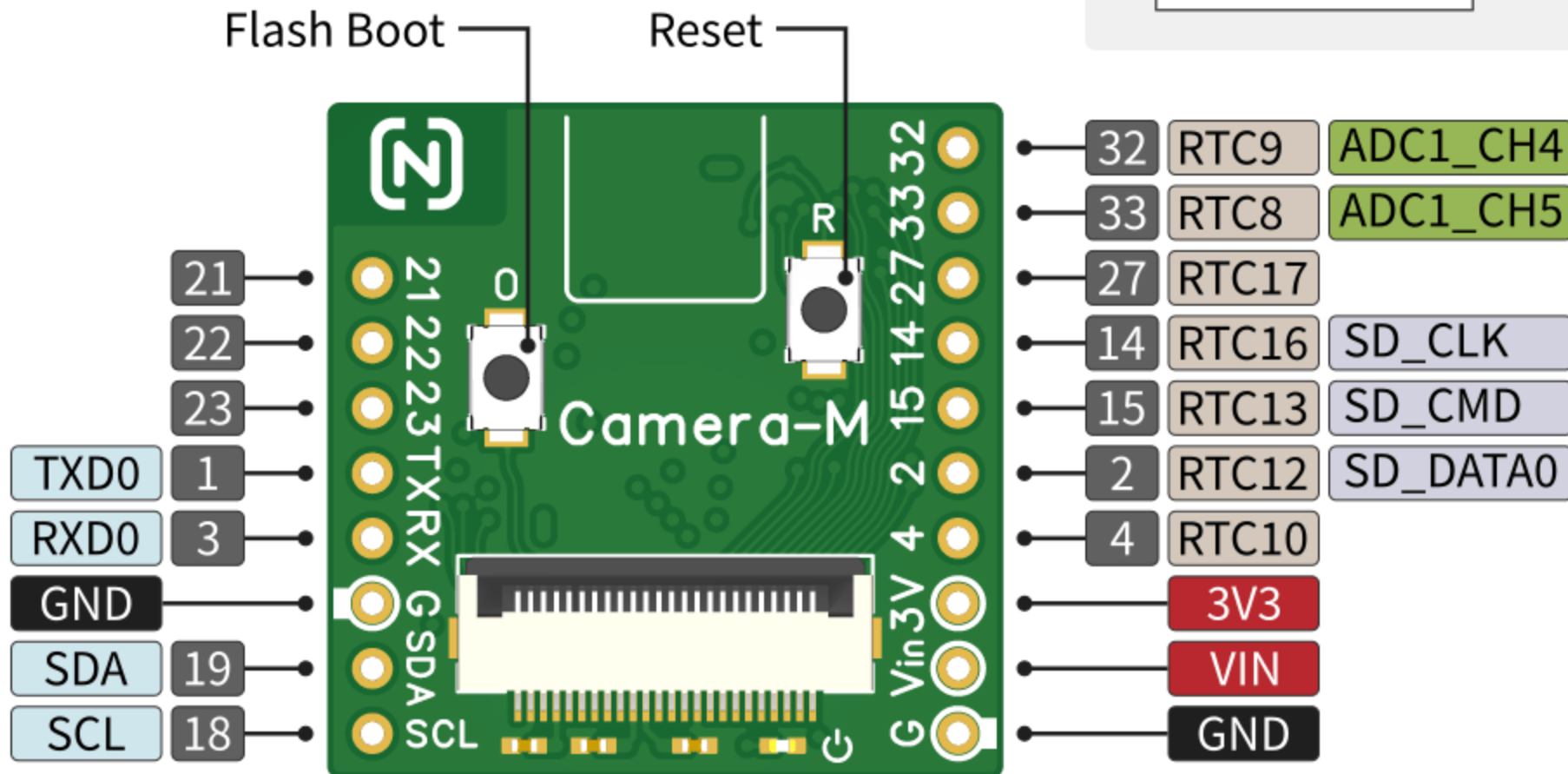


Camera-M

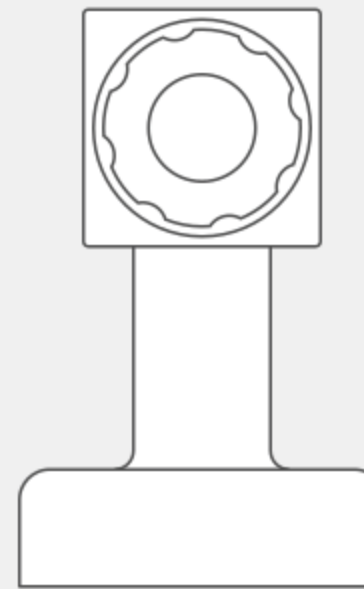
PINOUT DIAGRAM

VIN Unregulated power input
3.7-5.5V

3V3 3V3 output from regulator
ABSOLUTE Max 200mA



OV2640 Camera Pin Assignment



PWDN	-1	Y9	38
RESET	-1	Y8	37
XCLK	0	Y7	36
SIOD	19	Y6	25
SIOC	18	Y5	34
VSYNC	5	Y4	13
HREF	39	Y3	12
PCLK	26	Y2	35

■	Power
■	GND
■	GPIO Pin
■	RTC IO Pin
■	Analog Pin
■	Serial Pin
■	SDMMC Pin

 When connecting the Basic shield, the SD_CLK, SD_CMD, and SD_DATA0 pins are connected to the SD card slot on the shield in SDMMC 1-bit mode with pull-up resistors.

Camera-M

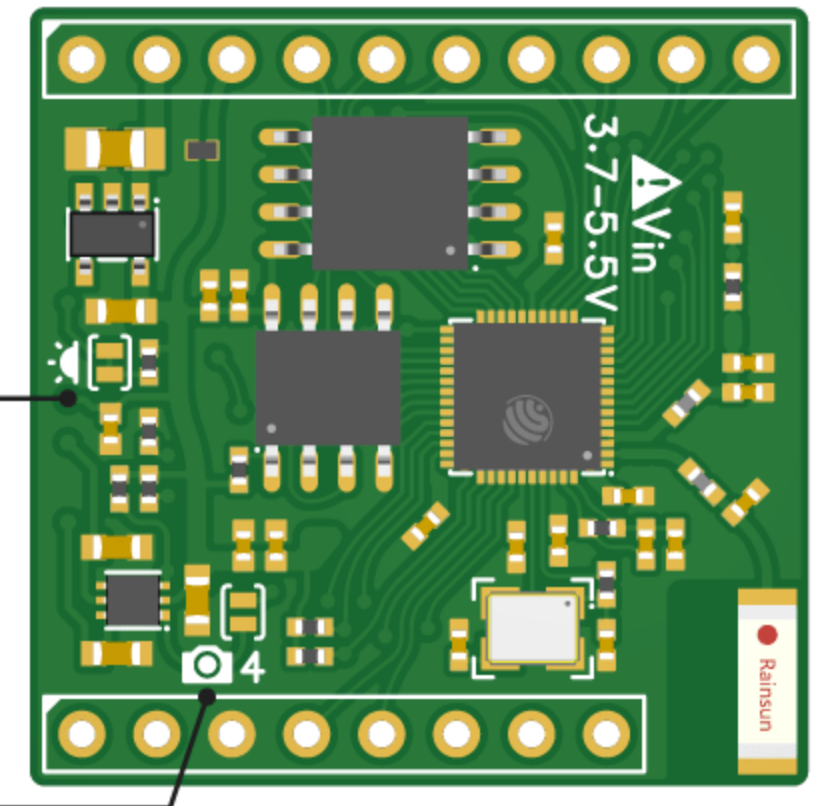
SOLDER JUMPERS

Power-On Indication

To disable the power-on LED, disconnect the jumper.

Camera Power Control

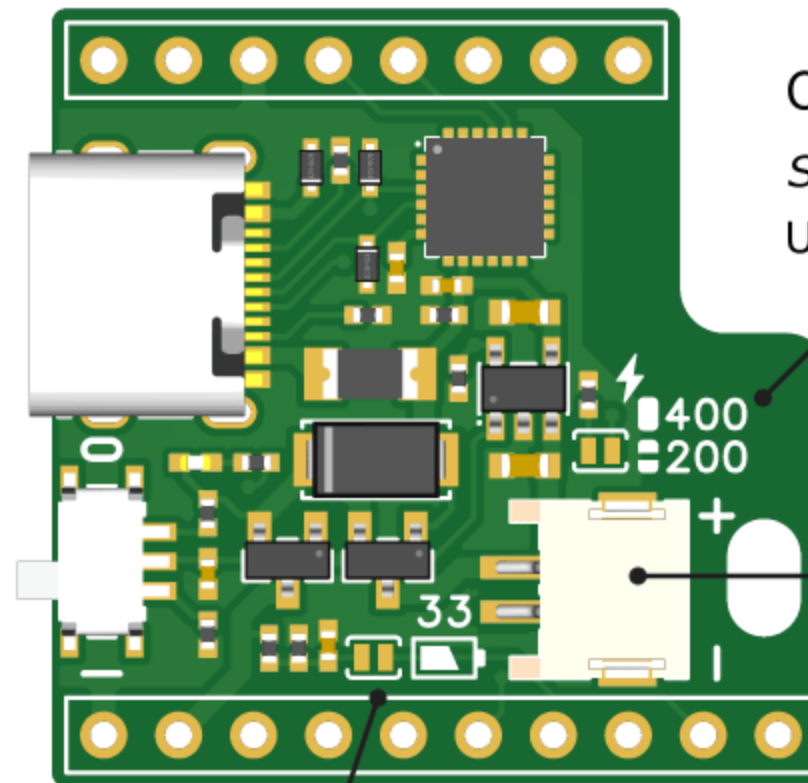
Solder the jumper to connect GPIO4 to the EN pin of the camera regulator. This allows your firmware to control camera power ON (H) or OFF (L), reducing power consumption.



Basic Shield

Battery Monitor

A 100k Ω -100k Ω voltage divider is connected to the battery input. Solder the jumper to connect GPIO33 (ADC1_CH5) to the divider, allowing the firmware to monitor the battery voltage.



Charging Current Selection

Solder jumper to select charging current.
UNCONNECTED - 200mA current limit
CONNECTED - 400mA current limit

LiPo Battery Jack
JST-ZH 1.5mm

VOLTAGE REGULATOR

The diagram illustrates a voltage regulator circuit. The top section features a 3V3 input (VIN) connected to a 10uF capacitor (C1) and the VIN pin of an XC6227C331MR-G voltage regulator (U1). The VSS pin of U1 is connected to GND. The VOUT pin of U1 is connected to a 10uF capacitor (C2) and a 1kΩ resistor (R1). The output of R1 is connected to a 3V3 output terminal and the anode of an LED (LED1) through a current-limiting resistor (J1). The bottom section shows a 3V3 input connected to a 10kΩ resistor (R2) and the EN2 pin of a VRD1328MNX voltage detector (U2). The VIN pin of U2 is connected to GND. The VOUT pin of U2 is connected to a 4.7uF capacitor (C5) and a 2V8 output terminal. The VO1 pin of U2 is connected to a 4.7uF capacitor (C4) and a 1V3 output terminal. The VSS pin of U2 is connected to GND.

CAMERA OV2640

The schematic diagram illustrates the electrical connections for the CAMERA OV2640 module, organized into five main sections:

- Power Supply (Left):** Shows three voltage regulators: AVDD_2V8 (powered by 2V8, decoupled by C10 100nF to AGND), DVDD_1V3 (powered by 1V3, decoupled by C11 100nF to GND), and OVDD_3V3 (powered by 3V3, decoupled by C12 4.7uF and C13 100nF to GND).
- Control Signals (Middle-Left):** Includes the PWDN pin connected to GND via R10 (10kΩ), and the OVDD_3V3 pin connected to GND via R11 (10kΩ). The CAM_RST pin is also shown.
- Data and I/O (Middle-Right):** Lists 19 pins: IO19, IO18, IO5, IO39, IO38, IO0, IO37, IO36, IO26, IO25, IO35, IO34, IO12, and IO13 on the left; and I2C_SDA, I2C_SCL, VSYNC, HREF, Y9, XCLK, Y8, Y7, PCLK, Y6, Y2, Y5, Y3, and Y4 on the right. R12 (4.7kΩ) and R13 (4.7kΩ) are connected between 3V3 and the I2C_SDA/I2C_SCL pins.
- Connector (Right):** A 26-pin FPC1 connector. Pins 1-15 are connected to the module pins: 1 to I2C_SDA, 2 to AVDD_2V8, 3 to I2C_SCL, 4 to CAM_RST, 5 to VSYNC, 6 to PWDN, 7 to HREF, 8 to DVDD_1V3, 9 to OVDD_3V3, 10 to Y9, 11 to XCLK, 12 to Y8, 13 to Y7, 14 to PCLK, 15 to Y6. Pins 16-24 are marked with 'X' (unconnected). Pins 25 and 26 are connected to GND.

HEADERS

3V3

D1

LESD8D3.3CAT5G

GND

H1

1

2

3

4

5

6

7

8

9

10

GND

VIN

3V3

IO4

IO2

IO15

IO14

IO27

IO33

IO32

H2

1

2

3

4

5

6

7

8

I2C_SCL

I2C_SDA

GND

RXD0

TXD0

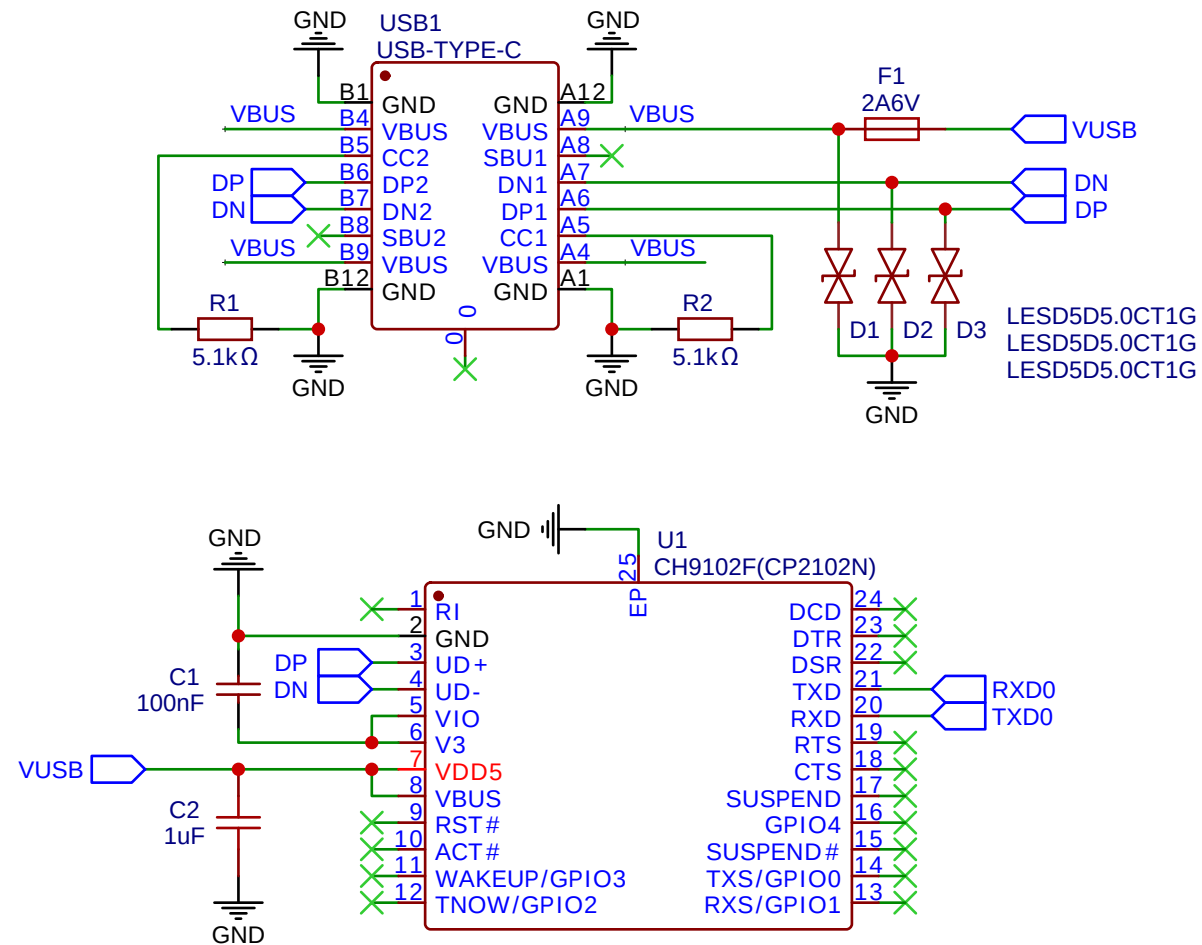
IO23

IO22

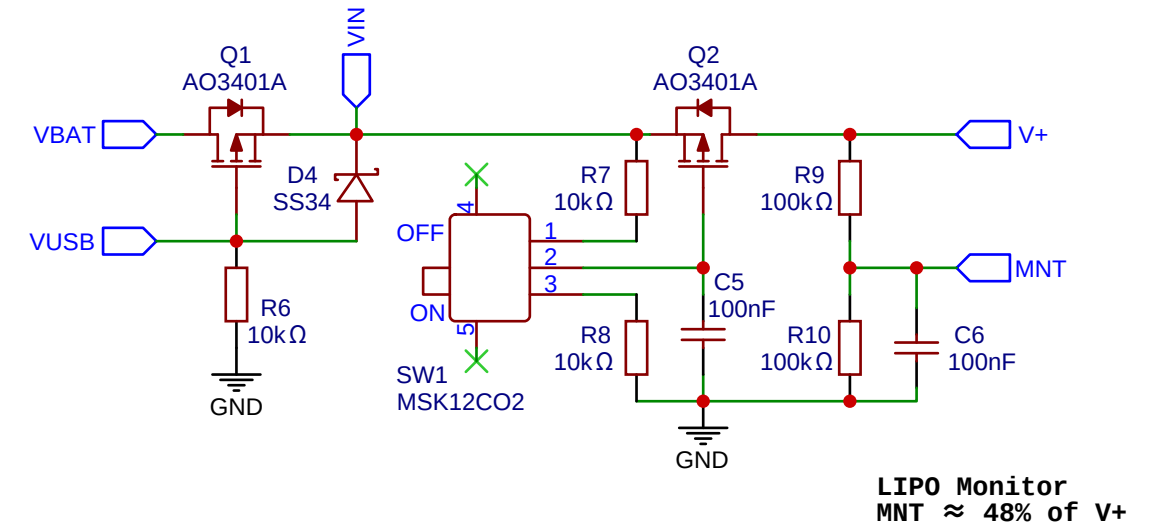
IO21

TITLE: Camera-M		REV: 1.1
	Company: Node-Matrix	Sheet: 1/1
	Date: 2025-03-07	Drawn By: Jason Yang

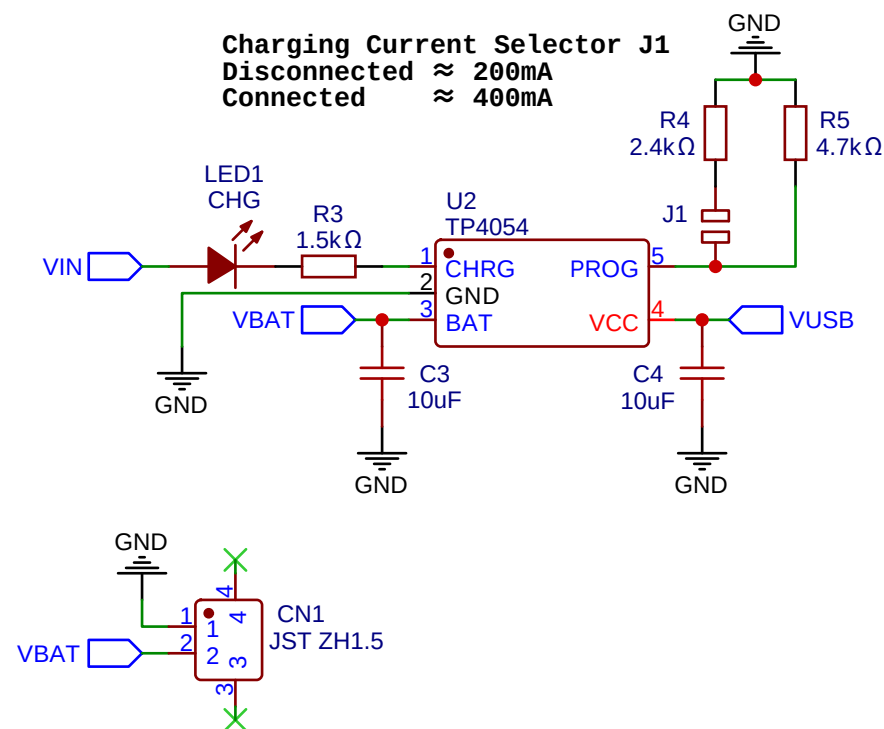
USB TO SERIAL CONVERTER



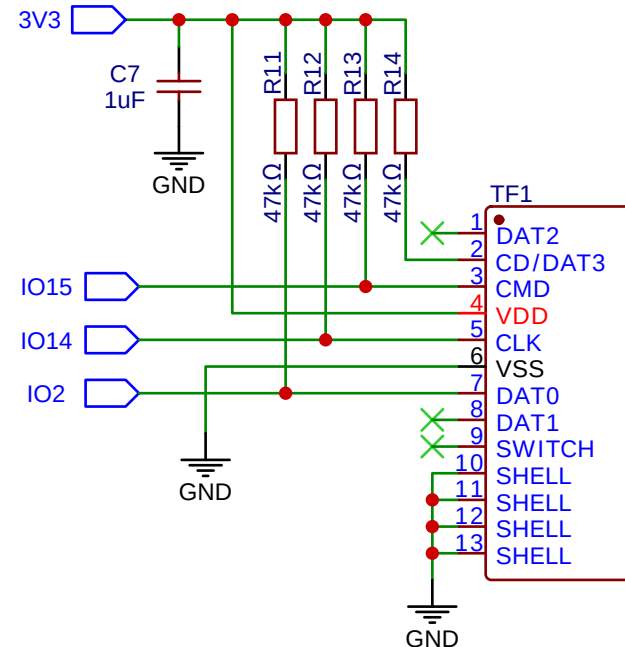
POWER SWITCH



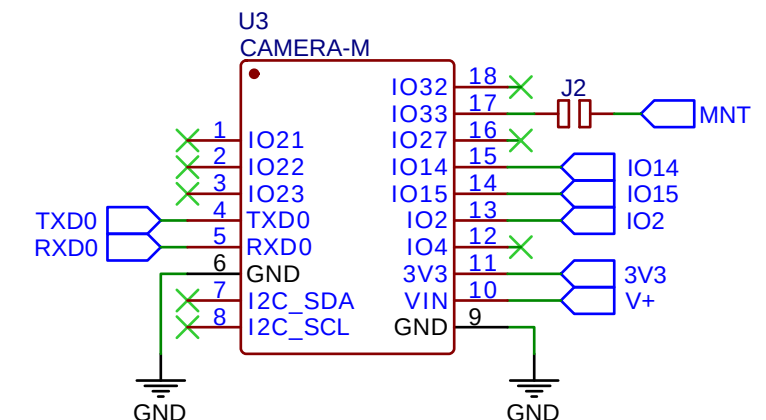
LIPO CHARGER



SD CARD



HEADERS



TITLE:

Camera-M Basic

REV: 1.0



Company: Node-Matrix

Sheet: 1/1

Date: 2023-10-23

Drawn By: Jason Yang