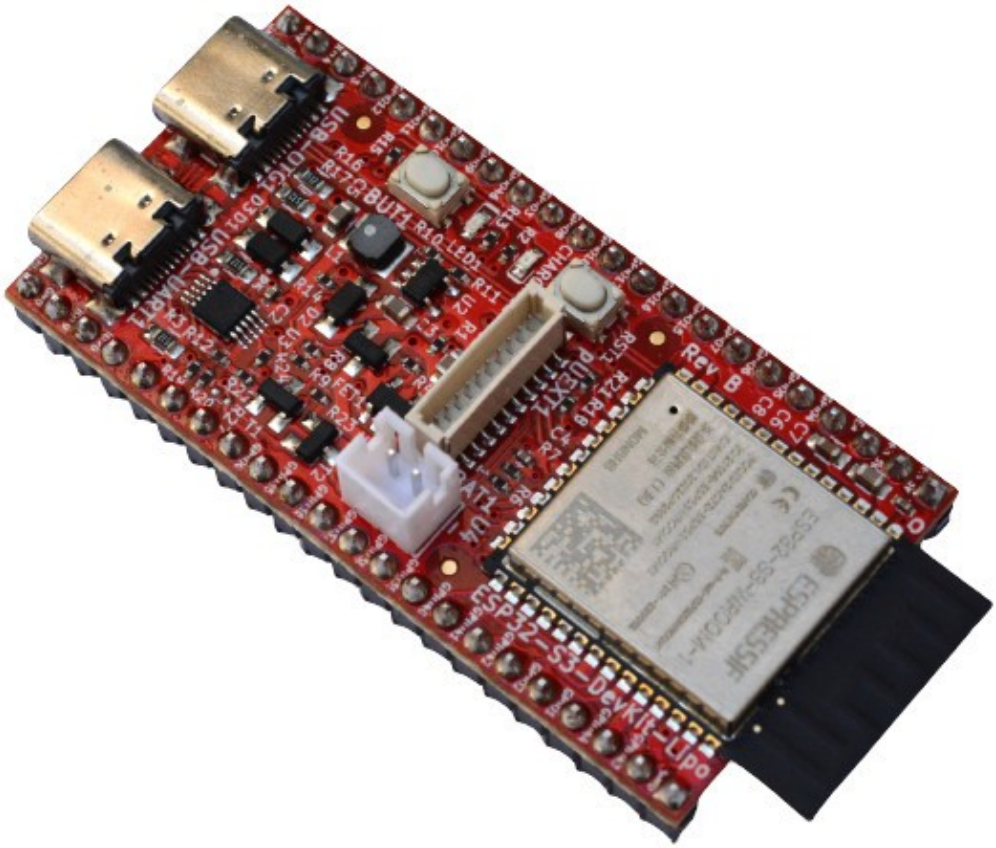


ESP32-S3-DevKit-LiPo

User Manual

Rev.1.0 July 2023

olimex.com

Table of Contents

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:

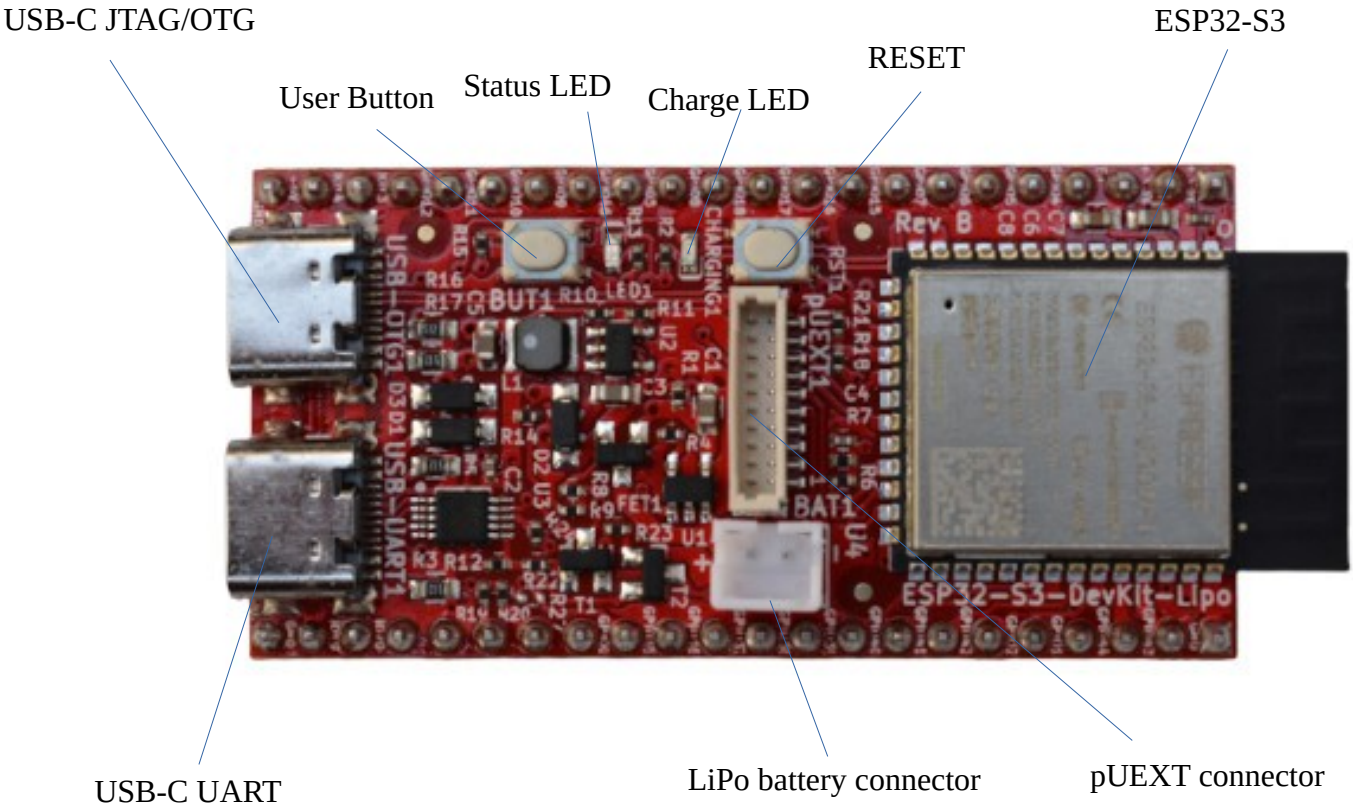
- ESP32-S3-WROOM-1-N8R8 8MB RAM 8 MB Flash
- Green Status LED
- Yellow Charge LED
- UEXT connector (pUEXT 1.0 mm step connector)
- USB-C power supply and USB-Serial programmer
- USB-C OTG JTAG/Serial connector
- LiPo charger
- LiPo battery connector
- External power sense
- Battery measurement
- Automatic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

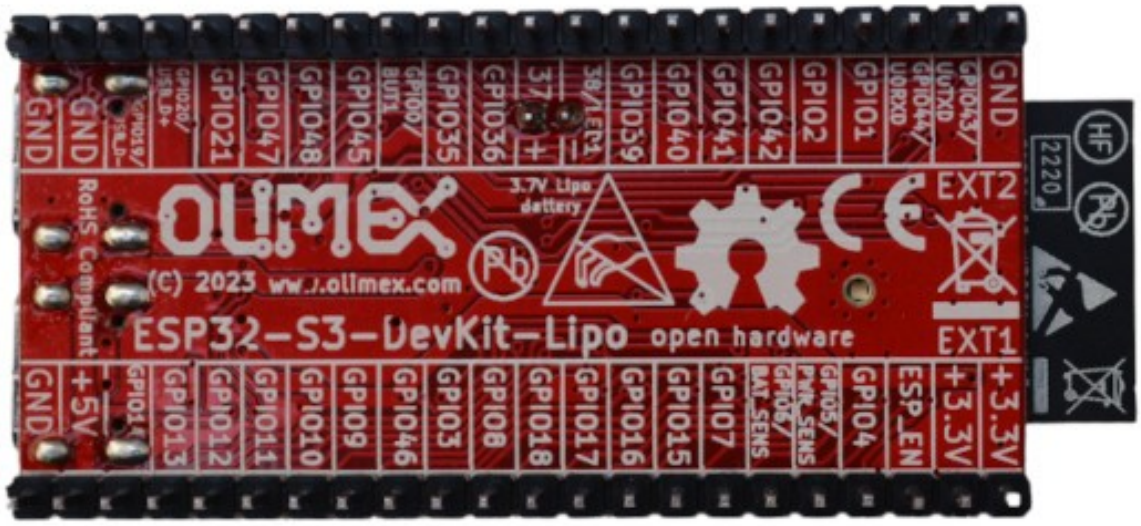
Order codes for ESP32-S3-DevKit-Lipo and accessories:

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

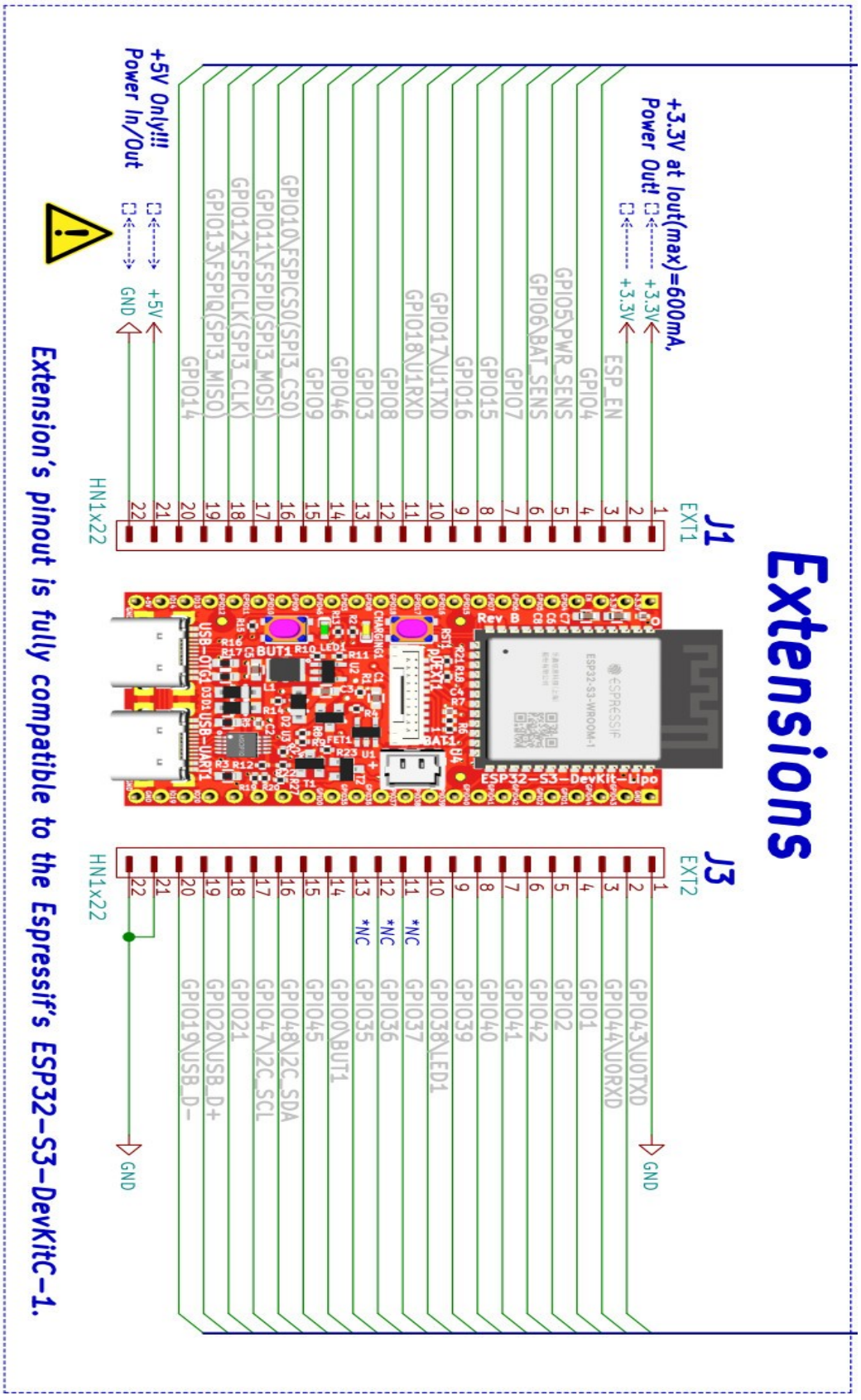
HARDWARE

ESP32-S3-DevKit-LiPo layout:




GND
GPIO43/ U0TXD
GPIO44/ U0RXD
GPIO1
GPIO2
GPIO42
GPIO41
GPIO40
GPIO39
3.7V
GPIO36
GPIO35
GPIO45
GPIO48
GPIO47
GPIO21
GPIO20/ USB_D+
GPIO19/ USB_D-
GND
GND
EXT2
3.7V Lipo battery
(C) 2023 www.olimex.com
RoHS Compliant
ESP32-S3-DevKit-Lipo open hardware
EXT1
GND
+5V
GPIO14
GPIO13
GPIO12
GPIO11
GPIO10
GPIO9
GPIO46
GPIO3
GPIO8
GPIO18
GPIO17
GPIO16
GPIO15
GPIO7
GPIO6/ BAT_SENS
GPIO5/ PWR_SENS
GPIO4
ESP_EN
+3.3V
+3.3V
HF
2220

ESP32-S3-DevKit-LiPo GPIOs:



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:

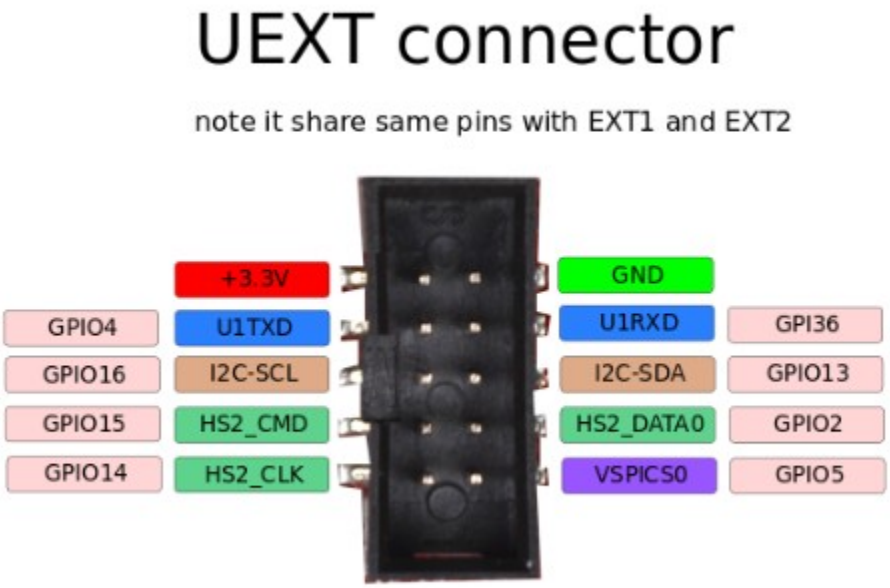
ESP32-S3-DevKit-LiPo latest schematic is on GitHub

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.



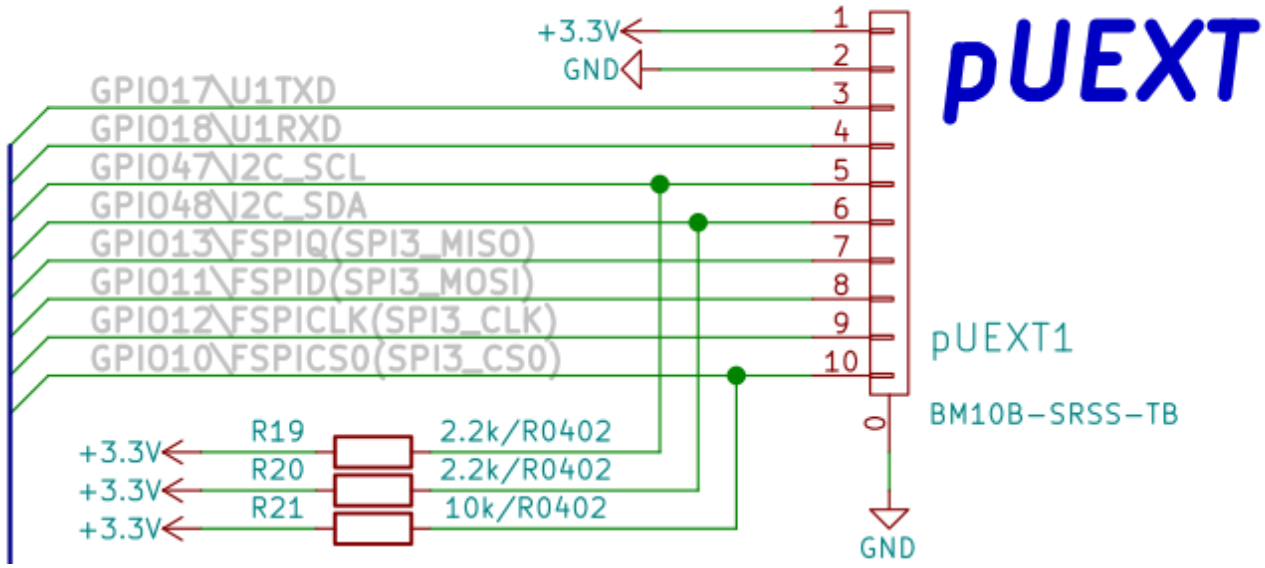
As the boards become smaller and smaller some smaller packages were introduced too beside the original UEXT connector

- 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 form ESP32DE

Revision History

Revision 1.0 July 2023