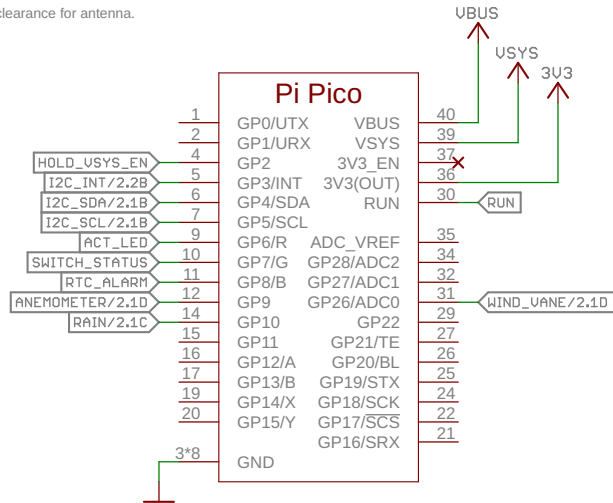


Enviro Weather (PIM628)

Raspberry Pi Pico

As soon as the RP2040 has booted PICO_POWER_EN must be pulled high to maintain power supply to the board.

Ensure copper clearance for antenna.

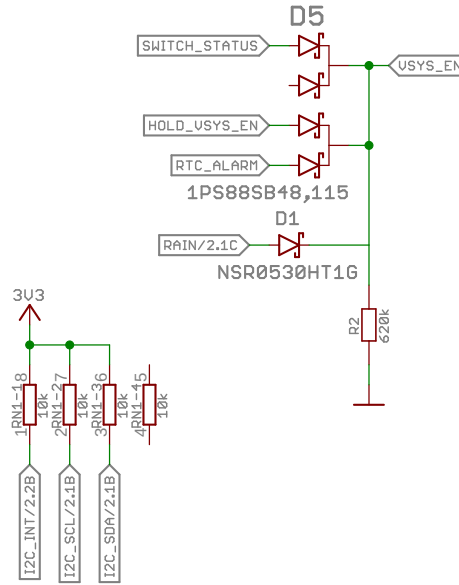


Wakeup events

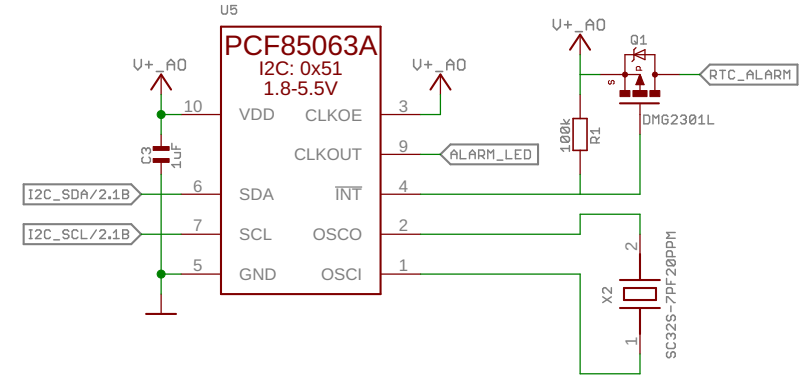
To conserve power the module spends most of its time sleeping. An on-board RTC will periodically wake the module to take a reading.

The module will also wake when USB power is applied, the user presses the STATUS switch, or when an external trigger fires.

All wake triggers are active high apart from the RTC alarm.



RTC

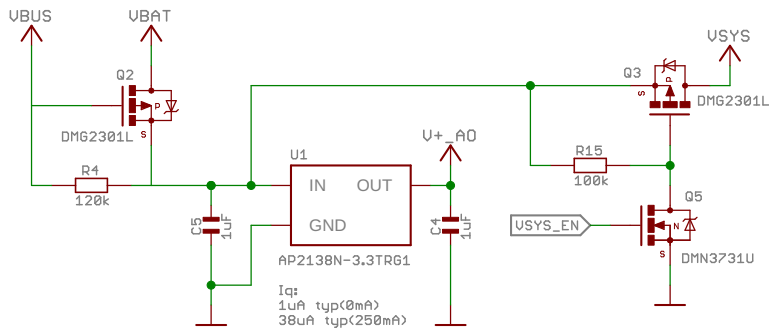


3V3 LDO / "always on" supply / VSYS EN

Provides the "always on" V+ rail (between 1.8V and 3.3V) needed by the system when in low power (shutdown) mode. Nothing draws much power from this rail to ensure that modules are using minimal battery power when idle.

The regulator is supplied by VSYS when VBUS is present, or directly from VBAT otherwise.

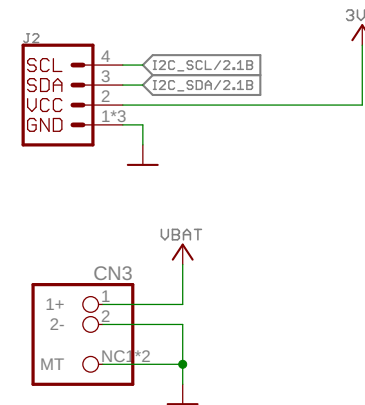
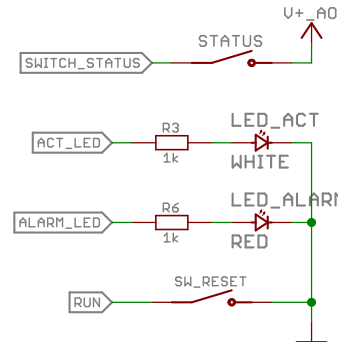
Using the built in 3V3_EN signal on the Pico draws too much power in sleep mode so we have our own cut off for VSYS which can completely disconnect the Pico.



QW/ST / Battery connectors

Battery input voltage between 2V and 5.5V - i.e. a protected LiPo cell or 2/3xAAA battery holder. Battery connector mounting pads connected to ground plane (no thermals) for mechanical strength.

User interface



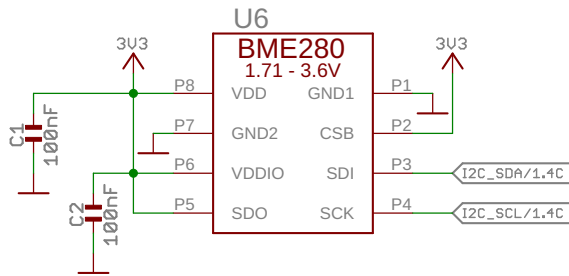
Enviro Weather (PIM628)

BME280 environmental sensor

CSB (chip select) tied to 1V8 to put into I2C mode.

SDO tied to 1V8 selects I2C address 0x77.

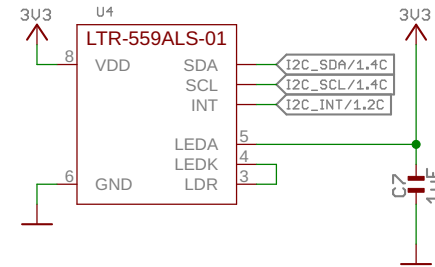
BME280 decoupled with C10



LTR-559 digital light sensor

Datasheet:

https://optoelectronics.liteon.com/upload/download/ds86-2013-0003/ltr-559als-01_ds_v1.pdf



Weather sensor connections

Rain gauge outputs a reed-switch-short per bucket-tipping

Wind direction (vane) sensor outputs a resistance.

Wind speed sensor (anemometer) outputs a reed-switch-short per rotation.

