

MODEL NAME : *Bold_Peak_II (AAE00)*
PCB NO : *LA-C321P (DAA000A6000)*
BOM P/N :

Dell/Compal Confidential

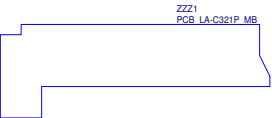
Schematic Document

Bold Peak2 (Skylake Y)

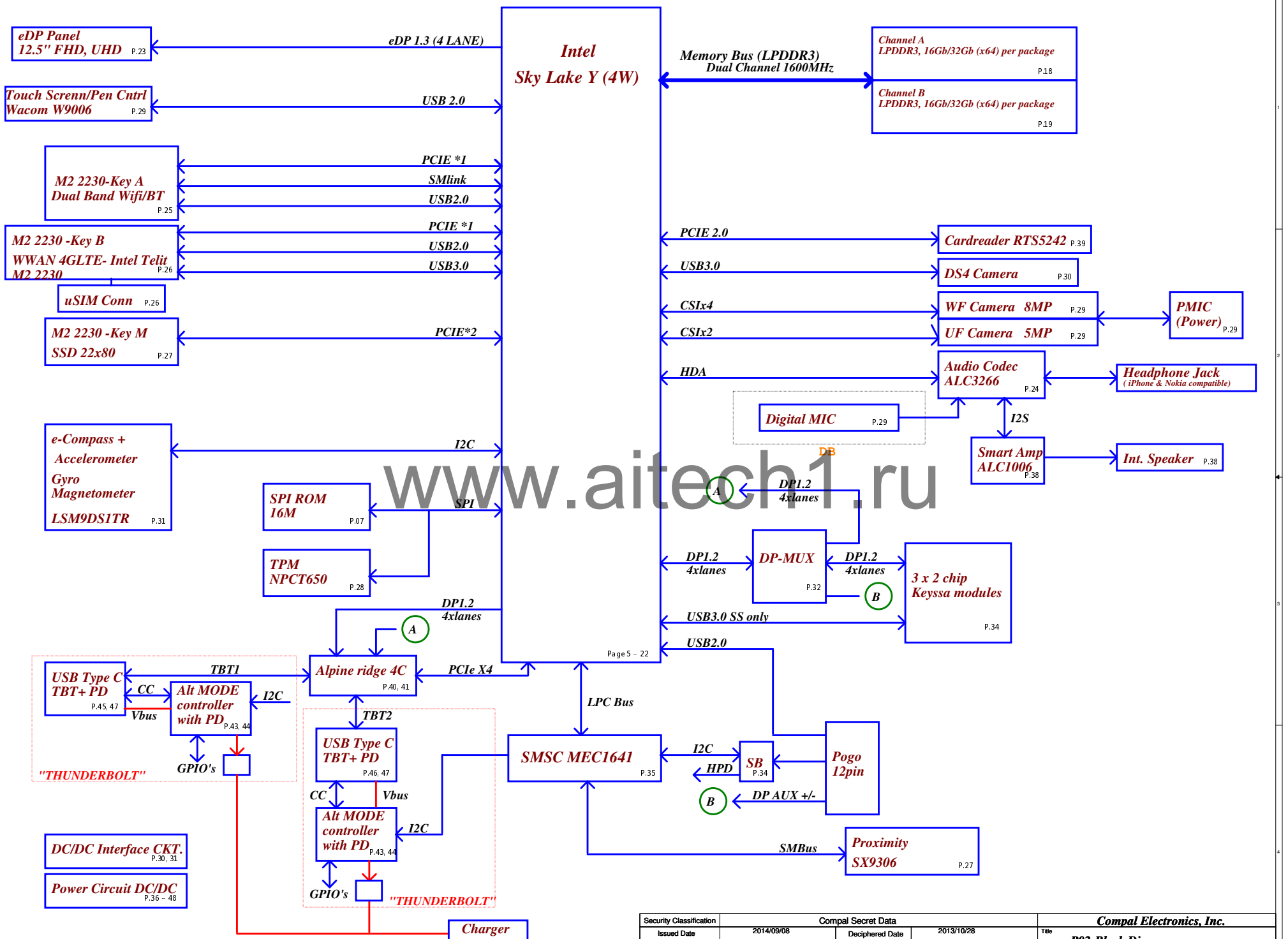
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2015-07-03

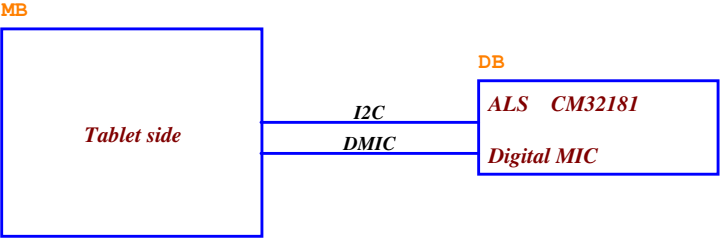
Rev: 0.7 (X06)



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		LA-C321P			0.7(X06)
Date: Wednesday, July 08, 2015		Sheet 1 of 61			



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				LA-C321P
				Size
				0.7x0.9
				Date
				Wednesday, July 08, 2015
				Sheet
				2 of 61



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				LA-C321P	Rev 0.7(206)
Date: Wednesday, July 09, 2015				Sheet	3 of 61

Board ID Table

Vcc	3.3V +/- 5%			
Board ID	R	C	REV	
0	240K +/- 5%	4700p	0.1, 0.2	Pre-EVT1, 2
1	130K +/- 5%	4700p	0.3	EVT
2	62K +/- 5%	4700p	0.4	DVT1
3	33K +/- 5%	4700p	0.5	DVT2
4	8.2K +/- 5%	4700p	1.0	PVT
5	4.3K +/- 5%	4700p		
6	2K +/- 5%	4700p		
7	NC			

SMBUS Control Table

	SOURCE	Base	BATT	Charger	TBT	XDP	SB
PCH_SML0CLK PCH_SML0DATA	PCH						
PCH_SML1CLK PCH_SML1DATA	PCH						
MEM_SMBCLK MEM_SMBDATA	PCH					V	V
EC_SMB00_CLK EC_SMB00_DAT	MEC1641						
EC_SMB01_CLK EC_SMB01_DAT	MEC1641				V		
EC_SMB03_CLK EC_SMB03_DAT	MEC1641		V				
EC_SMB04_CLK EC_SMB04_DAT	MEC1641			V			
EC_SMB05_CLK EC_SMB05_DAT	MEC1641	V					

Link

USB 3.0 PORT#	DESTINATION
1	Debug
2	WWAN
3	DS4 camera
4	Keyssa

USB 2.0 PORT#	DESTINATION
1	BASE
5	WWAN
7	Touch
3	BT
9	Debug

PCH DDI Port Mapping	DDI PORT#	DESTINATION
	B	DP MUX
	C	TBT
	D	

PCI EXPRESS	DESTINATION
Lane 1	TBT (Alpine Ridge, Gen3)
Lane 2	TBT (Alpine Ridge, Gen3)
Lane 3	TBT (Alpine Ridge, Gen3)
Lane 4	TBT (Alpine Ridge, Gen3)
Lane 5	WWAN (NGFF, Gen3)
Lane 6	
Lane 7/ SATA0	SSD (NGFF, Gen3)
Lane 8	SSD (NGFF, Gen3)
Lane 9	WLAN (NGFF, Gen2)
Lane 10	Cardreader (Gen2)

CLK	DIFFERENTIAL	DESTINATION
	CLKOUT_PCIE1	TBT
	CLKOUT_PCIE2	Cardreader
	CLKOUT_PCIE3	NGFF SSD
	CLKOUT_PCIE4	NGFF (WLAN)
	CLKOUT_PCIE5	NGFF (WWAN)

FLEX CLOCKS	DESTINATION
CLKOUT_LPC_0	EC LPC
CLKOUT_LPC_1	Debug

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Symbol Note :

- @ : means de-pop
- ⏏ : means Digital Ground
- ⏏ : means Analog Ground

Functional Strap Definitions

GPP_E19 (Internal Pull Down): DDPB_CTRLDATA

0 = Port B is not detected.

1 = Port B is detected.

GPP_E21 (Internal Pull Down): DDPC_CTRLDATA

0 = Port C is not detected.

1 = Port C is detected.

GPP_E23 (Internal Pull Down): DDPD_CTRLDATA

0 = Port D is not detected.

1 = Port D is detected.

SOC_DPI_CTRL_DATA (Internal Pull Down):
Display Port B detected
0 = Port B is not detected.
1 = Port B is detected.
SOC_DPI_CTRL_DATA (Internal Pull Down):
Display Port C detected
0 = Port C is not detected.
1 = Port C is detected.

SOC_DPI_CTRL_DATA (Internal Pull Down):
Display Port D detected
0 = Port D is not detected.
1 = Port D is detected.

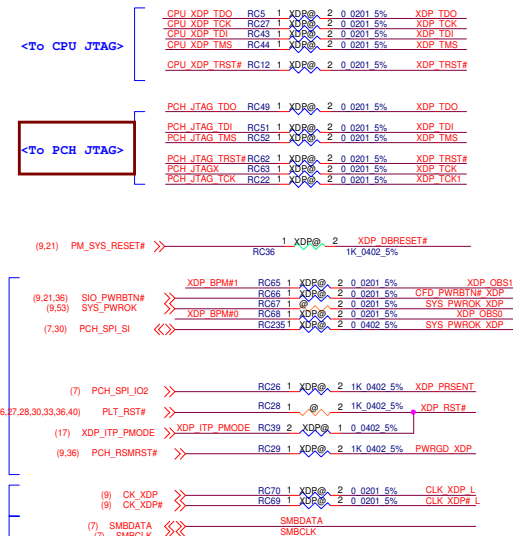
<To CPU JTAG>

<To PCH JTAG>

<XDP Misc.>

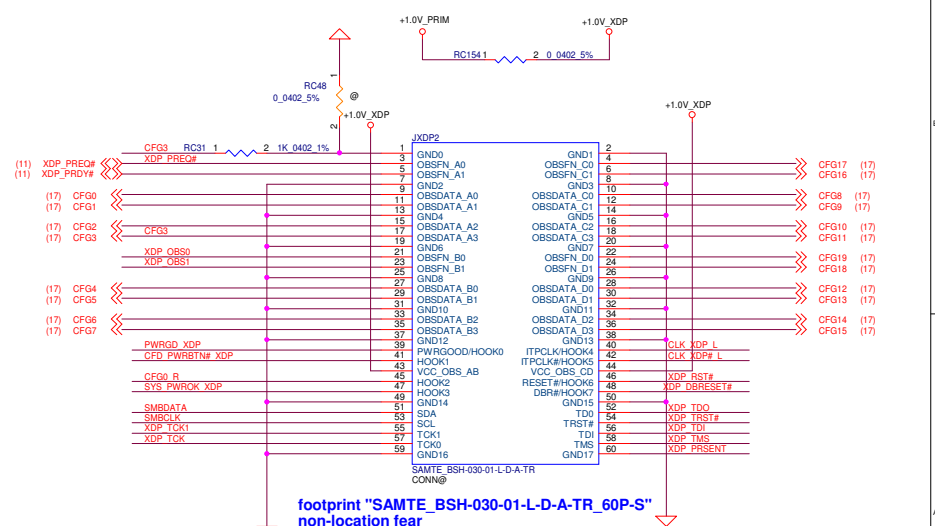
<XDP CLK>

<XDP SMBUS>



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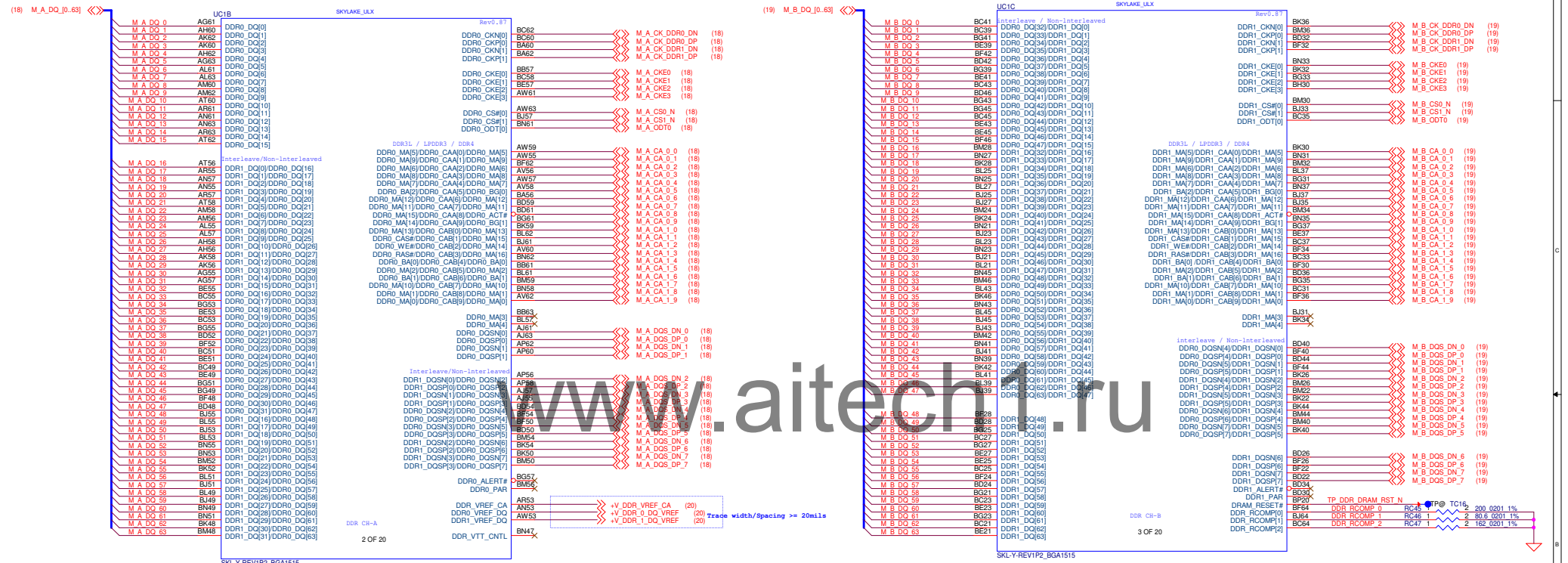
XDP CONN



footprint "SAMTE_BSH-030-01-L-D-A-TR_60P-S"
non-location fear

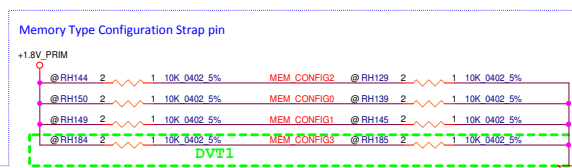
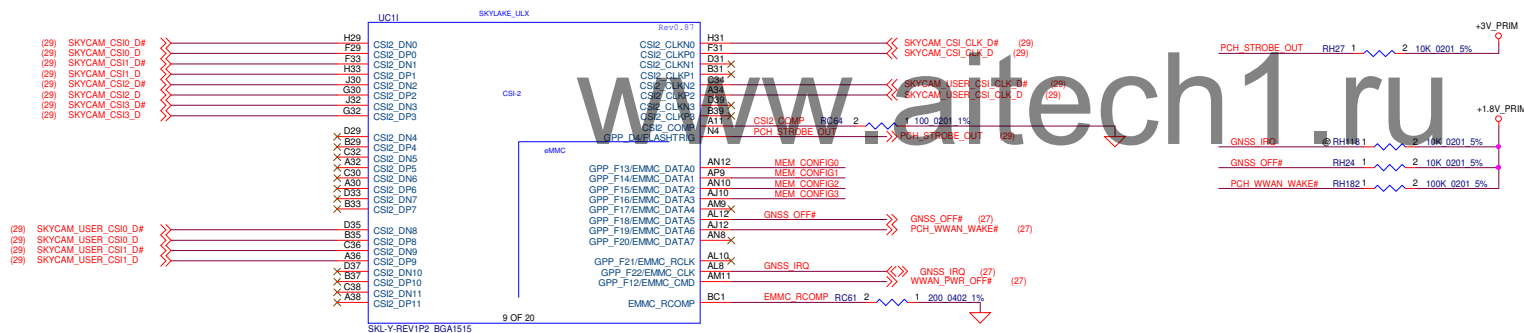
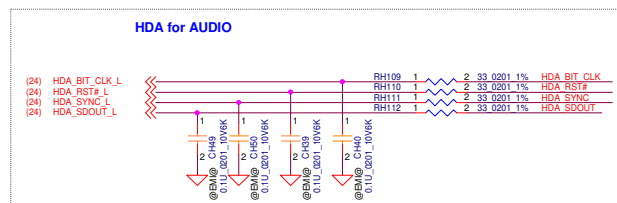
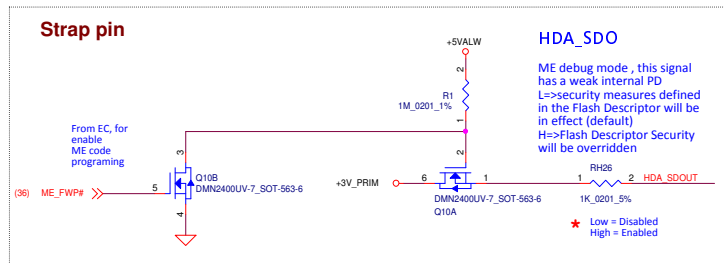
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Size	C	Document Number	LA-C321P	Rev
Date	Wednesday, July 08, 2015	Sheet	5	of 61

Non-interleaved Memory



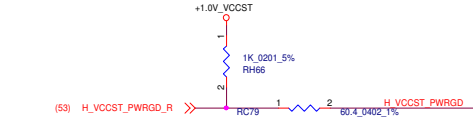
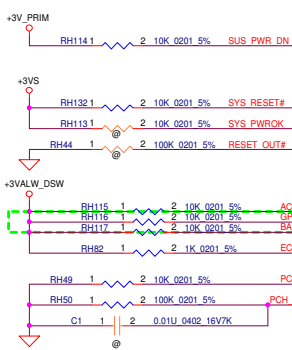
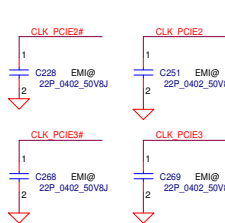
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				C	LA-C321P	0.7(706)
				Date:	Wednesday, July 08, 2015	Sheet 6 of 61



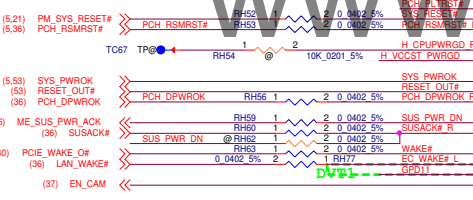
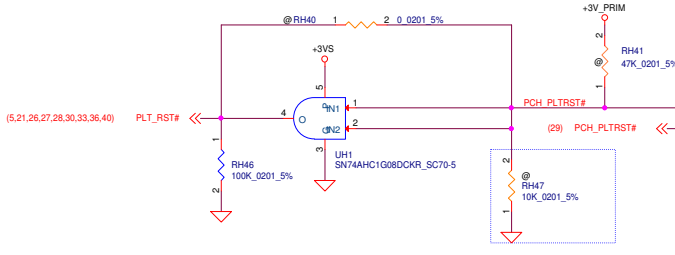
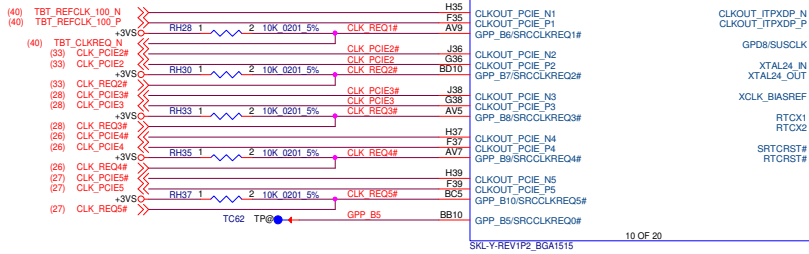


Pin Name	MEM Speed 1600	MEM Speed 1866
MEM_CONFIG3	0	1

Pin Name	Micron 4G SA000062S1L	Micron 8G SA000083Z0L	Rynix 4G SA000080C0L	Rynix 8G SA000084Z0L	Samsung 4G SA000073T0L	Samsung 8G P/N: TBD
MEM_CONFIG0	0	1	0	1	0	1
MEM_CONFIG1	0	0	1	1	0	0
MEM_CONFIG2	0	0	0	0	1	1



TBT
Cadreader
SSD
WLAN
WWAN



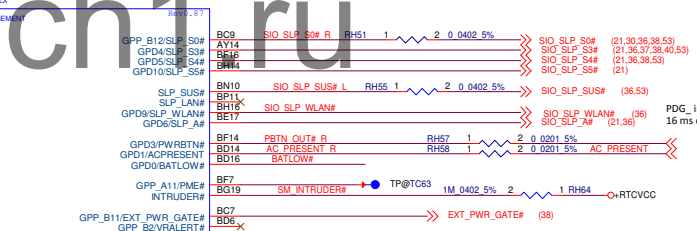
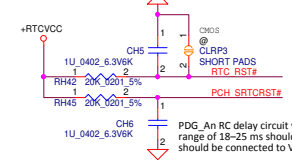
PMIC have internal pull up -->

PDG_DPWRCK connect to VccDSW3_3 power rail monitoring circuit to support Deep Sx state. This signal can be tied to RSMRST# for platforms that do not support the Deep Sx state. The DSW rails must be stable for at least 10 ms before DPWRCK is asserted to PCH.

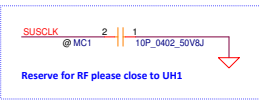
PDG_SUSACK#, this signal is driven from the platform EC to PCH to acknowledge that EC has received the SUSWARN# signals and it is preparing to go into DeepSx mode. For at least 10 ms before DPWRCK is asserted to PCH.

PDG_SLP_SUS#, a low on this signal indicates that PCH is in Deep Sx state and that EC/platform logic does not need to keep the Primary Rails ON.

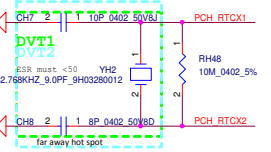
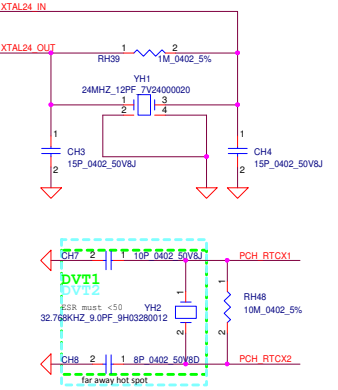
- T24
- T25
- T26
- T27
- T28
- T29
- T30
- T31
- T32
- T33
- T34
- T35
- T36
- T37



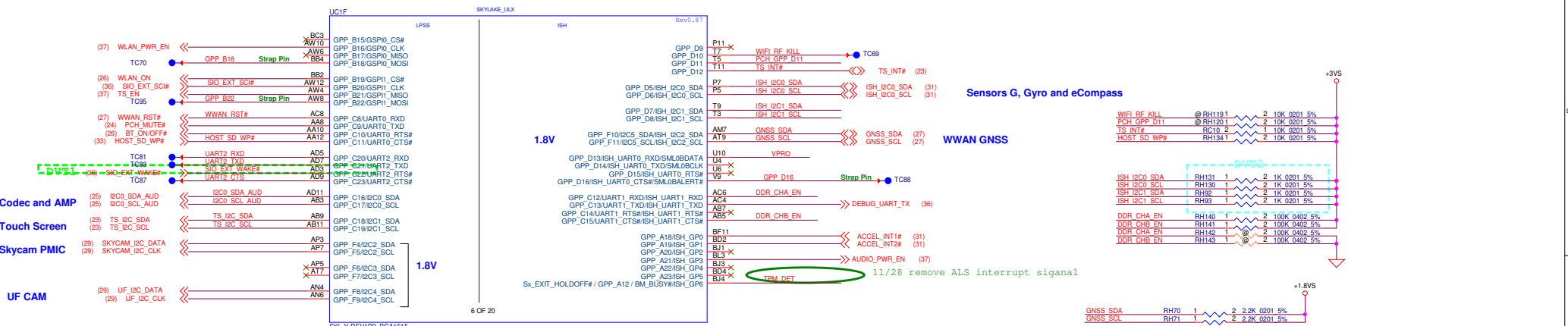
PDG_SLP_A#, This signal is used to control power to devices on the platform in conjunction with the Inter ME sub-system. This signal will be asserted in M-off state. If M3 is not supported then SLP_A# will have the same timings as SLP_S3#.



power on reset

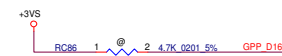
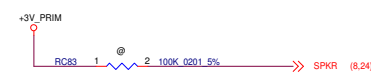
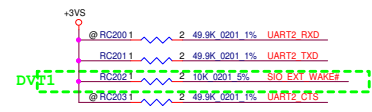


PDG internal pull-up resistor, internal 16 ms de-bounce on the input.



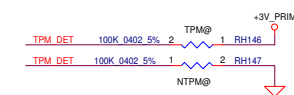
Functional Strap Definitions

- GPP_B14 (Internal Pull Down): SPKR**
- TOP Swap Override
- 0 = Disable TOP Swap mode.---> AAE00 Use
- 1 = Enable TOP Swap Mode.
- GPP_B16 (Internal Pull Down): GSSPIO_MOSI**
- No Reboot
- 0 = Disable No Reboot mode. --> AAE00 Use
- 1 = Enable No Reboot Mode. (PCH will disable the TCO Timer system reboot feature). This function is useful when running ITP/XDP.
- GPP_B22 (Internal Pull Down): GSSPI1_MOSI**
- Boot BIOS Strap Bit
- 0 = SPI Mode --> AAE00 Use
- 1 = LPC Mode
- GPPD16 (Internal Pull Down):**
- eSPI or LPC
- 0 = LPC is selected for EC --> For KB9022/9032 Use
- 1 = eSPI is selected for EC --> For KB9032 Only.



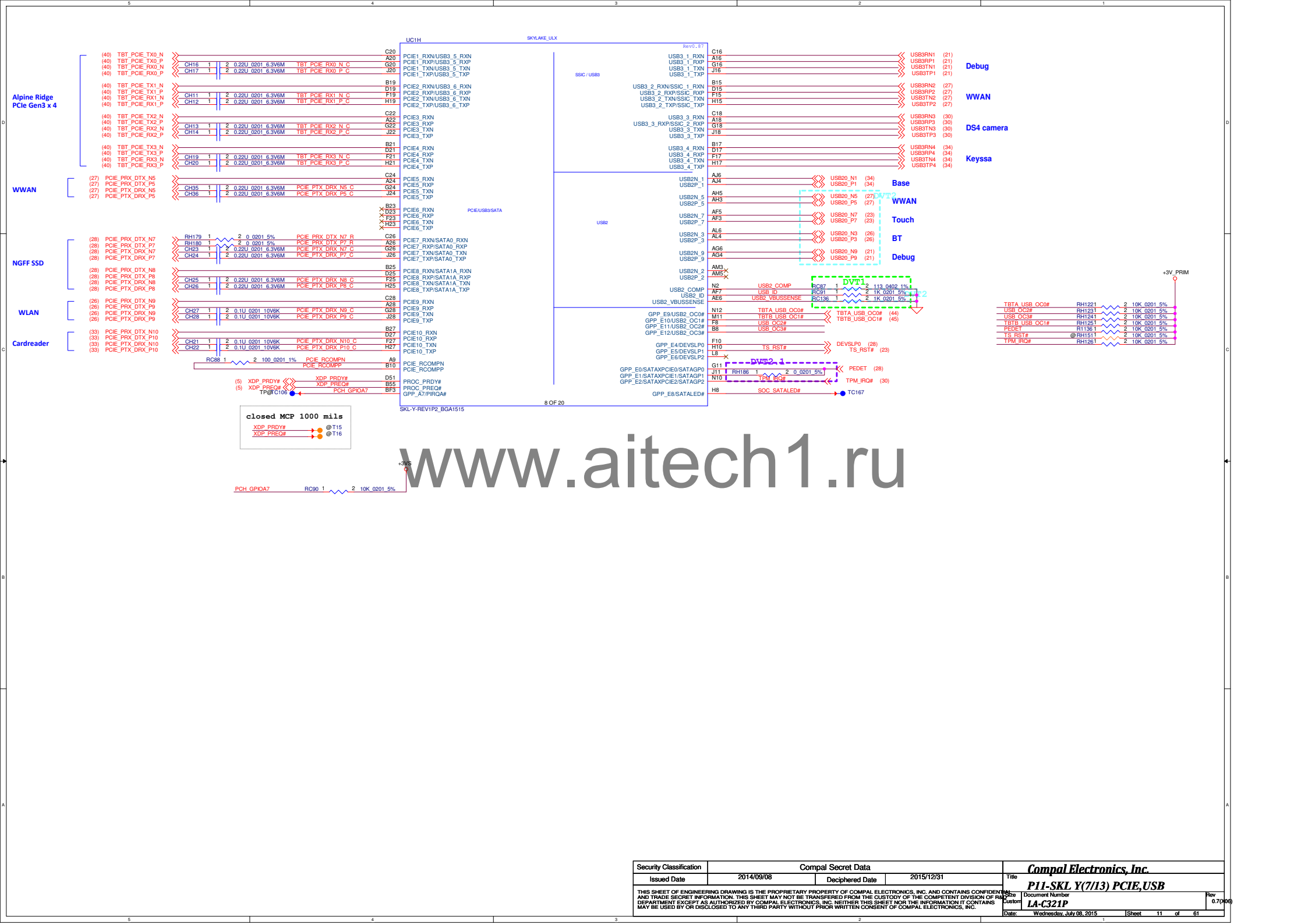
VPRO BOM Optional

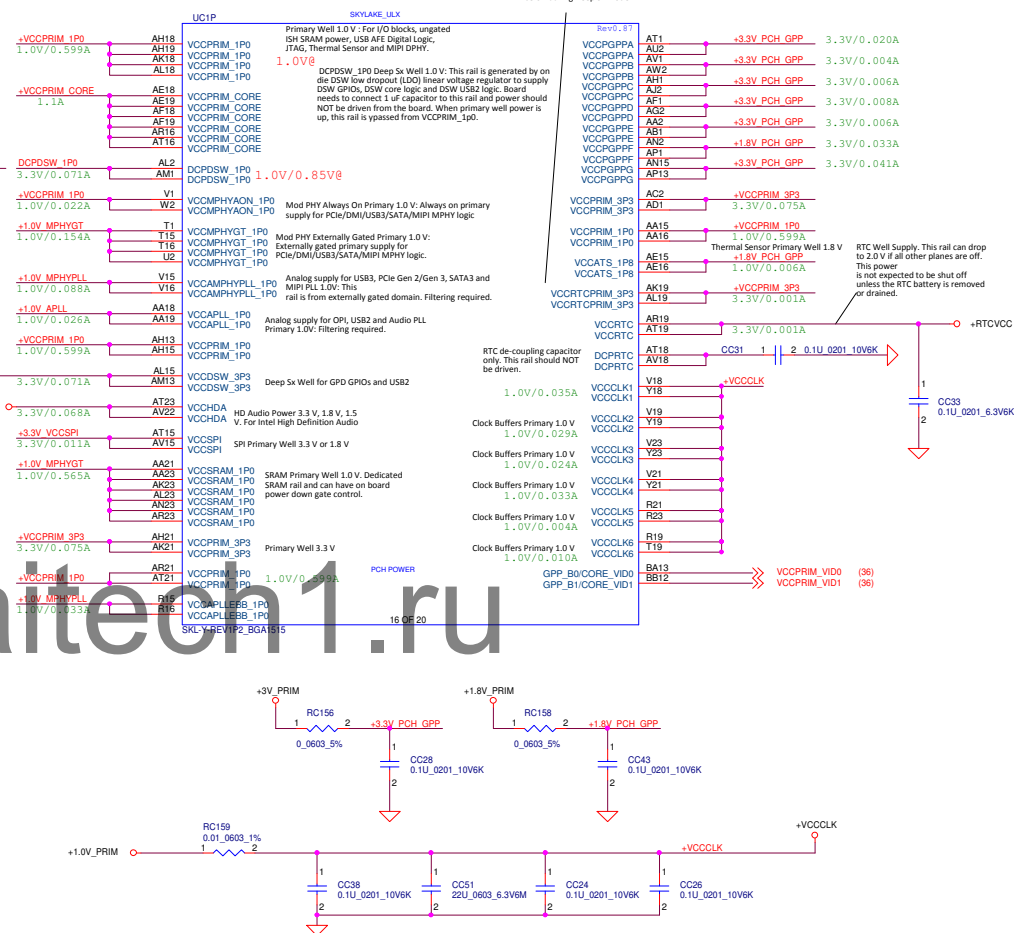
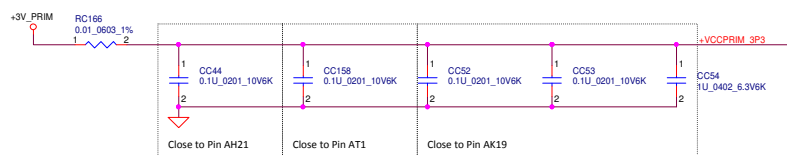
VPRO	
VPRO	1 = W/VPRO 0 = W/O VPRO

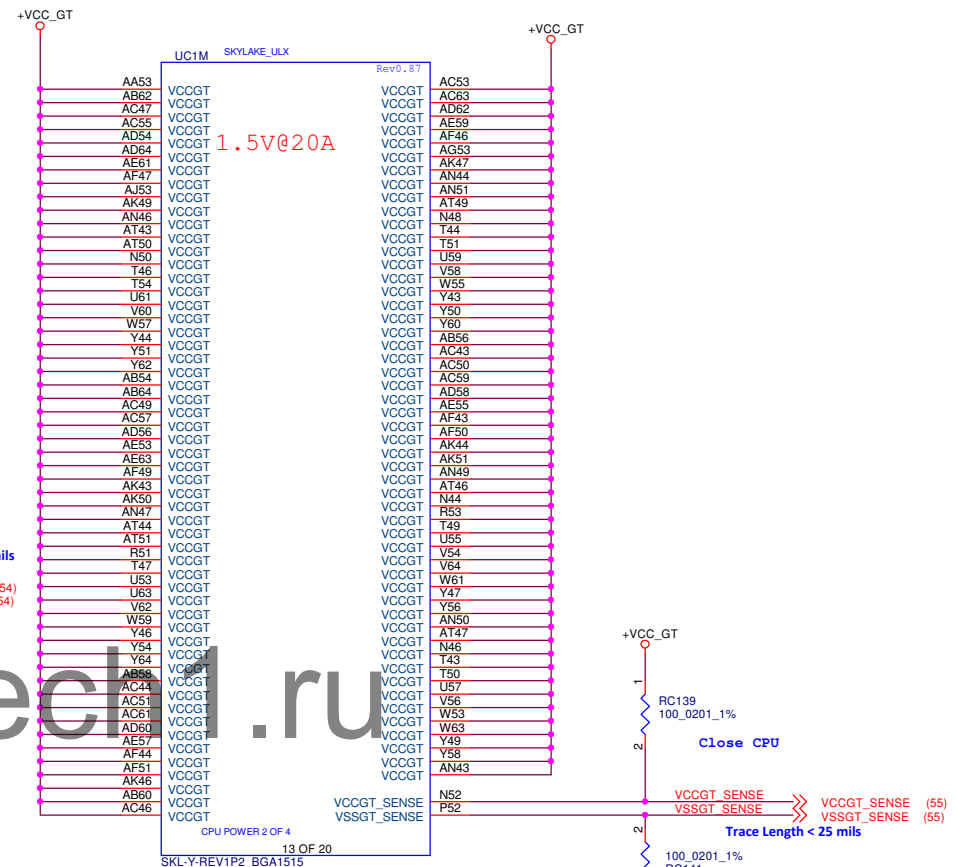
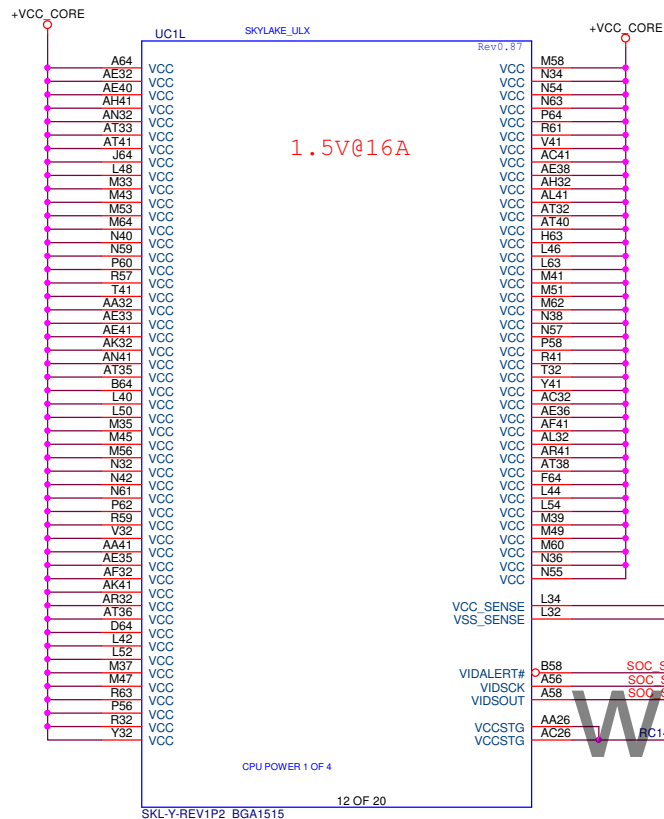


TPM BOM Optional

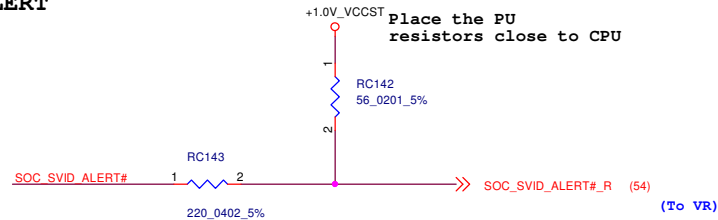
TPM_DET	
TPM	1 = W/TPM 0 = W/O TPM



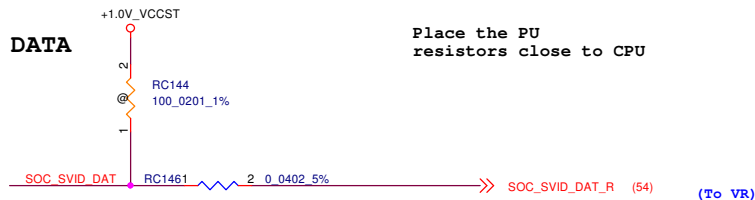




SVID ALERT



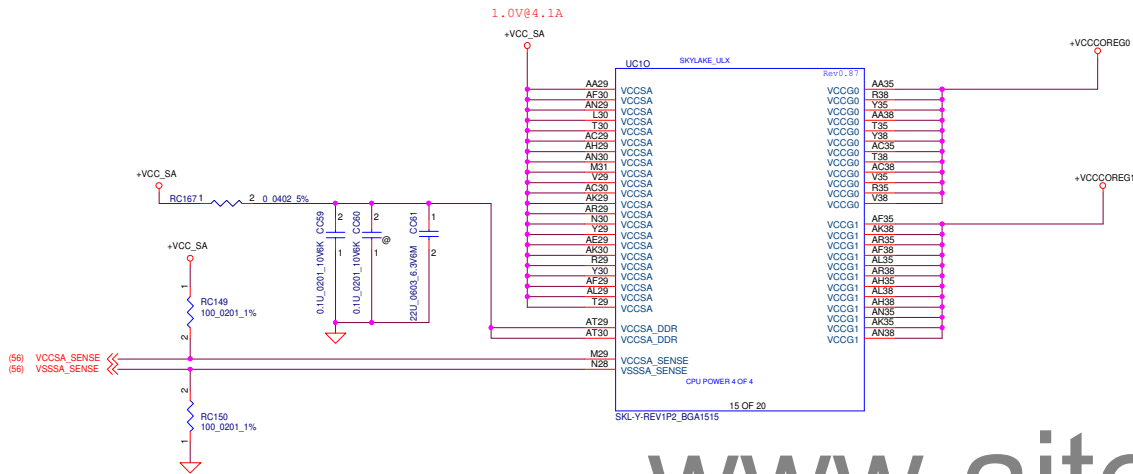
SVID DATA



SVID CLK

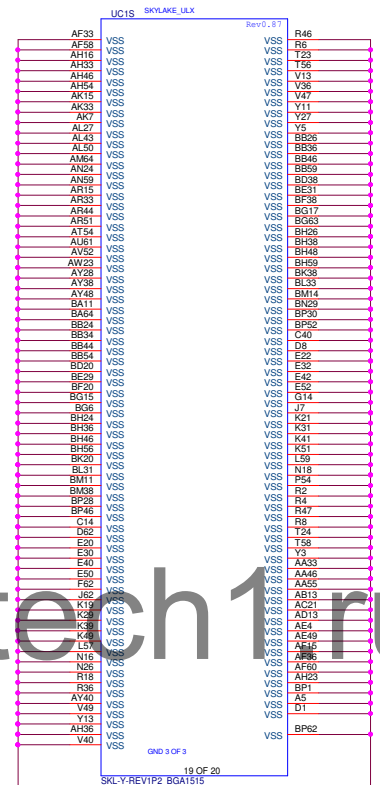
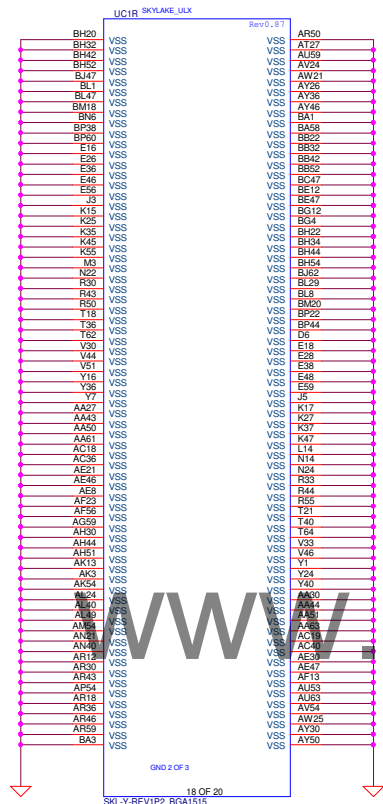
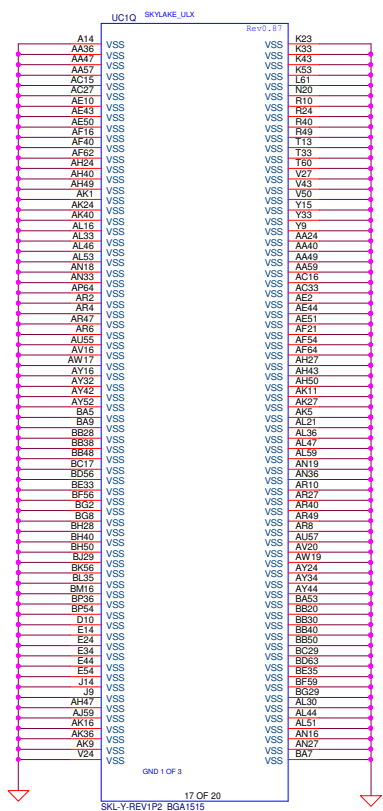


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Size	Custom	Document Number	LA-C321P	Rev	0.7(X06)
Date:	Wednesday, July 08, 2015	Sheet	14	of	61



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Issued Date		2014/09/08	Deciphered Date	2015/12/31	Title
Size		Document Number			Rev
C		LA-C321P			0.7(206)
Date:		Wednesday, July 08, 2015	Sheet	15	of 61



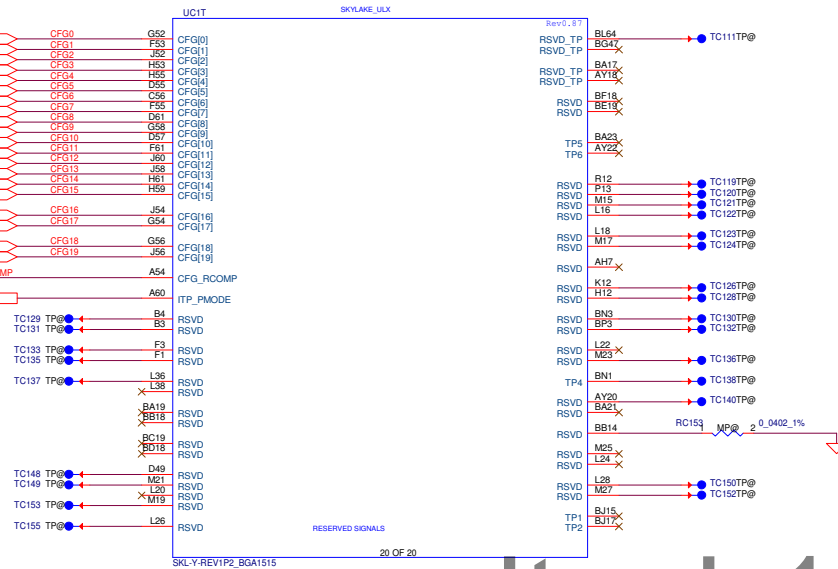
CRB : Reserve PH 10k?

CFG Signals
(For Strap & XDP)

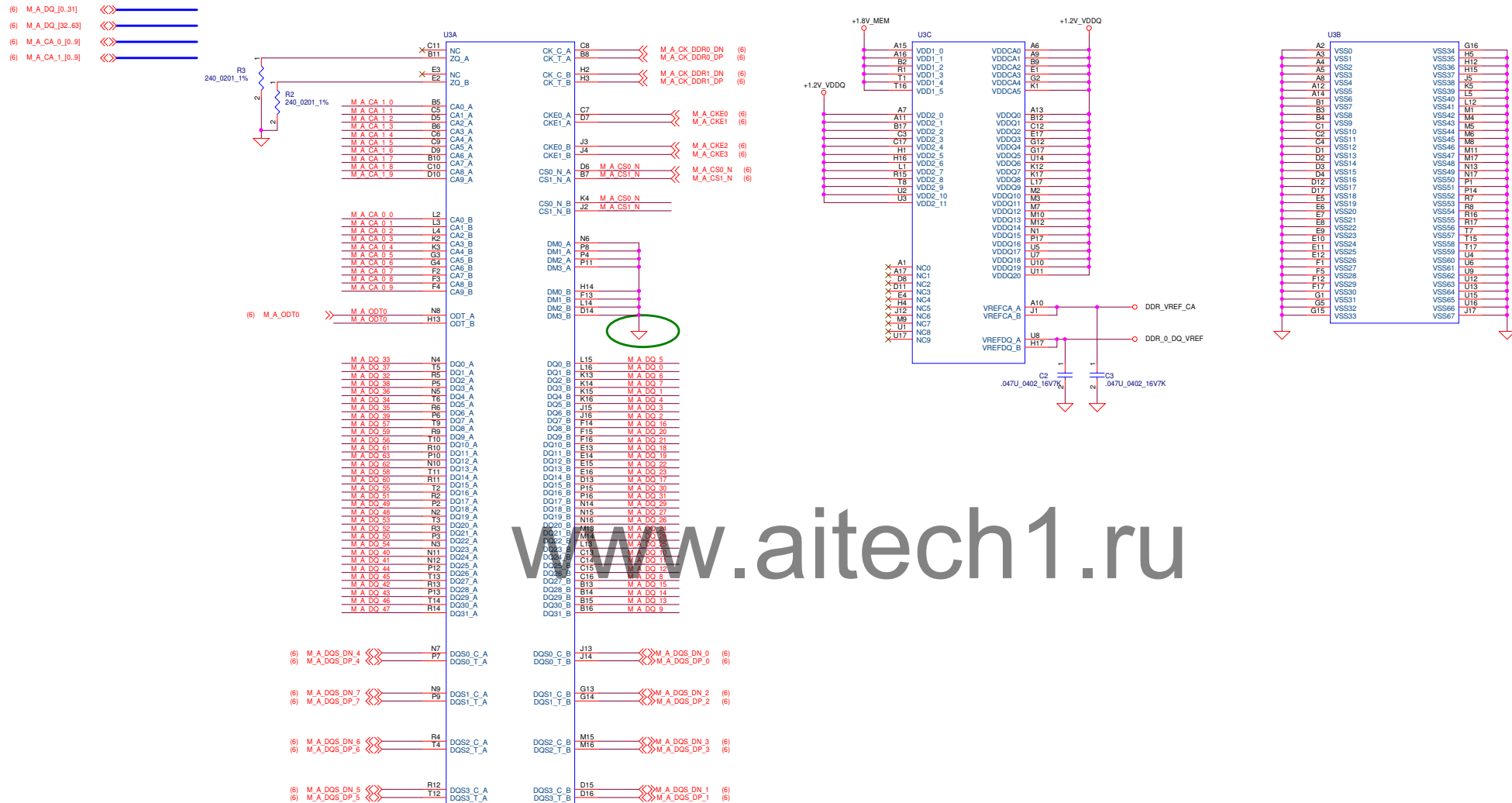
Functional Strap Definitions

CFG[4] : Display Port Presence strap
0 = Enabled - A Display Port device is connected to the Embedded DisplayPort.
No connect for disable.

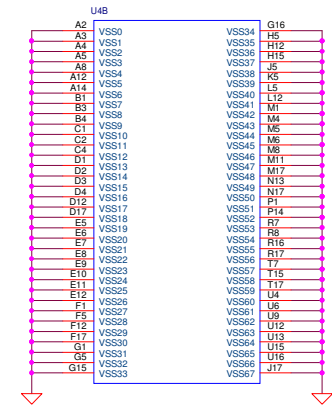
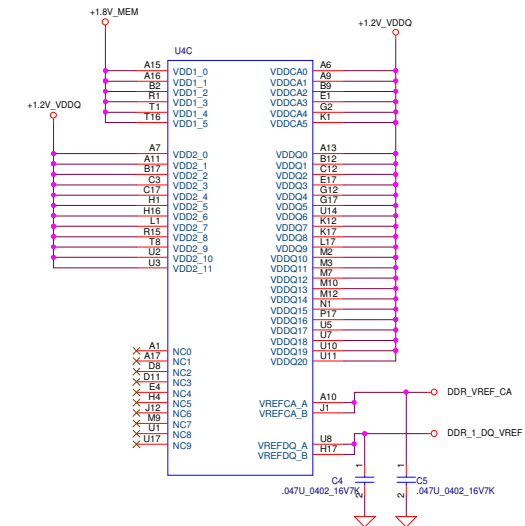
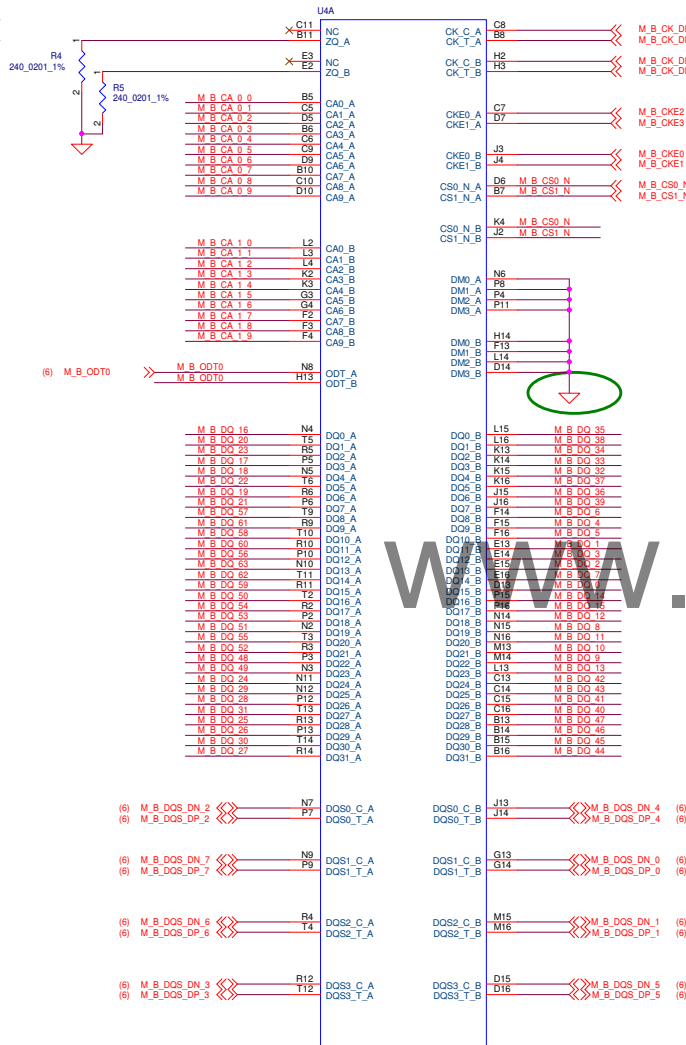
1 = Disabled - No Physical Display Port attached to Embedded DisplayPort.
Pull-down to GND through a 1 Kohm $\pm 5\%$ resistor to enable port.



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(6) M_B_DQ[0..31] <<>
(6) M_B_DQ[32..63] <<>
(6) M_B_CA_0[0..9] <<>
(6) M_B_CA_1[0..9] <<>

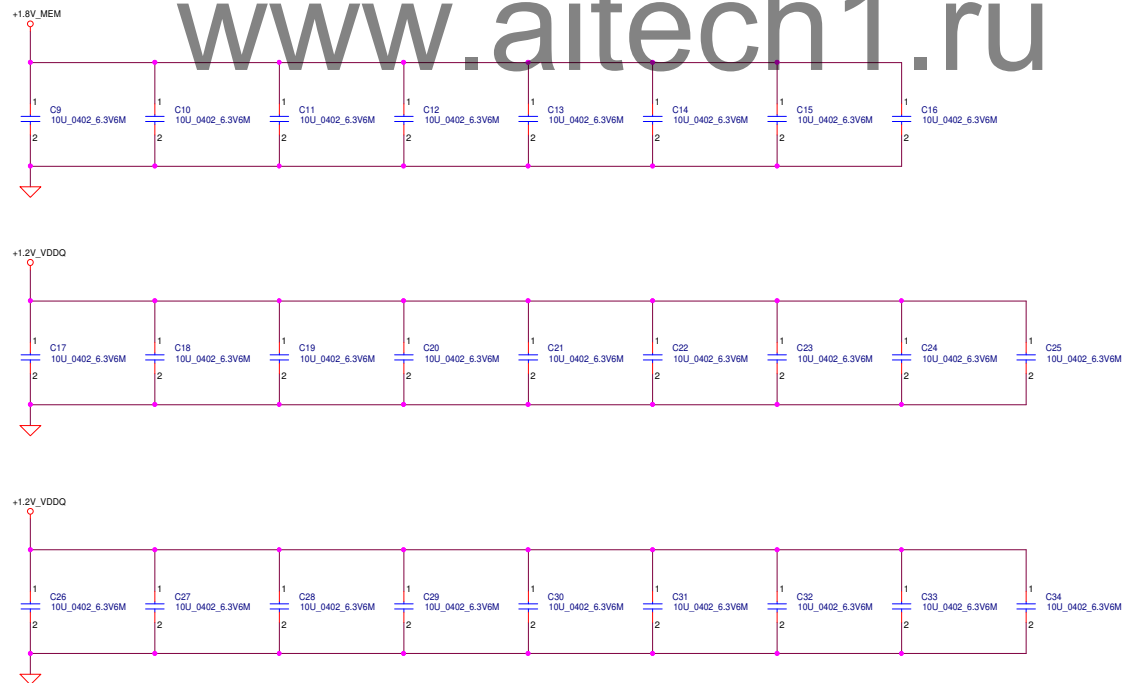
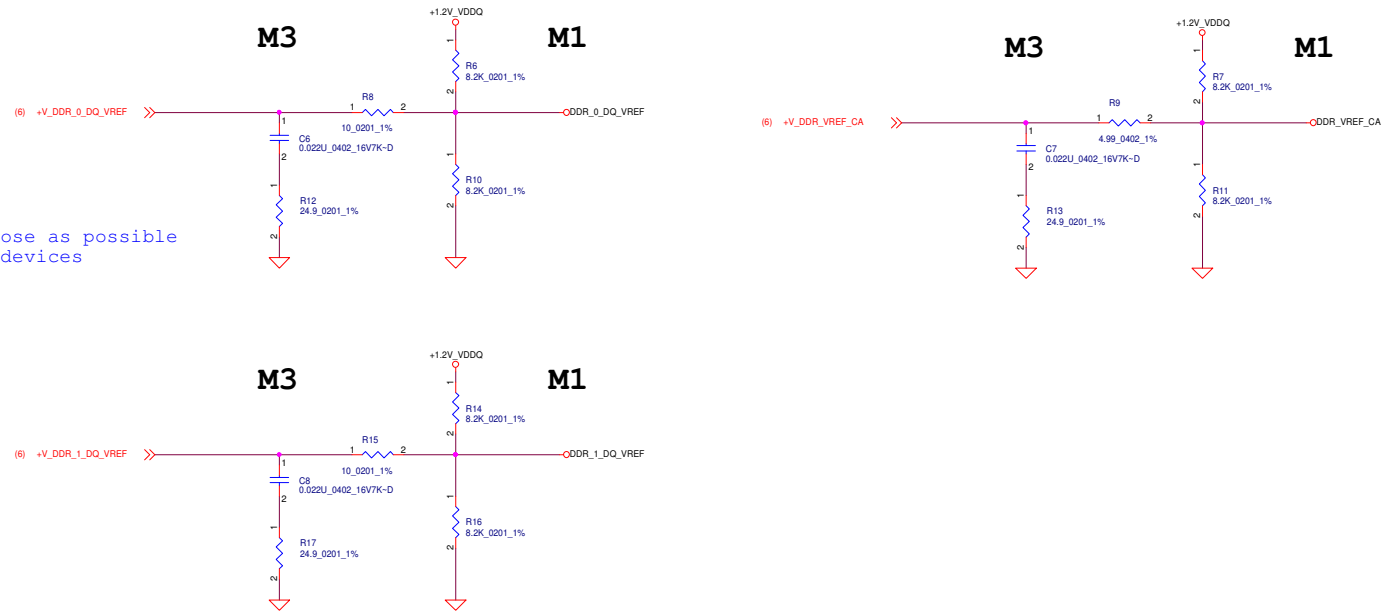


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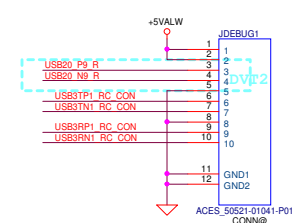
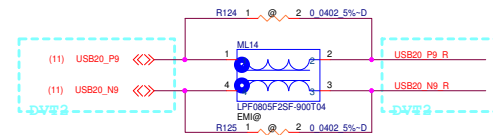
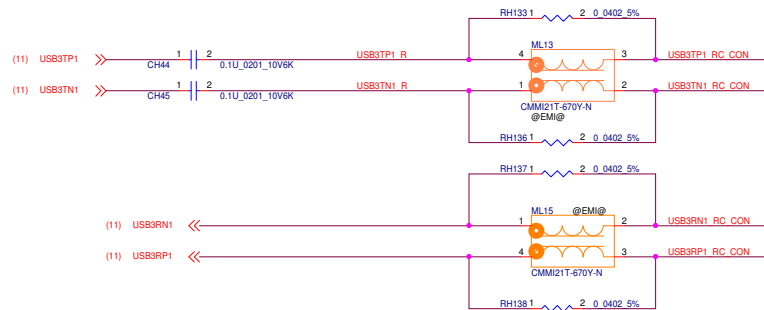
All VREF traces should have 10 mil trace width

Place the VREF voltage divider as close as possible to the LPDDR3 x64 memory down DREM devices

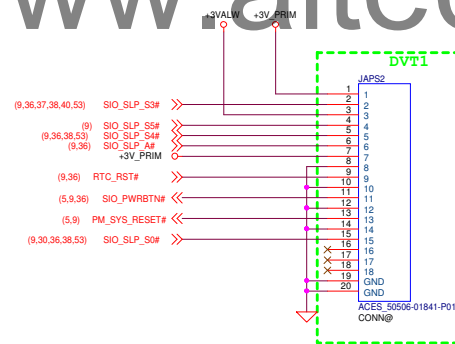
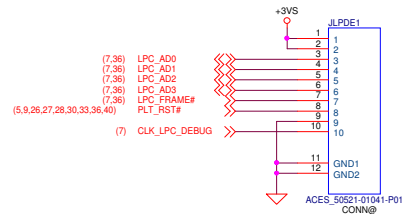


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Size				Document Number
Date				LA-C321P
Wednesday, July 09, 2015				Rev 0.7(206)
Sheet 20 of 61				

WIN debug

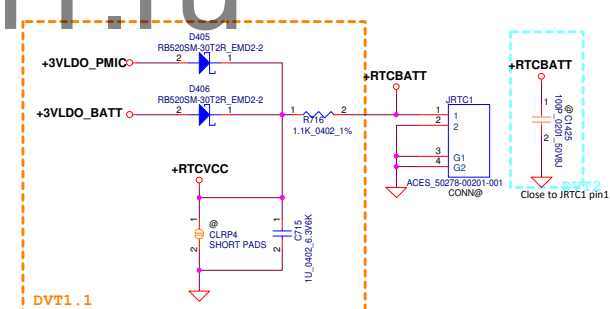


BIOS debug



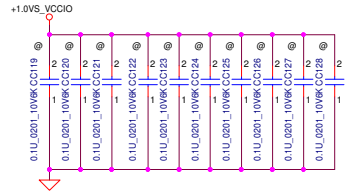
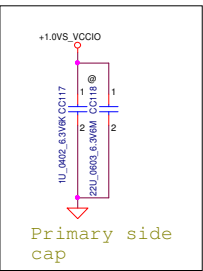
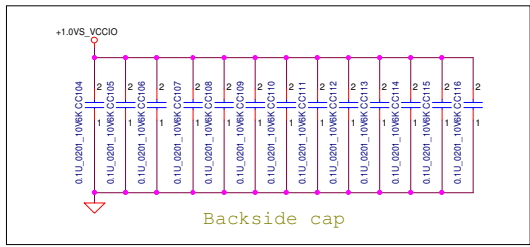
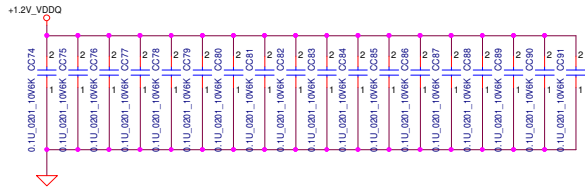
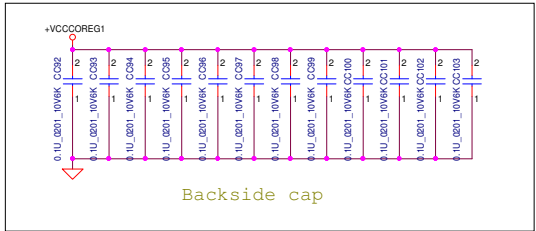
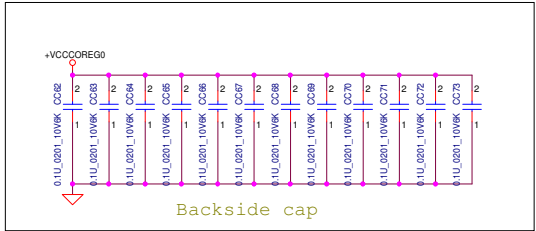
APS

RTC

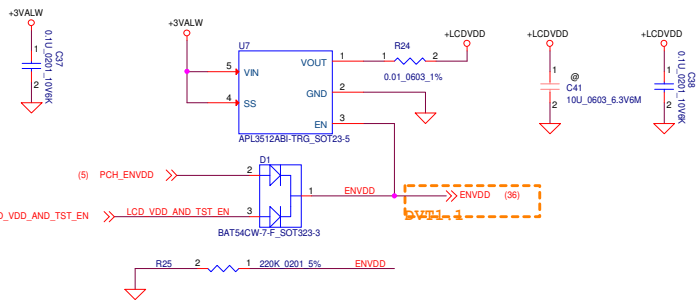


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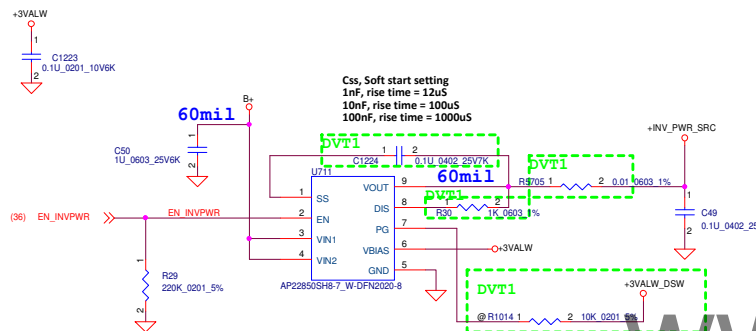
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Issued Date	2014/09/08	Deciphered Date	2013/10/28	Title
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LA-C321P				Rev 0.7(206)
Date: Wednesday, July 08, 2015				Sheet 21 of 61



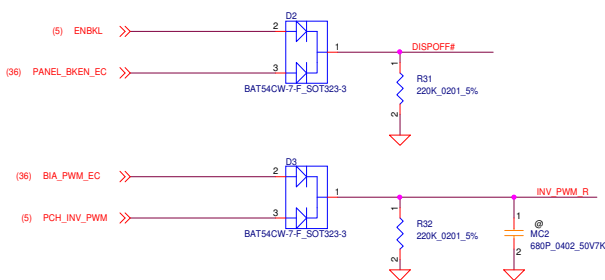
www.aitech1.ru



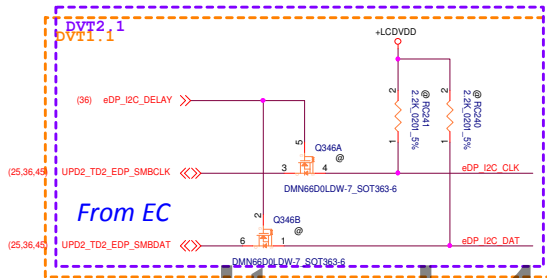
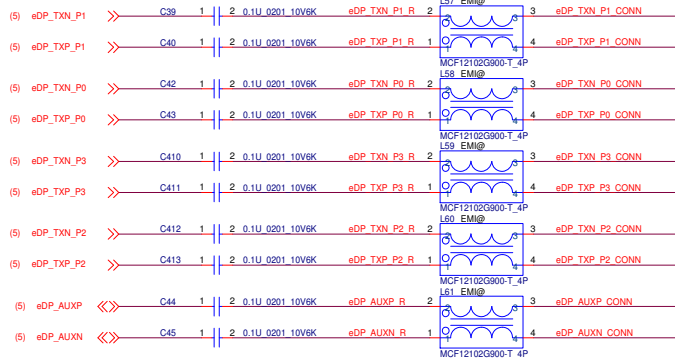
eDP BackLight Power



BackLight PWM Control

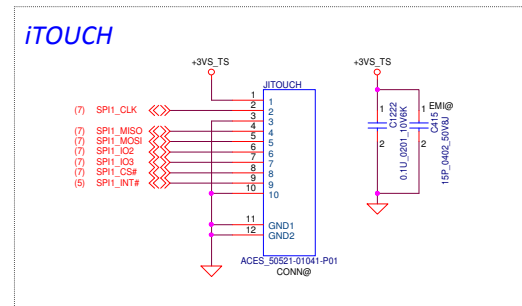
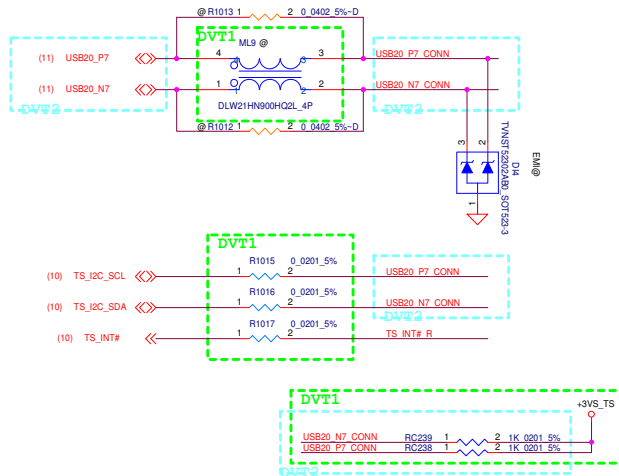


eDP Conn



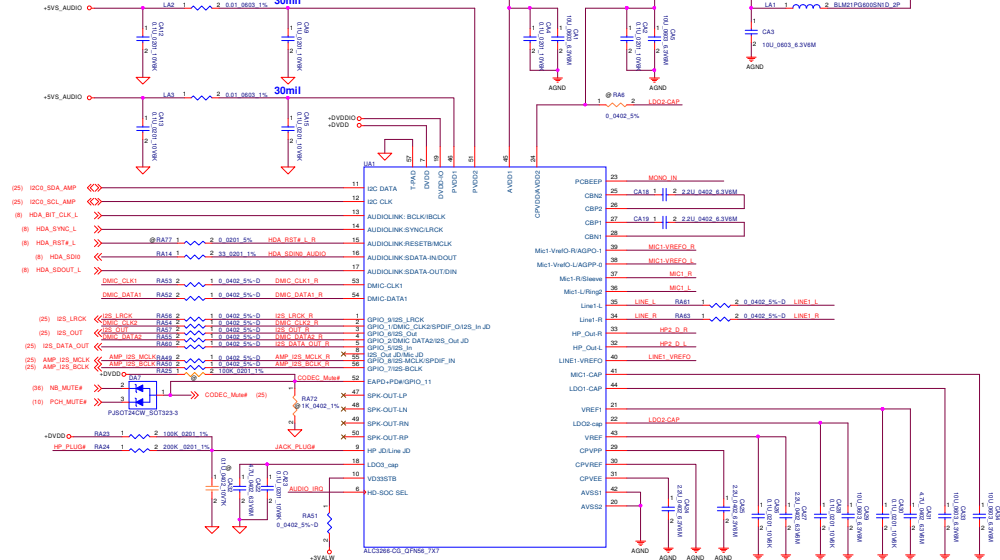
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Touch Screen (Co-lay with I2C interface)

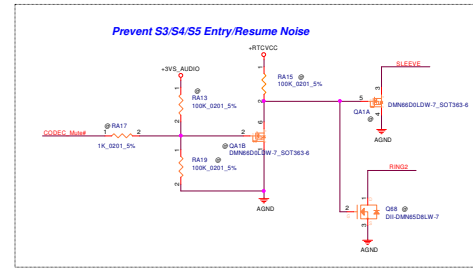


Speaker output by Smart AMP.
remove PVDD power filter only put 0.1uF.

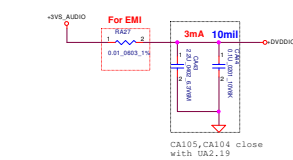
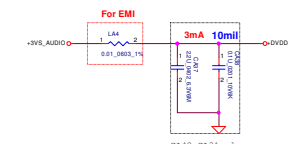
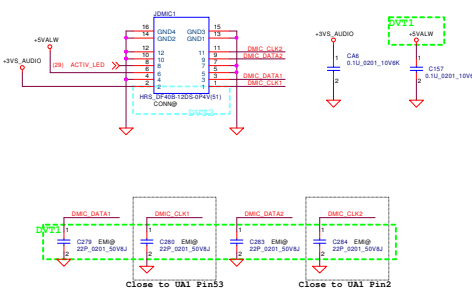
HD Audio Codec



Prevent S3/S4/S5 Entry/Resume Noise



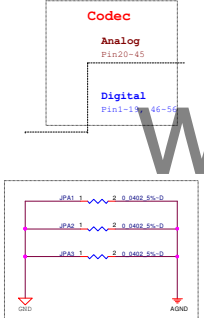
DMICS/CAMERA LED



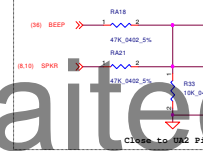
Codec

Analog
Pin20-45

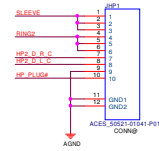
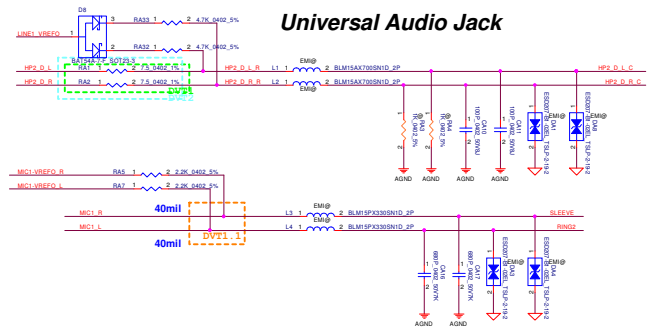
Digital
Pin1-19, 46-59



Beep sound

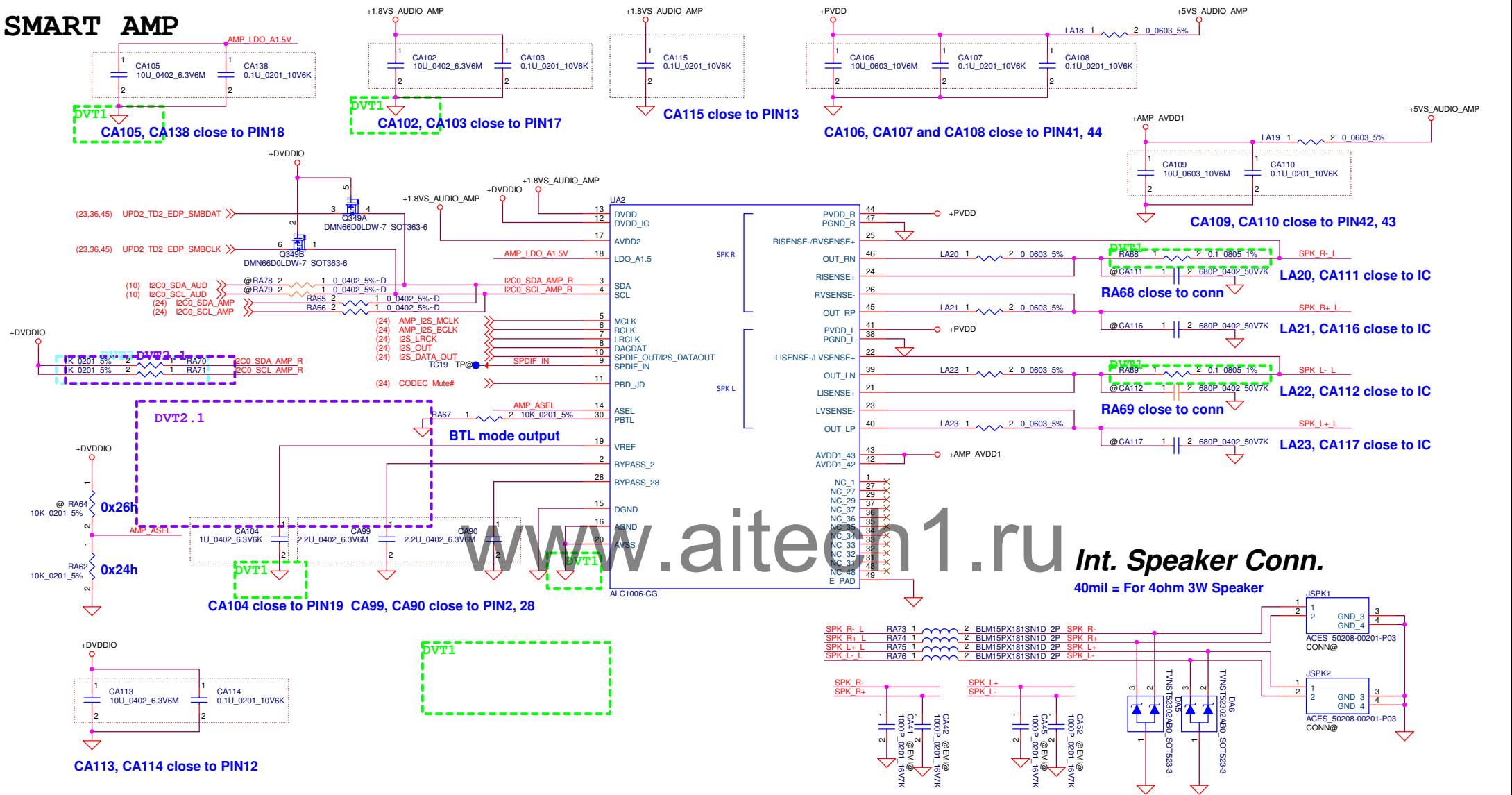


Universal Audio Jack



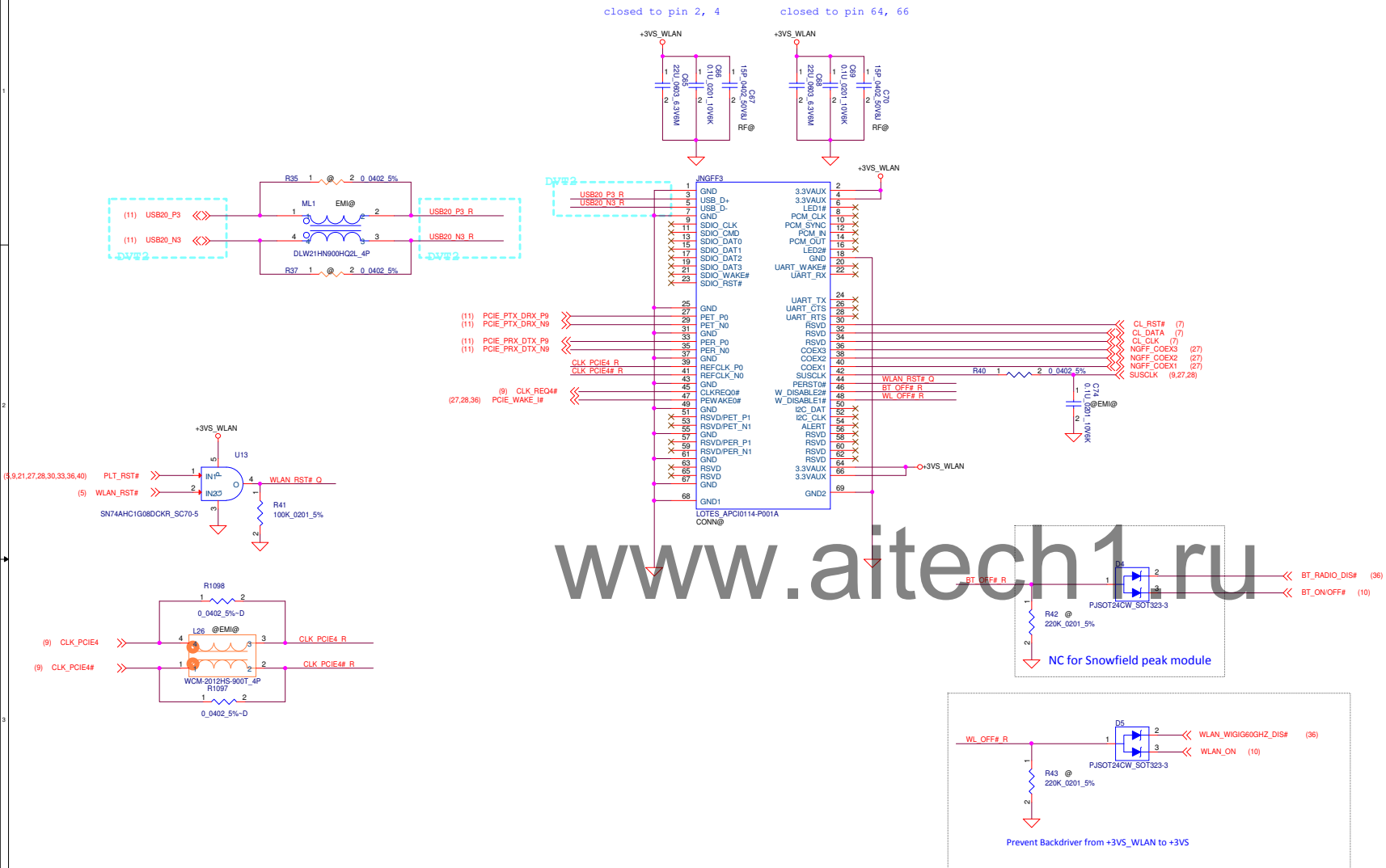
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LA-C321P		0.1
Rev		0.1
Rev		0.1

SMART AMP

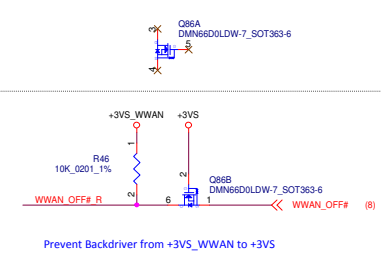
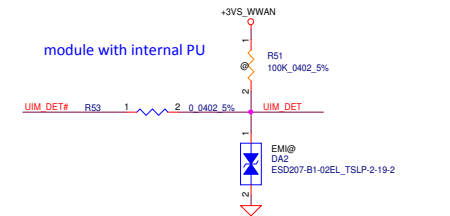
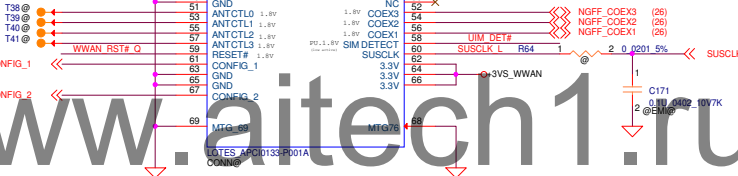
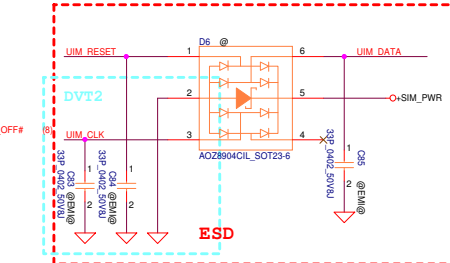
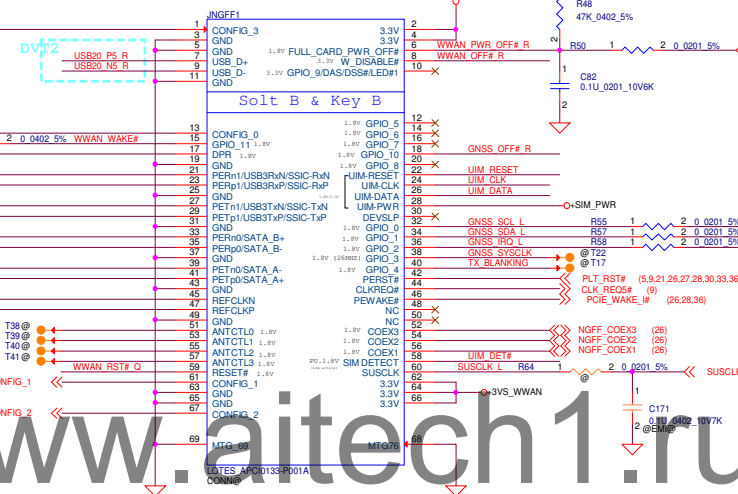
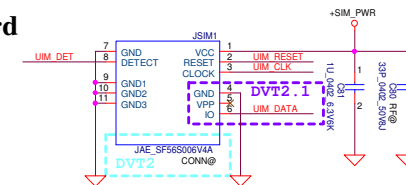


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				Docu- ment Number	LA-C321P
				Rev	070
				Date:	Wednesday, July 08, 2015
				Sheet	25 of 61

Wireless LAN

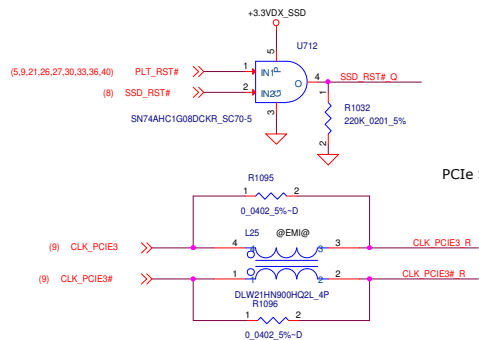


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				LA-C32IP	
Date: Wednesday, July 08, 2015				Sheet	26 of 61



State#	CONFIG_0 (Pin 21)	CONFIG_1 (Pin 69)	CONFIG_2 (Pin 75)	CONFIG_3 (Pin 1)	Module Type	Port Configuration	Pin	Port Config_0	Port Config_1	Port Config_2	Port Config_3
0	GND	GND	GND	GND	SSD - SATA	N/A	GPIO_0	GNSS_SCL	GNSS_SCL	SIM_DET2	IPC_0
1	GND	HIGH	GND	GND	SSD - PCIE	N/A	GPIO_1	GNSS_SDA	GNSS_SDA	UIM_DTA2	IPC_1
2	GND	GND	HIGH	GND	WWAN - PCIE	0	GPIO_2	GNSS_IRQ	GNSS_IRQ	UIM_CLK2	IPC_2
3	GND	HIGH	HIGH	GND	WWAN - PCIE	1	GPIO_3	SYSCLK	GNSS_0	UIM_RST2	IPC_3
4	GND	GND	GND	HIGH	WWAN - USB 3.0	0	GPIO_4	TX_BLANKING	GNSS_1	UIM_PWR2	IPC_4
5	GND	HIGH	GND	HIGH	WWAN - USB 3.0	1	GPIO_5	AUDIO_0	AUDIO_0	RFU	AUDIO_0
6	GND	GND	HIGH	HIGH	WWAN - USB 3.0	2	GPIO_6	AUDIO_1	AUDIO_1	RFU	AUDIO_1
7	GND	HIGH	HIGH	HIGH	WWAN - USB 3.0	3	GPIO_7	AUDIO_2	AUDIO_2	RFU	IPC_5/AUDIO_2
8	HIGH	GND	GND	GND	WWAN - SSIC	0	GPIO_8	AUDIO_3	AUDIO_3	RFU	IPC_6/AUDIO_3
9	HIGH	HIGH	GND	GND	WWAN - SSIC	1	GPIO_9	LED_1#	LED_1#	LED_1#	IPC_7
10	HIGH	GND	HIGH	GND	WWAN - SSIC	2	GPIO_10	W_DISABLE2#	W_DISABLE2#	W_DISABLE2#	HSIC_STROBE
11	HIGH	HIGH	HIGH	GND	WWAN - SSIC	3	GPIO_11	WAKE_ON_WWAN#	WAKE_ON_WWAN#	WAKE_ON_WWAN#	HSIC_DATA
12	HIGH	GND	GND	HIGH	WWAN - PCIE	2					
13	HIGH	HIGH	GND	HIGH	WWAN - PCIE	3					
14	HIGH	GND	HIGH	HIGH	DDP HCA - PCIE	N/A					
15	HIGH	HIGH	HIGH	HIGH	No Module	N/A					

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PCIe SSD

SATA SSD

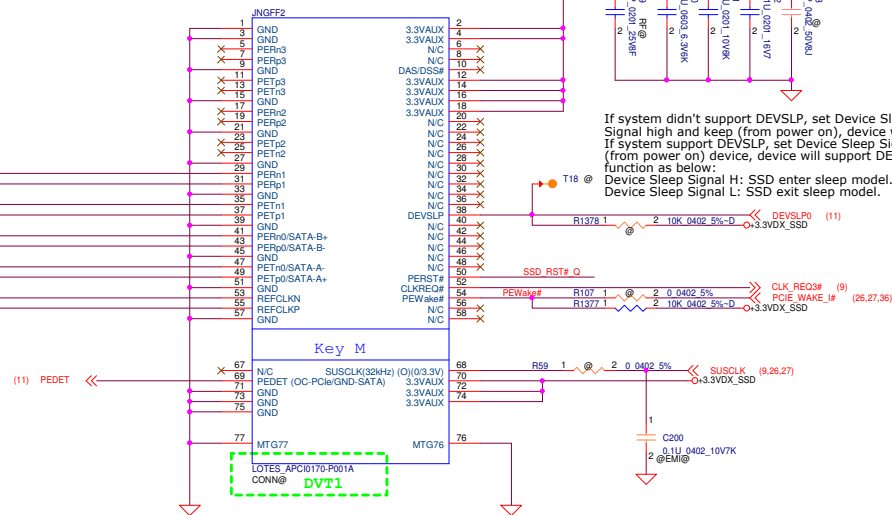
- (11) PCIE_PRX_DTX_N8
- (11) PCIE_PRX_DTX_P8
- (11) PCIE_PTX_DRX_N8
- (11) PCIE_PTX_DRX_P8
- (11) PCIE_PRX_DTX_P7
- (11) PCIE_PRX_DTX_N7
- (11) PCIE_PTX_DRX_N7
- (11) PCIE_PTX_DRX_P7

CLK_PCIE3# R

CLK_PCIE3 R

(11) PEDET

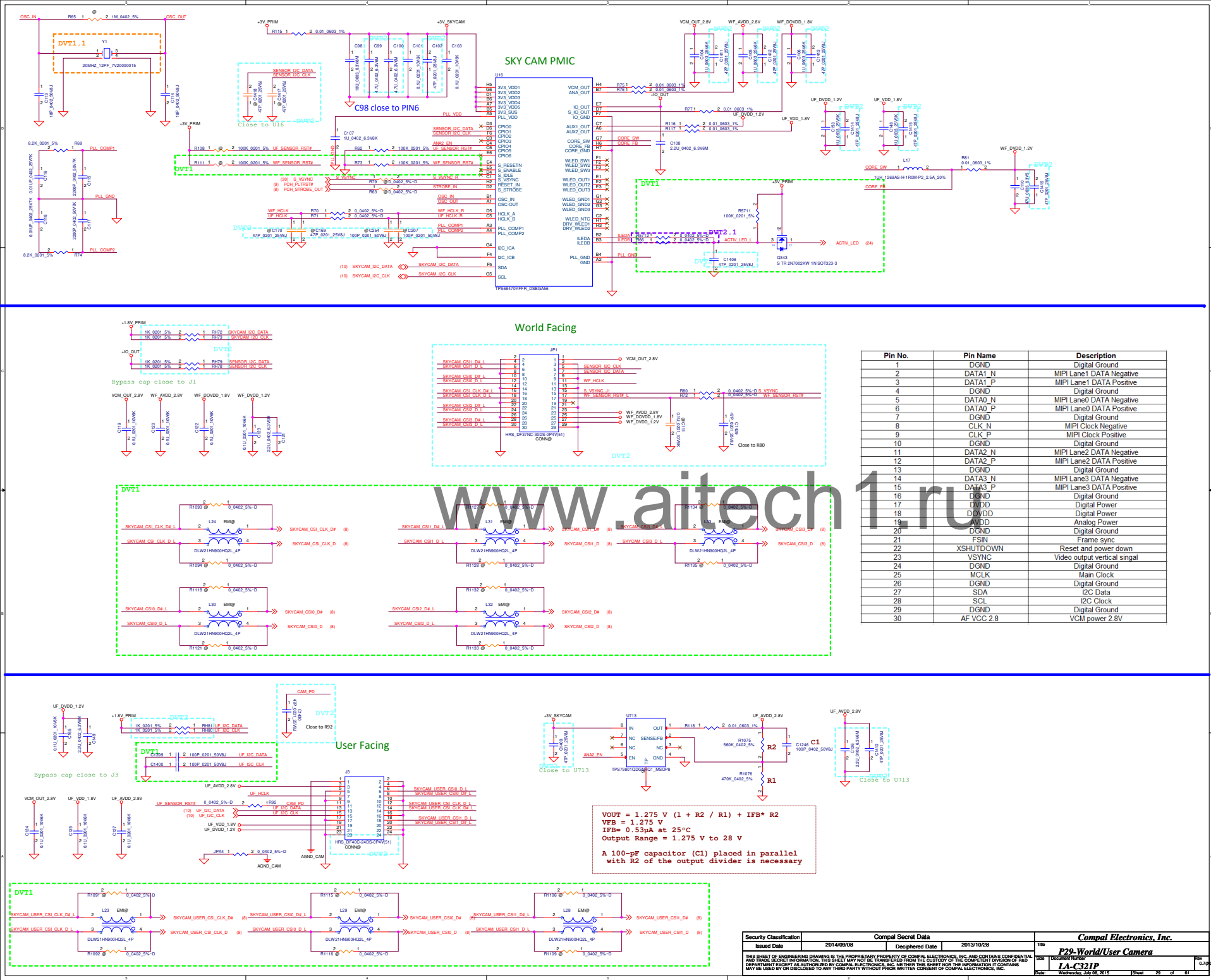
NGFF(SATA)



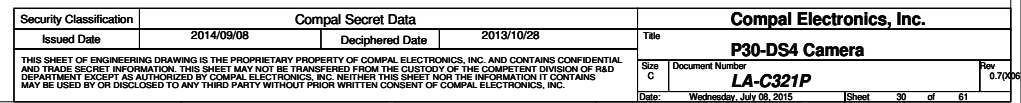
If system didn't support DEVSLP, set Device Sleep Signal high and keep (from power on), device will ignore.
If system support DEVSLP, set Device Sleep Signal low (from power on) device, device will support DEVSLP function as below:
Device Sleep Signal H: SSD enter sleep model.
Device Sleep Signal L: SSD exit sleep model.

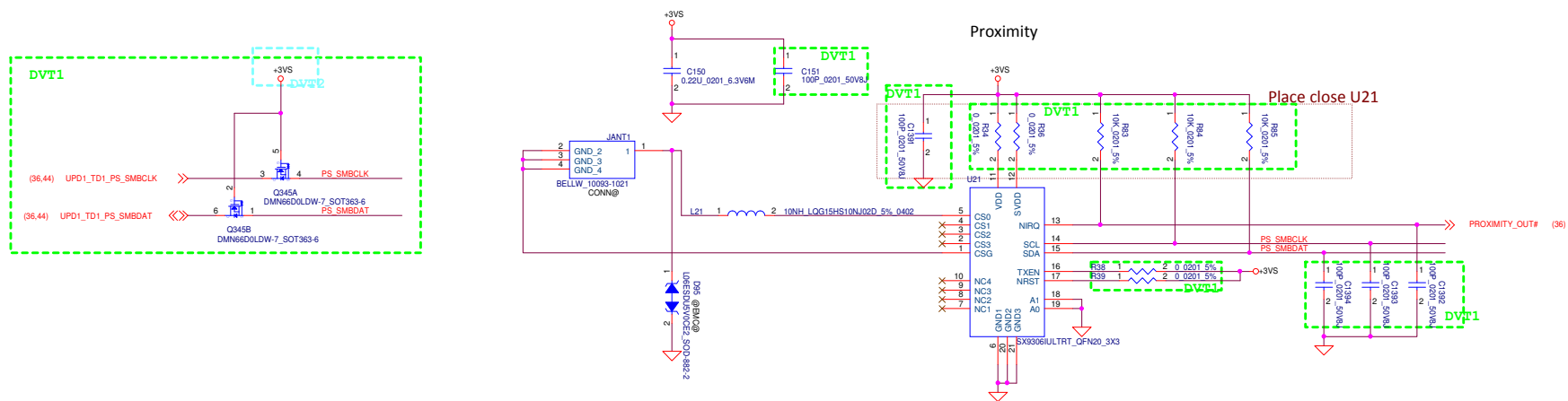
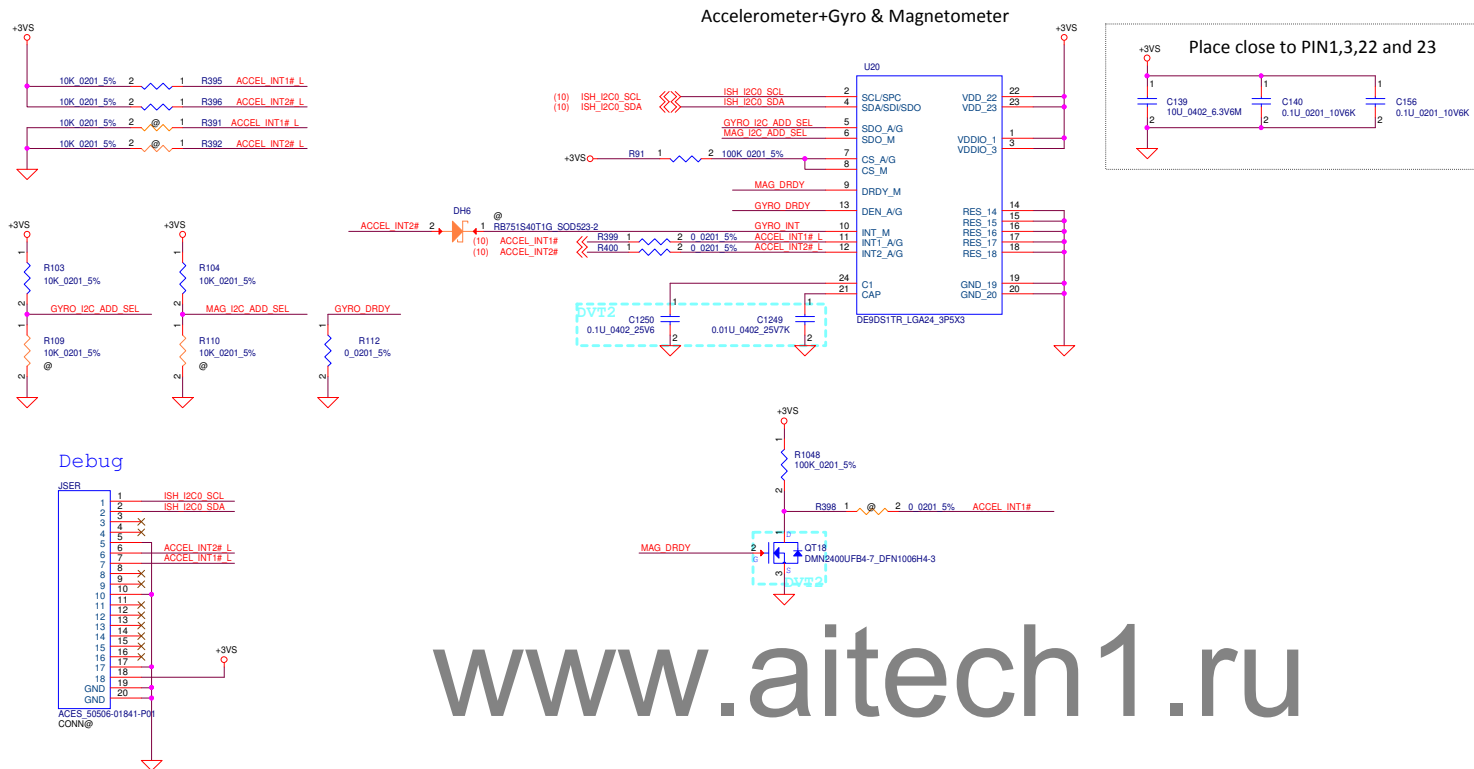
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Size	Document Number	Rev	Date: Wednesday, July 09, 2015	
C	LA-C321P	0.7(206)	Sheet 28 of 61	

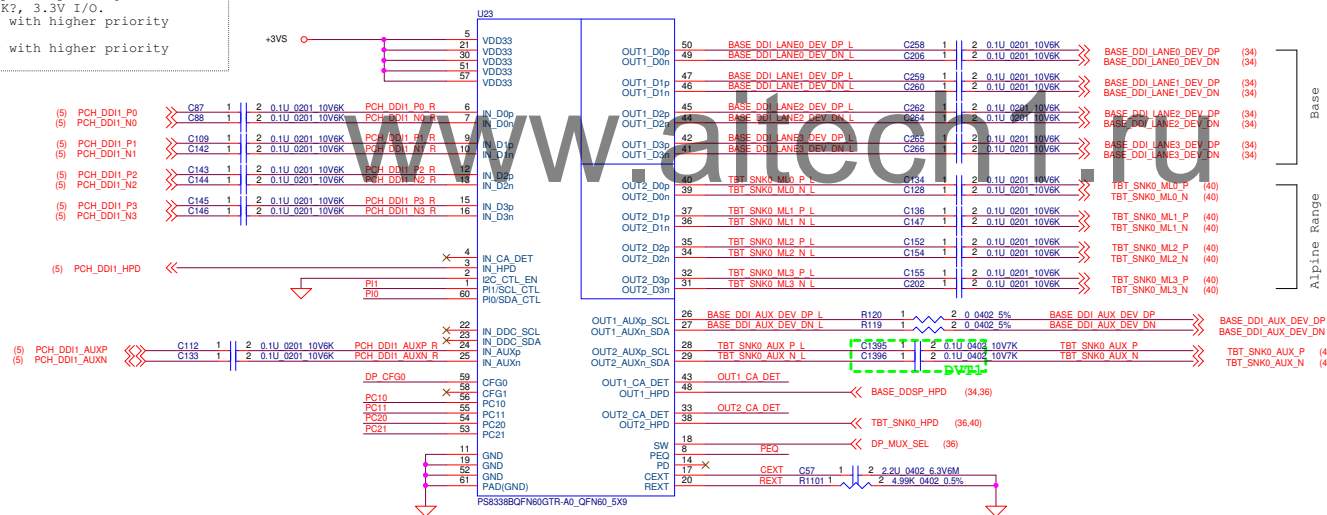
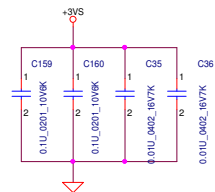
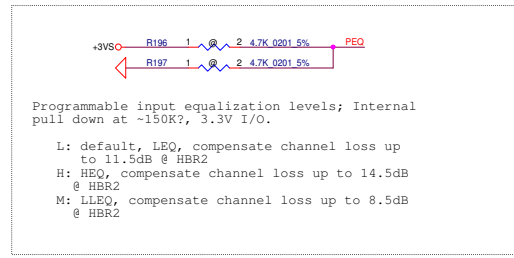
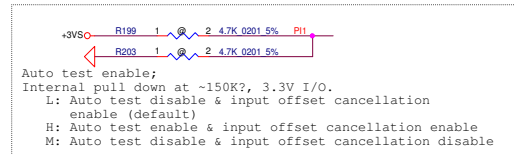
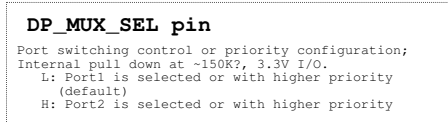
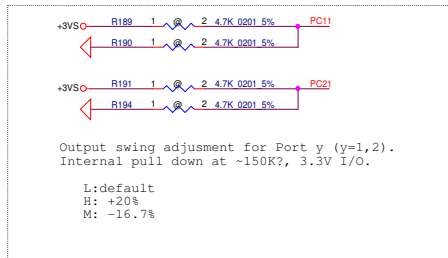
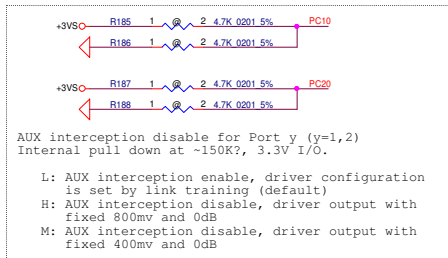
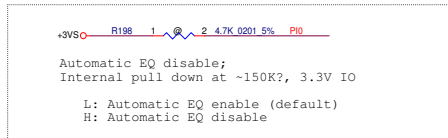
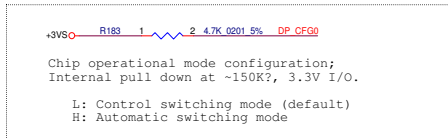


TPM

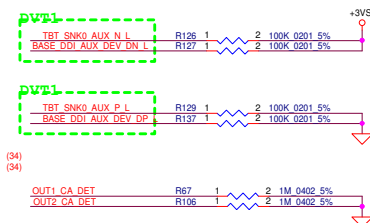




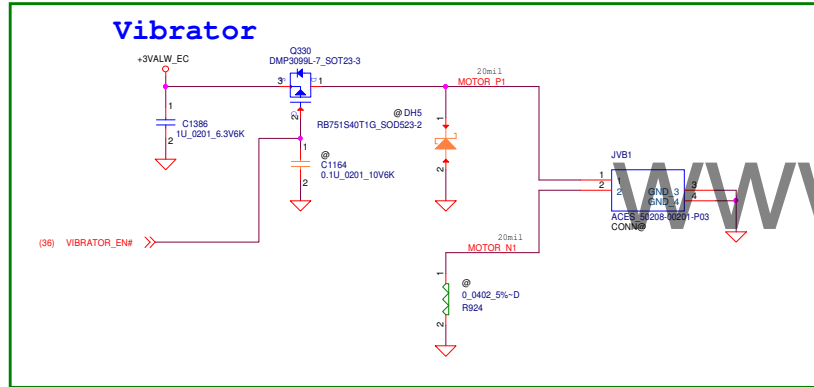
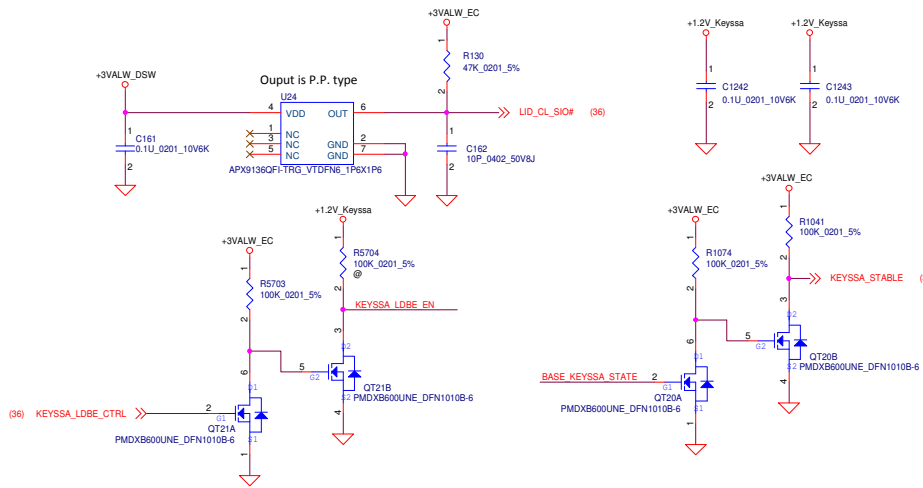
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				Document Number
				LA-C321P
				Date: Wednesday, July 08, 2015
				Sheet 31 of 61



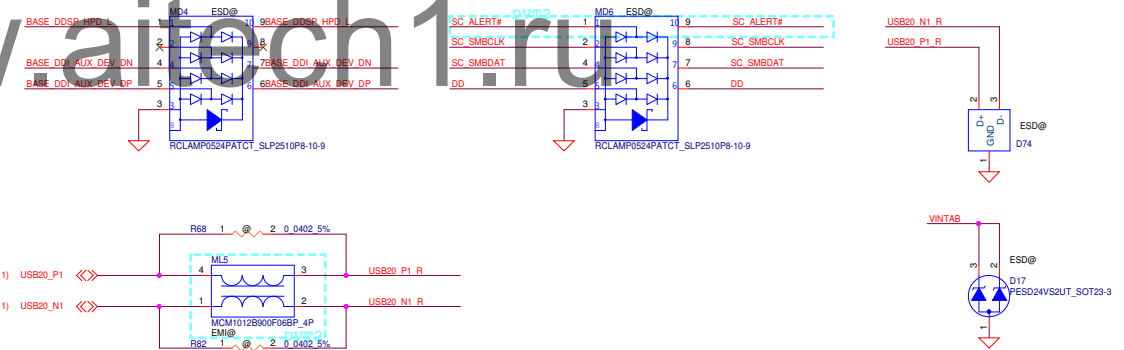
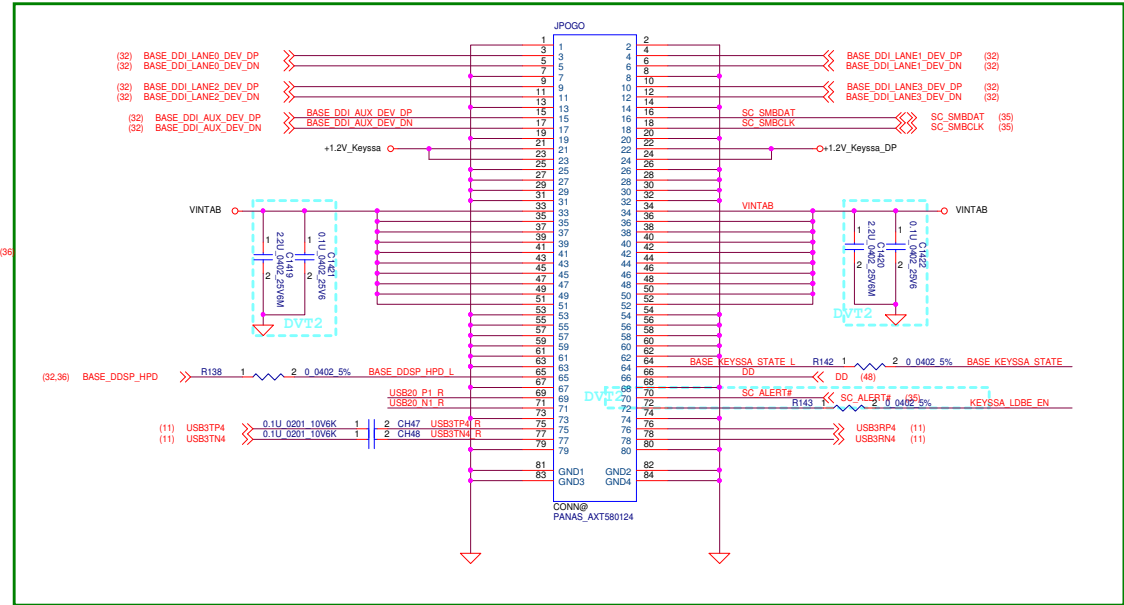
Base
Alpine Range



LID SW



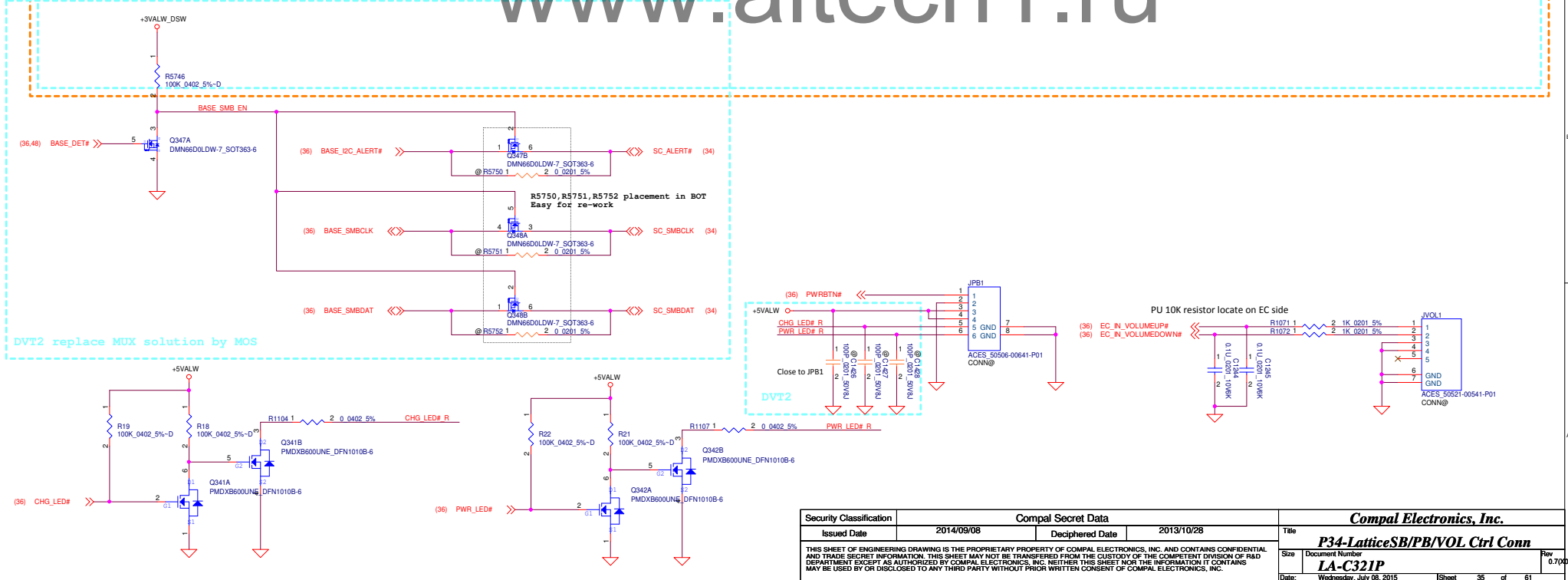
Keyssa USB3.0 and Displayport Conns



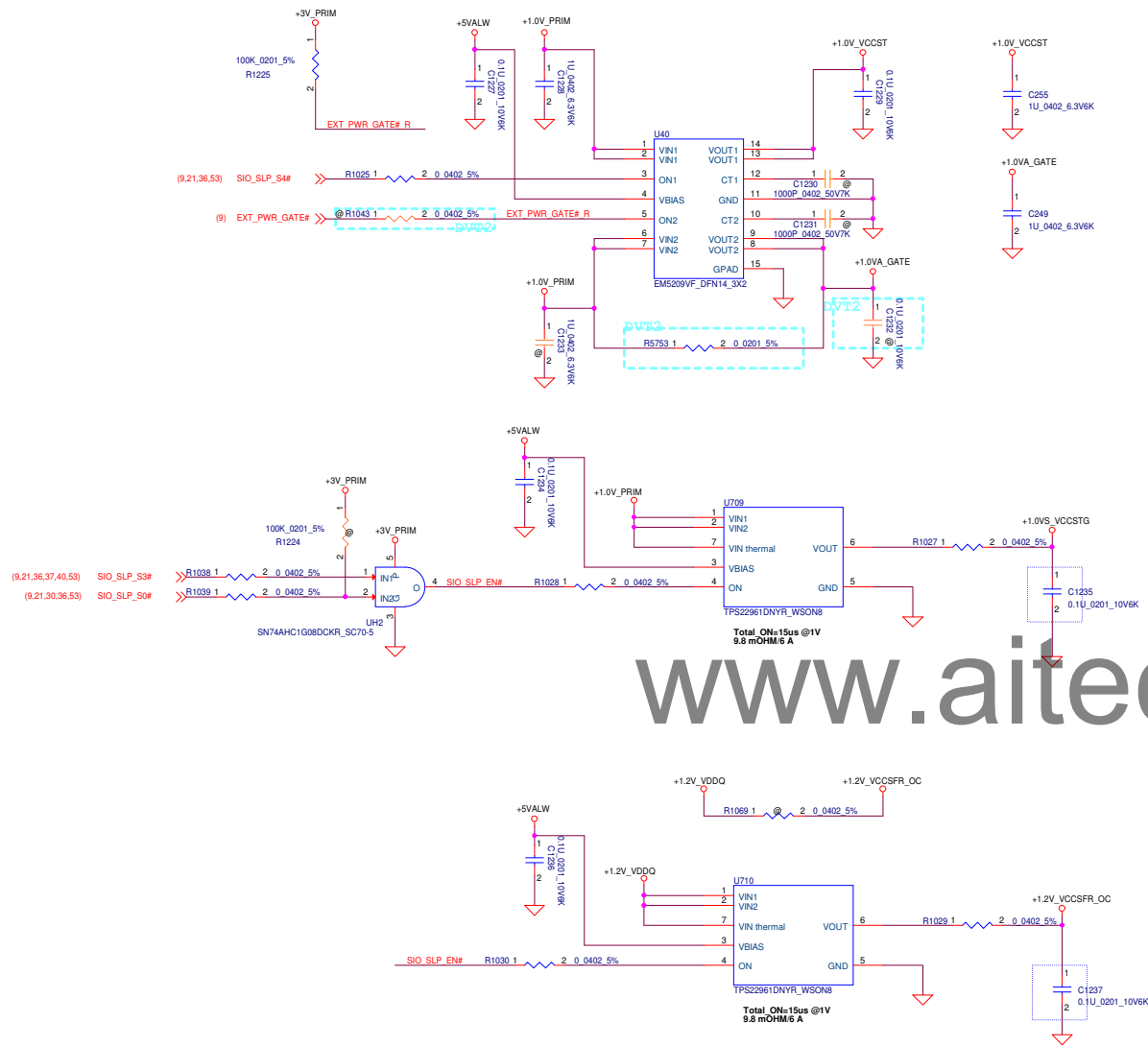
HEAD SIDE

DVT1.1 De-pop SB
DVT2 Remove SB

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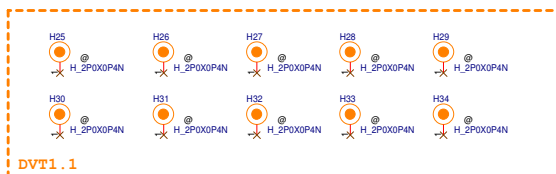
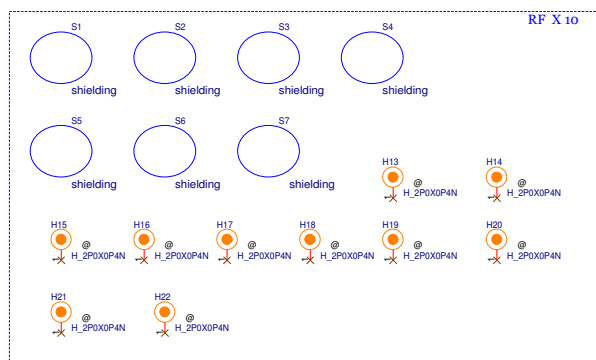
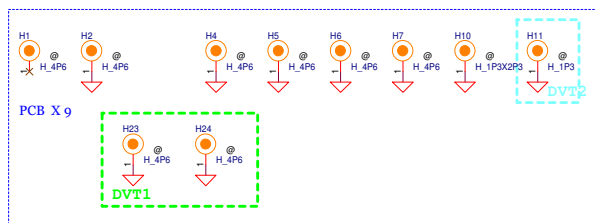
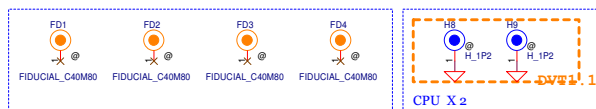
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				Rev 0.7(206)
				Date: Wednesday, July 08, 2015 1 Sheet 35 of 61



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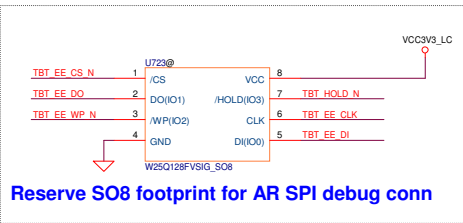
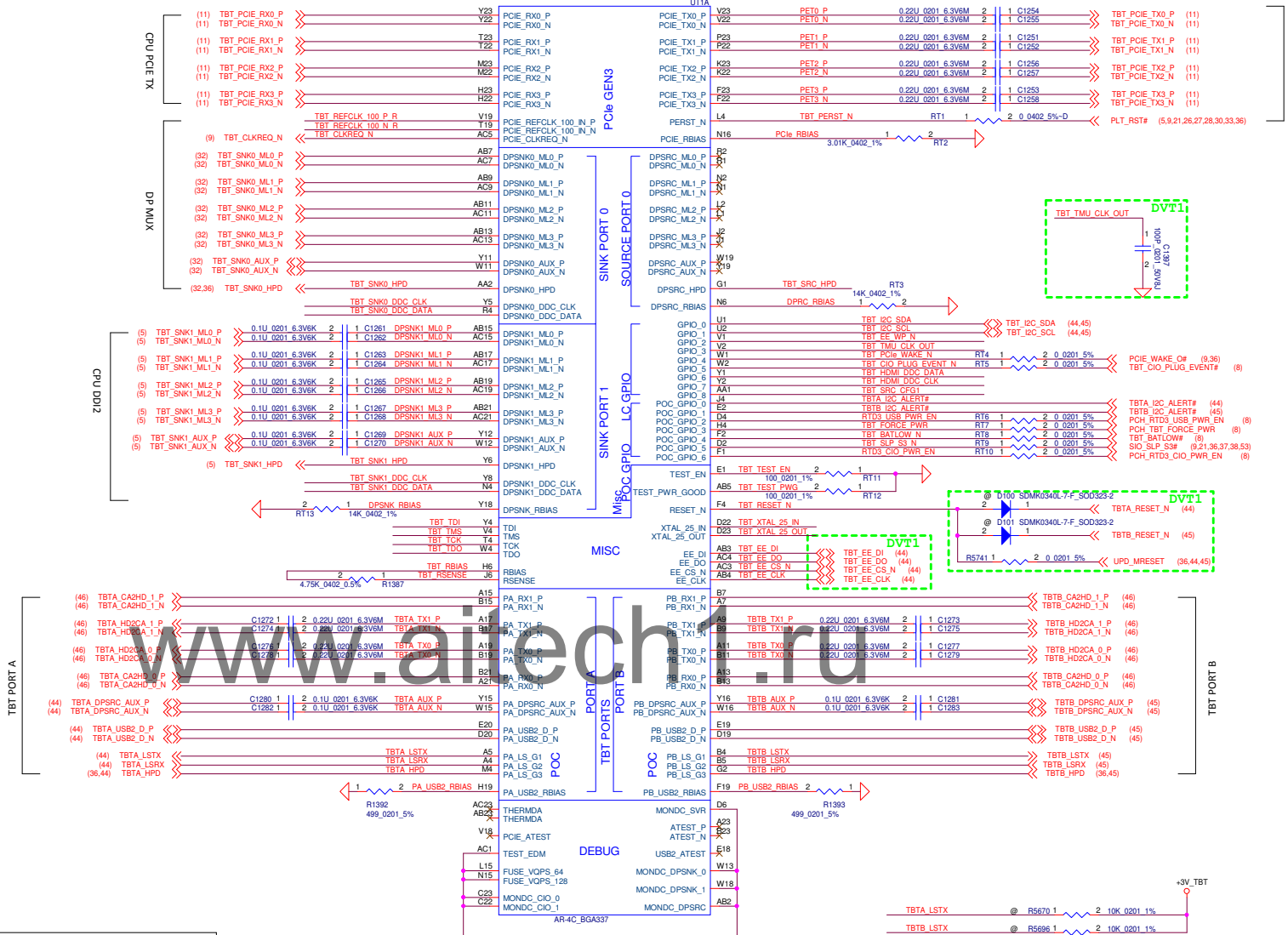
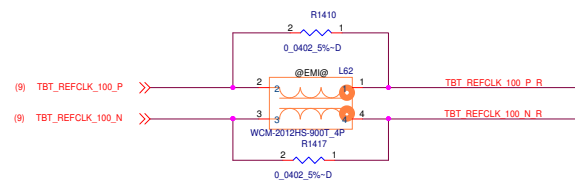
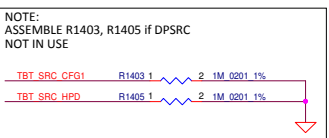
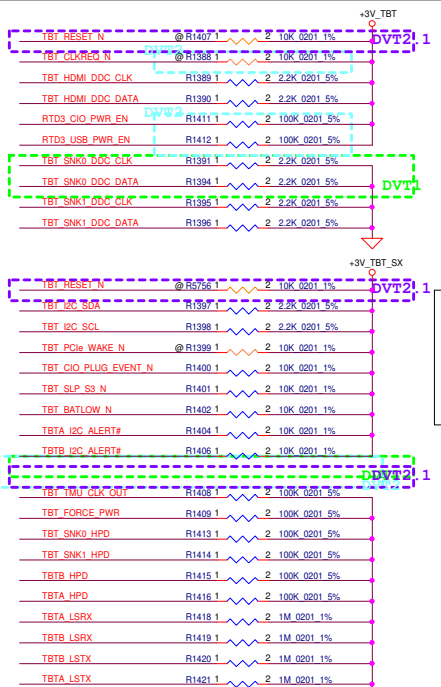
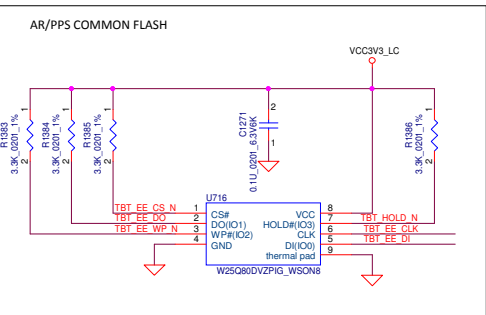
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Date: Wednesday, July 09, 2015					Sheet 38 of 61

Screw Hole



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Size	Document Number			LA-C321P	
Date	Wednesday, July 09, 2015	Sheet	39	of	61



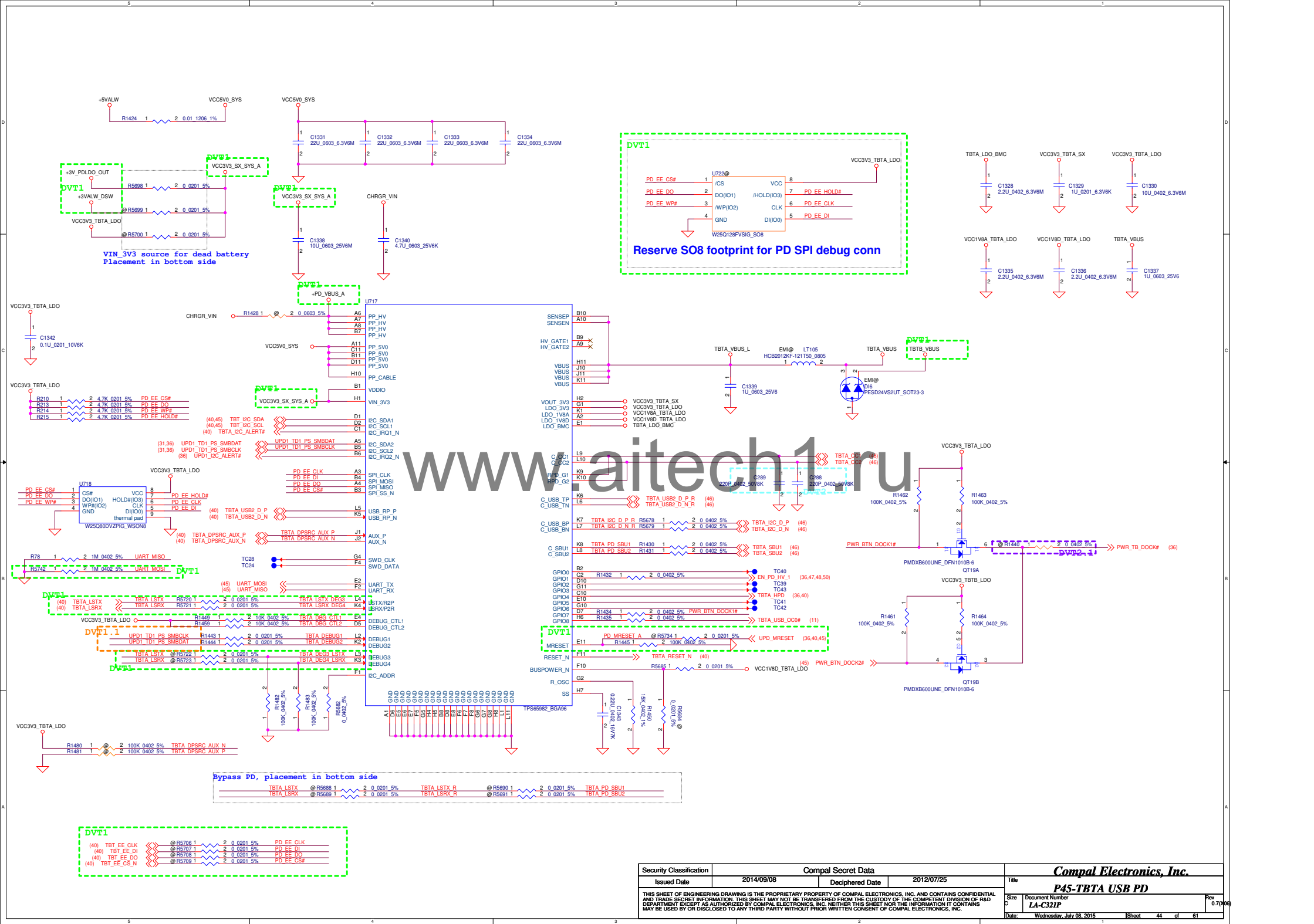
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				Rev	0.7000
				Date:	Wednesday, July 08, 2015 Sheet 40 of 61

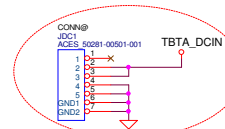
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				Date:	Wednesday, July 08, 2015
				Sheet	42 of 61
				Rev	0.7009

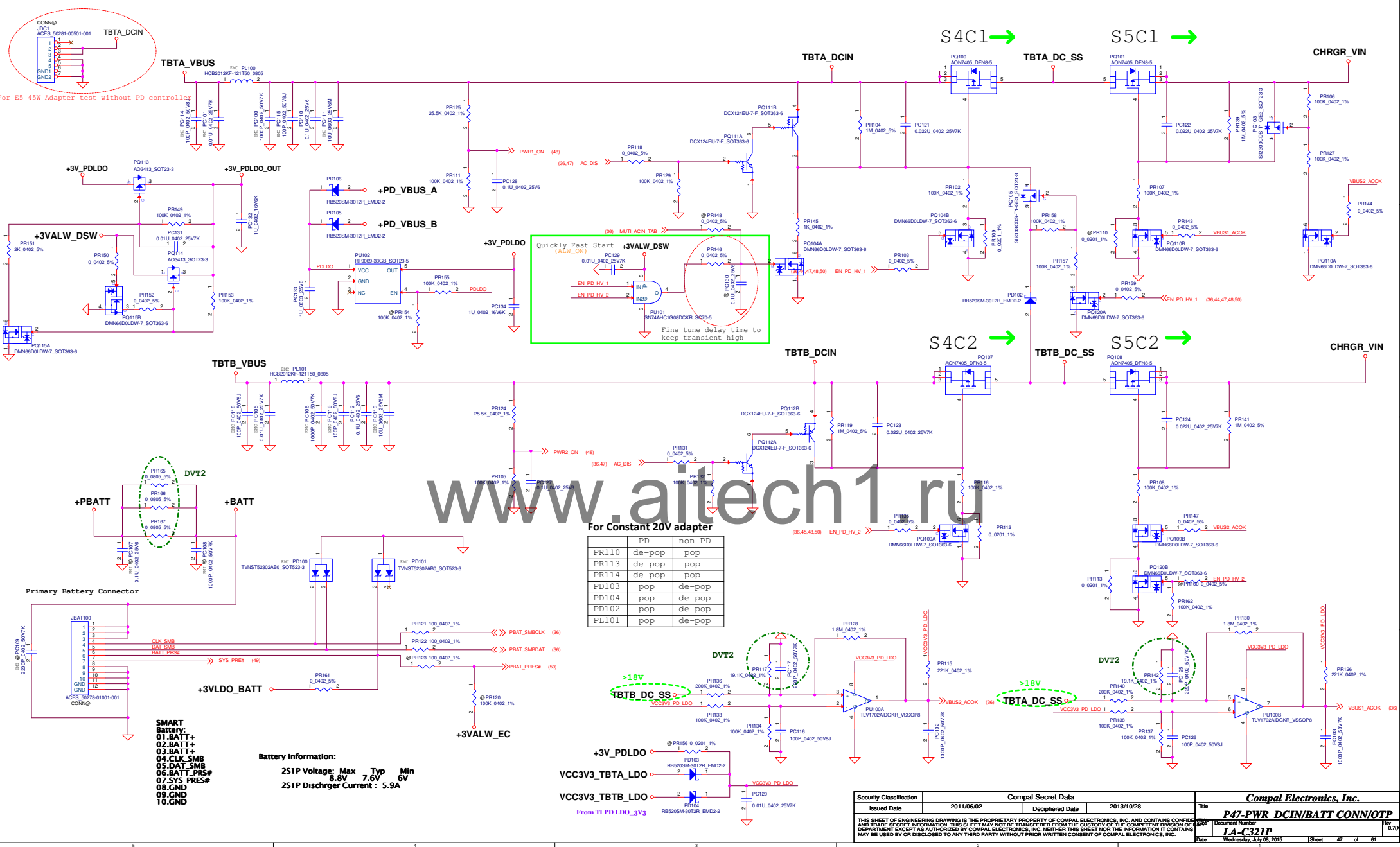
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				C	0.7009
				Document Number	
				LA-C321P	
				Date: Wednesday, July 08, 2015	Sheet 43 of 61





For E5 45W Adapter test without PD controller



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For Constant 20V adapter

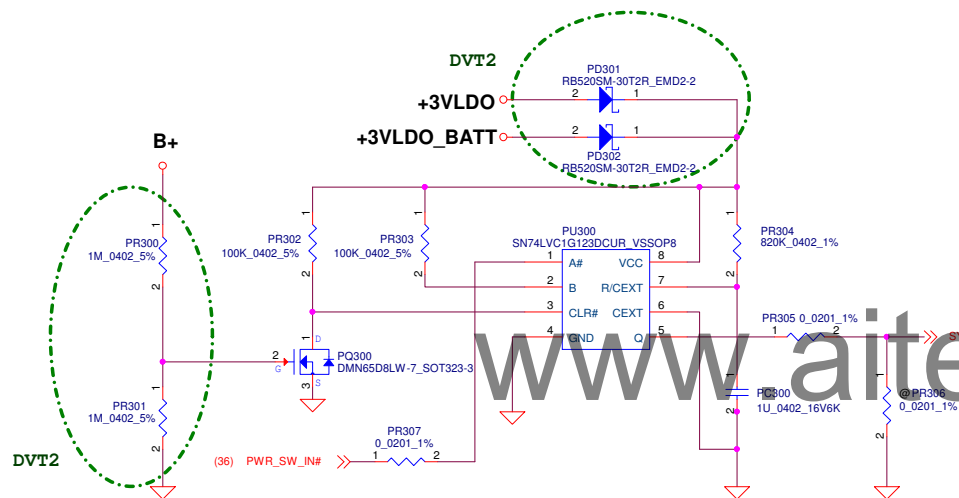
	PD	non-PD
PR110	de-pop	pop
PR113	de-pop	pop
PR114	de-pop	pop
PD103	pop	de-pop
PD104	pop	de-pop
PD102	pop	de-pop
PL101	pop	de-pop

SMART Battery
01.BATT+
02.BATT+
03.BATT+
04.CLK_SMB
05.DAT_SMB
06.BATT_PRES#
07.SYS_PRES#
08.GND
09.GND
10.GND

Battery information:
251P Voltage: Max Typ Min
8.8V 7.6V 6V
251P Discharger Current : 5.9A

+3V_PDLO
VCC3V3_TBTA_LDO
VCC3V3_TBTB_LDO
From TI PD LDO_3V3

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				Sheet	27 of 61

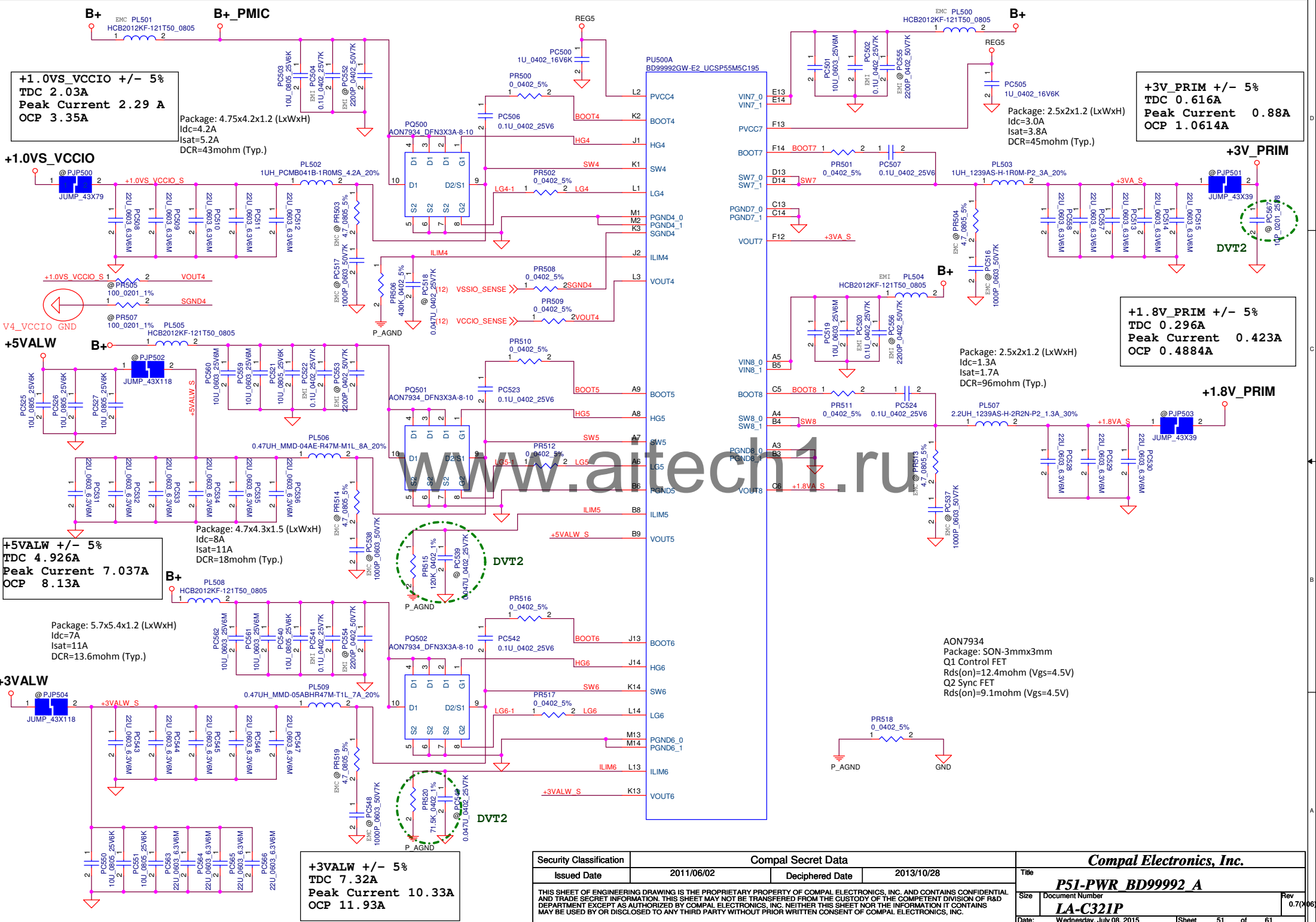


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Support Storage mode

FUNCTION TABLE

INPUTS			OUTPUTS
CLR	A	B	Q
L	X	X	L
X	H	X	L ⁽¹⁾
X	X	L	L ⁽¹⁾
H	L	↑	⌋
H	↓	H	⌋
↑	L	H	⌋



+1.0VS_VCCIO +/- 5%
TDC 2.03A
Peak Current 2.29 A
OCF 3.35A

Package: 4.75x4.2x1.2 (LxWxH)
Idc=4.2A
Isat=5.2A
DCR=43mohm (Typ.)

+1.0VS_VCCIO

+5VALW

+5VALW +/- 5%
TDC 4.926A
Peak Current 7.037A
OCF 8.13A

Package: 4.7x4.3x1.5 (LxWxH)
Idc=8A
Isat=11A
DCR=18mohm (Typ.)

+3VALW

+3VALW +/- 5%
TDC 7.32A
Peak Current 10.33A
OCF 11.93A

+3V_PRIM +/- 5%
TDC 0.616A
Peak Current 0.88A
OCF 1.0614A

+3V_PRIM

+1.8V_PRIM +/- 5%
TDC 0.296A
Peak Current 0.423A
OCF 0.4884A

+1.8V_PRIM

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				LA-C321P	Rev 0.70(06)
				Date	Wednesday, July 08, 2015
				Sheet	51 of 61

+1.8V_MEM +/- 5%
TDC 0.294A
Peak Current 0.42A
OCP 0.485A

+1.8V_MEM

+1.2V_VDDQ +/- 5%
TDC 3.78A
Peak Current 5.4A
OCP 6.237A

+1.2V_VDDQ

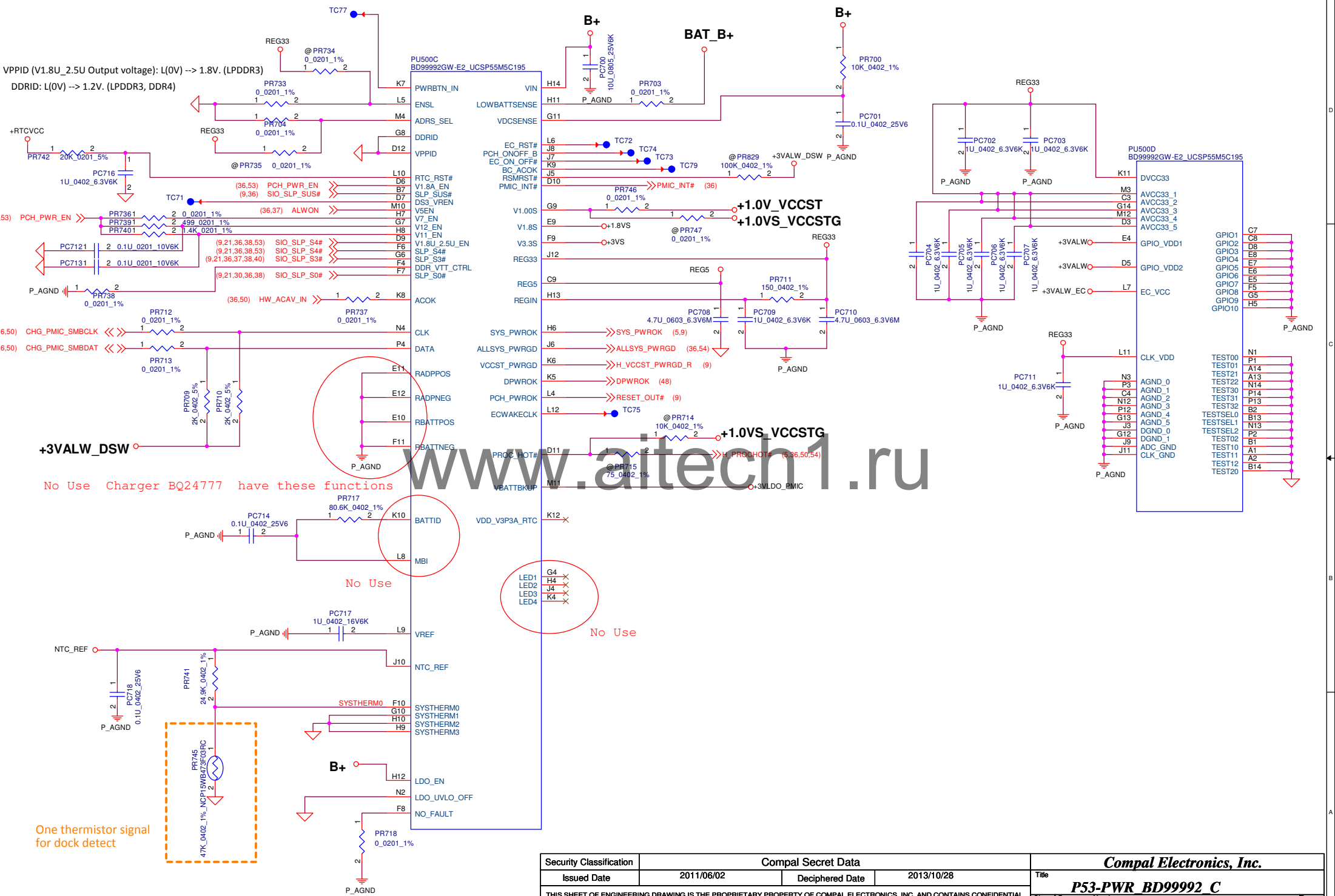
+1.0V_PRIM

+1.0V_PRIM +/- 5%
TDC 3.24A
Peak Current 3.29A
OCP 5.35A

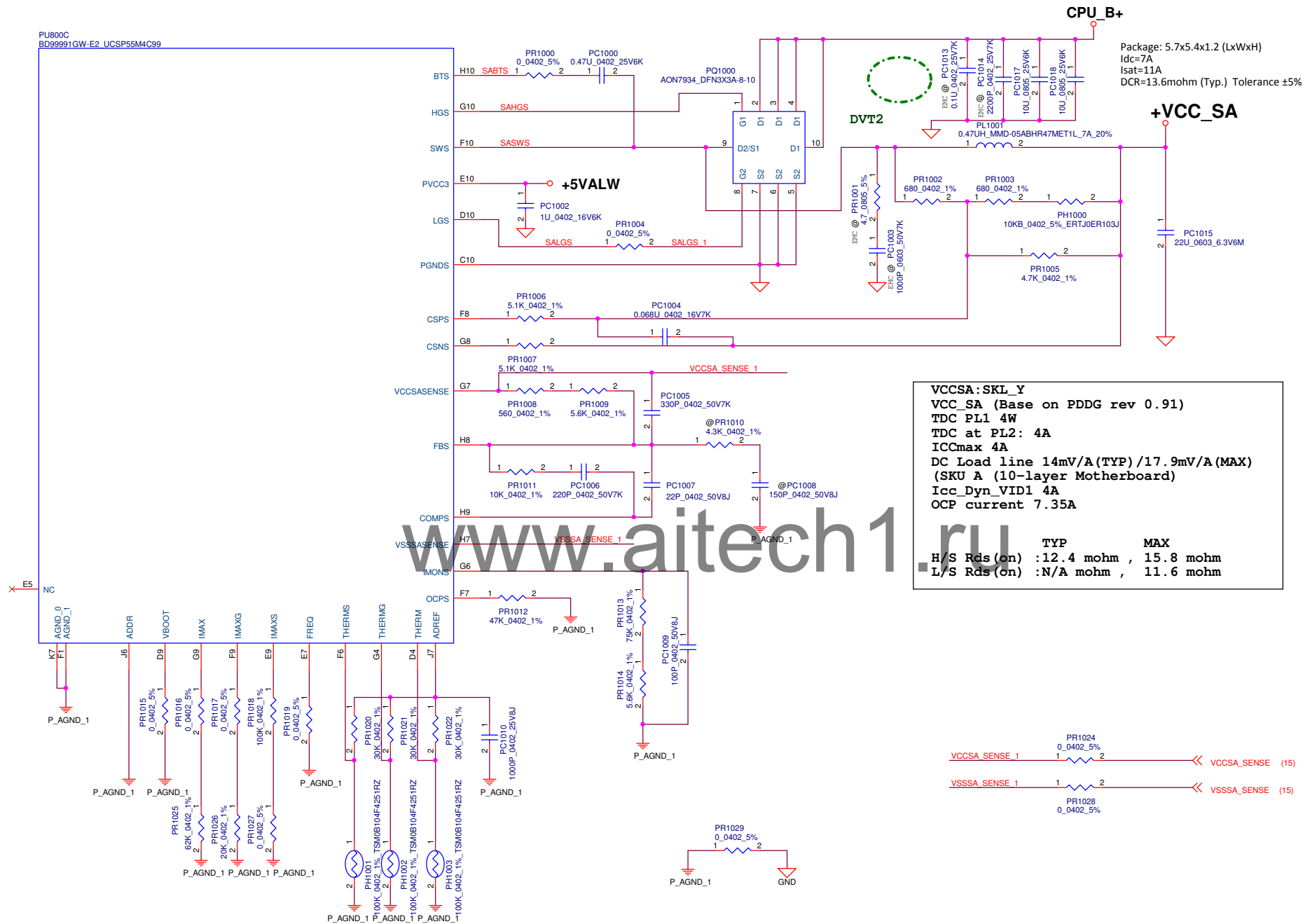
V0.85_PRIM +/- 5%
TDC 0.77A
Peak Current 1.1A
OCP 1.27A

+0.85V_PRIM

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				Date	Wednesday, July 08, 2015
				Sheet	52 of 61



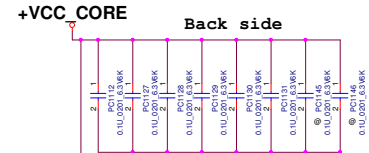
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				Sheet	56 of 61

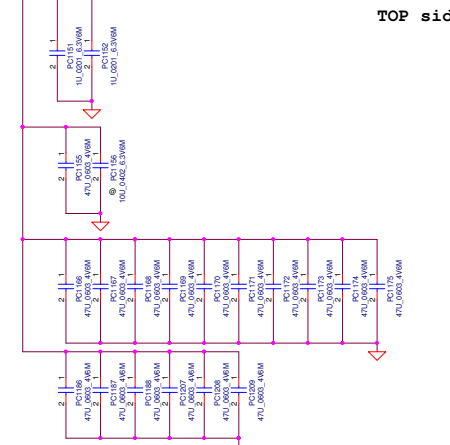
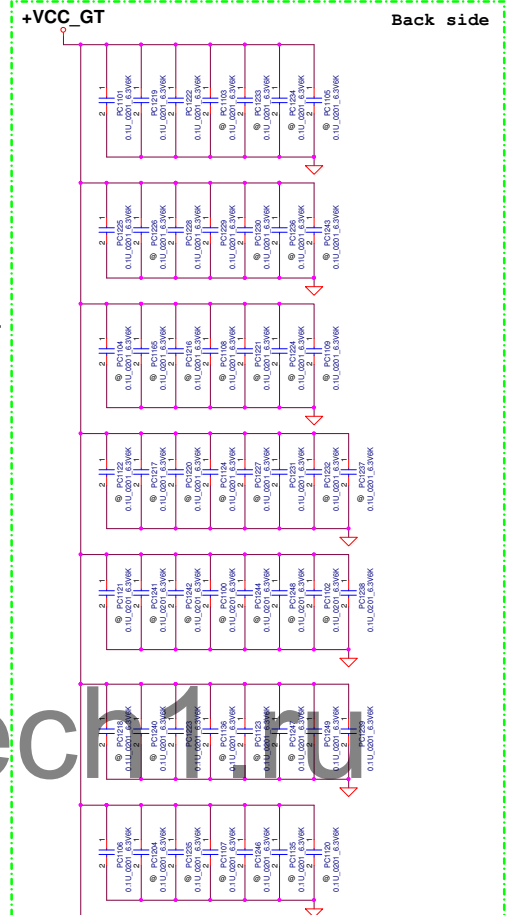
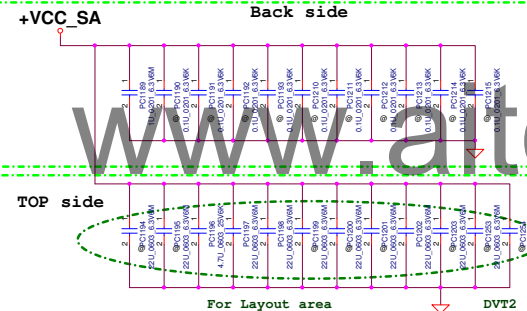
VCC_CORE
0.1U_0201 * 20 pcs +10U_0402*8cs+47U_0603*12pcs+(Reserve 0.1u_0201*12pcs)

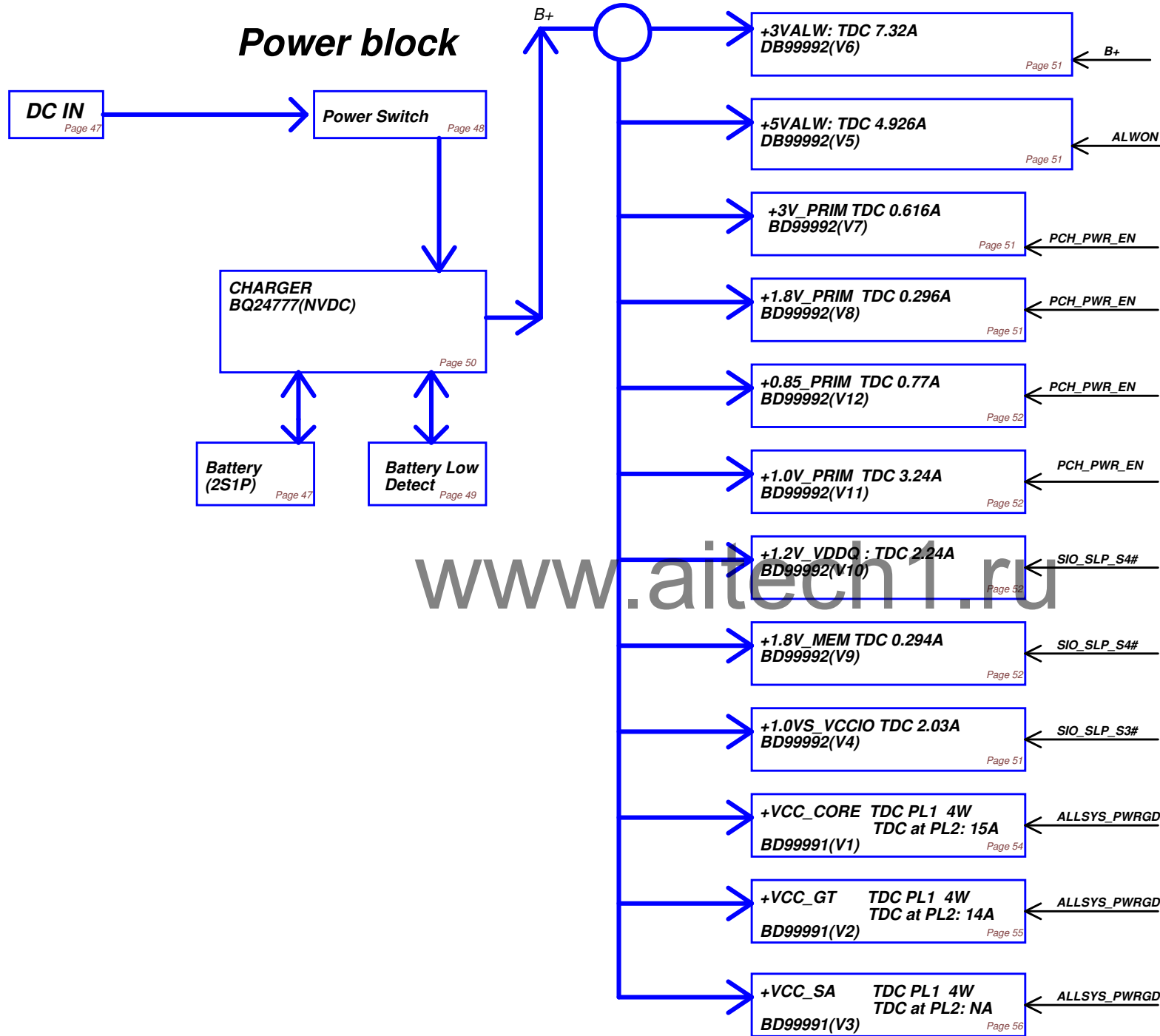
VCC_GT
0.1U_0201 * 12 pcs +1U_0201*2 pcs+47U_0603*16pcs+(Reserve 0.1U_0201*40pcs+10u_0402*2pcs)



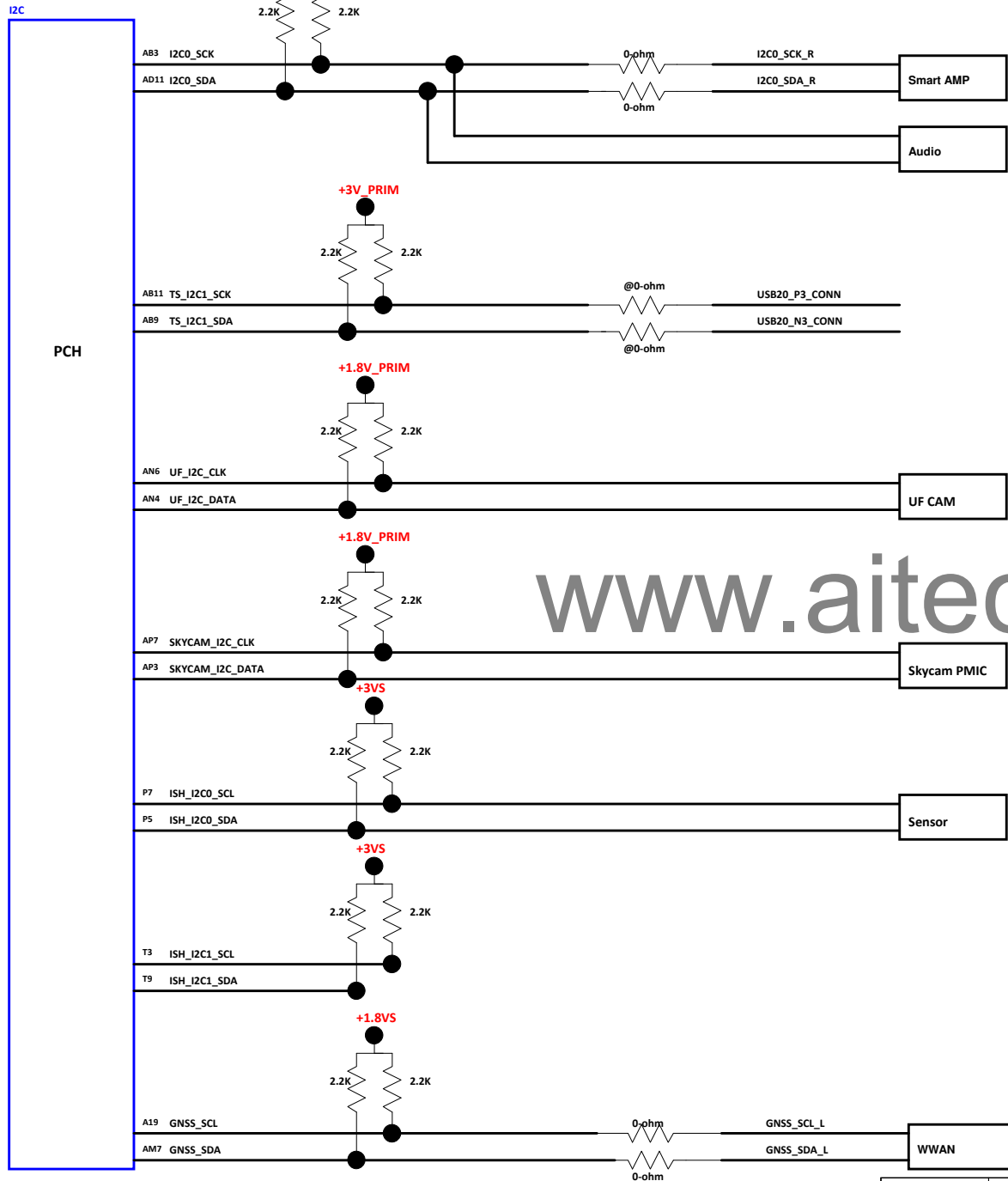
Decoupling capacitor all follow
Rohm
BD99991_REFERENCE_1PHASE_REV1P01

VCC_SA
1U_0201 * 1 pcs +22U_0603*8 pcs+(Reserve
0.1U_0201*10pcs+22u_0603*2pcs)





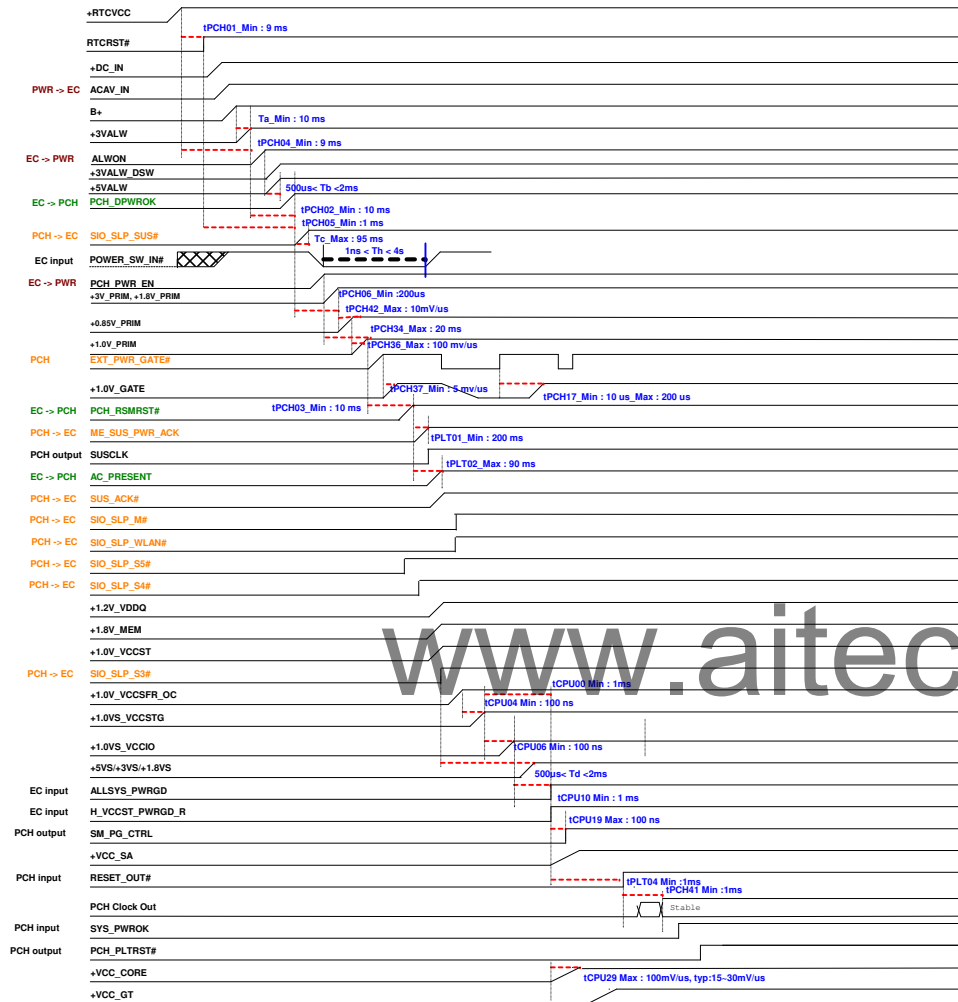
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				Date	Wednesday, July 08, 2015
				Sheet	58 of 61
				Rev	0.70



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Date: Wednesday, July 08, 2015					Sheet 59 of 61

[Power ON Sequence]



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