

A

B

C

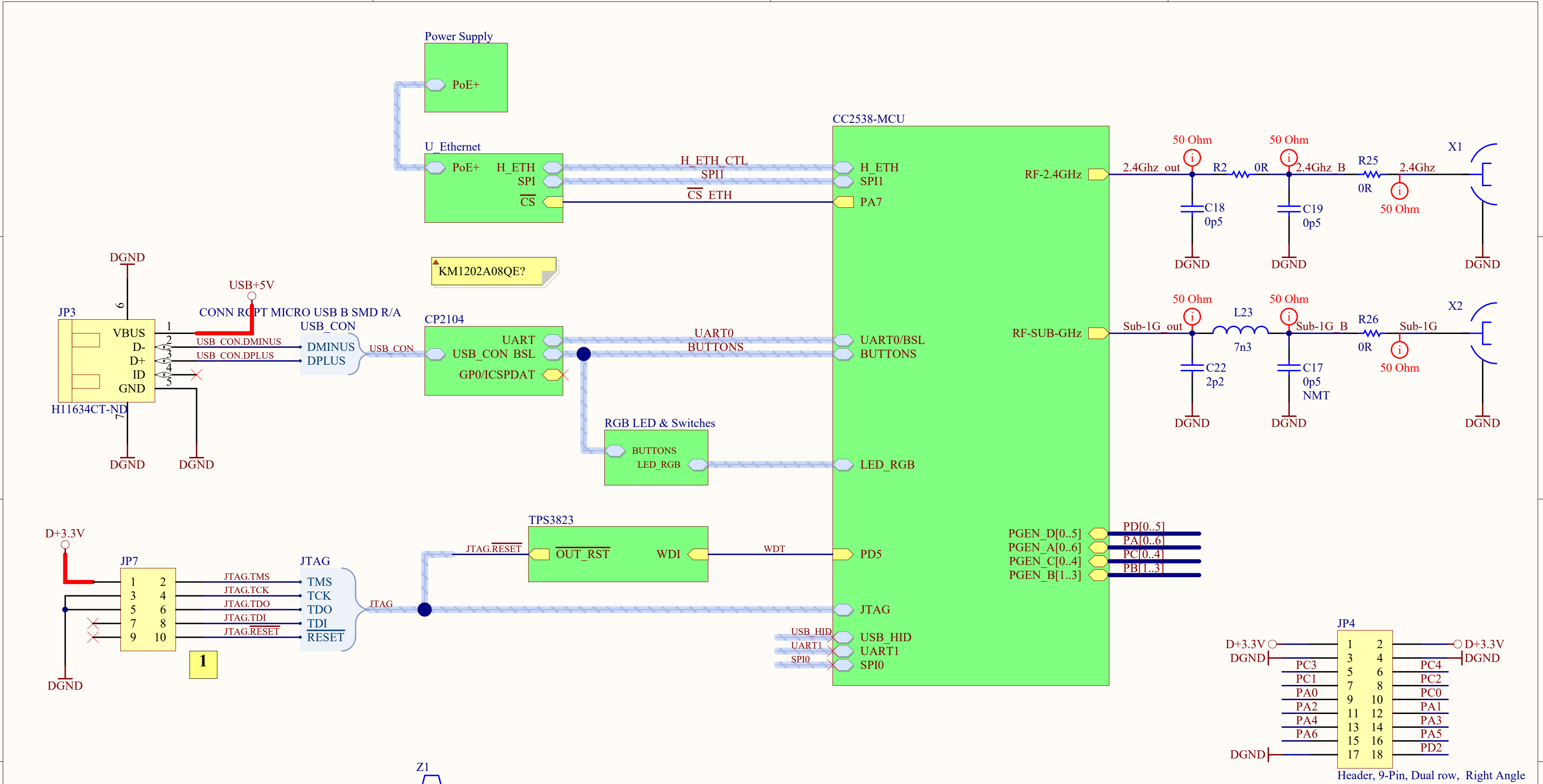
D

A

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D



1. Fiducials. 3 to Top and 3 to Bottom

1.

1. Place connector on form factor as required

Z1

C&C\_CAP\_PUSHBUTTON\_RECTANGULAR\_RED

LG2 Lights Logo LG1 Zolertia logo

Takachi-MX3-11-X Enclosures

1

FD1 FD2

FD3 FD4

FD5 FD6

Performed	Revised	Approved
Cannot open file C:\Users\amejias\Desktop\Projects\amejias.jpg		

Project Name	Orion_Ethernet_router	Sheet	1
Title	Main	Version	Rev B
Author	Aitor Mejias	Date	07/12/2015
Comments			

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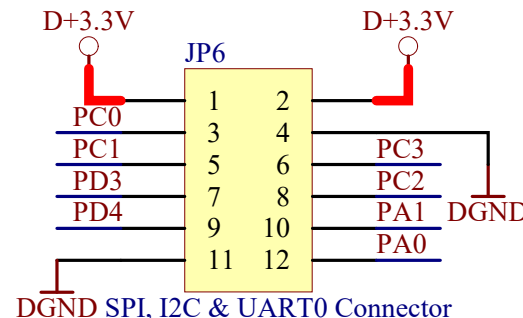
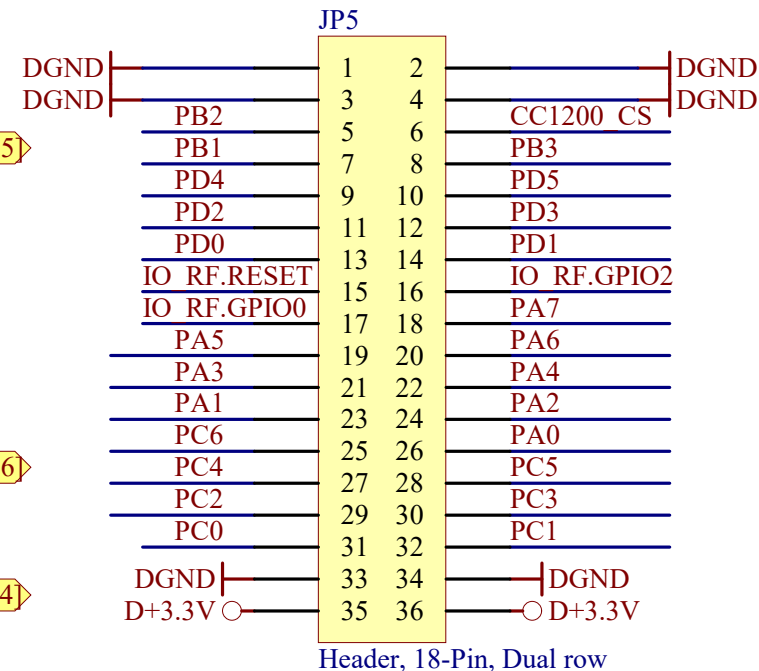
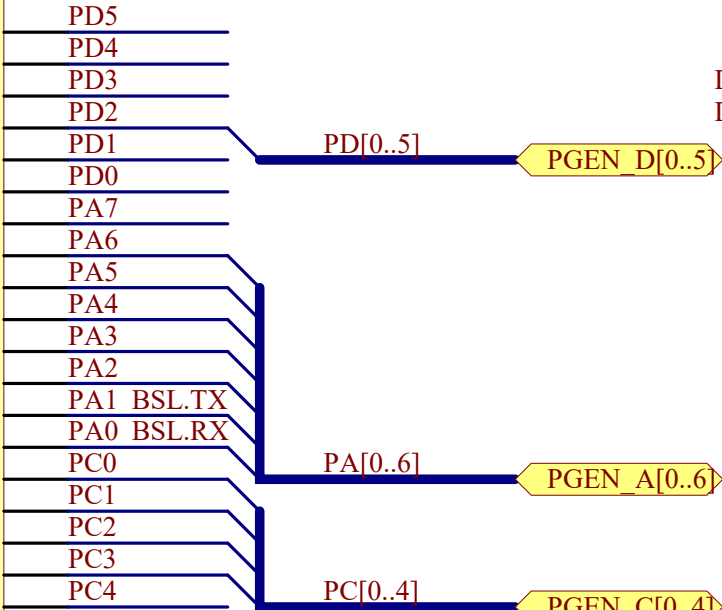
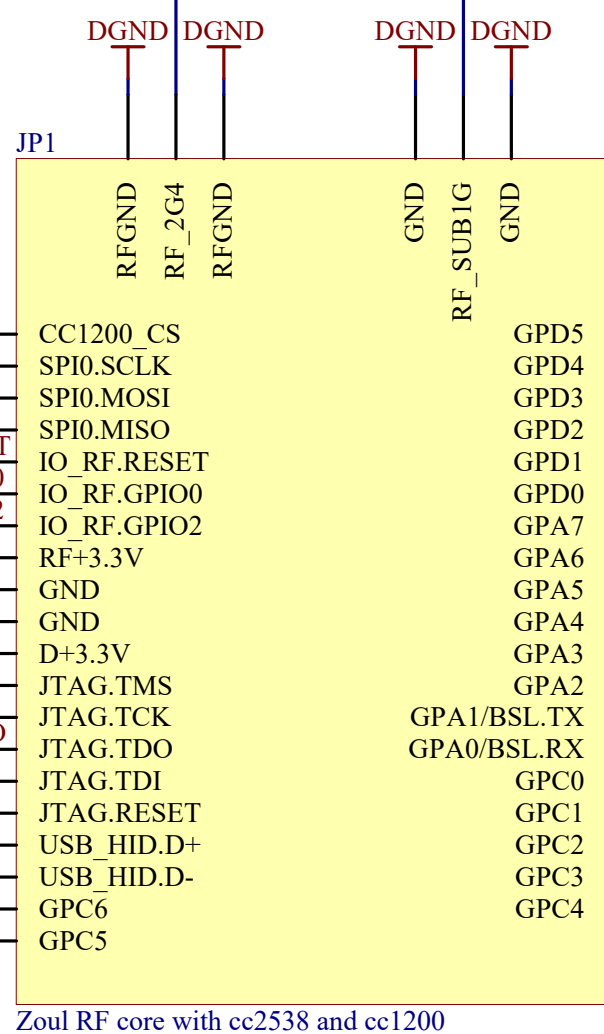
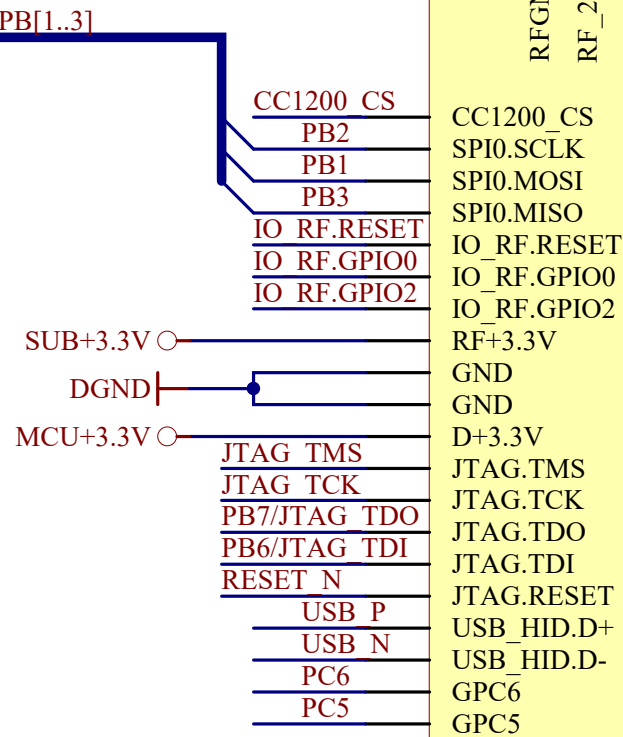
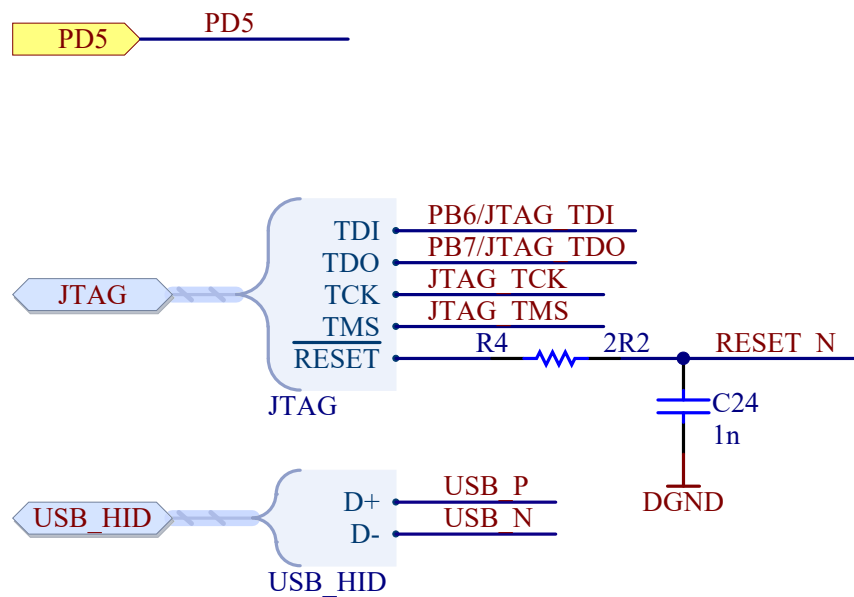
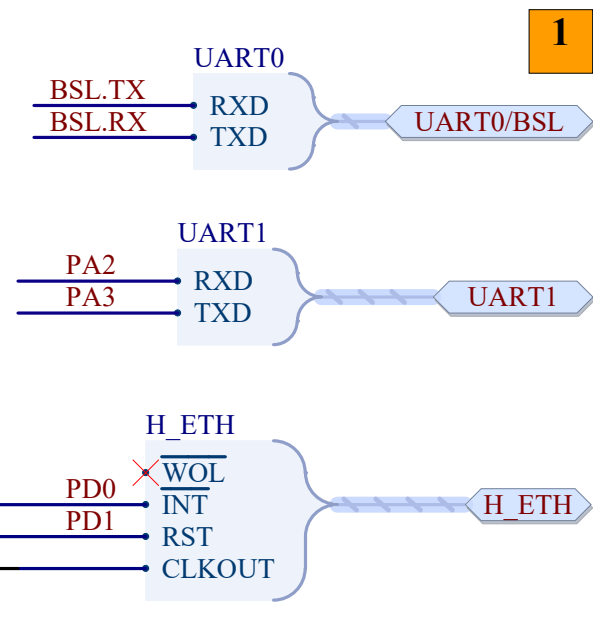
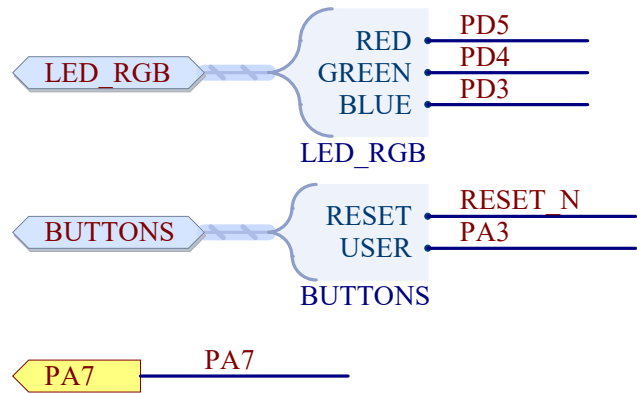
D

A

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C

D



1.

- UART0:  
\* - RX: PA0, connected to CP2104 serial-to-usb converter TX pin  
\* - TX: PA1, connected to CP2104 serial-to-usb converter RX pin

- UART1:  
\* - RX: PC1  
\* - TX: PC0  
\* - CTS: PD4, shared with LED2 (Green), disabled as default  
\* - RTS: PD3, shared with LED3 (Blue), disabled as default

1. BSL configuration as default UART0  
- RXD: GPA0  
- TXD: GPA1

1.

Project Name	Orion_Ethernet_router	Sheet	2
Title	MCU	Version	Rev B
Author	Aitor Mejias	Date	07/12/2015
Comments			

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A

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C

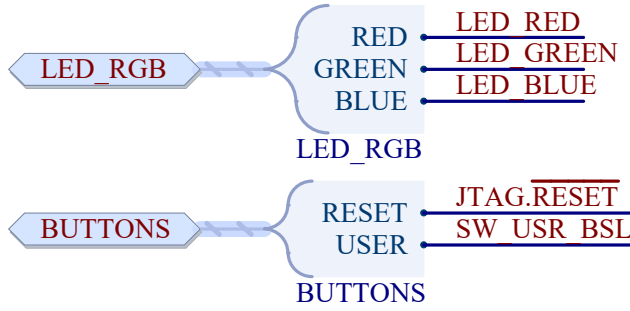
D

A

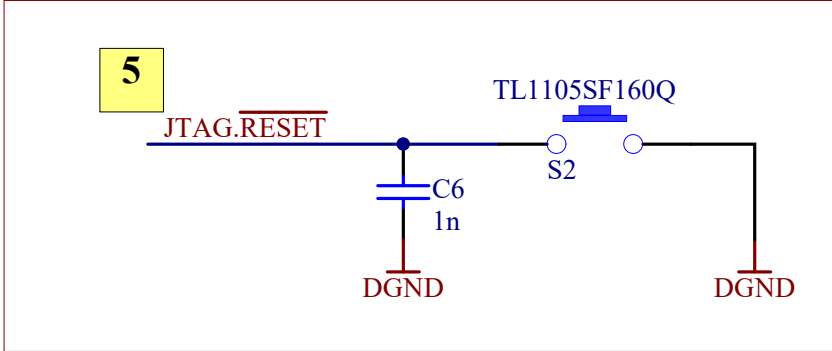
B

C

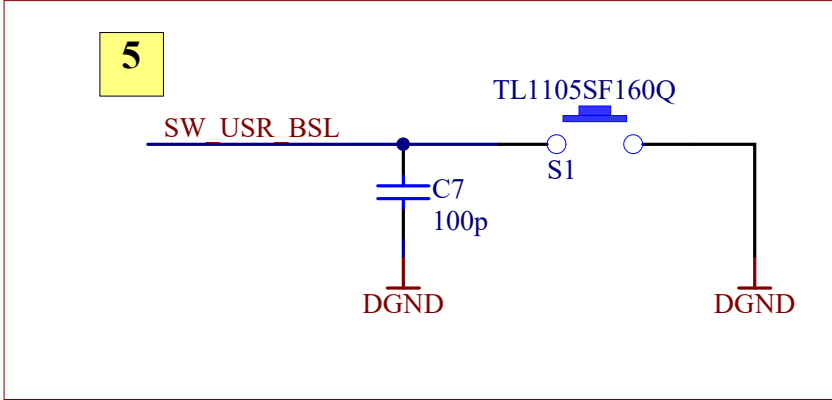
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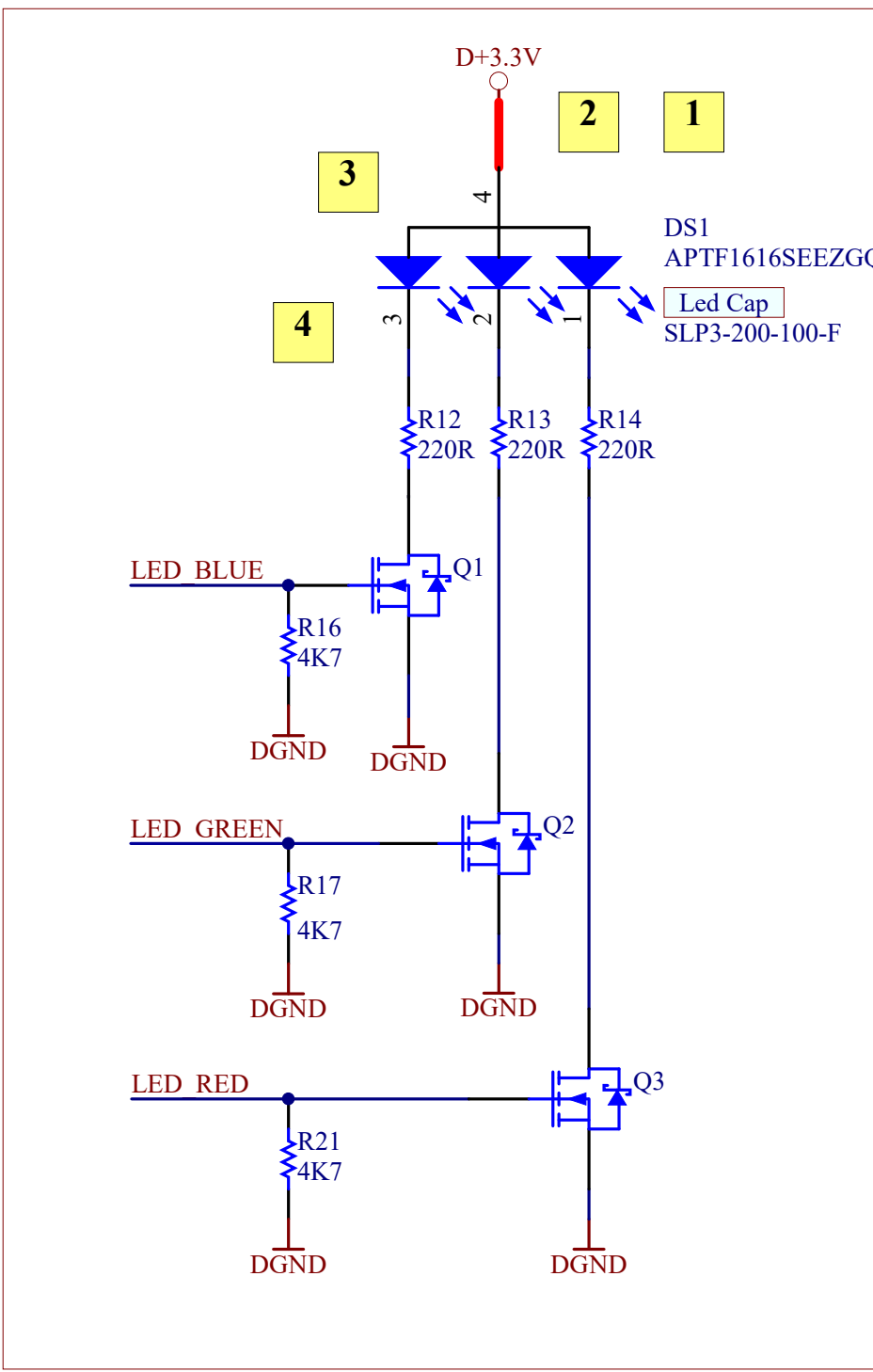
Reset Button



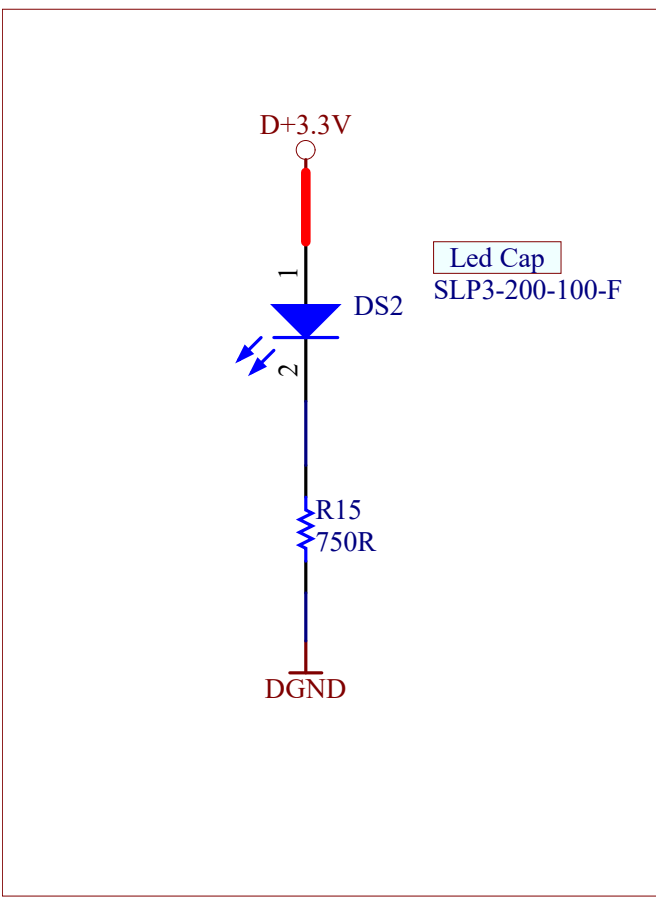
User Buttons



RGB Led



Status Led



1. Red Led
2. Green Led
3. Blue Led
4. Common Anode
5. Pull up in other sheet
1.
1.

Project Name	Orion_Ethernet_router	Sheet	4
Title	HMI	Version	Rev B
Author	Aitor Mejias	Date	07/12/2015
Comments	* * *		

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A

A

B

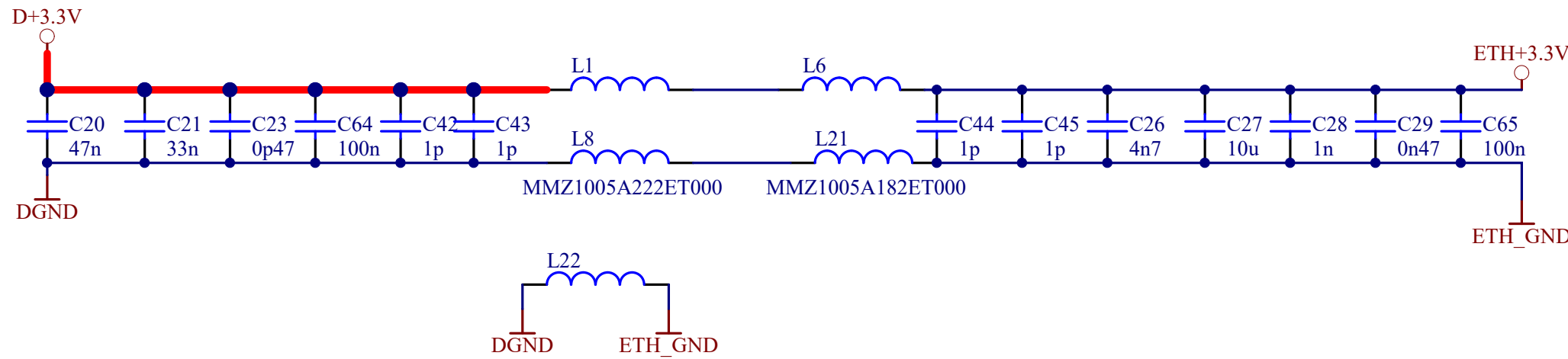
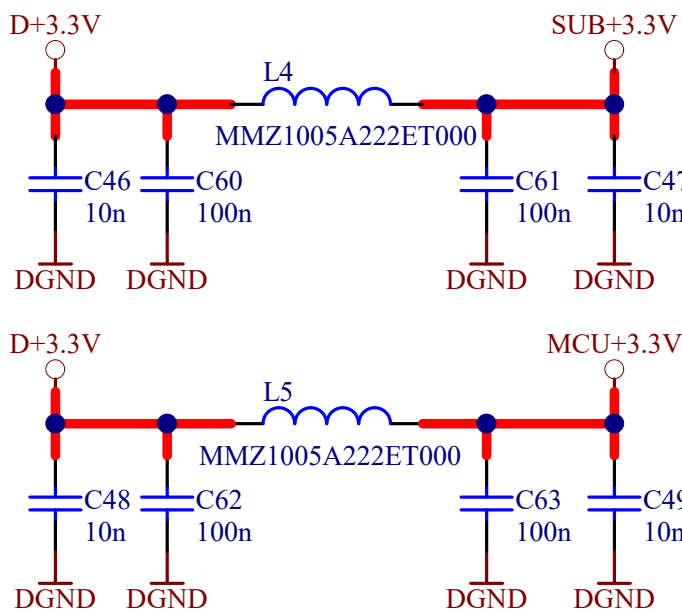
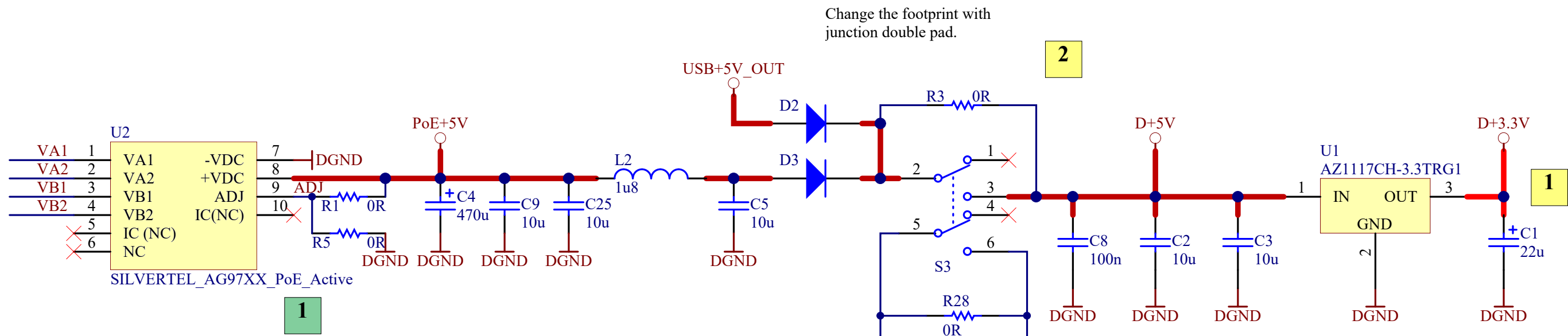
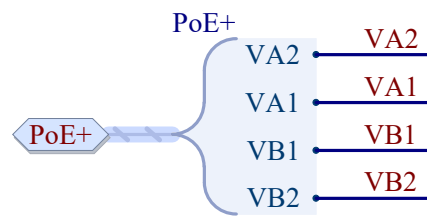
B

C

C

D

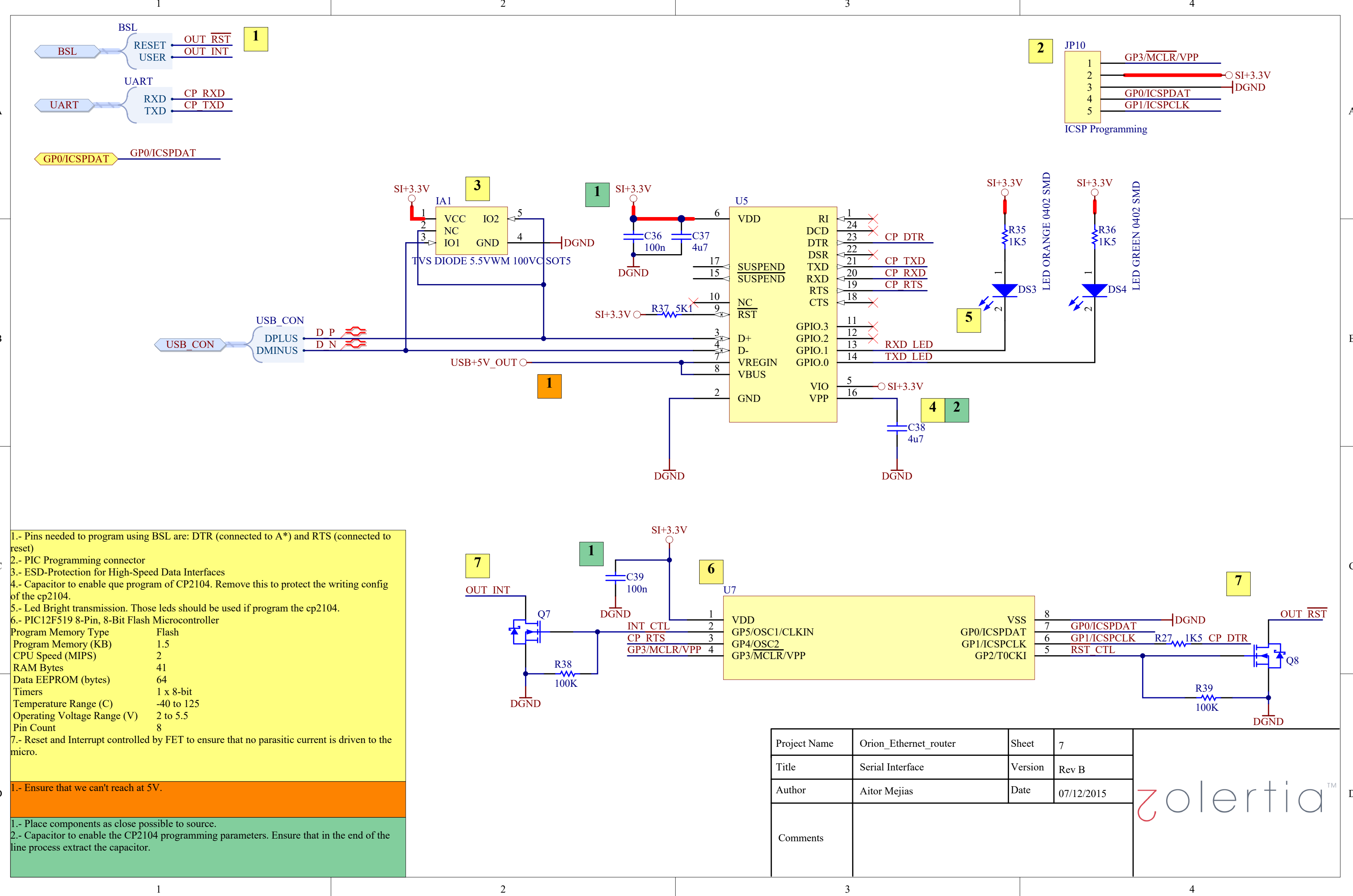
D



- 1.Place closed to IC  
2.Not mounted if Serial Interface is not mounted.
1. For select Soft-Start capacitor C37(nF)=5.55\*T(mSec)  
13uF for 2.5seg aproximated
1. Place a big plane to disipate maximun power possible

Project Name	Orion_Ethernet_router	Sheet	6
Title	Power Supply	Version	Rev B
Author	Aitor Mejias	Date	07/12/2015
Comments			





1.- Pins needed to program using BSL are: DTR (connected to A\*) and RTS (connected to reset)

2.- PIC Programming connector

3.- ESD-Protection for High-Speed Data Interfaces

4.- Capacitor to enable que program of CP2104. Remove this to protect the writing config of the cp2104.

5.- Led Bright transmission. Those leds should be used if program the cp2104.

6.- PIC12F519 8-Pin, 8-Bit Flash Microcontroller

Program Memory Type	Flash
Program Memory (KB)	1.5
CPU Speed (MIPS)	2
RAM Bytes	41
Data EEPROM (bytes)	64
Timers	1 x 8-bit
Temperature Range (C)	-40 to 125
Operating Voltage Range (V)	2 to 5.5
Pin Count	8

7.- Reset and Interrupt controlled by FET to ensure that no parasitic current is driven to the micro.

1.- Ensure that we can't reach at 5V.

1.- Place components as close possible to source.

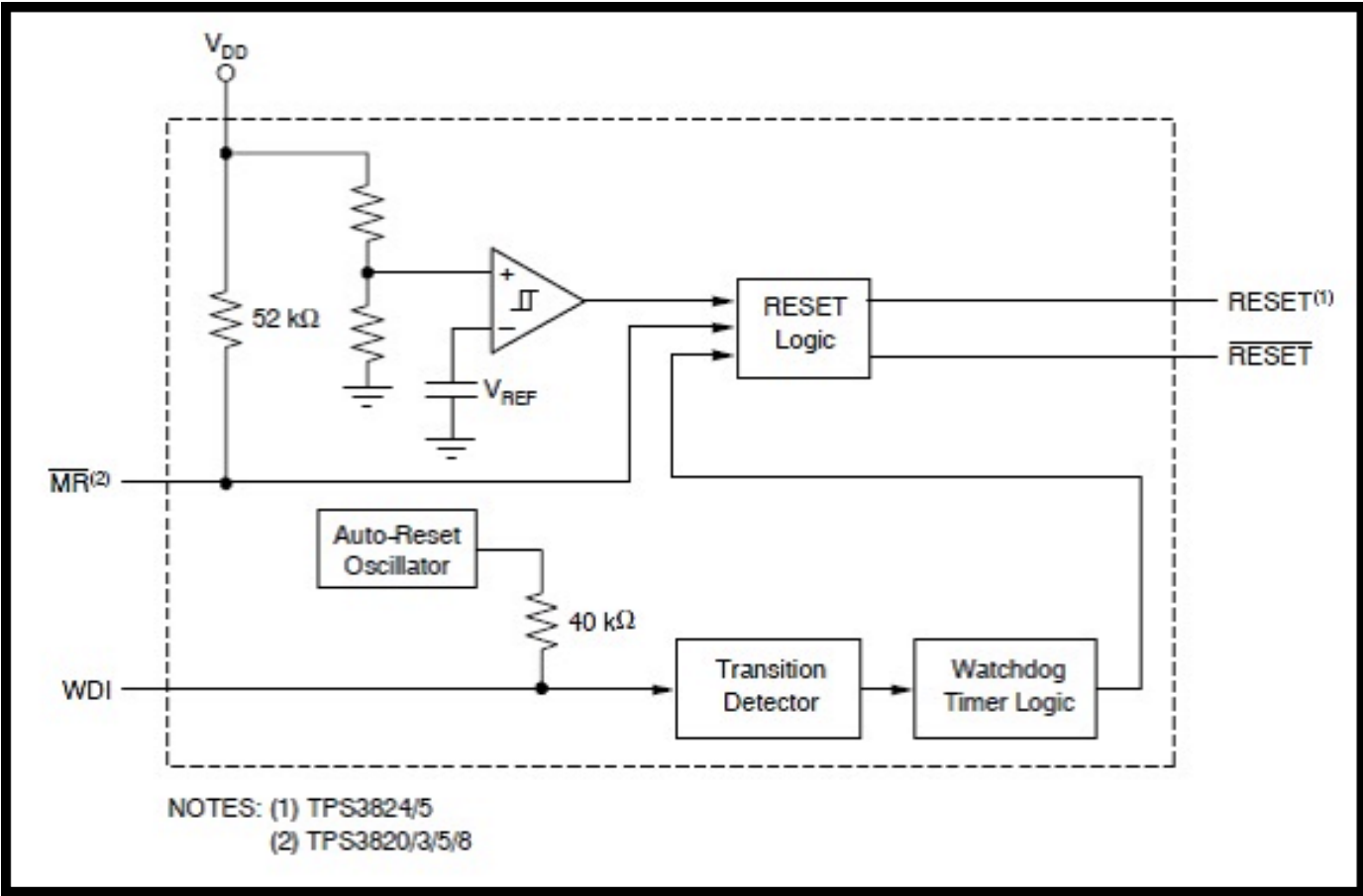
2.- Capacitor to enable the CP2104 programming parameters. Ensure that in the end of the line process extract the capacitor.

Project Name	Orion_Ethernet_router	Sheet	7
Title	Serial Interface	Version	Rev B
Author	Aitor Mejias	Date	07/12/2015
Comments			





A



TPS3823 Block Diagram

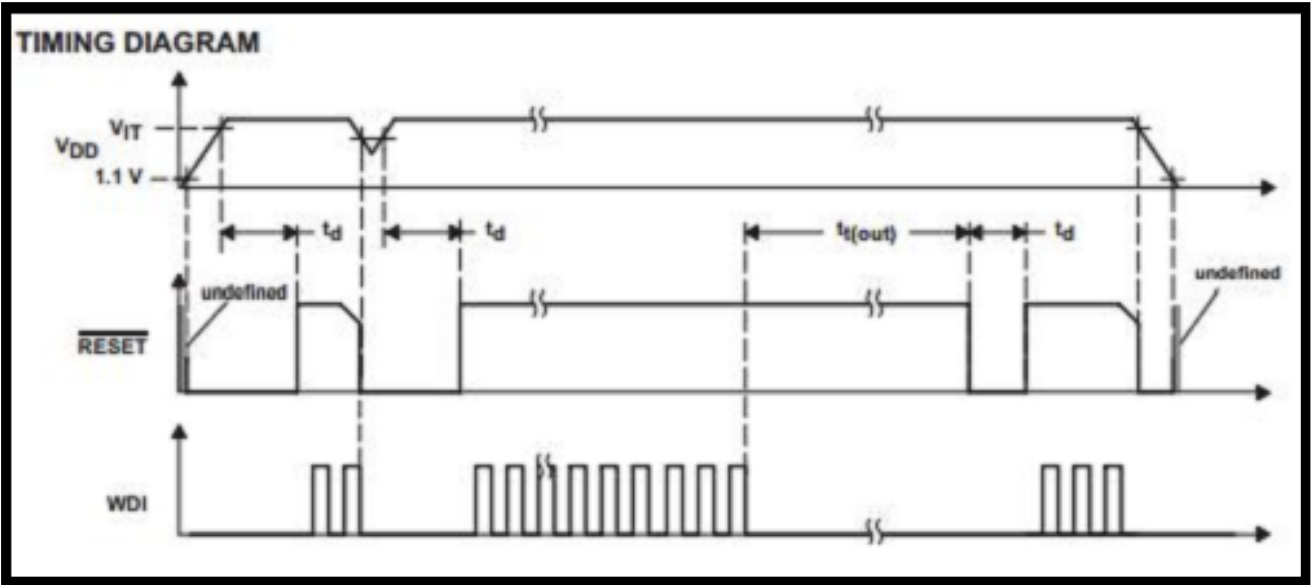
B

INPUTS		OUTPUTS	
MR <sup>(1)</sup>	VDD > VIT	RESET	RESET <sup>(2)</sup>
L	0	L	H
L	1	L	H
H	0	L	H
H	1	H	L

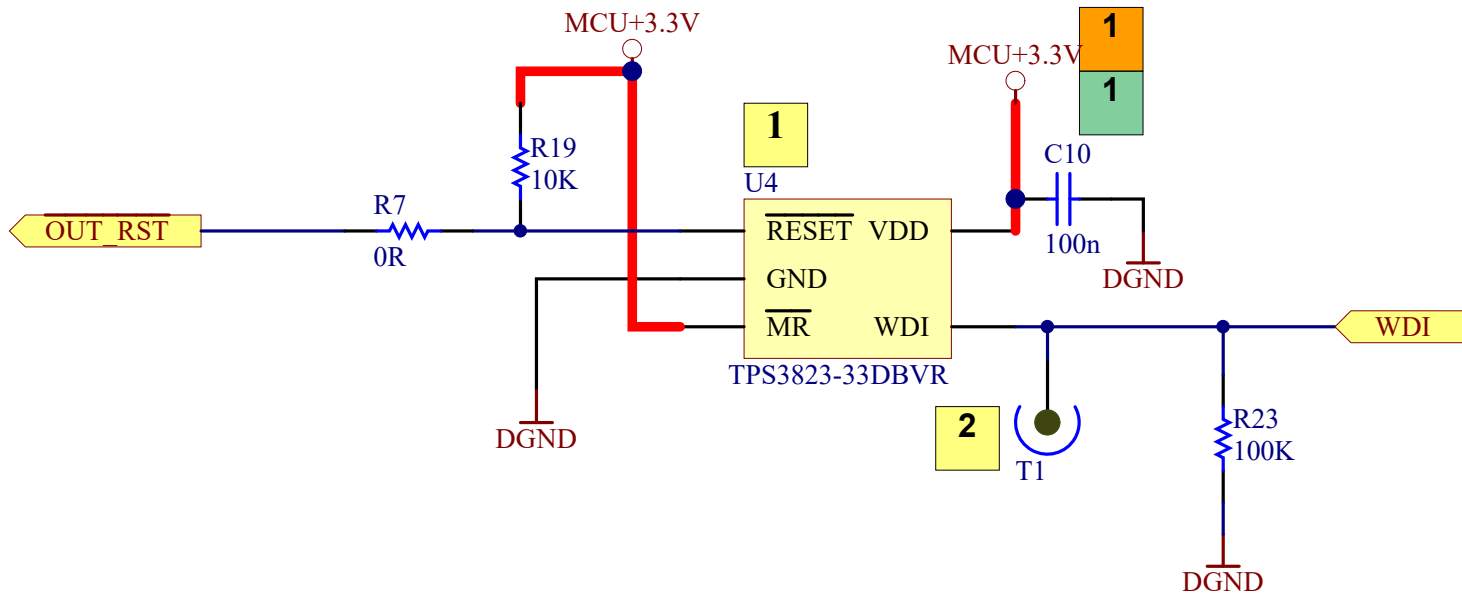
(<sup>1</sup>) TPS3820/3/5/8  
(<sup>2</sup>) TPS3824/5

TPS3823 Function/Truth Table

C



A



B

C

PARAMETER		TEST CONDITIONS	MIN	TYP	MAX	UNIT
t <sub>out</sub>	Watchdog time out	TPS3820	112	200	310	ms
		TPS3823/4/8	0.9	1.6	2.5	s
t <sub>d</sub>	Delay time	TPS3820	15	25	37	ms
		TPS3823/4/5/8	120	200	300	

Project Name	Orion_Ethernet_router	Sheet	8
Title	WDT	Version	Rev B
Author	Aitor Mejias	Date	07/12/2015
Comments			

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D

1 - The TPS382x family of supervisors provide circuit initialization and timing supervision, primarily for DSP and processor-based systems.

2 - Test points to connect logic analyzer if communication issue.

1 - Decoupling capacitors.

1 - Put capacitor as close as possible to IC.