

HW-S7-SP701 Rev 01

SP701 EVALUATION BOARD.


(XC7S100-2FGGA676C)

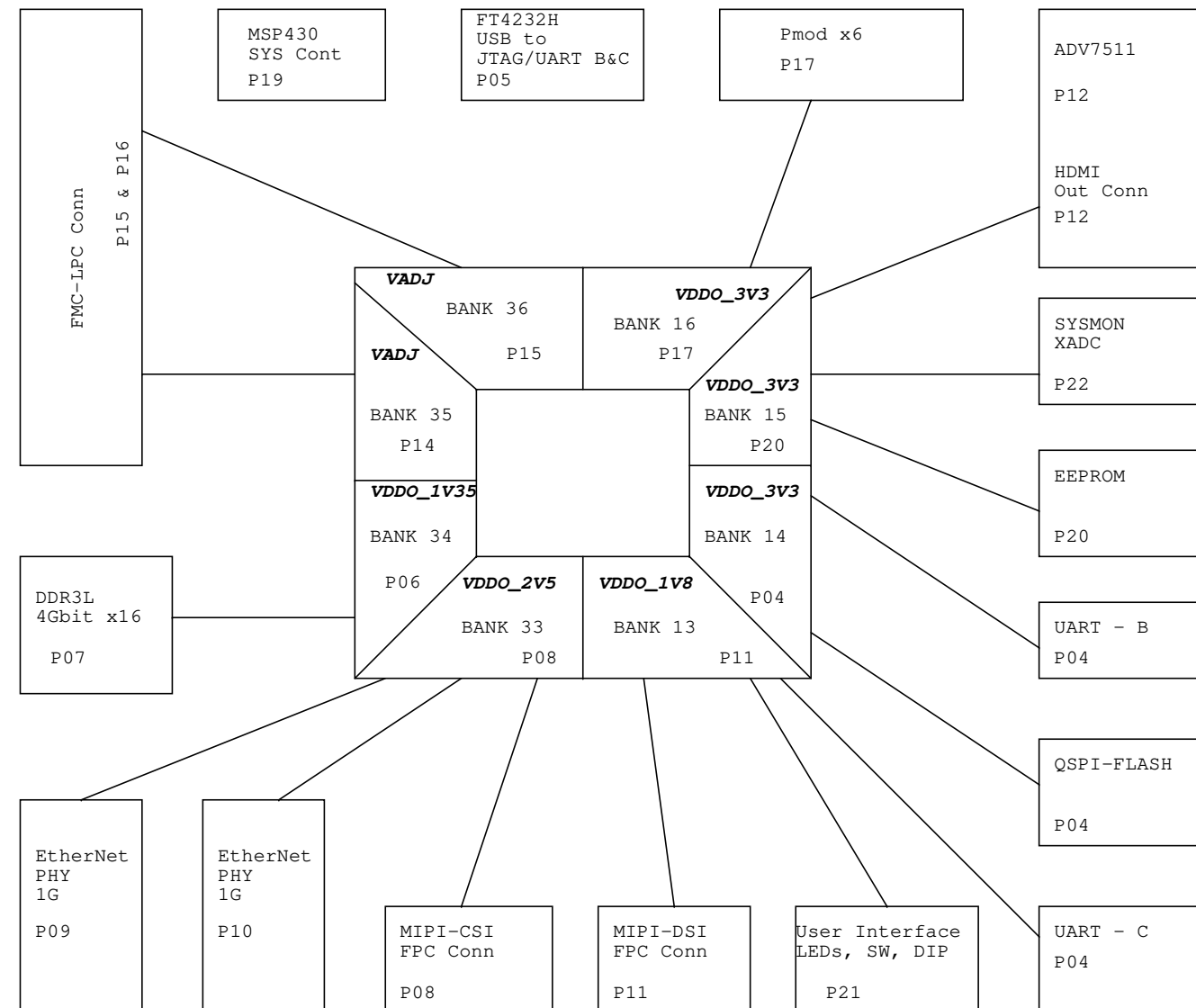
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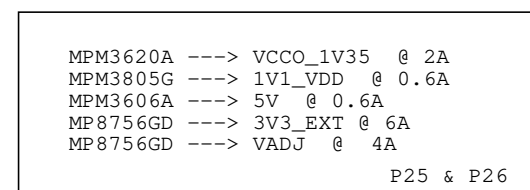
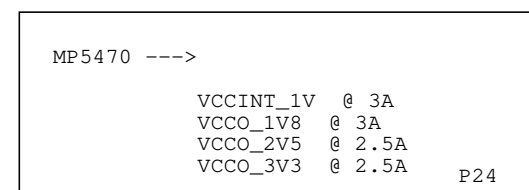
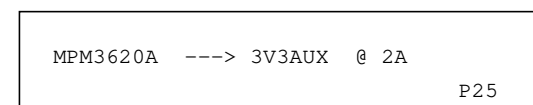
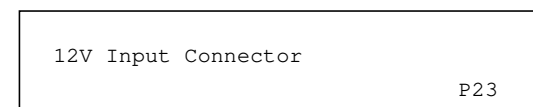
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 2100 Logic Drive San Jose, CA 95124		PCB P/N : 1281038 ASSY P/N : 0432153 TEST P/N : TSS0213	
Title:		HW-S7-SP701 Spartan-7 Evaluation Brd.	
		P01_TITLE	
Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Ver 1.1 Rev 01
Engineer: SR		Sheet 1 of 27	

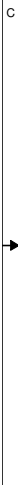


```
P01_TITLE
P02_BLOCK_DIAGRAM
P03_FPGA_CONFIG
P04_QSPI_BANK14
P05_USB_UART_JTAG
P06_DDR3L_BANK34
P07_DDR3L_DRAM
P08_ETH_MIPI_RX_BANK33
P09_ETHERNET_PHY1
P10_ETHERNET_PHY2
P11_MIPI_TX_USRIF_BANK13
P12_HDMI_ADV7511
P13_HDMI_TX_CONN
P14_FMC_BANK35
P15_FMC_CON_BANK36
P16_FMC_CON
P17_PMOD_BANK16
P18_FPGA_PWR
P19_SYS_CTRL_MSP430
P20_USRIF_SYSMON_HDMI
P21_USER_INTERFACE
P22_XADC_SYSMON
P23_POWER_SUPPLY
P24_POWER_SUPPLY
P25_POWER_SUPPLY
P26_POWER_SUPPLY
P27_MISC
```



 XILINX 2100 Logic Drive San Jose, CA 95124		PCB P/N : 1281038 ASSY P/N : 0432153 TEST P/N : TSS0213	
Title: HW-S7-SP701 Spartan-7 Evaluation Brd. P02_BLOCK_DIAGRAM			
Size B	Date Modified: Tuesday, Jan 18, 2019	Document Number: 0381874	Ver 1.1 Rev 01
Engineer: SR		Sheet 2 of 27	

A vertical number line with points A, B, C, and D. Point A is at the bottom, followed by B, then C, and D at the top. A horizontal arrow points from the line to the right at point B.



	A	B
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
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A



5



5



5

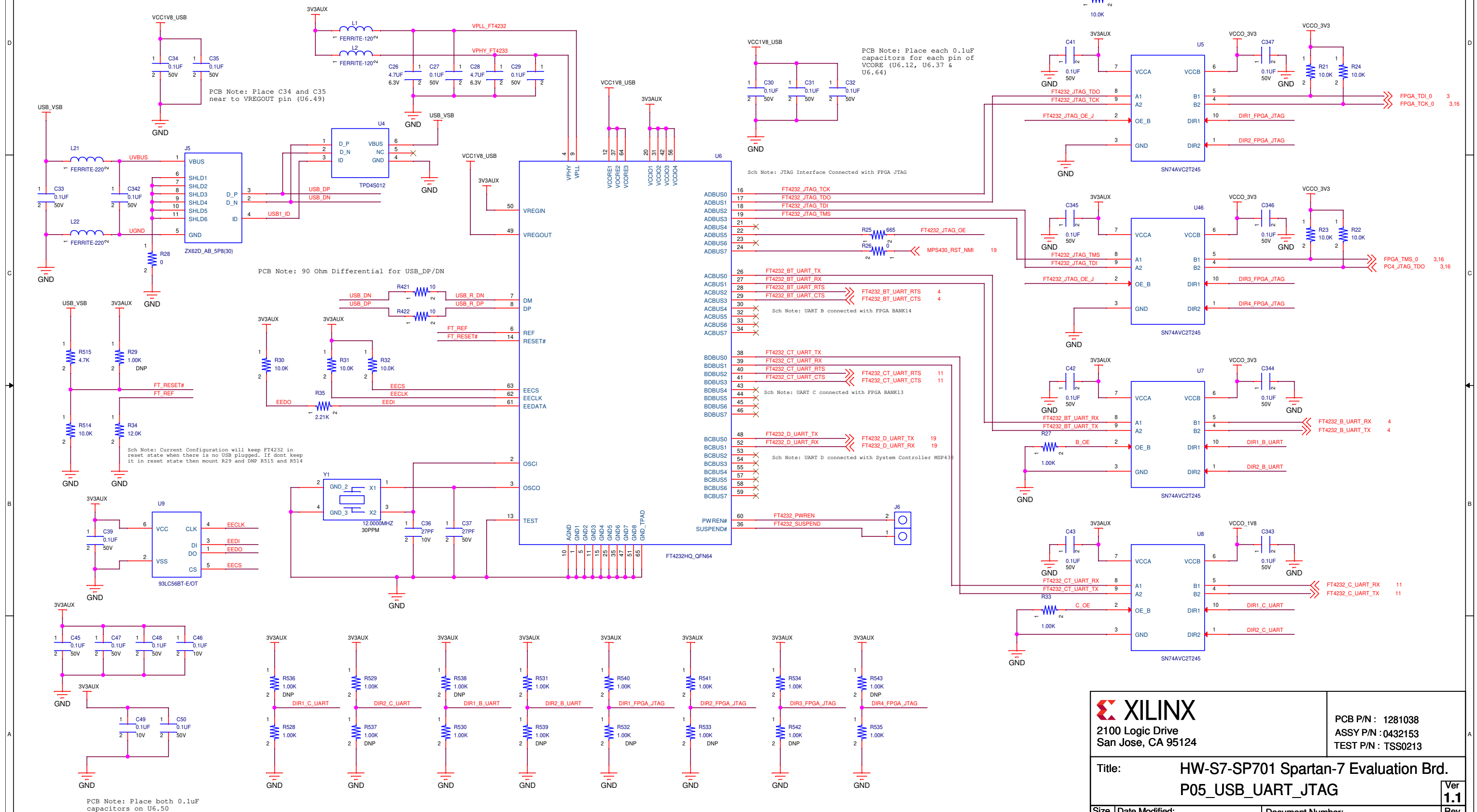
D




Sch Note: There is no option provided for series termination on DATA lines near FLASH as it has an option for configuring output drive strength settings

A

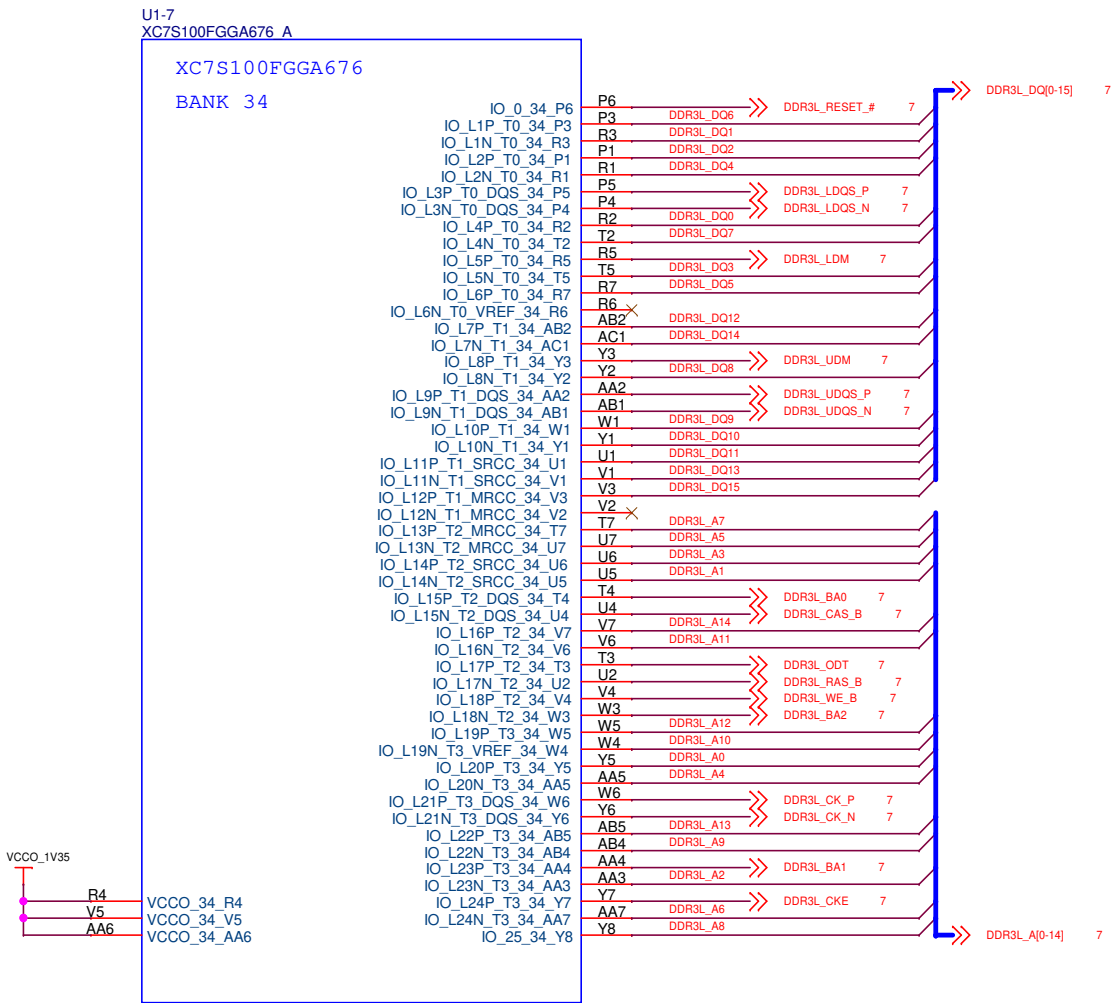
FT4232H Circuitry High Speed USB to Multipurpose UART/JTAG



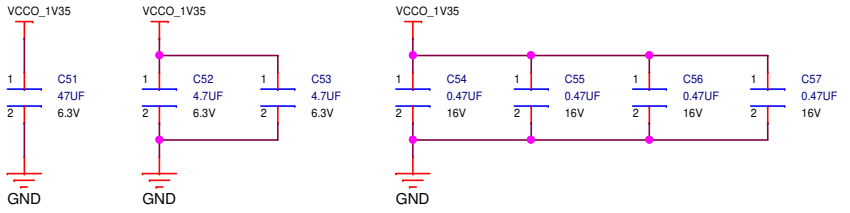
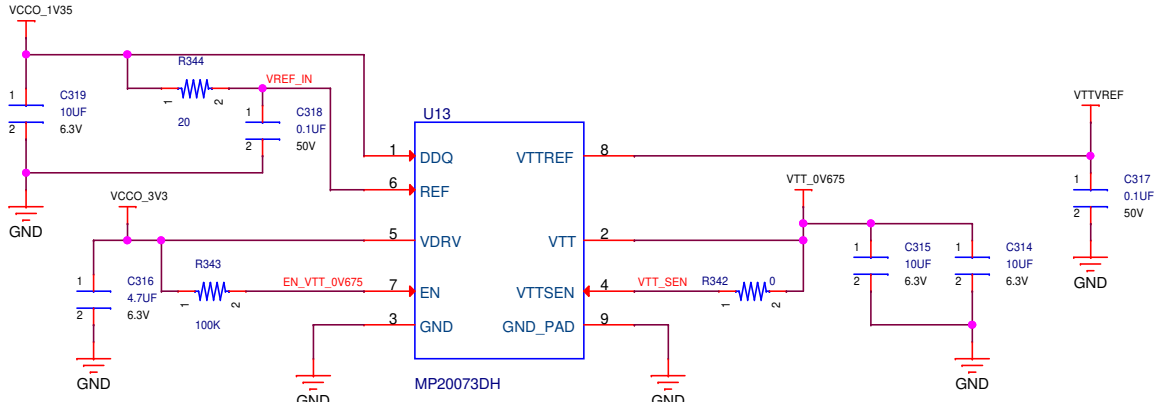
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Title: HW-S7-SP701 Spartan-7 Evaluation Brd. P05_USB_UART_JTAG			
Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Ver 1.1 Rev 01
Engineer: SR		Sheet 5 of 27	


DDR3L Controller

Sch Note: Shall use Internal VREF becasue Spartan 7S100 support only 800 Mb/s data rate. So external Reference not provided as per UG586_7Series_MIS.

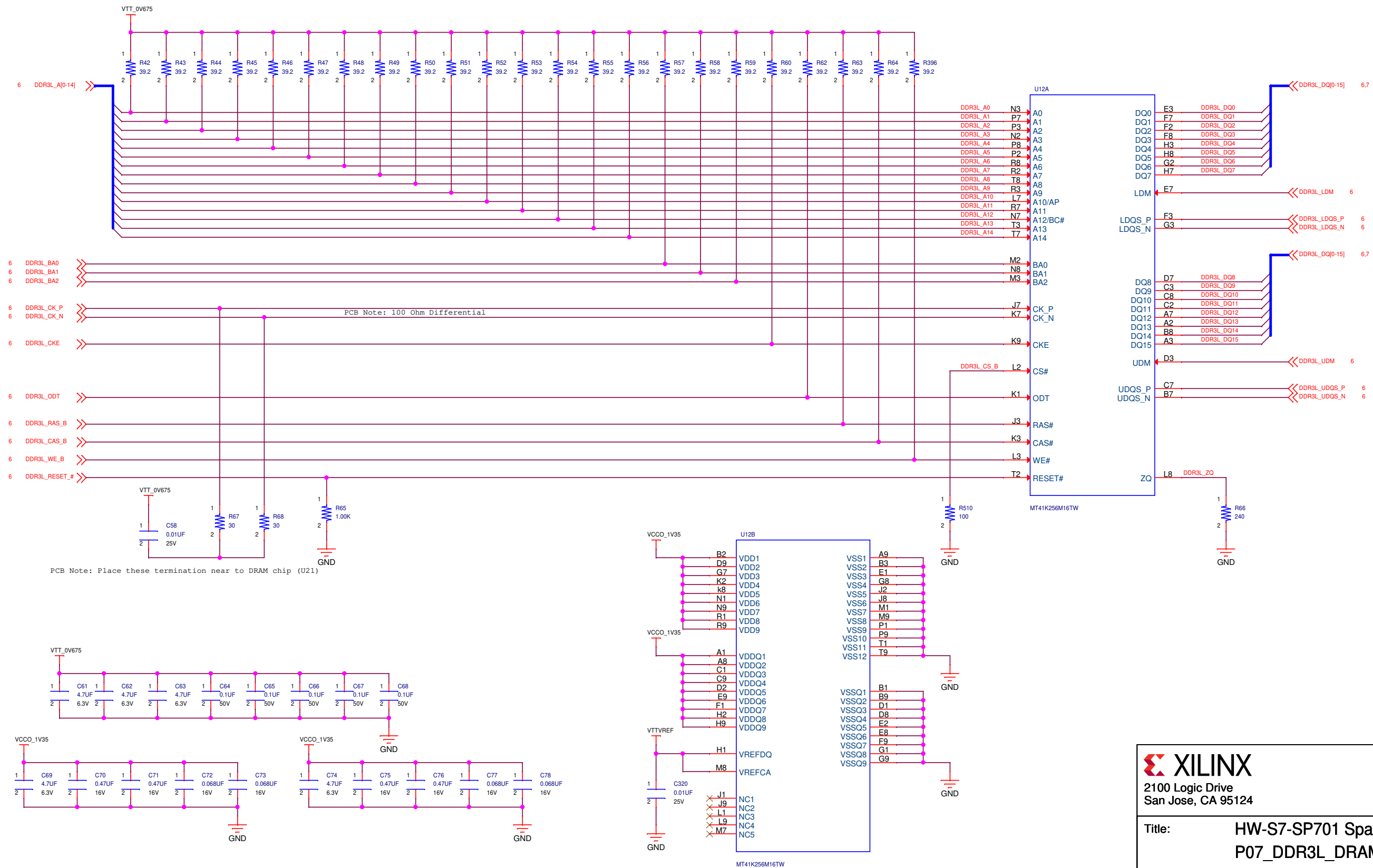



DDR3L VTT and VREF Power Supply



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Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Ver 1.1 Rev 01
Engineer: SR			Sheet 6 of 27

DDR3L DRAM

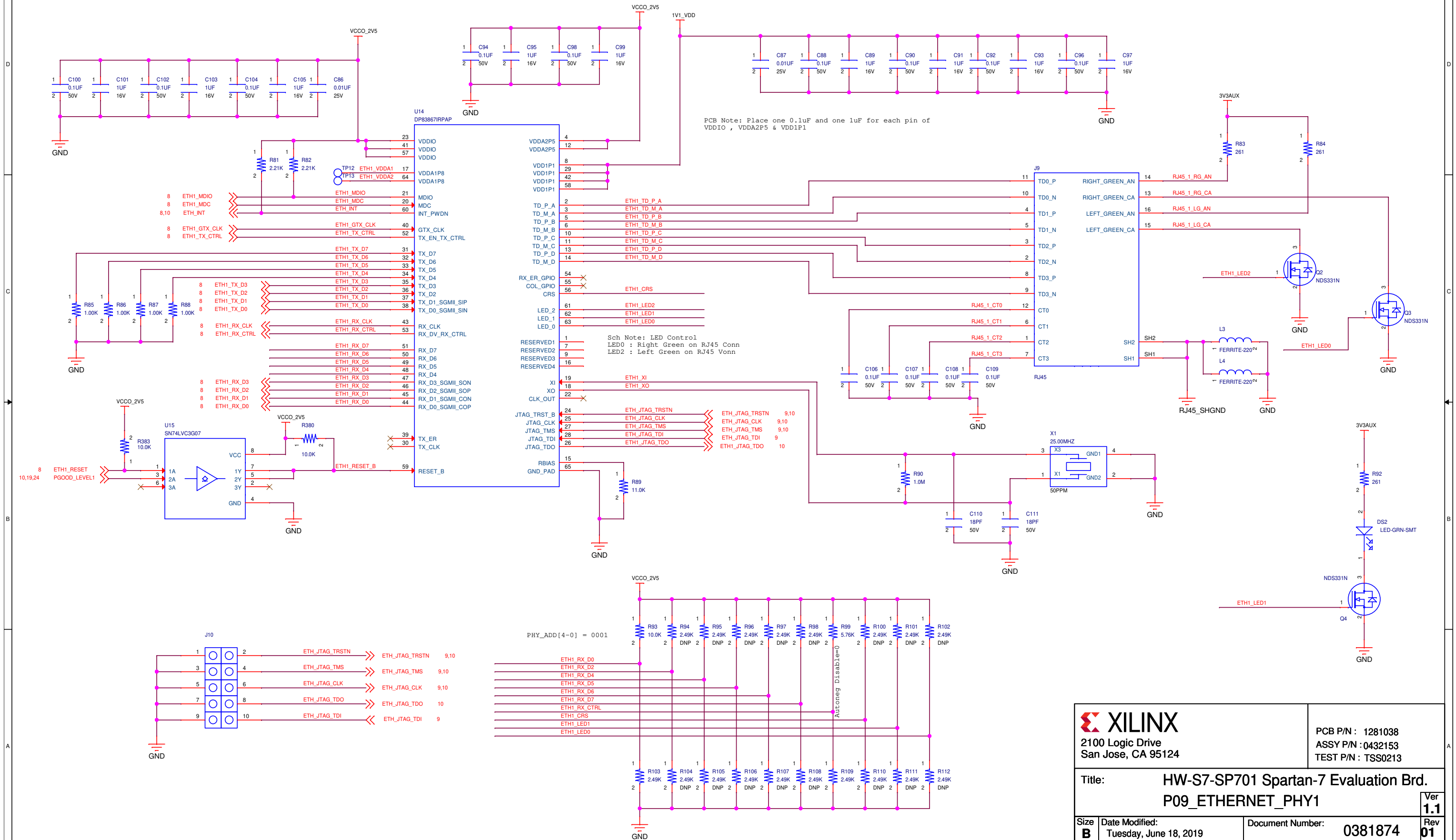


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Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Rev 01
Engineer: SR		Sheet 7 of 27	

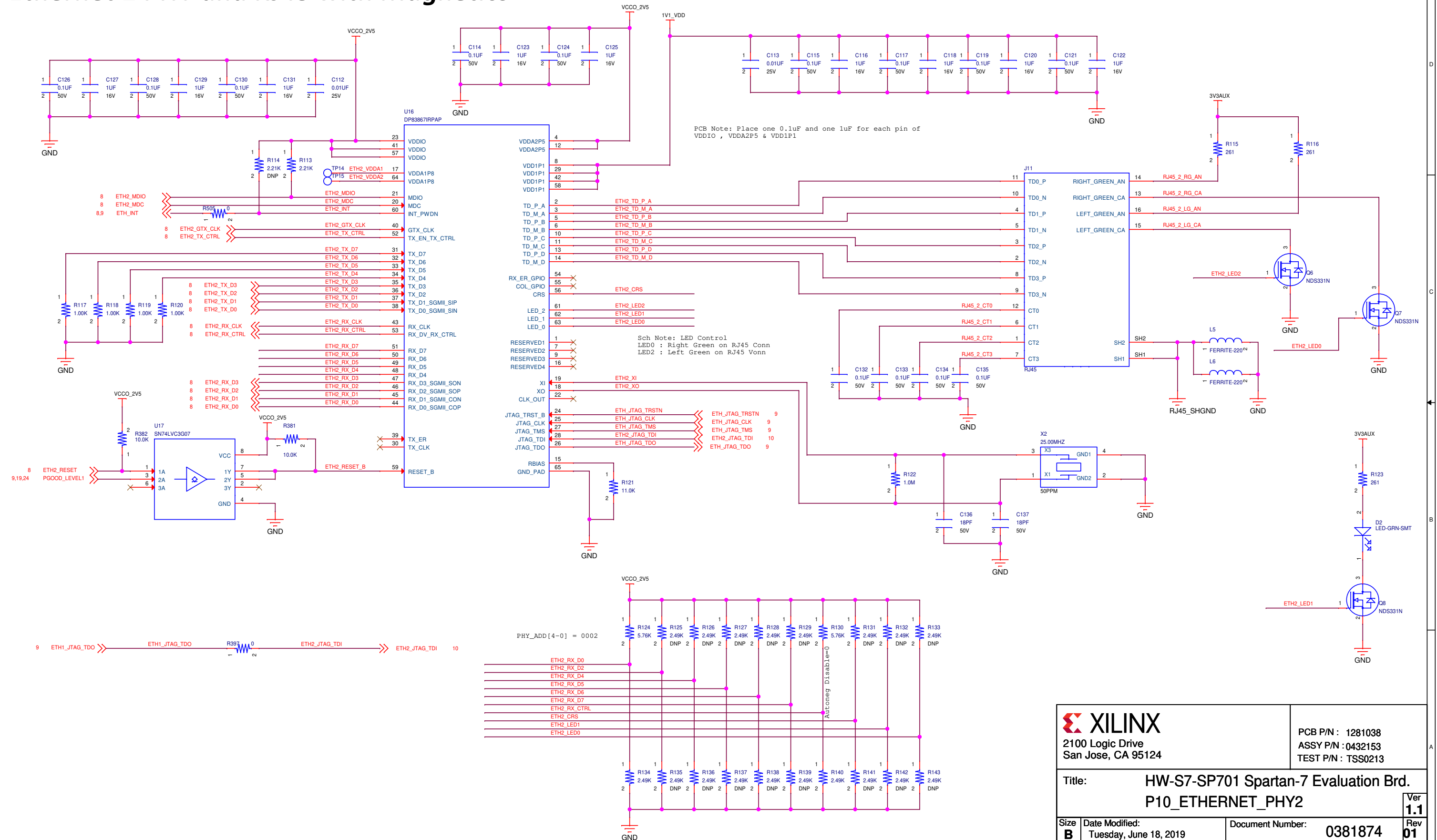
D



Ethernet 1 PHY and RJ45 with Magnetics



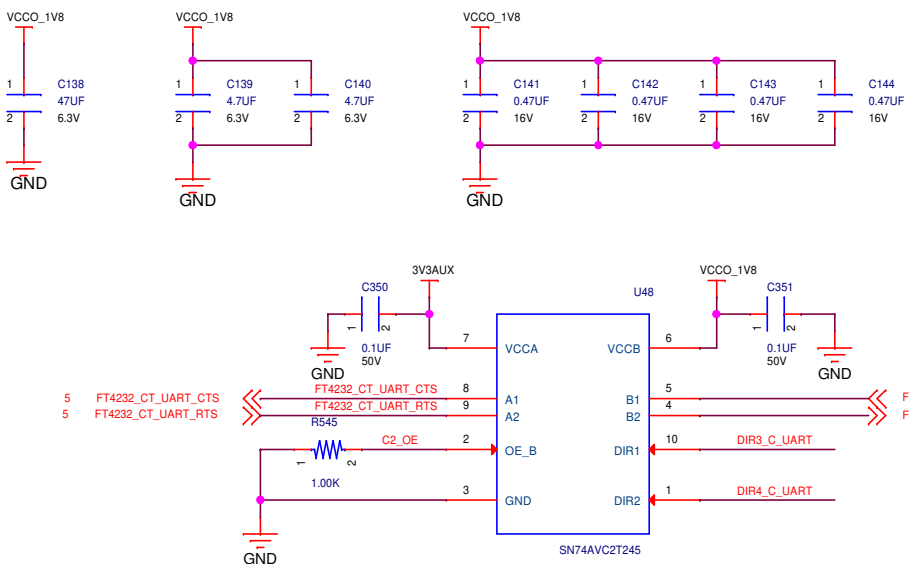
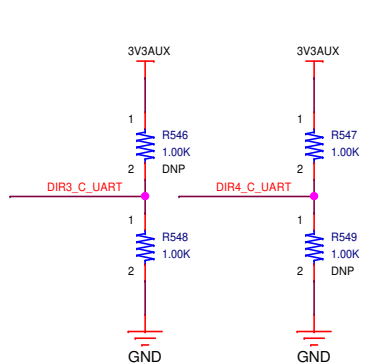
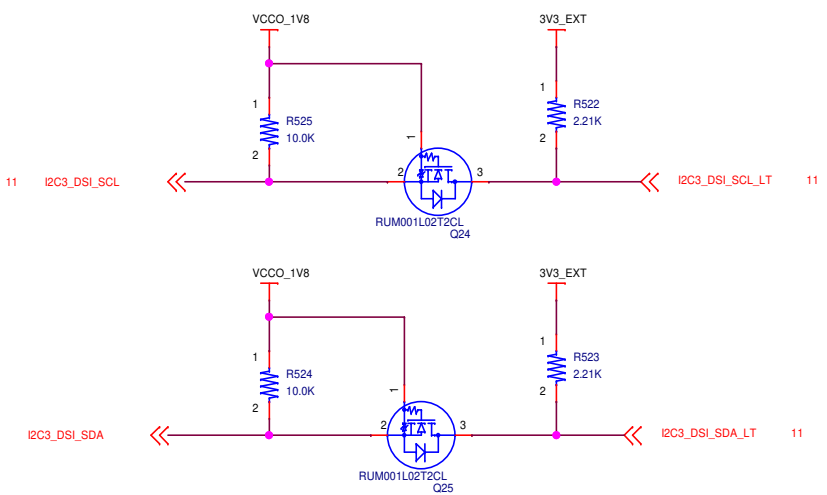
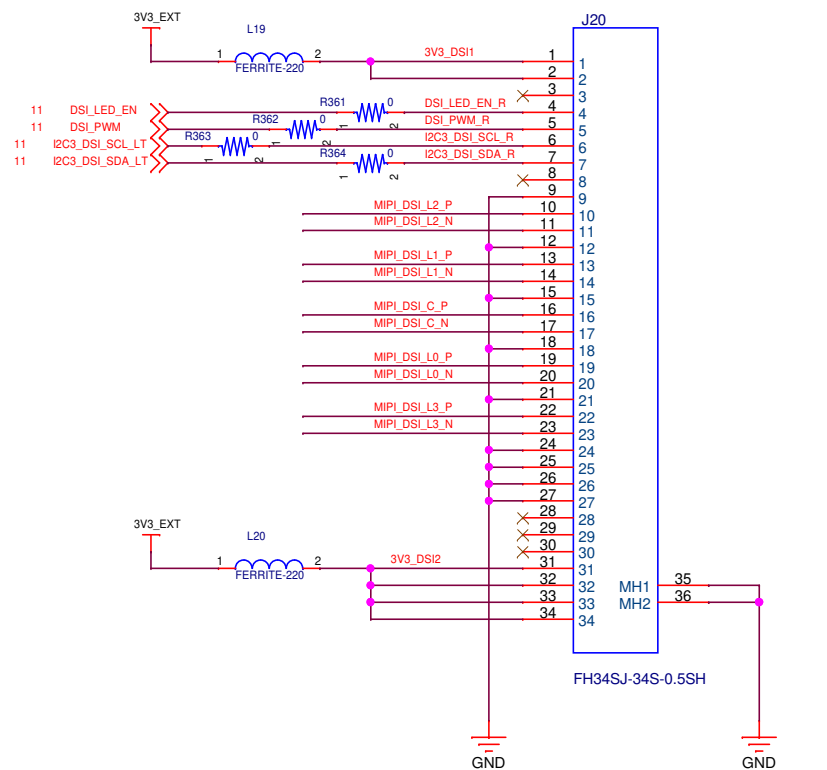
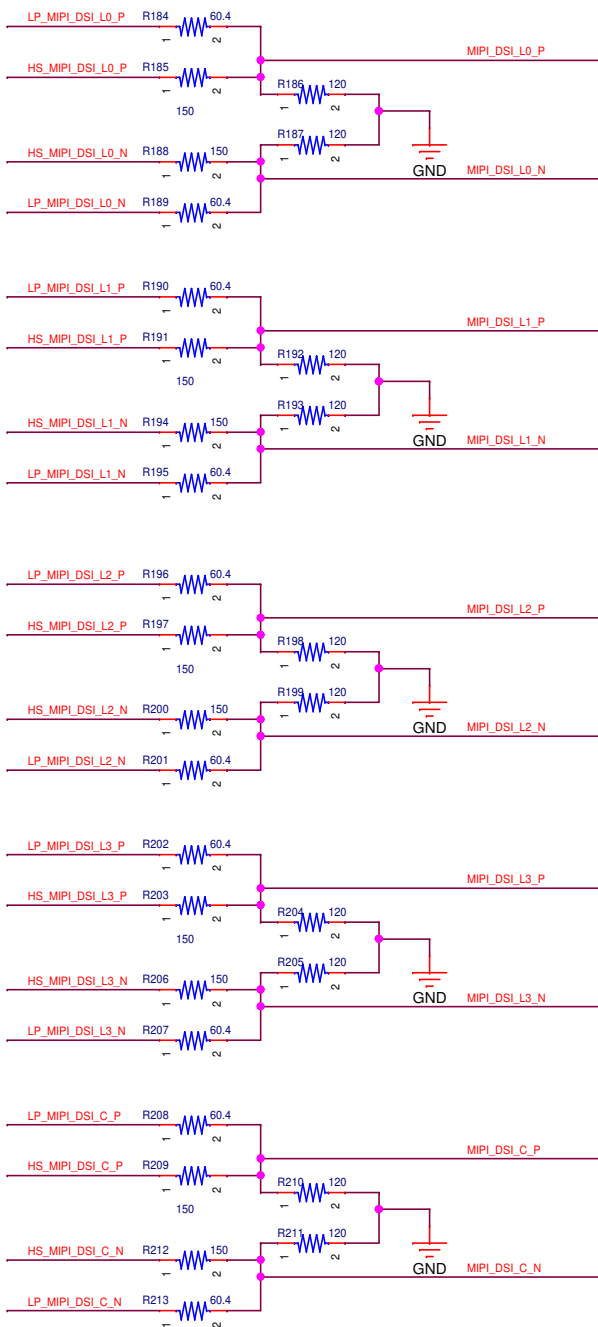
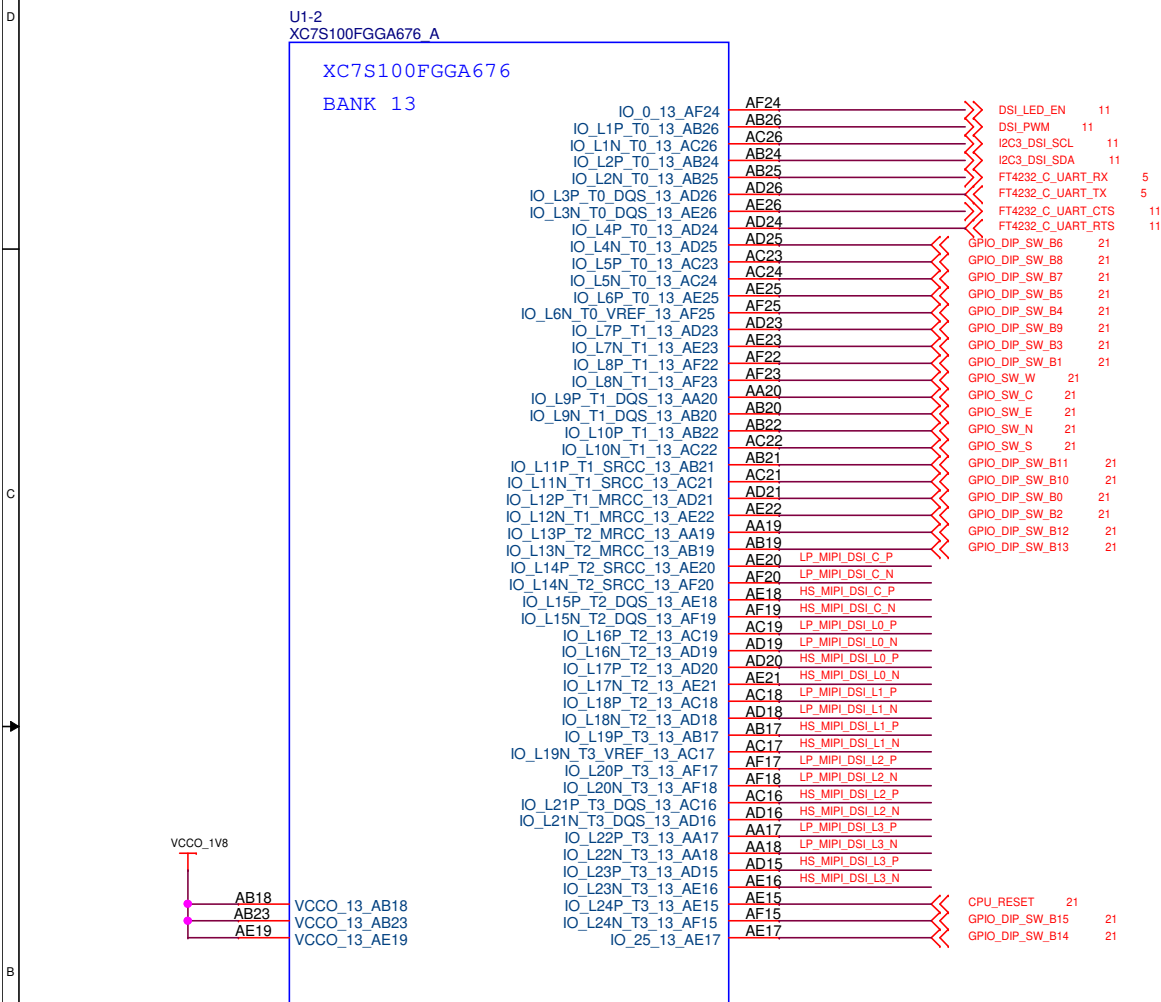
Ethernet 2 PHY and RJ45 with Magnetics




Bank 13: MIPI_DSI(TX) and UART

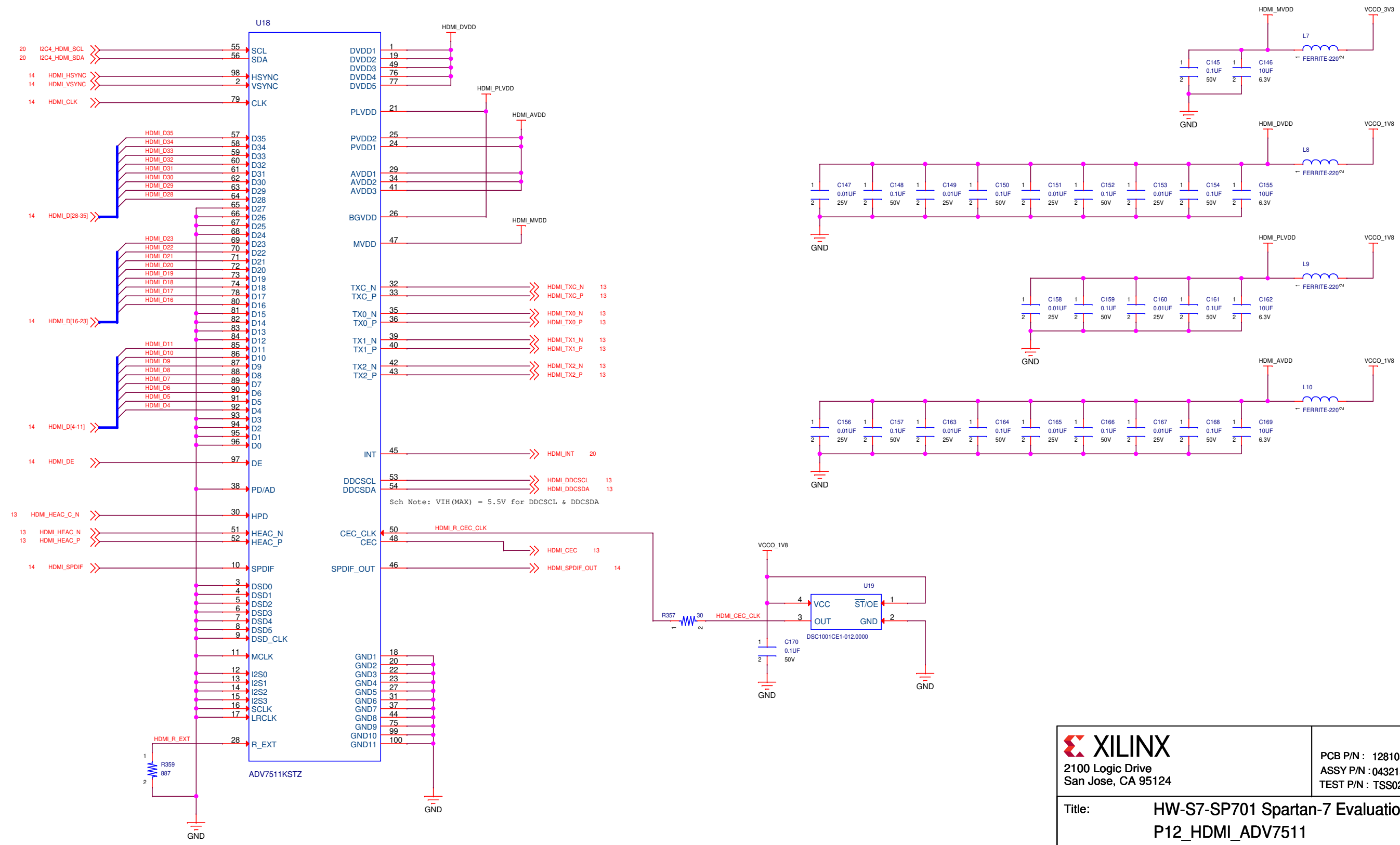
PCB Note: All HS_MIIPI_DSI and MIIPI_DSI signals are 100 Ohm Differential Impedence


PCB Note: Place all 60.4 ohm resistors and 150 ohm resistors near to FPGA (U1). Place all 120 ohm Shunt resistors near to connector (J20).



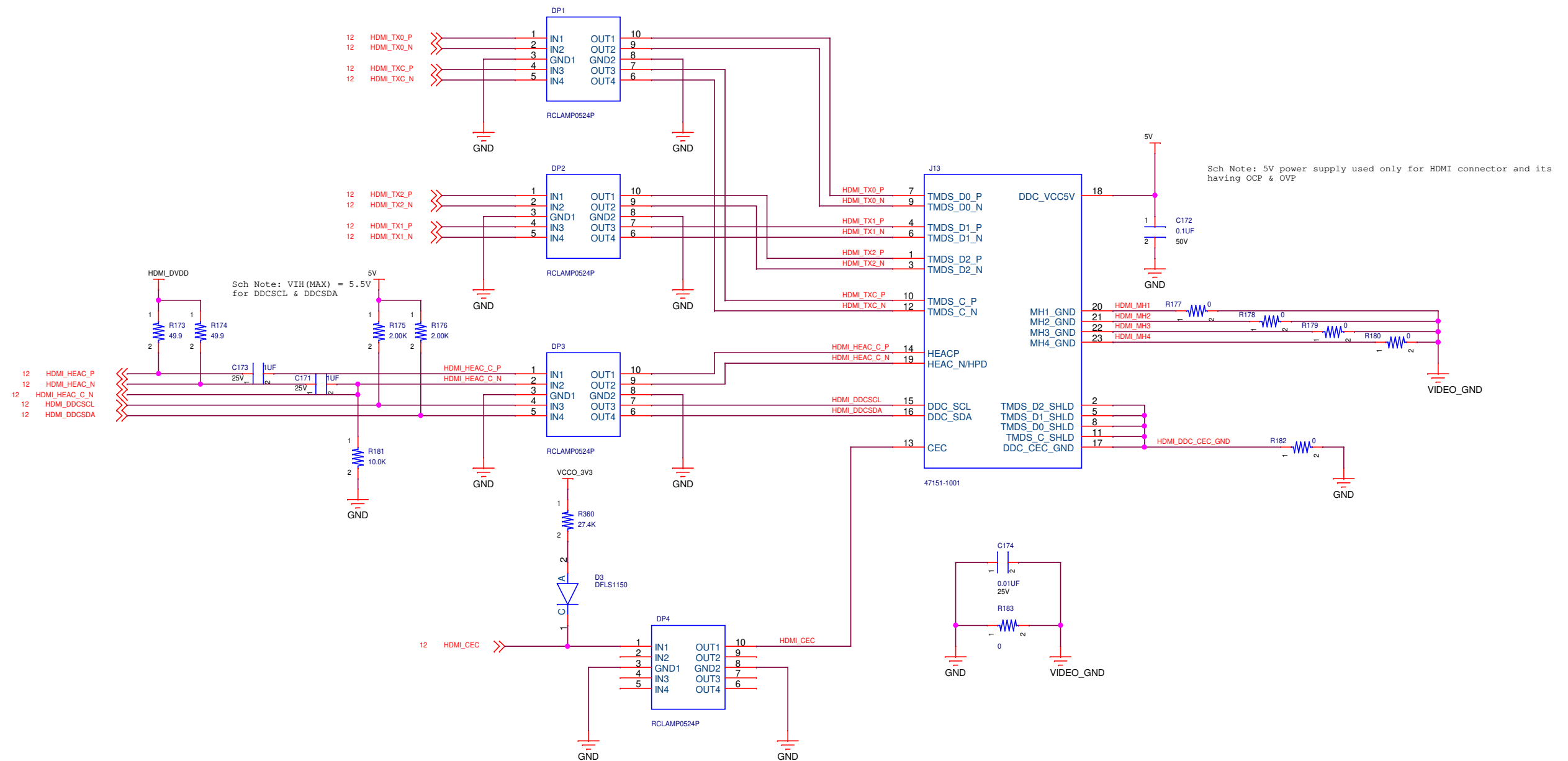
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Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Ver 1.1 Rev 01
Engineer: SR		Sheet 11 of 27	


HDMI Transmitter



 2100 Logic Drive San Jose, CA 95124		PCB P/N : 1281038 ASSY P/N : 0432153 TEST P/N : TSS0213	
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Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Rev 01
Engineer: SR			Sheet 12 of 27

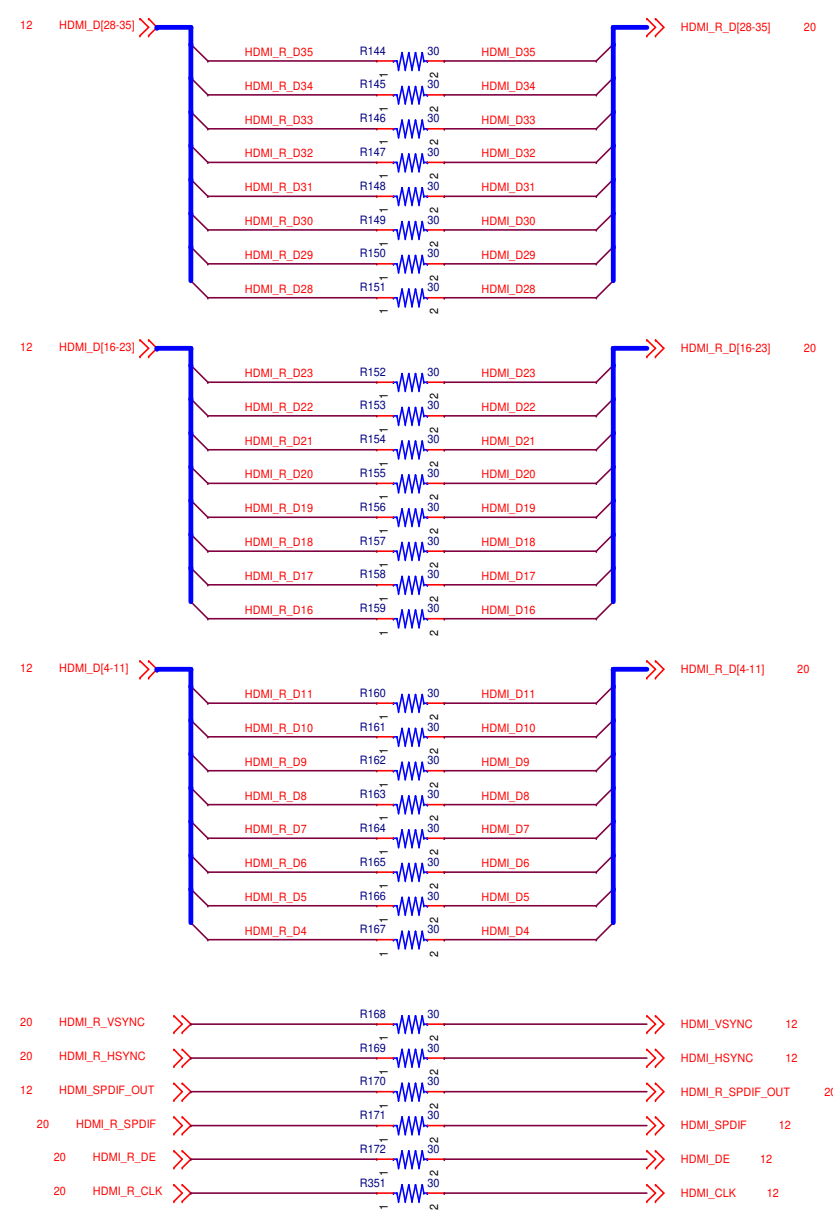
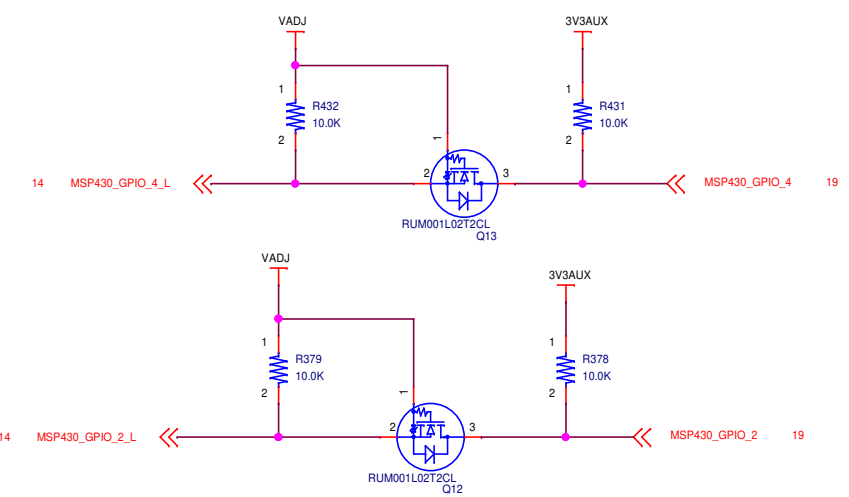
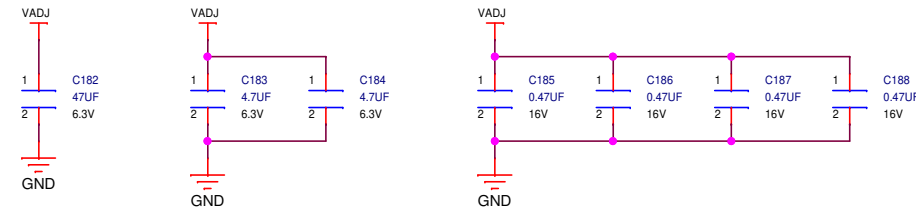
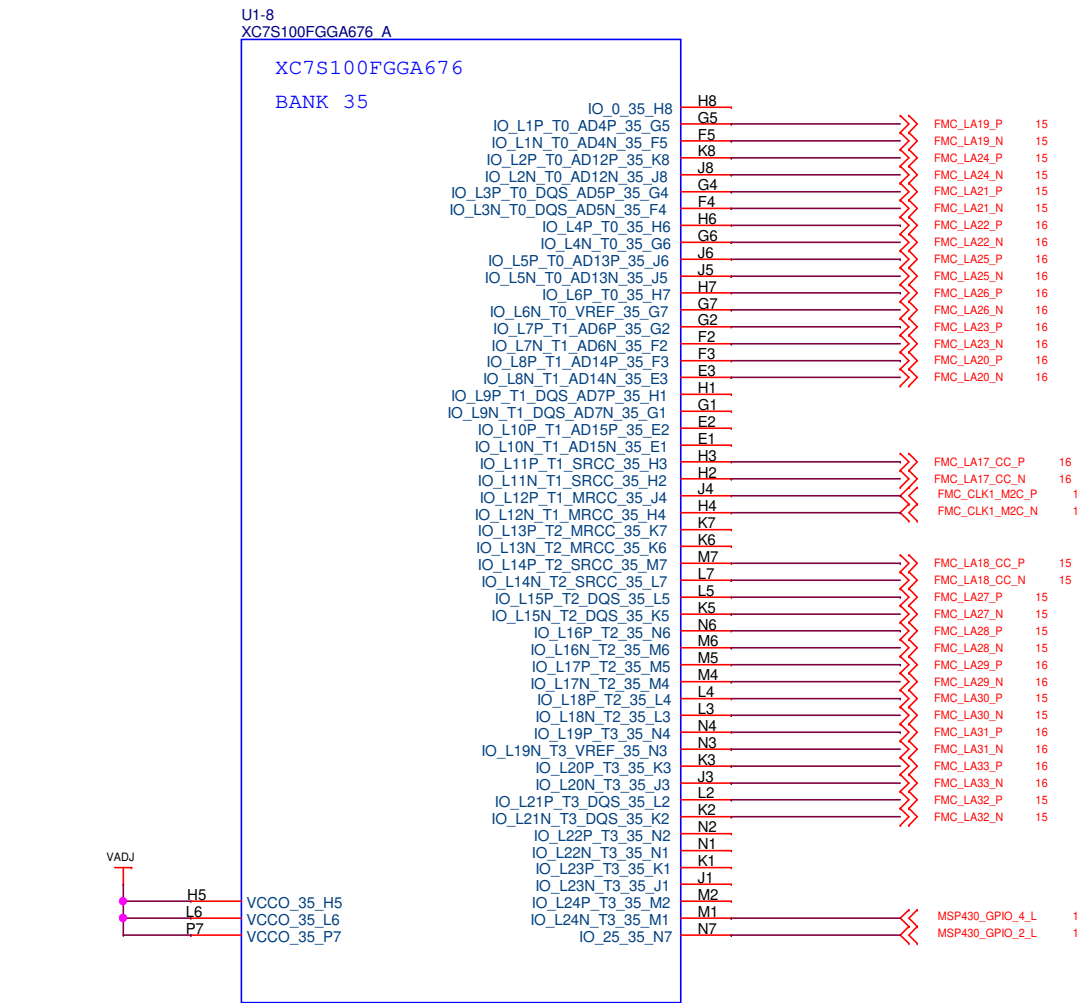
HDMI Out Connector




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Ver	1.1						
Rev	01						
Engineer: SR		Sheet 13 of 27					

Bank 35: FMC LPC Signals

HDMI Signals



**XILINX**
2100 Logic Drive
San Jose, CA 95124

PCB P/N : 1281038
ASSY P/N : 0432153
TEST P/N : TSS0213

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P14_FMC_BANK35

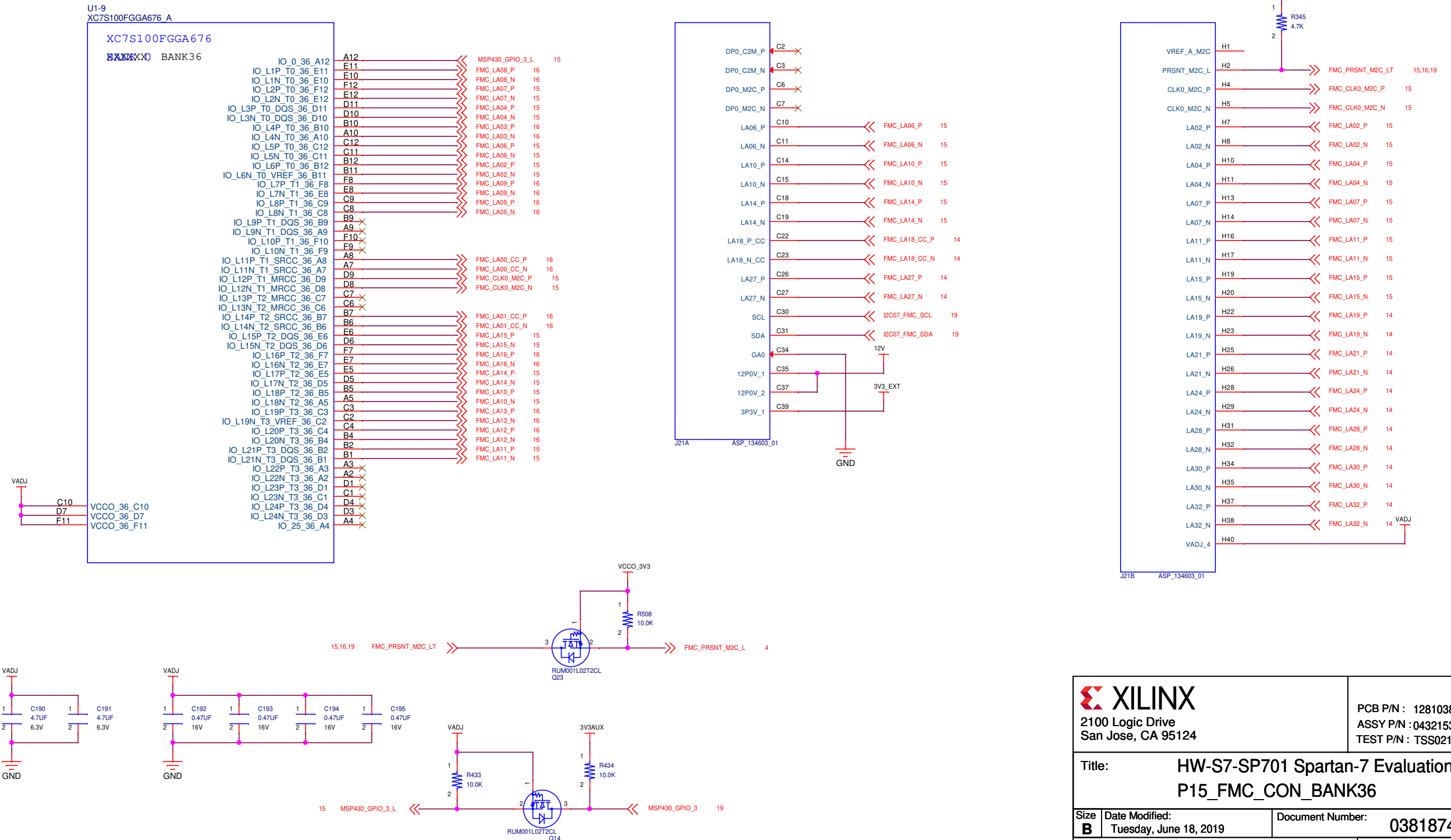
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Size B Date Modified: Tuesday, June 18, 2019 Document Number: 0381874 Rev 01

Engineer: SR Sheet 14 of 27

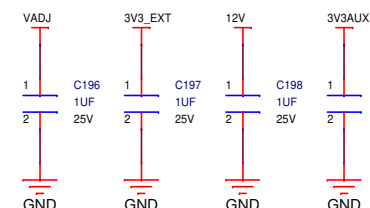
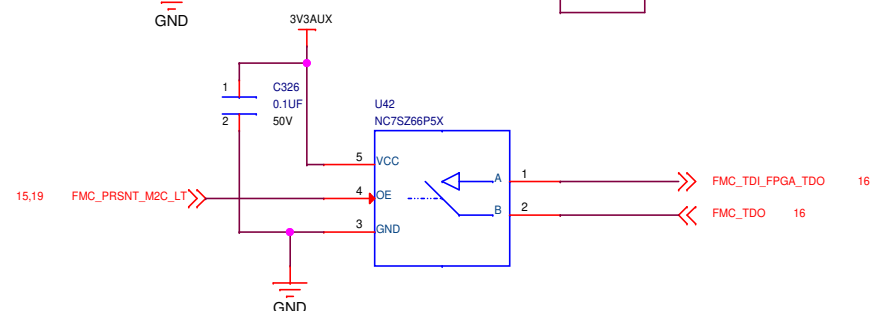
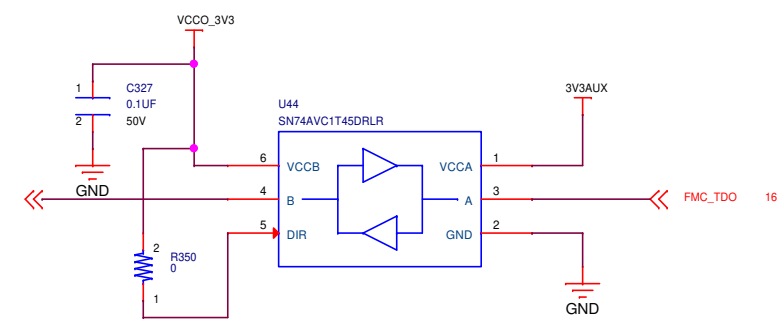
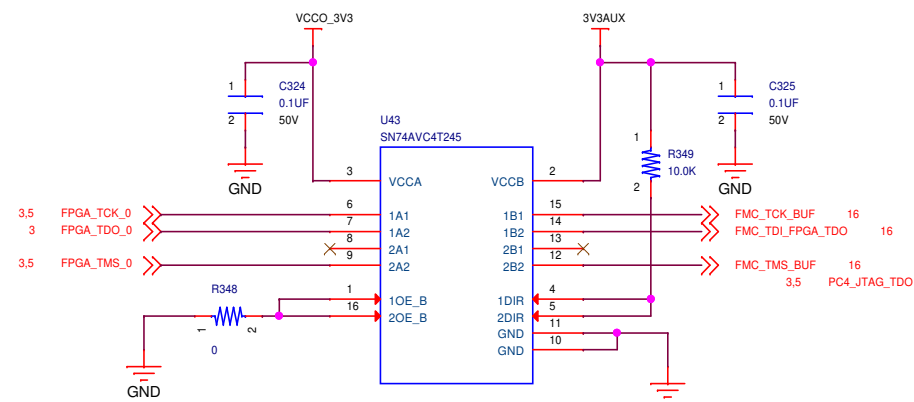
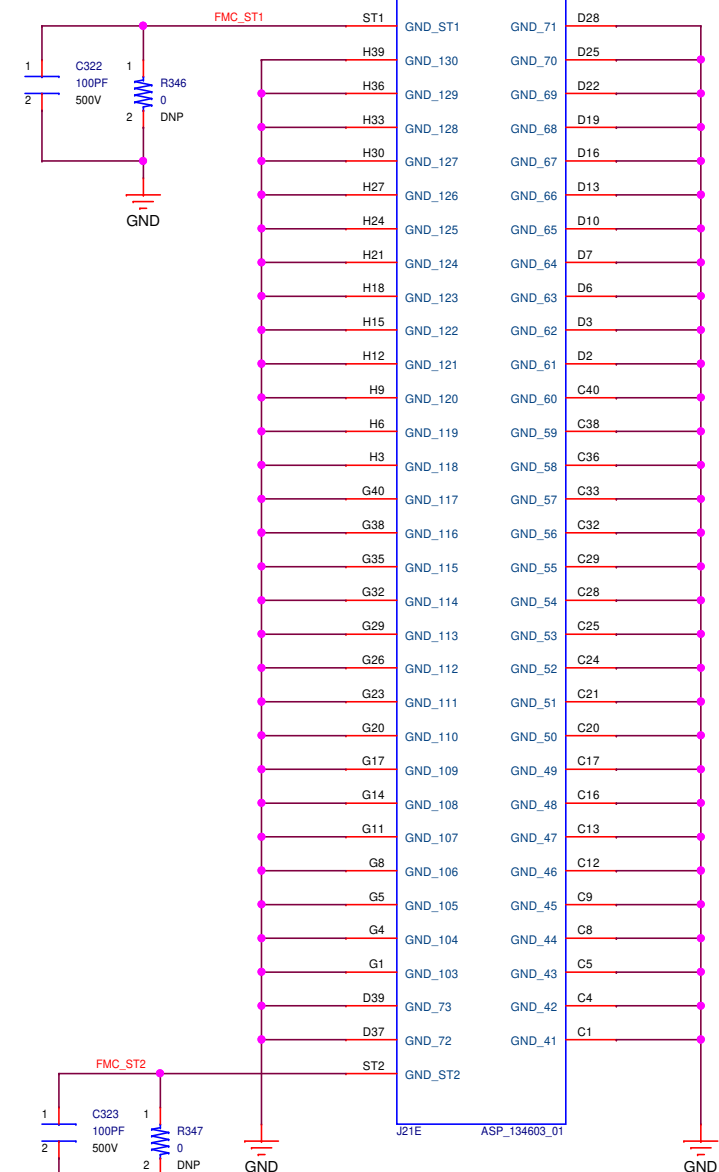
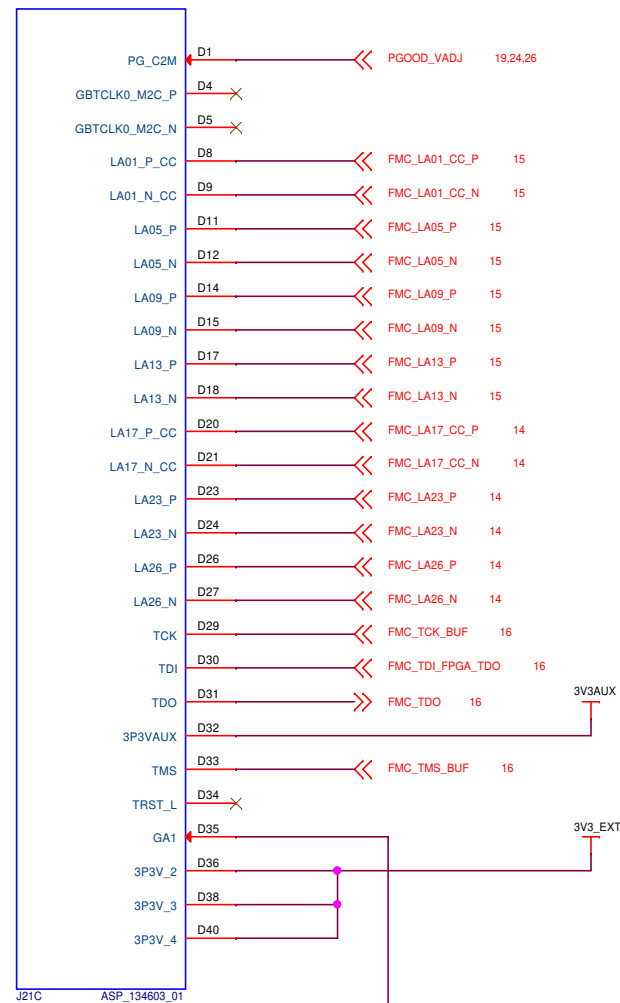
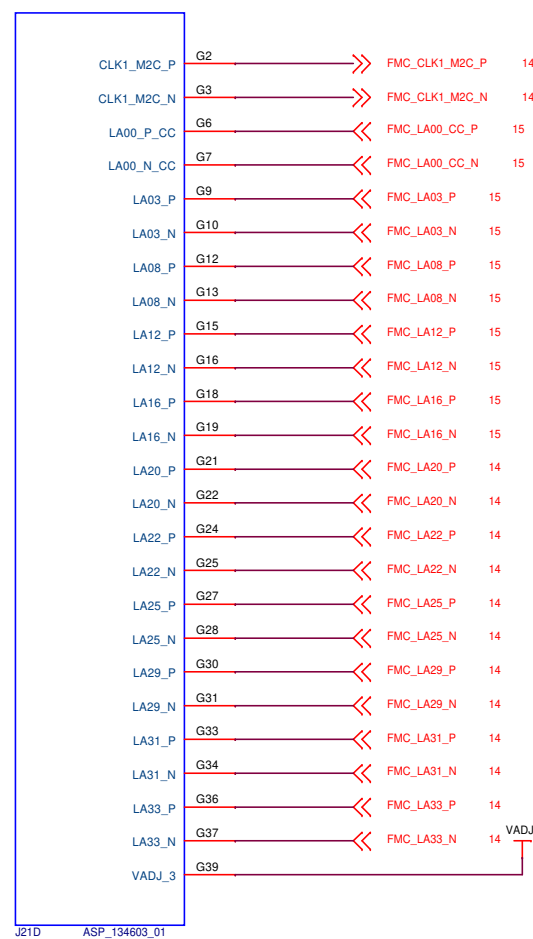
Bank 36: FMC LPC Signals


FMC LPC Connector



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Title: HW-S7-SP701 Spartan-7 Evaluation Brd. P15_FMC_CON_BANK36			
Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Ver 1.1 Rev 01
Engineer: SR		Sheet 15 of 27	

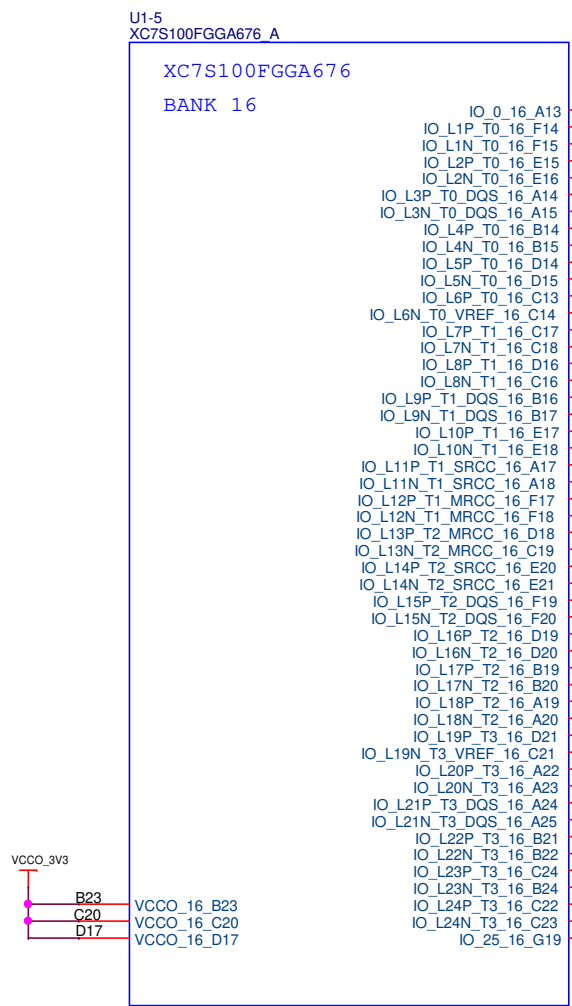
FMC LPC Connector



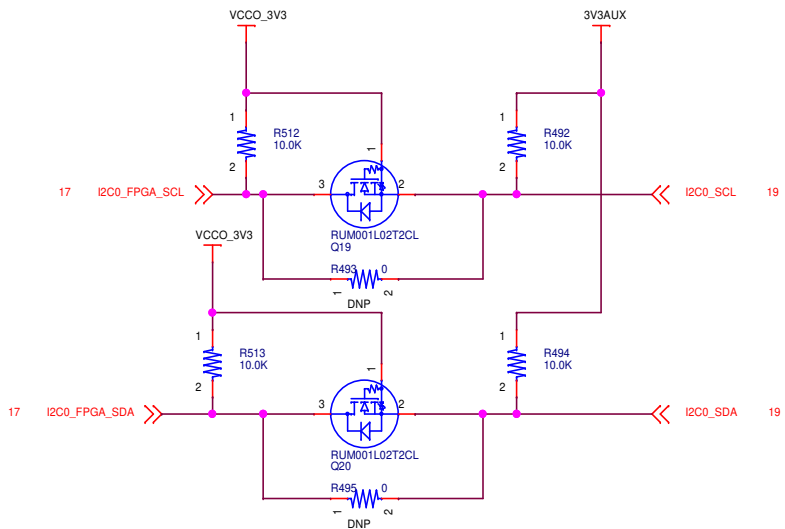
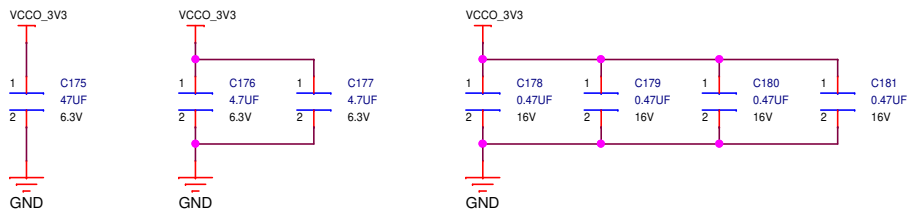
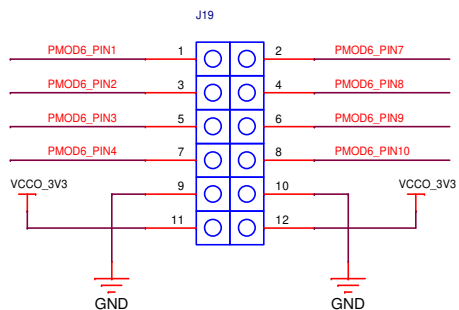
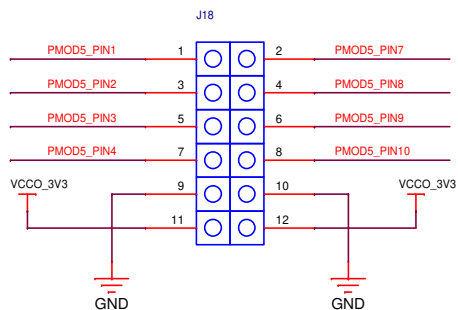
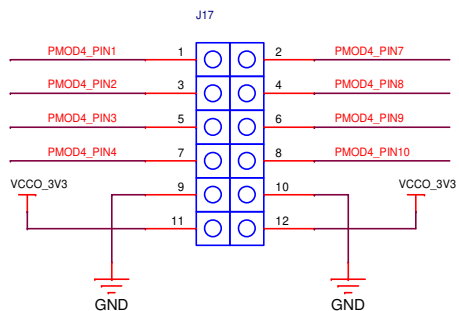
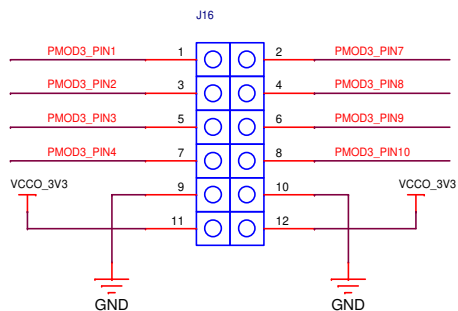
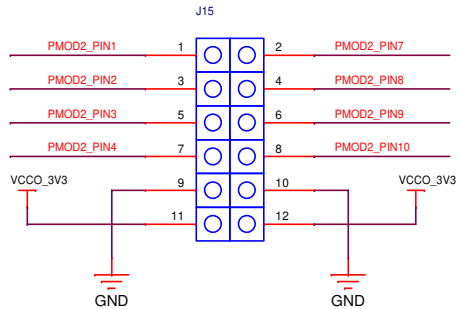
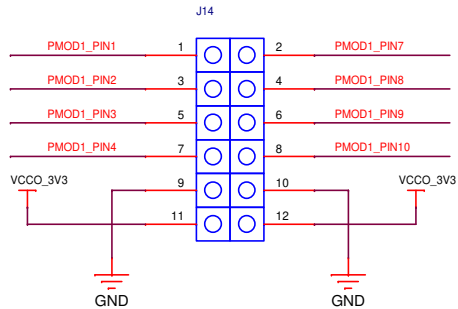
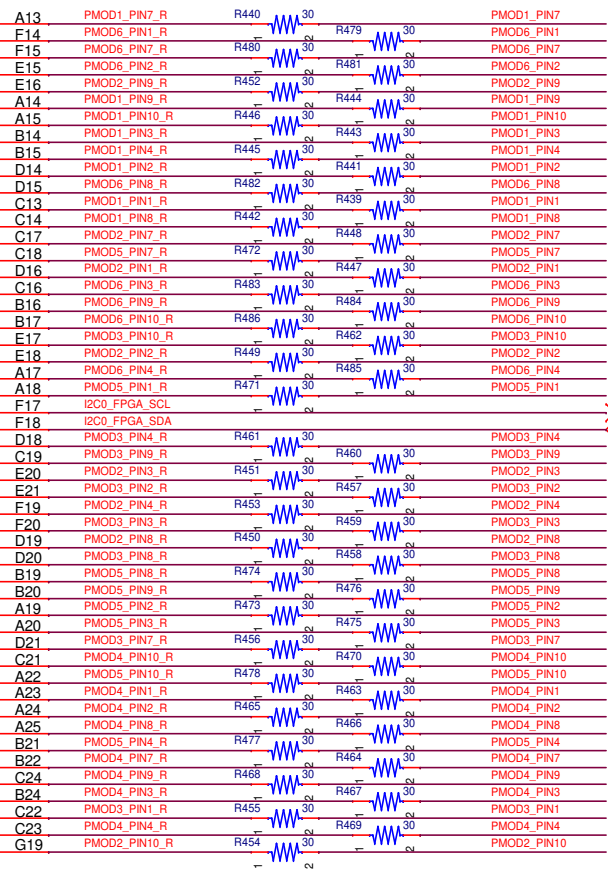
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Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Ver 1.1 Rev 01
Engineer: SR		Sheet 16 of 27	


Bank 16: Pmod Signal

6X Pmod Connectors



PCB Note: Please keep series resistors on Pmod connector side itself.



**XILINX**
2100 Logic Drive
San Jose, CA 95124

PCB P/N : 1281038
ASSY P/N : 0432153
TEST P/N : TSS0213

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P17_PMOD_BANK16

Size **B** Date Modified: Tuesday, June 18, 2019 Document Number: 0381874

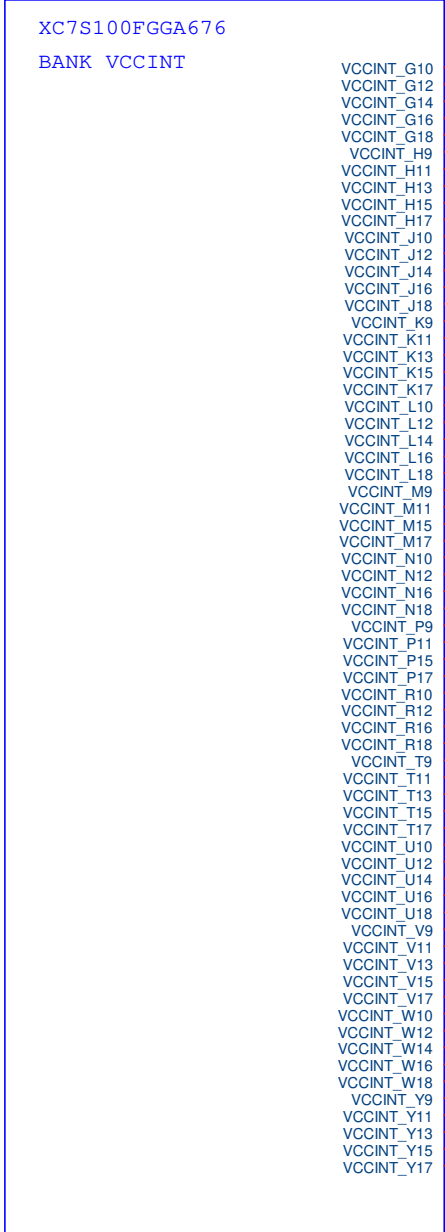
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Ver **1.1**
Rev **01**

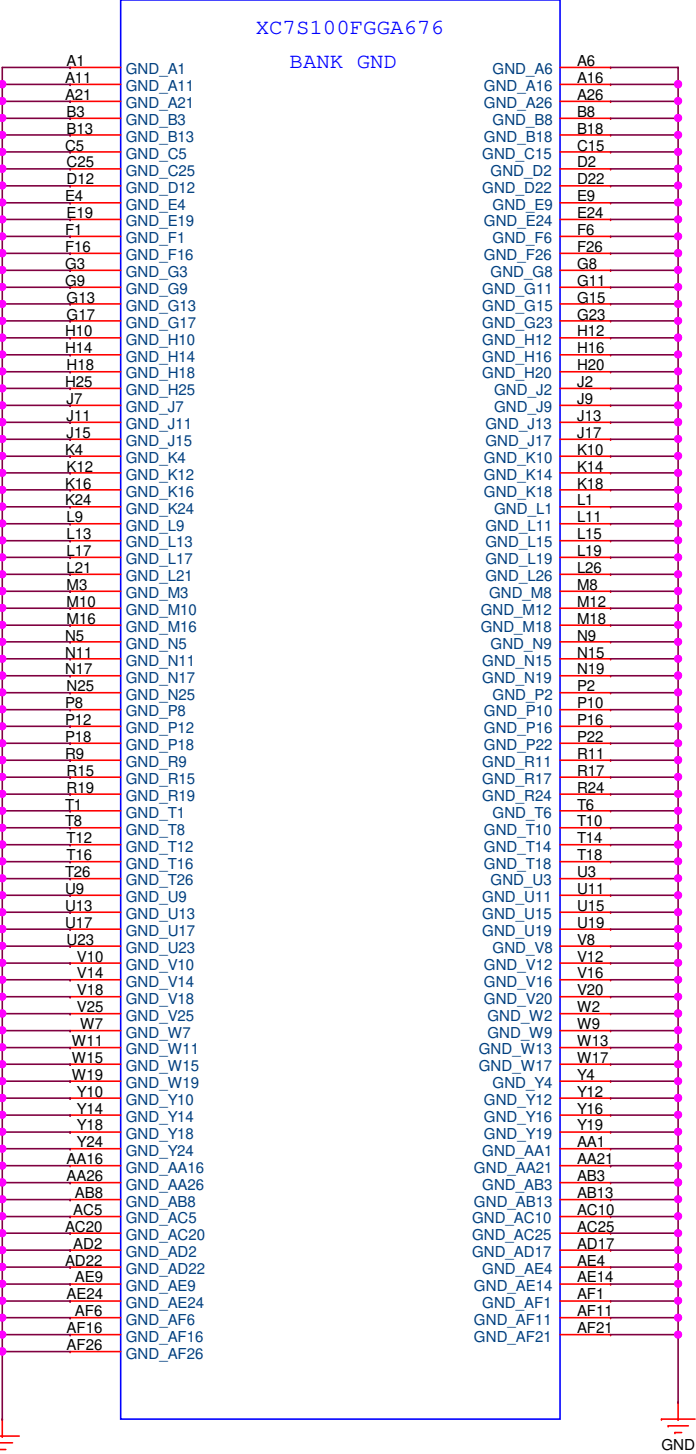
Sheet 17 of 27

FPGA Power & Decaps

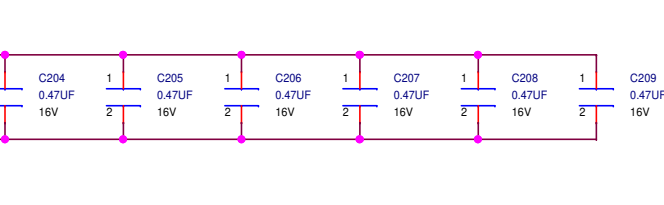
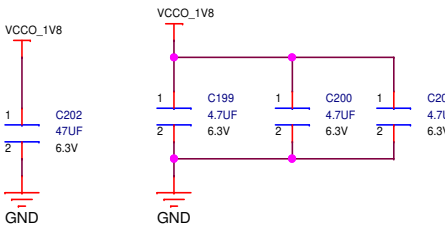
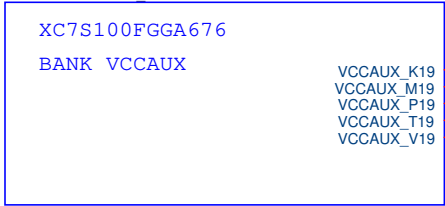
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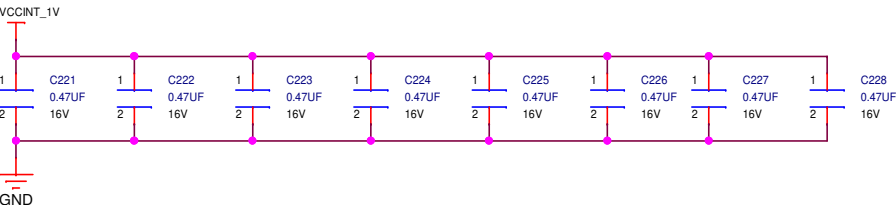
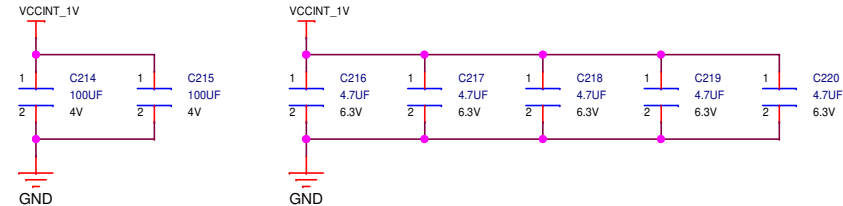
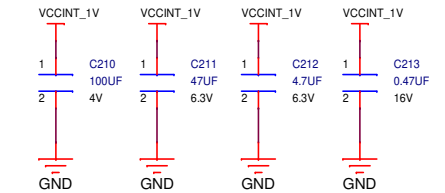
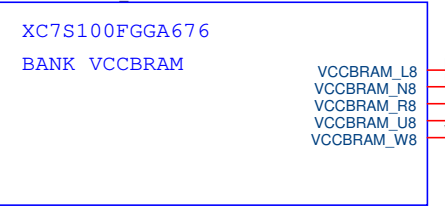
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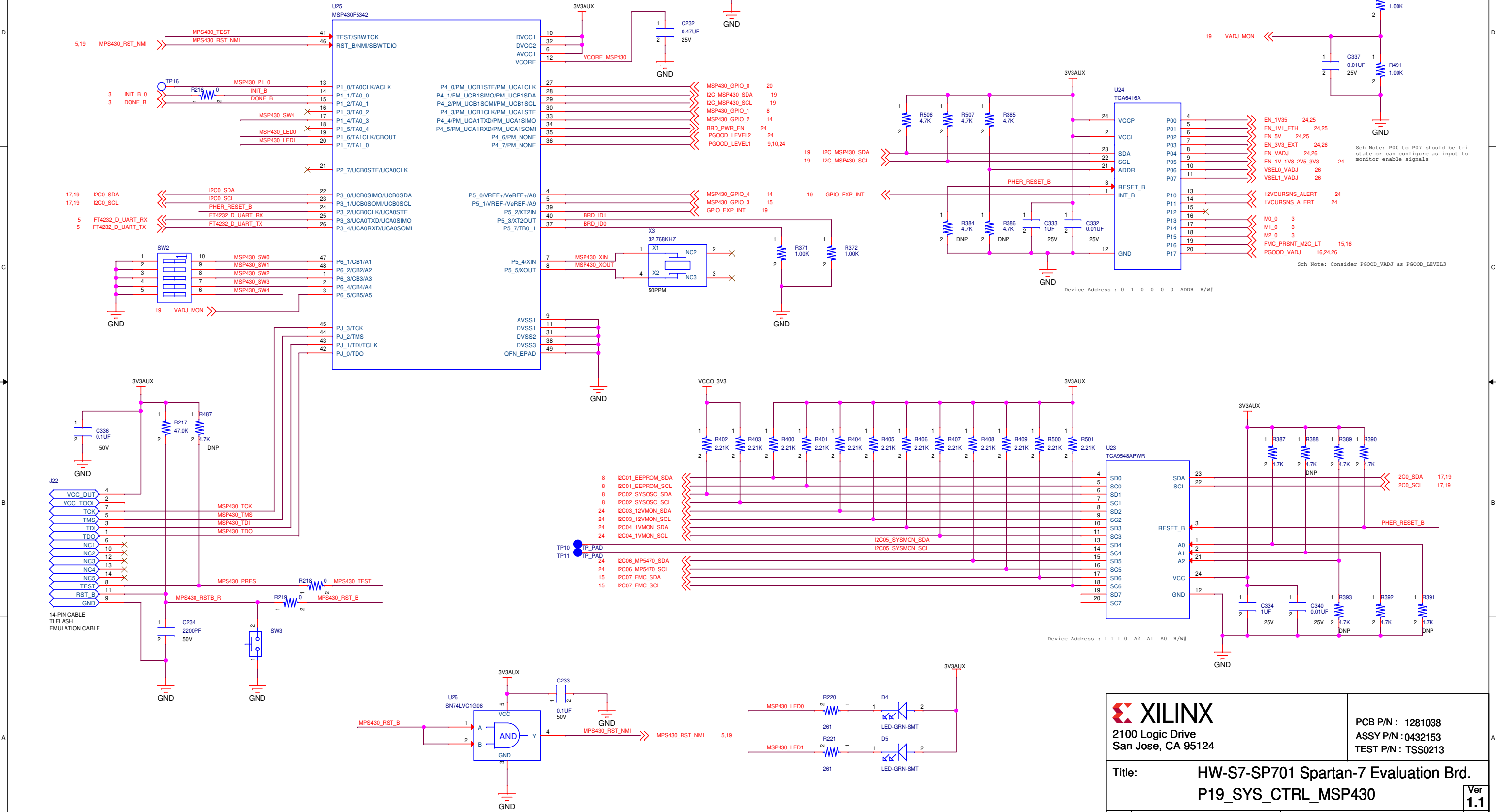
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PCB Note: Place decaps very near to respective power pins and distribute caps for all power pins

 XILINX 2100 Logic Drive San Jose, CA 95124		PCB P/N : 1281038 ASSY P/N : 0432153 TEST P/N : TSS0213	
		Title: HW-S7-SP701 Spartan-7 Evaluation Brd. P18_FPGA_PWR	
Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Ver 1.1 Rev 01
Engineer: SR		Sheet 18 of 27	

System Controller MSP430





2100 Logic Drive
San Jose, CA 95124

PCB P/N : 1281038
ASSY P/N : 0432153
TEST P/N : TSS0213

Title: HW-S7-SP701 Spartan-7 Evaluation Brd.
P19_SYS_CTRL_MSP430

Size B

Date Modified: Tuesday, June 18, 2019

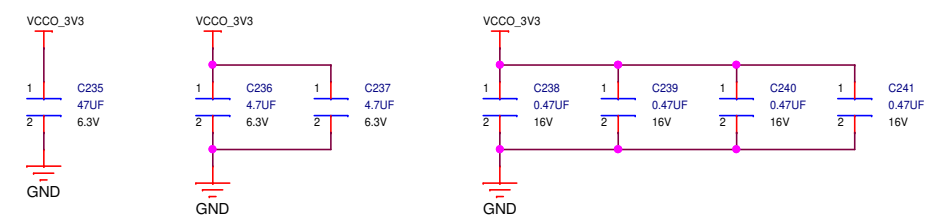
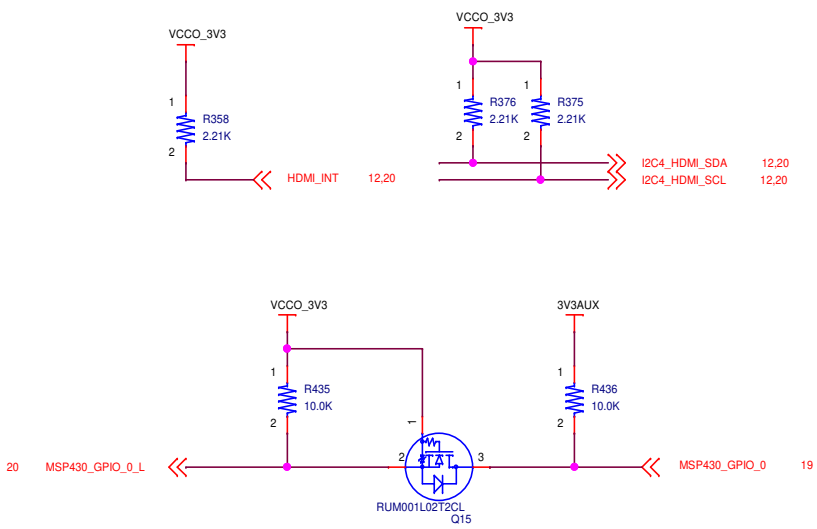
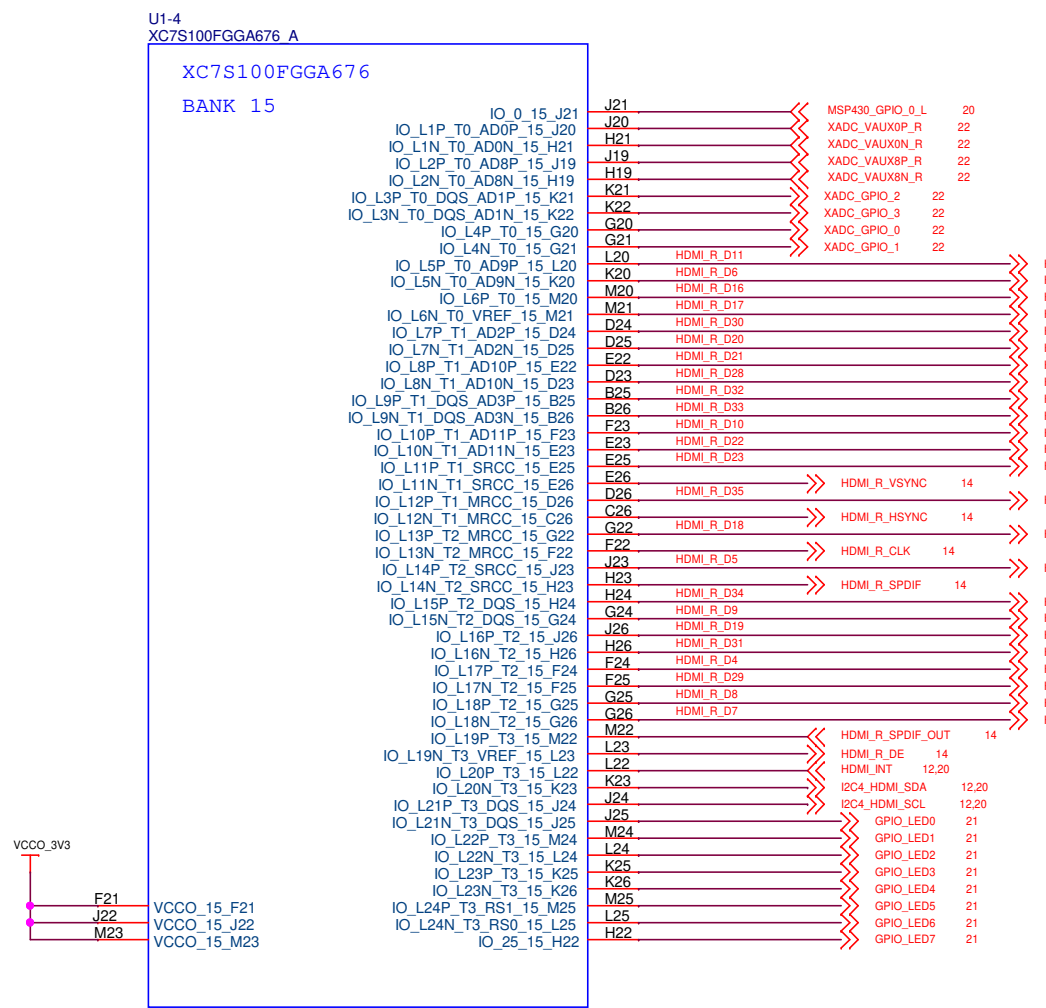
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Engineer: SR

Ver 1.1
Rev 01

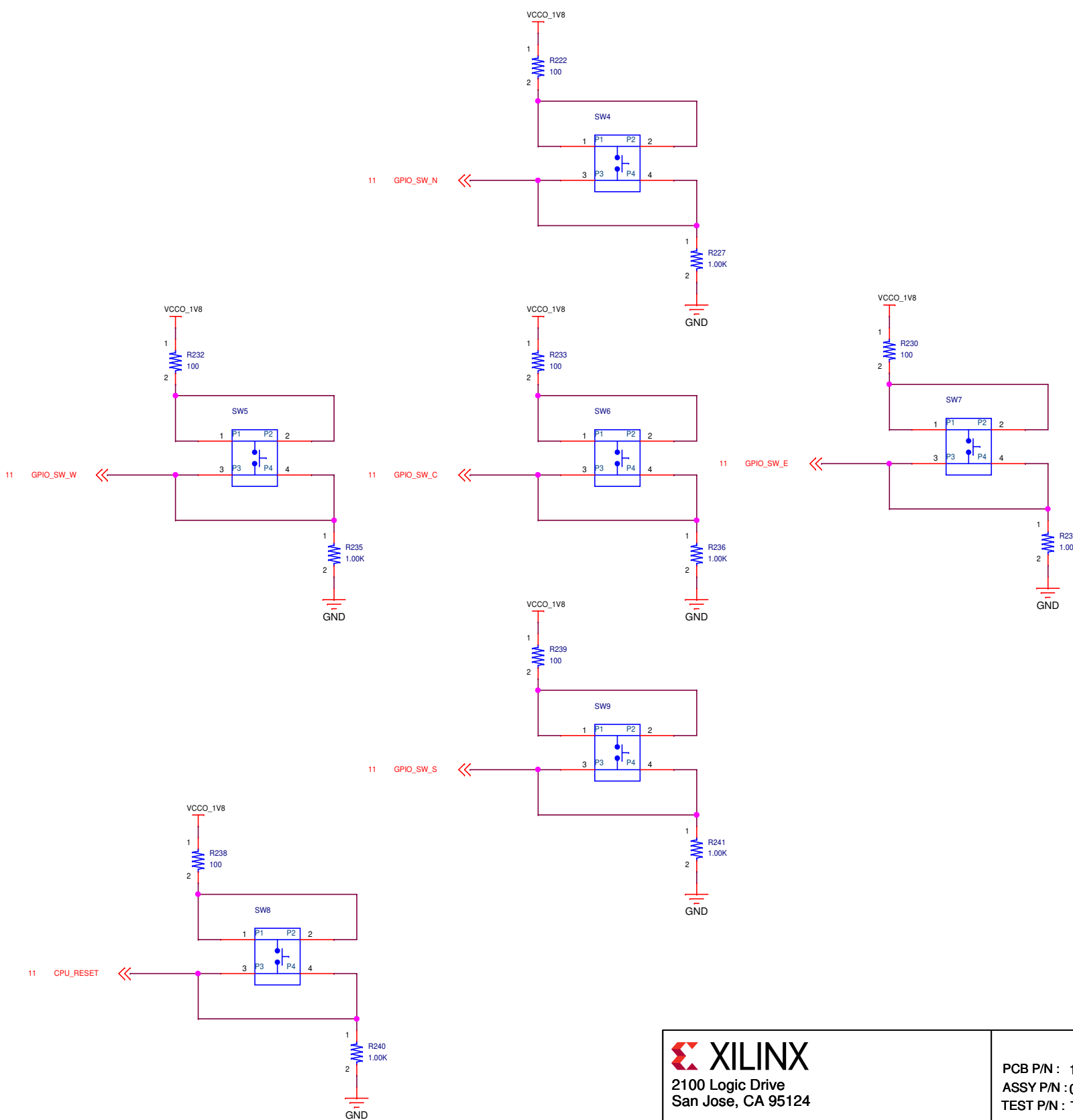
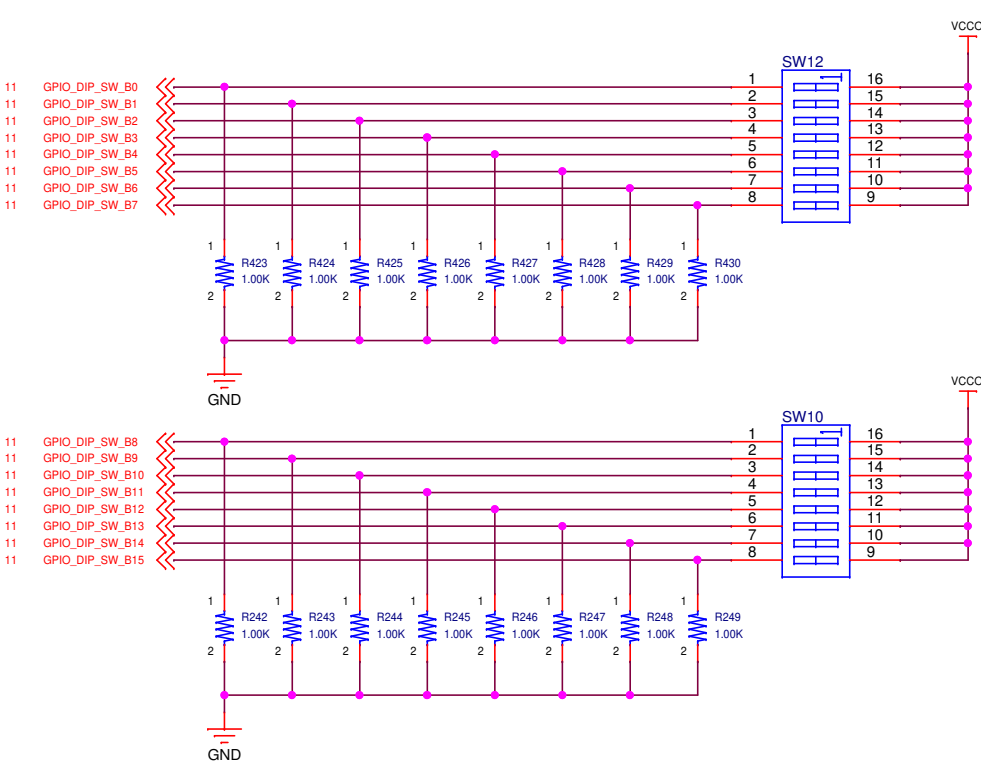
Sheet 19 of 27

Banks 15: User Interface, XADC (System Monitor) and HDMI



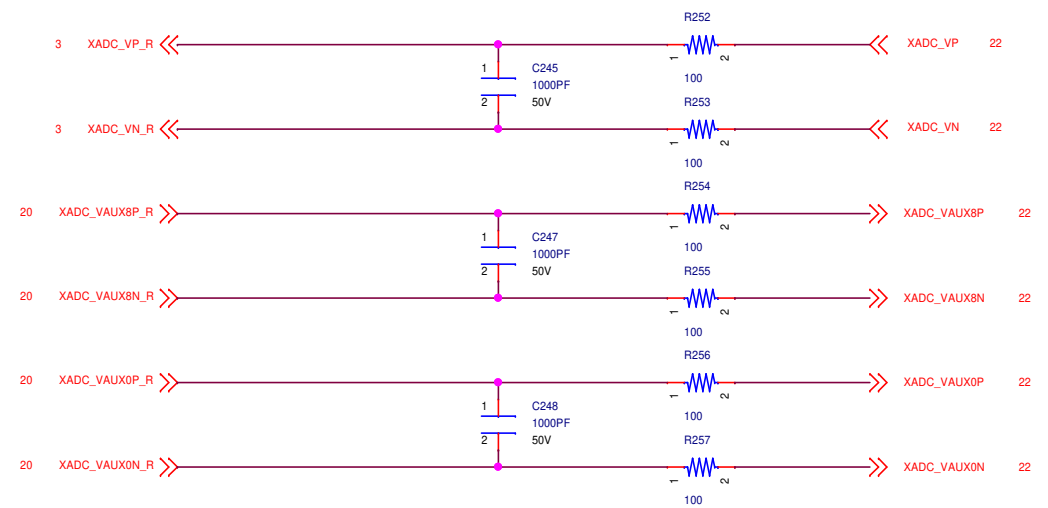
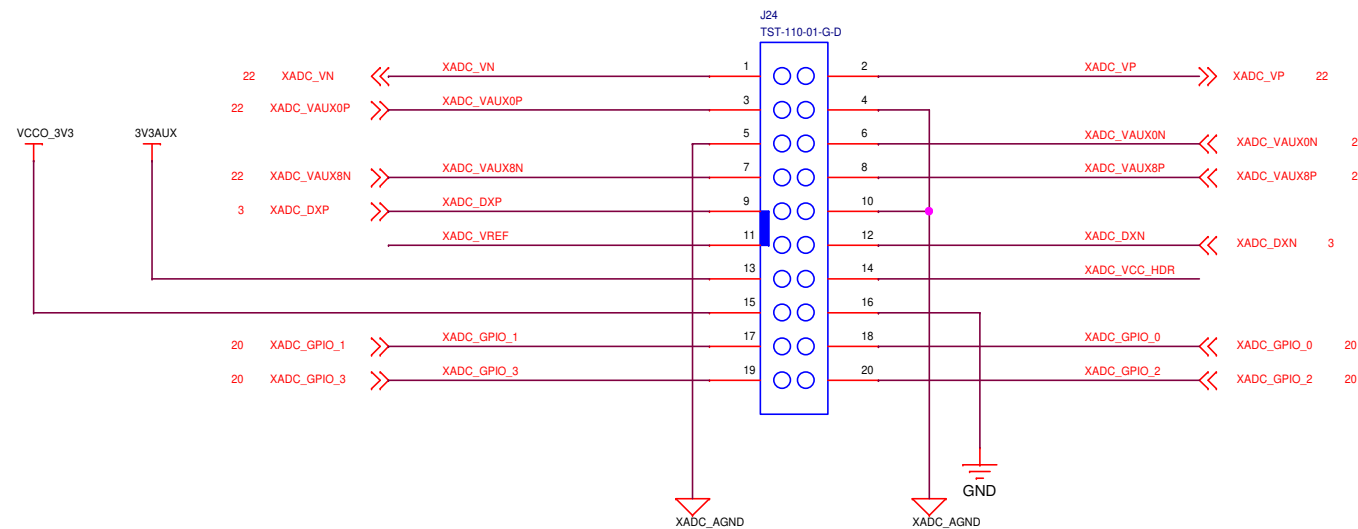
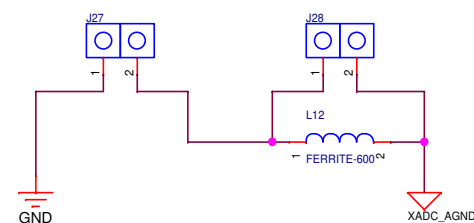
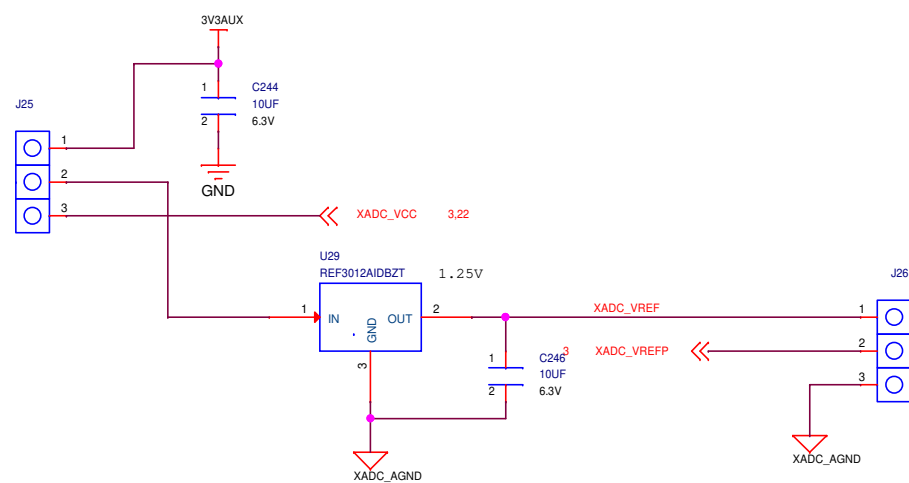
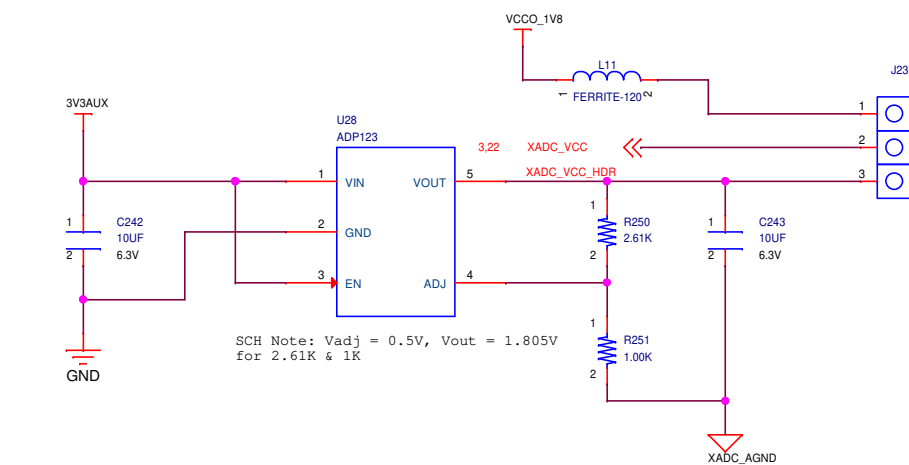
 2100 Logic Drive San Jose, CA 95124		PCB P/N : 1281038 ASSY P/N : 0432153 TEST P/N : TSS0213	
Title: HW-S7-SP701 Spartan-7 Evaluation Brd. P20_USRIF_SYSMON_HDMI			
Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Ver 1.1 Rev 01
Engineer: SR			Sheet 20 of 27


User Interface (Switches and LEDs)



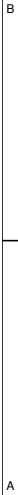
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Title: HW-S7-SP701 Spartan-7 Evaluation Brd. P21_USER_INTERFACE			
Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Ver 1.1 Rev 01
Engineer: SR			Sheet 21 of 27

XADC Header (System Monitor)



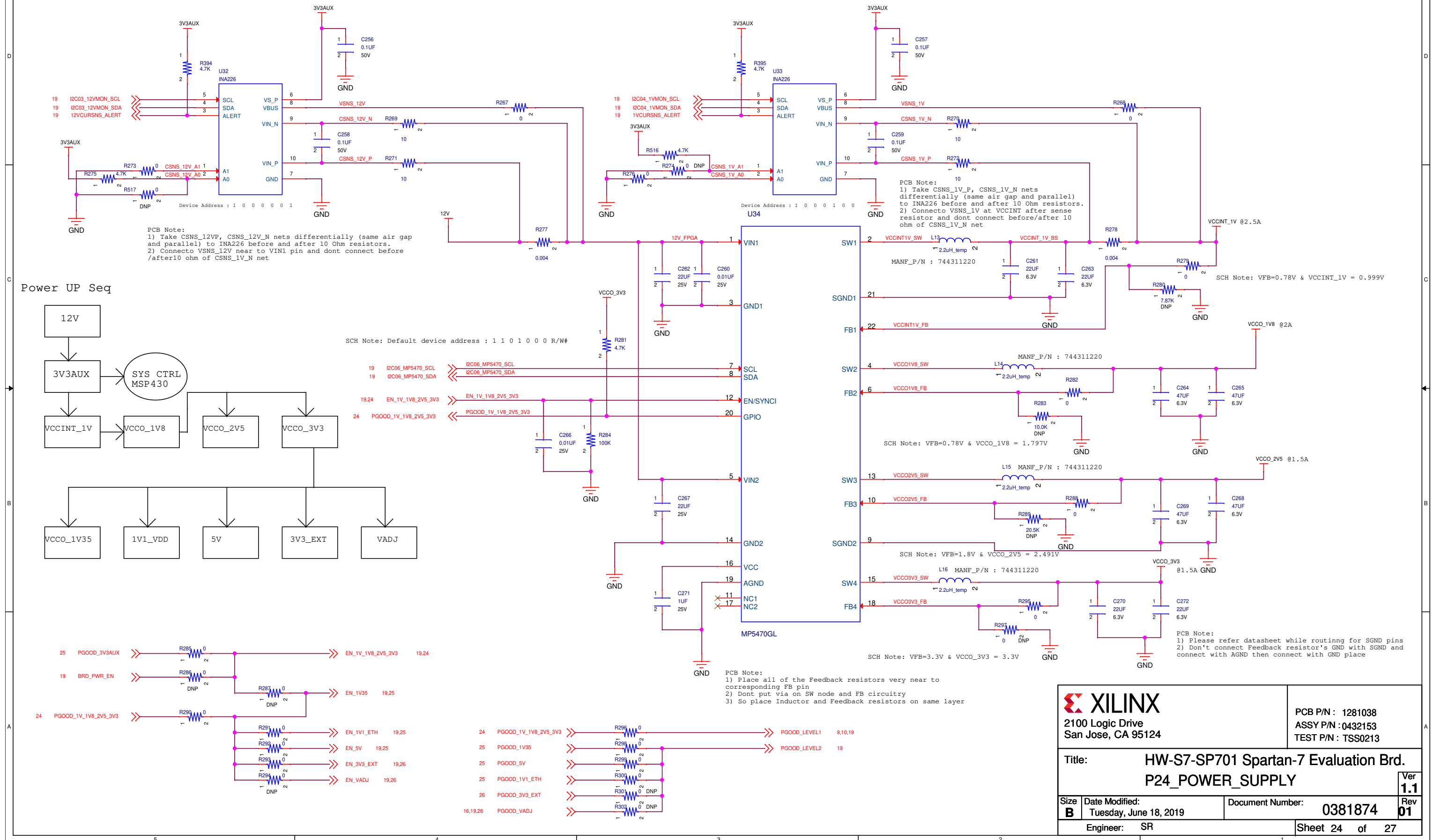
 XILINX 2100 Logic Drive San Jose, CA 95124		PCB P/N : 1281038 ASSY P/N : 0432153 TEST P/N : TSS0213	
Title: HW-S7-SP701 Spartan-7 Evaluation Brd. P22_XADC_SYSMON			
Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Ver 1.1 Rev 01
Engineer: SR		Sheet 22 of 27	


A vertical bar is divided into four segments labeled A, B, C, and D from bottom to top. A horizontal arrow points to the boundary between segments B and C.



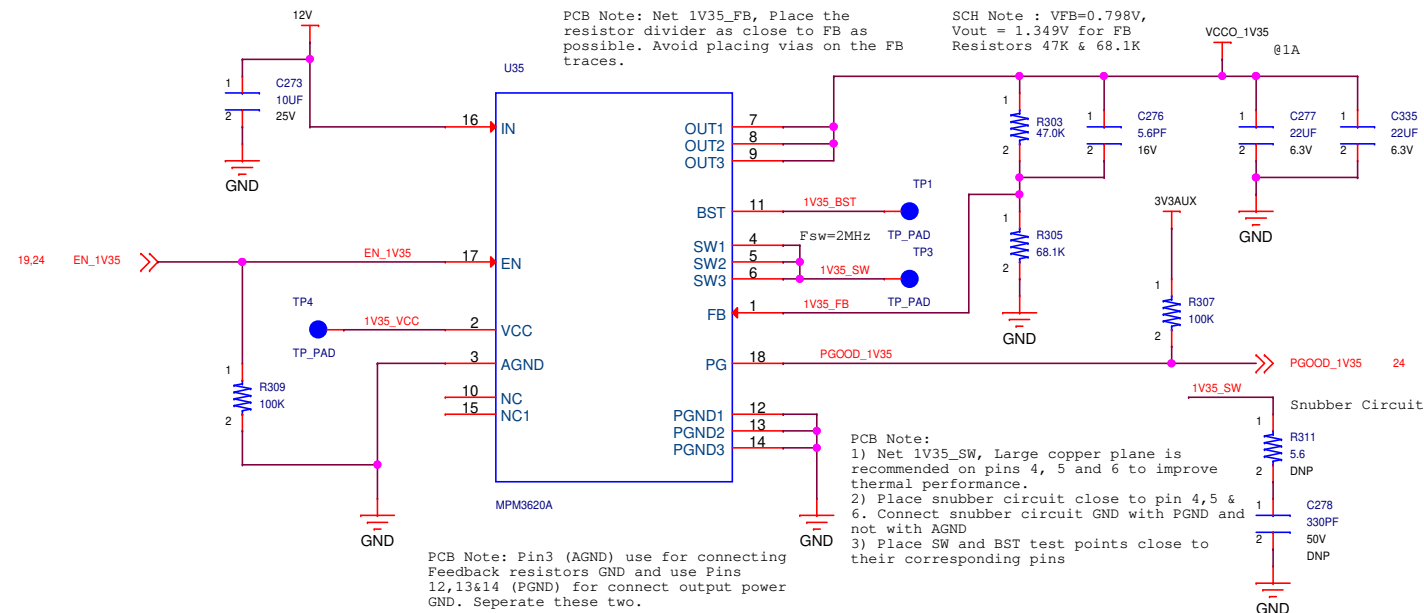
A

VCCINT & VCCO Power supply for FPGA core (1V) and IO (1.8V, 2.5V & 3.3V)

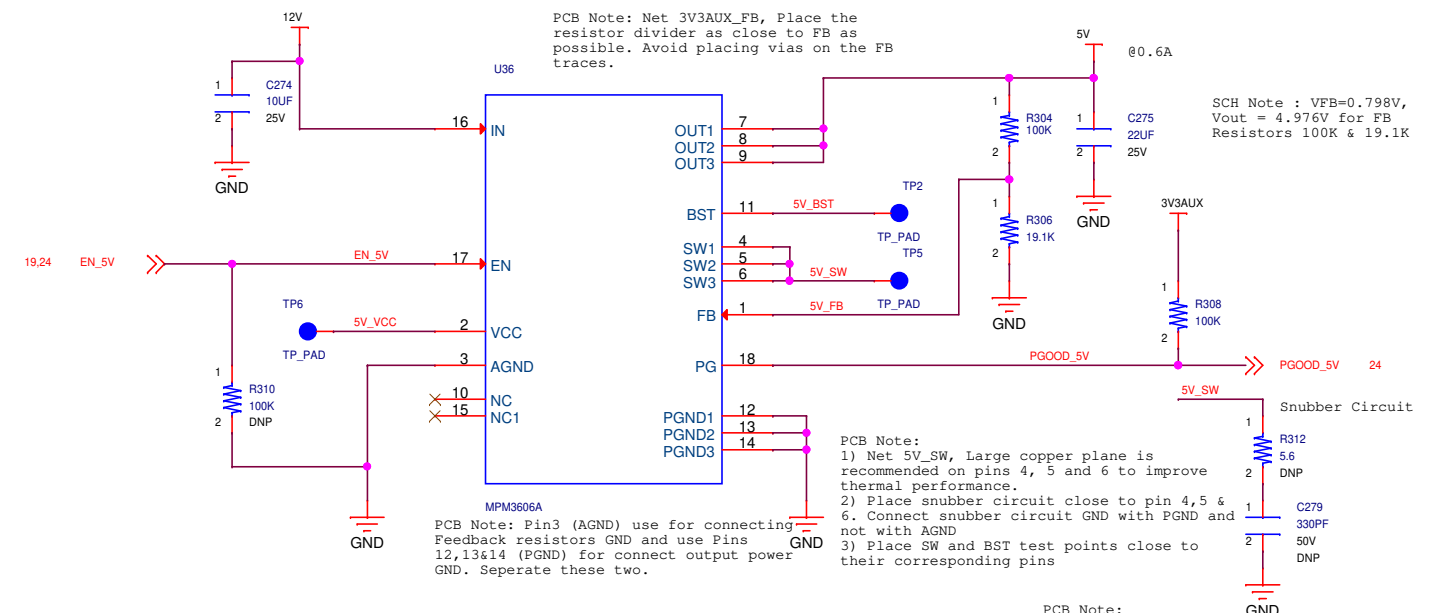


 XILINX 2100 Logic Drive San Jose, CA 95124		PCB P/N : 1281038 ASSY P/N : 0432153 TEST P/N : TSS0213	
Title: HW-S7-SP701 Spartan-7 Evaluation Brd. P24_POWER_SUPPLY			
Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Ver 1.1 Rev 01
Engineer: SR		Sheet 24 of 27	

DDR3L Core/IO (1.35) Power Supply



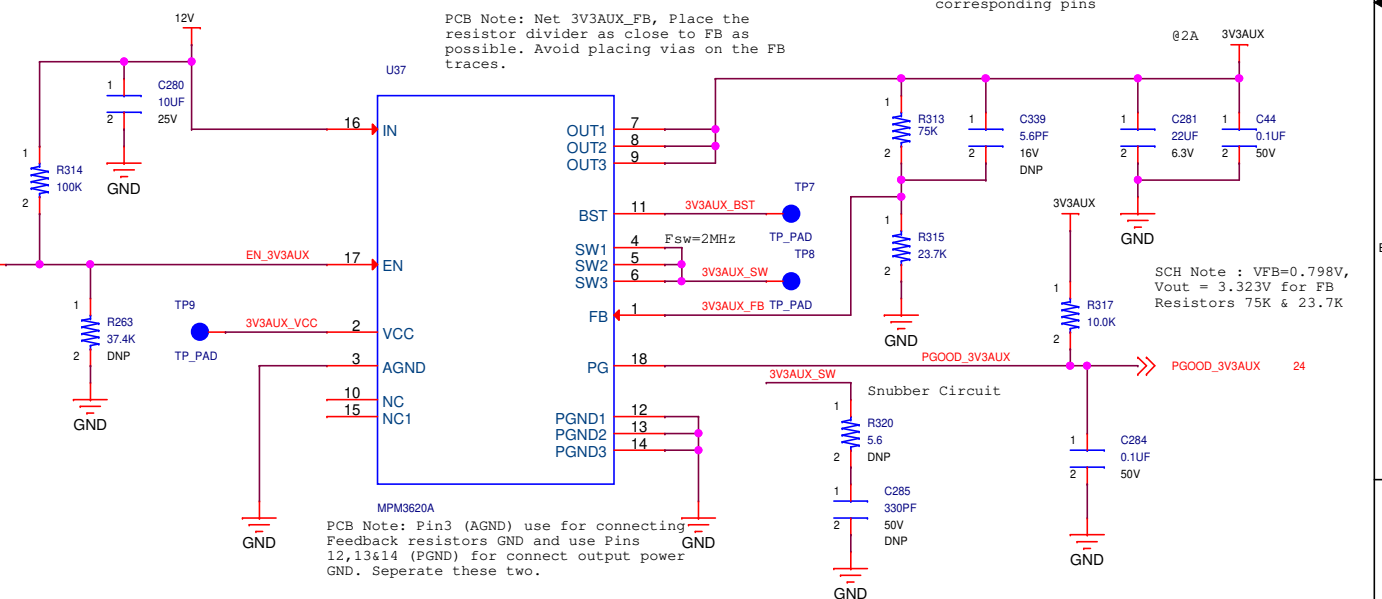
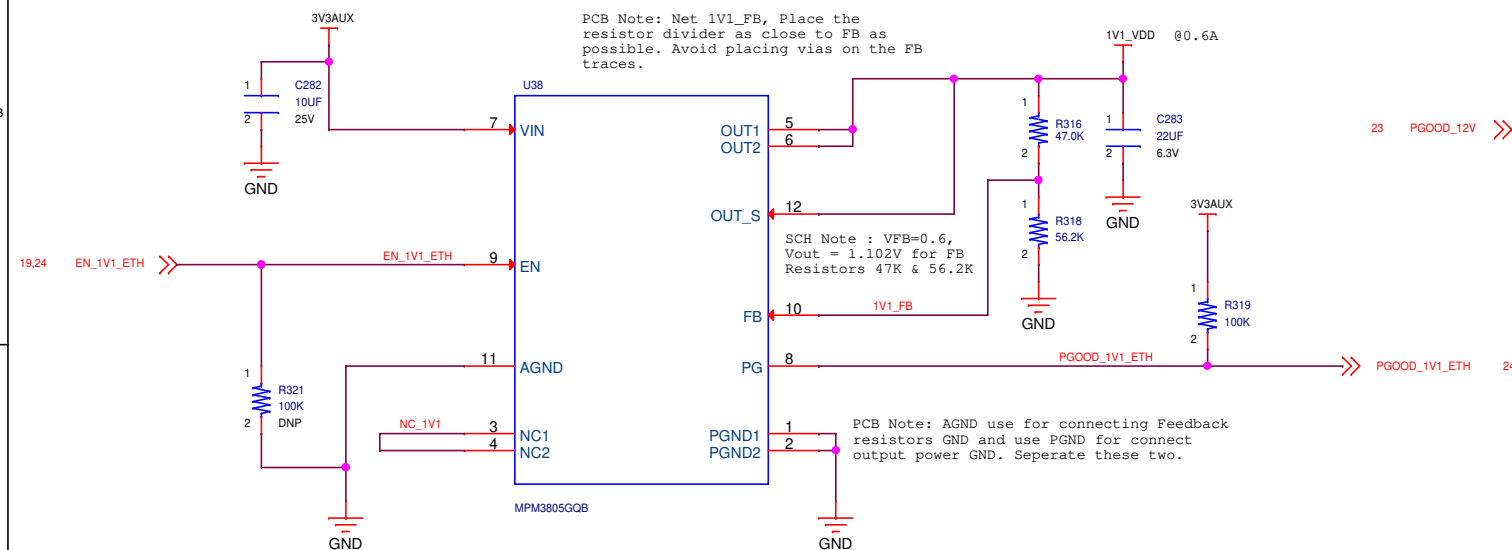
5V Power Supply for HDMI Tx Connector




3.3V VAUX Power Supply

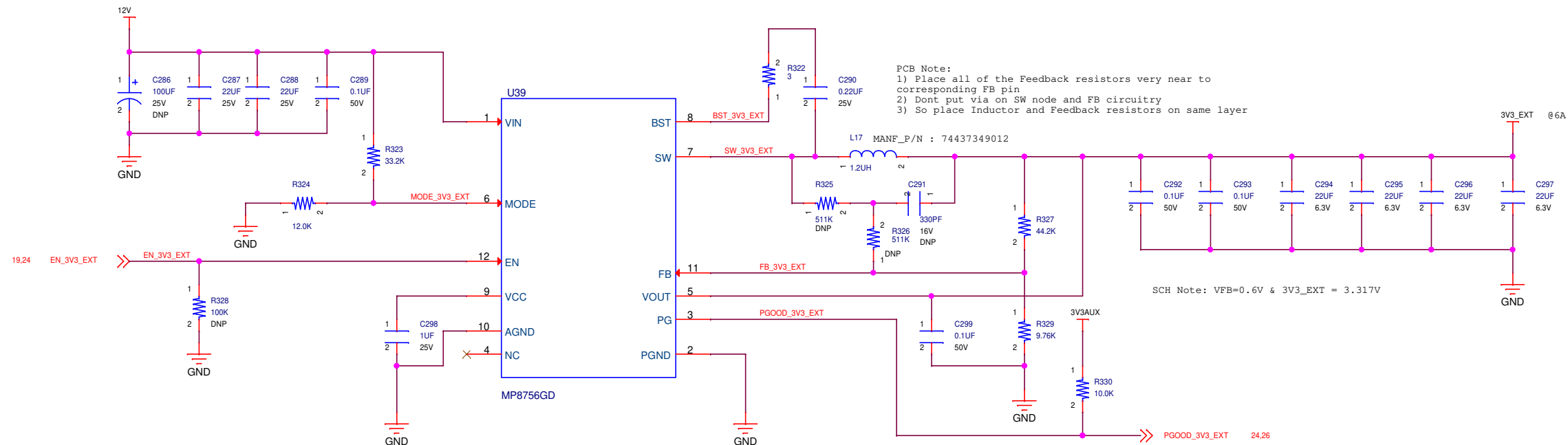
PCB Note: 1) Net 3V3AUX_SW, Large copper plane is recommended on pins 4, 5 and 6 to improve thermal performance.
2) Place snubber circuit close to pin 4,5 & 6. Connect snubber circuit GND with PGND and not with AGND
3) Place SW and BST test points close to their corresponding pins

ETH PHY1/2 Core (1.1V) Power Supply

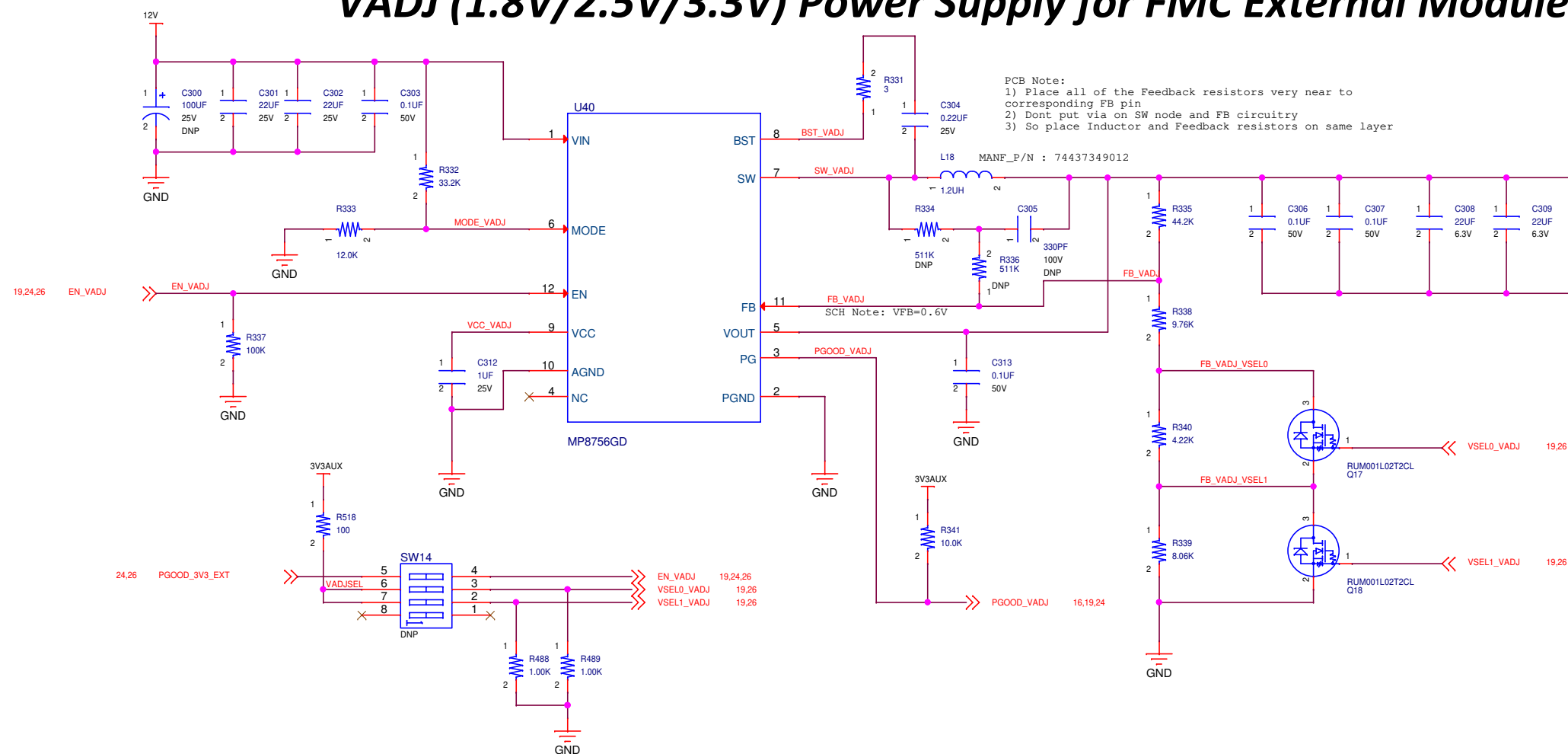


 XILINX 2100 Logic Drive San Jose, CA 95124		PCB P/N : 1281038 ASSY P/N : 0432153 TEST P/N : TSS0213	
Title: HW-S7-SP701 Spartan-7 Evaluation Brd. P25_POWER_SUPPLY			
Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Ver 1.1 Rev 01
Engineer: SR		Sheet 25 of 27	

3.3V Power Supply for External Modules like MIPI Camera/LCD and FMC module

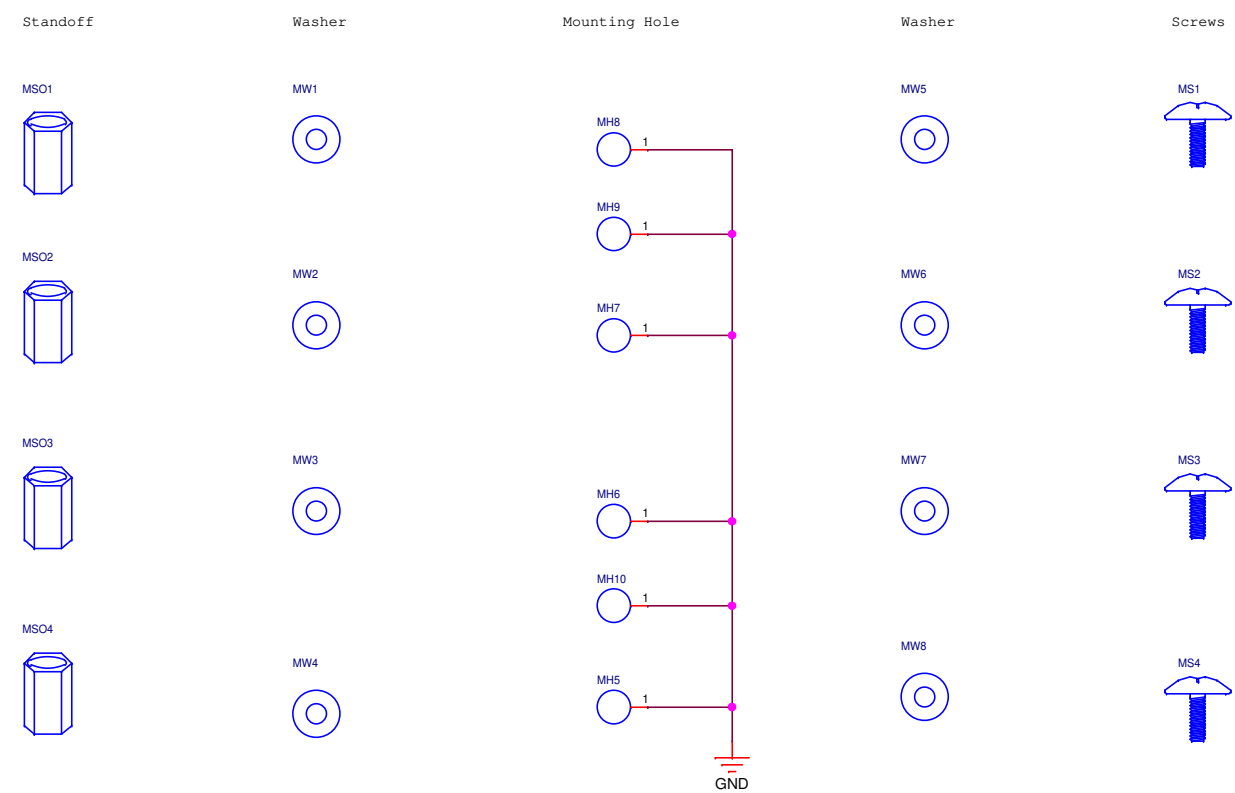


VADJ (1.8V/2.5V/3.3V) Power Supply for FMC External Module




		PCB P/N : 1281038 ASSY P/N : 0432153 TEST P/N : TSS0213	
Title: HW-S7-SP701 Spartan-7 Evaluation Brd. P26_POWER_SUPPLY			
Size B	Date Modified: Tuesday, June 18, 2019	Document Number: 0381874	Ver 1.1 Rev 01
Engineer: SR			Sheet 26 of 27

Screws, Standoff and Monting Hole



Default Short Jumper Positions

RefDes	Jumper Required	Jumper Position Pin#
J2 (2pins)	No	--
J6 (2Pins)	No	--
J23 (3Pins)	Yes	Pin#2 & Pin#3
J25 (3Pins)	Yes	Pin#1 & Pin#2
J26 (3Pins)	Yes	Pin#1 & Pin#2
J27 (2Pins)	Yes	Pin#1 & Pin#2
J28 (2Pins)	No	--
J35 (2Pins)	No	--
J38 (2Pins)	YES	Pin#1 & Pin#2



2100 Logic Drive
San Jose, CA 95124

PCB P/N : 1281038
ASSY P/N : 0432153
TEST P/N : TSS0213

Title:HW-S7-SP701 Spartan-7 Evaluation Brd.
P27_MISC

Ver1.1

SizeB

Date Modified:Tuesday, June 18, 2019

Document Number:0381874

Rev01

Engineer:SR

Sheet 27 of 27