

MODEL NAME : *QBR10*

PCB NO : *LA-8321P*

BOM P/N : *4619H531L01*

Compal Confidential

Avenger MLK

rPGA Ivy Bridge + FCBGA PCH Panther Point-M + MXM III x2

Rev: 0.3 (X02)

2011.12.08

@ : Nopop component

CONN@ : ME connector

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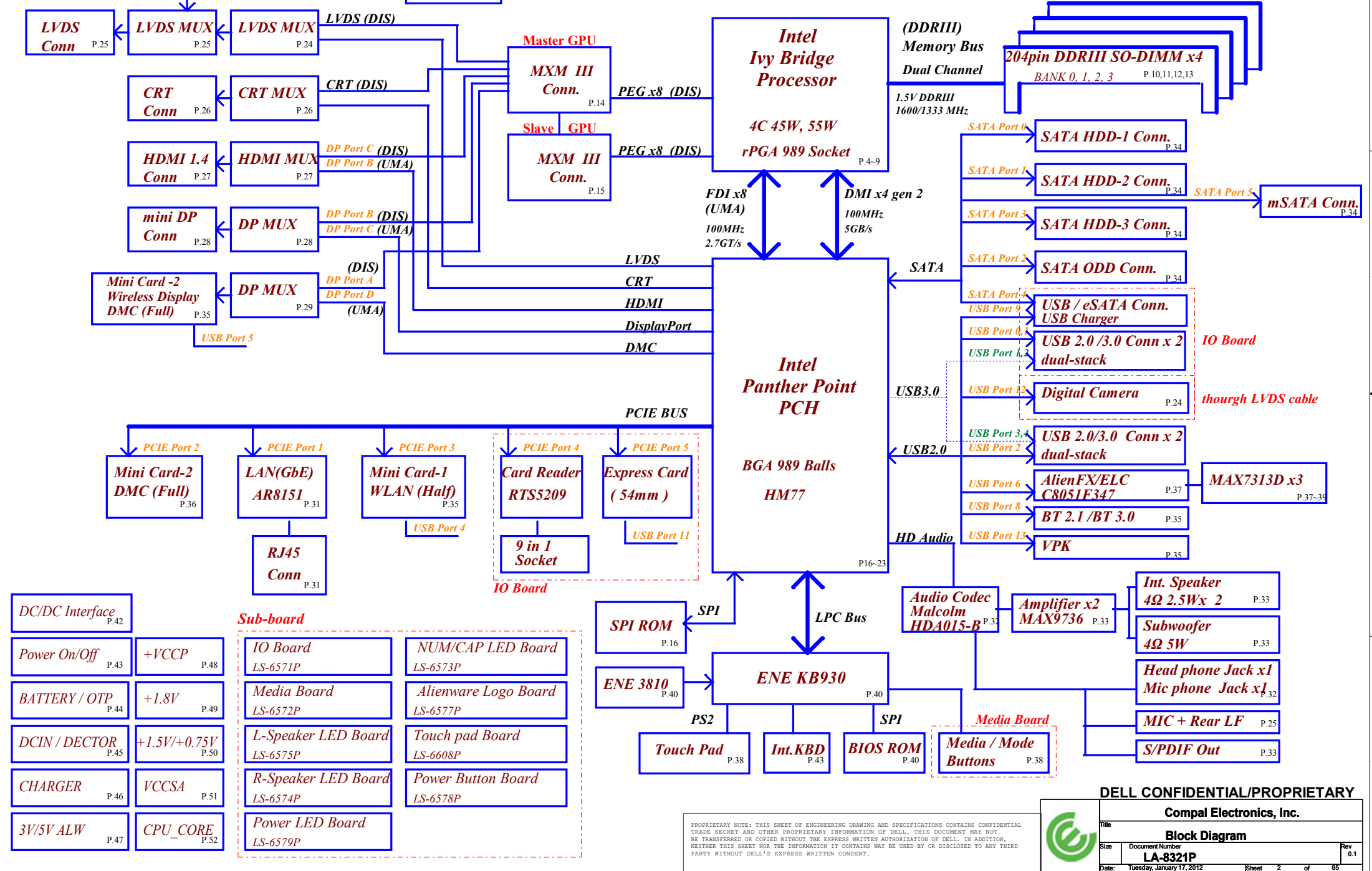
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Title		
Cover Sheet		
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Project Code : QBR10

File Name : LA-8321P



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Block Diagram

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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	8.2K +/- 5%	0.168 V	0.250 V	0.362 V
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

BOARD ID Table

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

USB3.0	USB PORT#	DESTINATION
	0	JUSB1
	1	JUSB2
	2	JUSB3
	3	JUSB4

USB	USB PORT#	DESTINATION
	0	JUSB1
	1	JUSB2
	2	JUSB3
	3	JUSB4
	4	Mini Card (WLAN)
	5	Mini Card (DMC)
	6	AlienFX/ELC
	7	None
	8	Bluetooth
	9	USB / eSATA combo
	10	None
	11	EXPRESS CARD
	12	CAMERA
	13	VPK

POWER STATES

State	Signal	SLP S3#	SLP S4#	SLP S5#	S4 STATE#	SLP M#	ALWAYS PLANE	SUS PLANE	RUN PLANE	CLOCKS
S0 (Full ON) / M0		HIGH	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S3 (Suspend to RAM) / M-OFF		LOW	HIGH		HIGH	LOW	ON	ON	OFF	OFF
S4 (Suspend to DISK) / M-OFF		LOW	LOW	HIGH	LOW	LOW	ON	OFF	OFF	OFF
S5 (SOFT OFF) / M-OFF		LOW	LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF

PM TABLE

State	power plane	+5VALW +3VALW +3VLP +3V_PCH	+1.5V	+5VS +3VS +1.8VS +1.5VS +0.75VS +3VMXM +5VMXM +VCCP +VCCSA +VCC_CORE +1.5V_CPU_VDDQ
S0		ON	ON	ON
S3		ON	ON	OFF
S5 S4/AC		ON	OFF	OFF
S5 S4/AC don't exist		OFF	OFF	OFF

CLK	DIFFERENTIAL	DESTINATION	FLEX CLOCKS	DESTINATION
	CLKOUT_PCIE0	None	CLKOUTFLEX0	None
	CLKOUT_PCIE1	10/100/1G LAN	CLKOUTFLEX1	None
	CLKOUT_PCIE2	MINI CARD-2 DMC	CLKOUTFLEX2	None
	CLKOUT_PCIE3	MINI CARD-1 WLAN	CLKOUTFLEX3	None
	CLKOUT_PCIE4	CARD READER		
	CLKOUT_PCIE5	EXPRESS CARD		
	CLKOUT_PCIE6	None		
	CLKOUT_PCIE7	None		
	CLKOUT_PEG_A	MXM I		
	CLKOUT_PEG_B	MXM II		

Symbol Note :



Digital Ground



Analog Ground

SATA	DESTINATION
SATA0	HDD1
SATA1	HDD2
SATA2	ODD
SATA3	HDD3
SATA4	E-SATA
SATA5	mSATA

Power plane	Voltage
+3VALW +3VLP +3V_PCH +3VS +3VMXM	3.3V

PCI EXPRESS	DESTINATION
Lane 1	10/100/1G LAN
Lane 2	MINI CARD-2 DMC
Lane 3	MINI CARD-1 WLAN
Lane 4	CARD READER
Lane 5	EXPRESS CARD
Lane 6	None
Lane 7	None
Lane 8	None

CLKOUT	DESTINATION
PCI0	PCH_LOOPBACK
PCI1	EC
PCI2	DEBUG
PCI3	None
PCI4	None

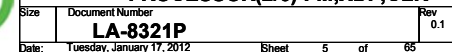
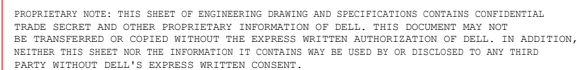
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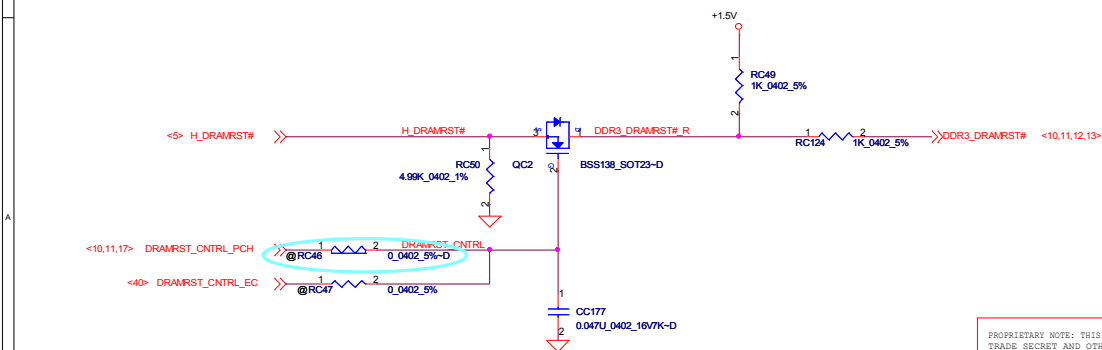
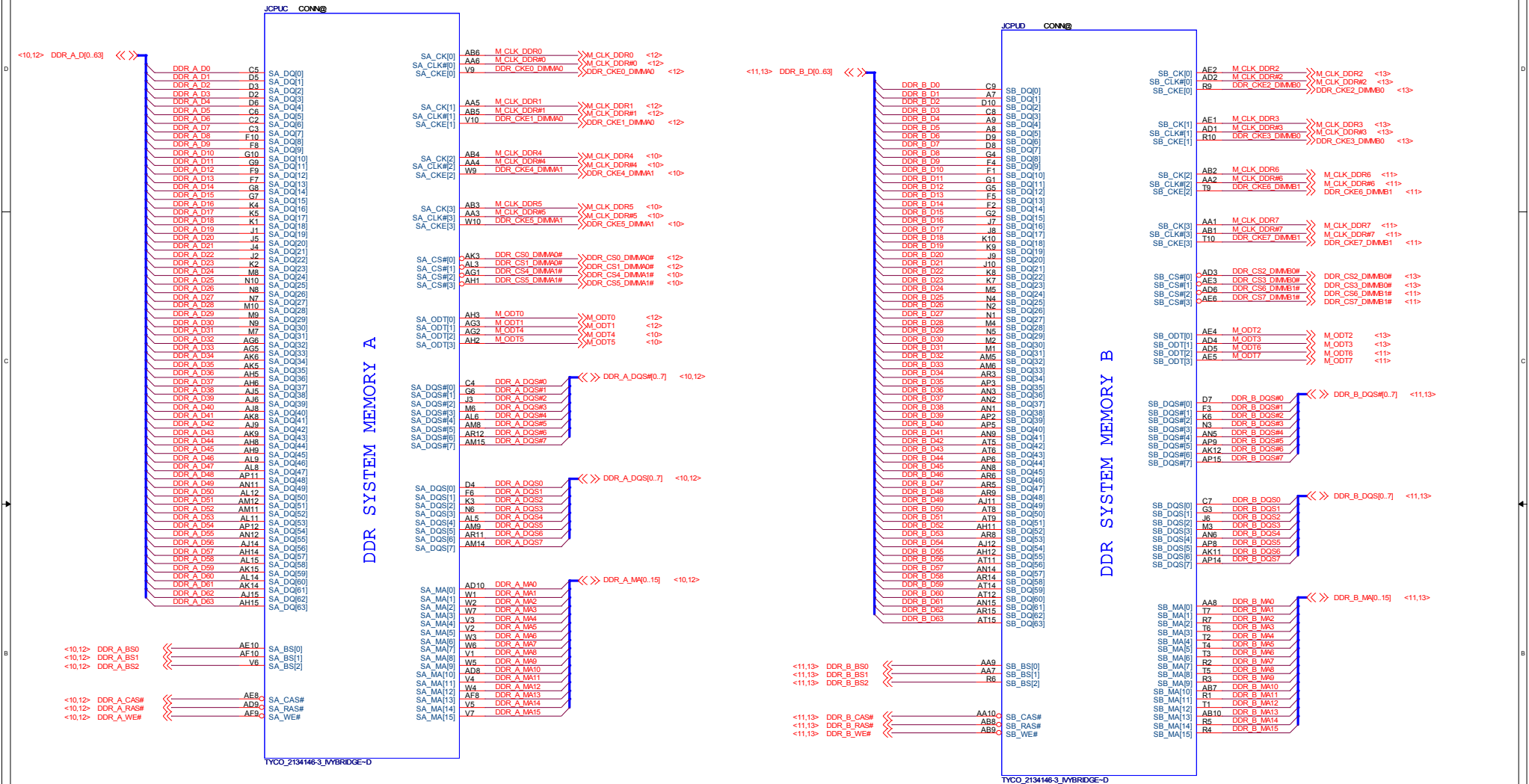
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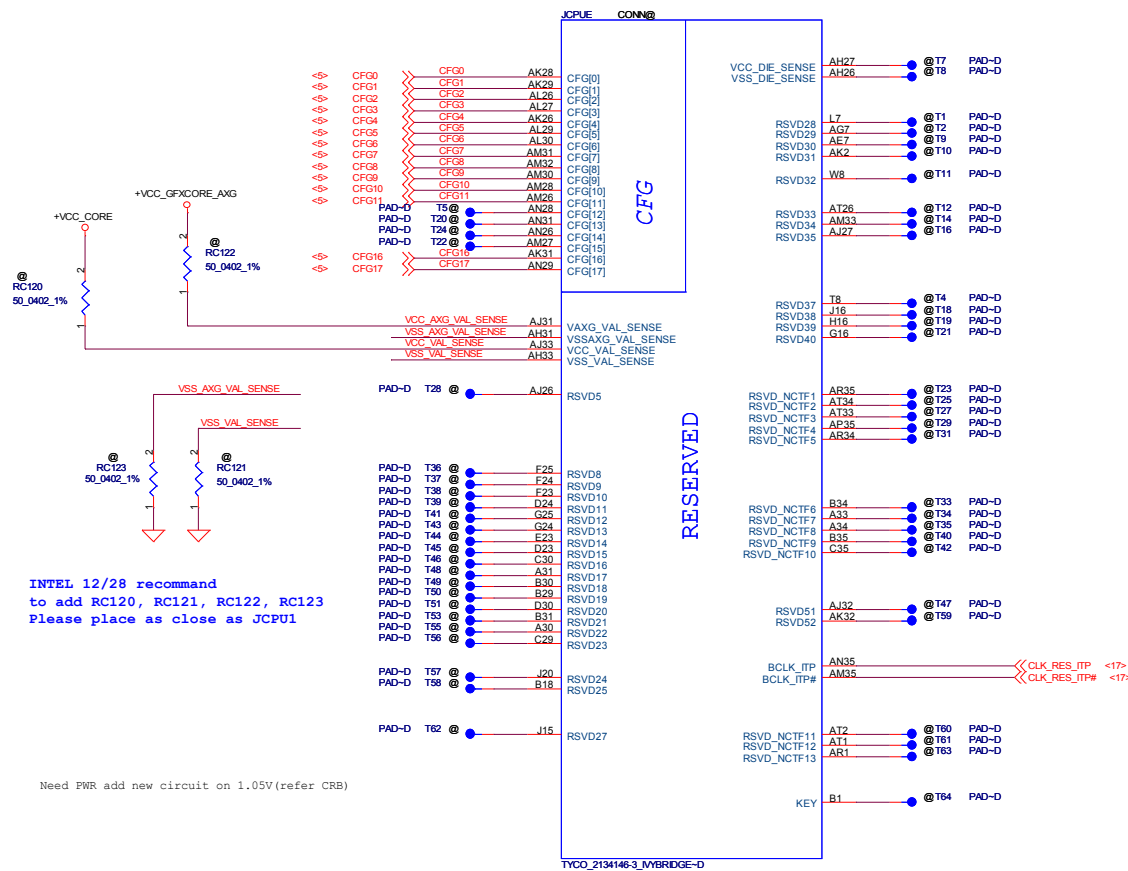




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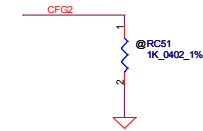
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File
PROCESSOR(3/6) DDRIII
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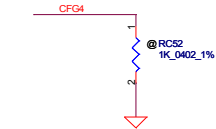
INTEL 12/28 recommend
to add RC120, RC121, RC122, RC123
Please place as close as JCPU1

Need PWR add new circuit on 1.05V(refer CRB)

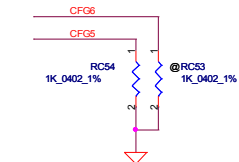
CFG Straps for Processor



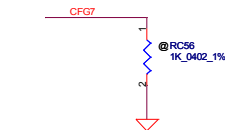
PEG Static Lane Reversal - CFG2 is for the 16x	
CFG2	1: (Default) Normal Operation; Lane # definition matches socket pin map definition 0: Lane Reversed



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



PCIe Port Bifurcation Straps	
CFG[6:5]	11: (Default) x16 - Device 1 functions 1 and 2 disabled 10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled 01: Reserved - (Device 1 function 1 disabled ; function 2 enabled) 00: x8,x4,x4 - Device 1 functions 1 and 2 enabled



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

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PROCESSOR(4/6) RSVD,CFG			
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POWER

JCPU_F CONN

+VCC_CORE

94A

AG35 VCC1
AG34 VCC2
AG33 VCC3
AG32 VCC4
AG31 VCC5
AG30 VCC6
AG29 VCC7
AG28 VCC8
AG27 VCC9
AG26 VCC10
AF35 VCC11
AF34 VCC12
AF33 VCC13
AF32 VCC14
AF31 VCC15
AF30 VCC16
AF29 VCC17
AF28 VCC18
AF27 VCC19
AF26 VCC20
AD35 VCC21
AD34 VCC22
AD33 VCC23
AD32 VCC24
AD31 VCC25
AD29 VCC26
AD28 VCC27
AD27 VCC28
AD26 VCC29
AC35 VCC30
AC34 VCC31
AC33 VCC32
AC32 VCC33
AC31 VCC34
AC30 VCC35
AC29 VCC36
AC28 VCC37
AC27 VCC38
AC26 VCC39
AA34 VCC40
AA33 VCC41
AA32 VCC42
AA31 VCC43
AA30 VCC44
AA29 VCC45
AA28 VCC46
AA27 VCC47
AA26 VCC48
Y35 VCC49
Y34 VCC50
Y33 VCC51
Y32 VCC52
Y31 VCC53
Y30 VCC54
Y29 VCC55
Y28 VCC56
Y27 VCC57
Y26 VCC58
Y25 VCC59
Y24 VCC60
V35 VCC61
V34 VCC62
V33 VCC63
V32 VCC64
V31 VCC65
V30 VCC66
V29 VCC67
V28 VCC68
V27 VCC69
V26 VCC70
U35 VCC71
U34 VCC72
U33 VCC73
U32 VCC74
U31 VCC75
U30 VCC76
U29 VCC77
U28 VCC78
U27 VCC79
U26 VCC80
R35 VCC81
R34 VCC82
R33 VCC83
R32 VCC84
R31 VCC85
R30 VCC86
R29 VCC87
R28 VCC88
R27 VCC89
R26 VCC90
P35 VCC91
P34 VCC92
P33 VCC93
P32 VCC94
P31 VCC95
P30 VCC96
P29 VCC97
P28 VCC98
P27 VCC99
P26 VCC100

CORE SUPPLY

SVID

SENSE LINES

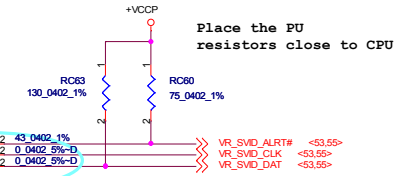
TYCO_21341463_MYBRIDGE-D

VCCIO1 AH13
VCCIO2 AH10
VCCIO3 AC10
VCCIO4 J10
VCCIO5 J10
VCCIO6 P10
VCCIO7 J10
VCCIO8 L10
VCCIO9 J13
VCCIO10 J13
VCCIO11 J12
VCCIO12 J11
VCCIO13 H12
VCCIO14 H11
VCCIO15 G14
VCCIO16 G13
VCCIO17 G12
VCCIO18 F14
VCCIO19 F13
VCCIO20 F12
VCCIO21 E12
VCCIO22 E11
VCCIO23 E14
VCCIO24 E12
VCCIO25 D14
VCCIO26 D13
VCCIO27 D12
VCCIO28 D11
VCCIO29 C14
VCCIO30 C13
VCCIO31 C12
VCCIO32 B11
VCCIO33 B14
VCCIO34 B12
VCCIO35 A14
VCCIO36 A13
VCCIO37 A12
VCCIO38 A11
VCCIO39 J23
VCCIO40 J23

8.5A

P000 0.78912

+VCCP



VIDALERT# H.CPU.SVIDALRT# RC61 1 2 43 0402_1%
VDSCLK H.CPU.SVIDCLK RC59 1 2 0 0402 5%-D
VDSOUT H.CPU.SVIDDAT RC65 1 2 0 0402 5%-D
VR_SVID_ALRT# <53.55>
VR_SVID_CLK <53.55>
VR_SVID_DAT <53.55>

VCC_SENSE VCCSENSE_R RC67 1 2 0 0402 5%-D
VSS_SENSE VCCSENSE_N RC68 1 2 0 0402 5%-D
VCCSENSE <53>
VSSSENSE <53>

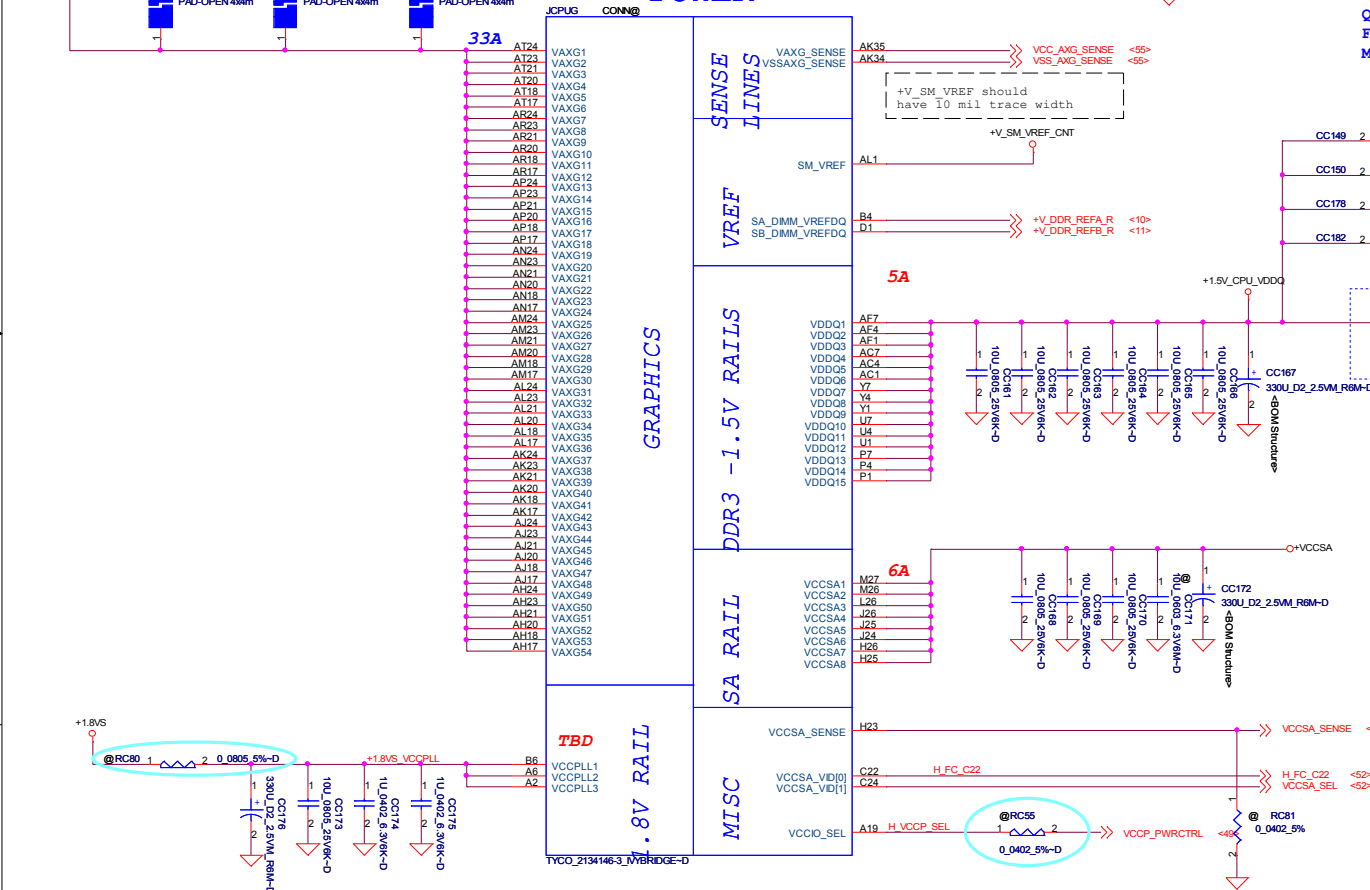
VCCIO_SENSE VCCIO_SENSE B10 1 2 0 0402 5%-D
VSS_SENSE_VCCIO VSSIO_SENSE A10 1 2 0 0402 5%-D
VCCIO_SENSE <49>

0902 RC1701 and RC1702 near close to CPU,
ask power to remove PR111 and PR104

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PROCESSOR(5/6) PWR,BYPASS	
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JCPU		CONV	
AT35	VSS1	VSS81	AJ22
AT32	VSS2	VSS82	AJ19
AT29	VSS3	VSS83	AJ16
AT25	VSS4	VSS84	AJ13
AT22	VSS5	VSS85	AJ10
AT22	VSS6	VSS86	AJ7
AT19	VSS7	VSS87	AJ4
AT16	VSS8	VSS88	AJ1
AT13	VSS9	VSS89	AJ2
AT10	VSS10	VSS90	AJ35
AT7	VSS11	VSS91	AJ34
AT4	VSS12	VSS92	AJ32
AT3	VSS13	VSS93	AJ30
AR65	VSS14	VSS94	AJ29
AR62	VSS15	VSS95	AJ28
AR19	VSS16	VSS96	AJ25
AR16	VSS17	VSS98	AJ22
AR10	VSS18	VSS99	AJ19
AR7	VSS19	VSS100	AJ16
AR4	VSS20	VSS101	AJ7
AR2	VSS21	VSS102	AJ4
AP34	VSS22	VSS103	AJ3
AP28	VSS23	VSS104	AJ8
AP31	VSS24	VSS105	AJ6
AP28	VSS25	VSS106	AJ5
AP22	VSS26	VSS107	AJ2
AP19	VSS27	VSS108	AJ1
AP16	VSS28	VSS109	AJ3
AP13	VSS29	VSS110	AJ35
AP10	VSS30	VSS111	AJ32
AP10	VSS31	VSS112	AJ34
AF7	VSS32	VSS113	AJ33
AF4	VSS33	VSS114	AJ32
AP1	VSS34	VSS115	AJ31
AN30	VSS35	VSS116	AJ30
AN2	VSS36	VSS117	AJ29
AN25	VSS37	VSS118	AJ28
AN22	VSS38	VSS119	AJ27
AN19	VSS39	VSS120	AJ26
AN16	VSS40	VSS121	AJ25
AN13	VSS41	VSS122	AJ24
AN10	VSS42	VSS123	AJ23
AN7	VSS43	VSS124	AJ22
AN4	VSS44	VSS125	AJ21
AM29	VSS45	VSS126	AJ20
AM25	VSS46	VSS127	AJ19
AM22	VSS47	VSS128	AJ35
AM19	VSS48	VSS129	AJ34
AM16	VSS49	VSS130	AJ33
AM13	VSS50	VSS131	AJ32
AM10	VSS51	VSS132	AJ31
AM7	VSS52	VSS133	AJ30
AM4	VSS53	VSS134	AJ29
AM3	VSS54	VSS135	AJ28
AM2	VSS55	VSS136	AJ27
AM1	VSS56	VSS137	AJ26
AL34	VSS57	VSS138	Y9
AL31	VSS58	VSS139	Y8
AL28	VSS59	VSS140	Y6
AL25	VSS60	VSS141	Y5
AL22	VSS61	VSS142	Y4
AL19	VSS62	VSS143	Y2
AL16	VSS63	VSS144	Y35
AL13	VSS64	VSS145	W35
AL10	VSS65	VSS146	W34
AL7	VSS66	VSS147	W33
AL4	VSS67	VSS148	W32
AL2	VSS68	VSS149	W31
AK33	VSS69	VSS150	W30
AK30	VSS70	VSS151	W29
AK27	VSS71	VSS152	W28
AK25	VSS72	VSS153	W27
AK22	VSS73	VSS154	W26
AK19	VSS74	VSS155	W25
AK16	VSS75	VSS156	U8
AK13	VSS76	VSS157	U6
AK10	VSS77	VSS158	U5
AK7	VSS78	VSS159	U3
AK4	VSS79	VSS160	U2
AJ25	VSS80		

Function	xxVccSA_Select[1] [[CPU PIN# C24 VID0 of VR]]	xxVccSA_Select[0] [[CPU PIN# C22 VID1 of VR]]	VCCSA VR Vout
SNB HIGH	0	0	0.90V
IVB HIGH	0	1	0.725V
SNB LOW	1	0	0.80V
IVB LOW	1	1	0.675V

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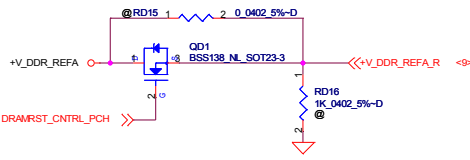
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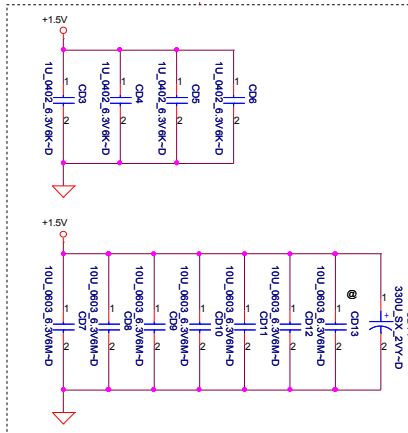
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<6,12> DDR_A_DQS#0..7 <<>>
<6,12> DDR_A_DQ0..63 <<>>
<6,12> DDR_A_M#0..15 <<>>

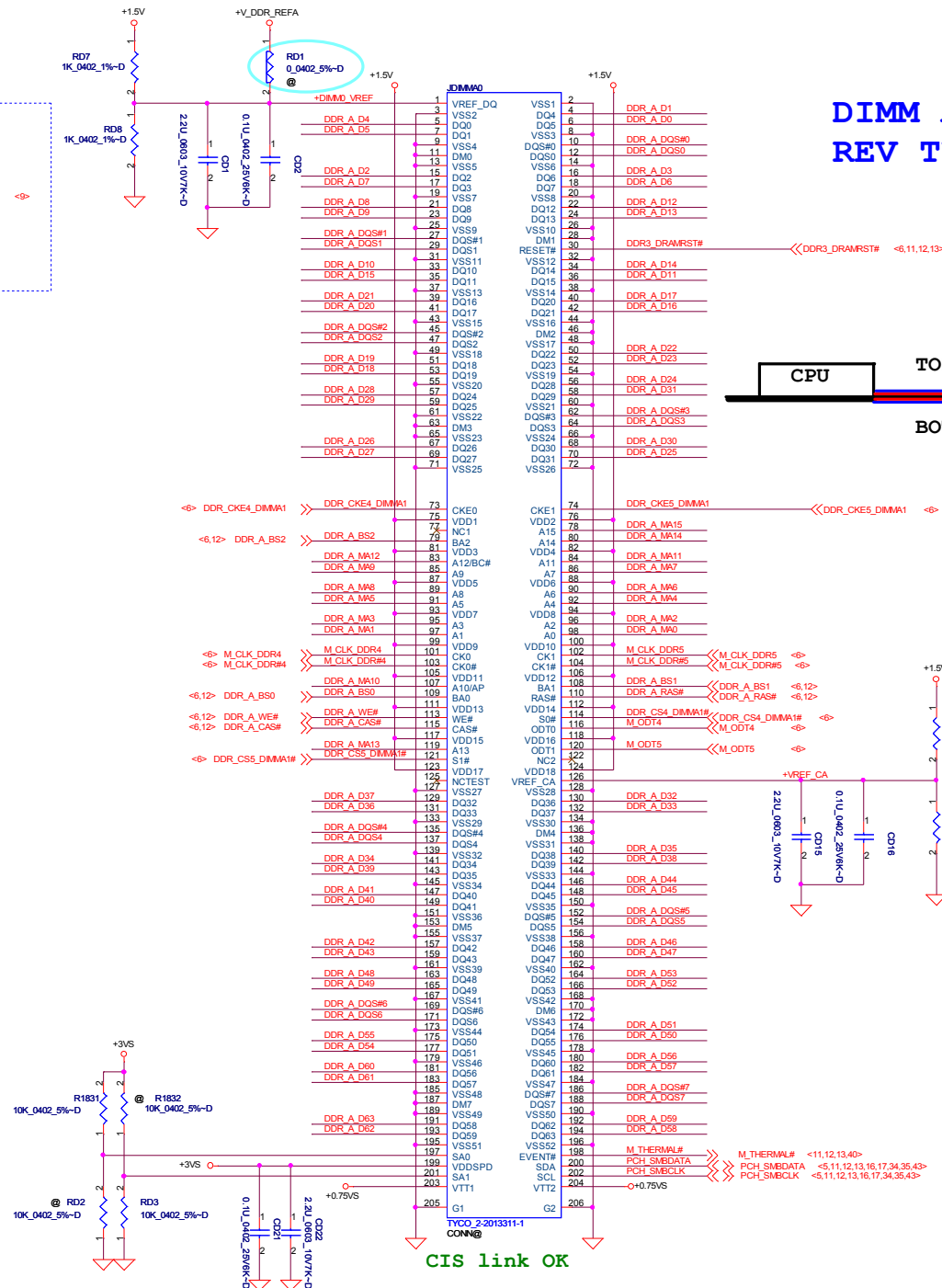
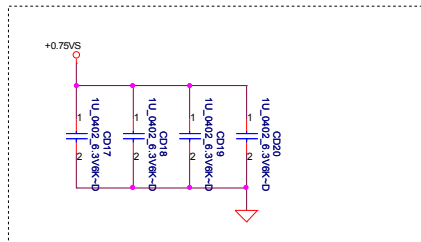
M3 Circuit (Processor Generated SO-DIMM VREF_DQ)



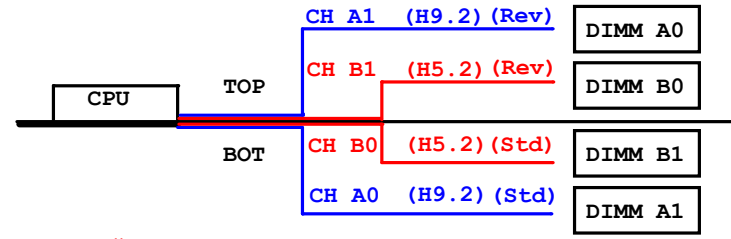
Layout Note:
Place near JDIMMA



Layout Note:
Place near JDIMMA.203,204



DIMM A0 REV TYPE (H9.2)



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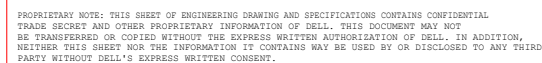
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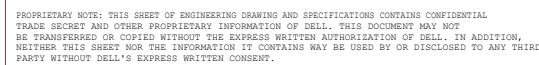
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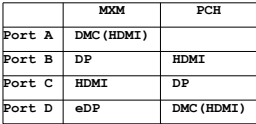
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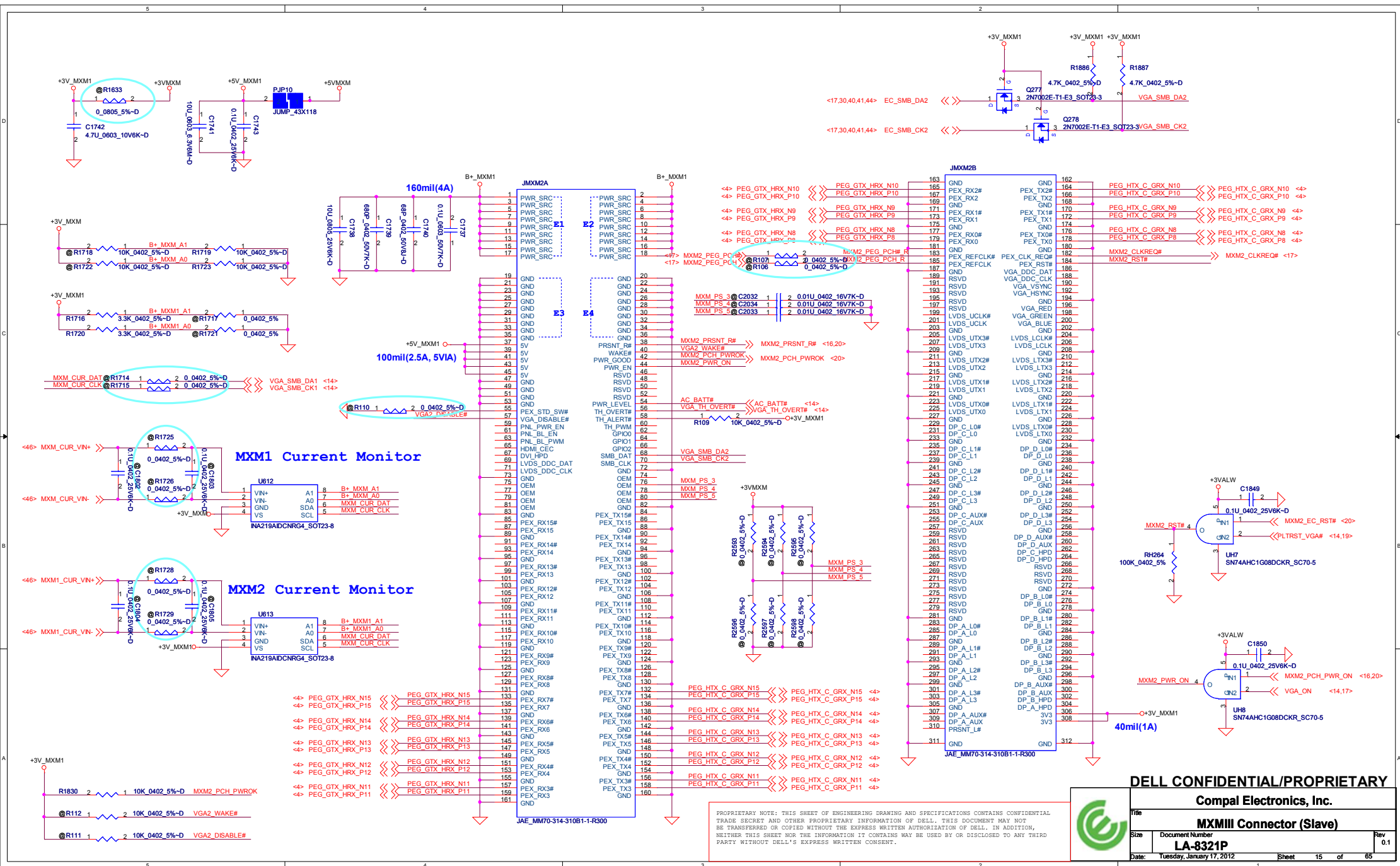


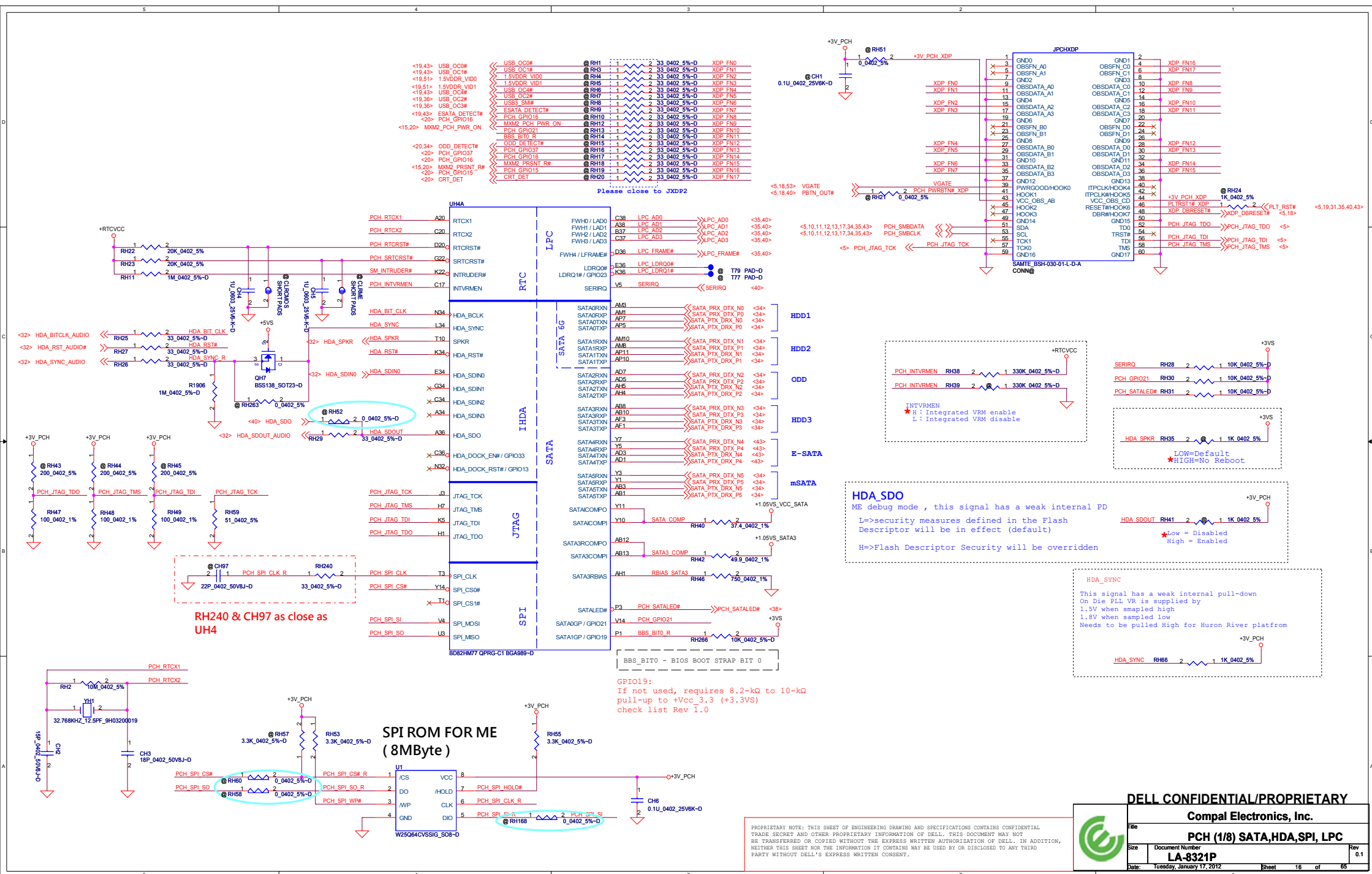


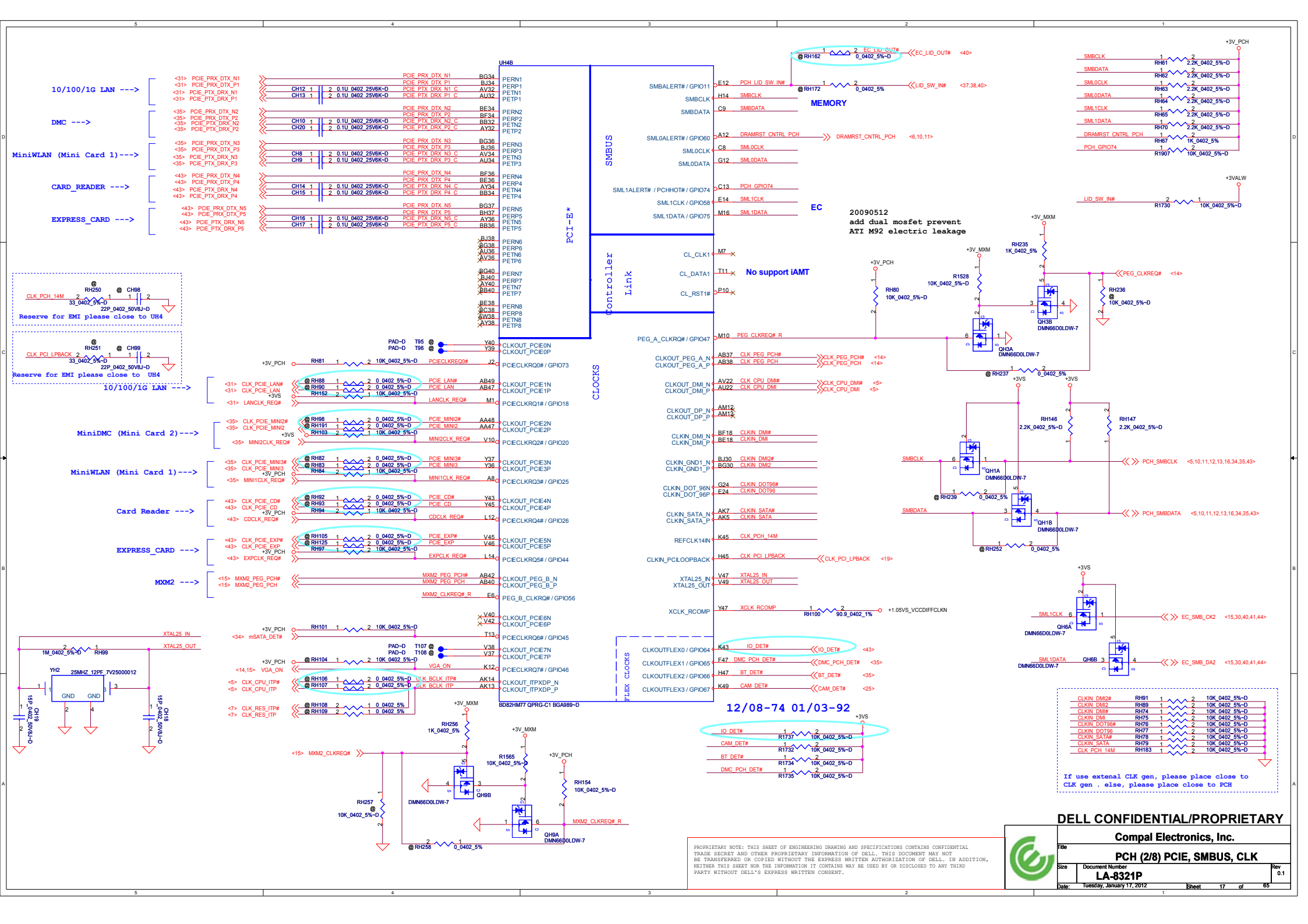




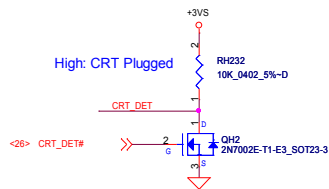
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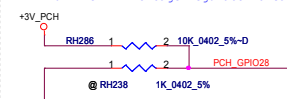




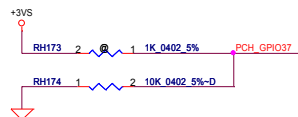
High: CRT Plugged



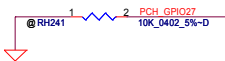
GPIO28
On-Die PLL Voltage Regulator
This signal has a weak internal pull up
* H: On-Die voltage regulator enable
L: On-Die PLL Voltage Regulator disable



PCH_GPIO37
FDI TERMINATION VOLTAGE OVERRIDE
* LOW - Tx, Rx terminated to same voltage (DC Coupling Mode)



GPIO27
PCH_GPIO27 (Have internal Pull-High)
* High: VCCVRM VR Enable
Low: VCCVRM VR Disable



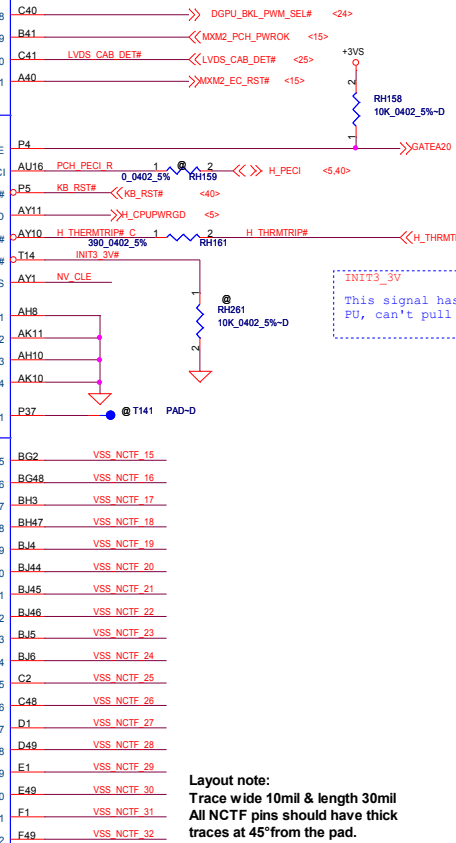
Layout note:
Trace wide 10mil & length 30mil
All NCTF pins should have thick traces at 45° from the pad.

PCH_GPIO28 needs to be connected to XDP_FN8
PCH_GPIO35 needs to be connected to XDP_FN9
PCH_GPIO15 needs to be connected to XDP_FN16

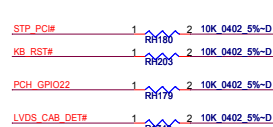
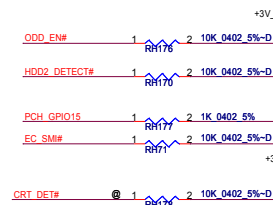
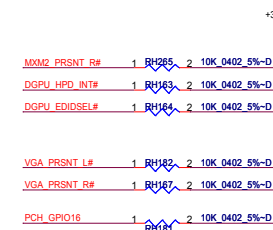
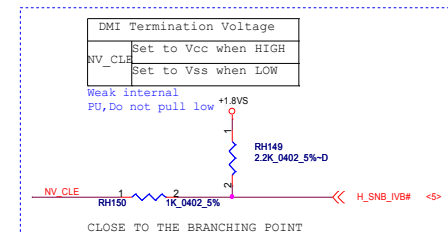
Please refer to Huron River Debug Board DG 0.5



SATA2GP/GPIO36
When Used as SATA2GP/SATA3GP for Mechanical Presence detect
- Use a weak external pull-up (150K-200K ohms) to Vcc3_3
* check list Rev 1.0



Layout note:
Trace wide 10mil & length 30mil
All NCTF pins should have thick traces at 45° from the pad.



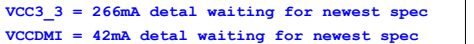
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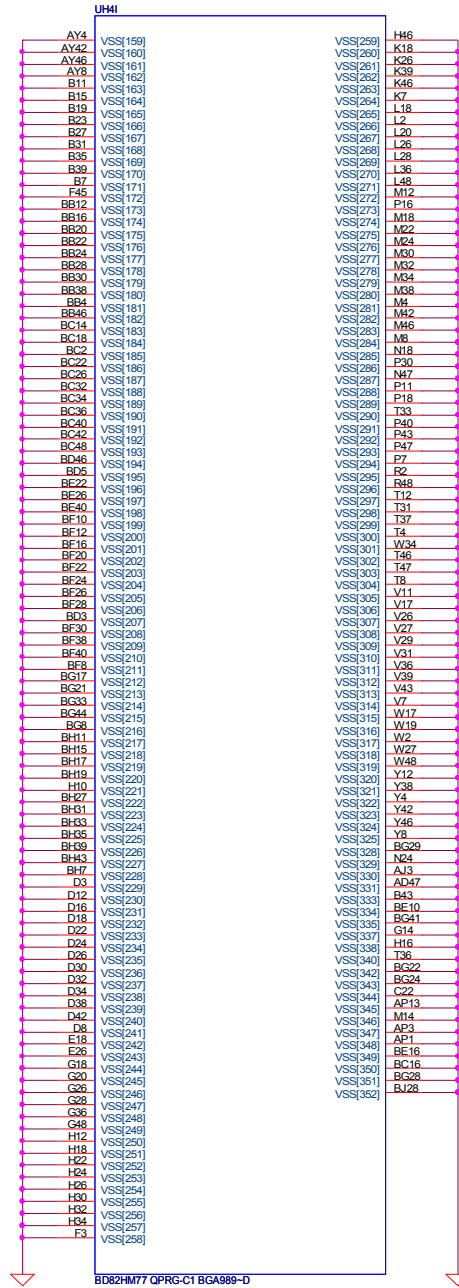
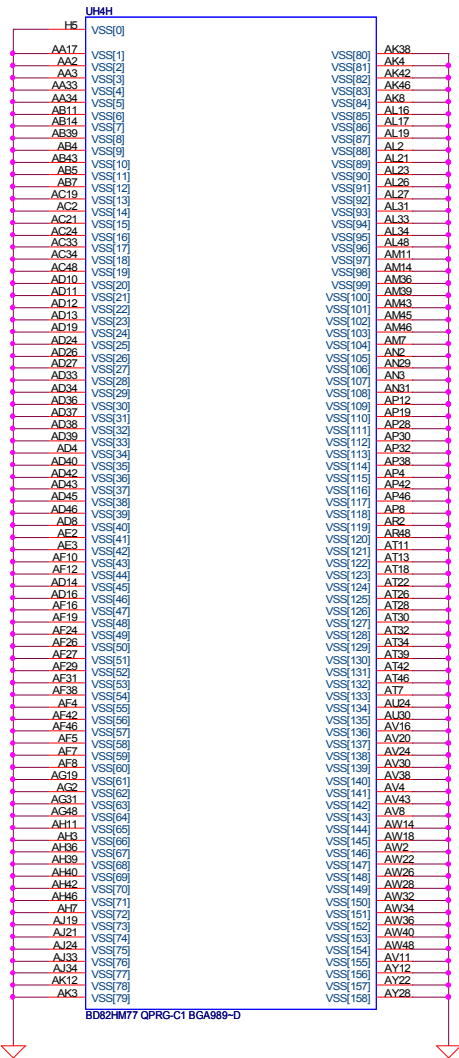
Compal Electronics, Inc.

PCH (5/8) GPIO, CPU, MISC

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of
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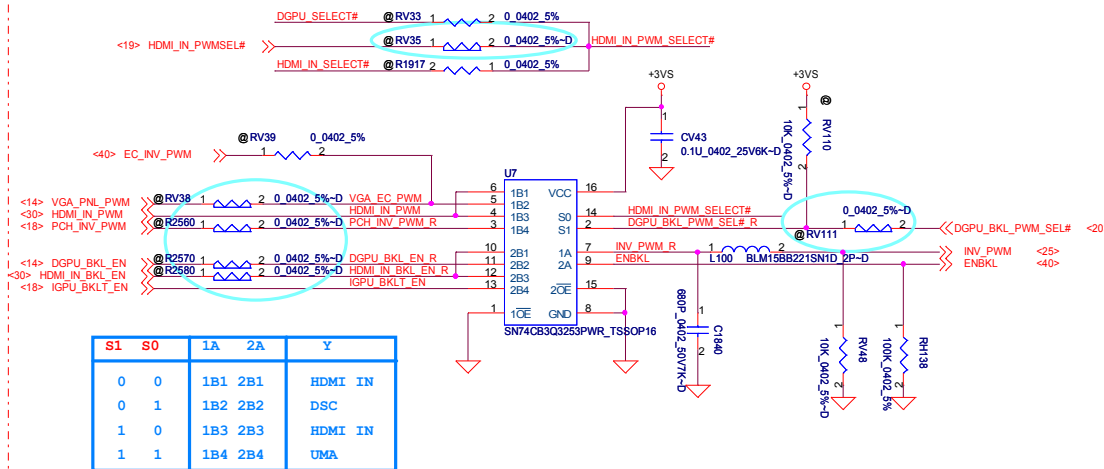


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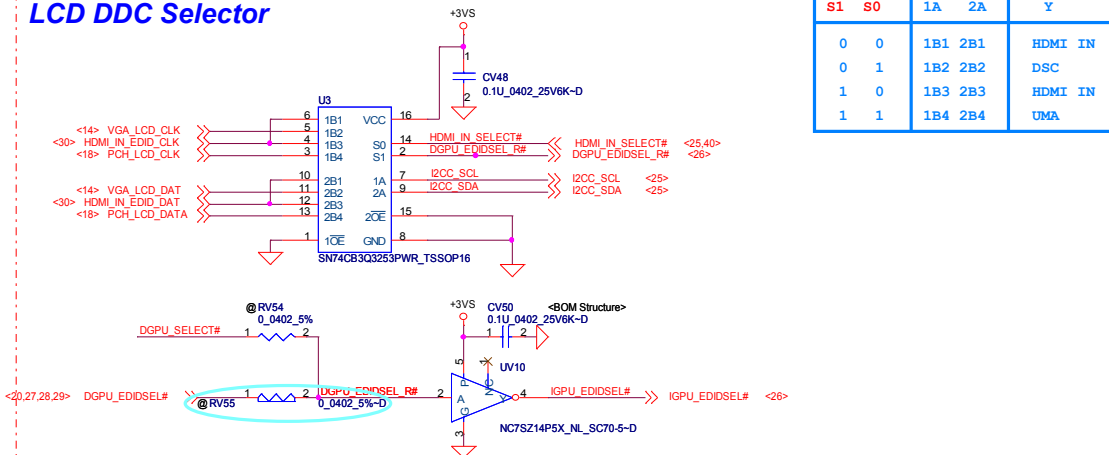


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Compal Electronics, Inc.			
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PCH (8/8) PWR			
Size	Document Number	Rev	
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Date:	Tuesday, January 17, 2012	Sheet	23 of 65

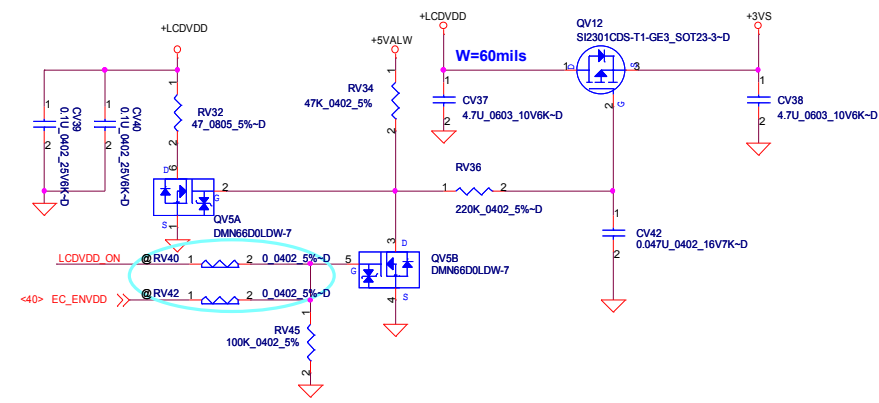
LCD Backlight / PWM Selector



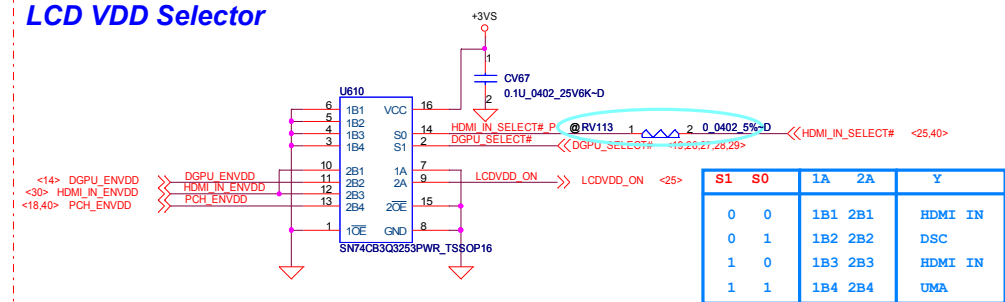
LCD DDC Selector



LCD POWER



LCD VDD Selector



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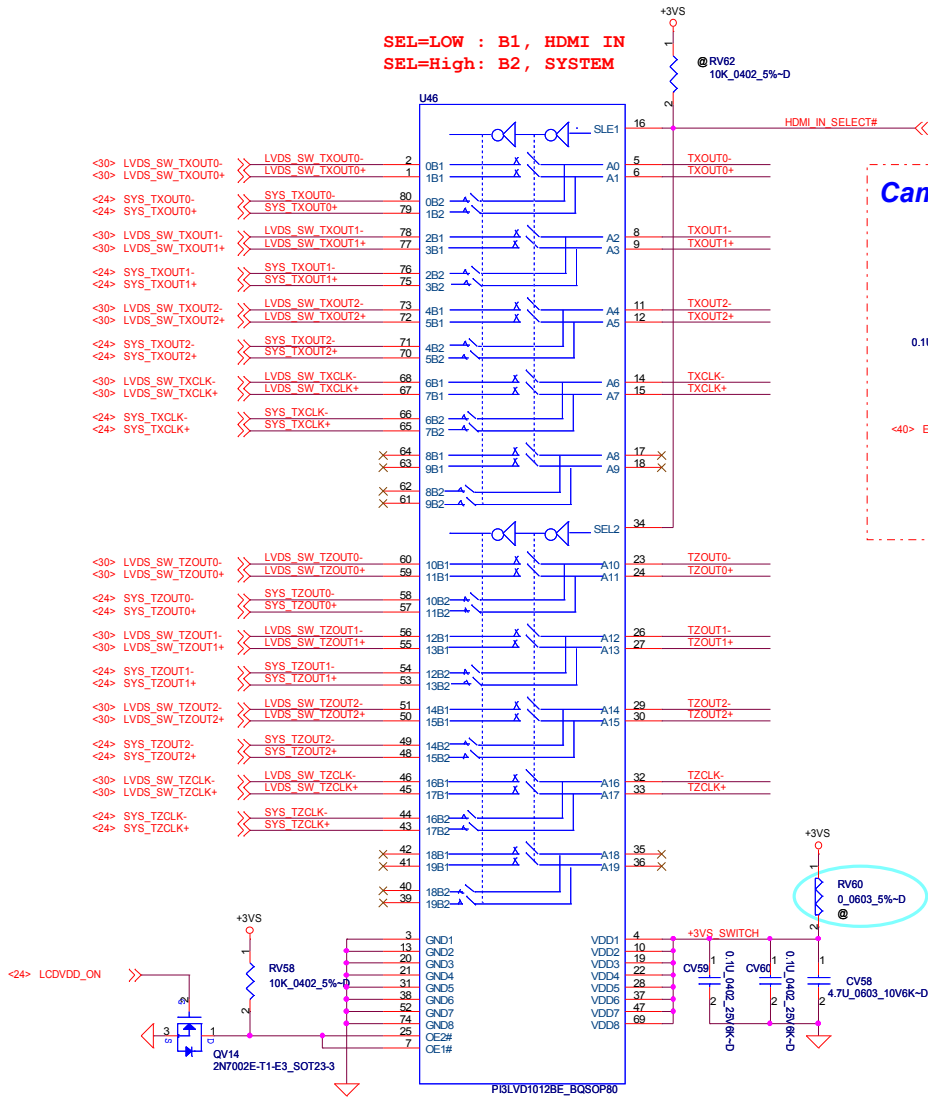
Title	LVDS SW - GPU & PCH
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Size	Document Number LA-8321P	Rev 0.1
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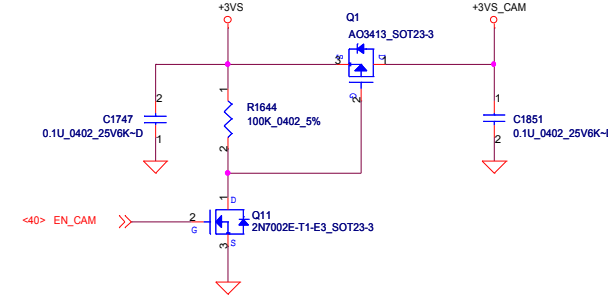
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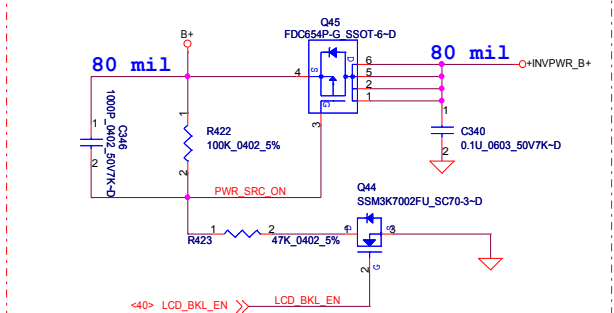
SEL=LOW : B1, HDMI IN
SEL=High: B2, SYSTEM



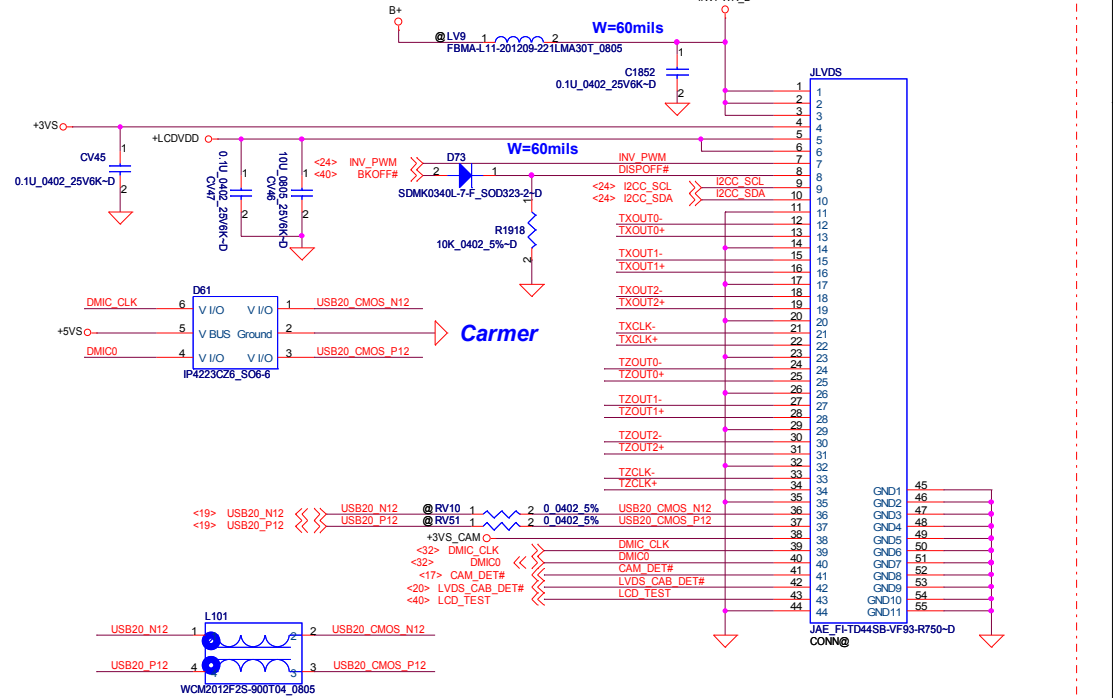
Camera Power Control



LCD Backlight Control



LVDS Connector



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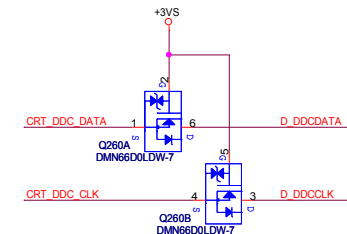
Compal Electronics, Inc.

LVDS SW - SYSTEM & HDMI IN

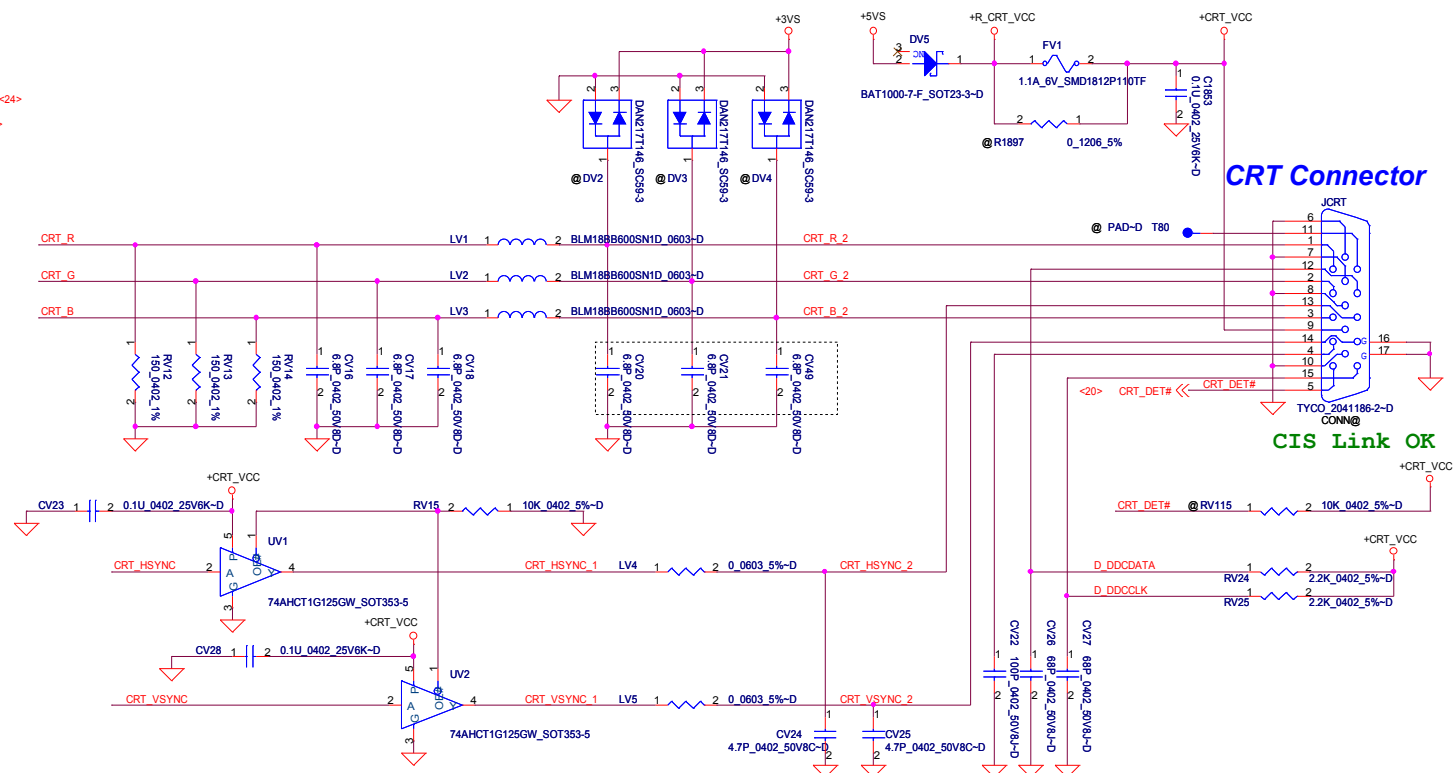
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IN1	IN2	D1	D2	Y
0	0			
0	1	1S1	2S1	DSC
1	0	1S2	2S2	UMA
1	1			

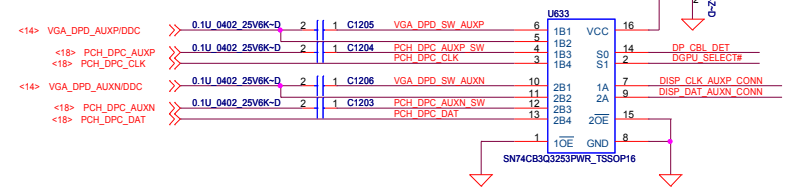
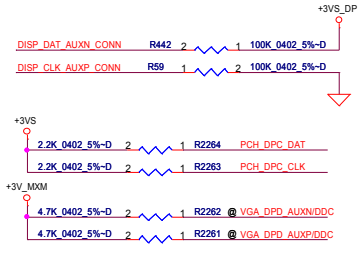
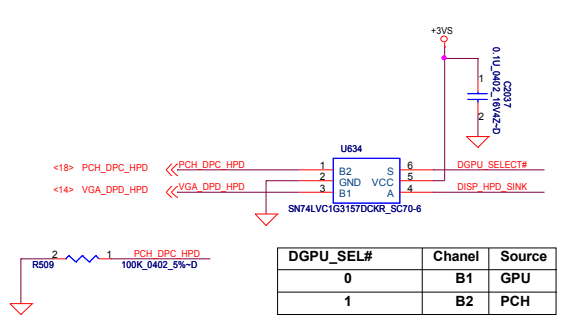


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CRT SW			
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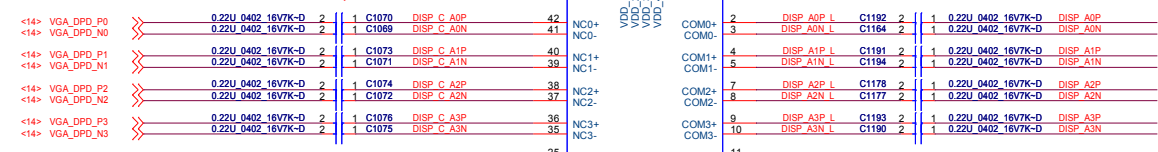
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Size	Document Number	Rev	
	LA-8321P	0.1	
Date:	Tuesday, January 17, 2012	Sheet	27 of 65



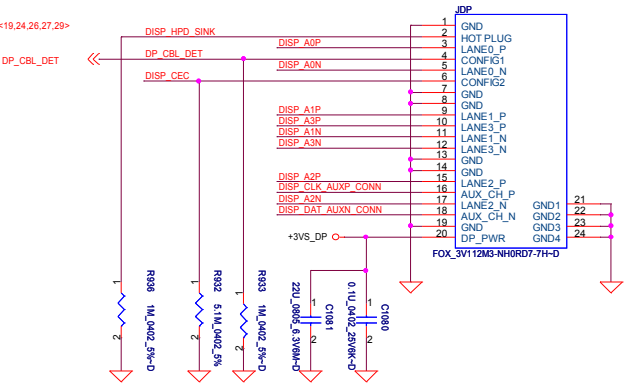
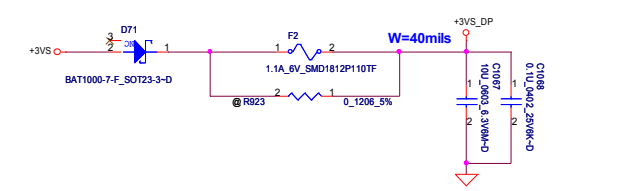
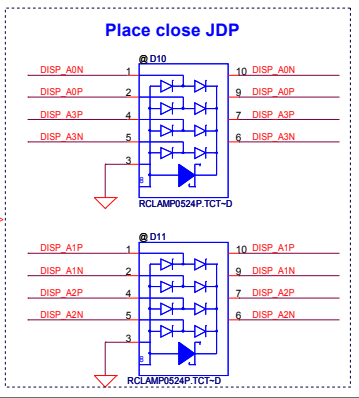
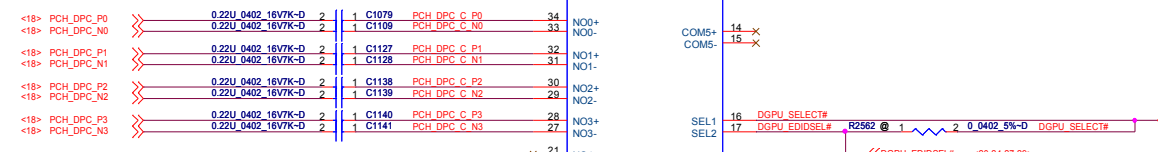
S1	S0	1A	2A	Y
0	0	1B1	2B1	MXM_AUX
0	1	1B2	2B2	MXM_DDC
1	0	1B3	2B3	PCH_AUX
1	1	1B4	2B4	PCH_DDC

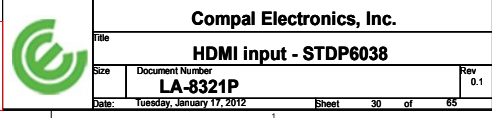
PCH/GPU AUX&LANE SW

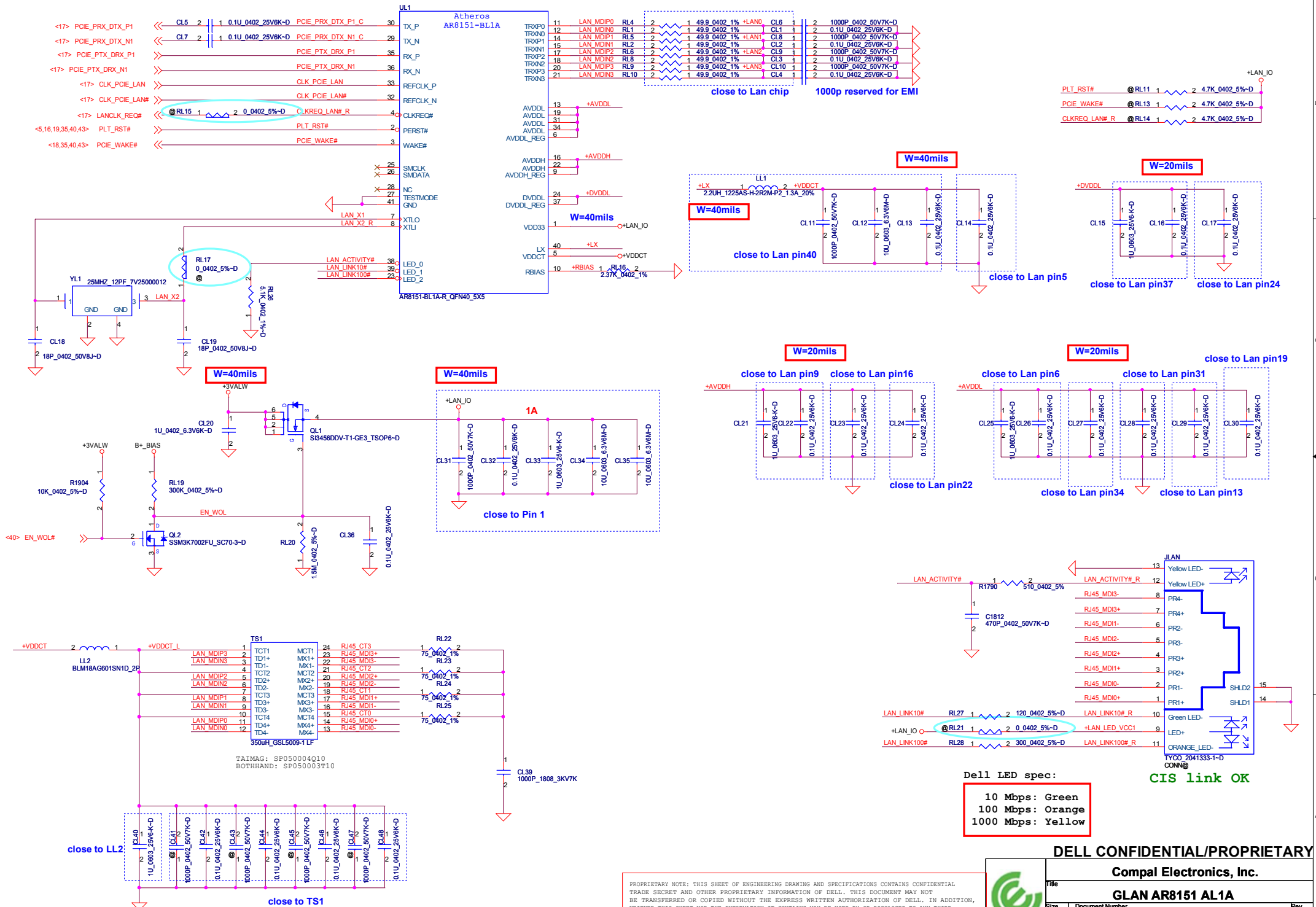
For ATi/Nvidia GPU



For Intel PCH







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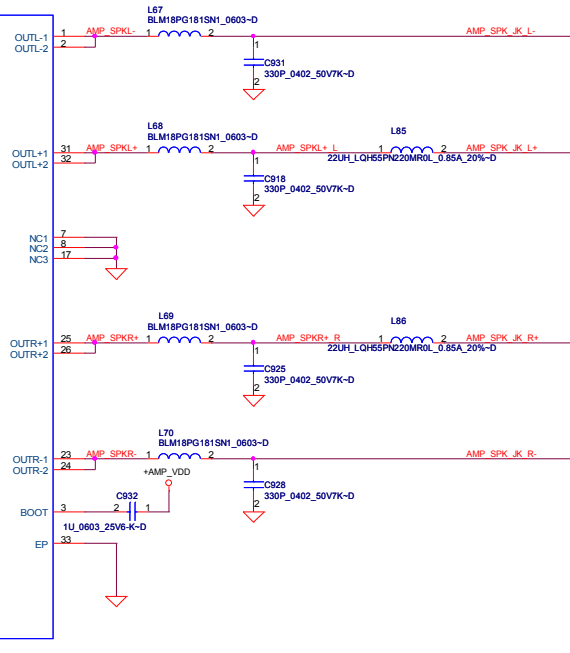
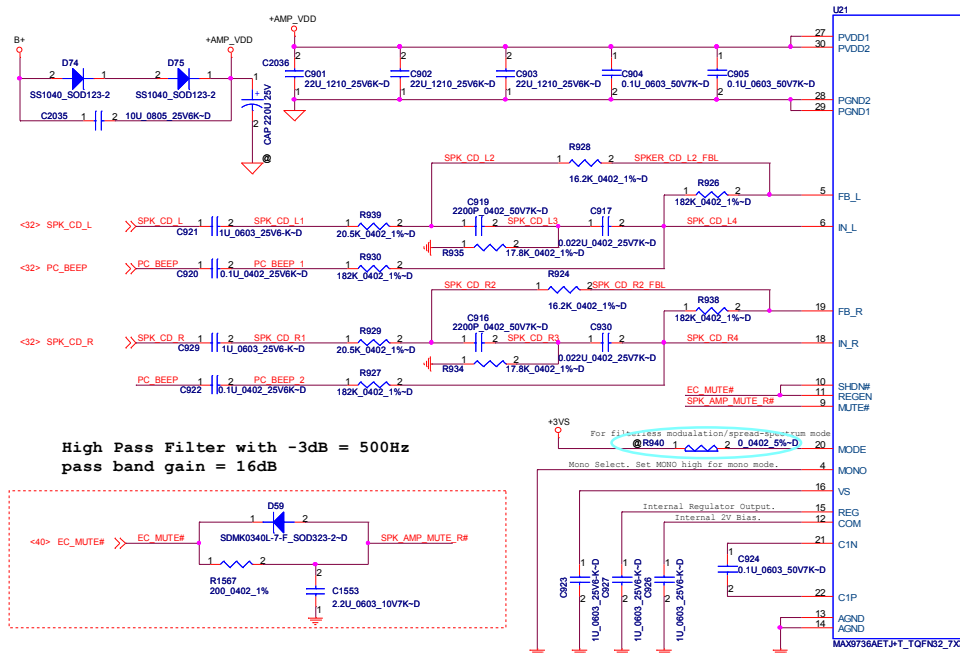
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Title: GLAN AR8151 AL1A

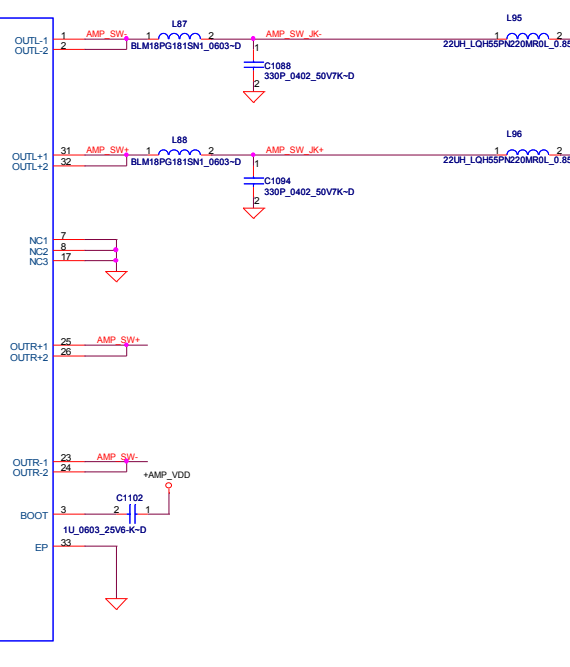
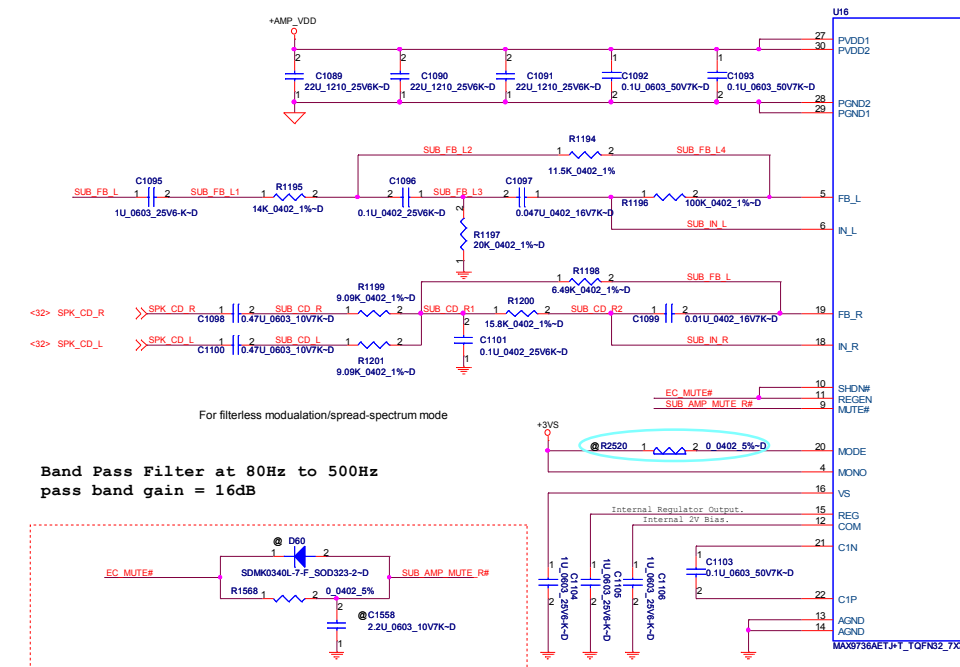
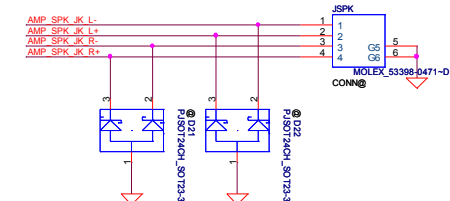
Size: LA-8321P

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SPK Board CONN

each one is 4 ohm/2.5W

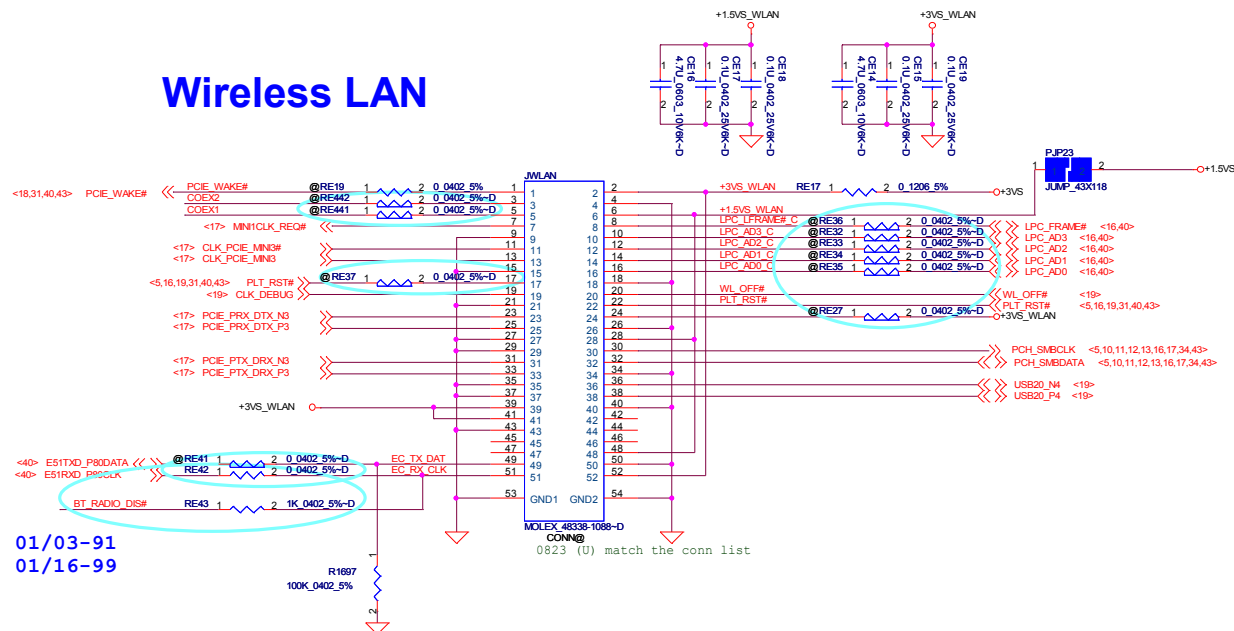


SUB WOOFER amp

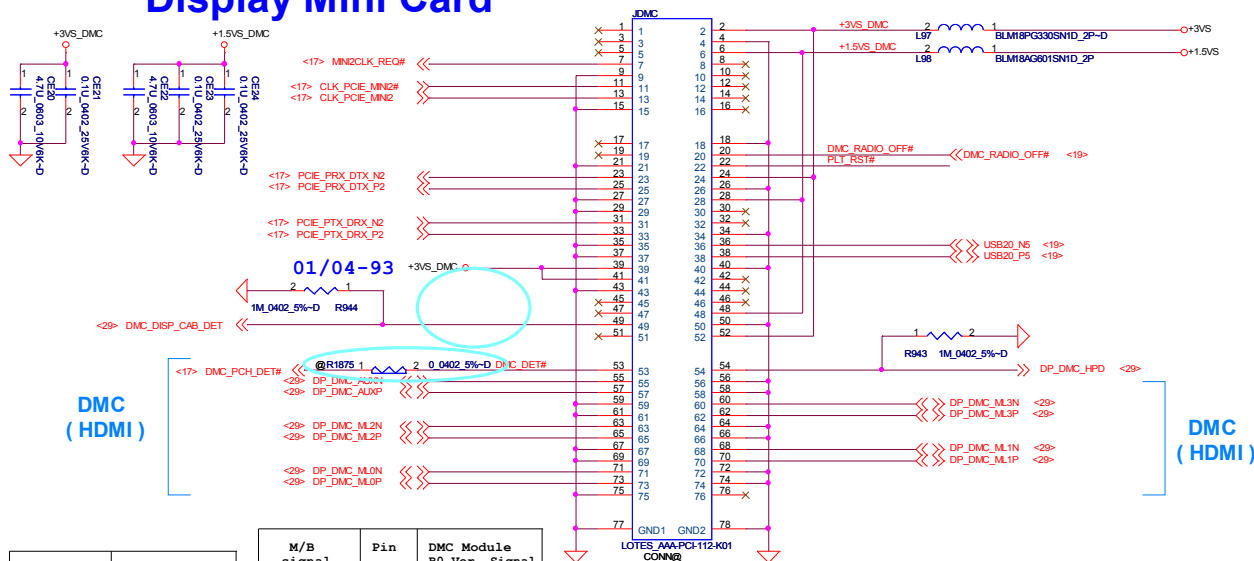
4 ohm/5W

CIS link OK

Wireless LAN

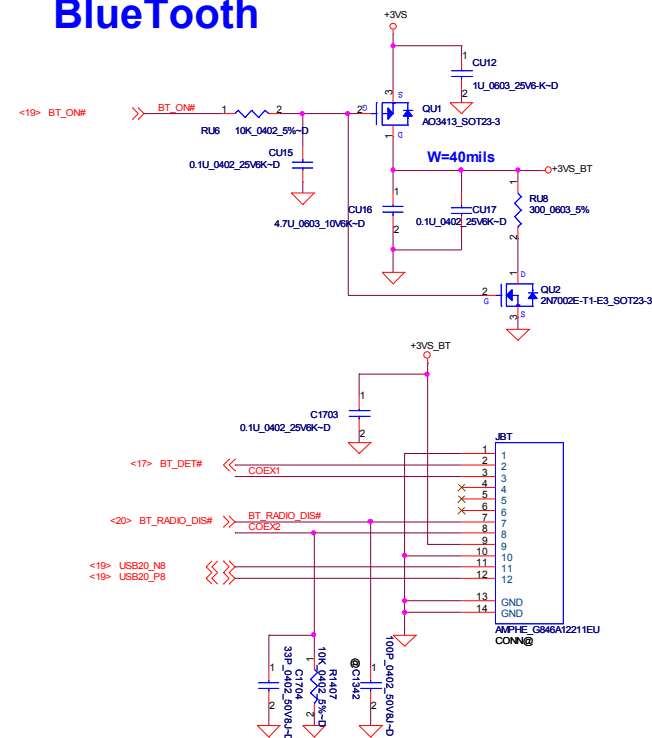


Display Mini Card



PCH DP Port		HDMI usage	M/B signal	Pin	DMC Module B0 Ver. Signal
DDP 0P	TMDS DATA 2		DP_DMC_ML3N	60	DMC_CKN
DDP 0N	TMDS DATA 2#		DP_DMC_ML3P	62	DMC_CKP
DDP 1P	TMDS DATA 1		DP_DMC_ML2N	63	DMC_D0N
DDP 1N	TMDS DATA 1#		DP_DMC_ML2P	65	DMC_D0P
DDP 2P	TMDS DATA 0		DP_DMC_ML1N	68	DMC_D1N
DDP 2N	TMDS DATA 0#		DP_DMC_ML1P	70	DMC_D1P
DDP 3P	TMDS CLK		DP_DMC_ML0N	71	DMC_D2N
DDP 3N	TMDS CLK#		DP_DMC_ML0P	73	DMC_D2P
DDP AUXP	HDMI_CTRL_CLK		DP_DMC_AUXN	55	DMC_DDC_DAT
DDP AUXN	HDMI_CTRL_DAT		DP_DMC_AUXP	57	DMC_DDC_CLK

Bluetooth



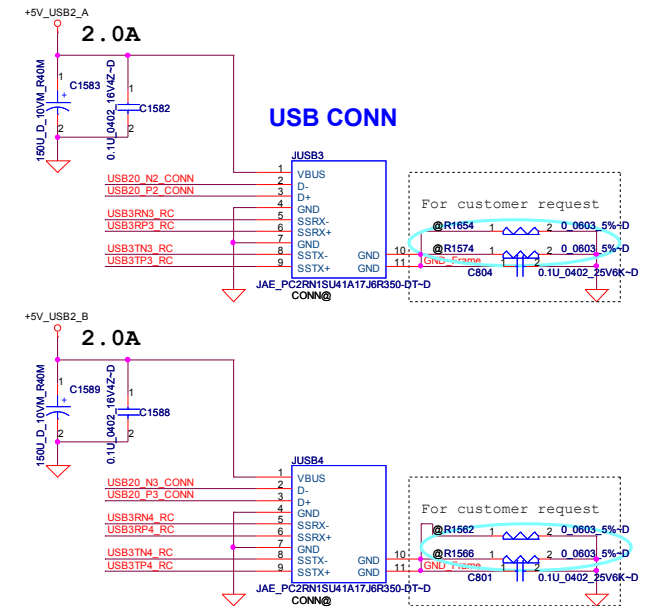
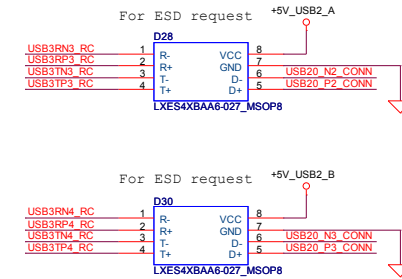
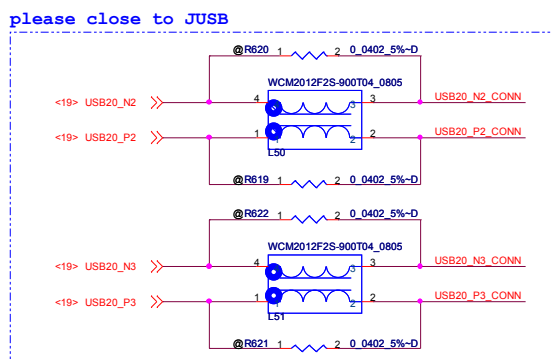
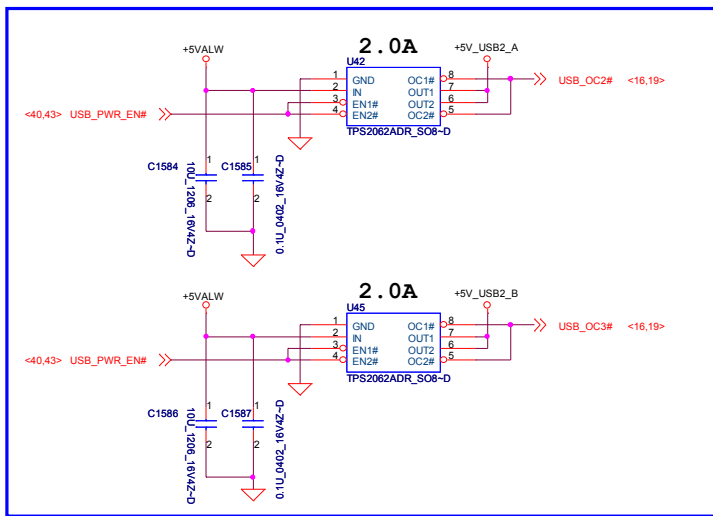
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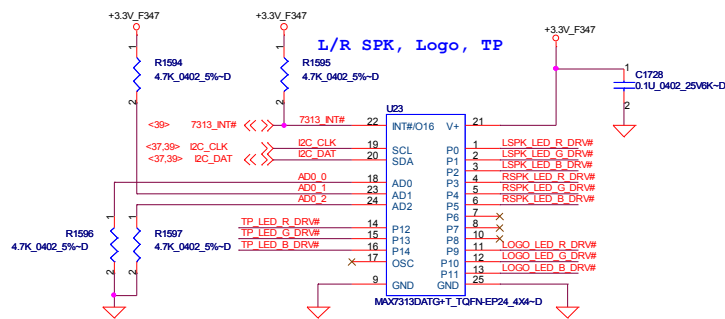
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Mini Card - WLAN/ BT/DMC

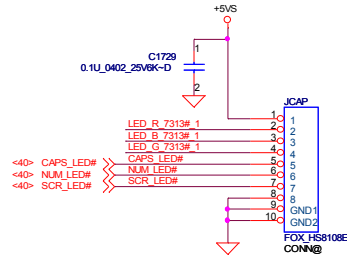
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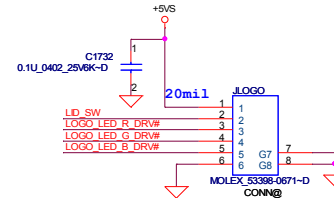




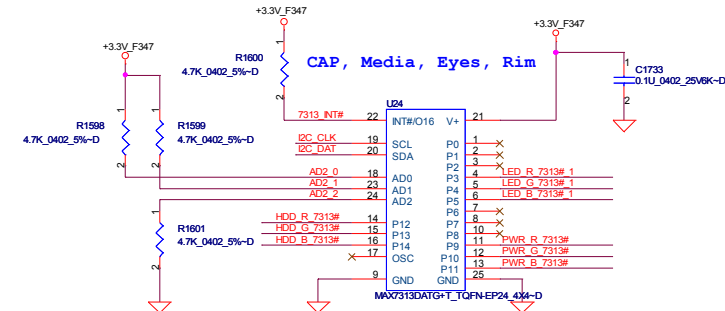
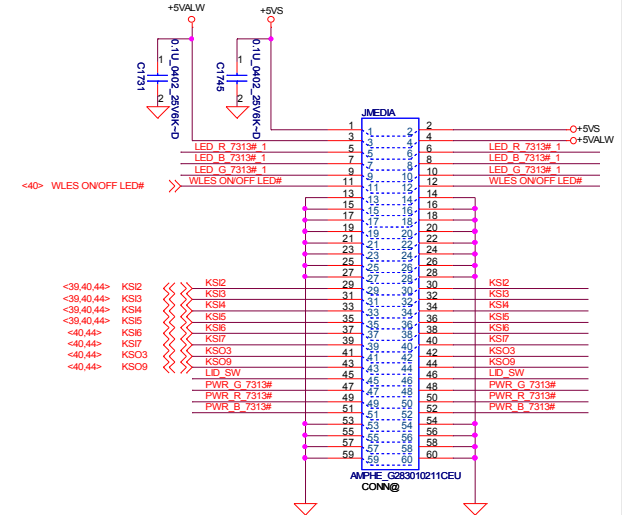
Num LED CONN



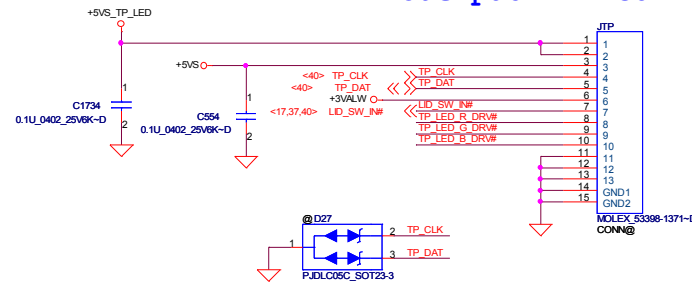
LOGO Board CONN



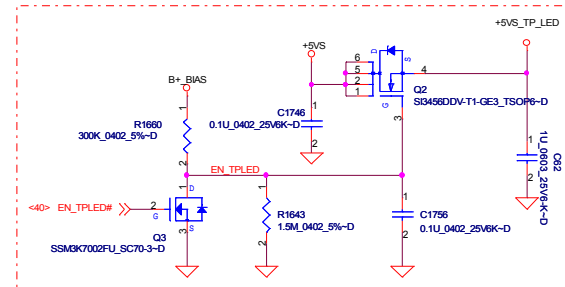
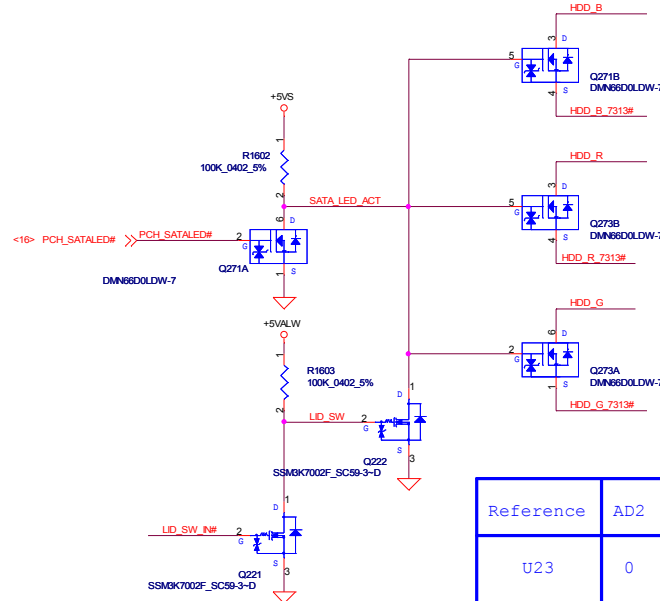
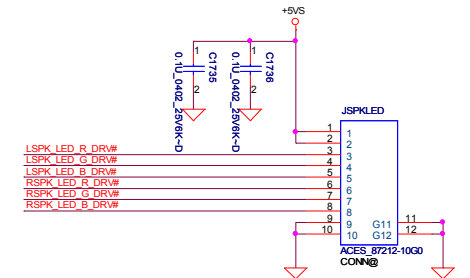
Media Board CONN



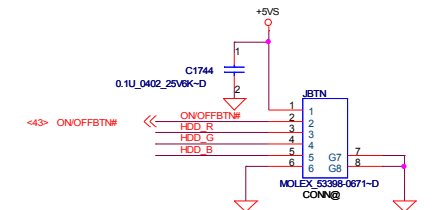
Touchpad LED CONN



SPK LED Board CONN



PWR BTN Board CONN



Reference	AD2	AD1	AD0	MAX7313
U23	0	1	0	L/R Headlight , Logo, TP
U24	0	1	1	Num, CAP , SCR EJECT, REV, PLAY/PAUSE FFWD, Vol_DWN, vol_UP Wireless ON/OFF AWCC Button Alien Adrenaline Power Button Eyes Power Button Rim

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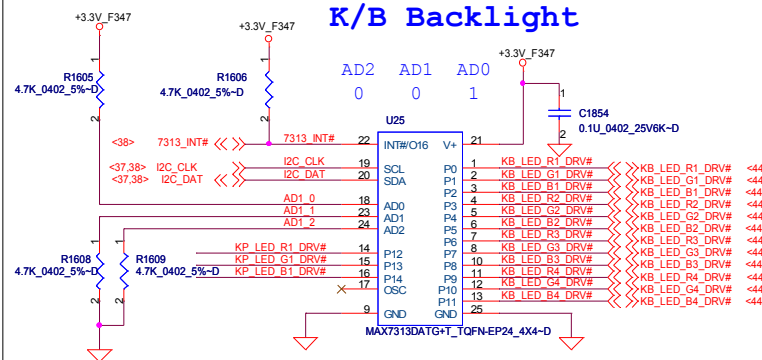


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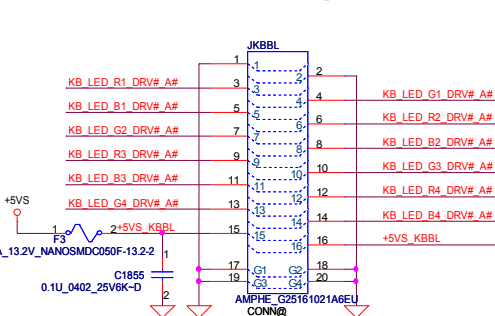
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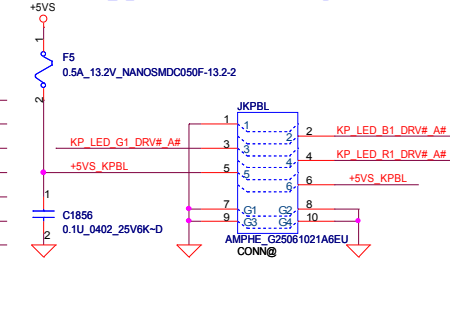
K/B Backlight



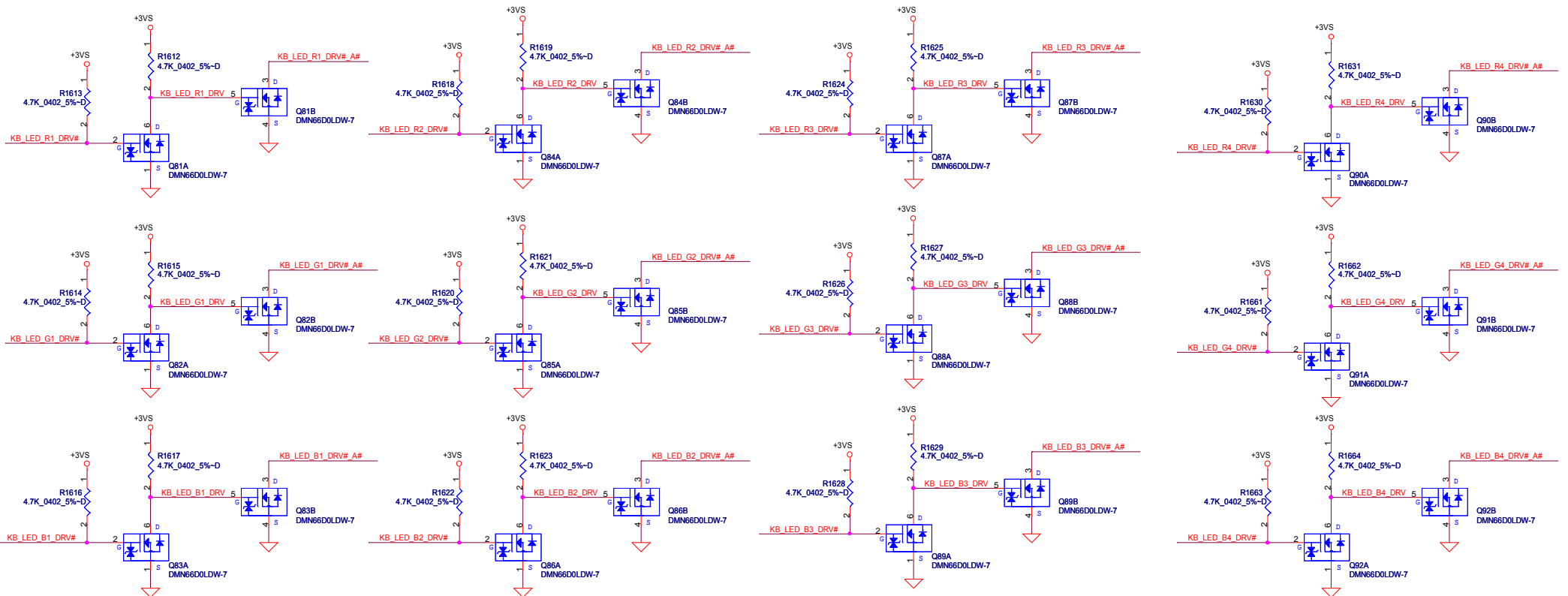
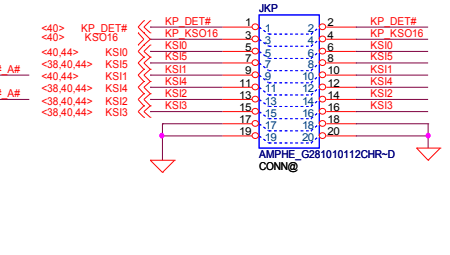
K/B Backlight CONN



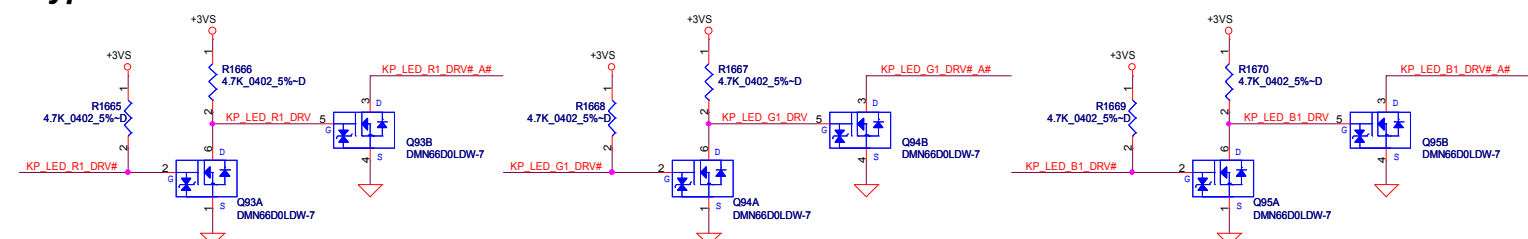
Keypad Backlight CONN

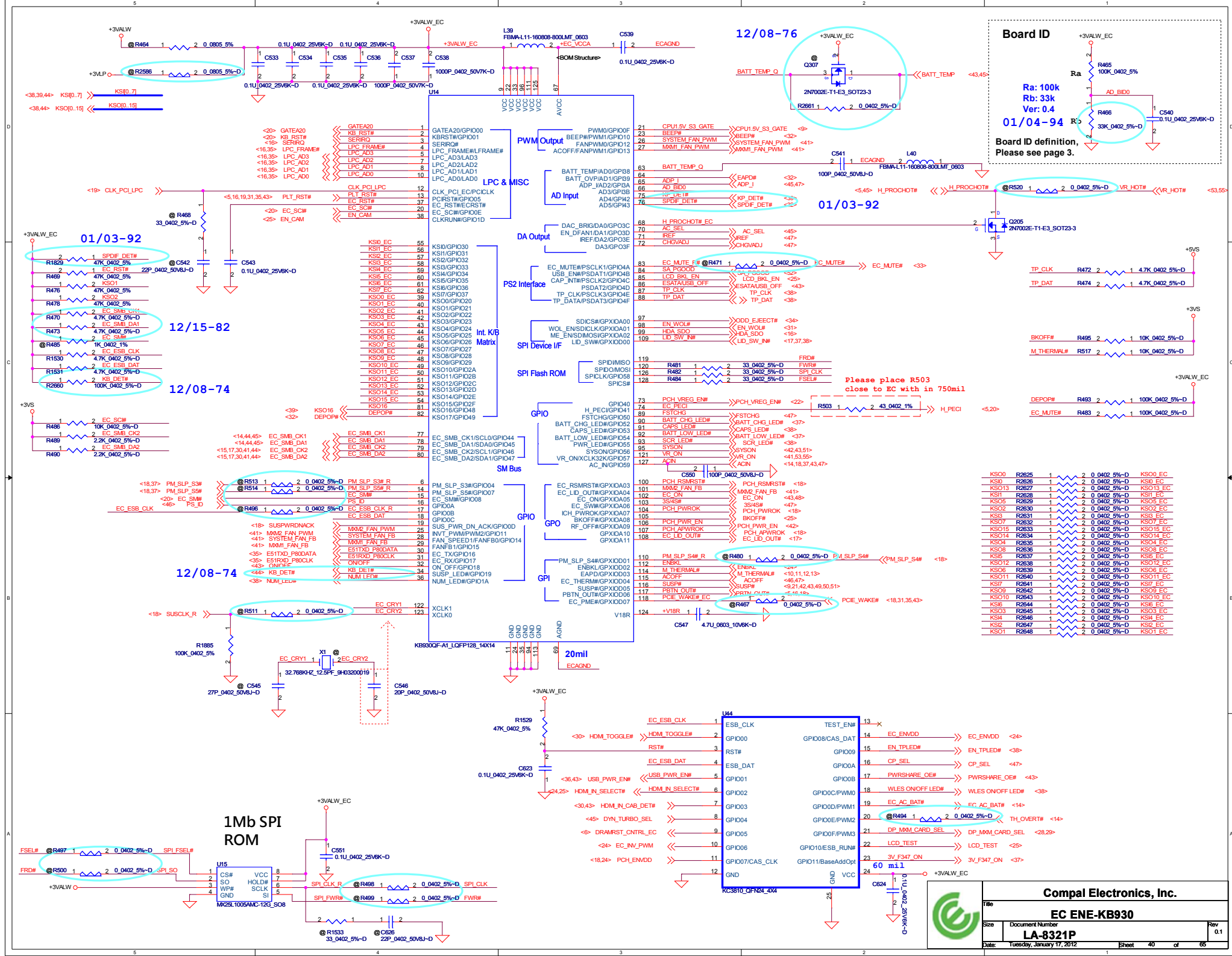


Keypad CONN



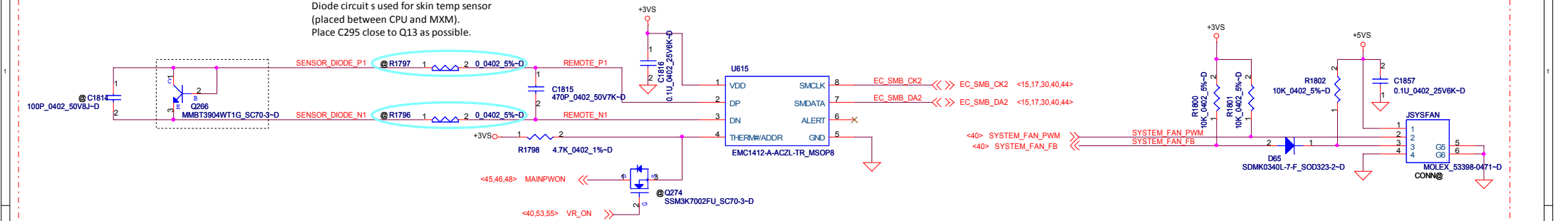
Keypad LED control



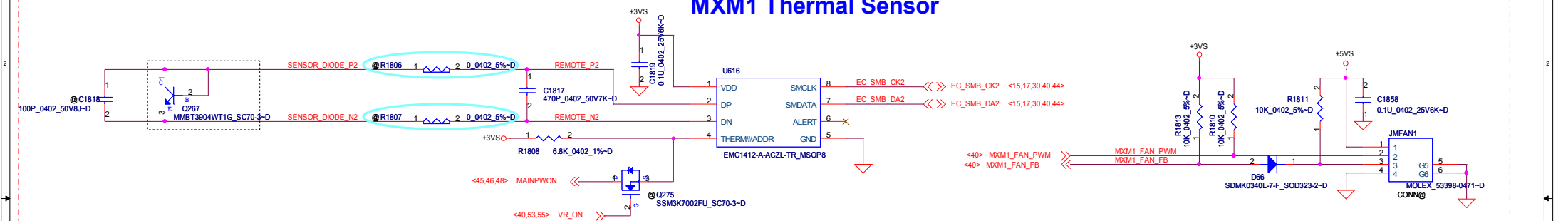


System Thermal Sensor

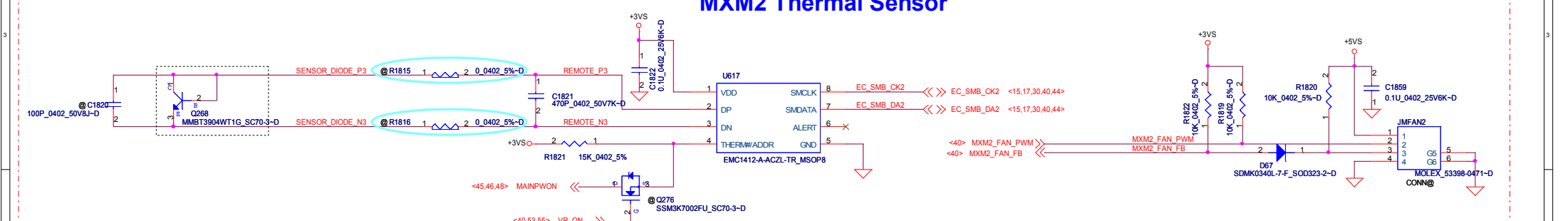
Diode circuit s used for skin temp sensor
(placed between CPU and MXM).
Place C295 close to Q13 as possible.



MXM1 Thermal Sensor



MXM2 Thermal Sensor



Pull up resistor on thermtrip pin	SMBUS address
4.7k	1111_100xb
6.8k	1011_100xb
10k	1001_100xb
15k	1101_100xb
22k	0011_100xb
33k	0111_100xb

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Compal Electronics, Inc.

Title

Theram! Sensor & FAN

Size

Document Number

Rev

0.1

Date

Tuesday, January 17, 2012

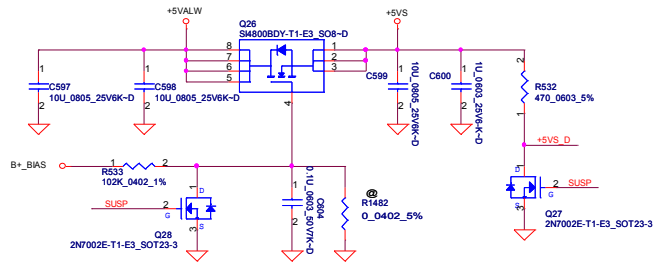
Sheet

41

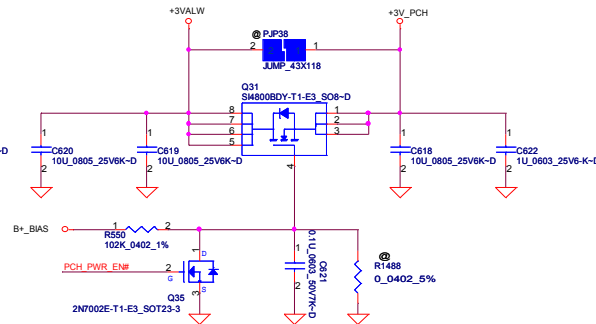
of

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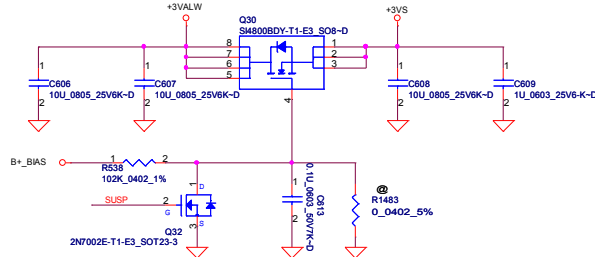
+5VALW to +5VS



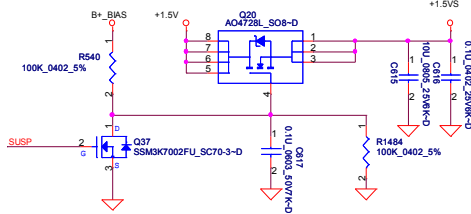
+3VALW to +3V_PCH



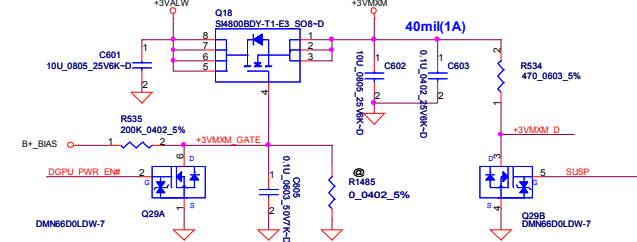
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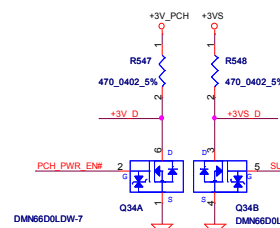
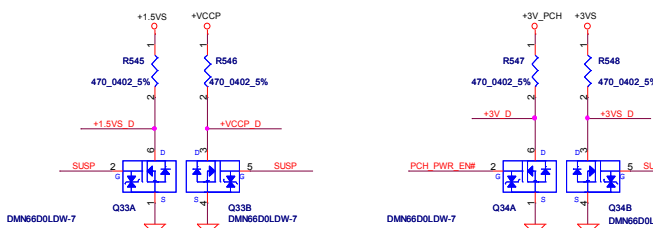
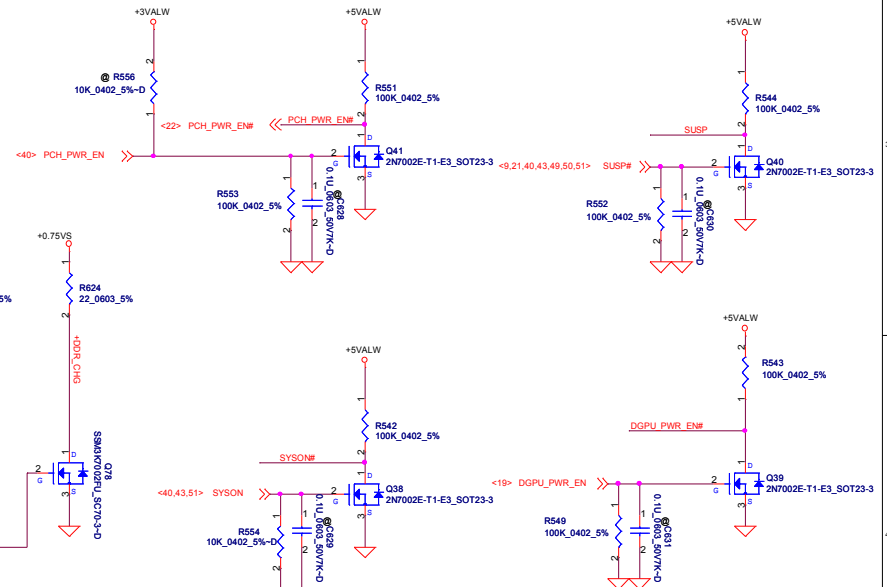
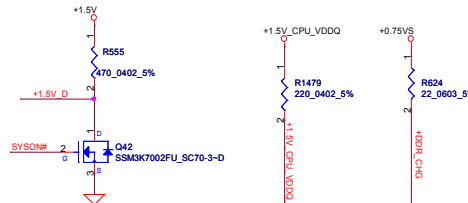
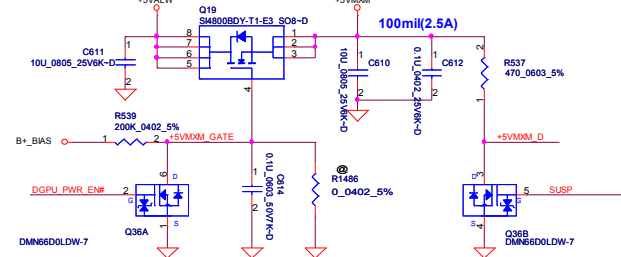
+1.5V To +1.5VS



+3VALW to +3VMXM Transfer



+5VALW to +5VMXM Transfer



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DC/DC Interface

LA-8321P

Date: Tuesday, January 17, 2012

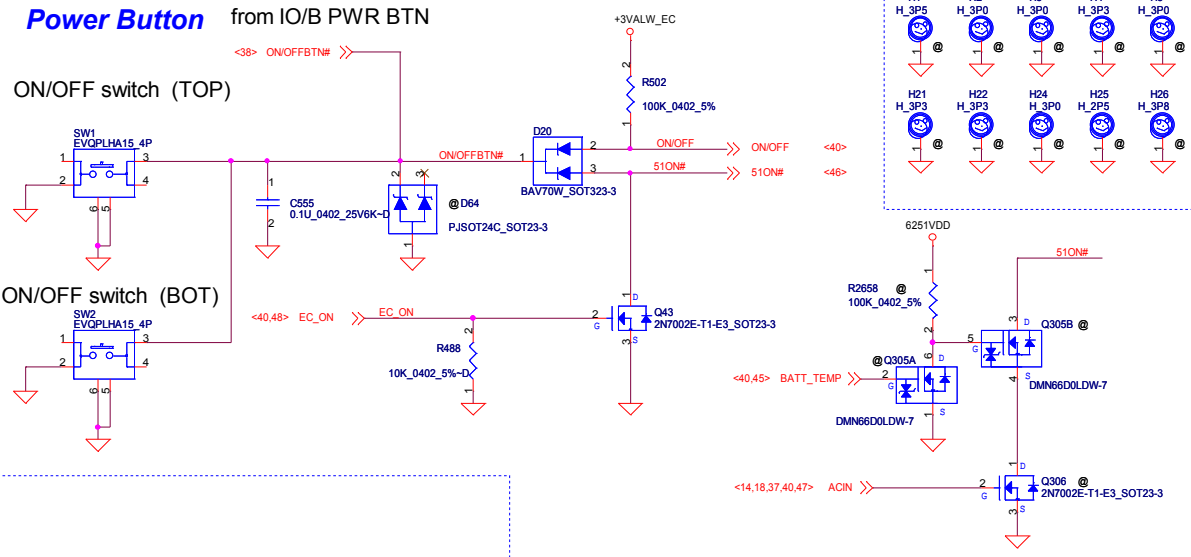
Sheet 42 of 85

Rev 0.1

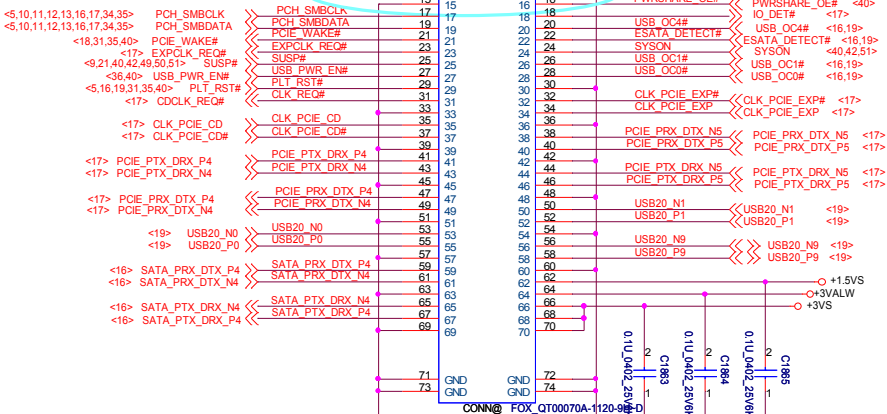
Power Button from IO/B PWR BTN

ON/OFF switch (TOP)

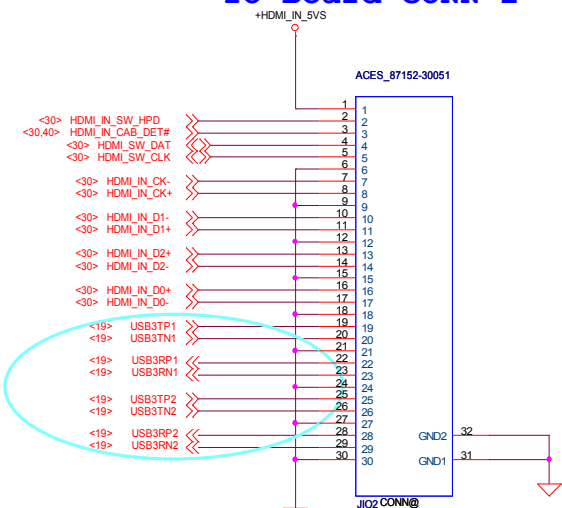
ON/OFF switch (BOT)



12/14-81



IO Board CONN 2



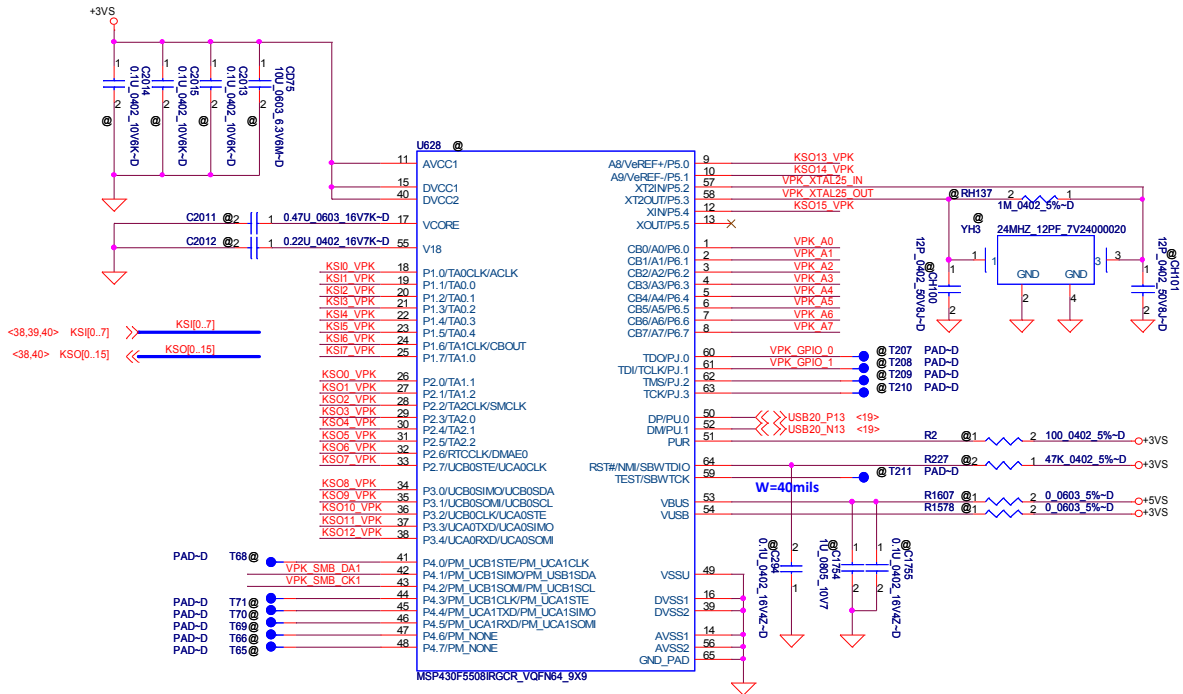
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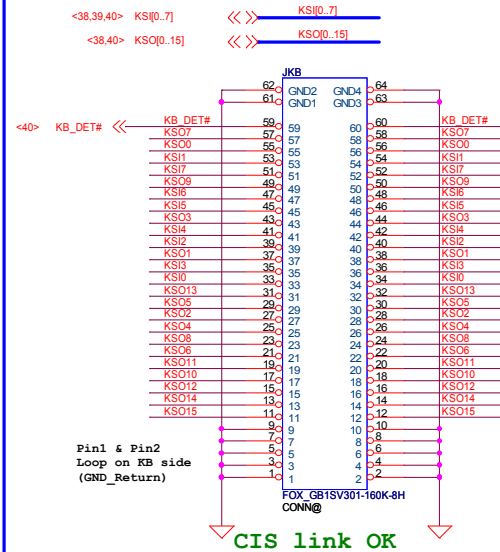
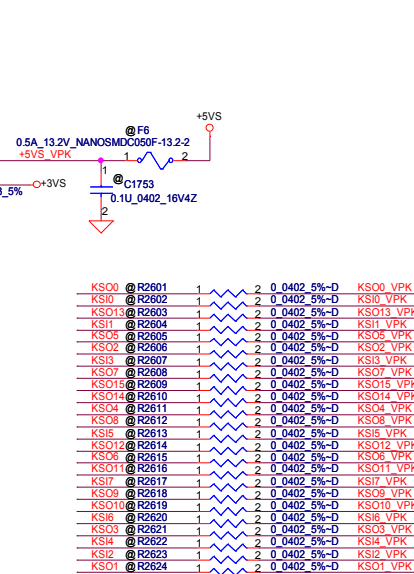
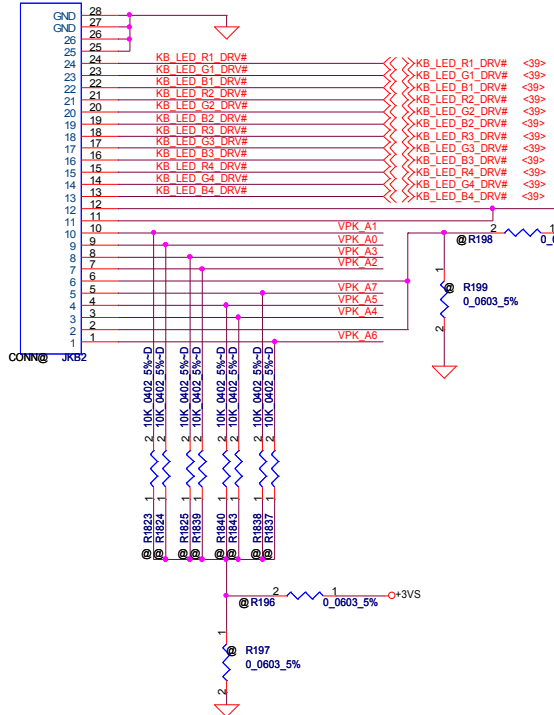
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Size	Document Number	Rev
	LA-8321P	0.1
Date:	Tuesday, January 17, 2012	Sheet 43 of 65

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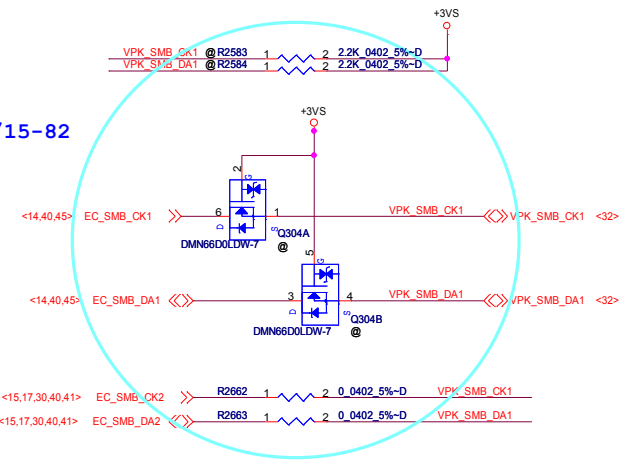


TYCO_2-2041070-6-D

Analog Keys



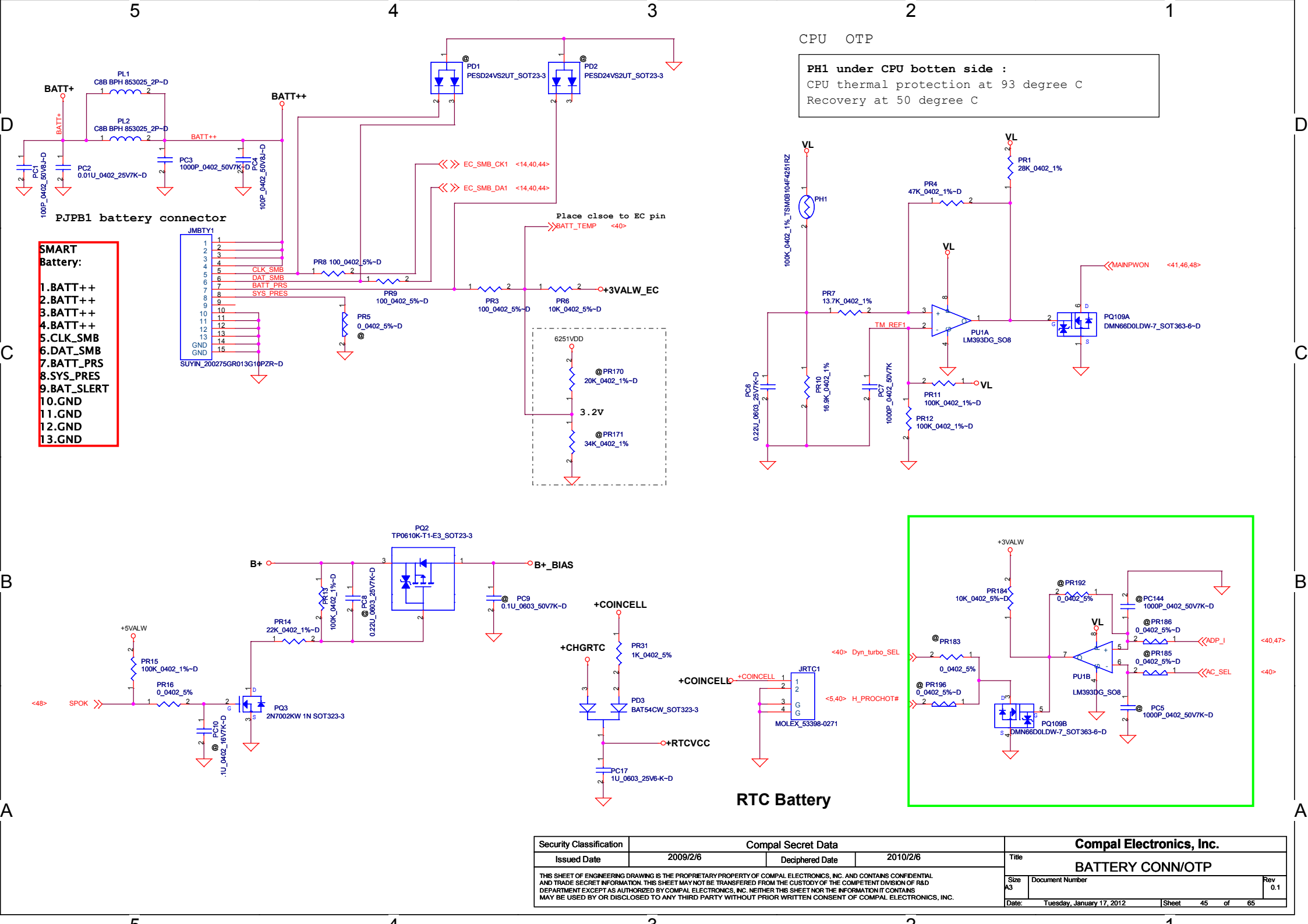
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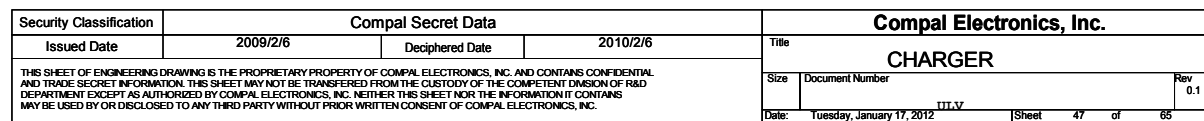


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ELC (3)			
LA-8321P			
Title Size Date	Document Number Tuesday, January 17, 2012	Rev 0.1	Sheet 44 of 65

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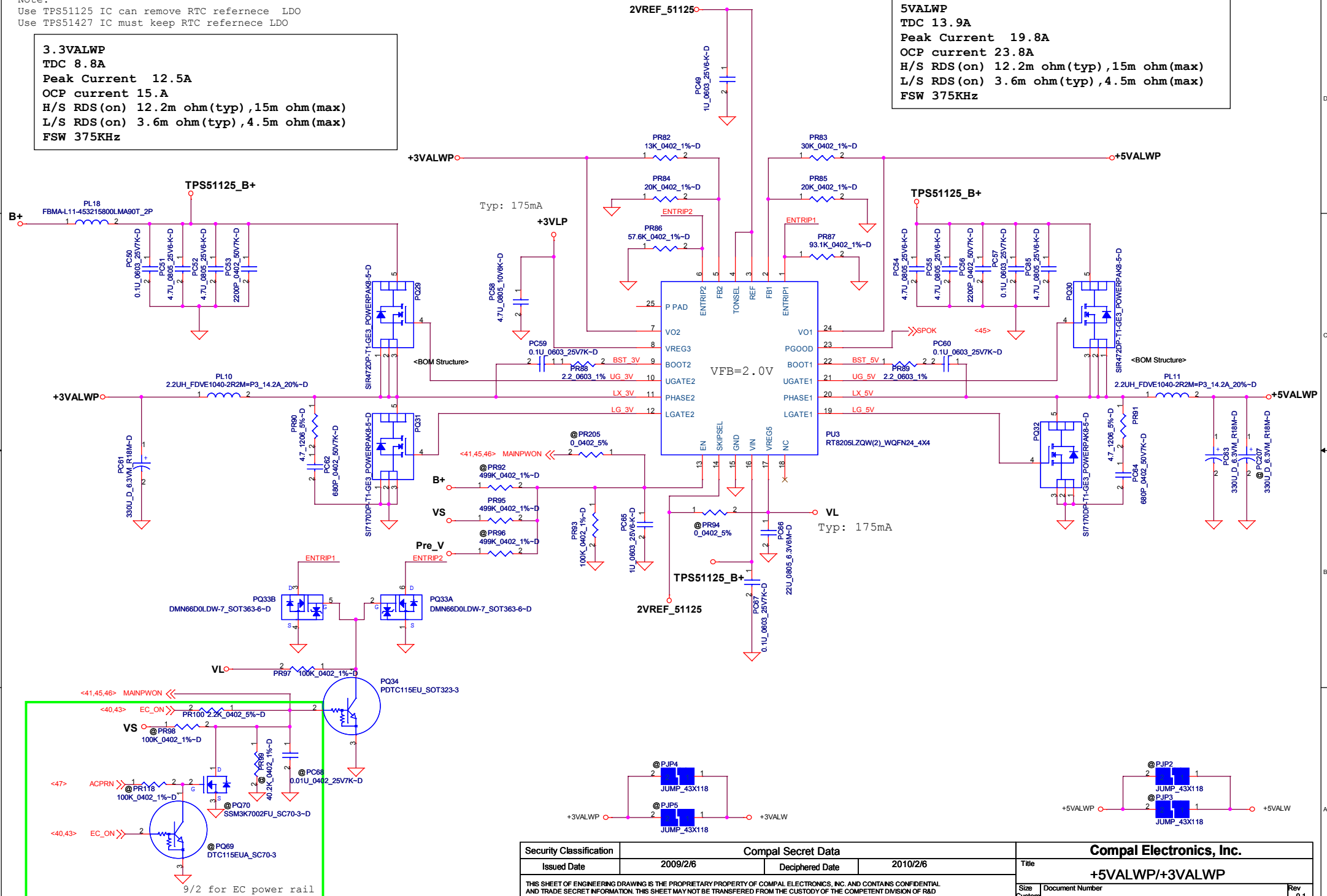




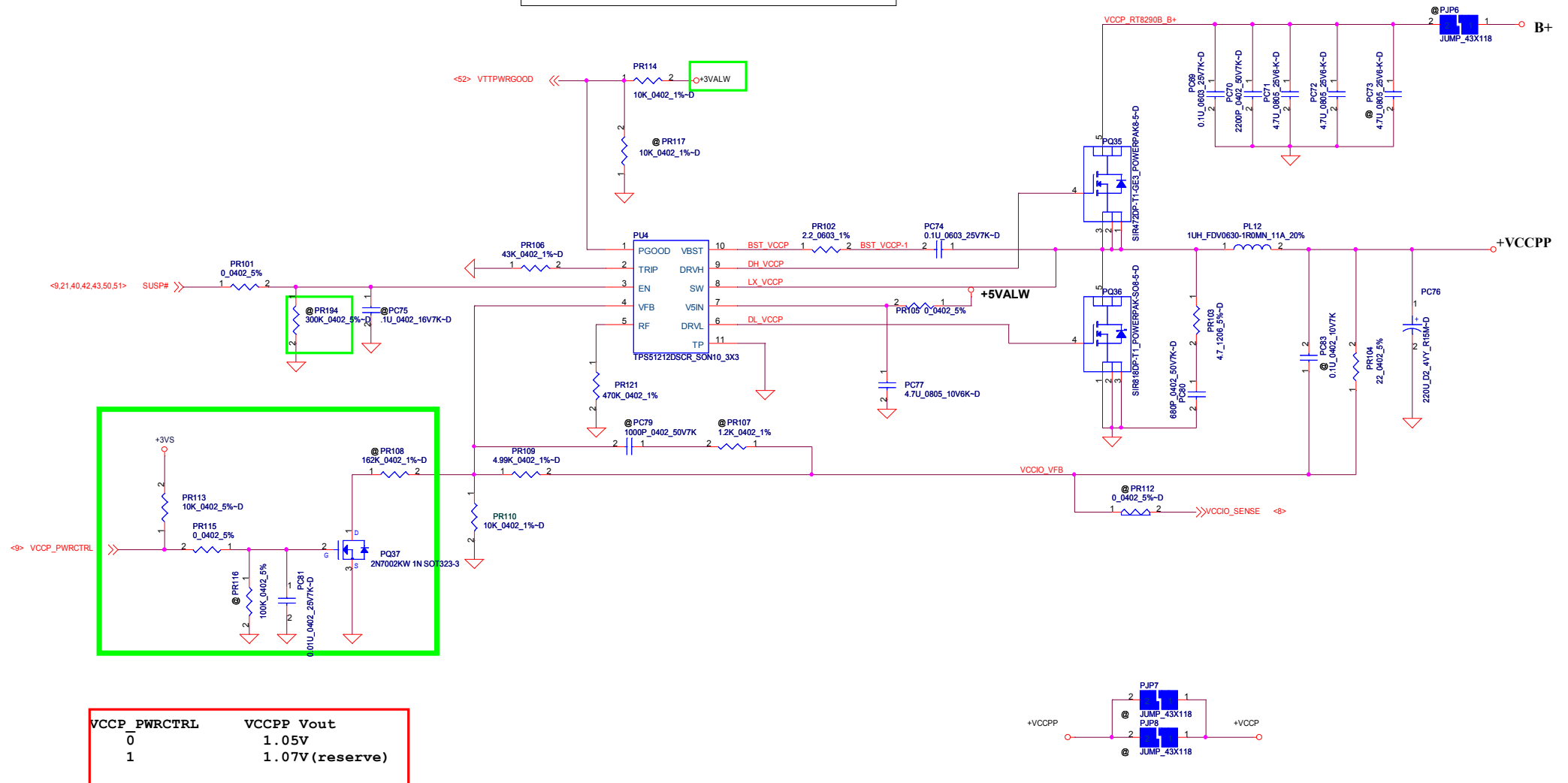
Note:
Use TPS51125 IC can remove RTC refernece LDO
Use TPS51427 IC must keep RTC refernece LDO

3.3VALWP
TDC 8.8A
Peak Current 12.5A
OCP current 15.A
H/S RDS(on) 12.2m ohm(typ) ,15m ohm(max)
L/S RDS(on) 3.6m ohm(typ) ,4.5m ohm(max)
FSW 375KHz

5VALWP
TDC 13.9A
Peak Current 19.8A
OCP current 23.8A
H/S RDS(on) 12.2m ohm(typ) ,15m ohm(max)
L/S RDS(on) 3.6m ohm(typ) ,4.5m ohm(max)
FSW 375KHz

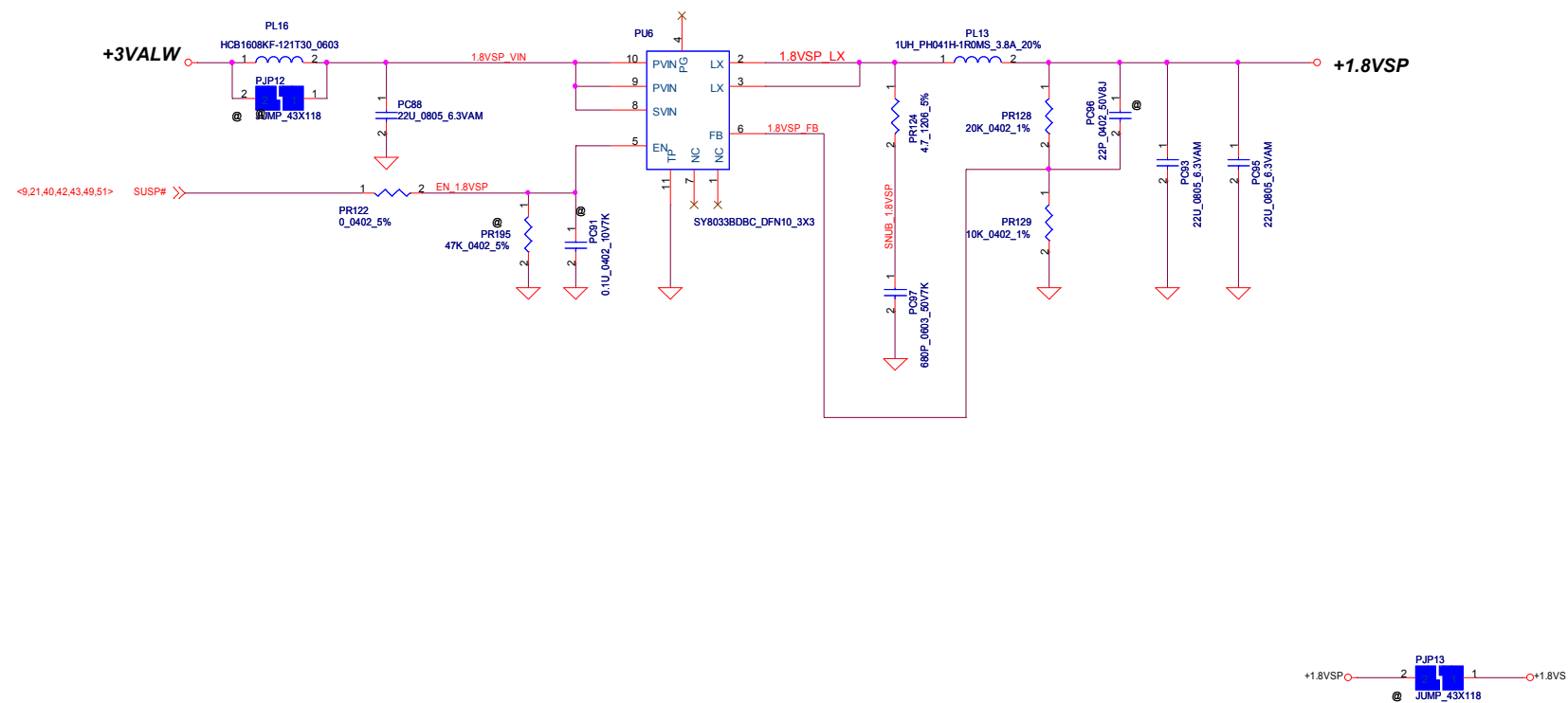


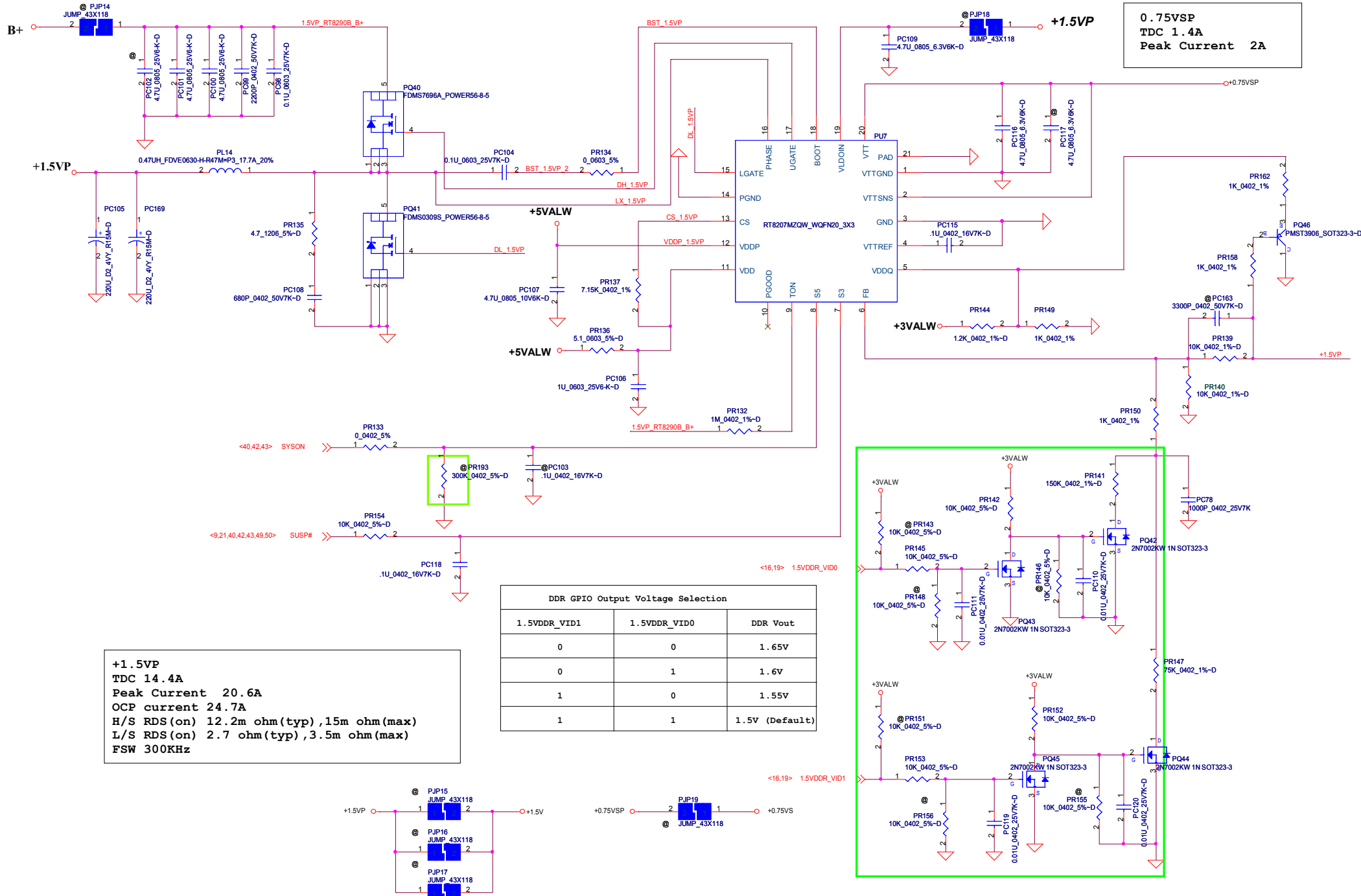
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+VCCPP
TDC 10.7A
Peak Current 15.3A
OCP current 18.3A
H/S RDS(on) 12.2m ohm(typ), 15m ohm(max)
L/S RDS(on) 2.7m ohm(typ), 3.3m ohm(max)
FSW 300KHz
```



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				Custom	
Date: Tuesday, January 17, 2012				Sheet	49 of 65

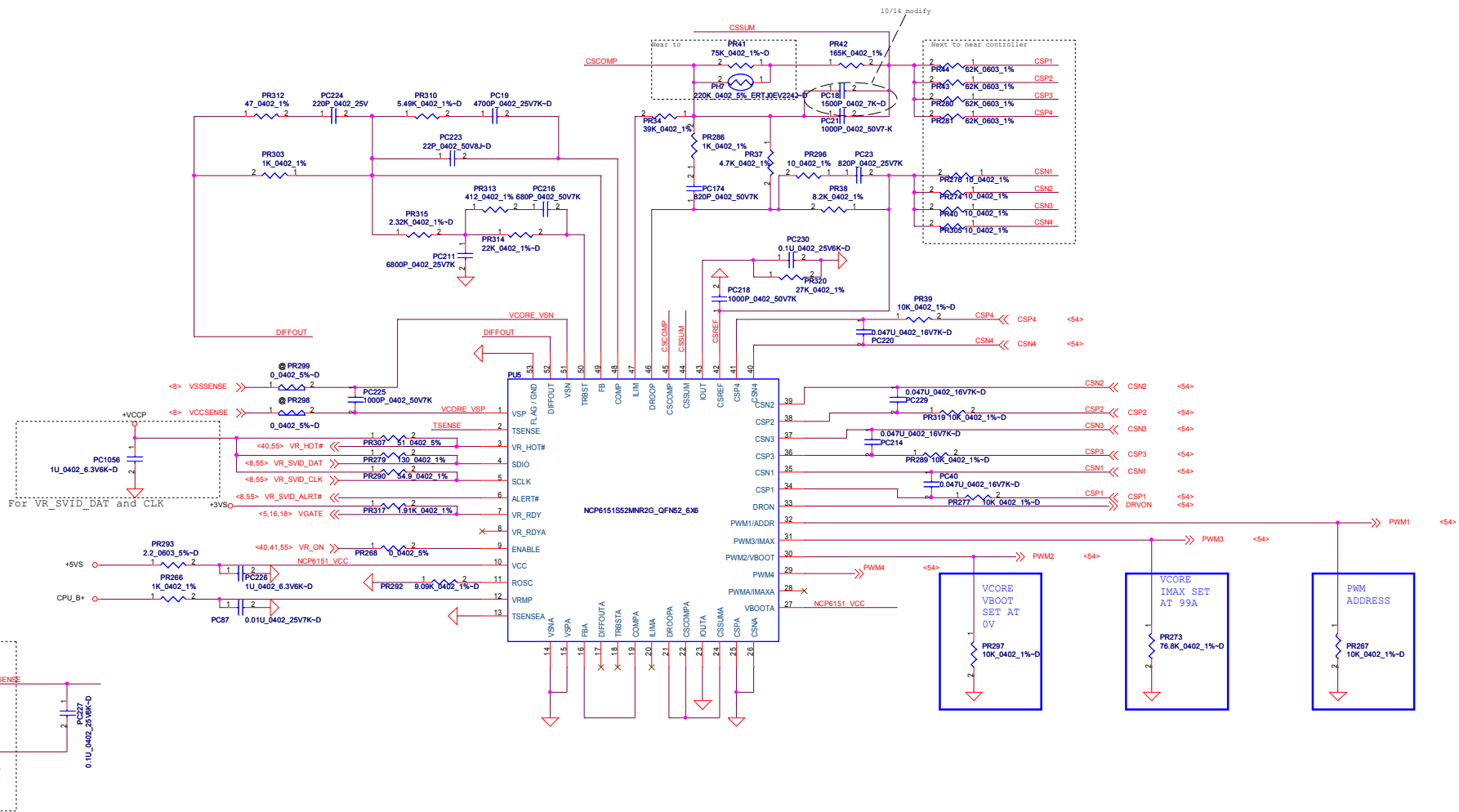
+1.8VSP
 TDC 0.9A
 Peak Current 1.2A
 OCP current 3A



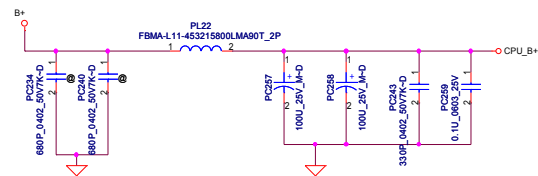
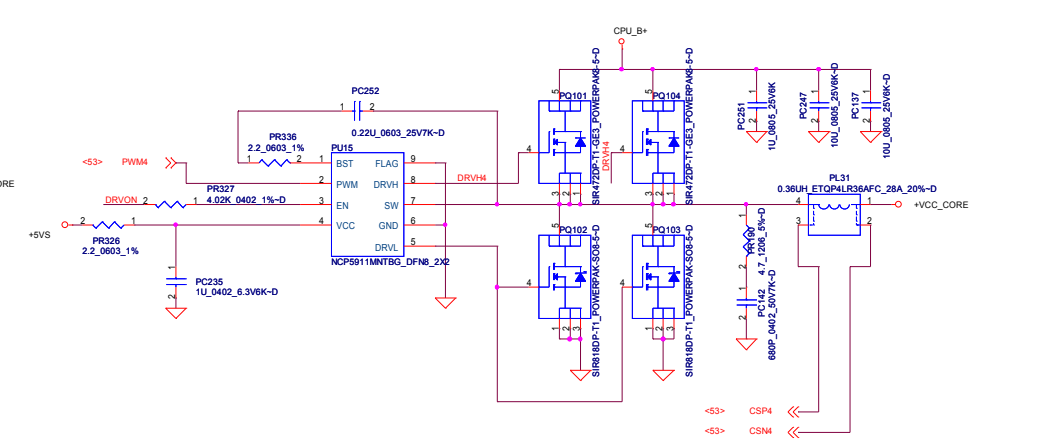
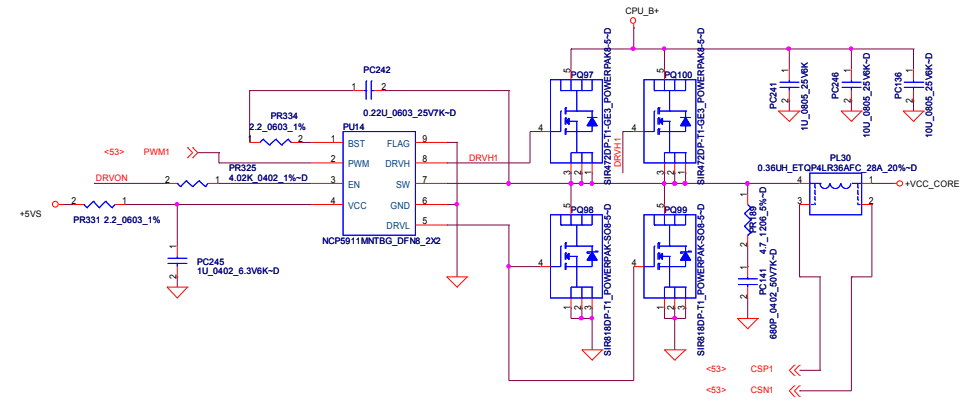
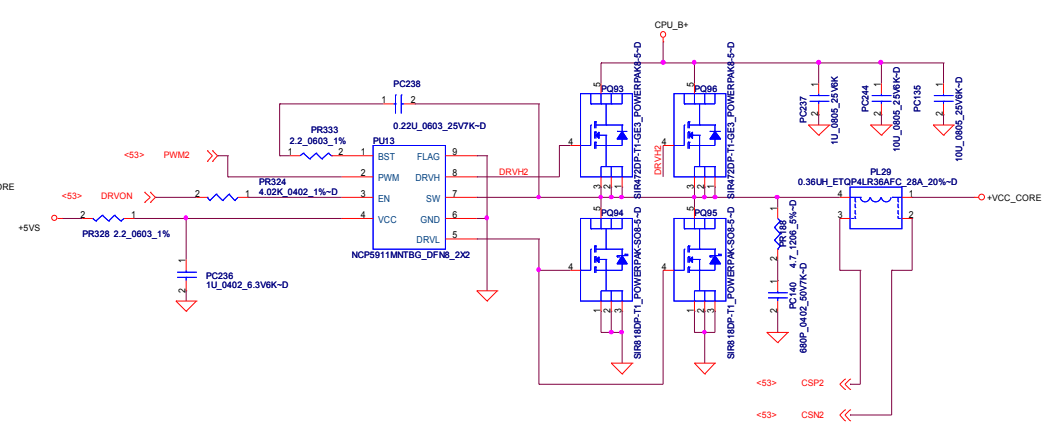
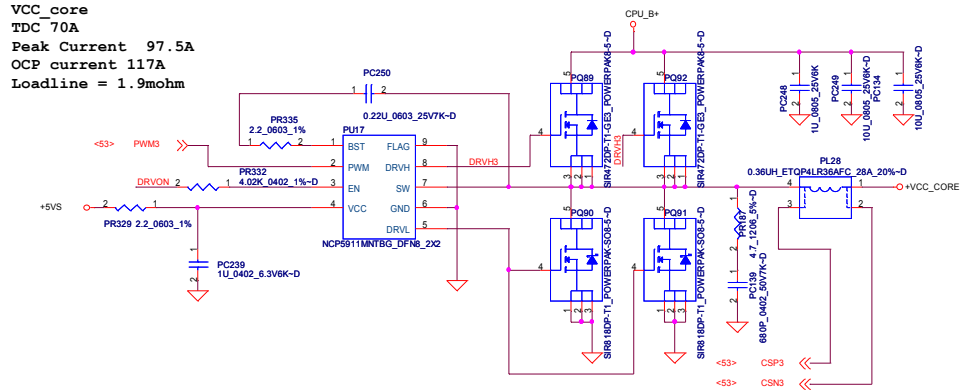


+1.5VP
TDC 14.4A
Peak Current 20.6A
OCP current 24.7A
H/S RDS(on) 12.2m ohm(typ), 15m ohm(max)
L/S RDS(on) 2.7 ohm(typ), 3.5m ohm(max)
FSW 300KHz

0.75VSP
TDC 1.4A
Peak Current 2A

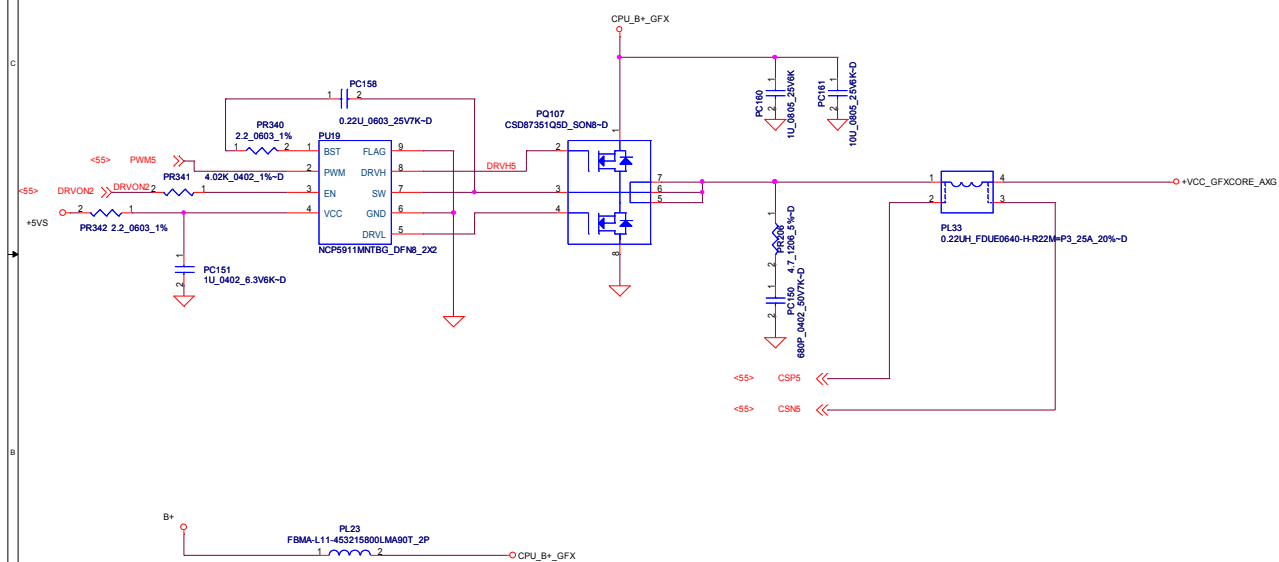
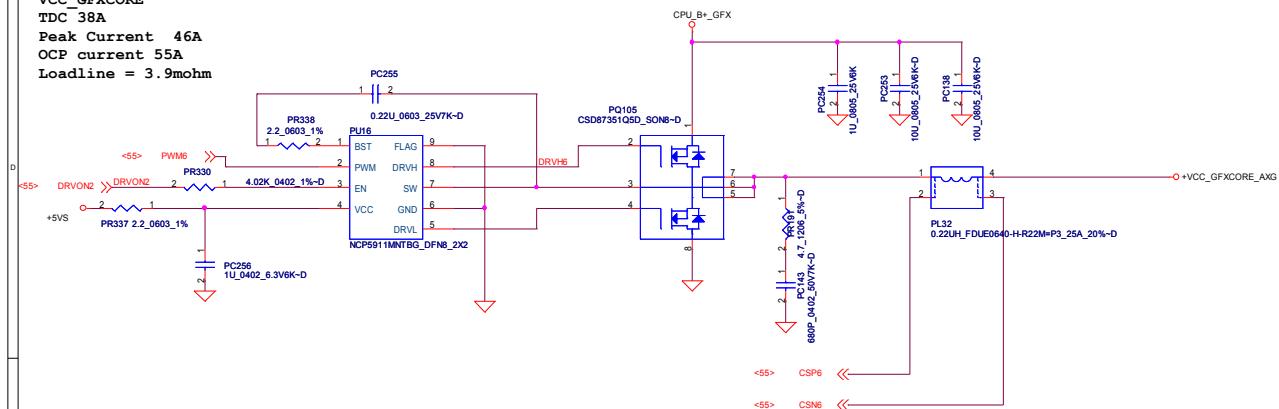


VCC_core
TDC 70A
Peak Current 97.5A
OCP current 117A
Loadline = 1.9mohm

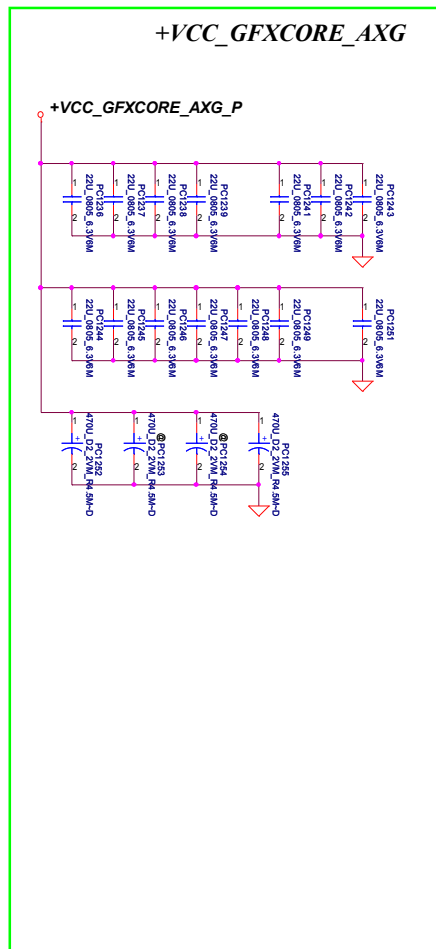
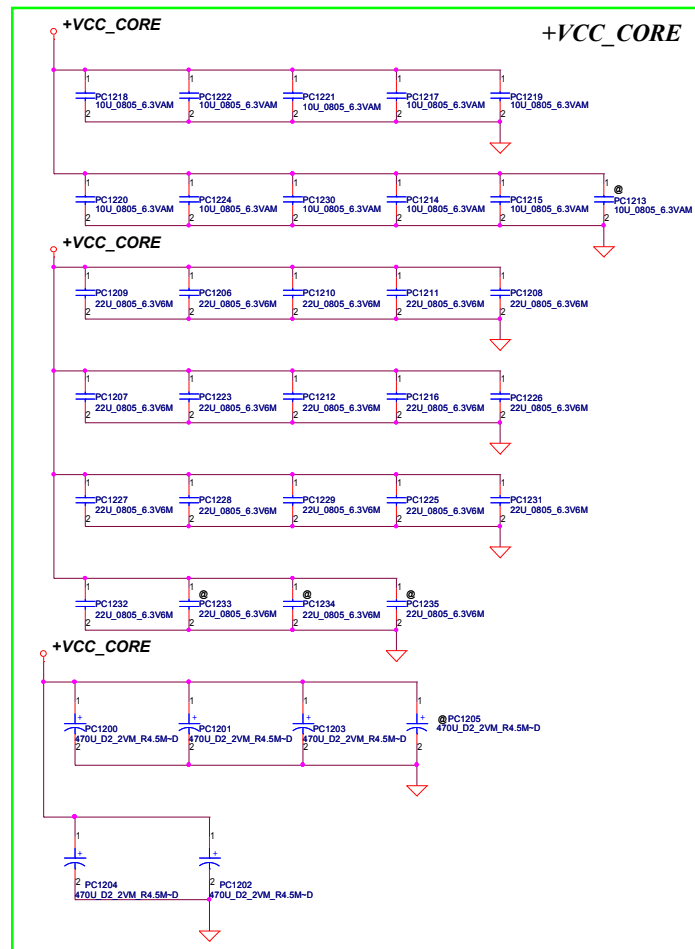


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				Date:	Tuesday, January 17, 2012	Sheet

VCC_GFXCORE
TDC_38A
Peak Current 46A
OCP current 55A
Loadline = 3.9mohm



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Issued Date	2011/02/08	Deciphered Date	2012/02/08	Title	GFXCORE2
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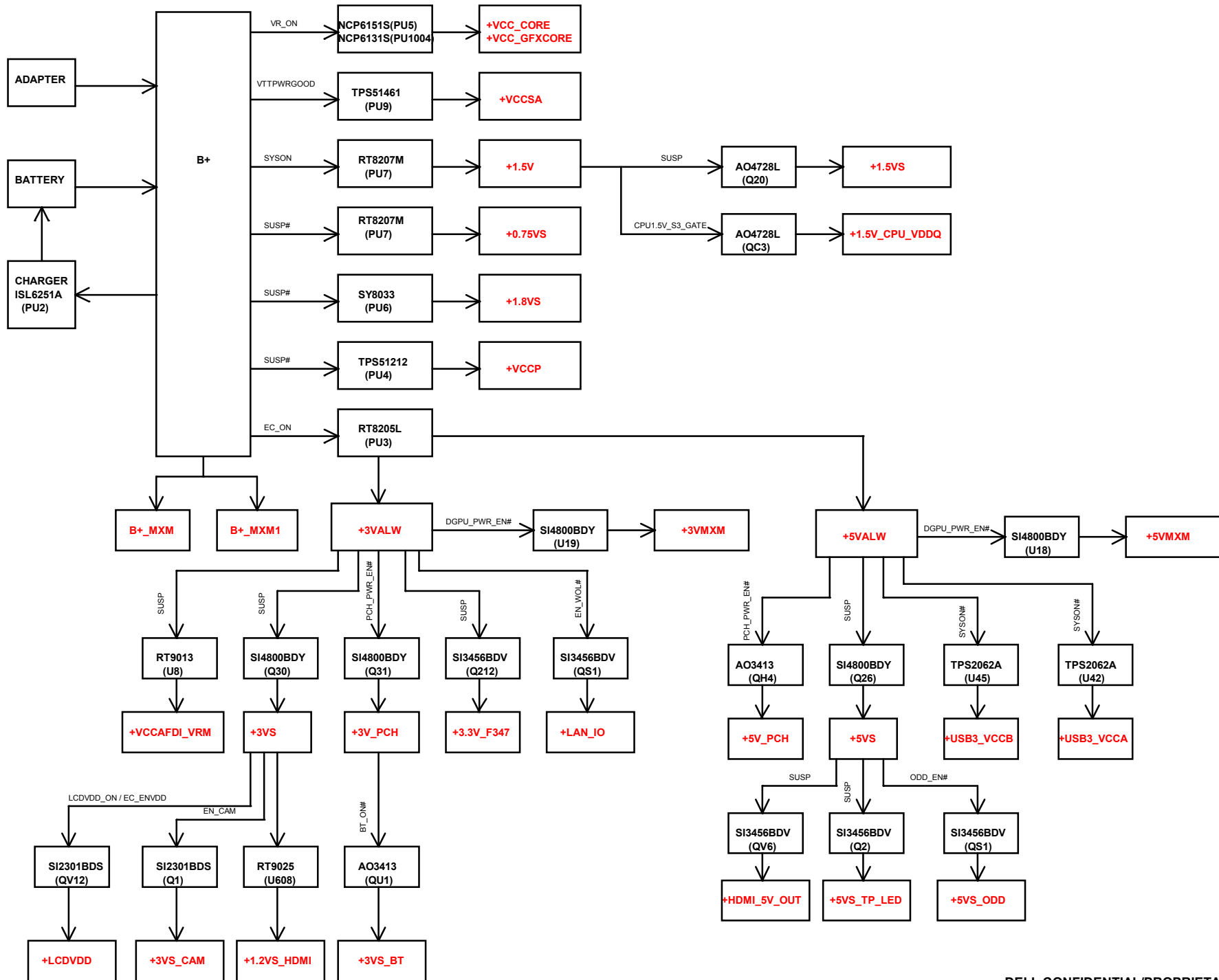


Below is 458544_CRV_PDDG_0.5 Table 5-8.

Socket Bottom	5 x 22 pF (0805) 5 x (0805) no-stuff sites
Socket Top	7 x 22 pF (0805) 2 x (0805) no-stuff sites

+VCCP

The diagram illustrates the bottom of the socket PCB layout. It features a central horizontal strip of components, including capacitors (C1277, C1278, C1279, C1280, C1281, C1282, C1283, C1284, C1285, C1286, C1287, C1288, C1289, C1290, C1291, C1292, C1293, C1294, C1295, C1296, C1297, C1298, C1299, C1300, C1301, C1302, C1303, C1304, C1305, C1306, C1307, C1308, C1309, C1310, C1311, C1312, C1313, C1314, C1315, C1316, C1317, C1318, C1319, C1320, C1321, C1322, C1323, C1324, C1325, C1326, C1327, C1328, C1329, C1330, C1331, C1332, C1333, C1334, C1335, C1336, C1337, C1338, C1339, C1340, C1341, C1342, C1343, C1344, C1345, C1346, C1347, C1348, C1349, C1350, C1351, C1352, C1353, C1354, C1355, C1356, C1357, C1358, C1359, C1360, C1361, C1362, C1363, C1364, C1365, C1366, C1367, C1368, C1369, C1370, C1371, C1372, C1373, C1374, C1375, C1376, C1377, C1378, C1379, C1380, C1381, C1382, C1383, C1384, C1385, C1386, C1387, C1388, C1389, C1390, C1391, C1392, C1393, C1394, C1395, C1396, C1397, C1398, C1399, C1400, C1401, C1402, C1403, C1404, C1405, C1406, C1407, C1408, C1409, C1410, C1411, C1412, C1413, C1414, C1415, C1416, C1417, C1418, C1419, C1420, C1421, C1422, C1423, C1424, C1425, C1426, C1427, C1428, C1429, C1430, C1431, C1432, C1433, C1434, C1435, C1436, C1437, C1438, C1439, C1440, C1441, C1442, C1443, C1444, C1445, C1446, C1447, C1448, C1449, C1450, C1451, C1452, C1453, C1454, C1455, C1456, C1457, C1458, C1459, C1460, C1461, C1462, C1463, C1464, C1465, C1466, C1467, C1468, C1469, C1470, C1471, C1472, C1473, C1474, C1475, C1476, C1477, C1478, C1479, C1480, C1481, C1482, C1483, C1484, C1485, C1486, C1487, C1488, C1489, C1490, C1491, C1492, C1493, C1494, C1495, C1496, C1497, C1498, C1499, C1500, C1501, C1502, C1503, C1504, C1505, C1506, C1507, C1508, C1509, C1510, C1511, C1512, C1513, C1514, C1515, C1516, C1517, C1518, C1519, C1520, C1521, C1522, C1523, C1524, C1525, C1526, C1527, C1528, C1529, C1530, C1531, C1532, C1533, C1534, C1535, C1536, C1537, C1538, C1539, C1540, C1541, C1542, C1543, C1544, C1545, C1546, C1547, C1548, C1549, C1550, C1551, C1552, C1553, C1554, C1555, C1556, C1557, C1558, C1559, C1560, C1561, C1562, C1563, C1564, C1565, C1566, C1567, C1568, C1569, C1570, C1571, C1572, C1573, C1574, C1575, C1576, C1577, C1578, C1579, C1580, C1581, C1582, C1583, C1584, C1585, C1586, C1587, C1588, C1589, C1590, C1591, C1592, C1593, C1594, C1595, C1596, C1597, C1598, C1599, C1600, C1601, C1602, C1603, C1604, C1605, C1606, C1607, C1608, C1609, C1610, C1611, C1612, C1613, C1614, C1615, C1616, C1617, C1618, C1619, C1620, C1621, C1622, C1623, C1624, C1625, C1626, C1627, C1628, C1629, C1630, C1631, C1632, C1633, C1634, C1635, C1636, C1637, C1638, C1639, C1640, C1641, C1642, C1643, C1644, C1645, C1646, C1647, C1648, C1649, C1650, C1651, C1652, C1653, C1654, C1655, C1656, C1657, C1658, C1659, C1660, C1661, C1662, C1663, C1664, C1665, C1666, C1667, C1668, C1669, C1670, C1671, C1672, C1673, C1674, C1675, C1676, C1677, C1678, C1679, C1680, C1681, C1682, C1683, C1684, C1685, C1686, C1687, C1688, C1689, C1690, C1691, C1692, C1693, C1694, C1695, C1696, C1697, C1698, C1699, C1700, C1701, C1702, C1703, C1704, C1705, C1706, C1707, C1708, C1709, C1710, C1711, C1712, C1713, C1714, C1715, C1716, C1717, C1718, C1719, C1720, C1721, C1722, C1723, C1724, C1725, C1726, C1727, C1728, C1729, C1730, C1731, C1732, C1733, C1734, C1735, C1736, C1737, C1738, C1739, C1740, C1741, C1742, C1743, C1744, C1745, C1746, C1747, C1748, C1749, C1750, C1751, C1752, C1753, C1754, C1755, C1756, C1757, C1758, C1759, C1760, C1761, C1762, C1763, C1764, C1765, C1766, C1767, C1768, C1769, C1770, C1771, C1772, C1773, C1774, C1775, C1776, C1777, C1778, C1779, C1780, C1781, C1782, C1783, C1784, C1785, C1786, C1787, C1788, C1789, C1790, C1791, C1792, C1793, C1794, C1795, C1796, C1797, C1798, C1799, C1800, C1801, C1802, C1803, C1804, C1805, C1806, C1807, C1808, C1809, C1810, C1811, C1812, C1813, C1814, C1815, C1816, C1817, C1818, C1819, C1820, C1821, C1822, C1823, C1824, C1825, C1826, C1827, C1828, C1829, C1830, C1831, C1832, C1833, C1834, C1835, C1836, C1837, C1838, C1839, C1840, C1841, C1842, C1843, C1844, C1845, C1846, C1847, C1848, C1849, C1850, C1851, C1852, C1853, C1854, C1855, C1856, C1857, C1858, C1859, C1860, C1861, C1862, C1863, C1864, C1865, C1866, C1867, C1868, C1869, C1870, C1871, C1872, C1873, C1874, C1875, C1876, C1877, C1878, C1879, C1880, C1881, C1882, C1883, C1884, C1885, C1886, C1887, C1888, C1889, C1890, C1891, C1892, C1893, C1894, C1895, C1896, C1897, C1898, C1899, C1900, C1901, C1902, C1903, C1904, C1905, C1906, C1907, C1908, C1909, C1910, C1911, C1912, C1913, C1914, C1915, C1916, C1917, C1918, C1919, C1920, C1921, C1922, C1923,



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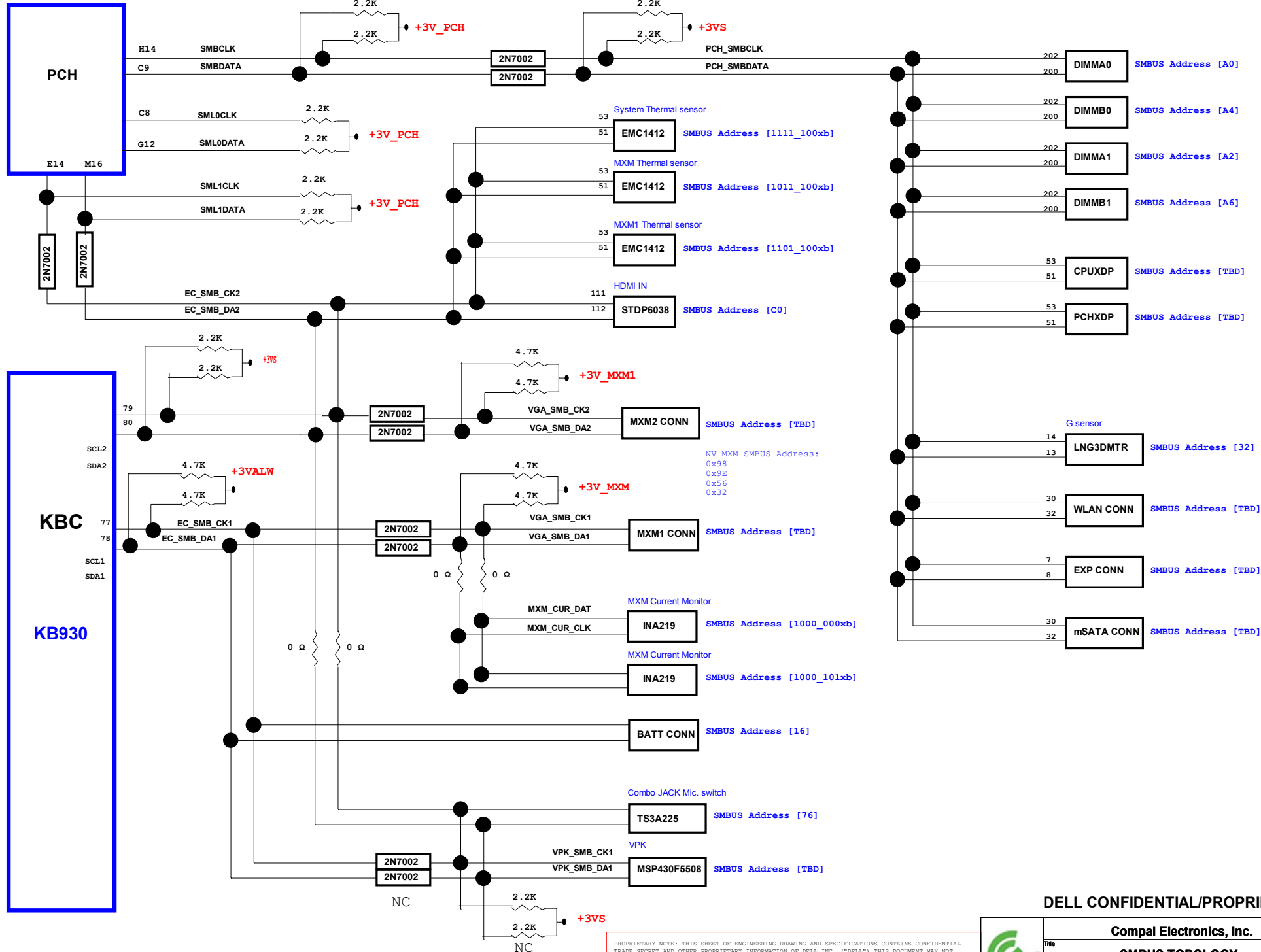
Power Rail

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	LA-6561P	1.0
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Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	52	PWR-VCCSA_COREP	10/05	Alan	SMT NC part (PR262)	BOM structure change to "Do Not Display"	X01
2	45	BATTERY CONN/OTP	10/13	Alan	EC detect the battery is insertion when only adapter in	BATT_PRS pull high from +3VALW to +3VALW_EC	
3	53	CPUCORE1	10/14	Alan	For Intel VCORE test	Change PC18=1500P	X01
4	55	GFXCORE1	10/14	Alan	For Intel Vgfx test	Change PC1042=180P, PR628=4.12K, PC1041=560P, PR622=PR626=36.5K	X01
5	47	CHARGER	10/17	Alan	For charger voltage and current setting	Change PR71=68.1K, PR75=12.7K, PR182=1.43K, PR45=0.005	X01
6	48, 51	3VALWP/5VALWP, +1.5VP/0.75VSP	10/17	Alan	Find tune OC setting	Change PR86 =57.6K, PR87 =93.1K, PR137 =7.15K	X01
7	45, 46	DCIN/DECTOR	10/25	Alan	"US California Energy Efficiency" (Reserve 130mW for no battery mode)	Refer to page 45 PR170, PR171 and page 46 modify	X01
8	46, 47	CHARGER	11/11	Alan	NC revise parts	NC: PD6, PQ23,PQ68, PD11, PD12, PQ20,	X01
9	**	ALL	11/11	Alan	Change source for affected by "Thailand flood"	Refer to PT-Build_SMT MEMO	X01
10	**	ALL	12/13	Alan	Change 0 ohm to short pad	PR5, PR196, PR186, PR185, PR300, PR46, PR112, PR262, PR298, PR299, PR642, PR643	X01
11	50	1.8VSP	12/14	Alan	PL13 footprint is too small to find the 2nd source	Change PL13 footprint for 2nd source	X01
12	48, 54, 56	DCIN/DECTOR	12/23	Alan	PL18, PL22, PL23 footprint DFB modify to larger size	PL18, PL22, PL23 update CIS PART	X02
13	47	DCIN/DECTOR	12/24	Alan	Revise PR164 for EE Jeffy request		X02
14	45	OTP Value modify	01/11	Alan	CPU OTP caculate and test value 93C not mach with schematic 90C	Double check with thermal team and agree change to 93C	X02

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1	34	SATA HDD	2011/10/4	Compal	HDD EA fial	Add HDD re-driver *3, Add RS11~RS37, US1~US3, CS51~CS68	X01
2	35	WLAN	2011/10/4	Compal	LPC pin assignment error for 80 port	Re-assignment pin	X01
3	40	EC	2011/10/10	Compal	There are double power source for EC	Depop R464	X01
4	40, 18	PCH, EC	2011/10/10	Compal	correct net name for not support deep S4/S5	Change net name from SUSWARN# to SUSPWRDNACK, Change net name from SUSWARN#_R to SUSPWRDNACK_R	X01
5	28	DP SW	2011/10/10	Compal	DP no function, because double CAP for MUX	Delete C1069, C1070, C1071, C1072, C1073, C1074, C1075, C1076, C1079, C1109, C1127, C1128, C1138, C1139, C1140, C1141, C1203, C1204, C1205, C1206	X01
6	40	EC	2011/10/10	Compal	Change board ID to V0.2	Change R466 from 0 ohm to 8.2K ohm	X01
7	17	PCH	2011/10/11	Compal	Sourcer require change crystal size to 3225	Change YH2 PN to SJ10000EF00	X01
8	31	GLAN	2011/10/11	Compal	Sourcer require change crystal size to 3225	Change YL1 PN to SJ10000EF00	X01
9	44	VPK	2011/10/11	Compal	Sourcer require change crystal size to 3225	Change YH3 PN to SJ10000DI00	X01
10	16	PCH	2011/10/11	Compal	Sourcer require change crystal size to 3215	Change YH1 PN to SJ10000DM00	X01
11	40	EC	2011/10/11	Compal	Sourcer require change crystal size to 3215	Change X1 PN to SJ10000DM00	X01
12	30	HDMI IN	2011/10/11	Compal	Sourcer require change crystal size to 3225	Change Y5 PN to SJ10000970L	X01
13	30	HDMI IN	2011/10/11	Compal	Follow Vandor feedback modify CAP value of crystal	Change C1751, C1750 from 27P to 12P	X01
14	27	HDMI SW	2011/10/11	Compal	HDMI eye diagram fail	Add R2600, pop R1855, R1857	X01
15	34	SATA HDD	2011/10/12	Compal	Add SATA re-driver co-lay circuit	Add RS38~RS49, CS69~CS80	X01
16	5	PCH	2011/10/13	Compal	PM_DRAM_PWRGD have glitch and leakage	Change RC18 from 200 ohm to 10k ohm	X01
17	44	VPK	2011/10/14	Compal	Depop VPK function	Depop CD75, C2011~C2015, RH137, CH100, CH101, YH3, R2, R227, R1607, R1578 C294, C1754, C1755, F6, R198, C1753, R197, R1823~R1825, R1837~R1840, R1843	X01
18	44	VPK	2011/10/14	Compal	Sourcer require change arrey resister to single	Delete RP1~RP6, add R2601~R2624	X01
19	40	EC	2011/10/14	Compal	Sourcer require change arrey resister to single	Delete RP7~RP12, add R2625~R2648	X01
20	19	PCH	2011/10/14	Compal	Sourcer require change arrey resister to single	Delete RPH1~RPH5, add RH267~RH285	X01
21	34	SATA HDD	2011/10/18	Compal	Delete HDD3 SATA re-driver circuit	Delete RS42~RS45, CS73~CR76, RS20~RS28, CS57~CS62, US2	X01
22	27	HDMI SW	2011/10/19	Compal	Intel feedback change HDMI DDC pull high resister value	Change R437, R438, R461, R462 from 4.7k ohm to 2.2k ohm	X01
23	27	HDMI SW	2011/10/19	Compal	Intel feedback change HDMI HPD implementation	Depop Q264, R1741, R1742, C1058, R1743, add R2652	X01

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24	29	DMC SW	2011/10/19	Compal	Intel feedback change DMC HPD implementation	Delete R1236, R1237, Add R2649	X01
25	29	DMC SW	2011/10/19	Compal	Intel feedback add DMC AUX PU/PD resister	Add R2650, R2651	X01
26	9	CPU	2011/10/19	Compal	Modify CPU DDR Vref circuit	Delete QC5, RC76, RC77, change RC118 connect from +1.5V to +1.5V_CPU_VDDQ	X01
27	22	PCH	2011/10/19	Compal	Intel feedback follow PDDG	Delete LH4, depop CH73	X01
28	22	PCH	2011/10/19	Compal	Intel feedback follow PDDG	Delete RH224, RH225, RH227	X01
29	21	PCH	2011/10/19	Compal	Intel feedback follow PDDG	Change LH9 to RH287 (0 ohm)	X01
30	20	PCH	2011/10/19	Compal	Intel feedback follow PDG	Pop RH181, Add RH286	X01
31	33	Audio Amplifier	2011/10/20	Compal	Audio Amplifier burned issue	Add D74, D75, C2035, C2036	X01
32	33	Audio Amplifier	2011/10/21	Compal	Audio Amplifier burned issue	Change C932, C1102 connect from B+ to +AMP_VDD	X01
33	32	Audio Jcak	2011/10/21	Compal	Change JHP2 connector	Change JHP2 footprint to SINGA_2SJ3062-000111F_6P-T	X01
35	5	XDP	2011/10/21	Compal	Depop CPU XDP	Depop RC84~RC95, RC5~RC9, RC112, RC113, CC65, CC66	X01
36	16	XDP	2011/10/21	Compal	Depop PCH XDP	Depop RH1, RH3~RH10, RH12~RH21, RH24, RH51, CH1	X01
37	20, 26	PCH, CRT	2011/10/21	Compal	CRT leakage	Depop RH178, add RV115	X01
38	32	Audio Jcak	2011/10/22	Compal	Change JHP2 connector from NC to NO	Change JHP2 symbol, add RA24, depop R149, QU4	X01
39	29	DMC SW	2011/10/22	Compal	DMC AUX channel pu/pd location error	Change R2650, R2651 connect from U132 to CONN	X01
40	32	AUDIO	2011/10/22	Compal	Reserve for pop noise	Add RA25~RA27, change U631 and U629 pin B2 connect to +3.3V_MUTE	X01
41	34	ODD	2011/10/24	Compal	Zero power ODD function	Pop RS10	X01
42	28	DP SW	2011/10/24	Compal	Vendor feedback DP MUX need CAP for input and output	Add C1069, C1070, C1071, C1072, C1073, C1074, C1075, C1076, C1079, C1109, C1127, C1128, C1138, C1139, C1140, C1141, C1203, C1204, C1205, C1206 Change C1190~C1194, C1164, C1177, C1178, C1200, C1201 to 220nF	X01
43	25	CCD	2011/10/24	Compal	Reserve for EMI	Add L101, depop RV10, RV51, change D61 connect to onnector side	X01
44	28	DP SW	2011/10/24	Compal	DP dongle can't display on UMA mode	Change U633, delete C1200, C1201, add U634, C2037, C2038 Change C1203~C1206 from 0.22uF to 0.1uF Change AUX, DDC, HDP connect	X01
45	43	PWR BTN	2011/10/24	Compal	Avoid SW reverse at SMT	NC SW1 pin 1 & pin 4 and SW2 pin 1 & pin 4	X01
46	30	HDMI IN	2011/10/24	Compal	(STDP6038) doesn't need to read / write the panel EDID	de-pop R1880, R1881	X01

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47	30	HDMI IN	2011/10/24	Compal	keep I2S_DAT/SPDIF_IN has fine performance	change R1882 to C2039 0.1UF	X01
48	30	HDMI IN	2011/10/24	Compal	reserver these soltion to avoid I2S_DAT/SPDIF_IN signal has attenuation problem duo to long trance	add U635, C2040	X01
49	32	Audio	2011/10/24	Compal	change combo jack dection method	de-pop R2585, pop R1244	X01
50	32	AUDIO	2011/10/24	Compal	Reserve for pop noise	Add C2041	X01
51	32	AUDIO	2011/10/24	Compal	JACK_PLUG funccion reverse duo to JACK change to normal open type	add R2653 and QU8	X01
52	32	AUDIO	2011/10/24	Compal	vendor suggestion	change R1752 to C2042 0.1UF	X01
53	32	AUDIO	2011/10/25	Compal	change combo jack dection circuit	pop R149, QU4, depop RA24, change QU8 connect	X01
54	32	AUDIO	2011/10/25	Compal	HP fast plug in/out issue	change RC107, RC114 to 1k ohm and pop	X01
55	32	AUDIO	2011/10/25	Compal	pop noise issue	change RA20, RA21 to 0 ohm	X01
56	32	AUDIO	2011/10/26	Compal	pop noise issue	change RA22, RA23 to 0 ohm	X01
57	43	USB3.0	2011/10/26	Compal	base on EA result, depop MB usb3.0 re-driver	change C205~C208 to 0 ohm (R2654~R2657) and pop, pop C209~C212, R358~365 depop C100, C111~C113, C140, C156, C186, C187, C194~C196, C200, C2025~C2028, R374, R375, R378, R379, R416~R418, R421, U630, U632	X01
58	43	PWR BTN	2011/10/26	Compal	"US California Energy Efficiency" (Reserve 130mW for no battery mode)	Add Q305, Q306, R2658	X01
59	5	XDP	2011/10/26	Compal	Depop CPU XDP	Depop RC23~RC24, RC30~RC31, RC33~RC34, RC36~RC39	X01
60	32	AUDIO	2011/10/26	Compal	HP fast plug in/out issue	change RC109, RC115 to 1k ohm and pop	X01
61	29	DMC	2011/10/26	Compal	Reserve for DMC card	Add R2659	X01
62	29	DMC	2011/10/26	Compal	add ESD protect for DMC card	change Q302 to SB000000EN00	X01
63	26	CRT	2011/10/27	Compal	rise and fall time fail	change LV1~LV3 from 75 ohm to 47 ohm	X01
64	32	Audio	2011/10/27	Compal	audio THD+N fail	change C11, C14 to 2.2uF 0805 16V	X01
65	40	EC	2011/11/09	Compal	For Erp lot 6, reduce power consumption on S5 mode	change R483, R493 from 10K to 100K ohm	X01
66	26	CRT	2011/11/09	Compal	For EMI test fail	change LV1~LV3 from 47 ohm to 60 ohm	X01
67	42	DC-DC	2011/11/09	Compal	For PCH_PWR_EN leakage	depop R556, pop R553	X01
68	28	DP	2011/11/25	Compal	DP can't hot plug issue	depop R2261 and R2262	X01

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69	34	HDD	2011/11/25	Compal	SATA EA test fail	pop RS13, RS14, RS31, RS32	X01
70	24	LCD	2011/11/30	Compal	LCD EA test fail	Change RV32 from 100 ohm to 47 ohm	X01
71	26	CRT	2011/11/30	Compal	CRT EA test fail	Change LV4, LV5 from bead to 0 ohm, CV24, V25 from 10P to 4.7P	X01
72	33	Audio	2011/11/30	Compal	Audio amplifier fine tune	Change R929, R939 from 16.5k ohm to 20.5k ohm, R1195 from 10k ohm to 14k ohm	X01
73	16	Crystal	2011/11/30	Compal	Crystal fine tune	Change CH2 from 18P to 15P	X01
74	17, 40	PCH, EC	2011/12/08	Compal	Chang KB_DET# from PCH to EC (pin 34)	Chang KB_DET# from PCH to EC (pin 34), DEL R1733, add R2660	X02
75	32	Audio	2011/12/08	Compal	S3/S4/S5/G3 have noise when insert external speaker	Add QA1, RA28, RA29	X02
76	40	EC	2011/12/08	Compal	"US California Energy Efficiency"	Add R2661, Q307	X02
77	34	ODD	2011/12/08	Compal	ADD pull down resister for ODD_EJEECT#	Add RS50	X02
78	34	ODD	2011/12/13	Compal	Reduce 0 ohm	delete RS6	X02
79	All	All	2011/12/13	Compal	Reduce 0 ohm	change 0 ohm to short pad	X02
80	32	Audio	2011/12/13	Compal	change HP mute IC's power rail to +3VALW	change HP mute IC's power rail to +3VALW, pop RA27, depop RA25	X02
81	43	IO CONN	2011/12/14	Compal	add +5V_ALW pin for USB	change JIO1 pin 13 to +5VALW, pin 14 to ground	X02
82	40 44	SMBus	2011/12/15	Compal	Battery can't charge when with N13-GS MXM card	add R2662, R2663, depop R2583, R2584, Q304, Change R470, R473 to 4.7k	X02
83	16-23	PCH	2011/12/16	Compal	change PCH to QS sample	change UH4 part number to SA00005AG1L	X02
84	40	EC	2011/12/16	Compal	Change board ID to V0.3	Change R466 from 8.2K ohm to 18K ohm	X02
85	32	Audio	2011/12/19	Compal	Modify line-in circuit	Change R2550 connect to LINEIN_L_L1	X02
86	19	PCH	2011/12/19	Compal	nVIDIA N-13 GE can't detect	Change UH5 to SN74AHC1G08DCKR, RH230 to 0 ohm, depop R1908, pop RH231	X02
87	43	USB 3.0	2011/12/20	Compal	delete USB 3.0 redriver and co-lay circuit	delete U630, U632, C100, C111~C113, R1844, R1845, R424, R411~R418, R374, R375, R378, R379, R4, R5, R12, R17, R25, R30, R32, R35, R44~R53, R63, R66, R67, R81, R83 R108, R190, R195, R290, R313, R314, R323, R326, R337, R421, R358~R365, R2654~R2657, C140, C156, C186, C187, C2025~C2028, C194~C196, C200, C209~C212	X02
88	32	Audio	2011/12/22	Compal	iPHONE's mic can't recording	depop R8, R9	X02
89	43	USB 3.0	2011/12/22	Compal	delete USB 3.0 redriver and co-lay circuit	delete C209~C212	X02
90	30	HDMI IN	2012/01/02	Compal	HDMI IN debug function	pop R1650, R1651	X02
91	35	BT	2012/01/03	Compal	can't disable bt of combo card	change RE42 to 0 ohm, add RE43, connect BT_RADIO_DIS# to JWLAN pin 51	X02

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