

COMPAL CONFIDENTIAL

MODEL NAME : CDP80  
PCB NO : LA-E151P  
BOM P/N :  
GPIO MAP: Dell GPIO map EC16 062416 Compal Only

Breckenridge 15 UMA

Kabylake H


2016-07-01

REV : 0.2 (X01)

- @ : Nopop Component
- EMI@ : EMI Component
- @EMI@ : EMI Nopop Component
- ESD@ : ESD Component
- @ESD@ : ESD Nopop Component
- RF@ : RF Component
- @RF@ : RF Nopop Component
- XDP@ : XDP Component
- CONN@ : Connector Component

MB PCB	
Part Number	Description
DA80018K000	PCB 1SE LA-E151P REV0 MB UMA 1

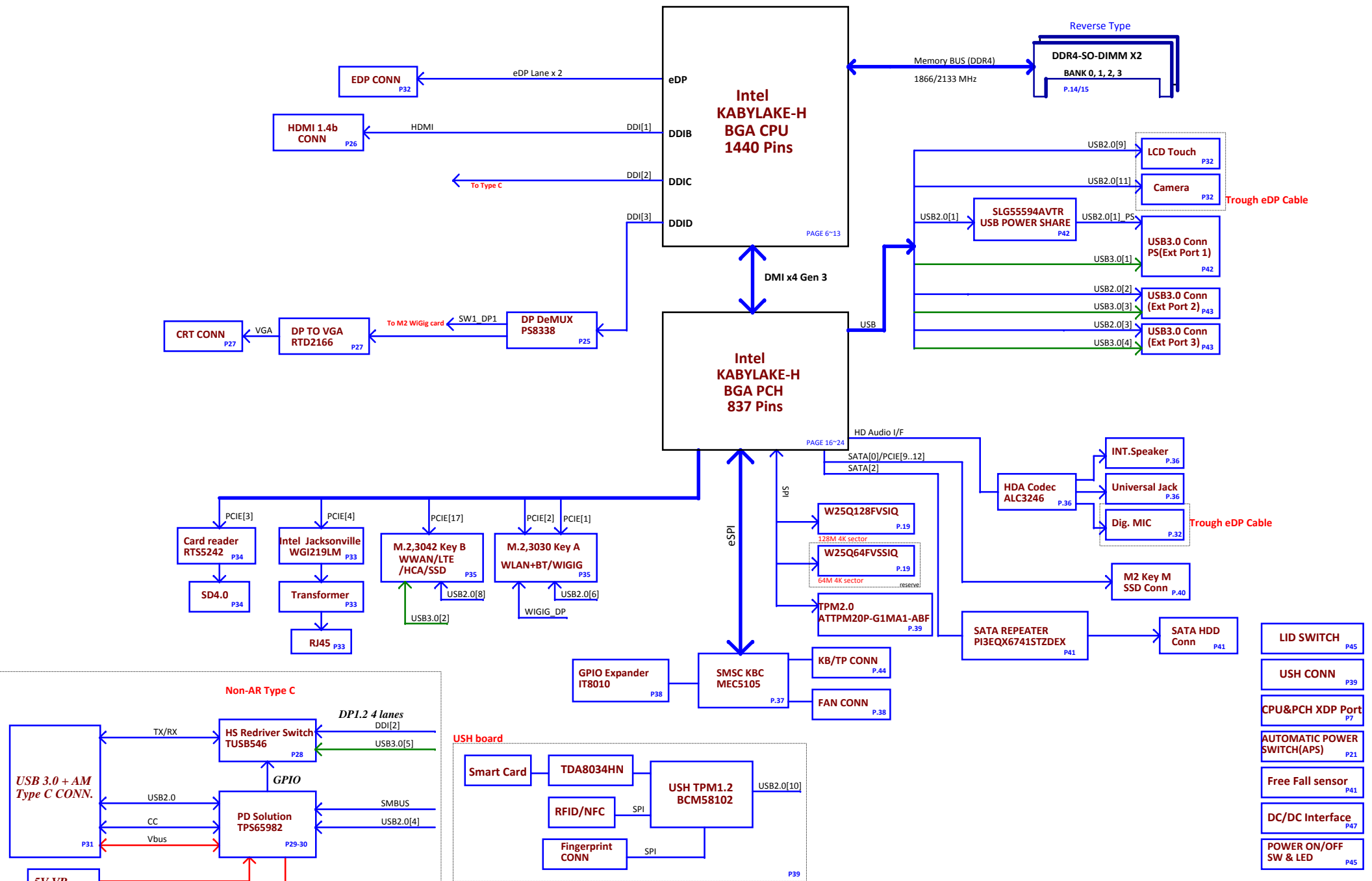
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REV: X01  
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Title		Compal Electronics, Inc.		Cover Sheet	
Size A		Document Number		Rev 0.2	
Date: Friday, July 01, 2016		Sheet 1 of 61		LA-E151P	
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Breckenridge 15 UMA non-TBT Block Diagram



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Block diagram

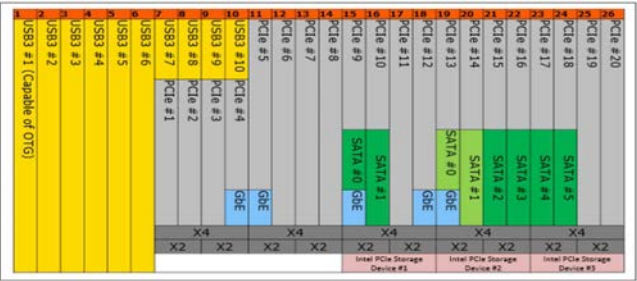
POWER STATES

Signal State	SLP S3#	SLP S4#	SLP S5#	SLP A#	ALWAYS PLANE	M PLANE	SUS PLANE	RUN PLANE	CLOCKS
S0 (Full ON) / M0	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON	ON
S3 (Suspend to RAM) / M3	LOW	HIGH	HIGH	HIGH	ON	ON	ON	OFF	OFF
S4 (Suspend to DISK) / M3	LOW	LOW	HIGH	HIGH	ON	ON	OFF	OFF	OFF
S5 (SOFT OFF) / M3	LOW	LOW	LOW	HIGH	ON	ON	OFF	OFF	OFF
S3 (Suspend to RAM) / M-OFF	LOW	HIGH	HIGH	LOW	ON	OFF	ON	OFF	OFF
S4 (Suspend to DISK) / M-OFF	LOW	LOW	HIGH	LOW	ON	OFF	OFF	OFF	OFF
S5 (SOFT OFF) / M-OFF	LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF	OFF

PM TABLE

power plane State	+5V_ALW +3.3V_ALW +3.3V_ALW_DSW +3.3V_ALW_PCH +RTC_CELL +1.8V_PRIM +1.0V_PRIM +1.0V_PRIM_CORE +5V_ALW2 +3.3V_ALW2 +3.3V_RTC_LDO +1.0V_MPHYGT	+3.3V_SUS +1.2V_MEM +1.0V_VCCST +2.5V_MEM	+5V_RUN +3.3V_RUN +0.6V_DDR_VTT +1.2V_RUN +VCC_CORE +VCC_GT +1.0VS_VCCIO +VCC_SA +1.8V_RUN
S0	ON	ON	ON
S3	ON	ON	OFF
S5 S4/AC	ON	OFF	OFF
S5 S4/AC doesn't exist	OFF	OFF	OFF

Layer No.	Name	Er	Material	Thickness (Material SPEC.) Unit : mil	Thickness (Actuality) Unit : mil
			SolderMask	IT-158	0.50
			Add Plating		0.95
1	Top		Copper foil	0.5oz	0.65
		3.7	Prepreg	1080	2.60
2	GND1		Copper foil	1oz	1.35
		3.7	Core	4mil	4.00
3	Sig 1		Copper foil	1oz	1.35
		3.6	Prepreg	2116HRCx2	5.90
4	GND1/PWR		Copper foil	1oz	1.35
		3.7	Core	4mil	4.00
5	Sig2		Copper foil	1oz	1.35
		3.6	Prepreg	2116HRCx2	5.20
6	Sig3		Copper foil	1oz	1.35
		3.6	Core	4mil	4.00
7	GND2		Copper foil	1oz	1.35
		3.7	Prepreg	1080	2.60
8	Bottom		Copper foil	0.5oz	0.65
			Add Plating		0.95
			SolderMask		0.50
Overall Thickness (1.2mm ± 10%)				47.2	46.60000 1.18364



USB3.0	SSIC	PCIE	SATA	DESTINATION
USB3.0-1				JUSB3-->Rear
USB3.0-2	SSIC-1			JNGFF2-->M2 3042(LTE)
USB3.0-3	SSIC-2			JUSB1-->Right
USB3.0-4				JUSB2-->Left
USB3.0-5				NA
USB3.0-6				NA
USB3.0-7		PCIE-1		JNGFF1-->M.2 3030(WIGIG)
USB3.0-8		PCIE-2		JNGFF1-->M.2 3030(WLAN)
USB3.0-9		PCIE-3		Card Reader
USB3.0-10		PCIE-4		LOM
		PCIE-5		NA
		PCIE-6		
		PCIE-7		
		PCIE-8		
		PCIE-9	SATA-0A	M.2 Socket 3 (Key M) M.2 2280 SSD (PCIEx4 or SATA)
		PCIE-10	SATA-1A	
		PCIE-11		
		PCIE-12		
		PCIE-13	SATA-0B	NA
		PCIE-14	SATA-1B	NA
		PCIE-15	SATA-2	JSATA1-->HDD SATA
		PCIE-16	SATA-3	NA
		PCIE-17	SATA-4	M.2 3042 (HCA or QCA LTE) SSD Cache
		PCIE-18	SATA-5	NA
		PCIE-19		NA
		PCIE-20		NA

USB PORT#	DESTINATION
1	JUSB3-->Rear
2	JUSB1-->Right
3	JUSB2 -->Left
4	Type C
5	NA
6	JNGFF1--> M.2 3030(BT)
7	NA
8	JNGFF2-->M2 3042(WWAN)
9	JEDP1-->Touch Screen
10	JUSH1-->USH
11	JEDP1-->Camera
12	NA

USH	H	BIO
-----	---	-----

VIDEO		DESTINATION
eDP		LCD
DDI-B		JHDMI1
DDI-C		Type-C
DDI-D	DeMux 1	M.2 3030 (WiGig)
		MB VGA

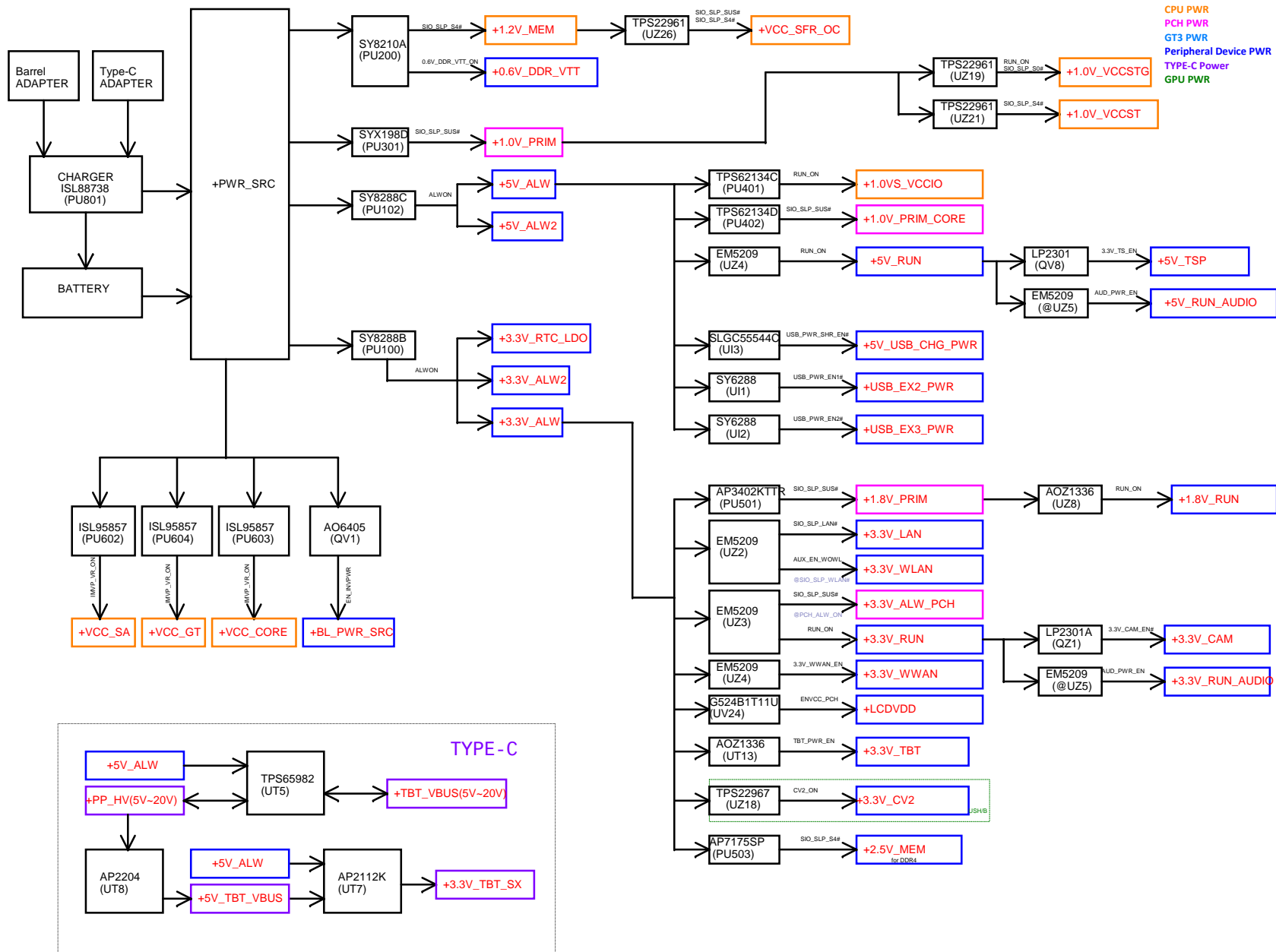
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Port Assignment

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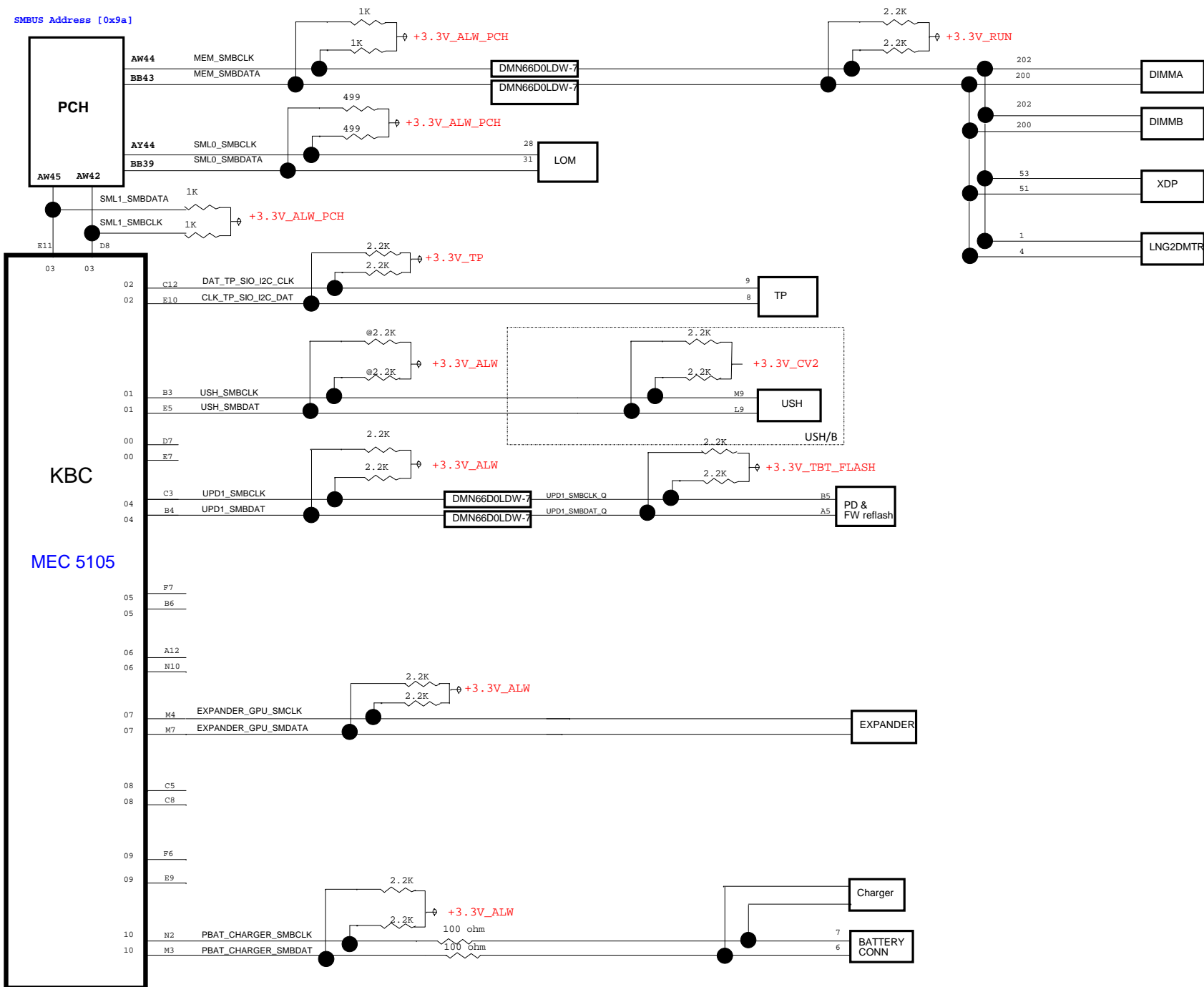


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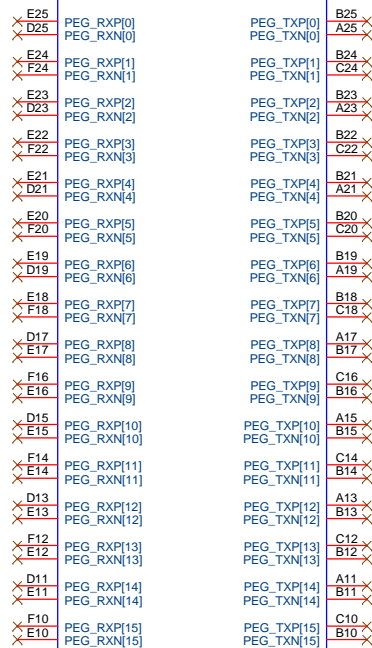
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Power Rails

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UC1C SKYLAKE\_HALO Rev. 1.0



PEG\_COMP G2 PEG\_RCOMP



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SKL-H\_BGA1440



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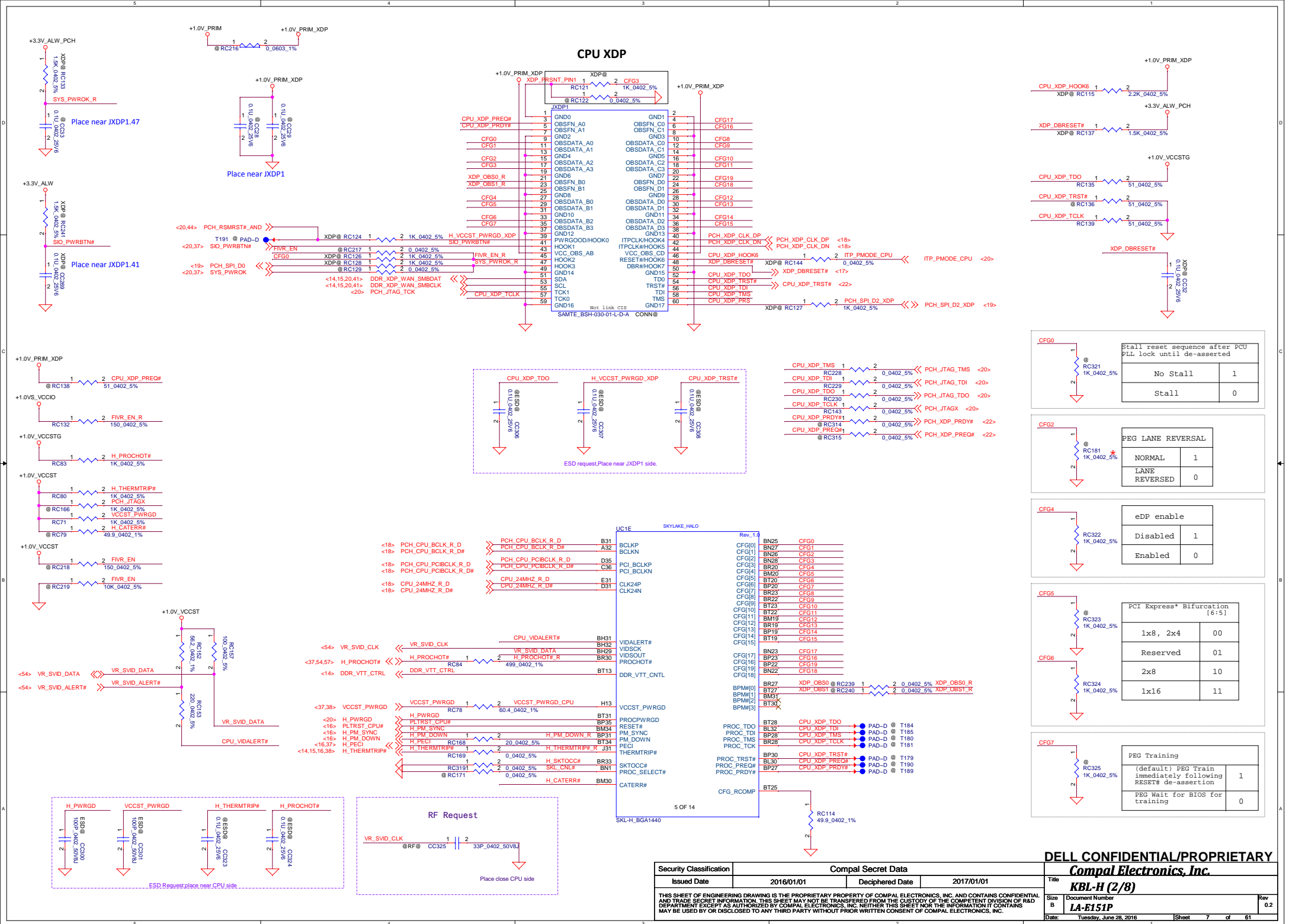
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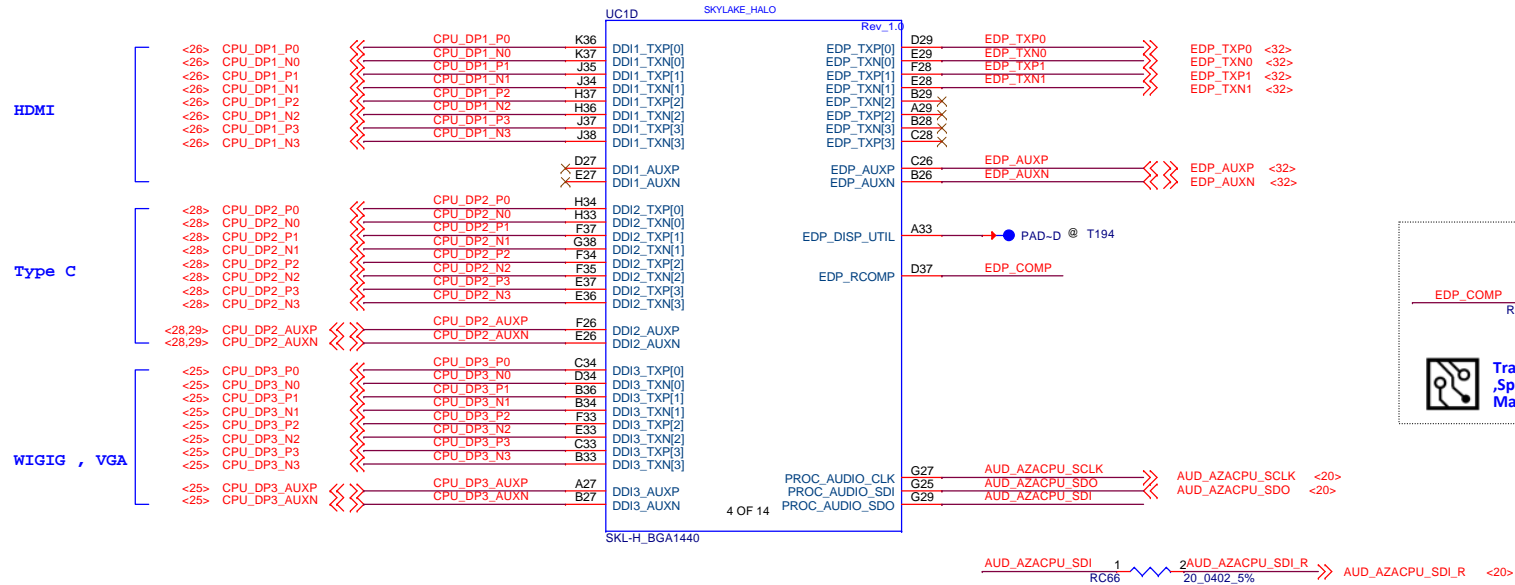
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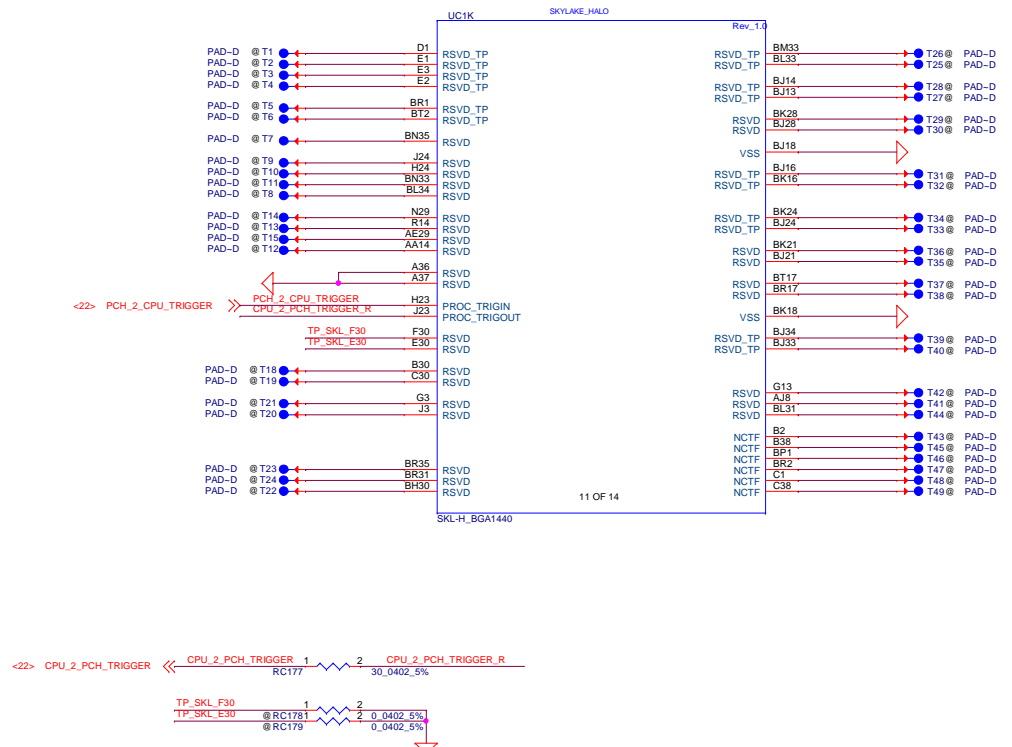
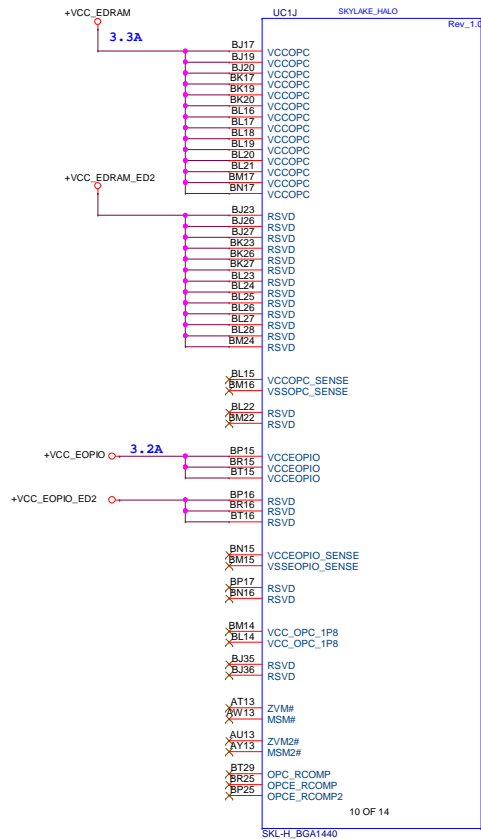


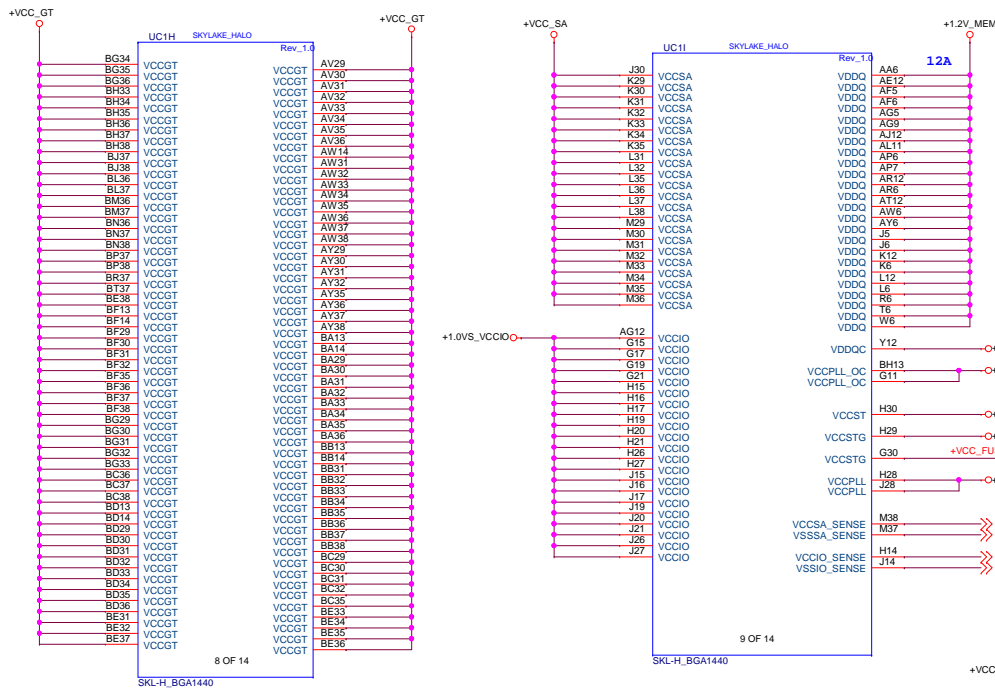




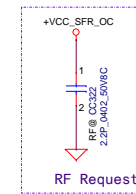
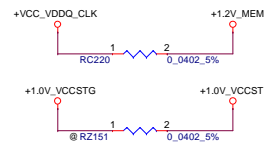
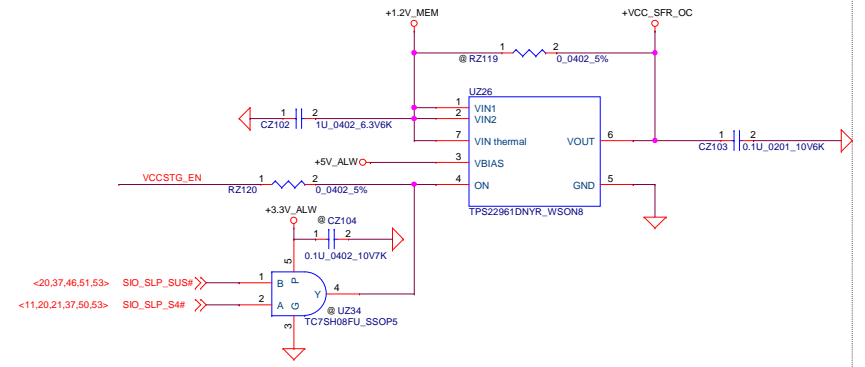


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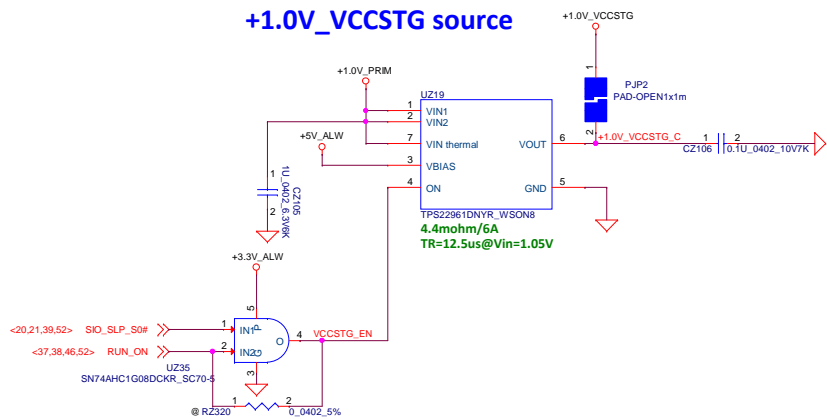




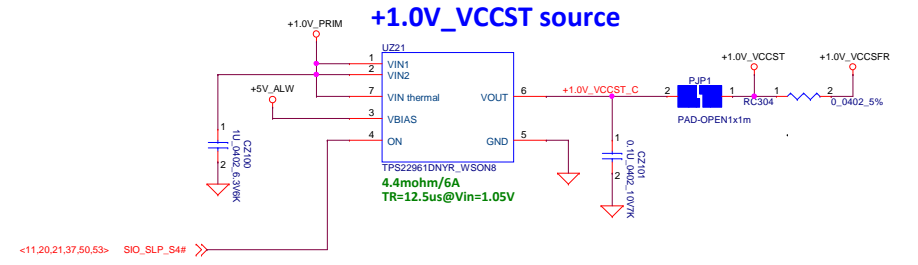
## +VCCPLL\_OC source



## +1.0V\_VCCSTG source



## +1.0V\_VCCST source



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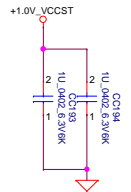
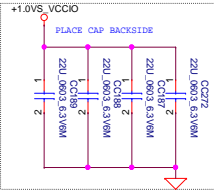
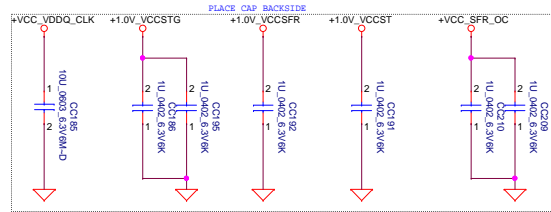
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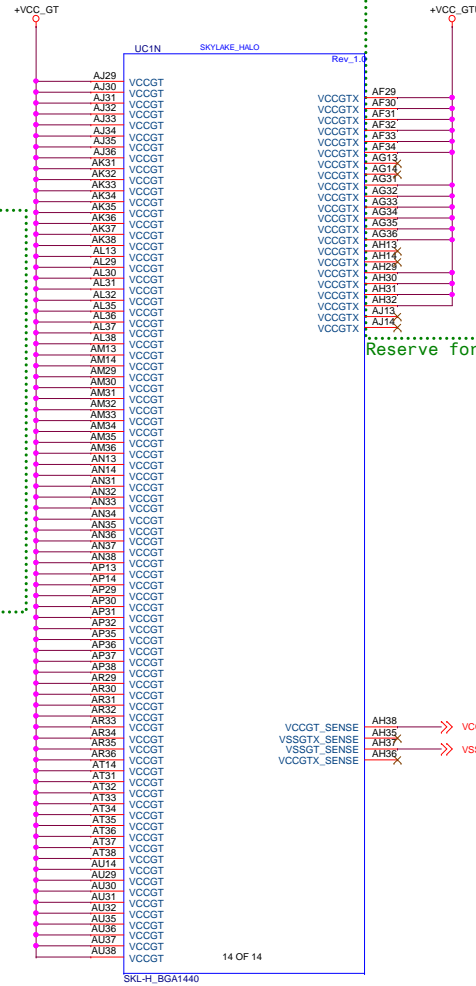
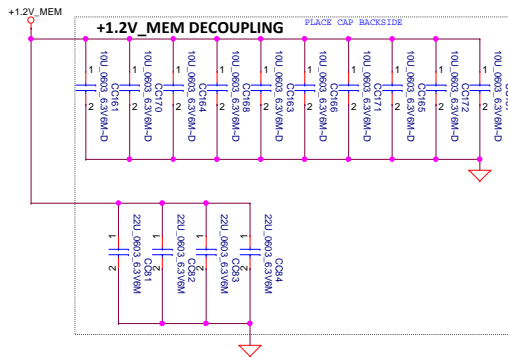
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For SKL-H 4+2  
Remove VCCOPC/VCCEPIO/  
VCCOPC\_1P8 Cap



Remove to Power (+VCC\_SA cap)



Reserve for Soldering



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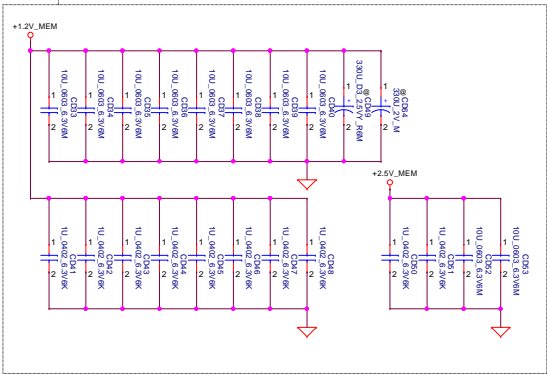
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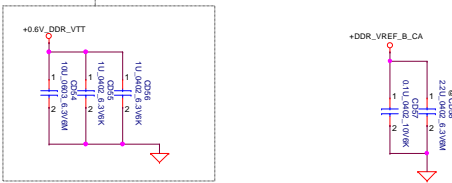


<B> DDR\_B\_DQS[0..7]  
<B> DDR\_B\_DQS[0..7]  
<B> DDR\_B\_DQ[16..31]  
<B> DDR\_B\_DQ[16..31]  
<B> DDR\_B\_DQ[32..47]  
<B> DDR\_B\_DQ[32..47]  
<B> DDR\_B\_MA[0..16]  
<B> DDR\_B\_MA[0..16]

Layout Note:  
Place near J1MM2

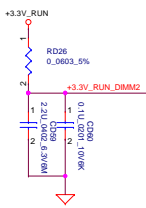
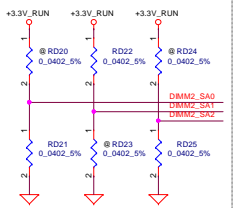


Layout Note:  
Place near J1MM2.258

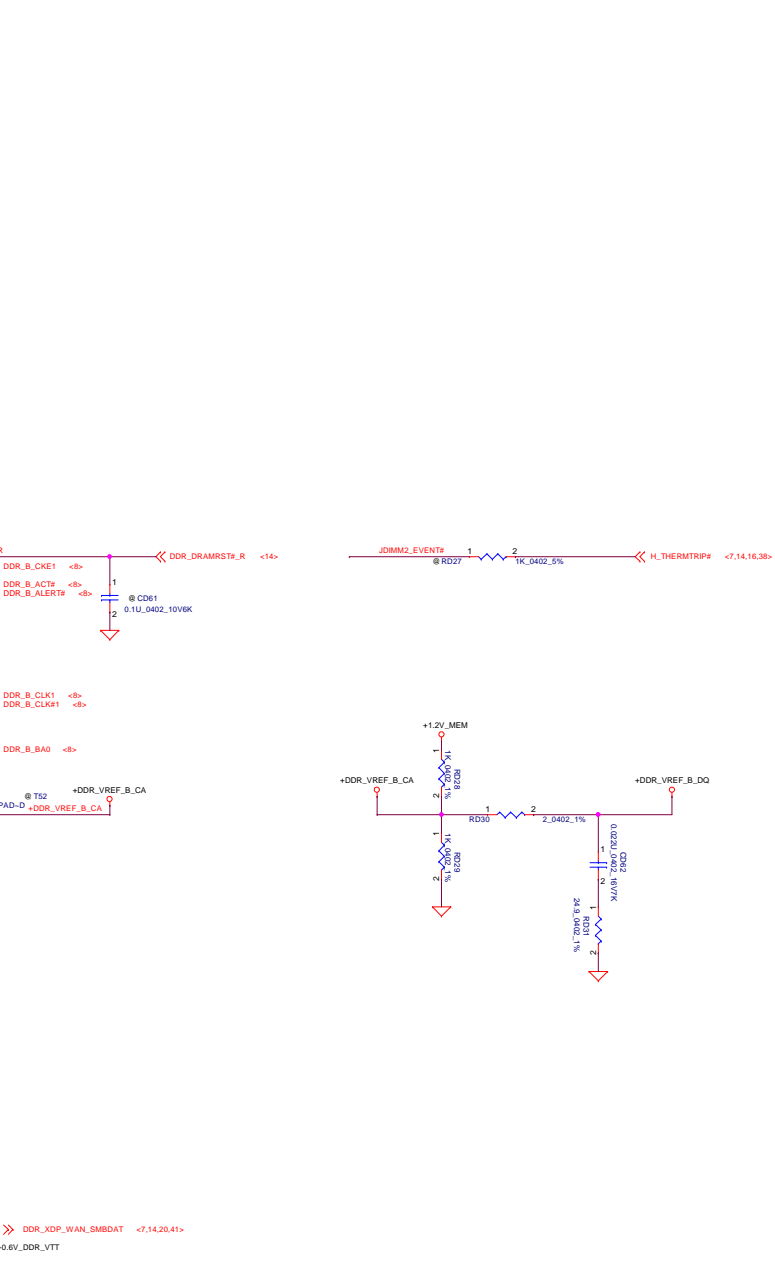
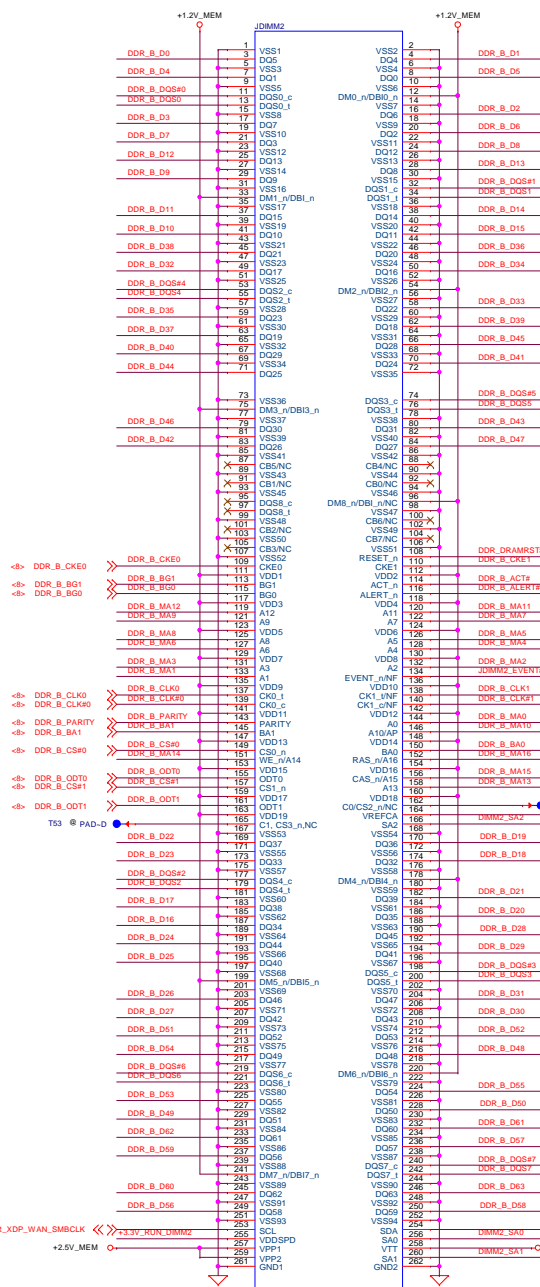


## DIMM Select

	SA0	SA1	SA2
DIMM1	0	0	0
DIMM2	1	0	0
DIMM3	0	1	0
DIMM4	1	1	0



Byte[0]	DQ[7:0]	DQS/DQS#[0]
Byte[1]	DQ[15:8]	DQS/DQS#[1]
Byte[2]	DQ[23:16]	DQS/DQS#[2]
Byte[3]	DQ[31:24]	DQS/DQS#[3]
Byte[4]	DQ[39:32]	DQS/DQS#[4]
Byte[5]	DQ[47:40]	DQS/DQS#[5]
Byte[6]	DQ[55:48]	DQS/DQS#[6]
Byte[7]	DQ[63:56]	DQS/DQS#[7]

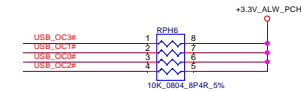
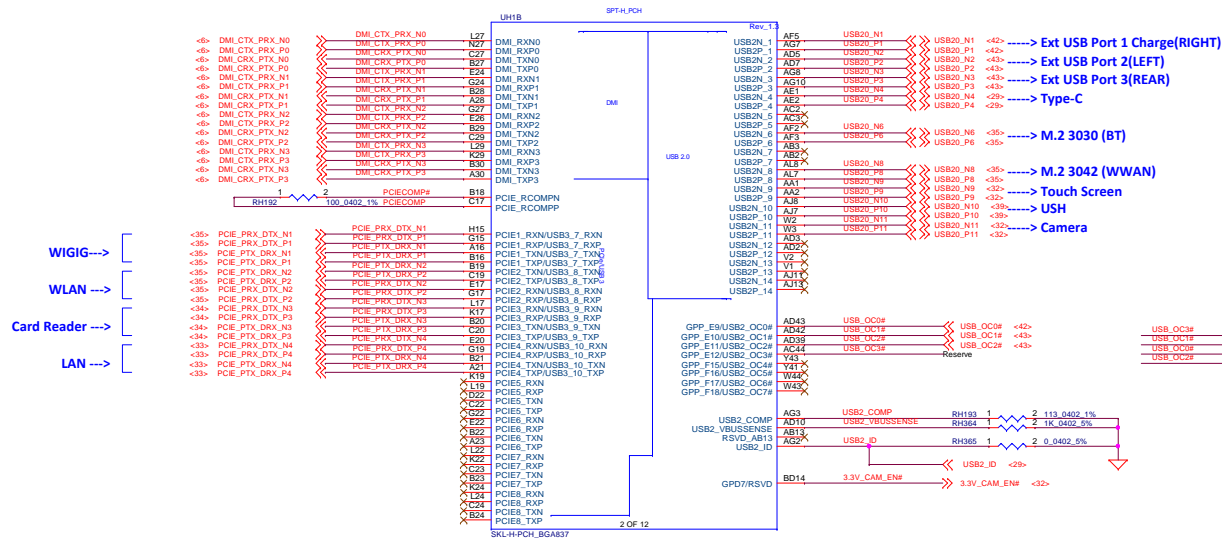
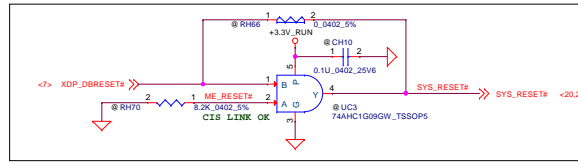


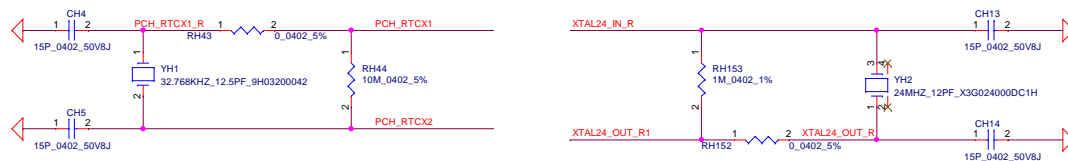
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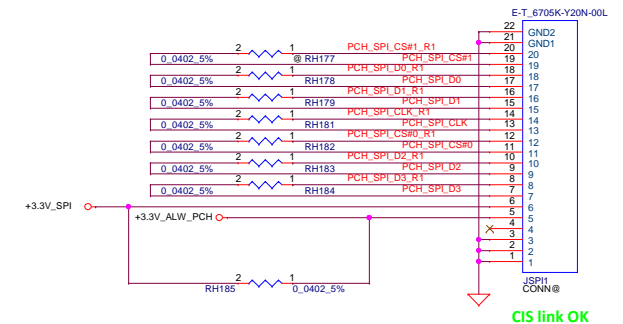
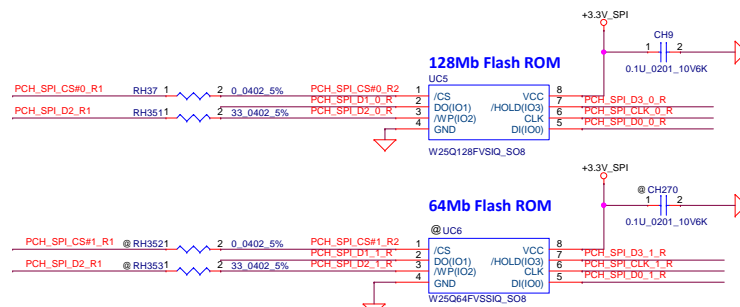
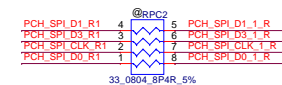
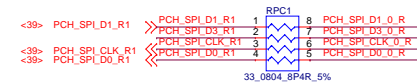
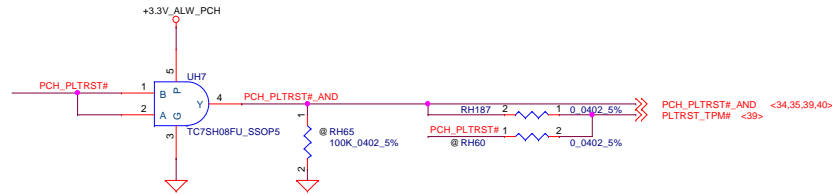






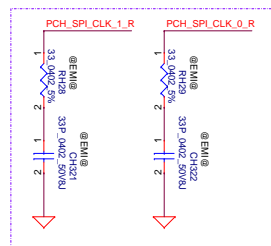


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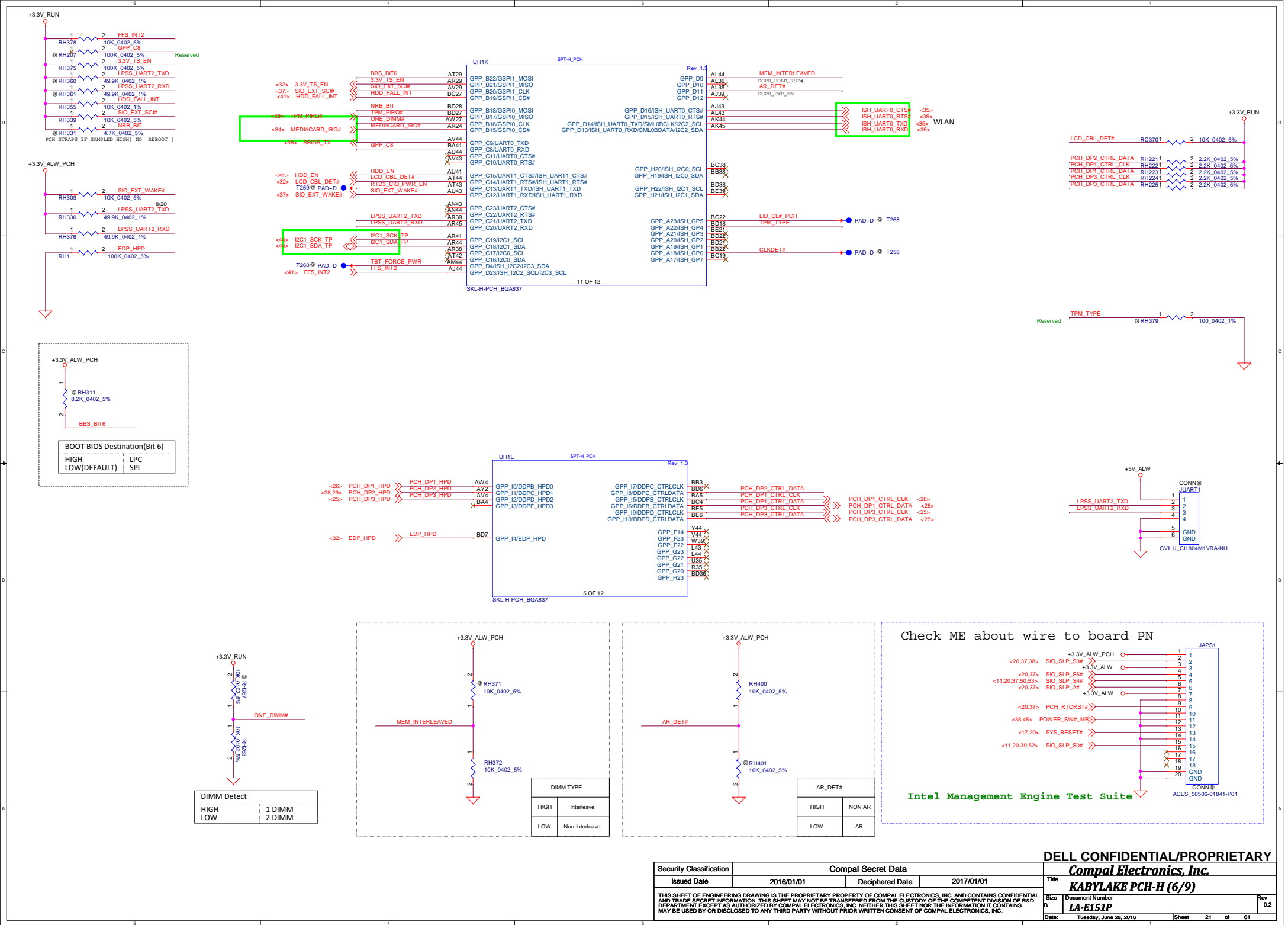


	ESPI	LPC
RH351	33 ohm	15 ohm
RPC1	33 ohm	15 ohm
RH178, RH179, RH181, RH182, RH183, RH184	0 ohm	25 ohm

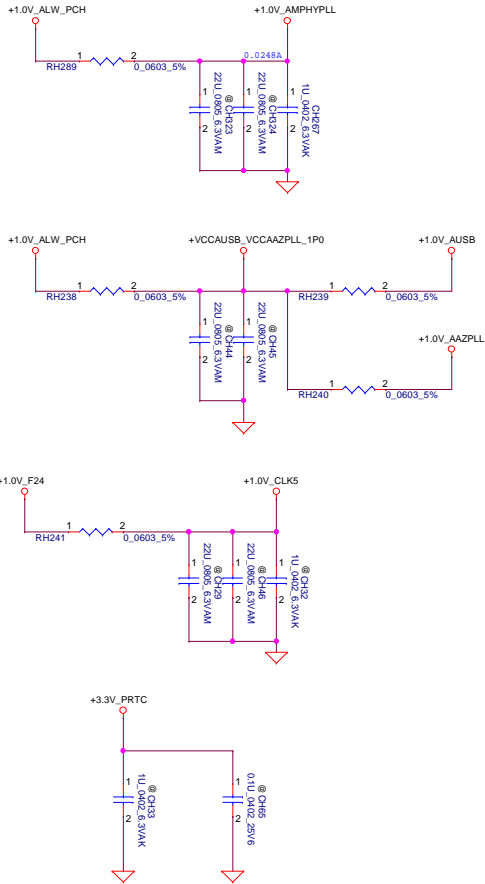
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AC18	VSS	AR5
AN4	VSS	AR7
AN10	VSS	U15
BE14	VSS	AL4
BE18	VSS	AE29
BE23	VSS	AE4
BE28	VSS	AE42
BE32	VSS	AF18
BE37	VSS	AF20
BE40	VSS	AF21
BE9	VSS	AF23
C10	VSS	AF25
C2	VSS	AF26
C28	VSS	AF28
C37	VSS	AF29
J7	VSS	AG11
K10	VSS	AG13
K27	VSS	AG31
K33	VSS	AG32
K36	VSS	AG33
K4	VSS	AG38
K42	VSS	AG4
K43	VSS	AH1
L12	VSS	AH17
L13	VSS	AH18
L15	VSS	AH20
L4	VSS	AH21
L41	VSS	AH23
L8	VSS	AH25
M35	VSS	AH26
M42	VSS	AH28
N10	VSS	AH29
N15	VSS	AH45
N19	VSS	AJ10
N22	VSS	AJ14
N24	VSS	AJ15
N35	VSS	AJ17
N36	VSS	AJ18
N4	VSS	AJ26
NM1	VSS	AJ28
N6	VSS	AJ29
P17	VSS	AJ31
P19	VSS	AJ32
P22	VSS	AJ36
P45	VSS	AK4
R10	VSS	AK42
R14	VSS	AU7
R22	VSS	AV17
R29	VSS	AV24
R33	VSS	AV27
R38	VSS	AV21
R5	VSS	AV33
T1	VSS	AV6
T2	VSS	AW13
T4	VSS	AW19
Y18	VSS	AW29
Y20	VSS	AW37
Y21	VSS	AW9
Y26	VSS	AY38
Y28	VSS	A145
Y29	VSS	B25
A18	VSS	B3
A25	VSS	B37
A32	VSS	B40
A37	VSS	B6
AA17	VSS	BAT
AA18	VSS	BB11
AA20	VSS	BB16
AA21	VSS	BB21
AA25	VSS	BB25
AA29	VSS	BB30
AA4	VSS	BB34
AA42	VSS	Bc2
AB10	VSS	BD43

9 OF 12  
SKL-H-PCH\_BGA837

UH1L SPT-H\_PCH Rev. 1.3

C42	VSS	AB11
D10	VSS	AB7
D12	VSS	AB14
D15	VSS	AB31
D16	VSS	AB32
D17	VSS	AB38
D19	VSS	AB4
D21	VSS	AB5
D24	VSS	AC1
D25	VSS	AC20
D27	VSS	AC21
D29	VSS	AC25
D30	VSS	AC29
D31	VSS	AC45
D33	VSS	AB8
D35	VSS	AD11
D36	VSS	AD14
E13	VSS	AB15
E15	VSS	AD32
E31	VSS	AD33
E33	VSS	AD36
F44	VSS	AD4
F8	VSS	AD8
G42	VSS	AE18
G9	VSS	AE20
H17	VSS	AE21
H19	VSS	AE25
H22	VSS	AE28
H24	VSS	AL10
H27	VSS	AL11
H29	VSS	AL13
H3	VSS	AL17
H35	VSS	AL19
J10	VSS	AL24
J11	VSS	AL29
J3	VSS	AL32
J39	VSS	AL33
J5	VSS	AL38
T42	VSS	AM15
U10	VSS	AM17
U11	VSS	AM19
U14	VSS	AM22
U17	VSS	AM24
U18	VSS	AM27
U28	VSS	AM29
U29	VSS	AM45
U31	VSS	AN11
U32	VSS	AN22
U33	VSS	AN27
U38	VSS	AN31
U4	VSS	AN39
U8	VSS	AN7
V18	VSS	AN8
V20	VSS	AP11
V21	VSS	AP4
V23	VSS	AR33
V25	VSS	AR34
V29	VSS	AR42
V3	VSS	AR9
V45	VSS	AT10
W14	VSS	AT15
W31	VSS	AT36
W32	VSS	AT9
W33	VSS	AU1
W38	VSS	AU35
W4	VSS	AU36
W8	VSS	AU39
Y17	VSS	AU45
	VSS	C4

12 OF 12  
SKL-H-PCH\_BGA837

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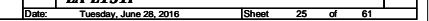
KABYLAKE PCH-H (9/9)

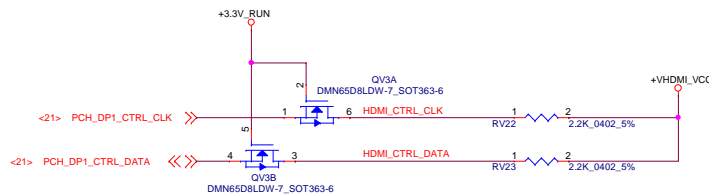
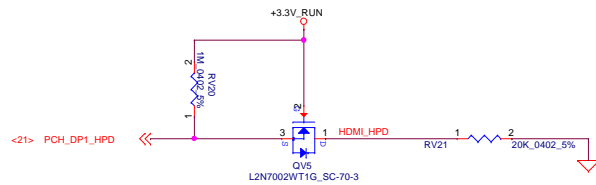
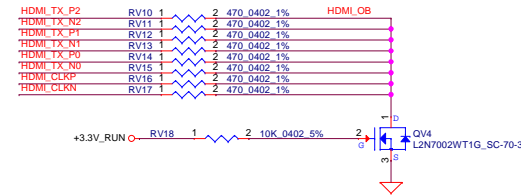
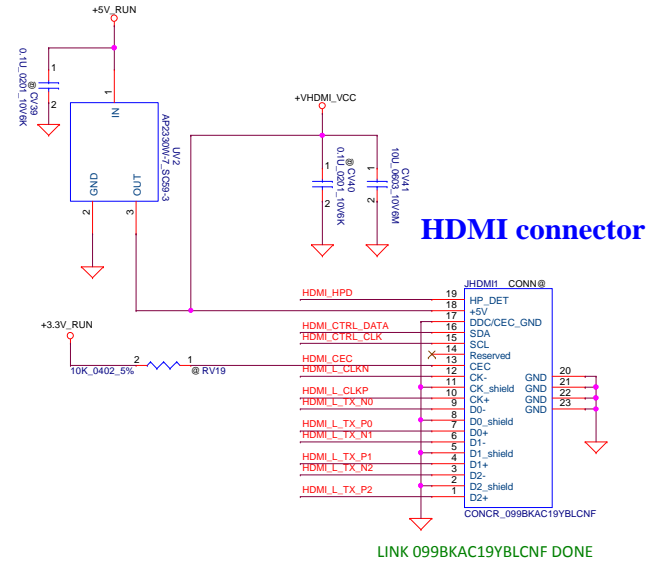
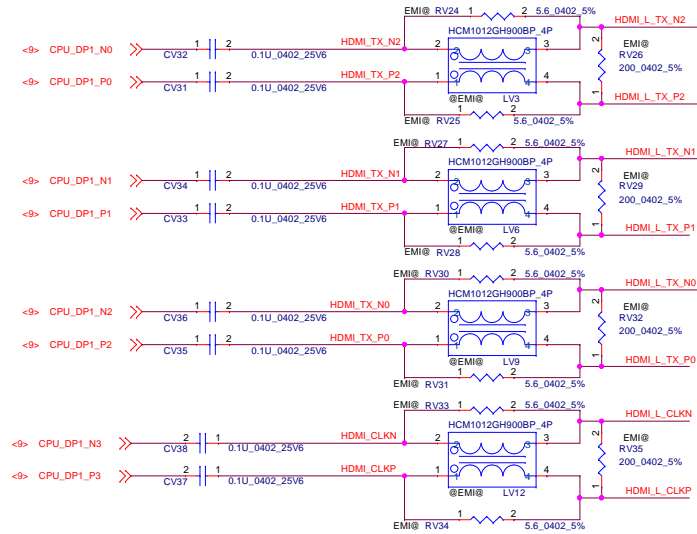
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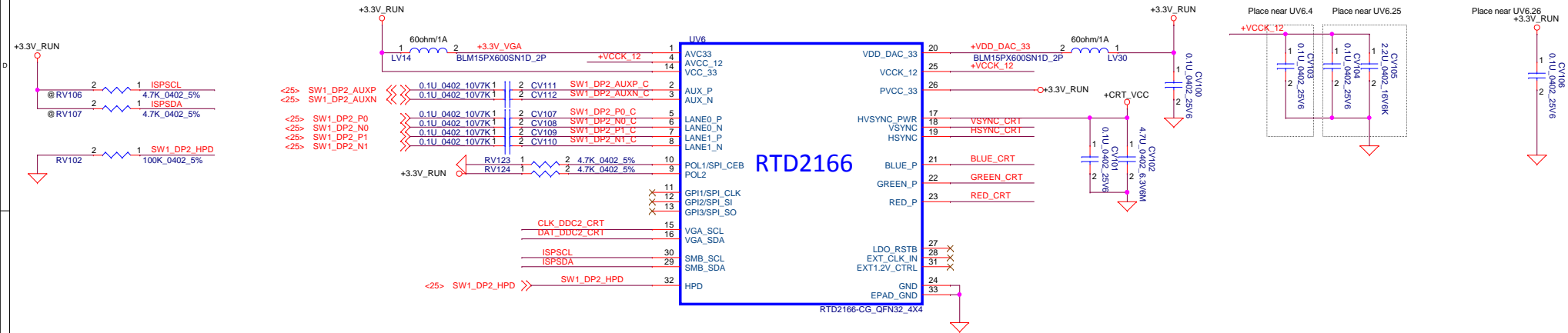




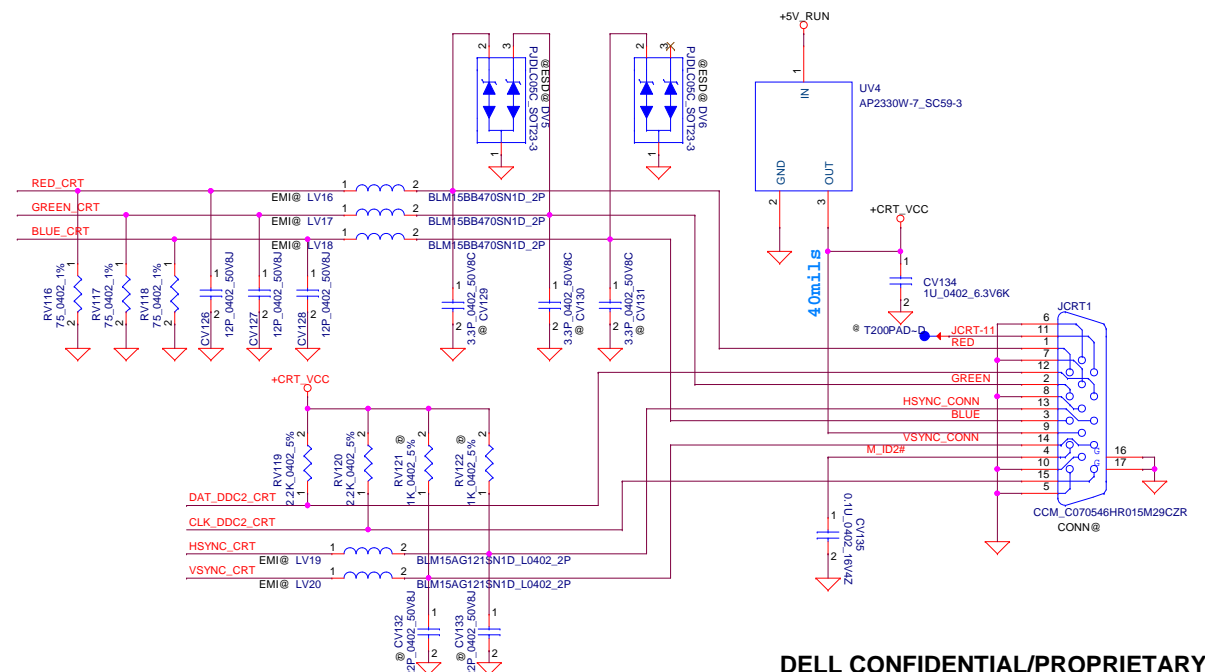


For TBT SW2\_DP2  
For non-TBT SW1\_DP2

## For Realtek Solution



		POL1(P10)	
		0	1
POL2 (P9)	0	X	X
	1	ROM	EEPROM



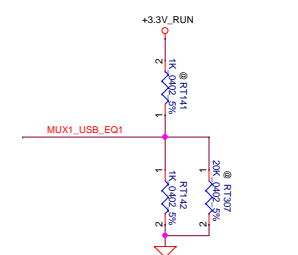
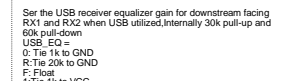
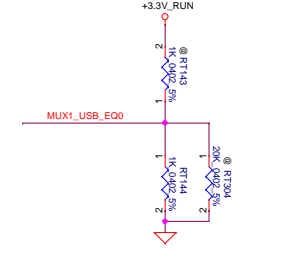
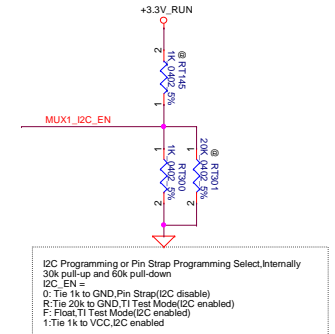
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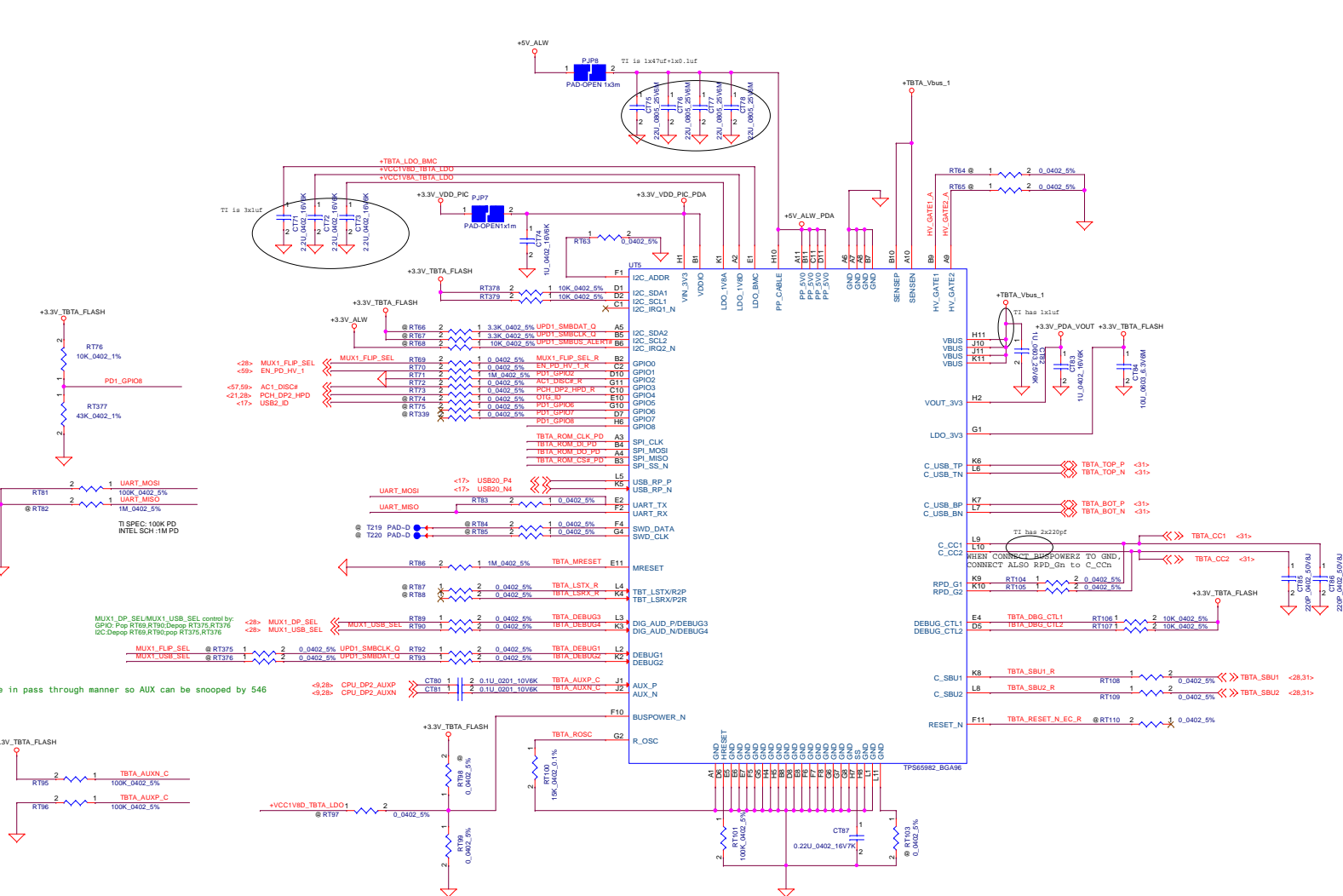
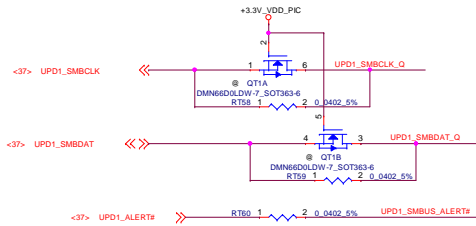
Title	<b><i>DP to VGA &amp; VGA Conn</i></b>
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IDENTICAL OF R802	Document Number	Rev
INS Custom	<b>IA-E1F1P</b>	0.2

Security Classification	Compal Secret Data		
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For Non-AR config

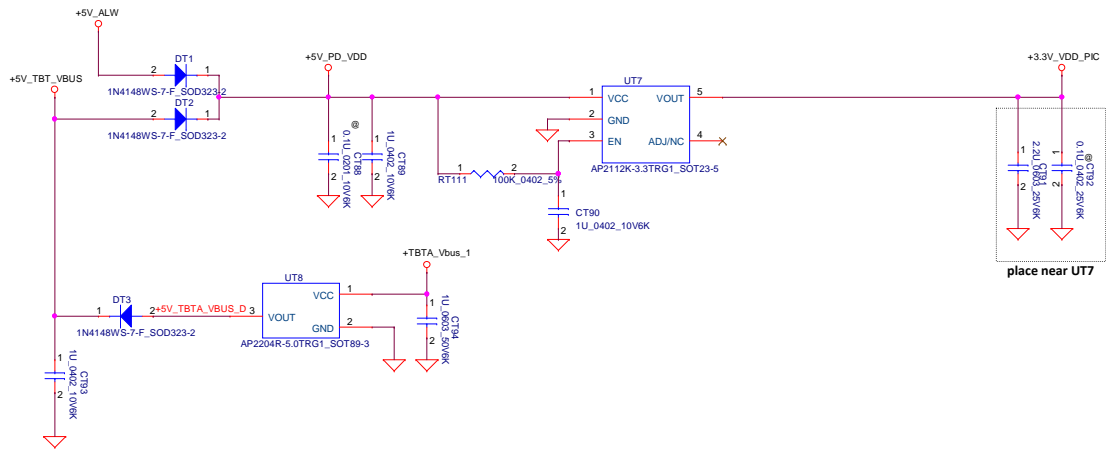


Need Link TPS65982D

DIV = R2/(R1+R2)		Factory Device Configuration	Description
DIV_min	DIV_max		
0.00	0.08	0	UFP only 5V @0.9A Sink capability with "Ask for Max" for anything from 0.9 - 3.0A TBT Alternate Modes not supported DisplayPort Alternate Modes not supported TI VD supported
0.10	0.18	1	UFP only 5V @0.9A Sink capability with "Ask for Max" for anything from 0.9 - 3.0A TBT Alternate Modes not supported DisplayPort Alternate Modes -Sink, C and D pin configuration TI VD supported
0.20	0.28	2	UFP only 5V @3.0A Source capability TBT Alternate Modes not supported DisplayPort Alternate Modes not supported TI VD supported
0.30	0.38	3	UFP only 5V @3.0A Source capability TBT Alternate Modes not supported DisplayPort Alternate Modes -Sink, C and D pin configuration TI VD supported
0.40	0.48	4	DRP 5V @0.9-3.0A Sink capability 5V @3.0A Source capability TBT Alternate Modes not supported DisplayPort Alternate Modes not supported TI VD supported Accepts data and power role swaps, but does not initiate.
0.50	0.58	5	DRP 5V @0.9-3.0A Sink capability 5V @3.0A Source capability TBT Alternate Modes not supported DisplayPort Alternate Modes - Source, C, D, and E pin configurations. TI VD supported Accepts power role swaps but will not initiate. Accepts data role swap to DFP and can initiate.
0.60	0.68	6	DRP 5V @0.9-3.0A Sink capability 5V @3.0A Source capability TBT Alternate Modes not supported DisplayPort Alternate Modes - Source, C, D, and E pin configurations. TI VD supported Accepts power role swaps but will not initiate. Accepts data role swap to DFP and can initiate.
0.70	1.00	7	Infinite boot retry from Flash to Host IF cycles.

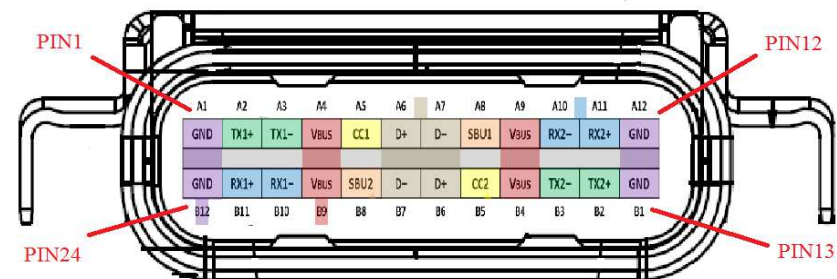
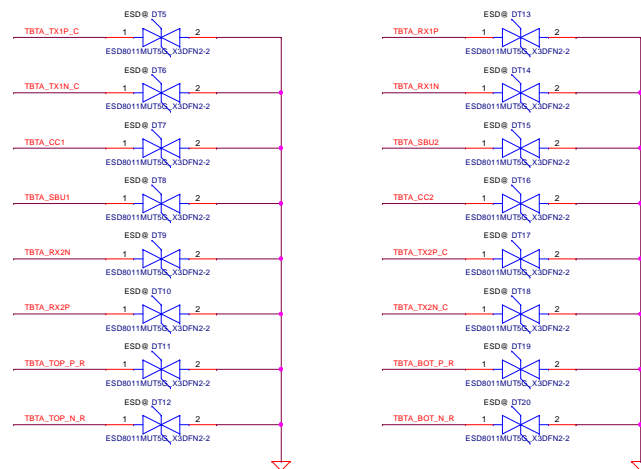
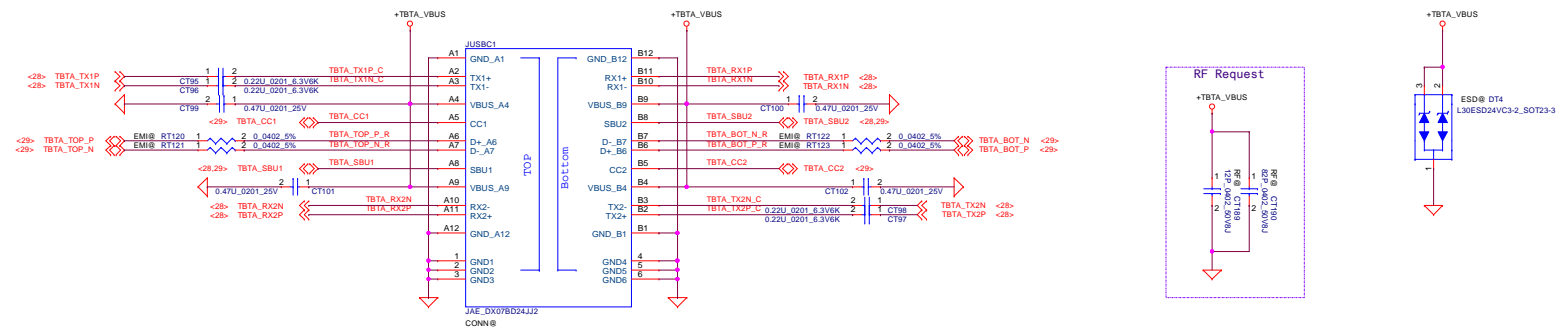
Route in pass through manner so AUX can be snooped by 546

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Title	<b>Compal Electronics, Inc. [Type C/PD Controller T]</b>		
Doc Number	LA-E15P1		
Date	Tuesday, June 28, 2016	Sheet	29 of 61

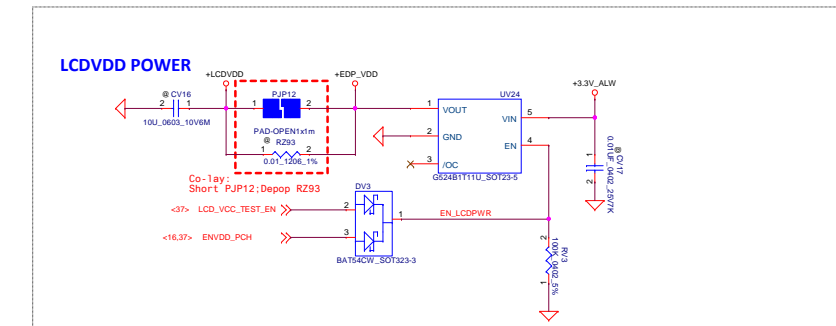
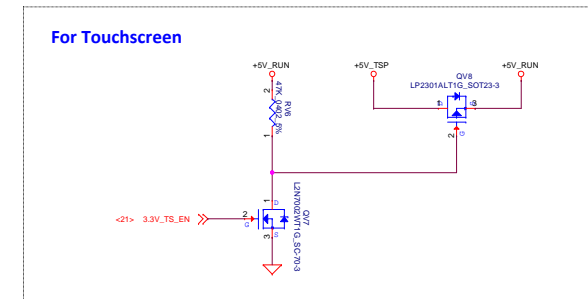
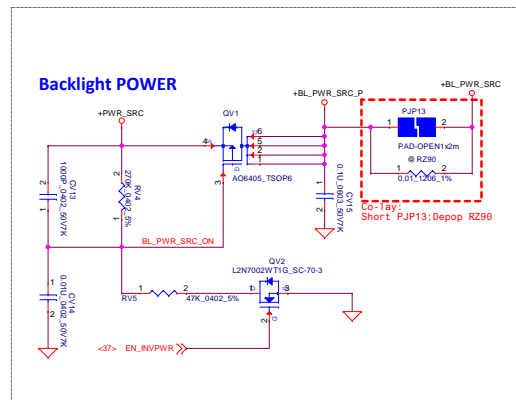
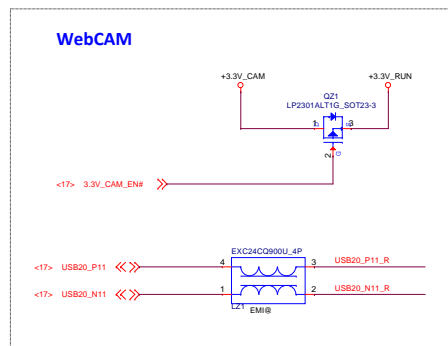
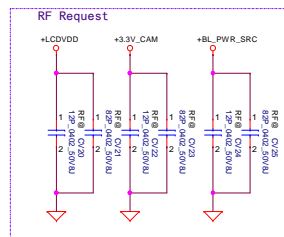
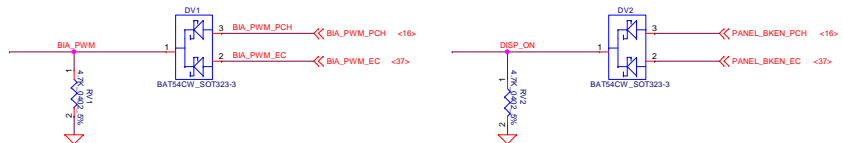
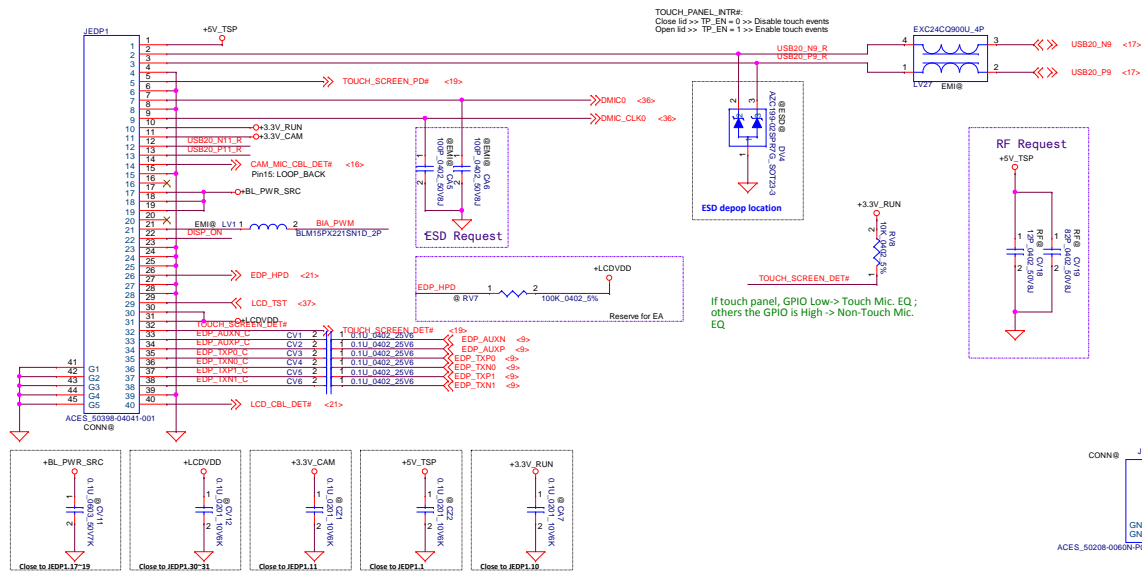


place near UT7

For NON AR Config



For Breckenridge 14



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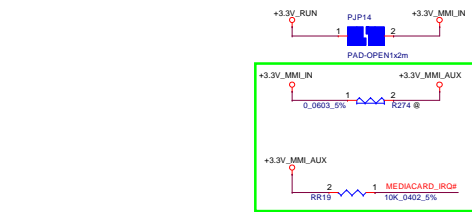
**eDP CONN & Touch screen**

Security Classification		Compal Secret Data		<del>CONFIDENTIAL FOR INTERNAL USE ONLY</del>	
Issued Date	2016/01/01	Deciphered Date	2017/01/01	Title	<b>Compal Electronics, Inc eDP CONN &amp; Touch screen</b>
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Date:	Tuesday, June 28, 2016	Sheet	32	of	61 Rev 0.2



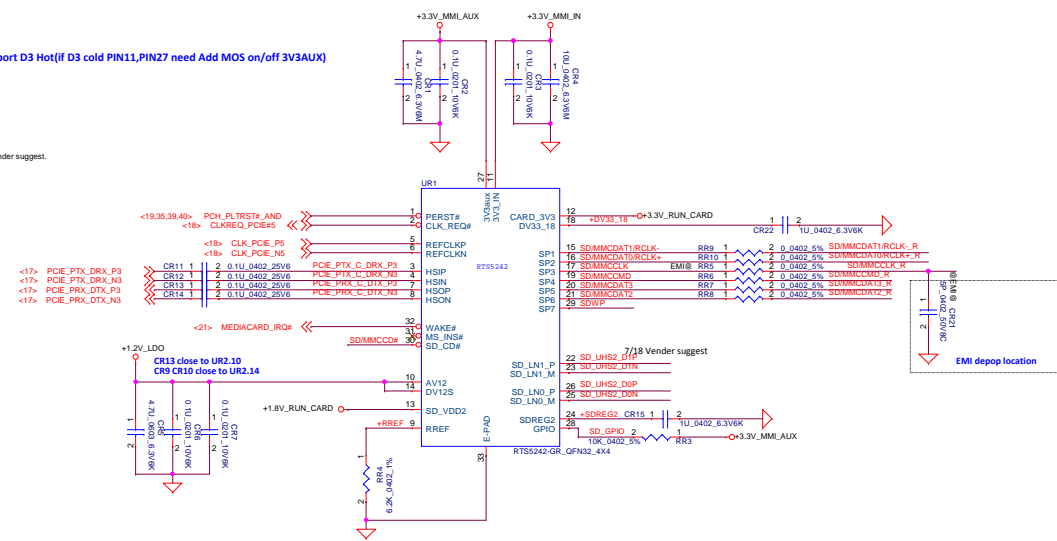
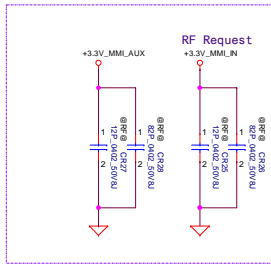


# For PCIE Interface

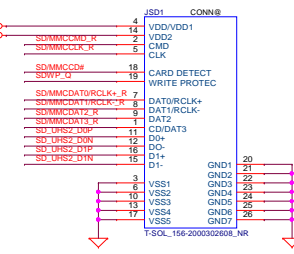
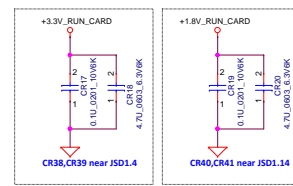
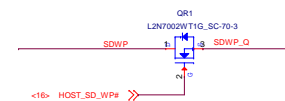


support D3 Hot(if D3 cold PIN11,PIN27 need Add MOS on/off 3V3AUX)

718 Vender suggest.



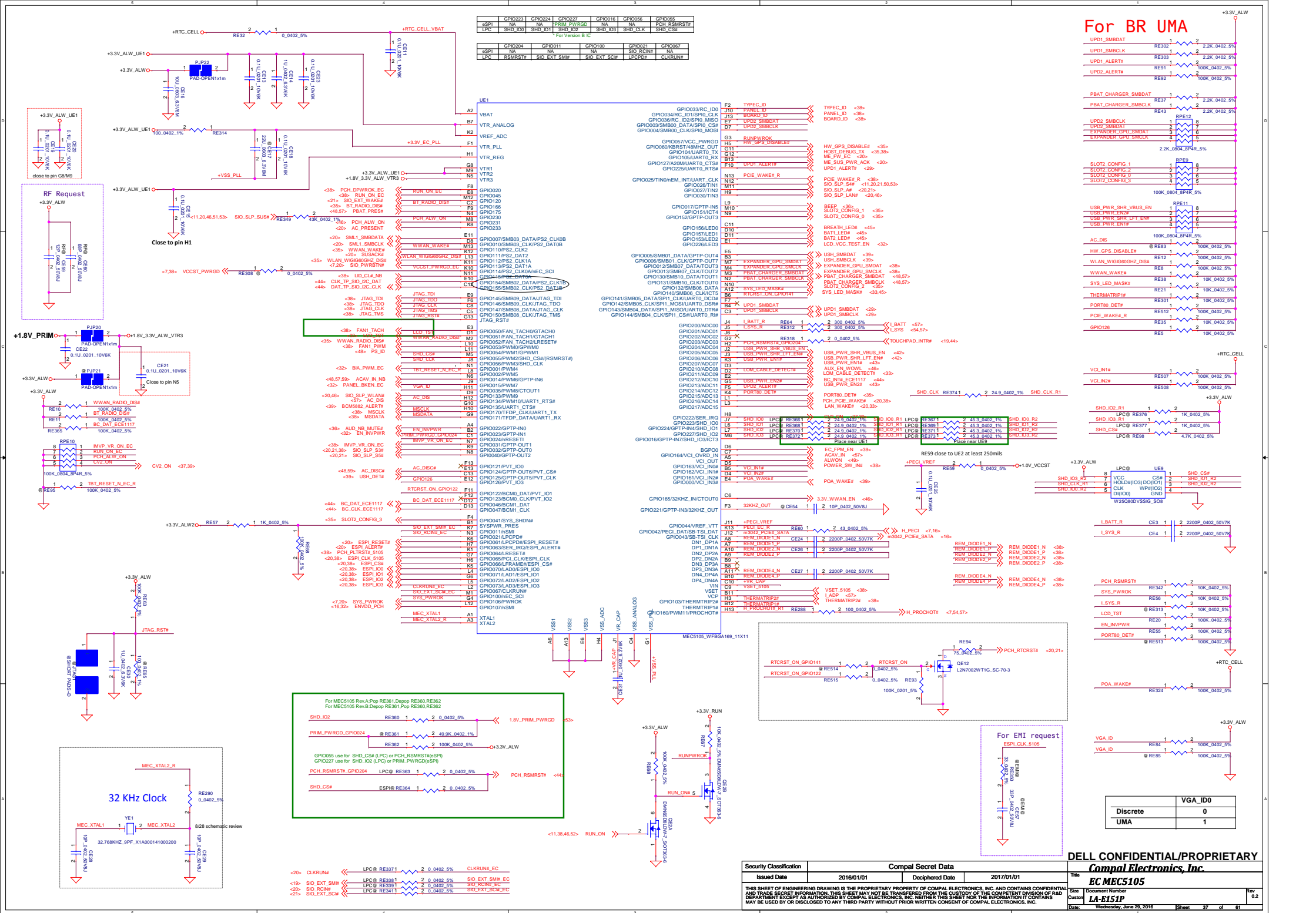
HOST_SD_WP#	SDWP_Q	SDWP	STATUS
High	High	High	Write Protect(SD LOCK)
High	Low	Low	Write Enable
Low	High	High	Write Protect(SD& FW LOCK)
Low	Low	High	Write Protect(FW LOCK)

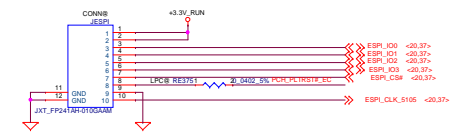
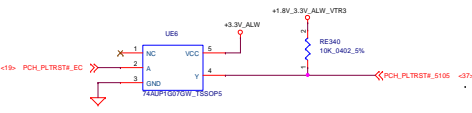


LINK SP070011U00 DONE



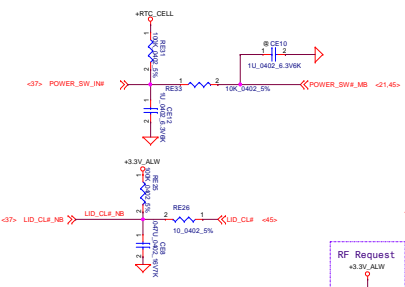
**WWW.AliSaler.Com**



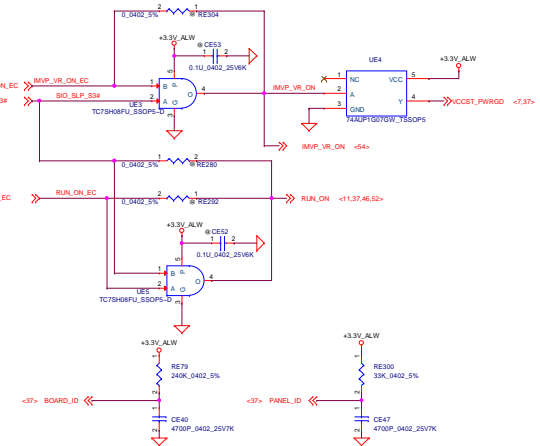
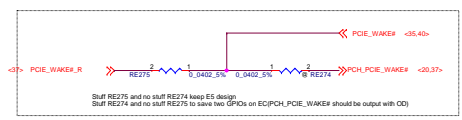


LPC 80Port Debug	LPC	ESPI
1	+3.3V_RUN	+3.3V_RUN
2	+3.3V_RUN	+3.3V_RUN
3	LPC_LAD0	ESPI_I00
4	LPC_LAD1	ESPI_I01
5	LPC_LAD2	ESPI_I02
6	LPC_LAD3	ESPI_I03
7	LPC_FRAME#	ESPI_CS#
8	PCH_PLTRST#	NA
9	GND	GND
10	LPC_CLOCK	ESPI_CLK

PAGE	ESPI	LPC
8	RC25_10K	RC8_15ohm RC13/RC27_8.2K
18	RC212_0ohm 0603	RC211_0ohm 0603
31		RE337,RE338 RE339,RE340, RE341 0_ohm
32	RE2 / RE3 0_ohm	

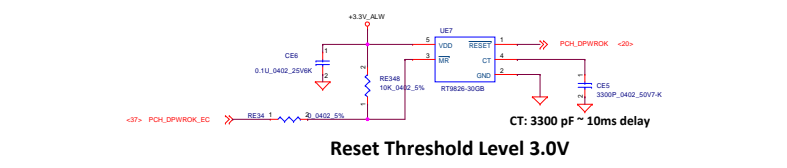


RE343	CE62	REV
240K	4700p	Single Port ACE w/o AR
130K	4700p	Single Port ACE w/AR
62K	4700p	Dual Port ACE w/o AR
33K	4700p	Dual Port ACE w/AR
8.2K	4700p	Dual Port ACE (w/AR +w/o AR)
4.3K	4700p	.
2K	4700p	.
1K	4700p	.



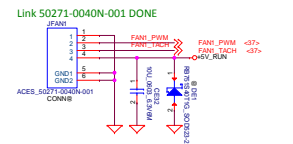
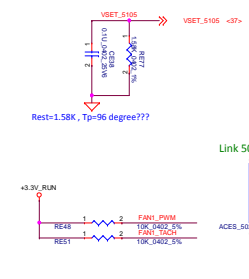
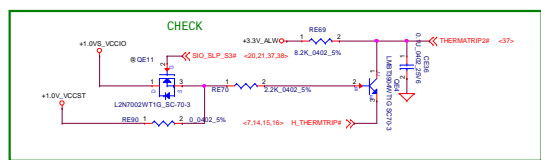
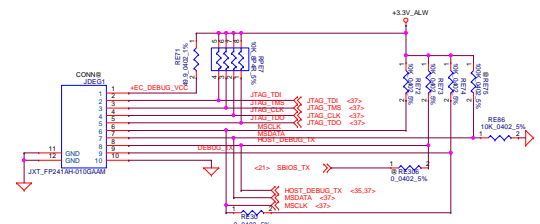
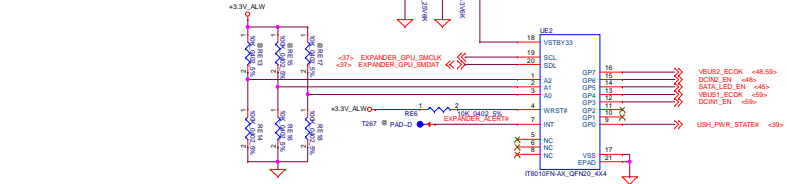
RE300	CE47	PANEL SIZE
240K	4700p	12"
130K	4700p	14"
33K	4700p	BR15 H
4.3K	4700p	BR15 P

PD\_ACE\_DET# rise time is measured from 5%~68% BOARD\_ID rise time is measured from 5%~68% PANEL\_ID rise time is measured from 5%~68%

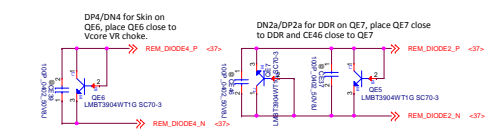


Control Byte
0 1 0 0 A2 A1 A0 R/W
R/W = 0 = Write
R/W = 1 = Read

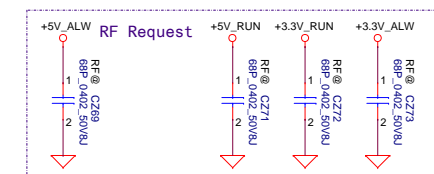
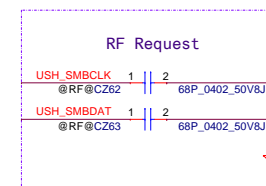
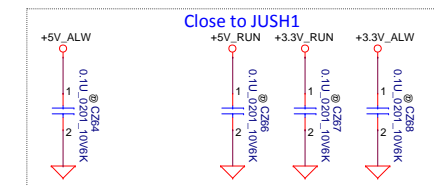
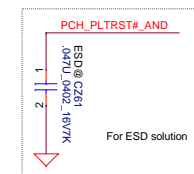
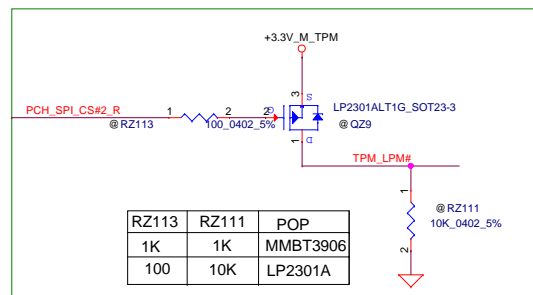
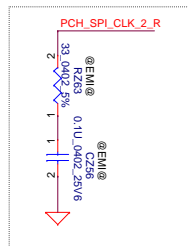
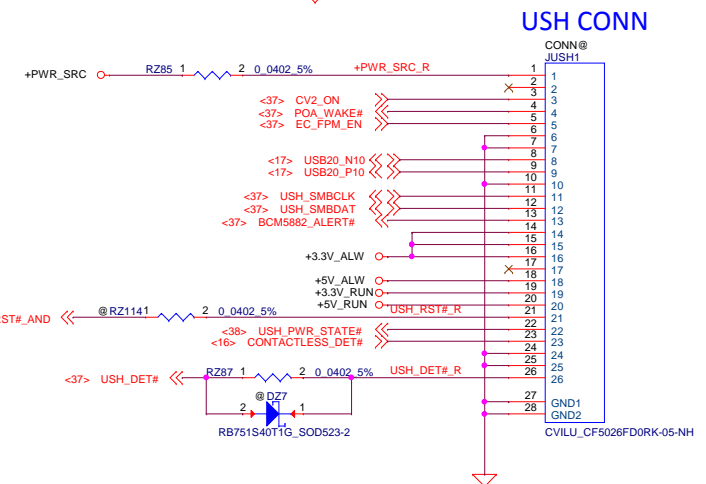
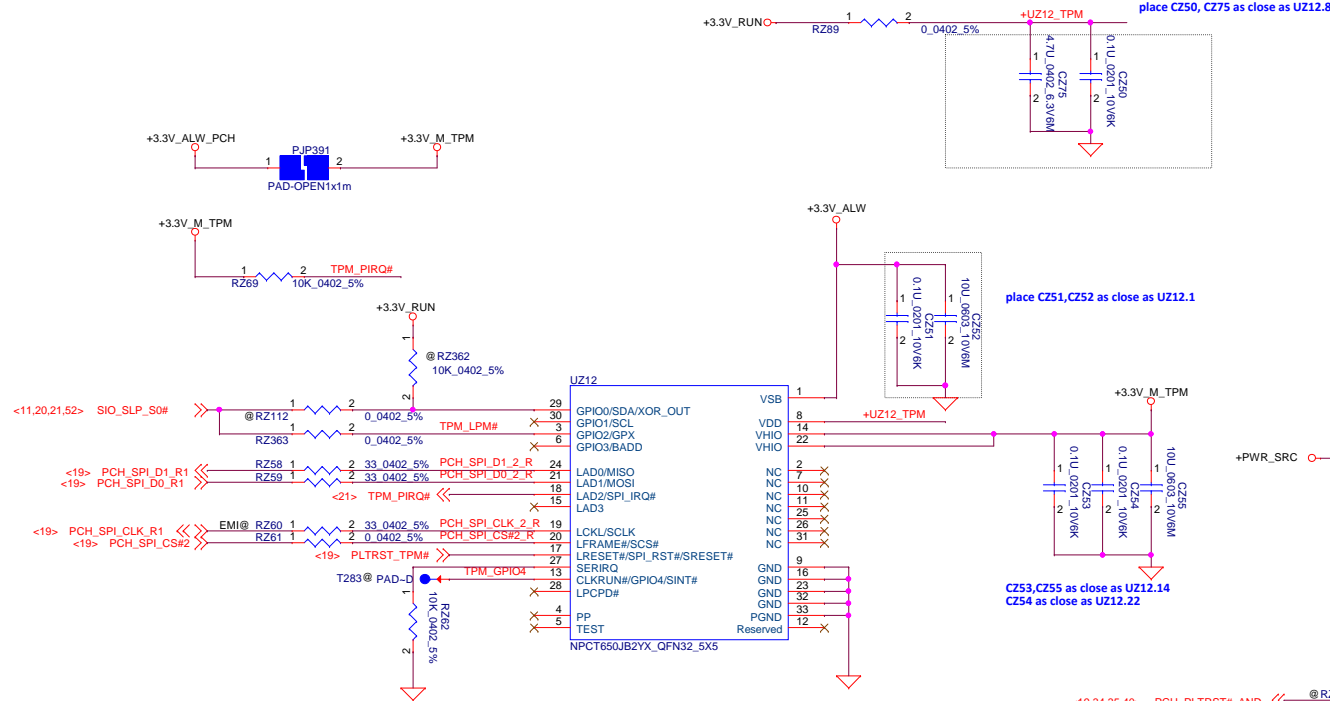
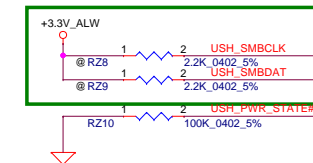
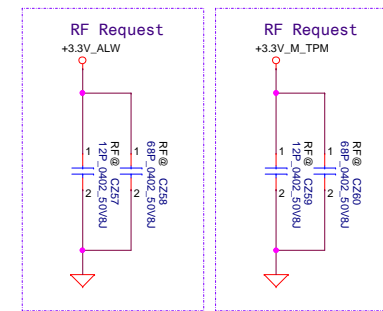
SMbus address 0x40



5105 Channel	Location
DP1/DN1	CPU (QE3)
DP2/DN2	WiGig (QE5)
DN2a/DP2a	DDR (QE7)
DP3/DN3	NA
DP4/DN4	CPU VR (QE6)



For NUVOTON TPM



RZ113	RZ111	POP
1K	1K	MMBT3906
100	10K	LP2301A

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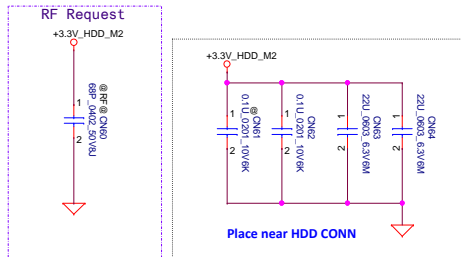
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**USH & TPM**

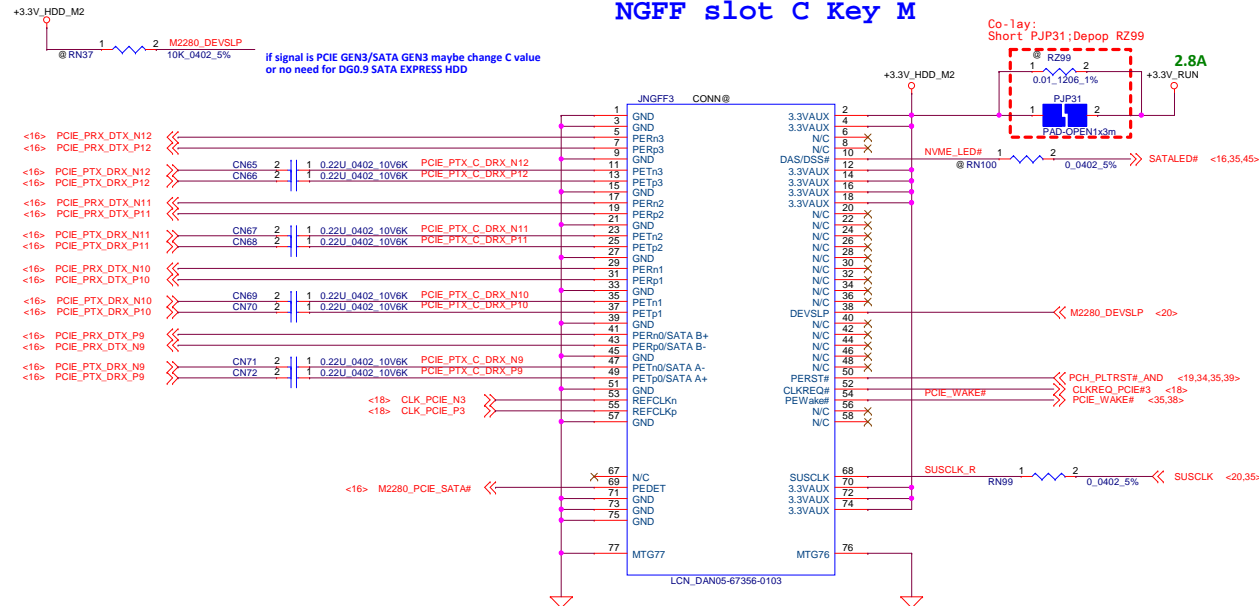
IDENTIFICATION OF RECORD OF INS	Document Number <b>LA-E151P</b>	Rev 0.2
Date: Thursday, June 30, 2016	Sheet 39 of 61	





2280 SSD

## NGFF slot C Key M

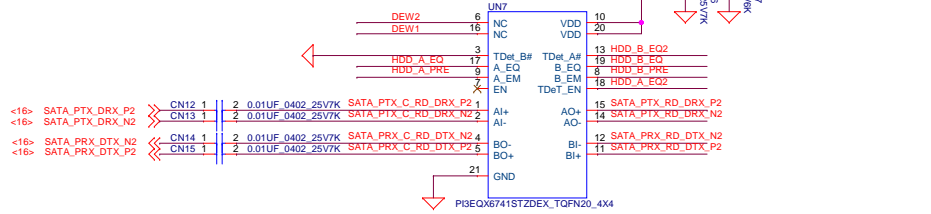


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				Size	B
				Document Number	LA-E151P
				Rev	0.2
				Date	Tuesday, June 28, 2016
				Sheet	40 of 61



	pin 3	pin 6	pin 13	pin 16	pin 18
Pericom	TDeT_B#	NC	TDeT_A#	NC	TDeT_EN
TI	GND	DEW2	GND	DEW1	GND
Parade	GND	REXT	B_EQ2	DEW	A_EQ2

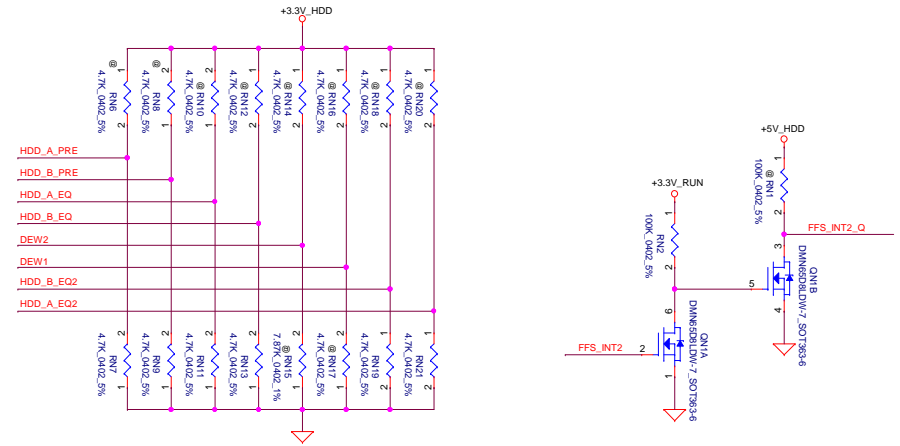
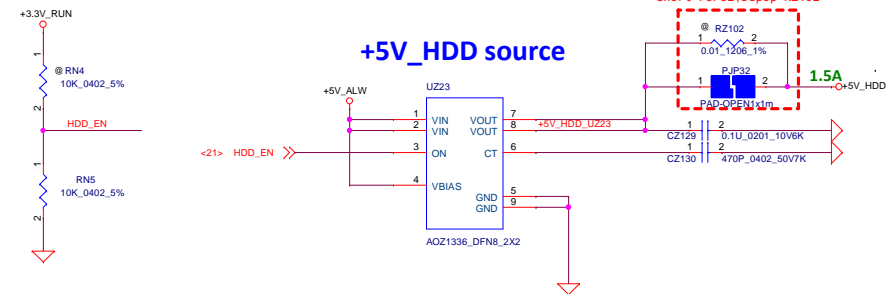
## SATA Repeater



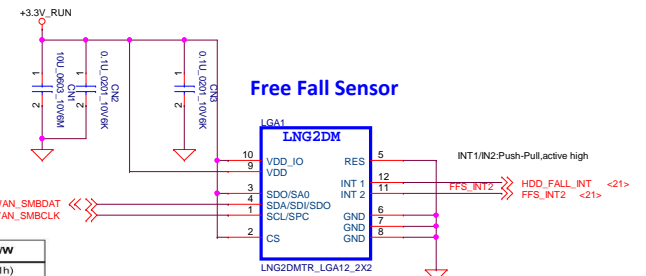
	HDD_A_EQ PIN17	HDD_B_EQ PIN19	HDD_A_EQ2 PIN18	HDD_B_EQ2 PIN13	DEW1 PIN16	DEW2 PIN6	HDD_A_PRE PIN9	HDD_B_PRE PIN8
Pericom PI3EQX6741ST	PD (RN13)	PD (RN16)	PD (RN83)	PD (RN23)	NC	NC	PD (RN9)	PD (RN11)
TI SN75LVCP601	PD (RN13)	NC	PD (RN83)	PD (RN23)	NC (IPU)	NC (IPU)	PH (RN8)	PH (RN10)
Parade PS8527C	PD (RN13)	PD (RN16)	PD (RN83)	PD (RN23)	NC (1/2 VDD)	PD (RN19)	NC (1/2 VDD)	NC (1/2 VDD)

			A_EQ	B_EQ		A_EM	B_EM
Main	Pericom	0 NC 1	3dB 6dB 9dB	3dB 6dB 9dB	0 NC 1	0dB 1.5dB	0dB 1.5dB
2nd	TI	0 NC 1	7dB 9dB 14dB	7dB 9dB 14dB	0 NC 1	0dB -4dB -2dB	0dB -4dB -2dB
3rd	Parade	EQ2 EQ1 (M = VDD/2) 0 M 0 0 0 1 M M M 0 M 1 1 M 1 0 1 1	2.4dB 7.4dB 14.4dB 12.2dB 9.4dB 13.3dB 6.2dB 11.2dB 5dB	2.4dB 7.4dB 14.4dB 12.2dB 9.4dB 13.3dB 6.2dB 11.2dB 5dB	0 NC 1	0dB -3.5dB -1.5dB	0dB -3.5dB -1.5dB

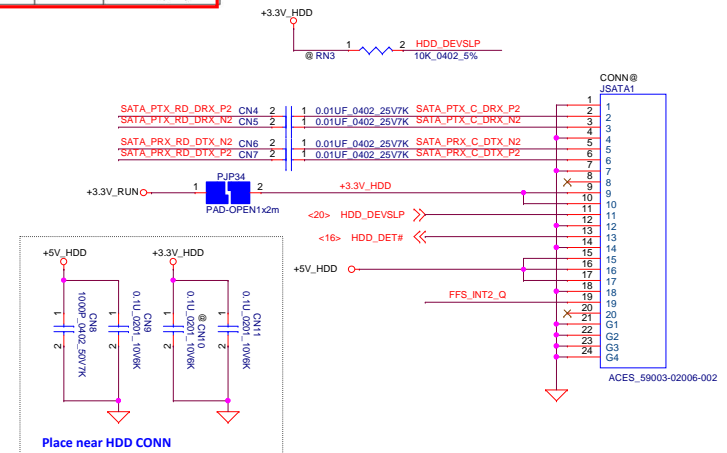
\* red color is current setting



## Free Fall Sensor



Command	SAD[6:1]	SAD[0] = SA0	R/W	SAD+R/W
Read	010100	0	1	01010001 (51h)
Write	010100	0	0	01010000 (50h)
Read	010100	1	1	01010011 (53h)
Write	010100	1	0	01010010 (52h)

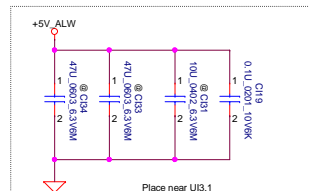
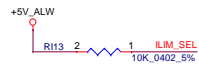
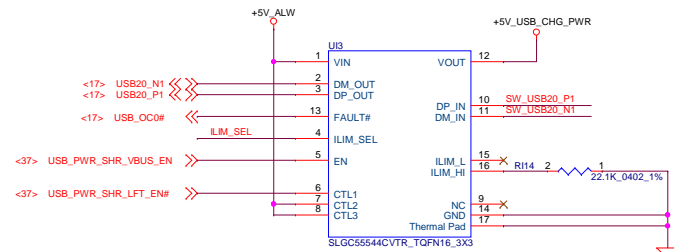
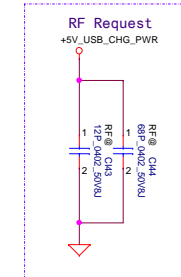
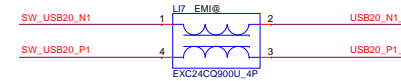
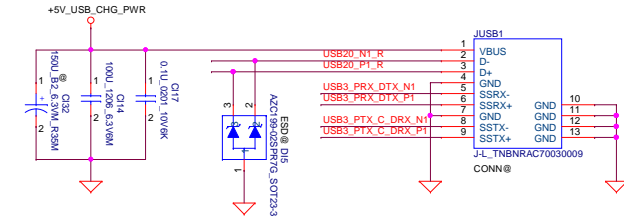
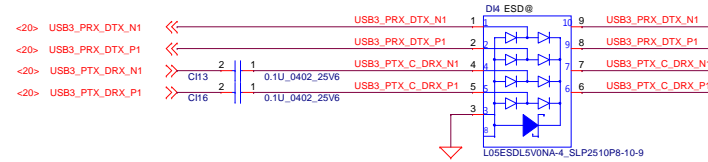


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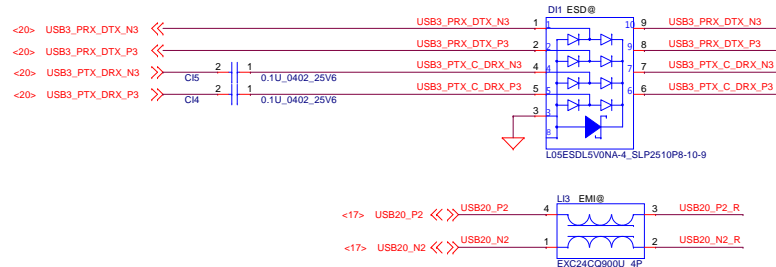
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Issued Date	2016/01/01	Deciphered Date	2017/01/01	HDD CONN
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Date:	Tuesday, June 28, 2016	Sheet	41 of 61	Rev 0.2

# For PWR SW + Charger combine IC

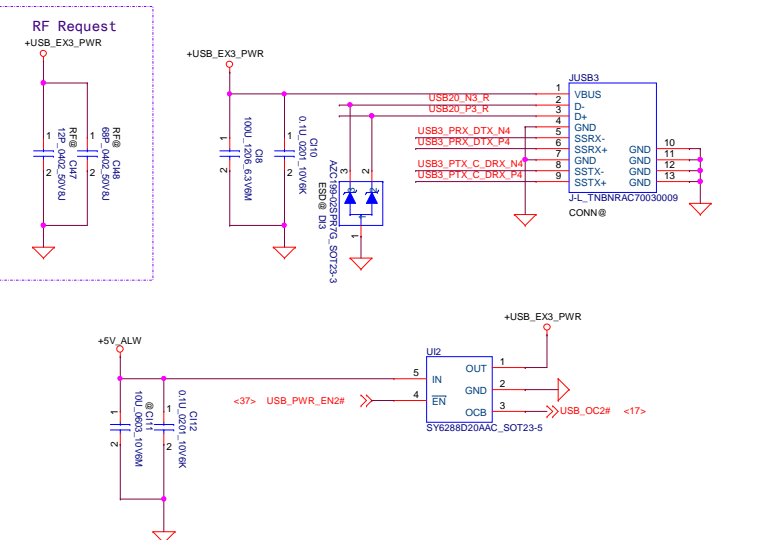
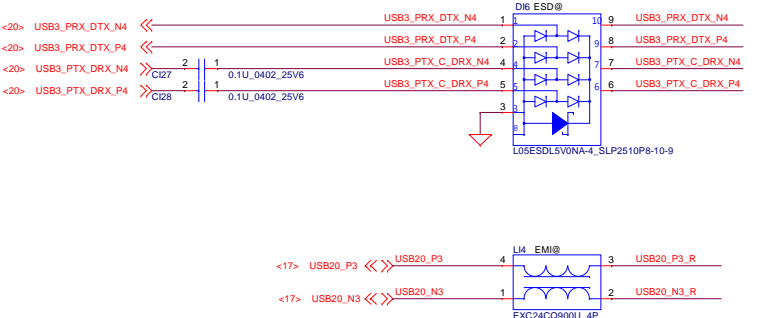
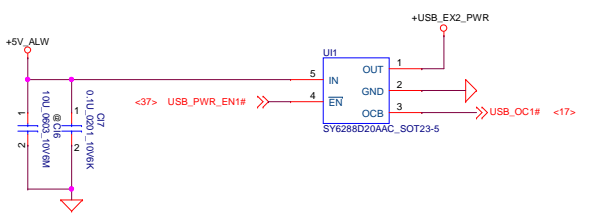
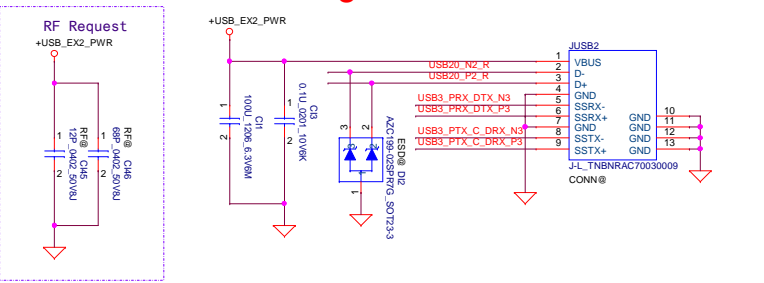


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LA-E151P				0.2				Date			
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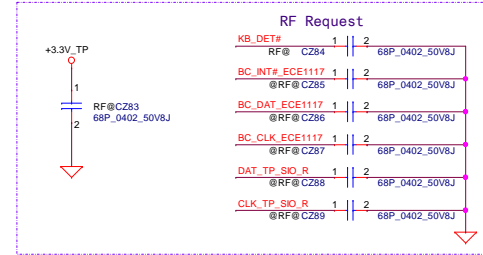
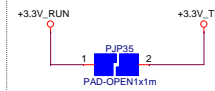
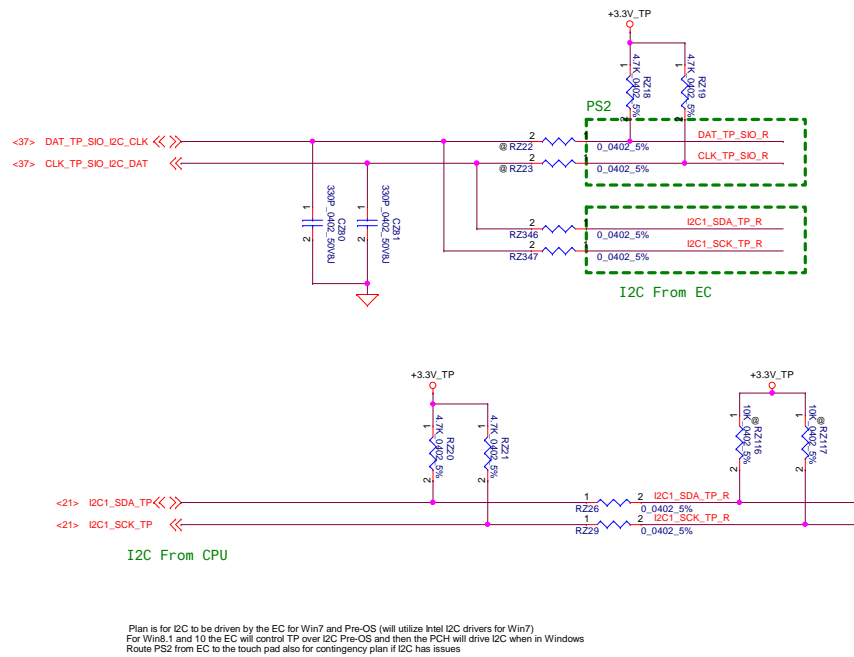
# For Breckenridge 14&15/Steamboat 14



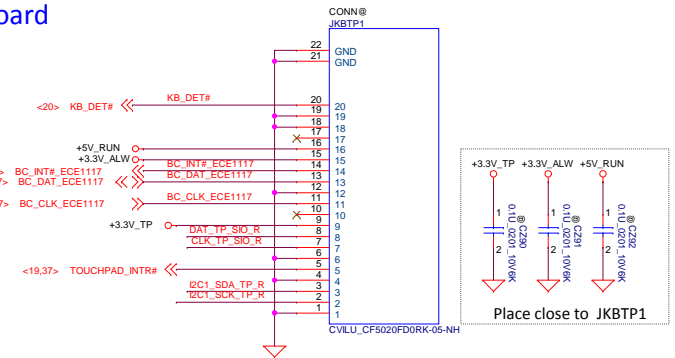
DfB request:  
main SM070003200 (INPAQ\_MCM1012B900F06BP\_4P)  
Footprint use 2nd source SM070004400 (PANAS\_EXC24CQ900U\_4P)  
Pitch change from 0.5mm to 0.55mm



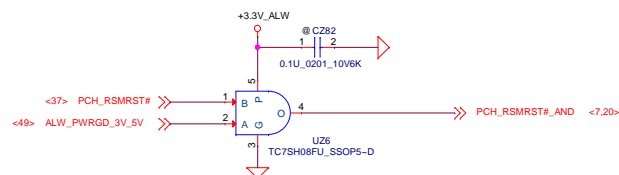
## Touch Pad



## Keyboard



## RSMRST circuit



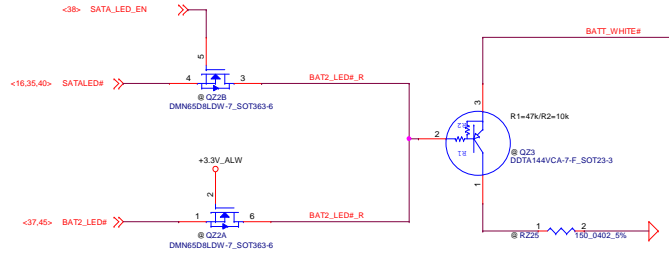
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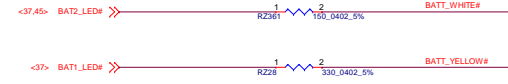
Title	Keyboard
Document Number	LA-E151P
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## HDD LED MUX

means EC can switch battery white led and HDD LED by hot key 'Fn+H'

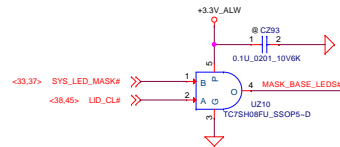
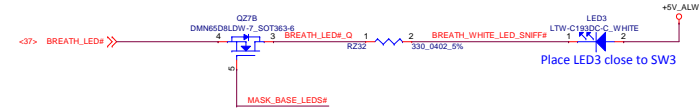


## Battery LED

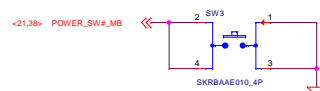


## Breath LED

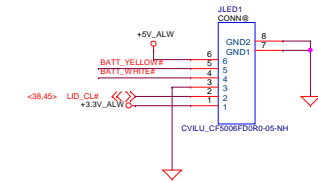
LED PIN change to SC50000FL00 from SC50000BA00



## POWER & INSTANT ON SWITCH



## LED board CONN

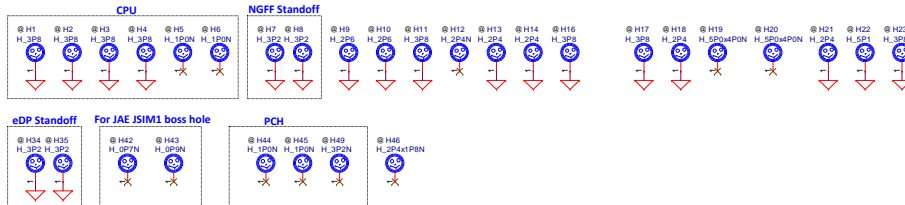


### Fiducial Mark



### LED Circuit Control Table

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



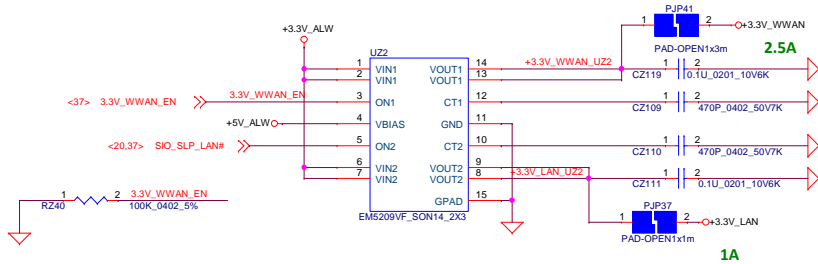
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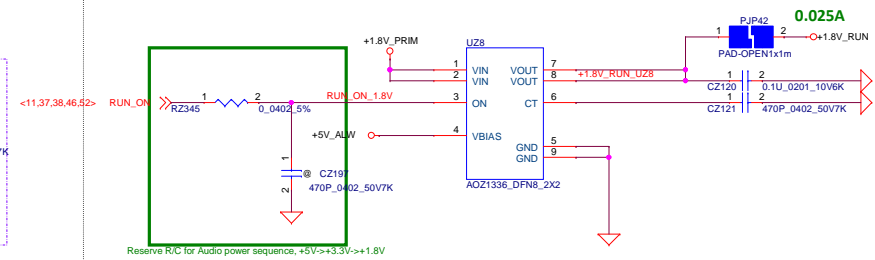
PAD, LED

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Date:	Tuesday, June 28, 2016	Sheet	46	of	61

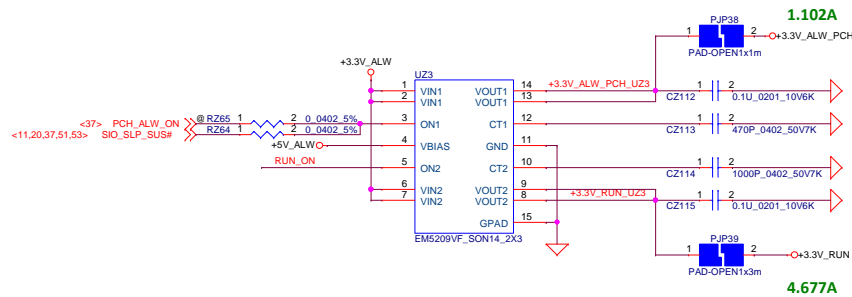
### +3.3V\_WWAN/+3.3V\_LAN source



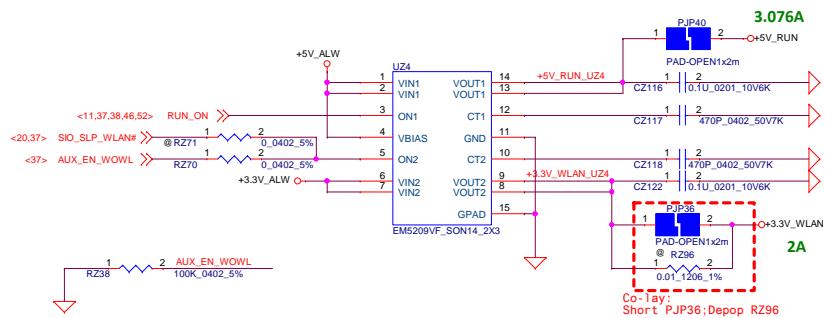
### +1.8V\_RUN source



### +3.3V\_ALW\_PCH/+3.3V\_RUN source



### +5V\_RUN/+3.3V\_WLAN source



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				Power control					
				Size		Document Number		Rev	
				LA-E151P				0.2	
Date:		Tuesday, June 28, 2016		Sheet		46 of 61			

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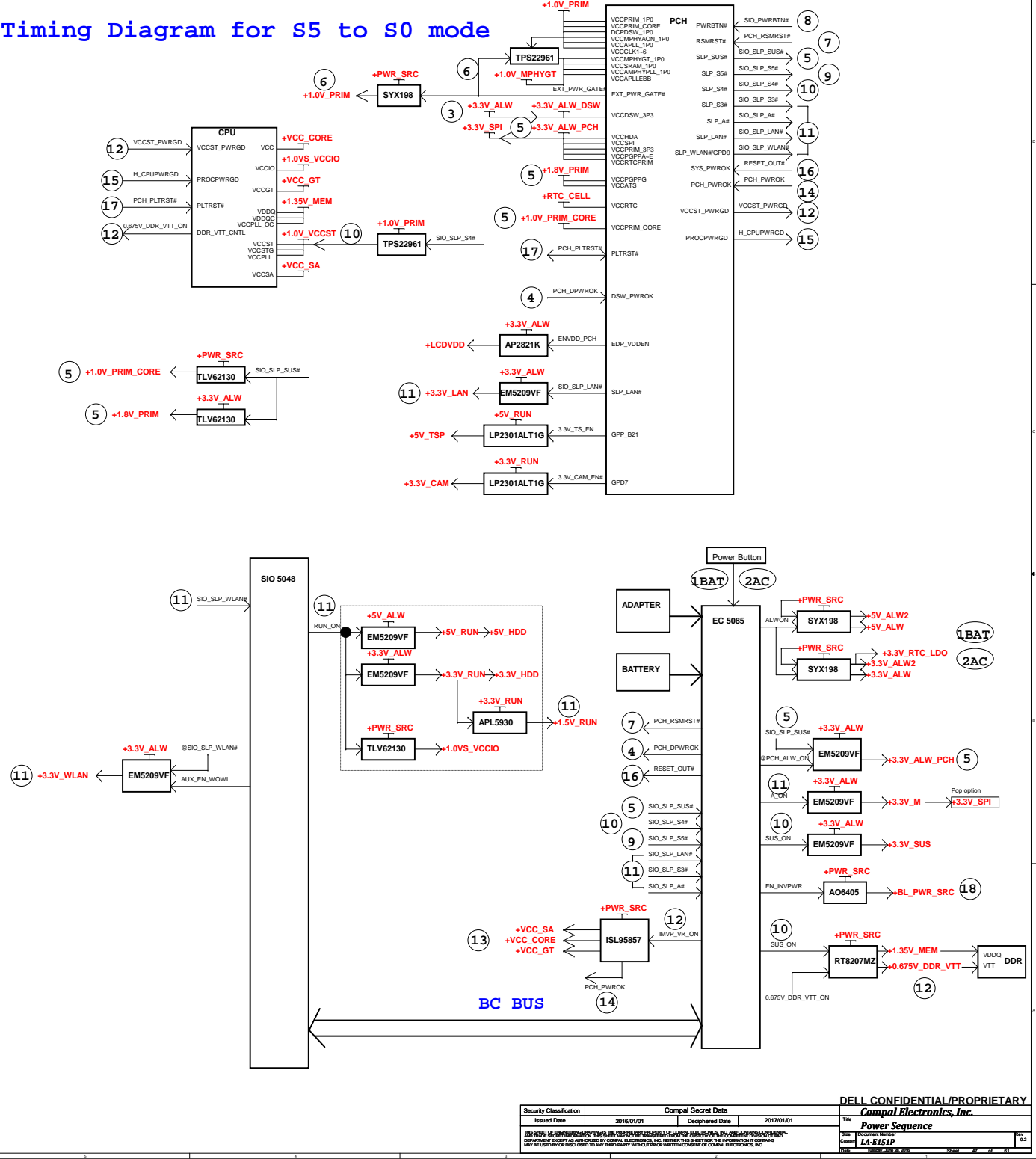
Power control

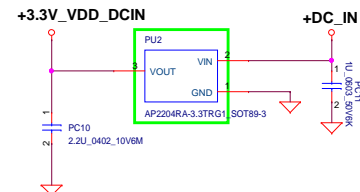
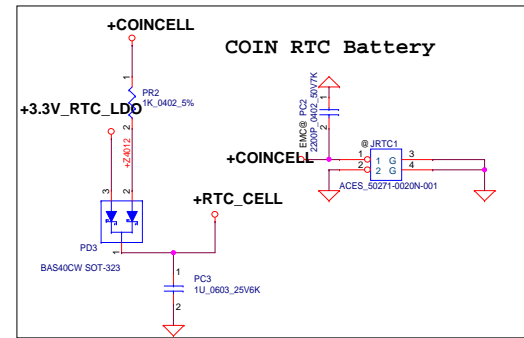
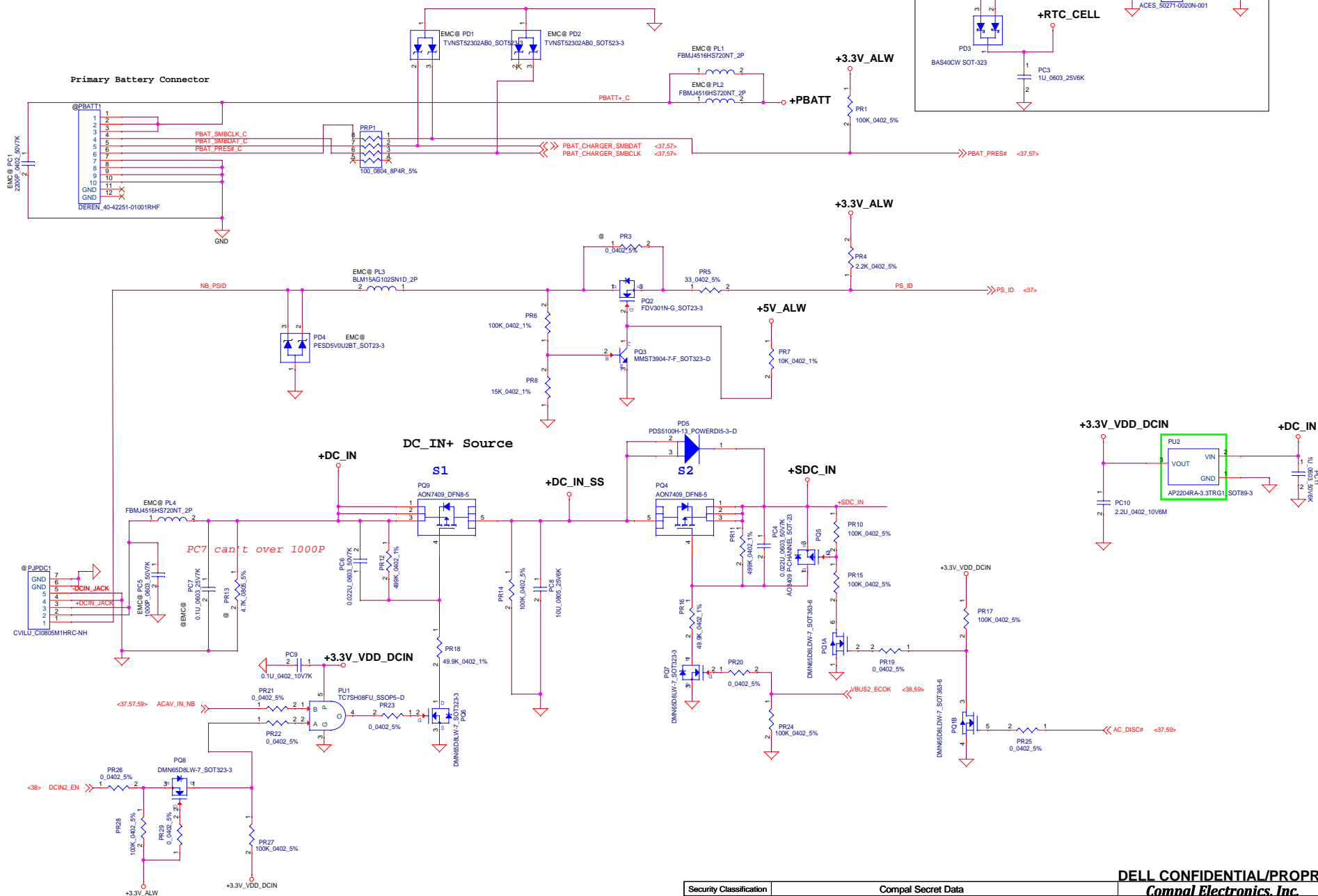
LA-E151P

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Timing Diagram for S5 to S0 mode





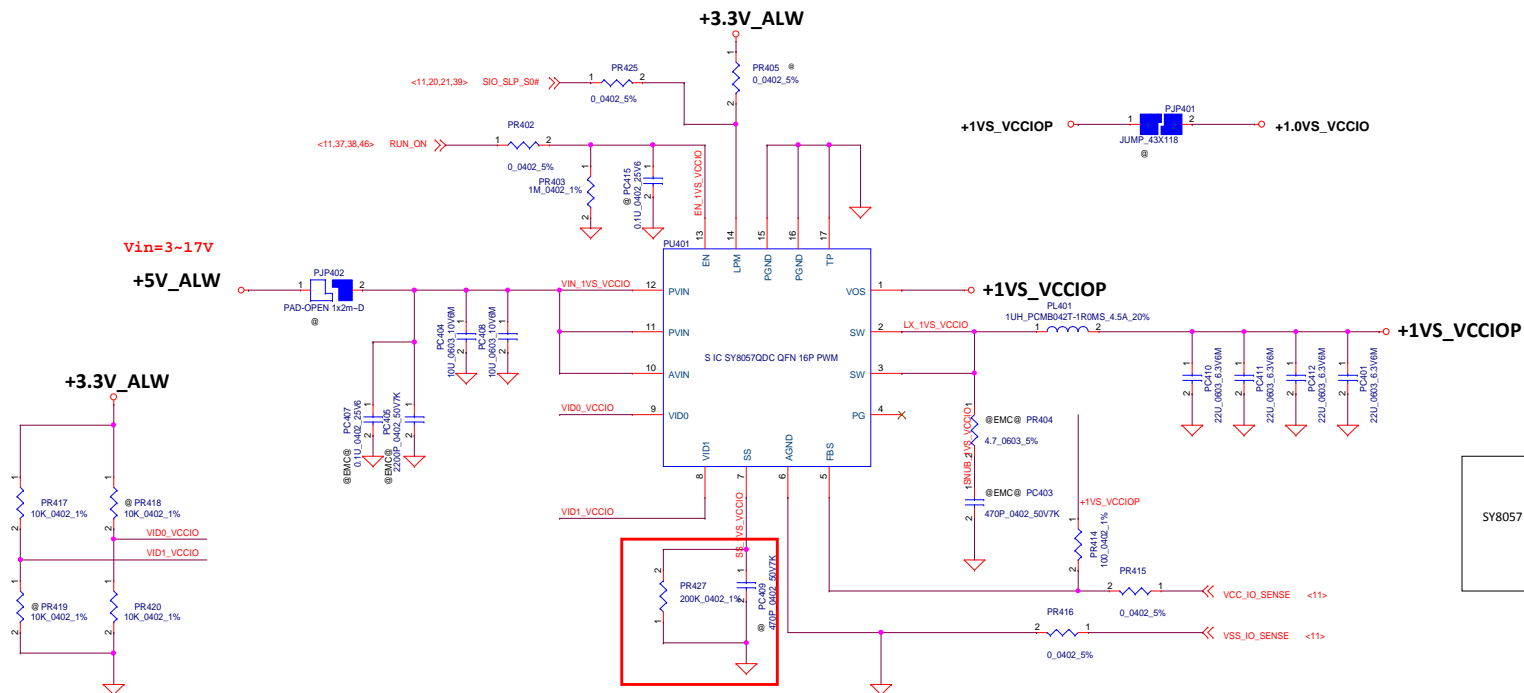
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Size	Document Number	LA-E151P	
C	Rev	0.2	
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Preset the different pull down resistor to choose the required power rail

(VCCIO/PCH/EDRAM/EOPIO applications.)  
RMODE=500k or floating Vcc\_PRIM\_CORE.  
RMODE=200k Vcc\_IO  
RMODE=0 Vcc\_EDRAM.

**+1.0VS\_VCCIO**  
TDC 3.9A  
Peak Current 5.5 A  
OCP Current 6.6 A Fix by IC  
TYP MAX

SY8057	LPM LOGIC	VID1 LOGIC	VID0 LOGIC	OUTPUT VOLTAGE
	0	X	X	0(LPM)
	1	0	0	0.85
	1	0	1	0.875
	1	1	0	0.95
	1	1	1	0.975

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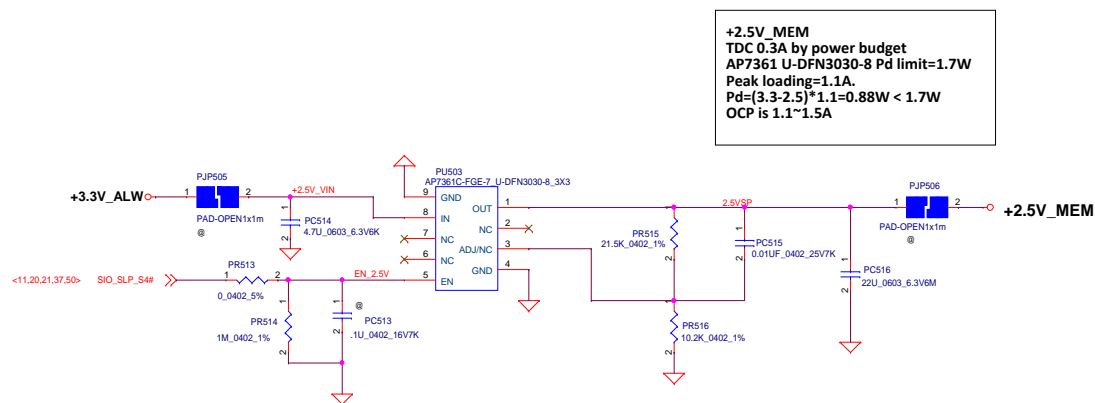
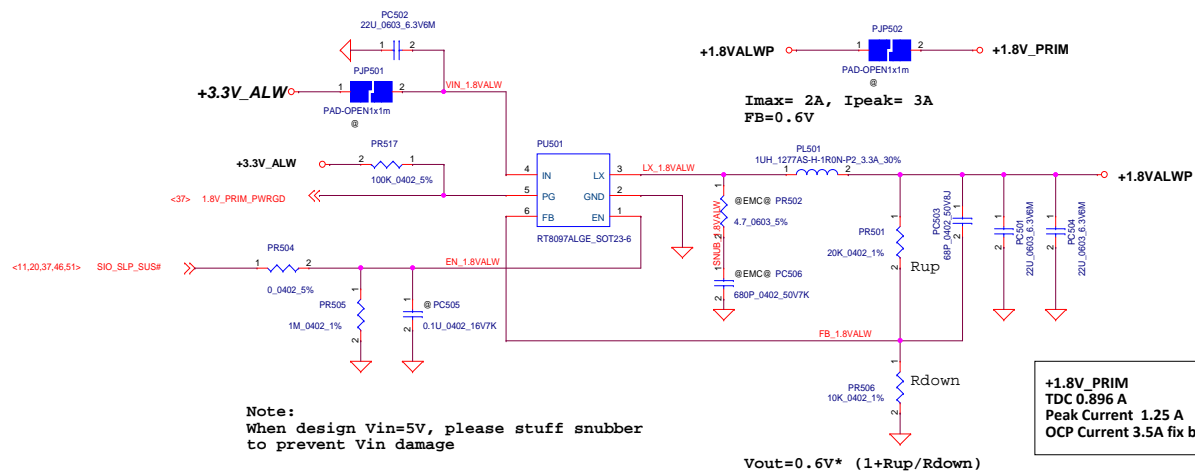
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+1VS\_VCCIO

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Date: Tuesday, June 28, 2016 Sheet 52 of 61

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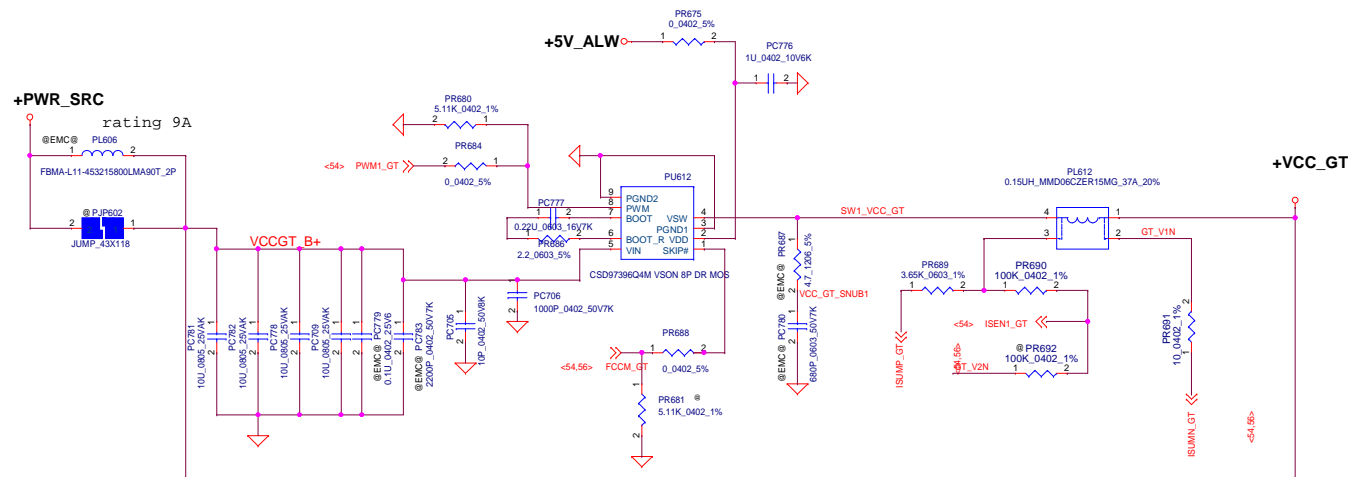


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Title		+1.8VALWP/+1.5VSP / +2.5V_MEM	
Size	Document Number	LA-E151P	
Date	Tuesday, June 28, 2016	Sheet	53 of 61

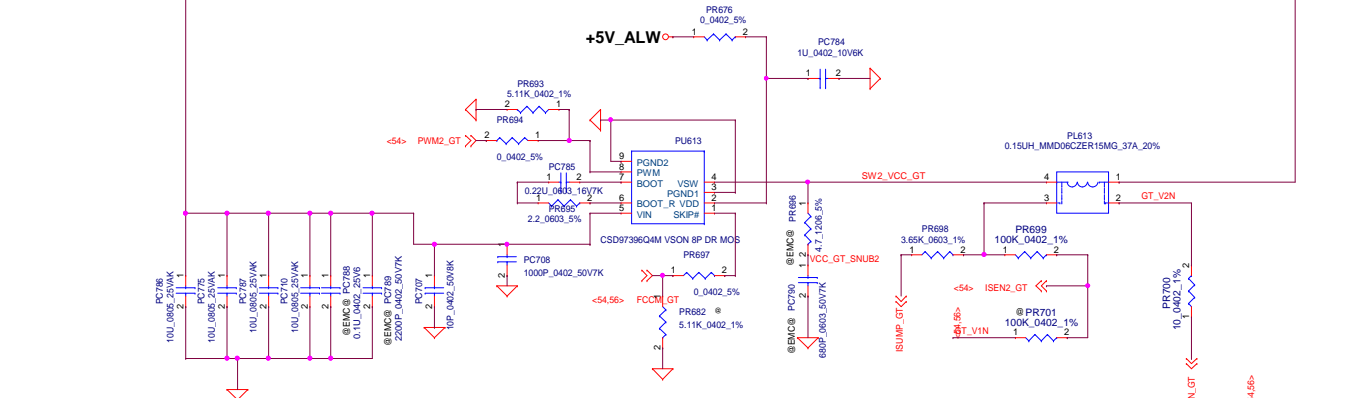




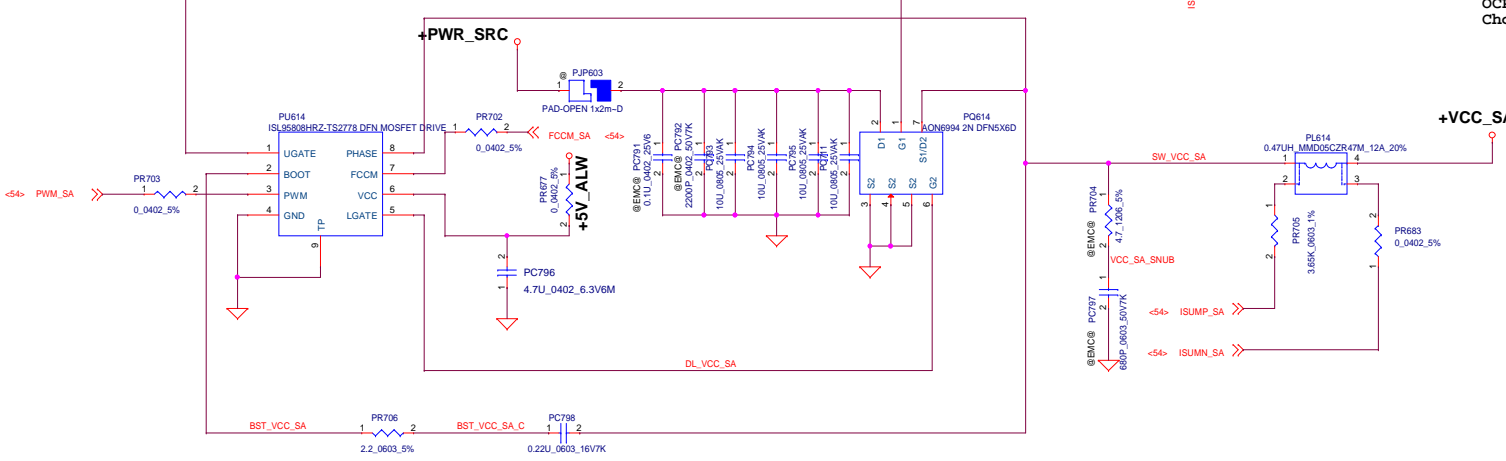
+PWR\_SRC  
rating 9A



VCC\_GT  
TDC 25A  
Peak Current 55A  
OCP current 66A  
Choke DCR 0.9 +-7% ohm



VCC\_SA  
TDC 10A  
Peak Current 11.1A  
OCP current 13.32A  
Choke DCR 6.2+-5% ohm



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Title		VGT_VSA	
Size	Document Number	LA-E151P	
Date	Tuesday, June 28, 2016	Sheet	56 of 61

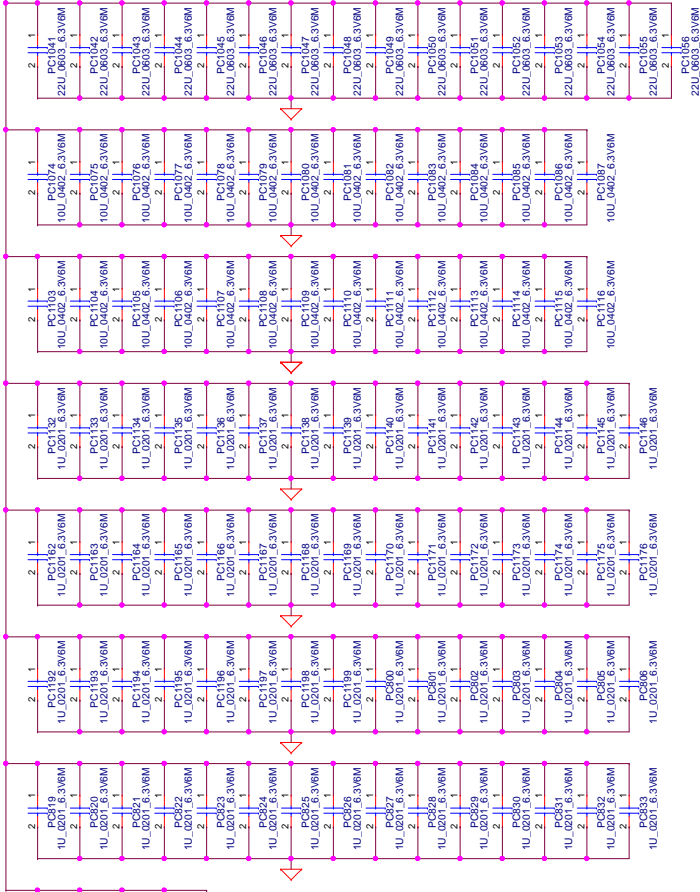




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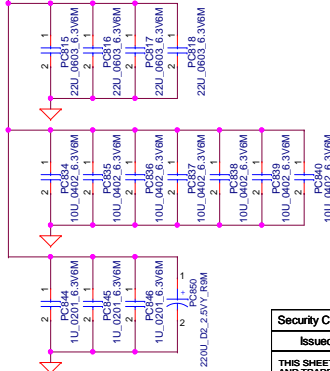
VCC\_CORE Place on CPU  
Back Side.  
22U\_0603 \* 8 pcs + 10U\_0402\*28 pcs + 1U\_0201\*35 pcs  
Primary Side.  
22U\_0603 \* 8 pcs+330u\_D2\*2 pcs

+VCC\_CORE



VCC\_SA Place on CPU  
Back Side.  
22U\_0603 \* 2 pcs + 10U\_0402\*7 pcs + 1U\_0201\*3 pcs  
Primary Side.  
22U\_0603 \* 2 pcs + 220u\_D2\*1 pcs

+VCC\_SA



VCC\_GT Place on CPU  
Back Side.  
22U\_0603 \* 8 pcs +10U\_0402\*35 pcs +1U\_0201\*68 pcs  
Primary Side.  
22U\_0603 \* 12 pcs +470u\_D2\*2 pcs

+VCC\_GT



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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	11	HW	2016/5/27	COMPAL	S0ix(modern standby) support for VCCPLL_OC	Pop RZ120 and Depop UZ34 Add net name VCCSTG_EN(UZ19.4) and connect to RZ120.1	0.2(X01)
2	37	HW	2016/5/27	COMPAL	Reserve PORT80_DET# PD resistance	Reserve RE513 100k (SD028100380) to GND	0.2(X01)
3	35	HW	2016/6/1	COMPAL	Intel schematics reivew modify item	CZ28,CZ29 change from 0.047uF to 0.01uF CZ27 change from 0.1uF(@)_0201 to 10uF_0603	0.2(X01)
4	45	HW	2016/6/1	COMPAL	JLED1 pin define error	JLED1 pin definition change	0.2(X01)
5	39	HW	2016/6/1	COMPAL	TPM change to NUVOTON	Change TPM from Atmel to NUVOTON.	0.2(X01)
6	35	HW	2016/6/1	COMPAL	Intel reviwie result (WWAN Coex feature support)	Add RZ128 0 ohm connect WWAN_COEX3 and WLAN_COEX3 Add RZ129 0 ohm connect WWAN_COEX2 and WLAN_COEX2 Add RZ130 0 ohm connect WWAN_COEX1 and WLAN_COEX1	0.2(X01)
7	35	HW	2016/6/7	COMPAL	Debug card reserve	Add RZ131, RZ132 for PORT80_DET# and HOST_DEBUG_TX	0.2(X01)
8	37	HW	2016/6/7	COMPAL	For MEC5105K-D1-TN setting	1. Change UE1 to SA00009GL00 2. POP RE360,RE362 3. De-POP RE361	0.2(X01)
9	35,32	HW	2016/6/16	COMPAL	For EMC request	De-pop RZ131, RZ132. CL22 change to 10pf , POP CA7,CZ1 (100P),CH268 modify from 22p to 47p and POP,Change LV1 to SM01000NY00	0.2(X01)
10	41	HW	2016/6/16	COMPAL	BITS284924-HDD is still working after press power button into S5 during POST.	POP RN5	0.2(X01)
11	39	ME	2016/6/17	COMPAL	Connector change	1. JKBTP1 change to CVILU_CF5020FD0RK-05-NH 2. JUSH1 change to CVILU_CF5026FD0RK-05-NH 3. JIR1 change to ACES_50208-0060N-P01	0.2(X01)
12	36	HW	2016/6/20	COMPAL	Vender suggest	RA7,RA8 change to 16.2ohm	0.2(X01)
13	37	HW	2016/6/22	COMPAL	The posibility of GPIO map update	Add RE514,RE515 for RTCRST_ON	0.2(X01)
14	41	HW	2016/6/22	COMPAL	BITS283552 - [BR_CSLP] FFS AP no function when execute FF generator or shake SU	FFS VDD_IO change to +3.3V_RUN	0.2(X01)

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