA CP mode
 $V_{acim} = 2.39 \times (2.2K / (2.2K + 21K)) = 0.2513V$
 $I_{nput} = (1 / 0.015) \times ((0.05 \times V_{acim}) / (2.39 + 0.05))$
 where $V_{acim} = 0.2513V$, $I_{nput} = 2.7629A$

CC=0.25A-3A
 $I_{REF} = 1.016 \times I_{charge}$
 $I_{REF} = 0.254V - 3.048V$
 V_{CHLIM} need over 95mV

3cell : GND
4cell : VDD

For WWAN solution

Security Classification
 Issued Date: 2010/01/13
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Compal Secret Data

Compal Electronics, Inc.

Title: CHARGER

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CHGVADJ = (V_{cell} - 4) / 0.10627

V _{cell}	CHGVADJ
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 $V_{acim} = 2.39 \times (2.2K / (2.2K + 21K)) = 0.2513V$
 $I_{nput} = (1 / 0.015) \times ((0.05 \times V_{acim}) / (2.39 + 0.05))$
 where $V_{acim} = 0.2513V$, $I_{nput} = 2.7629A$

CC=0.25A-3A
 $I_{REF} = 1.016 \times I_{charge}$
 $I_{REF} = 0.254V - 3.048V$
 V_{CHLIM} need over 95mV

3cell : GND
4cell : VDD

For WWAN solution

Security Classification
 Issued Date: 2010/01/13
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Compal Secret Data

Compal Electronics, Inc.

Title: CHARGER

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CHGVADJ = (V_{cell} - 4) / 0.10627

V _{cell}	CHGVADJ
4V	0V
4.2V	1.882V
4.35V	3.2935V

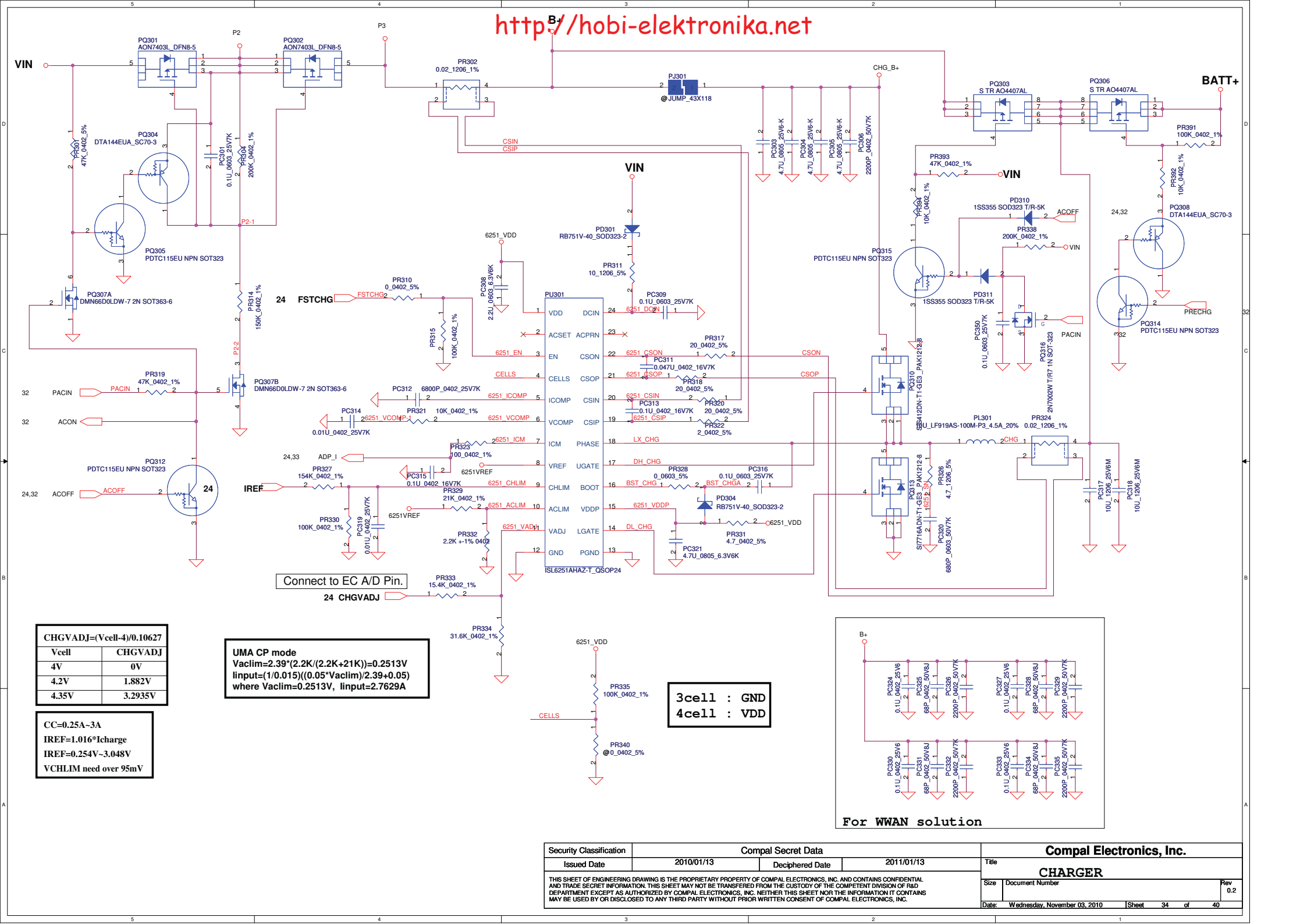
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 where $V_{acim} = 0.2513V$, $I_{nput} = 2.7629A$

CC=0.25A-3A
 $I_{REF} = 1.016 \times I_{charge}$
 $I_{REF} = 0.254V - 3.048V$
 V_{CHLIM} need over 95mV

3cell : GND
4cell : VDD

For WWAN solution

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 Issued Date: 2010/01/13
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CHGVADJ = (V_{cell} - 4) / 0.10627

V _{cell}	CHGVADJ
4V	0V
4.2V	1.882V
4.35V	3.2935V

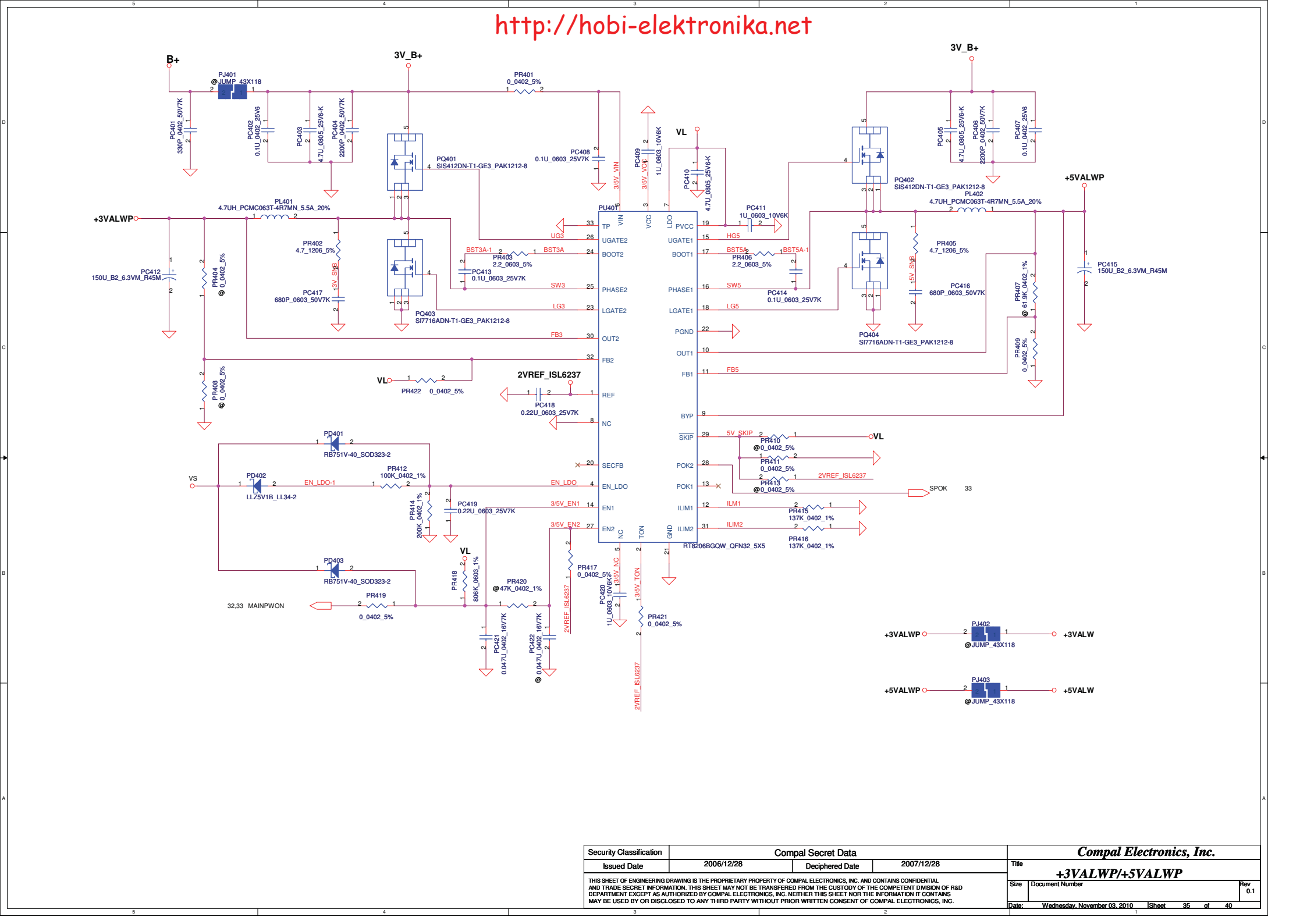
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CC=0.25A-3A
 $I_{REF} = 1.016 \times I_{charge}$
 $I_{REF} = 0.254V - 3.048V$
 V_{CHLIM} need over 95mV

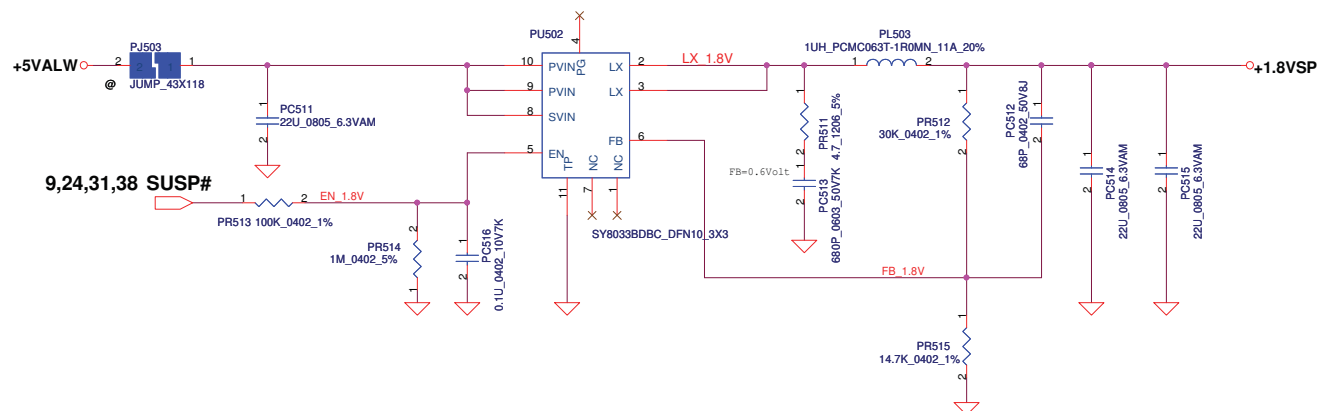
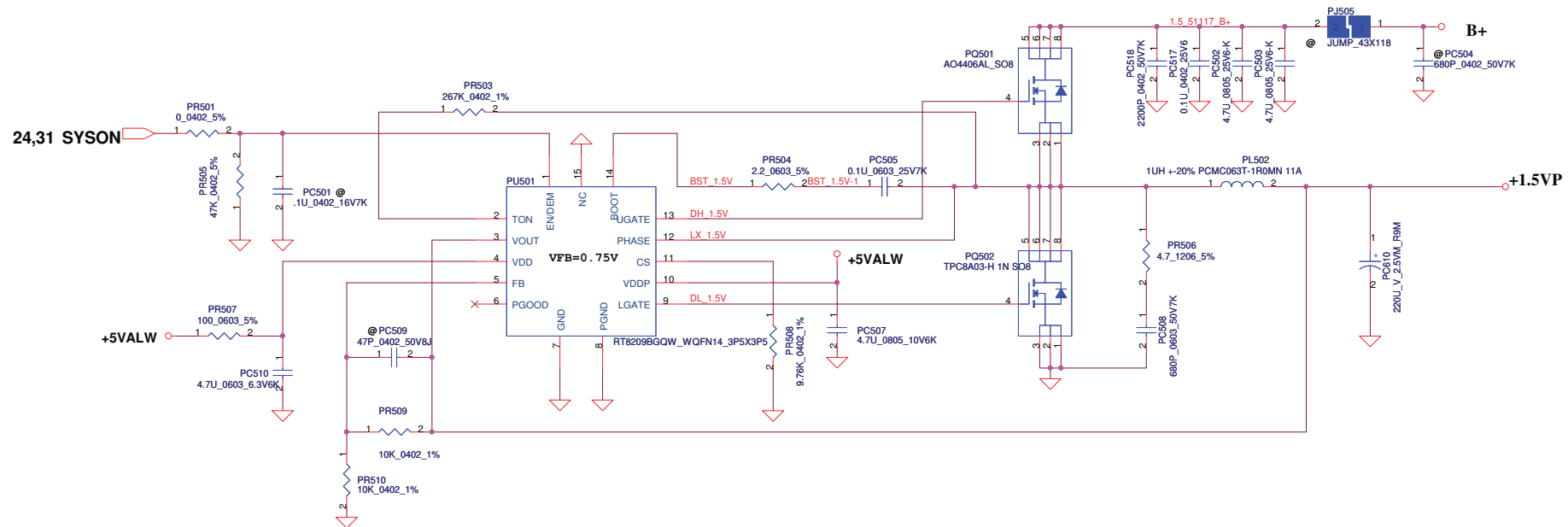
3cell : GND
4cell : VDD

For WWAN solution

Security Classification
 Issued Date: 2010/01/13
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 Title: **CHARGER**
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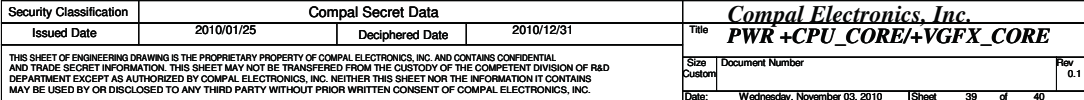


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Note: Use VCCSA_SEL to switch High & Low Level for VID[1] (ie. VCCSA_SEL) due to the VID[0] is don't care for this setting.

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Item	Reason for change	PG#	Modify List	Date	Phase
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2					
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