



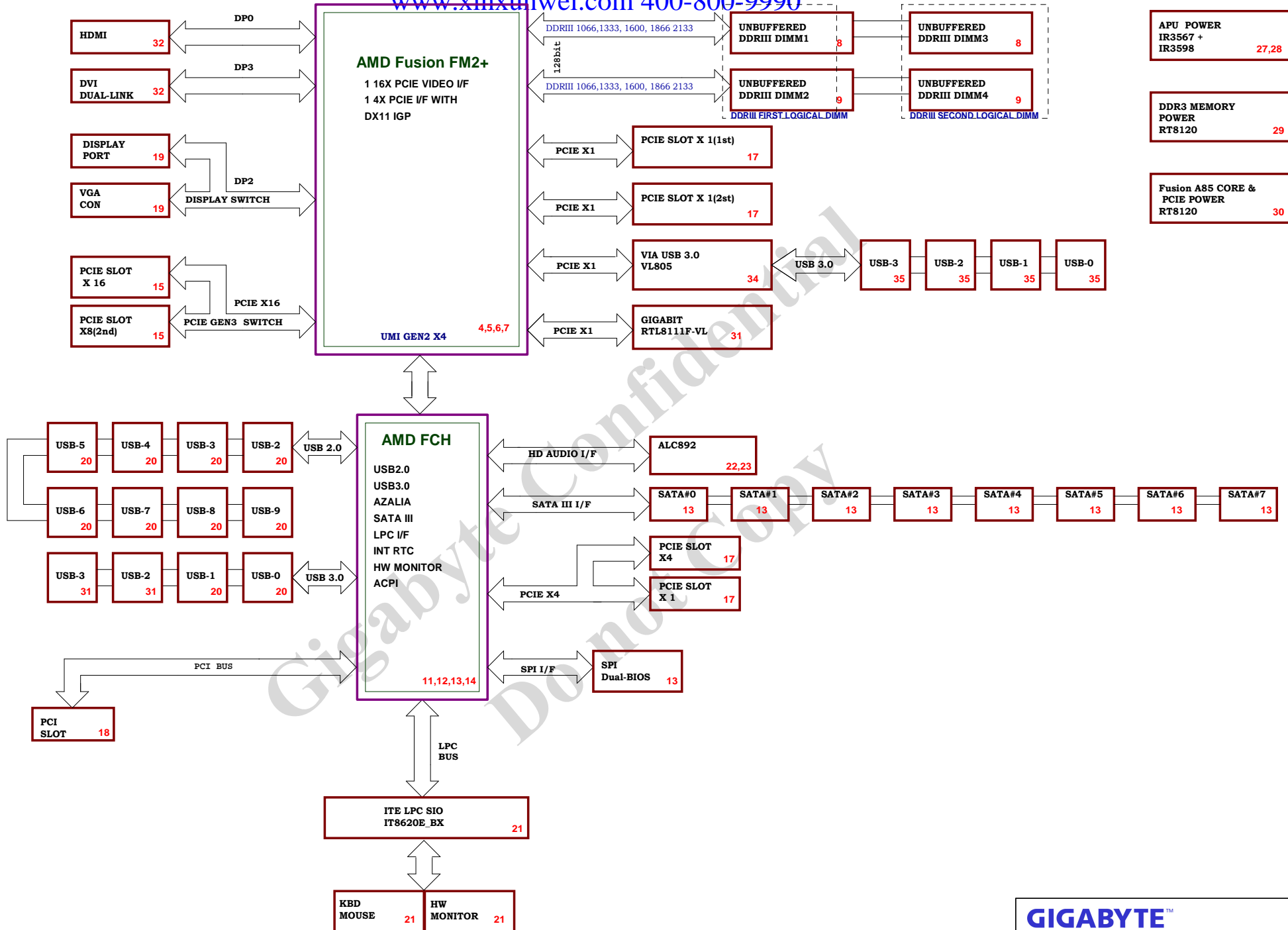
PAGE	TITLE
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Title			
COVER SHEET			
Size	Document Number	Rev	
Custom	GA-F2A88X-UP4	3.02	
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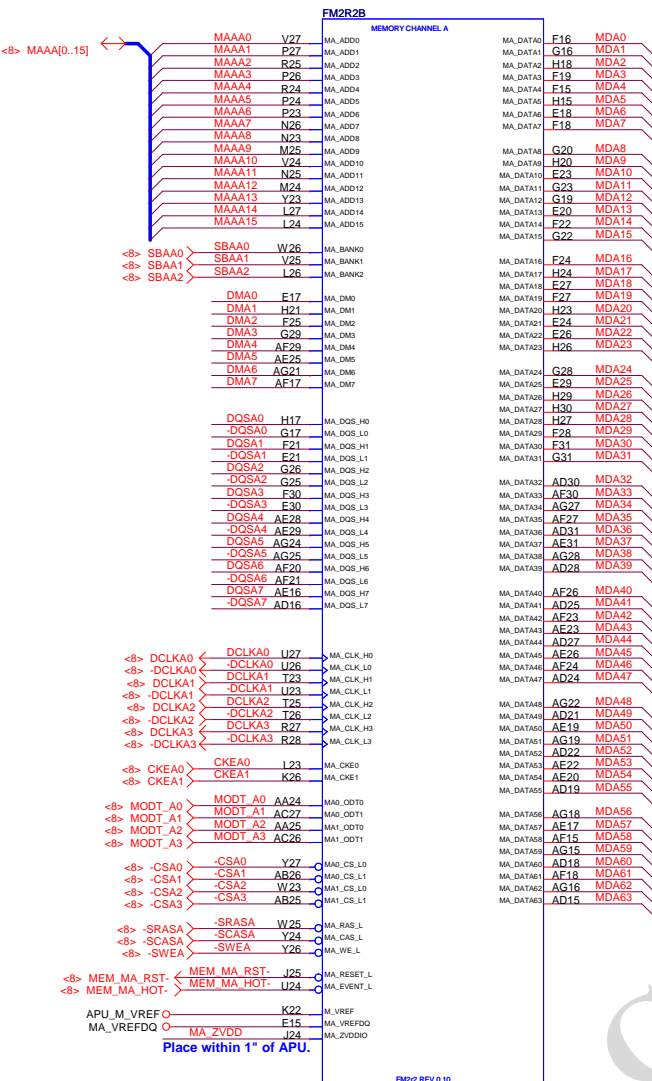
**Version: 3.02**  
P-Code: U13057-0  
9MF288XP4-00

[illegible][illegible]

				
Title				
BOM & PCB HISTORY				
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**GIGABYTE**

Title			BLOCK DIAGRAM	
Size	Customer	Document Number	Rev	
		GA-F2A88X-UP4	3.02	
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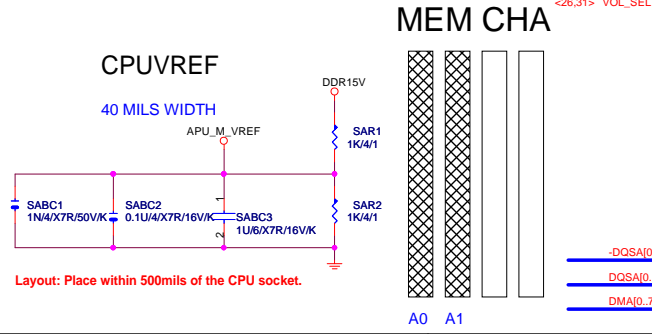


FM2 DDR Layout Guide Ver:1.0

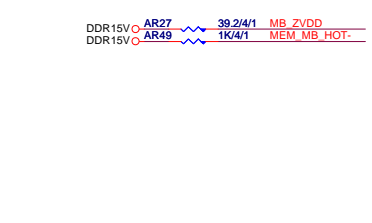
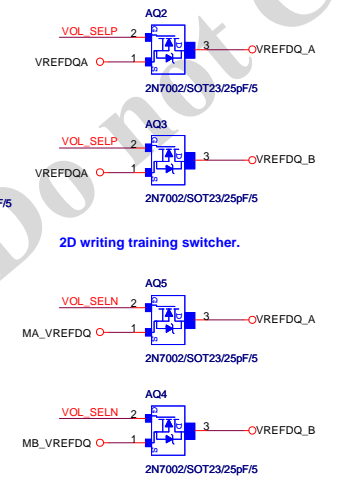
	Impedance	4L-1080-20Z
Clocks	72 ohm	20/7.5/7.5/20
ADDR, CMD, Control	40 ohm	7 mil
DQS	90 ohm	20/5/6/5/20
DATA, DM	40 ohm	7 mil
Others	40-60 ohm	7 mil

FM2 DDR Layout Guide Ver:1.01

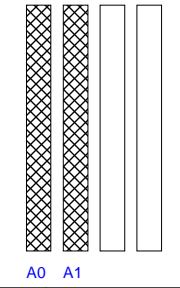
	Impedance	4L-1080-20Z
Clocks	72 ohm	20/8/5/8/20
ADDR, CMD, Control	40 ohm	8 mil
DQS	90 ohm	20/4.5/7.5/4.5/20
DATA, DM	40 ohm	7 mil
Others	40-60 ohm	4 mil



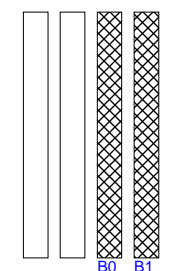
VOL_SEL	0	1
	KAVERI (FM2R2)	TRINITY (FM2)



### MEM CHA



### MEM CHB

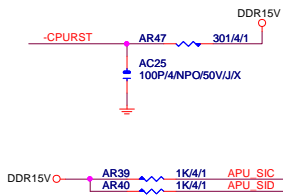


**GIGABYTE™**

Title: **CPU DDRIII**

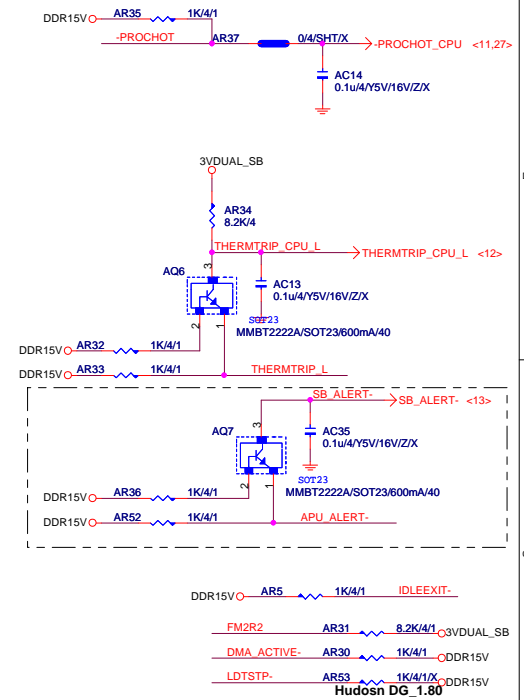
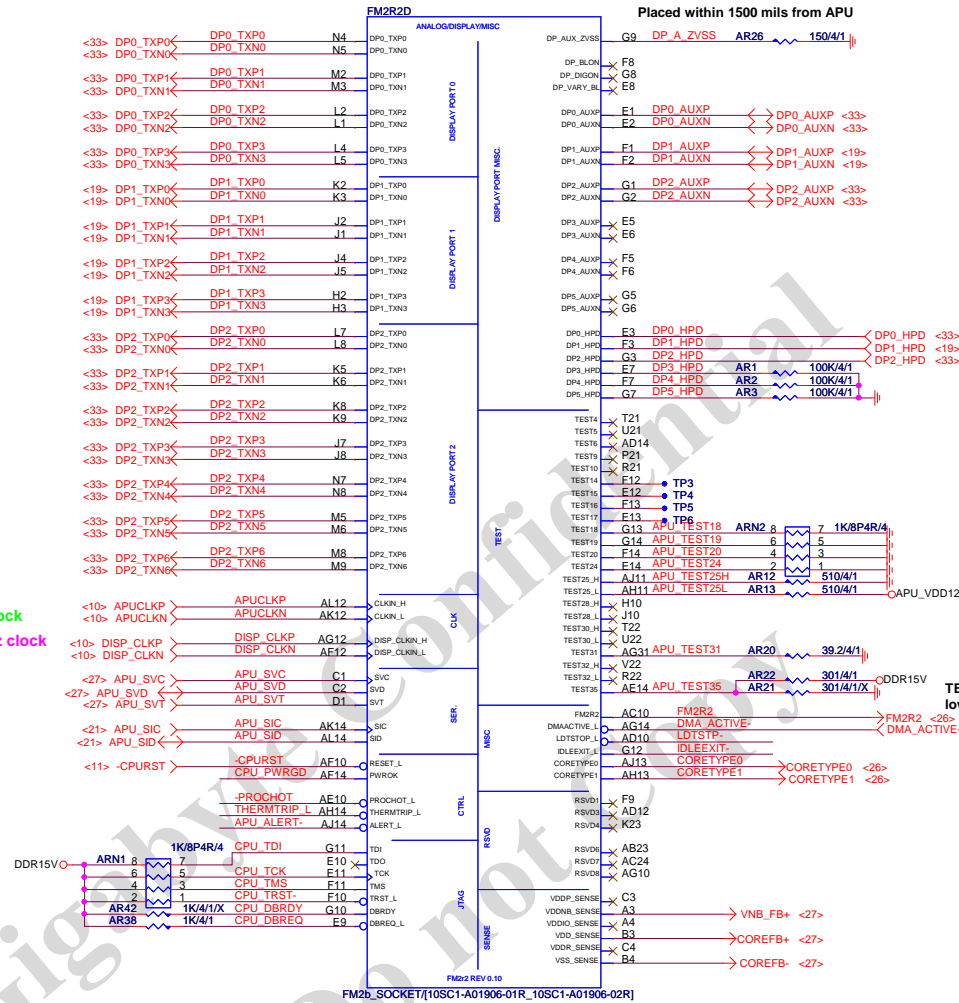
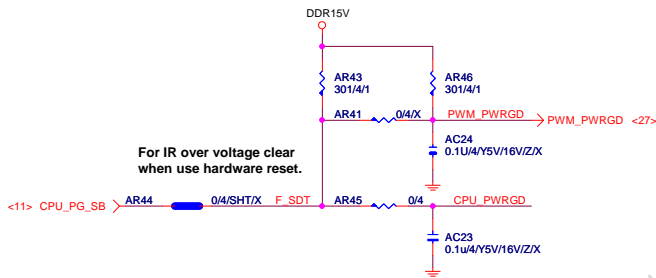
Size: Custom Document Number: **GA-F2A88X-UP4** Rev: **3.02**

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## FM2 CPU Clock Layout Guide

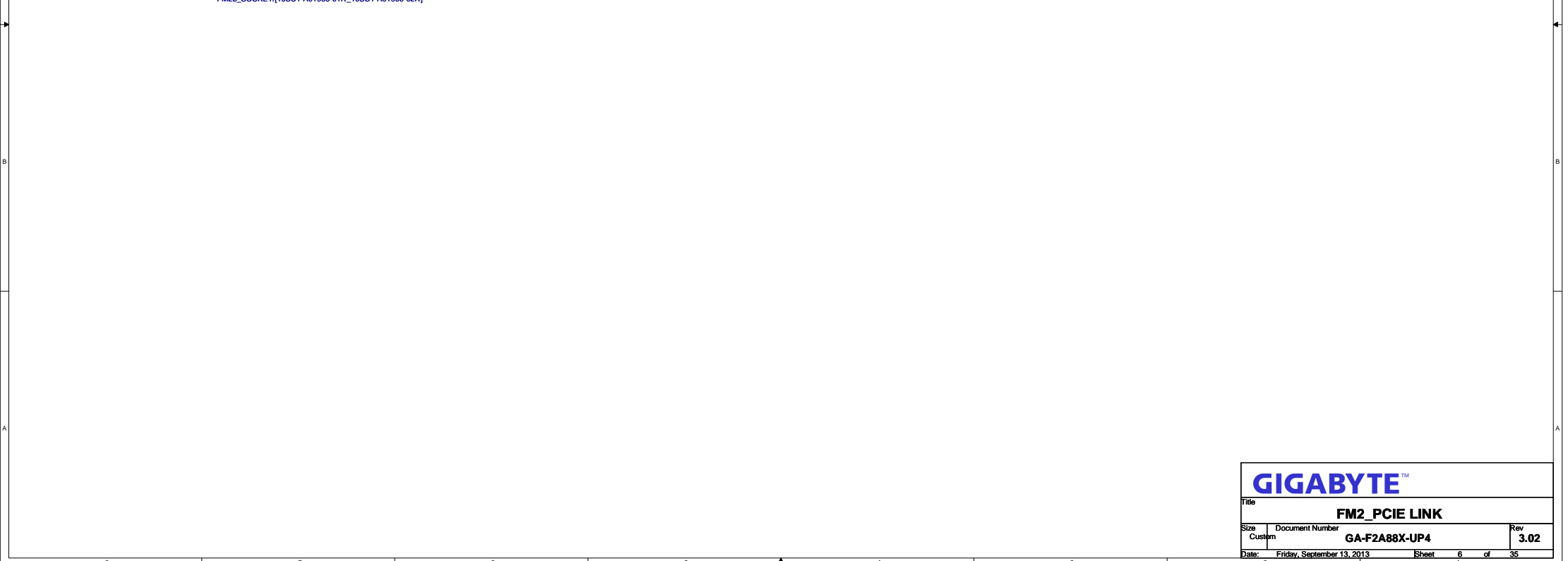
	Impedance	4L-1080
APU Clock	85 ohm	20/4.5/7.5/4.5/20
DISP Clcock	85 ohm	20/4.5/7.5/4.5/20
DP TX/RX	85 ohm	20/4.5/7.5/4.5/20
	55 ohm	4 mil
	40-60 ohm	7 mil



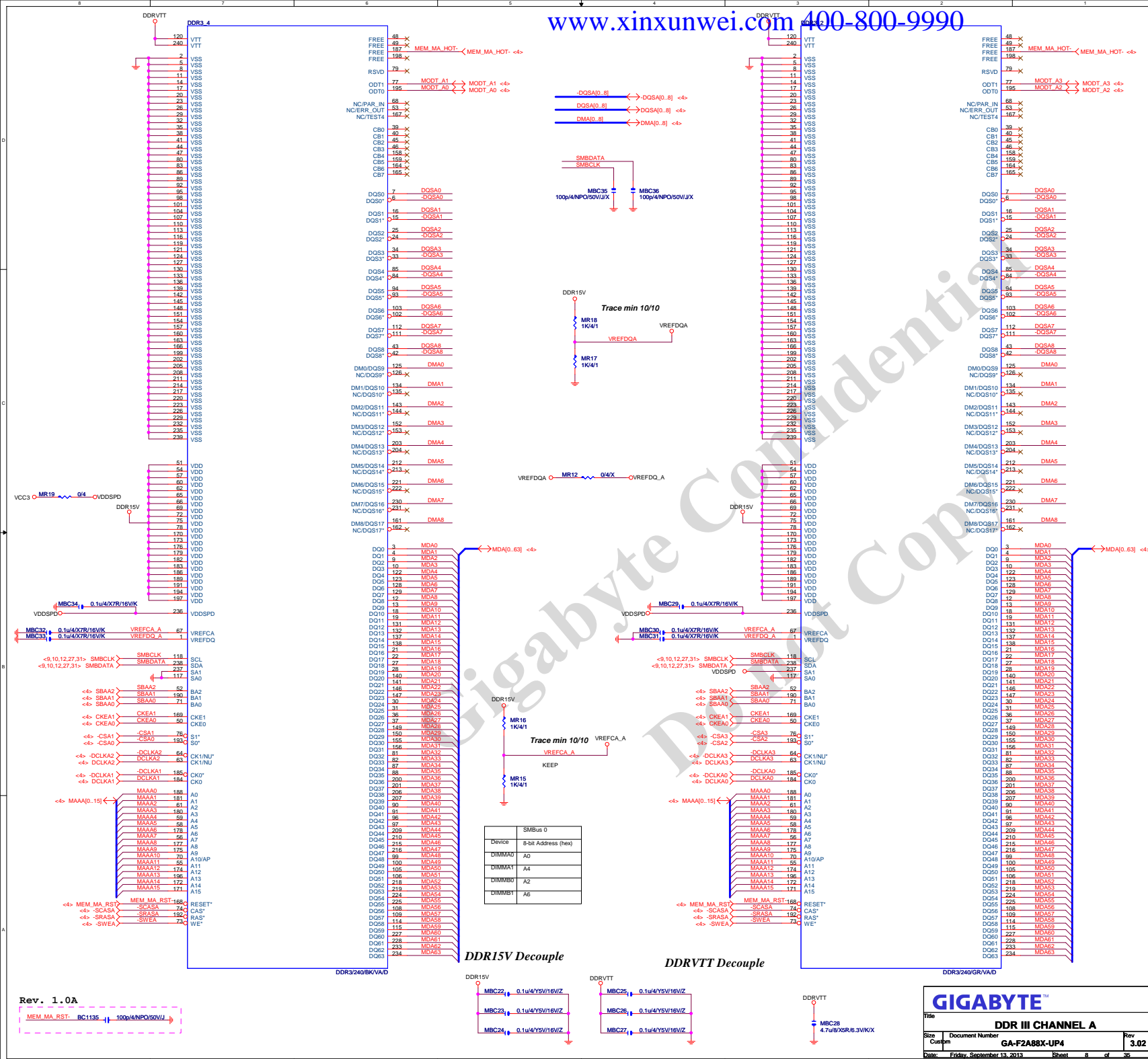
**TEST35: high=>HDMI enable,  
low=>HDMI disable.**

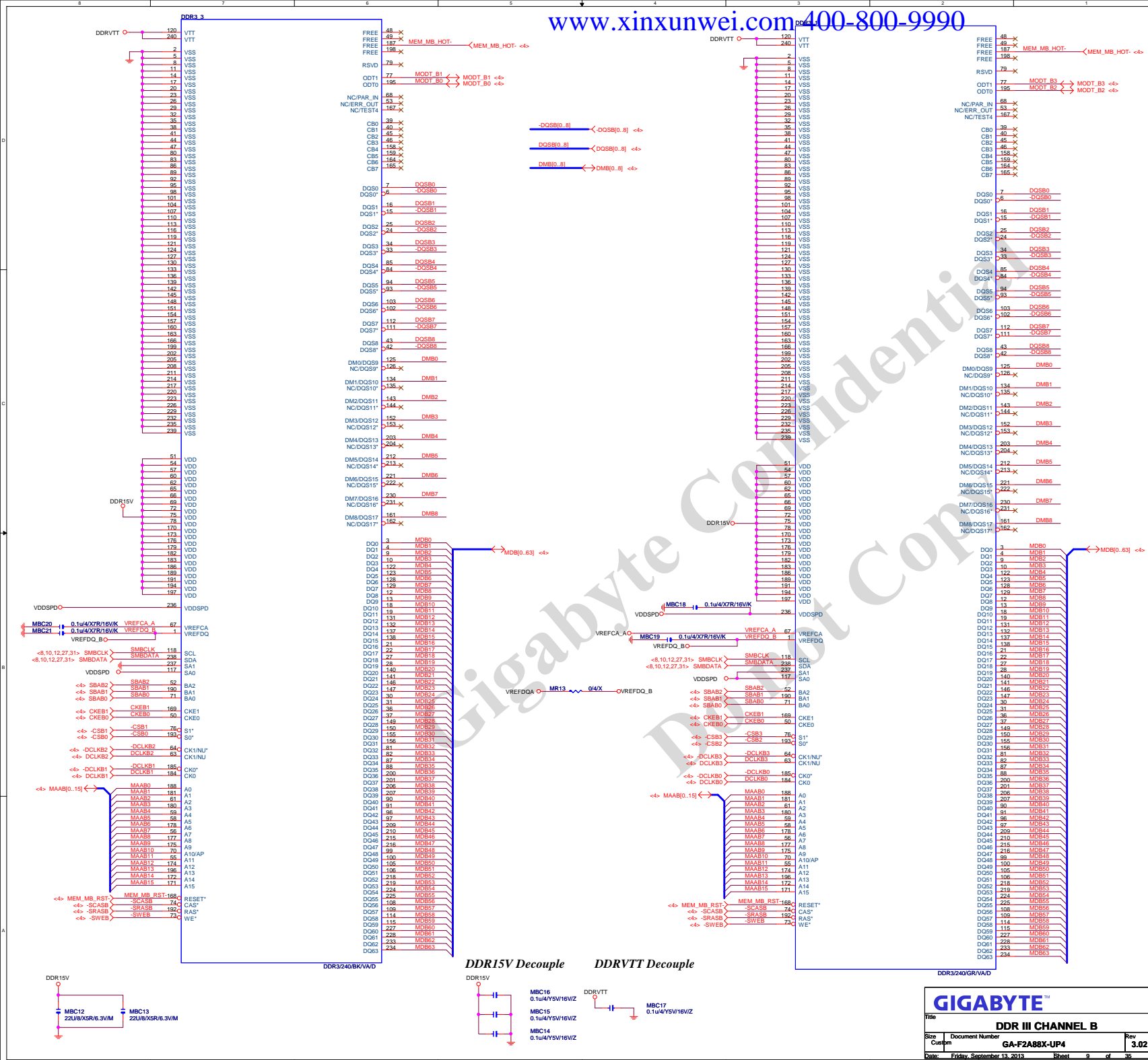
	APU FM2
Group A	VDDA25:1.8~2.7V/0.5A
Group A	DDR15V:0.8~2.3V/30A
Group B	VCORE: 0.8~2.0V/120A
Group B	VCORE_NB:1.2V/50A
Group B	VDDP:1.2V/5A
Group B	VDDR:1.2V/5A

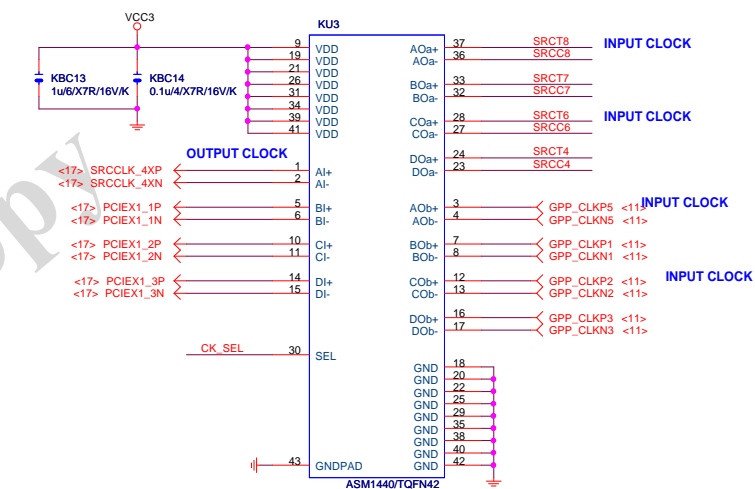
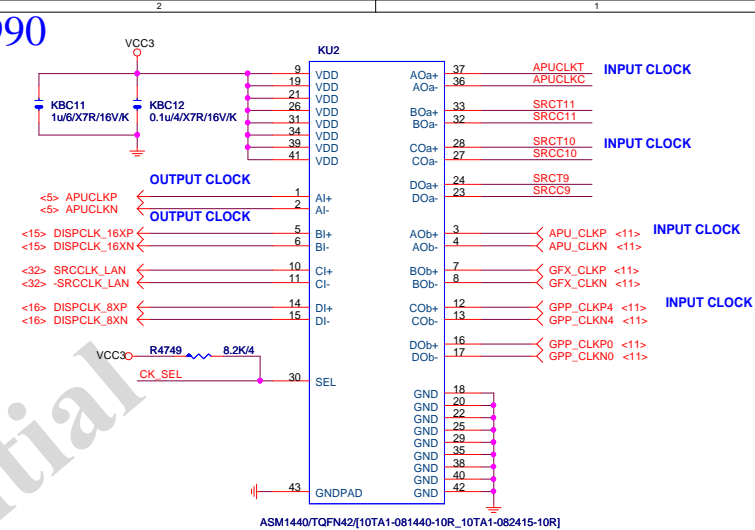
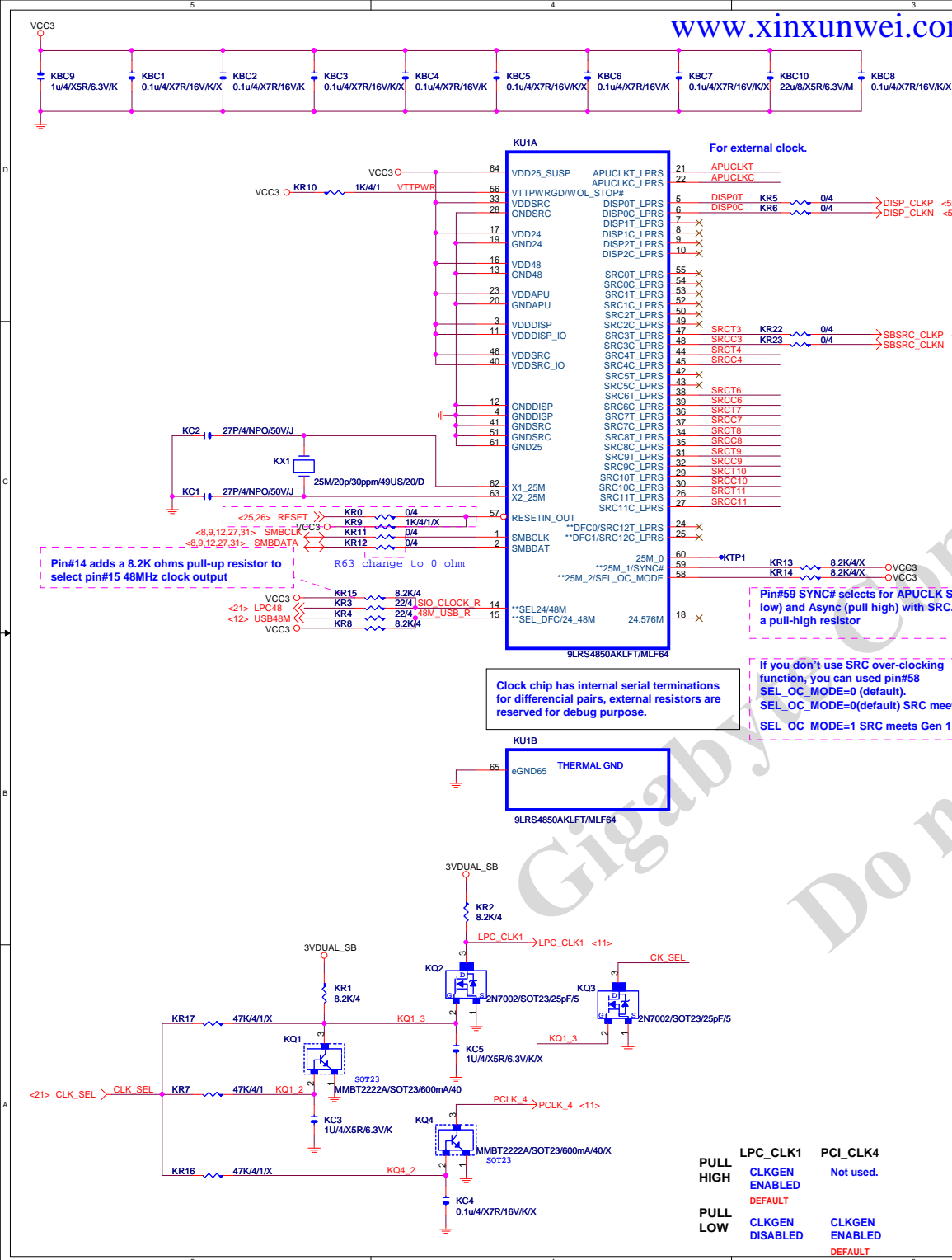
**Group A must early than Group B**











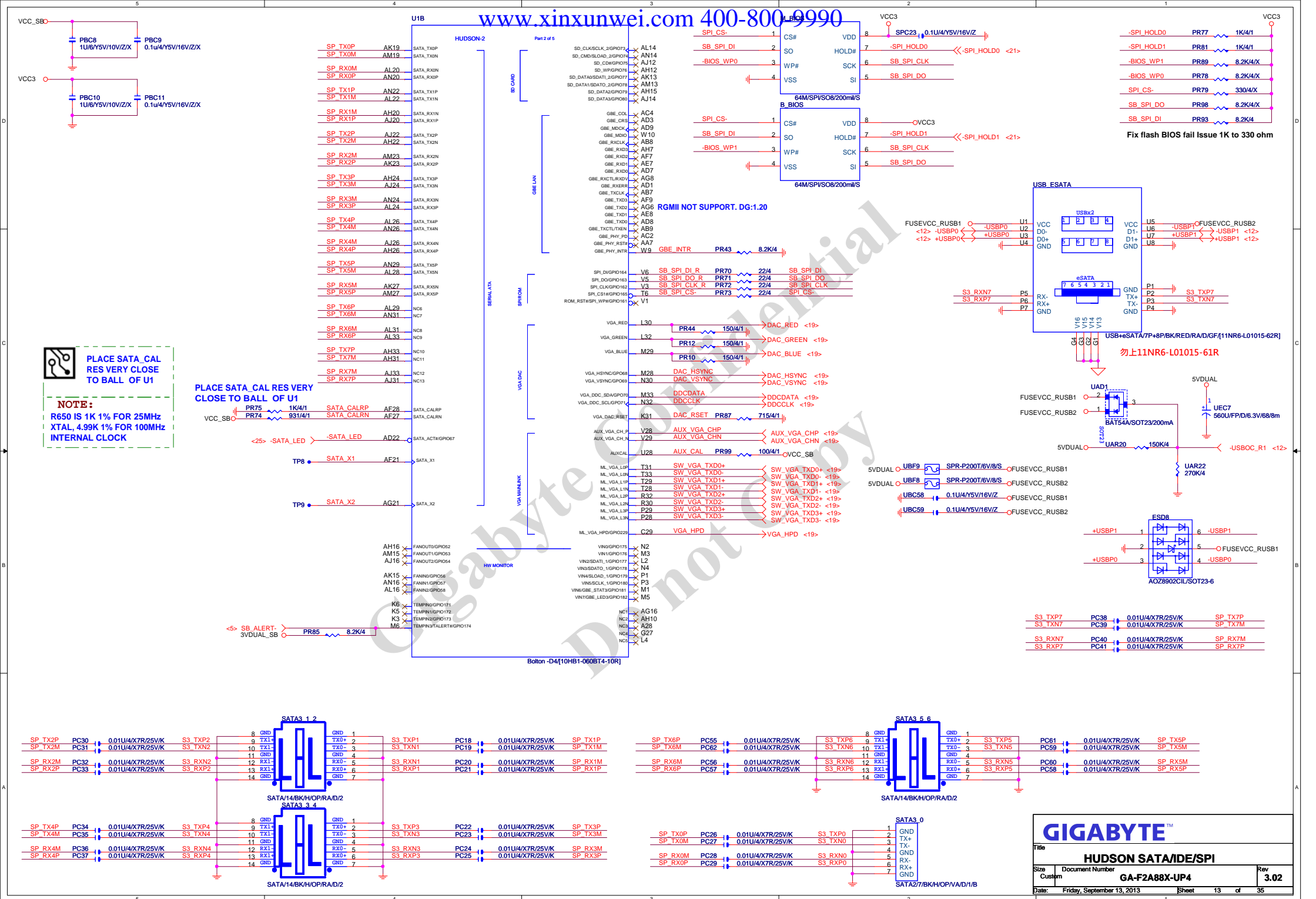
Function	SEL	CLK source
xl--> xOa	L	External
xl--> xOb	H	Internal

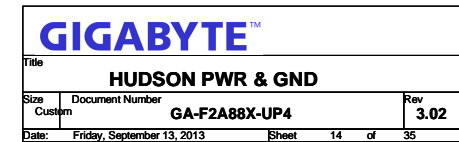
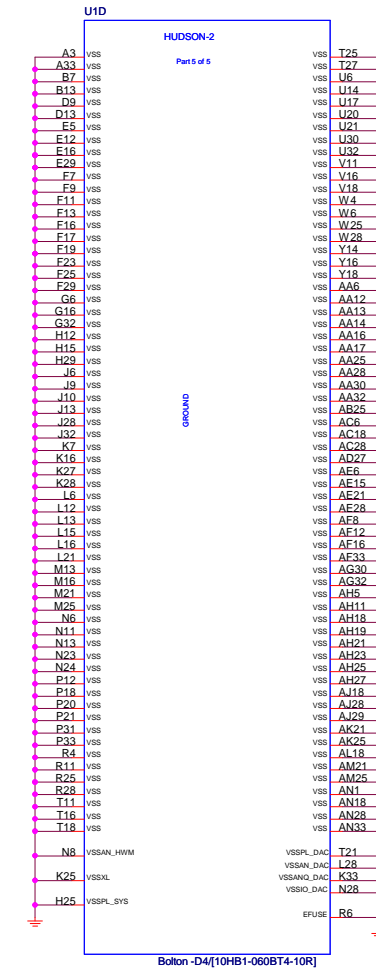
INPUT from Clock Gen

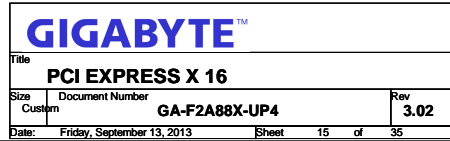
INPUT from South Bridge

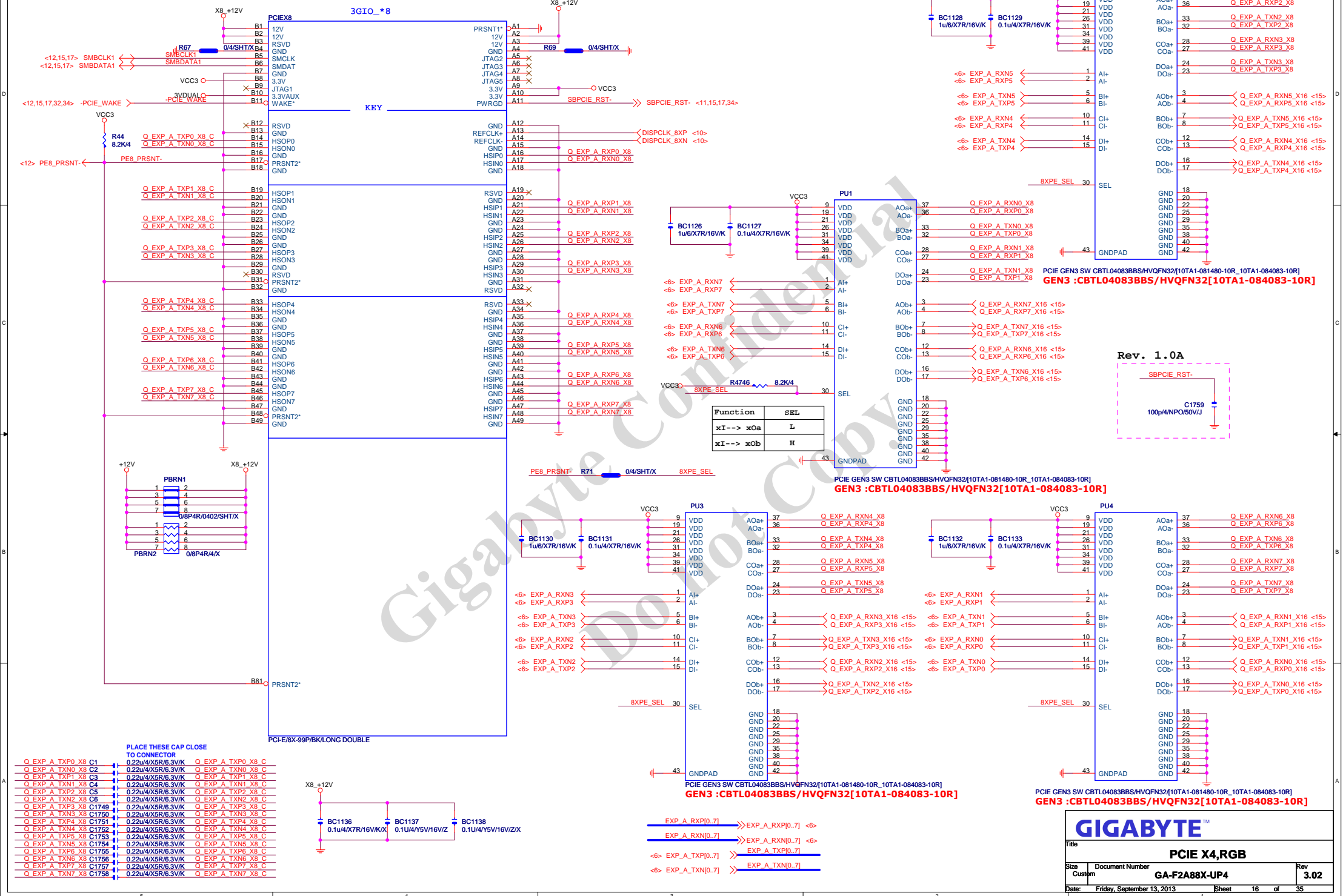










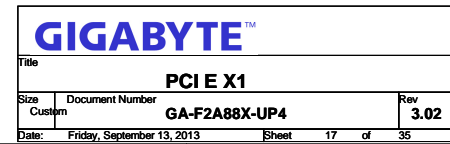


**GIGABYTE**

**PCIE X4,RGB**

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Custom	<b>GA-F2A88X-UP4</b>	<b>3.</b>

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## PCI SLOT 1,2

&lt;1&gt; AD[0..31] &lt;-&gt; AD[0..31]

## PCI SLOT

PCI

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B2

B3

B4

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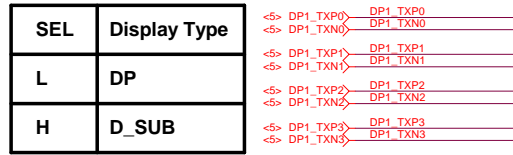
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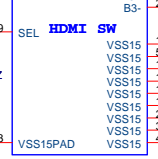
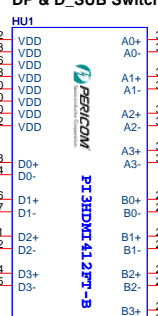
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DP & D\_SUB Control Table

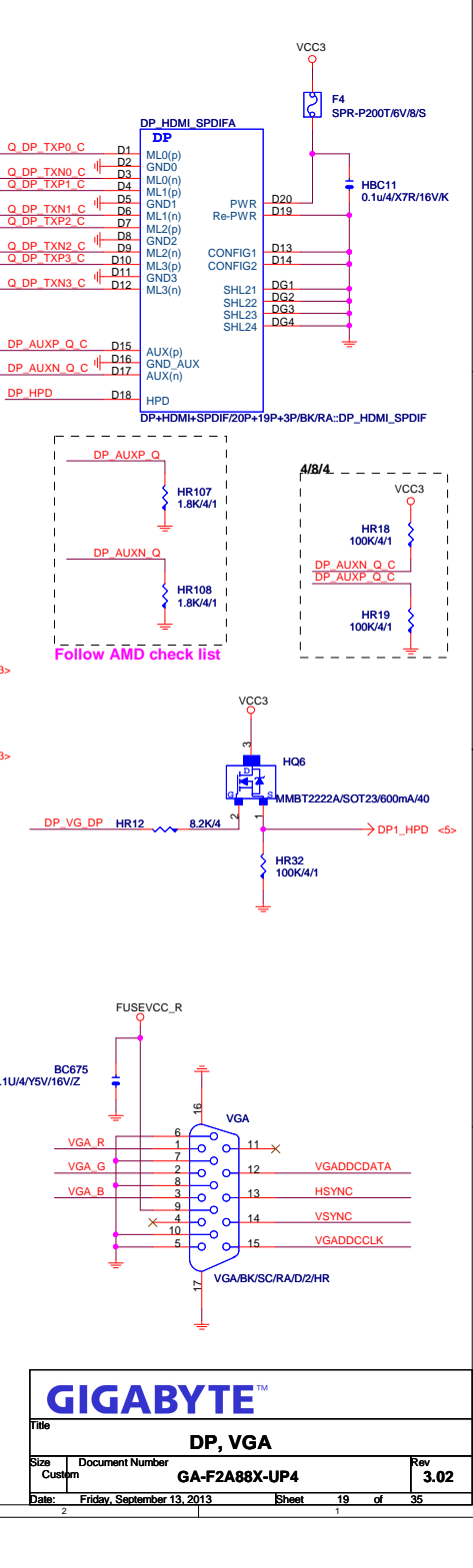
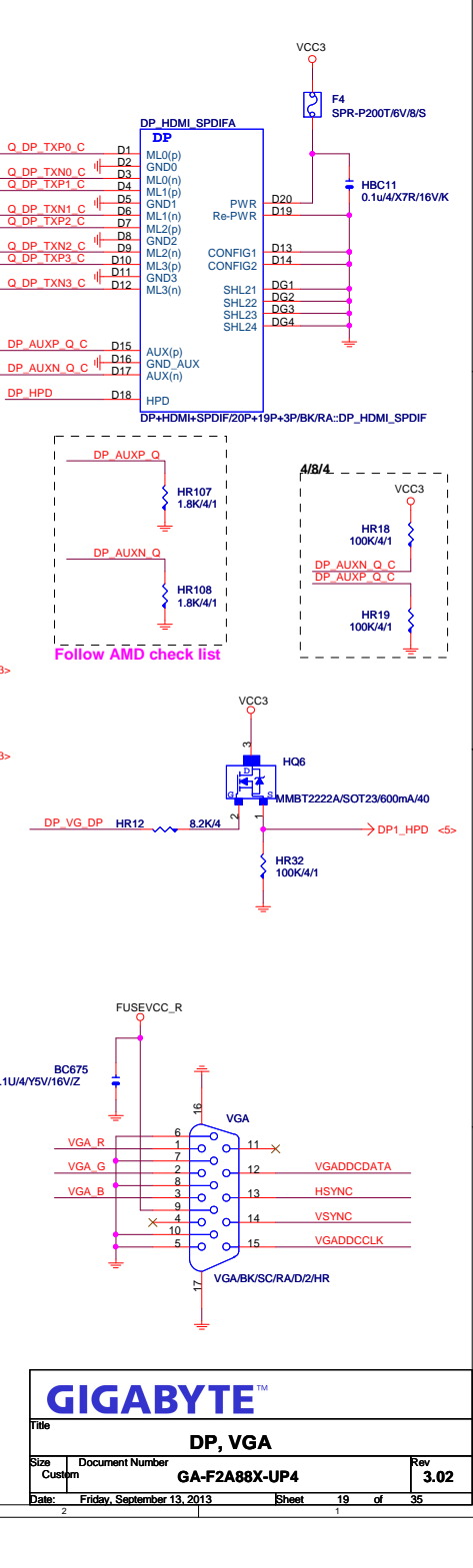
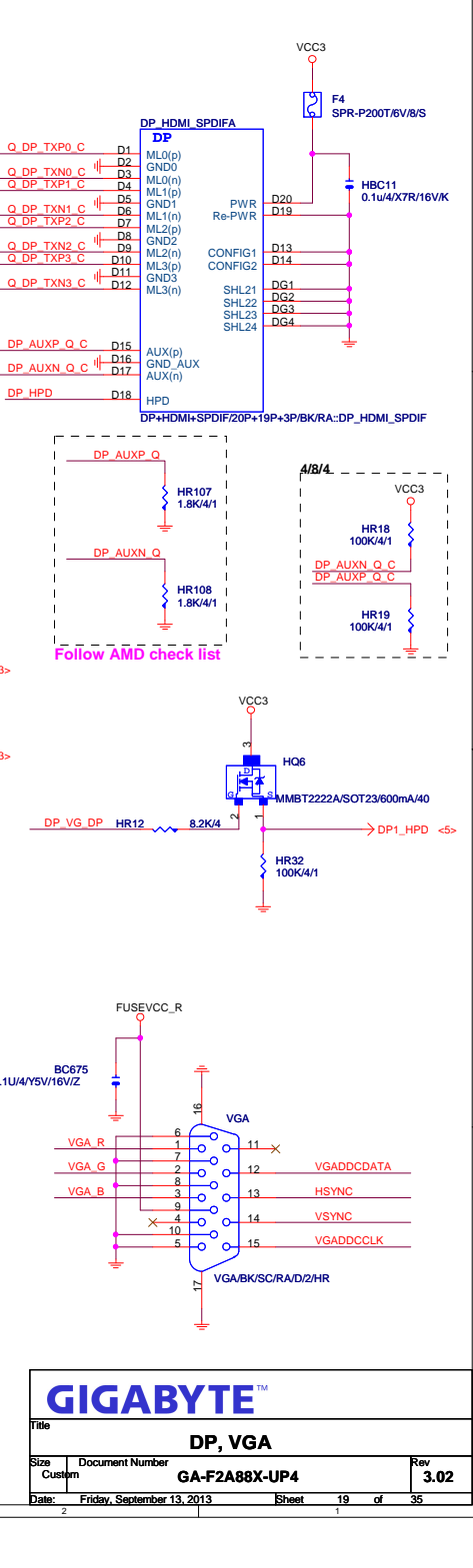
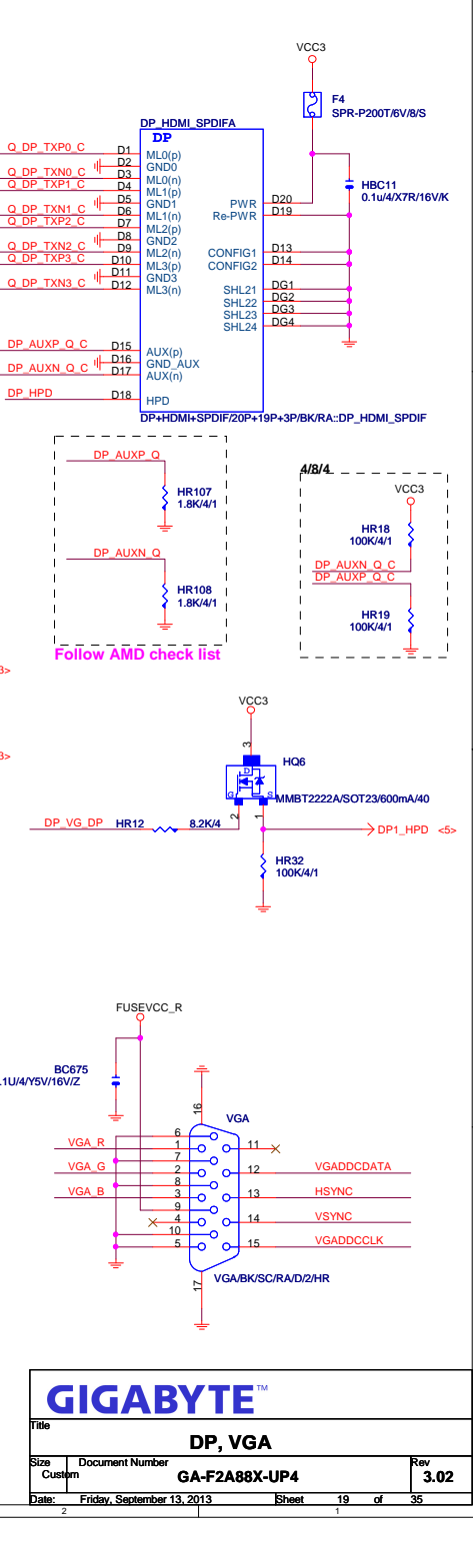
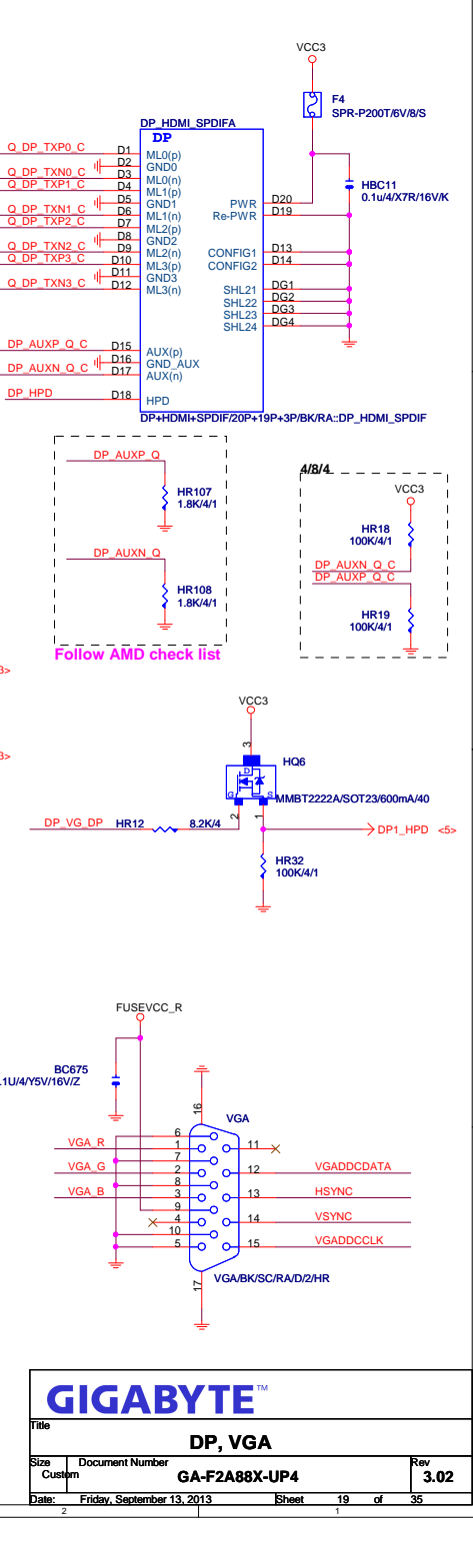
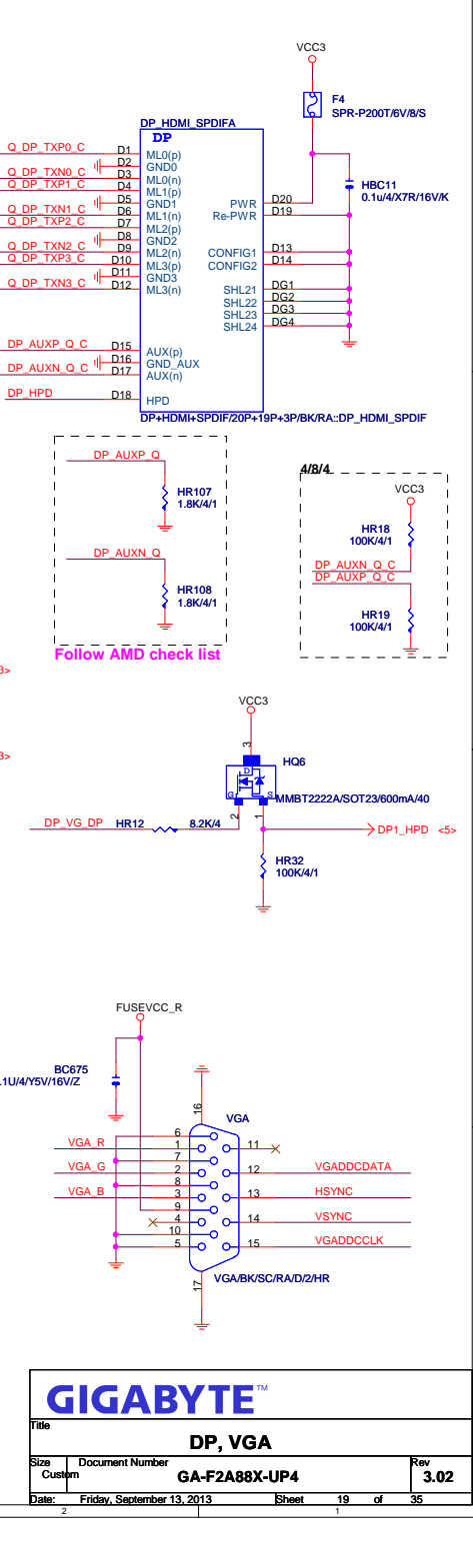
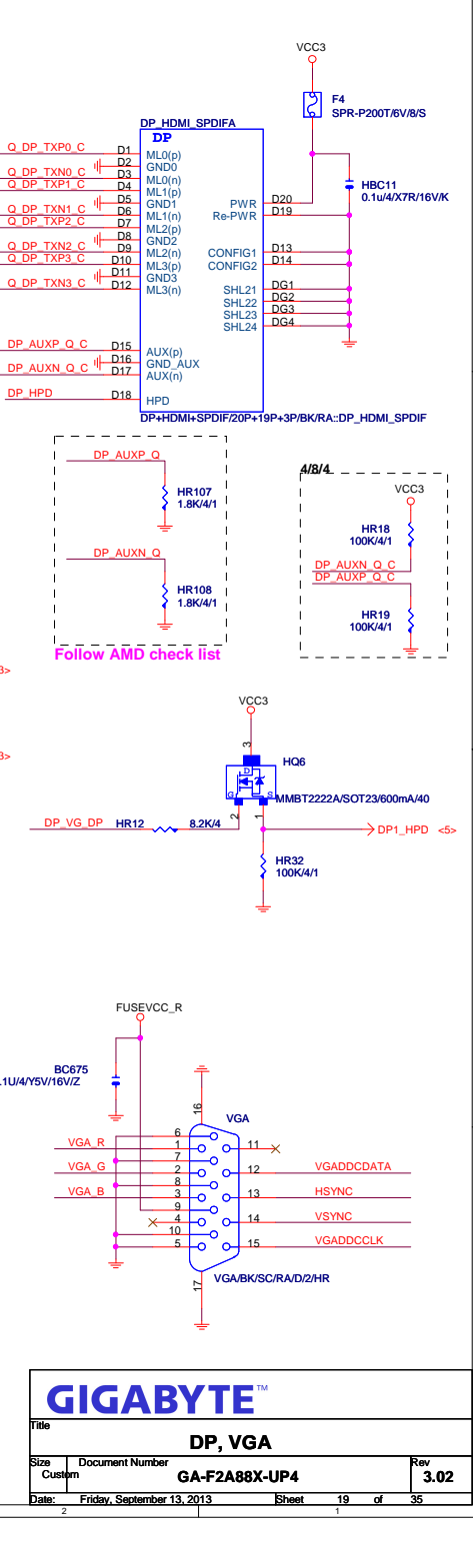
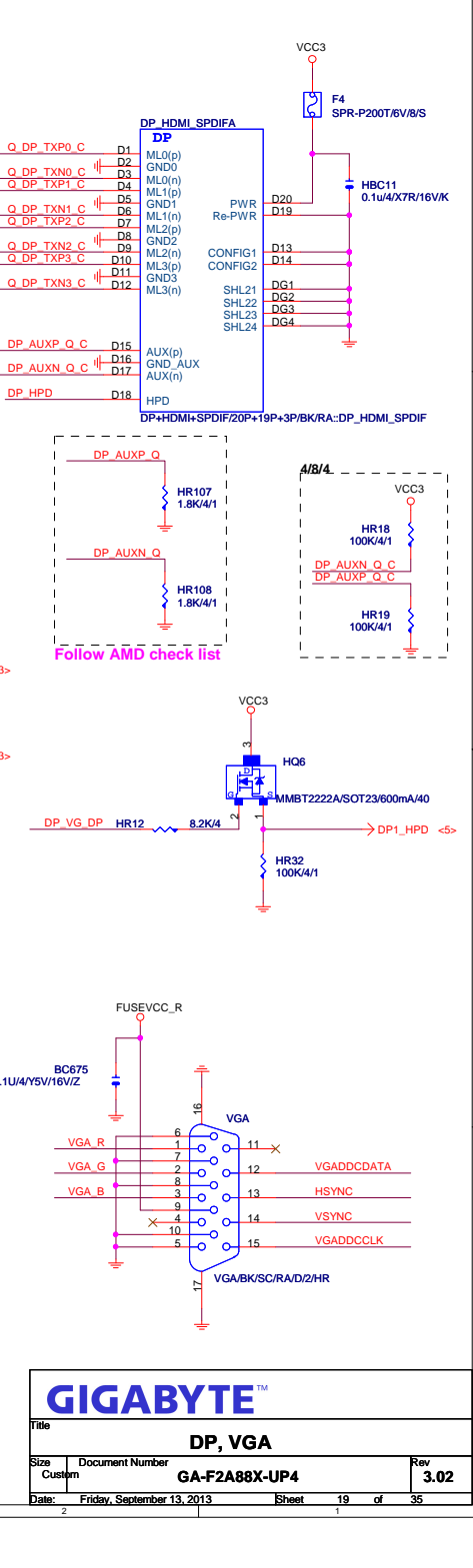
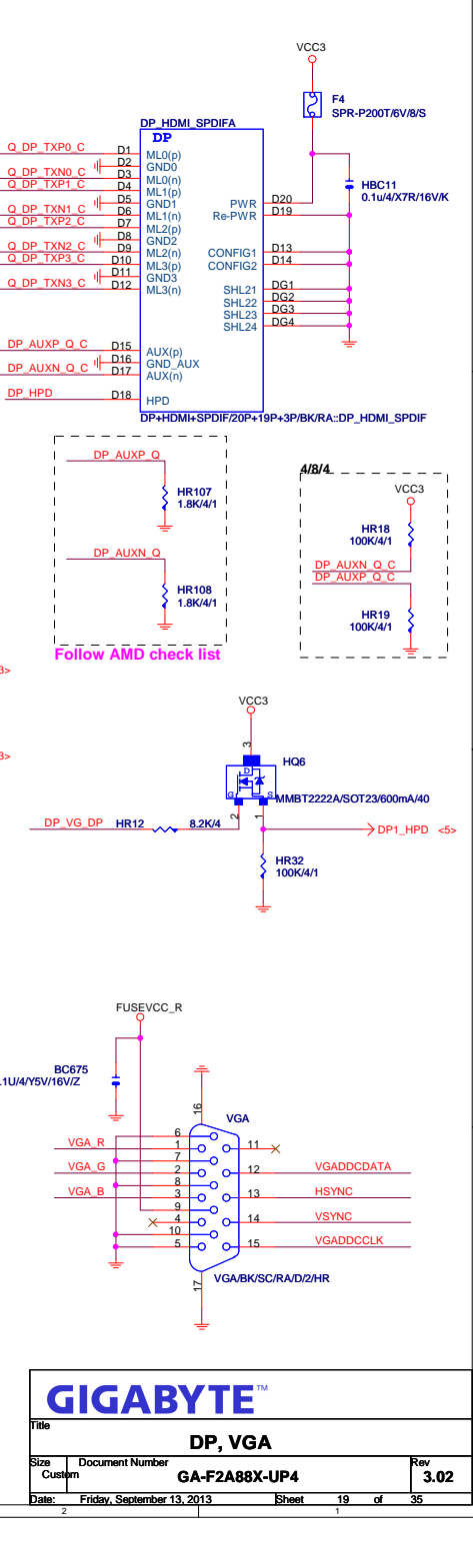
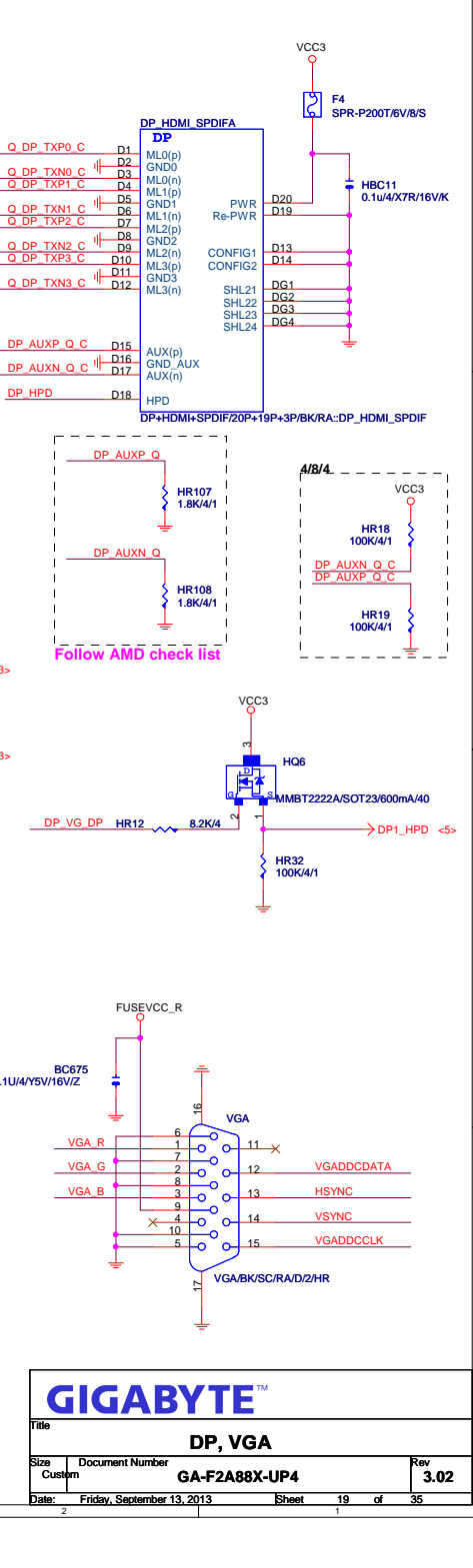
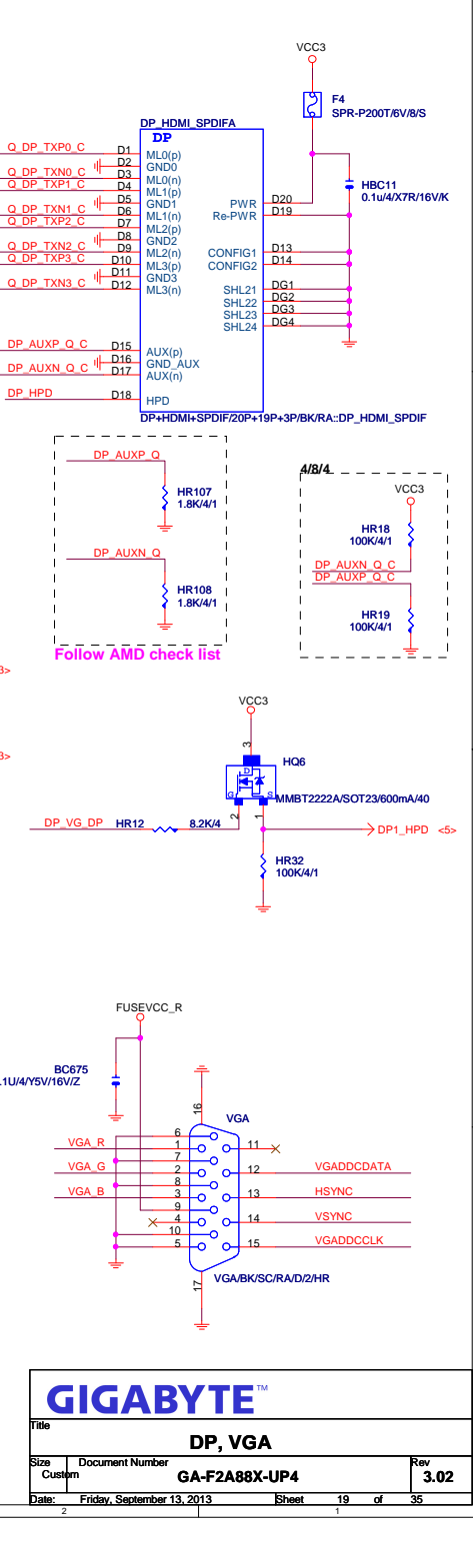
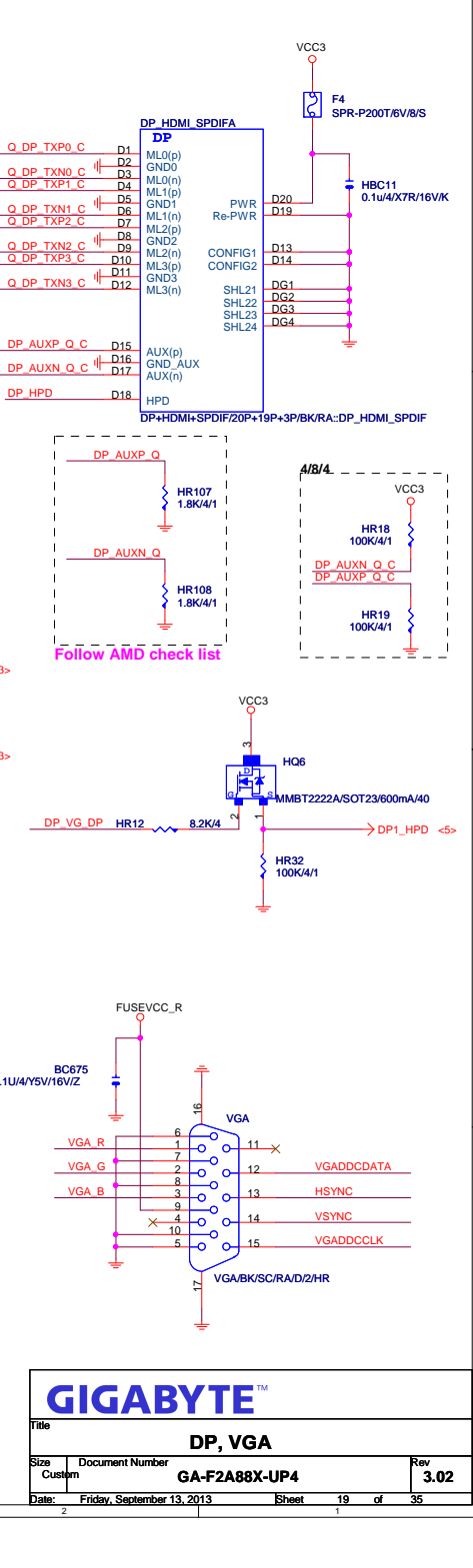
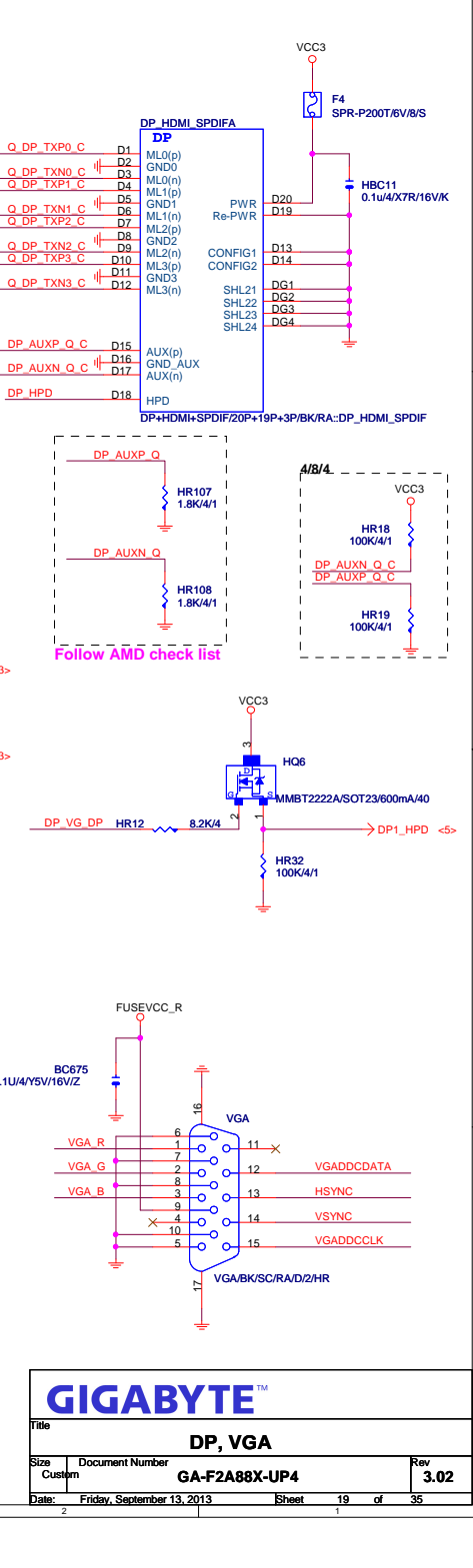
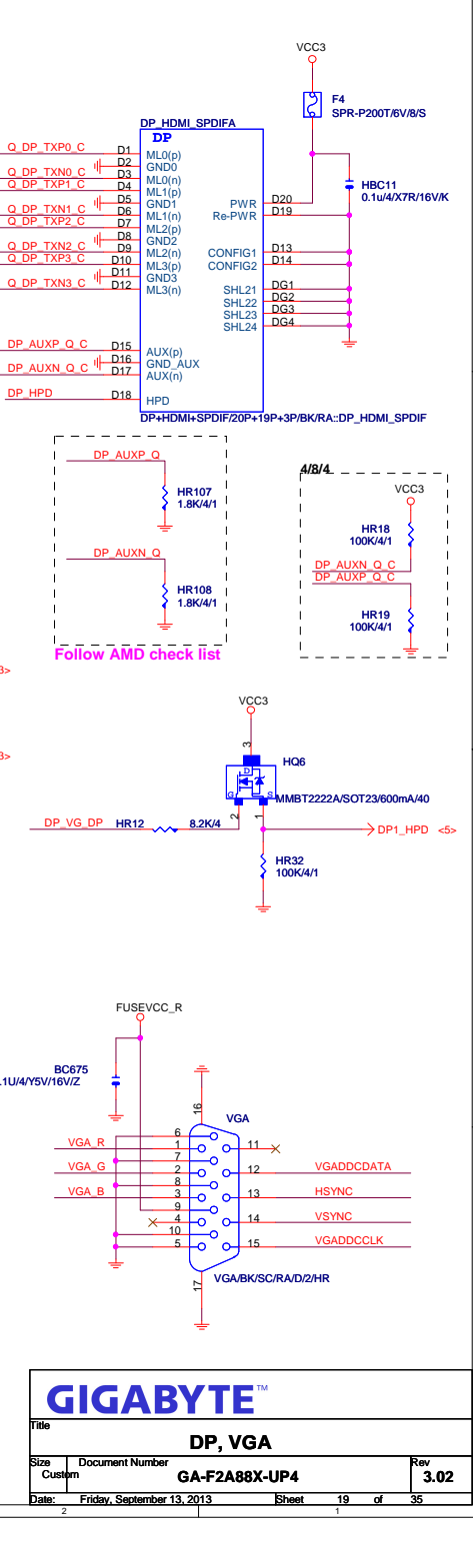
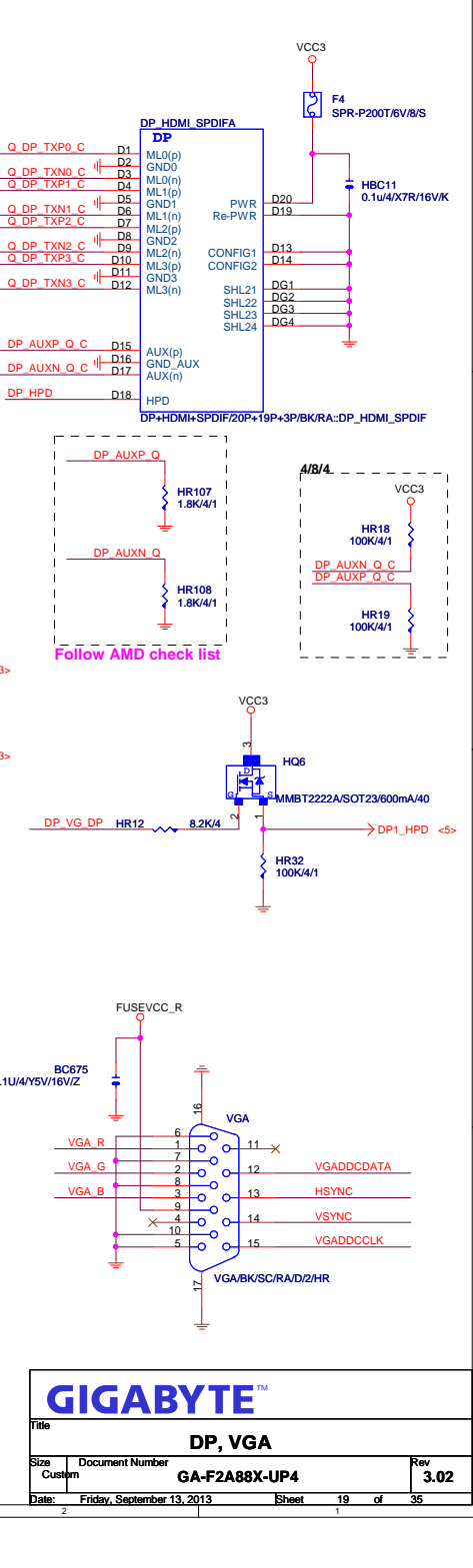
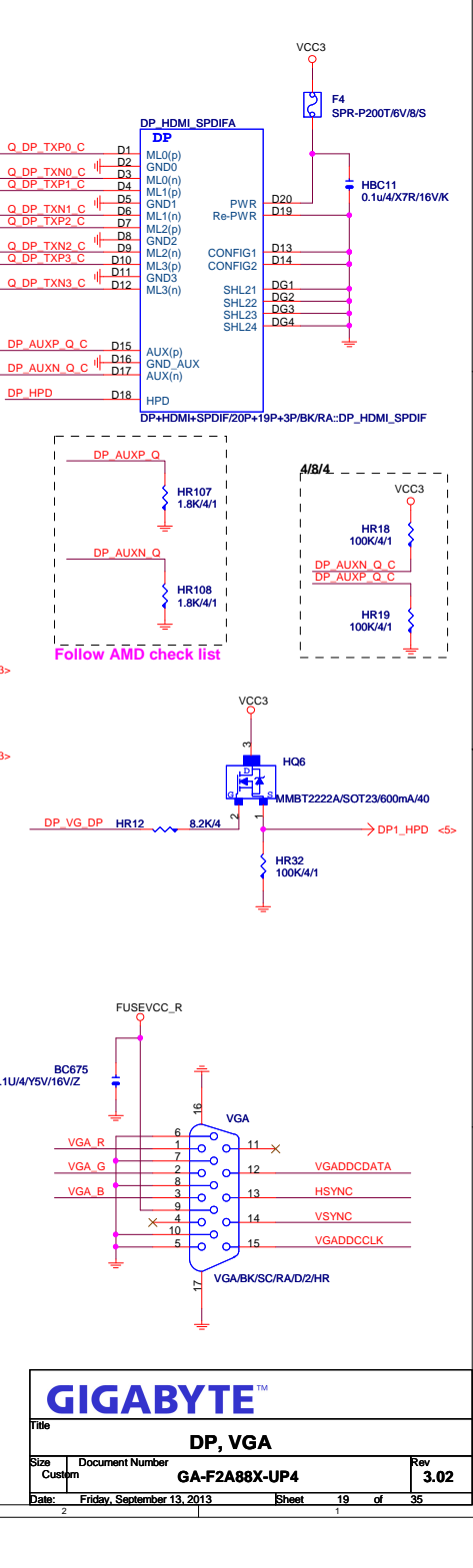
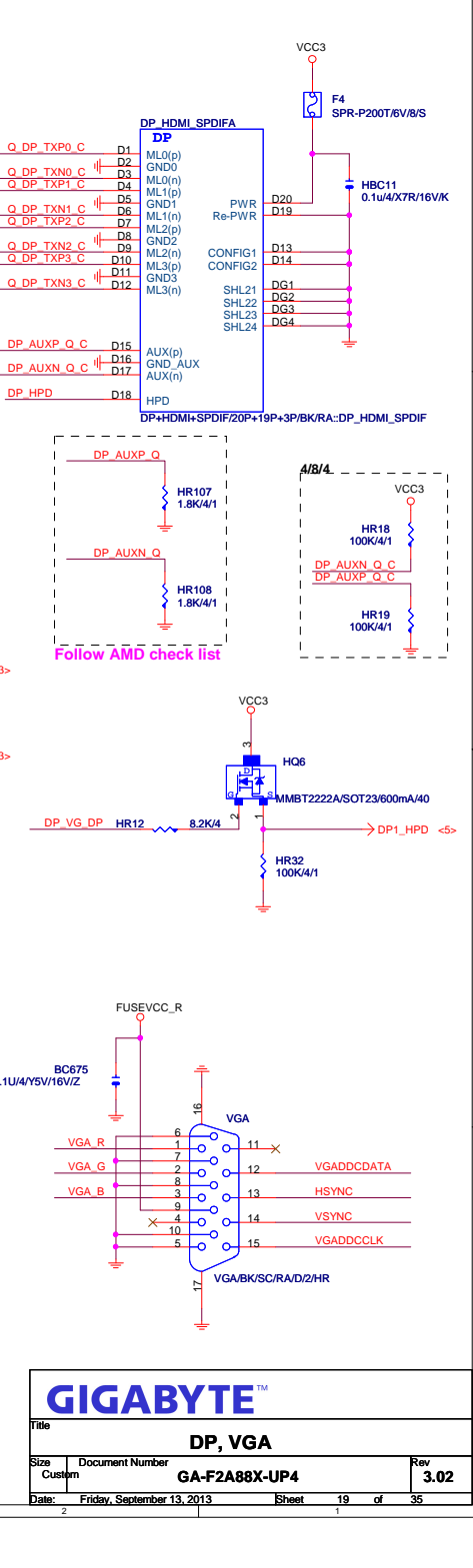
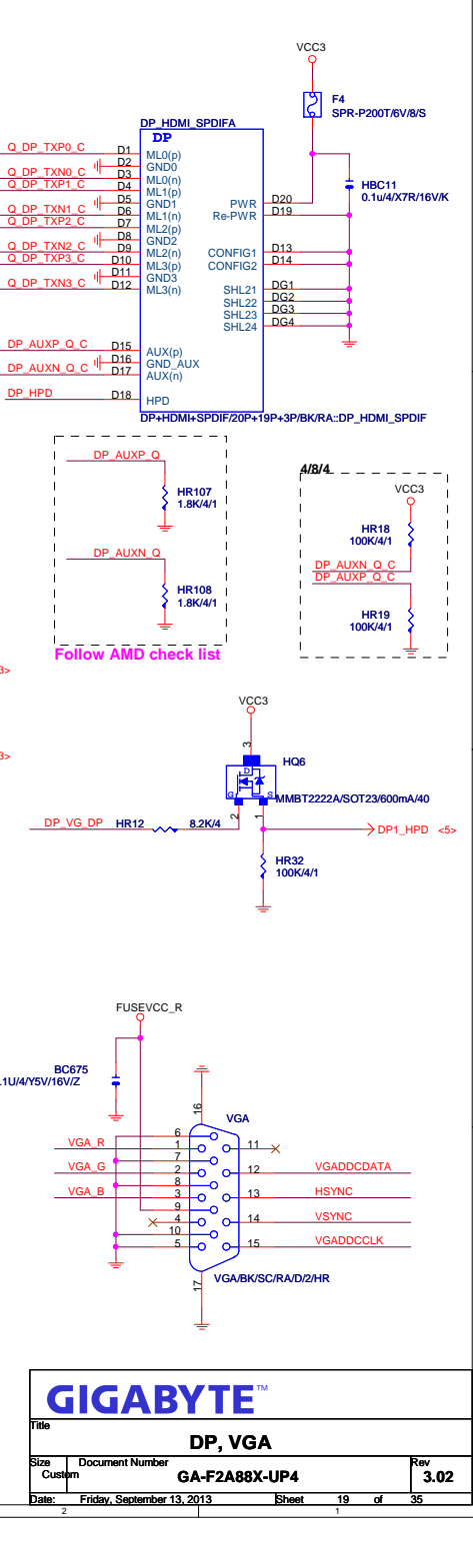
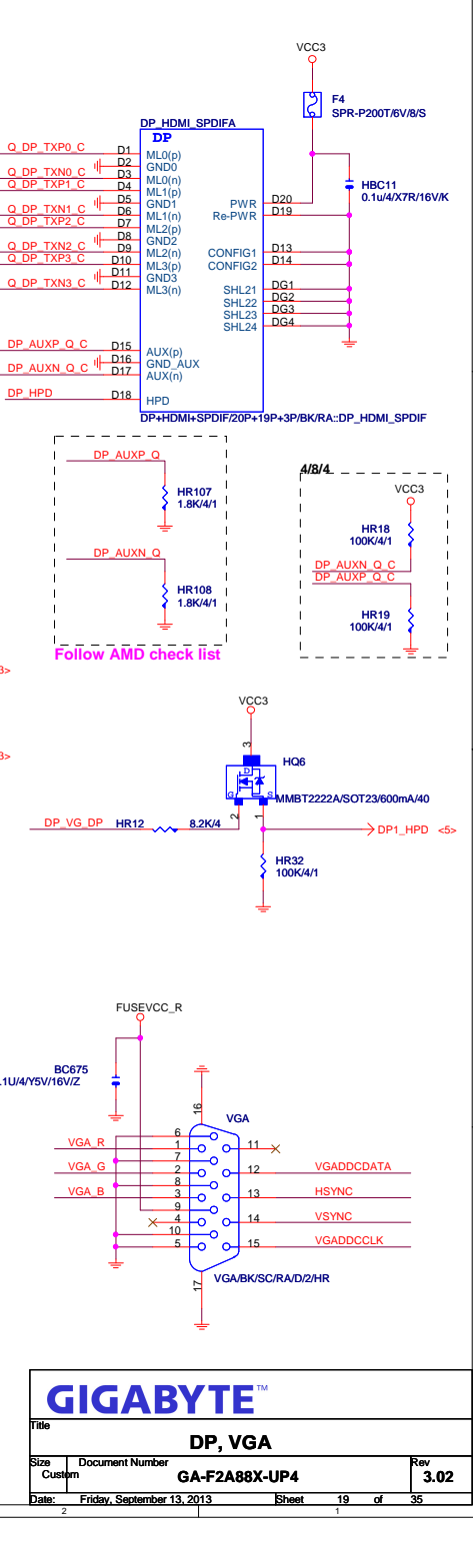
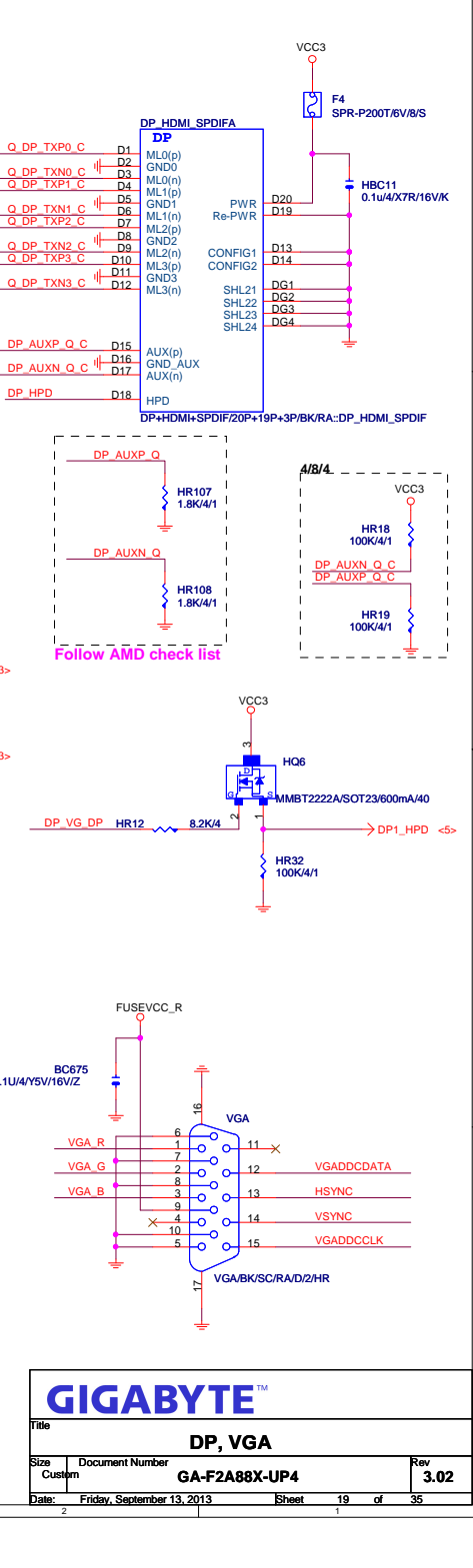
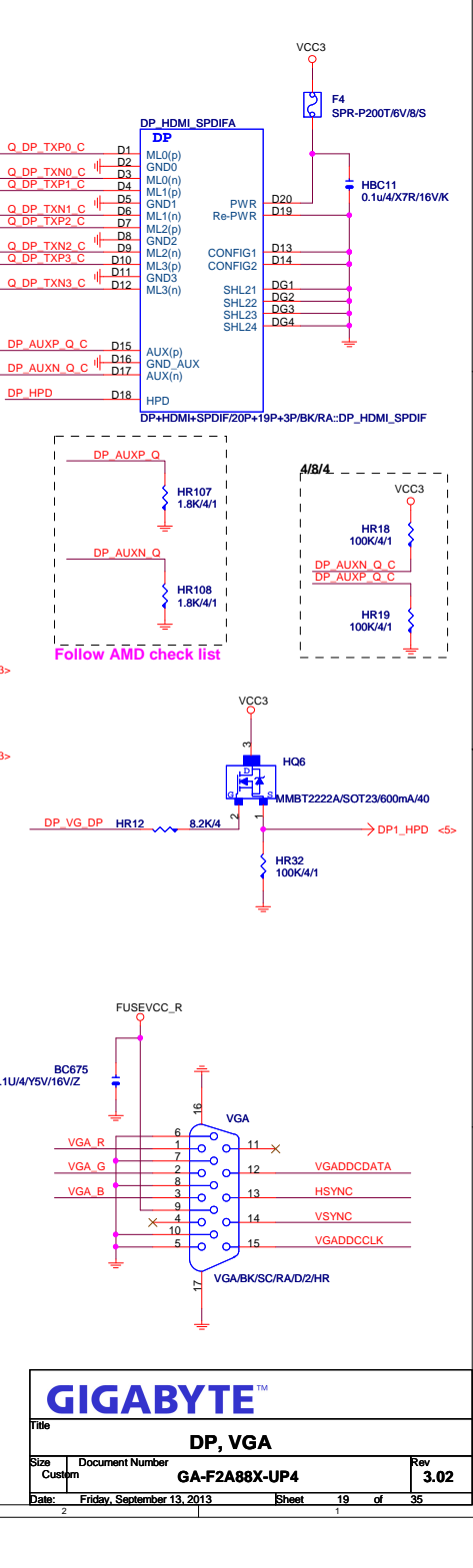
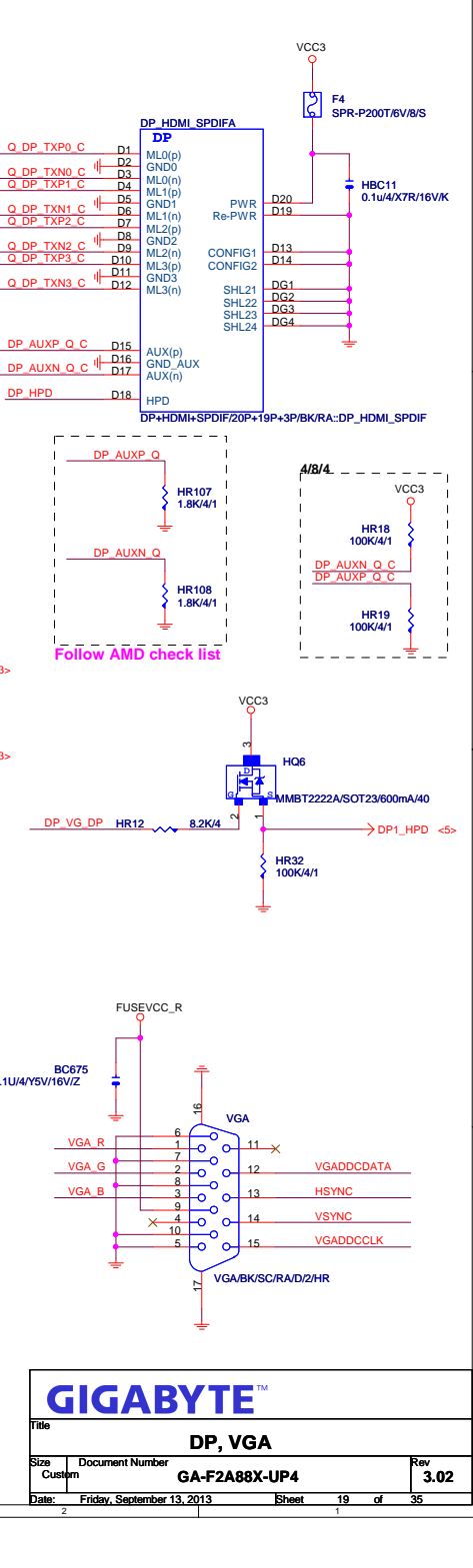
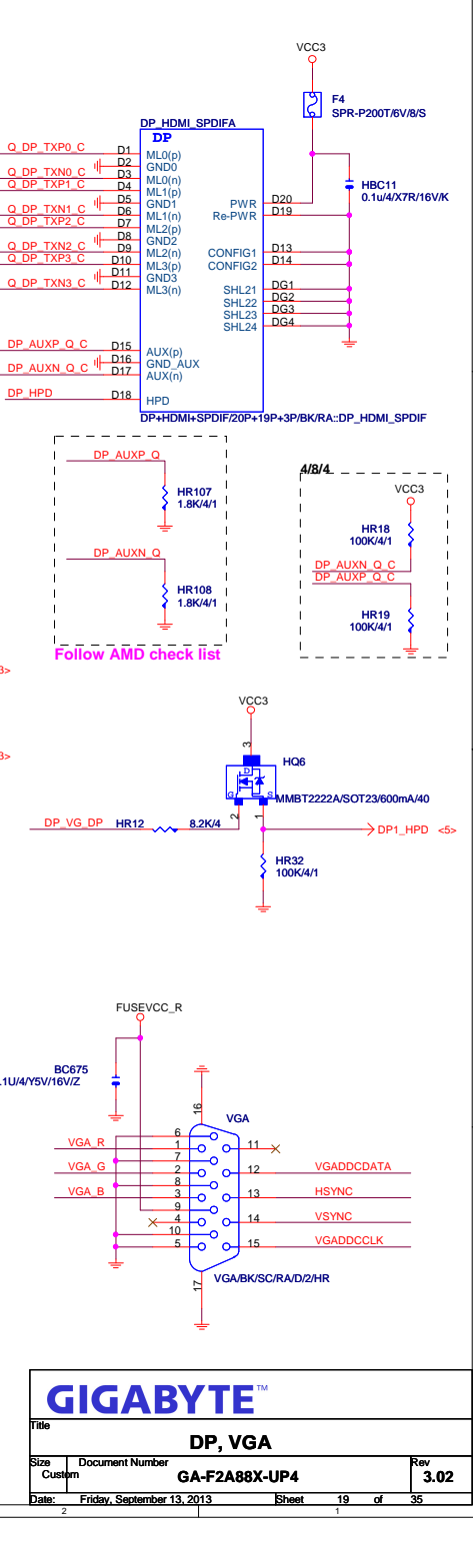
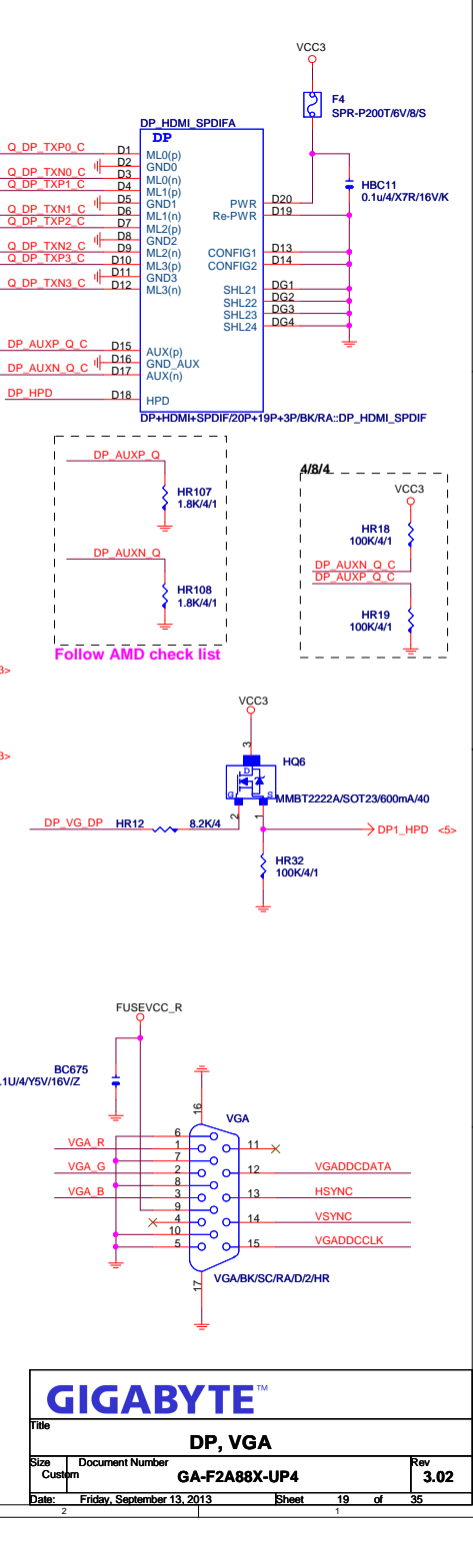
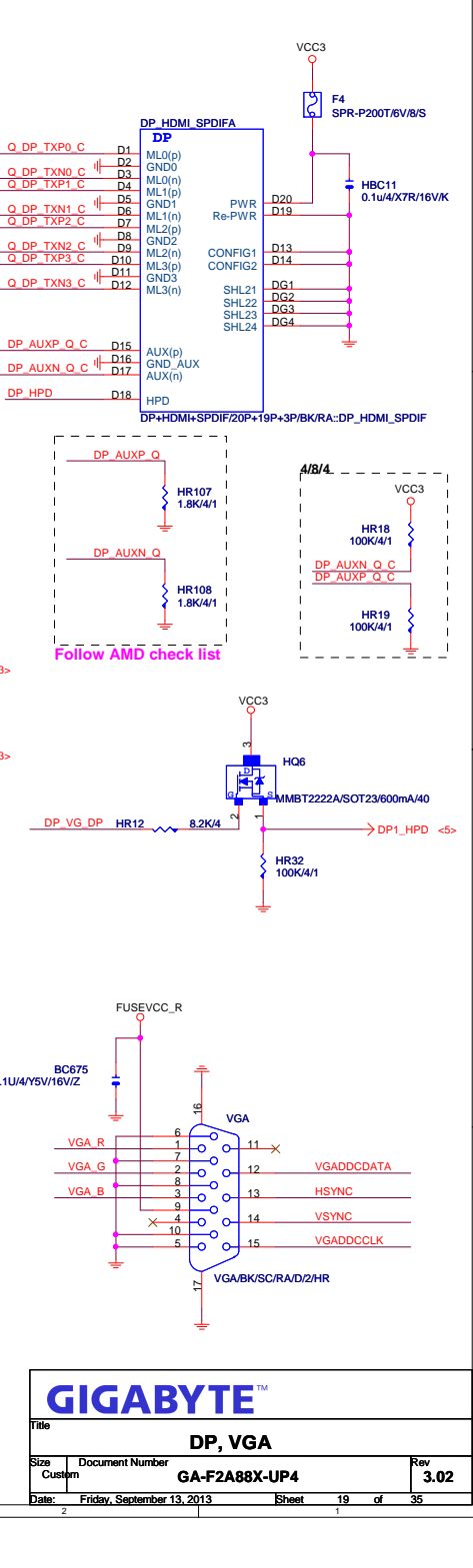
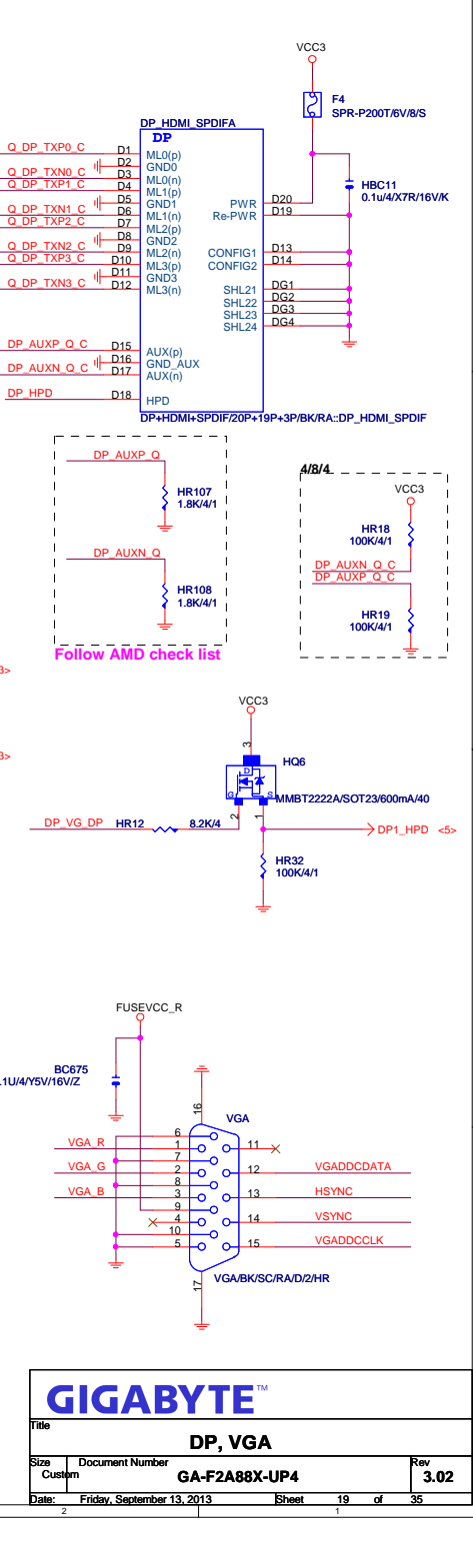
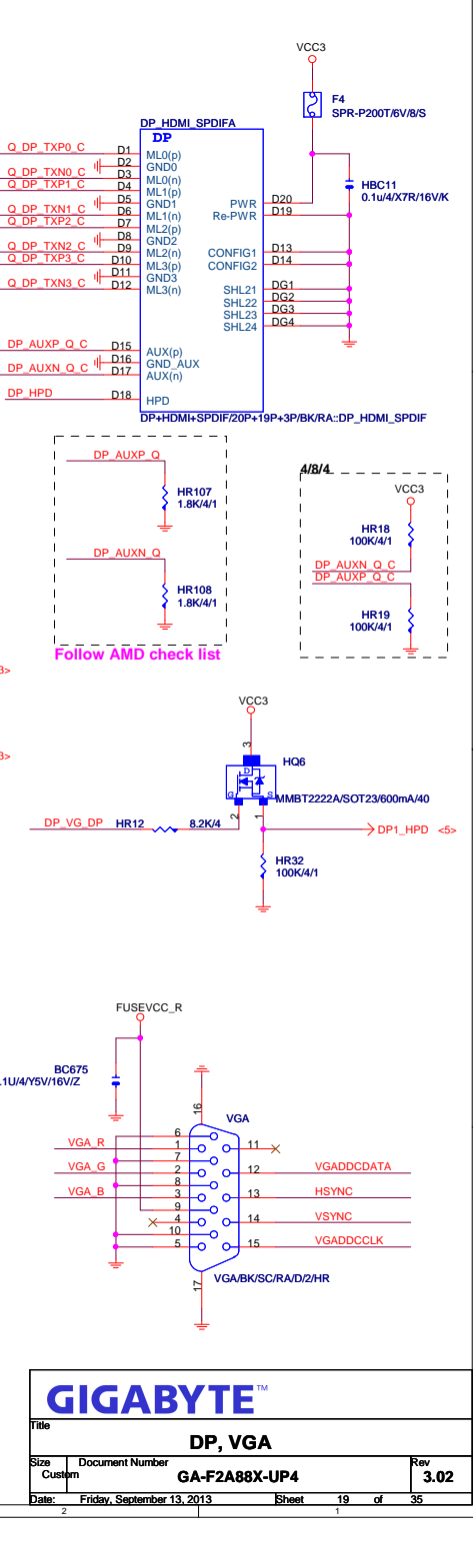
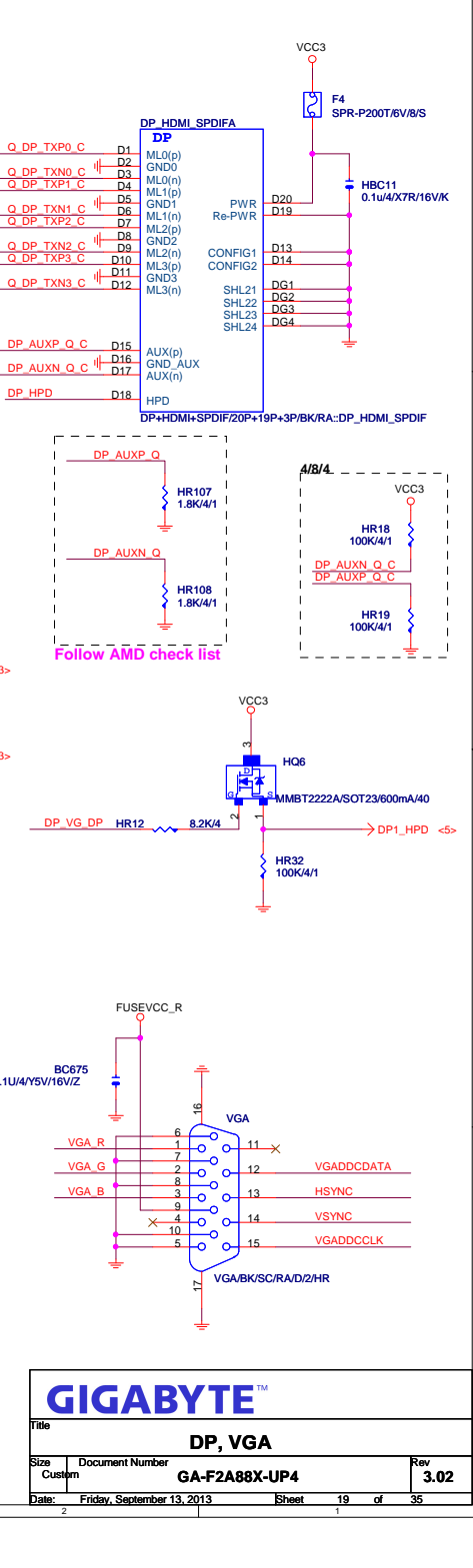
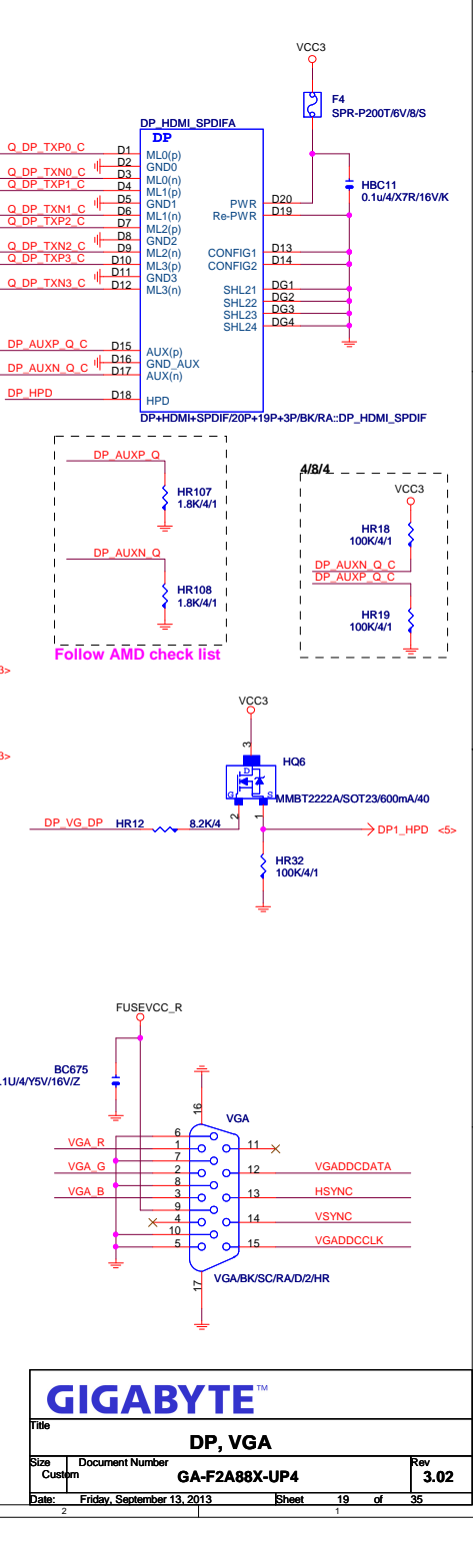
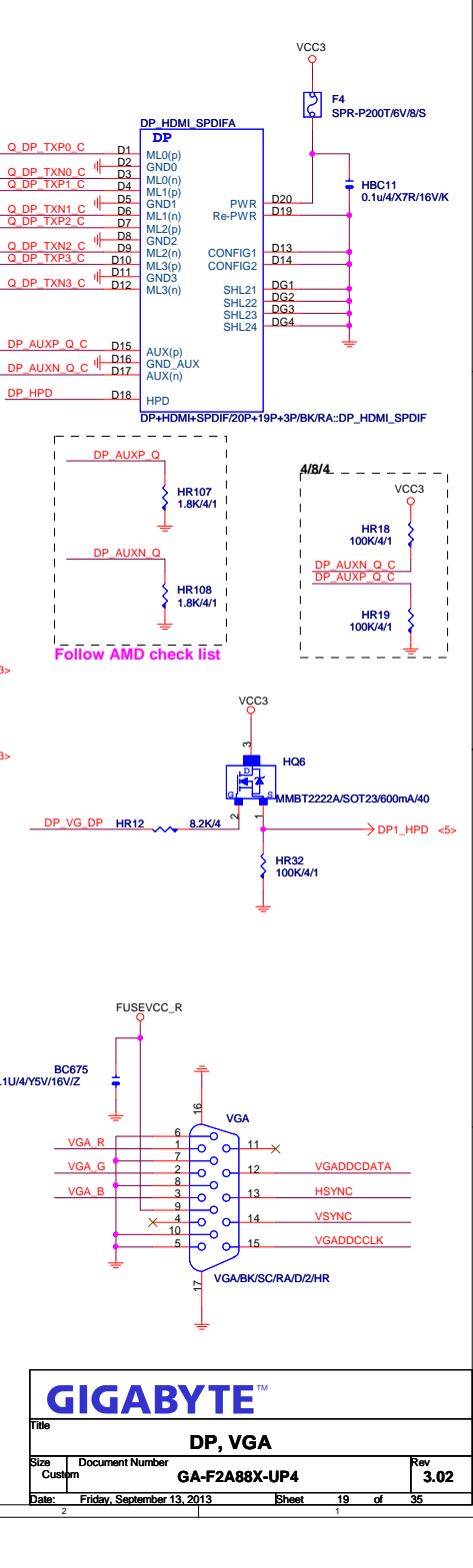
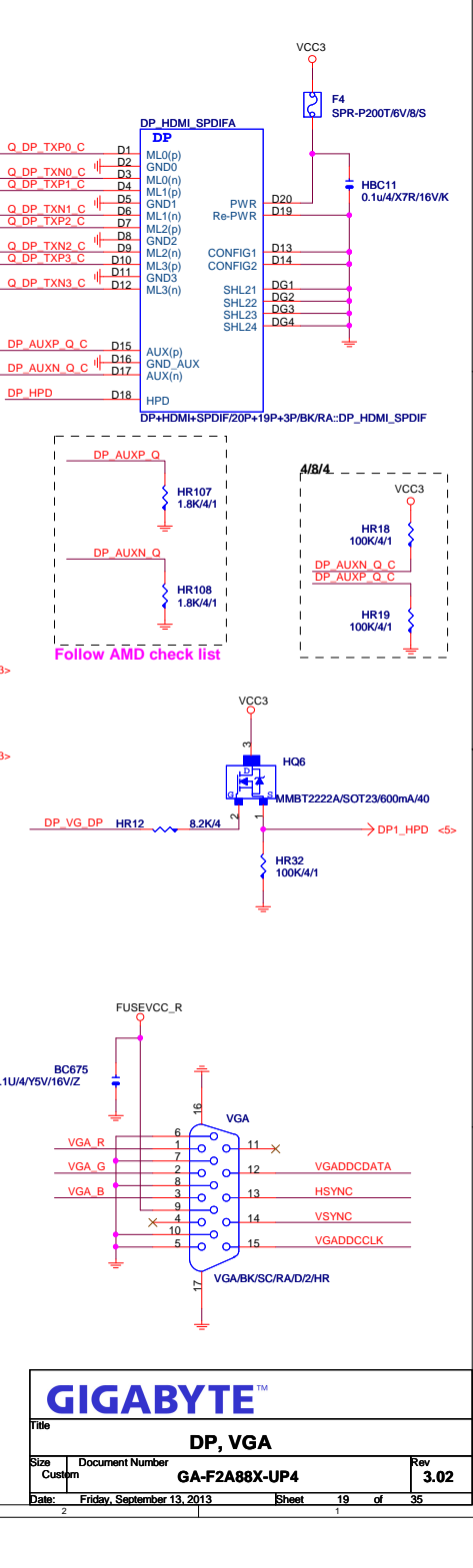
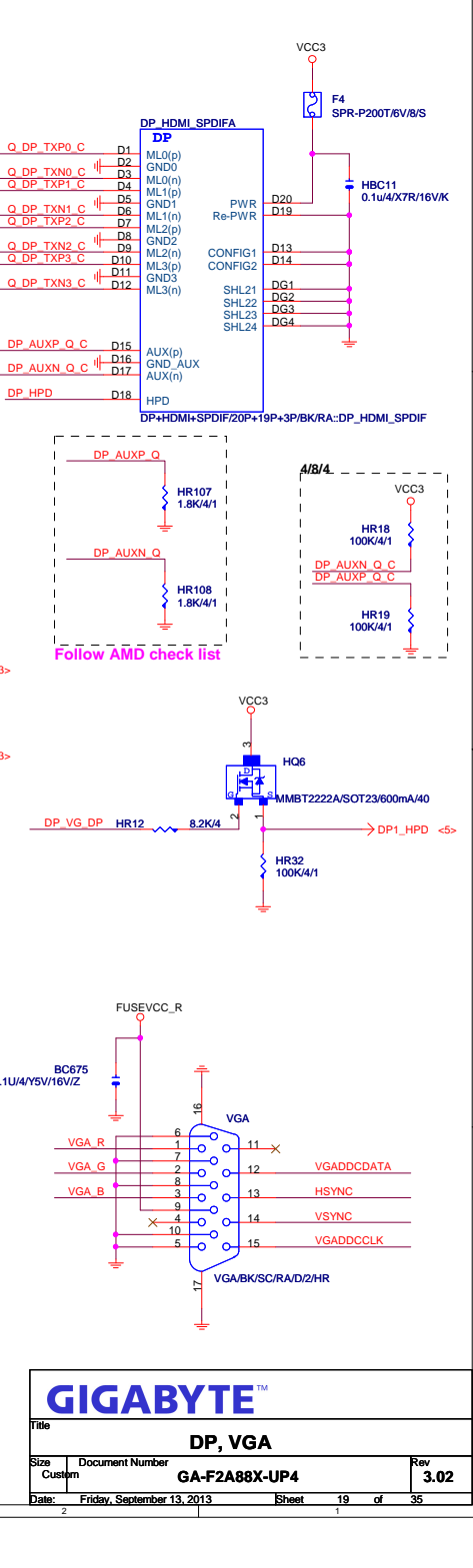
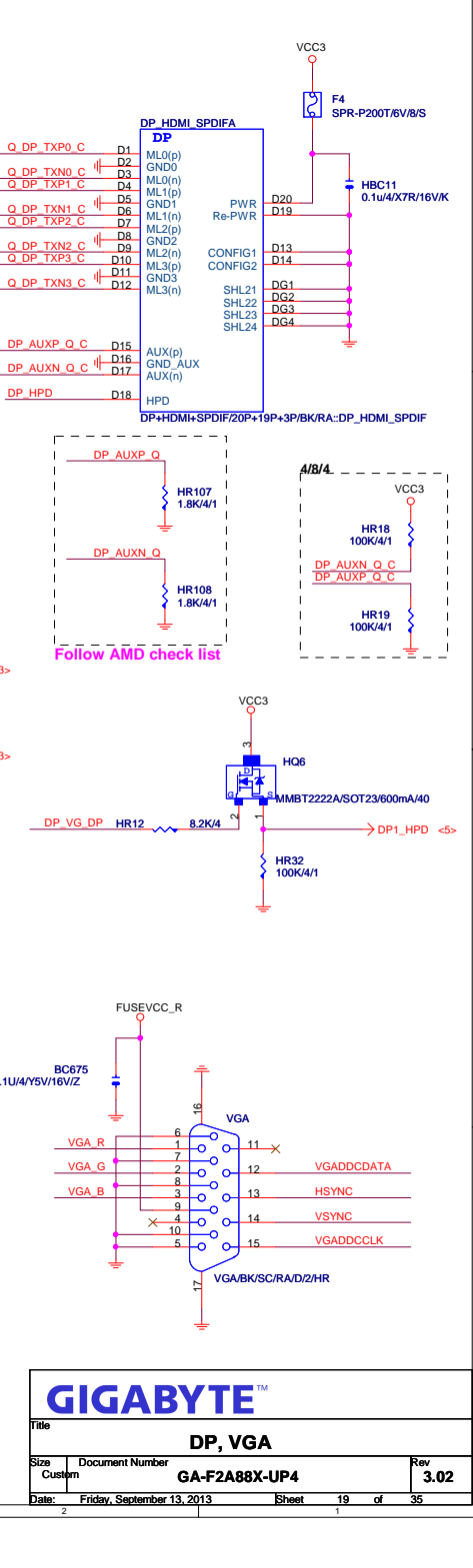
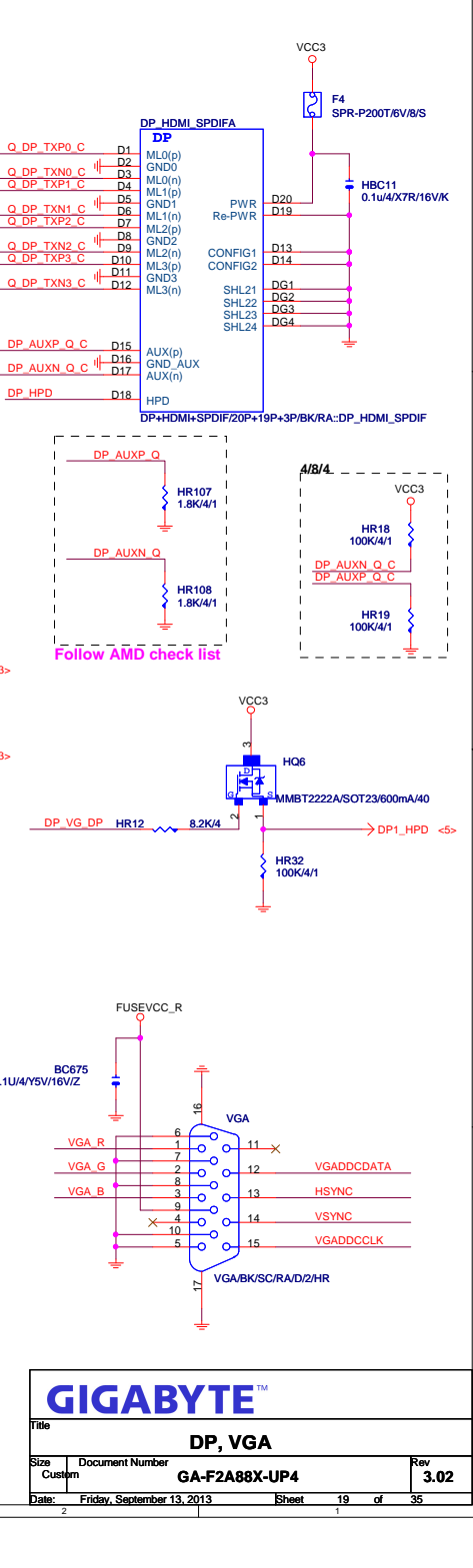
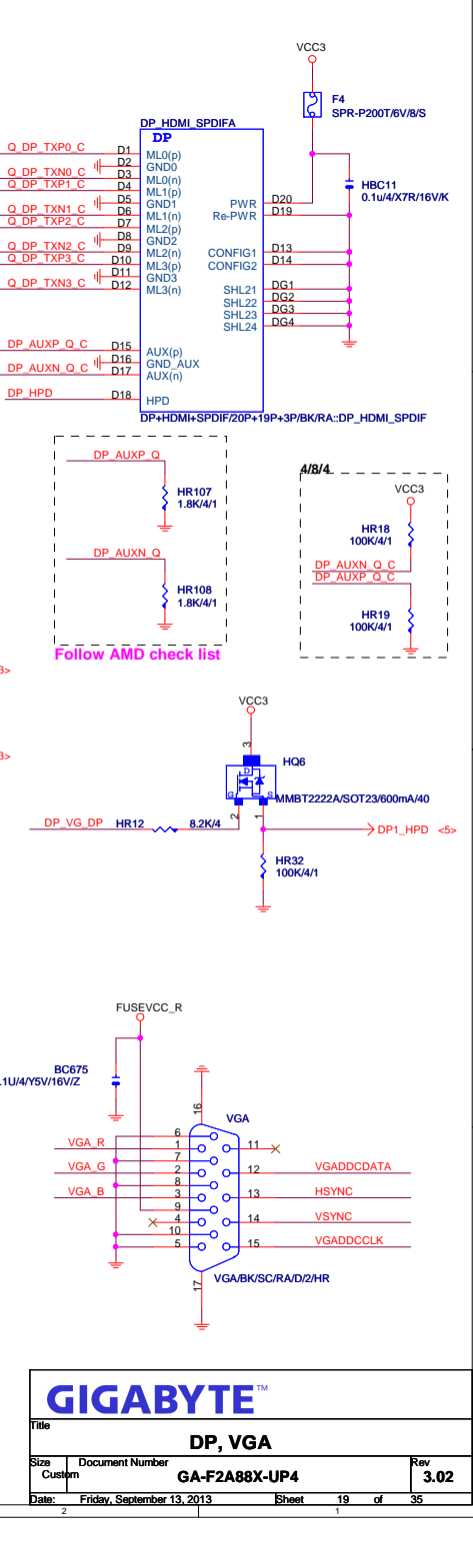
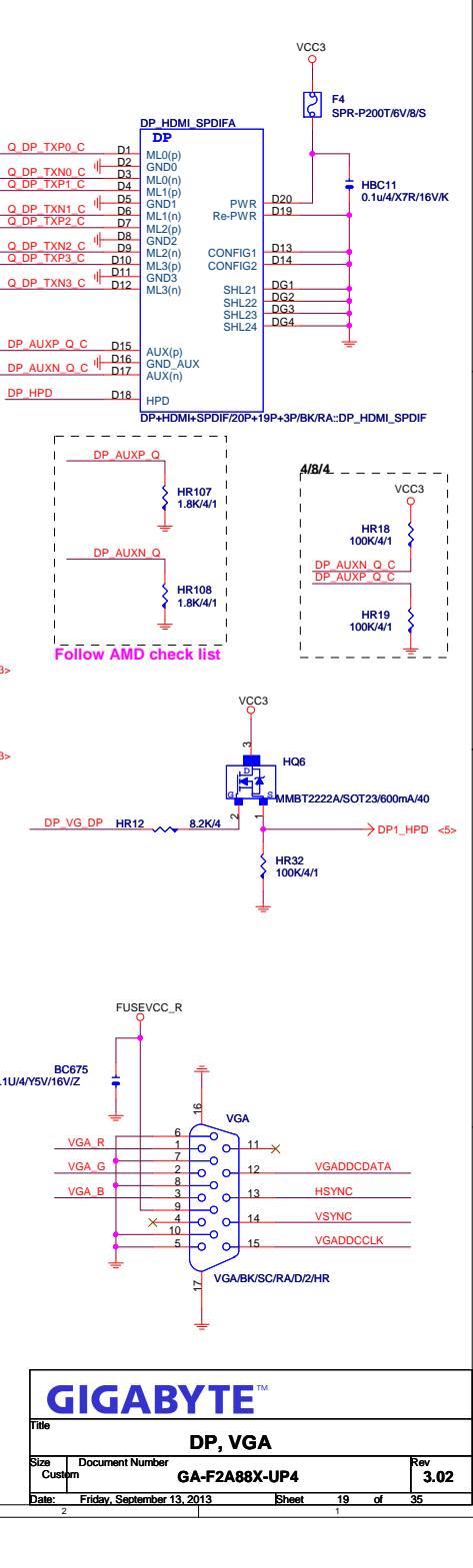
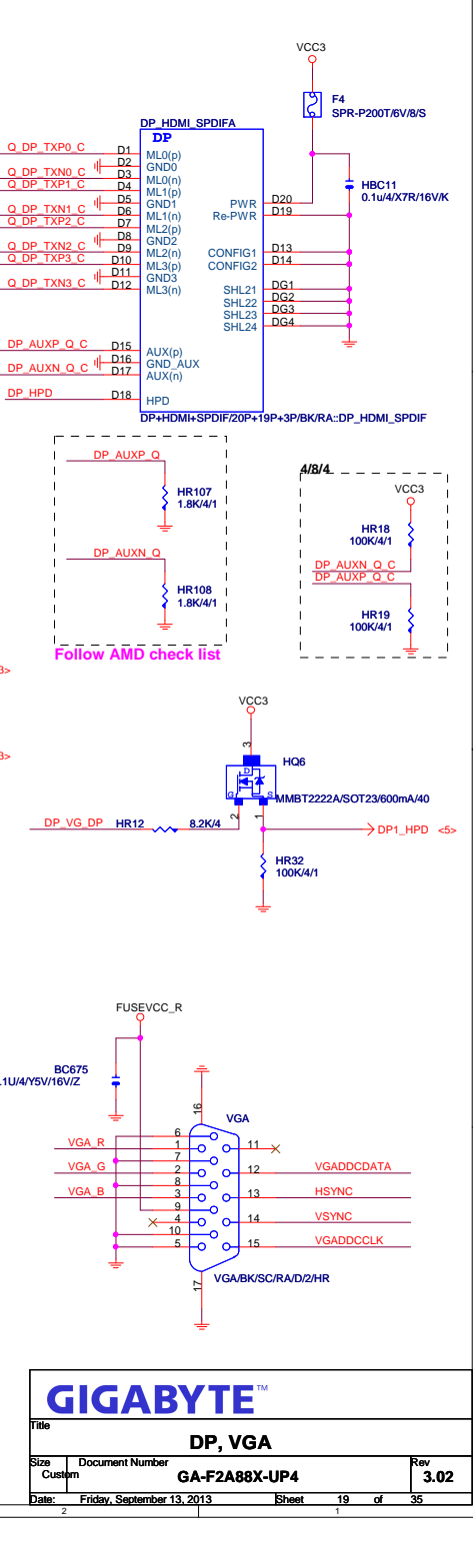
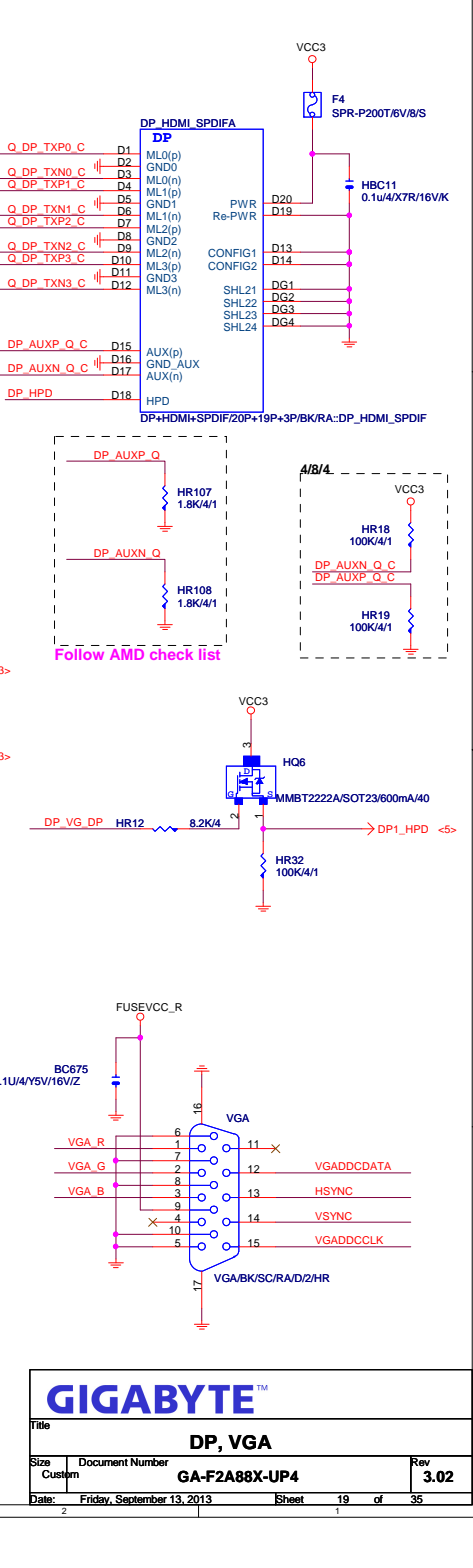
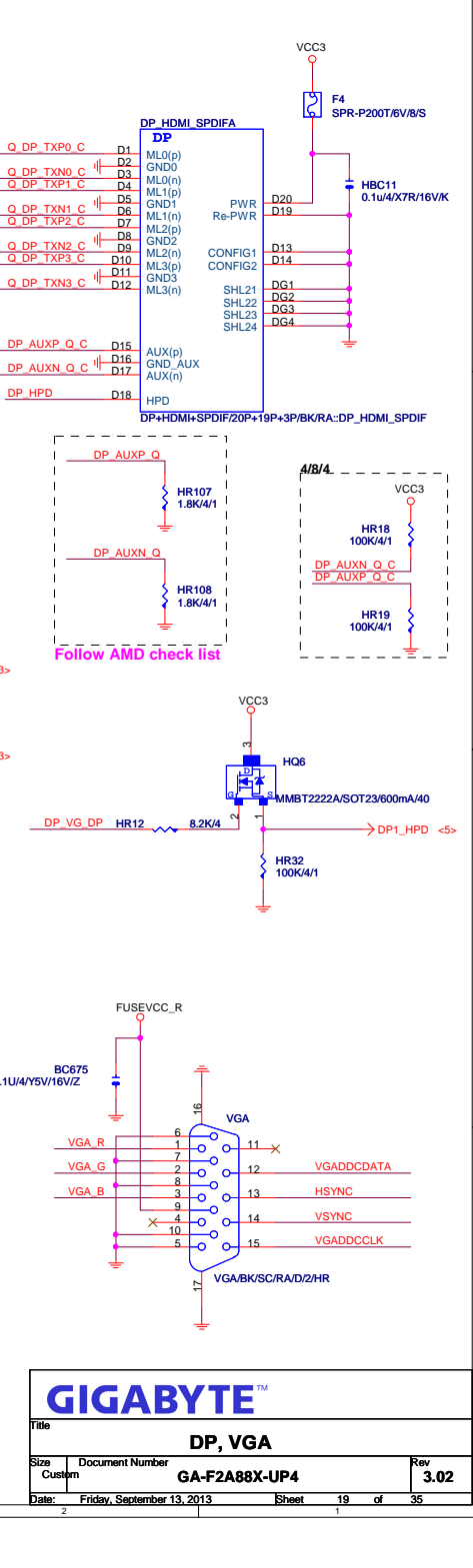
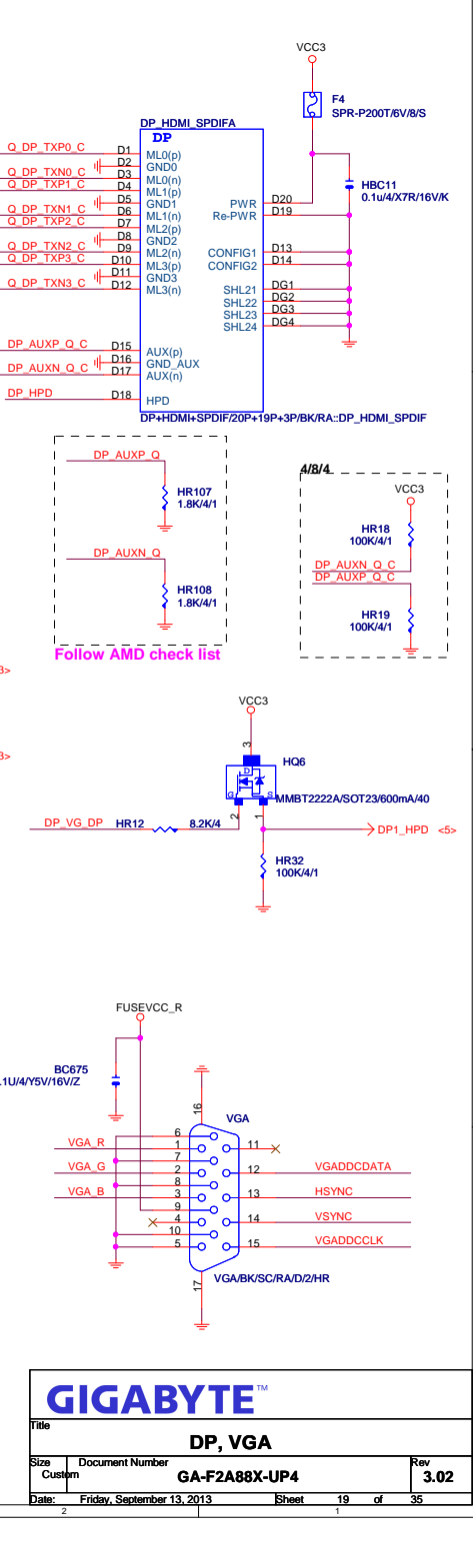
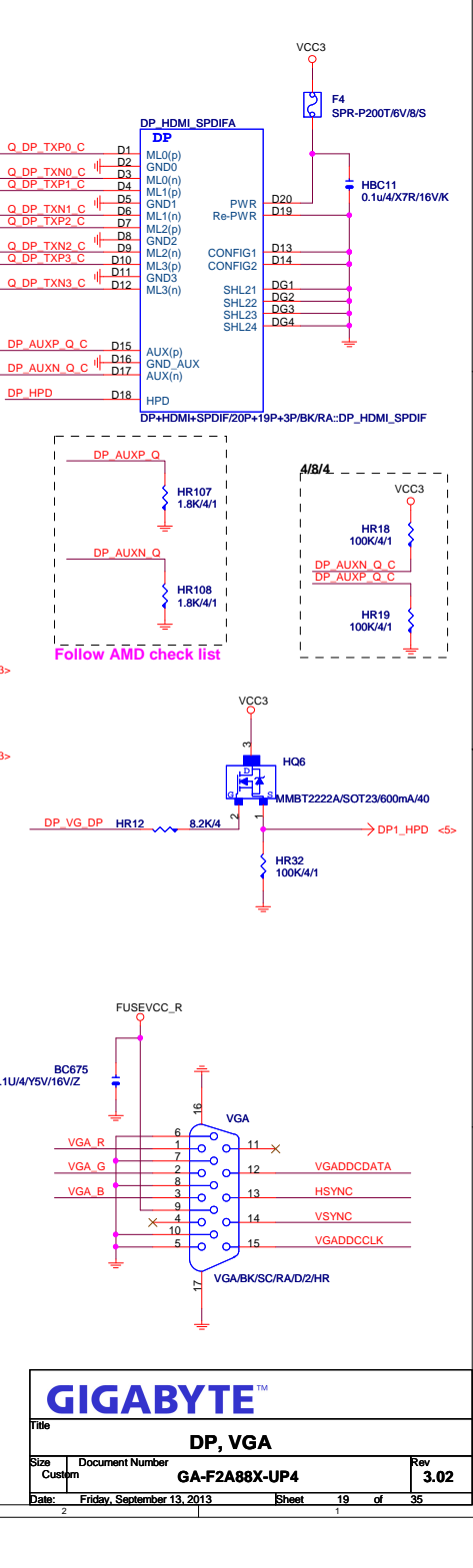
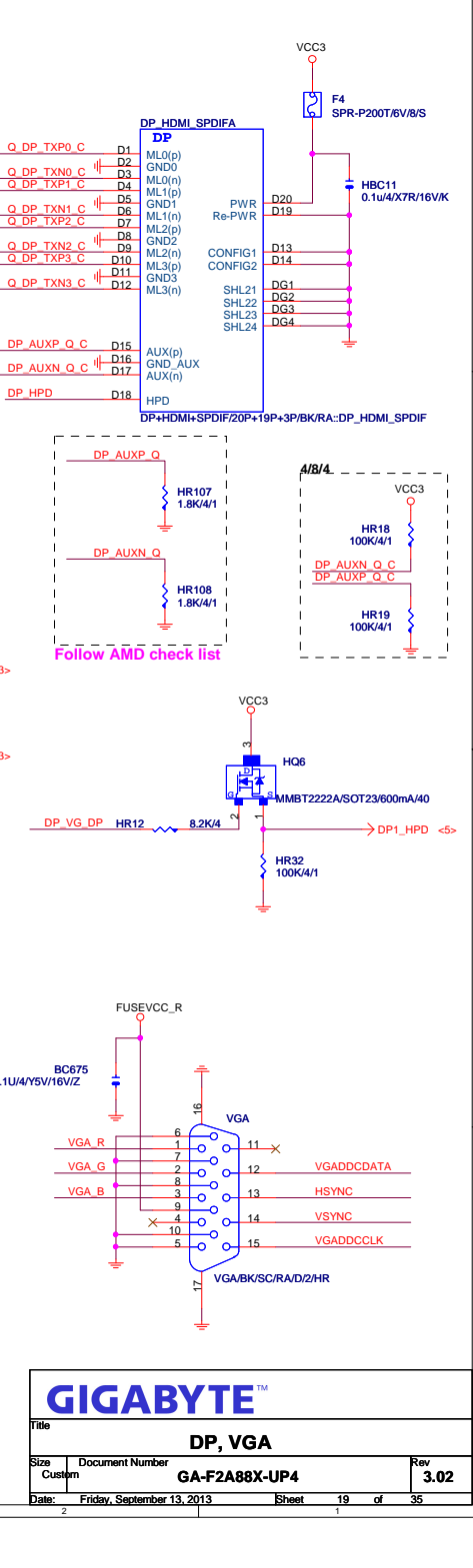
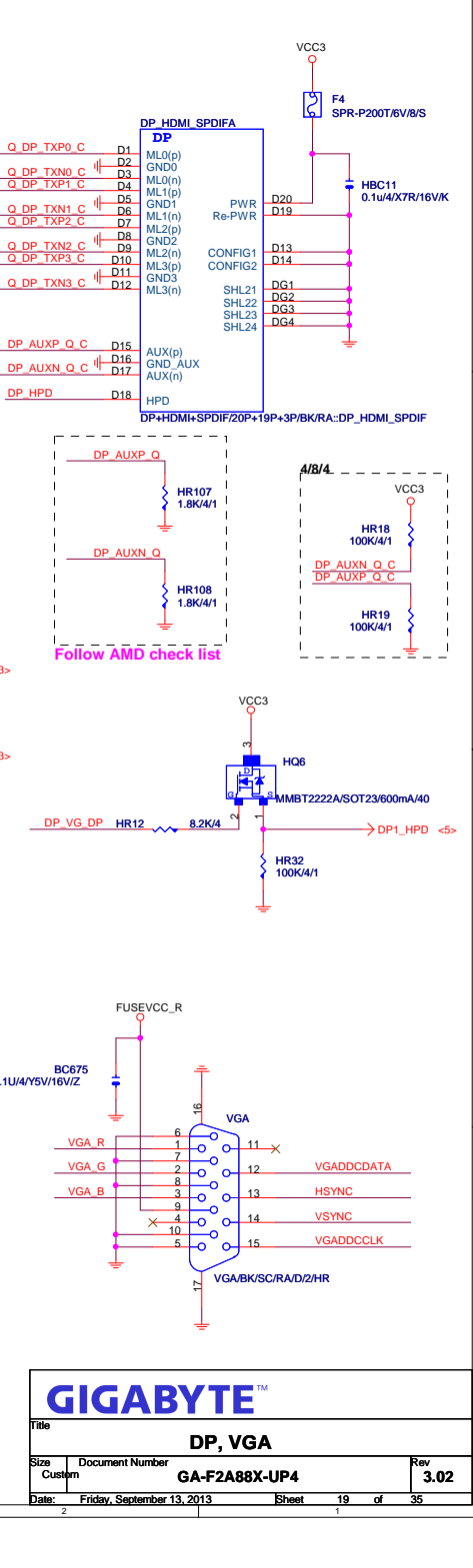
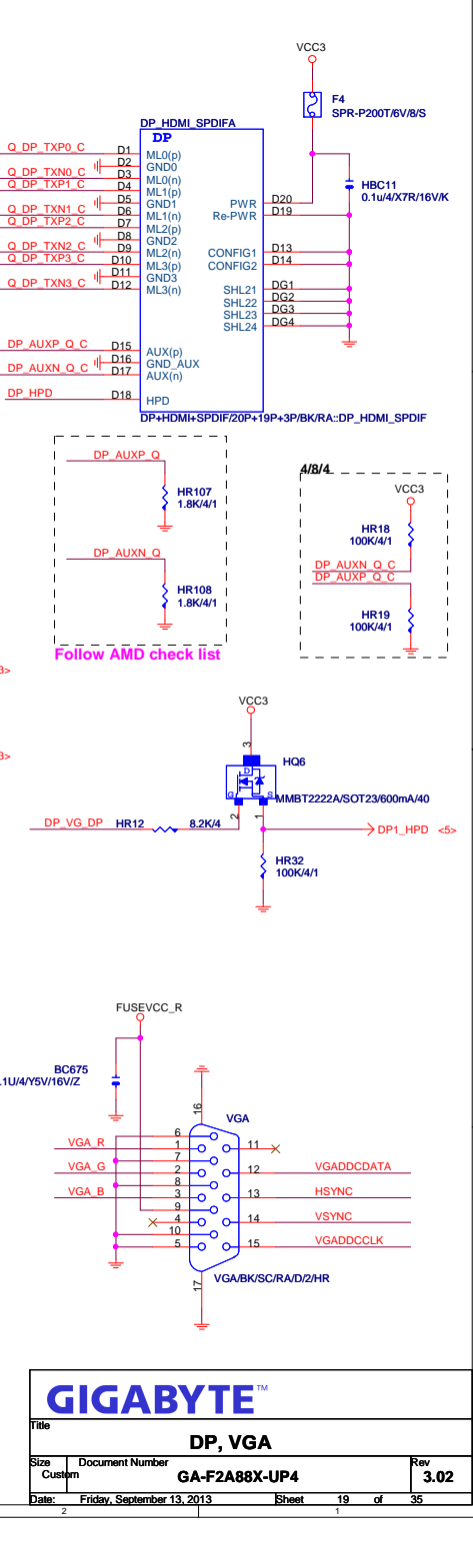
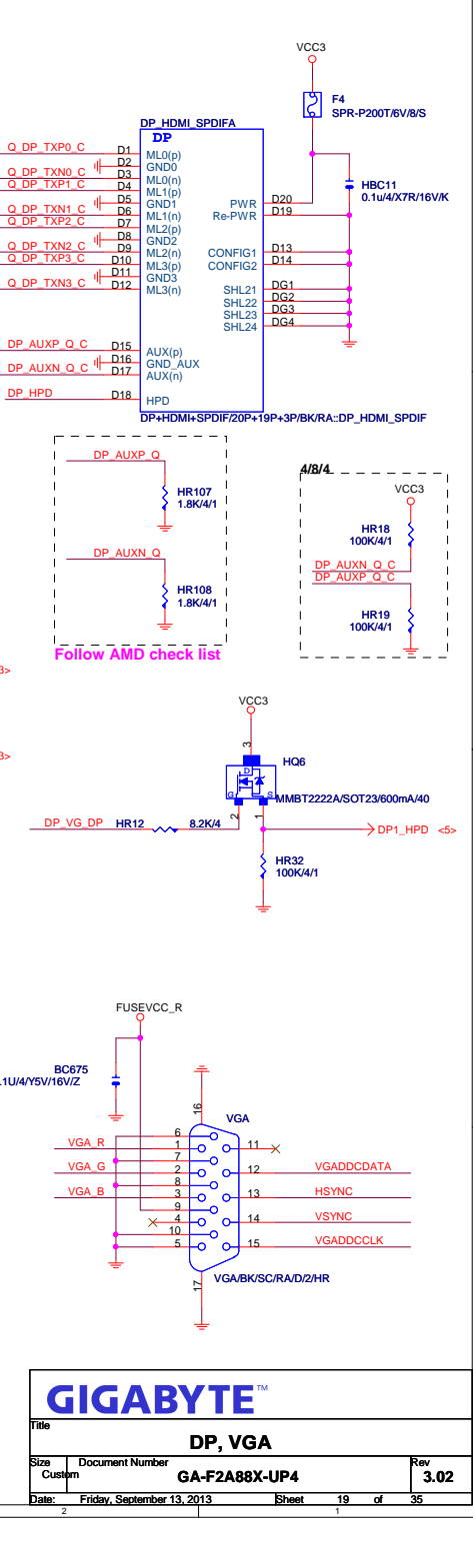
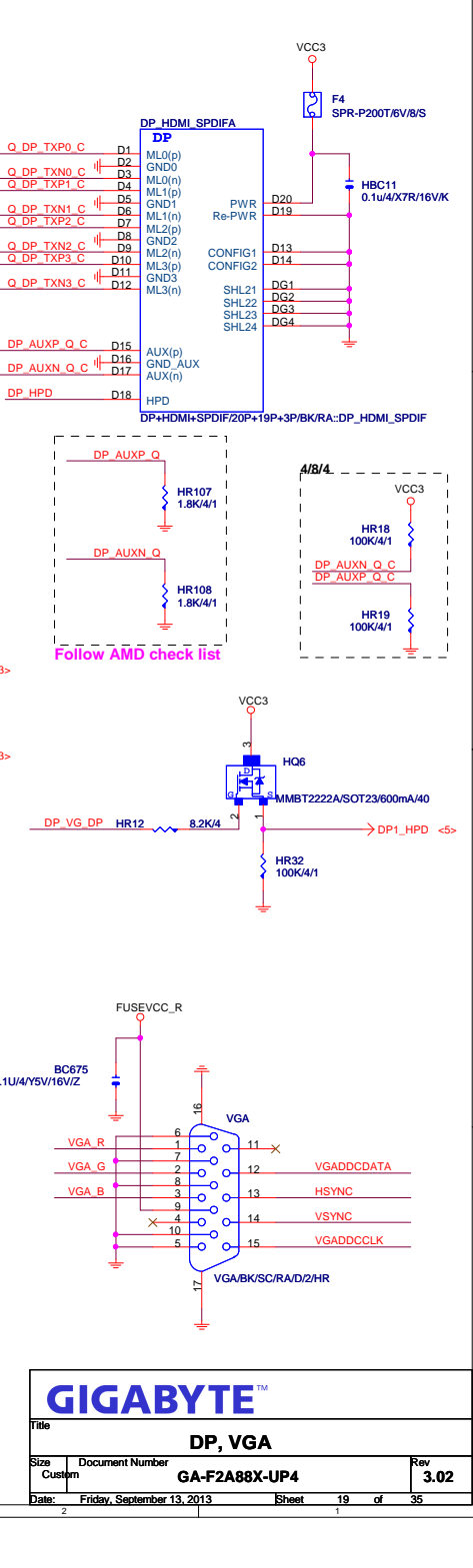
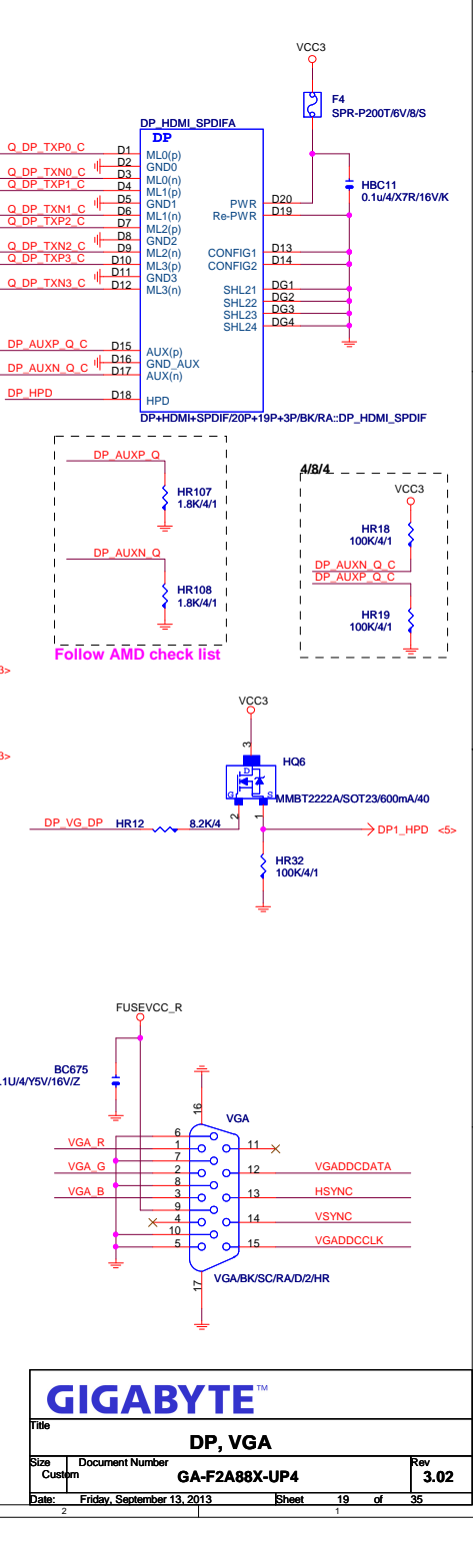
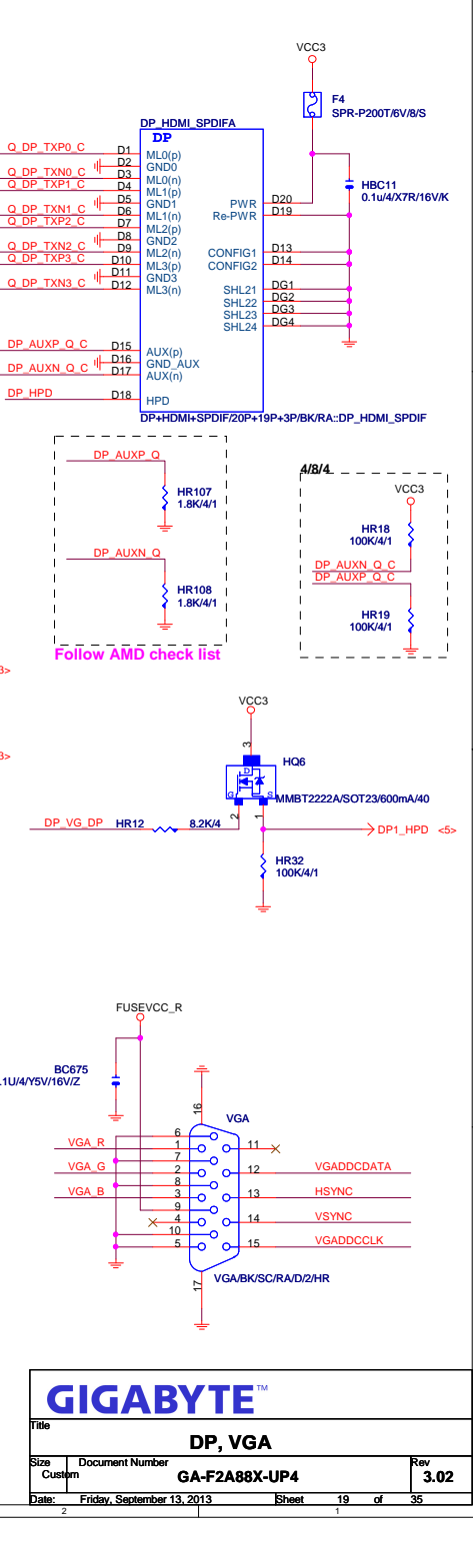
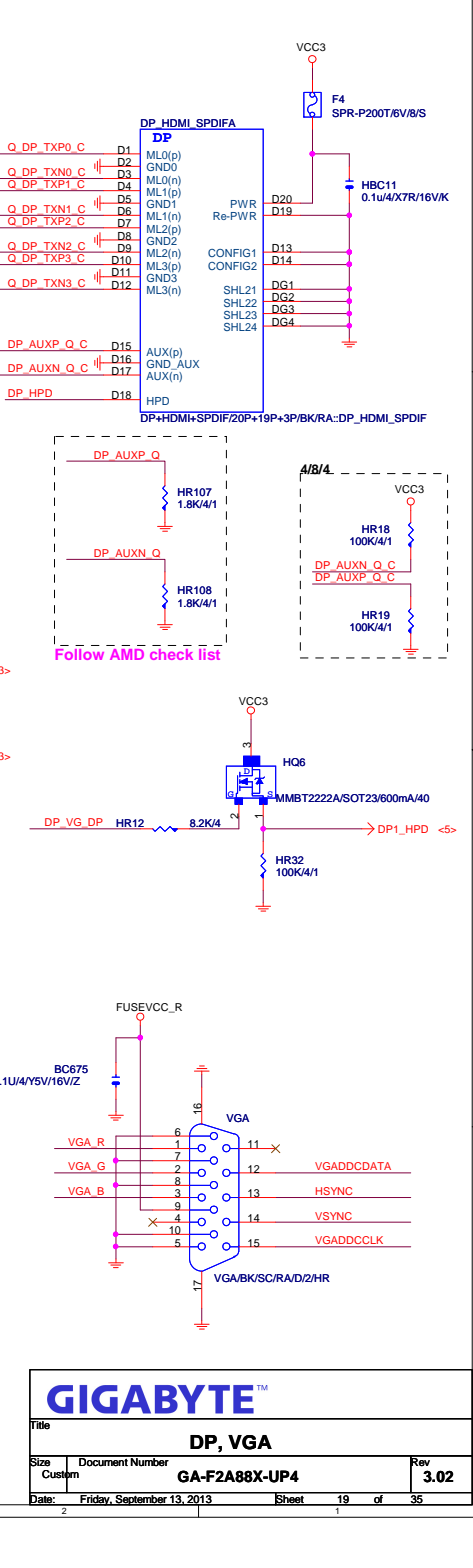
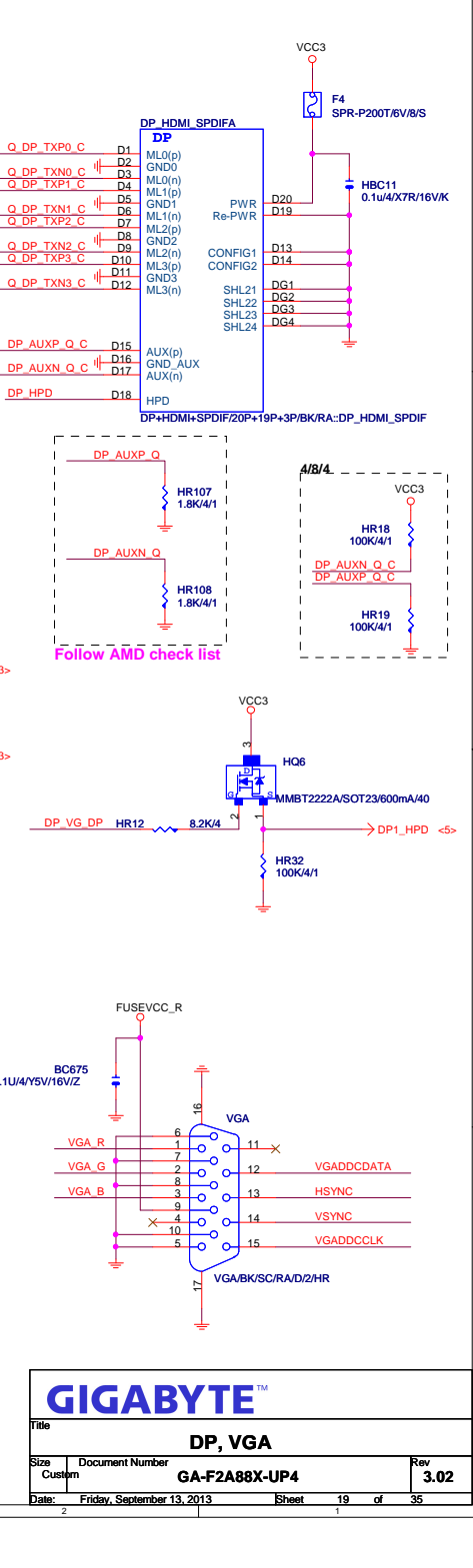
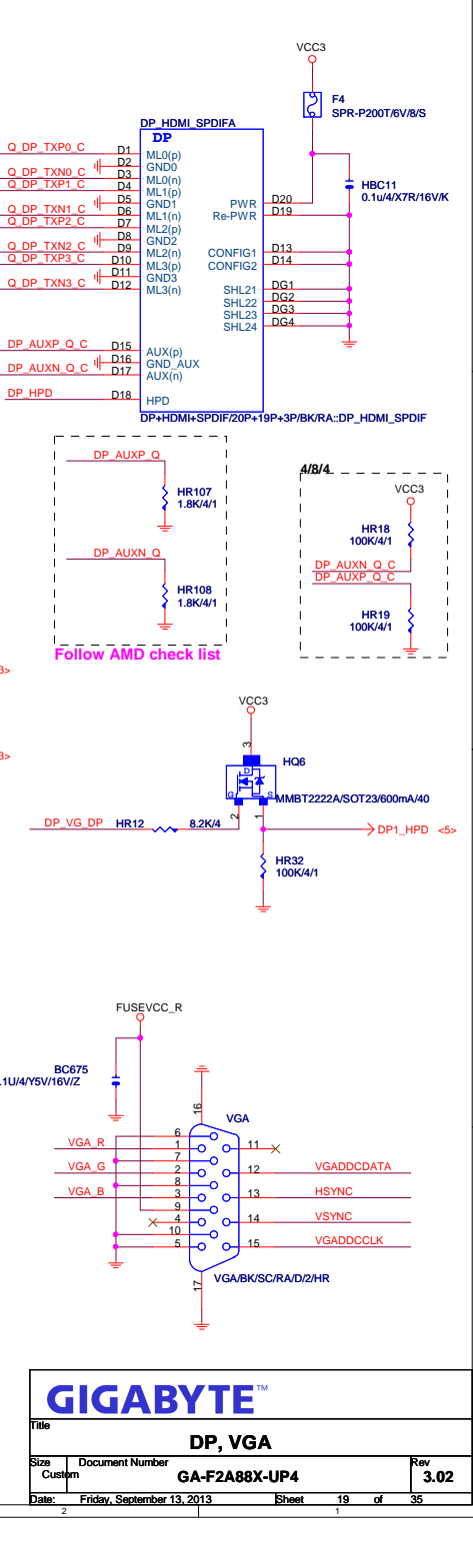
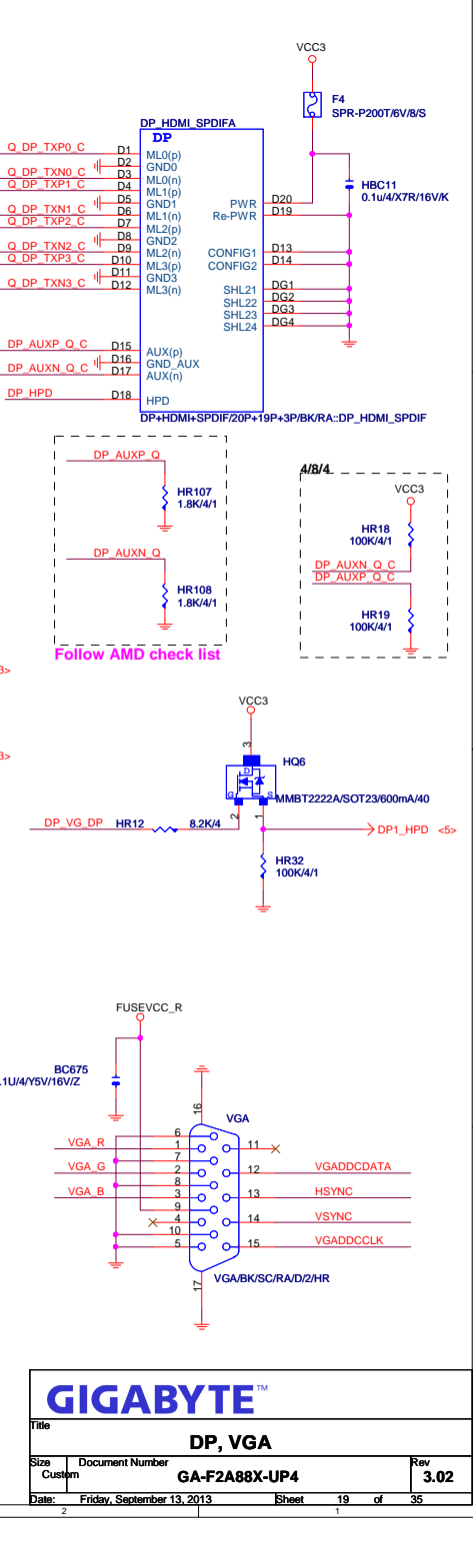
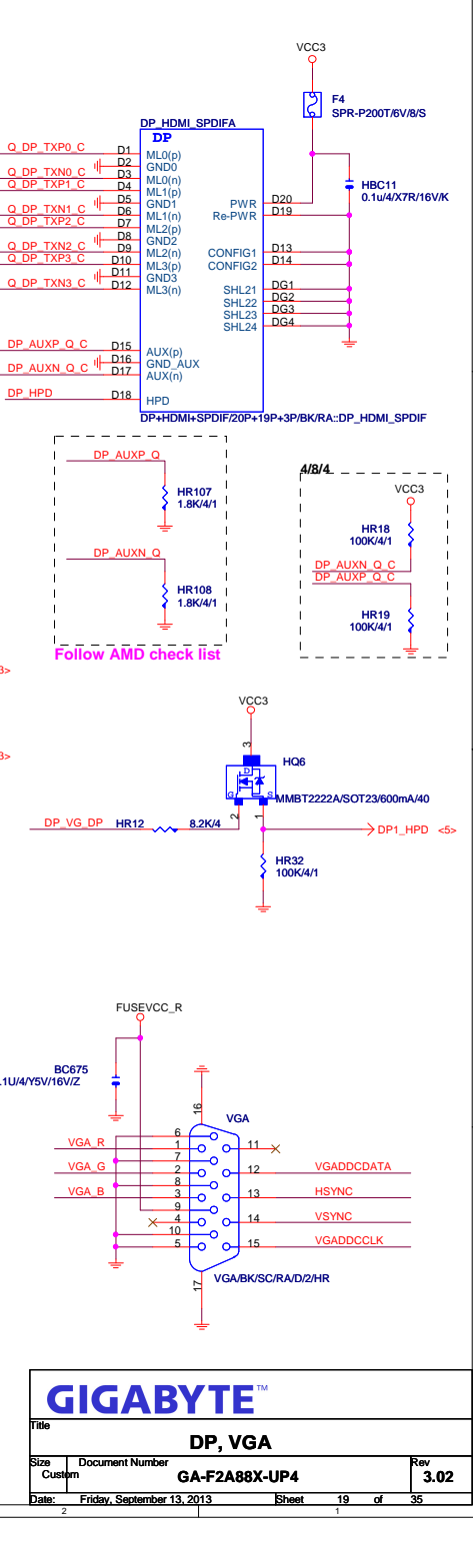
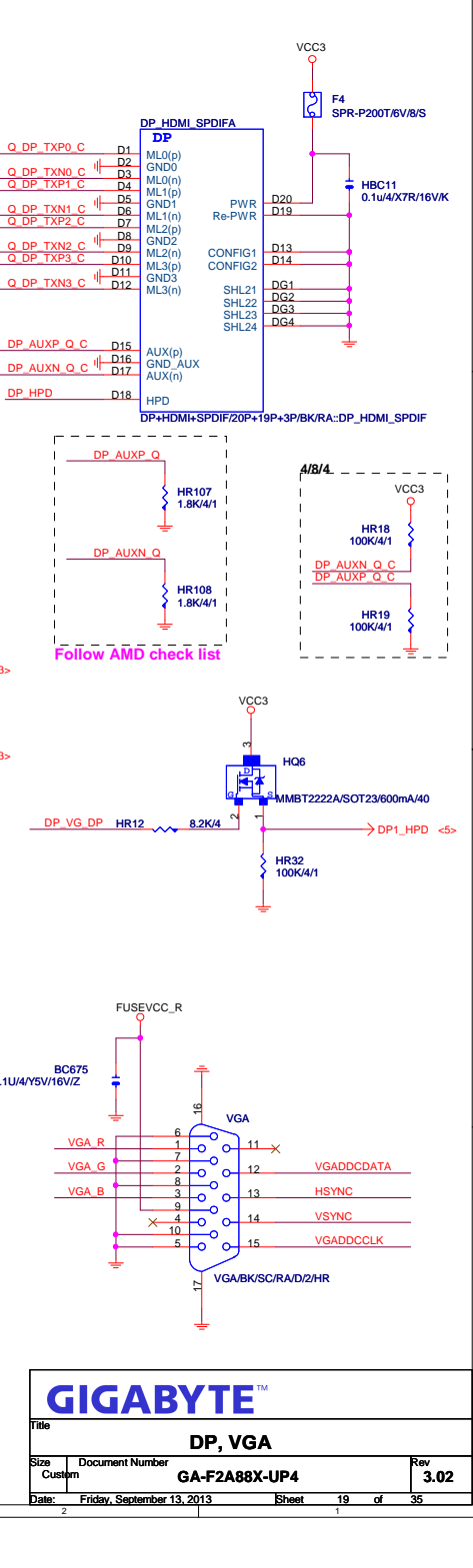
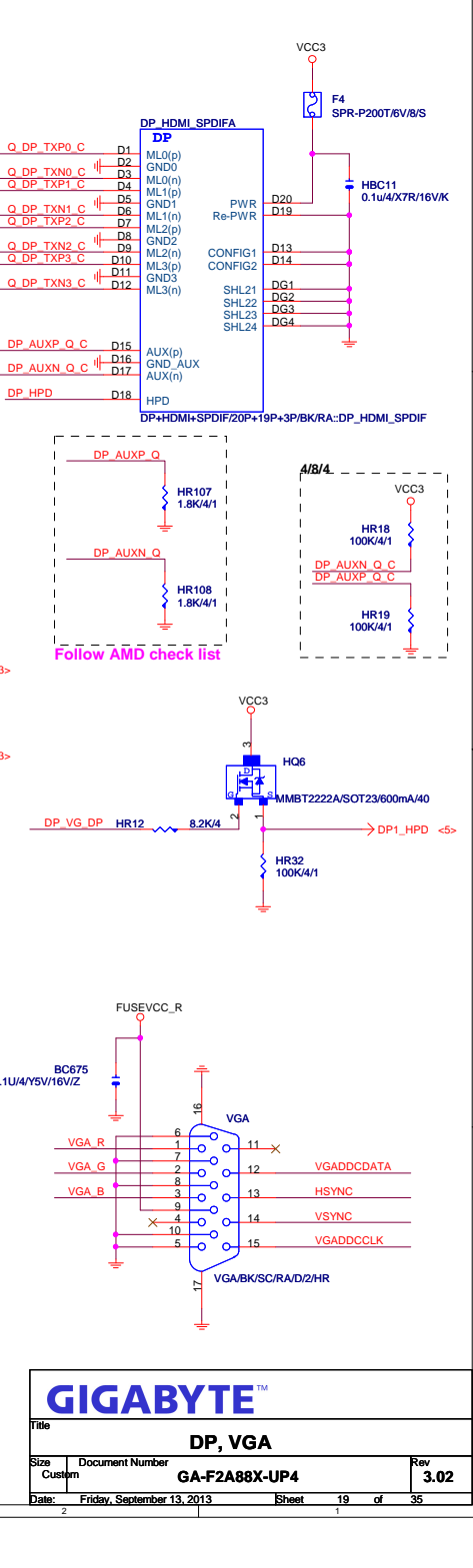
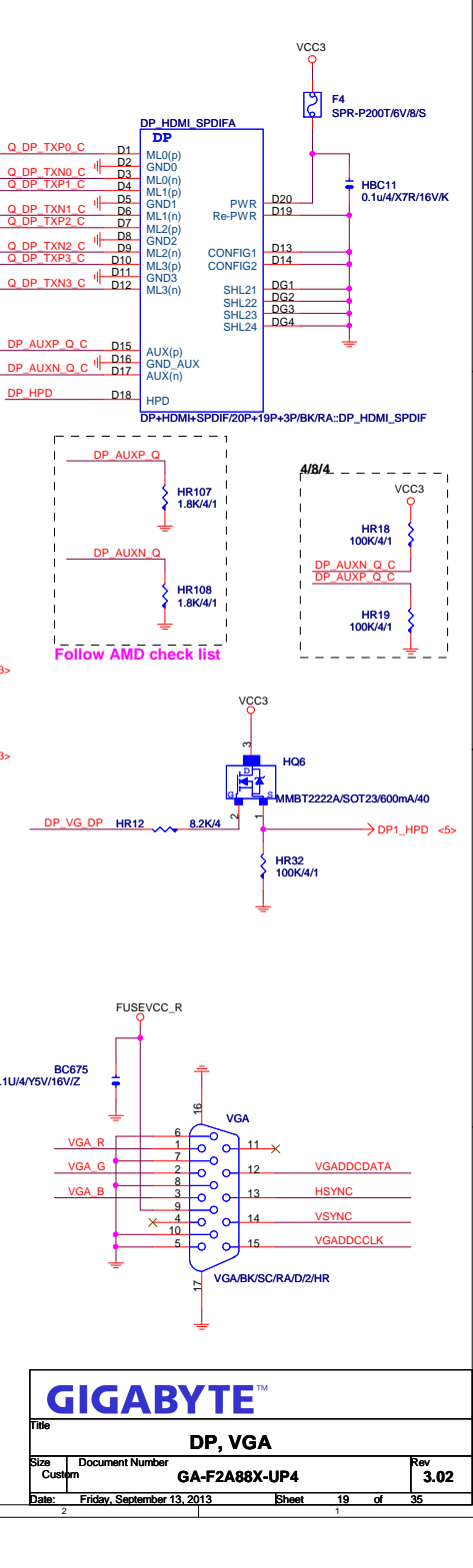
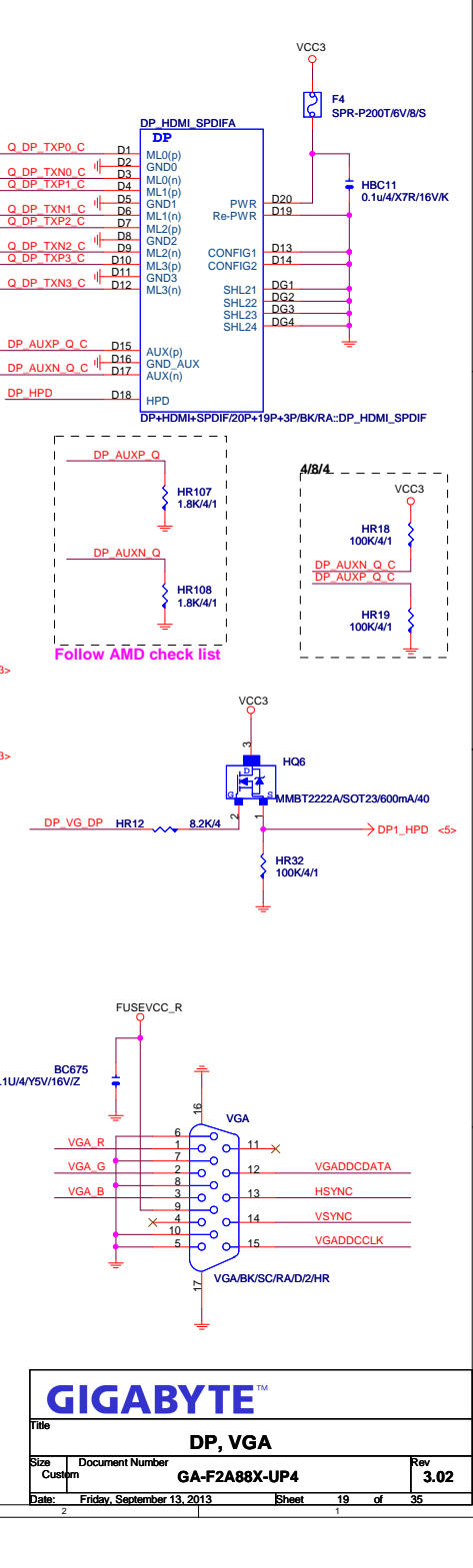
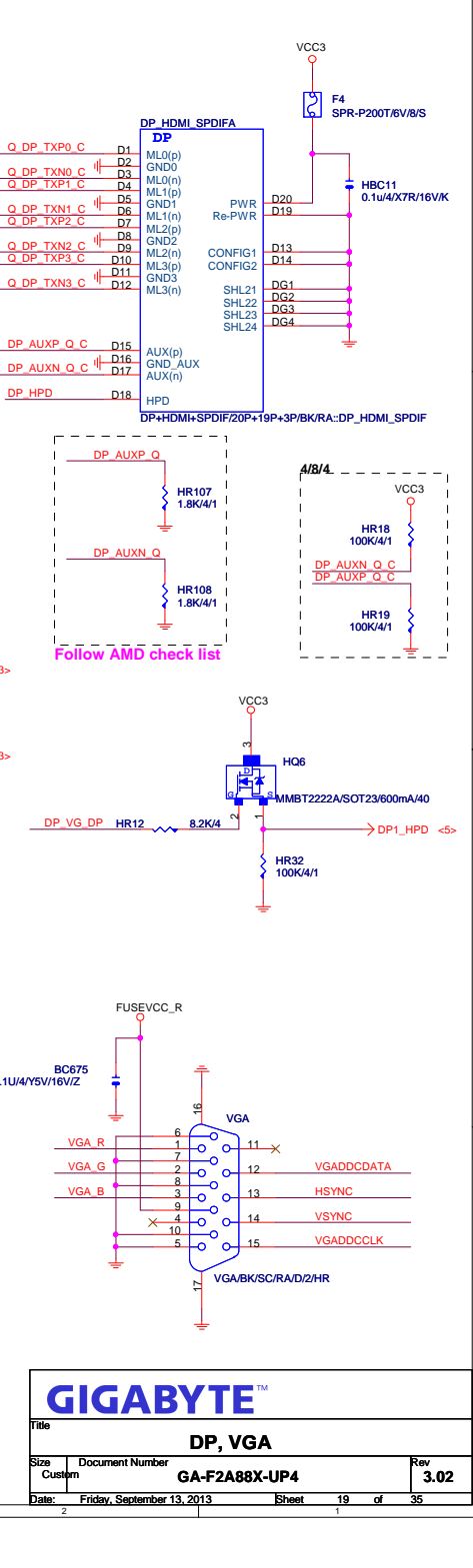
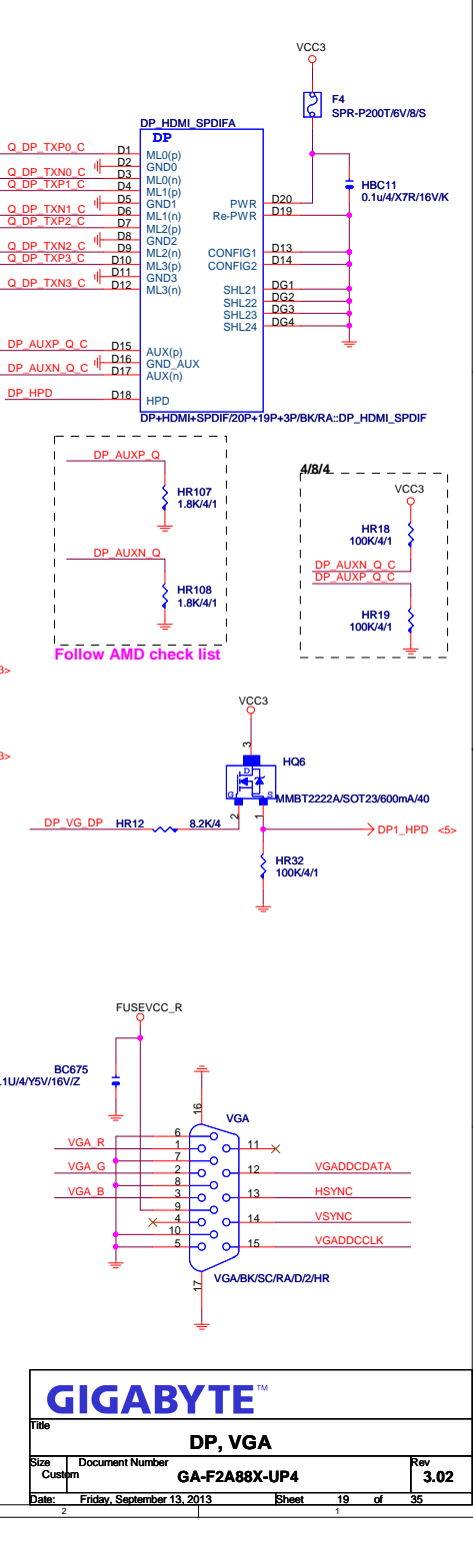
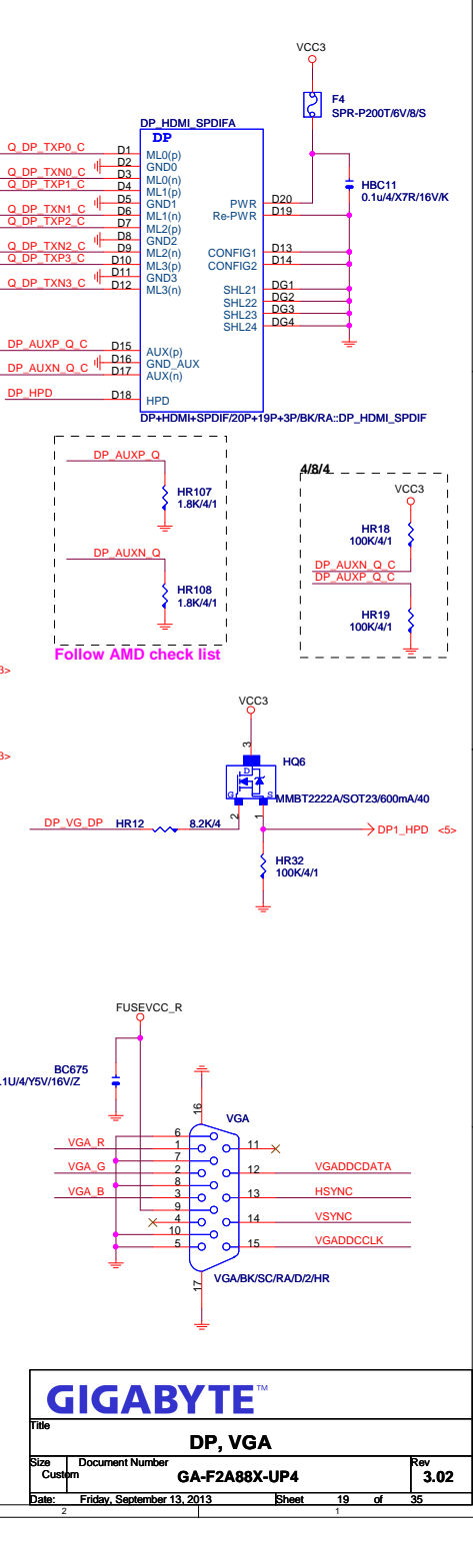
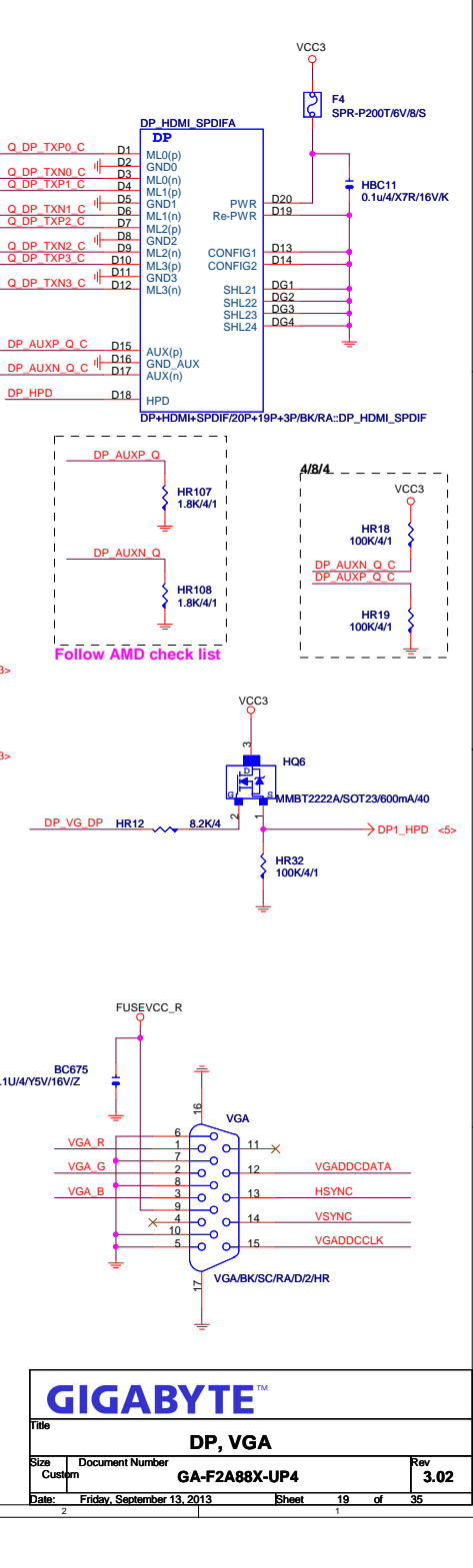
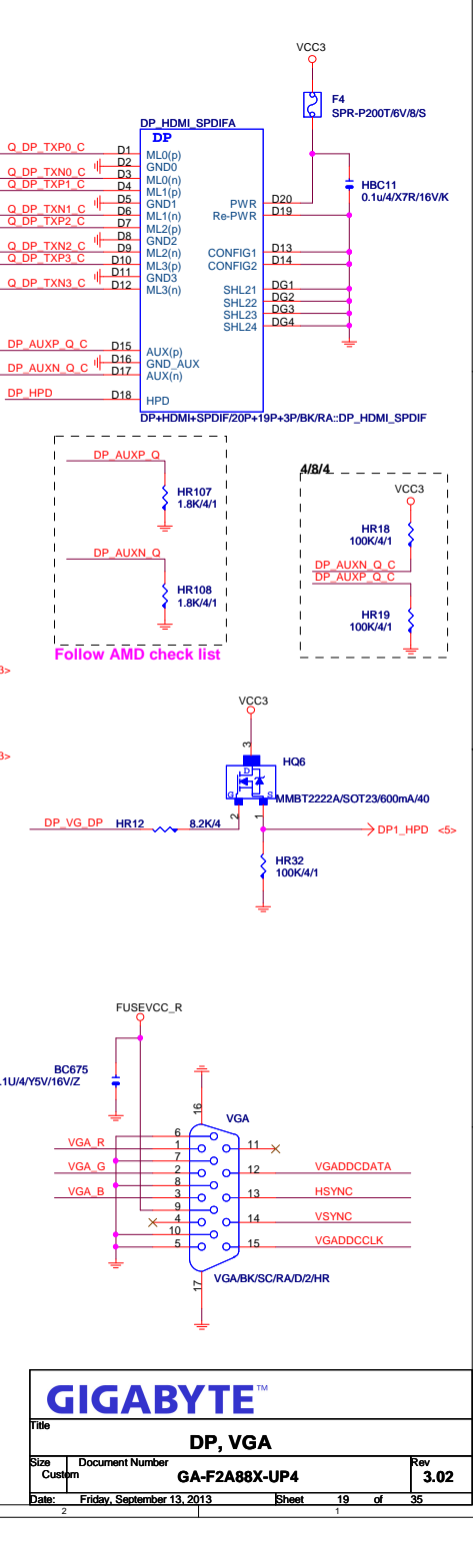
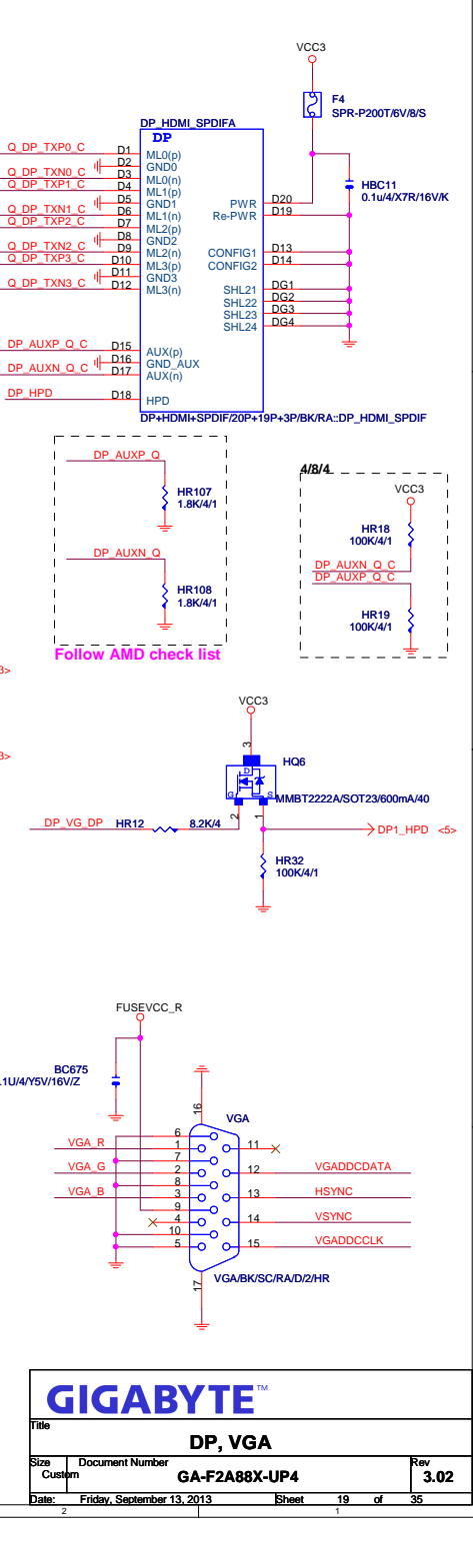
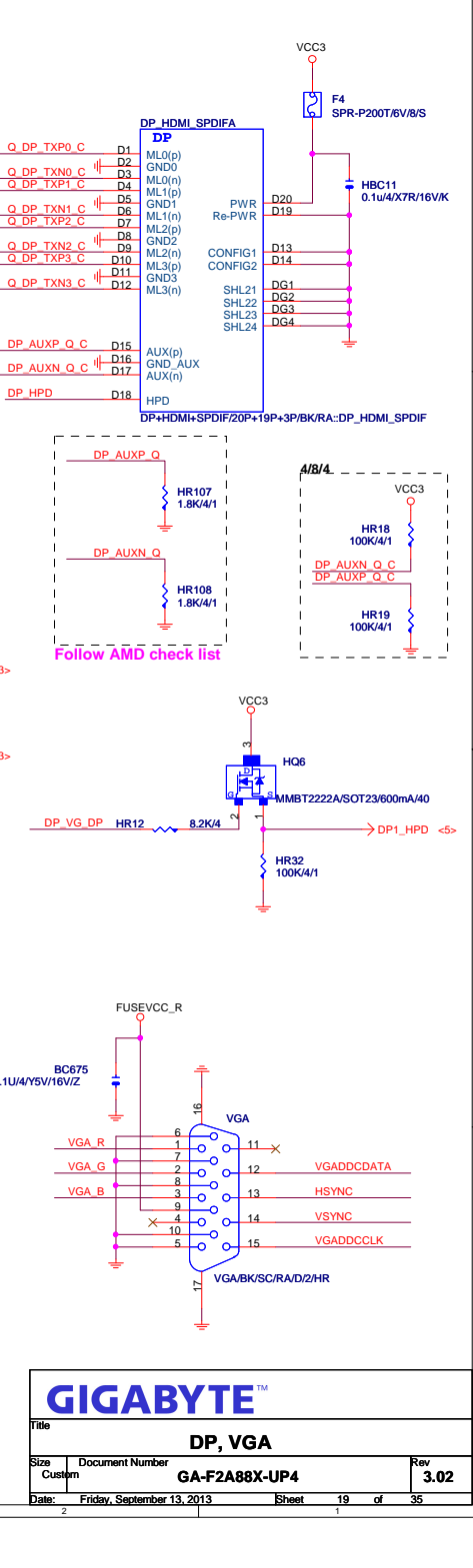
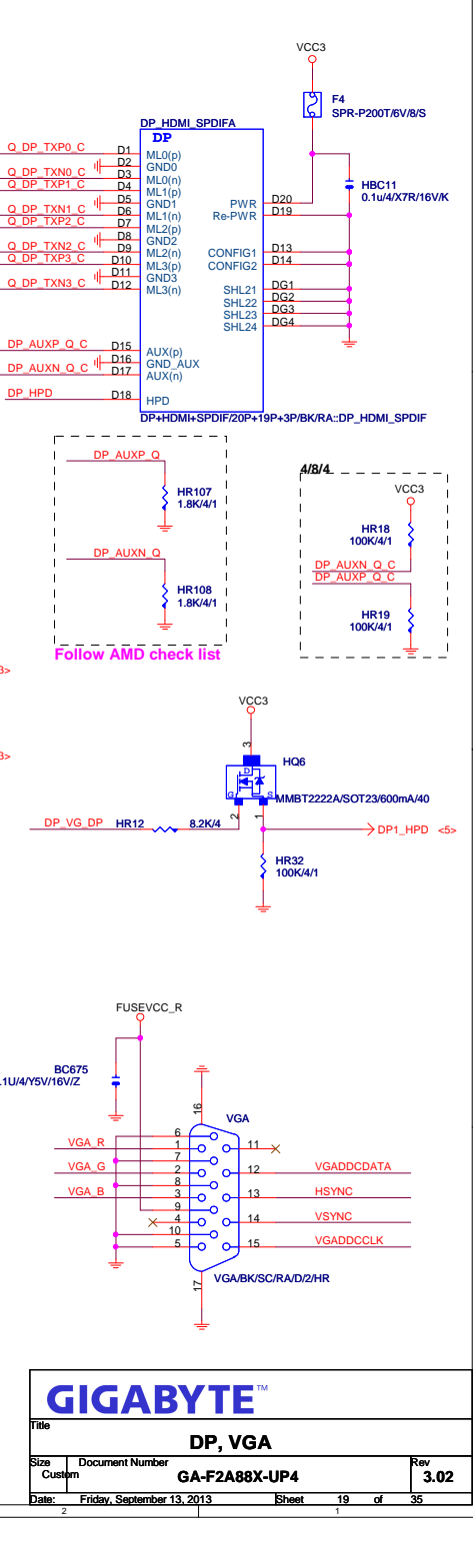
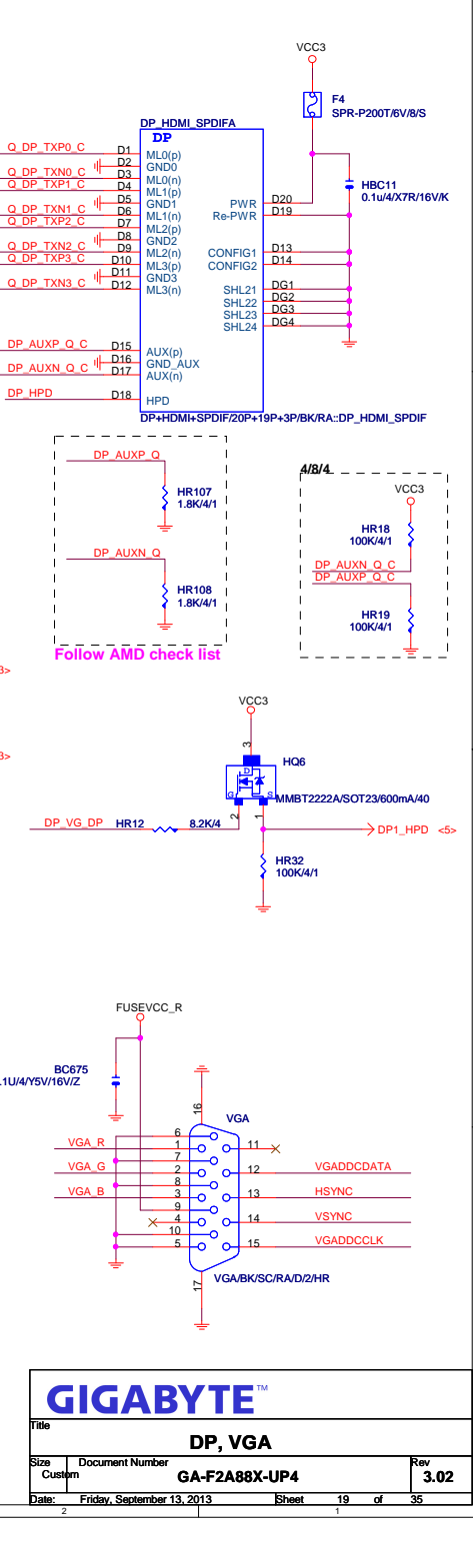
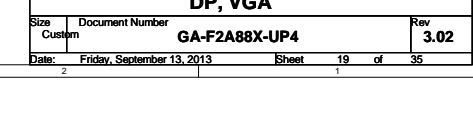
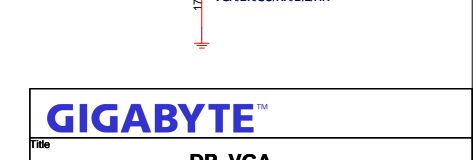
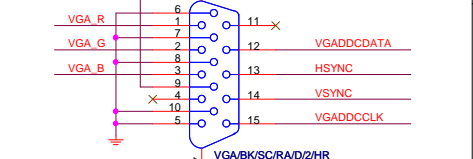
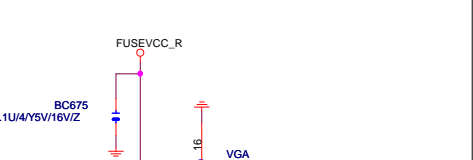
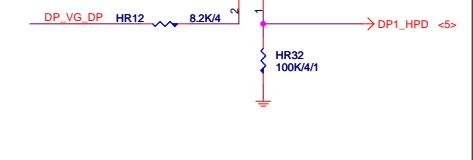
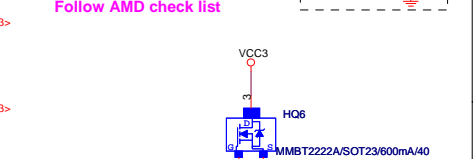
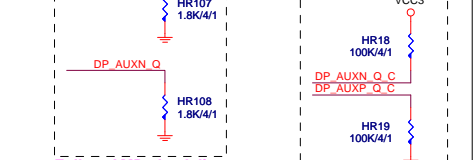
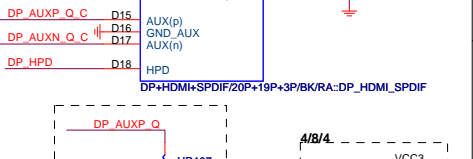
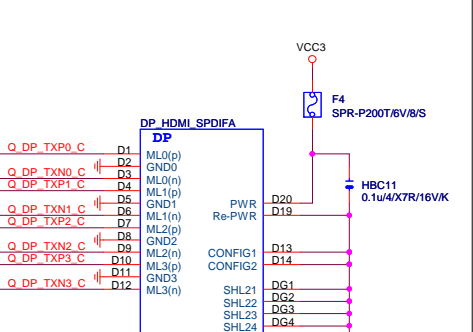
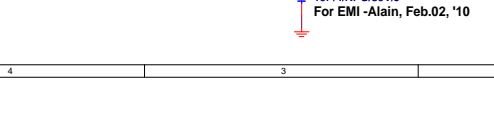
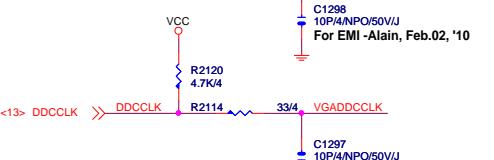
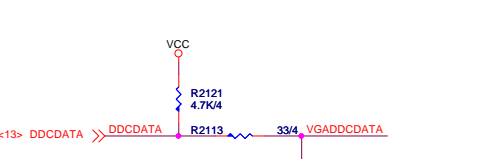
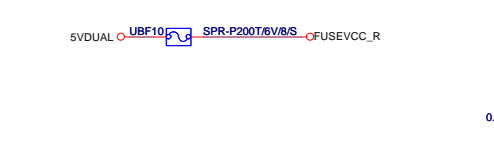
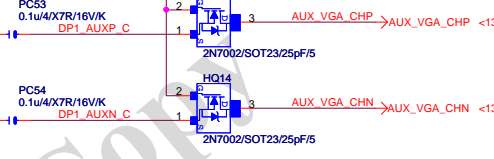
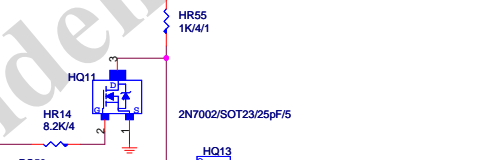
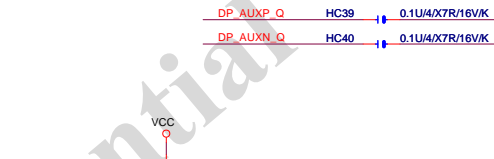
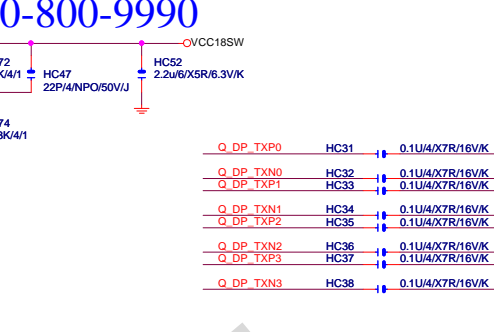
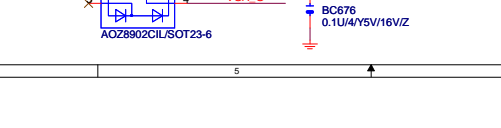
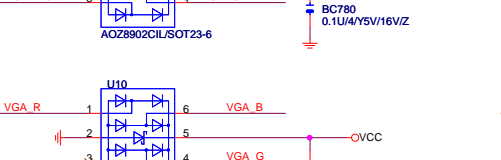
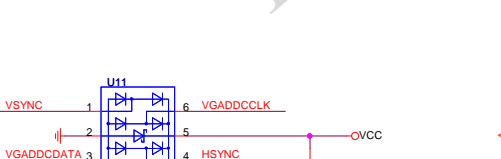
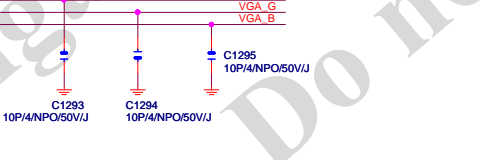
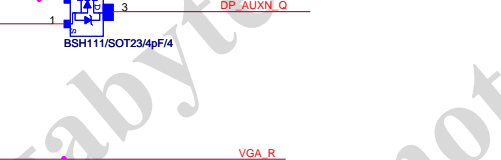
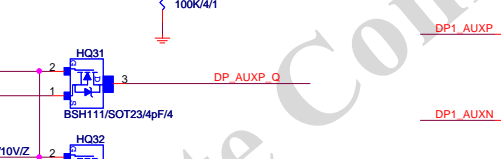
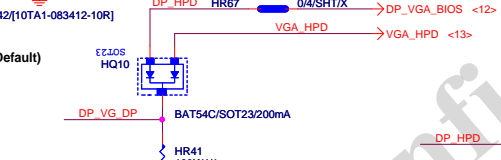
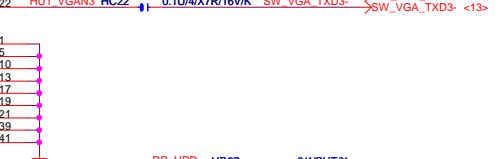
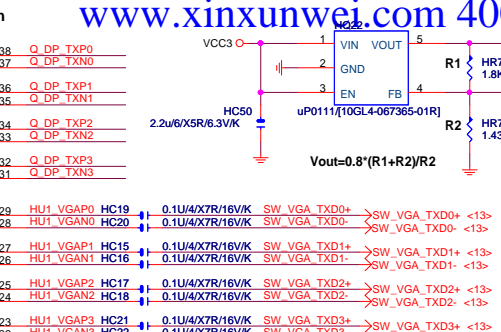
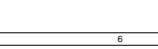
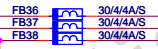
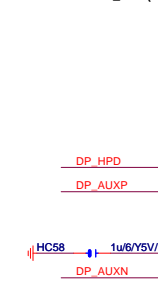
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L	DP
H	D_SUB

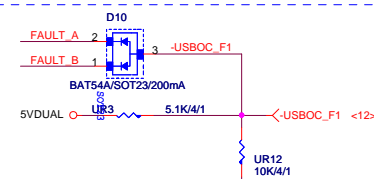
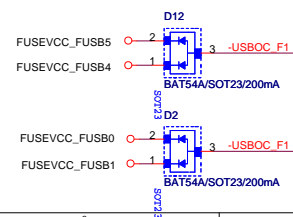
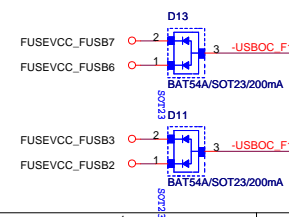
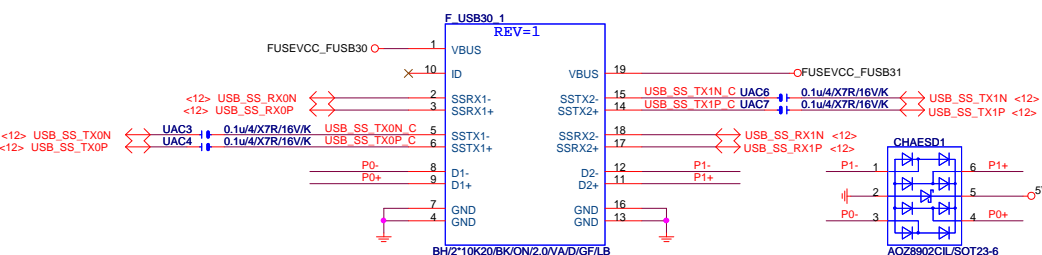
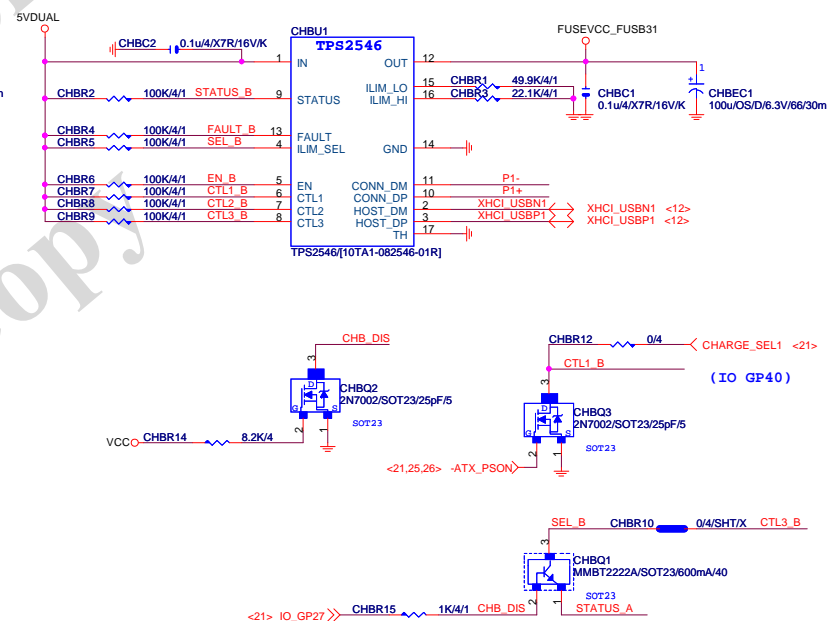
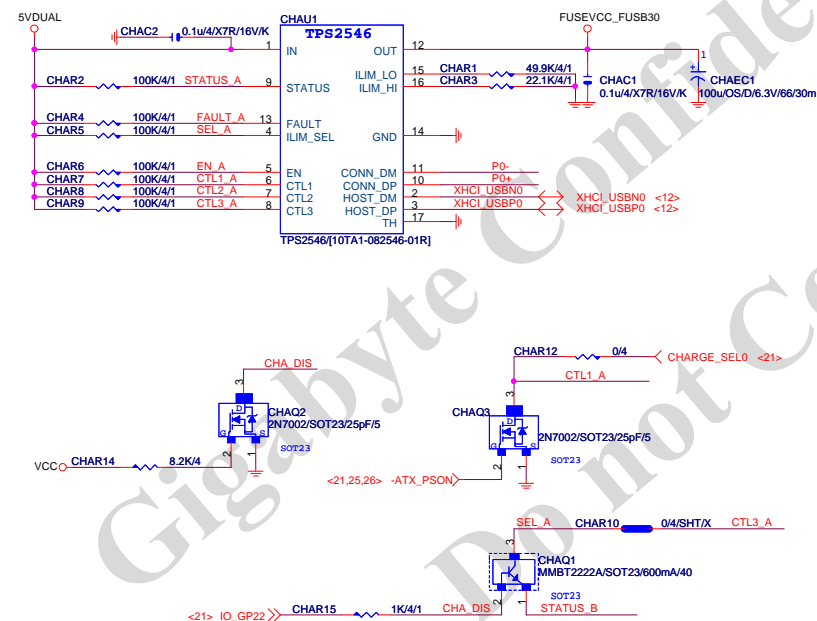
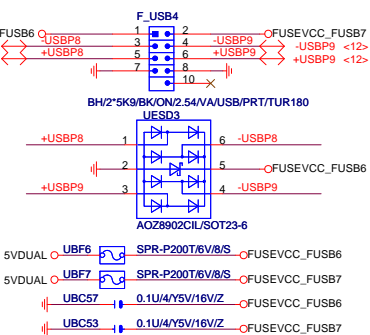


DP & D\_SUB Switch



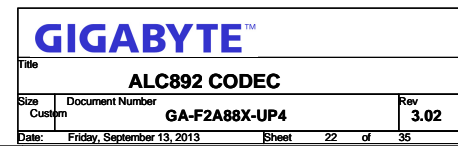
SEL="0"-->A-->DP  
SEL="1"-->B-->D\_SUB(Default)



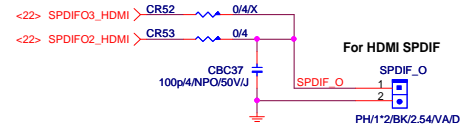




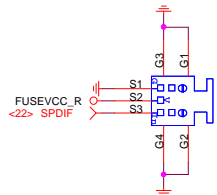
Can Support Amp Out



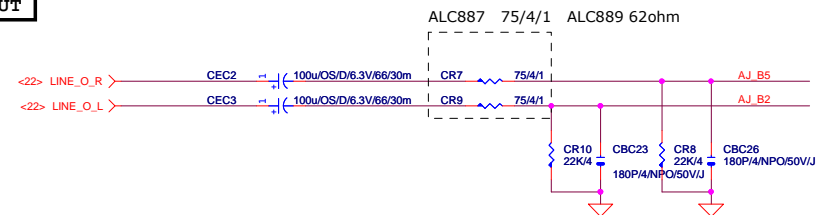
## SPDIF



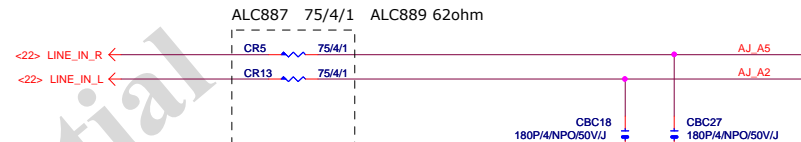
DP\_HDMI\_SPDIFC



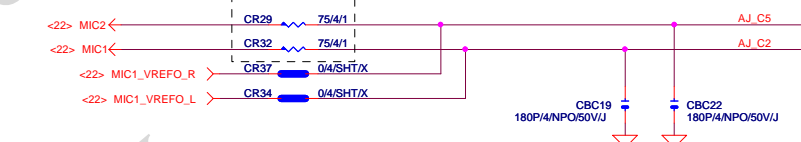
DP+HDMI+SPDIF/20P+19P+3P/BK/RA:DP\_HDMI\_SPDIF

LINE OUT  
FRONT OUT

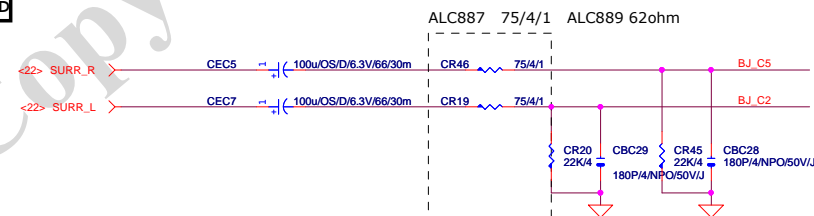
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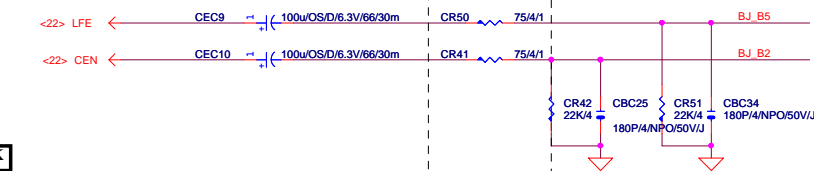
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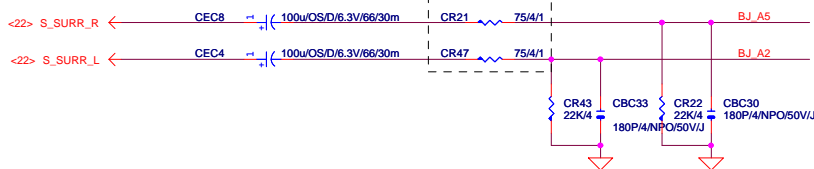
## SURROUND



## CEN/LFE



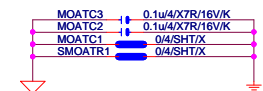
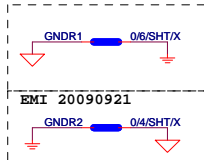
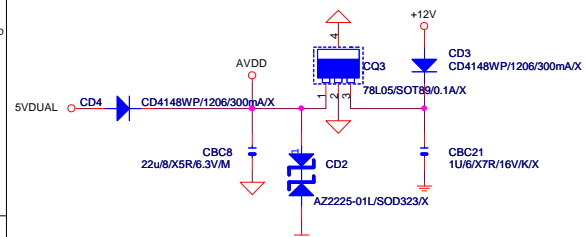
## SURR BACK



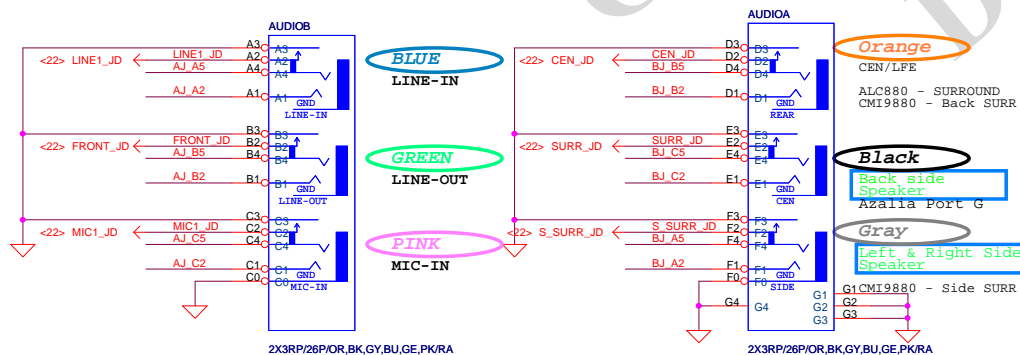
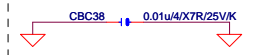
GIGABYTE™

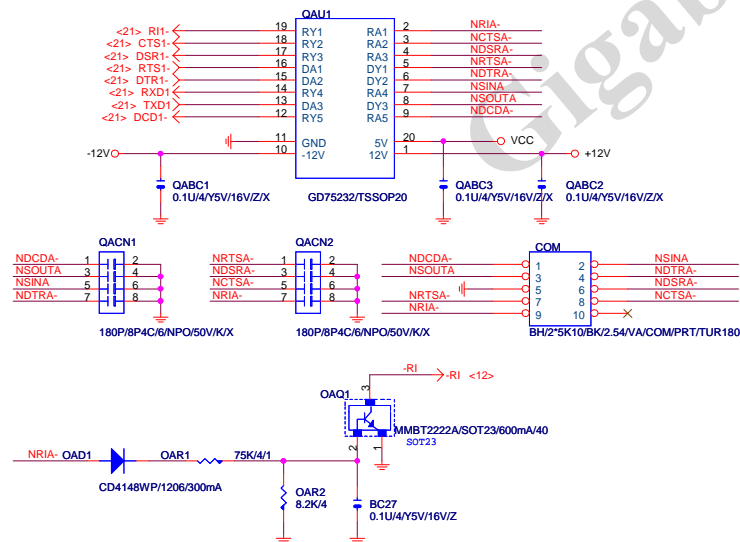
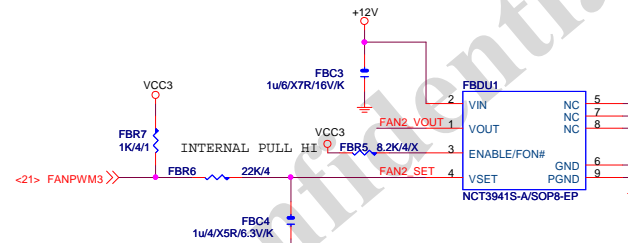
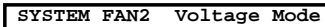
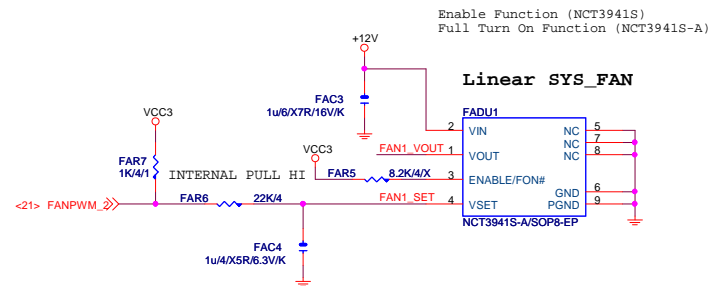
Title		
AUDIO JACK		
Size	Document Number	Rev
Custom	GA-F2A88X-UP4	3.02
Date:	Friday, September 13, 2013	Sheet 23 of 35

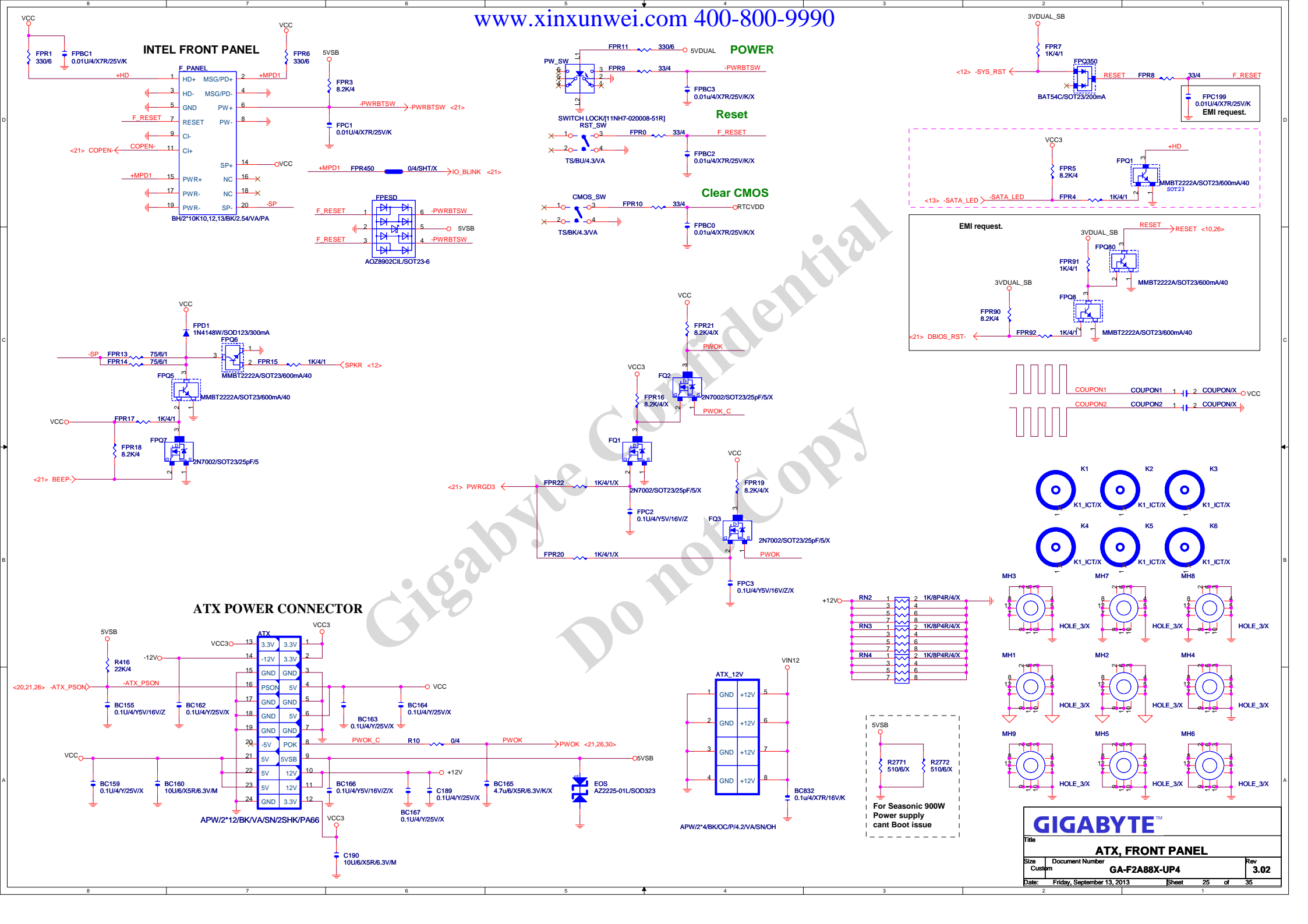
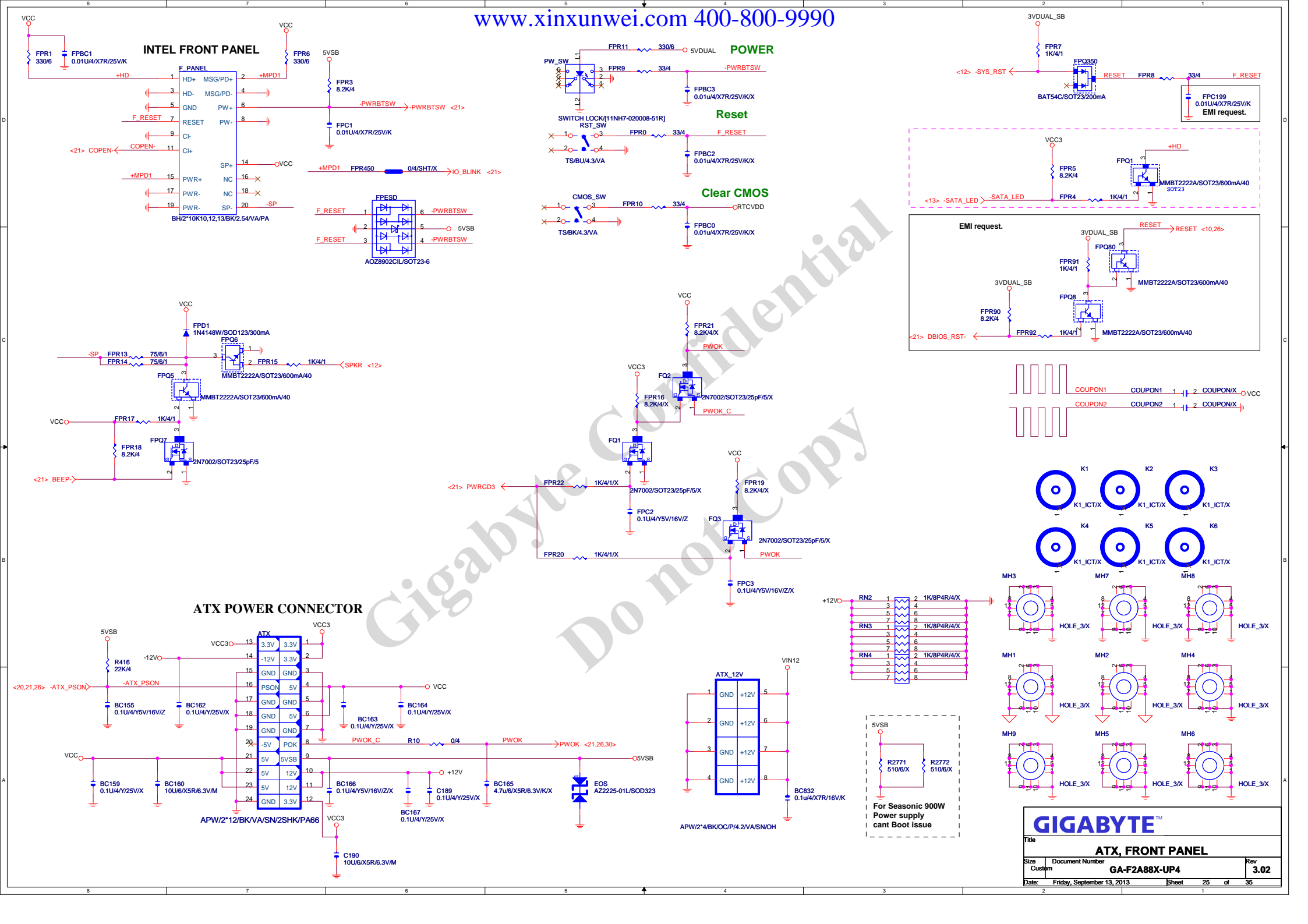
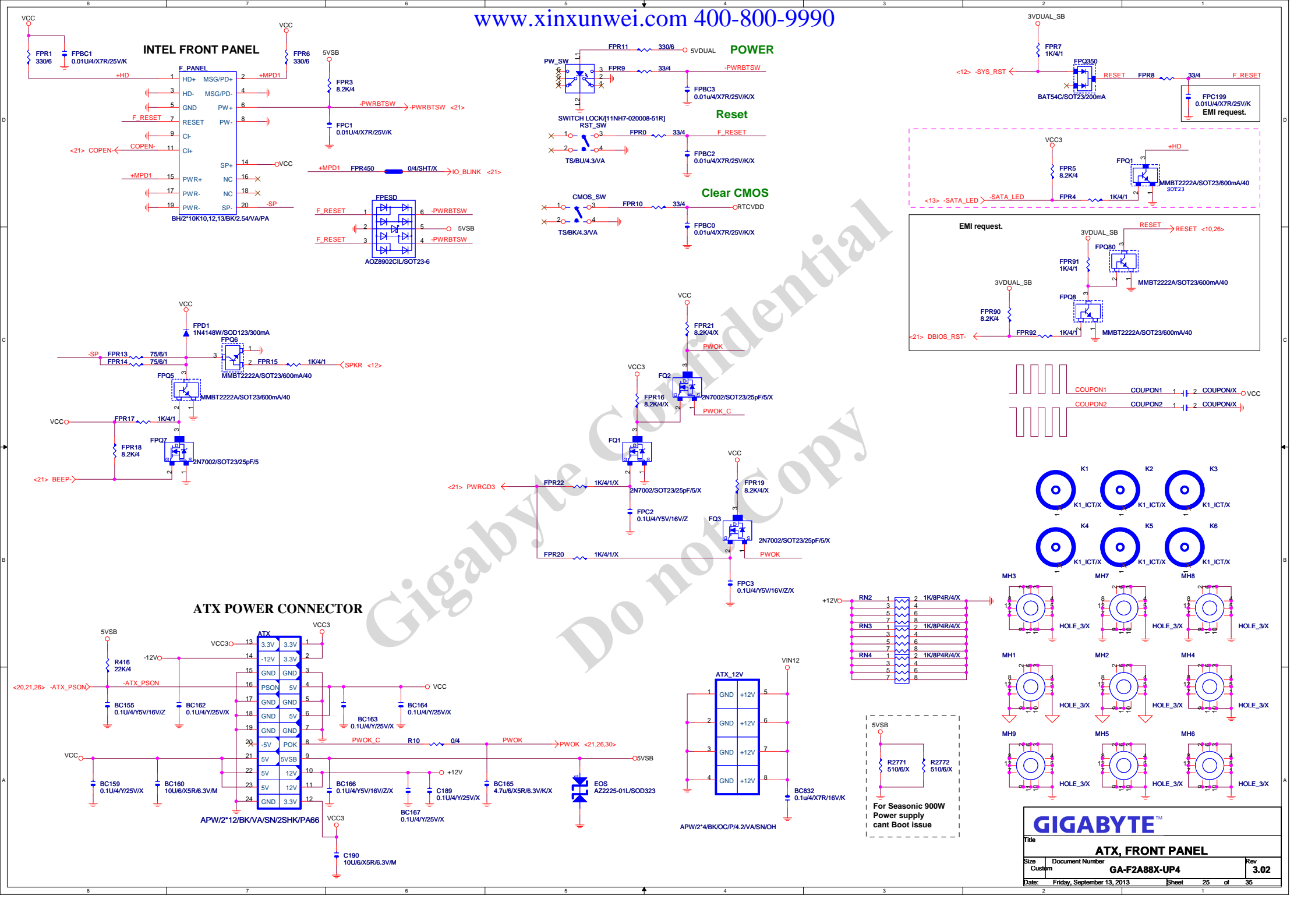
For ESD PROTECT DIODE

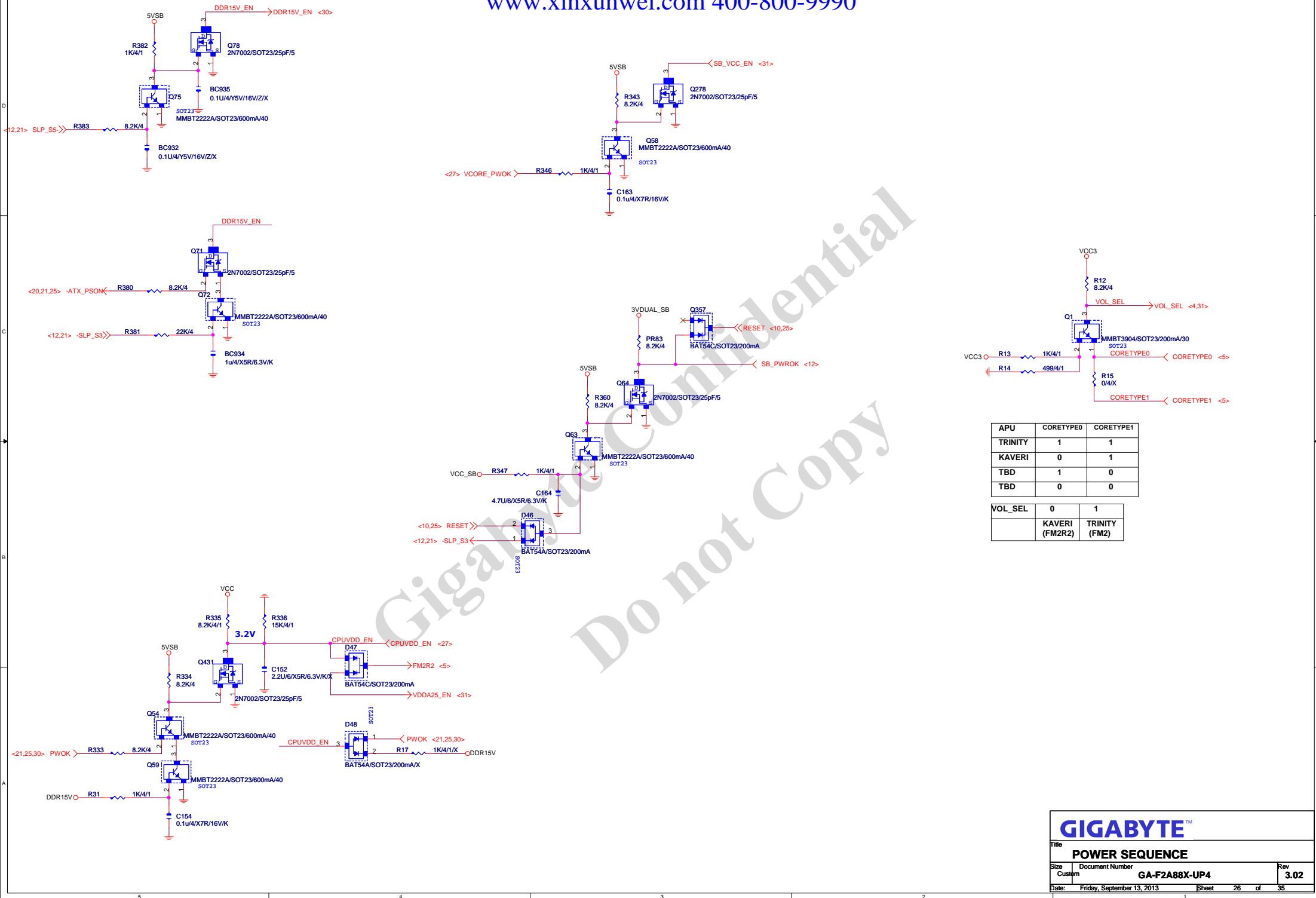


For Audio precision test

A3R7/13P/B/11NR6-403006-01\_11NR6-403006-02  
3R7+15P/11NR6-403004-11A3R7/13P/0BG/11NR6-403006-71  
3R7+15P/11NR6-403004-31



[illegible]



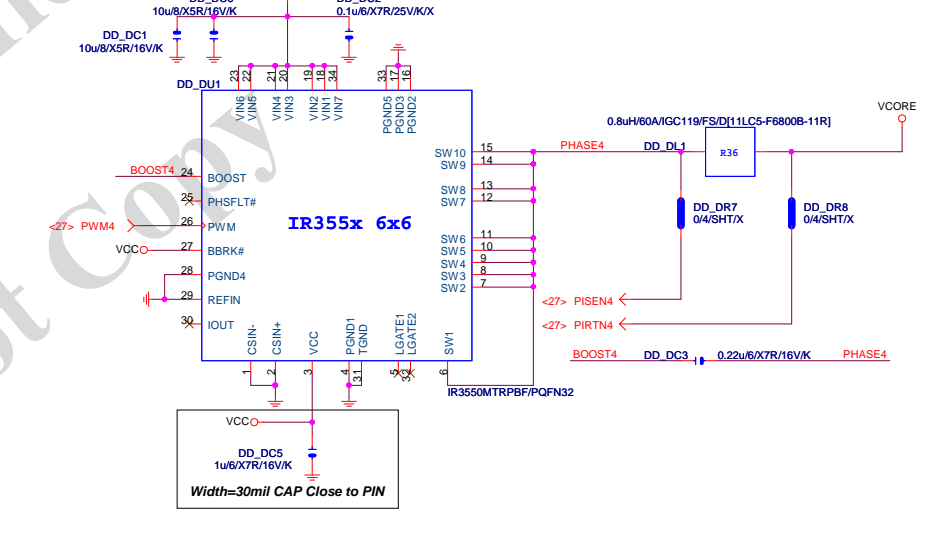
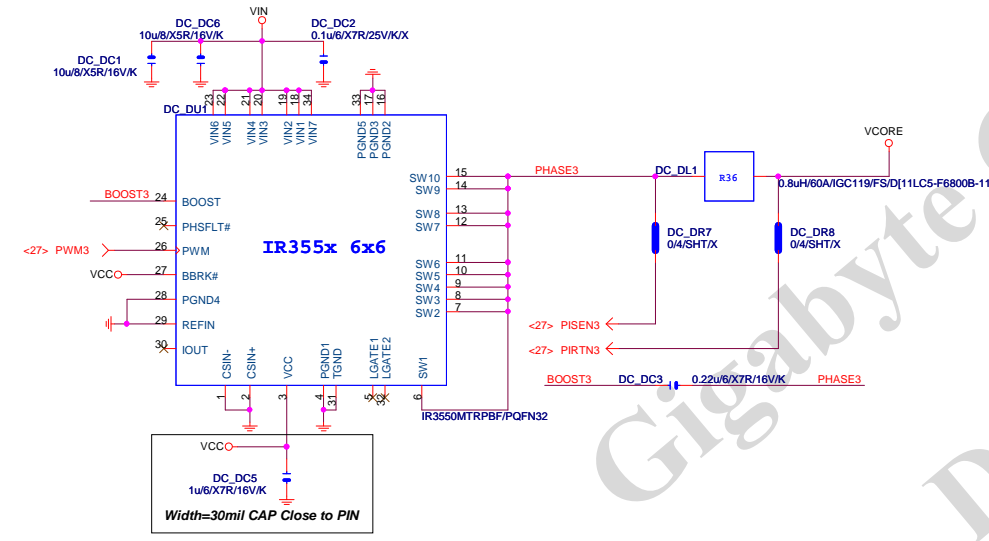
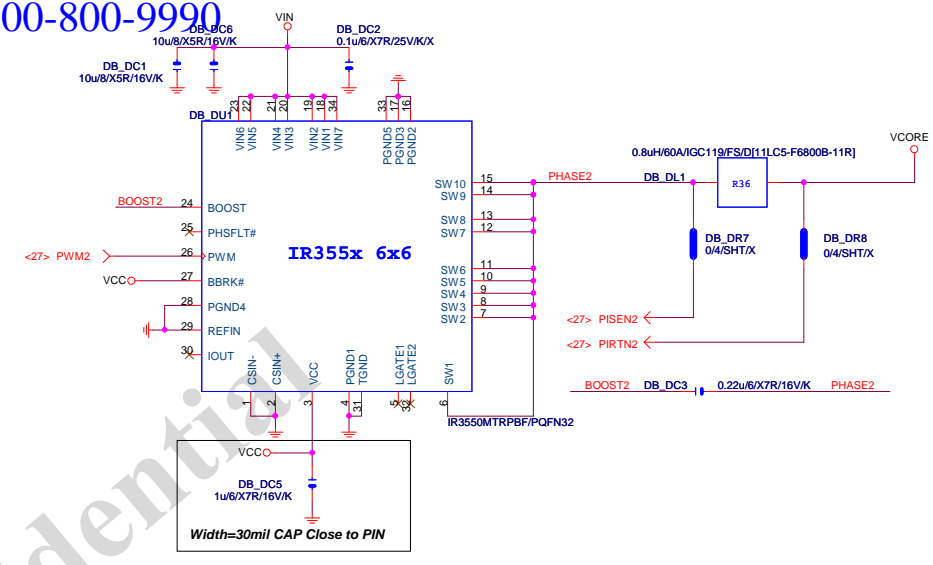
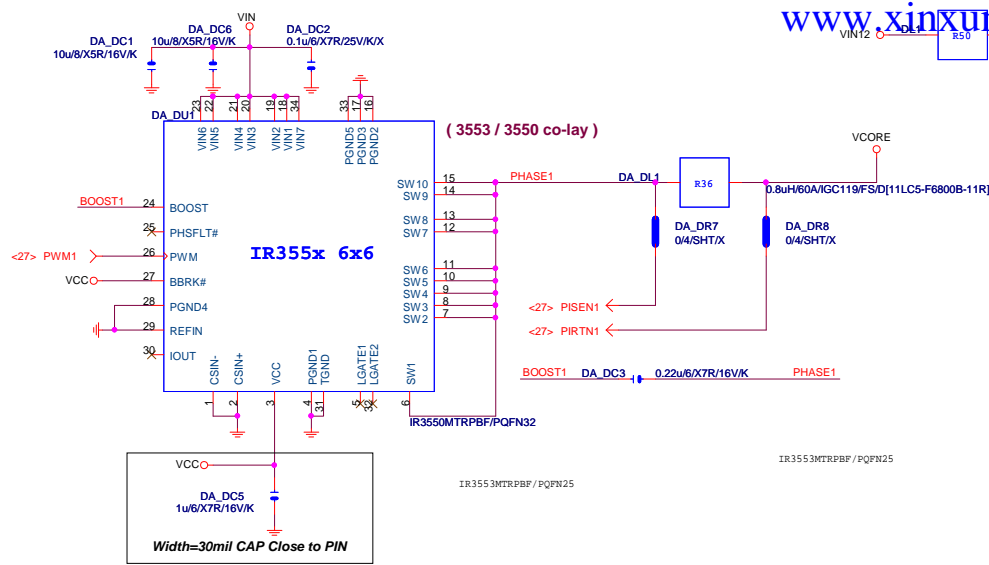
GIGABYTE™

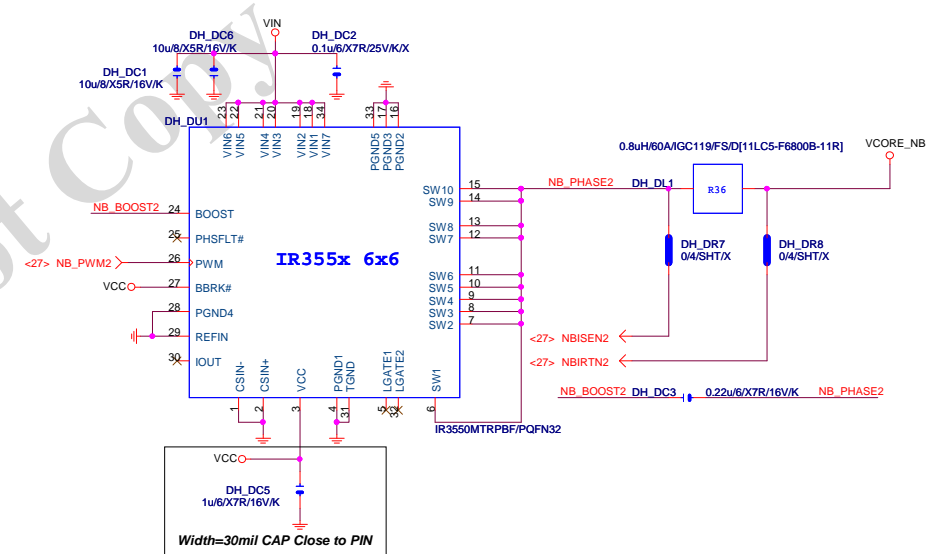
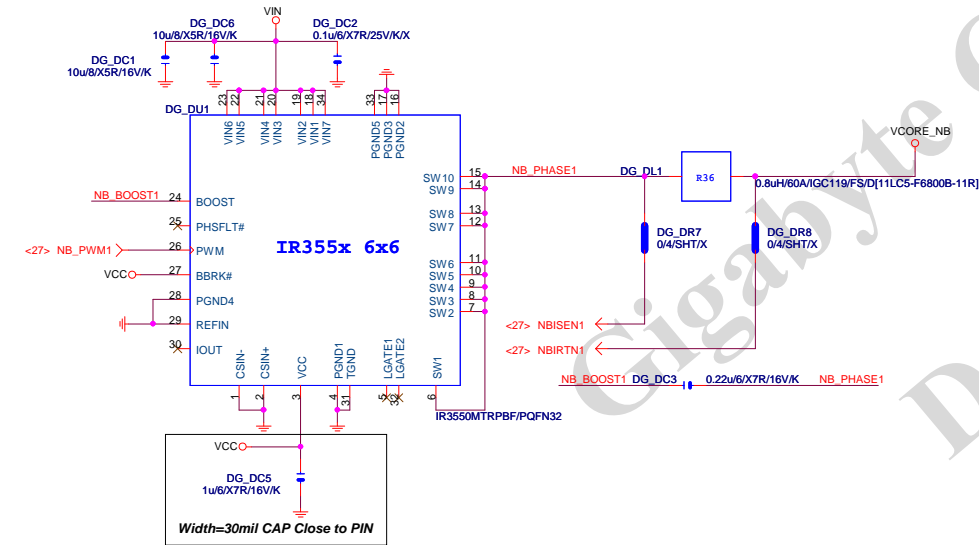
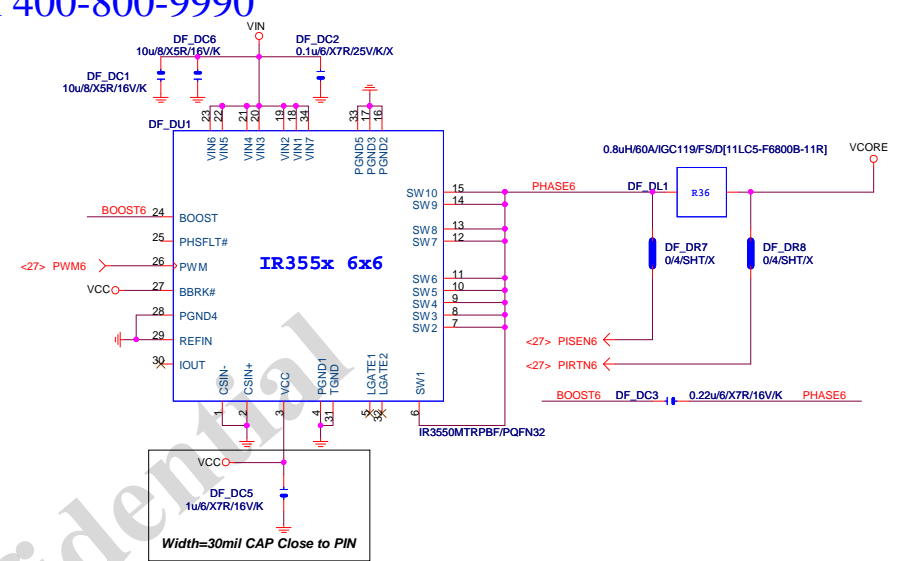
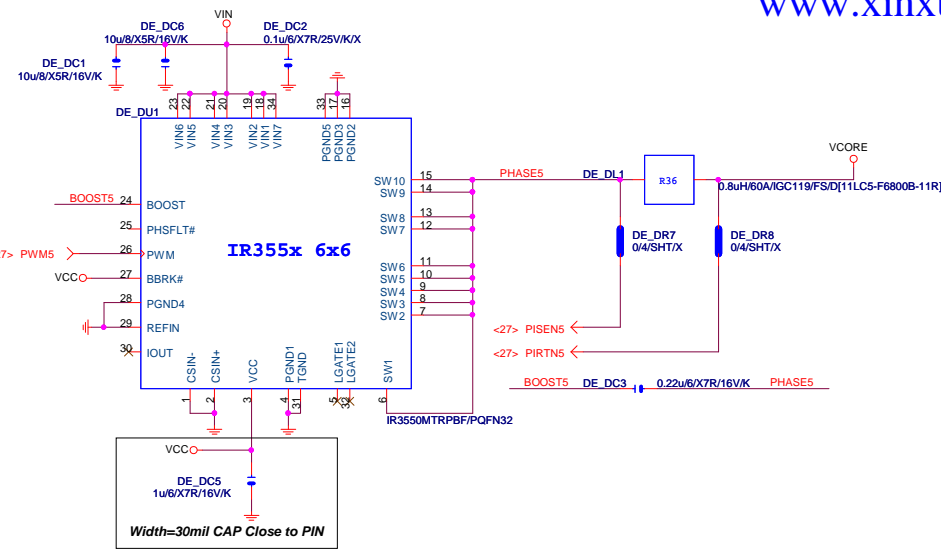
Title POWER SEQUENCE

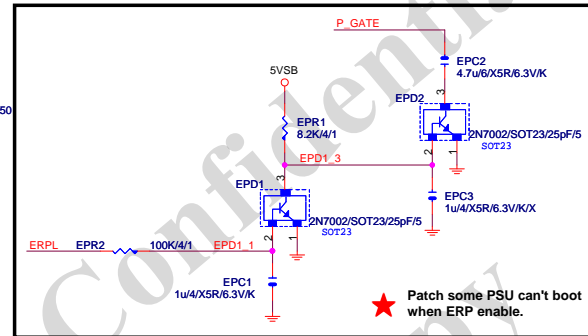
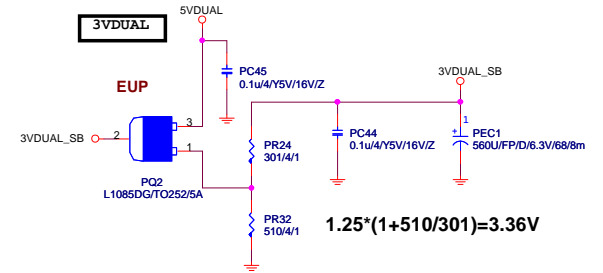
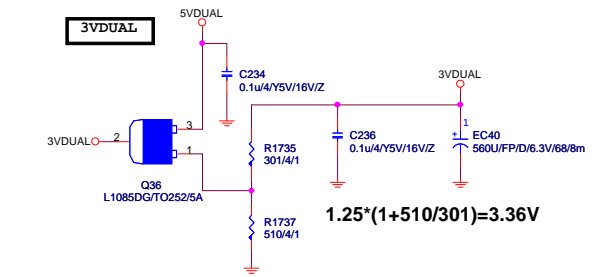
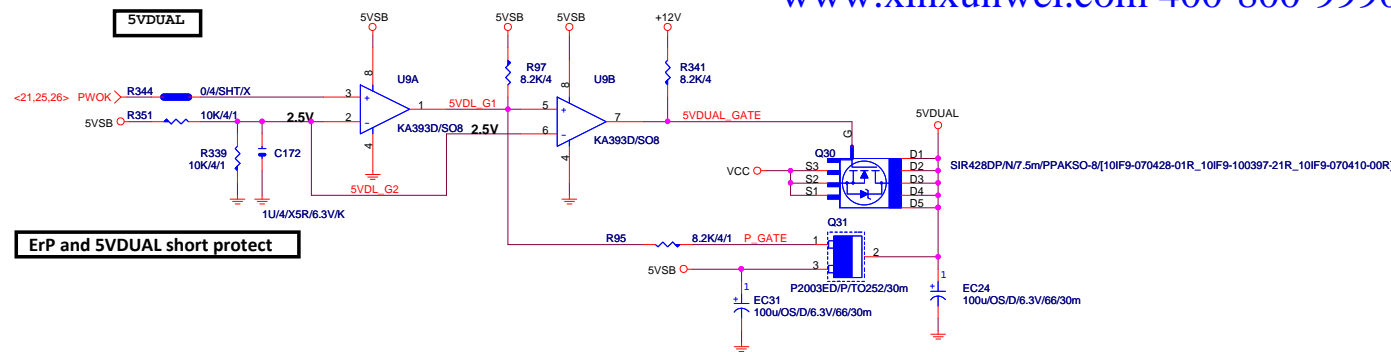
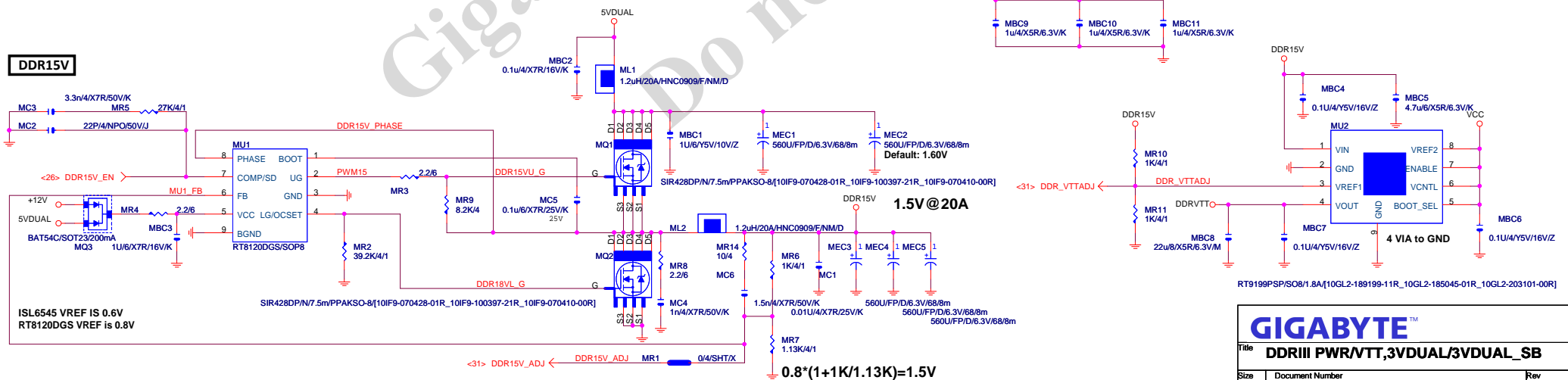
Size Custom Document Number GA-F2A88X-UP4 Rev 3.02

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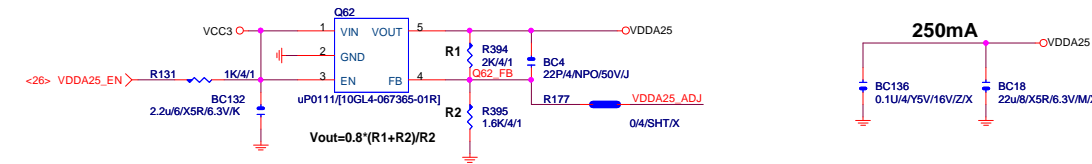
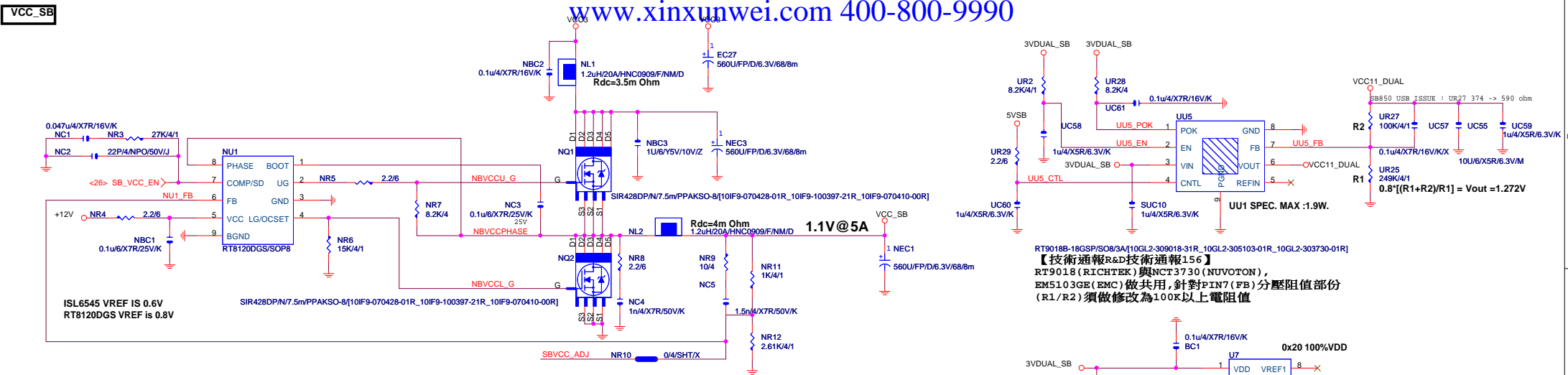




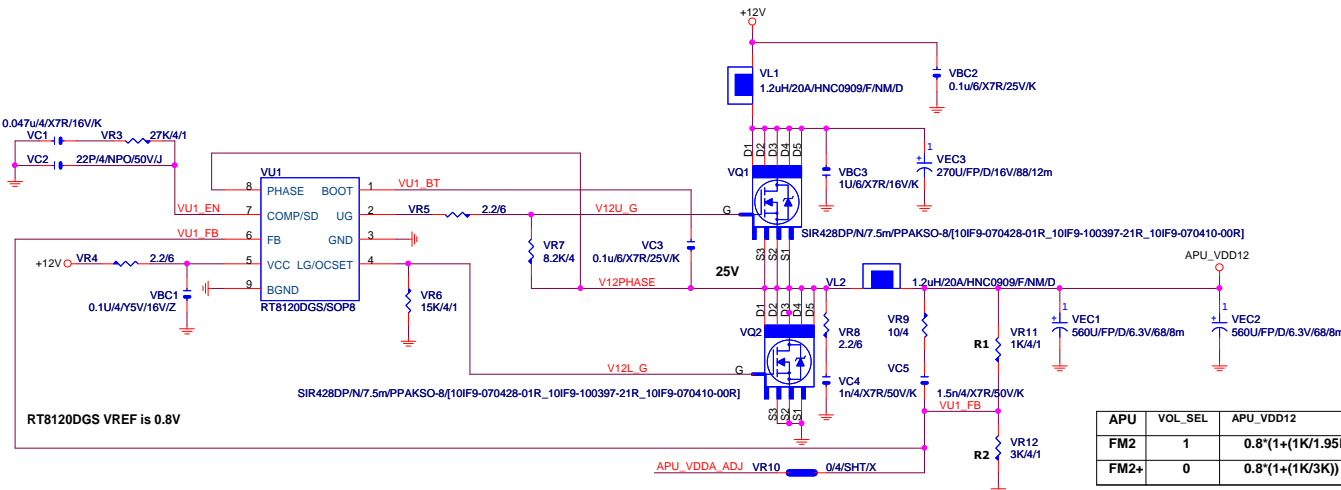
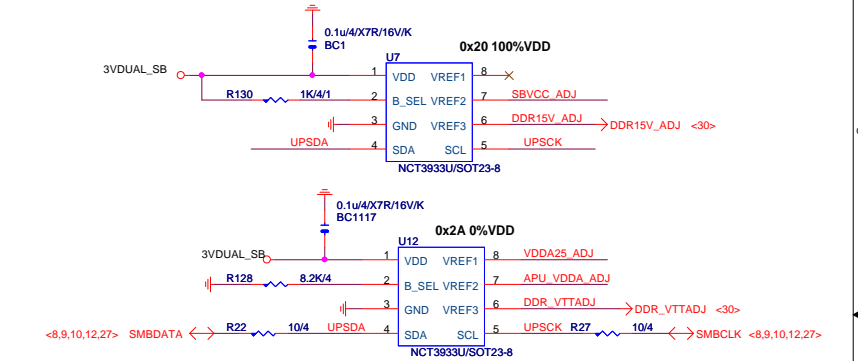
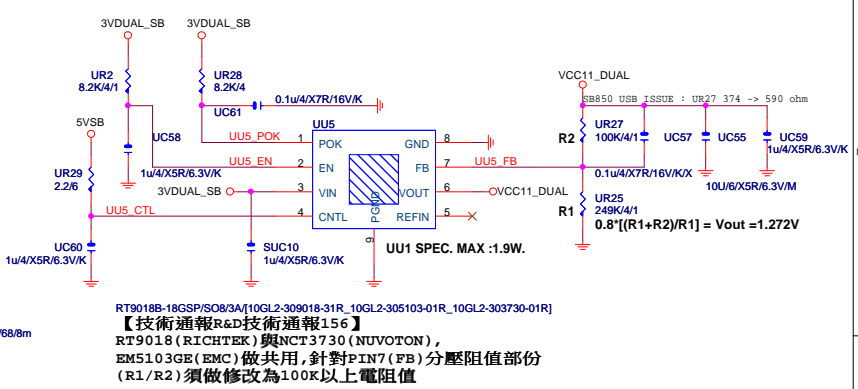
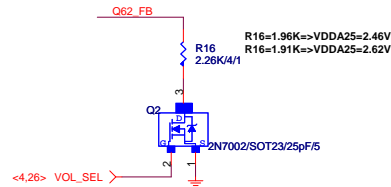
**DDR15V****GIGABYTE**Title **DDRIII PWR/TTT,3VDUAL/3VDUAL\_SB**Size Document Number **GA-F2A88X-UP4** Rev **3.02**

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VCC\_SB



APU	VOL_SEL	VDDA25
FM2	1	$0.8 \times (1 + (1K/936)) = 2.5V$
FM2+	0	$0.8 \times (1 + (2K/1.6K)) = 1.8V$



APU	VOL_SEL	APU_VDD12
FM2	1	$0.8 \times (1 + (1K/1.95K)) = 1.2V$
FM2+	0	$0.8 \times (1 + (1K/3K)) = 1.06V$

&lt;4,26&gt; VOL\_SEL

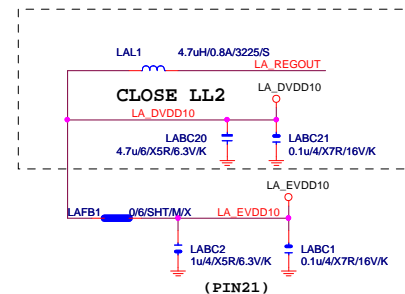
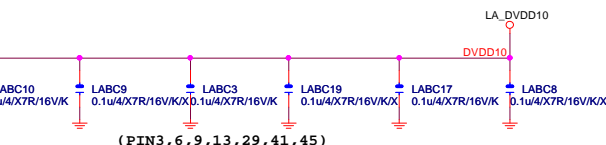
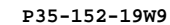
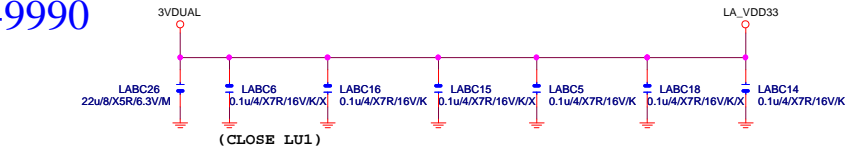
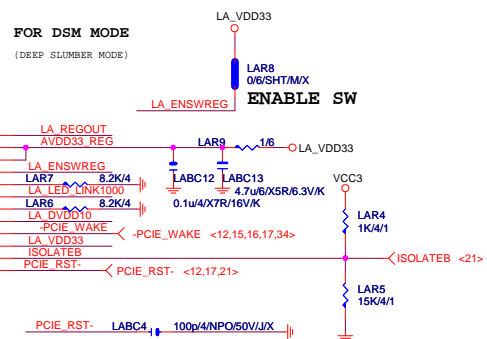
GIGABYTE™

NB/SB POWER,VCC12HT,VDDA25,VCC11Dual

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	RTL8111E
AVDD33	3.3V
DVDD33	3.3V
VDDREG	3.3V
DVDD10	1.05V



USB\_LAN

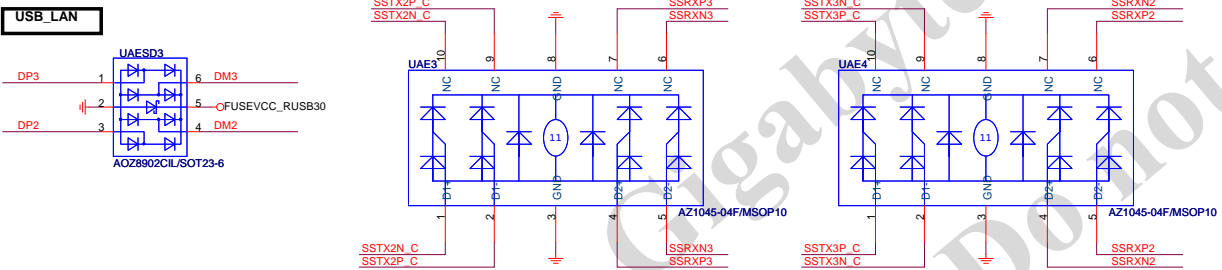
UAESD3

DP3 1 6 DM3

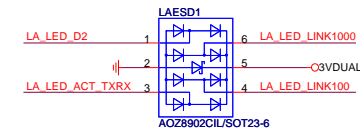
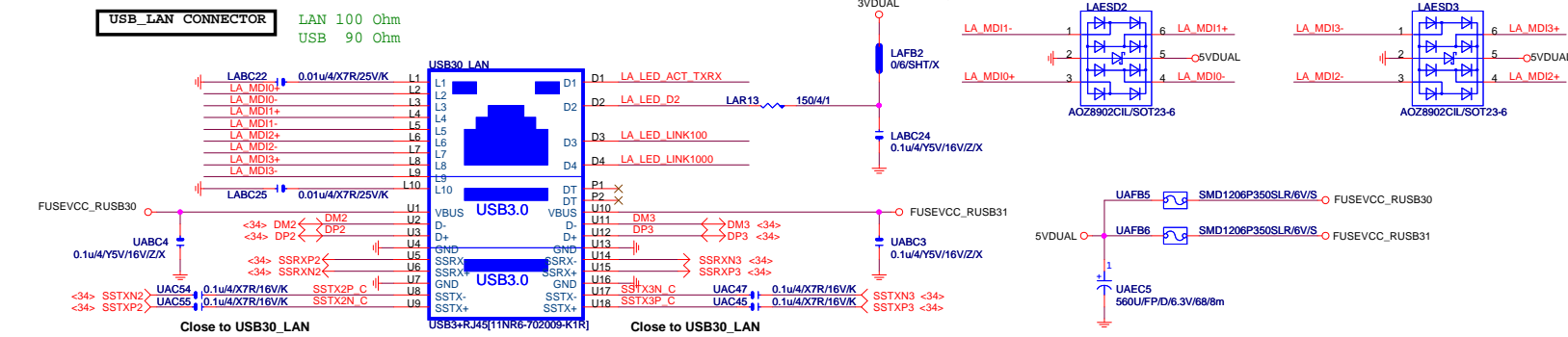
2 5 FUSEVCC\_RUS

DP2 3 4 DM2

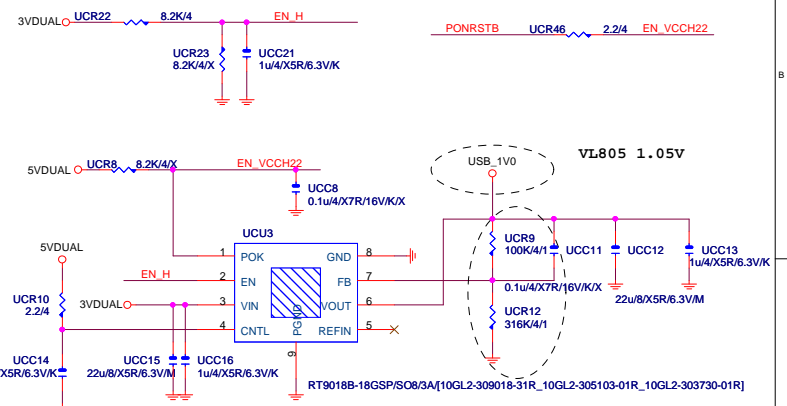
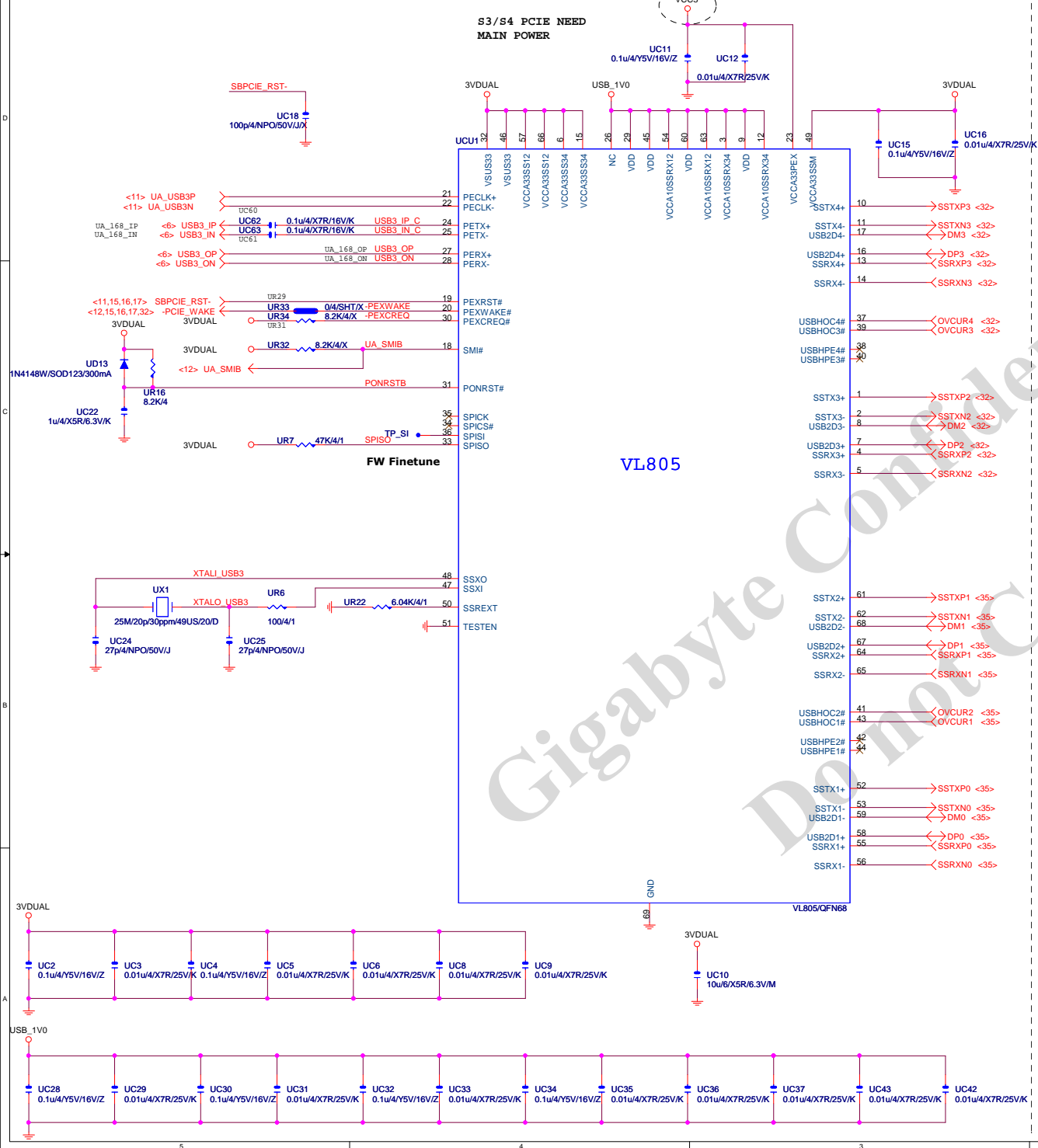
AOZ8902CIL/SOT23-6



LAN	100	Ohm
USB	90	Ohm



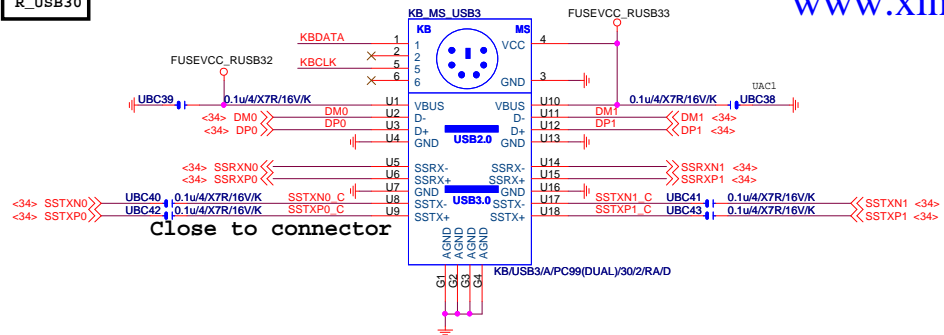




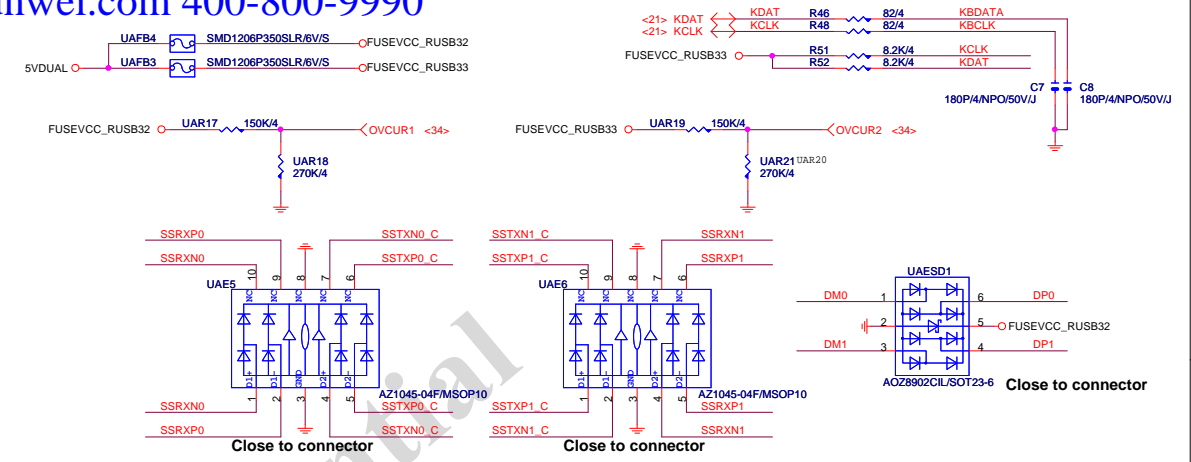
【技術通報R&D技術通報156】  
RT9018(RICHTEK)與NCT3730(NUVOTON),  
EM5103GE(EMC)做共用,針對PIN7(FB)分壓阻值部份  
須做修改為100K以上電阻值

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Title			
USB3 VL805 HOST CTRL			
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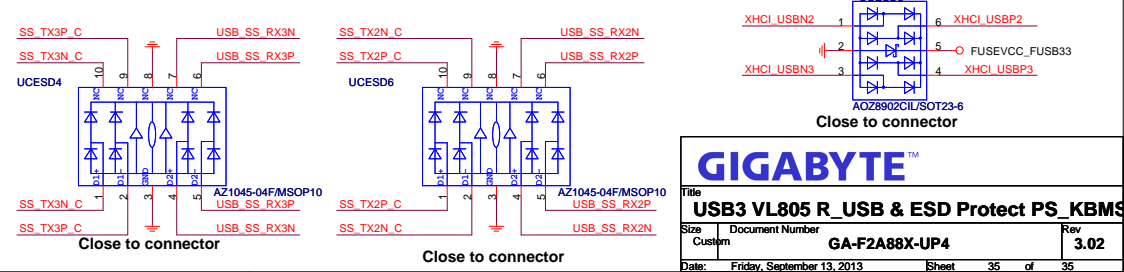
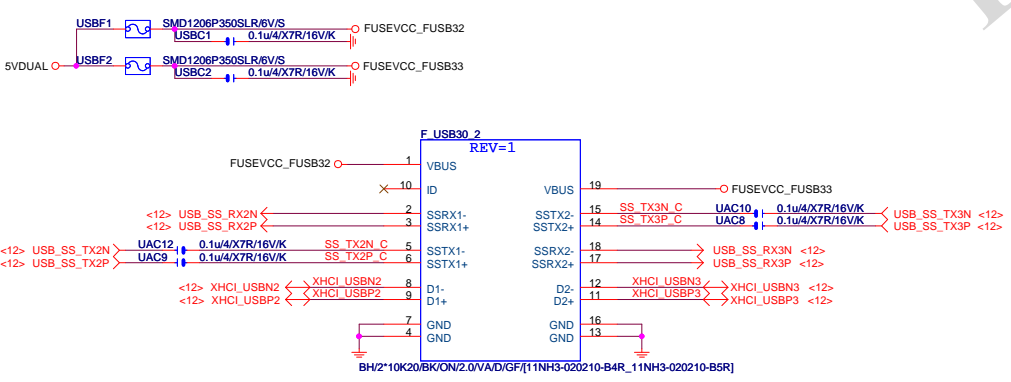
R\_USB30



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F\_USB30



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