



PCB
M/B
DAZ@



LA-7072P
M/B
DA@



LS-7072P
LED/B
DA@



LS-7073P
TP/B
DA@

11/18
LA-7072P P/N from DA60000LA00 to DA60000LA10
LS-7072P P/N from DA40000Z300 to DA40000Z310
LS-7073P P/N from DA40000Z400 to DA40000Z410

11/22
LS-7073P P/N from DA40000Z410 to DA20000Z410

11/18 ZZZ2 for DAZ P/N:DAZ0IV00101

Compal Confidential

P0VE6 LA7072P Schematics Document

AMD Ontario Processor with DDRIII + Hudson M1

10.1" M/B

2010-11-18

Rev : 1.0

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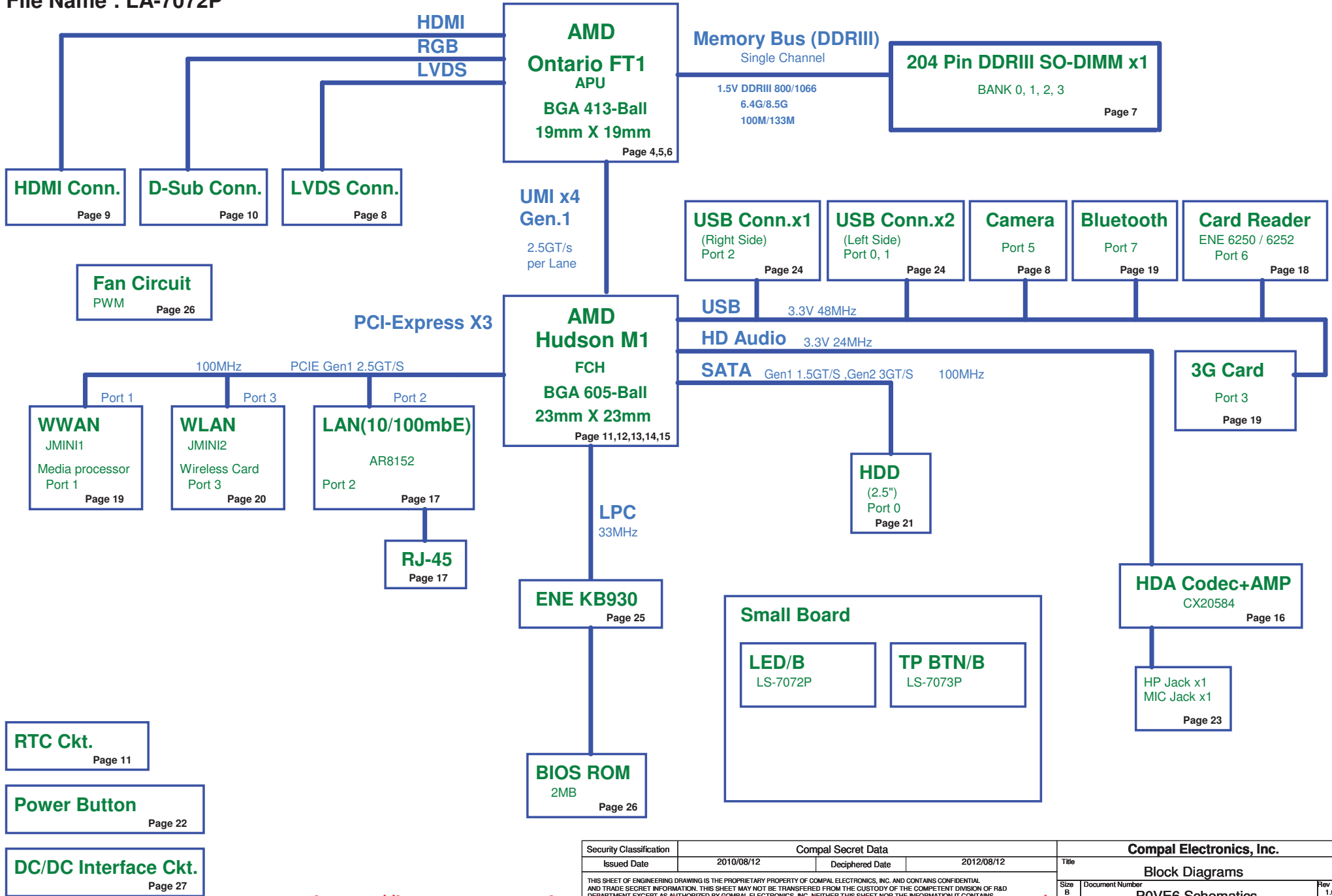
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Model Name : P0VE6 / P0VH6

File Name : LA-7072P

Brazos Platform



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Voltage Rails

Power Plane	Description	S1	S3	S5
VIN	Adapter power supply (19V)	N/A	N/A	N/A
B+	AC or battery power rail for power circuit.	N/A	N/A	N/A
+APU_CORE	Core voltage for CPU (0.7-1.2V)	ON	OFF	OFF
+APU_CORE_NB	1.0V switched power rail	ON	OFF	OFF
+1.5V	1.5V power rail for CPU VDDIO and DDRIII	ON	ON	OFF
+0.75VS	0.75VS switched power rail for DDR terminator	ON	OFF	OFF
+1.05VS	1.05V switched power rail for NB VDDC & VGA	ON	OFF	OFF
+1.1VS	1.1VS switched power rail	ON	OFF	OFF
+1.8VS	1.8V switched power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+1.1VALW	1.1V always on power rail	ON	ON	ON*
+3VS	3.3V switched power rail	ON	OFF	OFF
+1.5VS	1.5VS switched power rail	ON	OFF	OFF
+5VALW	5V always on power rail	ON	ON	ON*
+5VS	5V switched power rail	ON	OFF	OFF
+VSB	VSB always on power rail	ON	ON	ON*
+RTCBATT	RTC power	ON	ON	ON

Note : ON* means that this power plane is ON only with AC power available, otherwise it is OFF.

EC SM Bus1 address

EC SM Bus2 address

Device	Address	HEX	Device	Address	HEX
Smart Battery	0001-011xb	16H	SB-TSI	1001-100xb	98H

SM Bus Controller 0

(FCH_SMB1 - FCH_SMB4, SMB_ALERT#)

Device	Address	HEX
APU SIC/SID (FCH_SMB3)		
H_THERMTRIP# (FCH_ALERT#)		

SM Bus Controller 1

(FCH_SMB0)

Device	Address	HEX
DDR DIMM1 (FCH_SMB0)	1001-000xb	90

BOM Structure

HDMI@ : HDMI function
 BT@ : BT function
 CONN@ : Conneters
 45@ : 45 Level
 3G@ : 3G function
 3G_MP@: 3G & Media processor function
 CHARGE@: Charge BATT
 NONCHARGE@: nonCharge BATT

FCH Hudson-M1 USB Port List

USB1.1	
Port0	NC
Port1	NC
USB2.0	
Port0	Right USB2
Port1	Right USB3
Port2	Left USB1
Port3	WWAN
Port4	SIM
Port5	USB Camera
Port6	CardReader
Port7	BT
Port8	WiMax
Port9	NC
Port10	NC
Port11	NC
Port12	NC
Port13	NC

Brazos PCIE Port List

	PCIE0	
APU	PCIE1	NC
	PCIE2	
	PCIE3	
FCH	PCIE0	NC
	PCIE1	WWAN
	PCIE2	LAN
	PCIE3	WLAN

FCH Hudson-M1 SATA Port List

SATA0	HDD
SATA1	NC
SATA2	NC
SATA3	NC
SATA4	NC
SATA5	NC

Board ID / SKU ID Table for AD channel

Vcc	+3VALW				
Ra	100K +/- 5%				
Board ID	Rb	V _{AD_BID} min	V _{AD_BID} typ	V _{AD_BID} max	PCB Revision
0	0	0 V	0 V	0 V	0.1
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V	0.2
2	18K +/- 5%	0.436 V	0.503 V	0.538 V	
3	33K +/- 5%	0.712 V	0.819 V	0.875 V	
4	56K +/- 5%	1.036 V	1.185 V	1.264 V	
5	100K +/- 5%	1.453 V	1.650 V	1.759 V	
6	200K +/- 5%	1.935 V	2.200 V	2.341 V	
7	NC	2.500 V	3.300 V	3.300 V	

SMBUS Control Table

	Source	BATT	DIMM	MINI Card	LCD DDC ROM	HDMI DDC ROM	APU
EC_SMB_CK1 EC_SMB_DA1	KB930	V					
EC_SMB_CK2 EC_SMB_DA2	KB930						V
HDMI_DATA HDMI_CLK	APU FT1					V	
EDID_DATA EDID_CLK	APU FT1				V		
FCH_SMDAT0 FCH_SMCLK0	FCH M1		V	V			

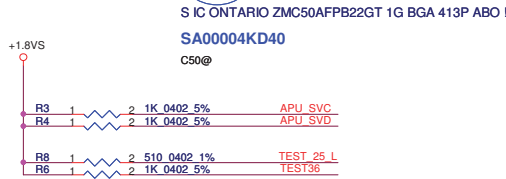
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				Notes List		Rev 1.0
				POVE6 Schematics		



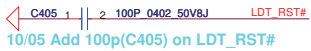
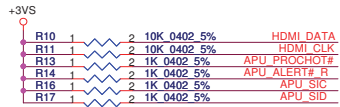
10/08 Add U1(C50@) SA00004BM30 S IC ONTARIO ZM101034B2238 1G BGA ABO!

10/08 Change U1 P/N to SA00004DF20 S IC ONTARIO ZM121034B1238 1.2G BGA ABO!

R9	R352	Display
mount	@	LVDS
@	mount	eDP



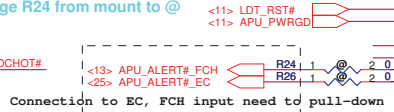
11/29 Change U1 from SA00004BM80 to SA00004KD40



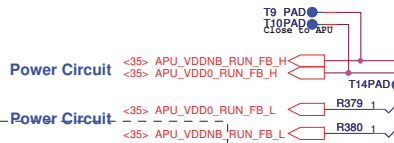
10/05 Add 100p(C405) on LDT_RST#



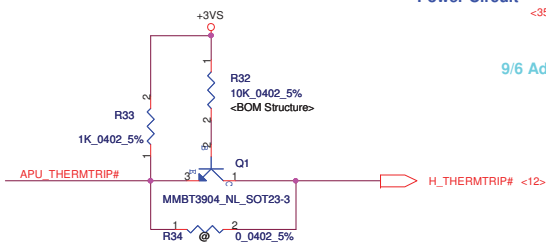
9/9 Change R24 from @ to mount R26 from mount to @
9/15 Change R24 from mount to @



Connection to EC, FCH input need to pull-down



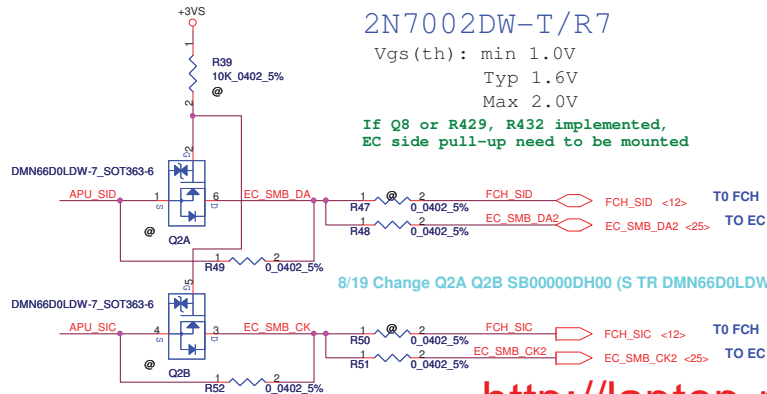
9/6 Add R379, R380 for APU_VDDNB_RUN_FB_L



If FCH internal pull-up disabled, level-shifter could be deleted. Need BIOS to disable internal pull-up!!

2N7002DW-T/R7

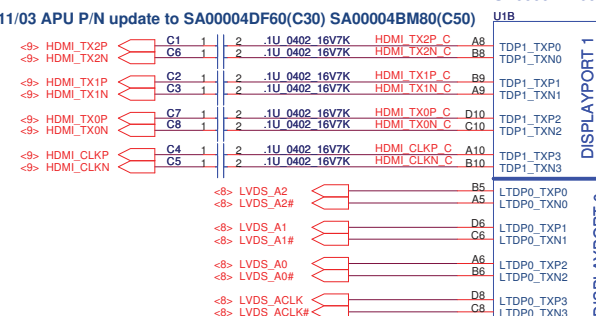
Vgs(th): min 1.0V
Typ 1.6V
Max 2.0V
If Q8 or R429, R432 implemented, EC side pull-up need to be mounted



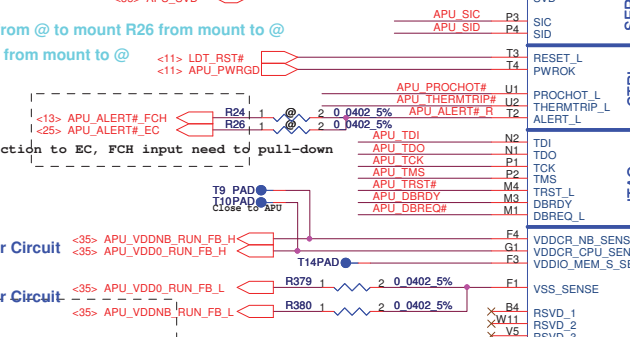
8/19 Change Q2A Q2B SB00000DH00 (S TR DMN66D0LDW-7 2N SOT363-6)

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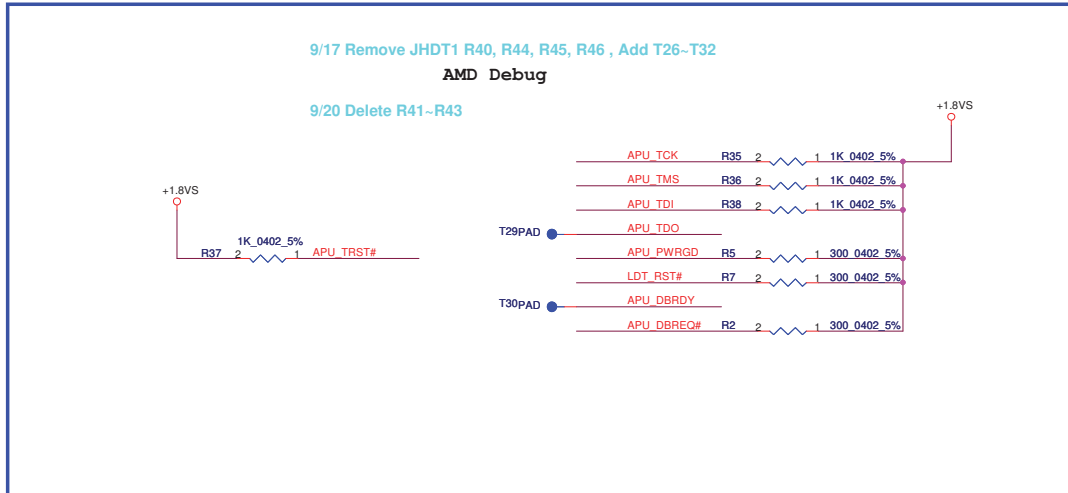
SA00004DF60



Power Circuit



8/31 Change U1 P/N to SA00004DF00 S IC ONTARIO ZM121034B1240 1.2G BGA 413P ABO!



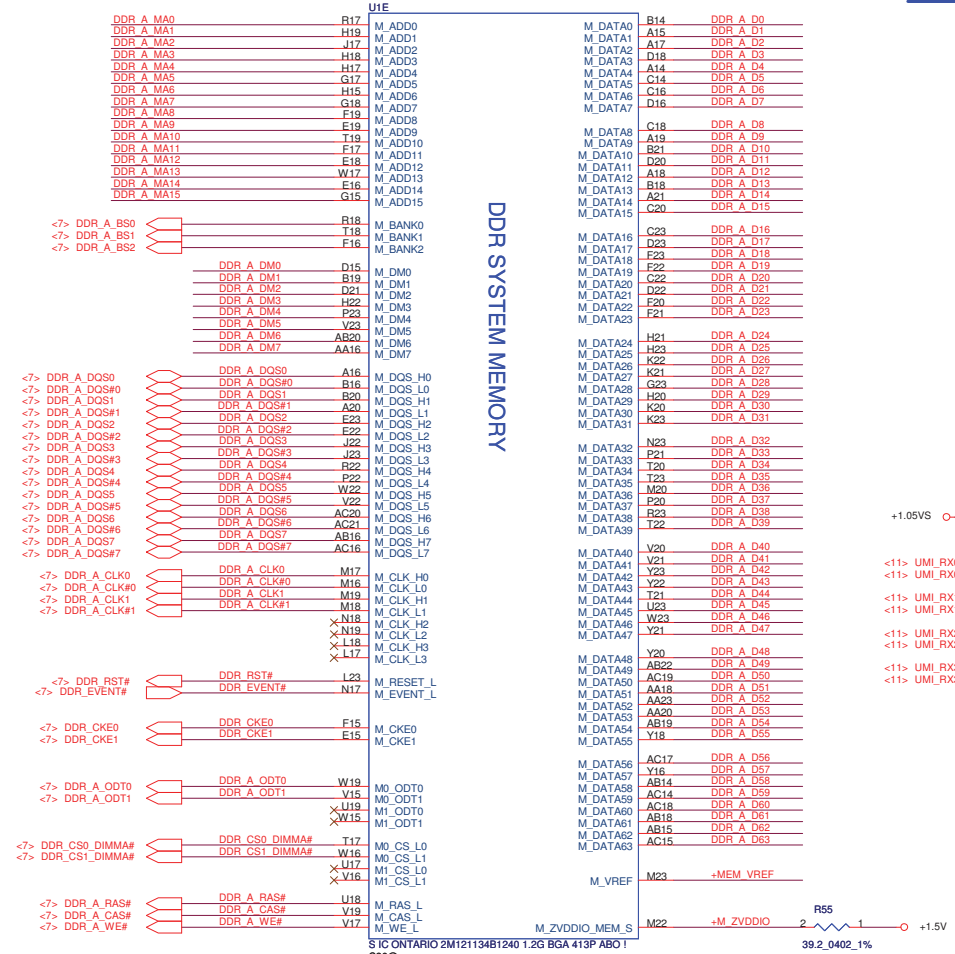
9/17 Remove JHDT1 R40, R44, R45, R46, Add T26-T32
9/20 Delete R41-R43

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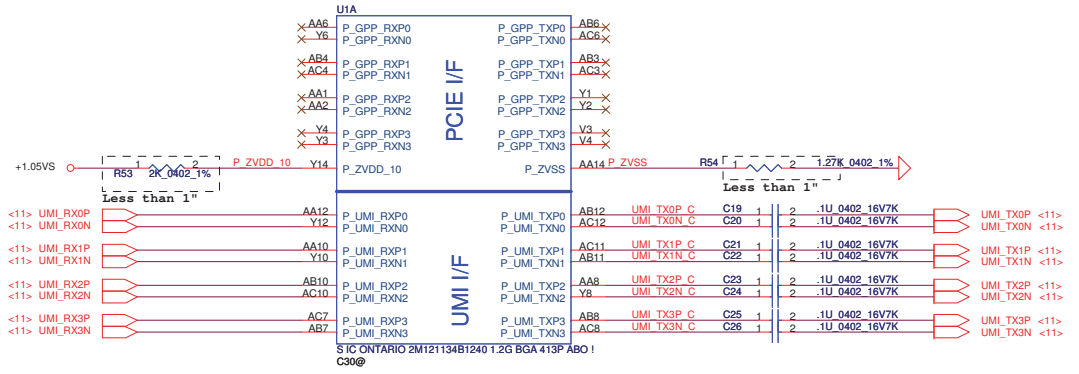
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Title		
FT1 CTRL/DP/CRT		
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DDR A D[0..63] <-> DDR_A_D[0..63] <->
 DDR A MA[0..15] <-> DDR_A_MA[0..15] <->
 DDR A DM[0..7] <-> DDR_A_DM[0..7] <->

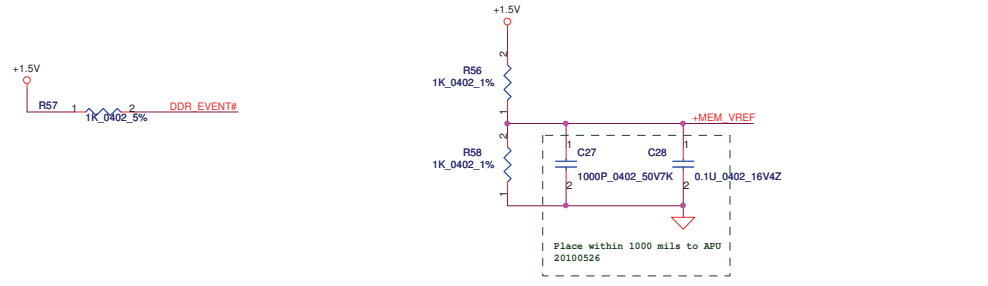


DDR SYSTEM MEMORY

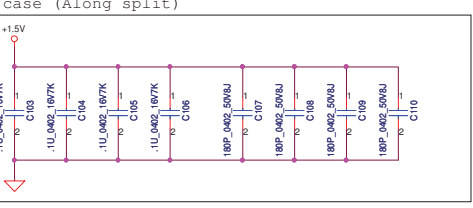
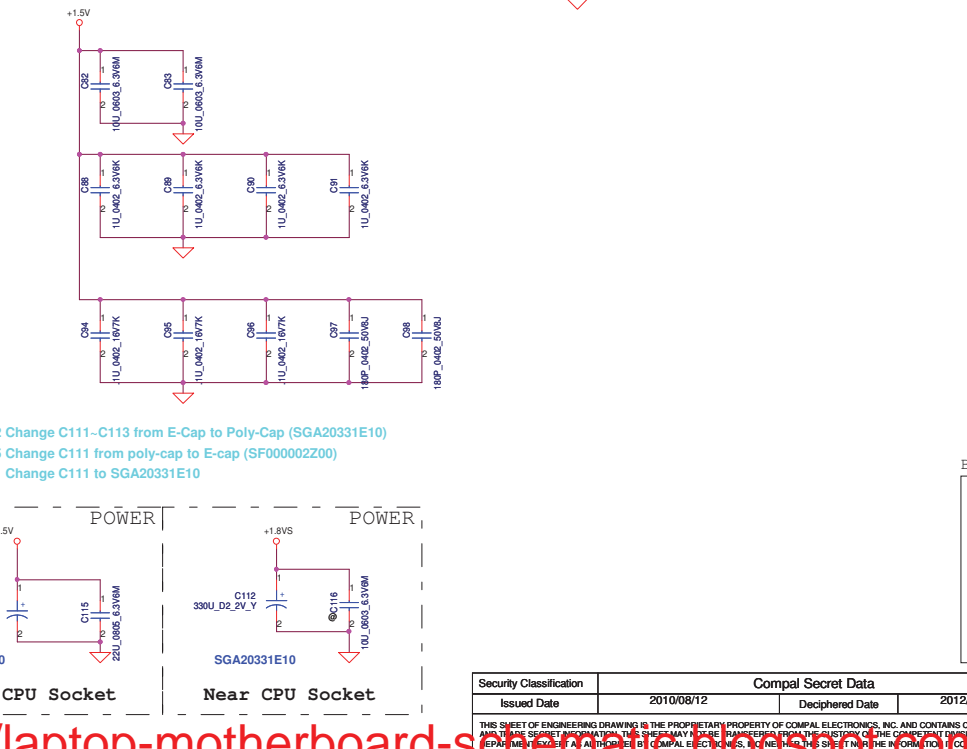
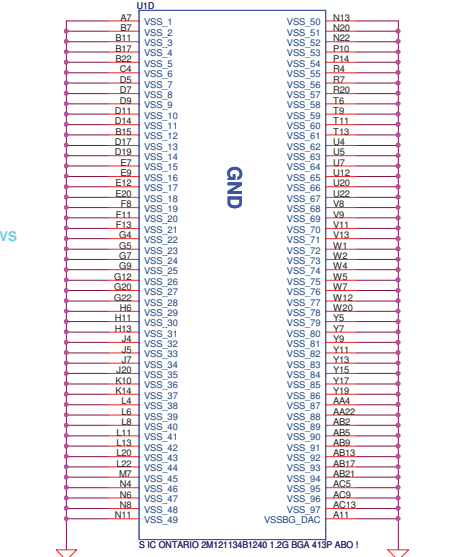
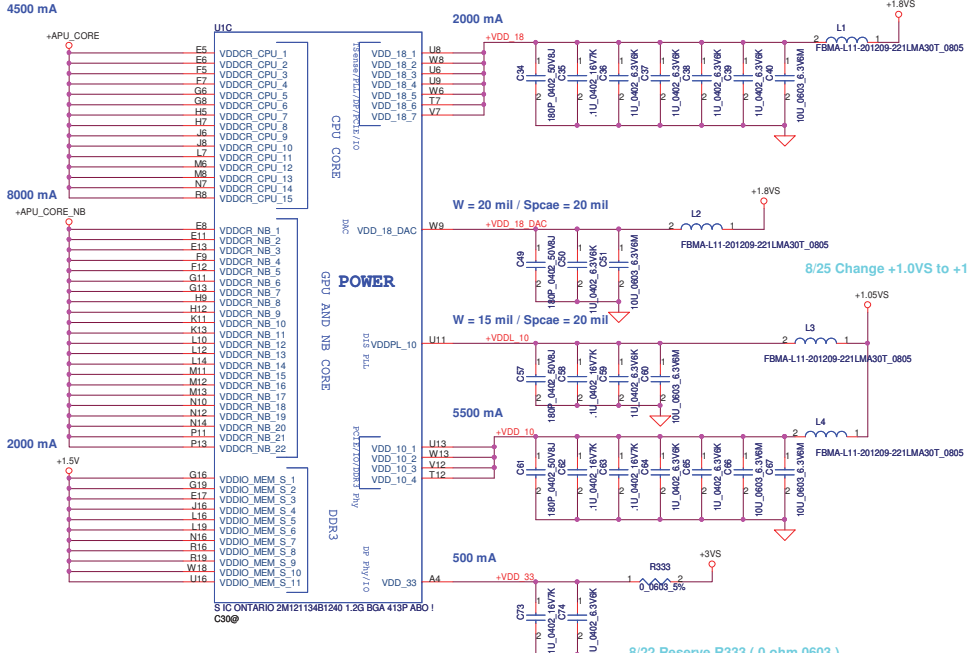
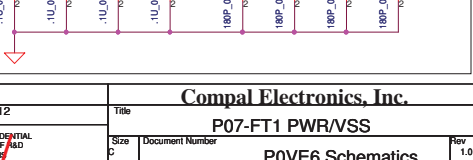
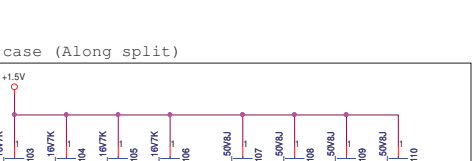
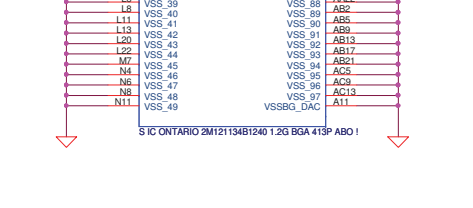
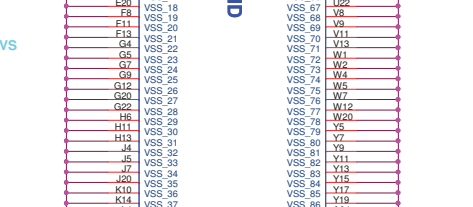
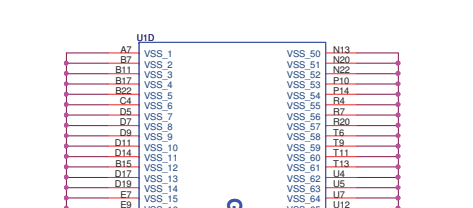
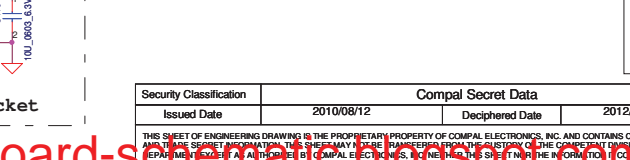
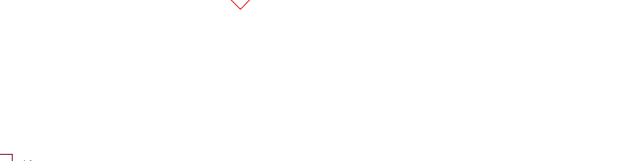
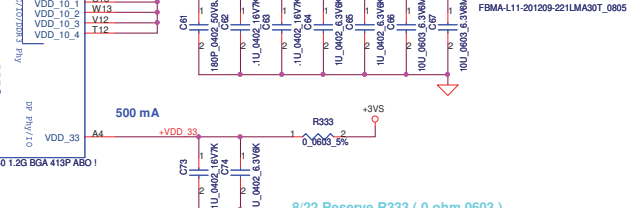
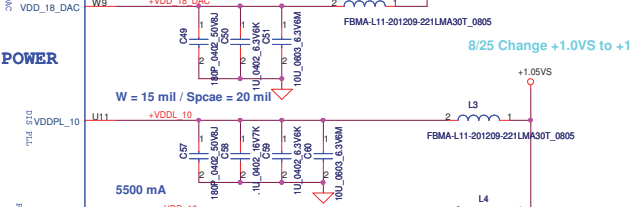
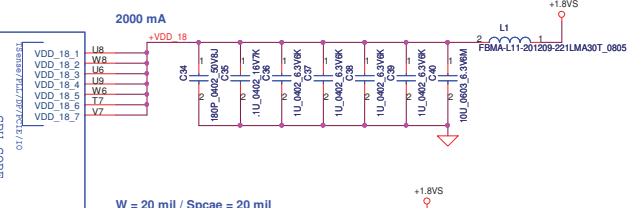
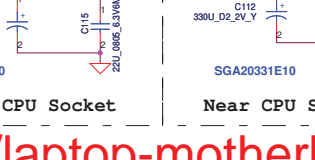
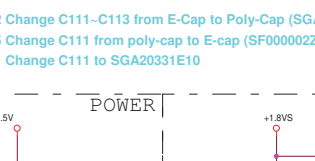
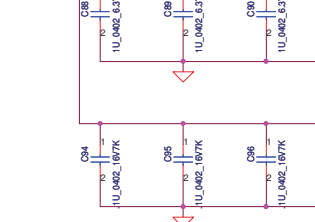
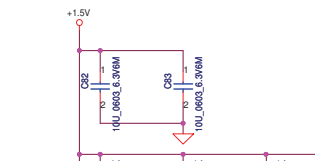
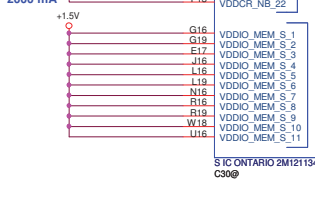
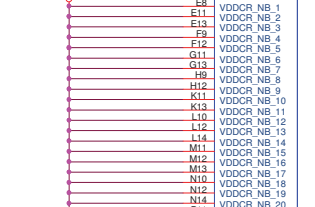
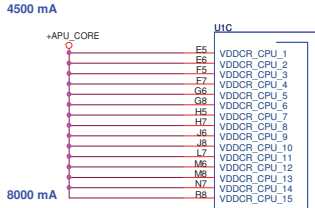
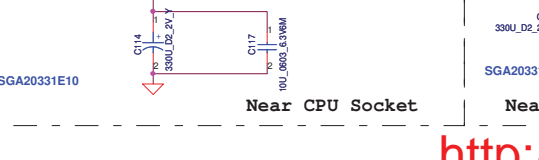
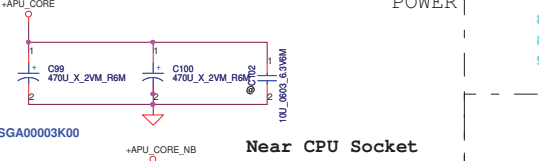
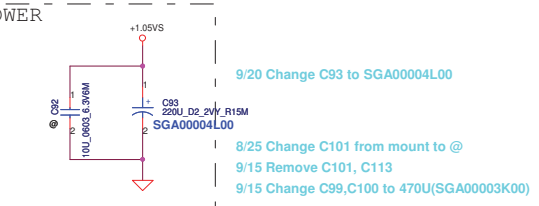
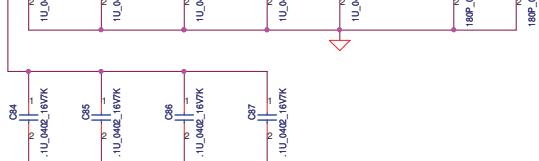
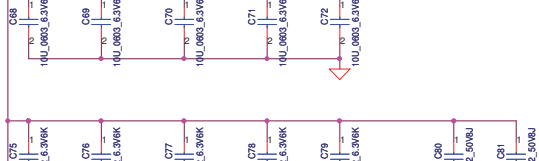
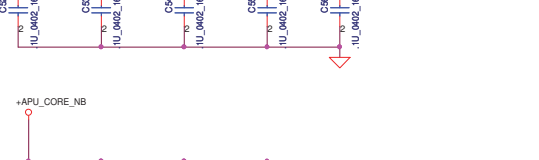
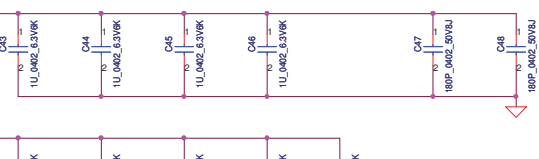
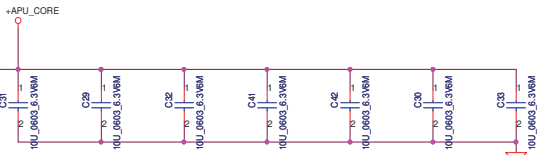
8/22 Delete C11-C18 (No VGA)
 9/6 Change PCI-E from FCH to APU
 9/6 Update PCI-E port List
 9/15 Change PCI-E from APU to FCH



9/11 Delete DDR Signal link to JDIMM2

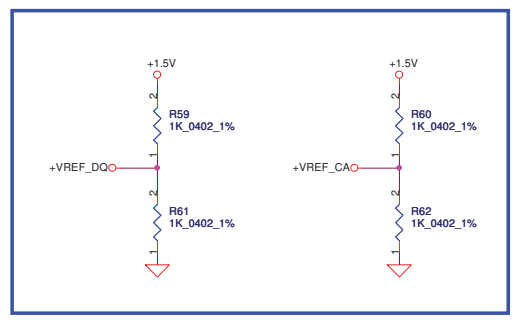
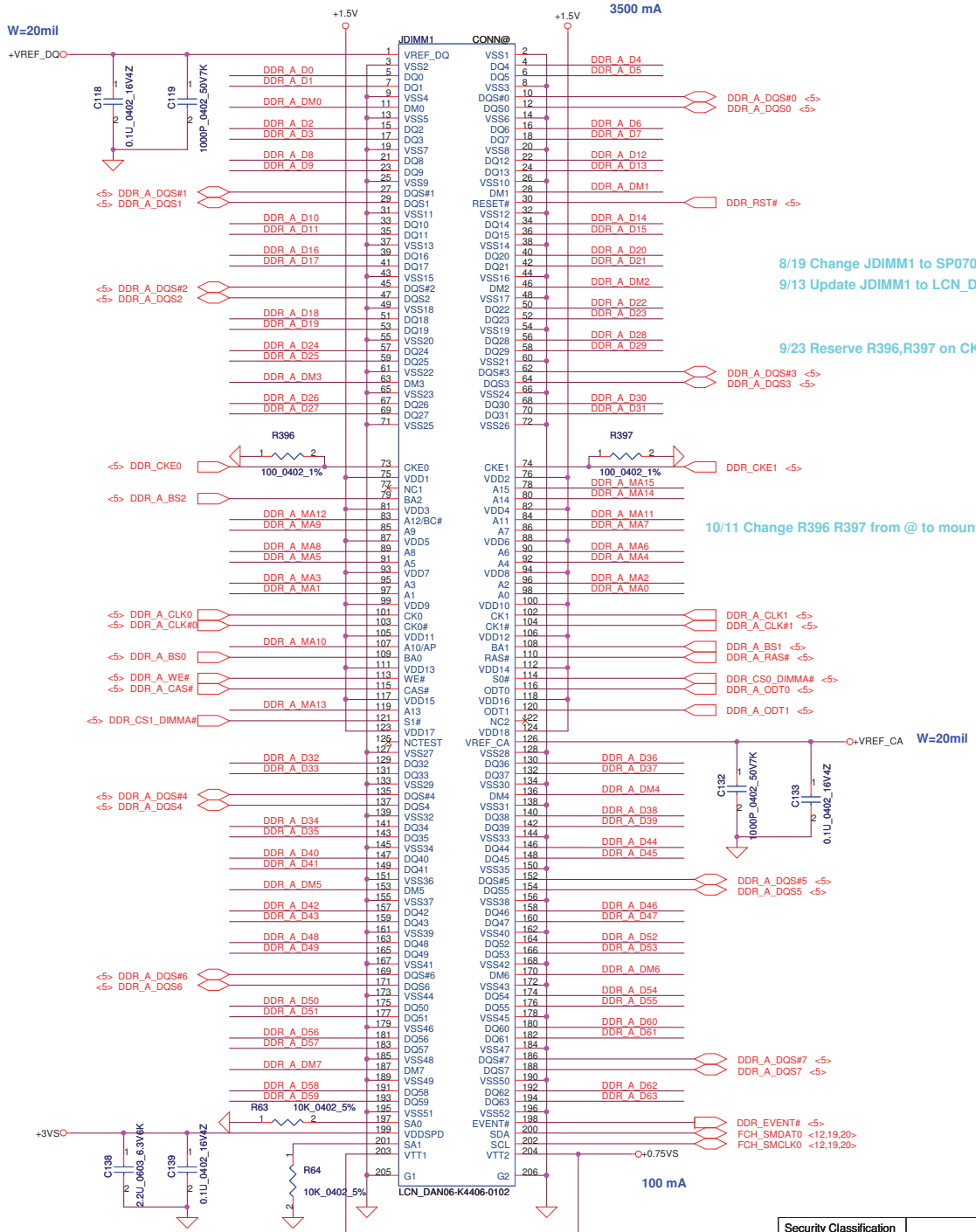


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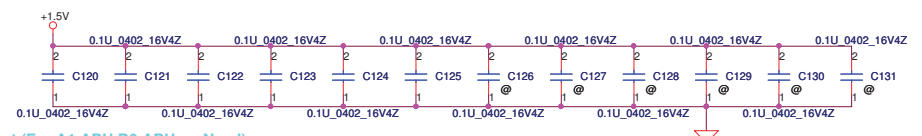
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APU CORE			Document Number	P0VE6 Schematics	
GPU AND NB CORE			Date	Wednesday, November 17, 2010	
DDR3			Rev	1.0	

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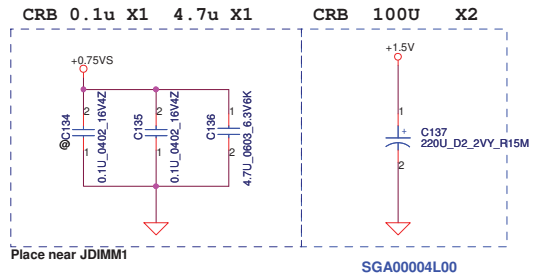
8/19 Change JDIMM1 to SP07000LT00(LCN_DAN06-K4406-0103_204P)
 9/13 Update JDIMM1 to LCN_DAN06-K4406-0102_204P

9/23 Reserve R396,R397 on CKE0 & CKE1(S3 hang Issue)



10/11 Change R396 R397 from @ to mount (For A1 APU,B0 APU no Need)

9/11 Change C137 to SGA00004L00



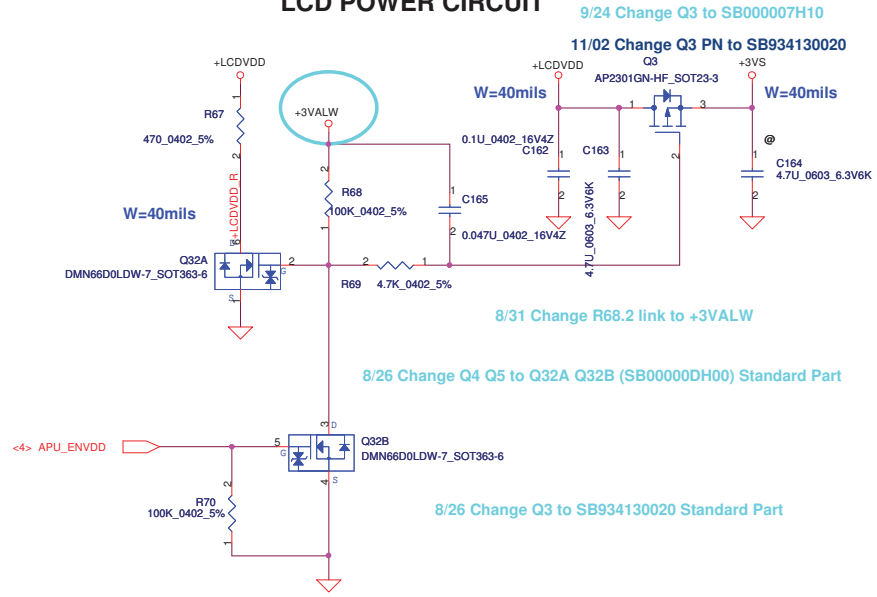
8/25 Change C137 from poly-cap to E-cap (SF000002Y00)
 8/25 Reserve C381 E-cap (SF000002Y00) on +1.5V

9/11 Remove C381

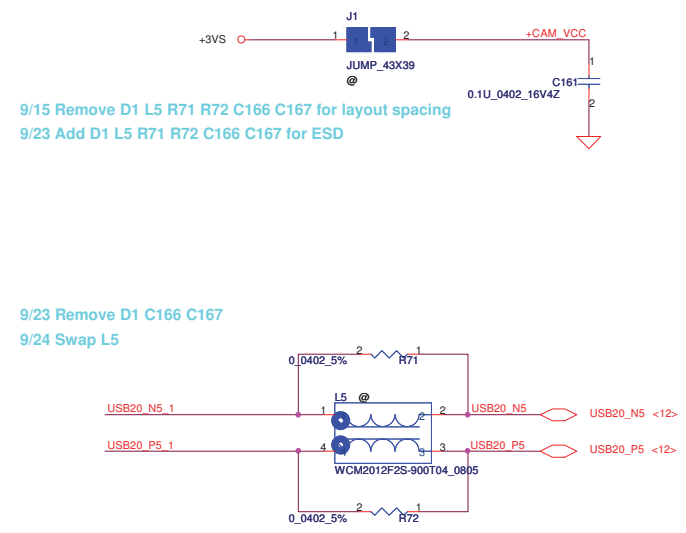
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LCD POWER CIRCUIT



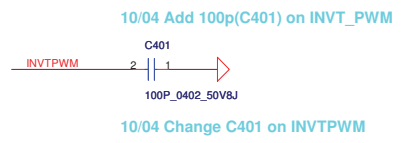
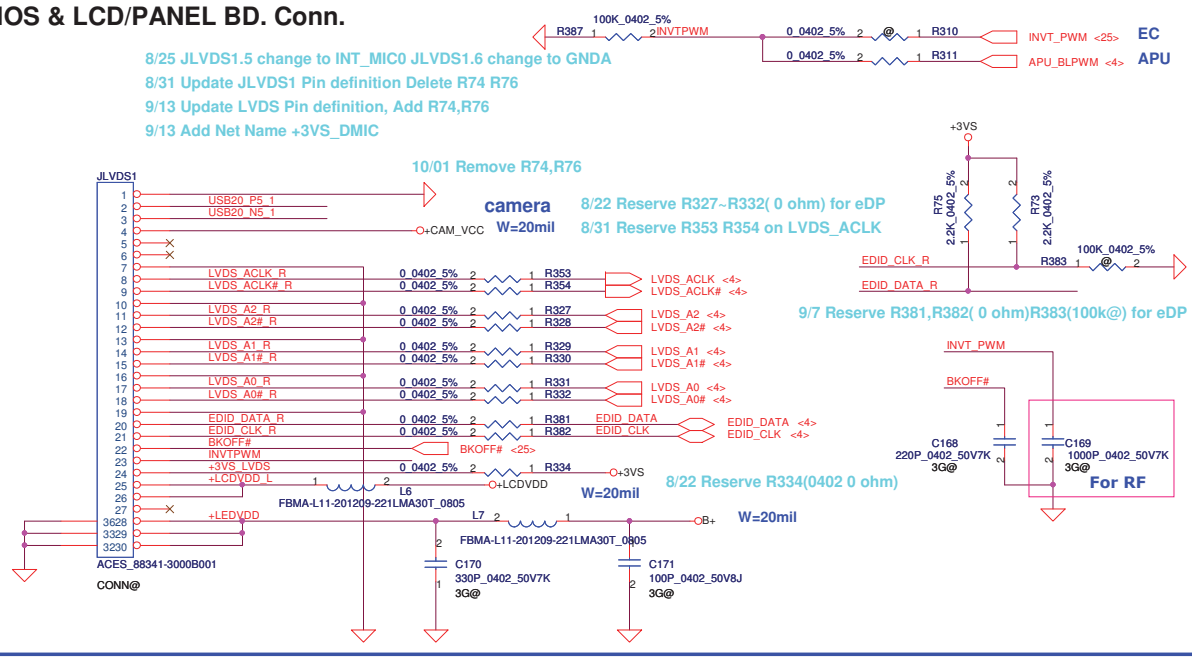
About Camera



9/9 Reserve 100k PD to GND on INVT_PWM 9/17 Change R387 from @ to mount

CMOS & LCD/PANEL BD. Conn.

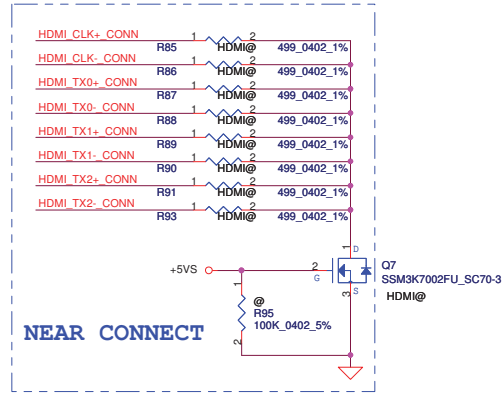
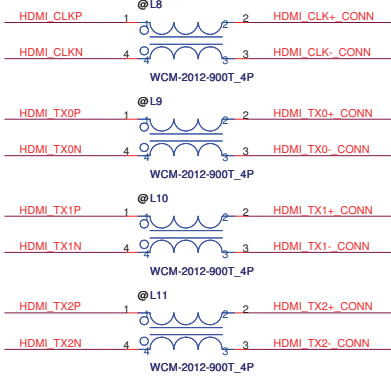
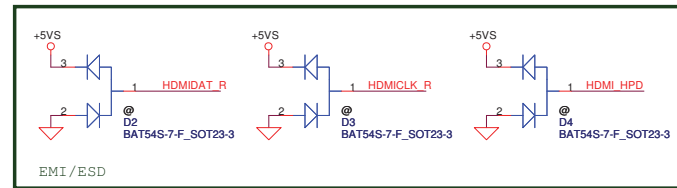
8/25 JLVDS1.5 change to INT_MIC0 JLVDS1.6 change to GNDA
 8/31 Update JLVDS1 Pin definition Delete R74 R76
 9/13 Update LVDS Pin definition, Add R74,R76
 9/13 Add Net Name +3VS_DMIC



*

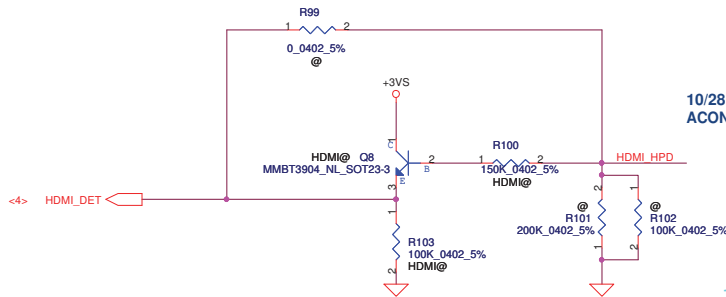
Display	LVDS	eDP
R331	0 ohm	0.1uF
R332	0 ohm	0.1uF
R381	0 ohm	0.1uF
R382	0 ohm	0.1uF
R383	@	100k ohm
R73	2.2k ohm	@
R75	2.2k ohm	100k ohm

<->	HDMI_CLKP	R77	1	HDMI@	2	0.0402_5%	HDMI_CLK+_CONN
<->	HDMI_CLKN	R78	1	HDMI@	2	0.0402_5%	HDMI_CLK-_CONN
<->	HDMI_TX0P	R79	1	HDMI@	2	0.0402_5%	HDMI_TX0+_CONN
<->	HDMI_TX0N	R80	1	HDMI@	2	0.0402_5%	HDMI_TX0-_CONN
<->	HDMI_TX1P	R81	1	HDMI@	2	0.0402_5%	HDMI_TX1+_CONN
<->	HDMI_TX1N	R82	1	HDMI@	2	0.0402_5%	HDMI_TX1-_CONN
<->	HDMI_TX2P	R83	1	HDMI@	2	0.0402_5%	HDMI_TX2+_CONN
<->	HDMI_TX2N	R84	1	HDMI@	2	0.0402_5%	HDMI_TX2-_CONN



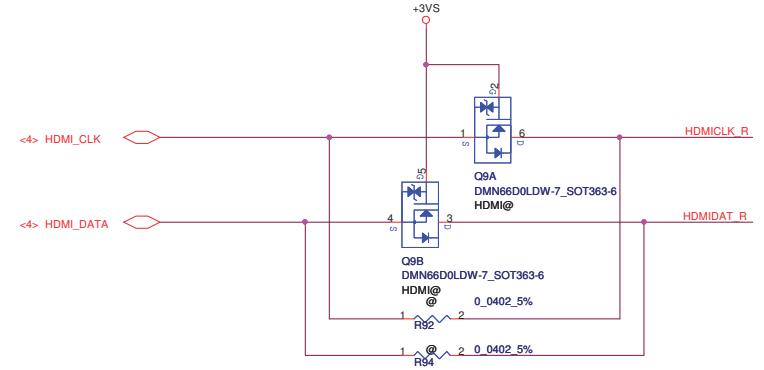
8/26 Change Q7 to SB000009610 Standard Part

9/20 Change R99 from HDMI@ to @
9/20 Change Q8, R100 from @ to HDMI@



10/28 Change JHDMI1 footprint from ACON_HMR2E-AK120D_19P-T to ACON_HMR2E-AK120D_19P-S

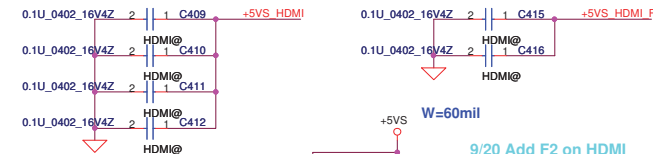
10/07 Update JHDMI1 footprint from ACON_HMR2E-AK120D_19P to ACON_HMR2E-AK120D_19P-T



8/19 Change Q9A Q9B to SB00000DH00 (S TR DMN66D0LDW-7 2N SOT363-6)

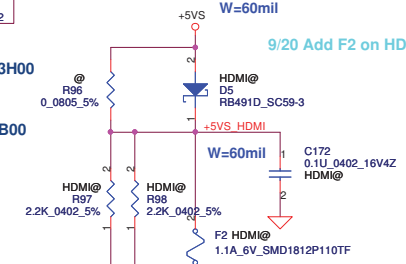
10/29 Add C409~C412(0.1U) on +5VS_HDMI

10/29 Add C415~C416(0.1U) on +5VS_HDMI_F



10/27 Change D5 P/N from SC1B491D000 to SCS00003H00

10/27 Change F2 P/N from SP04301P120 to SP040001B00



8/23 Update JHDMI1 Symbol (SUYIN_100042GR019S268ZR_19P-T)

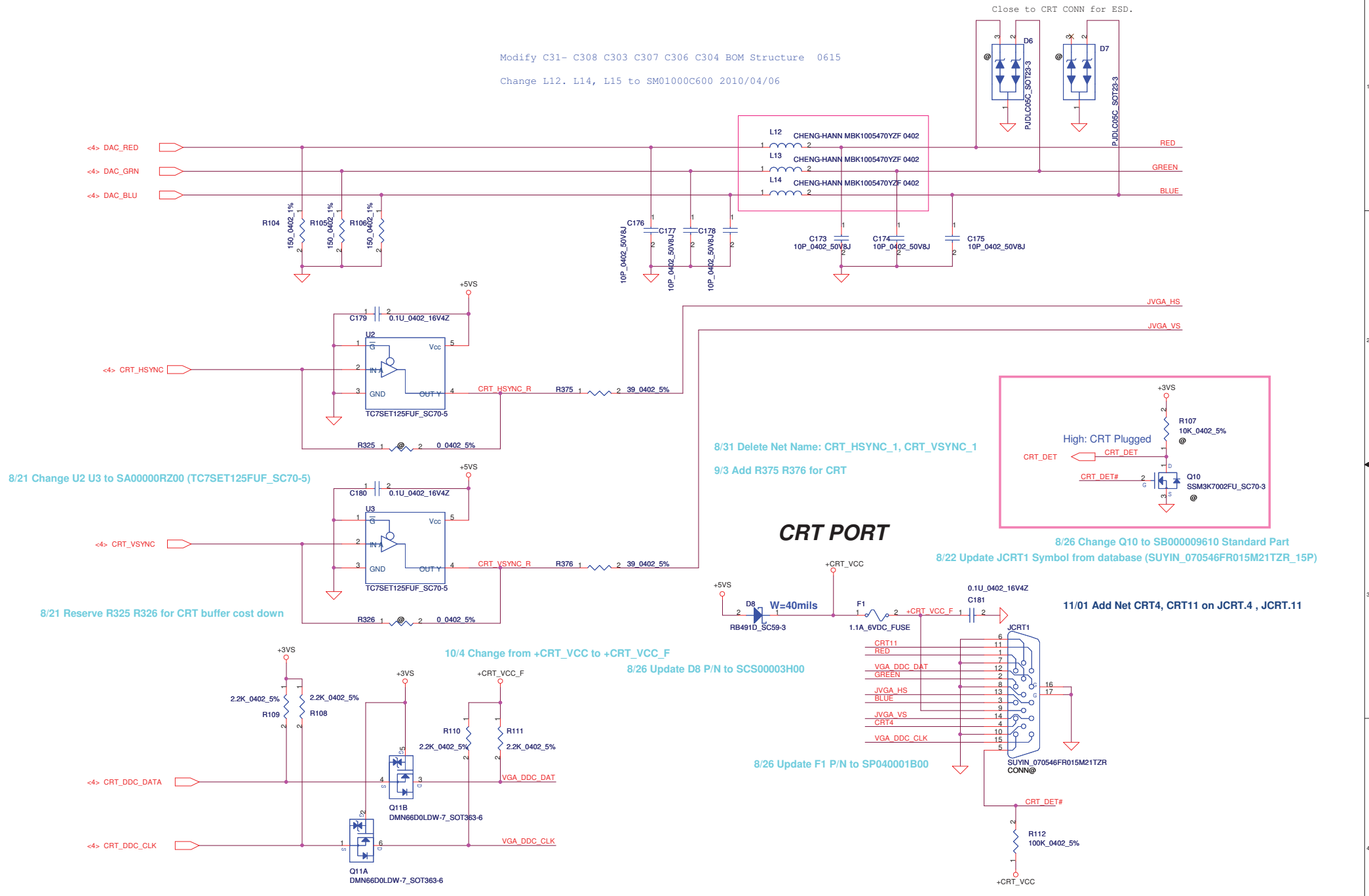
8/23 Update JHDMI1 Symbol (SUYIN_100042GR019M23DZL_19P-T)

9/7 Update JHDMI1 Symbol (ACON_HMR2E-AK120D_19P)

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Size	Document Number	P0VE6 Schematics		Rev	1.0
Custom	Date: Wednesday, November 17, 2010			Sheet	9 of 36

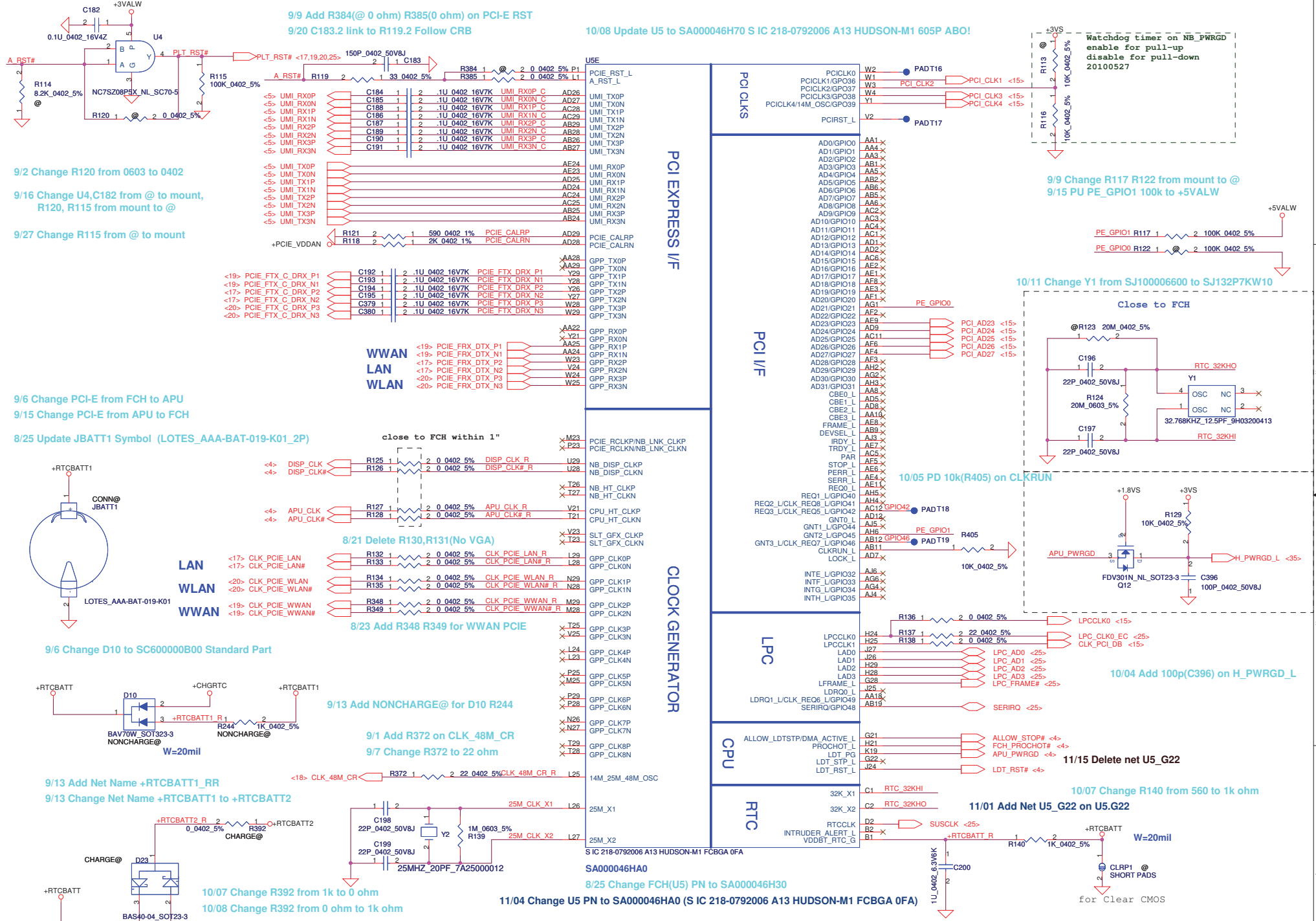
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Modify C31- C308 C303 C307 C306 C304 BOM Structure 0615
 Change L12, L14, L15 to SM01000C600 2010/04/06



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				P0VE6 Schematics	
				Date:	Wednesday, November 17, 2010
				Sheet	10 of 36
				Rev	1.0

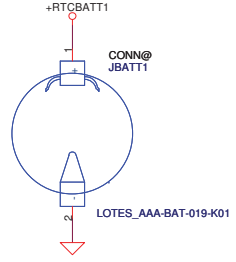
<http://laptop-motherboard-schematic.blogspot.com/>



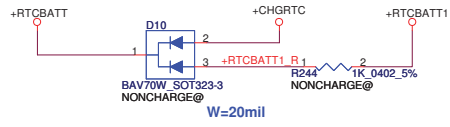
9/2 Change R120 from 0603 to 0402
 9/16 Change U4, C182 from @ to mount, R120, R115 from mount to @
 9/27 Change R115 from @ to mount

9/6 Change PCI-E from FCH to APU
 9/15 Change PCI-E from APU to FCH

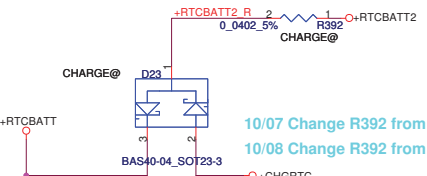
8/25 Update JBATT1 Symbol (LOTES_AAA-BAT-019-K01_2P)



9/6 Change D10 to SC600000B00 Standard Part

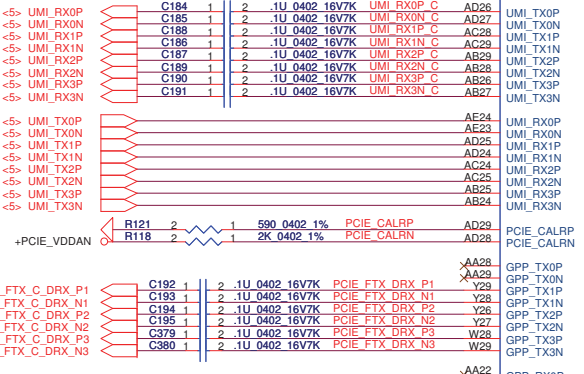


9/13 Add Net Name +RTCBATT1_RR
 9/13 Change Net Name +RTCBATT1 to +RTCBATT2

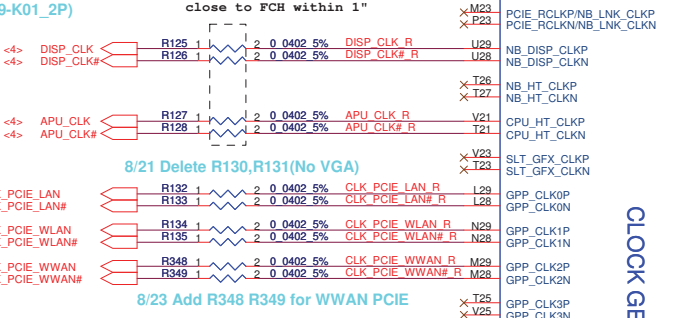


10/07 Change R392 from 1k to 0 ohm
 10/08 Change R392 from 0 ohm to 1k ohm
 11/01 Change R392 from 1k to 0 ohm
 9/13 Add C392, R392, D23(CHARGE@) for RTC Charge Circuit

9/9 Add R384(@ 0 ohm) R385(0 ohm) on PCI-E RST
 9/20 C183.2 link to R119.2 Follow CRB



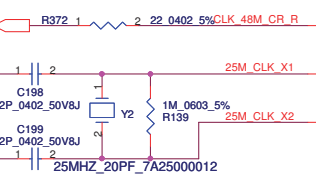
WWAN
 LAN
 WLAN



8/23 Add R348 R349 for WWAN PCIE

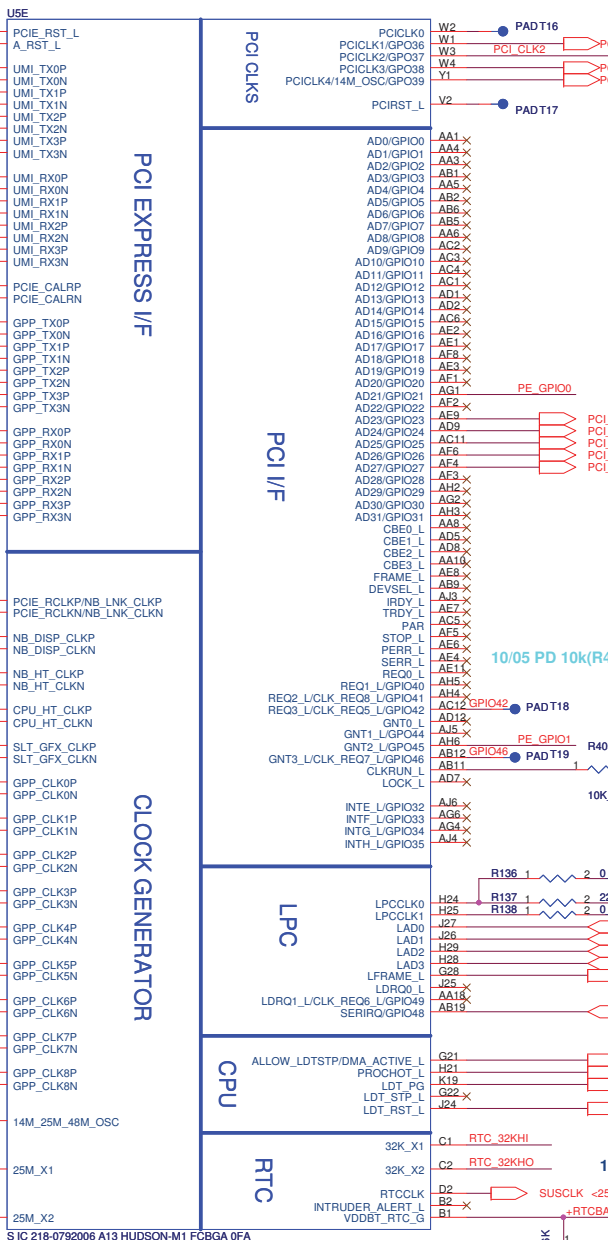


9/1 Add R372 on CLK_48M_CR
 9/7 Change R372 to 22 ohm

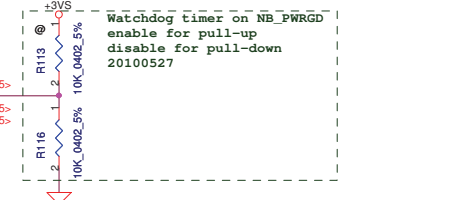


11/01 Change R392 from 1k to 0 ohm
 9/13 Add C392, R392, D23(CHARGE@) for RTC Charge Circuit

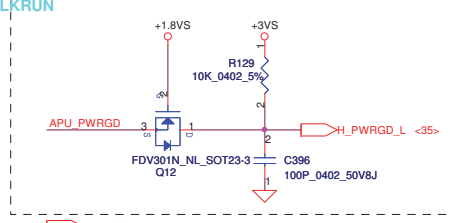
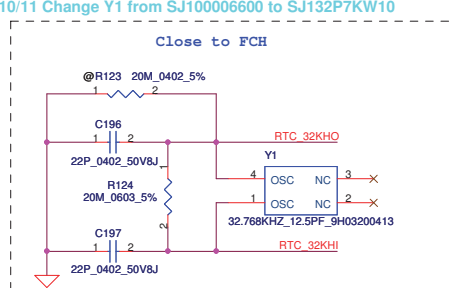
10/08 Update U5 to SA000046H70 S IC 218-0792006 A13 HUDSON-M1 605P ABO!



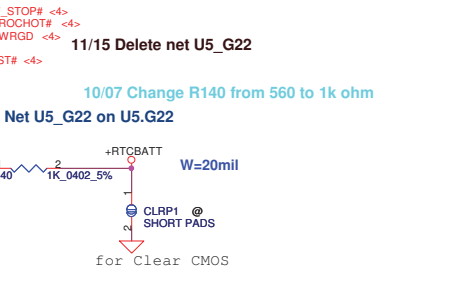
8/25 Change FCH(U5) PN to SA000046H30
 11/04 Change U5 PN to SA000046HA0 (S IC 218-0792006 A13 HUDSON-M1 FCBGA 0FA)



9/9 Change R117 R122 from mount to @
 9/15 PU PE_GPIO1 100k to +5VALW



10/04 Add 100p(C396) on H_PWRGD_L
 11/15 Delete net U5_G22



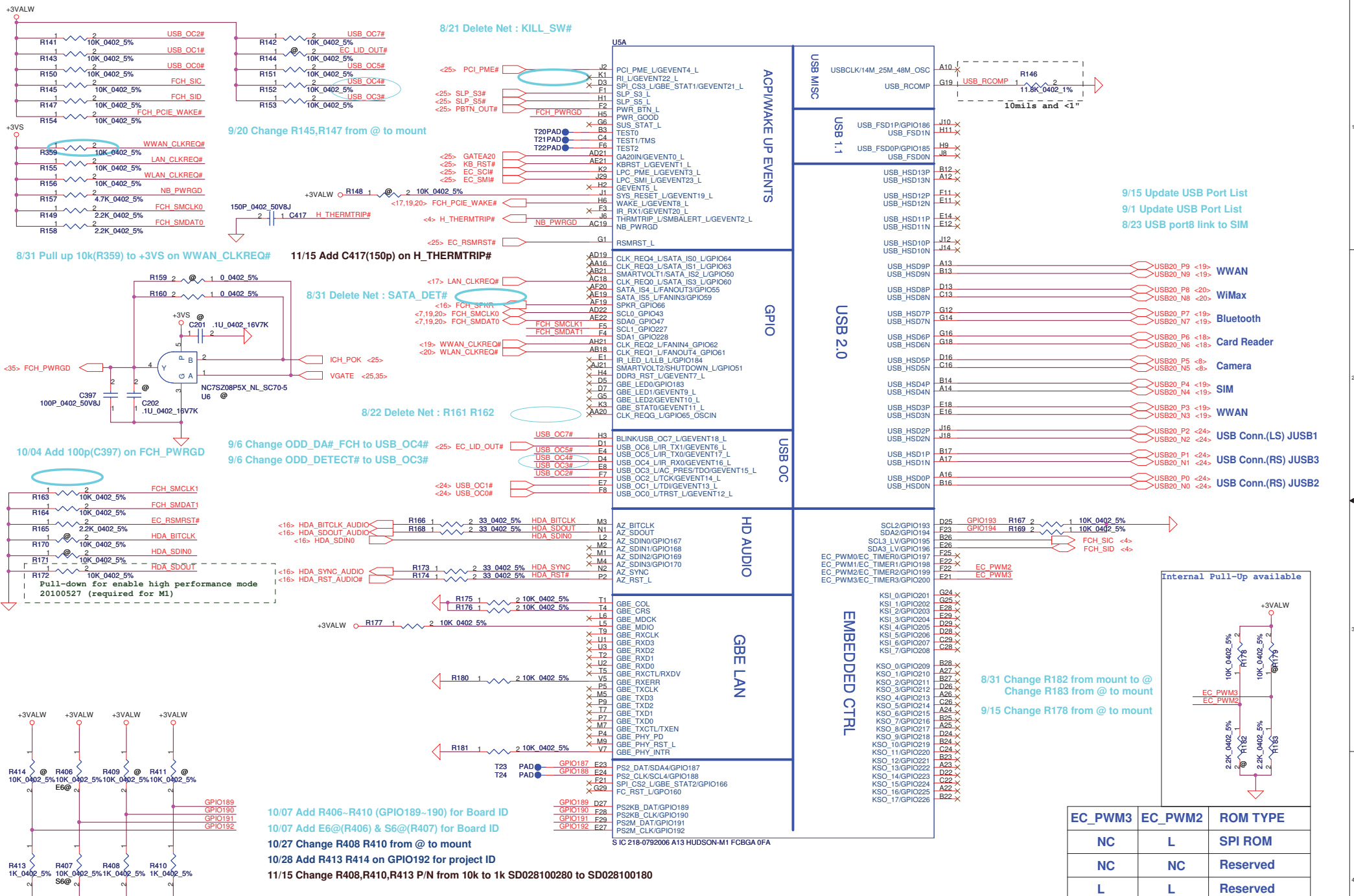
10/07 Change R140 from 560 to 1k ohm
 11/01 Add Net U5_G22 on U5.G22

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FCH PCIE/PCI/ACPI/LPC/RTC		
Title	Document Number	Rev
	P0VE6 Schematics	1.0
Date:	Wednesday, November 17, 2010	Sheet 11 of 36

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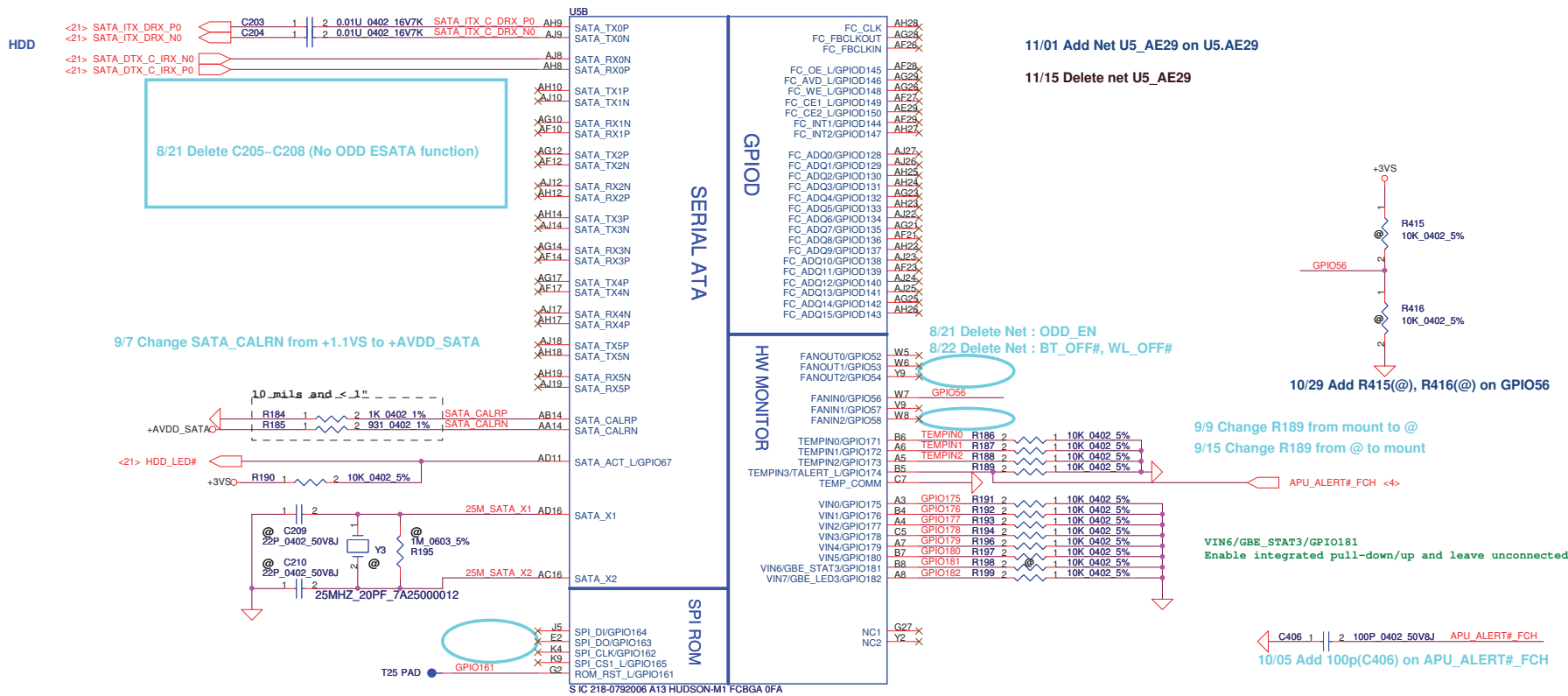


R406	R407	Board ID
mount	@	POVE6
@	mount	POVS6

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Issued Date	2010/08/12	Deciphered Date
		2012/08/12
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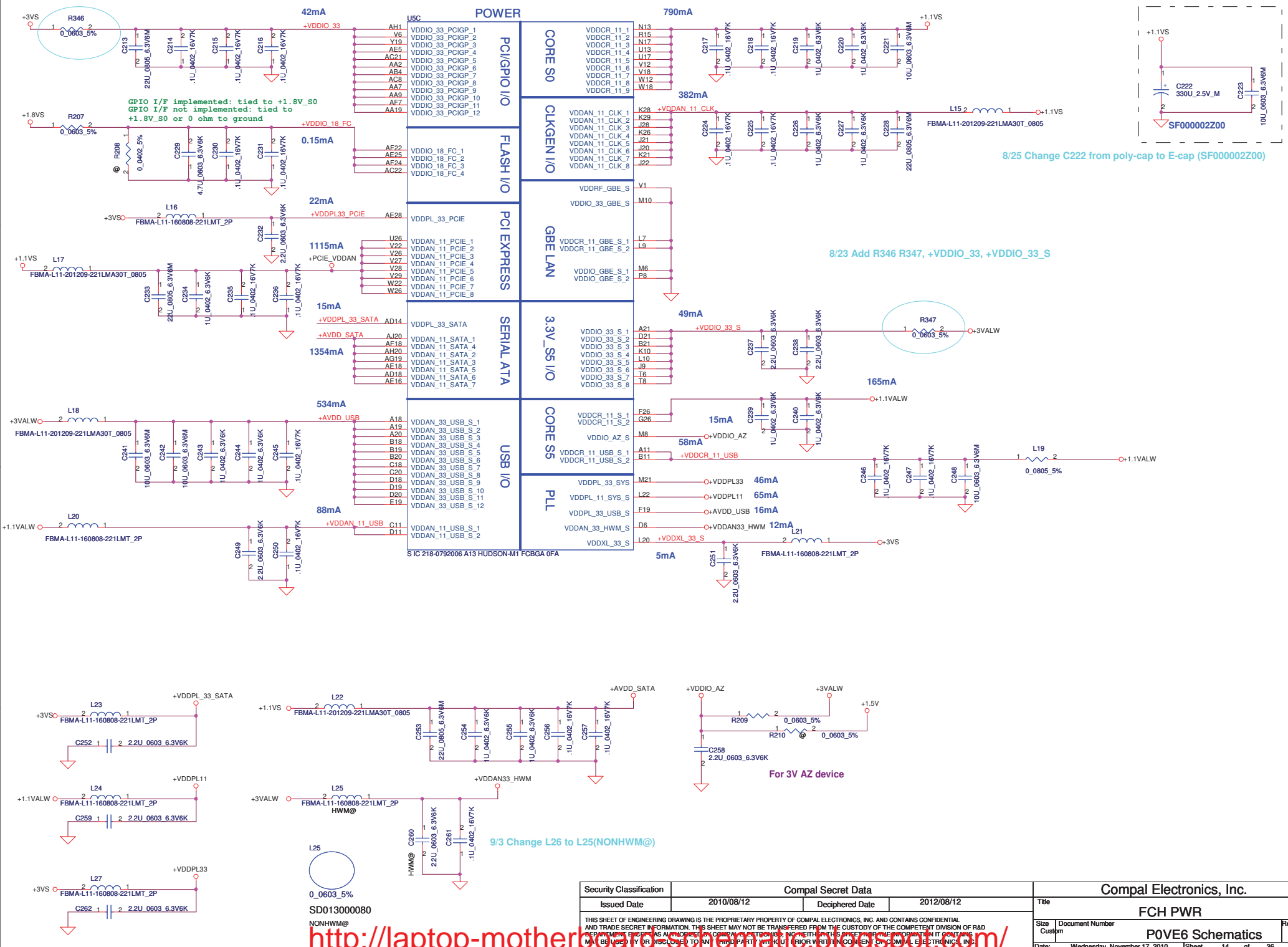
EC_PWM3	EC_PWM2	ROM TYPE
NC	L	SPI ROM
NC	NC	Reserved
L	L	Reserved
L	H	LPC ROM

Compal Electronics, Inc.		
FCH HDA/USB/ACPI		
Title	FCH HDA/USB/ACPI	
Size	Document Number	Rev
Custom	POVE6 Schematics	1.0
Date:	Thursday, November 18, 2010	Sheet 12 of 36



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				Rev	1.0

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IC 218-0792006 A13 HUDSON-M1 FCBGA 0FA

SD013000080

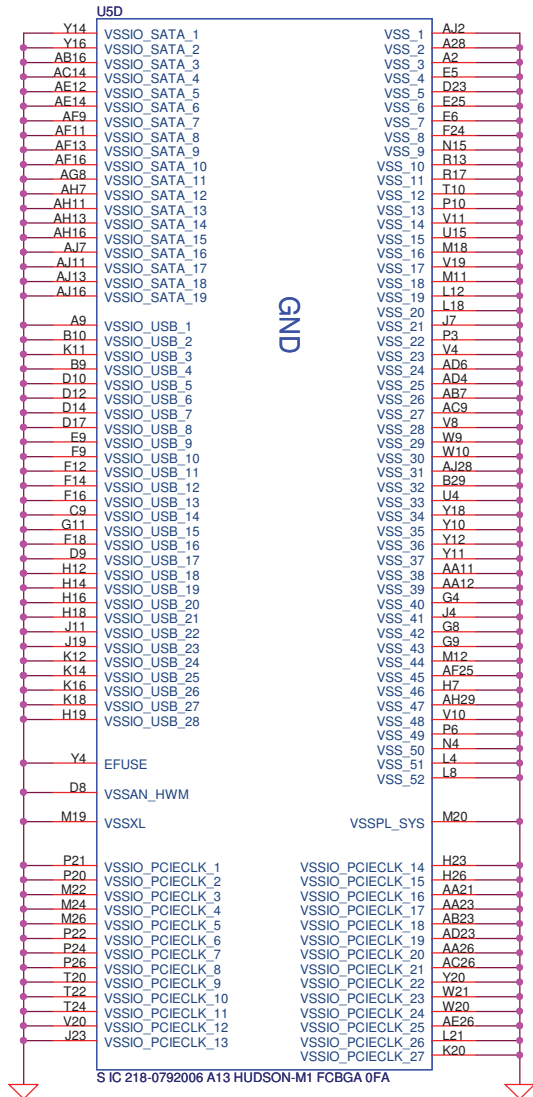
NONHWM@

<http://laptop-motherboard-schematic.blogspot.com/>

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		2012/08/12

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Title		
FCH PWR		
Size	Document Number	Rev
Custom	POVE6 Schematics	1.0
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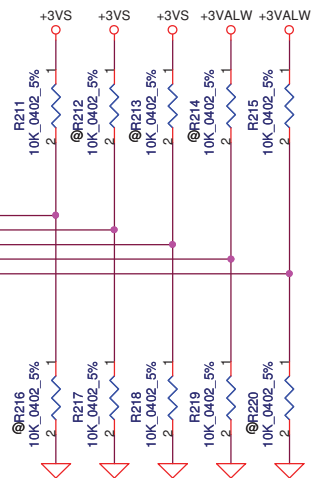


REQUIRED STRAPS

Check Internal PU/PD

	PCI_CLK1	PCI_CLK3	PCI_CLK4	LPC_CLK0	CLK_PCI_DB				
PULL HIGH	ALLOW PCIE GEN2 *	USE DEBUG STRAP	Reserved	internal EC ENABLE	Internal CLKGEN Mode *				
PULL LOW	FORCE PCIE GEN1	IGNORE DEBUG STRAP *	CLKGEN Mode Internal *	internal EC DISABLE *	External CLKGEN Mode				

- <1> PCI_CLK1
- <1> PCI_CLK3
- <1> PCI_CLK4
- <1> LPCCLK0
- <1> CLK_PCI_DB



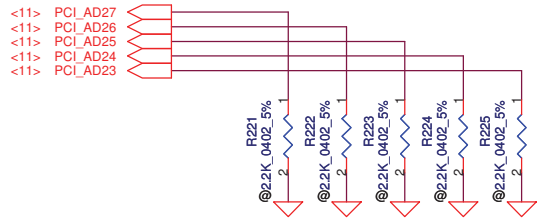
9/13 Change R211 from mount to @, R216 from @ to mount
9/13 Change R211 from @ to mount, R216 from mount to @

DEBUG STRAPS

FCH M1 HAS 15K INTERNAL PU FOR PCI_AD[27:23]

	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23 Enable ROM Straps
PULL HIGH	USE internal PLL generated PLL CLK *	ILA AUTORUN Disabled *	Selects FC PLL *	Disable I2C ROM *	Required Setting *
PULL LOW	BYPASS PCI PLL	ILA AUTORUN Enabled	FC PLL bypassed	Getting Value from I2C EPROM	Reserved

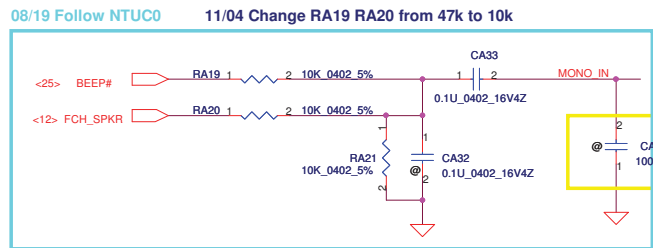
Check AD29,AD28 strap function check default



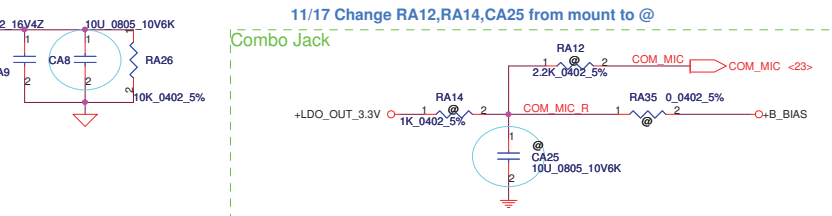
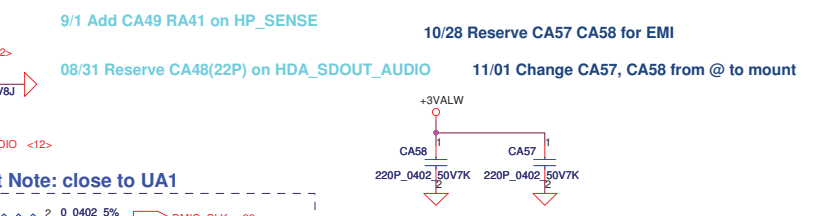
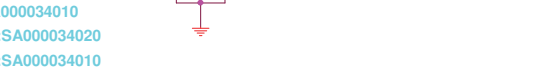
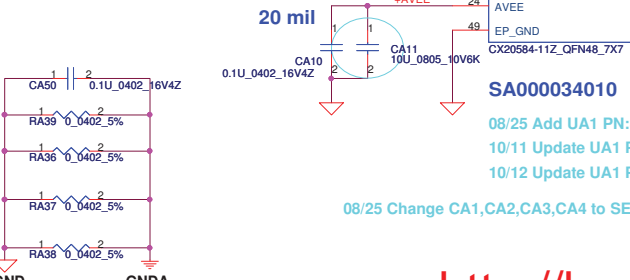
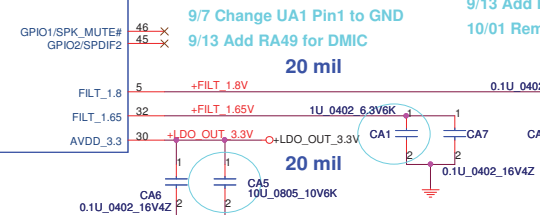
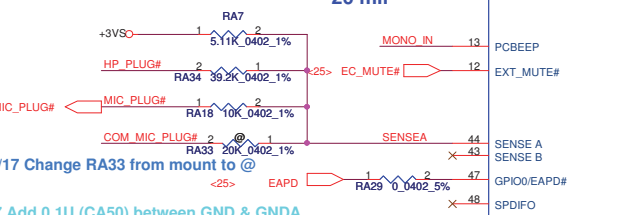
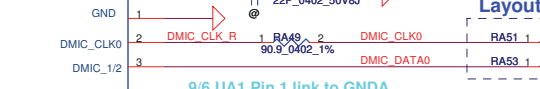
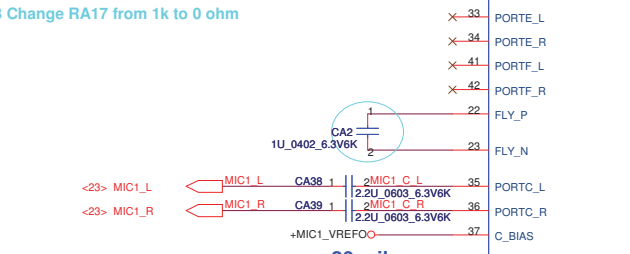
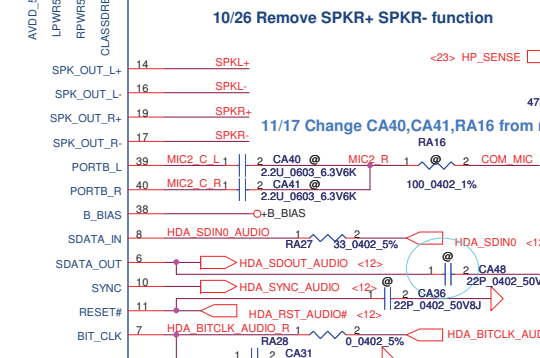
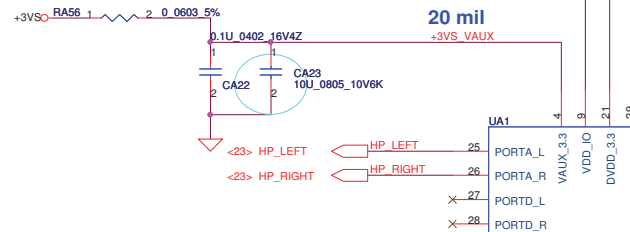
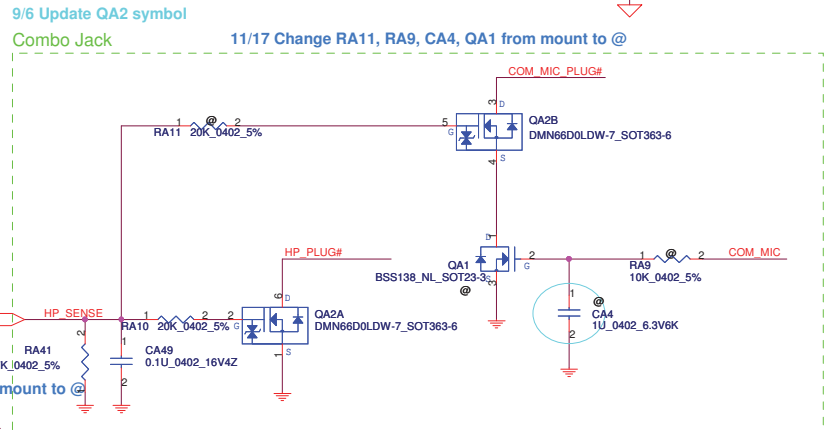
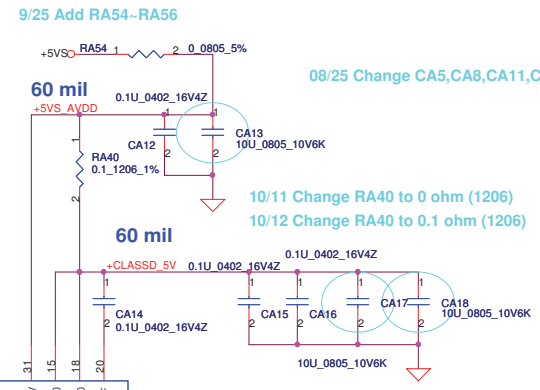
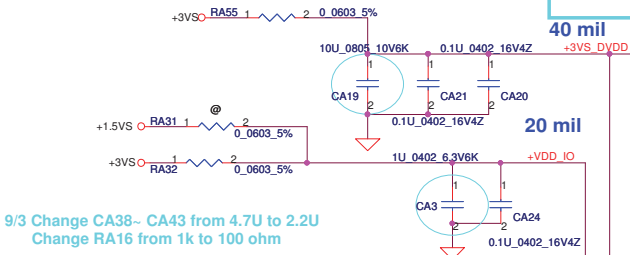
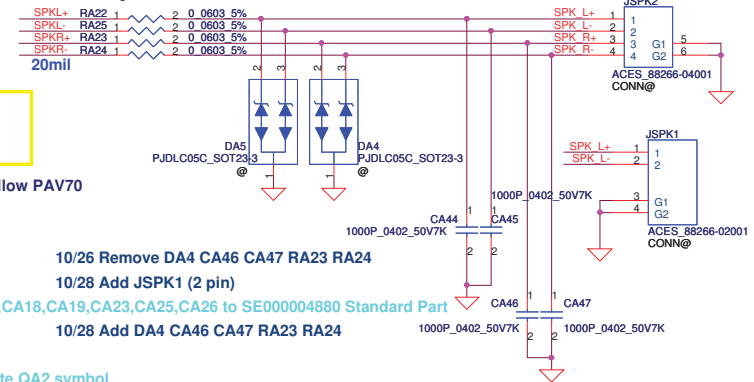
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Size B	Document Number	P0VE6 Schematics		Rev	1.0
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Port Configuration

- Port A: Headphone jack (jack shared with S/PDIF)
- Port B: Internal MIC (mono or stereo)
- Port C: Microphone/LI/LO jack
- Port D: Line Out jack (Optional)
- Port E: Line In jack (Optional)
- Port F: Not used.
- Port G: Internal stereo speakers
- Port J: Internal stereo digital mic (Optional)
- Port H: S/PDIF (jack shared with headphone)



Int. Speaker Conn.



08/25 Change CA1,CA2,CA3,CA4 to SE00000K80 Standard Part

SA000034010

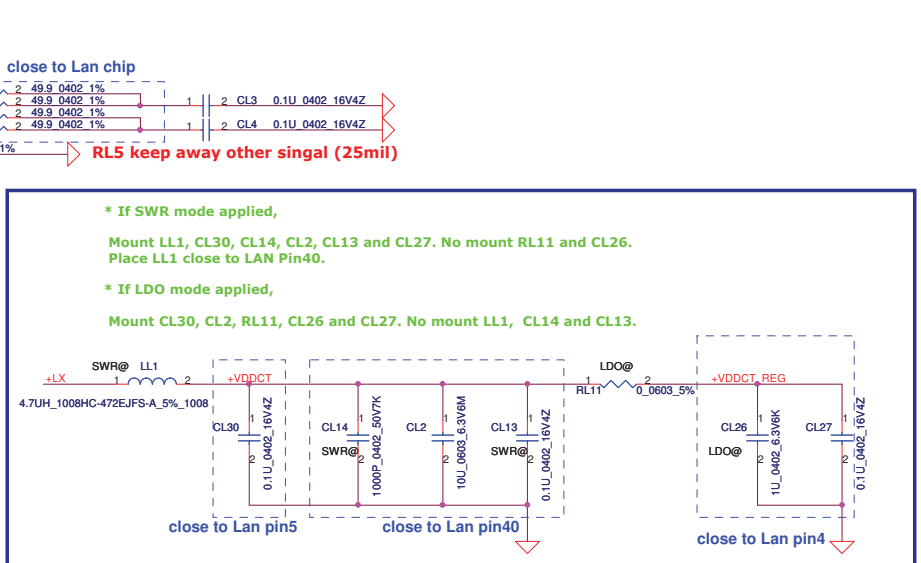
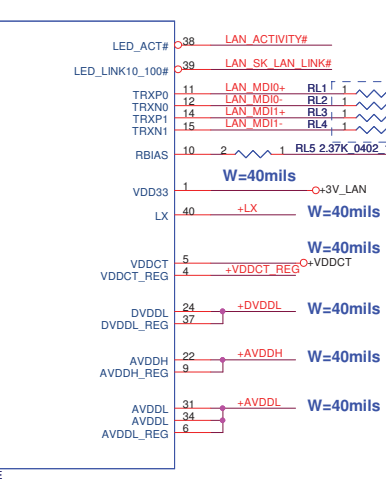
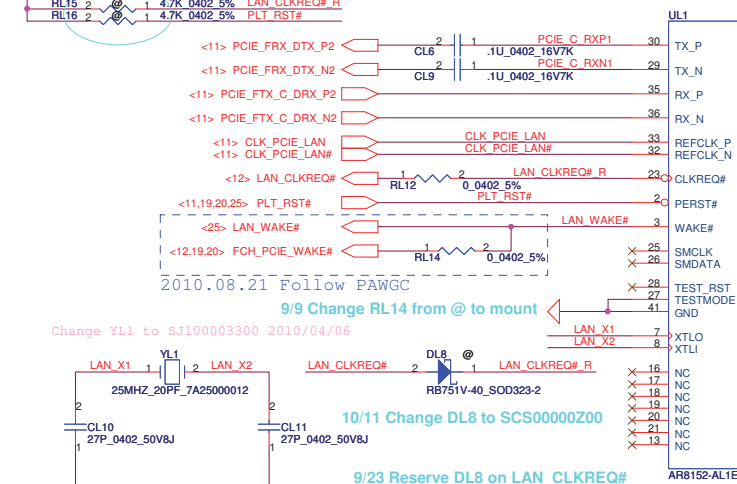
- 08/25 Add UA1 PN:SA000034010
- 10/11 Update UA1 PN:SA000034020
- 10/12 Update UA1 PN:SA000034010

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Audio Codec CX20584		
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Custom	P0VE6 Schematics	1.0
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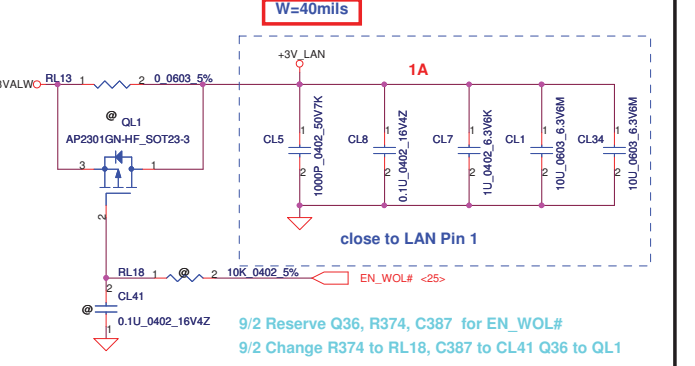
8/23 Reserve 4.7k(RL15) to +3V_LAN on PLT_RST#
Reserve 4.7k(RL16) to +3V_LAN on LAN_CLKREQ#_R



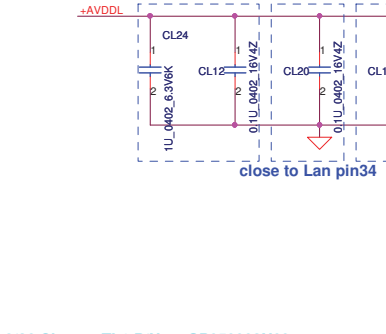
9/9 Change RL14 from @ to mount
Change YL1 to SJ100003300 2010/04/06



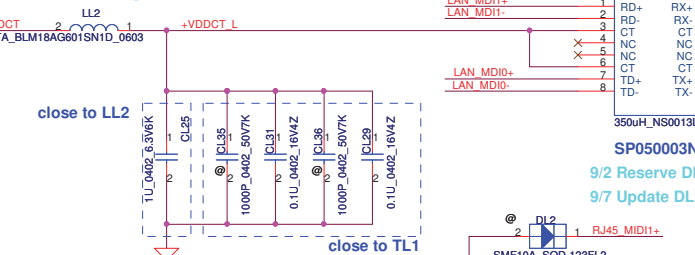
8/25 Change UL1 P/N to SA00003JW30



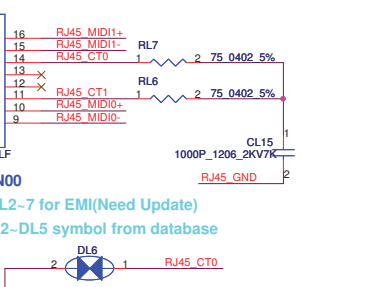
8/26 Change TL1 P/N to SP050003N00



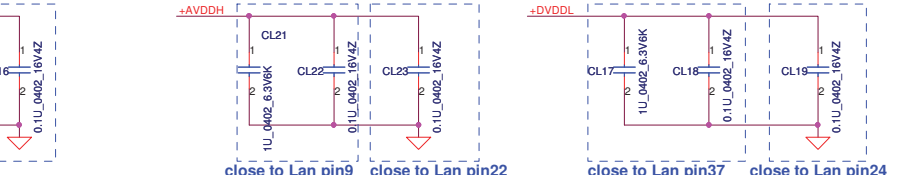
9/21 Change QL1 from SB934130000 to SB934130020
9/25 Change QL1 to SB000007H10



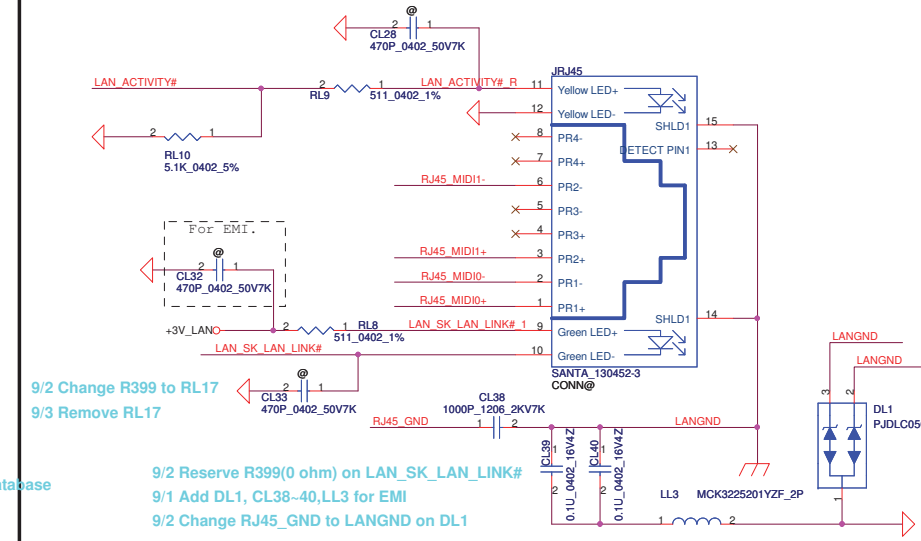
9/2 Reserve DL2-7 for EMI(Need Update)
9/7 Update DL2-DL5 symbol from database



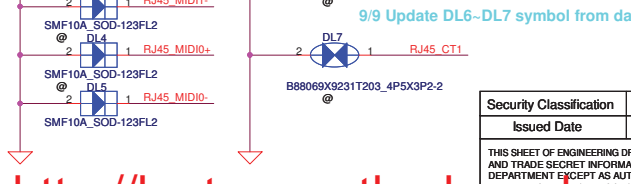
Change CL17, CL21, CL24, CL26 to SE000000K80 2010/04/06



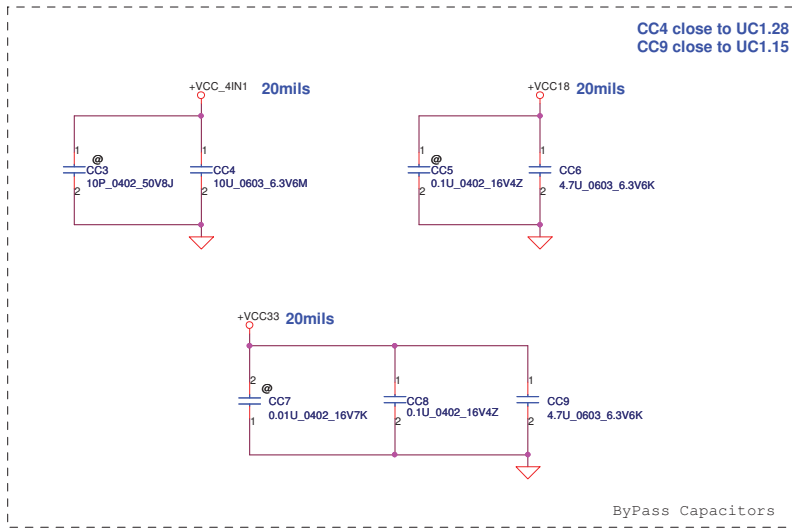
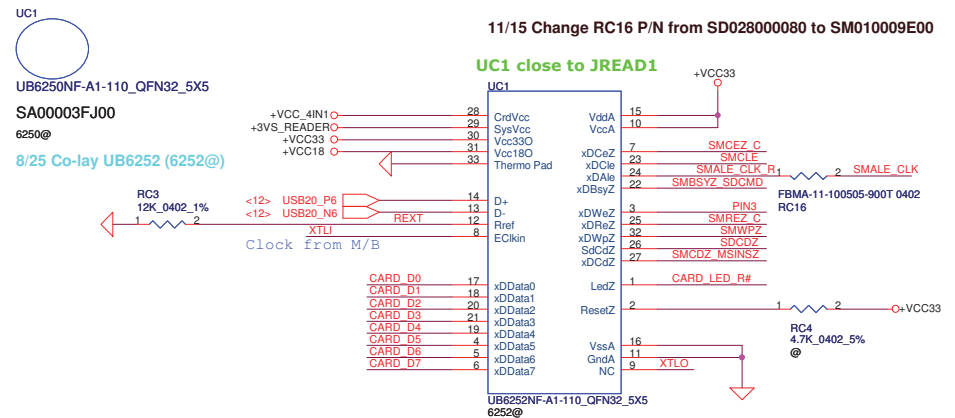
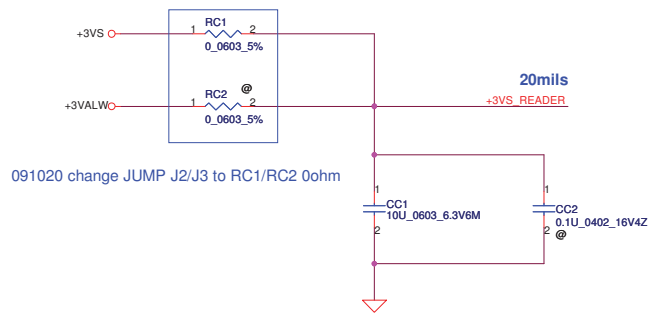
9/2 Change R399 to RL17
9/3 Remove RL17



AR8152	Pin No.	PU/PD	Description
LED[0]	38	L	un-overclocking
		H	overclocking
LED[1]	39	L	LDO mode
		H	SWR mode



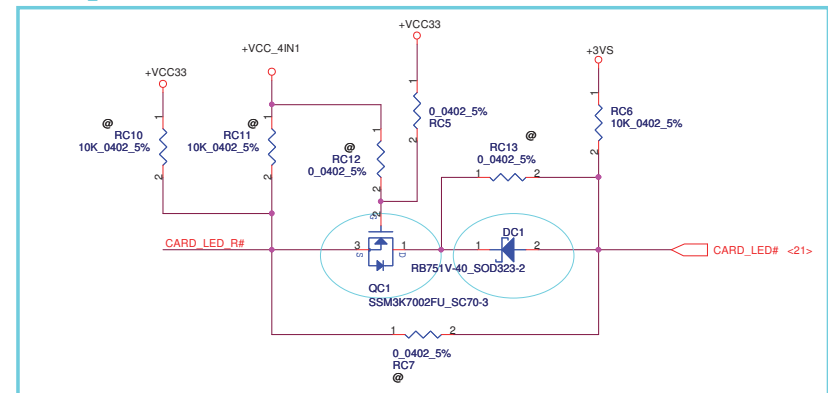
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2010/08/12	Deciphered Date	2012/08/12	Title	LAN AR8152
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			Customer	P0VE6 Schematics	1.0
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8/26 Change UC1 to UB6252 (SA00003K010)

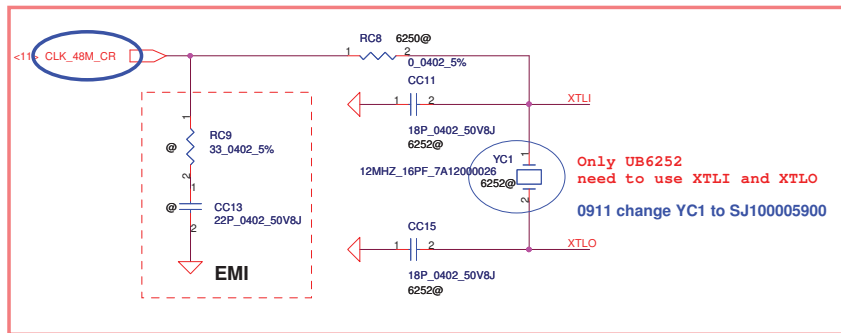
If use external crystal (YC1), UC1 will change to UB6252

8/24 Card_LED# Follow PAV70

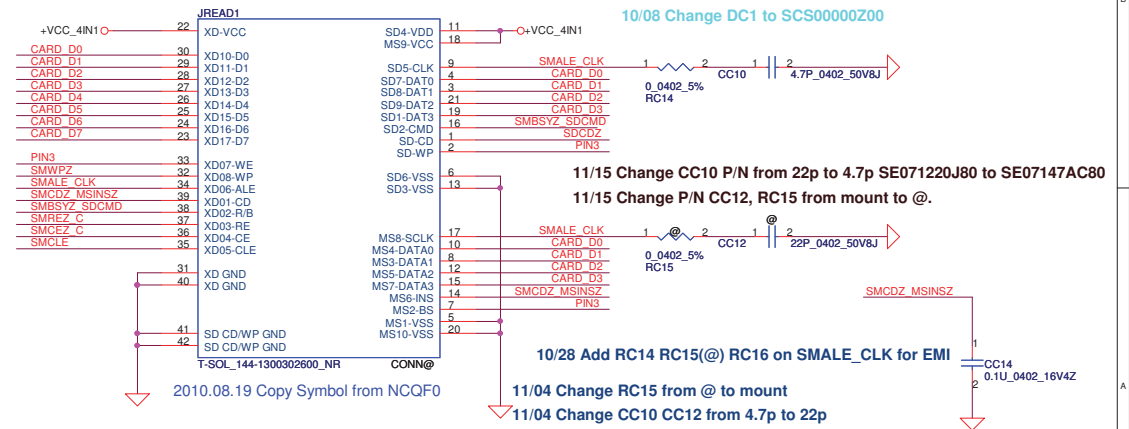


Card Reader Connector

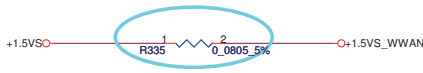
8/26 Change DC1 to SCS00002G00 Standard Part
8/26 Change Q1 to SB000009510 Standard Part
10/08 Change DC1 to SCS00000Z00



9/2 Change CC11 CC15 from 27P to 18P



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Size	Document Number	Customer	P0VE6 Schematics	Rev 1.0
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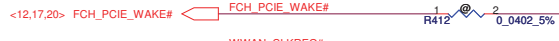
8/22 Reserve R335 (0 ohm 0805) Add net +1.5V_WWAN

8/25 Change C269,C275 to SE000004880 Standard Part

Change JMINI1 to FOX_AS0B246-S50U-7F_52P-T 06/29

10/27 Add R412 (0 ohm) on FCH_PCOE_WAKE#

9/2 Change ICH_PCIE_WAKE# to FCH_PCIE_WAKE#



<11> CLK_PCIE_WWAN#

<11> CLK_PCIE_WWAN

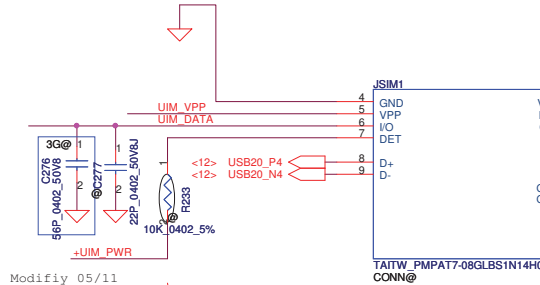
<11> PCIE_FRX_DTX_N1

<11> PCIE_FRX_DTX_P1

<11> PCIE_FTX_C_DRX_N1

<11> PCIE_FTX_C_DRX_P1

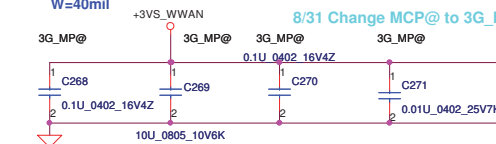
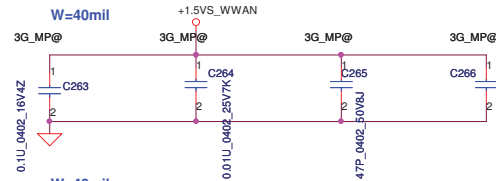
9/9 Remove D9



Modify 05/11

Reserve for SIM card does not meet rise time and pull-up is needed.

8/22 Update JP1 Symbol from database (TAITW_PMPAT7-08GLBS1N14H0_9P)



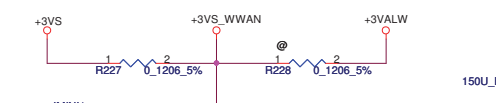
8/31 Change MCP@ to 3G_MP@

10/04 Add 100p(C402) on BT_ON#

9/3 Reserver +3VALW for BT (R378 R374)
9/25 Change Q13 to SB000007H10

BT MODULE CONN

11/02 Change Q3 PN to SB934130020



Close to WWAN CONN

8/26 Change Q13 to SB934130020 Standard Part

10/04 Add 100p(C398) on UIM_RST

10/06 Remove C398

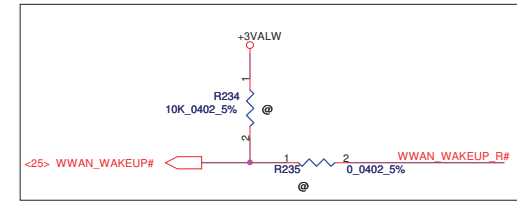
9/1 Change R230 R231 from NON3G@ to mount

8/22 Update JBT1 Symbol from database (ACES_88266-04001_4P)

10/31 Add R417~R420 for co-lay USB port3 & port9

11/01 Change R417 R418 from mount to @
Change R419 R420 from mount to @ SW request (P0VE6-0045)

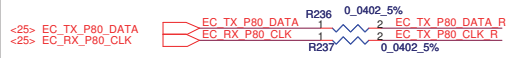
9/1 Change R234 from mount to @



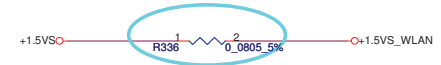
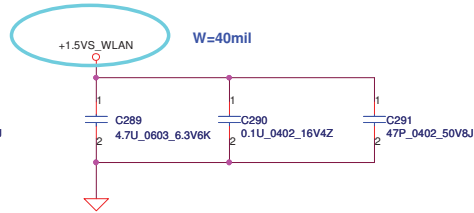
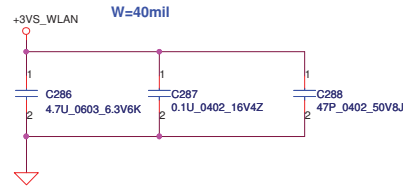
10/06 Change C278 to 100p

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Size	Document Number	POVE6 Schematics		Rev 1.0
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Mini-Express Card for WWAN

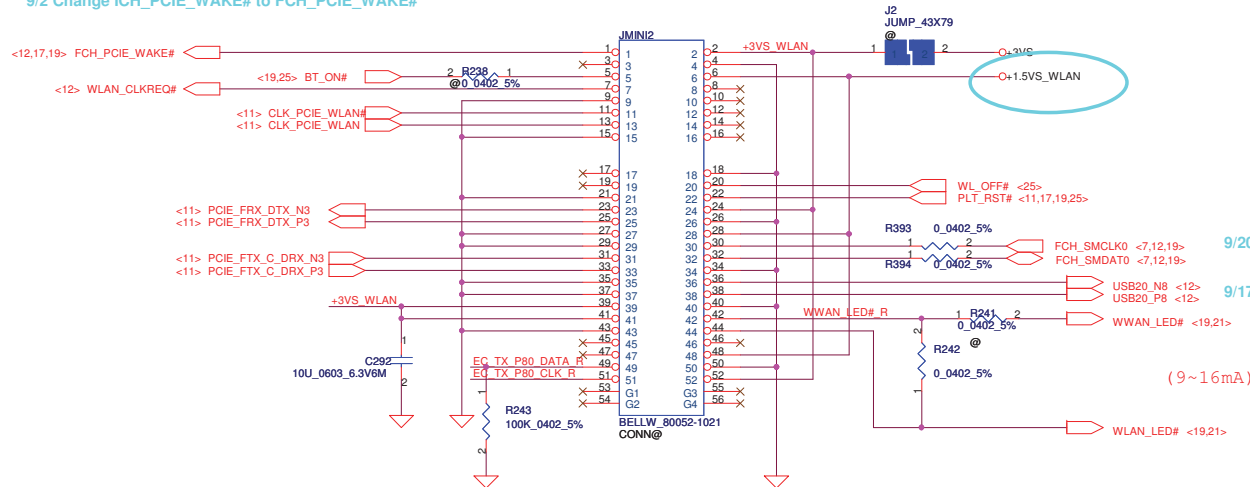


Mini-Express Card for WLAN



8/22 Reserve R336 (0 ohm 0805) Add net +1.5VS_WLAN

9/2 Change ICH_PCIE_WAKE# to FCH_PCIE_WAKE#



9/20 Add R393 R394 for SMBus

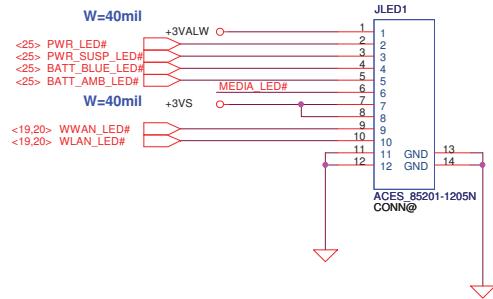
9/17 Remove R239,R240

(9~16mA)

- 5/12 Update WLAN connector (the same as KAV60)
- 6/1 Revised 37、39、41、42、43 to NC
- 6/12 Update connector to DC040006S00
- 6/26 Update JMINI1 footprint
- 7/01 update pin 23,25,31,33

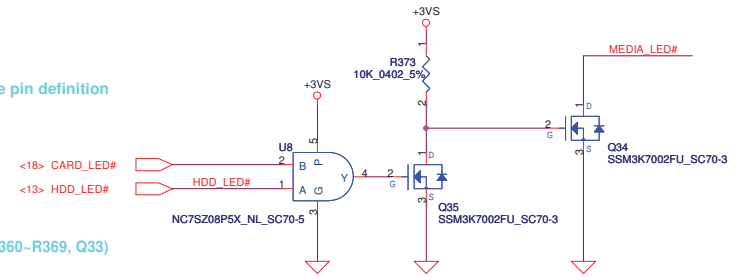
Compal Electronics, Inc.			
Title		WLAN	
Size		Document Number	
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LED PCB CONN



8/22 Update JP2 Symbol from database (ACES_85201-1605N_16P)
 8/24 Update JLED1 Symbol from database (ACES_85201-1205N_12P) & Update pin definition

9/1 Add LED Circuit (LED2-4(SC597UDB000)LED5(SC5191NB000), R360-R369, Q33)
 9/1 Change All LED power to 5V

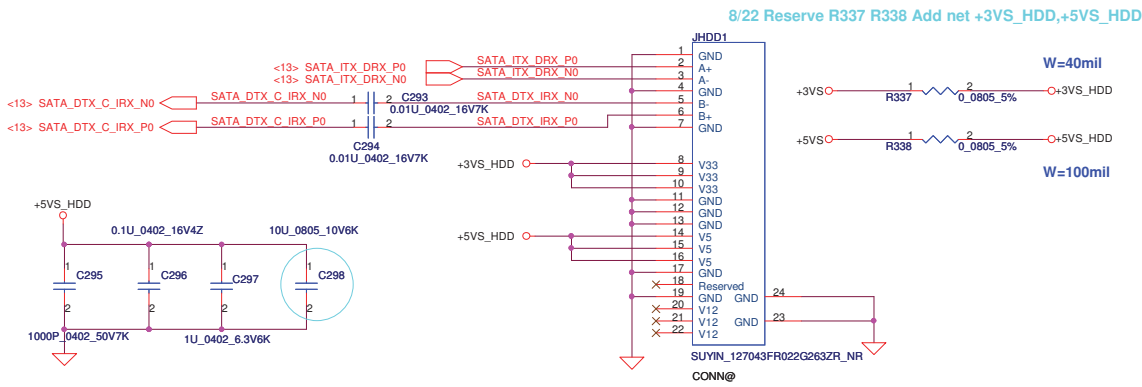


9/1 Add R373, Q34, Q35 for MEDIA_LED#

9/9 Change LED2-4 footprint to LED_HT-297DQ-GQ_4P

9/11 Remove LED portion

SATA HDD Conn.

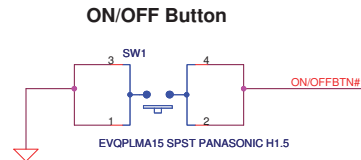


8/22 Reserve R337 R338 Add net +3VS_HDD,+5VS_HDD

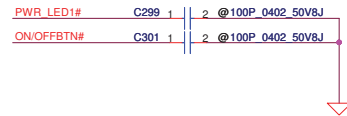
9/1 Change Q33 to SB000009610(SSM3K7002FU_SC70-3)

8/22 Change C298 from 10U 6.3V to 10U 10V

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Size B	Document Number	POVE6 Schematics		Rev	1.0
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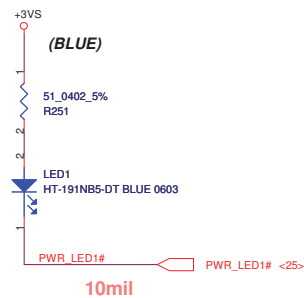
FOR EMI



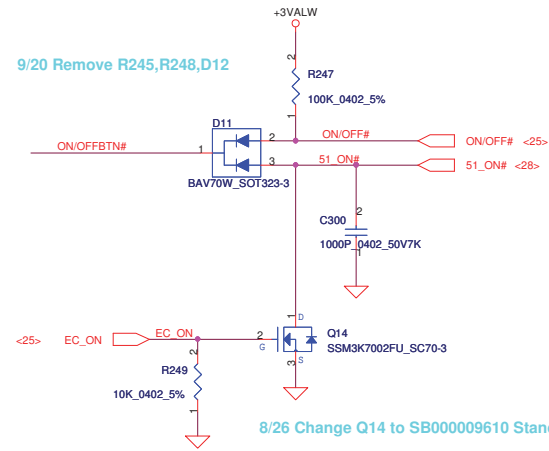
9/6 Change D13 from mount to @
10/05 Remove D13

9/1 Remove LED2 LED3 circuit, Change 70@ to mount

9/20 Add LED2 LED3 Circuit
9/21 Remove LED2 LED3 Circuit

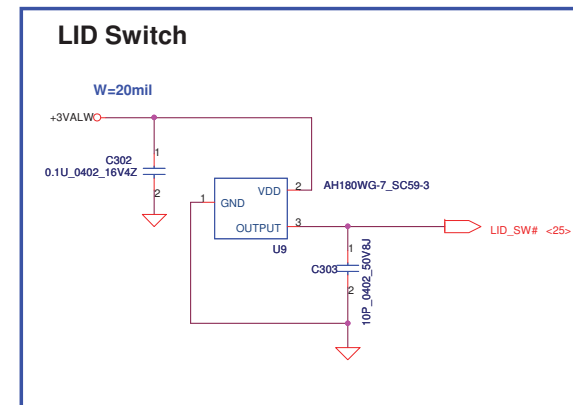


8/26 Change D11 to SC600000B00 Standard Part

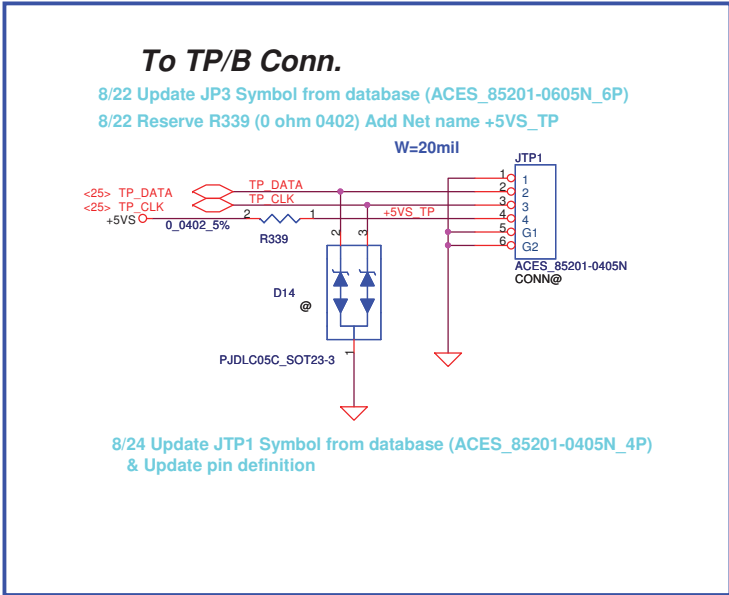
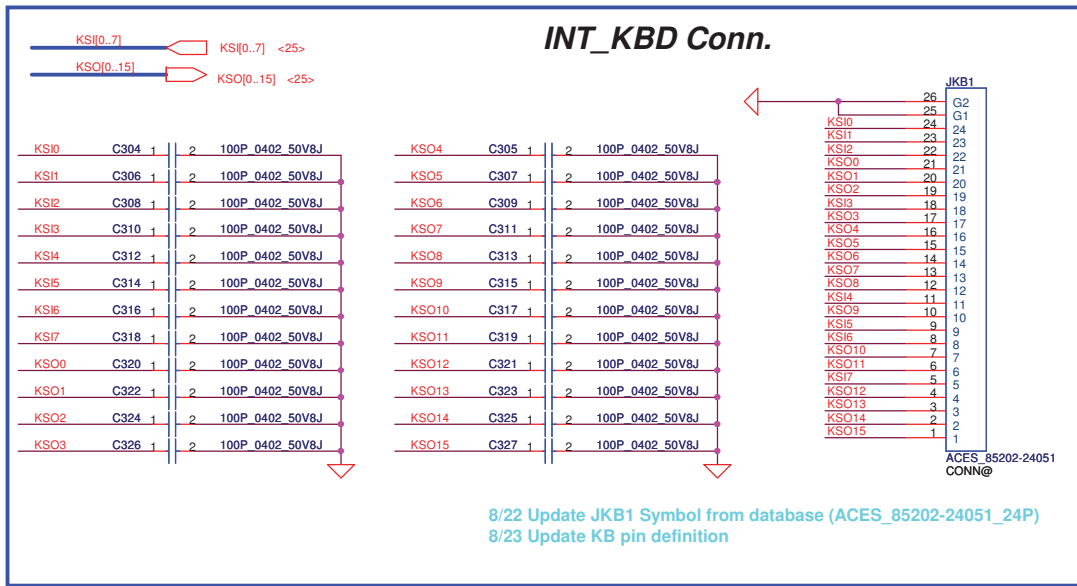


8/26 Change Q14 to SB000009610 Standard Part

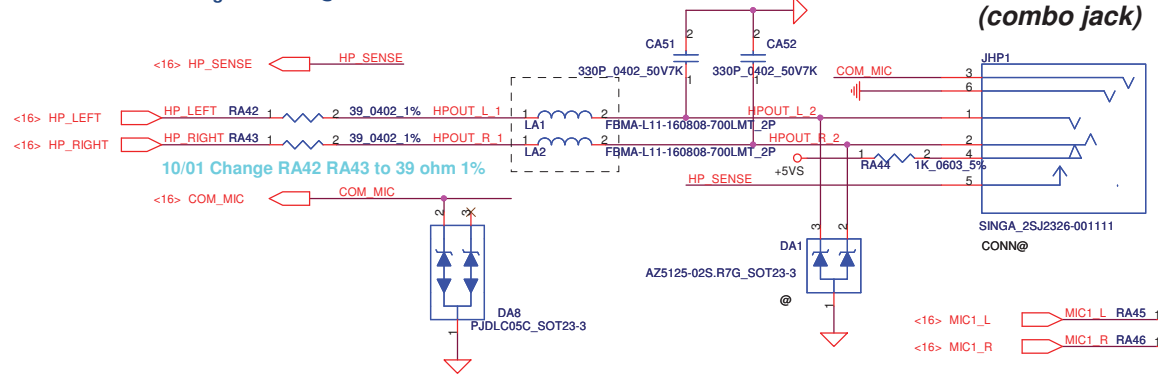
9/24 Change U9 to SA00001TC00



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11/01 Change DA8 from @ to mount

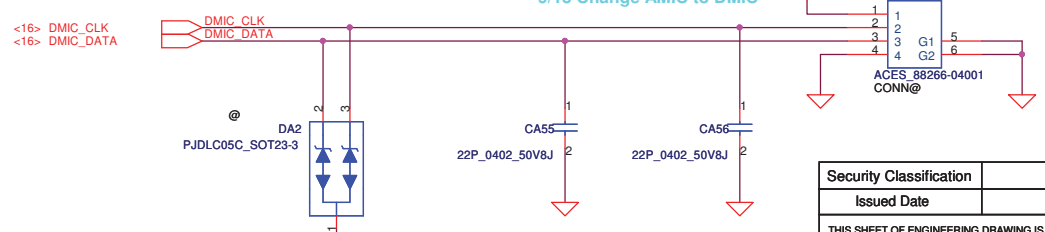


10/06 Change Jacks GND to GNDA

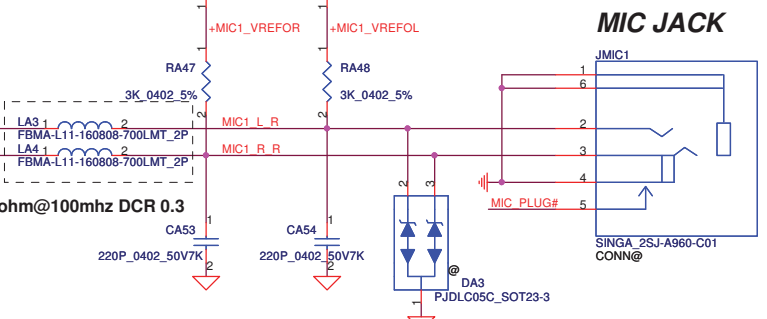
9/28 Change Jacks AGND to GND

9/13 Combine LS-7071PR01_USB_0908.DSN Audio Jack Portion

10/29 Reserve DA8(SCA00001100) on COM_MIC



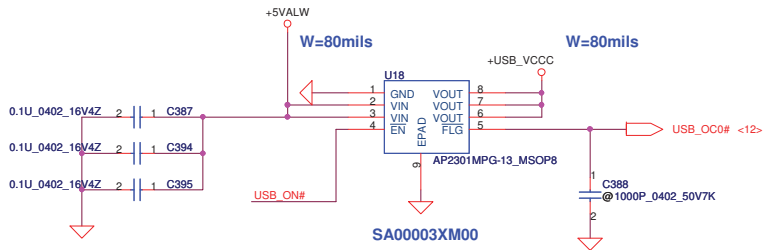
10/08 Change DA6, DA7 to SCS00000Z00



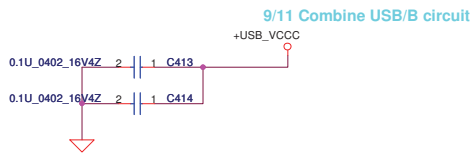
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9/1 Add R370 R371 for OC circuit

9/15 remove R370 R371 for OC circuit



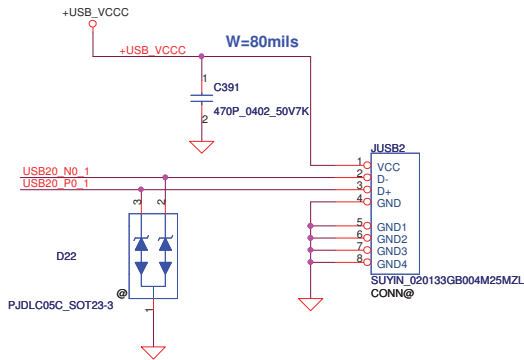
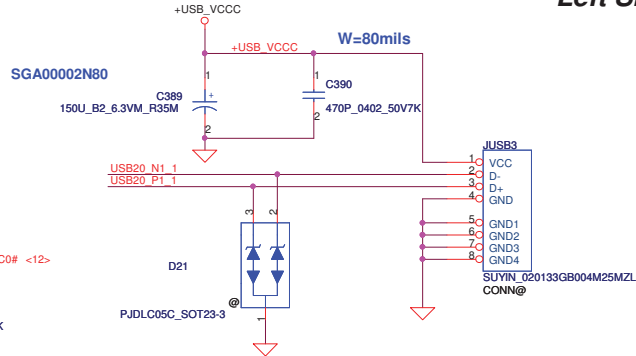
9/29 Add C394,C395(0.1U) Close to U18



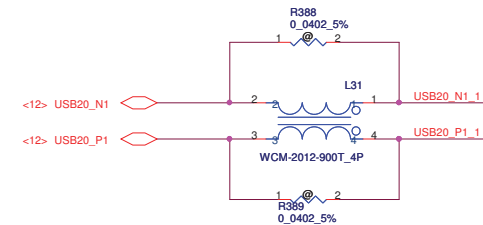
10/29 Add C413-C414(0.1U) on +USB_VCC

9/11 Change C340 C389 to SGA00002N80
9/24 Change U11,U18 to SA00003XM00

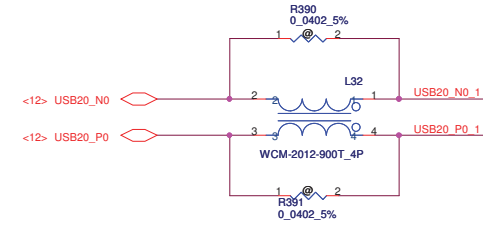
USB Charge Follow PAWGC 8/25 Remove Charge USB Circuit



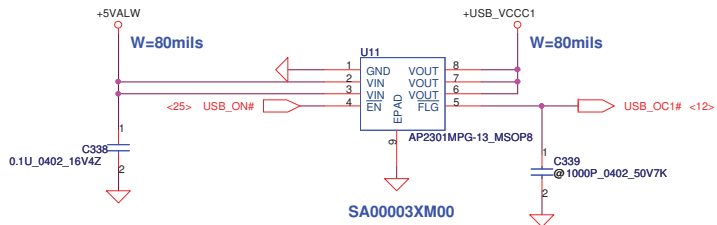
Left Side USB CONN.



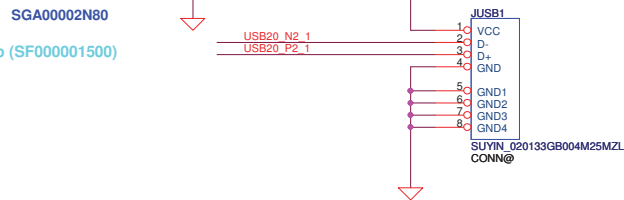
9/28 Swap L31 L32



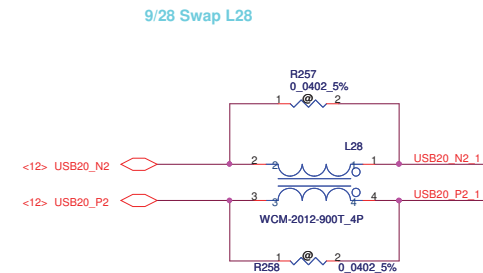
10/28 Change R388,R389,R390,R391,R257,R258 from mount to un-mount
10/28 Change L28,L31,L32 (SM070000K00) from un-mount to mount
9/27 Change L28,L31,L32 to SM070000K00



8/25 Change C340 from poly-cap to E-cap (SF000001500)



Right Side USB CONN.

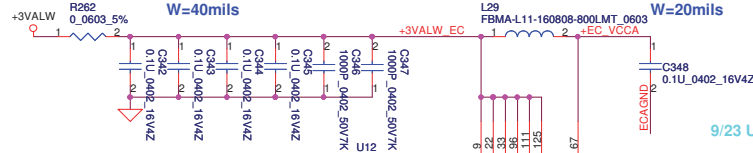


9/28 Swap L28

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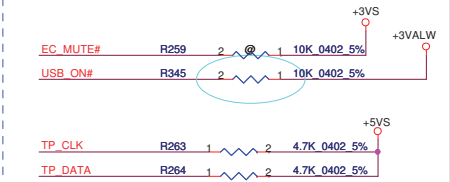
11/15 Change L29,L30 P/N from SM010015410 to SM010004010

8/21 Change R262 from 0 ohm 0805 to 0 ohm 0603



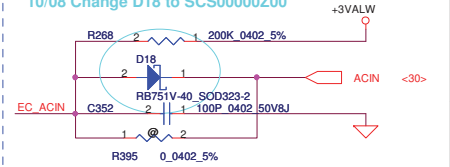
8/23 Pull up 10k (R345) to +3VALW on USB_ON#

8/31 Change EC_MUTE# Pull-up to +3VS(=)

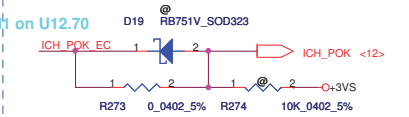


9/23 Update EC pin definition follow P5WE6

8/26 Change D18 to SCS0002G00 Standard Part
9/23 Reserve R395 on ACIN
10/08 Change D18 to SCS00000Z00



Follow PAWGC



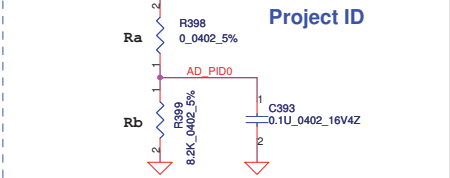
9/25 Change VLDT_EN# to VLDT_EN#



9/17 Change Net Name from BATT_GRN_LED# to BATT_BLUE_LED#

8/23 Delete W_DISABLE# 2

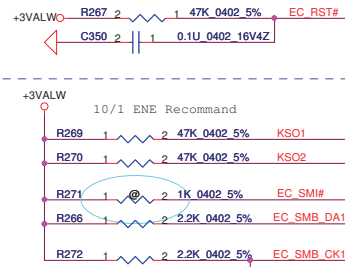
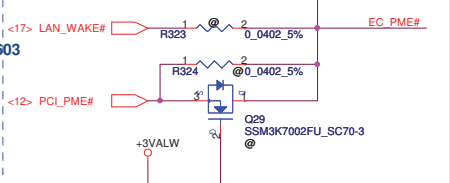
10/04 Add 100p(C400) on VR_ON



9/9 Change R323 from mount to @

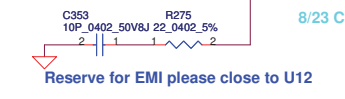


9/21 Change Q29 from SB000008J00 to SB000009610



11/02 Change C353 to 10p R275 to 22 ohm

8/23 Change R271 R279 from mount to @



Reserve for EMI please close to U12

9/5 Change R276 R277 from mount to @



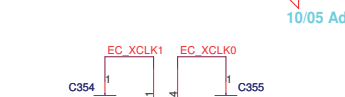
8/31 EC_SCI# Pull up to +3VALW

8/25 Delete KSO16 KSO17

Battery

APU

10/05 Add 100p(C407) on APU_ALERT#_EC



8/24 Delete NET_FAN_SPEED1

8/23 Change R282 from mount to @

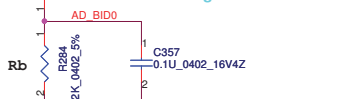
8/26 Change R282 from @ to mount

X1 C354 C355 from mount @



Board ID
Analog Board ID definition,
Please see page 3.

8/21 Change R283 from 100k to 0 ohm



8/31 Add 100k(R358) pull-down on SUSCLK

10/11 Change R282 R358 from mount to @

8/22 Add R340~R343 (0 ohm)

8/31 Change EC_FAN_PWM from pin 34 to pin 26

8/31 Change PWR_SUSP_LED from pin 36 to pin 34

8/31 Change EC_PME# from pin 118 to pin 103

8/23 Delete R280

8/23 Delete W_DISABLE# 2

10/04 Add 100p(C400) on VR_ON

9/9 Change R323 from mount to @

9/21 Change Q29 from SB000008J00 to SB000009610

8/23 Delete DAC_BRIG

8/25 Delete CHG_ON#

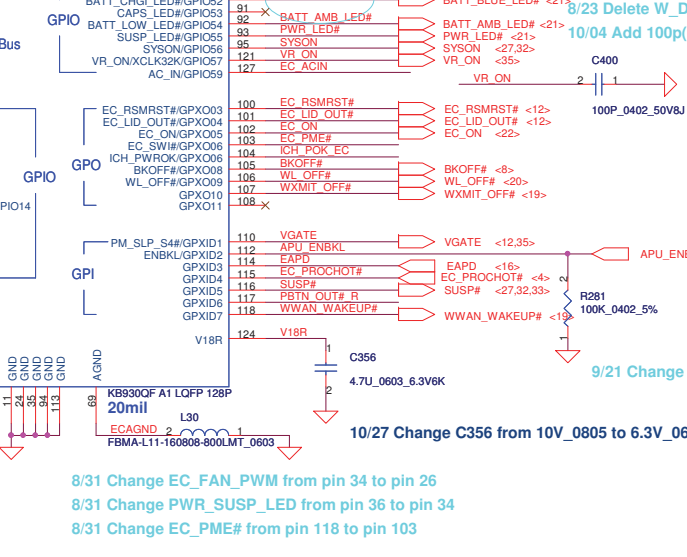
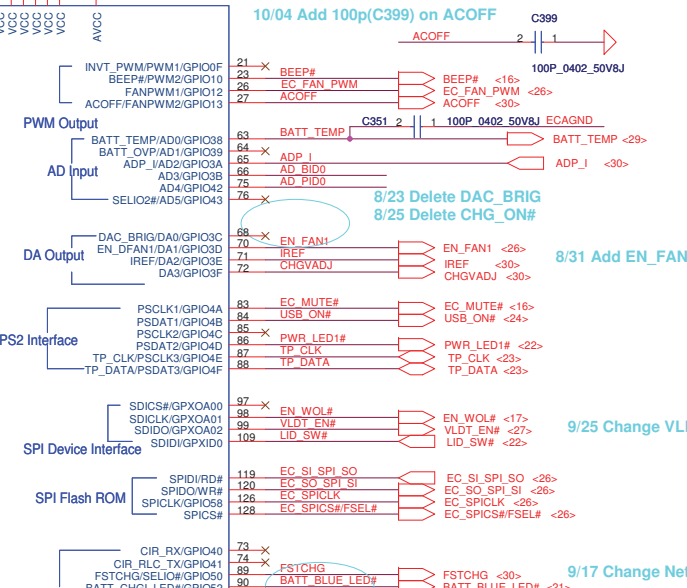
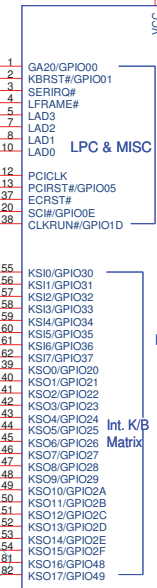
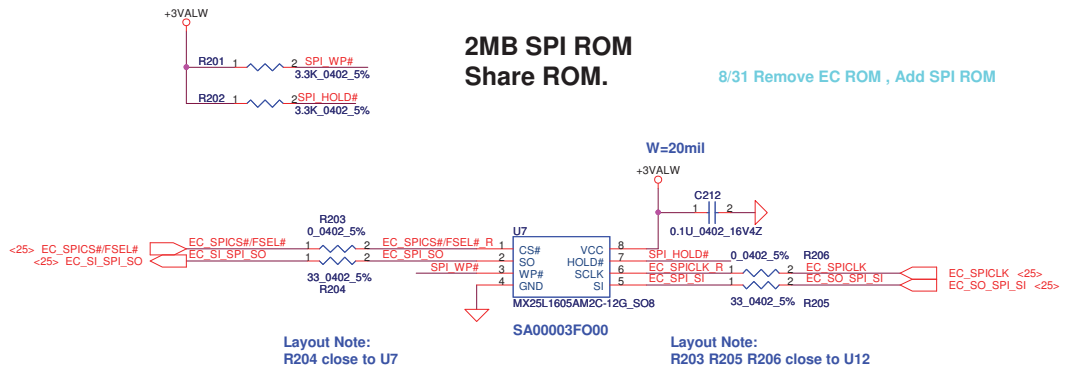
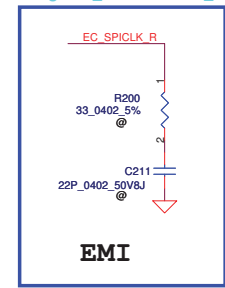


Table with 4 columns: Security Classification, Compal Secret Data, Issued Date, Deciphered Date. Includes document title 'EC ENE-KB930', date 'Wednesday, November 17, 2010', and page '25 of 36'.



8/31 Remove EC ROM , Add SPI ROM

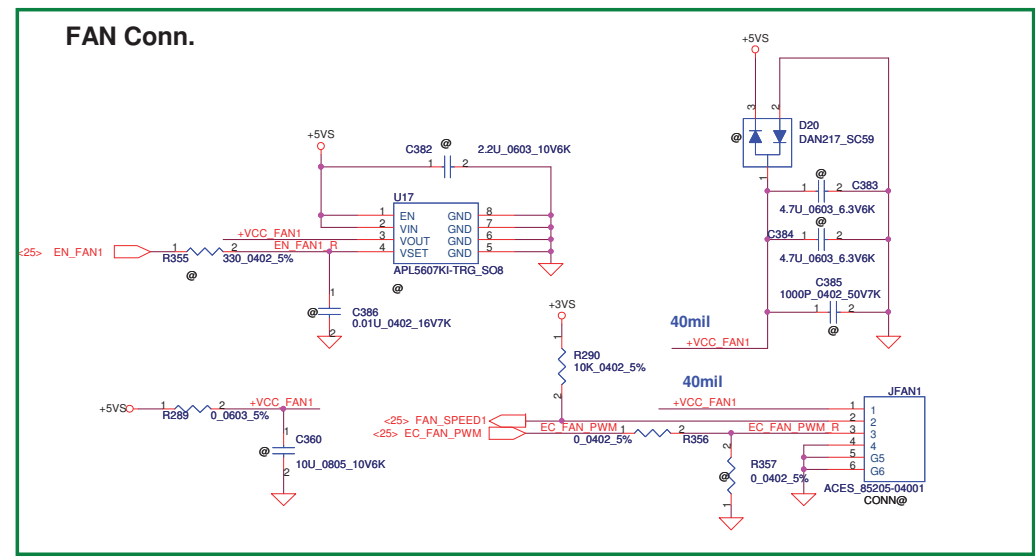
9/2 Change EC_SPICLK to EC_SPICLK_R



EMI

Layout Note: R203 R205 R206 close to U12

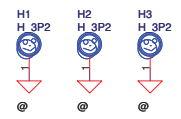
FAN Conn.



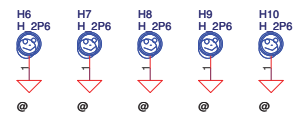
8/24 Update JFAN1 Symbol from database (ACES_85205-03001_3P) & Update pin definition
 8/24 Delete R290
 8/25 Update JFAN1 Symbol from database (ACES_85205-04001_4P) & Update pin definition
 8/25 Add R290 10k pull-up tp +3VS
 8/31 Reserve U17,C382-C386, R355-R357, D20 (Fan Drive Circuit)

9/15 Update the Screw Hole
 9/20 Add H20 (H_3P4X3P2N)

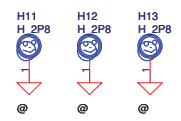
3P2 x 3 (APU)



2P6 x 5



2P8 x 3



10/07 Change H13 from GND to LANGND
 10/07 Change H13 from LANGND to GND

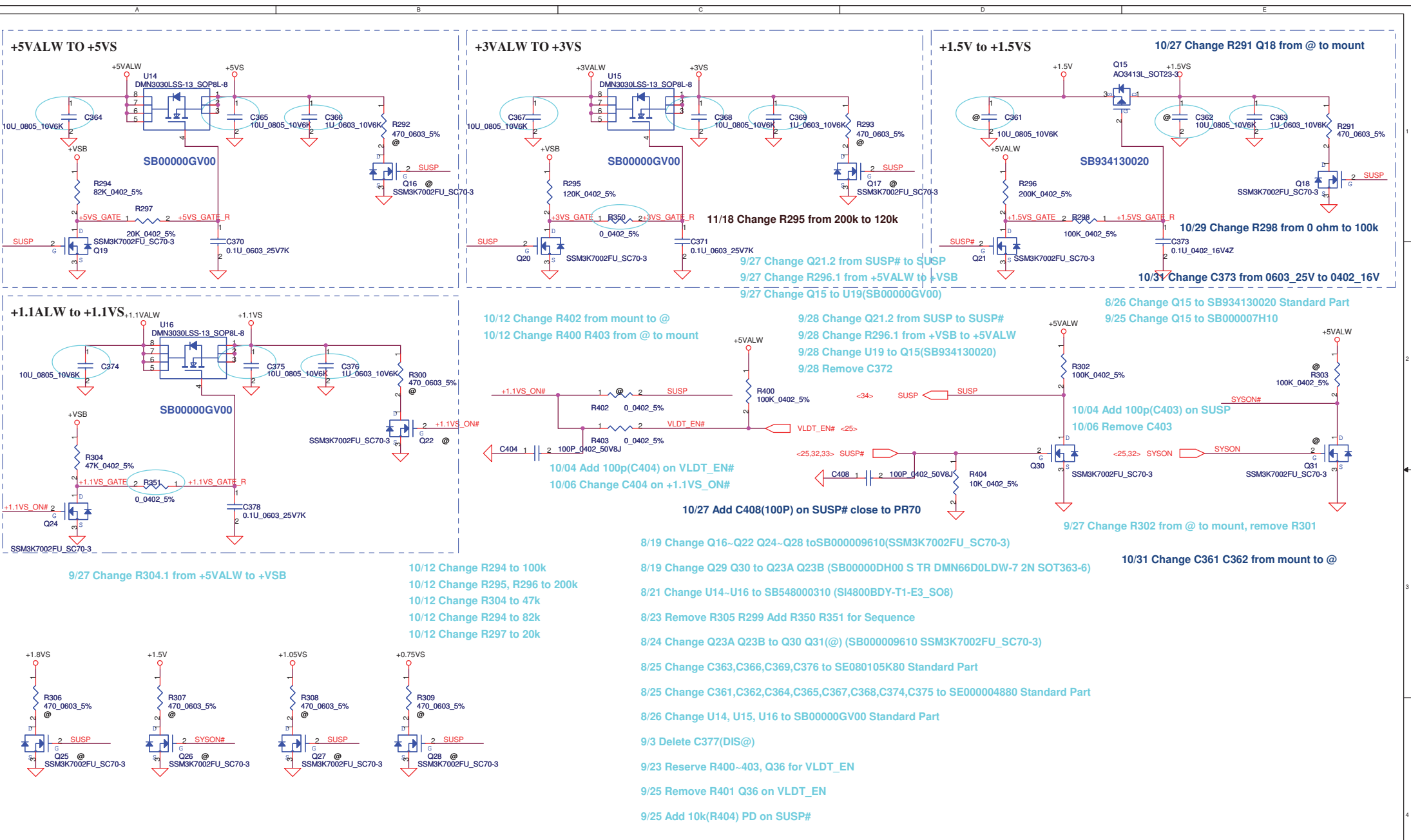
3P2N x 1



3P3N x 1



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Size	B	Document Number	POVE6 Schematics		Rev
Date:	Wednesday, November 17, 2010	Sheet	26	of	36

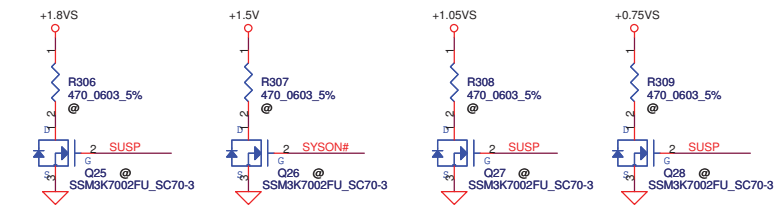


9/27 Change R304.1 from +5VALW to +VSB

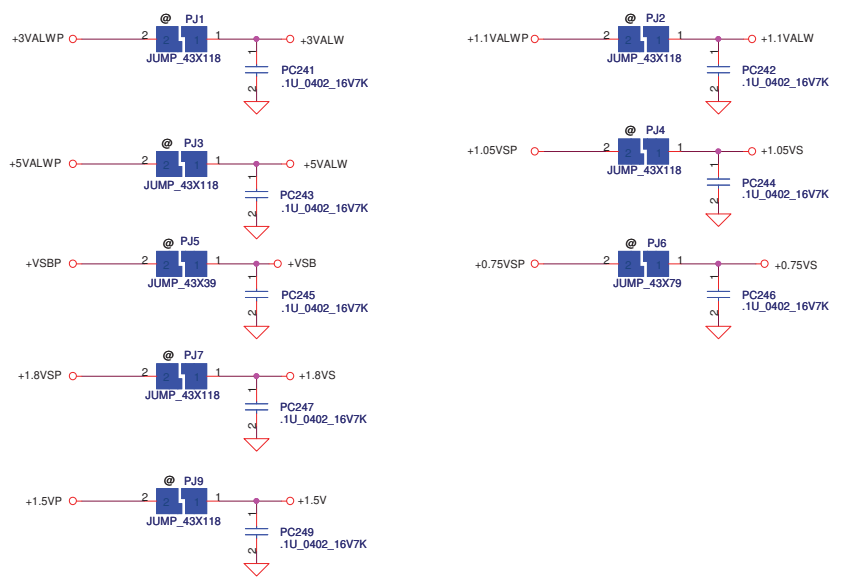
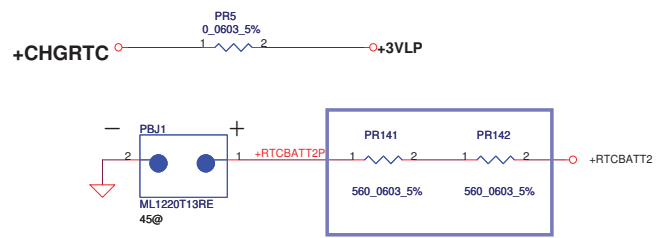
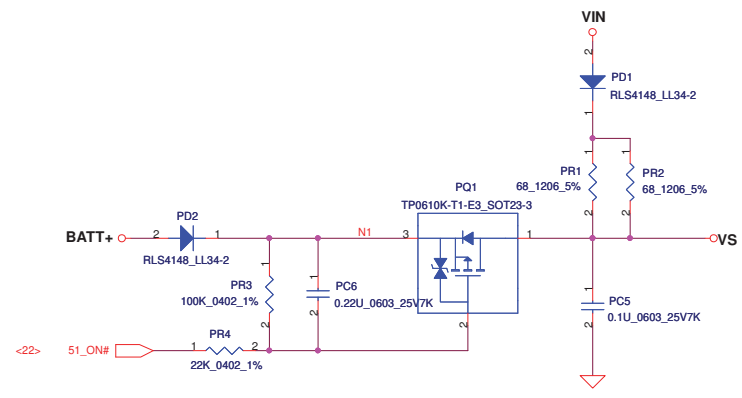
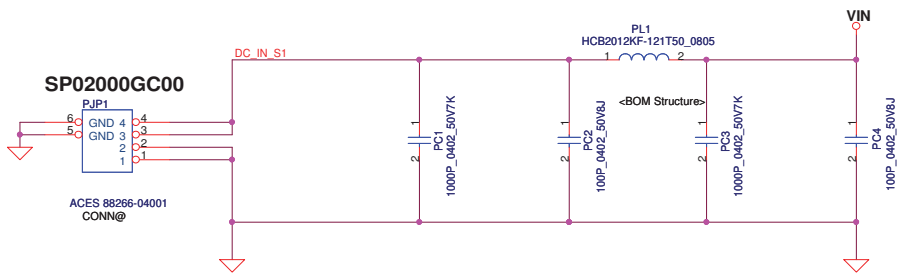
10/12 Change R294 to 100k
 10/12 Change R295, R296 to 200k
 10/12 Change R304 to 47k
 10/12 Change R294 to 82k
 10/12 Change R297 to 20k

8/19 Change Q16-Q22 Q24-Q28 to SB000009610 (SSM3K7002FU_SC70-3)
 8/19 Change Q29 Q30 to Q23A Q23B (SB00000DH00 S TR DMN66D0LDW-7 2N SOT363-6)
 8/21 Change U14-U16 to SB548000310 (SI4800BDY-T1-E3_S08)
 8/23 Remove R305 R299 Add R350 R351 for Sequence
 8/24 Change Q23A Q23B to Q30 Q31(@) (SB000009610 SSM3K7002FU_SC70-3)
 8/25 Change C363, C366, C369, C376 to SE080105K80 Standard Part
 8/25 Change C361, C362, C364, C365, C367, C368, C374, C375 to SE000004880 Standard Part
 8/26 Change U14, U15, U16 to SB00000GV00 Standard Part
 9/3 Delete C377 (DIS@)
 9/23 Reserve R400-403, Q36 for VLDT_EN
 9/25 Remove R401 Q36 on VLDT_EN
 9/25 Add 10k(R404) PD on SUSP#

10/31 Change C361 C362 from mount to @

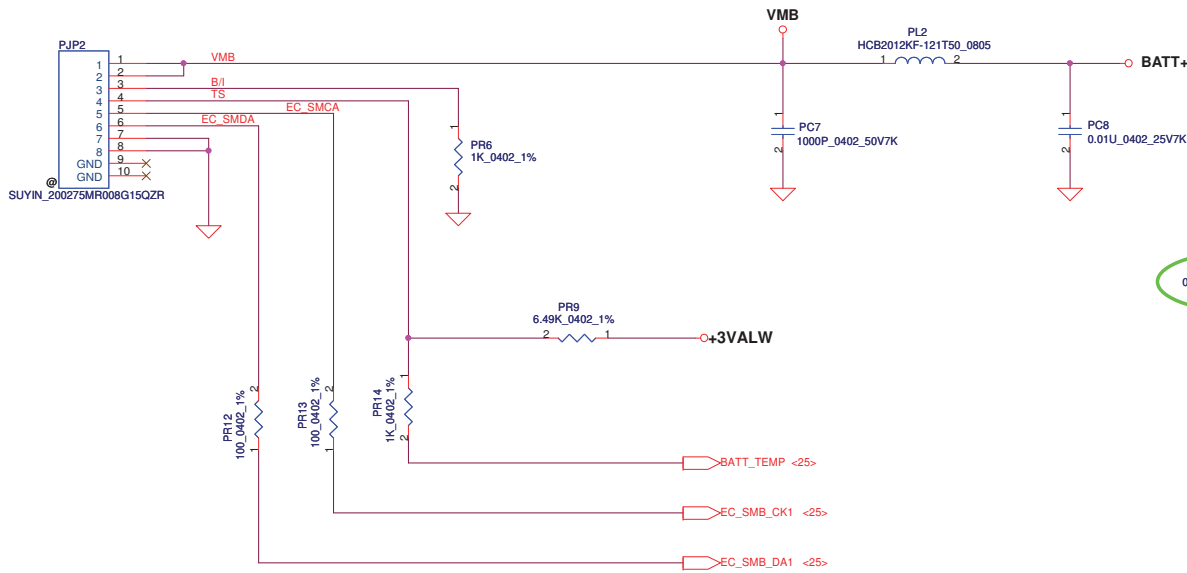


Security Classification		Compal Secret Data		Compal Electronics, Inc.		
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				DC Interface		
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				Custom	P0VE6 Schematics	1.0
				Date:	Thursday, November 18, 2010	Sheet 27 of 36

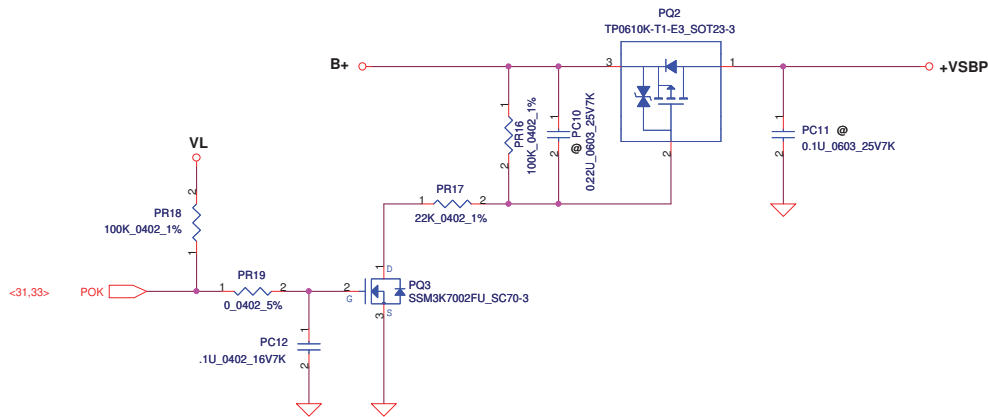
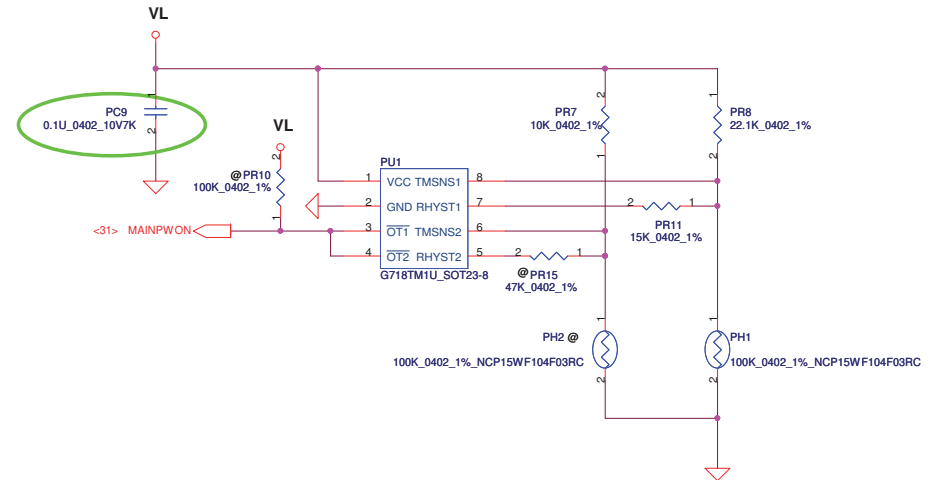


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				DCIN/VIN DETECTOR	
Size	Document Number			Rev	
				1.0	
Date:	Wednesday, November 17, 2010	Sheet	28	of	36

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PH1 under CPU bottom side :
 CPU thermal protection at 92 degree C
 Recovery at 72 degree C



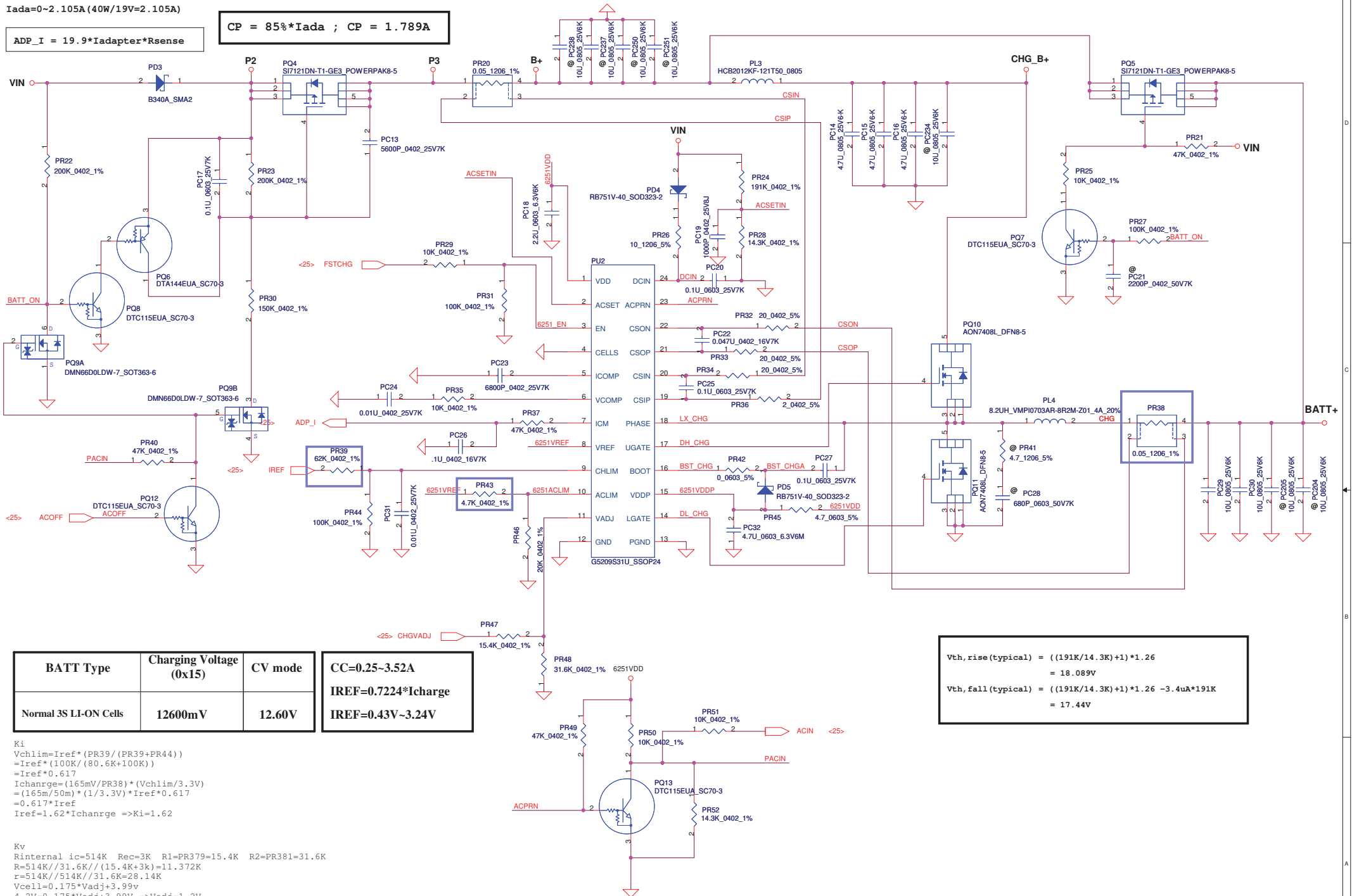
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Issued Date	2010/08/12	Deciphered Date	2012/08/12	Title
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				Rev 1.0
Date: Wednesday, November 17, 2010				Sheet 29 of 36

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Iada=0~2.105A (40W/19V=2.105A)

ADP_I = 19.9*Iadapter*Rsense

CP = 85%*Iada ; CP = 1.789A



BATT Type	Charging Voltage (0x15)	CV mode
Normal 3S LI-ON Cells	12600mV	12.60V

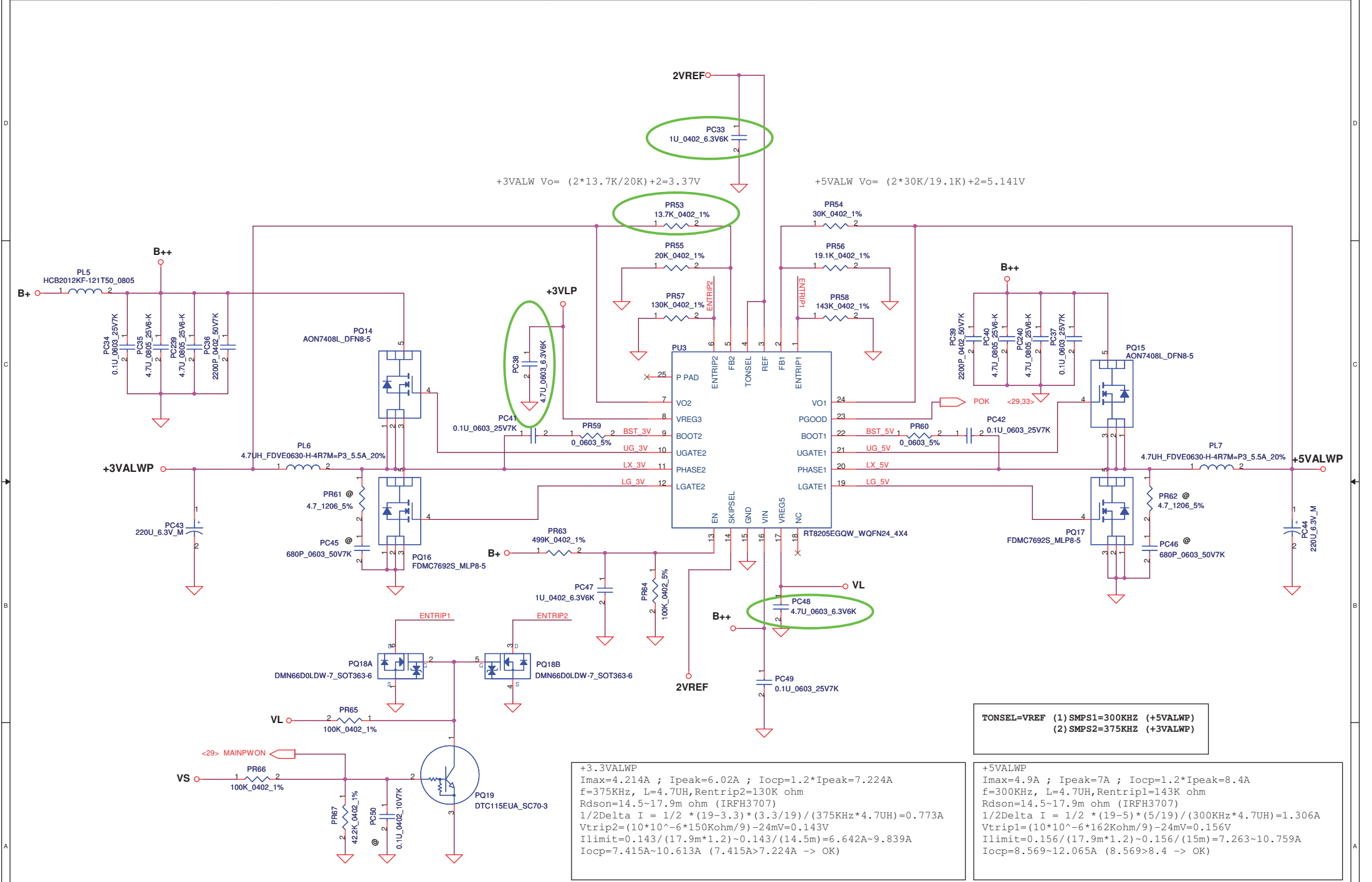
CC=0.25~3.52A
IREF=0.7224*Icharge
IREF=0.43V~3.24V

Vth, rise (typical) = ((191K/14.3K)+1)*1.26 = 18.089V
 Vth, fall (typical) = ((191K/14.3K)+1)*1.26 - 3.4uA*191K = 17.44V

Ki
 Vchlim=Iref*(PR39/(PR39+PR44))
 =Iref*(100K/(80.6K+100K))
 =Iref*0.617
 Icharge=(165mV/PR38)*(Vchlim/3.3V)
 =(165m/50m)*(1/3.3V)*Iref*0.617
 =0.617*Iref
 Iref=1.62*Icharge => Ki=1.62

Kv
 Rinternal ic=514K Rec=3K R1=PR379=15.4K R2=PR381=31.6K
 R=514K/31.6K/(15.4K+3K)=11.372K
 r=514K/514K/31.6K=28.14K
 Vcell=0.175*Vadj+3.99v
 4.2V=0.175*Vadj+3.99V => Vadj=1.2V
 Vadj=Vref*(R/(R+514K))+CALIBRATE*(r/(r+514K))
 1.1483=CALIBRATE*0.6046 => CALIBRATE=1.899
 1.899=(4.2-(Vcell+A*0.175))*Kv=(4.2-(4.2+A*0.175))*Kv
 A=Vref*(R/(R+514K))=0.052
 Kv=9.451

<http://laptop-motherboards.com/>

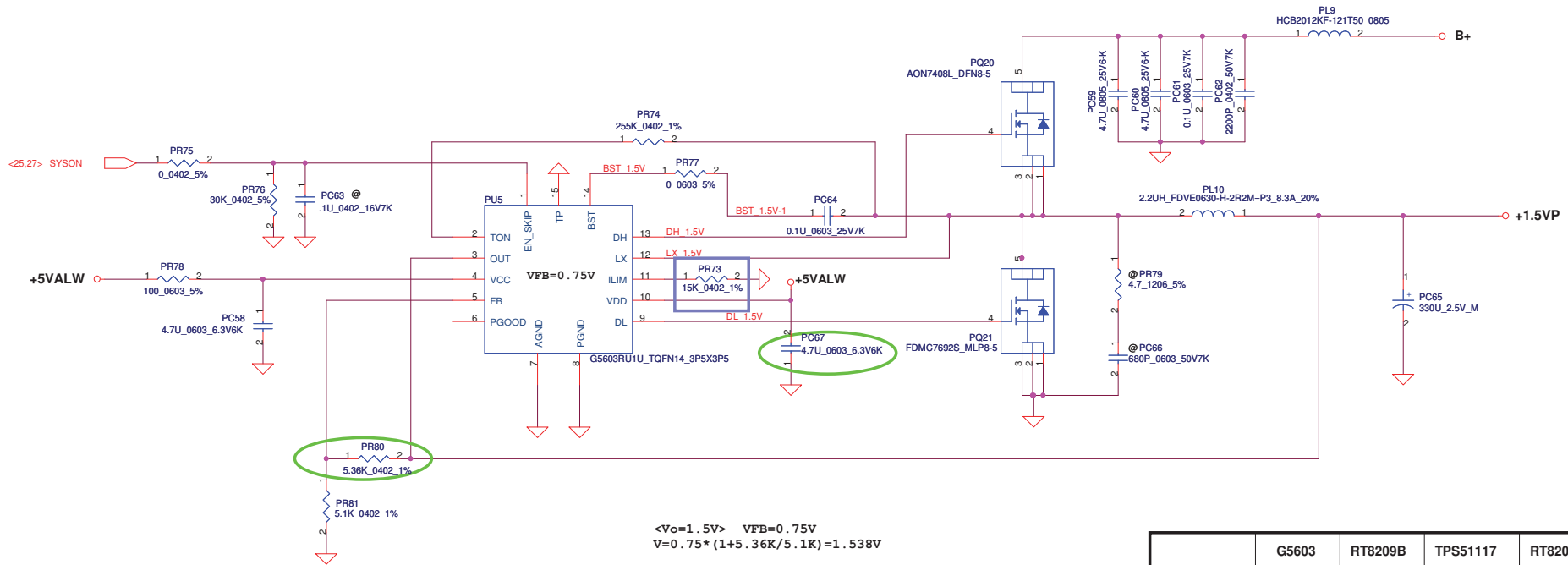
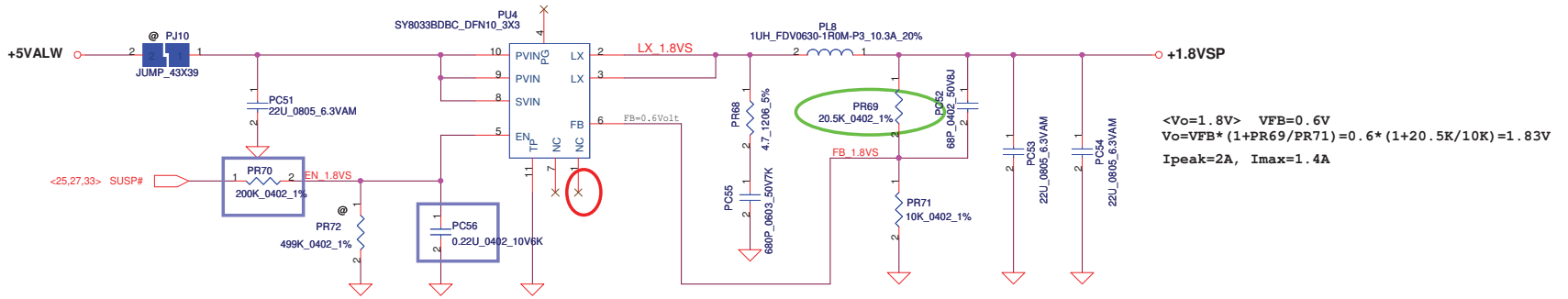


$+3.3VALWP$
 $I_{max} = 4.214A$; $I_{peak} = 6.02A$; $I_{ocp} = 1.2 * I_{peak} = 7.224A$
 $f = 375KHz$, $L = 4.7UH$, $R_{entrip2} = 130K \text{ ohm}$
 $R_{dson} = 14.5 \sim 17.9m \text{ ohm}$ (IRFH3707)
 $1/2\Delta I = 1/2 * (19 - 3.3) * (3.3 / 19) / (375KHz * 4.7UH) = 0.773A$
 $V_{trip2} = (10 * 10^{-6} * 150Kohm / 9) - 24mV = 0.143V$
 $I_{limit} = 0.143 / (17.9m * 1.2) \sim 0.143 / (14.5m) = 6.642A \sim 9.839A$
 $I_{ocp} = 7.415A \sim 10.613A$ ($7.415A > 7.224A \rightarrow OK$)

$+5VALWP$
 $I_{max} = 4.9A$; $I_{peak} = 7A$; $I_{ocp} = 1.2 * I_{peak} = 8.4A$
 $f = 300KHz$, $L = 4.7UH$, $R_{entrip1} = 143K \text{ ohm}$
 $R_{dson} = 14.5 \sim 17.9m \text{ ohm}$ (IRFH3707)
 $1/2\Delta I = 1/2 * (19 - 5) * (5 / 19) / (300KHz * 4.7UH) = 1.306A$
 $V_{trip1} = (10 * 10^{-6} * 162Kohm / 9) - 24mV = 0.156V$
 $I_{limit} = 0.156 / (17.9m * 1.2) \sim 0.156 / (15m) = 7.263A \sim 10.759A$
 $I_{ocp} = 8.569 \sim 12.065A$ ($8.569 > 8.4 \rightarrow OK$)

TONSEL = VREF (1) SMPS1 = 300KHZ (+5VALWP)
 (2) SMPS2 = 375KHZ (+3VALWP)

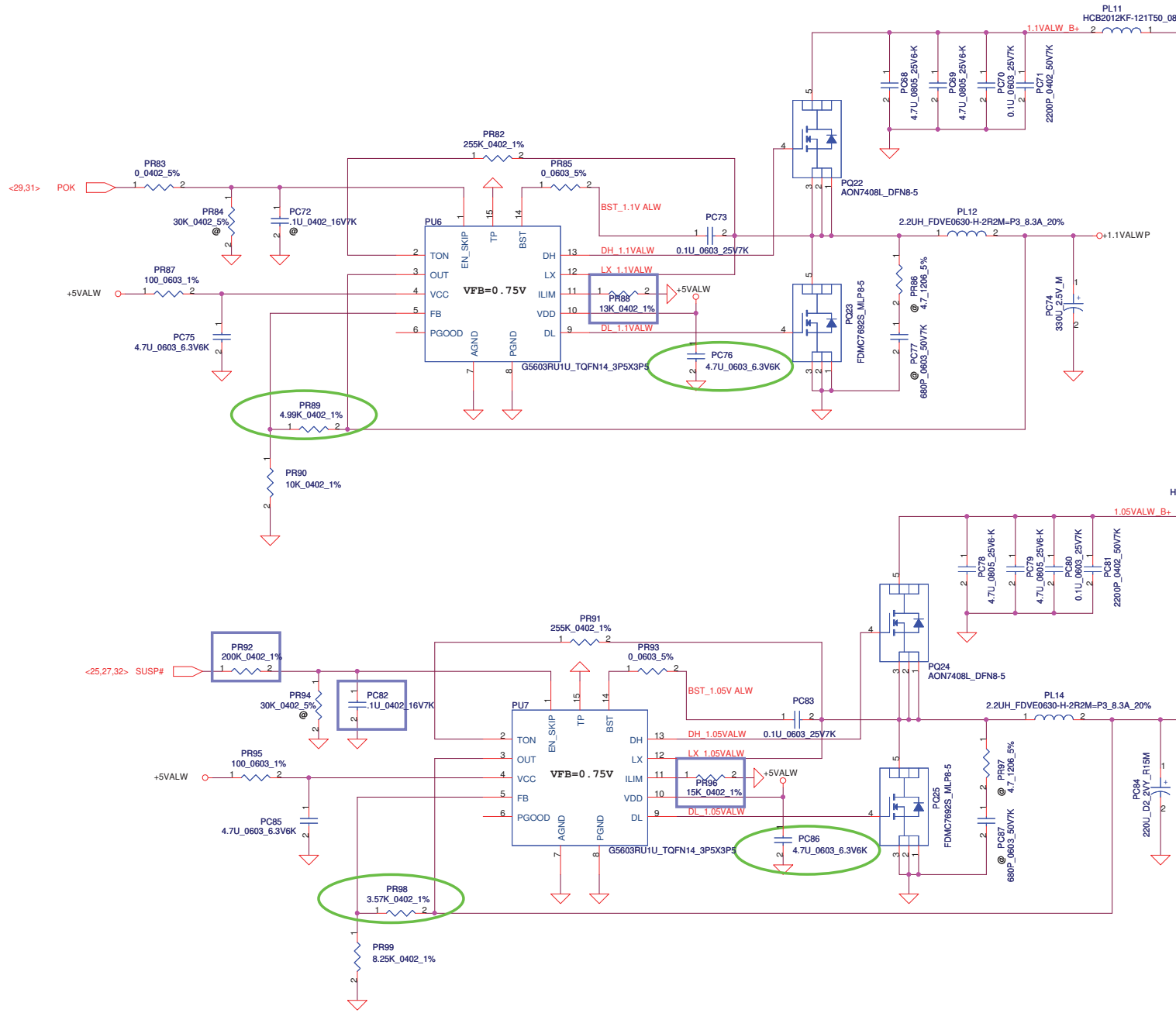
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Issued Date	2010/08/12	Deciphered Date	2012/08/12	Title	
				3VALWP/5VALWP	
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Cout ESR=25m ohm
 Rdson (max)=17.9 mohm Rdson (typ)=14.5 mohm. (IRFH3707)
 Ipeak=6.5A, Imax=4.55A, Iocp > 7.8A

	G5603	RT8209B	TPS51117	RT8209M
OCP setting	6.821A	7.235A	8.000A	8.178A

	G5603	RT8209B	TPS51117	RT8209M
Temperature Compensated	-1180ppm/°C	1600ppm/°C	4500ppm/°C	4800ppm/°C
Vtrip_min (SPEC)	30mV	50mV	30mV	50mV
Vtrip_max (SPEC)	200mV	200mV	200mV	200mV



<Vo=1.1V> VFB=0.75V
 $V=0.75 * (1 + 4.99K/10K) = 1.124V$

Cout ESR=25m ohm
 Rdson(max)=17.9 mohm Rdson(typ)=14.5 mohm. (IRFH3707)
 Ipeak=4.02A, Imax=2.814A, Iocp > 4.824A

	G5603	RT8209B	TPS51117	RT8209M
OCP setting	5.799A	6.183A	6.845A	6.976A

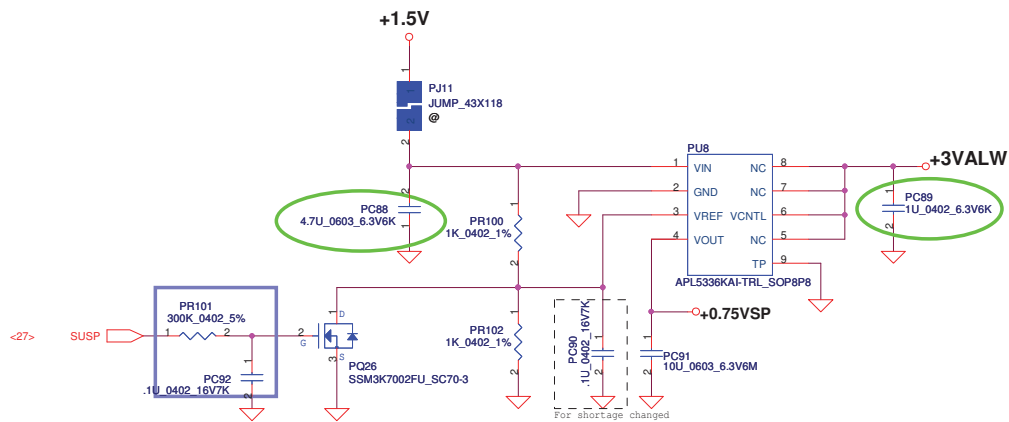
<Vo=1.05V> VFB=0.75V
 $V=0.75 * (1 + 3.57K/8.25K) = 1.074V$

Cout ESR=25m ohm
 Rdson(max)=17.9m ohm Rdson(typ)=14.5 mohm. (IRFH3707)
 Ipeak=5.5A, Imax=3.85A, Iocp > 6.6A

	G5603	RT8209B	TPS51117	RT8209M
OCP setting	6.524A	7.003A	7.768A	7.881A

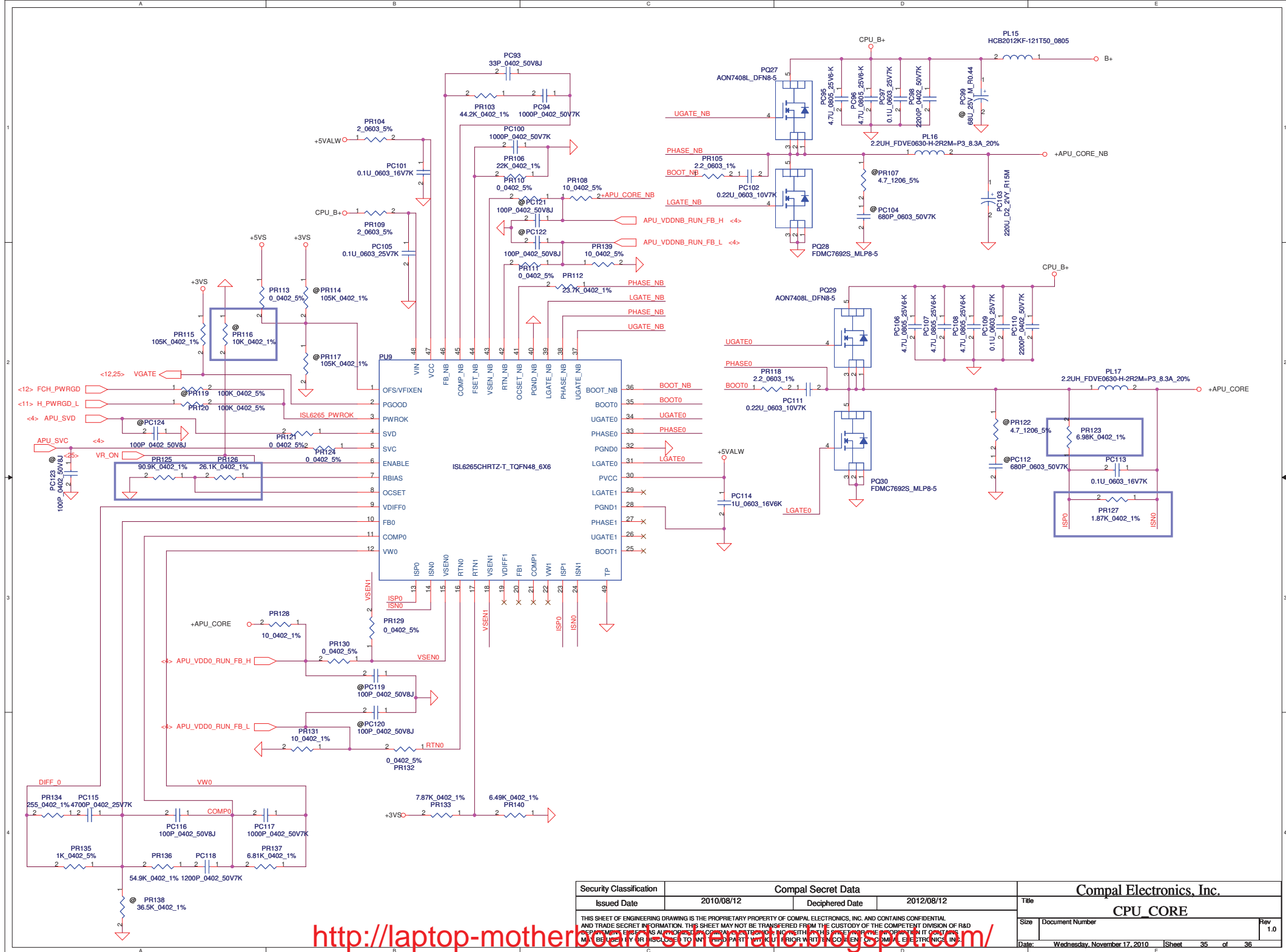
	G5603	RT8209B	TPS51117	RT8209M
Temperature Compensated	-1180ppm/°C	1600ppm/°C	4500ppm/°C	4800ppm/°C
Vtrip_min (SPEC)	30mV	50mV	30mV	50mV
Vtrip_max (SPEC)	200mV	200mV	200mV	200mV

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Size		Document Number		Rev	
Custom				1.0	
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				CPU CORE	
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Date: Wednesday, November 17, 2010		Sheet	35	of 36	

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Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	Date	Phase
1		Modify CP point for 40W adapter (40W*0.85=34W)	1	30	Change PR43 from SD034249280 (S RES 1/16W 24.9K +-1% 0402) to SD034470180 (S RES 1/16W 4.7K +-1% 0402)	20101011	EVT
2		Modify Outpot current sensor follow PAV70 design	1	30	Change PR38 from SD012200D80 (S RES 1/2W 0.02 +-1% 1206) to SD00000CI10 (S RES 1/2W 0.05 +-1% 1206)	20101011	EVT
3		Modify KI =1.62 follow PAV70 design	1	30	Change PR39 from SD034309380 (S RES 1/16W 309K +-1% 0402) to SD034620280 (S RES 1/16W 62K +-1% 0402)	20101011	EVT
4		Modify 1.5V OCP (there is only one dimm for 10.1")	1	32	Change PR73 from SD034787180 (S RES 1/16W 7.87K +-1% 0402) to SD034150280 (S RES 1/16W 15K +-1% 0402)	20101011	EVT
5		Modify 1.1V OCP for G5603	1	33	Change PR88 from SD034100280 (S RES 1/16W 10K +-1% 0402) to SD034130280 (S RES 1/16W 13K +-1% 0402)	20101011	EVT
6		Modify 1.05V OCP for G5603	1	33	Change PR96 from SD034140280 (S RES 1/16W 14K +-1% 0402) to SD034150280 (S RES 1/16W 15K +-1% 0402)	20101011	EVT
7		Modify +APU CORE OCP setting	1	35	Change PR123 to 6.98K ohm , PR127 to 1.87K ohm, PR125 to 90.9K ohm, PR126 to 26.1K ohm	20101011	EVT
8		+APU CORE power sequence concern	1	35	change PR116 to non-pop	20101011	EVT
9		Modify RTC schematic	1	28	add PR141 & PR142 =560 ohm	20101011	EVT
10		Modify SY8033B Enable pin pull down resistor	1	32	Change PR72 to non-pop	20101011	EVT
11		Modify 1.8VS power sequence	1	32	Change PR70 to 200K ohm , add PC56 =0.22uF	20101012	EVT
12		Modify 1.05VSP power sequence	1	33	Change PR92 to 200K ohm , add PC82 =0.1uF	20101012	EVT
13		Modify 0.75VSP power sequence	1	34	Change PR101 to 300K ohm , add PC92 =0.1uF	20101012	EVT
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
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				PIR (PWR)	
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