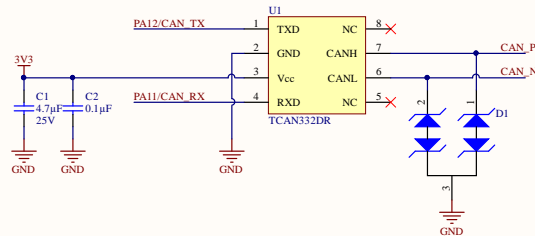
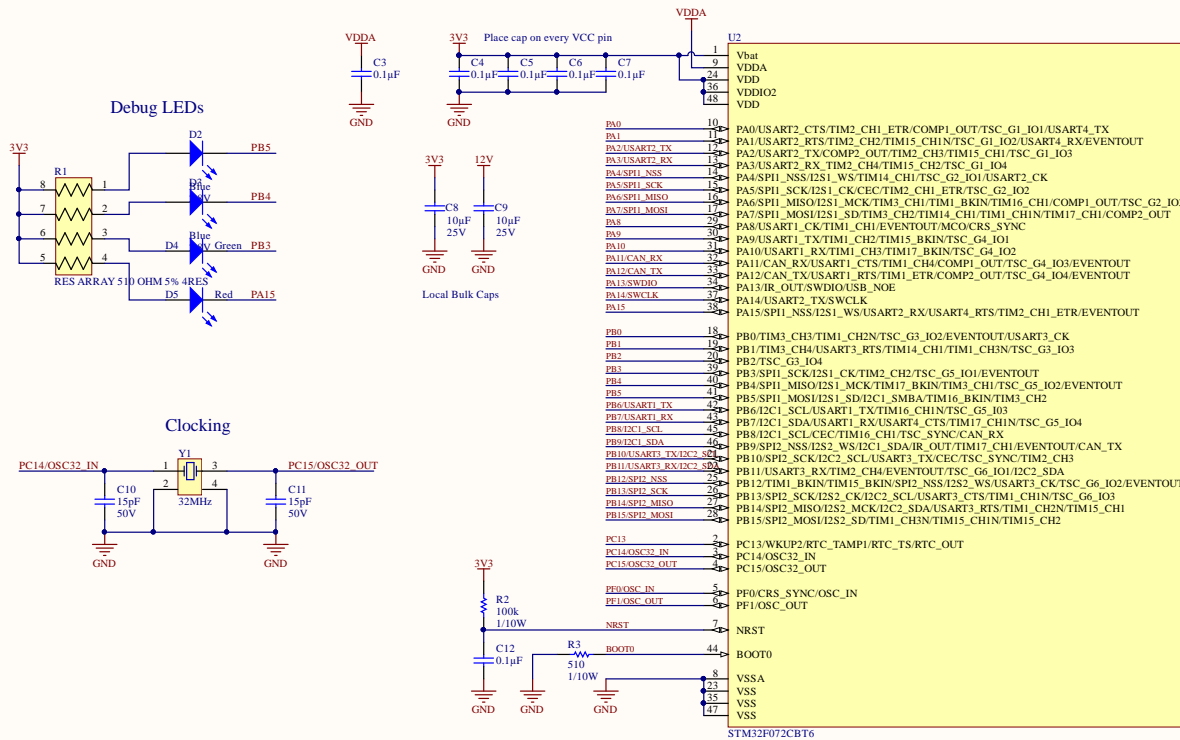


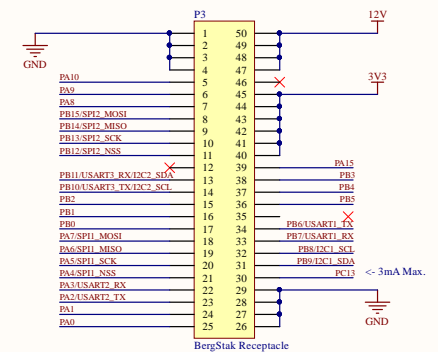
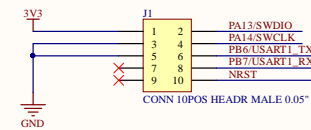
CAN




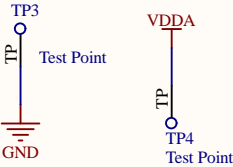
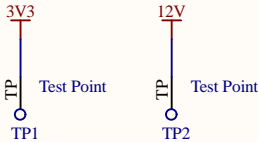
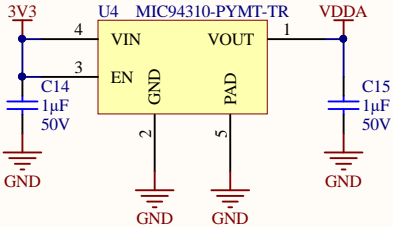
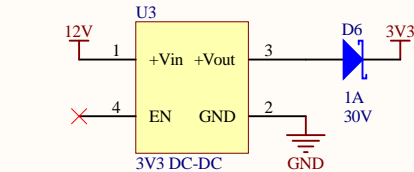
MCU + Peripherals




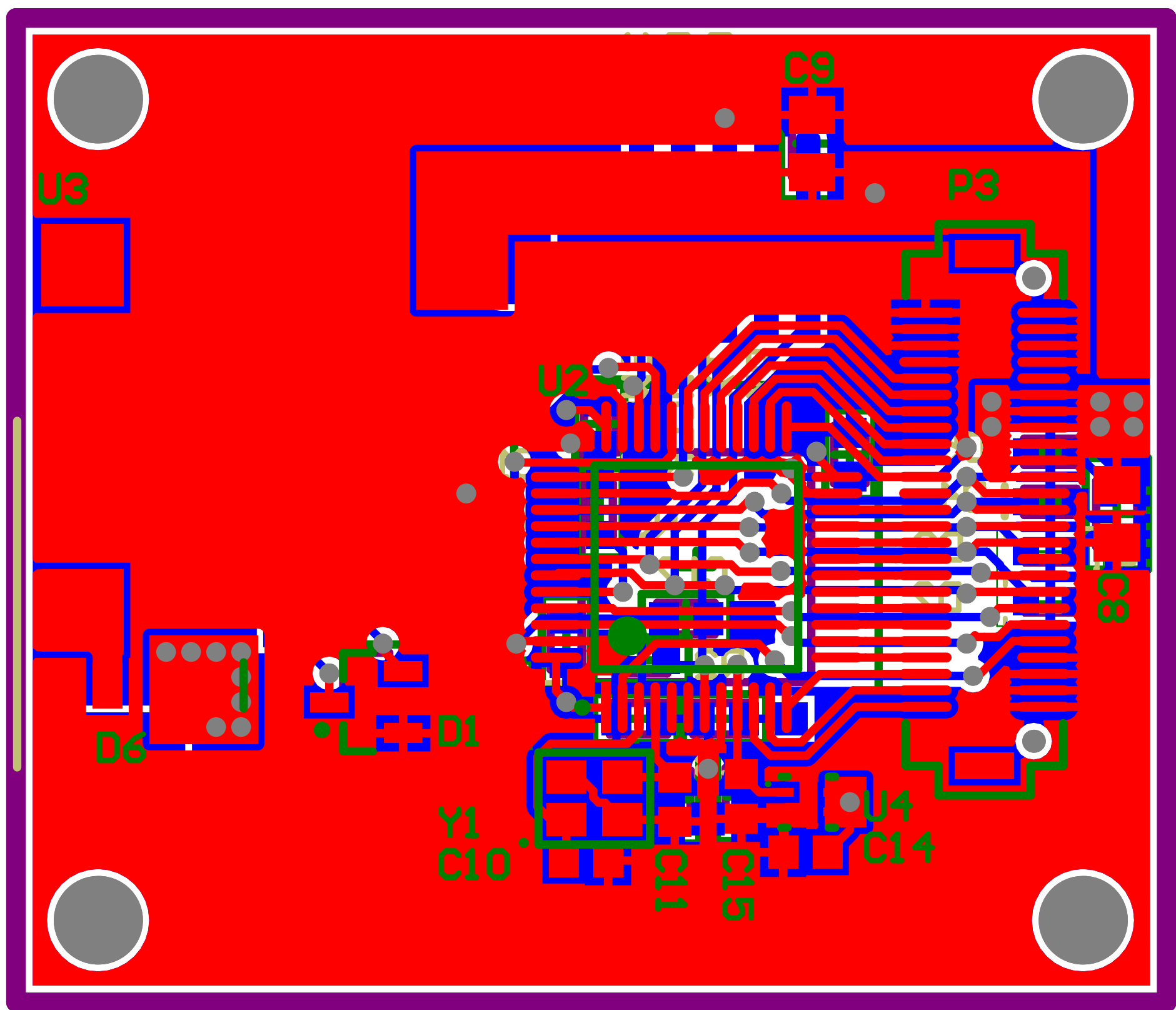
Connectors



Project: Controller-Board.PrjPcb			
Title: Controller Board Main			
Project Lead: Kevin Chen, Aleksa, Yifei Li, Titus Chow		University of Waterloo 200 University Ave W Waterloo, ON, Canada N2L 3E9	
Size: Letter	Revision: 5.1	Website: www.uwmidsun.com	
Date: 7/19/2017	Sheet1 of 2		



Project: Controller-Board.PrjPcb		
Title: Controller Board Power Supply		
Project Lead: Kevin Chen, Aleksa, Yifei Li, Titus Chow		University of Waterloo 200 University Ave W Waterloo, ON, Canada N2L 3E9 Website: www.uwmidsun.com
Size: Letter	Revision: 5.2	
Date: 7/19/2017	Sheet2 of 2	



Bill of Materials

Bill of Materials For Project [Controller-Board.PrjPcb] (No PCB Document Selected)

Source Data From: Controller-Board.PrjPcb
 Project: Controller-Board.PrjPcb
 Variant: None

Creation Date: 7/19/2017 1:02:16 PM
 Print Date: 19-Jul-17 1:02:21 PM
 Production Quantity: 1
 Currency: <none>

#Column Name Error	#Column Name Error	LibRef	Designator	Description	Quantity	Supplier 1	Supplier Part Number 1	Supplier Unit Price 1	Supplier Order Qty 1	Supplier Subtotal 1	Manufacturer 1	Manufacturer Part Number 1
		CAP CER 4.7UF 25V 10% XSR 0603	C1	4.7uF ±10% 25V Ceramic Capacitor XSR 0603 (1608 Metric)	1	Digi-Key	490-7203-1-ND	0.51	1	\$ 0.51	Murata Electronics North America	GRM188R61E475KE11D
		CAP CER 0.1UF 50V 10% X7R 0603	C2, C3, C4, C5, C6, C7, C12	0.10uF ±10% 50V Ceramic Capacitor X7R 0603 (1608 Metric)	7	Digi-Key	478-5052-1-ND	0.14	7	\$ 0.98	AVX Corporation	06035C104KA2A
		CAP CER 10uF 25V 10% XSR 0805	C8, C9	10uF ±10% 25V Ceramic Capacitor XSR 0805 (2012 Metric)	2	Digi-Key	490-5523-1-ND	0.3	2	\$ 0.60	Murata Electronics North America	GRM21BR61E106KA73L
		CAP CER 15PF 50V ±5% NPO 0603	C10, C11	15pF ±5% 50V Ceramic Capacitor C0G, NPO 0603 (1608 Metric)	2	Digi-Key	311-1060-1-ND	0.14	2	\$ 0.28	Yageo	CC0603JRNPO9BN150
		CAP CER 1UF 50V 10% X7R 0603	C14, C15	1uF ±10% 50V Ceramic Capacitor X7R 0603 (1608 Metric)	2	Digi-Key	587-3247-1-ND	0.35	2	\$ 0.70	Taiyo Yuden	UMK107AB7105KA-T
		DIODE TVS 24VWM 70VC SOT23	D1	TVS DIODE 24VWM 70VC SOT23	1	Digi-Key	1727-3817-1-ND	0.66	1	\$ 0.66	Nexperia USA Inc.	PESD1CAN,215
		LED BLUE CLEAR 2.8V 0603	D2, D3	Blue 470nm LED Indication - Discrete 2.8V 0603 (1608 Metric)	2	Digi-Key	160-1827-1-ND	0.66	2	\$ 1.32	Lite-On Inc.	LTST-C193TBKT-5A
		LED GREEN CLEAR 2V 0603	D4	Green 572nm LED Indication - Discrete 2V 0603 (1608 Metric)	1	Digi-Key	732-4980-1-ND	0.2	1	\$ 0.20	Würth Electronics Inc.	150060VS75000
		LED RED CLEAR 2V 0603	D5	Red 631nm LED Indication - Discrete 2V 0603 (1608 Metric)	1	Digi-Key	732-4978-1-ND	0.2	1	\$ 0.20	Würth Electronics Inc.	150060RS75000
		DIODE SCHOTTKY 30V 1A	D6	Diode Schottky 30V 1A Surface Mount PowerDI™ 123	1	Digi-Key	DFLS130LDICT-ND	0.7	1	\$ 0.70	Diodes Incorporated	DFLS130L-7
		POWERDI123 CONN 10POS HEADR MALE 0.05"	J1	10 Positions Header Connector 0.050" (1.27mm) Surface Mount Gold	1	Digi-Key	609-3695-1-ND	1.13	1	\$ 1.13	Amphenol FCI	20021121-00010C4LF
		CONN 2POS DURA-CLIK 0.079" VERT	P1, P2	2 Positions Header, Shrouded Connector 0.079" (2.00mm) Surface Mount, Vertical Tin	2	Digi-Key	WM10862CT-ND	1.16	2	\$ 2.32	Molex, LLC	5600200220
		CONN 50POS Bergstak Receptacle 0.02"	P3	50 Position Connector Receptacle, Center Strip Contacts Surface Mount Gold	1	Digi-Key	609-5227-1-ND	1.86	1	\$ 1.86	Amphenol FCI	10132798-052100LF
		RES ARRAY 510 OHM 5% 4RES EXB-N8V511JX	R1	RES ARRAY SMD 510 OHM 5% 4RES EXB-N8V511JX	1	Digi-Key	Y10511CT-ND	0.15	1	\$ 0.15	Panasonic Electronic Components	EXB-N8V511JX
		RES 100K OHM 5% 1/8W 0603	R2	RES SMD 100K OHM 5% 1/10W 0603	1	Digi-Key	311-100KGRCT-ND	0.15	1	\$ 0.15	Yageo	RC0603JR-07100KL
		RES 510 OHM 5% 1/10W 0603	R3	RES SMD 510 OHM 5% 1/10W 0603	1	Digi-Key	311-510GRCT-ND	0.15	1	\$ 0.15	Yageo	RC0603JR-07510RL
		Test Point IC CAN	TP1, TP2, TP3, TP4		4							
		Tranceiver TCAN332DR	U1	1/1 Transceiver CAN 8-SOIC	1	Digi-Key	296-43711-1-ND	2.84	1	\$ 2.84	Texas Instruments	TCAN332DR
		IC MCU 32BIT 128KB FLASH 48LQFP	U2	ARM® Cortex®-M0 STM32 F0 Microcontroller IC 32-Bit 48MHz 128KB (128K x 8) FLASH 48-LQFP (7x7)	1	Digi-Key	497-14645-ND	5.34	1	\$ 5.34	STMicroelectronics	STM32F072CBT6
		IC DCDC 3.3V 0.5A 4-SMD	U3	Non-Isolated PoL DC-DC Module 3.3V Output 0.5A 5-36V Input	1	Digi-Key	945-1689-1-ND	4.97	1	\$ 4.97	Recom Power	ROF-78E3.3-0.5SMD-R
		IC REG LDO 3V 0.2A 4-TDFN	U4		1	Digi-Key	576-4761-1-ND	0.44	1	\$ 0.44	Microchip Technology	MIC94310-PYMT-TR
		CRYSTAL 32 MHz 8pF 4-SMD	Y1	32MHz ±15ppm Crystal 8pF 50 Ohm -40°C ~ 85°C AEC-Q200 Surface Mount 4-SMD, No Lead	1	Digi-Key	1253-1730-1-ND	1.01	1	\$ 1.01	AVX Corp/Kyocera Corp	CX2520DB32000D0GPSC1
					36						\$ 26.51	

Approved	Notes