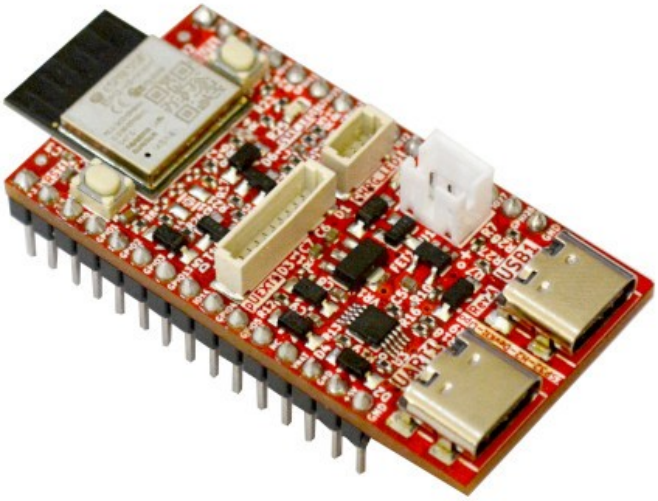


ESP32-H2-DevKit-Lipo

User Manual

Rev.1.0 January 2024

olimex.com

Table of Contents

What is ESP32-H2-DevKit-Lipo

ESP32-H2 combines IEEE 802.15.4 connectivity with Bluetooth 5 (LE).

The SoC is powered by a single-core, 32-bit RISC-V microcontroller that can be clocked up to 96 MHz.

The ESP32-H2 has been designed to ensure low power consumption and security for connected devices.

ESP32-H2 has 320 KB of SRAM with 16 KB of Cache, 128 KB of ROM, 4 KB LP of memory, and a built-in 2 MB or 4 MB SiP flash.

It has 19 programmable GPIOs with support for ADC, SPI, UART, I2C, I2S, RMT, GDMA and LED PWM.

Bluetooth supports: Bluetooth Low Energy (Bluetooth 5.3 certified), Bluetooth mesh, Bluetooth Low Energy long range (Coded PHY, 125 Kbps and 500 Kbps), Bluetooth Low Energy high speed (2 Mbps)

IEEE Standard 802.15.4-2015 compliant

Supports Thread 1.3

Supports Zigbee 3.0

Supports Matter

Supports HomeKit, MQTT

ESP32-H2-DevKit-Lipo features

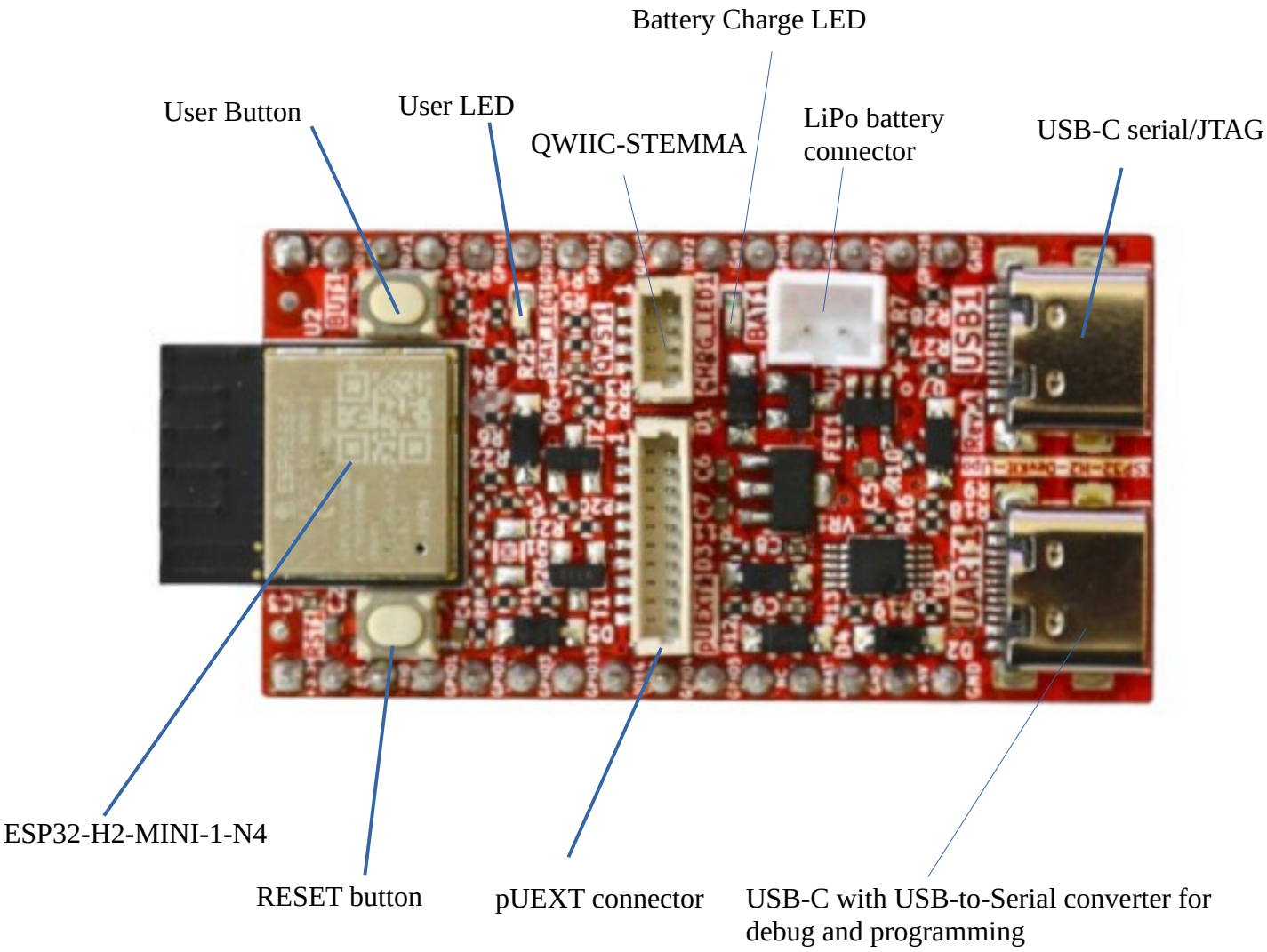
- ESP32-H2 embedded, RISC-V single-core 32-bit LX7 microprocessor, up to 96 MHz, 128 KB ROM, 320 KB SRAM, 4 KB LP Memory, 4 MB flash
- USB-C with USB to Serial converter for programming / debugging
- USB-C connected directly to ESP32-H2
- LiPo battery charger and connector
- pUEXT UEXT connector
- Qwiic/Stemma connector
- Reset button
- User button
- User LED
- all GPIOs available on two headers at 25.4 mm space
- Dimensions: 48 x 25 mm
- Operating temperature: -40+85C

Order codes for ESP32-H2-DevKit-Lipo and accessories:

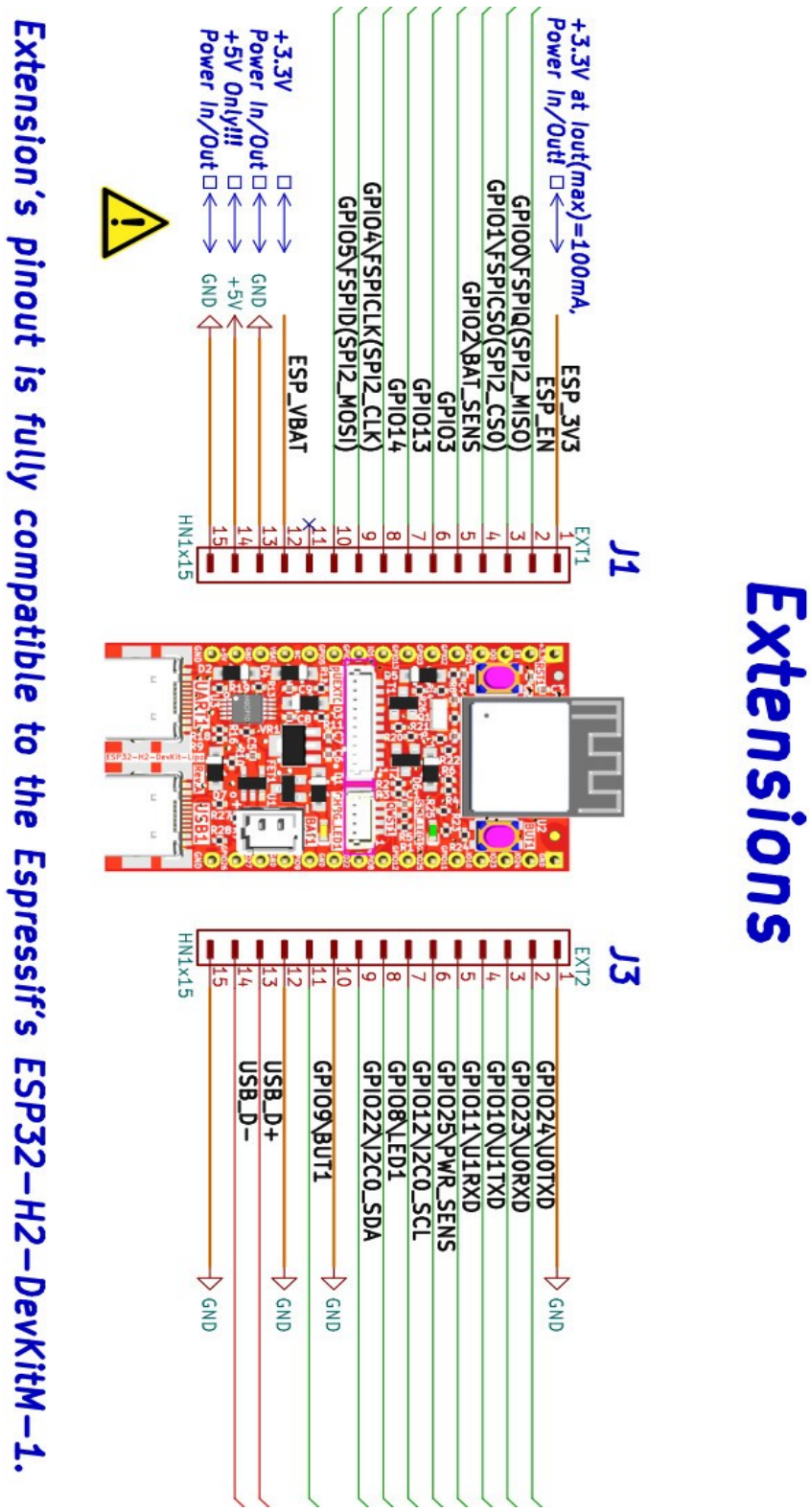
ESP32-H2-DevKit-Lipo	commercial grade -40+85C board with internal antenna
USB-CABLE-A-TO-C-1M	USB-C cable
BATTERY-LIPO1400mAh	- Lipo battery 3.7V 1400mAh – note these batteries can be shipped only by ground so we can deliver only to EU destinations.
UEXT modules	- different sensors, relays, LCDs, RTC, GSM, GPS etc accessories which can be connected to UEXT connector

HARDWARE

ESP32-H2-DevKit-Lipo layout:



ESP32-H2-DevKit-Lipo GPIOs:



ESP32-H2-DevKit-Lipo schematics:

ESP32-H2-DevKit-Lipo latest schematic is on GitHub

ESP32-H2-DevKit-Lipo power supply:

ESP32-H2-DevKit-Lipo can be powered by:

- USB-C connectors USB1 or UART1
- EXT1 pin 14 (+5V)
- LiPo battery

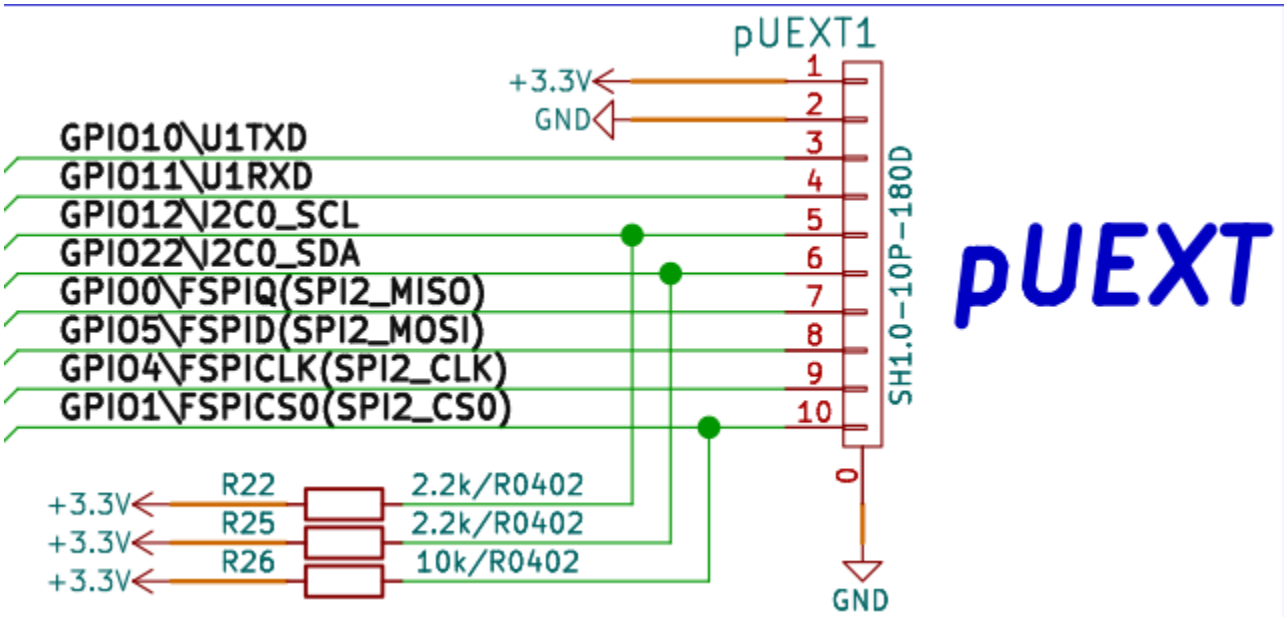
the switch between these is automatically without voltage drop

Power consumption of ESP32-H2-DevKit-Lipo is less 10uA in deep sleep

UEXT connector:

UEXT connector stands for Universal EXTension connector and contain +3.3V, GND, I2C, SPI, UART signals.

pUEXT is 1mm step boxed plastic connector. All signals are with 3.3V levels.



Olimex has developed number of MODULES with this connector. There are temperature, humidity, pressure, magnetic field, light sensors. Modules with LCDs, LED matrix, Relays, Bluetooth, Zigbee, WiFi, GSM, GPS, RFID, RTC, EKG, sensors and etc.

SOFTWARE:

ESP32-H2-DevKit-Lipo is supported by

- Espressif ESP-IDF
- Arduino IDE

Revision History

Revision 1.0 January 2024