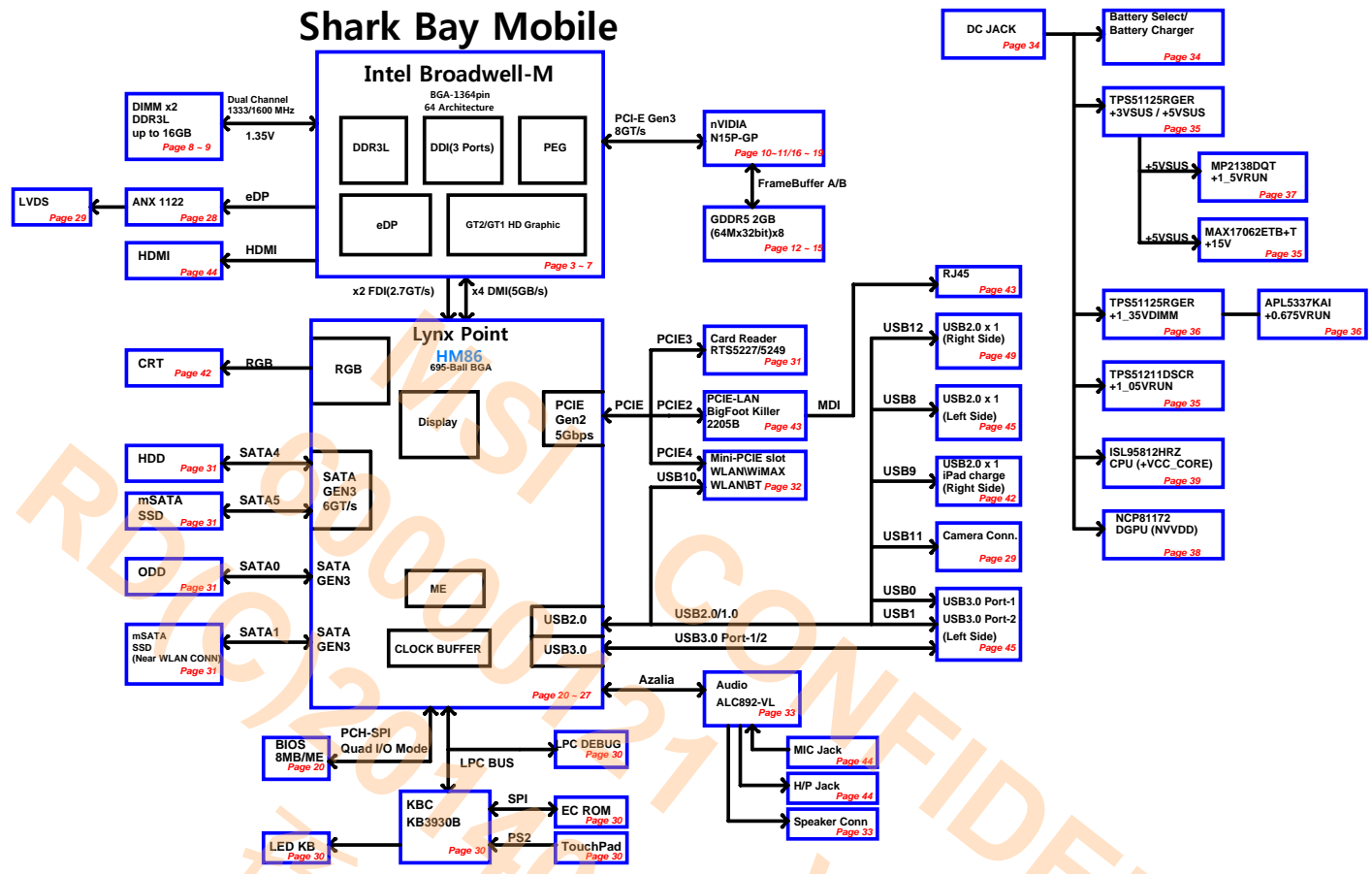


Shark Bay Mobile



SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

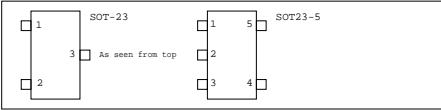
Voltage Rails

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#
NVDD	0.6-1.2V(VBoot:0.9V)Core Voltage for nVIDIA N14E-GE DGPU	GPIO11_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)

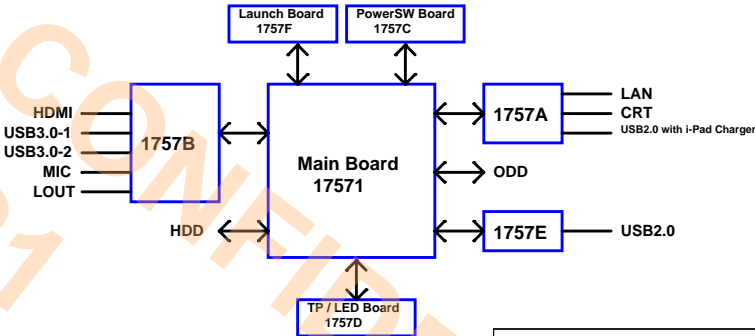
PCB Footprints



POWER STATES

STATE	SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#	+V*ALW	+VSUS	+V*RUN	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

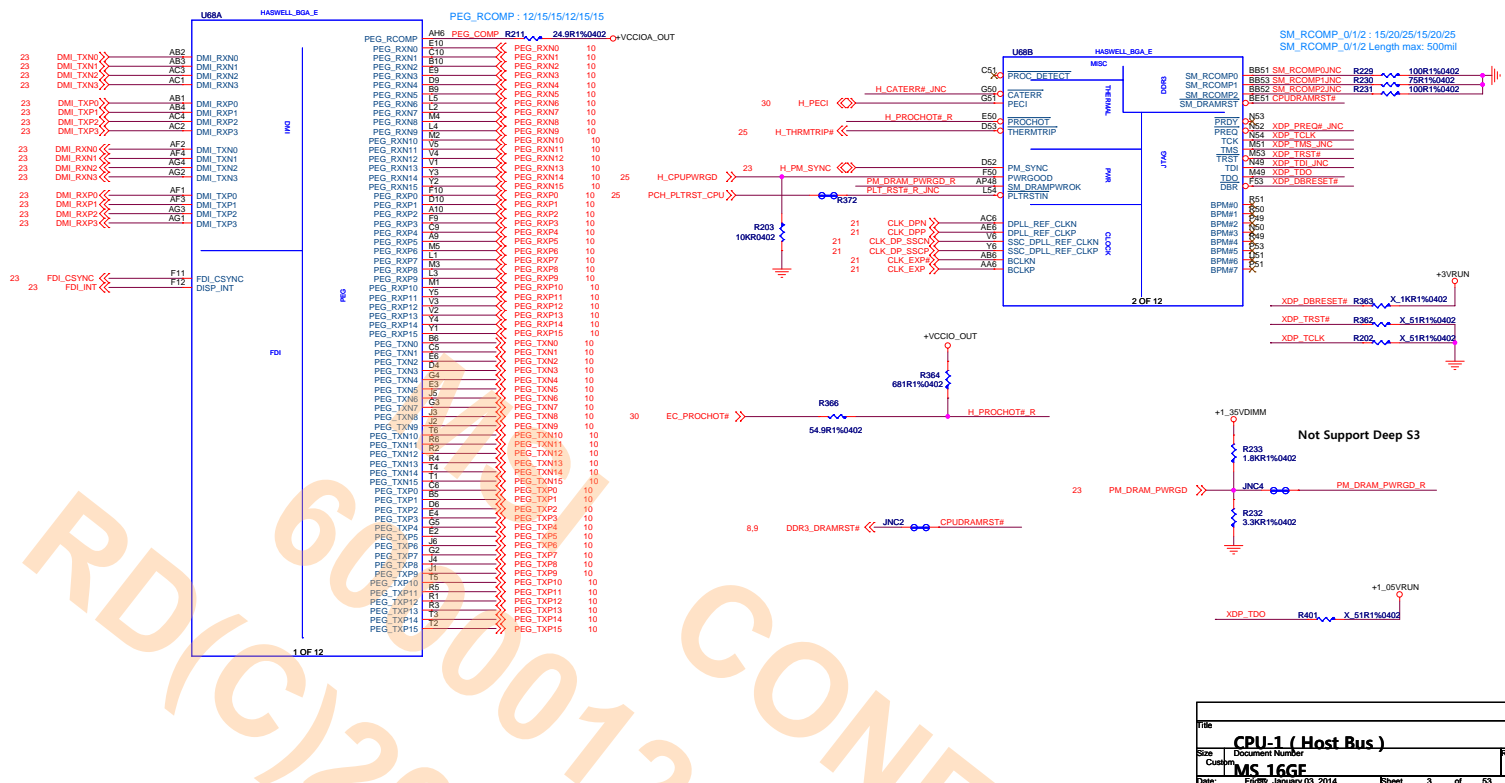
Note : WHEN AC MODE , System turn on then +V*SUS will always keep high



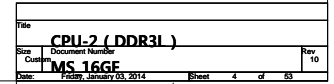
Platform	
Size	Document Number
Cust	MS-1757
Date	Friday, January 03, 2014
Sheet	2 of 53
Rev	10

Haswell (CLK,MISC,JTAG)

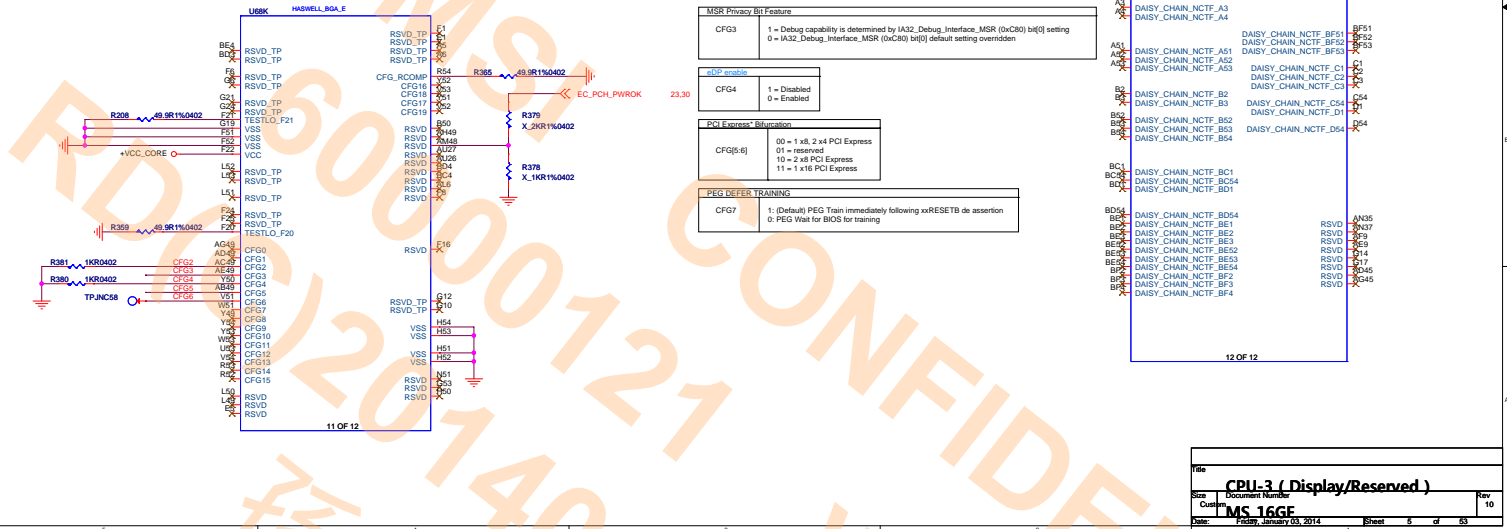
SM_RCOMP_0/1/2 : 15/20/25/15/20/25
SM_RCOMP_0/1/2 Length max: 500mil

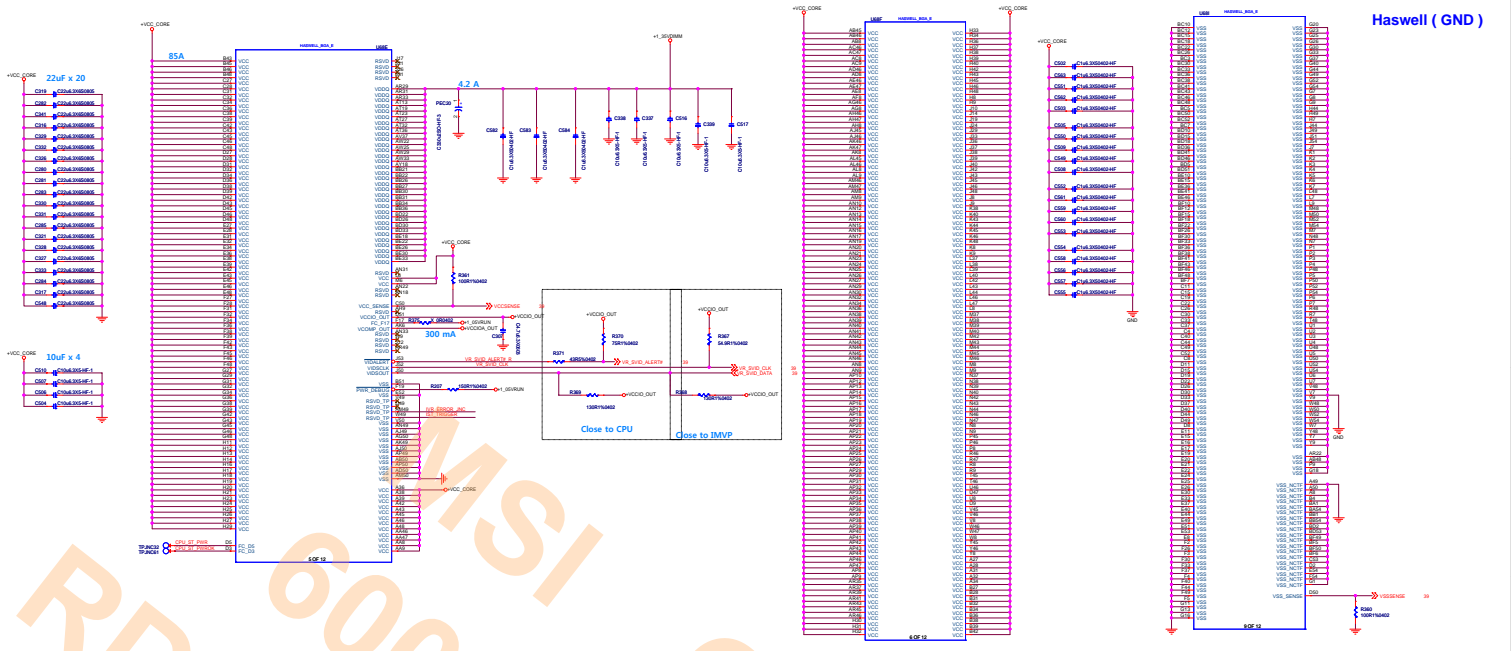


SODIMM#B



Haswell (Reserved)

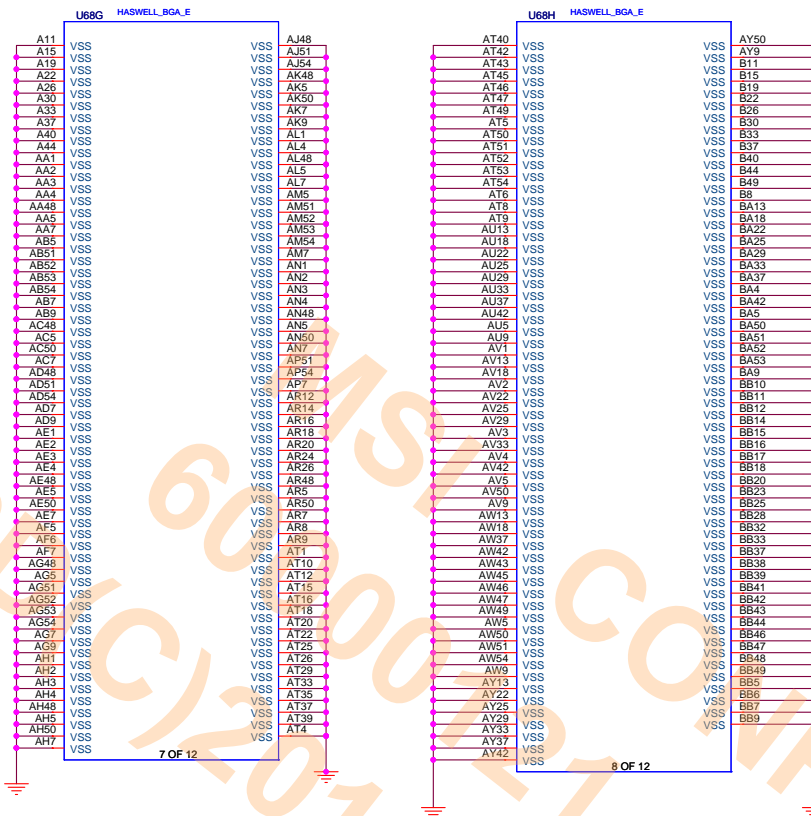




CPU-4 (Power)	
MS 16GE	
MS 16GE	

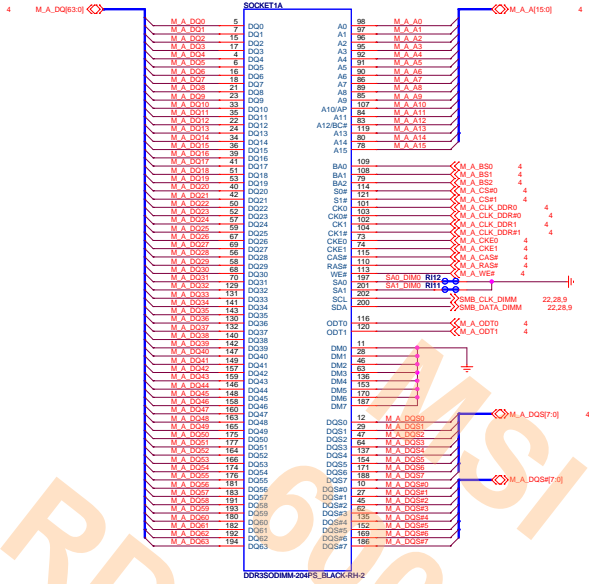
MSI CONFIDENTIAL
RD(C)2014010242客戶服務部
孫飛(60010839) weilu(盧偉)

Haswell (GND)

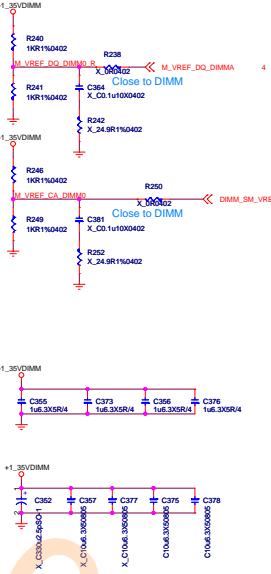


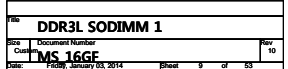
Title		
CPU-5 (GND)		
Size	Document Number	Rev
Custom	MS 16GE	10
Date:	Friday, January 03, 2014	Sheet 1 of 53

SODIMM#A



Vref DQ & CA



SODIMM#B

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weilu(盧偉)

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DDR3L SODIMM 1

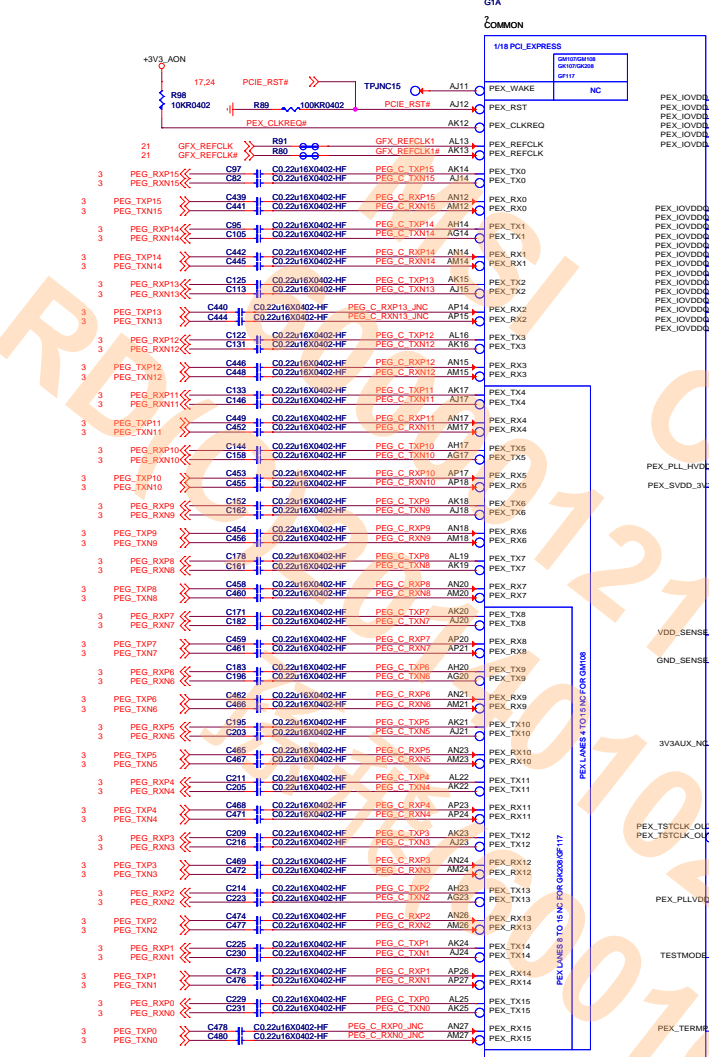
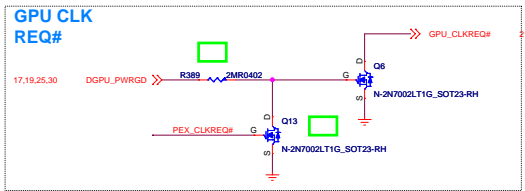
Document Number

TMS16GE

Rev. 1.00, January 10, 2014

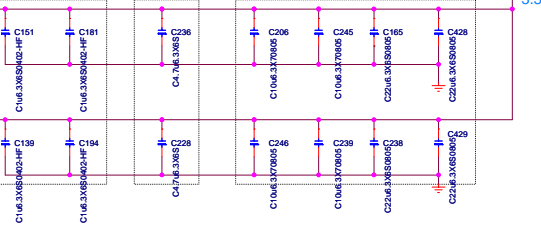
Page 9 of 27

N14E-GE(PCI-Express Gen3 x16 Interface)



Design Guide Table14

4x 1u under GPU;
2x 4.7u near GPU;
4x 10u,4 x22u Place between GPU and Power Supply



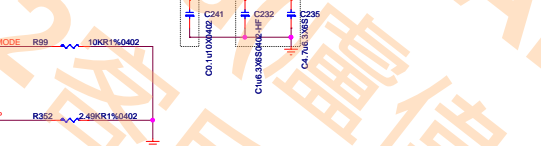
Design Guide Table16

1x 0.1u Near GPU;
2x 4.7u Near GPU;



Design Guide Table15

1x 0.1u Under GPU;
1x 1u Near GPU;
1x 4.7u Near GPU;

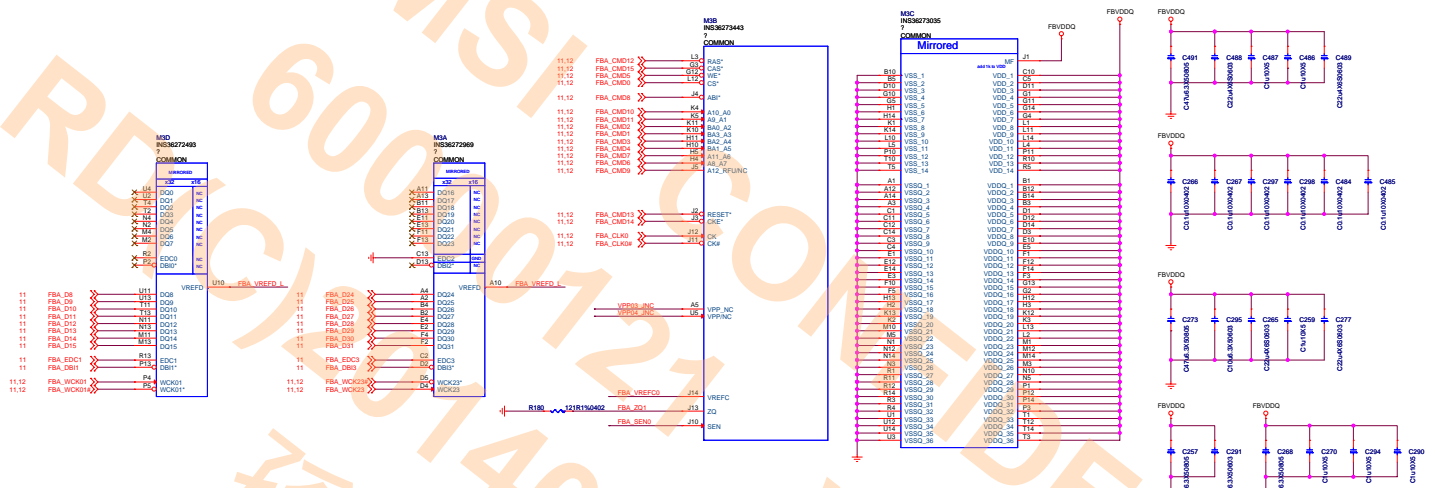
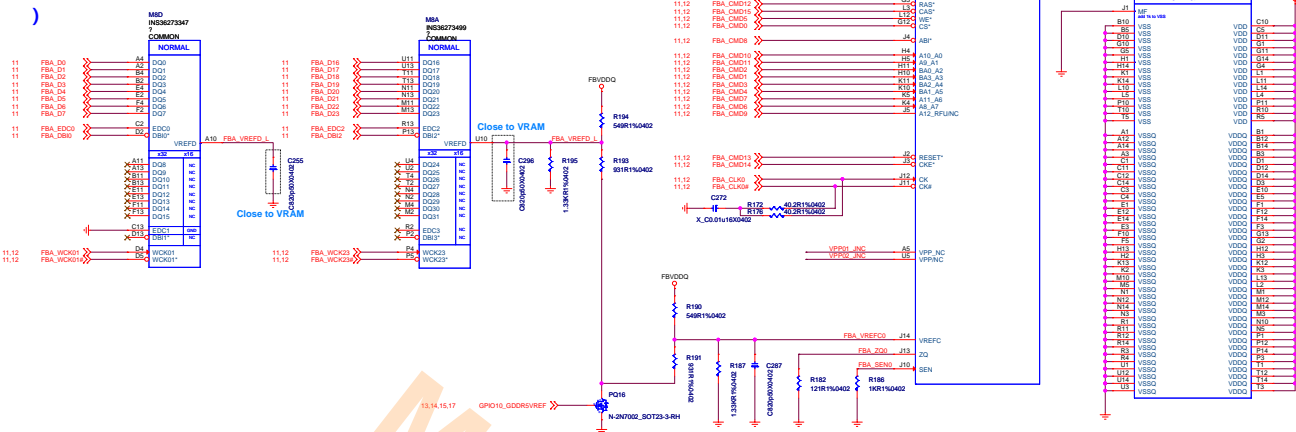


File					Rev 10
N14E-GE PCI-E Host					
Size	Customer	Document Number			
MS 16GE					
Date	File	January 03, 2014	Sheet	10 of 53	

1



N14E-GE(GDDR5 Frame A-1



N14E-GE GDDR5 Frame A-1

Document Number: MS16GE

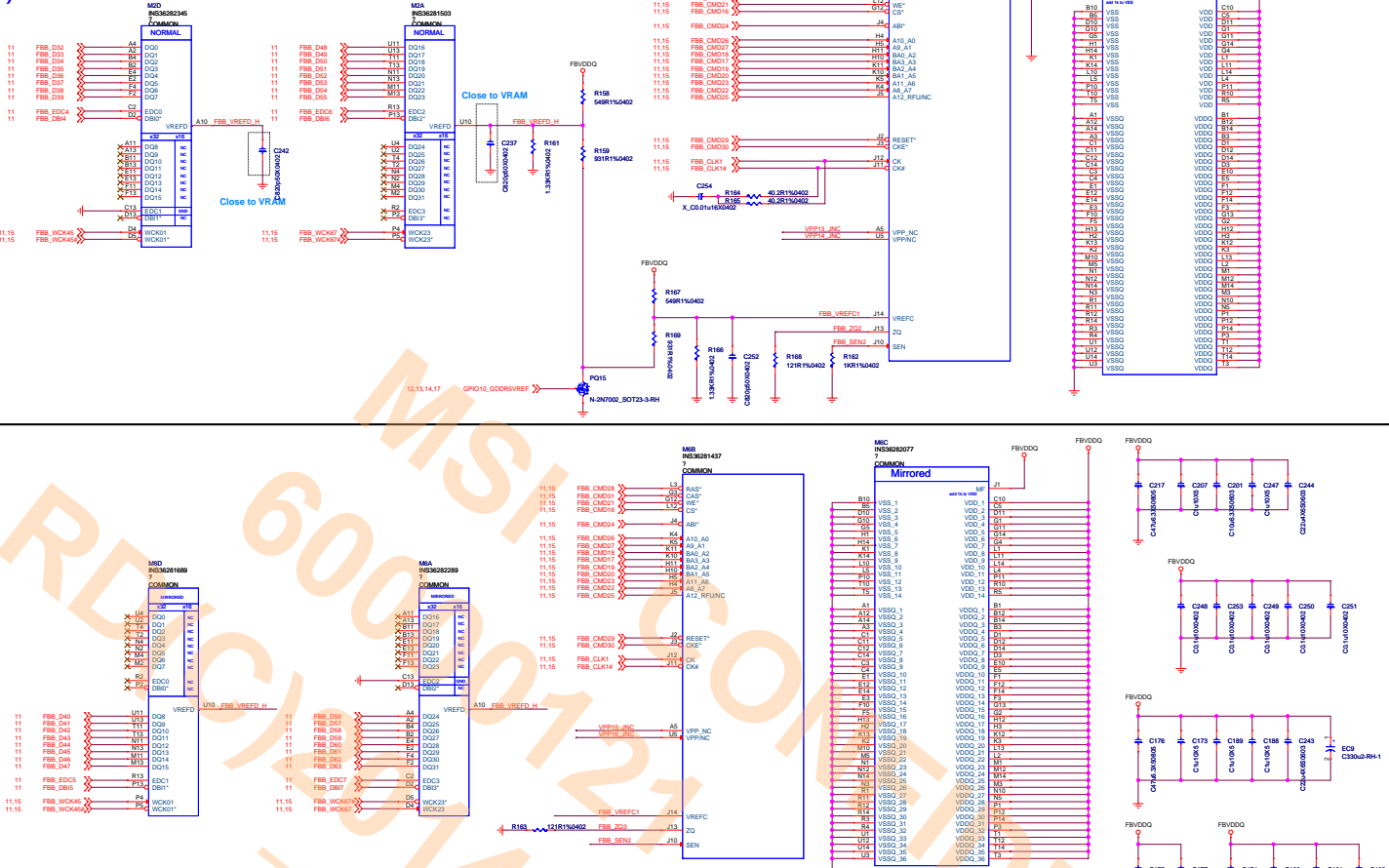
Page 1 of 1

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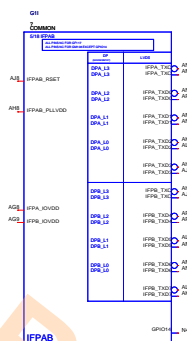


N14E-GE(GDDR5 Frame B-2

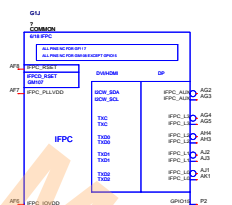


N14E-GE(Display IF)

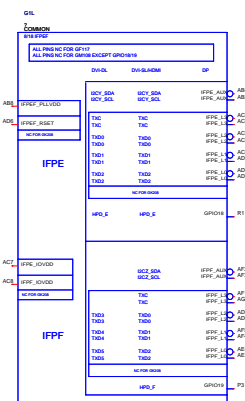
IFP A/B LVDS Dual Link



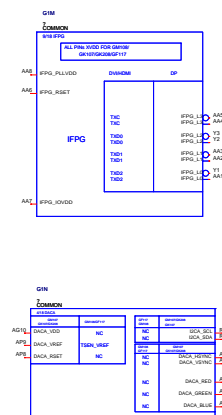
IFP C Native HDMI OR DP



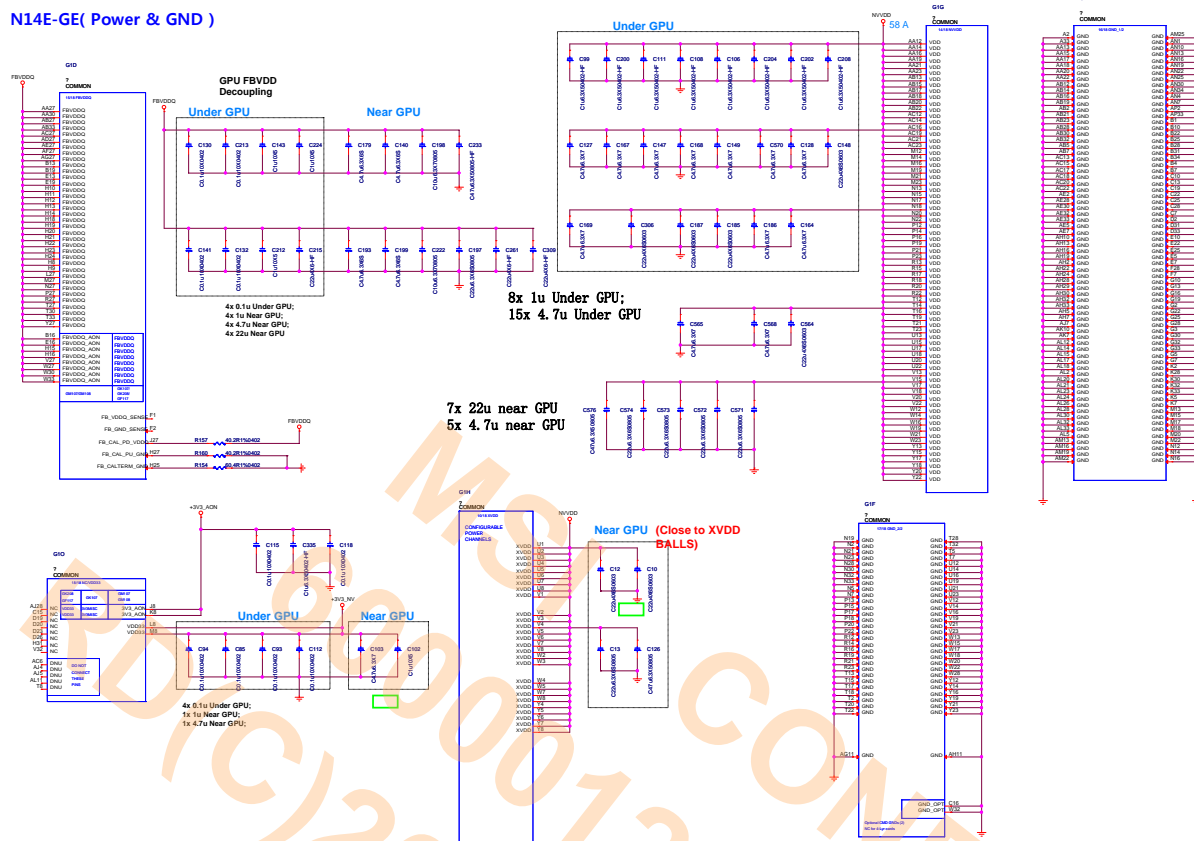
IFP E/F Dual Link TMDS DVI-I



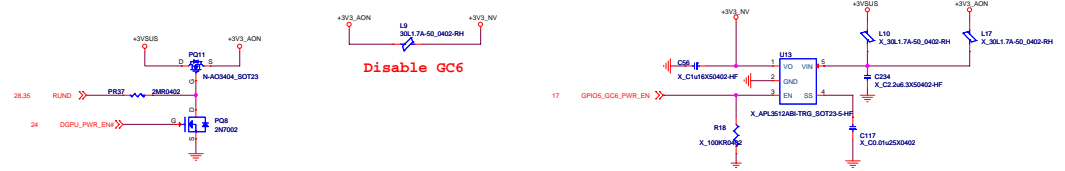
DAC A VGA



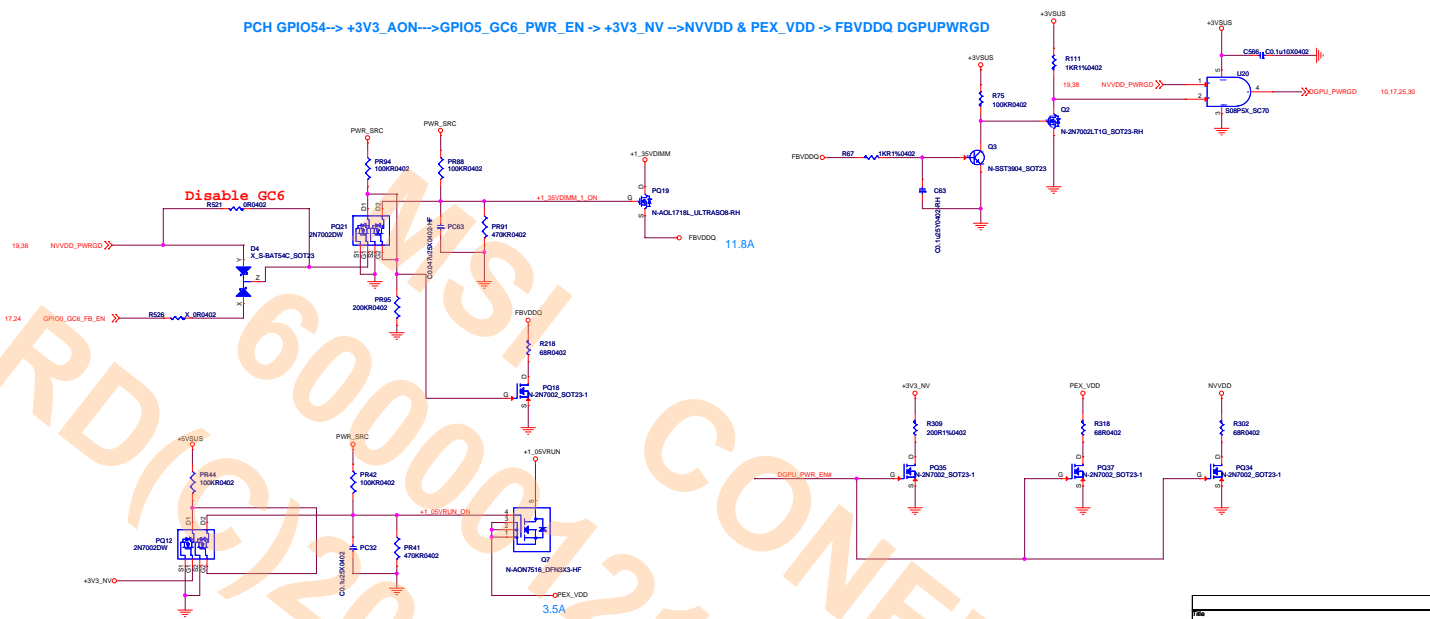
N14E-GE(Power & GND)



N15P-GE(Power Control)

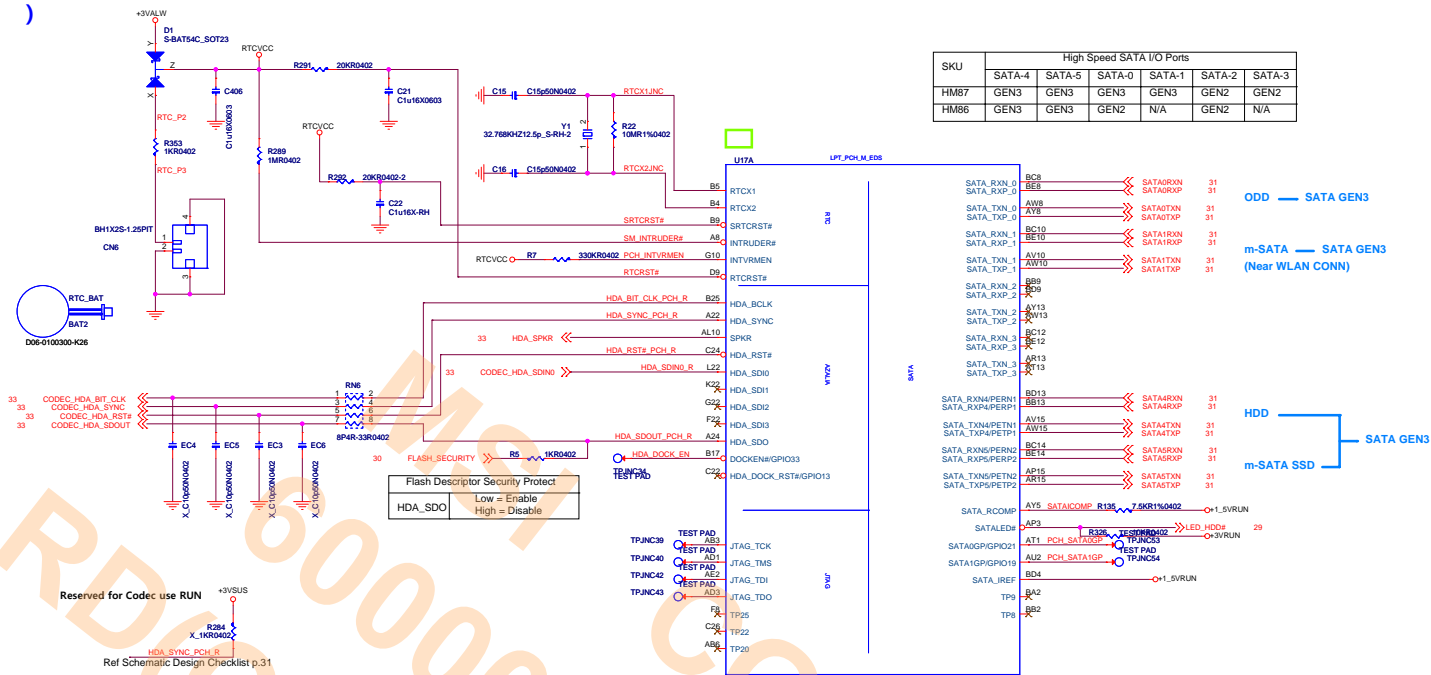


PCH GPIO54--> +3V3_AON-->GPIO5_GC6_PWR_EN -> +3V3_NV ->NVVDD & PEX_VDD -> FBVDDQ DGPUPWRGD



Title			
N14E-GE Power Control			
Size	Document Number		Rev
Custom	MS 16GF		10
Date:	Printed: January 03, 2014		Sheet 19 of 53

Lynx Point (HDA,JTAG,SATA)

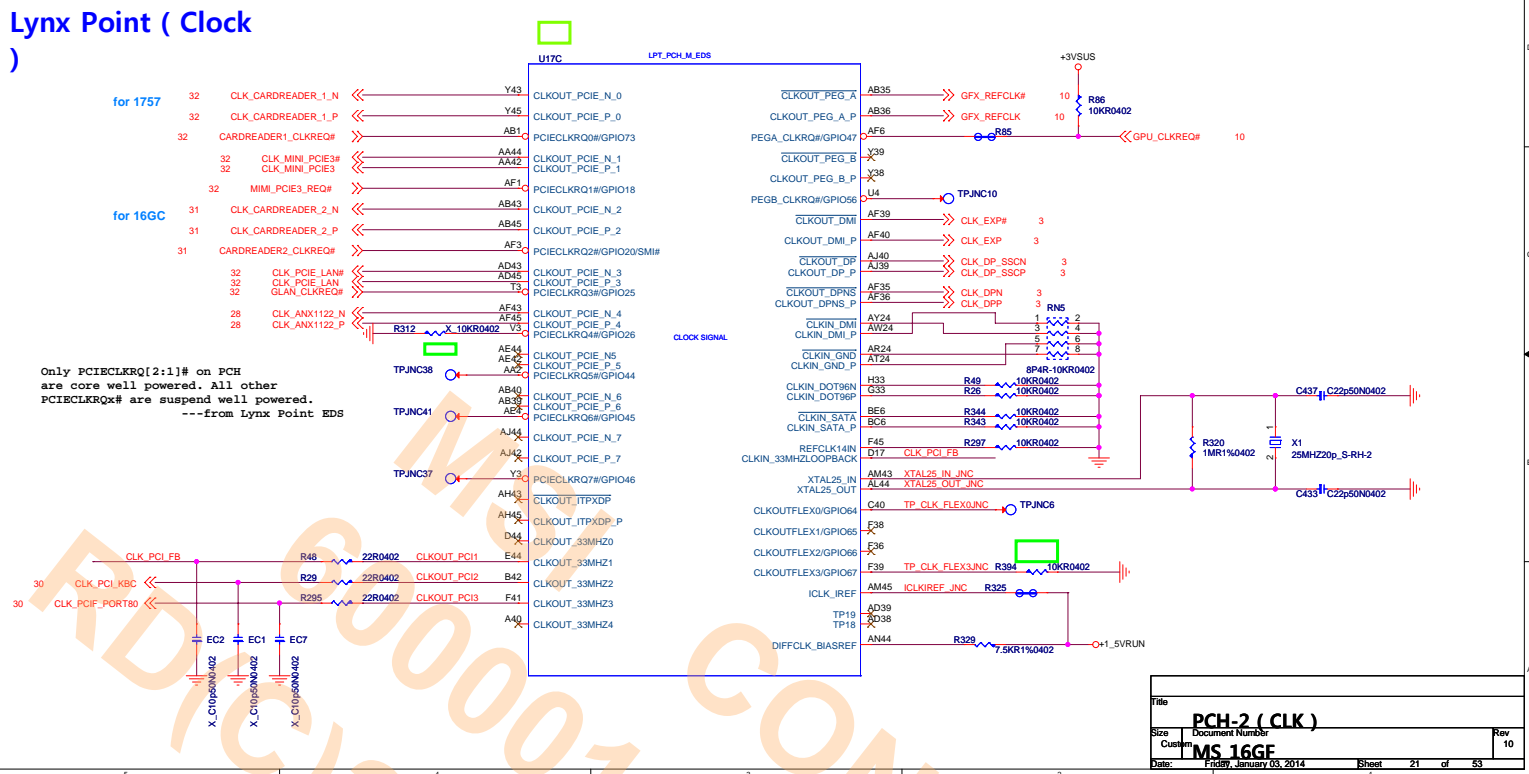


Title		PCH-1 (HDA/JTAG/SATA)	
Size	Document Number	MS 16GE	Rev
Date	Project	January 03, 2014	Sheet 20 of 83

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Lynx Point (Clock)



EC1

EC7

X_C100500N1402

X_C100500N1402

CLKOUT_33MHZ

CLKOUT_33MHZ4

A40

TP19

TP18

DIFFCLK_BIASREF

AD39

AD38

AN44

R329

7.5KR1%0402

V1.5VRUN

V1.5VRUN

Title	
PCH-2 (CLK)	
Size	Document Number
Customer	MS 16GE
Date	Friday, January 03, 2014
Sheet	21

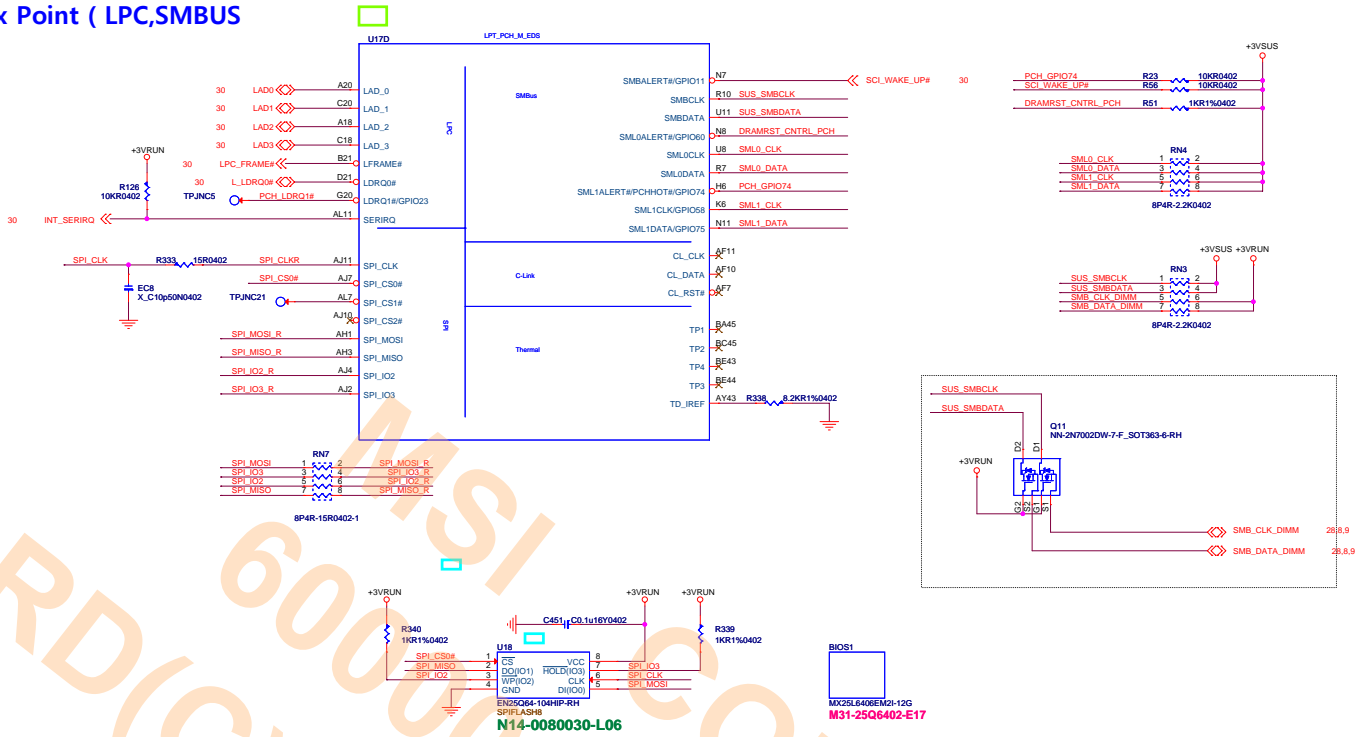
6000121

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weilu(盧偉)

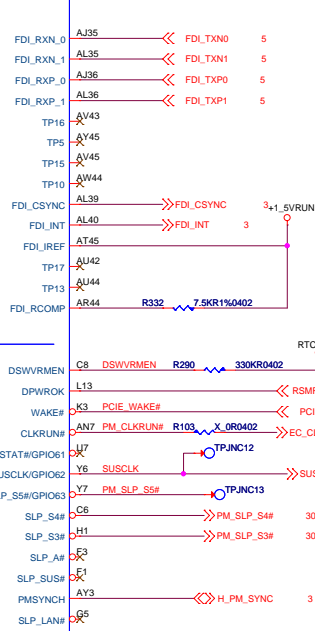
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Lynx Point (LPC,SMBUS)



File	PCH-3 (LPC,SMBUS)	
Size	Document Number	Rev
Custom	MS 16GE	10
Date:	File, January 03, 2014	Sheet 22 of 63

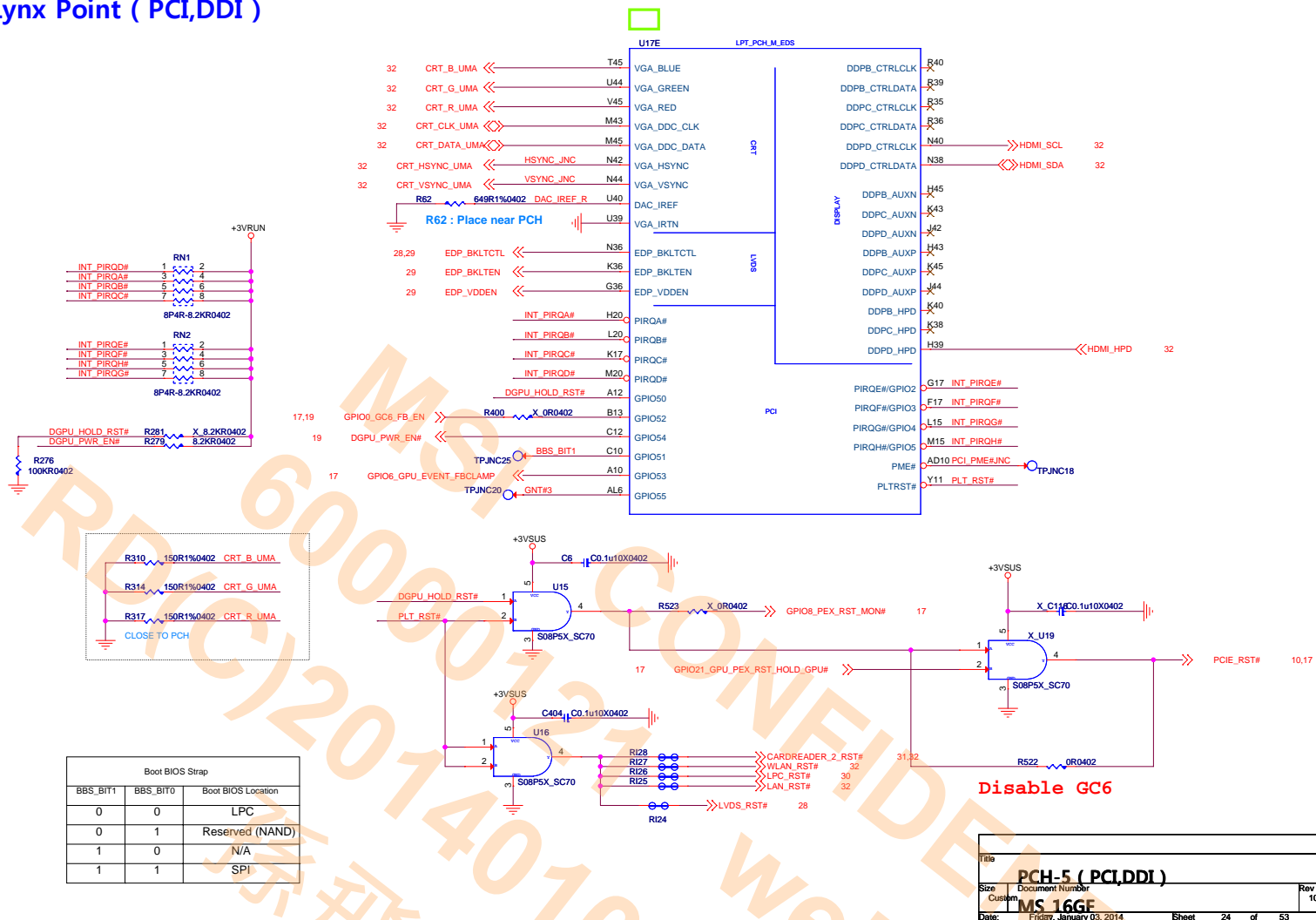
)



APWROK not supporting Intel AMT , it can be connected to PWROK
GPI031 : 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	Custom	Document Number	Rev	
		MS 16GE	10	
Date:	Friday, January 03, 2014	Sheet	23	of 53

Lynx Point (PCI,DDI)

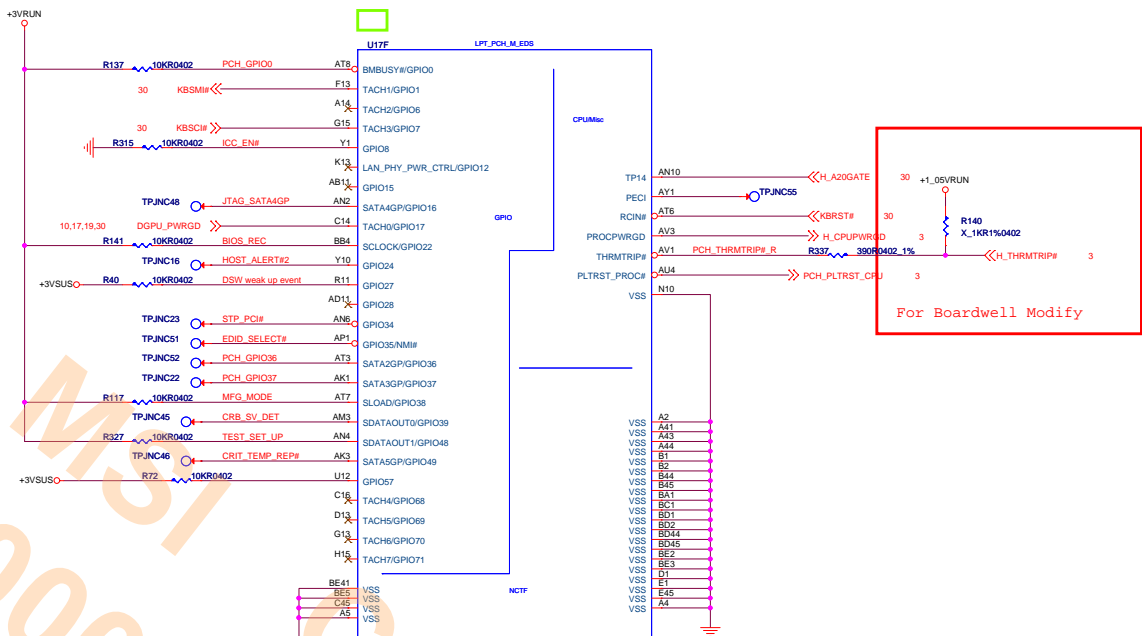


Title		
PCH-5 (PCI,DDI)		
Size	Document Number	Rev
Custom	MS 166F	10
Date	Friday, January 03, 2014	Sheet 24 of 53

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	MS 16GE	Rev 10
Date	Friday, January 03, 2014	Sheet 26 of 53	

Lynx Point (PCIE,USB)

USB			
USB 2.0	USB 3.0	Device	Note
0	1	USB 3.0 Port 1	(160CB/1757B)
1	2	USB 3.0 Port 2	(166GB/1757B)
2			NC
3			NC
4			NC
5			NC
6			NC
7			
8		USB 2.0 Port	(160GB)
9		USB 2.0 Port	(166CA/1757A)
10		WLAN	
11		WebCam	
12		USB 2.0 Port	(1757E)
13			NC
	3		NC
	4		NC
	5		NC
	6		NC

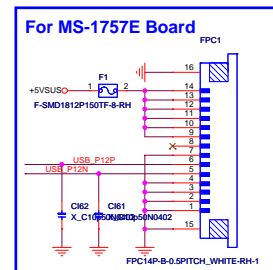
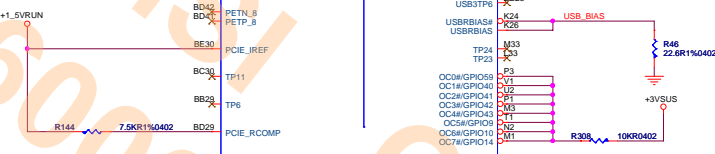


LAN

Card Reader for 16GC

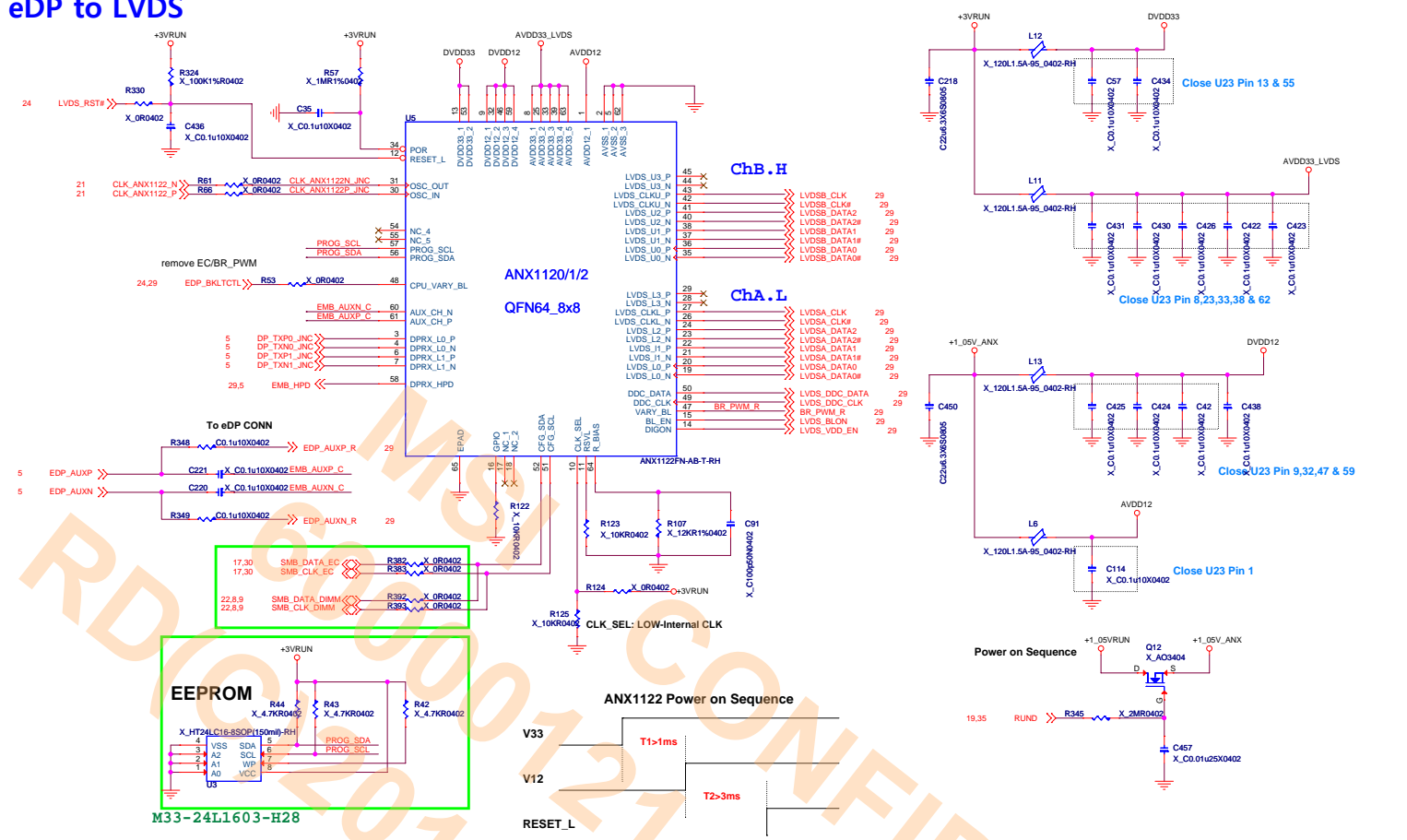
WLAN

Close to device

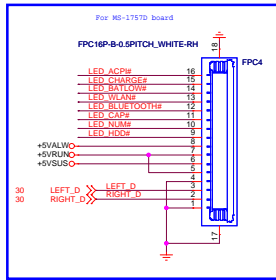


Title		PCH-7 (PCIE,USB)		Rev		10	
Size		Document Number					
Custom		MS 16GF					
Date:		Friday, January 03, 2014		Sheet		26 of 53	

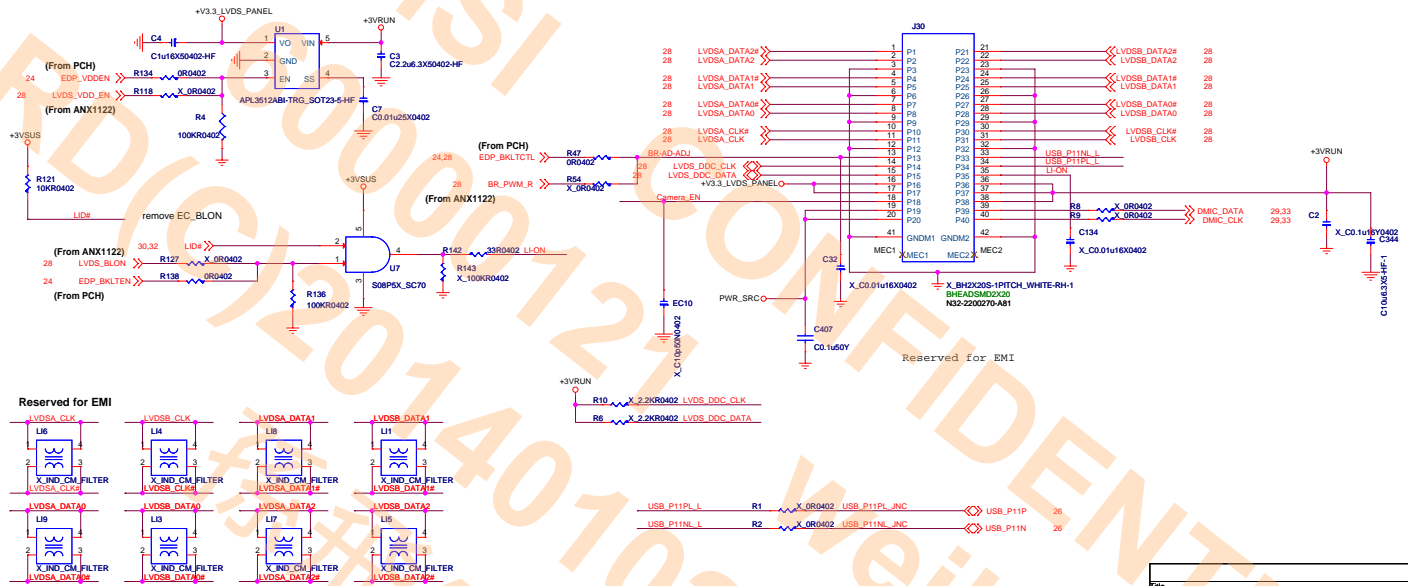
eDP to LVDS



Title				eDP to LVDS (ANX1122)				Rev	
Size		Document Number						10	
Customer		MS 16GE							
Date		Friday, January 03, 2014		Sheet		28		of 53	



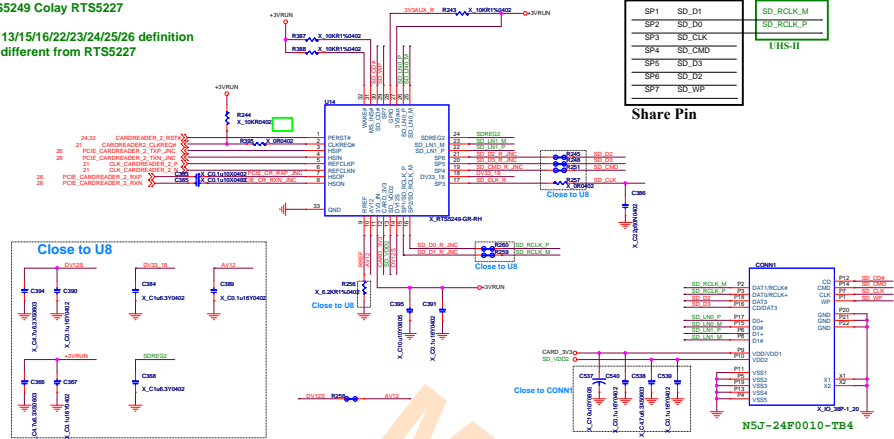
```
R16 for 16GF Camera_ON# Low Enable
R15 for 1759 , High enable
```



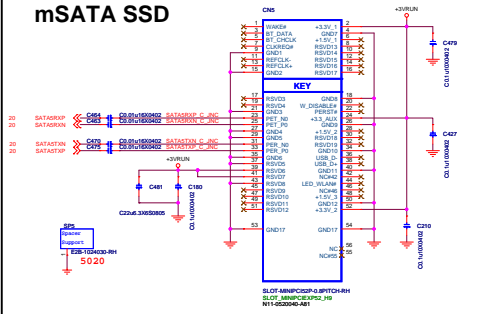
Title			
FAN/LED/LVDS			
Size	Document Number		Rev
Custom	MS 16GF		10
Date:	Friday, January 03, 2014	Sheet	29 of 53

CardReader
RTS5249 Colay RTS5227

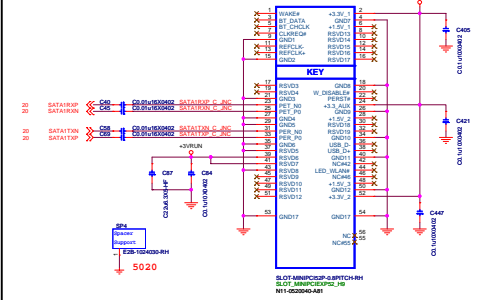
Pin 13/15/16/22/23/24/25/26 definition
are different from RTS5227



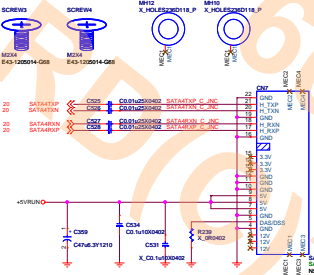
mSATA SSD



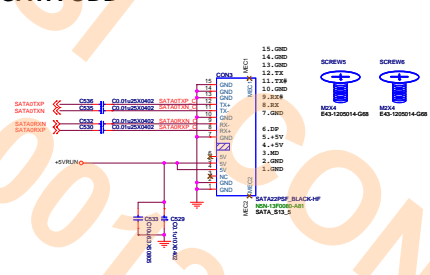
mSATA SSD
(Near WLAN CONN)



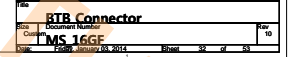
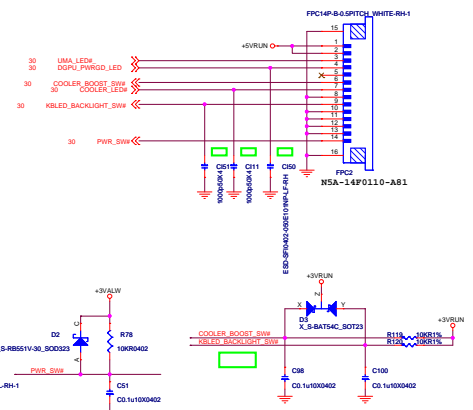
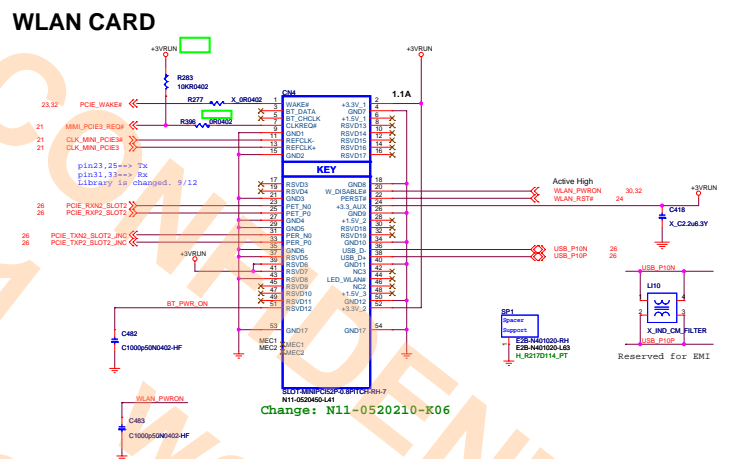
SATA HDD

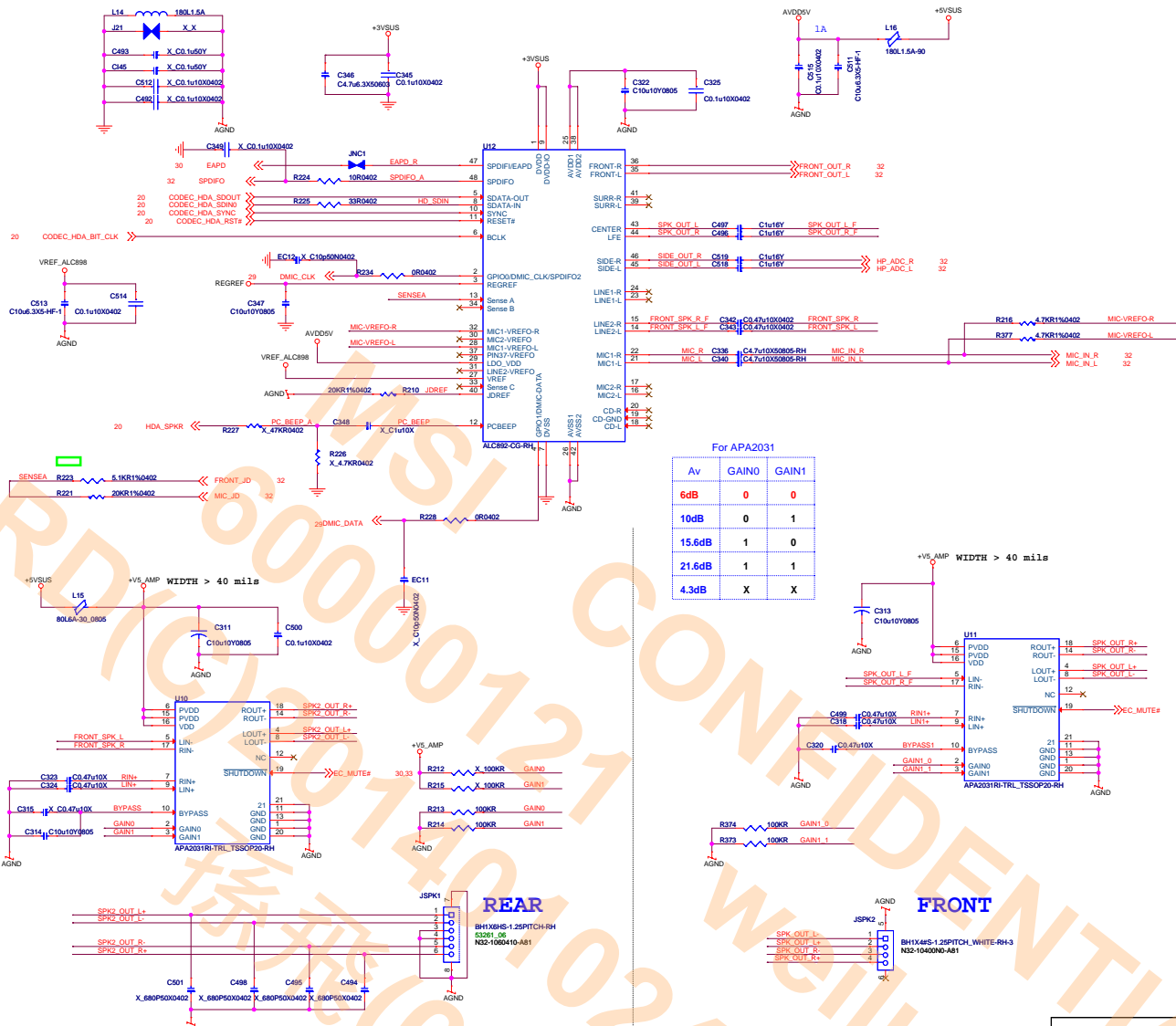


SATA ODD



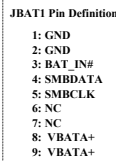
Board A - CRT/USB/WLAN/BT/LAN





Audio CODEC/Audio AMP			
Doc	Document Number		Rev
MS 16GF			10
Issue	January 03, 2014	Issue	33 of 53

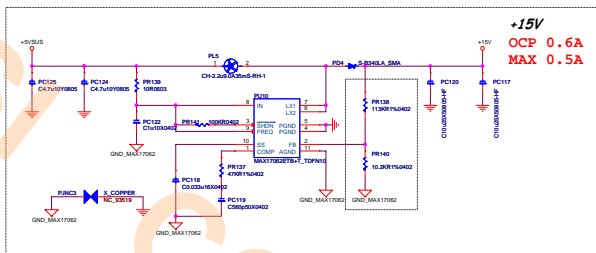
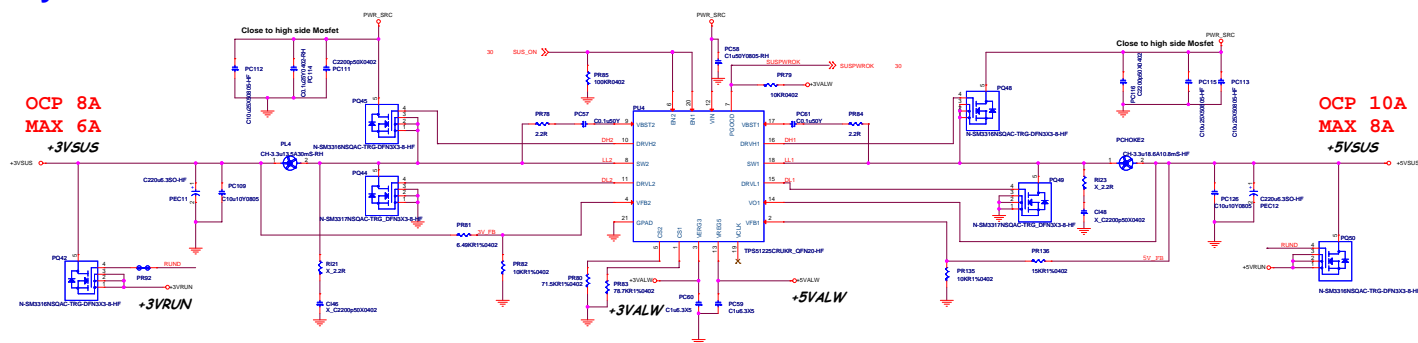
Battery Select



Battery Charger



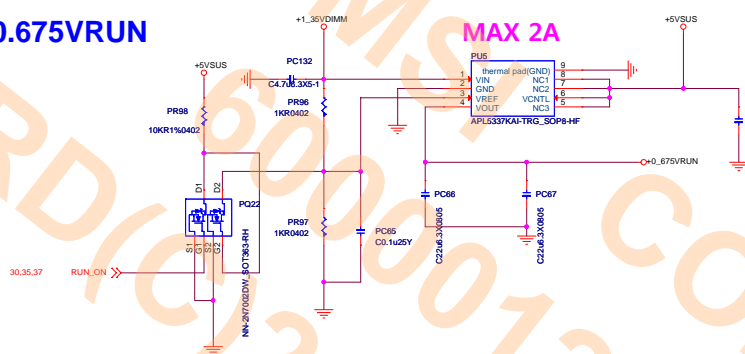
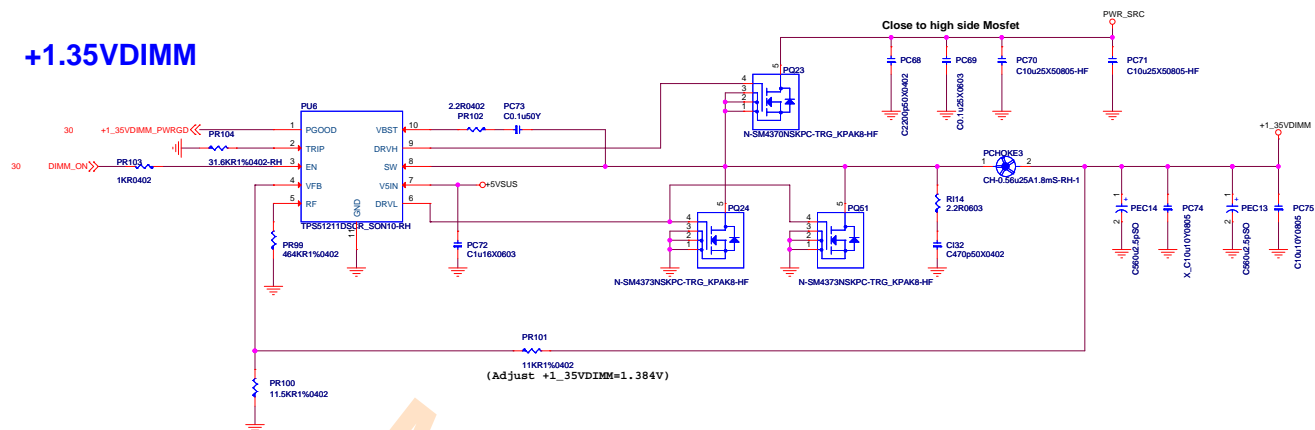
System Power



System Power	
MS 166F	
Rev: 1.0	Page: 10 of 10

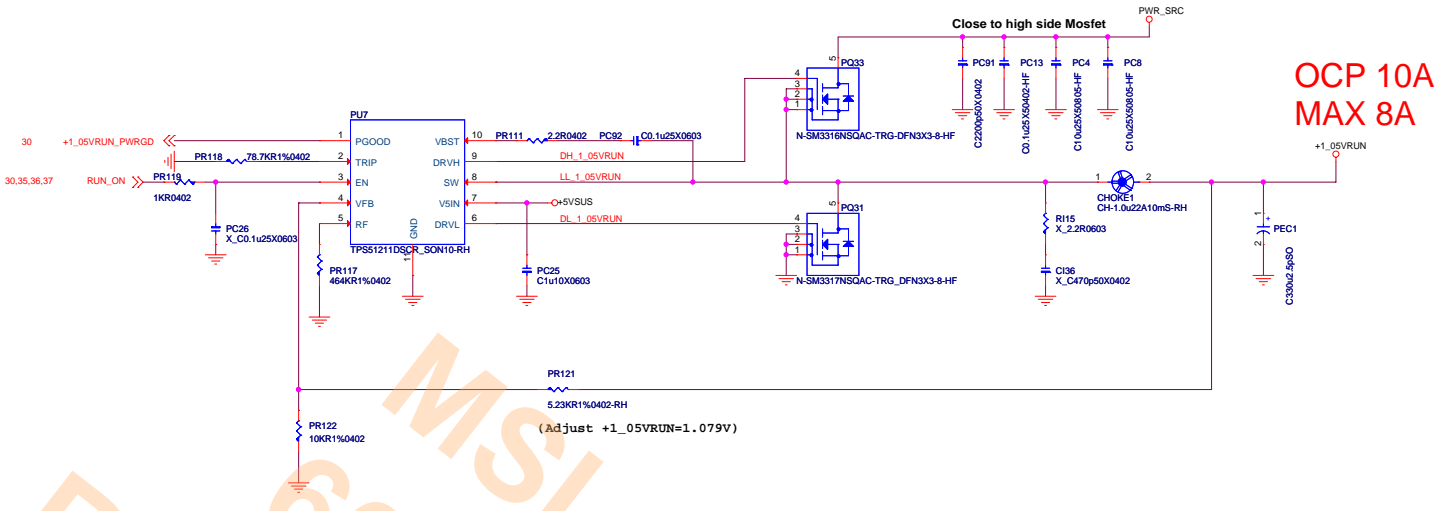
+0.675VRUN

MAX 2A

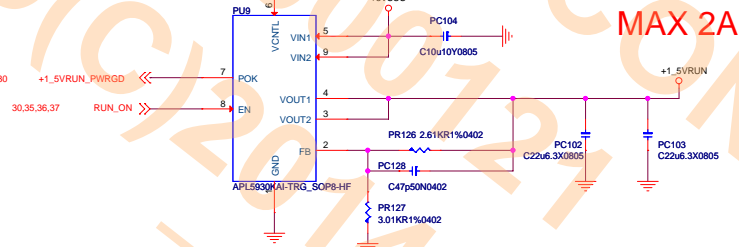


File									
+1 35VDIMM/+0_675VRUN									
Size	Document Number								Rev
Custom	MS 16GE								10
Date	Friday, January 10, 2014		Sheet	36	of	334			

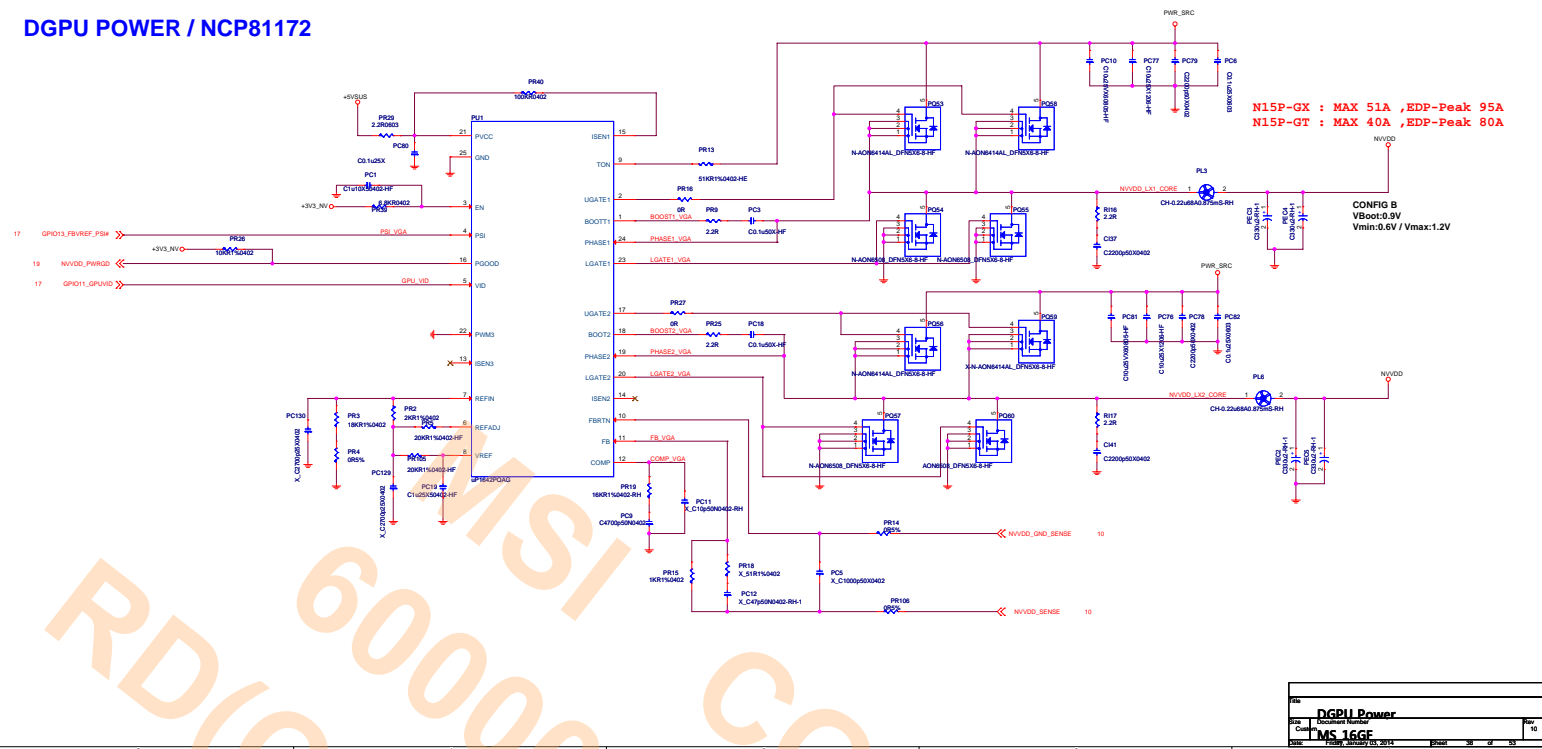
+1.05VRUN



+1.5VRUN



File	+1.05VRUN / +1.5VRUN	
Size	Document Number	Rev
Cusum	MS 16GE	10
Date	Friday, January 03, 2014	Sheet 37 of 53



File

DGPU Power

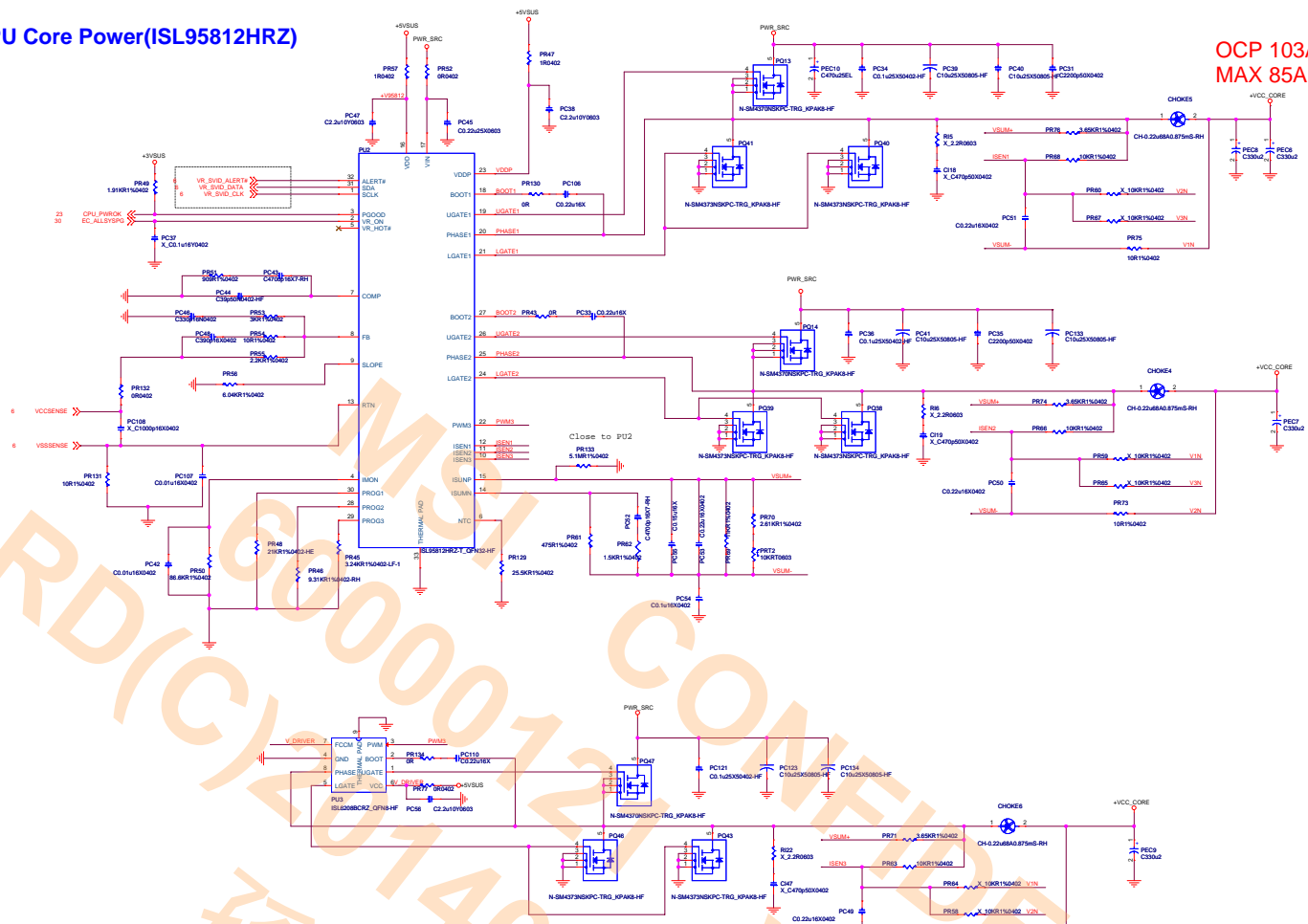
Size Document Number Rev

Custom MS 16GE 10

Date: Friday, January 03, 2014 Sheet 36 of 53

File	CPU Power
Rev	1.0
Client	MS 16GE
Date	2016-08-08 10:11

CPU Power
Document Number
MS 16GF
Friday, January 03, 2014 Sheet 39 of 53



File CPU Power Document Number MS 16GE
Size Custom
Date: Friday, January 03, 2014 Sheet 50 of 53

Top Spring

PAD6
X_HS-MS1011-RH
E23-1011040-CA7



PAD11
X_HS-MS1011-RH
E23-5551040-CA7

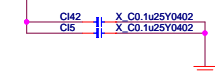


PAD1
X_HS-MS1011-RH
E23-5551040-CA7

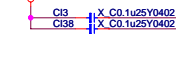


PWR_SRC

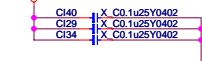
Close to PQ31, PQ34



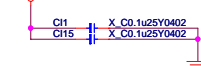
SDC_IN+



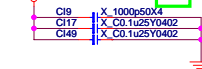
+5VSUS



PWR_SRC



+5VRUN



BOT Spring

PAD12
X_HS-MS1011-RH
E23-1011040-CA7



PAD15
X_HS-MS1011-RH
E23-1011040-CA7



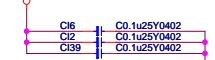
PAD3
X_HS-MS1011-RH
E23-5551040-CA7



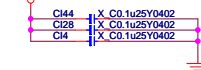
PAD10
X_HS-MS1011-RH
E23-5551040-CA7



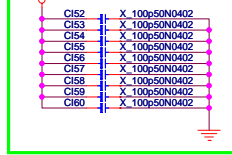
+VBATA



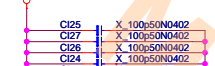
+3VRUN



+1.35VDIMM



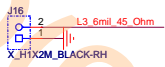
FBVDDQ



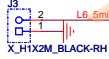
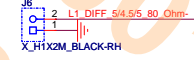
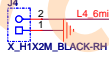
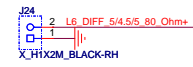
+3VSUS



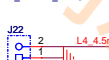
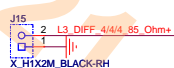
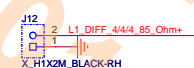
45 OHM



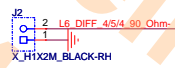
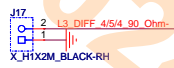
80 OHM



85 OHM

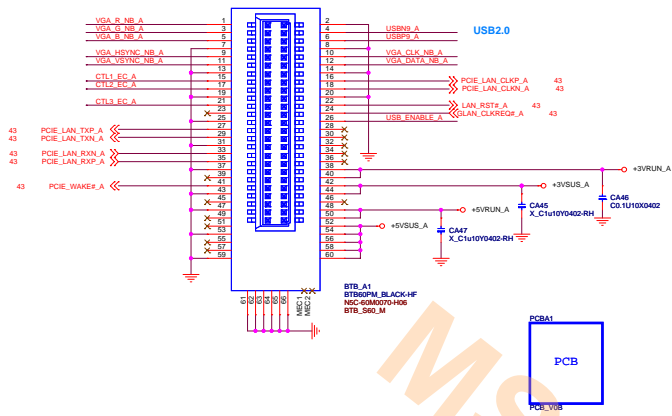


90 OHM

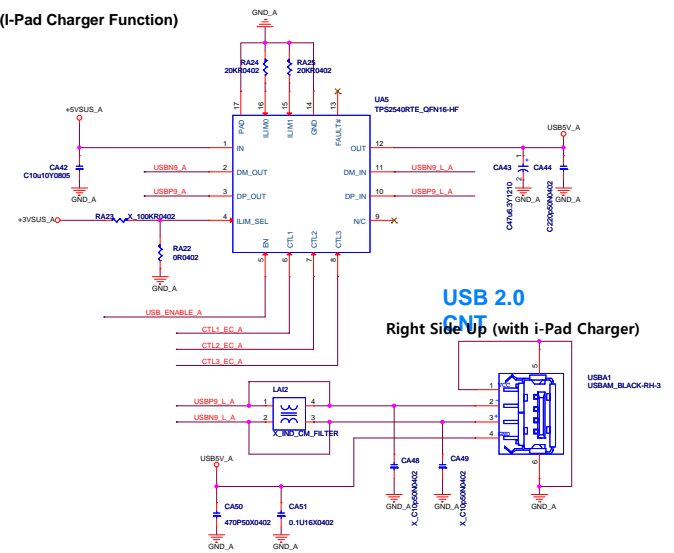


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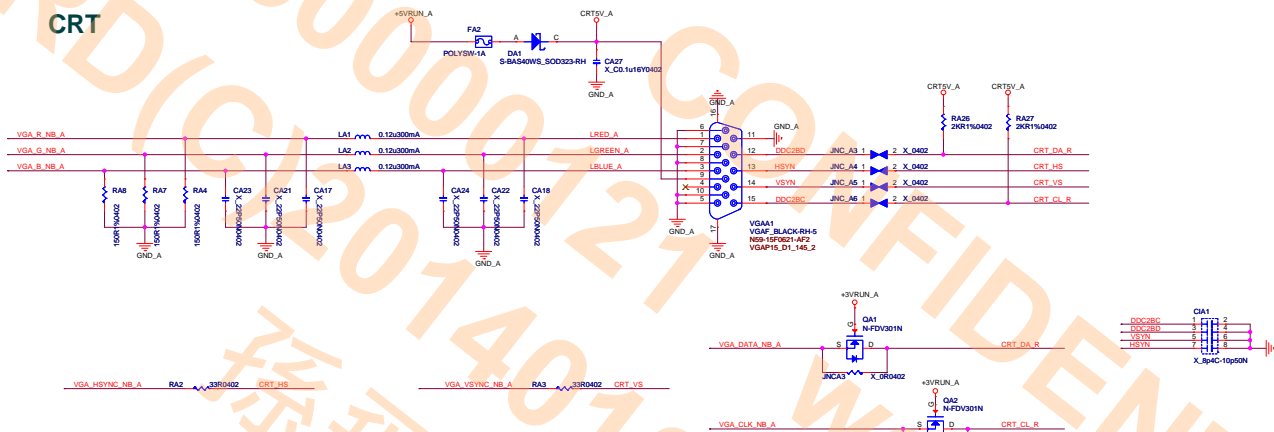
60PIN BTB I/O Connector(VGA, LAN, USB)



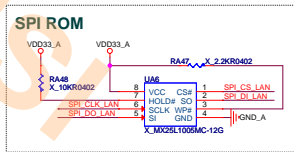
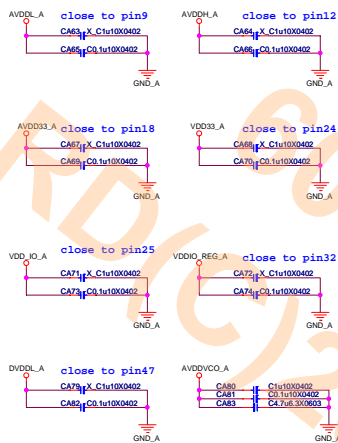
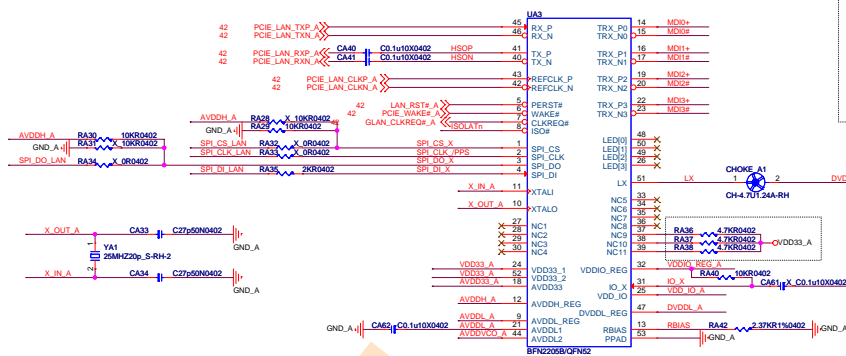
USB2.0 (I-Pad Charger Function)



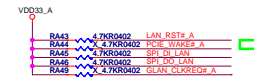
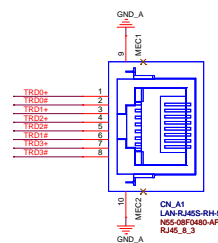
CRT



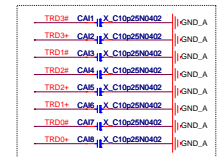
Title			
[A] CRT/USB/BT			
Document Number			
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MS-1757A			
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FLASH TYPE NOTE:
SST25VF010A
PM25LV010/020/040
AT25FS010, AT25f1024
MX25L1005/2006

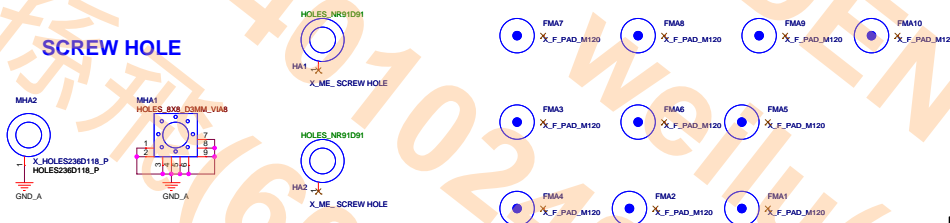
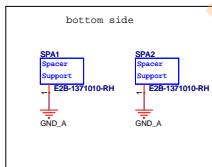


ENSWREG:ENABLE SWITCH LDO



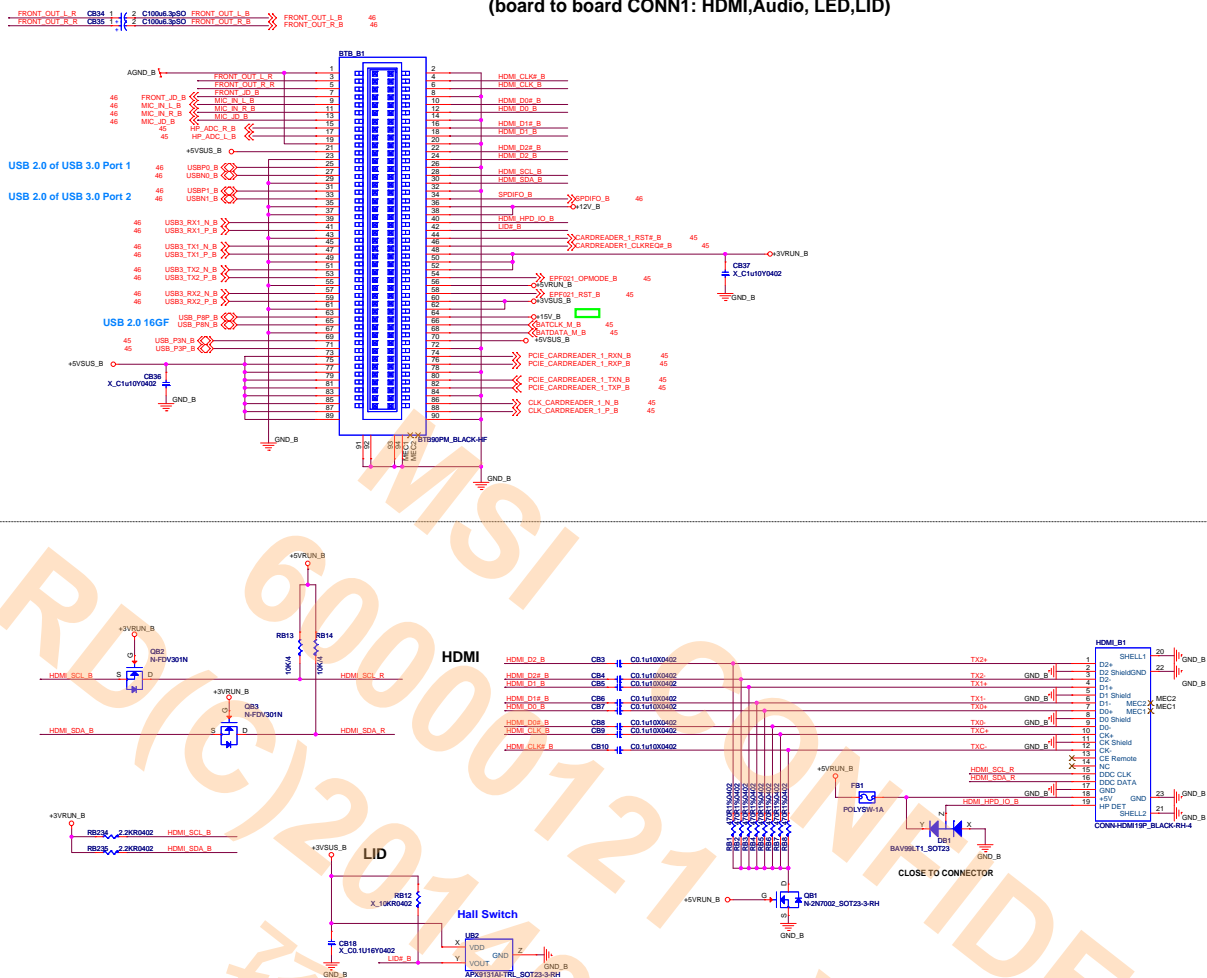
Gene	Accession	Feature	Start	End	Strand	Product
GND_A	CA75	V_DAC	1	1	+	TC1
		MD01	2	2	+	TD1
		MD02	3	3	+	TD1
		MD03	4	4	+	TD1
GND_A	CA76	V_DAC	1	1	+	TC2
		MD01	2	2	+	TD1
		MD02	3	3	+	TD1
		MD03	4	4	+	TD1
GND_A	CA78	V_DAC	1	1	+	TC2
		MD01	2	2	+	TD2
		MD02	3	3	+	TD2
		MD03	4	4	+	TD2
GND_A	CA84	V_DAC	1	1	+	TC3
		MD01	2	2	+	TD3
		MD02	3	3	+	TD3
		MD03	4	4	+	TD3
GND_A	CA84	V_DAC	1	1	+	TC4
		MD01	2	2	+	TD4
		MD02	3	3	+	TD4
		MD03	4	4	+	TD4

SCREW HOLE



Title	[A] GIGA LAN(BFN2200B)			Rev	10
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(board to board CONN1: HDMI,Audio, LED,LID)

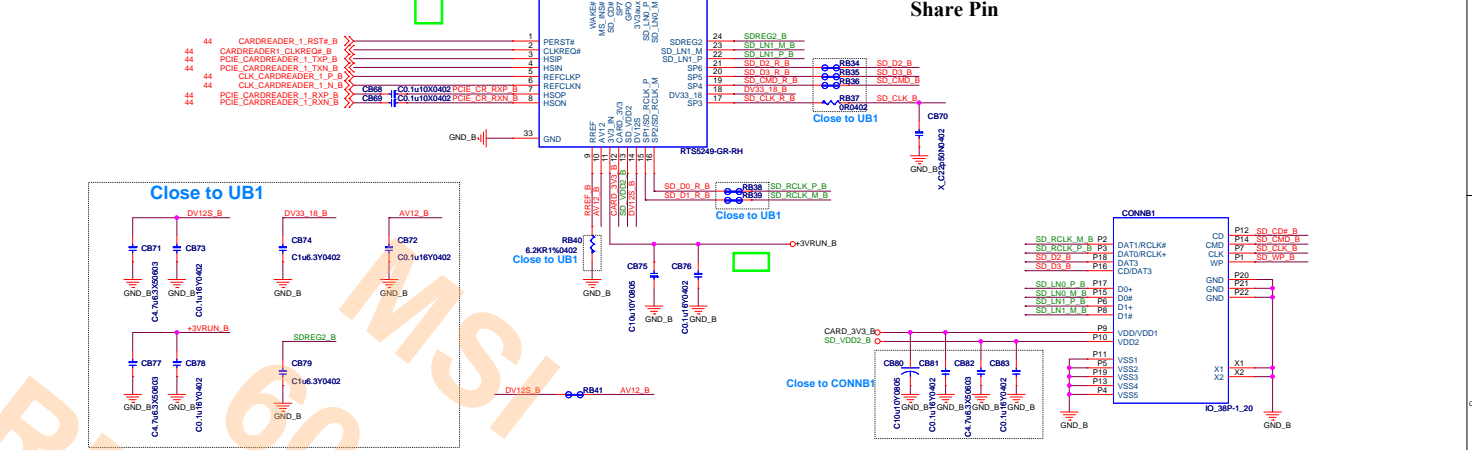


BTB_CONN / HDMI			
Rev	1.0	Rev	1.0
Account Number	MS-1757B	Rev	1.0
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CardReader

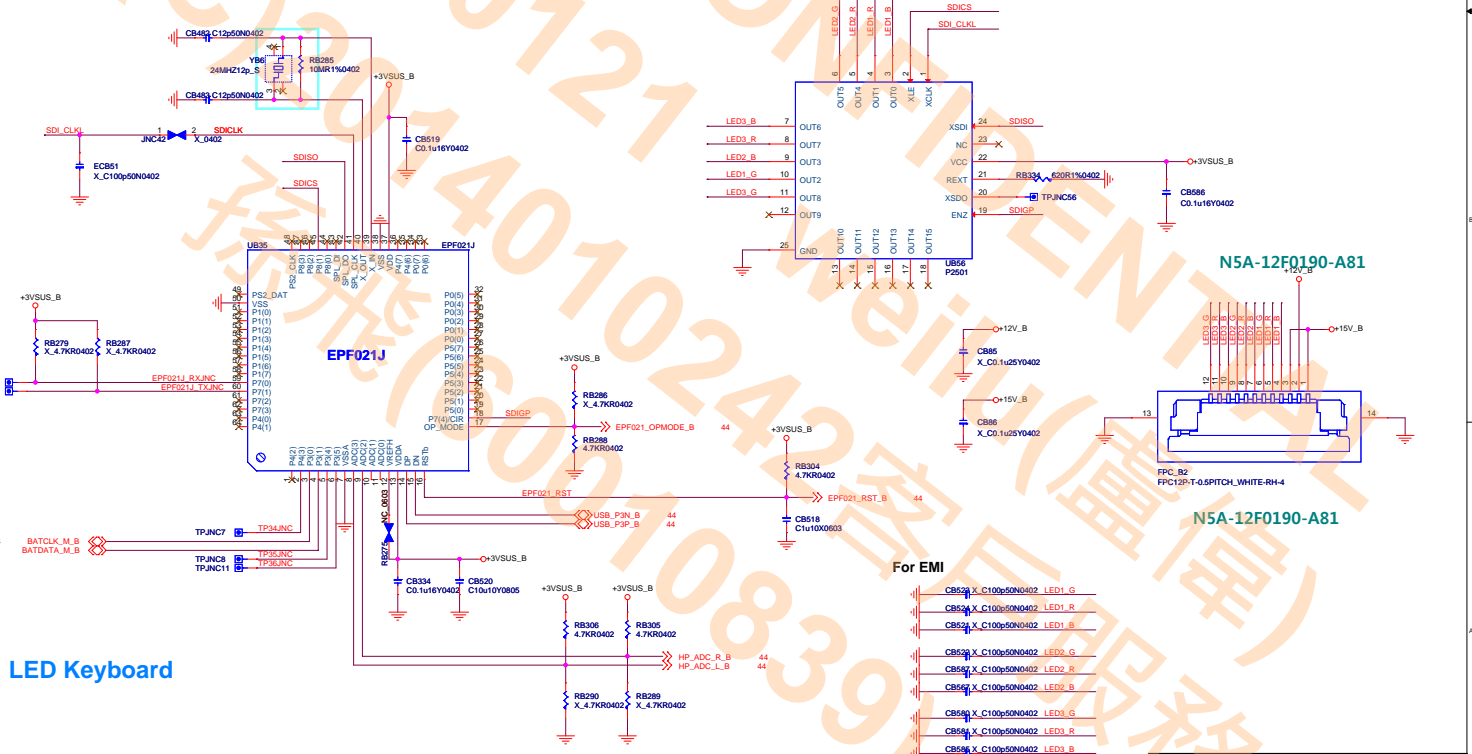
RTS5249 Colay RTS5227

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



LED Keyboard

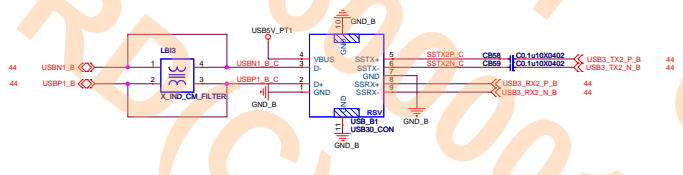
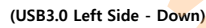
LED 8051 Controller



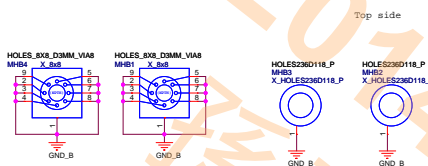
LED Keyboard

File	[B] RTS5227 / LED KB		
Sheet	10	10	10
Customer	MS-1757R	Sheet	45 of 53

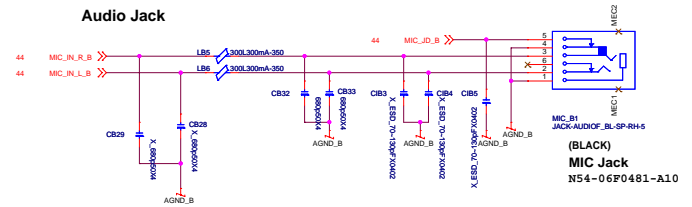
(USB3.0 Left Side - UP)



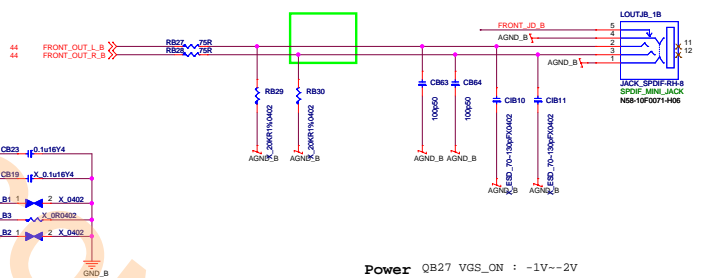
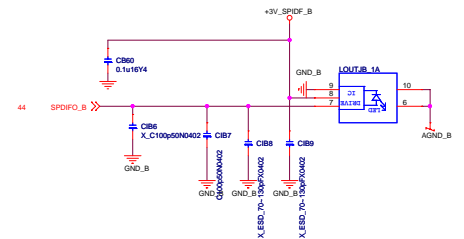
BTB STANDOFF



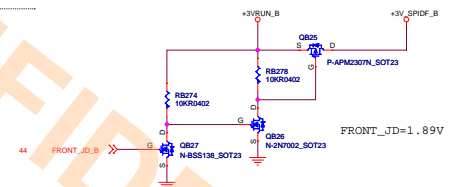
MYLAR
E2P-7214
Audio J
for EMI



(BLACK)
MIC Jack
N54-06F0481-A10



Power QB27 VGS_ON : -1V~-2V



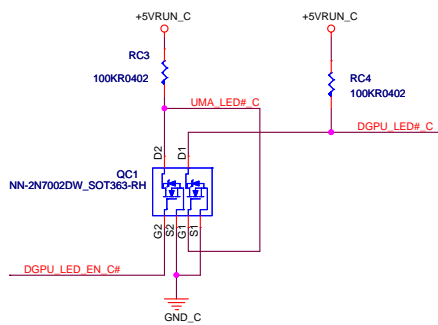
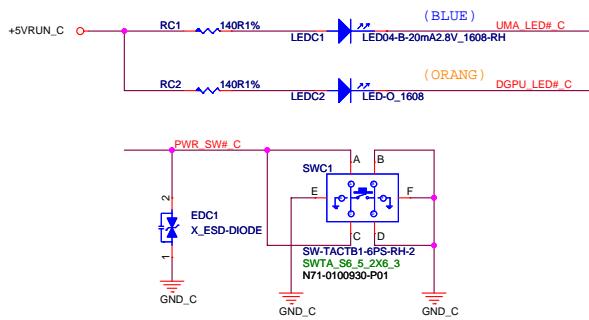
FRONT_JD=1.89V



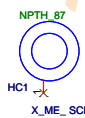
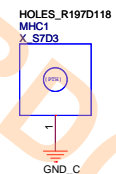
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Size: **10** Custom: **10**

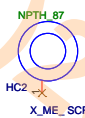
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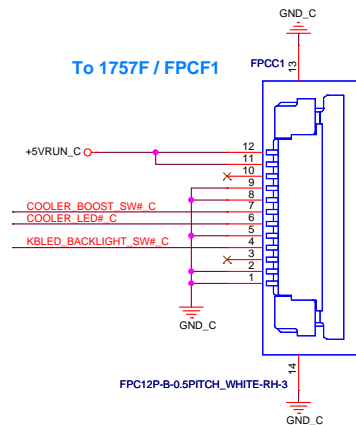
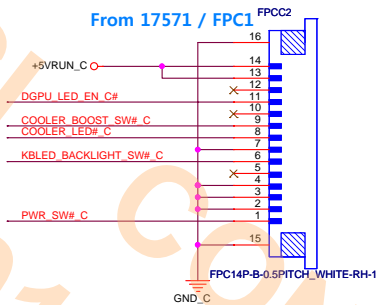
PCB_V08



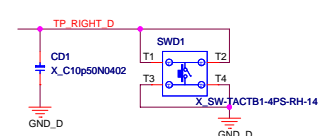
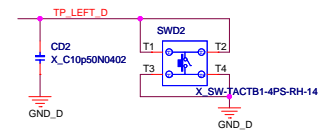
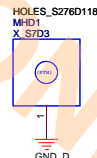
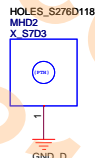
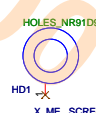
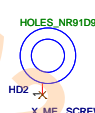
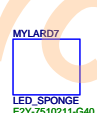
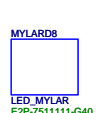
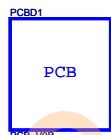
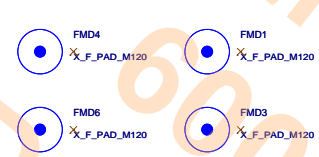
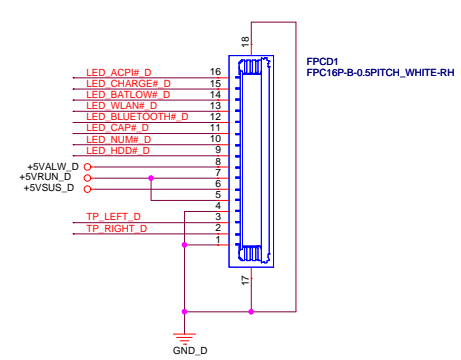
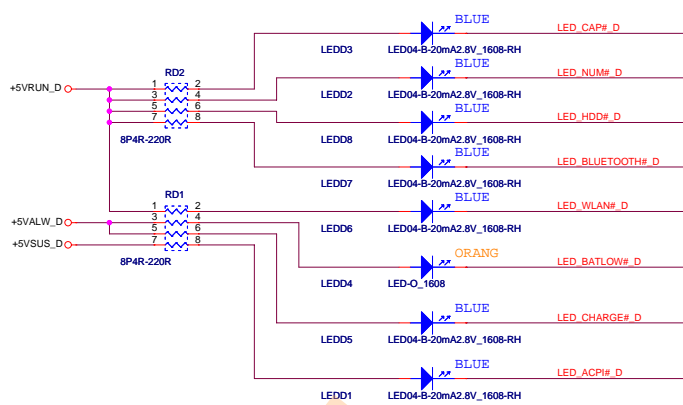
HC1 X_ME_SCREW HOLE



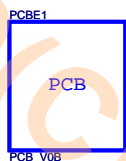
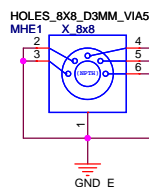
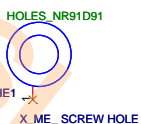
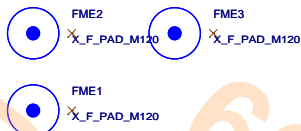
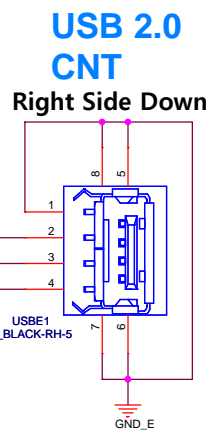
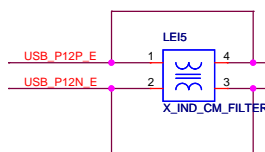
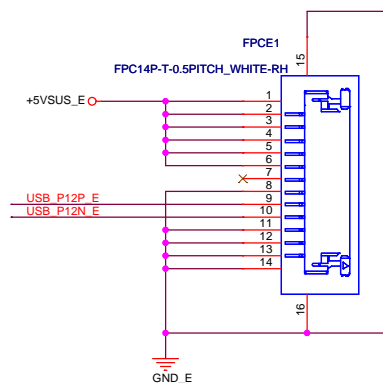
HC2 X_ME_SCREW HOLE



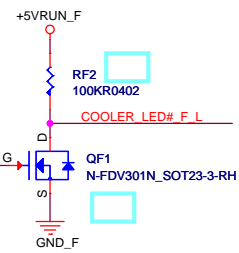
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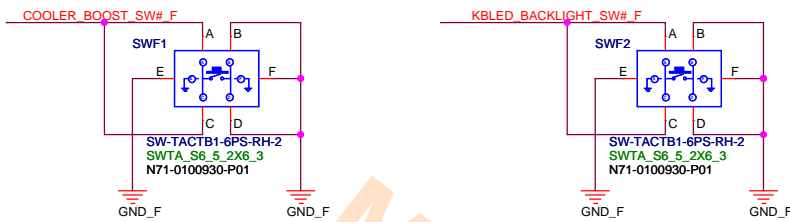
Title			ID1 TP / LED	
Size	Document Number		Rev	
Custom	MS-1757D		10	
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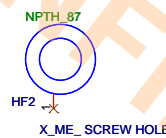
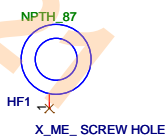
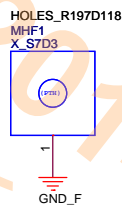
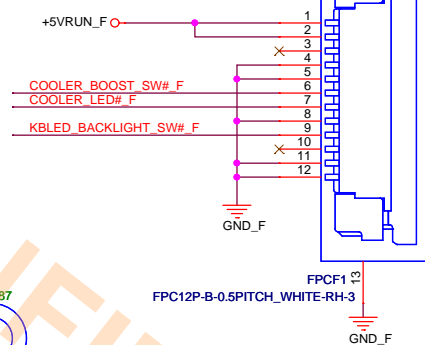
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IEI USB2.0 PORT			
Size	Document Number	Rev	
Custom	MS-1757E	10	
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Near LEDF1

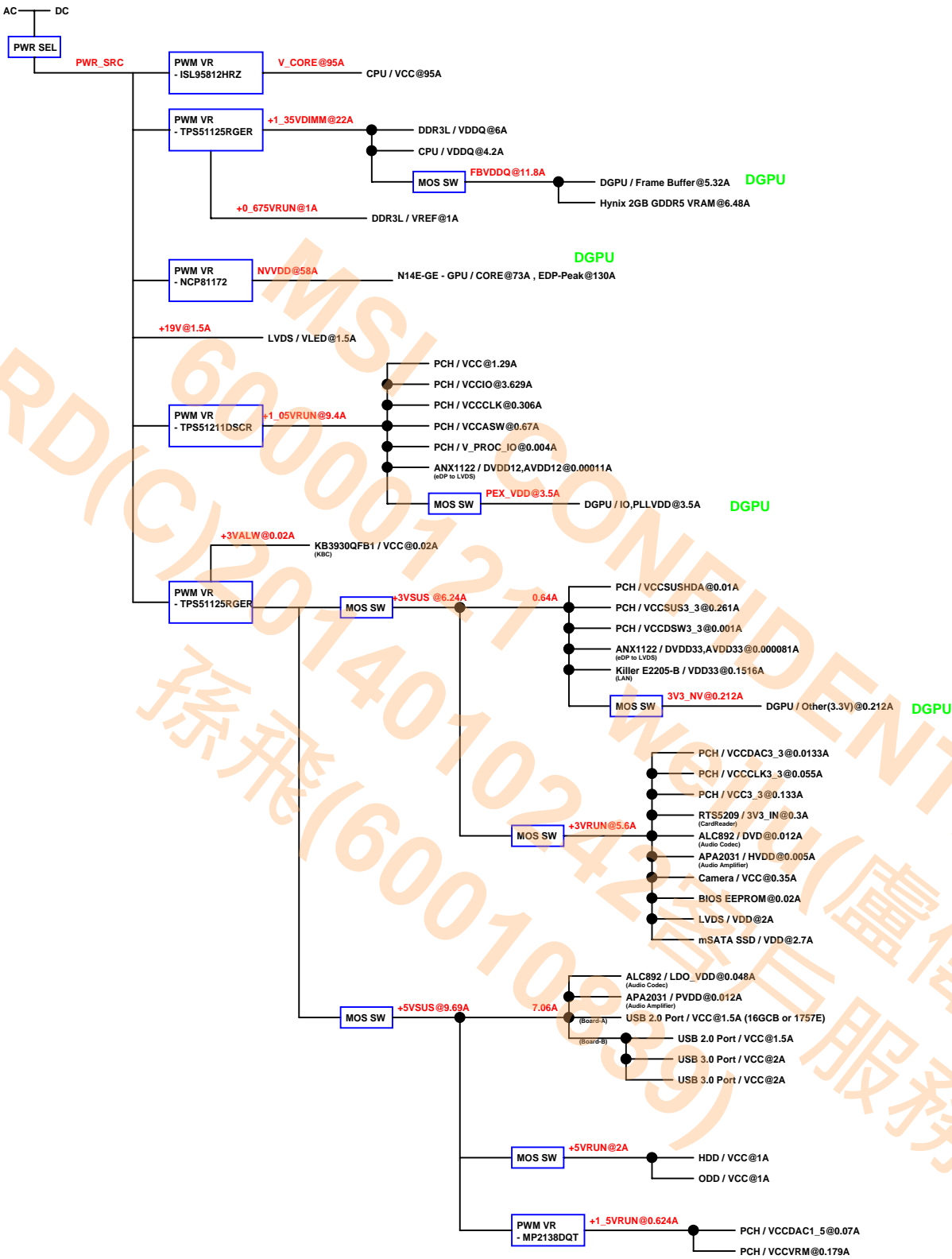


From 1757C / FPCC1

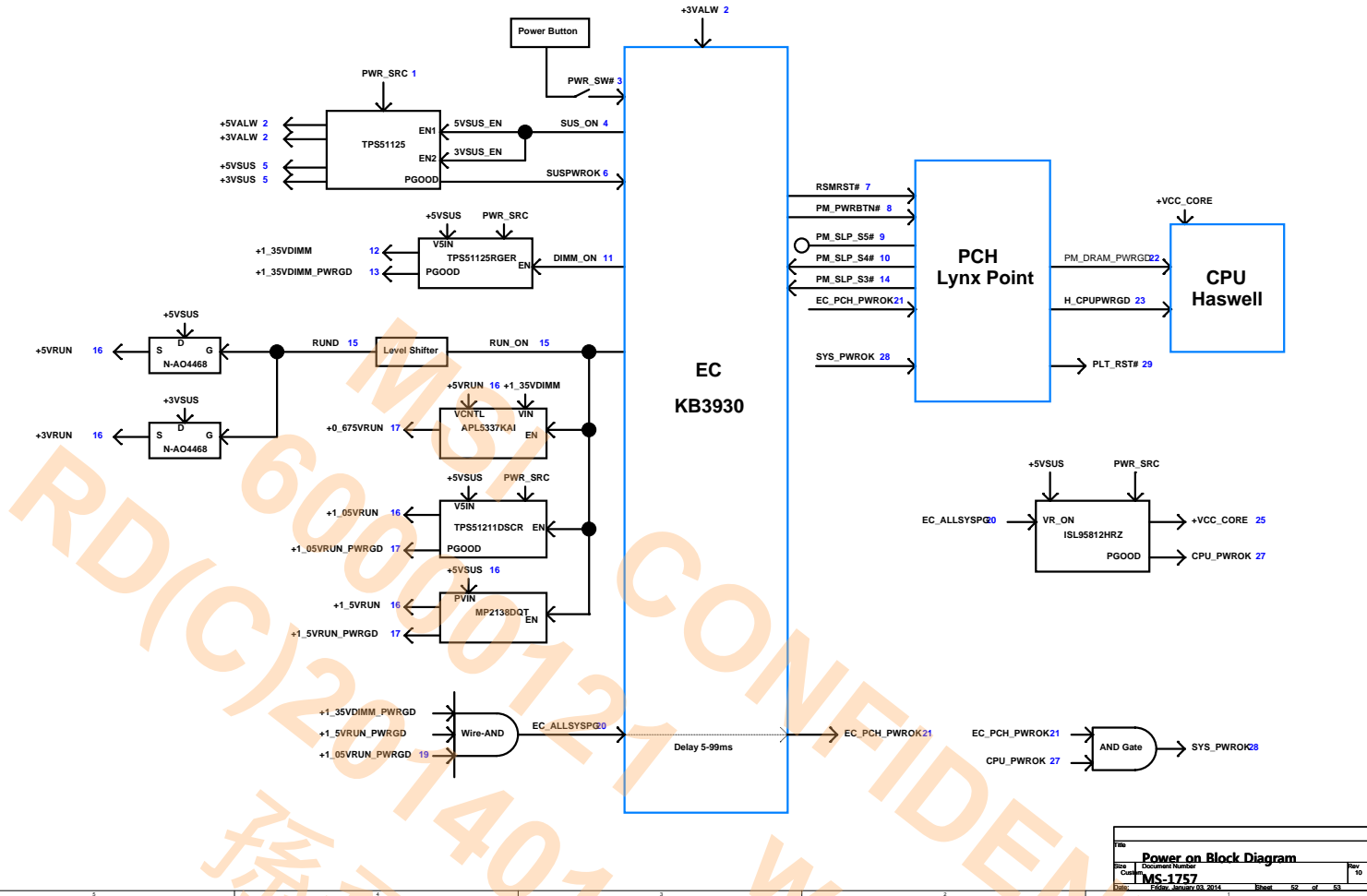


Title		[F] Launch Board	
Size	Document Number	Rev 10	
Custom	MS-1757F		
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1757 Power Delivery Chart

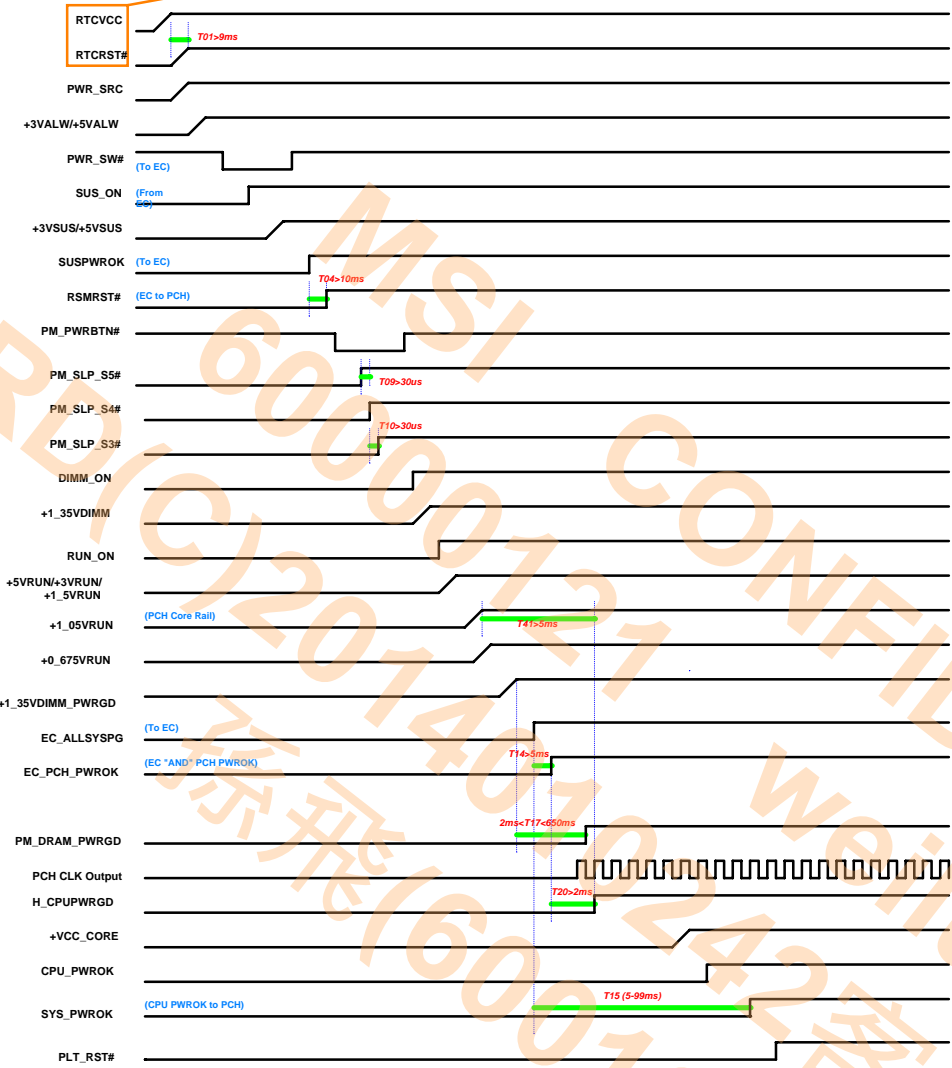


1757 Power on Block Diagram



Power on Sequence

G3 -> S0



Title			
Power on Sequence			
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Date	2014.08.01	Sheet	53 of 53