EdgeTinker Lite

BLOCK DIAGRAM

ETPCB0003 | Hardware V1 RevC

Battery input J6
JST XH connector

Power path
Q3, D6: USB has priority

VIN (5V0 or VBAT)

TPS63900 (U9)
Buck-boost regulator
3.3 V, 400 mA

3V3_ESP

Rail switch Q2
Enabled by IO2

3V3_COM switched rail

USB 5V diode-OR
FB1, D3 and FB2, D5

USB-C J4
Upload and console
ESD: U7

USB

CH343P (U8)
USB to UART bridge
Auto-download Q1

UART0 (IO16, IO17)

DTR, RTS

USB-C J1
ESP32-C6 native USB
ESD: U6

USB (IO12, IO13)

Buttons
RESET, BOOT, USER

EN, IO9, IO1

User LED D4
Green, driven by Q6

IO8

ESP32-C6-MINI-1-H4 (U5)
Main controller
Wi-Fi 6, Bluetooth LE,
Zigbee (802.15.4)

I2C (IO6, IO7)

INT1 (IO0)

LIS2DH12 (U1)
3-axis accelerometer
I2C 0x18

AHT20 (U3)
Temp + humidity, 0x38

AGS10 (U4)
VOC gas sensor, 0x1A

PCF85063A (U2)
Real-time clock, 0x51

Coin cell B1
CR1220 RTC backup

SPI (IO19 to IO22)

microSD socket SD1
SPI mode

Header J5
RAK3172 UART, SPI, I2C,
SWD, BOOT0, RST

Module pins

RAK3172 (U10)
LoRa / LoRaWAN module
IPEX antenna connector

LP UART (IO4, IO5)

Reset (IO3)

Qwiic connector J7
External I2C devices

GPIO

Headers J2, J3
GPIO, I2C, power rails

NOTES
3V3_ESP is always on and also powers the RAK3172, CH343P I/O, Qwiic J7, buttons and LEDs.
The dashed red outline and line mark the switched rail 3V3_COM (3V3 SW): drive IO2 HIGH to power it.

Legend:

Controller · LoRa radio · Power · Sensors · Real-time clock · Storage · USB bridge · Connectors · Buttons and LEDs

Power rail · Switched rail · USB / UART · I2C · SPI · GPIO / control