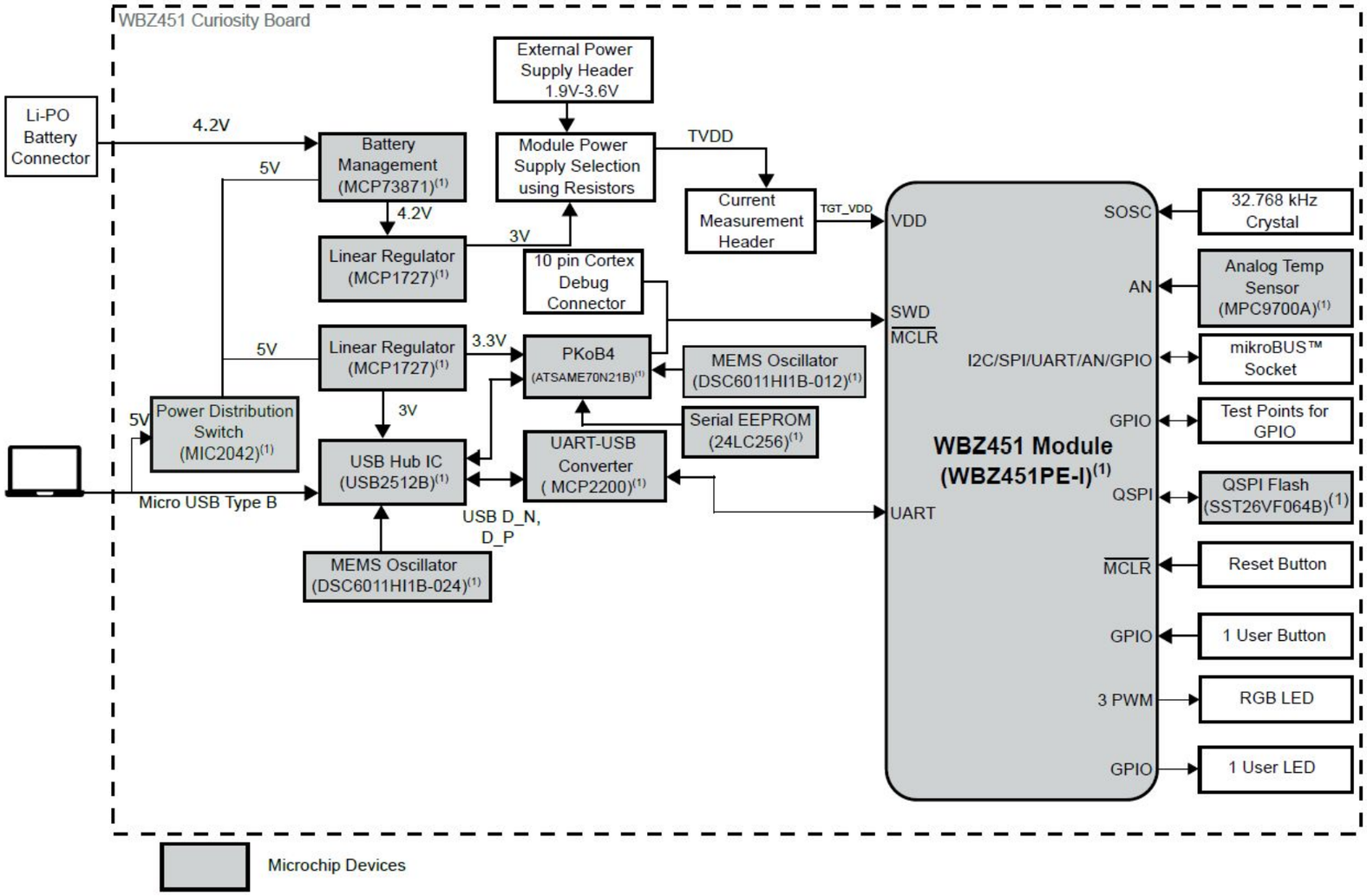


Application Notes

PKoB4 is a Microchip Technology debugger platform that is intended to be integrated into a hardware/firmware application demonstration board.

DGI, CDC Interface of PKoB4 is not used.
MCP2200 is used for providing USB to UART conversion with Hardware Flow Control. MCP2200 can support baud rates from 300k to 1000k.

Voltage to WBZ451 is fixed by default to 3V derived from the USB connection from the debugger or Battery. It can also be powered by the application external power supply header (1.9V-3.6V)
For application power supply for device to operate with PKOB4 and MCP2200, translators are added for PKOB4 and MCP2200.

Revision History

Revision 1.0:
Initial Release

Revision 2.0:
Fixes and improvements

Revision 3.0:
D3, LED Footprint
MikroBus UART Rx,Tx
Pull up resistors

Revision 4.0:
3.3V regulator for WBZ451 modified to 3V

Revision 5.0:
D6 LED :MPN changed

Revision 7.0: USB cable added to Box

LABEL1

[DATE yyyy.mm.dd]
SN: [SERIAL]
[ASSY# / REV]

PCBA LABEL 18X6mm

PAD1

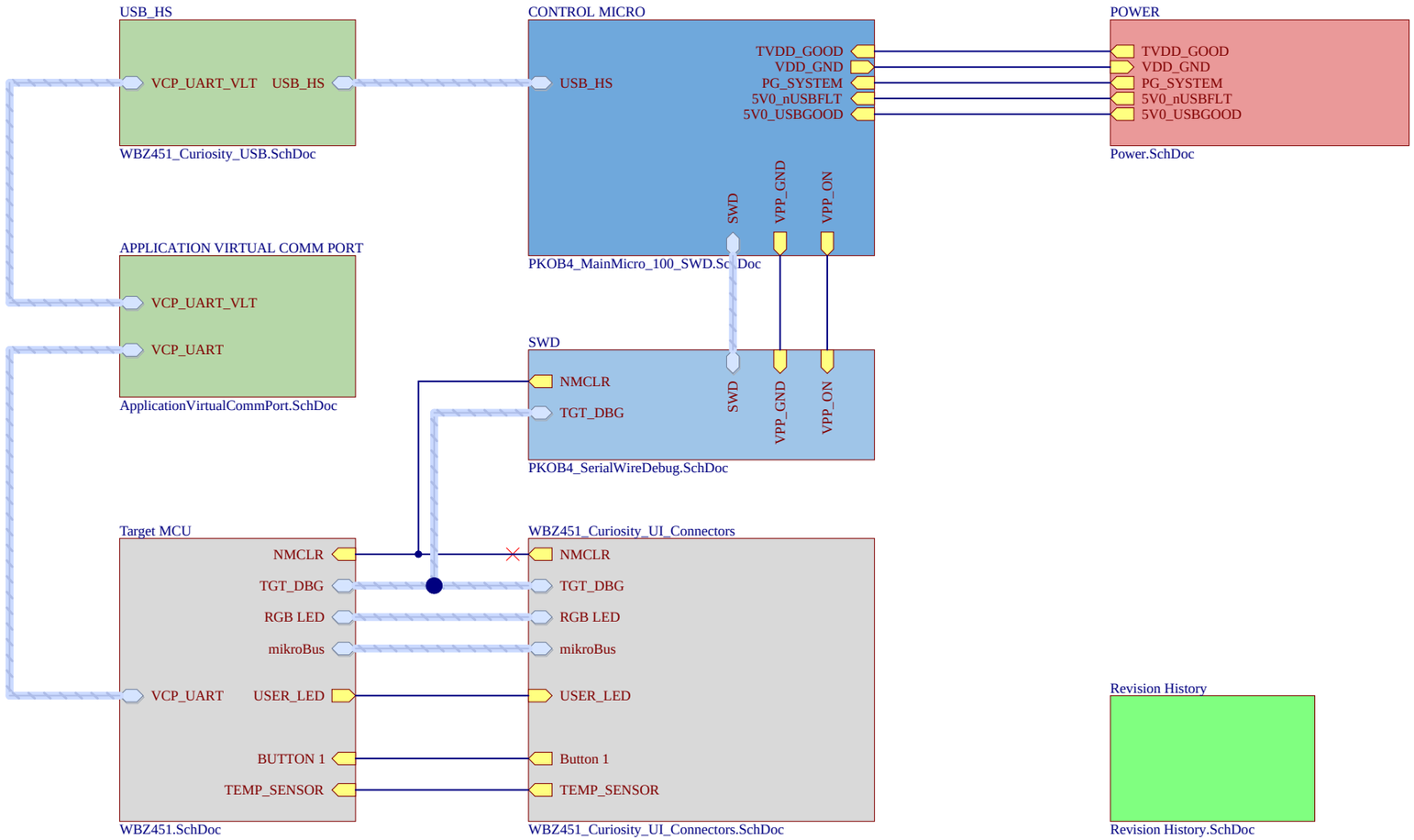
RUBBER PAD D8H2.8

PAD2

RUBBER PAD D8H2.8

Project Owner: RINU CLEETUS			
PCB Layout Contact: BALAJI NARAYANA			
PartNumber: EV96B94A	Project Title: *WBZ451 CURIOSITY BOARD*	Variant: [No Variations]	
Sheet Title: Revision History			Designed with Altium — Altium.com
Size: B	SCH #: 03-00307	Rev: 7.0	Date: 9/27/2022
	PCB #: 04-11423	Rev: 4.0	Sheet 1 of 10
File: Revision History.SchDoc			

Main System Interconnect



Revision History

Revision History.SchDoc

Project Owner: RINU CLEETUS			
PCB Layout Contact: BALAJI NARAYANA			
PartNumber: EV96B94A	Project Title: ***WBZ451 CURIOSITY BOARD***	Variant: [No Variations]	
Sheet Title: WBZ451 Curiosity Board Top Level			Designed with Altium — Altium.com
Size: B	SCH #: 03-00307	Rev: 7.0	Date: 9/27/2022
	PCB #: 04-11423	Rev: 4.0	Sheet 2 of 10
File: WBZ451_Curiosity_TopLevel.SchDoc			

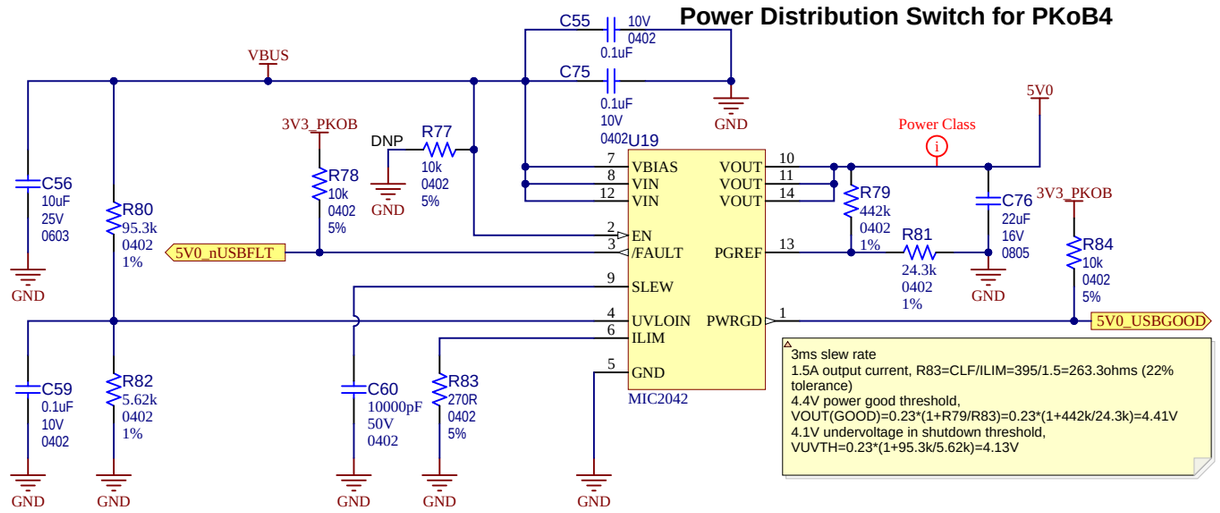
Power

Application Note:

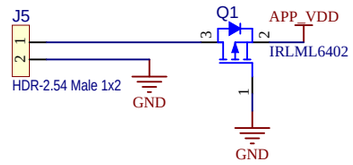
Default, R26 is populated. Application will be using system supplied 3.3V.
Remove R26, populate R32 for using External Supply from J5

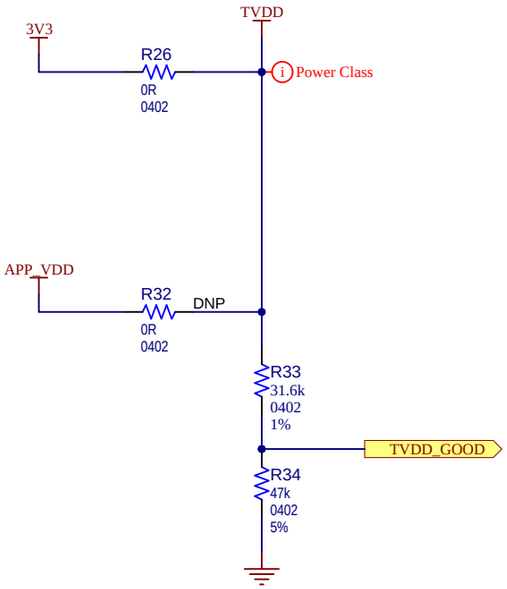
Connect application voltage here if not using system supplied power.
(DO NOT POPULATE R26)

Power Distribution Switch for PKoB4

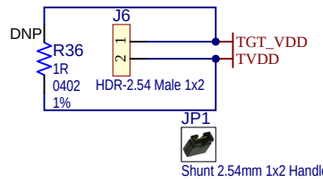


External Power Supply

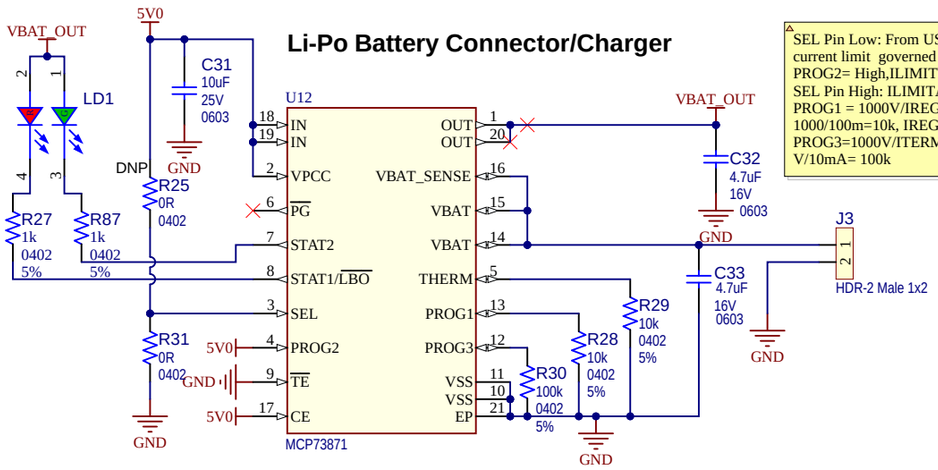




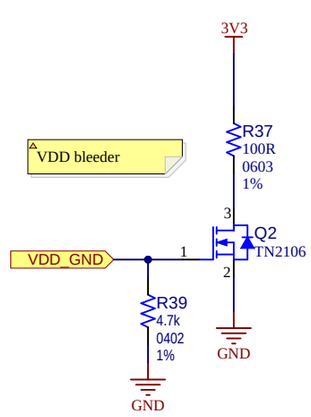
TGT Current Measurement Header



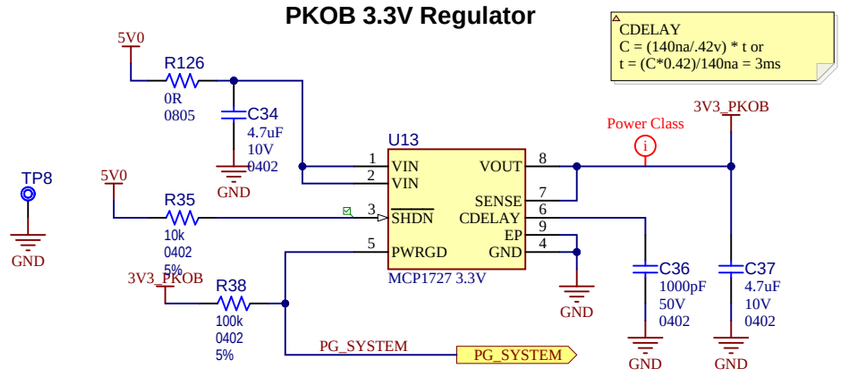
Li-Po Battery Connector/Charger



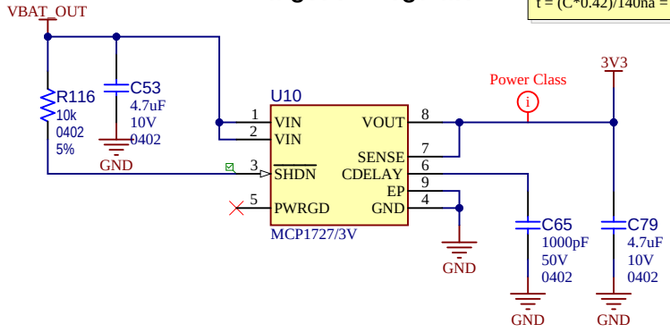
VDD bleeder



PKOB 3.3V Regulator



Target 3V Regulator



Project Owner: RINU CLEETUS			
PCB Layout Contact: BALAJI NARAYANA			
PartNumber: EV96B94A	Project Title: *WBZ451 CURIOSITY BOARD*	Variant: [No Variations]	
Sheet Title: Power			
Size B	SCH #: 03-00307	Rev: 7.0	Date: 9/27/2022
	PCB #: 04-11423	Rev: 4.0	Sheet 3 of 10
File: Power.SchDoc			

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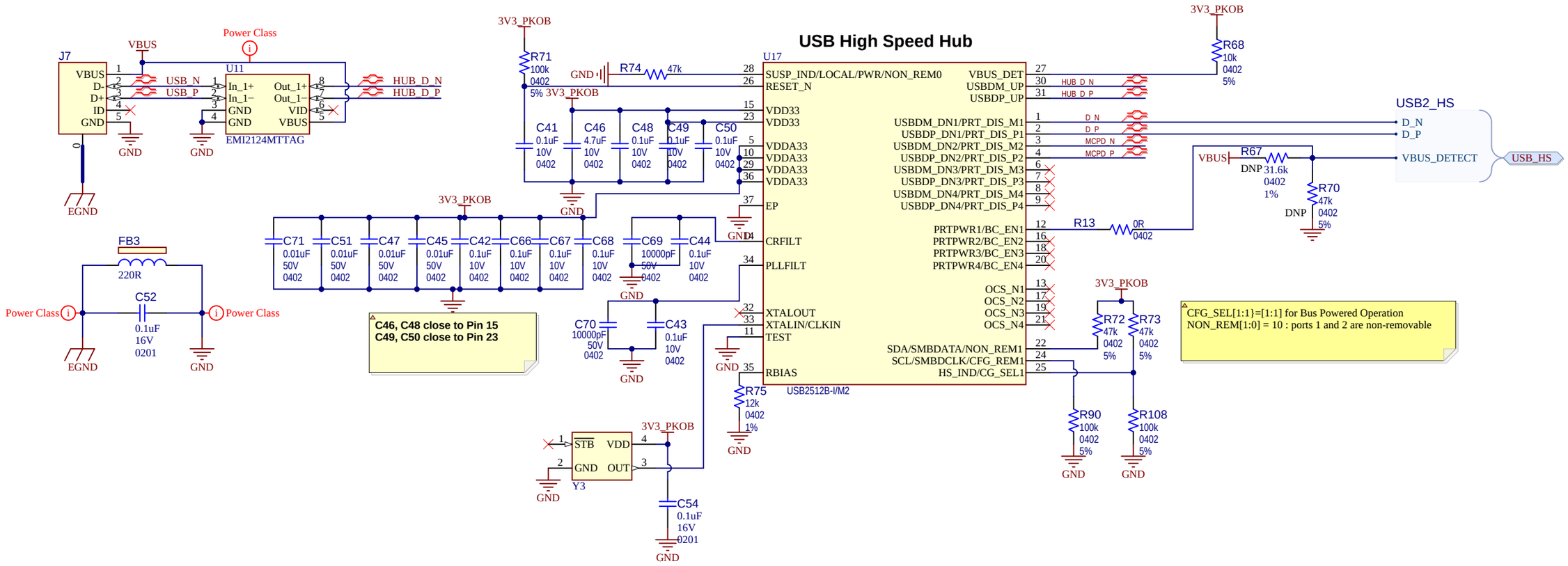
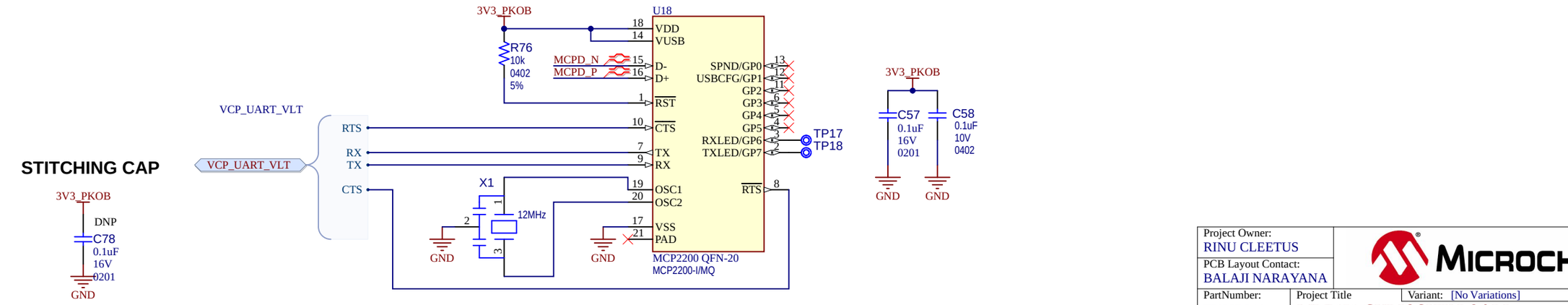
USB High Speed Hub

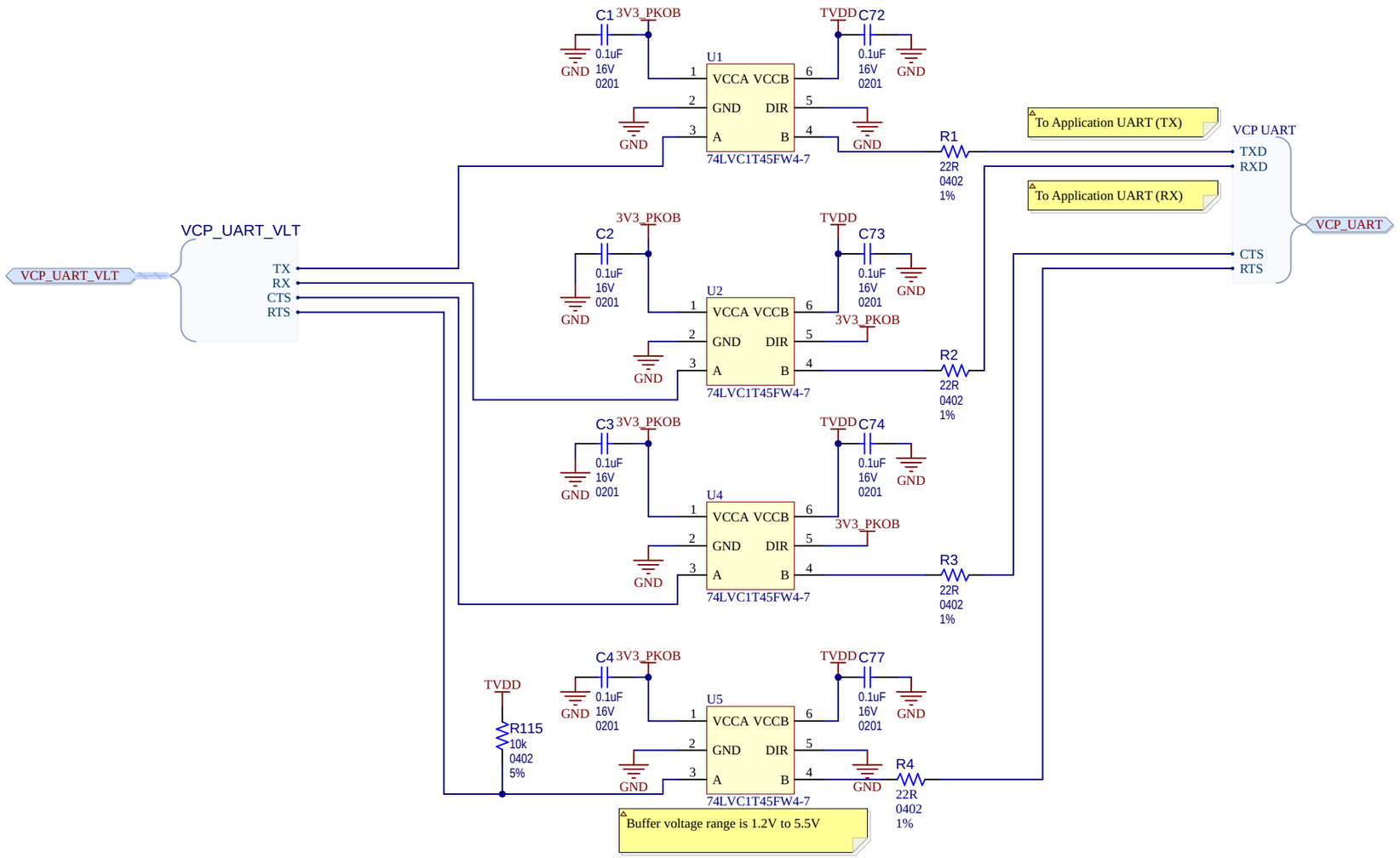


MCP2200 USB UART Converter



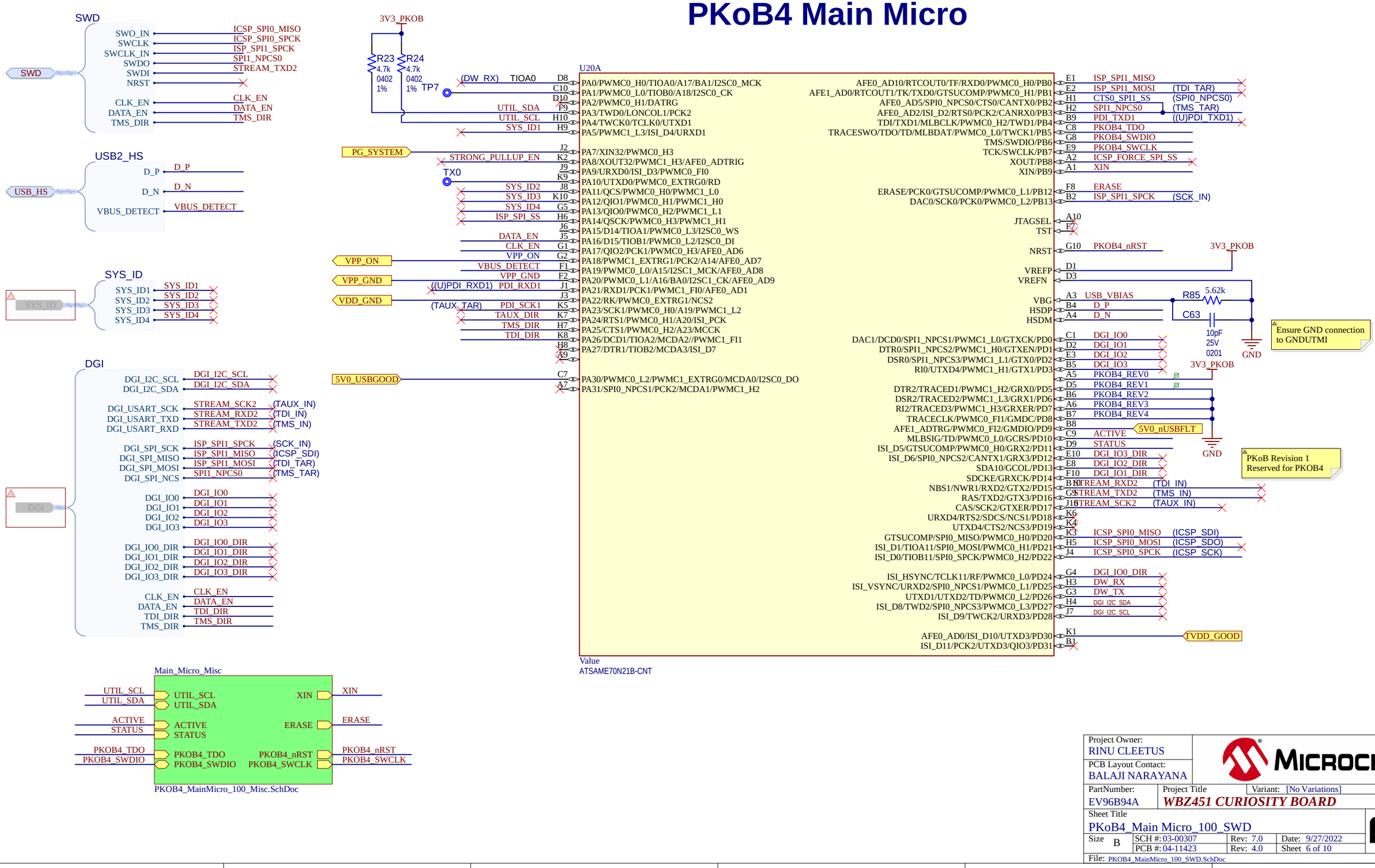
Project Owner: RINU CLEETUS			
PCB Layout Contact: BALAJI NARAYANA			
PartNumber: EV96B94A	Project Title: *WBZ451 CURIOSITY BOARD*	Variant: [No Variations]	
Sheet Title: WBZ451_Curiosity_USB			Designed with Altium — Altium.com
Size: B	SCH #: 03-00307	Rev: 7.0	Date: 9/27/2022
	PCB #: 04-11423	Rev: 4.0	Sheet 4 of 10
File: WBZ451_Curiosity_USB.SchDoc			

Application Virtual Comm Port



Project Owner: RINU CLEETUS			
PCB Layout Contact: BALAJI NARAYANA			
PartNumber: EV96B94A	Project Title: *WBZ451 CURIOSITY BOARD*	Variant: [No Variations]	
Sheet Title: Application Virtual Comm Port			Designed with Altium — Altium.com
Size: B	SCH #: 03-00307	Rev: 7.0	Date: 9/27/2022
	PCB #: 04-11423	Rev: 4.0	Sheet 5 of 10
File: ApplicationVirtualCommPort.SchDoc			

PKoB4 Main Micro



Project Owner:	RINU CLEETUS
PCB Layout Contact:	BALAJI NARAYANA
PartNumber:	EV96B94A
Project Title	*WBZ451 CURIOSITY BOARD*
Variant:	[No Variations]
Sheet Title	PKoB4_Main Micro_100_SWD
Size	B
SCH #:	03-00307
Rev:	7.0
Date:	9/27/2022
PCB #:	04-11423
Rev:	4.0
Sheet	6 of 10
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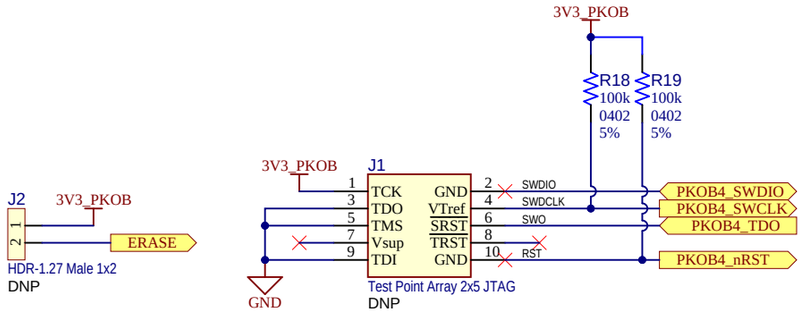
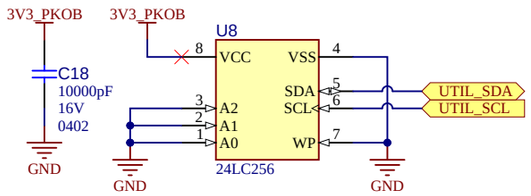
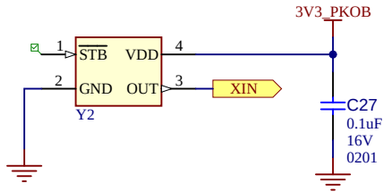
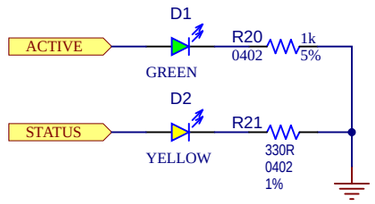
PKOB4 MISC

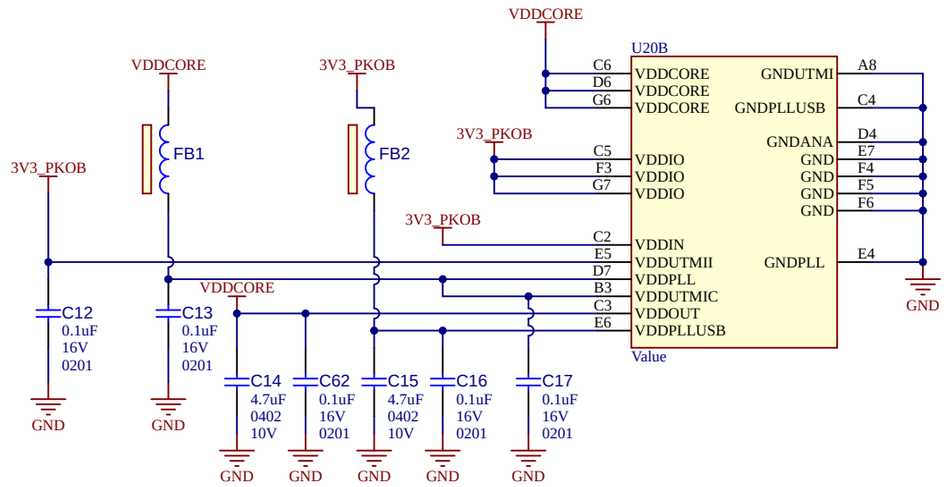
PKoB4 Debug Header



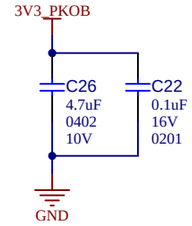




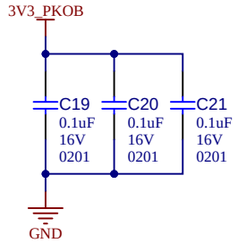




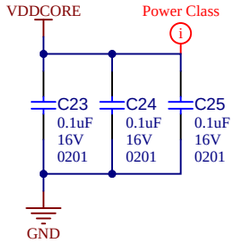
VDDIN Cap



VDDIO Bypass Caps



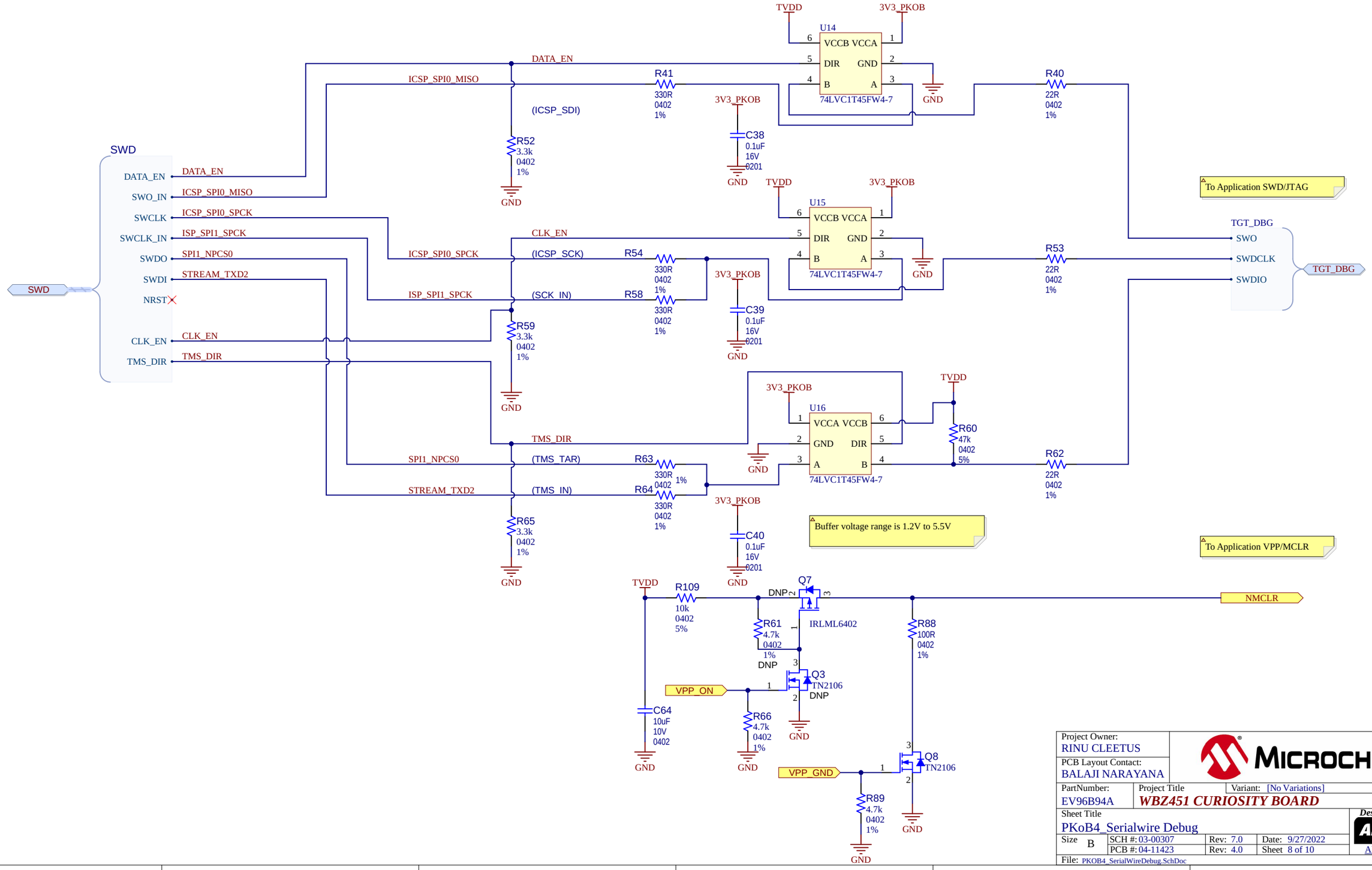
VDDCORE Bypass Caps



ATSAME70N21B-CNT

Project Owner: RINU CLEETUS				
PCB Layout Contact: BALAJI NARAYANA				
PartNumber: EV96B94A	Project Title: *WBZ451 CURIOSITY BOARD*		Variant: [No Variations]	
Sheet Title: PKoB4 _Main Micro_100_ Misc.				Designed with Altium
Size: B	SCH #: 03-00307	Rev: 7.0	Date: 9/27/2022	Altium.com
	PCB #: 04-11423	Rev: 4.0	Sheet 7 of 10	
File: PKOB4_MainMicro_100_Misc.SchDoc				

Serial Wire Debug



Project Owner: RINU CLEETUS			
PCB Layout Contact: BALAJI NARAYANA			
PartNumber: EV96B94A	Project Title: *WBZ451 CURIOSITY BOARD*	Variant: [No Variations]	
Sheet Title: PKoB4_Serialwire Debug			Designed with Altium — Altium.com
Size: B	SCH #: 03-00307	Rev: 7.0	Date: 9/27/2022
	PCB #: 04-11423	Rev: 4.0	Sheet 8 of 10
File: PKOB4_SerialWireDebug.SchDoc			

WBZ451

U6

WBZ451PE-I

TPAD_GND

RGB LED

TGT_DBG

TEMP_SENSOR

USER_LED

NMCLR

TGT_VDD

BUTTON 1

mikroBus

VCP UART

VCP_UART

J9

Test Point Array 1x9
DNP

QSPI Flash

U7

SST26VF064B-104I/MF

2.7-3.6V: 104 MHz max
2.3-3.6V: 80 MHz max

Project Owner:	RINU CLEETUS
PCB Layout Contact:	BALAJI NARAYANA
PartNumber:	EV96B94A
Project Title	WBZ451 CURIOSITY BOARD
Variant:	[No Variations]
Sheet Title	WBZ451
Size	B
SCH #:	03-00307
Rev:	7.0
Date:	9/27/2022
PCB #:	04-11423
Rev:	4.0
Sheet	9 of 10
File:	WBZ451.SchDoc

MICROCHIP

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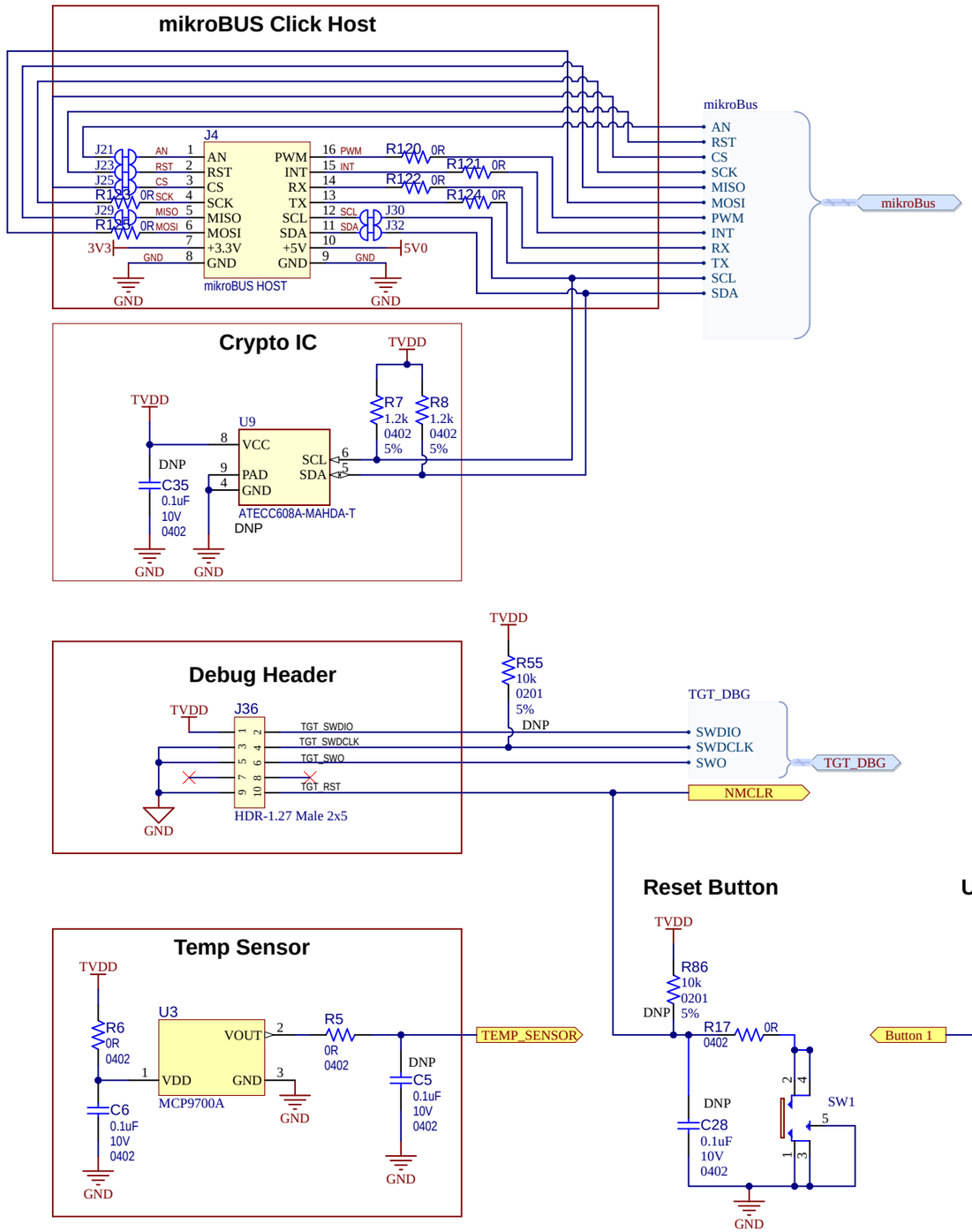

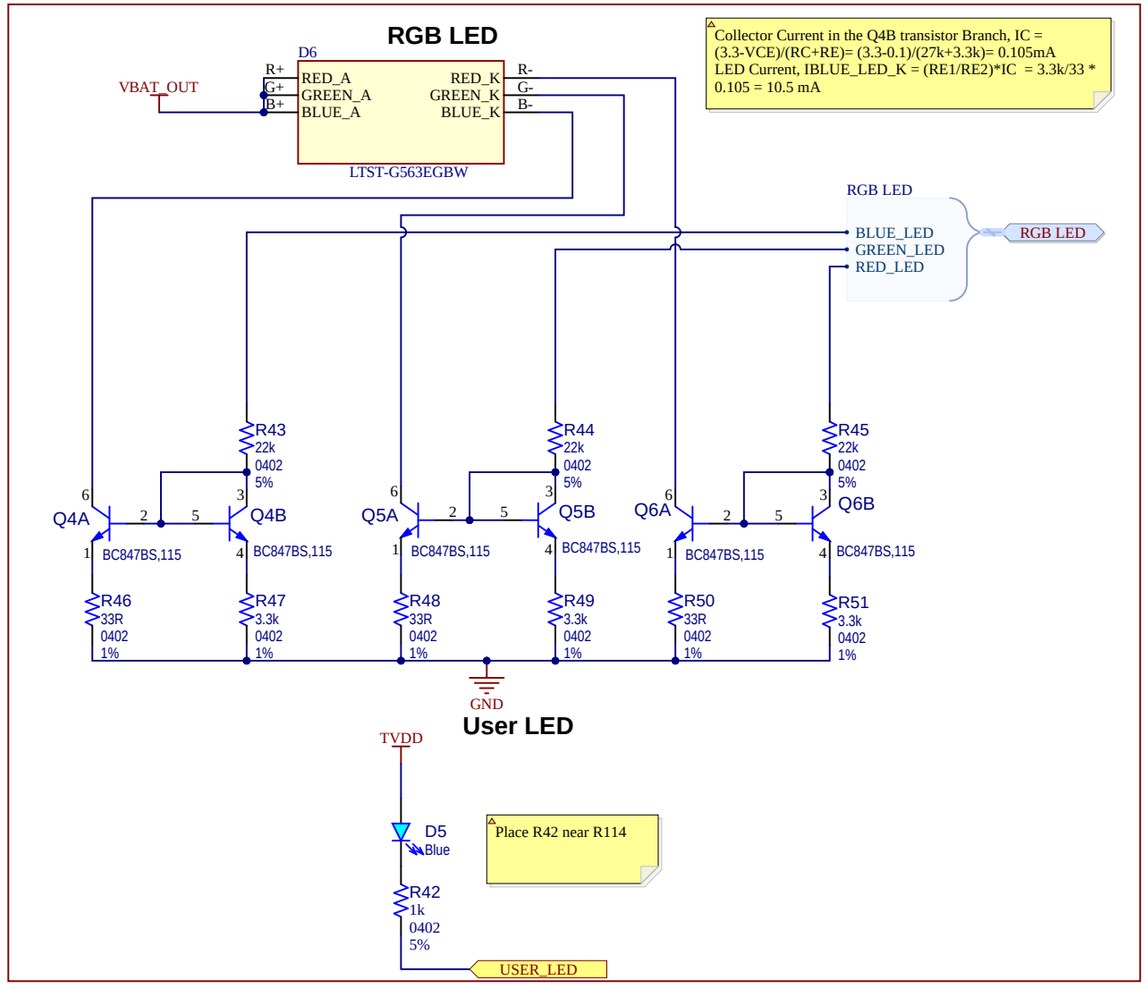

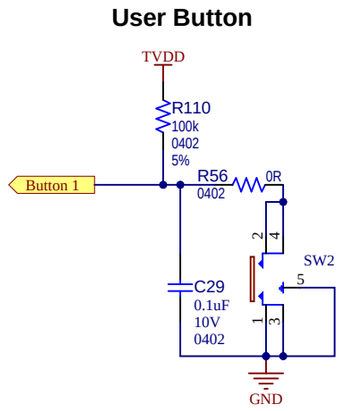

Project Owner: RINU CLEETUS			
PCB Layout Contact: BALAJI NARAYANA			
PartNumber: EV96B94A	Project Title: *WBZ451 CURIOSITY BOARD*	Variant: [No Variations]	
Sheet Title: WBZ451_Curiosity_UI_Conn			Designed with Altium — Altium.com
Size: B	SCH #: 03-00307	Rev: 7.0	Date: 9/27/2022
	PCB #: 04-11423	Rev: 4.0	Sheet 10 of 10
File: WBZ451_Curiosity_UI_Connectors.SchDoc			