COMPAL CONFIDENTIAL

MODEL NAME : *PAL60*

PCB NO : *LA-6562P (DA80000JP00)*

BOM P/N : *43193031L01*

GPIO MAP: E3 Master GPIO Map10102010.xlsx

E3 MACALLAN 15" UMA

rPGA Sandy Bridge +
FCBGA PCH Cougar Point-M

2010-10-27

REV : 0.3(X02)

@ : Nopop Component

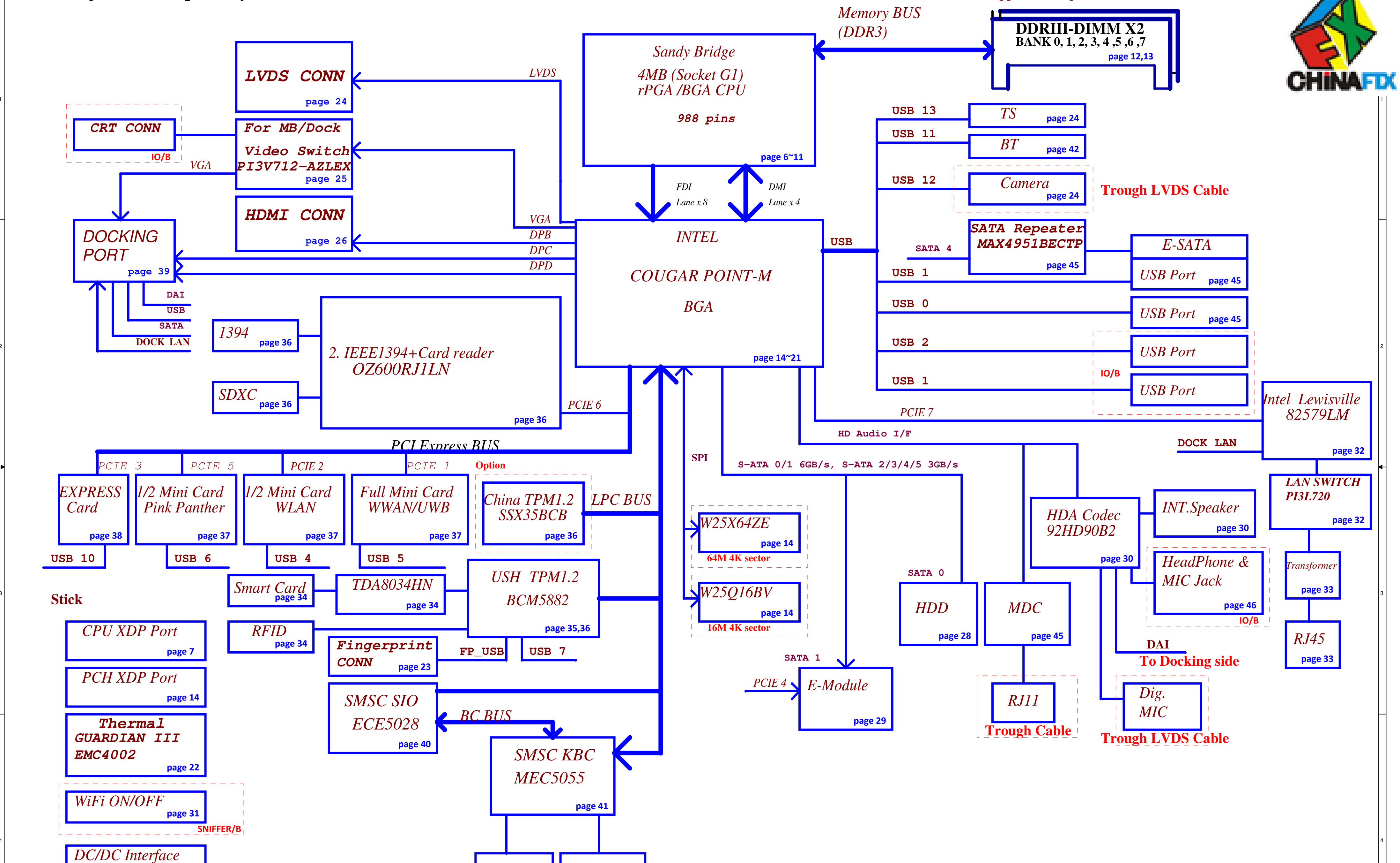
CONN@ : Connector Component

MB Type	BOM P/N	
TPM EN/ TCM DIS	43193031L01 (R1)	1@ 3@
TPM DIS/ TCM EN	43193031L02 (R1)	2@ 4@
TPM DIS/ TCM DIS	43193031L03 (R1)	2@ 3@

MB PCB

Part Number	Description
DA80000I700	PCB 0FH LA-6562P REV0 M/B UMA

Block Diagram   Compal confidential   Model: PAL60



	Compal Electronics, Inc.
Title	UMA Block Diagram
Size / Document Number	LA-6562P
Rev	0.3
Date:	Tuesday, October 12, 2010
Sheet	2 of 66

POWER STATES

Signal / State	SLP S3#	SLP S4#	SLP S5#	S4 STATE#	SLP M#	ALWAYS PLANE	M PLANE	SUS PLANE	RUN PLANE	CLOCKS
S0 (Full ON) / M0	HIGH	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON	ON
S3 (Suspend to RAM) / M1	LOW	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	OFF	OFF
S4 (Suspend to DISK) / M1	LOW	LOW	HIGH	LOW	HIGH	ON	ON	OFF	OFF	OFF
S5 (SOFT OFF) / M1	LOW	LOW	LOW	LOW	HIGH	ON	ON	OFF	OFF	OFF
S3 (Suspend to RAM) / M-OFF	LOW	HIGH	HIGH	HIGH	LOW	ON	OFF	ON	OFF	OFF
S4 (Suspend to DISK) / M-OFF	LOW	LOW	HIGH	LOW	LOW	ON	OFF	OFF	OFF	OFF
S5 (SOFT OFF) / M-OFF	LOW	LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF	OFF

PM TABLE

power plane / State	+15V_ALW +5V_ALW +3.3V_ALW_PCH +3.3V_RTC_LDO	+3.3V_SUS +1.5V_MEM	+5V_RUN +3.3V_RUN +1.8V_RUN +1.5V_RUN +0.75V_DDR_VTT +VCC_CORE +1.05V_RUN_VTT +1.05V_RUN	+3.3V_M +1.05V_M	+3.3V_M +1.05V_M (M-OFF)
S0	ON	ON	ON	ON	ON
S3	ON	ON	OFF	ON	OFF
S5 S4/AC	ON	OFF	OFF	ON	OFF
S5 S4/AC don't exist	OFF	OFF	OFF	OFF	OFF

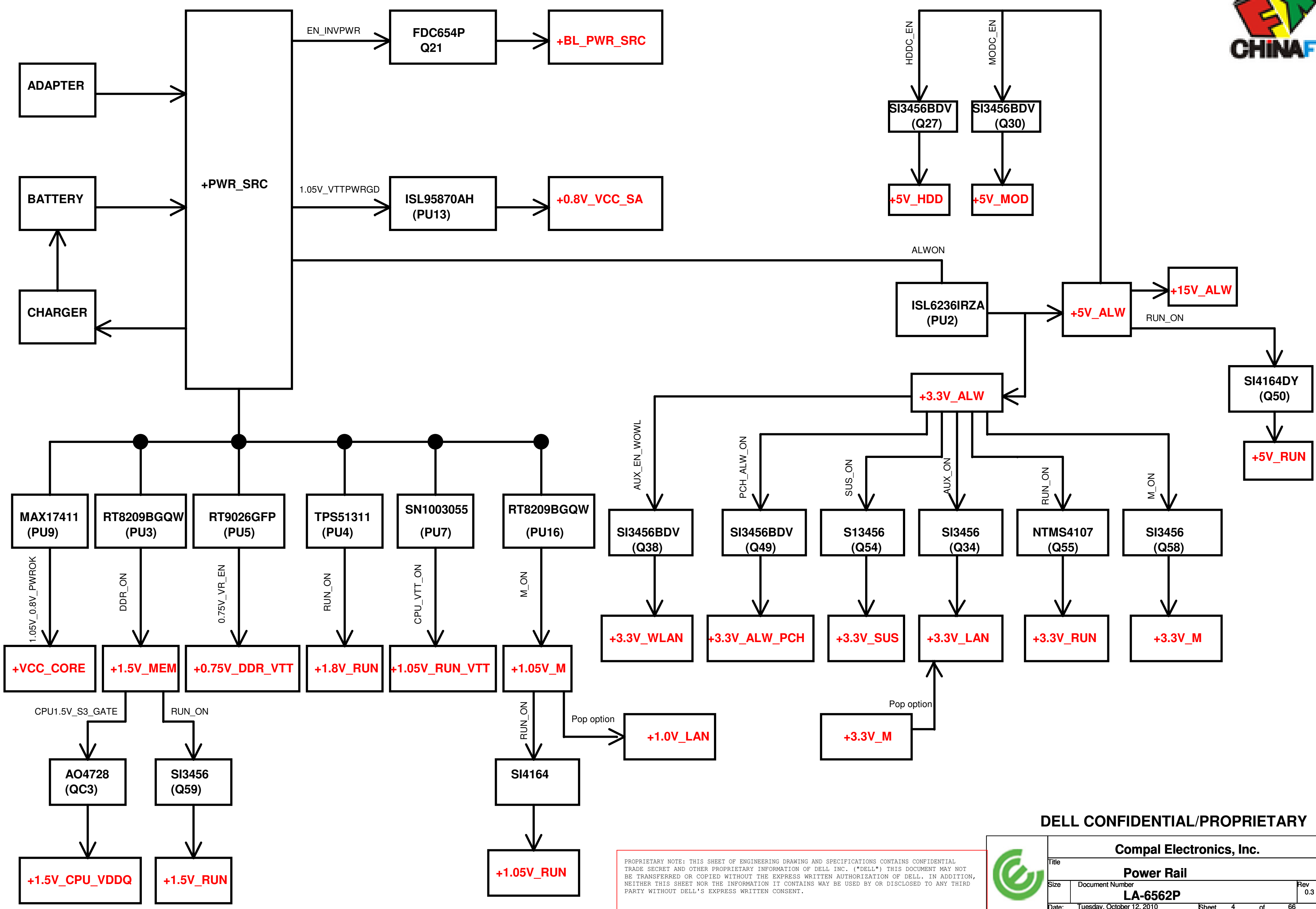
USB PORT#		DESTINATION
PCH	0	JUSB1 (Ext Right Side)
	1	JESA1 (Ext Right Side)
	2	IO Board- JUSB1 (Ext Left Side)
	3	IO Board- JUSB2 (Ext Left Side)
	4	WLAN
	5	WWAN
	6	JMINI3(Pink Panther)
	7	USH->BIO
	8	DOCKING
	9	DOCKING
	10	Express card
	11	Bluetooth
	12	Camera
	13	LCD Touch
USH	0	BIO
	1	NA

SATA	DESTINATION
SATA 0	HDD
SATA 1	ODD/ E3 Module Bay
SATA 2	NA
SATA 3	NA
SATA 4	ESATA
SATA 5	Dock

PCI EXPRESS	DESTINATION
Lane 1	MINI CARD-1 WWAN
Lane 2	MINI CARD-2 WLAN
Lane 3	Express card
Lane 4	E3 Module Bay (USB3)
Lane 5	MINI CARD-3 (Pink Panther)
Lane 6	MMI
Lane 7	10/100/1G LOM

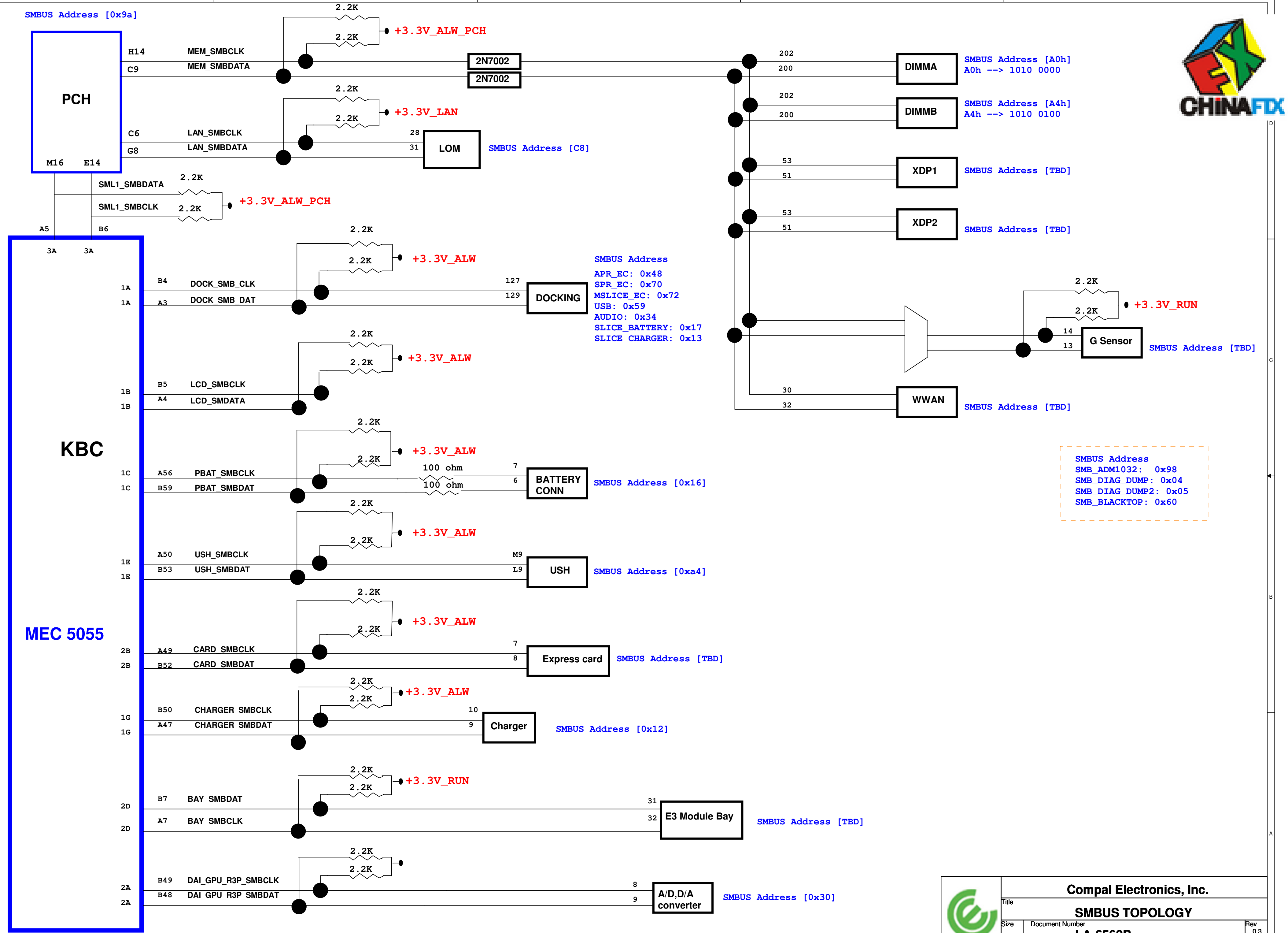
UMA DP/HDMI Port	Connetion
Port B	MB HDMI Conn
Port C	Dock DP port 2
Port D	Dock DP port 1

			Enginner proposal (Unit : mil)			
Layer No.	Name	Dielectric Constant	Material		Thickness (Material SPEC.) Unit : mil	Thickness (Actuality) Unit : mil
			SolderMask		0.6	0.50
			Add Plating		1.3	1.40
1	Top		Copper foil		0.5oz	0.70
			Prepreg	1080LRC	2.80	2.67
2	GND		Copper foil		0.5oz	0.70
			Core	3mil H/1	3.00	3.00
3	Sig1		Copper foil		1.0oz	1.30
			Prepreg	7628HRC*2	17.06	15.10
4	Sig2		Copper foil		1.0oz	1.30
			Core	3mil 1/1	3.00	3.00
5	VCC		Copper foil		1.0oz	1.30
			Prepreg	7628HRC*2	17.06	15.76
6	Sig 3		Copper foil		1.0oz	1.30
			Core	3mil H/1	3.00	3.00
7	GND		Copper foil		0.5oz	0.70
			Prepreg	1080LRC	2.80	2.67
8	Bottom		Copper foil		0.5oz	0.70
			Add Plating		1.3	1.40
			SolderMask		0.6	0.50
Overall Thickness (1.45 mm ± 10%)						57.00
						1.4478



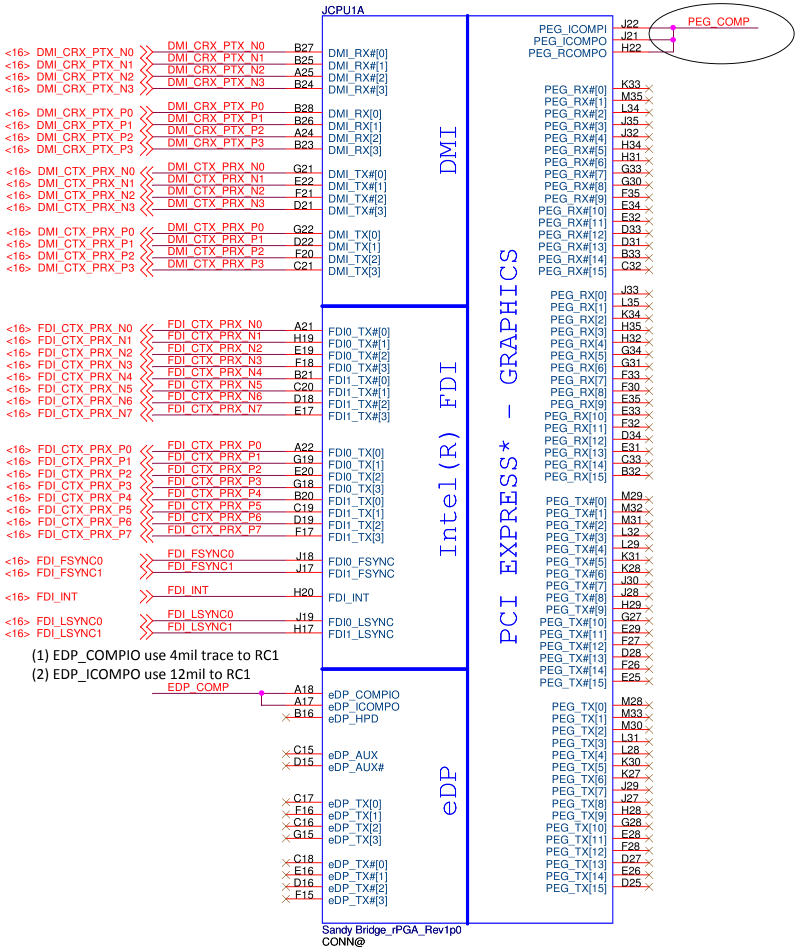
Compal Electronics, Inc.

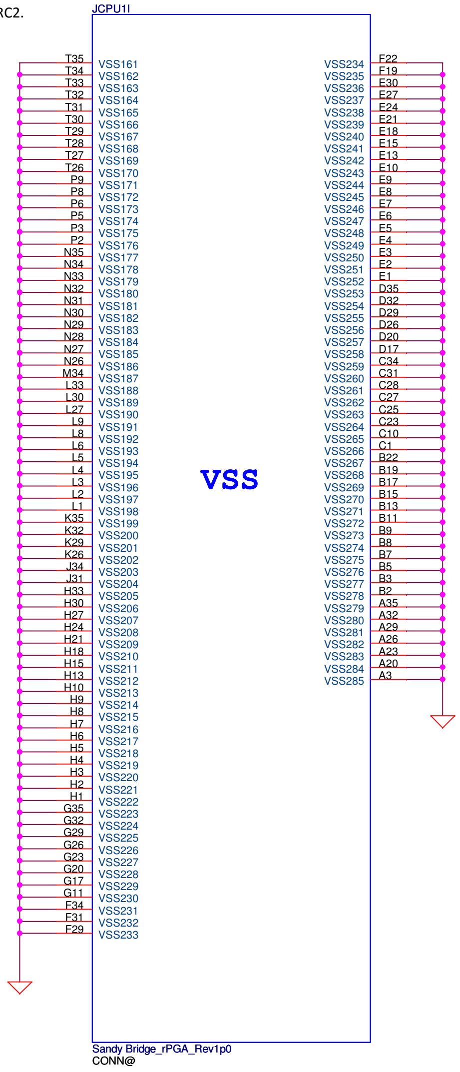
Title	Power Rail	
Size	Document Number LA-6562P	Rev 0.3
Date: Tuesday, October 12, 2010	Sheet 4 of 66	



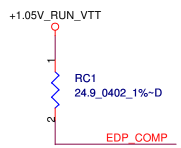
Compal Electronics, Inc.	
Title	SMBUS TOPOLOGY
Size / Document Number	LA-6562P
Rev	0.3
Date:	Tuesday, October 12, 2010
Sheet	5 of 66

(1)PEG_RCOMPO (H22) use 4mil connect to PEG_ICOMPI, then use 4mil connect to RC2.
(2)PEG_ICOMPO use 12mil connect to RC2

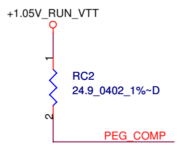




DP Compensation



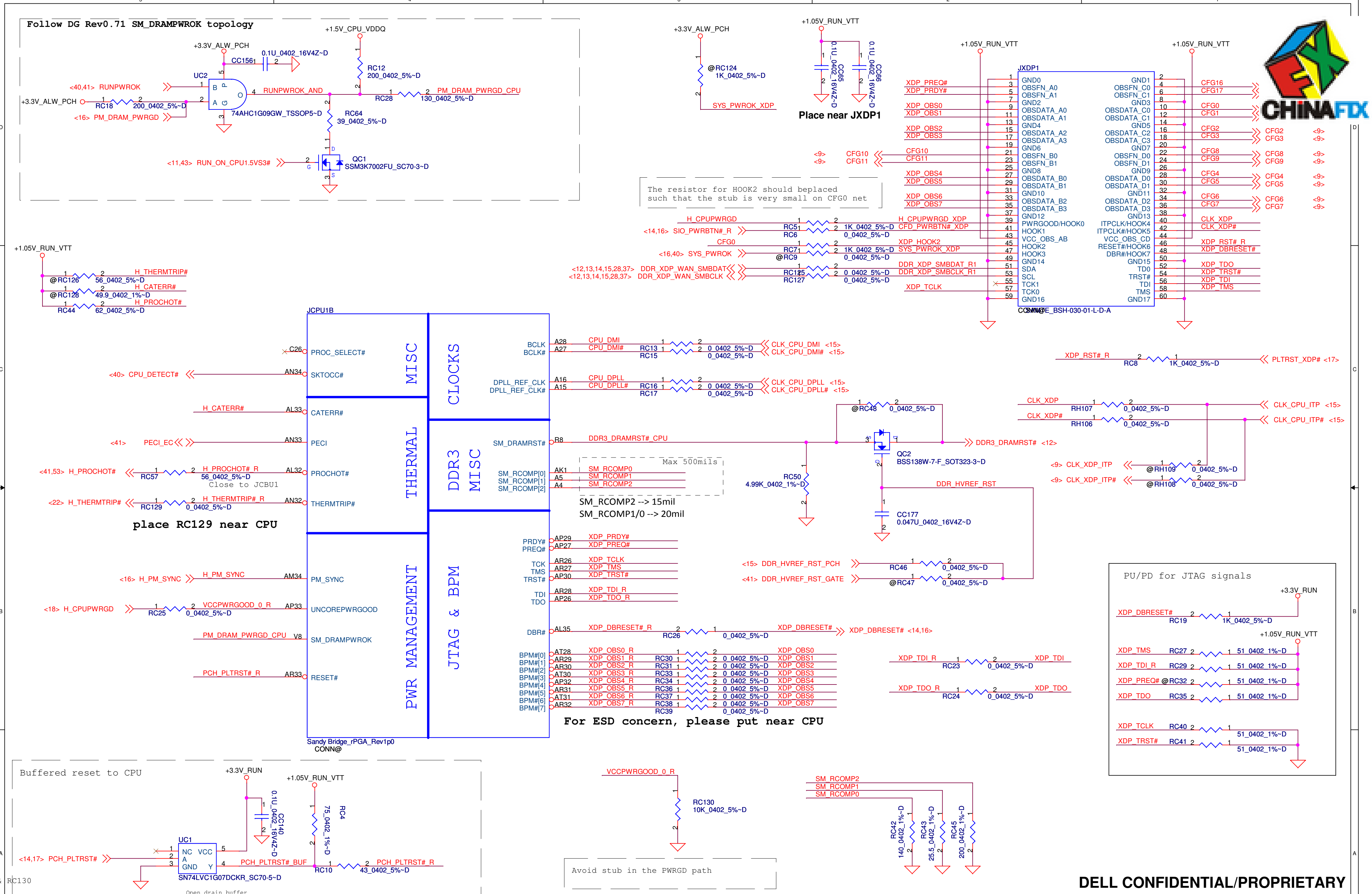
PEG Compensation



eDP_COMPIO and ICOMPO signals should be shorted near balls and routed with typical impedance <25 mohms

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

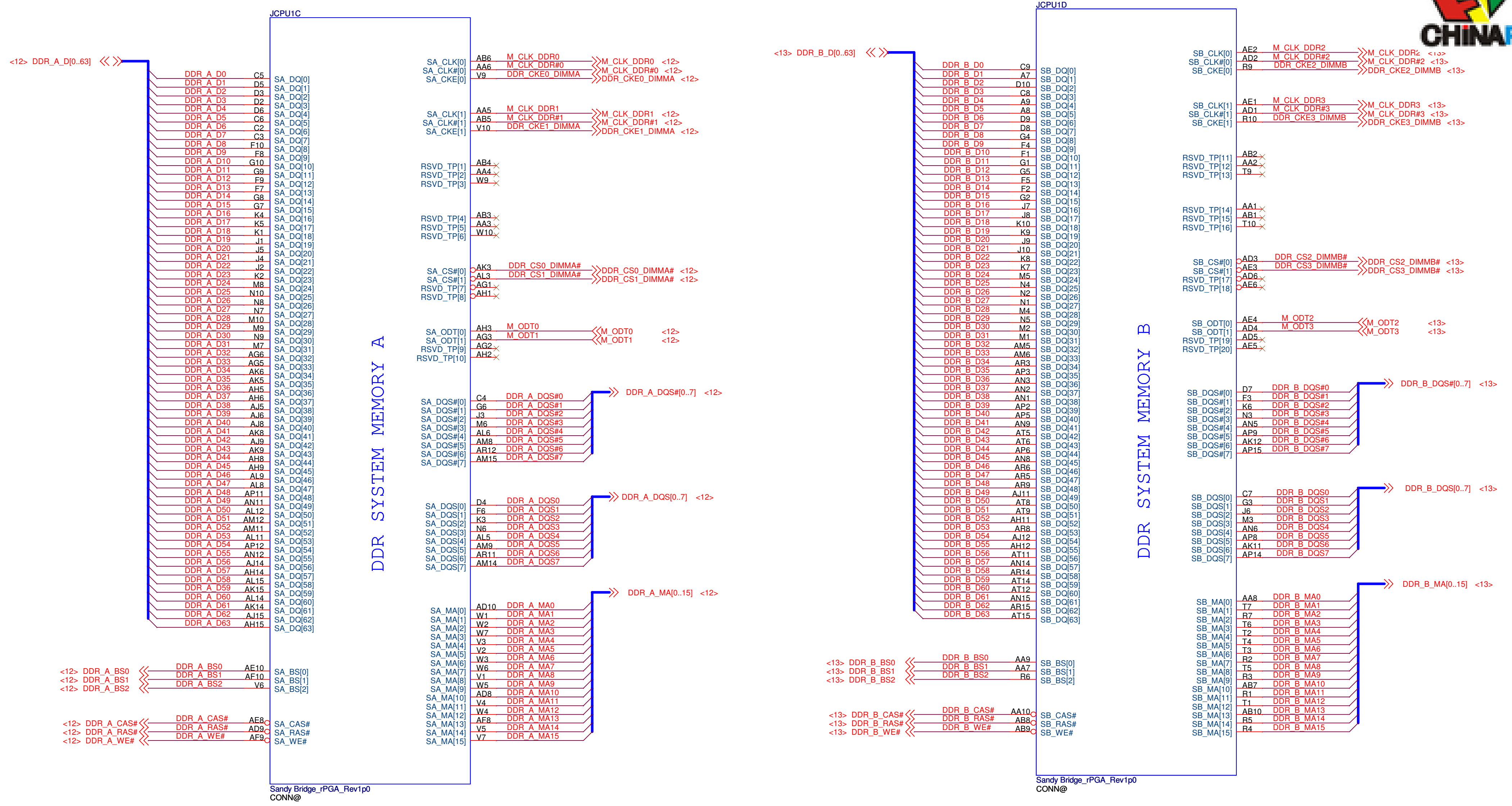
Compal Electronics, Inc.
Title: Sandy Bridge (1/6)
Size | Document Number: LA-6562P | Rev 0.3
Date: Tuesday, October 12, 2010 | Sheet 6 of 66



DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title	Sandy Bridge (2/6)	
Size	Document Number: LA-6562P	Rev 0.3
Date: Tuesday, October 19, 2010	Sheet 7 of 66	



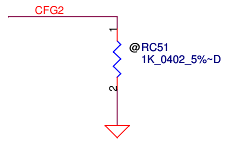
Compal Electronics, Inc.

Title: Sandy Bridge (3/6)

Size | Document Number: LA-6562P | Rev 0.3

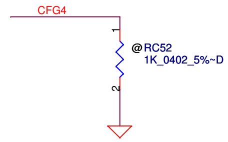
Date: Tuesday, October 12, 2010 | Sheet 8 of 66

CFG Straps for Processor



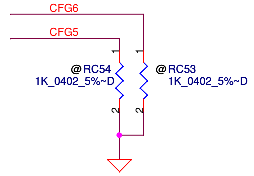
PEG Static Lane Reversal - CFG2 is for the 16x

CFG2	1:(Default) Normal Operation; Lane # definition matches socket pin map definition 0:Lane Reversed



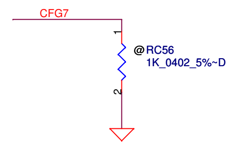
Display Port Presence Strap

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



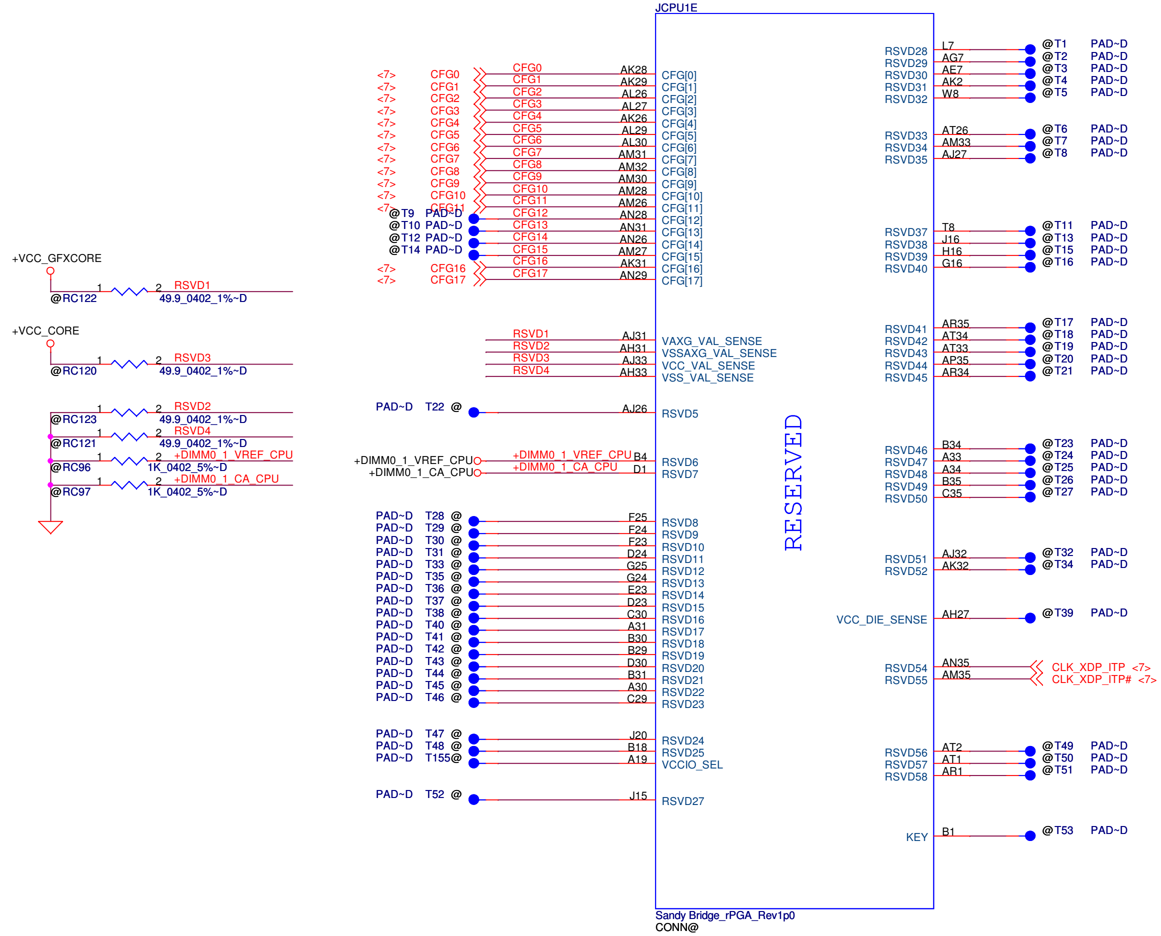
PCIE Port Bifurcation Straps

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



PEG DEFER TRAINING

CFG7	1: (Default) PEG Train immediately following xxRESETB de assertion



0: PEG Wait for BIOS for training

PROPRIETARY NOTE: THIS SHEET OF ENGINEERING DRAWING AND SPECIFICATIONS CONTAINS CONFIDENTIAL TRADE SECRET AND OTHER PROPRIETARY INFORMATION OF DELL INC. ("DELL") THIS DOCUMENT MAY NOT BE TRANSFERRED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF DELL. IN ADDITION, NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT DELL'S EXPRESS WRITTEN CONSENT.

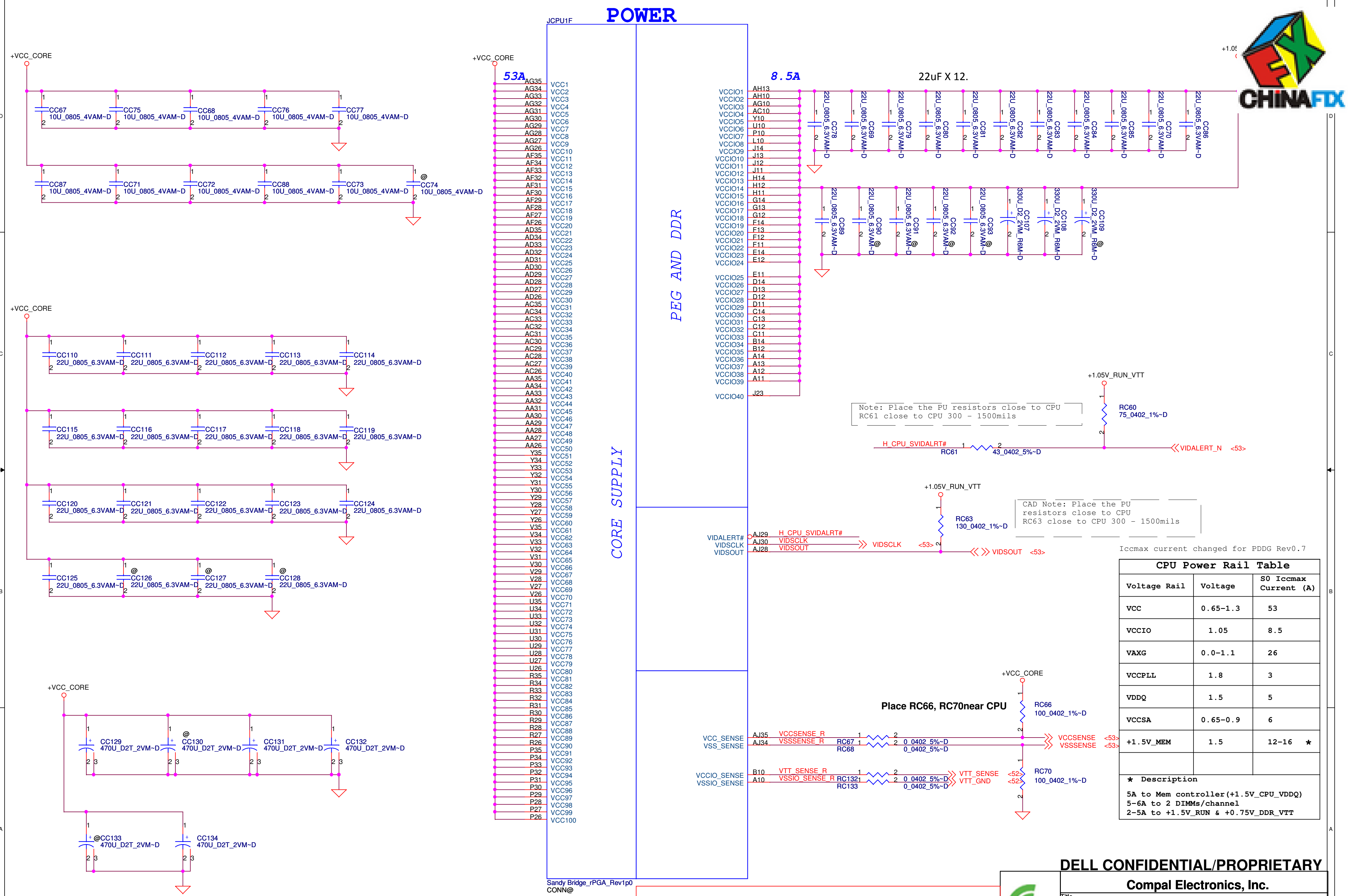
DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title: Sandy Bridge (4/6)

Size | Document Number: LA-6562P | Rev 0.3

POWER



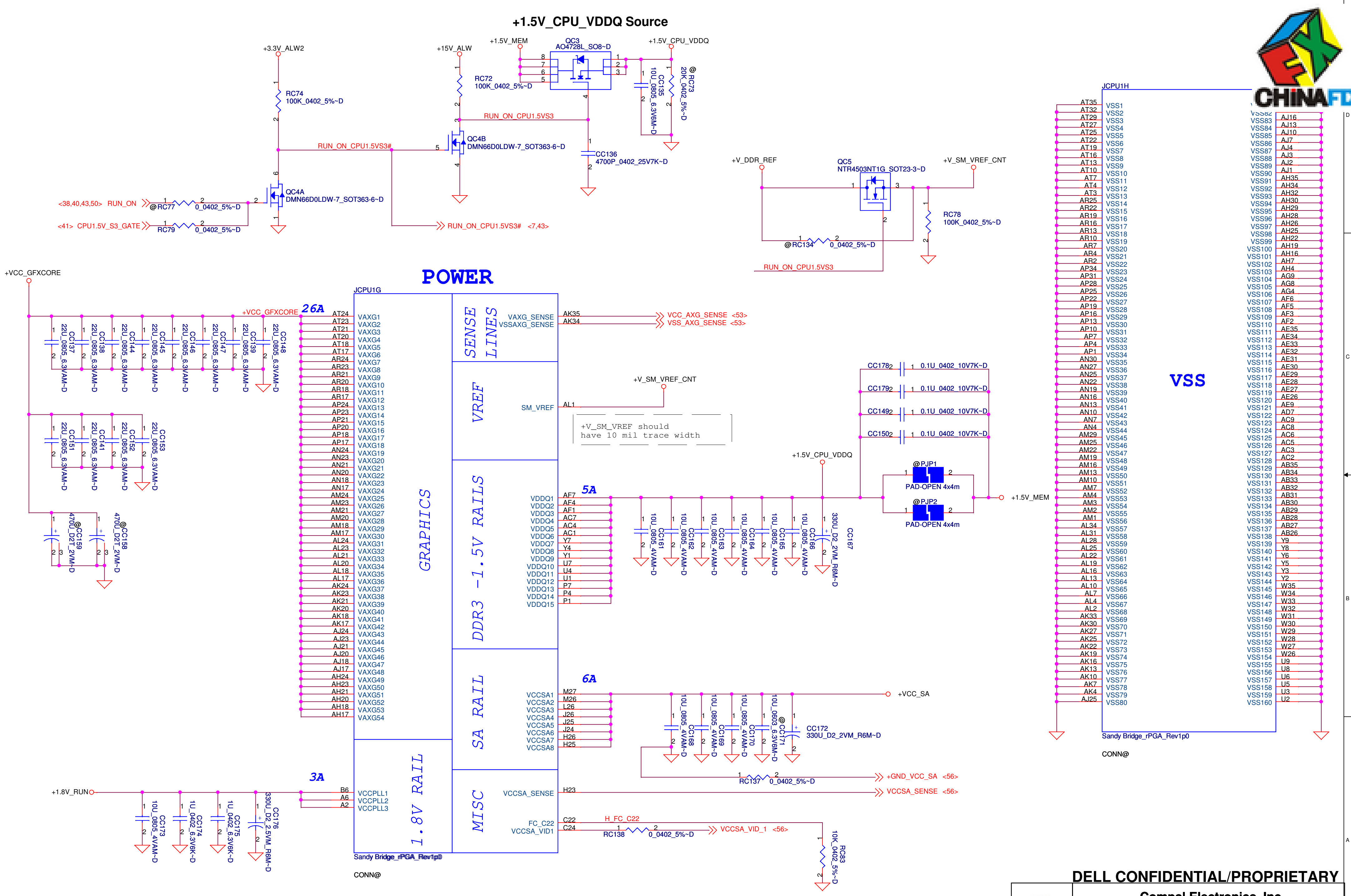
Iccmax current changed for PDDG Rev0.7

CPU Power Rail Table

Voltage Rail	Voltage	S0 Iccmax Current (A)
VCC	0.65-1.3	53
VCCIO	1.05	8.5
VAXG	0.0-1.1	26
VCCPLL	1.8	3
VDDQ	1.5	5
VCCSA	0.65-0.9	6
+1.5V_MEM	1.5	12-16 ★

★ Description

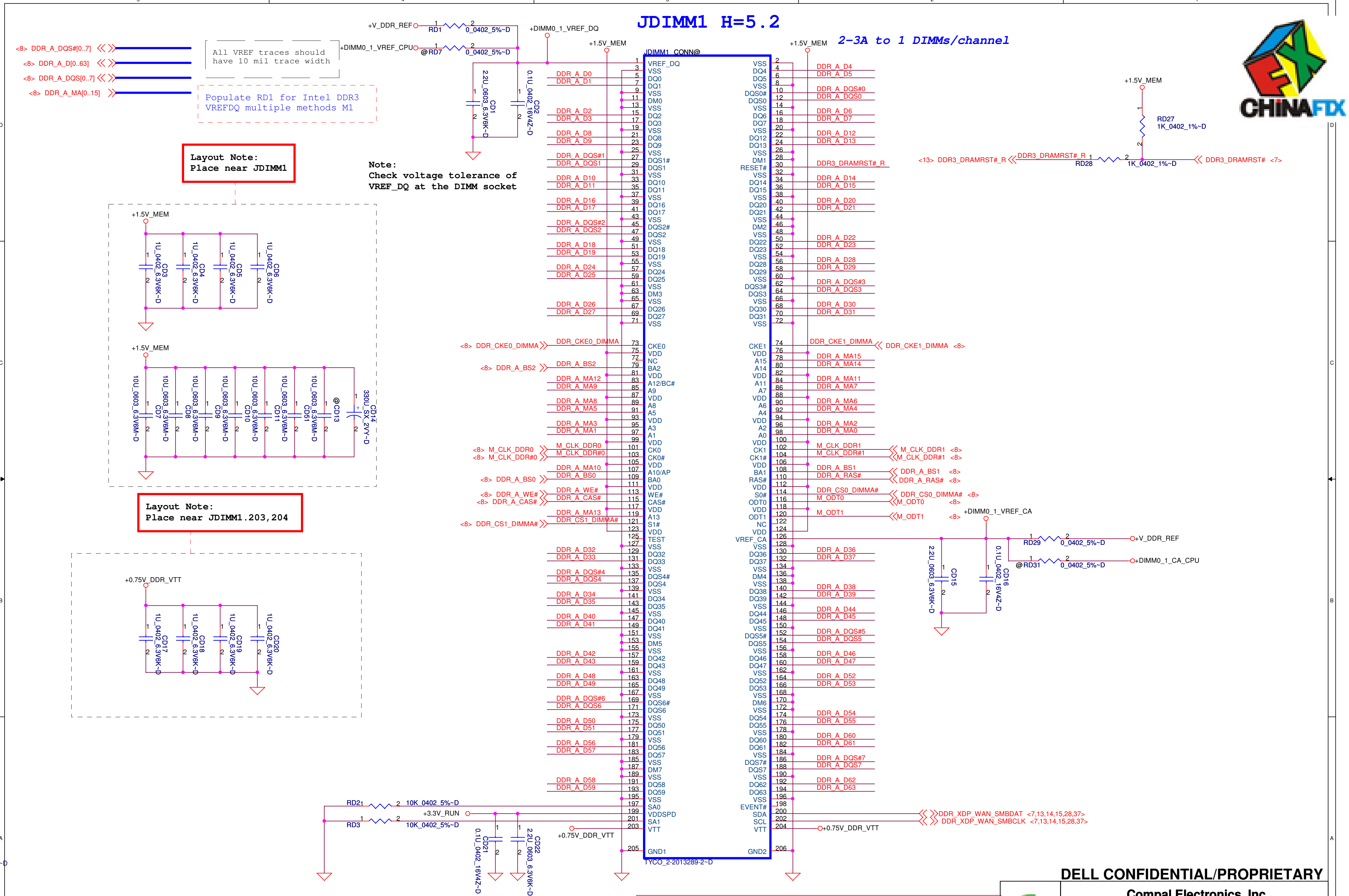
5A to Mem controller(+1.5V_CPU_VDDQ)
5-6A to 2 DIMMs/channel
2-5A to +1.5V_RUN & +0.75V_DDR_VTT



DELL CONFIDENTIAL/PROPRIETARY

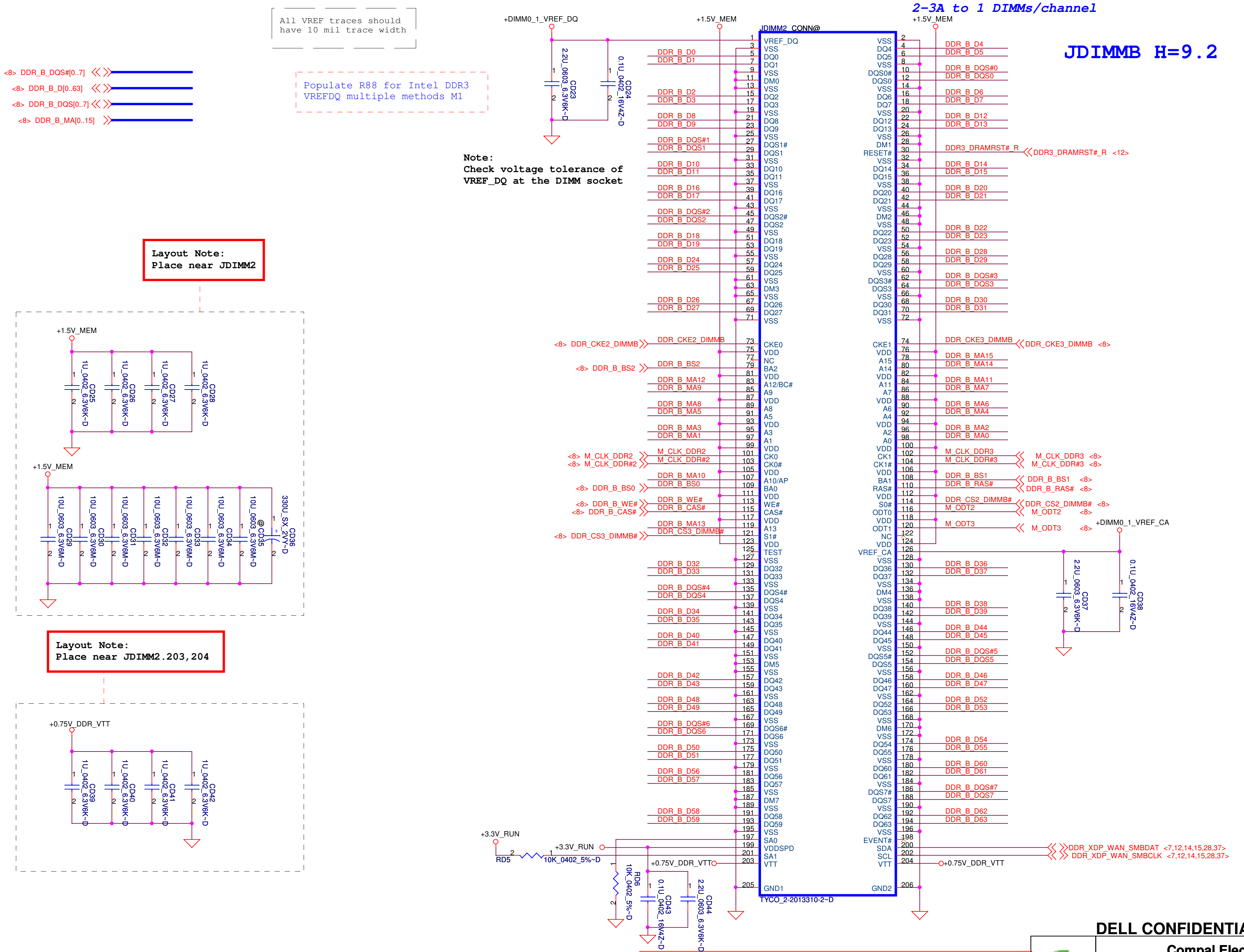
PROPRIETARY NOTE: THIS SHEET OF ENGINEERING DRAWING AND SPECIFICATIONS CONTAINS CONFIDENTIAL TRADE SECRET AND OTHER PROPRIETARY INFORMATION OF DELL INC. ("DELL") THIS DOCUMENT MAY NOT BE TRANSFERRED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF DELL. IN ADDITION, NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT DELL'S EXPRESS WRITTEN CONSENT.

	Compal Electronics, Inc.
Title	Sandy Bridge (6/6)
Size / Document Number	LA-6562P
Rev	0.3
Date:	Tuesday, October 12, 2010
Sheet	11 of 66



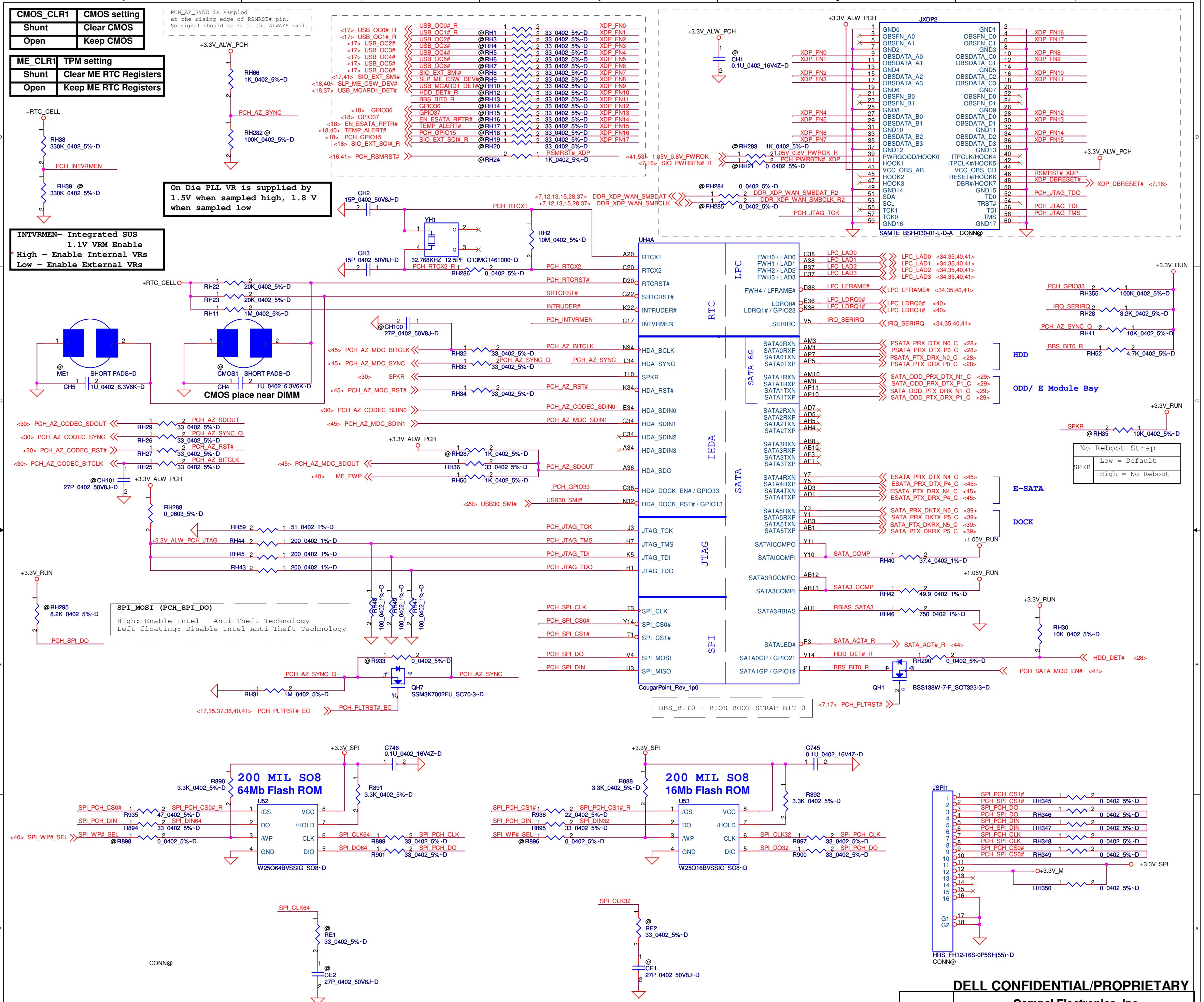
Compal Electronics, Inc.

Title	DDRIII-SODIMM SLOT1	
Size	Document Number: LA-6562P	Rev 0.3
Date: Monday, October 18, 2010	Sheet 12 of 66	



Compal Electronics, Inc.

Title	DDRIII-SODIMM SLOT2	
Size	Document Number: LA-6562P	Rev 0.3
Date: Monday, October 18, 2010	Sheet 13 of 66	

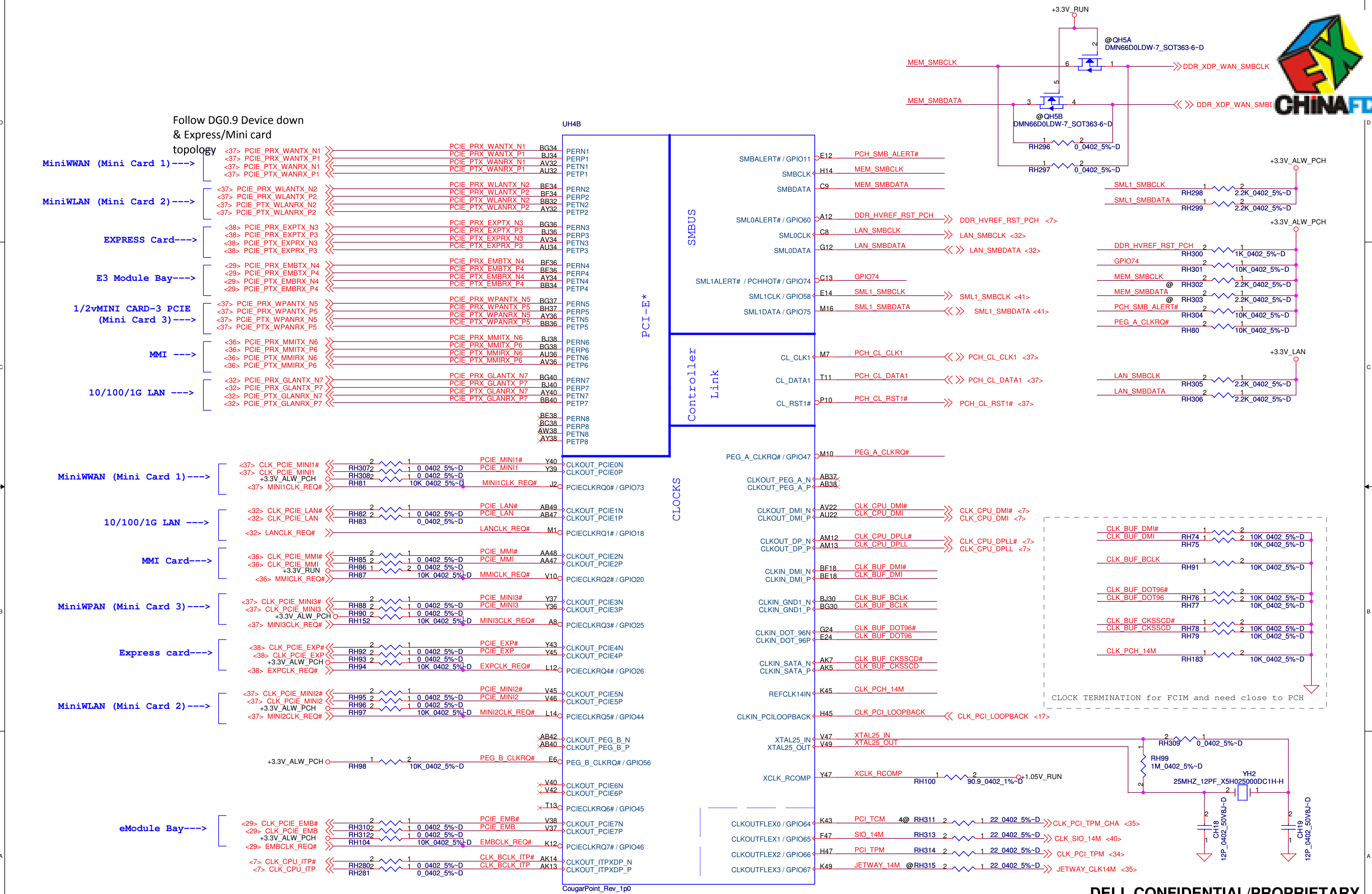


PROPRIETARY NOTE: THIS SHEET OF ENGINEERING DRAWING AND SPECIFICATIONS CONTAINS CONFIDENTIAL TRADE SECRET AND OTHER PROPRIETARY INFORMATION OF DELL INC. ("DELL") THIS DOCUMENT MAY NOT BE TRANSFERRED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF DELL. IN ADDITION, NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT DELL'S EXPRESS WRITTEN CONSENT.

DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title	PCH (1/8)	
Size	Document Number LA-6562P	Rev 0.3
Date: Wednesday, October 27, 2010	Sheet 14 of 66	

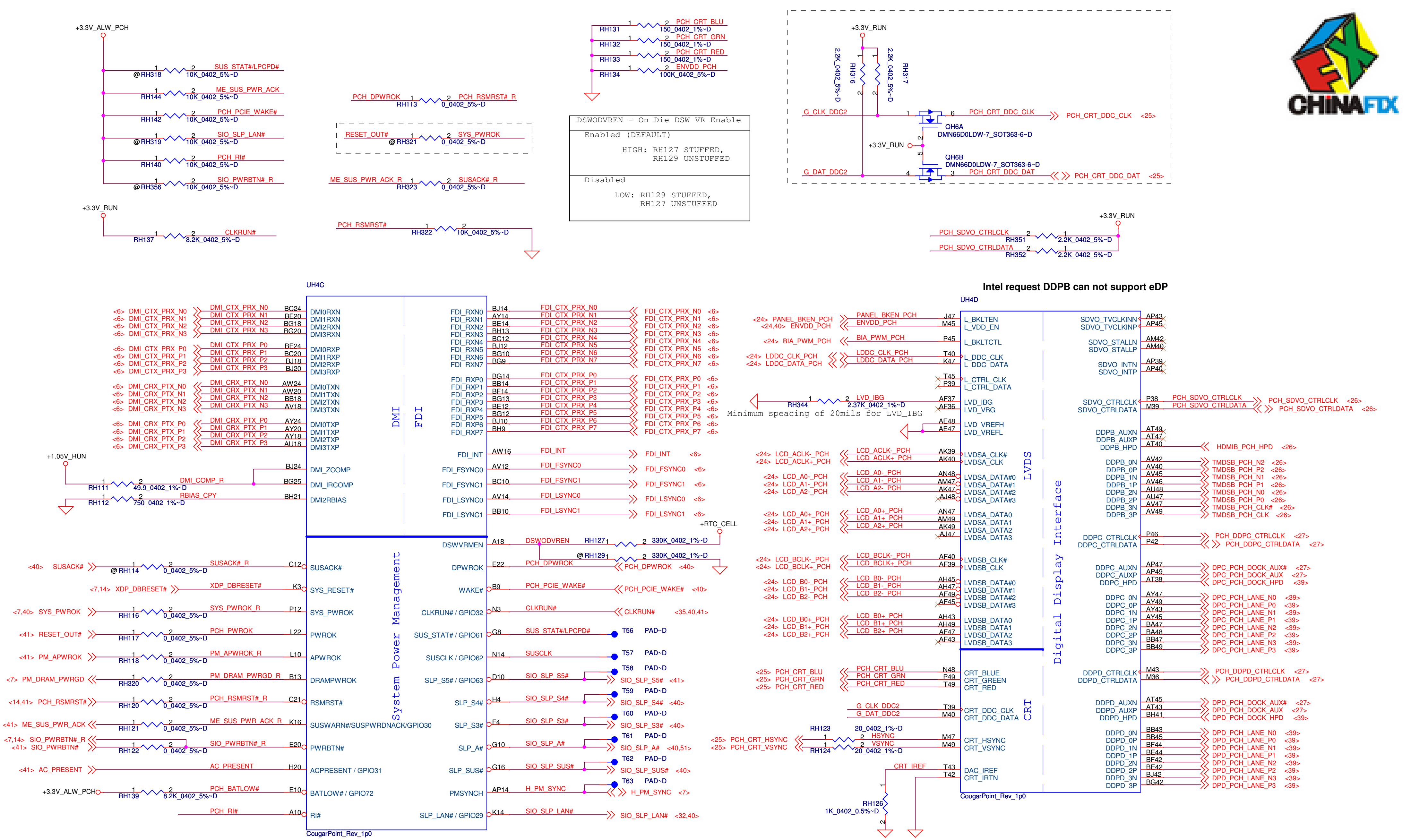


PCIE REQ power rail:
suspend: 0 3 4 5 6 7
core: 1 2

DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title	PCH (2/8)	
Size	Document Number: LA-6562P	Rev 0.3
Date: Friday, October 15, 2010	Sheet 15 of 66	



Compal Electronics, Inc.

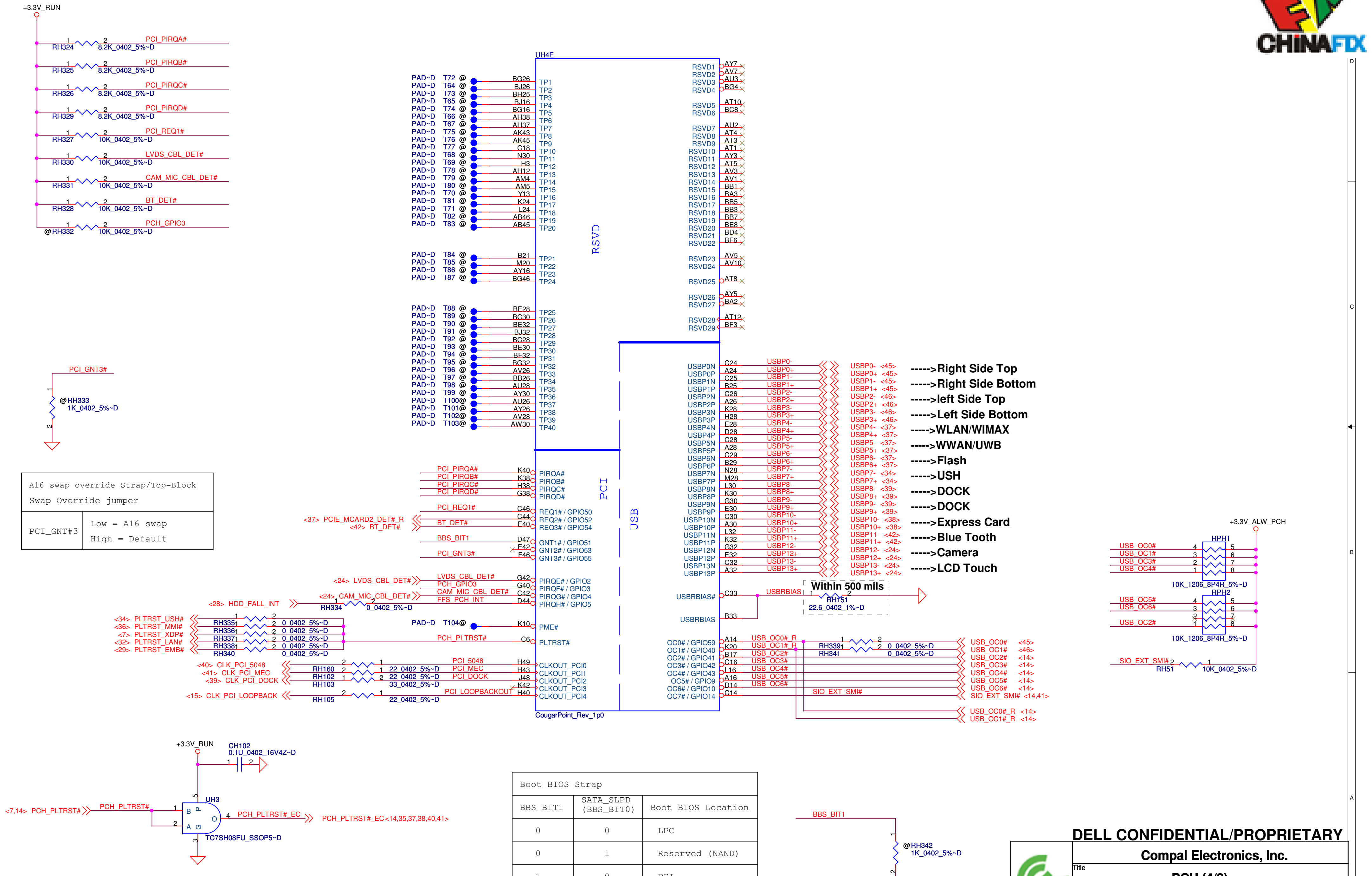
DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title: PCH (3/8)

Size | Document Number: LA-6562P | Rev: 0.3

Date: Tuesday, October 12, 2010 | Sheet 16 of 66



A16 swap override Strap/Top-Block Swap Override jumper	
PCI_GNT#3	Low = A16 swap High = Default

Boot BIOS Strap		
BBS_BIT1	SATA_SLPD (BBS_BIT0)	Boot BIOS Location
0	0	LPC
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI

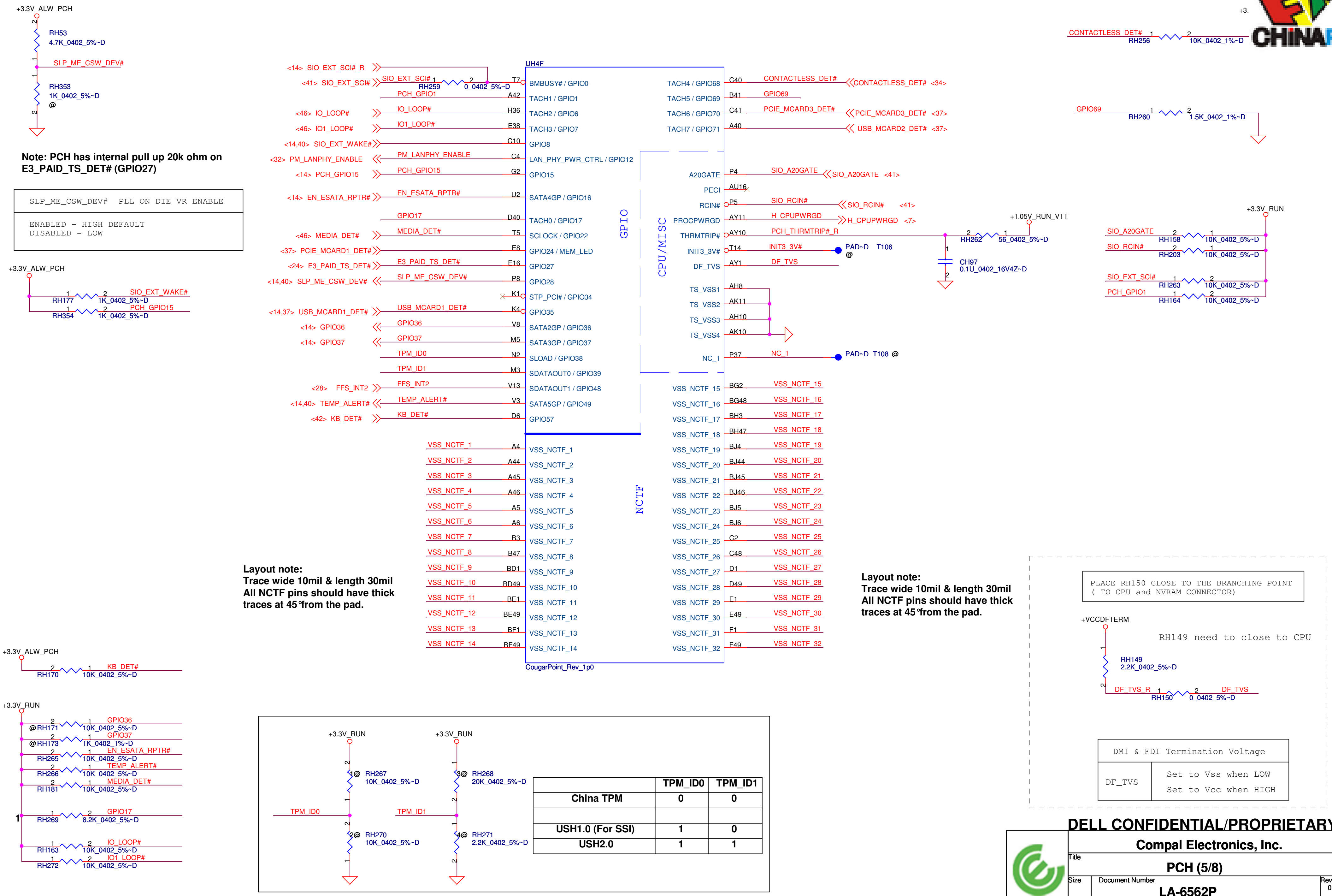
*

Compal Electronics, Inc.

Title: PCH (4/8)

Size | Document Number: LA-6562P | Rev 0.3

Date: Tuesday, October 12, 2010



Note: PCH has internal pull up 20k ohm on E3_PAID_TS_DET# (GPIO27)

SLP_ME_CSW_DEV#	PLL ON DIE VR ENABLE
ENABLED - HIGH DEFAULT DISABLED - LOW	

Layout note:
Trace wide 10mil & length 30mil
All NCTF pins should have thick traces at 45° from the pad.

Layout note:
Trace wide 10mil & length 30mil
All NCTF pins should have thick traces at 45° from the pad.

	TPM_ID0	TPM_ID1
China TPM	0	0
USH1.0 (For SSI)	1	0
USH2.0	1	1

PLACE RH150 CLOSE TO THE BRANCHING POINT (TO CPU and NVRAM CONNECTOR)

RH149 need to close to CPU

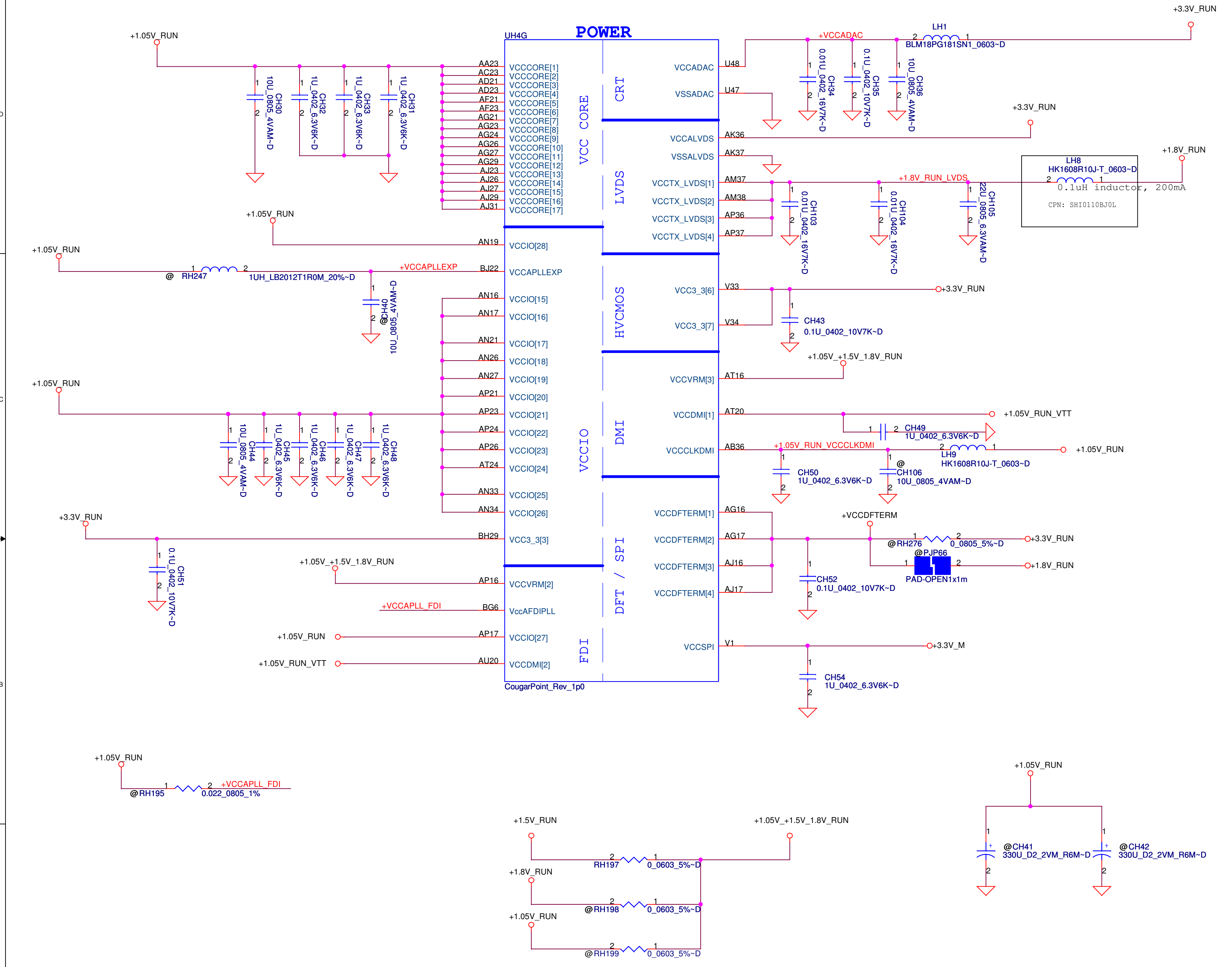
DMI & FDI Termination Voltage	
DF_TVS	Set to Vss when LOW Set to Vcc when HIGH

Compal Electronics, Inc.

Title: PCH (5/8)

Document Number: LA-6562P — Rev 0.3

Date: Tuesday, October 19, 2010 — Sheet 18 of 66



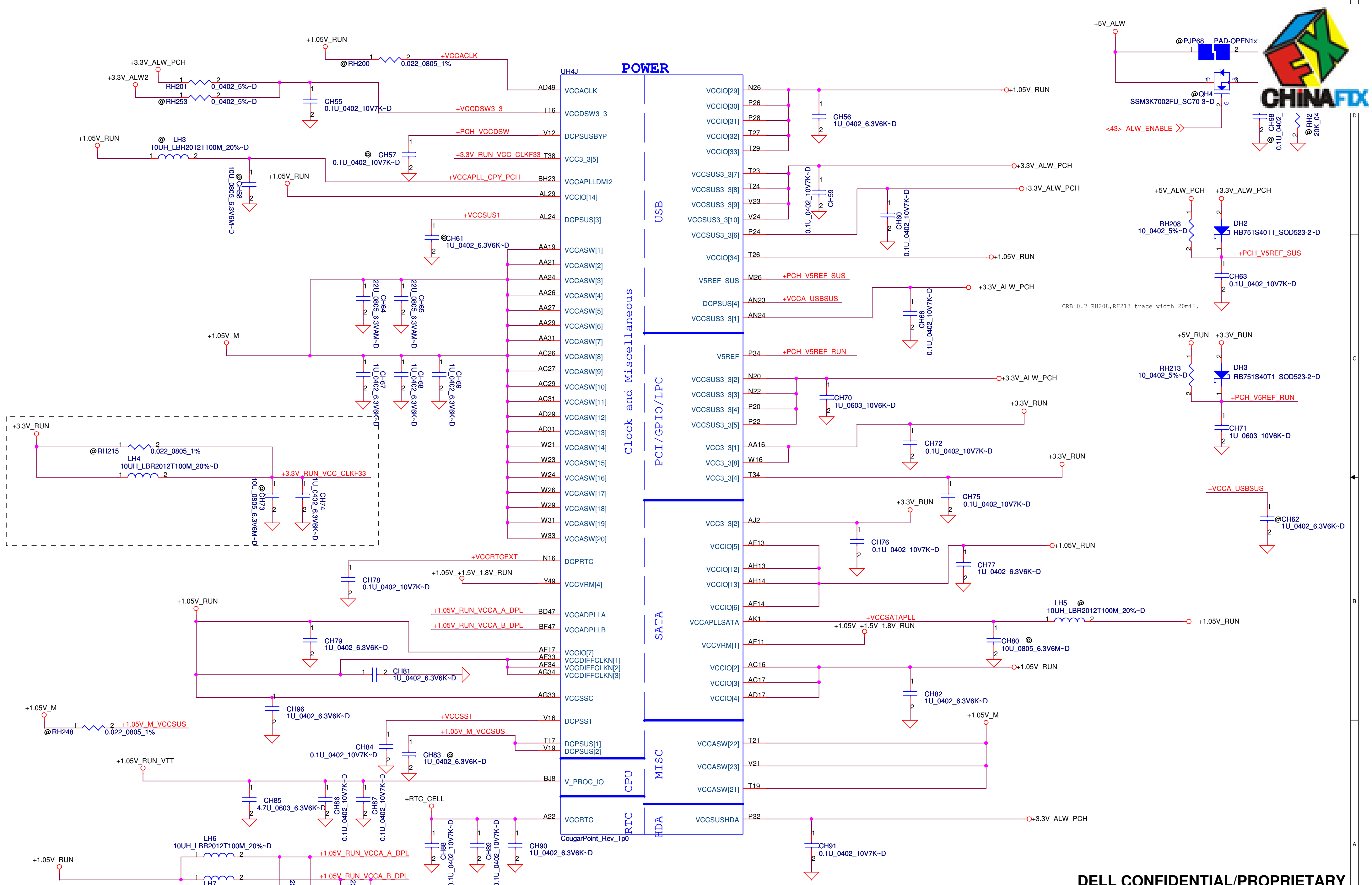
PCH Power Rail Table

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
VccADAC3	3.3	0.001
VccADPLLA	1.05	0.08
VccADPLLB	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	0.020
VccDSW3_3	3.3	0.003
VCCDFTERM	1.8	0.19
VccRTC	3.3	2 (mA)
VccSus3_3	3.3	0.119
VccSusHDA	3.3	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
VccAPLLEXP	1.05	0.05

Compal Electronics, Inc.

Title: PCH (6/8)

Size | Document Number: LA-6562P | Rev 0.3



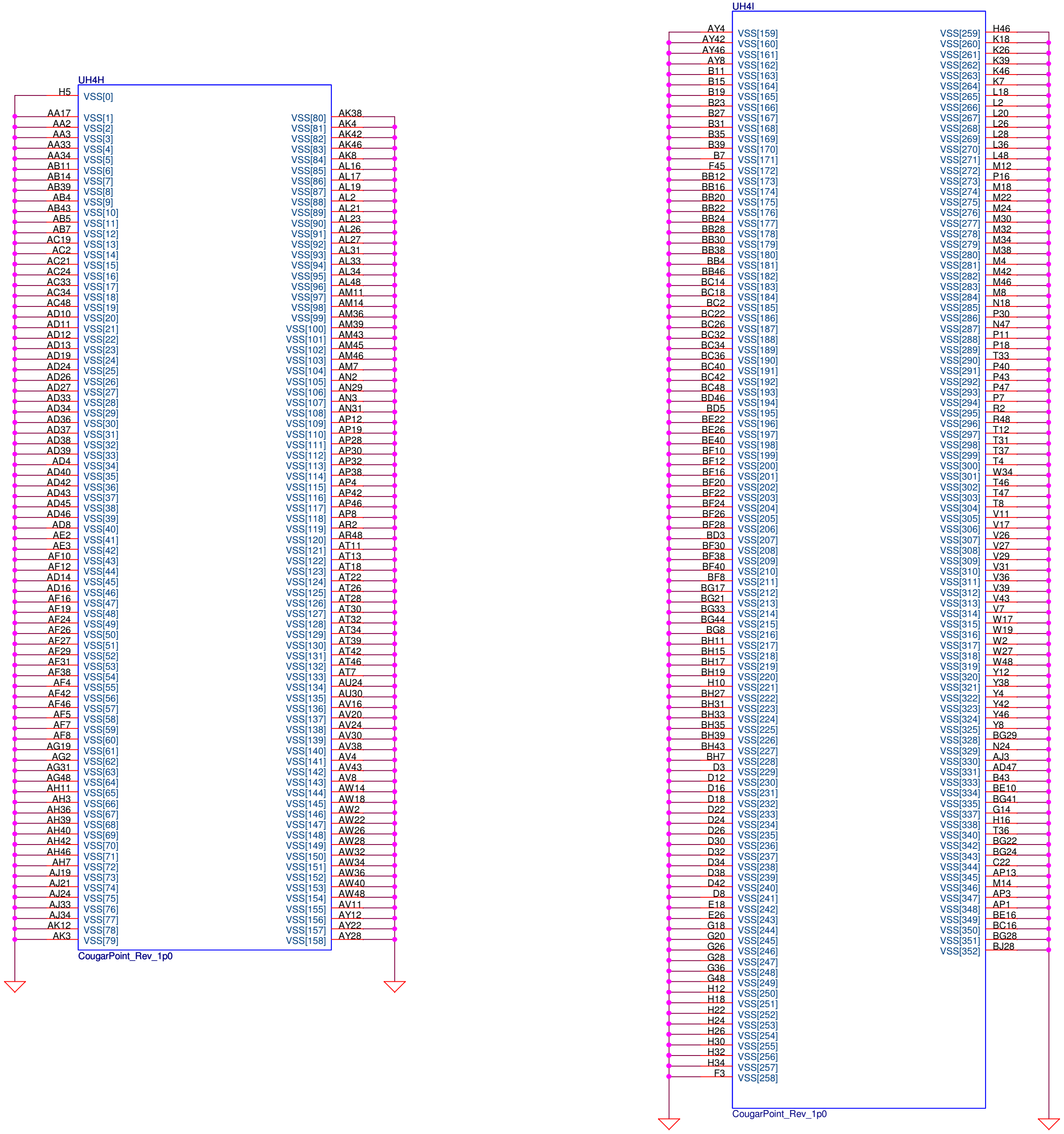
DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title: PCH (7/8)

Size | Document Number: LA-6562P | Rev 0.3

Date: Monday, October 18, 2010 | Sheet 20 of 66



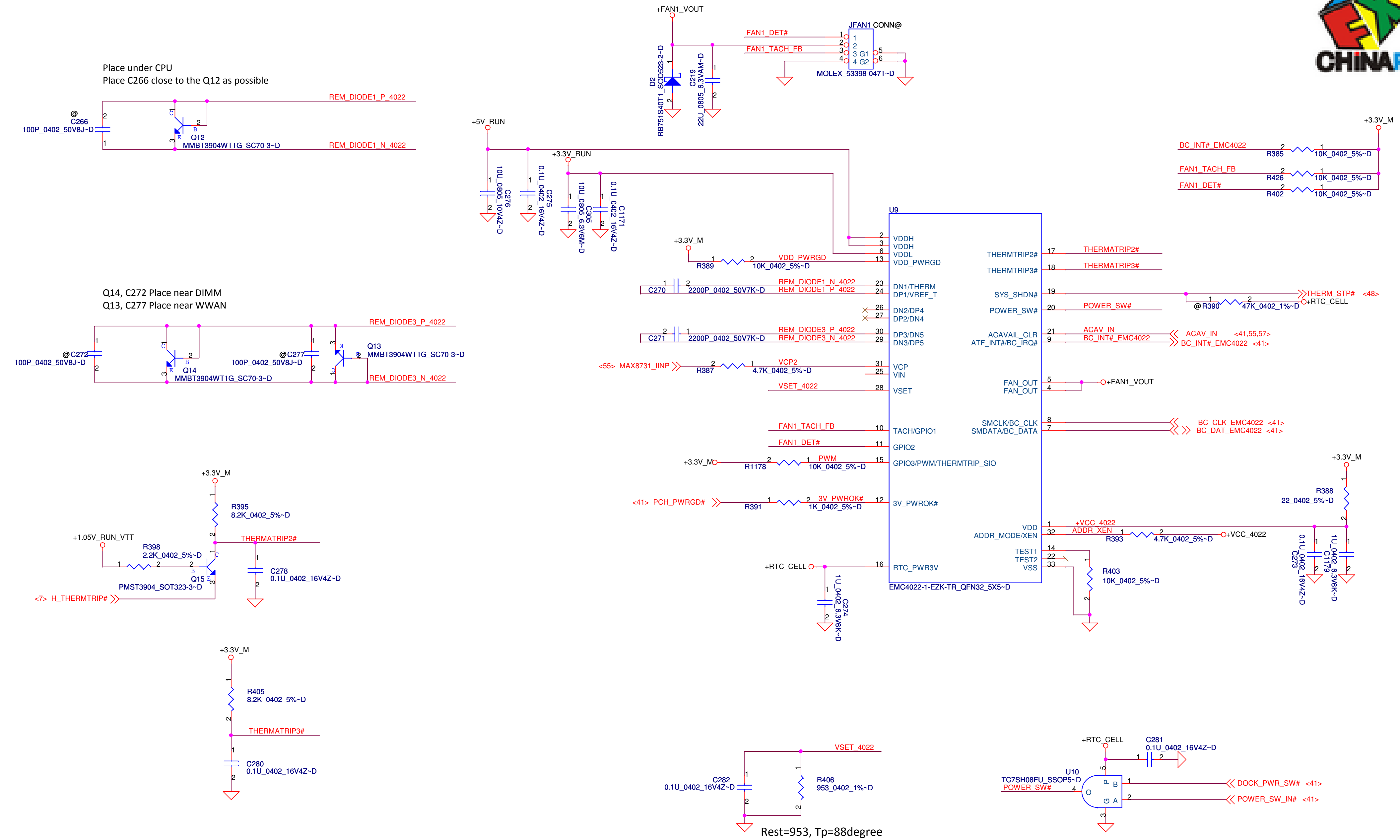
CougarPoint_Rev_1p0

Compal Electronics, Inc.

Title	PCH (8/8)	
Size	Document Number: LA-6562P	Rev 0.3
Date: Tuesday, October 12, 2010	Sheet 21 of 66	

Place under CPU
Place C266 close to the Q12 as possible

Q14, C272 Place near DIMM
Q13, C277 Place near WWAN



Rest=953, Tp=88degree

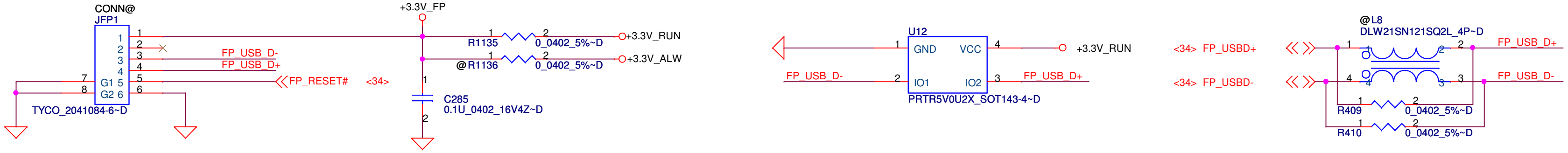
Compal Electronics, Inc.

Title: FAN & Thermal Sensor

Size | Document Number: LA-6562P | Rev 0.3

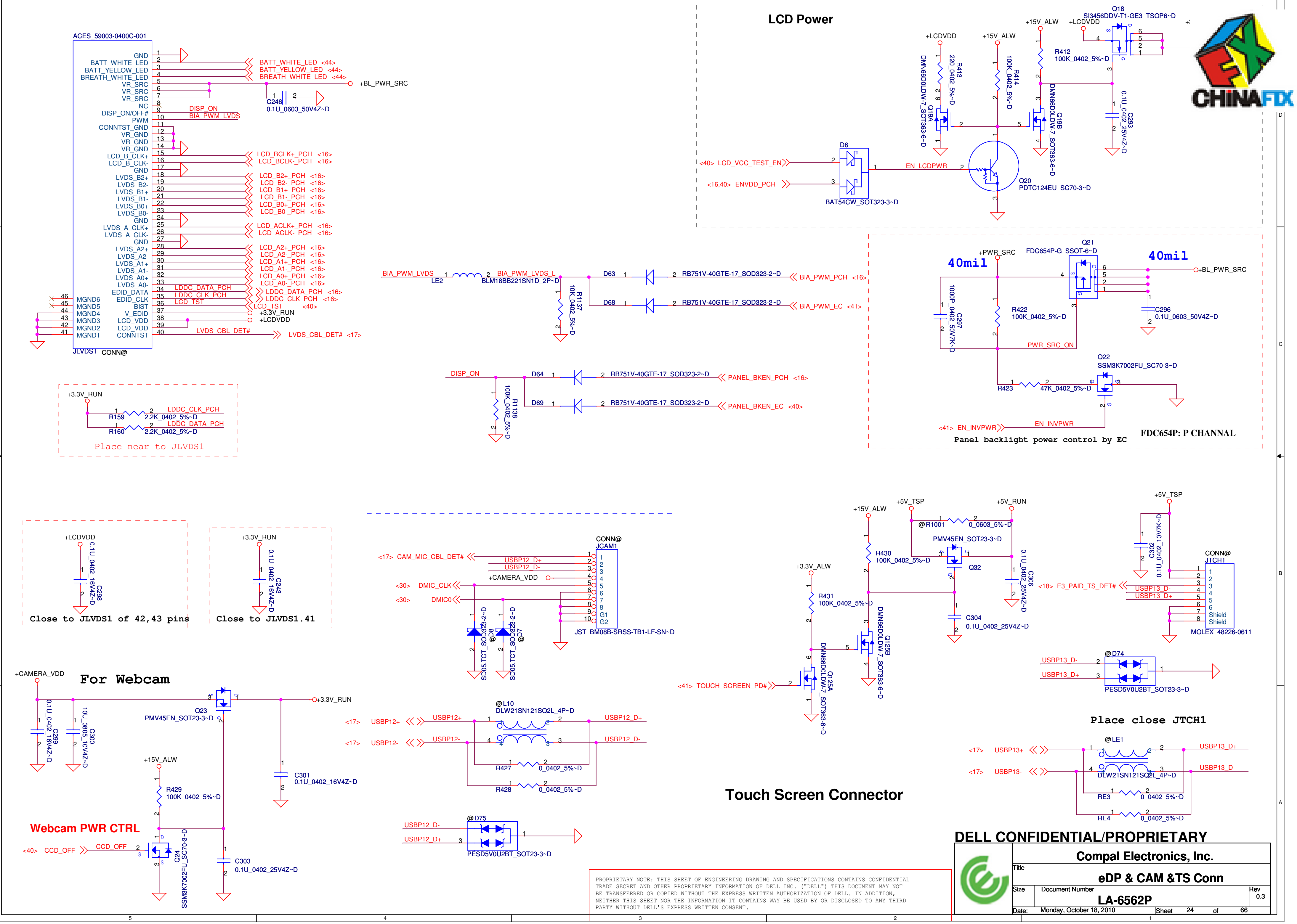
Date: Tuesday, October 12, 2010 | Sheet 22 of 66

Fingerprint CONN.



Compal Electronics, Inc.

Title	FP Conn.	
Size	Document Number LA-6562P	Rev 0.3
Date: Tuesday, October 12, 2010	Sheet 23 of 66	



DELL CONFIDENTIAL/PROPRIETARY

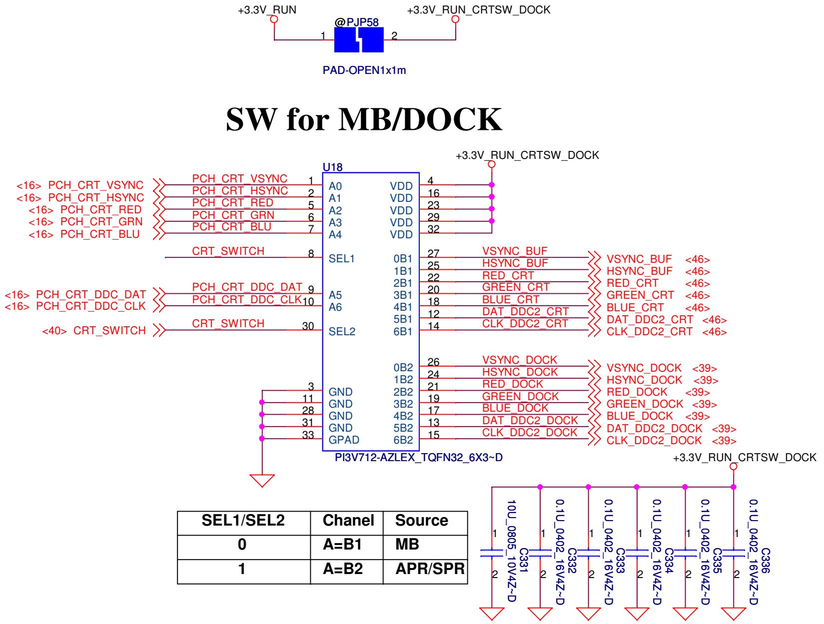
Compal Electronics, Inc.

Title: eDP & CAM &TS Conn

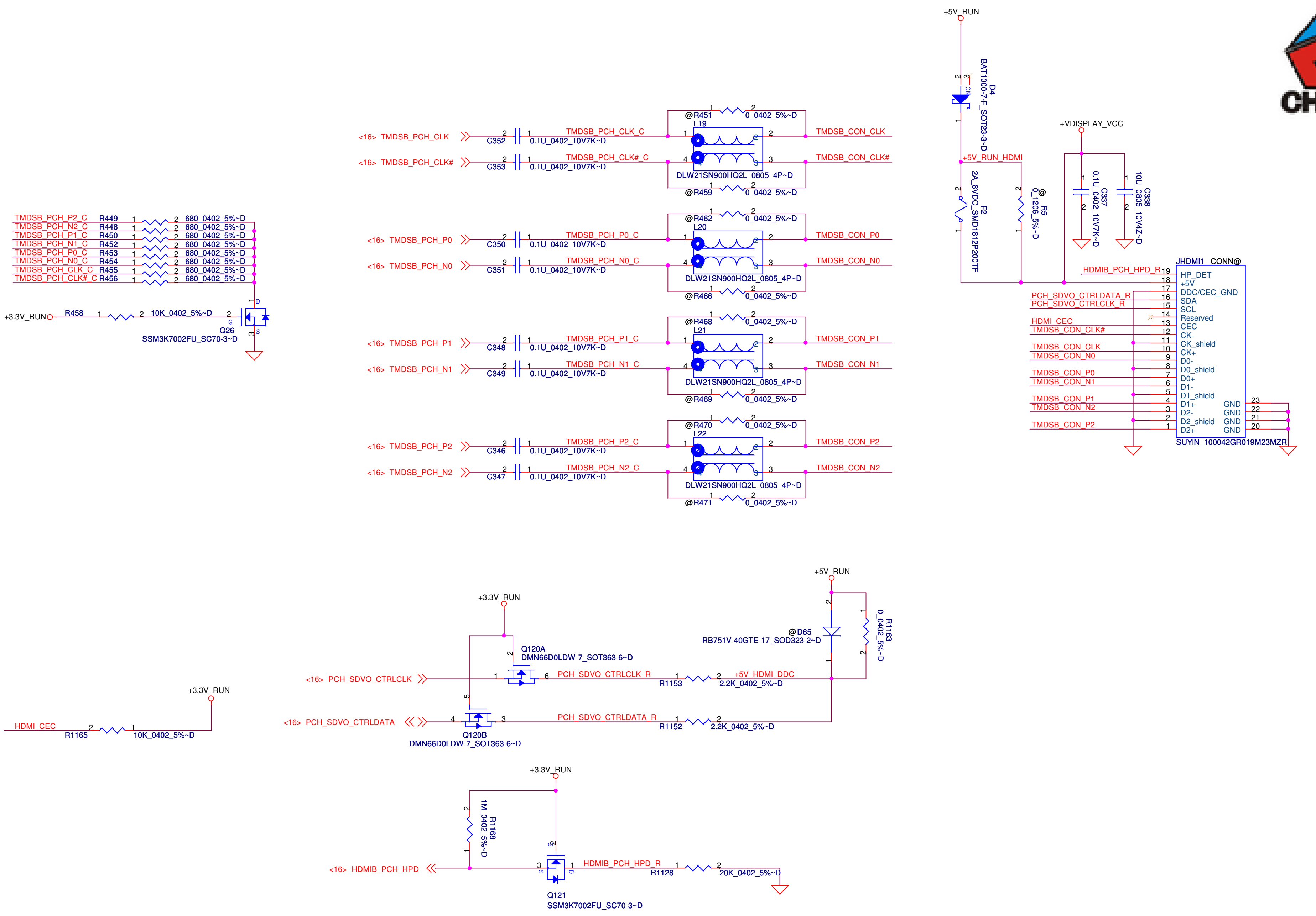
Size | Document Number: LA-6562P | Rev 0.3

Date: Monday, October 18, 2010 | Sheet 24 of 66

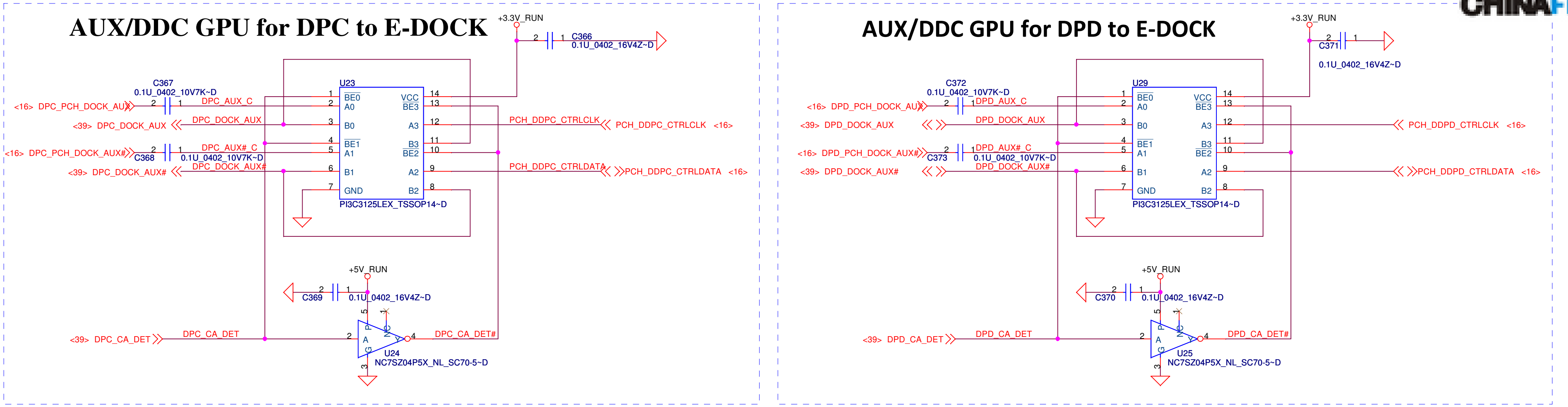
SW for MB/DOCK

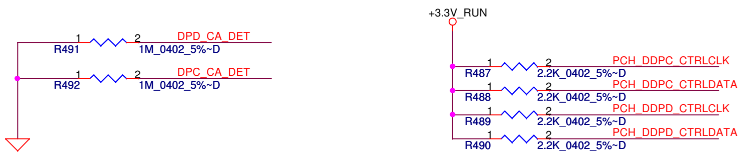


SEL1/SEL2	Chanel	Source
0	A=B1	MB
1	A=B2	APR/SPR



Compal Electronics, Inc.	
Title	HDMI port
Size / Document Number	LA-6562P
Rev	0.3
Date:	Wednesday, October 20, 2010
Sheet	26 of 66



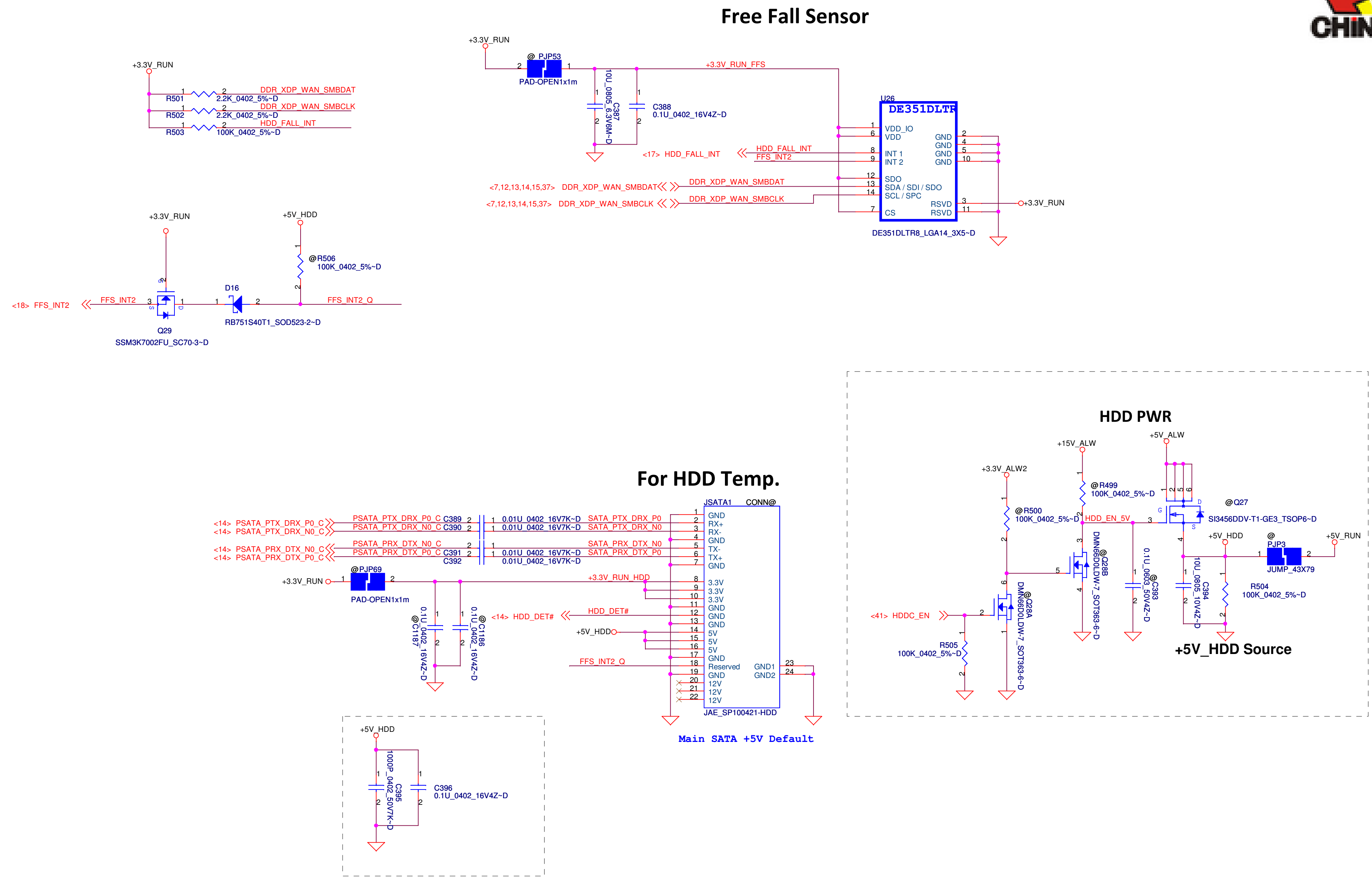


Intel WW18 Strapping option

Intel WW18 Strapping option

DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.	
Title	DP AUX SW
Size / Document Number	LA-6562P
Rev	0.3
Date:	Tuesday, October 12, 2010
Sheet	27 of 66



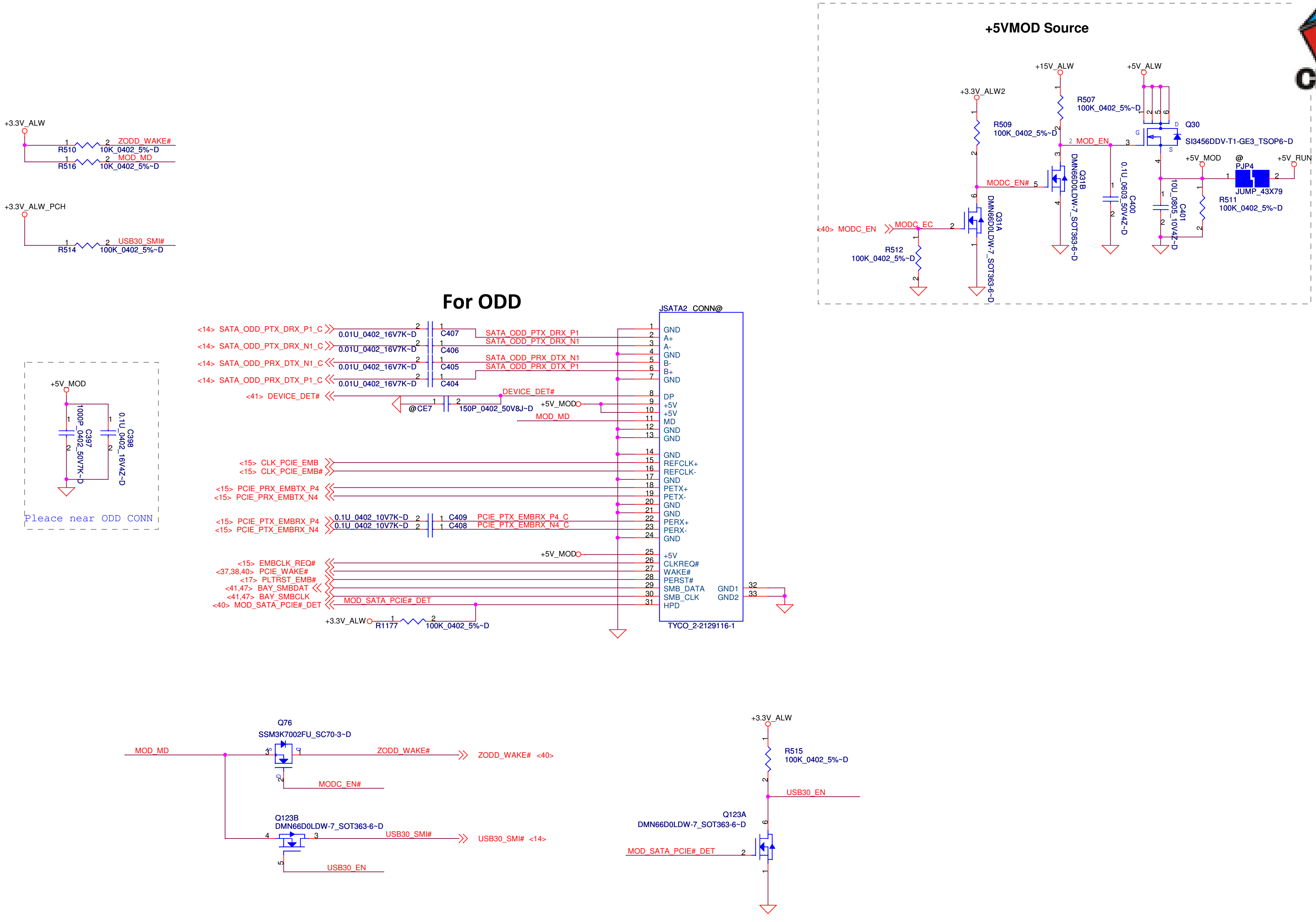
DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title: HDD CONNECTOR

Size | Document Number: LA-6562P | Rev 0.3

Date: Monday, October 18, 2010 | Sheet 28 of 66

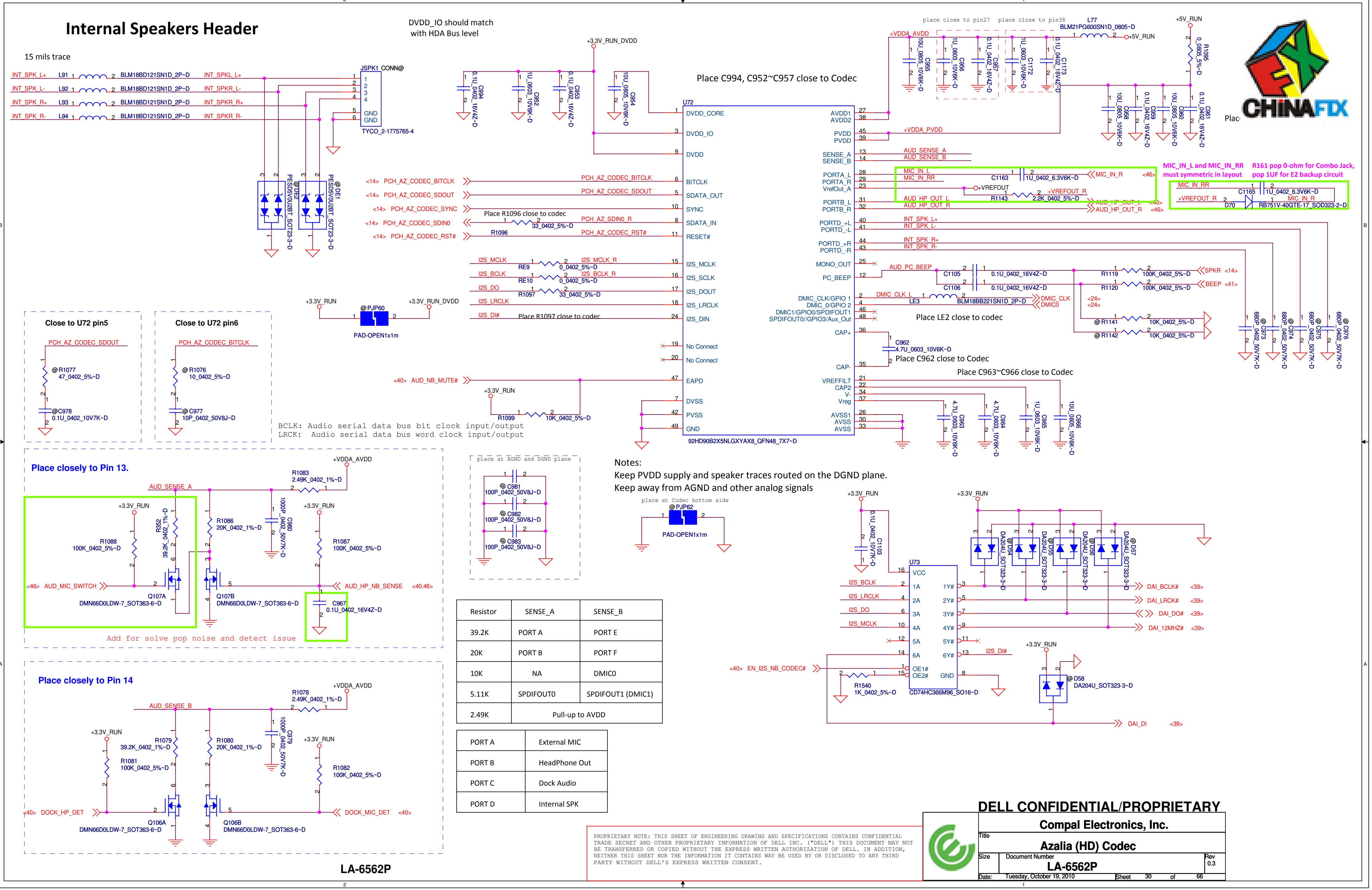


PROPRIETARY NOTE: THIS SHEET OF ENGINEERING DRAWING AND SPECIFICATIONS CONTAINS CONFIDENTIAL TRADE SECRET AND OTHER PROPRIETARY INFORMATION OF DELL INC. ("DELL") THIS DOCUMENT MAY NOT BE TRANSFERRED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF DELL. IN ADDITION, NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT DELL'S EXPRESS WRITTEN CONSENT.

DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title	ODD CONNECTOR
Size / Document Number	LA-6562P
Rev	0.3
Date:	Tuesday, October 12, 2010
Sheet	29 of 66



Notes:
Keep PVDD supply and speaker traces routed on the DGND plane.
Keep away from AGND and other analog signals

Resistor	SENSE_A	SENSE_B
39.2K	PORT A	PORT E
20K	PORT B	PORT F
10K	NA	DMIC0
5.11K	SPDIFOUT0	SPDIFOUT1 (DMIC1)
2.49K	Pull-up to AVDD	

PORT A	External MIC
PORT B	HeadPhone Out
PORT C	Dock Audio
PORT D	Internal SPK

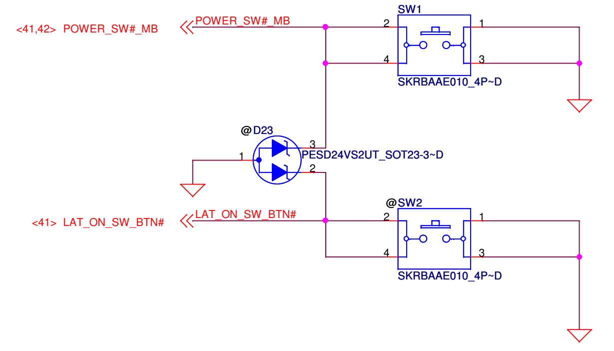
DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title: Azalia (HD) Codec

Size | Document Number: LA-6562P | Rev 0.3

Date: Tuesday, October 19, 2010 | Sheet 30 of 66



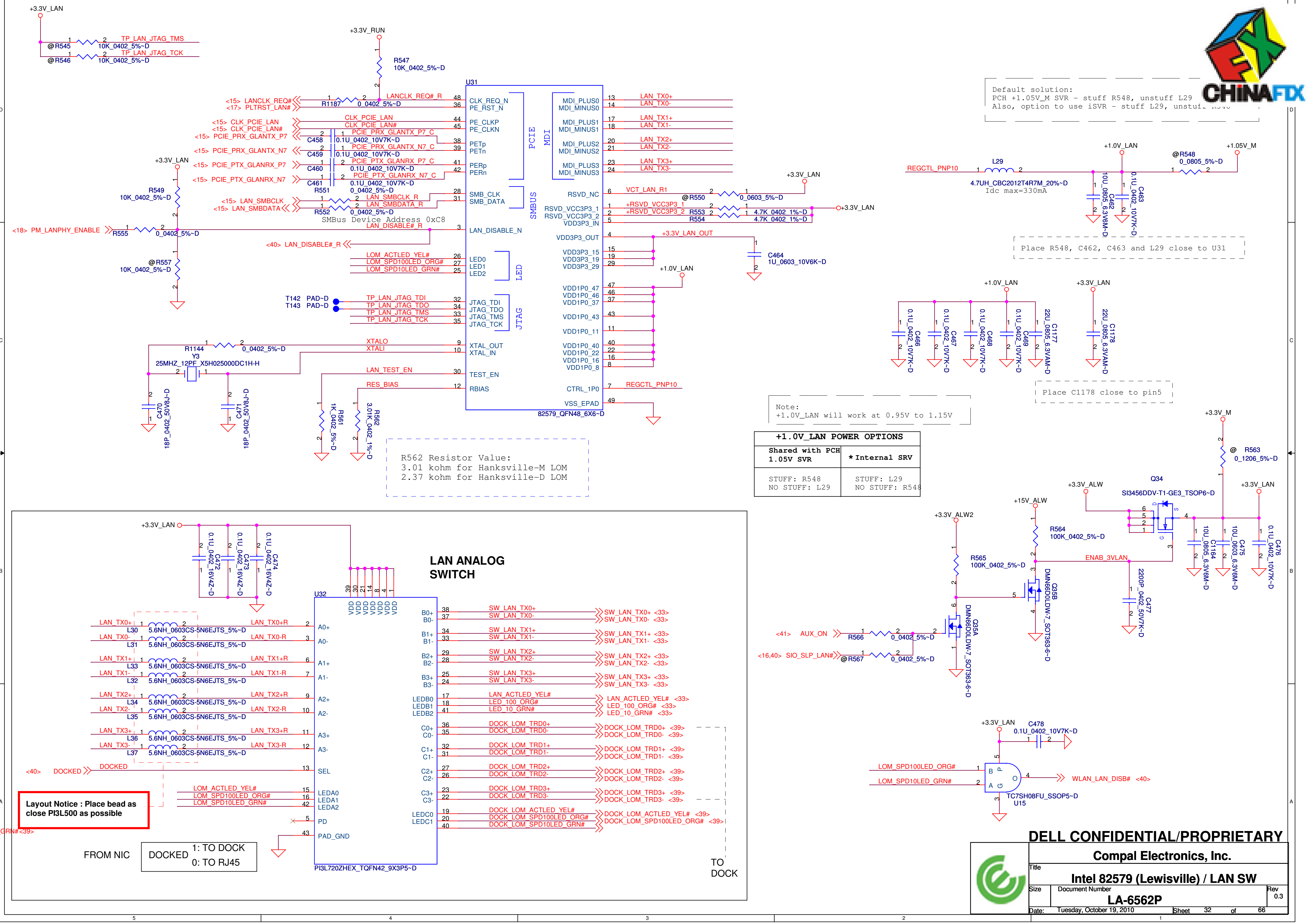
POWER & INSTANT ON SWITCH

Compal Electronics, Inc.

Title: PWR SW/Sniffer/1394/Audio Jack

Size | Document Number: LA-6562P | Rev 0.3

Date: Tuesday, October 12, 2010



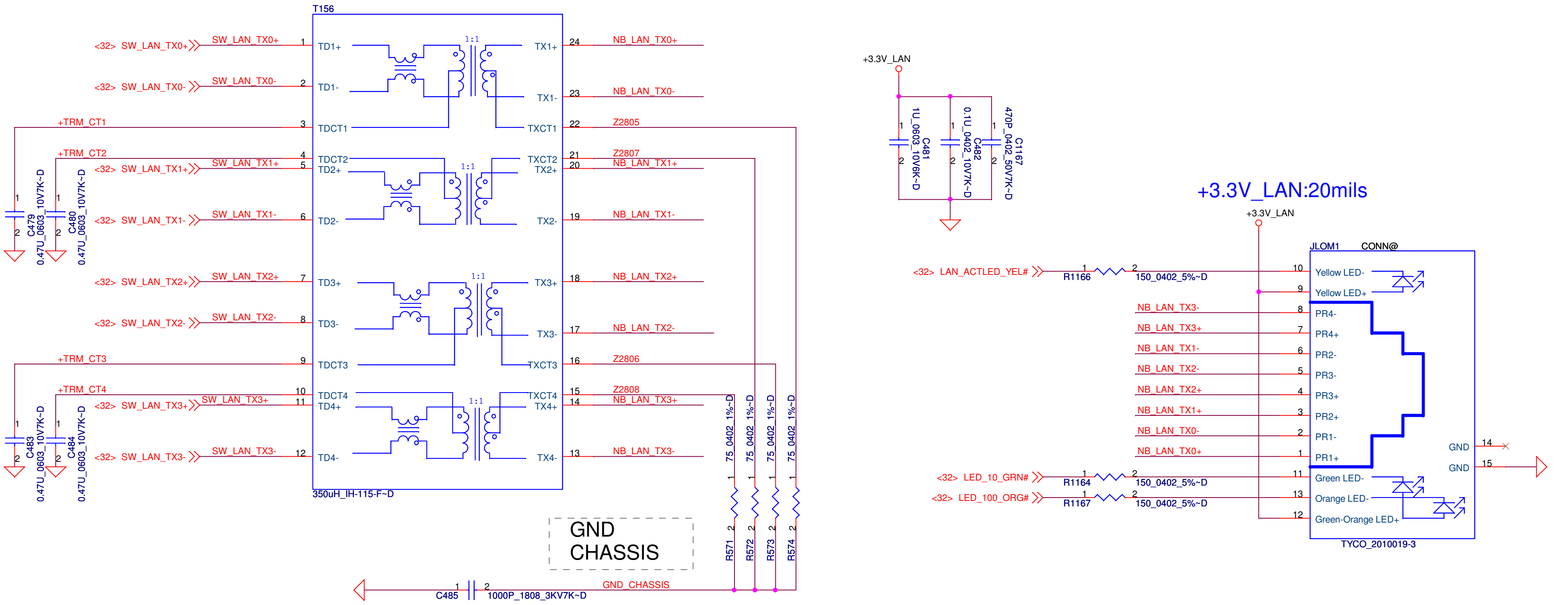
+1.0V_LAN POWER OPTIONS	
Shared with PCH 1.05V SVR	* Internal SRV
STUFF: R548 NO STUFF: L29	STUFF: L29 NO STUFF: R548

Compal Electronics, Inc.

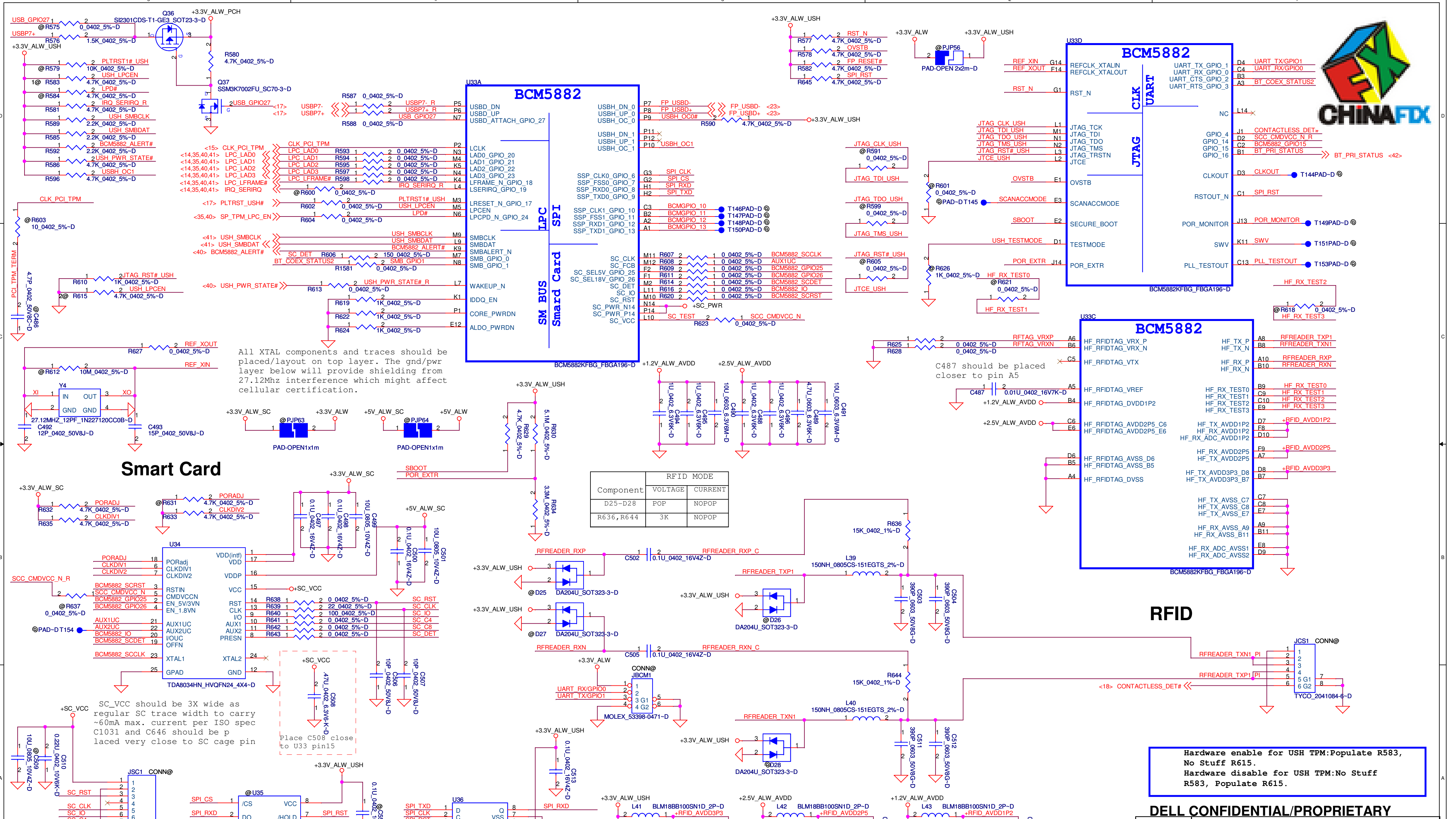
Title: Intel 82579 (Lewisville) / LAN SW

Size | Document Number: LA-6562P | Rev 0.3

Date: Tuesday, October 19, 2010 | Sheet 32 of 66



Compal Electronics, Inc.		
Title: RJ45 Conn		
Size	Document Number: LA-6562P	Rev: 0.3
Date: Wednesday, October 20, 2010	Sheet 33 of 66	



All XTAL components and traces should be placed/layout on top layer. The gnd/pwr layer below will provide shielding from 27.12Mhz interference which might affect cellular certification.

C487 should be placed closer to pin A5

SC_VCC should be 3X wide as regular SC trace width to carry ~60mA max. current per ISO spec C1031 and C646 should be p laced very close to SC cage pin

Place C508 close to U33 pin15

Component	RFID MODE	
	VOLTAGE	CURRENT
D25-D28	POP	NOPOP
R636,R644	3K	NOPOP

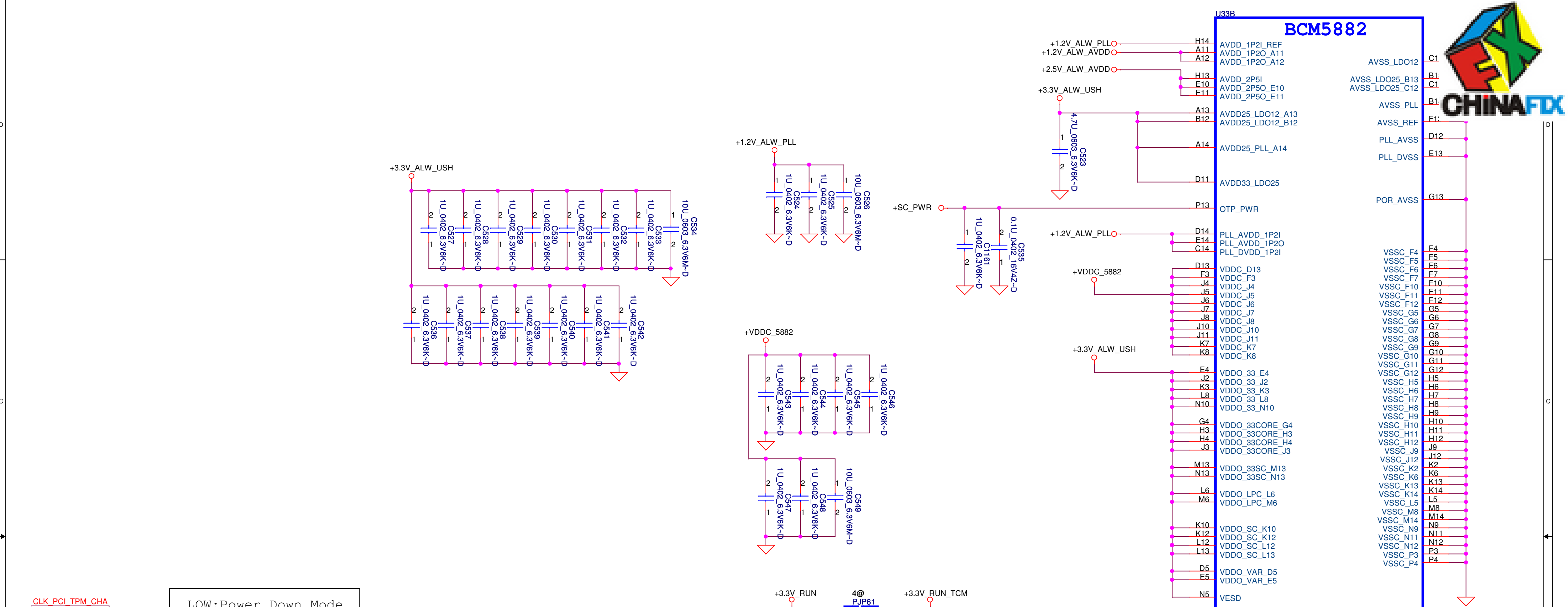
Hardware enable for USH TPM:Populate R583, No Stuff R615.
Hardware disable for USH TPM:No Stuff R583, Populate R615.

Compal Electronics, Inc.

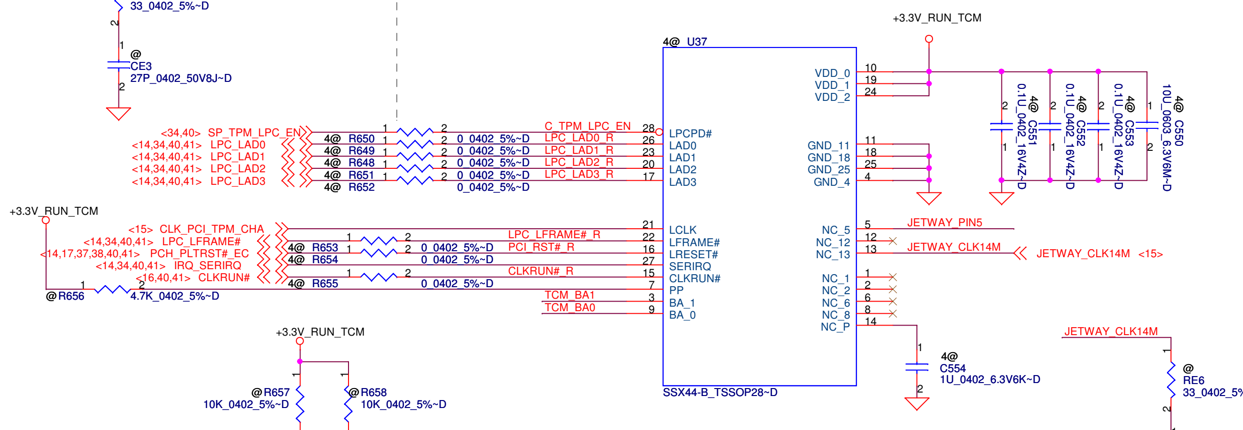
Title: USH BCM5882 (1/2)

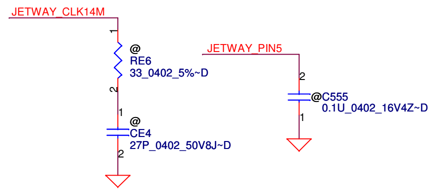
Size | Document Number: LA-6562P | Rev 0.3

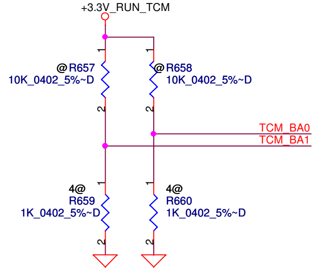
Date: Tuesday, October 12, 2010 | Sheet 34 of 66



China TCM: NationZ & Jetway co-lay







TCM Vender	POP
NationZ	R660, R659, C554, C550

USH BCM5882 and China TCM Z8H172T Option

PART/PIN	Ref Des	TCM Enable	TPM Enable	ALL TPM/TCM Disable
TCM circuit	All 4@	POP	@	@
USH_LPCEN	PU R583	@	POP	@
	PD R615	POP	@	@
SIO 5028 ->SP_TPM_LPC_EN	PU R772	@	@	@
PCH GPIO39 ->TPM_ID1	PU RH268	@	POP	POP
	PD RH271	POP	@	@
PCH GPIO38 ->TPM_ID0	PU RH267	@	POP	@
	PD RH270	POP	@	POP

Compal Electronics, Inc.

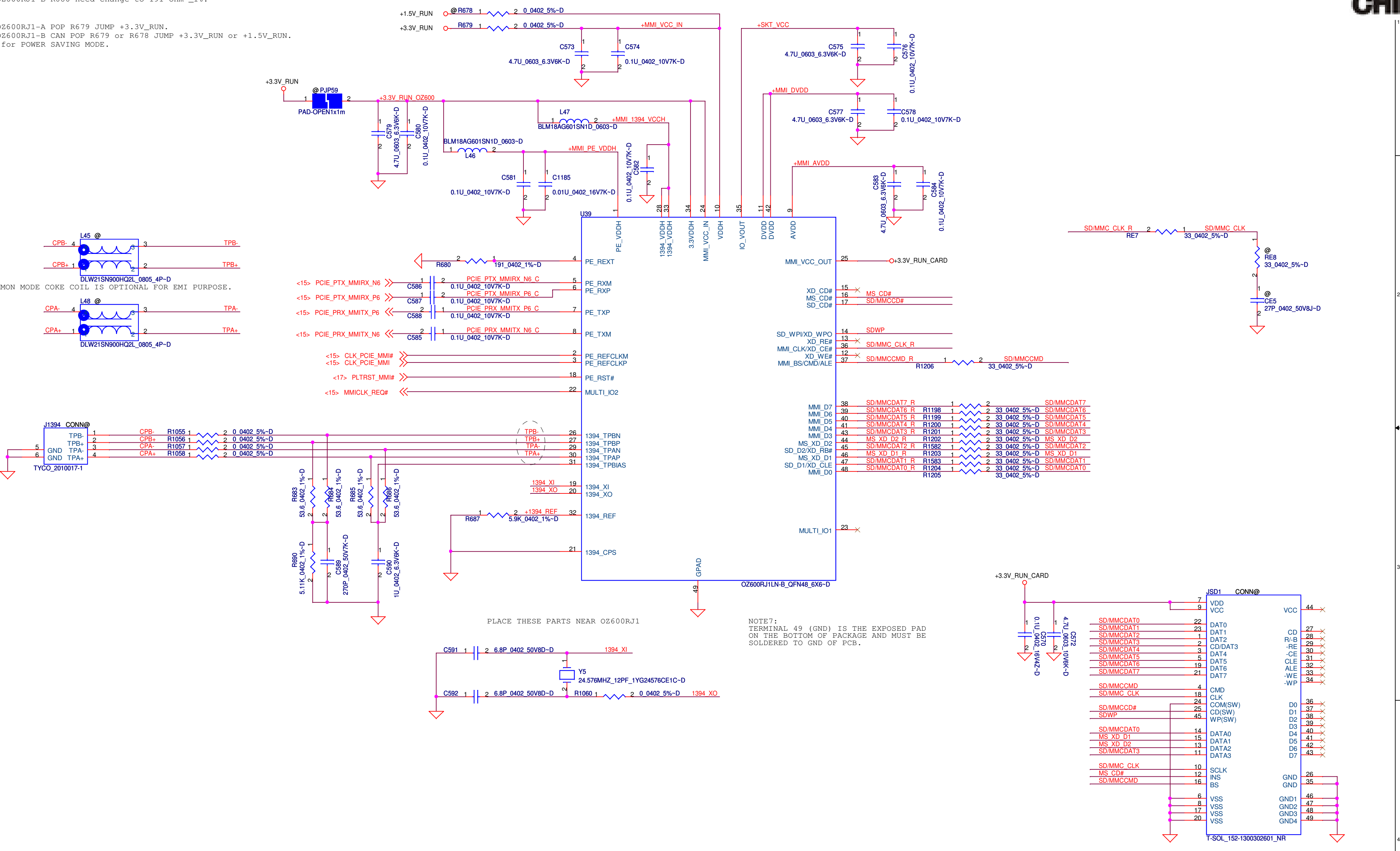
Title: **USH BCM5882 (2/2)**

Size | Document Number: **LA-6562P** | Rev 0.3

NOTE1:
THESE 1394 SIGNALS ARE HIGH SPEED
DIFFERENTIAL PAIRS AND MUST BE KEPT EQUAL
LENGTH WITH A DIFFERENTIAL IMPEDANCE (Z0)
OF 110 OHMS.

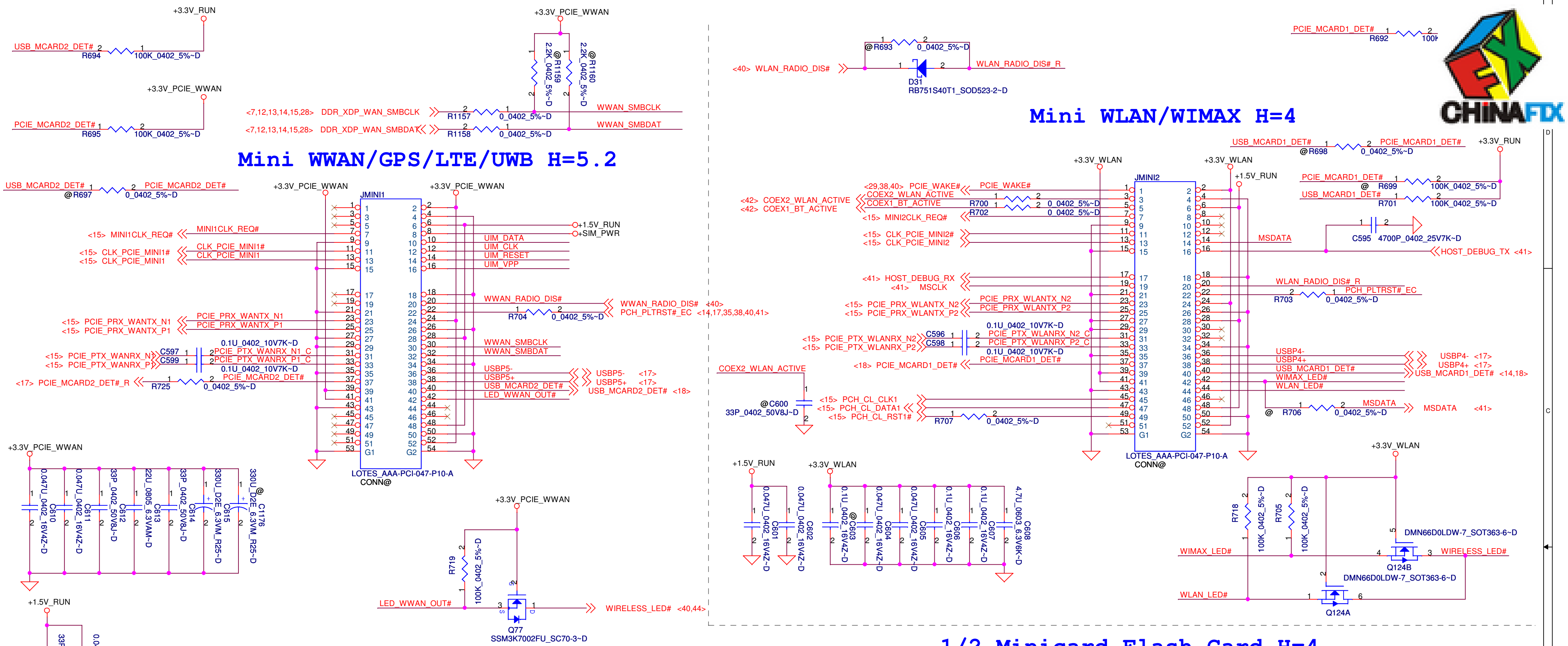
NOTE2:
If used OZ600RJ1-A R680 need change to 5.1K ohm_1%.
If used OZ600RJ1-B R680 need change to 191 ohm _1%.

NOTE3:
If used OZ600RJ1-A POP R679 JUMP +3.3V_RUN.
If used OZ600RJ1-B CAN POP R679 or R678 JUMP +3.3V_RUN or +1.5V_RUN.
1.5V_RUN for POWER SAVING MODE.

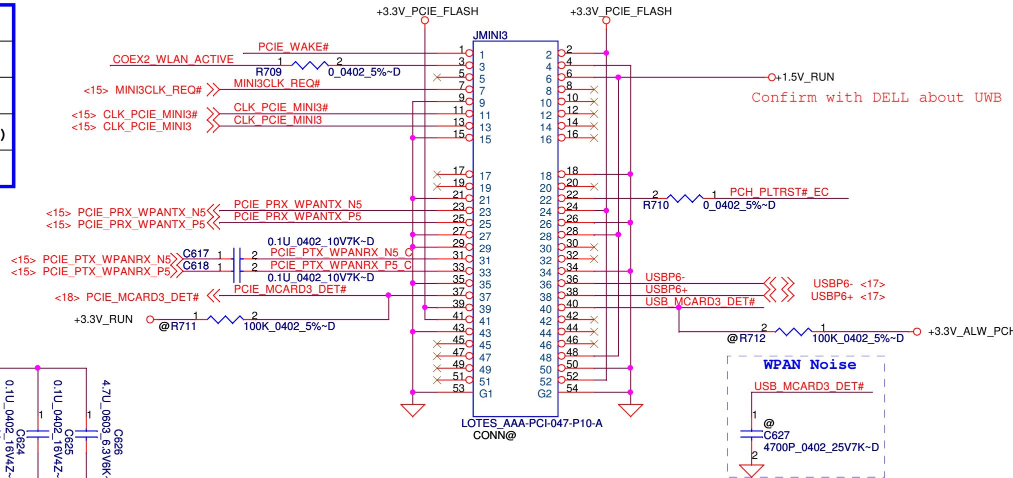


DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.	
Title	OZ600 Card Reader
Size / Document Number	LA-6562P
Rev	0.3
Date:	Tuesday, October 12, 2010
Sheet	36 of 66

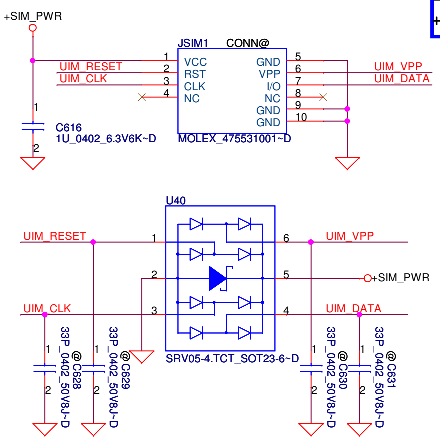


1/2 Minicard Flash Card H=4



PWR Rail	Voltage Tolerance	Primary Power		Aux Power
		Peak	Normal	Normal
+3.3V	+-9%	1000	750	
+3.3Vaux	+-9%	330	250	250 (Wake enable) 5 (Not wake enable)
+1.5V	+-5%	500	375	NA

SIM Card Push-Push

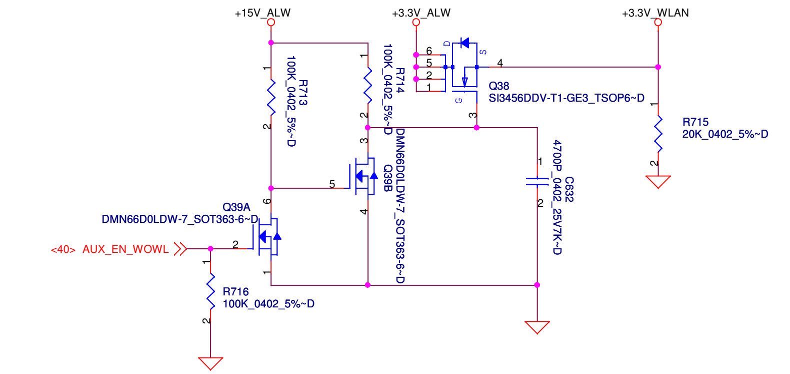


Compal Electronics, Inc.

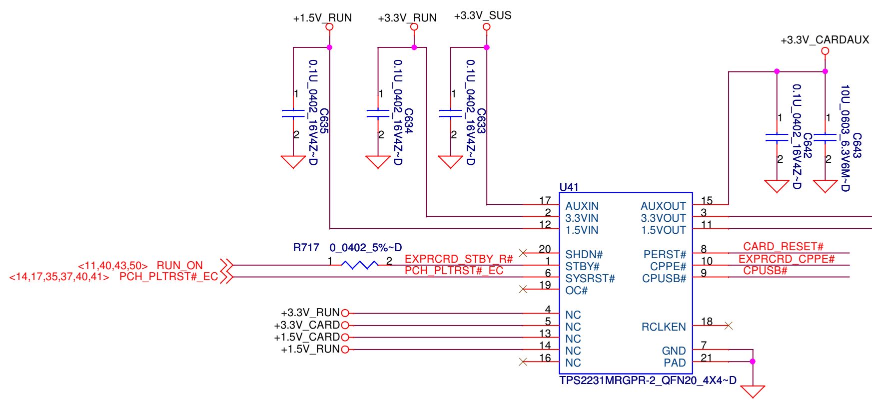
Title: Mini Card

Size | Document Number: LA-6562P | Rev 0.3

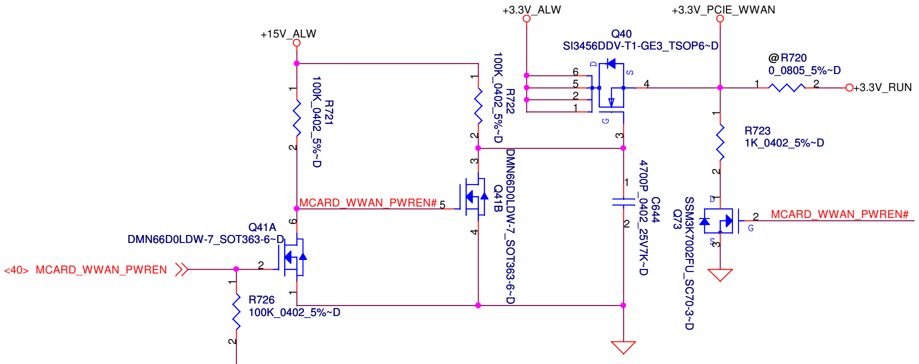
Power Control for Mini card1



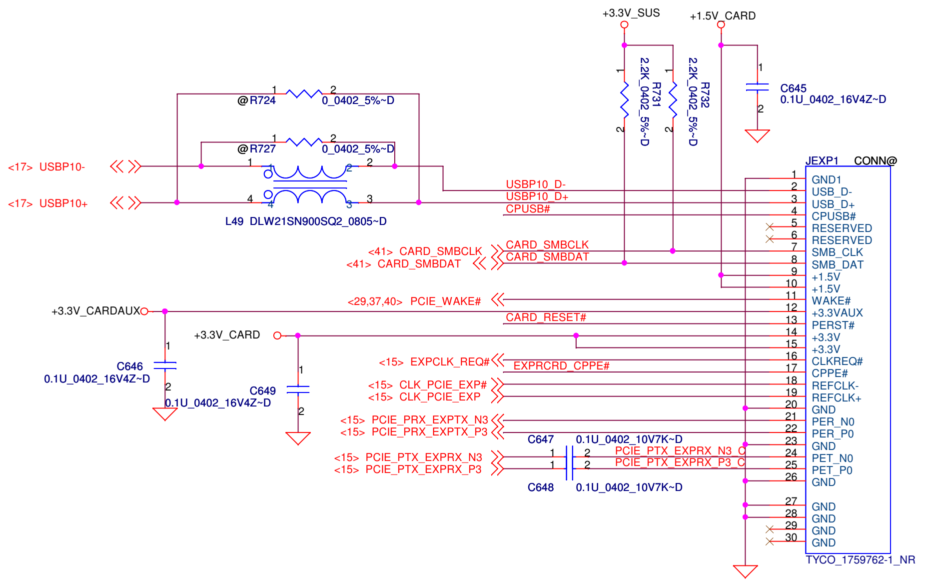
Express Card PWR S/W



Power Control for Mini card2

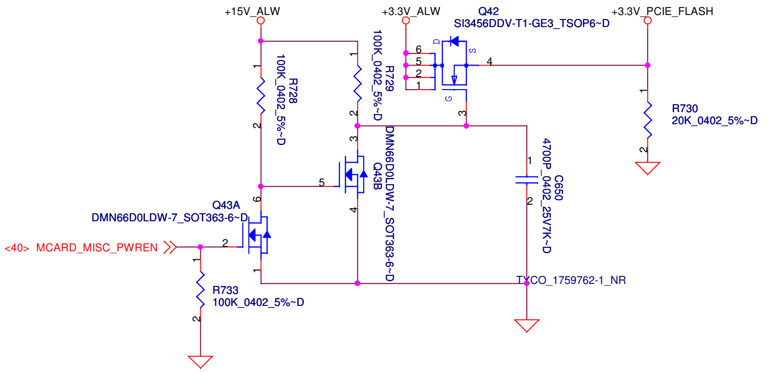


Express Card BTB Conn.



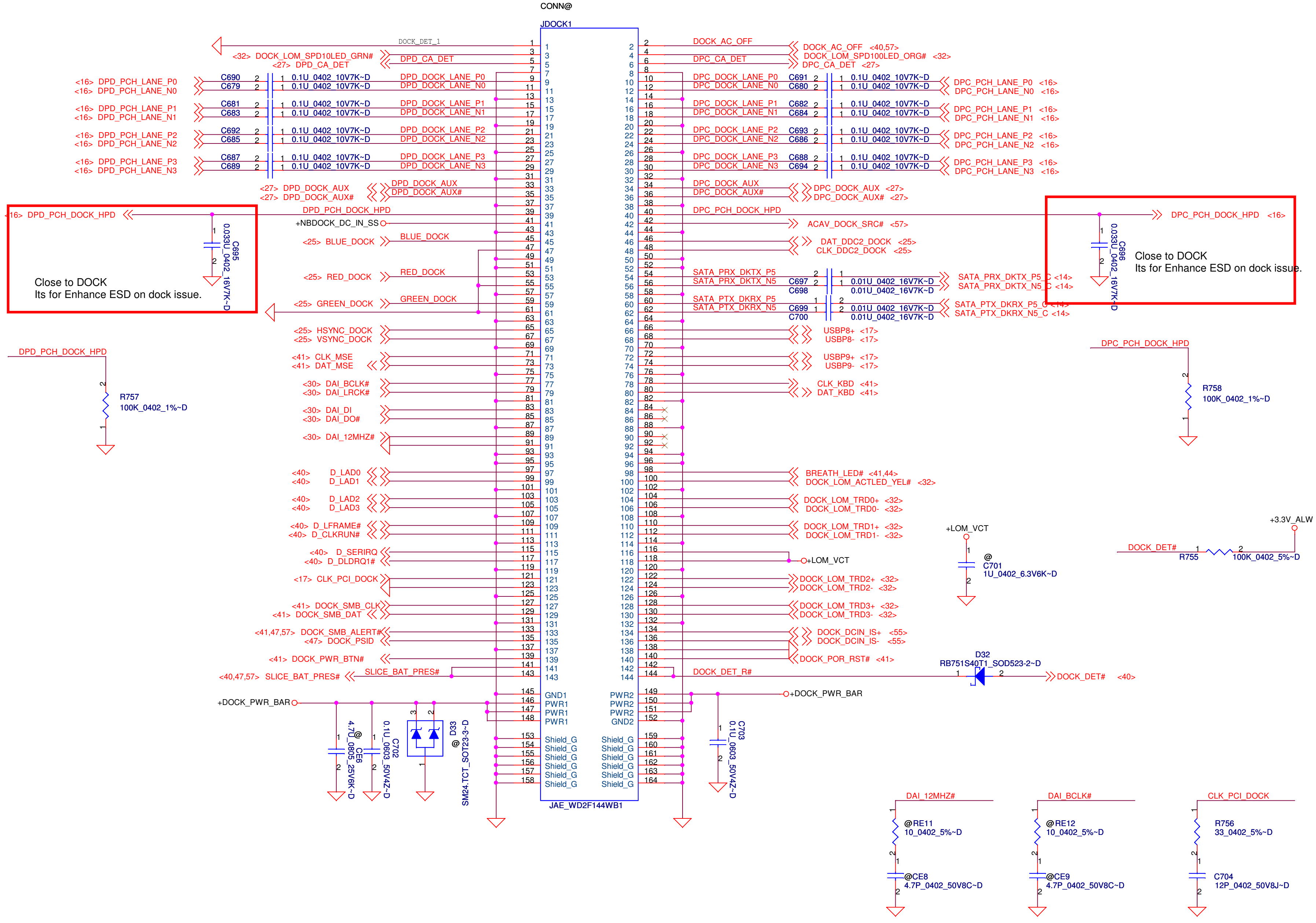
+1.5V_CARD: Max. 650mA, Average 500mA
+3.3V_CARD: Max. 1300mA, Average 1000mA

Power Control for Mini card3



Compal Electronics, Inc.

Title	PCIE-SATA SW / PCIE PWR	
Size	Document Number LA-6562P	Rev 0.3
Date: Wednesday, October 20, 2010	Sheet 38 of 66	



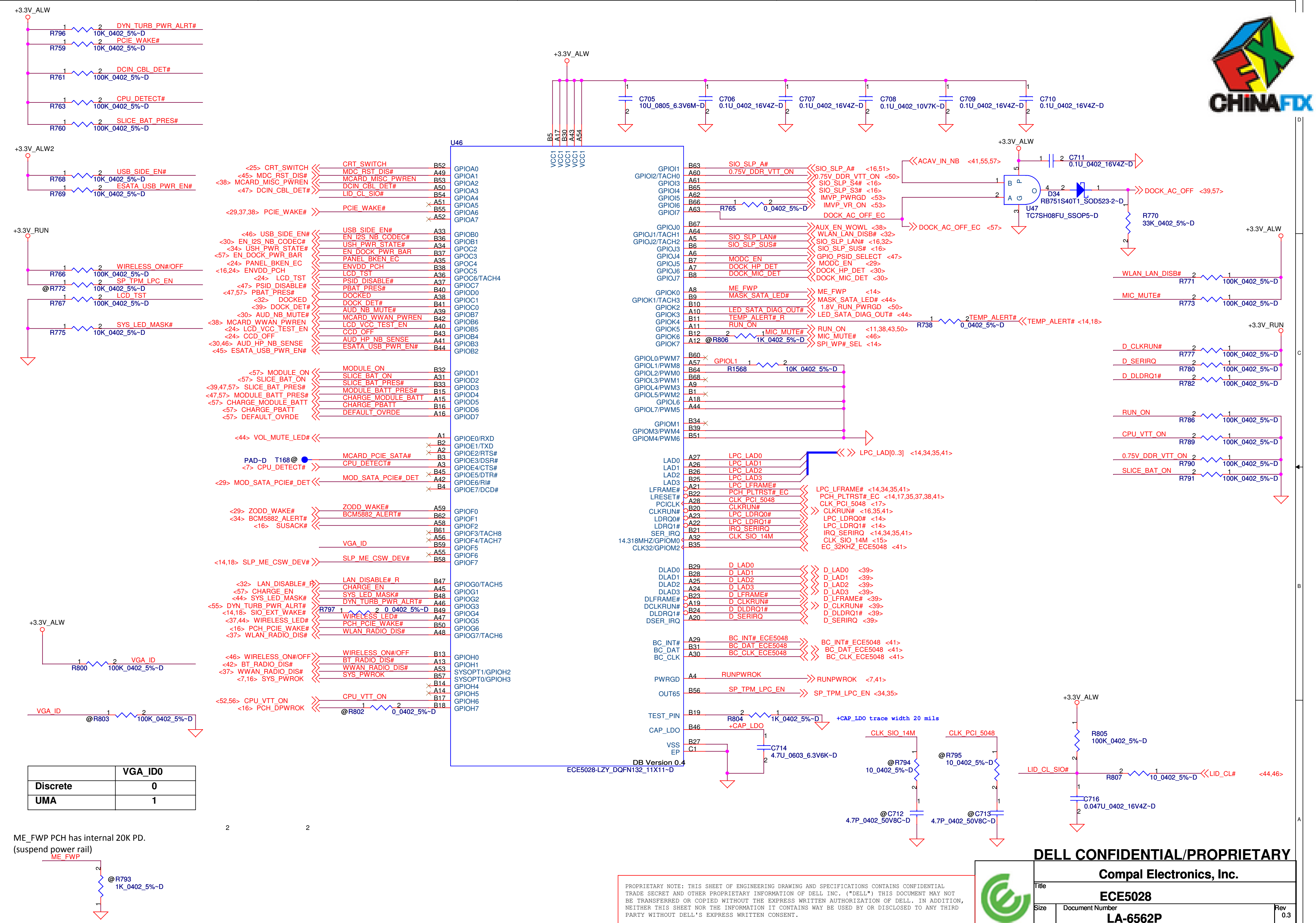
DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title: DOCKING CONN

Size | Document Number: LA-6562P | Rev 0.3

Date: Tuesday, October 12, 2010 | Sheet 39 of 66



	VGA_ID0
Discrete	0
UMA	1

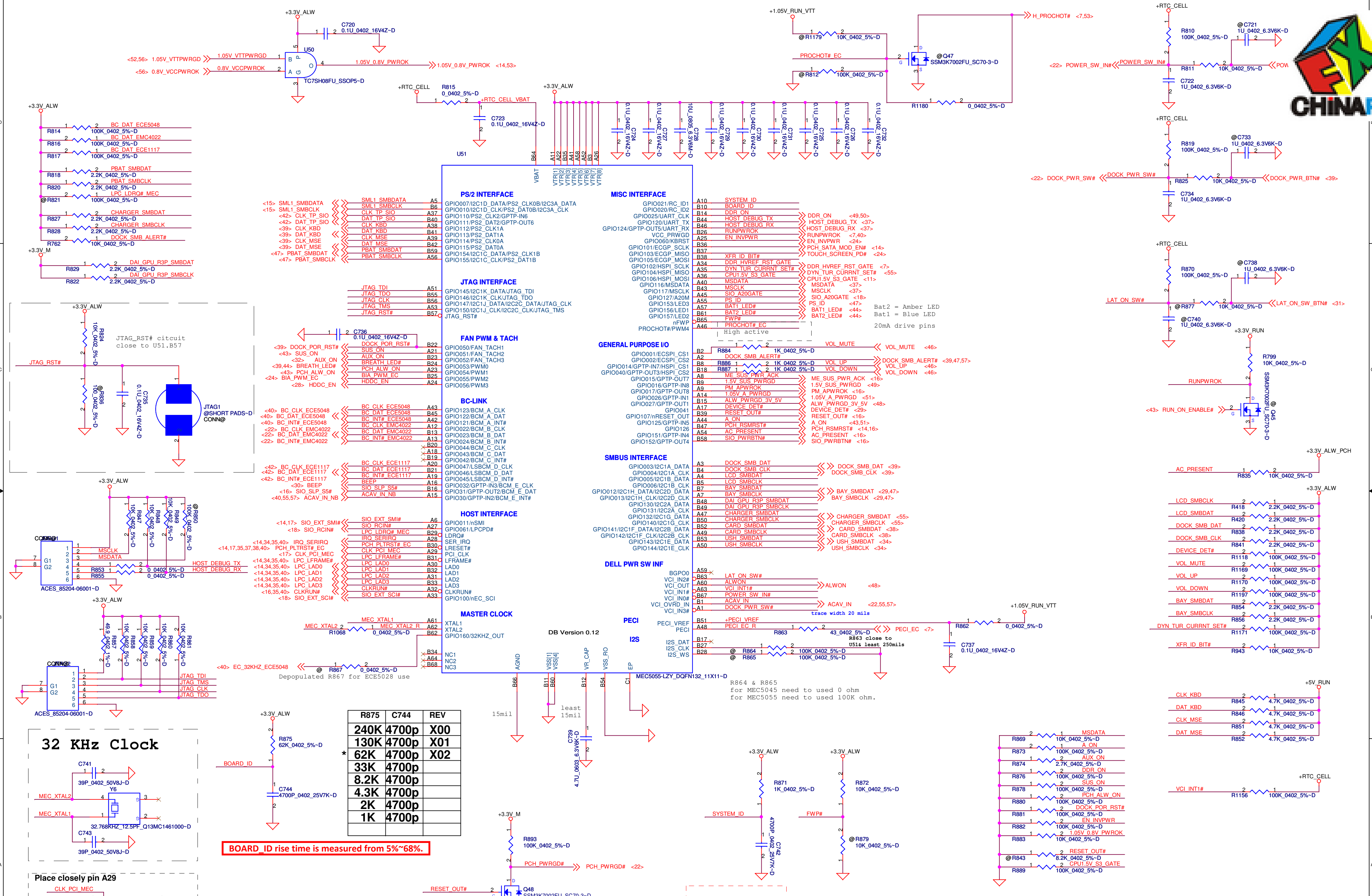
ME_FWP PCH has internal 20K PD.
(suspend power rail)

Compal Electronics, Inc.

Title: ECE5028

Size | Document Number: LA-6562P | Rev 0.3

Date: Tuesday, October 19, 2010 | Sheet 40 of 66



R875	C744	REV
240K	4700p	X00
130K	4700p	X01
62K	4700p	X02
33K	4700p	
8.2K	4700p	
4.3K	4700p	
2K	4700p	
1K	4700p	

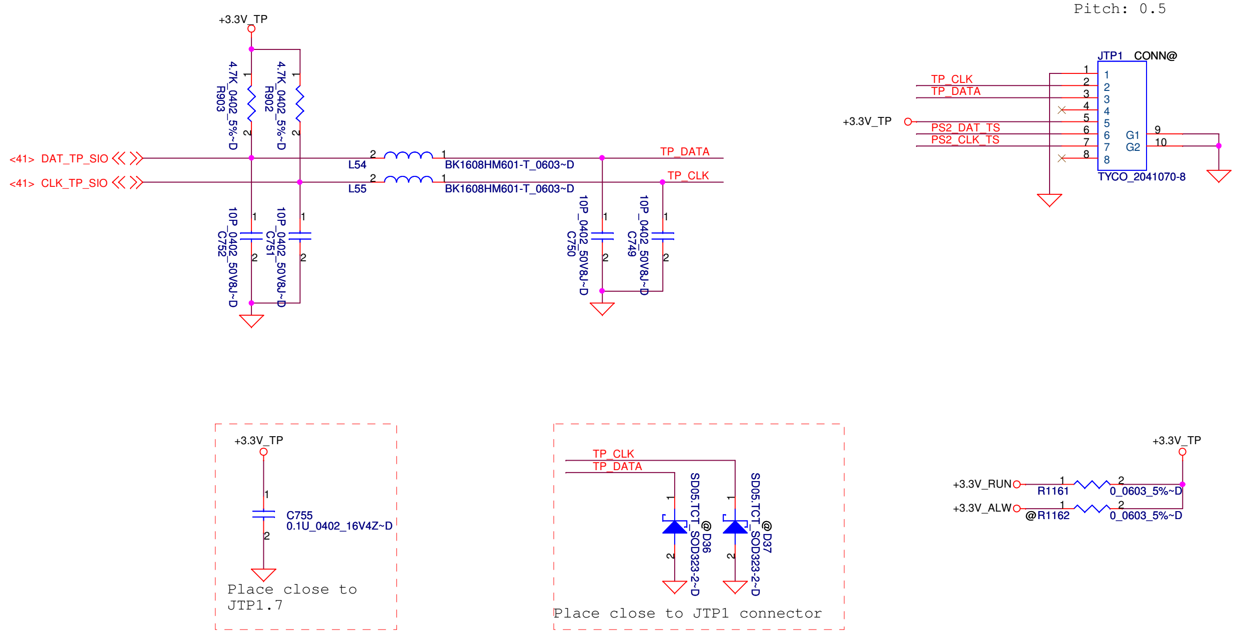
DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title	EMC5055
Size / Document Number	LA-6562P
Rev	0.3
Date:	Tuesday, October 12, 2010
Sheet	41 of 66

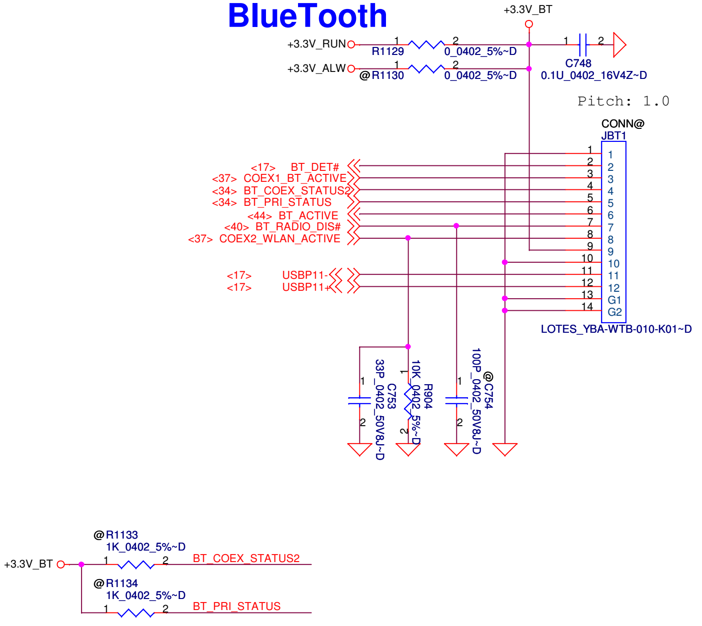
Touch Pad

Pitch: 0.5



BlueTooth

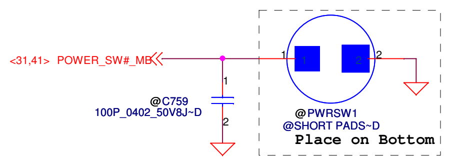
Pitch: 1.0



Keyboard

Pitch: 1.0

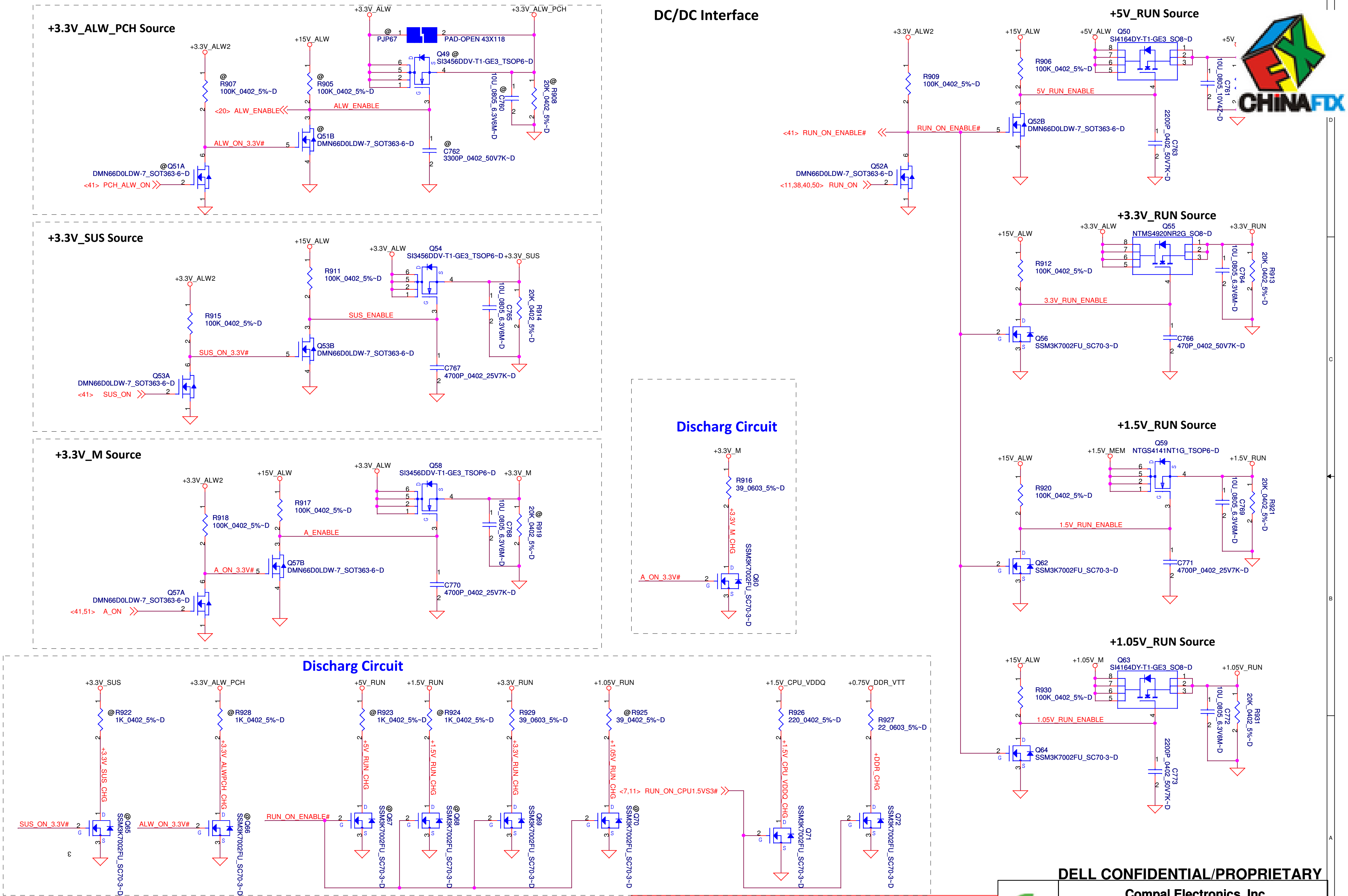
Power Switch for debug



Compal Electronics, Inc.

Title	Touch PAD/Int KB	
Size	Document Number LA-6562P	Rev 0.3
Date: Wednesday, October 20, 2010	Sheet 42 of 66	

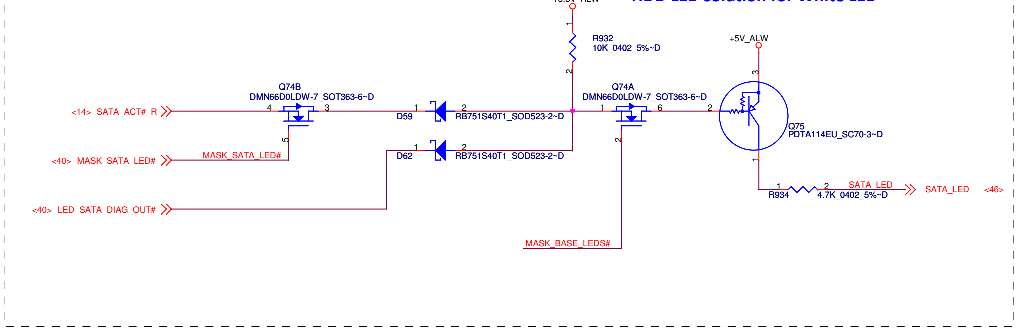
DC/DC Interface



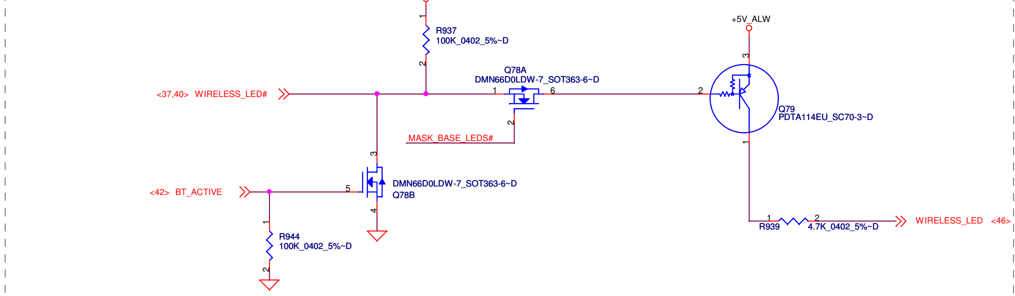
Compal Electronics, Inc.

Title	POWER CONTROL
Size / Document Number	LA-6562P
Rev	0.3
Date	Tuesday, October 12, 2010

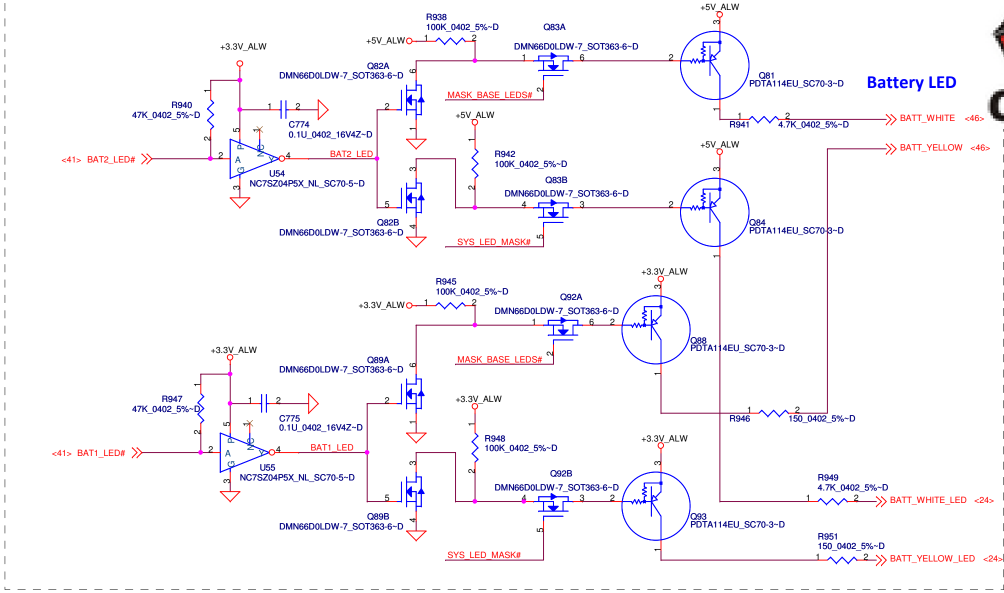
HDD LED solution for White LED



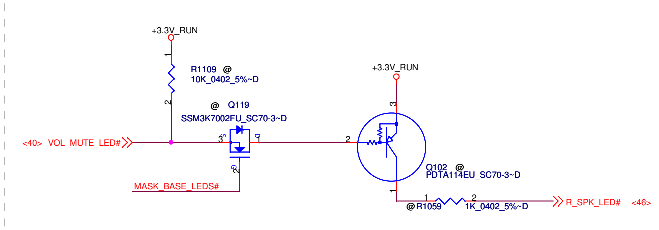
WIRELESS LED solution for White LED

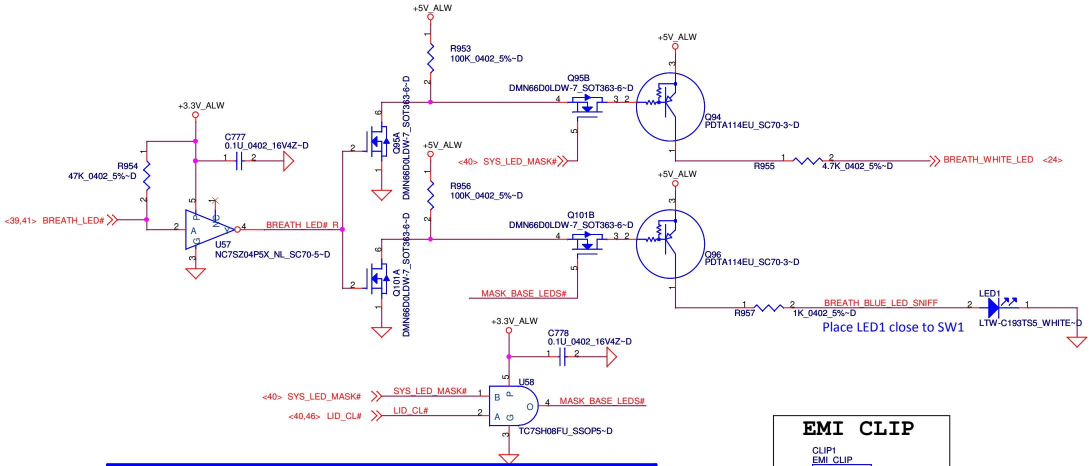


Battery LED



SPK Status LED

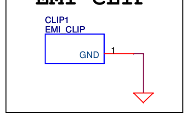




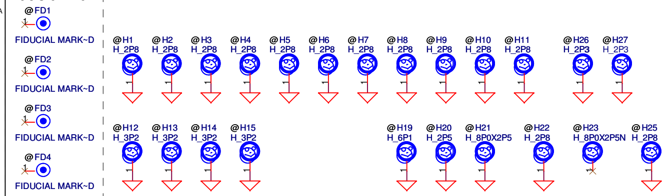
LED Circuit Control Table

	SYS_LED_MASK#	LID_CL#
Mask All LEDs (Sniffer Function)	0	X
Mask Base MB LEDs (Lid Closed)	1	0
Do not Mask LEDs (Lid Opened)	1	1

EMI CLIP



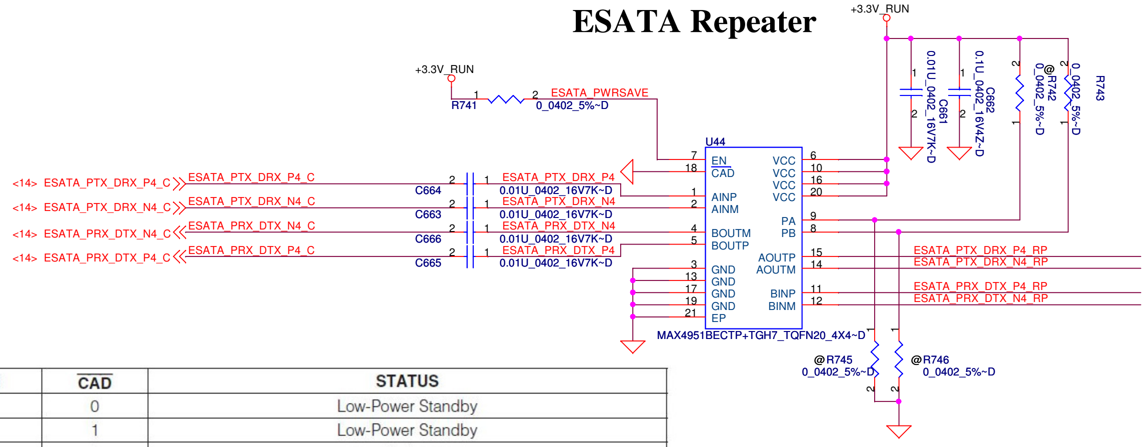
Fiducial Mark



Compal Electronics, Inc.

Title	PAD and Standoff
Size / Document Number	LA-6562P
Rev	0.3
Date:	Tuesday, October 12, 2010
Sheet	44 of 66

ESATA Repeater

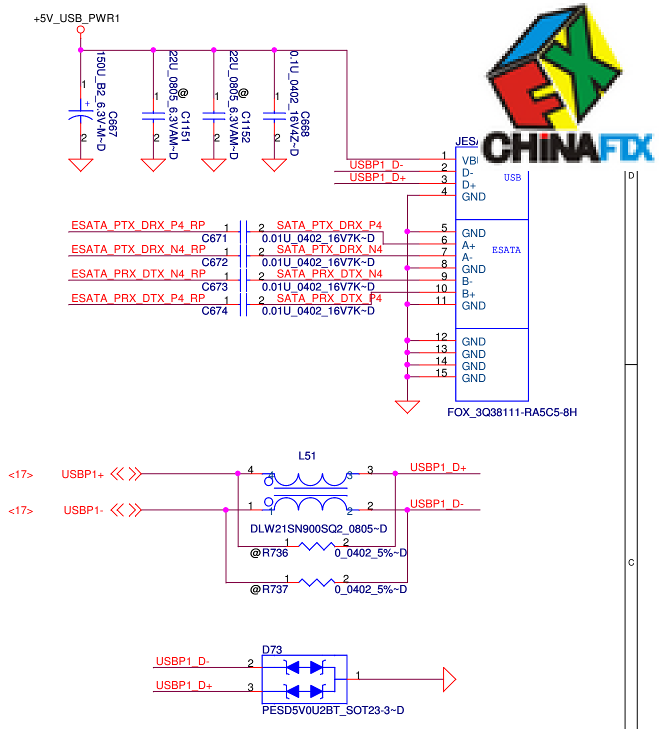


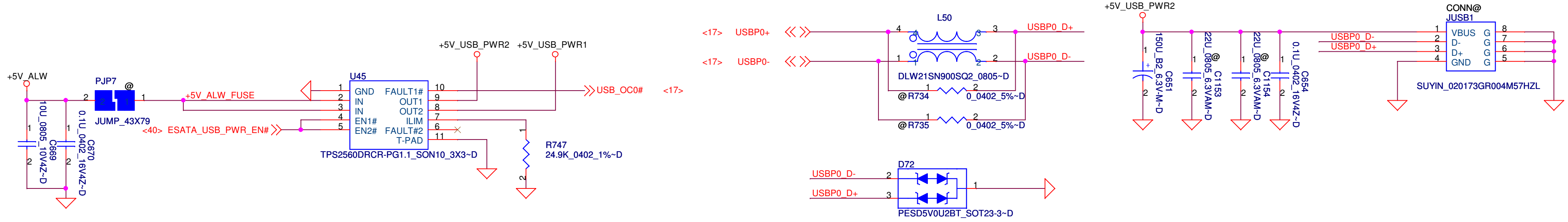
EN	$\overline{CAD}$	STATUS
0	0	Low-Power Standby
0	1	Low-Power Standby
1	0	Active
1	1	Low-Power Standby

EN	PA	PB	CHANNEL A	CHANNEL B
0	X	X	Standby	Standby
1	0	0	Standard SATA	Standard SATA
1	1	0	Preemphasis	Standard SATA
1	0	1	Standard SATA	Preemphasis
1	1	1	Preemphasis	Preemphasis

Note: *PA, PB, EN are internally pulled down to GND by 330kΩ resistors. $\overline{CAD}$ is internally pulled up to V_{CC} by a 330kΩ resistor.*

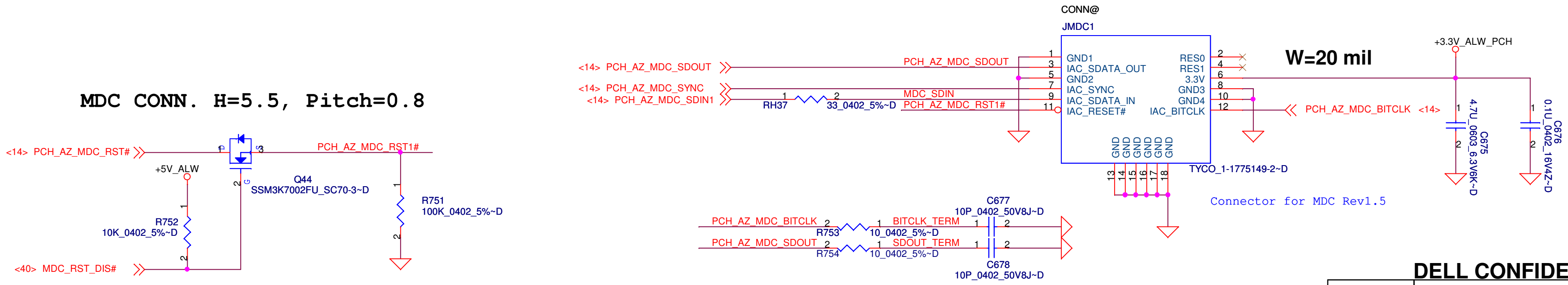
X = Don't care.





MDC CONN. H=5.5, Pitch=0.8

W=20 mil



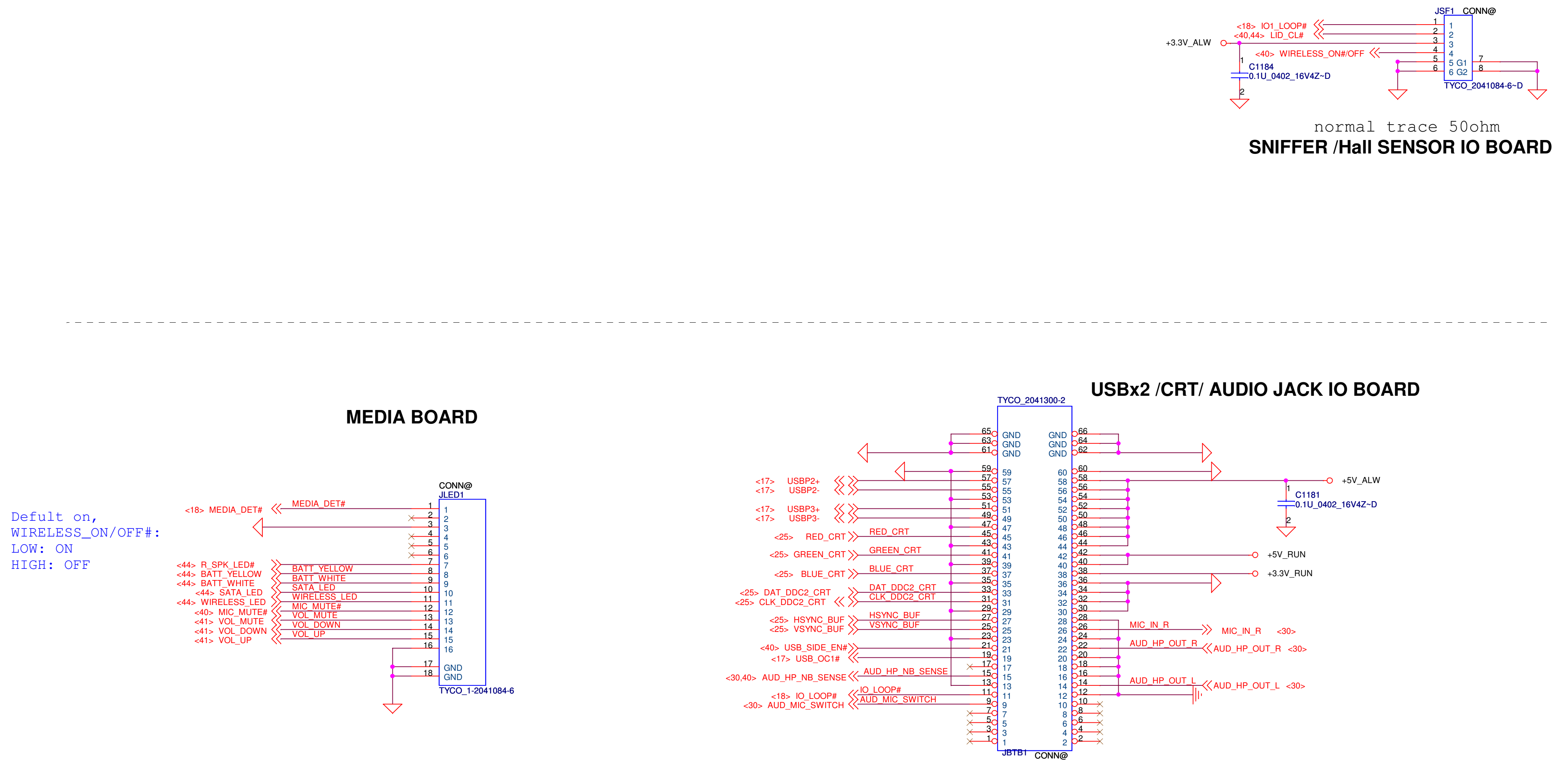
Compal Electronics, Inc.

Title: USBx2/ESATA/MDC

Size | Document Number: LA-6562P | Rev 0.3

Date: Wednesday, October 20, 2010 | Sheet 45 of 66

power 20mil

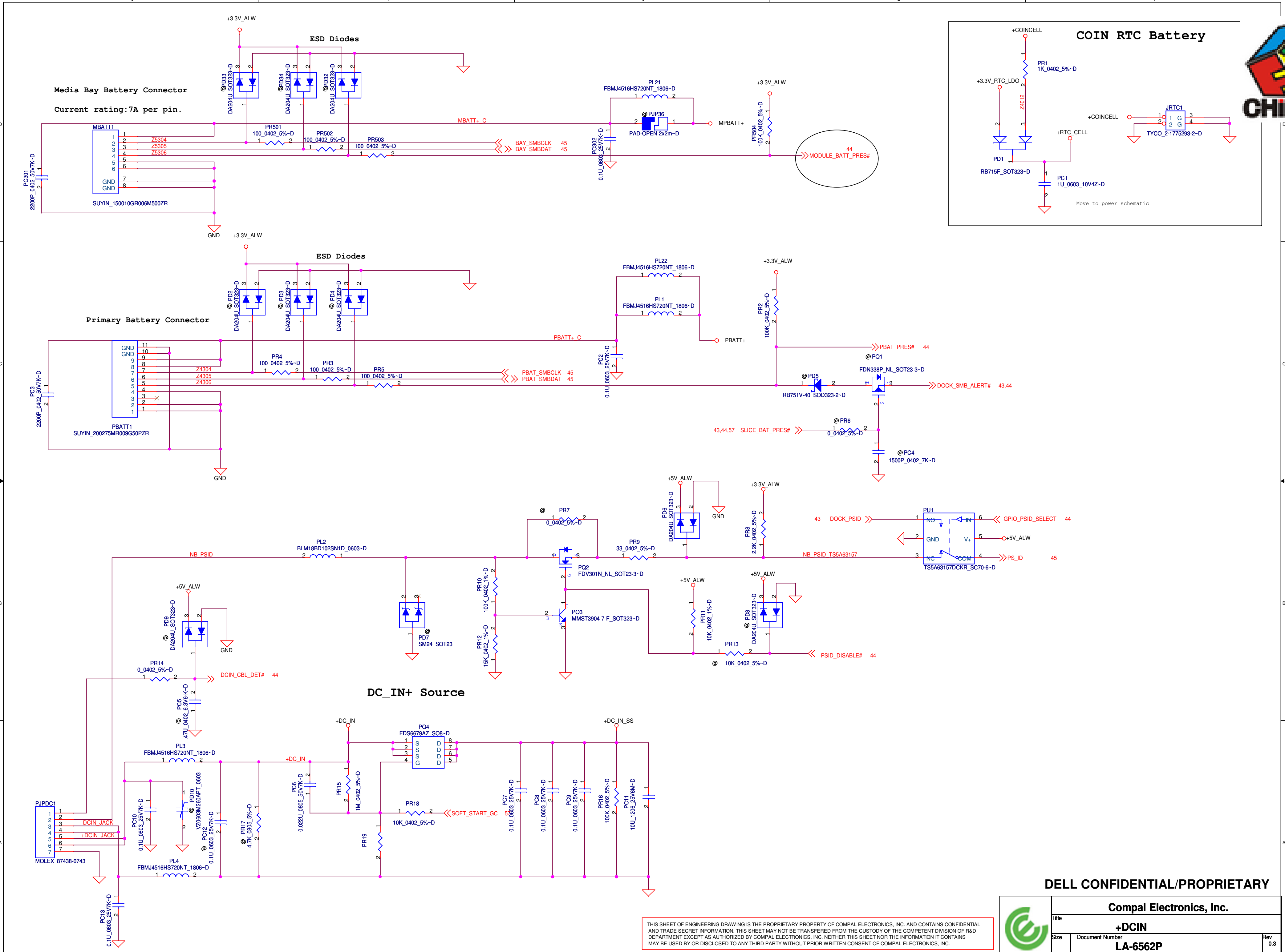


PROPRIETARY NOTE: THIS SHEET OF ENGINEERING DRAWING AND SPECIFICATIONS CONTAINS CONFIDENTIAL TRADE SECRET AND OTHER PROPRIETARY INFORMATION OF DELL INC. ("DELL") THIS DOCUMENT MAY NOT BE TRANSFERRED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF DELL. IN ADDITION, NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT DELL'S EXPRESS WRITTEN CONSENT.

DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title	IO BOARD
Size / Document Number	LA-6562P
Rev	0.3
Date:	Tuesday, October 12, 2010
Sheet	46 of 66



DELL CONFIDENTIAL/PROPRIETARY

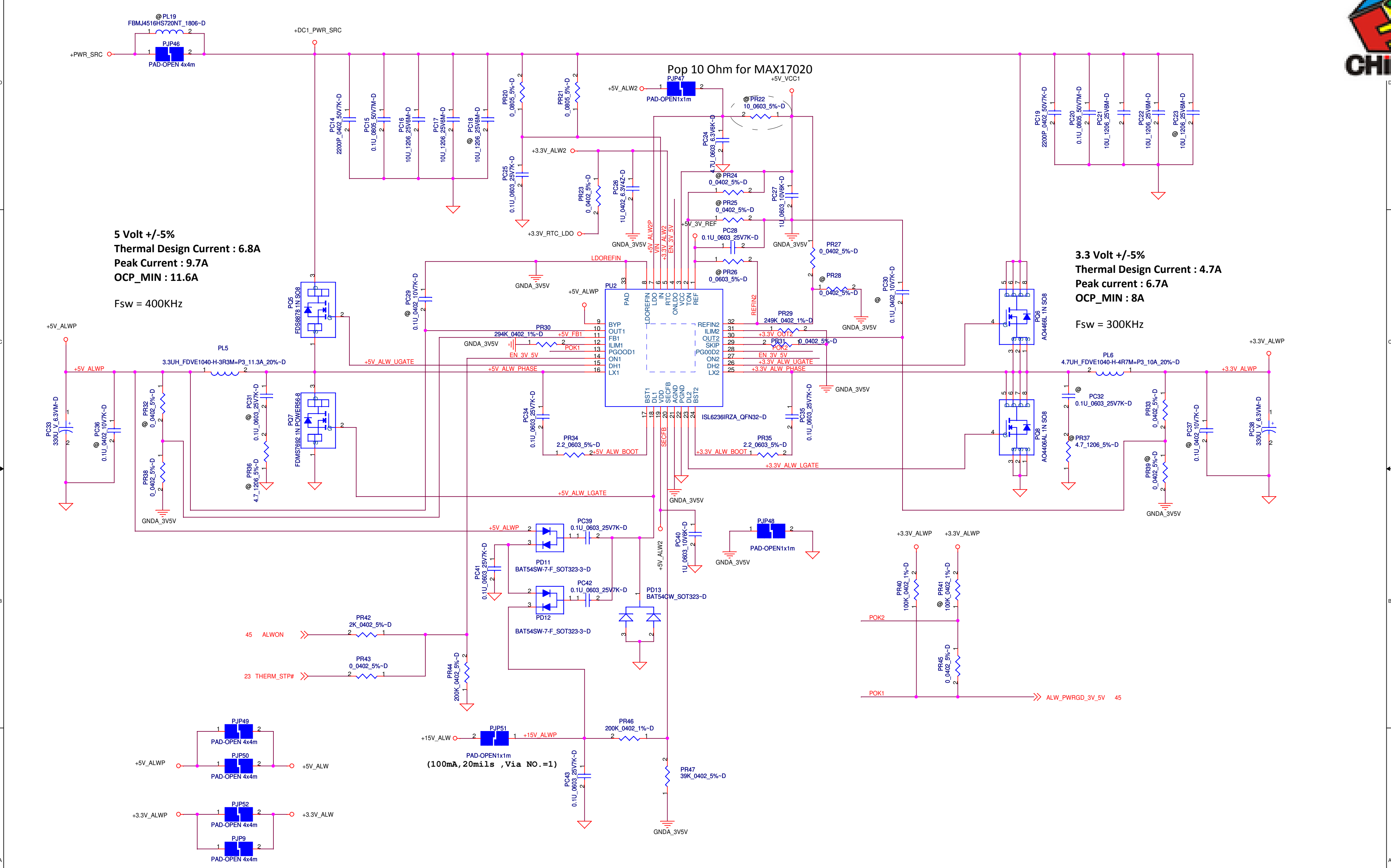
Compal Electronics, Inc.

Title: +DCIN

Size | Document Number: LA-6562P | Rev: 0.3

Date: Wednesday, October 27, 2010 | Sheet 47 of 66

+3.3V_ALWP/ +5V_ALWP/ +5V_ALW2 / +15V_ALWP/ +3.3V_RTC_LDO



5 Volt +/-5%
Thermal Design Current : 6.8A
Peak Current : 9.7A
OCP_MIN : 11.6A

Fsw = 400KHz

3.3 Volt +/-5%
Thermal Design Current : 4.7A
Peak current : 6.7A
OCP_MIN : 8A

Fsw = 300KHz

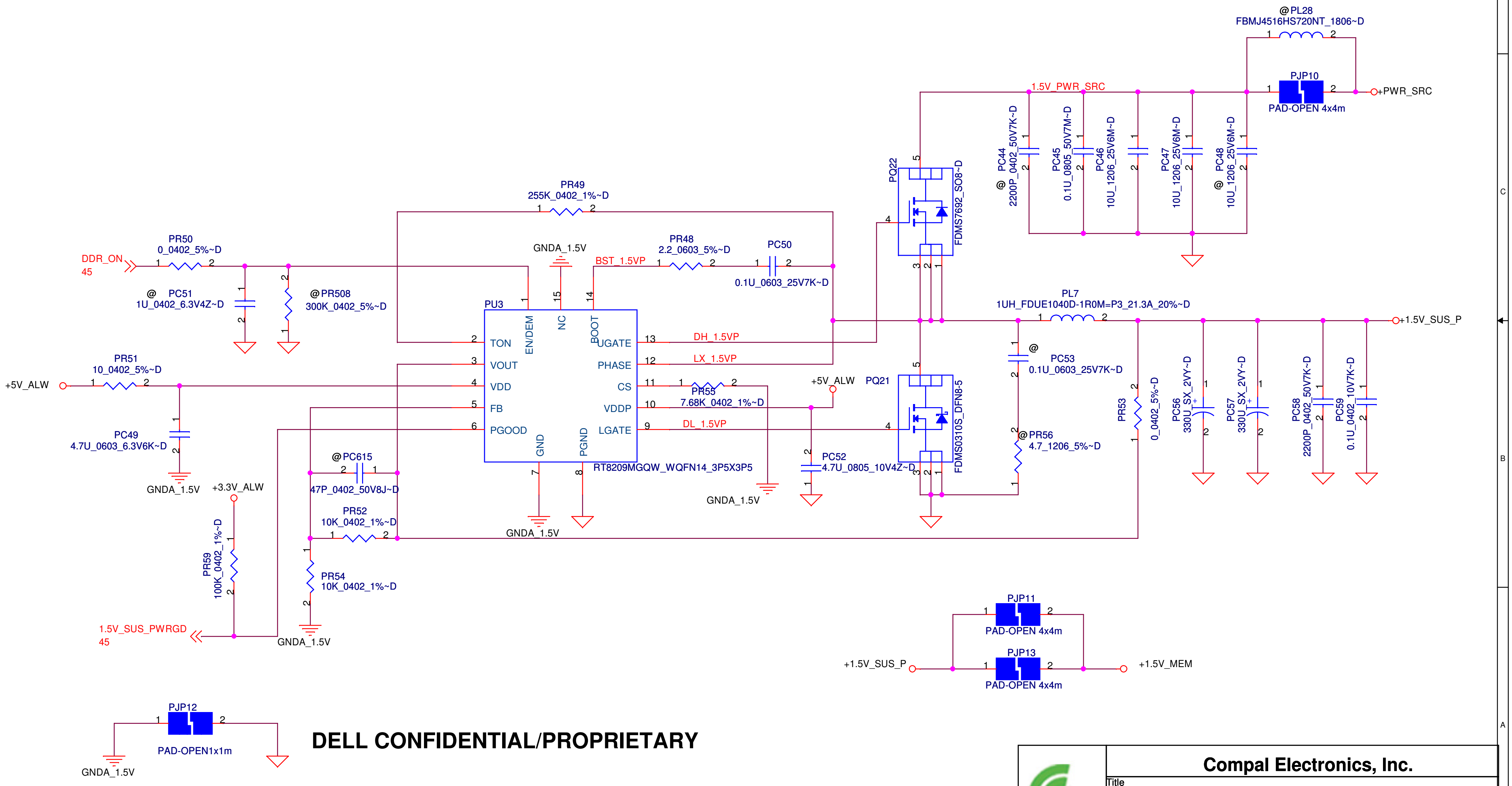
DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.	
Title	DC/DC +3V/ +5V
Size / Document Number	LA-6562P
Rev	0.3
Date:	Wednesday, October 27, 2010
Sheet	48 of 66

+1.5V_SUS_P (RT8209B)

1.5 Volt +/-5%
Thermal Design Curr
Peak current: 13.8A
OCP_MIN:16.6A

Fsw:300KHz



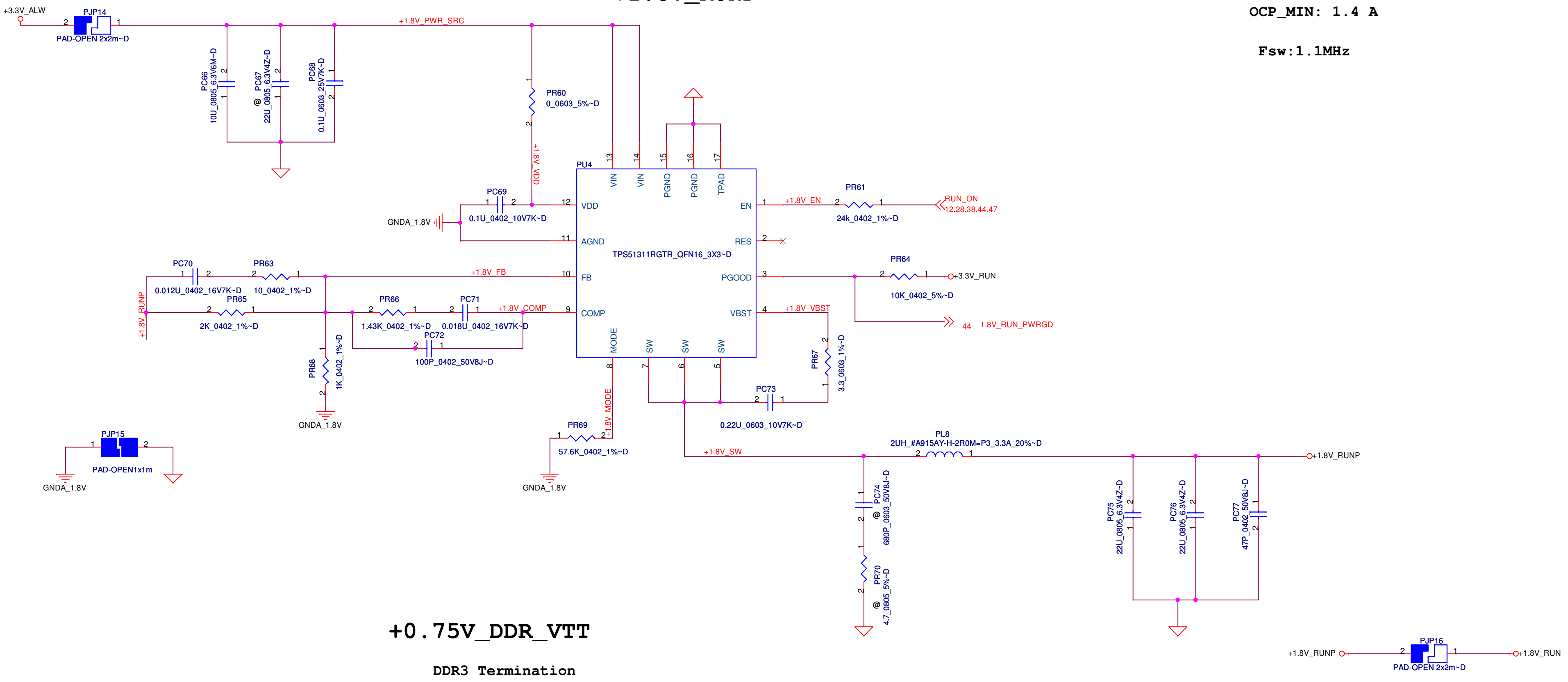
DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.			
Title	+1.5V_MEM		
Size	Document Number: LA-6562P		Rev 0.3
Date: Wednesday, October 27, 2010	Sheet 49 of 66		

+1.8V_RUNP

1.8 Volt +/-5%
Thermal Design Current: 0.82 A
Peak current: 1.17 A
OCP_MIN: 1.4 A

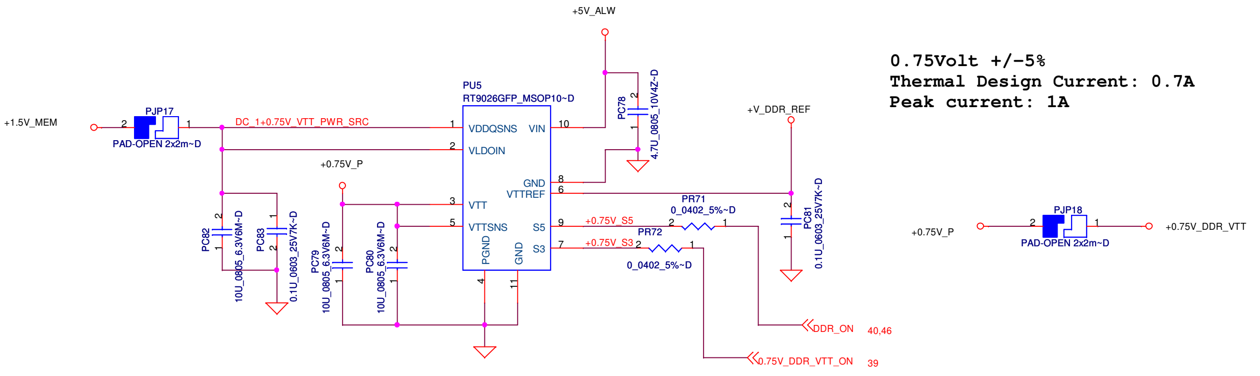
Fsw:1.1MHz



+0.75V_DDR_VTT

DDR3 Termination

0.75Volt +/-5%
Thermal Design Current: 0.7A
Peak current: 1A



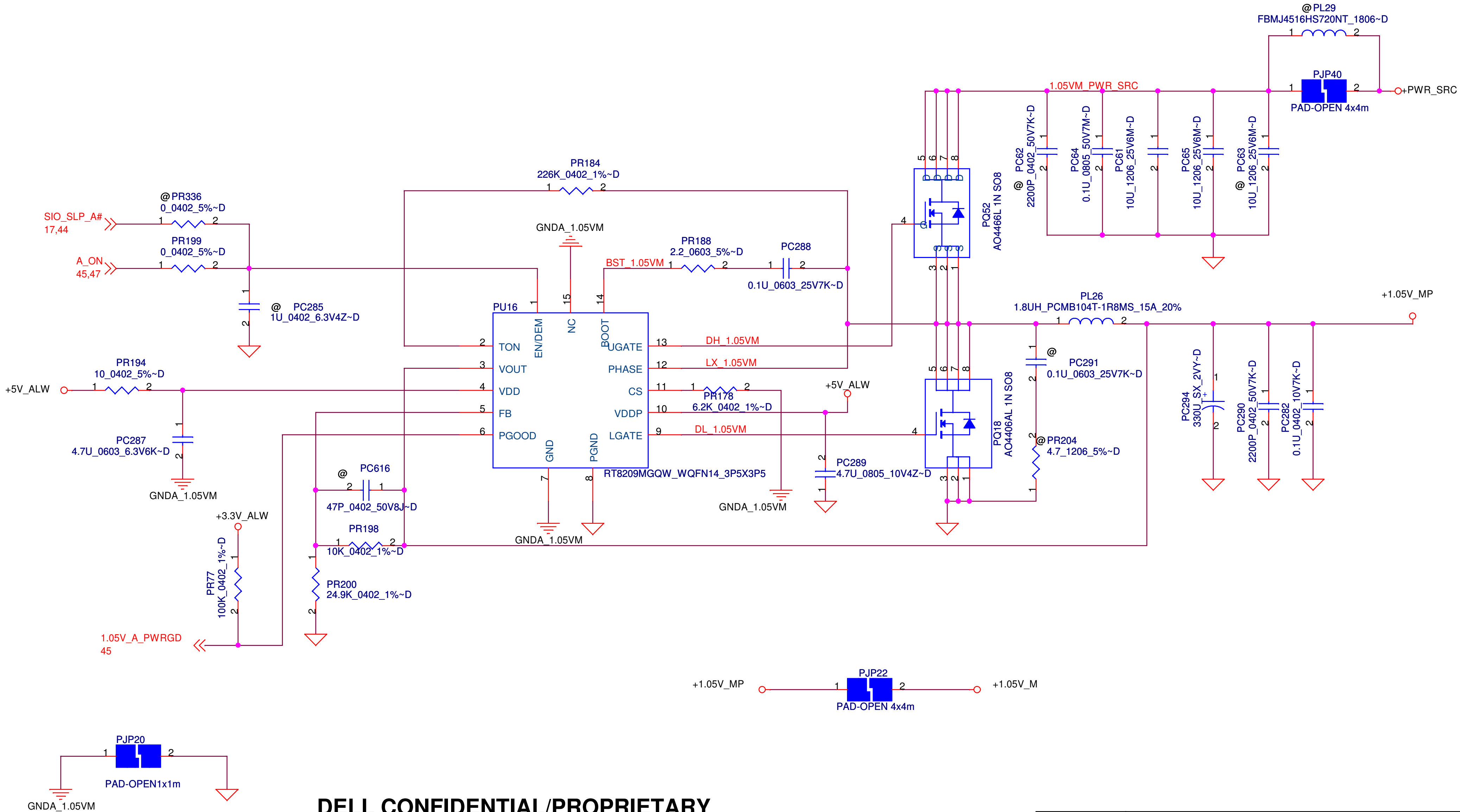
DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.	
Title	+0.75V_DDR_VT/+1.8V_RUN
Size / Document Number	LA-6562P
Rev	0.3
Date:	Wednesday, October 27, 2010
Sheet	50 of 66

+1.05V_M

Fsw:300KHz

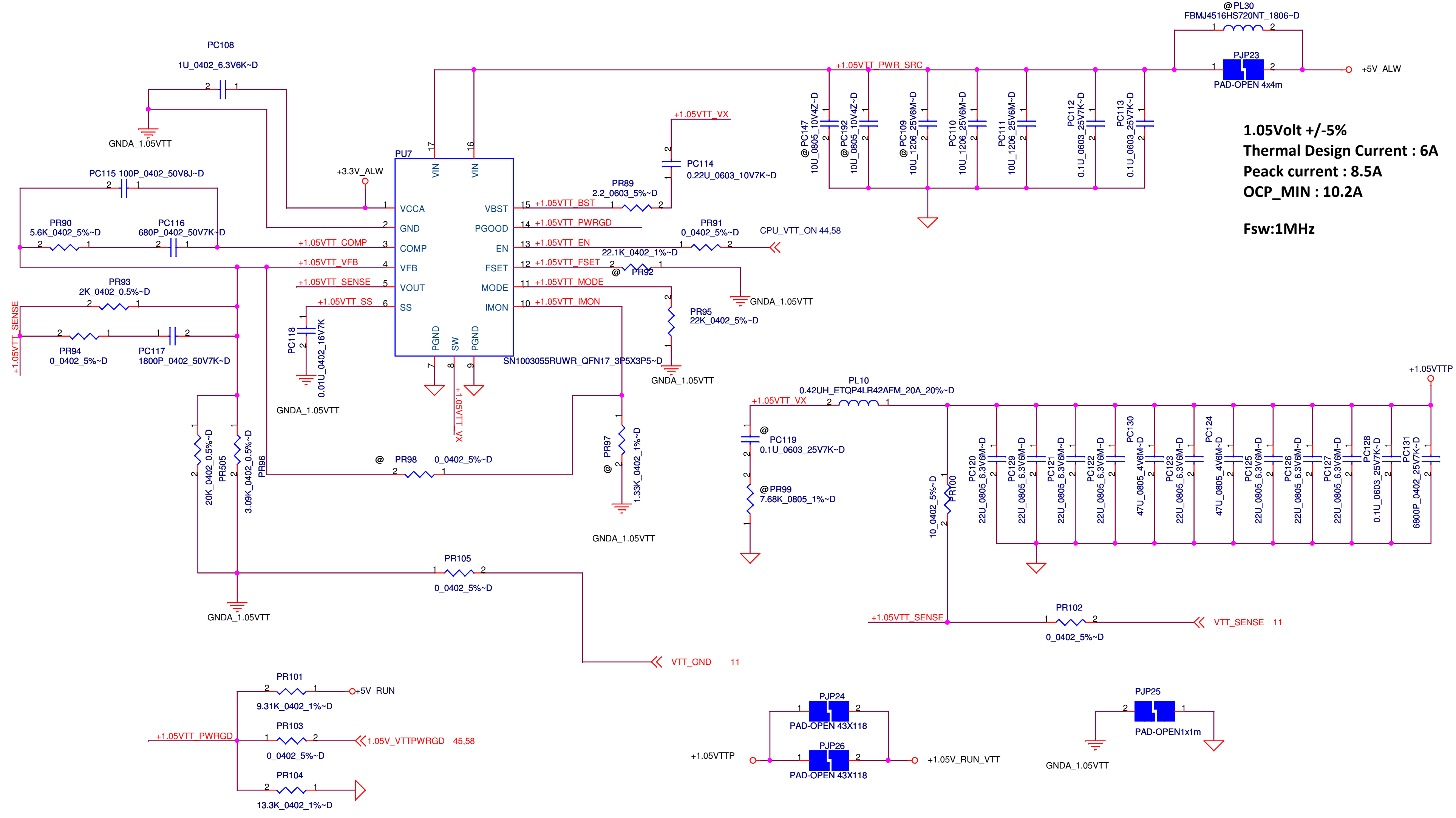
1.05 Volt +/-5%
Thermal Design Current : 2
Peak current : 4.2A
OCP_MIN :5A



DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.		
Title	+1.05V_M	
Size	Document Number LA-6562P	Rev 0.3
Date: Wednesday, October 27, 2010	Sheet 51 of 66	

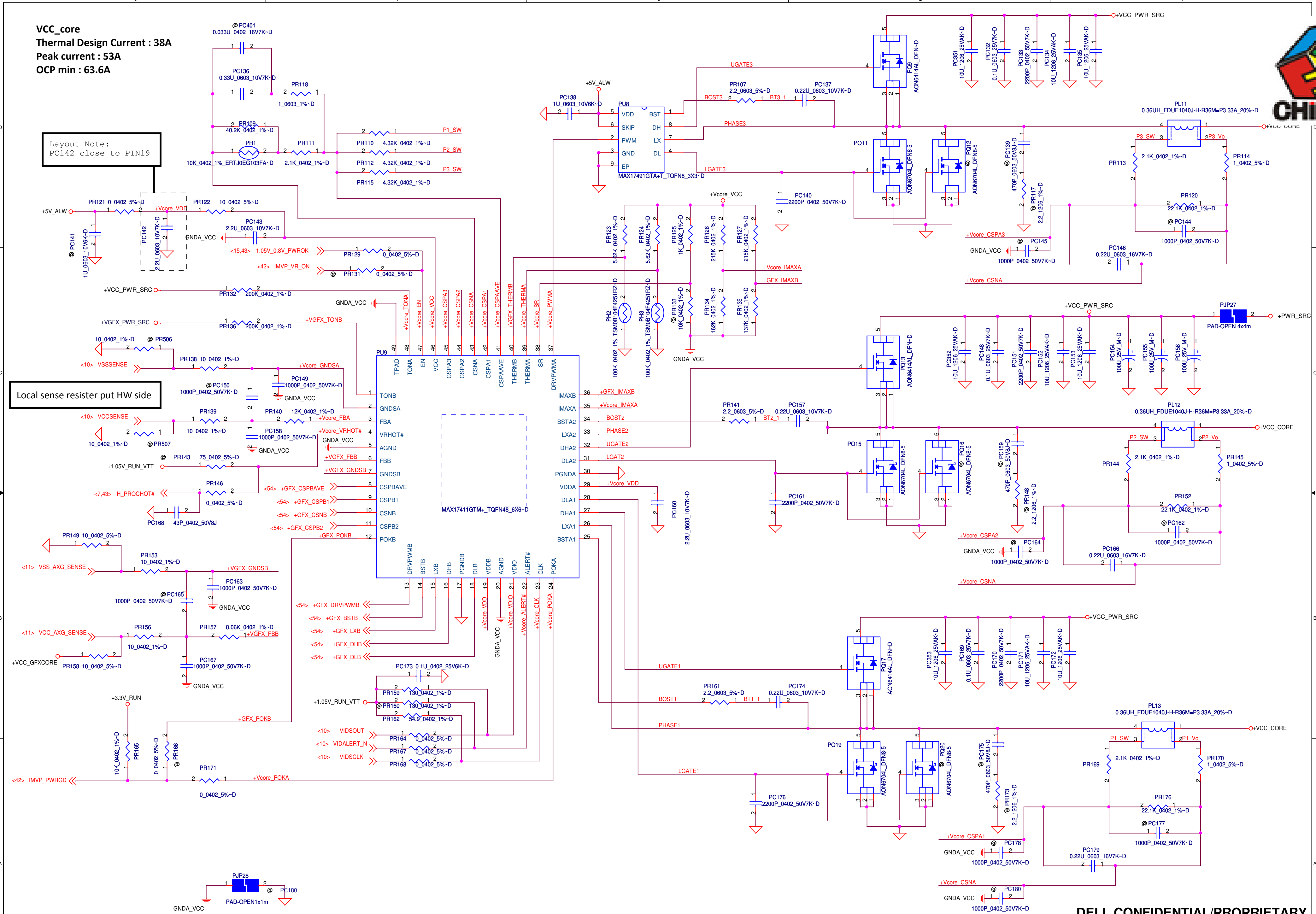
+1.05VTT_RUN



1.05Volt +/-5%
Thermal Design Current : 6A
Peack current : 8.5A
OCP_MIN : 10.2A

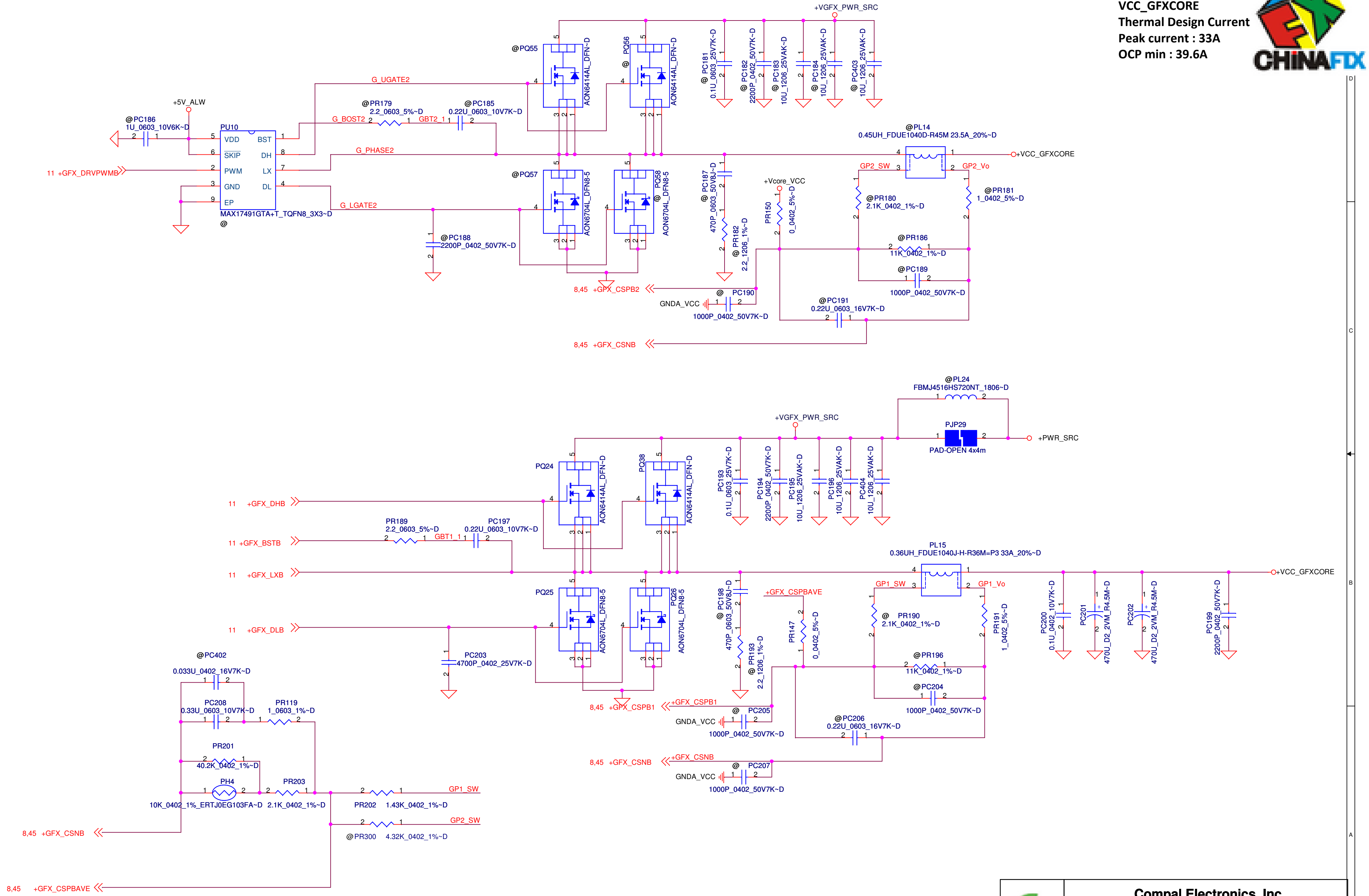
Fsw:1MHz

	Compal Electronics, Inc.
Title	+1.05V_RUN_VTT
Size / Document Number / Rev	LA-6562P / 0.3
Date:	Wednesday, October 27, 2010
Sheet	52 of 66



	Compal Electronics, Inc.
Title	VCORE_MAX17411
Size / Document Number	LA-6562P
Rev	0.3
Date:	Wednesday, October 27, 2010
Sheet	53 of 66

VCC_GFXCORE
Thermal Design Current
Peak current : 33A
OCP min : 39.6A



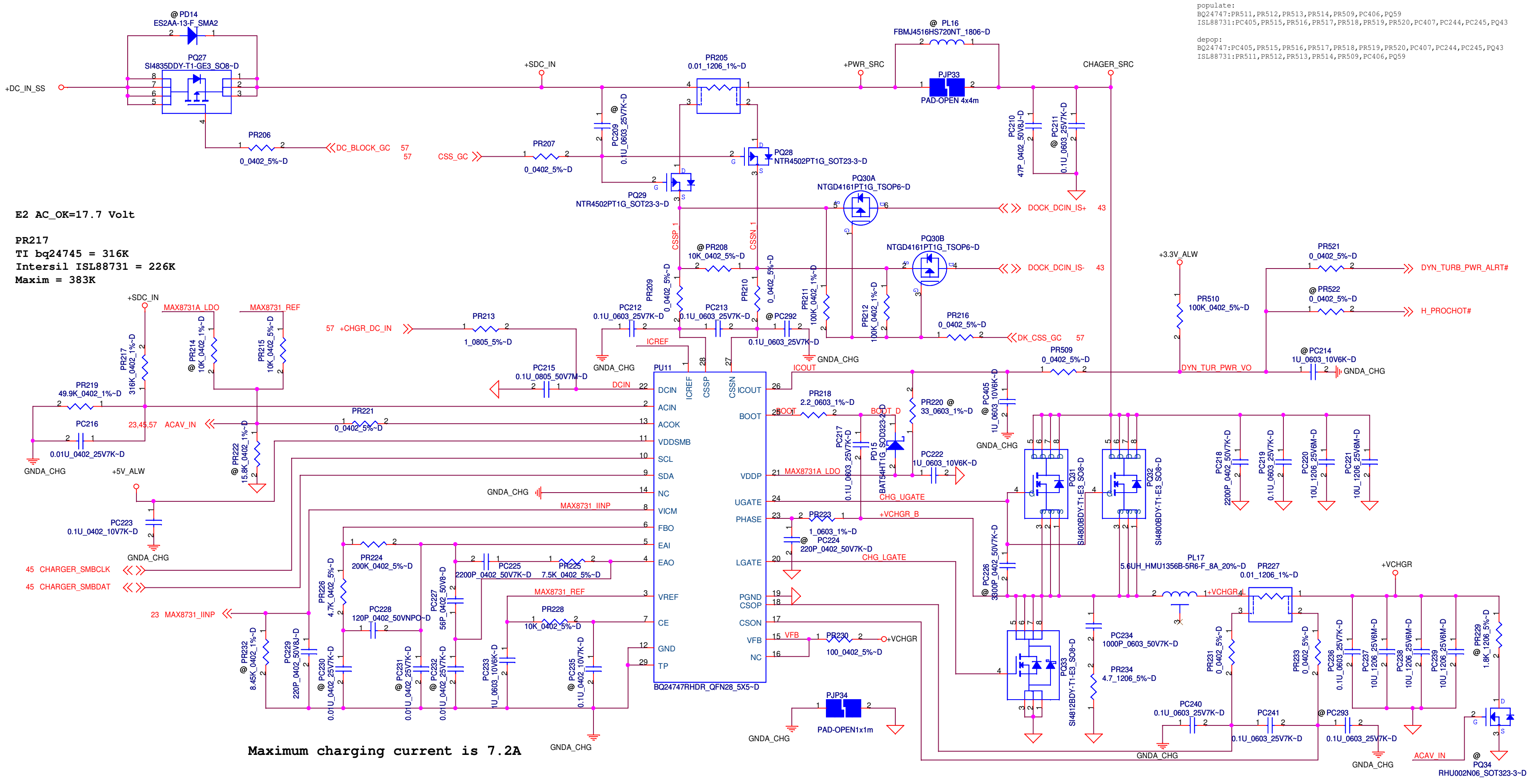
	Compal Electronics, Inc.
Title	**+VCORE/+GFXCORE**
Size / Document Number	**LA-6562P** — Rev 0.3
Date:	Wednesday, October 27, 2010 — Sheet 54 of 66

populate:
BQ24747:PR511,PR512,PR513,PR514,PR509,PC406,PQ59
ISL88731:PC405,PR515,PR516,PR517,PR518,PR519,PR520,PC407,PC244,PC245,PQ43

depop:
BQ24747:PC405,PR515,PR516,PR517,PR518,PR519,PR520,PC407,PC244,PC245,PQ43
ISL88731:PR511,PR512,PR513,PR514,PR509,PC406,PQ59

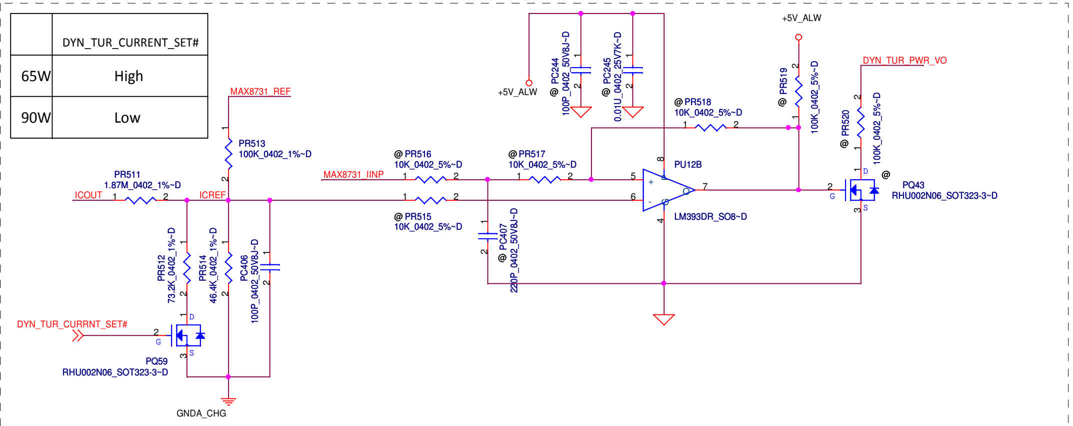
E2 AC_OK=17.7 Volt

PR217
TI bq24745 = 316K
Intersil ISL88731 = 226K
Maxim = 383K

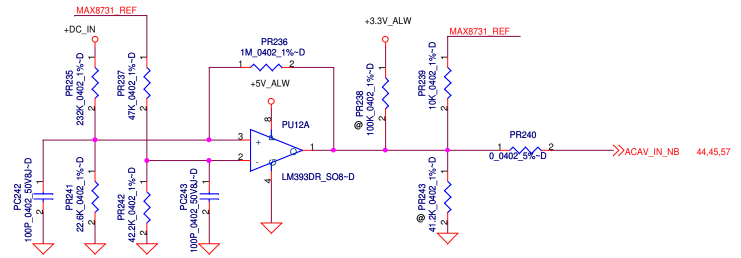


Maximum charging current is 7.2A

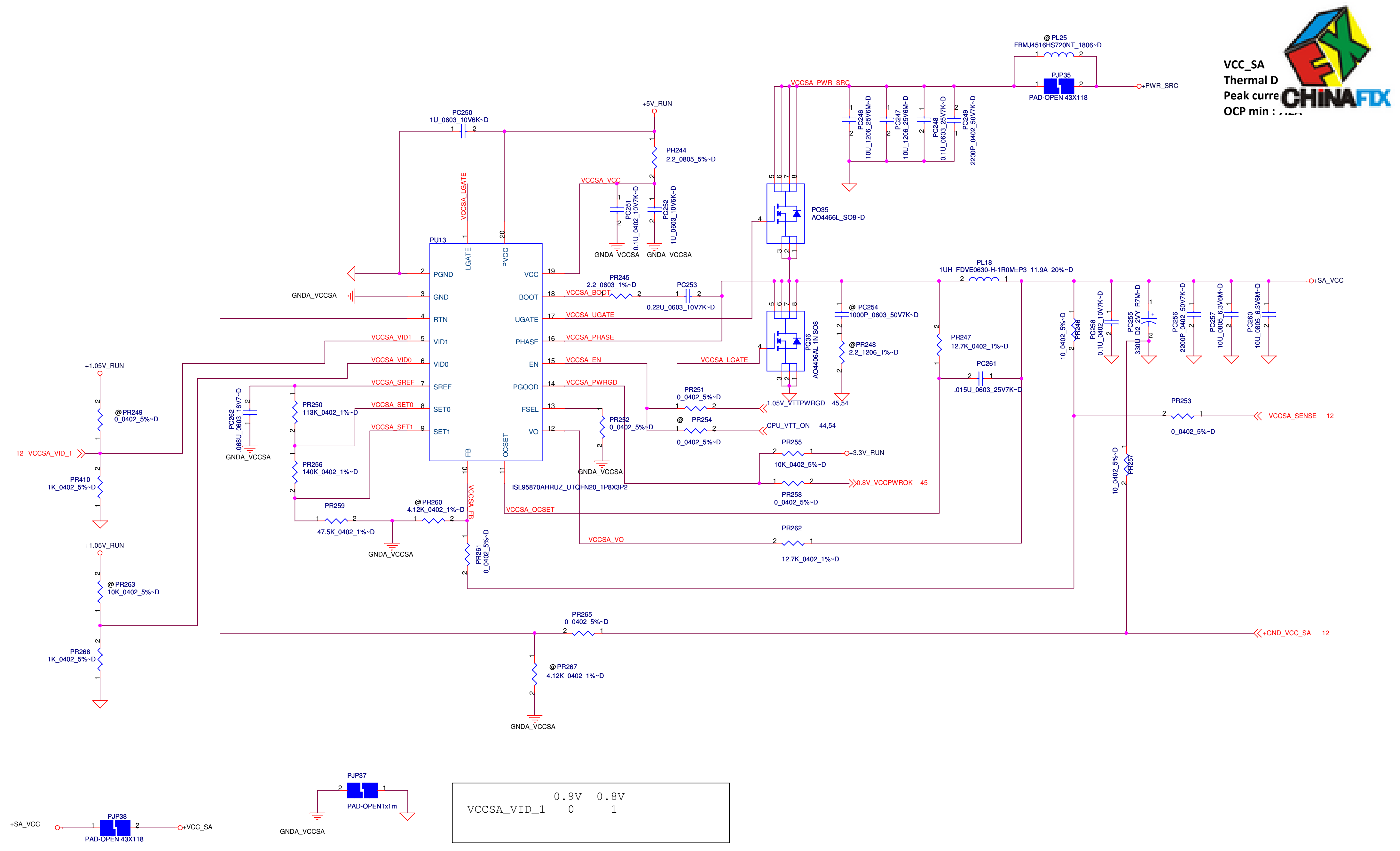
	DYN_TUR_CURRENT_SET#
65W	High
90W	Low



Adapter Protection Circuit fot Turbo Mode



Compal Electronics, Inc.
Title: Charger
Size | Document Number: LA-6562P | Rev: 0.3
Date: Wednesday, October 27, 2010 | Sheet 55 of 66



	0.9V	0.8V
VCCSA_VID_1	0	1

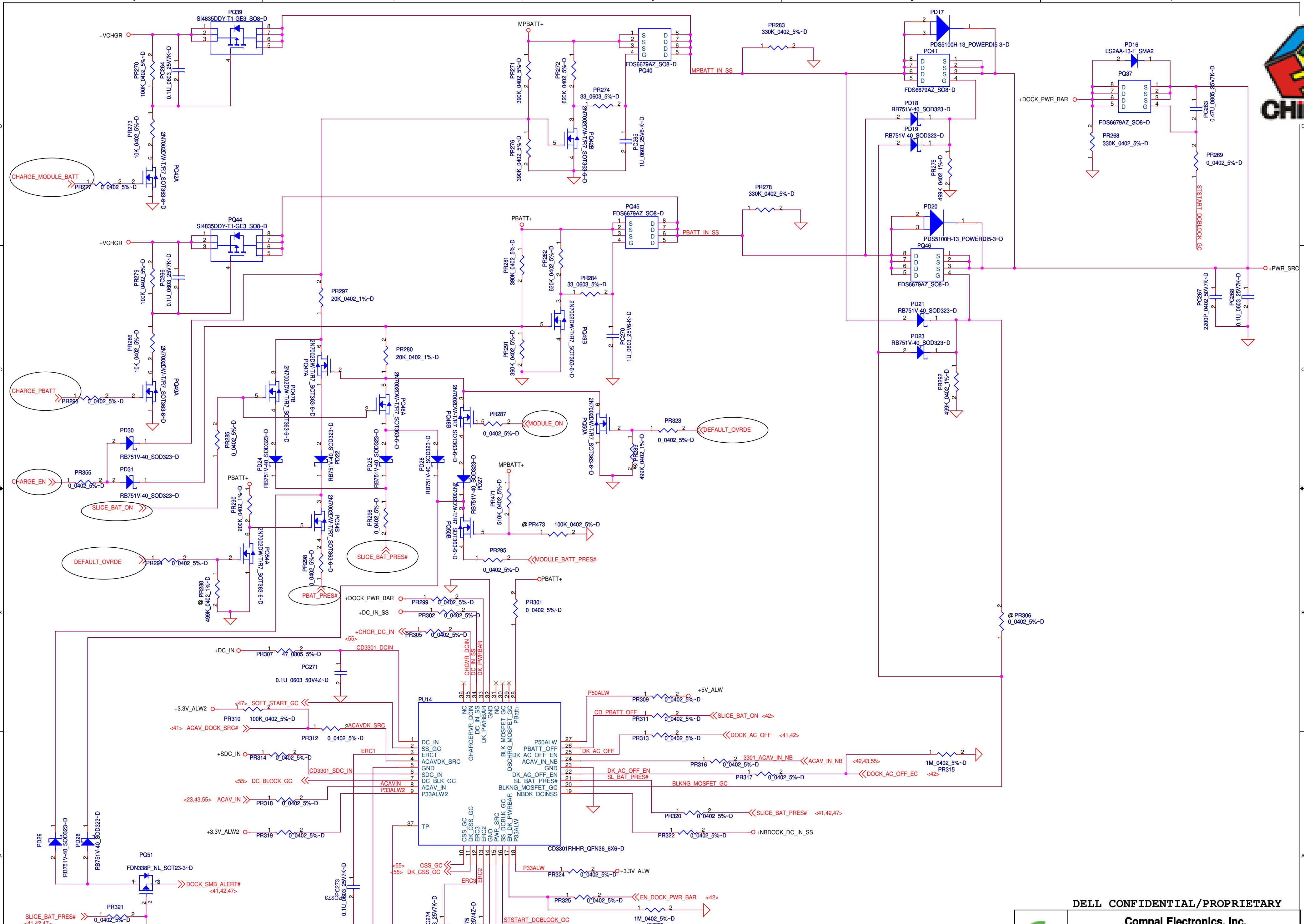
output voltage adjustable network

DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title: **ISL95870A +VCC_SA**

Size | Document Number: **LA-6562P** | Rev 0.3



DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title: Selector

Size | Document Number: LA-6562P | Rev: 0.3

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	
1	7	HW	6/15/2010	COMPAL	Boot issue	Change QC1 control from SUS_ON to RUN_ON_CPU1.5VS3#	X01
2	11	HW	6/15/2010	COMPAL	Modify net name	Change +0.8V_VCC_SA to +VCC_SA	X01
3		HW	6/15/2010	COMPAL	Follow PPM recommendation to change material	Change capacitors from 10uF_0805_10V Y5V to 10uF_0805_6.3V_X5R: C305,C316,C387,C462,C705,C728,C760,C764,C765,C768,C769, C772,CC135,CH58,CH73,CH80 Change capacitors from 10uF_0805_6.3V to 10uF_0603_6.3V: C475,C638,C641,C643 Change resistors to 0402 size: RC134, RH201,RH253,RH208,RH213 Delete RH192 and add PJP51	X01
4	14	HW	6/15/2010	COMPAL	De-pop PCH XDP	De-pop RH1,RH3~RH10,RH12~RH21,RH24,RH283~RH285,CH1	X01
5	14	HW	6/15/2010	COMPAL	Add HDA_SYNC pull up	Add RH41	X01
6	17,29,42	HW	6/15/2010	COMPAL	Change ODD connector from 13 pin to 31 pin	Change ODD connector to 31 pin, add @R1189,RH340 and remove C1168, C1169,C1170,U87,U88,U89, and connect ODD_DET# to U51.B36	X01
7	18	HW	6/17/2010	COMPAL	Remove touch screen PAID pull down circuit	Remove RH241	X01
8	18	HW	6/17/2010	COMPAL	Follow Intel Design Guide Rev1.0	Change RH149 to 1k and RH150 to 4.7k	X01
9	22	HW	6/17/2010	COMPAL	Change EMC4002 to EMC4022	Change U9 to EMC4022, remove R866,R404,C279 and add Q16, C277,Reserve C277	X01
10	26	HW	6/17/2010	COMPAL	For Safety request	Add no stuff D4 and co-lay with F2, change F2 to 2A_8V	X01
11	28, 39	HW	6/17/2010	COMPAL	Change E-SATA repeater to MAX4951BE	Chagne U44 to MAX4591BE and Reserve R1189~R1196 for bypass repeater	X01
12	30	HW	6/17/2010	COMPAL	Change Codec to ZB version	Change U72 to ZB version as 92HD90B2X5NLGXZBX8 and stuff C962	X01
13	46	HW	6/17/2010	COMPAL	ME request	Change the JBTB1 to TYCO_2041300-2 connector	X01
14	33	HW	6/17/2010	COMPAL	Change SI2301BDS to C version	Change Q36 to SI2301CDS	X01
15	33	HW	6/17/2010	BRCOM	Change RFID capacitors for more popular	Change C502,C505 from 1uF to 0.1uF	X01
16	33	HW	6/17/2010	COMPAL	Link R667 to CIS and modify JSD1 connection	Link R667 to CIS to have the correct part number and swap SD/MMCCD# from JSD1 pin16 to pin17, SDWP from JSD1 pin17 to pin 18	X01
17	41	HW	6/17/2010	COMPAL	Board ID	Change R875 to 130K	X01
18	41	HW	6/17/2010	COMPAL	Add pull down on SLICE_BAT_ON	Add R791	X01
19	11,14,42	HW	6/18/2010	COMPAL	EOL concern	Change CC176 to SGA00005H0L, change YH1,Y6 to SJ132P7KW1L	X01
20	43,46	HW	6/18/2010	COMPAL	Change connector	Change JKB1 to same as JSC1	X01
21	41	HW	6/17/2010	COMPAL	Change BAY_SMBDAT and BAY_SMBCLK pull-up resistors to +3.3V_ALW	Change R854, R856 pull up power rail to +3.3V_ALW	X01

Change JLED1 to TYCO_1-2041084-6

DELL CONFIDENTIAL/PROPRIETARY

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	
21	43	HW	6/18/2010	COMPAL	Change TP pin definition	Reverse TP pin definition for PT	X01
22	14	HW	6/18/2010	COMPAL	Add RTC PAID function	Add RTC_DET# and RH355 on PCH GPIO33	X01
23	41,42	HW	6/18/2010	COMPAL	Add series resistor and pull up resistors on MIC_MUTE#, VOL_MUTE,VOL_UP,VOL_DOWN	Add R773,R806,R884,R886,R887,R1169,R1170,R1197	X01
24	24,44	HW	6/18/2010	COMPAL	Correct net name for LED signal	Modify signal name BREATH_BLUE_LED to BREATH_WHITE_LED and BREATH_BLUE_LED_SNIFF to BREATH_WHITE_LED_SNIFF	X01
25	41	HW	6/18/2010	COMPAL	Correct net name	Modify R1132.2 from SUSACK#_R to SUSACK#_EC	X01
26	32	HW	6/21/2010	INTEL	Remove useless resistors	Remove R556, R558, R559, R560 and short the pin1 and pin2 together	X01
27	14	HW	6/22/2010	COMPAL	Modify BOM Structure	Correct RH45 BOM structure	X01
28	24,28,29, 32,37,44	HW	6/22/2010	COMPAL	Change part for Halogen free	Change Q18,Q27,Q30,Q34,Q38,Q40,Q42,Q49,Q54,Q58 to HF part	X01
31	44	HW	6/23/2010	COMPAL	Solution +1.5V_RUN voltage drop issue	Change Q59 from SI3456BDV to NTGS4141NT1G	X01
32	27	HW	6/23/2010	COMPAL	Add PU 2.2K on PCH_DDPC_CTRLDATA, PCH_DDPC_CTRLCLK,PCH_DDPD_CTRLDATA, PCH_DDPD_CTRLCLK,	Add R487~R490 2.2 Kohm pull up to +3.3V_RUN	X01
34	44	HW	6/25/2010	COMPAL	NTMS4107NR2G EOL	Change Q55 to NTMS4920NR2G	X01
35	14	HW	6/25/2010	COMPAL	Follow Intel XDP design	Change RH43,RH44,RH45 to 200 ohm	X01
36	24	HW	6/25/2010	COMPAL	Change LVDS connector to 40 pin	Change JLVDS1 to 40 pin	X01
37	14	HW	6/23/2010	COMPAL	Add serial damping on SPI_CS0#,SPI_CS1# to avoid SPI EA fail issue	Add serial damping resistor R935 47 ohm on SPI_CS0#, R936 22ohm on SPI_CS1#	X01
38	24	HW	6/25/2010	COMPAL	PT panel change touch screen pin definition	Change JTS1 pin definition for new TS pin define	X01
39	14,29, 36,42	HW	7/1/2010	COMPAL	Modify Module Bay circuit	1.Remove R1181,R1182,R1189. 2.Change BAY_SMBUS, DEVICE_DET# pull up power rail from +3.3V_RUN to +3.3V_ALW. 3.Change net name ODD_DET# to PCH_SATA_MOD_EN#. 4.Add Q123,Q76,R513,R514,R515 for USB_SMI# circuit. 5.De-pop C627,R712	X01
40	7	HW	7/1/2010	COMPAL	For support XDP device	De-pop RC9	X01
41	15,18, 41,42	HW	7/1/2010	COMPAL	Base on GPIO map to modify	1. Move SLP_ME_CSW_DEV# from GPIO45 to GPIO28, add MCARD_PCIE_SATA# on 5028 GPIOE3. 2. Remove RH238. 3. Change SLICE_BAT_PRES# pull up power rail from +3.3V_ALW2 to +3.3V_ALW. 4. Add R889	X01
42	24	HW	7/1/2010	COMPAL	PWM function	Remove R1139,R1140 and add D68,D69	X01
43	11	HW	7/1/2010	COMPAL	VCCSA VID circuit	CCSA_VID_1 and pop RC138	X01

DELL CONFIDENTIAL/PROPRIETARY

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	
21	22	HW	7/2/2010	COMPAL	Modify thermal diode for thermal request	Remove C268,C269,use DP1/DN1 for CPU,DP3/DN3 for DIMM,DN5/DP5 for WWAM	X01
22	14,15,32 36	HW	7/8/2010	COMPAL	Meet Crystal EA chnage caps value.	1. CH18, CH19 change to 12P_0402_50V8J~D 2. C470, C471 change to 27P_0402_50V8J~D 3. CH2, CH3 change to 15P_0402_50V8J~ 4. C591, C592 6.8P_0402_50V8D~D	X01
23	36	HW	7/12/2010	COMPAL	O2 suggest 1. add the damping resistors 33ohm on the (SD/MMCDAT0-7 and SD/MMCCMD) 2. change the resistor RE7 on the SD/MMC_CLK to 33ohm.	1. Add R1198~R1205 33 ohm 2. RE7 change to 33 ohm	X01
24	24,45,29	HW	7/12/2010	COMPAL	EMC request 1.Add 220 ohm bead at BIA_PWM_LVDS for PCI noise 2. Add 90 ohm common mode choke L50,L51 at USBP0+/- and USBP1+/- for USB R/W noise 3. Reserve 150pF bypass capacitor at ODD DEVICE_DET 4..Add 220ohm Bead at DMIC_CLK for DMIC noise	1. Add LE3 BLM18BB221SN at BIA_PWM_LVDS 2. L51,L50 change to POP, R734~R737 change to De POP. 3. Reserve CH7 150P 4. add LE2 220 ohm bead instead of R1106.	X01
25	24,45	HW	7/13/2010	COMPAL	PPM recommendation to change material	1.C300, C669 from 10U 16V Y5V 1206 change to 10U 10V Z Y5V 0805	X01
26	41	HW	7/13/2010	COMPAL	SMSC request 1.I2S_CLK, I2S_WS pull down resistors depopulated	R864 and R865 can be depopulated	X01
27	33	HW	7/15/2010	COMPAL	Hi-Pot EA Fail	JLOM1.14 change to NC net; JLOM1.15 change to GND net,Remove C1165,C1166	X01
28	37,44	HW	7/15/2010	COMPAL	Modify LED circuit	Remove R1578,R1579,R1580,D42,D60,D61, add Q77,Q124,R705,R718,R719	X01
29	26	HW	7/15/2010	COMPAL	Meet HDMI EA, EMI	1.L19,L20,L21,L22 change to Populated 2.R470,R471,R468,R469,R462,R466,R451,R459 change to Depopulated	X01
30	37	HW	7/15/2010	COMPAL	MINI card CONN from H9.9 change to H9	JMINI1,JMINI2,JMINI3 change to LOTES_AAA-PCI-047-P10-A	X01
31	44	HW	7/15/2010	DELL	1.Remove MIC MUTE LED circuit, 2.Reserve SPK MUTE LED circuit	1.Remove the R1108,Q119,R1061,Q105 parts as MIC mute circuit 2.Reserve the R1109,Q119,Q102,R1059 parts as SPK mute circuit, Change Q119 to SSM3K7002FU	X01
32	14,17,18 40,41	HW	7/16/2010	COMPAL	Follow GPIO MAP	1.Remove R1567~R1577. 2.U46.B64,A9,A18,A44,B39,B51 connect to GND direct. 3.R796 Net rename to DYN_TURB_PWR_ALRT# then change to 10K value and pull up to +3.3V_ALW power rail. 4.Add GPIO DYN_TUR_CURRNT_SET# TO U51.A35 and add R1171 10k pull up. 5.SIO_EXT_SMI# GPIO form PCH.GPIO1 change to PCH.GPIO14 and add RH51 10kohm Pull up 6.RH164 change to PCH_GPIO1 net. and remove RH254	X01
33	33	HW	7/19/2010	COMPAL	ME change reuqest	JLOM1 change to TYCO_2010019-3	X01
34	28,44	HW	7/19/2010	COMPAL	Diode parts sync	3751S40T1_SOD323-2~D	X01

DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title: EE P.I.R (3/5)

Size | Document Number: LA-6562P | Rev: 0.3

Date: Tuesday, October 12, 2010 |

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	
57	36	HW	7/19/2010	COMPAL	OZ600RJ1 from A change to B version	U39 change to OZ600RJ1LN-B_QFN48	X01
58	20,43	HW	7/19/2010	COMPAL	Cost reduction as +3.3V_ALW_PCH and +5V_ALW_PCH power control circuit	1.Add PJP68 bypass JUMP for +5V_ALW to +5V_ALW_PCH 2.QH4,CH98,RH278 change to NON-POP 3.Add PJP67 bypass JUMP for +3.3V_ALW to +3.3V_ALW_PCH 4.Q51,R907,R905,C762,C760,R908,Q49 change to NON-POP	X01
59	24	HW	7/20/2010	COMPAL	Meet LCD power sequence spec	R413 change to 390 ohm	X01
60	24	HW	7/20/2010	COMPAL	Corrent Touch screen pin define	Modify JTS1 pin define	X01
61	29	HW	7/20/2010	COMPAL	Q107 change to one channel	Q107 change to SSM3K7002FU_SC70-3~D	X01
62	17,30,39	HW	7/20/2010	COMPAL	EMC suggestion item	1.I2S_12MHZ add @RE9 2.I2S_BCLK add @RE10 3.CLK_PCI_DOCK, RH103 change to 33ohm, R756 change to 33 ohm, C704 change to 12pf 4.DAI_BCLK# add@RE12,@CE9 5.DAI_12MHZ# add @RE11,@CE8	X01
63	26	HW	7/21/2010	COMPAL	Safety team request	Modify HDMI power circuit about D4,F2,R5 parts	X01
64	37	HW	7/21/2010	COMPAL	DF398754 Debug reserve	Reserve R725 0 ohm both PCIE_MCARD2_DET#R to PCIE_MCARD2_DET#	X01
65	36	HW	7/21/2010	COMPAL	Meet 1394 EA SPEC	R683,R684,R685,R686 from 56.2 change to 53.6 ohm	X01
66	30	HW	7/22/2010	COMPAL	EMI snubber and change Audio net name	1.Change net name from I2S_12MHZ to I2S_MCLK 2.Reserve R1587~R1590 part at INT_SPK bus	X01
67	41	HW	7/22/2010	COMPAL	New GPIO MAP	1.Pull up R943 to +3.3V_ALW on XFR_ID_BIT# of ECE5055-GPIO105 2.R712,R711,C627 change to de-pop	X01
68	40	HW	7/23/2010	COMPAL	TEMP_ALERT# Add 0 ohm jump between EC to PCH	Add R738 ohm at TEMP_ALERT#	X01
69	24,42	HW	7/24/2010	COMPAL	Follow GPIO map to add touch screen power down control circuit	Add TOUCH_SCREEN_PD#, Q125,Q32,R430,R431,C304,C306, and change JTCH1 pin 1,pin2 from +5V_RUN to +5V_TSP	X01
70	24	HW	7/26/2010	COMPAL	Reserve a 0 ohm option between +5V_RUN and +5V_TSP	Reserve R1001 0 ohm 0603 between +5V_RUN and +5V_TSP	X01
71	44	HW	7/26/2010	COMPAL	Due to BT_ACTIVE was folating pin, so, add 100 Kohm pull down	Add R944 100K ohm for BT_ACTIVE pull down	X01
72	16	HW	7/26/2010	COMPAL	PWRBTN# PCH has integrated pull up 20K ohm	RH356 change to De pop	X01
73	37	HW	7/28/2010	COMPAL	PCIE_MCARD1_DET# add resistor pull up to +3.3V_ALW_PCH	R692 change to pop	X01

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	
74	24	HW	9/06/2010	COMPAL	In order to use the HF part.	Q21 change SB000009K0L to SB000009K1L	X02
75	14,18	HW	9/06/2010	Intel	Follow Intel request	Add RH52 and RH53.	X02
76	27	HW	9/10/2010	COMPAL	Schematic error that Docking video output NG of DP & DVI.	U29.5 netname change from DPC_AUX#_C to DPD_AUX#_C.	X02
~~77~~	~~38,45~~	~~HW~~	~~9/15/2010~~	~~COMPAL~~	~~For the part consist issue.~~	~~L49,L50,L51 change SM01002080L to SM070001E0L~~	~~X02~~
78	15	HW	9/17/2010	H.ELE.	YH2's CL value can't match cd & cg value.	CH18 change from 10P to 22P, CH19 change from 10P to 27P.	X02
79	30	HW	9/23/2010	IDT	MIC detect issue.	U72 change version from SA00003ZZ1L(ZB) to SA00003ZZ2L(YA).	X02
80	27	HW	9/23/2010	COMPAL	2nd source question.	U23 & U29 DP_SW change from SA00000CA0L(TI) to SA00003890L(PERICOM).	X02
81	18	HW	9/23/2010	Intel	Follow Intel design guide Rev1.2	Change RH149 to 2.2k and RH150 to 0 ohm	X02
82	32	HW	9/23/2011	Intel	Intel request	U31 change version from WG82579LM QMWM A2 to WG82579LM QNGP C0.	X02
83	15,32	HW	9/24/2011	H.ELE.	modify item 78 YH2's CL value can't match cd & cg value.	CH18 & CH19 change from 22P to 10P and YH2 change from CL=18pF to CL=12pF. C470 & C471 change from 33P to 18P and Y3 change from CL=18pF to CL=12pF.	X02
84	24	HW	9/24/2011	COMPAL	The PWM can not function correct.	R1137 change from 100K to 10K.	X02
85	41	HW	9/24/2011	EPSON	The frequency skew of Y6 is too big in Normal temperature.	C741 & C743 change from 33P to 39P,	X02
86	36	HW	9/25/2011	COMPAL	Correct the 53.6 ohm into L end part number.	Change the R683,R684,R685,R686 to SD00000HE8L	X02
87	24	HW	9/25/2011	COMPAL	Meet LCD fall time as 3~10ms spec	R413 from 390 ohm change to 220 ohm	X02
88	38	HW	9/25/2011	COMPAL	Correct the Express Card PWR S/W into L end part number.	Change the U41 to SA00001SL2L.	X02
89	36	HW	9/28/2010	O2Micro	O2Micro request.	1. Move C582 to +MMI_1394_VCCH and close to either one pin 28 or pin 33. 2. Move C581 to +MMI_PE_VDDH and close to pin1. 3. Add a 0.01uF capacitor on +MMI_PE_VDDH and close to pin1.	X02
90	30,31	HW	9/30/2010	IDT	To solve pop noise and detect issue	Add U6,Q33,Q46,D70,D71,R425,R33,R38,R424,R161,R352,R1088,C967,C307,C308 Q107 change from SB00000960L(3pin) to SB00000DH0L(6pin)	X02
91	30	HW	9/30/2010	COMPAL	EMC request	Add bypass cap C1186~C1189	X02
92	14,09	HW	10/04/2010	Intel	Following Intel DG ver1.5	1. Add RH31 pull down resister. 2. RC96,RC97 no stuff	X02
93	34	HW	10/04/2010	Broadcom	Broadcom request(enhancement current amount)	L39 & L40 change from SHI00005Y0L(0603 size) to SHI0000CH0L(0805 size).	X02

DELL CONFIDENTIAL/PROPRIETARY

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	
94	11	HW	10/04/2010	COMPAL	Change QC5 VGS MAX rating from 12V to 20V	Change QC5 from SB52302028L to SB00000HK0L	X02
95	24,26	HW	10/04/2010	COMPAL	Change RB751V to HF part	Change D63,D64,D65,D68,D69 to SCS00004L0L	X02
96	7,18,41	HW	10/04/2010	COMPAL	For cost saving	Remove RH159,RH261	X02
97	30	HW	10/06/2010	COMPAL	1. Sync-up with Macallan 14" 2. EMC request	1. Remove R1587~R1590, C1186~C1189, change R1183~R1186 to L91~L94 2. Change Audio signal's diode from 4 of 2pins(SD05.TCT) to 2 of 3pins (PESD5V0U2BT SCA00000T0L)	X02
98	38	HW	10/06/2010	COMPAL	In order to enable Express Card PWR S/W 2nd source vendor "GMT" to act.	Add connection of pin4,pin5,pin13 and pin14 to power net.	X02
99	26	HW	10/06/2010	COMPAL	Follow safety request	Pop F2 and de-pop R5	X02
100	45	HW	10/06/2010	COMPAL	Remove Bypass ESATA Repeater schematic, because Gen1 EA fail when Bypass ESATA Repeater.	Remove R1189~R1196.	X02
101	47,14	Hw	10/06/2010	COMPAL	Remove PAID function of RTC	1. JRTC1 change from 3pin to 2pin(SP02000CA0L) and remove detect pin 2. UH4.C36 & RH355.2 rename from RTC_DET# to PCH_GPIO33	X02
102	29	HW	10/06/2010	COMPAL	For power saving	Increase JSATA2 detect pin R1177 from 1k to 100kohm	X02
103	46	HW	10/07/2010	COMPAL	For NB board space consider.	Remove page46 two block MIC detect schematic to IO/B.	X02
104	28	HW	10/07/2010	COMPAL	For cost saving	De-pop the R505,Q28,R500,R499,C393,C394,R504 parts.	X02
105	28	HW	10/07/2010	COMPAL	Based on support SSD HDD	Add +3.3V_RUN on JSATA1 pin8,pin9,pin10	X02
106	30,32,40 42	HW	10/07/2010	COMPAL	GPIO MAP update at 1-Oct-10	1. Add U15, C478 that defect RJ45 cable insert or not if plug in then close WLAN power. 2. 5048 GPIOB7 rename from AUD_NB_MUTE to AUD_NB_MUTE#	X02
107	32	HW	10/08/2010	COMPAL	Based on IEEE Return Loss EA fail	L30~L37 change from SHI00004O0L(22NH) to SHI0000CV0L(5.6NH)	X02
108	18,30	HW	10/08/2010	COMPAL	Remove PAID function of speaker	1. JSPK1 change from 6pin to 4pin(LTCX002V50L) that remove detect pin 2. UH4.D40 & RH269.2 rename from SPEAKER_DET# to GPIO17	X02
109	44	HW	10/11/2010	COMPAL	LED brightness test result	change R957 to 1K, R955, R941, R949, R939, R934 to 4.7K	X02
110	41	HW	10/11/2010	COMPAL	BORAD_ID	change R875 to 62K.	X02
111	17	HW	10/11/2010	Intel	Follow Intel check list Rev1.2	Add @RH332	X02
112	31,41	HW	10/12/2010	DELL	DELL DM Dennis has confirmed.	No stuff “Latitude On” button of SW2,R877,C740	X02
113	24,45	HW	10/13/2010	COMPAL	EMC request(for cost saving)	1.UE1,UE2,U13,U86 change from PRTR5V0U2X(SOT143-4)(4pin)to PESD5V0U2BT(SOT23-3)(3pin) SCA00000T0L. 2.Diode for UE1,UE2 shall be added, not reserved. 3.Rename UE1 to D73,UE2 to D72,U86 to D74,U13 to D75	X02

DELL CONFIDENTIAL/PROPRIETARY

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	
114	28	HW	10/13/2010	COMPAL	Follow 14"	PJP71 size change to 1X1	
115	7	HW	10/14/2010	COMPAL	UC1.4 is OD pin,so remove pull down R.	Remove RC11	X02
116	28	HW	10/15/2010	COMPAL	MikeCC suggest	Stuff of R505,C394,R504	X02
117	14,18	HW	10/19/2010	COMPAL	Follow Intel debug port DG	Connect PCH_GPIO15 to PCH XDP_FN16	X02
118	30	HW	10/19/2010	COMPAL	Change Mic detect to external detect	Remove R161 and add C1165	X02

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	54	+3V/+5V	7/2	Compal	EA test fail in 3.3V HS Vds ring	Change PQ6 from SI4128 to AO4466L. Change PQ8 from SI4134 to AO4712L.	X01
2	62	+VCC_SA	7/2	Compal	VCCSA have the spike to damage CPU	Remove PR264 and add PR410 connect PR249.1 to do PD. Remove VCCSA_VID_0 net to connect PR249.1 and change net name to VCCSA_VID_1 Change PR250 from 34K to 113K Change PR256 from 0 to 140K Change PR261 and 265 from 2.49K to 0 ohm. Change PD resister PR266 and PR410 to 1K. Depop PR260 and PR267 Change PR259 from 274K to 47.5K	X01
3	47	+DCIN	7/16	Compal	PR16 down size from 0805 to 0402	Change PR16 from 100k/0805 (SD01510038L) to 100k/0402 (SD02810038L)	X01
4	56	+VCC_SA	7/20	Compal	VCCSA phase node over Mosfet Vds rating	Change PQ35 from SI4128 to AO4466L. Change PQ36 from SI4172 to AO4712L.	X01
5	56	+1.05V_M	7/20	Compal	+1.05V_M phase node over Mosfet Vds rating	Change PQ52 from SI4128 to AO4466L. Change PQ18 from SI4172 to AO4712L.	X01
6	55/57	Charger Slector	7/20	Compal	solve leakage issue	Change PD14,PD16 from SBR3A40SA-13_SMA2 (SC100003J00) to ES2AA-13-F (SC100005A0L)	X01
7	49	+1.5V_SUS	7/20	Compal	Material shortage issue.	Change PC56 and PC57 from 330U/9m/2.5V (SGA19331D1L) to 330U/9m/2V (SGA20331E0L)	X01
8	47	+DCIN	7/20	Compal	PL1 current rating is not enough for 9cell (3.0Ah 1C) discharge current	Change PL1 to FBMJ4516HS720NT(SM010009C8L) from FBMA-L18-453215-900LMA90T (SM01002078L) Add PL22 FBMJ4516HS720NT(SM010009C8L) Take off PJP45	X01
9	48	+3V/+5V	7/20	Compal	PC24 down size to 0603 from 0805	Change PC24 to 4.7u/6.3V/0603 (SE107475K8L) from 4.7u/6.3V/0805 (SE093475K8L)	X01
10	49	+1.5V_SUS	7/20	Richtek	Reserve 300K PD to avoid VR turn on when EN/DEM is floating.	Add PR508 to do PD from PU3 pin1	X01
11	53	VCORE	7/20	MAXIN	Reserve 33nF cap parallel with PC136 to fine tuning VCORE transient	Add PC401 33nF/16V/X7R/0402(SE076333K8L)	X01
12	54	VGFX	7/20	MAXIN	Add 33nF cap parallel with PC208 to fine tuning VGFX transient	Add PC402 33nF/16V/X7R/0402(SE076333K8L)	X01
13	55	Charger	7/21	Compal	Reserve adapter protection circuit for turbo mode	Change PU11 pin1 net name to ICREF from GNDA_CHG Change PU11 pin26 net name to ICOUT from VCC Reserve PR511,PR512,PR513,PR514,PC406,PQ59,PR515,PR516.PR517,PC407 PC244,PC245,PR518,PR519,PR520.PQ43,PC405,PR509,PR510	X01
14	55	Charger	7/21	Compal	PQ27 body diode can handle surge current	Depop PD14 SBR3A40SA (SC100003J00)	X01

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	53,54	VGFX_Core	7/21	MAXIM	Depop one phase for GFX_core	Change PR202 to 1.43k (SD03414318L) from 5.49k (SD03454918L) Change PR203 to 2.1k (SD03421018L) from 2.49k (SD03424918L) Change PC208 to 0.33u/10V/X7R (SE080334K8L) from 0.22u/16V/X7R (SE026224K8L) Change PR201 to 40.2k (SD03440228L) from 10K (SD03410028L) Depop PR204,PR190,PR196,PC206,PR197,PL14,PR181,PR186,PR190,PC191,PR187 PQ21,PQ22,PC184,PC183,PC182,PC181,PC403,PC185,PR179,PC188,PU10,PC186 Pop PR147 and PR150 0 Ohm (SD02800008L) Change PR157 to 8.66k (SD03486618L) from 13.3K (SD03413328L) Pop PQ38 AON6414L (SB00000NW00) Pop PQ26 AON6704 (SB00000I90L) Change PL15 to 0.36u (SH00000HQ0L) from 0.56u (SH00000I20L) Change PC203 to 4700p (SE075472K8L) from 2200p (SE074222K8L)	X01
2	53	Vcore	7/26	MAXIM	MAX17411 version change,setting change.	Change PR118,PR119 to 1 ohm (SD014100B8L) from 2 ohm (SD013200B8L) Change PR127 to 215K (SD03421538L) from 100K (SD03410038L) Change PR135 to 137K (SD03413738L) from 150K (SD03415038L) Change PR126 to 215K (SD03421538L) from 127K (SD03412738L) Change PR134 to 162K (SD03416238L) from 100K (SD03410038L)	X01
3	53	Vcore VGFX_Core	7/26	MAXIM	Fine tune Vcore and VGFX_core loadline.	Change PR140 to 12K (SD03412020L) from 12.4K (SD00000AJ8L) Change PR157 to 8.87K (SD03488718L) from 8.66K (SD03486618L)	X01
4	53/54	Vcore VGFX_Core	7/26	MAXIM	Fine tune Vcore and VGFX_core Transient Response.	Add PC401 0.033uF (SE076333K8L) Add PC402 0.033uF (SE076333K8L)	X01
5	55	Charger	7/28	MAXIM	Pop adapter protection componment for turbo mode with TI solution.	Pop PR510(SD02810038L),PR511( ),PR512(SD03411038L),PR513(SD03410038L) PR514(SD000009R8L),PC406(SE071101J8L),PQ59(SB50206008L)	X01
6	52	1.05V_VTT	9/20	TI	TI IC version change, OCP setting change.	PR95 change from 0 ohm to 22K ohm.	X02
7	52	1.05V_VTT	10/12	TI	1206 MLCC COS issue.	Change from 22uF 1206 X5R 8pcs to 47uF 0805 X5R 2pcs and 22uF 0805 X5R 8pcs.	X02
8	56	VCCSA	10/15	Compal	Fine tune VCCSA OCP setting for 2nd and 3rd source choke	Change PR247 and PR262 to 12.7k (SD03412728L) from 11.5k (SD03411528L)	X02
9	47	DCIN	10/15	Compal	6 ~ 7mA leakage current in slice	Change PR2 and PR504 to 100K (SD02810038L) from 10K (SD03410028L)	X02
10	55	charger	10/15	Compal	Fine tune adapter protection circuit for 2nd source and reserve H_PROCHOT#	Pop PR509 Ohm (SD02800008L) Add PR521 and reserve PR522 connect to H_PROCHOT#	X02
11	48	5V/3.3V	10/15	Compal RF Kuo. Jimmy	WWAN noise solution.	Change PR34,PR35 from 1 ohm to 2.2 ohm.	X02
12	53	Vcore VGFX_Core	10/27	Compal	Fine tune Vcore and VGFX_core loadline. Fine tune Vcore and VGFX_core	Change PR157 to 8.06K(SD03480618L) from 8.87K (SD03488718L) Depopulate PC401,PC402	X02