

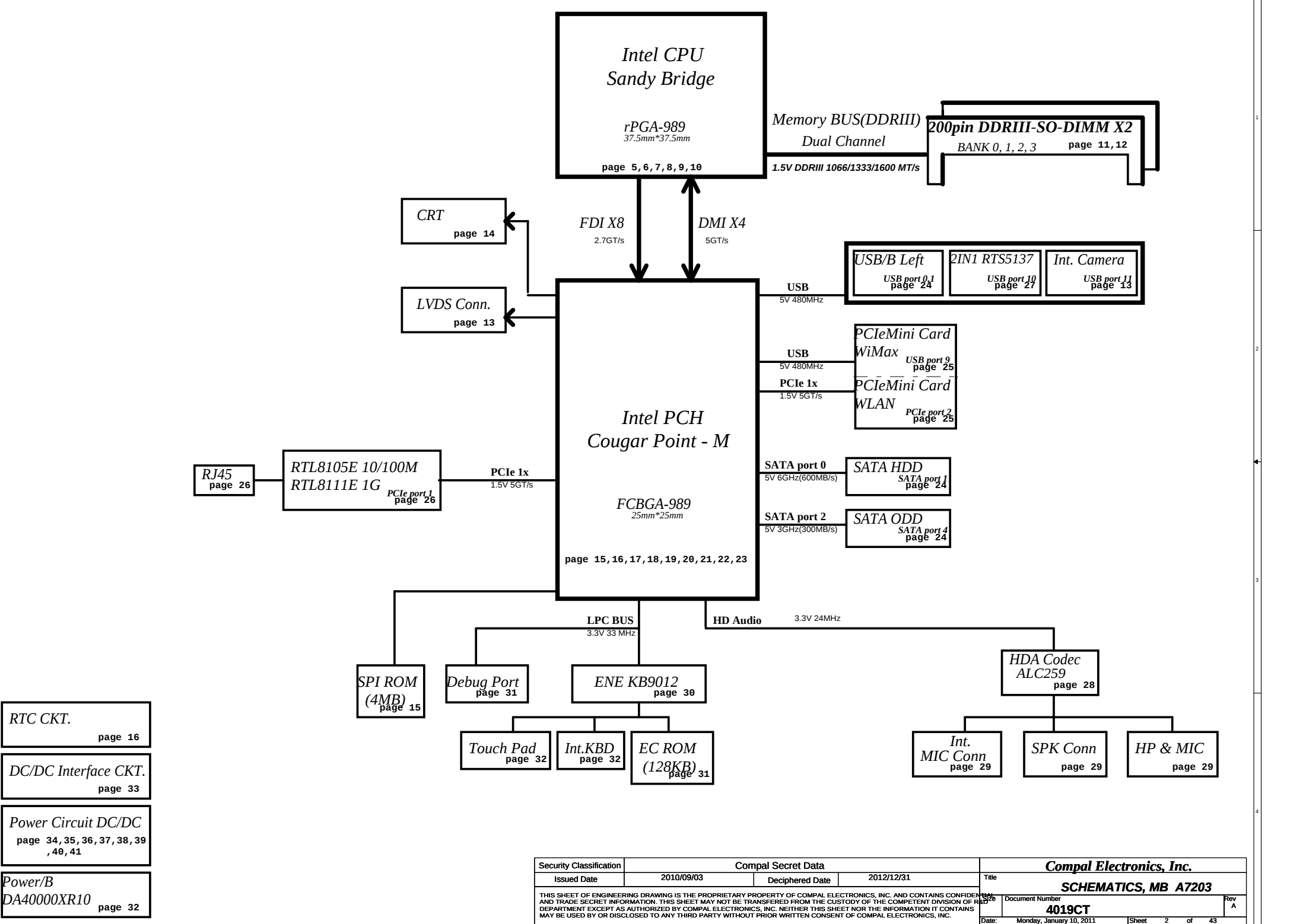
PWWHA

TaiDi1 Plus

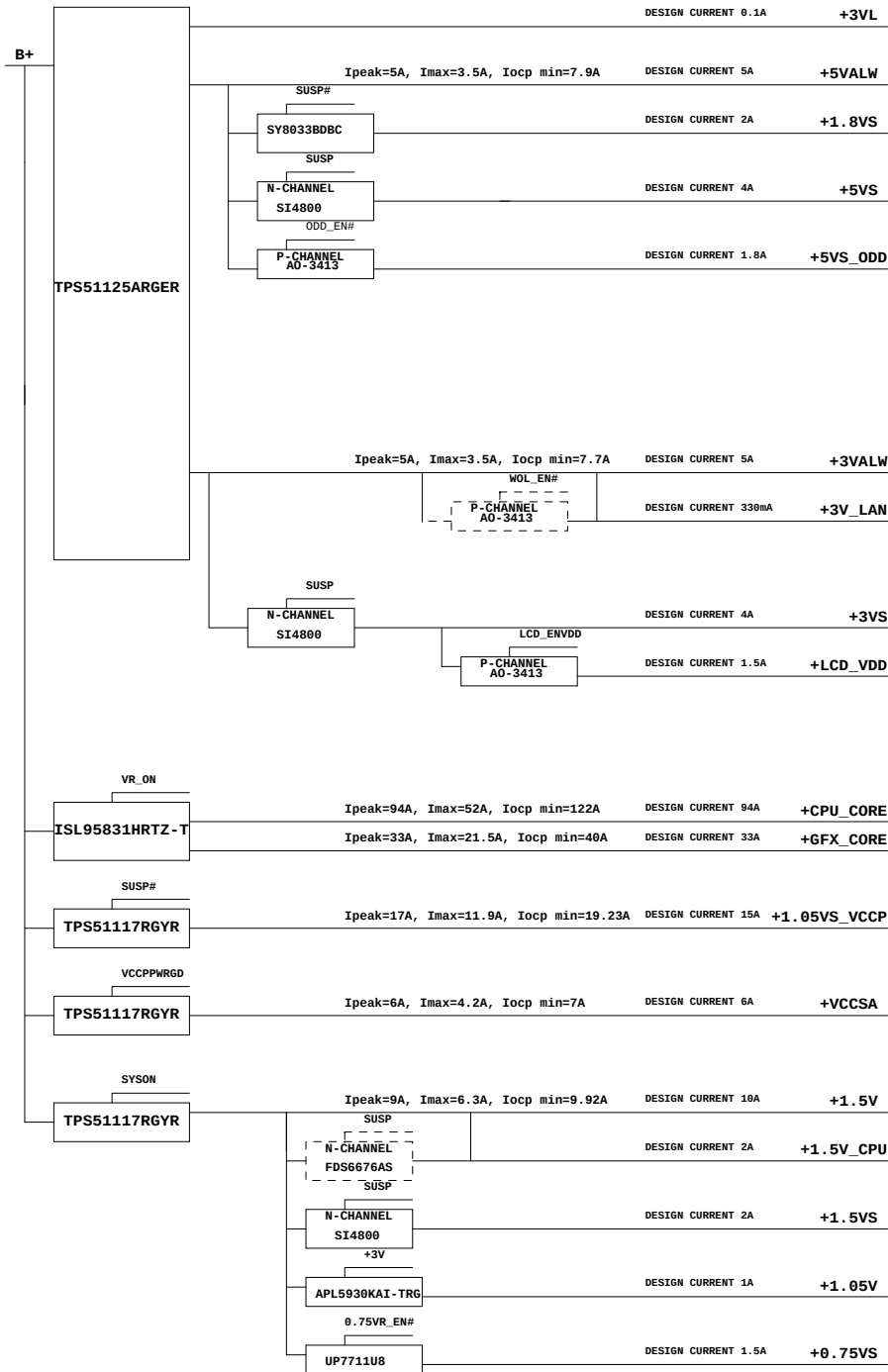
LA-7203P REV 0.1 Schematic

Intel Processor(Sandy Bridge) / PCH(Cougar Point)
2010-12-27 Rev 0.1

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Voltage Rails (0 MEANS ON X MEANS OFF)

power plane State	+RTCVCC	B+	+3VL	+5VALW +3VALW +VSB	+1.5V	+5VS +3VS +1.8VS +1.5VS +1.05VS +0.75VS +CPU_CORE +GFX_CORE
S0	0	0	0	0	0	0
S1	0	0	0	0	0	0
S3	0	0	0	0	0	X
S5 S4/AC	0	0	0	0	X	X
S5 S4/ Battery only	0	0	0	X	X	X
S5 S4/AC & Battery don't exist	0	X	X	X	X	X

PCH SM Bus Address

Power	Device	HEX	Address
+3VS	DDR SO-DIMM 0	A0 H	1010 0000 b
+3VS	DDR SO-DIMM 1	A4 H	1010 0100 b
+3VS	Clock Generator	D2 H	1101 0010 b
+3VS	WLAN/WIMAX		

EC SM Bus1 Address

Power	Device	HEX	Address
+3VL	Smart Battery	16 H	0001 0110 b

EC SM Bus2 Address

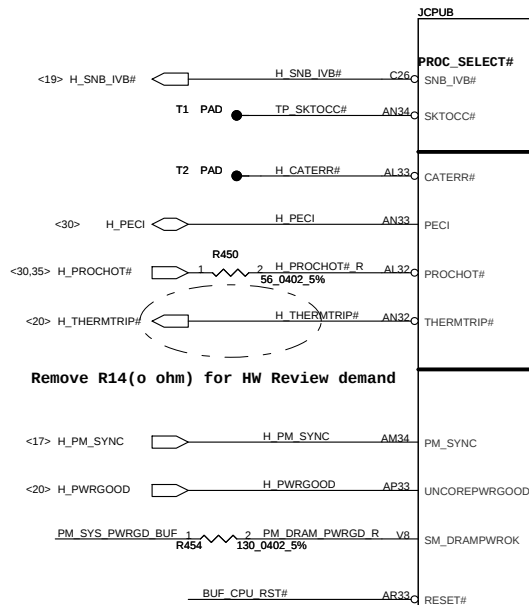
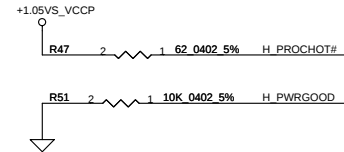
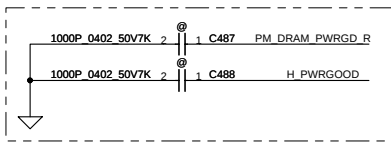
Power	Device	HEX	Address
+3VS	PCH	96 H	1001 0110 b

BTO Option Table

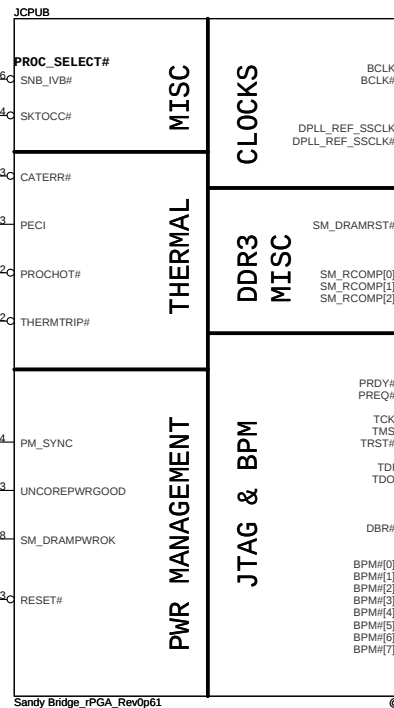
Function	MINI PCI-E SLOT	LAN		Camera & Mic		
description	SLOT1	LAN		Camera & Mic		
explain	WIMAX	10/100M	Giga	Camera & Mic		
BTO	WIMAX@	8105E@	8111E@	CAM@		

SIGNAL STATE	SLP_S3#	SLP_S4#	SLP_S5#
Full ON	HIGH	HIGH	HIGH
S1(Power On Suspend)	HIGH	HIGH	HIGH
S3 (Suspend to RAM)	LOW	HIGH	HIGH
S4 (Suspend to Disk)	LOW	LOW	HIGH
S5 (Soft OFF)	LOW	LOW	LOW
G3	LOW	LOW	LOW

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Remove R14(0 ohm) for HW Review demand



100 Mhz
120 Mhz

100 Mhz
120 Mhz

100 Mhz
120 Mhz

100 Mhz
120 Mhz

100 Mhz
120 Mhz

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120 Mhz

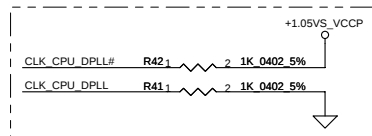
100 Mhz
120 Mhz

100 Mhz
120 Mhz

100 Mhz
120 Mhz

100 Mhz
120 Mhz

Stuff R41 and R42 if do not support eDP



DDR3 Compensation Signals
Layout Note: Place these resistors near Processor

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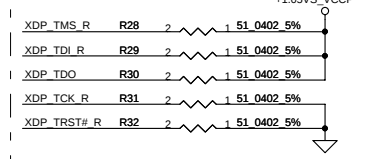
DDR3 Compensation Signals
Layout Note: Place these resistors near Processor

DDR3 Compensation Signals
Layout Note: Place these resistors near Processor

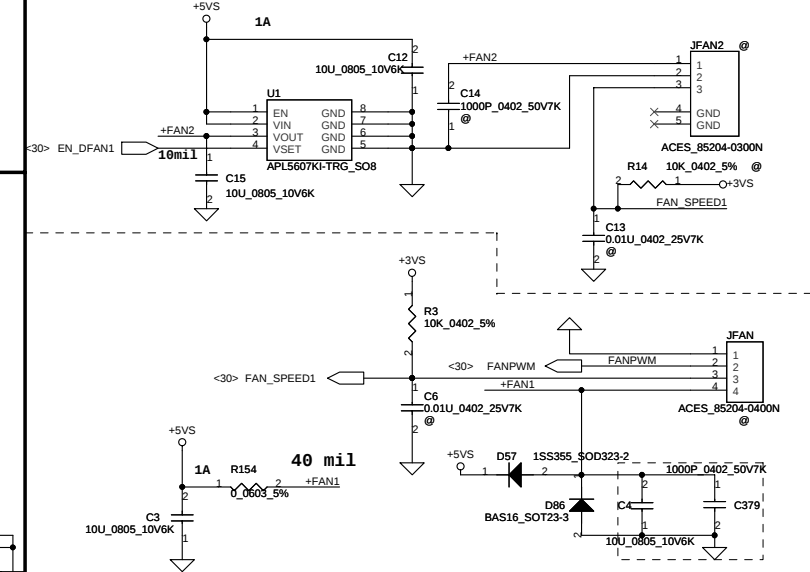
DDR3 Compensation Signals
Layout Note: Place these resistors near Processor

DDR3 Compensation Signals
Layout Note: Place these resistors near Processor

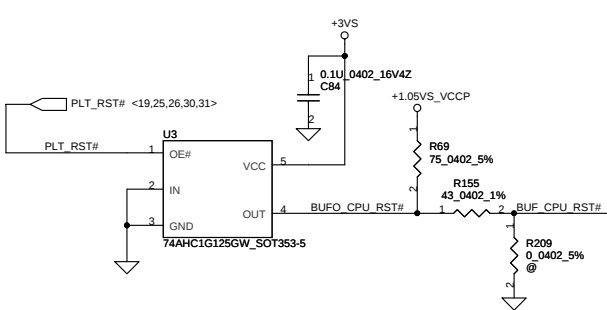
PU/PD for JTAG signals



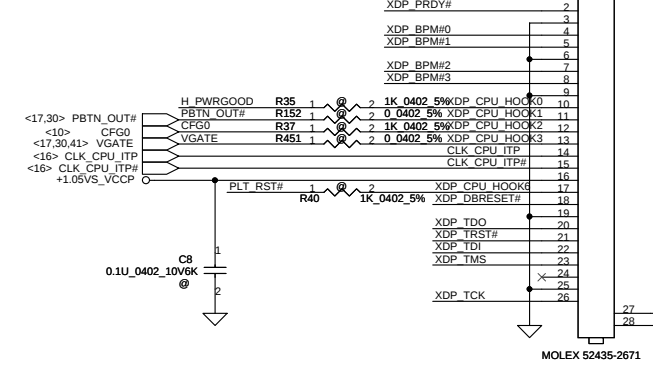
FAN Control Circuit (RPM and PWM)



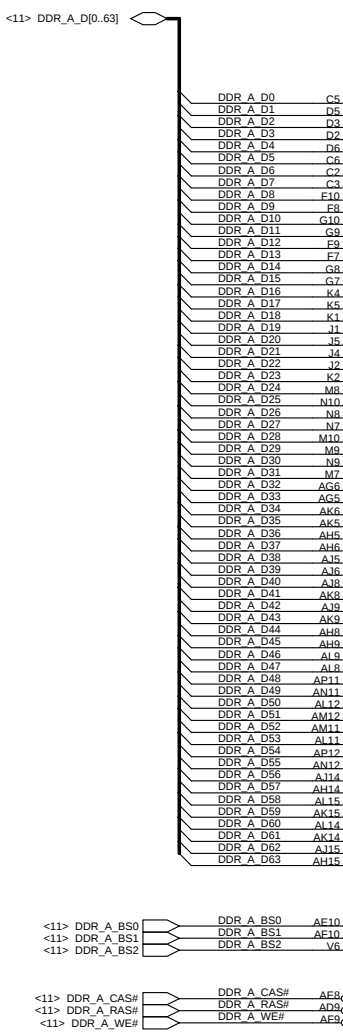
Buffered Reset to CPU



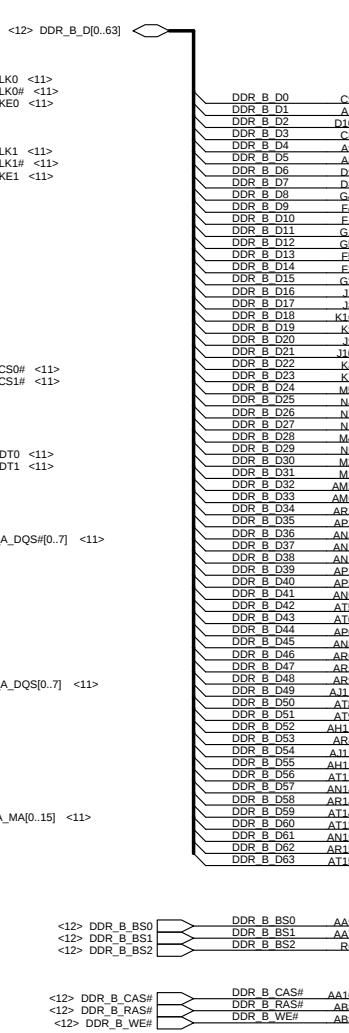
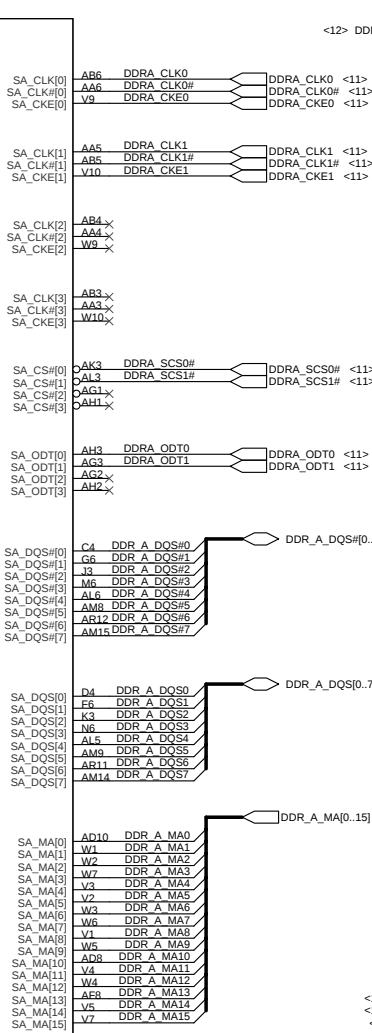
XDP Connector



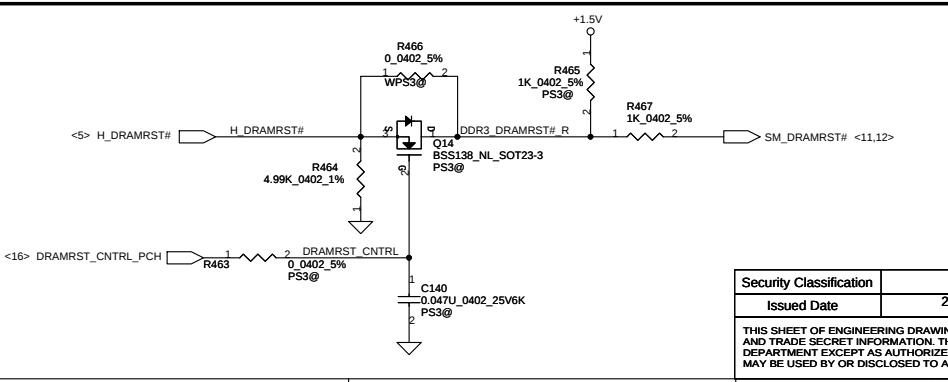
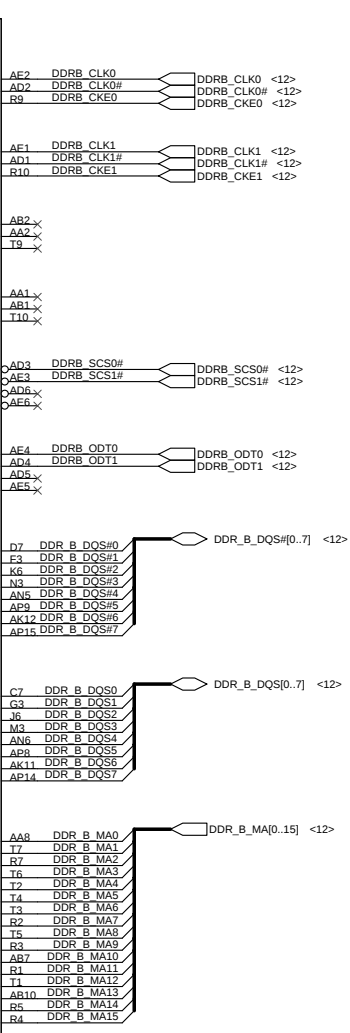
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DDR SYSTEM MEMORY A



DDR SYSTEM MEMORY B



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+CPU_CORE

POWER

JCPUF

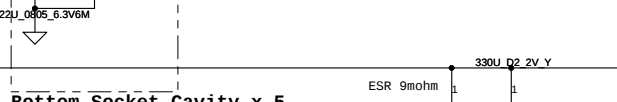
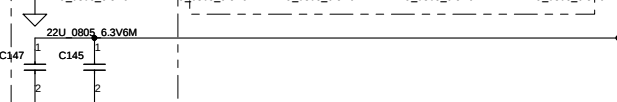
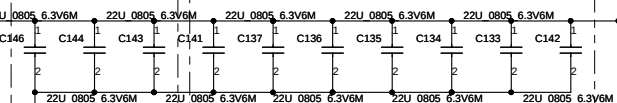
94A (Quad Core 45W)
53A (SV 35W)

8.5A

+1.05VS_VCCP Decoupling:
2X 330U (6m ohm), 12X 22U

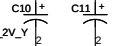
+1.05VS_VCCP

TOP Socket Cavity x 7

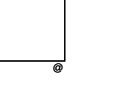
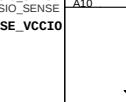
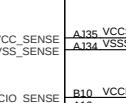
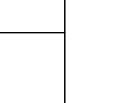
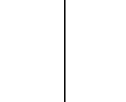
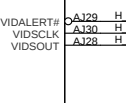
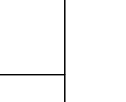
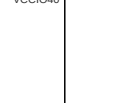
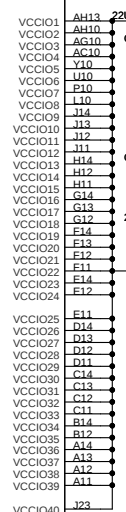


Bottom Socket Cavity x 5

ESR 9mohm
330U_D2_2V_Y

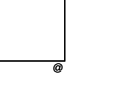
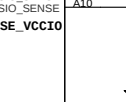
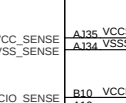
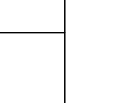
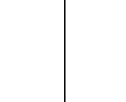
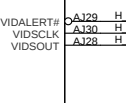
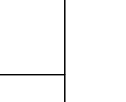


PEG AND DDR

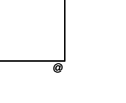
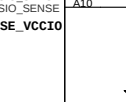
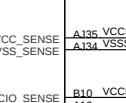
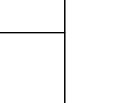
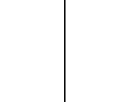
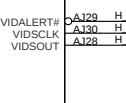
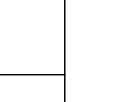


CORE SUPPLY

SVID

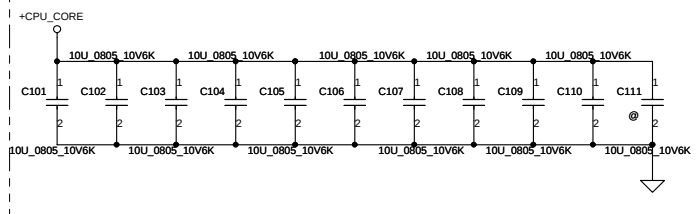


SENSE LINES

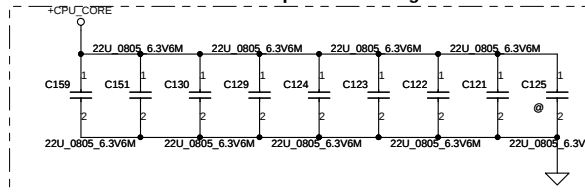


+CPU_CORE Decoupling:
4X 470U (4m ohm), 16X 22U, 10X 10U

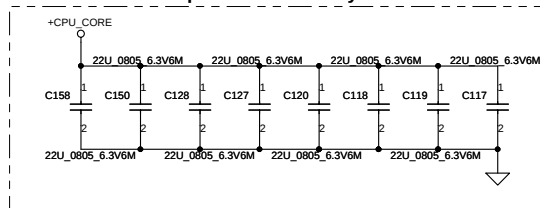
Bottom Socket Cavity



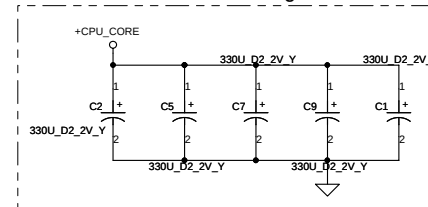
Top Socket Edge



Top Socket Cavity

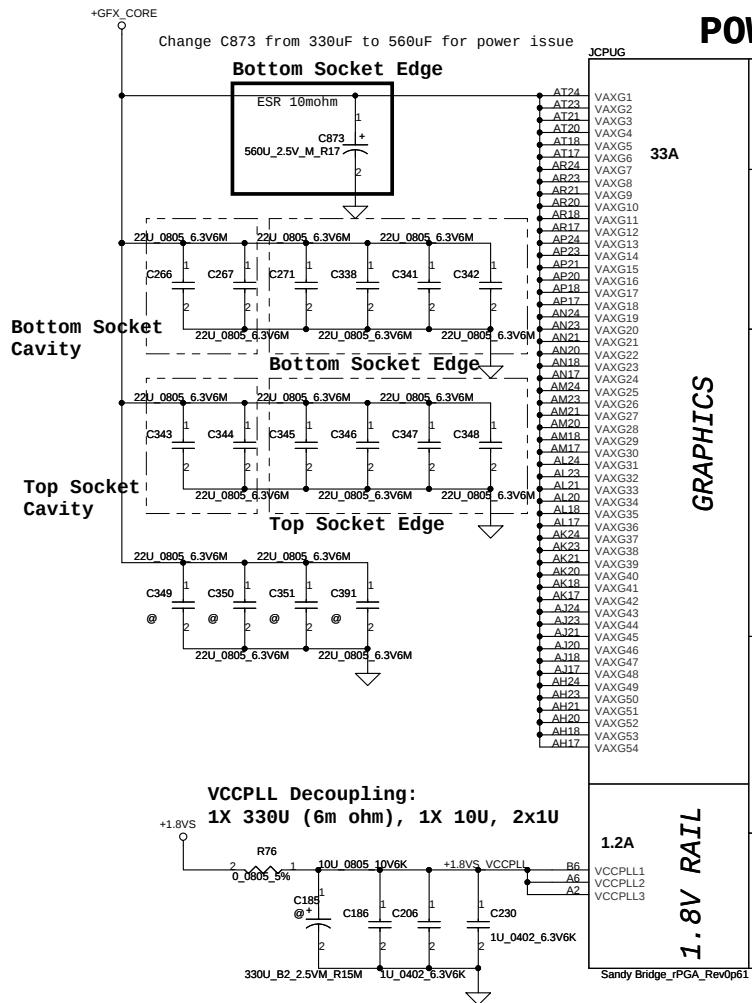


Bottom Socket Edge



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+GFX_CORE Decoupling:
1X 560U (10m ohm), 12X 22U



POWER

SENSE LINES

VREF

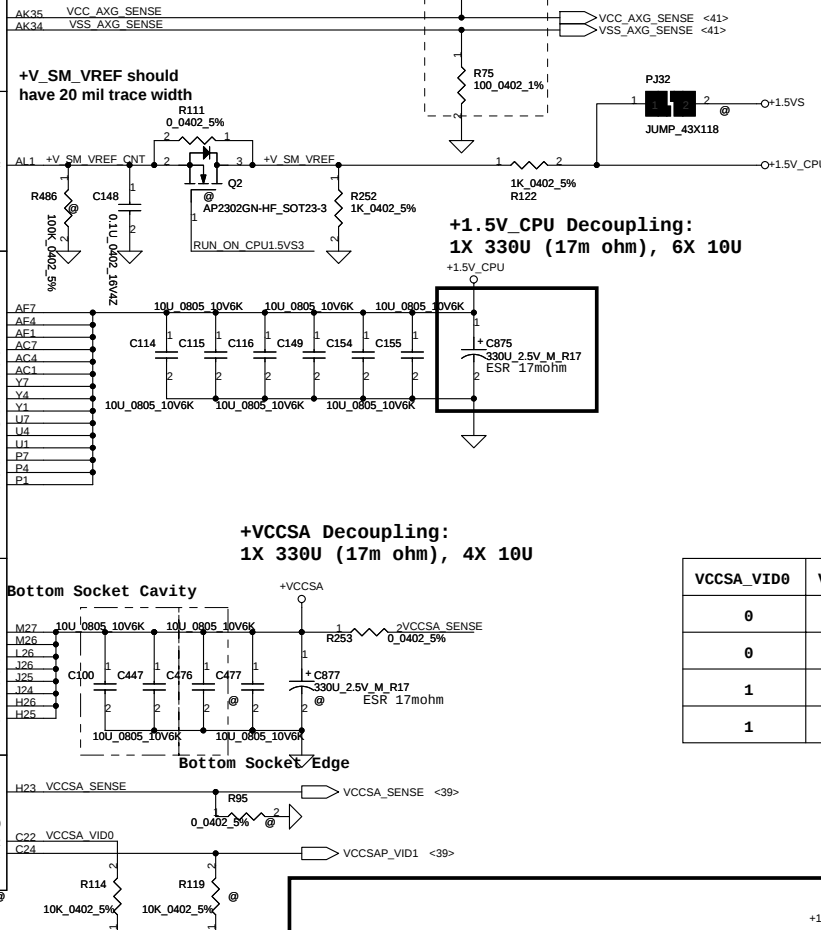
DDR3 -1.5V RAILS

SA RAIL

MISC

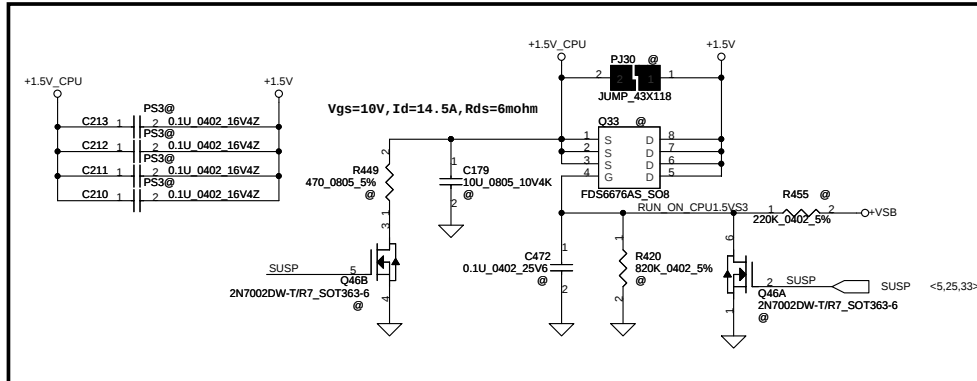
GRAPHICS

1.8V RAIL

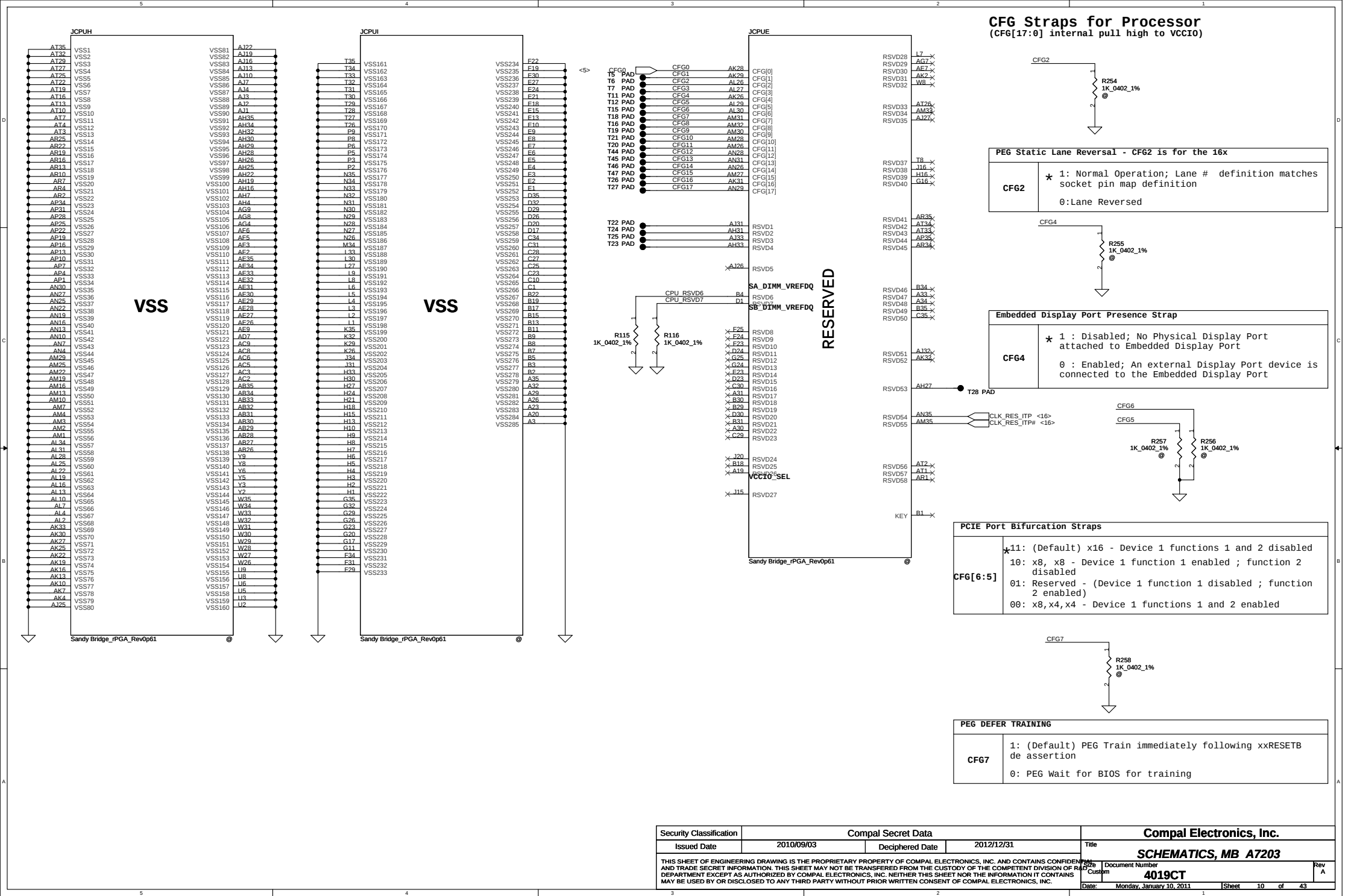


VCCSA_VID0	VCCSA_VID1	+VCCSA
0	0	0.90 V
0	1	0.80 V
1	0	0.75 V
1	1	0.65 V

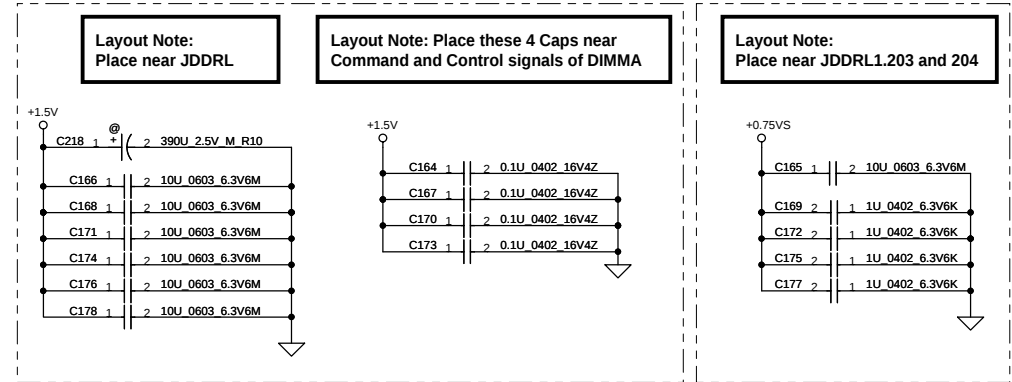
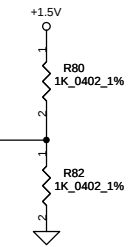
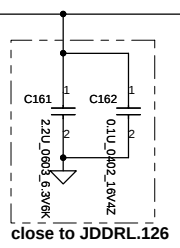
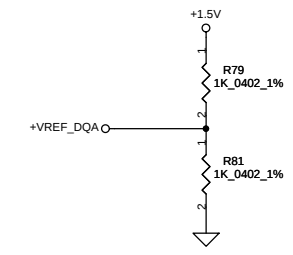
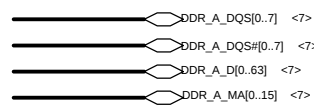
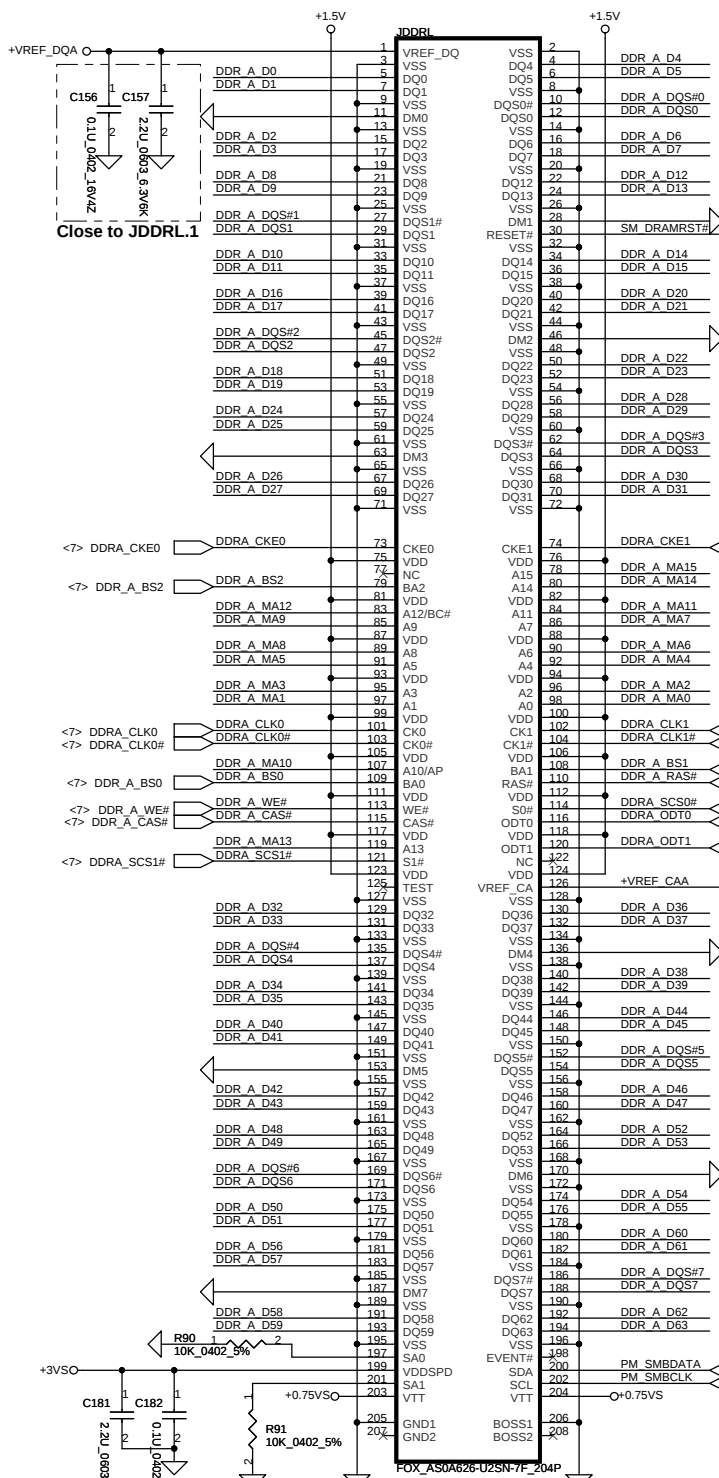
For Sandy Bridge



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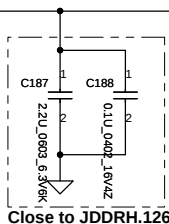
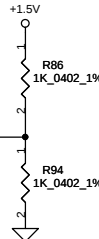
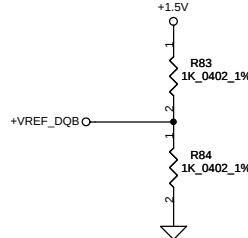
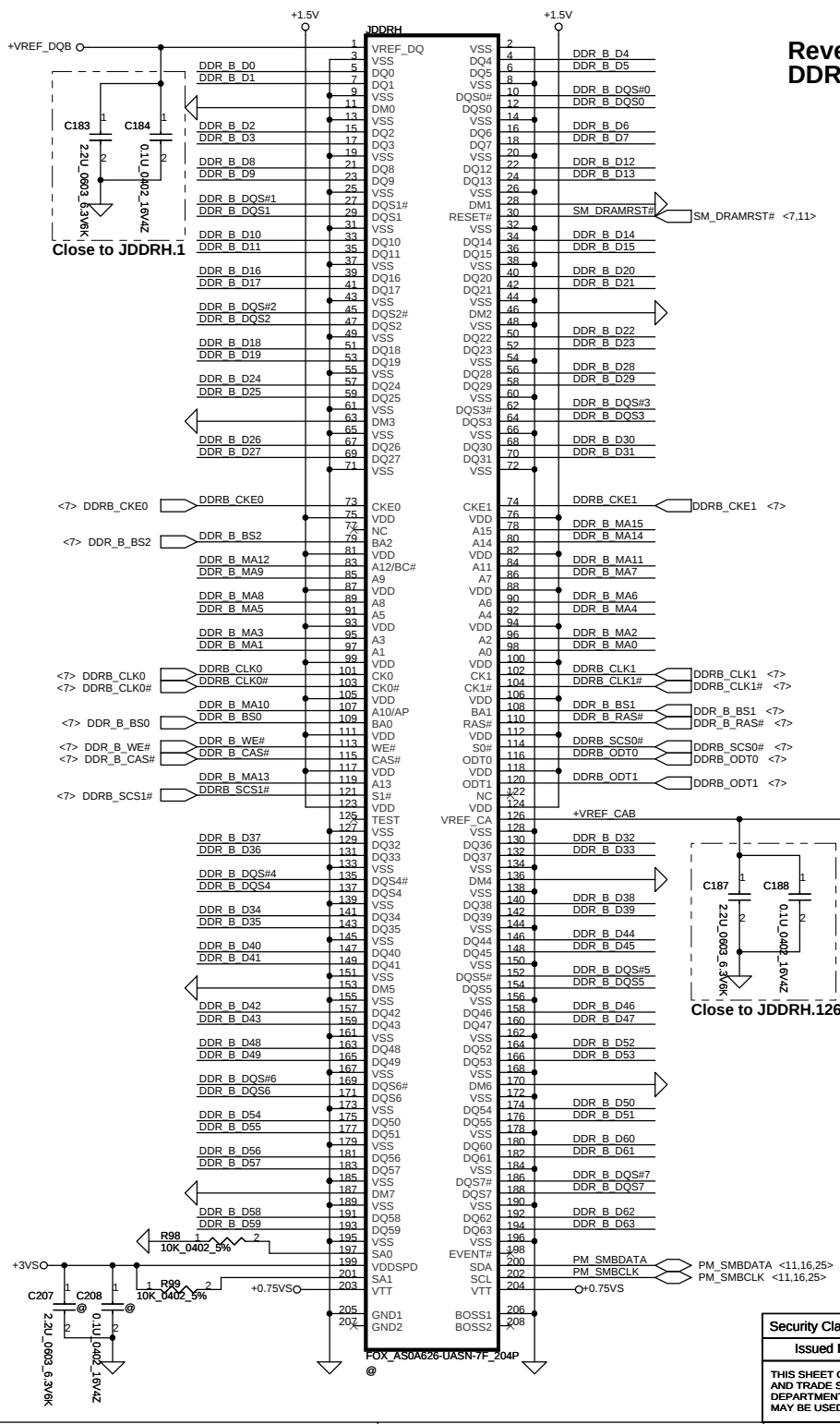


DDR3 SO-DIMM A Reverse Type



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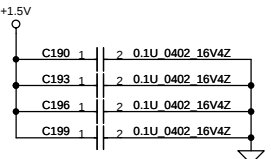
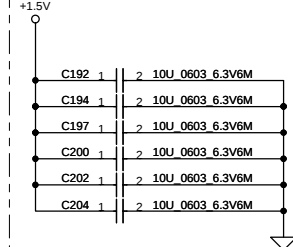
Reverse Type DDR3 SO-DIMM B

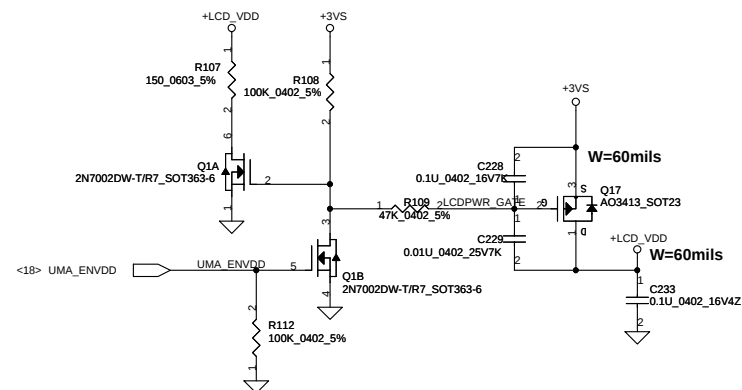
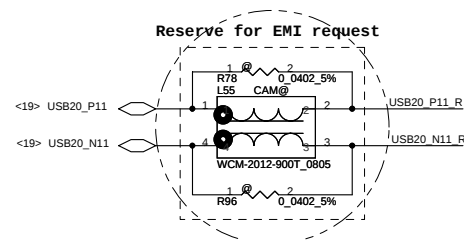
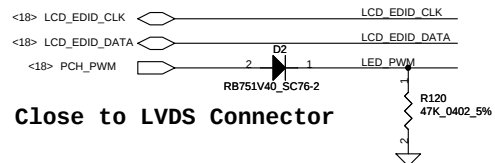


Layout Note:
Place near JDDR.H

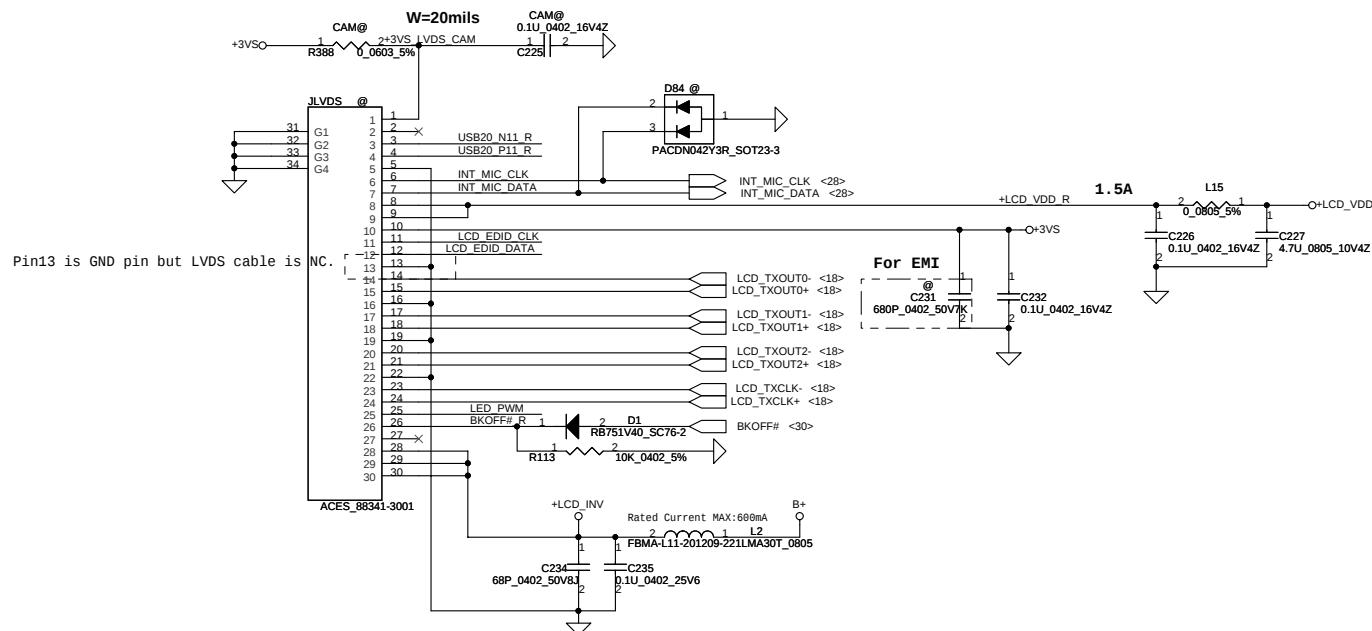
Layout Note: Place these 4 Caps near
Command and Control signals of DIMMB

Layout Note:
Place near JDDR.H.203 and 204

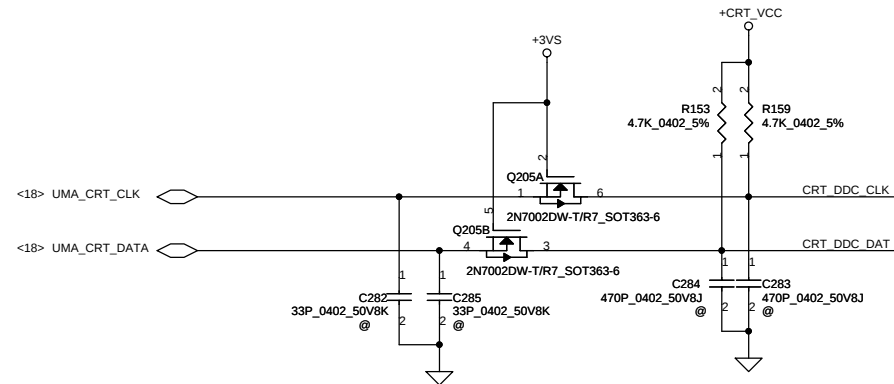
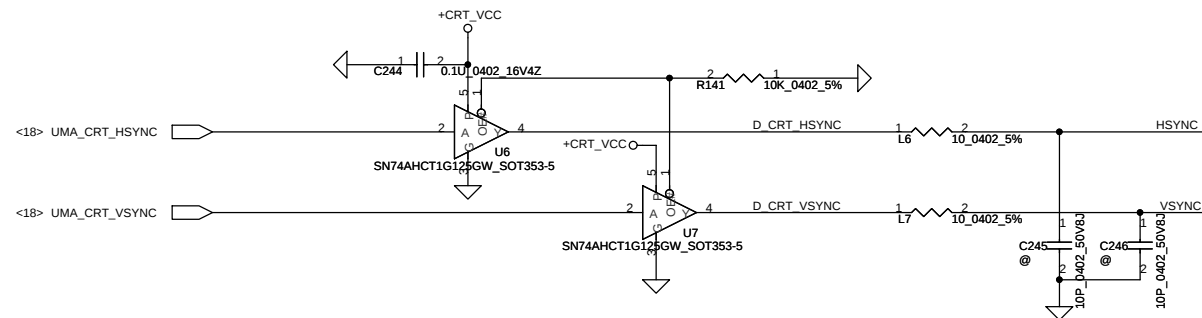
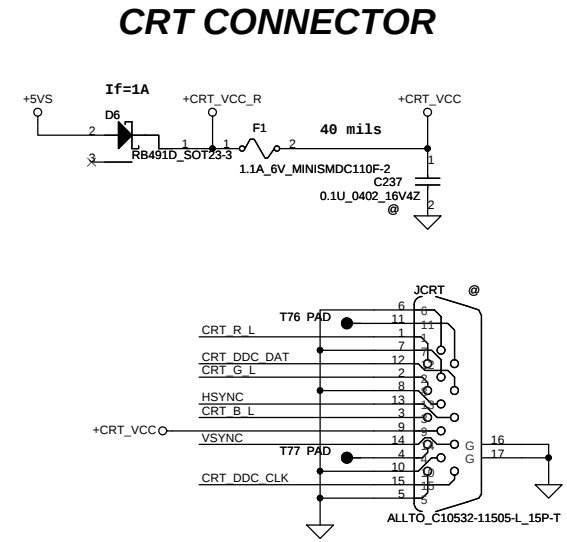
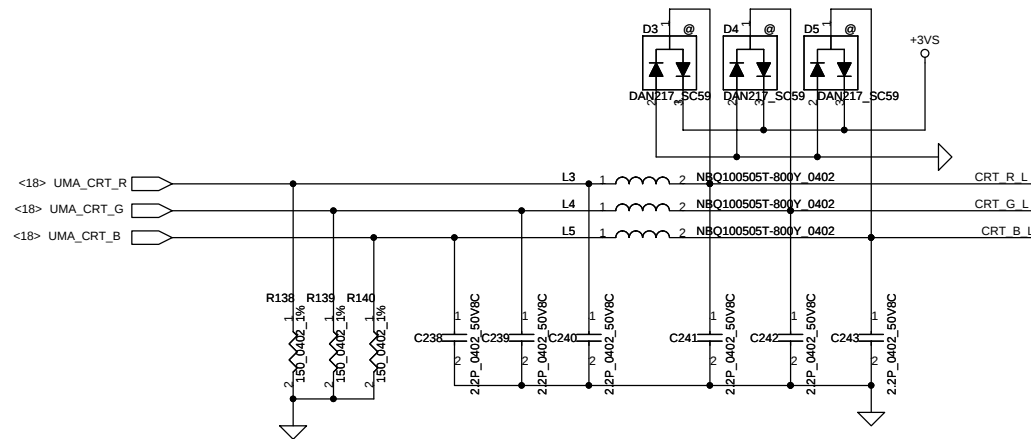




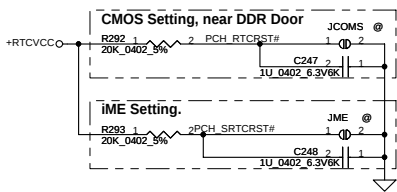
LCD/PANEL BD. Conn.



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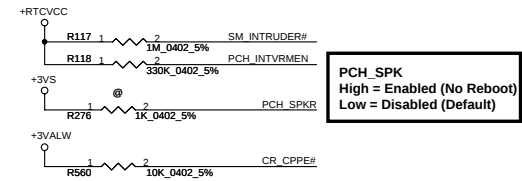


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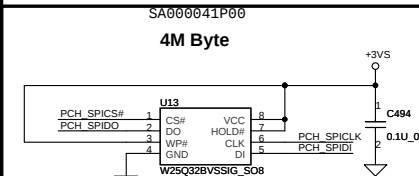
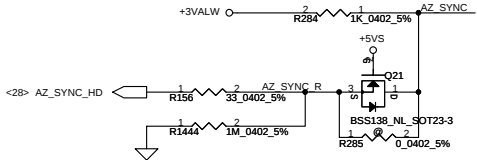
Integrated SUS 1.05V VRM Enable

PCH_INTVRMEN High - Enable Internal VRs (must be always pulled high)

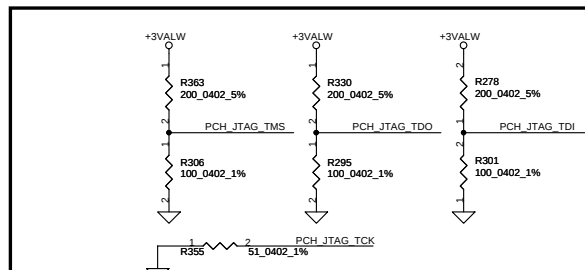
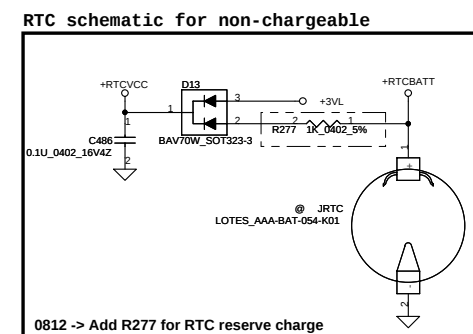
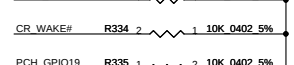
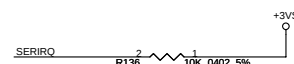
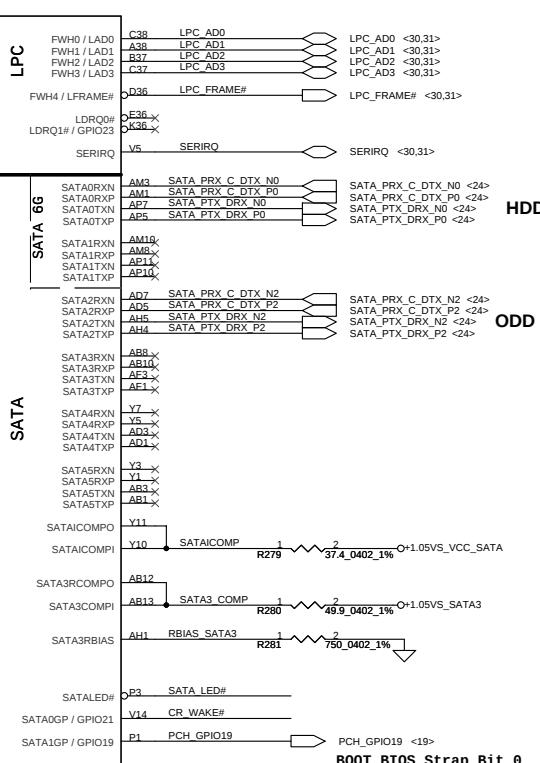
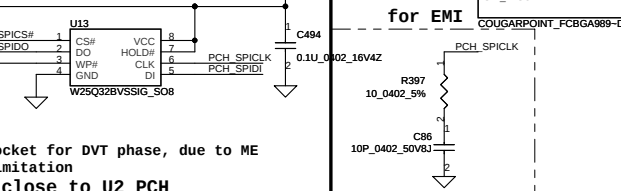
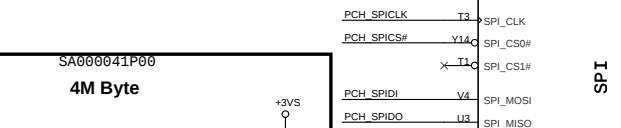
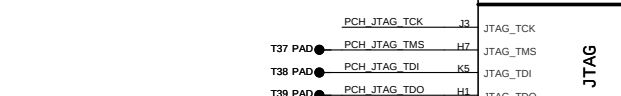
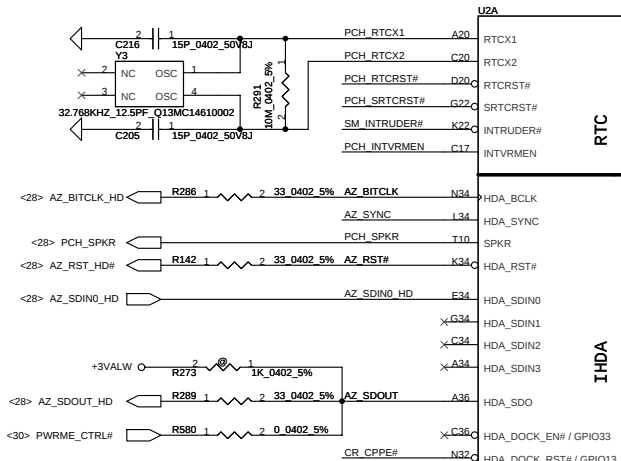


HDA_SDO
ME debug mode,
this signal has a weak internal pull down
*Low = Disable (default)
High = Enable (flash descriptor security override)

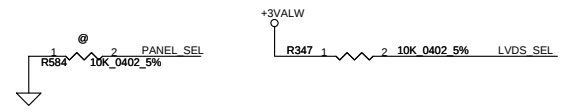
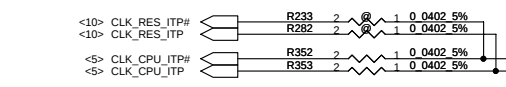
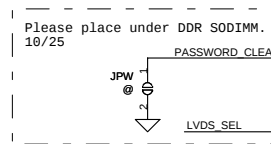
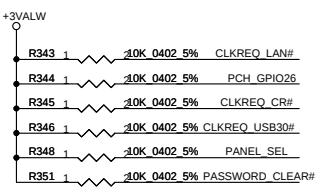
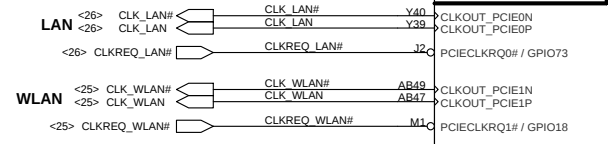
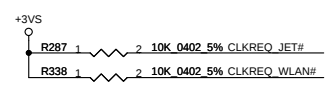
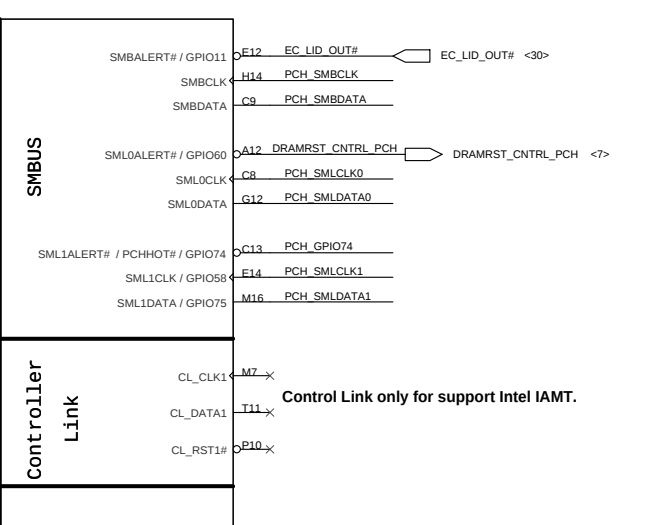
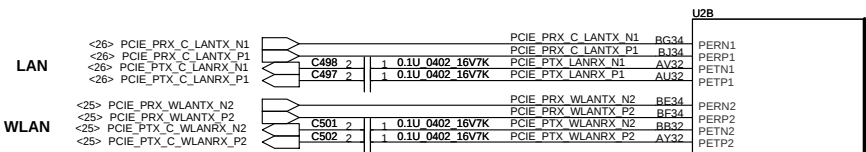
HDA_SYNC
*This signal has a weak internal pull down
H=>On Die PLL is supplied by 1.5V
L=>On Die PLL is supplied by 1.8V
Need to pull high for Huron River platform



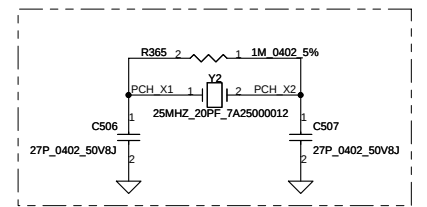
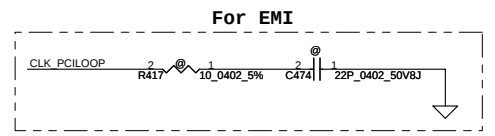
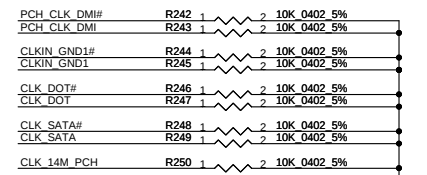
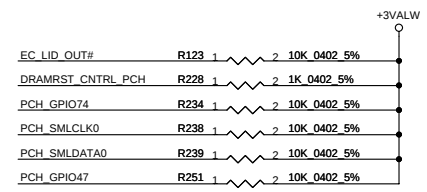
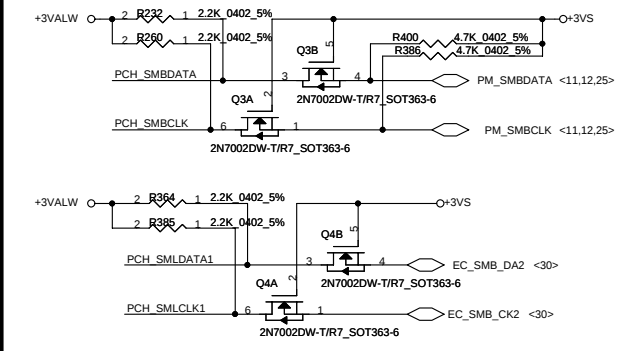
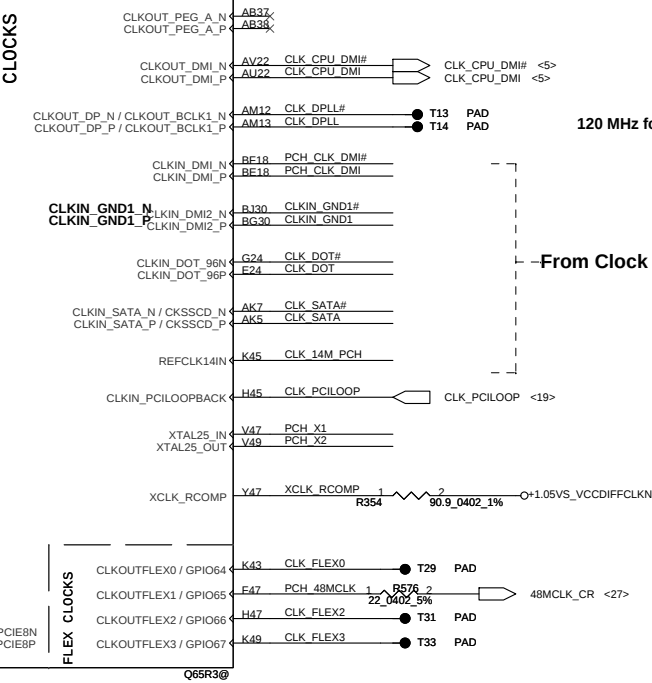
remove socket for DVT phase, due to ME height limitation
Please close to U2 PCH



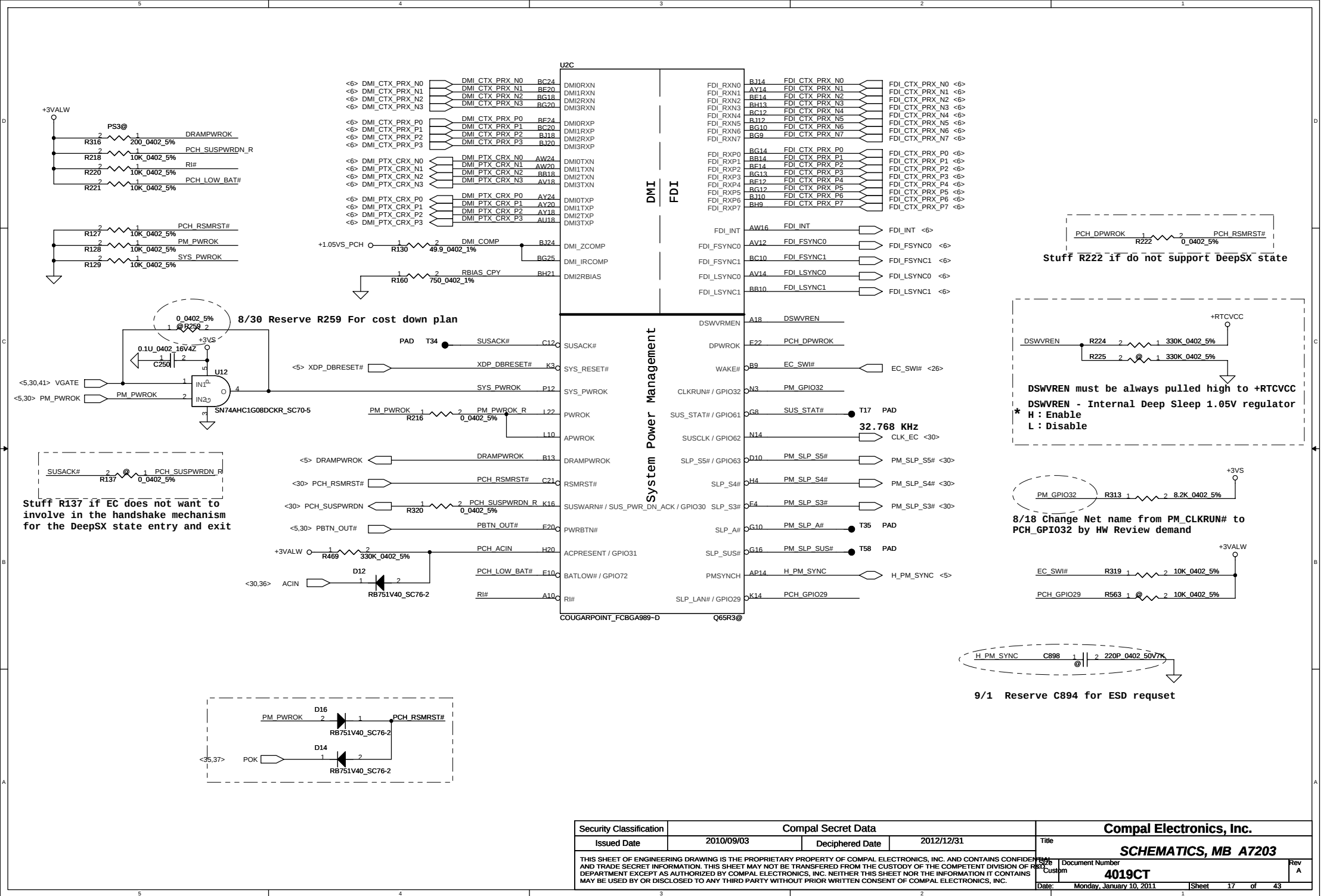
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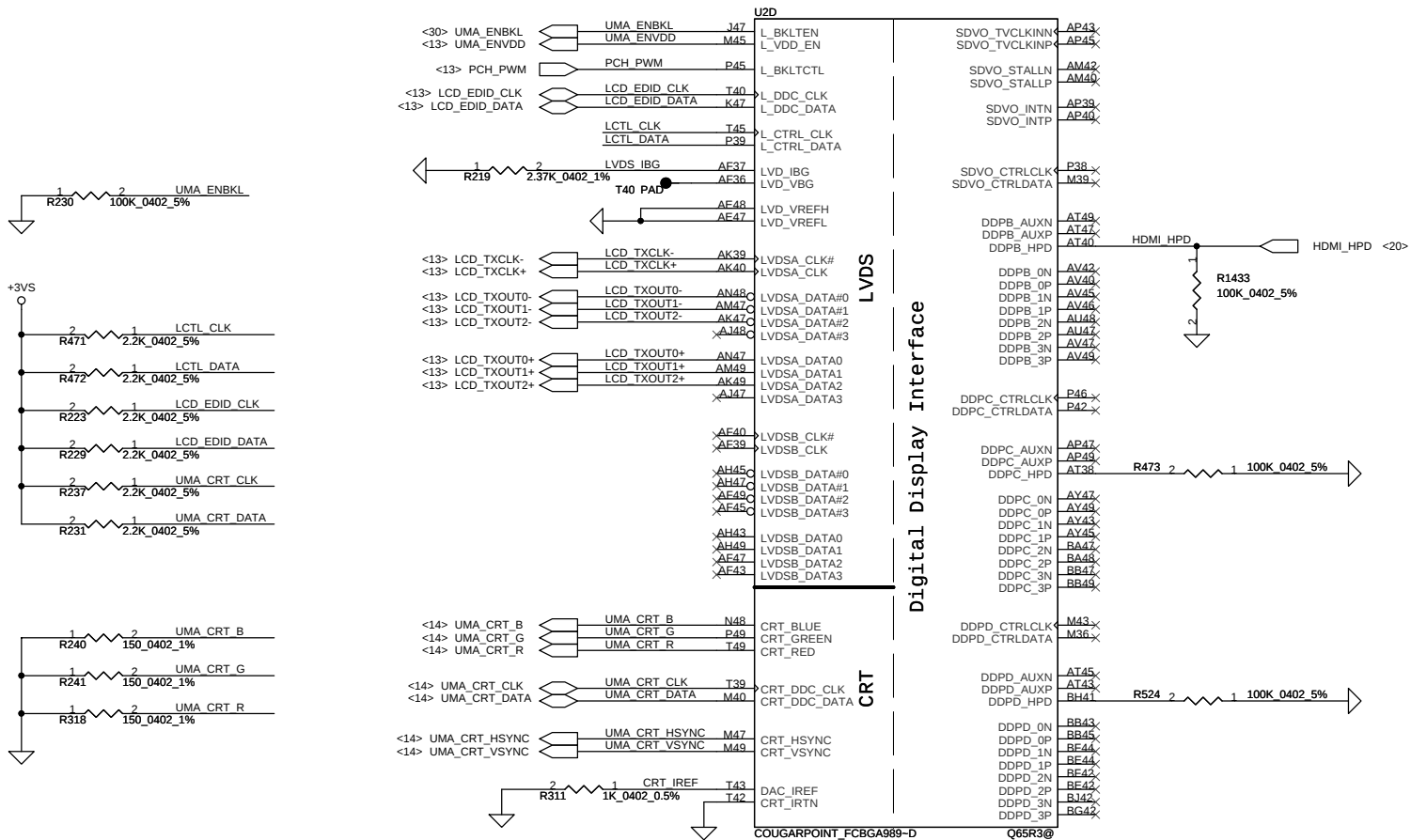


PANEL_SEL		
PANEL_SEL	H	L
Channel1	LVDS	EDP

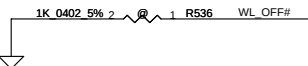
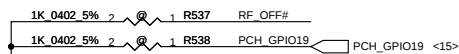
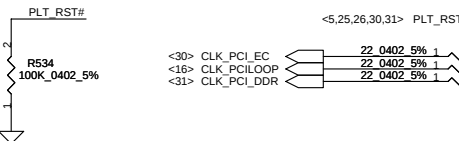
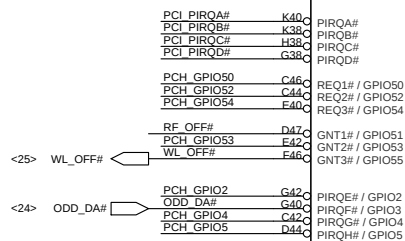
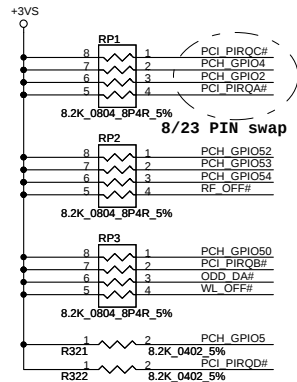


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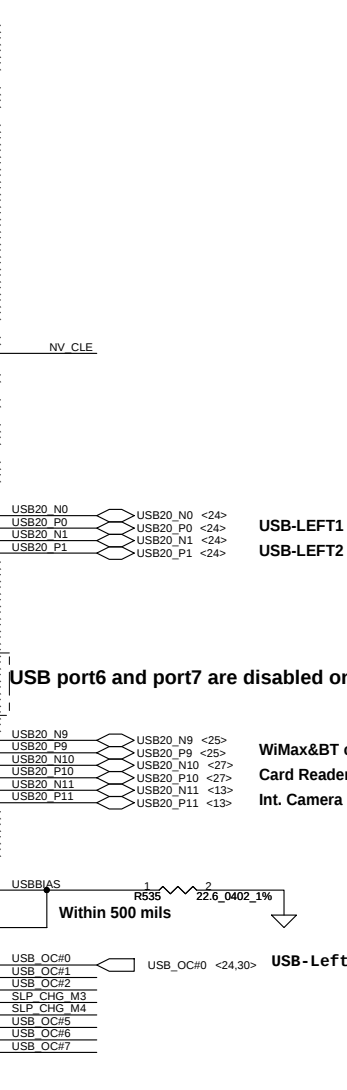
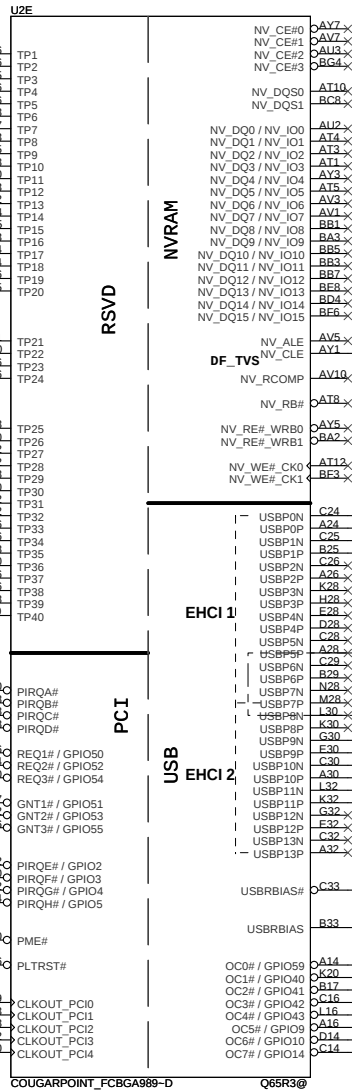


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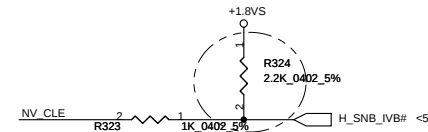


Boot BIOS Strap		
RF_OFF#	PCH_GPIO19	Boot BIOS Location
0	0	LPC
0	1	Reserved
1	0	PCI
1	1	SPI *

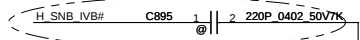
A16 Swap Override Strap	
WL_OFF#	
*	Low= A16 swap override Enable High= A16 swap override Disable



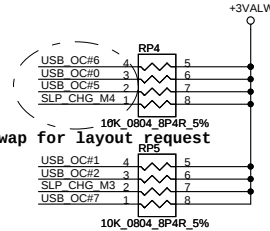
DMI & FDI Termination Voltage	
NV_CLE	Set to VCC when HIGH Set to VSS when LOW



8/18 Change R324 From 1K to 2.2K by Intel check list demand

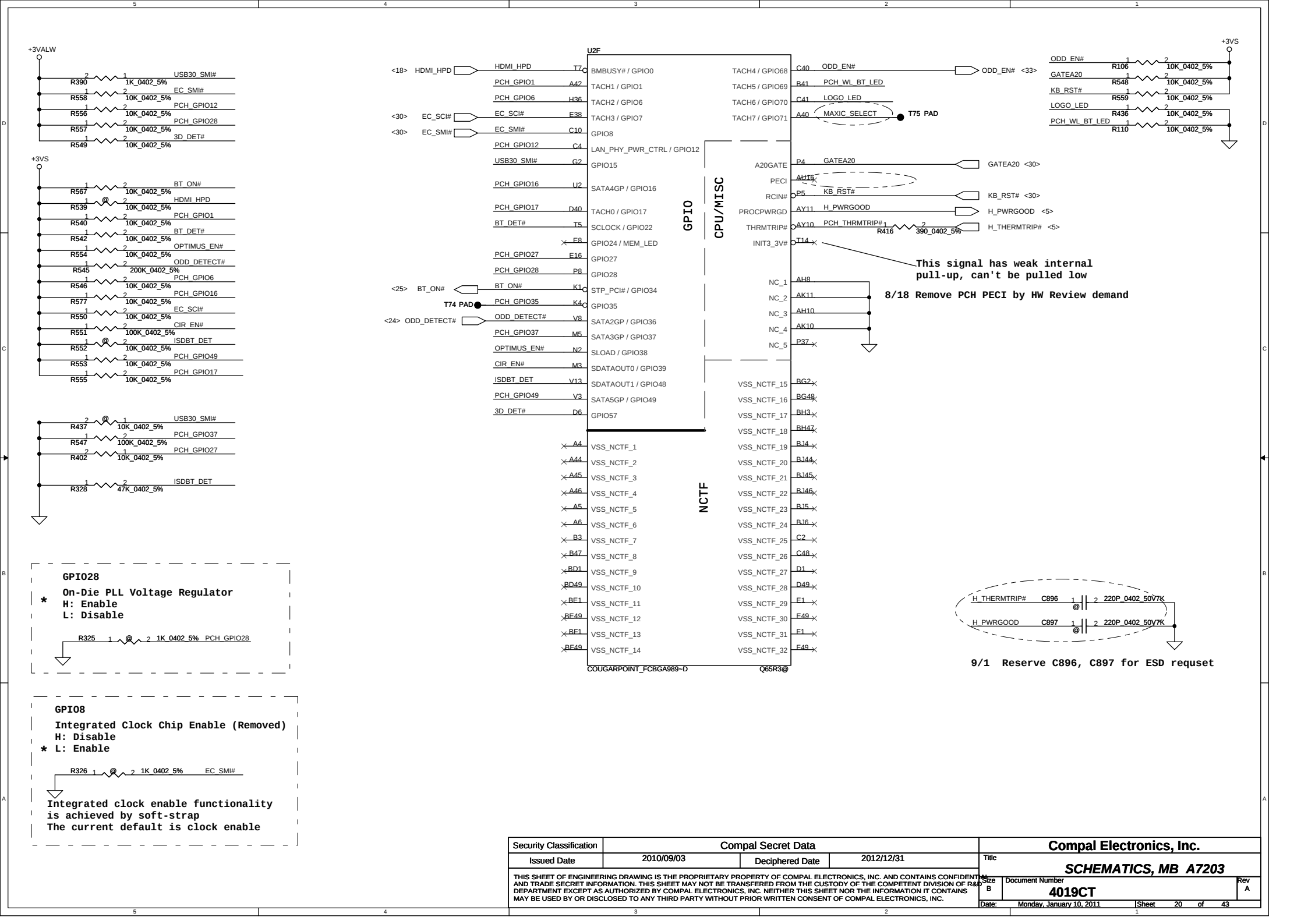


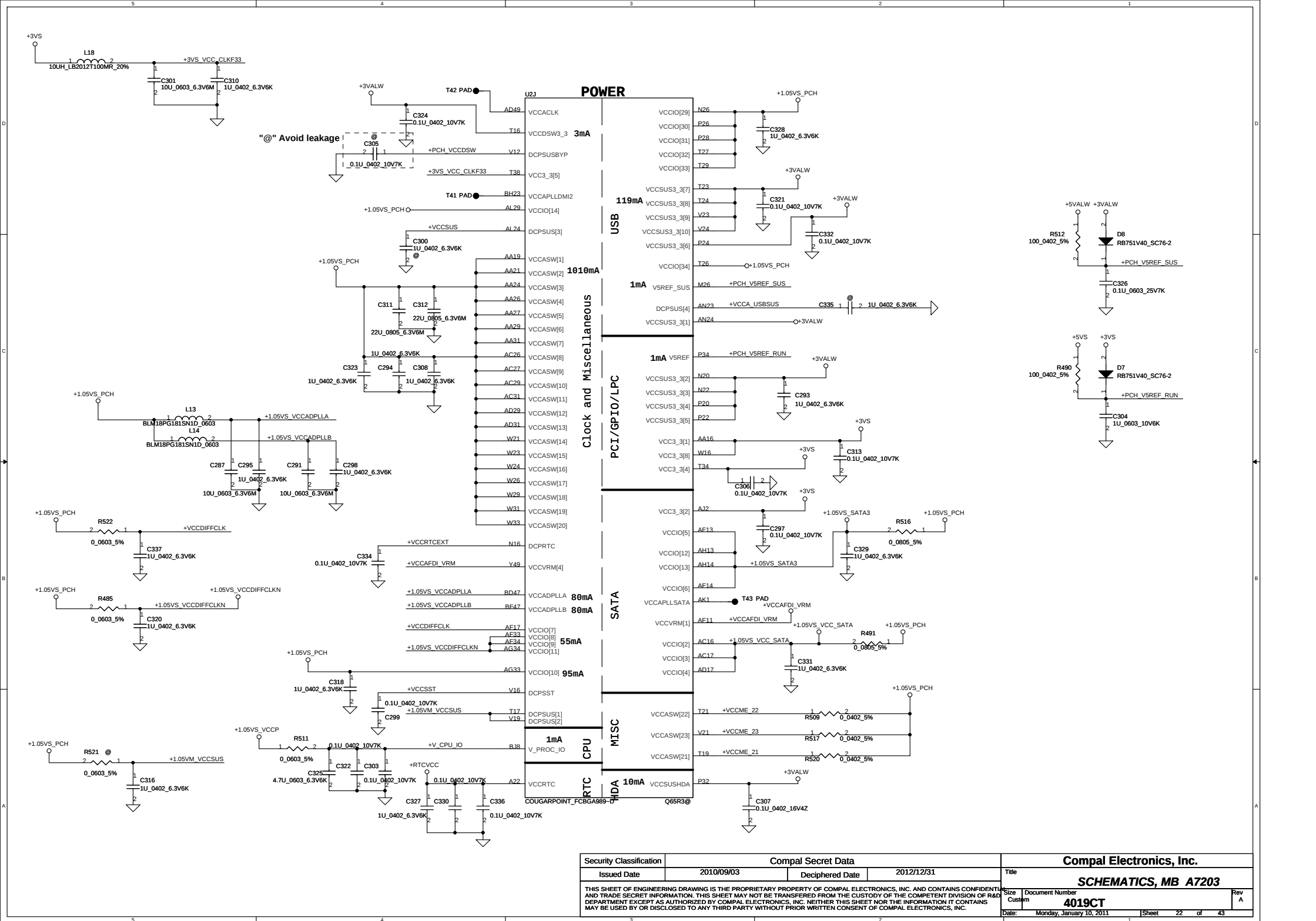
9/1 Reserve C895 for ESD request

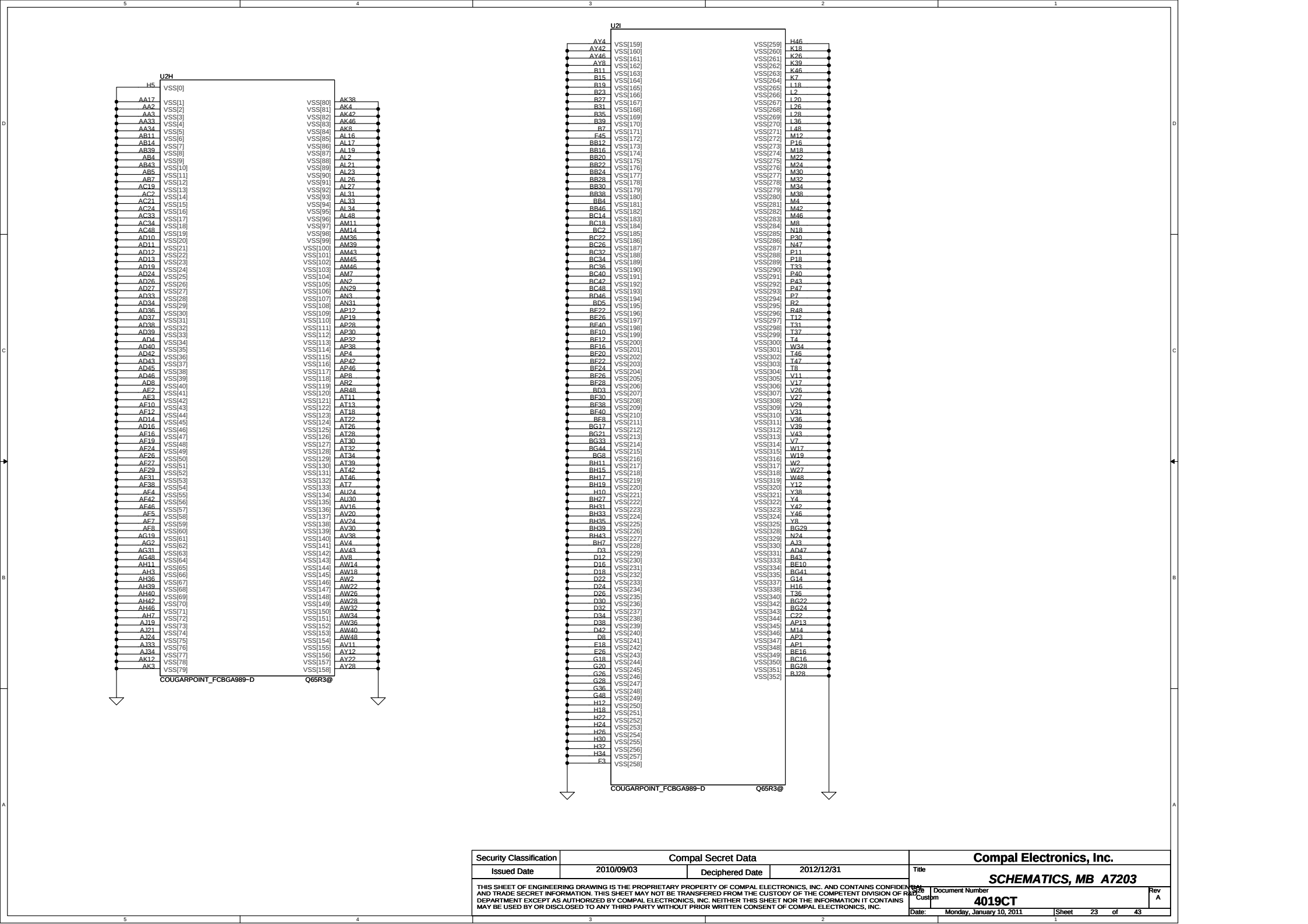


8/23 PIN swap for layout request

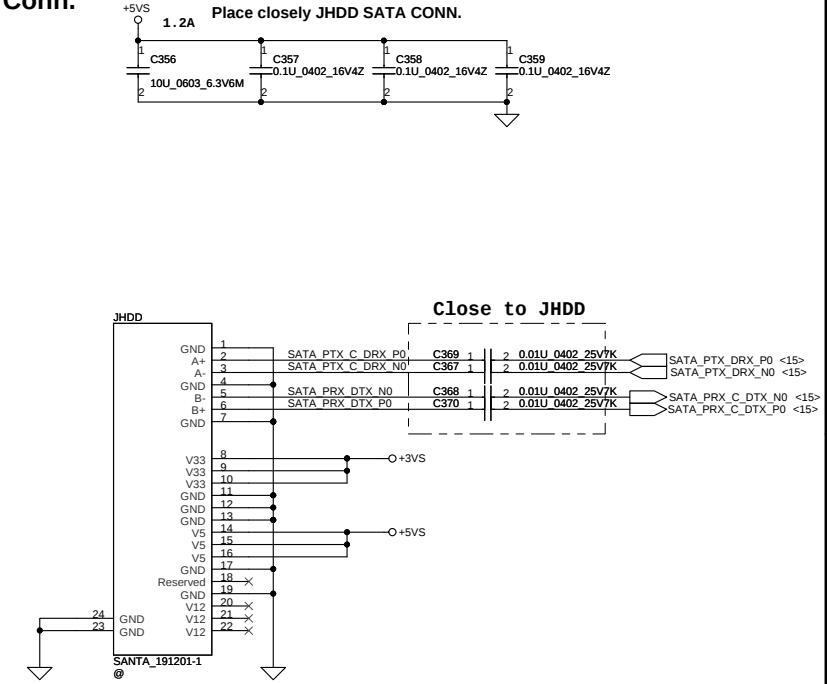
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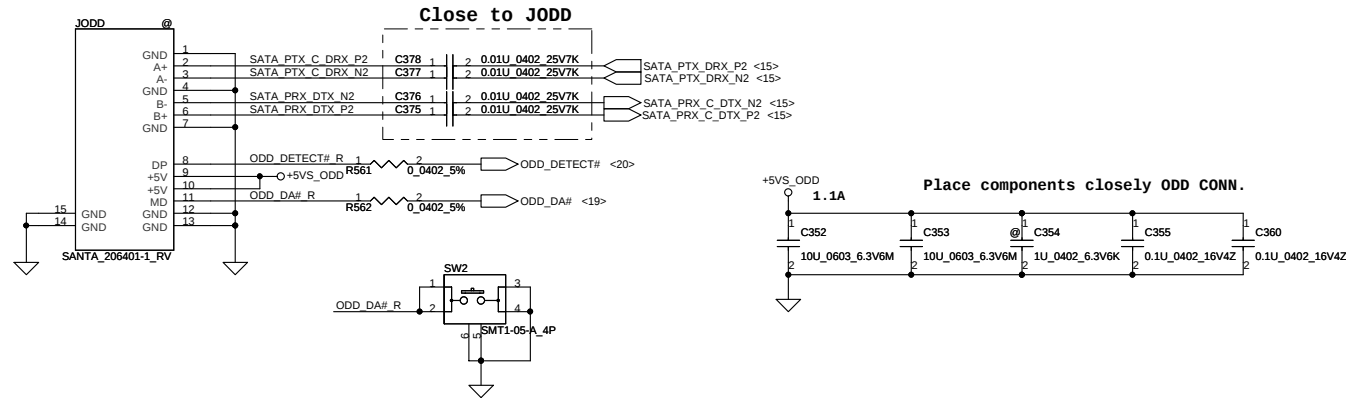




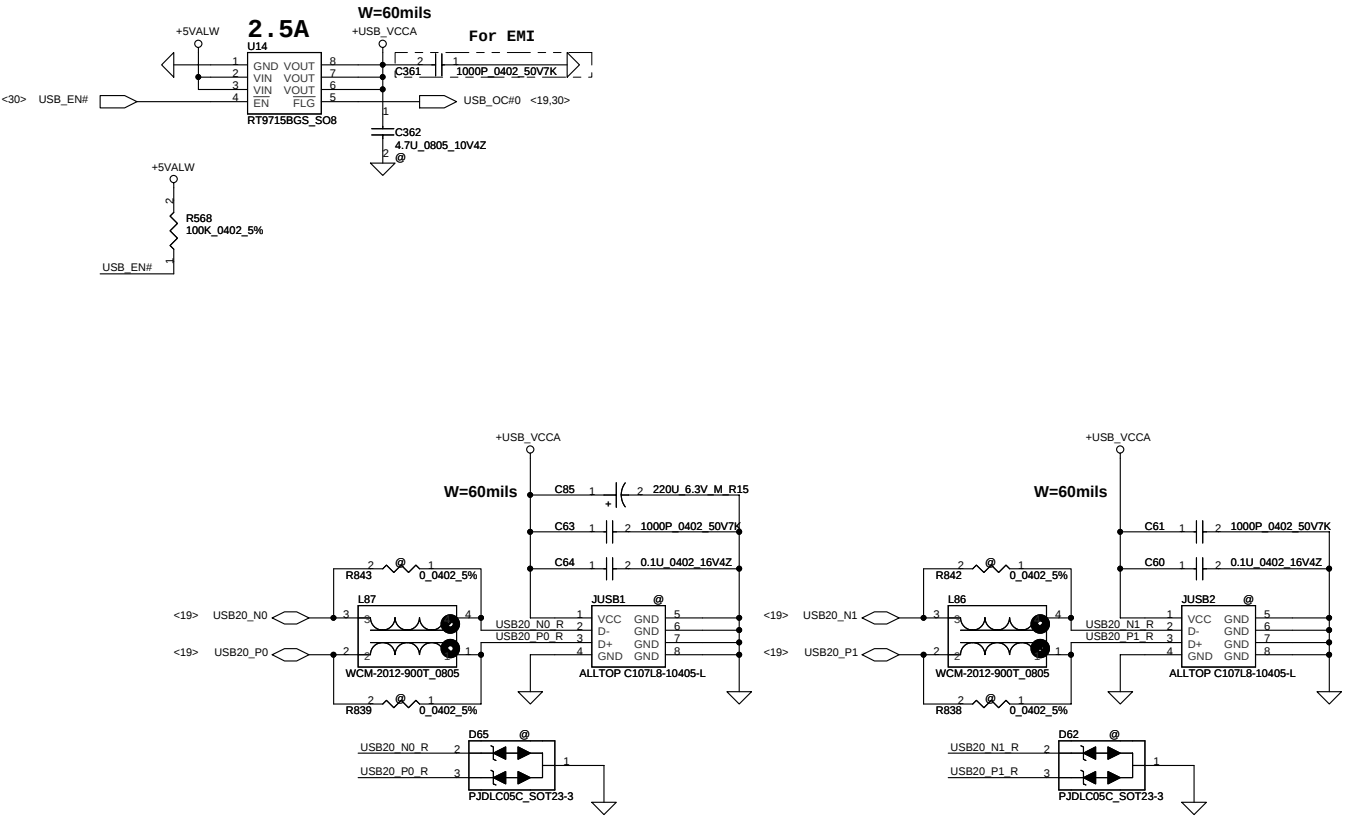
SATA HDD Conn.



SATA ODD Conn

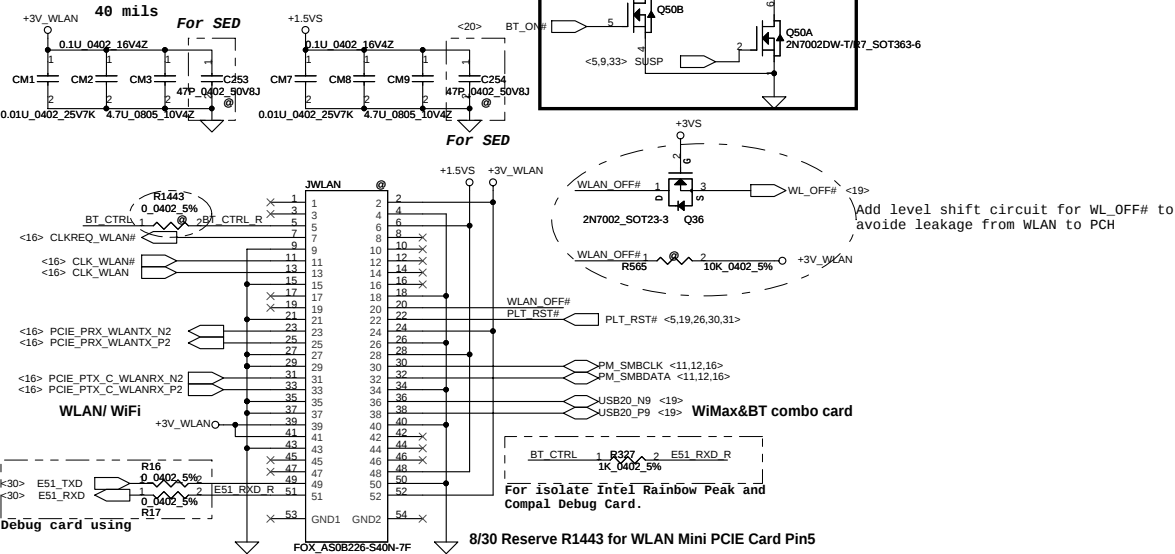
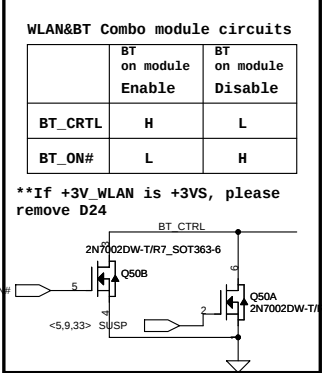
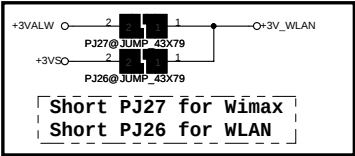


USB Conn. Left Side

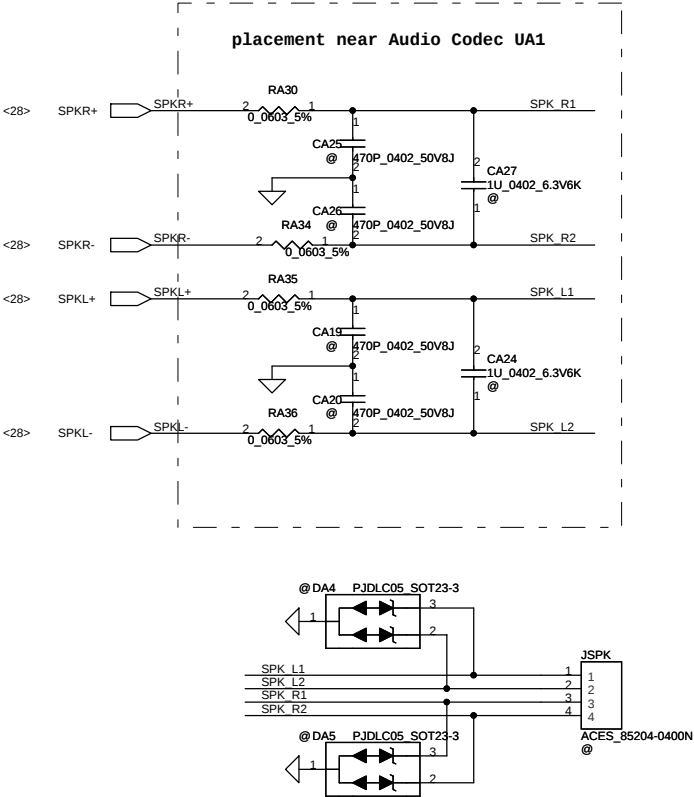


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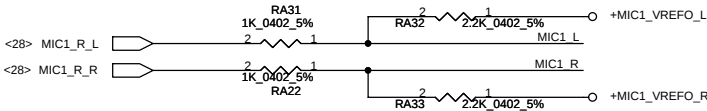
Slot 1 Half PCIe Mini Card-WLAN/ WiMax



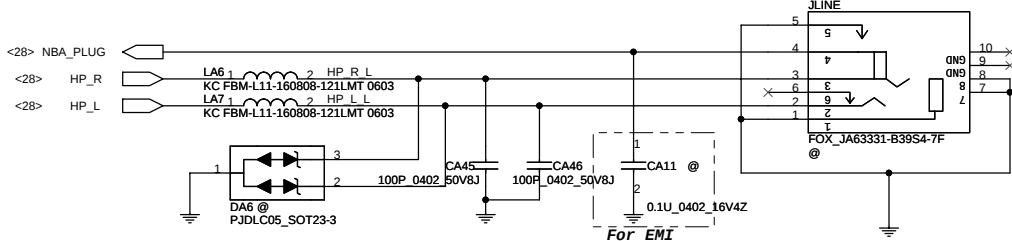
Speaker Connector



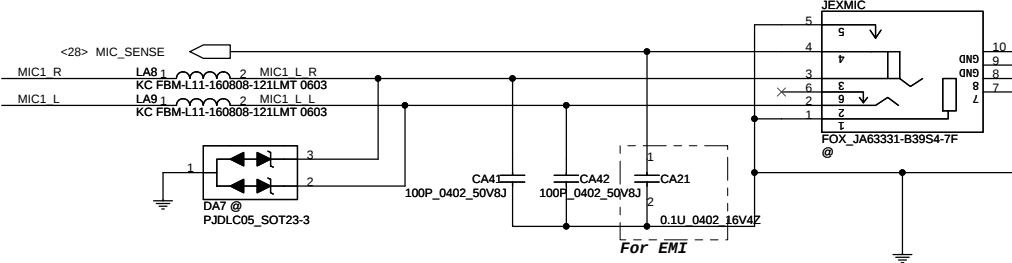
Ext. Mic



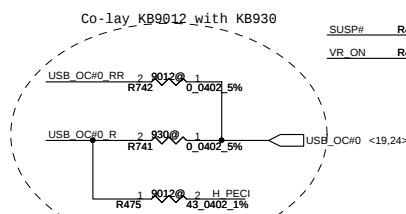
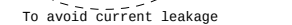
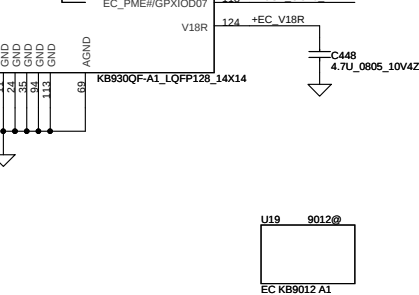
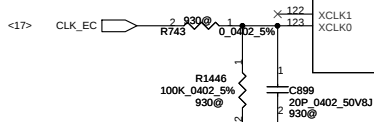
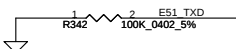
HeadPhone/LINE Out JACK



Ext.MIC/LINE IN JACK

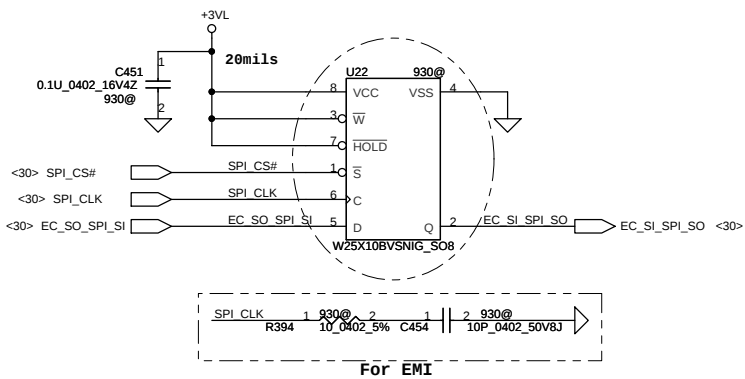


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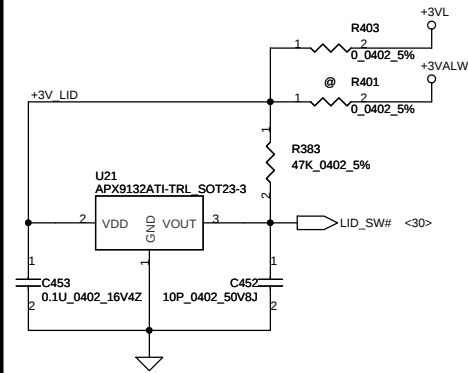


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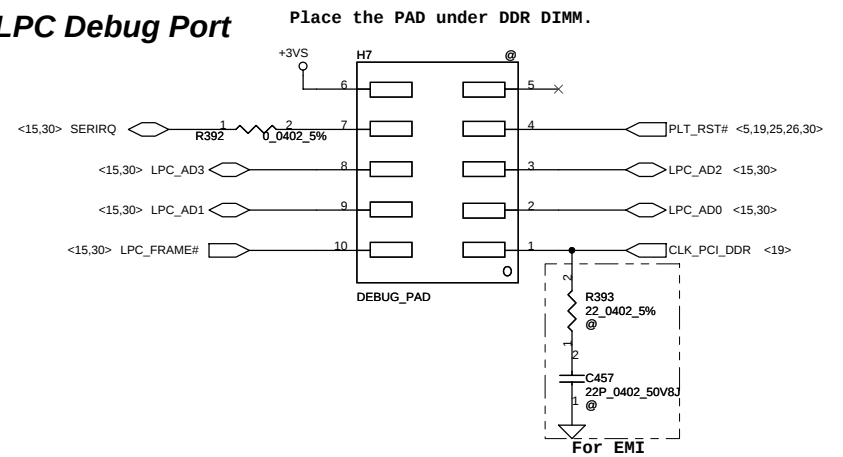
SPI Flash (256KB)



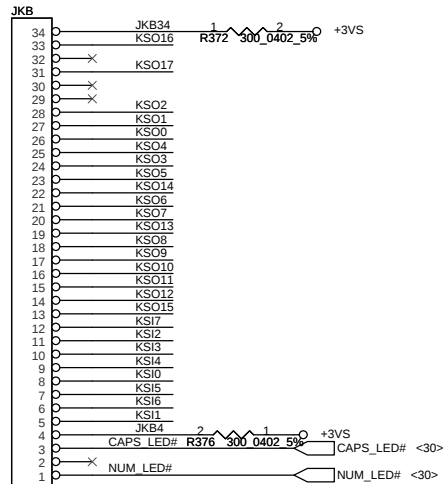
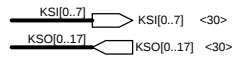
Lid SW



LPC Debug Port



KEYBOARD CONN.



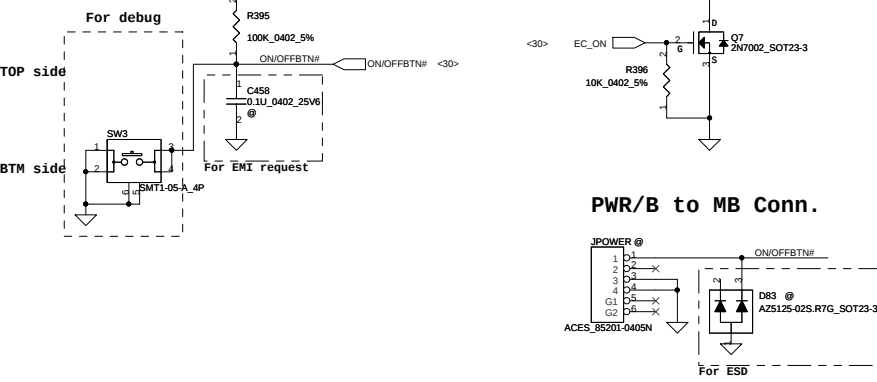
For EMI

Close to JKB

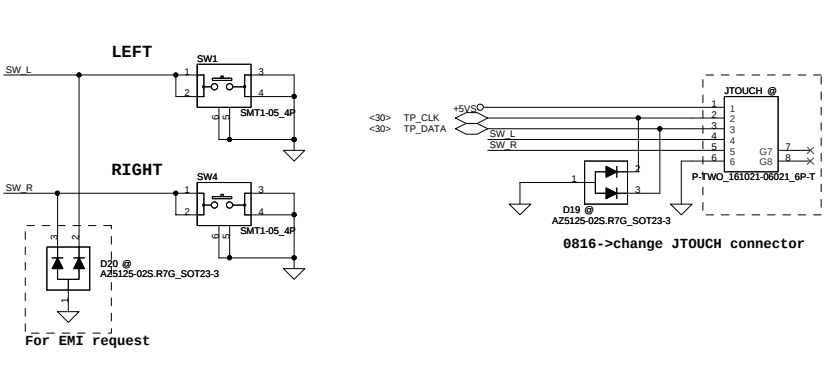
KSO16	1	2
C401	100P_0402_50V8J	
KSO17	1	2
C402	100P_0402_50V8J	
KSO2	1	2
C404	100P_0402_50V8J	
KSO1	1	2
C405	100P_0402_50V8J	
KSO0	1	2
C406	100P_0402_50V8J	
KSO4	1	2
C407	100P_0402_50V8J	
KSO3	1	2
C408	100P_0402_50V8J	
KSO5	1	2
C409	100P_0402_50V8J	
KSO14	1	2
C410	100P_0402_50V8J	
KSO6	1	2
C411	100P_0402_50V8J	
KSO7	1	2
C412	100P_0402_50V8J	
KSO13	1	2
C413	100P_0402_50V8J	
KSO8	1	2
C415	100P_0402_50V8J	
KSO9	1	2
C416	100P_0402_50V8J	
KSO10	1	2
C417	100P_0402_50V8J	
KSO11	1	2
C418	100P_0402_50V8J	
KSO12	1	2
C419	100P_0402_50V8J	
KSO15	1	2
C420	100P_0402_50V8J	
KSI7	1	2
C421	100P_0402_50V8J	
KSI2	1	2
C422	100P_0402_50V8J	
KSI3	1	2
C423	100P_0402_50V8J	
KSI4	1	2
C424	100P_0402_50V8J	
KSI0	1	2
C425	100P_0402_50V8J	
KSI5	1	2
C427	100P_0402_50V8J	
KSI6	1	2
C429	100P_0402_50V8J	
KSI1	1	2
C431	100P_0402_50V8J	
CAPS_LED#	C433	100P_0402_50V8J
NUM_LED#	C435	100P_0402_50V8J

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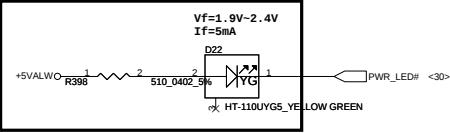
Power Button



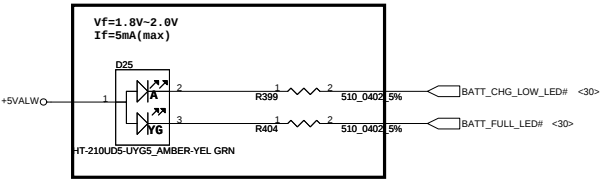
TP Button/Conn.



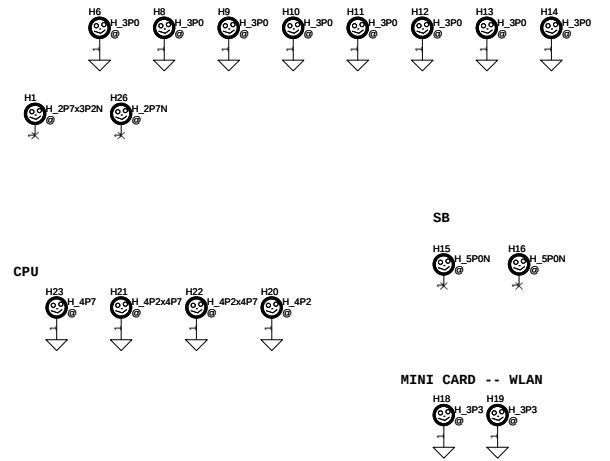
POWER/SUSPEND LED



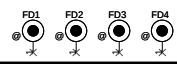
BATT CHARGE/FULL LED



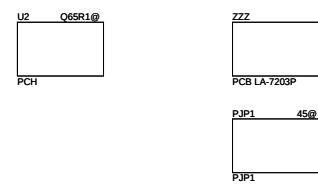
Screw Hole



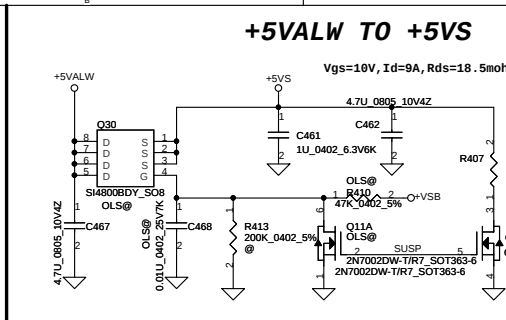
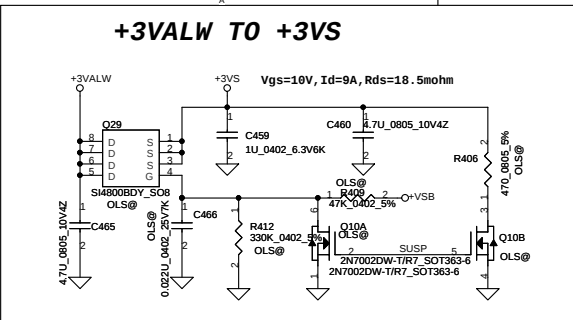
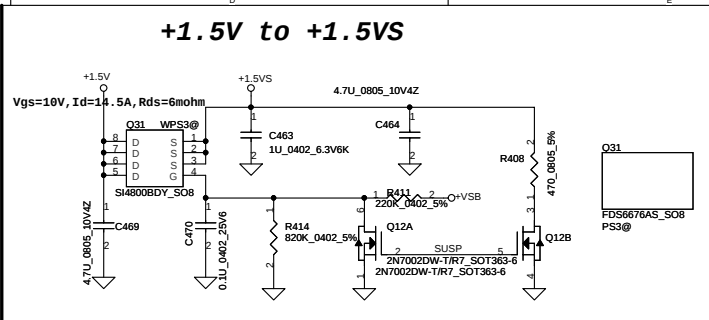
PCB Fedcal Mark PAD



ISPD



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[illegible][illegible]

+5V5V_ODD

R457 470_0805_5%

Q53A 2N7002DW-T/R7_SOT363-6

Q53B 2N7002DW-T/R7_SOT363-6

R440 47K_0402_5%

Q45 AO3413_SOT23

P328 JUMP_43X79

C471 0.1uF_0402_16V7K

C217 0.01uF_0402_25V7K

C679 4.7uF_0805_10V4Z

C680 1uF_0402_6.3V6K

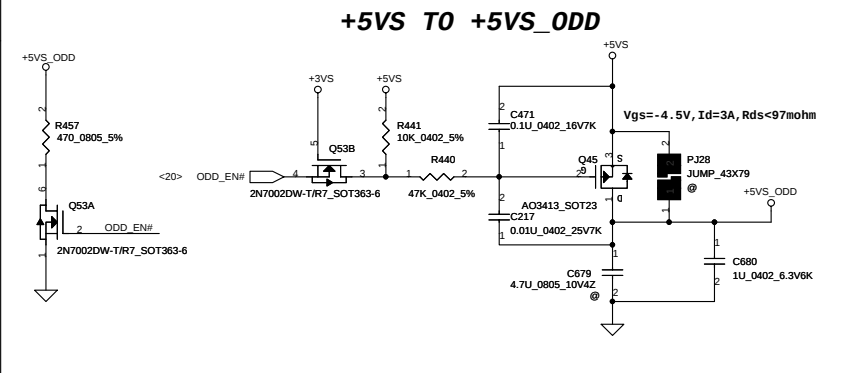
Vgs = -4.5V, Id = 3A, Rds < 97mohm

ODD_EN#

ODD_ENH

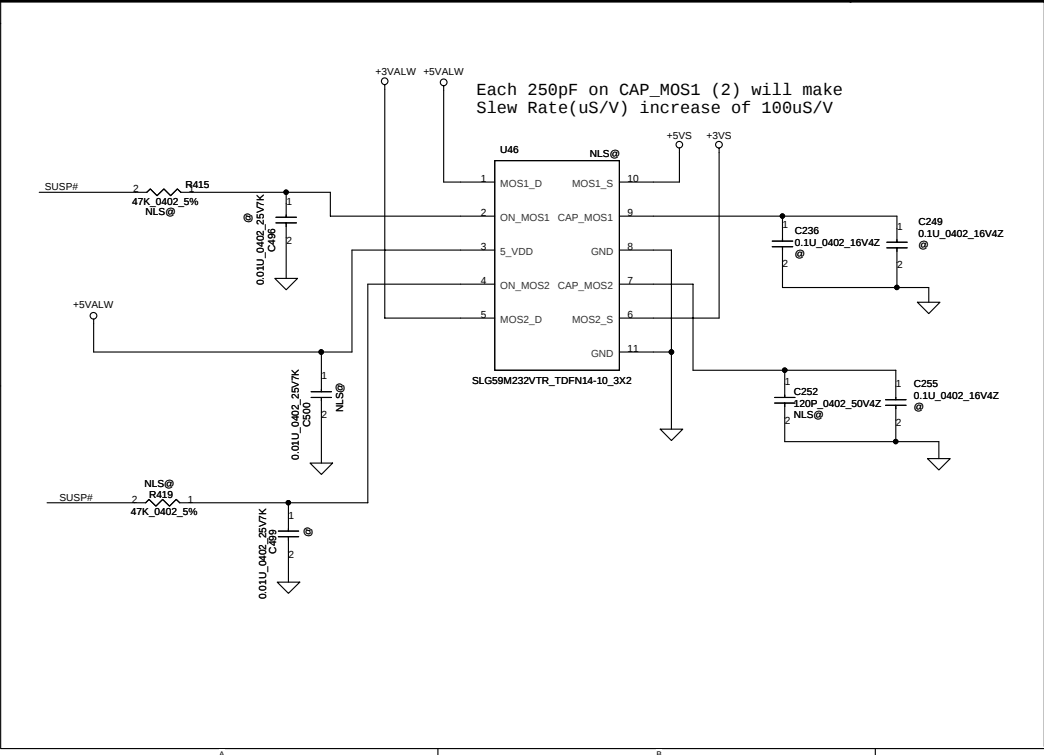
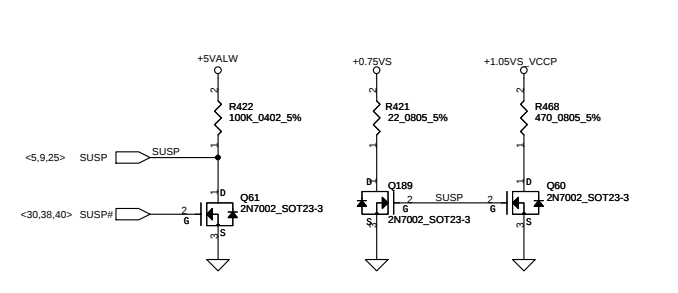
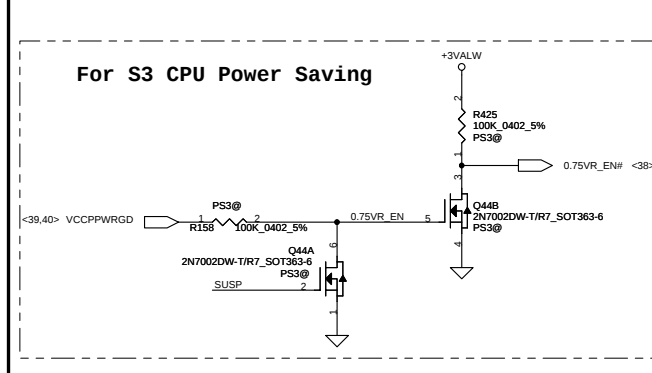
+5V5V_ODD

+5V5V_ODD

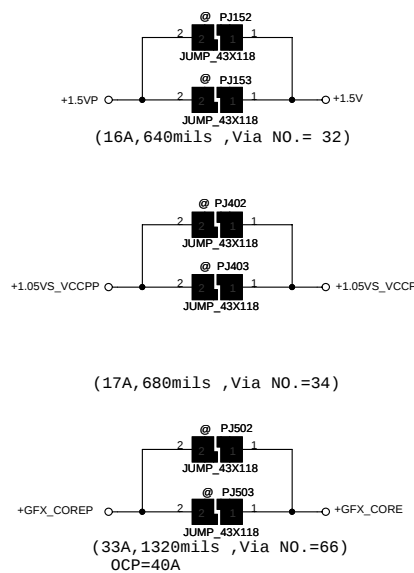
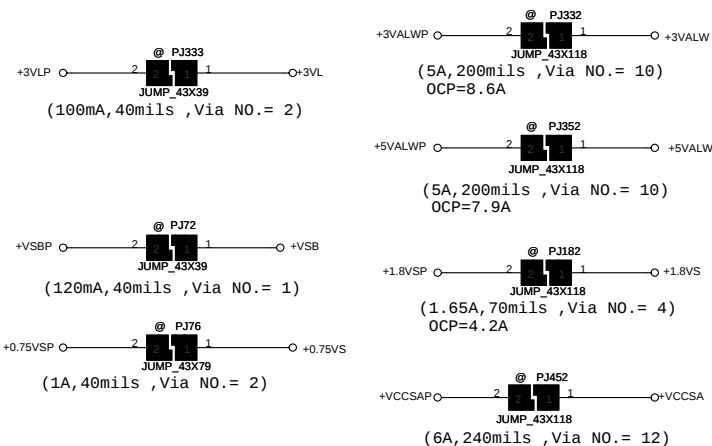
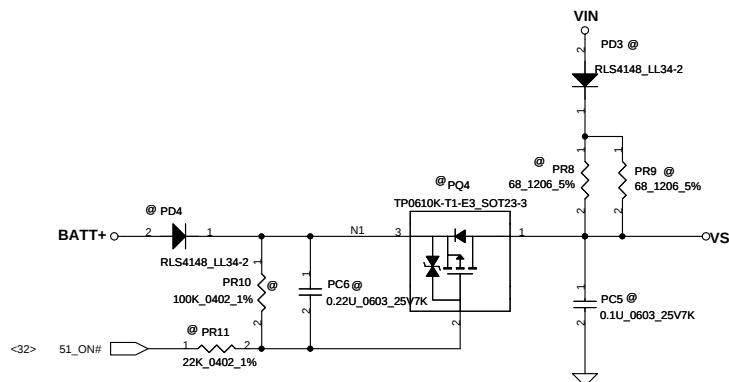


For S3 CPU Power Saving

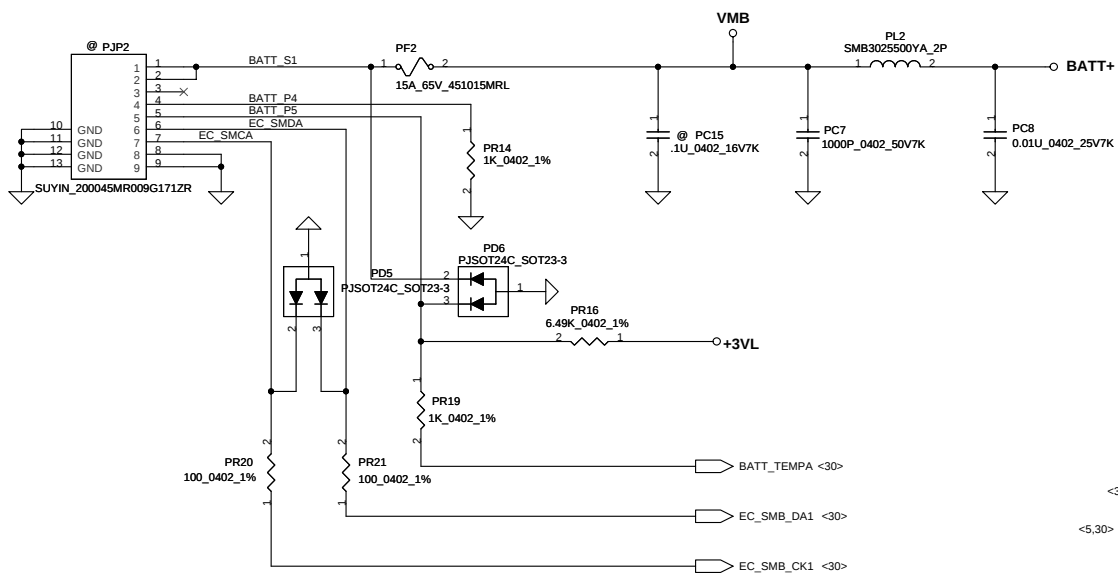
The diagram illustrates a circuit for S3 CPU power saving. It features a +3VALW input connected to a 100K_0402_5% resistor (R425), which is then connected to a PS3@ component. A 0.75VR_EN signal is connected to the gate of a 2N7002DW-T/R7 MOSFET (Q44B). The MOSFET's source is connected to ground, and its drain is connected to the PS3@ component. The PS3@ component is also connected to a 100K_0402_5% resistor (R158) and a 2N7002DW-T/R7 MOSFET (Q44A). The Q44A MOSFET's source is connected to ground, and its drain is connected to the PS3@ component. The PS3@ component is also connected to a 0.75VR_EN signal. The PS3@ component is also connected to a 0.75VR_EN signal. The PS3@ component is also connected to a 0.75VR_EN signal.



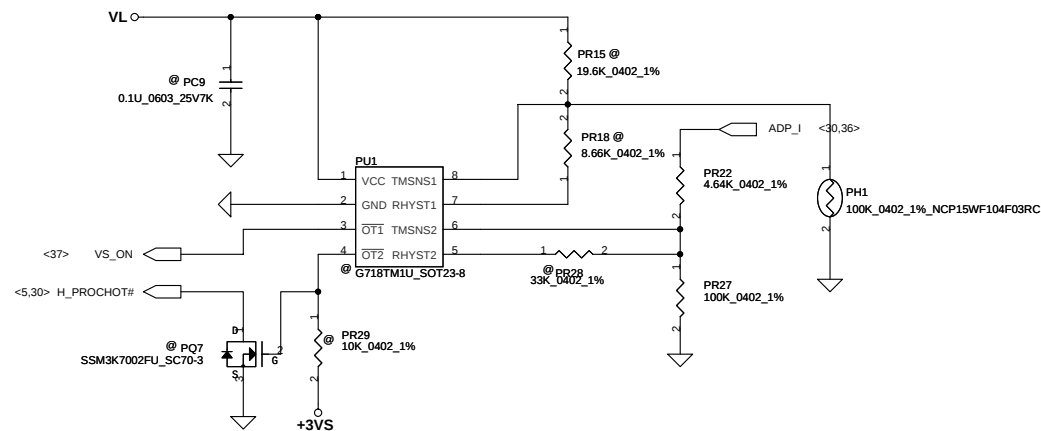
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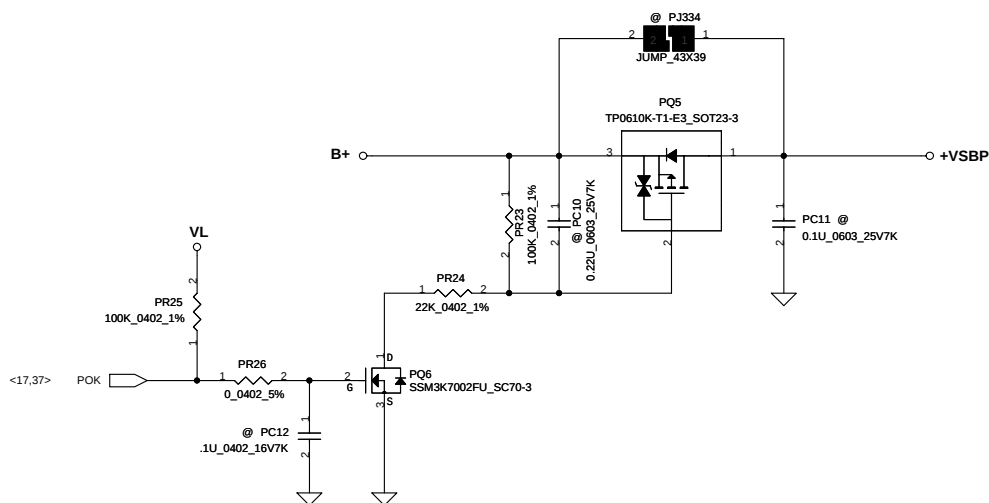
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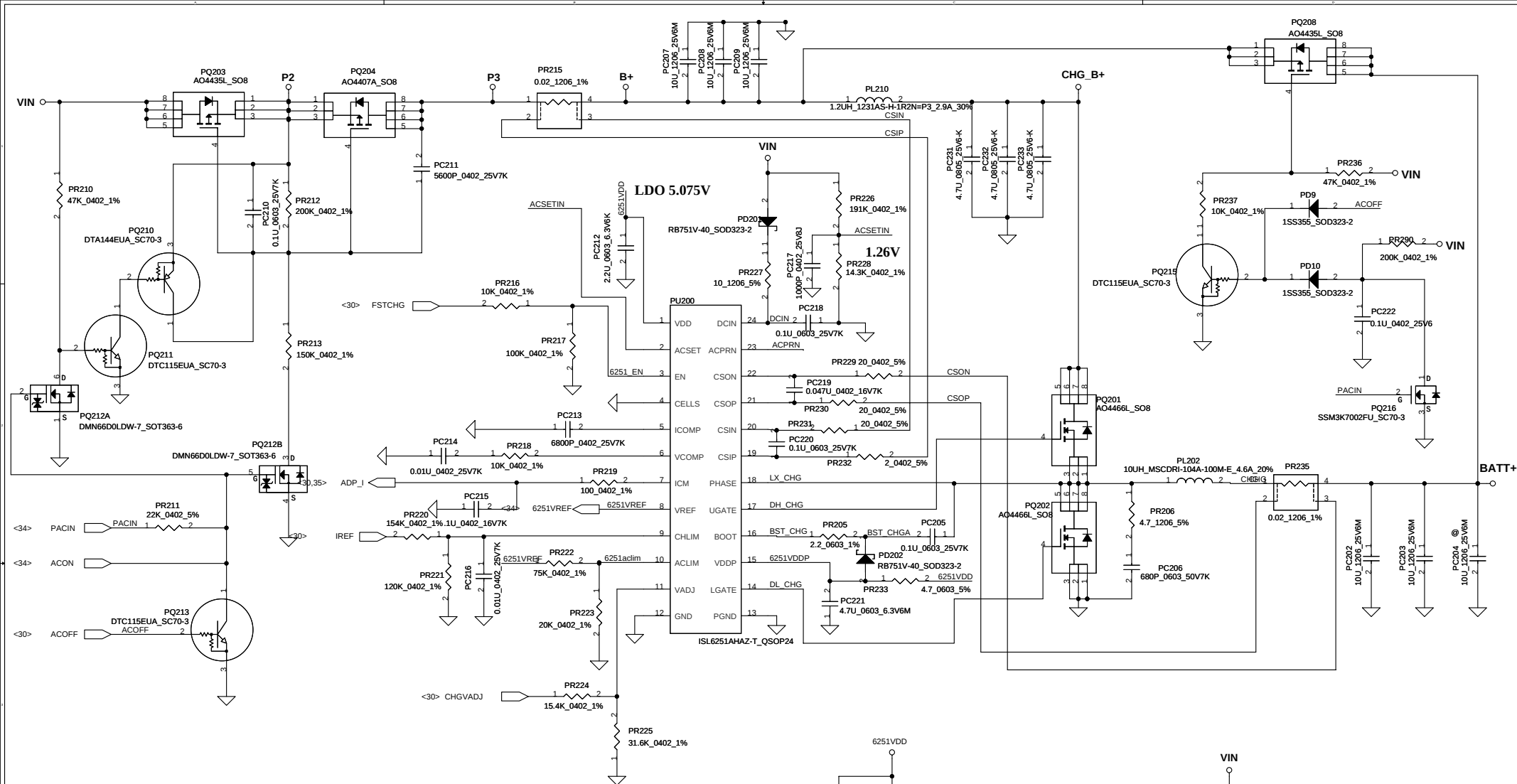


PH1 under CPU botten side :
CPU thermal protection at 95 degree C
Recovery at 56 degree C



Adapter	Throttle Watt	Recovery Watt	Throttle Point	Recovery Point
65W_UMA	71.25W	62.4W	1.48V	1.308V
75W_DIS	85.5W	72W	1.78V	1.5V
75W_QCore	85.5W	72W	1.78V	1.5V

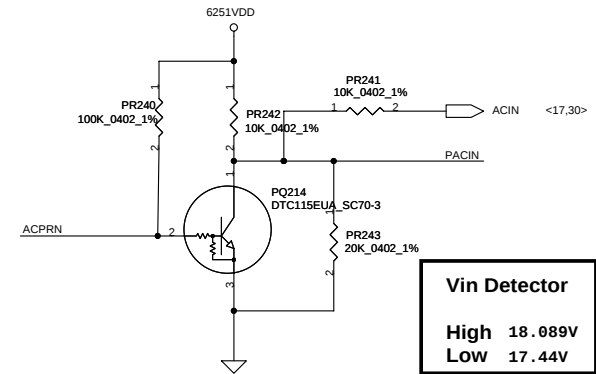




CC=0.25A~3A
 IREF=1.016*Icharge
 IREF=0.254V~3.048V
 VCHLIM need over 95mV

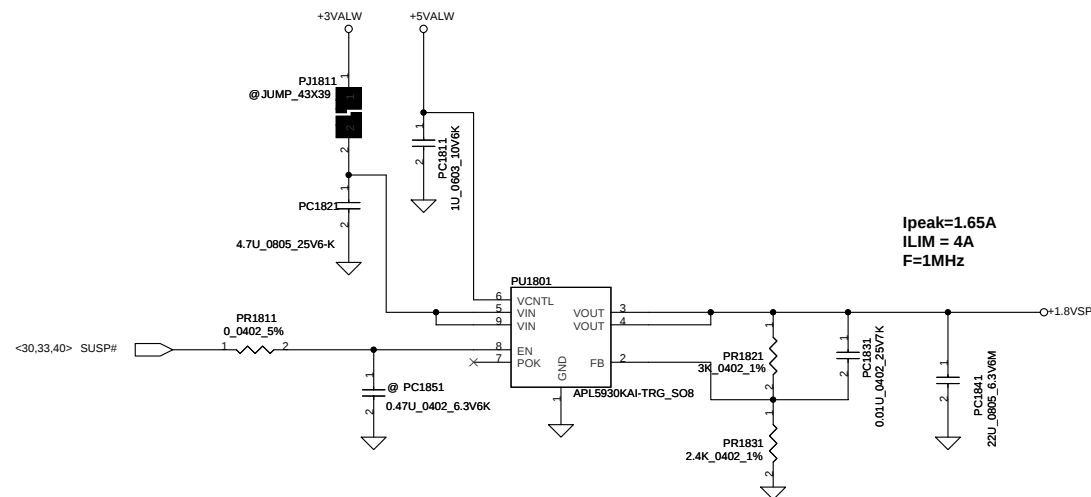
CHGVADJ=(Vcell-4)*9.445	
Vcell	CHGVADJ
4V	0V
4.2V	1.882V
4.35V	3.2935V

CP mode	
Iada=0~3.42A(65W)	CP= 92%*Iada; CP=3.147A
VacLim=1.08V(65W)	PR222=75k PR223=20k PR215=0.02
Iada=0~3.947A(75W)	CP= 92%*Iada; CP=3.63A
VacLim=0.736V(75W)	PR222=24k PR223=20k PR215=0.02

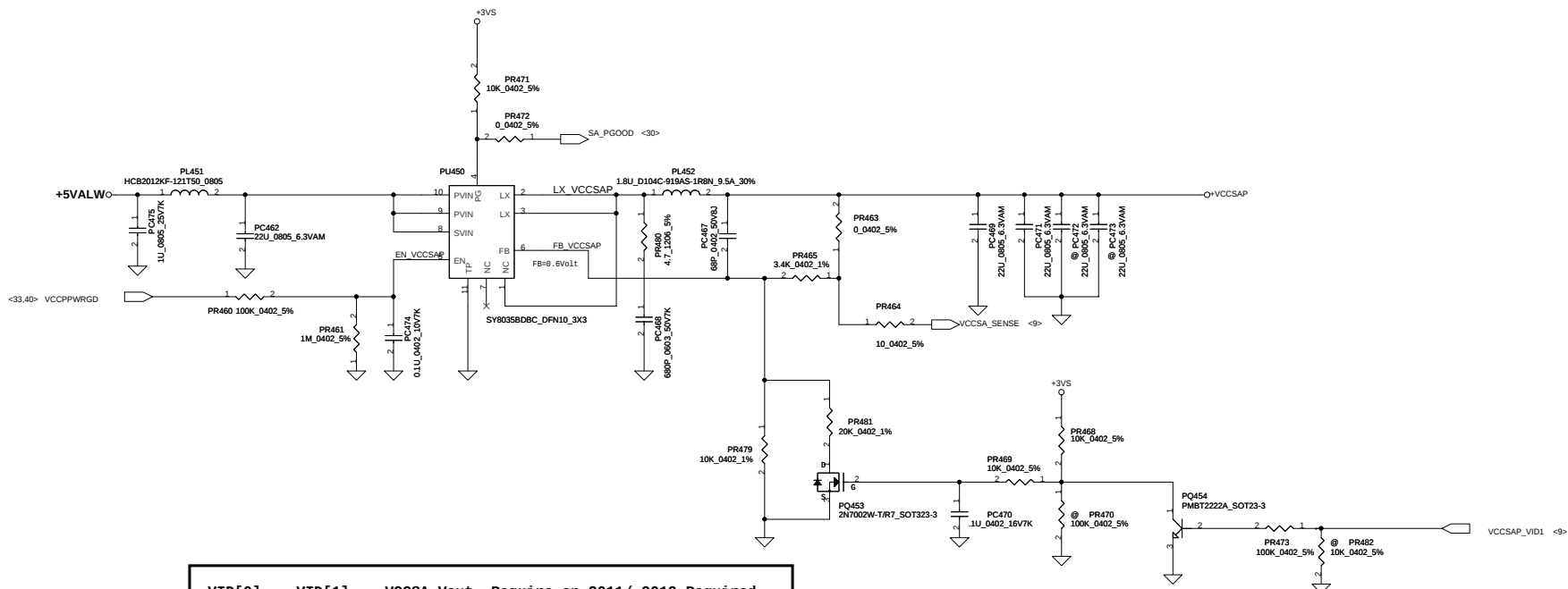


$1.26 / 14.3 * 205.3 = 18.089V$

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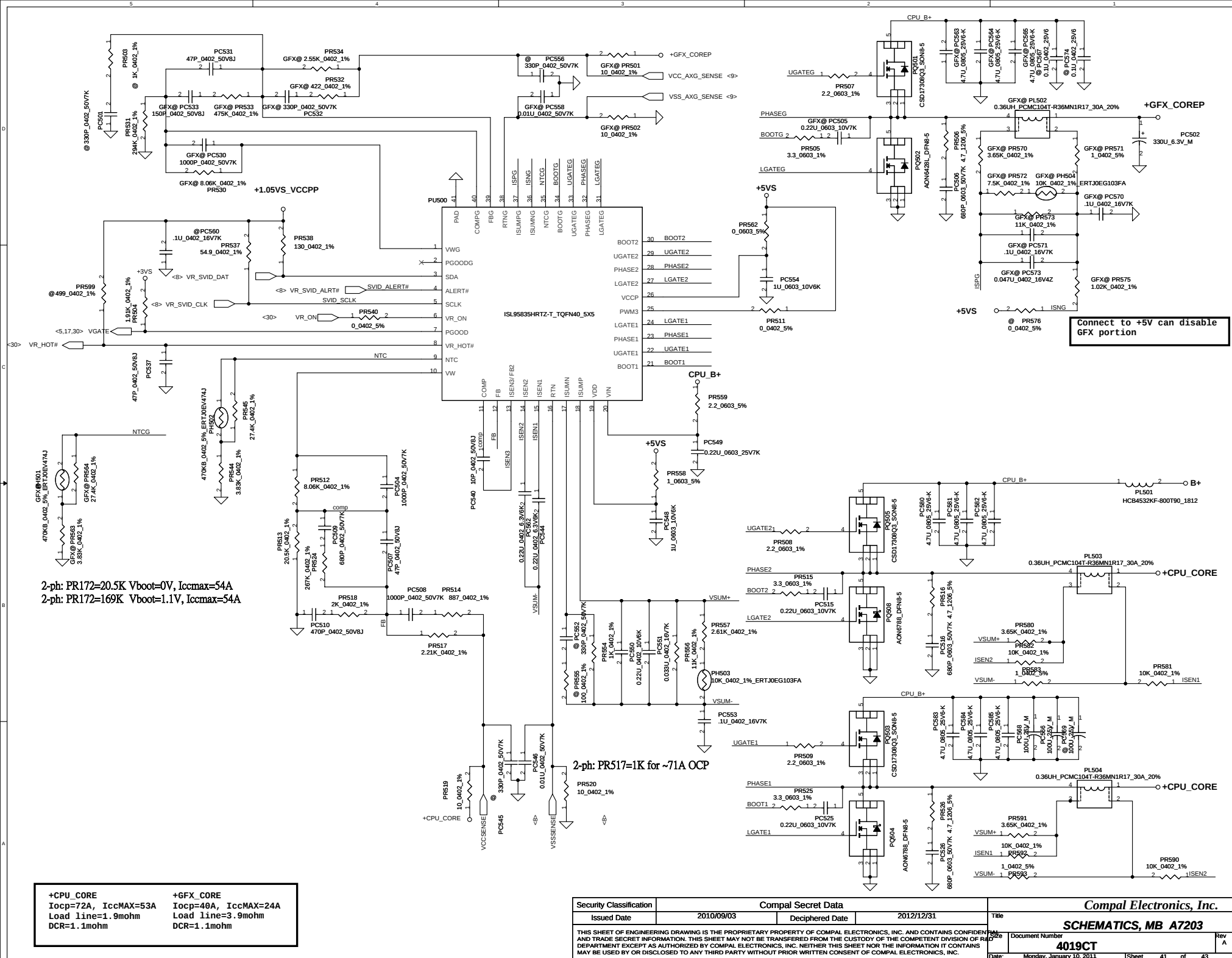
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VID[0]	VID[1]	VCCSA Vout	Require on 2011/ 2012	Required
0	0	0.9 V	Yes/Yes	
0	1	0.8 V	Yes/Yes	
1	1	0.75V	No/Yes	
1	1	0.65V	No/Yes	

Note: Use VCCSA_SEL to switch High & Low Level for VID[1]
(ie. VCCSA_SEL) due to the VID[0] is don't care for this setting.

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2-ph: PR172=20.5K Vboot=0V, Iccmax=54A
2-ph: PR172=169K Vboot=1.1V, Iccmax=54A

2-ph: PR517=1K for ~71A OCP

Connect to +5V can disable
GFX portion

+CPU_CORE	+GFX_CORE
Iocp=72A, IccMAX=53A	Iocp=40A, IccMAX=24A
Load line=1.9mohm	Load line=3.9mohm
DCR=1.1mohm	DCR=1.1mohm

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NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
1	2010/04/20	P36-P45	Release	

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HW PIR (Product Improve Record)

PWWHA LA-7203P SCHEMATIC CHANGE LIST
REVISION CHANGE: 0.1
GERBER-OUT DATE: 2011/01/04
NO DATE PAGE MODIFICATION LIST

PURPOSE

1) 12/29 33 Co-lay KB9012 with KB930, only change pin 118 For new EC design

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