

# COMPAL CONFIDENTIAL

MODEL NAME : VAL90

PCB NO : DA6000WZ010

GPIO P/N: 2012.8.1 Rev 2.7

BOM P/N :

X76 of SPI:

X7650731L03

SA000039A30 (64M W25Q64FVSSIQ)

SA00003K820 (32M W25Q32FVSSIQ)

X7650731L04

SA00006N000 (32M MX25L3273EM2I-10G)

SA00006N100 (64M MX25L6473EM2I-10G)

## SALADO 14 HSW UMA

HASWELL + LYNX POINT

2013-07-04

REV : 1.0 (A00)

@ : Nopop Component

CONN@ : Connector Component

SPI@ : For X76 SPI

14UMA

EMC@: EMI/RF/ESD ask to add V


CXDP@ : CPU XDP

PXDP@ : PCH XDP

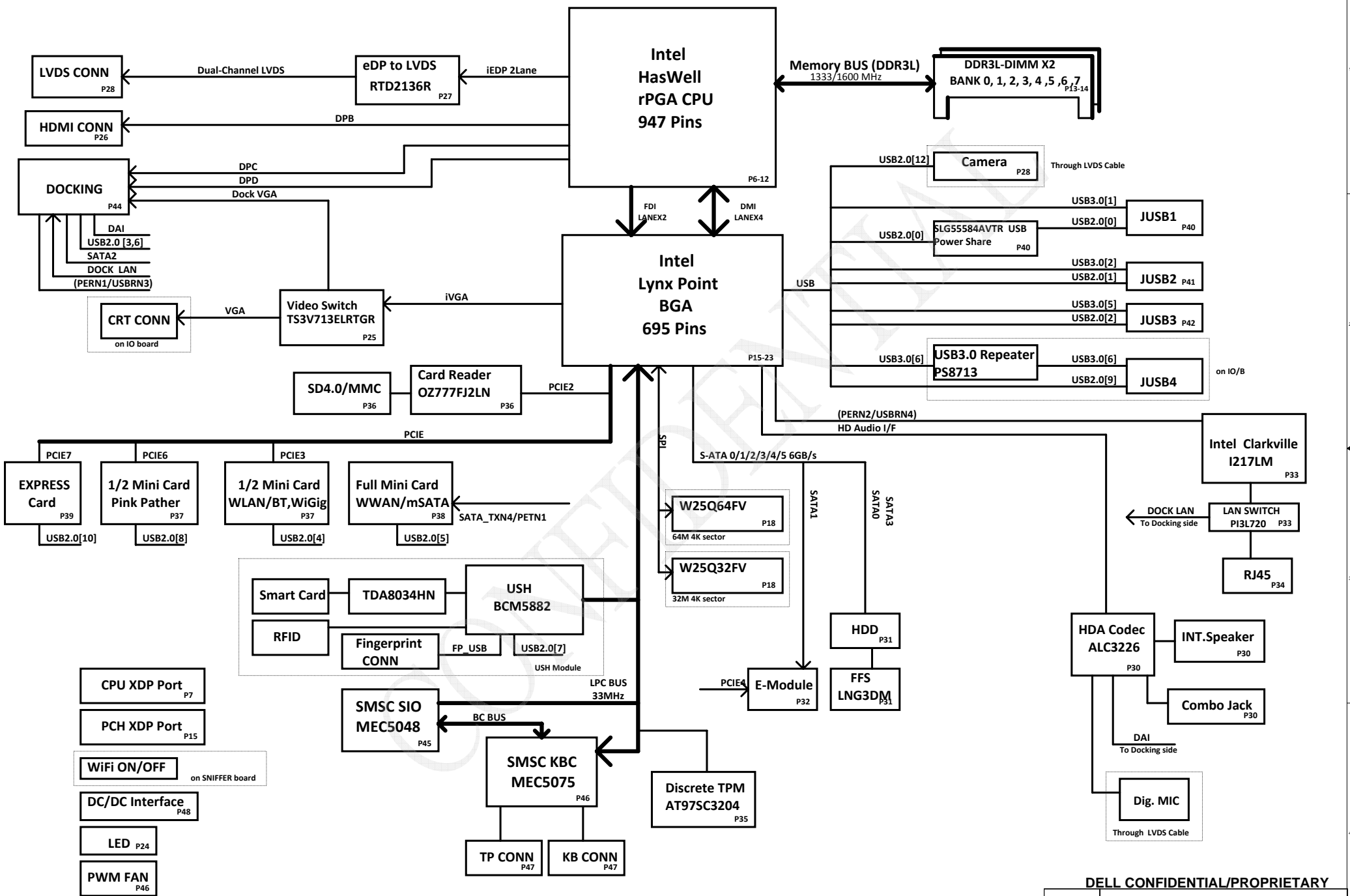
MB PCB	
Part Number	Description
DA6000WZ000	PCB OYG LA-9931P REV0 M/B UMA 6

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## Block Diagram



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**4019MY**

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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	+PWR_SRC +PWR_SRC_S +5V_ALW +3.3V_ALW +3.3V_ALW_PCH +3.3V_RTC_LDO	+3.3V_SUS +1.35V_MEM	+5V_RUN +3.3V_RUN +1.5V_RUN +0.675V_DDR_VTT +VCC_CORE +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

PCH	USB 2.0 PORT#	USB 3.0 PORT#	DESTINATION
	0	1	Rear Side (JUSB1)
	1	2	Right Side TOP (JUSB2)
	2	5	Right Side bottom (JUSB3)
	3	3 (PERN1/USBRN3)	DOCKING (JDOCK1)
	4		WLAN (JMINI2)
	5		WWAN (JMINI1)
	6		DOCKING (JDOCK1)
	7		USH (JUSH1)
	8		Pink Pather (JMINI3)
	9	6	Left Side (JUSB4)
	10		Express card (JEXP1)
	11		None
	12		CAMERA (JCAM1)
	13		LCD Touch

PCI EXPRESS	DESTINATION
Lane 1 (SATA_TXN4/PETN1)	WWAN (JMINI1) SATA by default
Lane 2 (SATA_RXN5/PERN2)	None
Lane 2 (PERN2/USBRN4)	10/100/1G LOM
Lane 3	WLAN (JMINI2)
Lane 4	E3 Module Bay (JSATA2)
Lane 5	None
Lane 6	Pink Pather (JMINI3)
Lane 7	Express card (JEXP1)
Lane 8	MMI

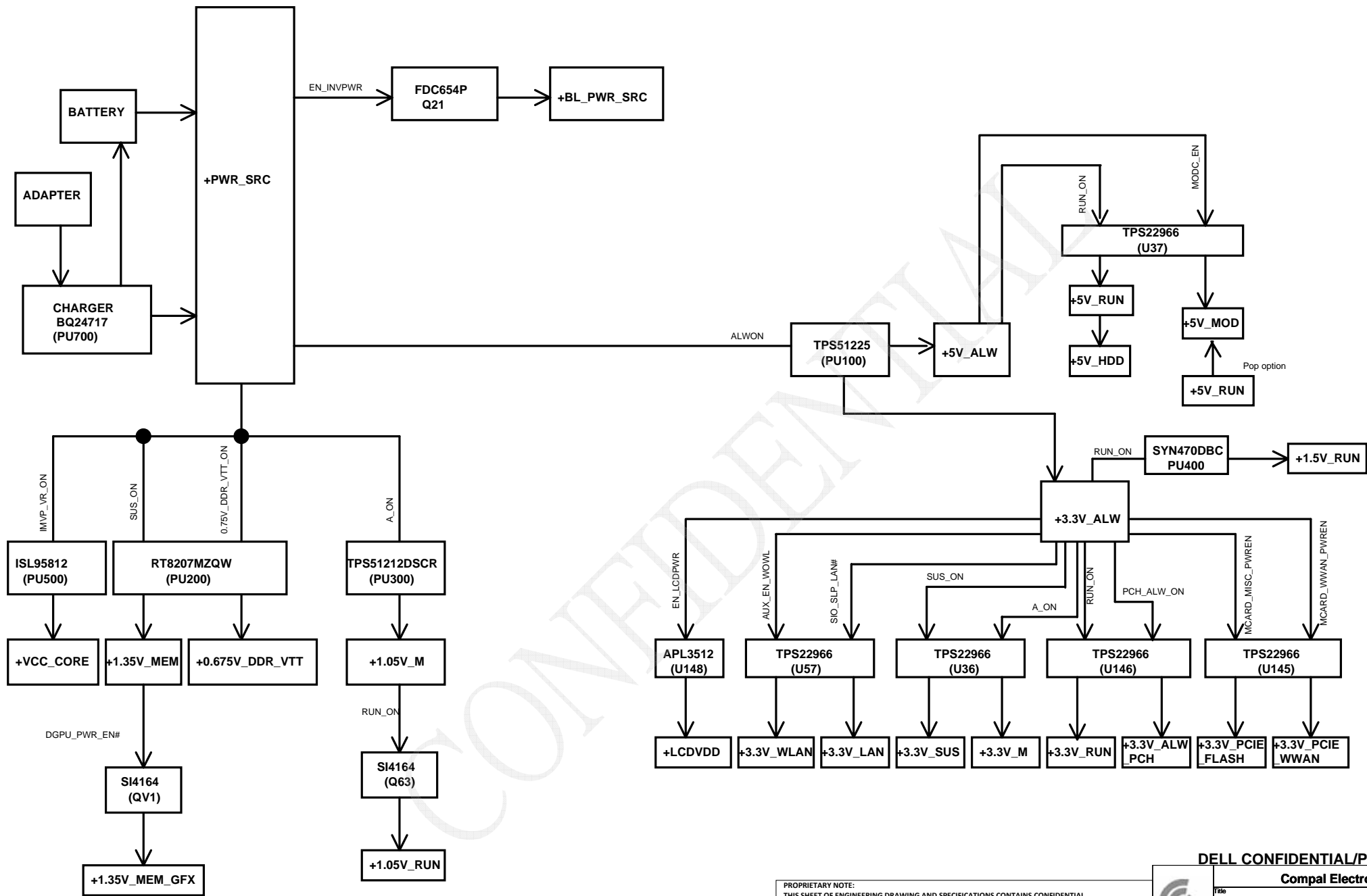
SATA	DESTINATION
SATA 0	HDD (JSATA1)
SATA 1	ODD (JSATA2)
SATA 2	Dock (JDOCK1)
SATA 3	NA
SATA 4 (SATA_TXN4/PETN1)	WWAN (JMINI1) SATA by default

DISPLAY Ports On CPU	Connetion
DDIB	MB HDMI (JHDMI1)
DDIC	Dock DP port 1
DDID	Dock DP port 2

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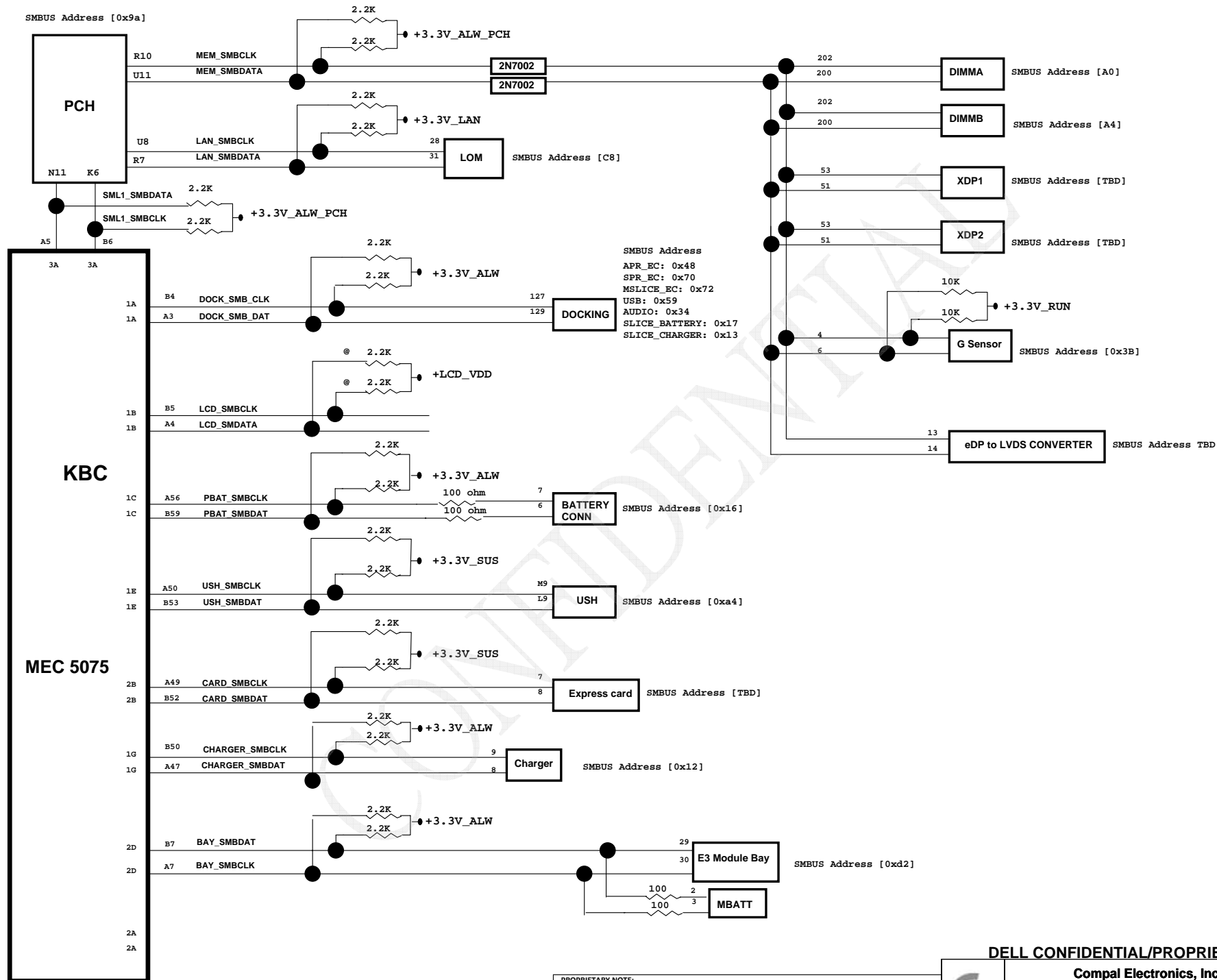
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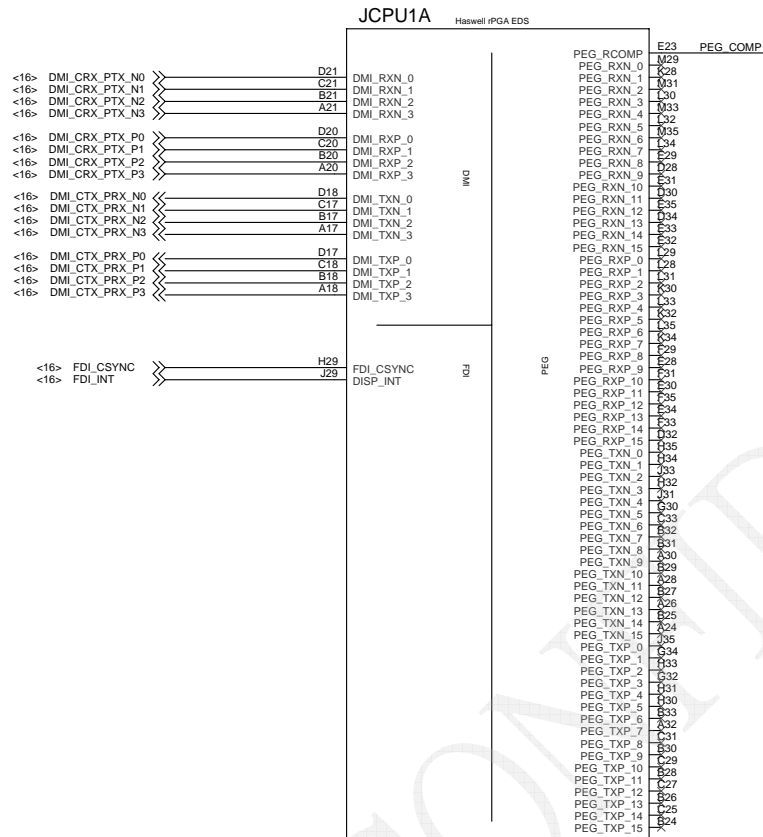
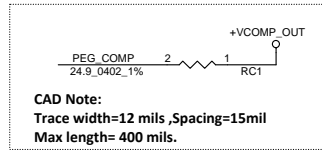
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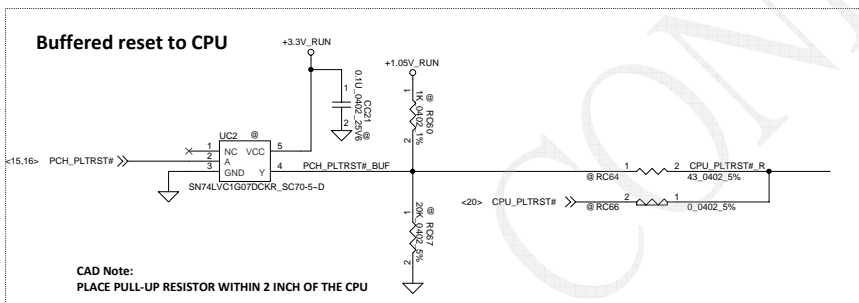
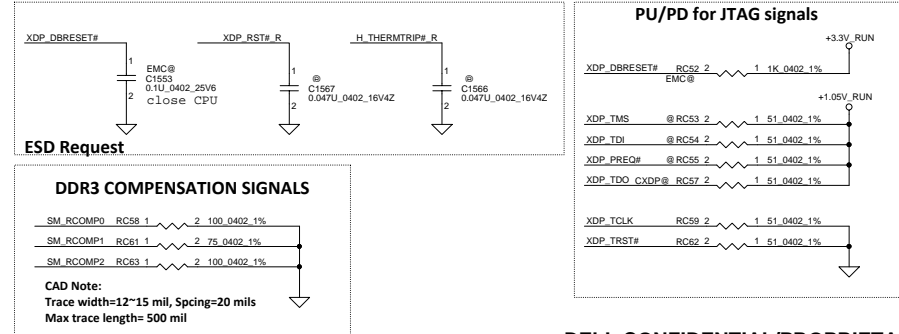
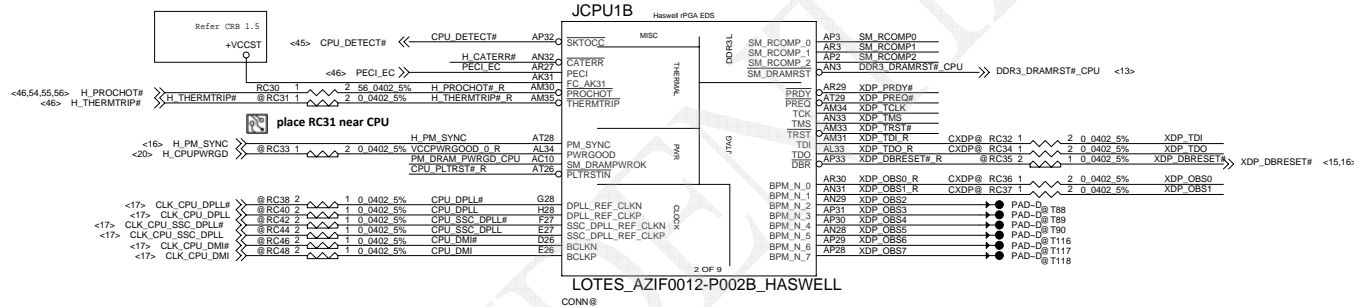
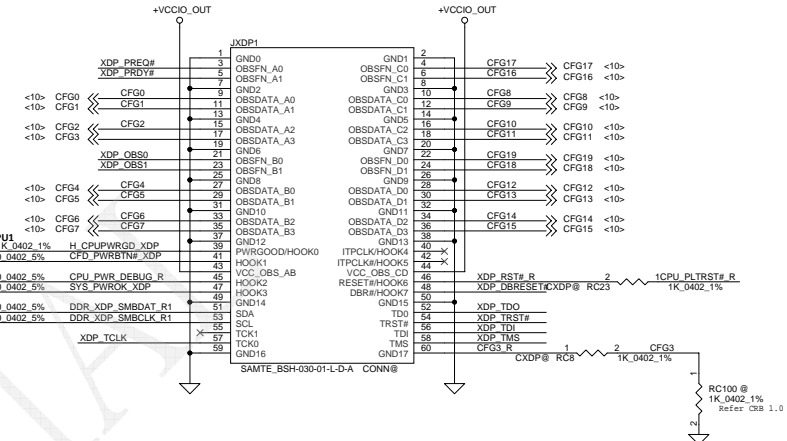
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**CAD Note:**  
Avoid stub in the PWRGD path  
while placing resistors RC33 & RC56

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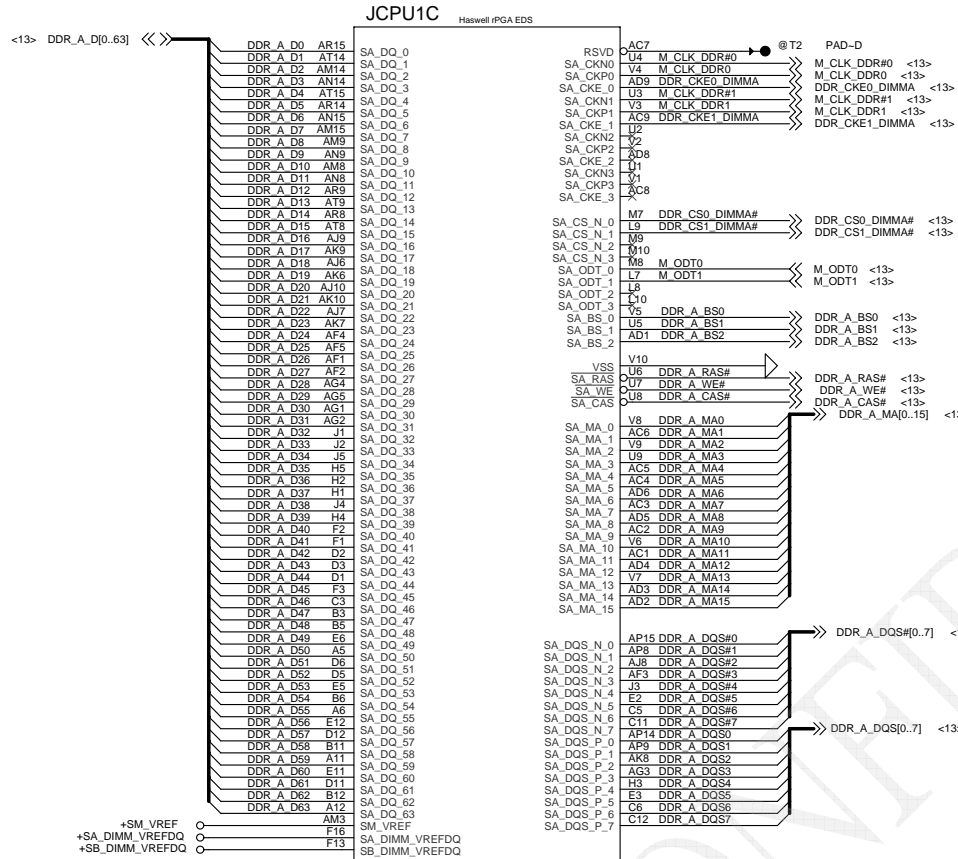
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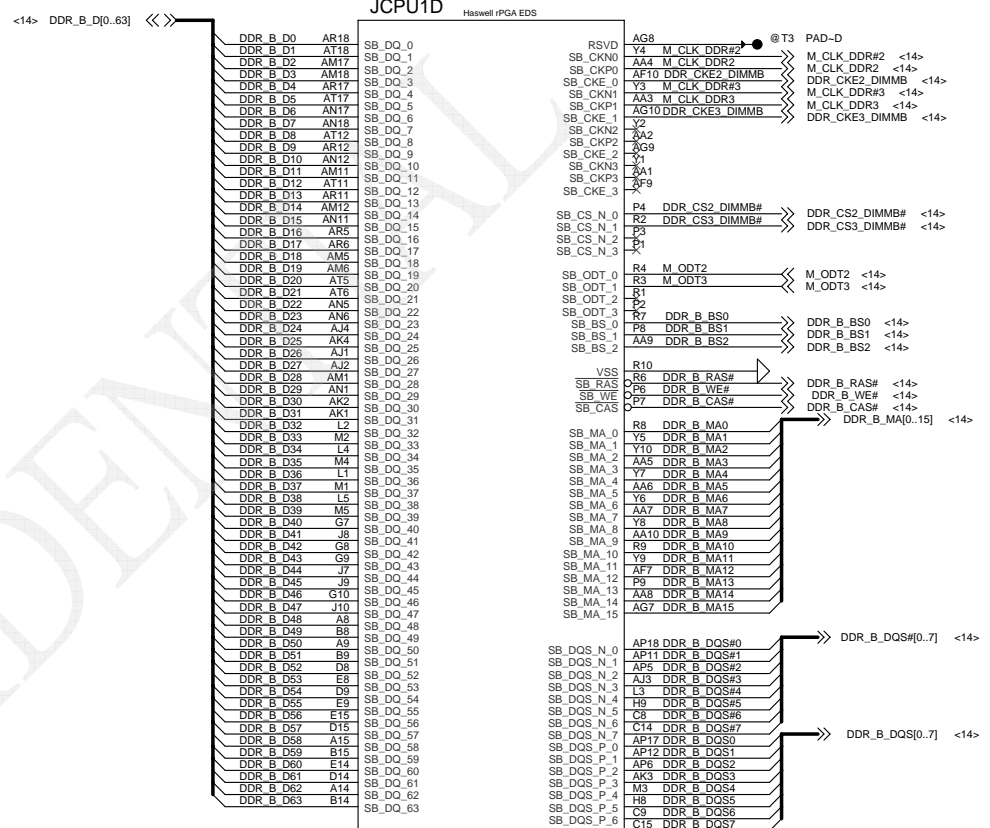
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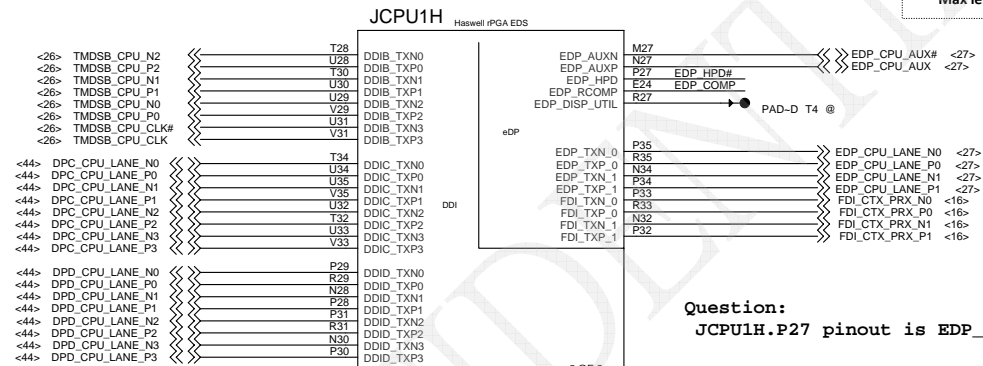
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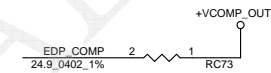
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### COMPENSATION PU FOR eDP

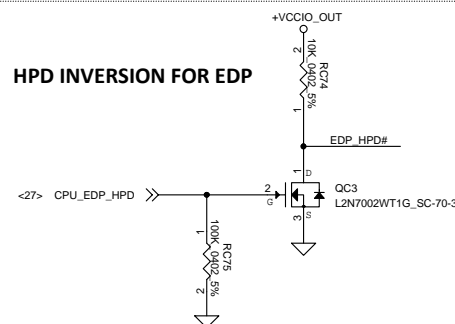


CAD Note: Trace width=20 mils, Spacing=25mil, Max length=100 mils.

### Question:

JCPU1H.P27 pinout is EDP\_HPD. is it high active when Plug in eDP device?

### HPD INVERSION FOR EDP



QC3 change PN to SB50138003L S TR BSS138-7-F 1N SOT23-3

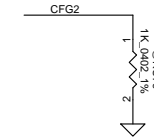
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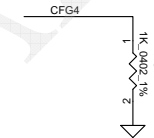
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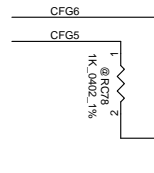
# CFG STRAPS for CPU



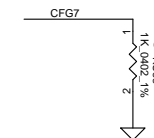
PEG Static Lane Reversal - CFG2 is for the 16x	
CFG2	1:(Default) Normal Operation; Lane # definition matches socket pin map definition 0:Lane Reversed



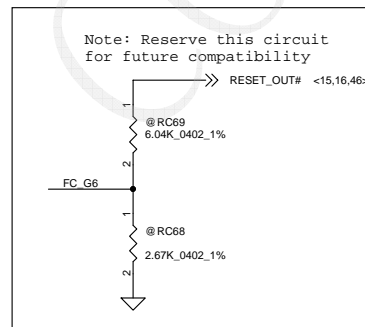
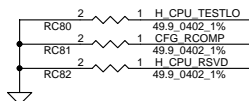
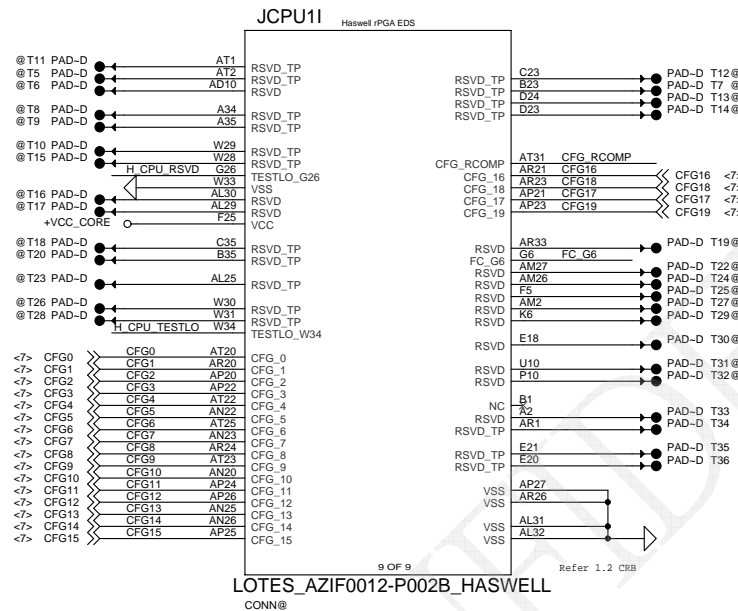
Display Port Presence Strap	
CFG4	1 : Disabled; No Physical Display Port attached to Embedded Display Port 0 : Enabled; An external Display Port device is connected to the Embedded Display Port



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



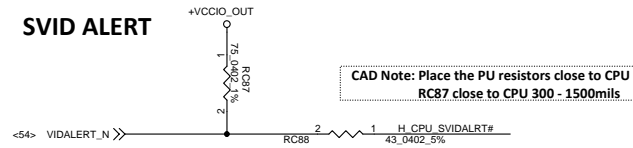
PEG DEFER TRAINING	
CFG7	1: (Default) PEG Train immediately following xxRESETB de assertion 0: PEG Wait for BIOS for training



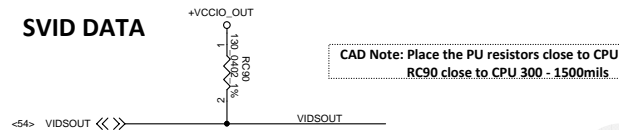
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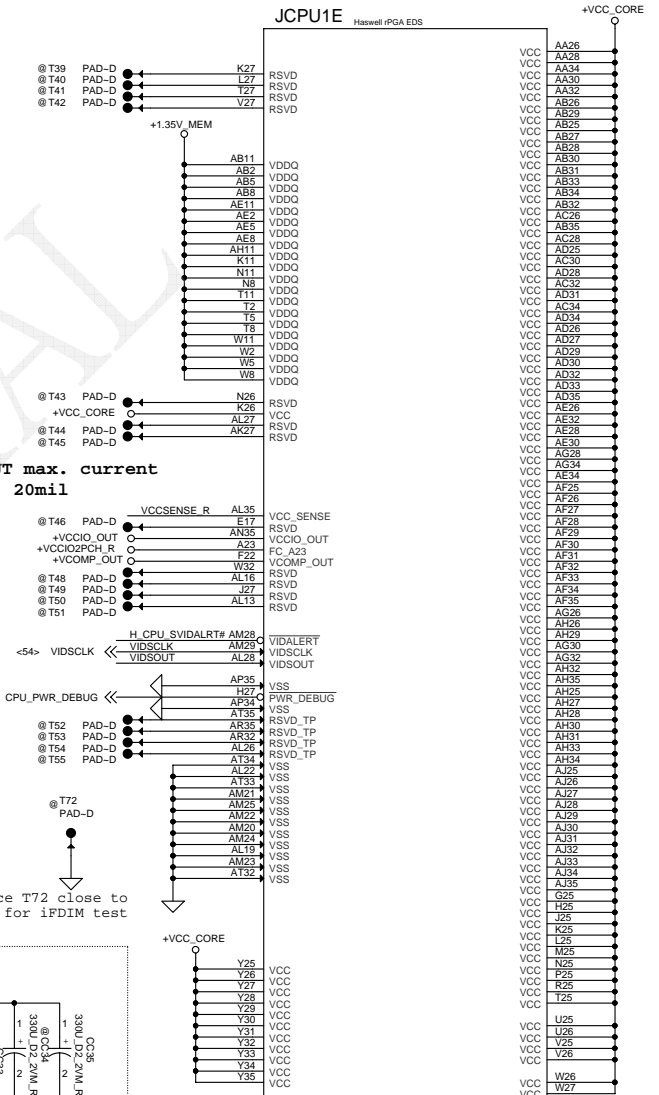
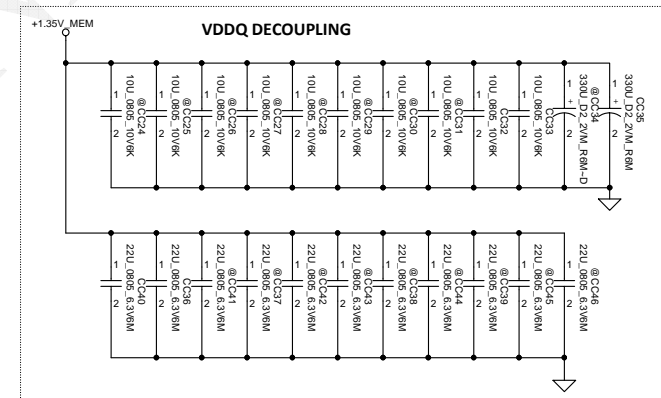
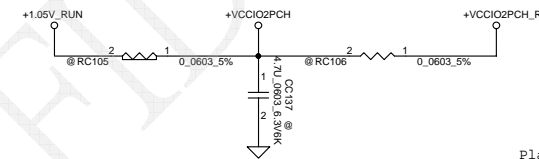
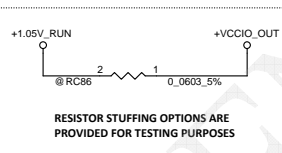
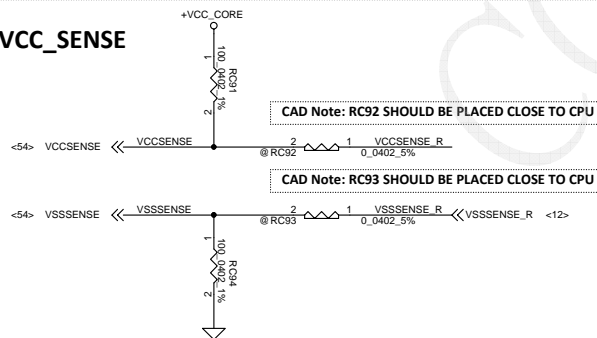
## SVID ALERT



## SVID DATA



## VCC\_SENSE



+VCCIO\_OUT max. current  
is 300mA, 20mil

Place T72 close to  
T55 for iFDIM test

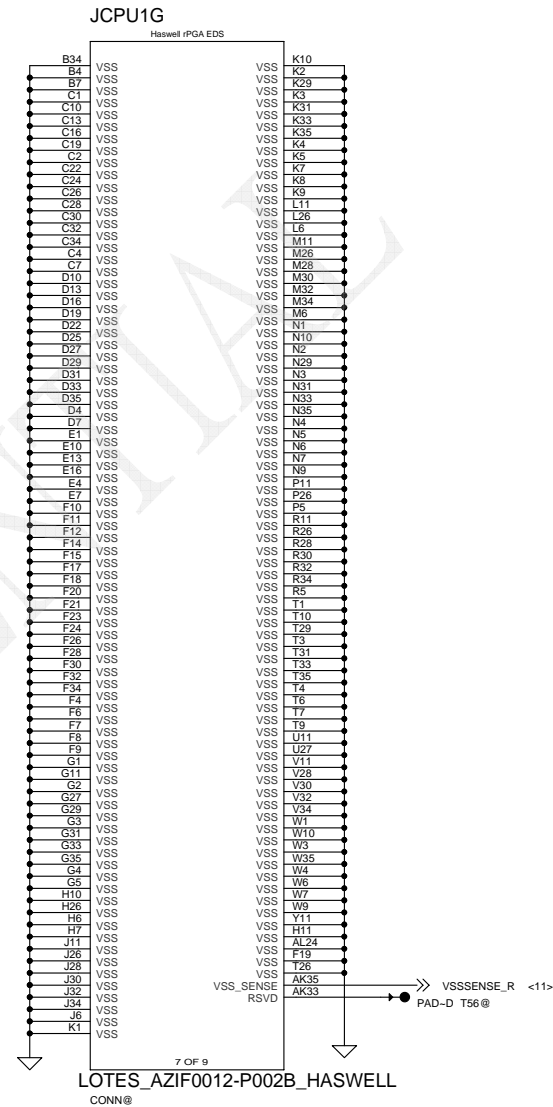
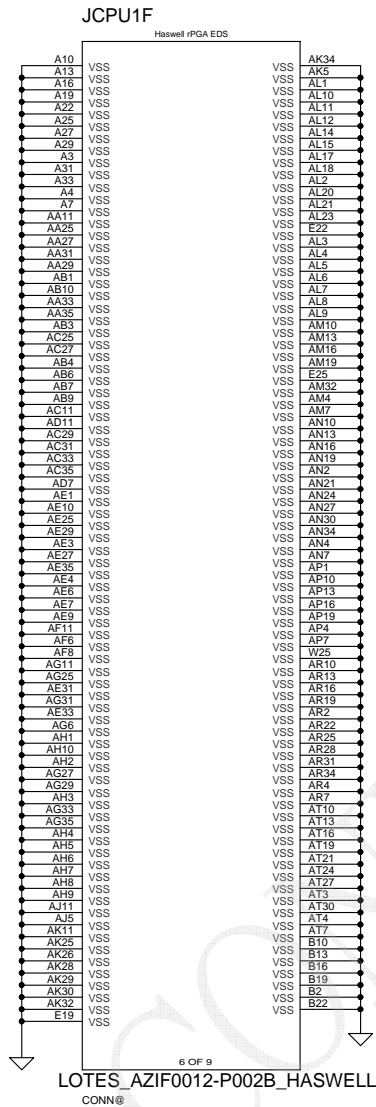
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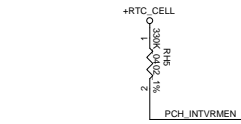
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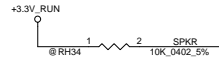
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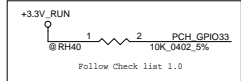




INTVRMEN - INTEGRATED SUS 1.05V VRM  
ENABLE  
High - Enable Internal VRs  
Low - Enable External VRs



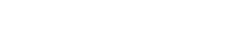
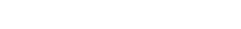
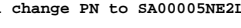
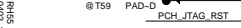
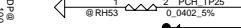
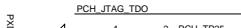
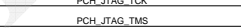
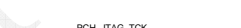
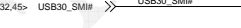
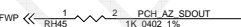
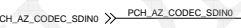
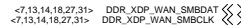
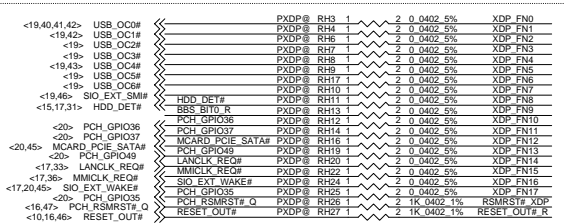
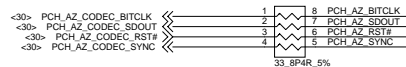
NO REBOOT STRAP  
DISABLED WHEN LOW (DEFAULT)  
ENABLED WHEN HIGH



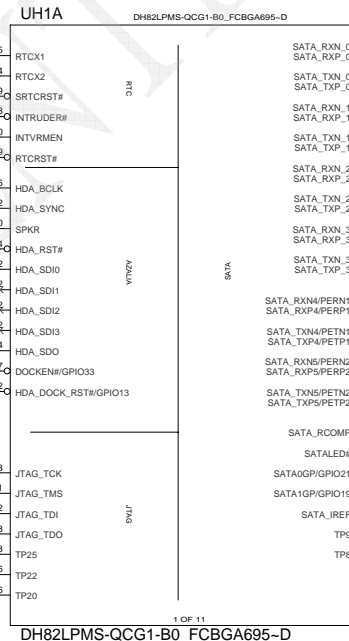
CMOS_CLR1	CMOS setting
Shunt	Clear CMOS
Open	Keep CMOS

ME_CLR1	TPM setting
Shunt	Clear ME RTC Registers
Open	Keep ME RTC Registers

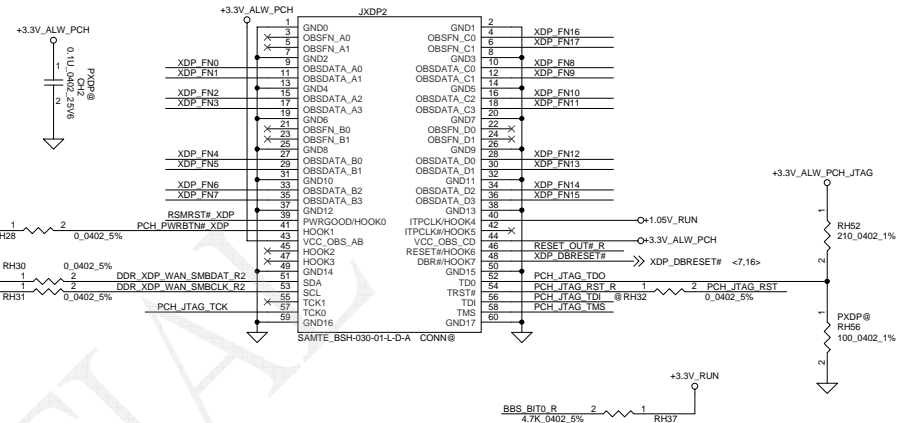
## HDA for Codec



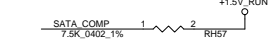
UH1 change PN to SA00005NE2L IC A31 DH82LPMS QCG1 B0 FCBGA 695P PCH



## PCH XDP



## SATA Impedance Compensation



CAD note:  
Place the resistor within 500 mils of the PCH. Avoid routing next to clock pins.

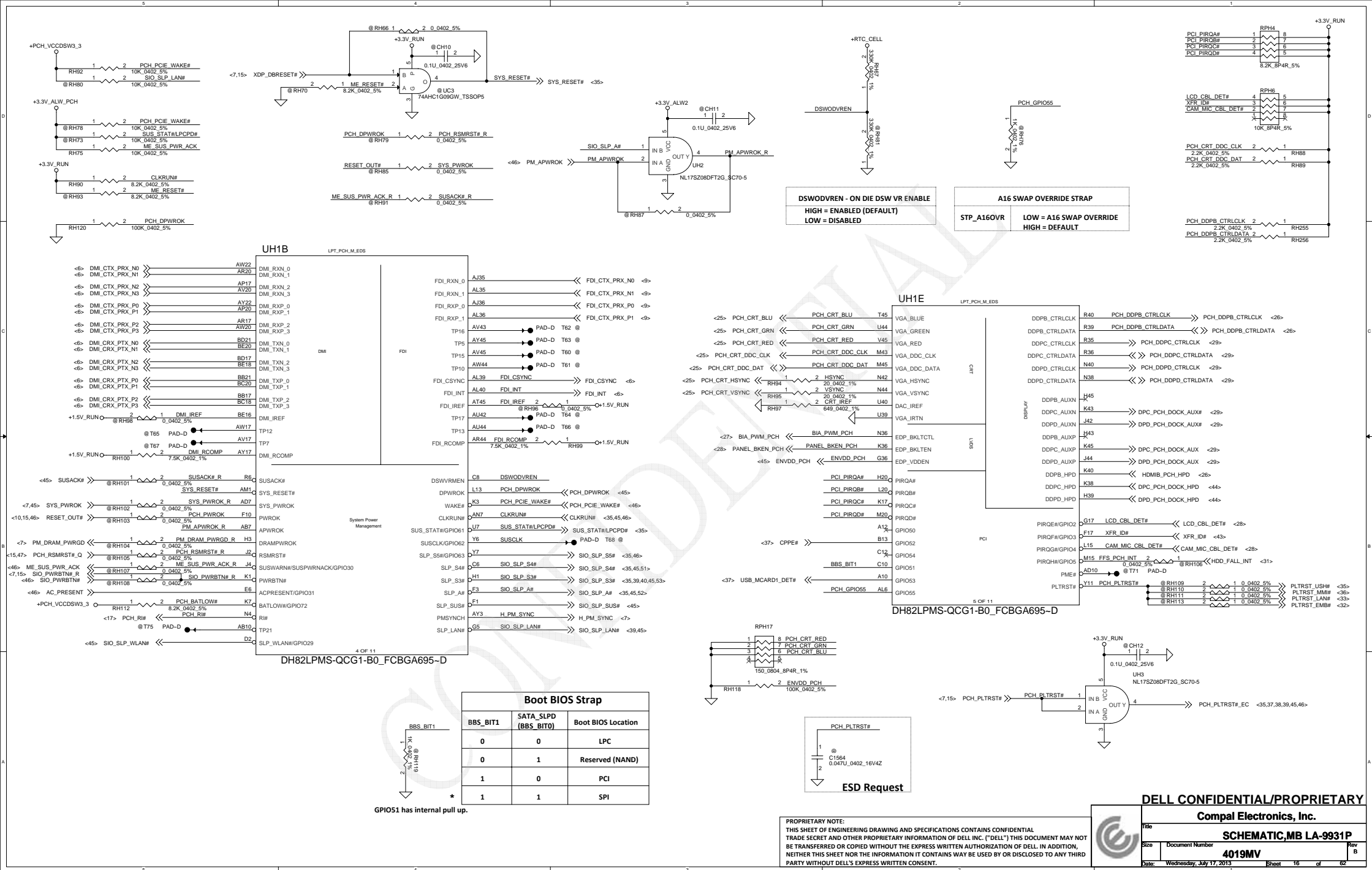
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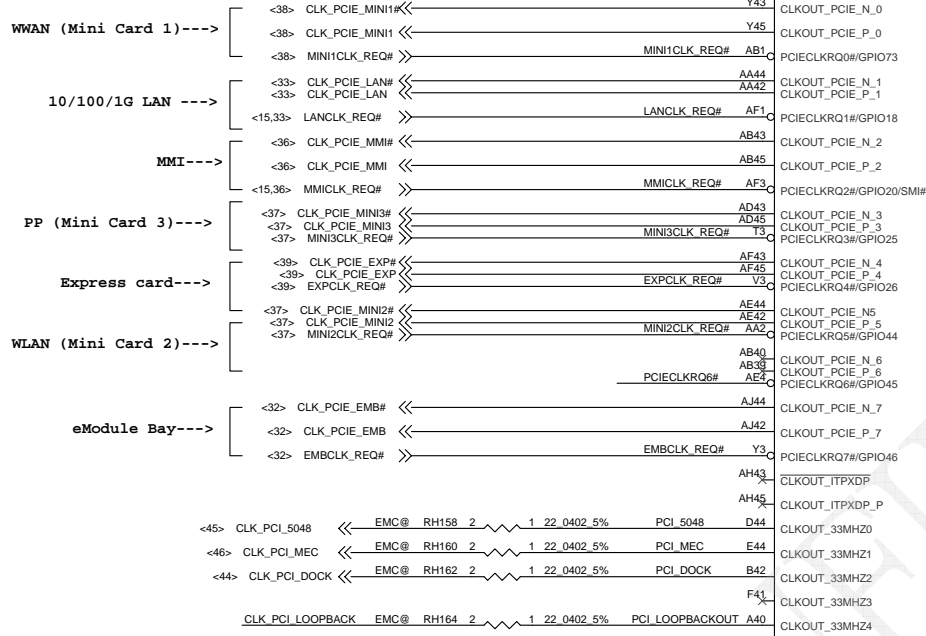
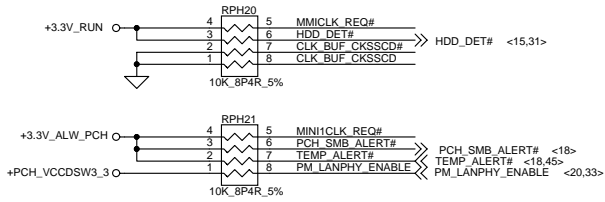
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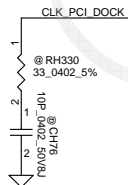
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**PCIECLK REQ Pull UP Power Rail:**  
**SUS Rail : 0 3 4 5 6 7**  
**Core Rail: 1 2**



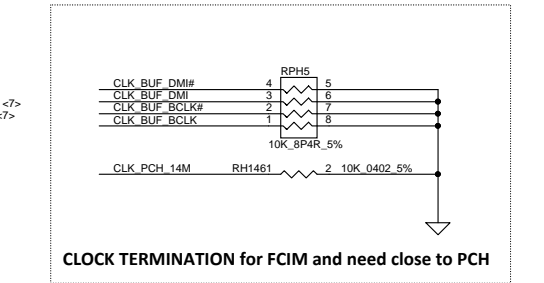
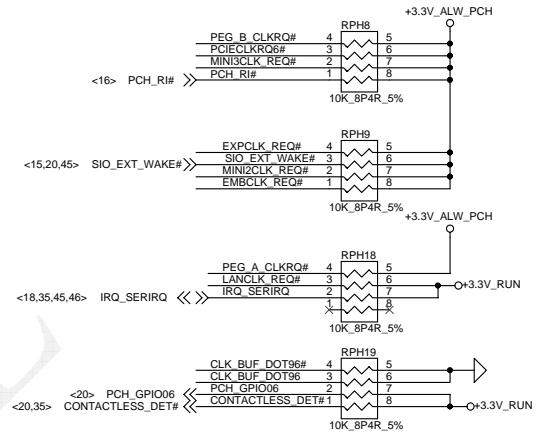
# UH1C

LPT\_PCH\_M\_EDS

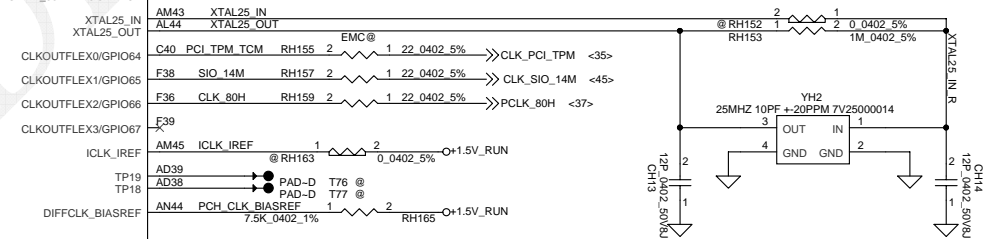
CLOCK SIGNAL

2 OF 11

DH82LPMS-QCG1-B0\_FCBGA695-D



**CLOCK TERMINATION for FCIM and need close to PCH**



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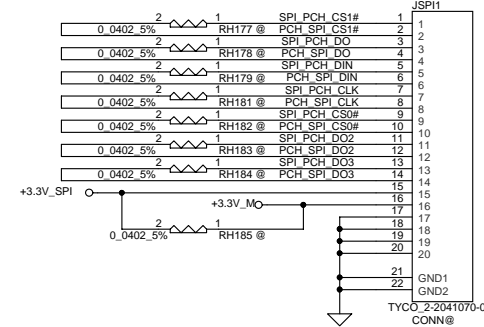
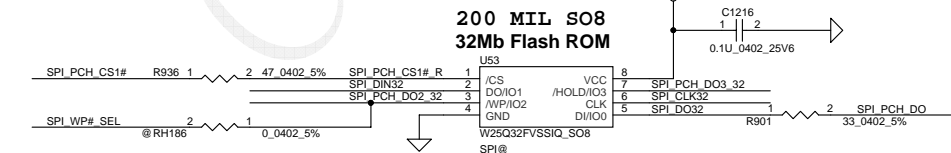
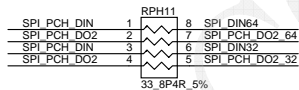
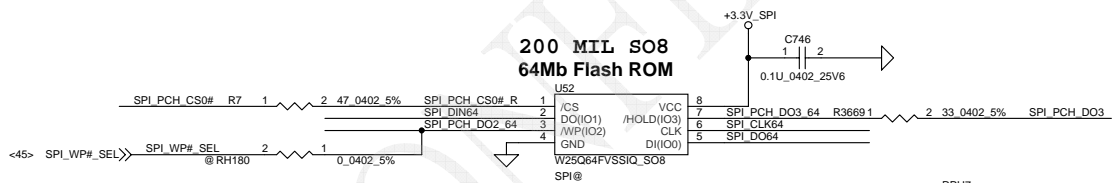
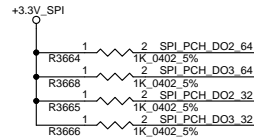
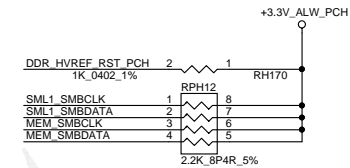
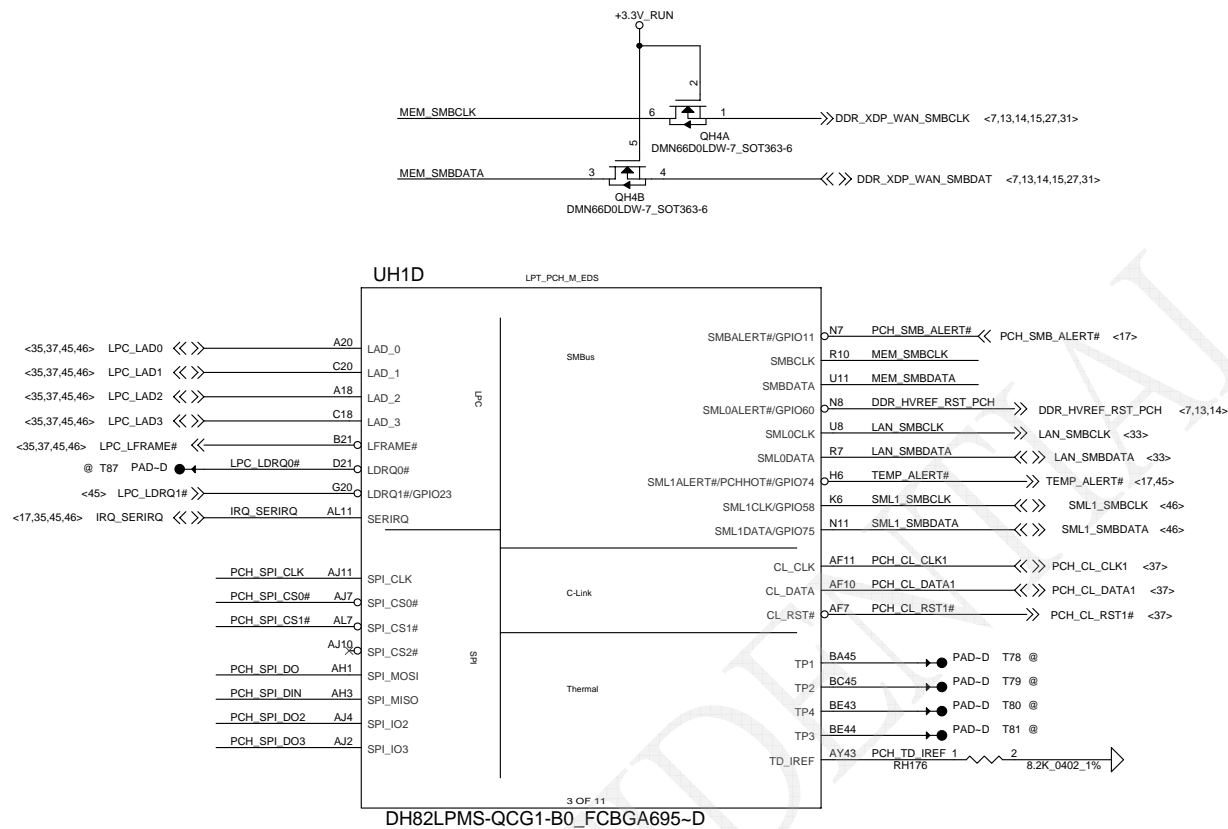
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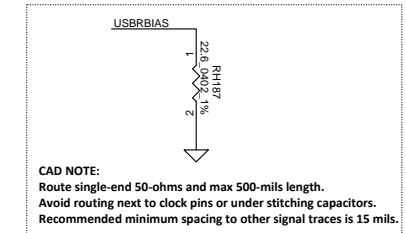
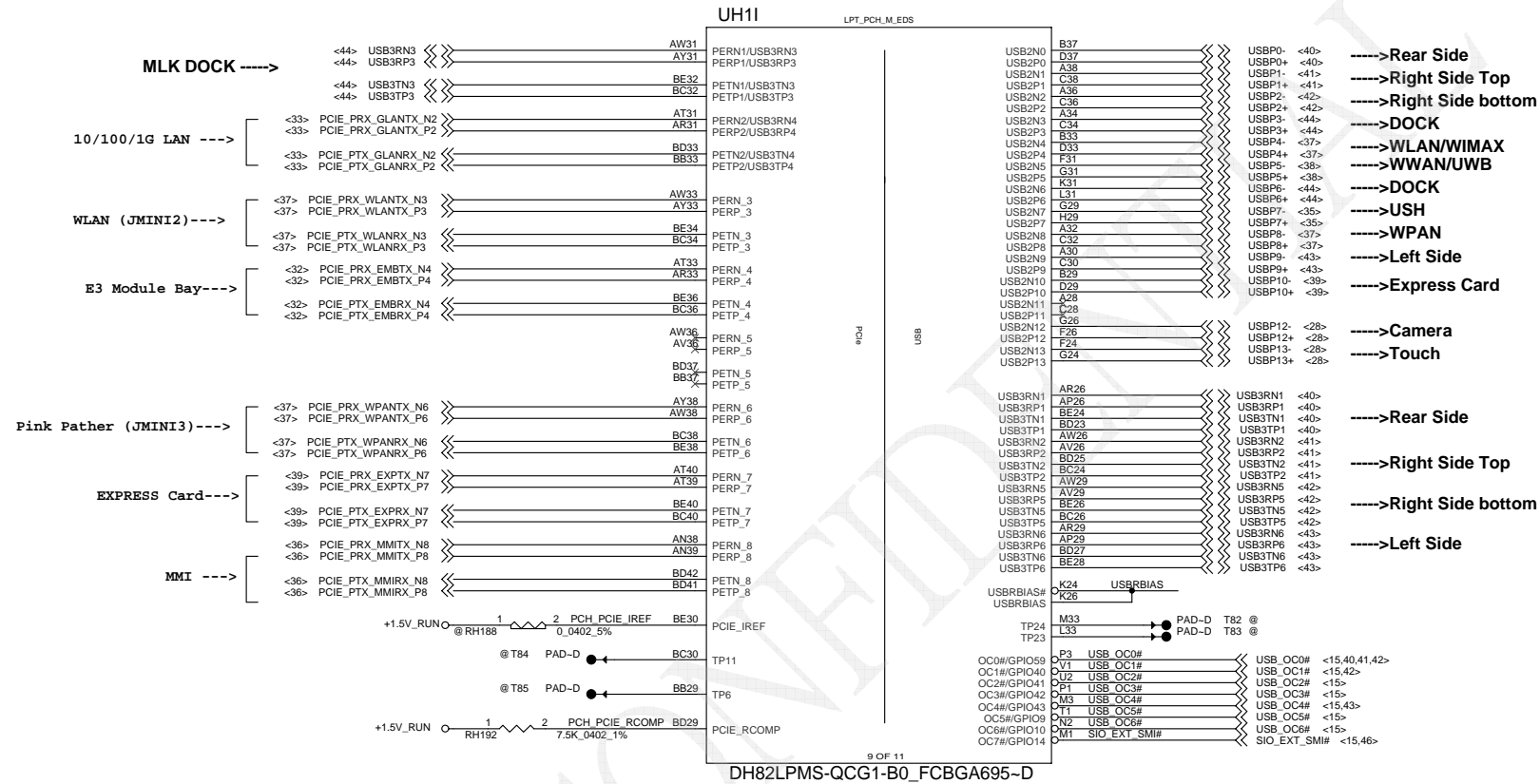
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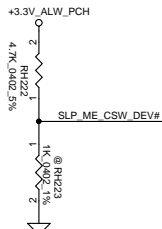
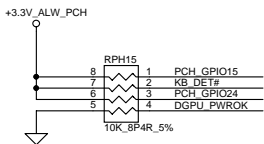
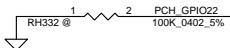
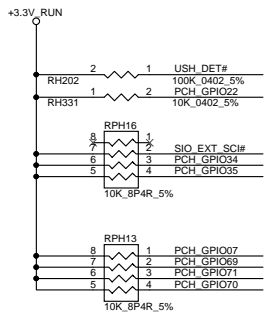
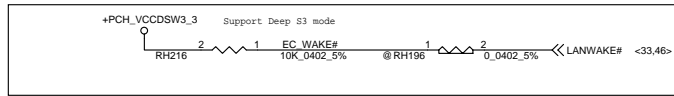


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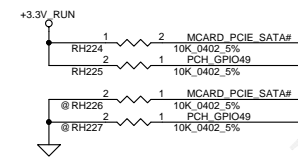


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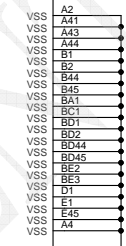
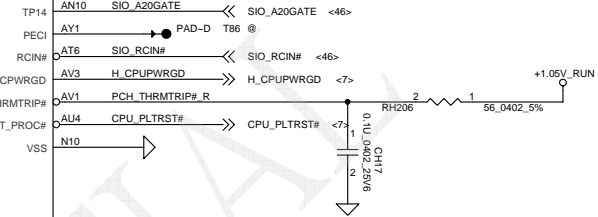
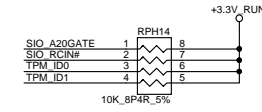
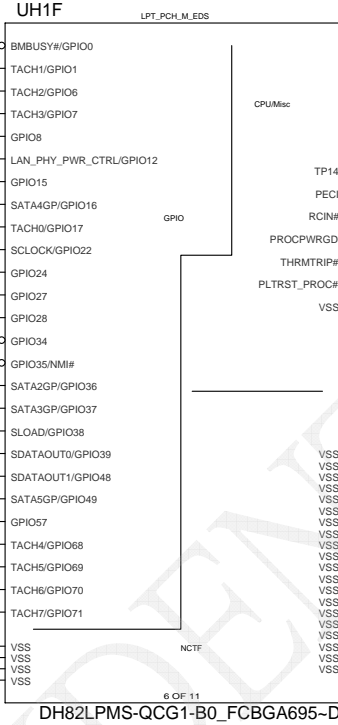
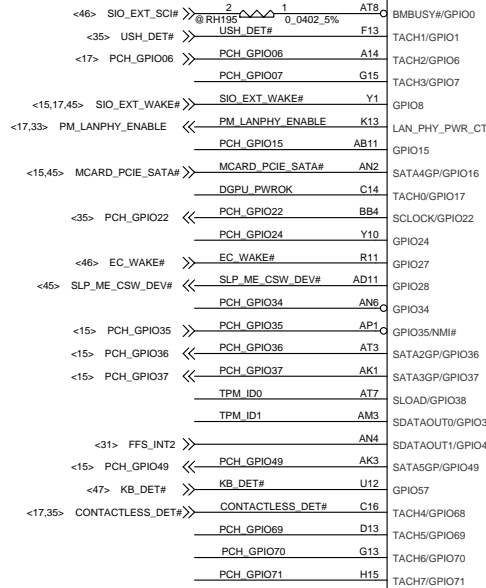
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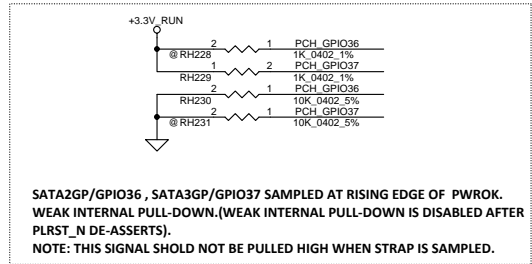
PLL ON DIE VR ENABLE  
ENABLED - HIGH(DEFAULT)  
DISABLED - LOW



Config	GPIO16,49
USB X4,PCIEX8,SATAx6	11
USB X6,PCIEX8,SATAx4	01



CRB1.2 already change to GND directly at UH1.A44, B45, BD1 pins



SATA2GP/GPIO36, SATA3GP/GPIO37 SAMPLED AT RISING EDGE OF PWROK.  
WEAK INTERNAL PULL-DOWN.(WEAK INTERNAL PULL-DOWN IS DISABLED AFTER PLRST\_N DE-ASSERTS).  
NOTE: THIS SIGNAL SHOULD NOT BE PULLED HIGH WHEN STRAP IS SAMPLED.

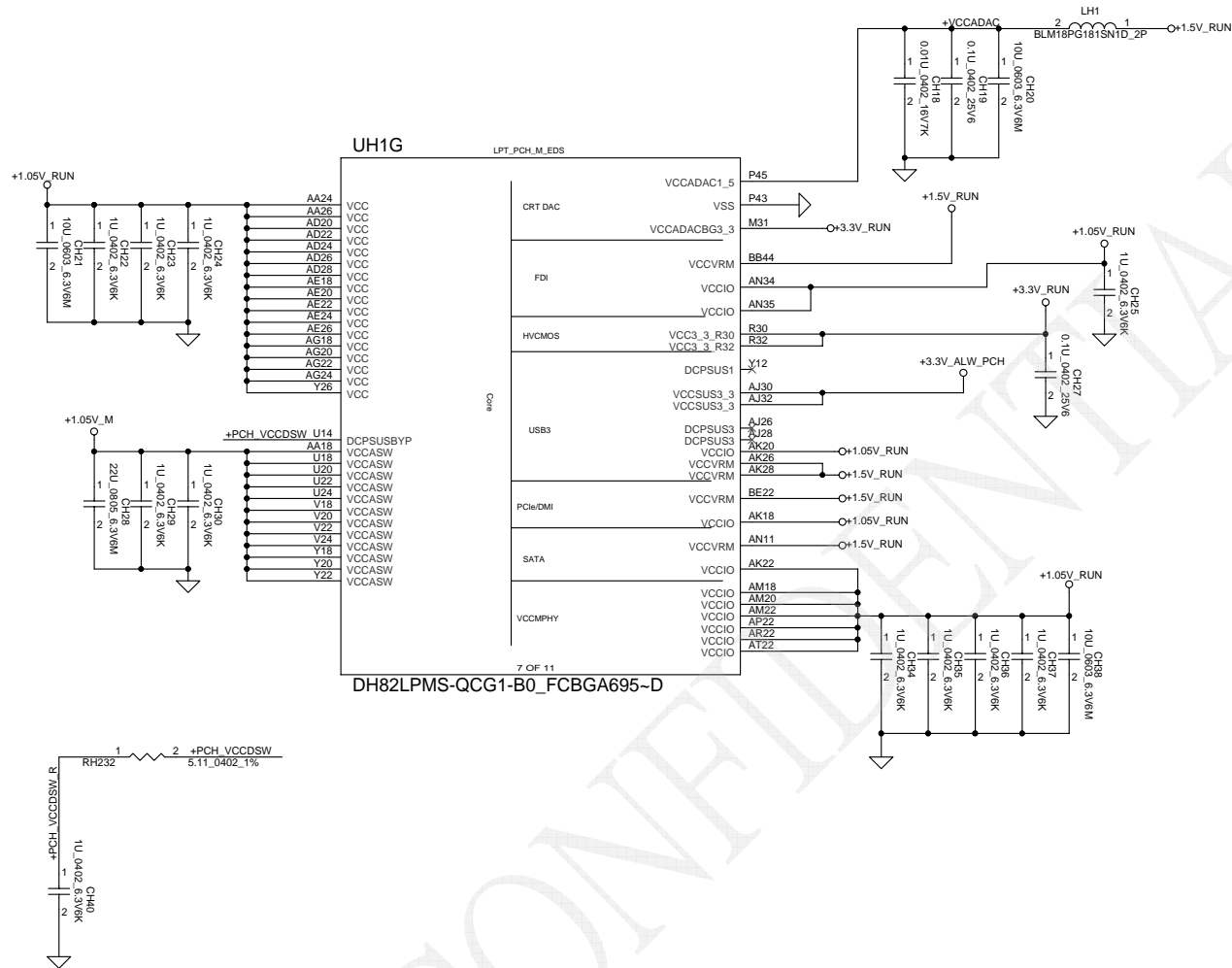
Fixed Signals				Muxed Signals		Fixed Signals						Muxed Signals		Fixed Signals					
USB3 1	USB3 2	USB3 5	USB3 6	PCIE 1	PCIE 2	PCIE 3	PCIE 4	PCIE 5	PCIE 6	PCIE 7	PCIE 8	SATA 4	SATA 5	SATA 0	SATA 1	SATA 2	SATA 3		
				(00)	(00)							(00)	(00)						
				USB3 3	USB3 4							PCIE 1	PCIE 2						
				(01)	(01)							(01)	(01)						

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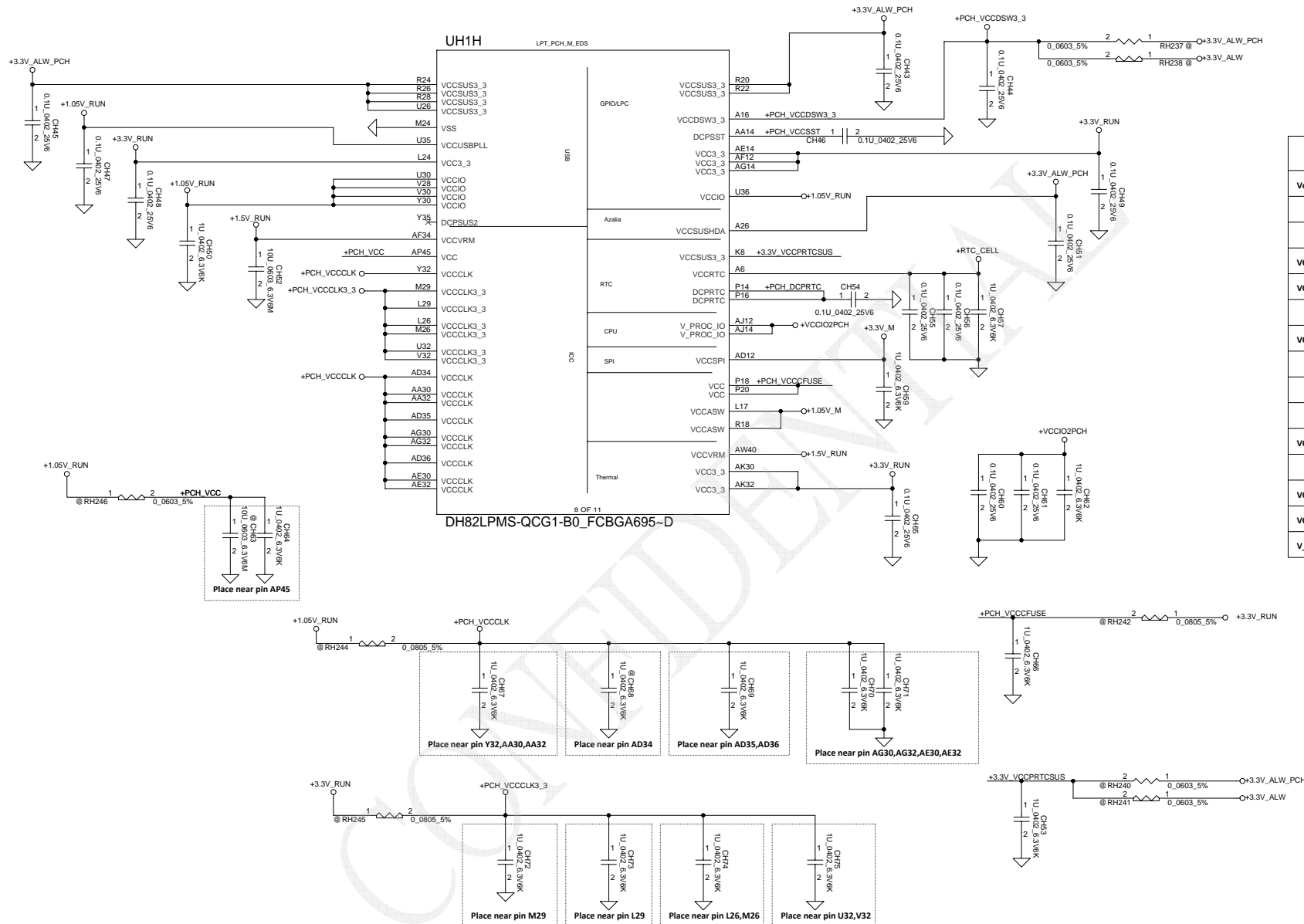
PCH Power Rail Table		
Voltage Rail	Voltage	SO Iccmax Current (A)
VCC	1.05V	1.138 A
VCCIO	1.05V	3.629 A
VCCDAC1_5	1.5V	0.070 A
VCCDAC3_3	3.3V	0.0133 A
VCCCLK	1.05V	0.306 A
VCCCLK_3	3.3V	0.055 A
VCCVRM	1.5V	0.183 A
VCC3_3	3.3V	0.133 A
VCCASW	1.05V	0.67 A
VCCSUSHDA	3.3V	0.01 A
VCCSPI	3.3V	0.022 A
VCCSUS3_3	3.3V	0.261 A
VCCDSW3_3	3.3V	0.015 A
V_PROC_IO	1.05V	0.004 A

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PCH Power Rail Table

Voltage Rail	Voltage	S0 Iccmax Current (A)
VCC	1.05V	1.138 A
VCCIO	1.05V	3.629 A
VCCDAC1_5	1.5V	0.070 A
VCCDAC3_3	3.3V	0.0133 A
VCCCLK	1.05V	0.306 A
VCCCLK_3	3.3V	0.055 A
VCCVRM	1.5V	0.183 A
VCC3_3	3.3V	0.133 A
VCCASW	1.05V	0.67 A
VCCSUSHDA	3.3V	0.01 A
VCCSPI	3.3V	0.022 A
VCCSUS3_3	3.3V	0.261 A
VCCDSW3_3	3.3V	0.015 A
V_PROC_IO	1.05V	0.004 A

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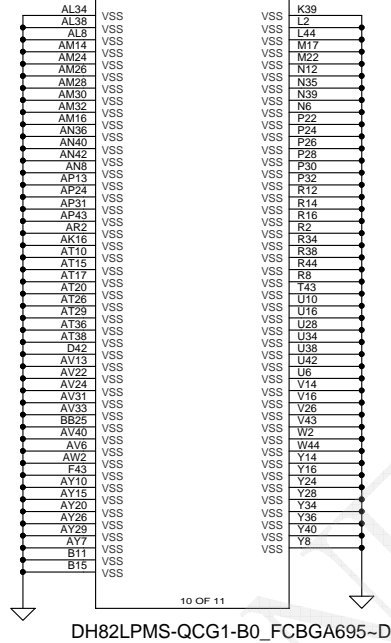


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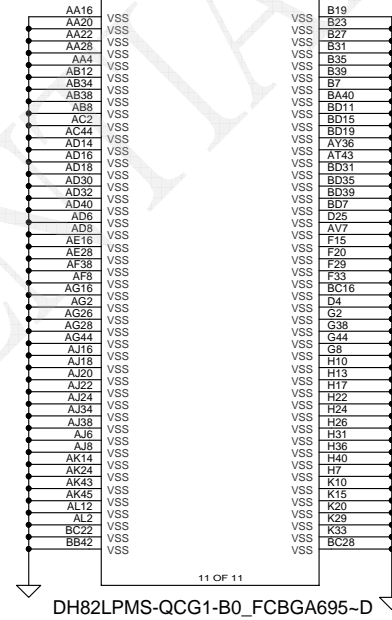
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UH1J LPT\_PCH.M.EDS



UH1K LPT\_PCH.M.EDS



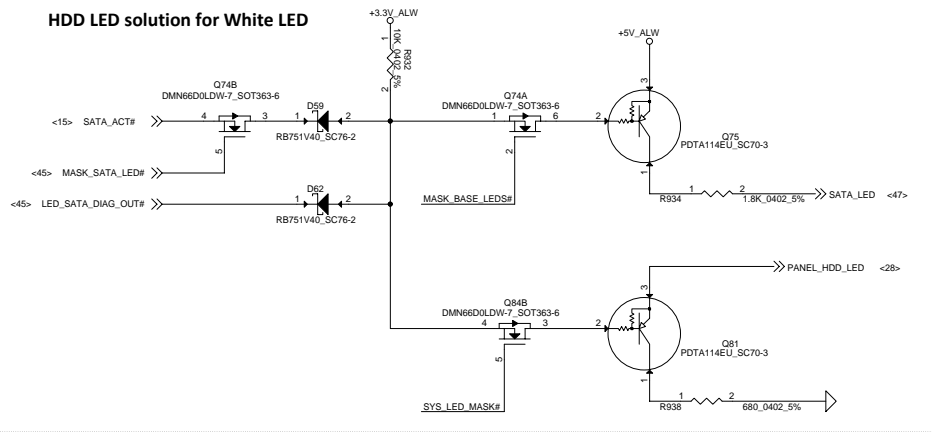
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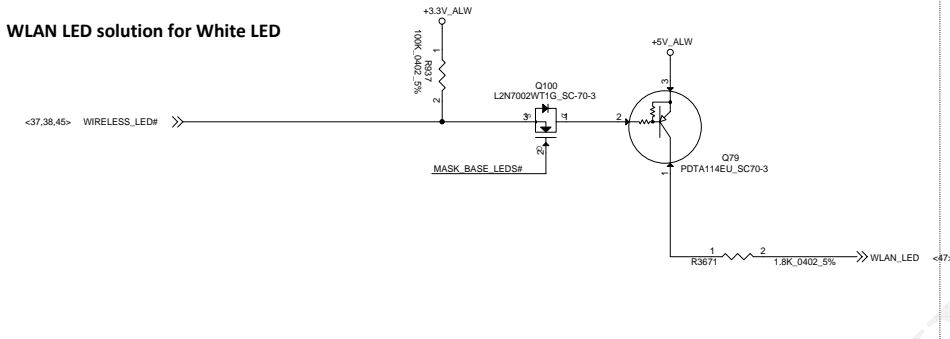
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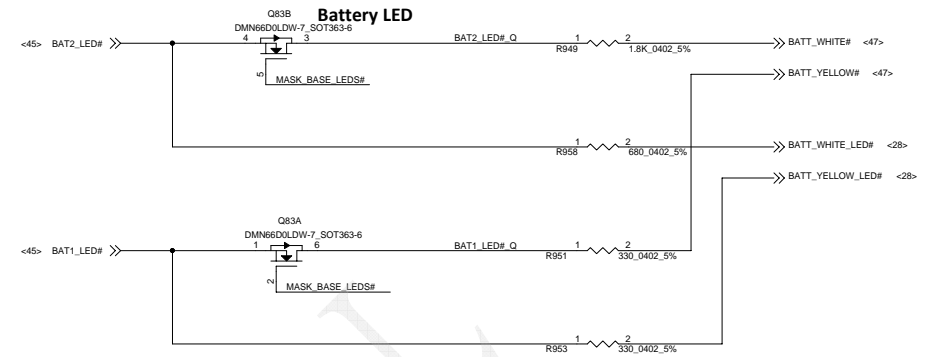
## HDD LED solution for White LED



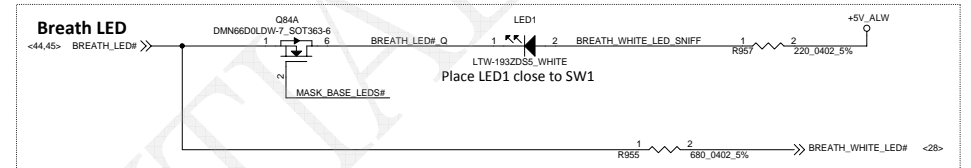
## WLAN LED solution for White LED



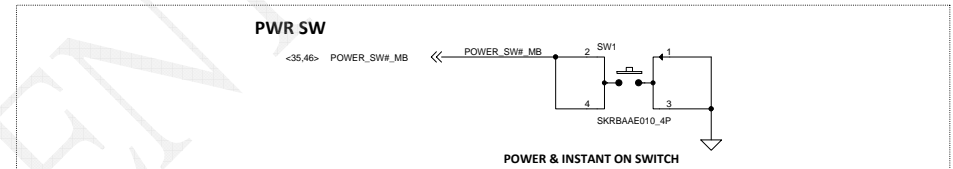
## Battery LED



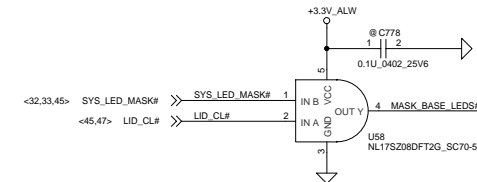
## Breath LED



## PWR SW

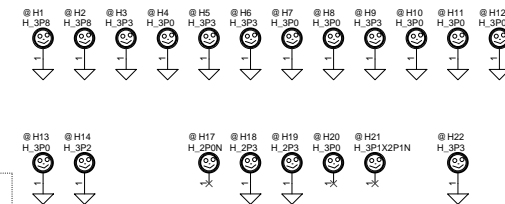


## POWER & INSTANT ON SWITCH



## 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



## Fiducial Mark



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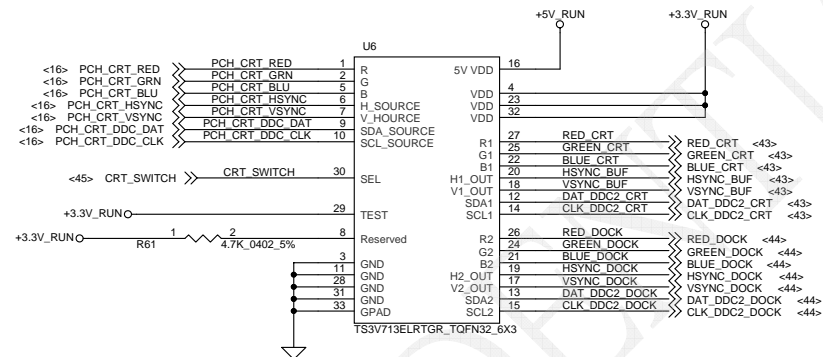
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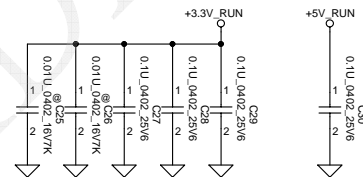
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## SW for MB/DOCK



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



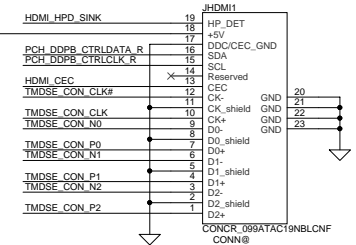
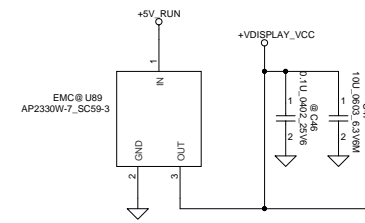
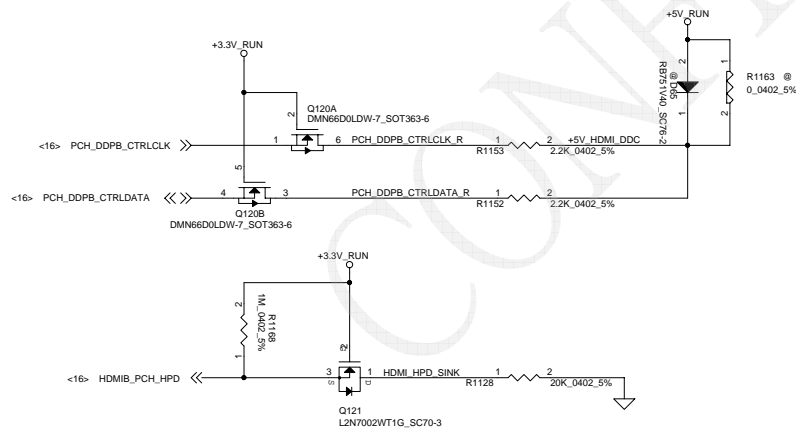
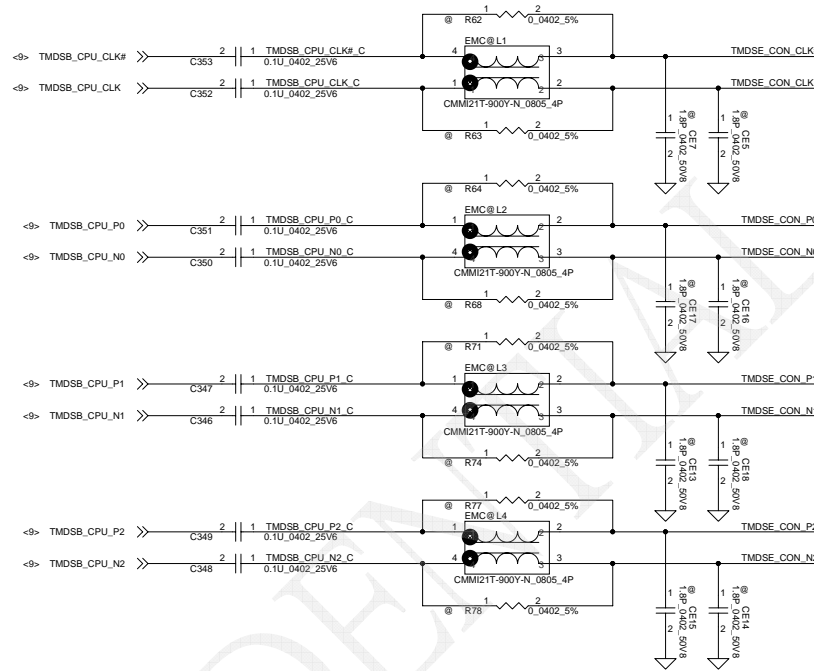
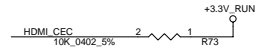
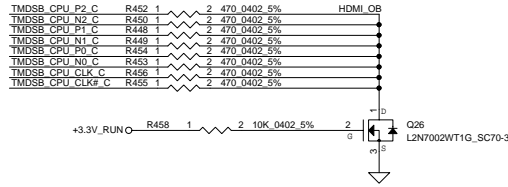
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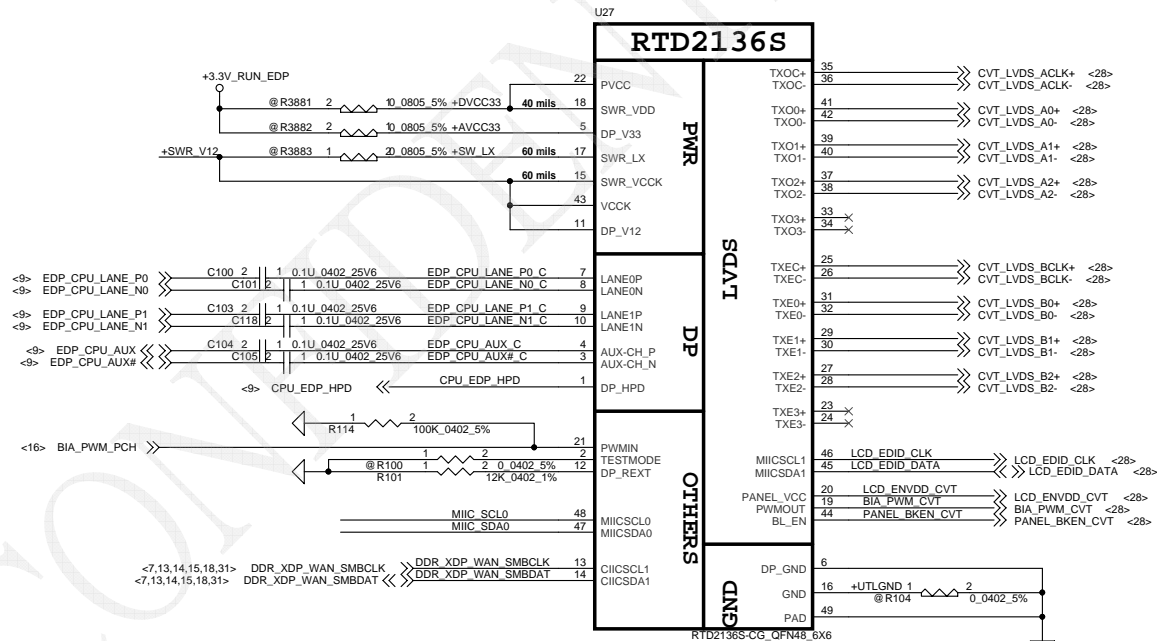
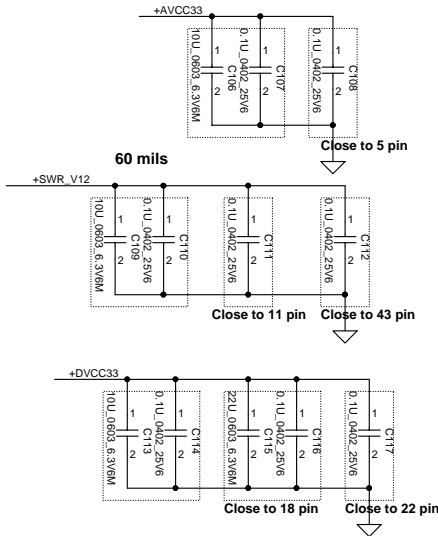
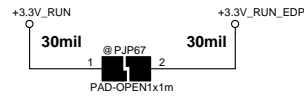
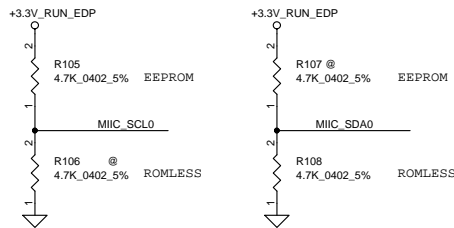
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# Power Consumption:

- Pin5 (DPV33) < 20mA
- Pin 11 (DPV12) < 100mA
- Pin 15 (SWR\_VCCK) < 100mA (layout trace > 60 mil)
- Pin 17 (SWR\_LX) < 600mA (layout trace > 60 mil)
- Pin 18 (SWR\_VDD) < 200mA (layout trace > 40 mil)
- Pin 22 (PVCC) < 50 mA
- Pin 43 (VCCK) < 50mA

Symbol need to update

1. RTD2136S:SA00004NW10 Populated R102, R103, R107; De-populated R108
- \*\*\* 2. RTD2136R SA000067100 : De-Populated R102, R103, R107; Populate R108;

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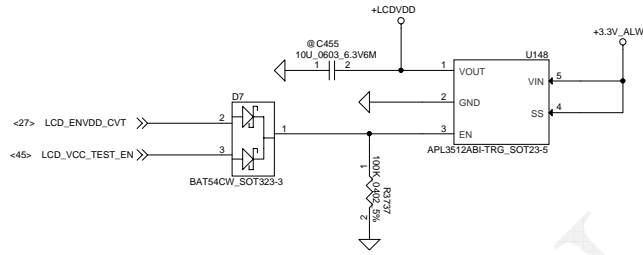
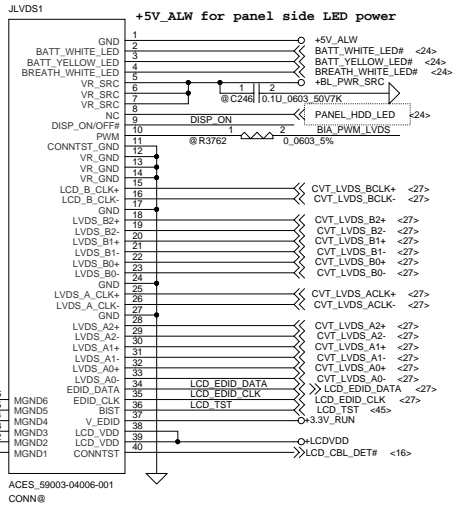
SCHEMATIC,MB LA-9931P

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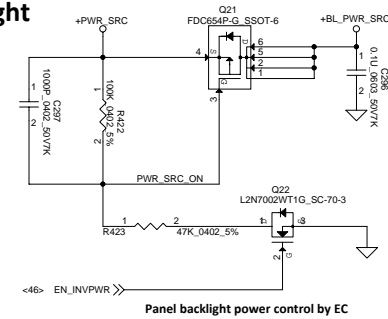
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## LCD Power



## LCD Backlight

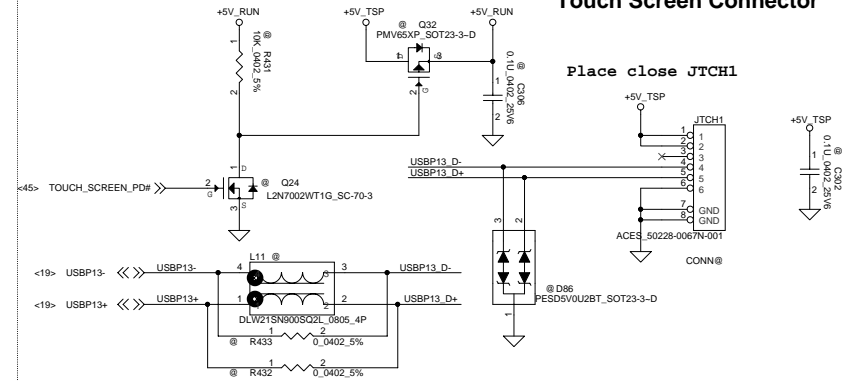
### FDC654P: P CHANNEL



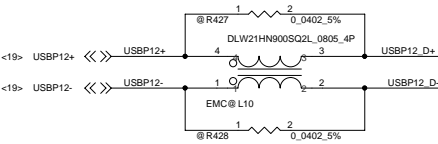
Panel backlight power control by EC

## Touch Screen Connector

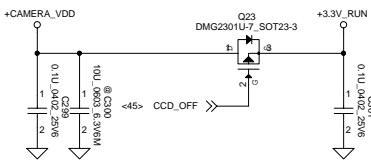
Place close JTCH1



## For Webcam



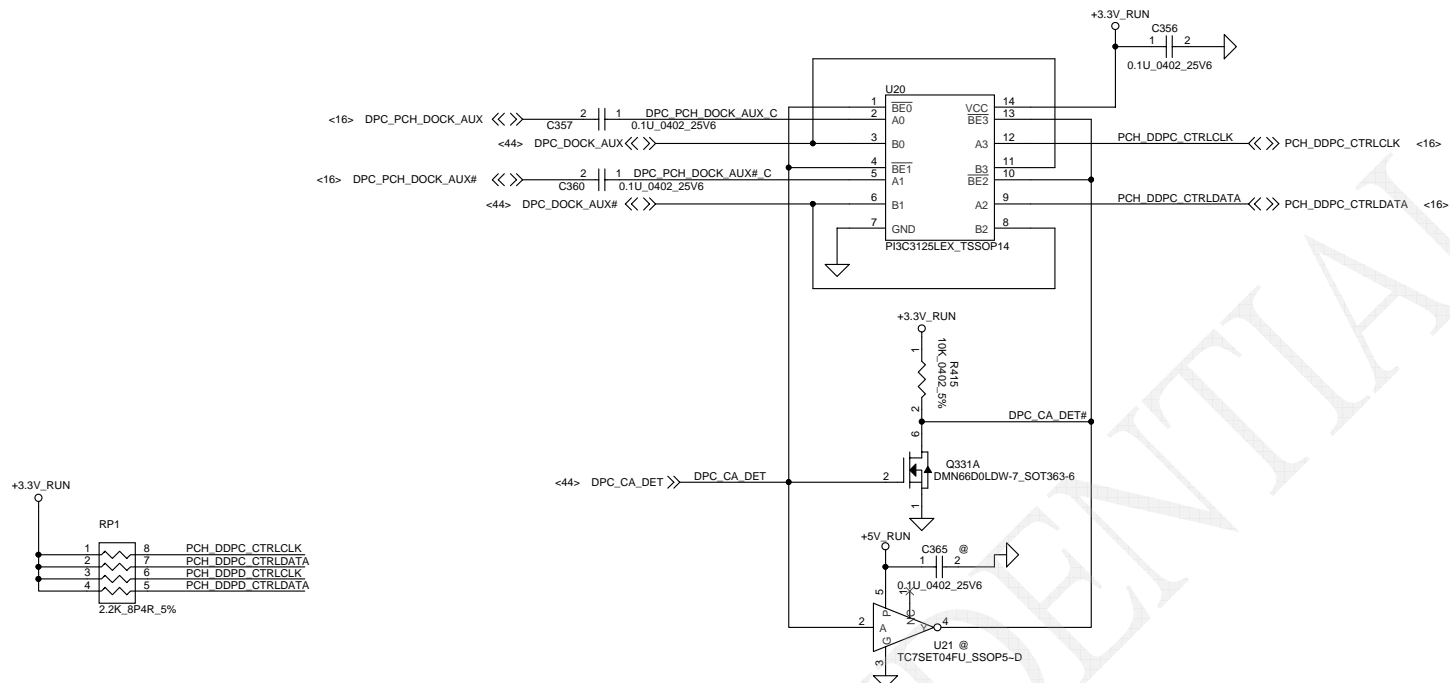
## Webcam PWR CTRL



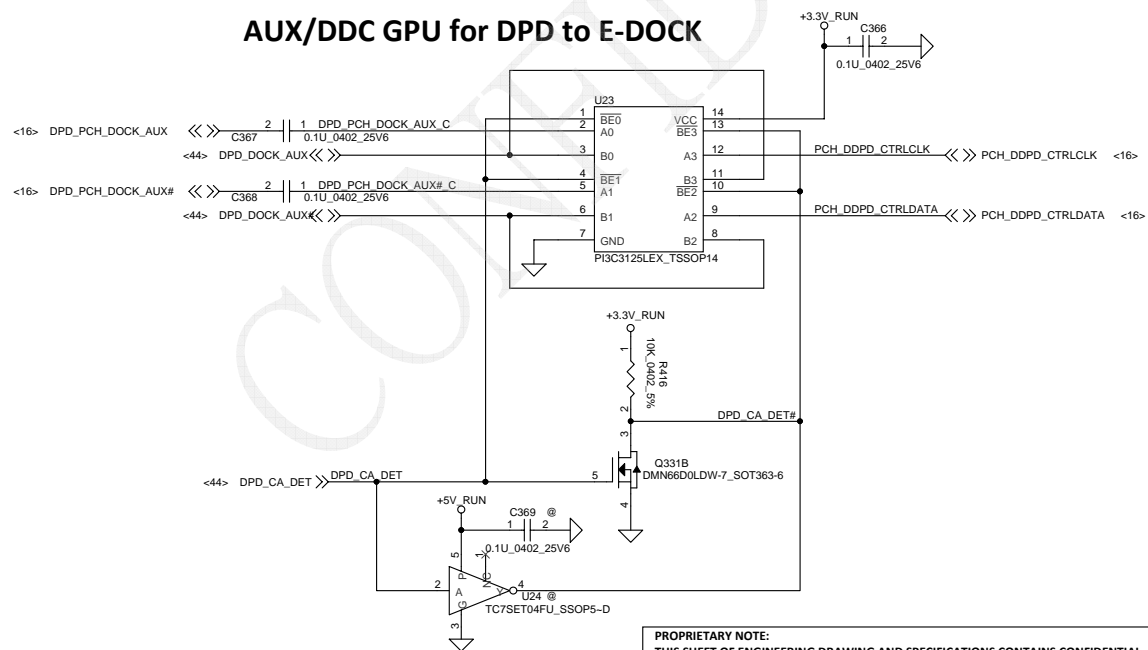
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## AUX/DDC GPU for DPC to E-DOCK



## AUX/DDC GPU for DPD to E-DOCK



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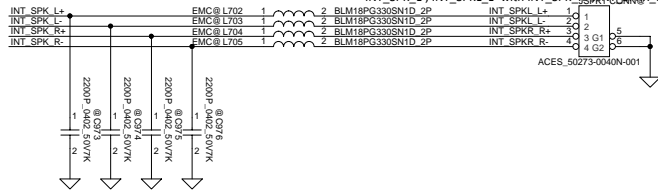
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# Internal Speakers Header

INT\_SPK\_L+, INT\_SPKL\_L+ :40 mils trace, keep 10mils spacing  
 INT\_SPK\_L-, INT\_SPKL\_L- :40 mils trace, keep 10mils spacing  
 INT\_SPK\_R+, INT\_SPKR\_R+ :40 mils trace, keep 10mils spacing  
 INT\_SPK\_R-, INT\_SPKR\_R- :40 mils trace, keep 10mils spacing  
 INT\_SPK\_L-, INT\_SPKL\_L- with INT\_SPK\_R+, INT\_SPKR\_R+ keep 20mils spacing



<15> PCH\_AZ\_CODEC\_BITCLK >> PCH\_AZ\_CODEC\_BITCLK 6 BIT-CLK  
 <15> PCH\_AZ\_CODEC\_SDOUT >> PCH\_AZ\_CODEC\_SDOUT 5 SDATA-OUT  
 <15> PCH\_AZ\_CODEC\_SYNC >> PCH\_AZ\_CODEC\_SYNC 10 SYNC  
 <15> PCH\_AZ\_CODEC\_SDI0 >> Place R1096 close to codec PCH\_AZ\_SDI0\_R 8 SDATA-IN  
 <15> PCH\_AZ\_CODEC\_RST# >> R1096 22.0402.5% PCH\_AZ\_CODEC\_RST# 11 RESET#

<44> DAI\_12MHZ# << DAI\_12MHZ# 1 12S\_MCLK 15 12S\_MCLK  
 <44> DAI\_BCLK# << DAI\_BCLK# 1 R1854 22.0402.5% 16 12S\_SCLK 17 12S\_SCLK  
 <44> DAI\_DO# << DAI\_DO# 1 R1668 22.0402.5% 17 12S\_DO 18 12S\_DO  
 <44> DAI\_LRCK# << DAI\_LRCK# 1 R1097 33.0402.5% 18 12S\_LRCK 18 12S\_LRCK  
 <44> DAI\_DI << DAI\_DI 24 12S\_DI 24 12S\_DI

BCLK: Audio serial data bus bit clock input/output  
 LRCK: Audio serial data bus word clock input/output

<45> AUD\_NB\_MUTE# >> AUD\_NB\_MUTE# 47 EAPD/PD 7 DVSS 42 PVSS 49 GND

+3.3V\_RUN @ R1099 1 10K\_0402.5% 2 10K\_0402.5%

C977 10P\_0402.50V6J

R39 @ 0.0402.5% R40 @ 0.0402.5%

PCH\_AZ\_CODEC\_RST# AUD\_NB\_MUTE#

place at Codec bottom side @ PJP62 PAD-OPEN1x1m

place at AGND and DGND plane

R5 @ 0.0402.5% R6 @ 0.0402.5% R15 @ 0.0402.5%

place closely to Pin 13

AUD SENSE A R1096 33.2K\_0402.1% L24022V7T0 SC-703

AUD HP NB SENSE C977 10P\_0402.50V6J

base E-team detect issue, reserve RC to delay time

Add for solve pop noise and detect issue

Place closely to Pin 14

AUD SENSE B +3.3V\_RUN R1079 39.2K\_0402.1% R1080 20K\_0402.1%

+3.3V\_RUN R1081 100K\_0402.5% R1082 100K\_0402.5%

<45> DOCK\_HP\_DET# C106A DMN66D0LDW-7\_SOT363-6

C106B DMN66D0LDW-7\_SOT363-6

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

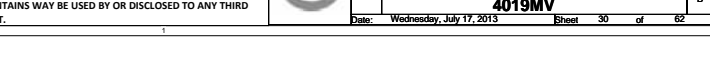
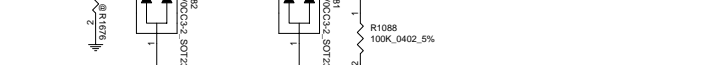
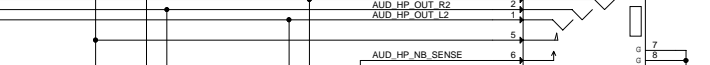
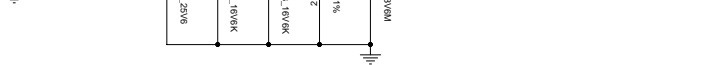
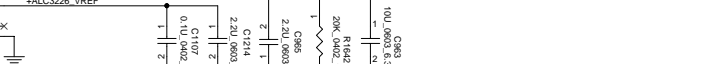
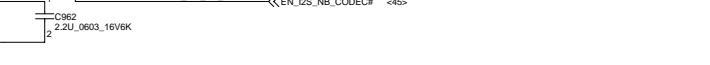
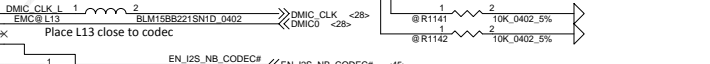
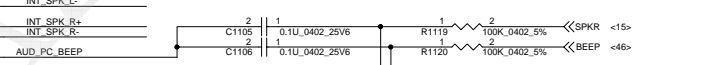
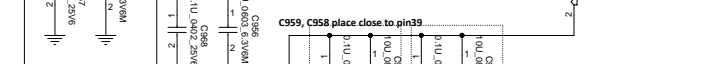
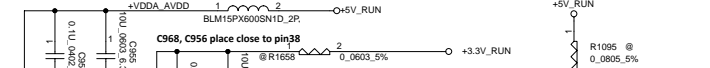
PORT A External MIC

PORT B HeadPhone Out

PORT C Dock Audio

PORT D Internal SPK

place close to pin27



## Combo Jack

Normal Open

EXT MIC RING2\_L

AUD HP OUT R2

AUD HP OUT L2

AUD HP NB SENSE

AUD HP NB SENSE

AUD\_HP\_NB\_SENSE <45>

R1088 100K\_0402.5%

C977 10P\_0402.50V6J

EMC8 D81 L08S015V0C3-2\_SOT23-3

EMC8 D82 L08S015V0C3-2\_SOT23-3

EMC8 D83 L08S015V0C3-2\_SOT23-3

EMC8 D84 L08S015V0C3-2\_SOT23-3

EMC8 D85 L08S015V0C3-2\_SOT23-3

EMC8 D86 L08S015V0C3-2\_SOT23-3

EMC8 D87 L08S015V0C3-2\_SOT23-3

EMC8 D88 L08S015V0C3-2\_SOT23-3

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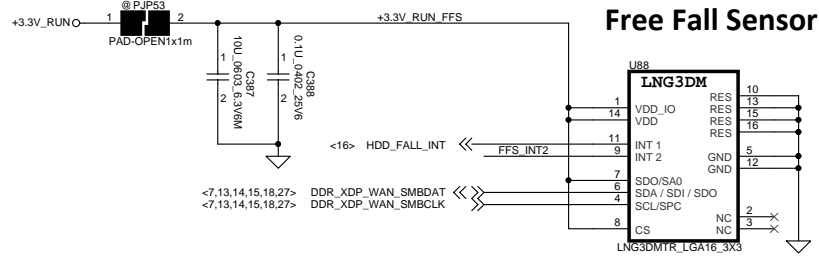
4019MV

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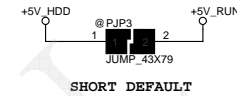
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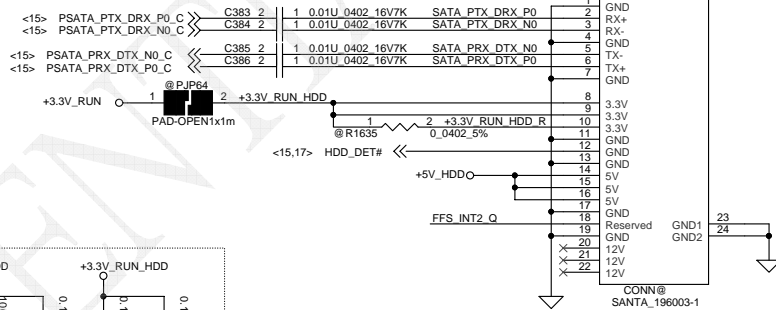
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## HDD PWR



## HDD CONN

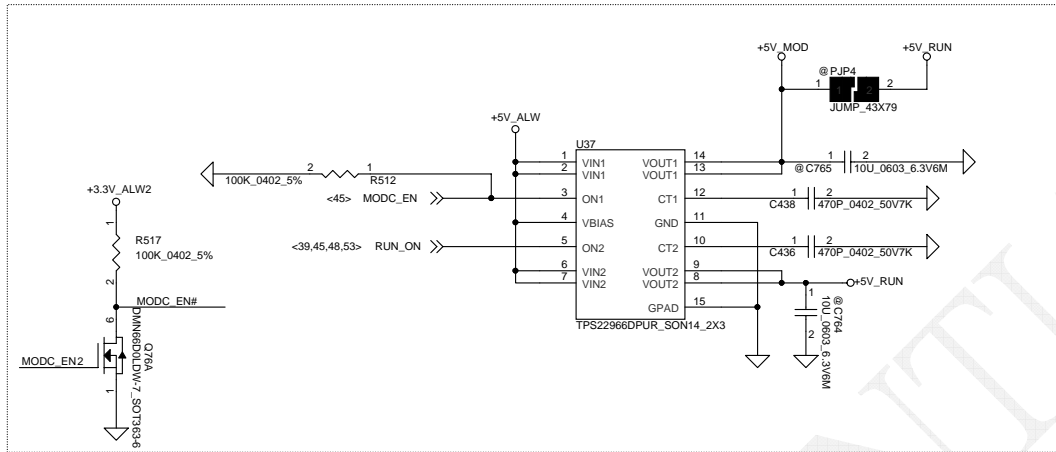


Main SATA +5V Default

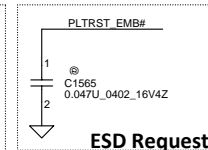
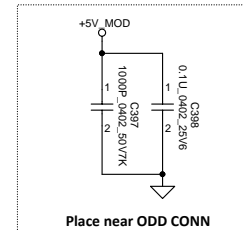
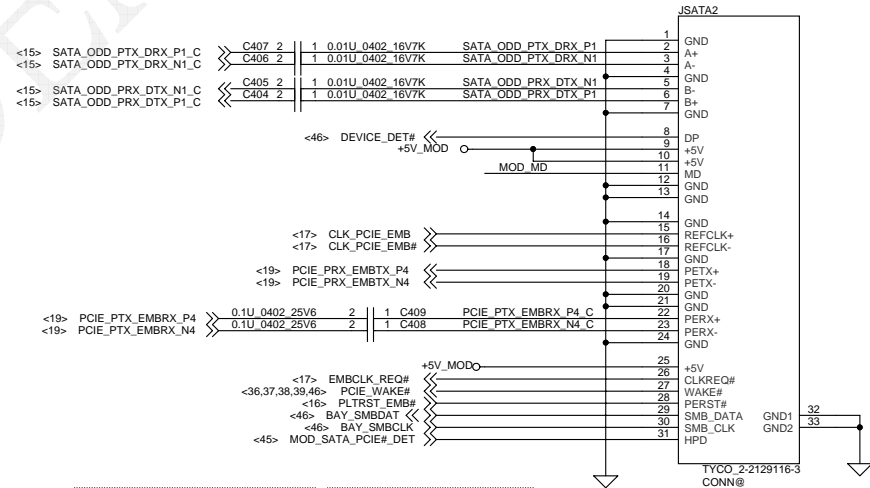
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## +5V\_MOD/+5V\_RUN source



## ODD CONN



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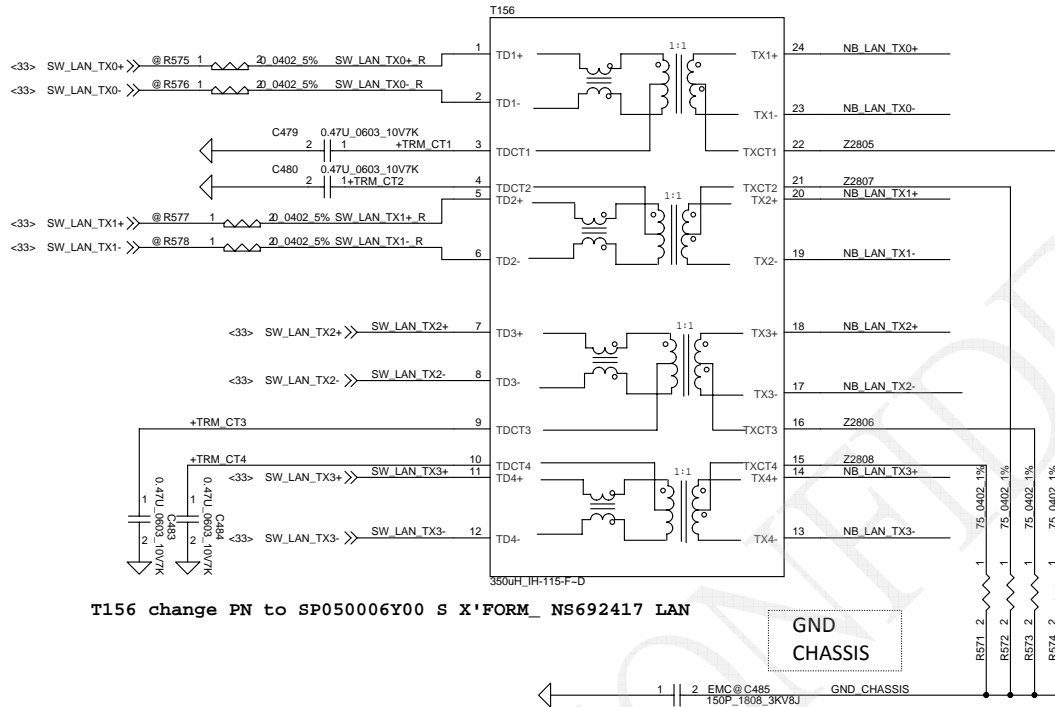
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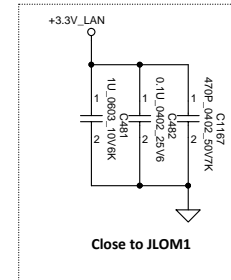
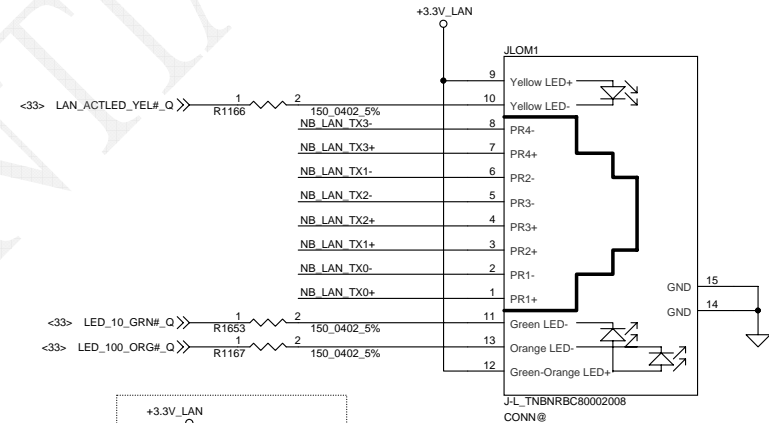




SW_LAN_TX0+ R	1	2	SW_LAN_TX0- R
@ C500	1	2	10P_0402_50V8J
SW_LAN_TX1+ R	1	2	SW_LAN_TX1- R
@ C501	1	2	10P_0402_50V8J



T156 change PN to SP050006Y00 S X'FORM\_ NS692417 LAN

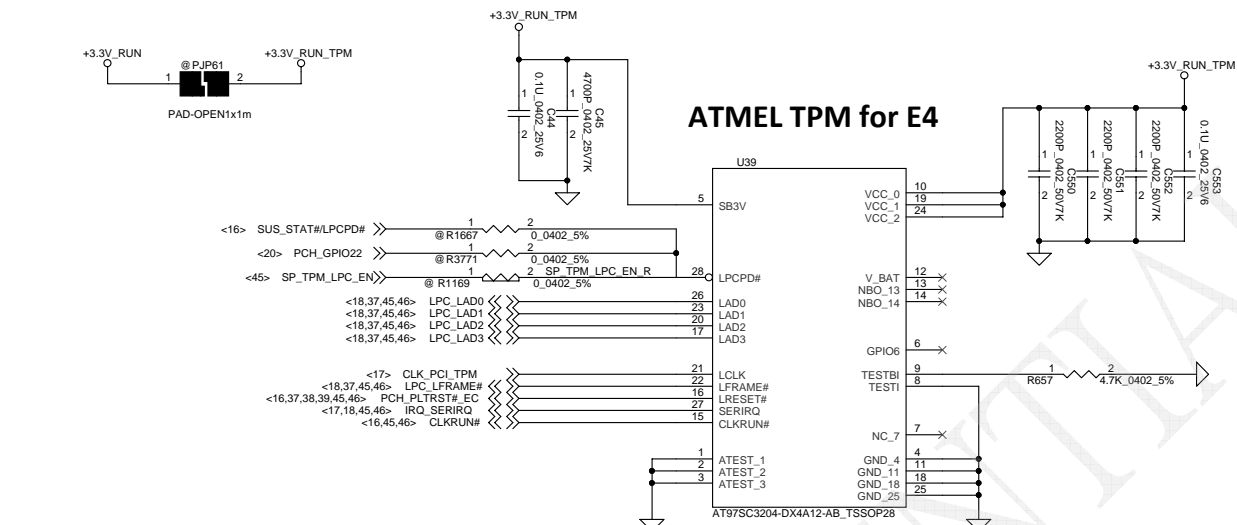


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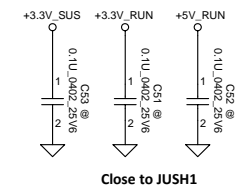
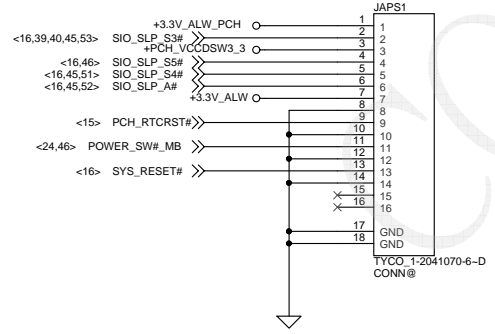
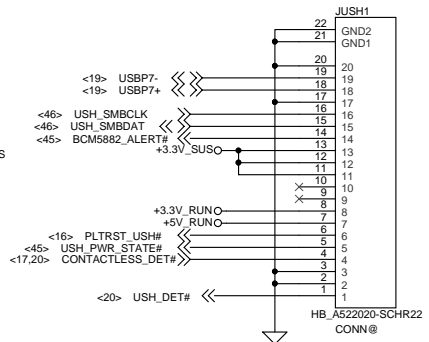
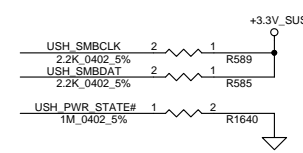
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JUSH1 pin reverse between IVY and HSW to support E4 13 USH board

### USH CONN



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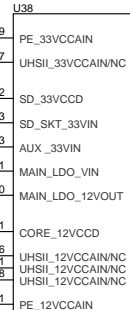
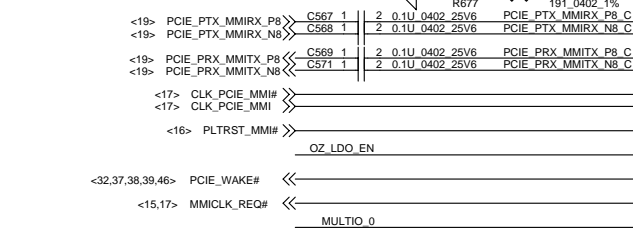
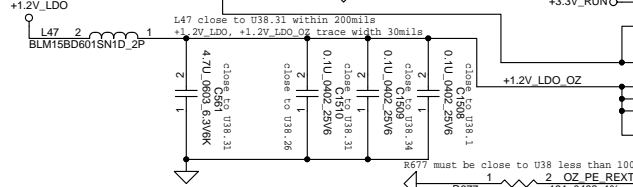
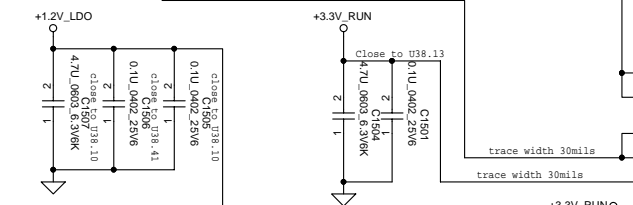
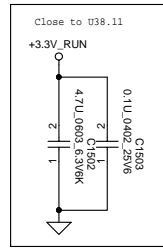
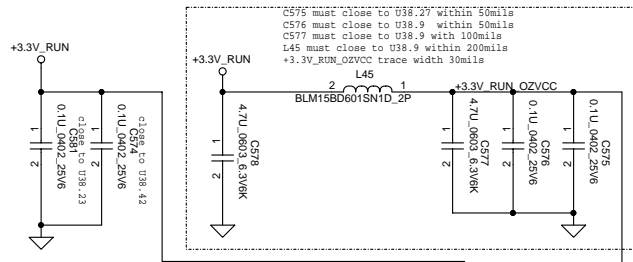
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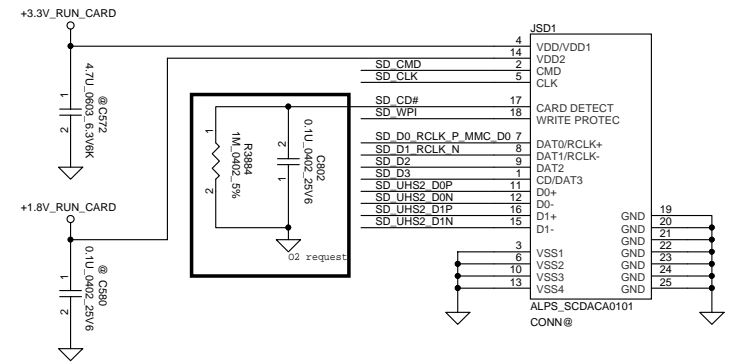
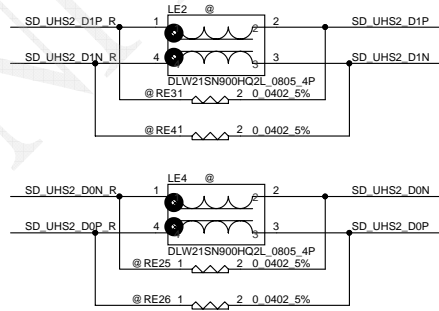
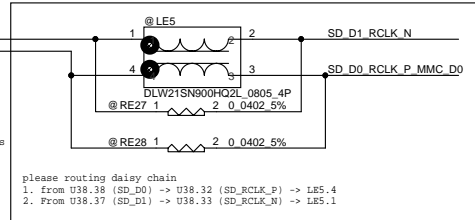
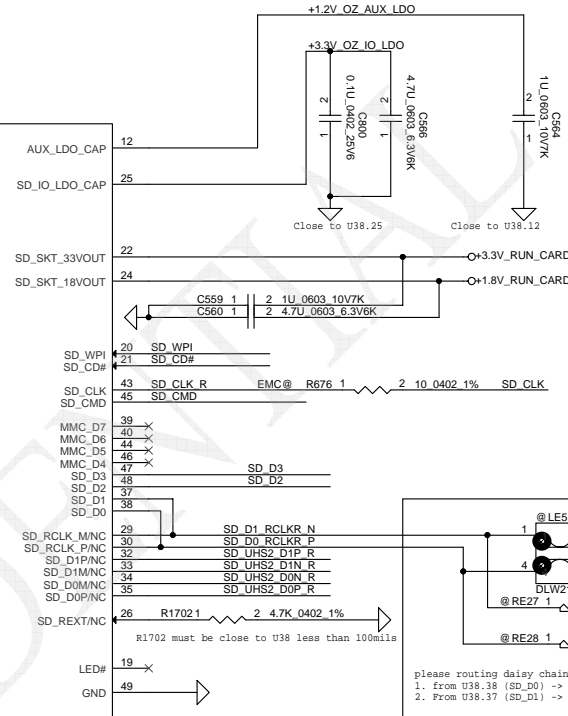
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OZ777FJ2LN



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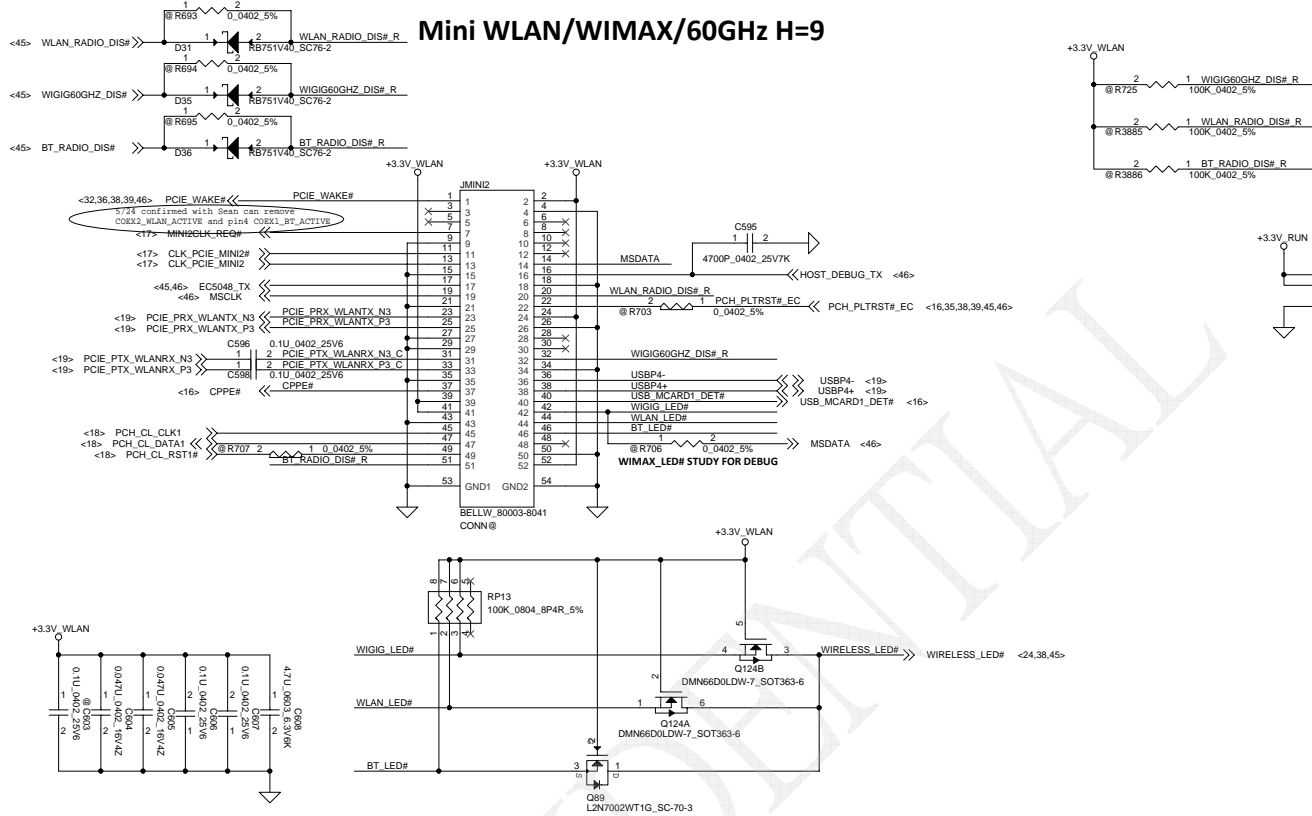
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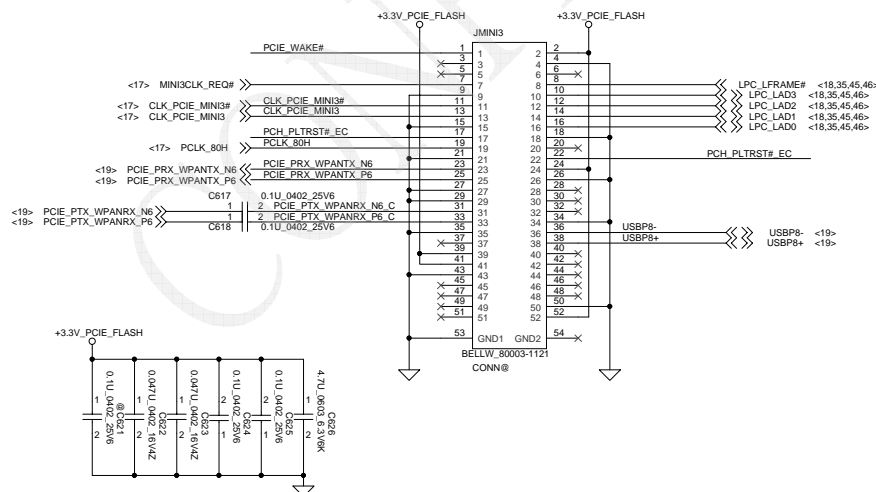
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### 1/2 Minicard Pink Pather Card H=9



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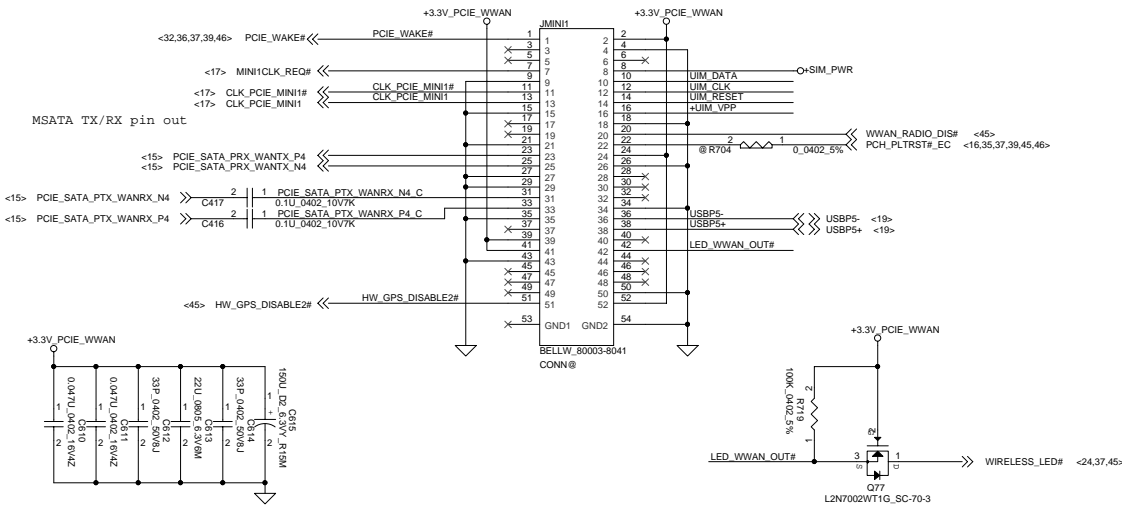
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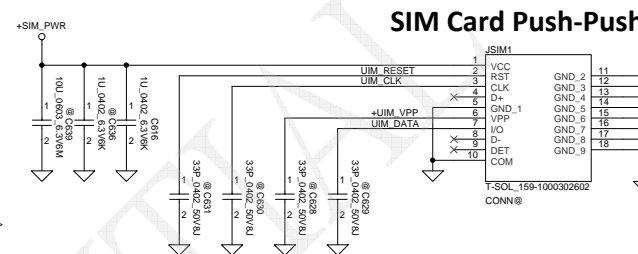
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# Mini WWAN/GPS/LTE/UWB H=9



(1) Wake Enabled and Active (2) Wake NOT Enabled nor Active					
PWR Rail	Voltage Tolerance	D0-D2&D3 hot Power		D3 cold Power	
		Peak(mA)	Typ(mA)	Peak(mA)	Typ(mA)
+3.3V_PCIE_WWAN	+/-9%	2750	800	800 (1)	150 (1) 5 (2)



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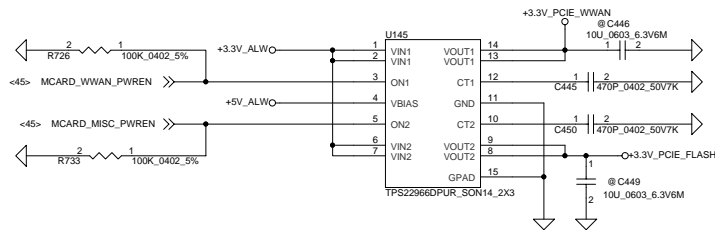
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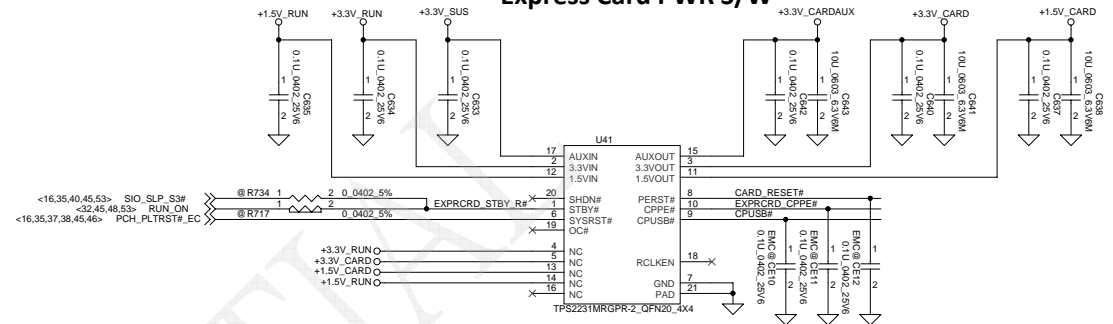
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## +3.3V\_PCIE\_WWAN/+3.3V\_PCIE\_FLASH



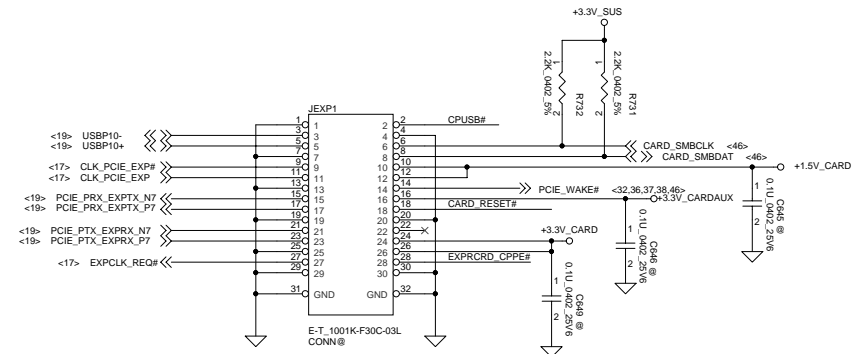
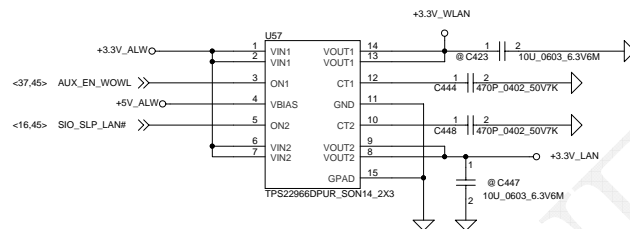
## Express Card PWR S/W



Note: Add connection on pin4, pin5, pin 13 and pin14 to support GMT 2nd source part

## Express Card Conn.

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



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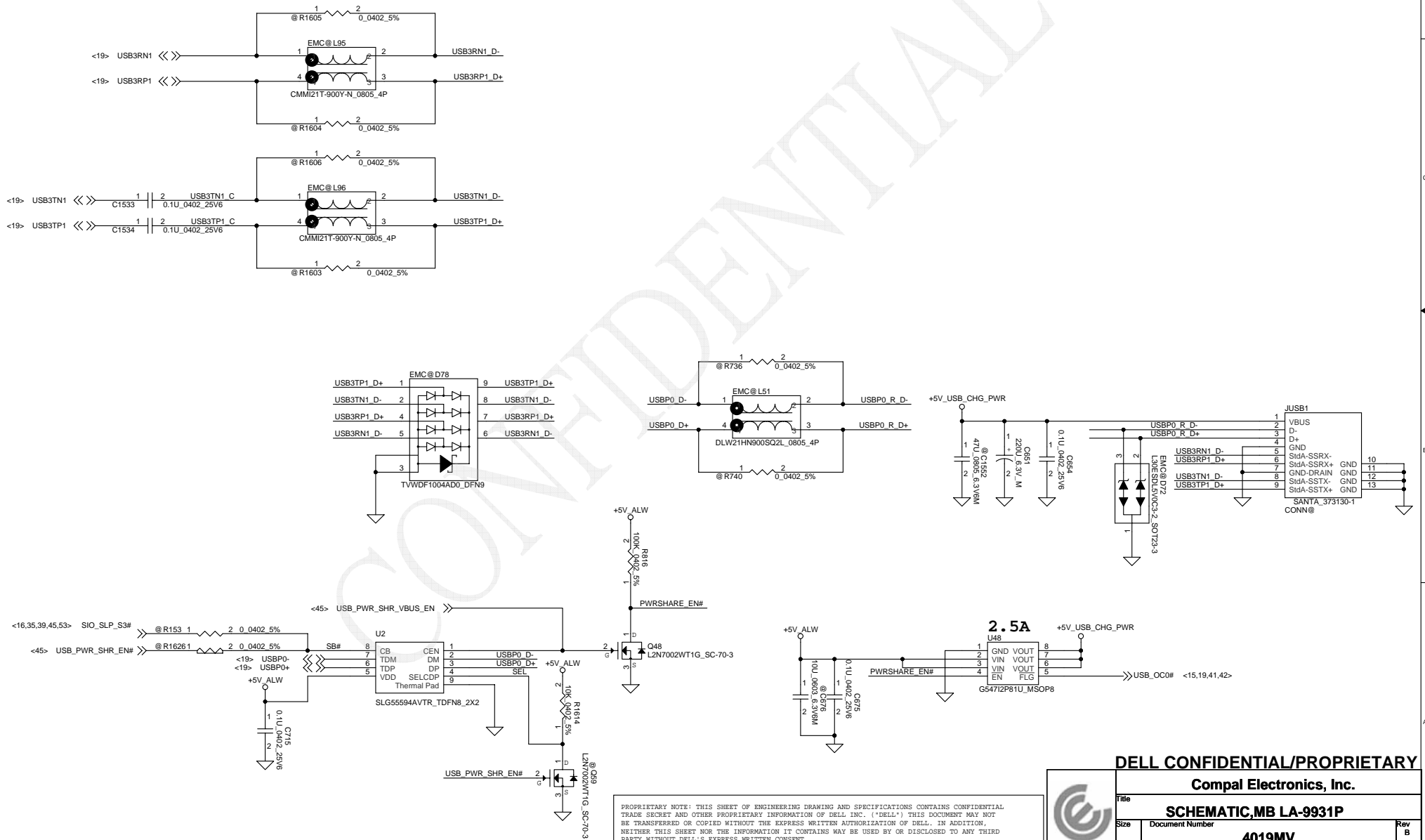
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# Rear Side (JUSB1)



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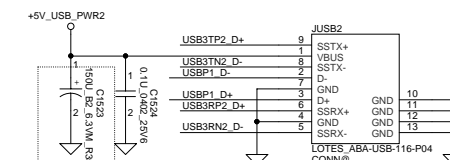
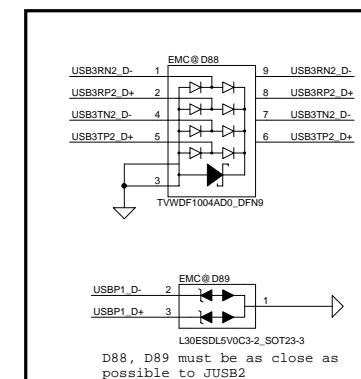
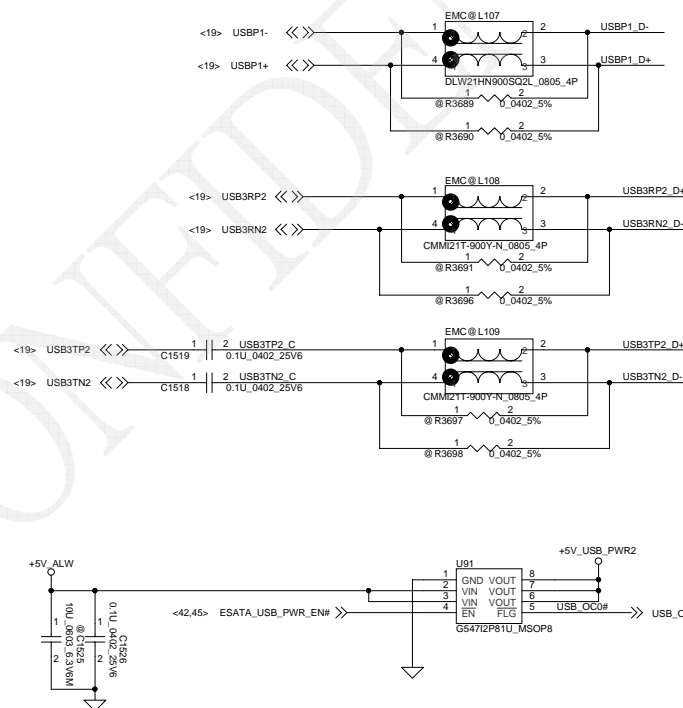
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# Right Side Top (JUSB2)

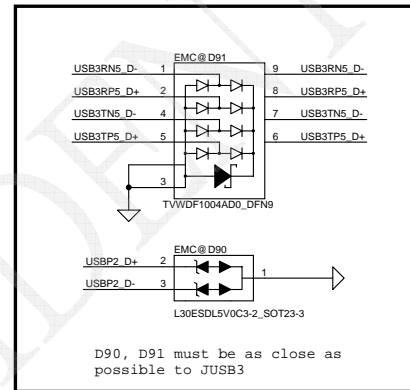
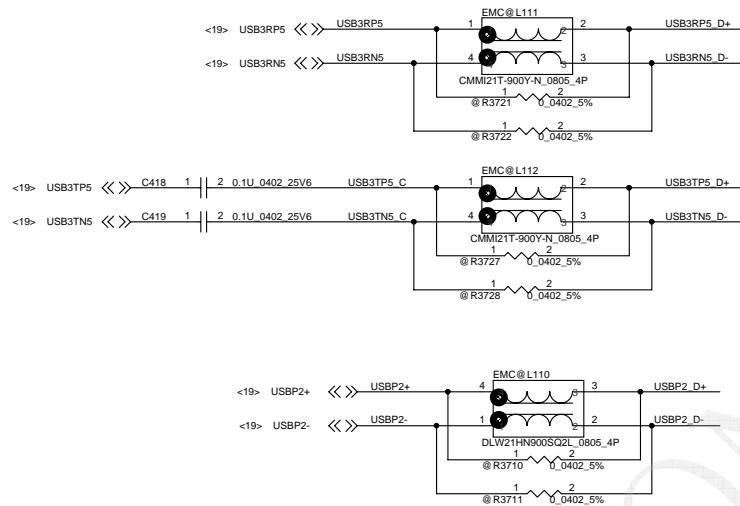


place C1523 between JUSB2 and JUSB3

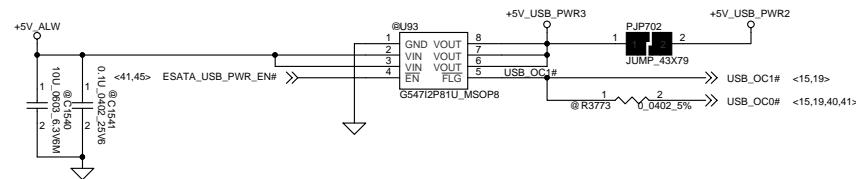
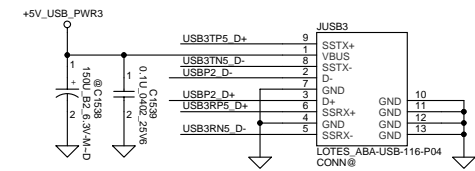
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# Right Side bottom (JUSB3)



D90, D91 must be as close as possible to JUSB3

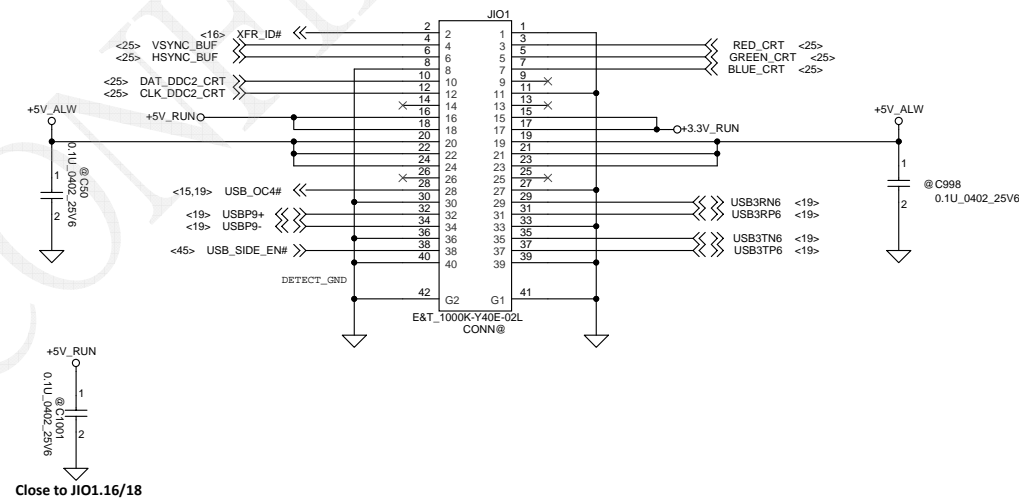


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# I/O board CONN.

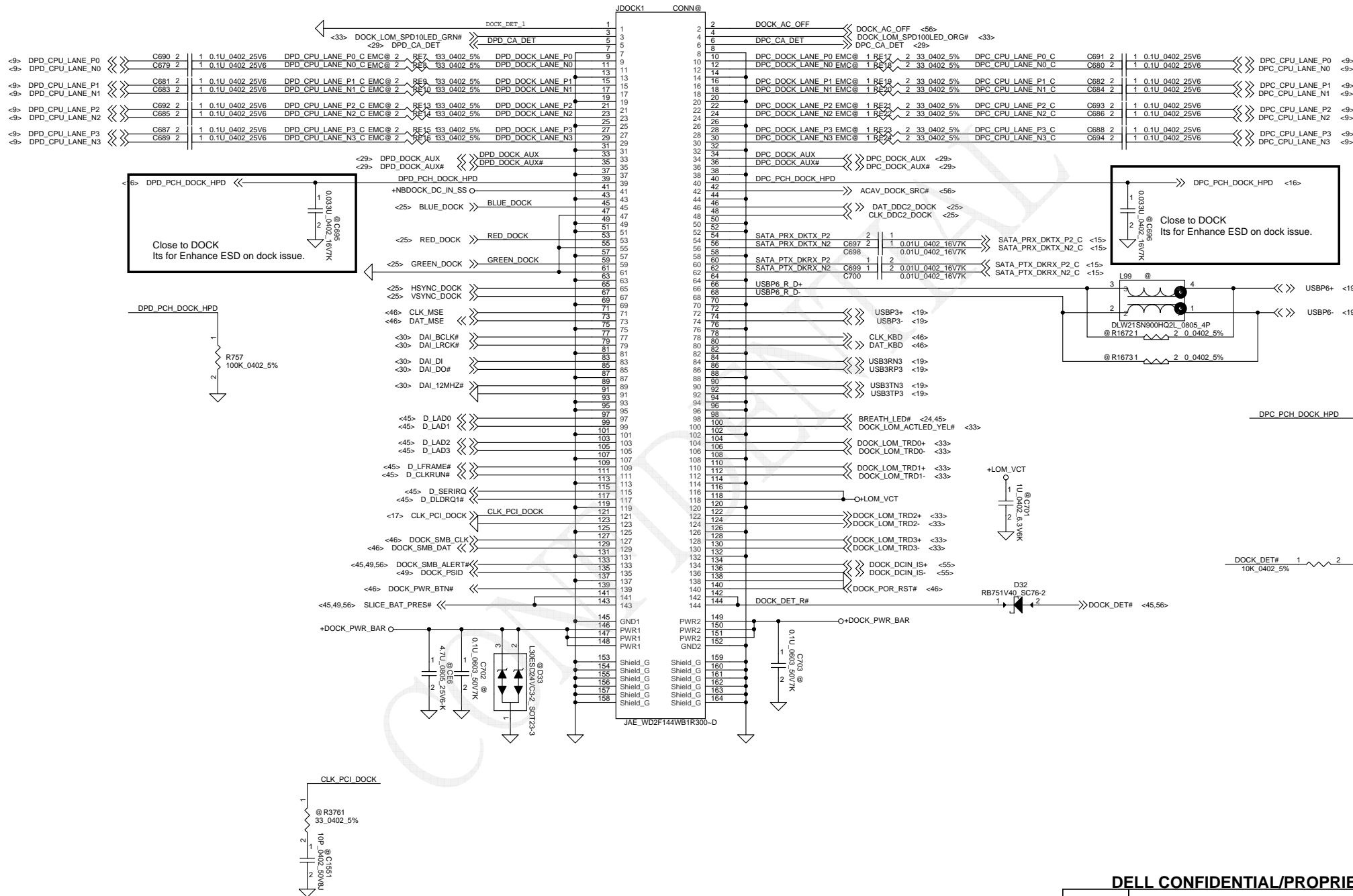


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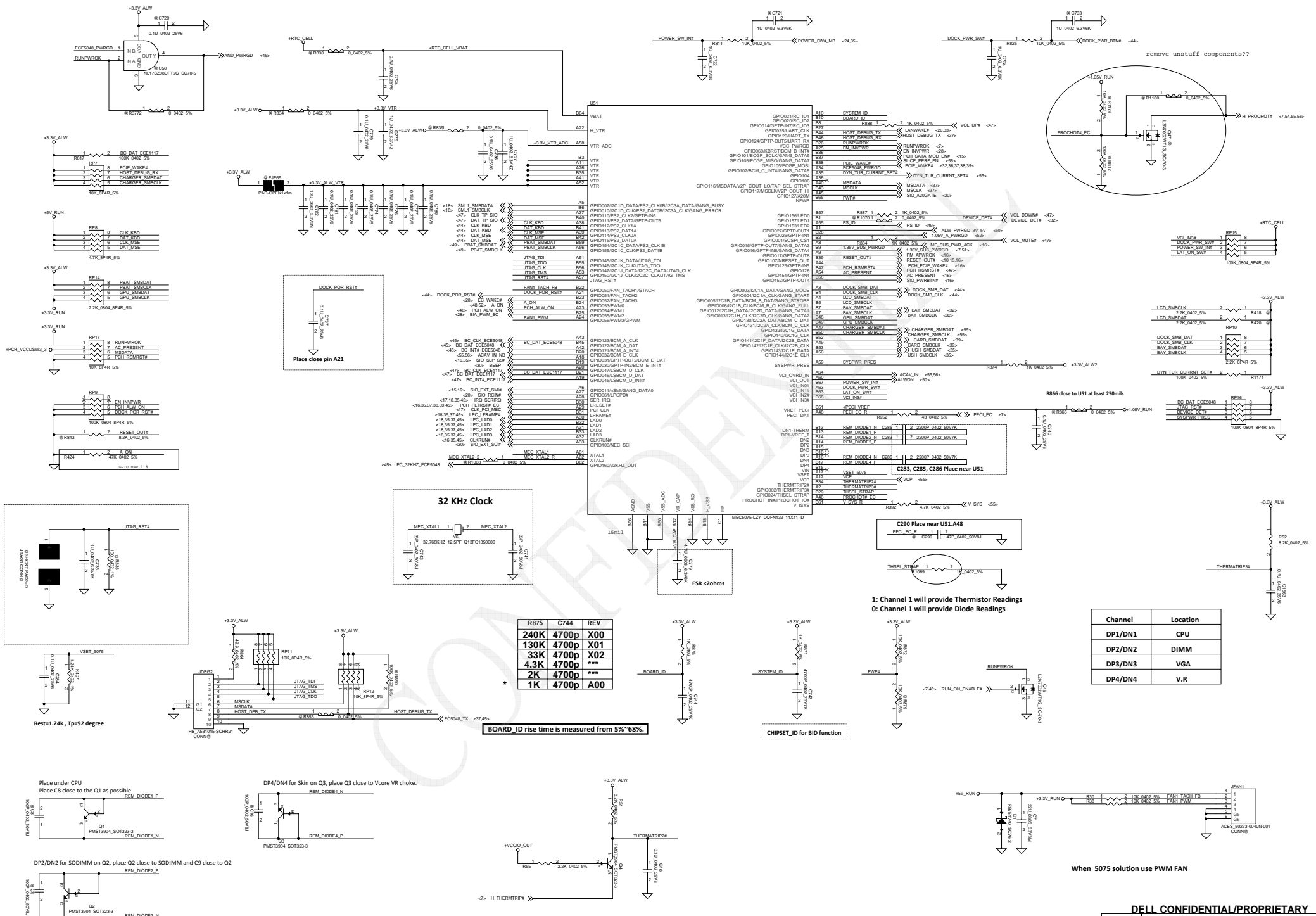
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R875	C744	REV
240K	4700p	X00
130K	4700p	X01
33K	4700p	X02
4.3K	4700p	***
2K	4700p	A00

BOARD\_ID rise time is measured from 5%~68%.

Channel	Location
DP1/DN1	CPU
DP2/DN2	DIMM
DP3/DN3	VGA
DP4/DN4	V.R

1: Channel 1 will provide Thermistor Readings  
0: Channel 1 will provide Diode Readings

When 5075 solution use PWM FAN

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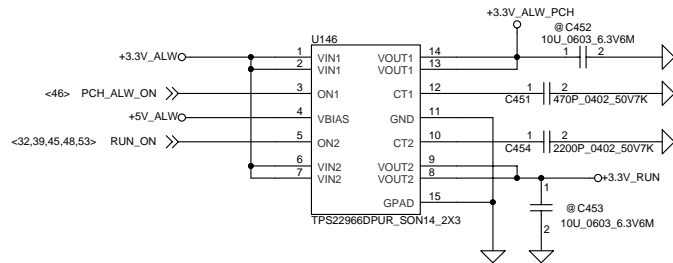
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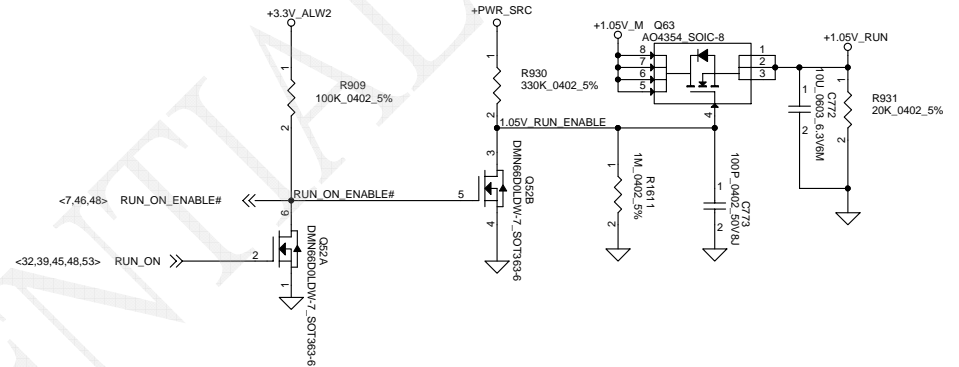


## +3.3V\_ALW\_PCH/+3.3V\_RUN Source

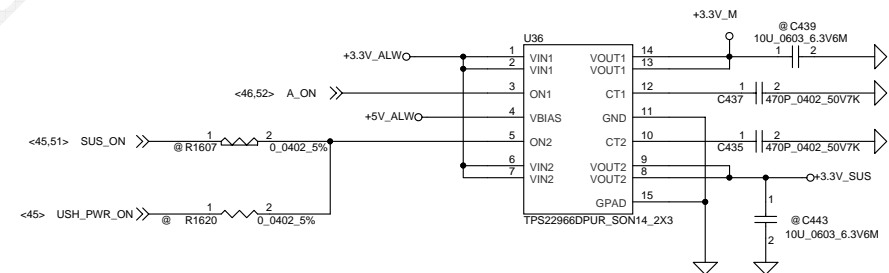


SI4164DY		
VDS	RDS(on)	ID(A)
30	0.0032ohm at VGS=10V	30A
30	0.0039ohm at VGS=4.5V	26.3A

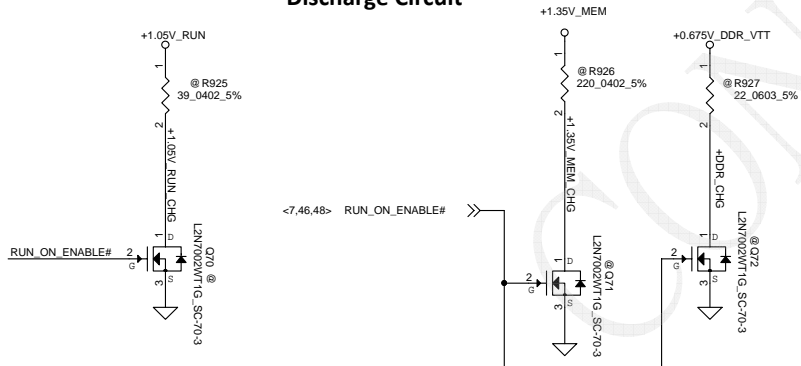
## +1.05V\_RUN Source



## +3.3V\_M/+3.3V\_SUS source



## Discharge Circuit



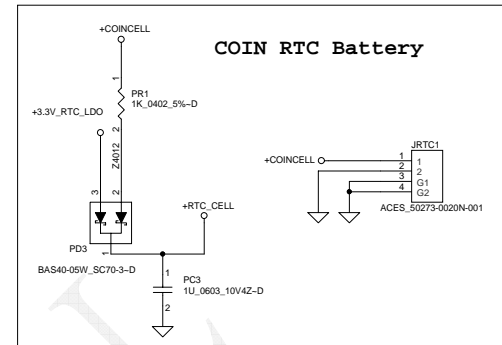
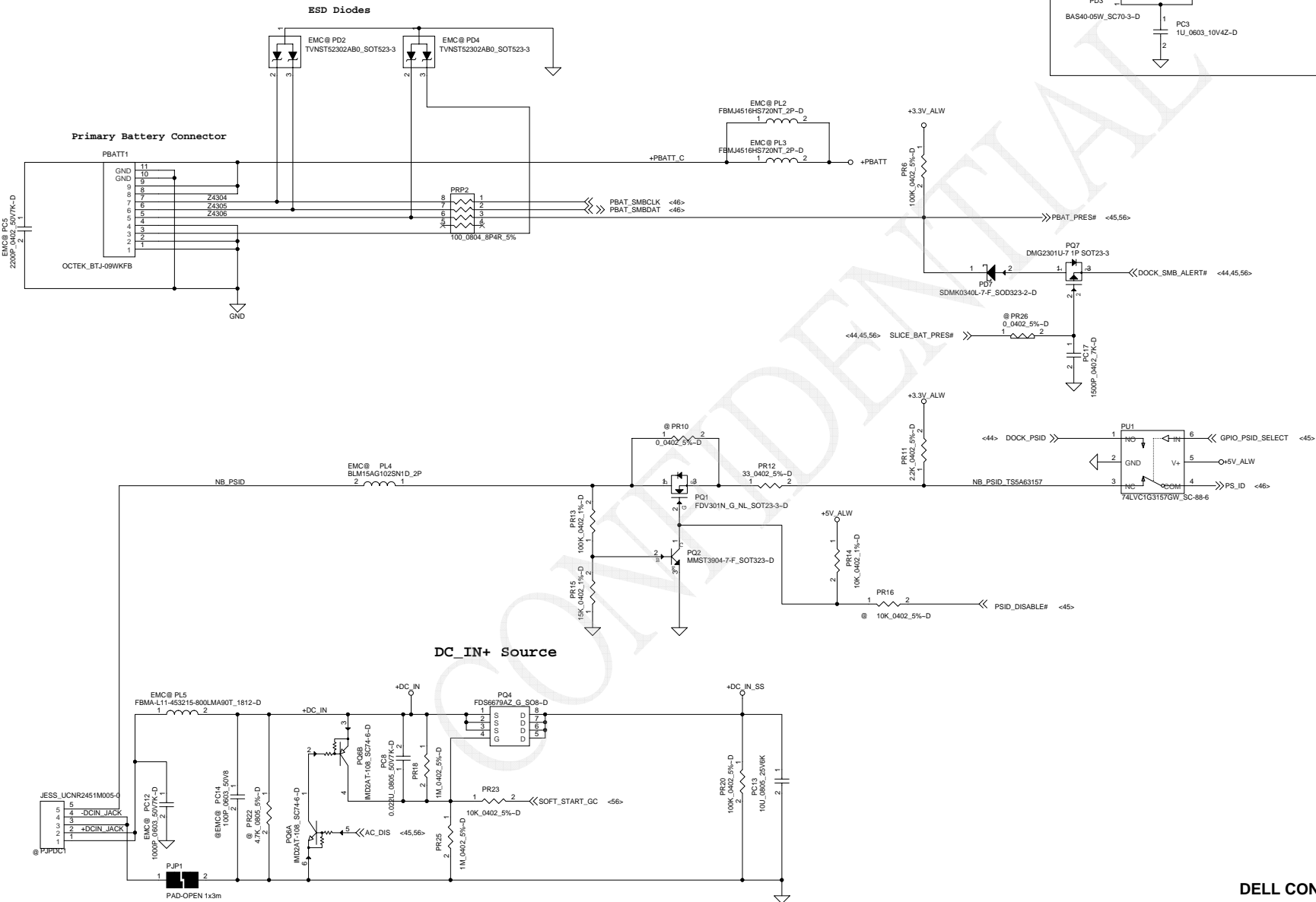
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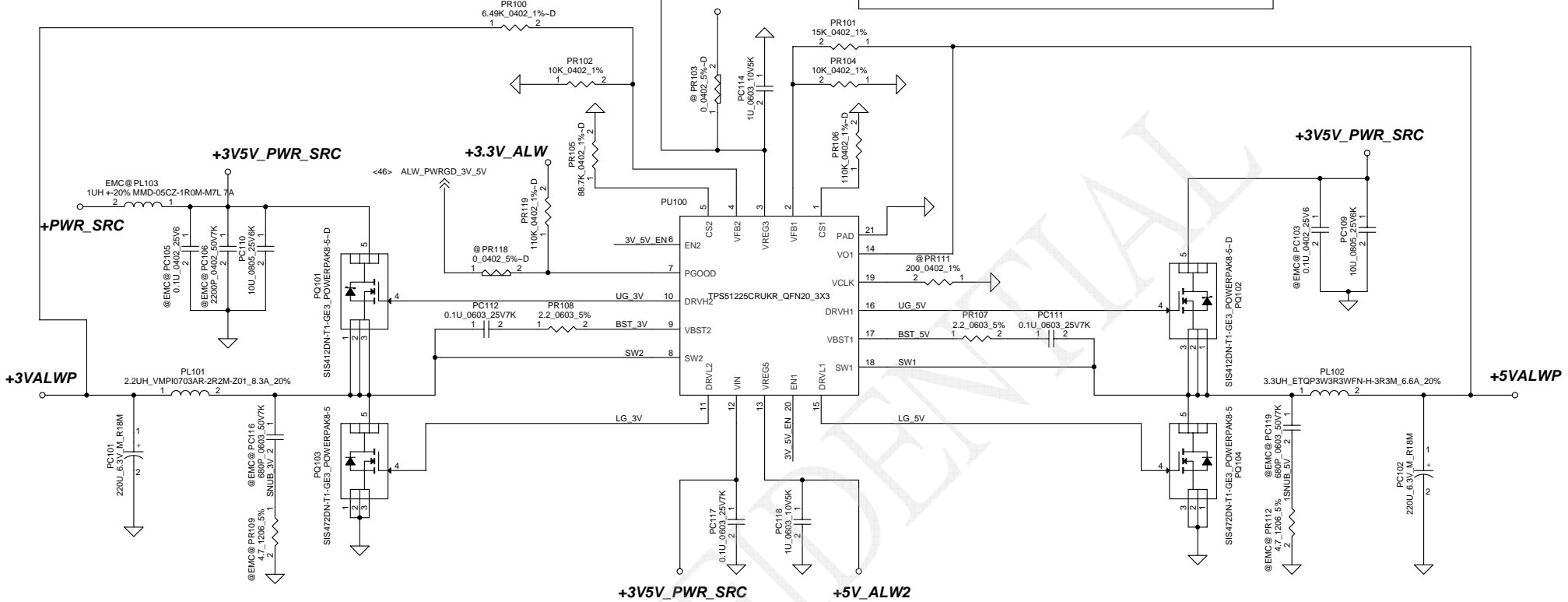
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$$VFB2=2V, PR100=(V_{out}-0.5*V_{ripple}-2)/2*PR102$$

**+3.3V\_ALW2**

**+3.3V\_RTC\_LDO**

$$VFB1=2V, PR101=(V_{out}-0.5*V_{ripple}-2)/2*PR104$$




3VALWP  
Ripple voltage -  
Static load 3% / Dynamic load 5%  
Frequency 350kHz  
TDC 5.099A  
Peak Current 7.285A  
OCP current 8.742A  
TYP MAX  
H/S Rds(on) 24mohm , 30mohm  
L/S Rds(on) 10.3mohm , 12.4mohm  
Choke DCR Max:17mohm  
Choke Ityp:8.3A / Isat:10.8A  
Bulk cap ESR 18mohm

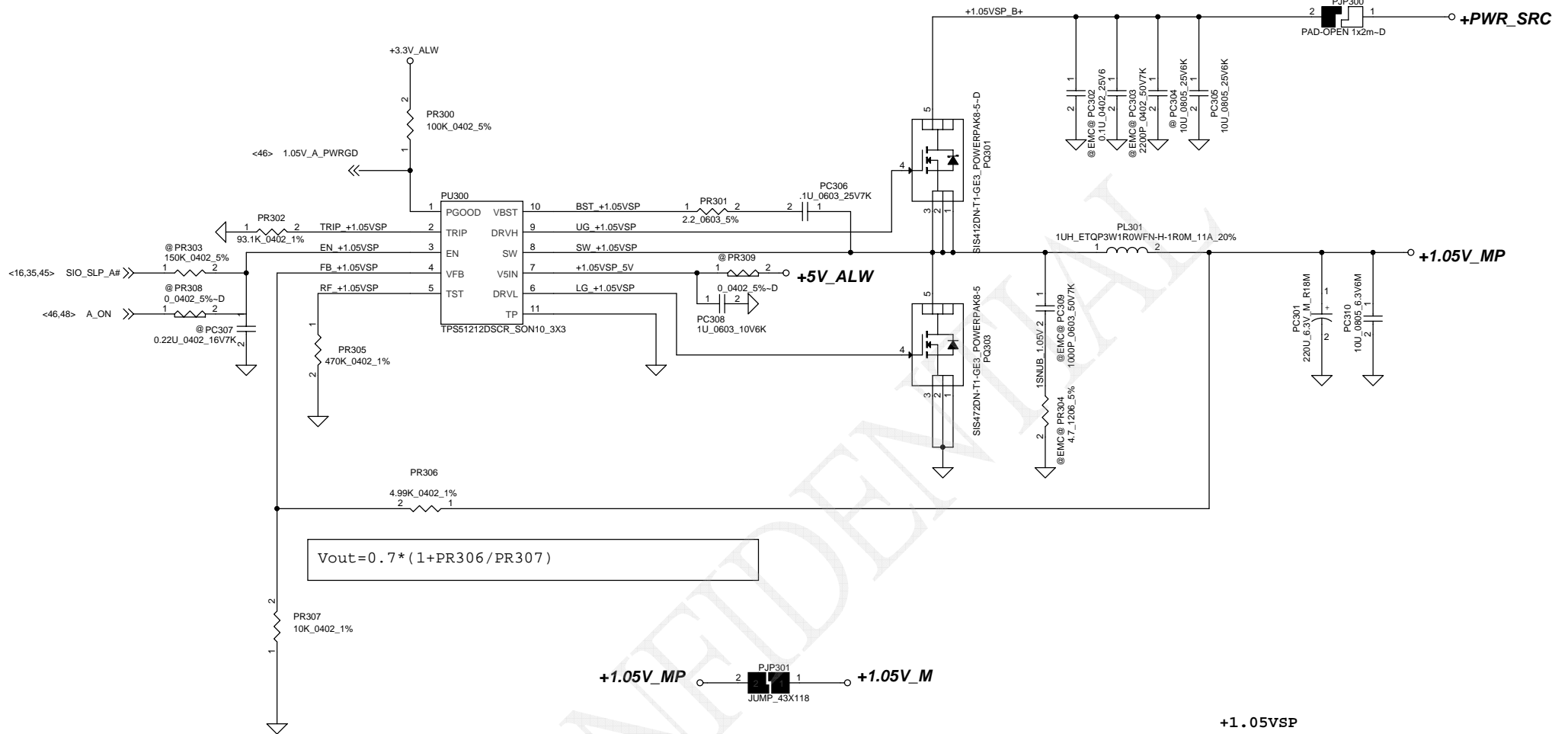
5VALWP  
Ripple voltage -  
Static load 3% / Dynamic load 5%  
Frequency 300kHz  
TDC 6.075A  
Peak Current 8.679A  
OCP current 10.415A  
TYP MAX  
H/S Rds(on) 24mohm , 30mohm  
L/S Rds(on) 10.3mohm , 12.4mohm  
Choke DCR Max:28mohm  
Choke Ityp:6.6A / Isat:8.2A  
Bulk cap ESR 18mohm

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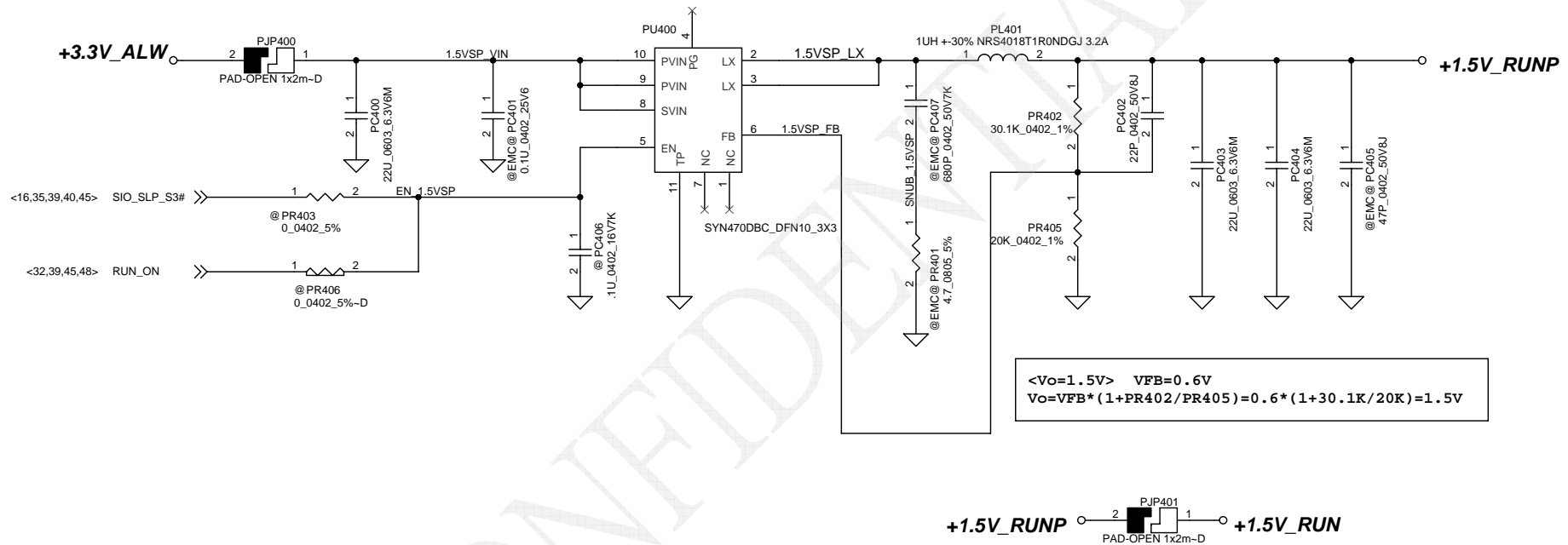
+1.05VSP  
 Ripple voltage -  
 Static load 3% / Dynamic load 5%  
 Frequency 290kHz  
 TDC 4.659A  
 Peak Current 6.523A  
 OCP current 7.828A  
 TYP MAX  
 H/S Rds(on) 24mohm , 30mohm  
 L/S Rds(on) 10.3mohm , 12.4mohm  
 Choke DCR 11mohm  
 Choke Ityp:11A / Isat:14.5A  
 Bulk cap ESR 18mohm

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+1.5VSP  
 Ripple voltage -  
 Static load 3% / Dynamic load 5%  
 Frequency 1MHz  
 TDC 1.329A  
 Peak Current 1.899A  
 OCP current 2.279A  
 Choke DCR 27mohm  
 Choke Ityp:3.2A / Isat:4A

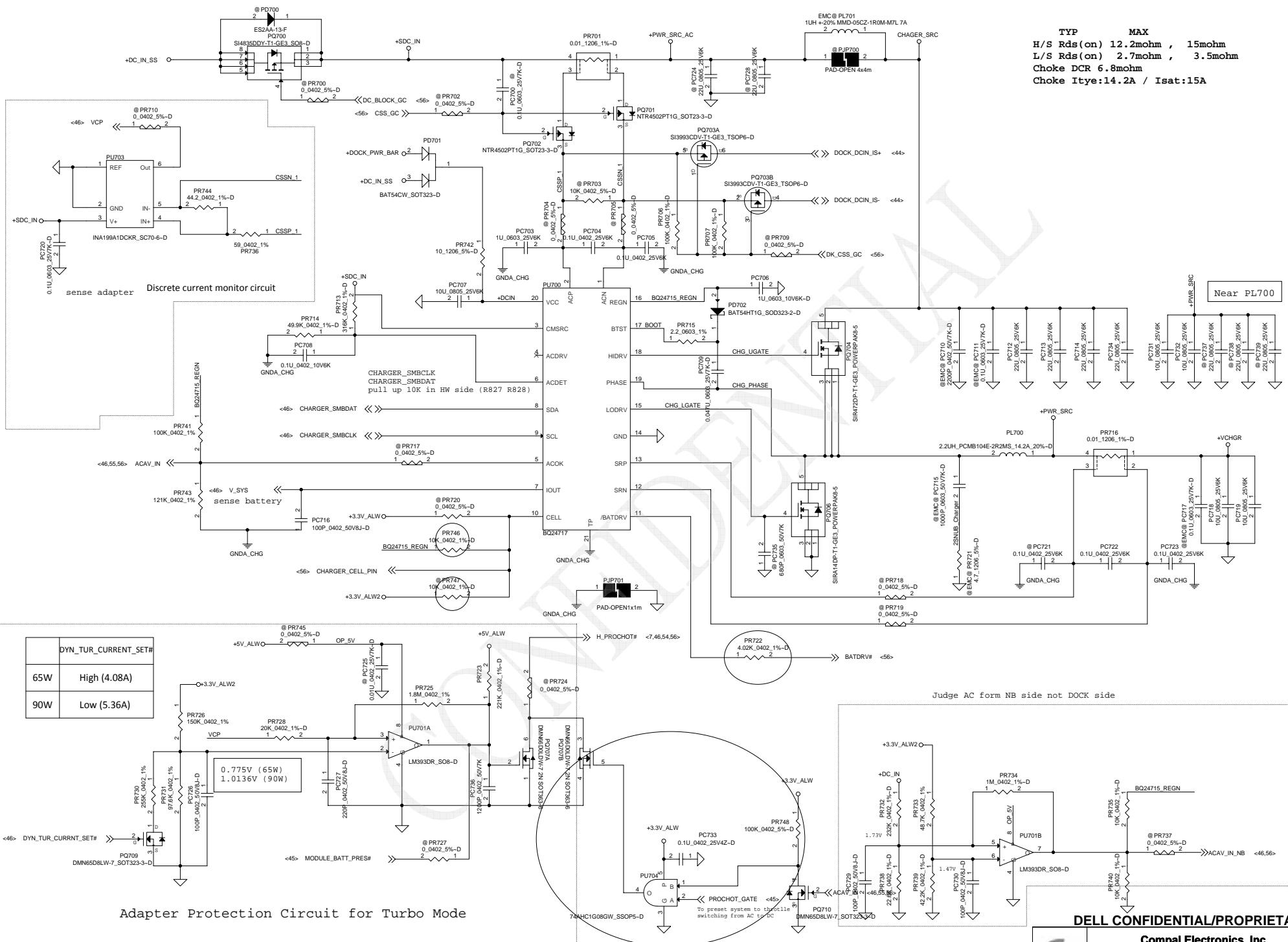


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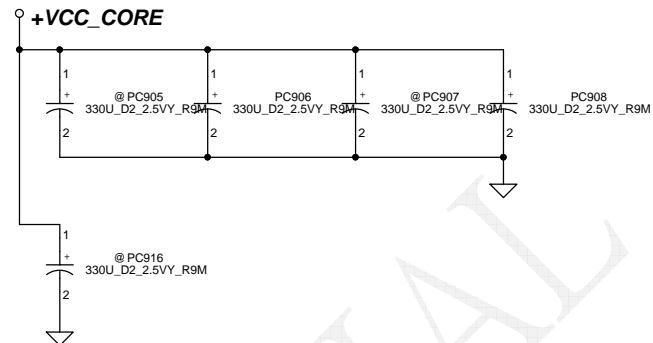
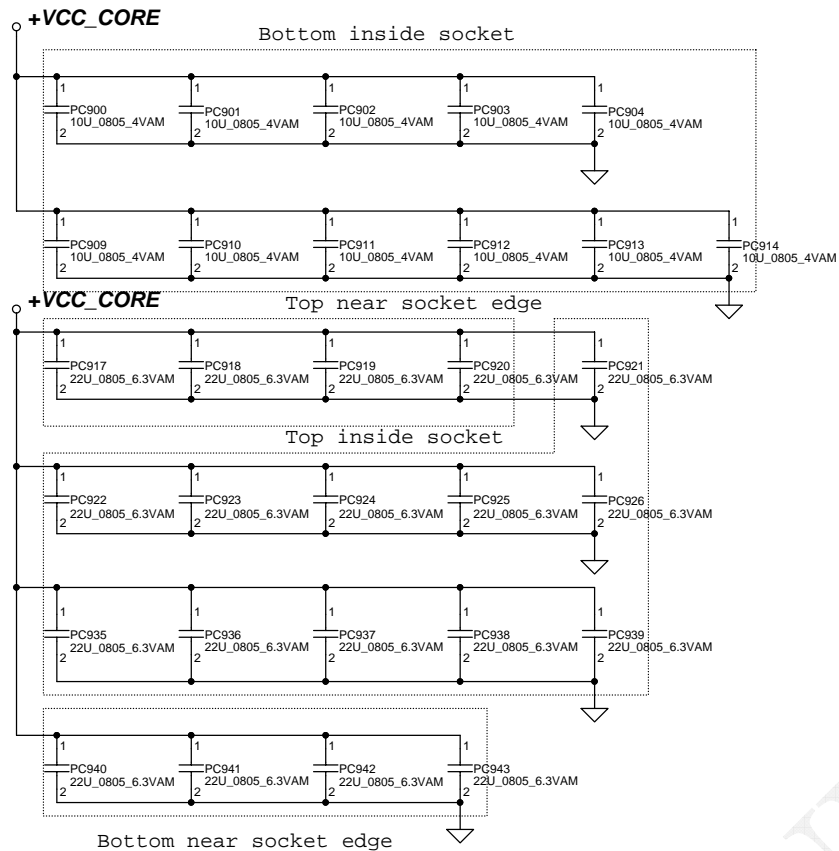
TYP MAX  
H/S Rds(on) 12.2mohm , 15mohm  
L/S Rds(on) 2.7mohm , 3.5mohm  
Choke DCR 6.8mohm  
Choke Iyte:14.2A / Isat:15A

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Based on PDDG rev 1.1 Table 5-1.



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# Version ChangeList (P. I. R List)

Item	Page#	Title	Date	Request Owner	IssueDescription	Solutiion Description	Rev.
1	55	Charger	1/8	TI	Change cell pin pull high reference voltage from +3.3V_ALW to BQ24715_REGN	Depop PR720 and pop PR746	X01
2	55	Charger	1/8	Compal	Reduce adapter current ripple	PC724,PC728,PC712,PC713,PC714,PC734 pop 22uF cap	X01
3	54	VCC_CORE	1/8	Compal	Reduce adapter current ripple	Add input jump PJP500 and unpop PL504, PC516 pop 470pF	X01
4	55	Charger	1/8	Compal	Fine tune H_PROCHOT# response time.	Add 0402 cap PC736(1.2nF) on PU701 pin1	X01
5	55	Charger	1/8	Compal	Control H_PROCHOT# when AC removed.	Add PR727(0 ohm) and MODULE_BATT_PRES# connect to PU701 pin1	X01
6	54	VCC_CORE	1/8	Compal HW	Reduce noise on +VCCIO_OUT.	Add 1uF cap (PC548) on +VCCIO_OUT	X01
7	55	Charger	1/8	Compal	For Input current sense stabilize.	PC703 change from 0402 0.1uF to 0603 1uF	X01
8	56	Selector	1/8	Compal	For undock shutdown issue.	Add PQ827 and gate connect to SLICE_BAT_PRES#.	X01
9	55	Charger	1/8	Compal	To prevent charger into sleep mode when dual AC transient.	PC707 change from 1uF to 10uF.	X01
10	55	Charger	1/8	Compal	Improve ACAV_IN_NB ref voltage accuracy.	PR733 connect to +3.3V_ALW2. PR740 change from 12K to 10K PR733 change from 130k to 48.8k	X01
11	54	VCC_CORE	1/8	Intersil	Fine tune IMON,OCP, Iout offset.	Add PR558 4.99M on ISUMP to GND. PR535 change from 432 to 499. PR521 change from 95.3k to 97.6k. PC500 change from 0.01u to 1000p	X01
12	55	Charger	1/9	Compal	Fine tune ACOK response time.	PC708 change from 0.01uF to 0.1uF	X01
13	49 56	DCIN selector	1/9	Compal	GPIO net - AC_DIS# is high active. Corrent net name.	AC_DIS# cahnge to AC_DIS.	X01
14	55	Charger	1/9	Compal	Improve current sense accuracy.	PR744=44.2ohm PR736=59ohm	X01
16	56	Selector	1/9	Compal	AC_DIS circuit modify to improve output voltage level.	Add PD820,PQ828,PQ829,PR895.	X01
17	52	1.05V_VM	1/11	Compal	Improve output ripple voltage.	Add 10uF(PC310) on output.	X01
18	56	DCIN	1/14	Compal	To prevent PD2 damage issue, ESD team suggest pin5 connect to VCC.	PD2 pin5 connect to +3.3V_ALW, Add PR27 0 ohm PD2 change from NXP(SC300001100) to AMC(SC300001G00)	X01
19	55	Charger	1/17	Compal	Adapter protect from rating+0.75A to 2A.	PR730 change from 150k to 249k PR731 change from 66.5K to 162K unpop PR727	X01

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Item Page# Title Date Request Owner IssueDescription SolutionDescription Rev.

1	49	DCIN	4/2	Compal ESD	PD2 ESD diode damange issue.	ESD diode change from dual package to single package(PD2,PD4)	X02
2	All	All	4/8	Compal	0 ohm resistor change to short pad.	PR26,PR103,PR110,PR118,PR208,PR210,PR211,PR308,PR309,PR406,PR511,PR520,PR524,PR526,PR548,PR700,PR702,PR704,PR705,PR709,PR710,PR717,PR718,PR719,PR724,PR737,PR745,PR811,PR812,PR832,PR838,PR843,PR847,PR850,PR857,PR862,PR866,PR868,PR882,PR886,PR887,PR888,PR890,PR892,PR895	X02

3	49	DCIN	4/11	Compal	Saving space.	PL4 change from 0603 to 0402.	X02
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# Version ChangeList (P. I. R List)

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	37,45,46	HW	12/10/2012	Compal	Change R-Pak package.	Change RP3,RP4,RP5,RP6,RP9,RP13 P/N to SD309100380 (Change Package from 1206 to 0804)	X01
2	46	HW	12/10/2012	Compal	Change R-Pak package.	Change RP8 P/N to SD309470180 (Change Package from 1206 to 0804)	X01
3	35	HW	12/10/2012	Compal	Change New TPM Chip	Change U39 P/N to SA00004WQ40 (AT97SC3204-DX4A12-ABF)	X01
4	28	HW	12/18/2012	Compal	Impact SMT DFX stilt and solder risk.	Change JLVDS1 P/N from SP01001BS00 to SP01001BT00	X01
5	20,35	HW	12/21/2012	DELL	Update GPIO map to rev 3.0C	Reserve PCH GPIO 22 for moving SP_TPM_LPC_EN from OUT65 and add PD 100k(RH332)	X01
6	30	HW	12/21/2012	Compal	Remove non-pop item	Remove R3730	X01
7	46	HW	12/21/2012	DELL	Update GPIO map to rev 3.0C	Add a 0ohm resistor R3772 to short RUNPWROK and AND_PWRGD	X01
8	28	HW	12/21/2012	DELL	ATG droop	Remove ATG config 1@,2@	X01
9	40	HW	12/26/2012	Compal	Support Samsung Galaxy Tab charger in S3.	Change USB charger P/N from SLGC55584AVTR to SLG55594AVTR	X01
10	38	ME	01/02/2013	Compal	JSIM1 BOSS hole update from 3.55mm to 1.7mm.	Change JSIM1 P/N from 159-1000302600 to 159-1000302602	X01
11	47	ME	01/03/2013	Compal	JSF1 pitch change from 0.5mm to 1.0mm	Change JSF1 P/N from A520620-SCHR22 to A090620-SAHR21	X01
12	30	HW	01/03/2012	COMPAL	Follow Realtek recommend circuit	1.Change R1119 ,R1120 to 100K 2.Change R1677 R1679 to 9.1 ohm 3.Change C958,C960 from 0603 to 0805	X01
13	28	HW	01/04/2013	COMPAL	Import U148 of 2nd source	U148 pin4 connect to +3.3V_ALW and remove C33	X01
14	15,17,18, 20,46	HW	01/04/2013	COMPAL	Import R-Pak	R820,R818,R829,R822 change to RP14 R1125,R810,R1156,R819 change to RP15 R814,R920,R870,R876 change to RP16 RH168,RH329,RH125 change to RPH18 R799,R835,R892,R869 change to RP17 RH138,RH136,RH257,RH201 change to RPH19 RH133,RH141,RH143,RH36 change to RPH20 RH122,RH166,RH171,RH217 change to RPH21 R1183,R513,R510,R775 change to RP18 R514,R767,R3,R805 change to RP19 R728,R739,R737,R716 change to RP20	X01
15	46	HW	01/07/2013	COMPAL	Change Board ID from X00 to X01	Change R875 from 240K to 130K	X01

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Date: Wednesday, July 17, 2013

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