

ESP32-S3-DevKit-LiPo

User Manual

olimex.com

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Introduction to ESP32-S3-DevKit-LiPo

ESP32-S3 is a dual-core XTensa LX7 MCU, capable of running at 240 MHz. Apart from its 512 KB of internal SRAM, it also comes with integrated 2.4 GHz, 802.11 b/g/n Wi-Fi and Bluetooth 5 (LE) connectivity that provides long-range support. It has 45 programmable GPIOs and supports a rich set of peripherals. ESP32-S3 supports larger, high-speed octal SPI flash, and PSRAM with configurable data and instruction cache.

[ESP32-S3-DevKit-LiPo](#) board is development board with ESP32-S3 and these features:

- ESP32-S3-WROOM-1-N8R8 8MB RAM 8 MB Flash
- Green Status LED
- Yellow Charge LED
- UEXT connector (pUEXT 1.0 mm step connector)
- USB-C power supply and USB-Serial programmer
- USB-C OTG JTAG/Serial connector
- LiPo charger
- LiPo battery connector
- External power sense
- Battery measurement
- Automatic power supply switch between USB and LiPo
- RESET button
- USER button
- Dimensions 56x28 mm

Order codes for ESP32-S3-DevKit-Lipo and accessories:

[ESP32-S3-DevKit-LiPo](#) ESP32-S3 development board with USB JTAG/Debugger and Lipo charger

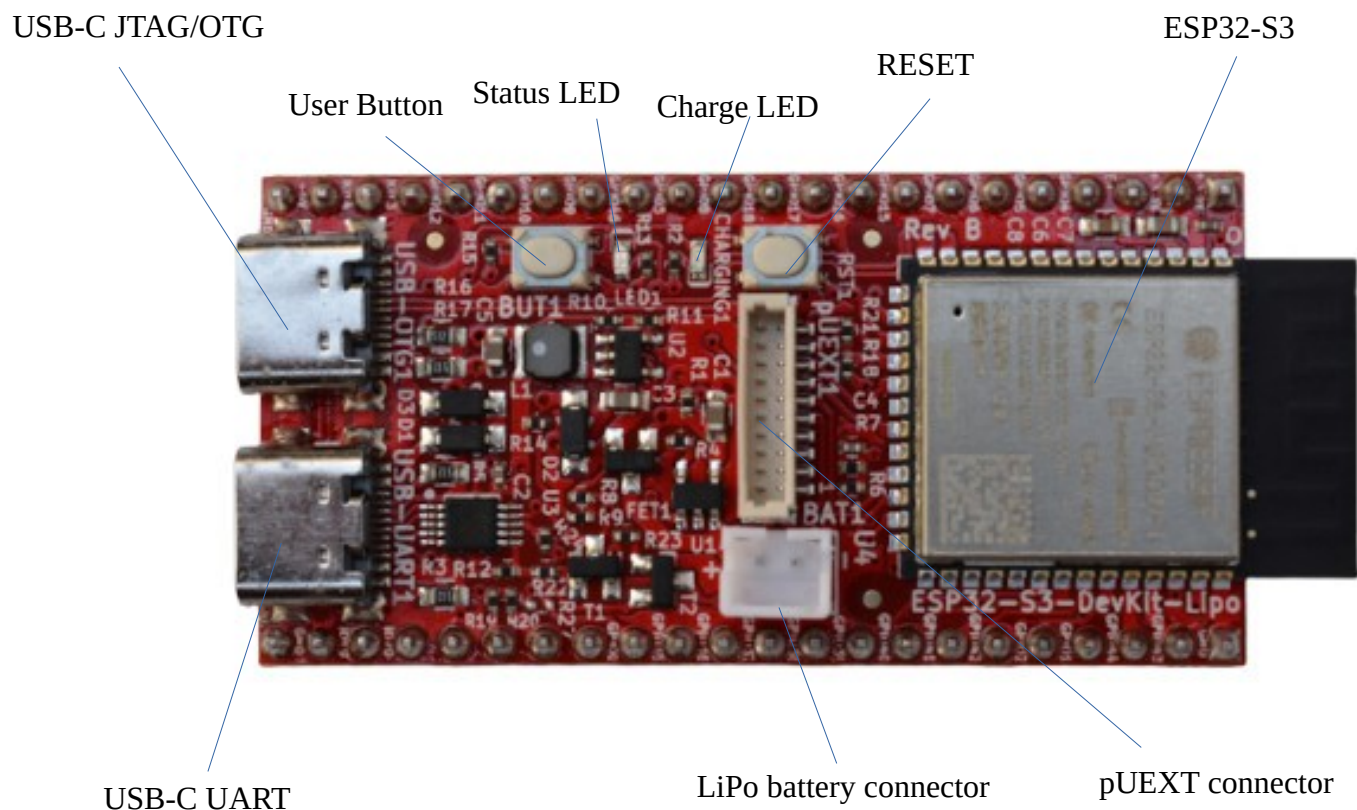
[USB-CABLE-A-TO-C-1M](#) USB-C power and programming cable

[LiPo](#) batteries

[UEXT](#) sensors and modules

HARDWARE

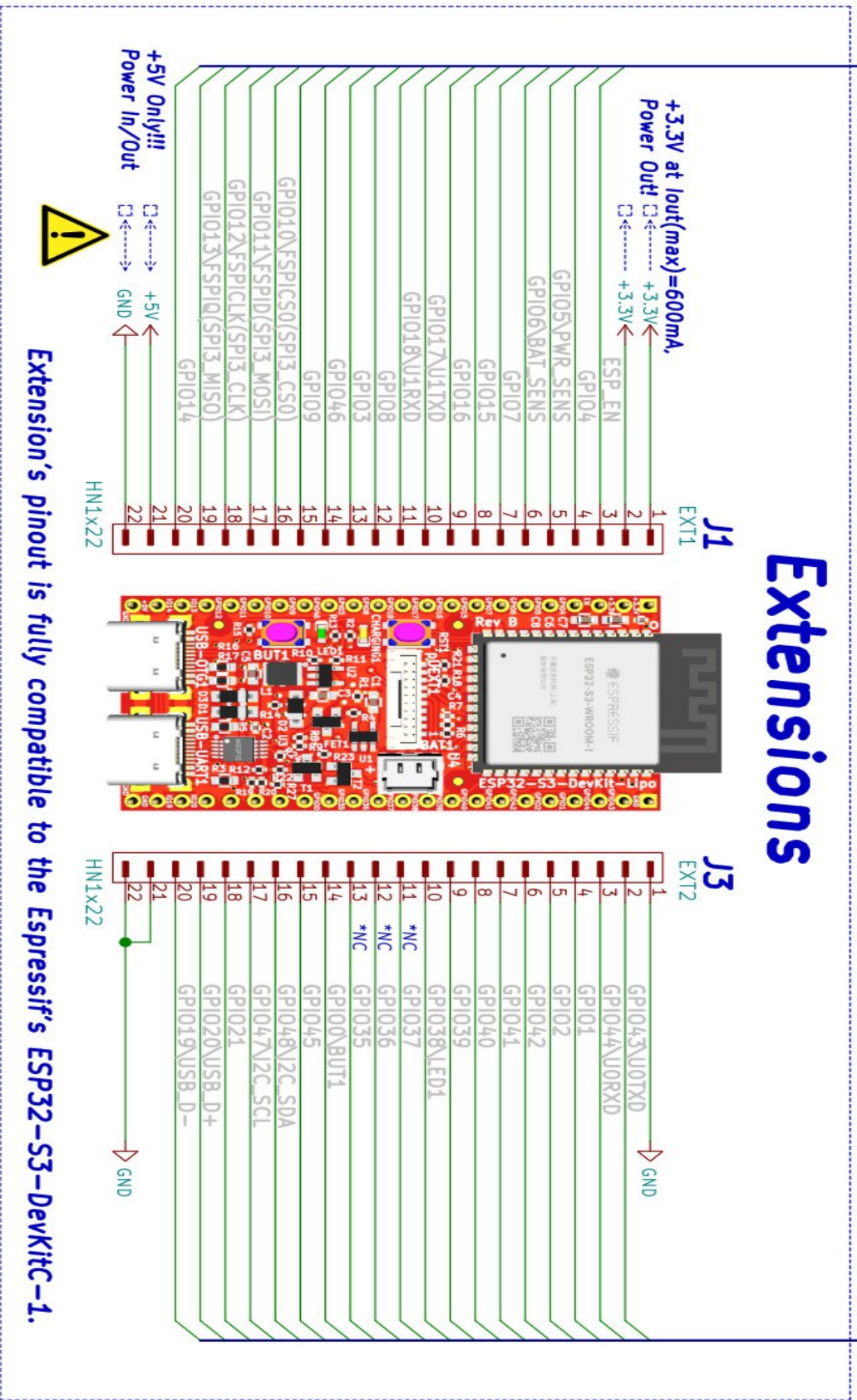
ESP32-S3-DevKit-LiPo layout:





ESP32-S3-DevKit-LiPo GPIOs:

Extensions



POWER SUPPLY:

This board can be powered by:

+5V **EXT1.pin 21** can be input or output

USB-UART USB-C connector

USB-OTG1 USB-C connector

LiPo battery

ESP32-S3-DevKit-Lipo schematics:

[ESP32-S3-DevKit-LiPo](#) latest schematic is on [GitHub](#)

UEXT connector:

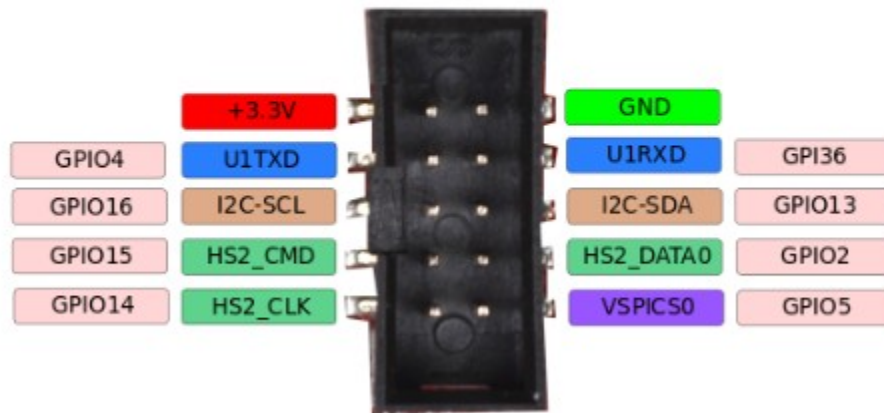
UEXT connector stands for Universal EXTension connector and contain +3.3V, GND, I2C, SPI, UART signals.

UEXT connector can be in different shapes.

The original UEXT connector is 0.1" 2.54mm step boxed plastic connector. All signals are with 3.3V levels.

UEXT connector

note it share same pins with EXT1 and EXT2

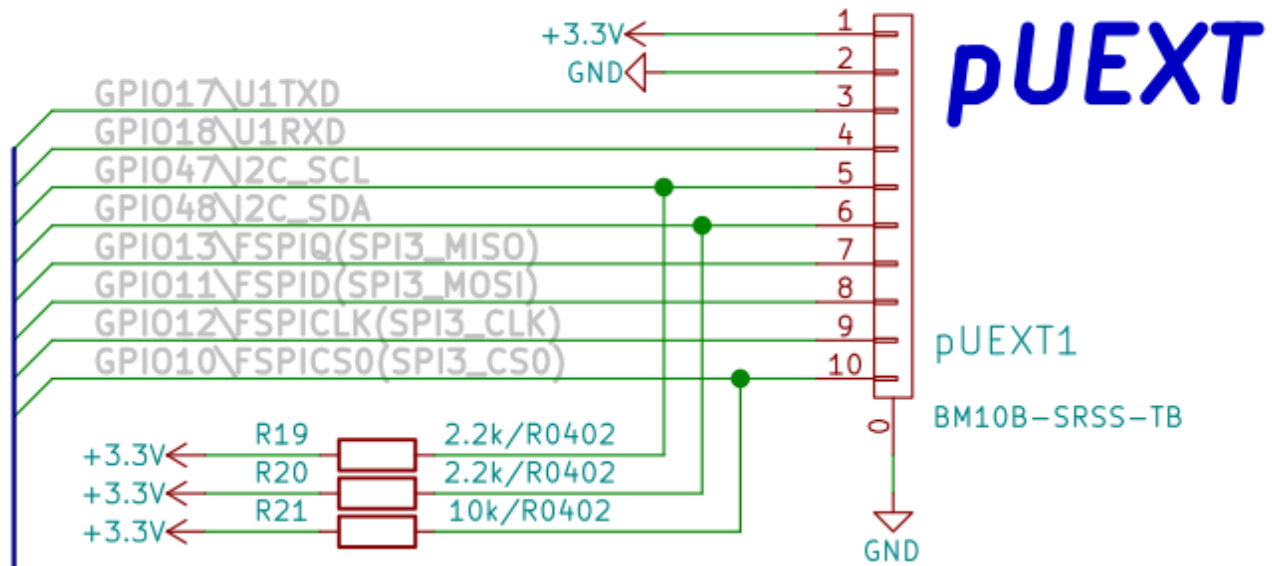


As the boards become smaller and smaller some smaller packages were introduced too beside the original UEXT connector

- mUEXT is 1.27 mm step boxed header connector which is with same layout as UEXT
- pUEXT is 1.0 mm single row connector (this is the connector used in RP2040-PICO30)

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.

pUEXT signals:



SOFTWARE:

- [ESP32-S3-DevKit-Lipo Linux image](#)
- ESP32-S3-DevKit-LiPo [Linux build instructions](#) from jcmvbkbc and [here](#)
- [ESP32-S3-DevKit-Lipo Linux build instructions](#) from ESP32DE

Revision History

Revision 1.0 July 2023