M54 Schematic Documentation

Project: BladeCore Board: M54 Variant: C Rev 1.0.0 2026-02-18

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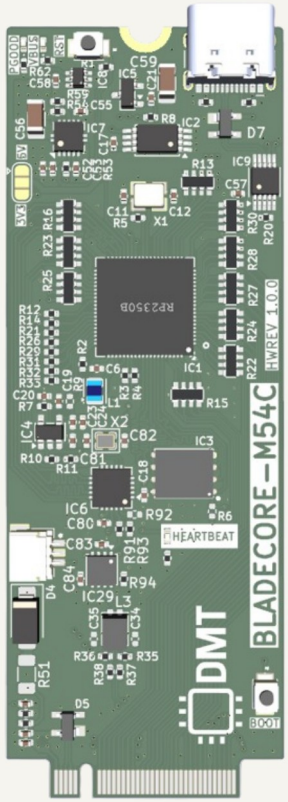
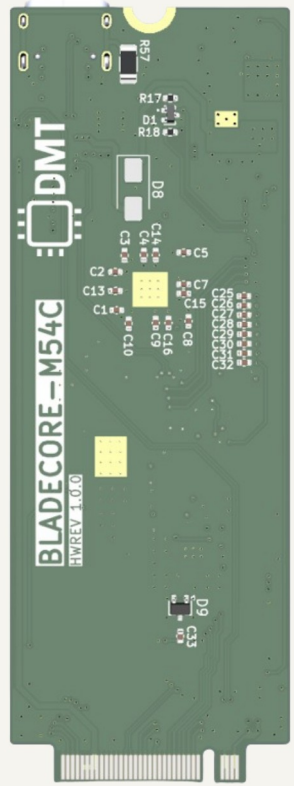
PCB PREVIEW

TOP VIEW



BOTTOM VIEW



COMMENT GUIDELINES

General comments are black, 50 mil size
Design notes and guidelines are blue, 50 mil size
Layout instructions are red, 50 mil size

NOTES

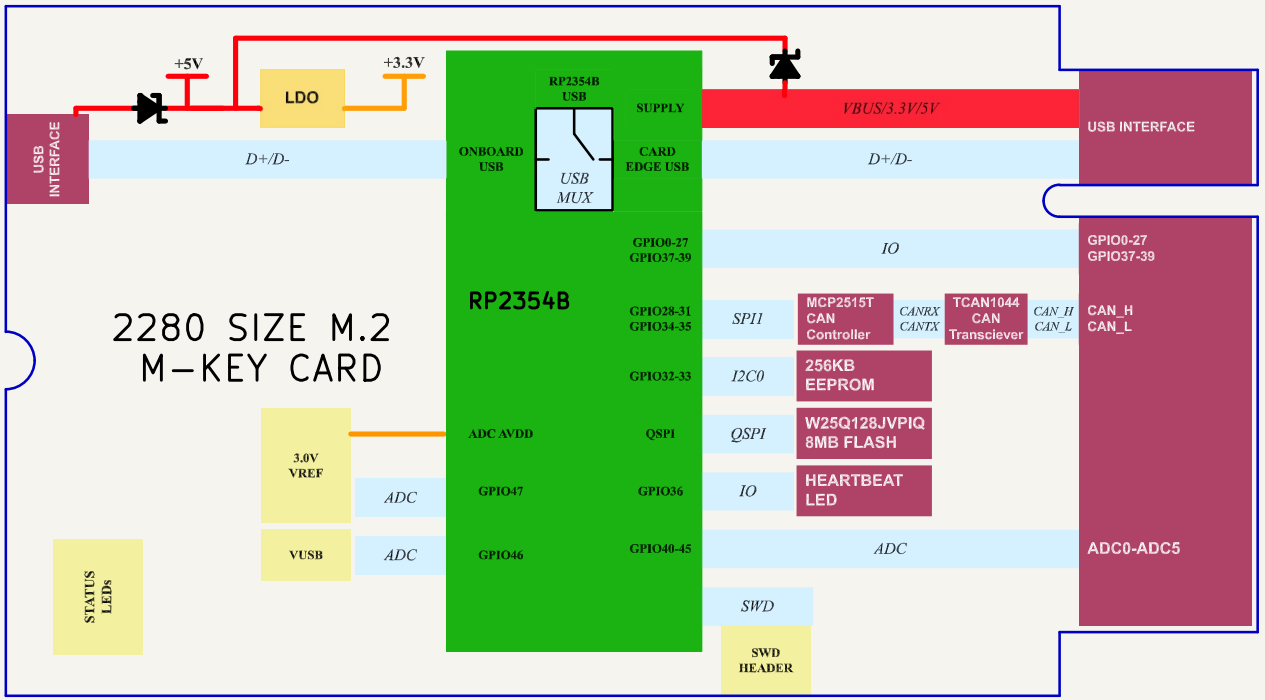
Not fitted components are marked as X

DMT Date: 2026-01-31	Board Name: BladeCore		Project Name: M54	
	File Name: BladeCore-M54C.kicad_sch		Revision: 1.0.0	Variant: C
Sheet Title: Root	Company: DvidMakesThings	Designer: David Sipos Reviewer:	Size: A3	Sheet: 1 of 9

Block Diagram — File: Block Diagram.kicad_sch

Revision History — File: Revision History.kicad_sch

[2] Block Diagram

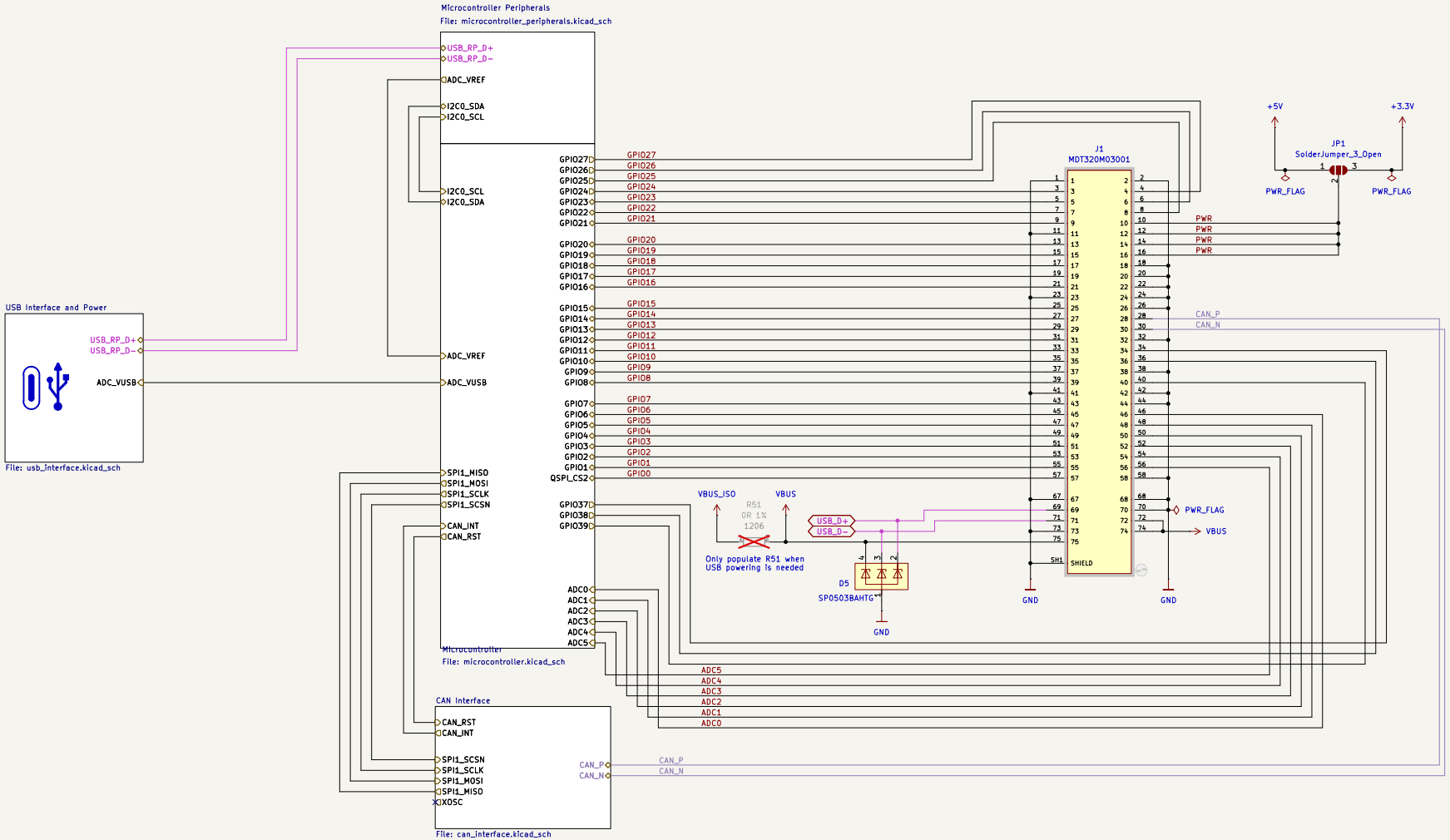


Electrical specifications:

Input voltage:	3.3V - 5.5 V
Absolut maximum current consumption	~200 mA
Typical current consumtion	60mA
IO voltage	3.3V
Onboard LDO output capacity	1.5A
LDO Dropout	60mV
EEPROM	256 kbit
External Flash	8MB

DMT Date: 2026-01-31	Board Name: BladeCore		Project Name: M54	
	File Name: Block Diagram.kicad_sch		Revision: 1.0.0	Variant: C
Sheet Title: Block Diagram	Company: DvidMakesThings	Designer: David Sipos Reviewer:	Size: A3	Sheet: 2 of 9

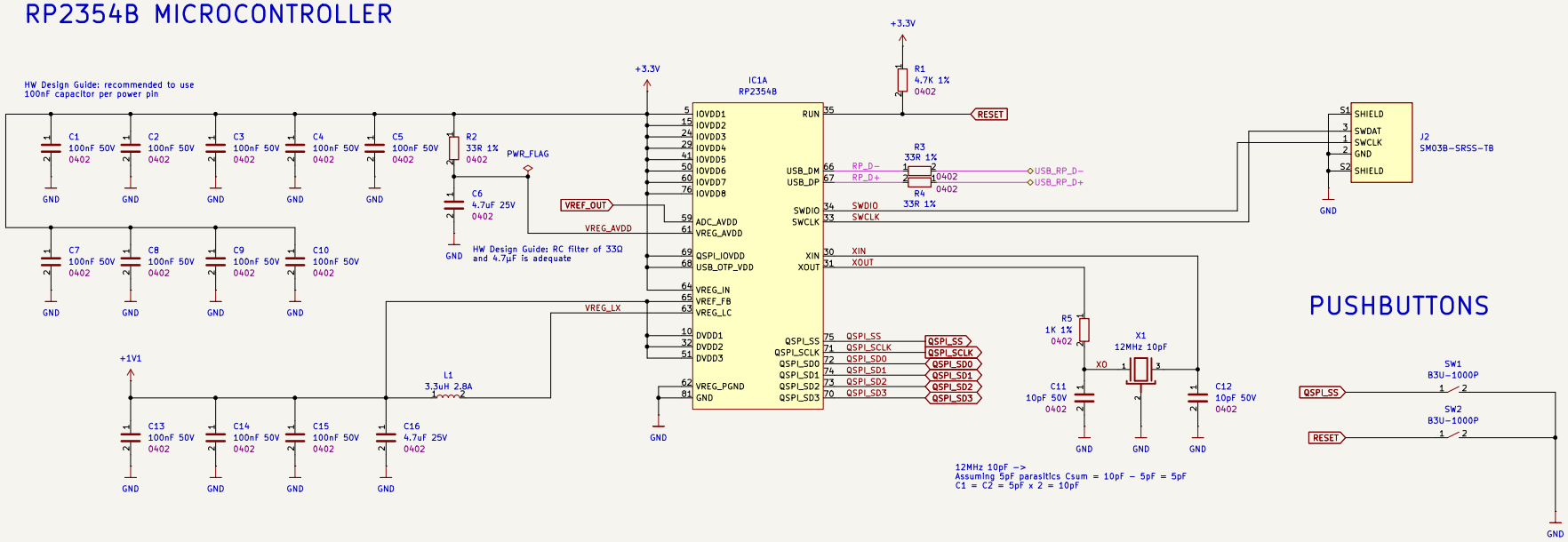
[3] Project Architecture



DMT	Board Name: BladeCore		Project Name: M54
Date: 2026-01-31	File Name: Project Architecture.kicad_sch		Revision: 1.0.0 / Variant: C
Sheet Title: Project Architecture	Company: DvidMakesThings	Designer: David Sipos Reviewer:	Size: A3 / Sheet: 3 of 9

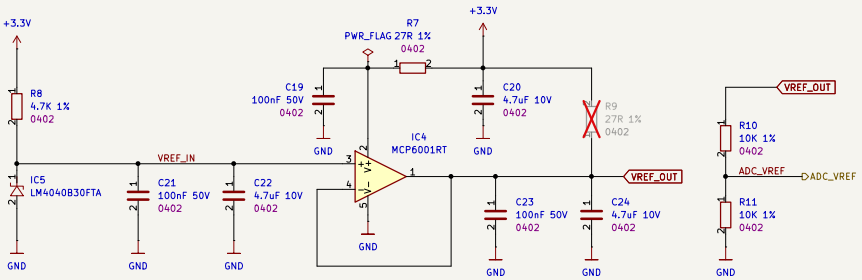
[4] Microcontroller Peripherals

RP2354B MICROCONTROLLER

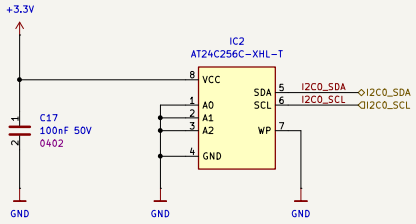


PUSHBUTTONS

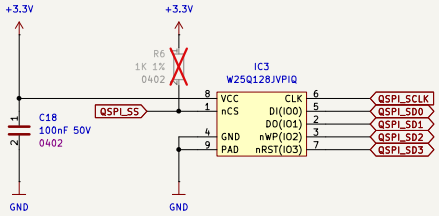
3.0V ADC VOLTAGE REFERENCE



EXTERNAL EEPROM



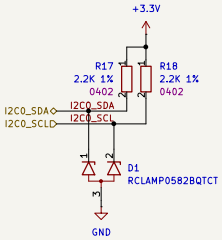
EXTERNAL FLASH



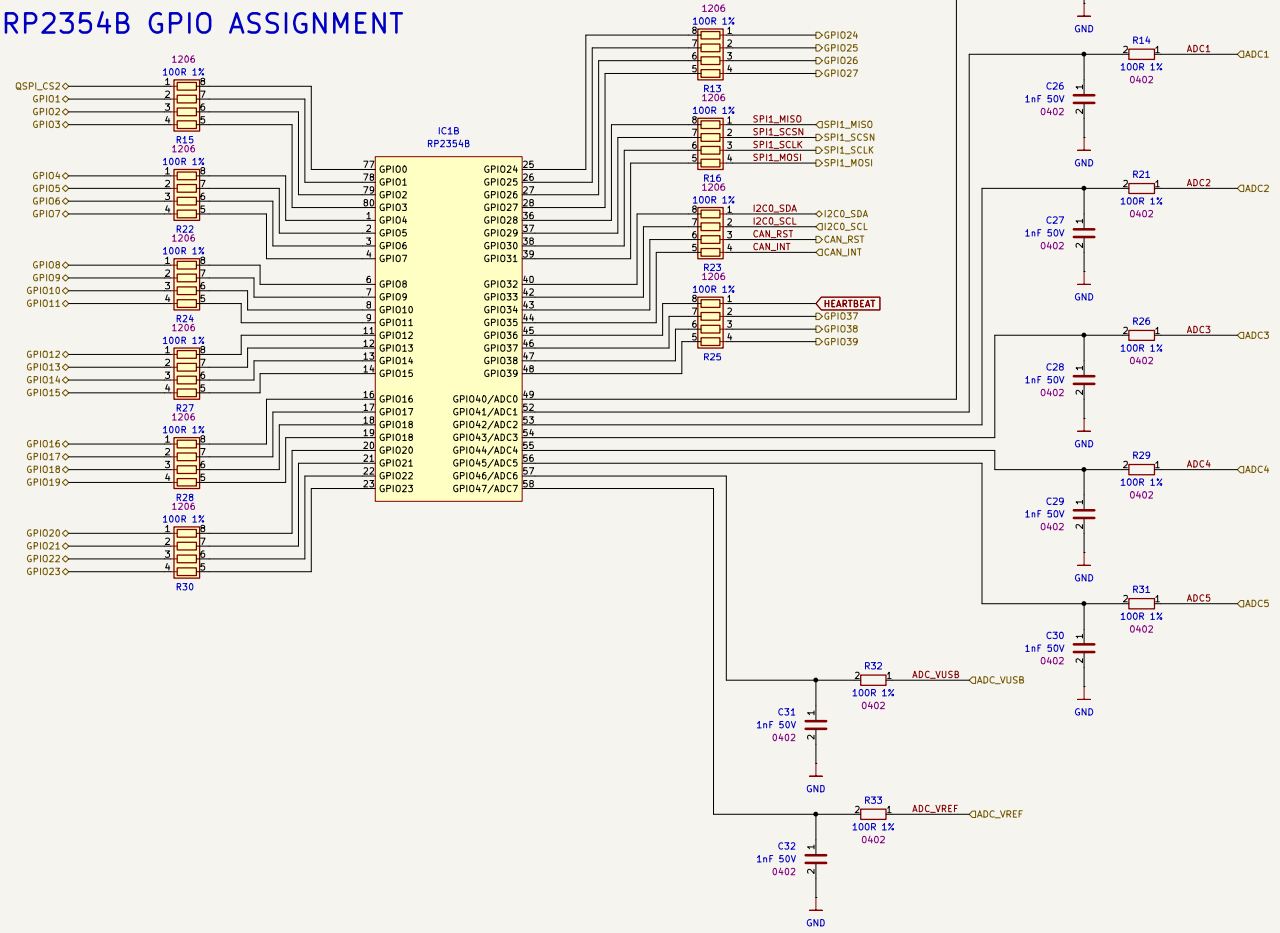
DMT	Board Name: BladeCore		Project Name: M54
Date: 2026-01-31	File Name: microcontroller_peripherals.kicad_sch		Revision: 1.0.0 / Variant: C
Sheet Title: Microcontroller Peripherals	Company: DvidMakesThings	Designer: David Sipos Reviewer:	Size: A3 / Sheet: 4 of 9

[5] Microcontroller

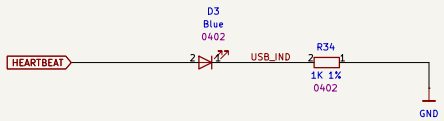
I2C PULLUP



RP2354B GPIO ASSIGNMENT



HEARTBEAT LED

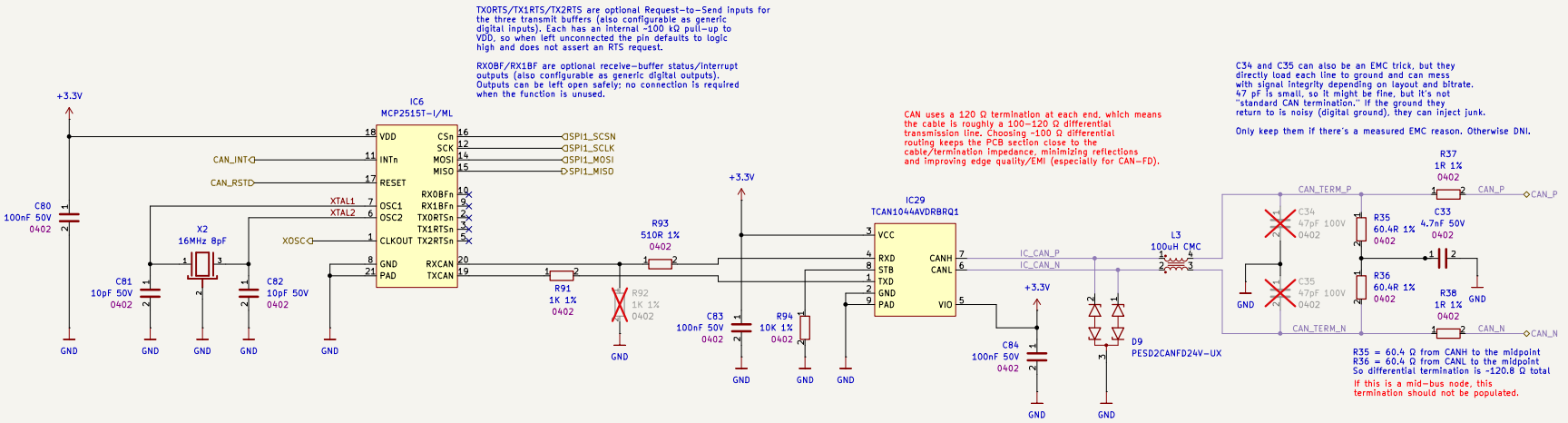


DMT Date: 2026-01-31	Board Name: BladeCore		Project Name: M54
	File Name: microcontroller.kicad_sch		Revision: 1.0.0 / Variant: C
Sheet Title: Microcontroller	Company: DvidMakesThings	Designer: David Sipos Reviewer:	Size: A3 / Sheet: 5 of 9

[6] CAN Interface

MCP2515 CAN CONTROLLER

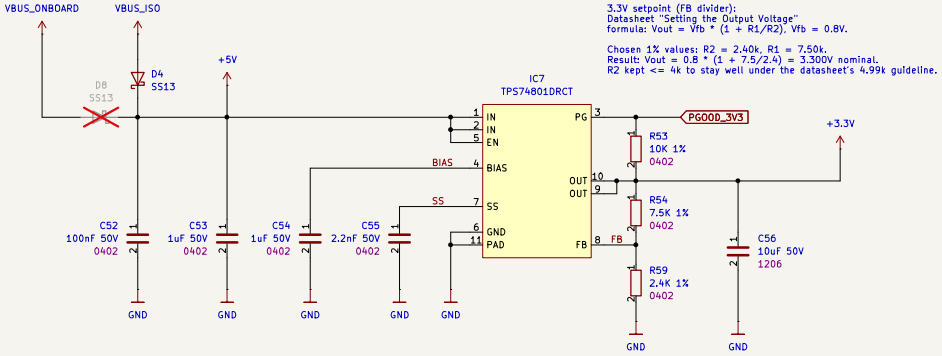
TCAN1044 CAN TRANSCIEVER



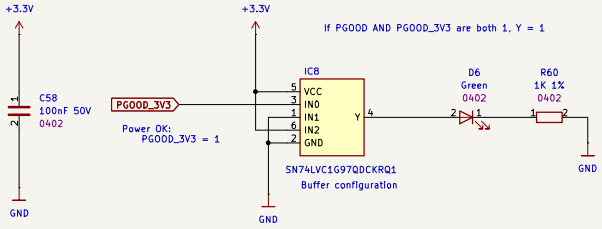
DMT	Board Name: BladeCore		Project Name: M54	
Date: 2026-01-31	File Name: can_interface.kicad_sch		Revision: 1.0.0	Variant: C
Sheet Title: CAN Interface	Company: DvidMakesThings	Designer: David Sipos Reviewer:	Size: A3	Sheet: 6 of 9

[7] USB Interface and Power

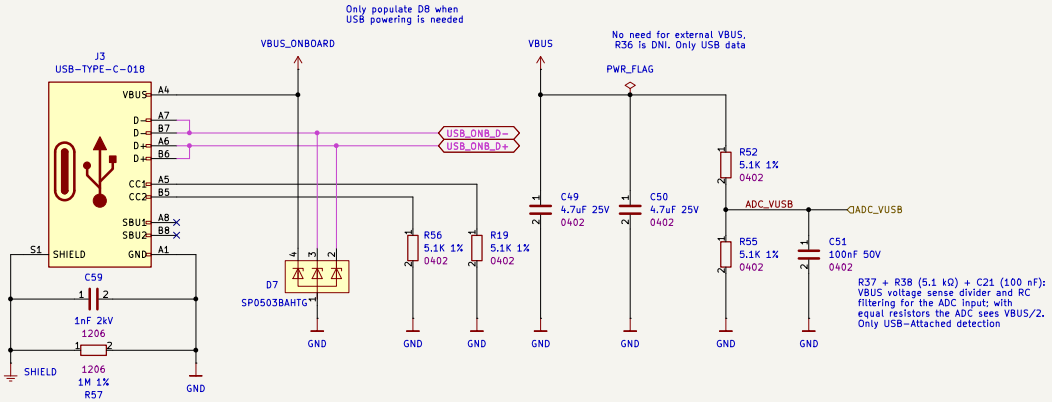
+5V to 3.3V PMIC



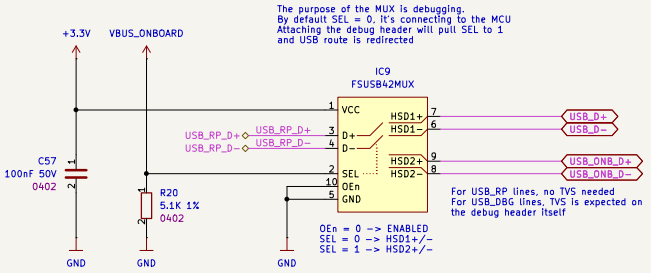
PGOOD LOGIC



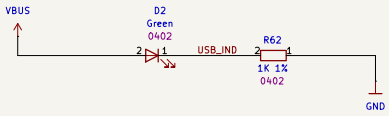
ONBOARD USB CONNECTOR



USB DATA-PATH SELECTOR

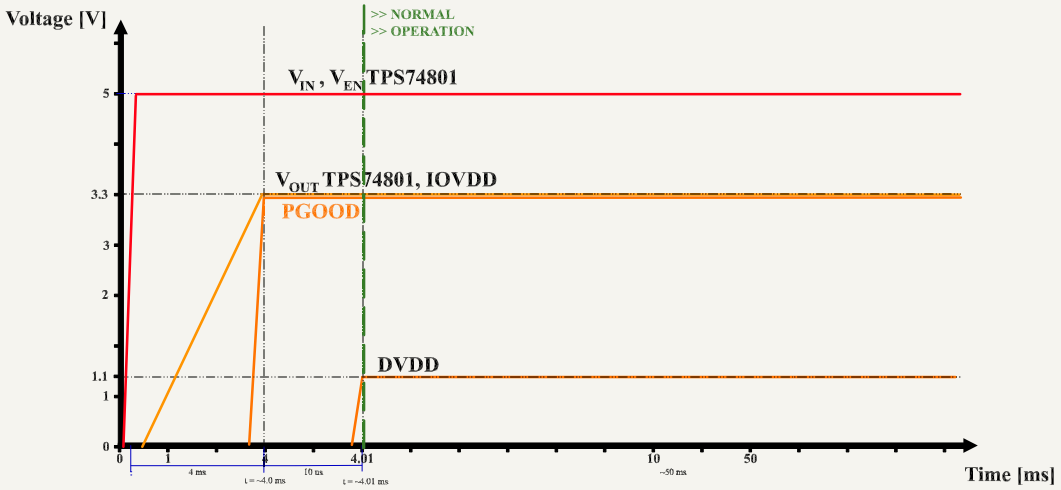


USB INDICATOR LED



DMT	Board Name: BladeCore		Project Name: M54	
Date: 2026-01-31	File Name: usb_interface.kicad_sch		Revision: 1.0.0	Variant: C
Sheet Title: USB Interface and Power	Company: DvidMakesThings	Designer: David Sipos Reviewer:	Size: A3	Sheet: 7 of 9

[8] Power - Sequencing



#	Stage	Δt	Total elapsed
1	VIN applied (5.0V)	0	0.000 ms
2	VEN high (TPS74801 EN)	0	0.000 ms
3	VOUT = 3.3V (soft-start)	4.000 ms	4.000 ms
4	PGOOD valid	0	4.000 ms
5	RP2354B 3.3V present	0	4.000 ms
6	RP2354B 1.1V valid (POR)	0.010 ms	4.010 ms

DMT Date: 2026-01-31	Board Name: BladeCore		Project Name: M54	
	File Name: Power - Sequencing.kicad_sch		Revision: 1.0.0	Variant: C
Sheet Title: Power - Sequencing	Company: DvidMakesThings	Designer: David Sipos Reviewer:	Size: A3	Sheet: 8 of 9

[9] Revision History

DATE	REVISION	RESPONSIBLE	CHANGE
31.01.2026	1.0.0	DMT	INITIAL CREATION

DMT Date: 2026-01-31	Board Name: **BladeCore**		Project Name: **M54**	
	File Name: Revision History.kicad_sch		Revision: 1.0.0	Variant: C
Sheet Title: Revision History	Company: **DvidMakesThings**	Designer: David Sipos Reviewer:	Size: **A3**	Sheet: **9** of **9**