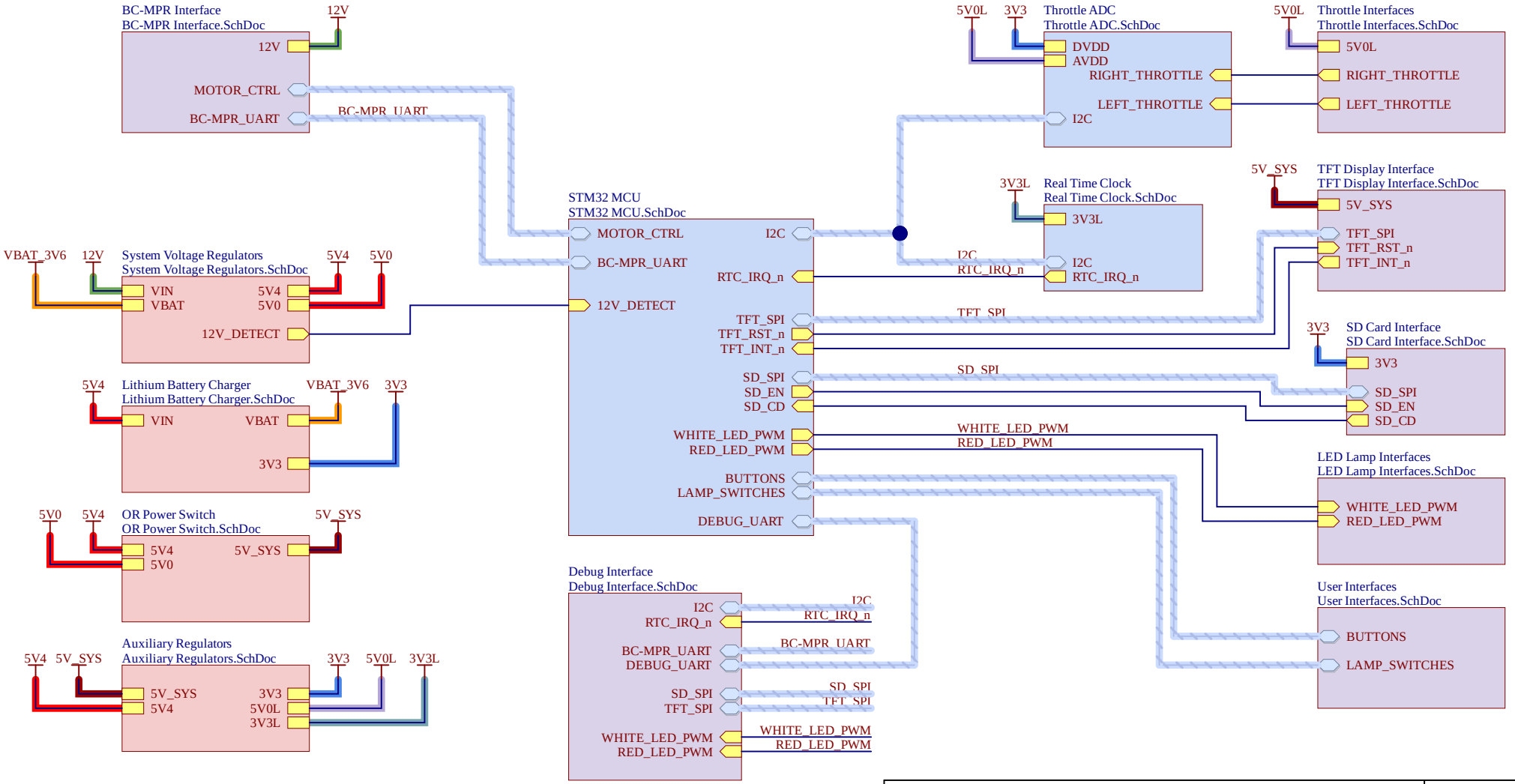
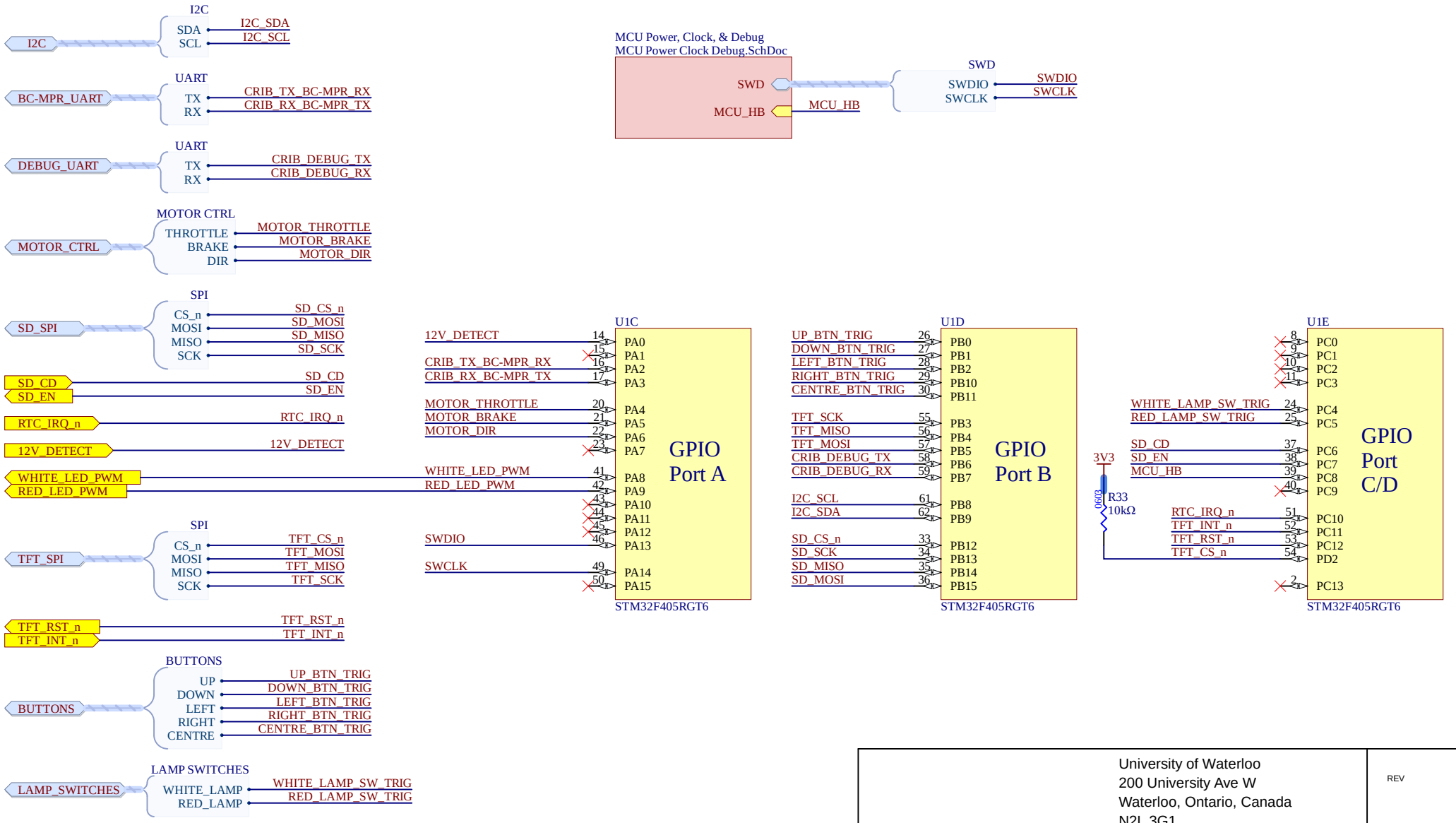


University of Waterloo
200 University Ave W
Waterloo, Ontario, Canada
N2L 3G1

REV

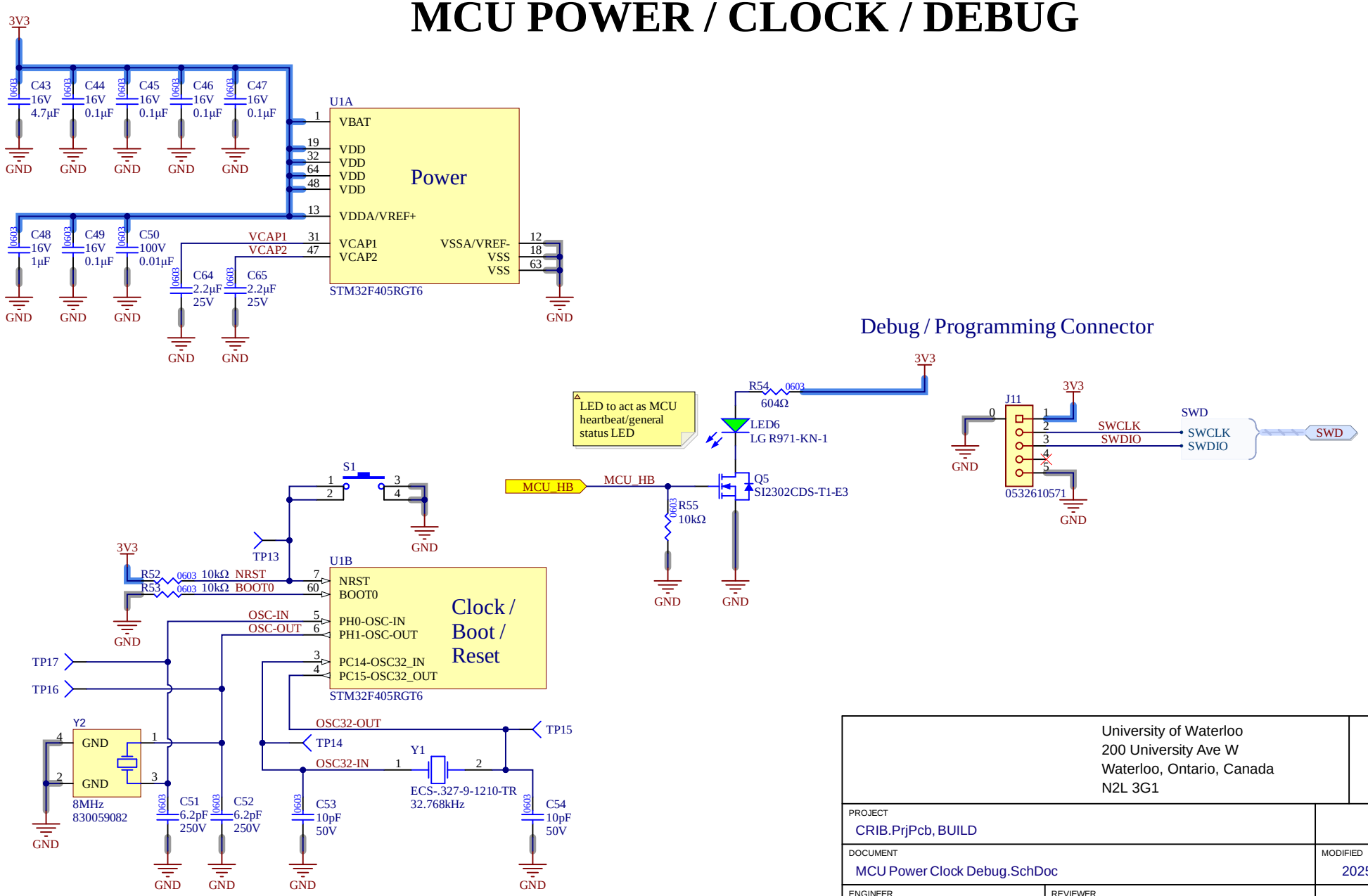
PROJECT: CRIB.PrjPcb, BUILD	
DOCUMENT: Top.SchDoc	MODIFIED: 2025-11-09
ENGINEER	REVIEWER: *

SHEET 1 OF 21



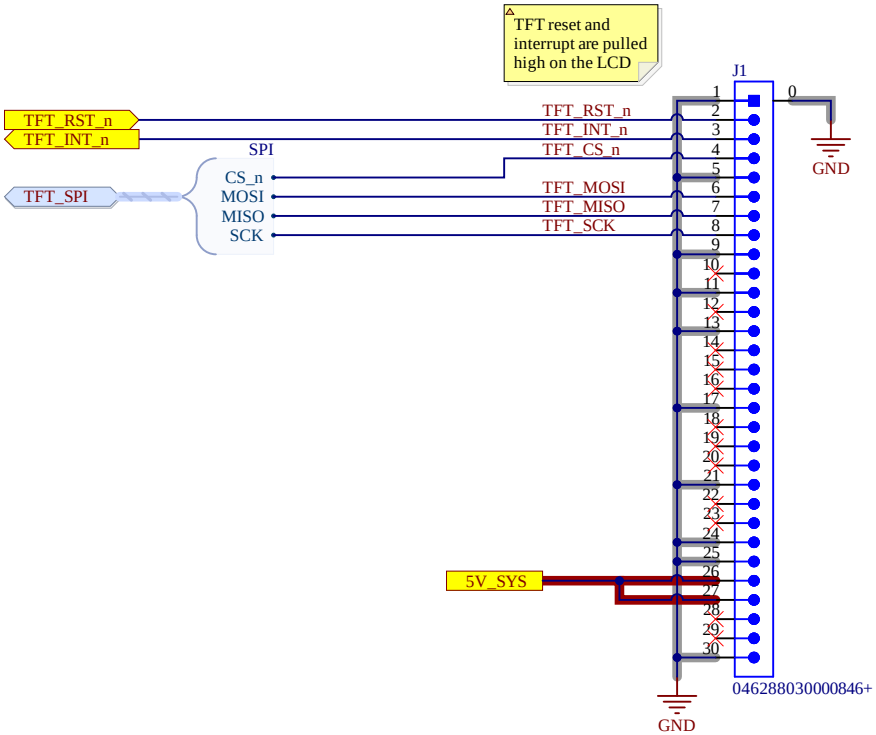
University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT STM32 MCU.SchDoc		MODIFIED 2025-11-02
ENGINEER	REVIEWER *	SHEET 2 OF 21

MCU POWER / CLOCK / DEBUG



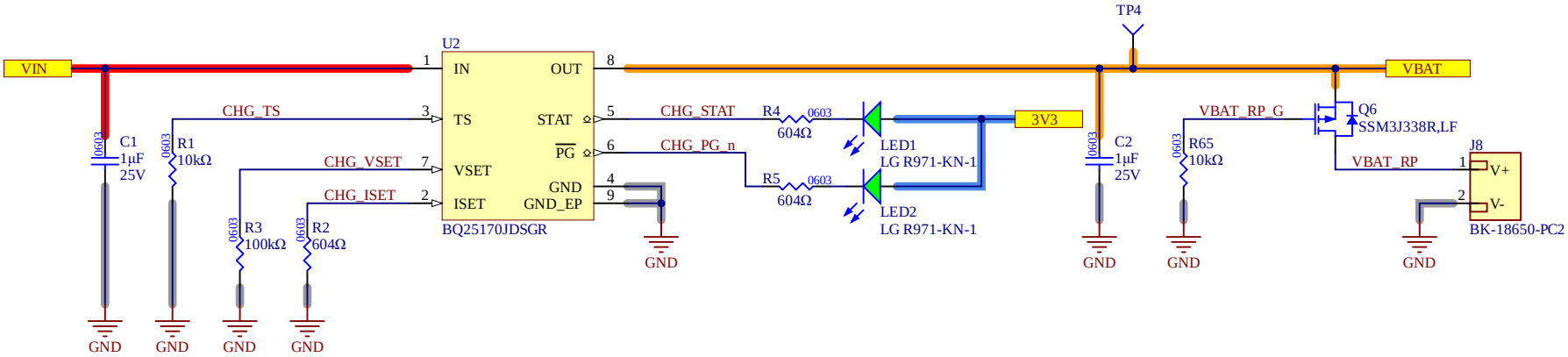
University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT MCU Power Clock Debug.SchDoc		MODIFIED 2025-11-16
ENGINEER	REVIEWER *	SHEET 3 OF 21

TFT DISPLAY INTERFACE



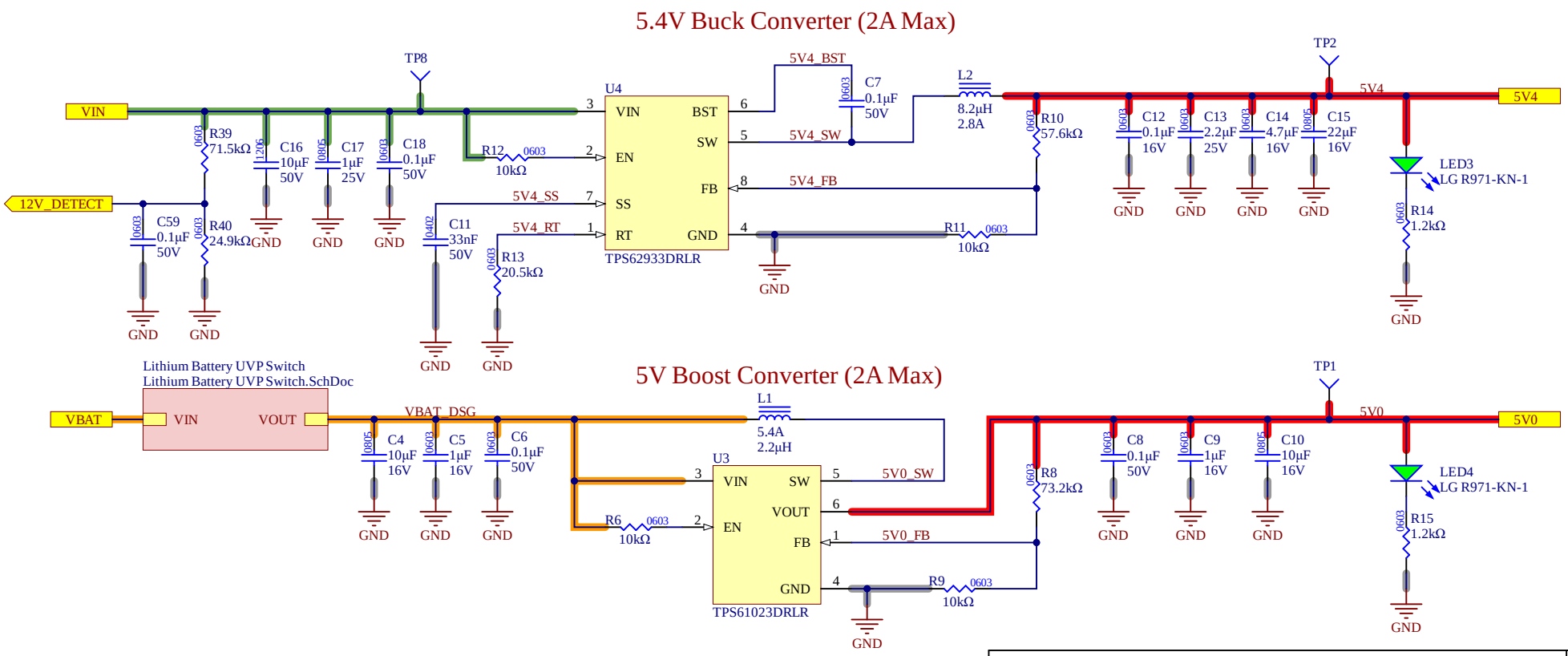
University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT TFT Display Interface.SchDoc		MODIFIED 2025-11-16
ENGINEER	REVIEWER *	SHEET 4 OF 21

LITHIUM BATTERY CHARGER



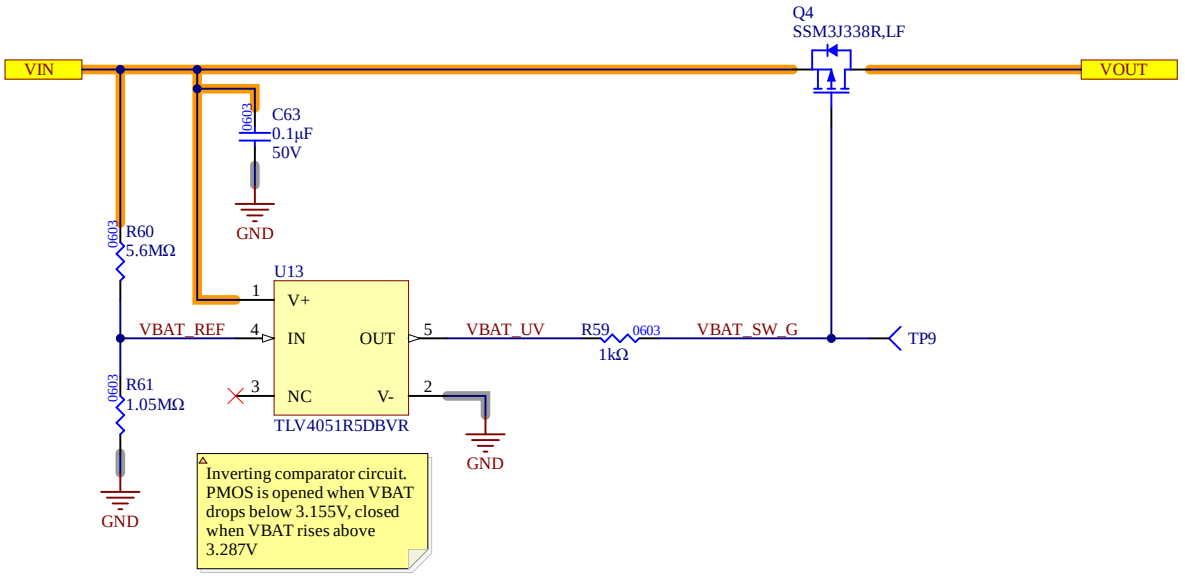
	University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT Lithium Battery Charger.SchDoc		MODIFIED 2025-11-16
ENGINEER	REVIEWER *	SHEET 5 OF 21

SYSTEM VOLTAGE REGULATORS



University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV
PROJECT: CRIB.PrjPcb, BUILD	
DOCUMENT: System Voltage Regulators.SchDoc	MODIFIED: 2025-10-08
ENGINEER	REVIEWER: *
	SHEET 6 OF 21

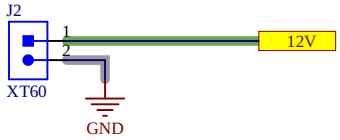
LITHIUM BATTERY UVP SWITCH



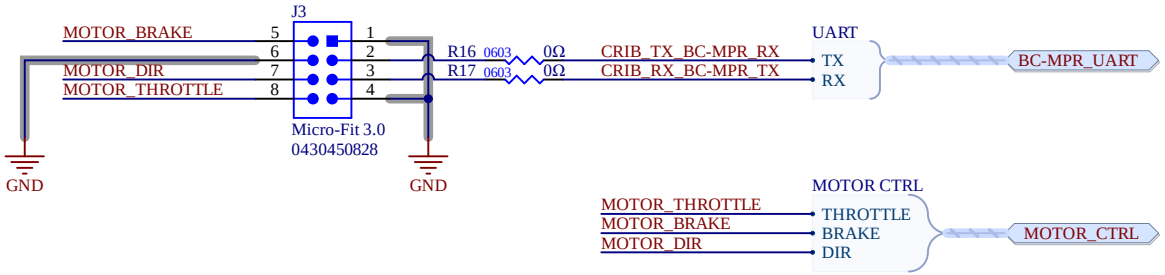
University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT Lithium Battery UVP Switch.SchDoc		MODIFIED 2025-11-16
ENGINEER	REVIEWER *	SHEET 7 OF 21

BC-MPR INTERFACE

Power Input

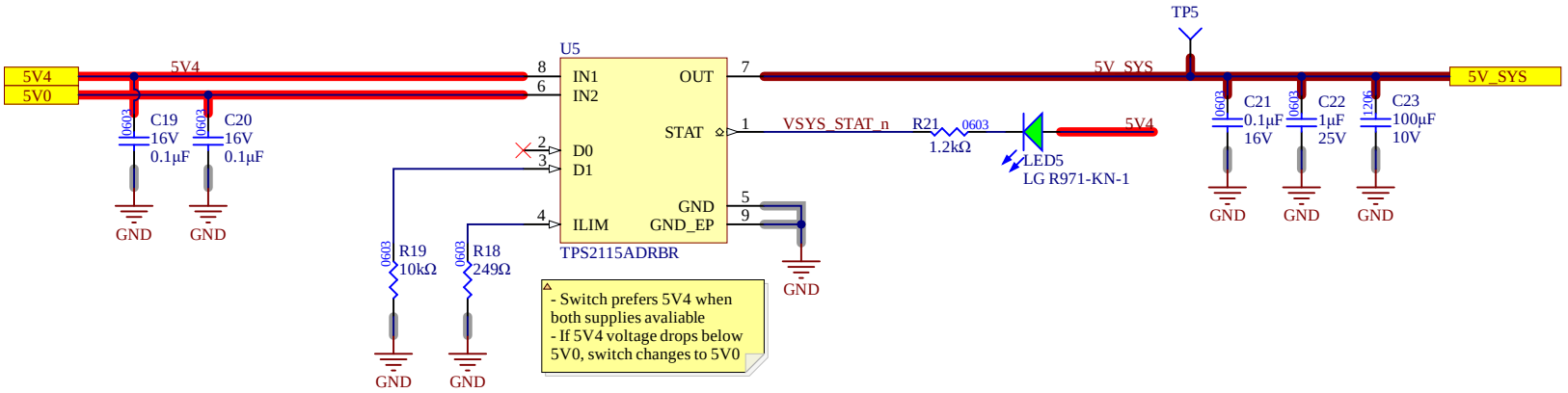


Control Signals



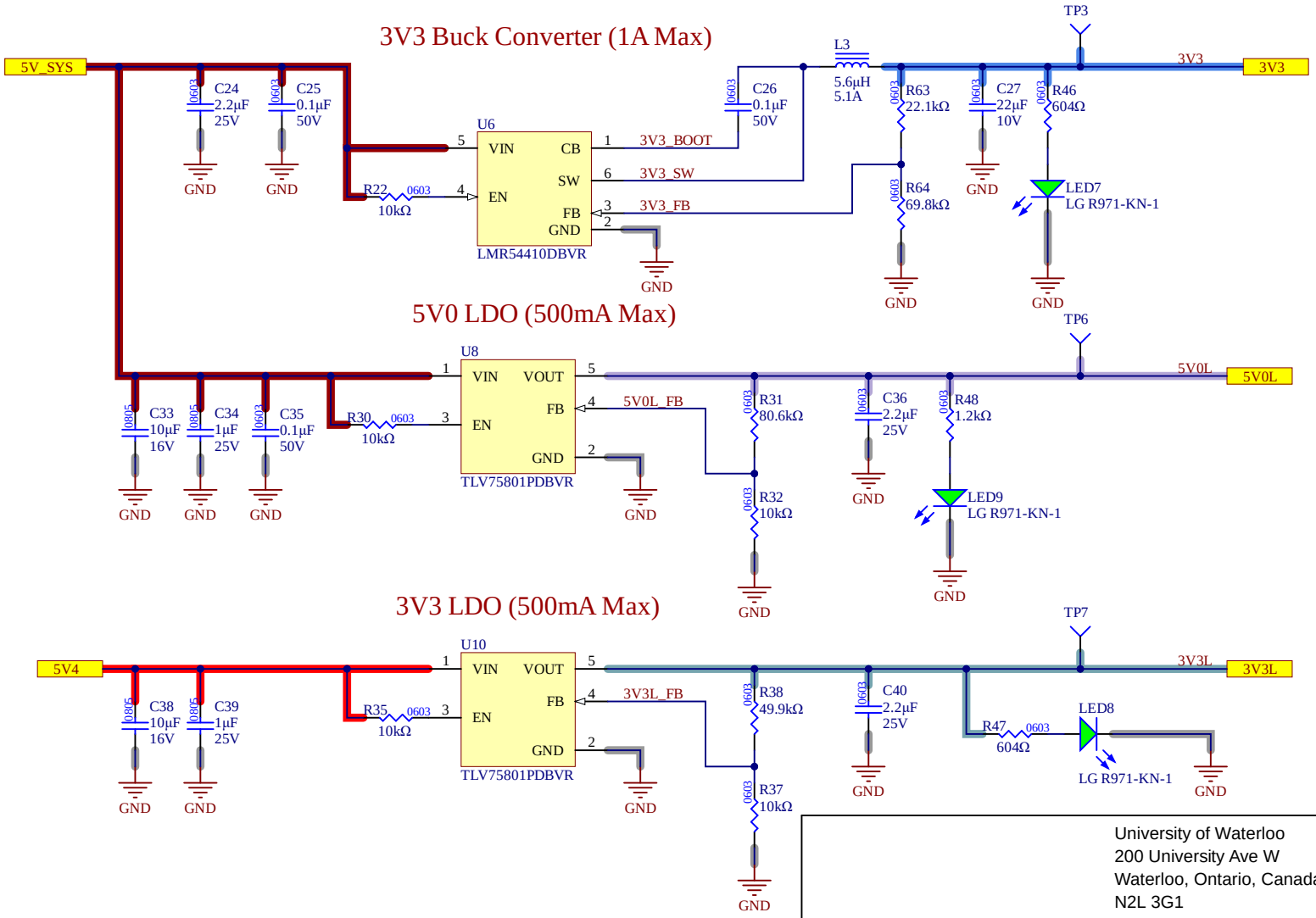
University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT BC-MPR Interface.SchDoc		MODIFIED 2025-08-18
ENGINEER	REVIEWER *	SHEET 8 OF 21

OR POWER SWITCH



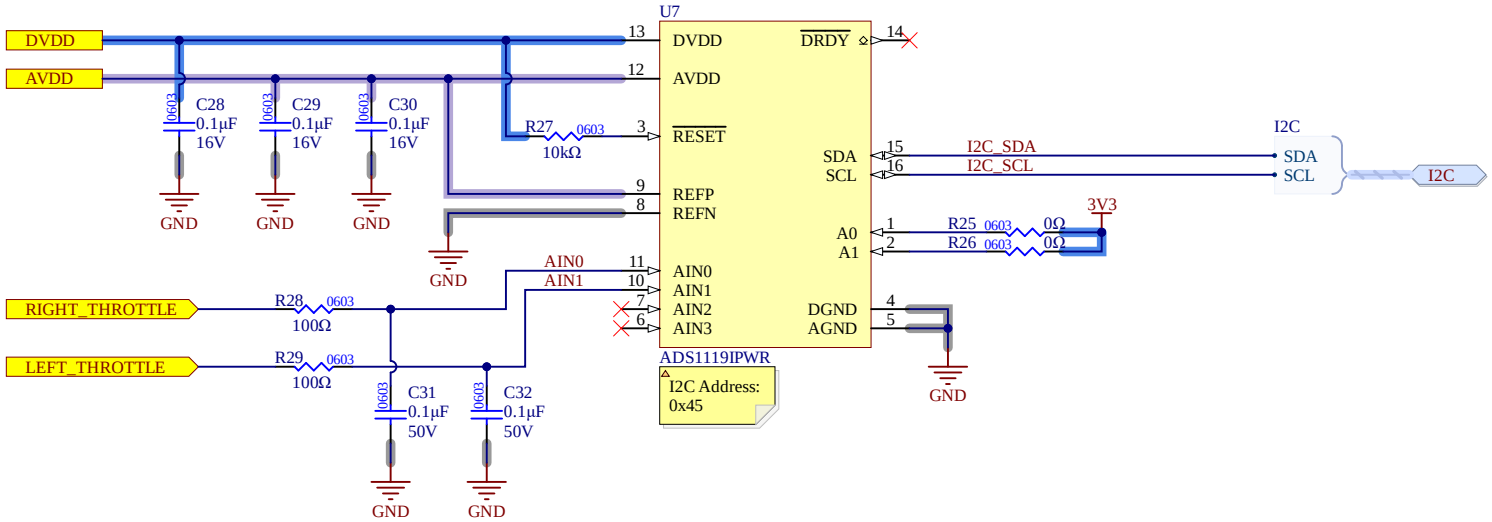
University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT OR Power Switch.SchDoc		MODIFIED 2025-09-15
ENGINEER	REVIEWER *	SHEET 9 OF 21

AUXILIARY REGULATORS



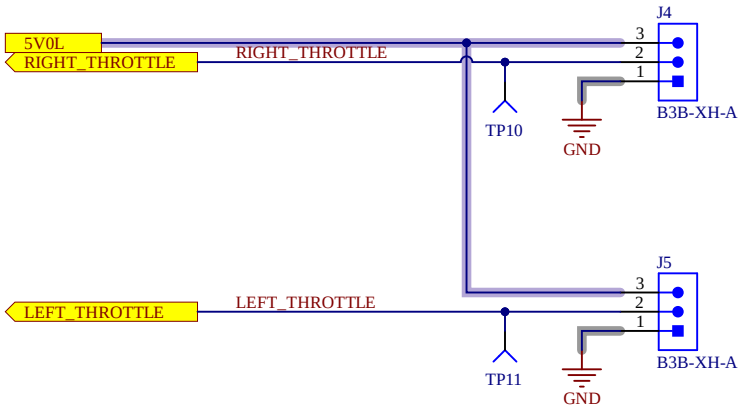
University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV
PROJECT: CRIB.PrjPcb, BUILD	
DOCUMENT: Auxiliary Regulators.SchDoc	MODIFIED: 2025-09-14
ENGINEER	REVIEWER: *
	SHEET 10 OF 21

THROTTLE ADC



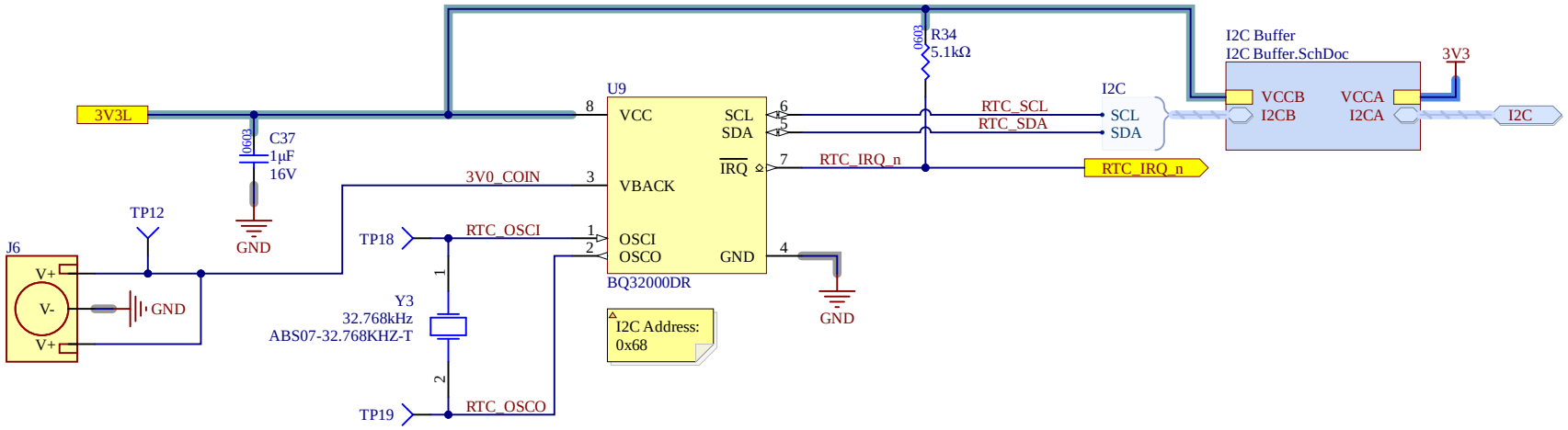
University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT Throttle ADC.SchDoc		MODIFIED 2025-08-31
ENGINEER	REVIEWER *	SHEET 11 OF 21

THROTTLE INTERFACES



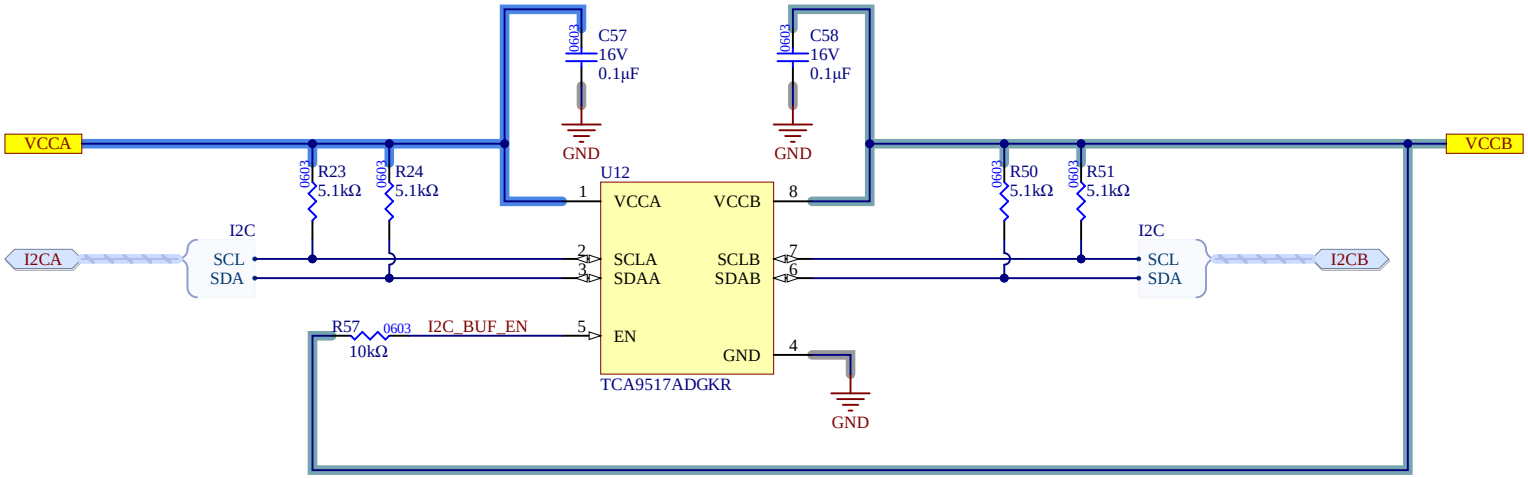
	University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT Throttle Interfaces.SchDoc		MODIFIED 2025-11-02
ENGINEER	REVIEWER *	SHEET 12 OF 21

REAL TIME CLOCK



University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT Real Time Clock.SchDoc		MODIFIED 2025-10-18
ENGINEER	REVIEWER *	SHEET 13 OF 21

I2C BUFFER



University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
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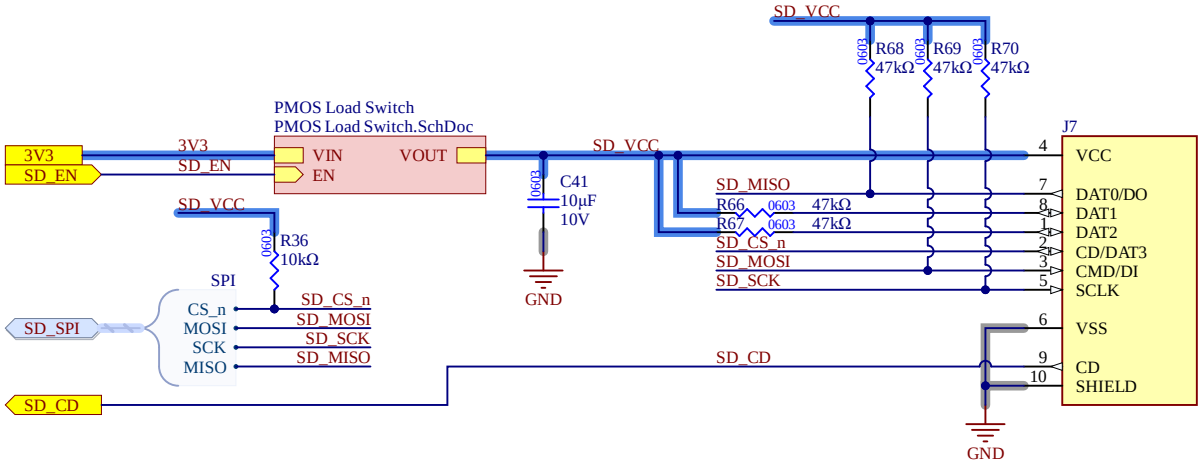
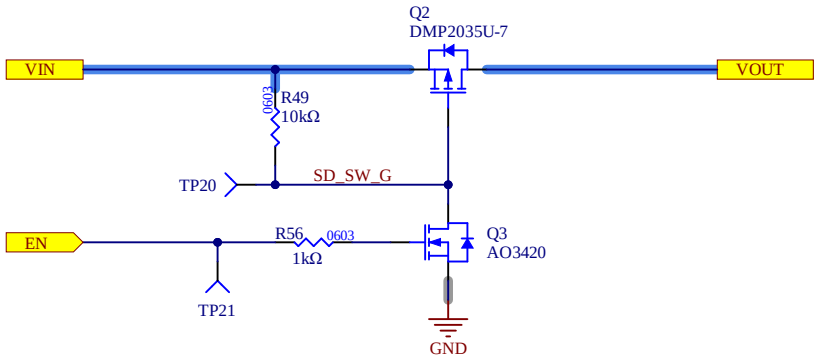
DOCUMENT I2C Buffer.SchDoc		MODIFIED 2025-08-31
ENGINEER	REVIEWER *	SHEET 14 OF 21

SD CARD INTERFACE



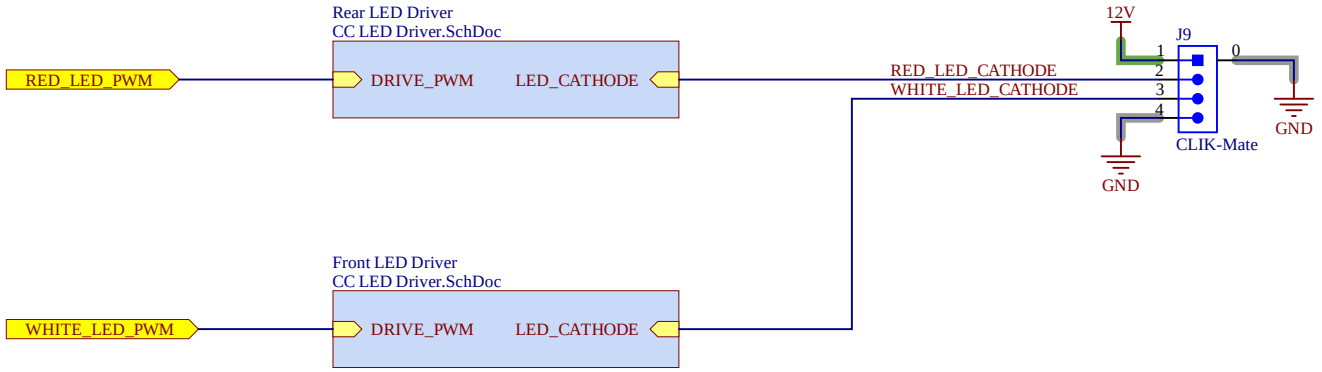
University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT SD Card Interface.SchDoc		MODIFIED 2025-10-18
ENGINEER	REVIEWER *	SHEET 15 OF 21

PMOS LOAD SWITCH



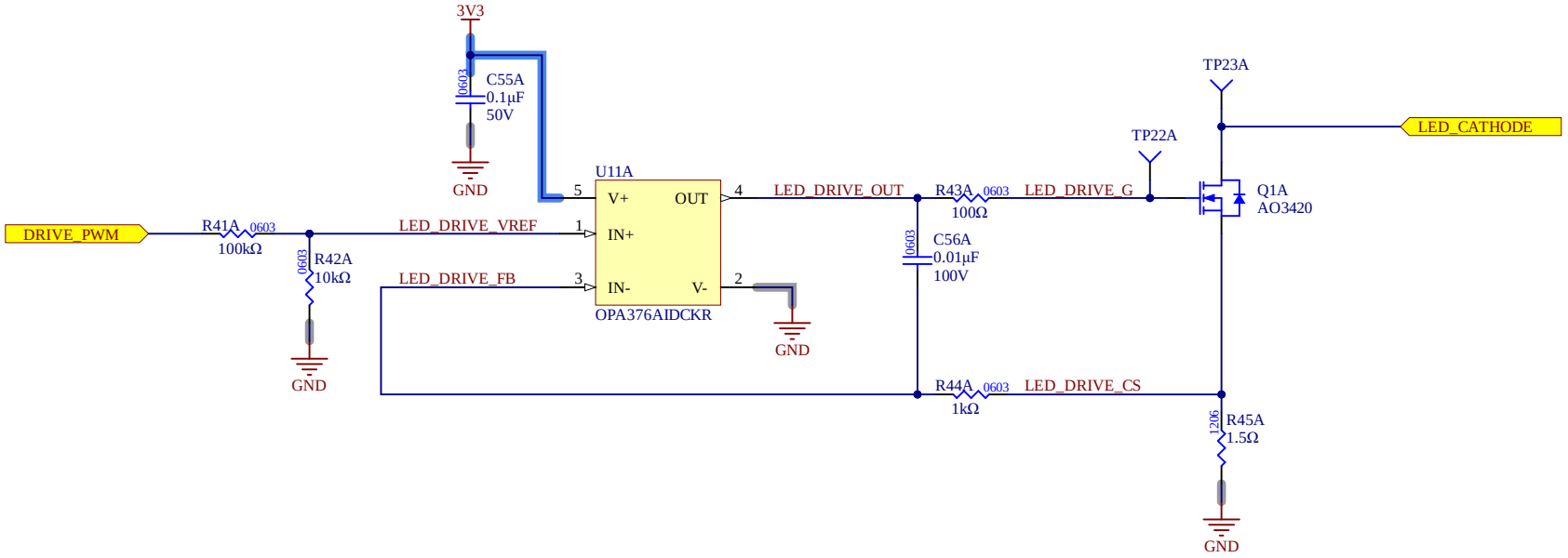
University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT PMOS Load Switch.SchDoc		MODIFIED 2025-09-07
ENGINEER	REVIEWER *	SHEET 16 OF 21

LED LAMP INTERFACES



University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT LED Lamp Interfaces.SchDoc		MODIFIED 2025-10-18
ENGINEER	REVIEWER *	SHEET 17 OF 21

CONSTANT CURRENT LED DRIVER



University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
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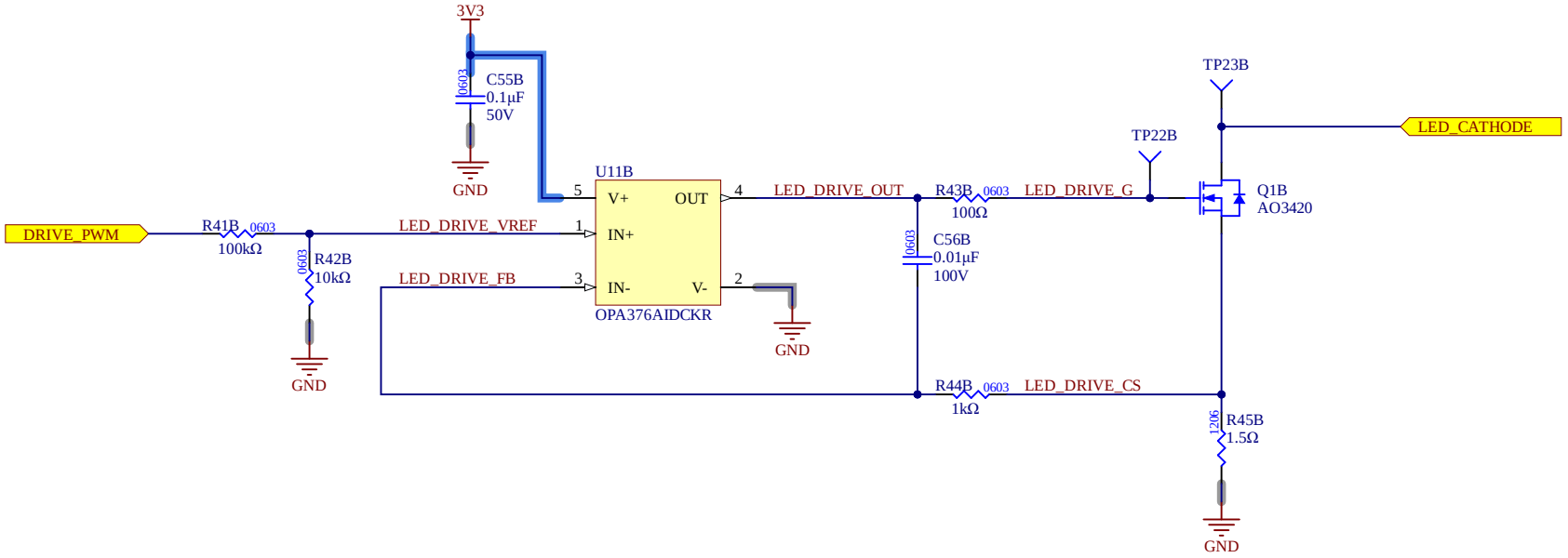
DOCUMENT CC LED Driver.SchDoc		MODIFIED 2025-10-18
ENGINEER	REVIEWER *	SHEET 18 OF 21

CONSTANT CURRENT LED DRIVER



University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
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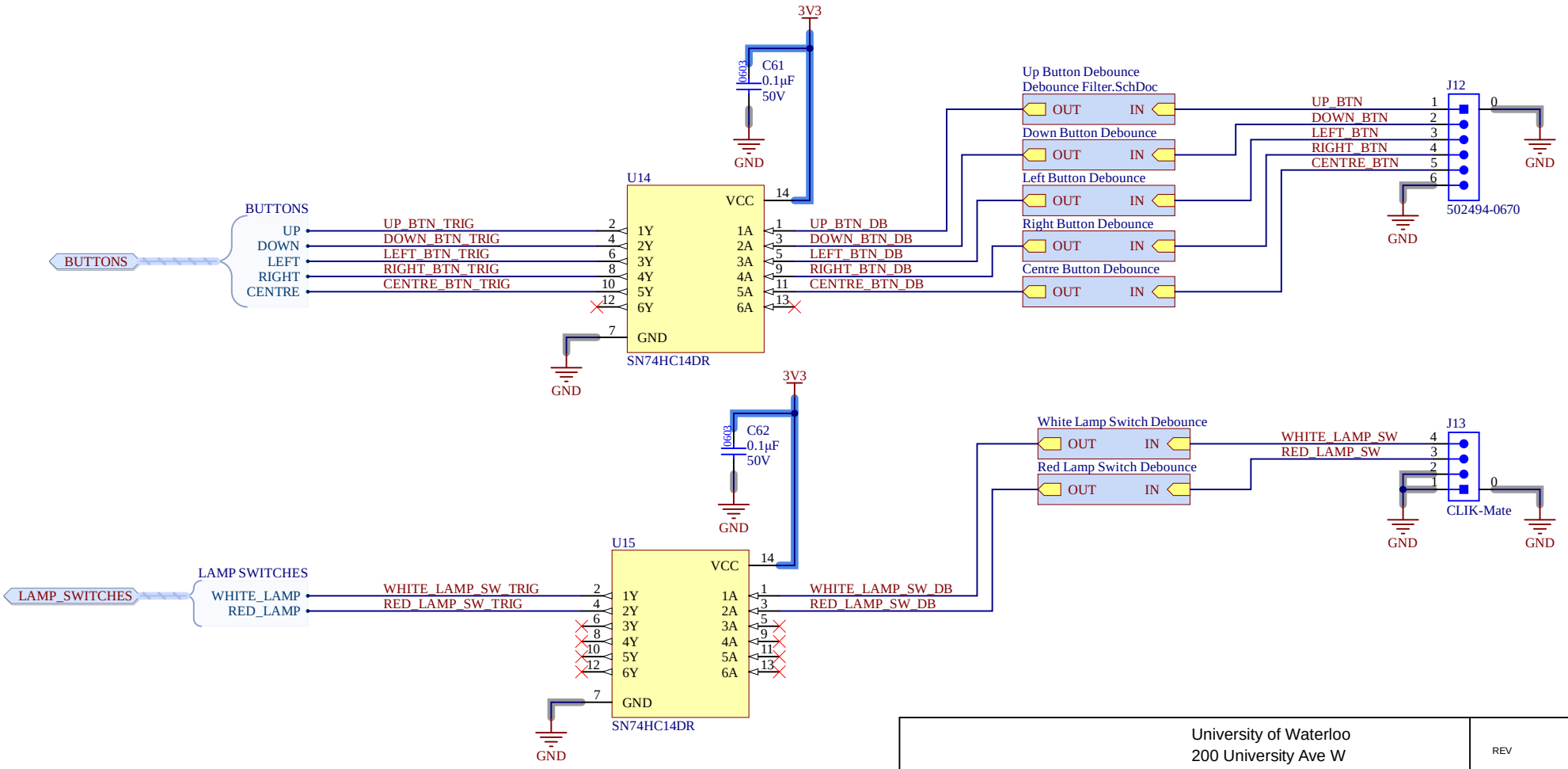
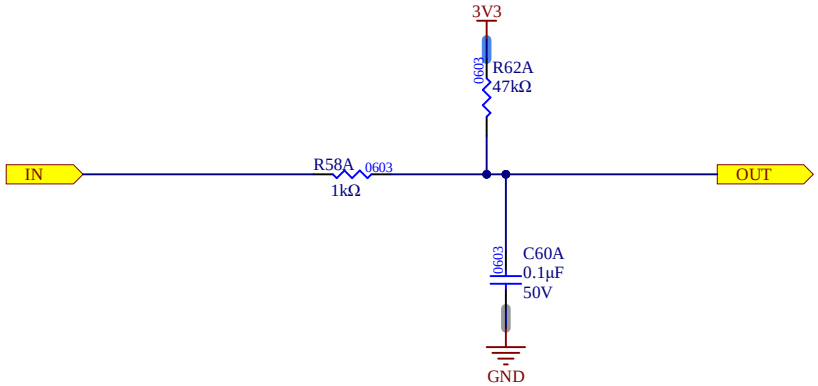
DOCUMENT CC LED Driver.SchDoc		MODIFIED 2025-10-18
ENGINEER	REVIEWER *	SHEET 18 OF 21

USER INTERFACES



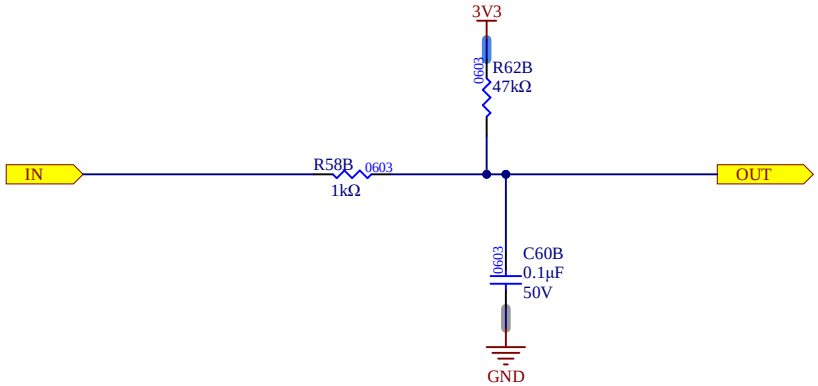
University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT User Interfaces.SchDoc		MODIFIED 2025-10-18
ENGINEER	REVIEWER *	SHEET 19 OF 21

DEBOUNCE FILTER



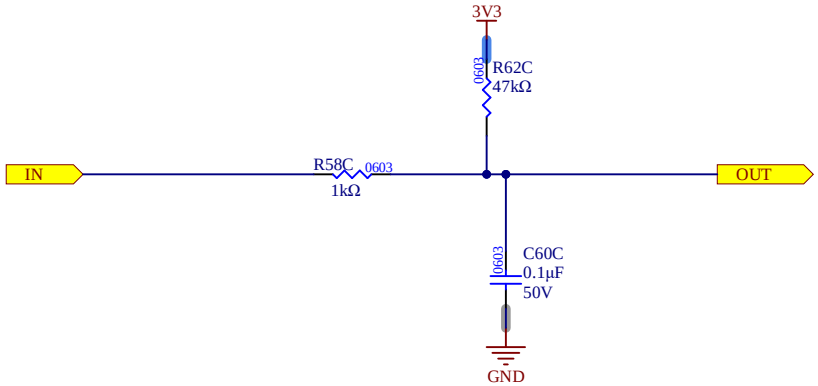
	University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT Debounce Filter.SchDoc		MODIFIED 2025-09-21
ENGINEER	REVIEWER *	SHEET 20 OF 21

DEBOUNCE FILTER



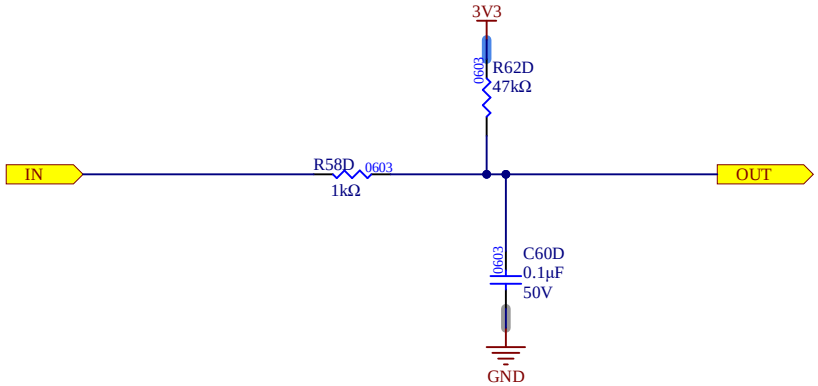
	University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT Debounce Filter.SchDoc		MODIFIED 2025-09-21
ENGINEER	REVIEWER *	SHEET 20 OF 21

DEBOUNCE FILTER



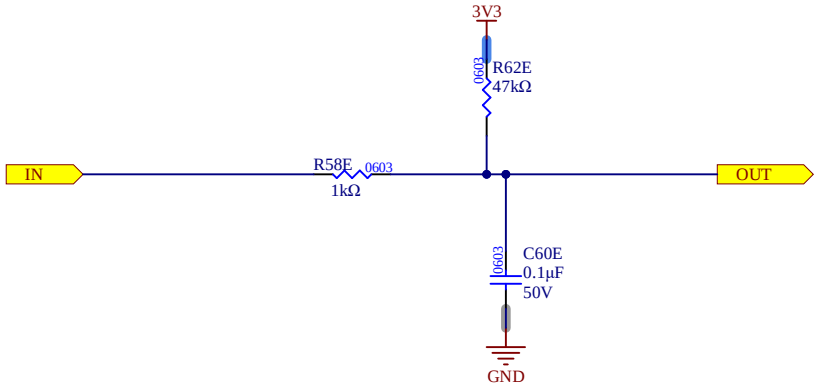
University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT Debounce Filter.SchDoc		MODIFIED 2025-09-21
ENGINEER	REVIEWER *	SHEET 20 OF 21

DEBOUNCE FILTER



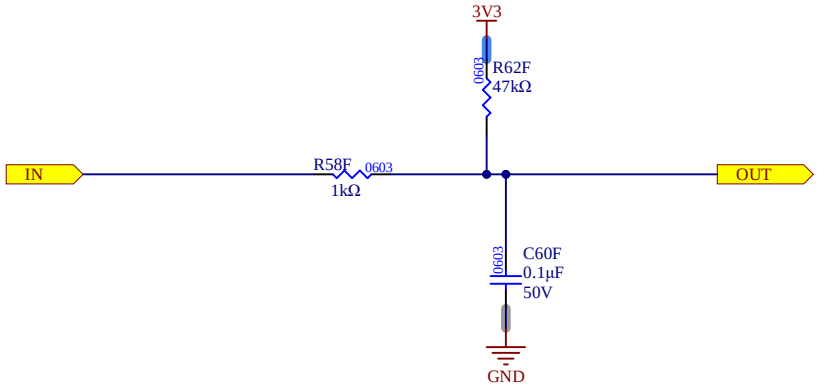
	University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT Debounce Filter.SchDoc		MODIFIED 2025-09-21
ENGINEER	REVIEWER *	SHEET 20 OF 21

DEBOUNCE FILTER



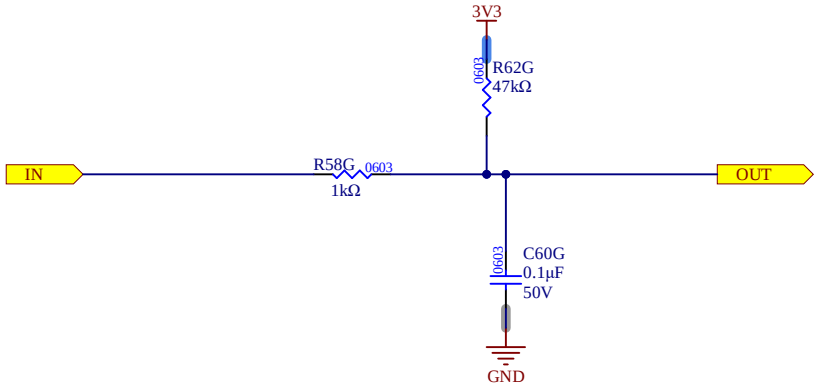
	University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT Debounce Filter.SchDoc		MODIFIED 2025-09-21
ENGINEER	REVIEWER *	SHEET 20 OF 21

DEBOUNCE FILTER



	University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT Debounce Filter.SchDoc		MODIFIED 2025-09-21
ENGINEER	REVIEWER *	SHEET 20 OF 21

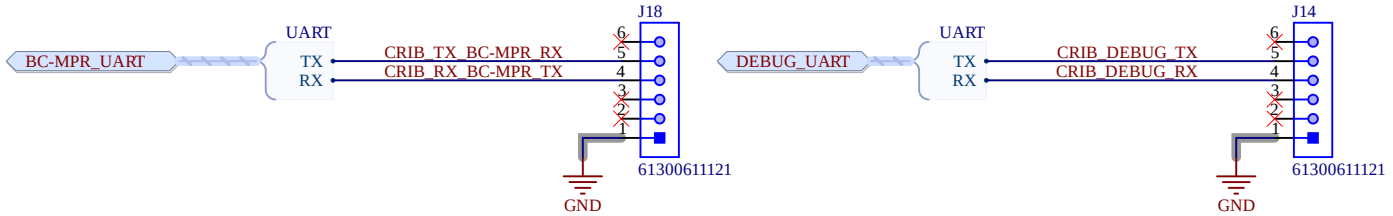
DEBOUNCE FILTER



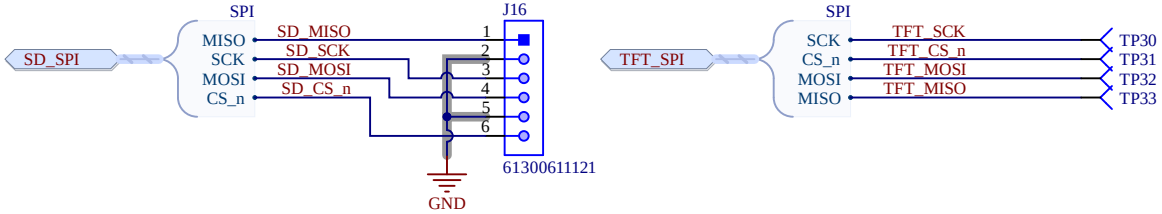
	University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT Debounce Filter.SchDoc		MODIFIED 2025-09-21
ENGINEER	REVIEWER *	SHEET 20 OF 21

DEBUG INTERFACE

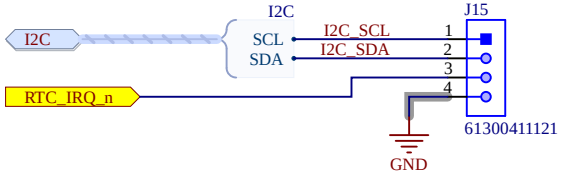
FTDI USB to UART Debug



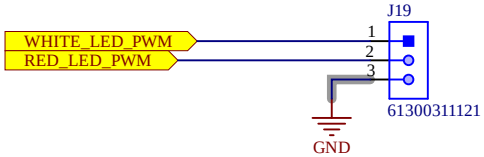
SPI Breakout



I2C Breakout



Lamp PWM Breakout



University of Waterloo 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		REV
PROJECT CRIB.PrjPcb, BUILD		
DOCUMENT Debug Interface.SchDoc		MODIFIED 2025-11-05
ENGINEER	REVIEWER *	SHEET 21 OF 21