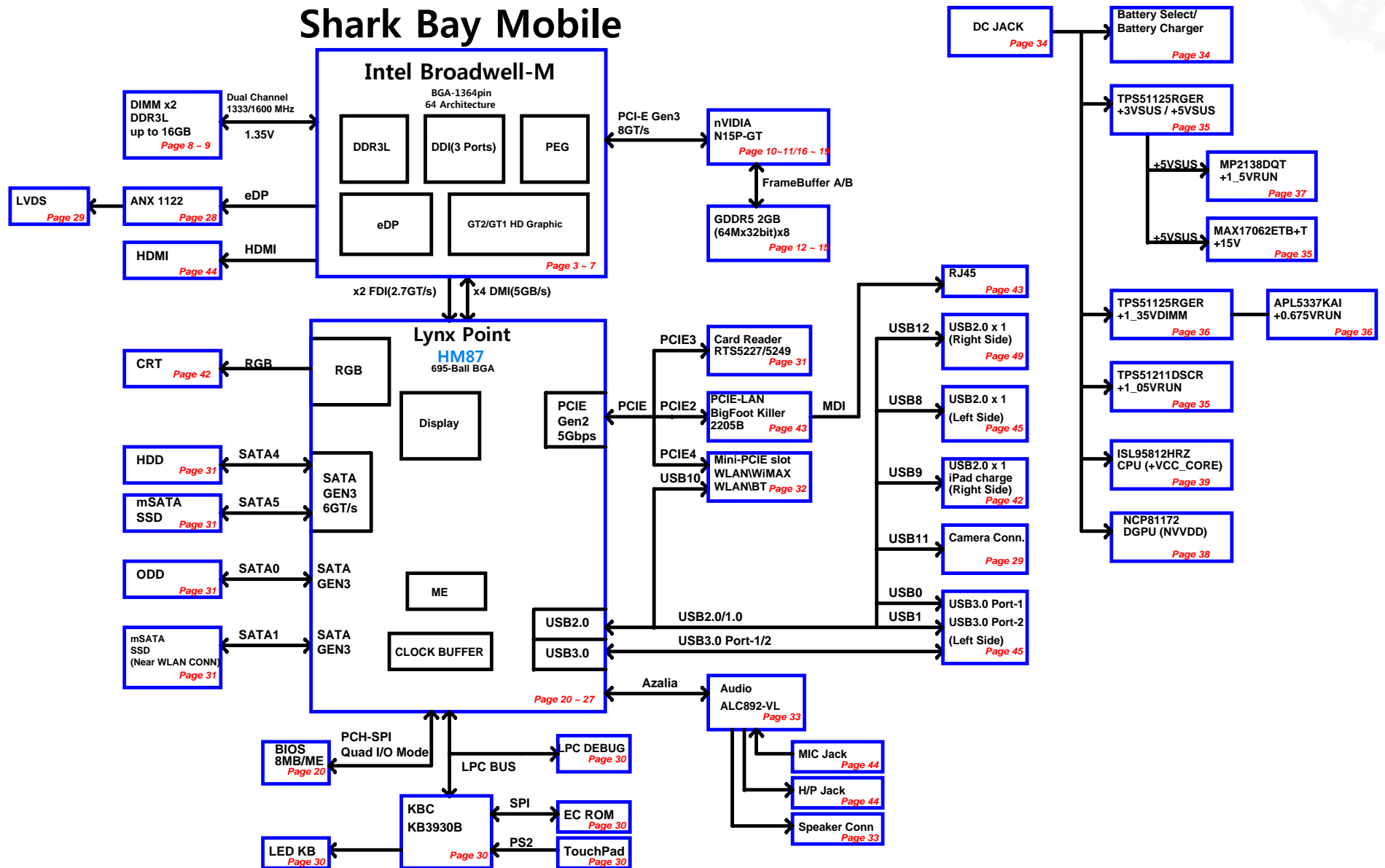


# MS-175A ver:0A

## Shark Bay Mobile



# SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

## Voltage Rails

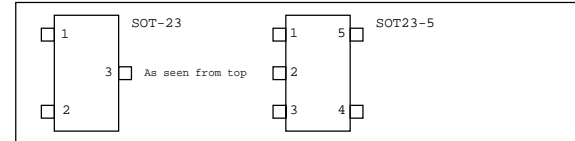
Voltage	Description	Control Signal
PWR_SRC	AC ADAPTER OR BATTERY IN	
+5VALW	5.0V always on power rail	PWR_SRC
+3VALW	3.3V always on power rail	PWR_SRC
+5VSUS	5.0V power rail	SUS_ON
+3VSUS	3.3V power rail	SUS_ON
+1_35VDIMM	1.35V DDR3L power rail (off in S4-S5)	PM_SLP_S4#
+0_675VRUN	0.675V DDR3L Termination 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	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)

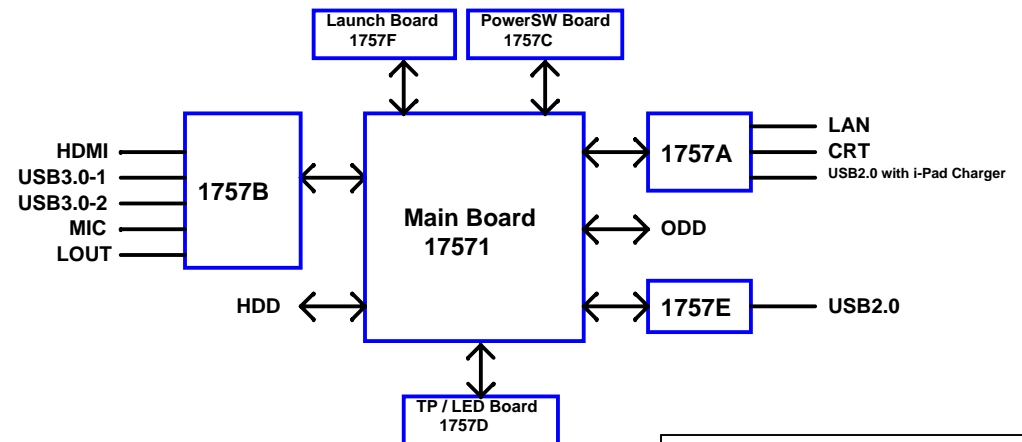
## PCB Footprints



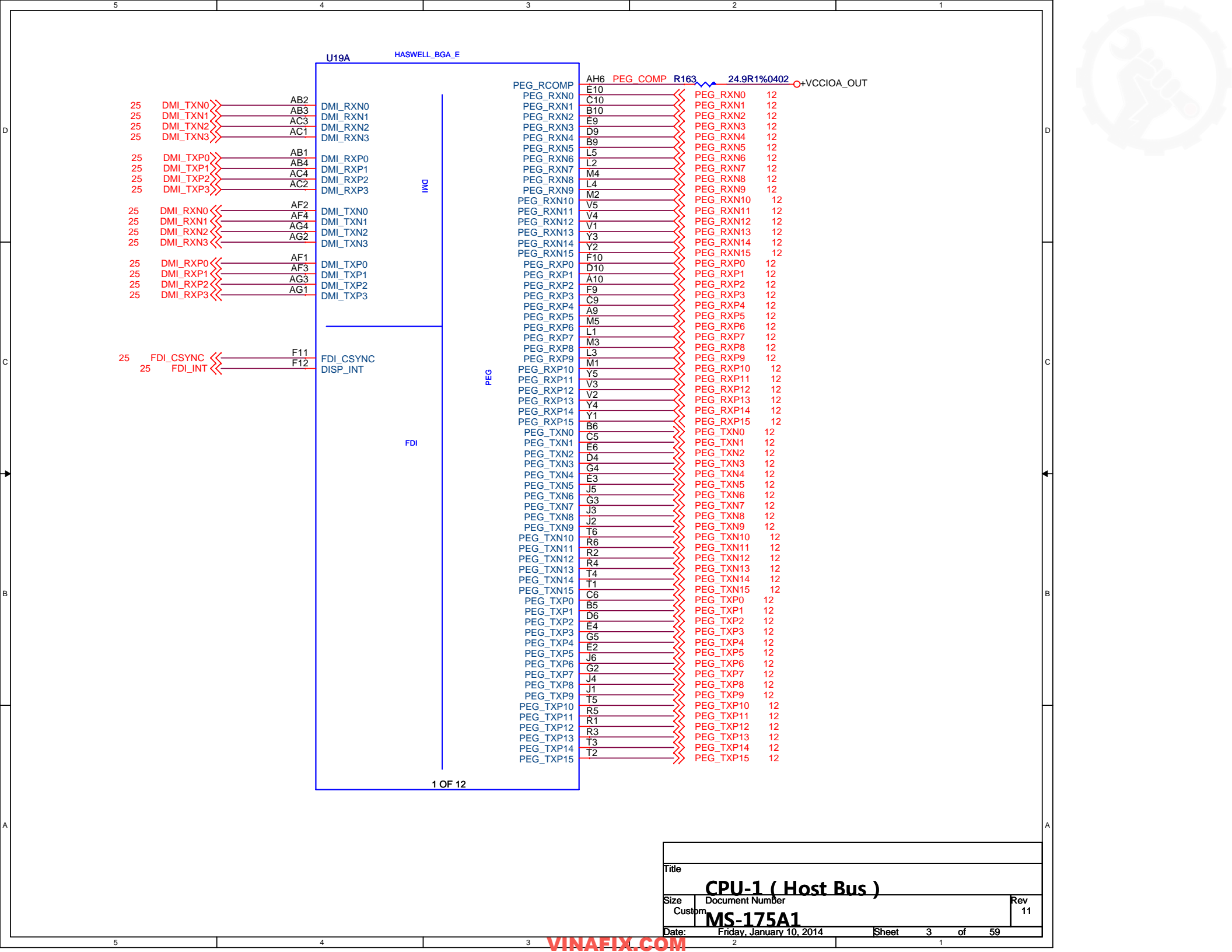
## POWER STATES

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

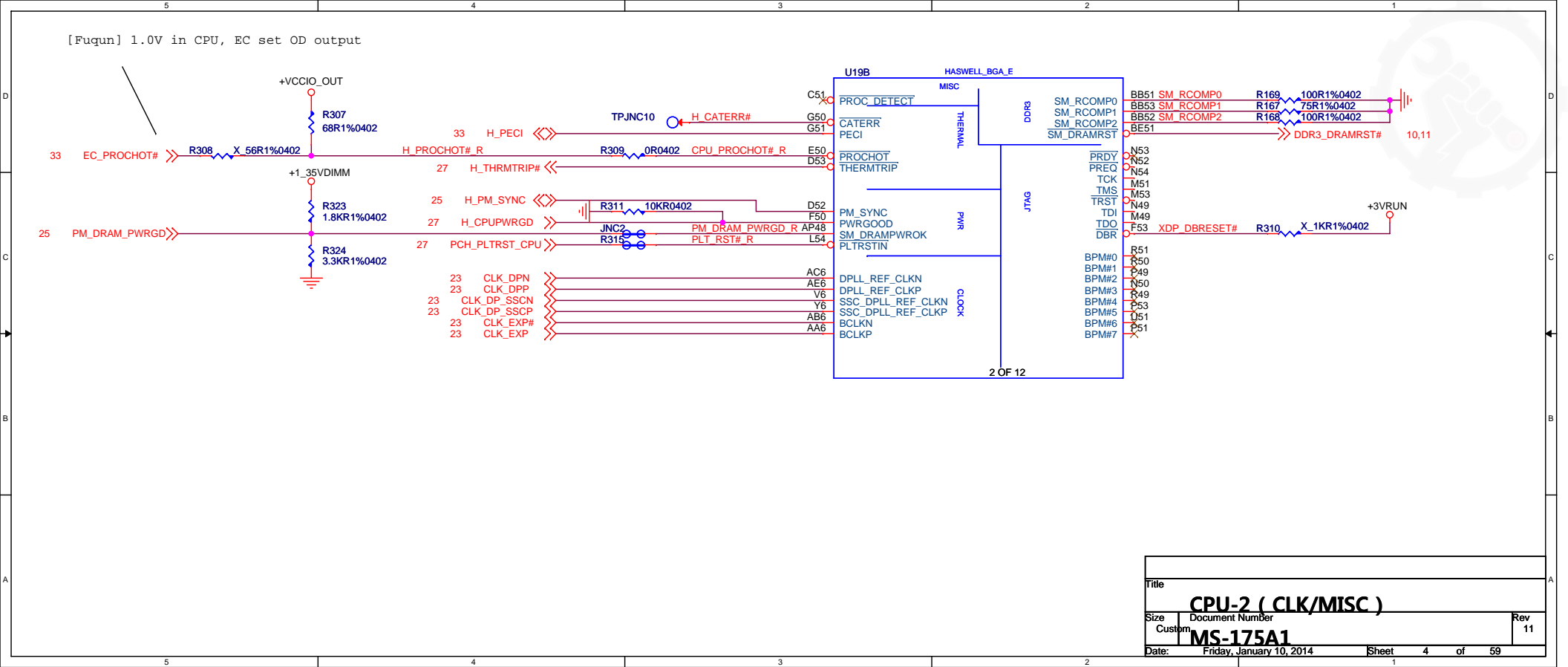
Note : WHEN AC MODE , System turn on then +V\*SUS will always keep high



Title	Platform		
Size	Custom	Document Number	Rev 11
Date	Monday, January 06, 2014	MS-175A1	
Sheet	2	of	59

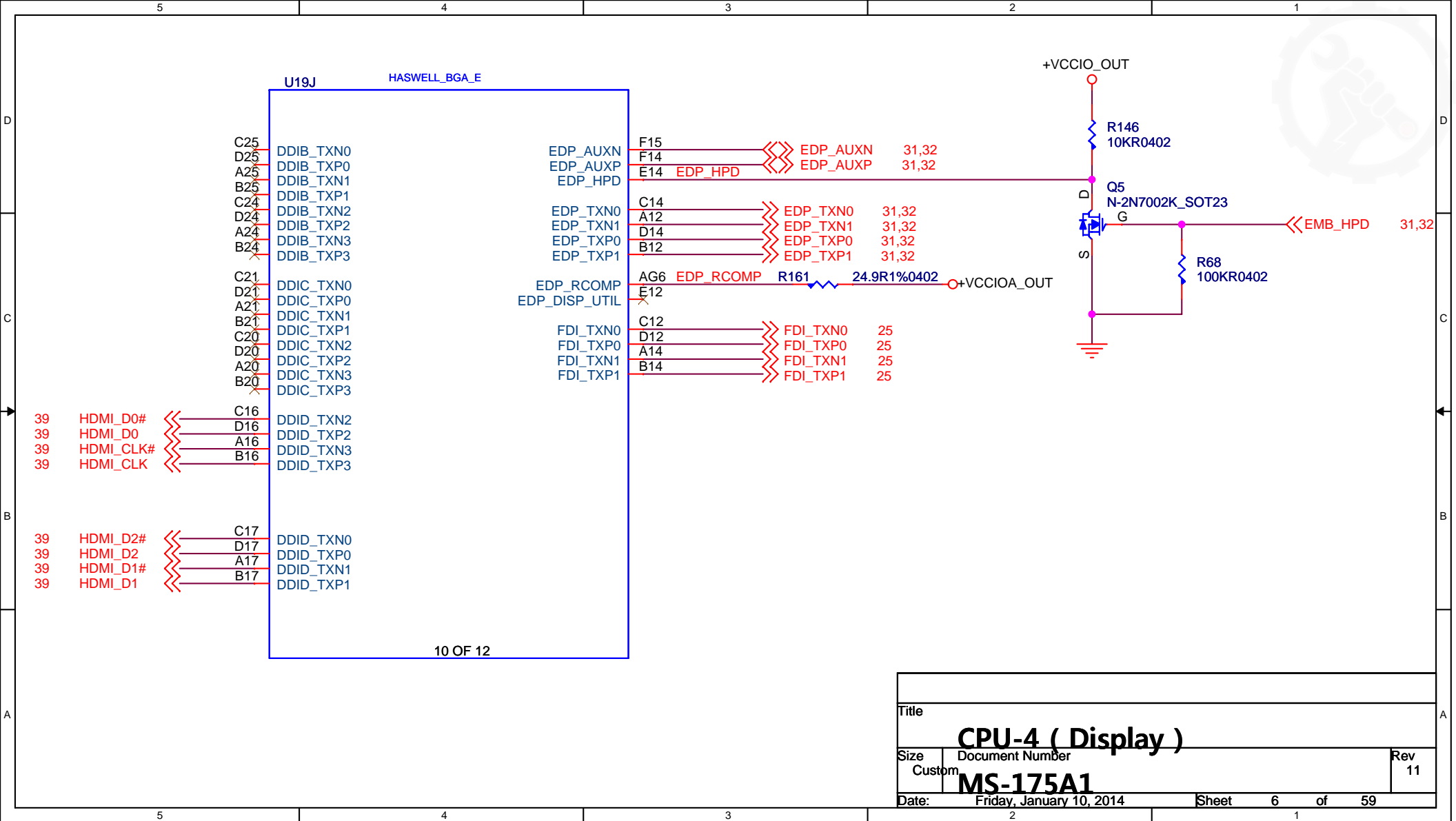


Title		
CPU-1 ( Host Bus )		
Size	Document Number	Rev
Custom	MS-175A1	11
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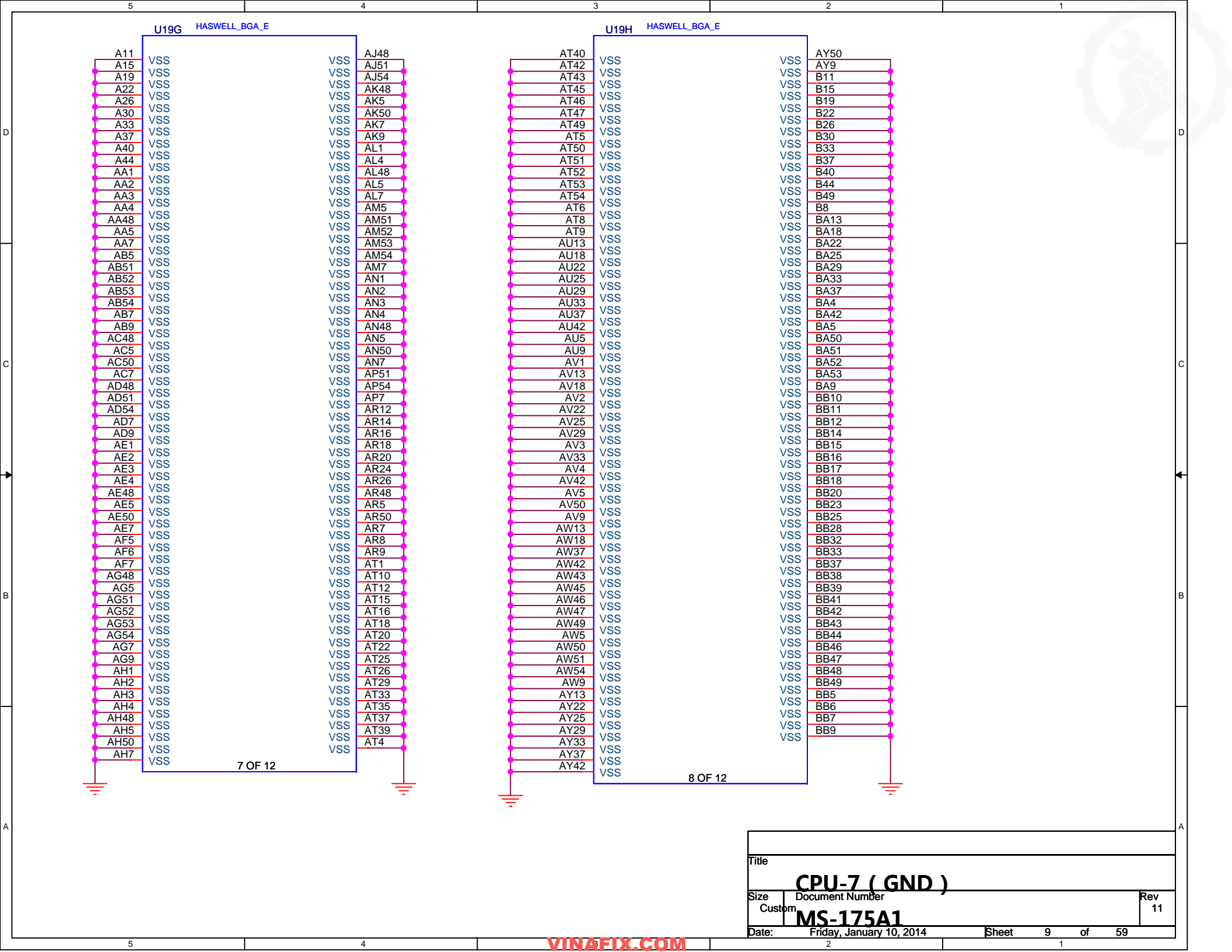
Title		
CPU-2 ( CLK/MISC )		
Size	Document Number	Rev
Custom	MS-175A1	11
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Title		
CPU-7 ( GND )		
Size	Document Number	Rev
Custom	MS-175A1	11
Date:	Friday, January 10, 2014	Sheet 9 of 59

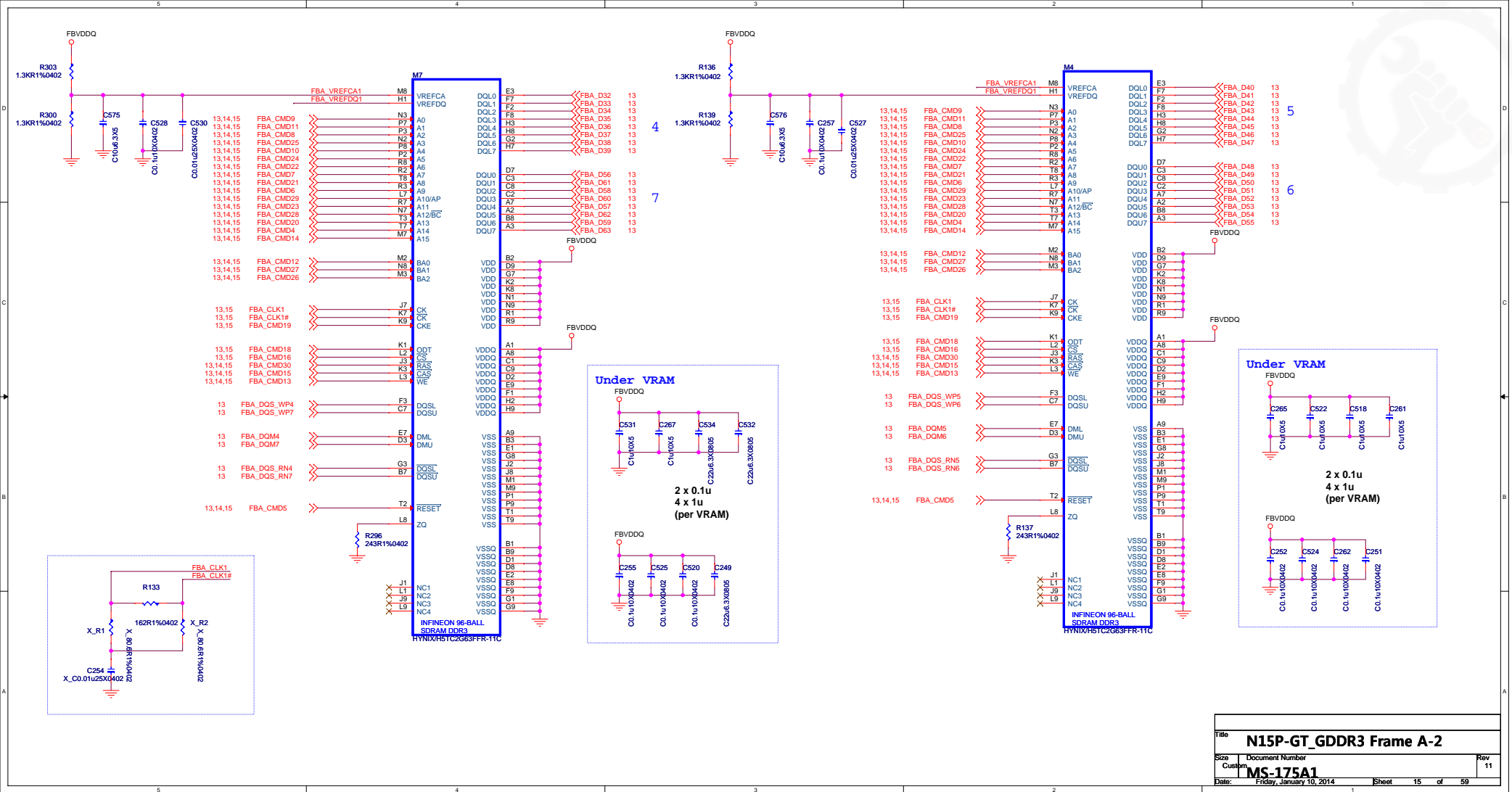






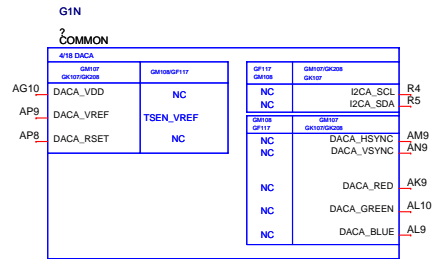
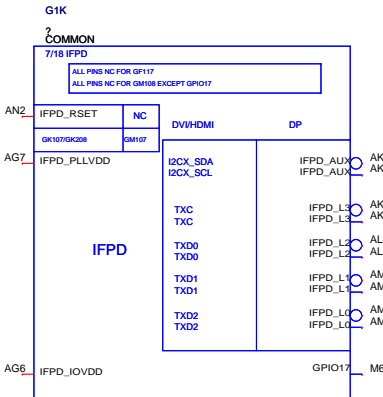
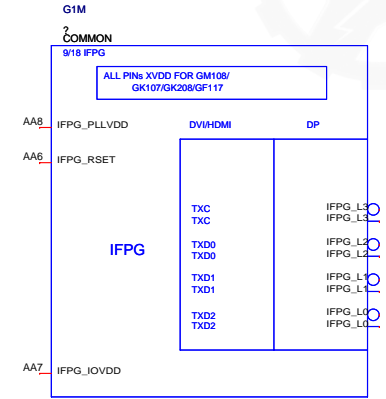
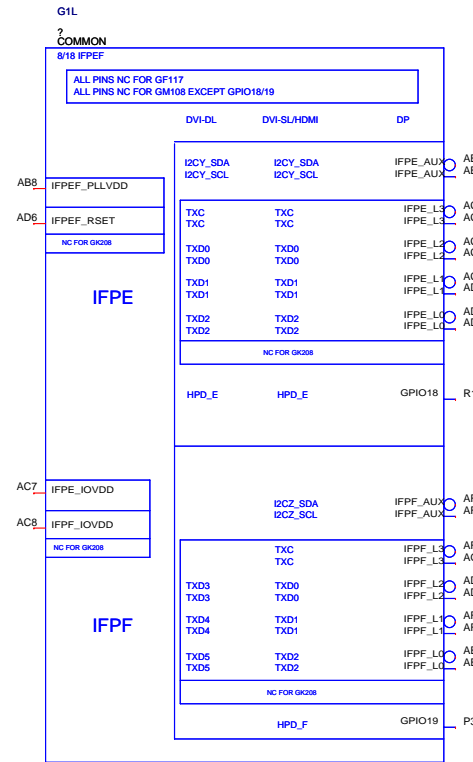
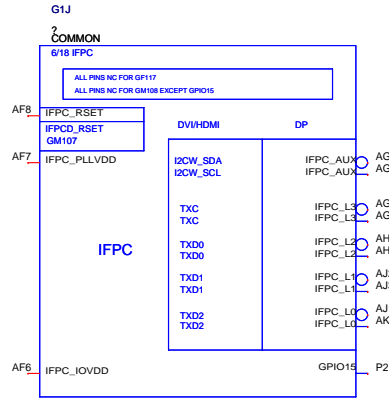
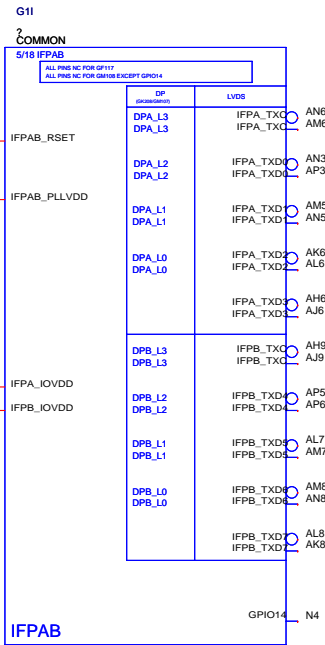










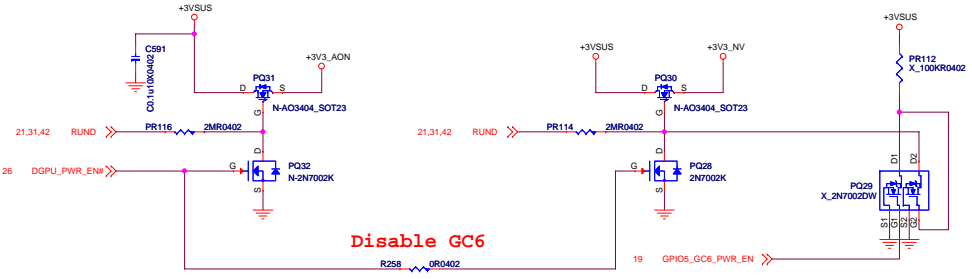


Title			<b>N15P-GT_Display IF</b>
Size	Document Number		Rev
Customer	<b>MS-175A1</b>		11
Date:	Monday, January 06, 2014		Sheet 18 of 59

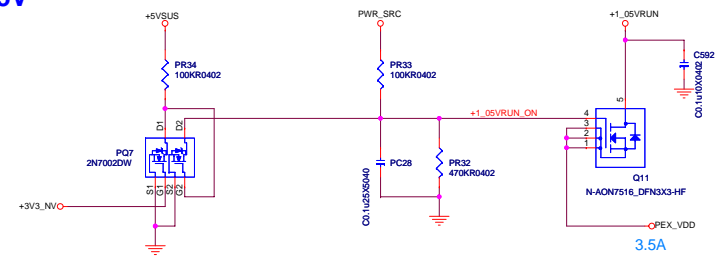




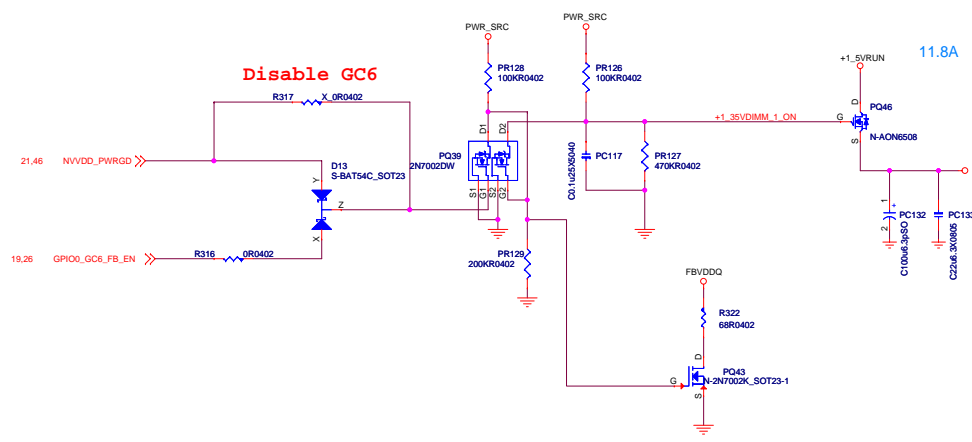
3.3V



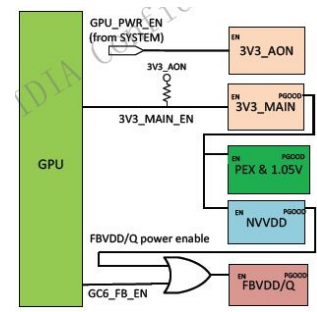
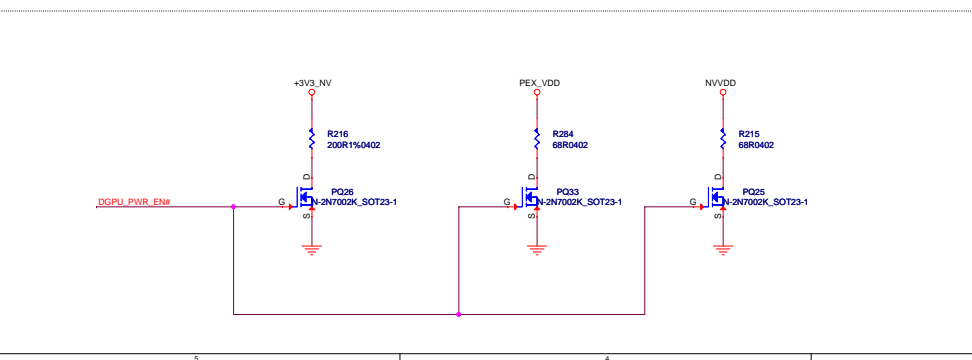
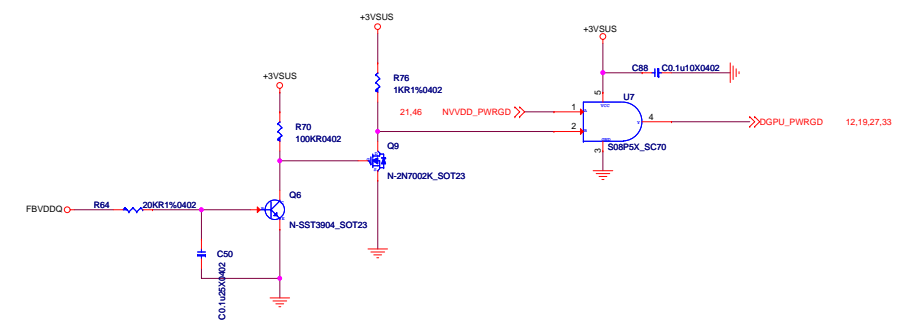
1.05V



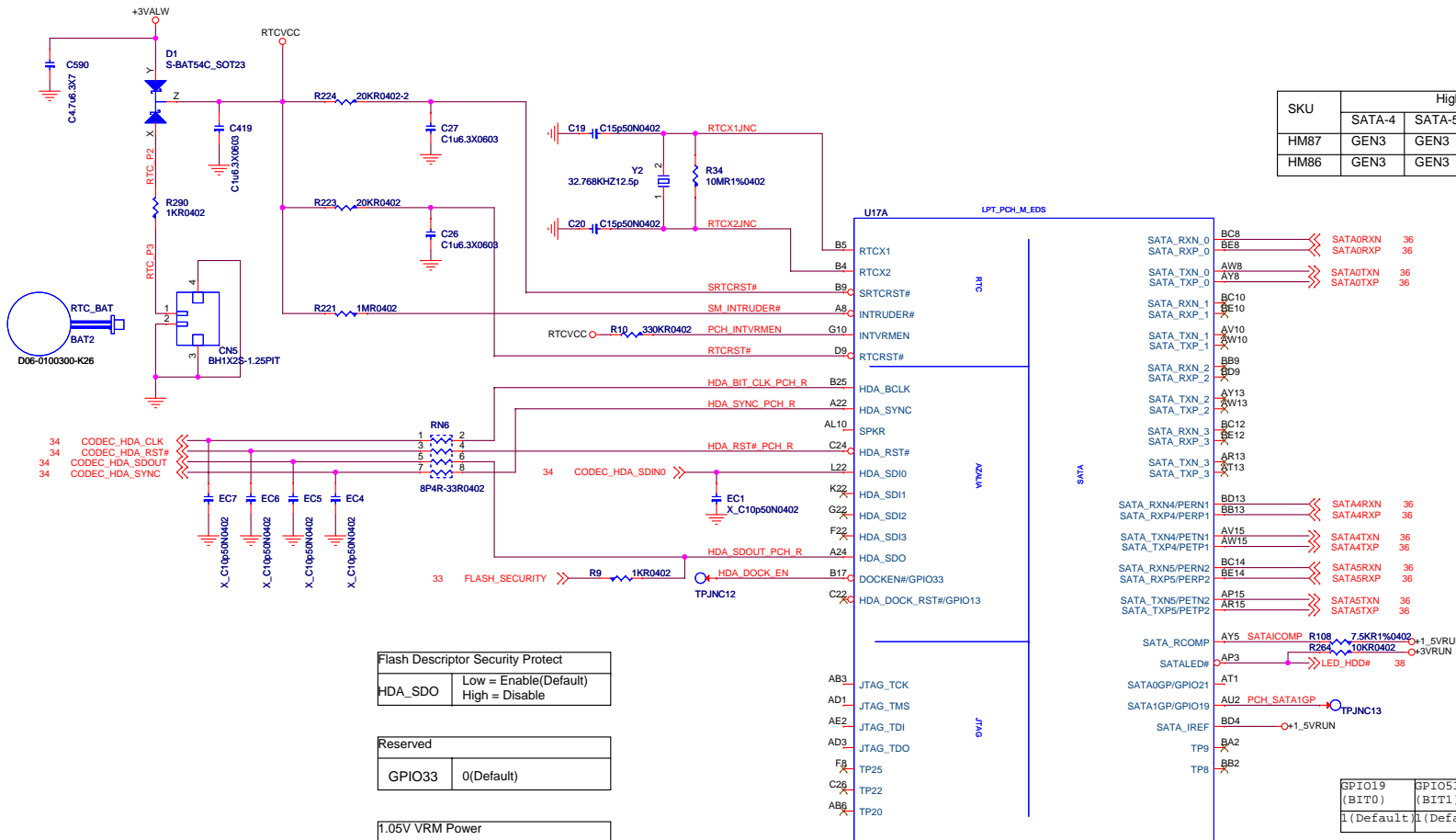
1.5V



GPU\_PWRGD



File	N15P-GT Power Control		
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SKU	High Speed SATA I/O Ports					
	SATA-4	SATA-5	SATA-0	SATA-1	SATA-2	SATA-3
HM87	GEN3	GEN3	GEN3	GEN3	GEN2	GEN2
HM86	GEN3	GEN3	GEN2	N/A	GEN2	N/A

ODD — SATA GEN2

HDD — SATA GEN3

m-SATA — SATA GEN3

Flash Descriptor Security Protect	
HDA_SDO	Low = Enable(Default) High = Disable

Reserved	
GPIO33	0(Default)

1.05V VRM Power	
INTVRMEN	0 = External 1 = Internal

No Reboot	
SPKR	1 = Disable(Default) 0 = Enable

GPIO19 (BIT0)	GPIO51 (BIT1)	BIOS
1(Default)	1(Default)	SPI

Title		
PCH-1 ( HDA/JTAG/SATA )		
Size	Document Number	Rev
Customer	MS-175A1	10
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For 175A

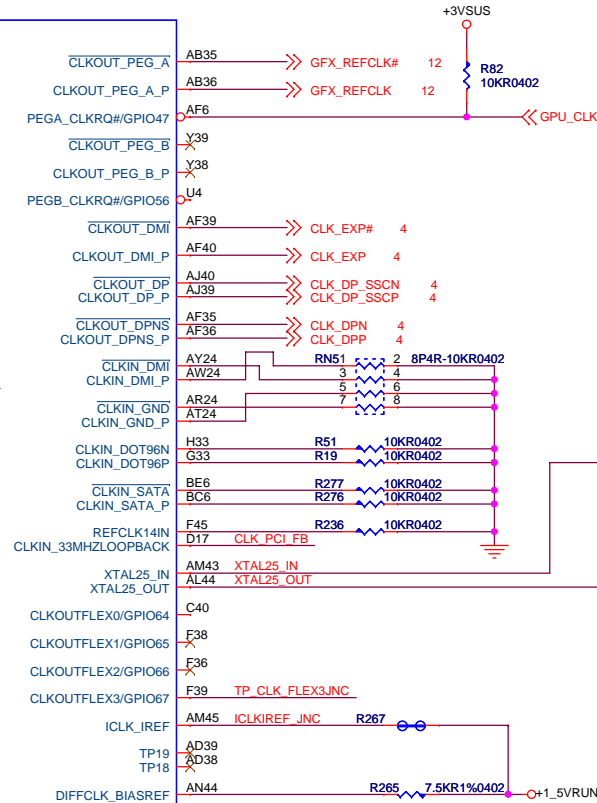
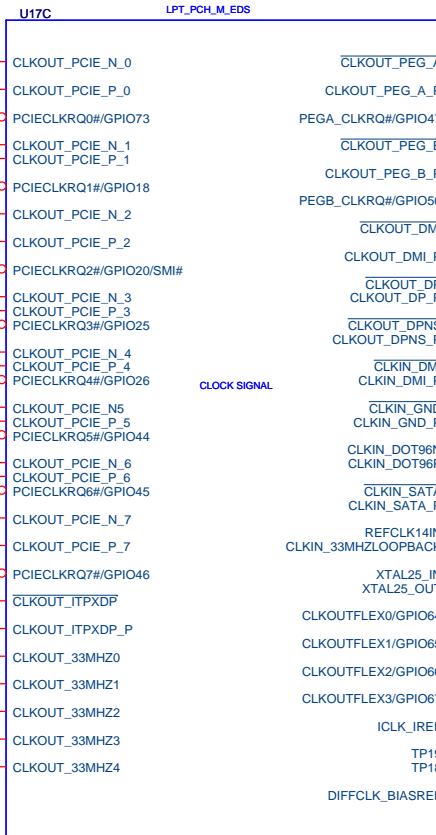
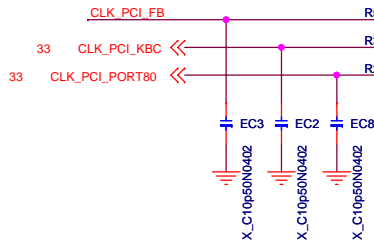
39 CLK\_PCIE\_CARD1# <<< Y43  
 39 CLK\_PCIE\_CARD1 <<< Y45  
 39 CARDREADER1\_CLKREQ# >>> AB1

For 16GH

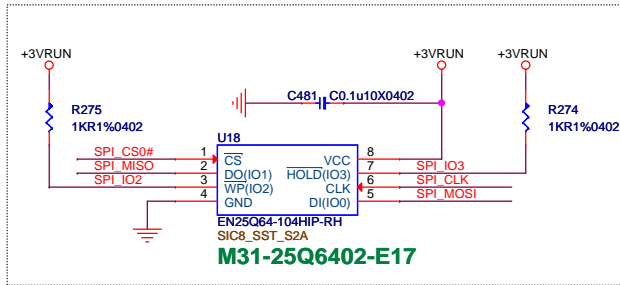
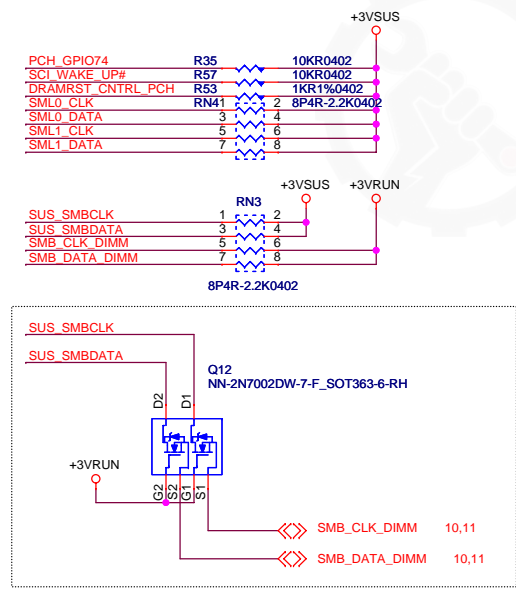
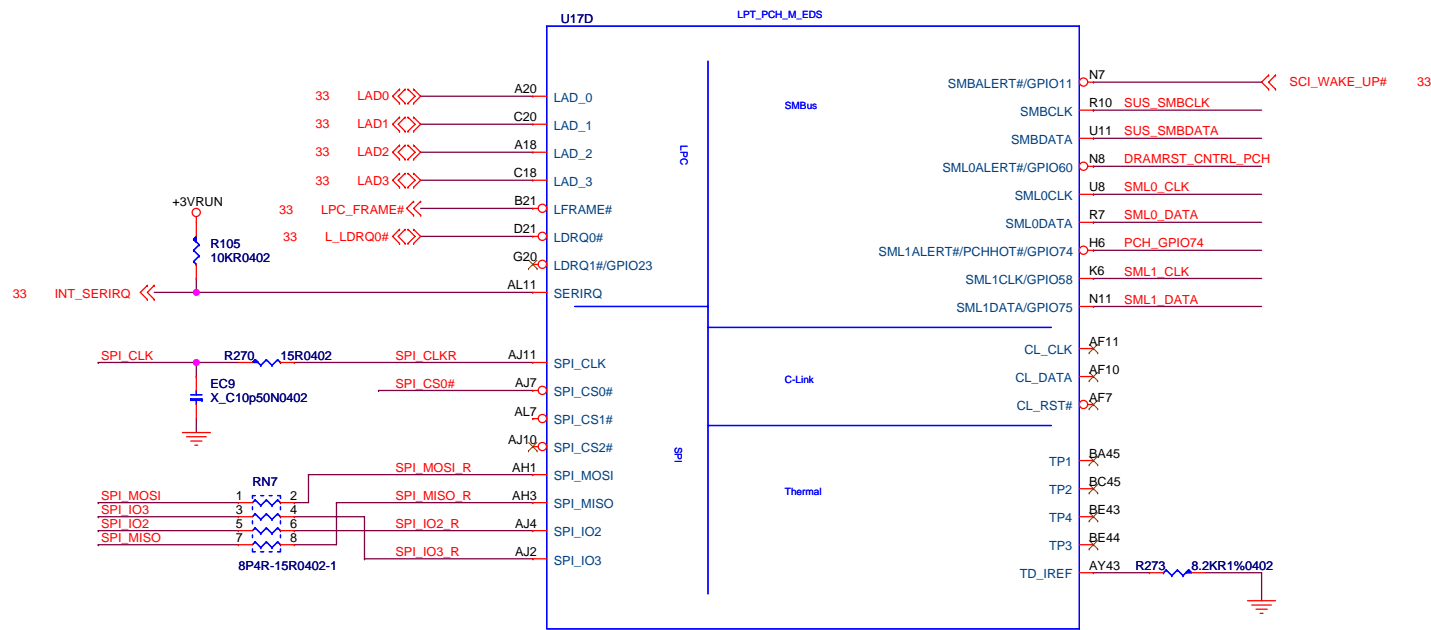
37 MIM1\_CLKREQ# >>> AF1  
 35 CLK\_PCIE\_CARD2# <<< AB43  
 35 CLK\_PCIE\_CARD2 <<< AB45  
 35 CARDREADER2\_CLKREQ# >>> AF3  
 39 CLK\_PCIE\_LAN# <<< AD43  
 39 CLK\_PCIE\_LAN <<< AD45  
 39 GLAN\_CLKREQ# >>> T3  
 31 CLK\_ANX1122\_N <<< AF43  
 31 CLK\_ANX1122\_P <<< AF45

[Fuqun]CLK1/2: RUN  
 CLK0/3/4/5/6/7: SUS

Reserved	
GPI044	1(Default)
GPI046	1(Default)



Title		
PCH-2 ( CLK )		
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Title		
PCH-3 ( LPC,SMBUS )		
Size	Document Number	Rev
Custom	MS-175A1	11
Date:	Monday, January 06, 2014	Sheet 24 of 59

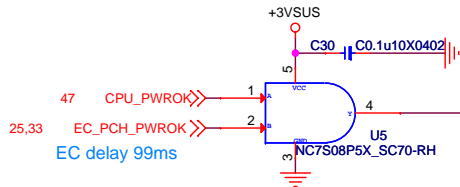
+3VSUS

R38 10KR0402 SUSPWRACK  
R6 10KR0402 AC\_PRESENT  
R59 10KR0402 PM\_RI#  
R49 8.2KR1% PM\_BATLOW#  
R248 10KR0402 PCIE\_WAKE#

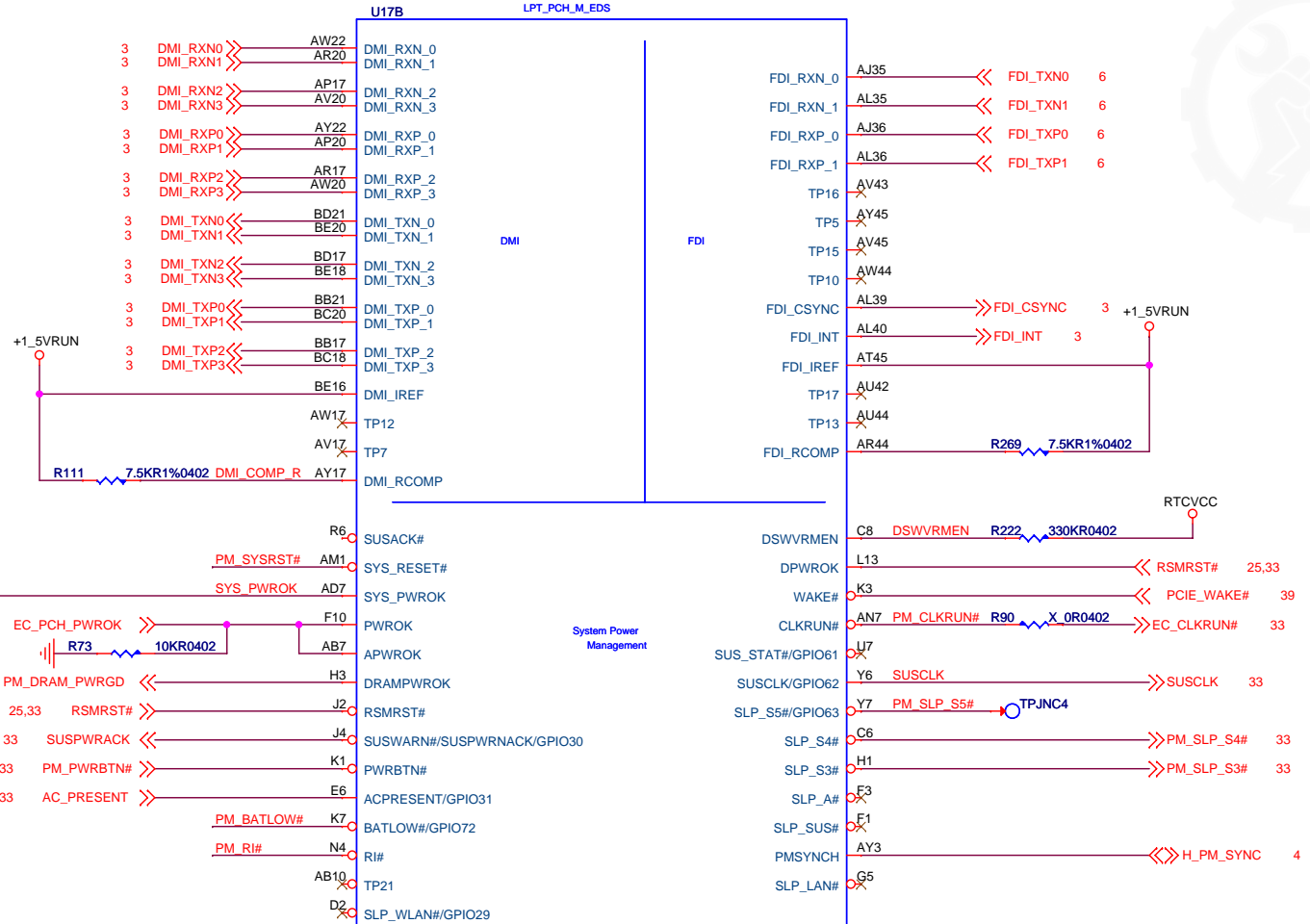
[Fuqun] WAKE# PU 1K in checklist

+3VRUN

R91 8.2KR0402 PM\_CLKRUN#  
R26 10KR0402 PM\_SYSRST#



PLL On-Die Voltage Regulator Enable	
SUSCLK	0 =Disable 1 = Enable(Default)
Deep Sx On-Die Voltage Regulator Enable	
DSWVRMEN	0 =Disable 1 = Enable



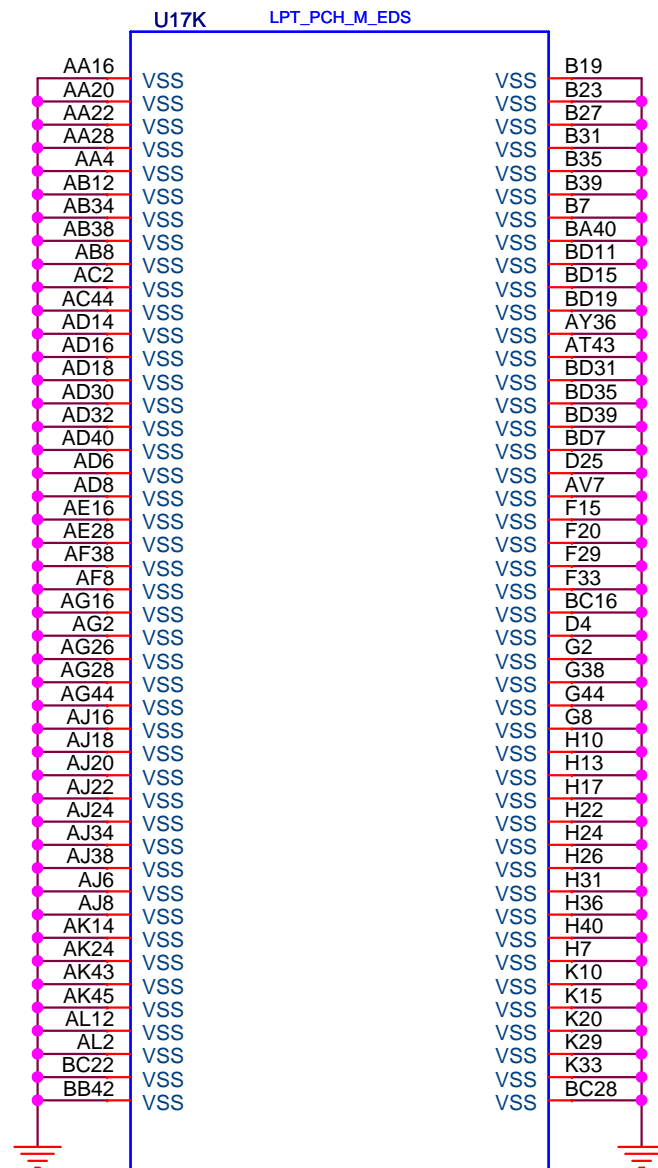
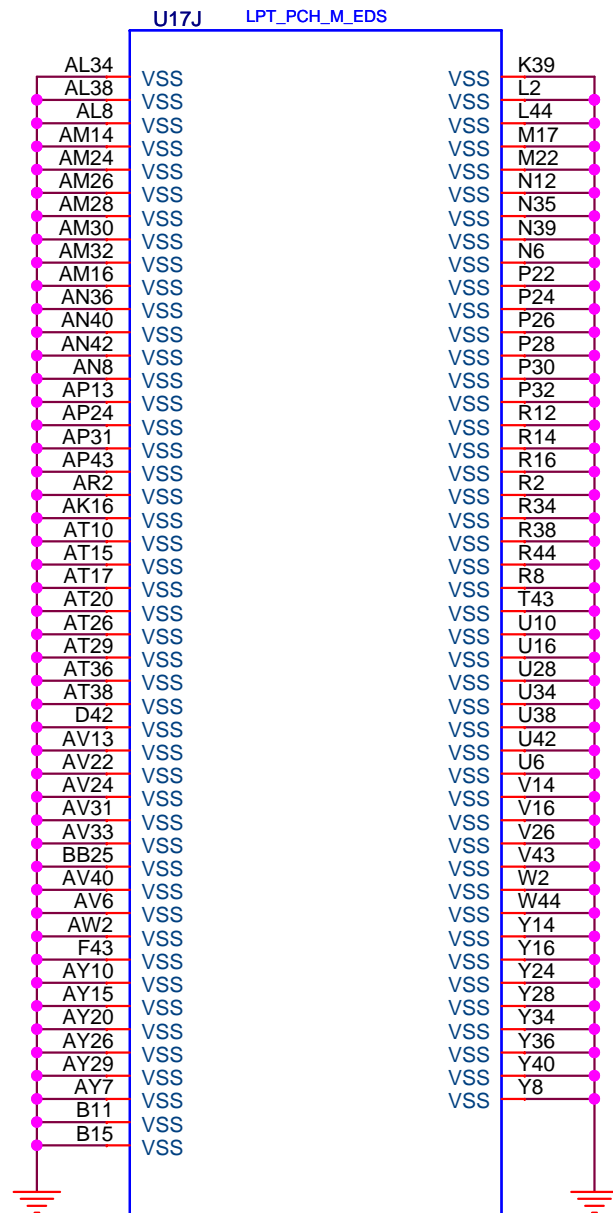
Title		
PCH-4 ( DMI,FDI )		
Size	Document Number	Rev
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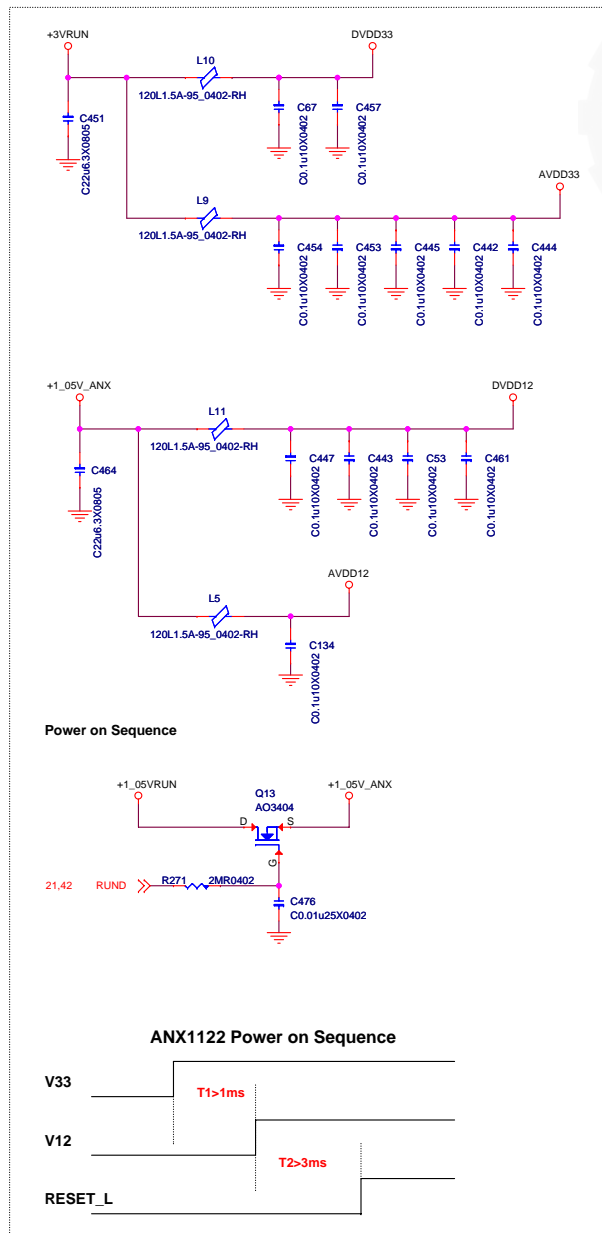
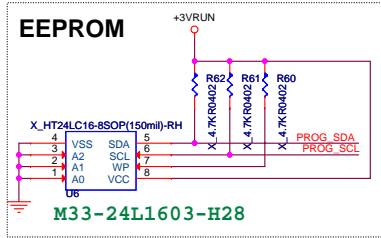
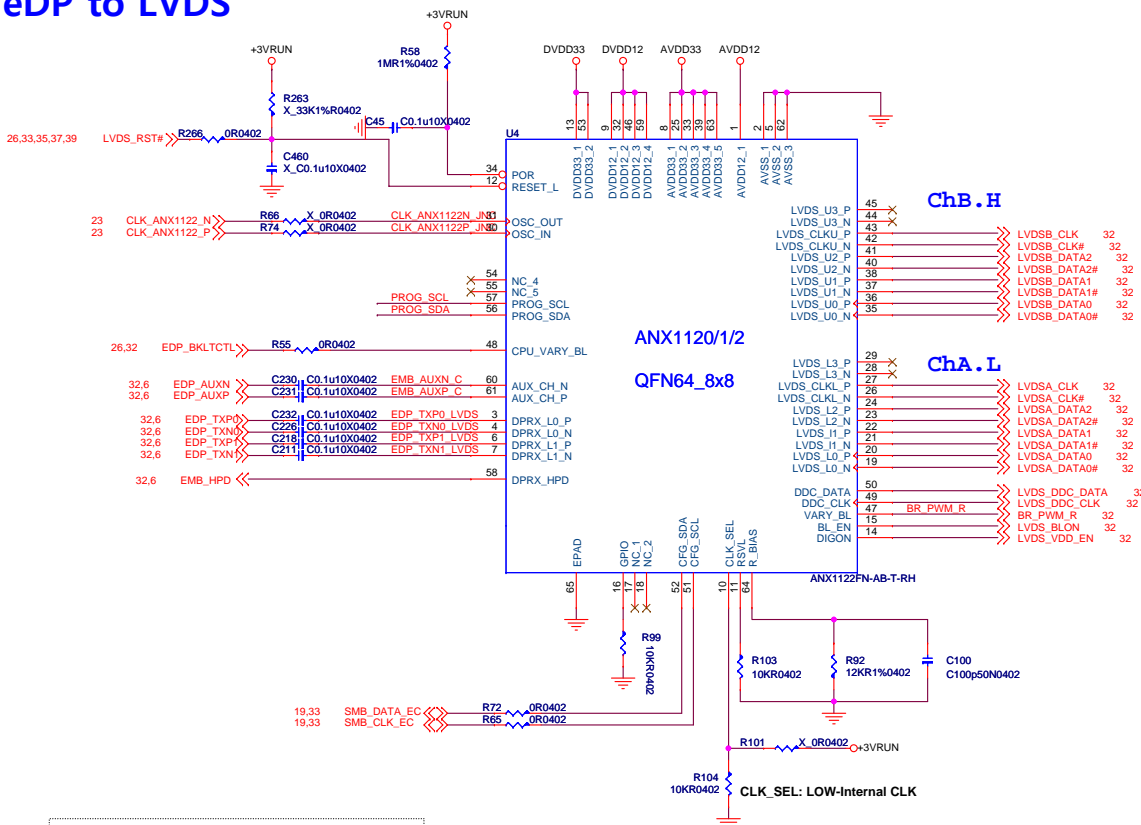




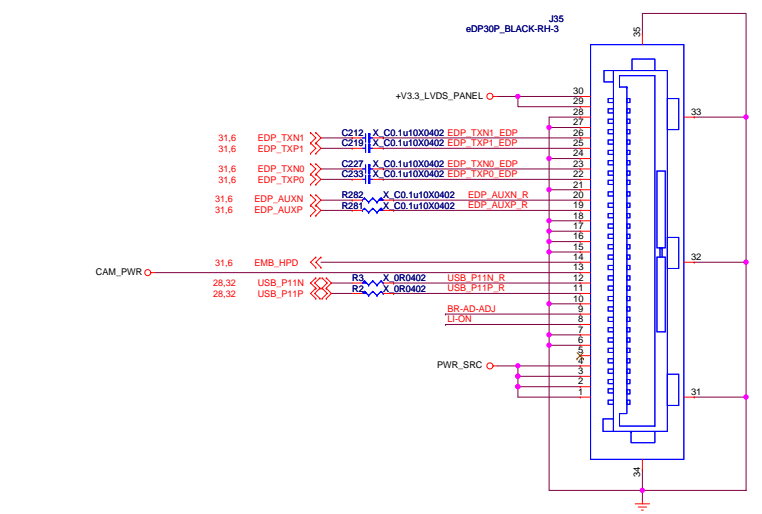
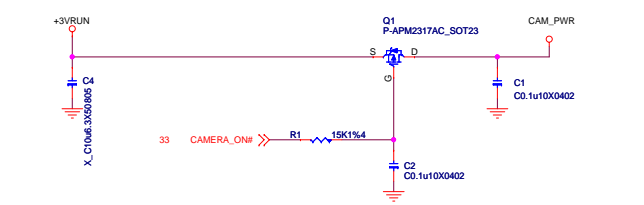
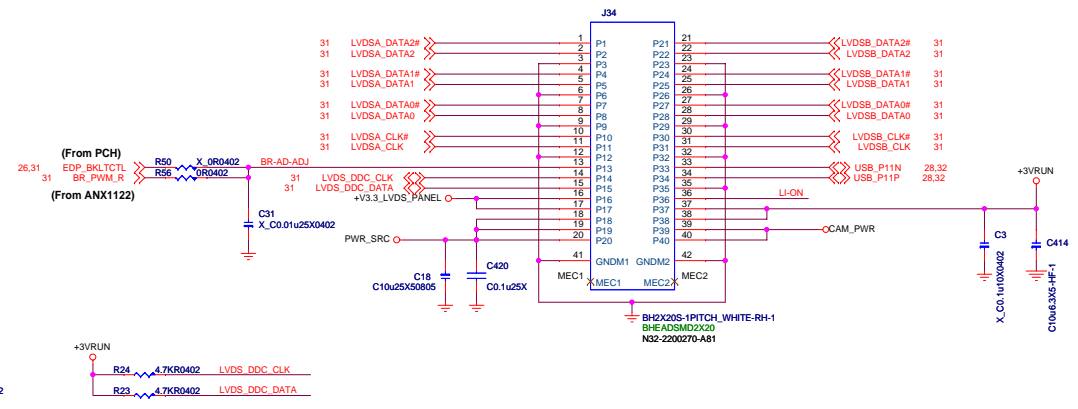
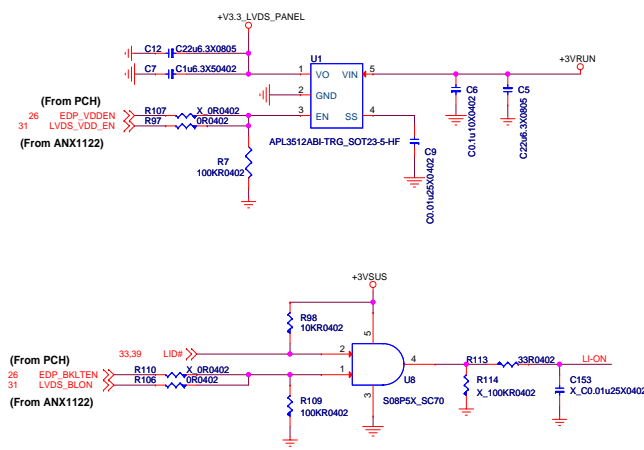


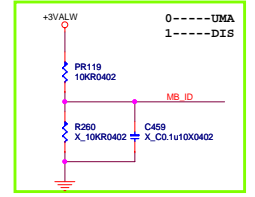
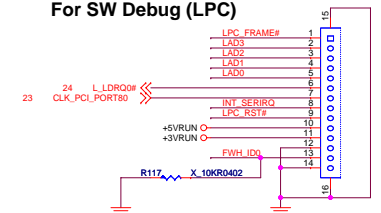
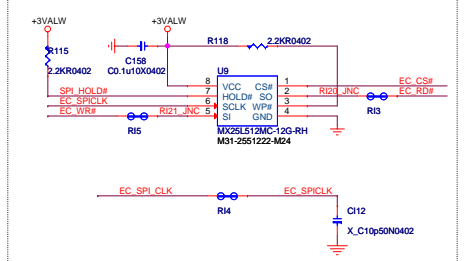
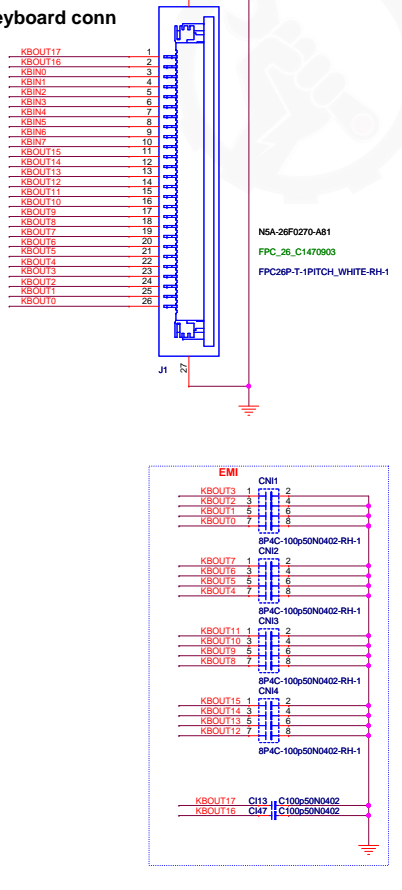
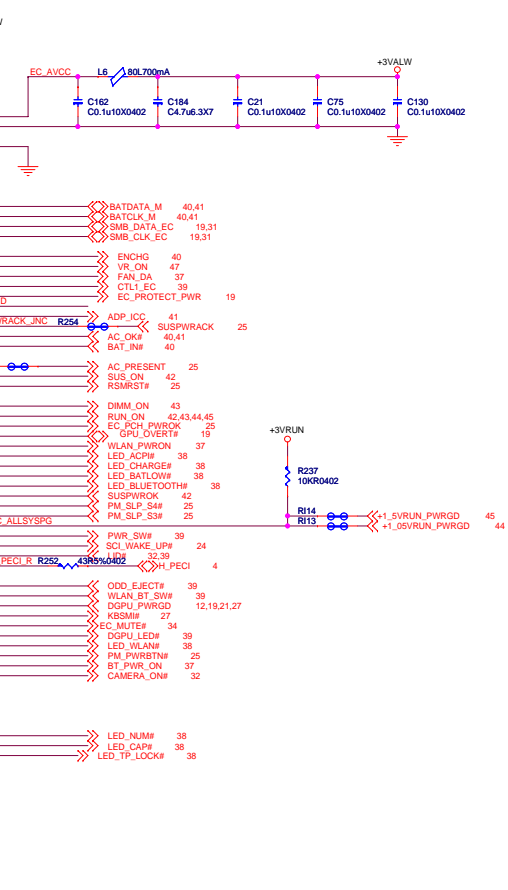
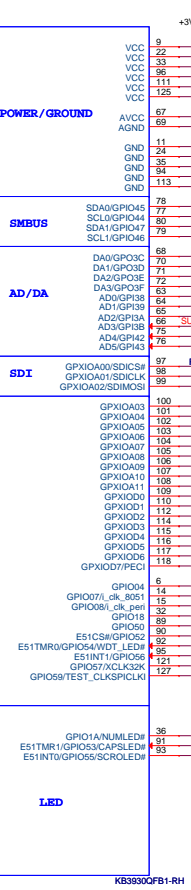
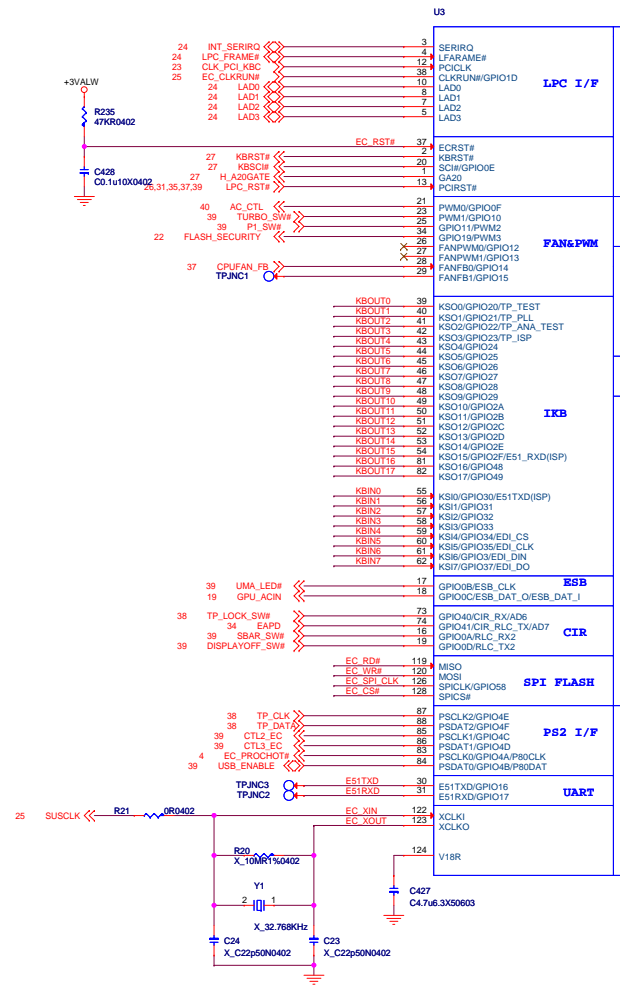
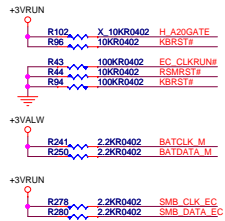
Title		
PCH-9 ( GND )		
Size	Document Number	Rev
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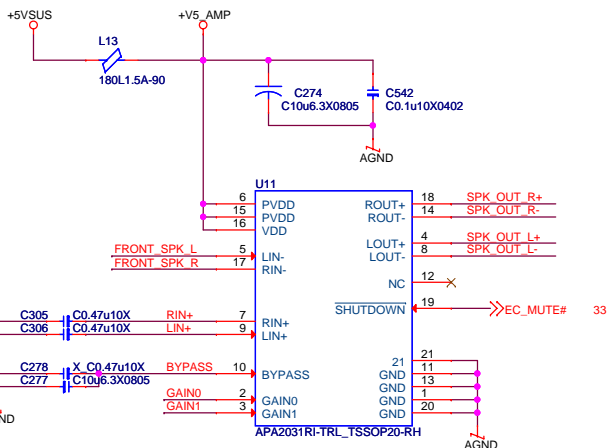
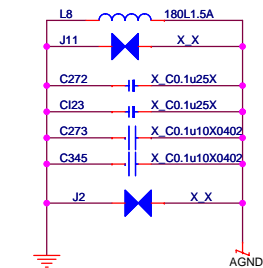
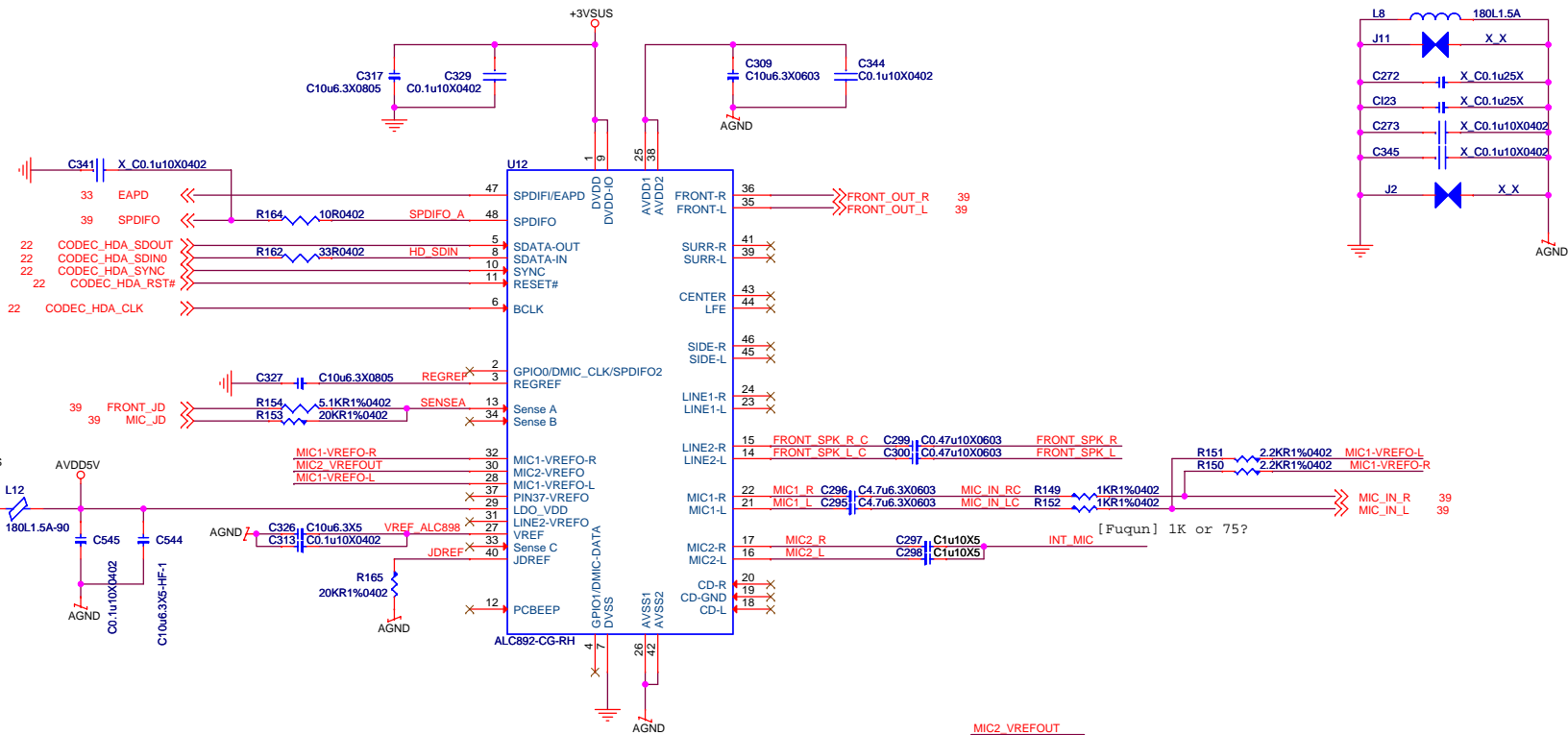
eDP to LVDS



File			
eDP / LVDS ( ANX1122 )			
Size			
Custom			
MS-175A1			
Date: Monday, January 06, 2014			
Sheet 31 of 58			
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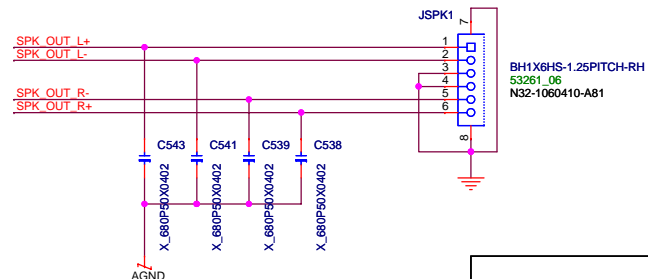
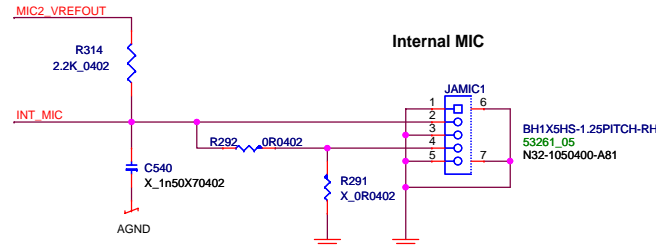
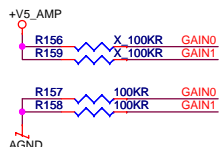


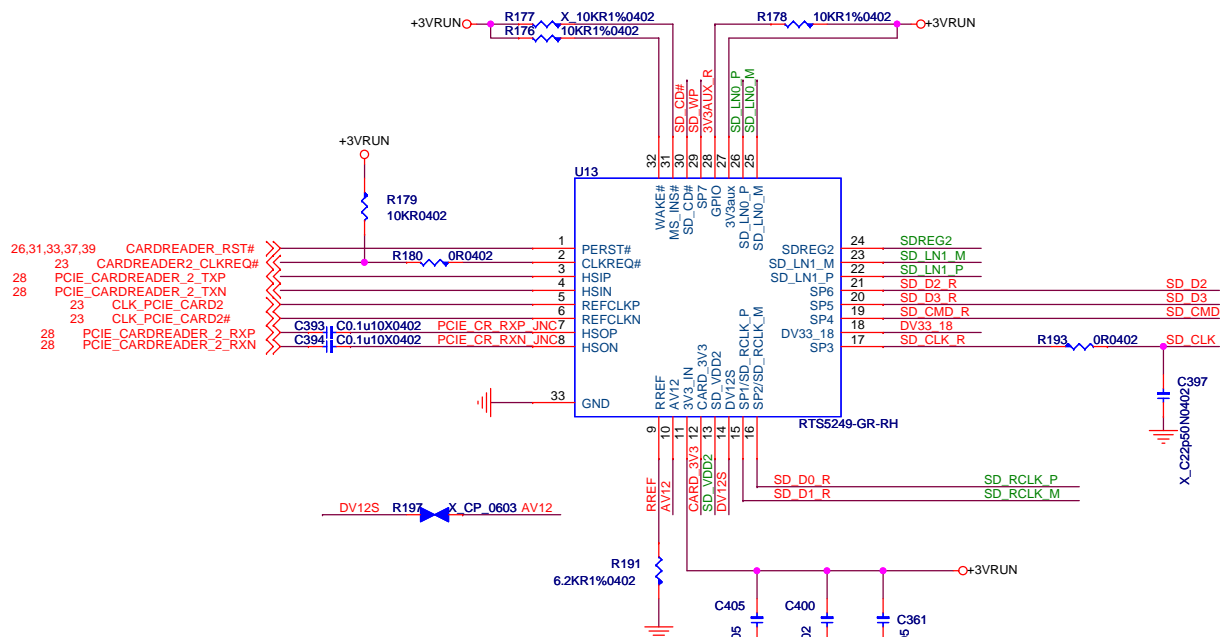




For APA2031

Av	GAIN0	GAIN1
6dB	0	0
10dB	0	1
15.6dB	1	0
21.6dB	1	1
4.3dB	X	X



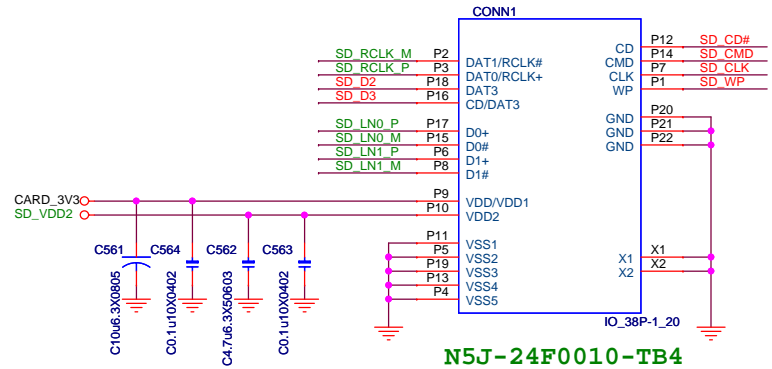
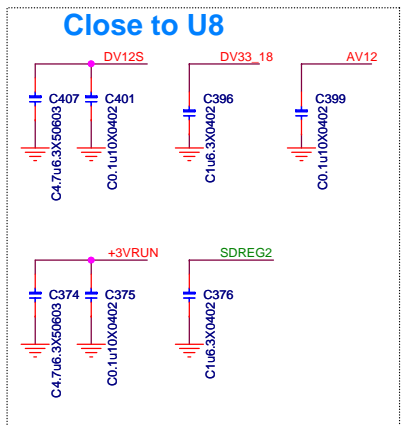


SP1	SD_D1
SP2	SD_D0
SP3	SD_CLK
SP4	SD_CMD
SP5	SD_D3
SP6	SD_D2
SP7	SD_WP

SD_RCLK_M
SD_RCLK_P

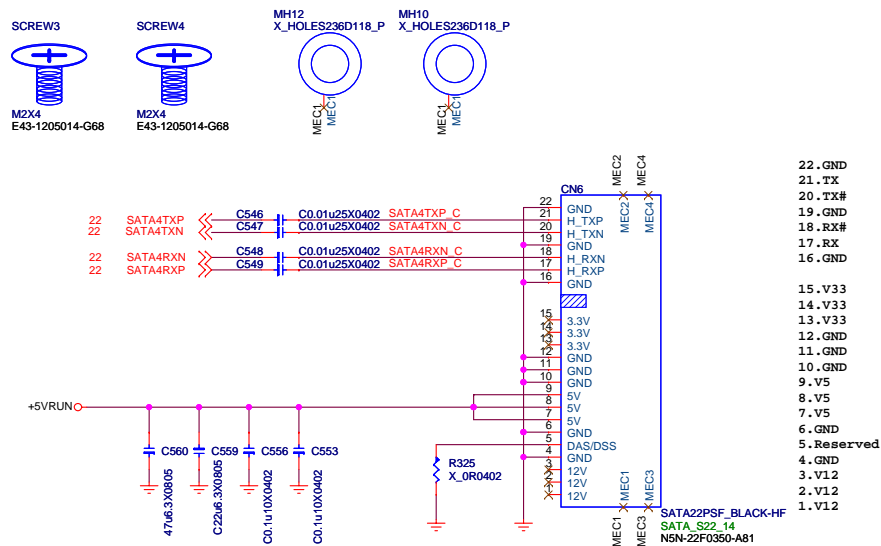
UHS-II

Share Pin

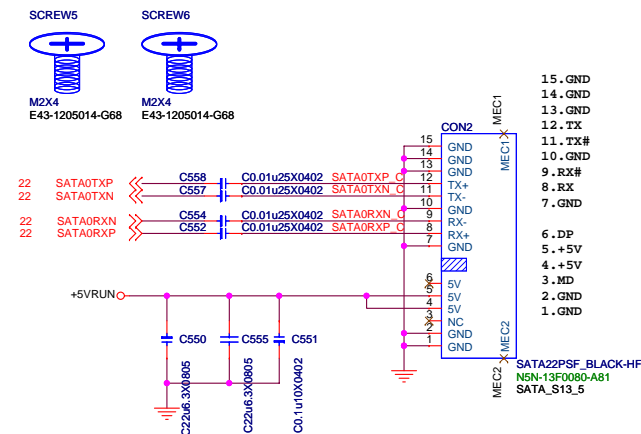


Title		Card Reader	
Size	Document Number	Rev 11	
Custom	MS-175A1		
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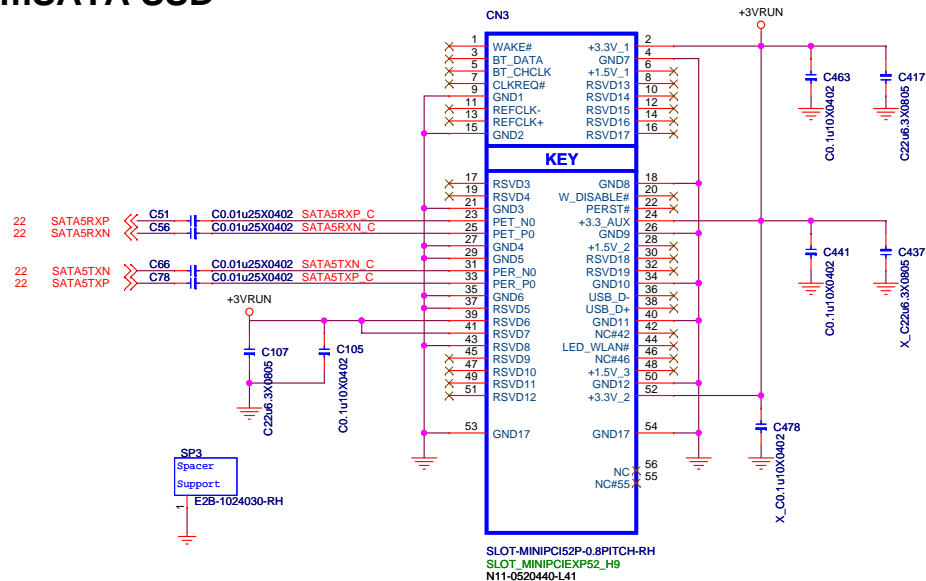
# SATA HDD



# SATA ODD

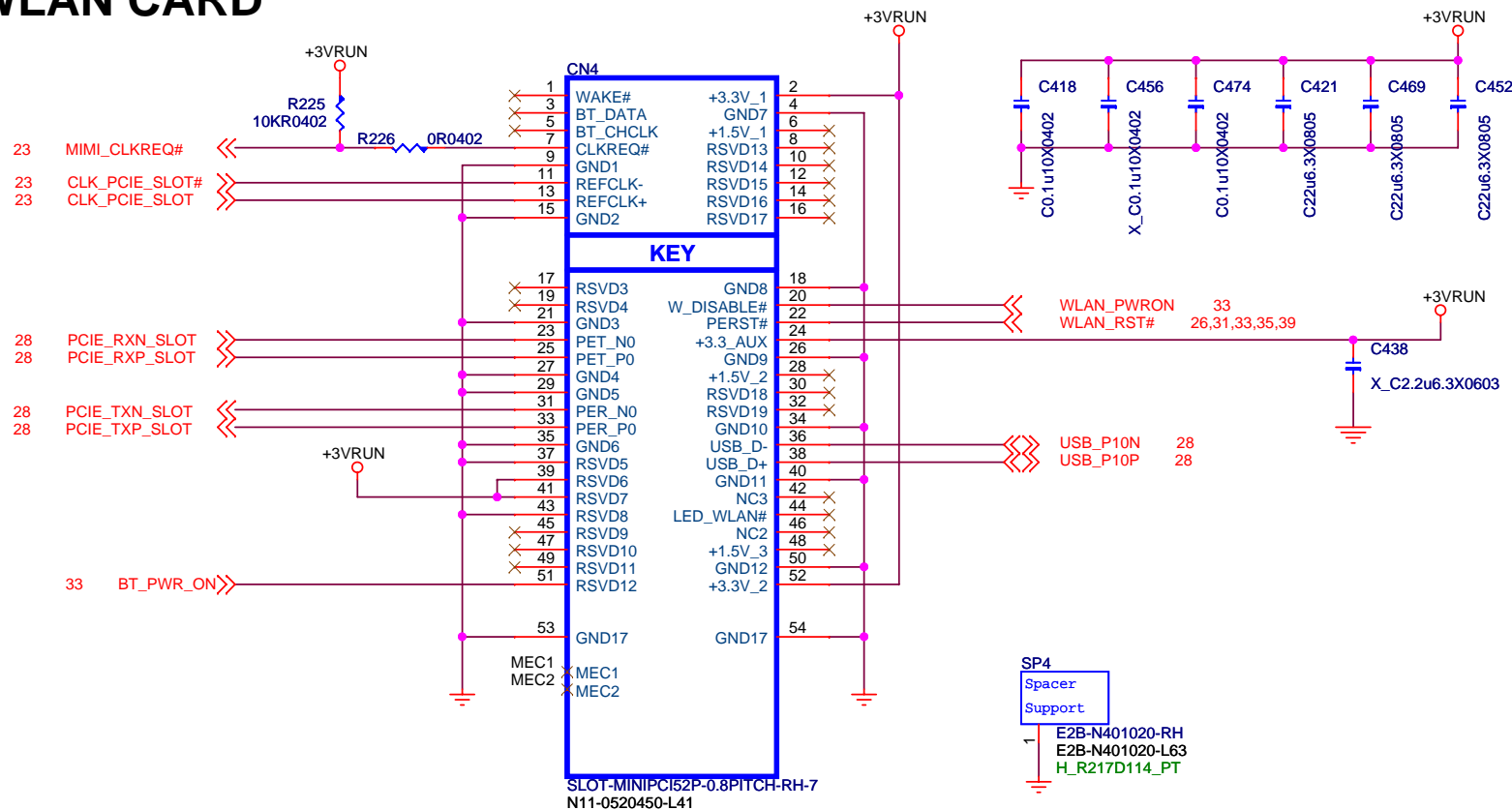


# mSATA SSD

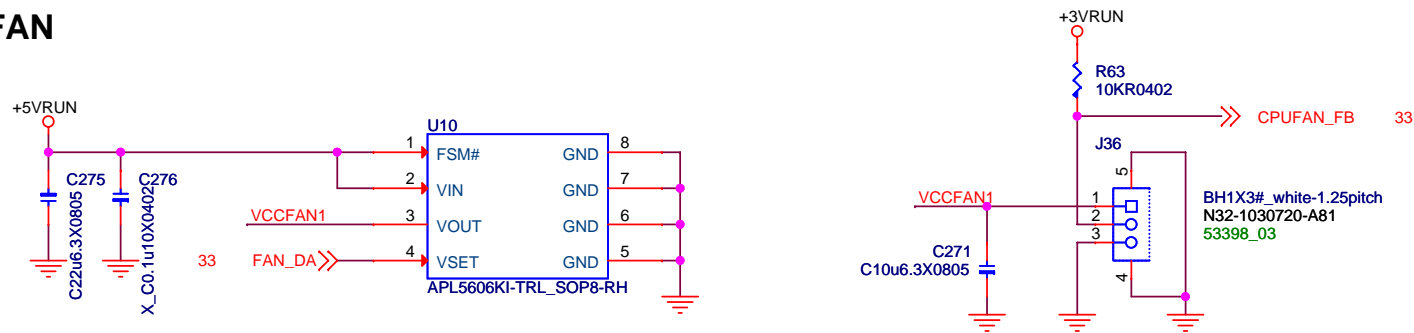


Title		HDD/ODD/SSD	
Size	Document Number	Rev	11
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# WLAN CARD

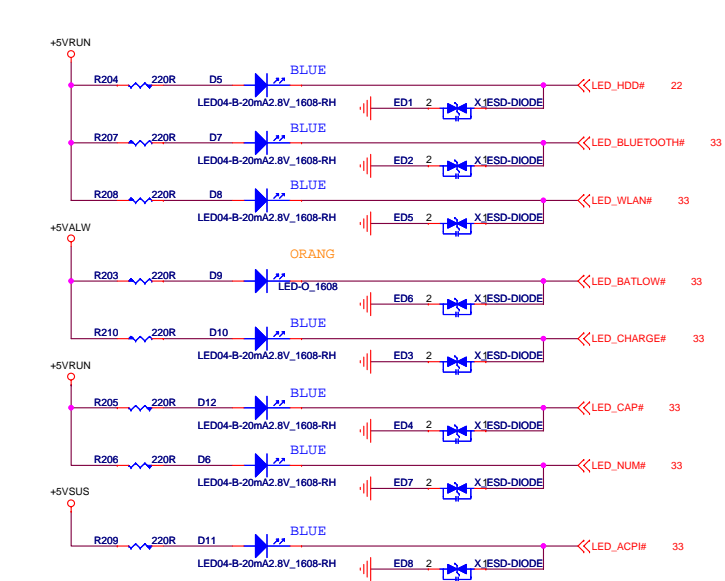


## CPU FAN

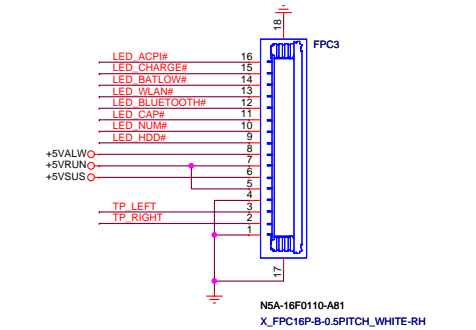


Title		WALN/FAN	
Size	Document Number	MS-175A1	
Custom			
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		Rev	11

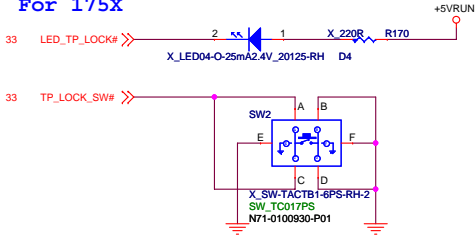
For 16GH



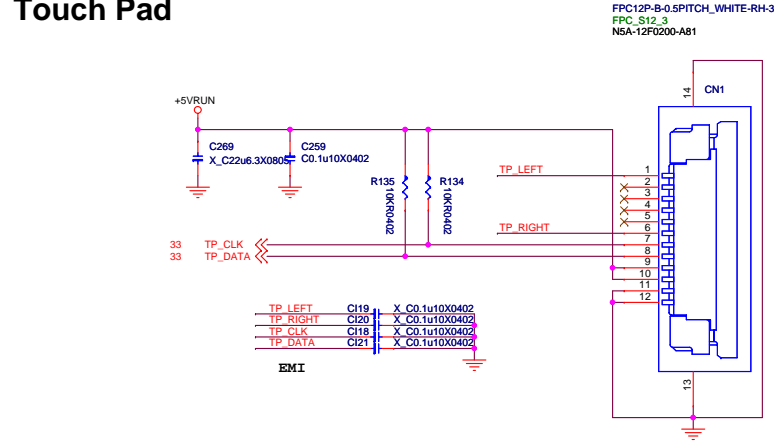
For MS-175AD board



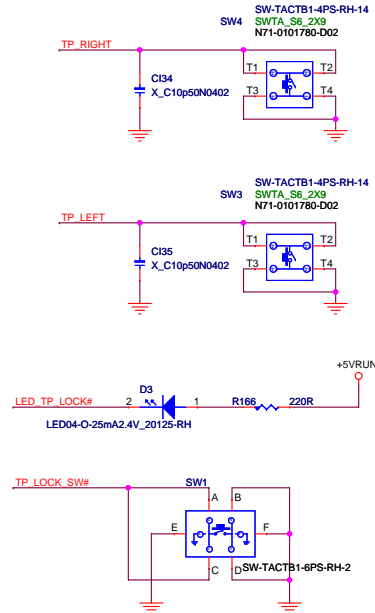
For 175X



Touch Pad



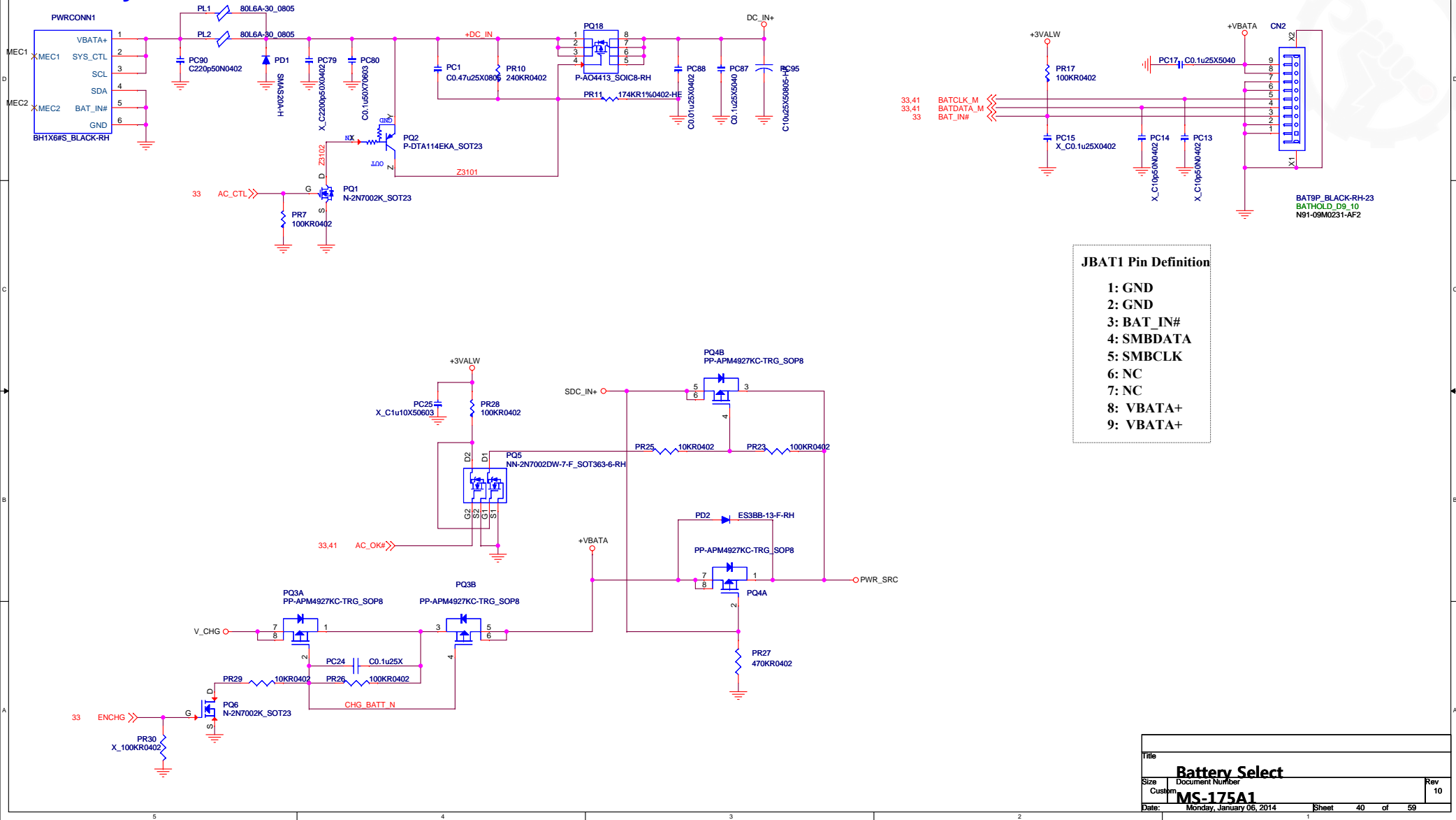
For 16GH



Title		
LED/TP		
Size	Document Number	Rev
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# Battery Select



## JBAT1 Pin Definition

- 1: GND
- 2: GND
- 3: BAT\_IN#
- 4: SMBDATA
- 5: SMBCLK
- 6: NC
- 7: NC
- 8: VBATA+
- 9: VBATA+

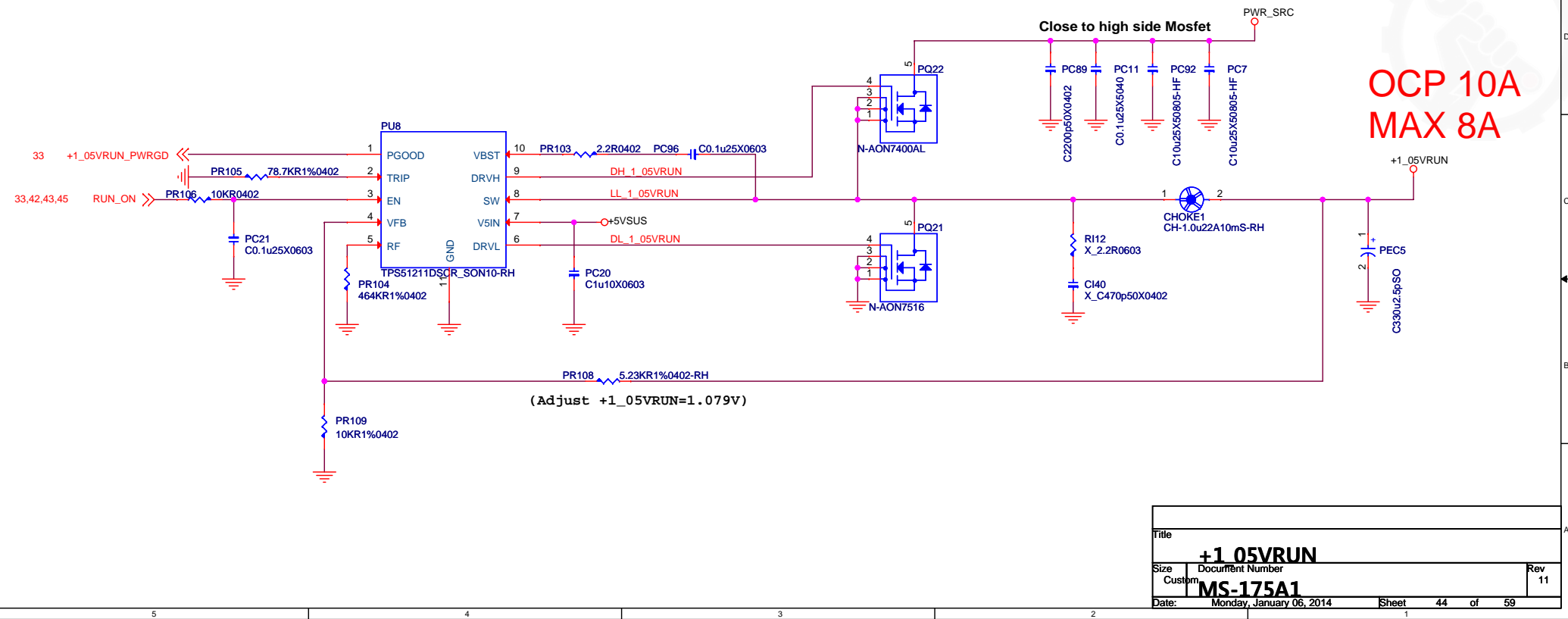
Title		
Battery Select		
Size	Document Number	Rev
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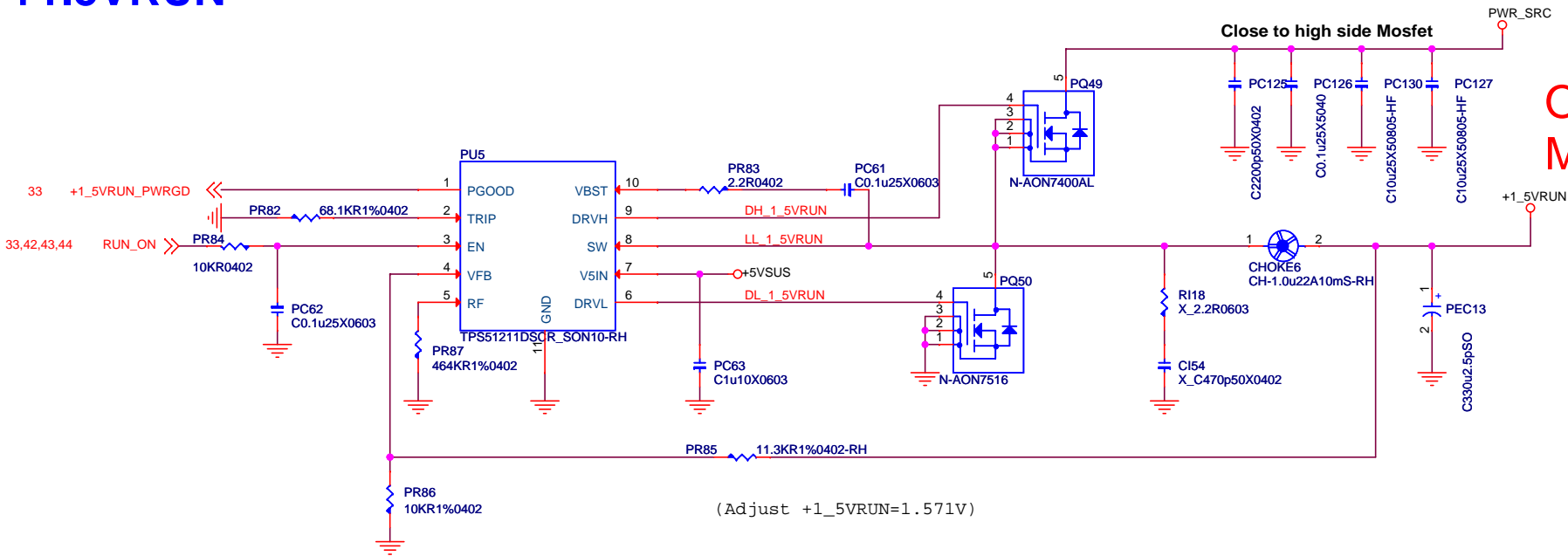




# +1.05V<sub>RUN</sub>



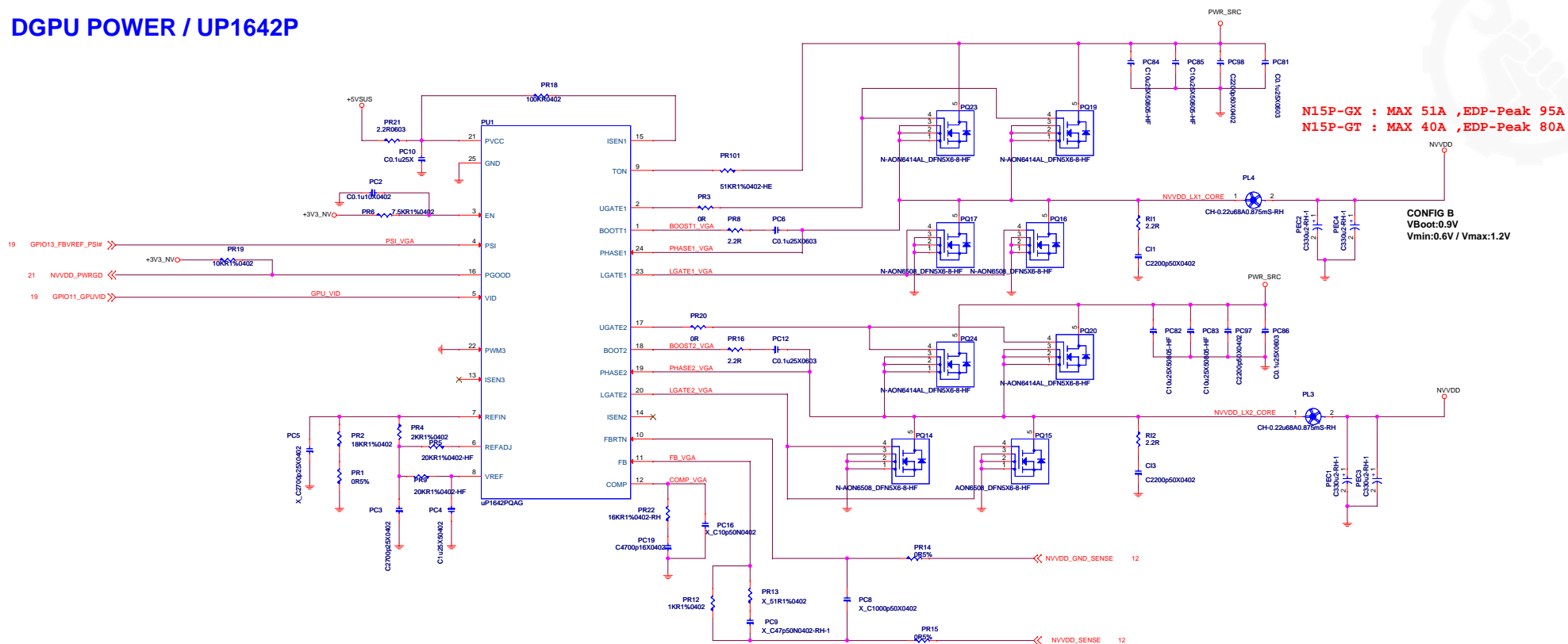
# +1.5V RUN



OCP 13A  
MAX 11A

Title		
+1.5V RUN		
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# DGPU POWER / UP1642P



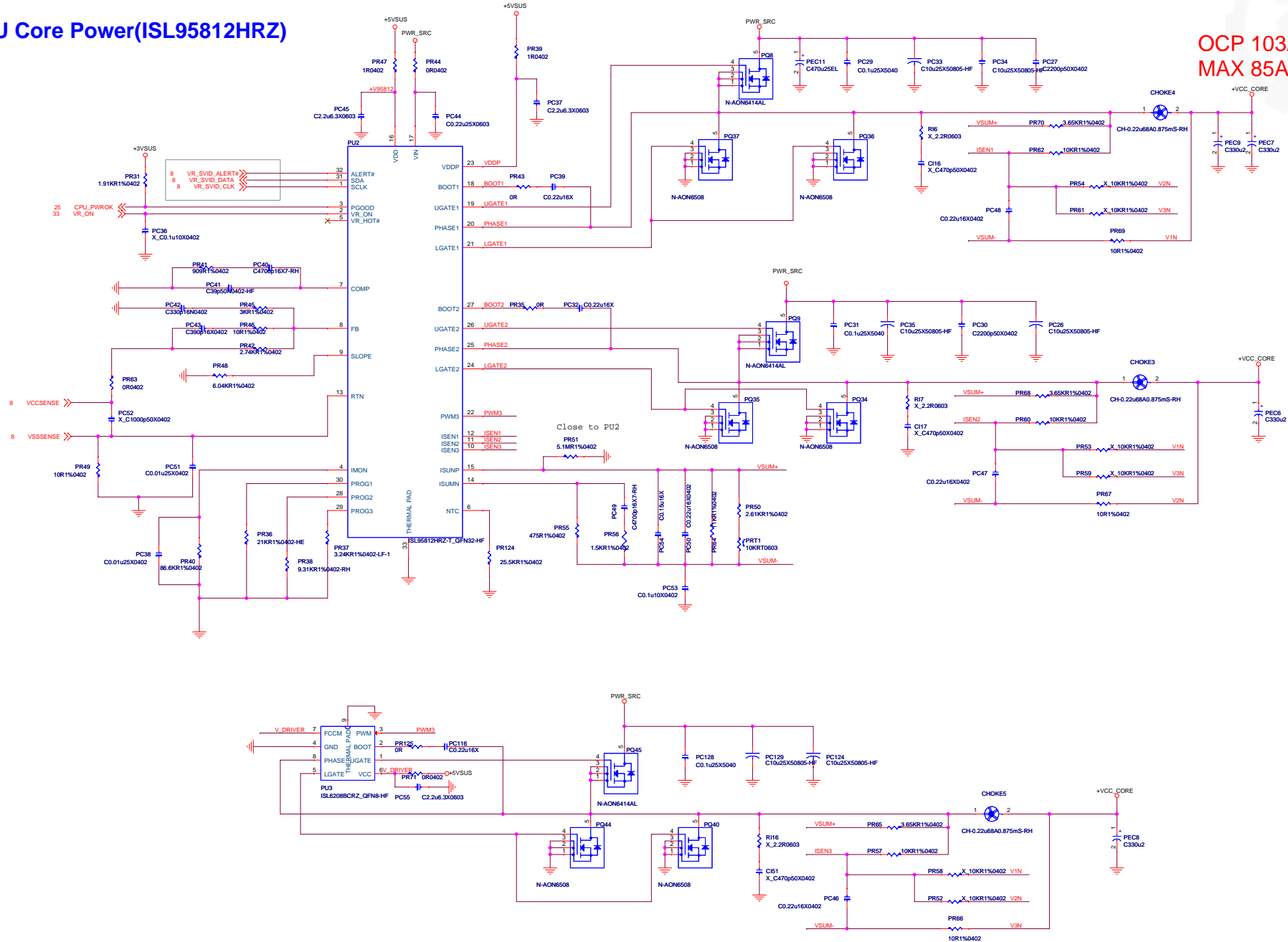
N15P-GX : MAX 51A ,EDP-Peak 95A  
N15P-GT : MAX 40A ,EDP-Peak 80A

CONFIG B  
VBoot:0.9V  
Vmin:0.6V / Vmax:1.2V

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# CPU Core Power(ISL95812HRZ)

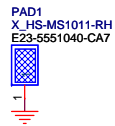
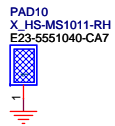
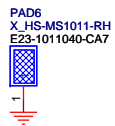
OCP 103A  
MAX 85A



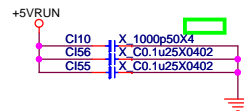
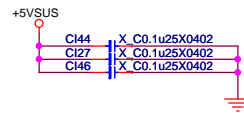
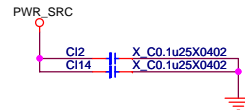
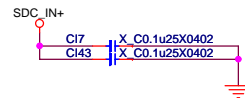
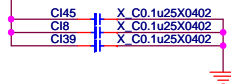
Title	CPU Power
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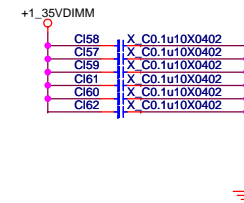
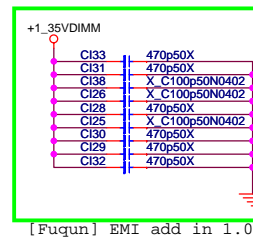
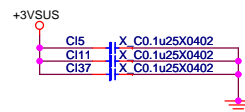
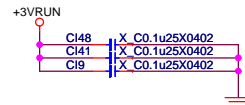
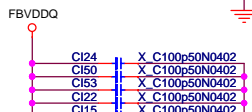
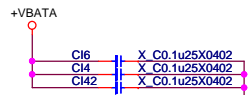
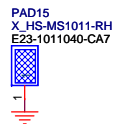
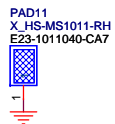
## Top Spring



PWR\_SRC  
Close to PQ31, PQ34



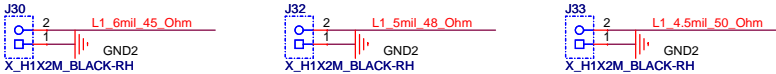
## BOT Spring



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EMI			
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Single-end

TOP



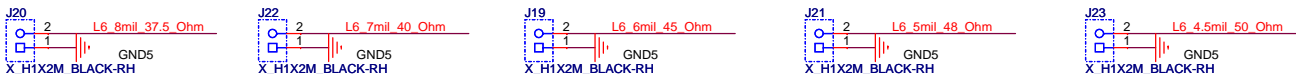
IN3



IN4

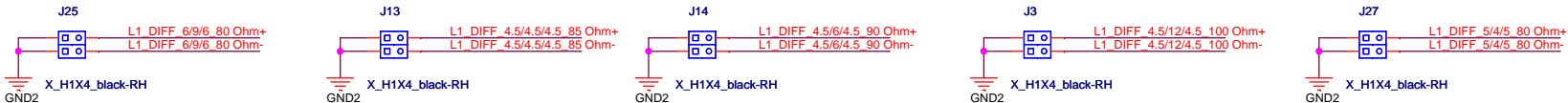


BOTTOM

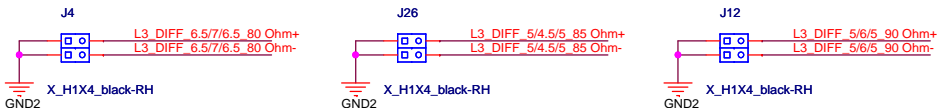


Differential signal

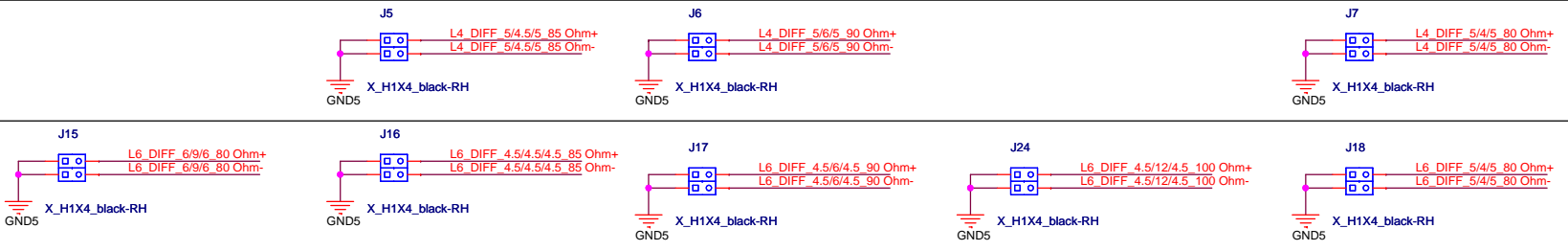
TOP



IN3



IN4



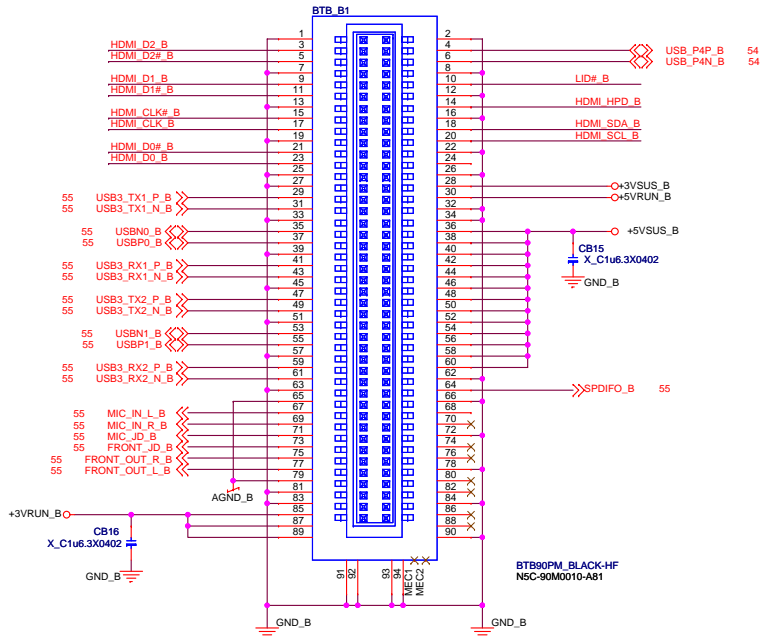
Title		
Impedance		
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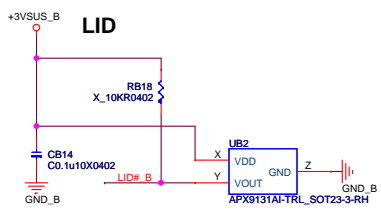


(才凹 board to board CONN1: HDMI,Audio, LED,LID)

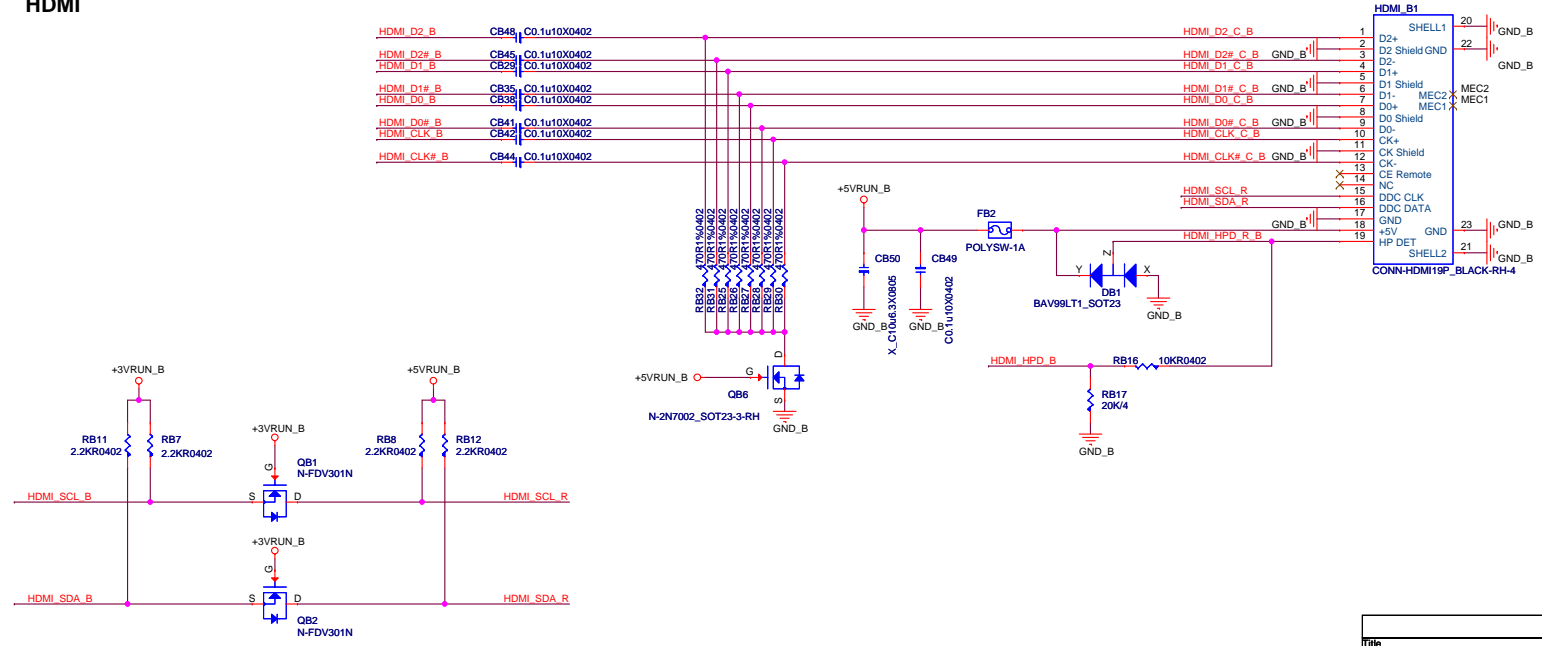
USB2.0 NC For 16GC



Hall Switch

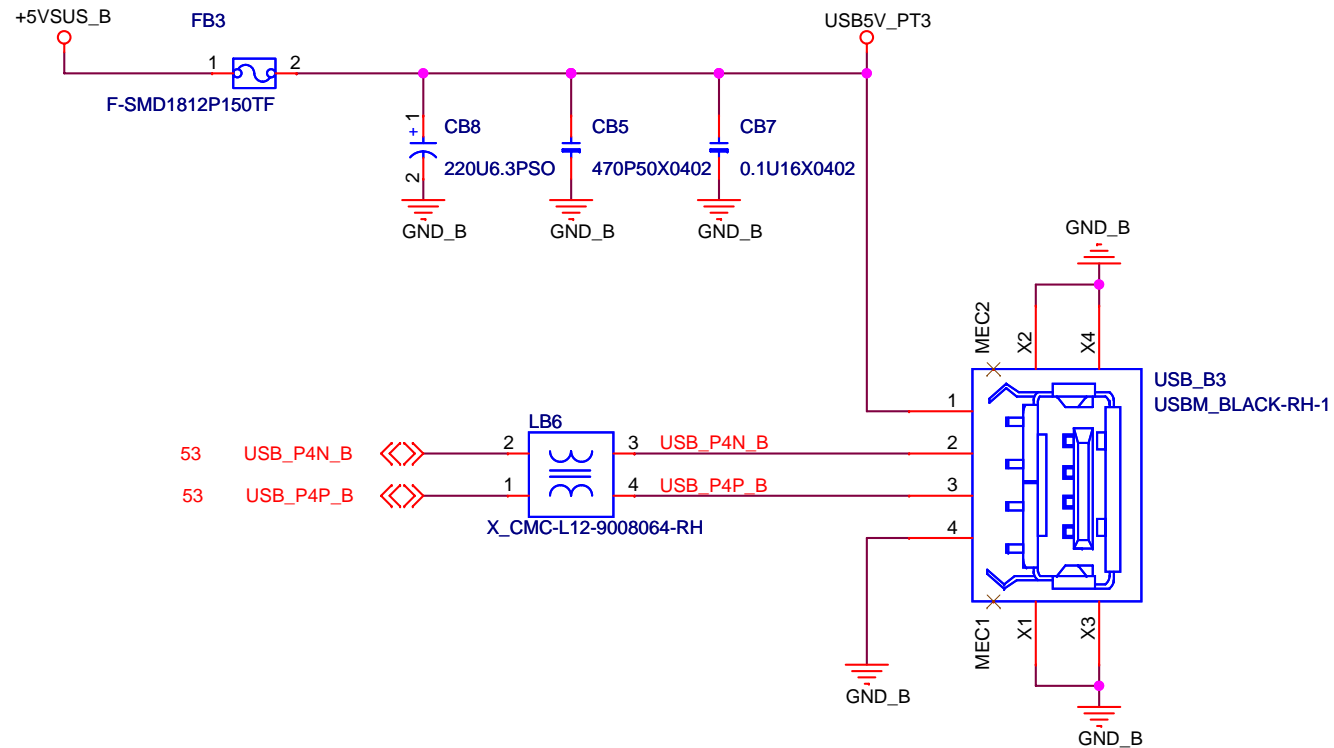


HDMI



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[B] BTB CONN / HDMI				
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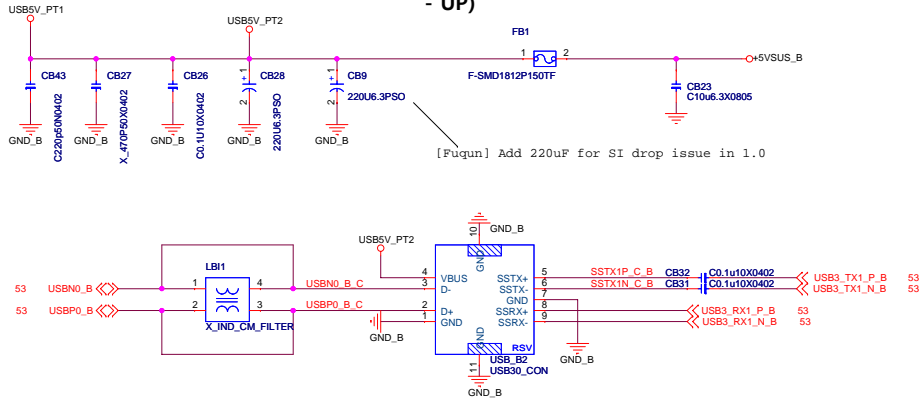
# USB2.0



Title			
[B] USB2.0			
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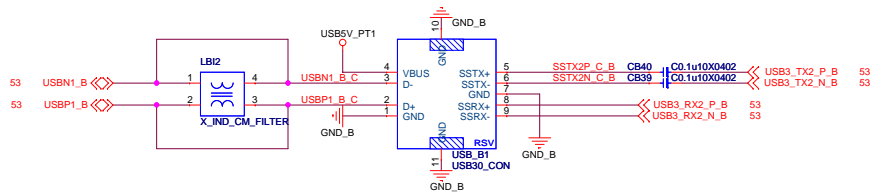
## USB 3.0 CNT1

### (USB3.0 Left Side - UP)

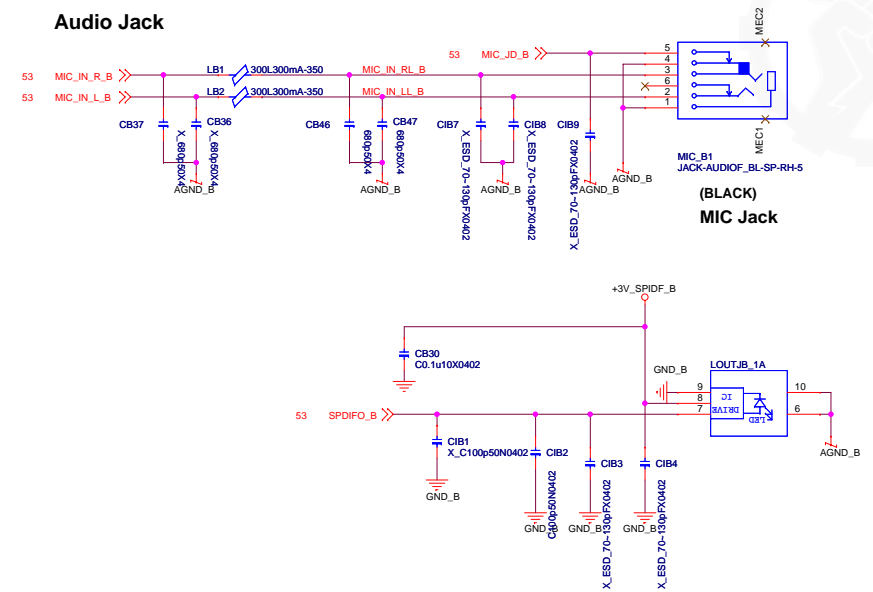


## USB 3.0 CNT2

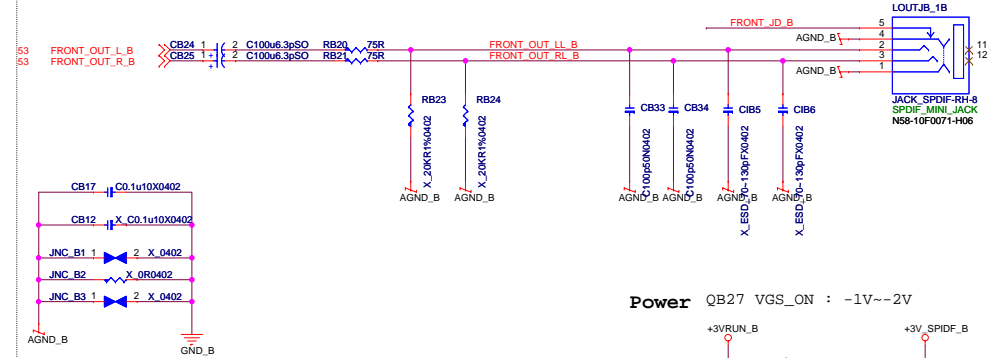
### (USB3.0 Left Side - Down)



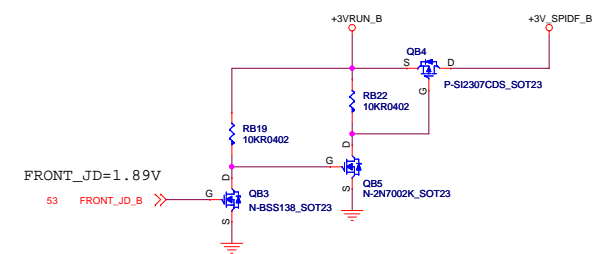
## Audio Jack



[Fuqun] ME change WLAN connect P/N from N58-10F0061-K06 to N58-10F0071-H06



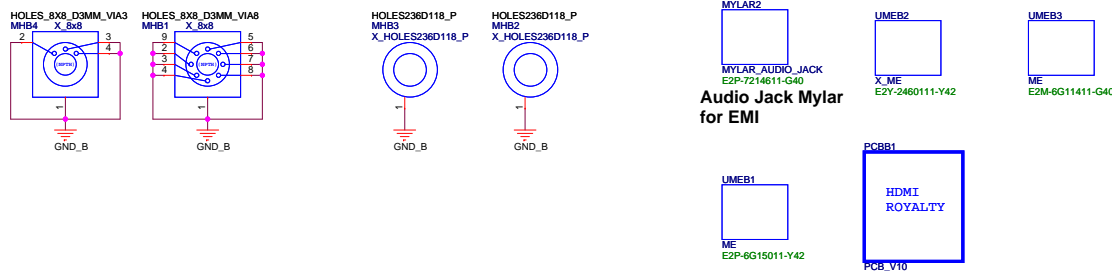
Power QB27 VGS\_ON : -1V~-2V



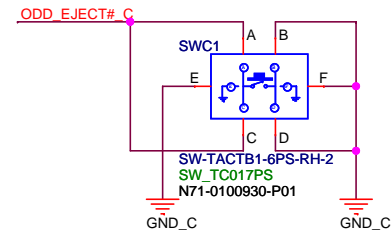
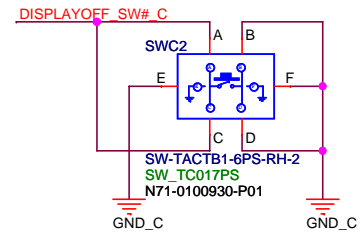
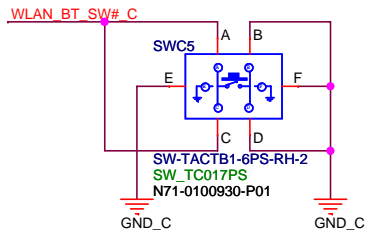
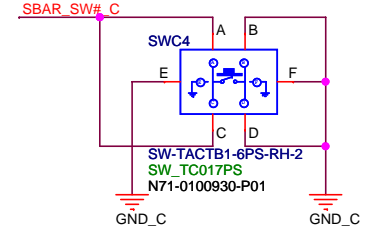
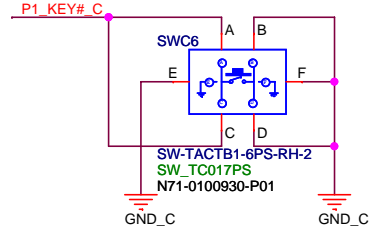
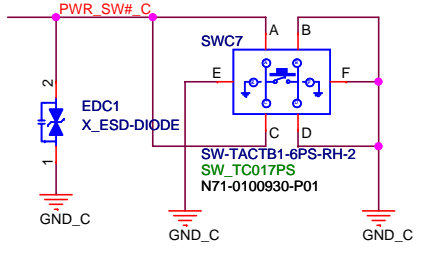
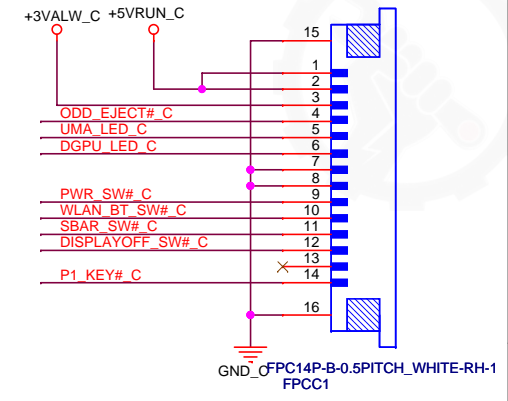
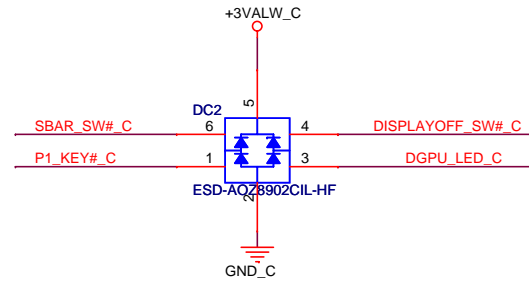
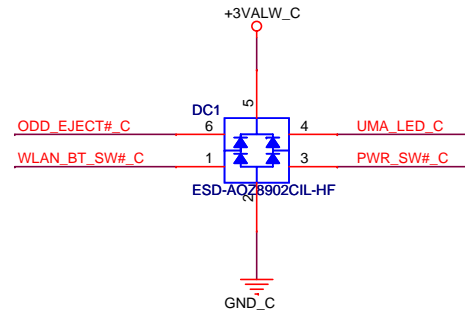
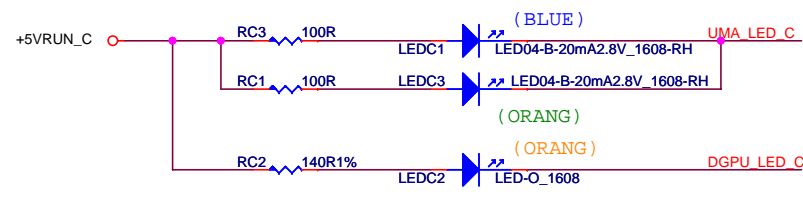
## SCREW HOLE

## BTB STANDOFF

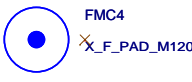
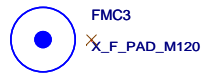
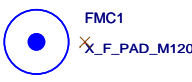
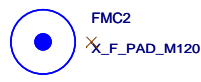
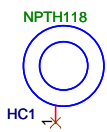
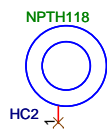
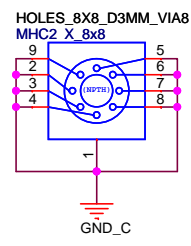
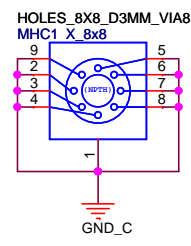
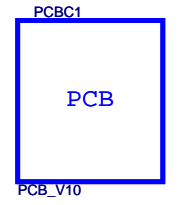
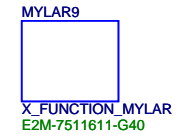
Top side



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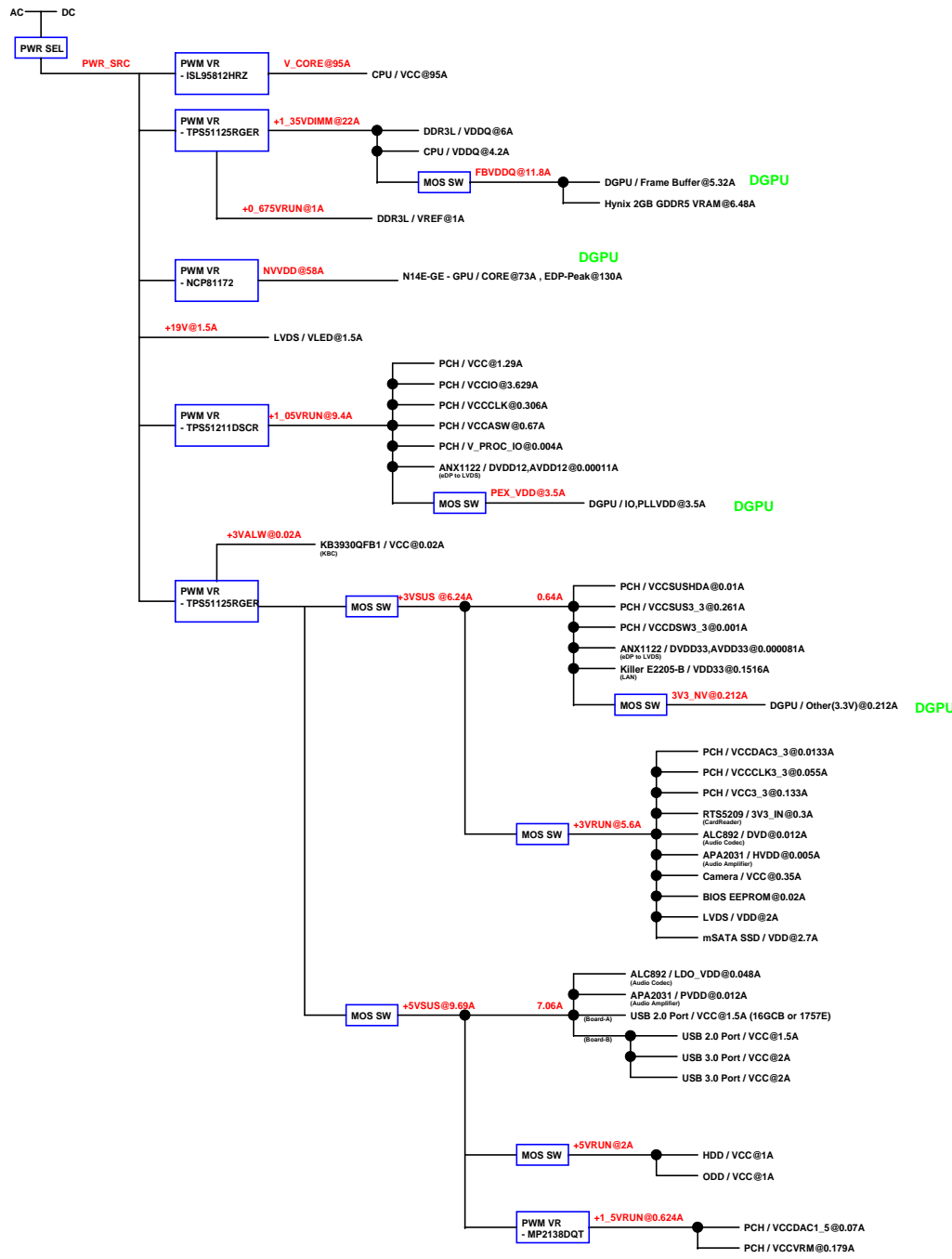


[Fuqun] EMI remove E2M-7511611-G40

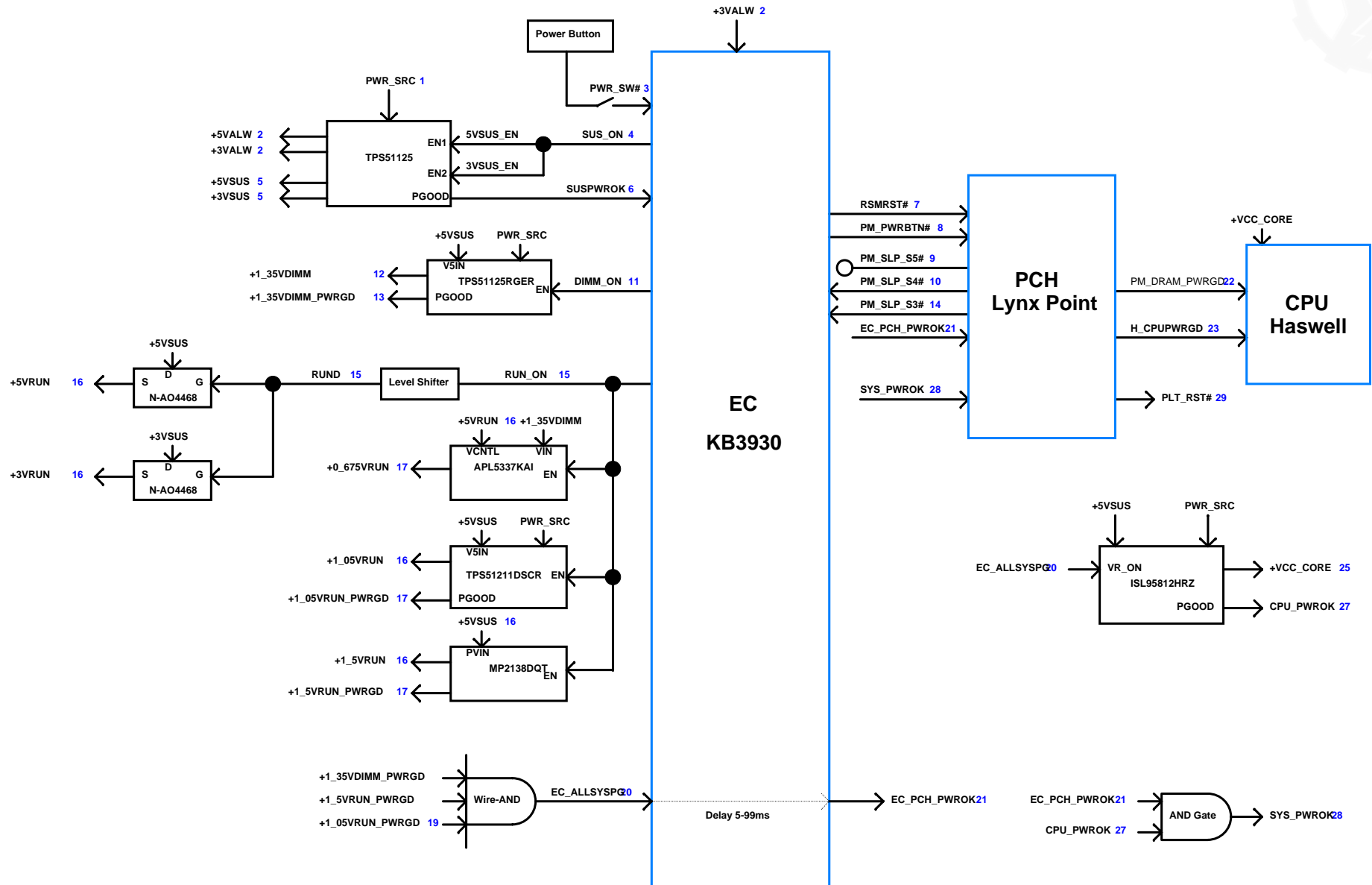


Title		
[C] PowerSW Board		
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# 1757 Power Delivery Chart



# 1757 Power on Block Diagram



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# Power on Sequence

G3 -> S0

