

Product Overview

mPython, micro-controller board is an open-source intelligent hardware tool to promote STEAM, Artificial Intelligence and Programming Education. It is a smart hardware built-in to support Graphical and Code Programming were: OLED Display Panel, RGB Lamp, Accelerometer, Microphone, Light Sensor, Buzzer, Push Switches, Touch Switch and Gold-Finger for external extension interface. An ideal educational tool to create and realizing smart robotic, DIY projects and other Maker's creation.

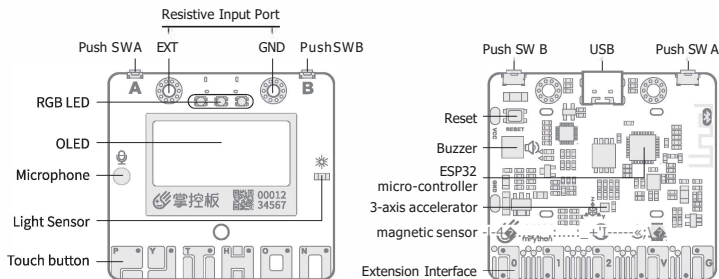
mPython

CREATIVITY SHALL BE REALIZED,
THIS IS OUR BELIEF.

mPython shall helps all programming user to realise their ideas.

V2.0

Overview



Feature of mPython Board

• Push Switch A/B

Located at the upper edge, push switch A and B. When push at "ON" stage which indicated by the LED lighted, its' to switch the operate the coding program. Vice-Versa if released.

• OLED Display Panel

Located on the front, this OLED display panel has a resolution of 128x64. It's capable to display text of Chinese, English, Japanese, Korean and other multilingual characters, graphical images and animations.

eRGBLED

Built-in with 3 pieces of RGB LED Lamp, individual programming to control the color display.

• Buzzer

A buzzer on the back of the control panel, which can produce different tones and play music, for example: "do, re, mi, fa, sol, la, si"

• Resistive Input Port

The two mounting holes located at the top, other than for mounting purpose, it is also can be used to measure the value of external resistive device. For example: measurement of ambient temperature changes by connecting a thermistor via alligator clip cable.

• Microphone

The built-in microphone enables this mPython microcontroller board to receive the background sound and noise•

• Light Sensor

The light sensor helps to sense the brightness and shade changes of the surrounding light density.

• 3-Axis Accelerator

The built-in 3-axis accelerator, to sense and detect motions of forward/backward tilts, left/right tilts, rocking, acceleration, deceleration, and also free-falling.

• Bluetooth

Bluetooth allows mPython board to connect to other electronic devices, such as mobile phones, tablets, etc.

• USBPort

USB port for connecting to PC via USB cable for power supply and also download program.

• Touch button

The golden finger located at front/bottom edges is the touch buttons (*6), marked as P Y T, H O & N To touch it to control board, LED Lamp, etc...

• Extension Interface

The golden finger located at back/bottom edge is the universal I/O connects to external devices to enrich its functionality and achieve greater creative performance.

• Magnetic field sensor

Detecting the magnetic induction intensity of the magnetic field can induce the geomagnetic field and realize the application of the compass.

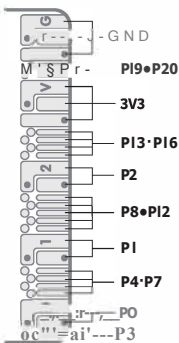
• Voice assistant

Connect to the voice cloud platform, receive voice instructions sent by the server, and realize voice recognition, voice control, artificial intelligence and other applications.

• Rstkey

When a crash occurs or a restart is required, gently press the rst button to restart mPython.

Pin definition



Product Data Sheet

• ESP-32 micro-controller

Processor: Tensilica LX6 Dual Core Processor, for processing high speed connection and for independent application development.

Main Frequency: 240MHz (clock frequency)

SRAM: 520KB

Flash: 8MB

BT protocol: v4.2 BR/EDR, BLE

BT Audio: OVS and SBC low power consumption 10μA

BT Frequency Range: 2.4~2.5GHz

• Power Supply: Type-C

eOperatingVoltage: 3.3V

• Operating Current: 200mA

• mPython micro-controller board

3-axis accelerometer, measuring range: ±2G

light Sensor

Microphone

RGBLamp* 3

OLED, 1.3inch, Resolution 128*64, support Chinese and English

character display

Passive Buzzer

Push Switch *2 (A/B)

Touch key* 6 (P/Y/T/H/O/N)

An interface for external resistive sensor input



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• mPython Extension Interface

20 digital I/O, D0~D20 (some used by on-board resource)

12bit analogue input* 5

Crocodile connector *1 for external input

I2C Interface

UART Interface

SPI Interface

Help Document

• Software Installation
mPython board supports mPythonX graphical and code programming software. Login to the below link to download mPythonX software and the software manual.

• mPythonX software manual:
<https://mpythonx.readthedocs.io>

• mPython guidance manual:
<https://mpython.readthedocs.io>

FCC regulatory conformance:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- {1} This device may not cause harmful interference.
- {2} This device must accept any interference received, including interference that may cause undesired operation.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

NOTE:

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

RF Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.