

COMPAL CONFIDENTIAL

MODEL NAME : *PAL51/53*

PCB NO : *LA-6592P (DAA00001V10)*

BOM P/N : *43192931L01*

GPIO MAP: E3 Master GPIO Map10102010.xlsx

E3 MACALLAN 14" SG

rPGA Sandy Bridge +
FCBGA PCH Cougar Point-M

2011-1-13

REV : 1.0(A00)

@ : Nopop Component

CONN@ : ME controll and stuff by default

MB Type	BOM P/N	
TPM EN/ TCM DIS	43192931L01	1@ 3@
TPM DIS/ TCM EN	43192931L02	2@ 4@
TPM DIS/ TCM DIS	43192931L03	2@ 3@
ATG TPM EN/ TCM DIS	43192931L11	1@ 3@
ATG TPM DIS/ TCM EN	43192931L12	2@ 4@
ATG TPM DIS/ TCM DIS	43192931L13	2@ 3@

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Title		
Cover Sheet		
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Part Number	Description
DAA00001V10	PCB OFE LA-6592P REV0 M/B DIS



POWER STATES

Signal State	SLP S3#	SLP S4#	SLP S5#	SLP A#	ALWAYS PLANE	M PLANE	SUS PLANE	RUN PLANE	CLOCKS
S0 (Full ON) / M0	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON	ON
S3 (Suspend to RAM) / M3	LOW	HIGH	HIGH	HIGH	ON	ON	ON	OFF	OFF
S4 (Suspend to DISK) / M3	LOW	LOW	HIGH	HIGH	ON	ON	OFF	OFF	OFF
S5 (SOFT OFF) / M3	LOW	LOW	LOW	HIGH	ON	ON	OFF	OFF	OFF
S3 (Suspend to RAM) / M-OFF	LOW	HIGH	HIGH	LOW	ON	OFF	ON	OFF	OFF
S4 (Suspend to DISK) / M-OFF	LOW	LOW	HIGH	LOW	ON	OFF	OFF	OFF	OFF
S5 (SOFT OFF) / M-OFF	LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF	OFF

PM TABLE

power plane State	+15V_ALW +5V_ALW +3.3V_ALW_PCH +3.3V_RTC_LDO	+3.3V_SUS +1.5V_MEM	+5V_RUN +3.3V_RUN +1.8V_RUN +1.5V_RUN +0.75V_DDR_VTT +VCC_CORE +1.05V_RUN_VTT +1.05V_RUN	+3.3V_M +1.05V_M	+3.3V_M +1.05V_M (M-OFF)
S0	ON	ON	ON	ON	ON
S3	ON	ON	OFF	ON	OFF
S5 S4/AC	ON	OFF	OFF	ON	OFF
S5 S4/AC don't exist	OFF	OFF	OFF	OFF	OFF

Layer No.	Name	Material	Thickness (Material SPEC.) Unit : mil	Thickness (Actuality) Unit : mil
		SolderMask	min 0.4	0.50000
		Add Plating		1.45000
1	Top	Copper foil	0.5oz(0.68)	0.65000
		Prepreg	1080	2.75000
2	GND1	Copper foil	1oz(1.35)	1.35000
		Core	4mil	3.89000
3	IN 1	Copper foil	1oz(1.35)	1.35000
		Prepreg	1506	5.50000
4	GND2	Copper foil	1oz(1.35)	1.35000
		Core	3mil	3.09000
5	IN 2	Copper foil	1oz(1.35)	1.35000
		Prepreg	1506*2	11.50000
6	IN 3	Copper foil	1oz(1.35)	1.35000
		Core	3mil	3.09000
7	VCC	Copper foil	1oz(1.35)	1.35000
		Prepreg	1506	5.50000
8	IN 4	Copper foil	1oz(1.35)	1.35000
		Core	4mil	3.89000
9	GND 3	Copper foil	1oz(1.35)	1.30000
		Prepreg	1080	2.75000
10	Bottom	Copper foil	0.5oz(0.68)	0.65000
		Add Plating		1.45000
		SolderMask	min 0.4	0.50000
	Overall Thickness (1.45mm ± 10%)			57.91000

SATA	DESTINATION
SATA 0	HDD
SATA 1	ODD/ E3 Module Bay
SATA 2	NA
SATA 3	NA
SATA 4	ESATA
SATA 5	Dock

need to update Power Status and PM Table

DSC DP/HDMI Port	Connetion
Port C	Dock DP port 2
Port D	Dock DP port 1
Port E	MB HDMI Conn

USB PORT#	DESTINATION
0	JUSB2 (Right side 1)
1	JUSB3 (Right side 2)
2	JESA1 (Right Side ESATA)
3	JESA1 (Ext Left Side)
4	WLAN
5	WWAN
6	JMINI3(Flash)
7	USH->BIO
8	DOCKING
9	DOCKING
10	Express card
11	Bluetooth
12	Camera
13	LCD Touch

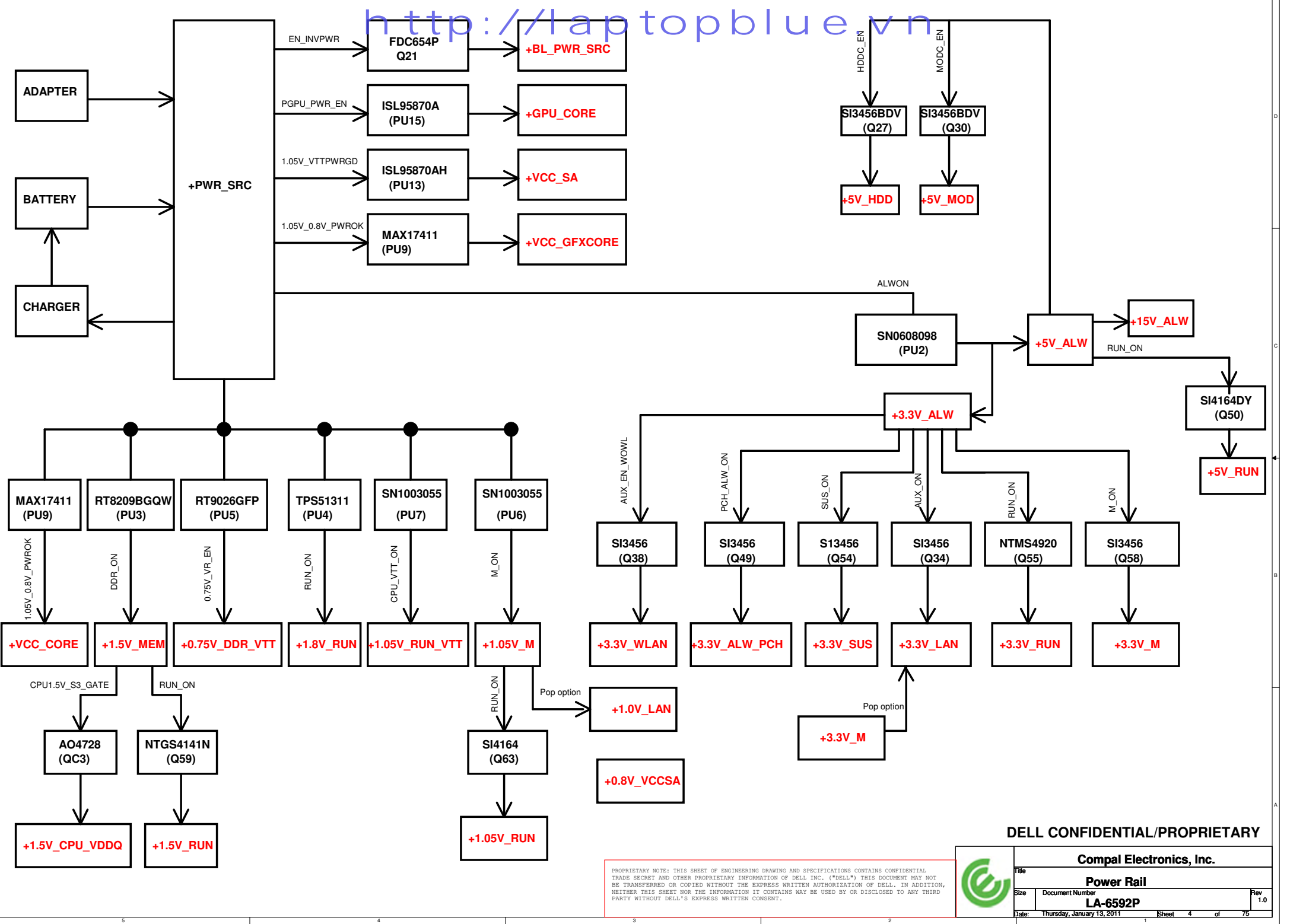
USH	0	BIO
	1	NA

PCI EXPRESS	DESTINATION
Lane 1	MINI CARD-1 WWAN
Lane 2	MINI CARD-2 WLAN
Lane 3	Express card
Lane 4	E3 Module Bay (USB3)
Lane 5	1/2vMINI CARD-3 PCIE
Lane 6	MMI
Lane 7	10/100/1G LOM
Lane 8	None

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Index and Config.			
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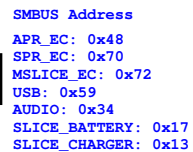


http://laptopblue.vn

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Power Rail				
LA-6592P				
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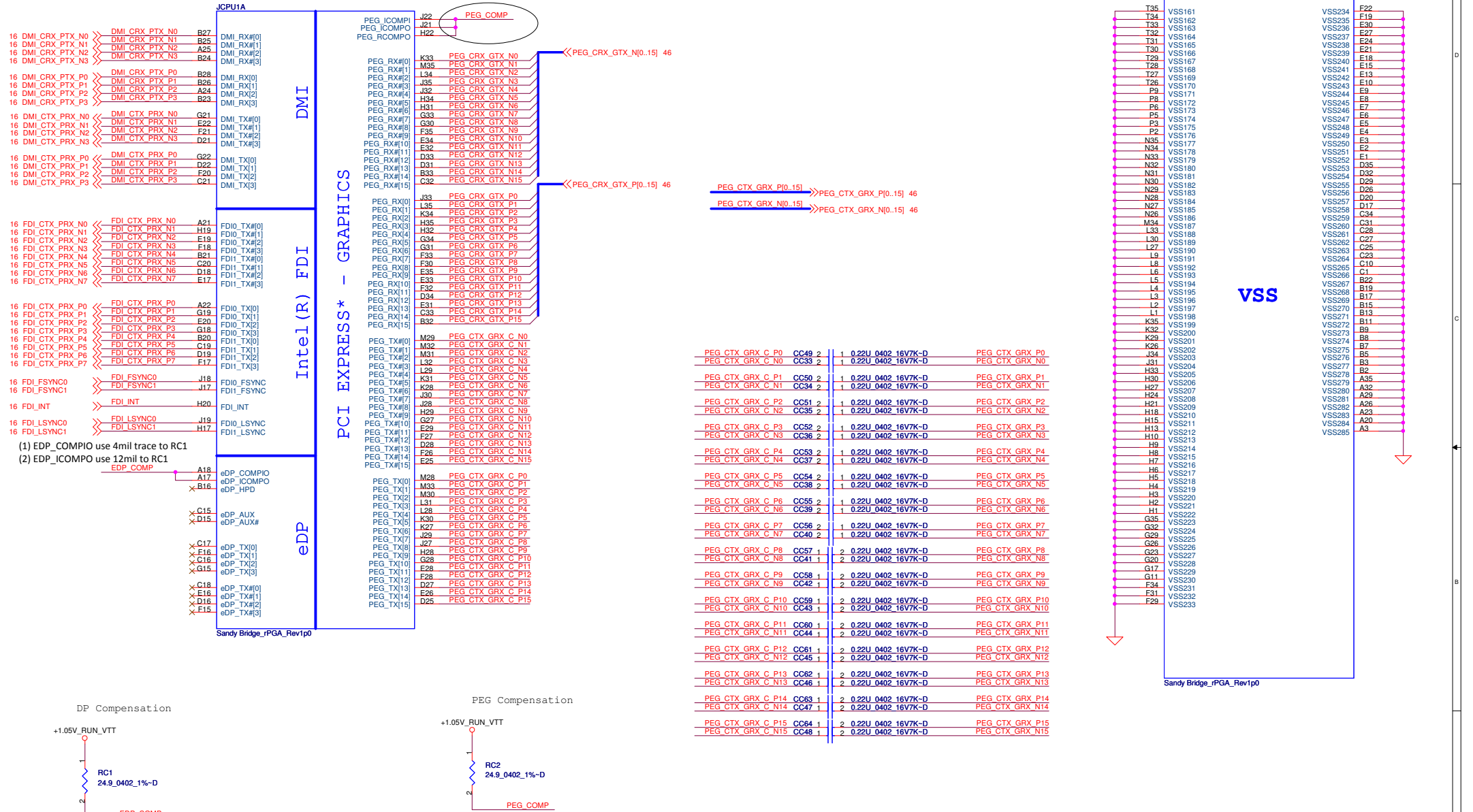
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SMBUS TOPOLOGY

LA-6592P

Rev	1.0
-----	-----

(1) PEG_RCOMP (H22) use 4mil connect to PEG_ICOMPI, then use 4mil connect to RC2.
(2) PEG_ICOMPO use 12mil connect to RC2



eDP_COMP and ICOMPO signals should be shorted near balls and routed with typical impedance <25 mohms

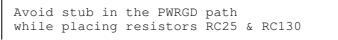
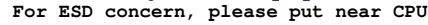
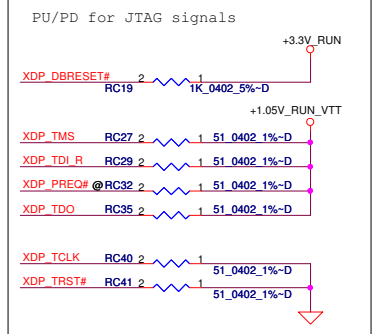
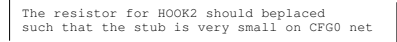
PEG_ICOMPI and RCOMP signals should be shorted and routed with - max length = 500 mils - typical impedance = 43 mohms

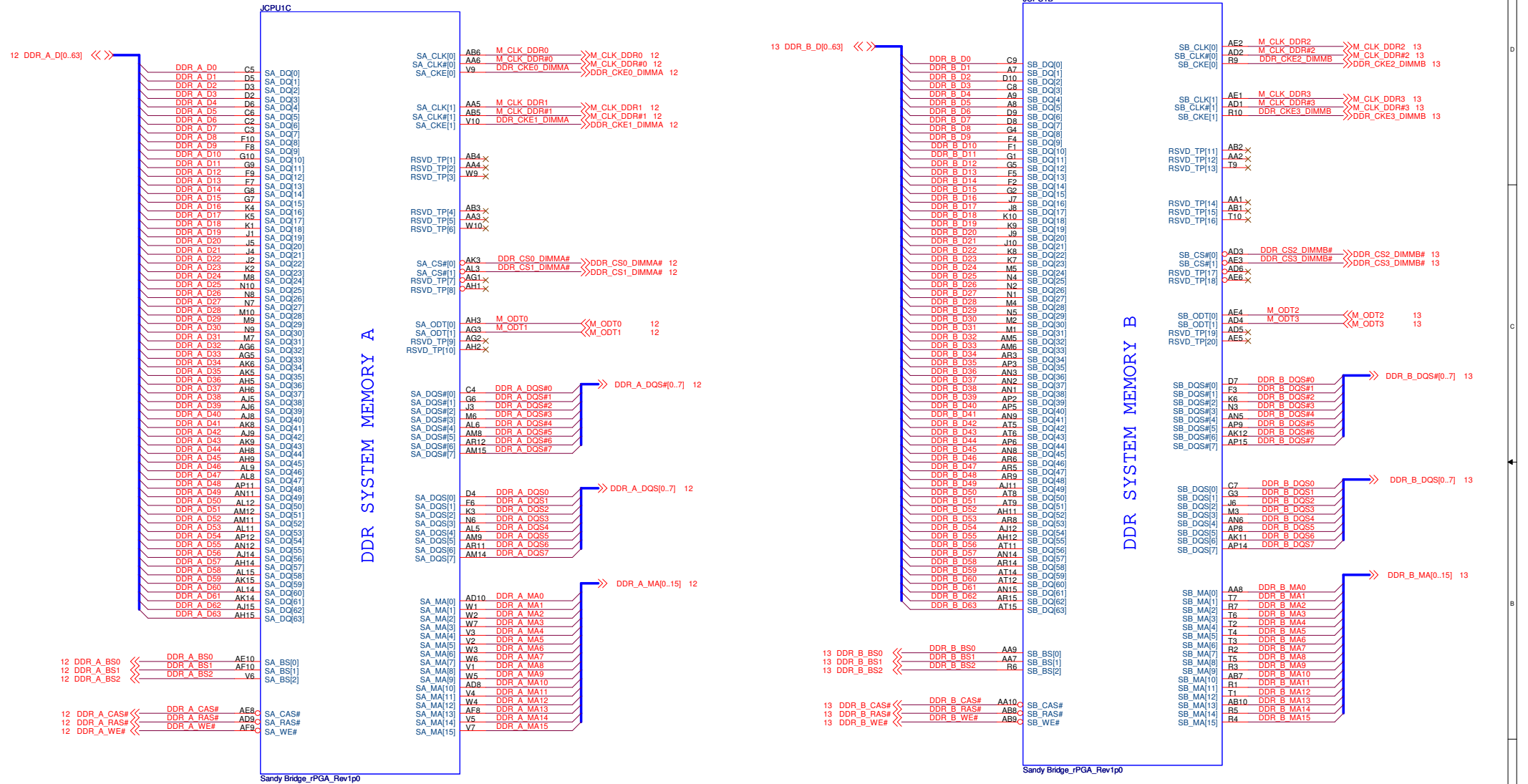
PEG_ICOMPO signals should be routed with - max length = 500 mils - typical impedance = 14.5 mohms

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Sandy Bridge (1/6)
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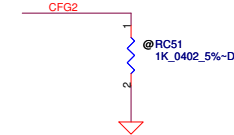
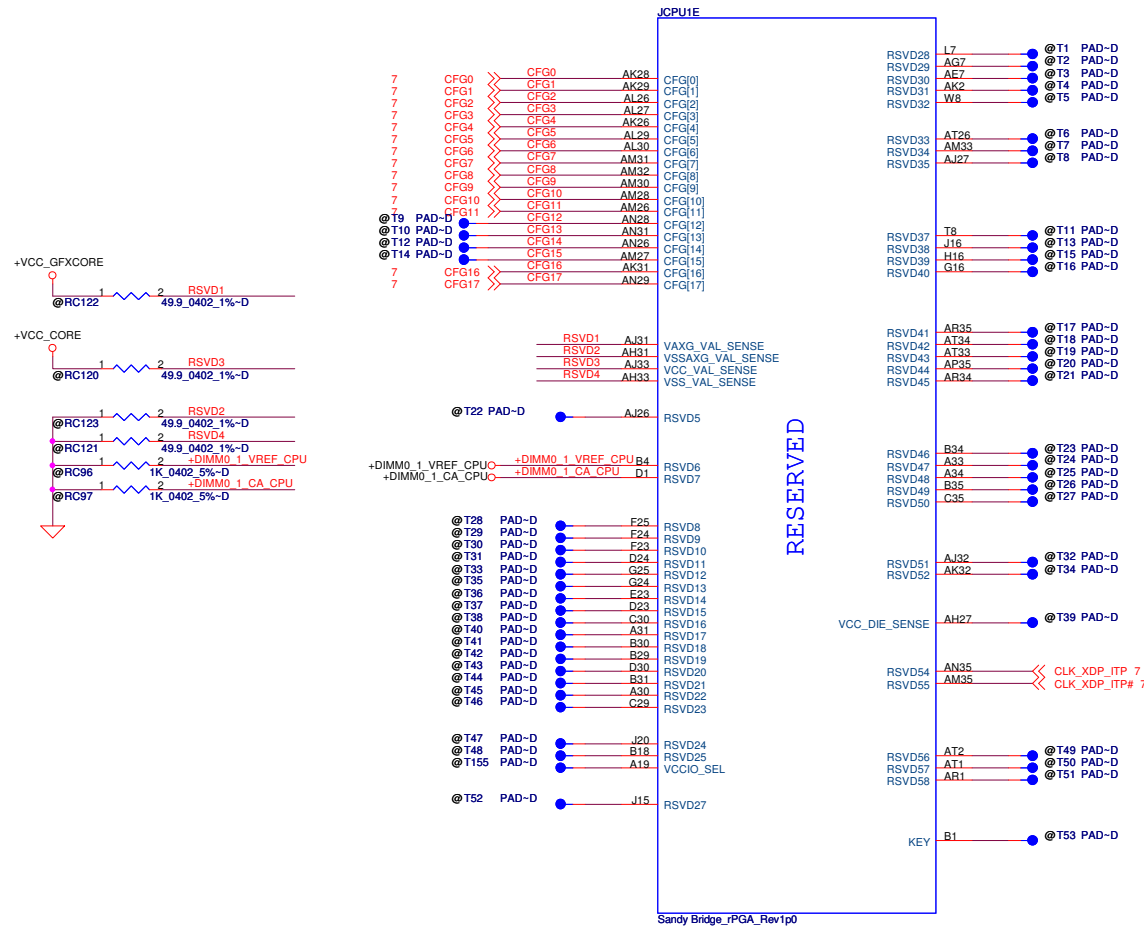


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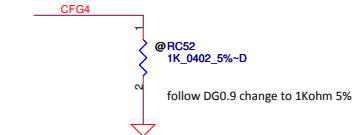
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Sandy Bridge (3/6)			
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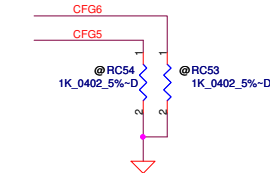
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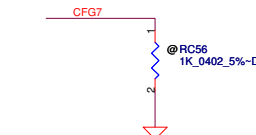
PEG Static Lane Reversal - CFG2 is for the 16x	
CFG2	1:(Default) Normal Operation; Lane # definition matches socket pin map definition 0:Lane Reversed



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

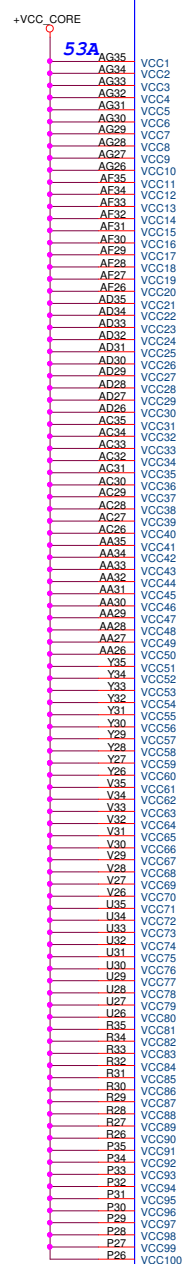
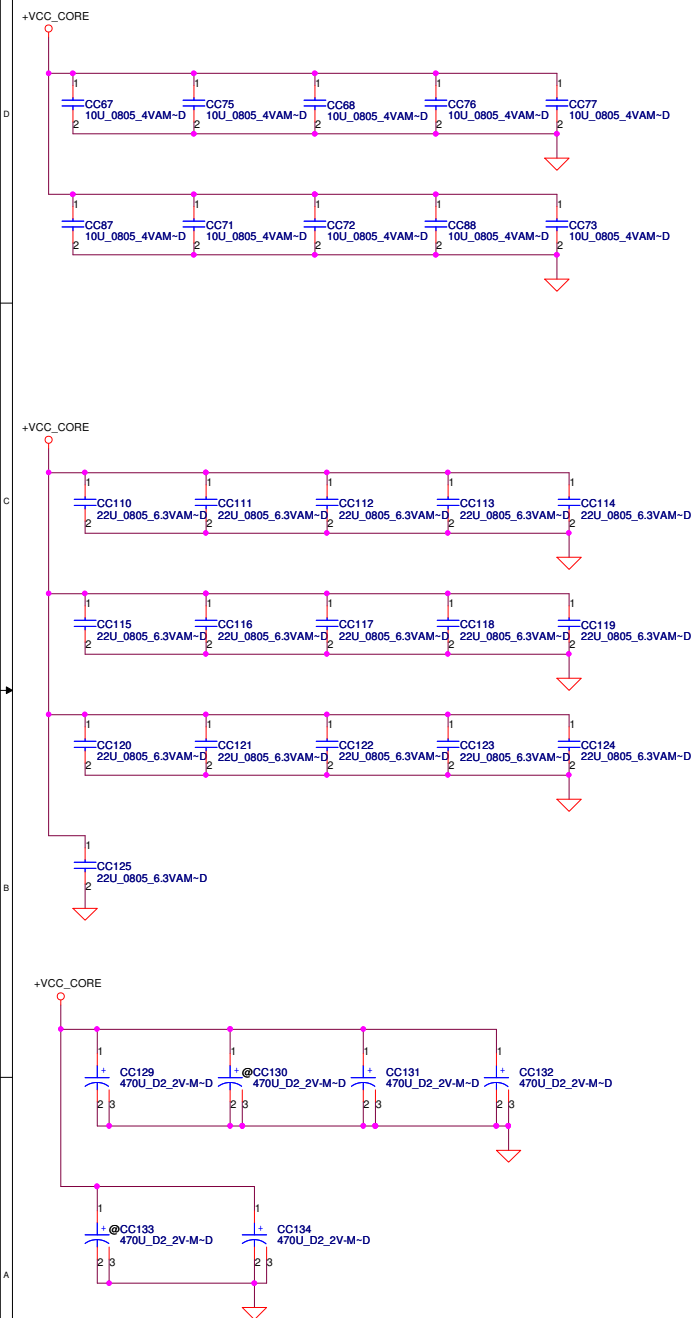


PEG DEFER TRAINING	
CFG7	1: (Default) PEG Train immediately following xxRESETB de assertion 0: PEG Wait for BIOS for training

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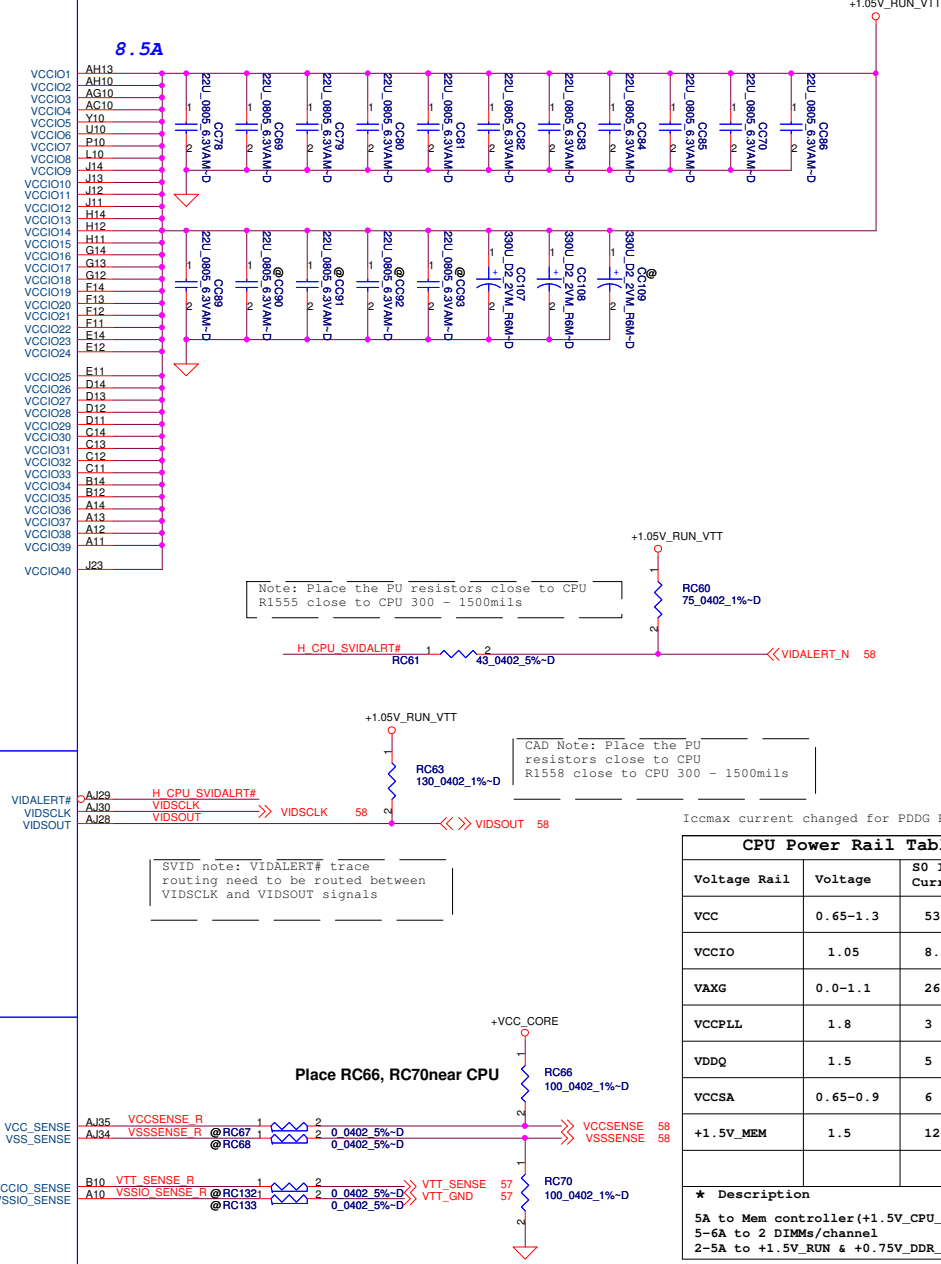


CORE SUPPLY

SVID

SENSE LINES

PEG AND DDR



Note: Place the PU resistors close to CPU
R1555 close to CPU 300 - 1500mils

CAD Note: Place the PU resistors close to CPU
R1558 close to CPU 300 - 1500mils

SVID note: VIDALERT# trace routing need to be routed between VIDSCCLK and VIDSOUT signals

Iccmax current changed for PDDG Rev0.7

CPU Power Rail Table		
Voltage Rail	Voltage	S0 Iccmax Current (A)
VCC	0.65-1.3	53
VCCIO	1.05	8.5
VAXG	0.0-1.1	26
VCCPLL	1.8	3
VDDQ	1.5	5
VCCSA	0.65-0.9	6
+1.5V_MEM	1.5	12-16 *
* Description		
5A to Mem controller(+1.5V_CPU_VDDQ)		
5-6A to 2 DIMMs/channel		
2-5A to +1.5V_RUN & +0.75V_DDR_VTT		

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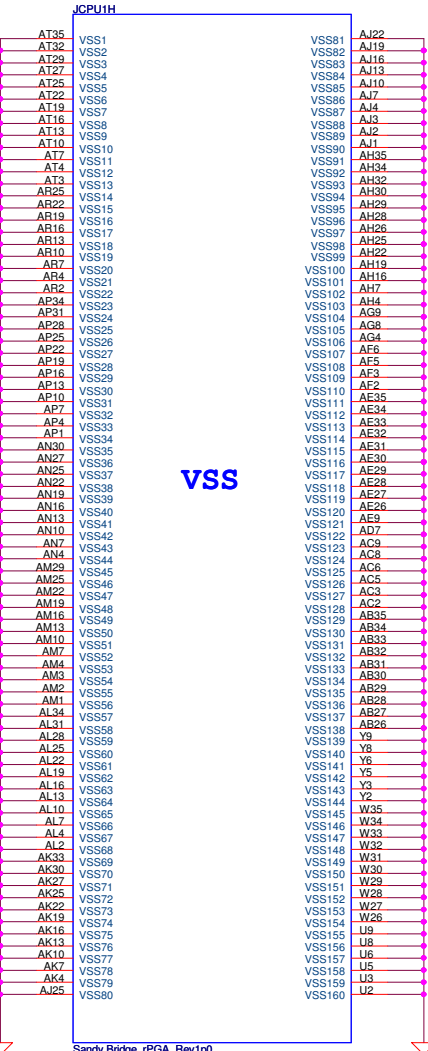
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Sandy Bridge (5/6)

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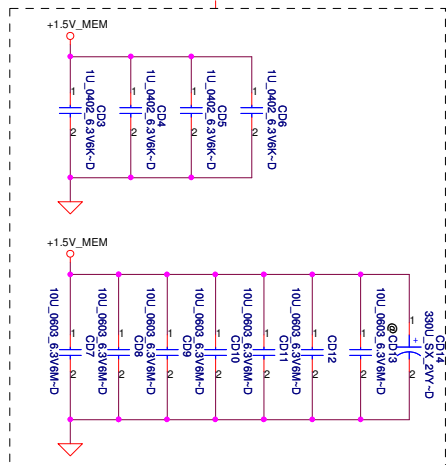
Note:
Check voltage tolerance of
VREF_DQ at the DIMM socket

8 DDR_A_DQS#0[0..7] <<>
8 DDR_A_D[0..63] <<>
8 DDR_A_DQS#0[0..7] <<>
8 DDR_MA[0..15] <<>

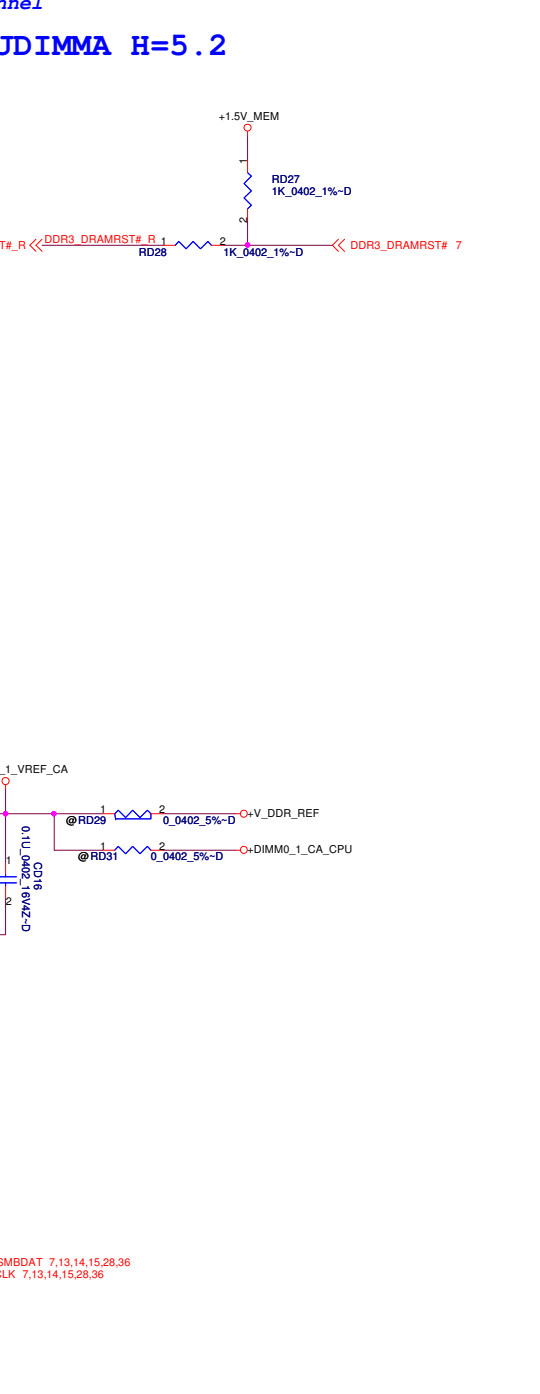
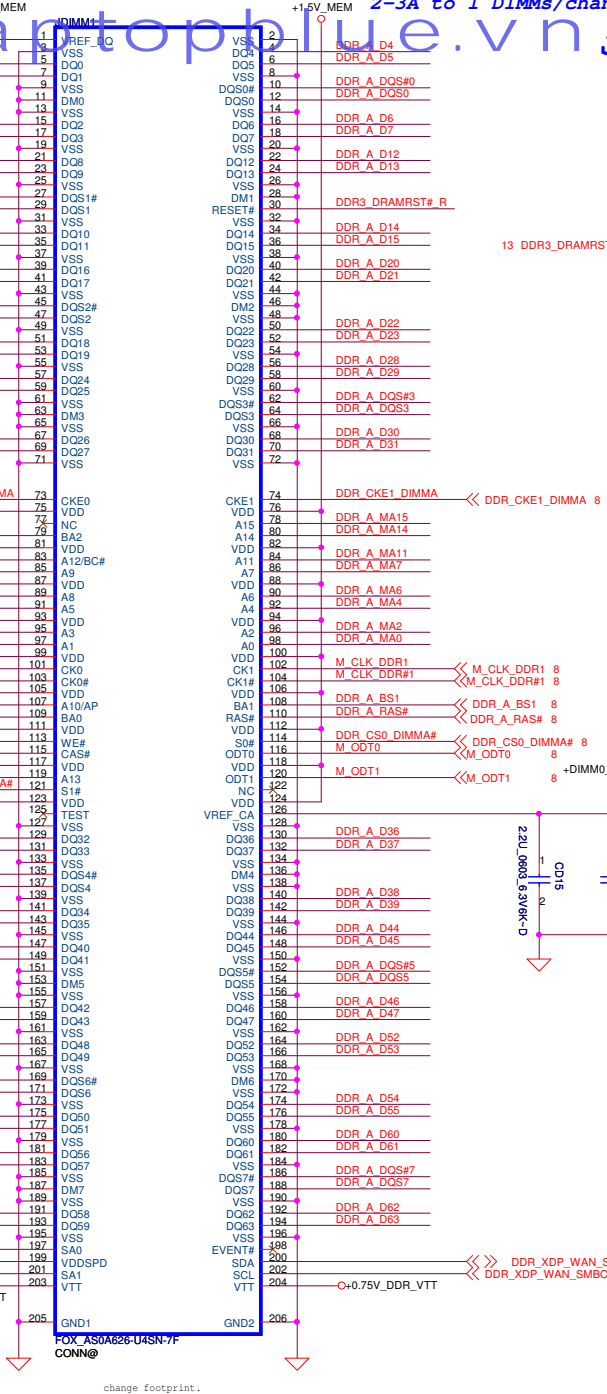
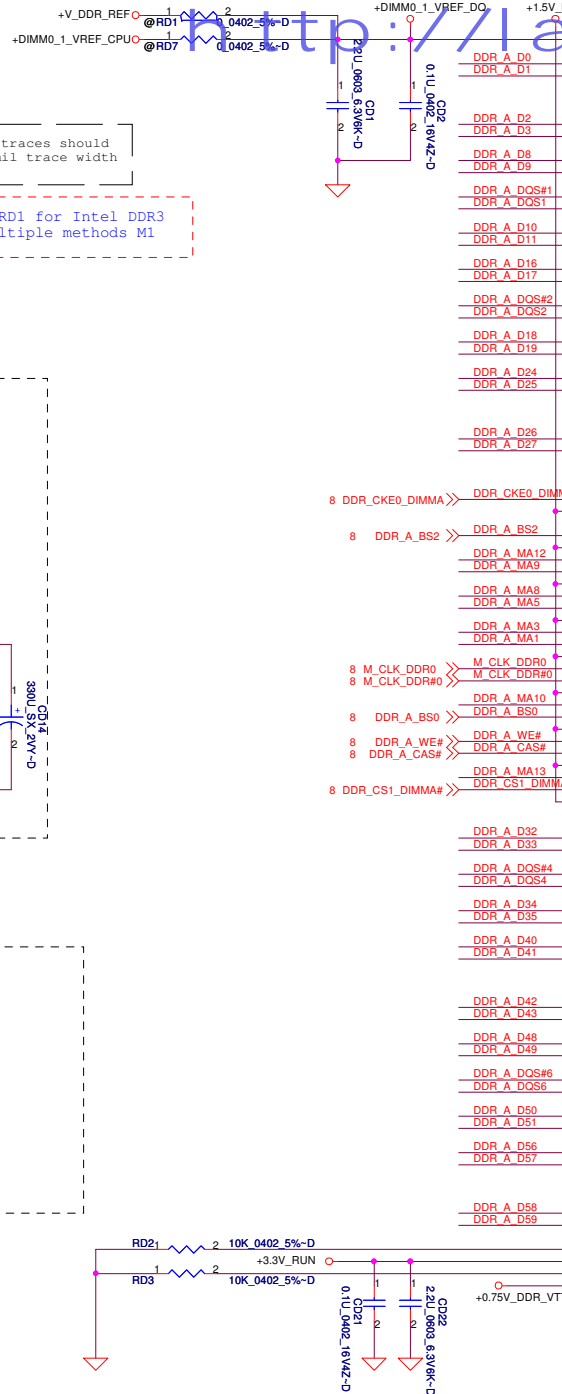
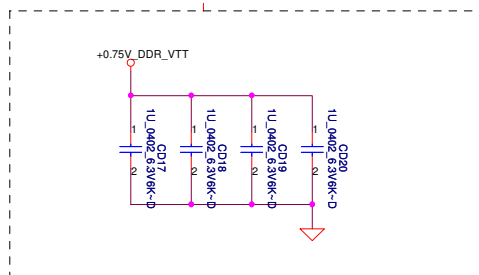
All VREF traces should
have 10 mil trace width

Populate RD1 for Intel DDR3
VREFDQ multiple methods M1

Layout Note:
Place near JDIMMA



Layout Note:
Place near JDIMMA.203, 204



change footprint.

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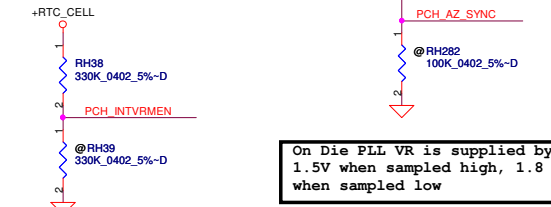


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DDRIII-SODIMM SLOT1				
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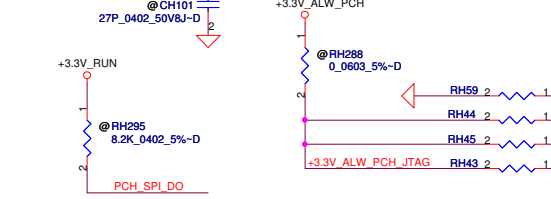
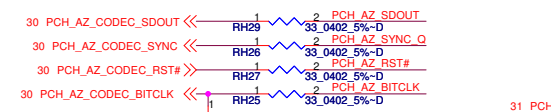
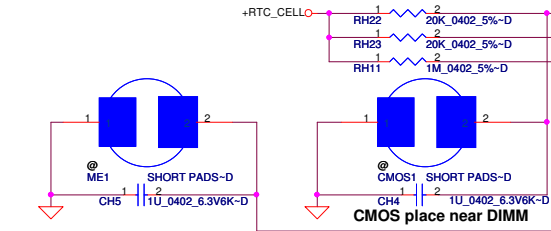
CMOS CLR1	CMOS setting
Shunt	Clear CMOS
Open	Keep CMOS

ME CLR1	TPM setting
Shunt	Clear ME RTC Registers
Open	Keep ME RTC Registers

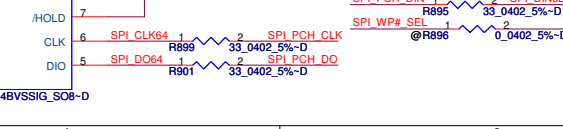
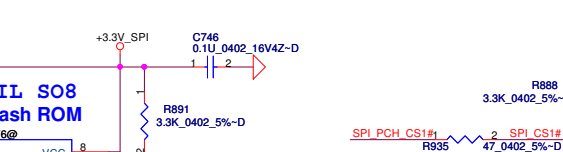
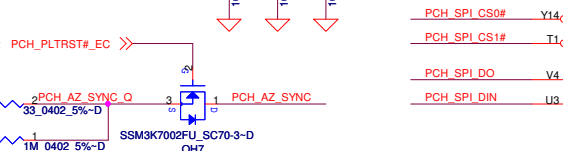
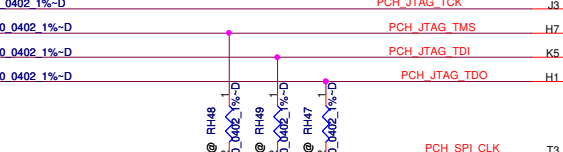
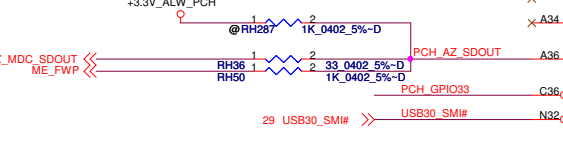
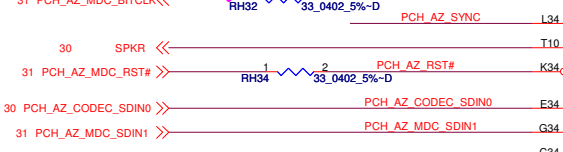
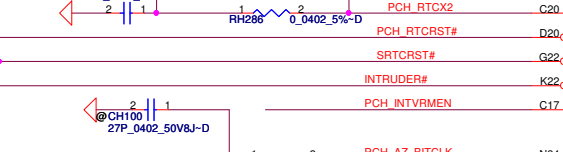
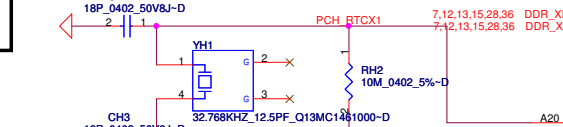
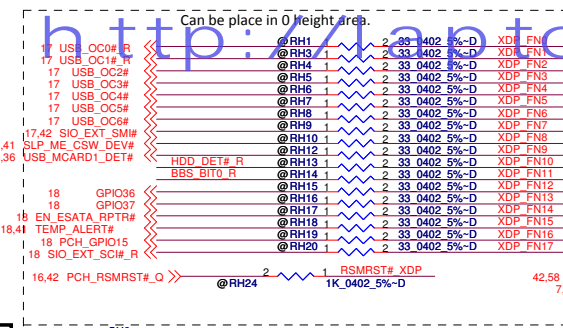
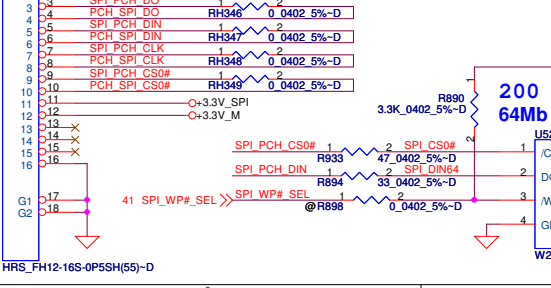
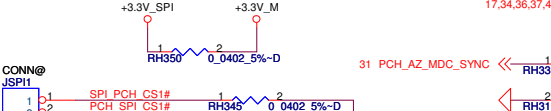
"PCH_AZ_SYNC" is sampled at the rising edge of RSMRST# pin. So signal should be PU to the ALWAYS rail.



INTVRMEN- Integrated SUS 1.1V VRM Enable
High - Enable Internal VRs
Low - Enable External VRs



SPI_MOSI
High: Enable Intel Anti-Theft Technology
Left floating: Disable Intel Anti-Theft Technology



Follow DG0.9 Device down & Express/Mini card topology

UH4B

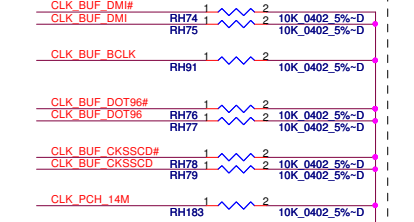
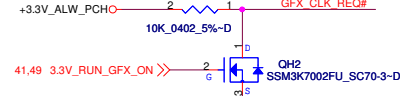
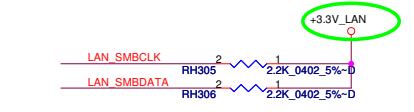
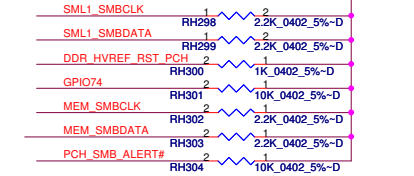
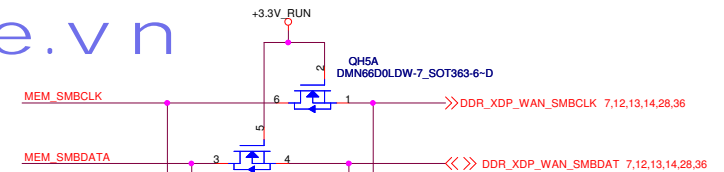
PCI-E*

CLOCKS

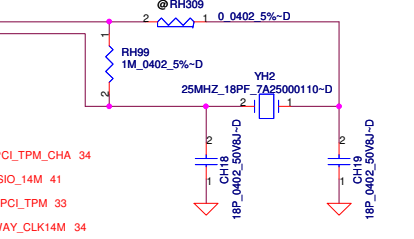
Controller Link

FLEX CLOCKS

CougarPoint_Rev_1p0



CLOCK TERMINATION for FCIM and need close to PCH



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PCH (2/8)			
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PCIE REQ power rail:
suspend: 0 3 4 5 6 7
core: 1 2

MiniWWAN (Mini Card 1)----

MiniWLAN (Mini Card 2)----

EXPRESS Card----

E3 Module Bay----

1/2vMINI CARD-3 PCIE (Mini Card 3)----

MMI ----

10/100/1G LAN ----

MiniWWAN (Mini Card 1)----

10/100/1G LAN ----

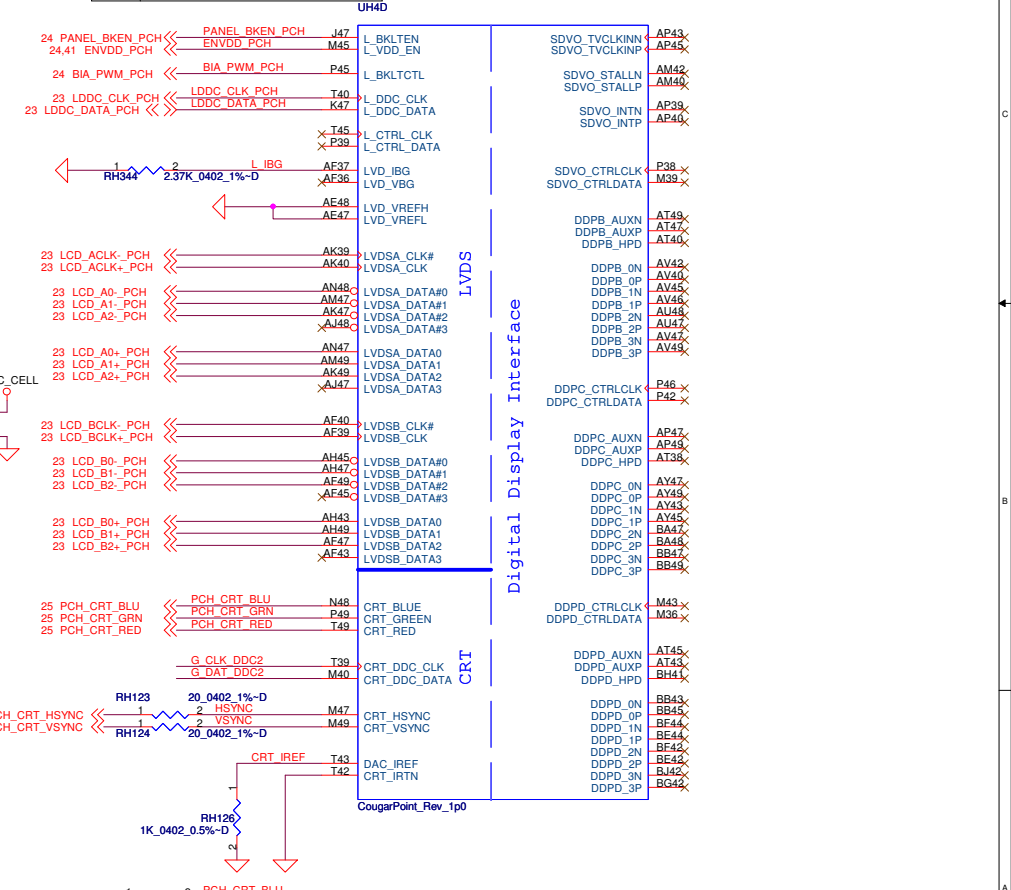
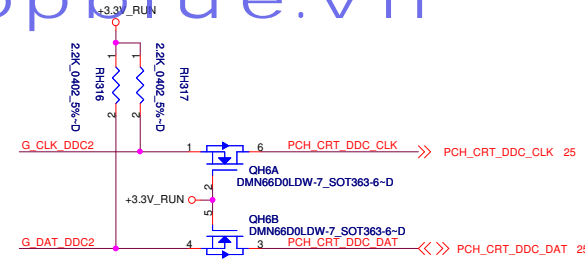
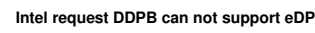
MMI Card----

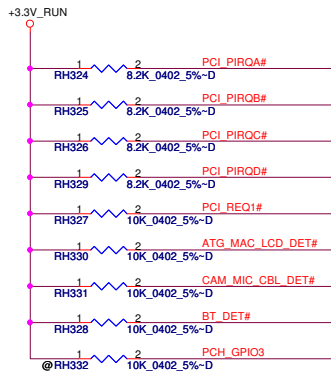
MiniWPAN (Mini Card 3)----

Express card----

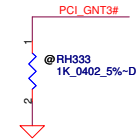
MiniWLAN (Mini Card 2)----

eModule Bay----

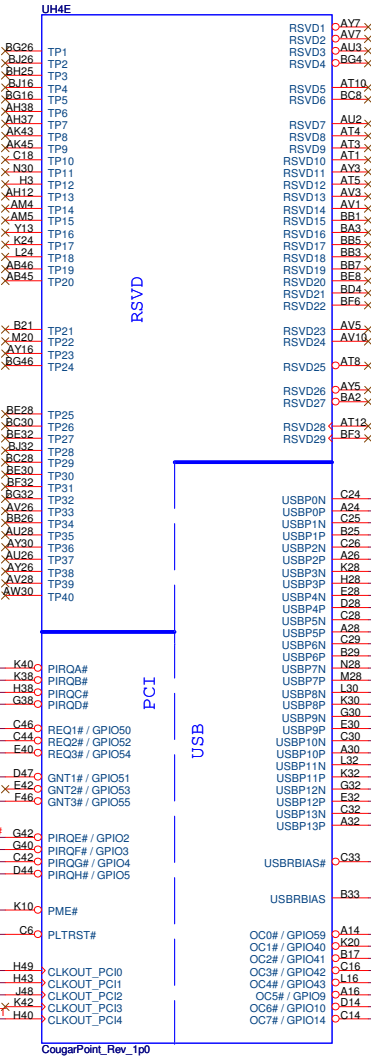
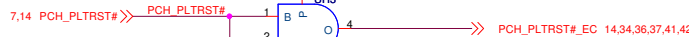
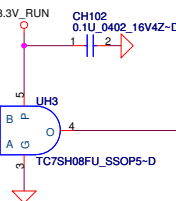
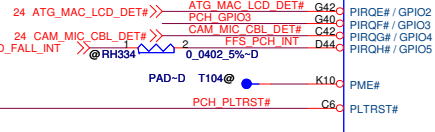
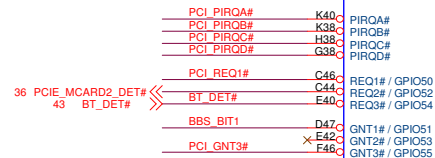
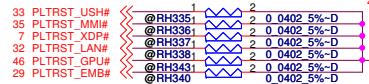




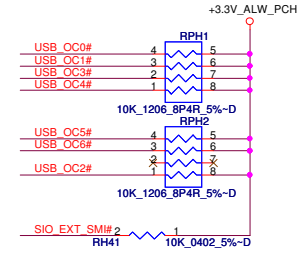
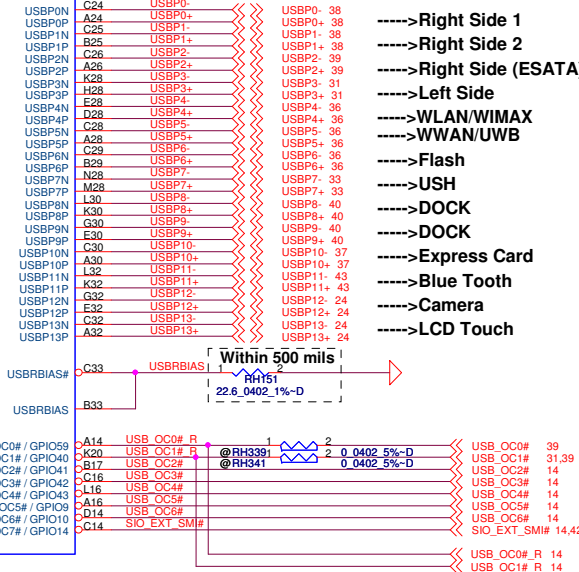
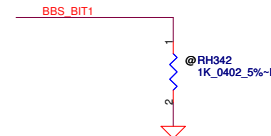
LVDS_CBL_ID	High : Normal type panel
	Low : High contrast ratio brightness



A16 swap override Strap/Top-Block Swap Override jumper	
PCI_GNT#3	Low = A16 swap High = Default

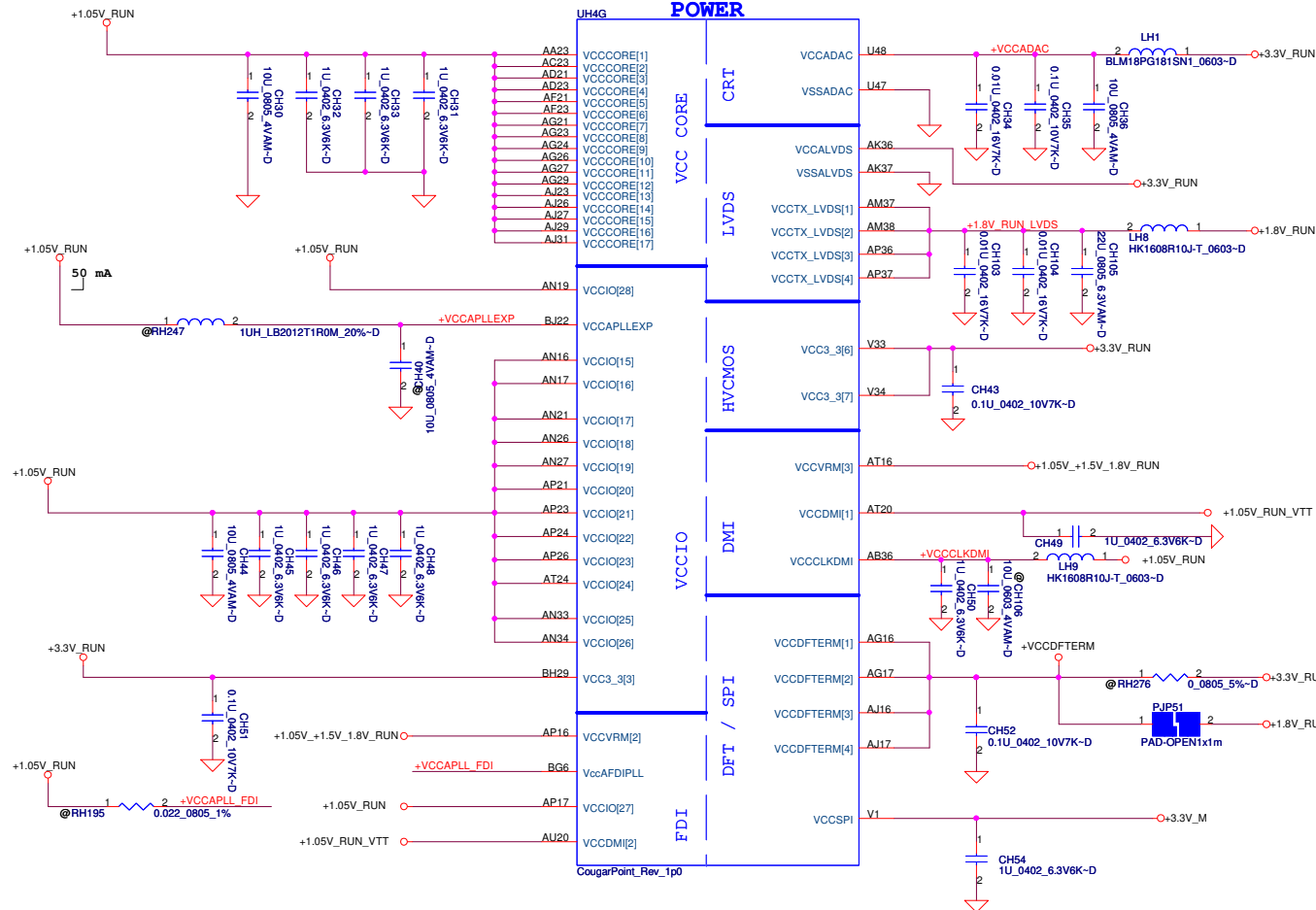


Boot BIOS Strap		
BBS_BIT1	SATA_SLPD (BBS_BIT0)	Boot BIOS Location
0	0	LPC
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI

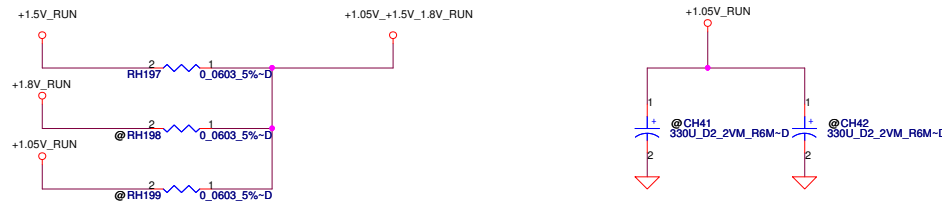


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PCH Power Rail Table		
Voltage Rail	Voltage	SO Iccmax Current (A)
V_PROC_IO	1.05	0.001
V5REF	5	0.001
V5REF_Sus	5	0.001
Vcc3_3	3.3	0.266
VccADAC3	3.3	0.001
VccADPLLA	1.05	0.08
VccADPLLB	1.05	0.08
VccCore	1.05	1.3
VccDMI	1.05	0.042
VccIO	1.05	2.925
VccASW	1.05	1.01
VccSPI	3.3	0.020
VccDSW3_3	3.3	0.003
VCCDFTERM	1.8	0.19
VccRTC	3.3	2 (mA)
VccSus3_3	3.3	0.119
VccSusHDA	3.3	0.01
VccVRM	1.8 / 1.5	0.16
VccClkDMI	1.05	0.02
VccSSC	1.05	0.095
VccDIFFCLKN	1.05	0.055
VccALVDS	3.3	0.001
VccTX_LVDS	1.8	0.06

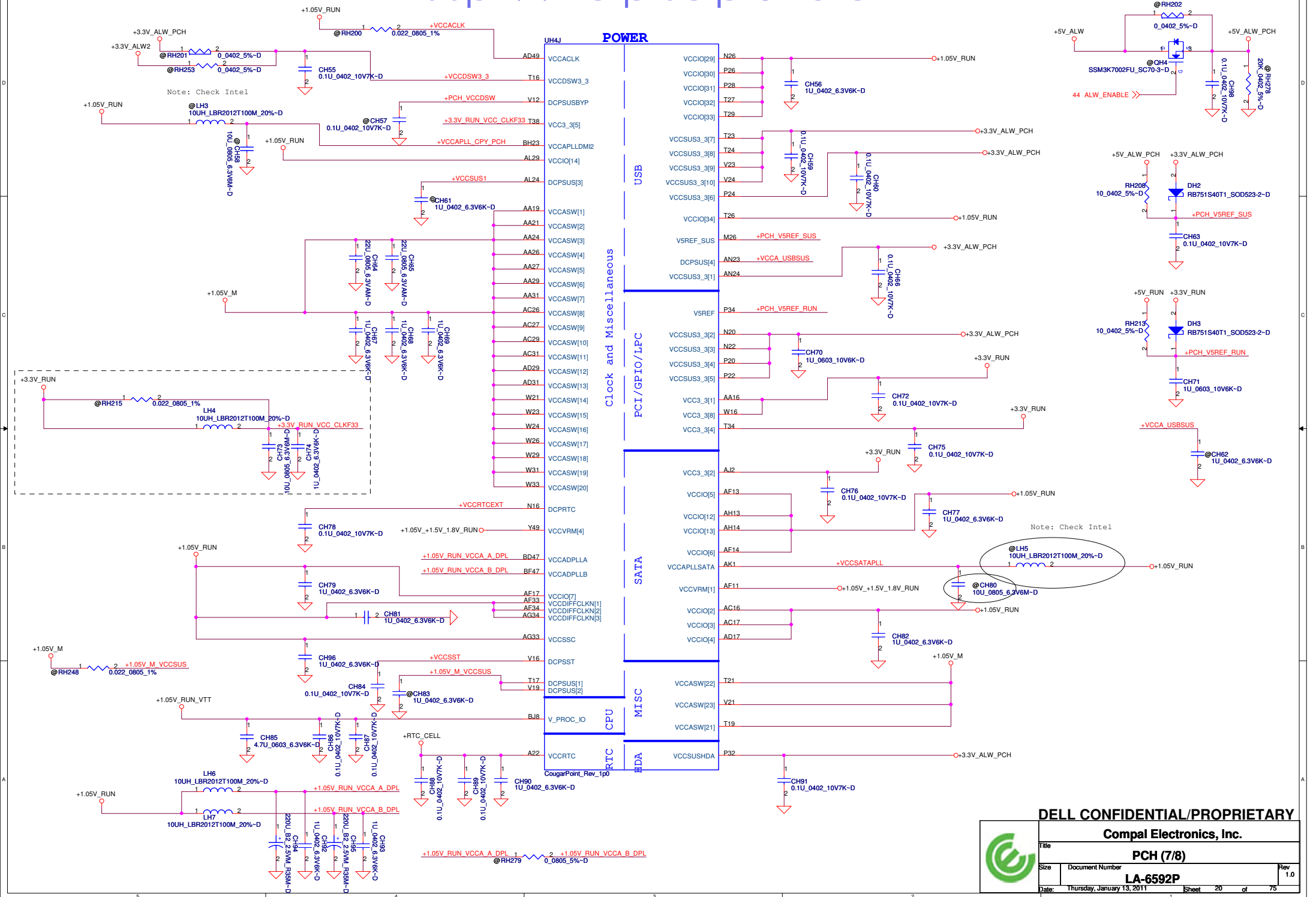


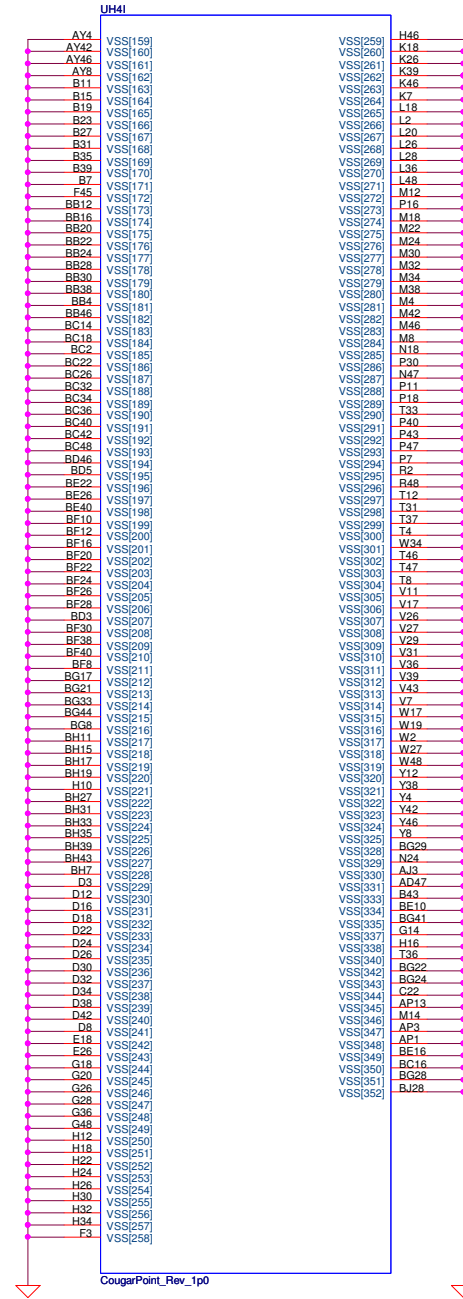
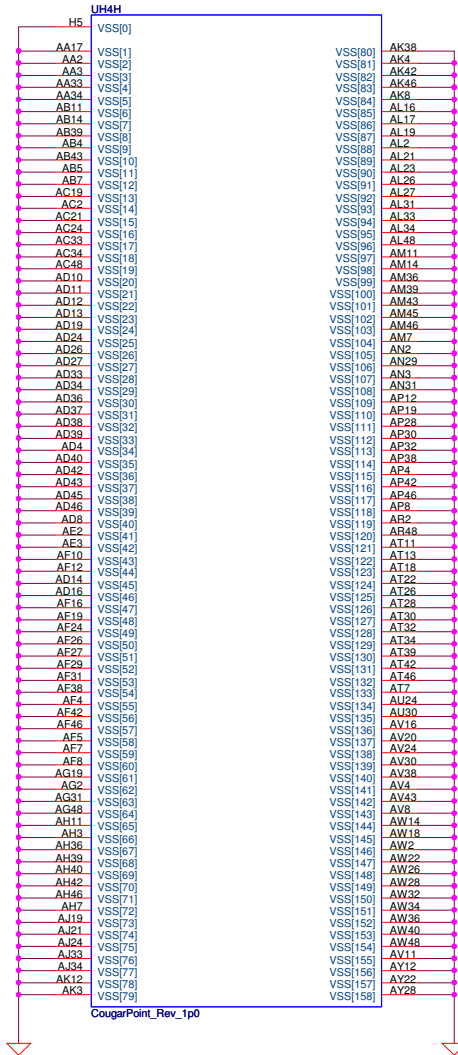
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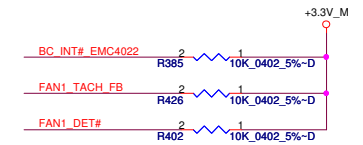
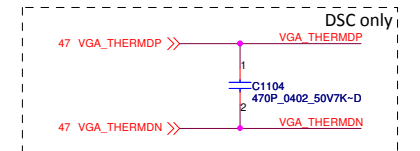
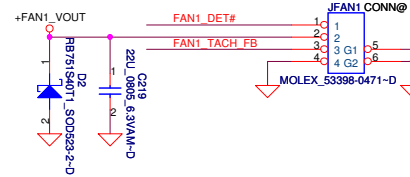
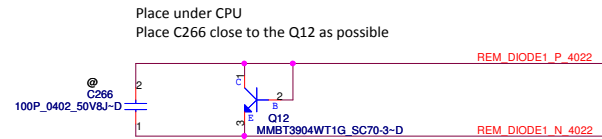
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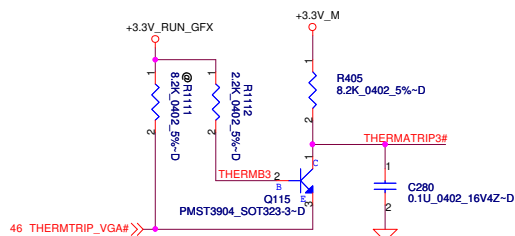
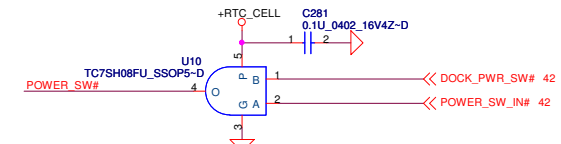
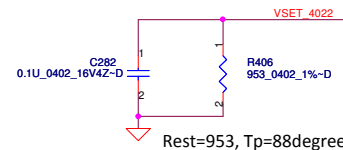
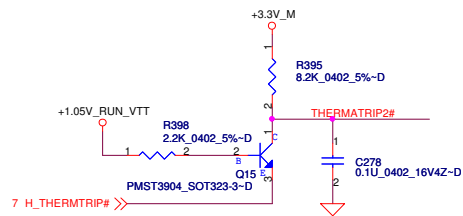
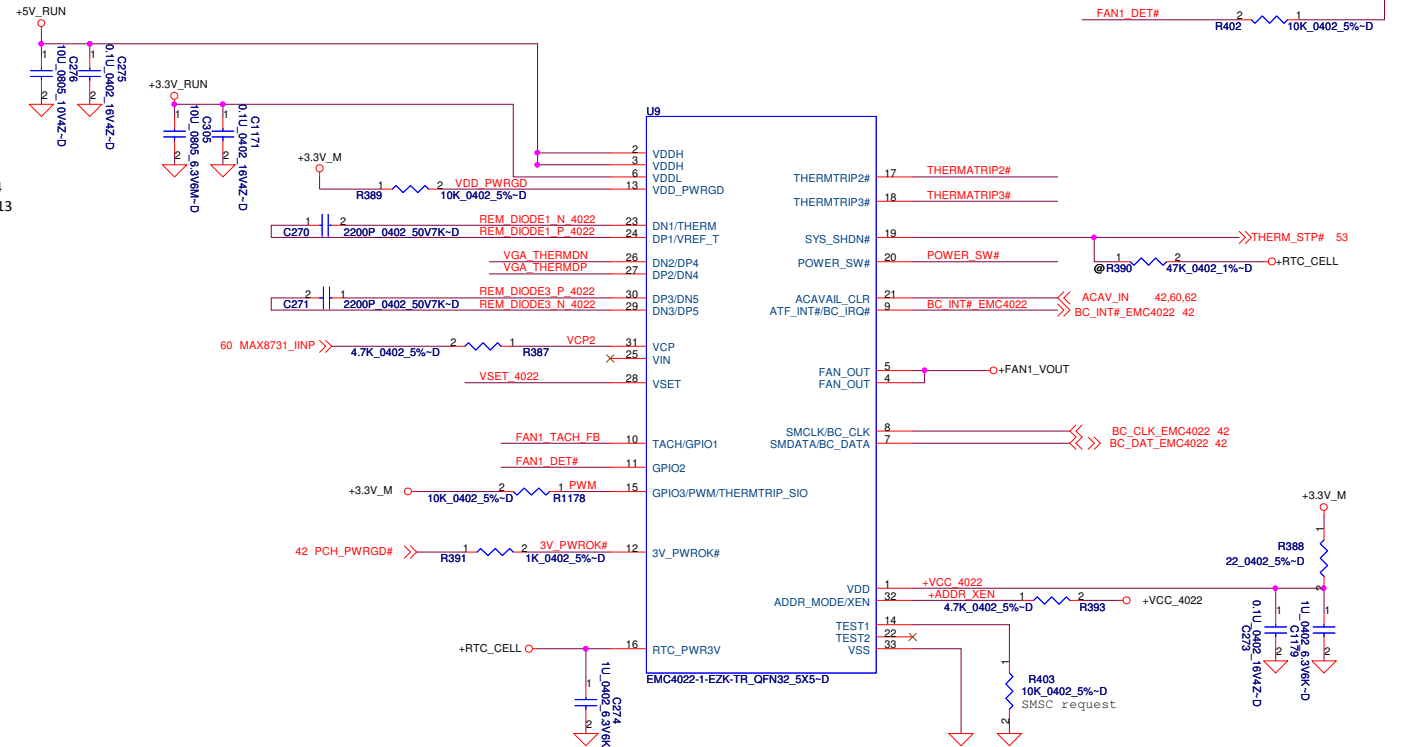
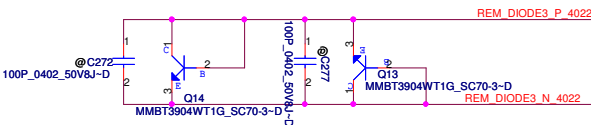
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(1) DP3/DN3 for SODIMM on Q14, place Q14 close to SODIMM and C272 close to Q14
(2) DP5/DN5 for Skin on Q13, place Q13 close to JMINI1 for WWAN and C277 close Q13



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FAN & Thermal Sensor

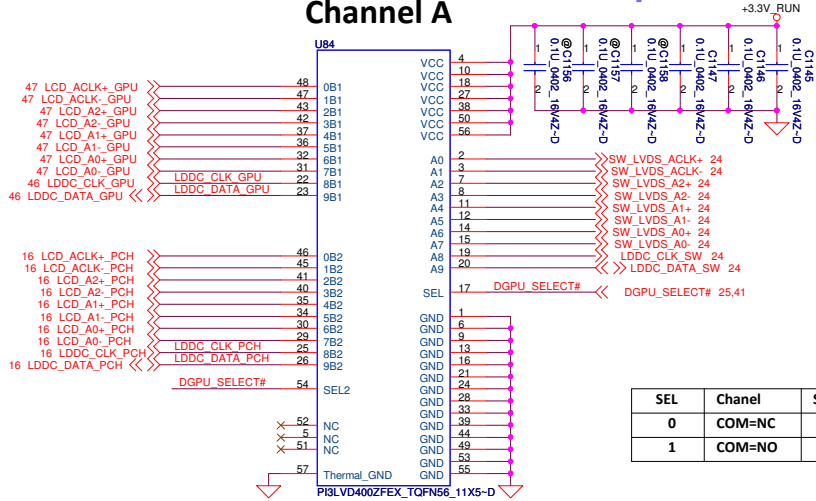
LA-6592P

Rev	
1.0	

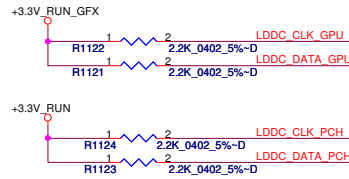
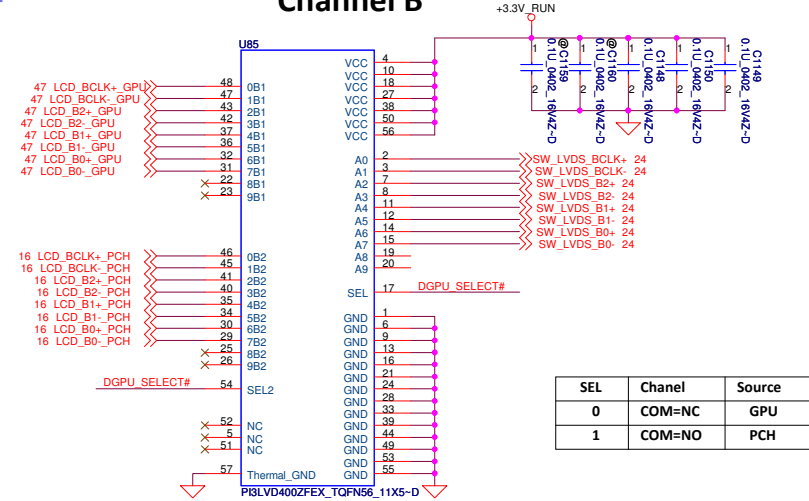
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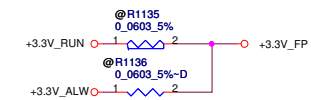
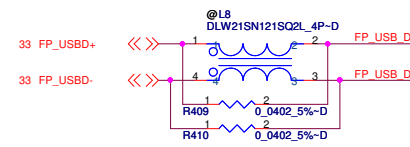
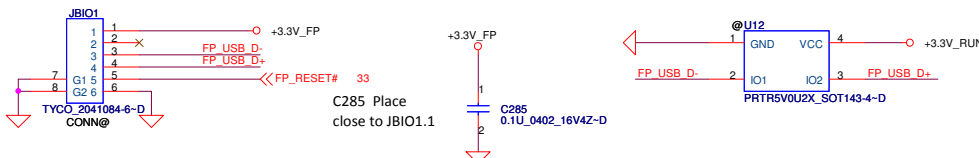
Channel A



Channel B



Fingerprint CONN.



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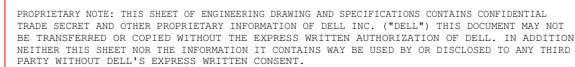
LVDS SW/FP Conn.

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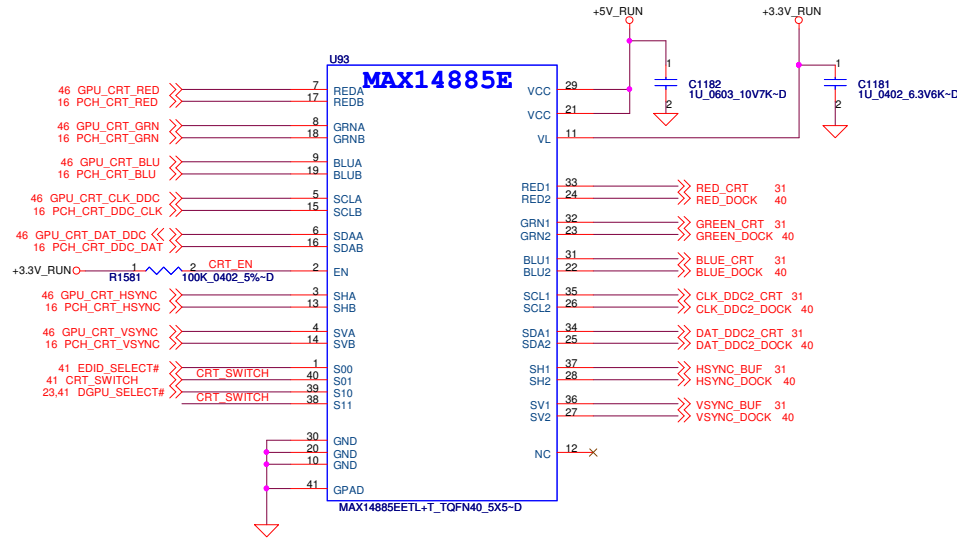
Rev 1.0

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Channel A --> GPU

Channel B --> PCH



Port 1 --> MB Port RGB

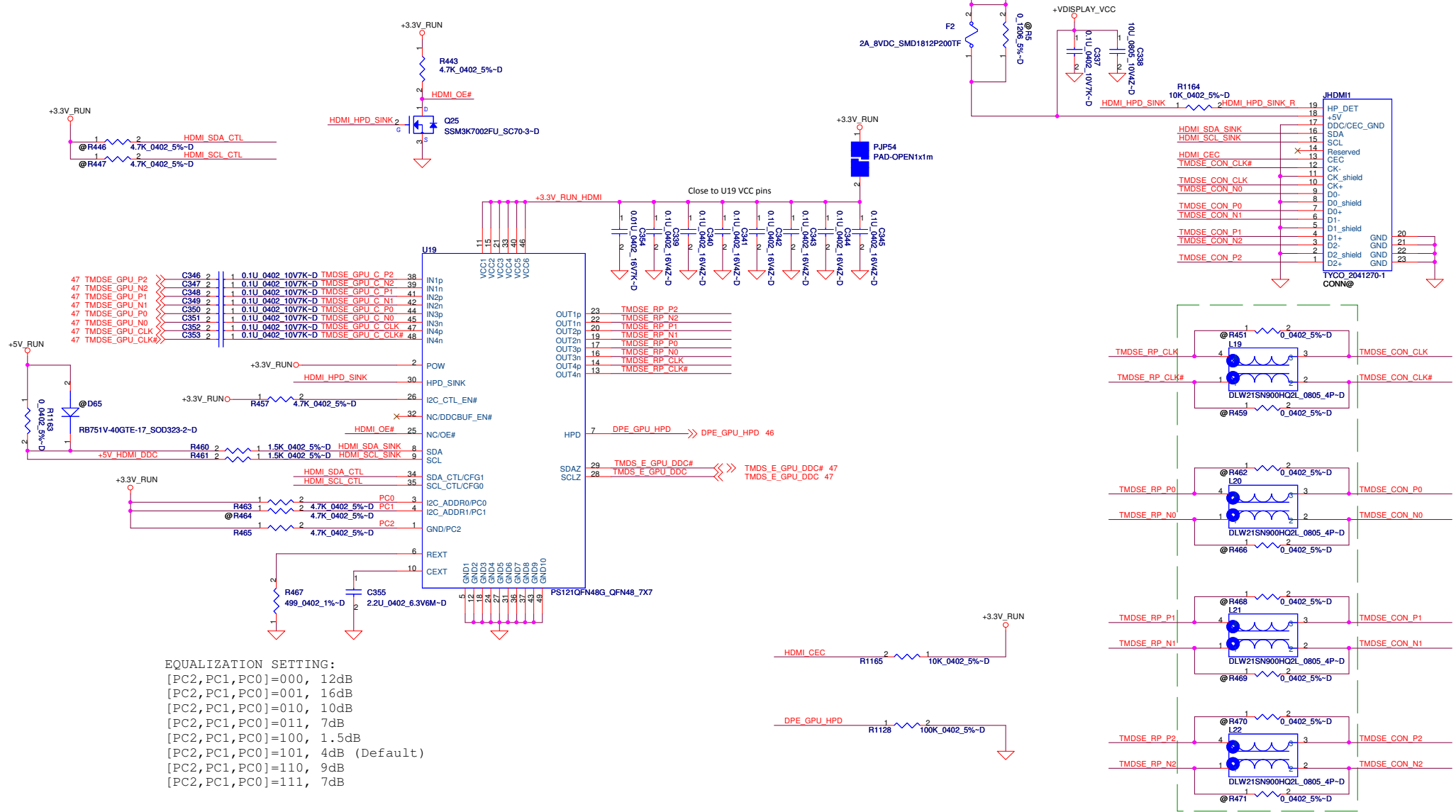
Port 2 --> Docking Port RGB

CRT_SWITCH	0	0	1	1
DGPU_SELECT#	0	1	0	1
EDID_SELECT#	0	1	0	1
	A --> Port 1	B --> Port 1	A --> Port 2	B --> Port 2

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Title CRT/Video switch			
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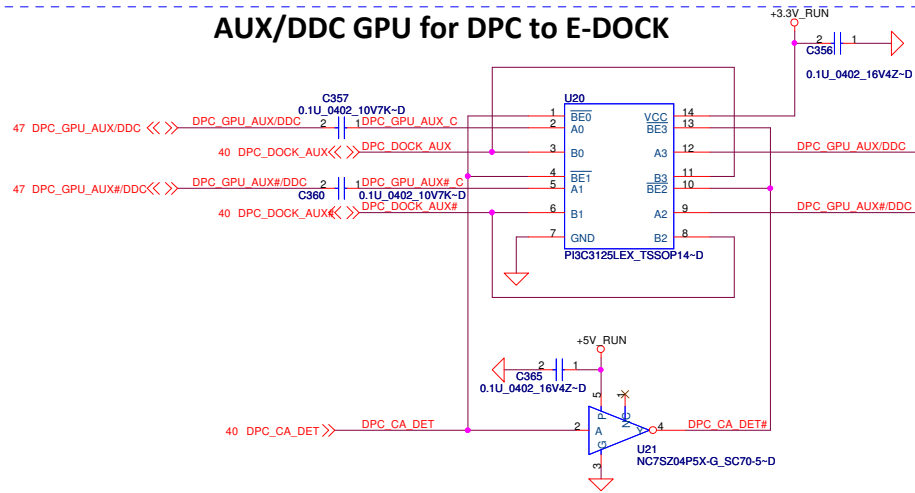
Compal Electronics, Inc.



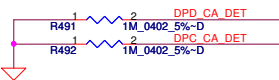
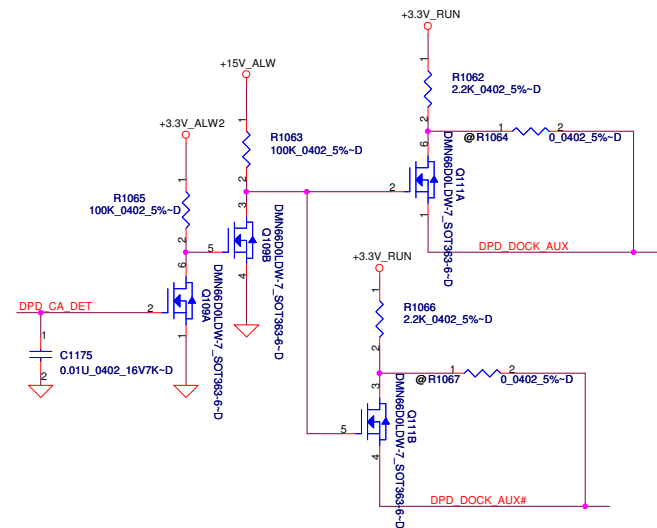
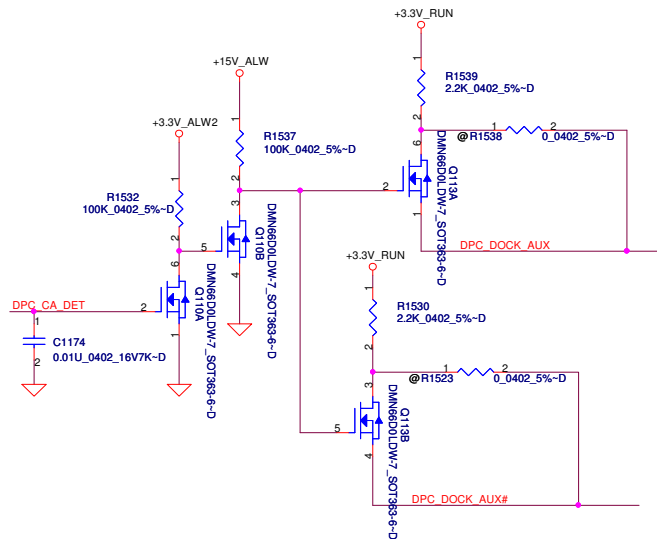
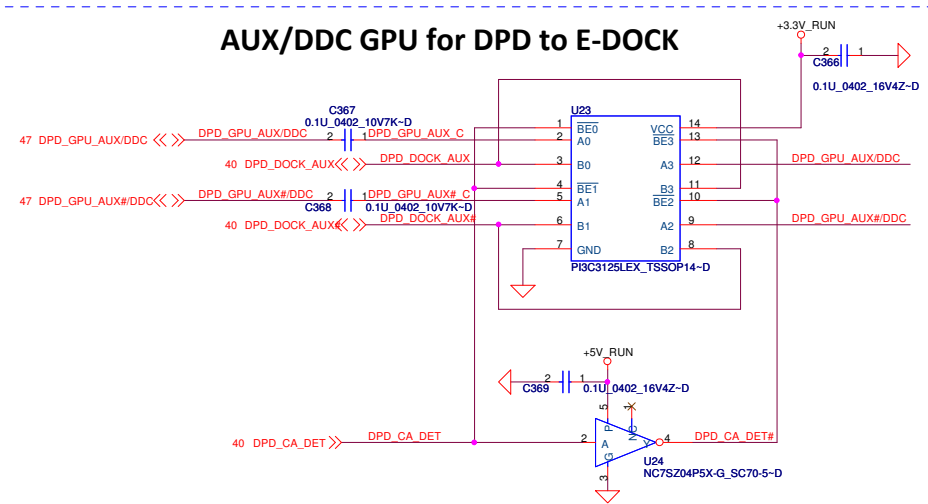
Title		
HDMI port		
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AUX/DDC GPU for DPC to E-DOCK



AUX/DDC GPU for DPD to E-DOCK



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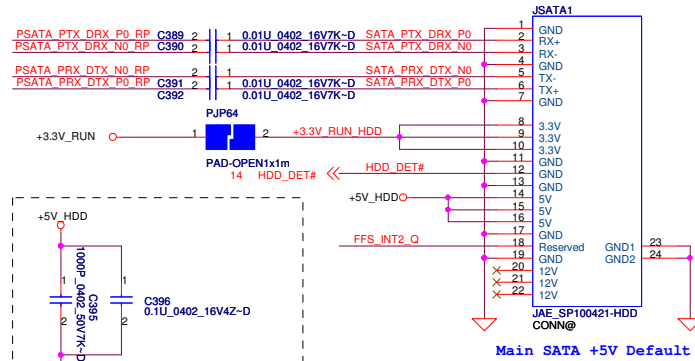
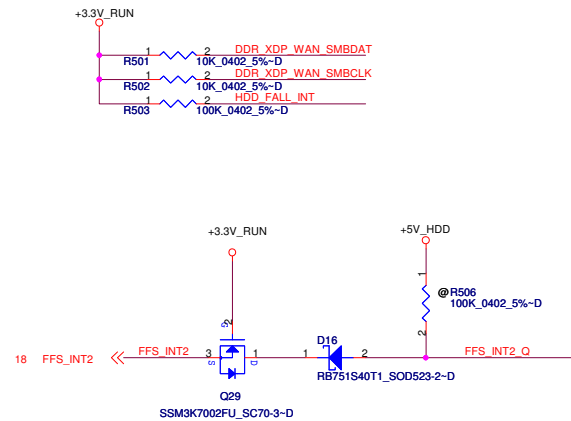
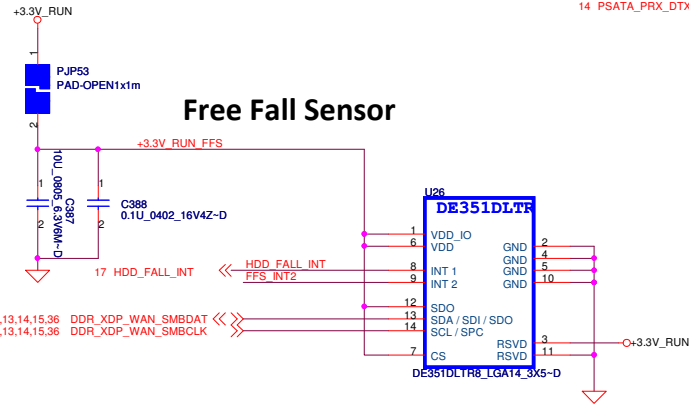
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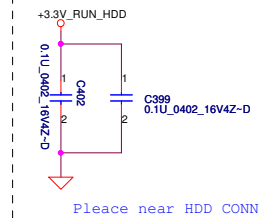
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Title			
DP AUX SW			
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HDD Repeater

Free Fall Sensor



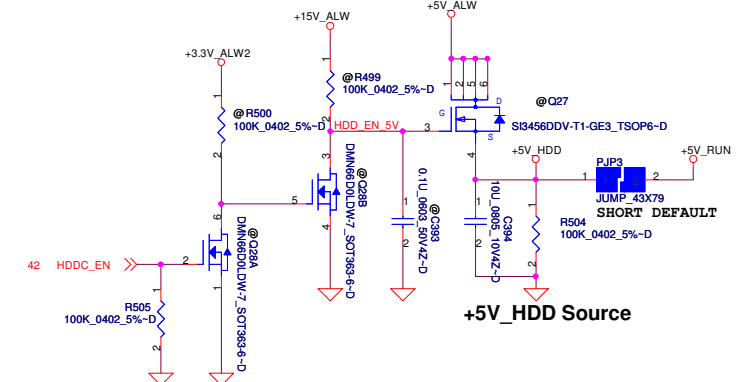
Please near HDD CONN



Please near HDD CONN

Note: +HDD_DEW1, +HDD_DEW2, +HDD_EQ1, +HDD_EQ2 need to route 10 mils and R1169, R1171, R1174, R1176 need to change to 10k and no stuff R1174, R1176 to support TI SN75LVCP601

HDD PWR



+5V_HDD Source

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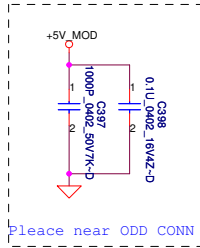
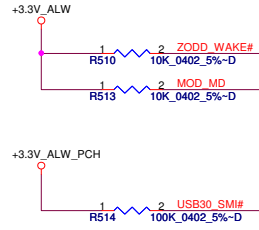
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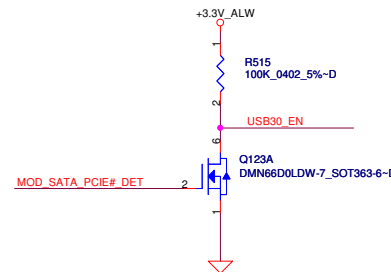
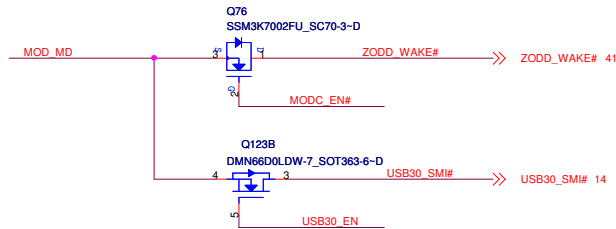
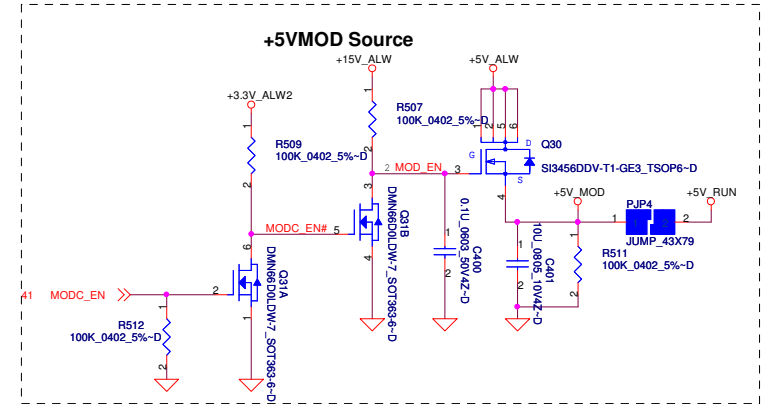
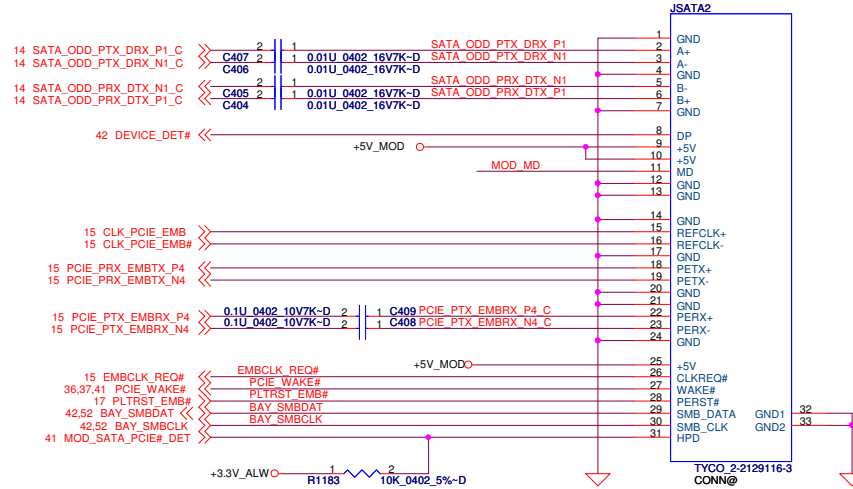
HDD CONNECTOR

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For ODD



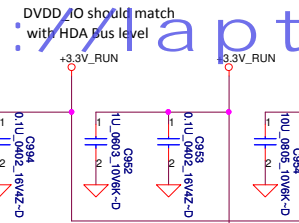
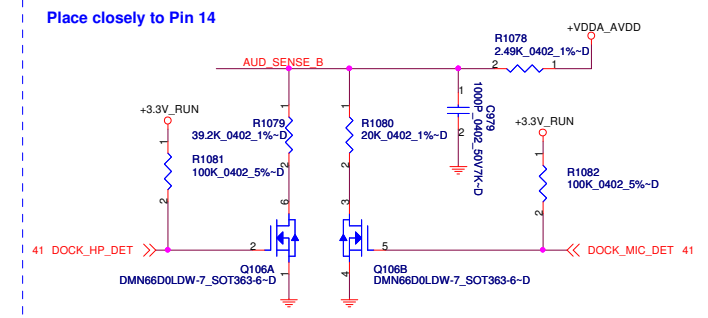
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Title			
ODD CONNECTOR			
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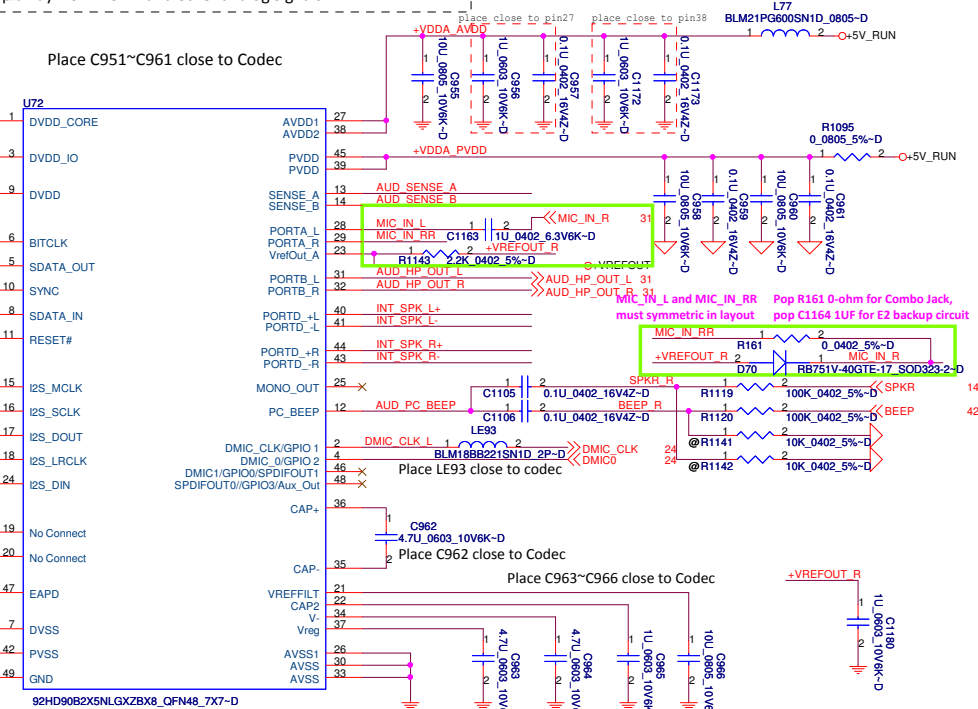
Speaker Connector



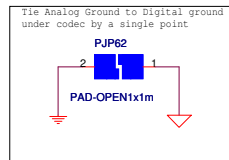
Notes:

- Keep PVDD supply and speaker traces routed on the DGND plane
- Keep away from AGND and other analog signals

Place C951~C961 close to Codec

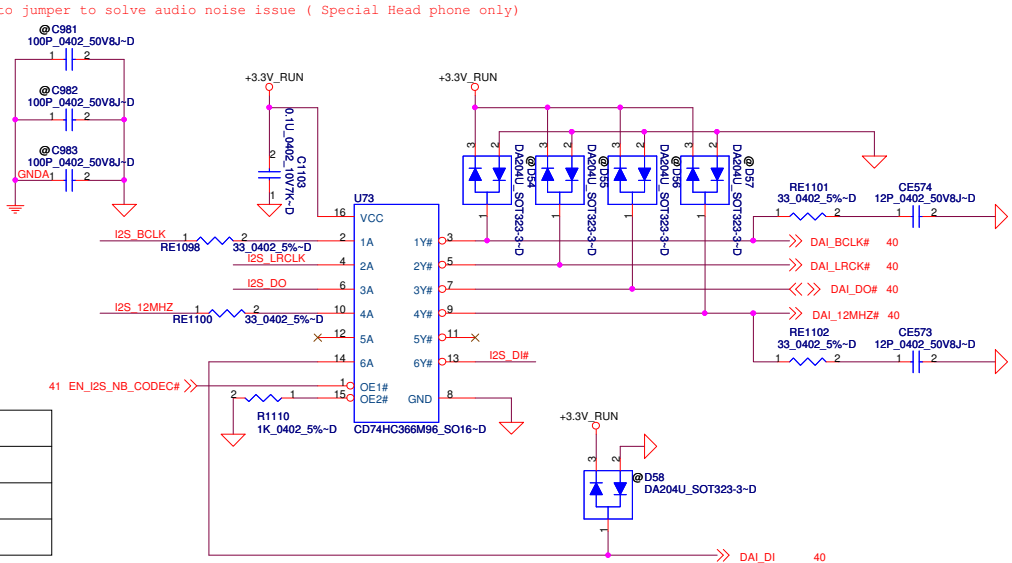


change C981 to jumper to solve audio noise issue (Special Head phone only)



PORT A	External MIC
PORT B	HeadPhone Out
PORT C	Dock Audio
PORT D	Internal SPK

Resistor	SENSE_A	SENSE_B
39.2K	PORT A	PORT E
20K	PORT B	PORT F
2.49K	Pull-up to AVDD	



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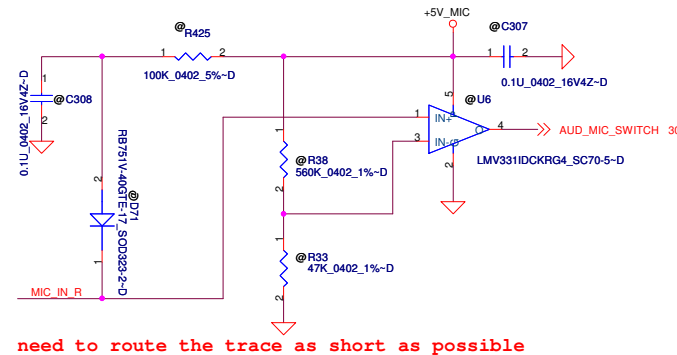
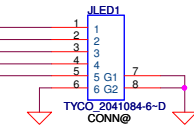
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Azalia (HD) Codec

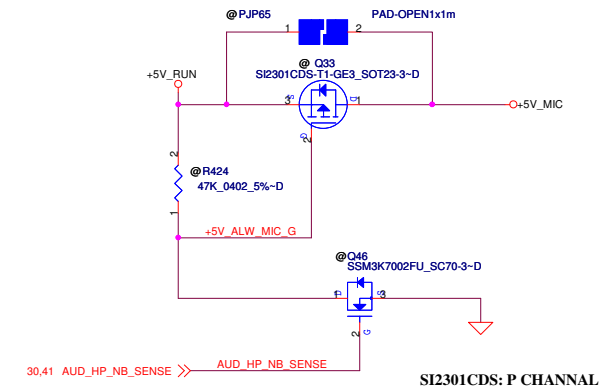
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Change to TYCO_2041300-2_60P-T and Horizontal reverse to SSI



need to route the trace as short as possible



SI2301CDS: P CHANNEL

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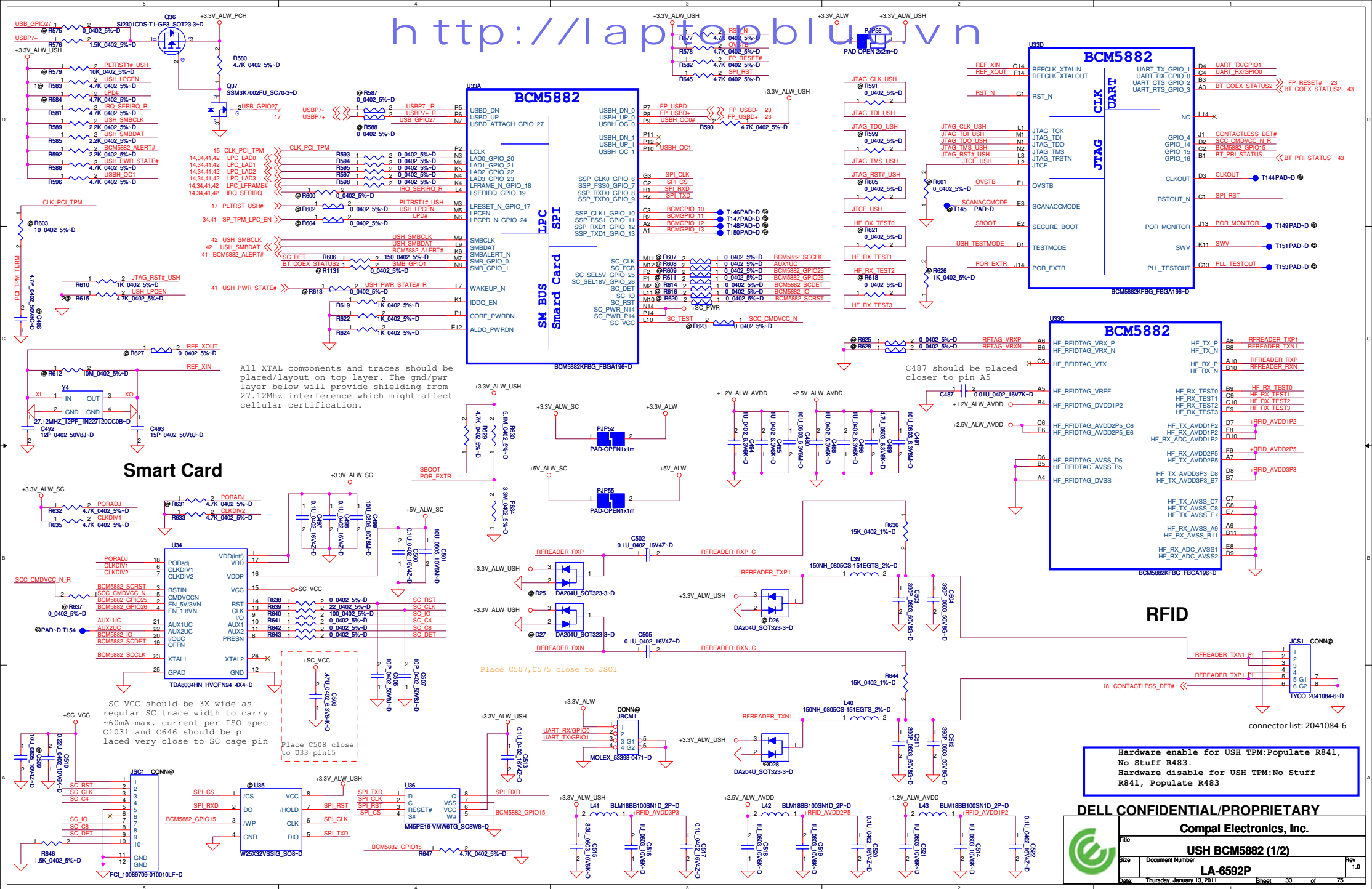
PWR SW/Sub-board Connector

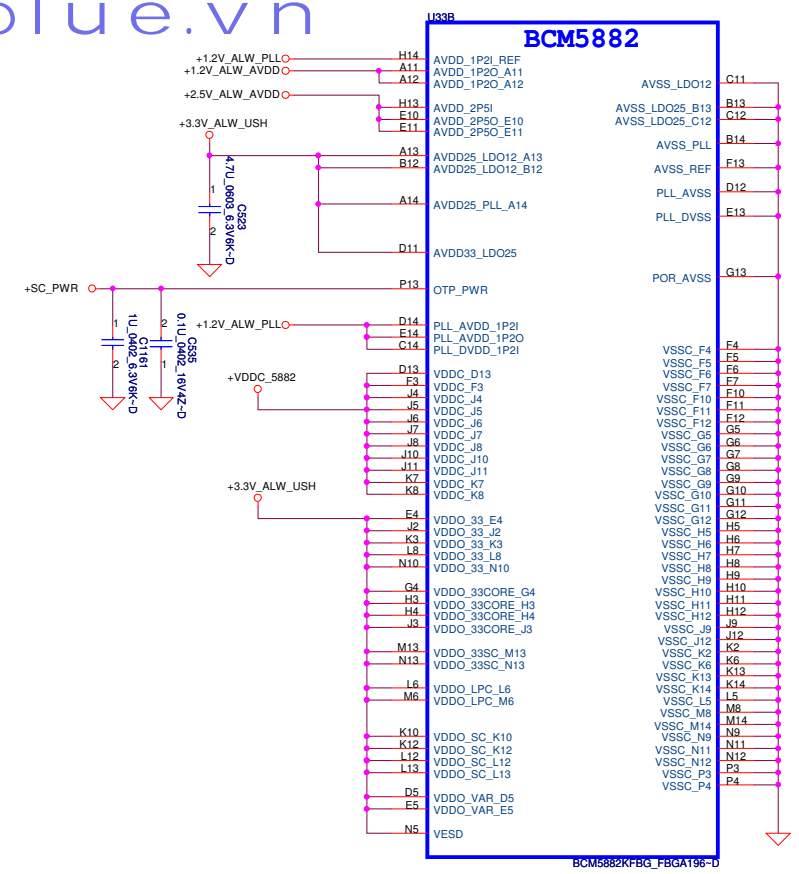
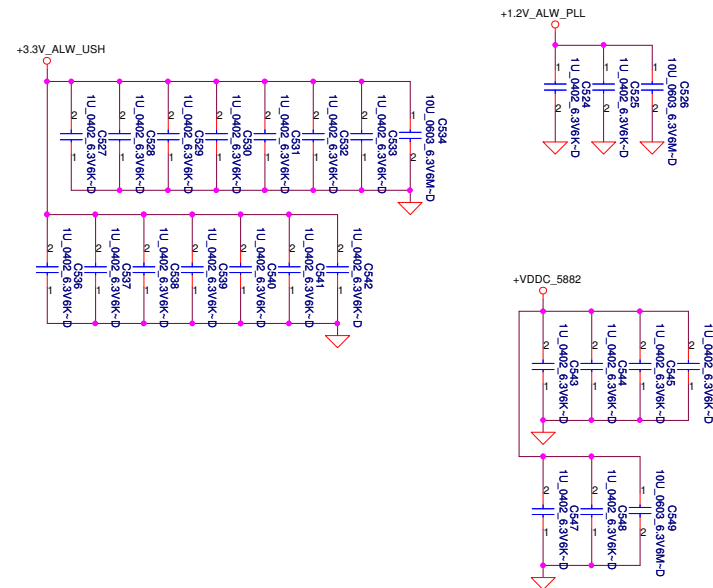
LA-6592P

Rev
1.0

Date: Thursday, January 13, 2011

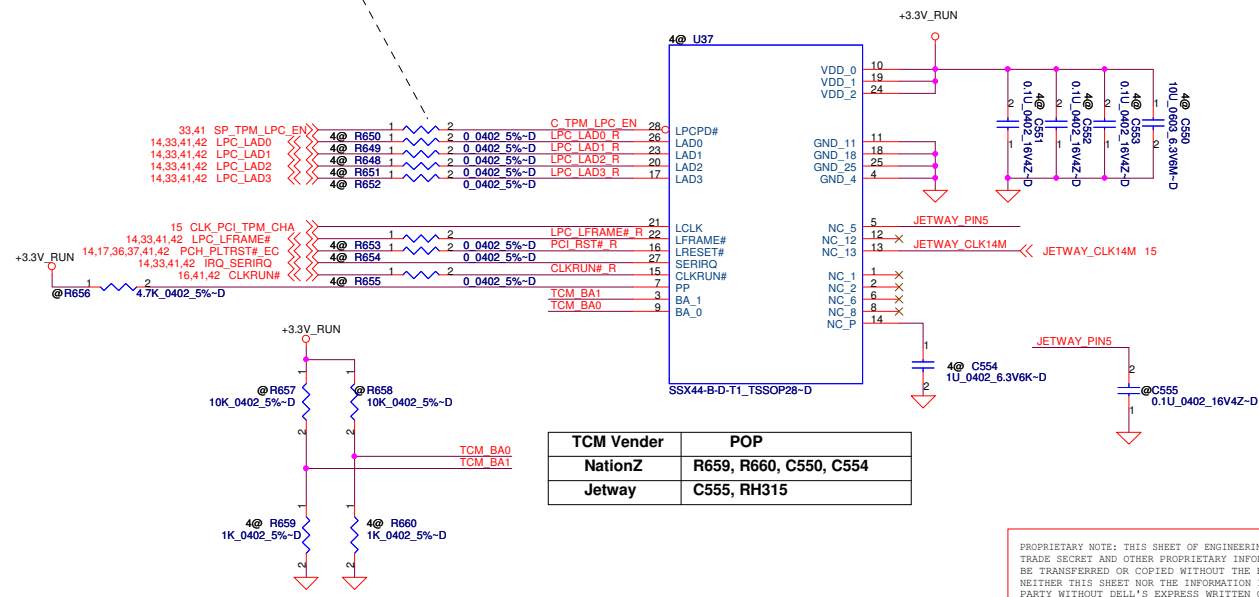
Sheet 31 of 75





LOW:Power Down Mode
High:Working Mode

China TCM: NationZ & Jetway co-lay



TCM Vender	POP
NationZ	R659, R660, C550, C554
Jetway	C555, RH315

USH BCM5882 and China TCM Z8H172T Option				
PART/PIN	Ref Des	TCM Enable	TPM Enable	ALL TPM/TCM Disable
TCM circuit	All 4@	POP	@	@
USH_LPCEN	PU R583	@	POP	@
SIO 5028 ->SP_TPM_LPC_EN	PD R615	POP	@	@
PCH GPIO39 ->TPM_ID1	PU RH268	@	POP	POP
PCH GPIO38 ->TPM_ID0	PD RH271	POP	@	@
	PD RH270	POP	@	POP



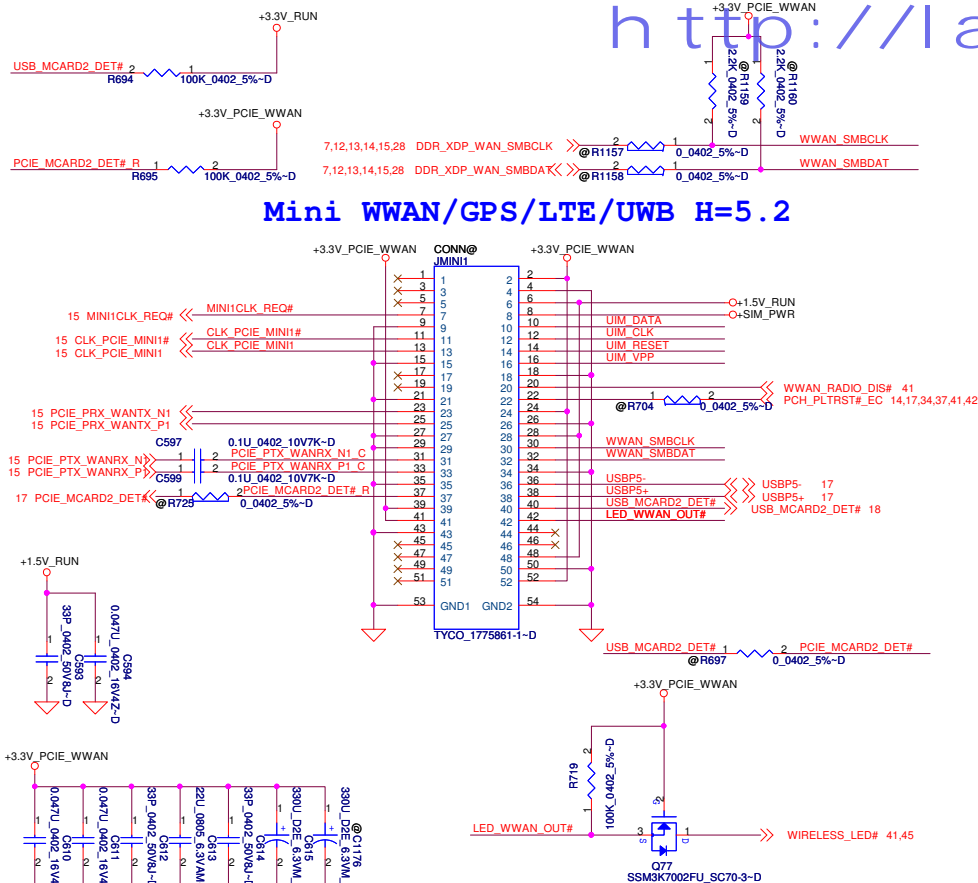
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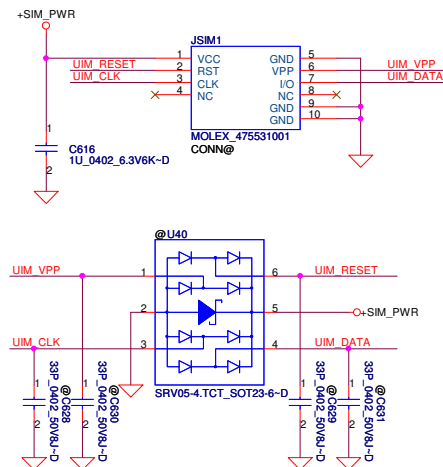
USH BCM5882 (2/2)

LA-6592P
Rev 1.0
Date: Thursday, January 13, 2011 Sheet 34 of 75

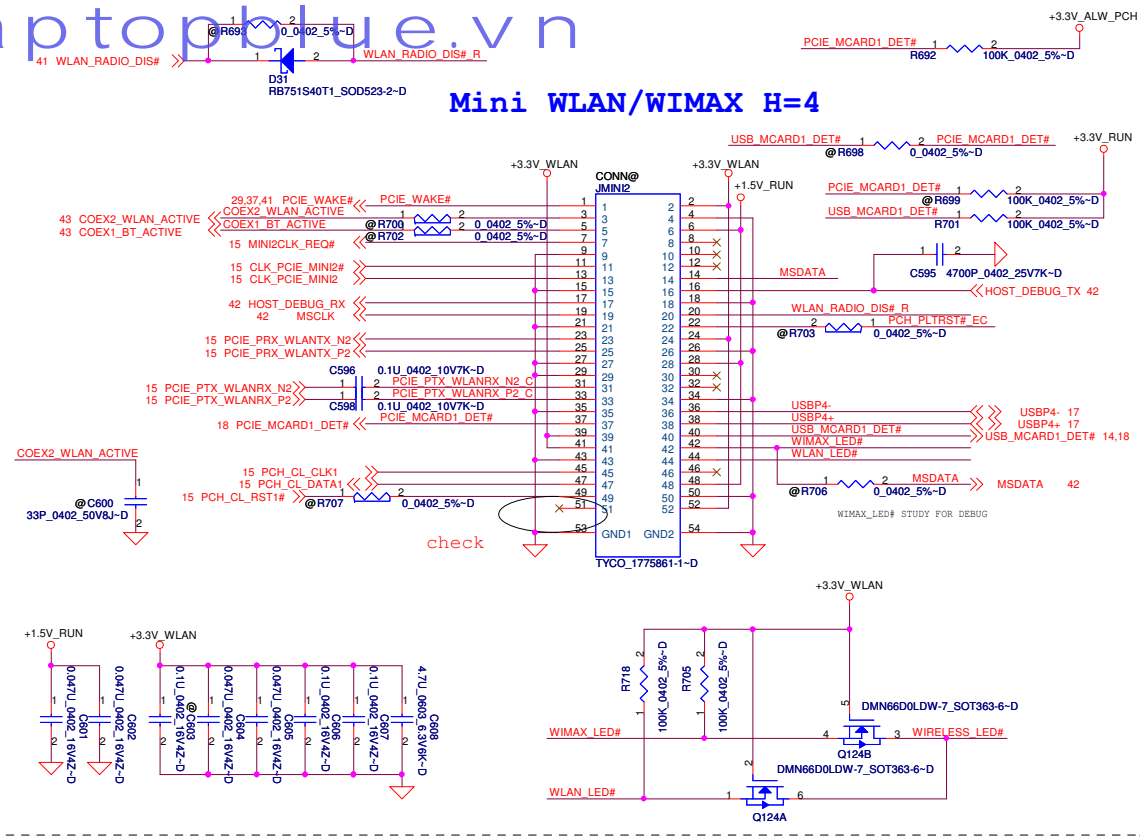
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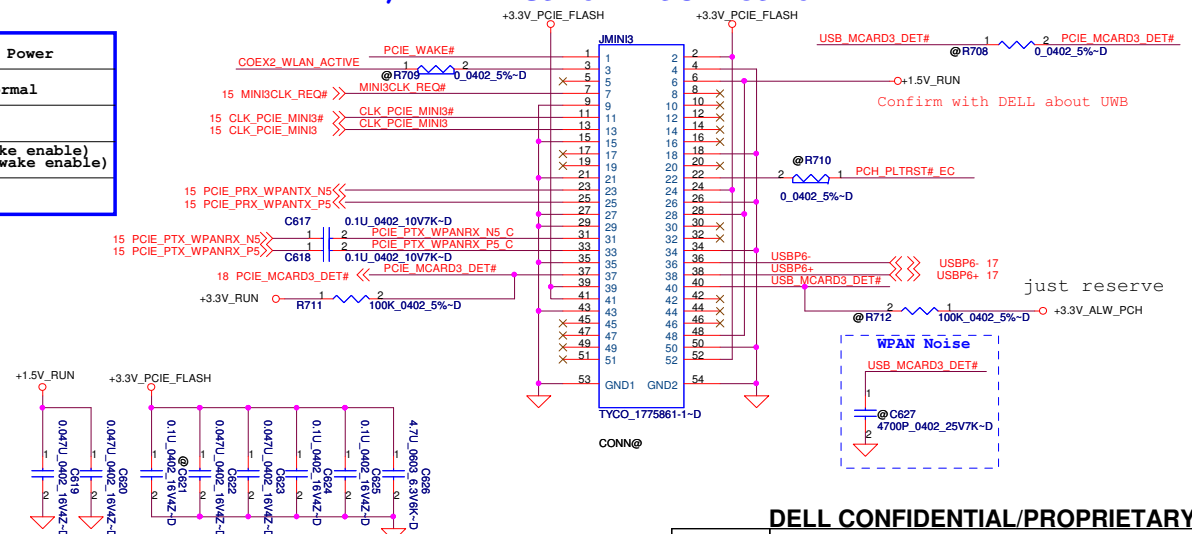
SIM Card Push-Push



PWR Rail	Voltage Tolerance	Primary Power		Aux Power
		Peak	Normal	Normal
+3.3V	+−9%	1000	750	
+3.3Vaux	+−9%	330	250	250 (Wake enable) 5 (Not wake enable)
+1.5V	+−5%	500	375	NA



1/2 Minicard Flash Card H=4



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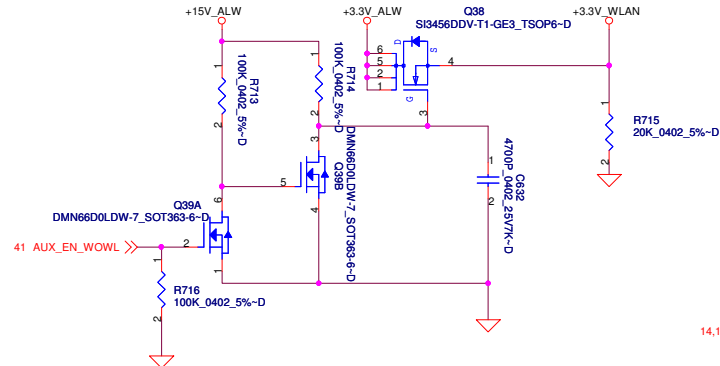
Compal Electronics, Inc.

Mini Card

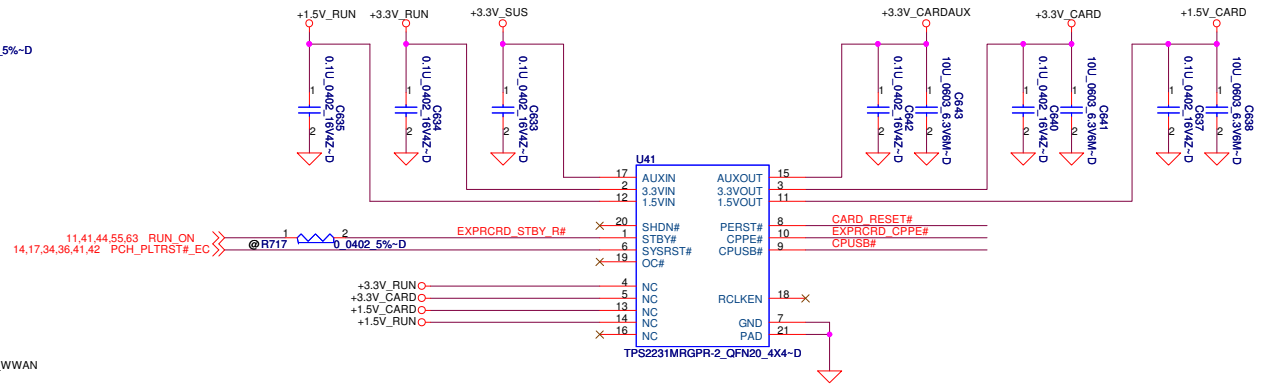
LA-6592P

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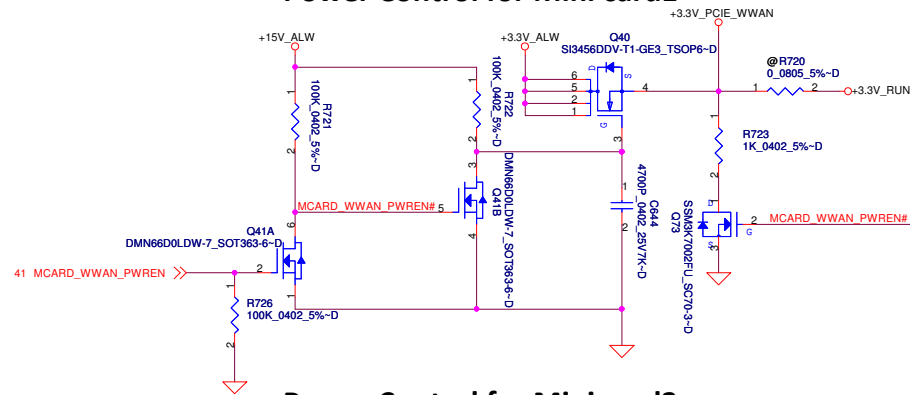
Power Control for Mini card2



Express Card PWR S/W

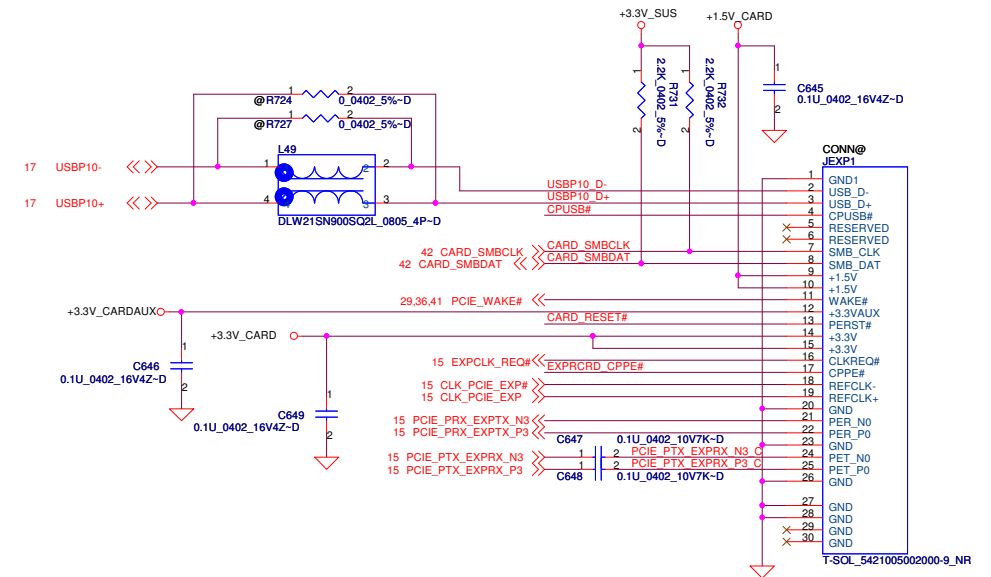


Power Control for Mini card1

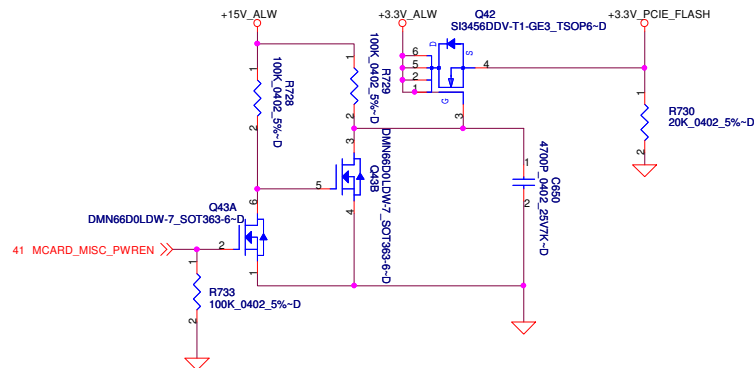


Note: Add connection on pin4, pin5, pin13 and pin14 to support GMT 2nd source part

Express Card Conn.



Power Control for Mini card3

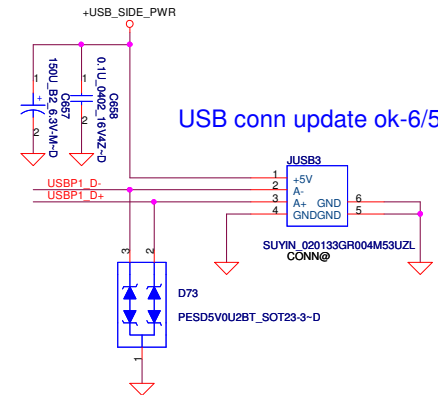
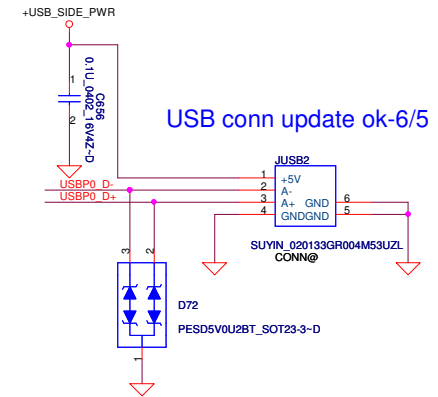
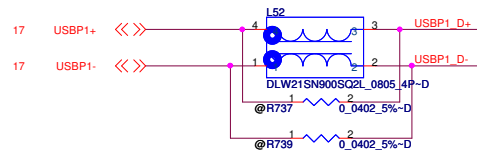
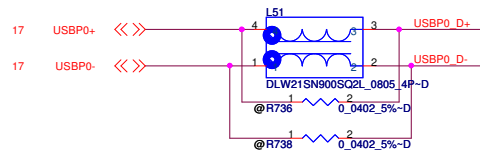


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PCIe-SATA SW / PCIe PWR			
Size	Document Number	Rev	1.0
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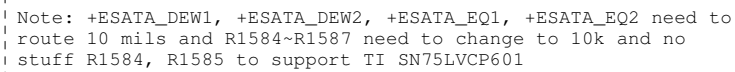


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Title			
USB x2			
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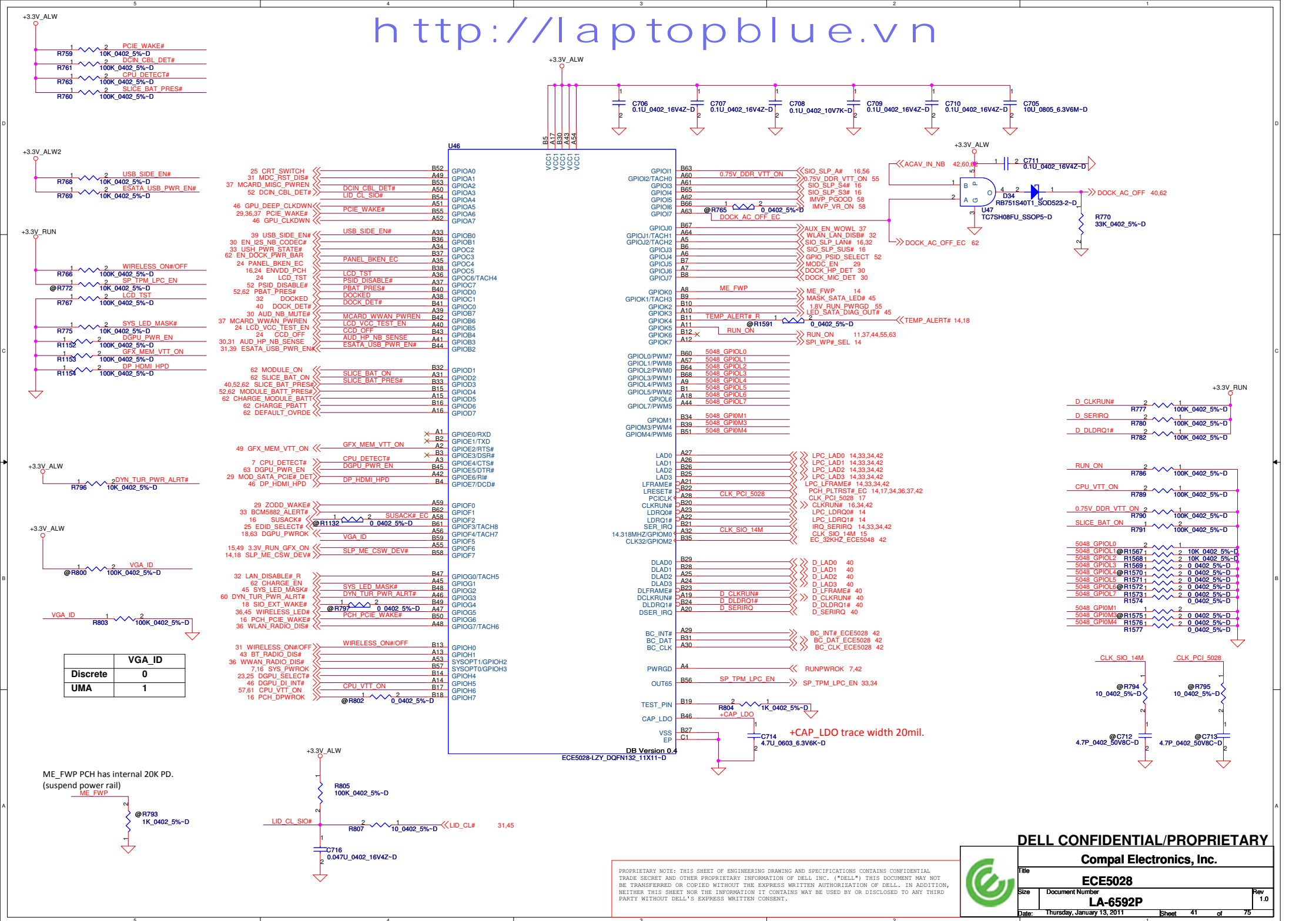
ESATA Repeater

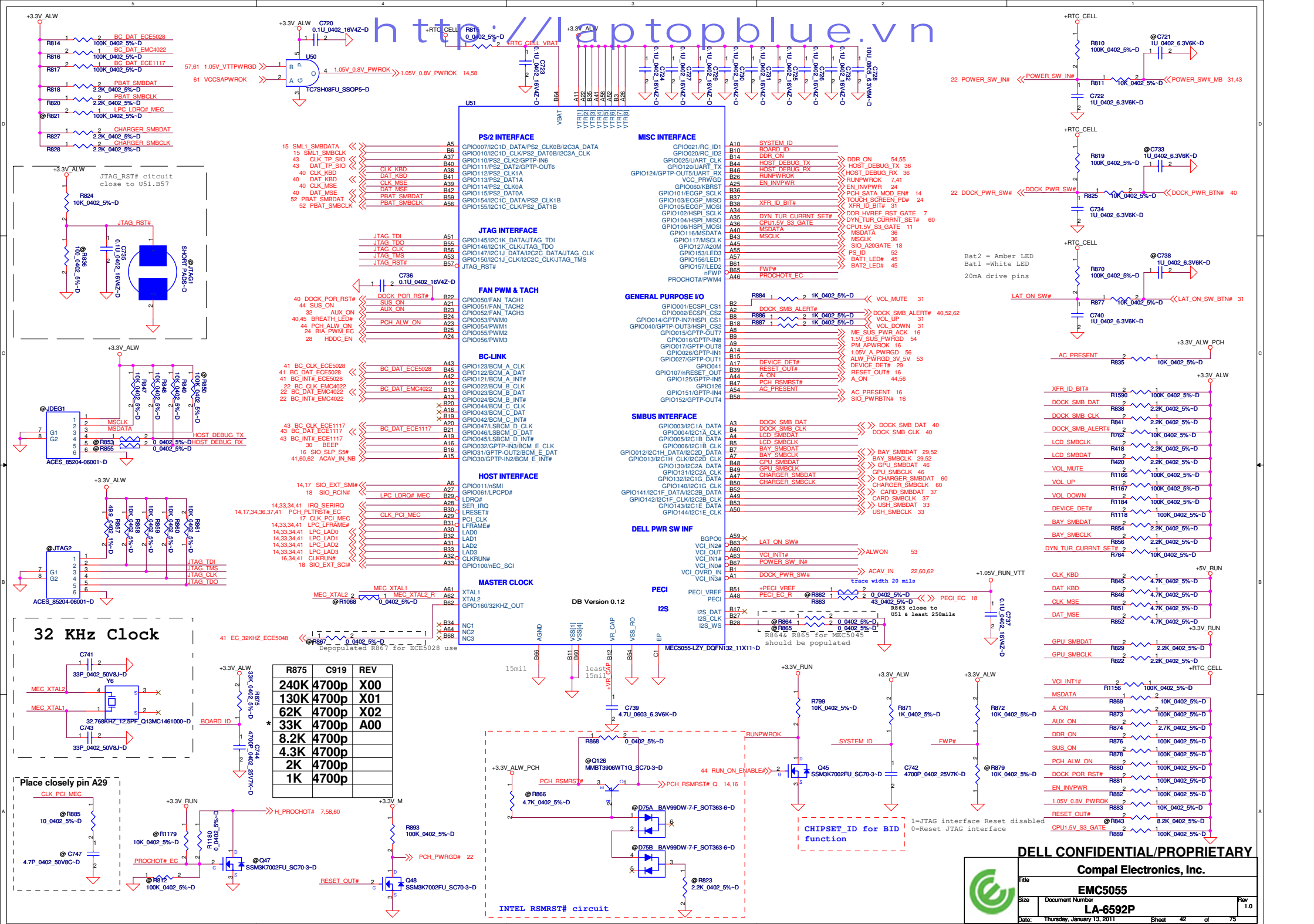


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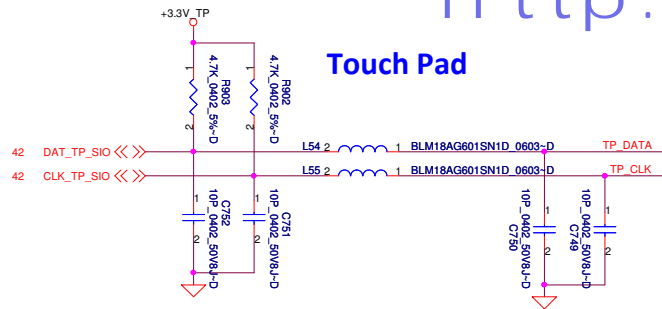


<http://laptopblue.vn>

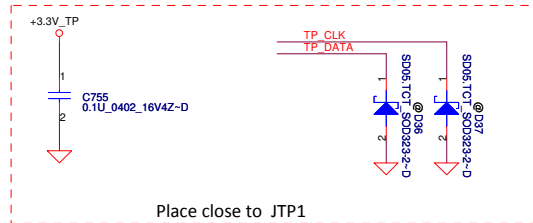
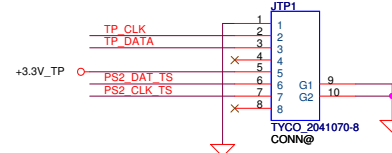




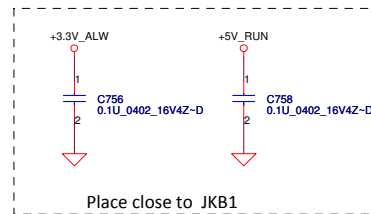
Touch Pad



Touch Pad Conn. Pitch=0.5mm

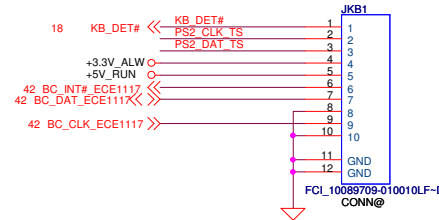


Place close to JTP1



Place close to JKB1

KB Conn. Pitch=1.0mm



@LVDS cable

Part Number	Description
DC020003Y0L	H-CONN SET 2.1X MB-LCD 14 WKG+(-1ch)

@RTC BATT

Part Number	Description
GC20323M000	BATT CR2032 3V 220MAH MAXELL

@FAN

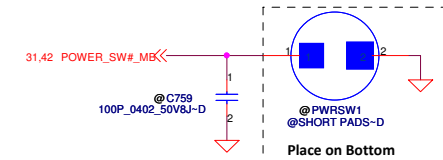
Part Number	Description
DC28A000800	FAN SET DAQ20 DC5V AB7405MB-HB3 ADDA

@Speak

Part Number	Description
PK230003Q0L	SPK PACK 2.1X 2.0W 4 OHM FG

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Power Switch for debug



Place on Bottom

@LED Board FFC

Part Number	Description
NBX0000R0P0L	FFC 6P H P1 PAD=0.7 87.4MM MB-LED/B OFD

@MEDIA Board FFC

Part Number	Description
NBX0000R0S0L	FFC 12P G P.5 PAD.3 75MM MB-VOLUME/B OFD

@LVDS cable

Part Number	Description
DC02C00180L	H-CONN SET OFD MB-LCD CAM LED 2CHANNEL

@SG DC IN wire cable

Part Number	Description
DC30100B00L	CONN SET OFE DCJACK-MB WDM-DCE30002-DF

@Battery bridge cable

Part Number	Description
DC020014210	H-CONN SET OFD M/B-BATTERY 9PIN

@MDC wire set cable

Part Number	Description
DC30100B00L	CONN SET OFD MDC-RJ11

@T/P FFC

Part Number	Description
NBX0000R0R0L	FFC 8P F P0.5 PAD=0.3 136MM MB-TP/B OFD

@KB FFC

Part Number	Description
SP070007V0L	S SOCKET TYCO 1770551-1 10P H5.9 SMART

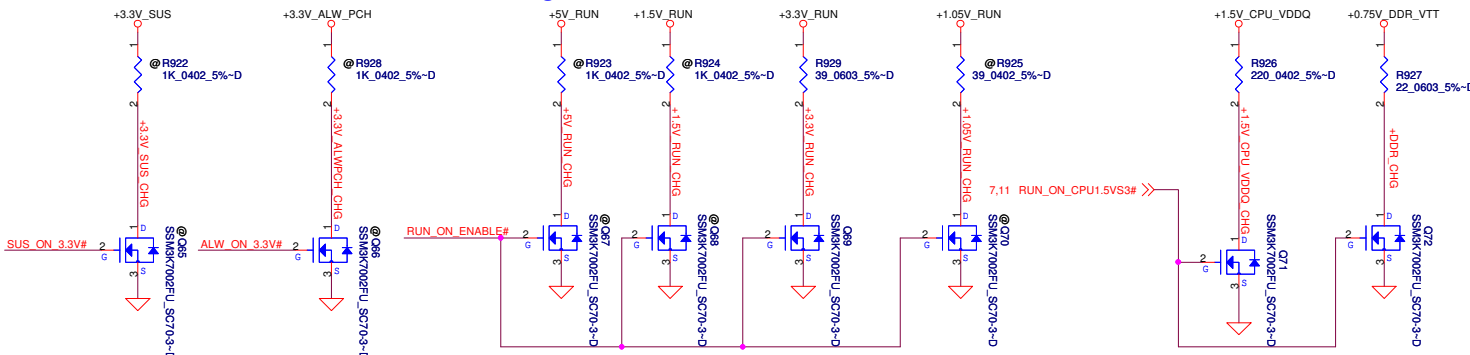
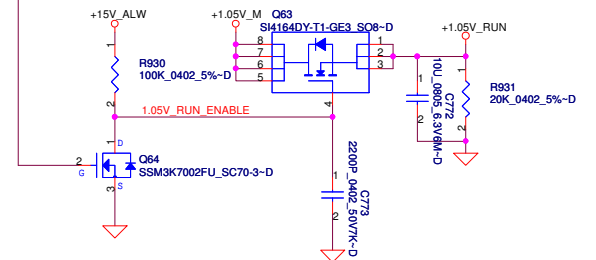
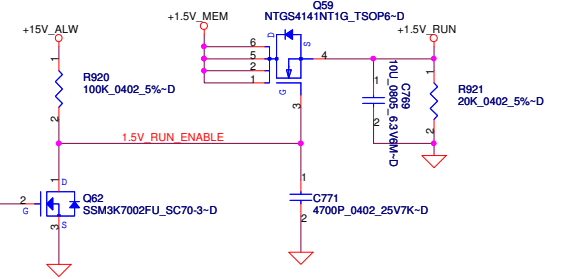
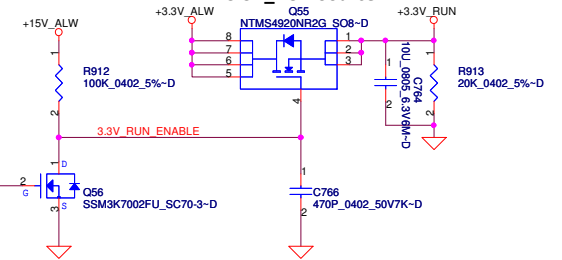
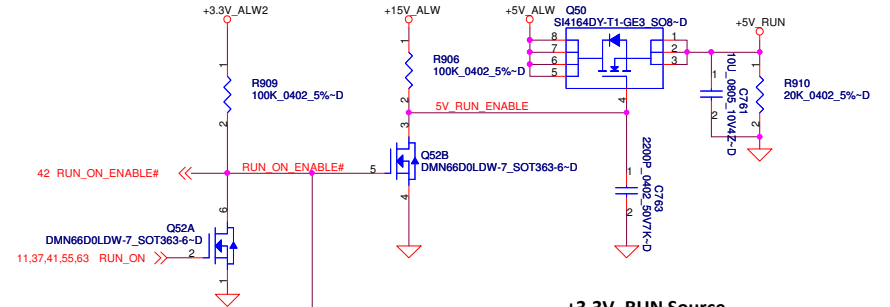
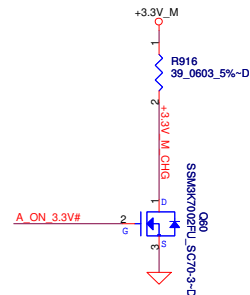
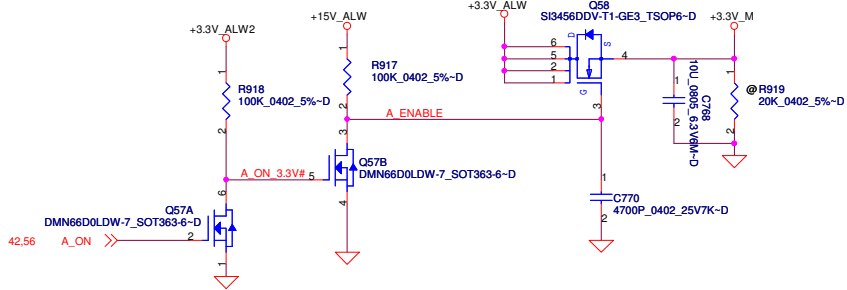
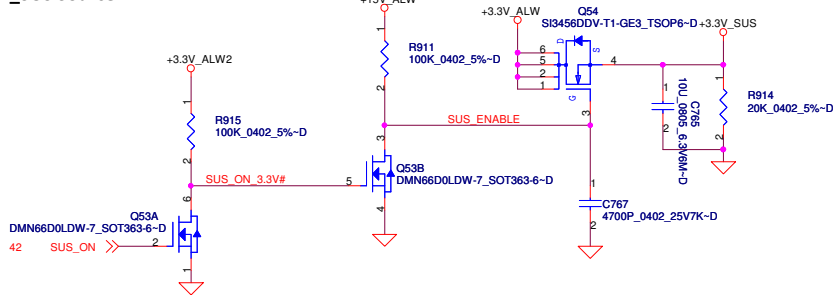
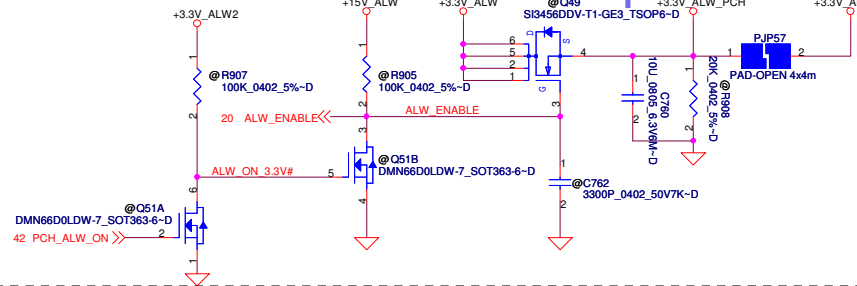
@BT wire cable

Part Number	Description
DC020014Y0L	H-CONN SET OFD MB-BT

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Title			
Touch PAD/Int KB/BT			
Size	Document Number	Rev	
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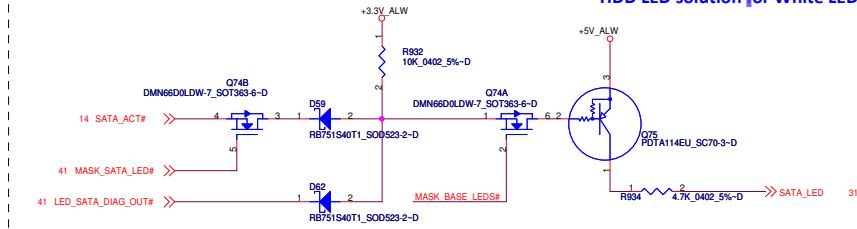


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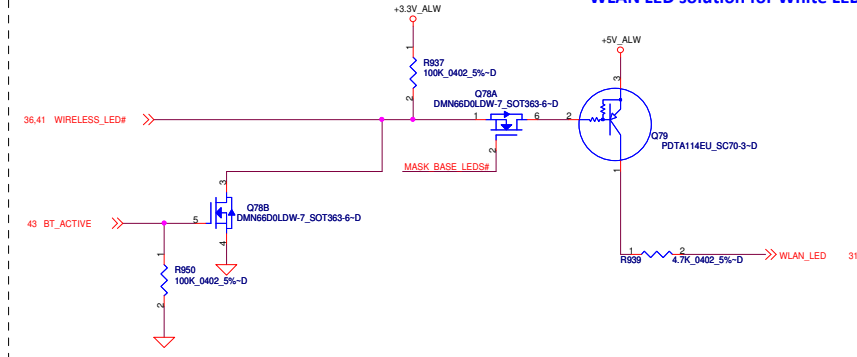
LA-6592P

1.0

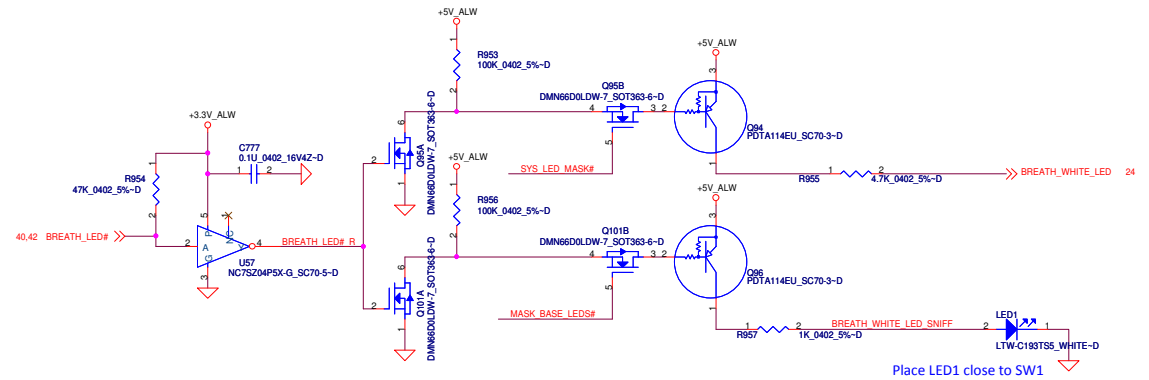
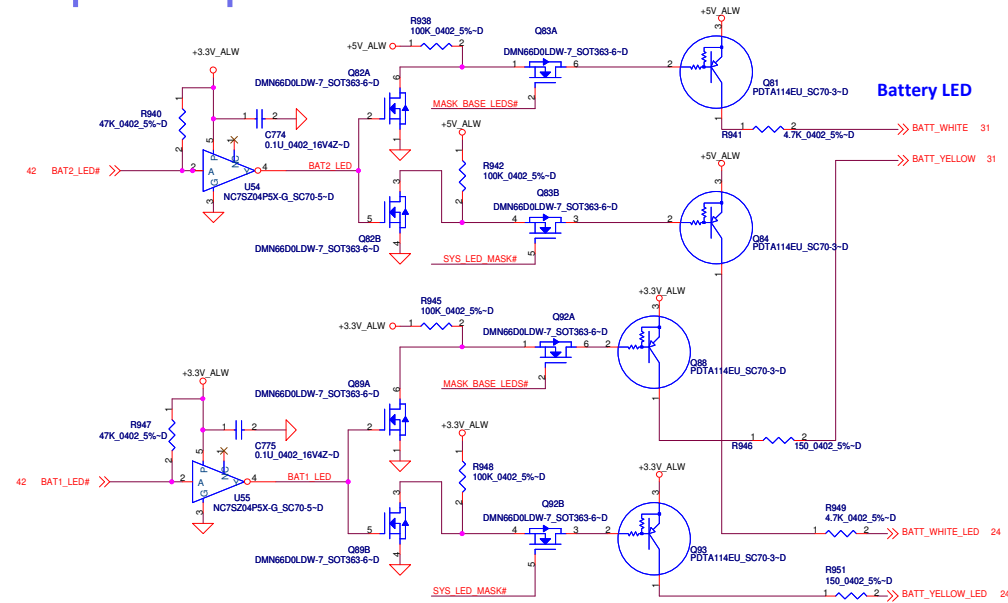
HDD LED solution for White LED



WLAN LED solution for White LED



Battery LED



Place LED1 close to SW1

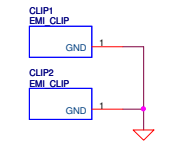
Fiducial Mark

- FD1
- FIDUCIAL MARK-D
- FD2
- FIDUCIAL MARK-D
- FD3
- FIDUCIAL MARK-D
- FD4
- FIDUCIAL MARK-D

LED Circuit Control Table

	SYS_LED_MASK#	LID_CL#
Mask All LEDs (Sniffer Function)	0	X
Mask Base MB LEDs (Lid Closed)	1	0
Do not Mask LEDs (Lid Opened)	1	1

EMI CLIP



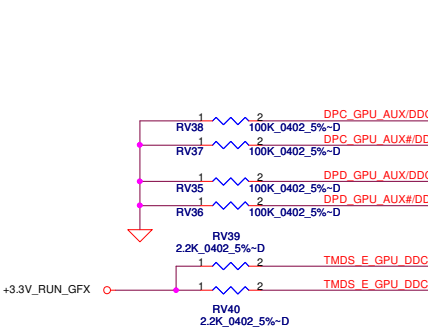
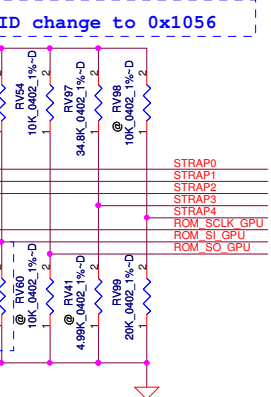
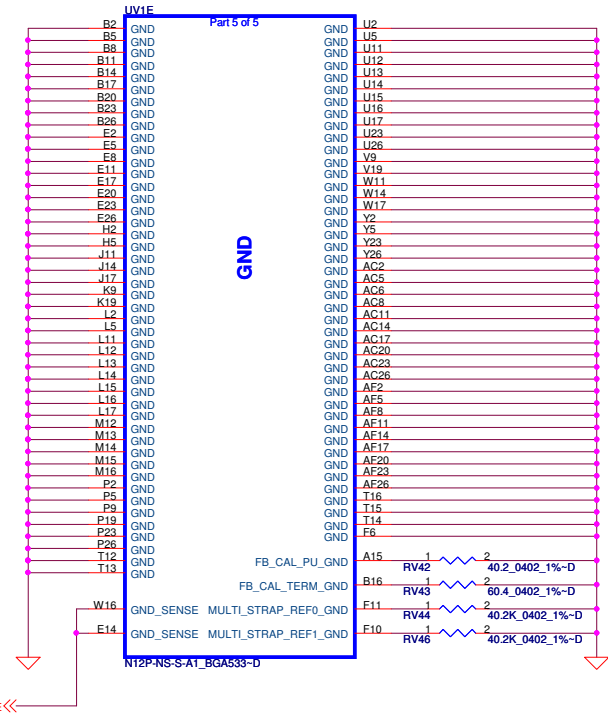
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PAD and Standoff

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Resistor Values	Pull-up to +3V	Pull-down to Gnd
5K	1000	0000
10K	1001	0001
15K	1010	0010
20K	1011	0011
25K	1100	0100
30K	1101	0101
35K	1110	0110
45K	1111	0111

ROM_SCLK	PCIDEVID_EXT, SUB_VENDOR, SLOT_CLK, PEX_PLL_EN
ROM_SI	RAM_CFG[3:0]
ROM_SO	XLCK_417, FB_0_BAR_SIZE, ALT_ADOOR, VGA_DEVICE

★★ Hynix 64Mx16 DDR3 part stuff RV59=15K
Samsung 64Mx16 DDR3 part stuff RV59=20K
Hynix 128Mx16 DDR3 part stuff RV59=35K
Samsung 128Mx16 DDR3 part stuff RV59=45.3K

STRAP0	USER[3:0]
STRAP1	3GIO_PADCFG_LUT_ADR[3:0]
STRAP2	PCI_DEVID[3:0]

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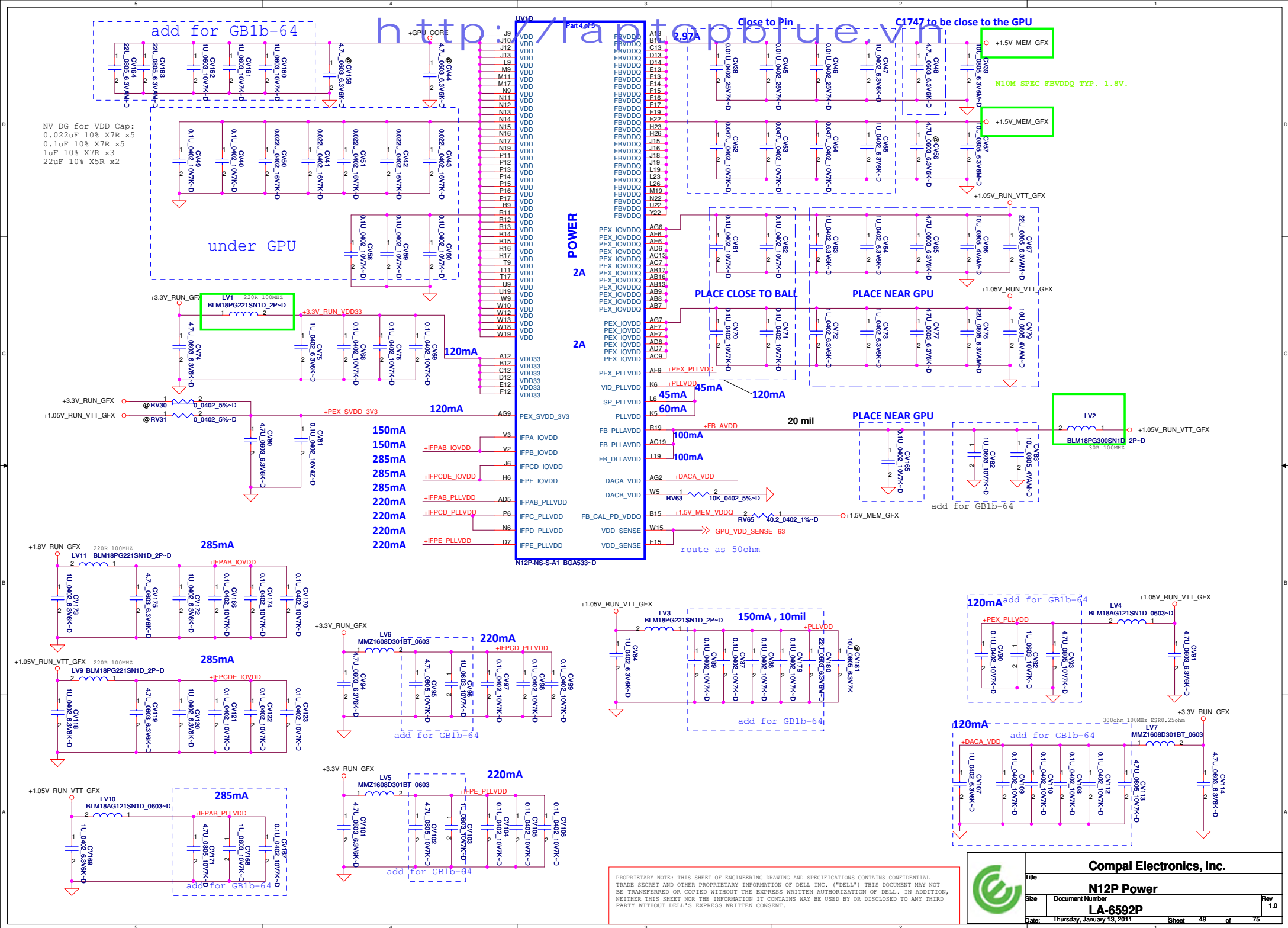
Title: **N12P DP, STRAP, GND**

Size: **LA-6592P**

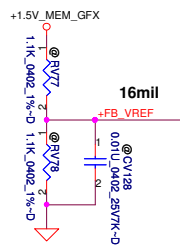
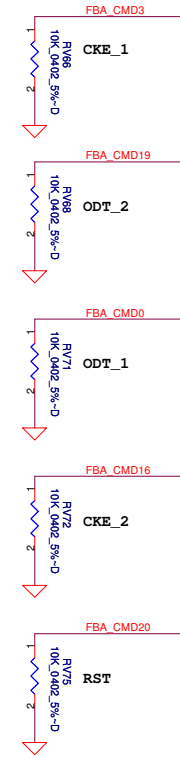
Date: Thursday, January 13, 2011

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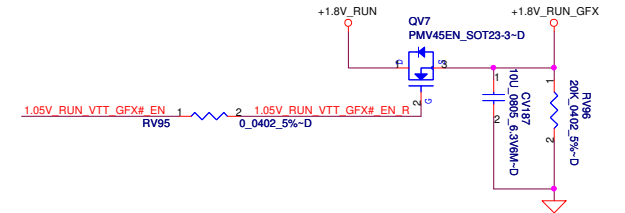
Rev: 1.0



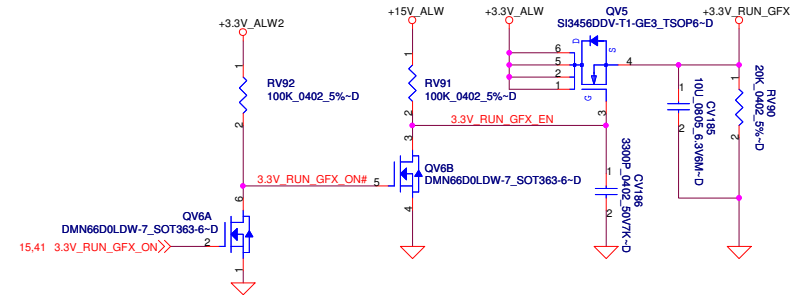
FBAD[0..63] <<> FBAD[0..63] 50,51
FBA_CMD[0..30] <> FBA_CMD[0..30] 50,51
DQMA[0..7] <> DQMA[0..7] 50,51
DQSA_RN[0..7] <> DQSA_RN[0..7] 50,51
DQSA_WP[0..7] <> DQSA_WP[0..7] 50,51



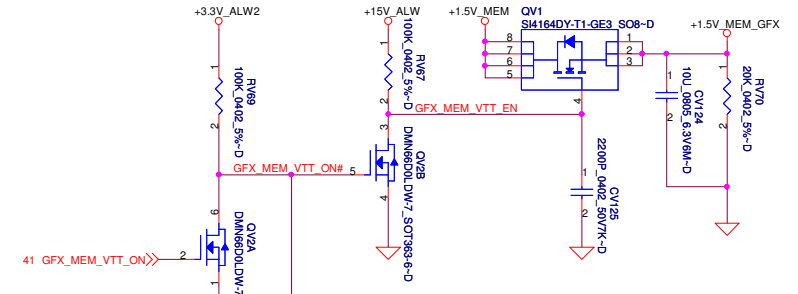
+1.8V_RUN_GFX Source



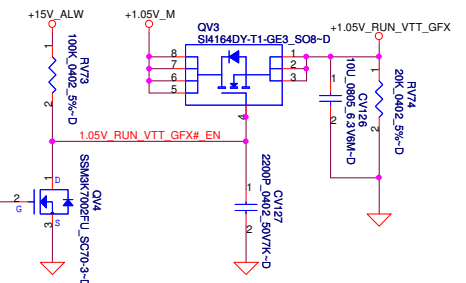
+3.3V_RUN_GFX Source



+1.5V_MEM_GFX Source



+1.05V_RUN_VTT_GFX Source



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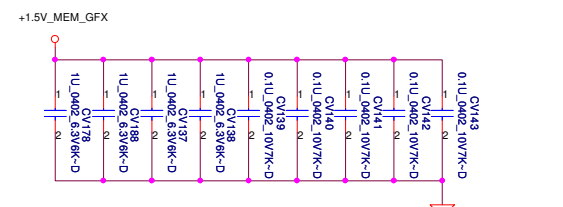
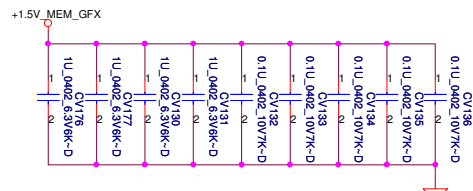


Compal Electronics, Inc.

Title			
N12P Memory			
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32 bits: `http://laptopblue.vn`

change to Hynix



<u>FBA_CMD[0..30]</u>	⟨⟨	FBA_CMD[0..30]	49,51
<u>FBAD[0..63]</u>	⟨⟨ ⟩⟩	FBAD[0..63]	49,51
<u>DQMA#[0..7]</u>	⟨⟨	DQMA#[0..7]	49,51
<u>DQSA_RN[0..7]</u>	⟨⟨ ⟩⟩	DQSA_RN[0..7]	49,51
<u>DQSA_WP[0..7]</u>	⟨⟨ ⟩⟩	DQSA_WP[0..7]	49,51

Mode E - Mirror Mode Mapping

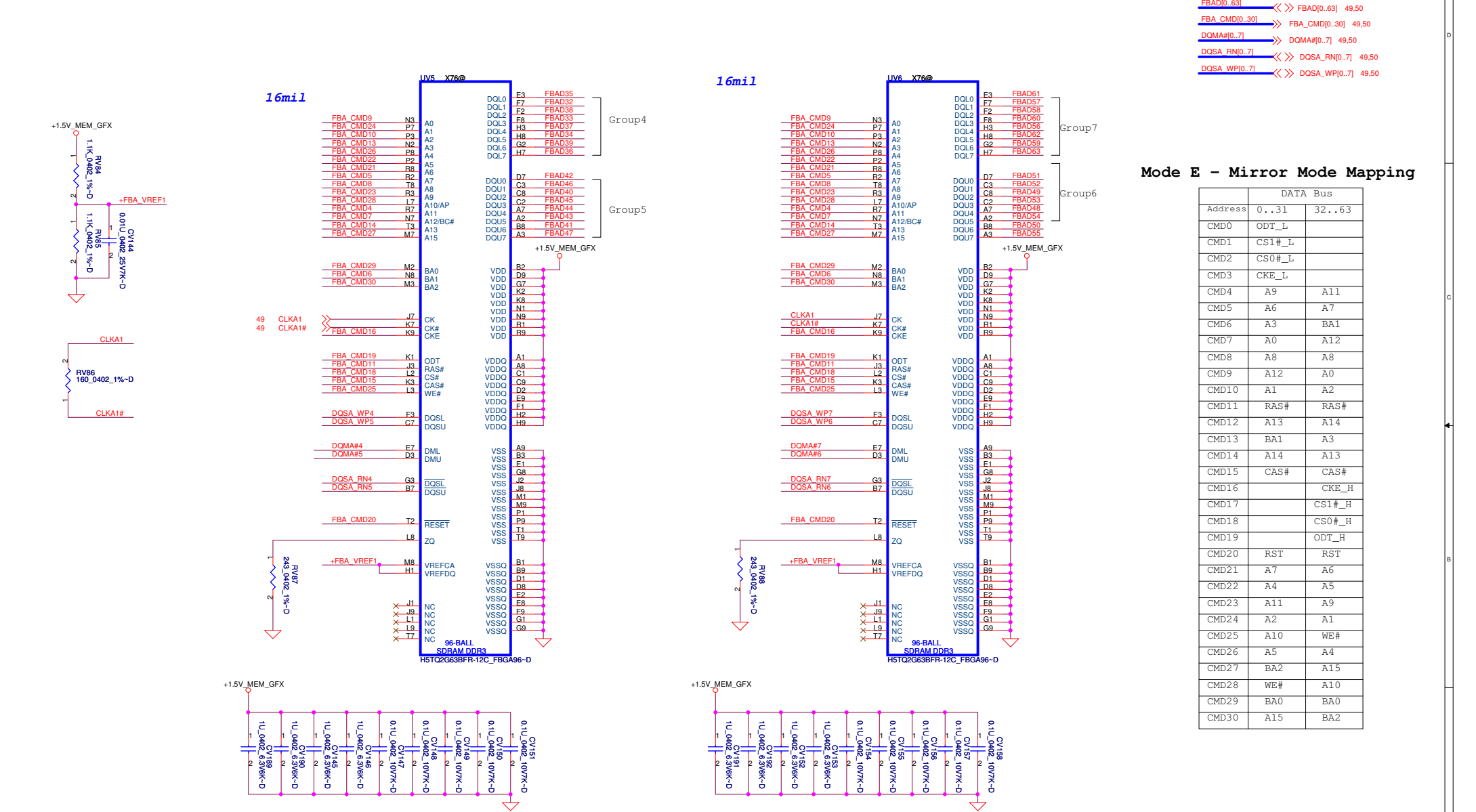
	DATA Bus	
Address	0..31	32..63
CMD0	ODT_L	
CMD1	CS1#_L	
CMD2	CS0#_L	
CMD3	CKE_L	
CMD4	A9	A11
CMD5	A6	A7
CMD6	A3	BA1
CMD7	A0	A12
CMD8	A8	A8
CMD9	A12	A0
CMD10	A1	A2
CMD11	RAS#	RAS#
CMD12	A13	A14
CMD13	BA1	A3
CMD14	A14	A13
CMD15	CAS#	CAS#
CMD16		CKE_H
CMD17		CS1#_H
CMD18		CS0#_H
CMD19		ODT_H
CMD20	RST	RST
CMD21	A7	A6
CMD22	A4	A5
CMD23	A11	A9
CMD24	A2	A1
CMD25	A10	WE#
CMD26	A5	A4
CMD27	BA2	A15
CMD28	WE#	A10
CMD29	BA0	BA0
CMD30	A15	BA2

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Title			
VRAM A Lower			
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Mode E - Mirror Mode Mapping

DATA Bus		
Address	0..31	32..63
CMD0	ODT_L	
CMD1	CS1#_L	
CMD2	CS0#_L	
CMD3	CKE_L	
CMD4	A9	A11
CMD5	A6	A7
CMD6	A3	BA1
CMD7	A0	A12
CMD8	A8	A8
CMD9	A12	A0
CMD10	A1	A2
CMD11	RAS#	RAS#
CMD12	A13	A14
CMD13	BA1	A3
CMD14	A14	A13
CMD15	CAS#	CAS#
CMD16		CKE_H
CMD17		CS1#_H
CMD18		CS0#_H
CMD19		ODT_H
CMD20	RST	RST
CMD21	A7	A6
CMD22	A4	A5
CMD23	A11	A9
CMD24	A2	A1
CMD25	A10	WE#
CMD26	A5	A4
CMD27	BA2	A15
CMD28	WE#	A10
CMD29	BA0	BA0
CMD30	A15	BA2

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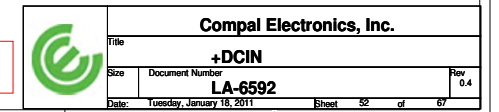
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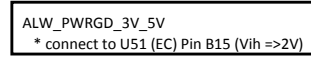
Size: **LA-6592P**

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$$F_{sw} = 400\text{KHz}$$
$$F_{sw} = 300\text{KHz}$$


	PU2	PR22
Main (X7630031L10)	SN0608098	@
2nd (X7630031L11)	MAX17020	10 Ohm

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DC/DC +3V/ +5V

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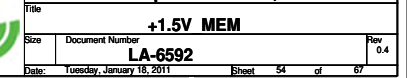
`http://laptopblue.vn`

1.5 Volt +/-5%
Thermal Design Current: 12.275A
Peak current: 17.535A
OCP_MIN:21.042A

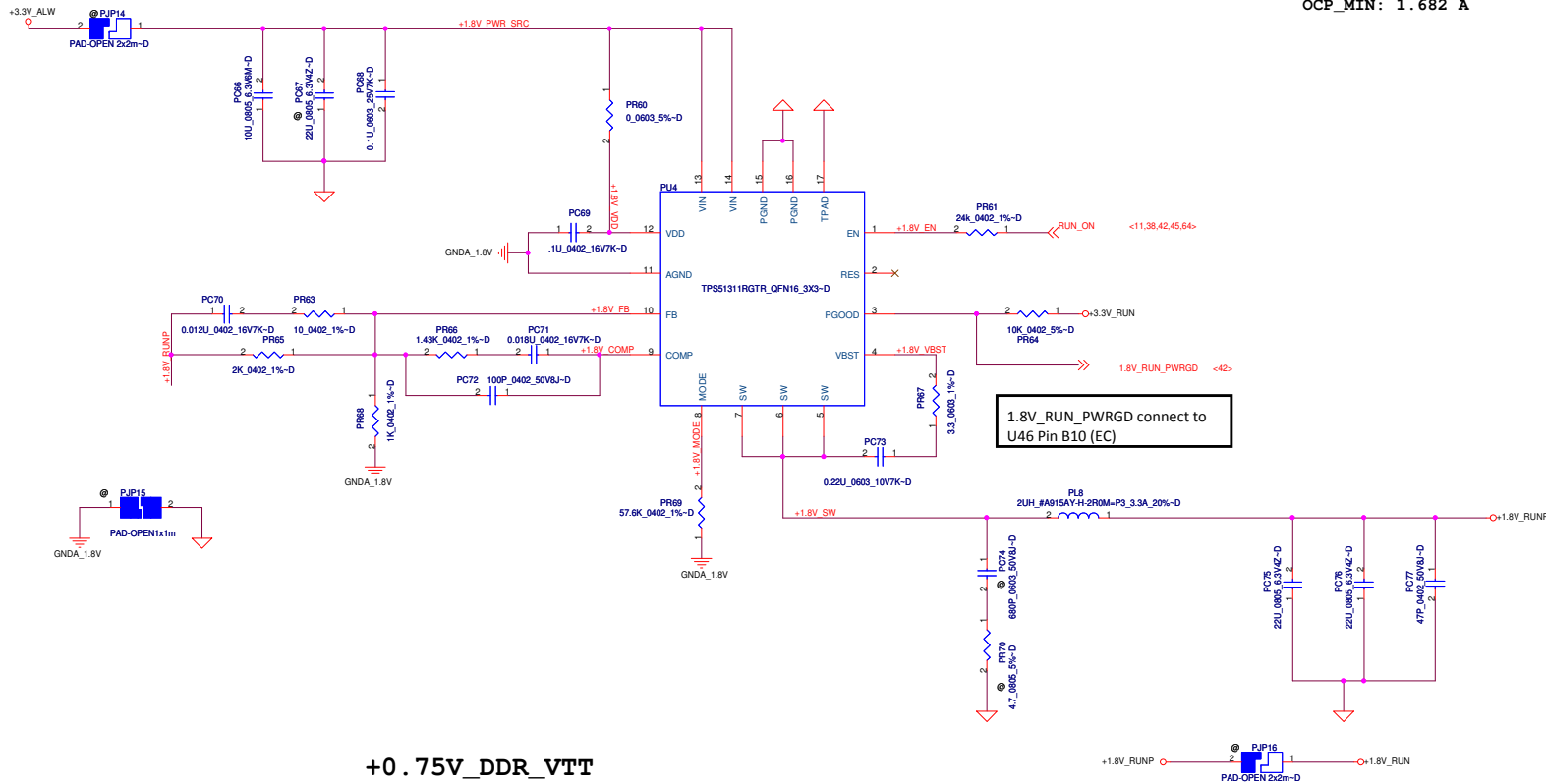


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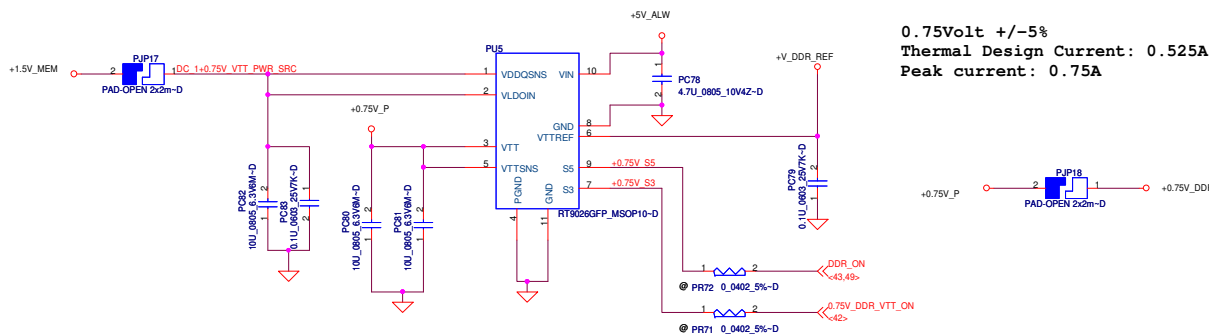


1.8 Volt +/-5%
Thermal Design Current: 0.981 A
Peak current: 1.402 A
OCP_MIN: 1.682 A



+0.75V_DDR_VTT

DDR3 Termination



0.75Volt +/-5%
Thermal Design Current: 0.525A
Peak current: 0.75A



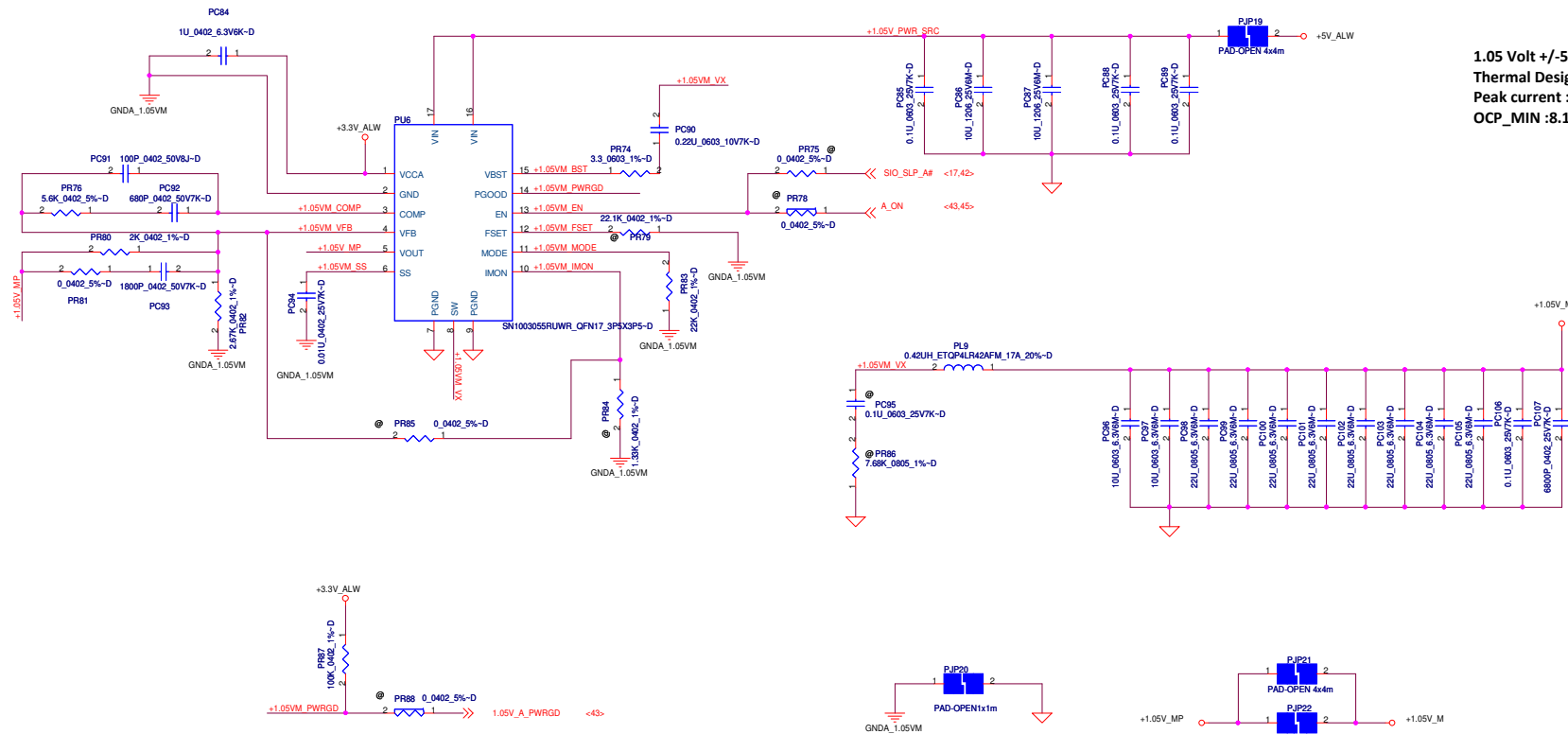
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+0.75V_DDR VT/+1.8V_RUN

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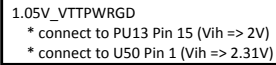
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1.05 Volt +/-5%
Thermal Design Current : 4.782A
Peak current : 6.832A
OCP_MIN : 8.198A

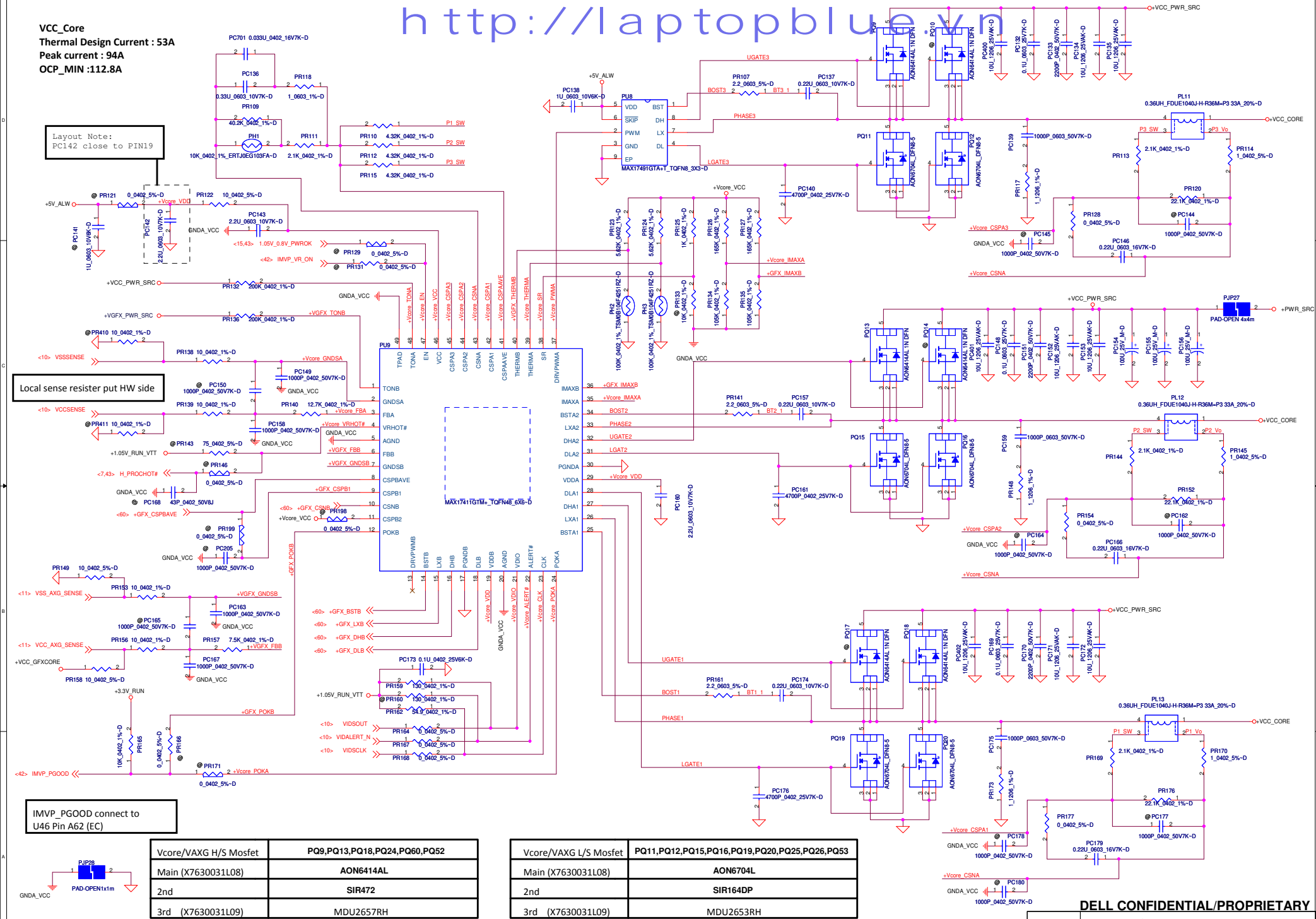
1.05V_A_PWRGD
* connect to U51 (EC) Pin A14 (Vih => 2V)

1.05V
=> (+/- 5% AC + DC +Ripple)
=> (+/- 2% DC + Ripple)
Thermal Design Current : 5.980A
Peack current : 8.970A
OCP_MIN : 10.764A



VCC_Core
Thermal Design Current : 53A
Peak current : 94A
OCP_MIN :112.8A

Layout Note:
PC142 close to



Vcore/VAXG H/S Mosfet	PQ9,PQ13,PQ18,PQ24,PQ60,PQ52
Main (X7630031L08)	AON6414AL
2nd	SIR472
3rd (X7630031L09)	MDU2657RH

Vcore/VAXG L/S Mosfet	PQ11,PQ12,PQ15,PQ16,PQ19,PQ20,PQ25,PQ26,PQ53
Main (X7630031L08)	AON6704L
2nd	SIR164DP
3rd (X7630031L09)	MDU2653RH

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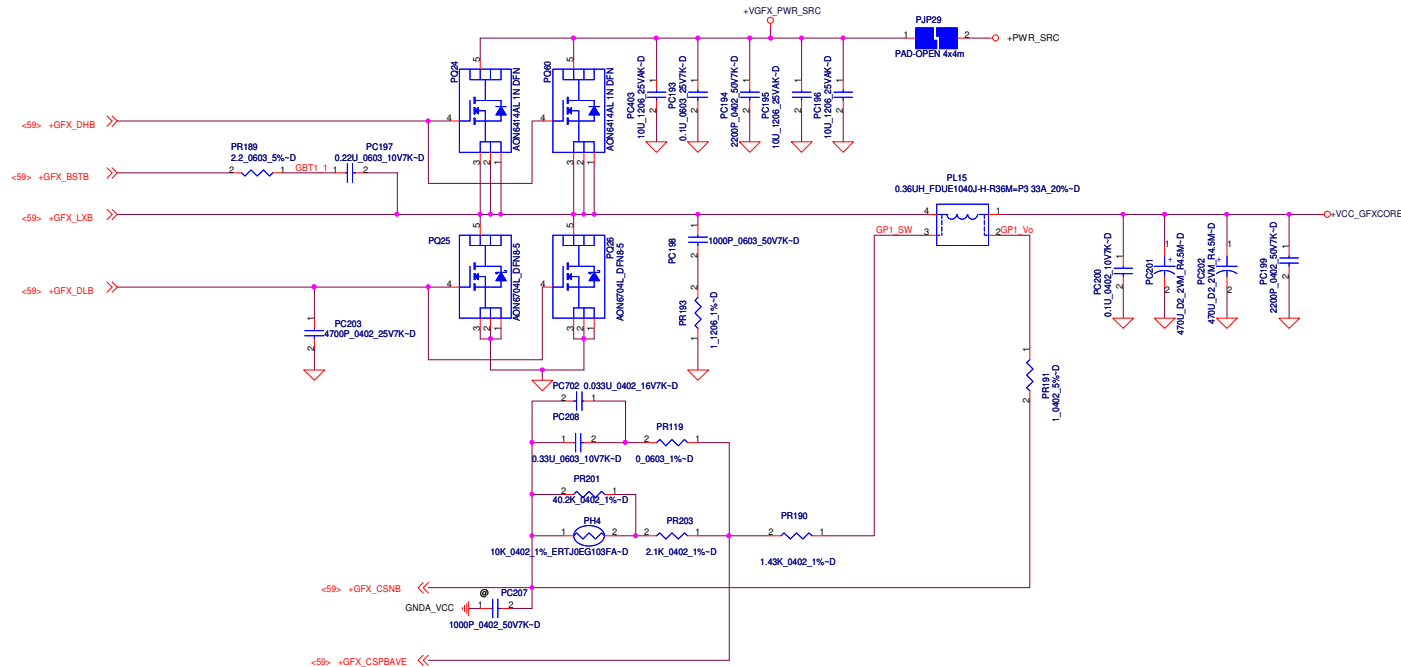
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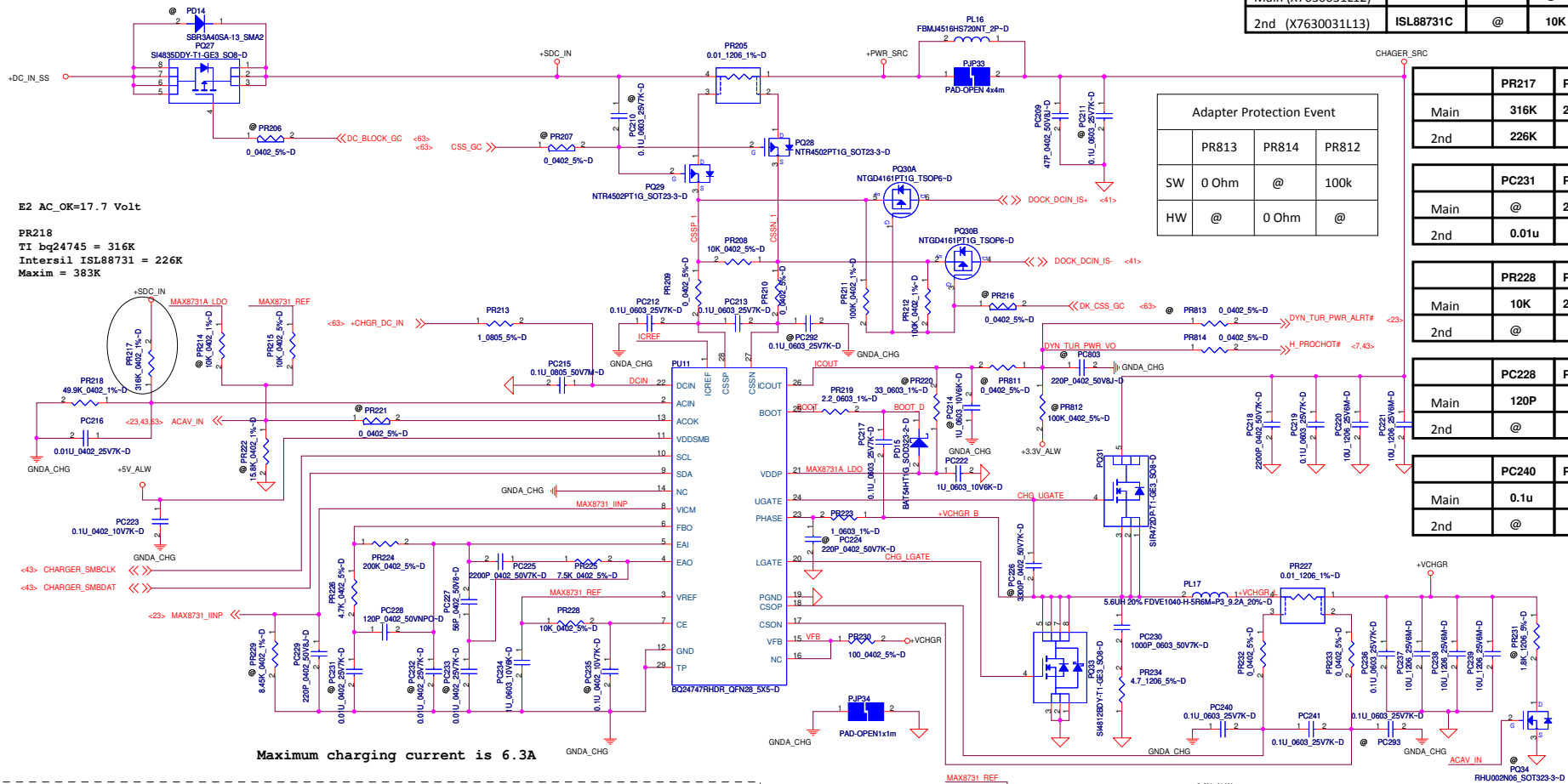
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Ycore

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VCC_AXG
Thermal Design Current : 21.5A
Peak current : 33A
OCP_MIN :39.6A





E2 AC_OK=17.7 Volt
PR218
TI bq24745 = 316K
Intersil ISL88731 = 226K
Maxim = 383K

Adapter Protection Event		
	PR813	PR814
SW	0 Ohm	@
HW	@	0 Ohm

	PU11	PR215	PR214	PR222
Main (X7630031L12)	BQ24747	10K	@	@
2nd (X7630031L13)	ISL88731C	@	10K	15.8K

	PR217	PC229	PR226
Main	316K	220P	4.7K
2nd	226K	@	2.2K

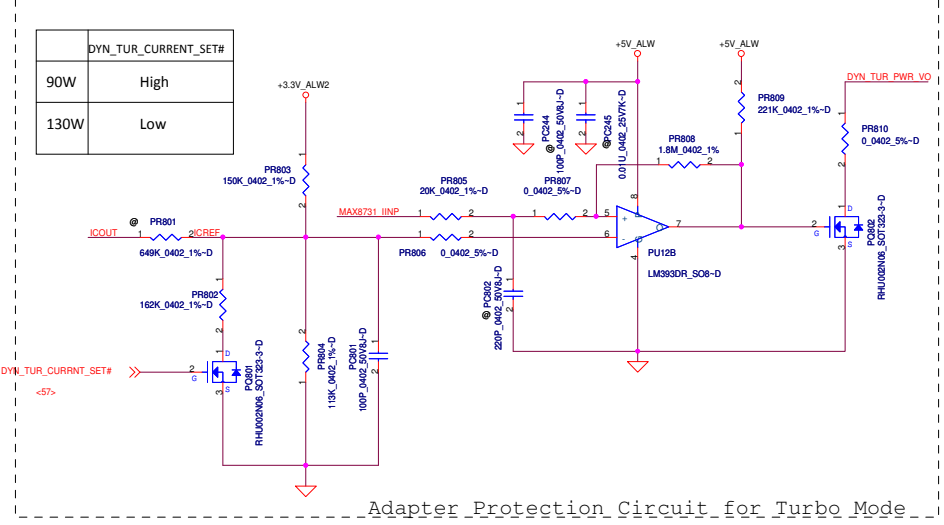
	PC231	PR224	PR225
Main	@	200K	7.5K
2nd	0.01u	@	@

	PR228	PC225	PC227
Main	10K	2200P	56P
2nd	@	@	@

	PC228	PC234	PC233
Main	120P	1u	@
2nd	@	@	0.01u

	PC240	PC241	PR232
Main	0.1u	0.1u	0 ohm
2nd	@	0.22u	10 ohm

Maximum charging current is 6.3A



DYN_TUR_CURRENT_SET#	
90W	High
130W	Low

	PR223	PR220	PC214	PC292	PR209	PR210	PC213
Main	1 ohm	@	@	@	0 ohm	0 ohm	0.1u
2nd	0 ohm	4.7 ohm	1u	0.1u	10 ohm	10 ohm	0.047u

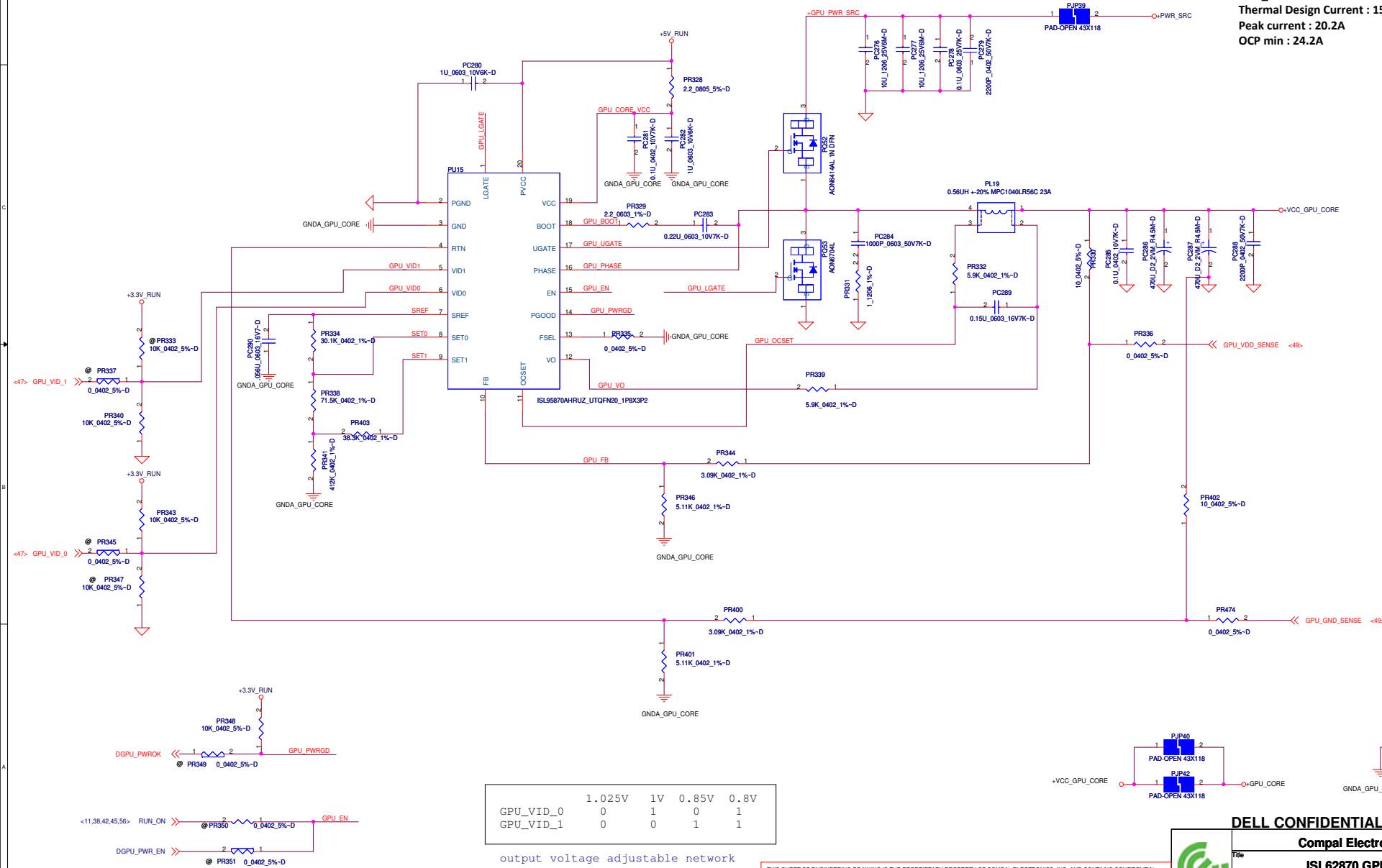
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Charger		
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GPU_CORE
 Thermal Design Current : 15.615A
 Peak current : 20.2A
 OCP min : 24.2A



	1.025V	1V	0.85V	0.8V
GPU_VID_0	0	1	0	1
GPU_VID_1	0	0	1	1

output voltage adjustable network

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ISL62870 GPU core			
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Version Change List (P. I. R. List)

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Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	61	VCCSA	6/30	Intersil	VCCSA spike issue	Delete PR264 Delete VCCSA_VID_0 net Connect VCCSA_VID_1 net to PIN5 Depop PR249, PR267 and PR260 Change PR261 and PR260 to 0 Ohm (SD02800008L) from 24.9k (SD03424918L) Change PR259 to 47.5k (SD03447528L) from 274k (SD03427438L) Change PR256 to 140k (SD03414038L) from 0 Ohm (SD02800008L) Change PR250 to 113k () from 34k (SD03434028L) Add pull down PR295 10k(SD02810028L)	X01
2	61	VCCSA	6/30	Intel	Change VCCSA VID pull down resistor value	Change PR295 and PR266 to 1k (SD02810018L) from 10k (SD02810028L)	X01
3	53	3V/5V	7/15	Compal	3V/5V Bulk cap interfere with ME	Change PC33 and PC38 to 330U/25m/H1.9(SGA00001A8L) from 330U/25m/H2.8 (SGA1933131L)	X01
4	54	+1.5V_SUS	7/15	Compal	Vendor will not support this part	Change PC609 and PC608 to 330U/9m/2V (SGA20331E0L) from 330U/9m/2.5V (SGA19331D1L)	X01
5	52	DCIN	7/15	Compal	PL3 and PL4 current rating is not enough for 130W adapter	Change PL2 and PL3 to FBMA-L18-453215-900LMA90T (SM01002078L) from FBMJ4516HS720NT(SM010009C8L)	X01
6	52	DCIN	7/15	Compal	PL1 current rating is not enough for 9cell (3.0Ah 1C) discharge current	Change PL1 to FBMJ4516HS720NT(SM010009C8L) from FBMA-L18-453215-900LMA90T (SM01002078L) Add PL22 FBMJ4516HS720NT(SM010009C8L)	X01
7	53	3V/5V	7/16	Compal	10u/1206/X5R/25V will COS	Change PC16,PC17,PC18,PC21,PC22 and PC23 to 10u/0805/X5R (SE00000QK00) from 10u/1206/X5R (SE142106M8L)	X01
8	53	3V/5V	7/16	Compal	+3.3V phase node over Mosfet Vds rating	Change PQ6 AO4466L (SB00000CG8L) from SI4128DY (SB00000IR0L) Change PQ8 AO4712L (SB00000AJ1L) from SI4134DY(SB00000KB0L)	X01
9	53	3V/5V	7/16	Compal	PC24 down size to 0603 from 0805	Change PC24 to 4.7u/6.3V/0603 (SE107475K8L) from 4.7u/6.3V/0805 (SE093475K8L)	X01
10	61	VCCSA	7/16	Compal	VCCSA output voltage is not constant so change some net name	Change +0.8V_VCC net name to +VCCSA_P Change 0.8V_VCCPWROK net name to VCCSAPWROK Change +0.8V_VCC_SA net name to +VCC_SA	X01
11	54	1.5V_SUS	7/16	Richtek	Reserve Pull down resister on EN pin for power consumption issue	Add 0402 resister pad on EN pin	X01
12	60	Charger	7/18	Compal	PQ27 body diode can handle surge current when adapter plug in so depop PD14	Depop PD14 SBR3A40SA (SC100003J00)	X01
13	62	Selector	7/18	Compal	Leakage issue on PD16	Change PD16 to ES2AA (SC100005A0L) from SBR3A40SA (SC100003J00)	X01
14	58,59	Axg_core Vcore	7/20	MAXIM	Reserve 0402 cap pad for transient fine tune	Add PC701 and PC702 0402 cap pad	X01
15	60	Charger	7/20	Compal	Reserve adapter protection circuit for turbo mode	Change PU11 pin1 net name to ICREF from GNDA_CHG Change PU11 pin26 net name to ICOUT from VCC Reserve PR801,PR802,PR803,PR804,PR805,PR806,PR807,PR808,PR809,PR810,PR811,PR812 Reserve PC801,PC802,PC803	X01
16	61	VCCSA	7/20	Compal	VCCSA phase node over Mosfet Vds rating	Change PQ35 AO4466L (SB00000CG8L) from SI4128DY (SB00000IR0L) Change PQ36 AO4712L (SB00000AJ1L) from SI4172DY(SB00000HN0L)	X01




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17	58	Vcore VAXG_core	7/24	MAXIM	Fine tune OCP setting for Pass 2 IC	Change PR127 to 165K (SD03416530L) from 100K (SD03410038L) Change PR135 to 105K (SD03410538L) from 150K (SD03415038L) Change PR126 to 165K (SD03416530L) from 100K (SD03410038L) Change PR134 to 105K (SD03410538L) from 150K (SD03415038L)	X01
18	58,59	Vcore VAXG_core	7/24	MAXIM	Phase node switching waveform abnormal issue for Pass 2 IC	Change PR118 to 1 Ohm (SD014100B8L) from 2 Ohm (SD013200B8L) Change PR119 to 1 Ohm (SD014100B8L) from 2 Ohm (SD013200B8L)	X01
19	53	3V/5V	7/28	Comapl	Broad band issue in 700MHz	Pop PC32 1000P (SE025102K8L) Pop PR37 2.2 Ohm (SD011220B8L) Pop PC31 1000P (SE025102K8L) Pop PR36 2.2 Ohm (SD011220B8L) Change PR35 to 2.2 Ohm (SD013220B8L) from 1 Ohm (SD013100B8L) Change PR35 to 2.2 Ohm (SD013220B8L) from 1 Ohm (SD013100B8L)	X01
20	58	Vcore	7/28	Comapl	Bump noise in band of 700MHz	Pop PC139 470P (SE024471J8L) Pop PC159 470P (SE024471J8L) Pop PR117 2.2 Ohm (SD011220B8L) Pop PR148 2.2 Ohm (SD011220B8L)	X01
21	54,58 59,63 56	1.5V Vcore VGFX_Core GPU_core 1.05VM	7/28	Comapl	Broad band in 800MHz and 900MHz	Pop PC610 1000P (SE025102K8L) Pop PR602 2.2 Ohm (SD011220B8L) Pop PC175 470P (SE024471J8L) Pop PR173 2.2 Ohm (SD011220B8L) Pop PC198 470P (SE024471J8L) Pop PR193 2.2 Ohm (SD011220B8L) Pop PC284 1000P (SE025102K8L) Pop PR331 2.2 Ohm (SD011220B8L) Pop PC85 0.1u (SE00000Q900)	X01
22	60	Charger	7/28	TI	Pop adapter protection componment for turbo mode with TI solution	Pop PR803 100k (SD03410038L) Pop PR804 78.7k (SD03478728L) Pop PR802 115k (SD03411538L) Pop PR801 1.87M () Pop PQ801 RHU002N06 (SB50206008L) Pop PR812 100K (SD02810038L) Pop PC801 100P (SE071101J8L)	X01
23	58,59	Vcore VAXG_core	7/28	Compal	Fine tune load line and transient for Vcore and VAXG_core	Change PR140 to 11.8k (SD03411828L) from 12.4k (SD00000AJ8L) Change PR157 to 8.25k (SD03482518L) from 8.66K(SD03486618L) Pop PC701 and PC702 0.033uF (SE076333K8L)	X01
24	56	Selector	9/2	Compal	Change parts to HF parts	Change PQ51 FDN338P_G (SB90338001L) from FDN338P (SB90338008L) Change PD18, PD19, PD21, PD22, PD23, PD24, PD25, PD26, PD27, PD28, PD29, PD30 and PD31 RB751V-40GTE-17 (SCS00004L0L) from RB751V (SC1B751V08L) Change PQ37, PQ40, PQ41, PQ45 and PQ46 FDS6679AZ_G (SB000009D1L) from FDS6679AZ (SB000009D8L)	X02
25	46	+DCIN	9/2	Compal	Change parts to HF parts	Change PD6 DA204UGT106 (SC60000170L) from DA204UT106 (SC1A204U00L) Change PQ4 FDS6679AZ_G (SB000009D1L) from FDS6679AZ (SB000009D8L) Change PD1 RB715FGT106 (SCSB715F010) from RB715F (SCSB715F08L) Change PQ2 FDV301N_G (SB503010020) from FDV301N (SB50301008L)	X02
26	47	+5V/3.3 /+15VALW	9/2	Compal	Change parts to HF parts	Change PQ5 FDS8878_G (SB00000BV1L) from FDS8878 (SB00000BV8L)	X02
27	54	Charger	9/2	Compal	Change parts to HF parts	Change PQ33 SI4812BDY-T1-GE3 (SB00000DI1L) from SI4812BDY-T1-E3 (SB00000DI0L) Change PL17 FDVE1040-H-5R6M=P3 (SH00000CH1L) from FDVE1040-5R6M=P3 (SH00000CH0L) Change PQ27 SI4835DDY-T1-GE3 (SB00000FF1L) from SI4835DDY-T1-E3 (SB00000FF0L)	X02
28	48	+1.5V_SUS	9/2	Compal	Change parts to HF parts	Change PL602 FDUE1040D-H-1R0M=P3 (SH000009U1L) from FDUE1040D-1R0M=P3 (SH000009U0L)	X02

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Item	Page #	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
29	47	+5V/3.3 /+15VALW	9/2	TI	Fine tune OCP setting for +5V/+3.3V	Change PR29 to 274K (SD03427438L) from 220K (SD03422038L) Change PR30 to 348K (SD00000WW8L) from 243K (SD03424338L)	X02
30	56	Selector	9/13	Compal	Change parts to HF parts	Change PQ39 and PQ44 SI4835DDY-T1-GE3 (SB00000FF1L) from SI4835DDY-T1-E3 (SB00000FF0L)	X02
31	60	charger	9/13	Compal	Fine tune adapter protection circuit for 2nd source and reserve H_PROCHOT#	Delete PQ802 and PR807 MAX8731_IINP signal connect change to inverting input from Non inverting input ICREF signal connect change to Non inverting input from inverting input Pop PR811 and PR813 0 Ohm (SD02800008L) Depop PR814	X02
32	56	+1.05VM	9/14	TI	Fine tune OCP setting	Change PR83 to 22k (SD03422028L) from 10k (SD03410028L)	X02
33	56	+1.05VM	10/05	Compal	22u/1206/6.3V COS issue	Change PC98 ~ PC105 to 22u/0805 (SE00000110L) from 22u/1206 (SE077226M8L)	X02
34	57	+1.05VTT	10/05	Compal	22u/1206/6.3V COS issue	Change PC123 ~ PC125, PC121, PC127, PC120, PC129 and PC130 to 22u/0805 (SE00000110L) from 22u/1206 (SE077226M8L) Change PC122 and PC126 to 47u/0805 (SE00000G60L) from 22u/1206 (SE077226M8L)	X02
35	52	DCIN	10/05	Compal	6 ~ 7mA leakage current in slice	Change PR2 and PR504 to 100K (SD02810038L) from 10K (SD03410028L)	X02
36	61	VCCSA	10/14	Compal	Fine tune VCCSA OCP setting for 2nd and 3rd source choke	Change PR247 and PR262 to 12.7k (SD03412728L) from 11.5k (SD03411528L)	X02
37	63	GPU_Core	10/14	nVidia	Fix output voltage to 0.9V for nVidia ES sample	Depop PR337 and PR345 0 Ohm (SD02800008L) Depop PR347 10K (SD02810028L) Pop PR343 10K (SD02810028L)	X02
38	63	GPU_Core	10/14	Compal	Change OCP setting for new nVidia chip	Change PR332 and PR339 to 5.9k (SD03459018L) from 4.22k (SD03442218L)	X02
39	63	GPU_Core	11/09	nVidia	Change VID setting for new nVidia chip. Default set 1V.	Depop PR347 10K (SD02810028L) Pop PR343 10K (SD02810028L) Change PR344 and PR400 to 3.09k (SD00000J38L) from 3.57k (SD03435718L) Change PR341 to 412k (SD00000678L) from 402k (SD034402380) Change PR403 to 38.3k (SD03438328L) from 200k (SD03420038L) Change PR338 to 71.5k (SD03471528L) from 0 Ohm (SD02800008L) Change PR334 to 30.1k (SD03430128L) from 23.7k (SD03423728L)	X03
40	62	Selector	11/09	Compal	Fine tune main and media battery switching to slice battery transient time	Change PC270 and PC265 to 0.22uF (SE000005Z8L) from 1uF (SE00000698L)	X03
41	60	Charger	11/09	Compal	Change adapter protection circuit trip point. (Adapter rated current + 0.75A)	Change PR802 to 107k (SD03410738L) from 115K (SD03411538L) Change PR801 to 649K (SD03464938L) from 1.87M (SD00000WN0L) Change PR804 to 80.6K (SD03480628L) from 78.7k (SD03478728L)	X03
42	60	Charger	11/09	Compal	Change adapter protection event to HW from SW	Pop PR814 0 Ohm (SD02800008L) Depop PR813 0 Ohm (SD02800008L) Depop PR812 100k Ohm (SD02810038L)	X03
43	60	Charger	12/09	Compal	H_PROCHOT# can not pull high issue with external circuit at DC mode	Change PR803.1 net nam to +3.3V_ALW2 from MAX8731_REF Change PQ801.3, PR804.1 and PC801.2 net nam to PGND from GAND_CHG	X04
44	60	Charger	12/09	Compal	H_PROCHOT# pull low level can not meet Intel SPEC with TI solution at AC mode	Depop PR801 (SD03464938L) Change PR802 to 174k (SD03417438L) from 107k (SD03410738L) Change PR803 to 150k (SD03415038L) from 100k (SD03410038L) Change PR804 to 113k (SD03411338L) from 80.6K (SD03480628L) Pop PR806, PR807, PR810 0 Ohm (SD02800008L) Pop PQ802 RHU002N06 (SB50206008L) Pop PR809 221K (SD00000HX8L) Pop PR808 1.8M (SD00000K180) Pop PR805 20K (SD03420028L) Depop PR811 (SD02800008L)	X04

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45	58,59,63	+Vcore +VAXG +VGPU	12/10	Compal	Change sunbber valure for 3rd source MOSFET	Change PC139, PC159, PC175, PC198, PC284 to 1000P (SE025102K8L) from 470P (SE024471J8L) Change PR117, PR148, PR173, PR193, PR331 to 1 Ohm (SD012100B8L) from 2.2 Ohm (SD011220B8L)	X04
46	60	Charger	12/17	TI	H_PROCHOT# spike voltage issue when AC to DC transient	Pop PR208 10k (SD02810028L)	X04
47	58,59	+Vcore +VAXG	12/17	Compal	Fine tune VAXG and Vcore load line for 2nd source choke	Change PR157 to 7.5k (SD03475018L) from 8.25k(SD03482518L) Change PR140 to 12.7k (SD03412728L) from 11.8k (SD03411828L)	X04
48	59	+VAXG	12/17	MAXIM	Low side driver no signal when loading over 10A	Change PR119 to 0 Ohm (SD01400008L) from 1 Ohm (SD014100B8L)	X04
49	60	Charger	01/12	Compal	Adapter protection trip point for 2nd source	Change PR802 to 162k (SD03416238L) from 174k (SD03417438L)	A00
50	52 ~ 63	ALL	01/12	Compal	Remove debug resistor (0 Ohm)	Change PR14,PR23,PR43,PR45,PR71,PR72,PR78,PR88,PR91,PR103,PR121,PR129,PR146,PR171,PR198 PR199,PR206,PR207,PR216,PR221,PR240,PR251,PR258,PR269,PR277,PR285,PR287,PR293,PR294 PR296,PR298,PR299,PR301,PR302,PR305,PR309,PR311,PR312,PR313,PR314,PR316,PR317,PR318 PR319,PR321,PR322,PR323,PR324,PR325,PR337,PR345,PR349,PR351,PR355,PR472,PR606 footprint	A00

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1	7	HW	6/15/2010	COMPAL	Boot issue	Change QC1 control from SUS_ON to RUN_ON_CPU1.5VS3#	X01
2	11	HW	6/15/2010	COMPAL	Modify net name	Change +0.8V_VCC_SA to +VCC_SA	X01
3		HW	6/15/2010	COMPAL	Follow PPM recommendation to change material	Change capacitors from 10uF_0805_10V Y5V to 10uF_0805_6.3V_X5R: C305,C387,C462,C705,C728,C760,C764,C765,C768,C769, C772,CC135,CH58,CH73,CH80,CV124,CV126,CV185,CV187 Change capacitors from 10uF_0805_6.3V to 10uF_0603_6.3V: C475,C638,C641,C643 Change resistors to 0402 size: RC134, RH201,RH253,RH208,RH213 Delete RH192 and add PJP51	X01
4	14	HW	6/15/2010	COMPAL	De-pop PCH XDP	De-pop RH1, RH3~RH10, RH12~RH21, RH24, RH283~RH285, CH1	X01
5	14	HW	6/15/2010	COMPAL	Change HDA_SYNC topology	Add QH7 and RH37	X01
6	17, 29, 42	HW	6/15/2010	COMPAL	Change ODD connector from 13 pin to 31 pin	Change ODD connector to 31 pin, add @R1189,RH340 and remove C1168, C1169,C1170,U87,U88,U89, R1188 and short R1188 pin1 and pin2 together	X01
7	18	HW	6/17/2010	COMPAL	Remove touch screen PAID pull down circuit	Remove RH241	X01
8	18	HW	6/17/2010	INTEL	Follow Intel Design Guide Rev1.0	Change RH149 to 1k and RH150 to 4.7k	X01
9	22	HW	6/17/2010	COMPAL	Change EMC4002 to EMC4022	Change U9 to EMC4022, remove R392,R394 R866,R404,C279	X01
10	25	HW	6/17/2010	COMPAL	Change CRT SW to MAX14885	Change CRT SW to MAX14885 and add C1181,C1182, R1581 remove C325~C336	X01
11	26	HW	6/17/2010	COMPAL	Safety request	Add no stuff D4 and co-lay with F2, change F2 to 2A_8V	X01
12	28, 39	HW	6/17/2010	COMPAL	Change SATA repeater to MAX4951BE	Chagne U25, U44 to MAX4591BE and change R1169,R1171,R1174,R1176 to 0 ohm and stuff R1174,R1176	X01
13	30	HW	6/17/2010	COMPAL	Change Codec to ZB version and speaker connector	Change JSPK1 to TYCO_1734595-6 and change U72 to ZB version and stuff C962	X01
14	33	HW	6/17/2010	COMPAL	Add Jumper for power consumption measurement	Add PJP52,PJP55	X01
15	33	HW	6/17/2010	COMPAL	Change SI2301BDS to C version	Change Q36 to SI2301CDS	X01
16	33	HW	6/17/2010	BRCOM	Change RFID capacitors for more popular	Change C502,C505 from 1uF to 0.1uF	X01
17	35	HW	6/17/2010	COMPAL	Link R677 to CIS	Link R677 to CIS to have the correct part number	X01
18	37	HW	6/17/2010	COMPAL	Change express card power SW to TPS2231MRGPR-2	Change U41 to TPS2231MRGPR-2 and remove C636,C639	X01
19	41	HW	6/17/2010	COMPAL	Add pull down on SLICE_BAT_ON	Add R791	X01
20	42	HW	6/17/2010	COMPAL	Board ID	Change R875 to 130K	X01
21	46	HW	6/17/2010	COMPAL	BIOS request	De-pop DV1, RV29 and pop U14	X01

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22	11, 14, 42	HW	6/18/2010	COMPAL	EOL concern	Change CC176 to SGA00005H0L, change YH1, Y6 to SJ132P7KW1L	X01
23	43	HW	6/18/2010	COMPAL	Change connector	Change JKB1 to same as JSC1	X01
24	43	HW	6/18/2010	COMPAL	Change TP pin definition	Reverse TP pin definition for PT	X01
25	41, 42	HW	6/18/2010	COMPAL	Add series resistor and pull up resistors on MIC_MUTE#, VOL_MUTE, VOL_UP, VOL_DOWN	Add R773, R806, R884, R886, R887, R1166, R1167, R1184	X01
26	24, 45	HW	6/18/2010	COMPAL	Correct net name for LED signal	Modify signal name BREATH_BLUE_LED to BREATH_WHITE_LED and BREATH_BLUE_LED_SNIFF to BREATH_WHITE_LED_SNIFF	X01
27	26, 40, 41, 46	HW	6/21/2010	NVIDIA	Add HPD circuit to inform system for NV request	Add DV2, DV3, DV4, R1154 and use ECE5028 GPIOE7/DCD# as HPD signal to inform system	X01
28	32	HW	6/21/2010	INTEL	Remove useless resistors	Remove R556, R558, R559, R560 and short the pin1 and pin2 together	X01
29	24, 28, 29, 32, 37, 44, 49	HW	6/22/2010	COMPAL	Change part for Halogen free	Change Q18, Q27, Q30, Q34, Q38, Q40, Q42, Q49, Q54, Q58, QV5 to HF part	X01
30	10	HW	6/22/2010	COMPAL	To have better return path	De-pop CC130 and pop CC134	X01
31	44	HW	6/23/2010	COMPAL	Solution +1.5V_RUN voltage drop issue	Change Q59 from SI3456BDV to NTGS4141NT1G	X01
32	41	HW	6/23/2010	COMPAL	Remove double pull high resistor	Remove R1177	X01
33	29	HW	6/23/2010	COMPAL	Remove useless resistor	Remove R1125, R1126	X01
34	44	HW	6/25/2010	COMPAL	NTMS4107NR2G EOL	Change Q55 to NTMS4920NR2G	X01
35	10	HW	6/25/2010	COMPAL	CC129~CC134 D2T LESR5M EOL	Change CC129~CC134 to SGA00004X0L	X01
36	24	HW	6/25/2010	COMPAL	Change LVDS connector to 40 pin	Change JLVDS1 to 40 pin	X01
37	31	HW	6/25/2010	COMPAL	Change I/O connector to TYCO	Change JI01 vendor from Lotes to TYCO	X01
38	24	HW	6/25/2010	COMPAL	PT panel change touch screen pin definition	Change JTS1 pin definition for new TS pin define	X01
39	14, 29, 36, 42	HW	7/1/2010	COMPAL	Modify Module Bay circuit	1.Remove R1181, R1182, R1189. 2.Change BAY_SMBUS, DEVICE_DET# pull up power rail from +3.3V_RUN to +3.3V_ALW. 3.Change net name ODD_DET# to PCH_SATA_MOD_EN#. 4.Add Q123, Q76, R513, R514, R515 for USB_SMI# circuit. 5.De-pop C627, R712	X01
40	24	HW	7/1/2010	COMPAL	Stuff PWM pull down resistor for PT solution	Pop R1137	X01
41	7	HW	7/1/2010	COMPAL	For support XDP device	De-pop RC9	X01
42	15, 18, 41, 42	HW	7/1/2010	COMPAL	Base on GPIO map to modify	1. Move SLP_ME_CSW_DEV# from GPIO45 to GPIO28, add MCARD_PCIE_SATA# on 5028 GPIOE3. 2. Remove RH238, change RH80 from 1k to 10k. 3. Change SLICE_BAT_PRES# pull up power rail from +3.3V_ALW2 to +3.3V_ALW. 4. Add R889	X01

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43	24	HW	7/1/2010	COMPAL	PWM function	Remove R1139,R1140 and add D68,D69	X01
44	11	HW	7/1/2010	COMPAL	VCCSA VID circuit	Change VCCSA_VID_0 to VCCSA_VID_1 and pop RC138	X01
45	36, 45	HW	7/2/2010	COMPAL	Modify LED circuit	Remove R1578,R1579,R1580,D42,D60,D61, add Q77,Q124,R705,R718,R719	X01
46	22	HW	7/2/2010	COMPAL	Modify thermal diode for thermal request	Remove C268,C269, use DP1/DN1 for CPU,DP2/DN2 for GPU, DP3/DN3 for DIMM, DN5/DP5 for WWAM	X01
47	15, 32	HW	7/5/2010	COMPAL	EOL concern	Change Y3 and YH2 from 1Y725000CE1A to 7A25000110	X01
48	11, 24, 27, 45	HW	7/7/2010	COMPAL	Change part for Halogen free part	Change QC5 to NTR4501NT1G, U21,U24,U54,U55,U57 change to NC7SZ04P5X-G, Q21 change to FDC654P-G	X01
49	29	HW	7/7/2010	COMPAL	USB30 SMI circuit	Stuff R513 due to this pin is OD type on USB30 module	X01
50	29	HW	7/8/2010	COMPAL	Link CIS symbol	Link JSATA2 CIS symbol	X01
51	35	HW	7/9/2010	O2-Mirco	Add discharge circuit for +3.3V_RUN_CARD	Add R826 on +3.3V_RUN_CARD	X01
52	15, 29, 32, 35, 36, 37	HW	7/9/2010	COMPAL	Move PCIE TX AC coupling capacitors close to PCH	Move C408,C409,C460,C461,C567,C568,C596,C597,C598,C599,C617,C618, C647,C648 to page 15 to close to PCH	X01
53	14	HW	7/12/2010	COMPAL	To solve SPI EA	Add R933,R935 on SPI chip select signals	X01
54	24	HW	7/12/2010	COMPAL	Link CIS symbol	Link JLVDS1	X01
55	28	HW	7/12/2010	COMPAL	Meet EA result	Stuff R493,R494	X01
56	24, 30, 35, 38, 39	EMI	7/12/2010	COMPAL	EMI request to solve EMI issue	Add R678,C757,L92,L93, and stuff L51,L52,L90, de-pop R736~R739,R1150,R1151, and remove R1106	X01
57	31, 41, 45	HW	7/13/2010	Dell	Remove Mic mute function and LED	Remove R773,R806,R1108,R1061,Q105 and delete MIC_MUTE# signal	X01
58	28	HW	7/13/2010	COMPAL	Follow EA result	De-pop R493,R494 and pop R495,R496	X01
59	29	HW	7/13/2010	COMPAL	Modify zero ODD circuit	Change ZODD_WAKE#,MODC_EN#,MOD_SATA_PCIE#_DET,USB30_EN connection	X01
60	33	HW	7/14/2010	COMPAL	Change power rail for smart card	Change R632,R635 pull up power rail from +3.3V_ALW to +3.3V_ALW_SC	X01
61	22	HW	7/14/2010	COMPAL	Reserve capacitor for WWAN thermal diode	Add @C277	X01
62	14, 17, 18	HW	7/14/2010	COMPAL	To solve back drive issue	Move SIO_EXT_SMI# from PCH GPIO1 to GPIO14, remove RH254, and change RH164 pull up power rail from +3.3V_RUN to +3.3V_ALW_PCH	X01
63	45	HW	7/14/2010	COMPAL	Remove CLIP	Remove CLIP3,CLIP4,CLIP6~CLIP8	X01
64	38, 39	HW	7/15/2010	COMPAL	Remove one TPS2560 for cost saving	Remove U43,C659,C660,R740,PJP6, and share with power source of U45	X01
65	31, 41, 45	HW	7/15/2010	COMPAL	Remove speaker LED	Remove Q119,Q102,R1109,R1059	X01

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66	17, 18	HW	7/15/2010	COMPAL	Add pull up for PCH GPIO1	Add RH41 and change reference RH164 to RH41	X01
67	24, 30, 35	HW	7/16/2010	COMPAL	Change part reference for EMI request	Change L92 to LE92, L93 to LE93, R678 to RE678, CE757 to CE757	X01
68	20, 44	HW	7/16/2010	COMPAL	For cost saving	Add PJP57, RH202, no stuff QH4, Q49, RH278, R908	X01
69	22	HW	7/16/2010	COMPAL	Modify current sense connection	Move MAX8731_IINP from U9.25 to U9.31	X01
70	41, 42	HW	7/16/2010	DELL	Follow GPIO 0713	Add DYN_TURB_PWR_ALRT#, DYN_TUR_CURRNT_SET#, and change R796 pull up power rail from +3.3V_RUN to +3.3V_ALW	X01
71	35	HW	7/16/2010	COMPAL	Follow vendor request	De-pop RE678, CE757	X01
72	28, 45	HW	7/19/2010	COMPAL	Part leverage select	Change D16, D59, D62 to SC100000S0L	X01
73	14	HW	7/19/2010	COMPAL	Follow Intel XDP design	Change RH43, RH44, RH45 to 200 ohm	X01
74	38, 39	HW	7/19/2010	COMPAL	Change power rail for layout limitation	Change U90, U91 power rail to +USB_SIDE_PWR, U92 power rail to +SATA_SIDE_PWR	X01
75	46	HW	7/19/2010	NV	NV request to add 10k pull on GPIO9	Add RV102	X01
76	23	HW	7/20/2010	SMSC	Follow SMSC review result	Add R403	X01
77	31	HW	7/20/2010	COMPAL	Change USB3 (on IO/B) enable signal	Change USB3 enable signal from USB_SIDE_EN# to ESATA_USB_PWR_EN#	X01
78	31	HW	7/20/2010	COMPAL	Change JIO1 for correct connector list	Change JIO1 to TYCO_2041300-2	X01
79	46	HW	7/20/2010	NV	Follow NV request	Add RV103, RV104, @RV20, @RV25, @RV26 and de-pop R1111	X01
80	26	HW	7/20/2010	Safety	Follow safety request	De-pop F2, pop D4 and add R5	X01
81	17, 30, 40	HW	7/20/2010	EMI	Follow EMI request	Add RE1098, RE1100, RE1101, RE1102, CE573, CE574, change RH103, R756 to 33 ohm, C704 to 12pF	X01
82	14	HW	7/20/2010	COMPAL	Change SPI chip select damping R	Change R933, R935 to 47 ohm	X01
83	24, 39	HW	7/20/2010	COMPAL	Change material for small size	Change C300, C669 from 1206 16V to 0805 10V	X01
84	24	HW	7/20/2010	COMPAL	Change U86 power rail for touch screen	Change U86.4 power rail from +3.3V_RUN to +5V_RUN	X01
85	38, 39	HW	7/20/2010	COMPAL	Remove useless capacitors	Remove C1151~C1154	X01
86	41	HW	7/20/2010	COMPAL	Follow GPIO map	Change R796 to 10k ohm, add R764	X01
87	44	HW	7/20/2010	COMPAL	Change PJP57 footprint	Change PJP57 footprint to 4x4mm	X01
88	31	HW	7/21/2010	COMPAL	Modify HP & Mic circuit	Change JIO1 pin connection	X01
89	36	HW	7/21/2010	COMPAL	Add 0 ohm R on PCIE_MCARD2_DET#	Add R725	X01
90	40	HW	7/21/2010	COMPAL	Follow EA request	Change C704 to 6.8pF	X01

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91	35	HW	7/21/2010	COMPAL	Change JSD1 to support Memory Stick	Change R666,R667, change JSD1	X01
92	31, 42	HW	7/22/2010	COMPAL	GPIO MAP update.	add R1590	X01
93	39	HW	7/22/2010	COMPAL	Follow Vender request.	add R1582~R1585	X01
94	39	HW	7/23/2010	COMPAL	To compatible with SN75LVCP601	Add R1586~R1589	X01
95	41	HW	7/23/2010	COMPAL	Add 0 ohm R on TEMP_ALERT# for backup	Add R1591	X01
96	24, 42	HW	7/24/2010	COMPAL	Follow GPIO map to add touch screen power down control circuit	Add TOUCH_SCREEN_PD#, Q125,Q32,R430,R431,C304,C306, and change JTCH1 pin 1,pin2 from +5V_RUN to +5V_TSP	X01
97	24	HW	7/26/2010	COMPAL	Reserve a 0 ohm resistor for +5V_TSP	Add R1592	X01
98	45	HW	7/26/2010	COMPAL	Add pull down 100k on BT_ACTIVE	Add R950	X01
99	48	HW	7/27/2010	NV	Follow NV suggestion to modify BOM	De-pop CV184, and change CV183 to 1uF,CV182 to 4.7uF, CV109 to 470pF,CV110 to 4700pF, LV8 to 100nH	X01
100	37	HW	8/23/2010	COMPAL	Add connection for express card SW	Add connection of pin4,pin5,pin13 and pin 14	X01
101	18	HW	8/23/2010	Intel	Follow Intel design guide Rev1.2	Change RH149 to 2.2k and RH150 to 0 ohm	X01
102	46	HW	8/23/2010	COMPAL	De-pop pull up resistors	De-pop RV23,RV24	X01
103	14,18,30	HW	8/23/2010	DELL	Remove PAID function of RTC and speaker	Change speaker connector to 4 pin and remove RTC_DET# and SPEAKER_DET#	X01
104	17	HW	8/26/2010	Intel	Follow Intel check list rev1.2	Add @RH332	X01
105	14,18	HW	8/26/2010	Intel	Follow Intel request	Add RH51 and RH356	X01
106	33	HW	8/27/2010	BRCOM	Follow BRCOM request	Change L39,L40 to rated current is 400mA	X01
107	45	HW	8/27/2010	COMPAL	Follow ME request	Change H17 to 2P2	X01
108	16	HW	8/27/2010	COMPAL	Reserve pull down R for ME_SUS_PWR_ACK	Add @RH145	X01
109	36	HW	9/2/2010	COMPAL	De-pop ESD diode	De-pop U40	X01
110	11	HW	9/2/2010	COMPAL	Change QC5 VGS to 20V part	Change QC5 to SB00000HK0L	X01
111	45	HW	9/3/2010	COMPAL	Follow ME request	Change H11 from 3P8 to 3P7	X01
112	26	HW	9/3/2010	COMPAL	Follow safety request	Pop F2 and de-pop R5	X01
113	46, 47, 48, 49	HW	9/6/2010	COMPAL	Change GPU to N12P FERMI	Change UV1 to N12P FERMI	X01
114	24, 26, 46	HW	9/8/2010	COMPAL	Change RB751V to HF part	Change D53,D63~D69,DV1~DV4 to SCS00004L0L	X01

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115	30, 31	HW	9/9/2010	IDT	To solve pop noise and detect issue	Add U6, Q33, Q46, D70, D71, R425, R33, R38, R424, R161, R352, R1088, C967, C307, C308	X01
116	35	HW	9/10/2010	O2	To solve RF noise issue	Add @C573, @C574, L45	X01
117	50, 51	HW	9/14/2010	COMPAL	Change VRAM to 800MHz	Change UV3~UV6 to SA00003VS0L	X01
118	30, 38, 39	HW	9/14/2010	COMPAL	For EMI request	Change C973~C976 to 680pF and pop, add L91~L94, D72~D74, remove U90~U92	X01
119	35	HW	9/14/2010	O2	Modify circuit	Remove R661, R662, add L46, L47, change L45 to SM01000GG0T	X01
120	17, 24	HW	9/15/2010	COMPAL	To support high contrast ratio brightness	Change net name from LVDS_CBL_DET# to LVDS_CBL_ID	X01
121	37, 38, 39	HW	9/16/2010	COMPAL	change materials	Change L49, L51, L52, L90 to SM070001E0L	X01
122	46, 48, 50, 51	HW	9/20/2010	Nvidia	Vender request	add CV89, CV176, CV177, CV178, CV188~CV192, RV30, RV31, change RV81/86 to 160ohm RV59 to 15K, CV80 to 4.7uF, CV40, CV58, CV59, CV60 to 0.1u, CV41, CV42, CV43, CV50, CV51 to 0.022u. CV160~CV162 to 1u, CV181 to 10u CV180 to 22u, pop RV99 and change it to 20K pop RV41 and change to 4.99K, de-pop RV50, pop RV56. Rename from I2CS_SCL/SDA to I2CH_SCL/SDA	X01
123	48	HW	9/28/2010	Nvidia	Vender request	Change LV3 to SM01000BE0L (220ohm)	X01
124	24	HW	9/28/2010	COMPAL	solve PWM leackage issue.	Change R1137 to 10Kohm	X01
125	46	HW	9/28/2010	COMPAL	solve system can't boot in UMA only mode.	correct from U14 to UV14 and change the PN to SA00003Y00L. pop RV29, de-pop RV22	X01
126	14	HW	10/01/2010	COMPAL	DG1.5 update.	add RH31	X01
127	32	HW	10/04/2010	COMPAL	GPIO MAP update.	add U15, C478.	X01
128	45	HW	10/04/2010	COMPAL	LED brightness test result	change R957 to 1K, R955, R941, R949, R939, R934 to 4.7K	X01
129	32	HW	10/07/2010	COMPAL	Solve LAN Package Lost Problem	change L30~L37 from 22NH to 12NH.	X01
130	9	HW	10/07/2010	COMPAL	DG1.5 update.	depop RC96, RC97	X01
131	30	HW	10/07/2010	COMPAL	change Codec to YA version.	change the PN from SA00003ZZ1L to SA00003ZZ2L	X01
132	17, 24, 41	HW	10/11/2010	COMPAL	Follow GPIO Map	Change LVDS_CBL_ID to ATG_MAC_LCD_DET#, remove R771	X02
133	31	HW	10/11/2010	DELL	Remove Latitude On button	Depop SW2	X02
134	28	HW	10/12/2010	DELL	Support SSD	Add PJP64, C399, C402	X02
135	31	HW	10/18/2010	IDT	Change GND reference	Change Mic detect circuit DGND to AGND	X02
136	30	HW	10/19/2010	COMPAL	Change Mic detect to external detect	Remove R161 and add C1164	X02
137	14, 18	HW	10/19/2010	COMPAL	Follow Intel debug port DG	Connect PCH_GPIO15 to PCH_XDP	X02

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Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
138	42	HW	10/19/2010	COMPAL	Change board ID to X02	Change R875 to 62k	X02
139	30,31	HW	10/21/2010	COMPAL	Modify Mic detect circuit	1. Add PJP65, 2. Change C307,C308 to 0402 size 3. Change C308 connection, 4. Change Mic detect power from +5V_ALW to +5V_RUN, 5. De-pop Q33,Q46,R424, 6. Move C1180 to +VREFOUT_R	X02
140	18	HW	10/22/2010	COMPAL	Follow check list rev1.0	Change RH177 to 10k	X02
141	31	HW	10/26/2010	COMPAL	Cost saving	Change C307,C308 to 0402 package	X02
142	34	HW	10/26/2010	COMPAL	Follow BRCOM request	Pop C1161	X02
143	14~21	HW	10/28/2010	Intel	Change PCH stepping	Change UH4 to B2 stepping	X02
144	30,31	HW	10/28/2010	COMPAL	Use internal Mic detect circuit	De-pop D71,R425,R33,R38,C307,C308,U6, R352,R1088,C967	X02
145	47	HW	11/1/2010	NV	Solve HDMI audio issue	De-pop RV41, change RV97 to 34.8K and stuff it	X02
146	47	HW	11/1/2010	NV	Chagne Device ID to 0x1056	De-pop RV51,change RV57 to 34.8k and stuff	X02
147	47	HW	11/1/2010	NV	Follow NV request	De-pop RV60, change RV54 to 10k and stuff it, change RV52 to 4.99k	X02
148	15	HW	11/5/2010	COMPAL	To fix ME issue	De-pop RH296,RH297, pop QH5,RH302,RH303	X02
149	37	HW	11/16/2010	COMPAL	To fix soldering issue	Change express card connector JEXP1 to TAISOL 5-421005002000-9	X02
150	28	HW	11/17/2010	Intel	Follow Intel CRB design	Change R501,R502 to 10k	X02
151	12,13	HW	11/18/2010	COMPAL	Follow part reference design rule	Change JDIMMA1 & JDIMMB1 to JDIMM1 & JDIMM2	X02
152	46,47,48,49	HW	11/18/2010	NV	Change GPU to QS sample	Change UV1 to N12P-NS-S-A1	X02
153	28,44	HW	11/19/2010	COMPAL	For cost saving	De-pop R499,R500,C393,Q28,R905,R907,C762,Q51	X02
154	31	HW	11/22/2010	COMPAL	Follow part reference design rule	Change JMEDIA1 to JMDIA1	X02
155	14	HW	11/22/2010	COMPAL	Change SPI ROM to version C	Change U52 to SA000039A1L, U53 to SA00003FO1L	X02
156	46	HW	12/03/2010	COMPAL	Solve GPU reset timing issue	Add RV33 100Kohms pull up to +3.3V_RUN and de-pop RV22	X02
157	42	HW	12/03/2010	COMPAL	Follow INTEL DG1.5 RSMRST# timing cicuit	Just add RSMRST# circuit for backup. but de-pop	X02
158	46	HW	12/07/2010	COMPAL	Solve GPU reset timing issue	de-pop RV33 and pop RV22	X02
159	18	HW	12/07/2010	COMPAL	Audio MIC detect selection	de-pop RH269 and add RH273 1Kohms pull low	X02
160	33	HW	12/17/2010	COMPAL	Follow NXP design guide	Add @C575	A00

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160	14	HW	12/17/2010	COMPAL	For cost saving	De-pop RH47, RH48, RH49, RH288	A00
161	42	HW	12/20/2010	COMPAL	Change Board ID	Change R875 to 33k	A00
162	42	HW	12/21/2010	COMPAL	To solve backdrive issue	Pop Q45	A00
163	33, 34	HW	12/24/2011	COMPAL	Change USH chip to CID7	Change U33 to SA00003A01L	A00
164	34	HW	1/6/2011	COMPAL	update TPM/TCM pop option table	Correct pop option table	A00
165	ALL	HW	1/11/2011	COMPAL	For cost saving	Change 125pcs 0402 0 ohm resistors and 3pcs 0603 0 ohm footprint to new footprint which is short pin1 and pin2	A00

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