

Compal Confidential

G400/G500 UMA M/B Schematics Document Intel Ivy Bridge Processor with DDRIII + Panther Point PCH

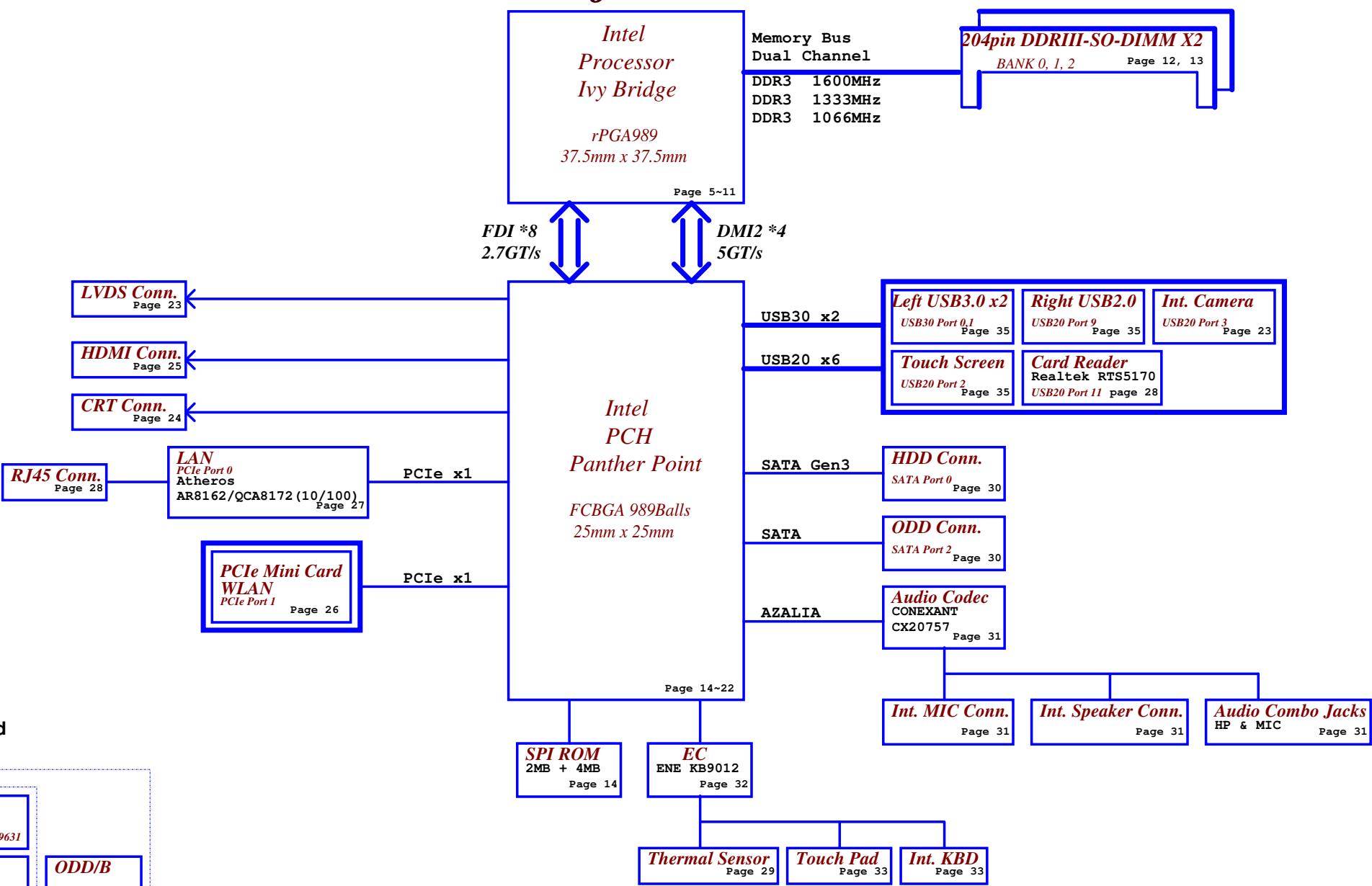
2013-02-27

LA-9632P
www.roosefix.com

REV: 1.0

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title	Cover Page
<small>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 THE DEPARTMENT OF DESIGN AUTHORIZED BY COMPAL ELECTRONICS, INC. IT IS THE PROPERTY OF THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.</small>					
<small>Document Number Custom LA-9632P Rev 1.0 Date: Wednesday, February 27, 2013 Sheet 1 of 60</small>					

Chief River



Security Classification	Compal Secret Data			Title	Compal Electronics, Inc.	
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title	MB Block Diagram	
Page	Custom	Document Number	LA-9632P	Rev	1.0	
THIS SHEET OF ENGINEERING DRAWING IS THE 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 COMPAL ELECTRONICS, INC. EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THE SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OTHERS, EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NOR MAY THE INFORMATION CONTAINED ON THIS SHEET BE REPRODUCED, IN WHOLE OR IN PART, WITHOUT WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.						
Date:	Wednesday, February 27, 2013	Sheet	2	of	60	

Voltage Rails

	power plane	+B	+5VALW	+1.5V	+5VS +3VS +1.5VS +V1.05S_VCCP +VCC_CORE +VGA_CORE +VCC_GFXCORE_AXG +1.8VS +0.75VS +1.05VS
s0	O	O	O	O	O
s3	O	O	O	O	X
S5 S4/AC	O	O	X	O	X
S5 S4/ Battery only	O	X	X	O	X
S5 S4/AC & Battery don't exist	X	X	X	O	X

EC SM Bus1 address

EC SM Bus2 address

PCH SM Bus address

AMD-GPU SM Bus address

SMBUS Control Table

	SOURCE	VGA	BATT	KB9012	SODIMM	WLAN	Thermal Sensor	PCH
SMB_EC_CK1	KB9012 +3VALW	X	V	X	X	X	X	X
SMB_EC_DA1	KB9012 +3VALW	V	+3VALW	X	X	X	+3VS	+3VALW
SMB_EC_CK2	KB9012 +3VS	V	X	X	X	X	V	V
SMB_EC_DA2	KB9012 +3VS	X	X	X	V	V	+3VS	+3VALW
PCH_SMBCLK	PCH +3VALW	X	X	X	V	V	X	X
PCH_SMBDATA	PCH +3VALW	X	X	X	+3VS	+3VS	X	X
PCH_SMLCLK	PCH +3VALW	X	X	X	X	X	X	X
PCH_SMLDATA	PCH +3VALW	V	+3VGS	X	V	+3VS	V	X
SML1CLK	PCH +3VALW	V	+3VGS	X	V	+3VS	V	X
SML1DATA	PCH +3VALW	V	+3VGS	X	V	+3VS	V	X

BOARD ID Table

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

STATE	SIGNAL	SLP_S1#	SLP_S3#	SLP_S4#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON	ON
S1 (Power On Suspend)	LOW	HIGH	HIGH	HIGH	ON	ON	ON	ON	LOW
S3 (Suspend to RAM)	LOW	LOW	HIGH	HIGH	ON	ON	OFF	OFF	OFF
S4 (Suspend to Disk)	LOW	LOW	HIGH	ON	OFF	OFF	OFF	OFF	OFF
S5 (Soft OFF)	LOW	LOW	LOW	ON	OFF	OFF	OFF	OFF	OFF

Vcc	3.3V
R694	100K +/- 1%

Board ID / SKU ID Table for AD channel

Board ID	R695	V _{AD_BID} min	V _{AD_BID} typ	V _{AD_BID} max	EC AD	
0	0	0 V	0 V	0 V	0x00 - 0x0B	MP
1	12K +/- 1%	0.347V	0.354V	0.360V	0x0C - 0x1C	PVT
2	15K +/- 1%	0.423V	0.430V	0.438V	0x1D - 0x26	DVT
3	20K +/- 1%	0.541V	0.550V	0.559V	0x27 - 0x30	EVT

USB Port Table

	USB 2.0	Port	3 External USB Port
EHC11	UHCI0	0	USB Port (Left Side) _{USB3.0}
	UHCI0	1	USB Port (Left Side) _{USB3.0}
	UHCI1	2	Touch Screen
	UHCI1	3	Camera
	UHCI2	4	
	UHCI2	5	
	UHCI2	6	
	UHCI3	7	
	UHCI4	8	
	UHCI4	9	USB Port (Right Side USB-BD)
EHC12	UHCI5	10	Mini Card(WLAN)
	UHCI5	11	Card Reader
	UHCI6	12	
	UHCI6	13	

BOM Structure Table

Item	BOM Structure
VIWGP (14")	14@
VIWGR (15")	15@
HDMI Logo	45@
LAN 10/100	8162@
LAN 10/100	8172@
LAN Switch mode	SWR@
LAN LDO Mode	LDO@
LAN Gas tube	GAS@
Camera	CMOS@
HDMI	HDMI@
PCH is HM76	HM76@
PCH is HM70	HM70@
PCH is NM70	NM70@
VGA is Mars XT	Mars@
VGA is Sun Pro	Sun@
For VGA	PX@
For VRAM and Strap	X76@
For UMA Strap	UMA@
Microphone	MIC@
Touch Screen	TS@
Connector	ME@
Board ID for EVT	EVTE@
Board ID for DVT	DVTE@
Board ID for PVT	PVTE@
For USB2.0 (All PCH)	USB2@
For USB3.0 (HM76, HM70)	USB3@
For share ROM	SROM@
For non-share ROM	NOSROM@

Security Classification

Compaq Secret Data

Issued Date 2011/06/15 Deciphered Date 2012/07/11

Compaq Electronics, Inc.

Notes List

Document Number LA-9632P Rev. 1.0

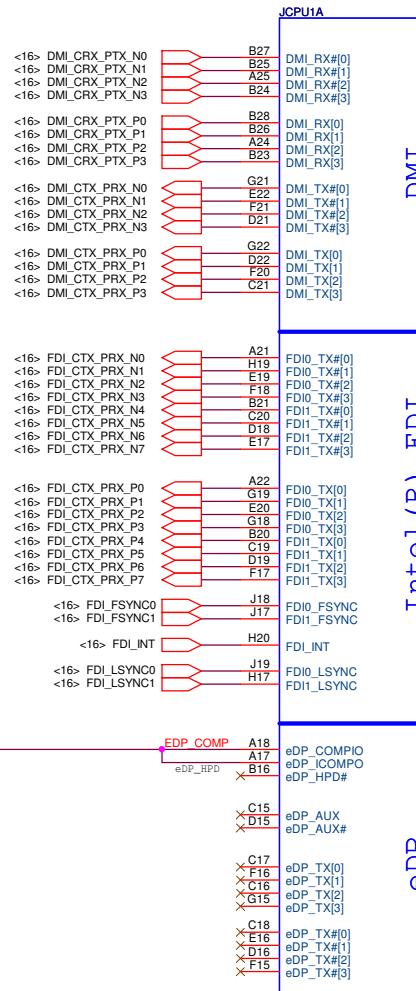
Date Wednesday, February 27, 2013 Sheet 3 of 60

A B C D E

WWW.vinamix.vn

Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title	VGA Notes List
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 FIVE DEPARTMENTS EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER IN THIS SHEET NOR IN THE INFORMATION IT CONTAINS MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
				Document Number Custom LA-9632P	Rev 1.0

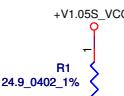
www.vinax.vn



PCT EXPRESS* - GRAPHICS

eDP

ME@



PEG_ICOMPI and RCOMPO signals should be shorted and routed with - max length = 500 mils - typical impedance = 43 mohms

PEG_ICOMPO signals should be routed with - max length = 500 mils - typical impedance = 14.5 mohms

PEG Static Lane Reversal - CFG2 is for the 16x

CFG2	1: Normal Operation; Lane # definition matches socket pin map definition ★ 0:Lane Reversed
------	---------------------------------------------------------------------------------------------------

PEG_RX#0
PEG_RX#1
PEG_RX#2
PEG_RX#3
PEG_RX#4
PEG_RX#5
PEG_RX#6
PEG_RX#7
PEG_RX#8
PEG_RX#9
PEG_RX#10
PEG_RX#11
PEG_RX#12
PEG_RX#13
PEG_RX#14
PEG_RX#15

J33
PEG_RX#0
M35
PEG_RX#1
L34
PEG_RX#2
J35
PEG_RX#3
J32
PEG_RX#4
H34
PEG_RX#5
H31
PEG_RX#6
G33
PEG_RX#7
G30
PEG_RX#8
F35
PEG_RX#9
E34
PEG_RX#10
E32
PEG_RX#11
D33
PEG_RX#12
D31
PEG_RX#13
B33
PEG_RX#14
C32

L33
PEG_RX#0
L35
PEG_RX#1
K34
PEG_RX#2
H35
PEG_RX#3
H32
PEG_RX#4
G34
PEG_RX#5
G31
PEG_RX#6
F33
PEG_RX#7
F30
PEG_RX#8
E35
PEG_RX#9
E33
PEG_RX#10
F32
PEG_RX#11
D34
PEG_RX#12
E31
PEG_RX#13
C33
PEG_RX#14
B32

M29
PEG_TX#0
M32
PEG_TX#1
M31
PEG_TX#2
L32
PEG_TX#3
L29
PEG_TX#4
K31
PEG_TX#5
K28
PEG_TX#6
J30
PEG_TX#7
J28
PEG_TX#8
H29
PEG_TX#9
G27
PEG_TX#10
E29
PEG_TX#11
F27
PEG_TX#12
D28
PEG_TX#13
F26
PEG_TX#14
E25
PEG_TX#15

M28
PEG_TX#0
M33
PEG_TX#1
M30
PEG_TX#2
L31
PEG_TX#3
L28
PEG_TX#4
K30
PEG_TX#5
K27
PEG_TX#6
J29
PEG_TX#7
J27
PEG_TX#8
H28
PEG_TX#9
G28
PEG_TX#10
F25
PEG_TX#11
F28
PEG_TX#12
D27
PEG_TX#13
E26
PEG_TX#14
D25

Security Classification

Compal Secret Data

Compal Electronics, Inc.

Issued Date

Deciphered Date

Title

Document Number

Rev

Custom

1.0

PROCESSOR(1/7) DMI,FDI,PEG

LA-9632P

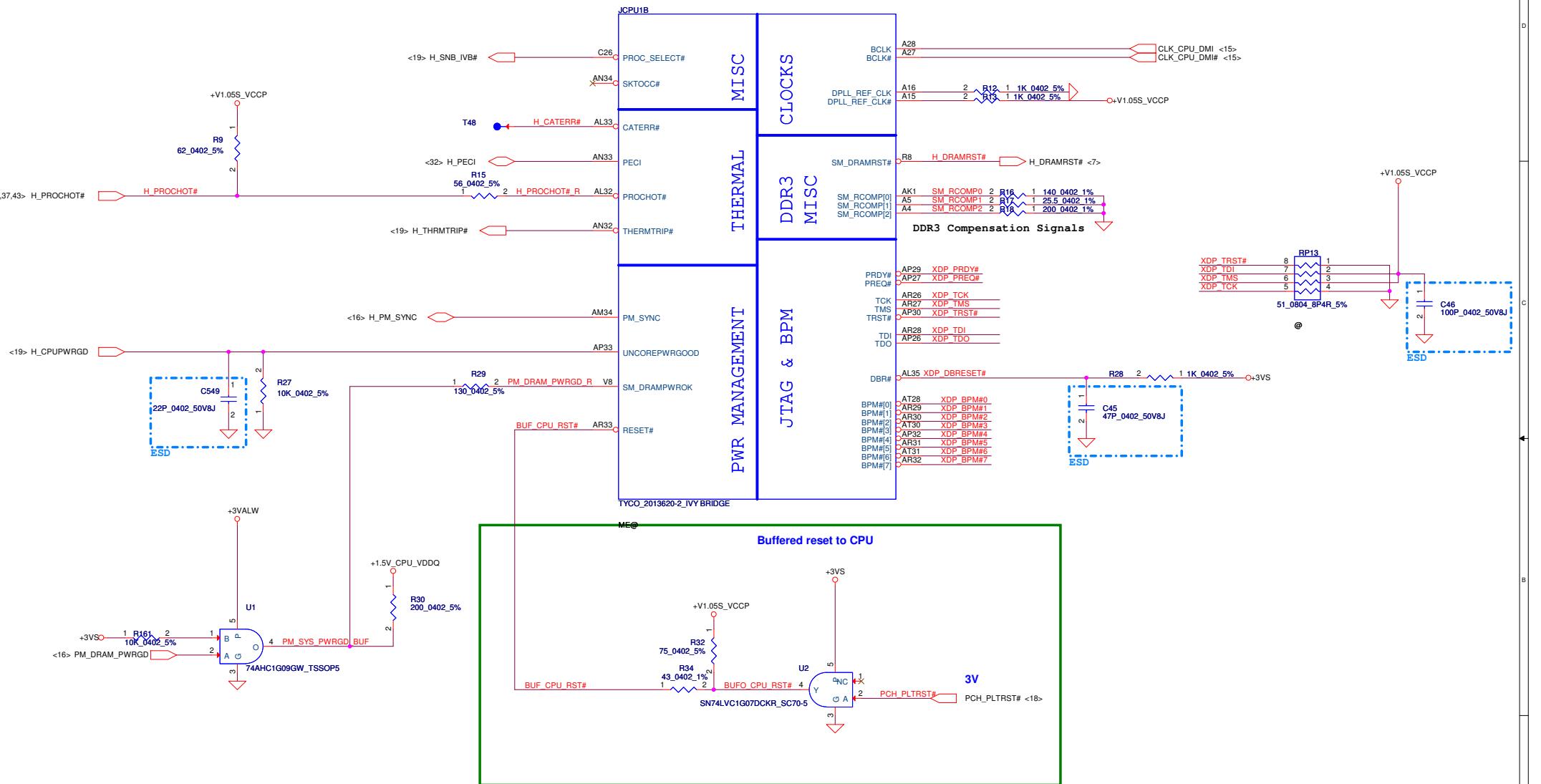
Date:

Wednesday, February 27, 2013

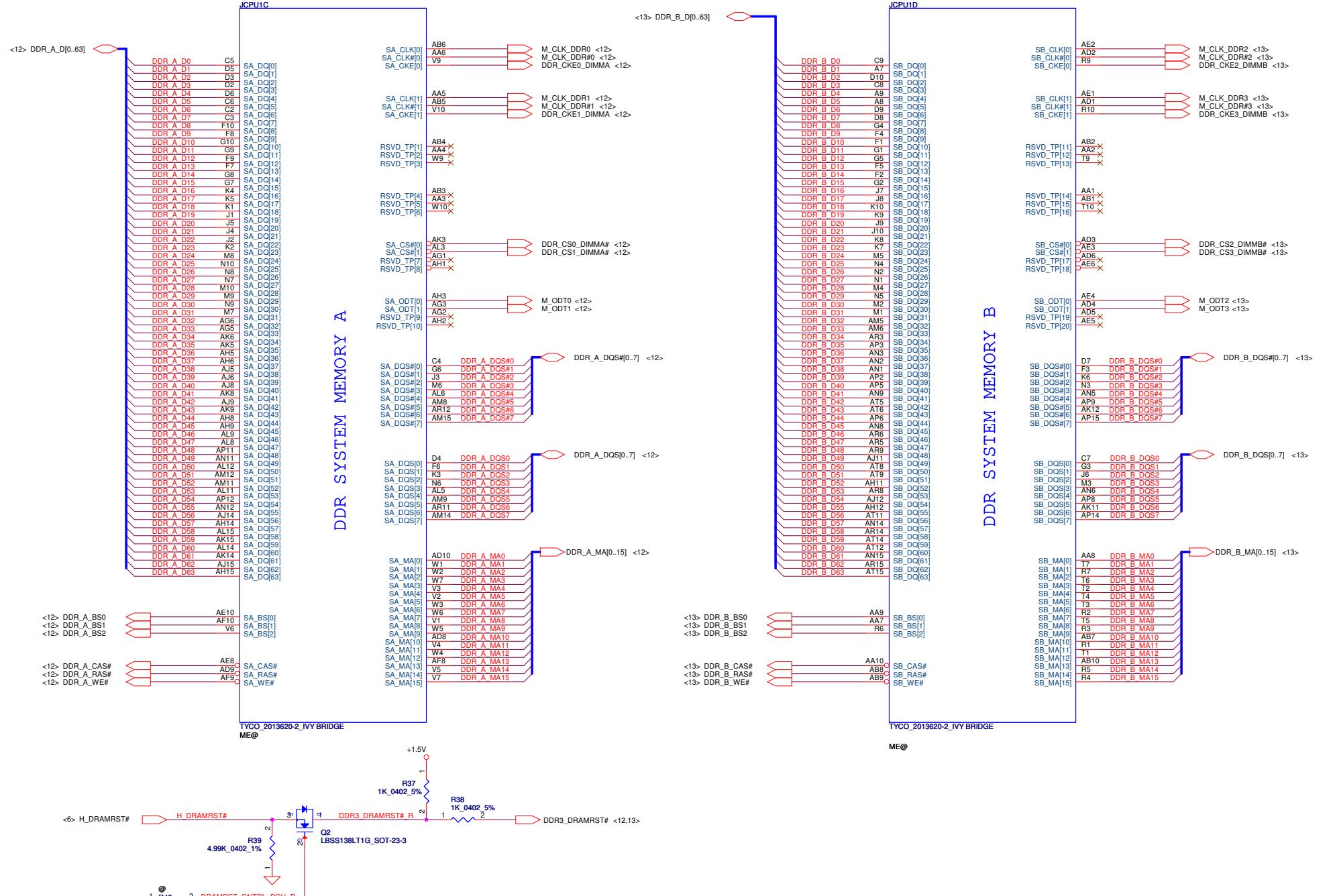
Sheet

5 of 60

WWW.Vinafix.vn

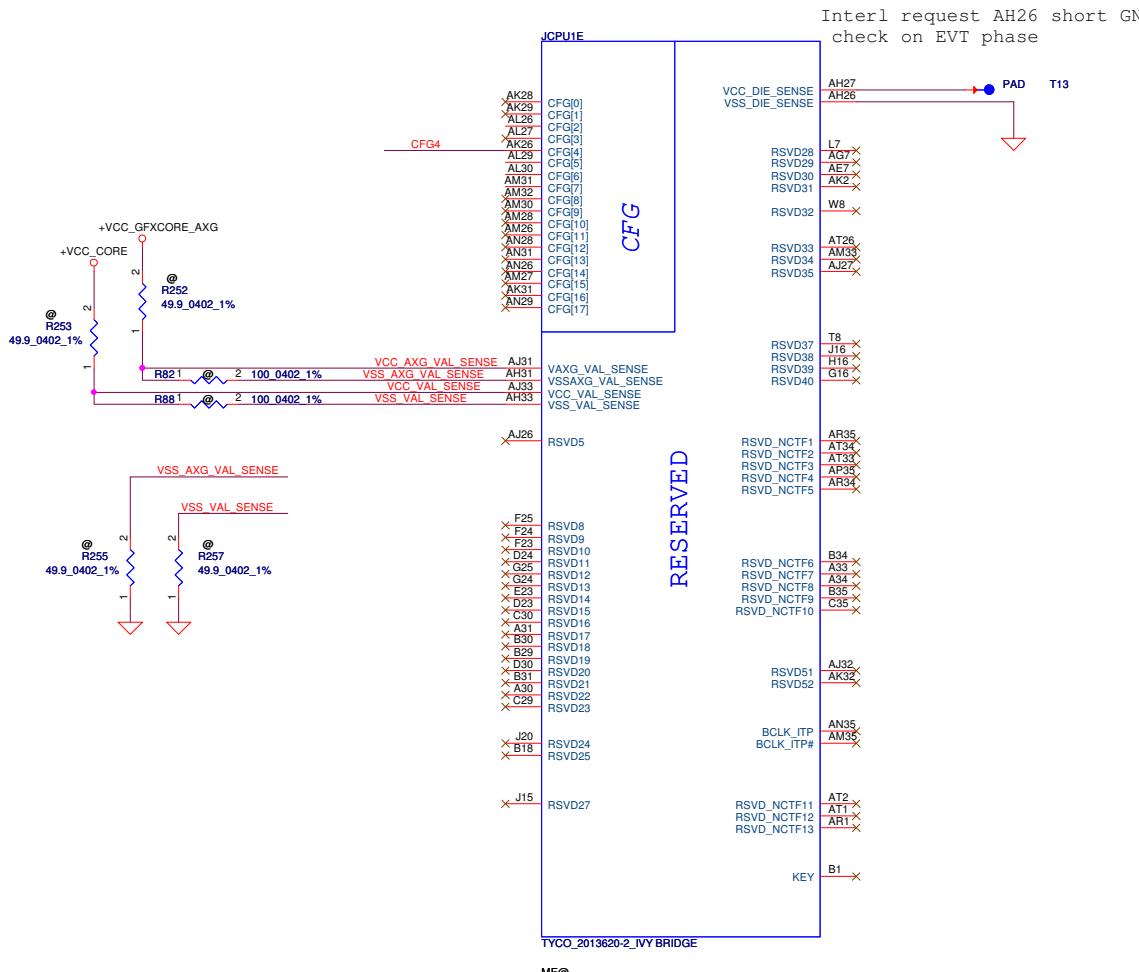


Security Classification	Compal Secret Data			Compal Electronics, Inc.
Issued Date	Deciphered Date	2012/07/11	Title	PROCESSOR(2/7) PM,XDP,CLK
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT OF DESIGN TO ANY OTHER DIVISION OF COMPAL ELECTRONICS, INC. IT IS THE PROPERTY OF COMPAL ELECTRONICS, INC. AND MAY NOT BE COPIED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				
Document Number LA-9632P	Rev. 1.0	Custom	Date: Wednesday, February 27, 2013	Sheet 6 of 60



www.vinafix.vn

CFG Straps for Processor

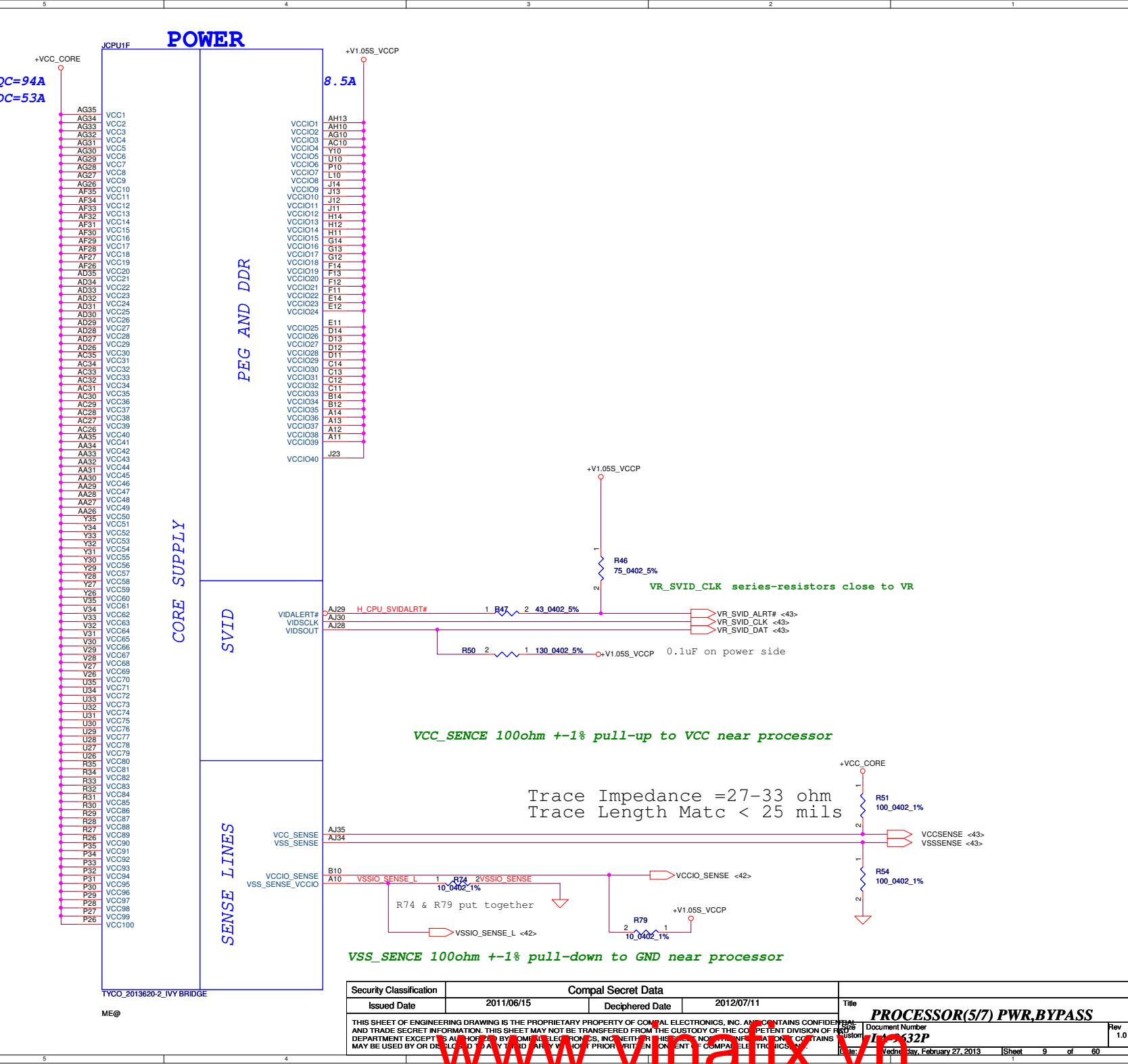


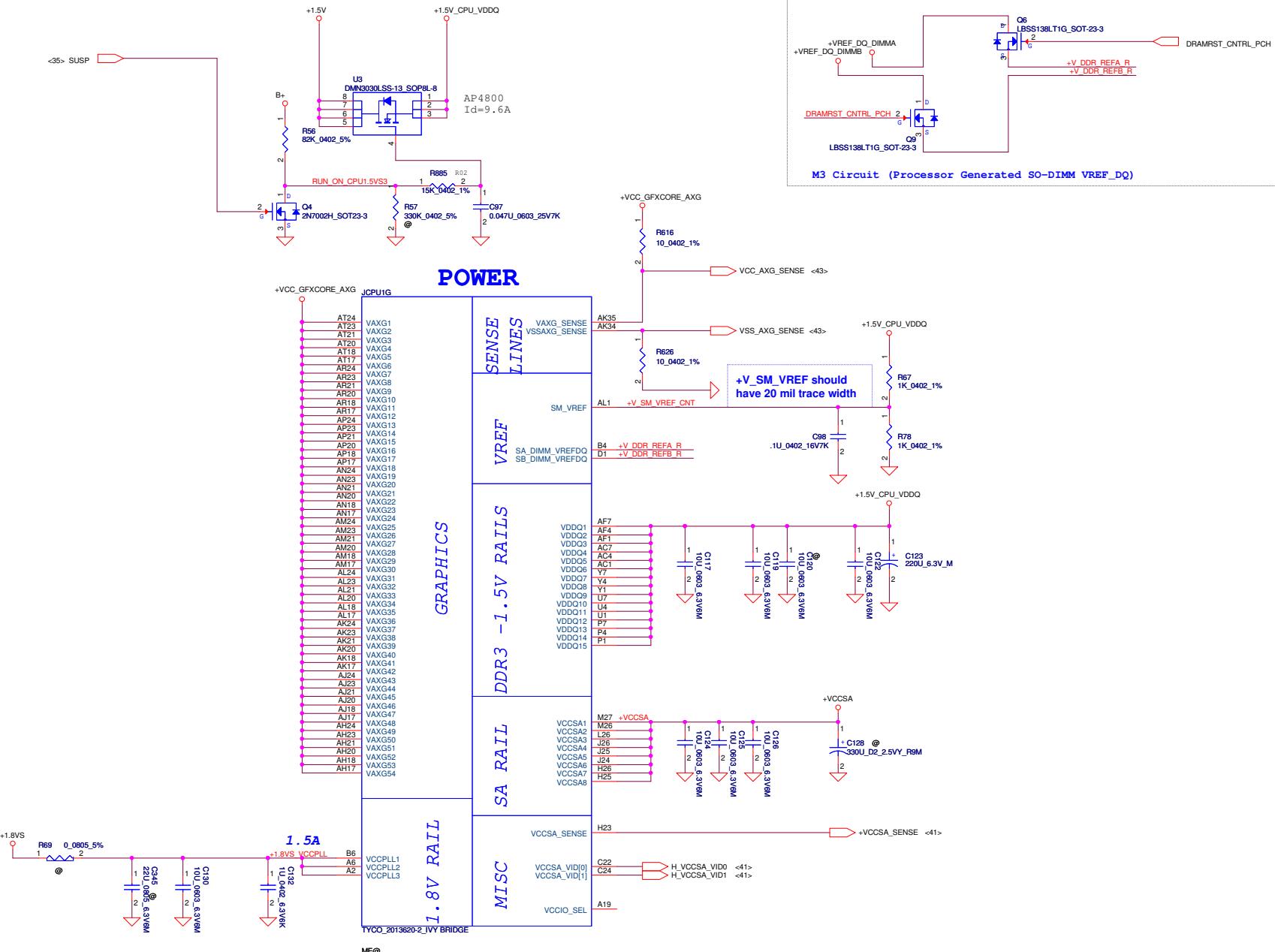
PEG Static Lane Reversal - CFG2 is for the 16x	
CFG2	1: Normal Operation; Lane # definition matches socket pin map definition ★ 0: Lane Reversed
CFG4	

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

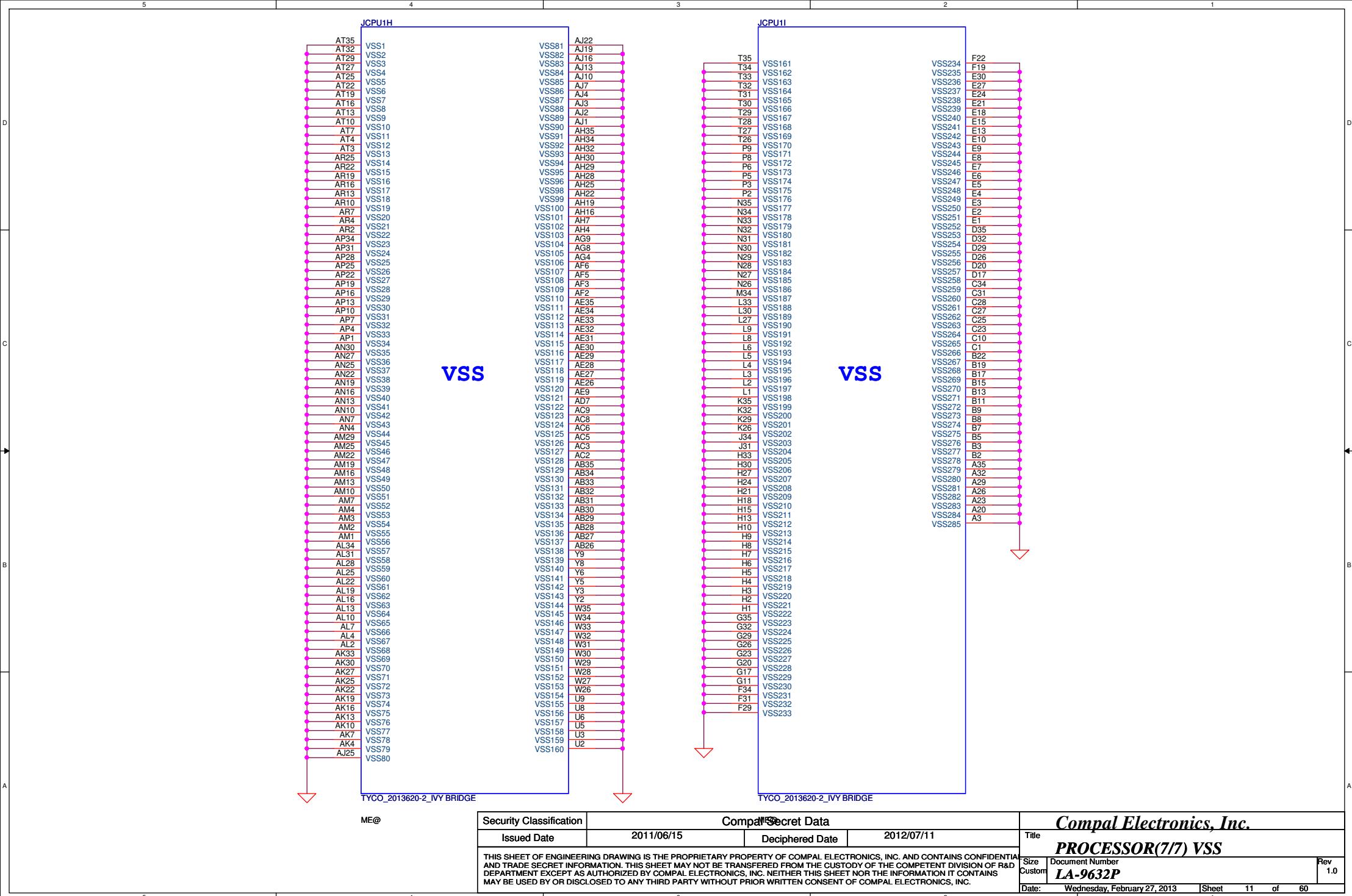
PEG DEFER TRAINING	
CFG7	1: (Default) PEG Train immediately following xxRESETB de assertion 0: PEG Wait for BIOS for training

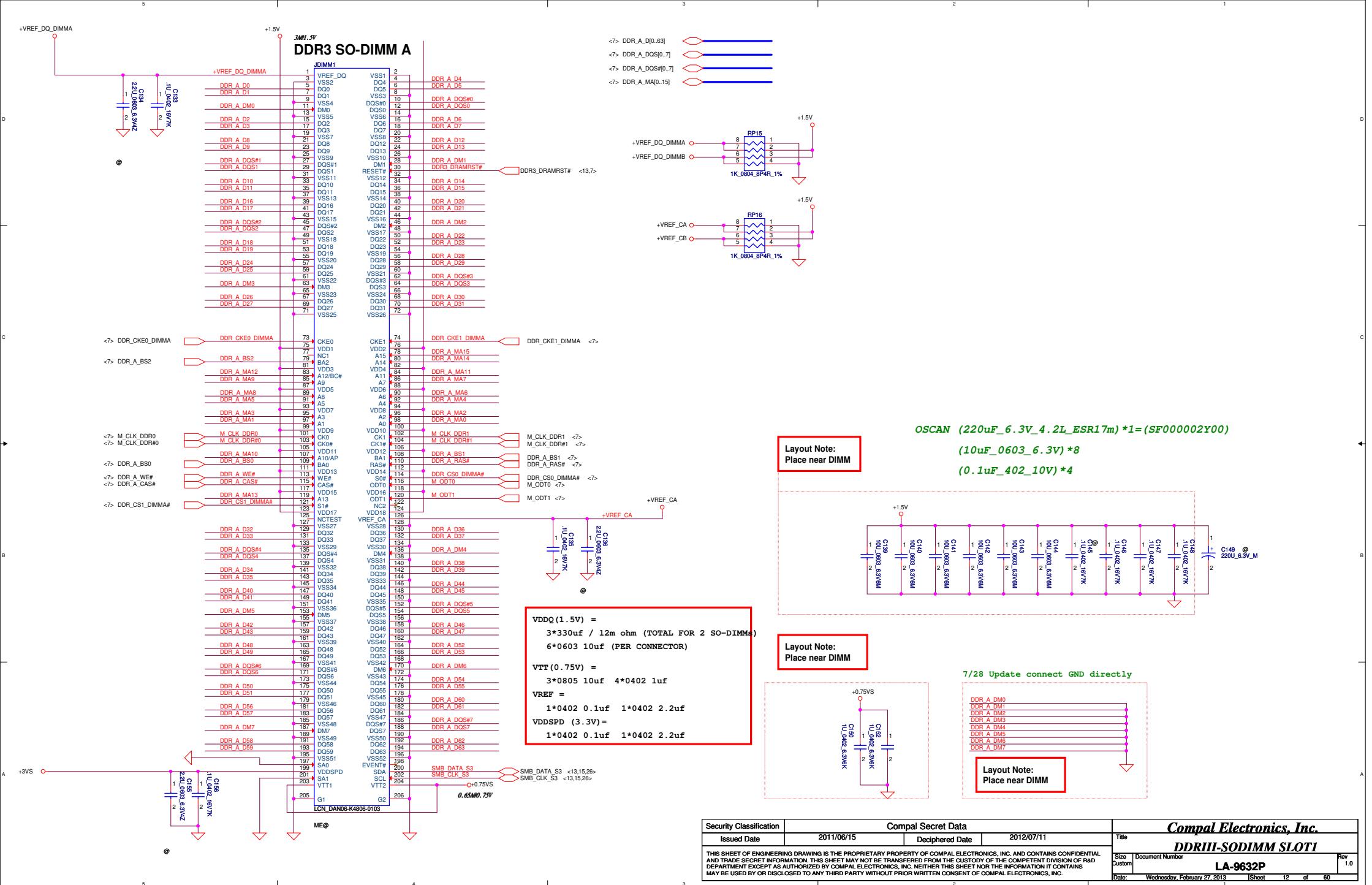


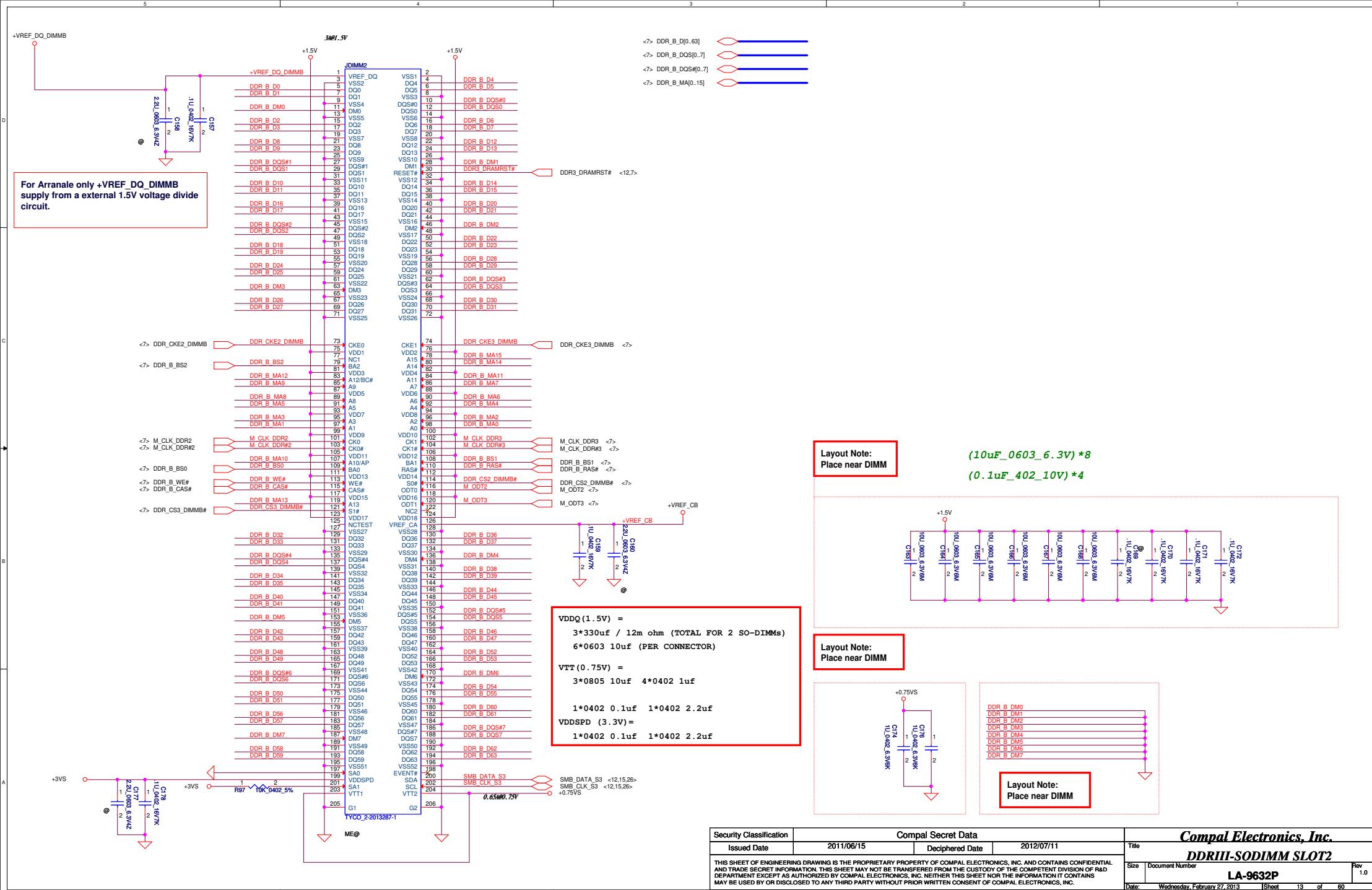


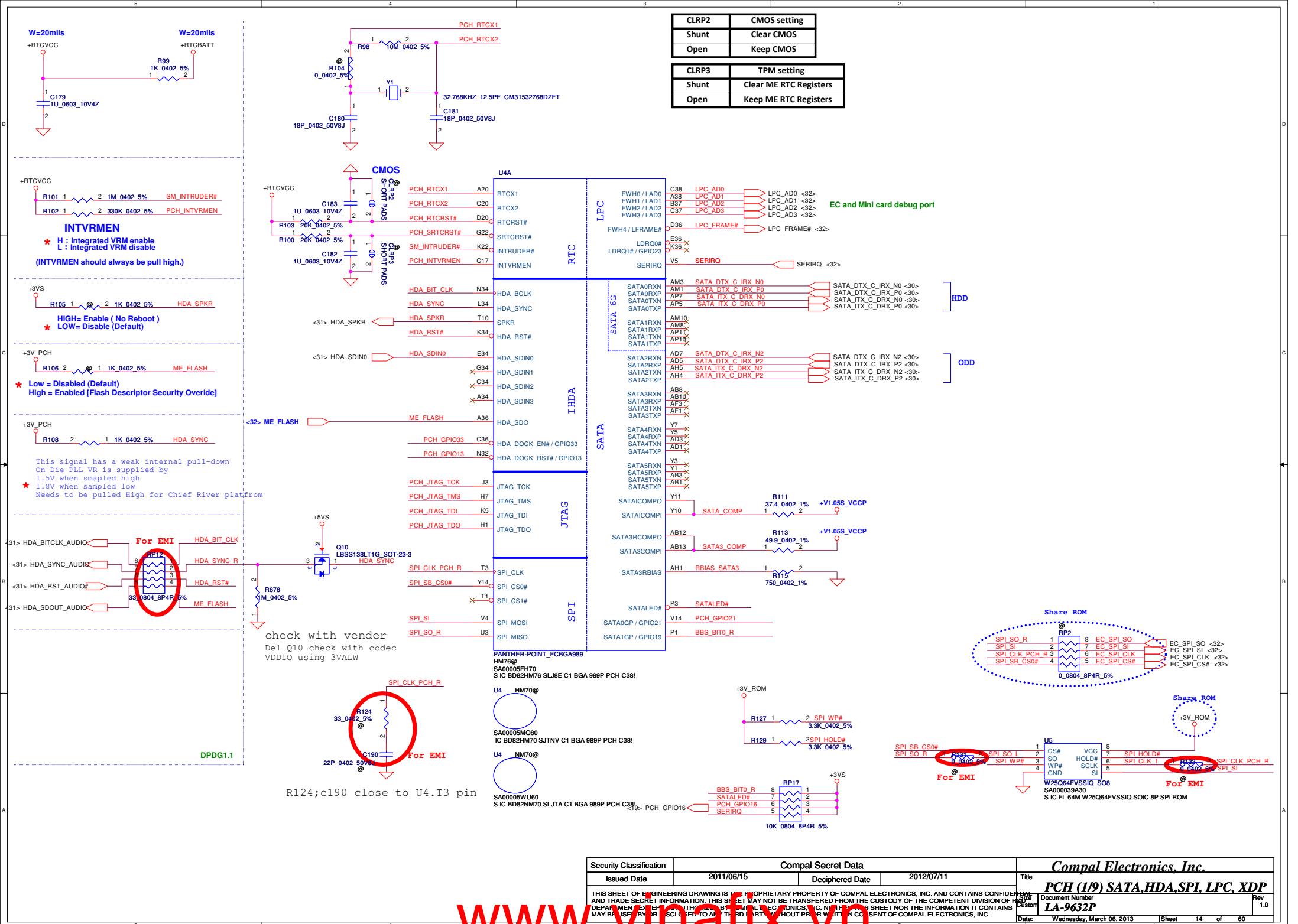
*IVY Bridge drives VCCIO_SEL low
VCCP_PWRCTRL:0
Sandy Bridge is NC for A19
VCCP_PWRCTRL:1*

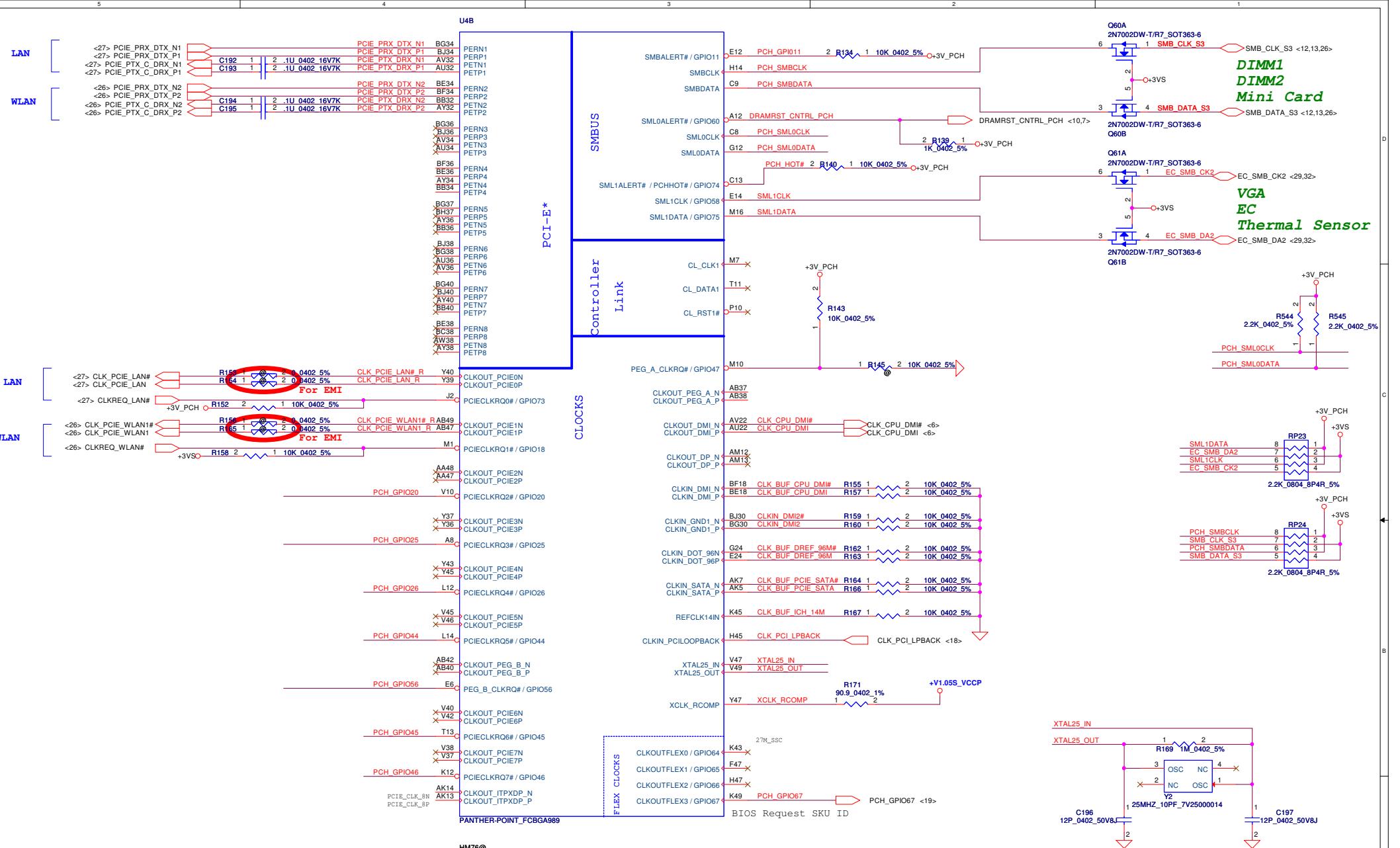
Security Classification	Compal Secret Data			Title PROCESSOR(6/7) PWR
Issued Date	2011/06/15	Deciphered Date	2012/07/11	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPERTY BY PROPERTY OF COMPALELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. IT MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AT AUTHORIZED BY COMPALELECTRONICS, INC. WHETHER THE SHEET OR THE INFORMATION IT CONTAINS ARE USED BY OTHERS OR CLOSED OR ANY PART THEREOF. NO PART WRITTEN COPY OF COMPALELECTRONICS, INC.				Document Number LA-9632P
Date: Wednesday, February 27, 2013				Sheet 10 of 60



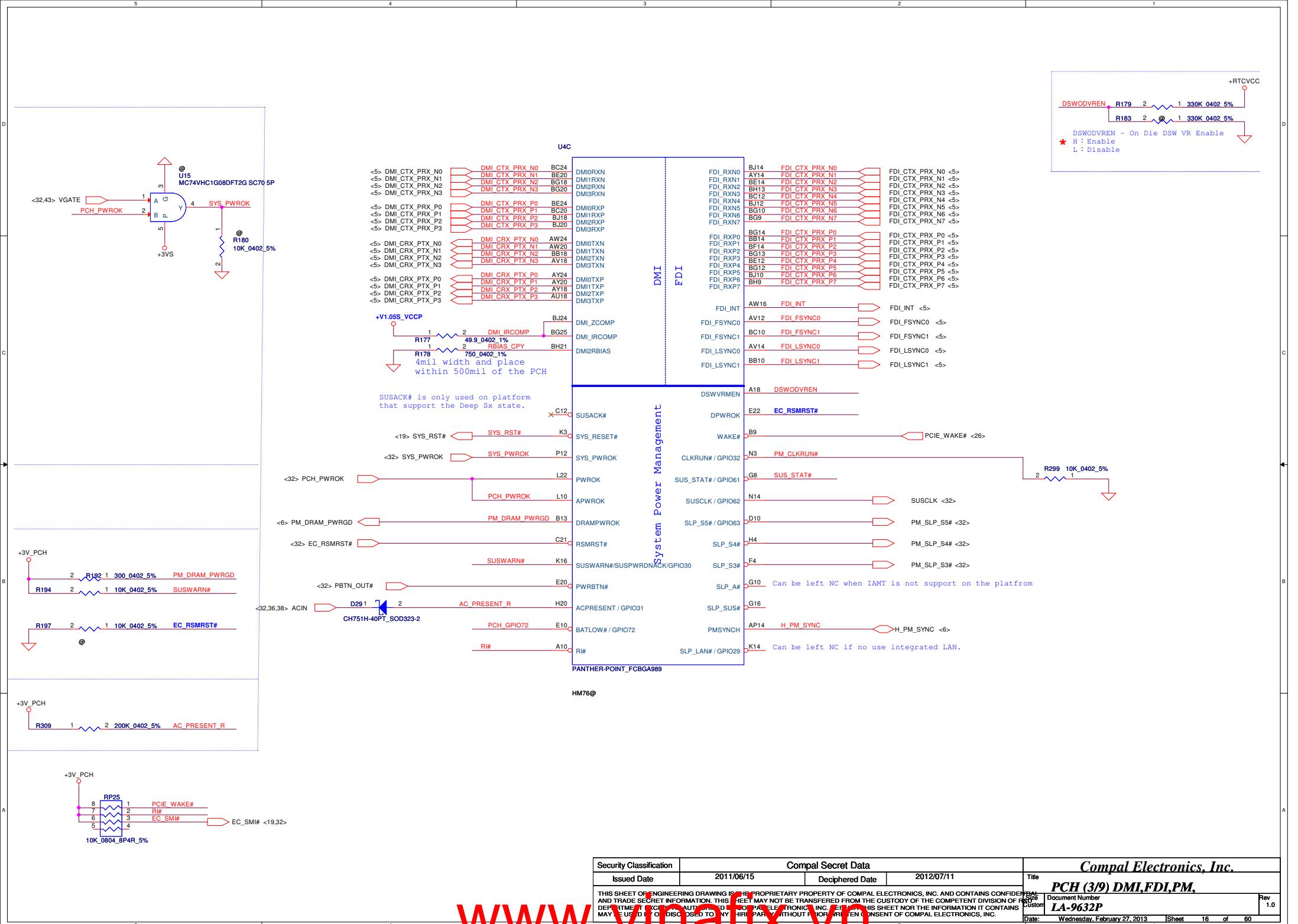


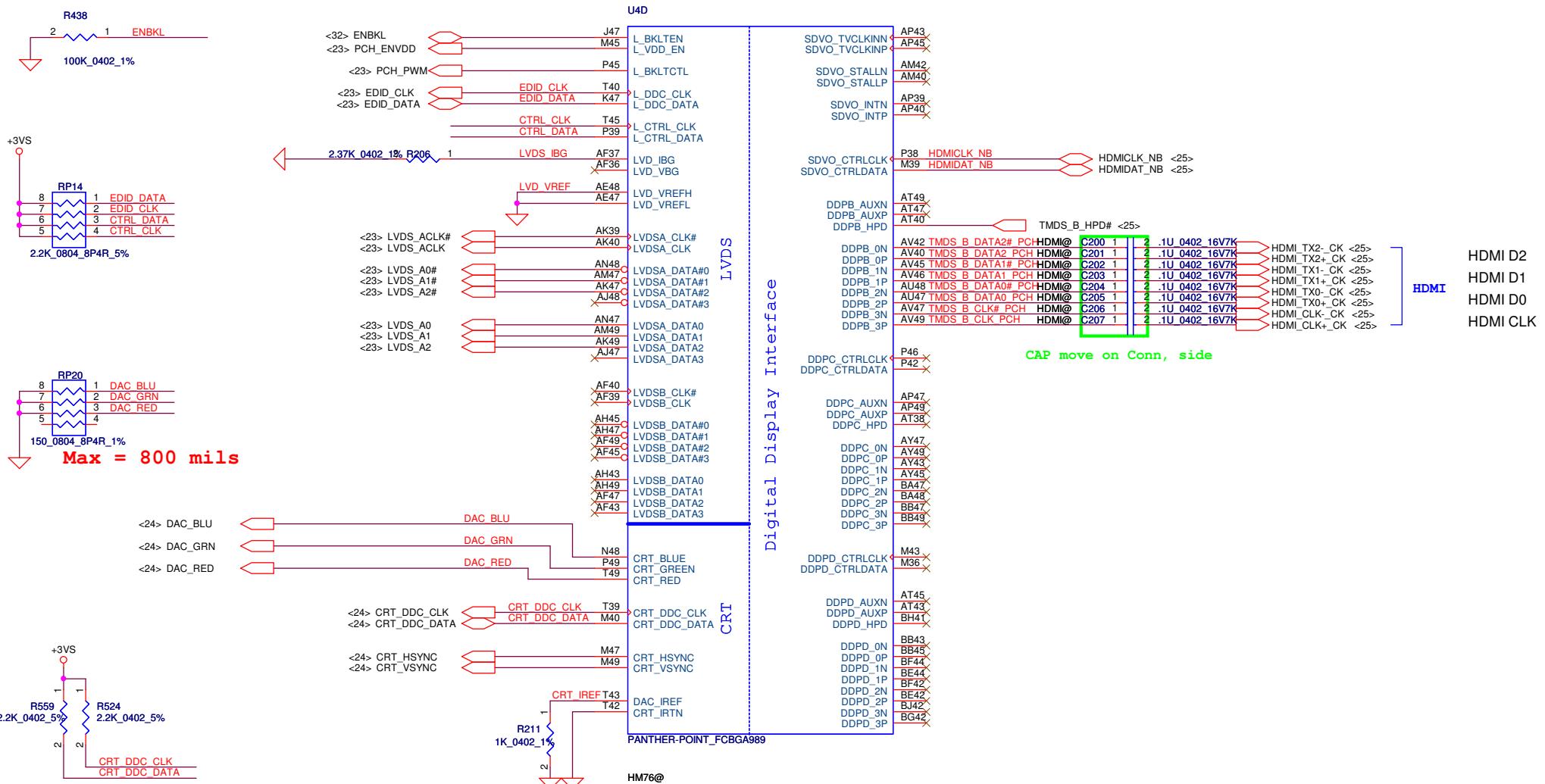




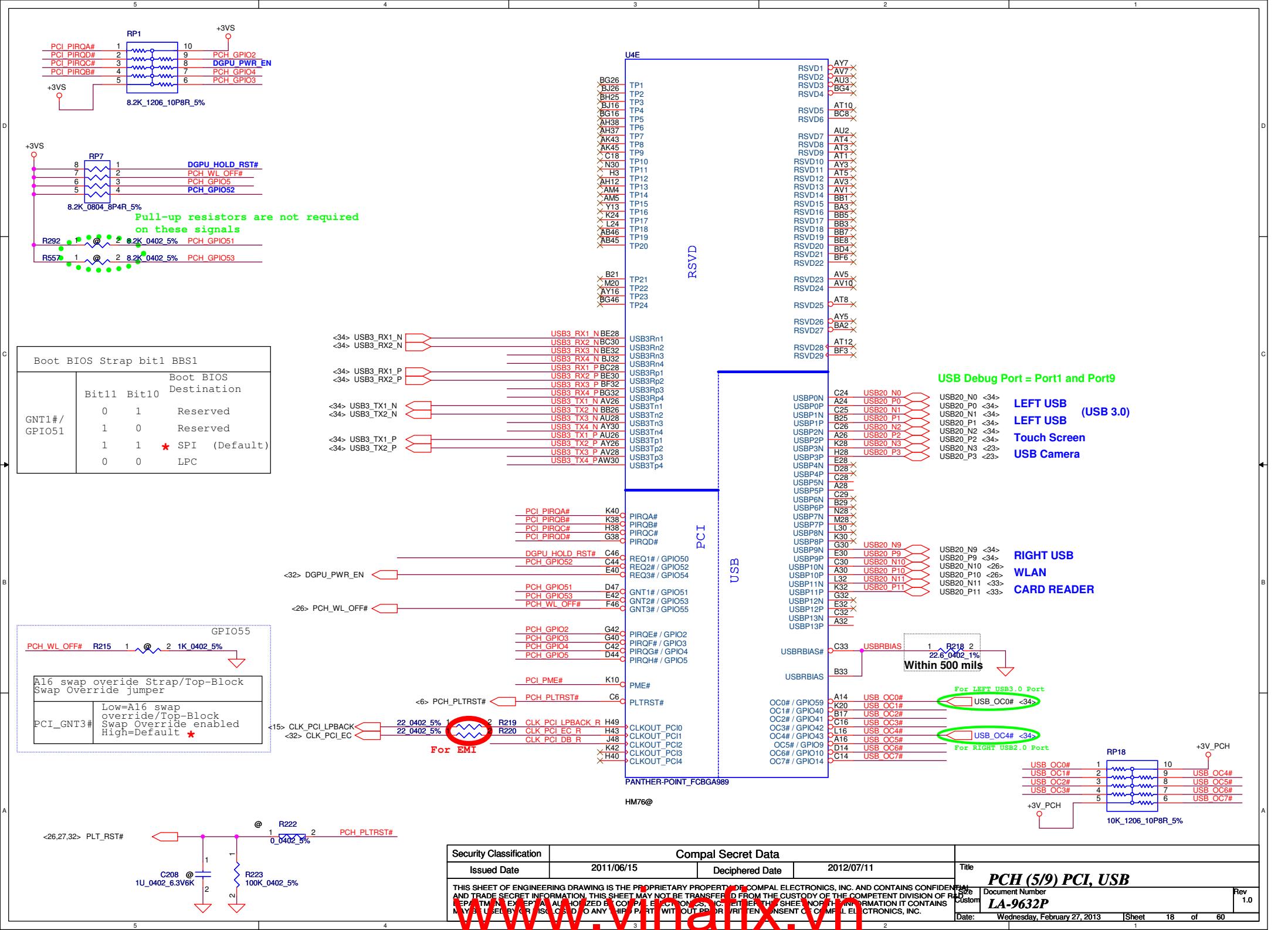


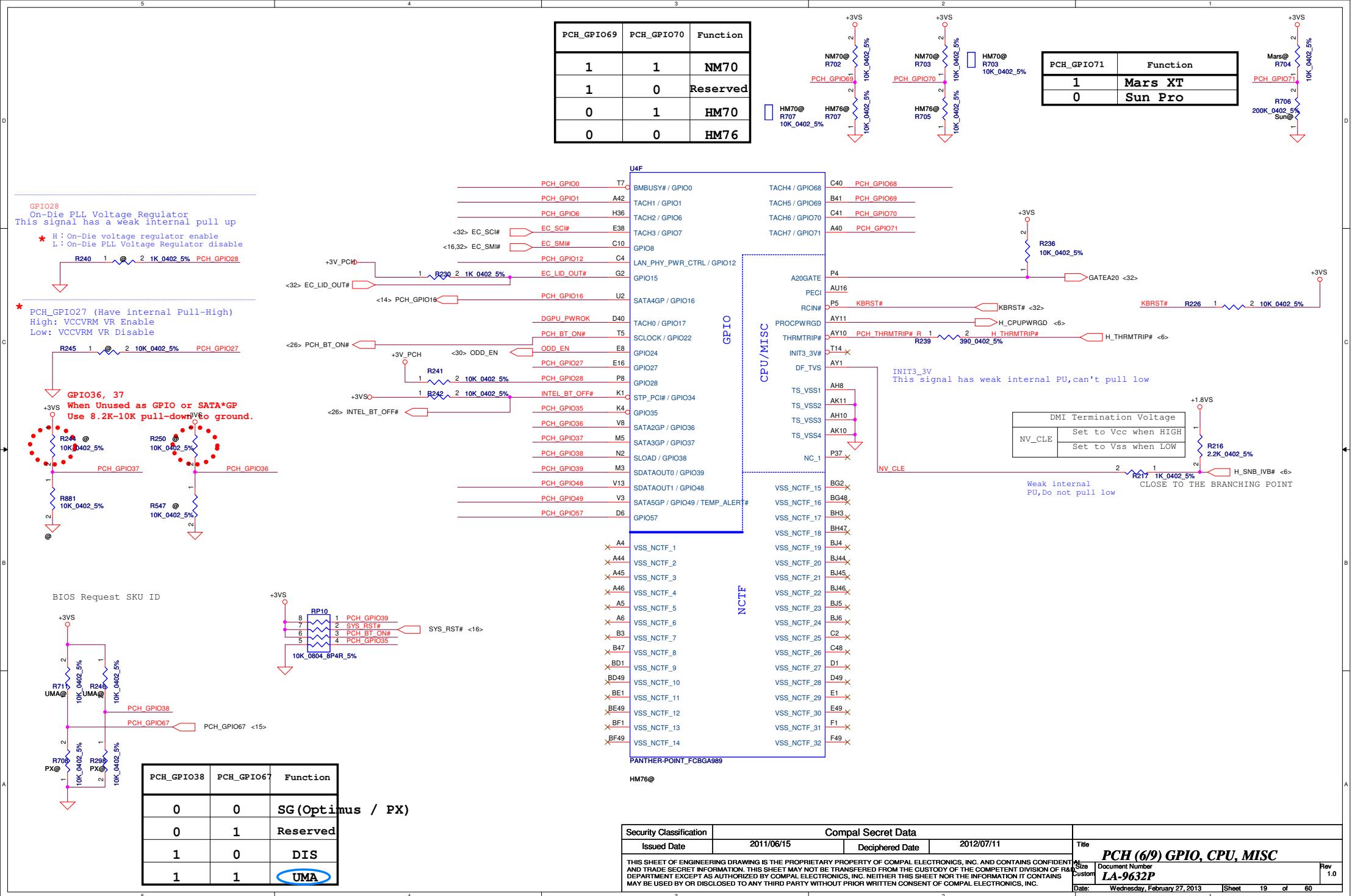
Security Classification	Compal Secret Data			Compal Electronics, Inc.
Issued Date	Deciphered Date	2011/06/15	2012/07/11	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF COMPAL ELECTRONICS, INC. WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				
FAI	Document Number	PCH (2/9) PCIE, SMBUS, CLK	Rev. 1.0	Custom
Date:	Wednesday, February 27, 2013	Sheet 15 of 60	1	

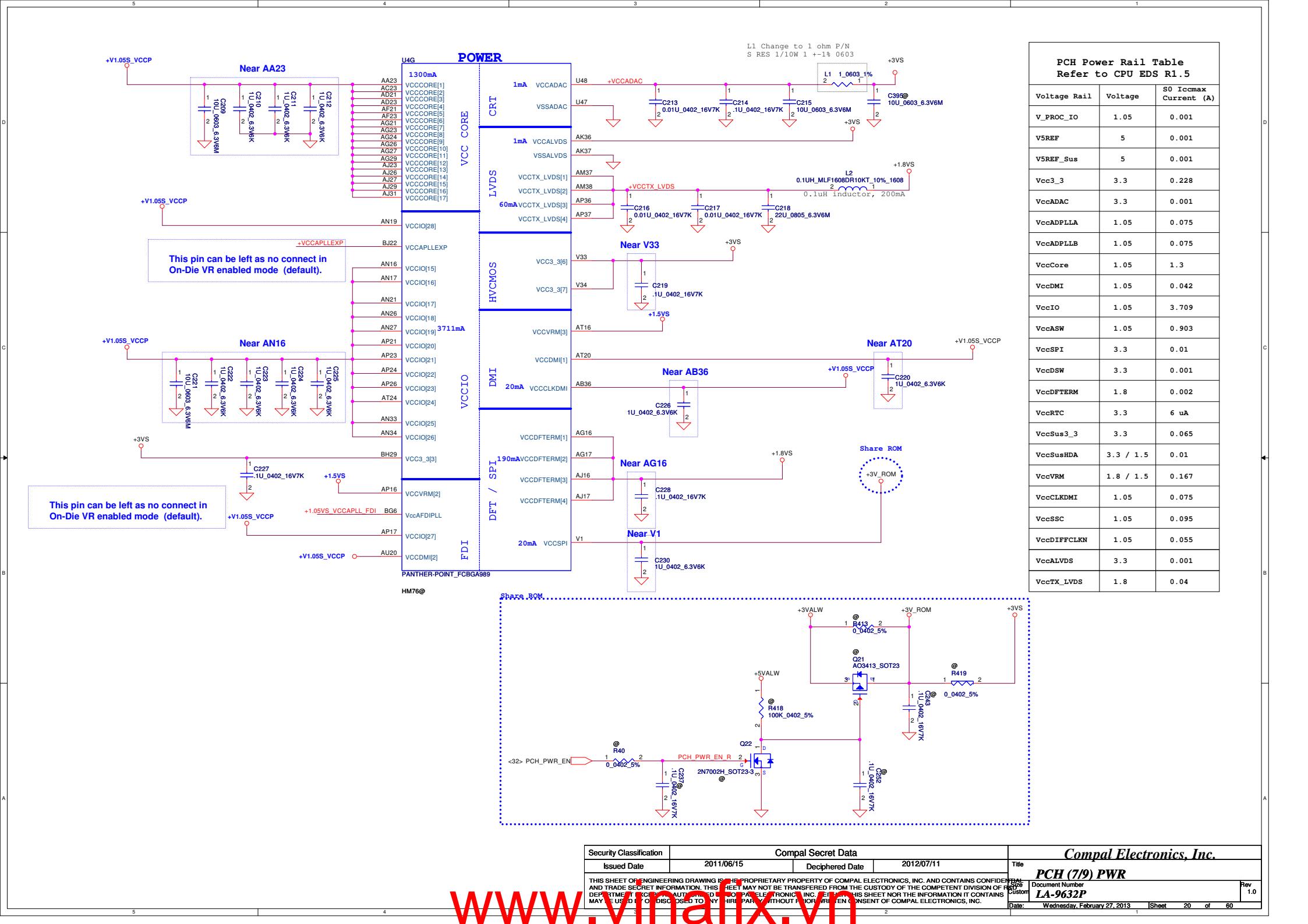


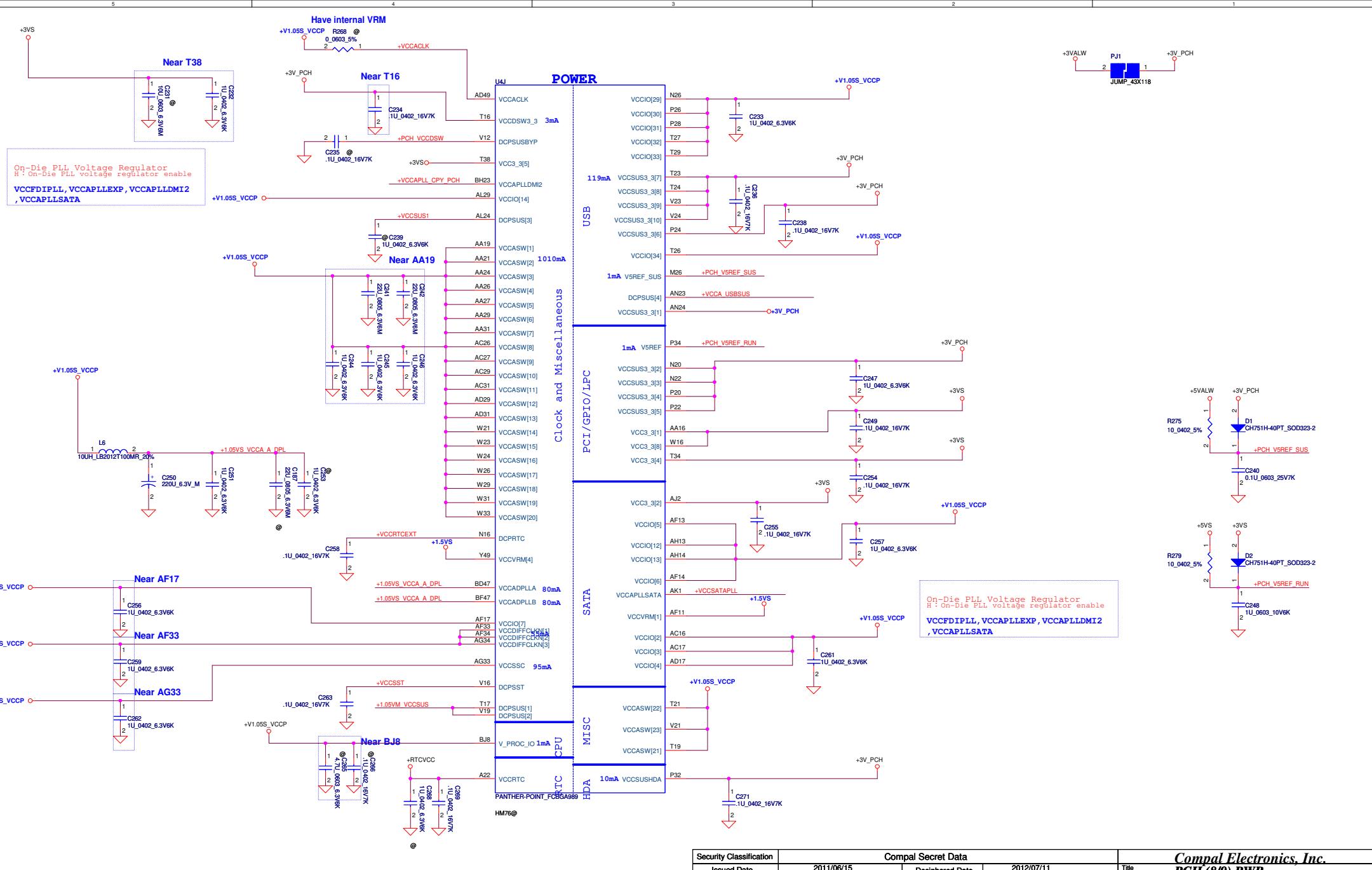


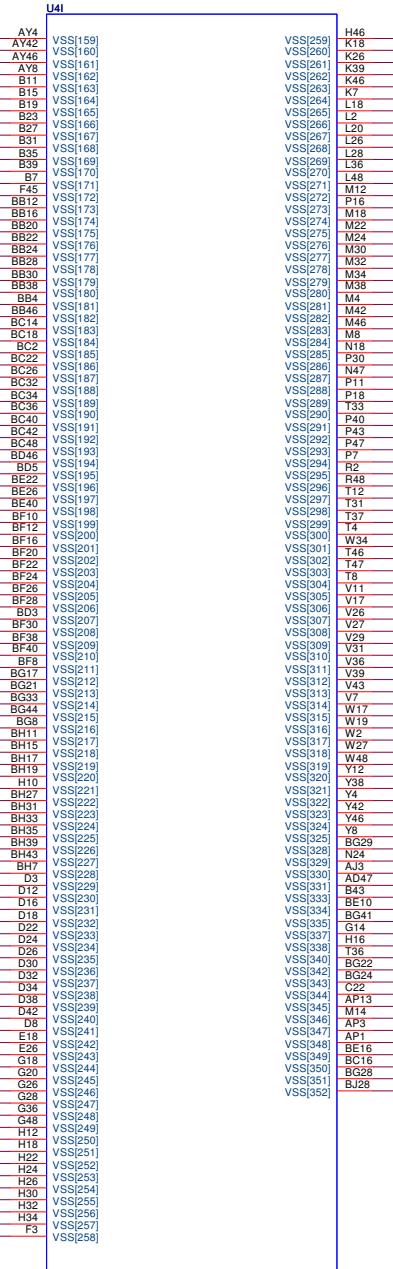
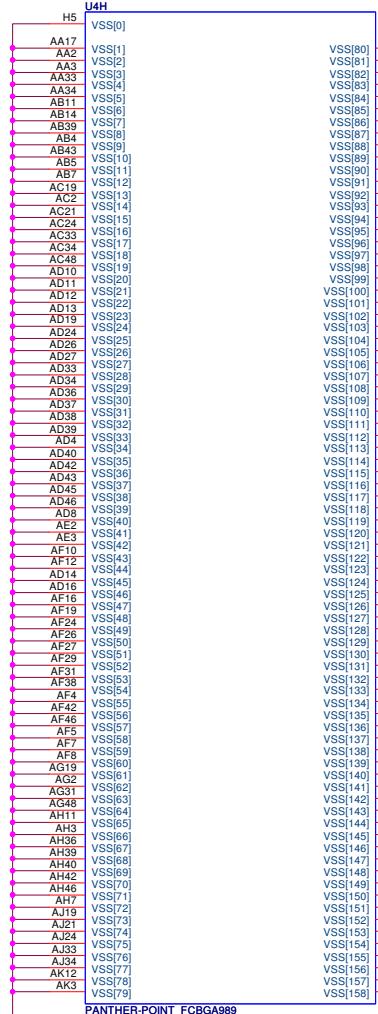
Security Classification		Compal Secret Data			Title	Size	Document Number	Rev.
Issued Date	Deciphered Date							
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE 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.								











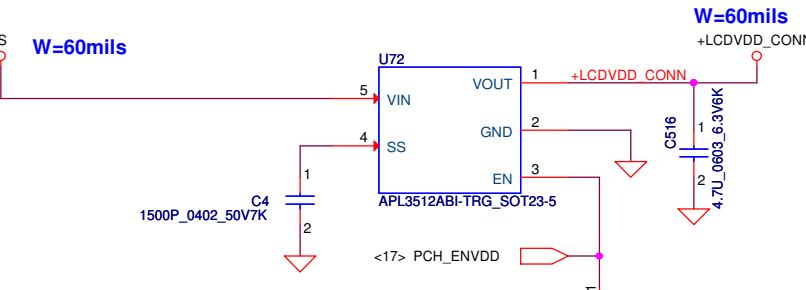
PANTHER-POINT_FCBGA989

HM76@

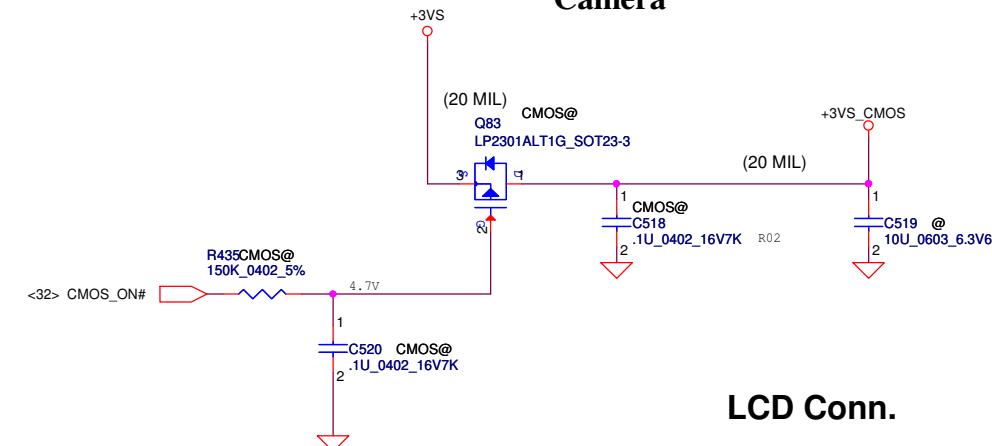
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	Deciphered Date	2011/06/15	2012/07/11	Title	PCH (9/9) VSS
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT OF ELECTRONIC AUTOMATION OF COMPAL ELECTRONICS, INC. IT IS A VIOLATION OF LAW TO COPY THIS SHEET NOR THE INFORMATION IT CONTAINS. MAY WE USE OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Document Number				Rev. 1.0	
LA-9632P				Custom	
Date:	Wednesday, February 27, 2013	Sheet:	22	of	60

WWW.Vinamix.vn

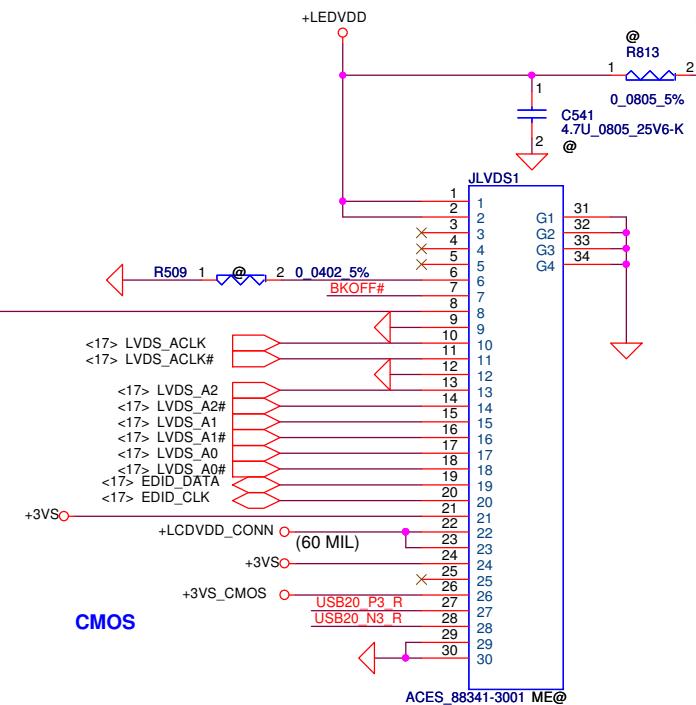
LCD POWER CIRCUIT



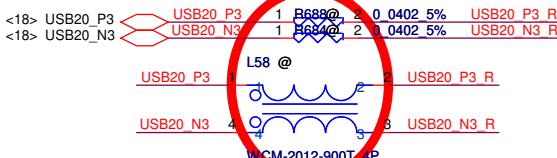
Camera



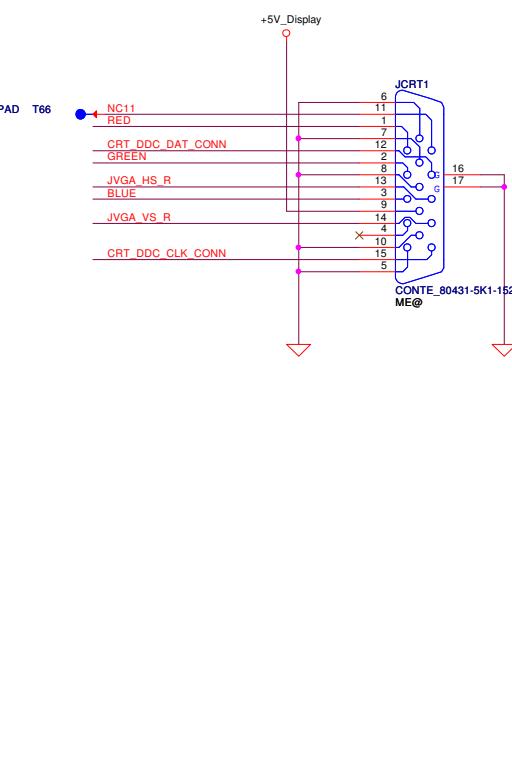
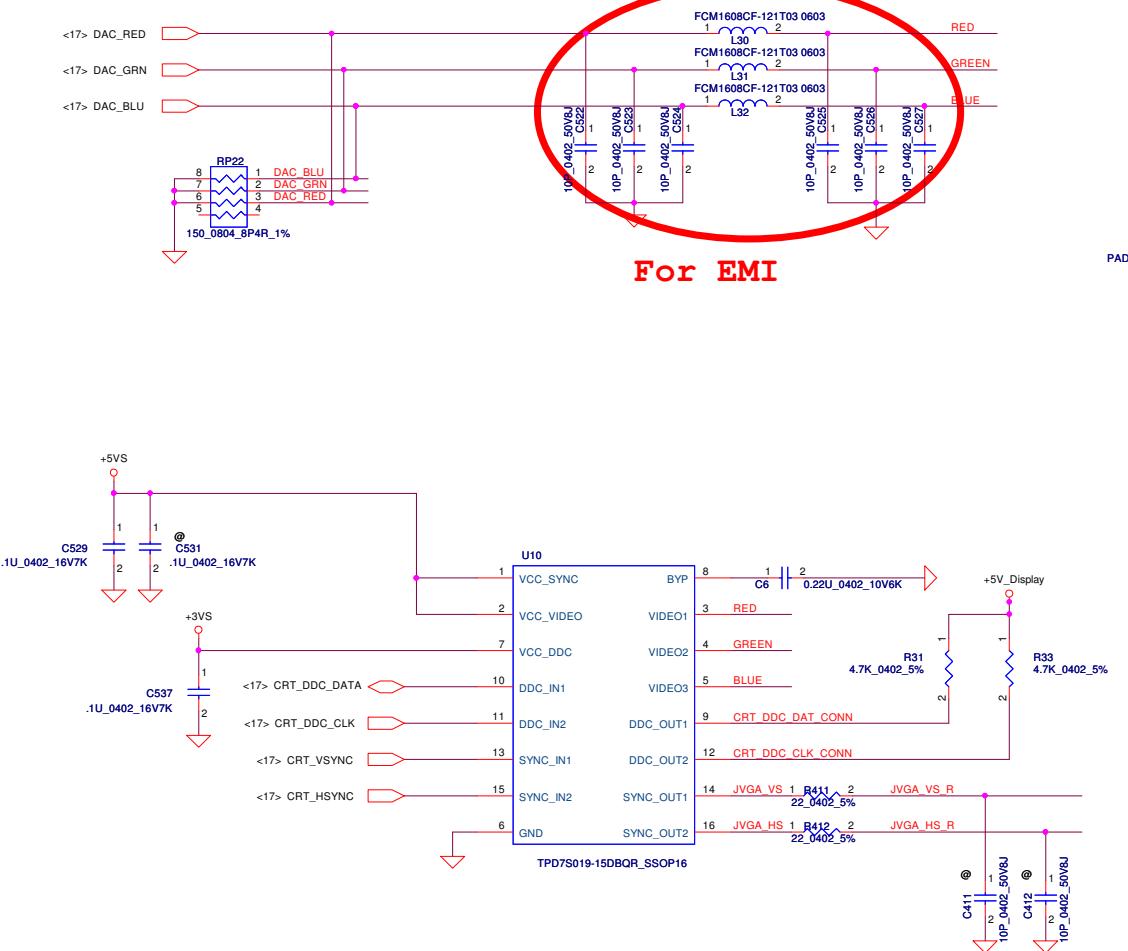
LCD Conn.



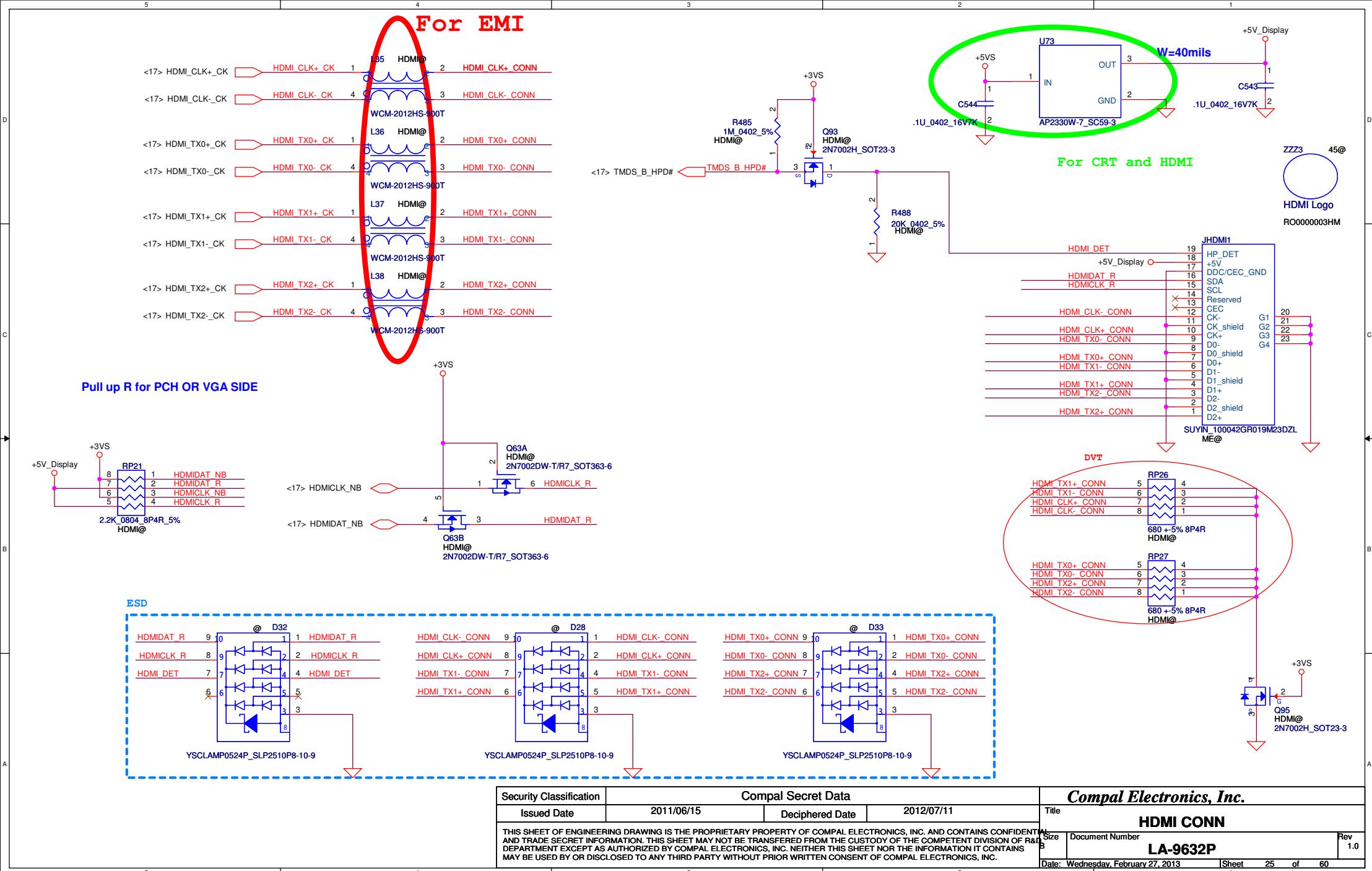
For EMI



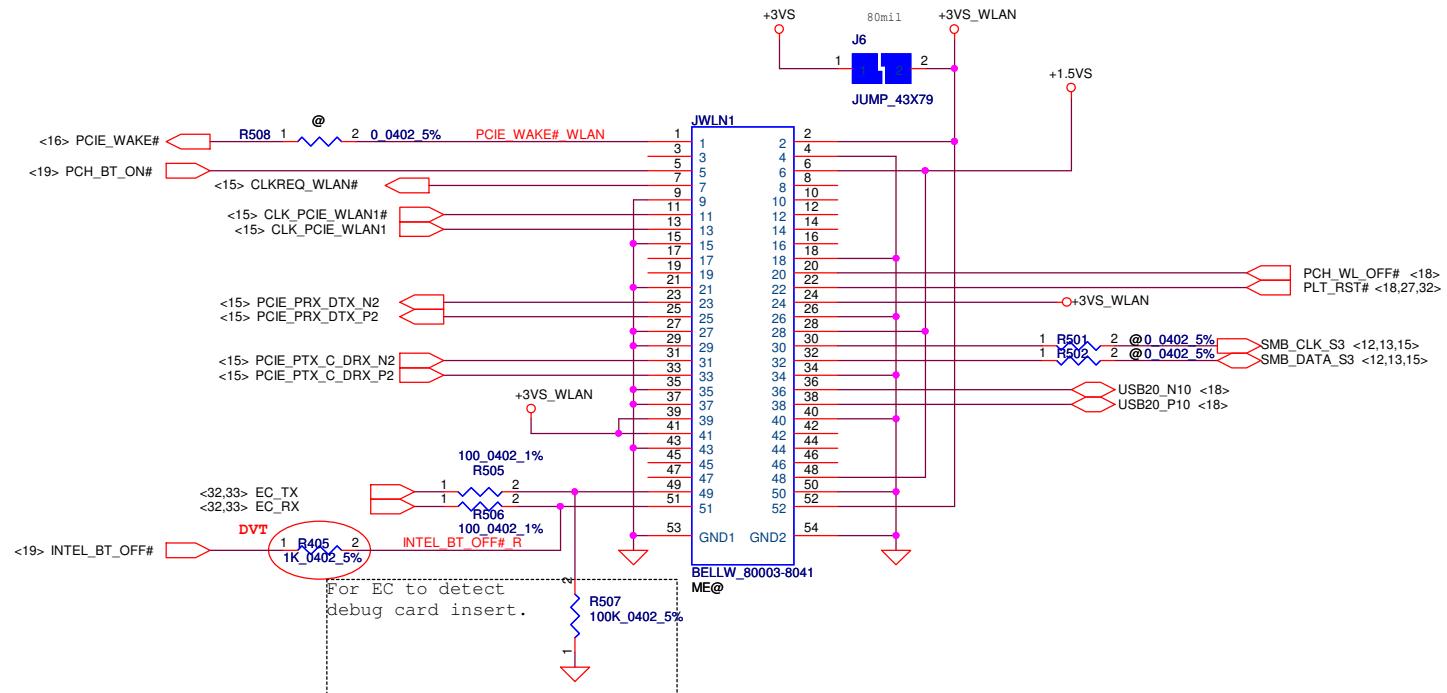
Compal Secret Data				Compal Electronics, Inc.		
Security Classification	Issued Date	Deciphered Date	2012/07/11	Title		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED OUT OF 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 OTHERS EXCEPT IN AN AUTHORIZED PARTIES PROPRIETARY CONSENT OF COMPAL ELECTRONICS, INC.	LVDS/CAMERA			Size	Document Number	Rev
				Custom	LA-9632P	1.0
	Date:	Wednesday, February 27, 2013	Sheet	23	of	60



Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title	CRT Connector
THIS SHEET OF ENGINEERING DRAWING IS THE 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 COMPAL ELECTRONICS, INC. EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THE SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY ANYONE OTHER THAN THE CUSTODIAN, OR ANY THIRD PARTY, WITHOUT WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Final	Document Number	Custom	Rev	1.0	LA-9632P
Date:	Wednesday, February 27, 2013	Sheet	24	of	60

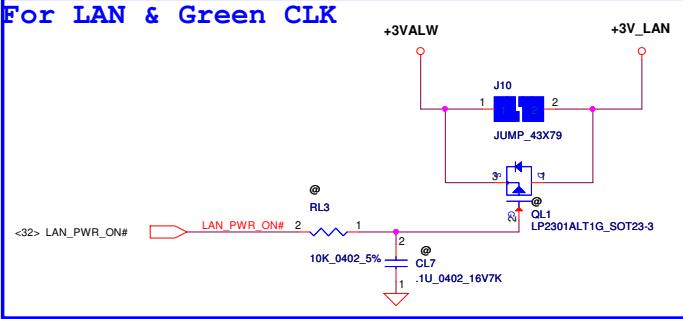


Mini Card for WLAN/WiMAX(Half)



Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2011/06/15	Deciphered Date	2012/07/11	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.					
Size	Document Number	Rev			
	LA-9632P	1.0			
Date:	Wednesday, February 27, 2013	Sheet	26	of	60

For LAN & Green CLK

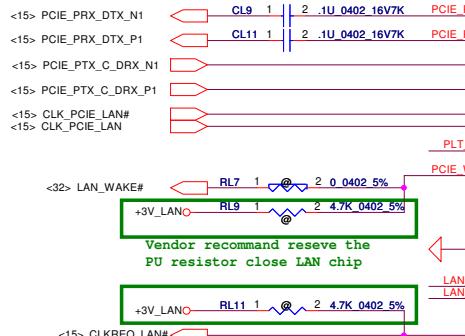


Vendor recommend reserve the
PU resistor close LAN chip

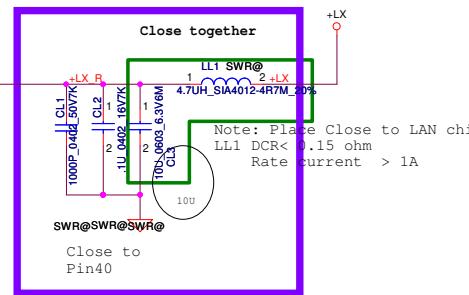
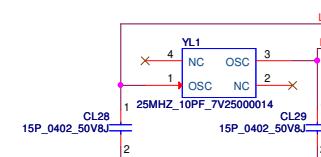


QCA8172-BL3A-R
SA000065410
S IC QCA8172-BL3A-R QFN 40P E-LAN CTRL

Place Close to Chip

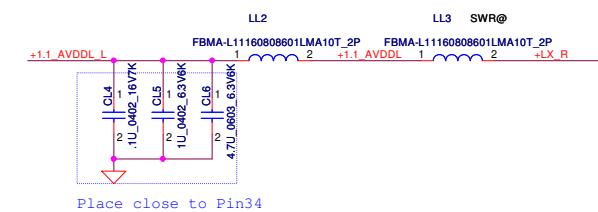


Near Pin13
Near Pin19
Near Pin31



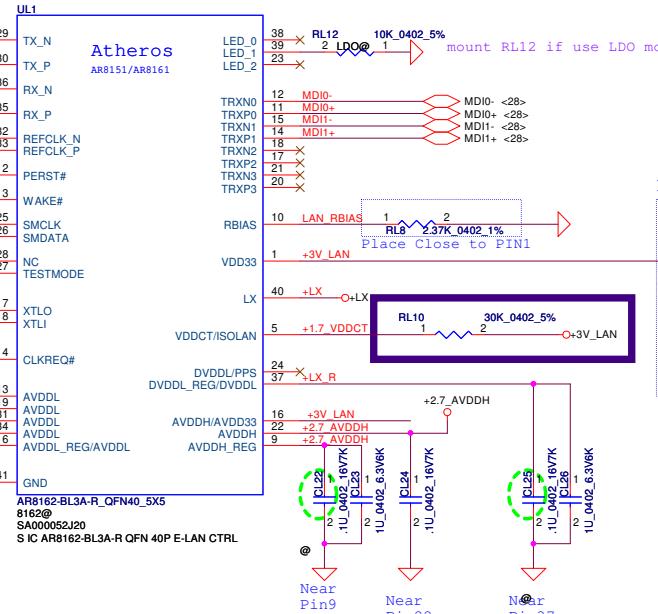
Note: Please Close to LAN chip
LL1 DCRx < 0.15 ohm
Rate current > 1A

SWR@SWR@SWR@
Close to Pin40

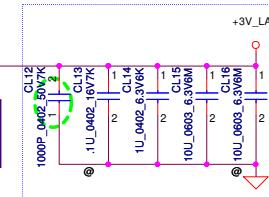


Place close to Pin34

UL1
Atheros
AR8151/AR8161

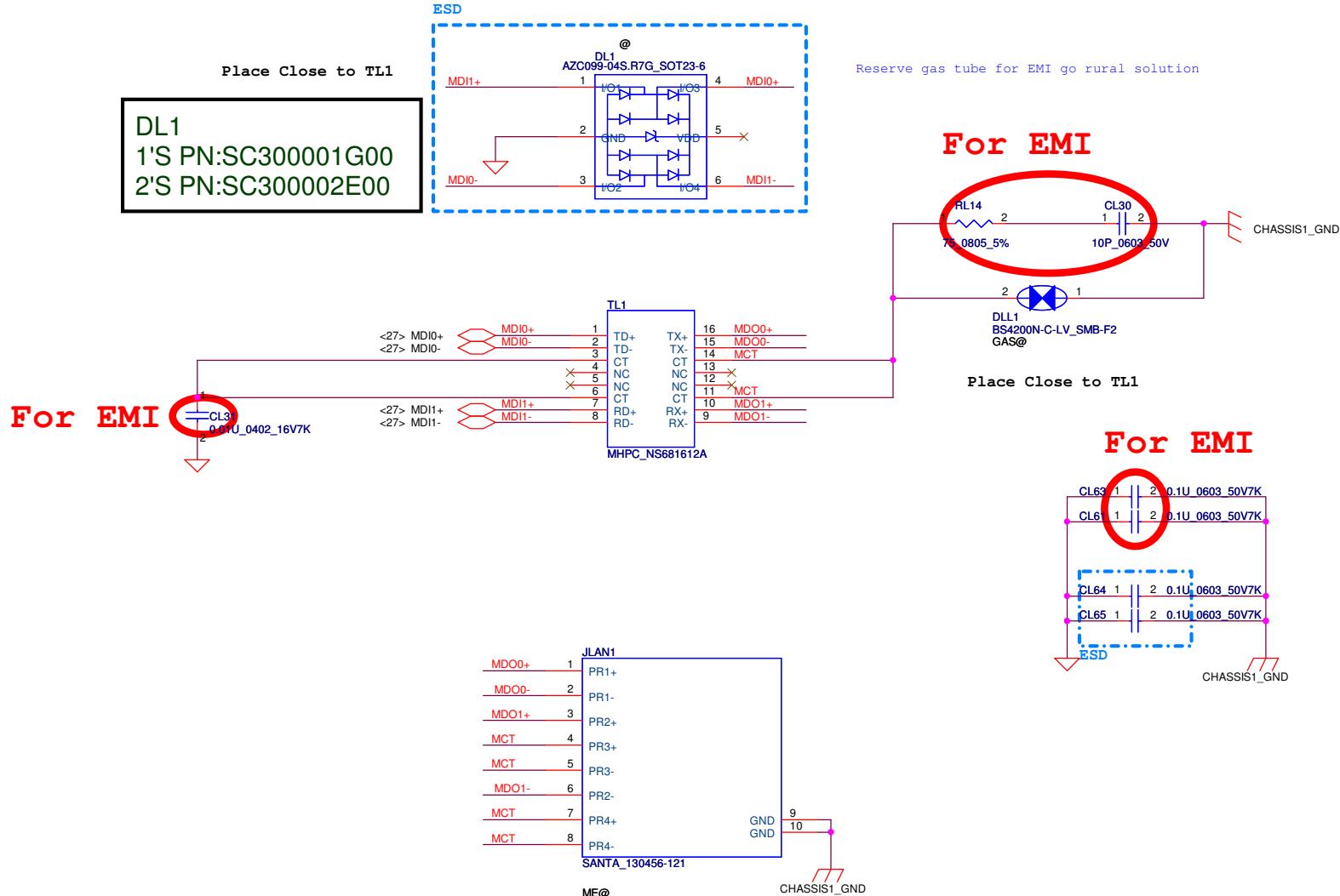


Place Close to PIN1



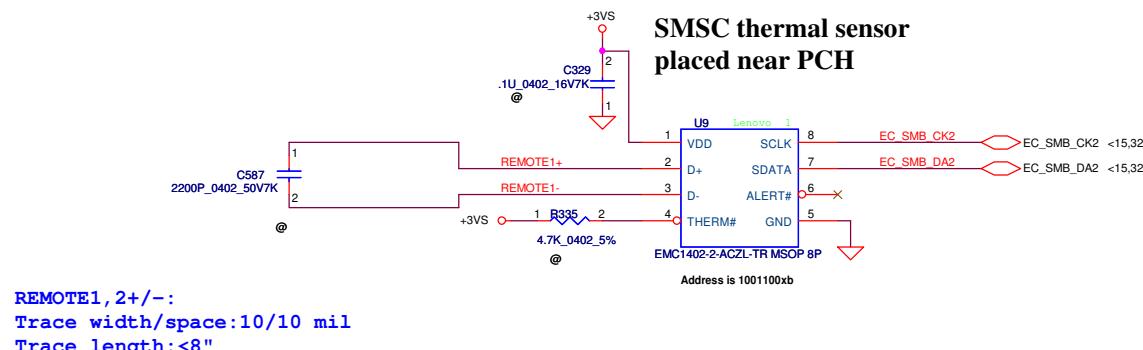
don't @ (could be B C cost done)

Security Classification	Compal Secret Data			Compal Electronics, Inc.
Issued Date	Deciphered Date	2011/06/15	2012/07/11	Title
<small>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.</small>				
Document Number	LA-9632P	Rev 1.0		Custom
Date:	Wednesday, February 27, 2013	Sheet 27	of 60	

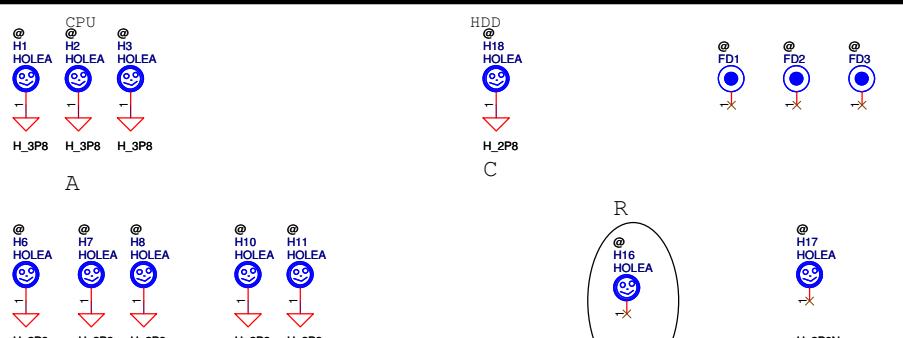
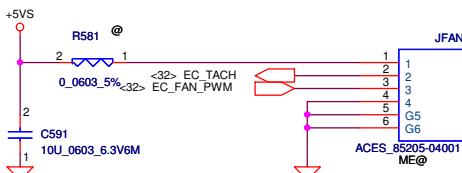


Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2011/06/15	Deciphered Date	2012/07/11 <th>Title</th> <td>LAN Transformer</td>	Title	LAN Transformer
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND 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.					
Size	Document Number	Rev		LA-9632P	1.0
B			Date:	Wednesday, February 27, 2013	Sheet 28 of 60

2 Channel



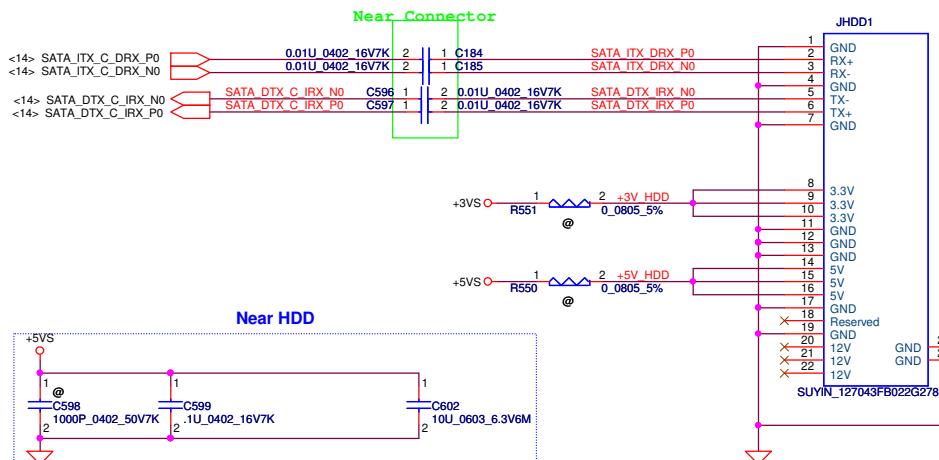
FAN1 Conn



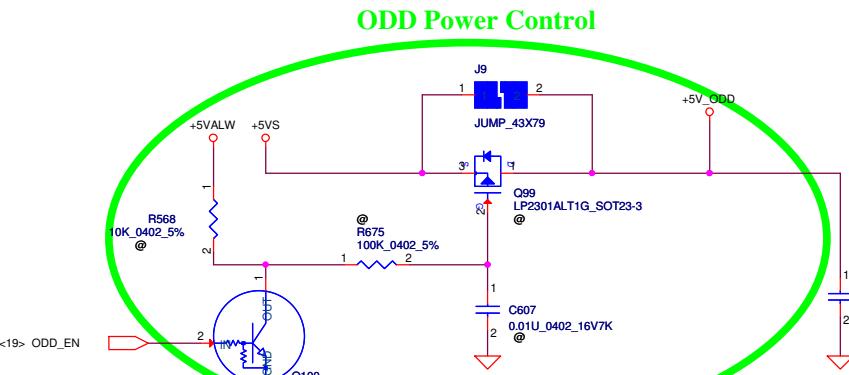
M/B 橢圓孔 M/B 圓孔

Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/06/15	Deciphered Date	2012/07/11	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 CLOUDS OF THE COMPETENT DIVISION OF RAD DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE REPRODUCED OR DISCLOSED, IN WHOLE OR IN PART, WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				
Size	Document Number	Rev	Fintek-Thermal IC/FAN/screw	
Custom	LA-9632P	1.0		
Date: Wednesday, February 27, 2013		Sheet	29	of 60

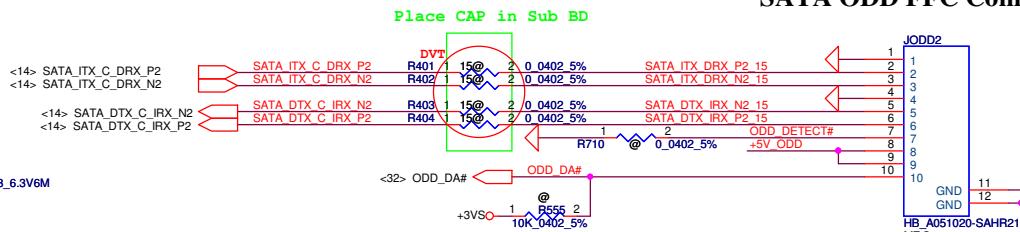
SATA HDD Conn.



ODD Power Control

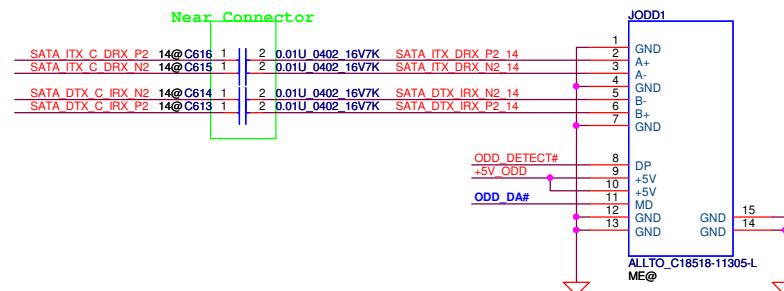


FOR 15" SATA ODD FFC Conn.



Co-lay

FOR 14" SATA ODD Conn.

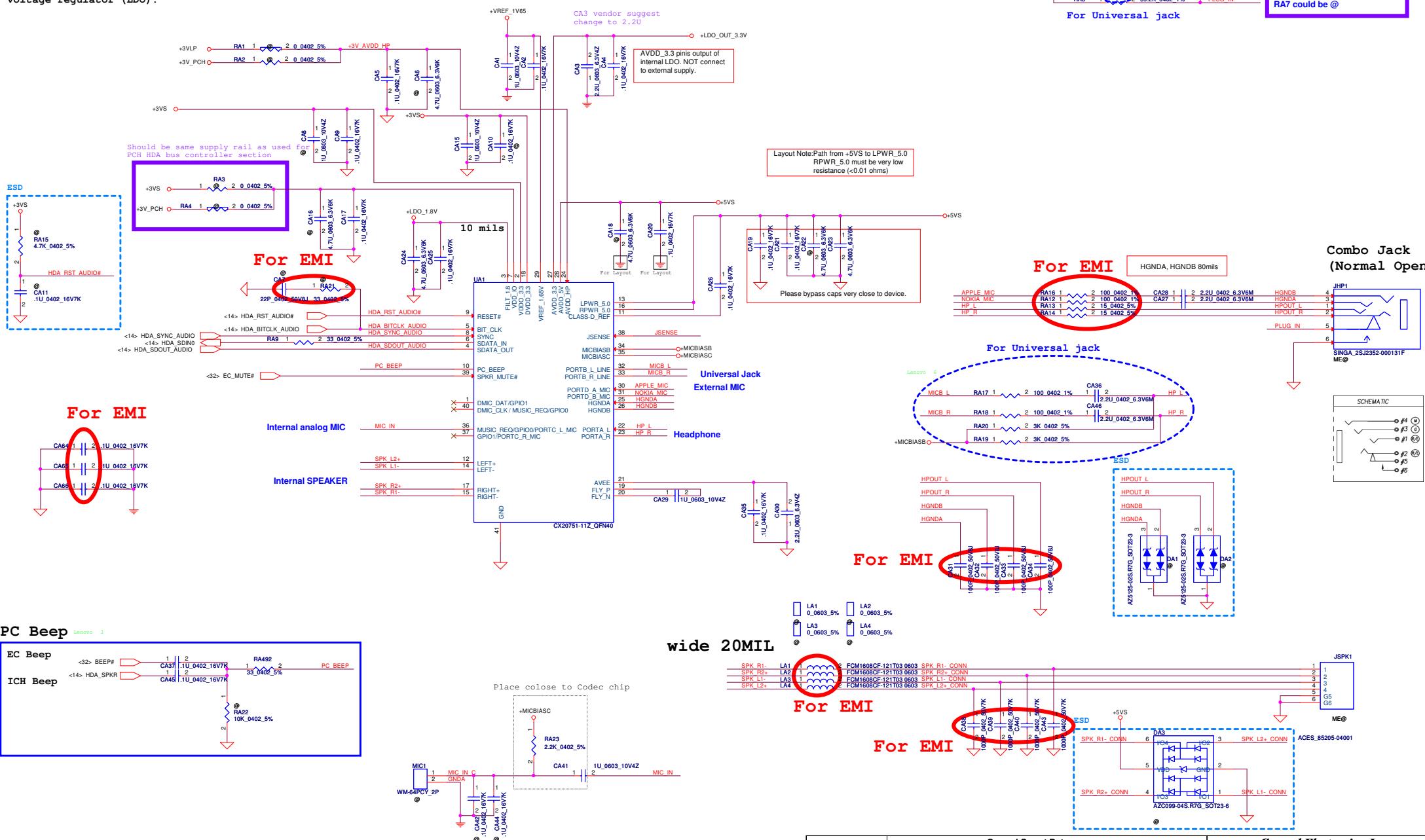


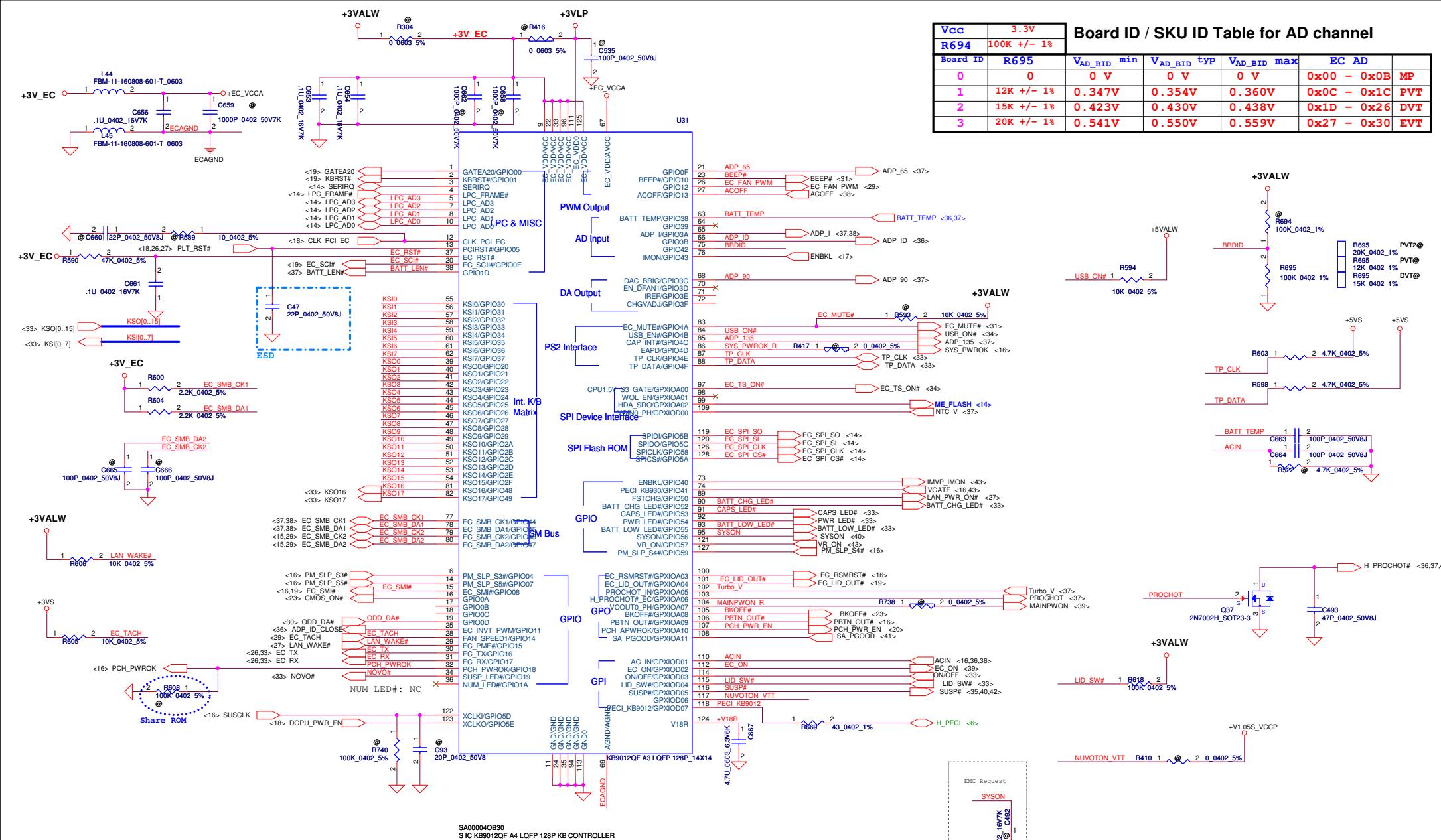
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CLOUDS OF THE COMPETENT DIVISION OF RAD DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED OR DISCLOSED, WHOLLY OR IN PART, WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.						LA-9632P
Size	Custom	Document Number	LA-9632P	Rev	1.0	
Date:	Wednesday, February 27, 2013	Sheet	30	of	60	

CX20751
High Definition Audio Codec SoC
With Integrated Class-D Stereo

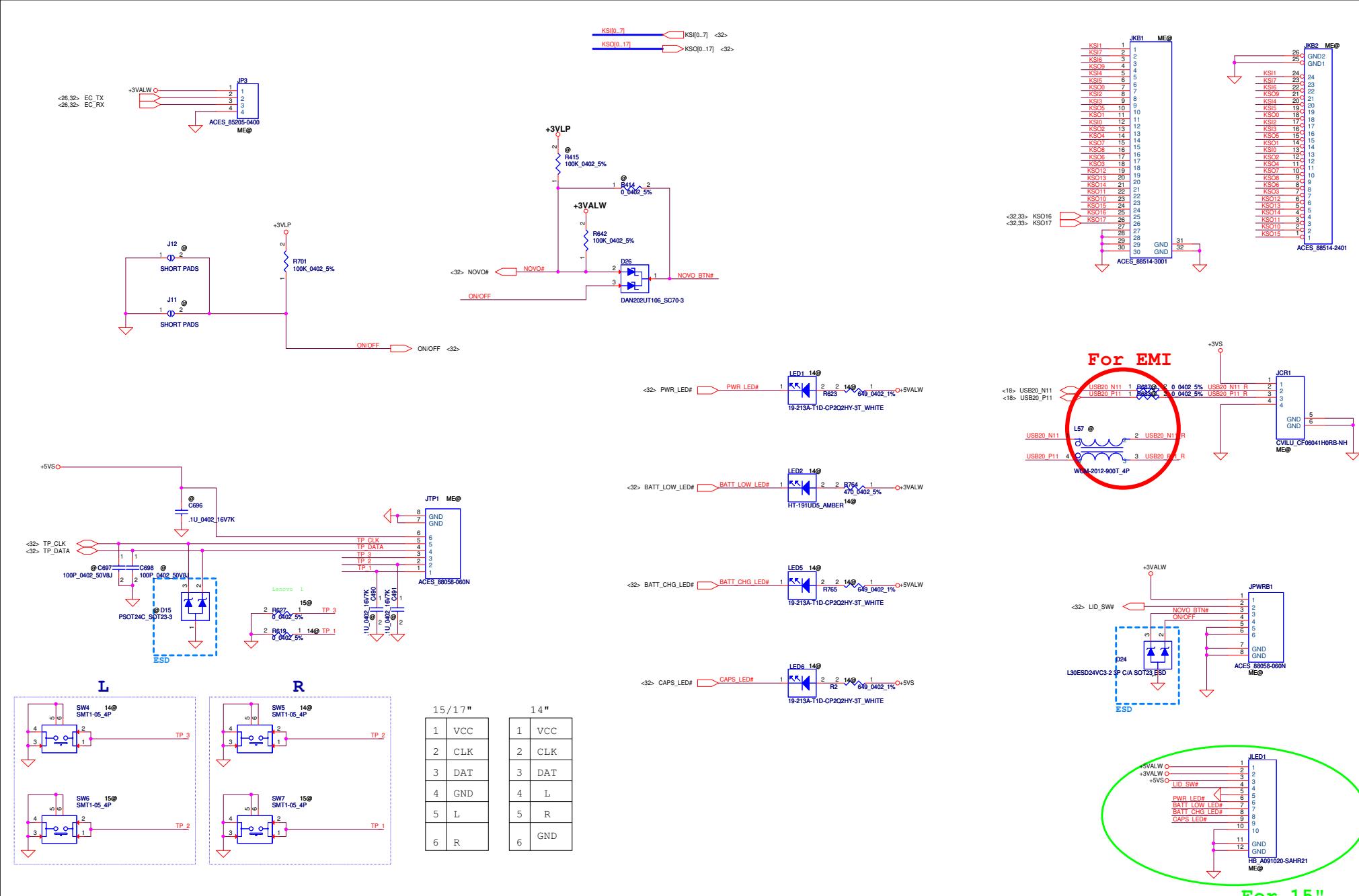
Amplifier.
An integrated 5 V to 3.3 V Low-dropout

An integrated 3.3 V to 1.8V Low-dropout voltage regulator (LDO).





Security Classification		CompaL Secret Data		CompaL Electronics, Inc.	
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title	BIOS & EC I/O Port
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. IT MAY NOT BE COPIED OR DISCLOSED TO ANY THIRD PARTY WITHOUT THE EXPRESS WRITTEN CONSENT 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.					
Size Custom	Document Number	Rev. 1.0	Date: Wednesday, March 06, 2013	Sheet 32 of 60	



Security Classification

Compal Secret Data

Issued Date

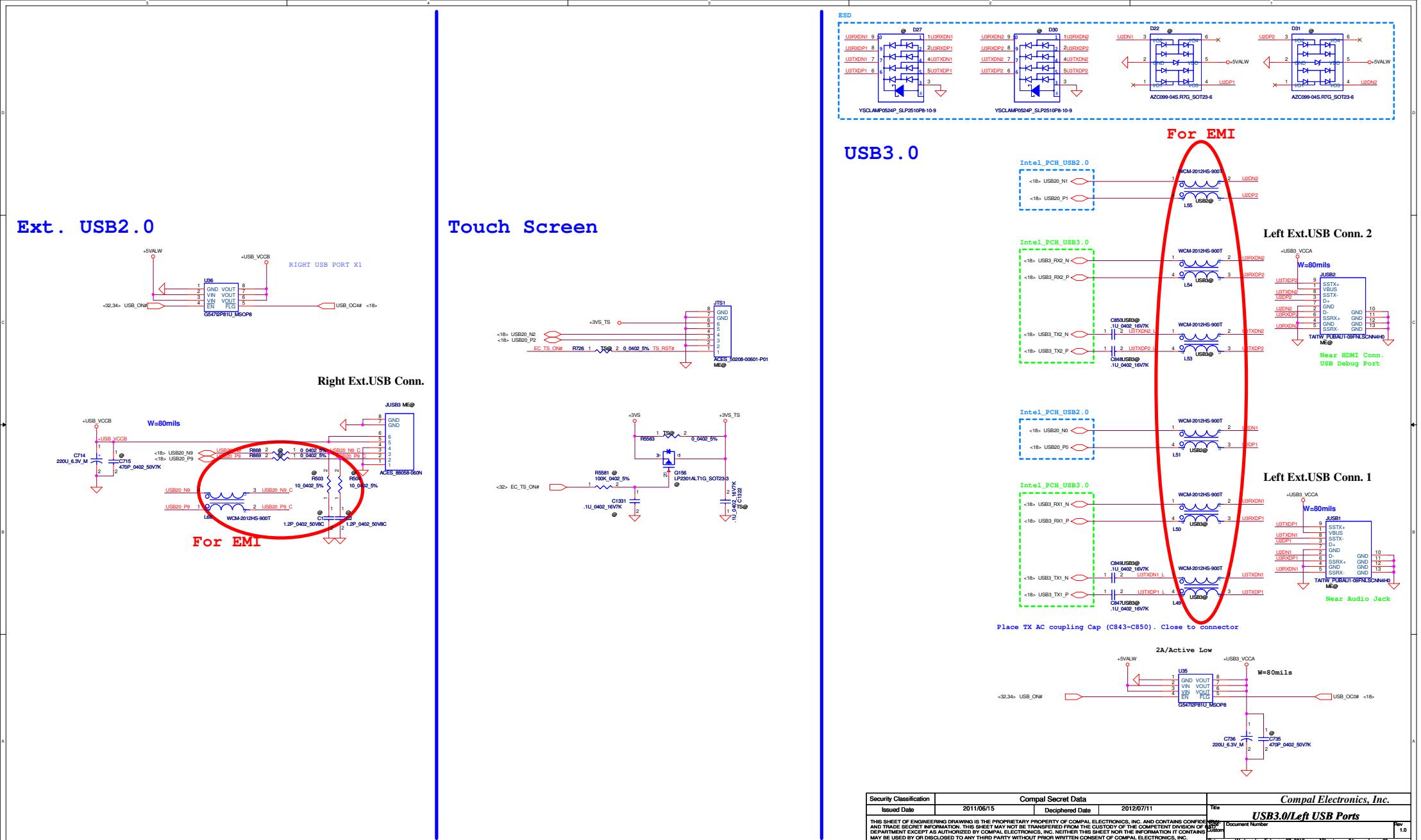
Deciphered Date

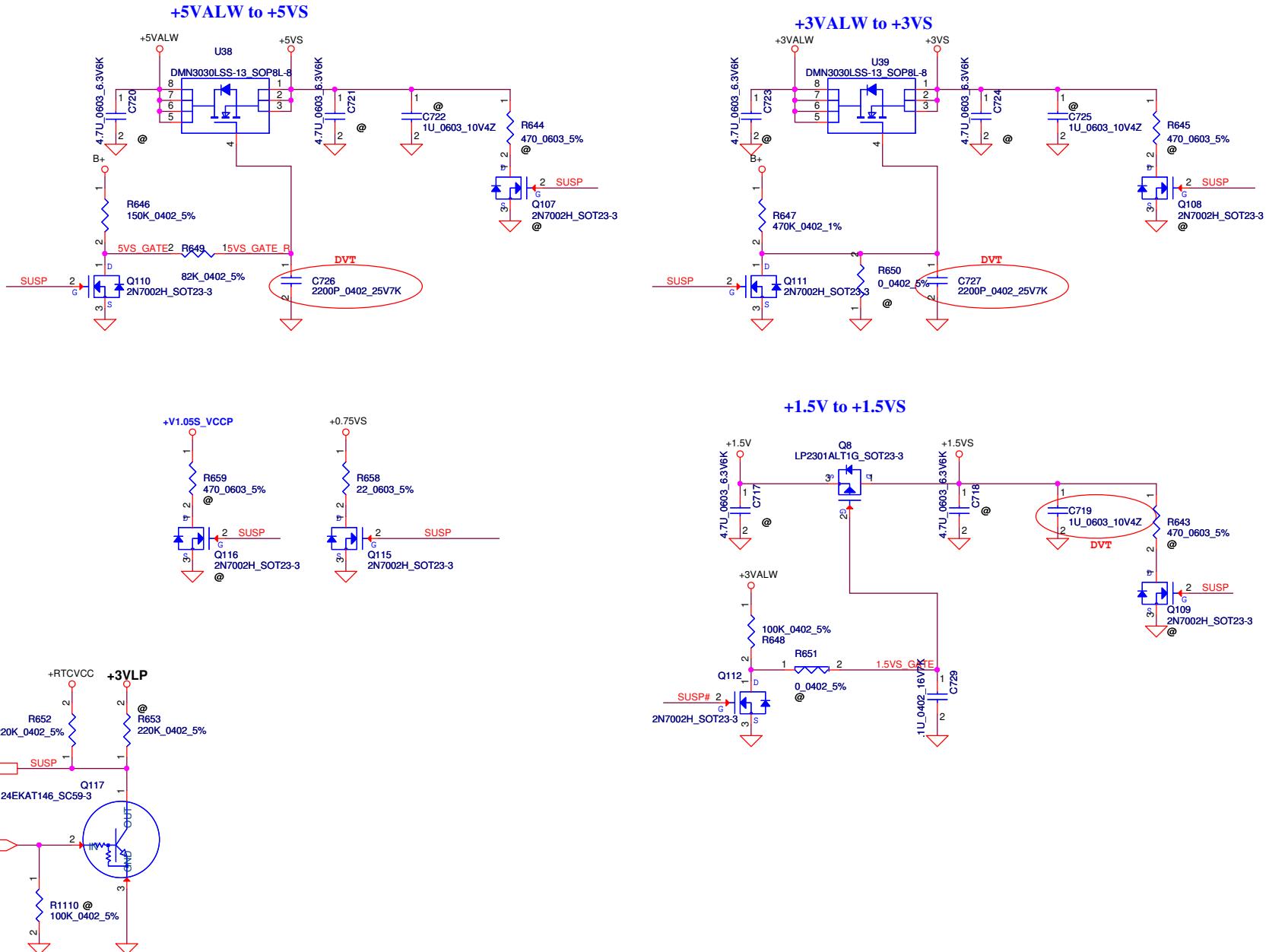
2012/07/11

Compal Electronics, Inc.
ROM/KBD/PWR/CR/LED/TP Conn.

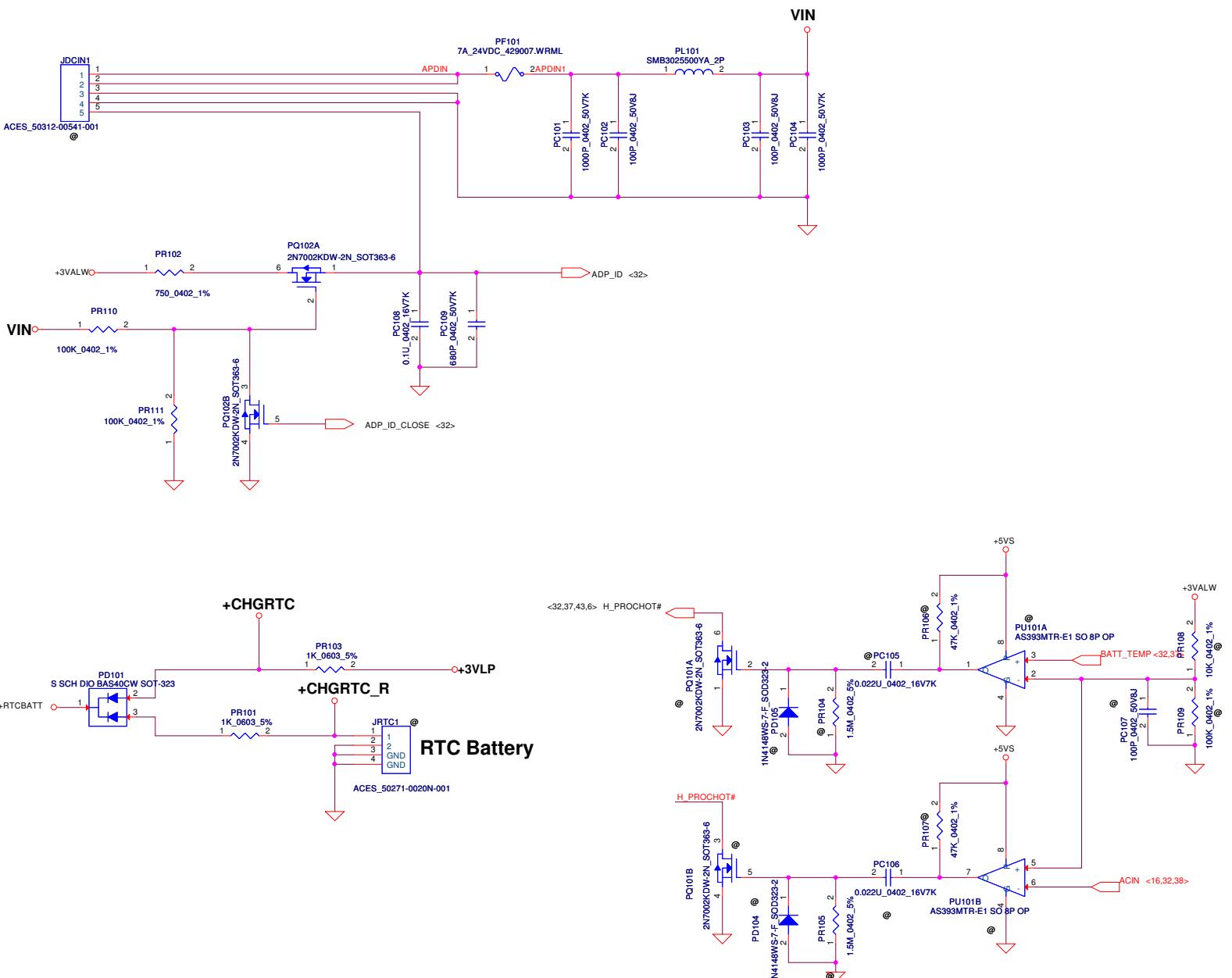
Size C Document Number LA-9632P Rev 1.0

Date: Wednesday, March 06, 2013 Sheet 33 of 60

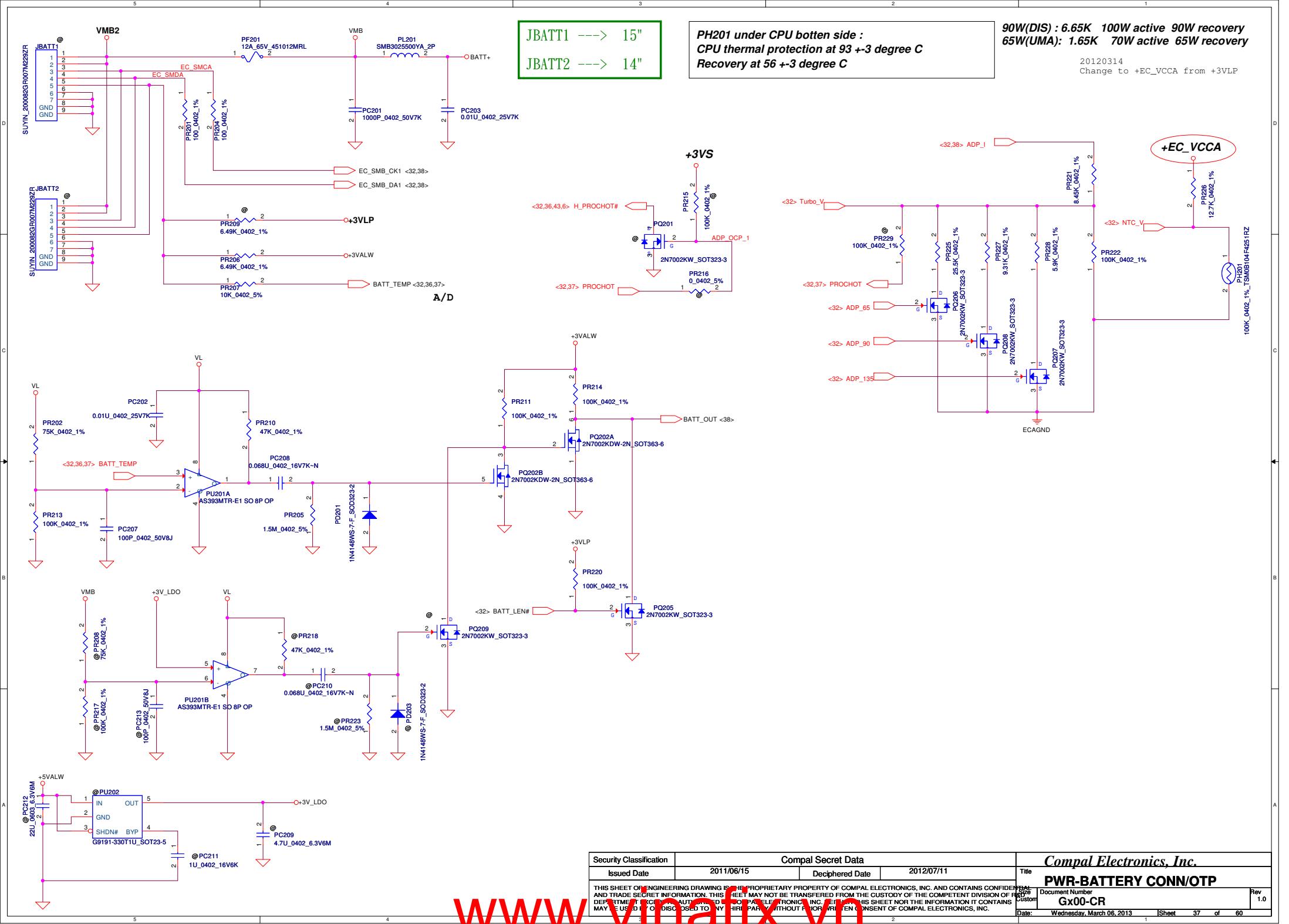


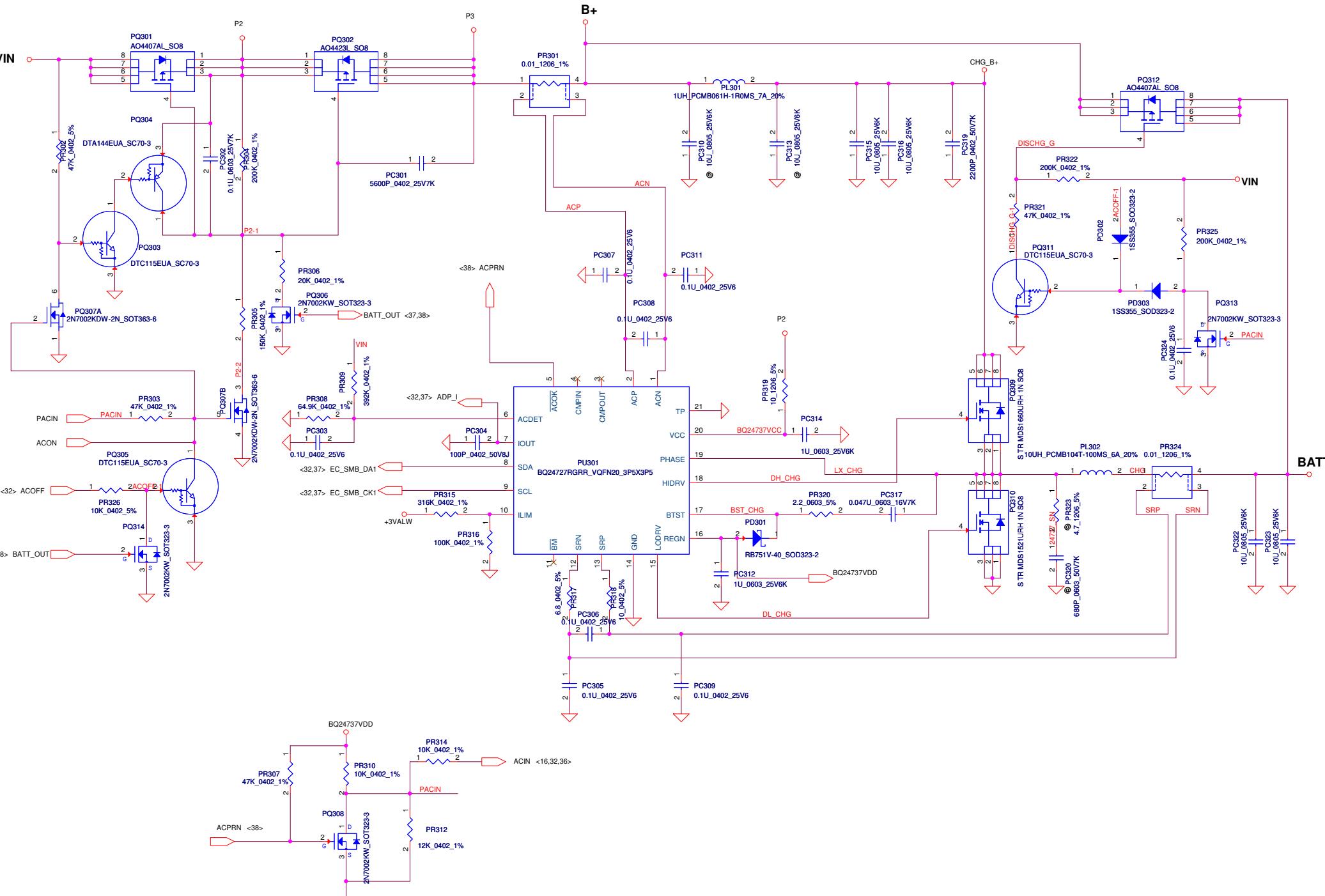


Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2011/06/15	Deciphered Date	2012/07/11 <th>Title</th> <td>DC Interface</td>	Title	DC Interface
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF READING DEPARTMENT, EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. WHETHER THE SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY OTHER PART, WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Size Custom	Document Number LA-9632P	Rev 1.0	Date: Wednesday, February 27, 2013	Sheet 35 of 60	E



Security Classification	Compal Secret Data			Compal Electronics, Inc.
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPALELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT OF DESIGN AUTOMATION TO ANY OTHER PERSON OR COMPANY. USE OF THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPALELECTRONICS, INC.				
Document Number	Gx00	Rev	1.0	
Date:	Wednesday, February 27, 2013	Sheet	36	of 60

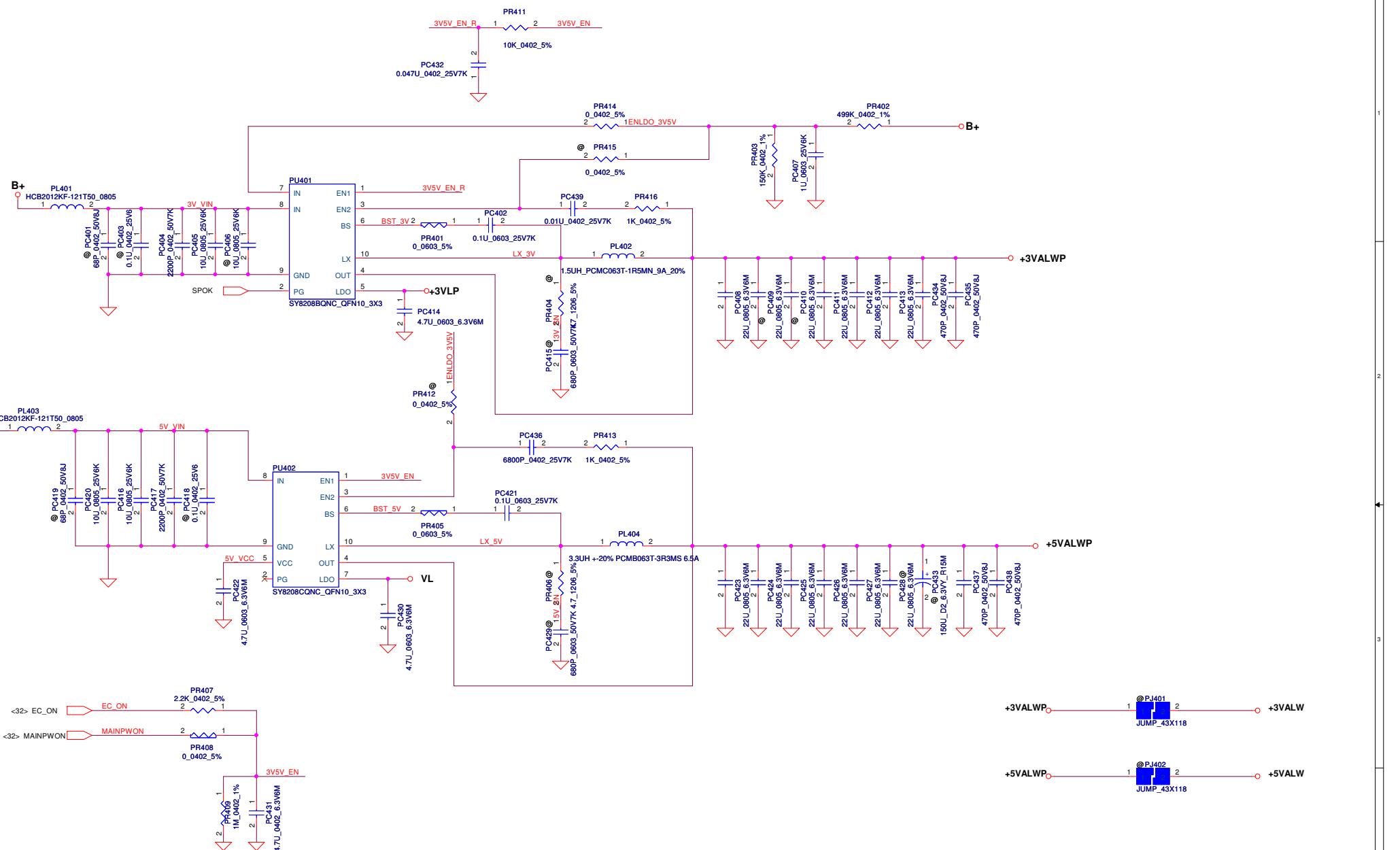




Issued Date 2011/06/15 Deciphered Date

THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS CO., LTD. AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTOMER'S DEPARTMENT UNLESS APPROVED BY THE COMPANY IN WRITING. IN NEITHER THE SHEET NOR ITS COPIES MAY BE USED BY A THIRD PARTY OR DISCLOSED TO A THIRD PARTY, WHETHER IN WHOLE OR IN PART, OR FOR ANY OTHER PURPOSE.

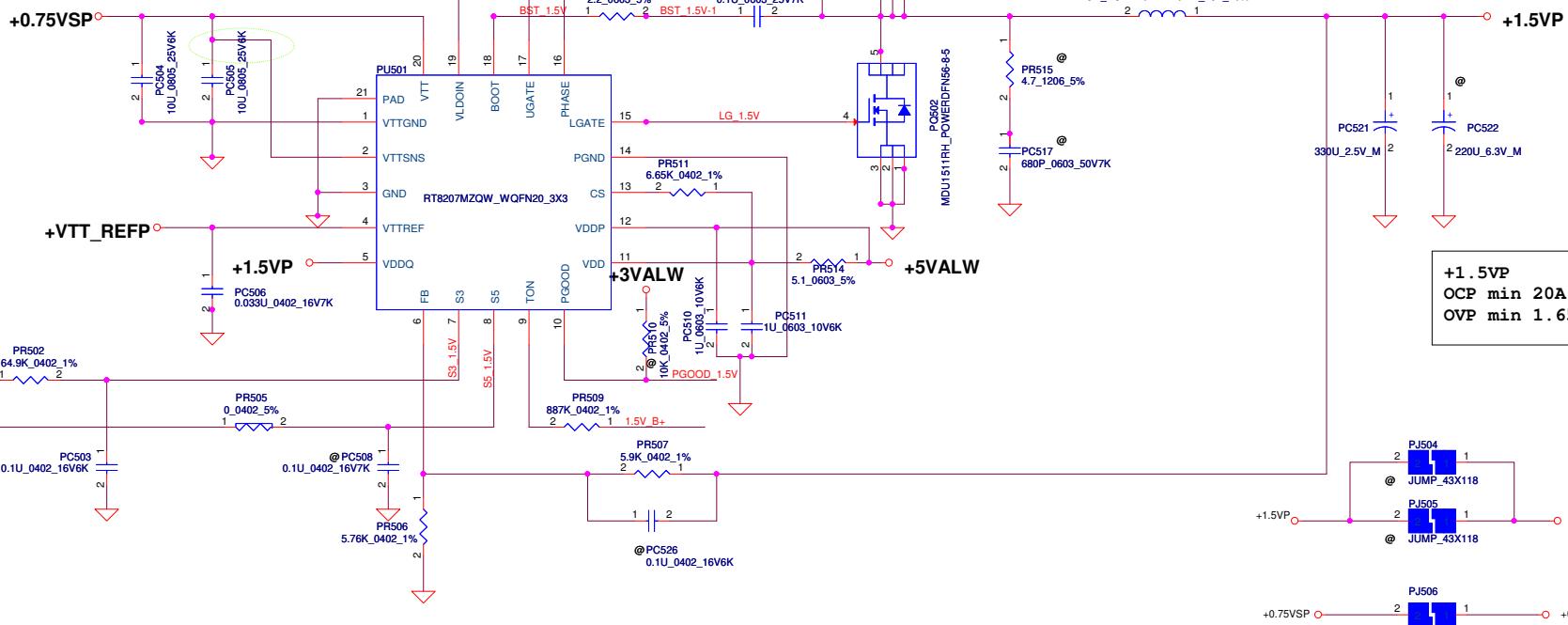
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title	CHARGER	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT 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 A THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Document Number	Rev
		Gx00-CR				1.0
Date:		Wednesday, February 27, 2013		Sheet	38	of 60



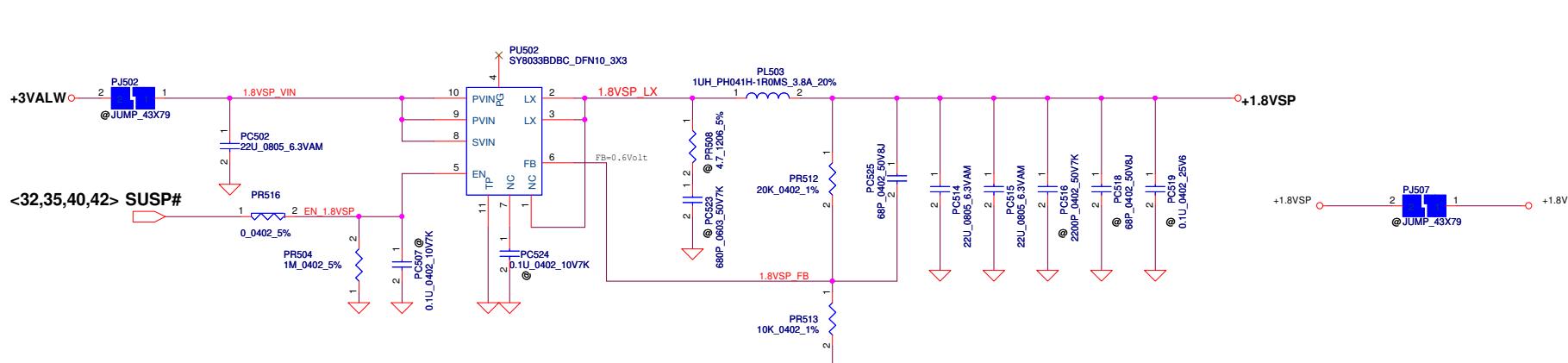
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title	+1.05VS VCCP	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE COMPANY. DEPARTMENT OR UNIT THAT ISSUED THIS DRAWING HAS NO CENSORSHIP RIGHTS. NEITHER THE SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OTHER PERSONS OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.						
Document Size	Custom	Document Number	Gx00-CR	Rev	1.0	
Date:	Wednesday, February 27, 2013	Sheet	39	of	60	

STATE	S3	S5	1.5VP	VTT_REFP	0.75VSP
S0	Hi	Hi	On	On	On
S3	Lo	Hi	On	On	Off (Hi-Z)
S4/S5	Lo	Lo	Off	Off	Off

Note: S3 - sleep ; S5 - power off



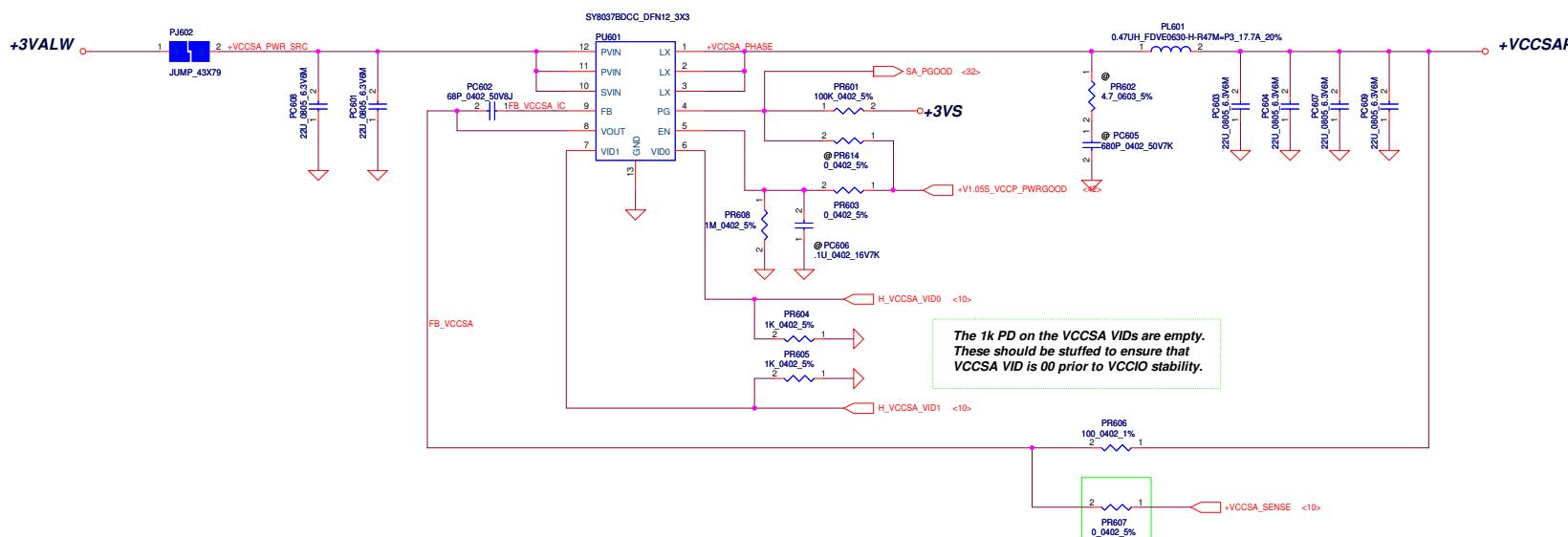
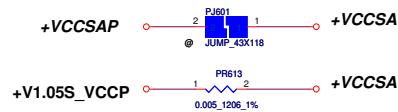
-1.5VP
DCP min 20A
DVP min 1.65V



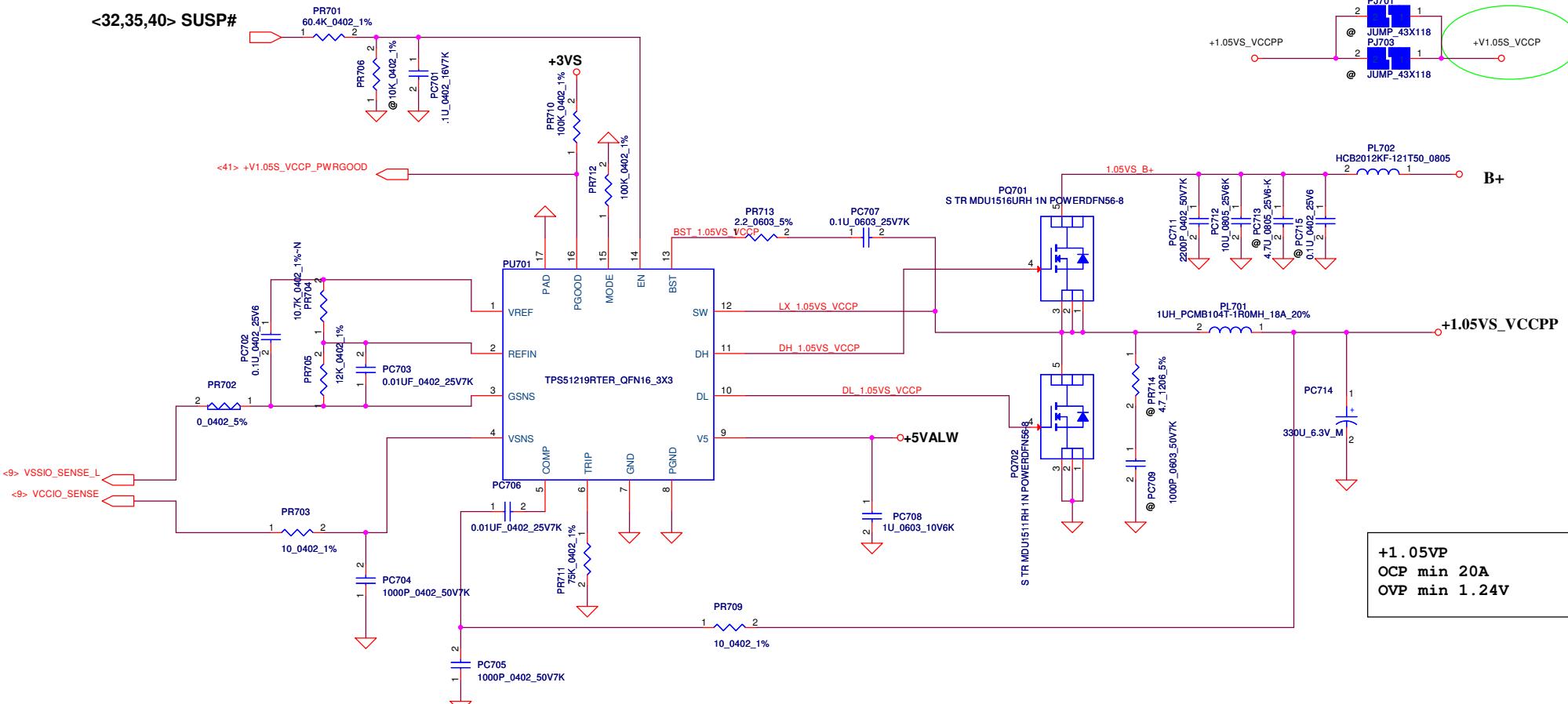
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title	+1.5VP/+1.8VSP	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. IT IS TO BE KEPT SECURE AND IS NOT TO BE COPIED OR DISCLOSED EXCEPT BY AUTHORIZED PERSONNEL 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 ANY DISCLOSED TO A THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Document Number	Rev
					Gx00-CR	1.0
				Date:	Wednesday, February 27, 2013	Sheet 40 of 60

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



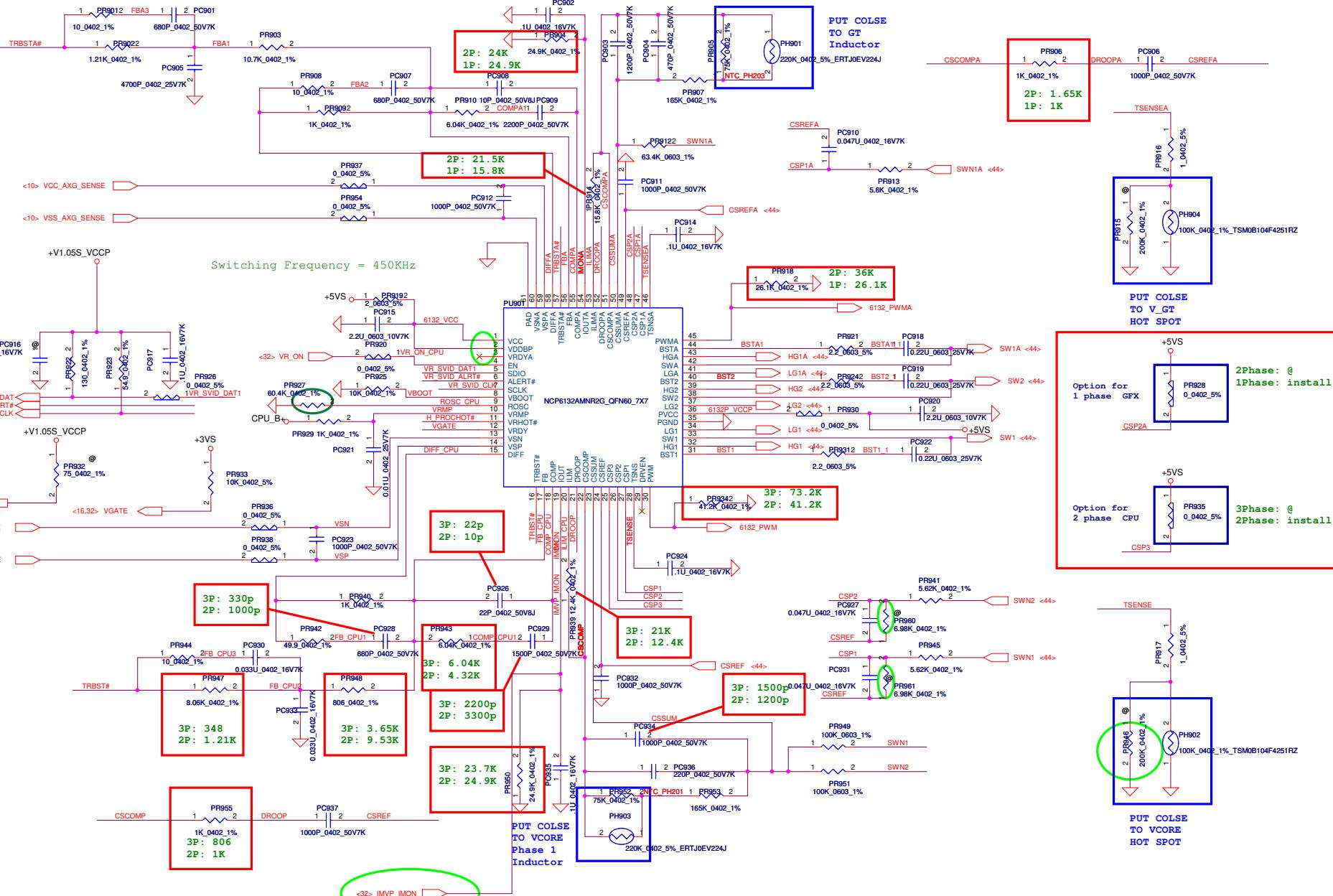
Security Classification	Compal Secret Data			Compal Electronics, Inc.
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title
Size	Document Number	+VCCSA		
C	Gx00-CR	Rev. 1.0		



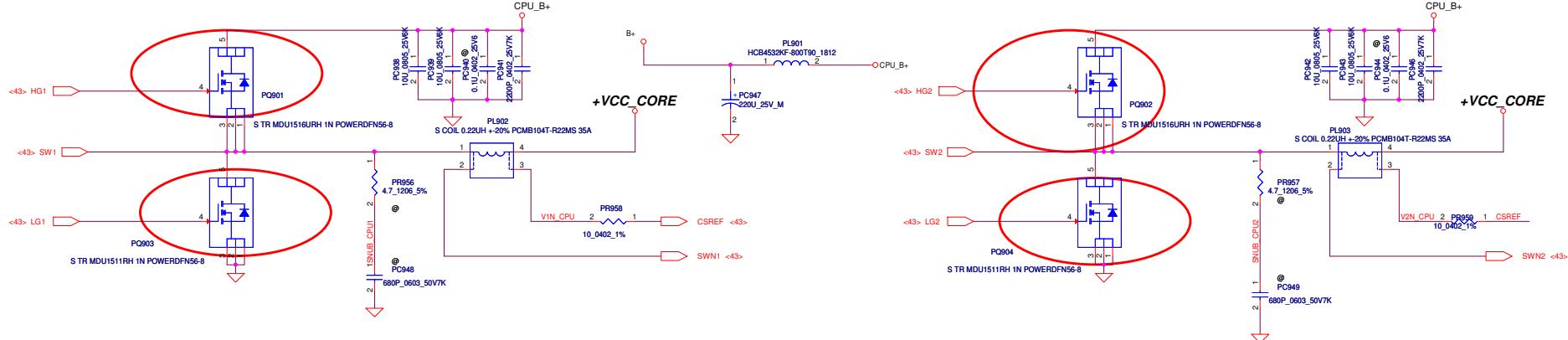
Security Classification	Compal Secret Data			Compal Electronics, Inc.
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE REMOVED 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 REVEALED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				
Size	Document Number	Rev		
Custom	Gx00-CR	1.0		
Date:	Wednesday, February 27, 2013	Sheet	42	of 60

www.vinamix.vn

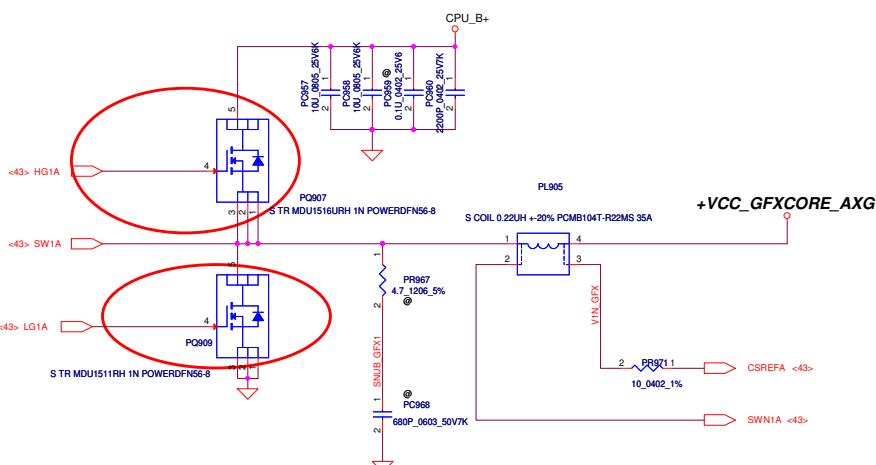
PR915, PR946=200K(setting 113 degreeC)
PR915, PR946=8.25K(setting 93 degreeC)



Security Classification	Compal Secret Data			Compal Electronics, Inc.
Issued Date	Deciphered Date	2012/07/11	Title	PWR-CPU_CORE
THIS SHEET OF ENGINEERING DRAWING IS THE PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT WITH AUTHORIZED WRITTEN APPROVAL OF THE COMPANIES. IN EITHER THE SHEET OR THE INFORMATION IT CONTAINS MAY BE USED BY OTHERS, COPIED OR REPRODUCED IN ANY FORM, OR DISCLOSED TO ANY OTHER PERSON, WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				
Document Number	Rev. 1.0	Gx00-CR	Date: Wednesday, February 27, 2013	Sheet 43 of 60



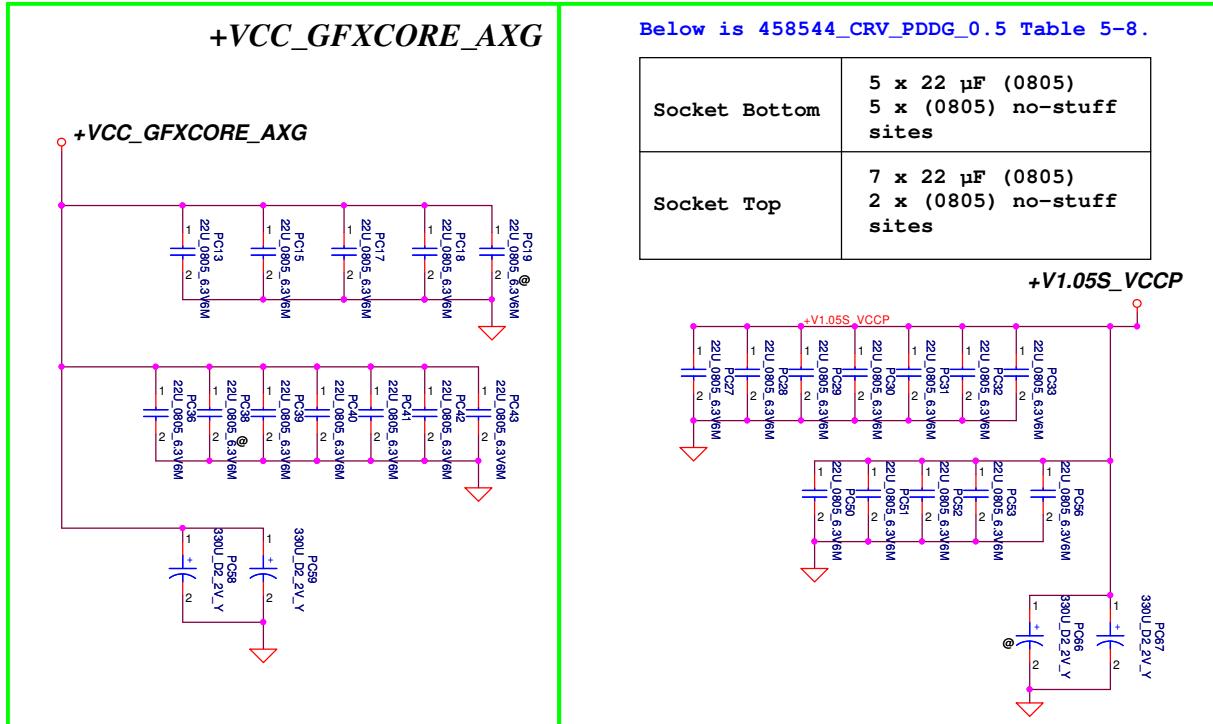
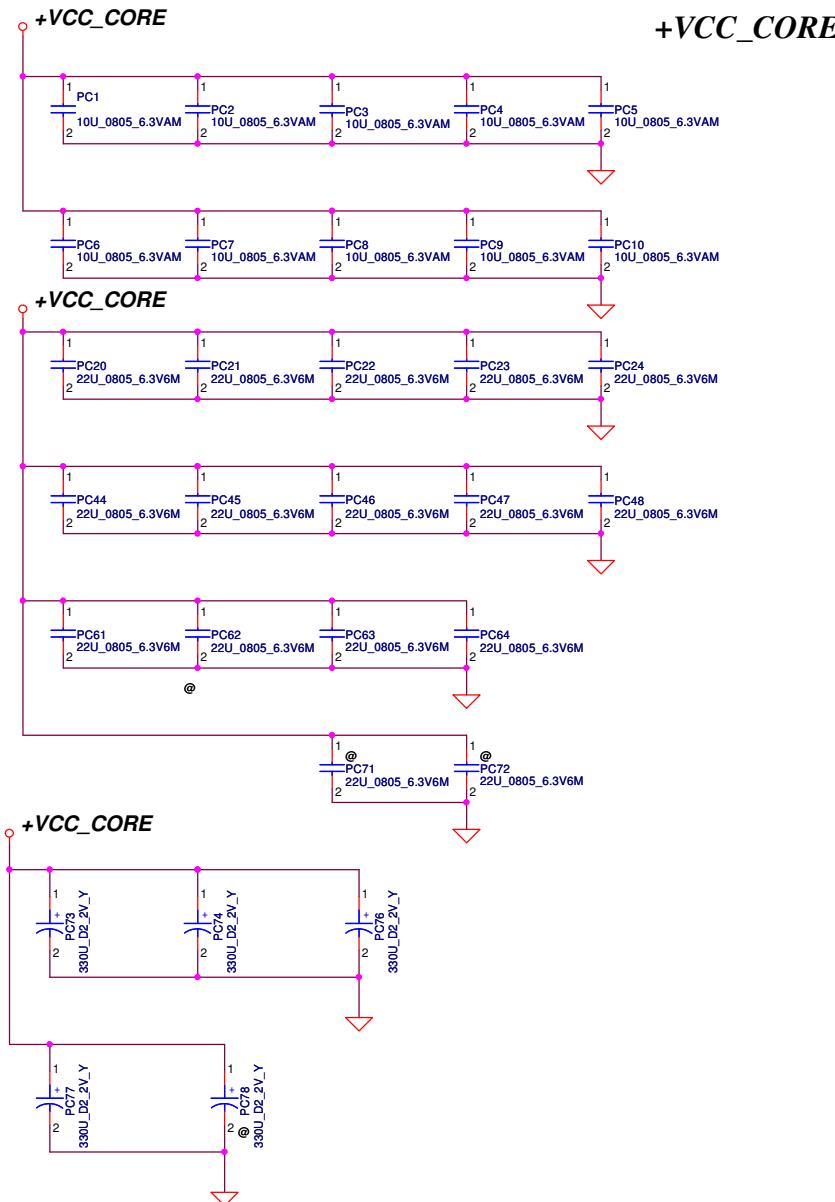
QC 45W CPU	DC 35W CPU
VID1=0.9V	VID1=1.05V
IccMax=94A	IccMax=53A
Icc_Dyn=66A	Icc_Dyn=43A
Icc_TDC=52A	Icc_TDC=36A
R_LL=1.9m ohm	R_LL=1.9m ohm
OCP-110A	OCP-65A



QC 45W GT2	DC 35W GT2
VID1=1.23V	VID1=1.23V
IccMax=46A	IccMax=33A
Icc_Dyn=37A	Icc_Dyn=20.2A
Icc_TDC=38A	Icc_TDC=21.5A
R_LL=3.9m ohm	R_LL=3.9m ohm
OCP-40A	OCP-30A

Security Classification	Compal Secret Data			Compal Electronics, Inc.
Issued Date	Deciphered Date	Title		PWR-CPU CORE
2011/06/15	2012/07/11	Size	Document Number	Rev. 1.0
C	Gx00-CR			
Date: Wednesday, February 27, 2013	Sheet: 44	of	60	

www.vinamix.vn



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

VIWGP/R HW PIR List

Item	Page	MODIFICATION LIST	PURPOSE	EVT TO DWT
1	P. 46	Add PR102, PC108, PC109	For ADP_ID pin detect	
2	P. 47	Add PR225, PR227, PR228, PQ206, PQ207, PQ208	For protect adapter function	
3	P. 49	Add PR410, PC433	For 3VALWP/5VALWP sequence	
4	P. 49	Add PC434, PC435, PC436, PC437	For EMI solution	
5	P. 49	Add PC432 and change PL404 from 1.5uH to 3.3uH	For improve output voltage ripple	
6	P. 50	Change PR502 from 49.9k to 64.9k	For +0.75VSP sequence	
7	P. 51	Add PC637	For +0.95VGSP sequence	
8	P. 54	Change PC907, PR912, PR927, PC928	For CPU Transient Compensation	
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title	PIR (PWR)
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPALELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. IT IS SUPPLIED AND INSPECTED FROM THE COMPANY FOR THE CONSIDERATION OF R&D DEPARTMENT. IT IS NOT TO BE COPIED, REPRODUCED, OR DISCLOSED EXCEPT WITH THE WRITTEN CONSENT OF COMPALELECTRONICS, INC.					
Size	Document Number	Rev			
Custom	C38-G series Chief River Schematic	C-1.0			
Date:	Wednesday, February 27, 2013	Sheet	46	of	60

www.vinamix.vn

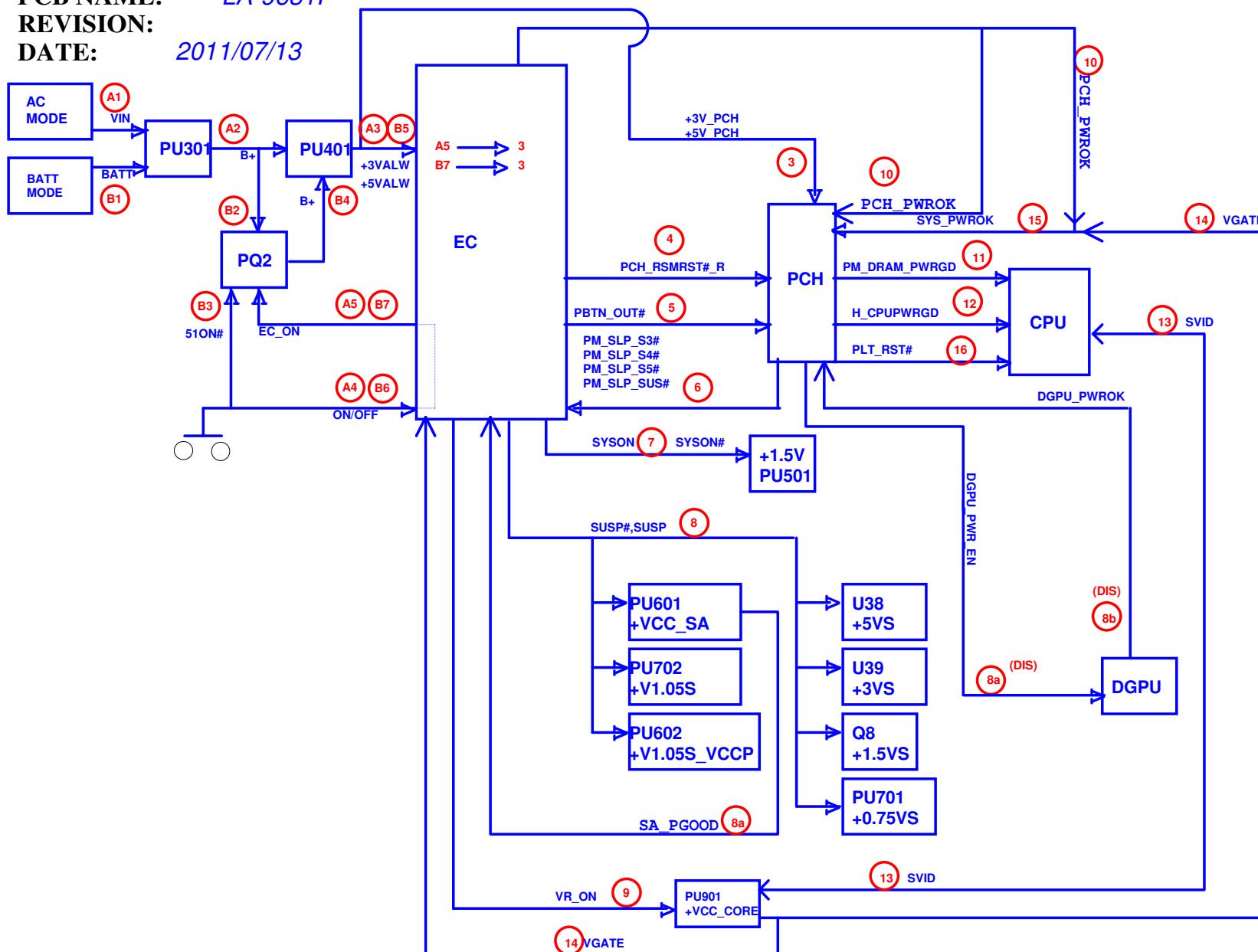
COMPAL CONFIDENTIAL

MODEL NAME: Power Sequence Block Diagram

PCB NAME: LA-9631P

REVISION:

DATE: 2011/07/13



Security Classification		Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title	Power sequence	
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 THE DEPARTMENT OF DESIGN AUTHORIZED BY COMPAL ELECTRONICS, INC. FROM THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.						
Document Number	LA-9632P	Rev	1.0	Custom	Date:	Wednesday, February 27, 2013

VIWGP/R HW PIR List

Item	Page	MODIFICATION LIST	PURPOSE	EVT TO DVT
1	P. 36	Change C726, C727 to 2.2nF	For Sequence	
2	P. 26	Add R405	For Intel Combo Card	
3	P. 25	Delete RP19. Add RP26, RP27	Because ME modify MIC location	
4	P. 14	Add R406, R407, R408, R409	Reserve for improvement factory processes	
5	P. 32	Add EC_SPI_SO, EC_SPI_SI, EC_SPI_CLK, EC_SPI_CS# to EC	Reserve for improvement factory processes	
6	P. 32	Add PCH_PWR_EN to EC Pin.107	Reserve for improvement factory processes	
7	P. 32	Reserve R410	Reserve Pull-high for GPIO	
8	P. 5~22	Change footprint of JCPU1, U4	For Lenovo rule	
9	P. 21	Add Q21, R40, C237, R225, C243	Reserve for power consumption	
10	P. 24	Add R411, R412, C411, C412	Reserve for EMI	
11	P. 32	Add ADP_65 to EC Pin.21	For adapter protection	
12	P. 32	Add ADP_90 to EC Pin.68	For adapter protection	
13	P. 32	Add ADP_135 to EC Pin.85	For adapter protection	
14	P. 32	Change EC_FAN_PWM from EC Pin.34 to EC Pin.26	For common design	
15	P. 32	Change NOVO# from EC Pin.26 to EC Pin.34	For common design	
16	P. 32	Add ADP_ID to EC Pin.66	For adapter	
17	P. 32	Change PCH_ENBKL from EC Pin.73 to EC Pin.76	For common design	
18	P. 32	Change IMVP_IMON from EC Pin.76 to EC Pin.73	For common design	
19	P. 32	Add VGATE to EC Pin.74	Reserve for sequence	
20	P. 32	Add SYS_PWROK to EC Pin.86	Reserve for sequence	
21	P. 32	Change EC_TS_ON# from EC Pin.85 to EC Pin.97	For common design	
22	P. 32	Change DGPU_PWR_EN from EC Pin.107 to EC Pin.123	For common design	
23	P. 32	Change SUSCLK from EC Pin.123 to EC Pin.122	For common design	

Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title	HW-PIR
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 THE COMPANY WITHOUT THE AUTHORIZATION OF COMPAL ELECTRONICS, INC. IT IS THE PROPERTY OF COMPAL ELECTRONICS, INC. IT MAY NOT BE COPIED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	LA-9632P
				Date:	Wednesday, February 27, 2013
				Sheet	48 of 60



VIWGP/R HW PIR List

Item	Page	MODIFICATION LIST	PURPOSE	DVT TO PVT
1	P. 30	Delete R416, Add J9	No need Zero ODD Function	
2	P. 26	Reserve R508	For leakage current issue of Atheros WLAN	
3	P. 23	Add R509	protect BKOFF# damage	
4	P. 32	Reserve R416	Reserve +3VLP power rail to EC	
5	P. 32	Change EC_RST# power rail to +3V_EC	Using power rail which the same with EC.	
6	P. 32	Change EC_SMB_CK1 & EC_SMB_DAI power rail to +3V_EC	Using power rail which the same with EC.	
7	P. 14	Change U5 from 4MB to 8MB ROM	Follow common design	
8	P. 14	Delete R266, R221, U6	It is for 2MB ROM, we don't need it	
1	P. 31	Reserve resistance to +3VLP and +3VALW.	For Speaker Noise in S5	
2	P. 32	Reserve resistance in EC for share ROM.	Follow common design	
3	P. 41	Reserve +V1.05S_VCCP_PWRGOOD of +V.05S_VCCP to connect to SA_PGOOD	For Celeron CPU	

Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2011/06/15	Deciphered Date	2012/07/11	Title	HW-PIR
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 THE DEPARTMENT OF DESIGN AUTHORIZED BY COMPAL ELECTRONICS, INC. IT IS THE PROPERTY OF THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	LA-9632P
				Date:	Wednesday, February 27, 2013
				Sheet	49 of 60

WWW.Vinamix.VN