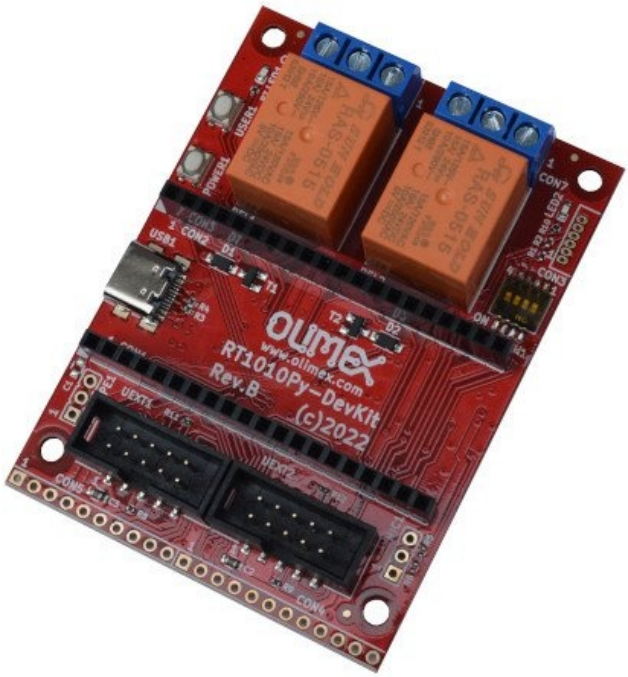


RT1010Py-DevKit

User Manual

Rev.1.1 Oct. 2025

olimex.com

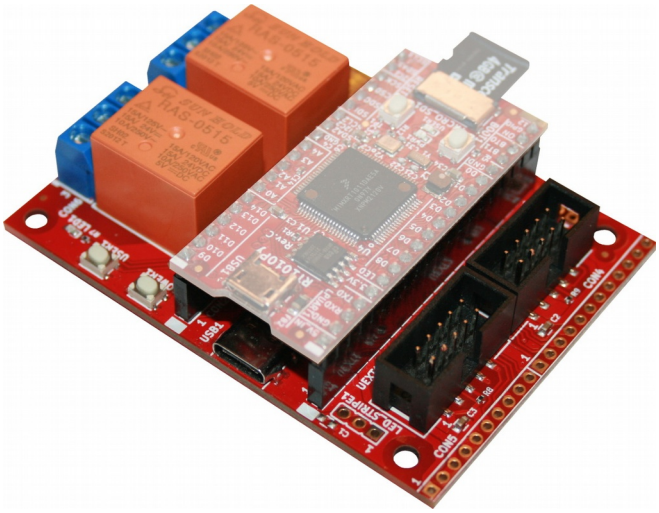
Table of Contents

Revision

Revision	Date	By	Description
1.0	Jan. 2024	TsvetanUsunov	Initial document
1.1	Oct. 2025	Meurisse D.	Adding content and details

What is RT1010Py-DevKit

RT1010Py-DevKit is development board for RT1010Py module.



RT1010Py-DevKit has these features:

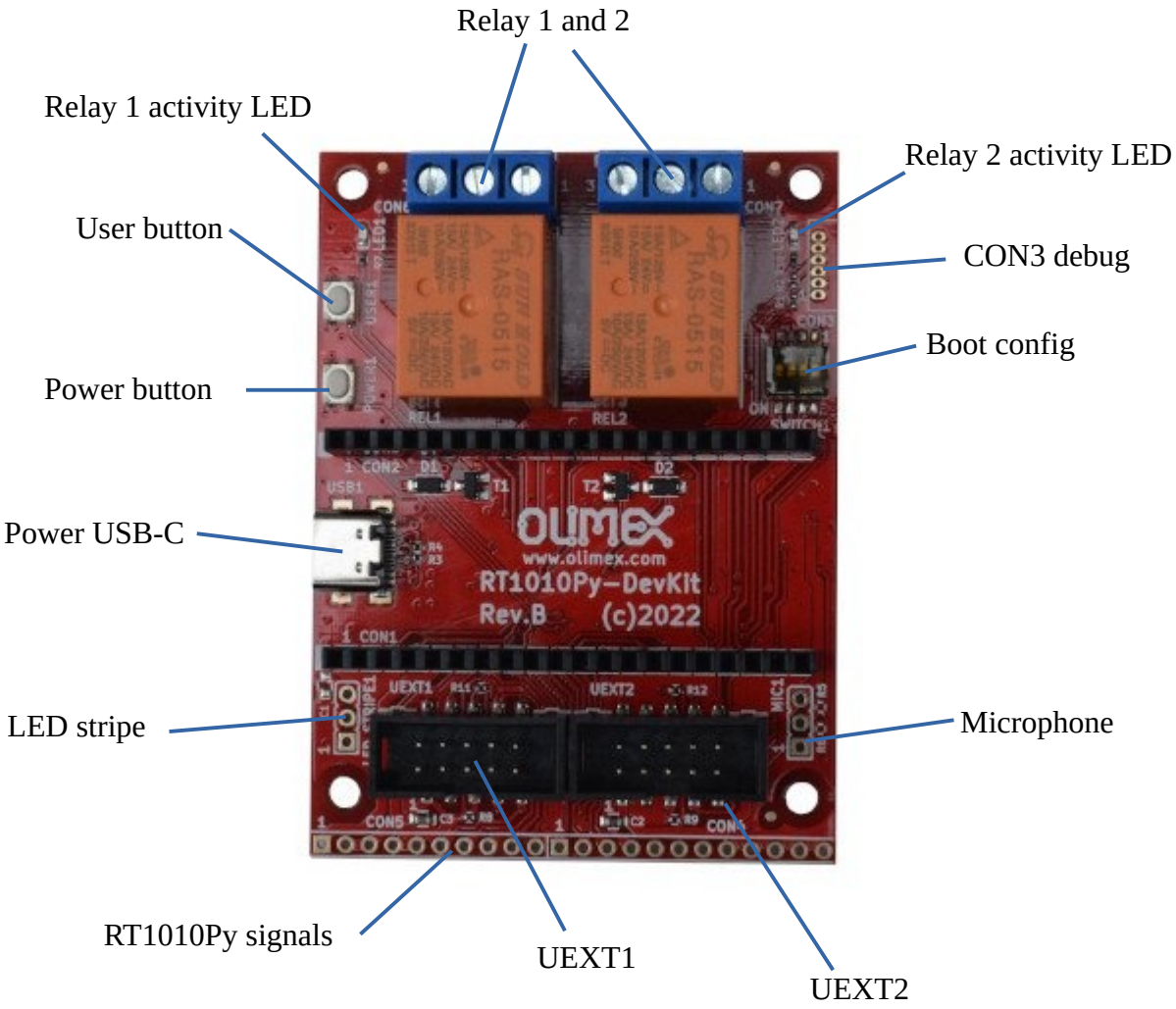
- Socket for RT1010Py
- USB-C power supply input
- Two buttons
- Two relays 10A/250VAC
- Two UEXT connectors
- Boot configuration slide switch
- Dimensions: (55 x 75)mm ~ (2.17 x 2.95)"

Order codes for RT1010Py-DevKit and accessories

RT1010Py-DevKit	evaluation board for RT1010Py with two relays, two UEXT, USB-C
RT1010Py	RT1011 board running at 500Mhz with MicroPython
USB-CABLE-A-MICRO-1.8M	USB-A to micro cable
MICRO-SD-16GB-CLASS10	16GB microSD card
UEXT modules	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.

HARDWARE

RT1010PyDevKit layout

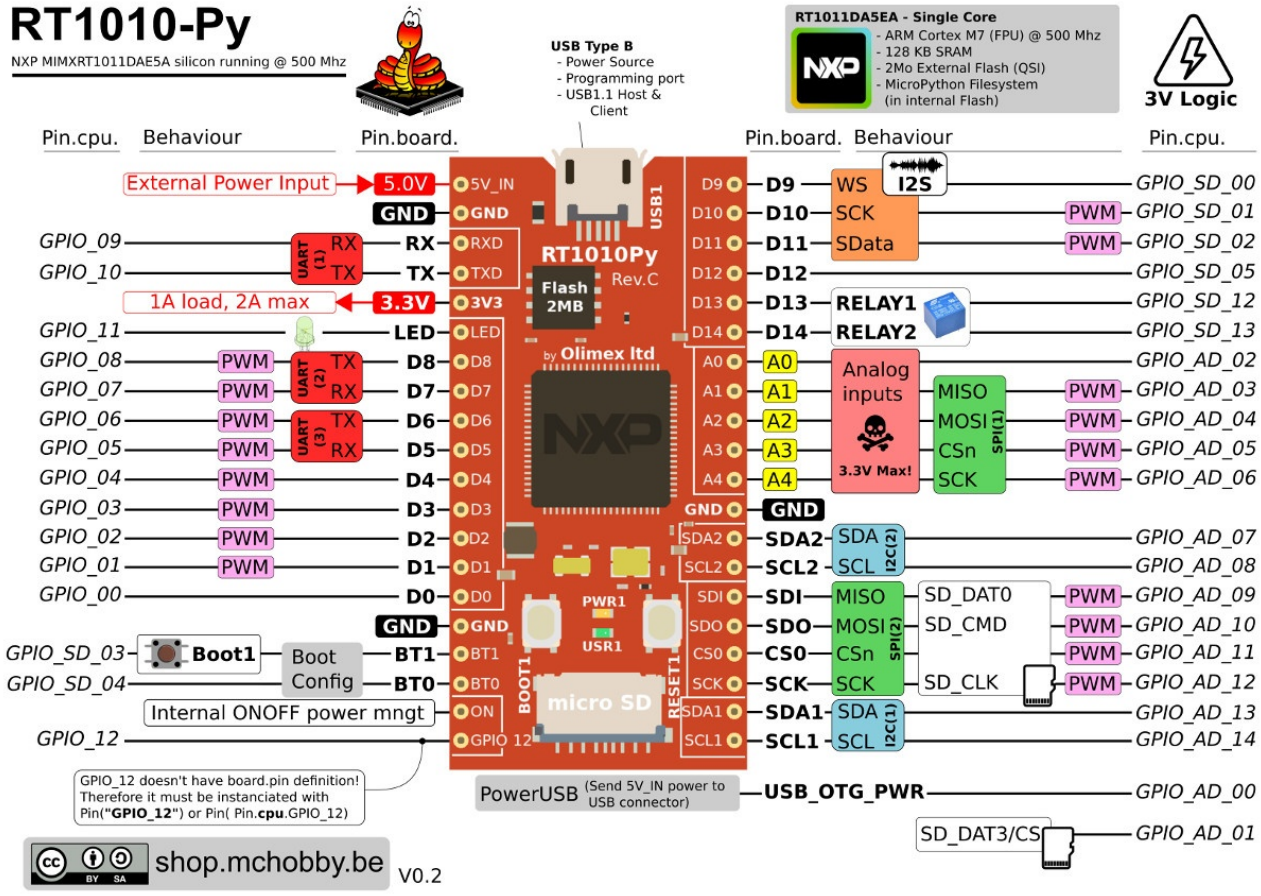


RT1010Py-DevKit schematics

RT1010Py-DevKit latest schematic is on GitHub

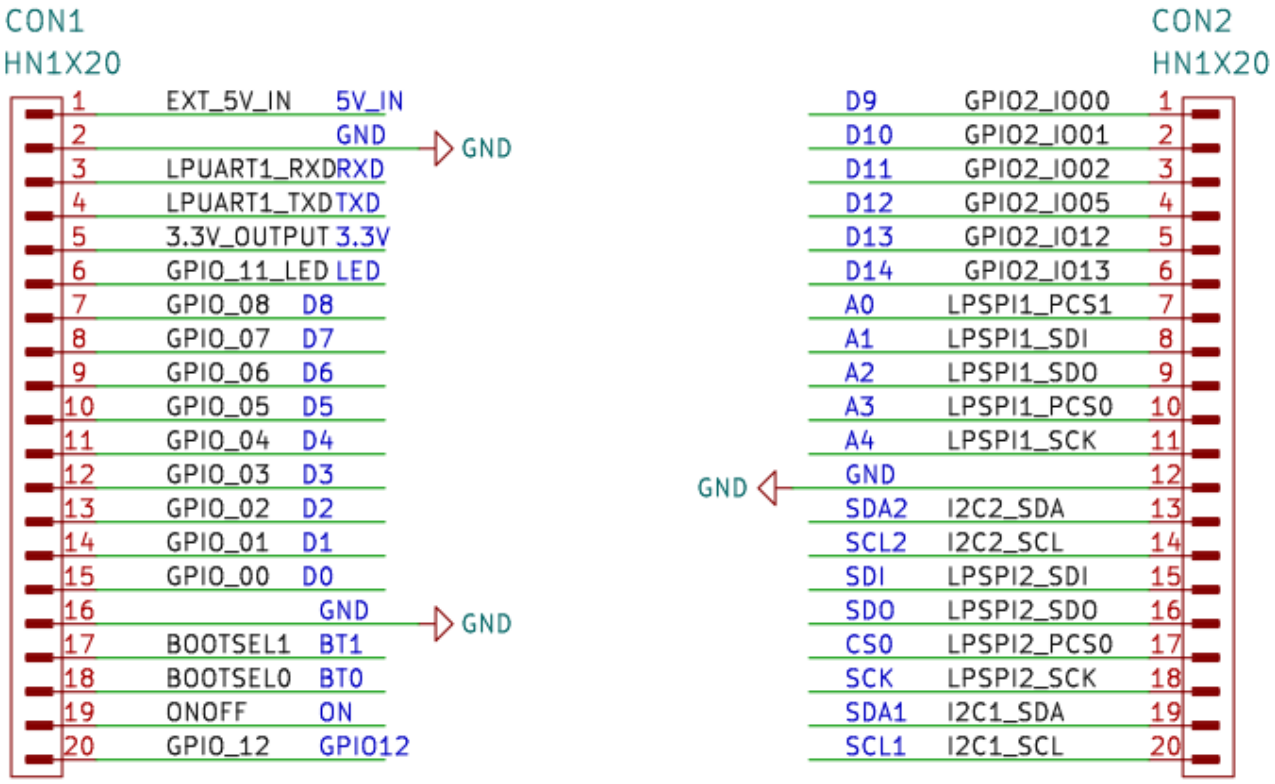
RT1010Py GPIOs

Le following picture remind the RT1010Py pinout.



DevKit GPIO connectors

The DevKit GPIO connector is designed to receive the RT1010Py microcontroler



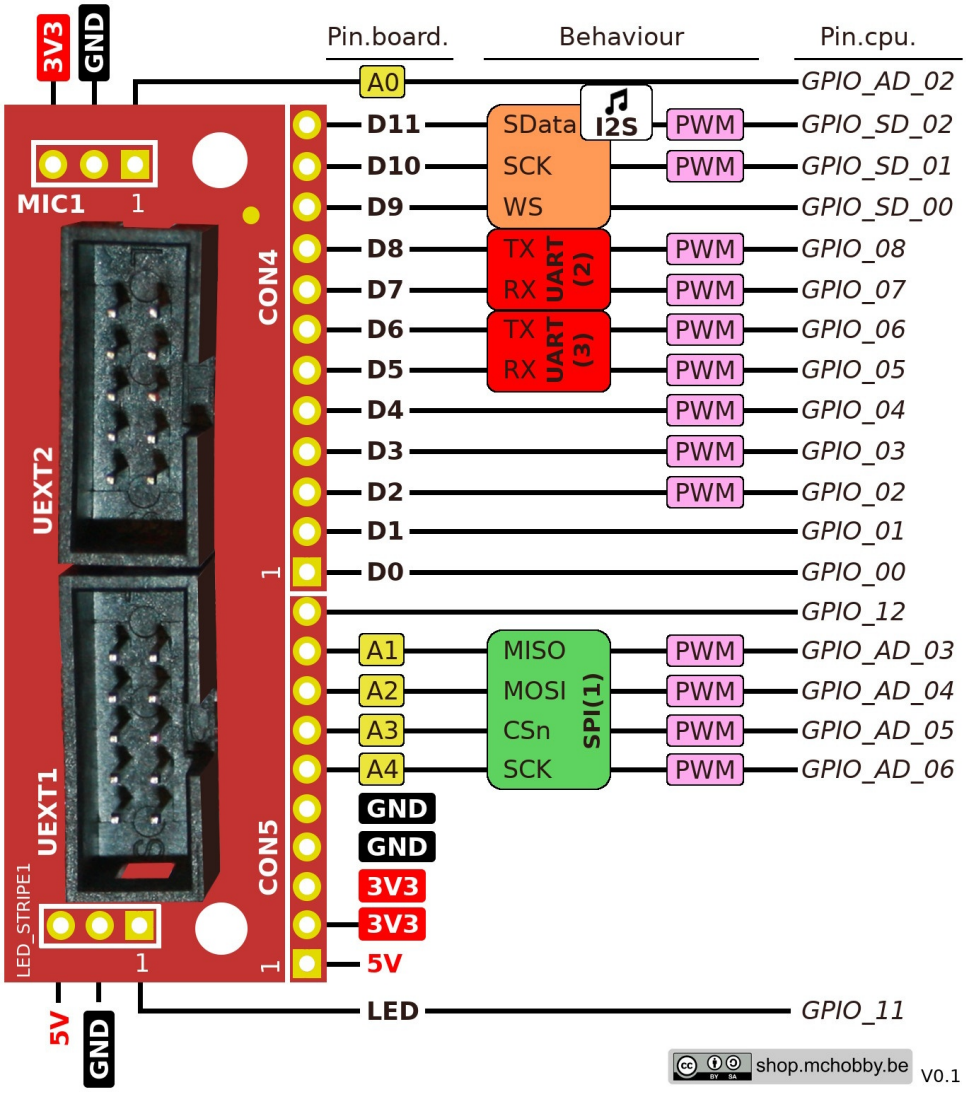
Here some useful details regarding the usage of some GPIO on the DevKit.

- **5V_IN**: This pin receive the 5V voltage coming from the USB-C. This pin will also power the RT1010Py MCU.
- **RX**: UART(1) RX also connected to debug connector pin #4 (220Ω must be populated).
- **TX**: UART(1) TX also connected to debug connector pin #3 (220Ω must be populated).
- **3V3**: The 3.3V voltage generated by the MCU regulator when the MCU is powered from its own micro-USB or from the USB-C (via 5V_IN pin).
- **LED**: The MCU User1 LED (green) is connected on that pin. LED is also connected on "**LED Stripe**" connector pin #1.
- **BT1, BT0**: allows to control the boot sequence. The pins are attached to DIP switch #1 & #2 (on right side of the relays). Place them up toward the relay terminal (switch is open) to run MicroPython at boot.
- **ON**: connected to the **Power button** (on left side of relays). This button controls the RT1010Py power management unit (see RT1010Py manual for details).
- **D12**: is connected to the User1 button (on left side of relays).

- **D13**, **D14**: activates the relay 1 (left one) and relay 2 (right one) when the signal is set HIGH. Note: MicroPython firmware defines **RELAY1**, **RELAY2** as alias for pin D13, D14.
- **A0**: connected on the MIC connector pin #1.
- **SCK**: also SWCLK in debug mode. Can be connected to debug connector pin #6 when the DIP switch #4 is placed down (toward the microcontroler).
- **SDA1**: also SWDIO in debug mode. Can be connected to debug connector pin #5 when the DIP switch #3 is placed down (toward the microcontroler).

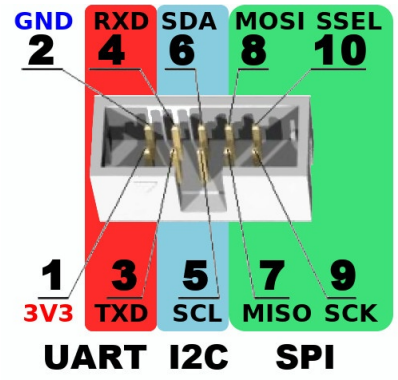
DevKit Edge connector

Most of the GPIOs are also broken out on the edge connector (see CON4, CON5).



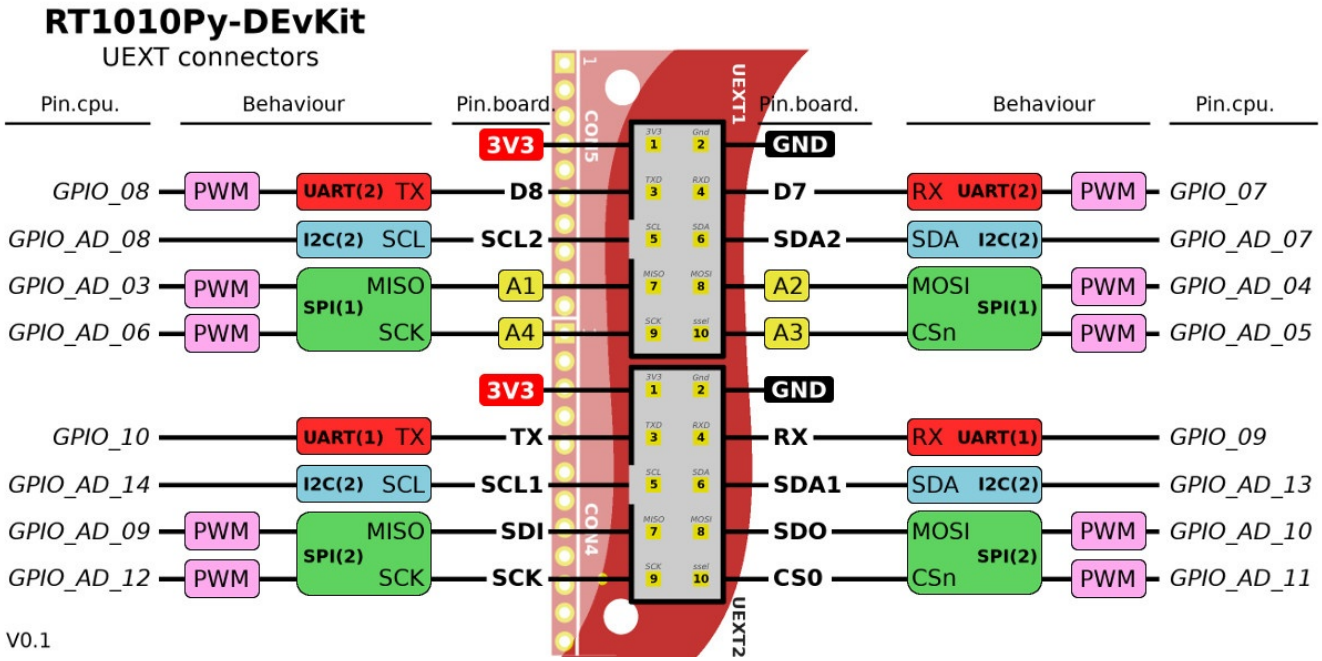
UEXT connectors

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

The RT1010Py-DevKit is fitted with two original size UEXT connectors (0.1”/2.54mm step boxed plastic connector, note that UEXT also exists in mini, pico and flat format).



SOFTWARE

Controling buses, analog input and IO are described in the RT1010Py User Manual.

Check it at https://github.com/OLIMEX/RT1010Py/tree/main/DOCUMENTS