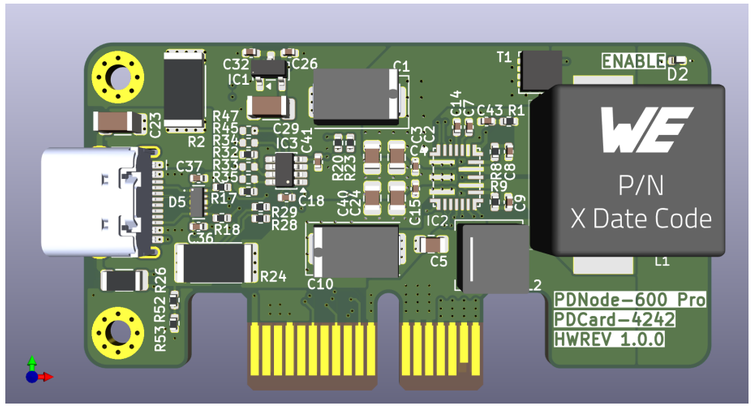
PDCard-4242 Schematic Documentation

Project: PDNode-600 PDCard-4242 Pro Rev 1.0.0 2026-02-25

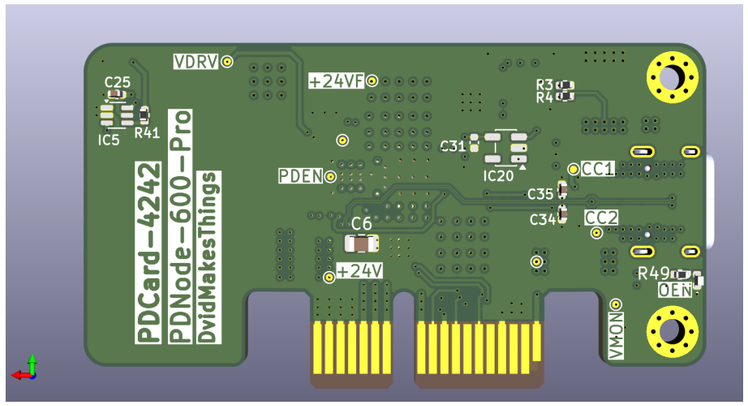
CONTENT

PCB PREVIEW

TOP VIEW



BOTTOM VIEW



COMMENT GUIDELINES

General comments are black, 50 mil size

Design notes and guidelines are blue, 50 mil size

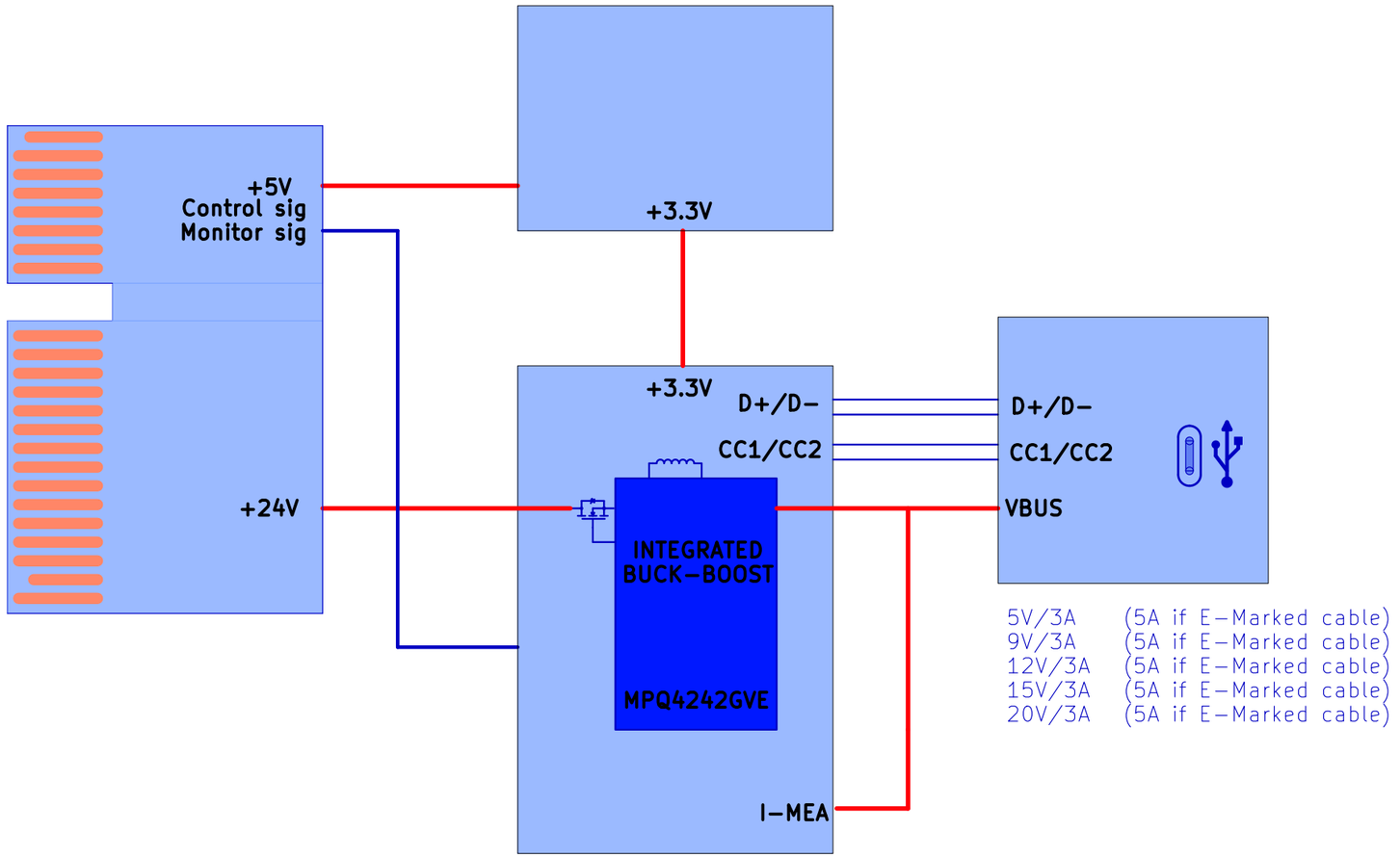
Layout instructions are red, 50 mil size

NOTES

Not fitted components are marked as X

DMT Date: 2025-01-12	Board Name: PDNode-600		Project Name: PDCard-4242	
	File Name: PDNode-PDCard-4242.kicad_sch		Revision: 1.0.0	Variant: Pro
Sheet Title: Root	Company: DvidMakesThings	Designer: David Sipos Reviewer:	Size: A3	Sheet: 1 of 7

[2] Block Diagram

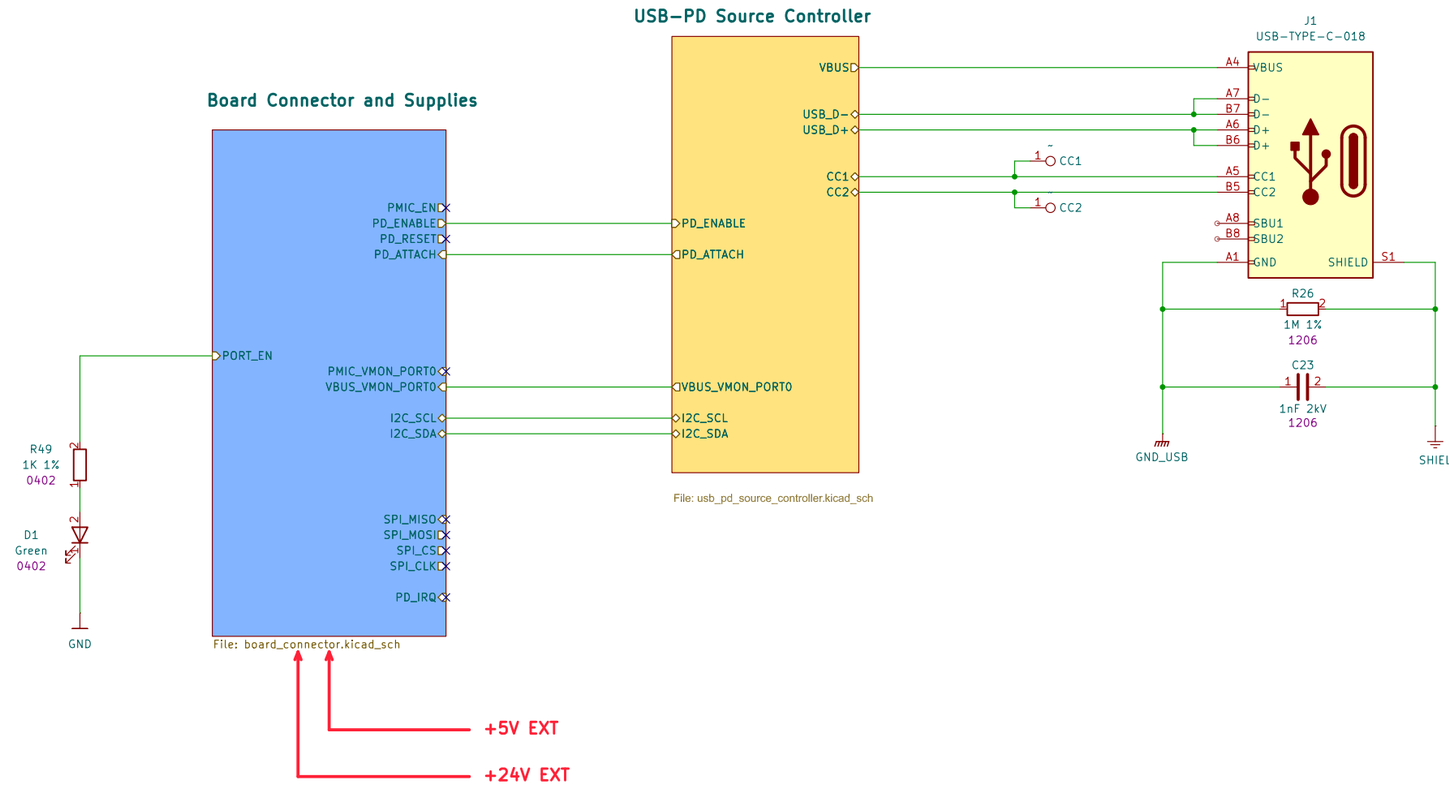


DMT

Date: 2026-01-31

Board Name: PDNode-600			Project Name: PDCard-4242	
File Name: Block Diagram.kicad_sch			Revision: 1.0.0	Variant: Pro
Sheet Title: Block Diagram	Company: DvidMakesThings	Designer: David Sipos Reviewer:	Size: A3	Sheet: 2 of 7

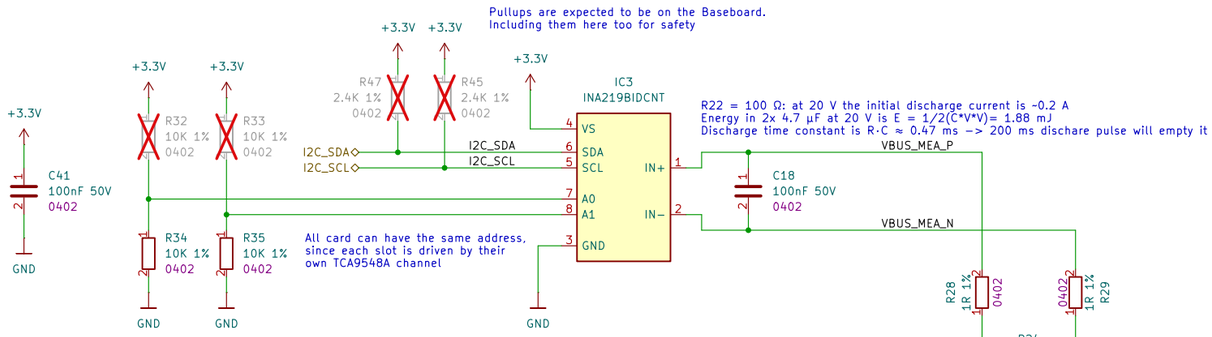
Block Diagram

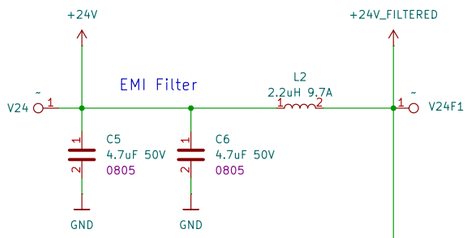


DMT Date: 2025-01-12	Board Name: **PDNode-600** File Name: Project Architecture.kicad_sch		Project Name: **PDCard-4242** Revision: 1.0.0	Variant: Pro
Sheet Title: Project Architecture	Company: **DvidMakesThings**	Designer: David Sipos Reviewer:	Size: **A3**	Sheet: **3** of **7**

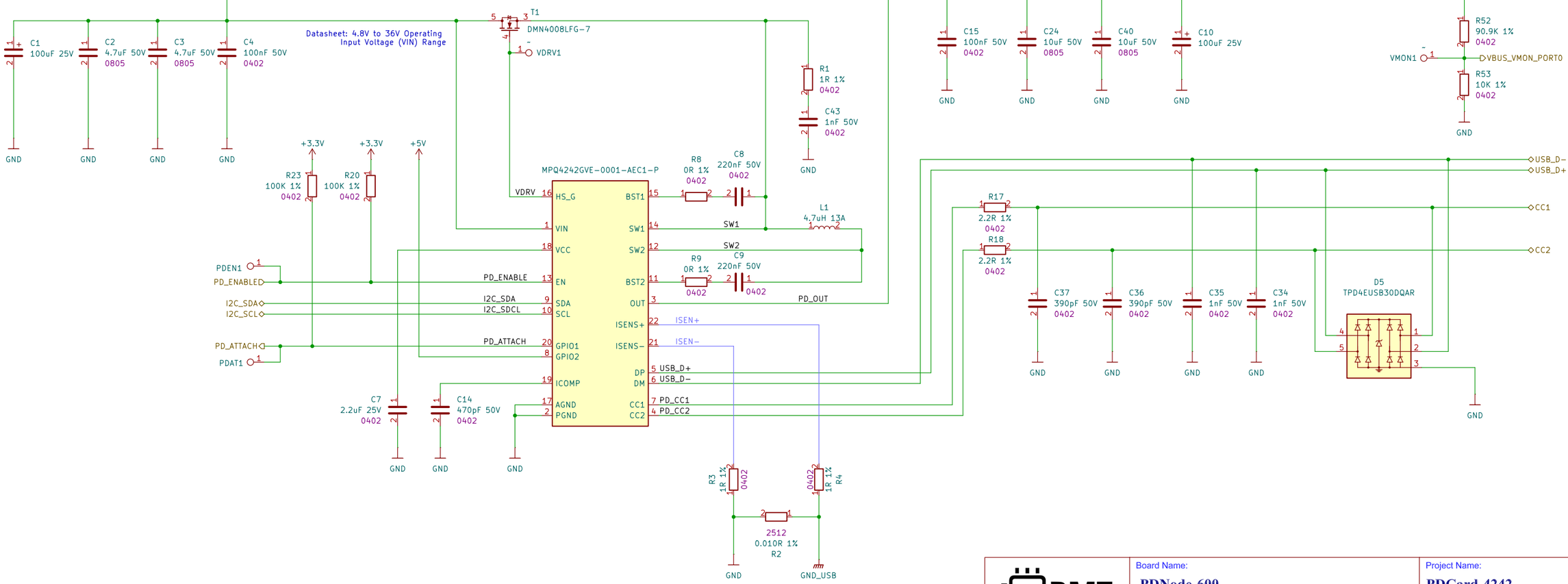
USB-PD SOURCE CONTROLLER

INA219BIDCNT CURRENT MEASUREMENT





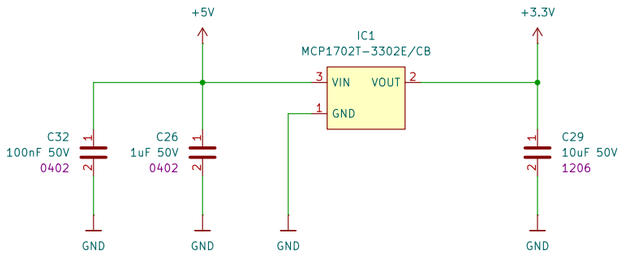
MPQ4242 PD SOURCE CONTROLLER



DMT Date: 2025-01-12	Board Name: **PDNode-600**		Project Name: **PDCard-4242**	
	File Name: usb_pd_source_controller.kicad_sch		Revision: 1.0.0	Variant: Pro
Sheet Title: USB-PD Source Controller	Company: **DvidMakesThings**	Designer: David Sipos Reviewer:	Size: **A3**	Sheet: **4** of **7**

BOARD CONNECTOR AND SUPPLIES

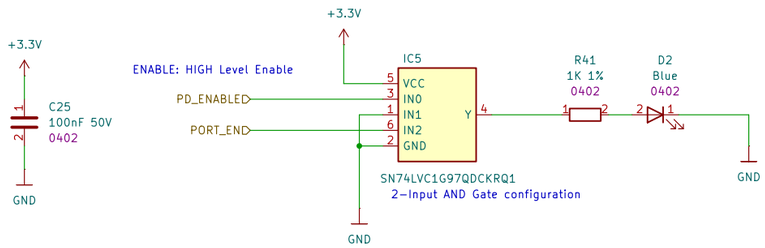
+5V to 3.3V PMIC



3.3V setpoint (FB divider):
Datasheet "Setting the Output Voltage"
formula: Vout = Vfb * (1 + R1/R2), Vfb = 0.8V.

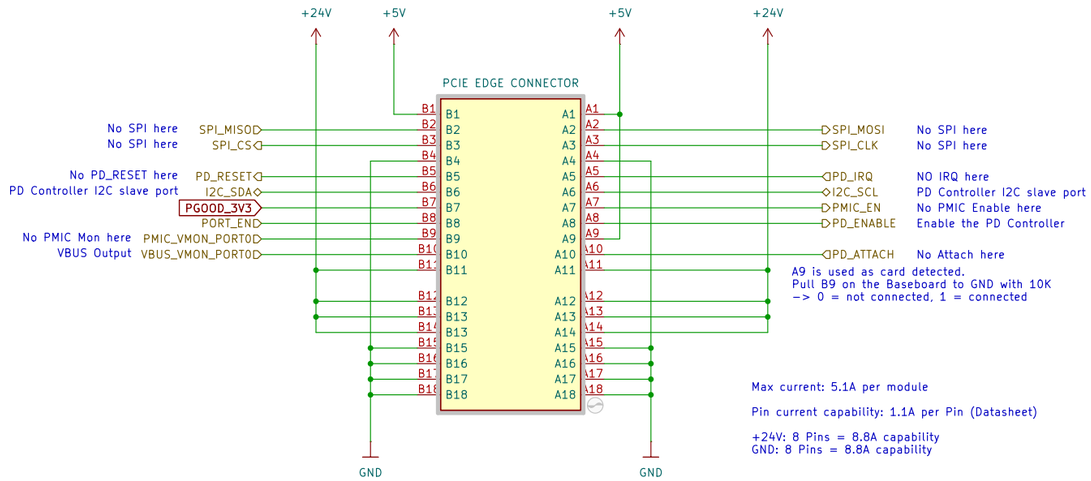
Chosen 1% values: R2 = 2.40k, R1 = 7.50k.
Result: Vout = 0.8 * (1 + 7.5/2.4) = 3.300V nominal.
R2 kept <= 4k to stay well under the datasheet's 4.99k guideline.

ENABLE STATUS



PCIE-X1 BOARD EDGE CONNECTOR

If +3.3V is selected, PMIC above is all DO NOT MOUNT except R37, since it would backfeed the carrier's 3.3V rail

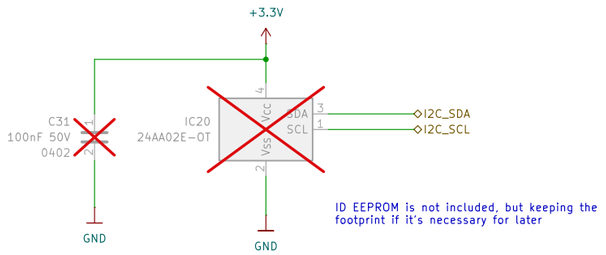


Max current: 5.1A per module

Pin current capability: 1.1A per Pin (Datasheet)

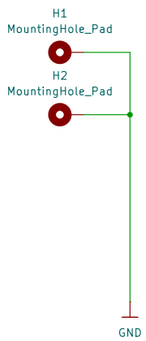
+24V: 8 Pins = 8.8A capability
GND: 8 Pins = 8.8A capability

DEVICE ID EEPROM



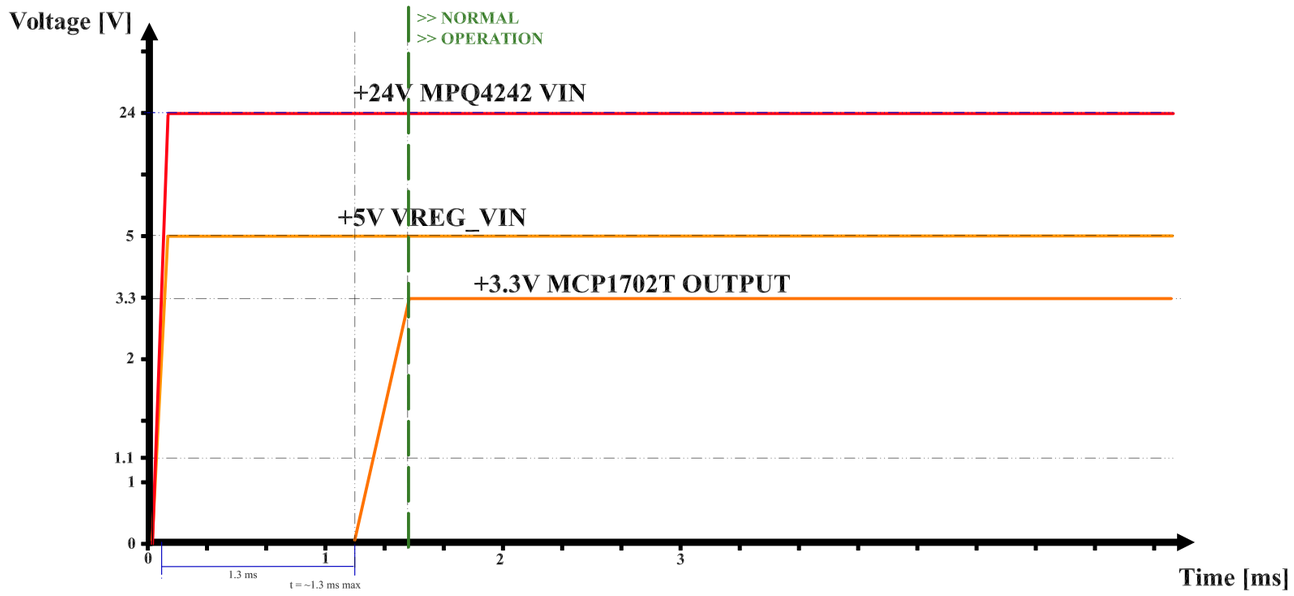
ID EEPROM is not included, but keeping the footprint if it's necessary for later

MOUNTING HOLES



DMT Date: 2025-01-12	Board Name: PDNode-600		Project Name: PDCard-4242	
	File Name: board_connector.kicad_sch		Revision: 1.0.0	Variant: Pro
Sheet Title: Board Connector and Supplies	Company: DvidMakesThings	Designer: David Sipos Reviewer:	Size: A3	Sheet: 5 of 7

[6] Power - Sequencing



DMT Date: 2025-01-12	Board Name: **PDNode-600** File Name: Power - Sequencing.kicad_sch		Project Name: **PDCard-4242** Revision: 1.0.0	Variant: Pro
Sheet Title: Power - Sequencing	Company: **DvidMakesThings**	Designer: David Sipos Reviewer:	Size: **A3**	Sheet: **6** of **7**

Revision History

DATE	REVISION	RESPONSIBLE	CHANGE
16.01.2026	1.0.0	DMT	INITIAL CREATION

DMT

Date: 2025-01-12

Board Name: **PDNode-600**

Project Name: **PDCard-4242**

File Name: Revision History.kicad_sch

Revision: 1.0.0

Variant: Pro

Sheet Title: Revision History

Company: **DvidMakesThings**

Designer: David Sipos

Reviewer:

Size: **A3**

Sheet: **7** of **7**