LoPy 1.0

With LoRa, Wifi and BLE ,the LoPy is the only triple bearer MicroPython enabled micro controller on the market today – the perfect enterprise grade IoT platform for your connected Things. With the latest Espressif chipset the LoPy offers a perfect combination of power, friendliness and flexibility.
Create and connect your things everywhere. Fast.

LoPy Features

- Powerful CPU, BLE and state of the art WiFi radio. 1KM Wifi Range
- Can also double up as a Nano LoRa gateway
- MicroPython enabled, the Linux o IoT for fast deployment
- Fits in a standard breadboard (with headers)
- Ultra-low power usage: a fraction compared to other connected micro controllers

Processing

- Espressif ESP32 chipset
- Dual processor + WiFi radio System on Chip.
- Network processor handles the WiFi connectivity and the IPv6 stack.
- Main processor is entirely free to run the user application.
- An extra ULP-coprocessor that can monitor GPIOs, the ADC channels and control most of the internal peripherals during deep-sleep mode while only consuming 25uA.

Operating Frequencies

- 868 MHz (Europe) at +14dBm maximum
- 915 MHz (North and South America, Australia and New Zealand) at +20dBm maximum

Range Specifiction

- Node range: Up to 40km
- Nano-Gateway: Up to 22km
- Nano-Gateway Capacity: Up to 100 nodes

Use the Pymakr IDE
Super easy code editor to write your Python scripts

Quick Verification
For easy and fast debugging use the interactive shell that is accessible through telnet or one of the serial ports

Easy Upload
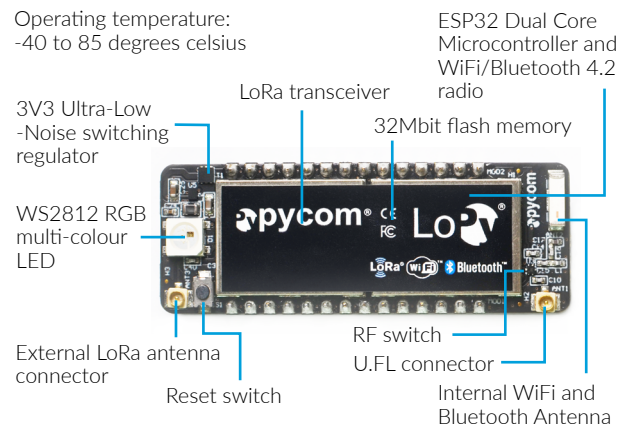Upload your scripts, and any other files you want to the LoPy via the FTP server

Locally or remotely
Reset the LoPy (you can do it locally, or remotely via Telnet)

Mechanical

Size: 55mm x 20mm x 3.5mm

Operating temperature: -40 to 85 degrees celsius

ESP32 Dual Core Microcontroller and WiFi/Bluetooth 4.2 radio

LoRa transceiver

3V3 Ultra-Low -Noise switching regulator

32Mbit flash memory

WS2812 RGB multi-colour LED

External LoRa antenna connector

RF switch

U.FL connector

Reset switch

Internal WiFi and Bluetooth Antenna

Interfaces

- 2 x UART, 2 x SPI, I2C, I2S, micro SD card
- Analog channels: 8x12 bit ADCs
- Timers: 4x16 bit with PWM and input capture
- DMA on all peripherals
- GPIO: Up to 24

Security & Certifications
- SSL/TLS support
- WPA Enterprise security
- FCC - 2AJMTWIPY2R
- CE 0700

Memory
- RAM: 512KB
- External flash 4MB
- Hardware floating point acceleration.
- Python multi-threading.

Hash / encryption
SHA, MD5, DES, AES

Wifi
802.11b/g/n 16mbps

Bluetooth
Low energy and classic

RTC
Running at 32KHz

Power

- Input: 3.3V - 5.5V
- 3v3 output capable of sourcing up to 400mA
- Wi-Fi: 12mA in active mode, 5uA in standby
- Lora: 15mA in active mode, 10uA in standby

LoRa Specifiction

- Semtech LoRa transceiver SX1272
- LoRaWAN stack
- Class A and C devices

With dozens of ready to use templates and libraries soon to be available on the Pycom Exchange, developing a new IoT solution is now easier and faster.

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