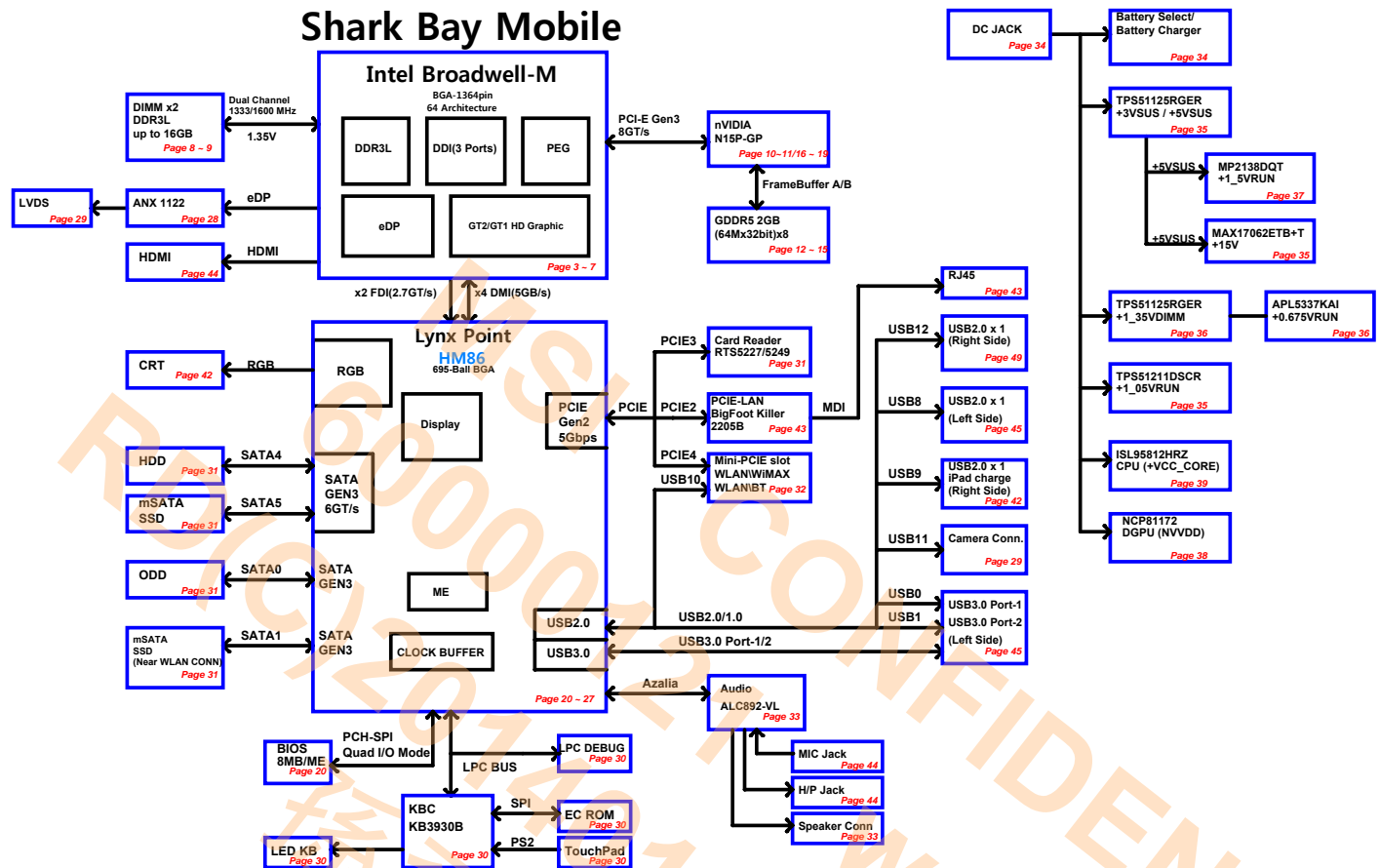


Shark Bay Mobile



SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

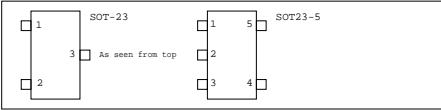
Voltage Rails

Voltage	Description	Control Signal
PWR_SRC	AC ADAPTER OR BATTERY IN	
+5VALW	5.0V always on power rail	PWR_SRC
+3VALW	3.3V always on power rail	PWR_SRC
+5VSUS	5.0V power rail	SUS_ON
+3VSUS	3.3V power rail	SUS_ON
+1_35VDIMM	1.35V DDR3L power rail (off in S4-S5)	PM_SLP_S4#
+0_675VRUN	0.675V DDR3L Termination voltage (off in S3-S5)	PM_SLP_S3#
+5VRUN	5.0V switched power rail (off in S3-S5)	PM_SLP_S3#
+3VRUN	3.3V switched power rail (off in S3-S5 / M0)	PM_SLP_S3#
+1_5VRUN	1.5V switched power rail (off in S3-S5)	PM_SLP_S3#
+VCC_CORE	1.8V Core Voltage for Processor	VR_ON
+1_05VRUN	1.05V rail for Processor	PM_SLP_S3#
NVVD	0.6~1.2V(VBoot:0.9V)Core Voltage for nVIDIA N14E-GE DGPU	GPI011_GPUVID
+3V3_NV	3.3V GPU I/O power rail (off in Optimus OFF)	DGPU_PWR_EN#
FBVDDQ	1.35V FB / GDDR5 power rail (off in Optimus OFF)	GPU_PWRGD
PEX_VDD	1.05V PLL power rail (off in Optimus OFF)	GPU_PWRGD

Net Naming Conventions

Suffix
= Active Low Signal
Prefix
H = Host
M = DDR Memory
TP = Test Point (does not connect anywhere else)

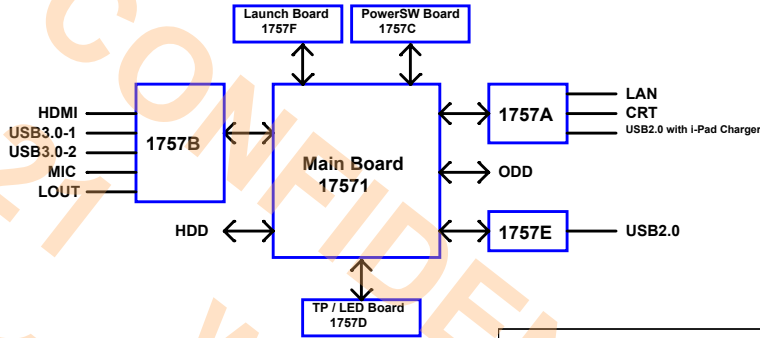
PCB Footprints



POWER STATES

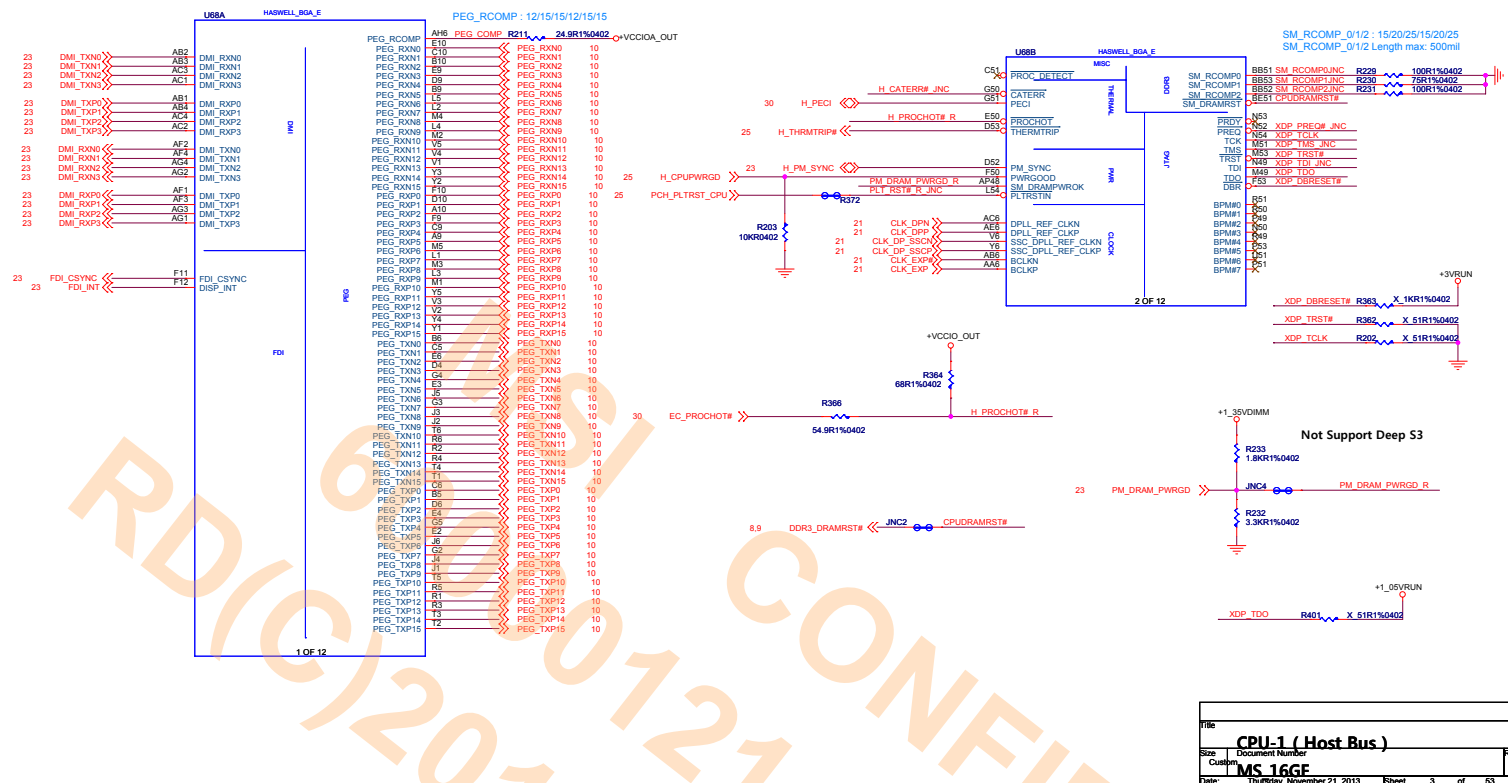
STATE	SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#	+V*ALW	+*VSUS	+*VRUN	Clocks
S0(Full ON)		HIGH	HIGH	HIGH	ON	ON	ON	ON
S3(Suspend to RAM)		LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4(Suspend to Disk)		LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5(Soft OFF)		LOW	LOW	LOW	ON	OFF	OFF	OFF

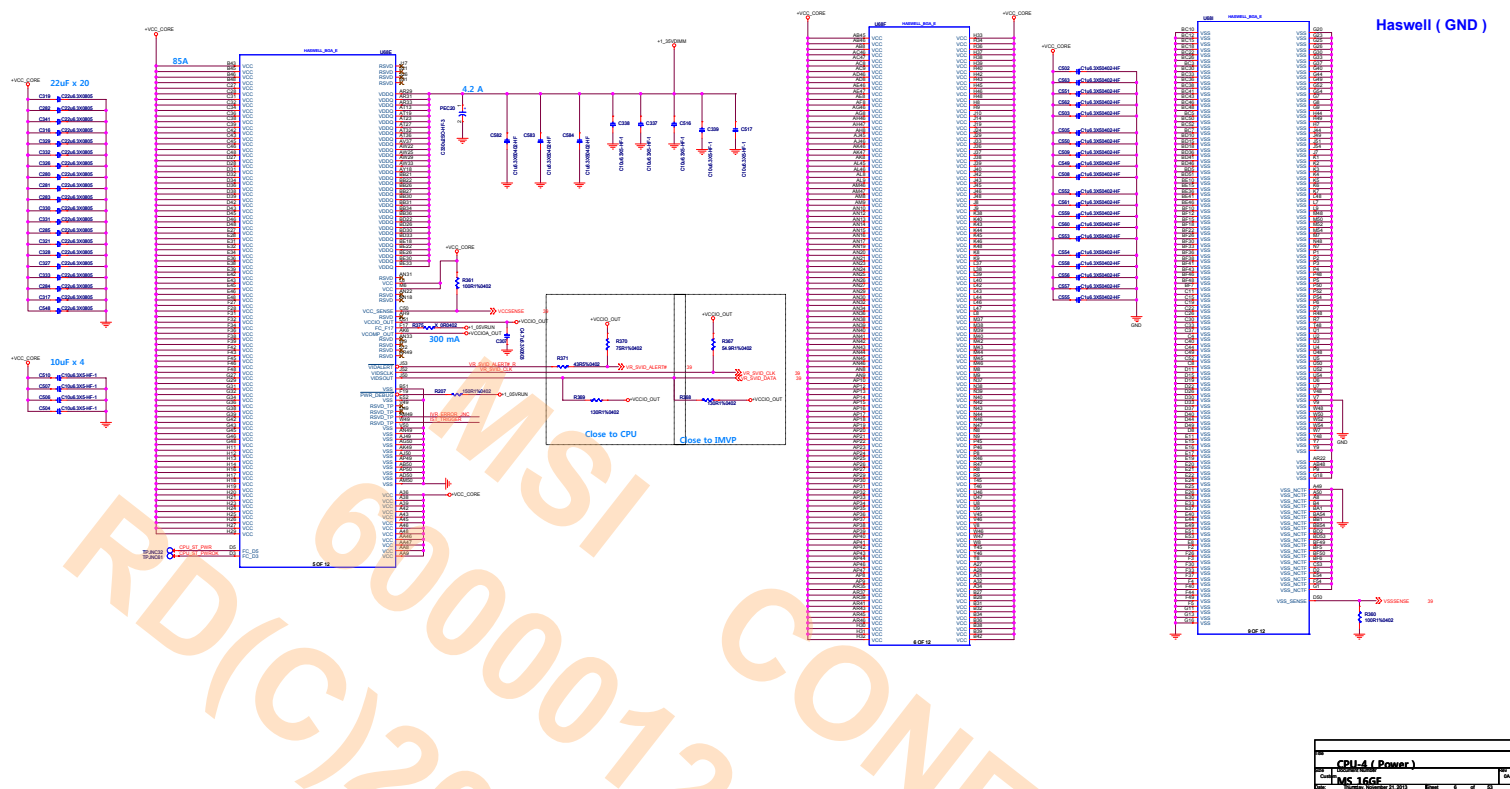
Note : WHEN AC MODE , System turn on then +V*SUS will always keep high



Platform			
Size	Document Number	MS 16GE	
Cust			
Date	Thu/Sat, November 21, 2013	Sheet	2 of 53

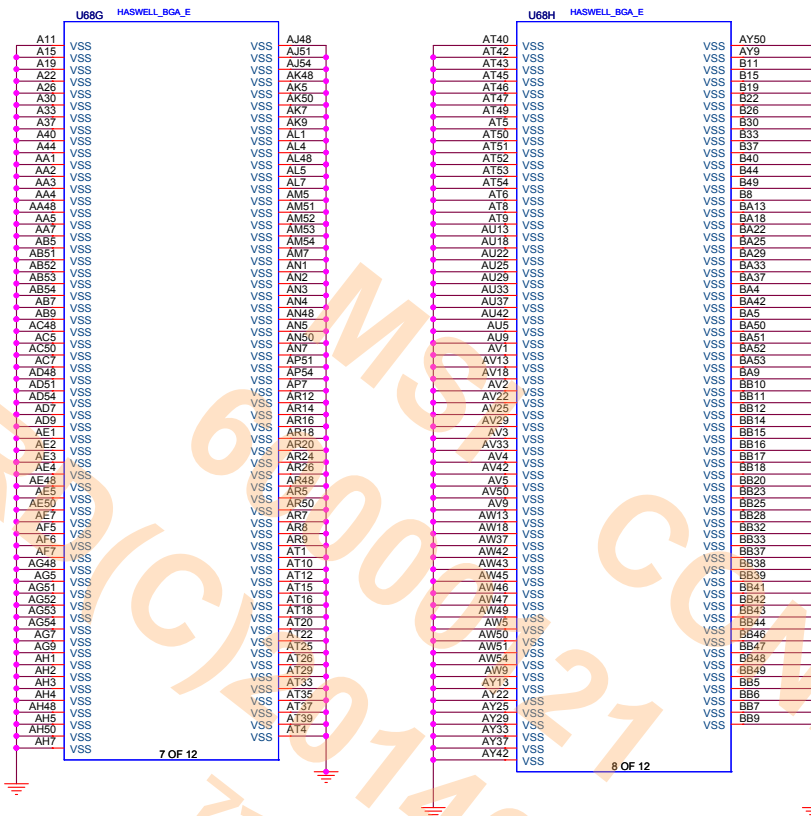
Haswell (CLK,MISC,JTAG)



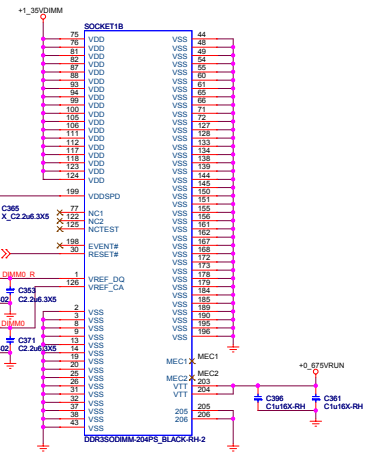
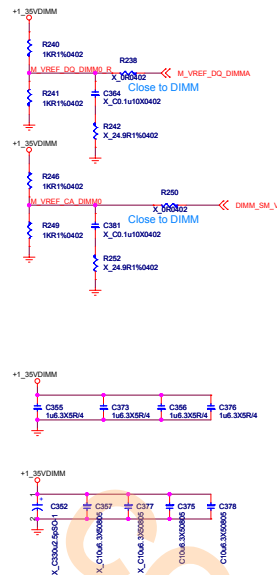
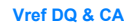
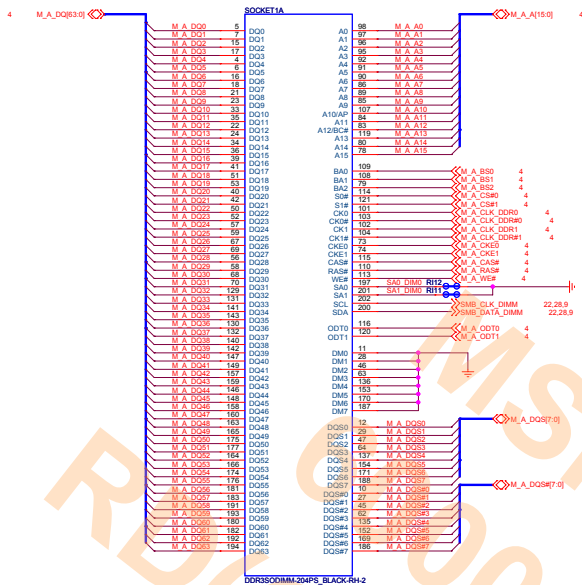


CPU-4 (Power)

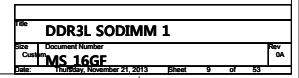
Haswell (GND)



Title			CPU-5 (GND)	
Size	Custom	Document Number	MS 16GE	
Date:	Thursday, November 21, 2013	Sheet	7	of 53

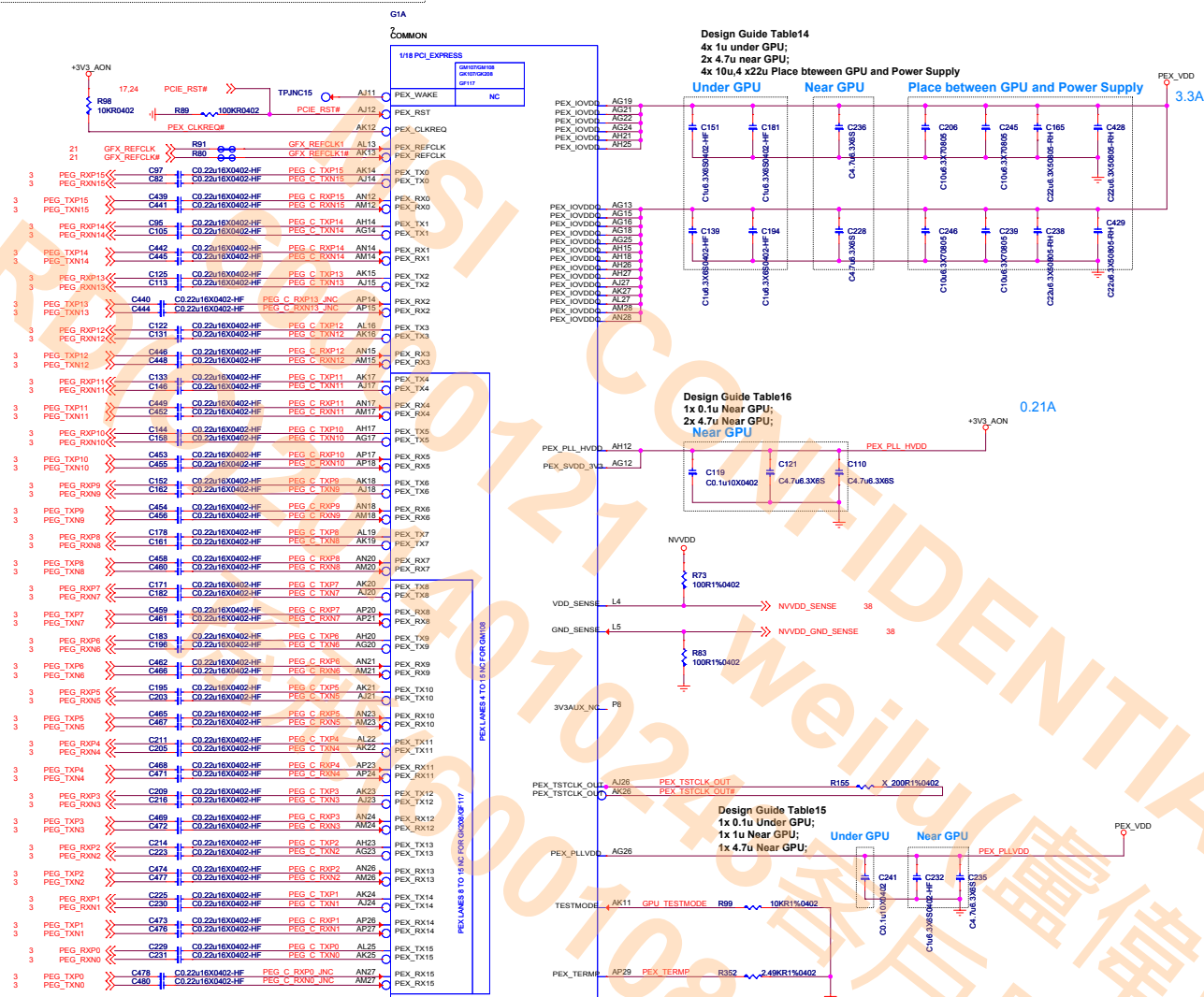
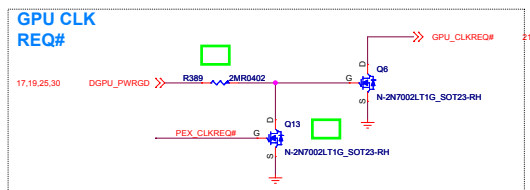
SODIMM#A

Title		DDR3L SODIMM 0		Rev		0A	
Size	Custom	Document Number					
		MS 16GF					
Date	Thursday, November 21, 2013		Sheet	8	of	53	

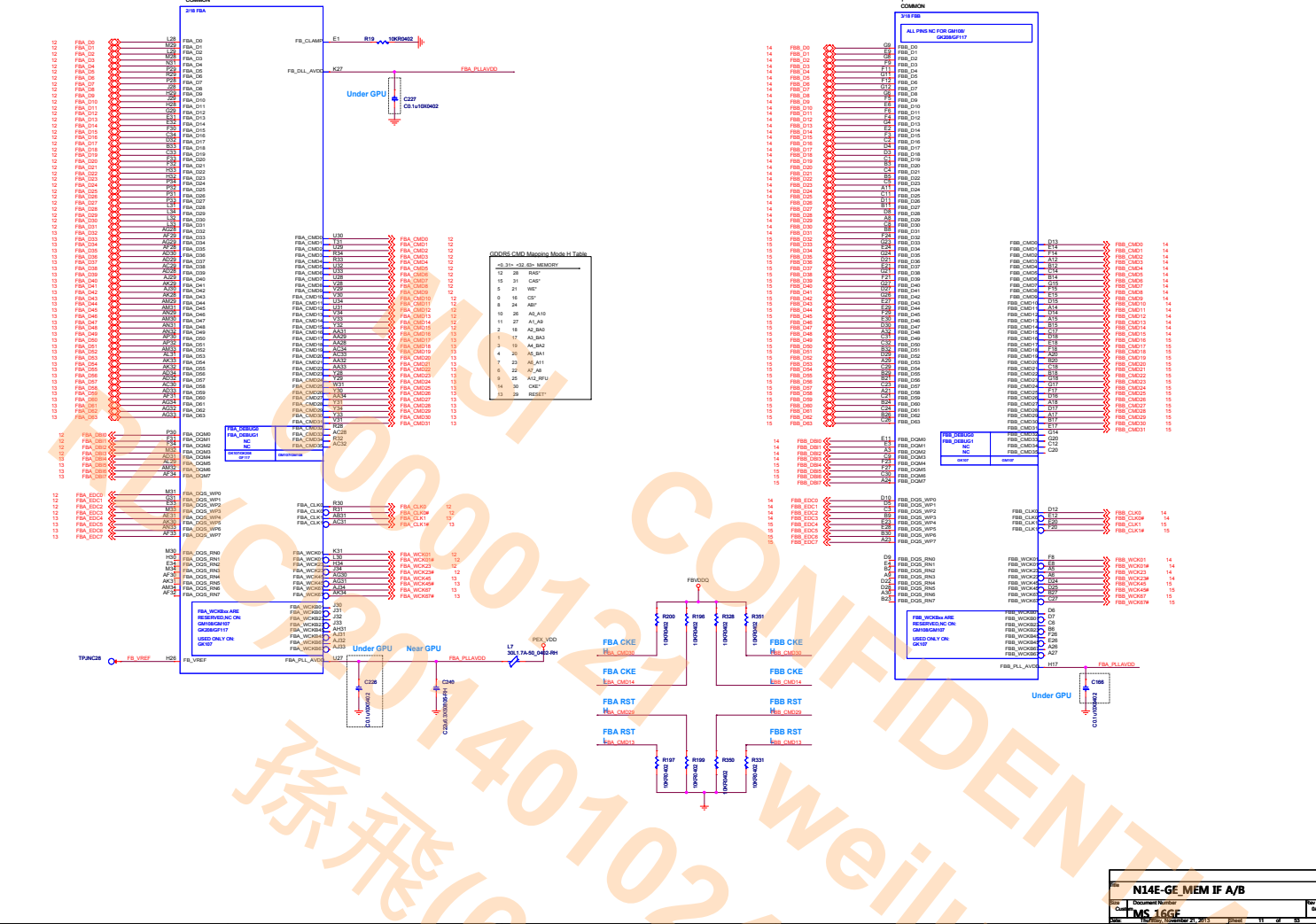
SODIMM#B

Title			
DDR3L SODIMM 1			
Size	Document Number		Rev
Customer	MS_16GF		0A
Date:	Thursday, November 21, 2013	Sheet 9 of 53	

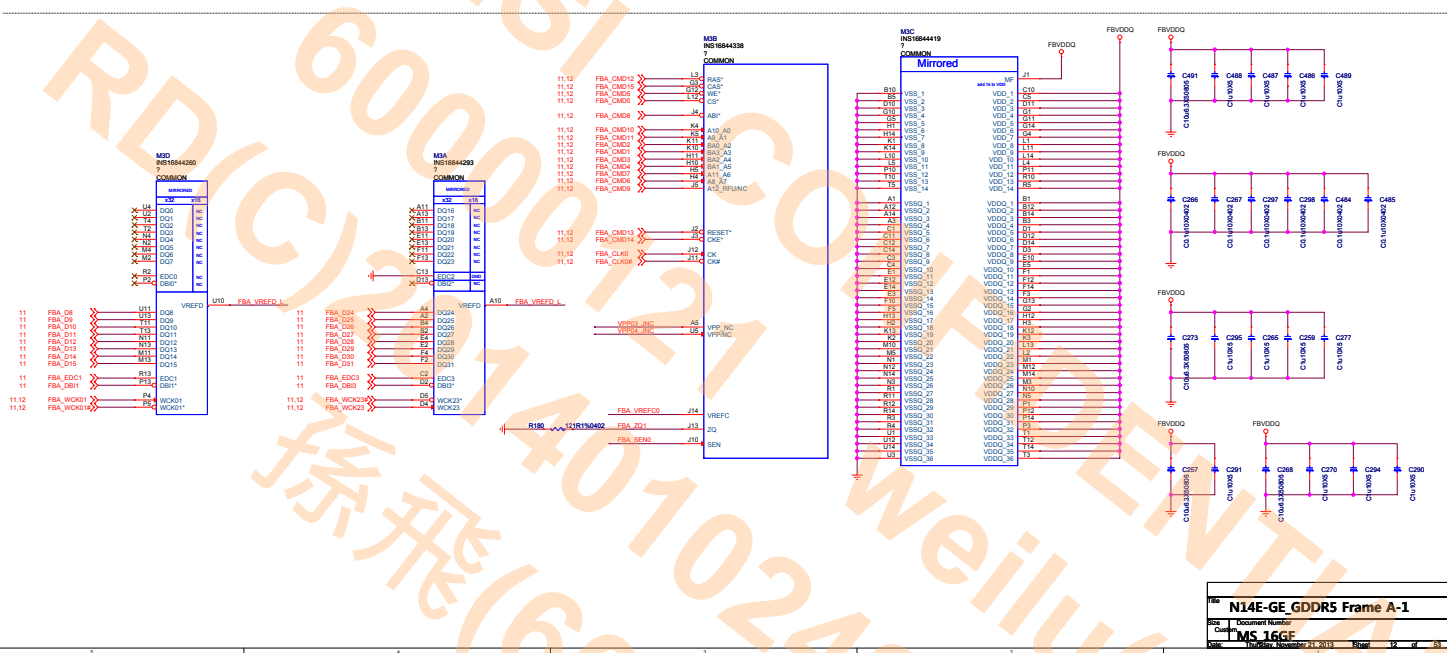
N14E-GE(PCI-Express Gen3 x16 Interface)



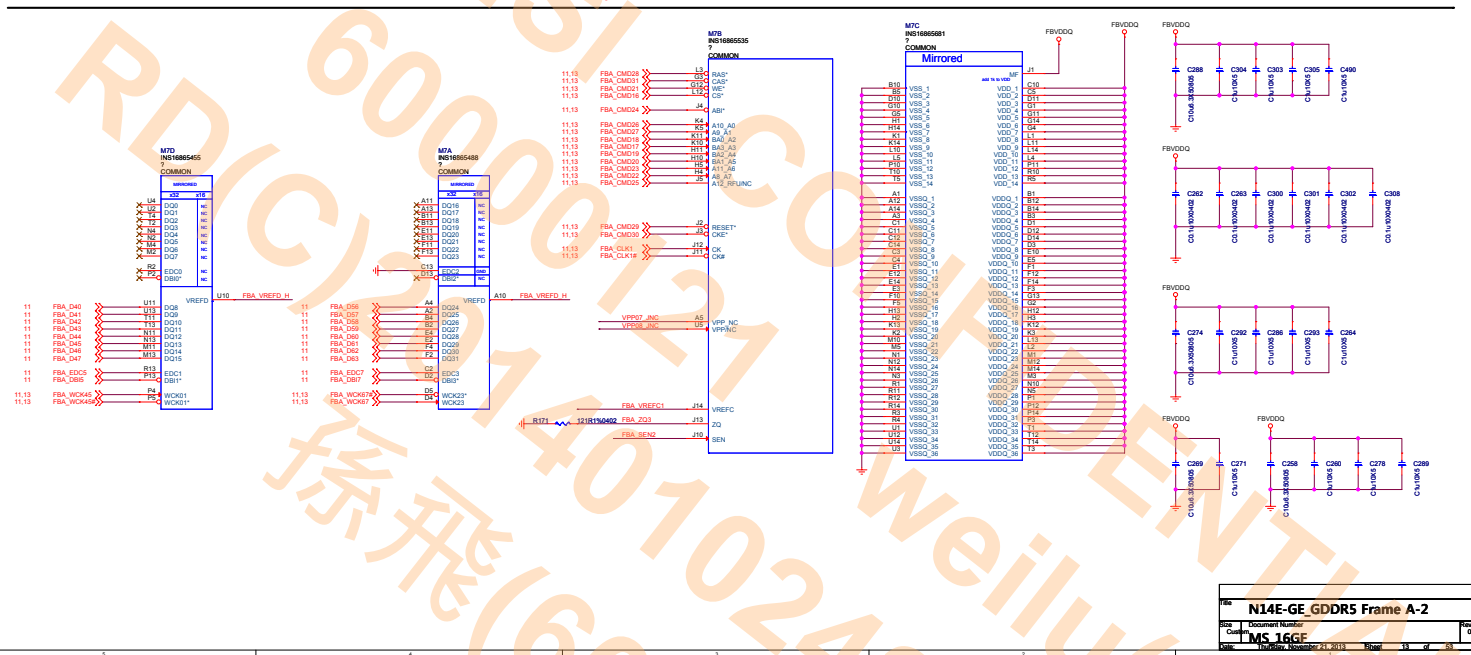
N14E-GE(Frame Buffer Interface)



)



)



MS 16GF
Date: Thursday, November 21, 2013 Sheet 13 of 13

MS 16GF
Date: Thursday, November 21, 2013 Sheet 13 of 13

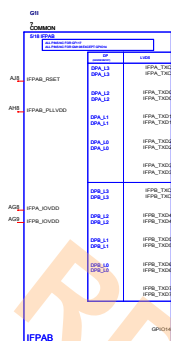
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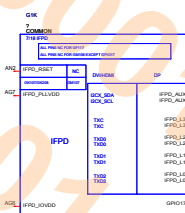
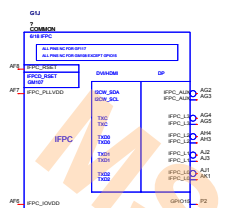
)

N14E-GE(Display IF)

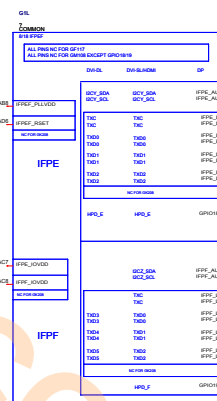
IFP A/B LVDS Dual Link



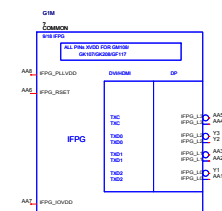
IFP C Native HDMI OR DP

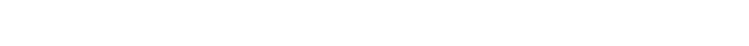
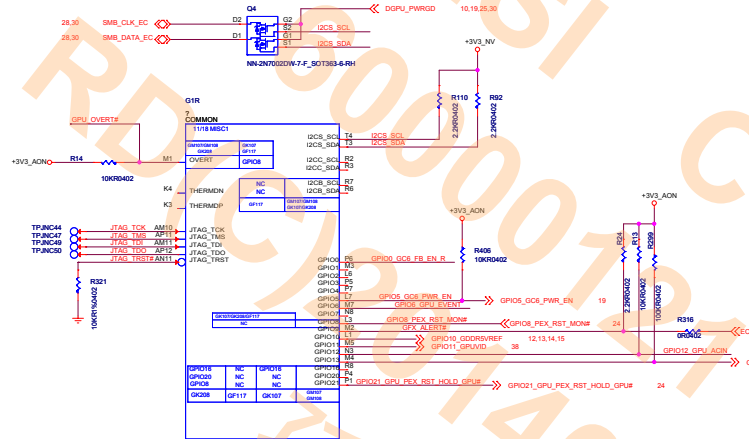
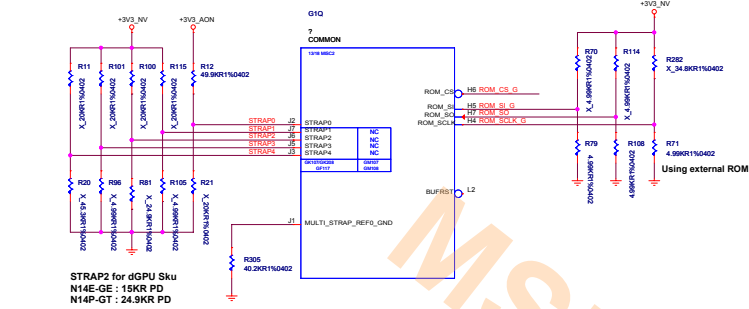
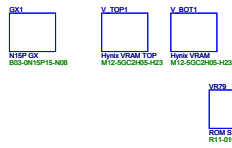


IFP E/F Dual Link TMDS DVI-I

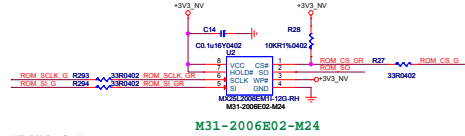


DAC A VGA

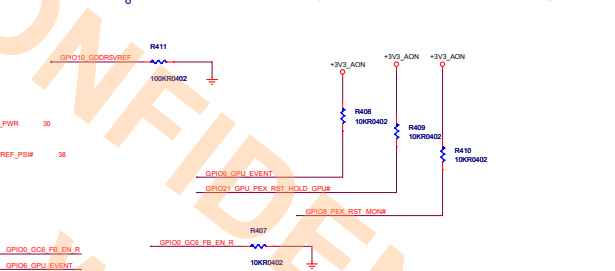
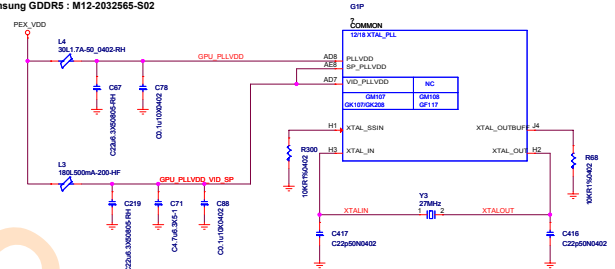




External EEPROM

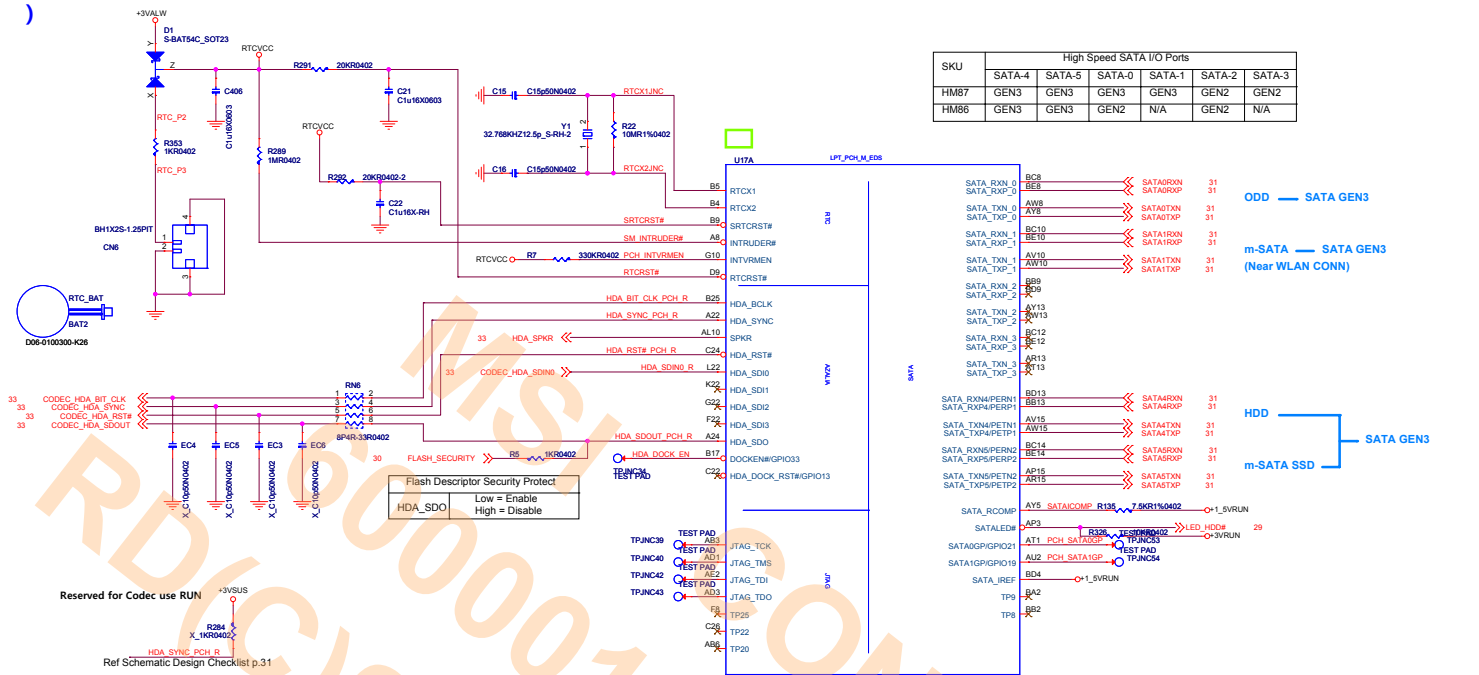


ROM_SO : 5KR PU for Optimus
ROM_SI for VRAM BOM Option
Hynix VRAM : 34.5KR PD
Samsung VRAM : 45.3KR PD
Hynix GDDR5 : M12-5GQ2H85-H23
Samsung GDDR5 : M12-2032565-S02



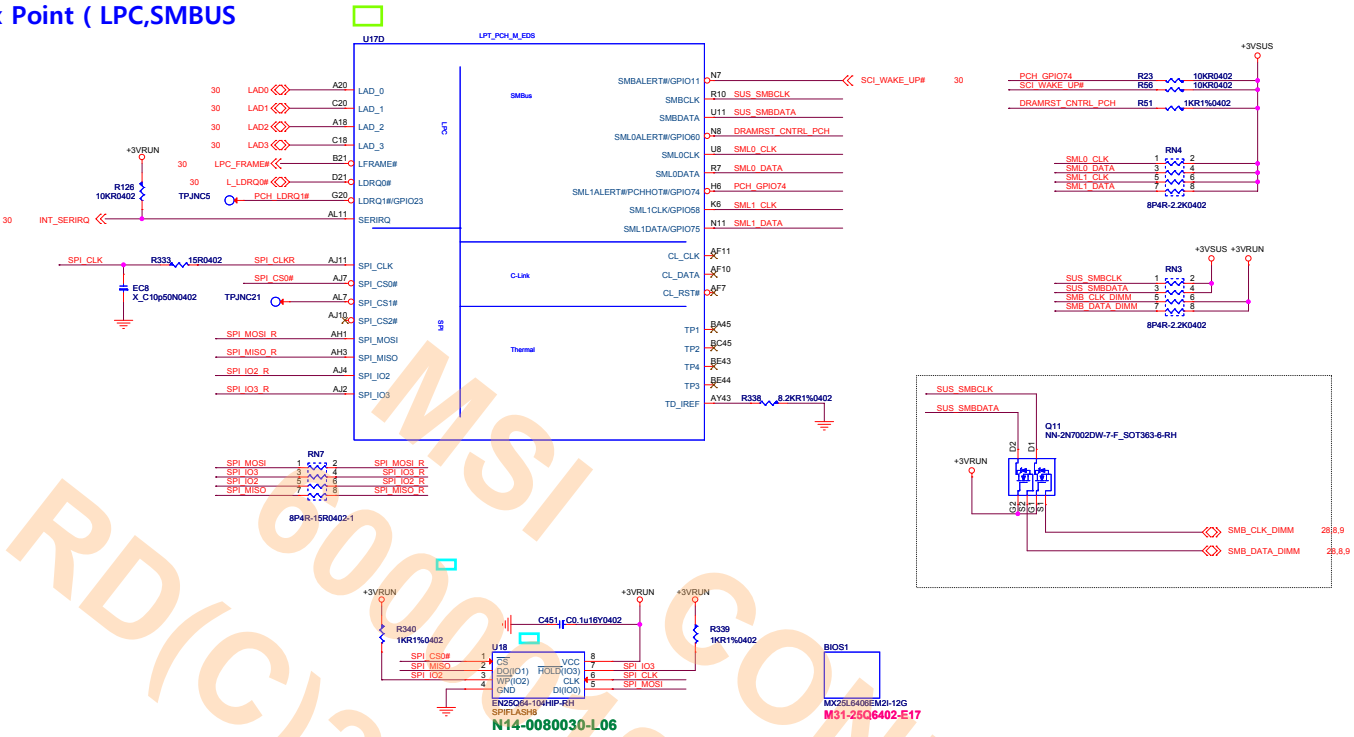
File	N14E-GE Thermal & GPIO
Doc	Document Number
Rev	MS 16GE
Date	Thu May 21 2015
Sheet	17 of 53

Lynx Point (HDA,JTAG,SATA)

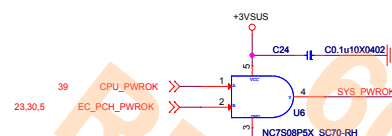


File	PCH-1 (HDA/JTAG/SATA)			Rev	BA
Size	Document Number	MS 16GE			
Date	Thursday, November 21, 2013	Sheet	20	of	83

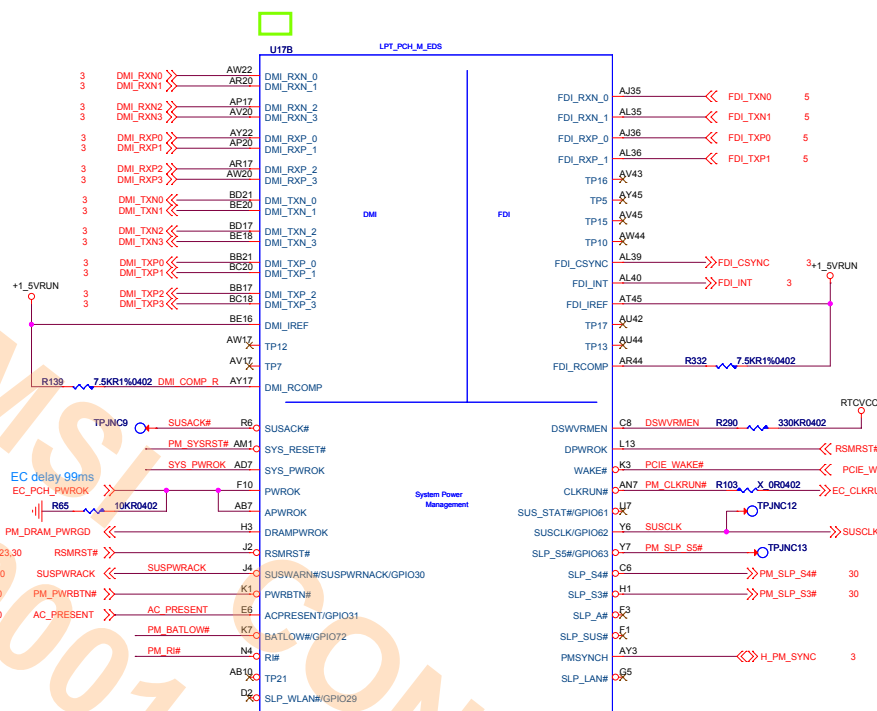
Lynx Point (LPC,SMBUS)



)

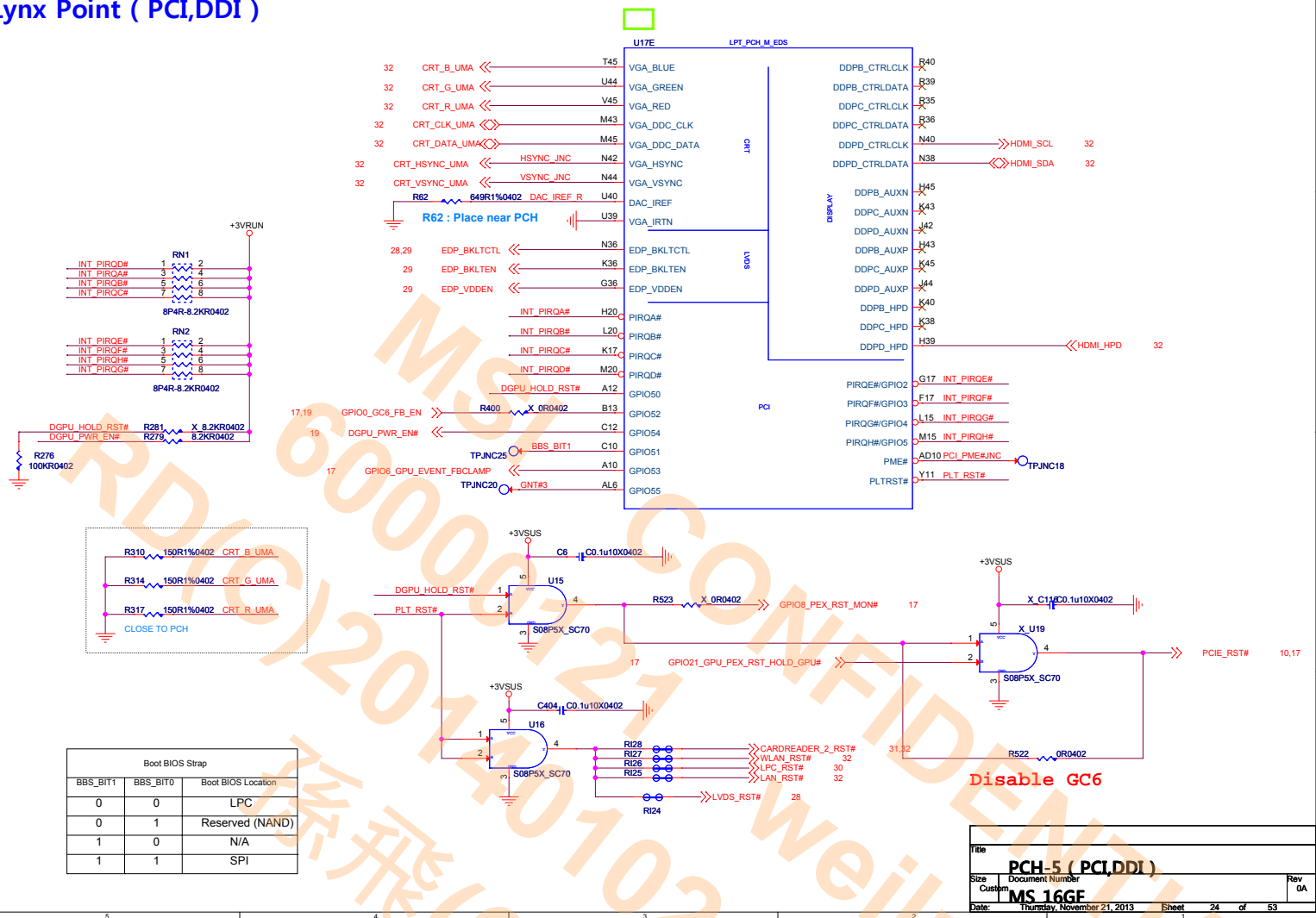


APWROK not supporting Intel AMT , it can be connected to PWROK
GPIO31 : If not used,require pull up +3VSUS
DSWODVREN - On Die DSW VR Enable HIGH : Enable internal 1.05V regulator LOW : Disable
DPWROK Without deep s4/s5 support tied together with RSMRST#



Title				
PCH-4 (DMI,FDI)				
Size	Document Number			Rev
Custom	MS 16GE			0A
Date:	Thursday, November 21, 2013		Sheet	23 of 63

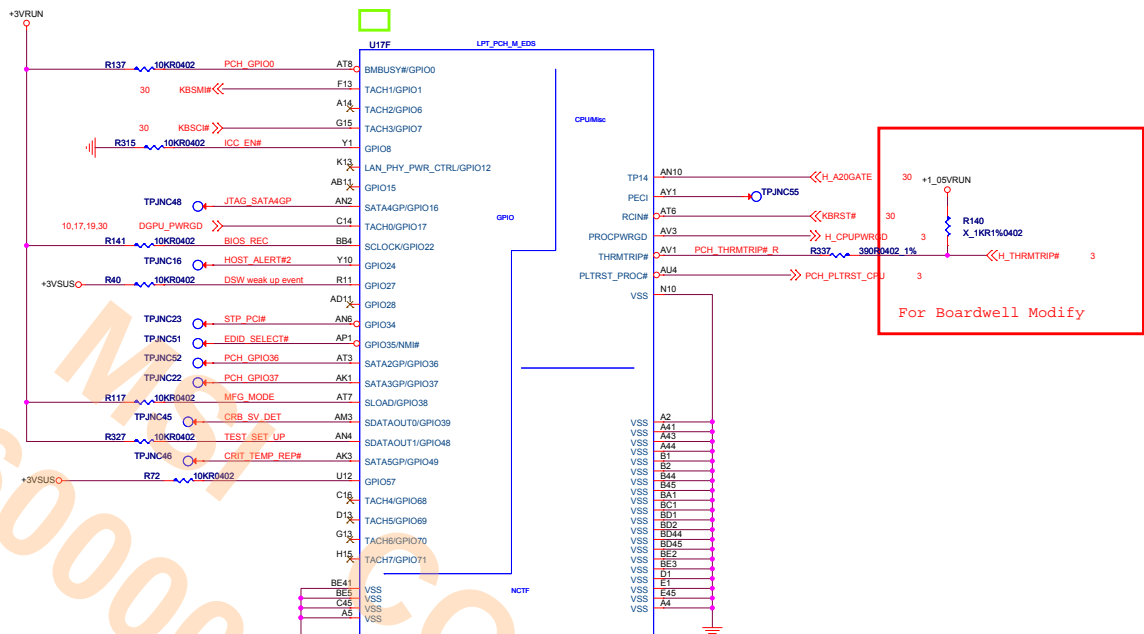
Lynx Point (PCI,DDI)



Lynx Point (GPIO,MISC)

GPIO Setting : Ref 486708_LPT_EDS Section2.24

PLL ON DIE VR_ENABLE	
GPIO28	Internal pull high (Enable)
	Low: Disable



Title				
PCH-6 (GPIO,MISC)				
Size	Document Number			Rev 0A
Custom	MS 16GE			
Date:	Thursday, November 21, 2013	Sheet	26 of 53	

Lynx Point (PCIE,USB)

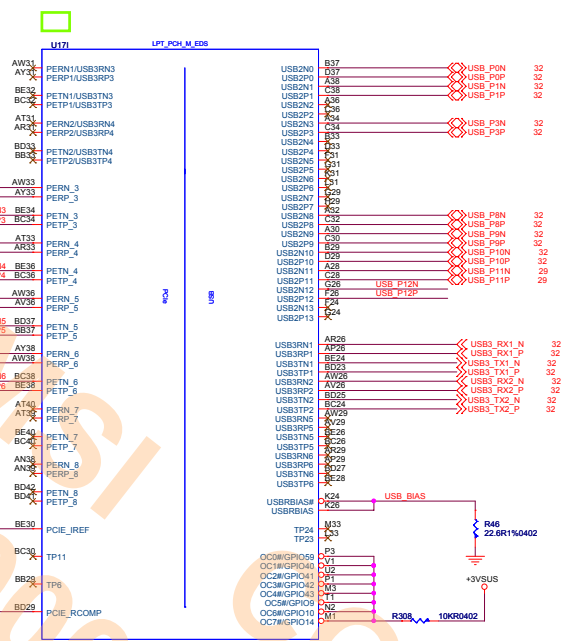
Card Reader for 1757

LAN

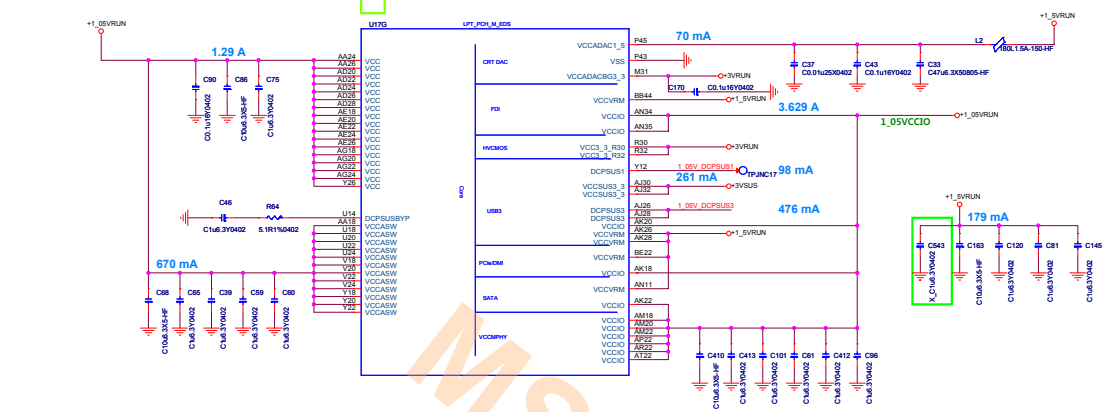
Card Reader for 16GC

WLAN

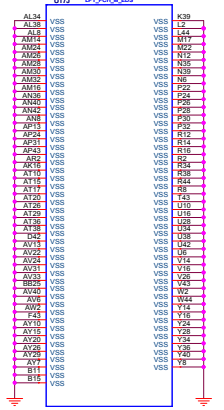
Close to device



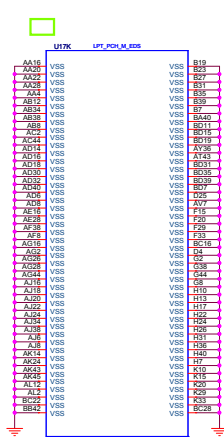
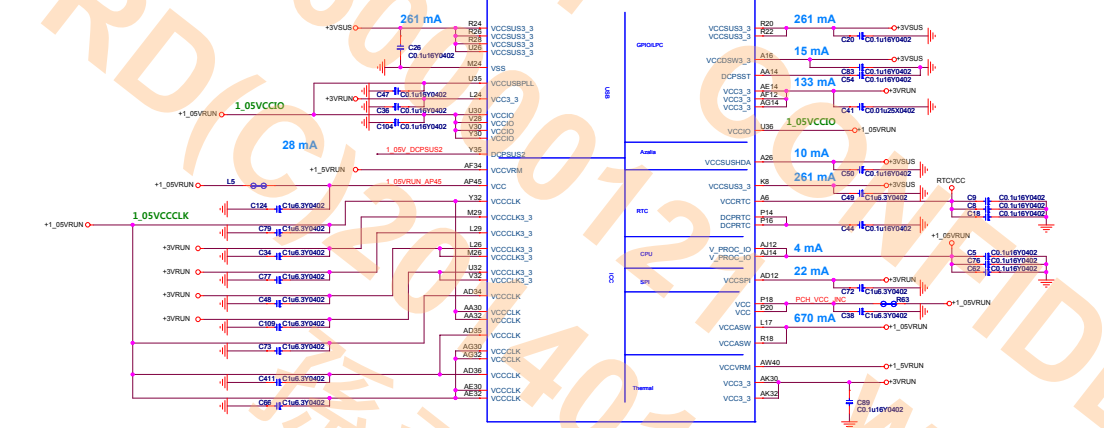
Lynx Point (Power)

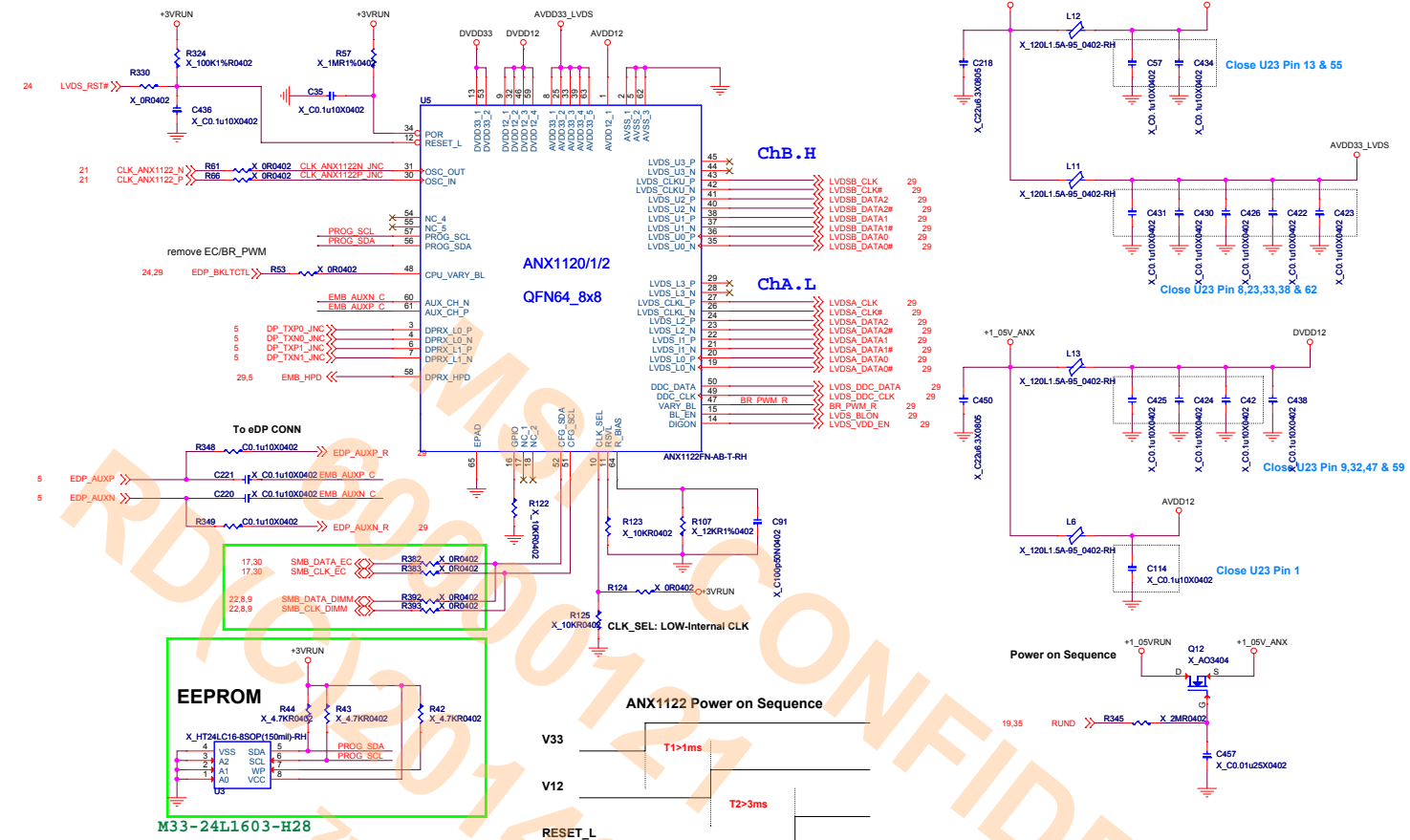


Lynx Point (GND)

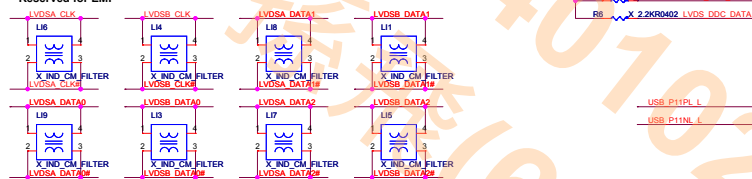
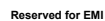
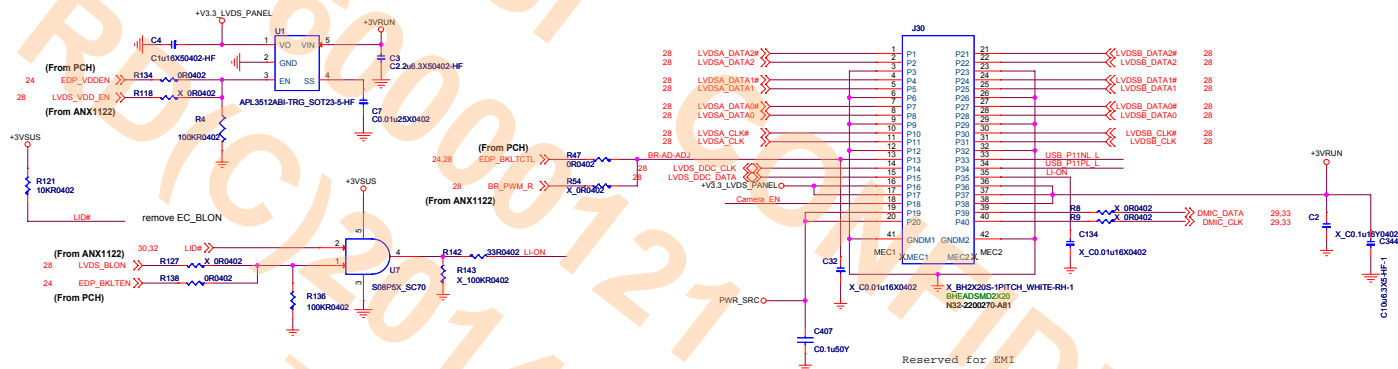
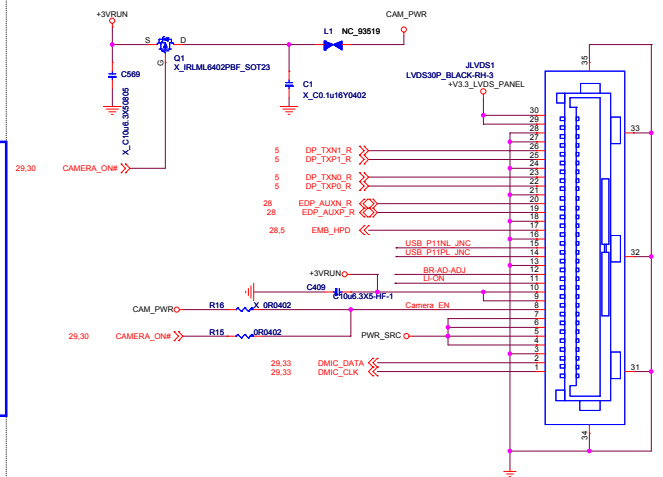
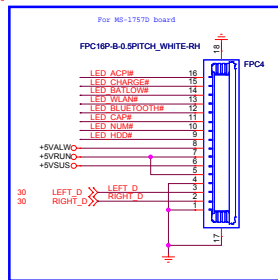
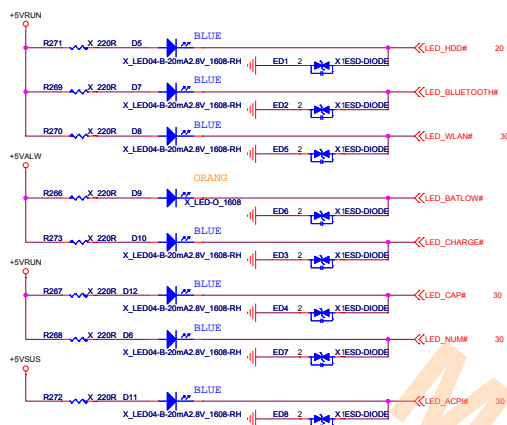


Lynx Point (Power)





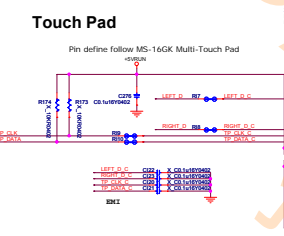
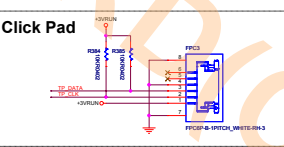
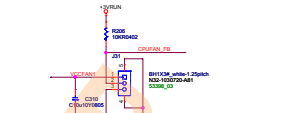
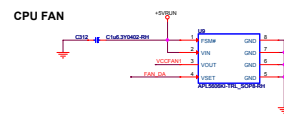
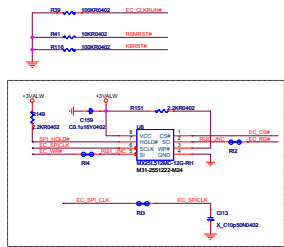
Title			
eDP to LVDS (ANX1122)			
Size	Document Number		Rev
Customer	MS 16GF		0A
Date:	Thursday, November 21, 2013	Sheet	26 of 53



Title: **FAN/LED/LVDS**

Size: **Custom** Document Number: **MS 16GE** Rev: **0A**

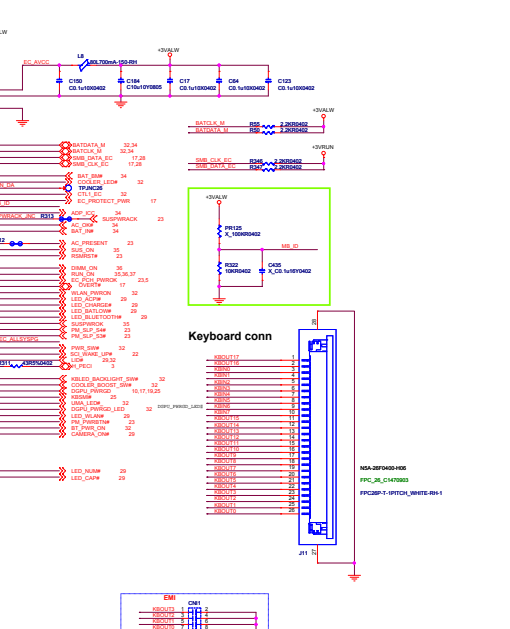
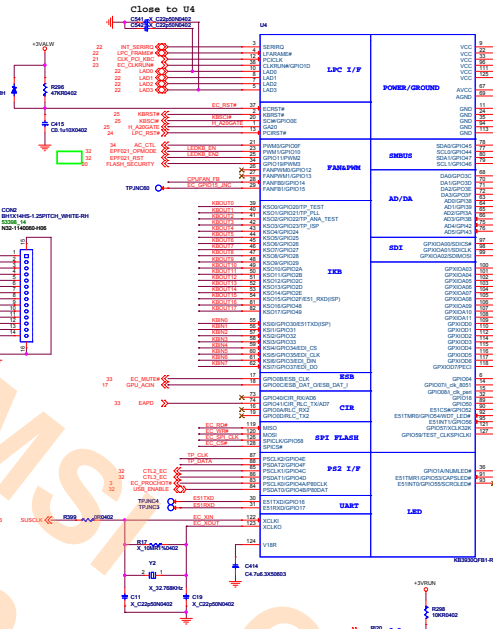
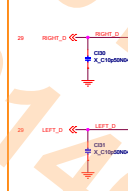
Date: **Thursday, November 21, 2013** Sheet: **29** of **53**



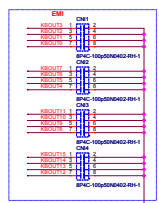
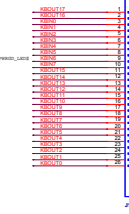
For SW Debug (LPC)



For 16GC1

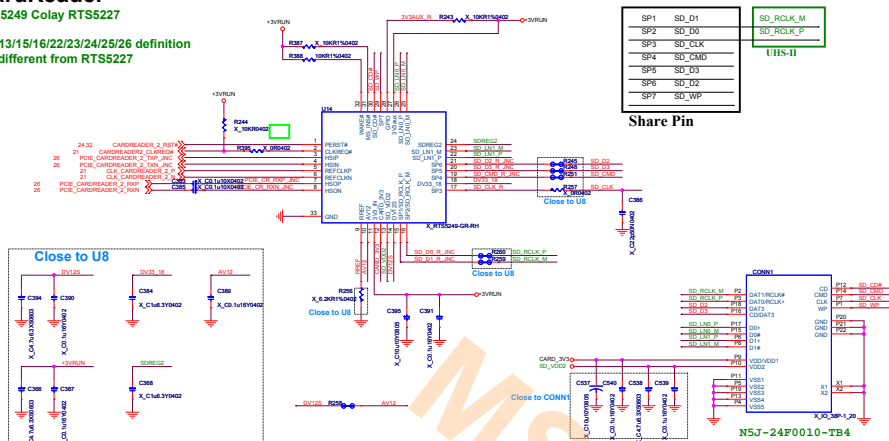


Keyboard conn

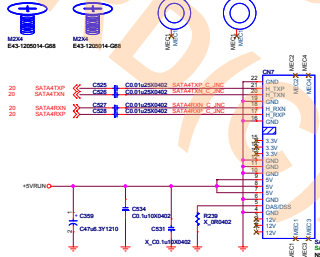


RTS5249 Colay RTS5227

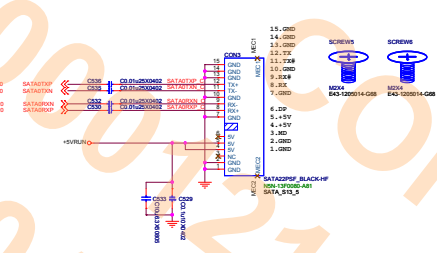
Pin 13/15/16/22/23/24/25/26 definition
are different from RTS5227

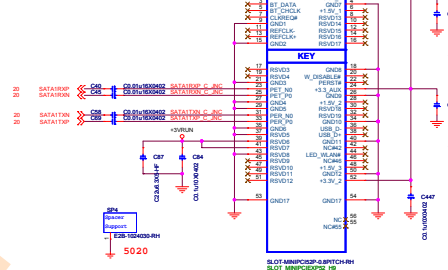
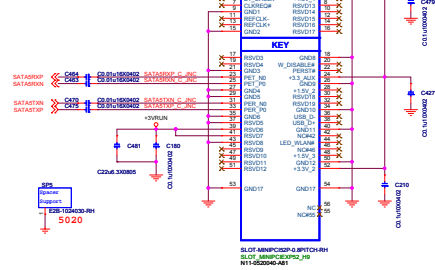


SCREW3 SCREW4

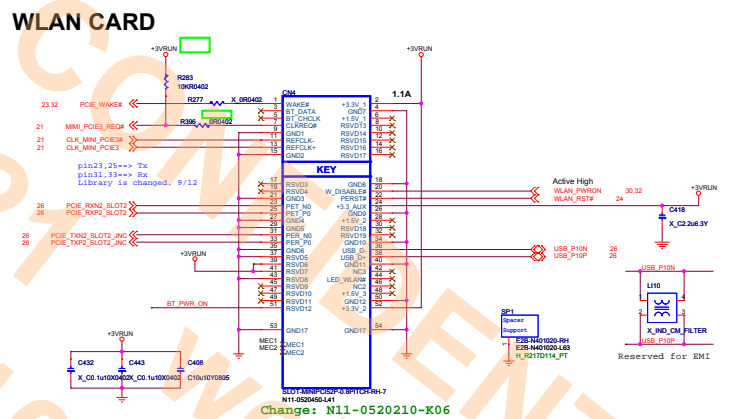


100





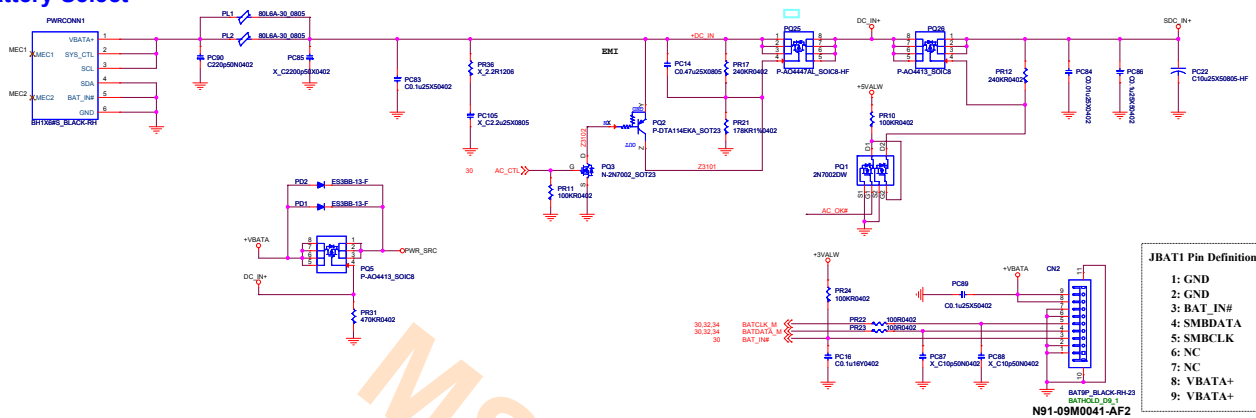
Board A - CRT/USB/WLAN/BT/LAN



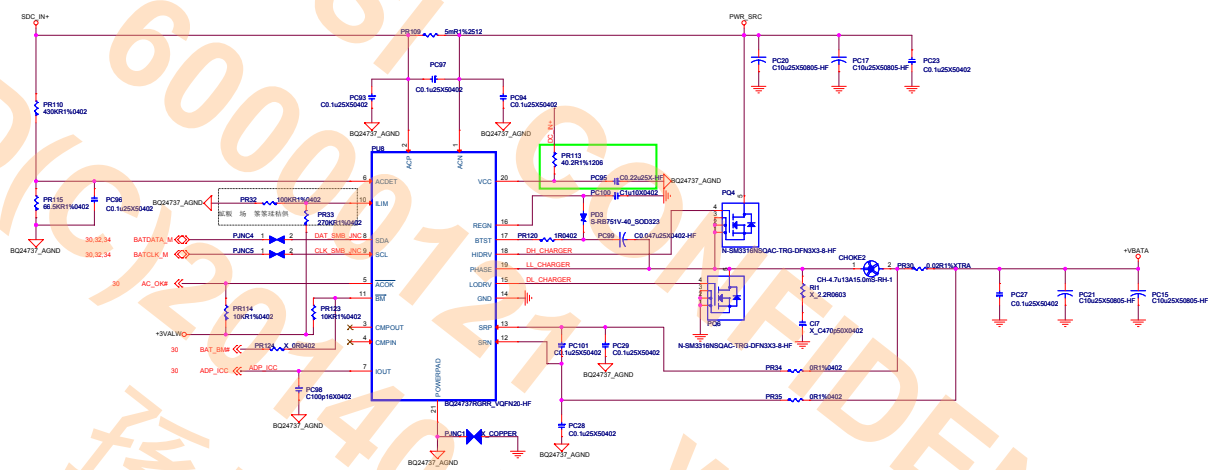
Change: N11-0520210-K06

File				Rev			
BTB Connector				Rev			
Size				Document Number			
Customer				Rev			
MS 16GE				GA			
Date		Thurs, November 21, 2013		Sheet		32 of 53	

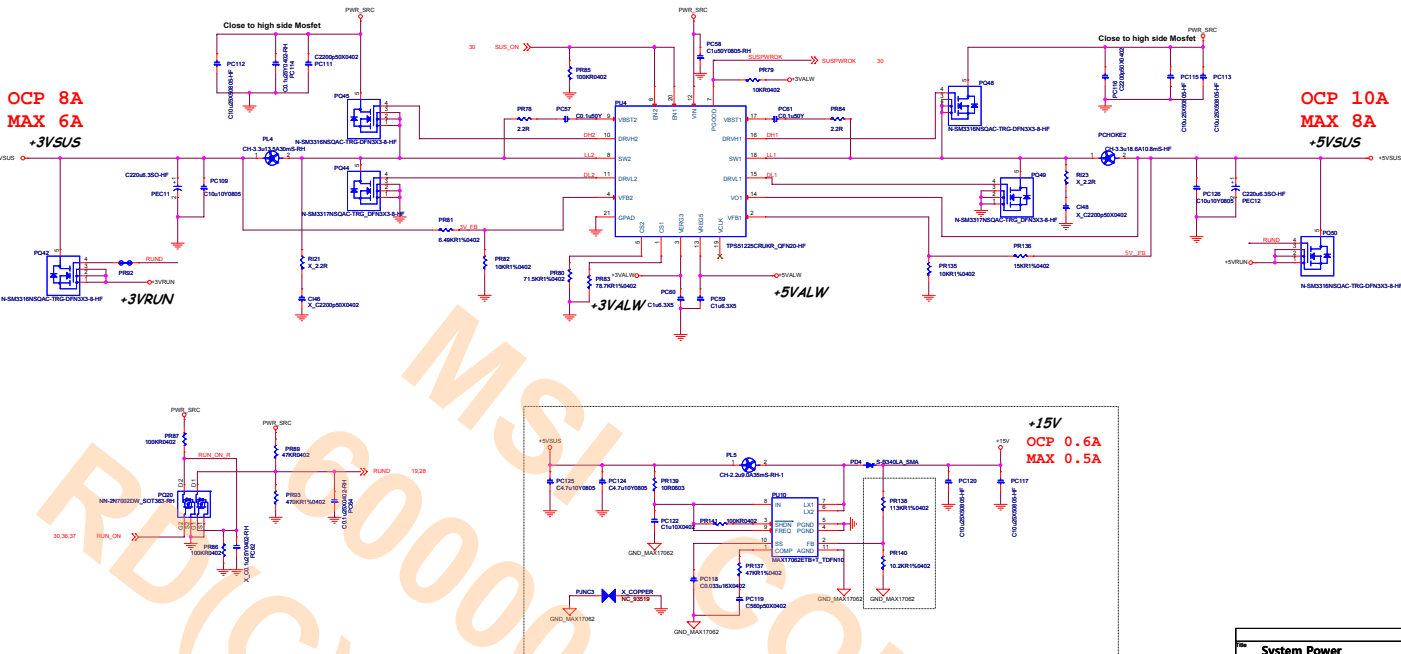
Battery Select



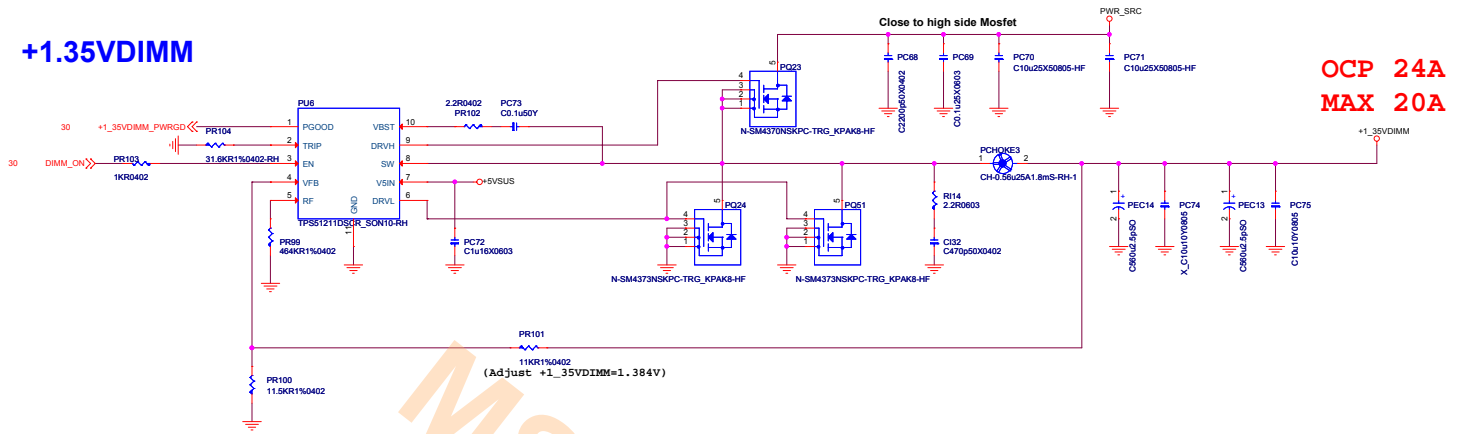
Battery Charger



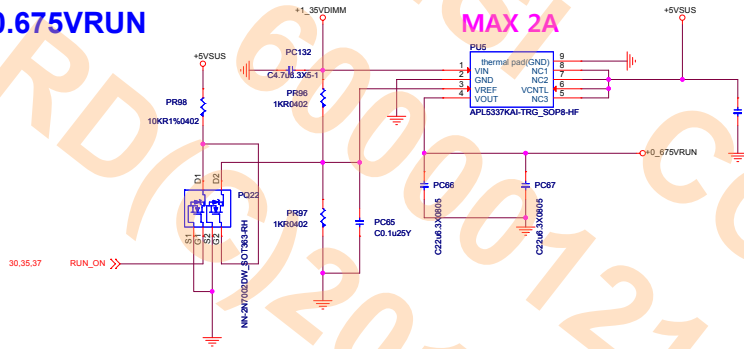
System Power



+1.35VDIMM

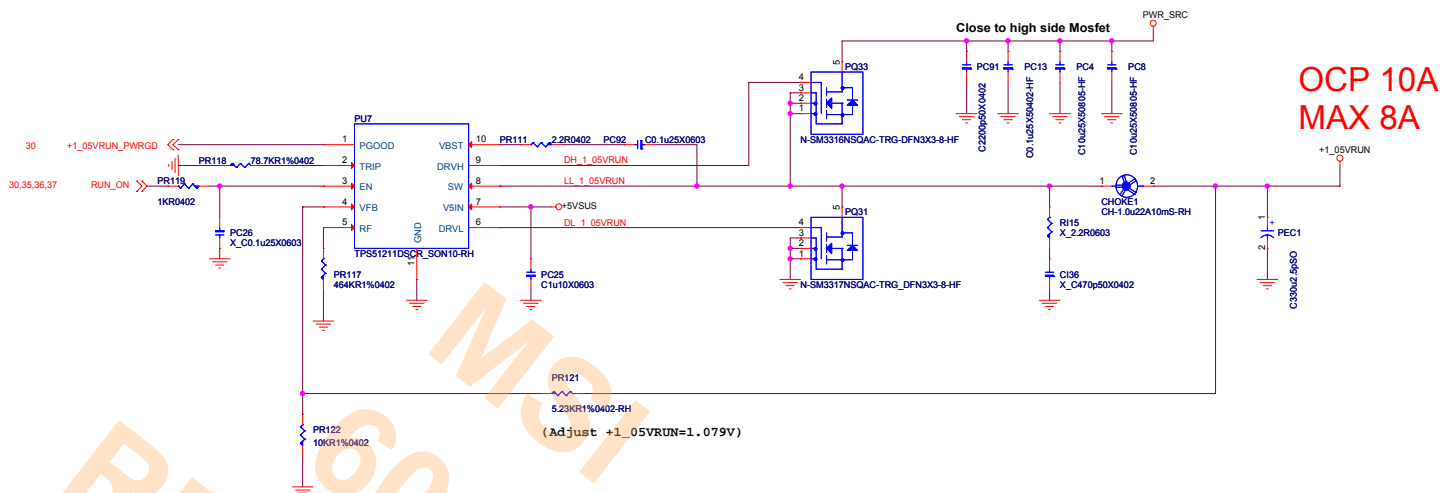


+0.675VRUN

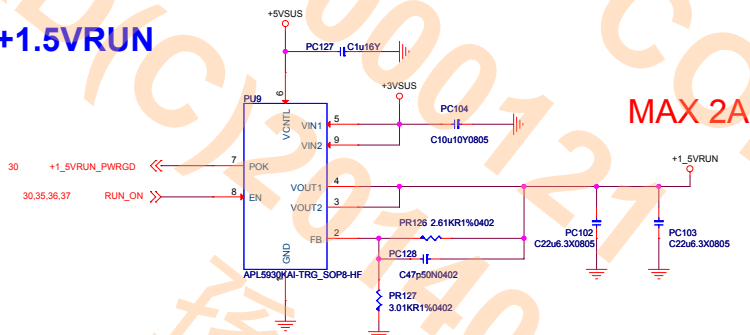


File	+1_35VDIMM/+0_675VRUN		
Size	Document Number	Rev	DA
Customer	MS 16GE		
Date	Thursday, November 21, 2013	Sheet	38 of 53

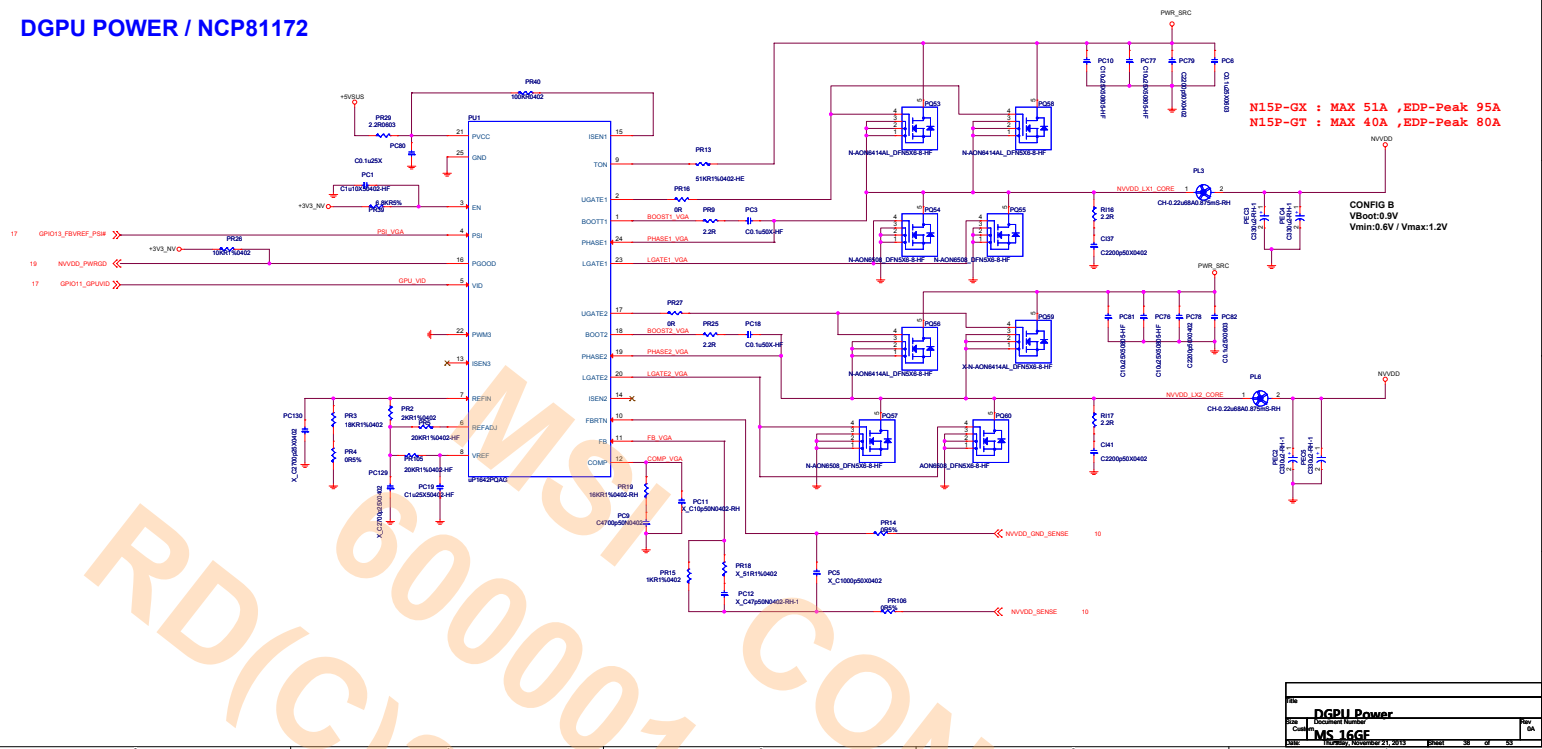
+1.05VRUN



+1.5VRUN



Title		+1.05VRUN / +1.5VRUN	
Size	Document Number		
Custom	MS 16GE		
Date:	Thursday, November 21, 2013	Sheet	37 of 53

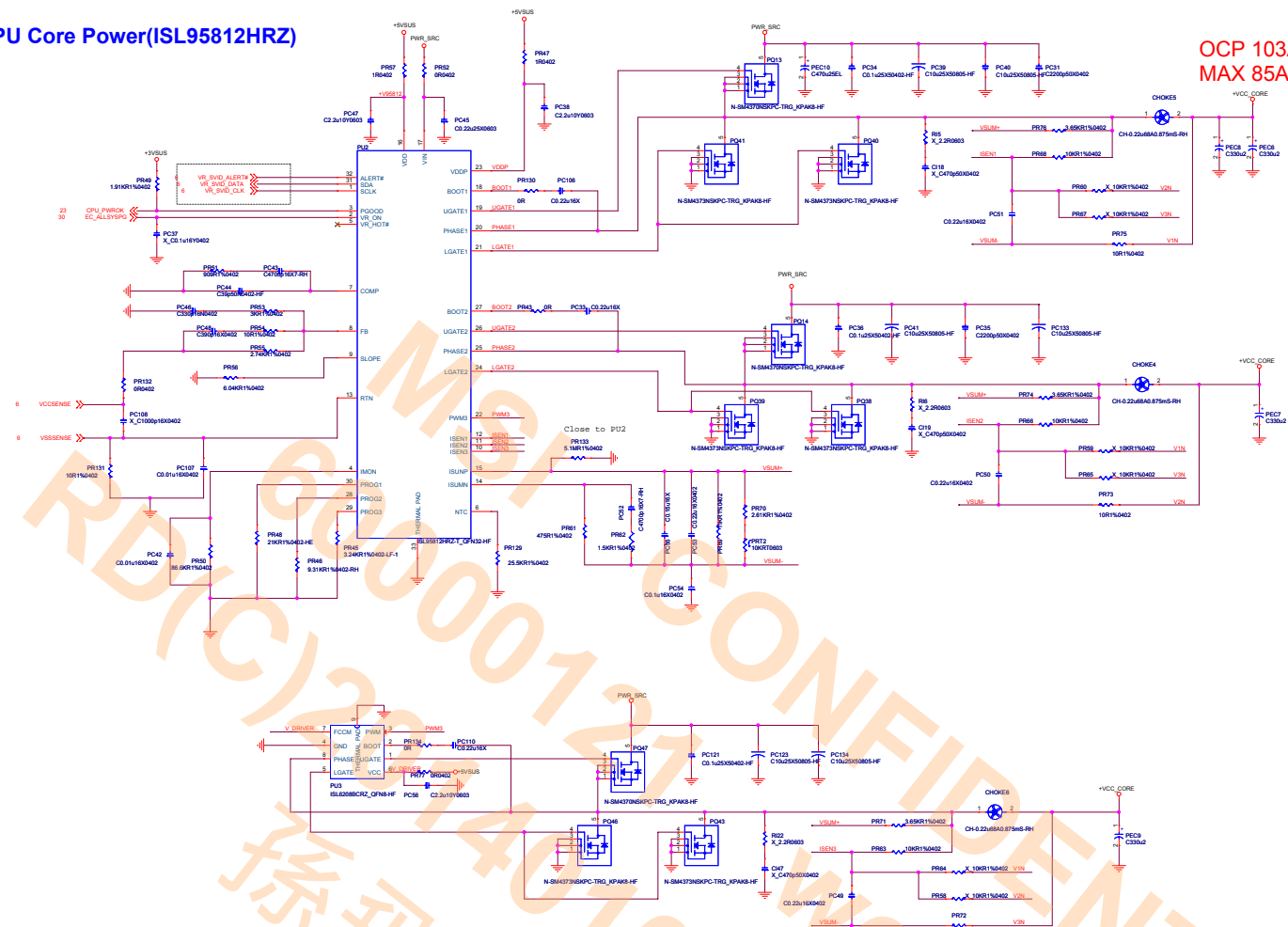


RD(C)2014010243 孫飛(60010839) weilu(盧偉)

DGPU Power	
MS 16GE	

CPU Core Power(ISL95812HRZ)

OCP 103A
MAX 85A



Title: **CPU Power**
 Document Number: **MS 16GE**
 Date: **Thursday, November 21, 2013** Page: **30** of **55**

Top Spring

PAD6
X_HS-MS1011-RH
E23-1011040-CA7

PAD11
X_HS-MS1011-RH
E23-5551040-CA7

PAD1
X_HS-MS1011-RH
E23-5551040-CA7

PWR_SRC
Close to PQ31, PQ34

SDG_IN+
C13 X C0.1u25Y0402
C138 X C0.1u25Y0402

+5VSUS
C140 X C0.1u25Y0402
C129 X C0.1u25Y0402
C134 X C0.1u25Y0402

PWR_SRC
C11 X C0.1u25Y0402
C115 X C0.1u25Y0402

+5VRUN
C19 X 1000p50X4
C117 X C0.1u25Y0402
C149 X C0.1u25Y0402

BOT Spring

PAD12
X_HS-MS1011-RH
E23-1011040-CA7

PAD15
X_HS-MS1011-RH
E23-1011040-CA7

PAD3
X_HS-MS1011-RH
E23-5551040-CA7

PAD10
X_HS-MS1011-RH
E23-5551040-CA7

+VBATA
C16 X C0.1u25Y0402
C12 X C0.1u25Y0402
C139 X C0.1u25Y0402

+3VRUN
C144 X C0.1u25Y0402
C128 X C0.1u25Y0402
C14 X C0.1u25Y0402

+1_35VDIMM
C152 X 100p50N0402
C153 X 100p50N0402
C154 X 100p50N0402
C155 X 100p50N0402
C156 X 100p50N0402
C157 X 100p50N0402
C158 X 100p50N0402
C159 X 100p50N0402
C160 X 100p50N0402

FBVDDQ
C125 X 100p50N0402
C127 X 100p50N0402
C126 X 100p50N0402
C124 X 100p50N0402
C116 X 100p50N0402

+3VSUS
C18 X C0.1u25Y0402
C112 X C0.1u25Y0402
C133 X C0.1u25Y0402

45 OHM

J16 2 L3 6mil 45 Ohm
X_H1X2M_BLACK-RH

80 OHM

J9 2 L1 DIFF 5/4.5/5 80 Ohm+
X_H1X2M_BLACK-RH

J7 2 L3 DIFF 5/4/5 80 Ohm+
X_H1X2M_BLACK-RH

J24 2 L6 DIFF 5/4.5/5 80 Ohm+
X_H1X2M_BLACK-RH

J4 2 L4 6mil 45 Ohm
X_H1X2M_BLACK-RH

J6 2 L1 DIFF 5/4.5/5 80 Ohm-
X_H1X2M_BLACK-RH

J8 2 L3 DIFF 5/4/5 80 Ohm-
X_H1X2M_BLACK-RH

J23 2 L6 DIFF 5/4.5/5 80 Ohm-
X_H1X2M_BLACK-RH

J3 2 L6 5mil 45 Ohm
X_H1X2M_BLACK-RH

85 OHM

J12 2 L1 DIFF 4/4/4 85 Ohm+
X_H1X2M_BLACK-RH

J15 2 L3 DIFF 4/4/4 85 Ohm+
X_H1X2M_BLACK-RH

J25 2 L4 DIFF 4/4/4 85 Ohm+
X_H1X2M_BLACK-RH

J28 2 L6 DIFF 4/4/4 85 Ohm+
X_H1X2M_BLACK-RH

50 OHM

J13 2 L3 4.5mil 50 Ohm
X_H1X2M_BLACK-RH

J10 2 L1 DIFF 4/4/4 85 Ohm-
X_H1X2M_BLACK-RH

J14 2 L3 DIFF 4/4/4 85 Ohm-
X_H1X2M_BLACK-RH

J27 2 L4 DIFF 4/4/4 85 Ohm-
X_H1X2M_BLACK-RH

J26 2 L6 DIFF 4/4/4 85 Ohm-
X_H1X2M_BLACK-RH

J22 2 L4 4.5mil 50 Ohm
X_H1X2M_BLACK-RH

90 OHM

J19 2 L1 DIFF 4/5/4 90 Ohm+
X_H1X2M_BLACK-RH

J18 2 L3 DIFF 4/5/4 90 Ohm+
X_H1X2M_BLACK-RH

J1 2 L6 DIFF 4/5/4 90 Ohm+
X_H1X2M_BLACK-RH

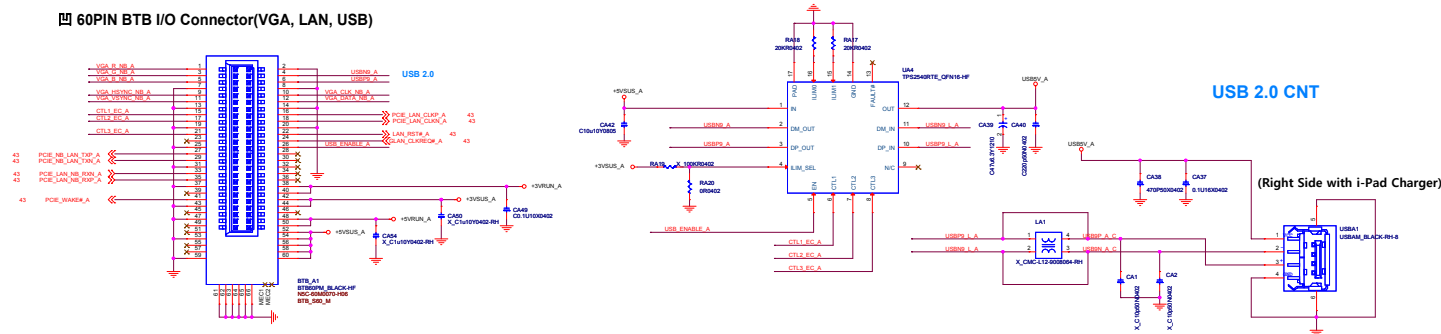
J20 2 L1 DIFF 4/5/4 90 Ohm-
X_H1X2M_BLACK-RH

J17 2 L3 DIFF 4/5/4 90 Ohm-
X_H1X2M_BLACK-RH

J2 2 L6 DIFF 4/5/4 90 Ohm-
X_H1X2M_BLACK-RH

Title				
EMI				
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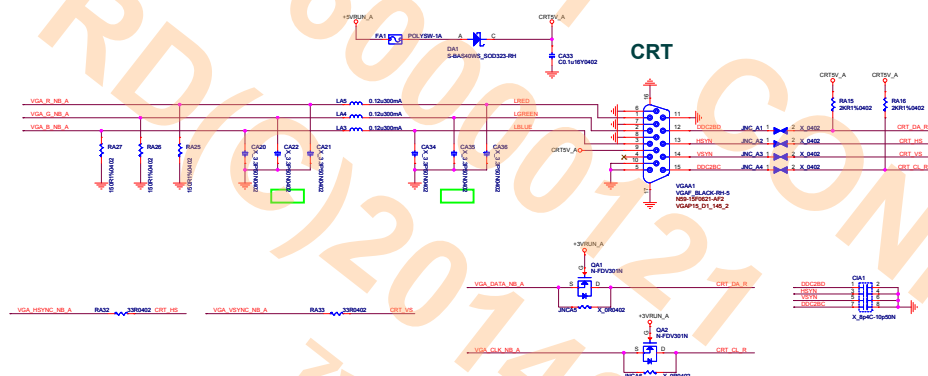
四 60PIN BTB I/O Connector(VGA, LAN, USB)



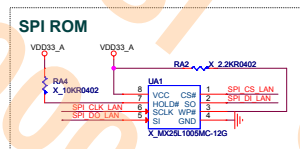
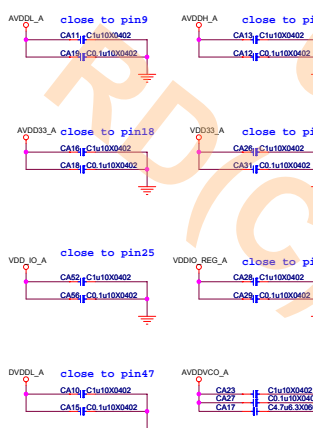
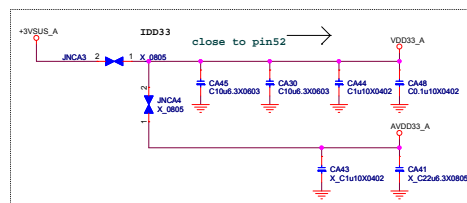
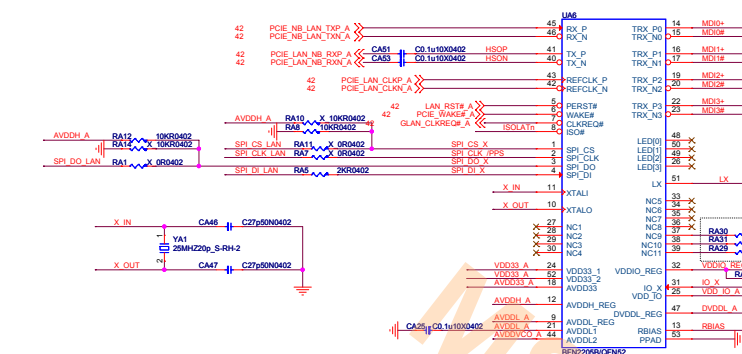
BTB STANDOFF (16GMA)

SCREW HOLE

PCB

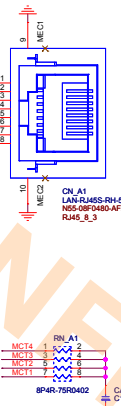
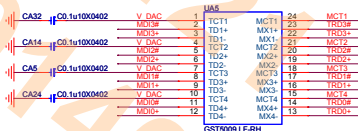


GIGA LAN(BFN2200A)

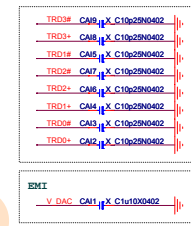


FLASH TYPE NOTE:
SST25VF010A
PM25LV010/020/040
AT25PF010, AT25F1024
MX25L1005/2006

Transfer Mode



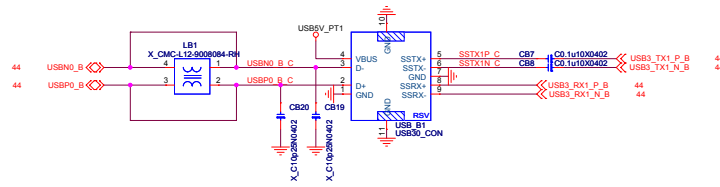
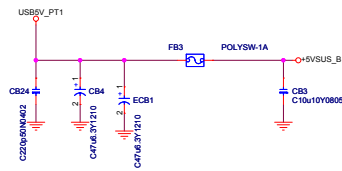
ENSURE:ENABLE SWITCH LDO



File	[A] GIGA LAN(BFN2205B)		
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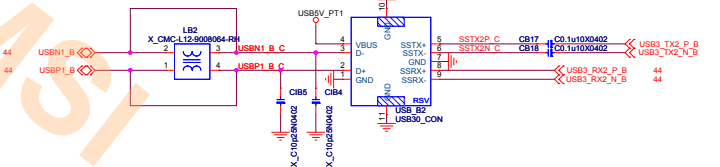
USB 3.0 CNT1

(USB3.0 Left Side - UP)



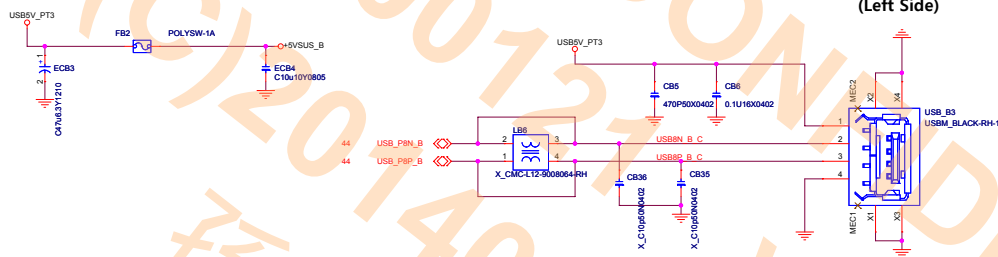
USB 3.0 CNT 2

(USB3.0 Left Side - Down)

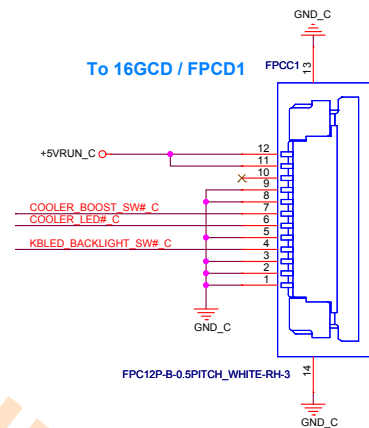
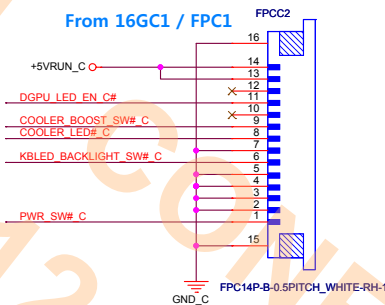
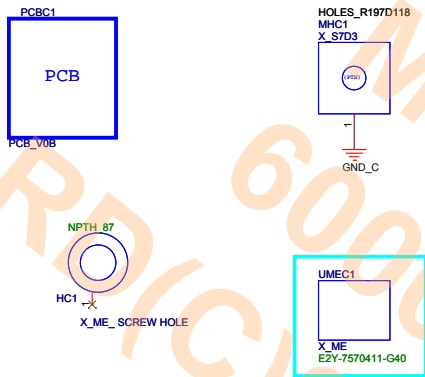
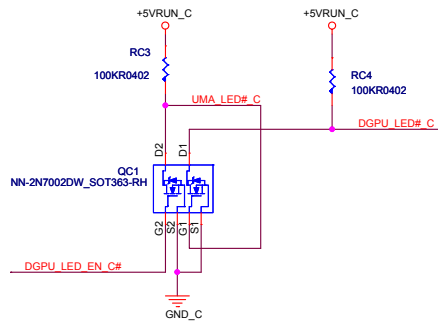
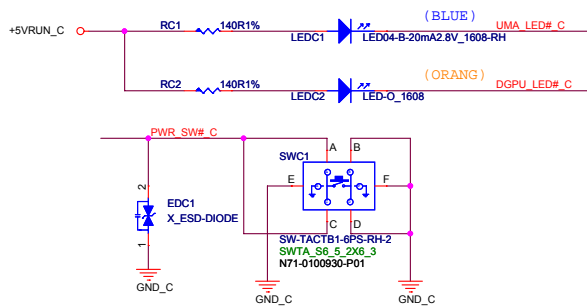


USB 2.0 CNT

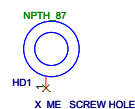
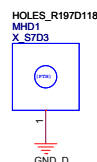
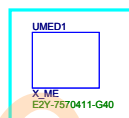
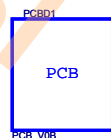
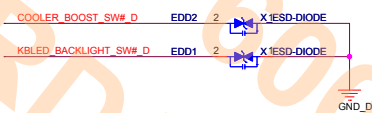
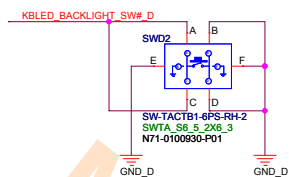
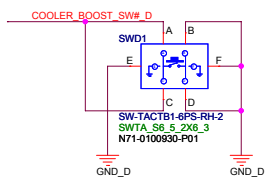
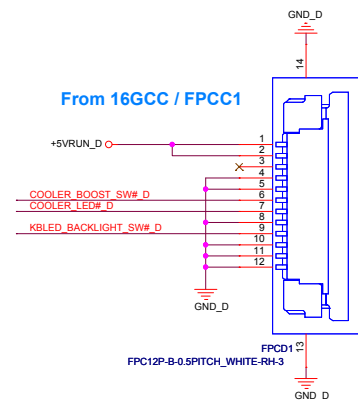
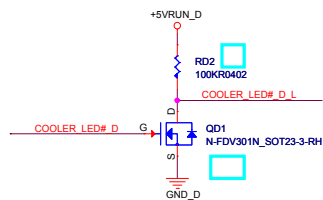
(Left Side)



Title: **[B] USB3.0x2/USB2.0x1/LFD KB**
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 Custom: **MS_16GE** **0A**
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[C1 Power SW Board		
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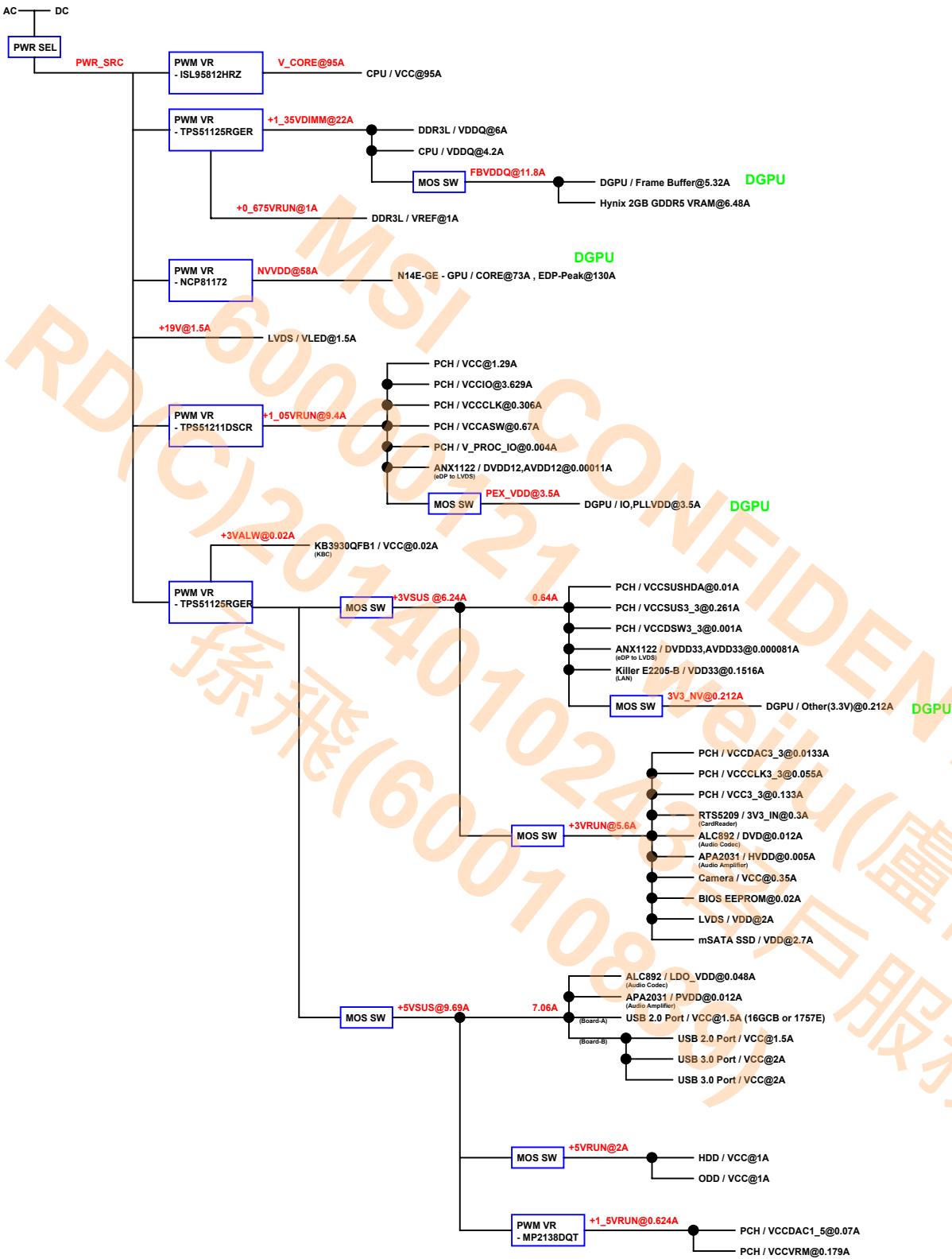


Title		
JDI Launch Board		
Size	Document Number	Rev
Custom	MS 16GE	0A
Date:	Thursday, November 21, 2013	Sheet 48 of 50

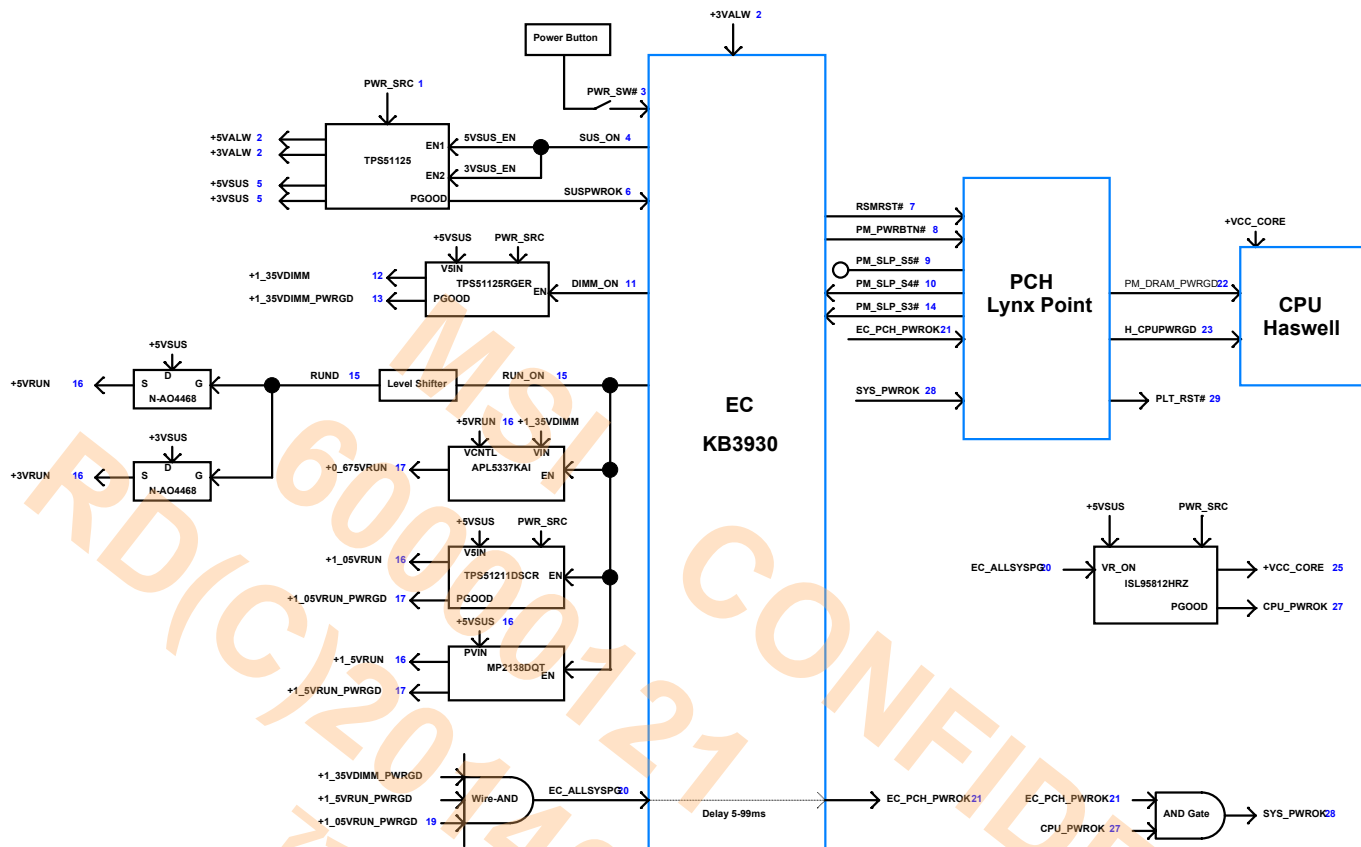
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C																																			
B																																			
A																																			
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					<table><tr><td colspan="5">Title</td></tr><tr><td colspan="5">[D] Launch Board</td></tr><tr><td>Size</td><td colspan="3">Document Number</td><td>Rev</td></tr><tr><td>A</td><td colspan="3">MS 16GE</td><td>0A</td></tr><tr><td>Date:</td><td colspan="2">Thursday, November 21, 2013</td><td>Sheet</td><td>50 of 53</td></tr><tr><td></td><td>5</td><td>4</td><td>3</td><td>2</td></tr></table>	Title					[D] Launch Board					Size	Document Number			Rev	A	MS 16GE			0A	Date:	Thursday, November 21, 2013		Sheet	50 of 53		5	4	3	2
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Size	Document Number			Rev																															
A	MS 16GE			0A																															
Date:	Thursday, November 21, 2013		Sheet	50 of 53																															
	5	4	3	2																															

1757 Power Delivery Chart



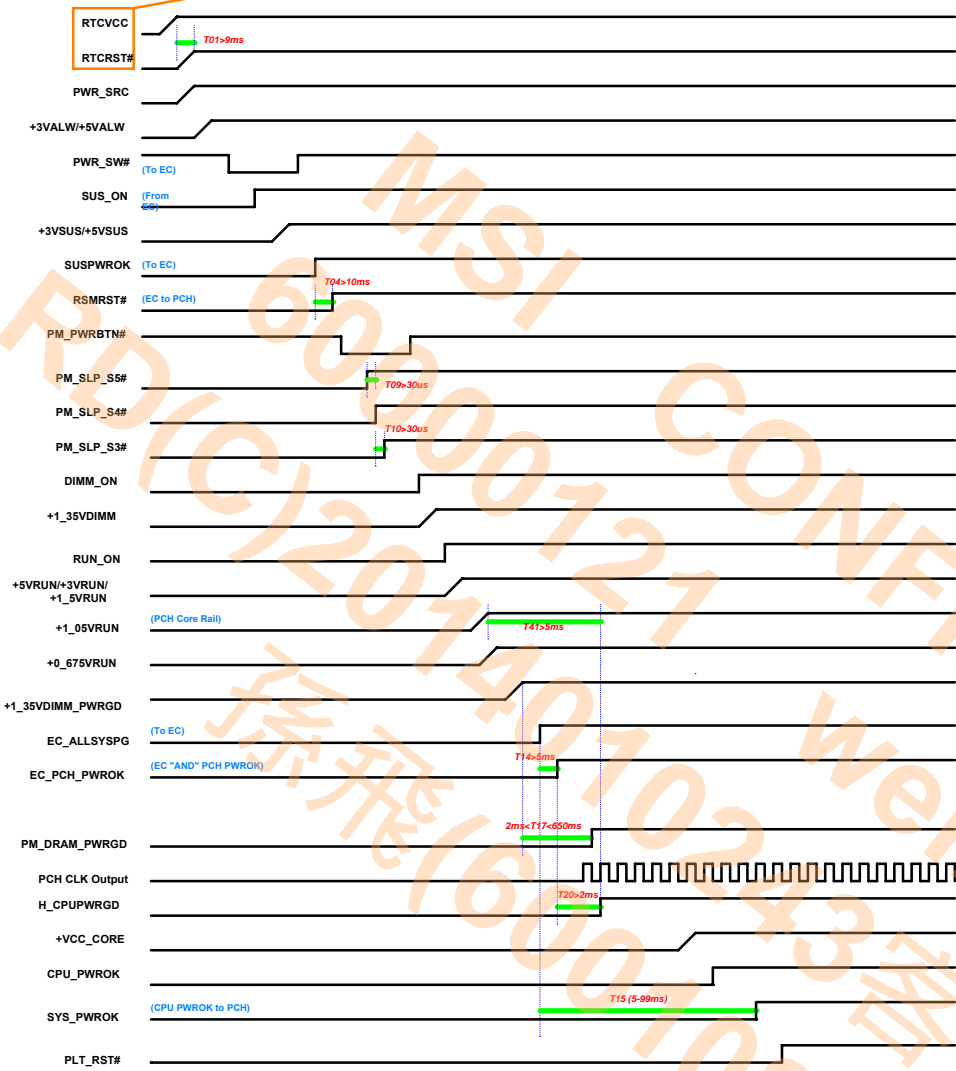
1757 Power on Block Diagram



Title									
Power on Block Diagram									
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Order	The Date		November 01 2012		Exhaust	E2	of	E2	

Power on Sequence

G3 -> S0



Title			
Power on Sequence			
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0	TMS 16GE		0A
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