

Compal confidential

Schematics Document

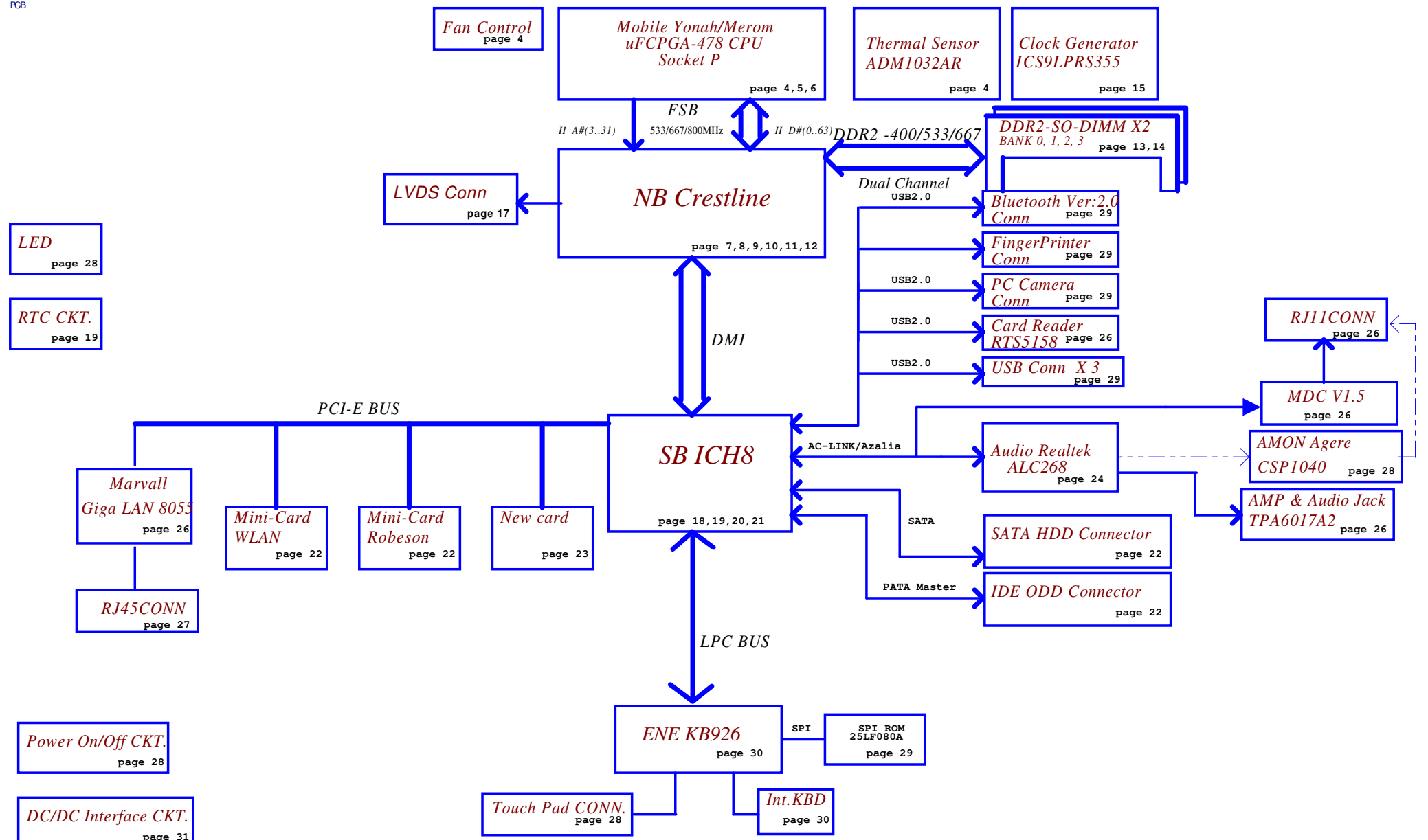
Mobile Merom uFCPGA with Satna Rosa Platform

2007-07-24
REV: 0.3

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Supra 1.0 (Merom +Crestline+ICH8) 12"

ZZZ1
PCB



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Voltage Rails

power plane State	+B	+5VALW +3VALW	+1.8V	+5VS +3VS +1.5VS +1.25VS +0.9V +VCCP +CPU_CORE
S0	O	O	O	O
S1	O	O	O	O
S3	O	O	O	X
S5 S4/AC	O	O	X	X
S5 S4/ Battery only	O	X	X	X
S5 S4/AC & Battery don't exist	X	X	X	X

Symbol Note :

 : means Digital Ground

 : means Analog Ground

@ : means just reserve , no build
DEBUG@ : means just reserve for debug.

I2C / SMBUS ADDRESSING

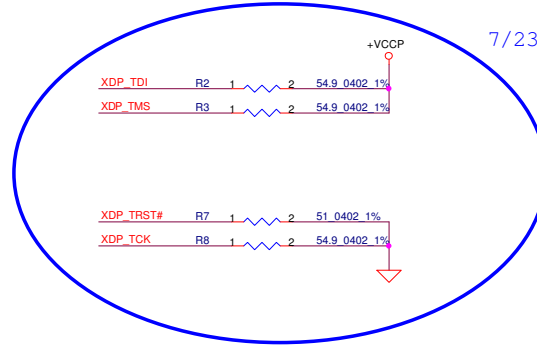
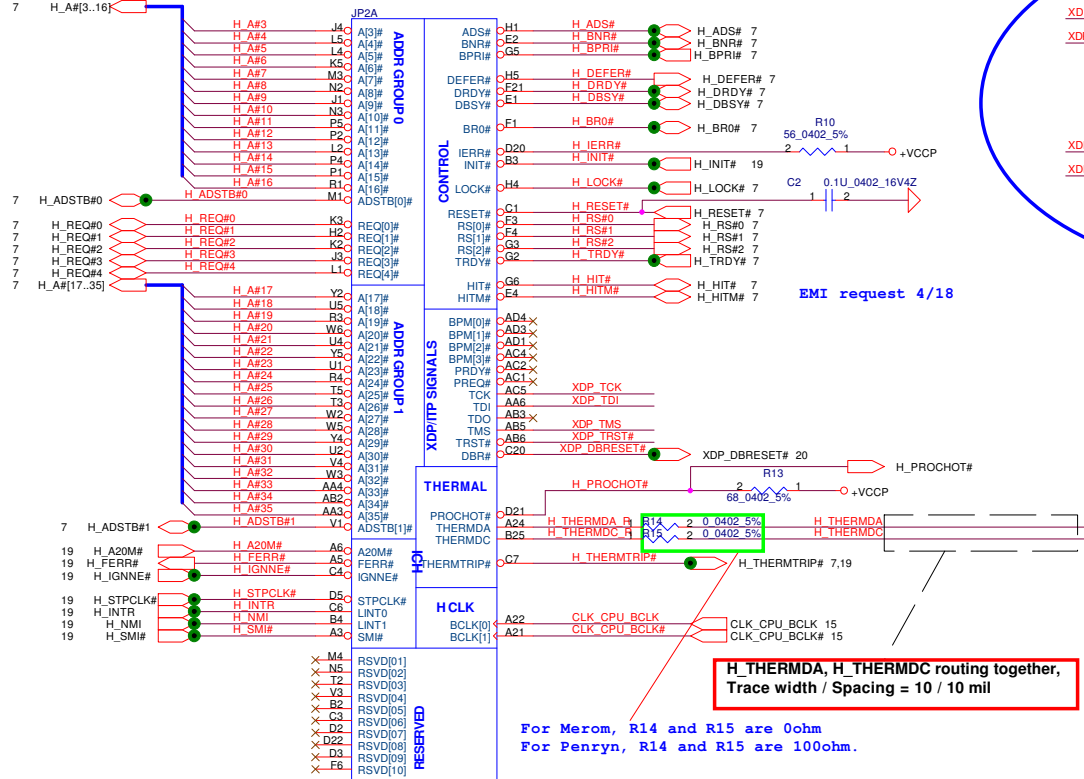
DEVICE	HEX	ADDRESS
DDR SO-DIMM 0	A0	1 0 1 0 0 0 0 0
DDR SO-DIMM 1	A4	1 0 1 0 0 1 0 0
CLOCK GENERATOR (EXT.)	D2	1 1 0 1 0 0 1 0

SMBUS Control Table

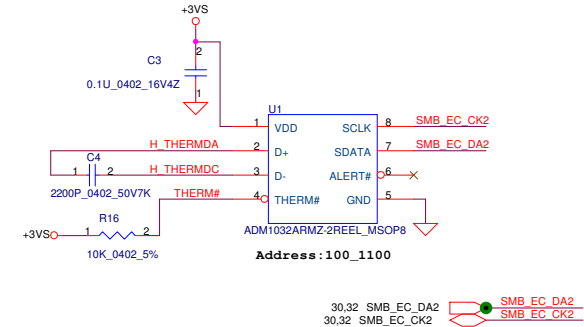
	SOURCE	INVERTER	BATT	SERIAL EEPROM	THERMAL SENSOR (CPU) ADM1032	SODIMM	CLK CHIP	MINI CARD	LCD
SMB_EC_CK1 SMB_EC_DA1	KB925	X	V	V	X	X	X	X	X
SMB_EC_CK2 SMB_EC_DA2	KB925	X	X	X	V	X	X	X	X
SMB_CK_CLK1 SMB_CK_DAT1	ICH8	X	X	X	X	V	V	V	X
LCD_CLK LCD_DAT	Crestline	X	X	X	X	X	X	X	V

BOM: 43XXXXXX

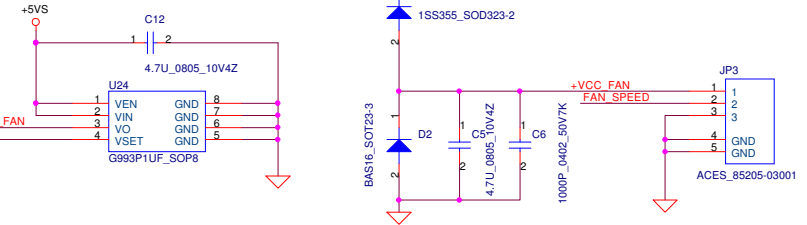
Jump-Short: PJP?



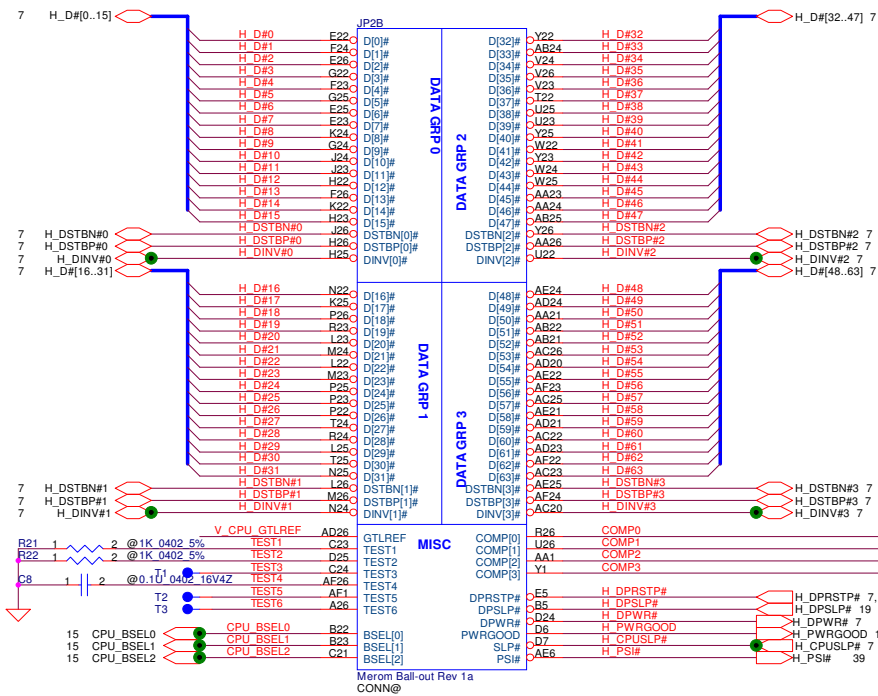
Thermal Sensor ADM1032ARMZ



Voltage Fan Control circuit

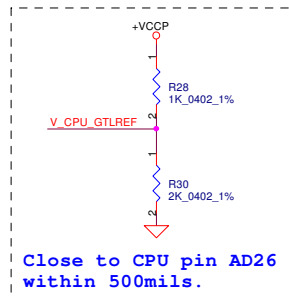


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2006/02/13				2006/03/10				Merom(1/3)-AGTL+/XDP			
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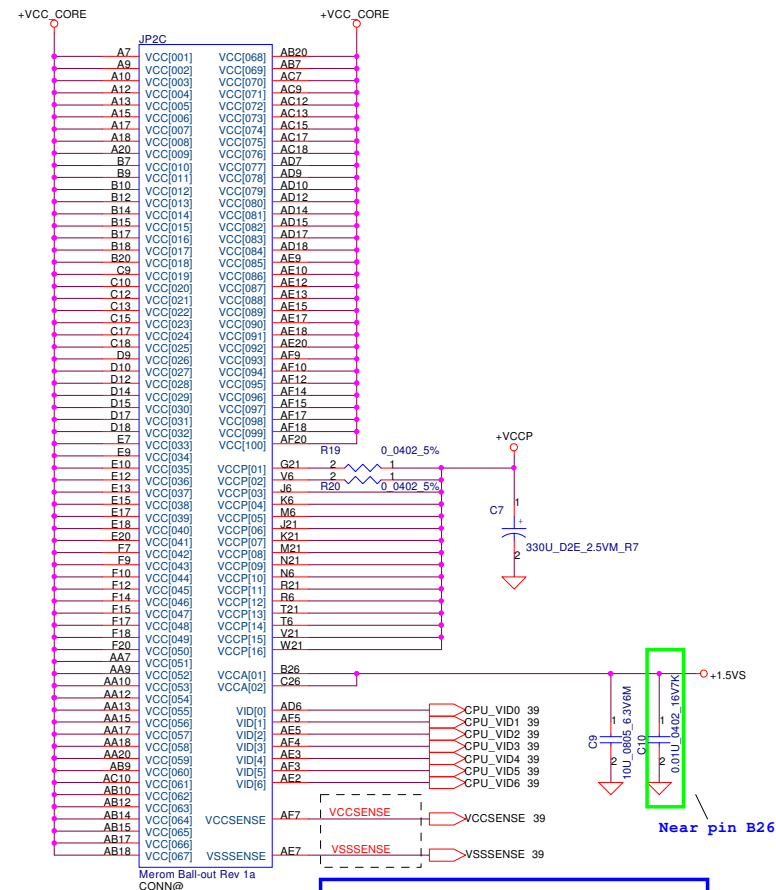


layout note: Route TEST3 & TEST5 traces on ground referenced layer to the TPs

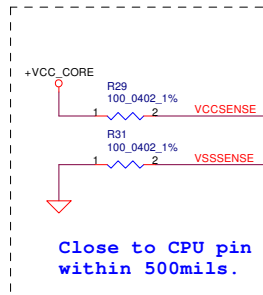
CPU_BSEL	CPU_BSEL2	CPU_BSEL1	CPU_BSEL0
166	0	1	1
200	0	1	0



Resistor placed within 0.5" of CPU pin. Trace should be at least 25 mils away from any other toggling signal. COMP[0,2] trace width is 18 mils. COMP[1,3] trace width is 4 mils.

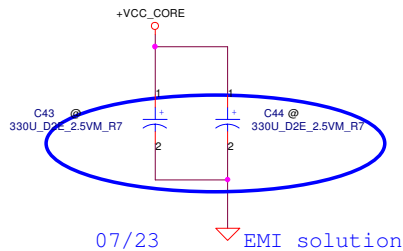


Length match within 25 mils. The trace width/space/other is 20/7/25.

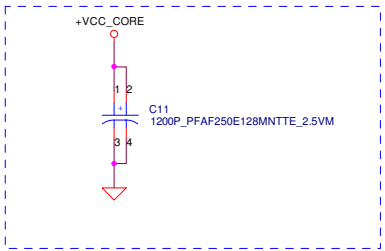


A4	JP2D	
A8	VSS[001]	P6
A11	VSS[002]	P21
A14	VSS[003]	P24
A16	VSS[004]	R2
A19	VSS[005]	R5
A23	VSS[006]	R22
AF2	VSS[007]	R25
B6	VSS[008]	T1
B8	VSS[009]	T4
B11	VSS[010]	T23
B13	VSS[011]	T26
B16	VSS[012]	U3
B19	VSS[013]	U6
B21	VSS[014]	U21
B24	VSS[015]	U24
C5	VSS[016]	V2
C8	VSS[017]	V5
C11	VSS[018]	V22
C14	VSS[019]	V25
C16	VSS[020]	W1
C19	VSS[021]	W4
C2	VSS[022]	W23
C22	VSS[023]	W26
C25	VSS[024]	Y3
D1	VSS[025]	Y6
D4	VSS[026]	Y21
D8	VSS[027]	Y24
D13	VSS[028]	AA2
D16	VSS[029]	AA5
D19	VSS[030]	AA8
D23	VSS[031]	AA11
D26	VSS[032]	AA14
E3	VSS[033]	AA16
E6	VSS[034]	AA19
E8	VSS[035]	AA22
E11	VSS[036]	AA25
E14	VSS[037]	AB1
E16	VSS[038]	AB4
E19	VSS[039]	AB8
F21	VSS[040]	AB11
F24	VSS[041]	AB13
F5	VSS[042]	AB16
F8	VSS[043]	AB19
F11	VSS[044]	AB23
F13	VSS[045]	AB26
F16	VSS[046]	AC3
F19	VSS[047]	AC6
F2	VSS[048]	AC8
F22	VSS[049]	AC11
F25	VSS[050]	AC14
G4	VSS[051]	AC16
G1	VSS[052]	AC19
G26	VSS[053]	AC21
H3	VSS[054]	AC24
H6	VSS[055]	AD2
H21	VSS[056]	AD5
H24	VSS[057]	AD8
J2	VSS[058]	AD11
J5	VSS[059]	AD13
J22	VSS[060]	AD16
J25	VSS[061]	AD19
K1	VSS[062]	AD22
K4	VSS[063]	AD25
K23	VSS[064]	AE1
K26	VSS[065]	AE4
L3	VSS[066]	AE8
L6	VSS[067]	AE11
L21	VSS[068]	AE14
L24	VSS[069]	AE16
M2	VSS[070]	AE19
M5	VSS[071]	AE23
M22	VSS[072]	AE26
M25	VSS[073]	A2
N1	VSS[074]	AF6
N4	VSS[075]	AF8
N23	VSS[076]	AF11
N26	VSS[077]	AF13
P3	VSS[078]	AF16
	VSS[079]	AF19
	VSS[080]	AF21
	VSS[081]	A25
	VSS[082]	AF25

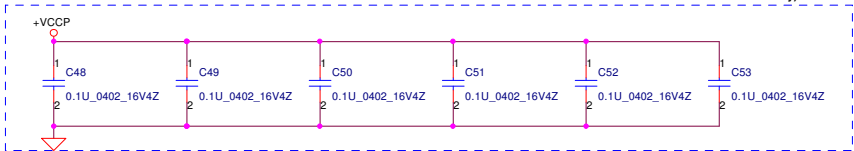
Near CPU CORE regulator



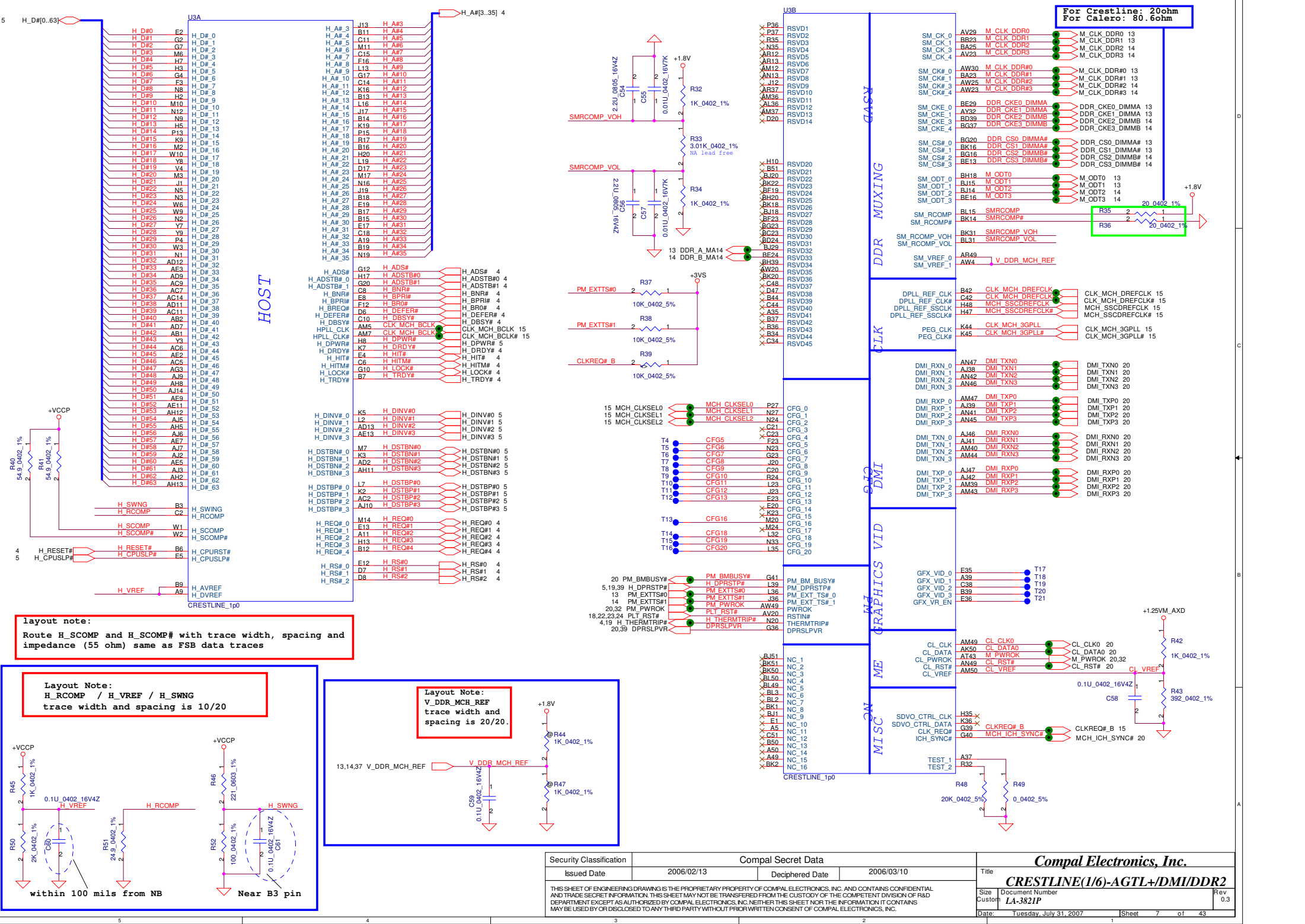
Proadlizer



Place these inside
socket cavity on L8
(North side
Secondary)



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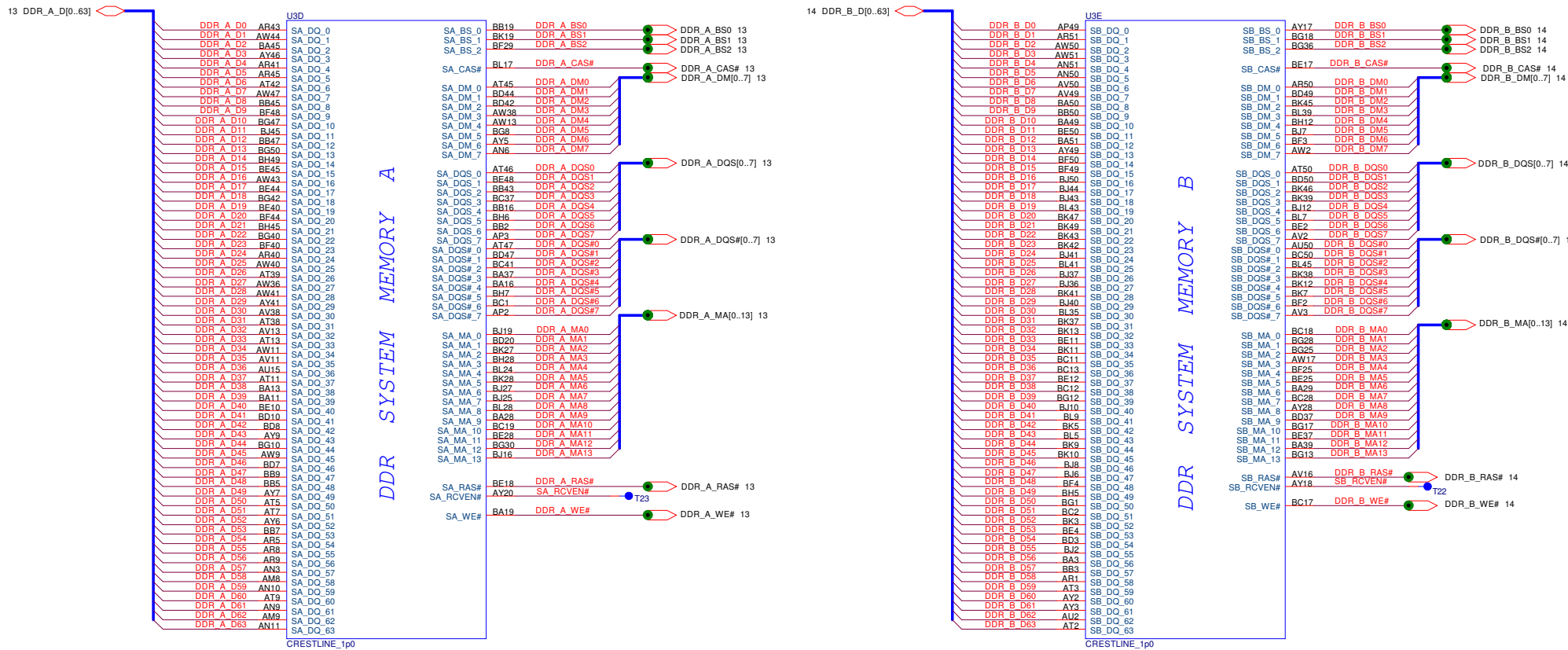


layout note:
Route H_SCOMP and H_SCOMP# with trace width, spacing and impedance (55 ohm) same as FSB traces

Layout Note:
H_RCOMP / H_VREF / H_SWNG
trace width and spacing is 10/20

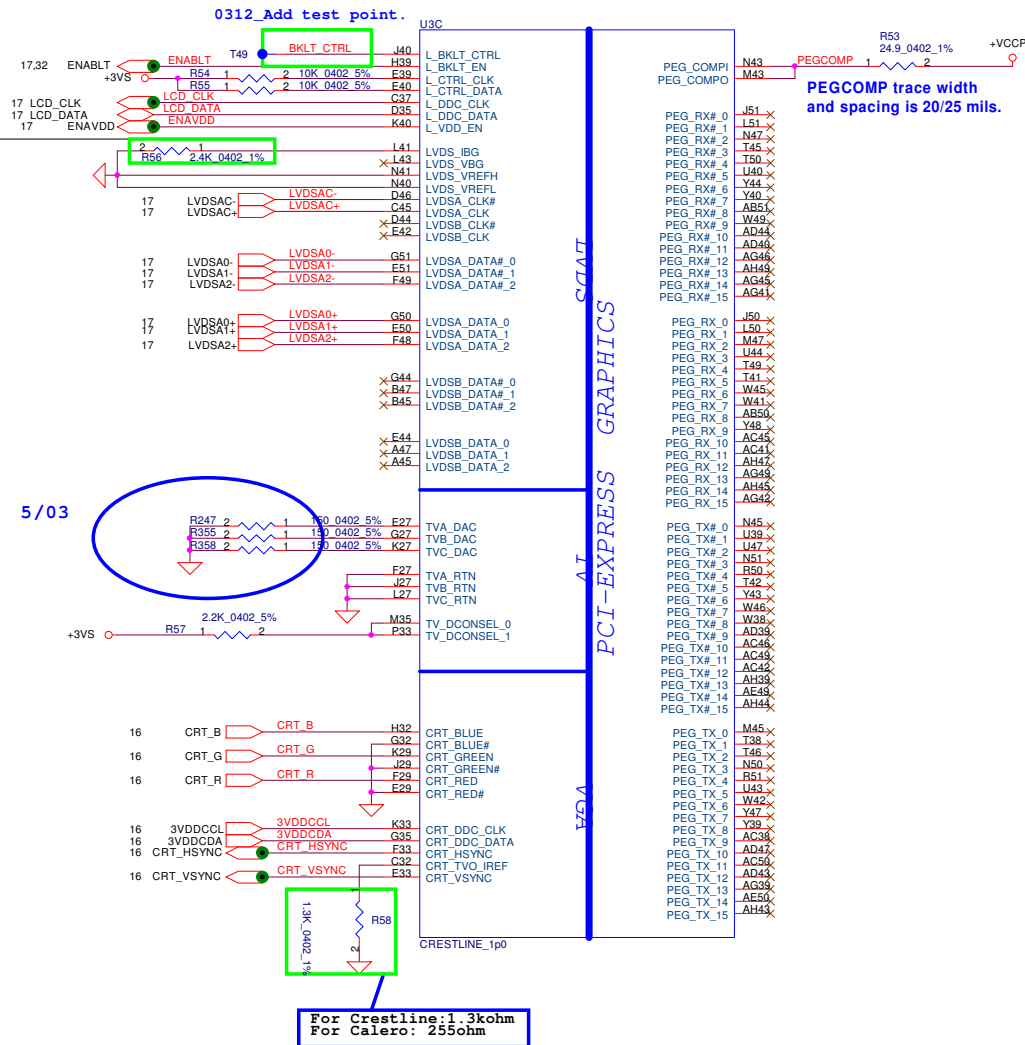
Layout Note:
V_DDR_MCH_REF
trace width and spacing is 20/20.

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For Crestline: 2.4kOhm
For Calero: 1.5kOhm

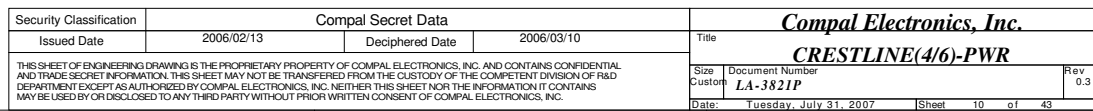
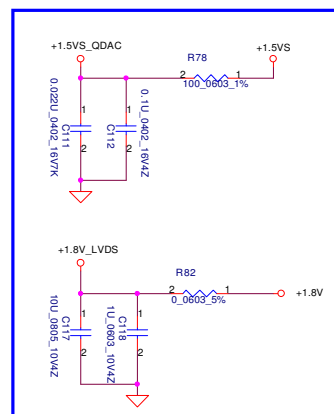
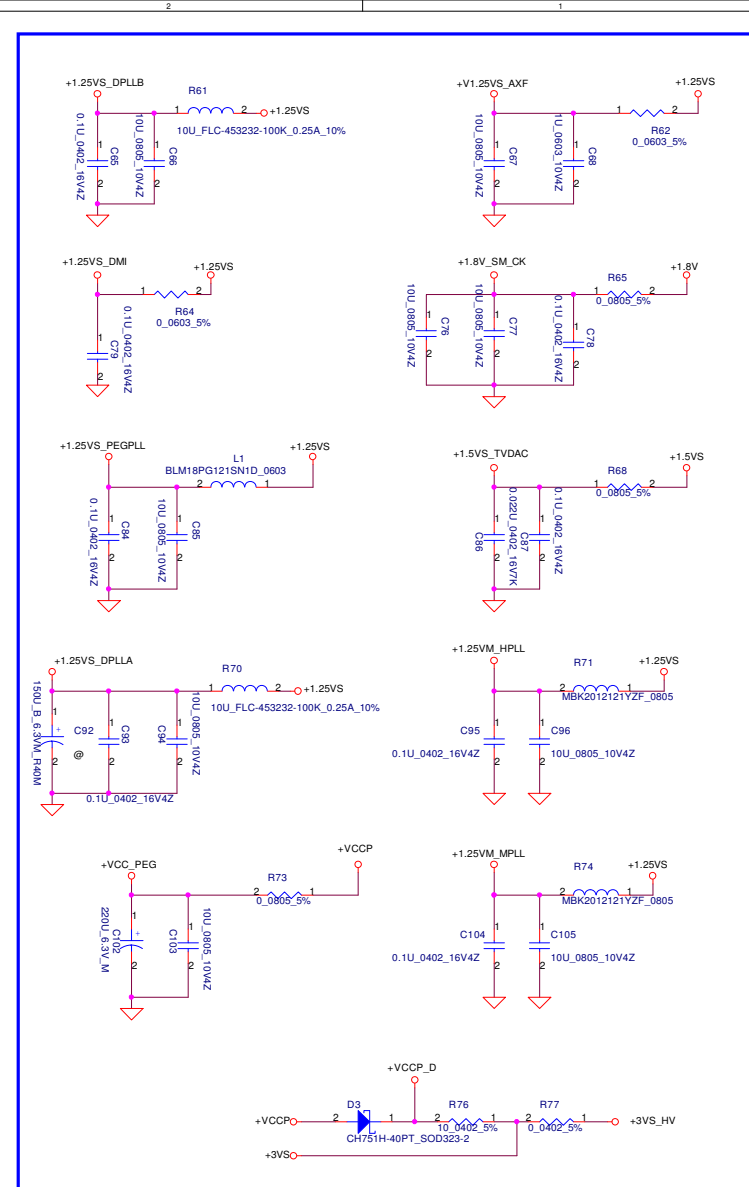


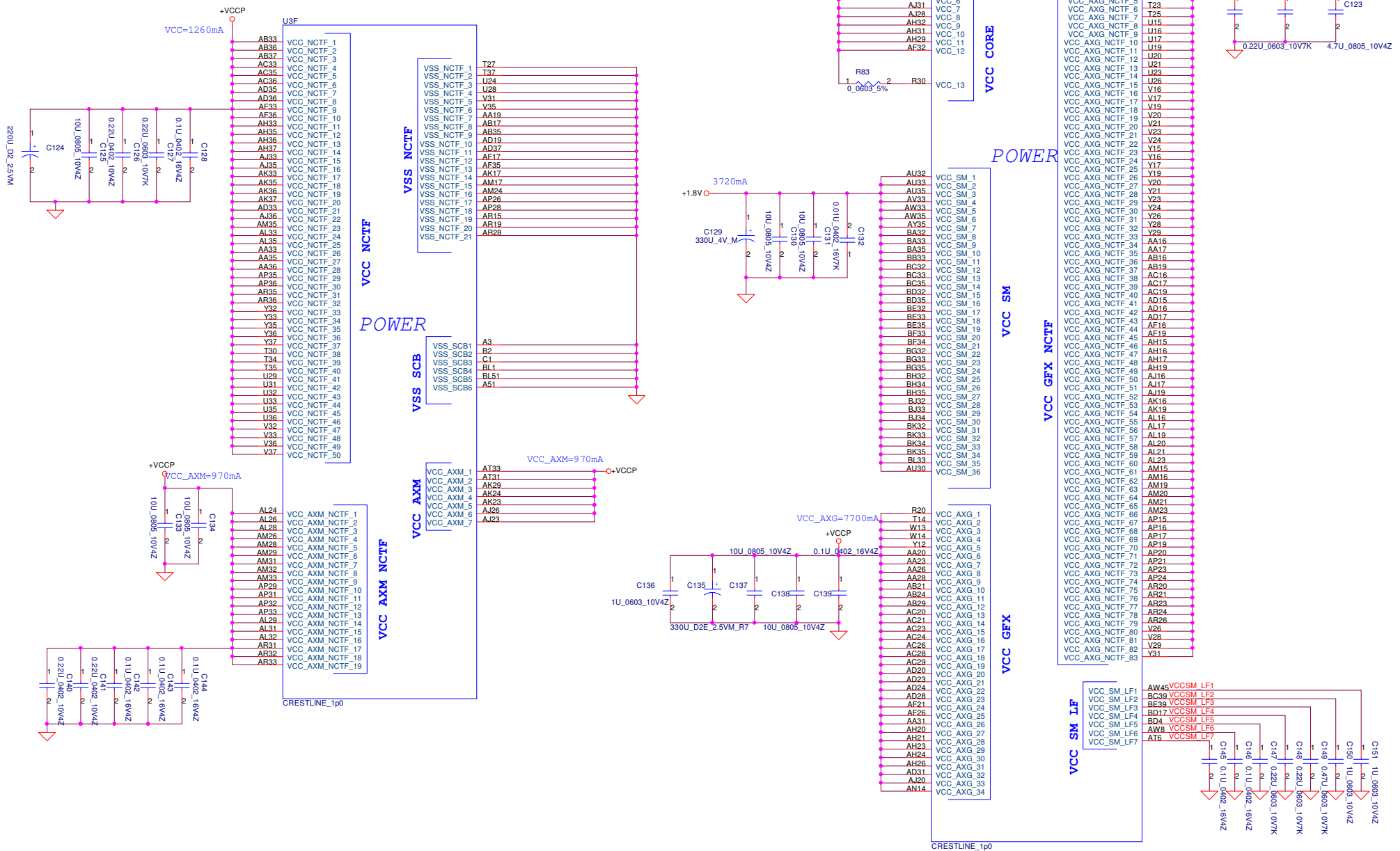
Strap Pin Table

CFG[2:0] FSB Freq select	010 = FSB 800MHz 011 = FSB 667MHz Others = Reserved
CFG5 (DMI select)	0 = DMI x 2 1 = DMI x 4 *
CFG6	Reserved
CFG7 (CPU Strap)	0 = Reserved 1 = Mobile CPU *
CFG8 (Low power PCIE)	0 = Normal mode 1 = Low Power mode *
CFG9 (PCIE Graphics Lane Reversal)	0 = Reverse Lane 1 = Normal Operation *
CFG[11:10]	Reserved
CFG[13:12] (XOR/ALLZ)	00 = Reserved 01 = XOR Mode Enabled 10 = All Z Mode Enabled 11 = Normal Operation(Default) *
CFG[15:14]	Reserved
CFG16 (FSB Dynamic ODT)	0 = Disabled 1 = Enabled *
CFG[18:17]	Reserved
SDVO_CTRLDATA	0 = No SDVO Device Present * 1 = SDVO Device Present
CFG19 (DMI Lane Reversal)	0 = Normal Operation (Lane number in Order) * 1 = Reverse Lane
CFG20 (PCIE/SDVO concurrent)	0 = Only PCIE or SDVO is operational. * 1 = PCIE/SDVO are operating simu.

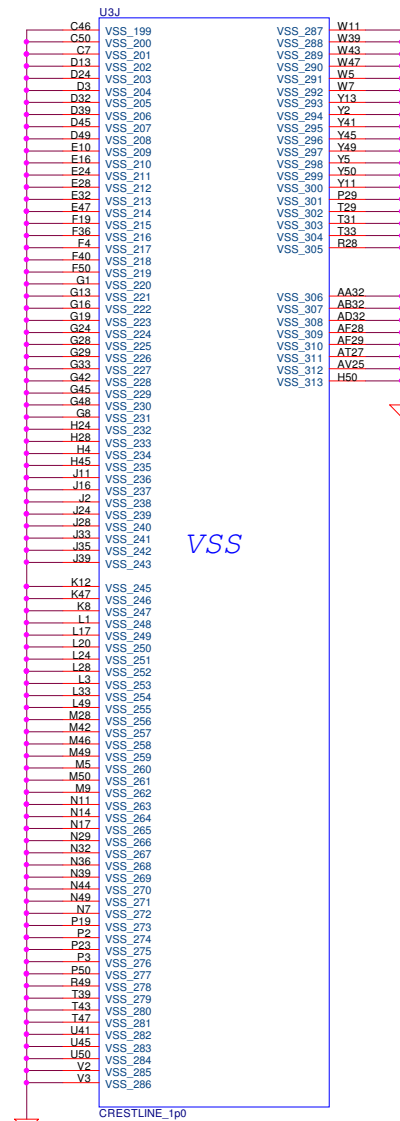
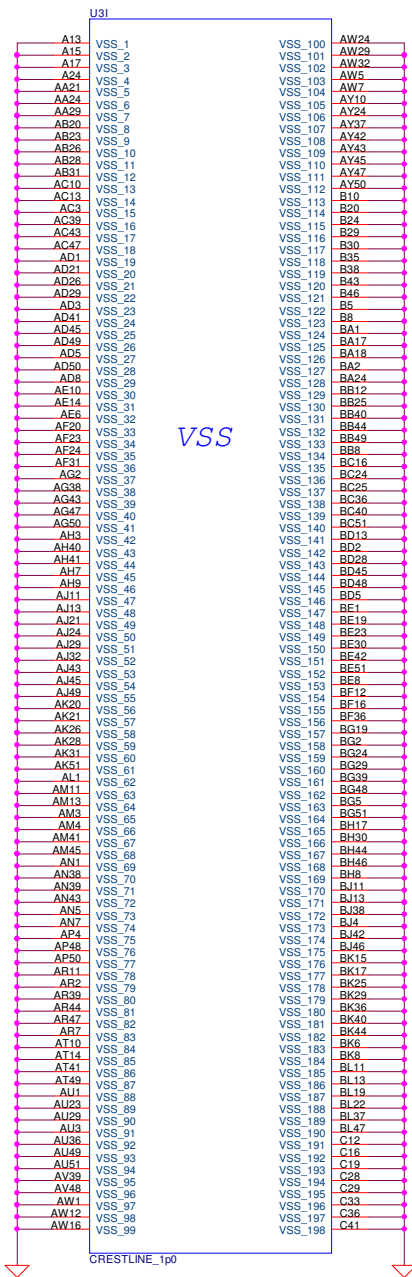
CFG[17:3] have internal pull up

CFG[19:18] have internal pull down





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C



B

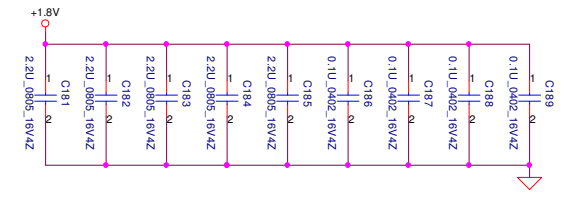


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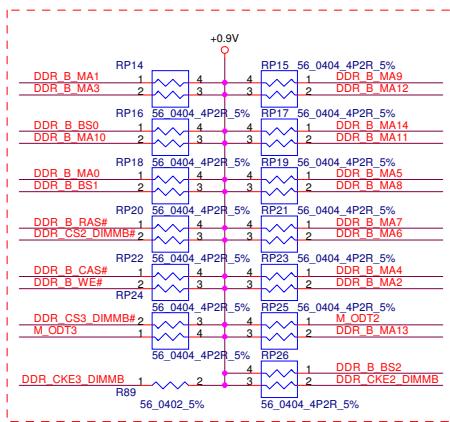
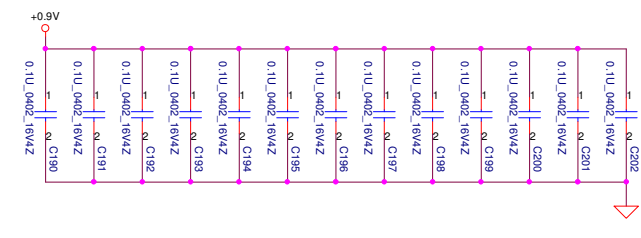


8 DDR_B_DQS#[0..7]
 8 DDR_B_D[0..63]
 8 DDR_B_DM[0..7]
 8 DDR_B_DQS[0..7]
 7,8 DDR_B_MA[0..14]

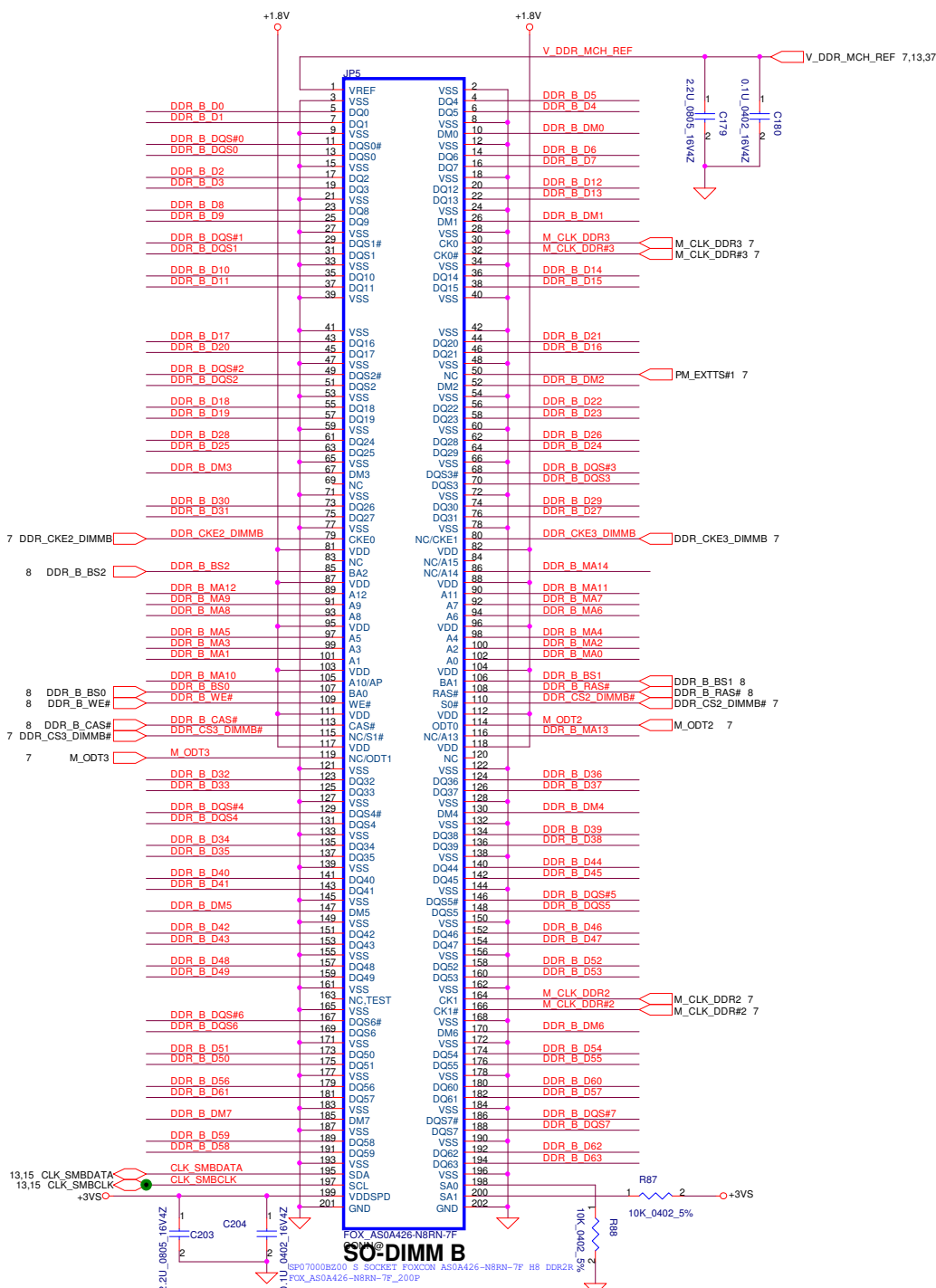
Layout Note:
 Place near JP10



Layout Note:
 Place one cap close to every 2 pullup resistors terminated to +0.9V



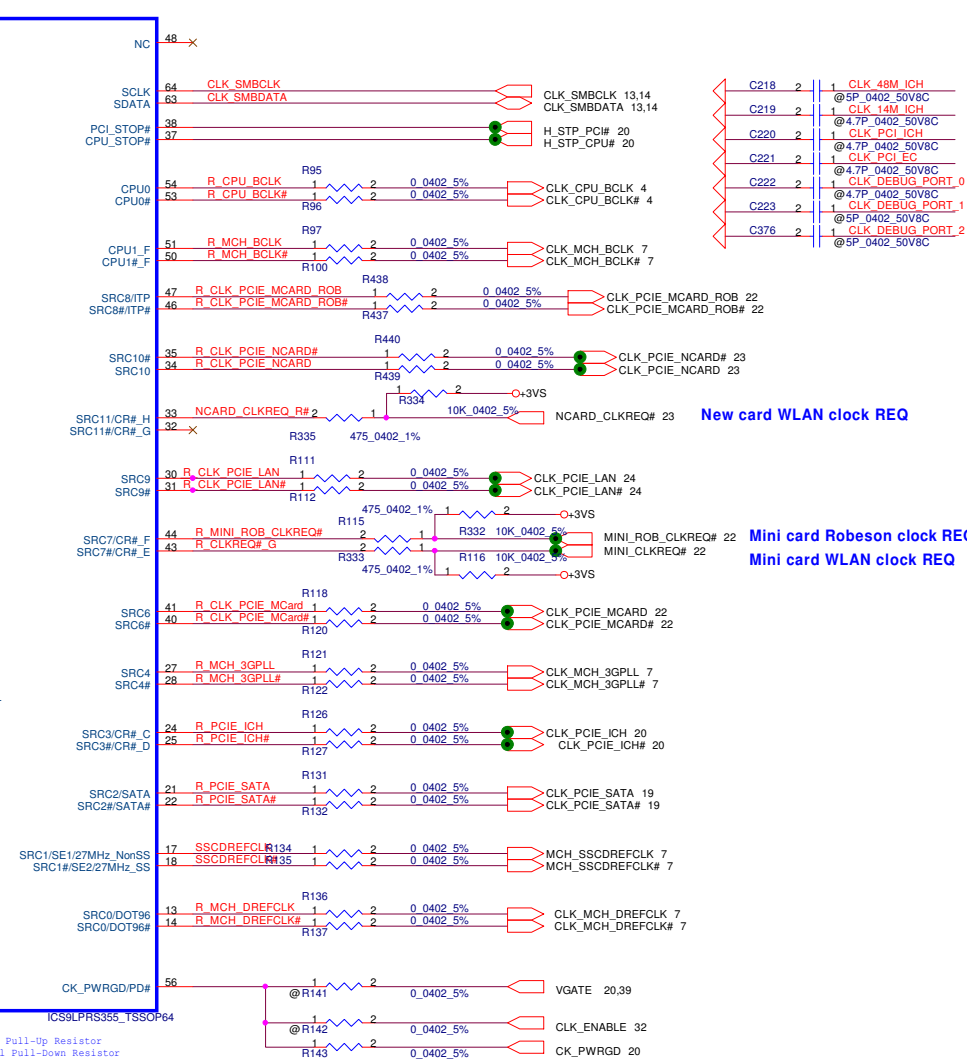
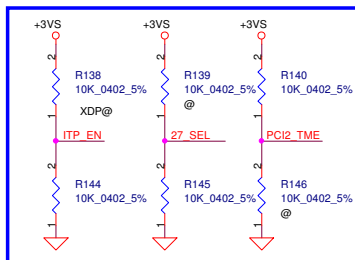
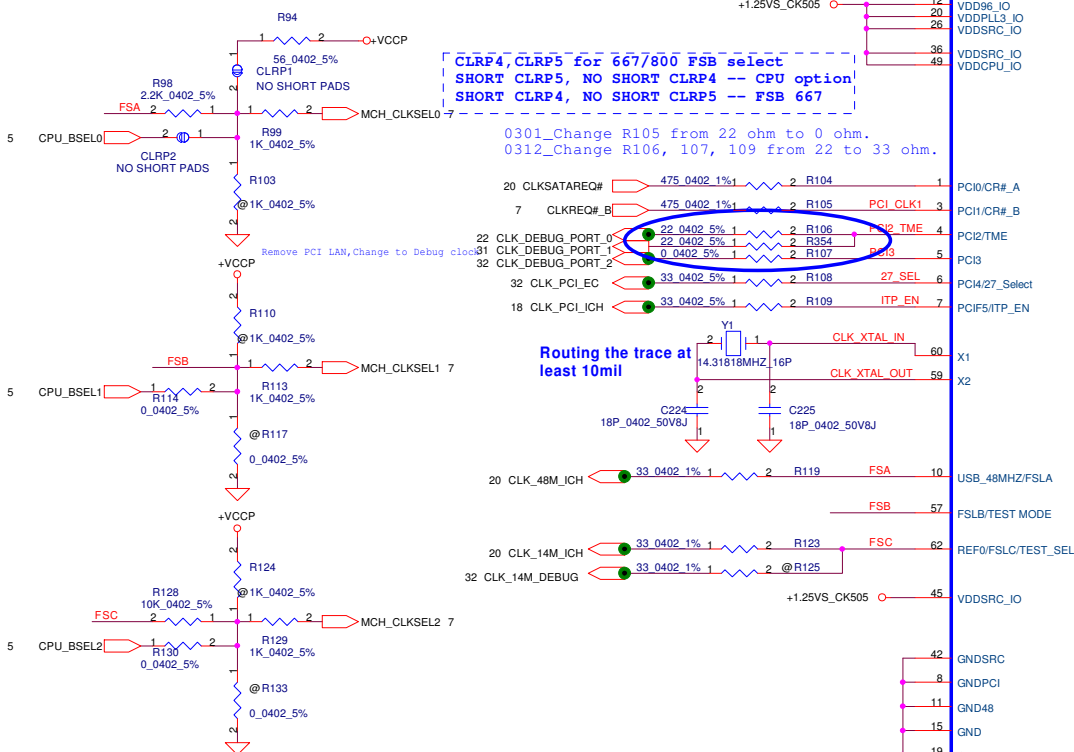
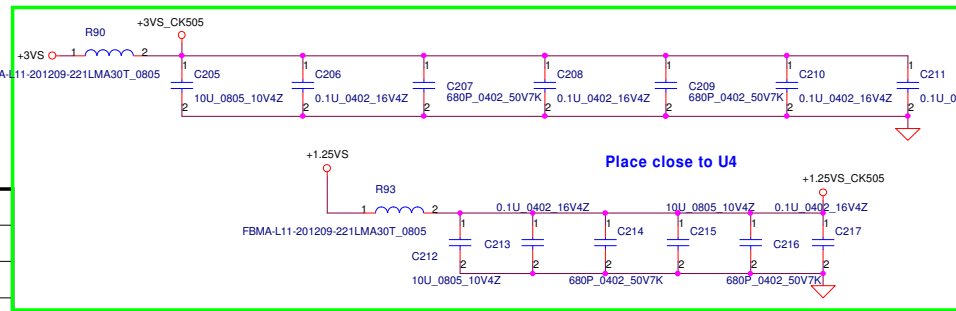
Layout Note:
 Place these resistor closely JP10, all trace length Max=1.5"



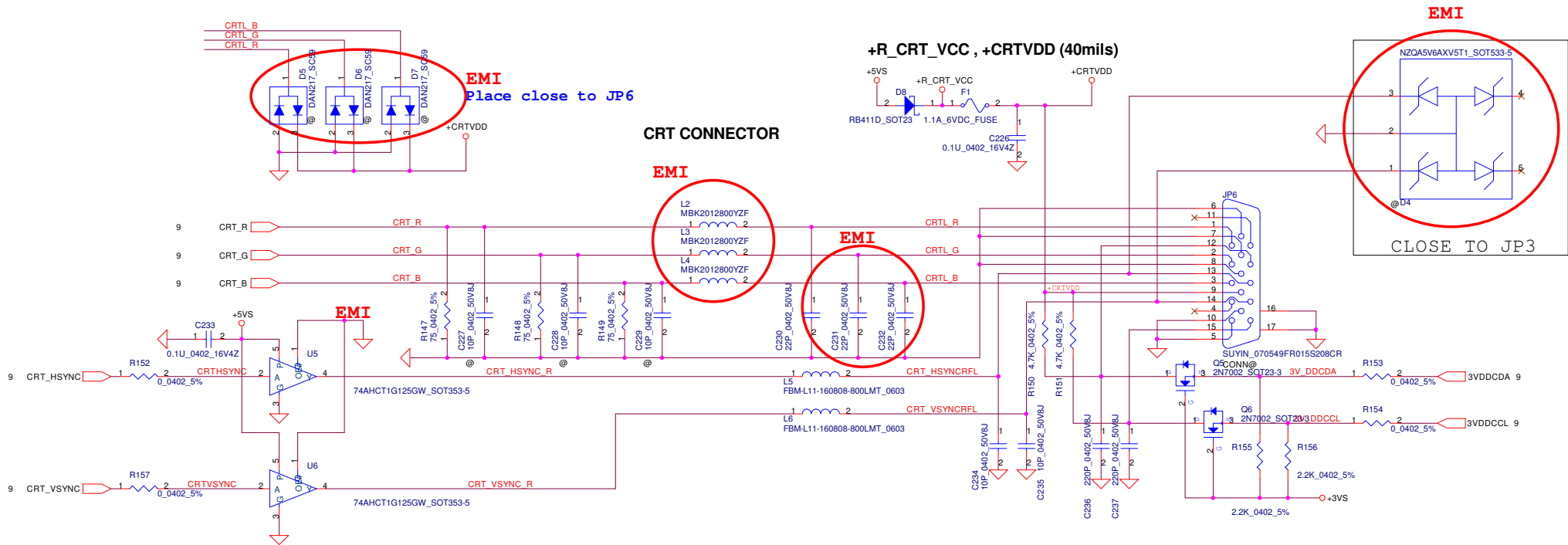
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FSB Frequency Selet:

CPU Driven	Stuff	R1107	R1135	R1083			
* (Default)	No Stuff	R1074	R1086	R1098	R1113	R1128	R1139
667MHz	Stuff	R1086	R1139	R1135	R1074	R1139	R1135
	No Stuff	R1083	R1107	R1128			
800MHz	Stuff	R1135	R1139				
	No Stuff	R1083	R1086	R1098	R1128		

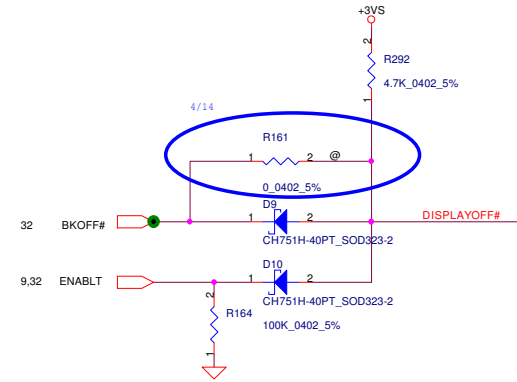
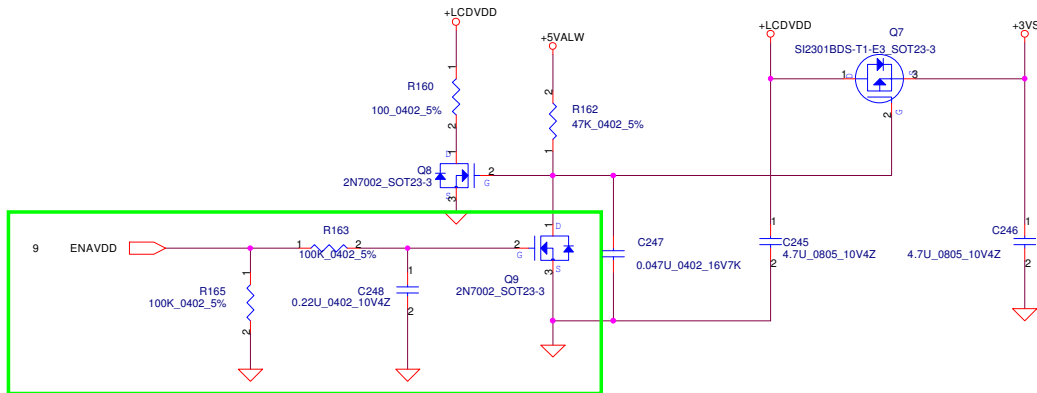
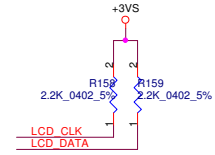
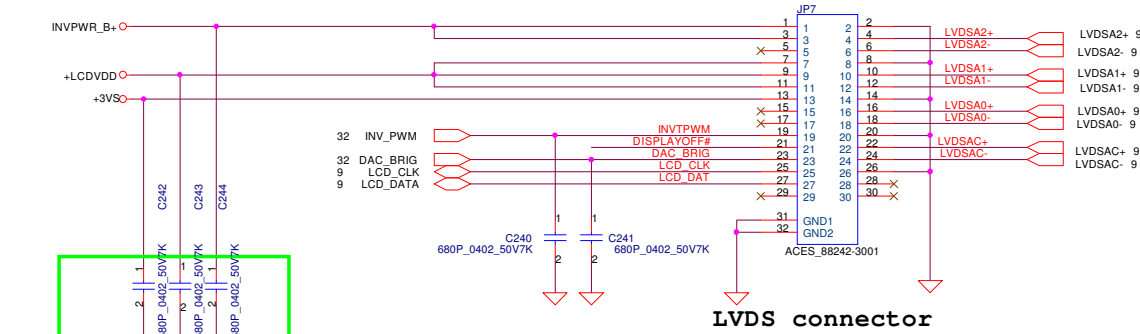
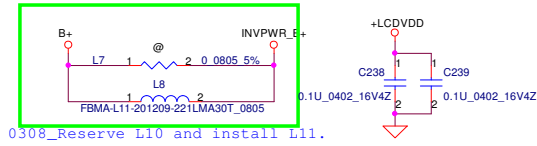


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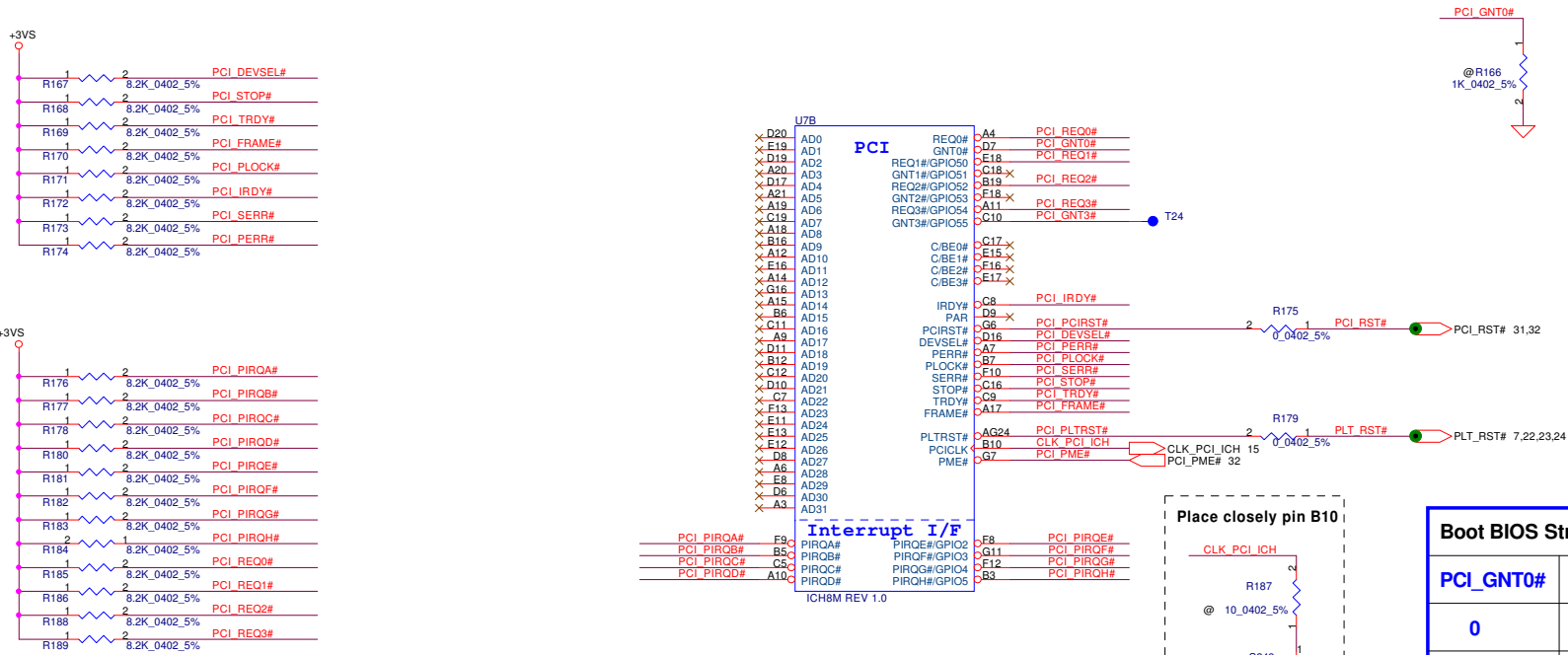


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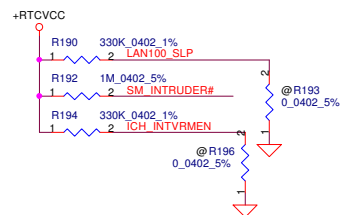
LVDS CONN



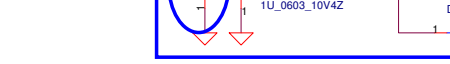
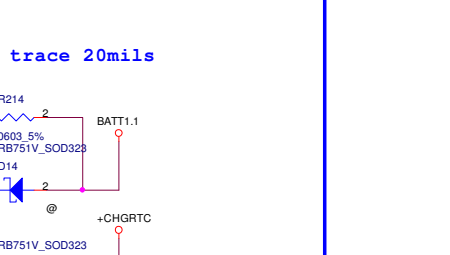
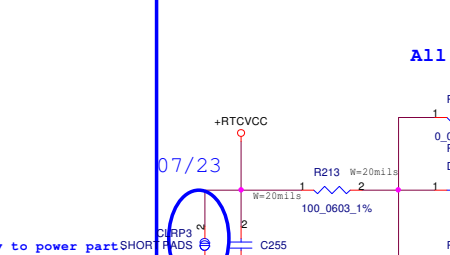
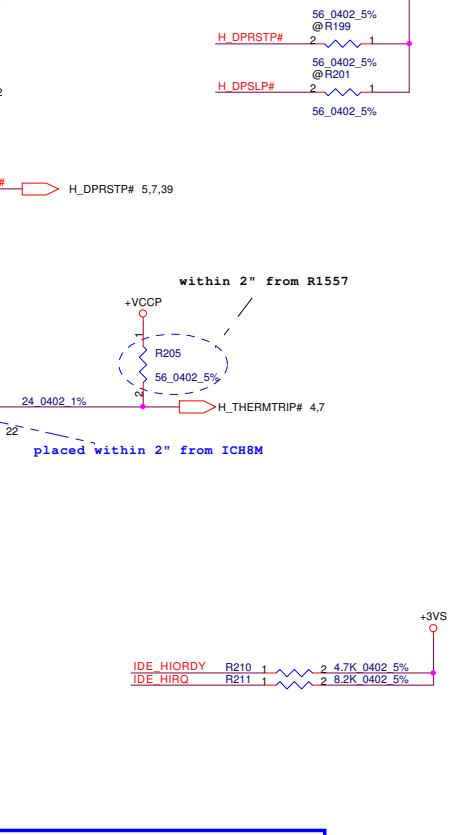
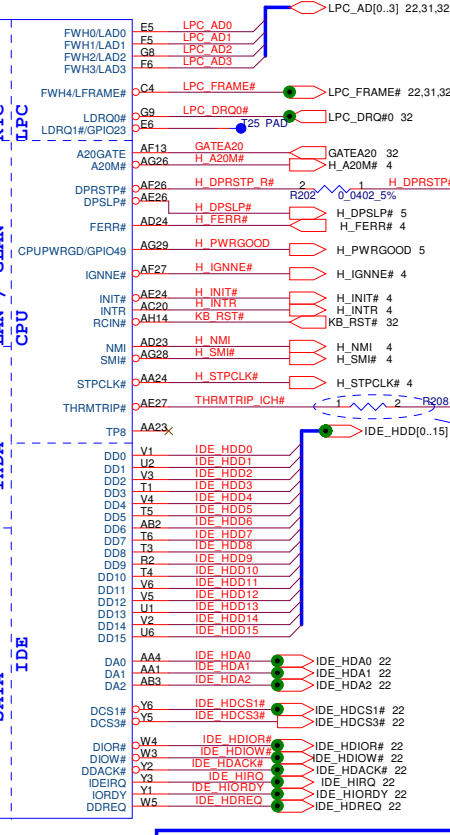
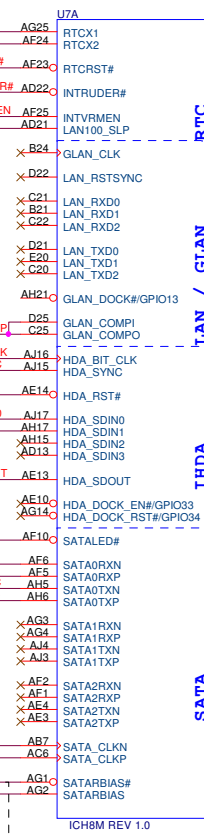
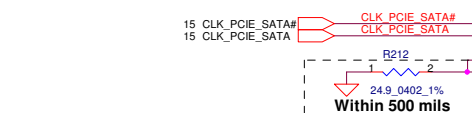
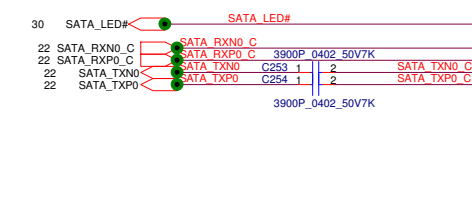
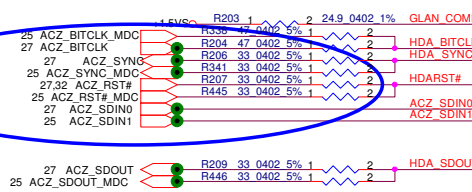
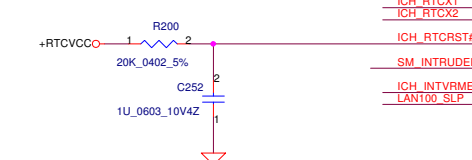
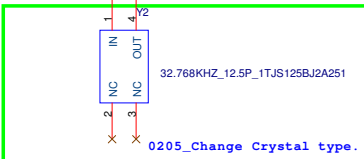
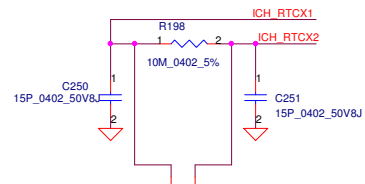
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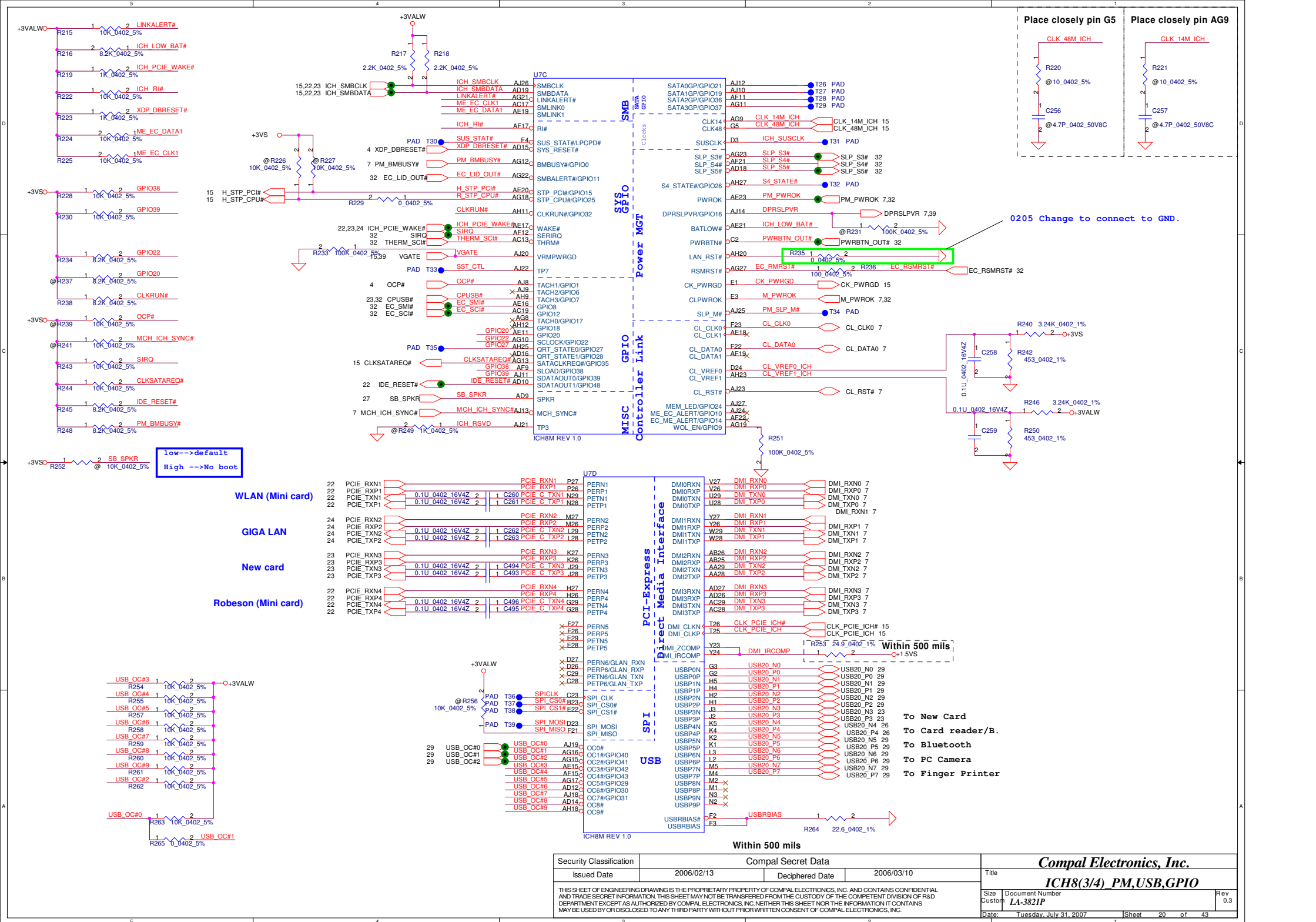
Boot BIOS Strap		
PCI_GNT0#	SPI_CS#1	Boot BIOS Location
0	1	SPI
1	0	PCI
1	1	LPC *
A16 swap override Strap		
PCI_GNT3#	*Low= A16 swap override Enble High= Default	

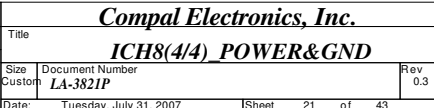


ICH8M Internal VR Enable Strap (Internal VR for VccSus1.05, VccSus1.5, VccCL1.5)	
ICH_INTVRMEN	Low = Internal VR Disabled High = Internal VR Enabled(Default)
ICH8M LAN100 SLP Strap (Internal VR for VccLAN1.05 and VccCL1.05)	
ICH_LAN100_SLP	Low = Internal VR Disabled High = Internal VR Enabled(Default)

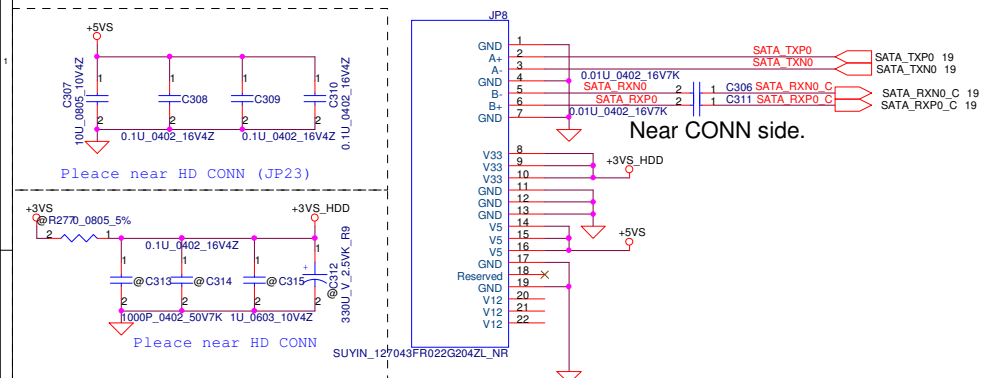


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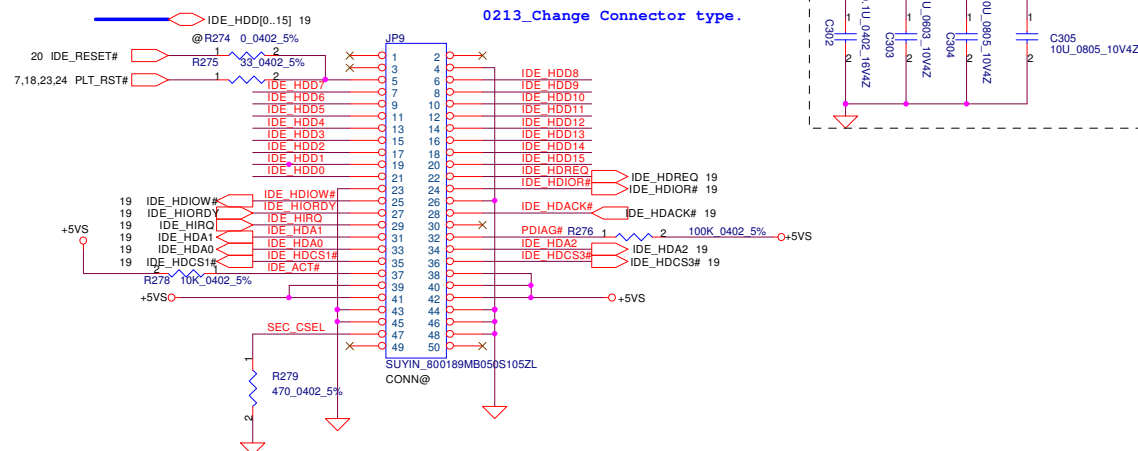




HDD Connector

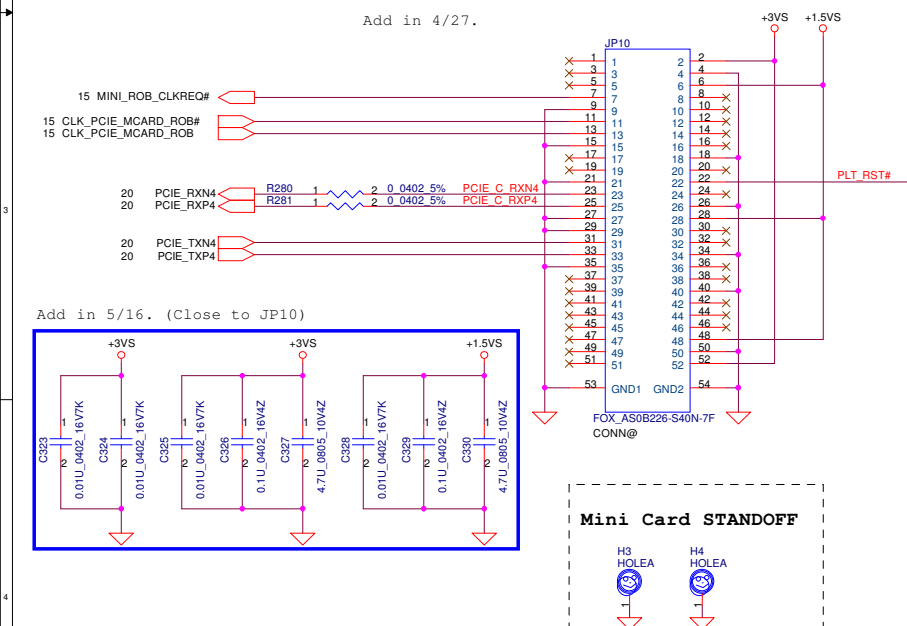


CD-ROM Connector

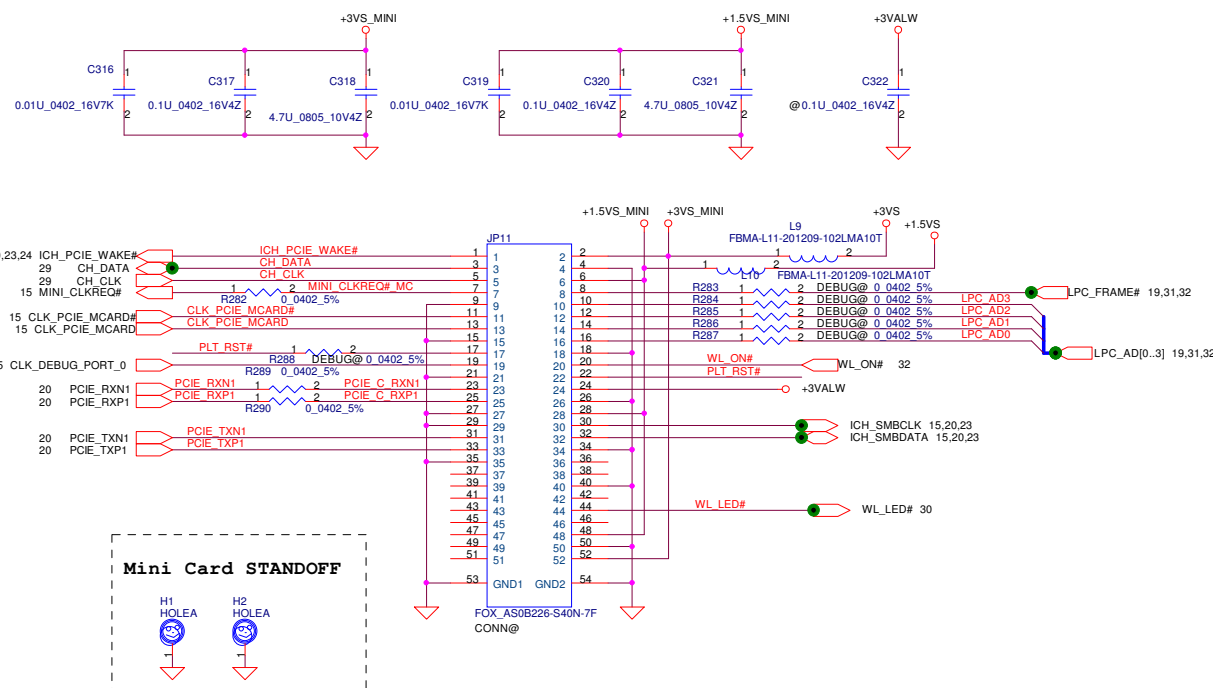


NAND mini Card(Robson support)

Add in 4/27.

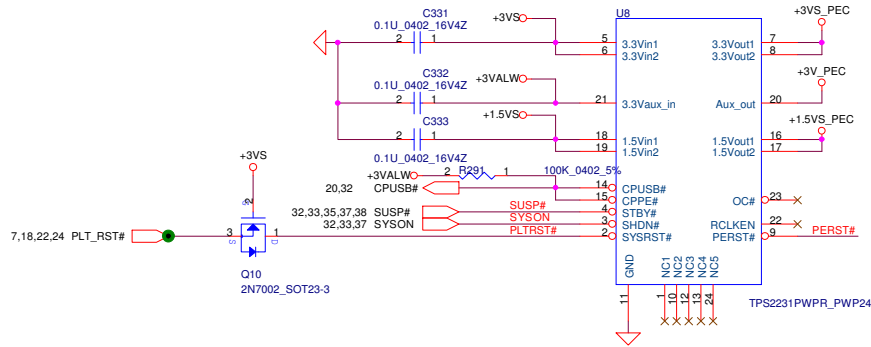


Mini-Express Card---WLAN

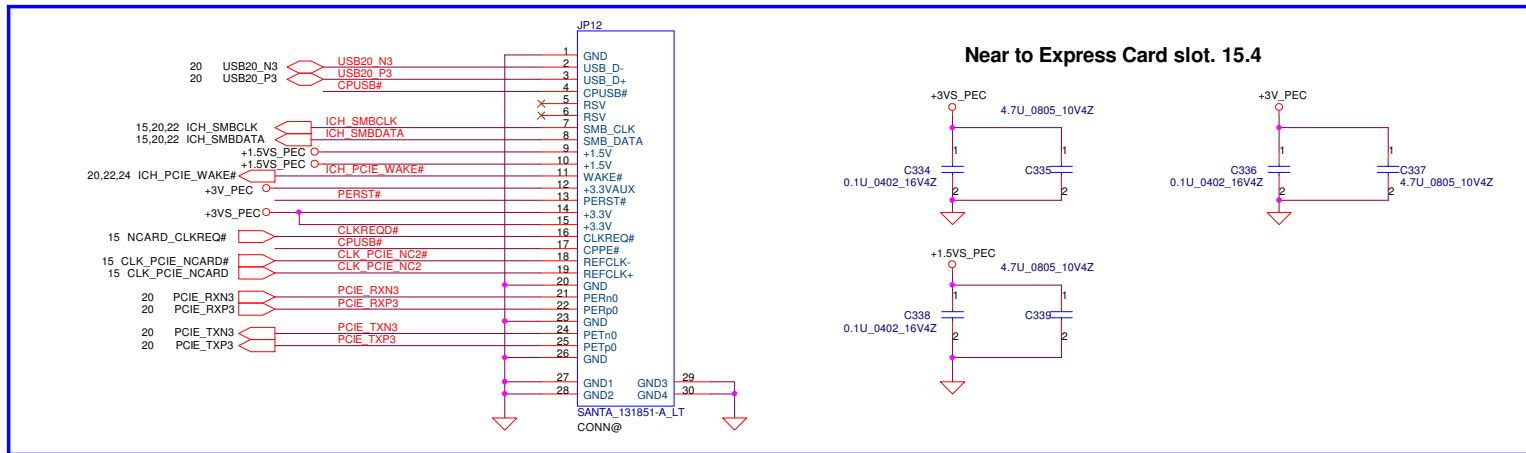


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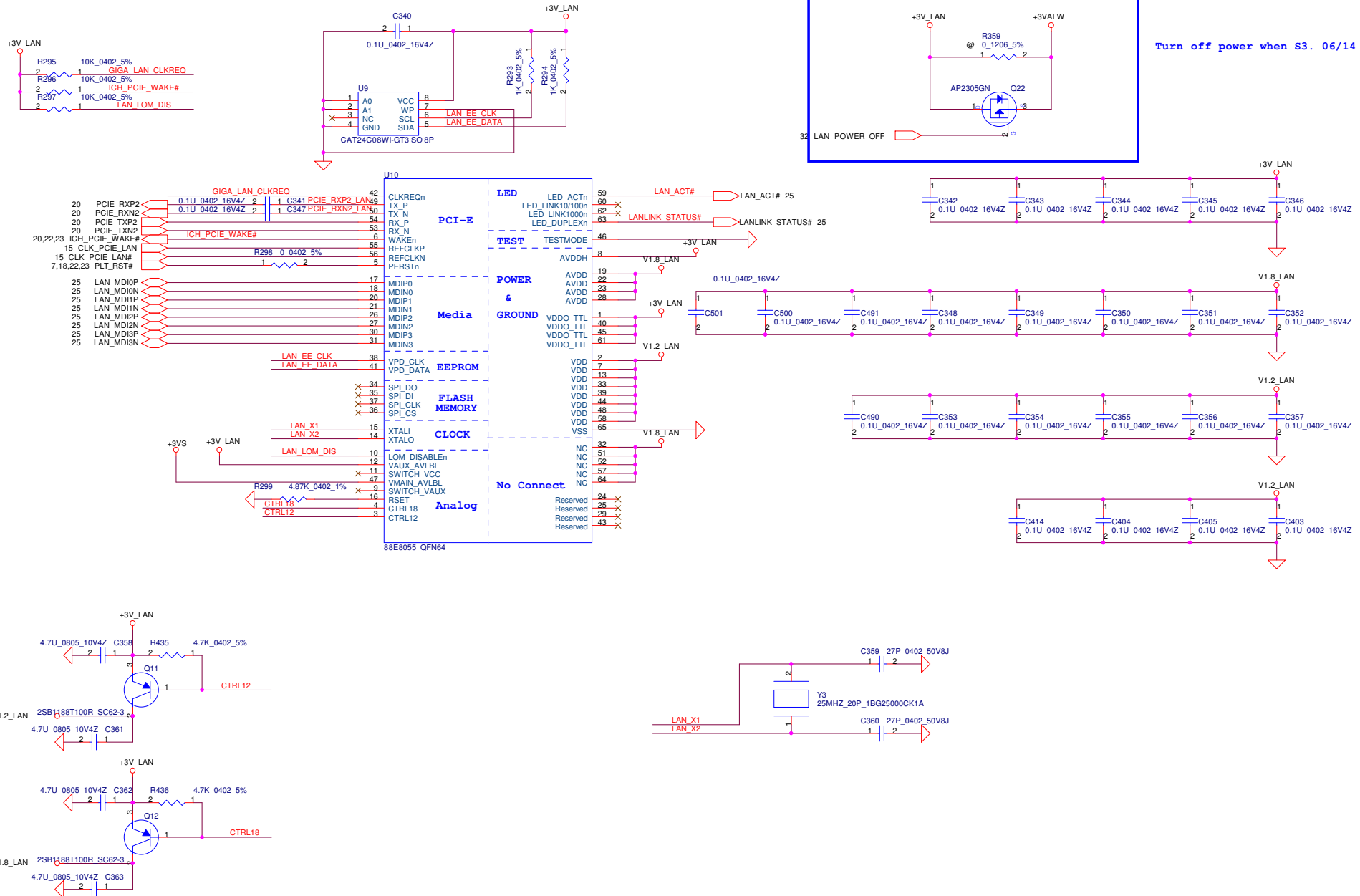
Express Card Power Switch

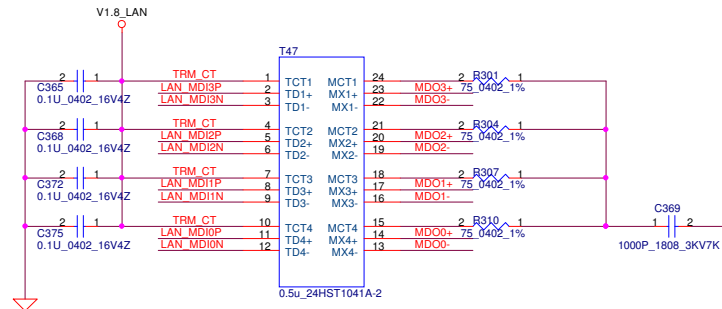
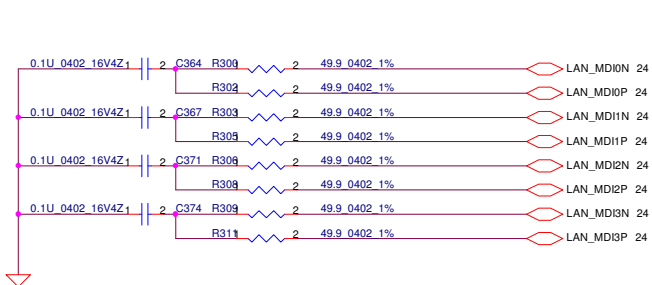


Near to Express Card slot. 15.4

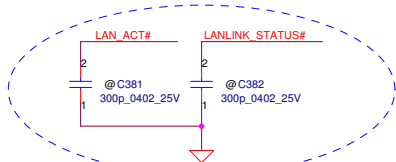
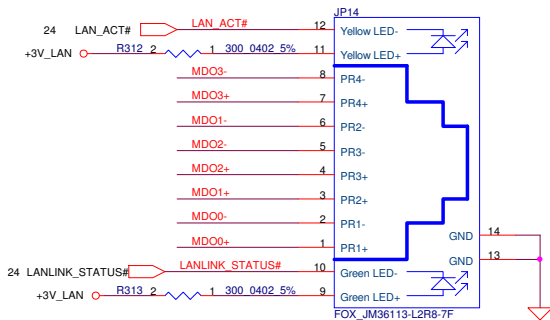


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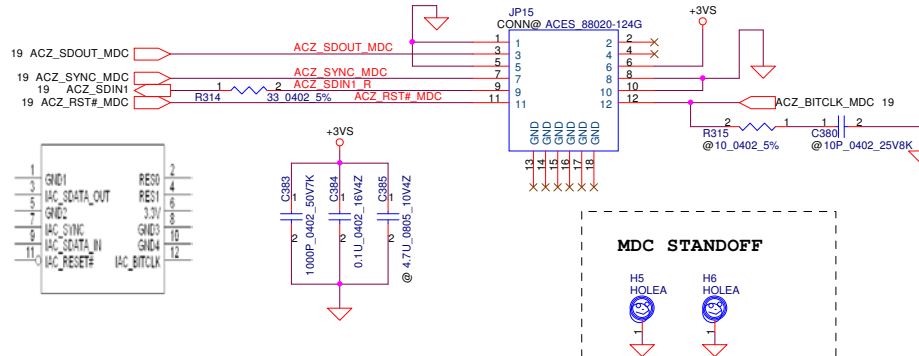
Note: MDO[3..0]+/- signals should route to JP13 first then to JP30.



1115 EMI REQUEST

MDC 1.5 Conn.

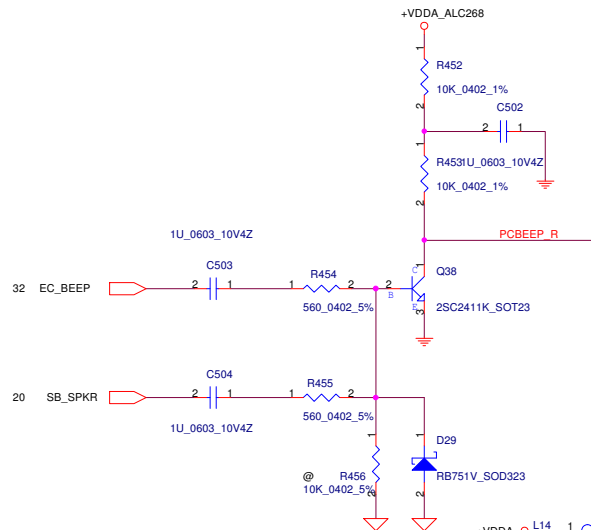
Change type 4/25



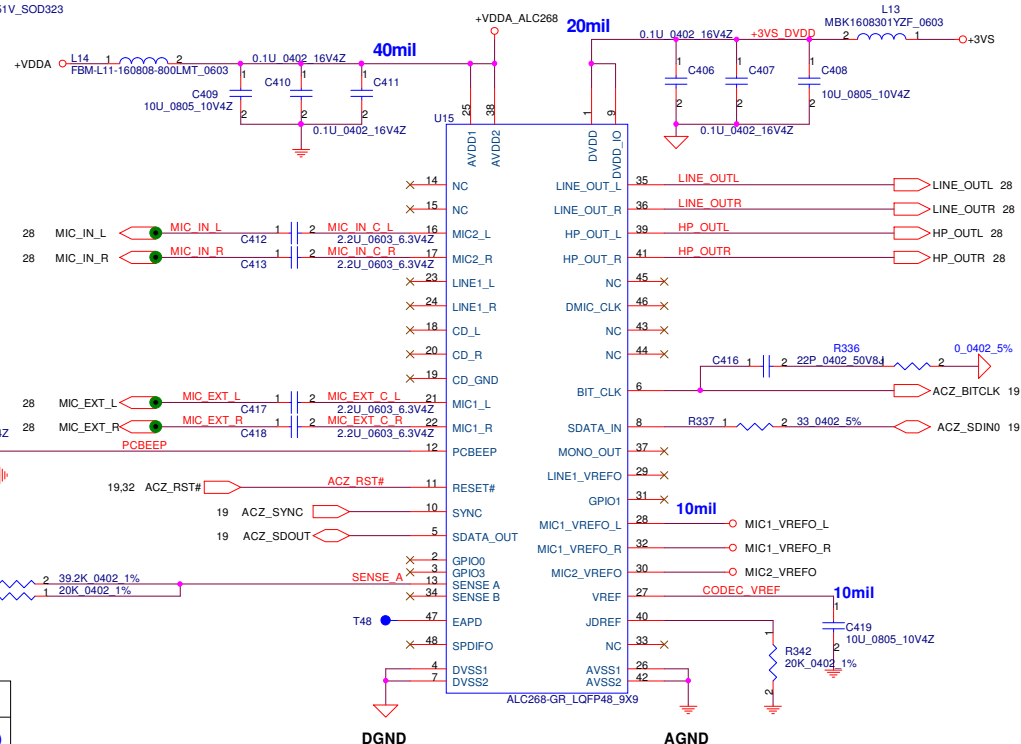
RJ11

ZZZ2
MDC cable
45@

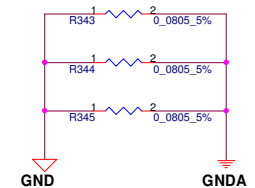
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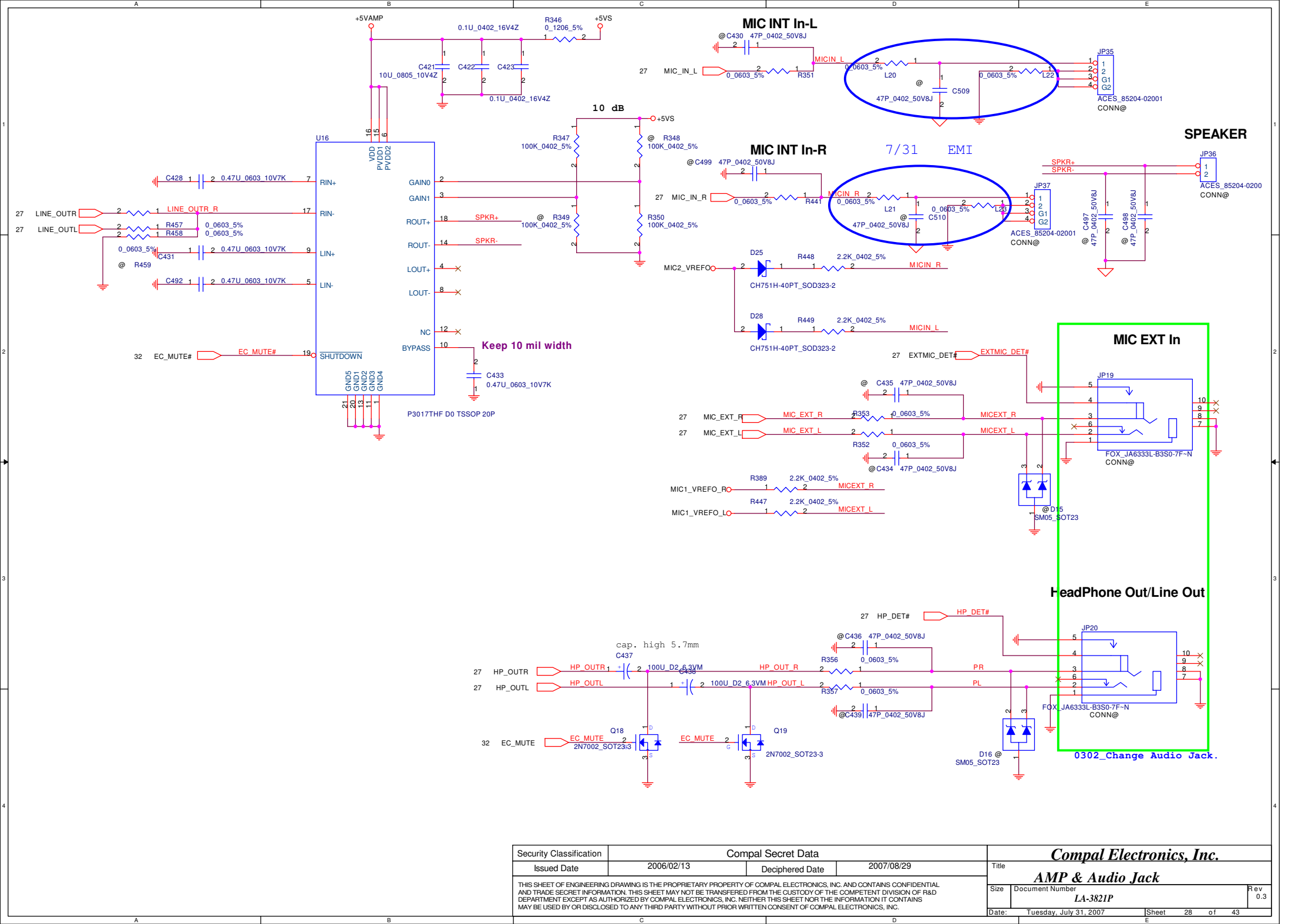
HD Audio Codec



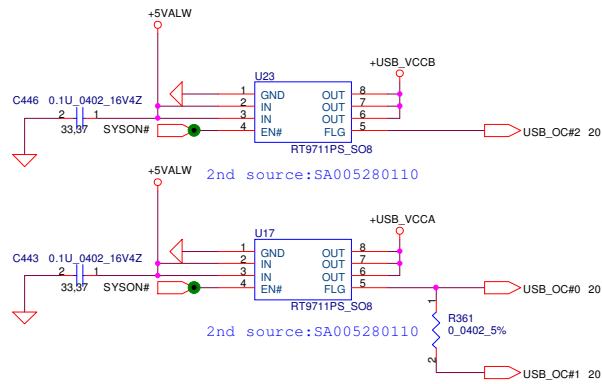
Sense Pin	Impedance	Codec Signals
SENSE A	39.2K	PORT-A (PIN 39, 41)
	20K	PORT-B (PIN 21, 22)
	10K	PORT-C (PIN 23, 24)
	5.1K	PORT-D (PIN 35, 36)
SENSE B	39.2K	PORT-E (PIN 14, 15)
	20K	PORT-F (PIN 16, 17)
	10K	PORT-G (PIN 43, 44)
	5.1K	PORT-H (PIN 45, 46)



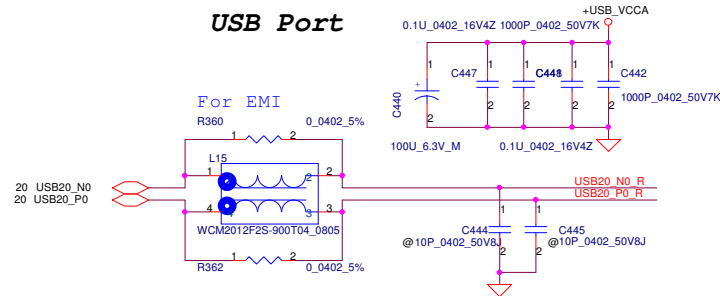
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Issued Date	2006/08/18	Deciphered Date	2007/8/18	Title	HD Audio Codec ALC268
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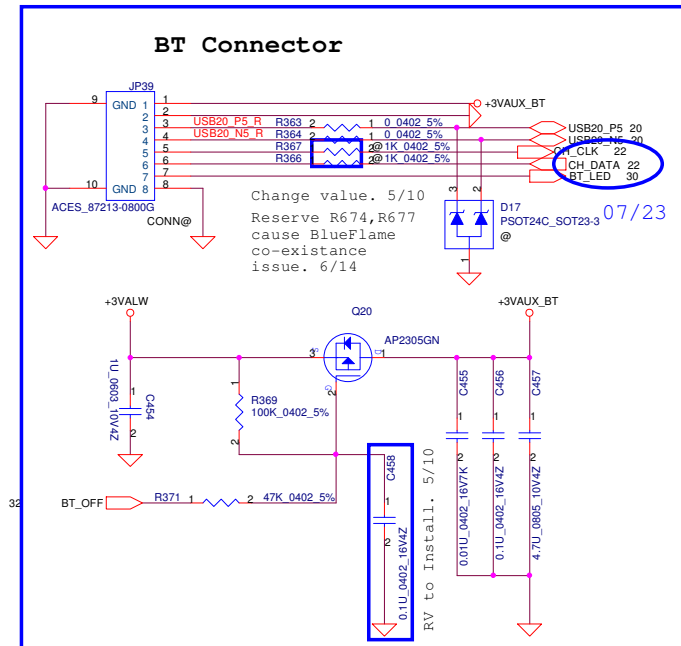
Security Classification		Compal Secret Data		Title	
Issued Date	2006/02/13	Deciphered Date	2007/08/29	AMP & Audio Jack	
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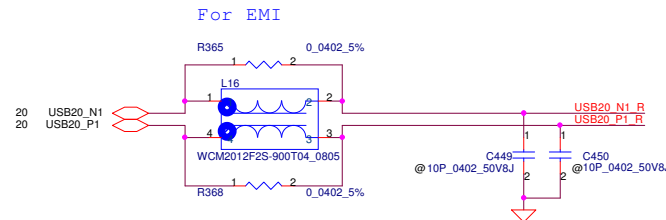
USB Port



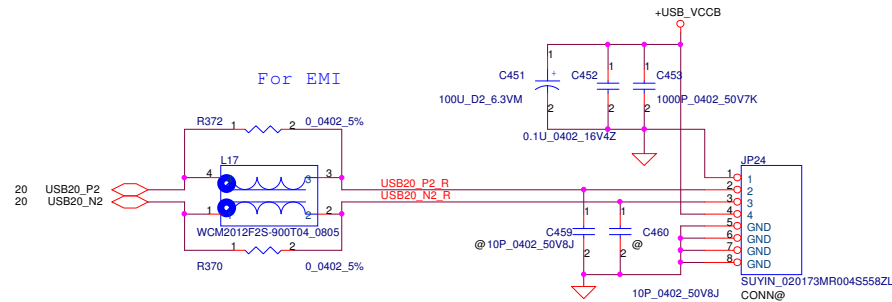
BT Connector



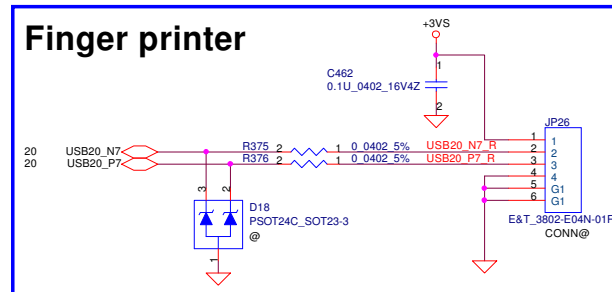
For EMI



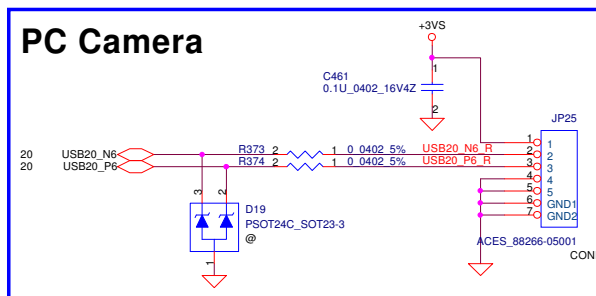
For EMI



Finger printer

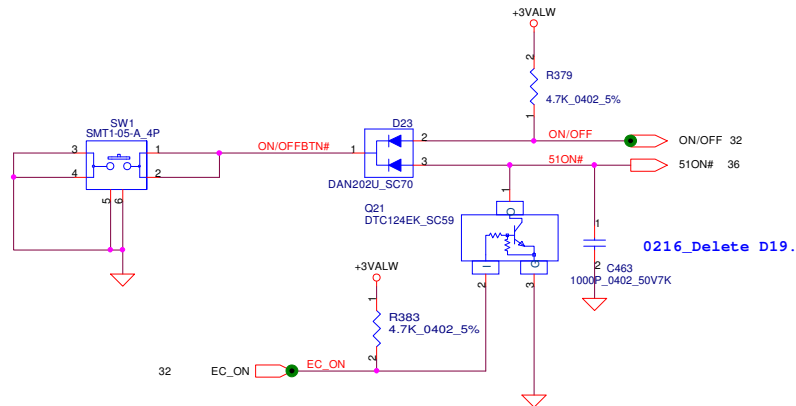


PC Camera

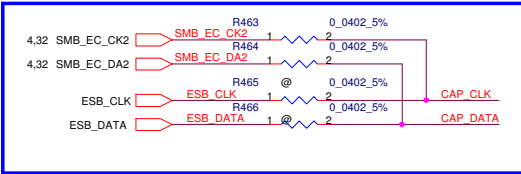


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Power ON/OFF

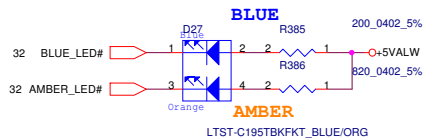


0216_Delete D19.

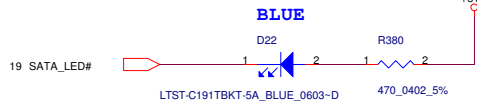


06/15 Change pin define for try ENE cap bottom

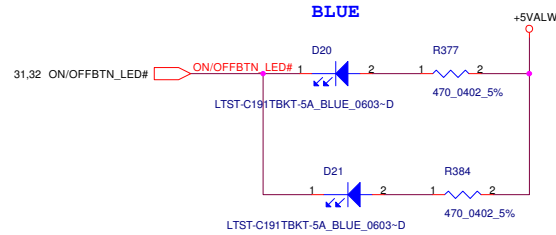
Battery Charge LED(Left 2)



HDD LED(Left 3)

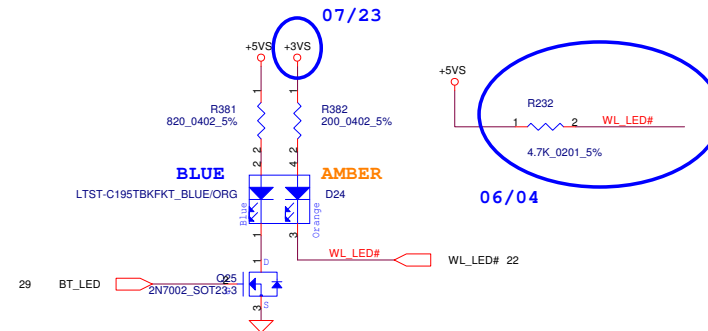


POWER LED1

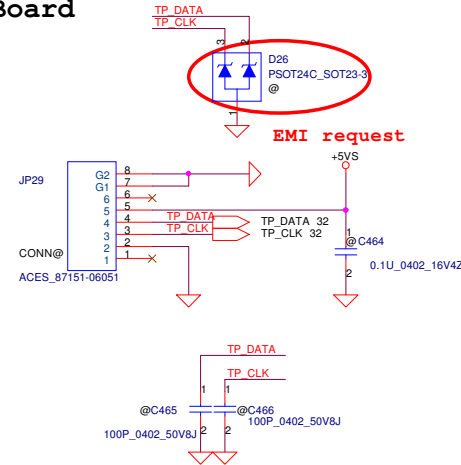


POWER LED2

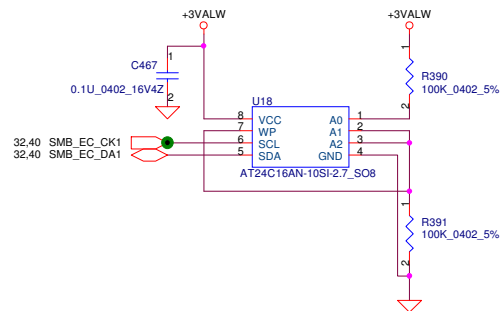
Wireless ON Amber Bluetooth ON Blue



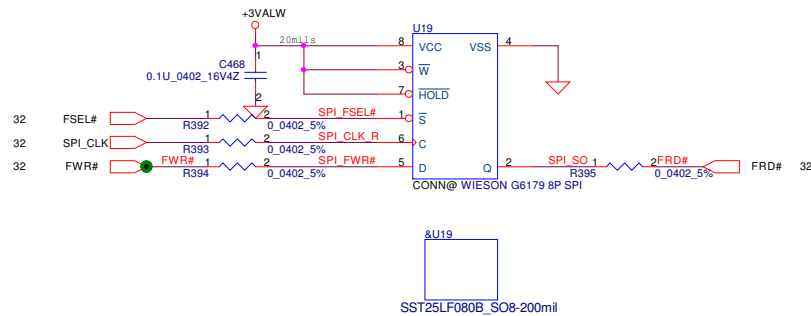
T/P Board



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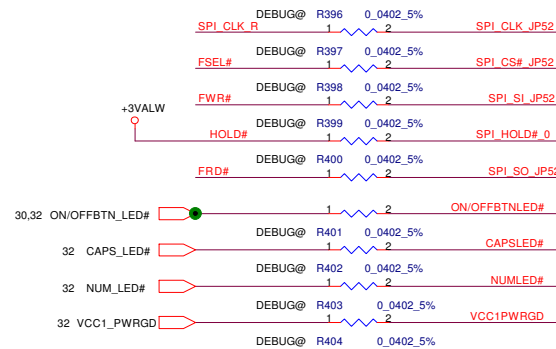
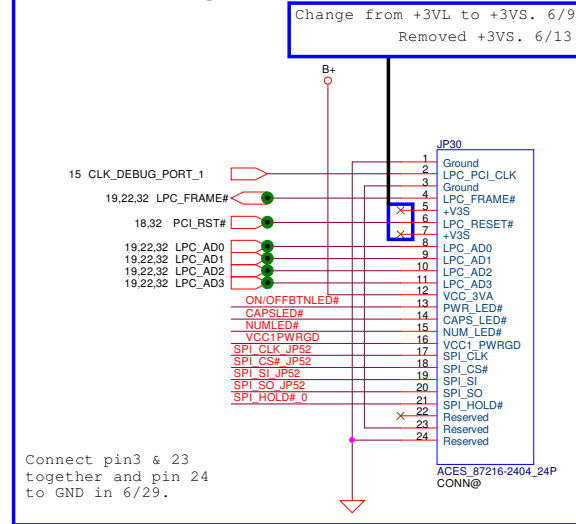


SPI ROM

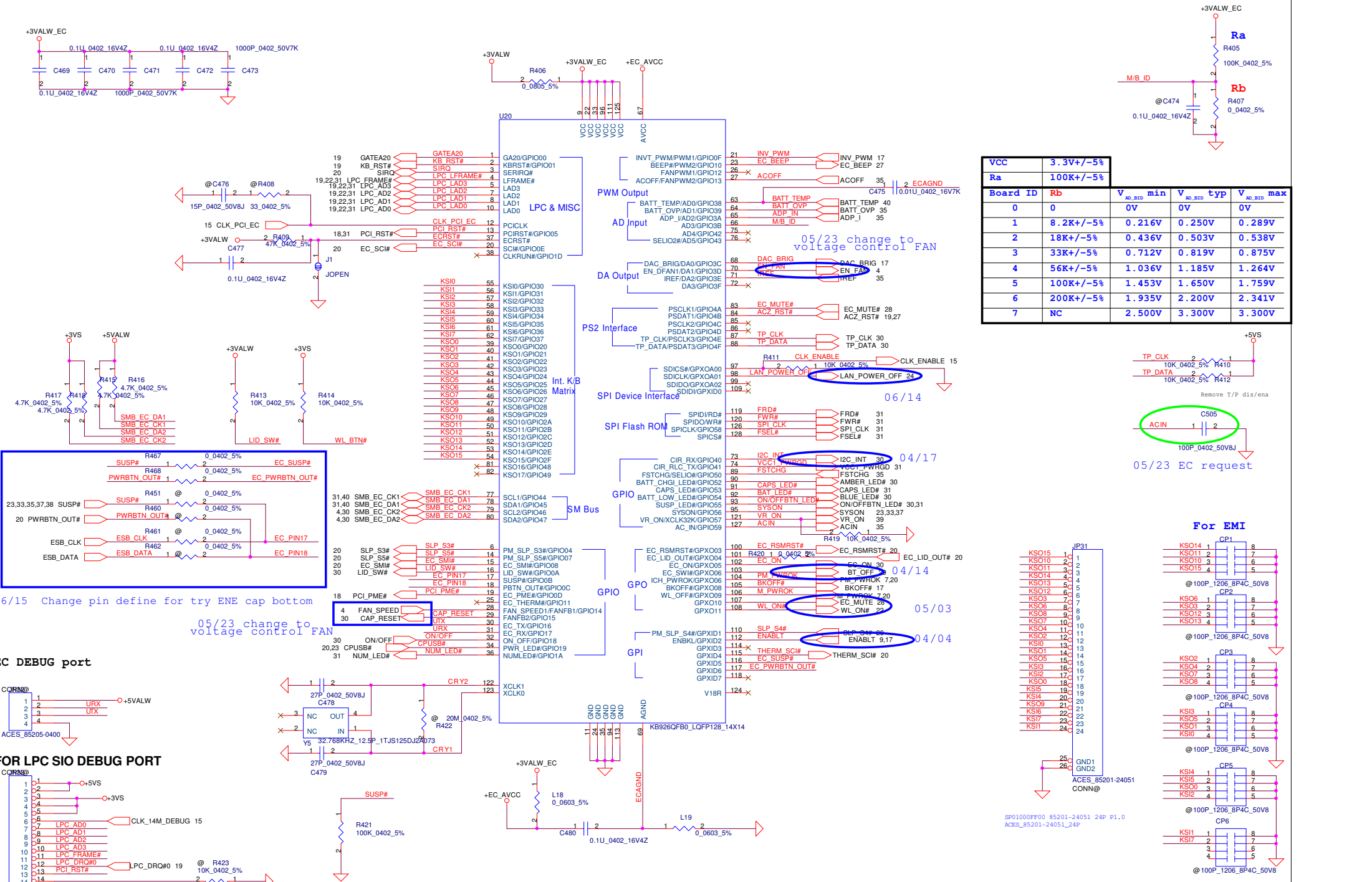


B-Test remove SPI ROM socket

LPC Debug Port

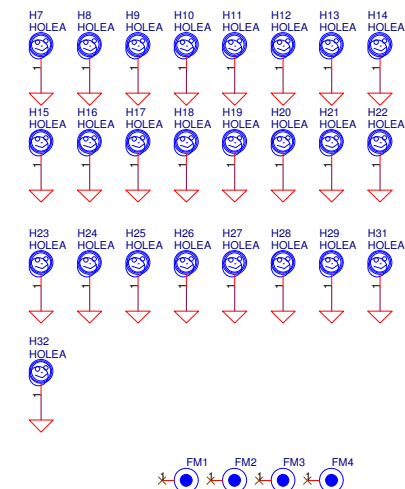
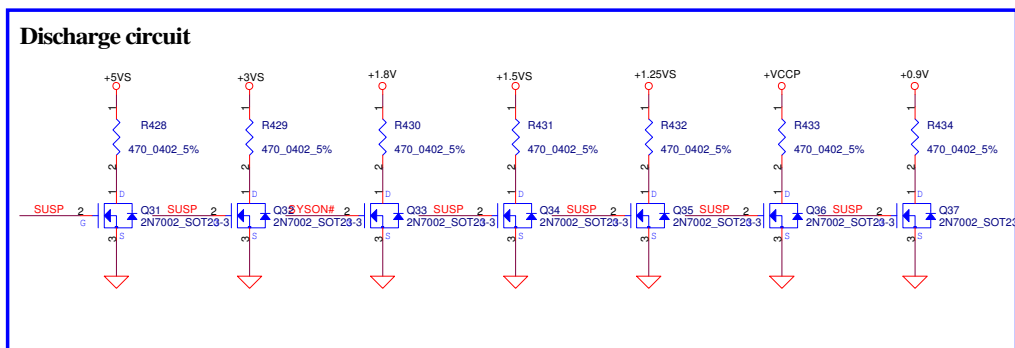
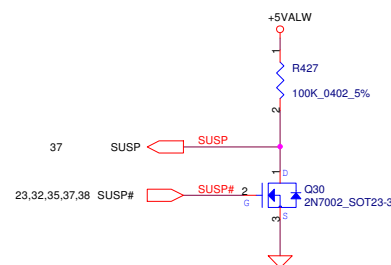
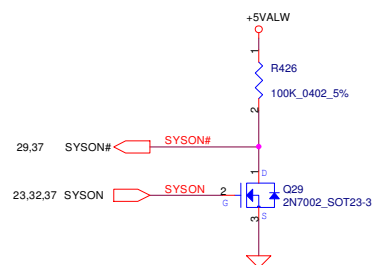
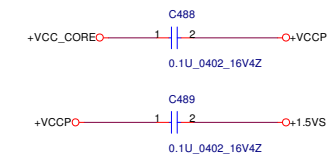
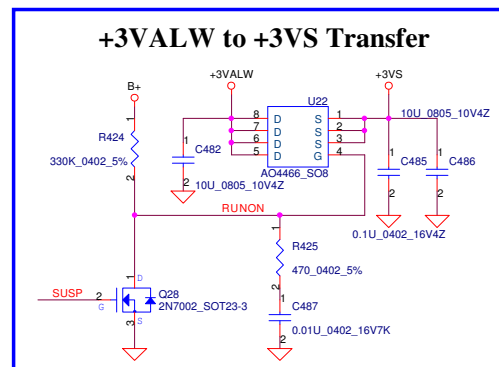
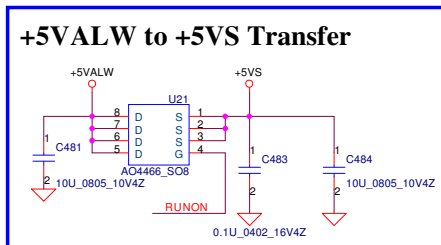


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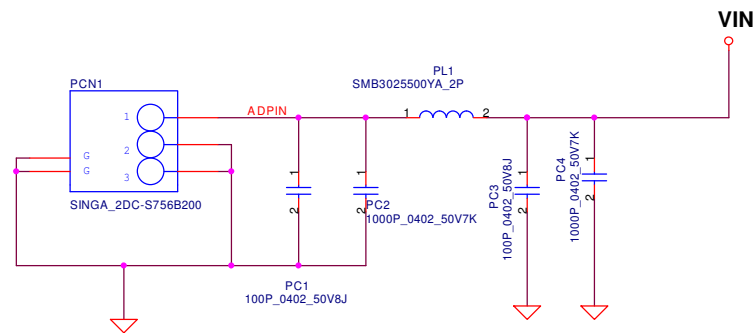


VCC	3.3V+/-5%			
Ra	100K+/-5%			
Board ID	Rb	V _{AD_BID} min	V _{AD_BID} typ	V _{AD_BID} max
0	0	0V	0V	0V
1	8.2K+/-5%	0.216V	0.250V	0.289V
2	18K+/-5%	0.436V	0.503V	0.538V
3	33K+/-5%	0.712V	0.819V	0.875V
4	56K+/-5%	1.036V	1.185V	1.264V
5	100K+/-5%	1.453V	1.650V	1.759V
6	200K+/-5%	1.935V	2.200V	2.341V
7	NC	2.500V	3.300V	3.300V

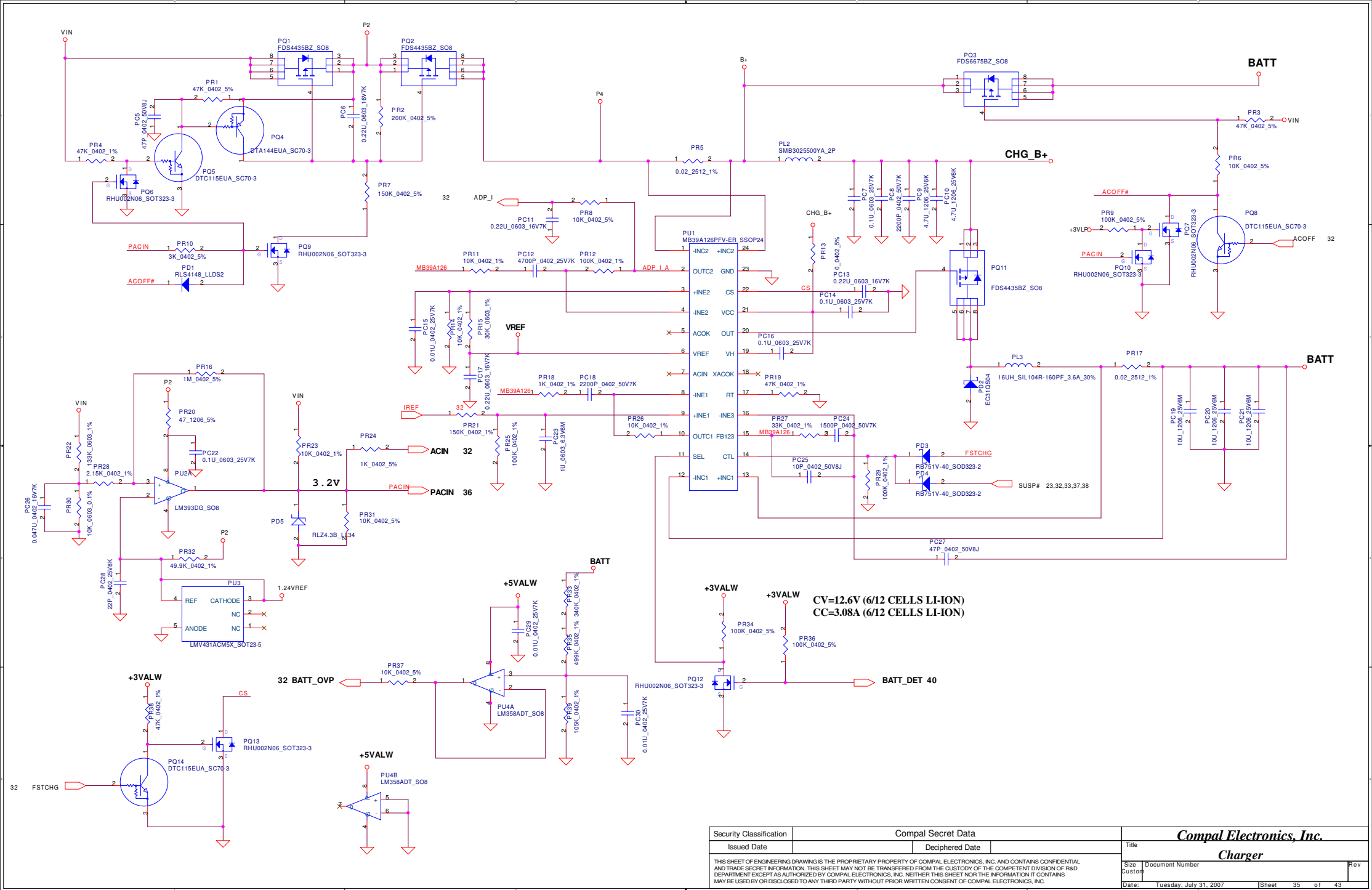
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Issued Date	2006/02/13	Deciphered Date	2006/07/26	Title	
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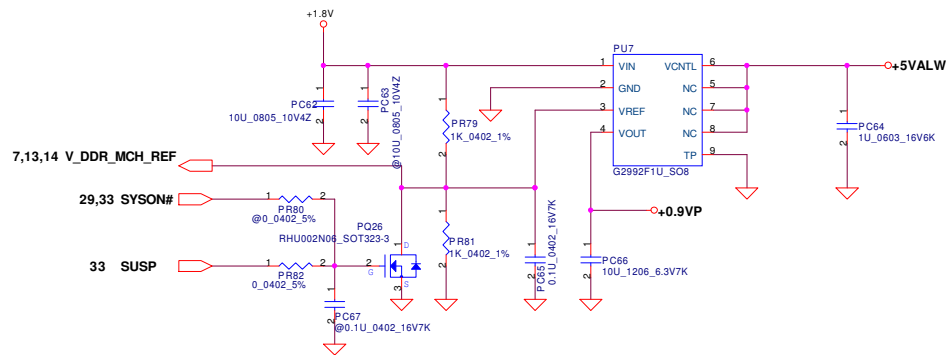
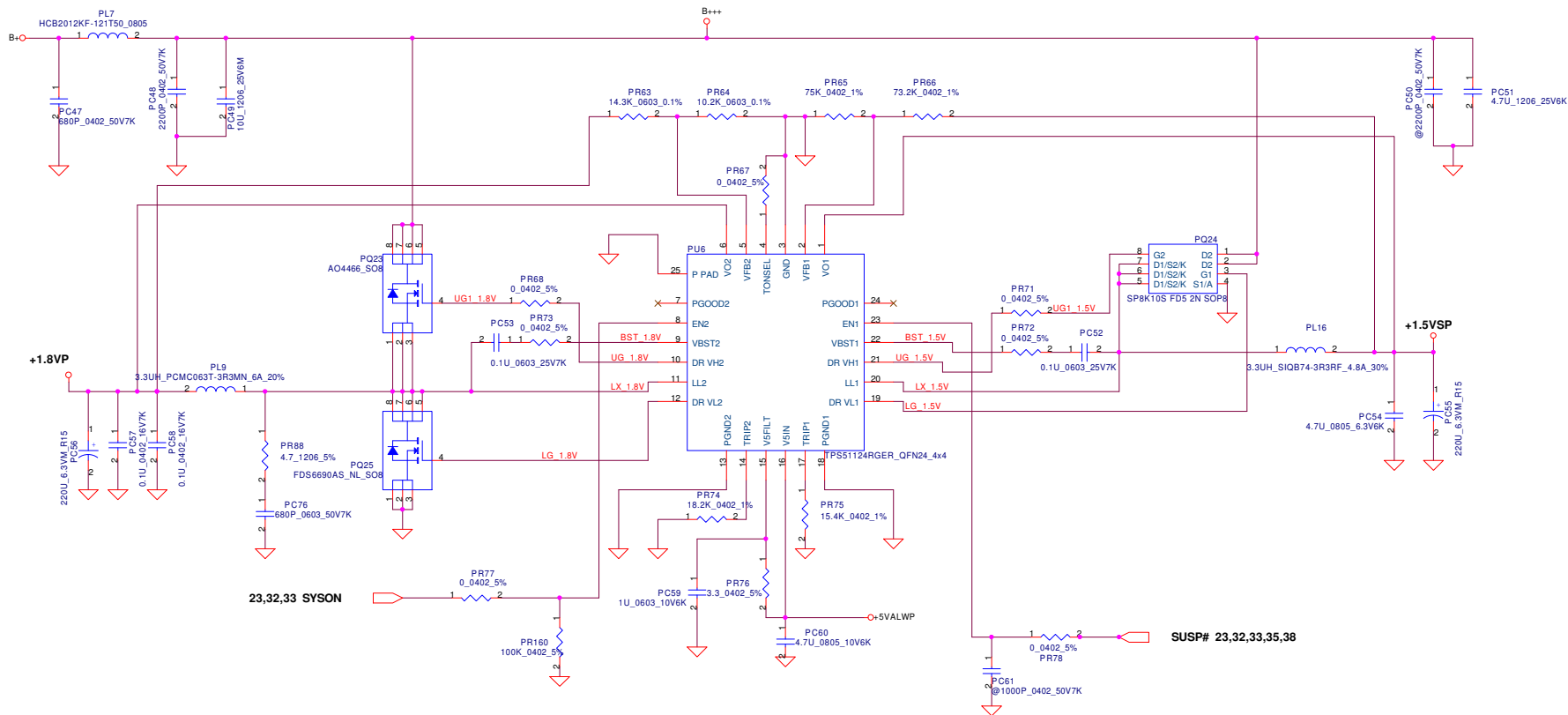


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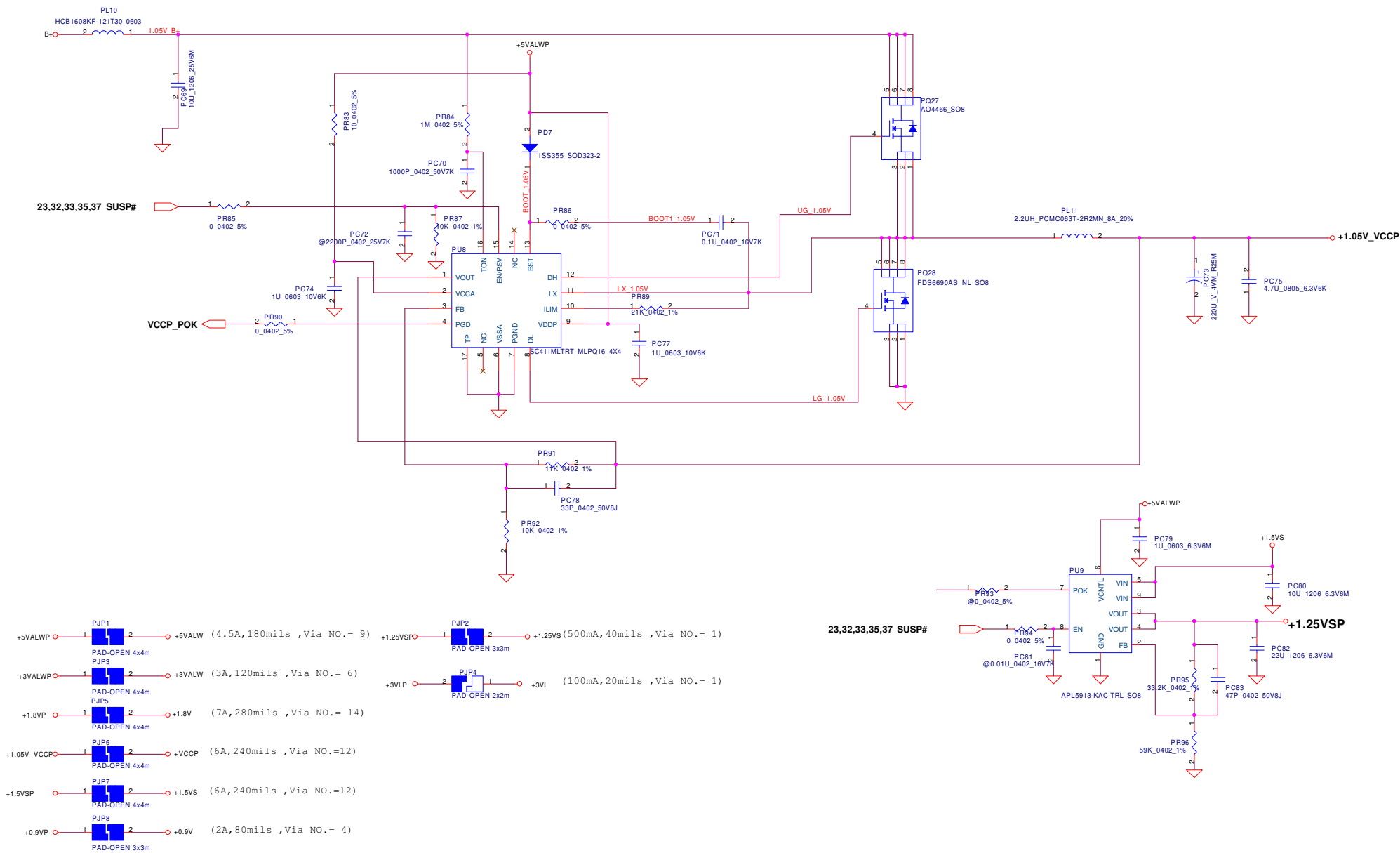


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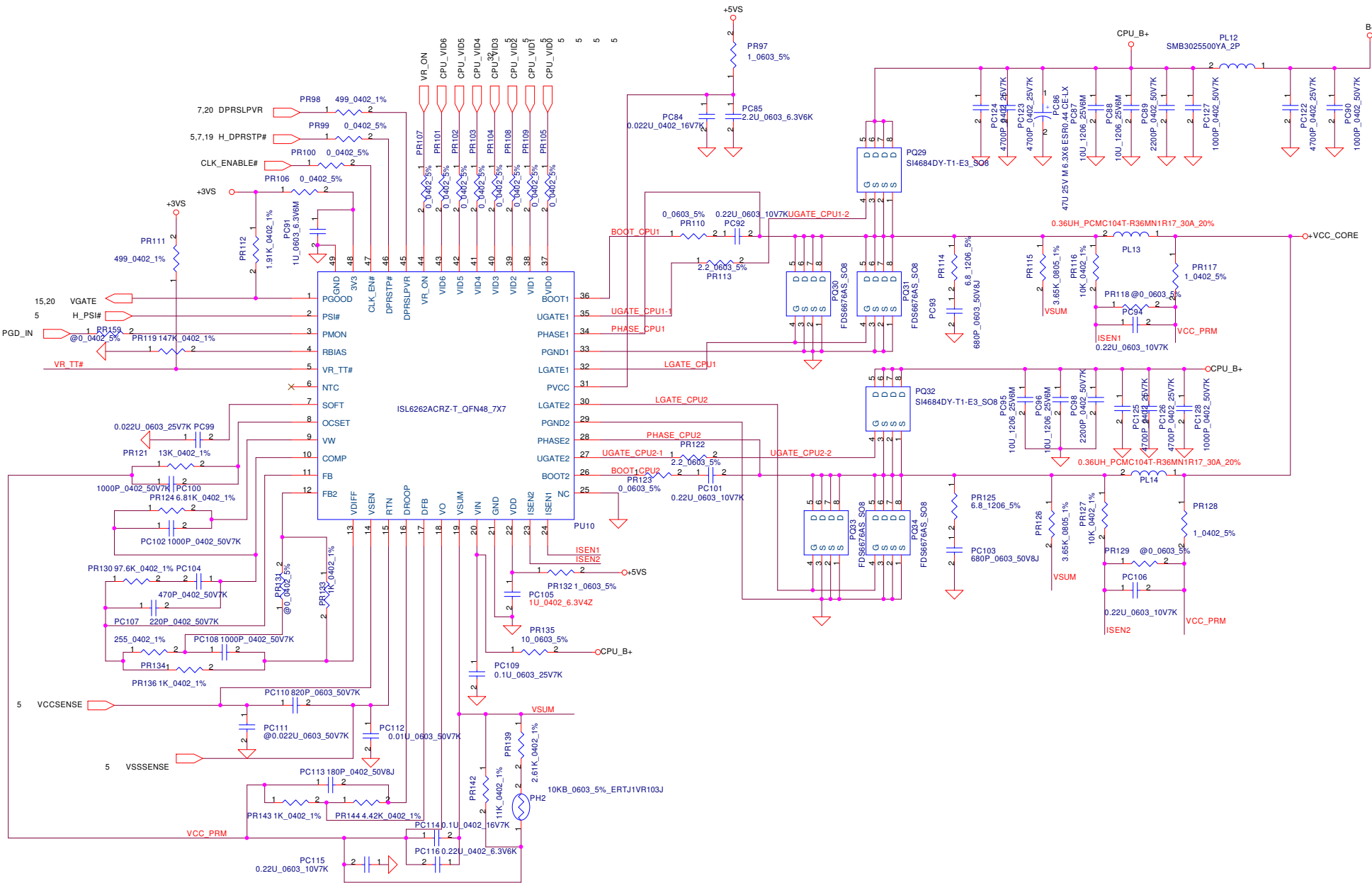


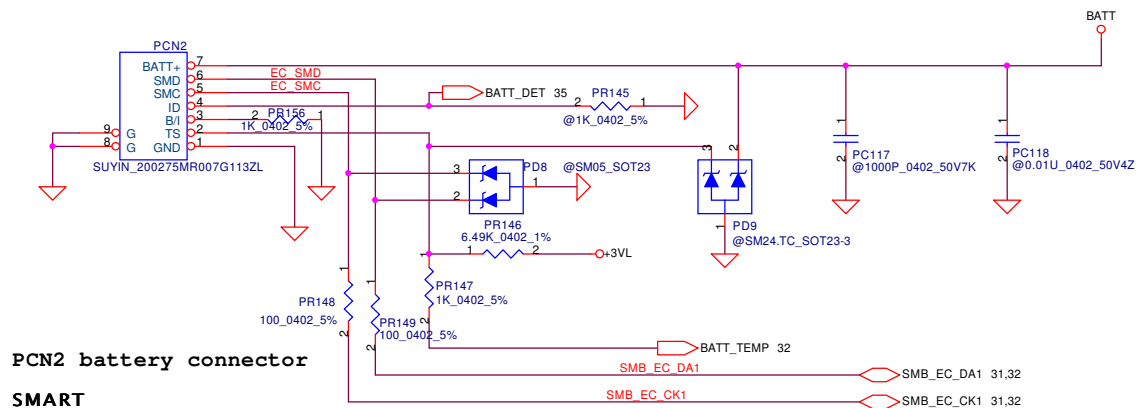


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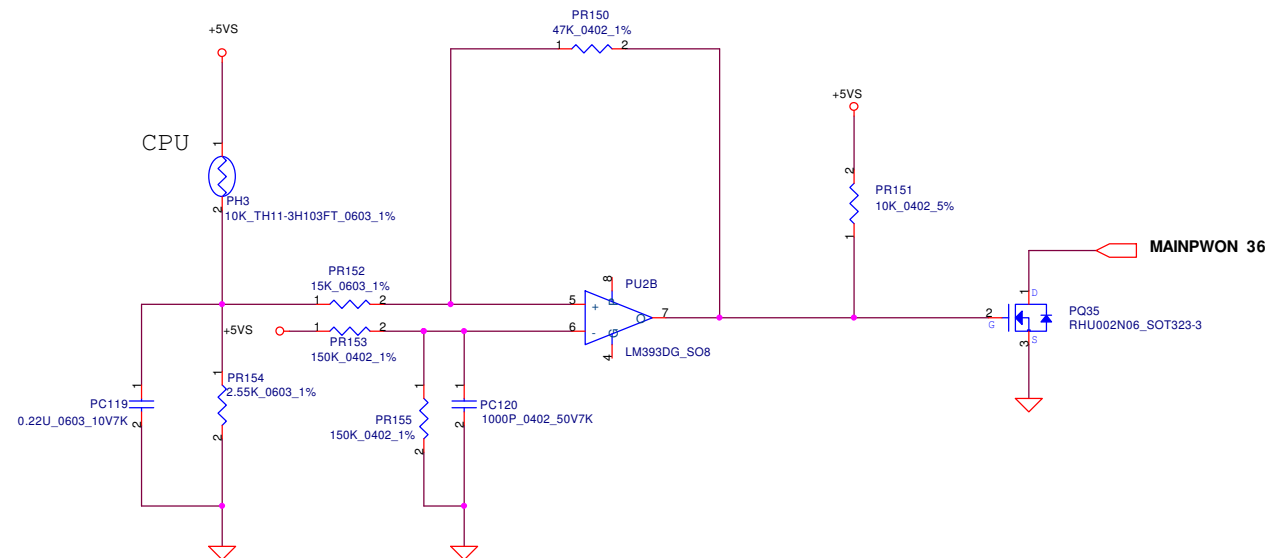


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PH3 under CPU botten side :
 CPU thermal protection at 90 $\pm$ 3 degree C
 Recovery at 47 $\pm$ 3 degree C



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Item	Reason for change	PG#	Modify List	Date	Phase
1	RT8203 crosstalk issue	37	add PC121 and 0.1uF	2007/05/24	SI
2	PU6 pin8 add a resistor to GND	38	add PR160 100K_ohm	2007/05/24	SI
3	remove PL15	36	remove PL15	2007/06/12	SI
4	EMI request	39	add PC122,PC123,PC124,PC125,PC126,PC127,PC128	2007/07/23	PV
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

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Version change list (P.I.R. List)

Power section

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Item	Reason for change	PG#	Modify List	Date	Phase
1	EC team request	32	ACIN add 100P (C505) to GND	2007/05/30	SI
2	Change Board ID	32	R407 from 0 Ohm to 8.2K,R405 install 100K	2007/05/30	SI
3	USB power switch fail	29	U23 & U17 change pin 4 from SLP_S5# to SYSON#	2007/05/30	SI
4	FAN use voltage control	4	del U2,Q1;add U24,C13 for 3 pin FAN	2007/05/30	SI
5	USB JP24 fail	29	Change pin define	2007/05/30	SI
6	Speaker output fail	28	Add R457,R458,R459 for Line_out	2007/05/30	SI
7	MS Pro fail	26	Add MS_D1,MS_D2,MS_D3 net	2007/06/06	SI
8	WLAN LED fail when disable WLAN	30	Add R232 pull high +5VS	2007/06/06	SI
9	+3VALW leakage	30	Del R387	2007/06/06	SI
10	Capacitor board fail	32	Add net CAP_RESET for Capacitor board reset	2007/06/06	SI
11	XDP fail	15	XDP clock share in robeson card	2007/06/06	SI
12	LAN power consumption is too large when S3	24	Add Q22	2007/06/14	SI
13	RJ11' cap is duplicate MDC module.	25	Delete C378,C379	2007/06/14	SI
14	Reverse some resister for tring ENE cap board	30 32	Add R460~R468,R451	2007/06/14	SI
15	+LCDVDD over current when diplay.	17	Change R163 from 47K to 100K Change C248 from 0.1U to 0.22U	2007/06/21	SI
16	LAN fail	24	Change JP14 pin define	2007/06/06	SI
17	WLAN LED (Amber led) issue	30	WLAN LED need change from +5VS to +3VS	2007/07/23	PV
18	030 project Bluetooth module issue	29	Swap pin5 & pin7	2007/07/23	PV
19	change Cap board LED supply voltage	30	from +3VS to +5VS	2007/07/23	PV
20	CMOS timing can't reset	19	SHORT PAD (CLRP3) connect between +RTCVCC and GND	2007/07/23	PV
20	EMI issue (CPU core)	5	add C43 & C44 (330U)	2007/07/23	PV
21	EMI/ESD issue (XDO connector)	4	delete XDP connector	2007/07/23	PV
22	EMI/ESD issue (RJ11 connector)	25	add 1000P at RJ11 RING & TIP	2007/07/23	PV
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