

Compal Confidential

Schematic Document

MCP79-MX

2009 / 02 / 19 Rev:1.0

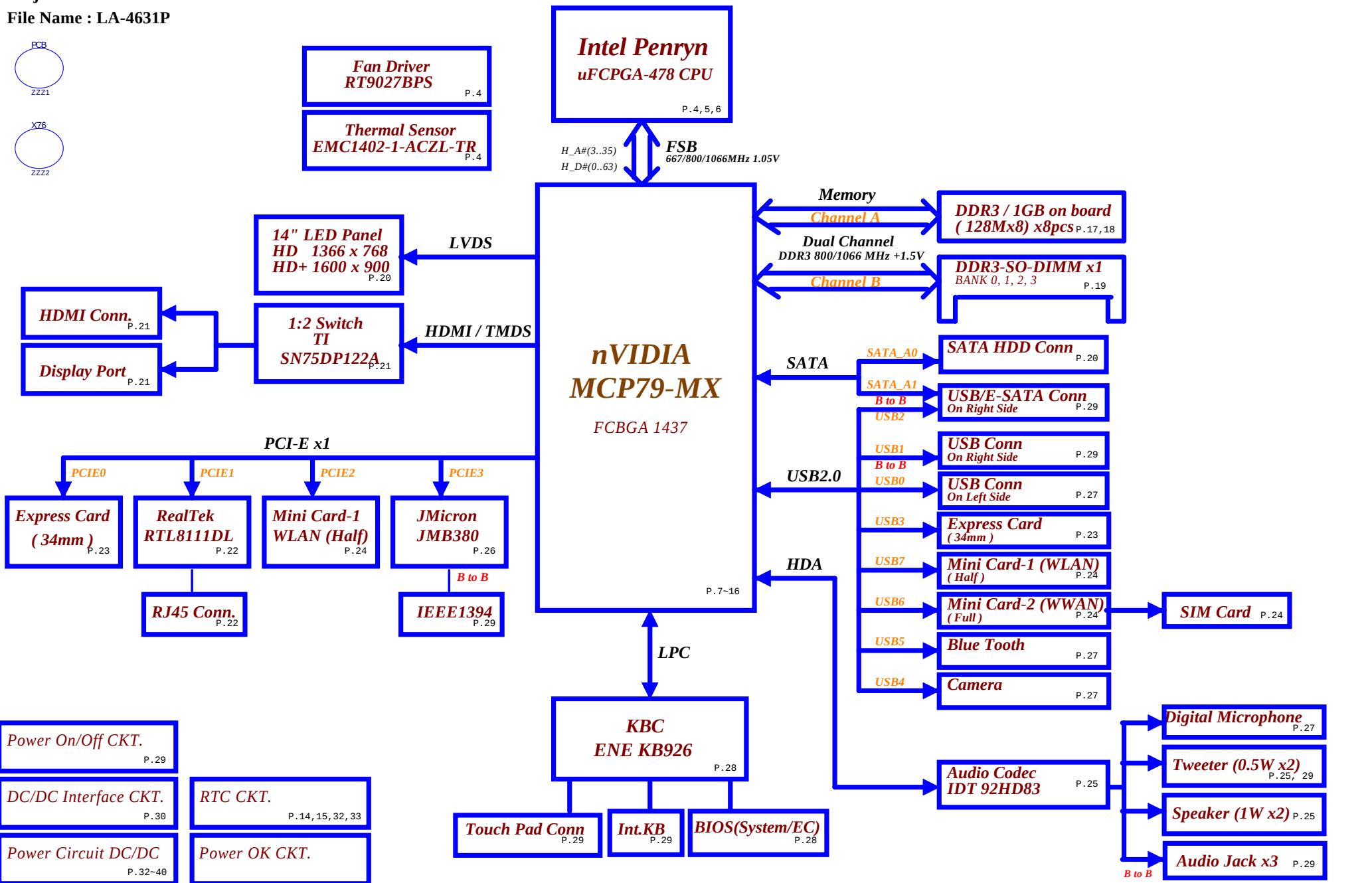
Security Classification		Compal Secret Data		Title	
Issued Date		Deciphered Date		2009/02/19	
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Compal confidential

Project Code: KCM00

File Name : LA-4631P

Braxton 14"

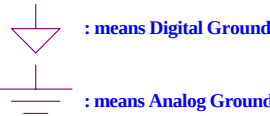


Security Classification	Compal Secret Data			Title	
Issued Date	2009/02/19	Deciphered Date	2009/12/31	Block Diagram	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size Custom	Document Number LA-4631P
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Voltage Rails 0 MEANS ON X MEANS OFF

power plane	State				
		+B	+5VALW +3VALW +1.1VALW	+1.5V	+5VS +3VS +1.8VS +1.1VS +VCCP +1.0VS +0.75VS +CPU_CORE +1.5VS
S0	0	0	0	0	0
S1	0	0	0	0	0
S3	0	0	0	0	X
S5 S4/AC	0	0	X	X	X
S5 S4/ Battery only	0	X	X	X	X
S5 S4/AC & Battery don't exist	X	X	X	X	X

Symbol Note :



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

Board ID Table for AD channel

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

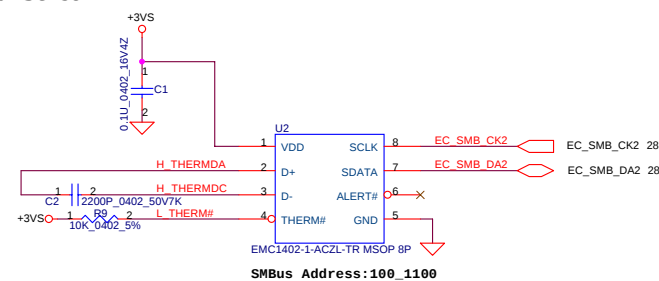
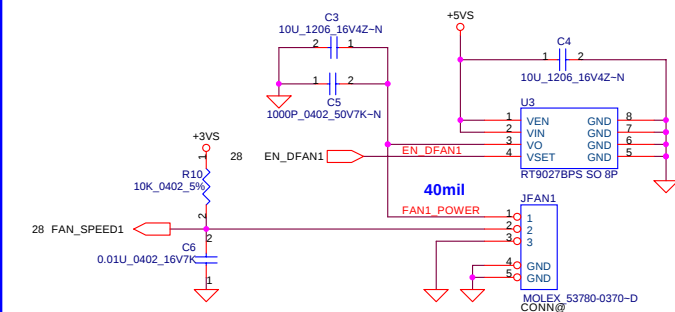
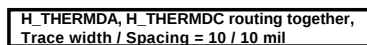
BOARD ID Table

Board ID	PCB Revision
0	0.1
1	0.2
2	0.3
3	0.4
4	0.5
5	1.0
6	
7	

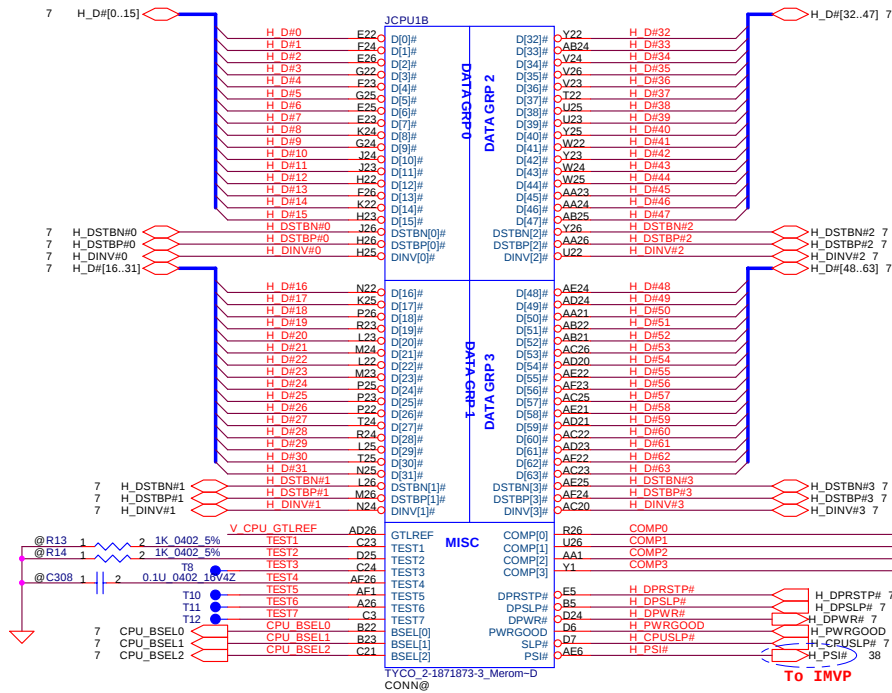
SMBUS Control Table

	SOURCE	INVERTER	BATT	SERIAL EEPROM	THERMAL SENSOR (CPU)	SODIMM	EXP CARD	MINI CARD1	MINI CARD2
EC_SMB_CK1 EC_SMB_DA1	KB926	X	V	X	X	X	X	X	X
EC_SMB_CK2 EC_SMB_DA2	KB926	X	X	X	V	X	X	X	X
MEM_SMBCLK MEM_SMBDATA	MCP79	X	X	X	X	V	X	X	X
MCP_SMB_CLK MCP_SMB_DATA	MCP79	X	X	X	X	X	V	V	V

MINI CARD 1 RESERVED +3VALW TO PULL HIGH

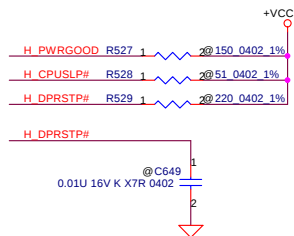


Security Classification	Compal Secret Data			Compal Electronics, Inc. Penryn(1/3)-AGTL+ITP-XDP	
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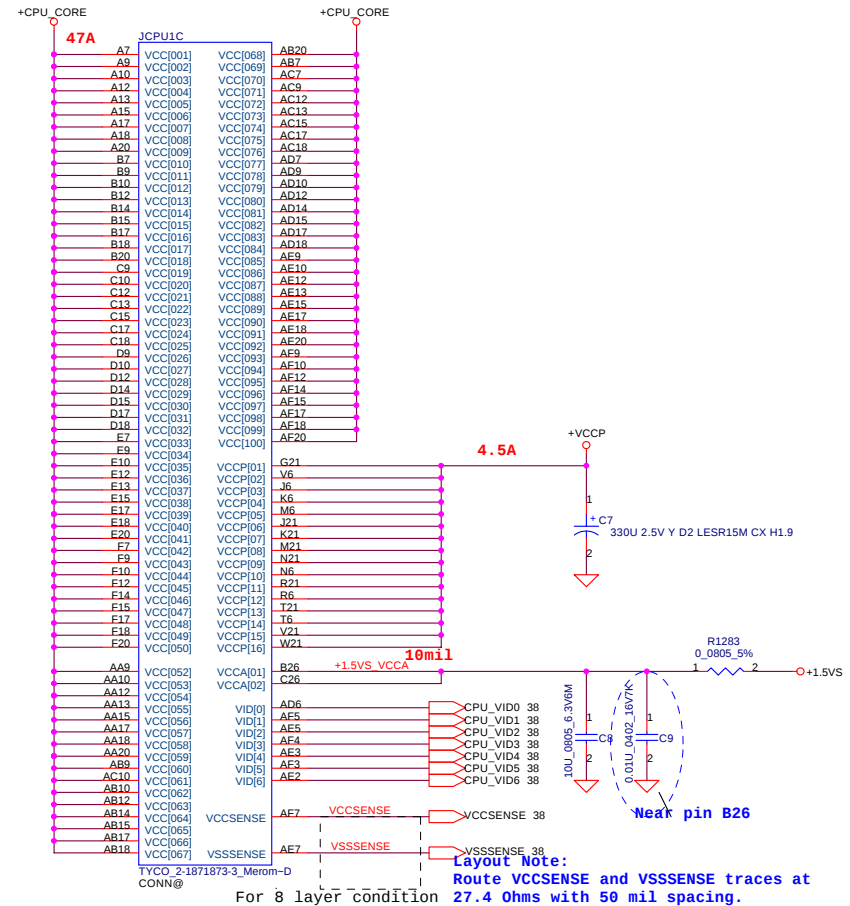
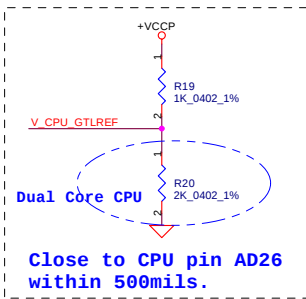


layout note: Rout H_DPRSTP# from ICH9 to IMPV6 then to GMCH & CPU
 layout note: Route TEST3 & TEST5 traces on ground referenced layer to the TPs

CPU_BSEL	CPU_BSEL2	CPU_BSEL1	CPU_BSEL0
166	0	1	1
200	0	1	0
266	0	0	0

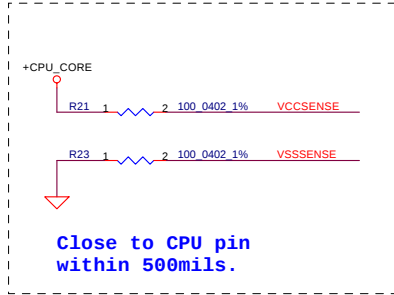


49.9 25.5 29.9 25.5
 Resistor placed within 0.5" of CPU pin. Trace should be at least 25 mils away from any other toggling signal. COMP[0,2] trace width is 18 mils. COMP[1,3] trace width is 4



For 8 layer condition

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



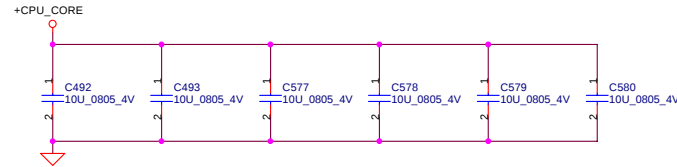
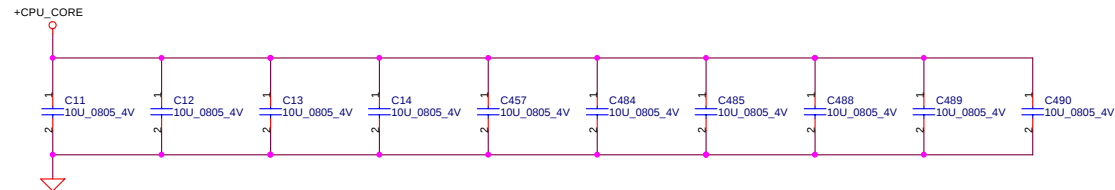
For 6 layer
 Z=27.4 ohm
 VCCSENSE, VSSSENSE/ 14mils (MS), 16mils (SL) width, 7mils space, 25mils space to other signals Mismatch =25mils.

Near CPU CORE regulator

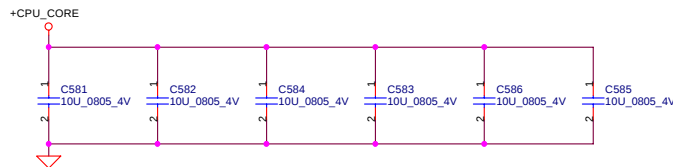
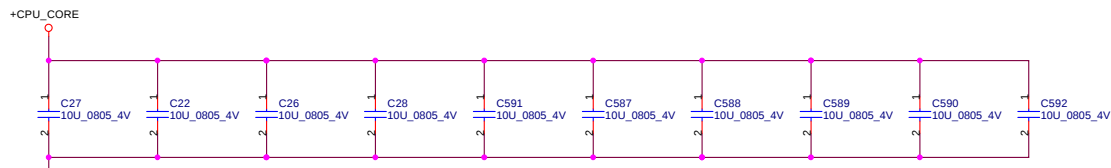
ESR <= 1.5m ohm
Capacitor > 1980uF

JCPU1D		
A4	VSS[001]	P6
A8	VSS[002]	P21
A11	VSS[003]	P24
A14	VSS[004]	R2
A16	VSS[005]	R5
A19	VSS[006]	R22
A23	VSS[007]	R25
A62	VSS[008]	T1
B6	VSS[009]	T4
B8	VSS[010]	T23
B11	VSS[011]	T26
B13	VSS[012]	U3
B16	VSS[013]	U6
B19	VSS[014]	U21
B21	VSS[015]	U24
B24	VSS[016]	V2
C5	VSS[017]	V5
C8	VSS[018]	V22
C11	VSS[019]	V25
C14	VSS[020]	W1
C16	VSS[021]	W4
C19	VSS[022]	W23
C2	VSS[023]	W26
C22	VSS[024]	Y3
C25	VSS[025]	Y6
D1	VSS[026]	Y21
D4	VSS[027]	Y24
D8	VSS[028]	AA2
D11	VSS[029]	AA5
D16	VSS[030]	AA11
D19	VSS[031]	AA12
D23	VSS[032]	AA14
D26	VSS[033]	AA16
E3	VSS[034]	AA19
E6	VSS[035]	AA22
E8	VSS[036]	AA25
E11	VSS[037]	AB1
E14	VSS[038]	AB4
E16	VSS[039]	AB8
E19	VSS[040]	AB11
E21	VSS[041]	AB13
E24	VSS[042]	AB16
F5	VSS[043]	AB19
F8	VSS[044]	AB23
F11	VSS[045]	AB26
F13	VSS[046]	AC3
F16	VSS[047]	AC6
F19	VSS[048]	AC8
F2	VSS[049]	AC11
F22	VSS[050]	AC14
F25	VSS[051]	AC16
G4	VSS[052]	AC19
G1	VSS[053]	AC21
G23	VSS[054]	AC24
G26	VSS[055]	AD2
H3	VSS[056]	AD5
H6	VSS[057]	AD8
H21	VSS[058]	AD11
H24	VSS[059]	AD13
J2	VSS[060]	AD16
J5	VSS[061]	AD19
J22	VSS[062]	AD22
J25	VSS[063]	AD25
K1	VSS[064]	AE1
K4	VSS[065]	AE4
K23	VSS[066]	AE8
K26	VSS[067]	AE11
L3	VSS[068]	AE14
L6	VSS[069]	AE16
L21	VSS[070]	AE19
L24	VSS[071]	AE23
M2	VSS[072]	AE26
M5	VSS[073]	A2
M22	VSS[074]	AF6
M25	VSS[075]	AF8
N1	VSS[076]	AF11
N4	VSS[077]	AF13
N23	VSS[078]	AF16
N26	VSS[079]	AF19
P3	VSS[080]	AF21
	VSS[081]	A25
		AF25

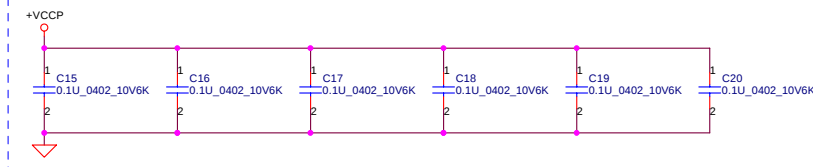
TYCO_2-1871873_3_Merom-D
CONN@



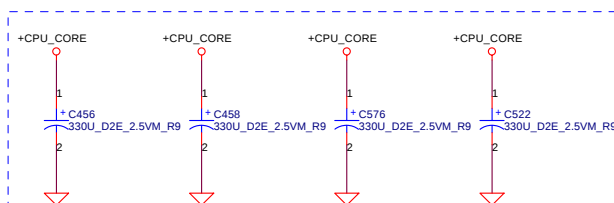
16pcs on TOP side



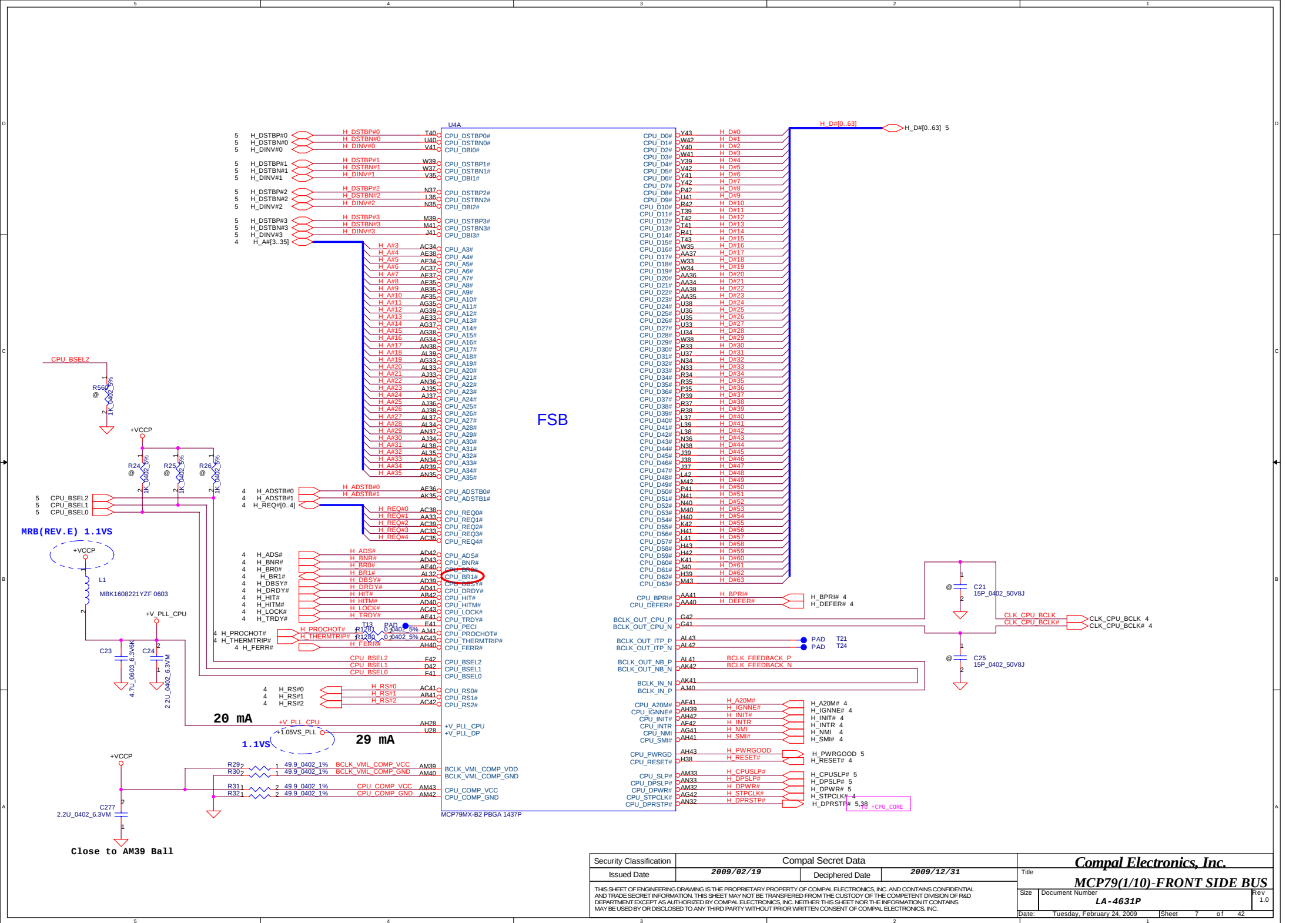
16pcs on bottom side



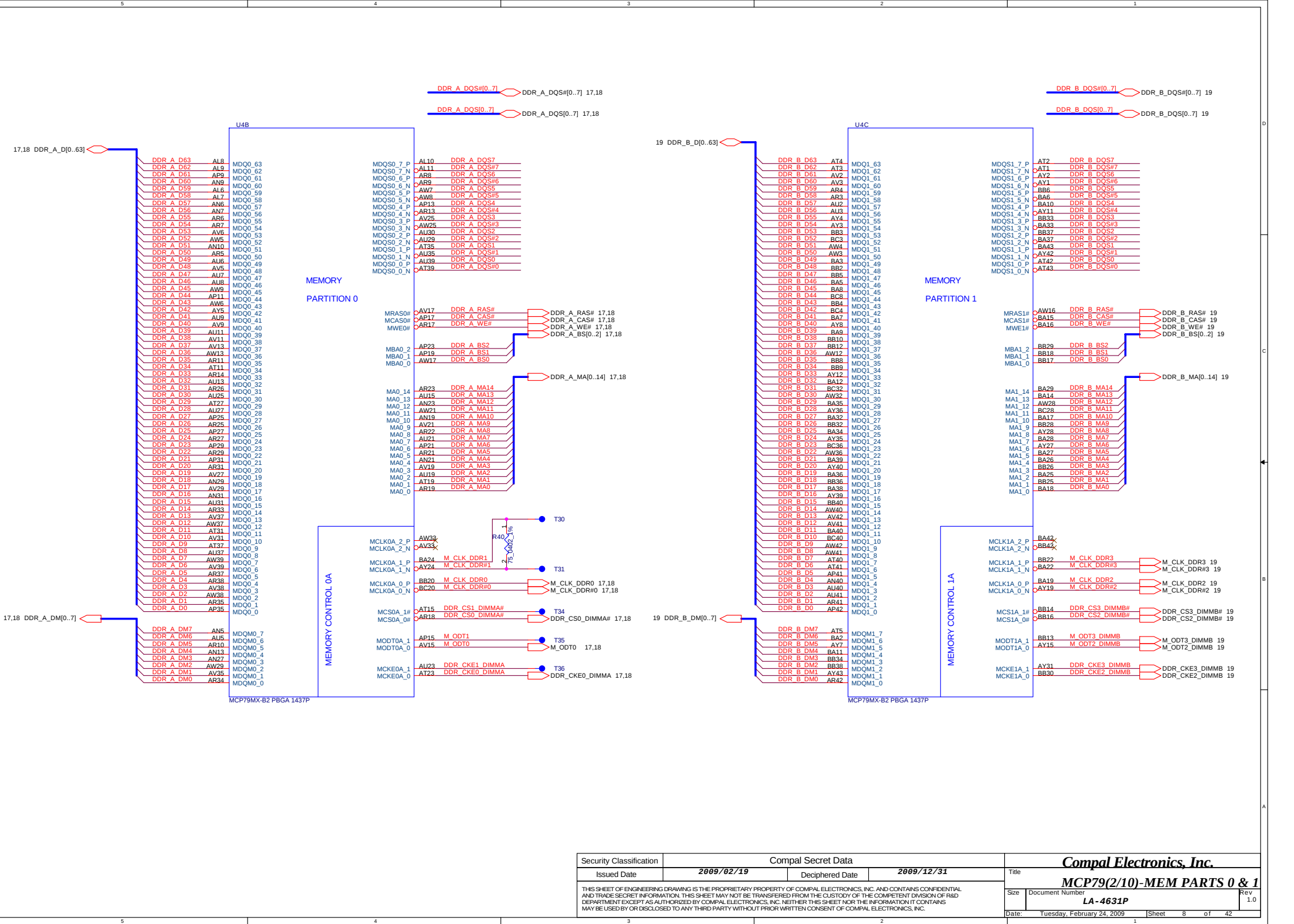
Place these caps inside the
socket cavity on Bottom side.
(North side Secondary)

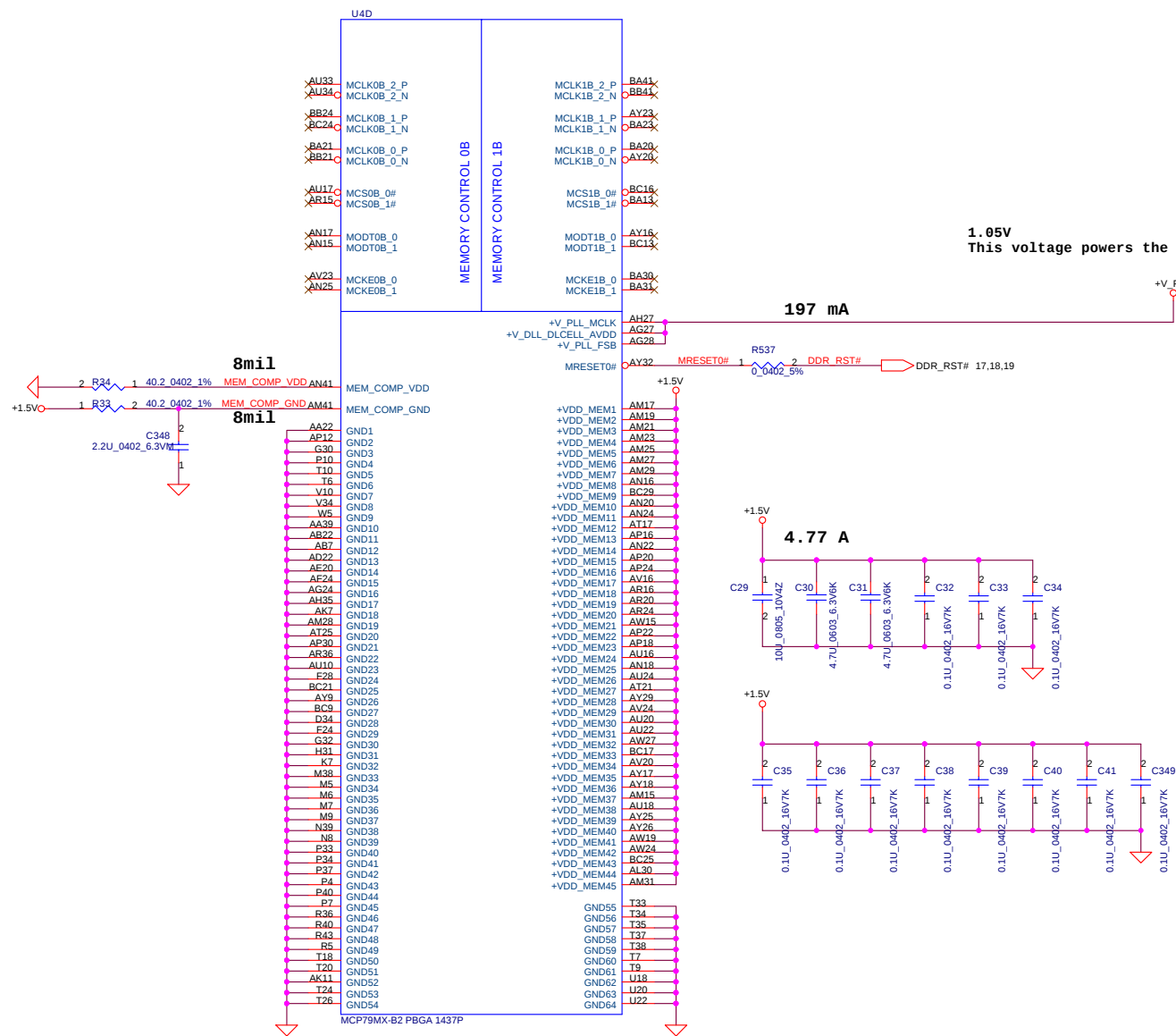


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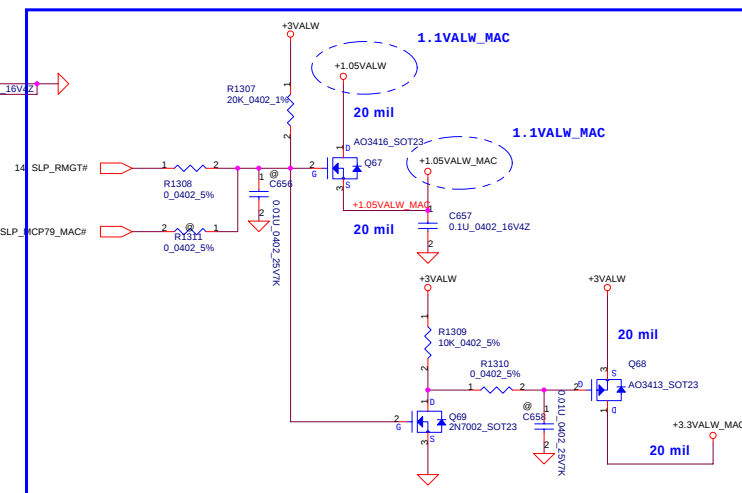


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SATA HDD

ESATA

U4H

SATA

USB

USB0

USB1

USB2

Express Card

Camera

BlueTooth

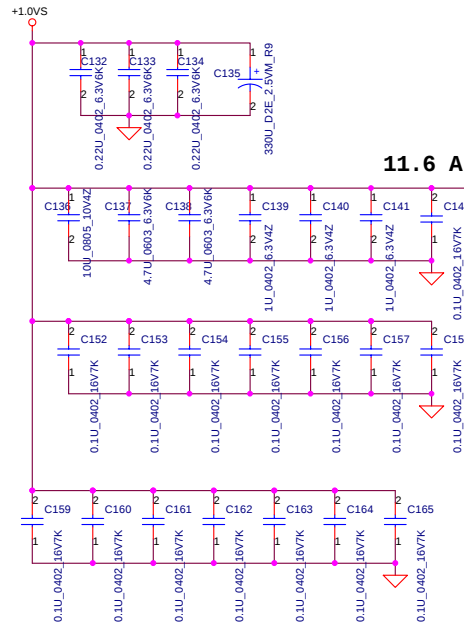
WWAN

WLAN

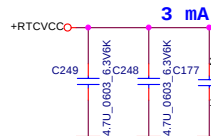
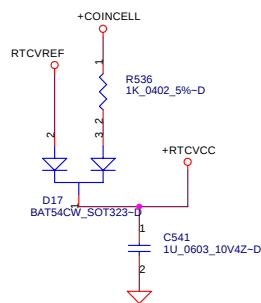
USB_OC#0 R78 1 2 10K 0402 5%
USB_OC#2 R103 2 2 10K 0402 5%
USB_OC#1 R111 1 2 10K 0402 5%

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0.75V ~ 1.05 V



RTC Battery



11.6 A

- AA25 +VDD CORE1
- AC23 +VDD CORE2
- U25 +VDD CORE3
- AH12 +VDD CORE4
- AG10 +VDD CORE5
- AG5 +VDD CORE6
- Y21 +VDD CORE7
- Y23 +VDD CORE8
- AA16 +VDD CORE9
- AA26 +VDD CORE10
- AA27 +VDD CORE11
- AA28 +VDD CORE12
- AC16 +VDD CORE13
- AC17 +VDD CORE14
- AC18 +VDD CORE15
- AC19 +VDD CORE16
- AC20 +VDD CORE17
- AC21 +VDD CORE18
- AA17 +VDD CORE19
- AC24 +VDD CORE20
- AC25 +VDD CORE21
- AC26 +VDD CORE22
- AC27 +VDD CORE23
- AC28 +VDD CORE24
- AD21 +VDD CORE25
- AD23 +VDD CORE26
- W27 +VDD CORE27
- V25 +VDD CORE28
- AA18 +VDD CORE29
- AE19 +VDD CORE30
- AE21 +VDD CORE31
- AE23 +VDD CORE32
- AE25 +VDD CORE33
- AE26 +VDD CORE34
- AE27 +VDD CORE35
- AE28 +VDD CORE36
- AE10 +VDD CORE37
- AE11 +VDD CORE38
- AA19 +VDD CORE39
- AF2 +VDD CORE40
- AE21 +VDD CORE41
- AE23 +VDD CORE42
- AE25 +VDD CORE43
- AE27 +VDD CORE44
- AF4 +VDD CORE45
- AF7 +VDD CORE46
- AH23 +VDD CORE47
- AE9 +VDD CORE48
- AA20 +VDD CORE49
- AG11 +VDD CORE50
- AG12 +VDD CORE51
- AG21 +VDD CORE52
- AG23 +VDD CORE53
- AG25 +VDD CORE54
- AG3 +VDD CORE55
- AG4 +VDD CORE56
- AA21 +VDD CORE57
- AG6 +VDD CORE58
- AG7 +VDD CORE59
- AG8 +VDD CORE60
- AG9 +VDD CORE61
- AH1 +VDD CORE62
- AH10 +VDD CORE63
- AH11 +VDD CORE64
- W26 +VDD CORE65
- AH2 +VDD CORE66
- AA23 +VDD CORE67
- W28 +VDD CORE68
- AH25 +VDD CORE69
- AH21 +VDD CORE70
- AH3 +VDD CORE71
- AH4 +VDD CORE72
- AH5 +VDD CORE73
- AH6 +VDD CORE74
- AH7 +VDD CORE75
- AH9 +VDD CORE76
- AA24 +VDD CORE77
- W21 +VDD CORE78
- W23 +VDD CORE79
- W25 +VDD CORE80
- AE12 +VDD CORE81

POWER

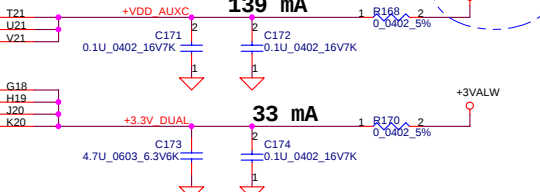
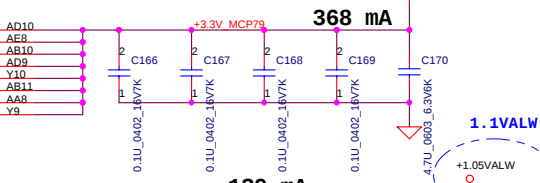
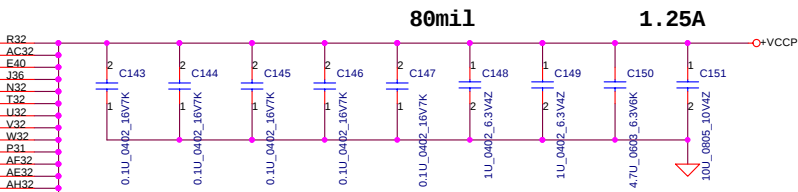
- +VTT_CPU1 R32
- +VTT_CPU2 AC32
- +VTT_CPU3 E40
- +VTT_CPU4 J36
- +VTT_CPU5 N32
- +VTT_CPU6 T32
- +VTT_CPU7 U32
- +VTT_CPU8 W32
- +VTT_CPU9 P31
- +VTT_CPU10 AE32
- +VTT_CPU11 AE32
- +VTT_CPU12 AH32
- +VTT_CPU13 AH32
- +VTT_CPU14 AK31
- +VTT_CPU15 AK32
- +VTT_CPU16 AD32
- +VTT_CPU17 AL31
- +VTT_CPU18
- +VTT_CPU20 B41
- +VTT_CPU21 B42
- +VTT_CPU22 C40
- +VTT_CPU23 C41
- +VTT_CPU24 C42
- +VTT_CPU25 D40
- +VTT_CPU26 D41
- +VTT_CPU27 E38
- +VTT_CPU28 E39
- +VTT_CPU29 F37
- +VTT_CPU30 F38
- +VTT_CPU31 F39
- +VTT_CPU32 G36
- +VTT_CPU33 G37
- +VTT_CPU34 G38
- +VTT_CPU35 H35
- +VTT_CPU36 H37
- +VTT_CPU37 I34
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- +VTT_CPU39 K33
- +VTT_CPU40 K34
- +VTT_CPU41 K35
- +VTT_CPU42 L32
- +VTT_CPU43 L33
- +VTT_CPU44 L34
- +VTT_CPU45 M31
- +VTT_CPU46 M32
- +VTT_CPU47 M33
- +VTT_CPU48 N31
- +VTT_CPU49 P32
- +VTT_CPU50 Y32
- +VTT_CPU51 AA32
- +VTT_CPU52 AB32
- +VTT_CPU53

+VTT_CPUCLK AG32

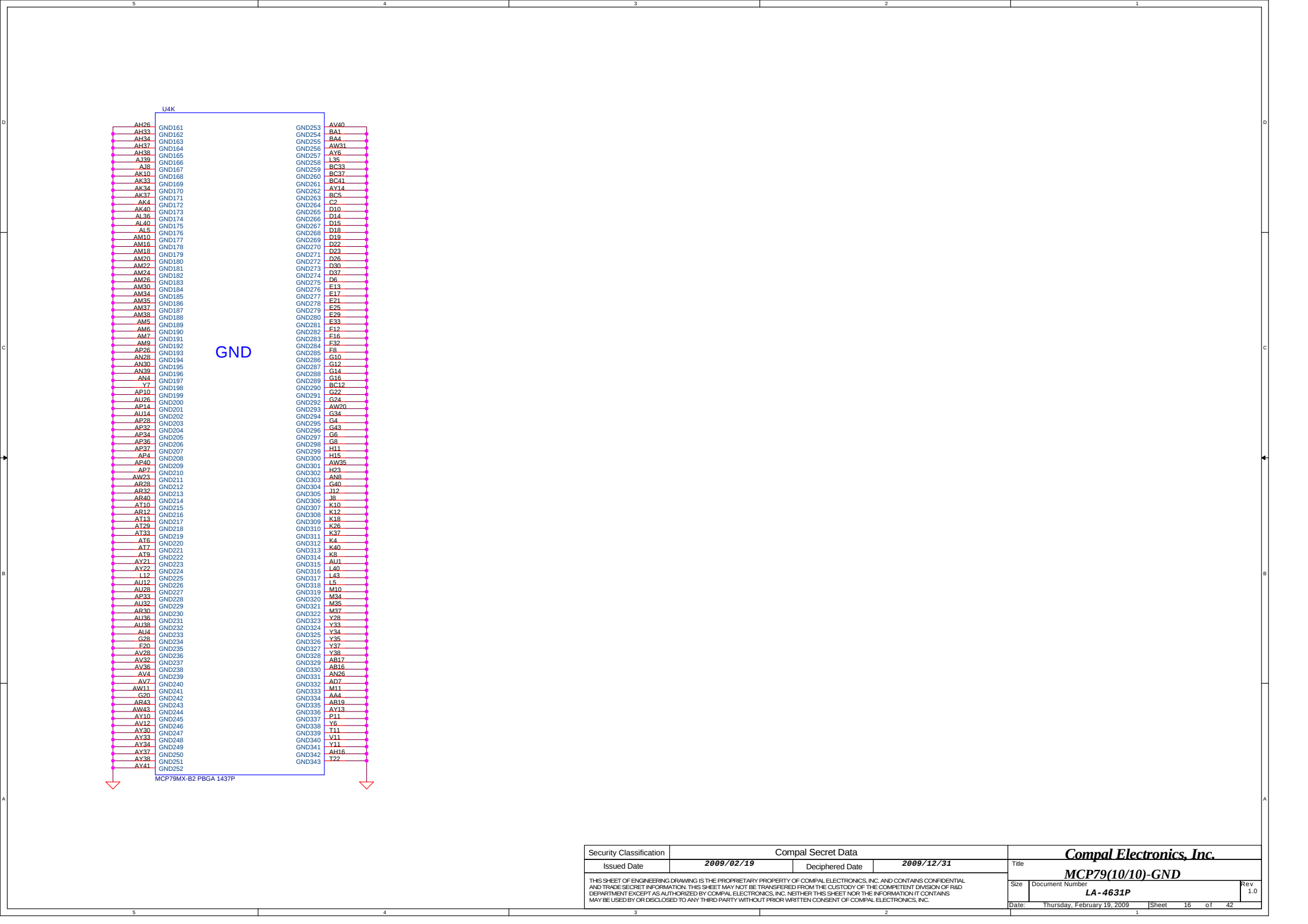
- +3.3V_1 AD10
- +3.3V_2 AE8
- +3.3V_3 AB10
- +3.3V_4 AD8
- +3.3V_5 Y10
- +3.3V_6 AB11
- +3.3V_7 AA8
- +3.3V_8 Y9

- +VDD_AUXC1 T21
- +VDD_AUXC2 U21
- +VDD_AUXC3 V21

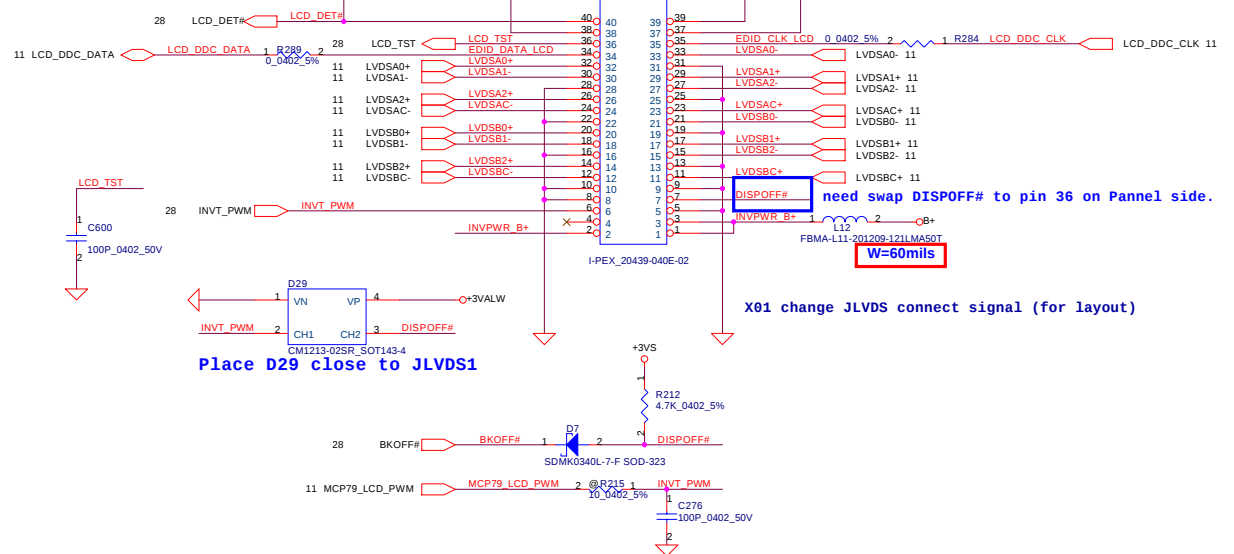
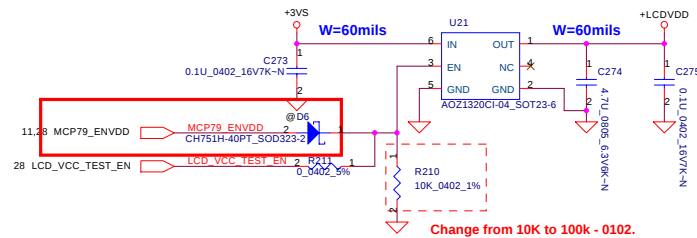
- +3.3V_DUAL1 G18
- +3.3V_DUAL2 H19
- +3.3V_DUAL3 J20
- +3.3V_DUAL4 K20



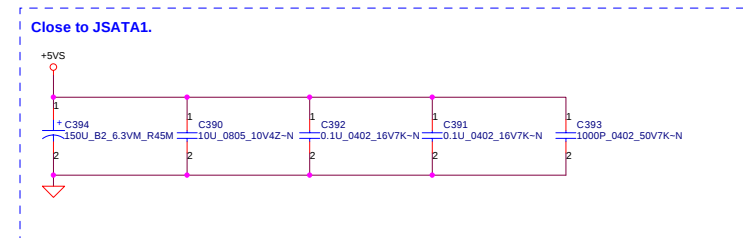
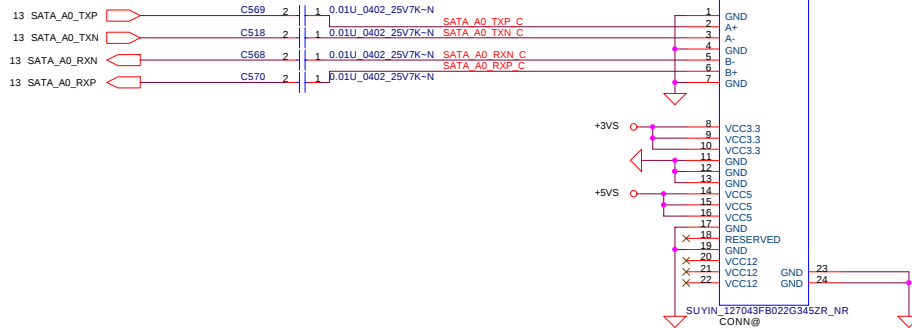
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Issued Date	2009/02/19	Deciphered Date	2009/12/31	MCP79(9/10)-POWER&RTC Batt	
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				Date	Thursday, February 19, 2009
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LCD

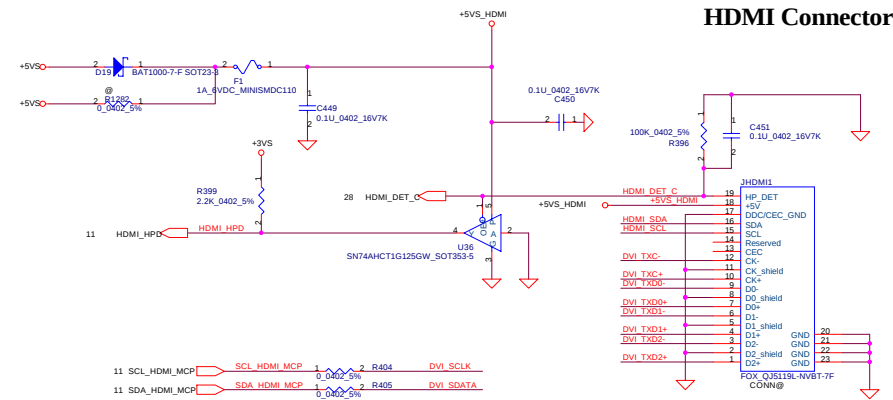


SATA HDD

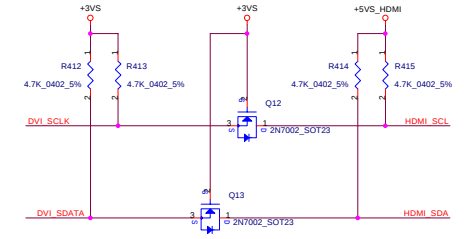


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Issued Date	2009/02/19	Deciphered Date	2009/12/31		
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				Size LA-4631P	
				Date: Tuesday, February 24, 2009	Sheet 20 of 42

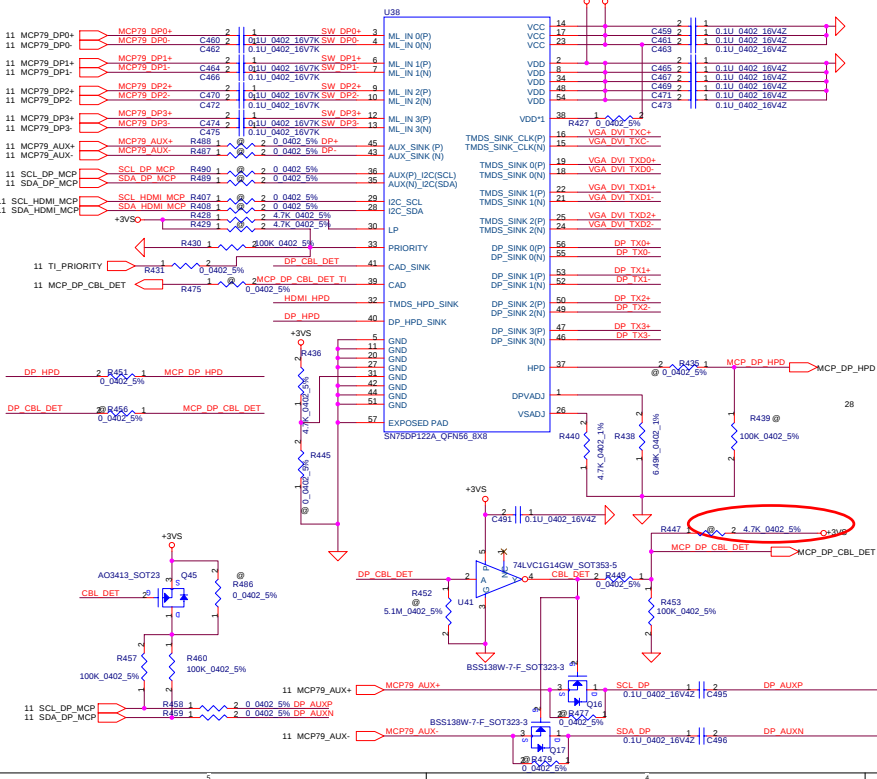
HDMI Connector



Close to JHDMI connector

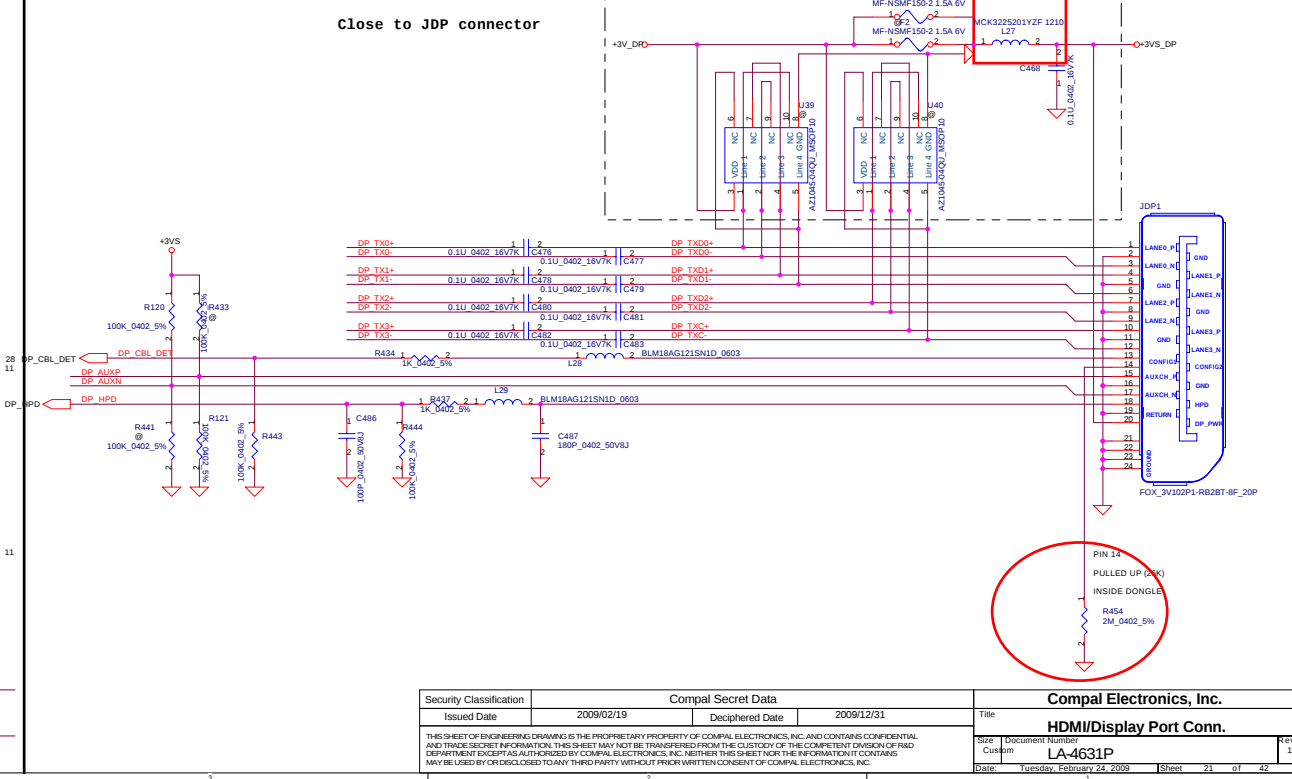


DisplayPort/TMDS 1:2 Switch/Translator

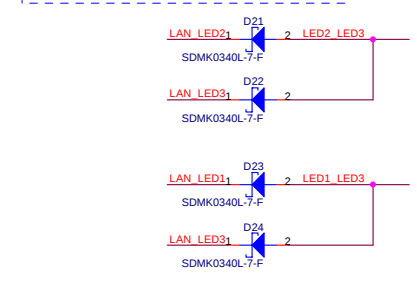
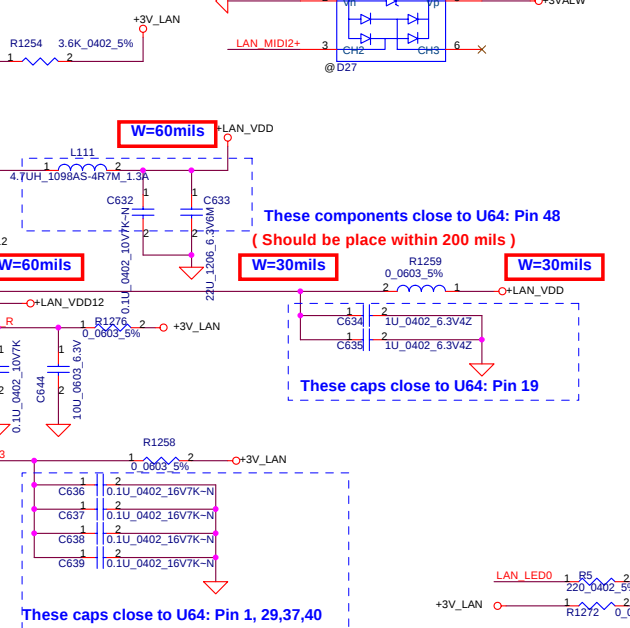
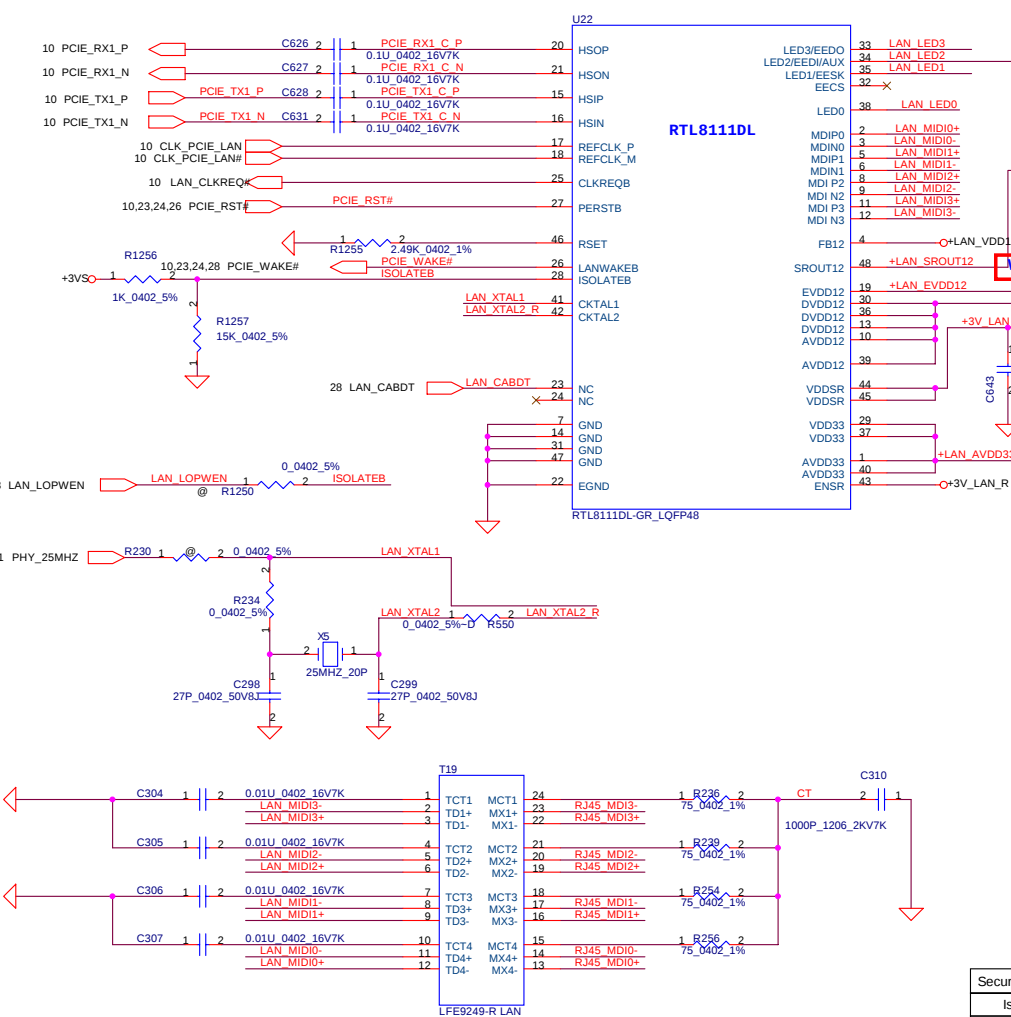
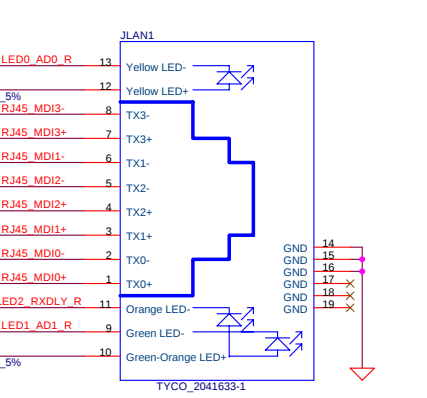
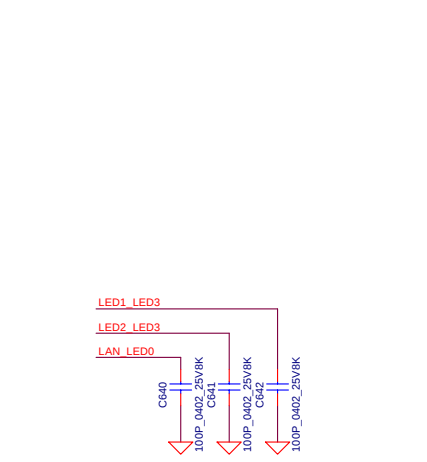
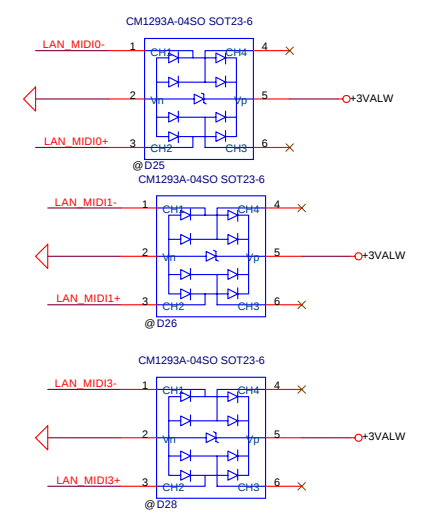
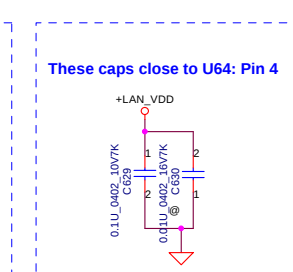
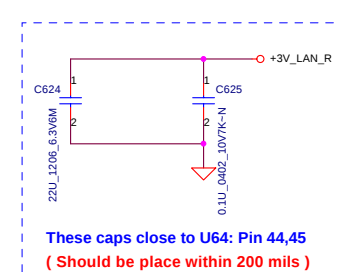
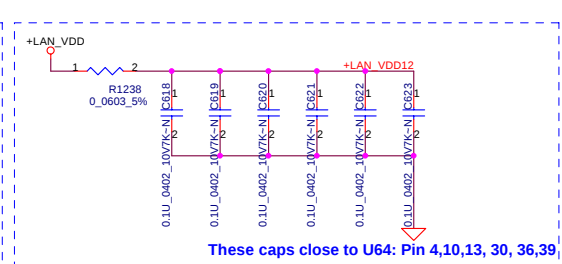
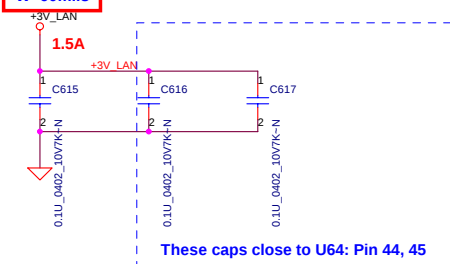


DisplayPort Connector

Close to JDP connector

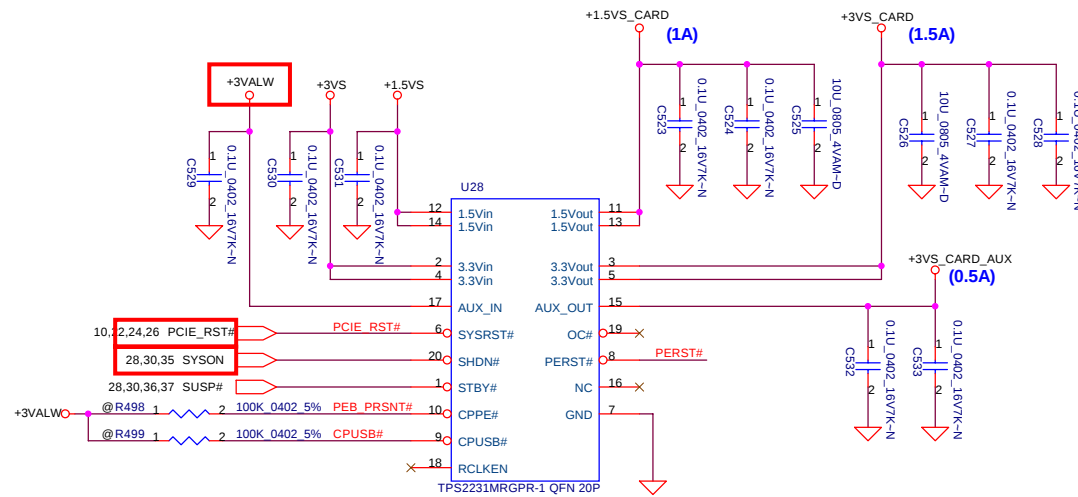


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Issued Date		2009/02/19		Title	
Deciphered Date		2009/12/31		HDMI/Display Port Conn.	
Size		Customer		Rev	
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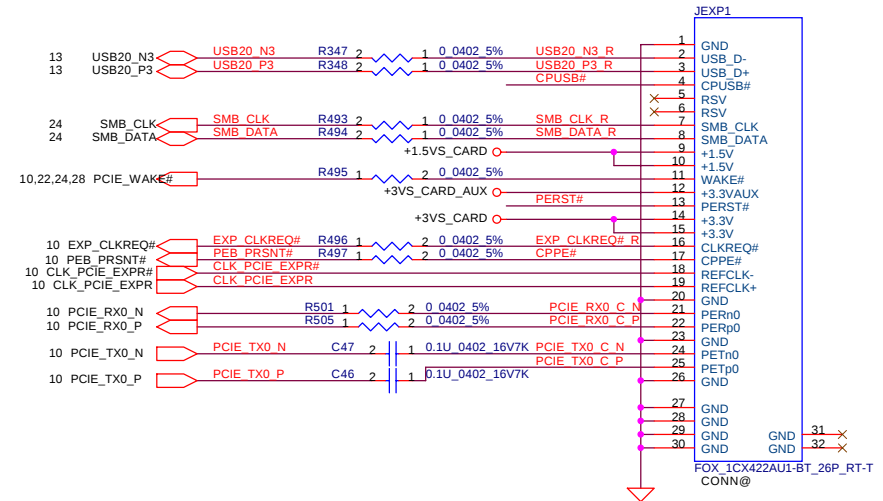


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Issued Date	2009/02/19	Deciphered Date	2009/12/31	Title	
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Express Card Power Switch

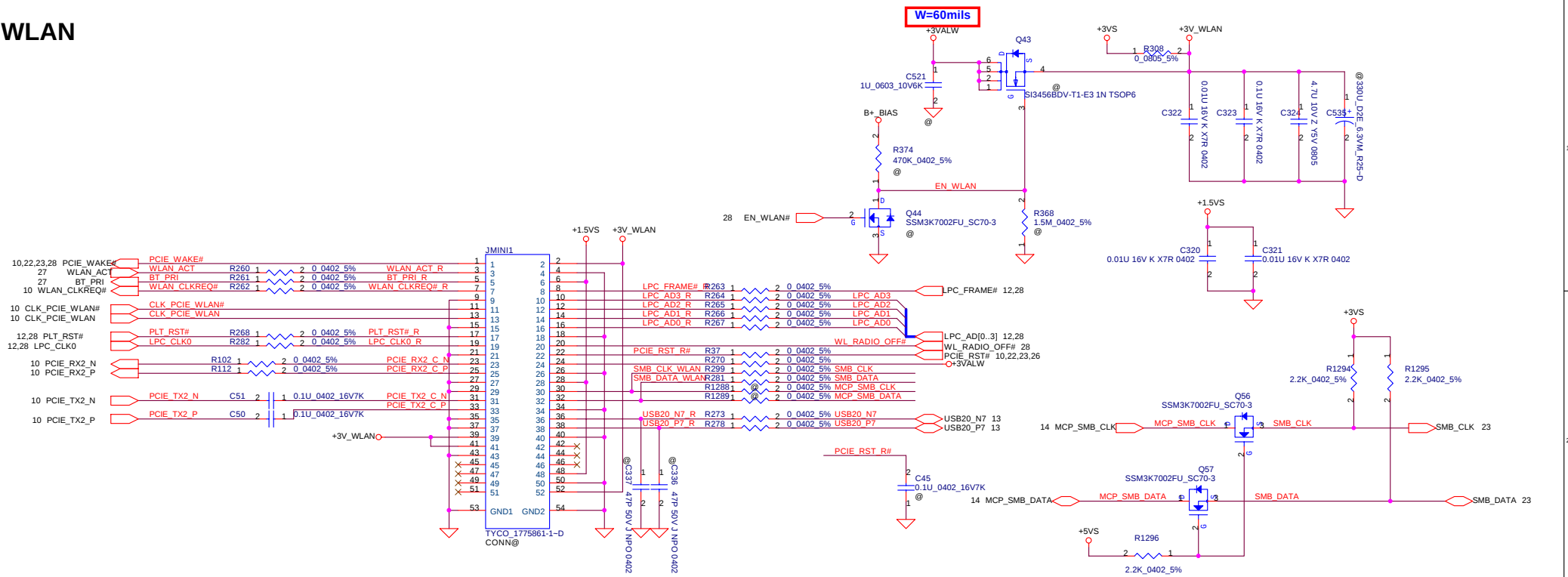


Express Card

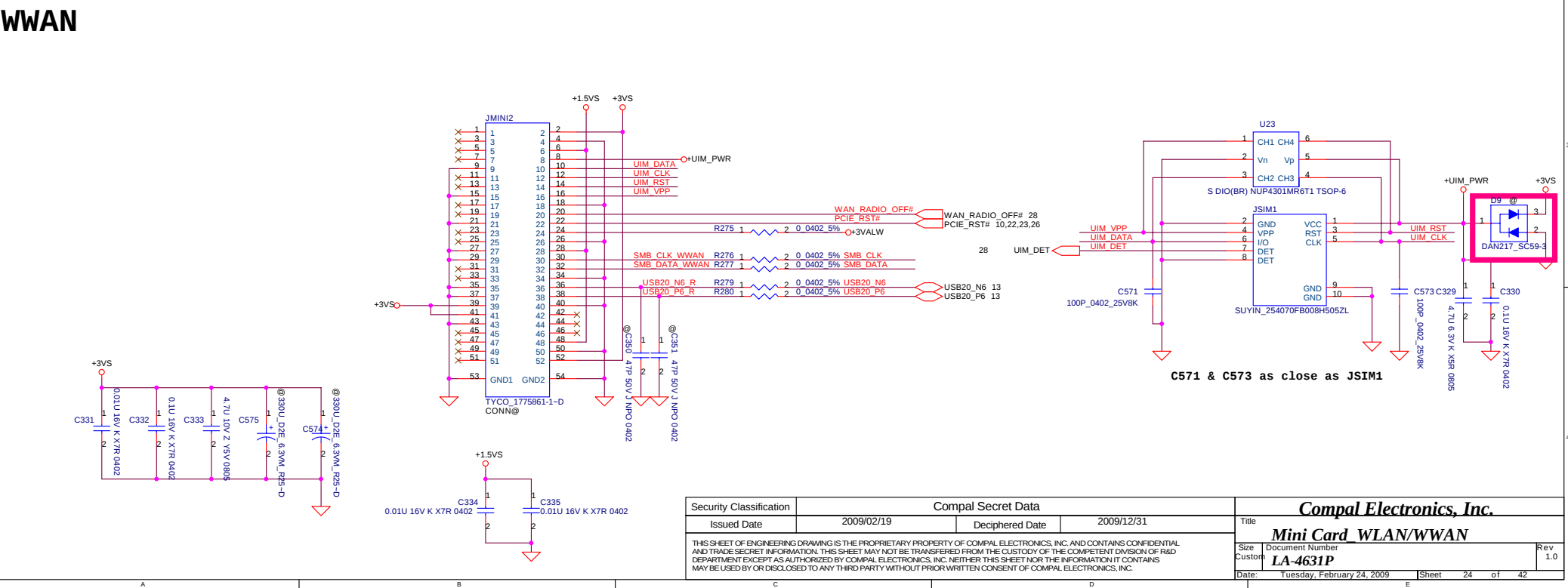


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				Custom	LA-4631P
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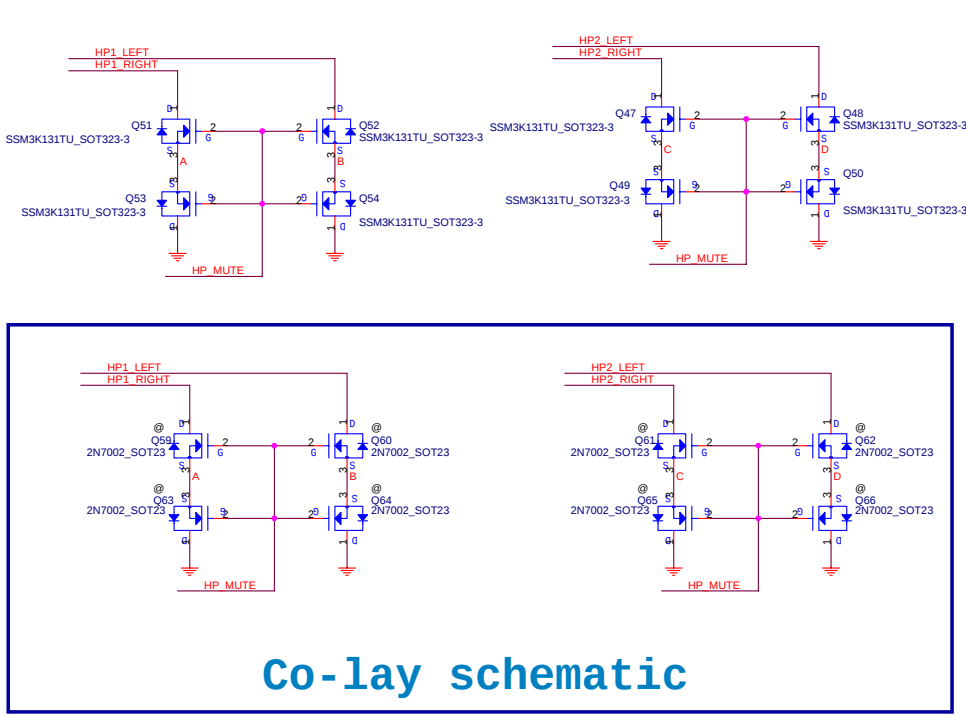
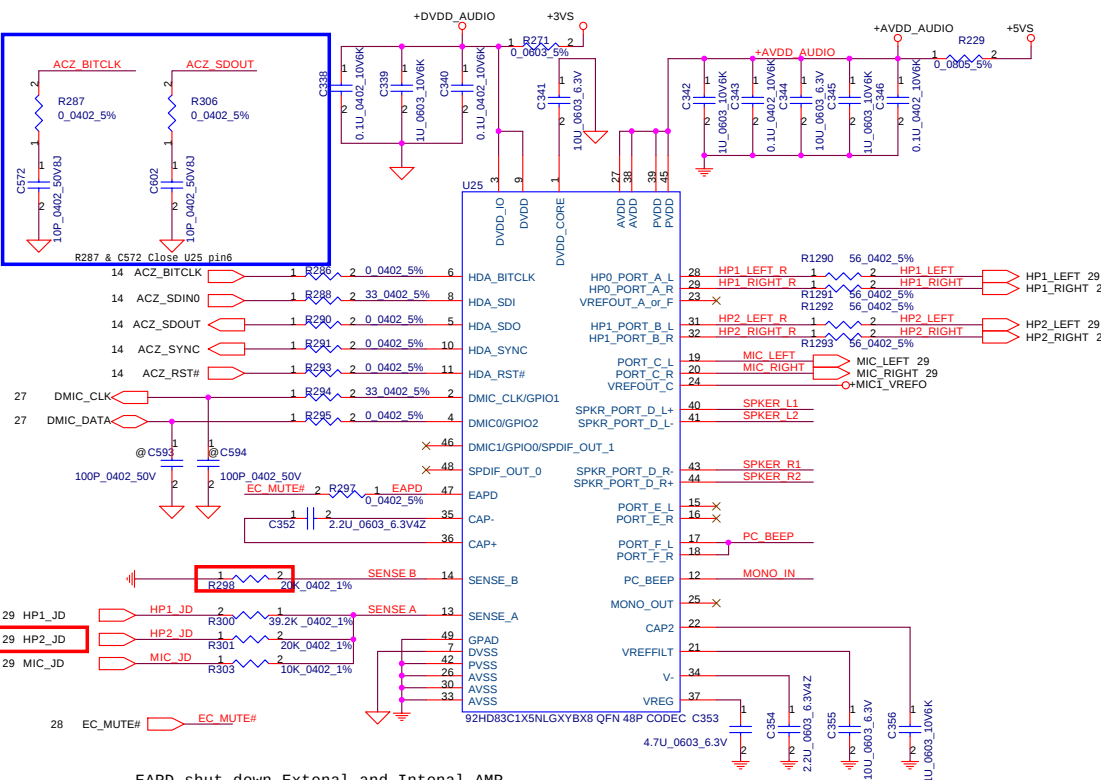
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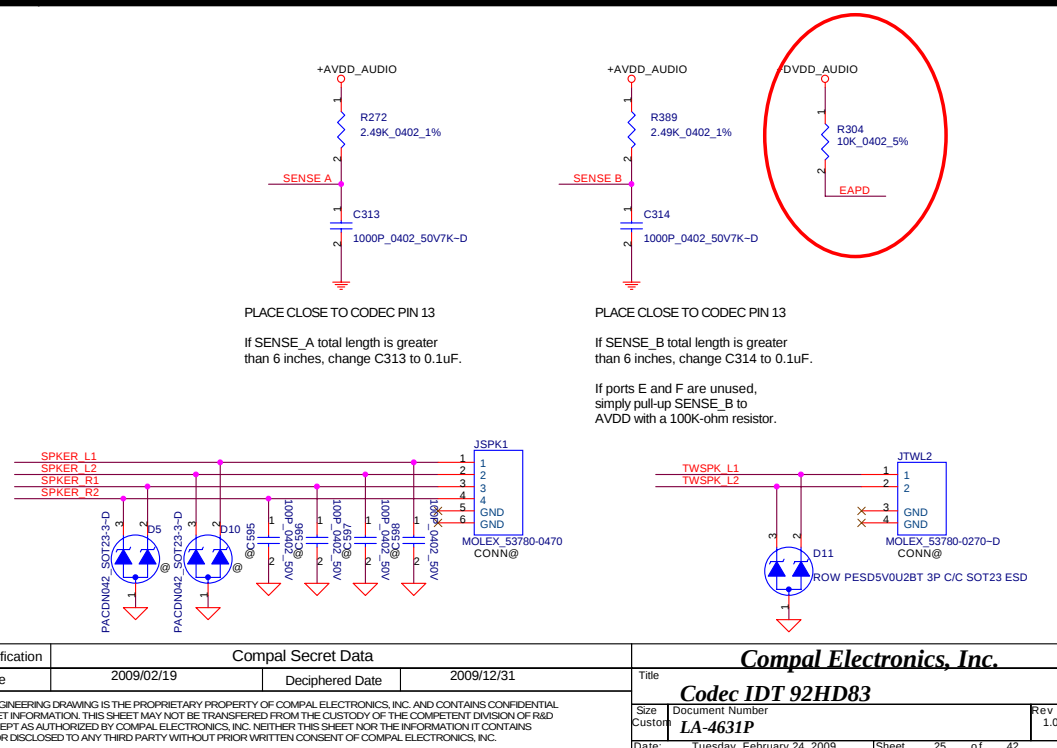
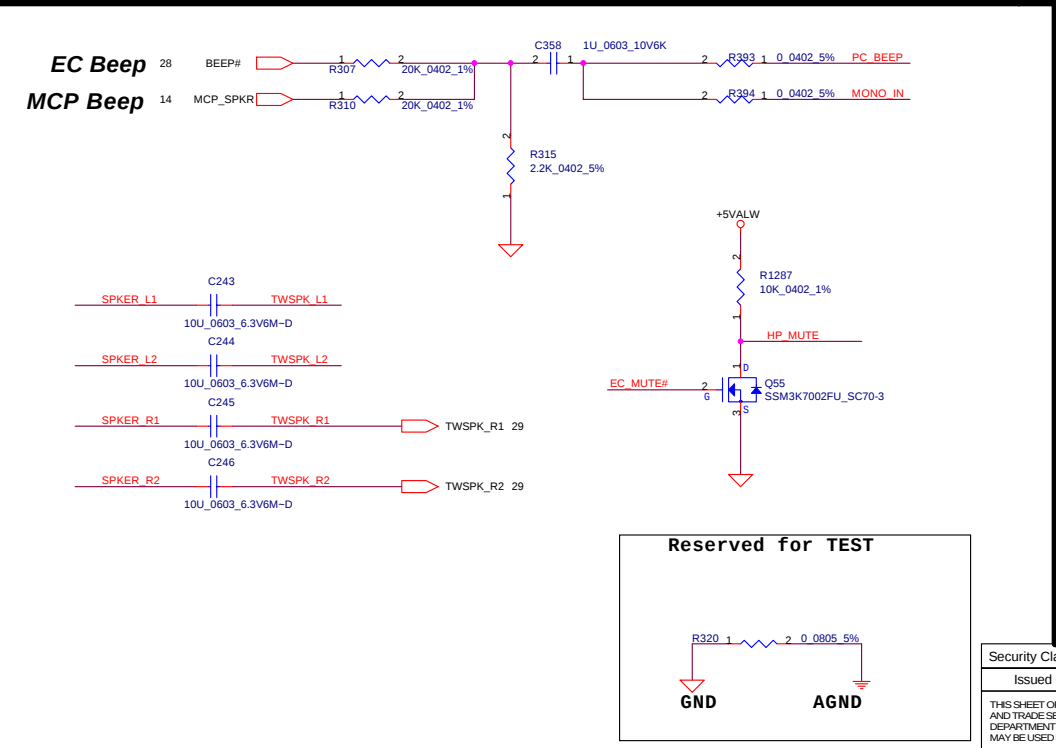
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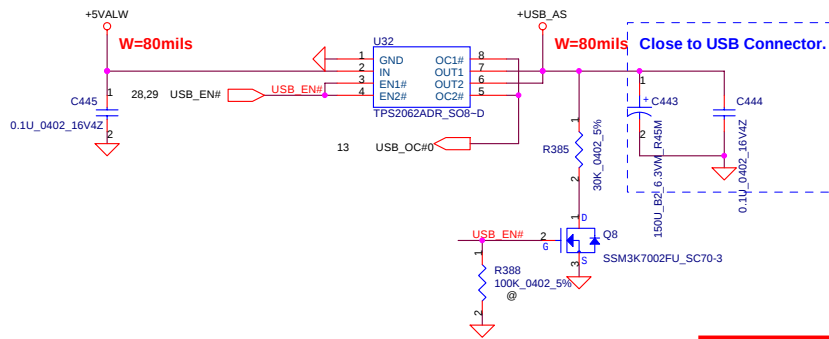
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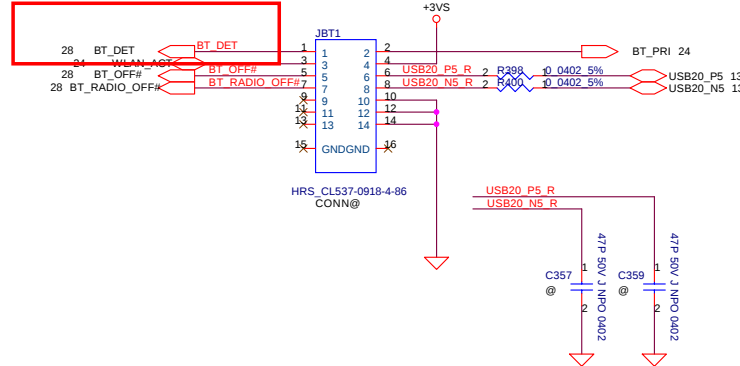
Co-lay schematic



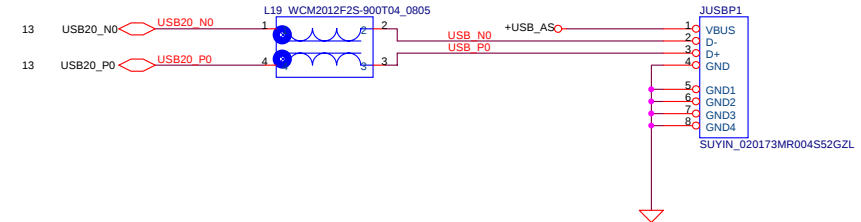
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Bluetooth

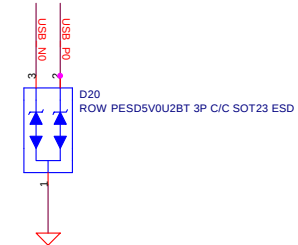
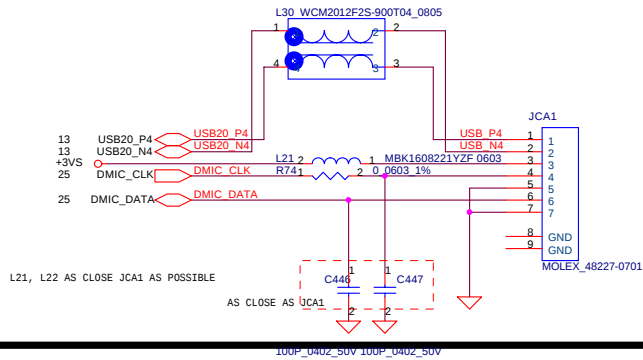


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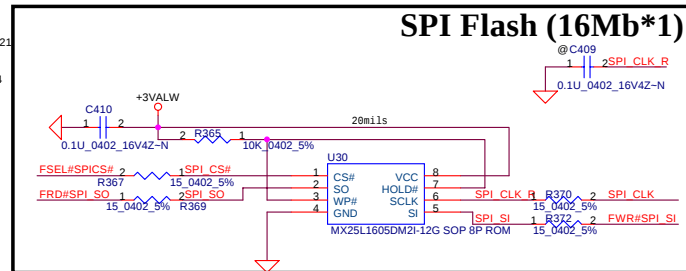
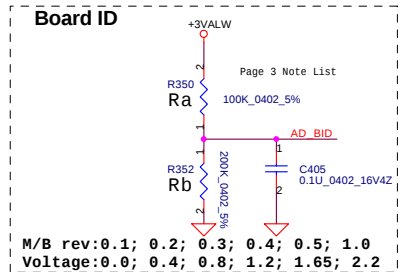
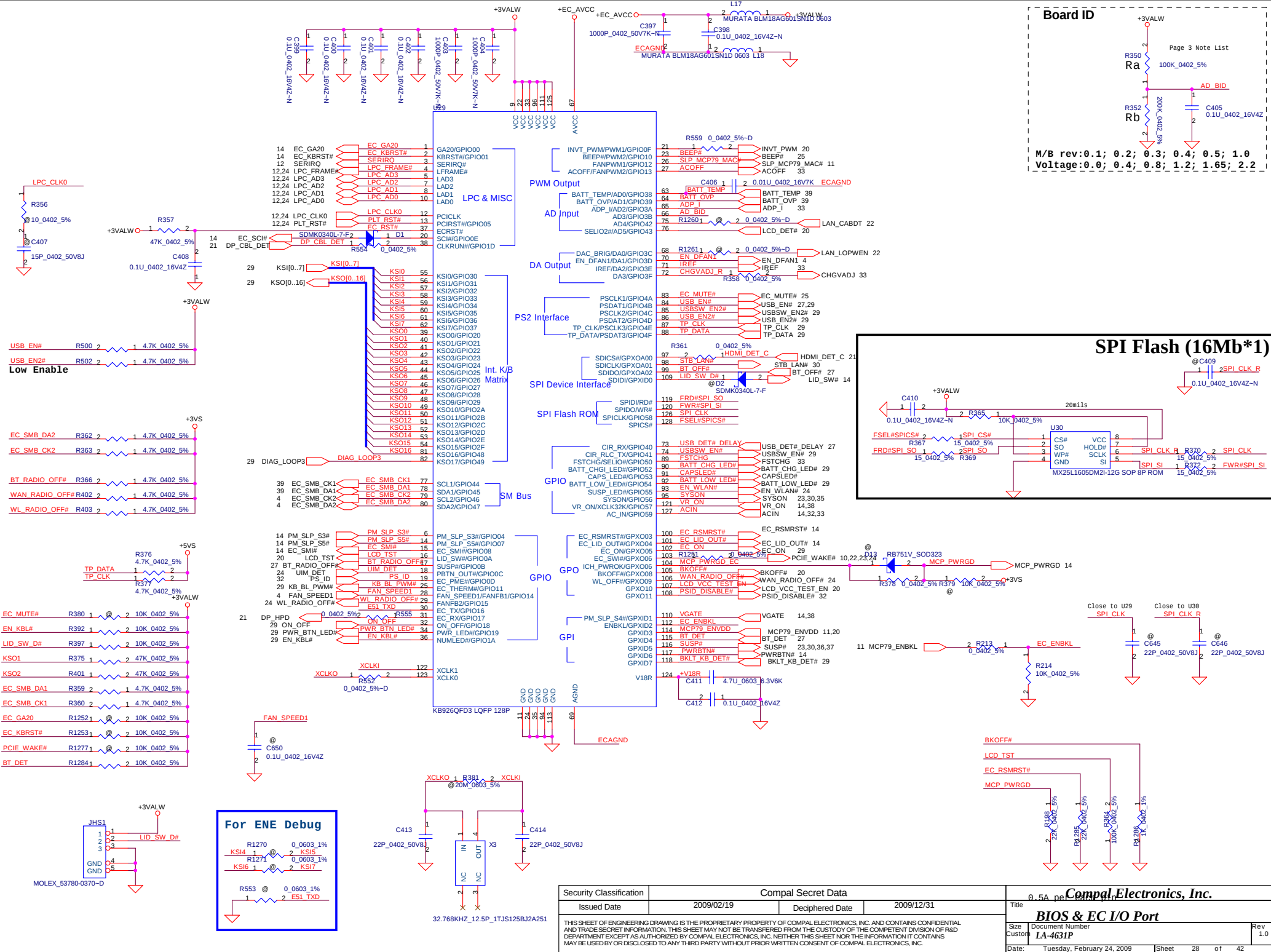


change JUSBP1 connect signal (for layout)

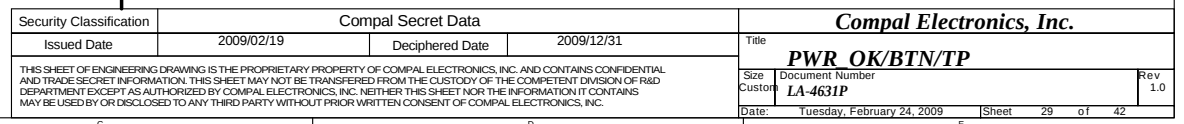
Camera Conn



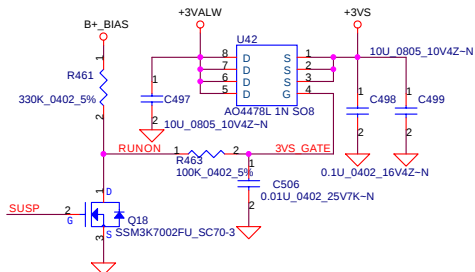
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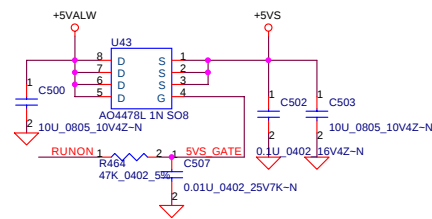
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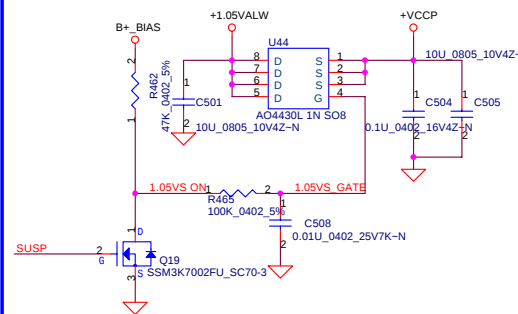
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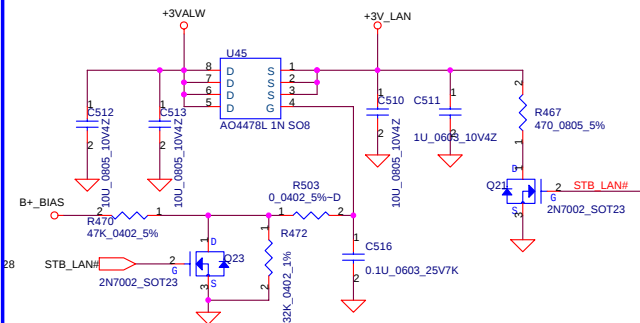
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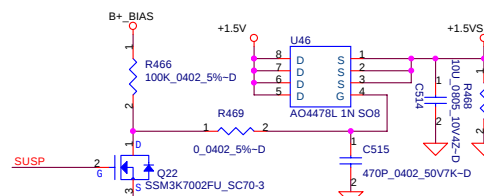
+1.05VALW to +VCCP Transfer



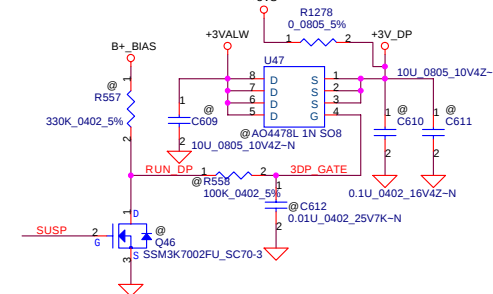
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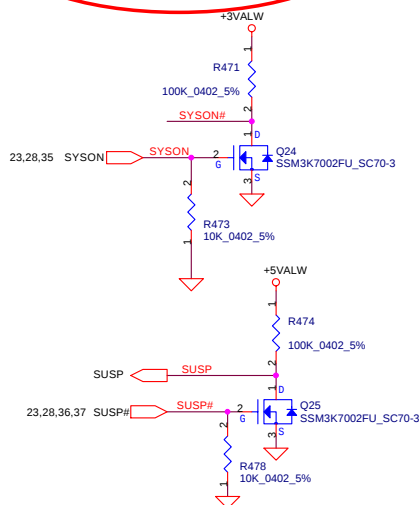
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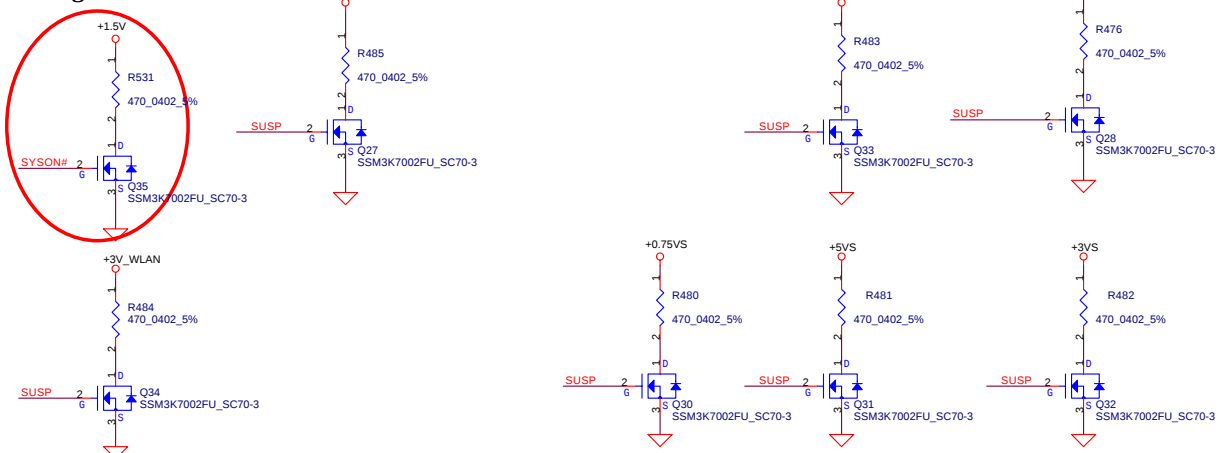
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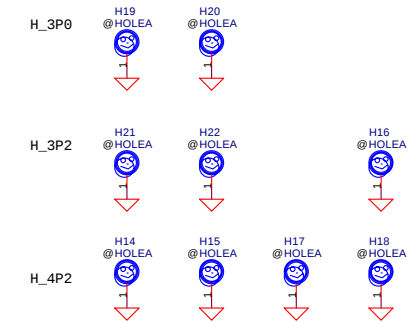
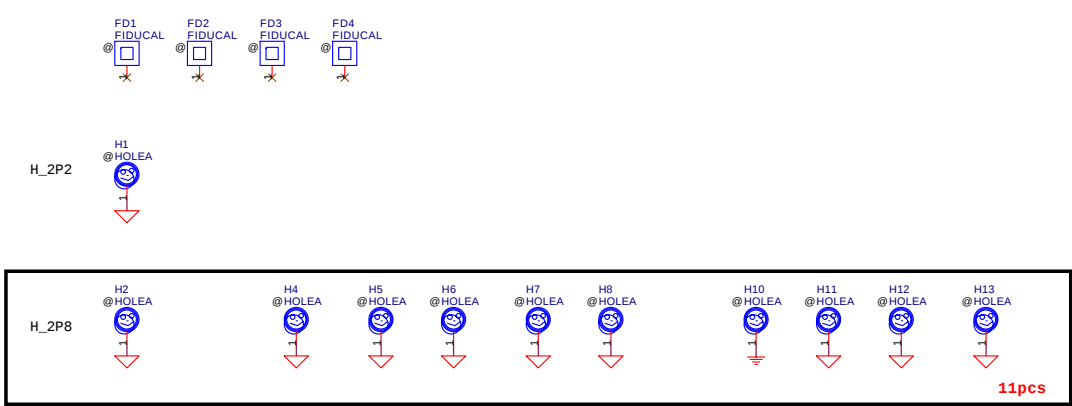
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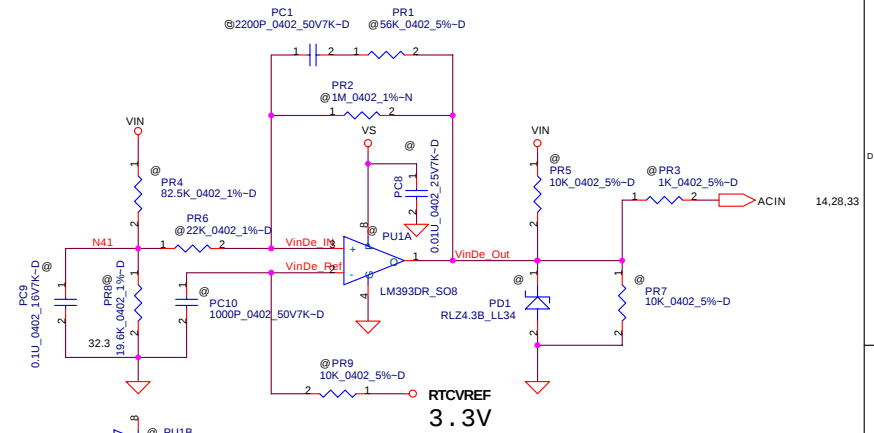
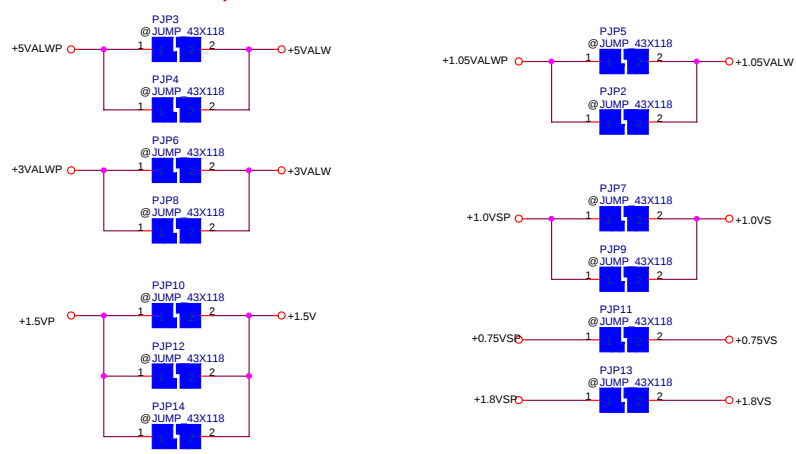
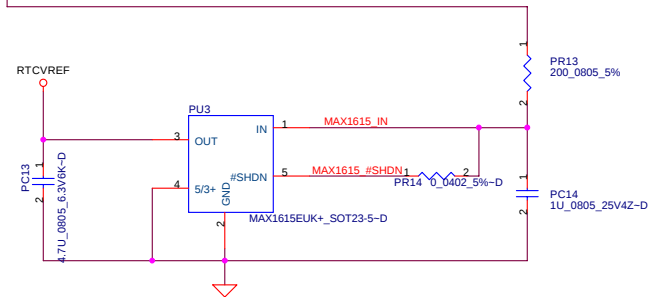
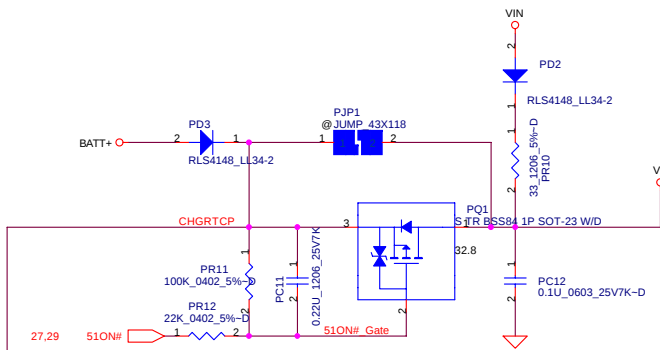
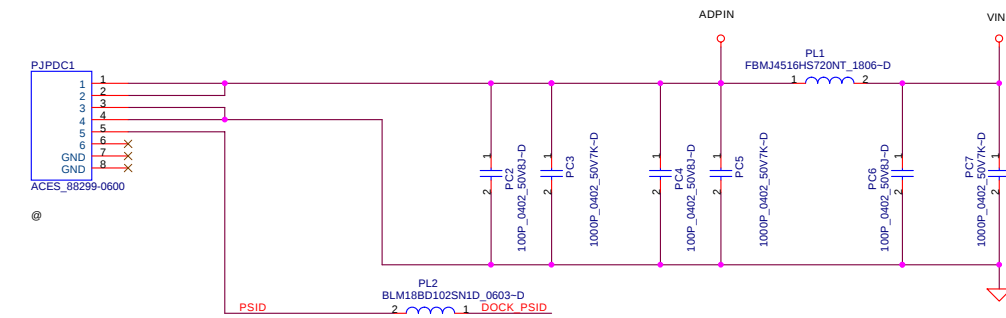
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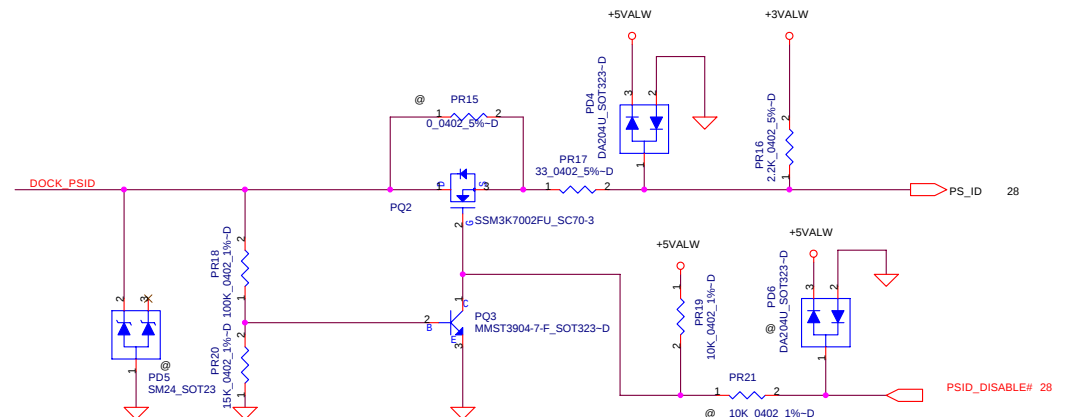
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Issued Date	2009/02/19	Deciphered Date	2009/12/31	Title	DC/DC Circuits	
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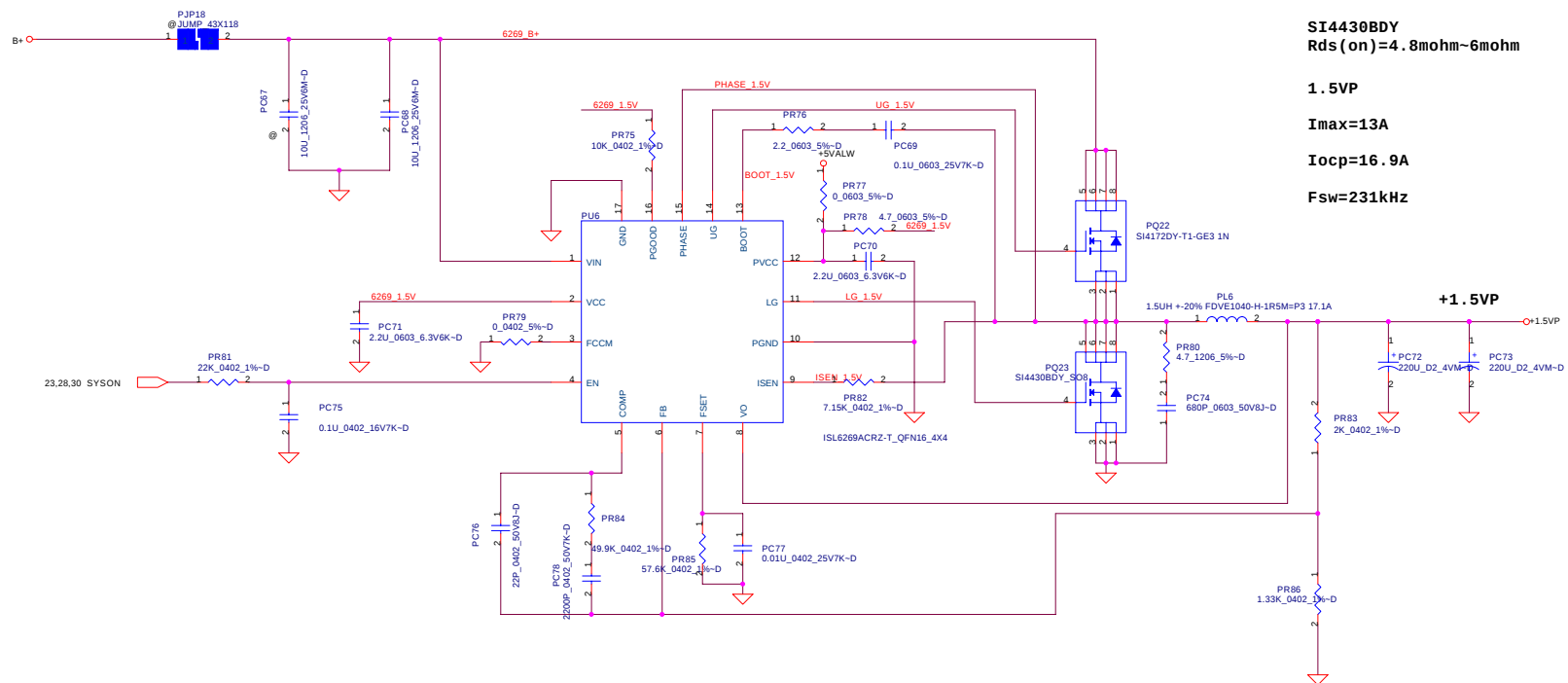
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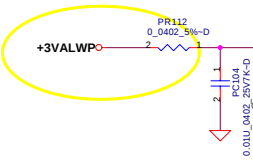
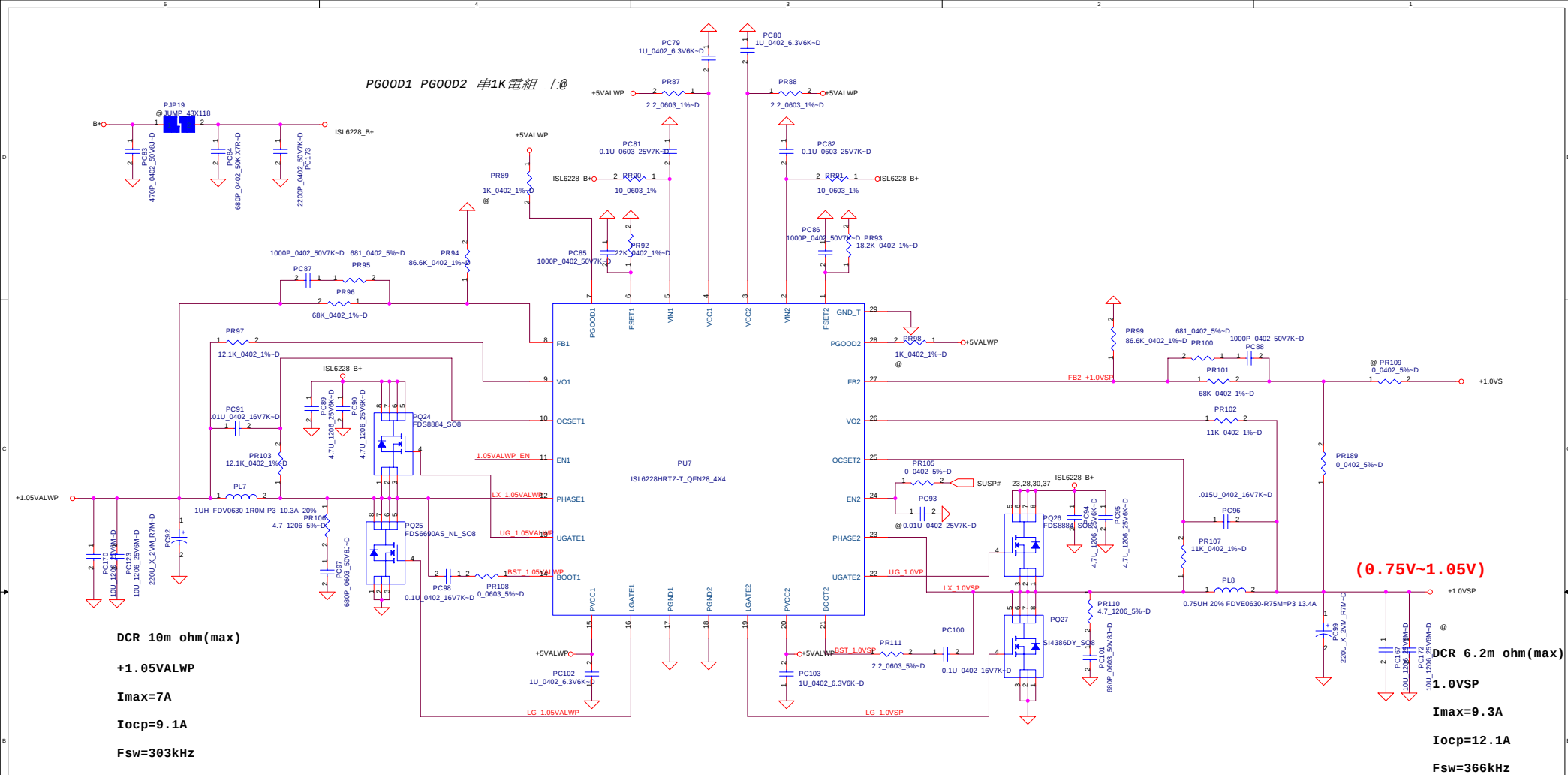
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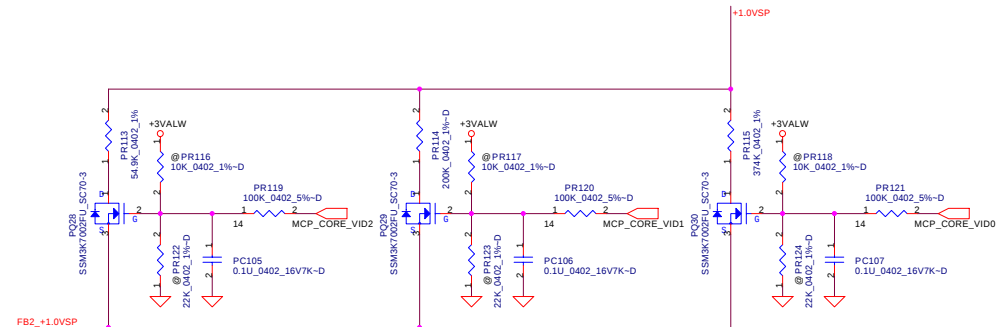
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				Custom	1.0
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				Tuesday, February 24, 2009	1.0
				Sheet	32 of 10

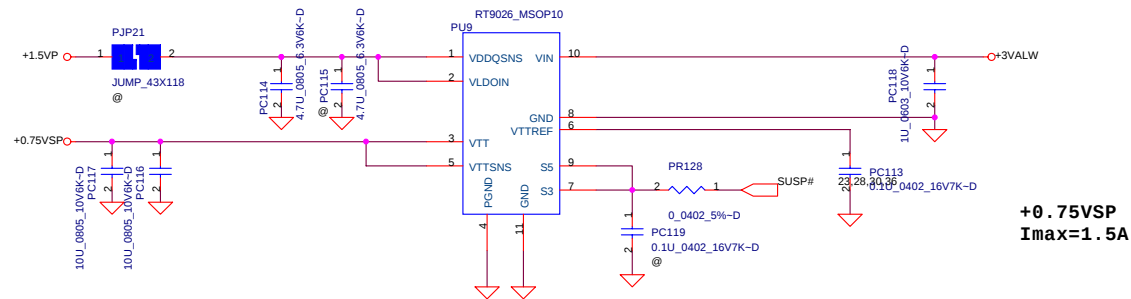
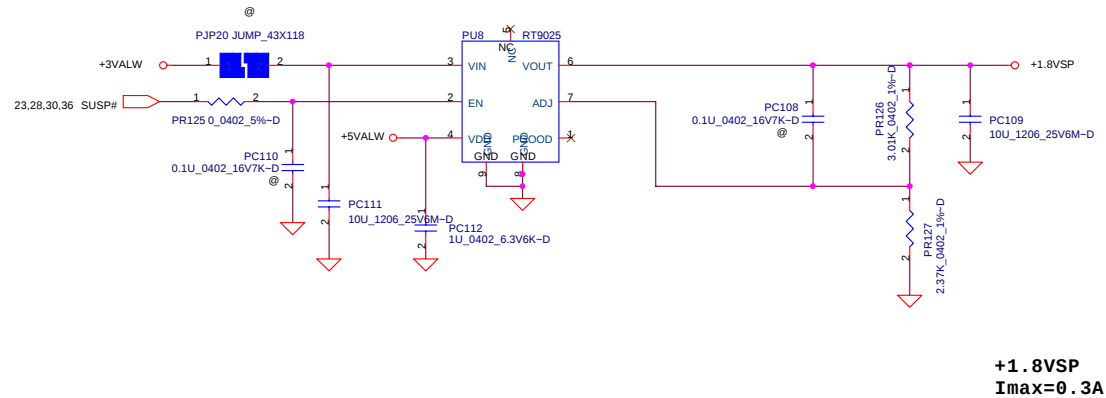


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Issued Date	2006/10/1	Deciphered Date	2007/05/30	Title		
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				Size	Document Number	Rev
					KCM00	1.0
				Date:	Tuesday, February 24, 2009	Sheet 35 of 10

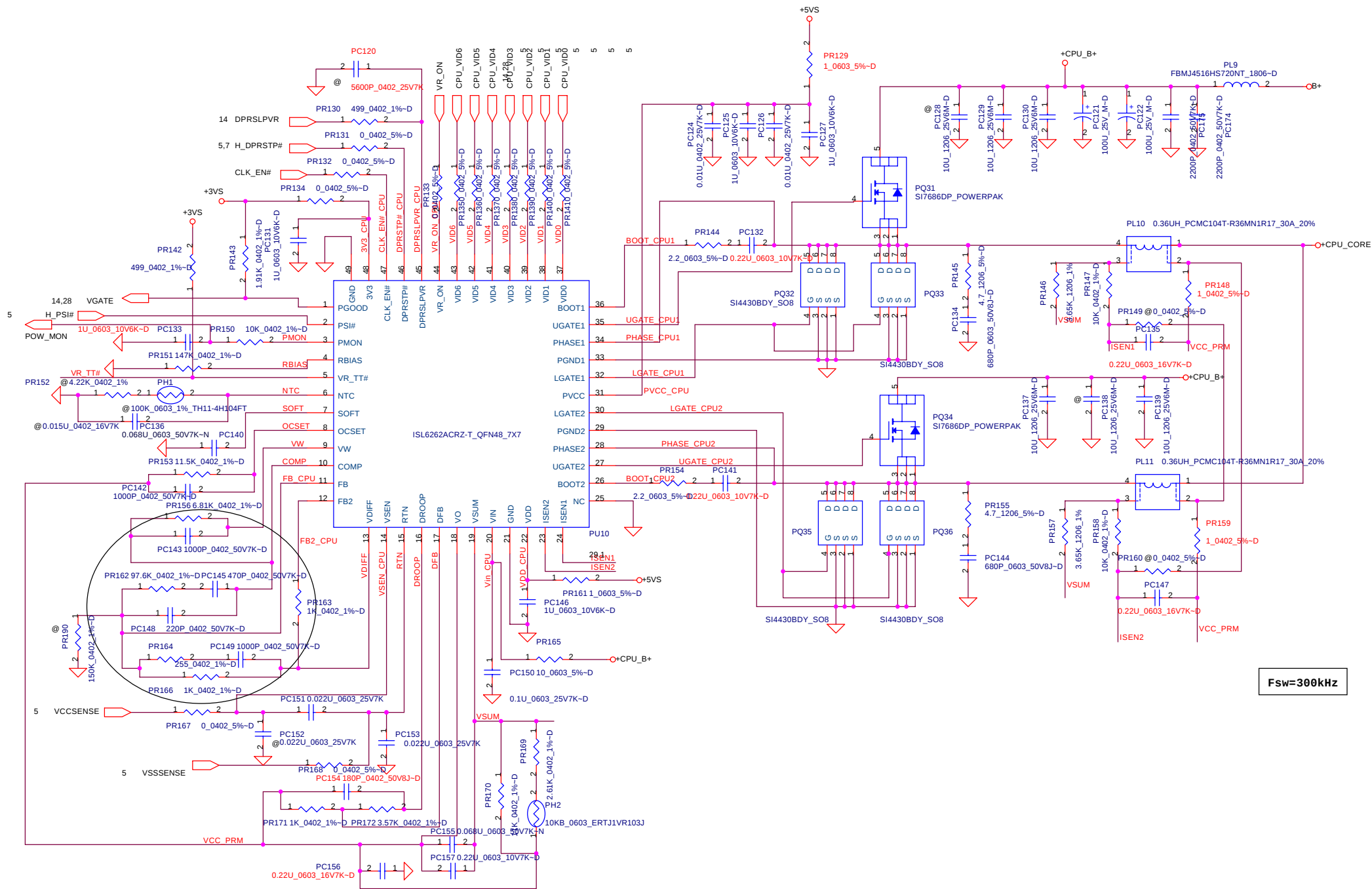


VID2	VID1	VID0	voltage
L	L	L	1.05
L	L	H	0.98
L	H	L	0.90
L	H	H	0.87
H	L	L	0.80
H	L	H	0.79
H	H	L	0.77
H	H	H	0.75

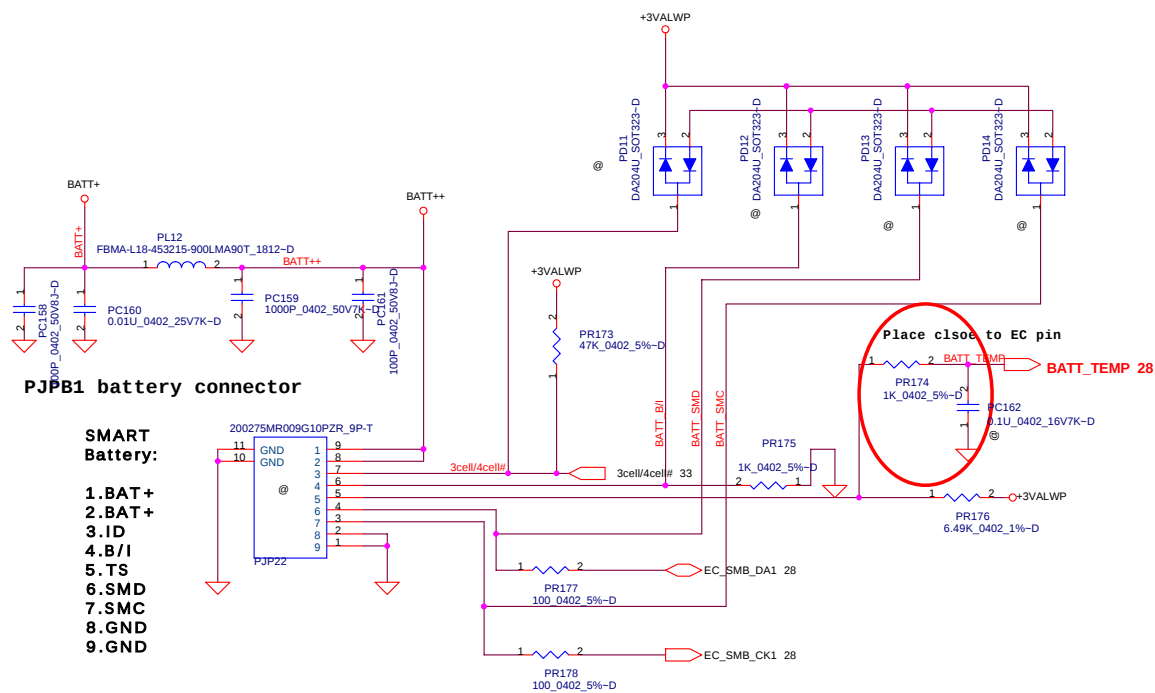




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Issued Date	2005/10/1	Deciphered Date	2007/05/30	Title	
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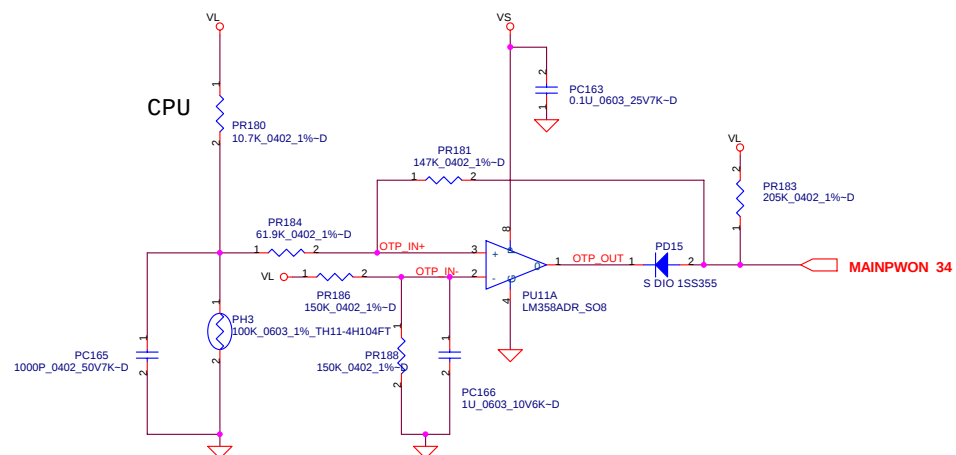
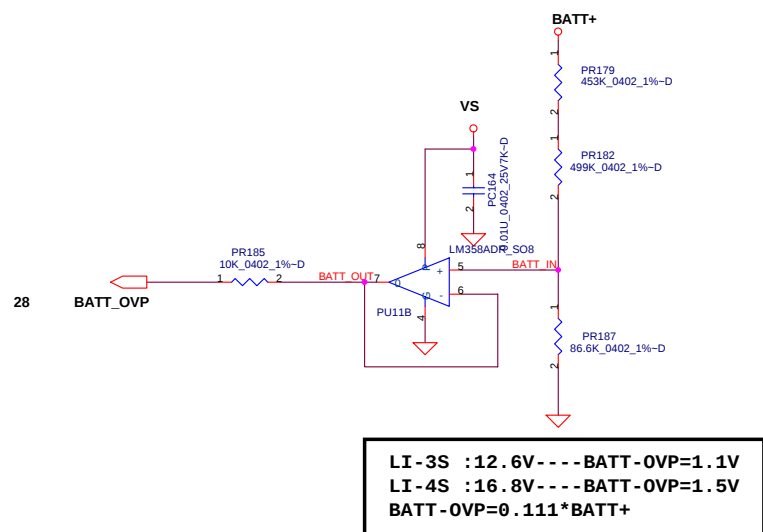


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CPU

PH1 under CPU bottom side :
CPU thermal protection at 90 +-3 degree C
Recovery at 50 +-3 degree C

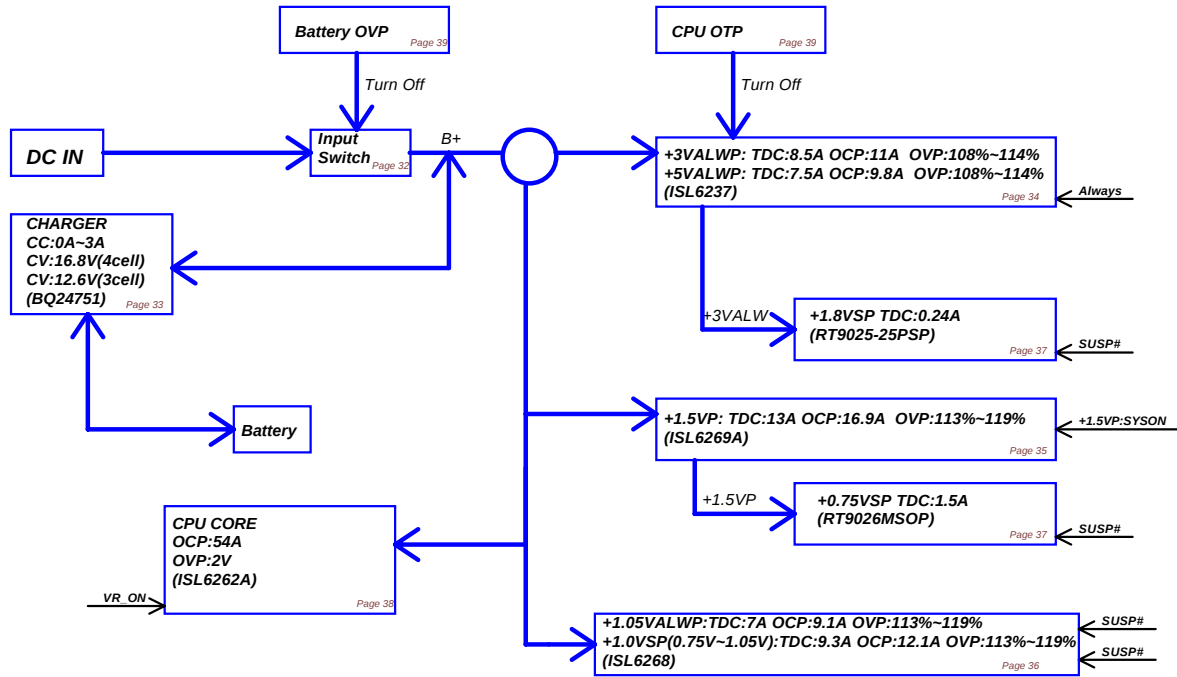


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1	p37	+0.75VSP/1.8VSP	08/10/15	compal	source shortage	pu9	
2	p33	charger	08/10/15	compal	design change	PQ6 PQ8	
3	p32	DCIN / Precharge	08/10/15	compal	meet PSL	PQ2	
4	p33	charger	08/10/15	compal	meet PSL	PQ16	
5	p32	DCIN / Precharge	08/10/15	compal	meet PSL	PQ1	
6	p33	charger	08/10/15	compal	meet PSL	PQ12	
7	p34	+3VALWP/+5VALWP	08/10/15	compal	meet PSL	PQ21	
8	p33	charger	08/10/15	compal	meet PSL	PR22 PR29	
9	p37	+0.75VSP/1.8VSP	08/10/15	compal	adjust 1.8V output voltage	PR127 PR124	
10	p33	charger	08/10/15	compal	adjust charge current to 3.1A	PR38	
11	p33	charger	08/10/15	compal	adjust CP set for ICPP function	PR38	
12	p34	+3VALWP/+5VALWP	08/10/15	compal	meet choke component current limit	PL4 PL5	
13	p32	DCIN / Precharge	08/10/15	compal	meet PSL	PL1	
14	p38	CPU_CORE	08/10/15	compal	meet PSL	PL9	
15	p39	BATTERY CONN	08/10/15	compal	meet PSL	PL12	
16	p33	charger	08/10/22	compal	design change	PQ6 PQ8	
17	p35	+1.5VSP	08/10/22	compal	reduce L/S MOS Vds	PQ22	
18	p36	+1.05VALWP/1.0VP	08/10/22	compal	Add remote sense function	PR189	
19	p36	+1.05VALWP/1.0VP	08/10/22	compal	adjust output voltage	pr94	
20	p36	+1.05VALWP/1.0VP	08/10/22	compal	design change	PL8	
21	p35	+1.5VSP	08/10/22	compal	design change	PL6	
22	p33	charger	08/10/22	compal	EMI request	PL13	
23	ALL	every power	08/10/22	compal	reduce output ripple	PC123 PC167 PC168 PC169 PC170	
24	ALL	every power	08/10/22	compal	sunbber for EMI request	PR30 PR106 PR55 PR56 PR80 PR110 PR105 PR155	
25	ALL	every power	08/10/22	compal	sunbber for EMI request	PC33 PC58 PC60 PC74 PC97 PC101 PC134 PC144	
26	P34 P35	every power	08/10/22	compal	increase boost resistor value form 0 ohm to 2.2 ohm for EMI request	PR57 PR58 Pr76	
27	p39	BATTERY CONN	08/12/03	compal	adjust OTP set	PR183	
28	p33	charger	08/12/03	compal	DFX request	PQ10 PQ11 PQ13 PQ14 PQ15	
29	p36	+1.05VALWP/1.0VP	08/12/03	compal	adjust +1.0VSP OCP set	PR102 PR107	
30	p36	+1.05VALWP/1.0VP	08/12/03	compal	adjust +1.0VSP output voltage	PR99	
31	p35	+1.5VSP	08/12/12	compal	design change(already trail run in PT phase)	PQ22	
32	p39	BATTERY CONN	08/12/12	compal	adjust OTP set	PR183	
33	p33	charger	08/12/31	compal	reduce AC-IN inrush current	PR24 PR25	
34	p36	+1.05VALWP/1.0VP	08/12/31	compal	WWAN issue	PC173 PC174 PC175	
34	p34	+3VALWP/+5VALWP	08/12/31	compal	adjust +5VALWP voltage	PR62 change frome 10k to 9.62k	

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Braxton Power block



Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	19	P19-DDR3_S0-DIMM SLOT	2008/09/22	nVidia	can't use S0-DIMM	change S0-DIMM SA0 to pull high & SA1 to pull down	0.2
2	20	P20-LCD/SATA HDD	2008/09/25	Compal	can't read EDID for Panel	change JLVDS1 Pin 37 from +LCDVDD TO +3VS	0.2
3	21	P21-HDMI/Display Port	2008/10/07	Compal	Change DP122 to DP122A	change R440 from 4.64K to 5.11K and R438 from 5.11K to 6.49K	0.2
4	12	P12-MCP79(6/10)_PCI/LPC	2008/10/13	Compal	can't select on board SPD data	ADD R191,R192,R193 TO SELECT ON BOARD MEMORY VENDOR	0.2
5	28	P28-EC_KB926/BIOS/Reed SW	2008/10/20	Compal		Change EC_SMB_DA1 and EC_SMB_CK1 from +5VALW to +3VALW	0.2
6	18	P18-1GB/2GB_DDR3_On Board	2008/12/04	nVidia	On board Ram unstable	Add 0.1uF cap between Termination Resistor and +0.75VS	0.4
7	14	P14-MCP79(8/10)_HDA/MISC	2009/02/03	Dell	saving power consumption	change +3VALW to +3VS on MEM_SMBCLK & MEM_SMBDATA	1.0
8	24	P24-Mini Card_WLAN/WWAN	2009/02/04	Dell		reserve SMBus from MCP79	1.0
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