SiPy 1.0

With Sigfox, WiFi and BLE, the SiPy is the latest Pycom 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 SiPy offers a complete combination of power, friendliness and flexibility. Create and connect your things everywhere. Fast.

SiPy Features
- Powerful CPU, BLE and state of the art WiFi radio.
- 1KM Wifi Range.
- MicroPython enabled, use the Linux of IoT for 10x faster programming
- 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.

Sigfox Operating Frequencies
RCZ1 - 868MHz (Europe)
RCZ2 - 902MHz (US, Canada and Mexico)
RCZ3 - (Japan and Korea)
RCZ4 - 920-922MHz (ANZ, Latin America and S-E Asia)

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

Hash / encryption
SHA, MD5, DES, AES

WiFi Networking
802.11b/g/n 16mbps

Bluetooth
Low energy and classic

RTC
Running at 32KHz

Range
Node range: Up to 50km

Security & Certifications
- SSL/TLS support
- WPA Enterprise security
- AES encryption engine

Memory
- RAM: 512kb
- Flash Memory: 4MB
- GPIO: Up to 24
- Hardware floating point acceleration.
- Python multi-threading.

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SHA, MD5, DES, AES

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Range
Node range: Up to 50km

SiPy Specifiction
- TI CC1125 Narrowband Transceiver
- Class 0 device. Maximum Tx power:
  - +14dBm (Europe)
  - +22dBm (America)
  - +22dBm (Australia and New Zealand)
- Node range: Up to 50km
- Sigfox pre-certified (October 2016).

Power
- Voltage Input: 3.3V - 5.5V
- 3v3 output capable of sourcing up to 400mA
- Wi-Fi: 12mA in active mode, 5uA in standby
- Sigfox (Europe): 17mA in Rx mode, 47mA in Tx mode and 0.5uA in standby.
- Sigfox (Australia, New Zealand and South America): 24mA in Rx mode, 257 mA in Tx mode and 0.5uA in standby.

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.